RF Exposure report

The following samples were submitted and identified on behalf of the client as:

Product Name	WLAN and BT, 2x2 PCIe M.2 1216 SD adapter card
Brand Name	Intel® Wi-Fi 6E AX211
Model No.	AX211D2W
Applicant	ASUSTeK COMPUTER INC.
	1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013
FCC ID	MSQAX211D2
Date of EUT Receipt	Dec. 02, 2022
Date of Test(s)	Dec. 18, 2022 ~ Dec. 19, 2022
Date of Issue	Jan. 05, 2023

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

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan Ltd. Central RF Lab or testing done by SGS Taiwan Ltd. Central RF Lab in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Ltd. Central RF Lab in writing.

Signed on behalf of SGS

Clerk / Kimmy Chiou	PM / Kiki Lin	Approved By / John Yeh
Kimmy Chiou	Kiki Lin	John Yeh

Date: Jan. 05, 2023

Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2212000562E5	Rev.00	Add series models and 5.9 GHz	Jan. 05, 2023	Kimmy Chiou	

Note:

1. The mark " * " is the revised version of the report due to comments submitted by the certification.
2. Added Model No.: UX8402V, RX8402V, BX8402V
3. Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received and are assessed as identical in hardware and firmware to each other, therefore, no further assessment required for the variant(s).
4. According to manufacture provide information and SAR technical judgement, the full function and complex model is UX8402Z, could be as representative mode and perform full test, no necessary to perform spot check test for added models(s).
5. Except for the data of 5.9 GHz addressed in this report, all the other data can refer to the original test report (Report No.: ES/2021/C0040).

Contents

1 GENERAL INFORMATION

1.1 Test Methodology

The SAR testing method and procedure for this device is in accordance with the following standards:
IEEE/ANSI C95.1-1992
IEEE 1528-2013
IEC/IEEE 62209-1528:2020
SPEAG DASY6 System Handbook
SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)
IEC TR 63170:2018
IEC 62479:2010
FCC KDB 865664 D01 v01r04
FCC KDB 865664 D02 v01r02
FCC KDB 447498 D01 v06
FCC KDB 616217 D04 v01r02
FCC KDB 248227 D01 v02r02

1.2 Description of EUT

Product Name	WLAN and BT, 2x2 PCIe M.2 1216 SD adapter card	
Brand Name	Intel® Wi-Fi 6E AX211	
Model No.	AX211D2W	
FCC ID	MSQAX211D2	
Host Information	Product Type: Zenbook Trade Name: ASUS Model Name: UX8402Z, RX8402Z, BX8402Z, UX8402V, RX8402V, BX8402V All models are electrically identical, different model names are for marketing purpose.	
Mode	LAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE	
Duty Cycle	WLAN802.11	Please refer to section 7
	Bluetooth	Please refer to section 7
Supported radios (TX Frequency Range, MHz)	802.11 b/g/n/ax	2.4GHz (2400.0 – 2483.5 MHz)
	802.11a/n/ac/ax	5.2GHz (5150.0 – 5250.0 MHz) 5.3GHz (5250.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) 5.9GHz (5850.0 – 5895.0 MHz)
	Bluetooth	2.4GHz (2400.0 – 2483.5 MHz)
	802.11ax	6.0GHz (5925.0 – 7125.0 MHz)

1.3 Maximum value

AWAN

Summary of Maximum SAR and Power Density Value			
Mode	Highest SAR1g Body (W/kg)	Highest APD (mW/cm^2)	Highest PD (mW/cm^2)
2.4G WLAN	1.15	N/A	N/A
5.2G WLAN	1.16	N/A	N/A
5.3G WLAN	1.11	N/A	N/A
5.6G WLAN	1.16	N/A	N/A
5.8G WLAN	1.15	N/A	N/A
5.9G WLAN	1.00	N/A	N/A
6G WLAN	1.01	0.71	0.98
Bluetooth(GFSK)	0.21	N/A	N/A

Pulse

Summary of Maximum SAR and Power Density Value			
Mode	Highest SAR1g Body (W/kg)	Highest APD (mW/cm^2)	Highest PD (mW/cm^2)
2.4G WLAN	1.17	N/A	N/A
5.2G WLAN	1.18	N/A	N/A
5.3G WLAN	1.11	N/A	N/A
5.6G WLAN	1.17	N/A	N/A
5.8G WLAN	1.14	N/A	N/A
5.9G WLAN	1.07	N/A	N/A
6G WLAN	1.10	0.72	0.97
Bluetooth(GFSK)	0.26	N/A	N/A

2 MEASUREMENT SYSTEM

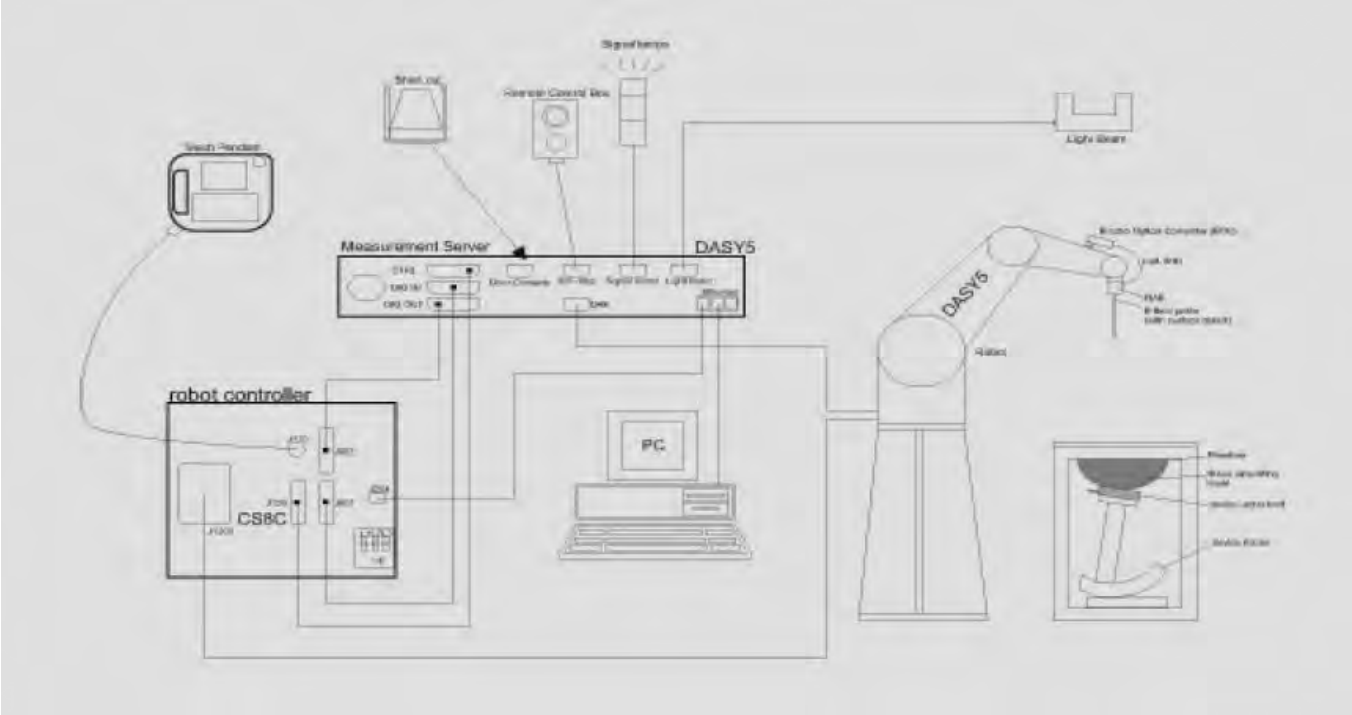
2.1 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	1F, No. 8, Alley 15, Lane 120, Sec. 1, NeiHu Road, Neihu District, Taipei City, 11493, Taiwan.	SAR 2	TW0029	TW3702
		SAR 6		
	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 33383, Taiwan	SAR 1	TW0028	
		SAR 4		
	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan	SAR 3	TW0027	
		SAR 7		
Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.				

2.2 SAR System

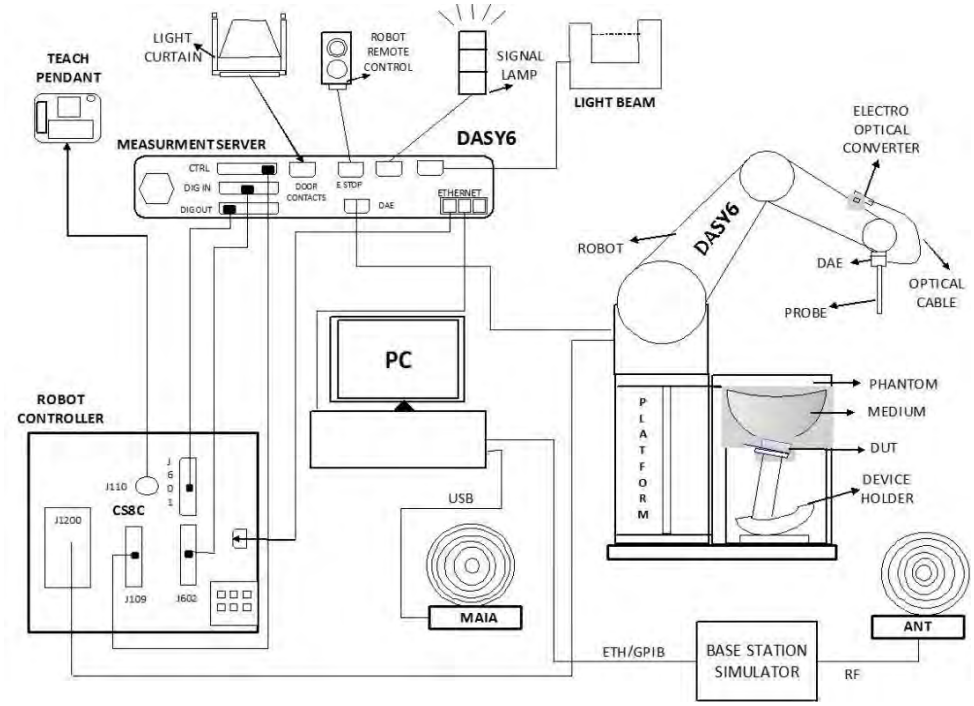
Block Diagram (DASY5)

A block diagram of the SAR measurement System is given in below. This SAR measurement system uses a computer-controlled 3-D stepper motor system (SPEAG DASY 5 professional system). The model EX3DV4 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ ($|Ei|^2$)/ ρ where σ and ρ are the conductivity and mass density of the tissue-simulant.



Block Diagram (DASY6)

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Windows 10 and the DASY6 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.

EX3DV4 E-Field Probe

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 2450/5200/5300/5600/5750/5800/6500/7000 MHz Additional CF for other liquids and frequencies upon request	
Frequency	10 MHz to > 6 GHz	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Tip diameter: 2.5 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

PHANTOM (ELI)

Model	ELI	
Construction	The ELI phantom is used 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.	
Shell Thickness	2 ± 0.2 mm	
Filling Volume	Approx. 30 liters	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	

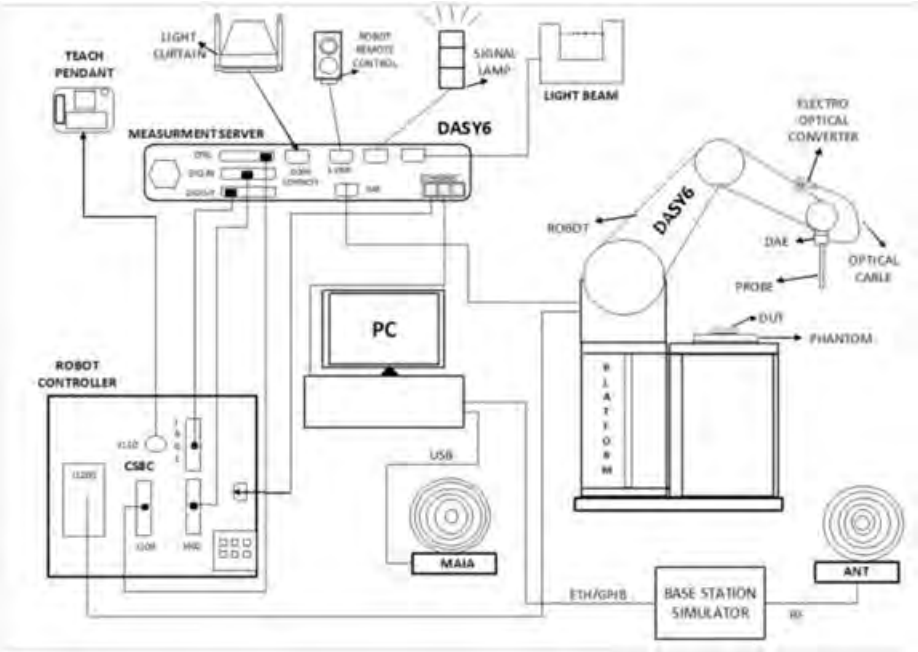
DEVICE HOLDER (ELI)

Construction	The device holder (Supporter) for Notebook is made by POM (polyoxymethylene resin) , which is non-metal and non-conductive. The height can be adjusted to fit varies kind of notebooks.	 Device Holder

2.3 PD system

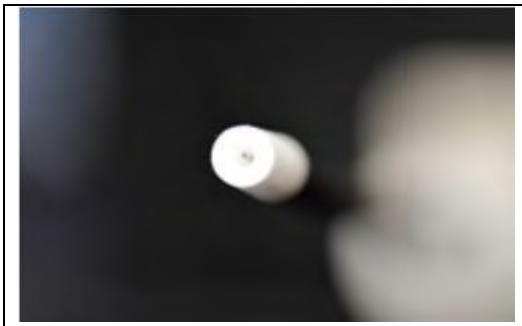
Block Diagram (DASY6)

Power density measurements for mmWave frequencies were performed using SPEAG DASY6 with cDASY6 5G module. The DASY6 included a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the 5G phantom cover.

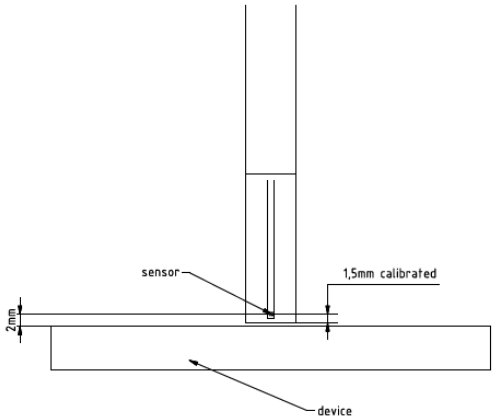


EUmmWVx probe

The EUmmWVx probe is based on the pseudo-vector probe design, which not only measures the field magnitude but also derives its polarization ellipse. The design entails two small 0.8mm dipole sensors mechanically protected by high-density foam, printed on both sides of a 0.9mm wide and 0.12mm thick glass substrate. The body of the probe is specifically constructed to minimize distortion by the scattered fields. The probe consist of two sensors with different angles (1 and 2) arranged in the same plane in the probe axis. Three or more measurements of the two sensors are taken for different probe rotational angles to derive the amplitude and polarization information. The probe design allows measurements at distances as small as 2mm from the sensors to the surface of the device under test (DUT). The typical sensor to probe tip distance is 1.5 mm. The exact distance is calibrated.

	Two dipoles optimally arranged to obtain pseudo-vector information.Minimum 3 measurements/ point, 120º rotated around probe axis. Sensors (0.8mm length) printed on glass substrate protected by high density foam.Low perturbation of the measured field. Requires positioner which can do accurate probe rotation.

Frequency Range	750 MHz – 110 GHz
Dynamic Range	< 20 V/m – 10,000 V/m with PRE-10 (min < 50 V/m - 3000 V/m)
Position Precision	< 0.2 mm (DASY6)
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: encapsulation 8 mm (internal sensor < 1mm) Distance from probe tip to dipole centers: < 2 mm. Sensor displacement to probe's calibration point: < 0.3 mm
Applications	E-field measurements of 5G devices and other mm-wave transmitters operating above 10GHz in < 2 mm distance from device (free-space).Power density, H-field and far-field analysis using total field reconstruction (cDASY6 5G module required)
Compatibility	cDASY6 + 5G-Module SW1.0 and higher



mmWave Phantom

The mmWave Phantom approximates free-space conditions, allowing for the evaluation of the antenna side of the device and the front (screen) side or any opposite-radiating side of wireless devices operating above 10 GHz without distorting the RF field. It consists of a 40mm thick Rohacell plate used as a test bed, which has a loss tangent (tan δ) $\leq$ 0.05 and a relative permittivity (ɛr) $\leq$ 1.2. High-performance RF absorbers are placed below the foam.

3 SAR SYSTEM VERIFICATION

3.1 Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with homogeneous tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm.

3.2 Tissue Simulant Liquid measurement

The dielectric properties for this Head-simulant fluid were measured by using the SPEAG Dielectric Assessment Kit (DAKS-3.5)
All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The measured conductivity and permittivity are all within ± 5% of the target values.

3.3 Measurement results of Tissue Simulant Liquid

Report No.: ES/2021/C0040

Tissue Type	Measurement Date	Measured Frequency (MHz)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ	Ambient temprature	liquid tempature	Use Equipment
Head	Dec. 26, 2021	2412	39.268	1.766	39.052	1.750	-0.55%	-0.92%	22.4	22.7	SAR 3 DAE : 877 Probe : 7686
		2437	39.223	1.788	39.017	1.776	-0.53%	-0.70%			
		2450	39.200	1.800	38.984	1.784	-0.55%	-0.89%			
		2457	39.188	1.806	38.976	1.792	-0.54%	-0.79%			
		2462	39.185	1.813	38.969	1.797	-0.55%	-0.89%			
		2480	39.162	1.833	38.962	1.817	-0.51%	-0.86%			
	Dec. 27, 2021	5200	36.000	4.660	35.622	4.623	-1.05%	-0.79%	22.3	22.6	
		5250	35.929	4.706	35.578	4.673	-0.98%	-0.71%			
		5290	35.883	4.747	35.547	4.711	-0.94%	-0.76%	22.3	22.9	
		5300	35.871	4.758	35.527	4.723	-0.96%	-0.73%			
	Dec. 28, 2021	5530	35.609	4.993	35.255	4.959	-0.99%	-0.69%	22.4	22.5	
		5570	35.563	5.034	35.177	4.999	-1.09%	-0.70%			
		5600	35.500	5.070	35.152	5.029	-0.98%	-0.81%			
		5690	35.426	5.157	35.038	5.108	-1.09%	-0.95%			
		5775	35.329	5.244	34.972	5.196	-1.01%	-0.92%	22.4	22.4	
		5800	35.300	5.270	34.947	5.225	-1.00%	-0.85%			
	Mar. 16, 2022	6025	35.070	5.510	34.688	5.459	-1.09%	-0.92%	22.3	22.7	
		6185	34.878	5.705	34.522	5.652	-1.02%	-0.92%			
		6345	34.686	5.890	34.349	5.839	-0.97%	-0.87%			
		6500	34.500	6.070	34.155	6.021	-1.00%	-0.81%			
		6505	34.494	6.076	34.141	6.022	-1.02%	-0.89%			
		6665	34.302	6.261	33.941	6.213	-1.05%	-0.77%			
	Dec. 29, 2021	6500	34.500	6.070	34.158	6.020	-0.99%	-0.82%	22.6	22.6	
		6665	34.302	6.261	33.945	6.211	-1.04%	-0.80%			
		6985	33.918	6.633	33.575	6.581	-1.01%	-0.78%			
		7000	33.900	6.650	33.547	6.600	-1.04%	-0.75%			

Report No.: TESA2212000562ES

Measured Frequency (MHz)	Liquid Temp. (°C)	Target Dielectric Constant, εr	Target Conductivity, σ (S/m)	Measured Dielectric Constant, εr	Measured Conductivity, σ (S/m)	% dev εr	% dev σ	Limit	Measurement Date
5750	22.1	35.350	5.220	35.441	5.287	0.26%	1.28%	± 5%	Dec. 19, 2022
5815	22.1	35.283	5.285	35.249	5.342	-0.10%	1.07%	± 5%	Dec. 19, 2022

3.4 The composition of the tissue simulating liquid:

Simulating Liquids for 600 MHz -10 GHz, Manufactured by SPEAG:

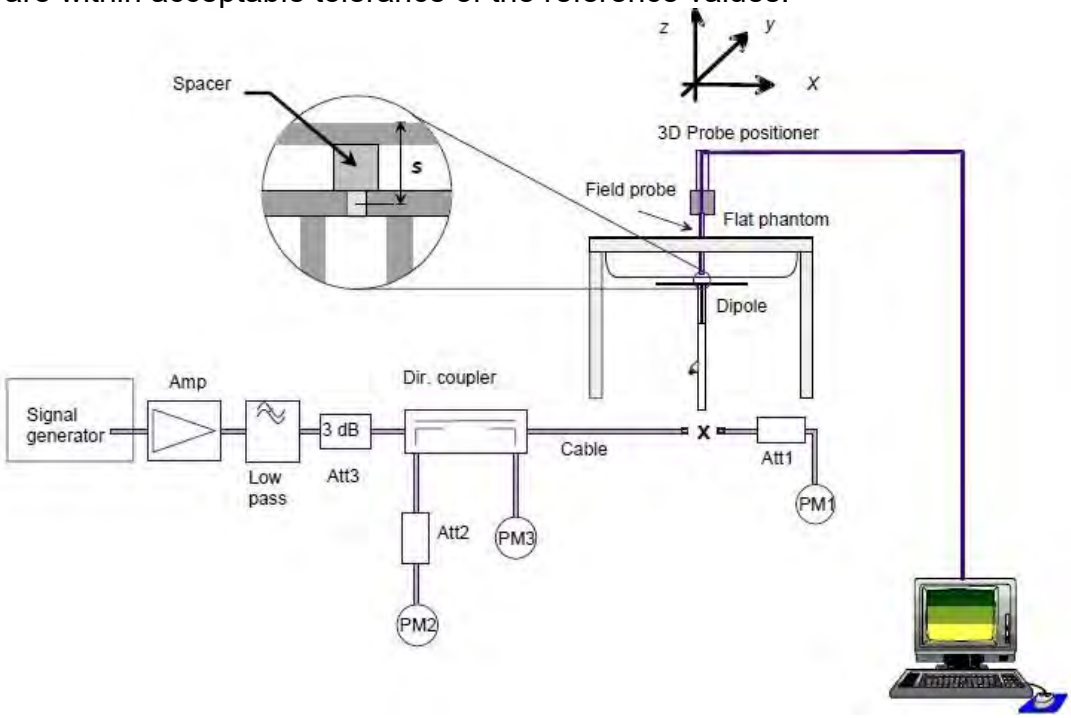
Broad-band head tissue simulating liquids	SPEAG Product	Frequency range (MHz)	Main Ingredients
	HBBL600-10000V6	600 - 10000	Water, Oil

3.5 System check

The microwave circuit arrangement for system check is sketched in below. The daily system accuracy verification occurs within the flat section of the SAM phantom and ELI phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values.

The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed with SAR values normalized to 1W forward power delivered to the dipole.

During the tests, the liquid depth from the center of the flat phantom to the liquid top surface was 15 cm above in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



The block diagram of system check

3.6 System check results

Report No.: ES/2021/C0040

Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	pin=250mW Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date
D2450V2	727	2450	Head	53.9	13.50	54	0.19%	Dec. 26, 2021
Validation Kit	S/N	Frequency (MHz)		1W Target SAR-1g (mW/g)	Pin=100mW Measured SAR-1g (mW/g)	Measured SAR-1g normalized to 1W (mW/g)	Deviation (%)	Measured Date
D5GHzV2	1023	5200	Head	77.9	7.76	77.6	-0.39%	Dec. 27, 2021
		5300	Head	80.4	7.92	79.2	-1.49%	Dec. 27, 2021
		5600	Head	83.9	8.08	80.8	-3.69%	Dec. 28, 2021
		5800	Head	80.9	8.06	80.6	-0.37%	Dec. 28, 2021
D6.5GHzV2	1006	6500	Head	291	29.40	294	1.03%	Dec. 29, 2021
D6.5GHzV2	1006	6500	Head	291	31.30	313	7.56%	Mar. 16, 2022
D7GHzV2	1007	7000	Head	275	28.40	284	3.27%	Dec. 29, 2021

Report No.: TESA2212000562ES

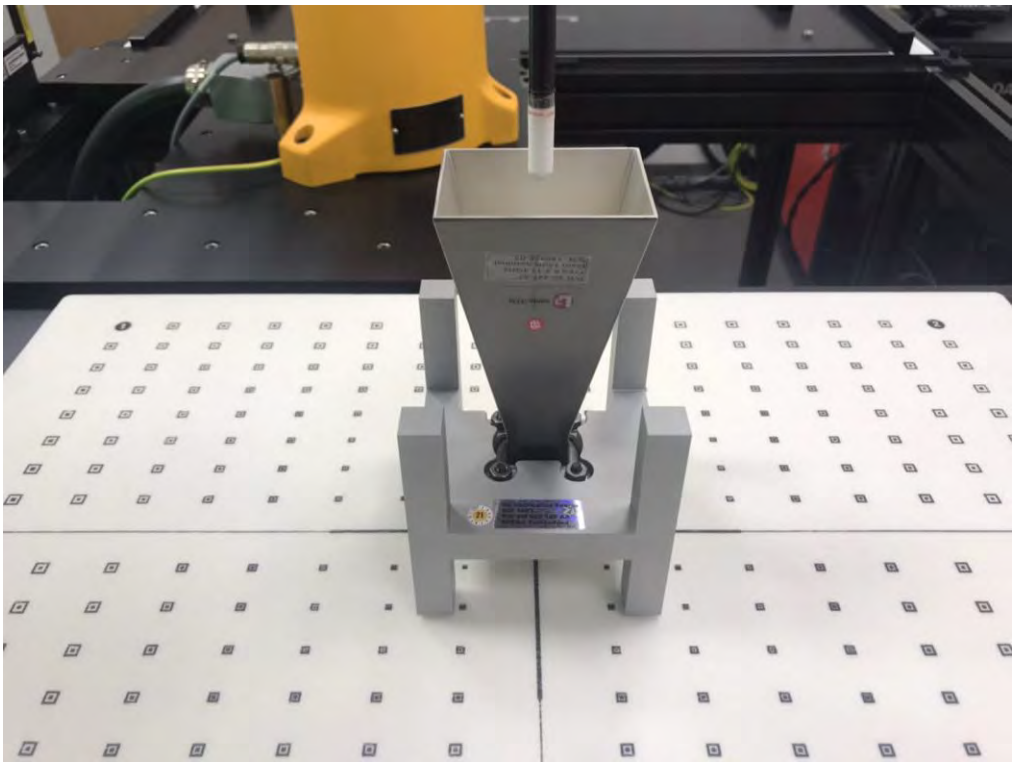
Validation Kit	S/N	Frequency (MHz)	1W Target 1g-SAR (W/kg)	pin=100mW Measured 1g-SAR (W/kg)	Normalized to 1W 1g-SAR (W/kg)	Deviation (%)	Limit	Measurement Date
D5GHzV2	1023	5750	81	8.04	80.4	-0.74	± 10%	Dec.19,2022

4 PD SYSTEM VERIFICATION

4.1 System check

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check.

The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.



System Verification Setup Photo

4.2 System check result

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check. The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

PD Verification Source	Probe S/N	DAE S/N	Distance (mm)	Prad (mW)	Measured 4cm^2 (W/m^2)	Target 4cm^2 (W/m^2)	Deviation (dB)	Date
10G	9399	877	10	74	43.7	42.3	0.14	Dec. 30, 2021
10G	9399	877	10	86.1	51.4	51.7	-0.03	Mar. 16, 2022

5 TEST CONFIGURATIONS

5.1 Test Environment

Ambient Temperature: 22±2° C
Tissue Simulating Liquid: 22±2° C

5.2 Test Note

- **General:** Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s).
- **General:** The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.
- **General:** During the SAR testing, the DASY system checks power drift by comparing the e-field strength of one specific location measured at the beginning with that measured at the end of the SAR testing.
- **General:** According to KDB447498D01v06, testing of other required channels is not required when the reported 1-g SAR for the highest output channel is ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz.
- **General:** According to KDB865664D01v01r04, SAR measurement variability must be assessed for each frequency band. When the original highest measured SAR is ≥ 0.8 W/kg, repeated that measurement once. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
- **WLAN 2.4GHz:** 802.11b DSSS SAR Test Requirements: SAR is measured for 2.4 GHz 802.11b DSSS mode using the highest measured maximum output power channel, 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; i.e., all channels require testing.
- **WLAN 2.4GHz:** 802.11g/n OFDM SAR Test Exclusion Requirements: SAR is not required for 802.11g/n since 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.
- **WLAN 5GHz:** Initial Test Configuration: An initial test configuration is determined for OFDM 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. 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 the reported SAR is ≤ 1.2 W/kg or all required channels are tested. Since the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration

specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for subsequent test configuration.

- **WLAN 5GHz:** Based on FCC guidance, general principles of KDB248227D01 can be applied to 802.11ax to determine initial test configuration with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency band.
- **WLAN 6GHz:** Per October 2020 & April 2021 TCB Workshop Interim procedures and FCC guidance, start instead with a minimum of 5 test channels across the full band, then adapt and apply conducted power and SAR test reduction procedures of KDB Pub. 248227 v02r02. WIFI 6E SAR is measured by using 6-7GHz parameters per IEC/IEEE62209- 1528:2020 and report also estimated absorbed PD (for reference purposes only, not specifically for compliance). For the highest SAR test configurations also measure incident PD (total) using mmW near-field probe and total-field/power-density reconstruction method.
- **WLAN 6GHz:** Per equipment manufacturer guidance, power density was measured at d=2mm with the grid step (0.0625λ) for determining compliance at d=2mm.
- **WLAN 6GHz:** According to October 2020 TCB Workshop Interim procedures, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of 2.67 dB (85%) was used to determine the psPD measurement scaling factor.
- **WLAN 6GHz:** Per FCC guidance, for simultaneous transmission evaluation, using SAR sum and SPLSR for simultaneous transmit exclusion analyses and evaluations.

5.3 Test position

Laptop mode SAR test position (0mm)

For laptop PC, according to KDB 616217 D04, SAR evaluation is required for the bottom surface of the keyboard. This EUT was tested in the base of EUT directly against the flat phantom. The required minimum test separation distance for incorporating transmitters and antennas into laptop computer display is determined with the display screen opened at an angle of 90° to the keyboard compartment.

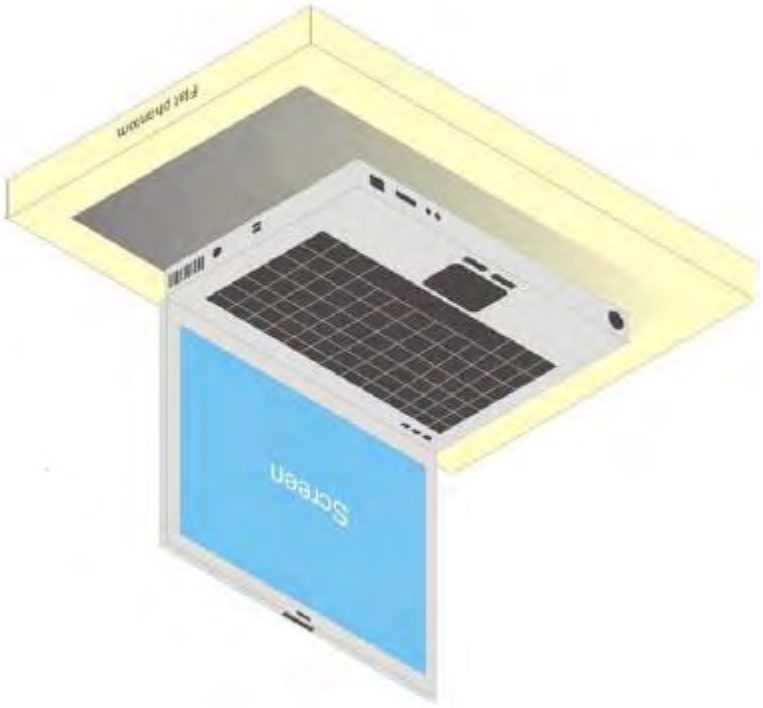


Illustration for Laptop Setup

Tablet mode SAR test position (0mm)

For full-size tablet, according to KDB 616217 D04, SAR evaluation is required for back surface and edges of the devices. The back surface and edges of the tablet are tested with the tablet touching the phantom. Exposures from antennas through the front surface of the display section of a tablet are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary. When voice mode is supported on a tablet and it is limited to speaker mode or headset operations only, additional SAR testing for this type of voice use is not required.

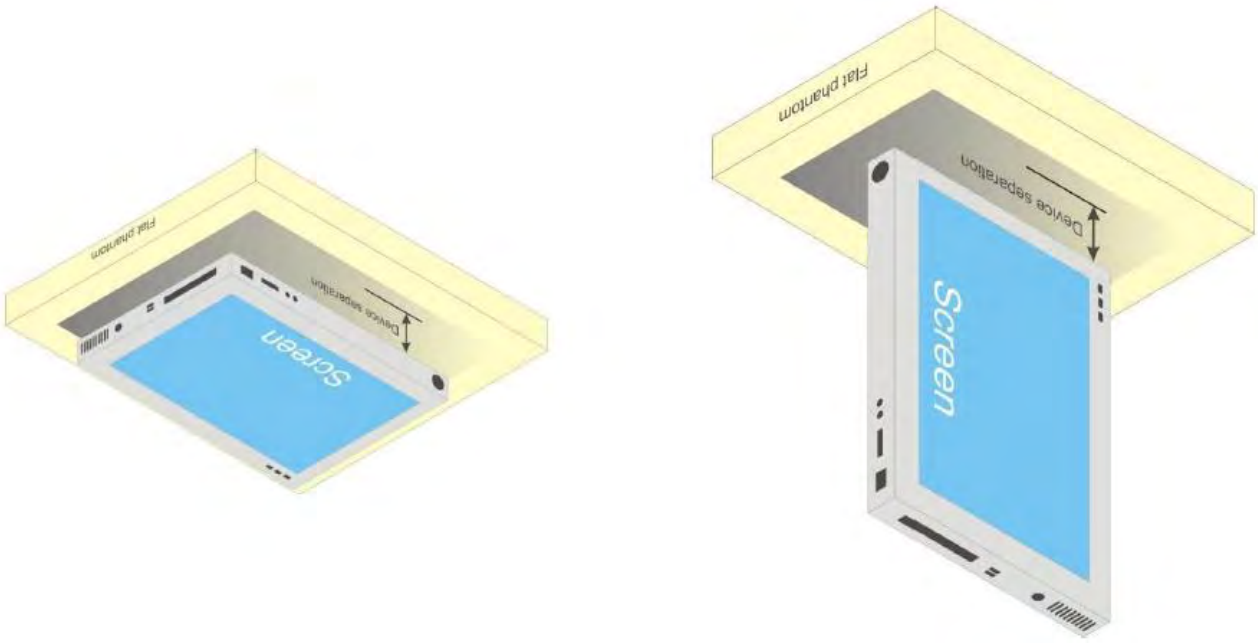


Illustration for Tablet Setup

5.4 Test limit

§ 2.1093(d)(1)
Applications for equipment authorization of portable RF sources subject to routine environmental evaluation must contain a statement confirming compliance with the limits specified in § 1.1310 as part of their application. Technical information showing the basis for this statement must be submitted to the Commission upon request. The SAR limits specified in § 1.1310(a) through (c) of this chapter shall be used for evaluation of portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz shall be evaluated in terms of the MPE limits specified in Table 1 to § 1.1310(e)(1). A minimum separation distance applicable to the operating configurations and exposure conditions of the device shall be used for the evaluation. In general, maximum time-averaged power levels must be used for evaluation. All unlicensed personal communications service (PCS) devices and unlicensed NII devices shall be subject to the limits for general population/uncontrolled exposure.
Radiofrequency radiation exposure limits.
§ 1.1310(a)
Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b) within the frequency range of 100 kHz to 6 GHz (inclusive).
§ 1.1310(b)
The SAR limits for occupational/controlled exposure are 0.4 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 8 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit for occupational/controlled exposure is 20 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 6 minutes to determine compliance with occupational/controlled SAR limits.
§ 1.1310(c)
The SAR limits for general population/uncontrolled exposure are 0.08 W/kg, as averaged over the whole body, and a peak spatial-average SAR of 1.6 W/kg, averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the parts of the human body treated as extremities, such as hands, wrists, feet, ankles, and pinnae, where the peak spatial-average SAR limit is 4 W/kg, averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). Exposure may be averaged over a time period not to exceed 30 minutes to determine compliance with general population/uncontrolled SAR limits.

Note to paragraphs (a) through (c):
SAR is a measure of the rate of energy absorption due to exposure to RF electromagnetic energy. These SAR limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized SAR in Section 4.2 of “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” ANSI/IEEE Std C95.1-1992, copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in “Biological Effects and Exposure Criteria for Radiofrequency

Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5, copyright 1986 by NCRP, Bethesda, Maryland 20814. Limits for whole body SAR and peak spatial-average SAR are based on recommendations made in both of these documents. The MPE limits in Table 1 are based generally on criteria published by the NCRP in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3, copyright 1986 by NCRP, Bethesda, Maryland 20814. In the frequency range from 100 MHz to 1500 MHz, these MPE exposure limits for field strength and power density are also generally based on criteria recommended by the ANSI in Section 4.1 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE Std C95.1-1992, copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017.

Portable devices that transmit at frequencies above 6 GHz shall be evaluated in terms of the MPE limits specified in Table 1 to § 1.1310(e)(1).
According to ANSI/IEEE C95.1-1992, the criteria listed in the following Table shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.
Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm2 per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*($180/f^2$)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.
Table 1 to § 1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

6 MAXIMUM OUTPUT POWER

6.1 WLAN

AWAN

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45 GHz	802.11b	1	2412	1Mbps	18.000	17.96
		6	2437		18.000	17.98
		11	2462		18.000	17.99
		12	2467		18.000	17.89
		13	2472		15.750	15.71
	802.11g	1	2412	6Mbps	18.000	NR*
		6	2437		18.000	
		11	2462		18.000	
		12	2467		15.000	
		13	2472		11.750	
	802.11n20-HT0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		15.000	
		13	2472		11.750	
	802.11ax20-HE0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		15.000	
		13	2472		11.750	
	802.11n40-HT0	3	2422	MCS0	15.500	
		6	2437		17.500	
		9	2452		15.500	
		10	2457		12.250	
		11	2462		9.750	
	802.11ax40-HE0	3	2422	MCS0	15.500	
		6	2437		17.500	
		9	2452		15.500	
		10	2457		12.250	
		11	2462		9.750	

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	13.000	NR*
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n20-HT0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11ax20-HE0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n40-HT0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ax40-HE0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ac80-VHT0	42	5210	MCS0	13.000	
	802.11ax80-HE0	42	5210	MCS0	13.000	
	802.11ac160-VHT0	50	5250	MCS0	13.000	12.98
	802.11ax160-HE0	50	5250	MCS0	13.000	NR*

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	13.500	NR*
		56	5280		13.500	
		60	5300		13.500	
		64	5320		13.500	
	802.11n20-HT0	52	5260	MCS0	13.500	
		56	5280		13.500	
		60	5300		13.500	
		64	5320		13.500	
	802.11ax20-HE0	52	5260	MCS0	13.500	
		56	5280		13.500	
		60	5300		13.500	
		64	5320		13.500	
	802.11n40-HT0	54	5270	MCS0	13.500	
		62	5310		13.500	
	802.11ax40-HE0	54	5270	MCS0	13.500	
		62	5310		13.500	
	802.11ac80-VHT0	58	5290	MCS0	13.500	13.49
	802.11ax80-HE0	58	5290	MCS0	13.500	NR*

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.6 GHz	802.11a	100	5500	6Mbps	14.500	NR*
		120	5600		14.500	
		140	5700		14.500	
	802.11n20-HT0	100	5500	MCS0	14.500	
		120	5600		14.500	
		140	5700		14.500	
		144	5720		14.500	
	802.11ax20-HE0	100	5500	MCS0	14.500	
		120	5600		14.500	
		140	5700		14.500	
		144	5720		14.500	
	802.11n40-HT0	102	5510	MCS0	14.500	
		118	5590		14.500	
		134	5670		14.500	
		142	5710		14.500	
	802.11ax40-HE0	102	5510	MCS0	14.500	
		118	5590		14.500	
		134	5670		14.500	
		142	5710		14.500	
	802.11ac80-VHT0	106	5530	MCS0	14.500	14.44
		122	5610		14.500	14.43
		138	5690		14.500	14.47
	802.11ax80-HE0	106	5530	MCS0	14.500	NR*
		122	5610		14.500	
		138	5690		14.500	
	802.11ac160-VHT0	114	5570	MCS0	14.500	14.50
	802.11ax160-HE0	114	5570	MCS0	14.500	NR*

Main(Chain-B)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.8 GHz	802.11a	149	5745	6Mbps	15.000	NR*
		157	5785		15.000	
		165	5825		15.000	
	802.11n20-HT0	149	5745	MCS0	15.000	
		157	5785		15.000	
		165	5825		15.000	
	802.11ax20-HE0	149	5745	MCS0	15.000	
		157	5785		15.000	
		165	5825		15.000	
	802.11n40-HT0	151	5755	MCS0	15.000	
		159	5795		15.000	
	802.11ax40-HE0	151	5755	MCS0	15.000	
		159	5795		15.000	
	802.11ac80-VHT0	155	5775	MCS0	15.000	14.97
	802.11ax80-HE0	155	5775	MCS0	15.000	NR*

Main(Chain-B)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.9GHz	802.11a	169	5845	6Mbps	13.00	12.87
		173	5865		13.00	12.77
		177	5885		13.00	12.88
	802.11n20-HT0	169	5845	MCS0	13.00	12.83
		173	5865		13.00	12.85
		177	5885		13.00	12.96
	802.11ax20-HE0	169	5845	MCS0	13.00	12.95
		173	5865		13.00	12.85
		177	5885		13.00	12.88
	802.11n40-HT0	167	5835	MCS0	13.00	12.79
		175	5875		13.00	12.94
	802.11ax40-HE0	167	5835	MCS0	13.00	12.94
		175	5875		13.00	12.90
	802.11ac80-VHT0	171	5855	MCS0	13.00	12.93
	802.11ax80-HE0	171	5855	MCS0	13.00	12.96
	802.11ac160-VHT0	163	5815	MCS0	12.50	12.47
	802.11ax160-HE0	163	5815	MCS0	13.00	12.98

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45 GHz	802.11b	1	2412	1Mbps	18.000	17.98
		6	2437		18.000	18.00
		11	2462		18.000	17.92
		12	2467		18.000	17.88
		13	2472		16.750	16.69
	802.11g	1	2412	6Mbps	18.000	NR*
		6	2437		18.000	
		11	2462		18.000	
		12	2467		14.750	
		13	2472		12.000	
	802.11n20-HT0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		14.750	
		13	2472		12.000	
	802.11ax20-HE0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		14.750	
		13	2472		12.000	
	802.11n40-HT0	3	2422	MCS0	15.750	
		6	2437		17.750	
		9	2452		17.000	
		10	2457		12.500	
		11	2462		10.750	
	802.11ax40-HE0	3	2422	MCS0	15.750	
		6	2437		17.750	
		9	2452		17.000	
		10	2457		12.500	
		11	2462		10.750	

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	13.000	NR*
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n20-HT0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11ax20-HE0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n40-HT0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ax40-HE0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ac80-VHT0	42	5210	MCS0	13.000	
	802.11ax80-HE0	42	5210	MCS0	13.000	
	802.11ac160-VHT0	50	5250	MCS0	13.000	12.98
	802.11ax160-HE0	50	5250	MCS0	13.000	NR*

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	13.000	NR*
		56	5280		13.000	
		60	5300		13.000	
		64	5320		13.000	
	802.11n20-HT0	52	5260	MCS0	13.000	
		56	5280		13.000	
		60	5300		13.000	
		64	5320		13.000	
	802.11ax20-HE0	52	5260	MCS0	13.000	
		56	5280		13.000	
		60	5300		13.000	
		64	5320		13.000	
	802.11n40-HT0	54	5270	MCS0	13.000	
		62	5310		13.000	
	802.11ax40-HE0	54	5270	MCS0	13.000	
		62	5310		13.000	
	802.11ac80-VHT0	58	5290	MCS0	13.000	12.94
	802.11ax80-HE0	58	5290	MCS0	13.000	NR*

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.6 GHz	802.11a	100	5500	6Mbps	13.500	NR*
		120	5600		13.500	
		140	5700		13.500	
	802.11n20-HT0	100	5500	MCS0	13.500	
		120	5600		13.500	
		140	5700		13.500	
		144	5720		13.500	
	802.11ax20-HE0	100	5500	MCS0	13.500	
		120	5600		13.500	
		140	5700		13.500	
		144	5720		13.500	
	802.11n40-HT0	102	5510	MCS0	13.500	
		118	5590		13.500	
		134	5670		13.500	
		142	5710		13.500	
	802.11ax40-HE0	102	5510	MCS0	13.500	
		118	5590		13.500	
		134	5670		13.500	
		142	5710		13.500	
	802.11ac80-VHT0	106	5530	MCS0	13.500	13.48
		122	5610		13.500	13.45
		138	5690		13.500	13.44
	802.11ax80-HE0	106	5530	MCS0	13.500	NR*
		122	5610		13.500	
		138	5690		13.500	
	802.11ac160-VHT0	114	5570	MCS0	13.500	13.48
	802.11ax160-HE0	114	5570	MCS0	13.500	NR*

Aux(Chain-A)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.8 GHz	802.11a	149	5745	6Mbps	13.500	NR*
		157	5785		13.500	
		165	5825		13.500	
	802.11n20-HT0	149	5745	MCS0	13.500	
		157	5785		13.500	
		165	5825		13.500	
	802.11ax20-HE0	149	5745	MCS0	13.500	
		157	5785		13.500	
		165	5825		13.500	
	802.11n40-HT0	151	5755	MCS0	13.500	
		159	5795		13.500	
	802.11ax40-HE0	151	5755	MCS0	13.500	
		159	5795		13.500	
	802.11ac80-VHT0	155	5775	MCS0	13.500	13.46
	802.11ax80-HE0	155	5775	MCS0	13.500	NR*

Aux(Chain-A)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.9GHz	802.11a	169	5845	6Mbps	13.50	13.25
		173	5865		13.50	13.39
		177	5885		13.50	13.37
	802.11n20-HT0	169	5845	MCS0	13.50	13.25
		173	5865		13.50	13.27
		177	5885		13.50	13.31
	802.11ax20-HE0	169	5845	MCS0	13.50	13.39
		173	5865		13.50	13.24
		177	5885		13.50	13.33
	802.11n40-HT0	167	5835	MCS0	13.50	13.38
		175	5875		13.50	13.24
	802.11ax40-HE0	167	5835	MCS0	13.50	13.29
		175	5875		13.50	13.22
	802.11ac80-VHT0	171	5855	MCS0	13.50	13.25
	802.11ax80-HE0	171	5855	MCS0	13.50	13.23
	802.11ac160-VHT0	163	5815	MCS0	13.50	13.42
	802.11ax160-HE0	163	5815	MCS0	13.50	13.26

Pulse

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45 GHz	802.11b	1	2412	1Mbps	18.000	17.96
		6	2437		18.000	17.99
		11	2462		18.000	18.00
		12	2467		18.000	17.88
		13	2472		15.750	15.67
	802.11g	1	2412	6Mbps	18.000	NR*
		6	2437		18.000	
		11	2462		18.000	
		12	2467		15.000	
		13	2472		11.750	
	802.11n20-HT0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		15.000	
		13	2472		11.750	
	802.11ax20-HE0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		15.000	
		13	2472		11.750	
	802.11n40-HT0	3	2422	MCS0	15.500	
		6	2437		17.500	
		9	2452		15.500	
		10	2457		12.250	
		11	2462		9.750	
	802.11ax40-HE0	3	2422	MCS0	15.500	
		6	2437		17.500	
		9	2452		15.500	
		10	2457		12.250	
		11	2462		9.750	

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	13.000	NR*
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n20-HT0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11ax20-HE0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n40-HT0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ax40-HE0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ac80-VHT0	42	5210	MCS0	13.000	
	802.11ax80-HE0	42	5210	MCS0	13.000	
	802.11ac160-VHT0	50	5250	MCS0	13.000	13.00
	802.11ax160-HE0	50	5250	MCS0	13.000	NR*

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	13.500	NR*
		56	5280		13.500	
		60	5300		13.500	
		64	5320		13.500	
	802.11n20-HT0	52	5260	MCS0	13.500	
		56	5280		13.500	
		60	5300		13.500	
		64	5320		13.500	
	802.11ax20-HE0	52	5260	MCS0	13.500	
		56	5280		13.500	
		60	5300		13.500	
		64	5320		13.500	
	802.11n40-HT0	54	5270	MCS0	13.500	
		62	5310		13.500	
	802.11ax40-HE0	54	5270	MCS0	13.500	
		62	5310		13.500	
	802.11ac80-VHT0	58	5290	MCS0	13.500	13.48
	802.11ax80-HE0	58	5290	MCS0	13.500	NR*

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.6 GHz	802.11a	100	5500	6Mbps	14.500	NR*
		120	5600		14.500	
		140	5700		14.500	
	802.11n20-HT0	100	5500	MCS0	14.500	
		120	5600		14.500	
		140	5700		14.500	
		144	5720		14.500	
	802.11ax20-HE0	100	5500	MCS0	14.500	
		120	5600		14.500	
		140	5700		14.500	
		144	5720		14.500	
	802.11n40-HT0	102	5510	MCS0	14.500	
		118	5590		14.500	
		134	5670		14.500	
		142	5710		14.500	
	802.11ax40-HE0	102	5510	MCS0	14.500	
		118	5590		14.500	
		134	5670		14.500	
		142	5710		14.500	
	802.11ac80-VHT0	106	5530	MCS0	14.500	14.48
		122	5610		14.500	14.42
		138	5690		14.500	14.45
	802.11ax80-HE0	106	5530	MCS0	14.500	NR*
		122	5610		14.500	
		138	5690		14.500	
	802.11ac160-VHT0	114	5570	MCS0	14.500	14.49
	802.11ax160-HE0	114	5570	MCS0	14.500	NR*

Main(Chain-B)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.8 GHz	802.11a	149	5745	6Mbps	15.000	NR*
		157	5785		15.000	
		165	5825		15.000	
	802.11n20-HT0	149	5745	MCS0	15.000	
		157	5785		15.000	
		165	5825		15.000	
	802.11ax20-HE0	149	5745	MCS0	15.000	
		157	5785		15.000	
		165	5825		15.000	
	802.11n40-HT0	151	5755	MCS0	15.000	
		159	5795		15.000	
	802.11ax40-HE0	151	5755	MCS0	15.000	
		159	5795		15.000	
	802.11ac80-VHT0	155	5775	MCS0	15.000	15.00
	802.11ax80-HE0	155	5775	MCS0	15.000	NR*

Main(Chain-B)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.9GHz	802.11a	169	5845	6Mbps	13.00	12.84
		173	5865		13.00	12.86
		177	5885		13.00	12.92
	802.11n20-HT0	169	5845	MCS0	13.00	12.93
		173	5865		13.00	12.94
		177	5885		13.00	12.80
	802.11ax20-HE0	169	5845	MCS0	13.00	12.89
		173	5865		13.00	12.77
		177	5885		13.00	12.80
	802.11n40-HT0	167	5835	MCS0	13.00	12.88
		175	5875		13.00	12.84
	802.11ax40-HE0	167	5835	MCS0	13.00	12.85
		175	5875		13.00	12.77
	802.11ac80-VHT0	171	5855	MCS0	13.00	12.79
	802.11ax80-HE0	171	5855	MCS0	13.00	12.87
	802.11ac160-VHT0	163	5815	MCS0	12.50	12.43
	802.11ax160-HE0	163	5815	MCS0	13.00	12.98

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45 GHz	802.11b	1	2412	1Mbps	18.000	18.00
		6	2437		18.000	17.92
		11	2462		18.000	17.96
		12	2467		18.000	17.86
		13	2472		16.750	16.70
	802.11g	1	2412	6Mbps	18.000	NR*
		6	2437		18.000	
		11	2462		18.000	
		12	2467		14.750	
		13	2472		12.000	
	802.11n20-HT0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		14.750	
		13	2472		12.000	
	802.11ax20-HE0	1	2412	MCS0	18.000	
		6	2437		18.000	
		11	2462		18.000	
		12	2467		14.750	
		13	2472		12.000	
	802.11n40-HT0	3	2422	MCS0	15.750	
		6	2437		17.750	
		9	2452		17.000	
		10	2457		12.500	
		11	2462		10.750	
	802.11ax40-HE0	3	2422	MCS0	15.750	
		6	2437		17.750	
		9	2452		17.000	
		10	2457		12.500	
		11	2462		10.750	

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.15-5.25 GHz	802.11a	36	5180	6Mbps	13.000	NR*
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n20-HT0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11ax20-HE0	36	5180	MCS0	13.000	
		40	5200		13.000	
		44	5220		13.000	
		48	5240		13.000	
	802.11n40-HT0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ax40-HE0	38	5190	MCS0	13.000	
		46	5230		13.000	
	802.11ac80-VHT0	42	5210	MCS0	13.000	
	802.11ax80-HE0	42	5210	MCS0	13.000	
	802.11ac160-VHT0	50	5250	MCS0	13.000	12.94
	802.11ax160-HE0	50	5250	MCS0	13.000	NR*

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.25-5.35 GHz	802.11a	52	5260	6Mbps	13.000	NR*
		56	5280		13.000	
		60	5300		13.000	
		64	5320		13.000	
	802.11n20-HT0	52	5260	MCS0	13.000	
		56	5280		13.000	
		60	5300		13.000	
		64	5320		13.000	
	802.11ax20-HE0	52	5260	MCS0	13.000	
		56	5280		13.000	
		60	5300		13.000	
		64	5320		13.000	
	802.11n40-HT0	54	5270	MCS0	13.000	
		62	5310		13.000	
	802.11ax40-HE0	54	5270	MCS0	13.000	
		62	5310		13.000	
	802.11ac80-VHT0	58	5290	MCS0	13.000	12.88
	802.11ax80-HE0	58	5290	MCS0	13.000	NR*

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.6 GHz	802.11a	100	5500	6Mbps	13.500	NR*
		120	5600		13.500	
		140	5700		13.500	
	802.11n20-HT0	100	5500	MCS0	13.500	
		120	5600		13.500	
		140	5700		13.500	
		144	5720		13.500	
	802.11ax20-HE0	100	5500	MCS0	13.500	
		120	5600		13.500	
		140	5700		13.500	
		144	5720		13.500	
	802.11n40-HT0	102	5510	MCS0	13.500	
		118	5590		13.500	
		134	5670		13.500	
		142	5710		13.500	
	802.11ax40-HE0	102	5510	MCS0	13.500	
		118	5590		13.500	
		134	5670		13.500	
		142	5710		13.500	
	802.11ac80-VHT0	106	5530	MCS0	13.500	13.45
		122	5610		13.500	13.48
		138	5690		13.500	13.50
	802.11ax80-HE0	106	5530	MCS0	13.500	NR*
		122	5610		13.500	
		138	5690		13.500	
	802.11ac160-VHT0	114	5570	MCS0	13.500	13.50
	802.11ax160-HE0	114	5570	MCS0	13.500	NR*

Aux(Chain-A)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.8 GHz	802.11a	149	5745	6Mbps	13.500	NR*
		157	5785		13.500	
		165	5825		13.500	
	802.11n20-HT0	149	5745	MCS0	13.500	
		157	5785		13.500	
		165	5825		13.500	
	802.11ax20-HE0	149	5745	MCS0	13.500	
		157	5785		13.500	
		165	5825		13.500	
	802.11n40-HT0	151	5755	MCS0	13.500	
		159	5795		13.500	
	802.11ax40-HE0	151	5755	MCS0	13.500	
		159	5795		13.500	
	802.11ac80-VHT0	155	5775	MCS0	13.500	13.49
	802.11ax80-HE0	155	5775	MCS0	13.500	NR*

Aux(Chain-A)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.9GHz	802.11a	169	5845	6Mbps	13.50	13.37
		173	5865		13.50	13.41
		177	5885		13.50	13.27
	802.11n20-HT0	169	5845	MCS0	13.50	13.33
		173	5865		13.50	13.36
		177	5885		13.50	13.34
	802.11ax20-HE0	169	5845	MCS0	13.50	13.43
		173	5865		13.50	13.42
		177	5885		13.50	13.31
	802.11n40-HT0	167	5835	MCS0	13.50	13.28
		175	5875		13.50	13.39
	802.11ax40-HE0	167	5835	MCS0	13.50	13.32
		175	5875		13.50	13.42
	802.11ac80-VHT0	171	5855	MCS0	13.50	13.26
	802.11ax80-HE0	171	5855	MCS0	13.50	13.33
	802.11ac160-VHT0	163	5815	MCS0	13.50	13.46
	802.11ax160-HE0	163	5815	MCS0	13.50	13.30

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Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11ax20-HE0	1	5955	MCS0	5.00	NR*
		45	6175		5.00	
		93	6415		5.00	
	802.11ax40-HE0	3	5985	MCS0	8.25	
		43	6165		8.25	
		91	6405		8.25	
	802.11ax80-HE0	7	5985	MCS0	10.75	
		39	6145		10.75	
		87	6385		10.75	
	802.11ax160-HE0	15	6025	MCS0	13.50	12.71
		47	6185		13.50	12.66
		79	6345		13.50	13.04

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11ax20-HE0	97	6435	MCS0	5.00	NR*
		105	6475		5.00	
		113	6515		5.00	
	802.11ax40-HE0	99	6445	MCS0	8.25	
		107	6485		8.25	
	802.11ax80-HE0	103	6465	MCS0	10.75	
		119	6545		10.75	
	802.11ax160-HE0	111	6505	MCS0	13.50	13.18

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11ax20-HE0	117	6535	MCS0	4.25	NR*
		149	6695		4.25	
		181	6855		4.25	
	802.11ax40-HE0	115	6525	MCS0	8.25	
		147	6685		7.50	
		179	6845		7.50	
	802.11ax80-HE0	135	6625	MCS0	10.00	
		151	6705		10.00	
		167	6785		10.00	
	802.11ax160-HE0	143	6665	MCS0	12.75	12.70
		175	6825		12.75	12.63

Main(Chain-B)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11ax20-HE0	185	6875	MCS0	4.25	NR*
		209	6995		4.25	
		233	7115		-1.00	
	802.11ax40-HE0	187	6885	MCS0	7.50	
		227	7085		7.50	
	802.11ax80-HE0	183	6865	MCS0	10.00	
		199	6945		10.00	
		215	7025		10.00	
	802.11ax160-HE0	207	6985	MCS0	12.75	12.73

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11ax20-HE0	1	5955	MCS0	5.00	NR*
		45	6175		5.00	
		93	6415		5.00	
	802.11ax40-HE0	3	5985	MCS0	8.25	
		43	6165		8.25	
		91	6405		8.25	
	802.11ax80-HE0	7	5985	MCS0	10.75	
		39	6145		10.75	
		87	6385		10.75	
	802.11ax160-HE0	15	6025	MCS0	13.50	12.94
		47	6185		13.50	12.89
		79	6345		13.50	12.91

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11ax20-HE0	97	6435	MCS0	5.00	NR*
		105	6475		5.00	
		113	6515		5.00	
	802.11ax40-HE0	99	6445	MCS0	8.25	
		107	6485		8.25	
	802.11ax80-HE0	103	6465	MCS0	10.75	
		119	6545		10.75	
	802.11ax160-HE0	111	6505	MCS0	13.50	13.15

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11ax20-HE0	117	6535	MCS0	4.25	NR*
		149	6695		4.25	
		181	6855		4.25	
	802.11ax40-HE0	115	6525	MCS0	8.25	
		147	6685		7.50	
		179	6845		7.50	
	802.11ax80-HE0	135	6625	MCS0	10.00	
		151	6705		10.00	
		167	6785		10.00	
	802.11ax160-HE0	143	6665	MCS0	12.75	12.53
		175	6825		12.75	12.51

Aux(Chain-A)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11ax20-HE0	185	6875	MCS0	4.25	NR*
		209	6995		4.25	
		233	7115		-1.00	
	802.11ax40-HE0	187	6885	MCS0	7.50	
		227	7085		7.50	
	802.11ax80-HE0	183	6865	MCS0	10.00	
		199	6945		10.00	
		215	7025		10.00	
	802.11ax160-HE0	207	6985	MCS0	12.75	12.72

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11ax20-HE0	1	5955	MCS0	5.00	NR*
		45	6175		5.00	
		93	6415		5.00	
	802.11ax40-HE0	3	5965	MCS0	8.25	
		43	6165		8.25	
		91	6405		8.25	
	802.11ax80-HE0	7	5985	MCS0	10.75	
		39	6145		10.75	
		87	6385		10.75	
	802.11ax160-HE0	15	6025	MCS0	13.50	12.68
		47	6185		13.50	12.62
		79	6345		13.50	13.02

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11ax20-HE0	97	6435	MCS0	5.00	NR*
		105	6475		5.00	
		113	6515		5.00	
	802.11ax40-HE0	99	6445	MCS0	8.25	
		107	6485		8.25	
	802.11ax80-HE0	103	6465	MCS0	10.75	
		119	6545		10.75	
	802.11ax160-HE0	111	6505	MCS0	13.50	13.15

Main(Chain-B)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11ax20-HE0	117	6535	MCS0	4.25	NR*
		149	6695		4.25	
		181	6855		4.25	
	802.11ax40-HE0	115	6525	MCS0	8.25	
		147	6685		7.50	
		179	6845		7.50	
	802.11ax80-HE0	135	6625	MCS0	10.00	
		151	6705		10.00	
		167	6785		10.00	
	802.11ax160-HE0	143	6665	MCS0	12.75	12.67
		175	6825		12.75	12.62

Main(Chain-B)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11ax20-HE0	185	6875	MCS0	4.25	NR*
		209	6995		4.25	
		233	7115		-1.00	
	802.11ax40-HE0	187	6885	MCS0	7.50	
		227	7085		7.50	
	802.11ax80-HE0	183	6865	MCS0	10.00	
		199	6945		10.00	
		215	7025		10.00	
	802.11ax160-HE0	207	6985	MCS0	12.75	12.72

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11ax20-HE0	1	5955	MCS0	5.00	NR*
		45	6175		5.00	
		93	6415		5.00	
	802.11ax40-HE0	3	5965	MCS0	8.25	
		43	6165		8.25	
		91	6405		8.25	
	802.11ax80-HE0	7	5985	MCS0	10.75	
		39	6145		10.75	
		87	6385		10.75	
	802.11ax160-HE0	15	6025	MCS0	13.50	12.87
		47	6185		13.50	12.81
		79	6345		13.50	12.86

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11ax20-HE0	97	6435	MCS0	5.00	NR*
		105	6475		5.00	
		113	6515		5.00	
	802.11ax40-HE0	99	6445	MCS0	8.25	
		107	6485		8.25	
	802.11ax80-HE0	103	6465	MCS0	10.75	
		119	6545		10.75	
	802.11ax160-HE0	111	6505	MCS0	13.50	13.11

Aux(Chain-A)						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11ax20-HE0	117	6535	MCS0	4.25	NR*
		149	6695		4.25	
		181	6855		4.25	
	802.11ax40-HE0	115	6525	MCS0	8.25	
		147	6685		7.50	
		179	6845		7.50	
	802.11ax80-HE0	135	6625	MCS0	10.00	
		151	6705		10.00	
		167	6785		10.00	
	802.11ax160-HE0	143	6665	MCS0	12.75	12.54
		175	6825		12.75	12.48

Aux(Chain-A)						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11ax20-HE0	185	6875	MCS0	4.25	NR*
		209	6995		4.25	
		233	7115		-1.00	
	802.11ax40-HE0	187	6885	MCS0	7.50	
		227	7085		7.50	
	802.11ax80-HE0	183	6865	MCS0	10.00	
		199	6945		10.00	
		215	7025		10.00	
	802.11ax160-HE0	207	6985	MCS0	12.75	12.71

6.3 Bluetooth

AWAN

Mode	Channel	Frequency (MHz)	1Mbps		2Mbps		3Mbps	
			Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
BR/EDR	CH 00	2402	11.00	9.03	7.00	NR*	7.00	NR*
	CH 39	2441		9.12				
	CH 78	2480		9.55				

Pulse

Mode	Channel	Frequency (MHz)	1Mbps		2Mbps		3Mbps	
			Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
BR/EDR	CH 00	2402	11.00	9.12	7.00	NR*	7.00	NR*
	CH 39	2441		9.22				
	CH 78	2480		9.41				

6.4 BLE

AWAN

Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)
BLE_1M	CH 00	2402	7	NR*
	CH 19	2440		
	CH 39	2480		

Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)
BLE_2M	CH 00	2402	7	NR*
	CH 19	2440		
	CH 39	2480		

Pulse

Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)
BLE_1M	CH 00	2402	7	NR*
	CH 19	2440		
	CH 39	2480		

Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)
BLE_2M	CH 00	2402	7	NR*
	CH 19	2440		
	CH 39	2480		

7 DUTY CYCLE

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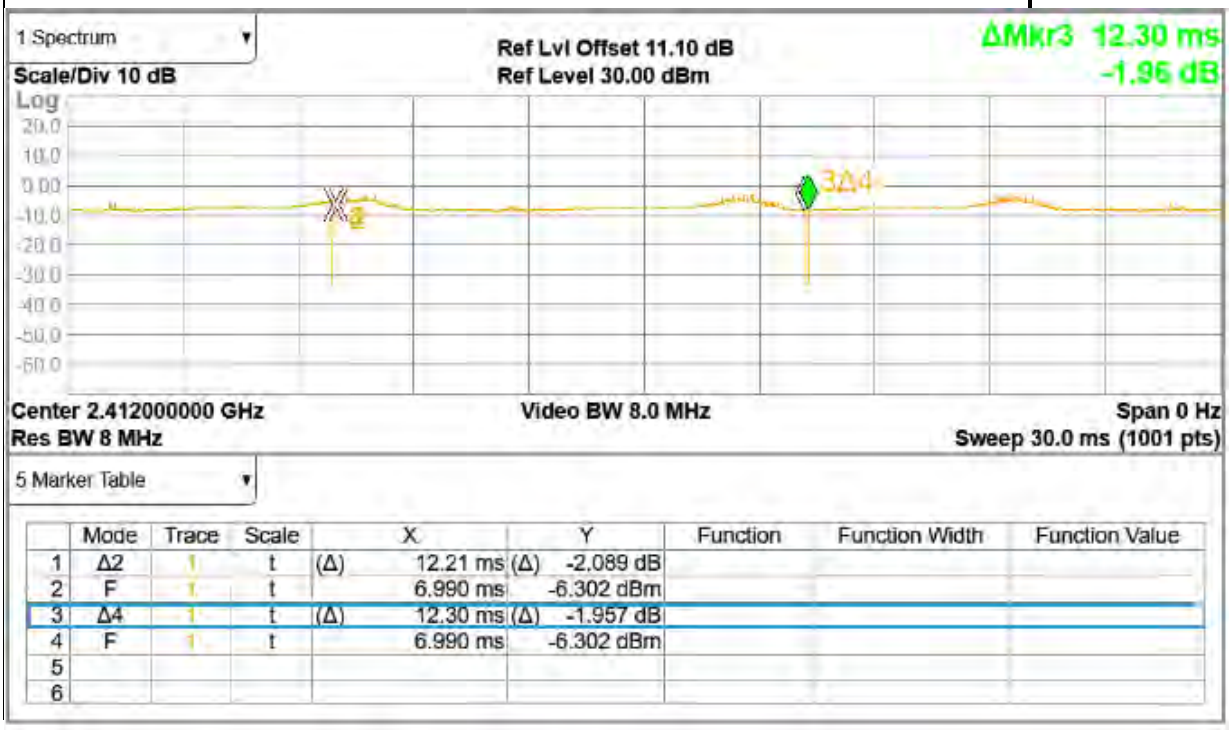
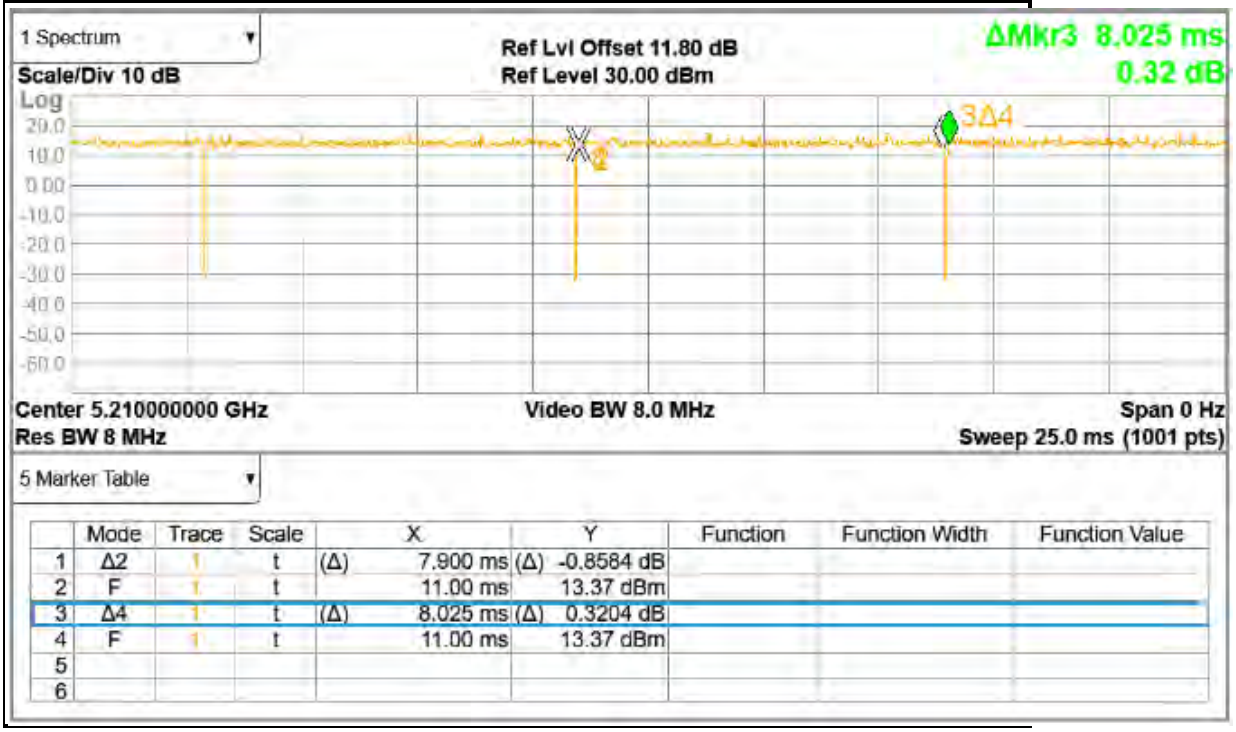
2.4G b duty	(12.21/12.3=0.993) Scaling Factor=1.007



5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	Δ2	1	t	(Δ) 12.21 ms	(Δ) -2.089 dB			
2	F	1	t	6.990 ms	-6.302 dBm			
3	Δ4	1	t	(Δ) 12.30 ms	(Δ) -1.957 dB			
4	F	1	t	6.990 ms	-6.302 dBm			
5								
6								

5G ac(80M) duty	(7.9/8.025=0.984) Scaling Factor=1.016



5 Marker Table

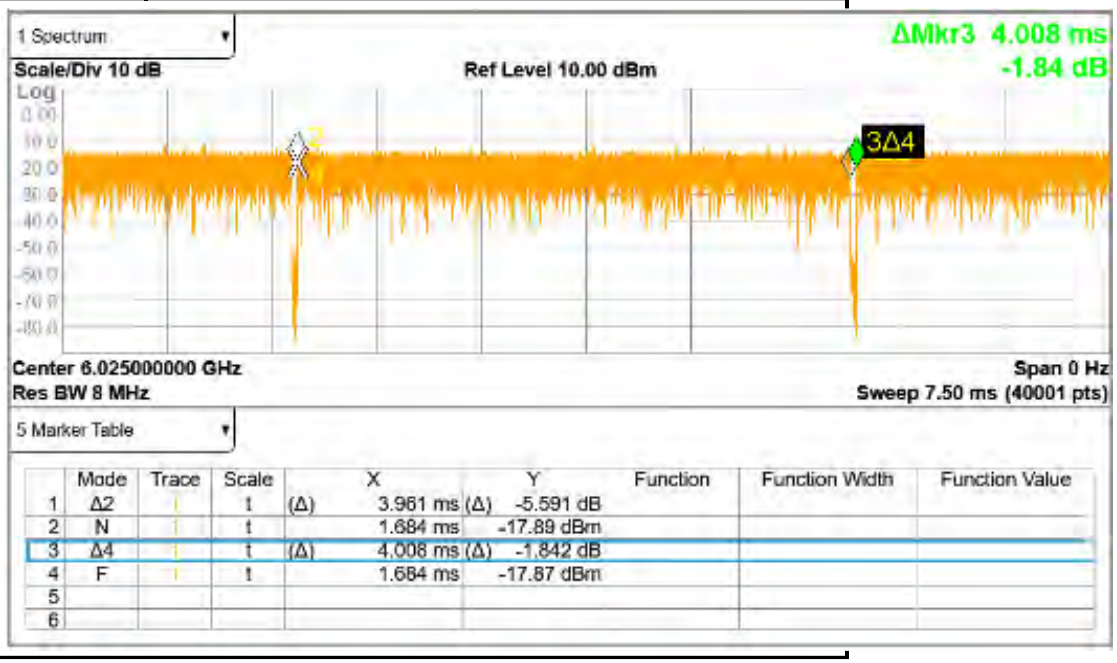
	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	Δ2	1	t	(Δ) 7.900 ms	(Δ) -0.8584 dB			
2	F	1	t	11.00 ms	13.37 dBm			
3	Δ4	1	t	(Δ) 8.025 ms	(Δ) 0.3204 dB			
4	F	1	t	11.00 ms	13.37 dBm			
5								
6								

5G ac(160M) duty	(3.96/4.007=0.988) Scaling Factor=1.012

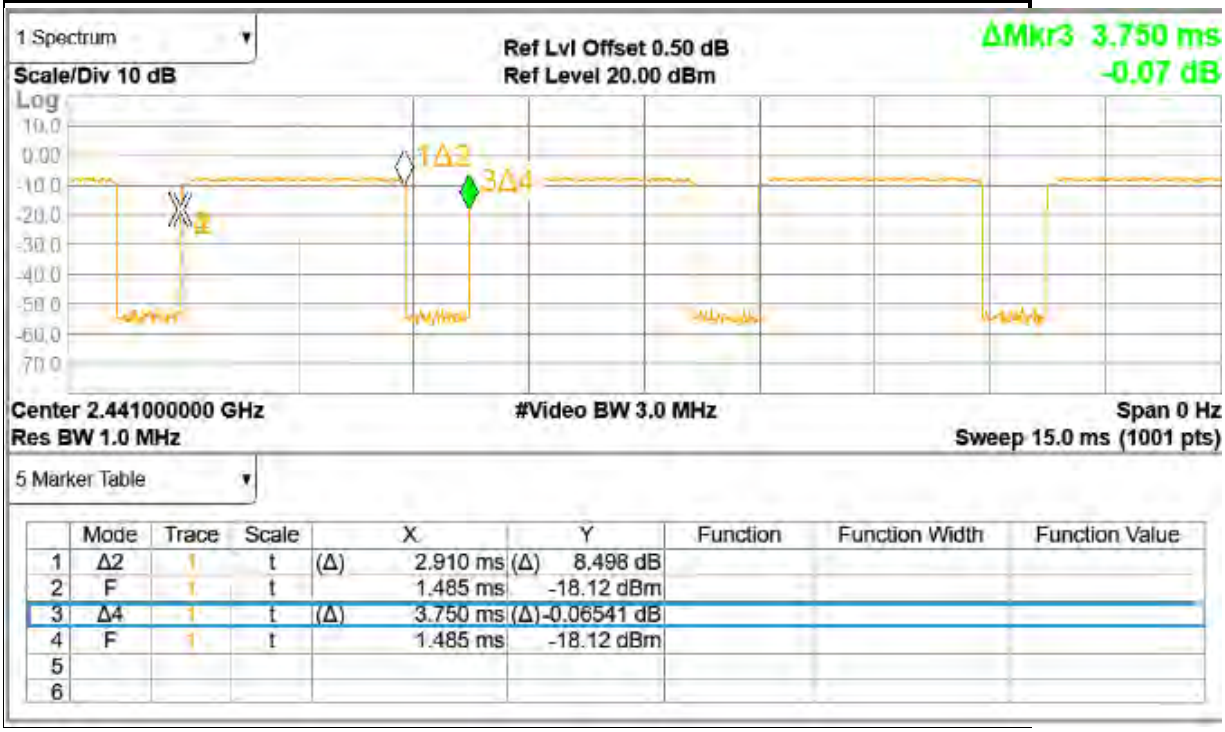
5 Marker Table

	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	Δ2	1	t	(Δ) 3.960 ms	(Δ) -3.259 dB			
2	F	1	t	2.369 ms	-18.71 dBm			
3	Δ4	1	t	(Δ) 4.007 ms	(Δ) 0.2713 dB			
4	N	1	t	2.369 ms	-18.71 dBm			
5								
6								

6E ax(160M) duty	(3.961/4.008=0.988) Scaling Factor=1.012



BT duty	(2.91/3.75=0.776) Scaling Factor=1.289



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	Δ2	1	t	(Δ) 2.910 ms	(Δ) 8.498 dB			
2	F	1	t	1.485 ms	-18.12 dBm			
3	Δ4	1	t	(Δ) 3.750 ms	(Δ) -0.06541 dB			
4	F	1	t	1.485 ms	-18.12 dBm			
5								
6								

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5.9G ax 160	(3.96/4.02=0.985) Scaling Factor=1.015

8 SUMMARY OF RESULTS

8.1 Decision rules

Reported measurement data comply with Test Methodology in section 1.1.
Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

8.2 Summary of SAR Results

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AWAN

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11b	Bottom Surface	0	1	2412	18.00	17.96	1.01	100.93%	0.983	0.999	-
	Bottom Surface	0	6	2437	18.00	17.98	1.01	100.46%	1.020	1.032	-
	Bottom Surface	0	11	2462	18.00	17.99	1.01	100.23%	1.130	1.141	001
WLAN 802.11ac (160M) 5.2G	Bottom Surface	0	50	5250	13.00	12.98	1.01	100.46%	1.140	1.159	002

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.3G	Bottom Surface	0	58	5290	13.50	13.49	1.02	100.23%	1.090	1.110	003

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (160M) 5.6G	Bottom Surface	0	114	5570	14.50	14.50	1.01	100.00%	1.070	1.083	004

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.8G	Bottom Surface	0	155	5775	15.00	14.97	1.02	100.69%	1.120	1.146	005

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11b	Bottom Surface	0	1	2412	18.00	17.98	1.01	100.46%	1.090	1.103	-
	Bottom Surface	0	6	2437	18.00	18.00	1.01	100.00%	1.140	1.148	006
	Bottom Surface	0	11	2462	18.00	17.92	1.01	101.86%	1.010	1.036	-
Bluetooth(GFSK)	Bottom Surface	0	78	2480	11.00	9.55	1.29	139.64%	0.118	0.212	007
WLAN 802.11ac (160M) 5.2G	Bottom Surface	0	50	5250	13.00	12.98	1.01	100.46%	1.020	1.037	008

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.3G	Bottom Surface	0	58	5290	13.00	12.94	1.02	101.39%	1.010	1.040	009

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (160M) 5.6G	Bottom Surface	0	114	5570	13.50	13.48	1.01	100.46%	1.140	1.159	010

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.8G	Bottom Surface	0	155	5775	13.50	13.46	1.02	100.93%	0.995	1.020	011

Pulse

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11b	Bottom Surface	0	1	2412	18.00	17.96	1.01	100.93%	0.993	1.009	-
	Bottom Surface	0	6	2437	18.00	17.99	1.01	100.23%	1.090	1.100	-
	Bottom Surface	0	11	2462	18.00	18.00	1.01	100.00%	1.160	1.168	012

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (160M) 5.2G	Bottom Surface	0	50	5250	13.00	13.00	1.01	100.00%	1.140	1.154	013

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.3G	Bottom Surface	0	58	5290	13.50	13.48	1.02	100.46%	0.940	0.959	014

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (160M) 5.6G	Bottom Surface	0	114	5570	14.50	14.49	1.01	100.23%	1.140	1.156	015

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.8G	Bottom Surface	0	155	5775	15.00	15.00	1.02	100.00%	1.120	1.138	016

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11b	Bottom Surface	0	1	2412	18.00	18.00	1.01	100.00%	0.809	0.815	017
	Bottom Surface	0	6	2437	18.00	17.92	1.01	101.86%	0.769	0.789	-
	Bottom Surface	0	11	2462	18.00	17.96	1.01	100.93%	0.777	0.790	-

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
Bluetooth(GFSK)	Bottom Surface	0	78	2480	11.00	9.41	1.29	144.21%	0.139	0.258	018

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (160M) 5.2G	Bottom Surface	0	50	5250	13.00	12.94	1.01	101.39%	1.150	1.180	019

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.3G	Bottom Surface	0	58	5290	13.00	12.88	1.02	102.80%	1.060	1.107	020

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (160M) 5.6G	Bottom Surface	0	114	5570	13.50	13.50	1.01	100.00%	1.160	1.174	021

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
									Measured	Reported	
WLAN 802.11ac (80M) 5.8G	Bottom Surface	0	155	5775	13.50	13.49	1.02	100.23%	1.080	1.100	022

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Mode	Antenna	Position	Distance (mm)	Channel	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
										Measured	Reported	
WLAN 802.11ax(160M) 5.9G	Main(Chain-B)	Bottom Surface	0	163	5815	13.00	12.98	1.02	100.46%	0.984	1.003	065
Repeat	Main(Chain-B)	Bottom Surface	0	163	5815	13.00	12.98	1.02	100.46%	0.911	0.929	-
Mode	Antenna	Position	Distance (mm)	Channel	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
										Measured	Reported	
WLAN 802.11ac(160M) 5.9G	Aux(Chain-A)	Bottom Surface	0	163	5815	13.50	13.42	1.01	101.86%	0.896	0.924	066

* - repeated at the highest SAR measurement according to the KDB 865664 D01

Pulse

Mode	Antenna	Position	Distance (mm)	Channel	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
										Measured	Reported	
WLAN 802.11ax(160M) 5.9G	Main(Chain-B)	Bottom Surface	0	163	5815	13.00	12.98	1.02	100.46%	0.953	0.972	067
Mode	Antenna	Position	Distance (mm)	Channel	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		ID
										Measured	Reported	
WLAN 802.11ac(160M) 5.9G	Aux(Chain-A)	Bottom Surface	0	163	5815	13.50	13.46	1.01	100.93%	1.050	1.072	068
Repeat	Aux(Chain-A)	Bottom Surface	0	163	5815	13.50	13.46	1.01	100.93%	0.993	1.014	-

* - repeated at the highest SAR measurement according to the KDB 865664 D01

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AWAN

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Estimated APD mW/cm^2 (4cm^2)	ID
									Measured	Reported		
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	0	15	6025	13.50	12.71	1.012	119.95%	0.667	0.810	0.451	023
	Bottom Surface	0	79	6345	13.50	13.04	1.012	111.17%	0.612	0.689	0.434	024
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	0	111	6505	13.50	13.18	1.012	107.65%	0.623	0.679	0.429	025
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	0	143	6665	12.75	12.70	1.012	101.16%	0.697	0.714	0.458	026
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	0	207	6985	12.75	12.73	1.012	100.46%	0.751	0.764	0.481	027

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Estimated APD mW/cm^2 (4cm^2)	ID
									Measured	Reported		
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	0	15	6025	13.50	12.94	1.012	113.76%	0.673	0.775	0.478	028
	Bottom Surface	0	79	6345	13.50	12.91	1.012	114.55%	0.656	0.760	0.457	029
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	0	111	6505	13.50	13.15	1.012	108.39%	0.823	0.903	0.541	030
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	0	143	6665	12.75	12.53	1.012	105.20%	0.782	0.833	0.501	031
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	0	207	6985	12.75	12.72	1.012	100.69%	0.993	1.012	0.707	032

Pulse

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Estimated APD mW/cm^2 (4cm^2)	ID
									Measured	Reported		
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	0	15	6025	13.50	12.68	1.012	120.78%	0.764	0.934	0.566	033
	Bottom Surface	0	47	6185	13.50	12.62	1.012	122.46%	0.814	1.009	0.661	034
	Bottom Surface	0	79	6345	13.50	13.02	1.012	111.69%	0.802	0.906	0.607	035
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	0	111	6505	13.50	13.15	1.012	108.39%	0.745	0.817	0.557	036
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	0	143	6665	12.75	12.67	1.012	101.86%	0.751	0.774	0.534	037
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	0	207	6985	12.75	12.72	1.012	100.69%	1.010	1.029	0.626	038

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Estimated APD mW/cm^2 (4cm^2)	ID
									Measured	Reported		
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	0	15	6025	13.50	12.87	1.012	115.61%	0.912	1.067	0.701	039
	Bottom Surface	0	47	6185	13.50	12.81	1.012	117.22%	0.925	1.097	0.713	040
	Bottom Surface	0	79	6345	13.50	12.86	1.012	115.88%	0.898	1.053	0.678	041
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	0	111	6505	13.50	13.11	1.012	109.40%	0.983	1.088	0.716	042
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	0	143	6665	12.75	12.54	1.012	104.95%	0.985	1.046	0.671	043
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	0	207	6985	12.75	12.71	1.012	100.93%	0.918	0.938	0.578	044

Note:

Reported SAR = measured SAR * Power scaling * Duty cycle scaling
Reported APD = measured APD * Power scaling * Duty cycle scaling

8.3 Summary of PD Results

Report No.: ES/2021/C0040
AWAN

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Tune-up Scaling	Duty cycle scaling	Measurement uncertainty	PD result(4cm)				ID
										Measured Total psPD (mW/cm^2)	Reported Total psPD (mW/cm^2)	Measured Normal psPD (mW/cm^2)	Reported Normal psPD (mW/cm^2)	
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	2	15	6025	13.5	12.71	119.95%	1.012	1.55	0.518	0.975	0.436	0.820	045
	Bottom Surface	2	79	6345	13.5	13.04	111.17%	1.012	1.55	0.267	0.466	0.254	0.443	046
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	2	111	6505	13.5	13.18	107.65%	1.012	1.55	0.285	0.481	0.271	0.458	047
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	2	143	6665	12.75	12.70	101.16%	1.012	1.55	0.388	0.616	0.338	0.536	048
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	2	207	6985	12.75	12.73	100.46%	1.012	1.55	0.505	0.796	0.457	0.720	049

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Tune-up Scaling	Duty cycle scaling	Measurement uncertainty	PD result(4cm)				ID
										Measured Total psPD (mW/cm^2)	Reported Total psPD (mW/cm^2)	Measured Normal psPD (mW/cm^2)	Reported Normal psPD (mW/cm^2)	
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	2	15	6025	13.5	12.94	113.76%	1.012	1.55	0.403	0.719	0.373	0.666	050
	Bottom Surface	2	79	6345	13.5	12.91	114.55%	1.012	1.55	0.365	0.656	0.339	0.609	051
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	2	111	6505	13.5	13.15	108.39%	1.012	1.55	0.511	0.869	0.476	0.809	052
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	2	143	6665	12.75	12.53	105.20%	1.012	1.55	0.255	0.421	0.217	0.358	053
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	2	207	6985	12.75	12.72	100.69%	1.012	1.55	0.428	0.676	0.366	0.578	054

Pulse

Main(Chain-B)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Tune-up Scaling	Duty cycle scaling	Measurement uncertainty	PD result(4cm)				ID
										Measured Total psPD (mW/cm^2)	Reported Total psPD (mW/cm^2)	Measured Normal psPD (mW/cm^2)	Reported Normal psPD (mW/cm^2)	
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	2	15	6025	13.5	12.68	120.78%	1.012	1.55	0.449	0.851	0.377	0.714	055
	Bottom Surface	2	79	6345	13.5	13.02	111.69%	1.012	1.55	0.552	0.967	0.478	0.837	056
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	2	111	6505	13.5	13.15	108.39%	1.012	1.55	0.541	0.920	0.457	0.777	057
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	2	143	6665	12.75	12.67	101.86%	1.012	1.55	0.364	0.582	0.328	0.524	058
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	2	207	6985	12.75	12.72	100.69%	1.012	1.55	0.606	0.957	0.504	0.796	059

Aux(Chain-A)

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Tune-up Scaling	Duty cycle scaling	Measurement uncertainty	PD result(4cm)				ID
										Measured Total psPD (mW/cm^2)	Reported Total psPD (mW/cm^2)	Measured Normal psPD (mW/cm^2)	Reported Normal psPD (mW/cm^2)	
WLAN 6E 802.11ax(160M) U-NII-5	Bottom Surface	2	15	6025	13.5	12.87	115.61%	1.012	1.55	0.467	0.847	0.455	0.825	060
	Bottom Surface	2	79	6345	13.5	12.86	115.88%	1.012	1.55	0.455	0.827	0.422	0.767	061
WLAN 6E 802.11ax(160M) U-NII-6	Bottom Surface	2	111	6505	13.5	13.11	109.40%	1.012	1.55	0.513	0.880	0.548	0.940	062
WLAN 6E 802.11ax(160M) U-NII-7	Bottom Surface	2	143	6665	12.75	12.54	104.95%	1.012	1.55	0.322	0.530	0.299	0.492	063
WLAN 6E 802.11ax(160M) U-NII-8	Bottom Surface	2	207	6985	12.75	12.71	100.93%	1.012	1.55	0.373	0.591	0.350	0.554	064

Note:
Reported PD = measured PD * Power scaling * Duty cycle scaling * Uncertainty scaling

8.4 Reporting statements of conformity

The conformity statement in this report is based solely on the test results, measurement uncertainty is excluded.

8.5 Conclusion

The device is compliant because all the standalone results are less than their corresponding criteria.

9 SIMULTANEOUS TRANSMISSION ANALYSIS

9.1 Simultaneous Transmission Scenarios:

Simultaneous Transmit Configurations	Body
WLAN 2.4GHz Main + BT Aux	Yes
WLAN 2.4GHz Main + WLAN 2.4GHz Aux	Yes
WLAN 5GHz Main + BT Aux	Yes
WLAN 5GHz Main + WLAN 5GHz Aux	Yes
WLAN 5GHz Main + WLAN 5GHz Aux + BT Aux	Yes
WLAN 6GHz Main + BT Aux	Yes
WLAN 6GHz Main + WLAN 6GHz Aux	Yes
WLAN 6GHz Main + WLAN 6GHz Aux + BT Aux	Yes

Note:
1. Bluetooth and WLAN Aux share the same antenna path, and BT can transmit with WLAN Main simultaneously.
2. For 2.4/5/6GHz WLAN Main and Aux antennas, the maximum output power of each antenna during simultaneous transmission is the same with (or less than) that used in standalone transmission, and we used the sum of 1-g SAR provision in KDB447498D01 to exclude the simultaneous transmitted SAR measurement.

9.2 Estimated SAR calculation

According to KDB447498 D01v06 – When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$$\text{Estimated SAR} = \frac{\text{Max. tune up power (mW)}}{\text{Min. test separation distance(mm)}} \times \frac{\sqrt{\text{f(GHz)}}}{7.5}$$

If the minimum test separation distance is < 5mm, a distance of 5mm is used for estimated SAR calculation. When the test separation distance is >50mm, the 0.4W/kg is used for SAR-1g.

9.3 SPLSR evaluation and analysis

Per KDB447498D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR sum to peak location separation ratio(SPLSR).

The simultaneous transmitting antennas in each operating mode and exposure condition combination must be considered one pair at a time to determine the SAR to peak location separation ratio to qualify for test exclusion.

The ratio is determined by **(SAR1 + SAR2)^1.5/Ri**, rounded to two decimal digits, and must be **≤ 0.04** for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

SAR1 and SAR2 are the highest reported or estimated SAR for each antenna in the pair, and Ri is the separation distance between the peak SAR locations for the antenna pair in mm.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna.

Simultaneous Transmission Combination

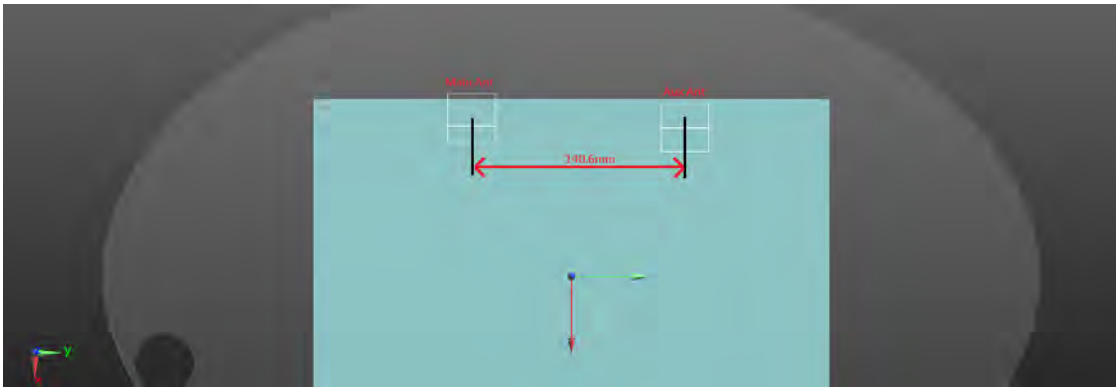
AWAN

		Reported SAR							Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Exposure Position		2	3	4	5	7	8	9	2+7	2+3	4+7	4+5	4+5+7	7+8	8+9	7+8+9
		2.4GHz WLAN Main	2.4GHz WLAN Aux	5GHz WLAN Main	5GHz WLAN Aux	Bluetooth Aux	6GHz WLAN Main	6GHz WLAN Aux	Summed	Summed	Summed	Summed	Summed	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Bottom Surface	0	1.141	1.148	1.159	1.159	0.212	0.810	1.012	**1.353**	2.289	**1.371**	2.318	2.530	**1.022**	1.822	2.034

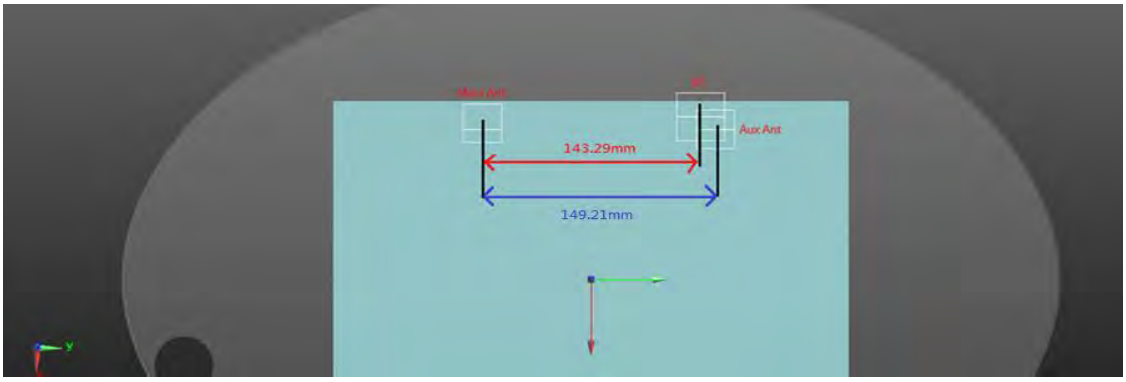
Pulse

		Reported SAR							Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Exposure Position		2	3	4	5	7	8	9	2+7	2+3	4+7	4+5	4+5+7	7+8	8+9	7+8+9
		2.4GHz WLAN Main	2.4GHz WLAN Aux	5GHz WLAN Main	5GHz WLAN Aux	Bluetooth Aux	6GHz WLAN Main	6GHz WLAN Aux	Summed	Summed	Summed	Summed	Summed	Summed	Summed	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
Bottom Surface	0	1.168	0.815	1.156	1.180	0.258	1.029	1.097	**1.426**	**1.983**	**1.414**	**2.336**	**2.594**	**1.287**	**2.126**	**2.384**

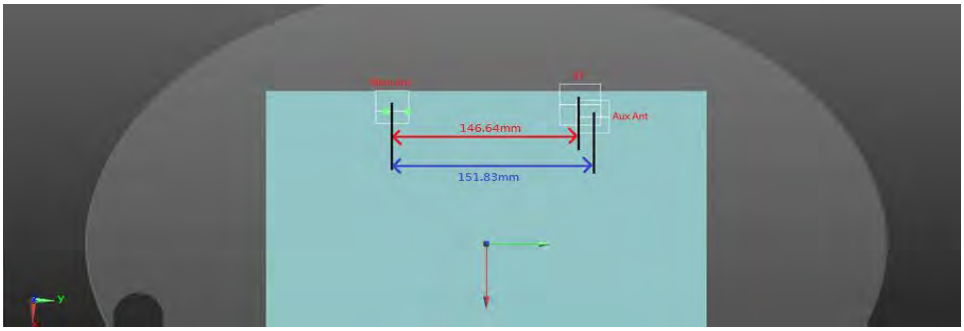
Scenario 2:									
Position	Conditions	SAR Value (W/kg)	Coordinates (mm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bottom Surface	WLAN 2.4G Main	1.141	-93.60	-66.40	-3.07	-	-	-	-
	WLAN 2.4G Aux	1.148	-93.60	74.20	-3.05	2.289	140.60	0.025	SPLSR ≤ 0.04, Not required



Scenario 5:									
Position	Conditions	SAR Value (W/kg)	Coordinates (mm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bottom Surface	WLAN 5G Main	1.159	-94.80	-70.40	-3.02	-	-	-	-
	WLAN 5G Aux(+BT)	1.371	-100.00	72.80	-2.87	2.530	143.29	0.028	SPLSR ≤ 0.04, Not required

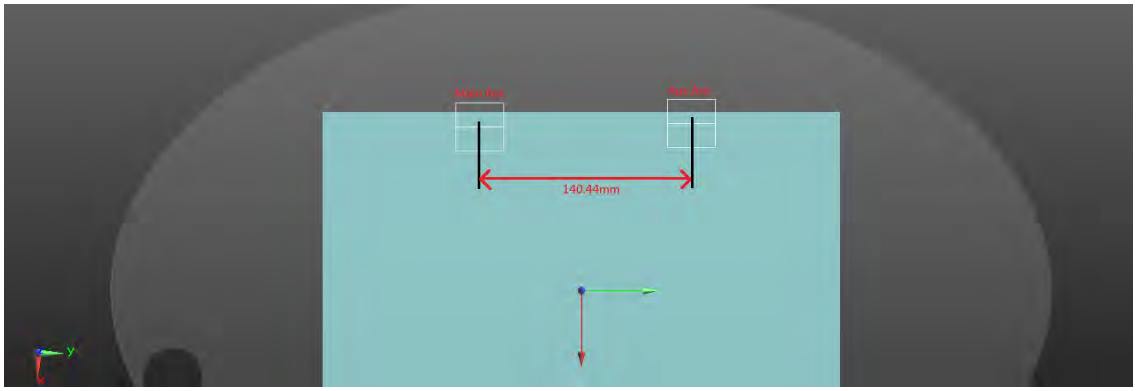


Scenario 8:									
Position	Conditions	SAR Value (W/kg)	Coordinates (mm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bottom Surface	WLAN 6E Main	0.810	-96.80	-73.80	-3.12	-	-	-	-
	WLAN 6E Aux(+BT)	1.224	-100.00	72.80	-2.87	2.034	146.64	0.020	SPLSR ≤ 0.04, Not required

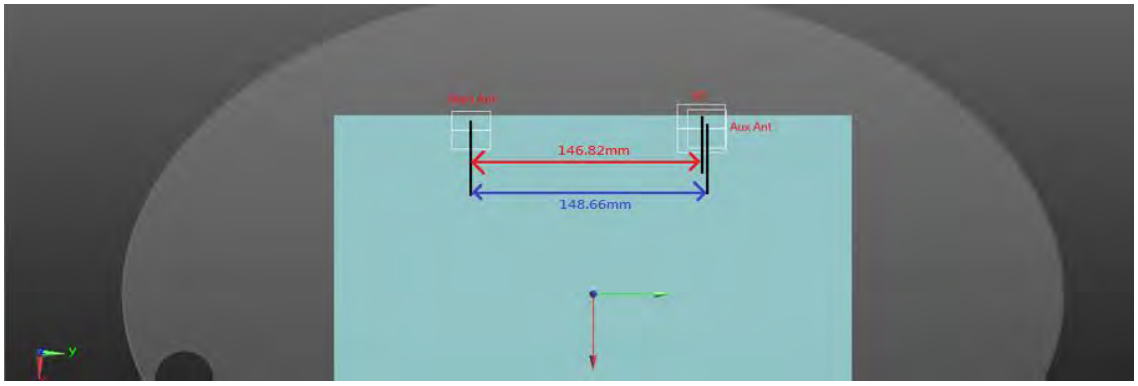


Pulse

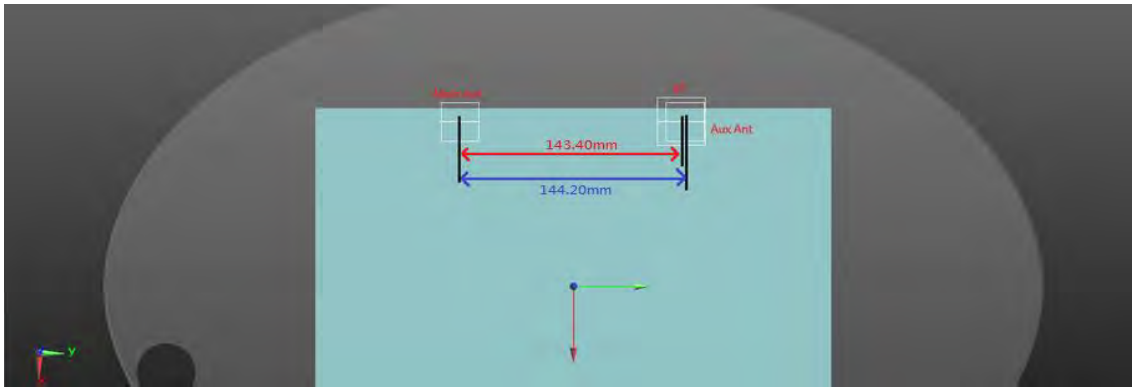
Scenario 2:									
Position	Conditions	SAR Value (W/kg)	Coordinates (mm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bottom Surface	WLAN 2.4G Main	1.168	-101.00	-68.60	-2.96	-	-	-	-
	WLAN 2.4G Aux	0.815	-104.40	71.80	-2.91	1.983	140.44	0.020	SPLSR ≤ 0.04, Not required



Scenario 5:									
Position	Conditions	SAR Value (W/kg)	Coordinates (mm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bottom Surface	WLAN 5G Main	1.156	-99.60	-75.20	-3.01	-	-	-	-
	WLAN 5G Aux(+BT)	1.438	-102.20	71.60	-3.09	2.594	146.82	0.028	SPLSR ≤ 0.04, Not required



Scenario 8:									
Position	Conditions	SAR Value (W/kg)	Coordinates (mm)			ΣSAR (W/kg)	Peak Location Separation Distance (mm)	SPLSR	Simultaneous Transmission SAR Test
			x	y	z				
Bottom Surface	WLAN 6E Main	1.029	-103.00	-71.80	-2.80	-	-	-	-
	WLAN 6E Aux(+BT)	1.355	-102.20	71.60	-3.09	2.384	143.40	0.026	SPLSR ≤ 0.04, Not required



9.4 Conclusion

The simultaneous transmission is compliant because both SAR sum and/or SPLSR are less than their corresponding criteria.

10 INSTRUMENTS LIST

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
SPEAG	Dosimetric E-Field Probe	EX3DV4	7686	Oct.05,2021	Oct.04,2022
		EUmmWV3	9399	Jan.28,2021	Jan.27,2022
			9399	Jan.26,2022	Jan.25,2023
SPEAG	System Validation Dipole	D2450V2	727	Apr.14,2021	Apr.13,2022
		D5GHzV2	1023	Jan.26.2021	Jan.25.2022
		D6.5GHzV2	1006	Aug.26,2021	Aug.25,2022
		D7GHzV2	1007	Aug.26,2021	Aug.25,2022
		5G-Veri10	1021	Jan.18,2021	Jan.17,2022
			1021	Jan.24,2022	Jan.23,2023
SPEAG	Data acquisition Electronics	DAE4	877	Mar.22,2021	Mar.21,2022
SPEAG	Software	DASY 52 V52.10.4	N/A	Calibration not required	Calibration not required
SPEAG	Phantom	ELI	N/A	Calibration not required	Calibration not required
		mmWave			
SPEAG	Dielectric Assessment Kit	DAKS-3.5	1053	Feb.17,2021	Feb.16,2022
			1001	Jan.26,2022	Jan.25,2023
Agilent	Dual-directional coupler	772D	MY46151242	Aug.16.2021	Aug.15.2022
		778D	MY48220468	Aug.16.2021	Aug.15.2022
Agilent	Signal Generator	N5181A	MY50141235	May.30,2021	May.29,2022
Agilent	Power Meter	E4417A	MY51410006	Mar.23,2021	Mar.22,2022
Agilent	Power Sensor	E9301H	MY51470001	Mar.23,2021	Mar.22,2022
			MY51470002	Mar.23,2021	Mar.22,2022
TECPEL	Digital thermometer	DTM-303A	TP130074	Apr.26,2021	Apr.25,2022
R&S	Power Sensor	NRP18S	101974	Oct.12.2021	Oct.11.2022

Note:
Instruments List of the test report ES/2021/C0040.

Equipment List					
Manufacturer	**Device**	**Type**	**Serial number**	**Date of last calibration**	**Date of next calibration**
SPEAG	Data acquisition Electronics	DAE4	1665	Feb/28/2022	Feb/27/2023
SPEAG	Dosimetric E-Field Probe	EX3DV4	7642	Mar/02/2022	Mar/01/2023
SPEAG	System Validation Dipole	D5GHzV2	1023	Jan/27/2022	Jan/26/2023
SPEAG	Dielectric Assessment Kit	DAKS-3.5	1053	Feb/28/2022	Feb/27/2023
R&S	MXG Analog Signal Generator	SMB100A03	182012	Jun/13/2022	Jun/12/2023
Agilent	Dual-directional coupler	772D	MY52180142	Oct/19/2022	Oct/18/2023
Agilent	Dual-directional coupler	778D	MY52180302	Oct/19/2022	Oct/18/2023
EMCI	Amplifier	ZHL-42	980189	Calibration not required	Calibration not required
EMCI	Amplifier	ZVE-8G	980190	Calibration not required	Calibration not required
R&S	Power Sensor	NRP18S	101973	Jan/22/2022	Jan/21/2023
R&S	Power Meter	NRX	102191	Jan/22/2022	Jan/21/2023
R&S	Power Sensor	NRP18S	101358	Jan/22/2022	Jan/21/2023
SPEAG	Software	DASY 52 V52.10.4.1527	N/A	Calibration not required	Calibration not required
SPEAG	Phantom	ELI	N/A	Calibration not required	Calibration not required
LKM	Digital thermometer	DTM3000	EC14010603	Sep/27/2022	Sep/26/2023
TECPEL	Digital thermometer	DTM-303A	TP130077	Sep/29/2022	Sep/28/2023
Note: Instruments List of the test report TESA2212000562ES.					

11 UNCERTAINTY BUDGET

Measurement Uncertainty evaluation template for DUT SAR test (3-6G)

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability Distributio	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.55%	N	1	1	1	1	6.55%	6.55%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom shell	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	1.09%	N	1	1	0.64	0.43	0.70%	0.47%	M
Liquid Conductivity (mea.)	0.95%	N	1	1	0.6	0.49	0.57%	0.47%	M
Combined standard uncertainty		RSS					11.75%	11.73%	
Expant uncertainty (95% confidence interval), K=2							23.50%	23.45%	

Measurement Uncertainty evaluation template for DUT SAR test (0.3-3G)

A	c	D	e		f	g	h=c * f / e	i=c * g / e	k
Source of Uncertainty	Tolerance/ Uncertainty	Probability Distributio	Div	Div Value	ci (1g)	ci (10g)	Standard uncertainty	Standard uncertainty	vi, or Veff
Measurement system									
Probe calibration	6.00%	N	1	1	1	1	6.00%	6.00%	∞
Isotropy , Axial	3.50%	R	√3	1.732	1	1	2.02%	2.02%	∞
Isotropy, Hemispherical	9.60%	R	√3	1.732	1	1	5.54%	5.54%	∞
Modulation Response	2.40%	R	√3	1.732	1	1	1.40%	1.40%	∞
Boundary Effect	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Linearity	4.70%	R	√3	1.732	1	1	2.71%	2.71%	∞
Detection Limits	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Readout Electronics	0.30%	N	1	1	1	1	0.30%	0.30%	∞
Response time	0.80%	R	√3	1.732	1	1	0.46%	0.46%	∞
Integration Time	2.60%	R	√3	1.732	1	1	1.50%	1.50%	∞
Measurement drift (class A evaluation)	1.75%	R	√3	1.732	1	1	1.01%	1.01%	∞
RF ambient condition - noise	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
RF ambient conditions - reflections	3.00%	R	√3	1.732	1	1	1.73%	1.73%	∞
Probe positioner Mechanical restrictions	0.40%	R	√3	1.732	1	1	0.23%	0.23%	∞
Probe Positioning with respect to phantom shell	2.90%	R	√3	1.732	1	1	1.67%	1.67%	∞
Post-processing	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Max SAR Eval	1.00%	R	√3	1.732	1	1	0.58%	0.58%	∞
Test Sample related									
Test sample positioning	2.90%	N	1	1	1	1	2.90%	2.90%	M-1
Device Holder Uncertainty	3.60%	N	1	1	1	1	3.60%	3.60%	M-1
Drift of output power	5.00%	R	√3	1.732	1	1	2.89%	2.89%	∞
Phantom and Setup									
Phantom Uncertainty	4.00%	R	√3	1.732	1	1	2.31%	2.31%	∞
Liquid permittivity (mea.)	0.55%	N	1	1	0.64	0.43	0.35%	0.24%	M
Liquid Conductivity (mea.)	0.92%	N	1	1	0.6	0.49	0.55%	0.45%	M
Combined standard uncertainty		RSS					11.44%	11.42%	
Expant uncertainty (95% confidence interval), K=2							22.87%	22.84%	

DASY6 Uncertainty Budget
According to IEC/IEEE 62209-1528
(Frequency band: 6GHz - 10GHz range)

a	b	c	d		e	e	f=b * e / d	f=b * e / d
Source of Uncertainty	Uncertainty Value (±%)	Probability Distributioin	Div.	Div. Value	(ci) 1g	(ci) 10g	Std. uncertainty (1g) (±%)	Std. uncertainty (10g) (±%)
Measurement system errors								
Probe calibration	18.6	N	2	2	1	1	9.3	9.3
Probe Calibration Drift	1.7	R	√3	1.732	1	1	1.0	1.0
Probe Linearity	4.7	R	√3	1.732	1	1	2.7	2.7
Broadband Signal	2.8	R	√3	1.732	1	1	1.6	1.6
Probe Isotropy	7.6	R	√3	1.732	1	1	4.4	4.4
Data Acquisition	0.3	N	1	1	1	1	0.3	0.3
RF Ambient	1.8	N	1	1	1	1	1.8	1.8
Probe positioning	0.2	N	1	1	0.67	0.67	0.1	0.1
Data Processing	3.5	N	1	1	1	1	3.5	3.5
Phantom and device errors								
Conductivity (meas.)DAK	2.5	N	1	1	0.78	0.71	2.0	1.8
Conductivity (temp.)BB	2.4	R	√3	1.732	0.78	0.71	1.1	1.0
Phantom Permittivity	14.0	R	√3	1.732	0.5	0.5	4.0	4.0
Distance DUT - TSL	2.0	N	1	1	2	2	4.0	4.0
Device Positioning (±0.5mm)	1.0	N	1	1	1	1	1.0	1.0
Device Holder	3.6	N	1	1	1	1	3.6	3.6
DUT Modulationm	2.4	R	√3	1.732	1	1	1.4	1.4
Time-average SAR	0.0	R	√3	1.732	1	1	0.0	0.0
DUT drift	2.5	N	1	1	1	1	2.5	2.5
Val Antenna Unc.	0.0	N	1	1	1	1	0.0	0.0
Unc. Input Power	0.0	N	1	1	1	1	0.0	0.0
Correction to the SAR results								
Deviation to Target	1.90	N	1	1	1	0.84	1.9	1.6
SAR scaling	1.097	R	√3	1.732	1	1	0.6	0.6
Combined Std. uncertainty							14.0	13.9
Expanded Std. uncertainty (95% confidence interval), K=2							28.0	27.8

cDASY6 Module mmWave Uncertainty Budget for PD
Evaluation Distances to the Antennas ≧λ/ 5
In Compliance with IEC/IEEE 63195

a	b	c	d		e	f=b * e / d	g
Source of Uncertainty	Uncertainty Value (+-dB)	Probability Distributioin	Div.	Div. Value	ci	Std. uncertainty (+-dB)	(vi) Veff
Uncertainty terms dependent on the measurement system							
Probe calibration	0.49	N	1	1	1	0.49	∞
Probe correction	0.00	R	√3	1.732	1	0.00	∞
Frequency response (BW≦1GHz)	0.20	R	√3	1.732	1	0.12	∞
Sensor cross coupling	0.00	R	√3	1.732	1	0.00	∞
Isotropy	0.50	R	√3	1.732	1	0.29	∞
Linearity	0.20	R	√3	1.732	1	0.12	∞
Probe scattering	0.00	R	√3	1.732	1	0.00	∞
Probe positioning offset	0.30	R	√3	1.732	1	0.17	∞
Probe positioning repeatability	0.04	R	√3	1.732	1	0.02	∞
Sensor mechanical offset	0.00	R	√3	1.732	1	0.00	∞
Probe spatial resolution	0.00	R	√3	1.732	1	0.00	∞
Field impedance dependance	0.00	R	√3	1.732	1	0.00	∞
Amplitude and phase drift	0.00	R	√3	1.732	1	0.00	∞
Amplitude and phase noise	0.04	R	√3	1.732	1	0.02	∞
Measurement area truncation	0.00	R	√3	1.732	1	0.00	∞
Data acquisition	0.03	N	1	1	1	0.03	∞
Sampling	0.00	R	√3	1	1	0.00	∞
Field reconstruction	2.00	R	√3	1.732	1	1.15	∞
Forward transformation	0.00	R	√3	1.732	1	0.00	∞
Power density scaling	-	R	√3	1.732	1	-	∞
Spatial averaging	0.10	R	√3	1.732	1	0.06	∞
System detection limit	0.04	R	√3	1.732	1	0.02	∞
Uncertainty terms dependent on the DUT and environmental factors							
Probe coupling with DUT	0.00	R	√3	1.732	1	0.00	∞
Modulation response	0.40	R	√3	1.732	1	0.23	∞
Integration time	0.00	R	√3	1.732	1	0.00	∞
Response time	0.00	R	√3	1.732	1	0.00	∞
Device holder influence	0.10	R	√3	1.732	1	0.06	∞
DUT alignment	0.00	R	√3	1.732	1	0.00	∞
RF ambient conditions	0.04	R	√3	1.732	1	0.02	∞
Ambient reflections	0.04	R	√3	1.732	1	0.02	∞
Immunity / secondary reception	0.00	R	√3	1.732	1	0.00	∞
Drift of the DUT	-	R	√3	1.732	1	-	∞
Combined Std. uncertainty						1.33	
Expanded Std. uncertainty (95% confidence interval), K=2						2.67	

12 SAR MEASUREMENT RESULTS

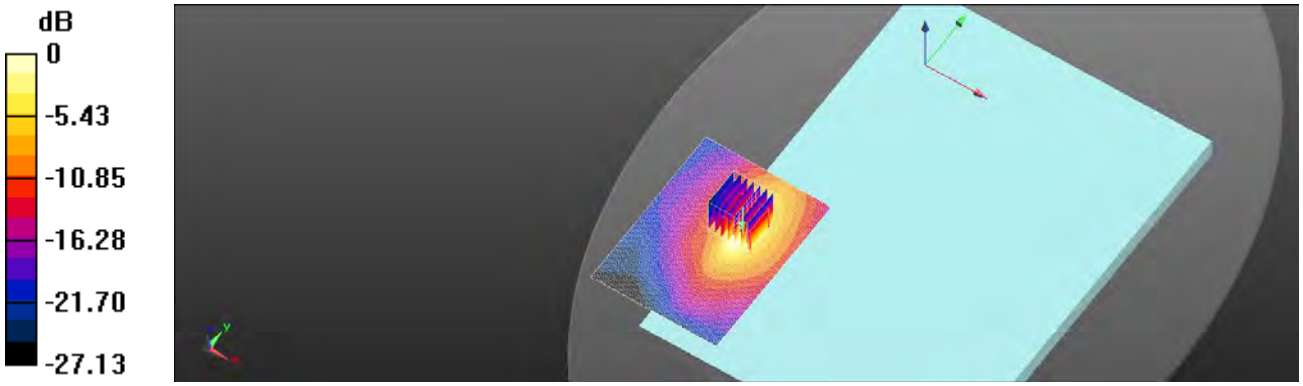
Date: 2021/12/26

ID:001
Report No. :ES/2021/C0040
WLAN 802.11b_Body_Bottom Surface_CH 11_Main_0mm

Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1.007
Medium parameters used: f = 2462 MHz; σ = 1.797 S/m; ε_r = 38.969; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C
DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.76 W/kg
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.245 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.85 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.460 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 42.2%
Maximum value of SAR (measured) = 1.97 W/kg



0 dB = 1.97 W/kg = 2.95 dBW/kg

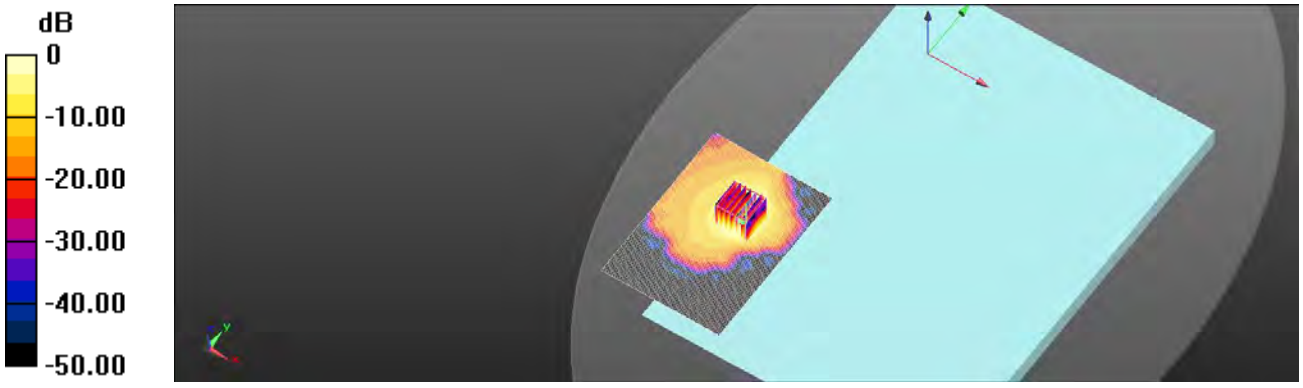
ID:002
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.2G_Body_Bottom Surface_CH 50_Main_0mm
Communication System: WLAN; Frequency: 5250 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5250 MHz; σ = 4.673 S/m; ε_r = 35.578; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.84 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.256 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.78 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.335 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 55.6%
Maximum value of SAR (measured) = 2.27 W/kg



0 dB = 2.27 W/kg = 3.56 dBW/kg

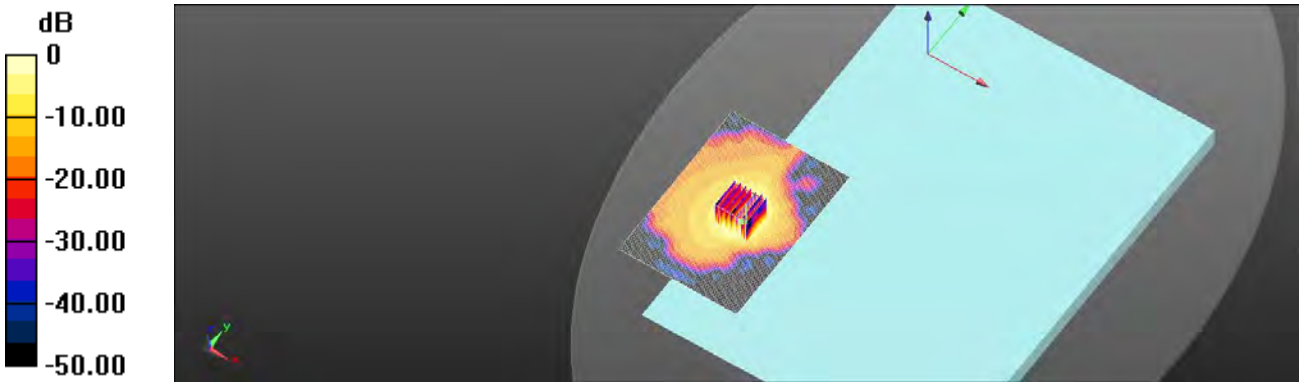
ID:003
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Main_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5290 MHz; σ = 4.711 S/m; ε_r = 35.547; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.65 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.525 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 4.51 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.328 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 53.4%
Maximum value of SAR (measured) = 2.08 W/kg

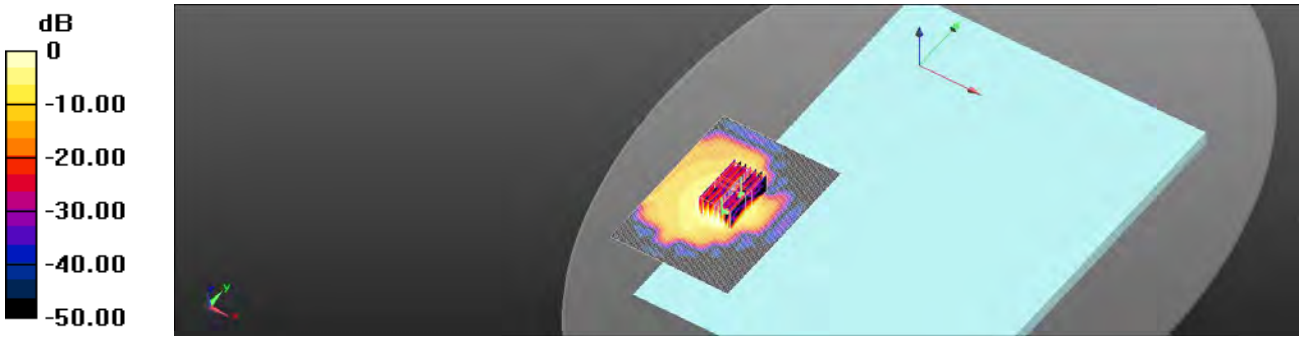


0 dB = 2.08 W/kg = 3.17 dBW/kg

ID:004
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.6G_Body_Bottom Surface_CH 114_Main_0mm
Communication System: WLAN; Frequency: 5570 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5570 MHz; σ = 4.999 S/m; ε_r = 35.177; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.5°C
DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.16, 5.16, 5.16); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.31 W/kg
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.244 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 5.22 W/kg
SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.307 W/kg
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 53%
Maximum value of SAR (measured) = 2.30 W/kg
Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.244 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.24 W/kg
SAR(1 g) = 0.708 W/kg; SAR(10 g) = 0.213 W/kg
Smallest distance from peaks to all points 3 dB below = 6.1 mm
Ratio of SAR at M2 to SAR at M1 = 52.3%
Maximum value of SAR (measured) = 1.44 W/kg

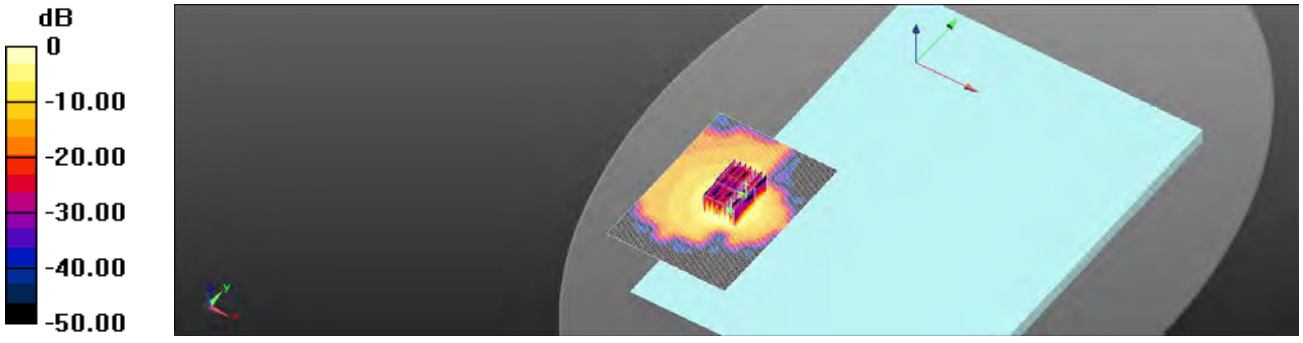


0 dB = 1.44 W/kg = 1.59 dBW/kg

ID:005
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Main_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5775 MHz; σ = 5.196 S/m; ε_r = 34.972; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.4°C
DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.3, 5.3, 5.3); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.95 W/kg
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.537 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 5.24 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.368 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 50.5%
Maximum value of SAR (measured) = 2.30 W/kg
Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.537 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.33 W/kg
SAR(1 g) = 0.918 W/kg; SAR(10 g) = 0.316 W/kg
Smallest distance from peaks to all points 3 dB below = 5.6 mm
Ratio of SAR at M2 to SAR at M1 = 50.4%
Maximum value of SAR (measured) = 1.87 W/kg



0 dB = 1.87 W/kg = 2.72 dBW/kg

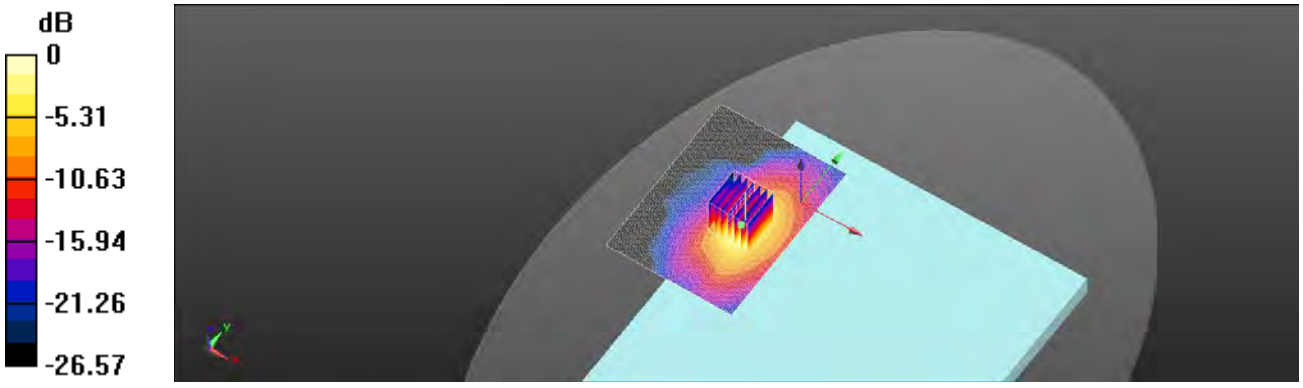
ID:006
Report No. :ES/2021/C0040
WLAN 802.11b_Body_Bottom Surface_CH 6_Aux_0mm
Communication System: WLAN; Frequency: 2437 MHz; Duty Cycle: 1:1.007
Medium parameters used: f = 2437 MHz; σ = 1.776 S/m; ε_r = 39.017; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.87 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.253 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.89 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.462 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 41.7%
Maximum value of SAR (measured) = 1.96 W/kg



0 dB = 1.96 W/kg = 2.93 dBW/kg

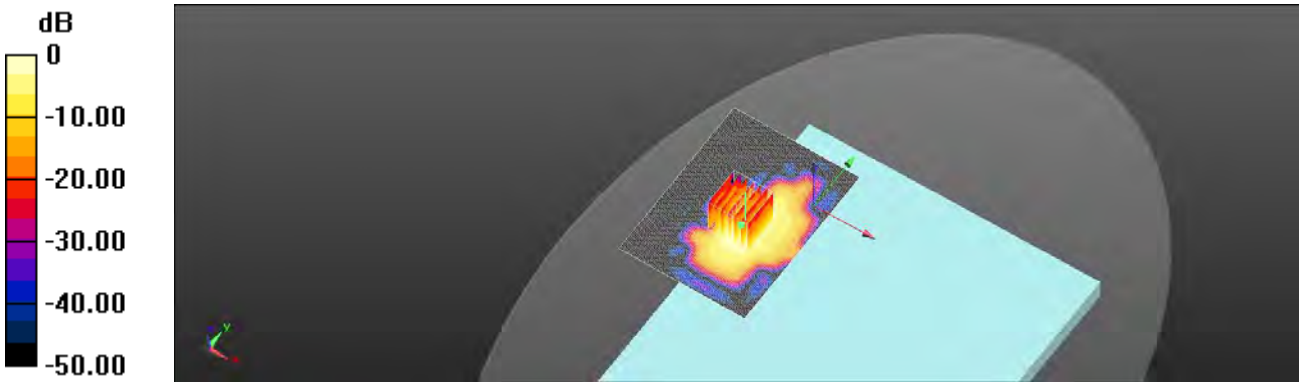
ID:007
Report No. :ES/2021/C0040
Bluetooth(GFSK)_Body_Bottom Surface_CH 78_Aux_0mm
Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.289
Medium parameters used: f = 2480 MHz; σ = 1.817 S/m; ε_r = 38.962; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.159 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.258 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.311 W/kg
SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.043 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 43.8%
Maximum value of SAR (measured) = 0.192 W/kg



0 dB = 0.192 W/kg = -7.16 dBW/kg

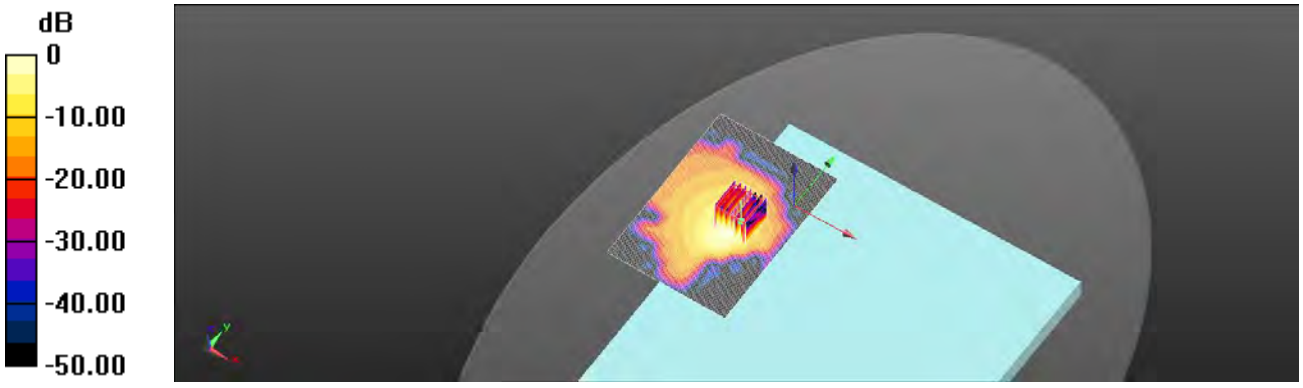
ID:008
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.2G_Body_Bottom Surface_CH 50_Aux_0mm
Communication System: WLAN; Frequency: 5250 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5250 MHz; σ = 4.673 S/m; ε_r = 35.578; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.78 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.253 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 4.45 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.282 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 55.1%
Maximum value of SAR (measured) = 2.19 W/kg



0 dB = 2.19 W/kg = 3.41 dBW/kg

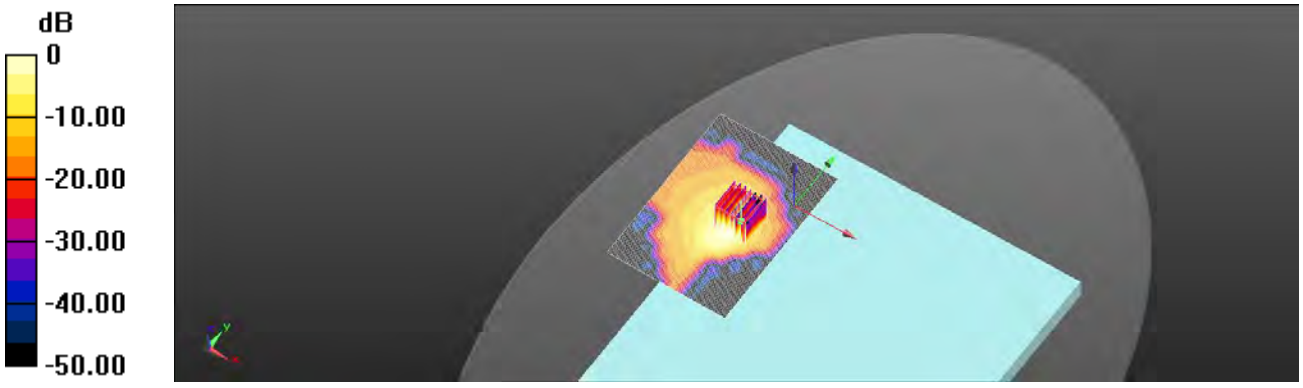
ID:009
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Aux_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5290 MHz; σ = 4.711 S/m; ε_r = 35.547; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.79 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.356 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 4.36 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.279 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 54.7%
Maximum value of SAR (measured) = 2.14 W/kg



0 dB = 2.14 W/kg = 3.30 dBW/kg

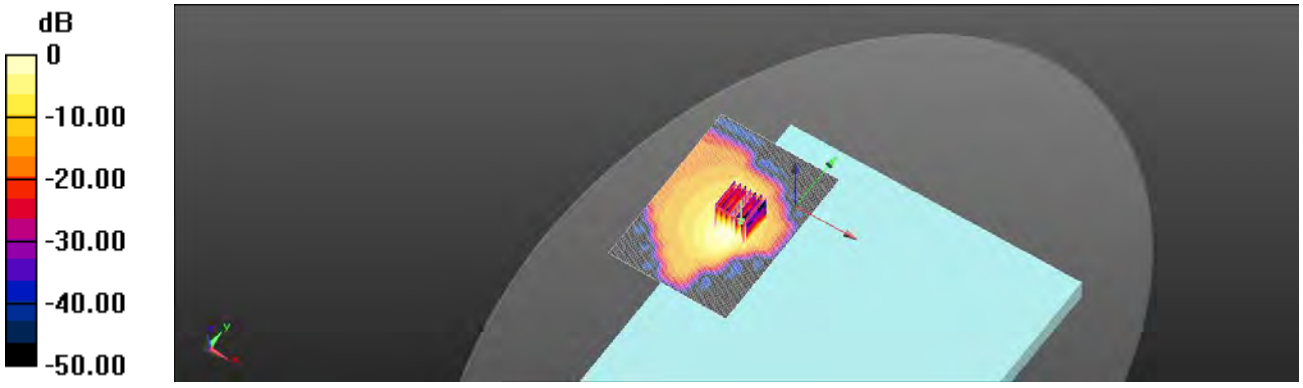
ID:010
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.6G_Body_Bottom Surface_CH 114_Aux_0mm
Communication System: WLAN; Frequency: 5570 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5570 MHz; σ = 4.999 S/m; ε_r = 35.177; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.16, 5.16, 5.16); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.86 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.356 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 5.48 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.338 W/kg
Smallest distance from peaks to all points 3 dB below = 4.7 mm
Ratio of SAR at M2 to SAR at M1 = 52.2%
Maximum value of SAR (measured) = 2.45 W/kg



0 dB = 2.45 W/kg = 3.90 dBW/kg

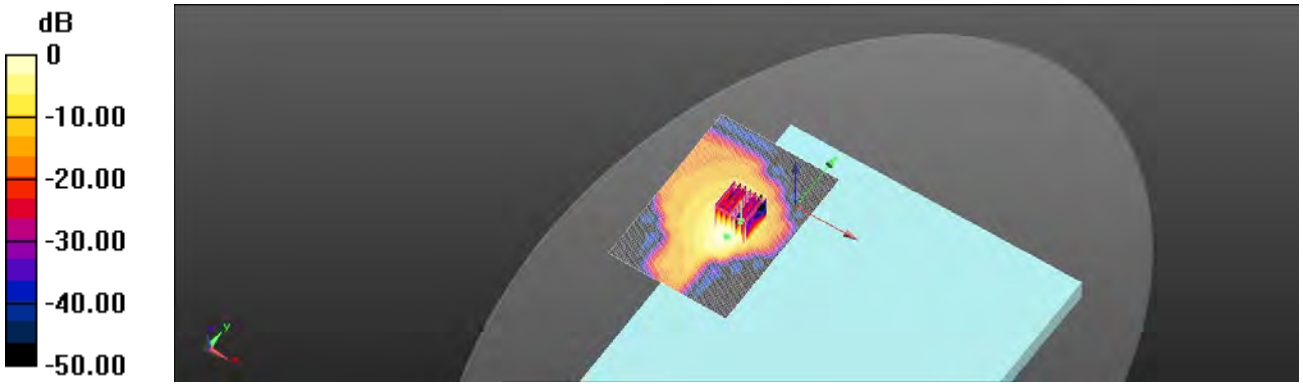
ID:011
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Aux_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5775 MHz; σ = 5.196 S/m; ε_r = 34.972; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.3, 5.3, 5.3); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.82 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.325 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 4.89 W/kg
SAR(1 g) = 0.995 W/kg; SAR(10 g) = 0.286 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 51.9%
Maximum value of SAR (measured) = 2.16 W/kg



0 dB = 2.16 W/kg = 3.34 dBW/kg

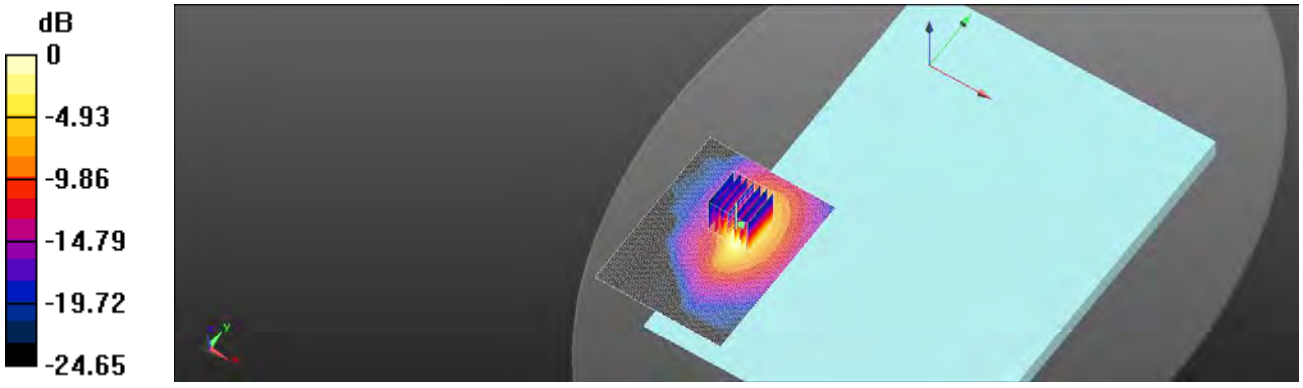
ID:012
Report No. :ES/2021/C0040
WLAN 802.11b_Body_Bottom Surface_CH 11_Main_0mm
Communication System: WLAN; Frequency: 2462 MHz; Duty Cycle: 1:1.007
Medium parameters used: f = 2462 MHz; σ = 1.797 S/m; ε_r = 38.969; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.256 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.92 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.487 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 42.1%
Maximum value of SAR (measured) = 1.97 W/kg



0 dB = 1.97 W/kg = 2.94 dBW/kg

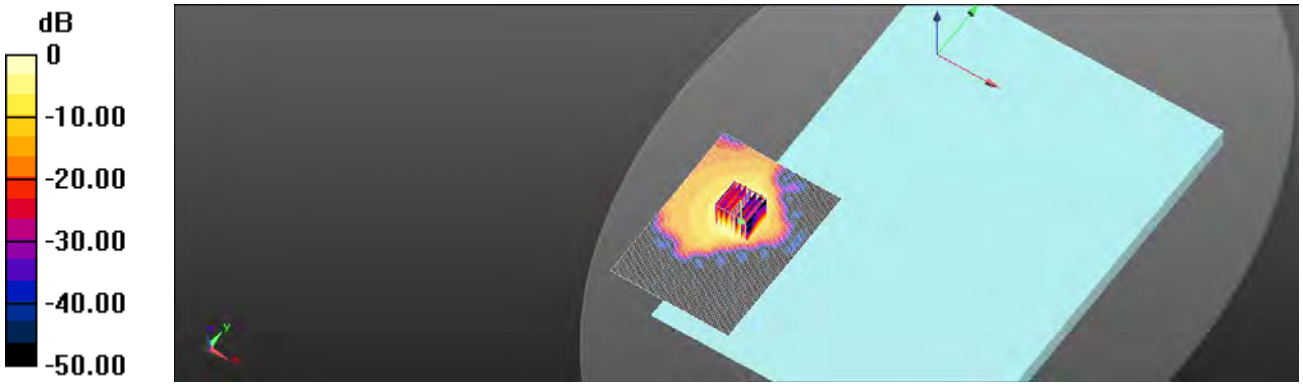
ID:013
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.2G_Body_Bottom Surface_CH 50_Main_0mm
Communication System: WLAN; Frequency: 5250 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5250 MHz; σ = 4.673 S/m; ε_r = 35.578; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.17 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.354 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 5.09 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.308 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 54%
Maximum value of SAR (measured) = 2.51 W/kg



0 dB = 2.51 W/kg = 3.99 dBW/kg

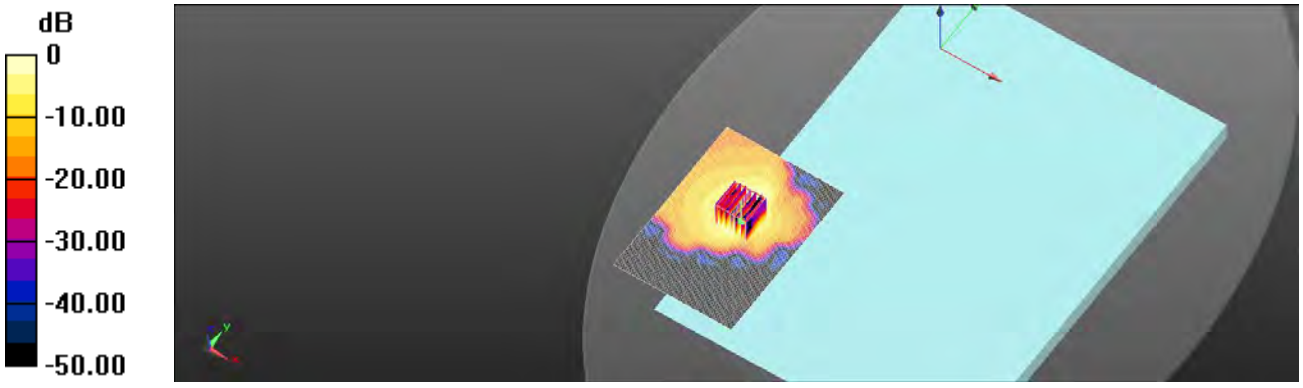
ID:014
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Main_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5290 MHz; σ = 4.711 S/m; ε_r = 35.547; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.90 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.585 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.86 W/kg
SAR(1 g) = 0.940 W/kg; SAR(10 g) = 0.283 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 56.9%
Maximum value of SAR (measured) = 1.79 W/kg



0 dB = 1.79 W/kg = 2.53 dBW/kg

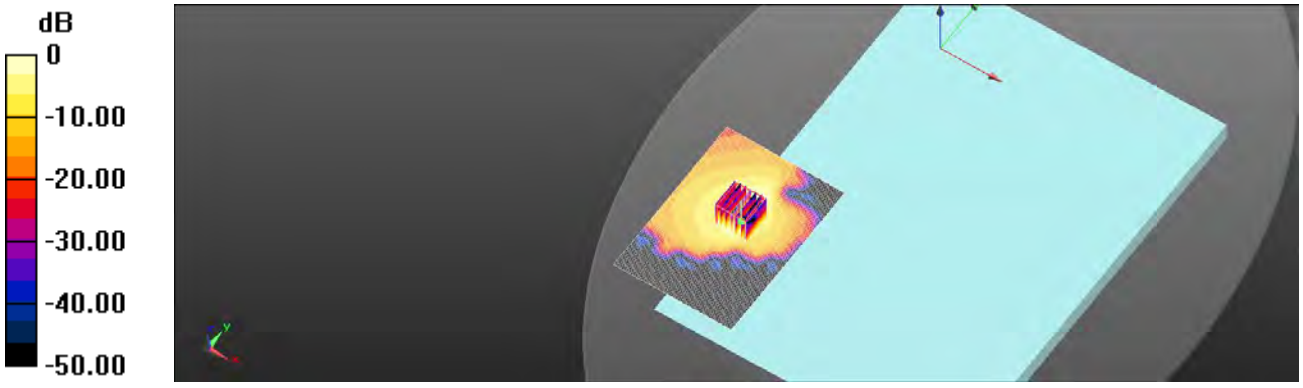
ID:015
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.6G_Body_Bottom Surface_CH 114_Main_0mm
Communication System: WLAN; Frequency: 5570 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5570 MHz; σ = 4.999 S/m; ε_r = 35.177; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.16, 5.16, 5.16); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.31 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.357 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 4.97 W/kg
SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.349 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 54.6%
Maximum value of SAR (measured) = 2.24 W/kg

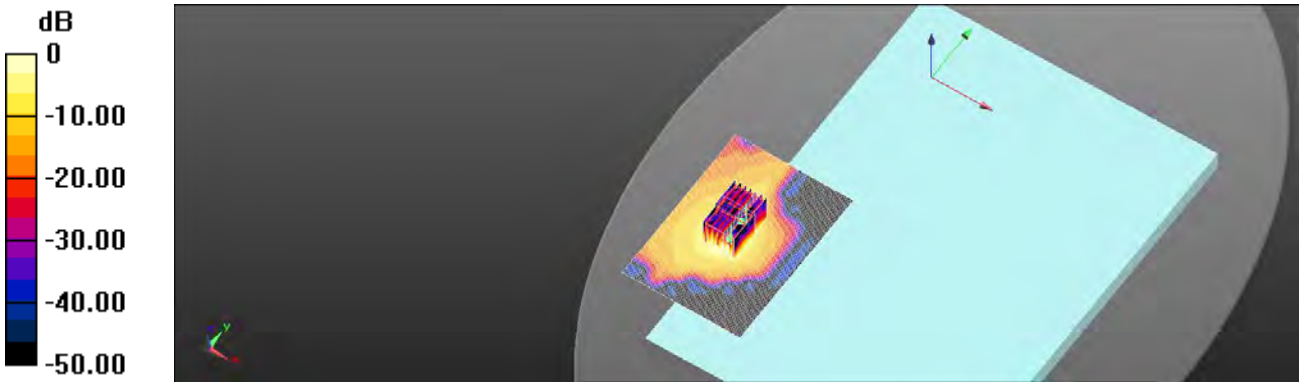


0 dB = 2.24 W/kg = 3.51 dBW/kg

ID:016
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Main_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5775 MHz; σ = 5.196 S/m; ε_r = 34.972; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.4°C
DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.3, 5.3, 5.3); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.30 W/kg
Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.352 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 7.29 W/kg
SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.325 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 50%
Maximum value of SAR (measured) = 3.09 W/kg
Zoom Scan (7x7x12)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.352 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.73 W/kg
SAR(1 g) = 0.977 W/kg; SAR(10 g) = 0.319 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 50.9%
Maximum value of SAR (measured) = 2.01 W/kg



0 dB = 3.09 W/kg = 4.90 dBW/kg

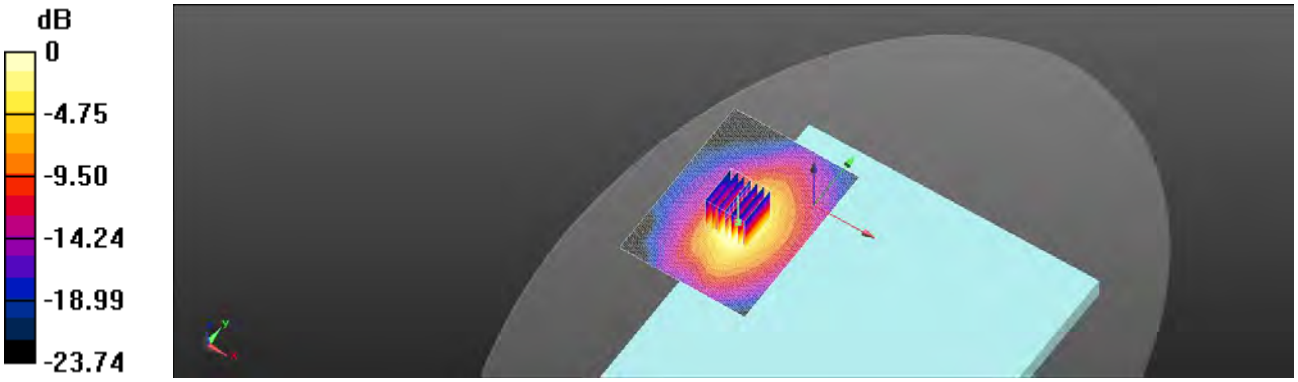
ID:017
Report No. :ES/2021/C0040
WLAN 802.11b_Body_Bottom Surface_CH 1_Aux_0mm
Communication System: WLAN; Frequency: 2412 MHz; Duty Cycle: 1:1.007
Medium parameters used: f = 2412 MHz; σ = 1.75 S/m; ε_r = 39.052; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 1.32 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.445 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.85 W/kg
SAR(1 g) = 0.809 W/kg; SAR(10 g) = 0.381 W/kg
Smallest distance from peaks to all points 3 dB below = 7.1 mm
Ratio of SAR at M2 to SAR at M1 = 44.7%
Maximum value of SAR (measured) = 1.28 W/kg



0 dB = 1.28 W/kg = 1.07 dBW/kg

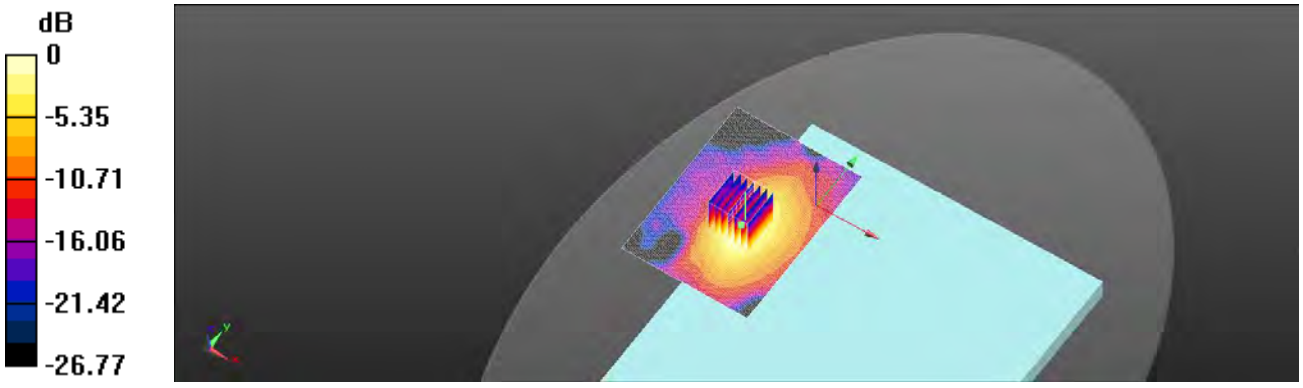
ID:018
Report No. :ES/2021/C0040
Bluetooth(GFSK)_Body_Bottom Surface_CH 78 _Aux_0mm
Communication System: Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.289
Medium parameters used: f = 2480 MHz; σ = 1.817 S/m; ε_r = 38.962; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (81x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.218 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.585 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.332 W/kg
SAR(1 g) = 0.139 W/kg; SAR(10 g) = 0.063 W/kg
Smallest distance from peaks to all points 3 dB below = 7.1 mm
Ratio of SAR at M2 to SAR at M1 = 43.6%
Maximum value of SAR (measured) = 0.228 W/kg



0 dB = 0.228 W/kg = -6.43 dBW/kg

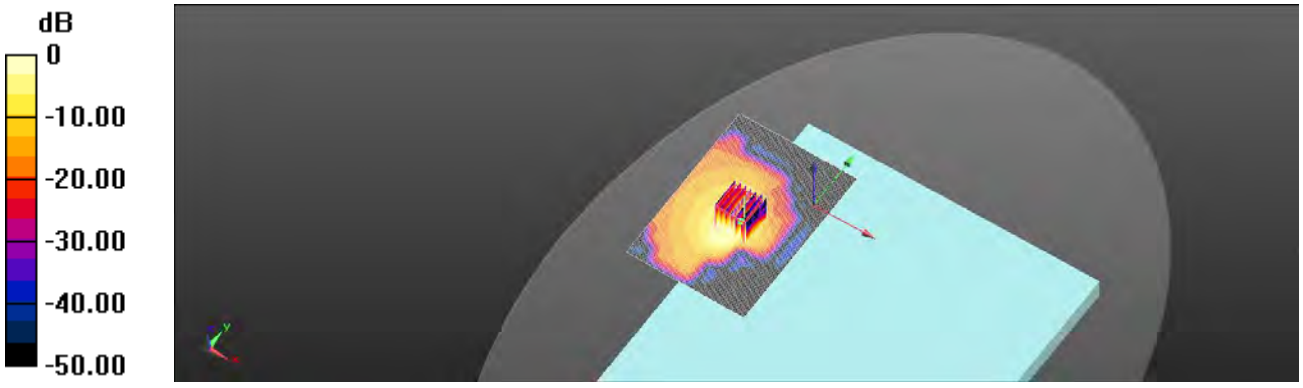
ID:019
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.2G_Body_Bottom Surface_CH 50_Aux_0mm
Communication System: WLAN; Frequency: 5250 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5250 MHz; σ = 4.673 S/m; ε_r = 35.578; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.10 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.653 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 5.22 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.316 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 55%
Maximum value of SAR (measured) = 2.45 W/kg



0 dB = 2.45 W/kg = 3.89 dBW/kg

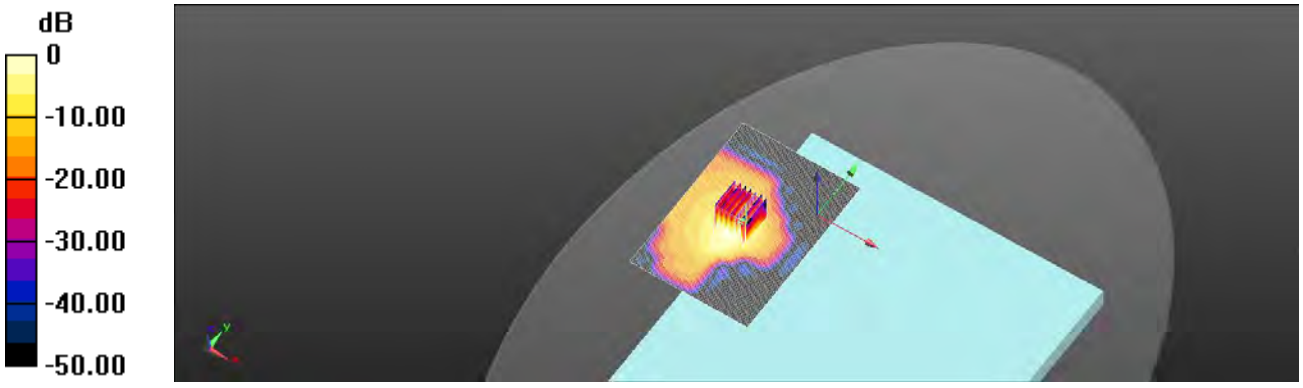
ID:020
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Aux_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5290 MHz; σ = 4.711 S/m; ε_r = 35.547; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.65 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.785 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 4.70 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.300 W/kg
Smallest distance from peaks to all points 3 dB below = 4.7 mm
Ratio of SAR at M2 to SAR at M1 = 54.6%
Maximum value of SAR (measured) = 2.23 W/kg



0 dB = 2.23 W/kg = 3.48 dBW/kg

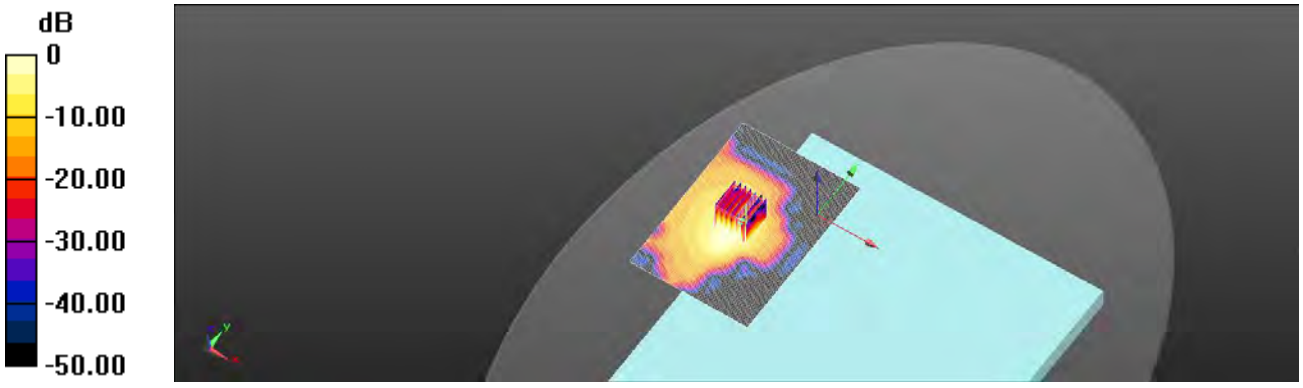
ID:021
Report No. :ES/2021/C0040
WLAN 802.11ac(160M) 5.6G_Body_Bottom Surface_CH 114_Aux_0mm
Communication System: WLAN; Frequency: 5570 MHz; Duty Cycle: 1:1.012
Medium parameters used: f = 5570 MHz; σ = 4.999 S/m; ε_r = 35.177; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.16, 5.16, 5.16); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.86 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.258 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 5.48 W/kg
SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.338 W/kg
Smallest distance from peaks to all points 3 dB below = 4.7 mm
Ratio of SAR at M2 to SAR at M1 = 52.2%
Maximum value of SAR (measured) = 2.45 W/kg



0 dB = 2.45 W/kg = 3.90 dBW/kg

Date: 2021/12/28

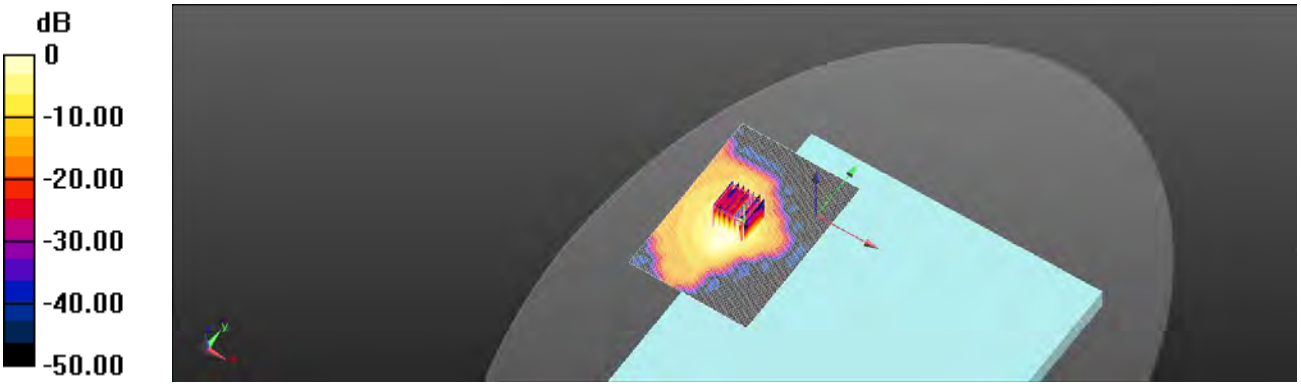
ID:022
Report No. :ES/2021/C0040
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Aux_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty Cycle: 1:1.016
Medium parameters used: f = 5775 MHz; σ = 5.196 S/m; ε_r = 34.972; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.3, 5.3, 5.3); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.93 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.589 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 5.17 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.337 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 50.9%
Maximum value of SAR (measured) = 2.30 W/kg



0 dB = 2.30 W/kg = 3.61 dBW/kg

Date: 2022/12/19

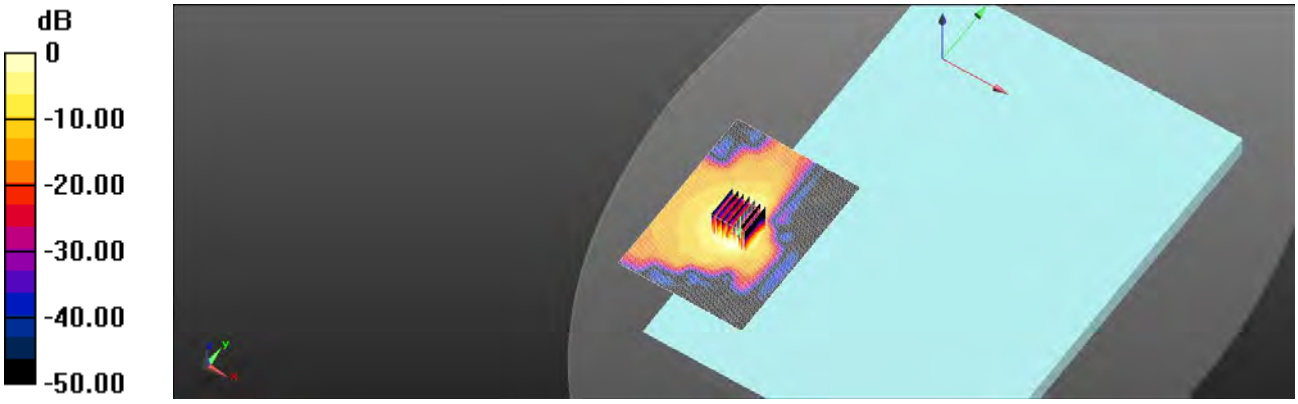
ID:065
Report No. : TESA2212000562ES.
WLAN 802.11ax(160M) 5.9G_Body_Bottom Surface_CH 163_Main_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.015
Medium parameters used: f = 5815 MHz; σ = 5.342 S/m; ε_r = 35.249; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.1℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.15, 5.15, 5.15); Calibrated: 2022/03/02
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1665; Calibrated: 2022/02/28
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 2.00 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.833 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 4.19 W/kg
SAR(1 g) = 0.984 W/kg; SAR(10 g) = 0.339 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 50%
Maximum value of SAR (measured) = 1.87 W/kg



0 dB = 1.87 W/kg = 2.71 dBW/kg

Date: 2022/12/19

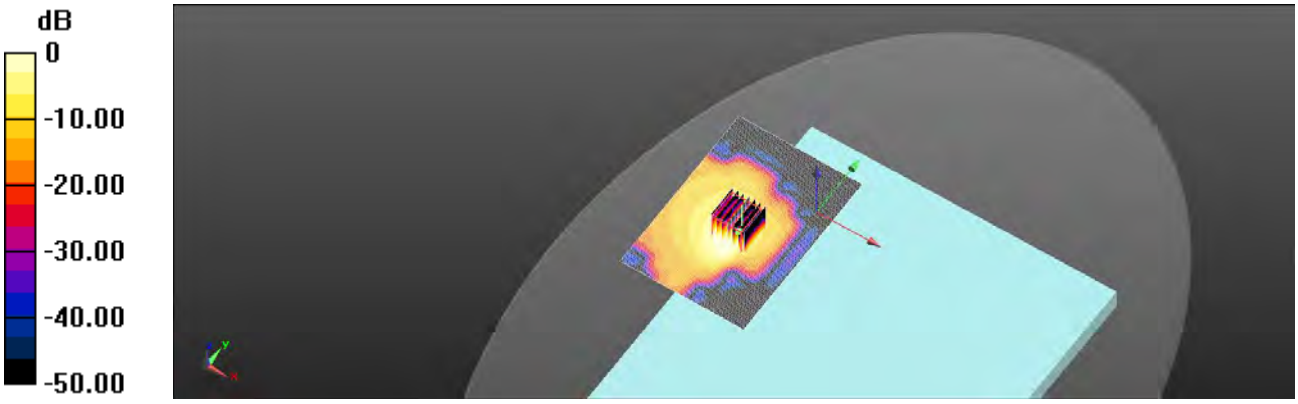
ID:066
Report No. : TESA2212000562ES.
WLAN 802.11ac(160M) 5.9G_Body_Bottom Surface_CH 163_Aux_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.015
Medium parameters used: f = 5815 MHz; σ = 5.342 S/m; ε_r = 35.249; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.1℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.15, 5.15, 5.15) ; Calibrated: 2022/03/02
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1665; Calibrated: 2022/02/28
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.93 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.739 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 4.02 W/kg
SAR(1 g) = 0.896 W/kg; SAR(10 g) = 0.296 W/kg
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 52%
Maximum value of SAR (measured) = 1.79 W/kg



0 dB = 1.79 W/kg = 2.53 dBW/kg

Date: 2022/12/19

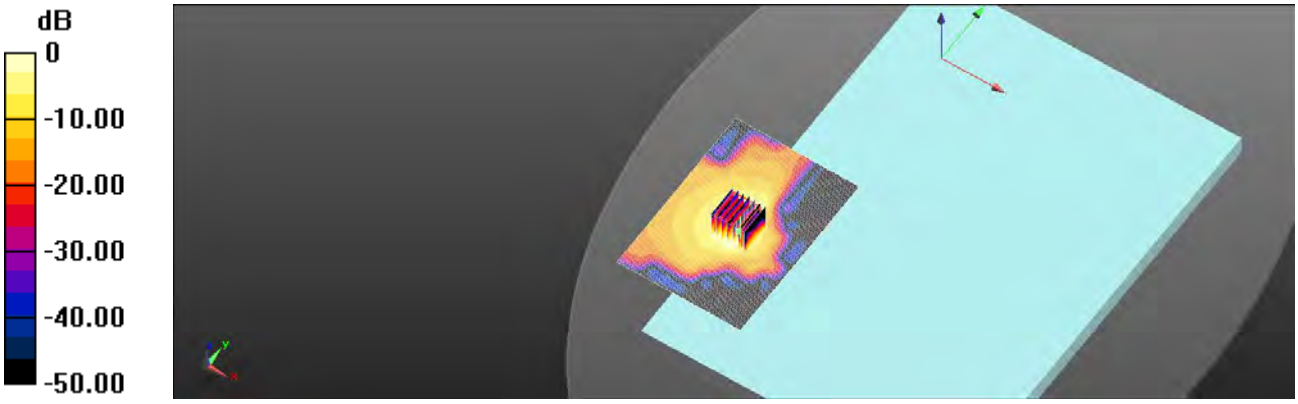
ID:067
Report No. : TESA2212000562ES..
WLAN 802.11ax(160M) 5.9G_Body_Bottom Surface_CH 163_Main_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.015
Medium parameters used: f = 5815 MHz; σ = 5.342 S/m; εr = 35.249; ρ = 1000 kg/m3 Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.1℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.15, 5.15, 5.15); Calibrated: 2022/03/02
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1665; Calibrated: 2022/02/28
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.98 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.142 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 4.11 W/kg
SAR(1 g) = 0.953 W/kg; SAR(10 g) = 0.336 W/kg
Smallest distance from peaks to all points 3 dB below = 5.6 mm
Ratio of SAR at M2 to SAR at M1 = 49.6%
Maximum value of SAR (measured) = 1.73 W/kg



0 dB = 1.73 W/kg = 2.39 dBW/kg

Date: 2022/12/19

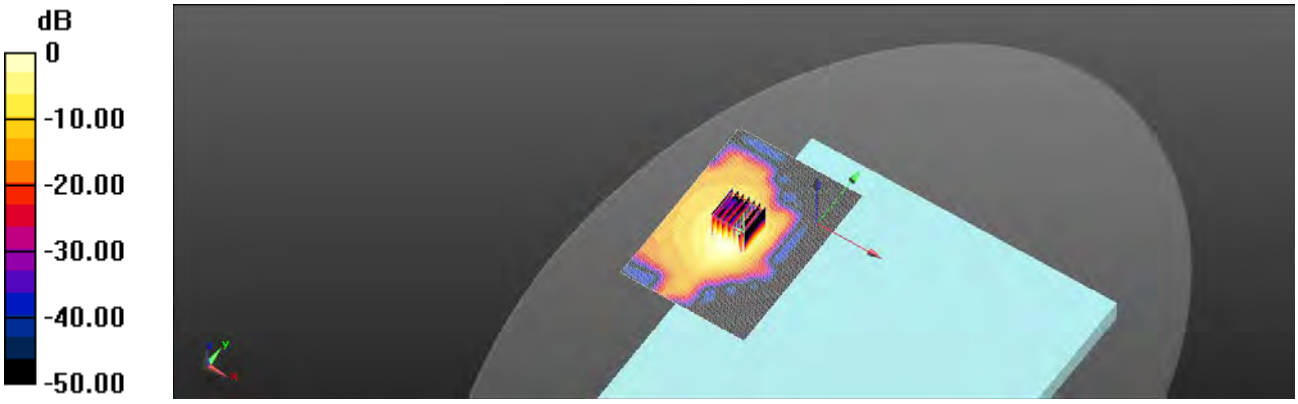
ID:068
Report No. : TESA2212000562ES.
WLAN 802.11ac(160M) 5.9G_Body_Bottom Surface_CH 163_Aux_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.015
Medium parameters used: f = 5815 MHz; σ = 5.342 S/m; εr = 35.249; ρ = 1000 kg/m3 Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.1℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.15, 5.15, 5.15) ; Calibrated: 2022/03/02
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1665; Calibrated: 2022/02/28
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (91x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.81 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.739 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 5.14 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.330 W/kg
Smallest distance from peaks to all points 3 dB below = 4.7 mm
Ratio of SAR at M2 to SAR at M1 = 50.5%
Maximum value of SAR (measured) = 2.13 W/kg



0 dB = 2.13 W/kg = 3.28 dBW/kg

ID:023
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	6.2	5.459	34.688

Hardware Setup

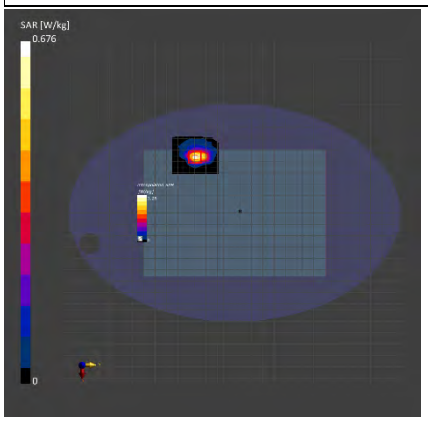
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 01:22	2022-03-16, 01:43
psSAR1g [W/Kg]	0.589	0.667
psSAR10g [W/Kg]	0.213	0.217
psPDab (1.0cm2, sq) [W/m2]		7.37
psPDab (4.0cm2, sq) [W/m2]		4.51
Power Drift [dB]	-0.08	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.8
Dist 3dB Peak [mm]		5.2



ID:024
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	6.2	5.839	34.349

Hardware Setup

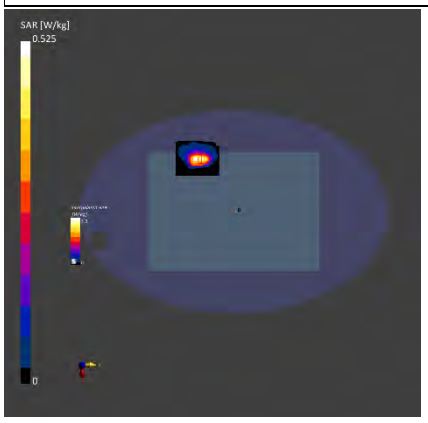
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 01:51	2022-03-16, 02:13
psSAR1g [W/Kg]	0.528	0.612
psSAR10g [W/Kg]	0.187	0.193
psPDab (1.0cm2, sq) [W/m2]		6.75
psPDab (4.0cm2, sq) [W/m2]		4.34
Power Drift [dB]	-0.01	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.6
Dist 3dB Peak [mm]		5.4



ID:025
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-6, IEEE 802.11ax (160MHz), Channel 111 (6505.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	6.2	6.022	34.141

Hardware Setup

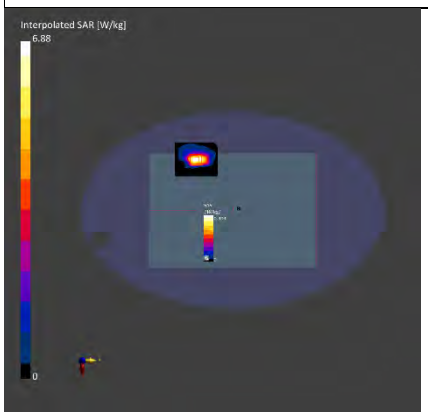
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 02:25	2022-03-16, 02:39
psSAR1g [W/Kg]	0.522	0.623
psSAR10g [W/Kg]	0.188	0.198
psPDab (1.0cm2, sq) [W/m2]		6.66
psPDab (4.0cm2, sq) [W/m2]		4.29
Power Drift [dB]	-0.08	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.5
Dist 3dB Peak [mm]		5.4



ID:026
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	6.2	6.211	33.945

Hardware Setup

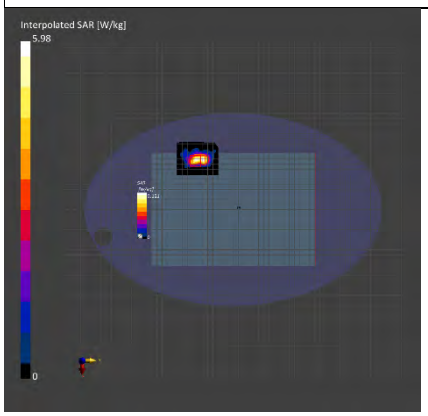
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 04:43	2021-12-29, 05:02
psSAR1g [W/Kg]	0.592	0.697
psSAR10g [W/Kg]	0.217	0.202
psPDab (1.0cm2, sq) [W/m2]		7.49
psPDab (4.0cm2, sq) [W/m2]		4.58
Power Drift [dB]	-0.06	-0.15
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.9
Dist 3dB Peak [mm]		4.8



ID:027
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	6.14	6.581	33.575

Hardware Setup

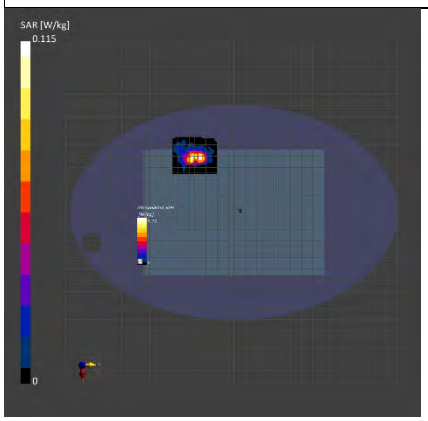
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 05:23	2021-12-29, 05:45
psSAR1g [W/Kg]	0.643	0.751
psSAR10g [W/Kg]	0.222	0.209
psPDab (1.0cm2, sq) [W/m2]		7.76
psPDab (4.0cm2, sq) [W/m2]		4.81
Power Drift [dB]	-0.12	0.13
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.5
Dist 3dB Peak [mm]		4.8



ID:028
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	6.2	5.459	34.688

Hardware Setup

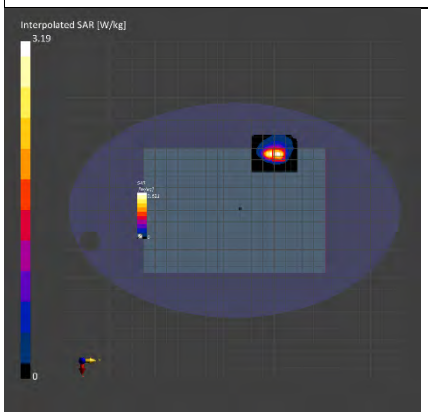
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 02:51	2022-03-16, 03:04
psSAR1g [W/Kg]	0.605	0.673
psSAR10g [W/Kg]	0.218	0.225
psPDab (1.0cm2, sq) [W/m2]		7.44
psPDab (4.0cm2, sq) [W/m2]		4.78
Power Drift [dB]	-0.05	-0.10
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.1
Dist 3dB Peak [mm]		5.2



ID:029
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	6.2	5.839	34.349

Hardware Setup

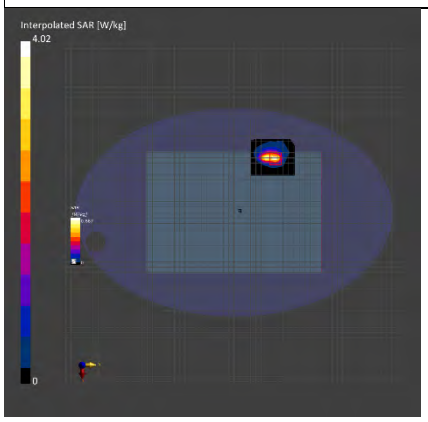
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 03:16	2022-03-16, 03:33
psSAR1g [W/Kg]	0.633	0.656
psSAR10g [W/Kg]	0.209	0.215
psPDab (1.0cm2, sq) [W/m2]		6.56
psPDab (4.0cm2, sq) [W/m2]		4.57
Power Drift [dB]	-0.09	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.2
Dist 3dB Peak [mm]		4.7



ID:030
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-6, IEEE 802.11ax (160MHz), Channel 111 (6505.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	6.2	6.022	34.141

Hardware Setup

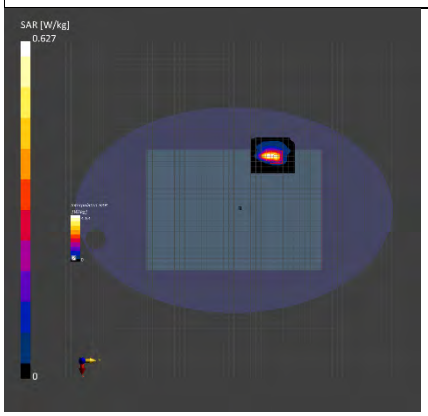
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 03:48	2022-03-16, 04:03
psSAR1g [W/Kg]	0.696	0.823
psSAR10g [W/Kg]	0.224	0.238
psPDab (1.0cm2, sq) [W/m2]		8.88
psPDab (4.0cm2, sq) [W/m2]		5.41
Power Drift [dB]	0.02	0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.5
Dist 3dB Peak [mm]		4.8



ID:031
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	6.2	6.213	33.941

Hardware Setup

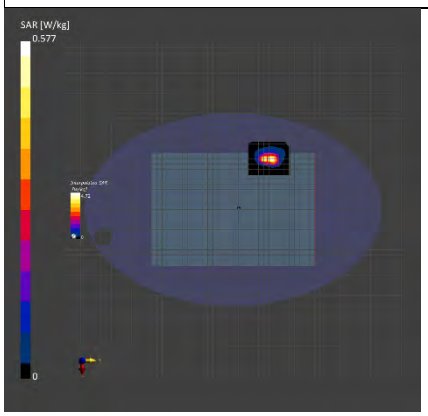
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 03:48	2022-03-16, 04:03
psSAR1g [W/Kg]	0.665	0.782
psSAR10g [W/Kg]	0.211	0.223
psPDab (1.0cm2, sq) [W/m2]		8.25
psPDab (4.0cm2, sq) [W/m2]		5.01
Power Drift [dB]	0.04	-0.10
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.6
Dist 3dB Peak [mm]		4.8



ID:032
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	6.14	6.581	33.575

Hardware Setup

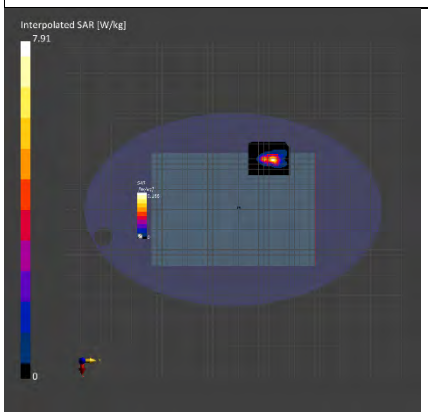
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 10:36	2021-12-29, 10:21
psSAR1g [W/Kg]	0.968	0.993
psSAR10g [W/Kg]	0.283	0.304
psPDab (1.0cm2, sq) [W/m2]		9.33
psPDab (4.0cm2, sq) [W/m2]		7.07
Power Drift [dB]	-0.19	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.0
Dist 3dB Peak [mm]		4.2



ID:033
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN,10755-AAC	6025.0,15	6.2	5.459	34.688

Hardware Setup

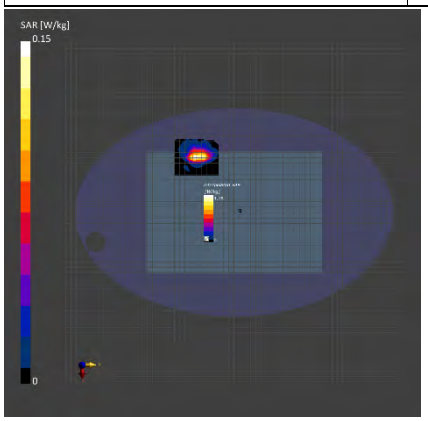
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	All points	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 04:16	2022-03-16, 04:41
psSAR1g [W/Kg]	0.735	0.764
psSAR10g [W/Kg]	0.242	0.256
psPDab (1.0cm2, sq) [W/m2]		7.64
psPDab (4.0cm2, sq) [W/m2]		5.66
Power Drift [dB]	-0.03	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.3
Dist 3dB Peak [mm]		5.3



ID:034
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 47 (6185.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN,10755-AAC	6185.0, 47	6.2	5.652	34.522

Hardware Setup

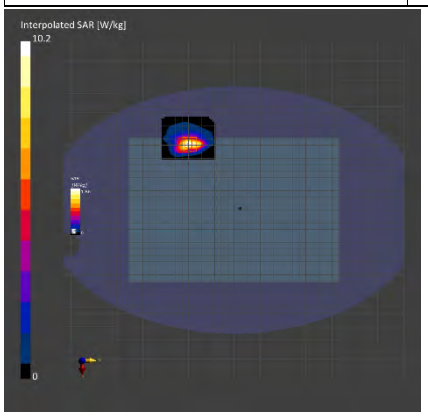
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	All points	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 04:45	2022-03-16, 04:53
psSAR1g [W/Kg]	0.785	0.814
psSAR10g [W/Kg]	0.282	0.306
psPDab (1.0cm2, sq) [W/m2]		8.14
psPDab (4.0cm2, sq) [W/m2]		6.61
Power Drift [dB]	-0.05	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.7
Dist 3dB Peak [mm]		5.6



ID:035
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN,10755-AAC	6345.0,79	6.2	5.839	34.349

Hardware Setup

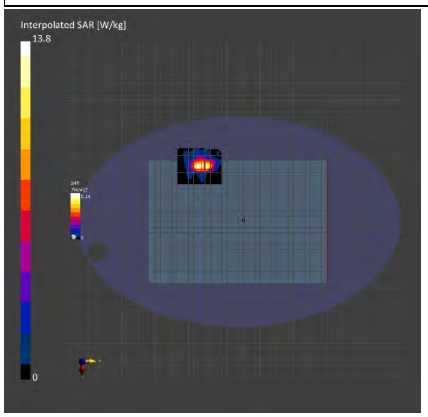
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	All points	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 04:56	2022-03-16, 05:11
psSAR1g [W/Kg]	0.774	0.802
psSAR10g [W/Kg]	0.265	0.274
psPDab (1.0cm2, sq) [W/m2]		8.03
psPDab (4.0cm2, sq) [W/m2]		6.07
Power Drift [dB]	-0.16	-0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.9
Dist 3dB Peak [mm]		6.1



ID:036
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz), Channel 111 (6505.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	6.2	6.022	34.141

Hardware Setup

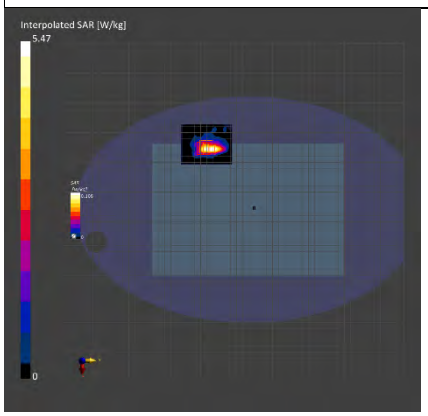
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	All points	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 05:22	2022-03-16, 05:43
psSAR1g [W/Kg]	0.683	0.745
psSAR10g [W/Kg]	0.225	0.234
psPDab (1.0cm2, sq) [W/m2]		7.74
psPDab (4.0cm2, sq) [W/m2]		5.57
Power Drift [dB]	-0.08	-0.16
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.0
Dist 3dB Peak [mm]		5.5



ID:037
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	6.2	6.213	33.941

Hardware Setup

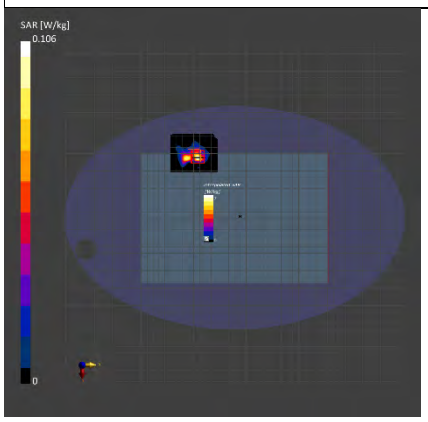
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 06:03	2022-03-16, 06:26
psSAR1g [W/Kg]	0.712	0.751
psSAR10g [W/Kg]	0.223	0.231
psPDab (1.0cm2, sq) [W/m2]		7.59
psPDab (4.0cm2, sq) [W/m2]		5.34
Power Drift [dB]	0.03	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.6
Dist 3dB Peak [mm]		6.1



ID:038
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	6.14	6.581	33.575

Hardware Setup

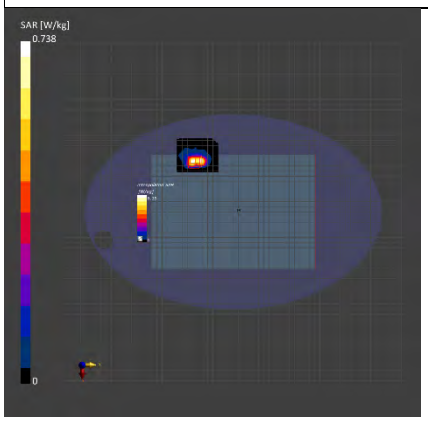
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.2 x 3.2 x 1.2
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 15:57	2021-12-29, 16:14
psSAR1g [W/Kg]	0.816	1.01
psSAR10g [W/Kg]	0.275	0.267
psPDab (1.0cm2, sq) [W/m2]		8,43
psPDab (4.0cm2, sq) [W/m2]		6.26
Power Drift [dB]	0.02	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.2
Dist 3dB Peak [mm]		4.0



ID:039
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	6.2	5.459	34.688

Hardware Setup

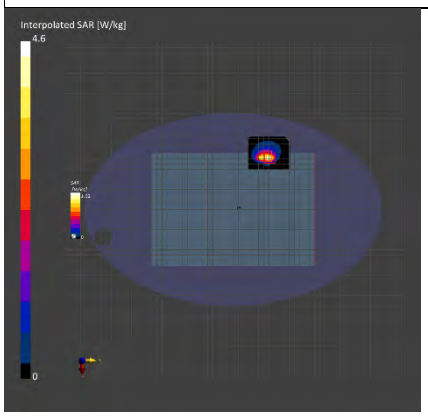
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 06:39	2022-03-16, 06:55
psSAR1g [W/Kg]	0.902	0.912
psSAR10g [W/Kg]	0.302	0.311
psPDab (1.0cm2, sq) [W/m2]		9.36
psPDab (4.0cm2, sq) [W/m2]		7.01
Power Drift [dB]	-0.04	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.1
Dist 3dB Peak [mm]		5.5



ID:040
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 47 (6185.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6185.0, 47	6.2	5.652	34.522

Hardware Setup

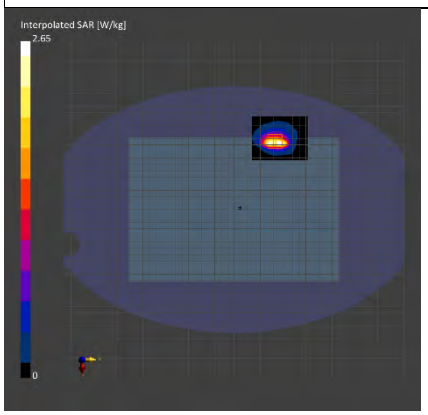
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 09:12	2022-03-16, 09:26
psSAR1g [W/Kg]	0.894	0.925
psSAR10g [W/Kg]	0.333	0.352
psPDab (1.0cm2, sq) [W/m2]		9.25
psPDab (4.0cm2, sq) [W/m2]		7.13
Power Drift [dB]	0.04	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.1
Dist 3dB Peak [mm]		5.4



ID:041
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	6.2	5.839	34.349

Hardware Setup

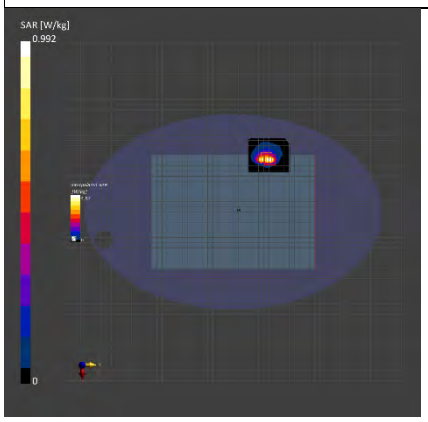
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 07:14	2022-03-16, 07:39
psSAR1g [W/Kg]	0.867	0.898
psSAR10g [W/Kg]	0.298	0.306
psPDab (1.0cm2, sq) [W/m2]		8.98
psPDab (4.0cm2, sq) [W/m2]		6.78
Power Drift [dB]	0.05	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.9
Dist 3dB Peak [mm]		5.2



ID:042
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz), Channel 111 (6505.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	6.2	6.022	34.141

Hardware Setup

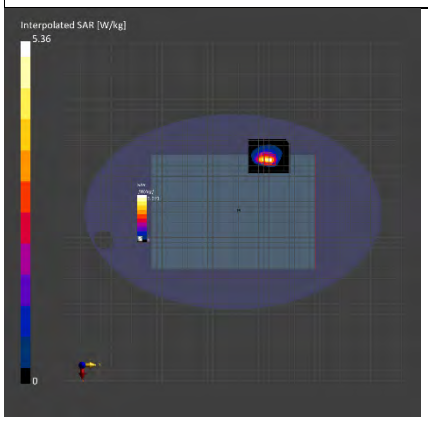
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 07:48	2022-03-16, 08:05
psSAR1g [W/Kg]	0.933	0.983
psSAR10g [W/Kg]	0.301	0.312
psPDab (1.0cm2, sq) [W/m2]		9.53
psPDab (4.0cm2, sq) [W/m2]		7.16
Power Drift [dB]	0.05	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.3
Dist 3dB Peak [mm]		5.2



ID:043
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	6.2	6.213	33.941

Hardware Setup

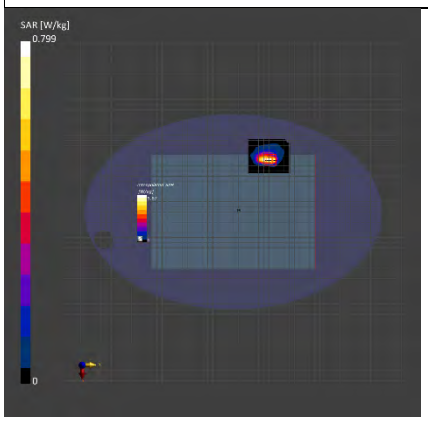
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 08:24	2022-03-16, 08:51
psSAR1g [W/Kg]	0.886	0.985
psSAR10g [W/Kg]	0.291	0.296
psPDab (1.0cm2, sq) [W/m2]		8.77
psPDab (4.0cm2, sq) [W/m2]		6.71
Power Drift [dB]	-0.15	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.9
Dist 3dB Peak [mm]		4.8



ID:044
Report No. :ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	6.14	6.581	33.575

Hardware Setup

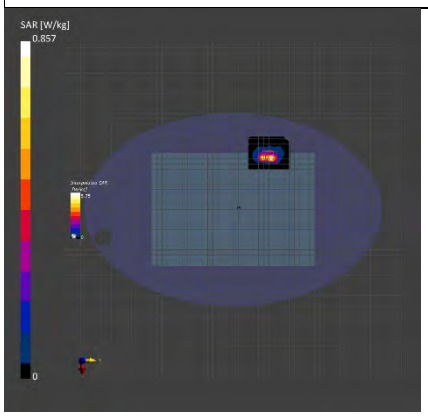
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 18:15	2021-12-29, 18:31
psSAR1g [W/Kg]	0.806	0.918
psSAR10g [W/Kg]	0.265	0.241
psPDab (1.0cm2, sq) [W/m2]		7.64
psPDab (4.0cm2, sq) [W/m2]		5.78
Power Drift [dB]	-0.02	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.3
Dist 3dB Peak [mm]		4.8



13 PD MEASUREMENT RESULTS

ID:045
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0

Hardware Setup

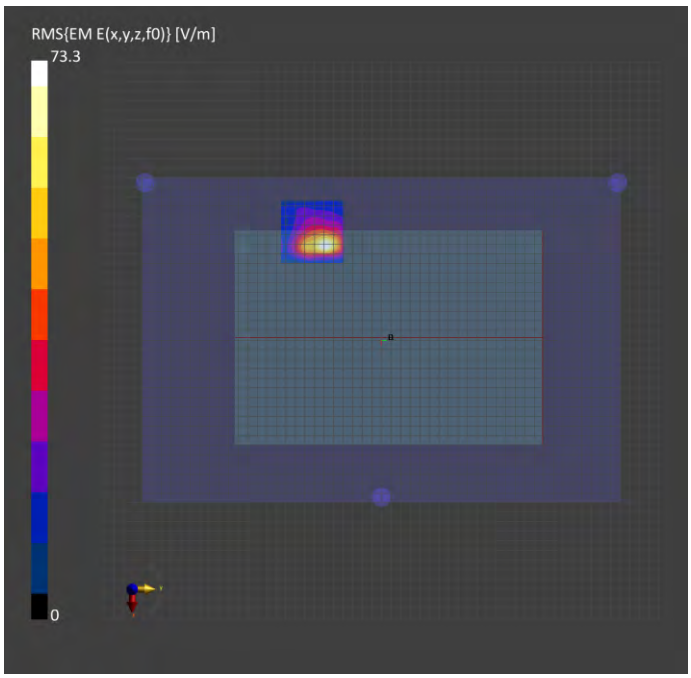
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 21:22
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.36
psPDtot+ [W/m²]	5.18
psPDmod+ [W/m²]	6.48
E_{max} [V/m]	73.3
Power Drift [dB]	-0.06



ID:046
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	1.0

Hardware Setup

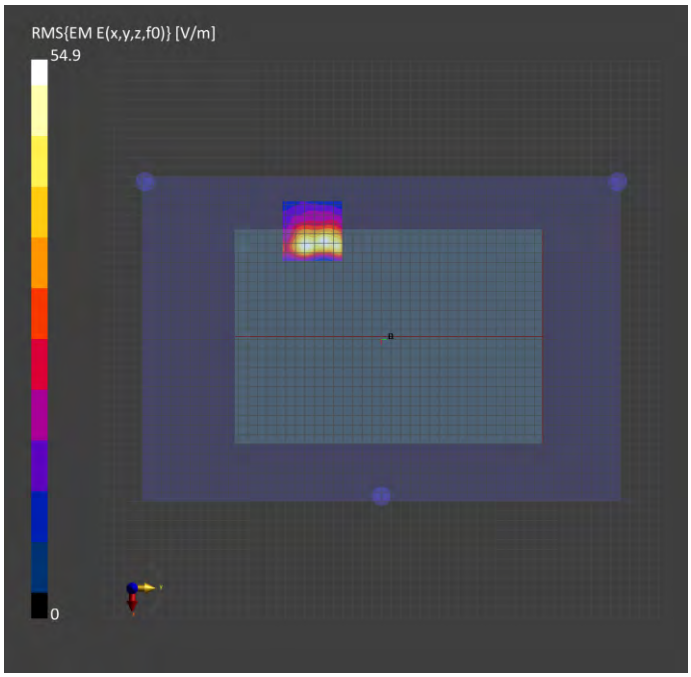
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 22:34
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	2.54
psPDtot+ [W/m²]	2.67
psPDmod+ [W/m²]	3.38
E_{max} [V/m]	54.9
Power Drift [dB]	-0.12



ID:047
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz), Channel 111 (6505.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	1.0

Hardware Setup

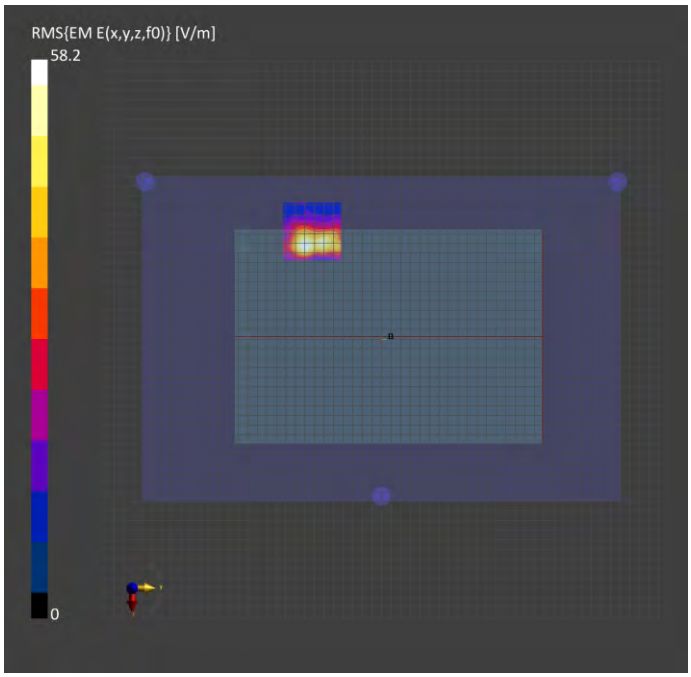
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 23:51
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	2.71
psPDtot+ [W/m²]	2.85
psPDmod+ [W/m²]	4.03
E_{max} [V/m]	58.2
Power Drift [dB]	-0.11



ID:048
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	1.0

Hardware Setup

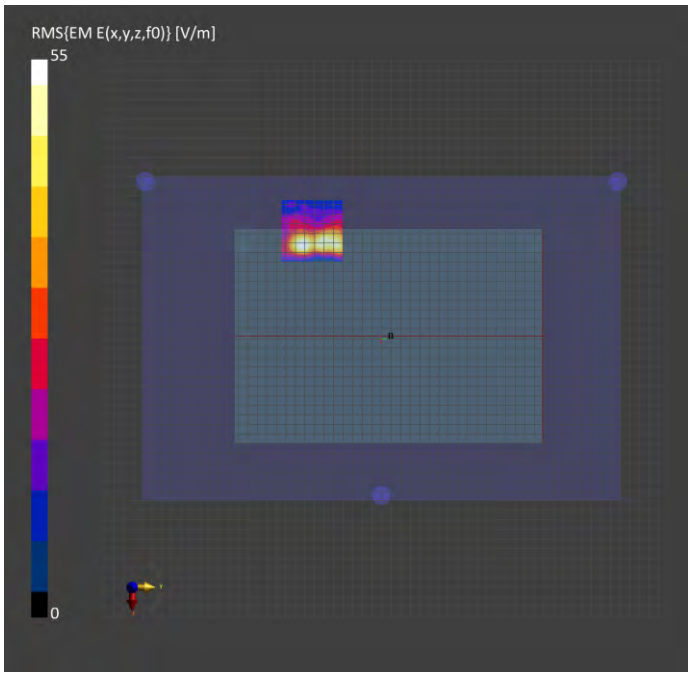
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2021-01-28	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2021-12-30, 07:35
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.38
psPDtot+ [W/m²]	3.88
psPDmod+ [W/m²]	4.53
E_{max} [V/m]	55.0
Power Drift [dB]	-0.13



ID:049
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Main

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	1.0

Hardware Setup

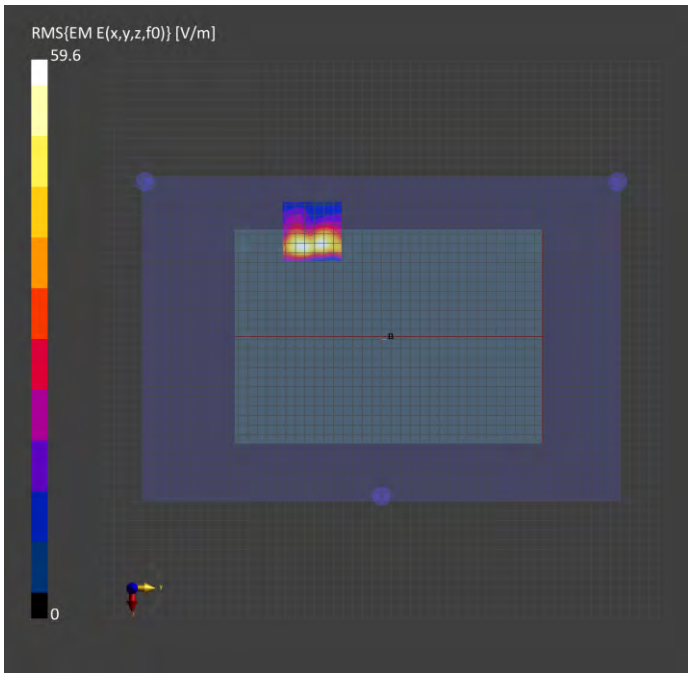
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2021-01-28	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2021-12-30, 08:04
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.57
psPDtot+ [W/m²]	5.05
psPDmod+ [W/m²]	5.64
E_{max} [V/m]	59.6
Power Drift [dB]	0.11



ID:050
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0

Hardware Setup

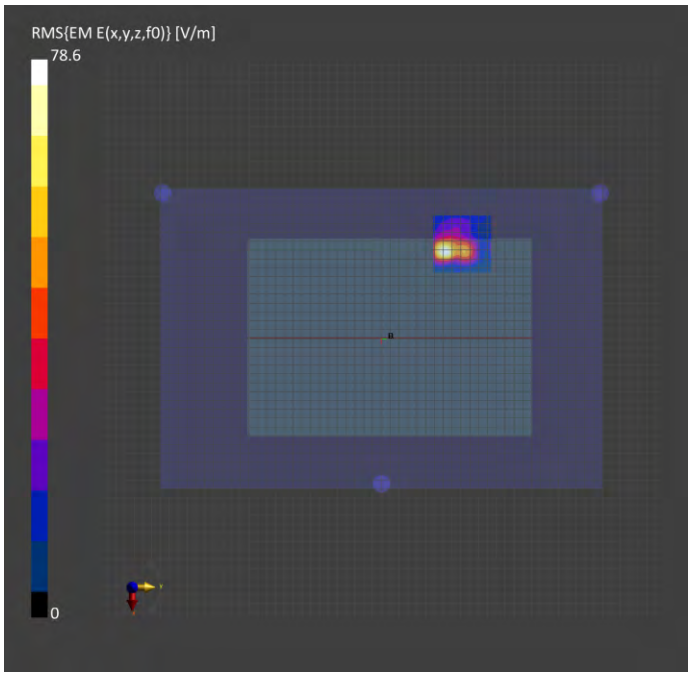
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-17, 01:26
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.73
psPDtot+ [W/m²]	4.03
psPDmod+ [W/m²]	6.38
E_{max} [V/m]	78.6
Power Drift [dB]	0.08



ID:051
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	1.0

Hardware Setup

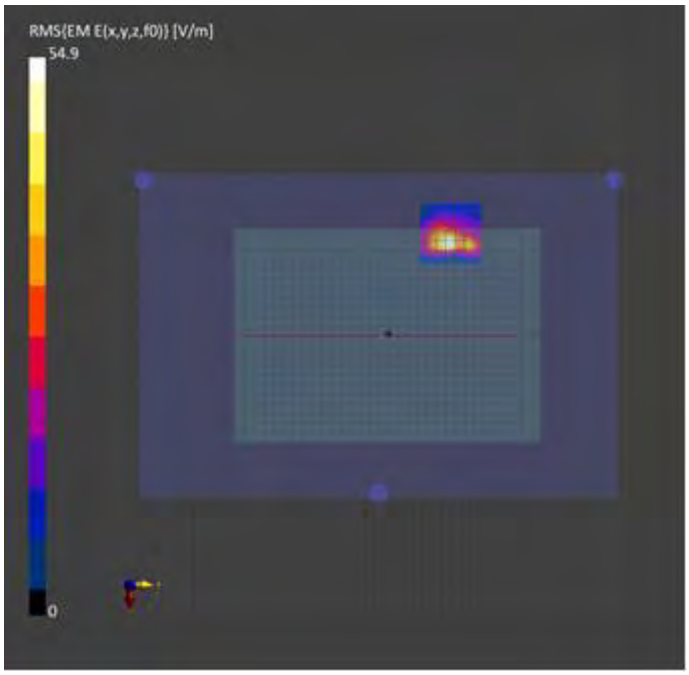
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-17, 11:21
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.39
psPDtot+ [W/m²]	3.65
psPDmod+ [W/m²]	5.11
E_{max} [V/m]	54.9
Power Drift [dB]	-0.06



ID:052
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MH), Channel 111 (6505.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	1.0

Hardware Setup

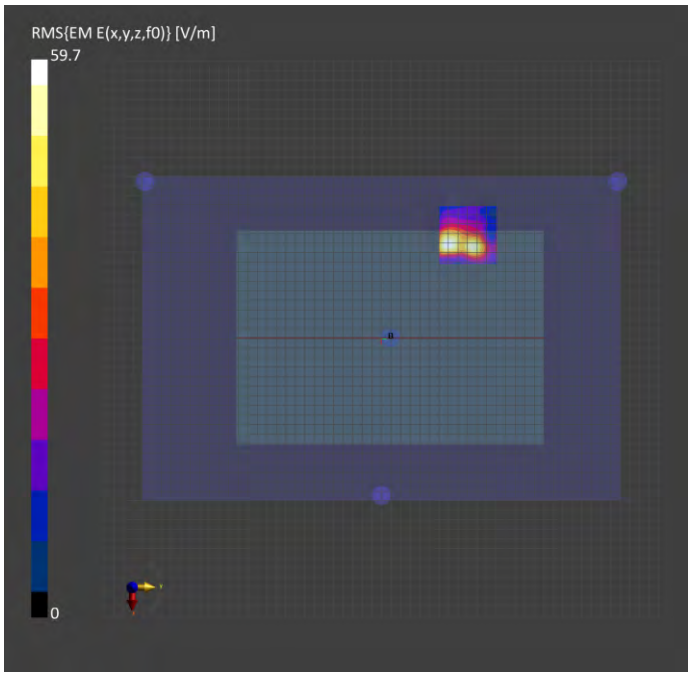
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-17, 04:05
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.76
psPDtot+ [W/m²]	5.11
psPDmod+ [W/m²]	5.74
E_{max} [V/m]	59.7
Power Drift [dB]	0.15



ID:053
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	1.0

Hardware Setup

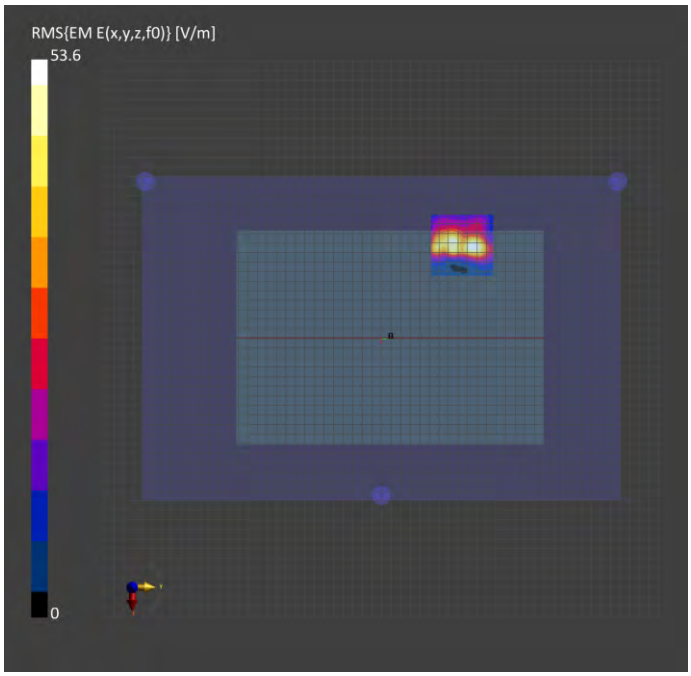
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-17, 05:17
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	2.17
psPDtot+ [W/m²]	2.55
psPDmod+ [W/m²]	3.37
E_{max} [V/m]	53.6
Power Drift [dB]	-0.13



ID:054
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	1.0

Hardware Setup

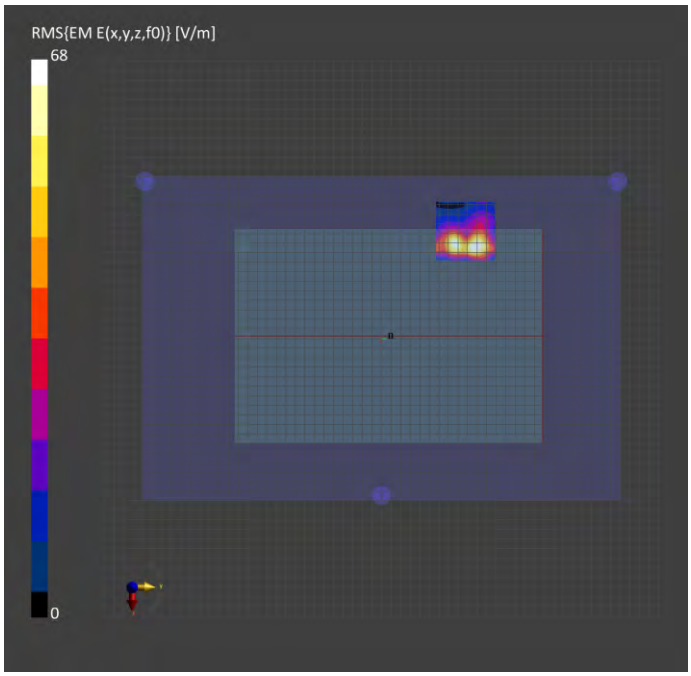
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2021-01-28	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2021-12-30, 10:48
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.66
psPDtot+ [W/m²]	4.28
psPDmod+ [W/m²]	5.69
E_{max} [V/m]	68.0
Power Drift [dB]	-0.09



ID:055
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0

Hardware Setup

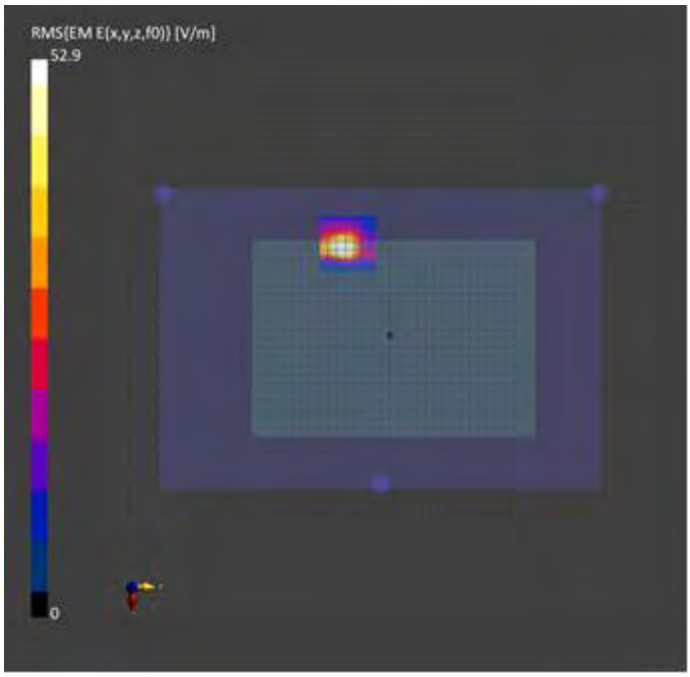
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 09:02
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.77
psPDtot+ [W/m²]	4.49
psPDmod+ [W/m²]	5.89
E_{max} [V/m]	52.9
Power Drift [dB]	-0.11



ID:056
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	1.0

Hardware Setup

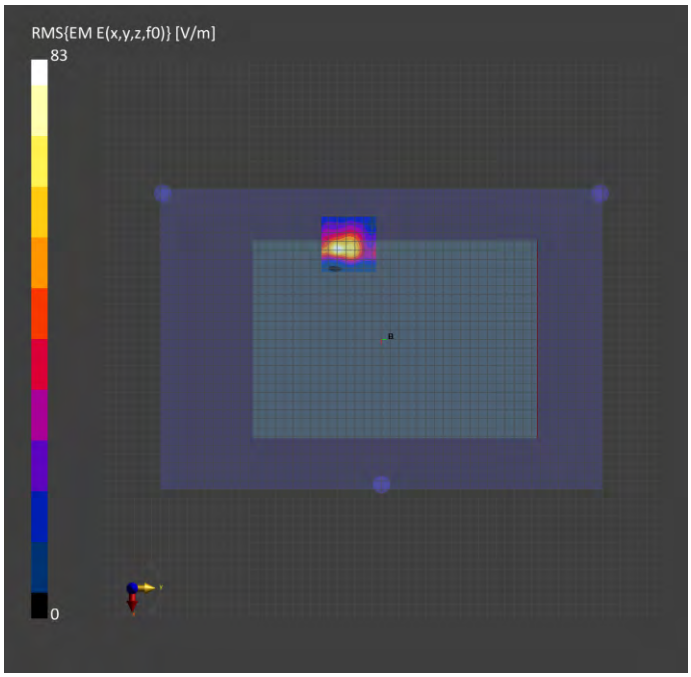
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 12:02
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.78
psPDtot+ [W/m²]	5.52
psPDmod+ [W/m²]	7.23
E_{max} [V/m]	83.0
Power Drift [dB]	0.03



ID:057
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz), Channel 111 (6505.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	1.0

Hardware Setup

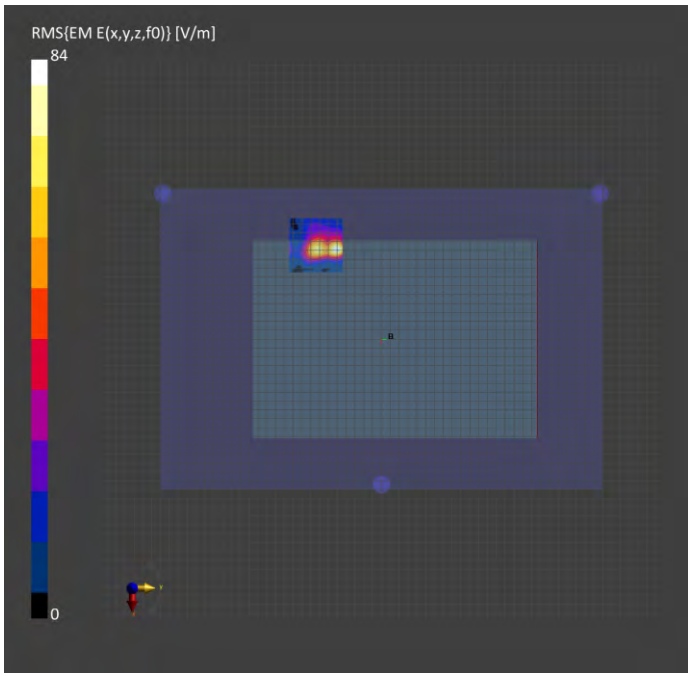
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 13:49
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.57
psPDtot+ [W/m²]	5.41
psPDmod+ [W/m²]	7.02
E_{max} [V/m]	84.0
Power Drift [dB]	-0.08



ID:058
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	1.0

Hardware Setup

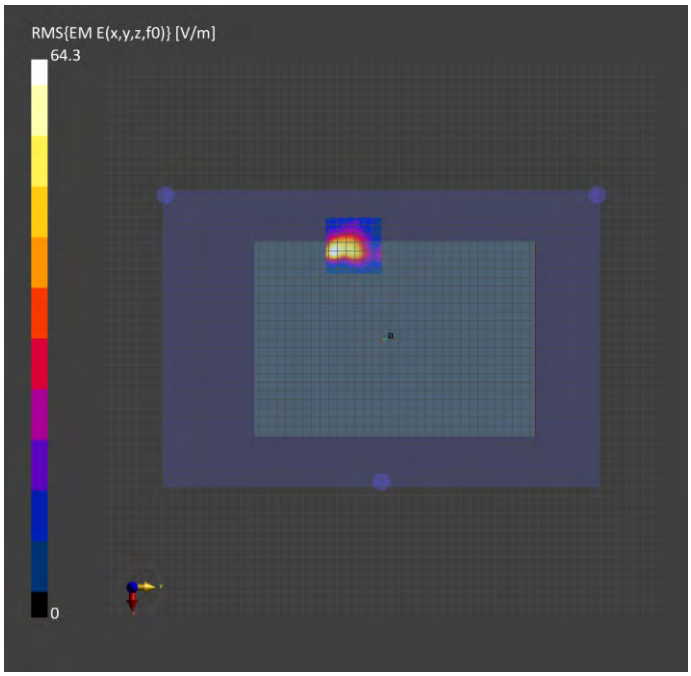
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 15:12
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.28
psPDtot+ [W/m²]	3.64
psPDmod+ [W/m²]	4.65
E_{max} [V/m]	64.3
Power Drift [dB]	-0.02



ID:059
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Main
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	1.0

Hardware Setup

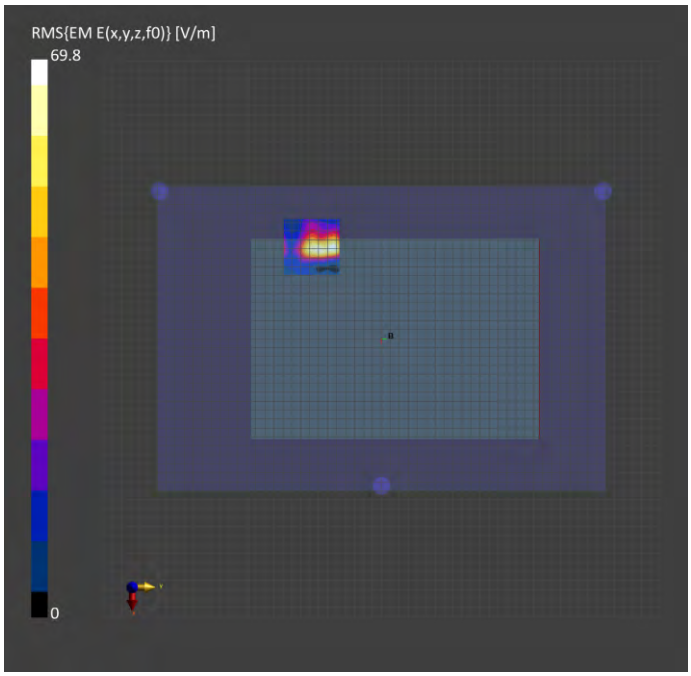
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2021-01-28	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2021-12-30, 13:46
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	5.04
psPDtot+ [W/m²]	6.06
psPDmod+ [W/m²]	7.30
E_{max} [V/m]	69.8
Power Drift [dB]	-0.05



ID:060
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 15 (6025.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0

Hardware Setup

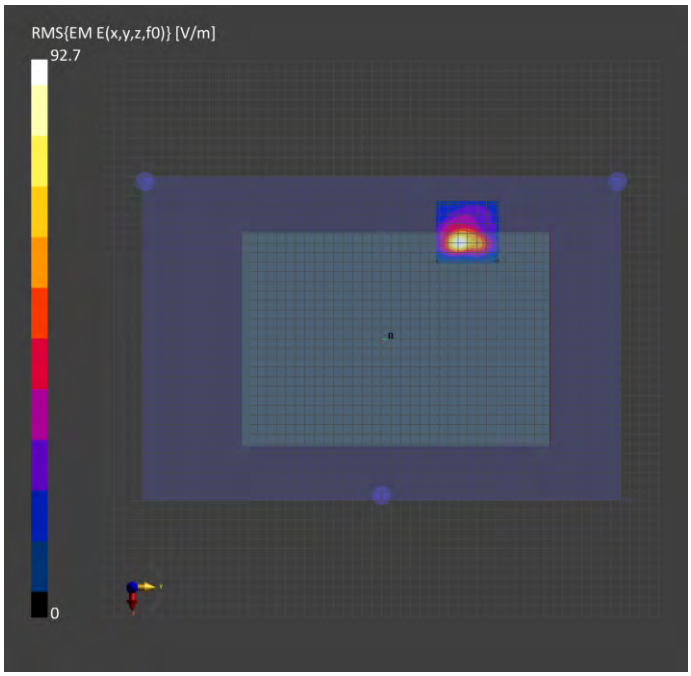
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 16:32
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.55
psPDtot+ [W/m²]	4.67
psPDmod+ [W/m²]	5.93
E_{max} [V/m]	92.7
Power Drift [dB]	0.02



ID:061
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz), Channel 79 (6345.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-5	WLAN, 10755-AAC	6345.0, 79	1.0

Hardware Setup

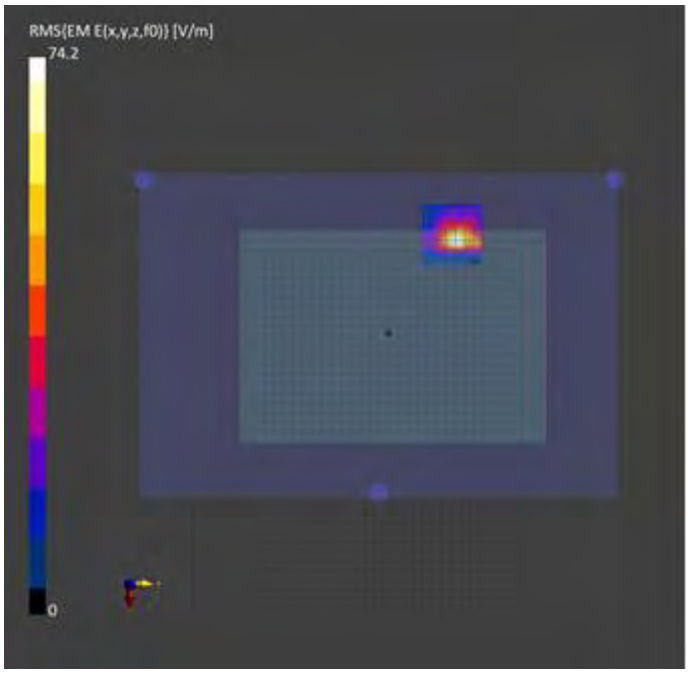
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-17, 09:33
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	4.22
psPDtot+ [W/m²]	4.55
psPDmod+ [W/m²]	5.56
E_{max} [V/m]	74.2
Power Drift [dB]	0.06



ID:062
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MH), Channel 111 (6505.0 MHz)_Aux

Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-6	WLAN, 10755-AAC	6505.0, 111	1.0

Hardware Setup

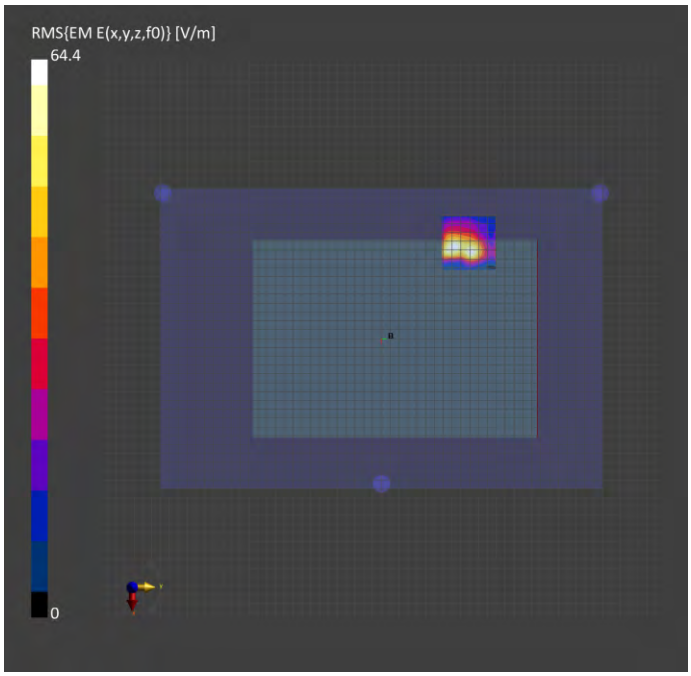
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 19:02
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	5.48
psPDtot+ [W/m²]	5.13
psPDmod+ [W/m²]	6.76
E_{max} [V/m]	64.4
Power Drift [dB]	-0.00



ID:063
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz), Channel 143 (6665.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-7	WLAN, 10755-AAC	6665.0, 143	1.0

Hardware Setup

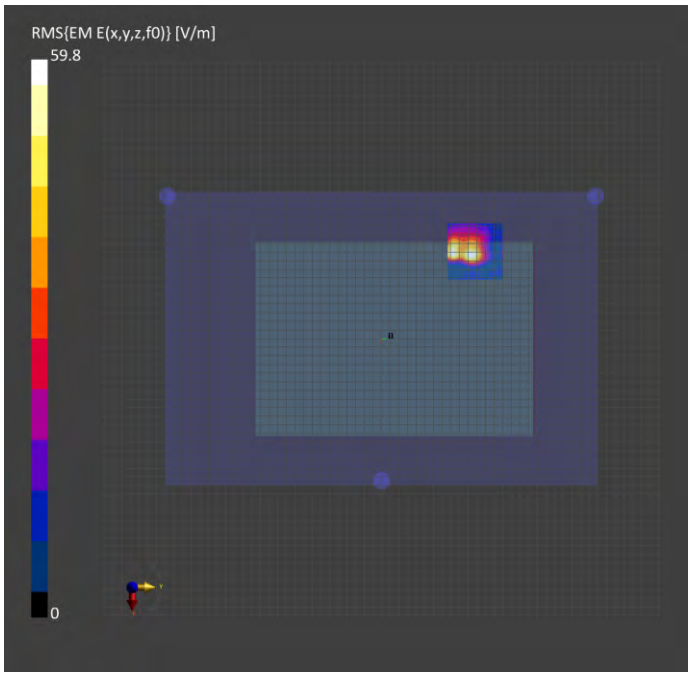
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-3-16, 20:17
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	2.99
psPDtot+ [W/m²]	3.22
psPDmod+ [W/m²]	3.89
E_{max} [V/m]	59.7
Power Drift [dB]	0.09



ID:064
Report No. : ES/2021/C0040
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz), Channel 207 (6985.0 MHz)_Aux
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device	323.0 x 223.0 x 15.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Bottom Surface, 2.00	U-NII-8	WLAN, 10755-AAC	6985.0, 207	1.0

Hardware Setup

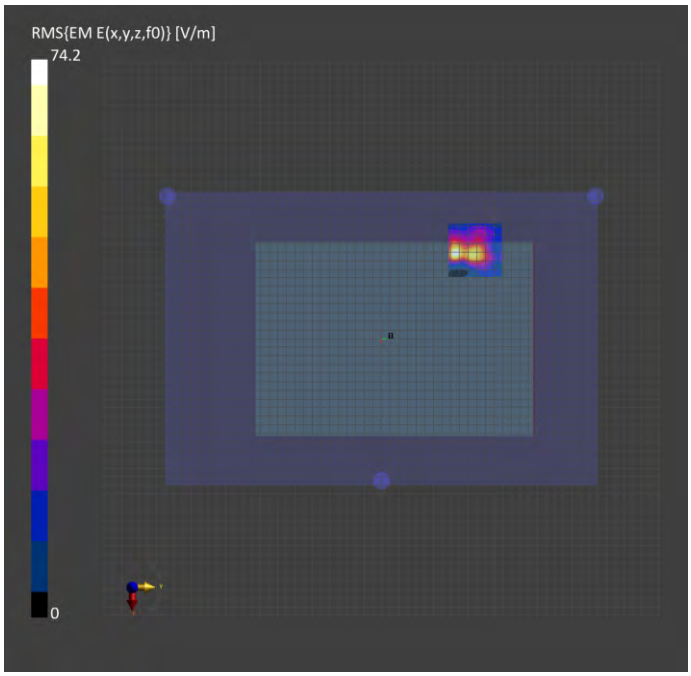
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2021-01-28	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2021-12-30, 16:39
Avg. Area [cm²]	4.00
psPDn+ [W/m²]	3.50
psPDtot+ [W/m²]	3.73
psPDmod+ [W/m²]	5.11
E_{max} [V/m]	74.2
Power Drift [dB]	-0.06



14 SAR SYSTEM CHECK RESULTS

Date: 2021/12/26

Report No. :ES/2021/C0040

Dipole 2450 MHz_SN:727

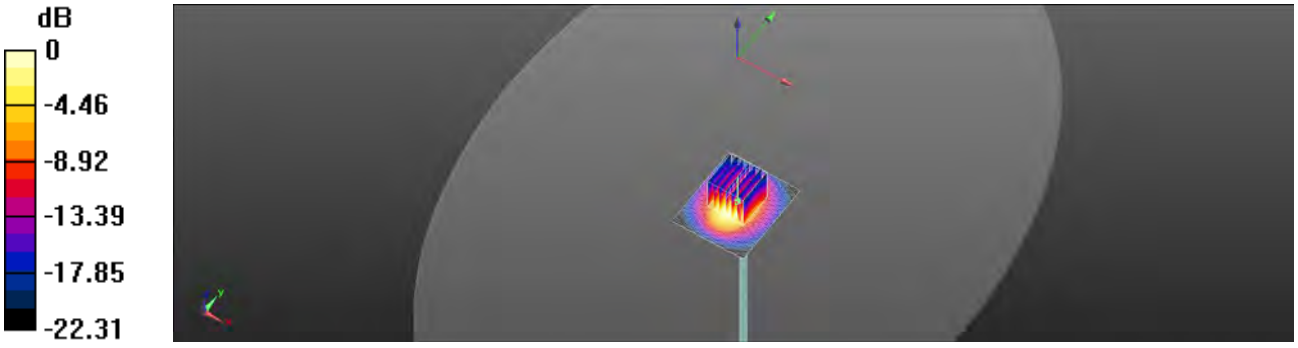
Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.784 S/m; ε_r = 38.984; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.7°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(8.32, 8.32, 8.32); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (51x61x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 27.1 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.88 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 21.0 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.33 W/kg
Smallest distance from peaks to all points 3 dB below = 9.2 mm
Ratio of SAR at M2 to SAR at M1 = 48.2%
Maximum value of SAR (measured) = 25.0 W/kg



0 dB = 25.0 W/kg = 14.98 dBW/kg

Report No. :ES/2021/C0040

Dipole 5200 MHz_SN:1023

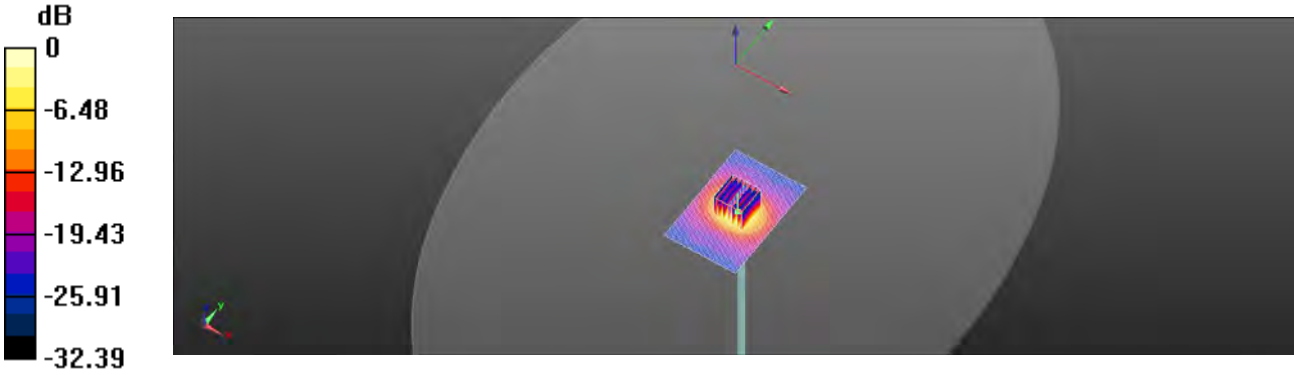
Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 4.623 S/m; ε_r = 35.622; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.6°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (51x51x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 14.8 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 59.23 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 28.0 W/kg
SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.23 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 55.6%
Maximum value of SAR (measured) = 15.2 W/kg



0 dB = 15.2 W/kg = 11.78 dBW/kg

Report No. :ES/2021/C0040

Dipole 5300 MHz_SN:1023

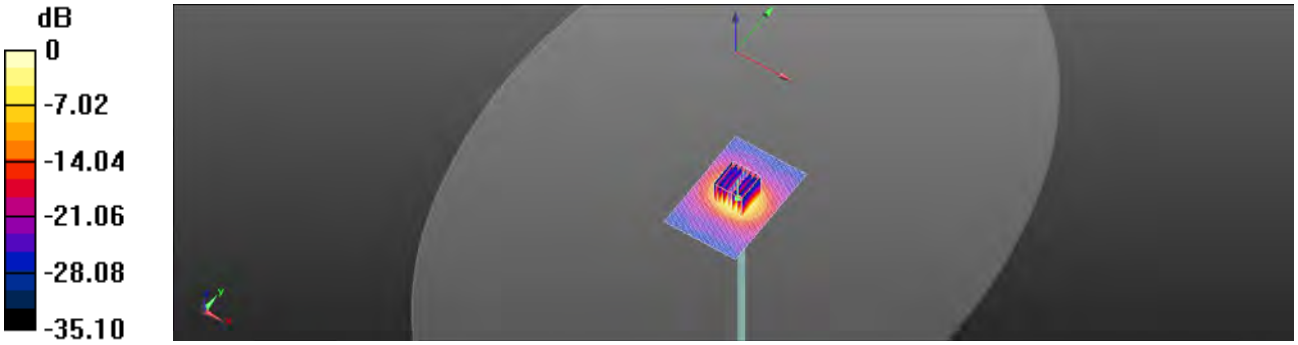
Communication System: CW; Frequency: 5300 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5300 MHz; σ = 4.723 S/m; ε_r = 35.527; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.9°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.81, 5.81, 5.81); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.1 W/kg

/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 57.53 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 29.7 W/kg
SAR(1 g) = 7.92 W/kg; SAR(10 g) = 2.26 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 52.2%
Maximum value of SAR (measured) = 15.2 W/kg



0 dB = 15.2 W/kg = 12.49 dBW/kg

Report No. :ES/2021/C0040

Dipole 5600 MHz_SN:1023

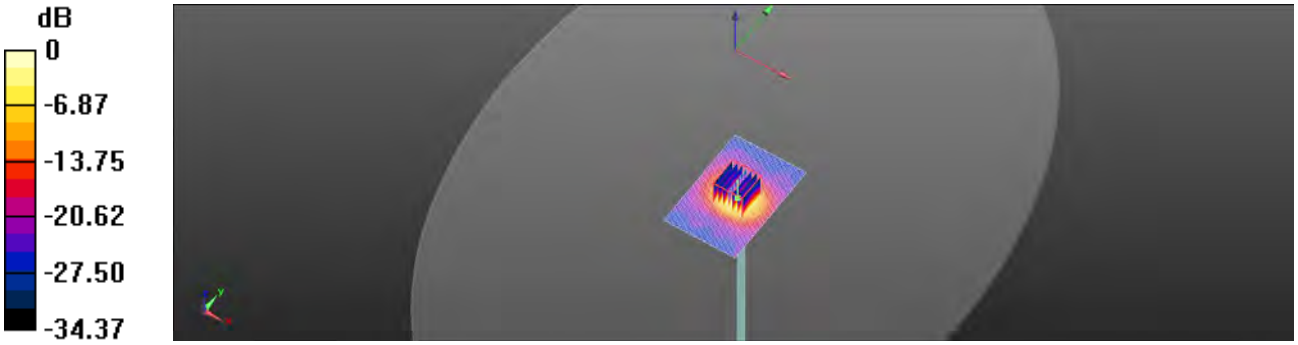
Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.029 S/m; ε_r = 35.152; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.16, 5.16, 5.16); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 18.9 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 61.15 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 37.5 W/kg
SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.34 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 53.3%
Maximum value of SAR (measured) = 17.9 W/kg



0 dB = 17.9 W/kg = 12.12 dBW/kg

Report No. :ES/2021/C0040

Dipole 5800 MHz_SN:1023

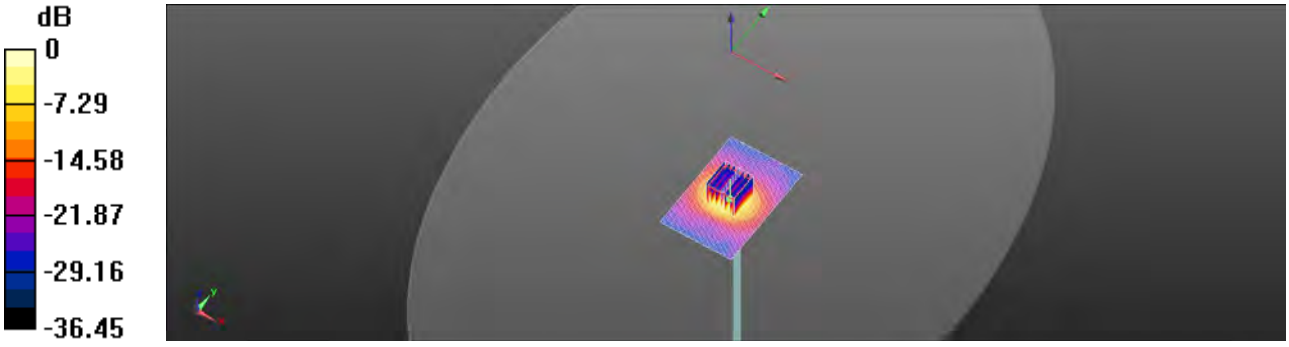
Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.225 S/m; ε_r = 34.947; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.4°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.3, 5.3, 5.3); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn877; Calibrated: 2021/03/22
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 19.0 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 57.67 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 36.8 W/kg
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.28 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 52.6%
Maximum value of SAR (measured) = 18.9 W/kg



0 dB = 18.9 W/kg = 13.17 dBW/kg

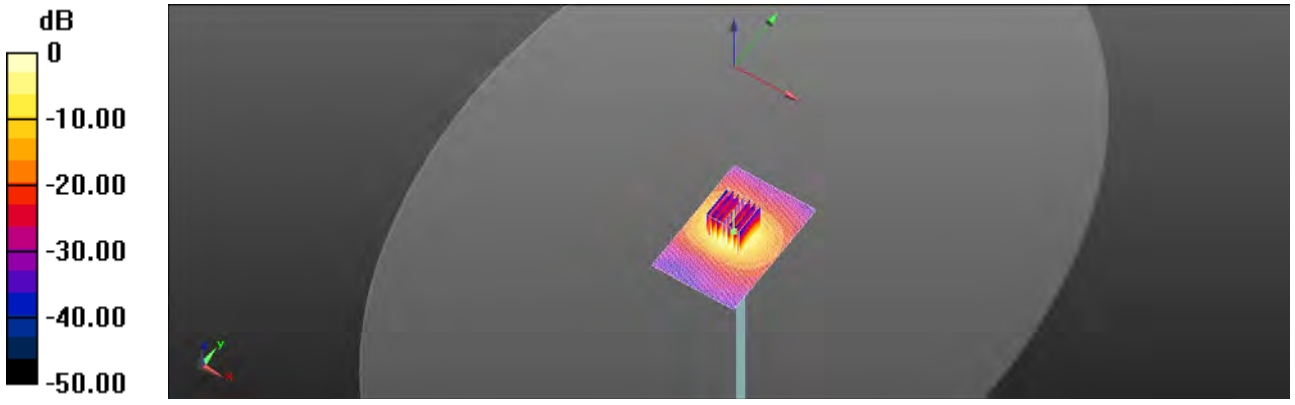
Report No. : TESA2212000562ES
Dipole 5750 MHz_SN:1023
Communication System: CW; Frequency: 5750 MHz; Duty cycle= 1:1
Medium parameters used: f = 5750 MHz; σ = 5.332 S/m; ε_r = 34.320; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.1℃

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.15, 5.15, 5.15) ; Calibrated: 2022/03/02
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1665; Calibrated: 2022/02/28
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Area Scan (61x91x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 16.9 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 52.27 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 35.7 W/kg
SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.25 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 51.6%
Maximum value of SAR (measured) = 17.1 W/kg



0 dB = 17.1 W/kg = 12.33 dBW/kg

Report No. :ES/2021/C0040
Measurement Report for Device, FRONT, Validation band, CW, Channel 6500 (6500.0 MHz)
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	16.0 x 6.0 x 300.0	SN:1006	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 5.00	Validation band	CW, 0--	6500.0, 6500	6.2	6.02	34.158

Hardware Setup

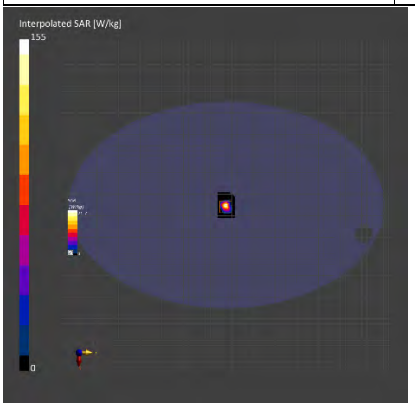
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	51.0 x 36.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 01:22	2021-12-29, 01:53
psSAR1g [W/Kg]	24.1	29.4
psSAR10g [W/Kg]	4.95	5.33
Power Drift [dB]	0.06	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.3
Dist 3dB Peak [mm]		5.6



Report No. :ES/2021/C0040
Measurement Report for Device, FRONT, Validation band, CW, Channel 6500 (6500.0 MHz)
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	16.0 x 6.0 x 300.0	SN:1006	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 5.00	Validation band	CW, 0--	6500.0, 6500	6.2	6.021	34.155

Hardware Setup

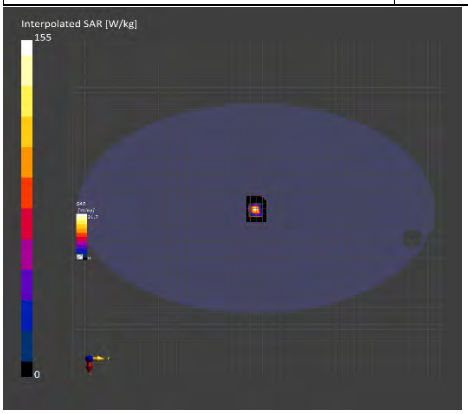
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2022-Mar-16	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	51.0 x 36.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-03-16, 00:34	2022-03-16, 00:59
psSAR1g [W/Kg]	28.5	31.3
psSAR10g [W/Kg]	5.13	5.48
Power Drift [dB]	0.07	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.2
Dist 3dB Peak [mm]		6.1



Report No. :ES/2021/C0040
Measurement Report for Device, FRONT, Validation band, CW, Channel 7000 (7000.0 MHz)
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Device,	14.0 x 6.0 x 297.0	SN:1007	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 5.00	Validation band	CW, 0--	7000.0, 7000	6.14	6.6	33.547

Hardware Setup

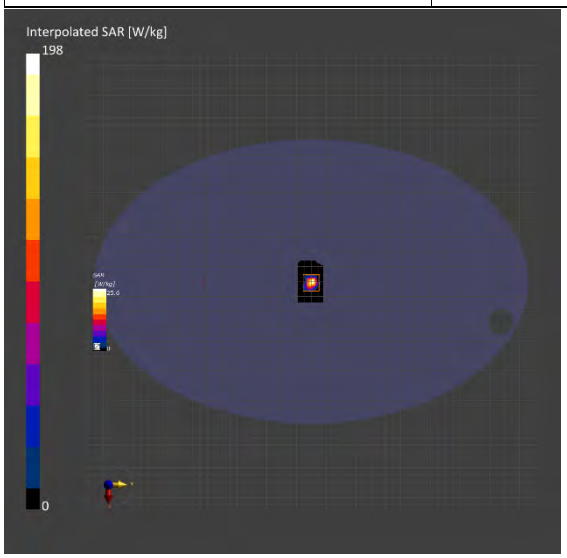
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	HBBL-600-10000 ,2021-Dec-29	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn877, 2021-03-22

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 45.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	7.5 x 7.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-12-29, 02:12	2021-12-29, 02:33
psSAR1g [W/Kg]	26.5	28.4
psSAR10g [W/Kg]	4.45	4.81
Power Drift [dB]	0.03	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		49.6
Dist 3dB Peak [mm]		4.6



15 PD SYSTEM CHECK RESULTS

Report No. : ES/2021/C0040
Measurement Report for 10G Source, Front, Validation band, CW, Channel 10000 (10000.0 MHz)
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
5G Verification Source 10 GHz,	100.0 x 100.0 x 172.0	SN: 1021	-

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Front, 10.00	Validation band	CW, 0--	10000.0, 10000	1.0

Hardware Setup

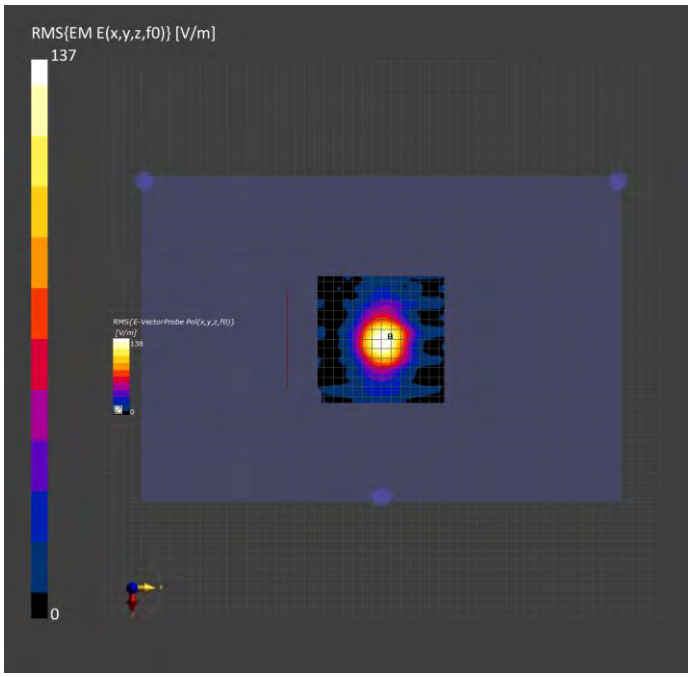
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-78GHz, 2021-01-28	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	120.0 x 120.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2021-12-30, 05:20
Avg. Area [cm²]	1.00
psPDn+ [W/m²]	43.4
psPDtot+ [W/m²]	43.7
psPDmod+ [W/m²]	43.9
E_{max} [V/m]	134
Power Drift [dB]	0.08



Report No. : ES/2021/C0040
Measurement Report for 10G Source, Front, Validation band, CW, Channel 10000 (10000.0 MHz)
Device Under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
5G Verification Source 10 GHz,	100.0 x 100.0 x 172.0	SN: 1021	-

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	Front, 10.00	Validation band	CW, 0--	10000.0, 10000	1.0

Hardware Setup

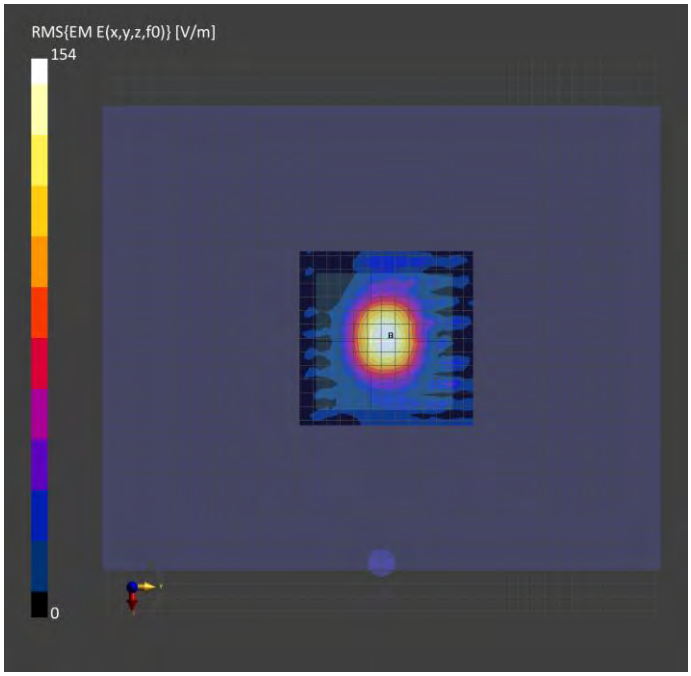
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn877, 2021-03-22

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	120.0 x 120.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0
MAIA	N/A

Measurement Results

Scan Type	5G Scan
Date	2022-03-16, 05:21
Avg. Area [cm²]	1.00
psPDn+ [W/m²]	51.1
psPDtot+ [W/m²]	51.4
psPDmod+ [W/m²]	51.6
E_{max} [V/m]	150
Power Drift [dB]	0.05



16 APPENDIXES

Refer to separated files for the following appendixes.

16.1 SAR_Appendix A Photographs

16.2 SAR_Appendix B DAE & Probe Cal. Certificate

16.3 SAR_Appendix C Phantom Description & Dipole Cal. Certificate

- End of report -