

TEST REPORT

EUT Description	Wireless Module installed in Convertible PC
Brand Name	Intel®
Model Name	BE201D2W
FCC/IC ID	PD9BE201D2; 1000M-BE201D2
Date of Test Start/End	2024-12-25 / 2025-01-08
Date of Issue:	2025-01-20
Features	2x2 Wi-Fi + Bluetooth® (see section 5)
Description	Platform: Yoga Book 9 14IAH10 + Luxshare / Speed antennas

Applicant	Intel Corporation SAS
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Reference Standards	FCC 47 CFR Part §2.1093 RSS-102, issue 6 (see section 1)						
RF Exposure Environment	Portable devices - General population/uncontrolled exposure						
Exposure Conditions	Body worn; Limbs						
	<table> <tr> <th>SAR Result</th><th>SAR Limit</th></tr> <tr> <td>Body: 1.17 W/kg (1g)</td><td>1.6 W/kg (1g)</td></tr> <tr> <td>Limbs: 0.81 W/kg (10g)</td><td>4.0 W/kg (10g)</td></tr> </table>	SAR Result	SAR Limit	Body: 1.17 W/kg (1g)	1.6 W/kg (1g)	Limbs: 0.81 W/kg (10g)	4.0 W/kg (10g)
SAR Result	SAR Limit						
Body: 1.17 W/kg (1g)	1.6 W/kg (1g)						
Limbs: 0.81 W/kg (10g)	4.0 W/kg (10g)						
Maximum SAR Result & Limit							
Min. test separation distance	0mm to phantom, 3.06 mm to antenna edge						

Test Report identification	BL-SZ24A0312-701
Revision Control	Rev. 00 This test report version is first issue (see section 8)

The test results relate only to the samples tested.
Reference to accreditation shall be used only by full reproduction of test report.

ISSUED BY:

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1. Standards, reference documents and applicable test methods

FCC	1. FCC Title 47 CFR Part §2.1093 – Radiofrequency radiation exposure evaluation: portable devices. 2. FCC OET KDB 447498 D04 interim v01 General RF Exposure Guidance v01– RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices. 3. FCC OET KDB 616217 D04 v01r02 – SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers. 4. FCC OET KDB 865664 D01 v01r04 – SAR Measurement Requirements for 100 MHz to 6 GHz. 5. FCC OET KDB 865664 D02 v01r02 – RF Exposure Compliance Reporting and Documentation Considerations. 6. FCC OET KDB 248227 D01 v02r02 – SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters 7. ANSI C95.1-1992 –IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz 8. IEEE Std 1528-2013 – IEEE Recommended Practice Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques...
ISED	1. ISED RSS 102, Issue 6 – Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands) 2. RSS-102.SAR.MEAS–Measurement Procedure for Assessing Specific Absorption Rate (SAR) Compliance in Accordance with RSS-102 3. ISED Notice 2020-DRS0020 Applicability of IEC/IEEE 62209-1528 and IEC 62209-3 Standard 4. ISED Notice 2016-DRS001 – Applicability of latest FCC RF Exposure KDB Procedures and Other Procedures. 5. ISED Notice 2012-DRS0529 – SAR correction for measured conductivity and relative permittivity based on IEC 62209-2 standard. 6. FCC OET KDB 447498 D01 V06 General RF Exposure Guidance – RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices. 7. FCC OET KDB 616217 D04 v01r02 – SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers. 8. FCC OET KDB 248227 D01 v02r02 – SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters 9. 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)

2. General conditions, competences and guarantees

- ✓ Shenzhen BALUN Technology Co., Ltd. (BALUN Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number CN1196.
- ✓ Shenzhen BALUN Technology Co., Ltd. (BALUN Lab) is a Registered Test Site listed by ISED, with ISED company number 32189 and CAB identifier CN0030.
- ✓ Shenzhen BALUN Technology Co., Ltd. (BALUN Lab) only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Shenzhen BALUN Technology Co., Ltd. (BALUN Lab) guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
- ✓ This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the “inspection and testing dedicated stamp” or test report stamp.
- ✓ The test data and results are only valid for the tested samples provided by the customer.
- ✓ This report shall not be partially reproduced without the written permission of the laboratory.
- ✓ Any objection shall be raised to the laboratory within 30 days after receiving the report.

3. Environmental Conditions

✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	22.1°C ~ 22.6°C
Humidity	50.1% ~ 58.5%
Liquid Temperature	21.1°C ~ 21.8°C

4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	SC-SZ24A0268.S03	Wireless Module installed in Convertible PC	Yoga Book 9 14IAH10	2053631400074	2024-12-12	Speed antenna
#02	SC-SZ24A0268.S04	Wireless Module installed in Convertible PC	Yoga Book 9 14IAH10	2053631400059	2024-12-12	Luxshare antenna

5. EUT Features

The herein information is provided by the customer

BALUN Lab declines any responsibility for the accuracy of the stated customer provided information, especially if it has any impact on the correctness of test results presented in this report.

Brand Name	Intel®		
Model Name	BE201D2W		
Software Version	DRTU.06643.23.60.0		
Driver Version	23.60.5.4		
Prototype / Production	Production		
Host Identification	Yoga Book 9 14IAH10		
Supported Radios	802.11b/g/n/ax/be 2.4GHz (2400.0 – 2483.5 MHz) 802.11a/n/ac/ax/be 5.2GHz (5150.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) 802.11ax/be 6.0GHz (5925.0 - 7125.0MHz) Bluetooth 2.4GHz (2400.0 – 2483.5 MHz)		
Antenna Information	Transmitter	Aux (Ant 1/Tx1)	Main (Ant 2/Tx2)
	Manufacturer	SPEED	SPEED
	Antenna type	PIFA	PIFA
	Part number	DC330027E10	DC330027E00
	Transmitter	Aux (Ant 1/Tx1)	Main (Ant 2/Tx2)
	Manufacturer	Luxshare	Luxshare
	Antenna type	PIFA	PIFA
	Part number	DC330027F10	DC330027F00
	See Annex F for more details on antennas location.		
Simultaneous Transmission Configurations	WLAN 2.4GHz Main + BT Aux WLAN 2.4GHz Main + WLAN 2.4GHz Aux WLAN 5GHz Main + BT Aux WLAN 5GHz Main + WLAN 5GHz Aux WLAN 5GHz Main + WLAN 5GHz Aux + BT Aux WLAN 6GHz Main + BT Aux* WLAN 6GHz Main + WLAN 6GHz Aux* WLAN 6GHz Main + WLAN 6GHz Aux + BT Aux*		
Additional Information	No WWAN transmitter is considered in this report		
	5.60-5.65 GHz band (TDWR) is supported by the device		
	Band gap is supported by the device		

*For WiFi 6E band refer to report: BL-SZ24A0312-702 and BL-SZ24A0312-703

Supported Radios

Mode	Duty Cycle	Modulation	Band	UL Freq Range (MHz)	Measured Max. Conducted Power (dBm)
802.11b/g/n/ax/be	100%	BPSK QPSK 16QAM 64QAM 256QAM 1024QAM 4096QAM	2.4GHz	2400-2483.5	17.19
802.11a/n/ac/ax/be	100%	BPSK QPSK 16QAM 64QAM 256QAM 1024QAM 4096QAM	5.2GHz	5150-5250	NM
			5.3GHz	5250-5350	15.86
			5.6GHz	5475-5725	15.91
			5.8GHz	5725-5850	16.83
			5.9GHz	5850-5895	16.78
BDR/EDR	77%	GFSK $\pi/4$ DQPSK 8DPSK	2.4GHz	2400-2483.5	9.94
Bluetooth LE	55%	GFSK	2.4GHz	2400-2483.5	NM

NM: Not Measured

Maximum Output power specification + Tune up tolerance limit, as specified by the client

Equipment Class	Mode	BW (MHz)	Notebook		Tablet	
			Main (dBm)	Aux (dBm)	Main (dBm)	Aux (dBm)
DTS	802.11b	20	17.00	17.00	17.00	17.50
	802.11g	20	17.00	17.00	17.00	17.50
	802.11n20 802.11ax20/be20	20	17.00	17.00	17.00	17.50
		20	17.00	17.00	17.00	17.50
		20	17.00	17.00	17.00	17.50
	802.11n40/ ax40/ be40	40	17.00	17.00	17.00	17.50
		40	17.00	17.00	17.00	17.50
		40	17.00	17.00	17.00	17.50
U-NII-1	802.11a 802.11n20 802.11ac20 /ax20/be20	20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
	802.11n40/ac40 / ax40/be40	40	15.50	16.00	11.00	13.50
		40	15.50	16.00	11.00	13.50
		40	15.50	16.00	11.00	13.50
		40	15.50	16.00	11.00	13.50
	802.11ac80 /ax80/be80	80	15.50	16.00	11.00	13.50
		80	15.50	16.00	11.00	13.50
		80	15.50	16.00	11.00	13.50
	802.11ax160	160	15.50	16.00	11.00	13.50
U-NII-2A	802.11a 802.11n20 802.11ac20 /ax20/be20	20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
		20	15.50	16.00	11.00	13.50
	802.11n40/ac40 / ax40/be40	40	15.50	16.00	11.00	13.50
		40	15.50	16.00	11.00	13.50
		40	15.50	16.00	11.00	13.50
		40	15.50	16.00	11.00	13.50
	802.11ac80 802.11ax80/be80	80	15.50	16.00	11.00	13.50
		80	15.50	16.00	11.00	13.50
		80	15.50	16.00	11.00	13.50
U-NII-2C	802.11a 802.11n20 802.11ac20 /ax20/be20	20	16.00	16.00	11.00	14.00
		20	16.00	16.00	11.00	14.00
		20	16.00	16.00	11.00	14.00
		20	16.00	16.00	11.00	14.00
		20	16.00	16.00	11.00	14.00
	802.11n40/ac40 / ax40/be40	40	16.00	16.00	11.00	14.00
		40	16.00	16.00	11.00	14.00
		40	16.00	16.00	11.00	14.00
		40	16.00	16.00	11.00	14.00
	802.11ac80 /ax80/be80	80	16.00	16.00	11.00	14.00
		80	16.00	16.00	11.00	14.00
		80	16.00	16.00	11.00	14.00
		80	16.00	16.00	11.00	14.00

	802.11ac160/ ax160/be160	160 160 160	16.00	16.00	11.00	14.00
			16.00	16.00	11.00	14.00
			16.00	16.00	11.00	14.00
U-NII-3	802.11a 802.11n20 802.11ac20 /ax20/be20	20 20 20 20 20	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
	802.11n40/ac40 / ax40/be40	40 40 40 40	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
	802.11ac80 802.11ax80/be80	80 80 80	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
U-NII-4	802.11a 802.11n20 802.11ac20 /ax20/be20	20 20 20 20 20	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
	802.11n40/ac40 / ax40/be40	40 40 40 40	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
	802.11ac80 802.11ax80/be80	80 80 80	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
	802.11ac160/ ax160/be160	160	17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50
			17.00	16.50	12.50	12.50

Equipment Class	Mode	BW (MHz)	Main (dBm)	Aux (dBm)
DSS	Bluetooth BDR	1	NA	10.00
	Bluetooth EDR2	1		10.00
	Bluetooth EDR3	1		10.00
	BLE	2	NA	10.00

The SAR measurement was performed at a high-power setting for Notebook mode, which is higher than the actual power setting reported in the technical documentation.

6. Remarks and comments

1. The conducted values are obtained by applying the BIOS SAR power values to the BE201D2W Intel module installed in the Yoga Book 9 14IAH10 identified in this report, as requested by the customer.
2. Variability and simultaneous transmission results shown in this report are based on the highest SAR value obtained among all antenna manufacturers.
3. Only the plots for the test positions with the highest measured SAR per band/mode are included in Annex C as required per FCC OET KDB 865664 D02, paragraph 2.3.h.
4. On both samples the same conducted power measurements was used as we swapped the module on the second sample during SAR testing.
5. This test report shows only test results for WLAN2.4GHz, 5GHz and BT.
6. Bystander condition is covered at modular level according to RSS-102, SPR-001.

7. Test Verdicts summary

The statement of conformity to applicable standards in the table below are based on the measured values, without taking into account the measurement uncertainties.

Standard	Band	Highest Reported SAR (1g) (W/kg)	Highest Reported SAR (10g) (W/kg)	Verdict
		Body	Limbs	
802.11b/g/n/ax	2.4GHz	0.98	0.42	P
802.11a/n/ac/ax/be	5.2GHz	NM	NM	NA
	5.3GHz	1.15	0.67	P
	5.6GHz	1.07	0.66	P
	5.8GHz	1.11	0.81	P
	5.9GHz	1.17	0.79	P
Bluetooth	2.4GHz	0.23	0.09	P

P: Pass

F: Fail

NM: Not Measured

NA: Not Applicable

According to the FCC OET KDB 690783 D01, this is the summary of the values for the Grant Listing:

Exposure Condition	Highest Reported SAR (1g) (W/kg)			Highest Reported SAR (10g) (W/kg)		
	Equipment Class			Equipment Class		
	Body			Limbs		
	DTS	DSS	U-NII	DTS	DSS	U-NII
Body Worn	0.98	0.23	1.17	0.42	0.09	0.81
Simultaneous Tx	Sum-SAR:1.76 SPLSR: 0.01	Sum-SAR:2.49 SPLSR: 0.02	Sum-SAR: 2.49 SPLSR:0.02	Sum-SAR:0.79	Sum-SAR:1.57	Sum-SAR: 1.57

Considering the results of the performed test according to FCC 47CFR Part 2.1093 and ISED RSS 102, Issue 6 the item under test is in compliance with the requested specifications specified in Section1. Standards, reference documents and applicable test methods

8. Document Revision History

Revision #	Modified by	Revision Details
Rev. 00	Xu Rui	First Issue

Annex A. Test & System Description

A.1 SAR Definition

Specific Absorption rate is defined as the time derivative of the incremental energy (dW) absorbed by (dissipated in) and incremental mass (dm) contained in a volume element (dV) of a given density (ρ).

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

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

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

Where:

σ = Conductivity of the tissue (S/m)

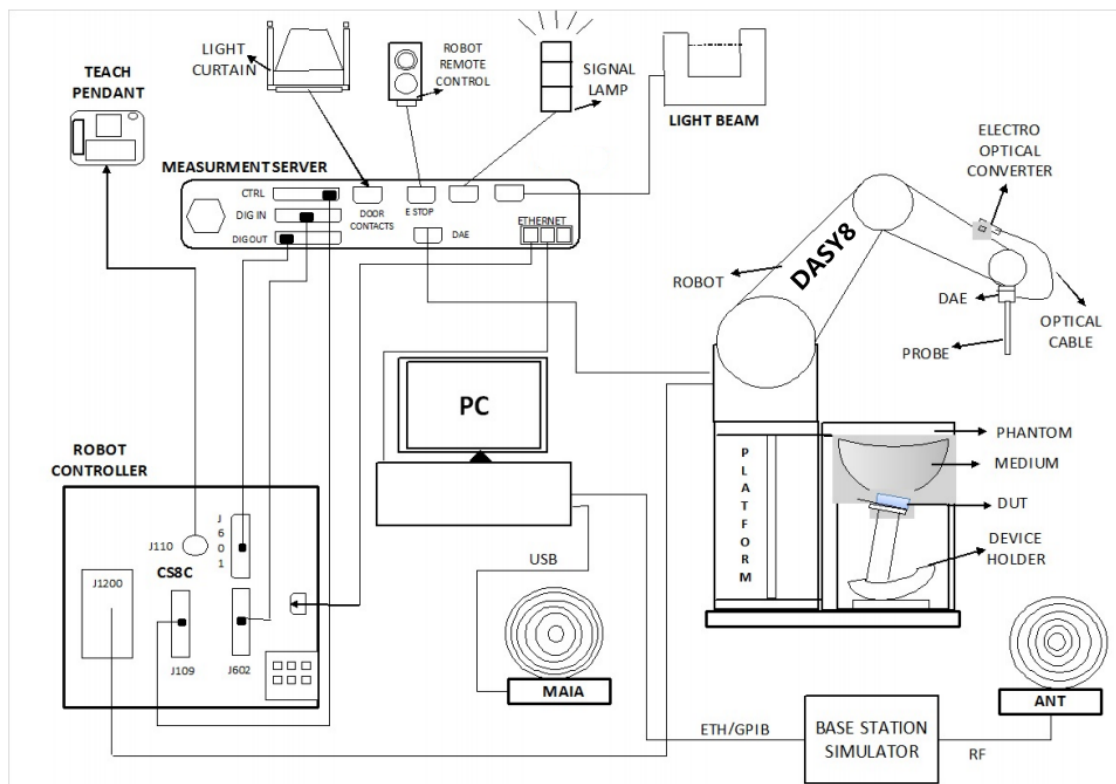
ρ = Mass density of the tissue (kg/m³)

E = RMS electric field strength (V/m)

A.2 SPEAG SAR Measurement System

A.2.1 SAR Measurement Setup

The DASY8 system for performing compliance tests consists of the following items:



- ✓ A standard high precision 6-axis robot (Stäubli TX/RX family) with controller, teach pendant and software. It includes an arm extension for accommodating the data acquisition electronics (DAE)
- ✓ An isotropic field probe optimized and calibrated for the targeted measurements.
- ✓ A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The signal is optically transmitted to the EOC.
- ✓ The Electro-optical Converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. The EOC signal is transmitted to the measurement server.
- ✓ The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movements interrupts.
- ✓ The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- ✓ A computer running Windows professional operating system and the DASY8 software.
- ✓ Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- ✓ The phantom, the device holder and other accessories according to the targeted measurement.
- ✓ MAIA is a hardware interface (Antenna) used to evaluate the modulation and audio interference characteristics of RF signals.
- ✓ ANT is an ultra-wideband antenna for use with the base station simulators over 698 MHz to 6GHz.
- ✓ The base station simulator is an equipment used for SAR cellular tests in order to emulate the cellular signals characteristics and behavior between a regular base station and the equipment under test.
- ✓ Tissue simulating liquid.
- ✓ System Validation dipoles.
- ✓ Network emulator or RF test tool.

A.2.2 E-Field Measurement Probe

The probe is constructed using three orthogonal dipole sensors arranged on an interlocking, triangular prism core. The probe has built-in shielding against static charges and is contained within a PEEK cylindrical enclosure material at the tip.



The probe's characteristics are:

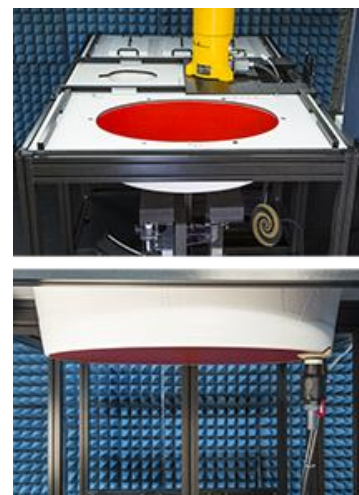
Frequency Range	4MHz – 10GHz
Length	337 mm
Probe tip external diameter	2.5 mm
Typical distance between dipoles and the probe tip	1 mm
Axial Isotropy (in human-equivalent liquids)	± 0.3 dB
Hemispherical Isotropy (in human-equivalent liquids)	± 0.5 dB
Linearity	± 0.2 dB
Maximum operating SAR	100 W/kg
Lower SAR detection threshold	0.001 W/kg

A.2.3 Flat Phantom

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

The phantom's characteristics are:

Material	Vinylester, glass fiber reinforced (VE-GF)
Shell thickness	2 mm $\pm$ 0.2 mm
Filling volume	30 Liters approx.
Dimensions	Major axis: 600mm / Minor axis: 400mm



A.2.4 Device Positioner

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



The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon=3$ and loss tangent $\delta=0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

A simple but effective and easy-to-use extension for the Mounting Device; facilitates testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.); lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI and other Flat Phantoms.



A.3 Data Evaluation

- **Power Reference measurement**

The robot measures the E field in a specified reference position that can be either the selected section's grid reference point or a user point in this section at 4mm of the inner surface of the phantom, 2mm for frequencies above 3GHz.

- **Area Scan**

Measurement procedures for evaluating SAR from wireless handsets typically start with a coarse measurement grid to determine the approximate location of the local peak SAR values. This is known as the area-scan procedure. The SAR distribution is scanned along the inside surface of one side of the phantom head, at least for an area larger than the projection of the handset and antenna. The distance between the measured points and phantom surface should be less than 8 mm, and should remain constant (with variation less than ± 1 mm) during the entire scan in order to determine the locations of the local peak SAR with sufficient accuracy. The angle between the probe axis and the surface normal line is recommended but not required to be less than 30° . If this angle is larger than 30° and the closest point on the probe-tip housing to the phantom surface is closer than a probe diameter, the boundary effect may become larger and polarization dependent. This additional uncertainty needs to be analyzed and accounted for. To achieve this, modified test procedures and additional uncertainty analyses not described in this recommended practice may be required. The measurement and interpolation point spacing should be chosen such as to allow identification of the local peak locations to within one-half of the linear dimension of a side of the zoom-scan volume. Because a local peak having specific amplitude and steep gradients may produce a lower peak spatial-average SAR compared to peaks with slightly lower amplitude and less steep gradients, it is necessary to evaluate these other peaks as well. However, since the spatial gradients of local SAR peaks are a function of the wavelength inside the tissue-equivalent liquid and the incident magnetic field strength, it is not necessary to evaluate local peaks that are less than 2 dB or more below the global maximum peak. Two-dimensional spline algorithms (Brishoual et al. 2001; Press et al., 1996) are typically used to determine the peaks and gradients within the scanned area. If a peak is found at a distance from the scan border of less than one-half the edge dimension of the desired 1 g or 10 g cube, the measurement area should be enlarged if possible.

- **Zoom Scan**

To evaluate the peak spatial-average SAR values for 1 g or 10 g cubes, fine resolution volume scans, called zoom scans, are performed at the peak SAR locations identified during the area scan. The minimum zoom scan volume size should extend at least 1.5 times the edge dimension of a 1 g cube in all directions from the center of the scan volume, for both 1 g and 10 g peak spatial-average SAR evaluations. Along the phantom curved surfaces, the front face of the volume facing the tissue/liquid interface conforms to the curved boundary, to ensure that all SAR peaks are captured. The back face should be equally distorted to maintain the correct averaging mass. The flatness and orientation of the four side faces are unchanged from that of a cube whose orientation is within $\pm 30^\circ$ of the line normal to the phantom at the center of the cube face next to the phantom surface. The peak local SAR locations that were determined in the area scan (interpolated values) should be used for the centers of the zoom scans. If a scan volume cannot be centered due to proximity of a phantom shape feature, the probe should be tilted to allow scan volume enlargement. If probe tilt is not feasible, the zoom-scan origin may be shifted, but not by more than half of the 1 g or 10 g cube edge dimension.

After the zoom-scan measurement, extrapolations from the closest measured points to the surface, for example along lines parallel to the zoom-scan centerline, and interpolations to a finer resolution between all measured and extrapolated points are performed. Extrapolation algorithm considerations are described in 6.5.3, and 3-D spline methods (Brishoual et al., 2001; Kreyszig, 1983; Press et al., 1996) can be used for interpolation. The peak spatial-average SAR is finally determined by a numerical averaging of the local SAR values in the interpolation grid, using for example a trapezoidal algorithm for the integration (averaging).

In some areas of the phantom, such as the jaw and upper head regions, the angle of the probe with respect to the line normal to the surface may be relatively large, e.g., greater than $\pm 30^\circ$, which could increase the boundary effect error to a larger level. In these cases, during the zoom scan a change in the orientation of the probe, the phantom, or both is recommended but not required for the duration of the zoom scan, so that the angle between the probe axis and the line normal to the surface is within 30° for all measurement points.

- **Power Drift measurement**

The robot re-measures the E-Field in the same reference location measured at the Power Reference. The drift measurement gives the field difference in dB from the first to the last reference reading. This allows a user to monitor the power drift of the device under test that must remain within a maximum variation of $\pm 5\%$.

- **Post-processing**

The procedure for spatial peak SAR evaluation has been implemented according to the IEEE1528 and IEC 62209-1/2 and IEC/IEEE 62209-1528:2020 standards. It can be conducted for 1g and 10g.

The software allows evaluations that combine measured data and robot positions, such as:

- ✓ Maximum search
- ✓ Extrapolation
- ✓ Boundary correction
- ✓ Peak search for averaged SAR

Interpolation between the measured points is performed when the resolution of the grid is not fine enough to compute the average SAR over a given mass.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation.

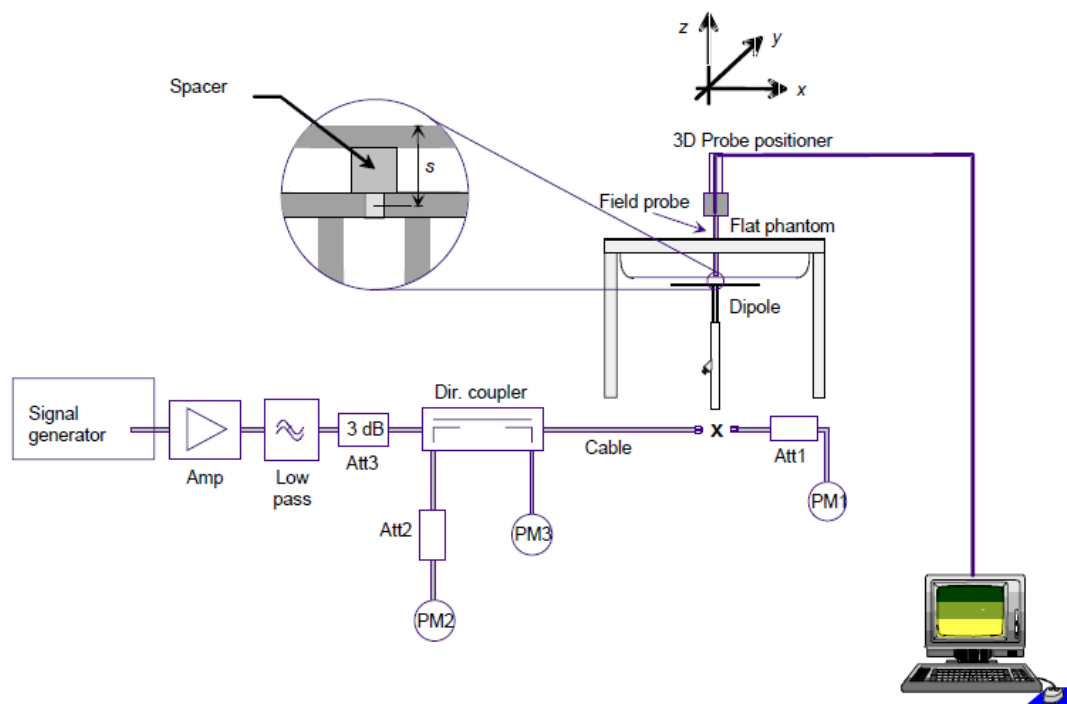
A.4 System and Liquid Check

A.4.1 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.

In the simplified setup for system check, the EUT is replaced by a calibrated dipole and the power source is replaced by a controlled continuous wave generated by a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the phantom at the correct distance.



The equipment setup is shown below:

- ✓ Signal Generator
- ✓ Amplifier
- ✓ Directional coupler
- ✓ Power meter
- ✓ Calibrated dipole

First, the power meter PM1 (including attenuator Att1) is connected to the cable to measure the forward power at the location of the connector (x) to the system check source. The signal generator is adjusted for the desired forward power at the connector as read by power meter PM1 after attenuation Att1 and also as coupled through Att2 to PM2. After connecting the cable to the source, the signal generator is readjusted for the same reading at power meter PM2.

SAR results are normalized to a forward power of 1W to compare the values with the calibration reports results as described at IEEE 1528, IEC 62209 and IEC/IEEE 62209-1528:2020 standards

A.4.2 Liquid Check

The dielectric parameters check is done prior to the use of the tissue simulating liquid. The verification is made by comparing the relative permittivity and conductivity to the values recommended by the applicable standards.

The liquid verification was performed using the following test setup:

- ✓ VNA (Vector Network Analyzer)
- ✓ Open-Short-Load calibration kit
- ✓ RF Cable
- ✓ Open-Ended Coaxial probe
- ✓ DAK software tool
- ✓ SAR Liquid
- ✓ De-ionized water
- ✓ Thermometer

These are the target dielectric properties of the tissue-equivalent liquid material as defined in FCC OET KDB 865664 D01.

Frequency (MHz)	Head SAR	
	ϵ_r (F/m)	(S/m)
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800-2000	40.0	1.40
2450	39.2	1.80
3000	38.5	2.40
5800	35.3	5.27

(ϵ_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m³)

The measurement system implement a SAR error compensation algorithm as documented in IEEE Std 1528-2013 and IEC/IEEE 62209-1528:2020 (equivalent to draft standard IEEE P1528-2011) to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters (applied to only scale up the measured SAR, and not downward) so, according to FCC OET KDB 865664 D01, the tolerance for ϵ_r and σ may be relaxed to $\pm 10\%$.

A.5 Test Equipment List

SAR system #4

Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
6-Axis Robot	TX290L Speag	F/21/0032513/A/001	STAÜBLI	NA	NA
Robot Controller	CSE9spe-TX2-90	F/21/0032513/C/001	STAÜBLI	NA	NA
Measurement Server	DASY8 MS	NA	SPEAG	NA	NA
Electro Optical Converter	EOC8-90	1025	SPEAG	NA	NA
Light Beam Unit	LB-85	2076	Di-soric	NA	NA
Oval Flat Phantom	ELI V8.0	2162	SPEAG	NA	NA
Measurement Software	DASY8 v16.2	9-1798AA01_D8	SPEAG	NA	NA
Data Acquisition Electronics	DAE	1710	SPEAG	2024/01/03	2025/01/02
Dosimetric E-Field probe	EX3DV4	7893	SPEAG	2024/09/05	2025/09/04
Thermometer	RC-4HC	EF7216002985	Elitech	2024/10/31	2025/10/30
Thermometer	RC-4HC	EF720B004811	Elitech	2024/10/31	2025/10/30

SAR system #5

Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
6-Axis Robot	TX290L Speag	F/21/0032513/A/001	STAÜBLI	NA	NA
Robot Controller	CSE9spe-TX2-90	F/21/0032513/C/001	STAÜBLI	NA	NA
Measurement Server	DASY8 MS	NA	SPEAG	NA	NA
Electro Optical Converter	EOC8-90	1021	SPEAG	NA	NA
Light Beam Unit	LB-85	2043	Di-soric	NA	NA
Oval Flat Phantom	ELI V8.0	2159	SPEAG	NA	NA
Measurement Software	DASY8 v16.2	9-31E3EA2E_D8	SPEAG	NA	NA
Data Acquisition Electronics	DAE	1711	SPEAG	2024/03/18	2025/03/17
Dosimetric E-Field probe	EX3DV4	7510	SPEAG	2024/06/25	2025/06/24
Dosimetric E-Field probe	EX3DV4	7893	SPEAG	2024/09/05	2025/09/04
Thermometer	RC-4HC	EF7239002655	Elitech	2024/10/31	2025/10/30
Thermometer	RC-4HC	EF7216002974	Elitech	2024/10/31	2025/10/30

Shared equipment

Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
PC	N/A	N/A	Dell	NA	NA
PC	N/A	N/A	Dell	NA	NA
2450MHz Validation Dipole	D2450V2	SN: 952	Speag	2024/05/07	2027/05/06
5GHz Validation Dipole	D5GHzV2	SN: 1200	Speag	2024/05/09	2027/05/08
Signal Generator	SMB100A	177746	R&S	2024/04/24	2025/04/23
Power Meter	NRVD-B2	835843/014	R&S	2024/08/08	2025/08/07
Power Sensor	NRV-Z4	100381	R&S	2024/08/08	2025/08/07
Power Sensor	NRV-Z2	100211	R&S	2024/08/08	2025/08/07
Network Analyzer	E5071C	MY46103472	Agilent	2024/09/11	2025/09/10
Power Amplifier	932502132	Mini-Circuits	ZVA-183W-S+	NA	NA
Dielectric Probe Kit	SN: 1312	Speag	DAK3.5	NA	NA
Attenuator	1305003187	COM-MW	ZA-S1-31	NA	NA
Directional coupler	000272	AA-MCS	AAMCS-UDC	NA	NA

A.5.1 Tissue Simulant Liquid

TSL	Manufacturer / Model	Freq Range (MHz)	Main Ingredients
Head WideBand	SPEAG HBBL600-6000V6	600-10000	Ethanediol, Sodium petroleum sulfonate, Hexylene Glycol / 2-Methyl-pentane-2.4-diol, Alkoxylated alcohol

A.6 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the table below with a coverage factor of $k = 2$ to indicate a 95% level of confidence:

DASY8 Uncertainty Budget (Frequency band: 300 MHz–3 GHz range)								
Symbol	Error Description	Uncert. value	Prob.Dis t.	Div.	(ci)(1 g)	(ci)(10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±12.0%	N	2	1	1	±6.0%	±6.0%
CFdrift	Probe Calibration Drift	±1.7%	R	√3	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	√3	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±3.0%	R	√3	1	1	±1.7%	±1.7%
ISO	Probe Isotropy	±7.6%	R	√3	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±0.7%	N	1	1	1	±0.7%	±0.7%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δsys	Probe Positioning	±0.006 mm	N	1	0.14	0.14	±0.10%	±0.10%
DAT	Data Processing	±1.2%	N	1	1	1	±1.2%	±1.2%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.) ^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(Tσ)	Conductivity (temp.) ^{BB}	±3.3%	R	√3	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	√3	0	0	±0%	±0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
Dxyz	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation ^m	±2.4%	R	√3	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	√3	1	1	±1.0%	±1.0%
RFdrift	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc. ^{val}	±0.0%	N	1	1	1	±0%	±0%
RFin	Unc. Input Power ^{val}	±0.0%	N	1	1	1	±0%	±0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling ^p	±0%	R	√3	1	1	±0%	±0%
u(ΔSAR)	Combined Uncertainty						±10.9%	±10.9%
U	Expanded Uncertainty						±21.9%	±21.8%

DASY8 Uncertainty Budget (Frequency band: 3 GHz–6 GHz range)								
Symbol	Error Description	Uncert. value	Prob.Dis t.	Div.	(ci)(1 g)	(ci)(10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±13.1%	N	2	1	1	±6.55%	±6.55%
CF _{drift}	Probe Calibration Drift	±1.7%	R	√3	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	√3	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.6%	R	√3	1	1	±1.5%	±1.5%
ISO	Probe Isotropy	±7.6%	R	√3	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±1.2%	N	1	1	1	±1.2%	±1.2%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ _{sys}	Probe Positioning	±0.005 mm	N	1	0.29	0.29	±0.15%	±0.15%
DAT	Data Processing	±2.3%	N	1	1	1	±2.3%	±2.3%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.) ^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(Tσ)	Conductivity (temp.) ^{BB}	±3.4%	R	√3	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	√3	0.25	0.25	±2.0%	±2.0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D _{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation ^m	±2.4%	R	√3	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	√3	1	1	±1.0%	±1.0%
RF _{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc. ^{val}	±0.0%	N	1	1	1	±0%	±0%
RF _{in}	Unc. Input Power ^{val}	±0.0%	N	1	1	1	±0%	±0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling ^p	±0%	R	√3	1	1	±0%	±0%
u(ΔSAR)	Combined Uncertainty						±11.6%	±11.5%
U	Expanded Uncertainty						±23.3%	±23.0%

A.7 RF Exposure Limits

SAR assessments have been made in line with the requirements of FCC 47CFR Part 2.1093 and ISED RSS 102 Issue 6 on the limitation of exposure of the general population / uncontrolled exposure for portable devices.

Exposure Type	General Population / Uncontrolled Environment
Peak spatial-average SAR (averaged over any 1 gram of tissue)	1.6 W/kg
Whole body average SAR	0.08 W/kg
Peak spatial-average SAR (extremities) (averaged over any 10 grams of tissue)	4.0 W/kg

Annex B. Test Results

The herein test results were performed by:

Test case measurement	Test Personnel
Conducted measurement	Xiong Lining
SAR measurement	Xiong Lining

B.1 Test Conditions

B.1.1 Test SAR Test positions relative to the phantom

The device under test was an Intel® card inside a Convertible host platform (Yoga Book 9 14IAH10) using a set of PIFA antennas. The card was operated utilizing proprietary software (DRTU version DRTU.06643.23.60.0) and each channel was measured using a broadband power meter to determine the maximum average power.

According to FCC OET KDB 616217 D04, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Test Exclusion Threshold in FCC OET KDB 447498 can be applied to determine SAR test exclusion for adjacent edge configurations.

The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

Antenna	Aux.	Main
Position	• Back Side • Bottom Side • Front Edge • Keyboard Side • Left Edge • Right Edge • Top Edge	• Back Side • Bottom Side • Front Edge • Keyboard Side • Left Edge • Right Edge • Top Edge

See B.1.3.1 for a more detailed list of the applied reductions.

See **F.2 Test positions** section for more information on the tested positions.

B.1.2 Test signal, Output power and Test Frequencies

For 802.11 transmission modes the device was put into operation by using an own control software to program the test mode required to select the continuous transmission with 100% duty cycle.

The output power of the device was set to transmit at maximum power for all tests.

B.1.3 Evaluation Exclusion and Test Reductions

B.1.3.1 SAR evaluation exclusion

For FCC:

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.

SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance					
Frequency	Exemption Limits (mW)				
(MHz)	At separation distance of ≤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	Exemption Limits (mW)				
(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

For ISED:

According to RSS-102 Issue6, SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table below:

SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance					
Frequency	Exemption Limits (mW)				
(MHz)	At separation distance of ≤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	45 mW	116 mW	139 mW	163 mW	189 mW
450	32 mW	71 mW	87 mW	104 mW	124 mW
835	21 mW	32 mW	41 mW	54 mW	72 mW
1900	6 mW	10 mW	18 mW	33 mW	57 mW
2450	3 mW	7 mW	16 mW	32 mW	56 mW
3500	2 mW	6 mW	15 mW	29 mW	50 mW
5800	1 mW	5 mW	13 mW	23 mW	32 mW
Frequency	Exemption Limits (mW)				
(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	216 mW	246 mW	280 mW	319 mW	362 mW
450	147 mW	175 mW	208 mW	248 mW	296 mW
835	96 mW	129 mW	172 mW	228 mW	298 mW
1900	92 mW	138 mW	194 mW	257 mW	323 mW
2450	89 mW	128 mW	170 mW	209 mW	245 mW
3500	72 mW	94 mW	114 mW	134 mW	158 mW
5800	41 mW	54 mW	74 mW	102 mW	128 mW

For Body&Limbs:

WLAN Antenna	Band Name	Tablet mode Output power		Notebook mode Output power		Bottom Side	Back Side	Left Edge	Right Edge	Top Edge	Bottom Edge	Keyboard Side
		dBm	mW	dBm	mW							
Aux	DTS	17.5	56.23	17	50.12	<50	<50	<50	>50	<50	<50	<50
	U-NII-1	13.5	22.39	16	39.81	<50	<50	<50	>50	<50	<50	<50
	U-NII-2A	13.5	22.39	16	39.81	<50	<50	<50	>50	<50	<50	<50
	U-NII-2C	14	25.12	16	39.81	<50	<50	<50	>50	<50	<50	<50
	U-NII-3	12.5	17.78	16.5	44.67	<50	<50	<50	>50	<50	<50	<50
	U-NII-4	12.5	17.78	16.5	44.67	<50	<50	<50	>50	<50	<50	<50
	BT	10	10.00	10	10.00	<50	<50	<50	>50	<50	<50	<50
Main	DTS	17	50.12	17	50.12	<50	<50	>50	<50	<50	<50	<50
	U-NII-1	11	12.59	15.5	35.48	<50	<50	>50	<50	<50	<50	<50
	U-NII-2A	11	12.59	15.5	35.48	<50	<50	>50	<50	<50	<50	<50
	U-NII-2C	11	12.59	16	39.81	<50	<50	>50	<50	<50	<50	<50
	U-NII-3	12.5	17.78	17	50.12	<50	<50	>50	<50	<50	<50	<50
	U-NII-4	12.5	17.78	17	50.12	<50	<50	>50	<50	<50	<50	<50

Bottom Side	Back Side	Left Edge	Right Edge	Top Edge	Bottom Edge	Keyboard Side
T	T	T	R	T	T	T
R	R	R	R	R	R	R
T	T	T	R	T	T	T
T	T	T	R	T	T	T
T	T	T	R	T	T	T
T	T	T	R	T	T	T
T	T	R	T	T	T	T
R	R	R	R	R	R	R
T	T	R	T	T	T	T
T	T	R	T	T	T	T
T	T	R	T	T	T	T
T	T	R	T	T	T	T

T: Tested position
R: Reduced

See Annex F for a more detailed explanation of the separation distance related to the platform.

B.1.3.2 General SAR test reduction

According to FCC OET KDB 447498, 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:

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 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
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

WLAN SAR Test reduction

Transmission Mode	SAR test exclusion/reduction
DSSS	According to FCC OET KDB 248227 D01, SAR is measured for 2.4 GHz 802.11b, SAR test reduction is determined according to the following: ▪ When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration. ▪ When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. According to FCC OET KDB 248227 D01, SAR is not required for 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 ≤ 1.2 W/kg.
OFDM	According to FCC OET KDB 248227 D01, 802.11a/g/n/ac modes have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. According to FCC OET KDB 248227 D01, an <u>initial test configuration</u> is determined for OFDM and DSSS transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. SAR test reduction for subsequent highest output test channels is determined according to reported SAR of the initial test configuration. The <u>initial test configuration</u> for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. According to FCC OET KDB 248227 D01, when the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.

B.2 Conducted Power Measurements

B.2.1 WLAN 2.4GHz- Notebook mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test ?
2.4GHz (DTS)	802.11b	1Mbps	1	2412	16.71	17.00	16.43	17.00	Yes
			6	2437	16.53	17.00	16.63	17.00	Yes
			11	2462	16.51	17.00	16.61	17.00	Yes
	802.11g	6Mbps	1	2412	NR1,2	17.00	NR1,2	17.00	No ²
			6	2437		17.00		17.00	
			11	2462		17.00		17.00	
	802.11n20	HT0	1	2412		17.00		17.00	
			6	2437		17.00		17.00	
			11	2462		17.00		17.00	
	802.11ax20	MCS0	1	2412		17.00		17.00	
			6	2437		17.00		17.00	
			11	2462		17.00		17.00	
	802.11n40	HT0	3	2422		17.00		17.00	
			6	2437		17.00		17.00	
			9	2452		17.00		17.00	
	802.11ax40	MCS0	3	2422		17.00		17.00	
			6	2437		17.00		17.00	
			9	2452		17.00		17.00	

Initial test configuration

1. NR: Not Required
2. As per FCC OET KDB 248227 D01, conducted output power and SAR testing are not required for 802.11g/n/ax channels 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 $\leq 1.2\text{W/kg}$.
3. When the reported SAR of the initial test configuration is $> 0.8\text{ W/kg}$, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is $\leq 1.2\text{ W/kg}$ or all required channels are tested.

B.2.2 WLAN 2.4GHz-Tablet mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test ?
2.4GHz (DTS)	802.11b	1Mbps	1	2412	16.74	17.00	17.00	17.50	Yes
			6	2437	16.52	17.00	17.19	17.50	Yes
			11	2462	16.53	17.00	17.18	17.50	Yes
	802.11g	6Mbps	1	2412	NR1,2	17.00	NR1,2	17.50	No ²
			6	2437		17.00		17.50	
			11	2462		17.00		17.50	
	802.11n20	HT0	1	2412		17.00		17.50	
			6	2437		17.00		17.50	
			11	2462		17.00		17.50	
	802.11ax20	MCS0	1	2412		17.00		17.50	
			6	2437		17.00		17.50	
			11	2462		17.00		17.50	
	802.11n40	HT0	3	2422		17.00		17.50	
			6	2437		17.00		17.50	
			9	2452		17.00		17.50	
	802.11ax40	MCS0	3	2422		17.00		17.50	
			6	2437		17.00		17.50	
			9	2452		17.00		17.50	

Initial test configuration

B.2.3 WLAN 5GHz (U-NII)

B.2.3.1 5.2GHz and 5.3GHz (U-NII-1 and U-NII-2A)- Notebook mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-1	802.11a	6Mbps	36	5180	NR ¹	15.50	NR ¹	16.00	No ²
			40	5200		15.50		16.00	
			48	5240		15.50		16.00	
	802.11n20	HT0	36	5180		15.50		16.00	
			40	5200		15.50		16.00	
			48	5240		15.50		16.00	
	802.11ac20	VHT0	36	5180		15.50		16.00	
			40	5200		15.50		16.00	
			48	5240		15.50		16.00	
	802.11ax20/be 20	MCS0	36	5180		15.50		16.00	
			40	5200		15.50		16.00	
			48	5240		15.50		16.00	
	802.11n40	HT0	38	5190		15.50		16.00	
			46	5230		15.50		16.00	
	802.11ac40	VHT0	38	5190		15.50		16.00	
			46	5230		15.50		16.00	
	802.11ax4/be4 0	MCS0	38	5190		15.50		16.00	
			46	5230		15.50		16.00	
	802.11ac80	VHT0	42	5210		15.50		16.00	
	802.11ax80/be 80	MCS0	42	5210		15.50		16.00	
	802.11ac160	VHT0	50	5250		15.50		16.00	
	802.11ax160/be160	MCS0	50	5250		15.50		16.00	

Initial test configuration

1. NR: Not Required
2. 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 ≤ 1.2 W/kg, SAR is not required for U-NII-1 band (see §B.5.2 in this document).
3. Additional conducted power measurement is required when reported SAR is > 1.2 W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested.
4. The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac/ax/be) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac, ax then be).
5. When the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.
6. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
7. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested.

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-2A	802.11a	6Mbps	52	5260	NR ¹	15.50	NR ¹	16.00	No ^{4,6}
			60	5300		15.50		16.00	No ^{4,6}
			64	5320		15.50		16.00	No ^{4,6}
	802.11n20	HT0	52	5260		15.50		16.00	No ^{4,6}
			60	5300		15.50		16.00	No ^{4,6}
			64	5320		15.50		16.00	No ^{4,6}
	802.11ac20	VHT0	52	5260		15.50		16.00	No ^{4,6}
			60	5300		15.50		16.00	No ^{4,6}
			64	5320		15.50		16.00	No ^{4,6}
	802.11ax20	MCS0	52	5260		15.50		16.00	No ^{4,6}
			60	5300		15.50		16.00	No ^{4,6}
			64	5320		15.50		16.00	No ^{4,6}
	802.11n40	HT0	54	5270		15.50		16.00	No ^{4,6}
			62	5310		15.50		16.00	No ^{4,6}
	802.11ac40	VHT0	54	5270		15.50		16.00	No ^{4,6}
			62	5310		15.50		16.00	No ^{4,6}
	802.11ax40/be	MCS0	54	5270		15.50		16.00	No ^{4,6}
			62	5310		15.50		16.00	No ^{4,6}
	802.11ac80	VHT0	58	5290	15.24	15.50	15.86	16.00	Yes
	802.11ax80/be80	MCS0	58	5290	NR ¹	15.50	NR ¹	16.00	No ^{4,6}

Initial test configuration

1. NR: Not Required
2. The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
3. Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested.
4. When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.
5. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤1.2 W/kg, SAR is not required for that subsequent test configuration.
6. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is >1.2 W/kg or until all required channels are tested.

B.2.3.2 5.2GHz and 5.3GHz (U-NII-1 and U-NII-2A)- Tablet mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-1	802.11a	6Mbps	36	5180	NR ¹	11.00	NR ¹	13.50	No ²
			40	5200		11.00		13.50	
			48	5240		11.00		13.50	
	802.11n20	HT0	36	5180		11.00		13.50	
			40	5200		11.00		13.50	
			48	5240		11.00		13.50	
	802.11ac20	VHT0	36	5180		11.00		13.50	
			40	5200		11.00		13.50	
			48	5240		11.00		13.50	
	802.11ax20/be20	MCS0	36	5180		11.00		13.50	
			40	5200		11.00		13.50	
			48	5240		11.00		13.50	
	802.11n40	HT0	38	5190		11.00		13.50	
			46	5230		11.00		13.50	
	802.11ac40	VHT0	38	5190		11.00		13.50	
			46	5230		11.00		13.50	
	802.11ax4/be40	MCS0	38	5190		11.00		13.50	
			46	5230		11.00		13.50	
	802.11ac80	VHT0	42	5210		11.00		13.50	
	802.11ax80/be80	MCS0	42	5210		11.00		13.50	
	802.11ac160	VHT0	50	5250		11.00		13.50	
	802.11ax160/be160	MCS0	50	5250		11.00		13.50	

Initial test configuration

1. NR: Not Required
2. 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 ≤ 1.2 W/kg, SAR is not required for U-NII-1 band (see §B.5.2 in this document).
3. Additional conducted power measurement is required when reported SAR is > 1.2 W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested.
4. The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac/ax/be) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac, ax then be).
5. When the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.
6. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
7. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested.

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-2A	802.11a	6Mbps	52	5260	NR ¹	11.00	NR ¹	13.50	No ^{4,6}
			60	5300		11.00		13.50	No ^{4,6}
			64	5320		11.00		13.50	No ^{4,6}
	802.11n20	HT0	52	5260		11.00		13.50	No ^{4,6}
			60	5300		11.00		13.50	No ^{4,6}
			64	5320		11.00		13.50	No ^{4,6}
	802.11ac20	VHT0	52	5260		11.00		13.50	No ^{4,6}
			60	5300		11.00		13.50	No ^{4,6}
			64	5320		11.00		13.50	No ^{4,6}
	802.11ax20	MCS0	52	5260		11.00		13.50	No ^{4,6}
			60	5300		11.00		13.50	No ^{4,6}
			64	5320		11.00		13.50	No ^{4,6}
	802.11n40	HT0	54	5270		11.00		13.50	No ^{4,6}
			62	5310		11.00		13.50	No ^{4,6}
	802.11ac40	VHT0	54	5270		11.00		13.50	No ^{4,6}
			62	5310		11.00		13.50	No ^{4,6}
	802.11ax40/be	MCS0	54	5270		11.00		13.50	No ^{4,6}
			62	5310		11.00		13.50	No ^{4,6}
	802.11ac80	VHT0	58	5290	10.85	11.00	13.32	13.50	Yes
	802.11ax80/be80	MCS0	58	5290	NR ¹	11.00	NR ¹	13.50	No ^{4,6}

Initial test configuration

1. NR: Not Required
2. The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
3. Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested.
4. When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.
5. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤1.2 W/kg, SAR is not required for that subsequent test configuration.
6. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is >1.2 W/kg or until all required channels are tested

B.2.3.3 5.6 (U-NII-2C)- Notebook mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test ?
U-NII-2C	802.11a	6Mbps	100	5500	NR ¹	16.00	NR ¹	16.00	No ^{4,6}
			116	5580		16.00		16.00	No ^{4,6}
			140	5700		16.00		16.00	No ^{4,6}
			144	5720		16.00		16.00	No ^{4,6}
	802.11n 20	HT0	100	5500		16.00		16.00	No ^{4,6}
			116	5580		16.00		16.00	No ^{4,6}
			140	5700		16.00		16.00	No ^{4,6}
			144	5720		16.00		16.00	No ^{4,6}
	802.11a c20	VHT0	100	5500		16.00		16.00	No ^{4,6}
			116	5580		16.00		16.00	No ^{4,6}
			140	5700		16.00		16.00	No ^{4,6}
			144	5720		16.00		16.00	No ^{4,6}
	802.11a x20/be	MCS0	100	5500		16.00		16.00	No ^{4,6}
			116	5580		16.00		16.00	No ^{4,6}
			140	5700		16.00		16.00	No ^{4,6}
			144	5720		16.00		16.00	No ^{4,6}
	802.11n 40	HT0	102	5510		16.00		16.00	No ^{4,6}
			110	5550		16.00		16.00	No ^{4,6}
			134	5670		16.00		16.00	No ^{4,6}
			142	5710		16.00		16.00	No ^{4,6}
	802.11a c40	VHT0	102	5510		16.00		16.00	No ^{4,6}
			110	5550		16.00		16.00	No ^{4,6}
			134	5670		16.00		16.00	No ^{4,6}
			142	5710		16.00		16.00	No ^{4,6}
	802.11a x40/be40	MCS0	102	5510		16.00		16.00	No ^{4,6}
			110	5550		16.00		16.00	No ^{4,6}
			118	5590		16.00		16.00	No ^{4,6}
			126	5630		16.00		16.00	No ^{4,6}
	802.11a c80	VHT0	106	5530	15.83	16.00	15.81	16.00	Yes
			122	5610	NR ¹	16.00	NR ¹	16.00	No ^{4,6}
			138	5690	15.68	16.00	15.72	16.00	Yes
	802.11a x80/be80	MCS0	106	5530	NR ¹	16.00	NR ¹	16.00	No ^{4,6}
			122	5610		16.00		16.00	No ^{4,6}
			138	5690		16.00		16.00	No ^{4,6}
	802.11a c160	VHT0	114	5570	15.66	16.00	15.91	16.00	Yes
	802.11a x160/be160	MCS0	114	5570	NR ¹	16.00	NR ¹	16.00	No ^{4,6}

Initial test configuration

1. NR: Not Required
2. When band gap channels between U-NII-2C and U-NII-3 band are supported channels in U-NII-2C band below 5.65 GHz are considered as one band and channels above 5.65 GHz, together with channels in 5.8 GHz U-NII-3 or §15.247 band, are considered as a separate band
3. Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested
4. The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
5. When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.

6. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
7. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested.

B.2.3.4 5.6 (U-NII-2C)- Tablet mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test ?
U-NII-2C	802.11a	6Mbps	100	5500	NR ¹	11.00	NR ¹	14.00	No ^{4,6}
			116	5580		11.00		14.00	No ^{4,6}
			140	5700		11.00		14.00	No ^{4,6}
			144	5720		11.00		14.00	No ^{4,6}
	802.11n 20	HT0	100	5500		11.00		14.00	No ^{4,6}
			116	5580		11.00		14.00	No ^{4,6}
			140	5700		11.00		14.00	No ^{4,6}
			144	5720		11.00		14.00	No ^{4,6}
	802.11a c20	VHT0	100	5500		11.00		14.00	No ^{4,6}
			116	5580		11.00		14.00	No ^{4,6}
			140	5700		11.00		14.00	No ^{4,6}
			144	5720		11.00		14.00	No ^{4,6}
	802.11a x20/be	MCS0	100	5500		11.00		14.00	No ^{4,6}
			116	5580		11.00		14.00	No ^{4,6}
			140	5700		11.00		14.00	No ^{4,6}
			144	5720		11.00		14.00	No ^{4,6}
	802.11n 40	HT0	102	5510		11.00		14.00	No ^{4,6}
			110	5550		11.00		14.00	No ^{4,6}
			134	5670		11.00		14.00	No ^{4,6}
			142	5710		11.00		14.00	No ^{4,6}
	802.11a c40	VHT0	102	5510		11.00		14.00	No ^{4,6}
			110	5550		11.00		14.00	No ^{4,6}
			134	5670		11.00		14.00	No ^{4,6}
			142	5710		11.00		14.00	No ^{4,6}
	802.11a x40/be40	MCS0	102	5510		11.00		14.00	No ^{4,6}
			110	5550		11.00		14.00	No ^{4,6}
			118	5590		11.00		14.00	No ^{4,6}
			126	5630		11.00		14.00	No ^{4,6}
	802.11a c80	VHT0	106	5530	10.71	11.00	13.62	14.00	Yes
			122	5610	NR ¹	11.00	NR ¹	14.00	No ^{4,6}
			138	5690	10.91	11.00	13.79	14.00	Yes
	802.11a x80/be80	MCS0	106	5530	NR ¹	11.00	NR ¹	14.00	No ^{4,6}
			122	5610		11.00		14.00	No ^{4,6}
			138	5690		11.00		14.00	No ^{4,6}
	802.11a c160	VHT0	114	5570	10.59	11.00	13.95	14.00	Yes
	802.11a x160/be160	MCS0	114	5570	NR ¹	11.00	NR ¹	14.00	No ^{4,6}

Initial test configuration

- NR: Not Required
- When band gap channels between U-NII-2C and U-NII-3 band are supported channels in U-NII-2C band below 5.65 GHz are considered as one band and channels above 5.65 GHz, together with channels in 5.8 GHz U-NII-3 or §15.247 band, are considered as a separate band
- Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested
- The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
- When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.

6. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
7. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested.

B.2.3.5 5.8GHz (U-NII-3)- Notebook Mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
5U-NII-3	802.11a	6Mbps	149	5745	NR ¹	17.00	NR ¹	16.50	No ^{4,6}
			157	5785		17.00		16.50	No ^{4,6}
			165	5825		17.00		16.50	No ^{4,6}
	802.11n20	HT0	149	5745		17.00		16.50	No ^{4,6}
			157	5785		17.00		16.50	No ^{4,6}
			165	5825		17.00		16.50	No ^{4,6}
	802.11ac20	VHT0	149	5745		17.00		16.50	No ^{4,6}
			157	5785		17.00		16.50	No ^{4,6}
			165	5825		17.00		16.50	No ^{4,6}
	802.11ax20/be	MCS0	149	5745		17.00		16.50	No ^{4,6}
			157	5785		17.00		16.50	No ^{4,6}
			165	5825		17.00		16.50	No ^{4,6}
	802.11n40	HT0	151	5755		17.00		16.50	No ^{4,6}
			159	5795		17.00		16.50	No ^{4,6}
	802.11ac40	VHT0	151	5755		17.00		16.50	No ^{4,6}
			159	5795		17.00		16.50	No ^{4,6}
	802.11ax40/be40	MCS0	151	5755		17.00		16.50	No ^{4,6}
			159	5795		17.00		16.50	No ^{4,6}
	802.11ac80	VHT0	155	5775	16.83	17.00	16.25	16.50	Yes
	802.11ax80/be80	MCS0	155	5775	NR1	17.00	NR1	16.50	No ^{4,6}

Initial test configuration

- NR: Not Required
- When band gap channels between U-NII-2C and U-NII-3 band are supported channels in U-NII-2C band below 5.65 GHz are considered as one band and channels above 5.65 GHz, together with channels in 5.8 GHz U-NII-3 or §15.247 band, are considered as a separate band
- Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested
- The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
- When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.
- When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤1.2 W/kg, SAR is not required for that subsequent test configuration.
- SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is >1.2 W/kg or until all required channels are tested.

B.2.3.6 5.8GHz (U-NII-3)- Tablet Mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-3	802.11a	6Mbps	149	5745	NR ¹	12.50	NR ¹	12.50	No ^{4,6}
			157	5785		12.50		12.50	No ^{4,6}
			165	5825		12.50		12.50	No ^{4,6}
	802.11n20	HT0	149	5745		12.50		12.50	No ^{4,6}
			157	5785		12.50		12.50	No ^{4,6}
			165	5825		12.50		12.50	No ^{4,6}
	802.11ac20	VHT0	149	5745		12.50		12.50	No ^{4,6}
			157	5785		12.50		12.50	No ^{4,6}
			165	5825		12.50		12.50	No ^{4,6}
	802.11ax20/be	MCS0	149	5745		12.50		12.50	No ^{4,6}
			157	5785		12.50		12.50	No ^{4,6}
			165	5825		12.50		12.50	No ^{4,6}
	802.11n40	HT0	151	5755		12.50		12.50	No ^{4,6}
			159	5795		12.50		12.50	No ^{4,6}
	802.11ac40	VHT0	151	5755		12.50		12.50	No ^{4,6}
			159	5795		12.50		12.50	No ^{4,6}
	802.11ax40/be40	MCS0	151	5755		12.50		12.50	No ^{4,6}
			159	5795		12.50		12.50	No ^{4,6}
	802.11ac80	VHT0	155	5775	12.32	12.50	12.18	12.50	Yes
	802.11ax80/be80	MCS0	155	5775	NR1	12.50	NR1	12.50	No ^{4,6}

Initial test configuration

- NR: Not Required
- When band gap channels between U-NII-2C and U-NII-3 band are supported channels in U-NII-2C band below 5.65 GHz are considered as one band and channels above 5.65 GHz, together with channels in 5.8 GHz U-NII-3 or §15.247 band, are considered as a separate band
- Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested
- The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
- When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.
- When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤1.2 W/kg, SAR is not required for that subsequent test configuration.
- SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is >1.2 W/kg or until all required channels are tested.

B.2.3.7 5.9GHz (U-NII-4)- Notebook Mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-4	802.11a	6Mbps	169	5845	NR ¹	17.00	NR ¹	16.50	No ^{4,6}
			173	5865		17.00		16.50	No ^{4,6}
			177	5885		17.00		16.50	No ^{4,6}
	802.11n20	HT0	169	5845		17.00		16.50	No ^{4,6}
			173	5865		17.00		16.50	No ^{4,6}
			177	5885		17.00		16.50	No ^{4,6}
	802.11ac20	VHT0	169	5845		17.00		16.50	No ^{4,6}
			173	5865		17.00		16.50	No ^{4,6}
			177	5885		17.00		16.50	No ^{4,6}
	802.11ax20/b e20	MCS0	149	5745		17.00		16.50	No ^{4,6}
			157	5785		17.00		16.50	No ^{4,6}
			165	5825		17.00		16.50	No ^{4,6}
	802.11n40	HT0	167	5835		17.00		16.50	No ^{4,6}
			175	5875		17.00		16.50	No ^{4,6}
	802.11ac40	VHT0	167	5835		17.00		16.50	No ^{4,6}
			175	5875		17.00		16.50	No ^{4,6}
	802.11ax40/b e40	MCS0	167	5835		17.00		16.50	No ^{4,6}
			175	5875		17.00		16.50	No ^{4,6}
	802.11ac80	VHT0	171	5855		17.00		16.50	No ^{4,6}
	802.11ax80/b e80	MCS0	171	5855		17.00		16.50	No ^{4,6}
	802.11ac160	VHT0	163	5815	16.78	17.00	16.02	16.50	Yes
	802.11ax160/be160	MCS0	163	5815	NR1	17.00	NR1	16.50	No ^{4,6}

Initial test configuration

- NR: Not Required
- When band gap channels between U-NII-2C and U-NII-3 band are supported channels in U-NII-2C band below 5.65 GHz are considered as one band and channels above 5.65 GHz, together with channels in 5.8 GHz U-NII-3 or §15.247 band, are considered as a separate band
- Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested
- The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
- When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.
- When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤1.2 W/kg, SAR is not required for that subsequent test configuration.
- SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is >1.2 W/kg or until all required channels are tested.

B.2.3.8 5.9GHz (U-NII-4)- Tablet Mode

Band	Mode	Data Rate	Ch #	Freq (MHz)	Average power (dBm) -Main	Tune-up Pwr (dBm)	Average power (dBm) -Aux	Tune-up Pwr (dBm)	SAR Test?
U-NII-4	802.11a	6Mbps	169	5845	NR ¹	12.50	NR ¹	12.50	No ^{4,6}
			173	5865		12.50		12.50	No ^{4,6}
			177	5885		12.50		12.50	No ^{4,6}
	802.11n20	HT0	169	5845		12.50		12.50	No ^{4,6}
			173	5865		12.50		12.50	No ^{4,6}
			177	5885		12.50		12.50	No ^{4,6}
	802.11ac20	VHT0	169	5845		12.50		12.50	No ^{4,6}
			173	5865		12.50		12.50	No ^{4,6}
			177	5885		12.50		12.50	No ^{4,6}
	802.11ax20/b e20	MCS0	149	5745		12.50		12.50	No ^{4,6}
			157	5785		12.50		12.50	No ^{4,6}
			165	5825		12.50		12.50	No ^{4,6}
	802.11n40	HT0	167	5835		12.50		12.50	No ^{4,6}
			175	5875		12.50		12.50	No ^{4,6}
	802.11ac40	VHT0	167	5835		12.50		12.50	No ^{4,6}
			175	5875		12.50		12.50	No ^{4,6}
	802.11ax40/b e40	MCS0	167	5835		12.50		12.50	No ^{4,6}
			175	5875		12.50		12.50	No ^{4,6}
	802.11ac80	VHT0	171	5855		12.50		12.50	No ^{4,6}
	802.11ax80/b e80	MCS0	171	5855		12.50		12.50	No ^{4,6}
	802.11ac160	VHT0	163	5815	12.33	12.50	12.05	12.50	Yes
	802.11ax160/be160	MCS0	163	5815	NR1	12.50	NR1	12.50	No ^{4,6}

Initial test configuration

1. NR: Not Required
2. When band gap channels between U-NII-2C and U-NII-3 band are supported channels in U-NII-2C band below 5.65 GHz are considered as one band and channels above 5.65 GHz, together with channels in 5.8 GHz U-NII-3 or §15.247 band, are considered as a separate band
3. Additional conducted power measurement is required when reported SAR is > 1.2W/kg. In case the subsequent test configuration and the channel bandwidth is smaller than the initial test configuration, all channels that overlap with the larger channel bandwidth in the initial configuration should be tested
4. The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n, ac then ax)
5. When the reported SAR of the initial test configuration is > 0.8W/kg, SAR measurement is required for the subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤1.2W/kg or all required channels are tested.
6. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure requirements, is adjusted by the ratio of the subsequent test configuration to the initial test configuration specified maximum output power and the adjusted SAR is ≤1.2 W/kg, SAR is not required for that subsequent test configuration.
7. SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is >1.2 W/kg or until all required channels are tested.

B.2.3.9 Bluetooth

Band	Mode	Data Rate	Channel	Frequency (MHz)	Antenna	Tablet and Notebook Mode	
						Avg Pwr (dBm)	Tune-up Pwr (dBm)
2.4GHz (BT)	Bluetooth	Basic rate GFSK	0	2402	Aux	9.62	10.00
			39	2441		9.75	10.00
			78	2480		9.94	10.00
		Basic rate $\pi/4$ DQPSK	0	2402		NR ¹	10.00
			39	2441			10.00
			78	2480			10.00
		Basic rate 8-DPSK	0	2402			10.00
			39	2441			10.00
			78	2480			10.00
		Low energy GFSK 1Mbps	0	2402			10.00
			19	2440			10.00
			39	2480			10.00
		Low energy GFSK 2Mbps	1	2404			10.00
			19	2440			10.00
			38	2478			10.00

Initial test configuration

1. NR: Not Required

B.3 Tissue Parameters Measurement

Head TSL

Freq. (MHz)	Target Parameters		Measured TSL Parameters		Deviation (%)		Date
	ϵ' (F/m)	σ (S/m)	ϵ' (F/m)	σ (S/m)	ϵ'	σ	
5530	35.61	4.99	35.35	4.98	-0.73	-0.20	2024-12-23
5600	35.53	5.07	35.29	5.11	-0.68	0.79	2024-12-23
5690	35.42	5.16	35.01	5.18	-1.16	0.39	2024-12-23
5750	35.36	5.22	34.79	5.24	-1.61	0.38	2024-12-24
5775	35.33	5.24	34.72	5.28	-1.73	0.76	2024-12-24
5815	35.28	5.29	34.46	5.31	-2.32	0.38	2024-12-24
2402	39.29	1.76	40.75	1.80	3.72	2.27	2024-12-25
2412	39.27	1.77	40.73	1.80	3.72	1.69	2024-12-25
2441	39.22	1.79	40.68	1.81	3.72	1.12	2024-12-25
2450	39.20	1.80	40.65	1.81	3.70	0.56	2024-12-25
2462	39.19	1.81	40.56	1.83	3.50	1.11	2024-12-25
2480	39.16	1.83	40.45	1.83	3.29	0.00	2024-12-25
2412	39.27	1.77	40.84	1.77	4.00	0.00	2024-12-30
2437	39.22	1.79	40.74	1.79	3.88	0.00	2024-12-30
2450	39.20	1.80	40.72	1.80	3.88	0.00	2024-12-30
2462	39.19	1.81	40.68	1.81	3.80	0.00	2024-12-30
2480	39.16	1.83	40.65	1.82	3.80	-0.55	2024-12-30
2402	39.29	1.76	40.74	1.84	3.69	4.55	2024-12-31
2412	39.27	1.77	40.71	1.85	3.67	4.52	2024-12-31
2441	39.22	1.79	40.69	1.87	3.75	4.47	2024-12-31
2450	39.20	1.80	40.64	1.88	3.67	4.44	2024-12-31
2462	39.19	1.81	40.61	1.88	3.62	3.87	2024-12-31
2480	39.16	1.83	40.60	1.89	3.68	3.28	2024-12-31
5250	35.93	4.71	35.87	4.70	-0.17	-0.21	2024-12-31
5290	35.88	4.75	35.81	4.74	-0.20	-0.21	2024-12-31
5250	35.93	4.71	35.92	4.73	-0.03	0.42	2025-01-01
5290	35.88	4.75	35.86	4.79	-0.06	0.84	2025-01-01
5530	35.61	4.99	35.44	5.01	-0.48	0.40	2025-01-02
5570	35.57	5.03	35.39	5.06	-0.51	0.60	2025-01-02
5600	35.53	5.07	35.17	5.11	-1.01	0.79	2025-01-02
5690	35.42	5.16	34.81	5.22	-1.72	1.16	2025-01-02
5250	35.93	4.71	35.68	4.67	-0.70	-0.85	2025-01-03
5290	35.88	4.75	35.66	4.73	-0.61	-0.42	2025-01-03
5570	35.57	5.03	35.41	5.04	-0.45	0.20	2025-01-07
5600	35.53	5.07	35.30	5.08	-0.65	0.20	2025-01-07
5690	35.42	5.16	34.81	5.22	-1.72	1.16	2025-01-07
5750	35.36	5.22	35.06	5.27	-0.85	0.96	2025-01-07
5775	35.33	5.24	35.01	5.30	-0.91	1.15	2025-01-07

5750	35.36	5.22	34.92	5.25	-1.24	0.57	2025-01-08
5775	35.33	5.24	34.91	5.29	-1.19	0.95	2025-01-08
5815	35.28	5.29	34.82	5.34	-1.30	0.95	2025-01-08

See *Annex D* for more details.

B.4 System Check Measurements

Frequency (MHz)	Average	Target SAR (W/kg)	Measured SAR normalized to 1W(W/kg)	Deviation to target (%)	Limit (%)	Date
5600	1g	81.3	77.1	-5.17	± 10	2024-12-23
5750	1g	77.6	73.8	-4.9		2024-12-24
2450	1g	52.6	53.4	1.52		2024-12-25
2450	1g	52.6	53.5	1.71		2024-12-30
2450	1g	52.6	52.1	-0.95		2024-12-31
5250	1g	77.7	76.8	-1.16		2024-12-31
5250	1g	77.7	78.1	0.51		2025-01-01
5600	1g	81.3	78.2	-3.81		2025-01-02
5250	1g	77.7	77.5	-0.26		2025-01-03
5600	1g	81.3	79.3	-2.46		2025-01-07
5750	1g	77.6	79.2	2.06		2025-01-07
5750	1g	77.6	74.5	-3.99		2025-01-08
5600	10g	23.1	23.5	1.73		2024-12-23
5750	10g	21.9	21.2	-3.2		2024-12-24
2450	10g	24.7	24.1	-2.43		2024-12-25
2450	10g	24.7	24.5	-0.81		2024-12-30
2450	10g	24.7	23.4	-5.26		2024-12-31
5250	10g	22	21.8	-0.91		2024-12-31
5250	10g	22	22.6	2.73		2025-01-01
5600	10g	23.1	24	3.9		2025-01-02
5250	10g	22	22.1	0.45		2025-01-03
5600	10g	23.1	24.5	6.06		2025-01-07
5750	10g	21.9	22.3	1.83		2025-01-07
5750	10g	21.9	21.6	-1.37		2025-01-08

See Annex C for more details.

B.5 SAR Test Results

B.5.1 Bluetooth, 802.11b/g/n/ax – 2.4GHz - DTS

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 1g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Body												
Speed	802.15	DH5	1	78	2480	Bottom Side	Aux.	1.014	0.088	1.304	0.116	/
ICT				78	2480	Bottom Side	Aux.	1.014	0.106	1.304	0.140	/
Speed				78	2480	Front edge	Aux.	1.014	0.038	1.304	0.050	/
ICT				78	2480	Front edge	Aux.	1.014	0.061	1.304	0.081	/
ICT				78	2480	Back Side	Aux.	1.014	0.117	1.304	0.155	/
ICT				78	2480	Top Edge	Aux.	1.014	0.066	1.304	0.087	/
ICT				78	2480	Left Edge	Aux.	1.014	0.011	1.304	0.015	/
Speed				78	2480	Back Side	Aux.	1.014	0.128	1.304	0.169	/
Speed				78	2480	Top Edge	Aux.	1.014	0.053	1.304	0.070	/
Speed				78	2480	Left Edge	Aux.	1.014	0.008	1.304	0.011	/
Speed				0	2402	Back Side	Aux.	1.091	0.158	1.304	0.225	1
Speed				39	2441	Back Side	Aux.	1.059	0.136	1.304	0.188	/
Speed	802.11b	1Mbps	20	6	2437	Bottom Side	Aux.	1.089	0.497	1.032	0.559	/
ICT				6	2437	Bottom Side	Aux.	1.089	0.647	1.032	0.727	/
ICT				1	2412	Bottom Side	Aux.	1.140	0.726	1.032	0.854	3#
ICT				11	2462	Bottom Side	Aux.	1.094	0.570	1.032	0.644	/
Speed				6	2437	Front edge	Aux.	1.089	0.203	1.032	0.228	/
ICT				6	2437	Front edge	Aux.	1.089	0.285	1.032	0.320	/
Speed				6	2437	Back Side	Aux.	1.074	0.619	1.032	0.686	/
Speed				6	2437	Left Edge	Aux.	1.074	0.052	1.032	0.058	/
Speed				6	2437	Top Edge	Aux.	1.074	0.311	1.032	0.345	/
ICT				6	2437	Back Side	Aux.	1.074	0.635	1.032	0.704	/
Speed				6	2437	Left Edge	Aux.	1.074	0.114	1.032	0.126	/
ICT				6	2437	Top Edge	Aux.	1.074	0.381	1.032	0.422	/
Speed				1	2412	Bottom Side	Main	1.069	0.794	1.032	0.876	/
ICT				1	2412	Bottom Side	Main	1.069	0.821	1.032	0.906	/
Speed				1	2412	Front edge	Main	1.069	0.280	1.032	0.309	/
ICT				1	2412	Front edge	Main	1.069	0.278	1.032	0.307	/
Speed				6	2437	Back Side	Main	1.117	0.748	1.032	0.862	/
Speed				1	2412	Right Edge	Main	1.062	0.078	1.032	0.085	/
Speed				1	2412	Top Edge	Main	1.062	0.313	1.032	0.343	/
Speed				1	2412	Back Side	Main	1.062	0.892	1.032	0.978	4
Speed				11	2462	Back Side	Main	1.114	0.720	1.032	0.828	/
Speed				1	2412	Right Edge	Main	1.062	0.116	1.032	0.127	/
ICT				1	2412	Top Edge	Main	1.062	0.444	1.032	0.487	/
ICT				1	2412	Back Side	Main	1.062	0.759	1.032	0.832	/

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 10g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Limbs												
Speed	802.15	DH5	1	78	2480	Keyboard Side	Aux.	1.014	0.054	1.304	0.071	/
Speed				0	2402	Keyboard Side	Aux.	1.091	0.066	1.304	0.094	2
Speed				39	2441	Keyboard Side	Aux.	1.059	0.057	1.304	0.079	/
ICT				78	2480	Keyboard Side	Aux.	1.014	0.050	1.304	0.066	/
Speed				78	2480	Left Edge	Aux.	1.014	0.003	1.304	0.004	/
ICT				78	2480	Left Edge	Aux.	1.014	0.002	1.304	0.003	/
Speed	802.11b	1Mbps	20	6	2437	Keyboard Side	Aux.	1.089	0.228	1.032	0.256	/
ICT				6	2437	Keyboard Side	Aux.	1.089	0.238	1.032	0.267	/
ICT				1	2412	Keyboard Side	Aux.	1.140	0.309	1.032	0.364	5
ICT				11	2462	Keyboard Side	Aux.	1.094	0.249	1.032	0.281	/
Speed				6	2437	Left Edge	Aux.	1.089	0.017	1.032	0.019	/
ICT				6	2437	Left Edge	Aux.	1.089	0.036	1.032	0.040	/
Speed				6	2437	Keyboard Side	Main	1.114	0.316	1.032	0.363	/
Speed				1	2412	Keyboard Side	Main	1.069	0.382	1.032	0.421	6
Speed				11	2462	Keyboard Side	Main	1.119	0.304	1.032	0.351	/
ICT				1	2412	Keyboard Side	Main	1.069	0.330	1.032	0.364	/
Speed				1	2412	Right Edge	Main	1.069	0.031	1.032	0.034	/
ICT				1	2412	Right Edge	Main	1.069	0.047	1.032	0.052	/

B.5.2 802.11a/n/ac/ax – 5.3 GHz – U-NII-2A

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 1g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Body												
Speed	802.11ac	VHT0	80	58	5290	Bottom Side	Aux.	1.033	0.883	1.024	0.934	/
ICT						Bottom Side	Aux.	1.033	0.823	1.024	0.871	/
Speed						Front edge	Aux.	1.033	0.457	1.024	0.483	/
ICT						Front edge	Aux.	1.033	0.421	1.024	0.445	/
Speed						Back Side	Aux.	1.042	1.080	1.024	1.152	7
Speed						Left Edge	Aux.	1.042	0.017	1.024	0.018	/
Speed						Top Edge	Aux.	1.042	0.193	1.024	0.206	/
ICT						Back Side	Aux.	1.042	1.070	1.024	1.142	/
ICT						Left Edge	Aux.	1.042	0.022	1.024	0.023	/
ICT						Top Edge	Aux.	1.042	0.309	1.024	0.330	/
Speed						Bottom Side	Main	1.062	0.639	1.024	0.695	8
ICT						Bottom Side	Main	1.062	0.633	1.024	0.688	/
Speed						Front edge	Main	1.062	0.338	1.024	0.368	/
ICT						Front edge	Main	1.062	0.269	1.024	0.293	/
Speed						Back Side	Main	1.035	0.518	1.024	0.549	/
Speed						Right Edge	Main	1.035	0.018	1.024	0.019	/
Speed						Top Edge	Main	1.035	0.146	1.024	0.155	/
ICT						Back Side	Main	1.035	0.466	1.024	0.494	/
ICT						Right Edge	Main	1.035	0.019	1.024	0.020	/
ICT						Top Edge	Main	1.035	0.133	1.024	0.141	/

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 10g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Limbs												
Speed	802.11ac	VHT0	80	58	5290	Keyboard Side	Aux.	1.033	0.558	1.024	0.590	/
ICT						Keyboard Side	Aux.	1.033	0.634	1.024	0.671	9
ICT						Keyboard Side	Aux.	1.033	0.518	1.024	0.548	/
Speed						Left Edge	Aux.	1.033	0.004	1.024	0.004	/
ICT						Left Edge	Aux.	1.033	0.023	1.024	0.024	/
Speed						Keyboard Side	Main	1.062	0.464	1.024	0.505	10
ICT						Keyboard Side	Main	1.062	0.363	1.024	0.395	/
Speed						Right Edge	Main	1.062	0.004	1.024	0.004	/
ICT						Right Edge	Main	1.062	0.026	1.024	0.028	/

B.5.3 802.11a/n/ac/ax – 5.6 GHz – U-NII-2C

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 1g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Body												
Speed	802.11ac	VHT 0	80	106	5530	Bottom Side	Aux.	1.045	0.697	1.024	0.746	/
ICT			80	106	5530	Bottom Side	Aux.	1.045	0.631	1.024	0.675	/
Speed			80	106	5530	Front edge	Aux.	1.045	0.371	1.024	0.397	/
ICT			80	106	5530	Front edge	Aux.	1.045	0.319	1.024	0.341	/
Speed			80	138	5690	Back Side	Aux.	1.050	0.879	1.024	0.945	/
Speed			80	138	5690	Left Edge	Aux.	1.050	0.067	1.024	0.072	/
Speed			80	138	5690	Top Edge	Aux.	1.050	0.300	1.024	0.323	/
Speed			80	106	5530	Back Side	Aux.	1.091	0.959	1.024	1.071	11
ICT			80	138	5690	Back Side	Aux.	1.050	0.641	1.024	0.689	/
ICT			80	138	5690	Left Edge	Aux.	1.050	0.070	1.024	0.075	/
ICT			80	138	5690	Top Edge	Aux.	1.050	0.391	1.024	0.420	/
Speed			80	106	5530	Bottom Side	Main	1.040	0.907	1.024	0.966	/
Speed			80	138	5690	Bottom Side	Main	1.076	0.963	1.024	1.061	12
ICT			80	106	5530	Bottom Side	Main	1.040	0.847	1.024	0.902	/
Speed			80	106	5530	Front edge	Main	1.040	0.451	1.024	0.480	/
ICT			80	106	5530	Front edge	Main	1.040	0.318	1.024	0.339	/
Speed			80	138	5690	Back Side	Main	1.021	0.846	1.024	0.884	/
Speed			80	138	5690	Right Edge	Main	1.021	0.039	1.024	0.041	/
Speed			80	138	5690	Top Edge	Main	1.021	0.181	1.024	0.189	/
ICT			80	138	5690	Back Side	Main	1.021	0.328	1.024	0.343	/
ICT			80	138	5690	Right Edge	Main	1.021	0.019	1.024	0.020	/
ICT			80	138	5690	Top Edge	Main	1.021	0.154	1.024	0.161	/
Speed			160	114	5570	Bottom Side	Aux.	1.021	0.822	1.045	0.877	/
ICT			160	114	5570	Bottom Side	Aux.	1.021	0.768	1.045	0.819	/
Speed			160	114	5570	Front edge	Aux.	1.021	0.412	1.045	0.440	/
ICT			160	114	5570	Front edge	Aux.	1.021	0.367	1.045	0.392	/
Speed			160	114	5570	Back Side	Aux.	1.012	0.971	1.045	1.027	/
Speed			160	114	5570	Left Edge	Aux.	1.012	0.041	1.045	0.043	/
Speed			160	114	5570	Top Edge	Aux.	1.012	0.166	1.045	0.176	/
ICT			160	114	5570	Back Side	Aux.	1.012	0.703	1.045	0.743	/
ICT			160	114	5570	Left Edge	Aux.	1.012	0.048	1.045	0.051	/
ICT			160	114	5570	Top Edge	Aux.	1.012	0.606	1.045	0.641	/
Speed			160	114	5570	Bottom Side	Main	1.081	0.889	1.045	1.004	/
ICT			160	114	5570	Bottom Side	Main	1.081	0.844	1.045	0.953	/
Speed			160	114	5570	Front edge	Main	1.081	0.472	1.045	0.533	/

ICT			160	114	5570	Front edge	Main	1.081	0.370	1.045	0.418	/
Speed			160	114	5570	Back Side	Main	1.099	0.579	1.045	0.665	/
Speed			160	114	5570	Right Edge	Main	1.099	0.006	1.045	0.007	/
Speed			160	114	5570	Top Edge	Main	1.099	0.120	1.045	0.138	/
ICT			160	114	5570	Back Side	Main	1.099	0.333	1.045	0.382	/
ICT			160	114	5570	Right Edge	Main	1.099	0.015	1.045	0.017	/
ICT			160	114	5570	Top Edge	Main	1.099	0.258	1.045	0.296	/

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 10g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Limbs												
Speed	802.11a c	VHT 0	80	106	5530	Keyboard Side	Aux.	1.045	0.439	1.024	0.470	/
ICT			80	106	5530	Keyboard Side	Aux.	1.045	0.473	1.024	0.506	/
ICT			80	138	5690	Keyboard Side	Aux.	1.067	0.452	1.024	0.494	
Speed			80	106	5530	Left Edge	Aux.	1.045	0.006	1.024	0.006	/
ICT			80	106	5530	Left Edge	Aux.	1.045	0.015	1.024	0.016	/
Speed			80	106	5530	Keyboard Side	Main	1.040	0.463	1.024	0.493	/
Speed			80	138	5690	Keyboard Side	Main	1.076	0.601	1.024	0.662	13
Speed			80	138	5690	Keyboard Side	Main	1.076	0.561	1.024	0.618	
ICT			80	106	5530	Keyboard Side	Main	1.040	0.437	1.024	0.465	/
Speed			80	106	5530	Right Edge	Main	1.040	0.004	1.024	0.004	/
ICT			80	106	5530	Right Edge	Main	1.040	0.002	1.024	0.002	/
Speed			160	114	5570	Keyboard Side	Aux.	1.021	0.458	1.045	0.489	/
ICT			160	114	5570	Keyboard Side	Aux.	1.021	0.537	1.045	0.573	14
Speed			160	114	5570	Left Edge	Aux.	1.021	0.033	1.045	0.035	/
ICT			160	114	5570	Left Edge	Aux.	1.021	0.033	1.045	0.035	/
Speed			160	114	5570	Keyboard Side	Main	1.081	0.493	1.045	0.557	/
ICT			160	114	5570	Keyboard Side	Main	1.081	0.455	1.045	0.514	/
Speed			160	114	5570	Right Edge	Main	1.081	0.005	1.045	0.006	/
ICT			160	114	5570	Right Edge	Main	1.081	0.006	1.045	0.007	/

B.5.4 802.11a/n/ac/ax – 5.8 GHz – U-NII-3

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 1g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Body												
Speed	802.11ac	VHT0	80	155	5775	Bottom Side	Aux.	1.059	0.670	1.024	0.727	/
ICT						Bottom Side	Aux.	1.059	0.893	1.024	0.968	15
Speed						Front edge	Aux.	1.059	0.441	1.024	0.478	/
ICT						Front edge	Aux.	1.059	0.428	1.024	0.464	/
Speed						Back Side	Aux.	1.076	0.537	1.024	0.592	/
Speed						Left Edge	Aux.	1.117	0.041	1.024	0.047	/
Speed						Top Edge	Aux.	1.076	0.140	1.024	0.154	/
ICT						Back Side	Aux.	1.076	0.550	1.024	0.606	/
ICT						Left Edge	Aux.	1.117	0.026	1.024	0.030	/
ICT						Top Edge	Aux.	1.076	0.200	1.024	0.220	/
Speed						Bottom Side	Main	1.040	1.040	1.024	1.108	/
ICT						Bottom Side	Main	1.040	0.956	1.024	1.018	/
Speed						Front edge	Main	1.040	0.680	1.024	0.724	/
ICT						Front edge	Main	1.040	0.449	1.024	0.478	/
Speed						Back Side	Main	1.042	0.623	1.024	0.665	/
Speed						Right Edge	Main	1.052	0.044	1.024	0.047	/
Speed						Top Edge	Main	1.042	0.431	1.024	0.460	/
ICT						Back Side	Main	1.042	1.040	1.024	1.110	16
ICT						Right Edge	Main	1.052	0.035	1.024	0.038	/
ICT						Top Edge	Main	1.042	0.283	1.024	0.302	/

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 10g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Limbs												
Speed	802.11ac	VHT0	80	155	5775	Keyboard Side	Aux.	1.059	0.473	1.024	0.513	17
ICT						Keyboard Side	Aux.	1.059	0.415	1.024	0.450	/
Speed						Left Edge	Aux.	1.059	0.012	1.024	0.013	/
ICT						Left Edge	Aux.	1.059	0.006	1.024	0.007	/
Speed						Keyboard Side	Main	1.040	0.711	1.024	0.757	/
ICT						Keyboard Side	Main	1.040	0.760	1.024	0.809	18
Speed						Right Edge	Main	1.040	0.020	1.024	0.021	/
ICT						Right Edge	Main	1.040	0.007	1.024	0.007	/

B.5.5 802.11a/n/ac/ax – 5.9 GHz – U-NII-4

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 1g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Body												
Speed	802.11ac	VHT0	160	163	5815	Bottom Side	Aux.	1.117	0.465	1.045	0.543	/
ICT						Bottom Side	Aux.	1.117	0.729	1.045	0.851	19
Speed						Front edge	Aux.	1.117	0.365	1.045	0.426	/
ICT						Front edge	Aux.	1.117	0.364	1.045	0.425	/
Speed						Back Side	Aux.	1.109	0.487	1.045	0.564	/
Speed						Left Edge	Aux.	1.117	0.042	1.045	0.049	/
ICT						Left Edge	Aux.	1.117	0.031	1.045	0.036	/
Speed						Top Edge	Aux.	1.109	0.217	1.045	0.251	/
ICT						Back Side	Aux.	1.109	0.466	1.045	0.540	/
ICT						Top Edge	Aux.	1.109	0.157	1.045	0.182	/
Speed						Bottom Side	Main	1.052	0.938	1.045	1.031	/
ICT						Bottom Side	Main	1.052	1.060	1.045	1.165	20
Speed						Front edge	Main	1.052	0.715	1.045	0.786	/
ICT						Front edge	Main	1.052	0.557	1.045	0.612	/
Speed						Back Side	Main	1.040	0.844	1.045	0.917	/
Speed						Right Edge	Main	1.052	0.061	1.045	0.067	/
ICT						Right Edge	Main	1.052	0.052	1.045	0.057	/
Speed						Top Edge	Main	1.040	0.368	1.045	0.400	/
ICT						Back Side	Main	1.040	0.906	1.045	0.985	/
ICT						Top Edge	Main	1.040	0.213	1.045	0.231	/

Antenna Manufacturer	Mode	Data rate	BW (MHz)	Channel Number	Freq (MHz)	Test position mode	Antenna	Scaling Factor (dB)	Measured SAR 10g (W/kg)	Duty cycle Factor	Reported SAR 1g (W/kg)	Plot #
Limbs												
Speed	802.11ac	VHT0	160	163	5815	Keyboard Side	Aux.	1.117	0.474	1.045	0.553	21
ICT						Keyboard Side	Aux.	1.117	0.373	1.045	0.435	/
Speed						Left Edge	Aux.	1.117	0.041	1.045	0.048	/
ICT						Left Edge	Aux.	1.117	0.004	1.045	0.005	/
Speed						Keyboard Side	Main	1.052	0.652	1.045	0.717	/
ICT						Keyboard Side	Main	1.052	0.718	1.045	0.789	22
Speed						Right Edge	Main	1.052	0.065	1.045	0.071	/
ICT						Right Edge	Main	1.052	0.016	1.045	0.018	/

B.5.6 SAR Measurement Variability

According to FCC OET KDB 865664, SAR Measurement variability is assessed when the maximum initial measured SAR is ≥ 0.8 W/kg for a certain band/mode. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with $< 20\%$ variation, only one repeated measurement is required to confirm that the results are not expected to have substantial variations.

A second repeated measurement is required only if the measured results for the initial repeated measurement are within 10% of the SAR limit or vary by more than 20%.

A third repeated measurement is required only if the original, first or second repeated measurement ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurement is > 1.2 .

Band / Mode	Position	Ch #	Freq. (MHz)	Measured SAR 1g (W/kg)	1st Repeated SAR 1g (W/kg)	Highest Ratio
2.4 GHz / 802.11b - 20 MHz	Back Side	1	2412	0.892	0.792	1.13
5.3 GHz / 802.11ac - 80 MHz	Back Side	58	5290	1.08	1.05	1.03
5.6 GHz / 802.11ac - 160 MHz	Back Side	114	5570	0.971	0.899	1.08
5.8 GHz / 802.11ac - 80 MHz	Bottom Side	155	5775	1.04	0.943	1.1
5.9 GHz / 802.11ac - 160 MHz	Bottom Side	163	5815	1.06	1.04	1.02

B.5.7 Simultaneous Transmission SAR Evaluation

According to FCC OET KDB 447498, when the sum of 1g SAR for all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

All the values stated in the table below are the worst case found for standalone measurement with disregard of the transmission mode or channel where the worst case was found.

Antenna	Position	Highest Reported SAR (1g) (W/Kg)		
		WLAN 2.4GHz	WLAN 5GHz	Bluetooth
Body				
Main	Bottom Side	0.906	1.165	
Aux		0.854	0.968	0.140
Main	Front edge	0.309	0.786	
Aux		0.320	0.483	0.081
Main	Back Side	0.978	1.110	
Aux		0.704	1.152	0.225
Main	Left Edge	0.000	0.000	
Aux		0.126	0.075	0.015
Main	Right Edge	0.127	0.067	
Aux		0.000	0.000	0.000
Main	Top Edge	0.487	0.460	
Aux		0.422	0.641	0.087

Antenna	Position	Highest Reported SAR (1g) (W/Kg)		
		WLAN 2.4GHz	WLAN 5GHz	Bluetooth
Limbs				
Main	Keyboard Side	0.421	0.809	
Aux		0.364	0.671	0.094
Main	Left Edge	0.000	0.000	
Aux		0.040	0.048	0.004
Main	Right Edge	0.052	0.071	
Aux		0.000	0.000	0.000

Position	Simultaneous Tx Antenna Combination		Σ SAR 1g (W/Kg)	Limit (W/kg)
	Main Antenna	Aux Antenna		
Body				
Bottom Side	WLAN 2.4GHz	Bluetooth	1.046	1.6
	WLAN 2.4GHz	WLAN 2.4GHz	1.760^{1#}	
	WLAN 5 GHz	Bluetooth	1.305	
	WLAN 5 GHz	WLAN 5 GHz	2.133^{2#}	
	WLAN 5GHz	WLAN 5GHz + BT	2.273^{3#}	
Front edge	WLAN 2.4GHz	Bluetooth	0.390	
	WLAN 2.4GHz	WLAN 2.4GHz	0.629	
	WLAN 5 GHz	Bluetooth	0.867	
	WLAN 5 GHz	WLAN 5 GHz	1.269	
	WLAN 5GHz	WLAN 5GHz + BT	1.350	
Back Side	WLAN 2.4GHz	Bluetooth	1.203	
	WLAN 2.4GHz	WLAN 2.4GHz	1.682^{4#}	
	WLAN 5 GHz	Bluetooth	1.335	
	WLAN 5 GHz	WLAN 5 GHz	2.262^{5#}	
	WLAN 5GHz	WLAN 5GHz + BT	2.487^{6#}	
Left Edge	WLAN 2.4GHz	Bluetooth	0.015	
	WLAN 2.4GHz	WLAN 2.4GHz	0.126	
	WLAN 5 GHz	Bluetooth	0.015	
	WLAN 5 GHz	WLAN 5 GHz	0.075	
	WLAN 5GHz	WLAN 5GHz + BT	0.090	
Right Edge	WLAN 2.4GHz	Bluetooth	0.127	
	WLAN 2.4GHz	WLAN 2.4GHz	0.127	
	WLAN 5 GHz	Bluetooth	0.067	
	WLAN 5 GHz	WLAN 5 GHz	0.067	
	WLAN 5GHz	WLAN 5GHz + BT	0.067	
Top Edge	WLAN 2.4GHz	Bluetooth	0.574	
	WLAN 2.4GHz	WLAN 2.4GHz	0.909	
	WLAN 5 GHz	Bluetooth	0.547	
	WLAN 5 GHz	WLAN 5 GHz	1.101	
	WLAN 5GHz	WLAN 5GHz + BT	1.188	

Position	Simultaneous Tx Antenna Combination		Σ SAR 10g (W/Kg)	Limit (W/kg)
	Main Antenna	Aux Antenna		
Limbs				
Bottom Side	WLAN 2.4GHz	Bluetooth	0.515	4.0
	WLAN 2.4GHz	WLAN 2.4GHz	0.785	
	WLAN 5 GHz	Bluetooth	0.903	
	WLAN 5 GHz	WLAN 5 GHz	1.480	
	WLAN 5GHz	WLAN 5GHz + BT	1.574	
Front edge	WLAN 2.4GHz	Bluetooth	0.004	
	WLAN 2.4GHz	WLAN 2.4GHz	0.040	
	WLAN 5 GHz	Bluetooth	0.004	
	WLAN 5 GHz	WLAN 5 GHz	0.048	
	WLAN 5GHz	WLAN 5GHz + BT	0.052	
Back Side	WLAN 2.4GHz	Bluetooth	0.052	
	WLAN 2.4GHz	WLAN 2.4GHz	0.052	
	WLAN 5 GHz	Bluetooth	0.071	
	WLAN 5 GHz	WLAN 5 GHz	0.071	
	WLAN 5GHz	WLAN 5GHz + BT	0.071	

In case the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio:

Case No.	Position	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
1#	Bottom Side	Main WLAN 2.4GHz	0.906	1.760	(-1.2, -99.2, -175.6)	0.01	0.04
		Aux WLAN 2.4GHz	0.854		(-19.4,103.4, -175.6)		

Case No.	Position	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
2#	Bottom Side	Main WLAN 5GHz	1.165	2.133	(0.0, -129.0, -175.6)	0.01	0.04
		Aux WLAN 5GHz	0.968		(5.0,120.0, -175.6)		

Case No.	Position	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
3#	Bottom Side	Main WLAN 5GHz	1.165	2.273	(0.0, -129.0, -175.6)	0.01	0.04
		Aux WLAN 5GHz+BT	1.108		(5.0,120.0, -175.6)		

Case No.	Position	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
4#	Back Side	Main WLAN 2.4GHz	0.978	1.682	(6.2, -99.2, -175.6)	0.01	0.04
		Aux WLAN 2.4GHz	0.704		(-12.0,110.0, -175.6)		

Case No.	Position	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
5#	Back Side	Main WLAN 5GHz	1.110	2.262	(10.0, -140.0, -175.6)	0.01	0.04
		Aux WLAN 5GHz	1.152		(-4.0,121.0, -178.9)		

Case No.	Position	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
6#	Back Side	Main WLAN 5GHz	1.377	2.487	(10.0, -140.0 -175.6)	0.02	0.04
		Aux WLAN 5GHz+BT	1.335		(-4.0,121.0, -178.9)		

Considering the results described above and according to the simultaneous transmission evaluation exclusions described in FCC OET KDB 447498, no enlarged zoom scan measurements are required.

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1. Bluetooth, Aux Antenna –Back Side

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	2402.0, 0	6.98	1.84	40.7	22.5	21.4

Hardware Setup

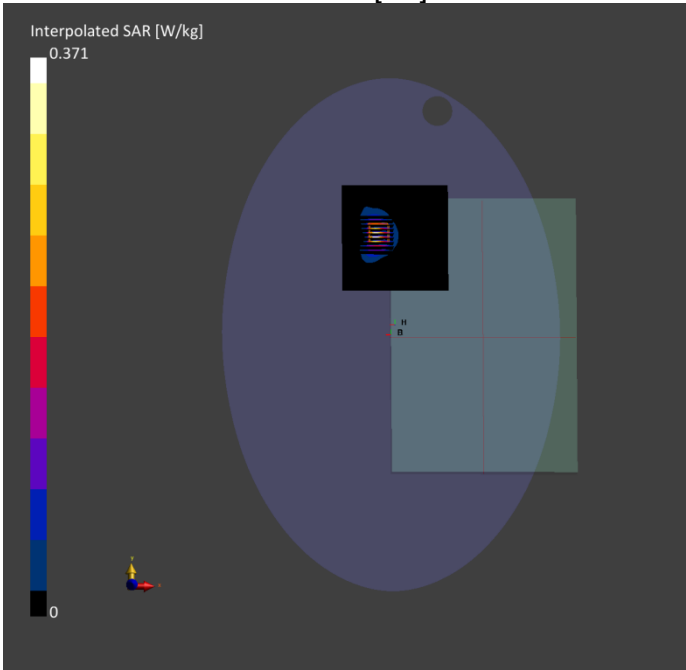
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-31	2024-12-31
psSAR1g [W/kg]	0.153	0.158
psSAR10g [W/kg]	0.068	0.067
Power Drift [dB]	-0.02	0.14
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		41.2
Dist 3dB Peak [mm]		7.0



2. Bluetooth, Aux Antenna –Keyboard Side

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	2402.0, 0	6.98	1.84	40.7	22.5	21.4

Hardware Setup

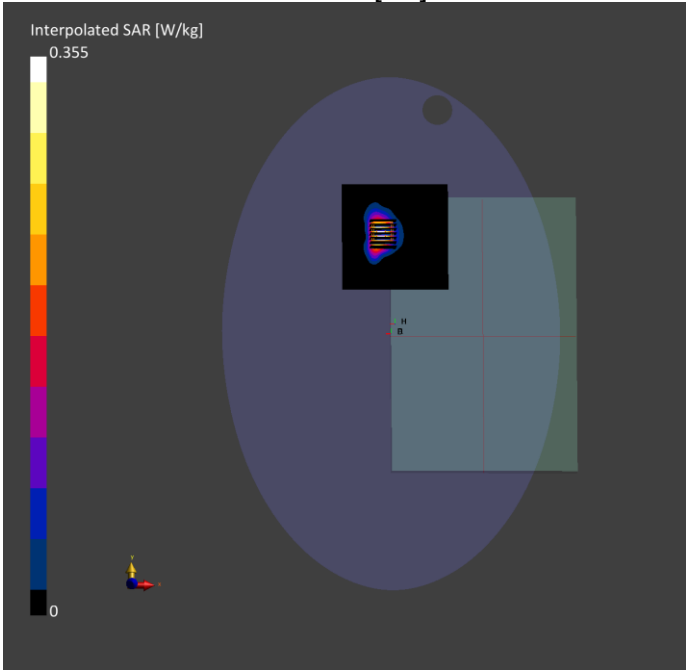
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-31	2024-12-31
psSAR1g [W/kg]	0.122	0.152
psSAR10g [W/kg]	0.062	0.066
Power Drift [dB]	0.01	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		39.4
Dist 3dB Peak [mm]		7.0



3. DTS - 802.11b, CH1, Aux Antenna –Bottom Side

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	EDGE BOTTOM, 0.00	WLAN 2.4GHz	WLAN, 10012-CAB	2412.0, 1	6.98	1.77	40.8	22.3	21.4

Hardware Setup

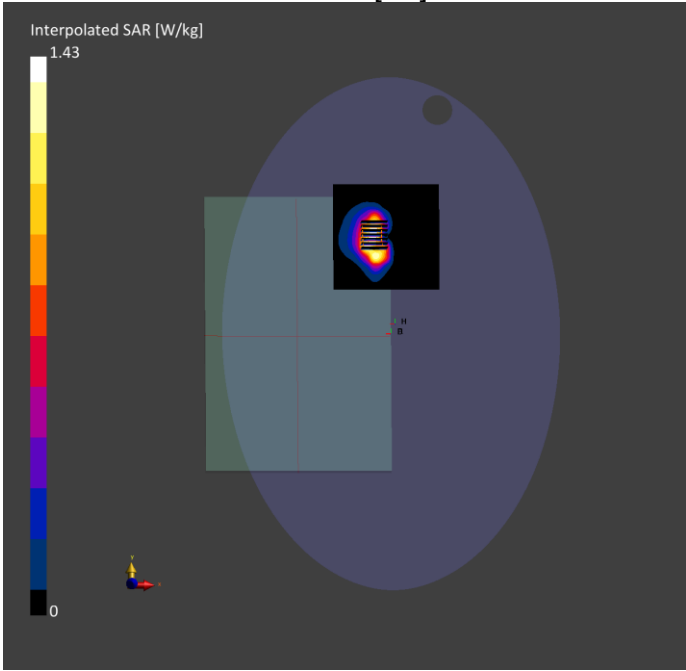
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-30	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-30	2024-12-30
psSAR1g [W/kg]	0.565	0.726
psSAR10g [W/kg]	0.297	0.337
Power Drift [dB]	-0.13	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.9
Dist 3dB Peak [mm]		7.0



4. DTS - 802.11b, CH11, Main Antenna –Back Side

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, 10415-AAA	2412.0, 1	6.98	1.77	40.8	22.3	21.4

Hardware Setup

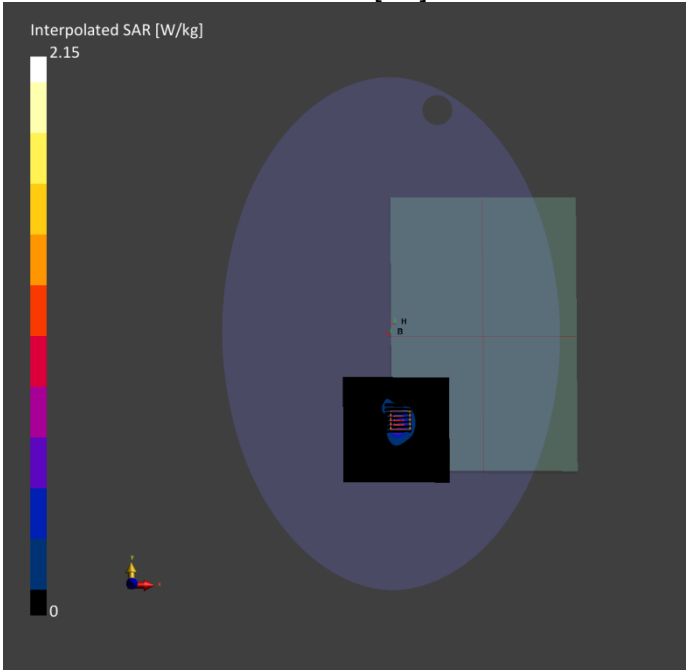
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-30	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-30	2024-12-30
psSAR1g [W/kg]	0.788	0.892
psSAR10g [W/kg]	0.347	0.382
Power Drift [dB]	-0.12	-0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		42.8
Dist 3dB Peak [mm]		6.0



5. DTS - 802.11b, CH1, Aux Antenna –Keyboard Side

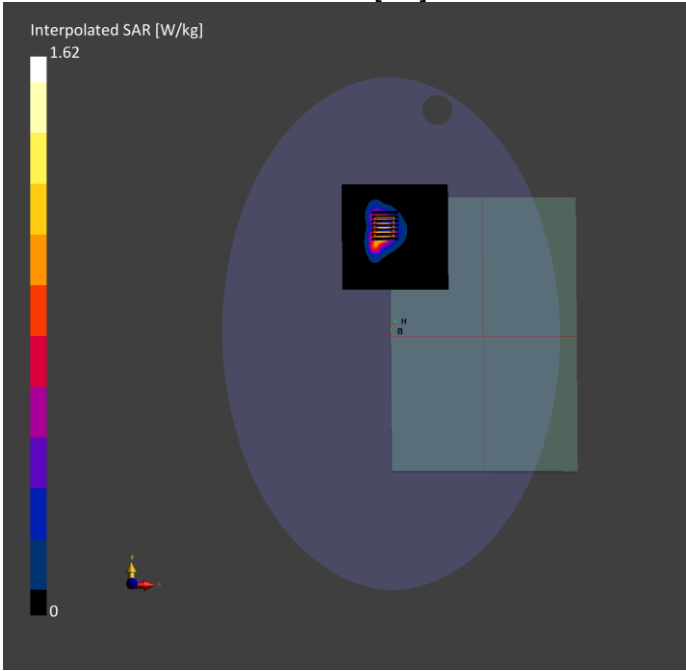
Exposure Conditions

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, 10415-AAA	2412.0, 1	6.98	1.85	40.7	22.5	21.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2024-12-31	2024-12-31
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0	psSAR1g [W/kg]	0.570	0.701
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.277	0.309
Graded Grid	Yes	Yes	Power Drift [dB]	-0.07	0.02
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		40.1
			Dist 3dB Peak [mm]		7.0



6. DTS - 802.11b, CH1, Main Antenna –Keyboard Side

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, 10415-AAA	2412.0, 1	6.98	1.77	40.8	22.3	21.4

Hardware Setup

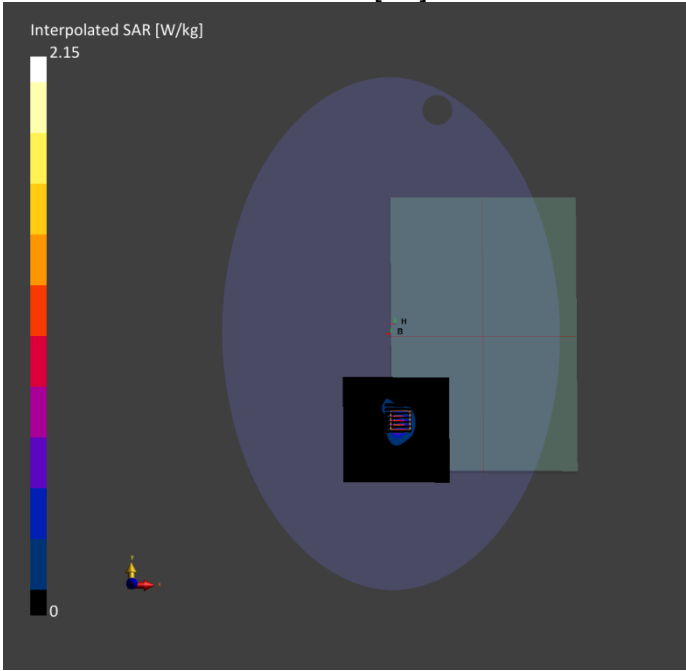
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-30	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-30	2024-12-30
psSAR1g [W/kg]	0.788	0.892
psSAR10g [W/kg]	0.347	0.382
Power Drift [dB]	-0.12	-0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		42.8
Dist 3dB Peak [mm]		6.0



7. U-NII-2A - 802.11ac80, CH58, Aux Antenna –Back Side

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	5.44	4.73	35.7	22.1	21.3

Hardware Setup

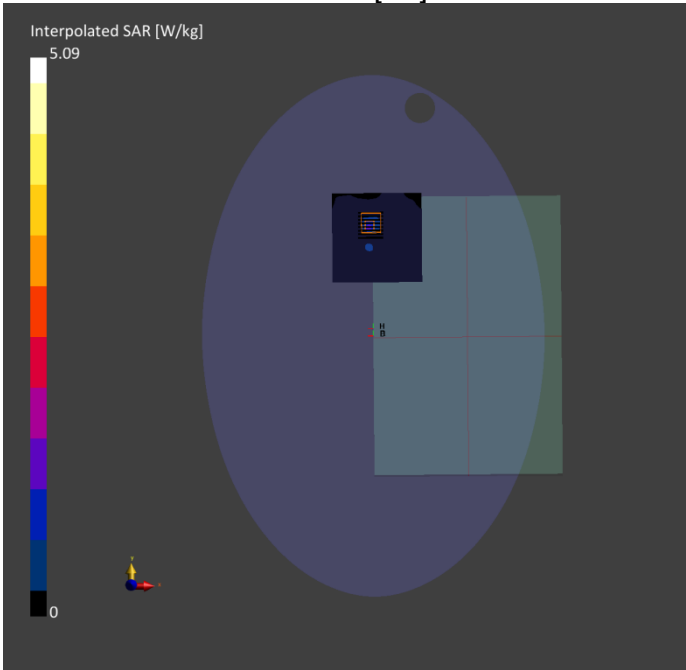
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-03	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	All points	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-03	2025-01-03
psSAR1g [W/kg]	0.931	1.08
psSAR10g [W/kg]	0.267	0.289
Power Drift [dB]	-0.15	-0.16
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.5
Dist 3dB Peak [mm]		4.8



8. U-NII-2A - 802.11ac80, CH58, Mian Antenna –Bottom Side

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	EDGE BOTTOM, 0.00	WLAN 5GHz	WLAN, 10544-AAD	5290.0, 58	5.44	4.74	35.8	22.5	21.4

Hardware Setup

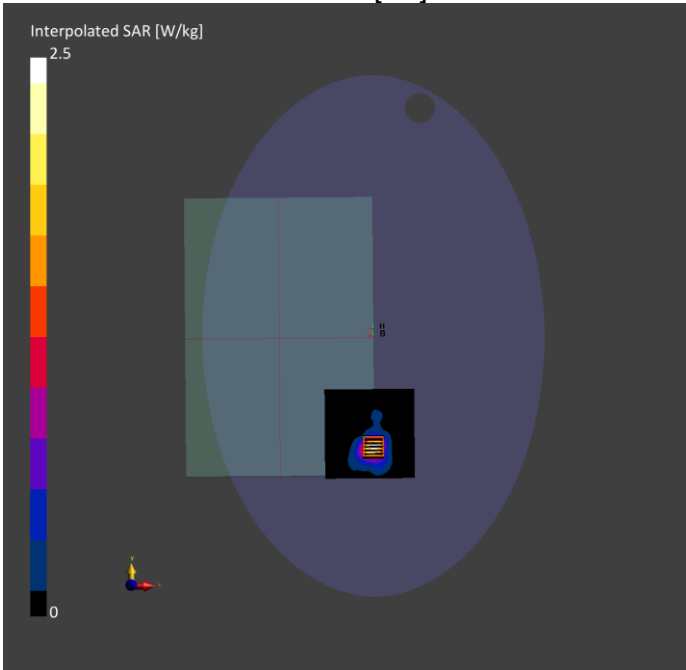
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-31	2024-12-31
psSAR1g [W/kg]	0.577	0.639
psSAR10g [W/kg]	0.207	0.206
Power Drift [dB]	0.08	0.19
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.8
Dist 3dB Peak [mm]		7.4



9. U-NII-2A - 802.11ac80, CH58, Aux Antenna –Keyboard Side

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- AAD	5290.0, 58	5.44	4.74	35.8	22.5	21.4

Hardware Setup

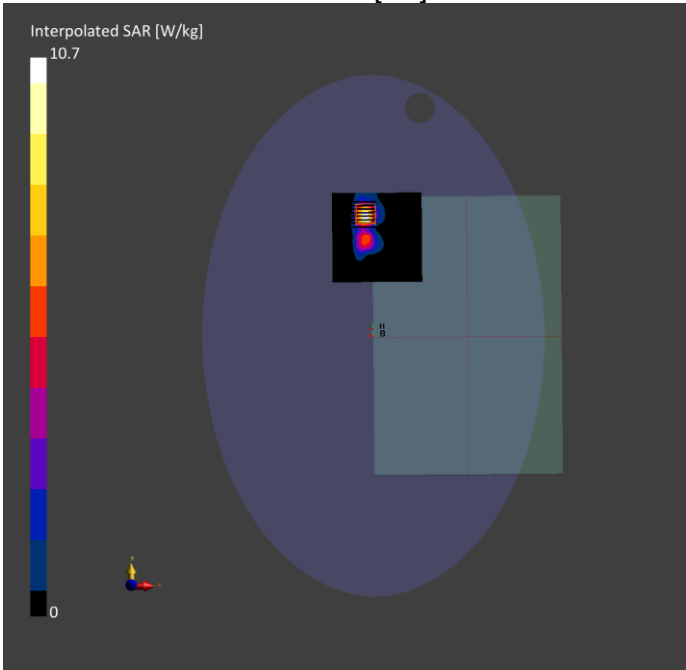
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-31	2024-12-31
psSAR1g [W/kg]	1.59	2.30
psSAR10g [W/kg]	0.538	0.634
Power Drift [dB]	0.09	0.07
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.2
Dist 3dB Peak [mm]		4.8



10.U-NII-2A - 802.11ac80, CH58, Main Antenna –Keyboard Side

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-AAD	5290.0, 58	5.44	4.79	35.9	22.6	21.1

Hardware Setup

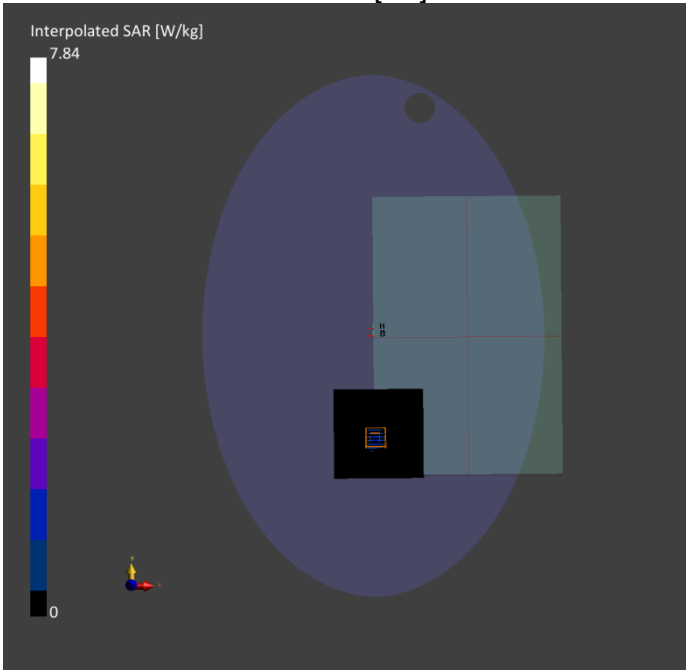
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2025-01-01	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	All points	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-01	2025-01-01
psSAR1g [W/kg]	1.22	1.69
psSAR10g [W/kg]	0.413	0.464
Power Drift [dB]	-0.08	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.3
Dist 3dB Peak [mm]		4.9



11. U-NII-2C - 802.11ac80, CH106, Aux Antenna –Back Side

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	5530.0, 106	5.11	5.01	35.4	22.6	21.1

Hardware Setup

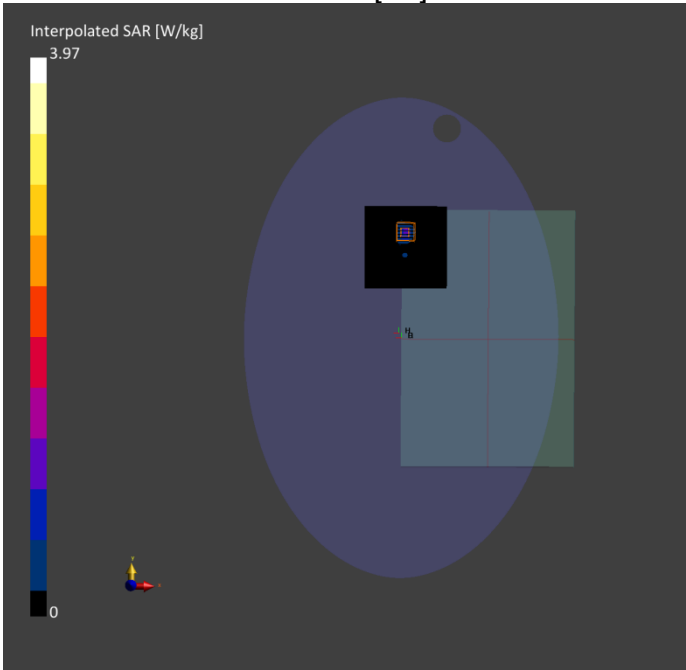
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-02	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-02	2025-01-02
psSAR1g [W/kg]	0.771	0.959
psSAR10g [W/kg]	0.235	0.281
Power Drift [dB]	0.16	0.18
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		49.2
Dist 3dB Peak [mm]		4.0



12. U-NII-2C - 802.11ac80, CH138, Main Antenna –Bottom Side

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	EDGE BOTTOM, 0.00	WLAN 5GHz	WLAN, 10544-AAC	5690.0, 138	5.0	5.22	34.8	22.6	21.1

Hardware Setup

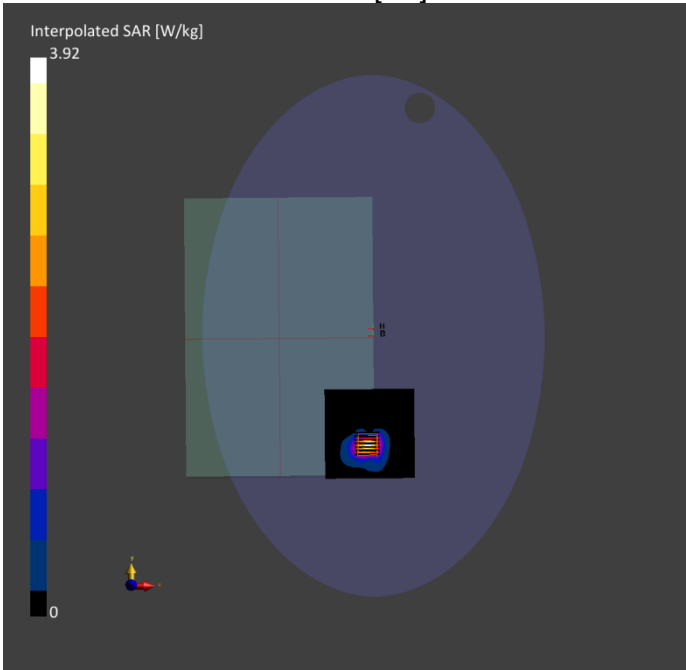
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-02	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-02	2025-01-02
psSAR1g [W/kg]	0.749	0.963
psSAR10g [W/kg]	0.260	0.310
Power Drift [dB]	-0.11	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.8
Dist 3dB Peak [mm]		7.2



13. U-NII-2C - 802.11ac80, CH138, Main Antenna –Keyboard Side

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	5690.0, 138	5.0	5.22	34.8	22.6	21.1

Hardware Setup

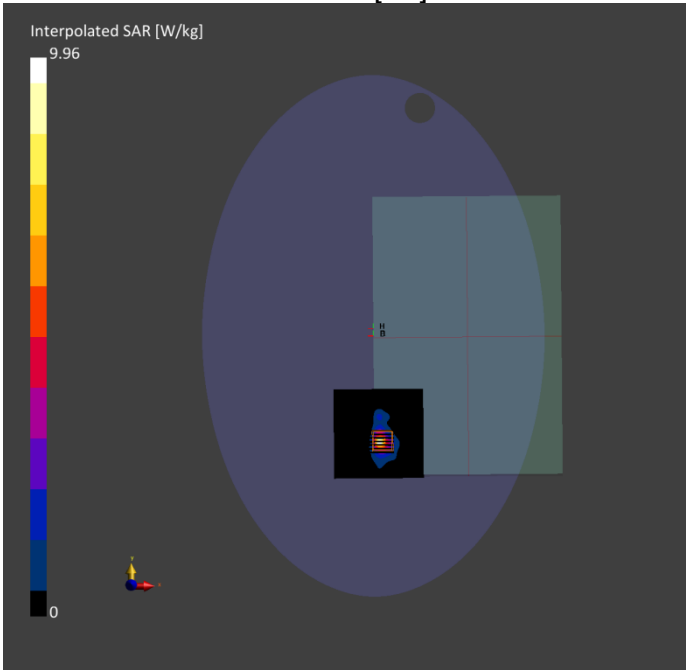
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-02	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-02	2025-01-02
psSAR1g [W/kg]	1.91	2.17
psSAR10g [W/kg]	0.544	0.601
Power Drift [dB]	-0.52	-0.14
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		47.0
Dist 3dB Peak [mm]		5.6



14. U-NII-2C - 802.11ac160, CH114, Main Antenna –Keyboard Side

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, 10554-AAD	5570.0, 114	4.91	5.04	35.4	22.3	21.7

Hardware Setup

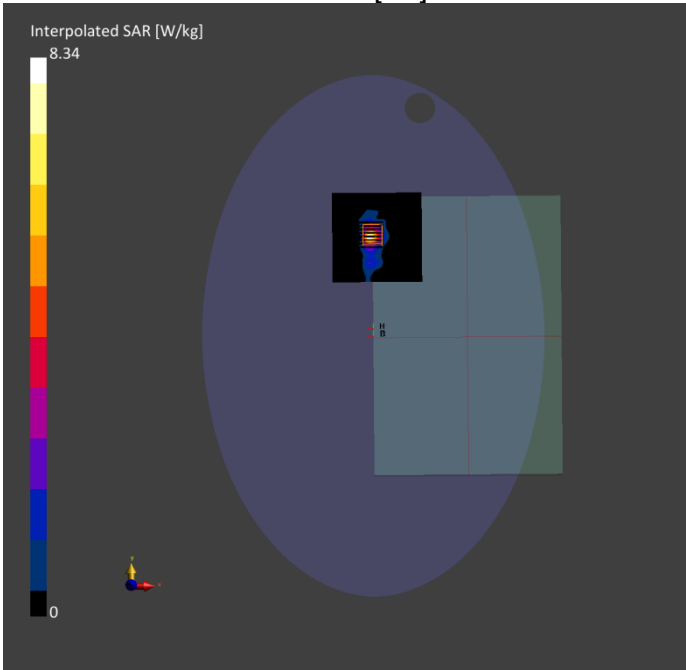
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-07	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-07	2025-01-07
psSAR1g [W/kg]	1.65	1.87
psSAR10g [W/kg]	0.496	0.537
Power Drift [dB]	0.03	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.3
Dist 3dB Peak [mm]		4.0



15. U-NII-3 - 802.11ac80, CH155, Aux Antenna –Bottom Side

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	EDGE BOTTOM, 0.00	WLAN 5GHz	WLAN, 10544-AAC	5775.0, 155	4.98	5.29	34.9	22.4	21.4

Hardware Setup

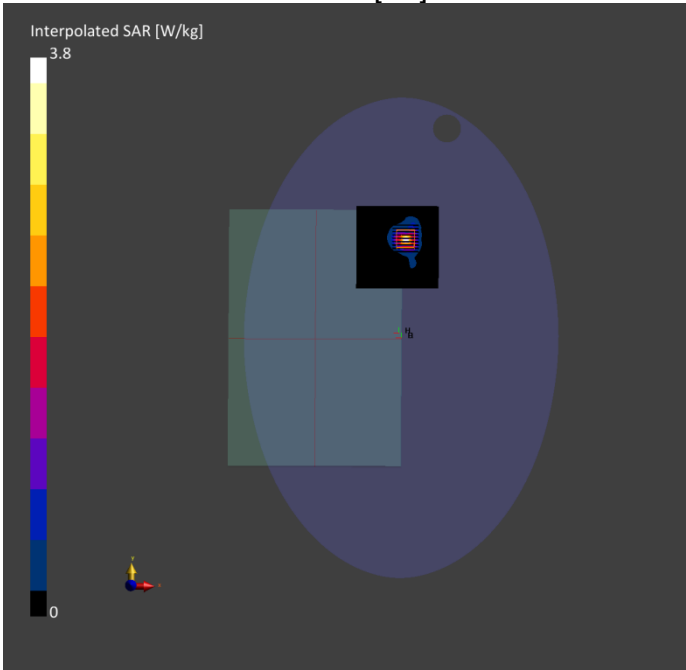
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-08	2025-01-08
psSAR1g [W/kg]	0.790	0.893
psSAR10g [W/kg]	0.247	0.273
Power Drift [dB]	0.02	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.2
Dist 3dB Peak [mm]		7.2



16. U-NII-3 - 802.11ac80, CH155, Main Antenna –Back Side

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	5775.0, 155	4.98	5.30	35.0	22.3	21.7

Hardware Setup

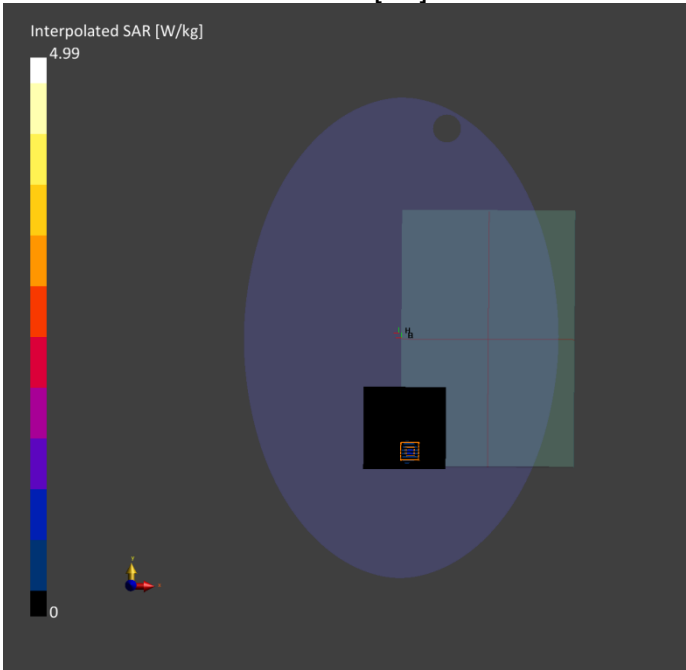
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-07	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-07	2025-01-07
psSAR1g [W/kg]	0.754	1.04
psSAR10g [W/kg]	0.241	0.282
Power Drift [dB]	-0.03	-0.09
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.8
Dist 3dB Peak [mm]		5.7



17. U-NII-3 - 802.11ac80, CH155, Aux Antenna –Keyboard Side

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	5775.0, 155	4.98	5.29	34.9	22.4	21.4

Hardware Setup

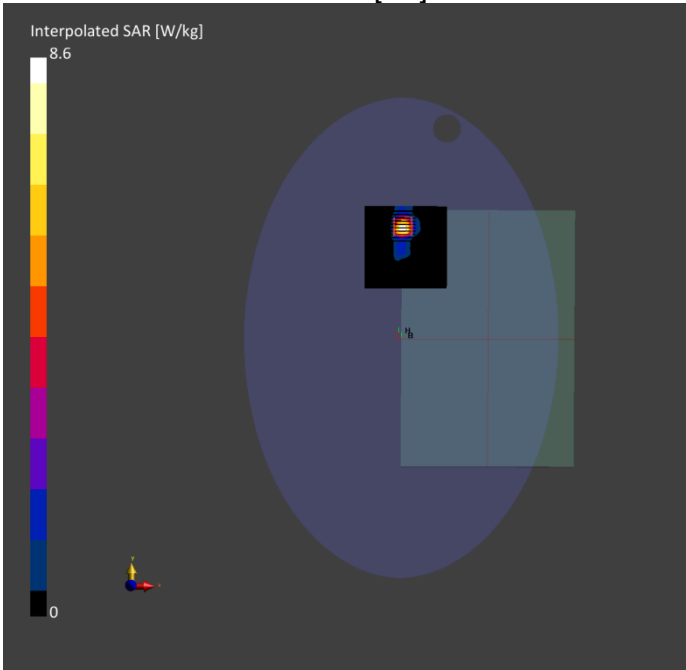
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-08	2025-01-08
psSAR1g [W/kg]	1.32	1.78
psSAR10g [W/kg]	0.425	0.473
Power Drift [dB]	-0.16	-0.15
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		45.5
Dist 3dB Peak [mm]		4.8



18. U-NII-3 - 802.11ac80, CH155, Main Antenna –Keyboard Side

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	5775.0, 155	4.98	5.30	35.0	22.3	21.7

Hardware Setup

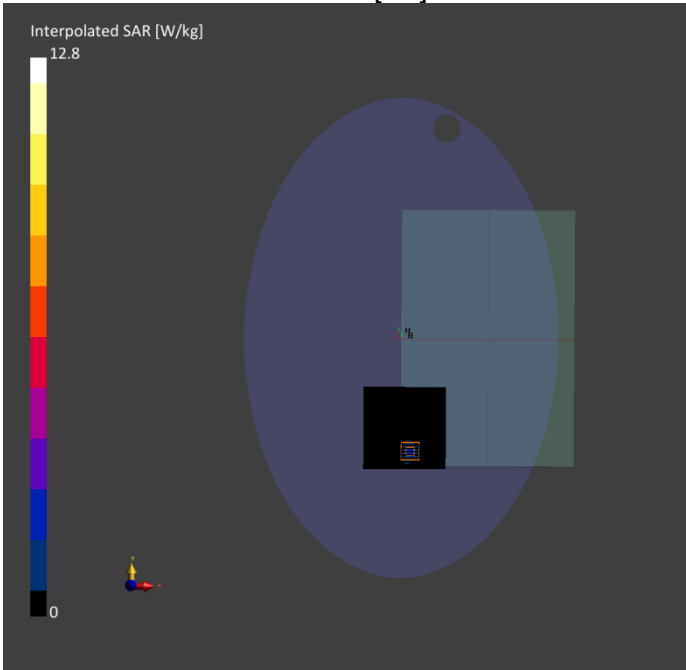
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-07	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-07	2025-01-07
psSAR1g [W/kg]	1.97	2.75
psSAR10g [W/kg]	0.633	0.760
Power Drift [dB]	0.04	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		45.2
Dist 3dB Peak [mm]		5.7



19.U-NII-4 - 802.11ac160, CH163, Aux Antenna –Bottom Side

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	EDGE BOTTOM, 0.00	Custom Band	CW, 10554-AAD	5815.0, 163	4.98	5.34	34.8	22.4	21.4

Hardware Setup

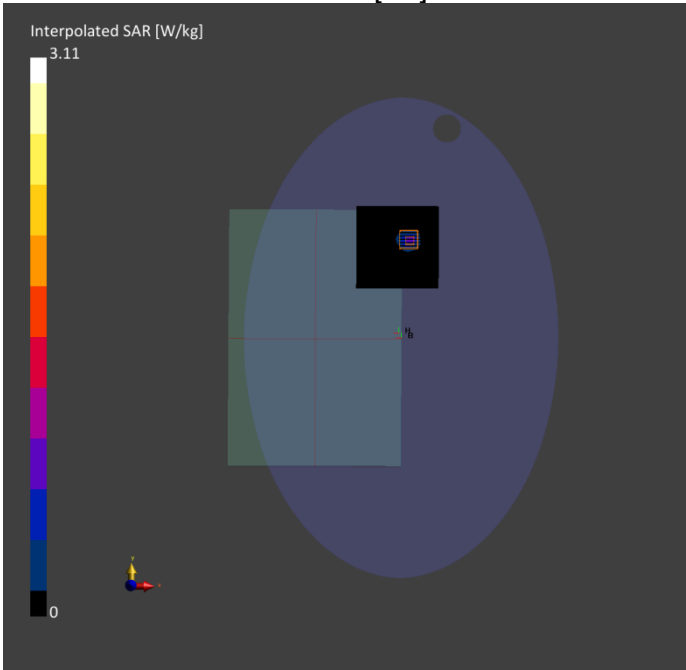
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-08	2025-01-08
psSAR1g [W/kg]	0.639	0.729
psSAR10g [W/kg]	0.215	0.227
Power Drift [dB]	0.03	-0.13
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.2
Dist 3dB Peak [mm]		7.2



20. U-NII-4 - 802.11ac160, CH163, Main Antenna –Bottom Side

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	EDGE BOTTOM, 0.00	Custom Band	CW, 10554-AAD	5815.0, 163	4.98	5.34	34.8	22.4	21.4

Hardware Setup

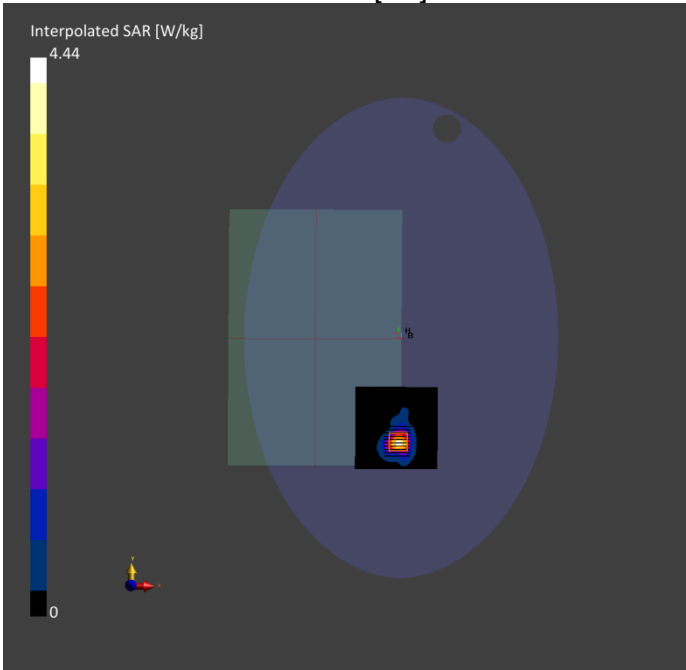
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-08	2025-01-08
psSAR1g [W/kg]	0.927	1.06
psSAR10g [W/kg]	0.314	0.327
Power Drift [dB]	0.06	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		49.5
Dist 3dB Peak [mm]		6.4



21.U-NII-4 - 802.11ac160, CH163, Aux Antenna –Keyboard Side

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-AAE	5815.0, 163	5.04	5.34	34.8	22.4	21.4

Hardware Setup

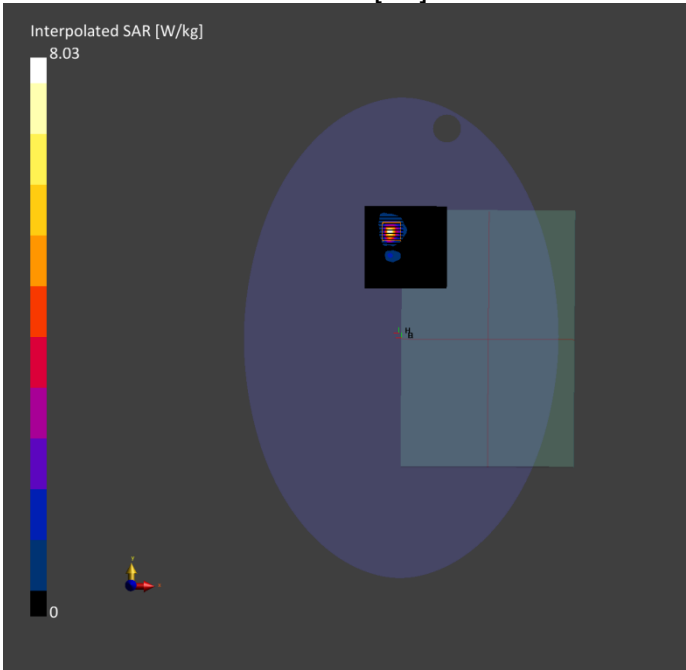
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-08	2025-01-08
psSAR1g [W/kg]	1.64	1.76
psSAR10g [W/kg]	0.453	0.474
Power Drift [dB]	0.03	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		49.0
Dist 3dB Peak [mm]		5.6



22. U-NII-4 - 802.11ac160, CH163, Main Antenna –Keyboard Side

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, 10544-AAC	5815.0, 163	4.98	5.34	34.8	22.4	21.4

Hardware Setup

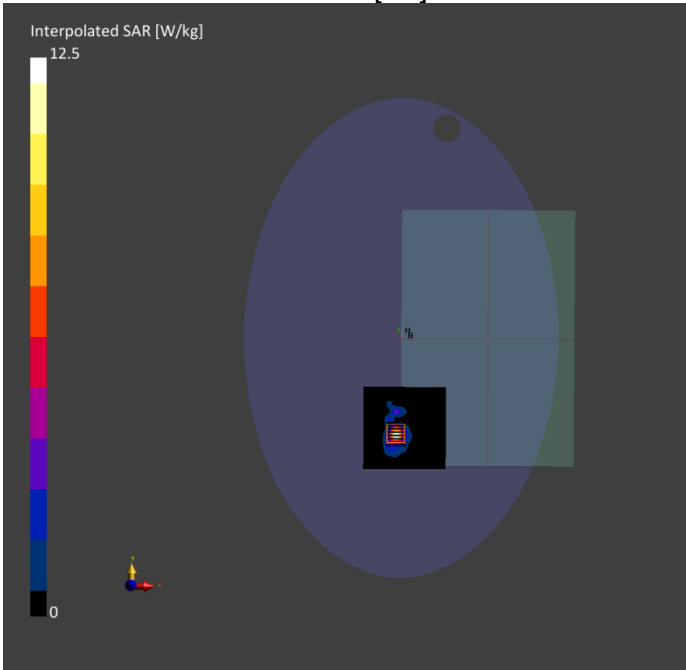
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2025-01-08	2025-01-08
psSAR1g [W/kg]	2.25	2.60
psSAR10g [W/kg]	0.646	0.718
Power Drift [dB]	0.04	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.0
Dist 3dB Peak [mm]		5.1



23. System Check Head Liquid 2450MHz

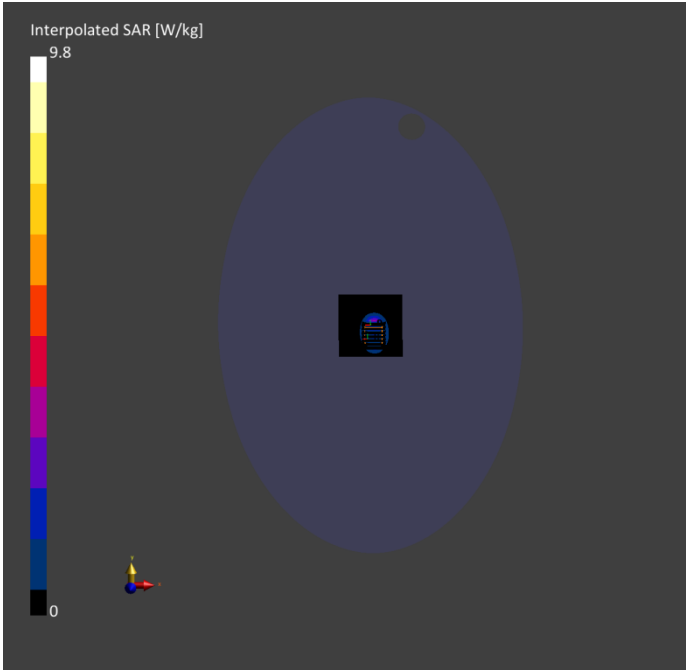
Exposure Conditions

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--	2450.0, 2450	6.98	1.80	40.7	22.3	21.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-30	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2024-12-30	2024-12-30
Grid Steps [mm]	8.0 x 10.0	5.0 x 5.0 x 1.5	psSAR1g [W/kg]	5.15	5.35
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.45	2.45
Graded Grid	Yes	Yes	Power Drift [dB]	0.03	0.03
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		79.5
					9.3



24. System Check Head Liquid 2450MHz

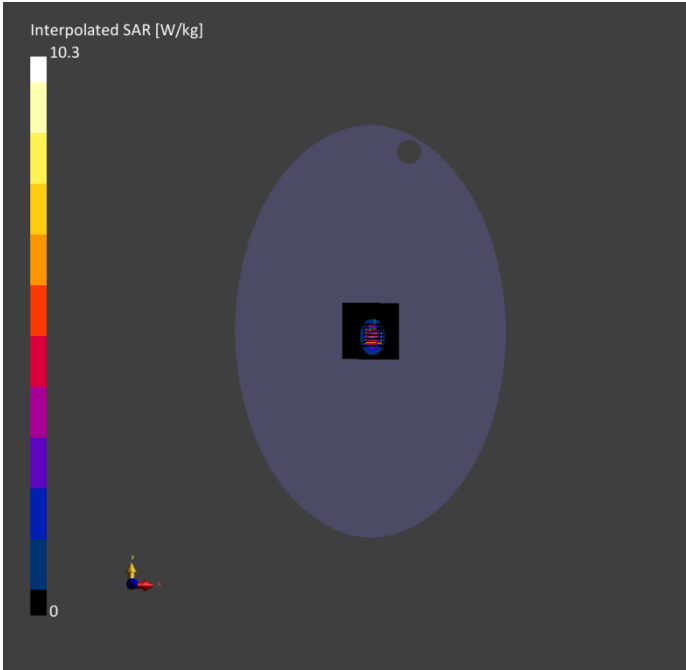
Exposure Conditions

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--	2450.0, 2450	6.98	1.88	40.6	22.5	21.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2024-12-31	2024-12-31
Grid Steps [mm]	8.0 x 10.0	5.0 x 5.0 x 1.5	psSAR1g [W/kg]	5.19	5.21
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.35	2.34
Graded Grid	Yes	Yes	Power Drift [dB]	0.12	0.02
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured			
			M2/M1 [%]		80.2
			Dist 3dB Peak [mm]		9.6



25. System Check Head Liquid 2450MHz

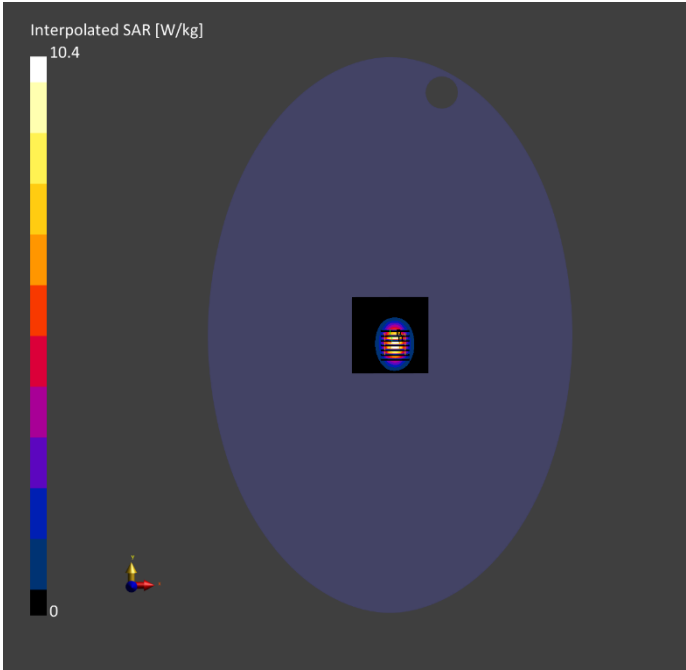
Exposure Conditions

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--	2450.0, 2450	6.98	1.81	40.7	22.6	21.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-25	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2024-12-25	2024-12-25
Grid Steps [mm]	8.0 x 10.0	5.0 x 5.0 x 1.5	psSAR1g [W/kg]	5.21	5.34
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.36	2.41
Graded Grid	Yes	Yes	Power Drift [dB]	0.13	0.06
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	Dist 3dB Peak [mm]		80.1
Scan Method	Measured	Measured			9.5



26. System Check Head Liquid 5250MHz

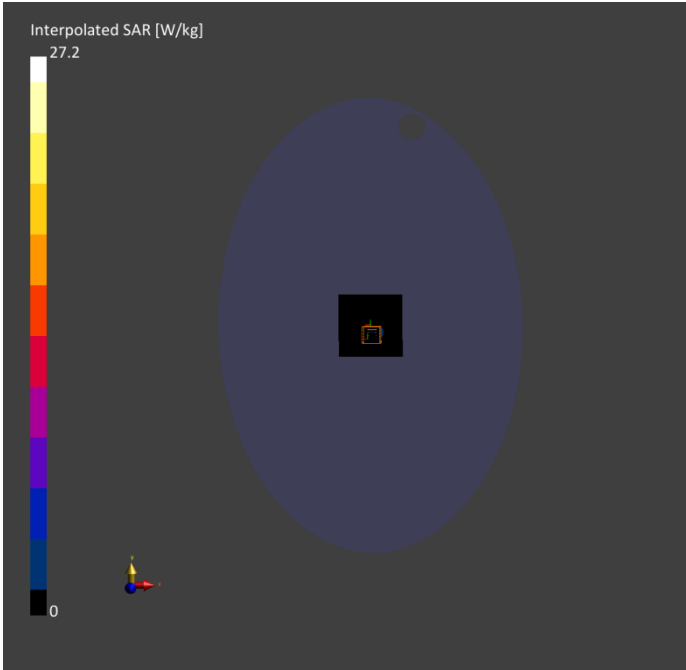
Exposure Conditions

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--	5250.0, 5250	5.44	4.70	35.9	22.5	21.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2024-12-31	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2024-12-31	2024-12-31
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.16	7.68
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.05	2.18
Graded Grid	Yes	Yes	Power Drift [dB]	0.02	-0.02
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		64.9
					7.5



27. System Check Head Liquid 5250MHz

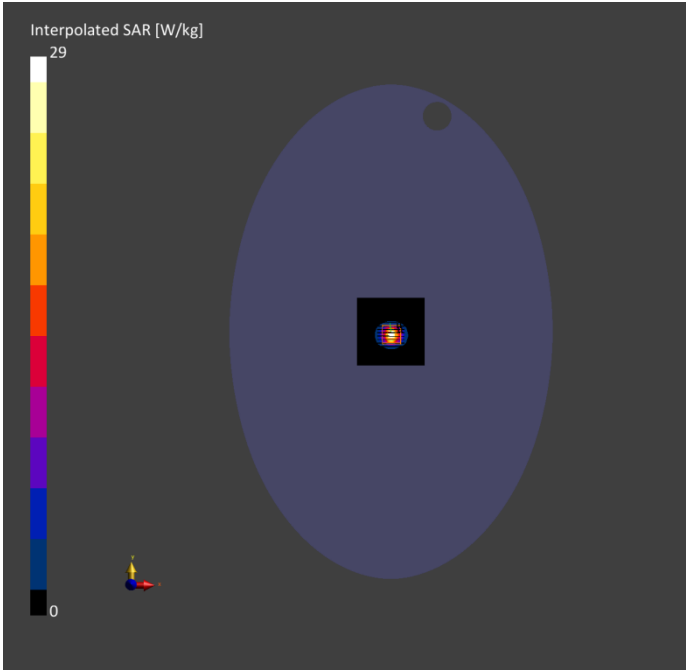
Exposure Conditions

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--	5250.0, 5250	5.44	4.73	35.9	22.6	21.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2162	HBBL-600-10000 2025-01-01	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2025-01-01	2025-01-01
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.79	7.81
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.32	2.26
Graded Grid	Yes	Yes	Power Drift [dB]	-0.04	0.02
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		54.7
					7.2



28. System Check Head Liquid 5250MHz

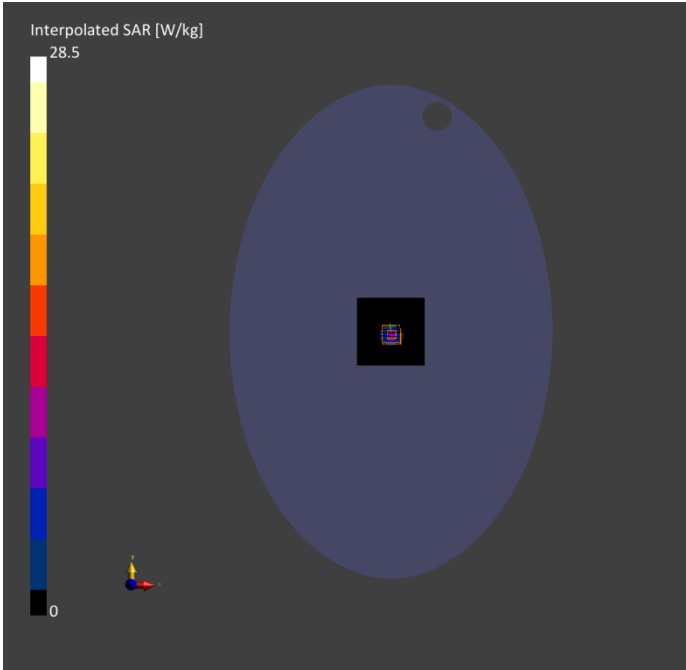
Exposure Conditions

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--	5250.0, 5250	5.44	4.67	35.7	22.1	21.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2024-01-03	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

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	2024-01-03	2024-01-03
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.61	7.75
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.13	2.21
Graded Grid	Yes	Yes	Power Drift [dB]	-0.14	0.06
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		58.7
					7.3



29. System Check Head Liquid 5600MHz

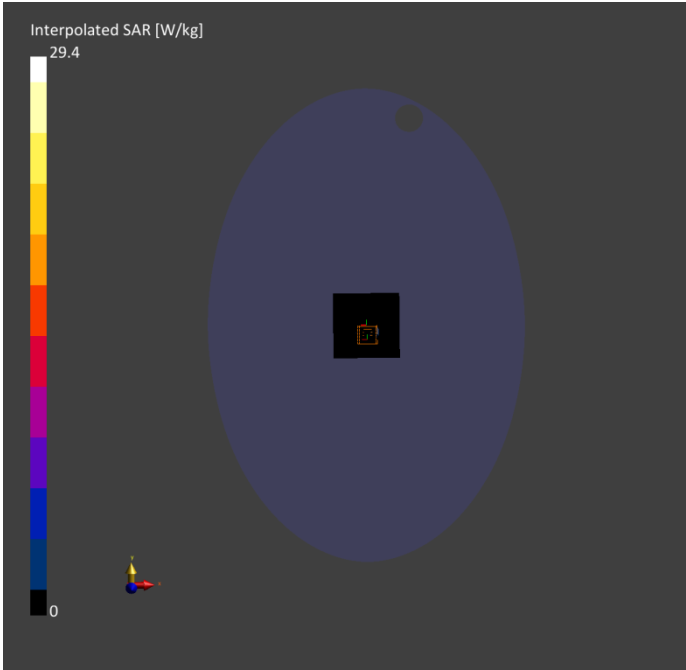
Exposure Conditions

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--	5600.0, 5600	4.91	5.11	35.3	22.5	21.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-12-23	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2025-12-23	2025-12-23
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.42	7.71
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.17	2.35
Graded Grid	Yes	Yes	Power Drift [dB]	-0.03	0.03
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		63.5
					7.4



30. System Check Head Liquid 5600MHz

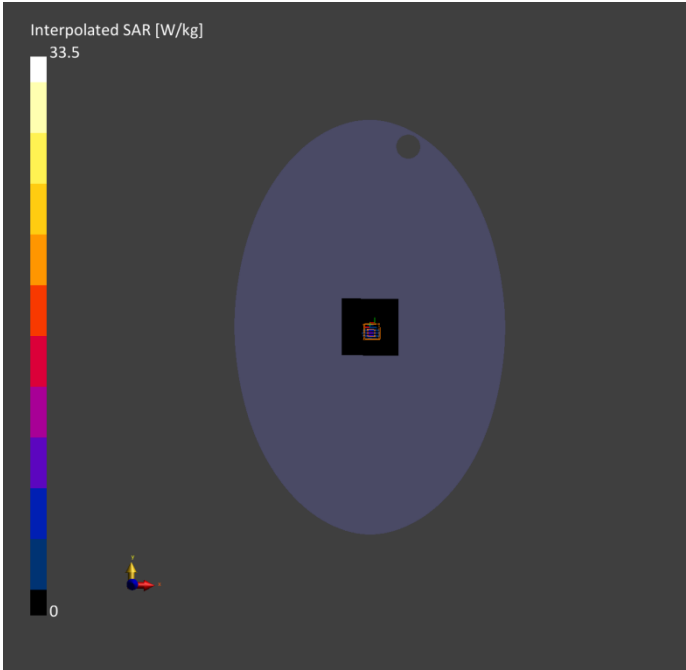
Exposure Conditions

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--	5600.0, 5600	5.00	5.11	35.2	22.6	21.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-02	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1711, 2024-03-18

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	2025-01-02	2025-01-02
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.61	7.82
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.33	2.40
Graded Grid	Yes	Yes	Power Drift [dB]	-0.04	0.01
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		62.7
					7.1



31. System Check Head Liquid 5600MHz

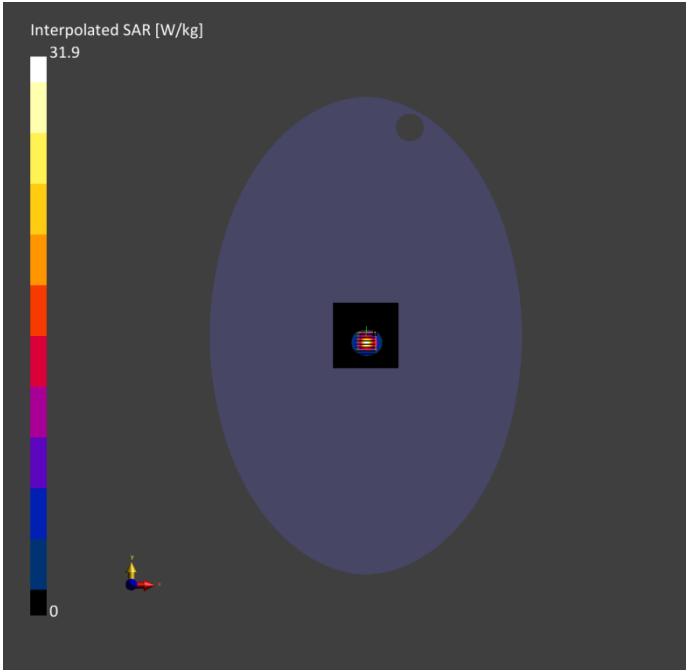
Exposure Conditions

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--	5600.0, 5600	4.91	5.08	35.3	22.3	21.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-07	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

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	2025-01-07	2025-01-07
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.25	7.93
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.18	2.45
Graded Grid	Yes	Yes	Power Drift [dB]	-0.06	0.03
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		63.4
					7.2



32. System Check Head Liquid 5750MHz

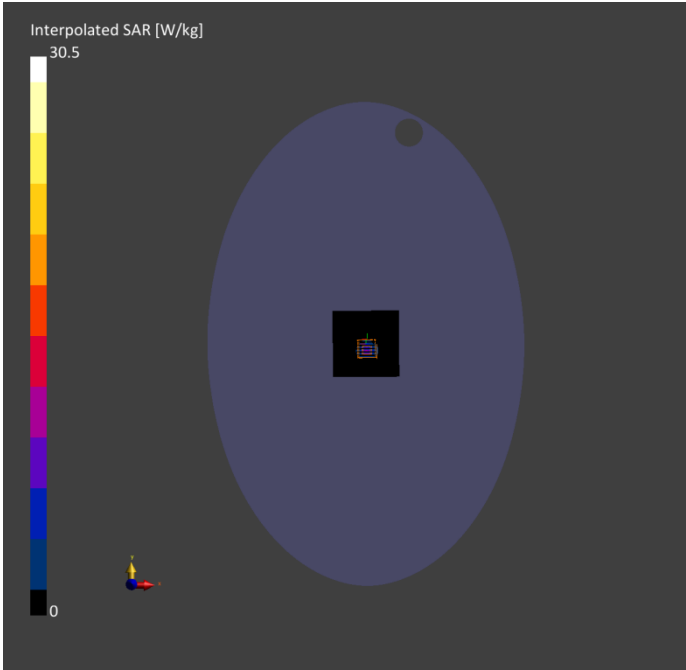
Exposure Conditions

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	4.98	5.27	35.1	22.3	21.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2025-01-07	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

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	2025-01-07	2025-01-07
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	6.88	7.92
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.04	2.23
Graded Grid	Yes	Yes	Power Drift [dB]	-0.01	0.01
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		61.4
					7.9



33. System Check Head Liquid 5750MHz

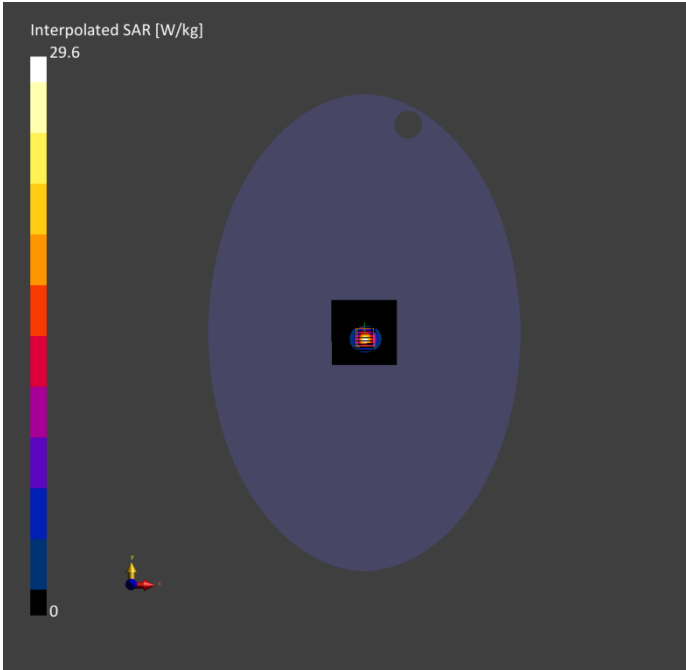
Exposure Conditions

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	4.98	5.25	34.9	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 2025-01-08	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1711, 2024-03-18

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	2025-01-08	2025-01-08
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.52	7.45
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.02	2.16
Graded Grid	Yes	Yes	Power Drift [dB]	-0.11	0.02
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]		
Scan Method	Measured	Measured	TSL Correction M2/M1 [%]	No correction	No correction
			Dist 3dB Peak [mm]		61.1
					7.5



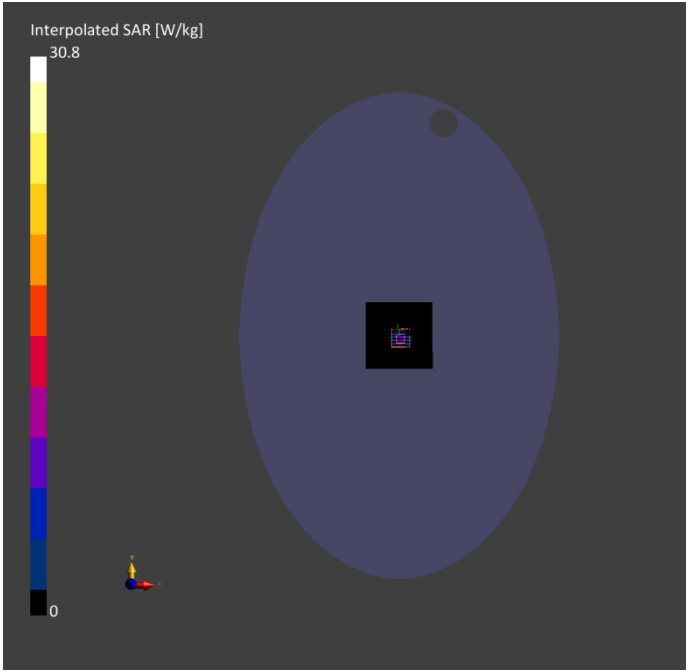
34. System Check Head Liquid 5750MHz

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	4.98	5.24	34.8	22.3	21.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2159	HBBL-600-10000 2024-12-24	EX3DV4 - SN7893, 2024-09-05	DAE4 Sn1710, 2024-01-03

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	2024-12-24	2024-12-24
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4	psSAR1g [W/kg]	7.52	7.38
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	2.02	2.12
Graded Grid	Yes	Yes	Power Drift [dB]	-0.11	0.02
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor		
Surface Detection	All points	All points	TSL Correction [dB]	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		61.5
			Dist 3dB Peak [mm]		7.6



Annex D. TSL Dielectric Parameters

D.1 Head DTS 2450MHz

Freq.(MHz)	Target		Measured 2024-12.25	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'(F/m)$	$\sigma1(S/m)$
2400	39.29	1.76	40.755	1.797
2450	39.20	1.80	40.653	1.811
2500	39.14	1.86	40.511	1.874

Freq.(MHz)	Target		Measured 2024-12-30	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'(F/m)$	$\sigma1(S/m)$
2400	39.29	1.76	40.805	1.764
2450	39.20	1.80	40.715	1.801
2500	39.14	1.86	40.624	1.826

Freq.(MHz)	Target		Measured 2024-12-31	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'(F/m)$	$\sigma1(S/m)$
2400	39.29	1.76	40.733	1.836
2450	39.20	1.80	40.640	1.876
2500	39.14	1.86	40.547	1.903

D.2 Head 5200MHz-5900MHz

Freq.(MHz)	Target		Measured 2024-12-31	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'1(F/m)$	$\sigma1(S/m)$
5200	35.99	4.66	35.969	4.625
5250	35.93	4.71	35.865	4.699
5300	35.87	4.76	35.821	4.756
5350	35.81	4.81	35.753	4.805

Freq.(MHz)	Target		Measured 2025-1-1	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'1(F/m)$	$\sigma1(S/m)$
5200	35.99	4.66	36.019	4.650
5250	35.93	4.71	35.915	4.725
5300	35.87	4.76	35.871	4.803
5350	35.81	4.81	35.803	4.834

Freq.(MHz)	Target		Measured 2025-1-3	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'1(F/m)$	$\sigma1(S/m)$
5200	35.99	4.66	35.806	4.612
5250	35.93	4.71	35.681	4.671
5300	35.87	4.76	35.644	4.745
5350	35.81	4.81	35.586	4.800

Freq.(MHz)	Target		Measured 2024-12-23	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'1(F/m)$	$\sigma1(S/m)$
5500	35.64	4.96	35.527	4.994
5550	35.59	5.01	35.393	5.028
5600	35.53	5.07	35.292	5.114
5650	35.47	5.12	35.207	5.168
5700	35.41	5.17	35.050	5.237

Freq.(MHz)	Target		Measured 2025-1-2	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'1(F/m)$	$\sigma1(S/m)$
5500	35.64	4.96	35.474	4.974
5550	35.59	5.01	35.246	5.019
5600	35.53	5.07	35.171	5.113
5650	35.47	5.12	34.256	5.199
5700	35.41	5.17	34.899	5.223

Freq.(MHz)	Target		Measured 2025-1-7	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'1(F/m)$	$\sigma1(S/m)$
5500	35.64	4.96	35.600	4.961
5550	35.59	5.01	35.494	5.012
5600	35.53	5.07	35.301	5.081
5650	35.47	5.12	35.202	5.144
5700	35.41	5.17	35.102	5.198

Freq.(MHz)	Target		Measured 2024-12-24	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'(F/m)$	$\sigma1(S/m)$
5700	35.41	5.17	34.814	5.170
5750	35.36	5.22	34.789	5.238
5800	35.30	5.27	34.709	5.310
5850	35.24	5.32	34.590	5.370
5900	35.18	5.37	34.532	5.404

Freq.(MHz)	Target		Measured 2025-1-7	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'(F/m)$	$\sigma1(S/m)$
5700	35.41	5.17	35.102	5.198
5750	35.36	5.22	35.059	5.265
5800	35.30	5.27	34.965	5.335
5850	35.24	5.32	34.858	5.396
5900	35.18	5.37	34.826	5.433

Freq.(MHz)	Target		Measured 2025-1-8	
	$\epsilon'(F/m)$	$\sigma(S/m)$	$\epsilon'(F/m)$	$\sigma1(S/m)$
5700	35.41	5.17	34.958	5.184
5750	35.36	5.22	34.924	5.252
5800	35.30	5.27	34.837	5.323
5850	35.24	5.32	34.724	5.383
5900	35.18	5.37	34.679	5.419