RF Exposure report

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

Product Type	2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card
Trade Name	MediaTek
Model Number	MT7922A22M
Applicant	MediaTek Inc. No. 1, Dusing 1st Rd., Hsinchu Science Park, Hsinchu City, 30078, Taiwan
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013
FCC ID	RAS-MT7922A22M
Date of EUT Receipt	Nov. 24, 2022
Date of Test(s)	Nov. 28, 2022 ~ Dec. 06, 2022
Date of Issue	Dec. 14, 2022

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 / Cindy Chou	PM / Kiki Lin	Approved By / John Yeh
Cindy Chou	Kiki Lin	John Yeh

Date: Dec. 14, 2022

Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2211000524ES	00	Initial creation of document	Dec. 14, 2022	Cindy Chou	

Note:

1. The mark " * " is the revised version of the report due to comments submitted by the certification.

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
KDB447498D01v06
KDB865664D01v01r04
KDB865664D02v01r02
KDB616217D04v01r02
KDB248227D01v02r01
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

1.2 Description of EUT

Product Type	2TX 11ax (WiFi6E) BW160+BT/BLE Combo Card	
Trade Name	MediaTek	
Model Number	MT7922A22M	
FCC ID	RAS-MT7922A22M	
Host Information	Product Type: Notebook PC Trade Name: ASUS Model Name: UM3402Y, RM3402Y, BM3402Y All models are electrically identical, different model names are for marketing purpose.	
Mode	WLAN: 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 –5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5850.0 MHz) 5.9GHz (5850.0 – 5895.0 MHz)
	802.11ax	6.2GHz (5925.0 – 6425.0 MHz) 6.5GHz (6425.0 – 6525.0 MHz) 6.7GHz (6525.0 – 6875.0 MHz) 7.0GHz (6875.0 – 7125.0 MHz)
	Bluetooth 5.2	2.4GHz (2400.0 – 2483.5 MHz)

1.3 Maximum value

INPAQ

Summary of Maximum SAR and Power Density Value			
Mode	Highest SAR 1g Body (W/kg)	Highest APD (W/m^2)	Highest PD (W/m^2)
Bluetooth(GFSK)	0.08	N/A	N/A
2.4G WLAN	0.17	N/A	N/A
5.2G WLAN	0.87	N/A	N/A
5.3G WLAN	0.74	N/A	N/A
5.6G WLAN	0.71	N/A	N/A
5.8G WLAN	0.94	N/A	N/A
5.9G WLAN	0.63	N/A	N/A
6G WLAN	0.73	3.88	4.22

INNOWAVE

Summary of Maximum SAR and Power Density Value			
Mode	Highest SAR 1g Body (W/kg)	Highest APD (W/m^2)	Highest PD (W/m^2)
Bluetooth(GFSK)	0.07	N/A	N/A
2.4G WLAN	0.27	N/A	N/A
5.2G WLAN	1.14	N/A	N/A
5.3G WLAN	0.75	N/A	N/A
5.6G WLAN	0.67	N/A	N/A
5.8G WLAN	0.53	N/A	N/A
5.9G WLAN	0.56	N/A	N/A
6G WLAN	0.99	6.23	3.01

1.4 Antenna Information

INPAQ

Vendor	INPAQ																				
Antenna	Main										Aux										
Part Number	WA-P-LELE-04-040 (HQ206050AL000)										WA-P-LELE-04-040 (HQ206050AL000)										
Frequency(MHz)	2400~2500	5150~5250	5250~5350	5470~5725	5725~5850	5850~5895	5925~6425	6425~6525	6525~6875	6875~7125	2400~2500	5150~5250	5250~5350	5470~5725	5725~5850	5850~5895	5925~6425	6425~6525	6525~6875	6875~7125
Gain (dBi)	2.44	2.45	2.91	2.89	2.77	2.81	2.67	2.97	2.99	2.96	2.33	2.81	2.84	2.76	2.6	2.59	2.79	2.67	2.16	2.55
Note: Antenna information is provided by the applicant.																					

INNOWAVE

Vendor	Innowave																				
Antenna	Main										Aux										
Part Number	F00197813110001 (HQ206050AD000)										F00197813110001 (HQ206050AD000)										
Frequency(MHz)	2400~2500	5150~5250	5250~5350	5470~5725	5725~5850	5850~5895	5925~6425	6425~6525	6525~6875	6875~7125	2400~2500	5150~5250	5250~5350	5470~5725	5725~5850	5850~5895	5925~6425	6425~6525	6525~6875	6875~7125
Gain (dBi)	2.54	2.64	2.97	2.94	2.81	2.95	2.78	2.99	3.02	3.11	2.32	2.94	2.88	2.84	2.71	2.71	2.84	2.90	2.84	2.77
Note: Antenna information is provided by the applicant.																					

2 MEASUREMENT SYSTEM

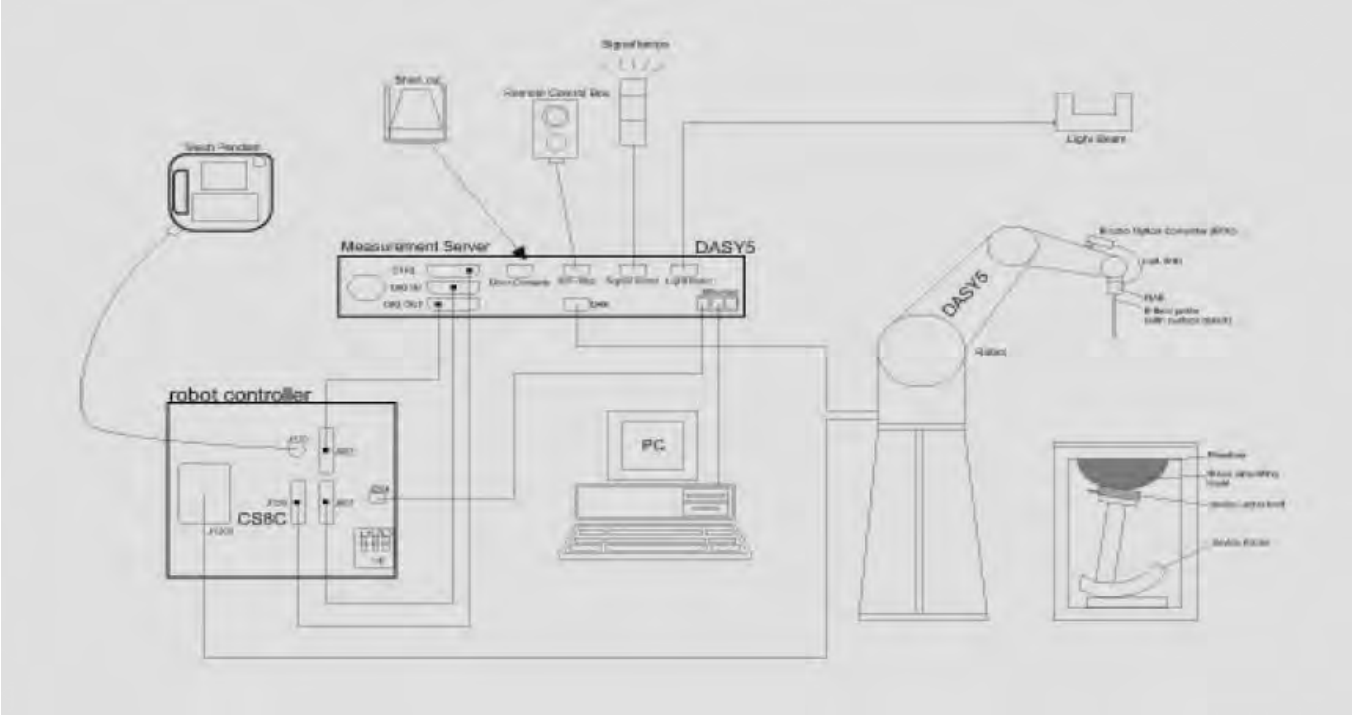
2.1 Test Facility

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

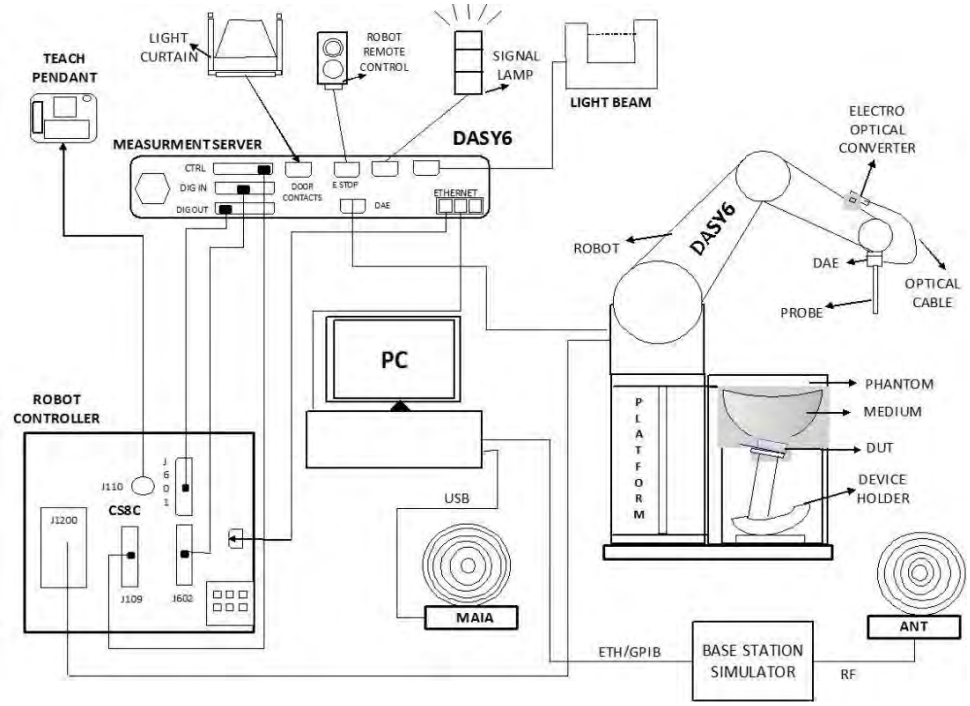
Block Diagram (DASY5)

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 2450/5250/5600/5750/6500/7000 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	

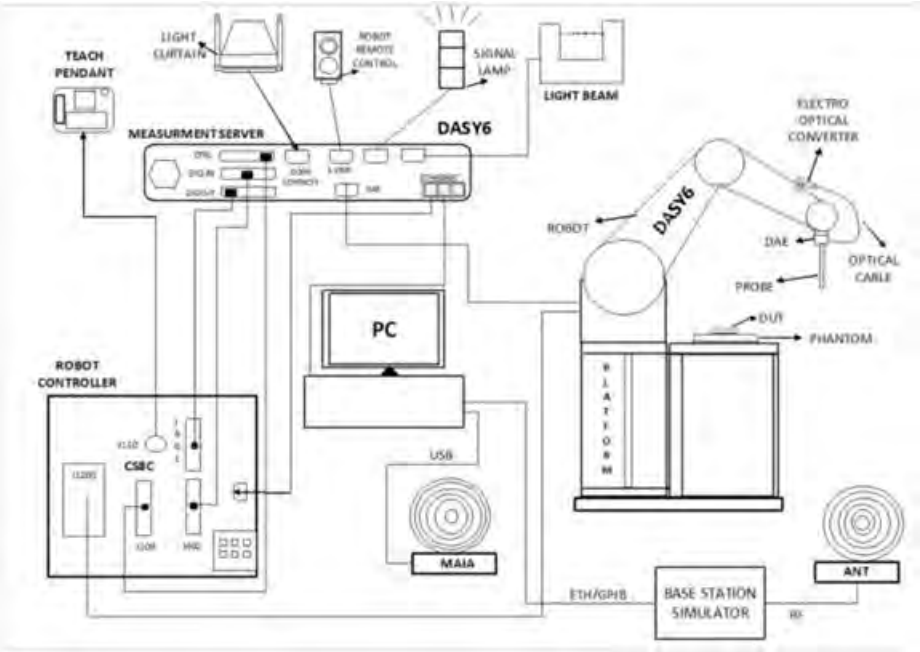
DEVICE HOLDER (ELI)

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

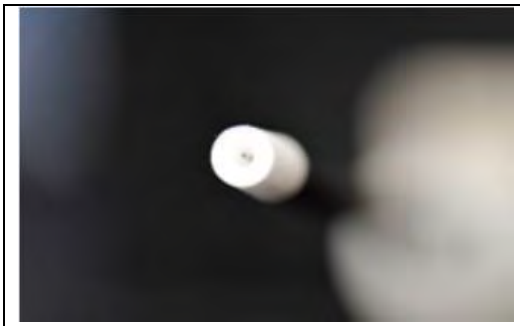
Block Diagram (DASY6)

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.

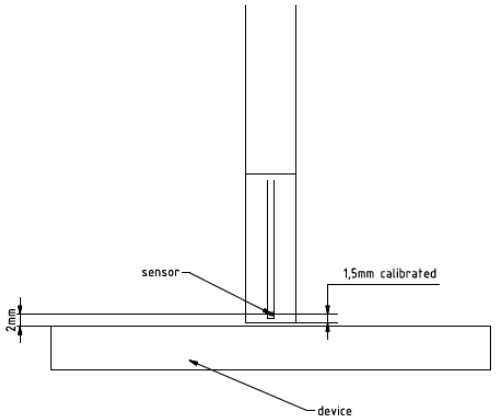


EUmmWVx probe

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 ($\tan \delta$) $\leq$ 0.05 and a relative permittivity (εr) $\leq$ 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

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
2402	22.2	39.282	1.757	39.905	1.789	1.59%	1.82%	± 5%	Dec. 01, 2022
2412		39.265	1.766	39.829	1.812	1.44%	2.60%	± 5%	
2437		39.222	1.788	39.778	1.835	1.42%	2.63%	± 5%	
2450		39.200	1.800	39.765	1.848	1.44%	2.67%	± 5%	
2462		39.184	1.813	39.744	1.860	1.43%	2.59%	± 5%	
5210	22.0	35.990	4.670	35.341	4.729	-1.80%	1.26%	± 5%	Dec. 02, 2022
5250		35.950	4.710	35.294	4.731	-1.82%	0.45%	± 5%	
5290		35.910	4.750	35.259	4.789	-1.81%	0.82%	± 5%	
5530	22.5	35.605	4.996	34.664	5.053	-2.64%	1.14%	± 5%	Dec. 03, 2022
5600		35.500	5.070	35.186	5.124	-0.88%	1.07%	± 5%	
5690		35.410	5.160	35.149	5.266	-0.74%	2.05%	± 5%	
5750	22.3	35.350	5.220	34.957	5.305	-1.11%	1.63%	± 5%	Dec. 04, 2022
5775		35.325	5.245	34.771	5.321	-1.57%	1.45%	± 5%	
5815		35.283	5.285	34.765	5.364	-1.47%	1.49%	± 5%	
6025	22.4	35.070	5.510	34.573	5.572	-1.42%	1.13%	± 5%	Dec. 05, 2022
6185		34.878	5.698	34.444	5.740	-1.24%	0.74%	± 5%	
6345		34.686	5.887	34.245	5.908	-1.27%	0.36%	± 5%	
6500		34.500	6.070	34.240	6.073	-0.75%	0.05%	± 5%	
6505		34.494	6.076	34.189	6.079	-0.88%	0.05%	± 5%	
6665		34.302	6.261	34.171	6.248	-0.38%	-0.21%	± 5%	
6985		33.918	6.633	34.148	6.591	0.68%	-0.63%	± 5%	
7000		33.900	6.650	33.976	6.607	0.22%	-0.65%	± 5%	

3.4 The composition of the tissue simulating liquid:

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

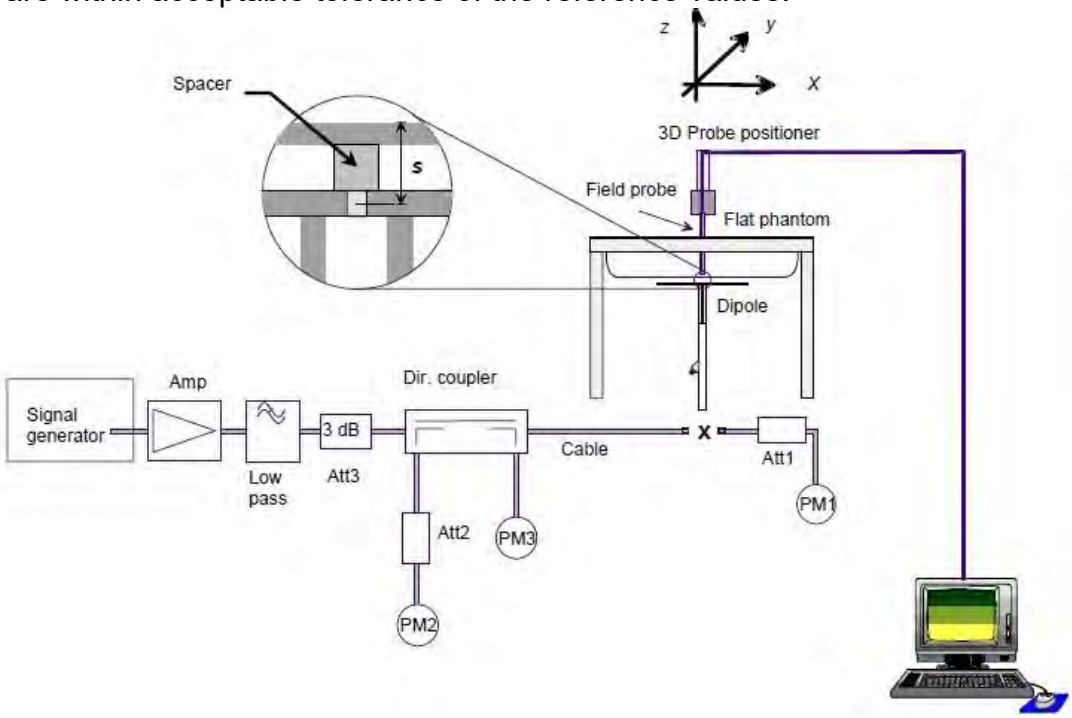
Broad-band head tissue simulating liquids	SPEAG Product	Frequency range (MHz)	Main Ingredients
	HBBL600-10000V6	600 - 10000	Water, Oil

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

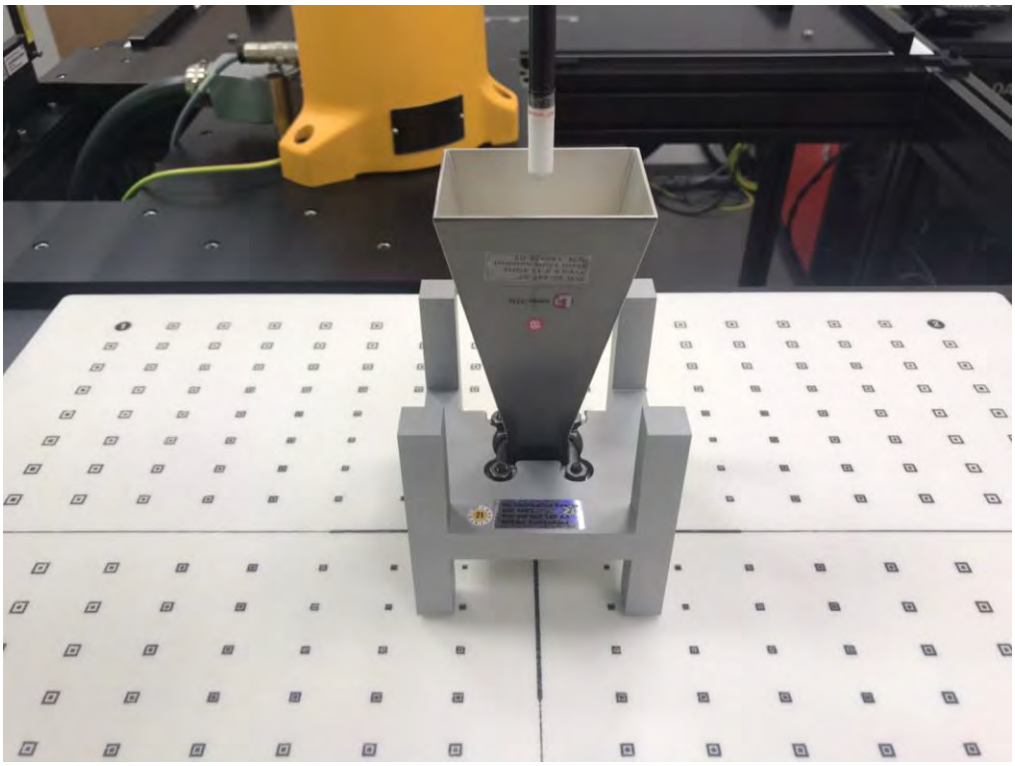
Validation Kit	S/N	Frequency (MHz)	1W Target 1g-SAR (W/kg)	pin=250mW Measured 1g-SAR (W/kg)	Normalized to 1W 1g-SAR (W/kg)	Deviation (%)	Limit	Measurement Date
D2450V2	727	2450	52.8	13.5	54	2.27	± 10%	Dec.01,2022
Validation Kit	S/N	Frequency (MHz)	1W Target 1g-SAR (W/kg)	pin=100mW Measured 1g-SAR (W/kg)	Normalized to 1W 1g-SAR (W/kg)	Deviation (%)	Limit	Measurement Date
D5GHzV2	1023	5250	81	8.03	80.3	-0.86	± 10%	Dec.02,2022
D5GHzV2	1023	5600	84.4	8.07	80.7	-4.38	± 10%	Dec.03,2022
D5GHzV2	1023	5750	81	8.3	83	2.47	± 10%	Dec.04,2022
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
D6.5GHzV2	1006	6500	292	29.1	291	-0.34	± 10%	Dec.05,2022
D7GHzV2	1007	7000	278	25.9	259	-6.83	± 10%	Dec.05,2022
Validation Kit	S/N	Frequency (MHz)	1W Target APD (W/m^2) (4cm^2)	pin=100mW Measured APD (W/m^2) (4cm^2)	Normalized to 1W APD (W/m^2) (4cm^2)	Deviation (%)	Limit	Measurement Date
D6.5GHzV2	1006	6500	1320	130	1300	-1.52	± 10%	Dec.05,2022
D7GHzV2	1007	7000	1210	112	1120	-7.44	± 10%	Dec.05,2022

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.

Frequency (MHz)	PD Verification Source (MHz)	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
10000	10000	9399	1665	10	86.1	52.5	51.7	0.07	Dec.06,2022

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.

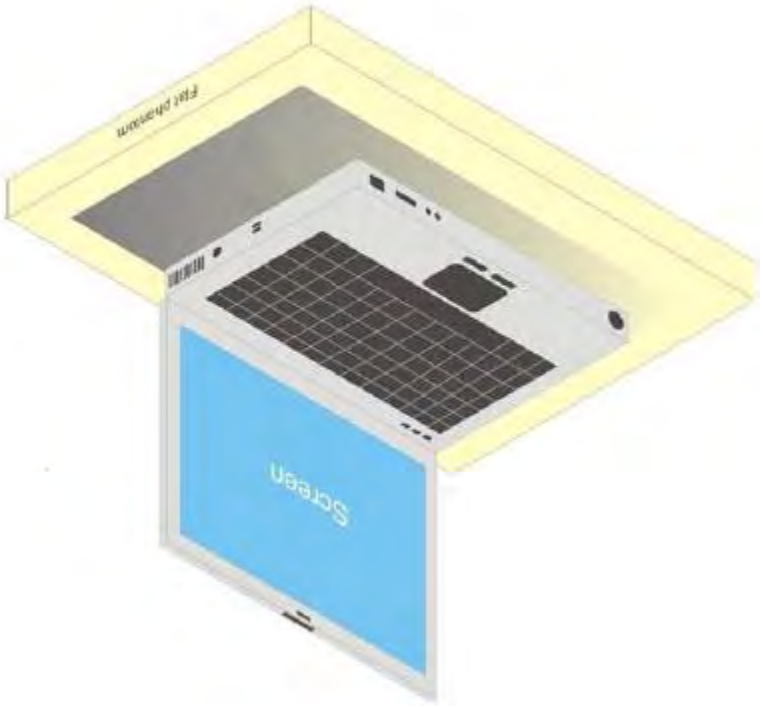


Illustration for Laptop Setup

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

Main						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45GHz	802.11b	1	2412	1Mbps	15.50	15.24
		6	2437		15.50	15.39
		11	2462		15.50	15.21
		12	2467		15.00	14.83
		13	2472		13.50	13.22
	802.11g	1	2412	6Mbps	15.50	15.03
		6	2437		15.50	15.04
		11	2462		15.50	15.05
		12	2467		14.50	14.04
		13	2472		11.50	11.19
	802.11n20-HT0	1	2412	MCS0	15.50	15.06
		6	2437		15.50	15.20
		11	2462		15.50	15.09
		12	2467		14.00	13.67
		13	2472		9.50	9.15
	802.11ac20-VHT0	1	2412	MCS0	15.50	15.10
		6	2437		15.50	15.08
		11	2462		15.50	15.20
		12	2467		14.00	13.64
		13	2472		10.00	9.65
	802.11ax20-HE0	1	2412	MCS0	15.50	15.16
		6	2437		15.50	15.15
		11	2462		15.50	15.10
		12	2467		14.00	13.66
		13	2472		10.00	9.55
	802.11n40-HT0	3	2422	MCS0	15.00	14.57
		6	2437		15.50	15.06
		9	2452		15.00	14.58
		10	2457		12.00	11.61
		11	2462		10.00	9.66
	802.11ac40-VHT0	3	2422	MCS0	15.00	14.64
		6	2437		15.50	15.06
		9	2452		15.00	14.70
		10	2457		12.50	12.02
		11	2462		10.00	9.67
	802.11ax40-HE0	3	2422	MCS0	15.00	14.53
		6	2437		15.50	15.04
		9	2452		15.00	14.62
		10	2457		12.50	12.11
		11	2462		10.00	9.65

Main						
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	14.00	13.31
		40	5200		14.00	13.47
		44	5220		14.00	13.29
		48	5240		14.00	13.33
	802.11n20-HT0	36	5180	MCS0	14.00	13.45
		40	5200		14.00	13.34
		44	5220		14.00	13.33
		48	5240		14.00	13.42
	802.11ac20-VHT0	36	5180	MCS0	14.00	13.40
		40	5200		14.00	13.35
		44	5220		14.00	13.30
		48	5240		14.00	13.33
	802.11ax20-HE0	36	5180	MCS0	14.00	13.46
		40	5200		14.00	13.30
		44	5220		14.00	13.31
		48	5240		14.00	13.47
	802.11n40-HT0	38	5190	MCS0	14.00	13.35
		46	5230		14.00	13.46
	802.11ac40-VHT0	38	5190	MCS0	14.00	13.42
		46	5230		14.00	13.37
	802.11ax40-HE0	38	5190	MCS0	14.00	13.42
		46	5230		14.00	13.43
	802.11ac80-VHT0	42	5210	MCS0	14.00	13.56
	802.11ax80-HE0	42	5210	MCS0	14.00	13.29
	802.11ac160-VHT0	50	5250	MCS0	13.50	12.83
	802.11ax160-HE0	50	5250	MCS0	13.50	12.84

Main						
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	14.00	13.32
		56	5280		14.00	13.43
		60	5300		14.00	13.38
		64	5320		14.00	13.34
	802.11n20-HT0	52	5260	MCS0	14.00	13.30
		56	5280		14.00	13.42
		60	5300		14.00	13.46
		64	5320		14.00	13.33
	802.11ac20-VHT0	52	5260	MCS0	14.00	13.46
		56	5280		14.00	13.40
		60	5300		14.00	13.34
		64	5320		14.00	13.30
	802.11ax20-HE0	52	5260	MCS0	14.00	13.45
		56	5280		14.00	13.35
		60	5300		14.00	13.41
		64	5320		14.00	13.34
	802.11n40-HT0	54	5270	MCS0	14.00	13.34
		62	5310		14.00	13.33
	802.11ac40-VHT0	54	5270	MCS0	14.00	13.44
		62	5310		14.00	13.42
	802.11ax40-HE0	54	5270	MCS0	14.00	13.41
		62	5310		14.00	13.34
	802.11ac80-VHT0	58	5290	MCS0	14.00	13.54
	802.11ax80-HE0	58	5290	MCS0	14.00	13.43

Main						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.6GHz	802.11a	100	5500	6Mbps	14.00	13.68
		120	5600		14.00	13.62
		140	5700		14.00	13.64
		144	5720		14.00	13.59
	802.11n20-HT0	100	5500	MCS0	14.00	13.66
		120	5600		14.00	13.62
		140	5700		14.00	13.68
		144	5720		14.00	13.69
	802.11ac20-VHT0	100	5500	MCS0	14.00	13.67
		120	5600		14.00	13.57
		140	5700		14.00	13.55
		144	5720		14.00	13.61
	802.11ax20-HE0	100	5500	MCS0	14.00	13.68
		120	5600		14.00	13.70
		140	5700		14.00	13.67
		144	5720		14.00	13.58
	802.11n40-HT0	102	5510	MCS0	14.00	13.54
		118	5590		14.00	13.67
		134	5670		14.00	13.52
		142	5710		14.00	13.67
	802.11ac40-VHT0	102	5510	MCS0	14.00	13.70
		118	5590		14.00	13.69
		134	5670		14.00	13.63
		142	5710		14.00	13.67
	802.11ax40-HE0	102	5510	MCS0	14.00	13.66
		118	5590		14.00	13.59
		134	5670		14.00	13.62
		142	5710		14.00	13.63
	802.11ac80-VHT0	106	5530	MCS0	14.00	13.70
		122	5610		14.00	13.82
		138	5690		14.00	13.87
	802.11ax80-HE0	106	5530	MCS0	14.00	13.50
		122	5610		14.00	13.65
		138	5690		14.00	13.53
	802.11ac160-VHT0	114	5570	MCS0	12.50	12.01
	802.11ax160-HE0	114	5570	MCS0	12.50	12.10

Main						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.8GHz	802.11a	149	5745	6Mbps	14.00	13.71
		157	5785		14.00	13.56
		165	5825		14.00	13.69
	802.11n20-HT0	149	5745	MCS0	14.00	13.53
		157	5785		14.00	13.50
		165	5825		14.00	13.70
	802.11ac20-VHT0	149	5745	MCS0	14.00	13.62
		157	5785		14.00	13.63
		165	5825		14.00	13.61
	802.11ax20-HE0	149	5745	MCS0	14.00	13.53
		157	5785		14.00	13.66
		165	5825		14.00	13.57
	802.11n40-HT0	151	5755	MCS0	14.00	13.61
		159	5795		14.00	13.51
	802.11ac40-VHT0	151	5755	MCS0	14.00	13.55
		159	5795		14.00	13.56
	802.11ax40-HE0	151	5755	MCS0	14.00	13.59
		159	5795		14.00	13.61
	802.11ac80-VHT0	155	5775	MCS0	14.00	13.72
	802.11ax80-HE0	155	5775	MCS0	14.00	13.58

Main						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.9GHz	802.11a	169	5845	6Mbps	14.00	13.46
		173	5865		14.00	13.60
		177	5885		14.00	13.58
	802.11n20-HT0	169	5845	MCS0	14.00	13.46
		173	5865		14.00	13.61
		177	5885		14.00	13.47
	802.11ac20-VHT0	169	5845	MCS0	14.00	13.54
		173	5865		14.00	13.51
		177	5885		14.00	13.49
	802.11ax20-HE0	169	5845	MCS0	14.00	13.52
		173	5865		14.00	13.59
		177	5885		14.00	13.55
	802.11n40-HT0	167	5835	MCS0	14.00	13.51
		175	5875		14.00	13.49
	802.11ac40-VHT0	167	5835	MCS0	14.00	13.53
		175	5875		14.00	13.49
	802.11ax40-HE0	167	5835	MCS0	14.00	13.62
		175	5875		14.00	13.53
	802.11ac80-VHT0	171	5855	MCS0	14.00	13.45
	802.11ax80-HE0	171	5855	MCS0	14.00	13.62
	802.11ac160-VHT0	163	5815	MCS0	14.00	13.65
	802.11ax160-HE0	163	5815	MCS0	14.00	13.54

Aux						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
2.45GHz	802.11b	1	2412	1Mbps	15.50	15.12
		6	2437		15.50	15.08
		11	2462		15.50	15.18
		12	2467		15.00	14.79
		13	2472		13.50	13.28
	802.11g	1	2412	6Mbps	15.50	14.94
		6	2437		15.50	15.03
		11	2462		15.50	15.10
		12	2467		14.50	13.93
		13	2472		11.50	11.01
	802.11n20-HT0	1	2412	MCS0	15.50	14.94
		6	2437		15.50	14.93
		11	2462		15.50	15.04
		12	2467		14.00	13.55
		13	2472		9.50	9.00
	802.11ac20-VHT0	1	2412	MCS0	15.50	15.04
		6	2437		15.50	14.99
		11	2462		15.50	14.93
		12	2467		14.00	13.46
		13	2472		10.00	9.48
	802.11ax20-HE0	1	2412	MCS0	15.50	15.07
		6	2437		15.50	15.05
		11	2462		15.50	15.00
		12	2467		14.00	13.60
		13	2472		10.00	9.44
	802.11n40-HT0	3	2422	MCS0	15.00	14.51
		6	2437		15.50	15.10
		9	2452		15.00	14.42
		10	2457		12.00	11.51
		11	2462		10.00	9.54
	802.11ac40-VHT0	3	2422	MCS0	15.00	14.52
		6	2437		15.50	14.97
		9	2452		15.00	14.61
		10	2457		12.50	11.94
		11	2462		10.00	9.48
	802.11ax40-HE0	3	2422	MCS0	15.00	14.43
		6	2437		15.50	15.02
		9	2452		15.00	14.47
		10	2457		12.50	11.98
		11	2462		10.00	9.55

Aux						
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	14.00	13.52
		40	5200		14.00	13.58
		44	5220		14.00	13.50
		48	5240		14.00	13.57
	802.11n20-HT0	36	5180	MCS0	14.00	13.52
		40	5200		14.00	13.50
		44	5220		14.00	13.53
		48	5240		14.00	13.59
	802.11ac20-VHT0	36	5180	MCS0	14.00	13.56
		40	5200		14.00	13.43
		44	5220		14.00	13.53
		48	5240		14.00	13.58
	802.11ax20-HE0	36	5180	MCS0	14.00	13.54
		40	5200		14.00	13.47
		44	5220		14.00	13.55
		48	5240		14.00	13.60
	802.11n40-HT0	38	5190	MCS0	14.00	13.47
		46	5230		14.00	13.58
	802.11ac40-VHT0	38	5190	MCS0	14.00	13.57
		46	5230		14.00	13.55
	802.11ax40-HE0	38	5190	MCS0	14.00	13.54
		46	5230		14.00	13.56
	802.11ac80-VHT0	42	5210	MCS0	14.00	13.62
	802.11ax80-HE0	42	5210	MCS0	14.00	13.59
	802.11ac160-VHT0	50	5250	MCS0	13.50	12.99
	802.11ax160-HE0	50	5250	MCS0	13.50	13.07

Aux						
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	14.00	13.67
		56	5280		14.00	13.80
		60	5300		14.00	13.69
		64	5320		14.00	13.61
	802.11n20-HT0	52	5260	MCS0	14.00	13.64
		56	5280		14.00	13.69
		60	5300		14.00	13.75
		64	5320		14.00	13.70
	802.11ac20-VHT0	52	5260	MCS0	14.00	13.79
		56	5280		14.00	13.66
		60	5300		14.00	13.64
		64	5320		14.00	13.63
	802.11ax20-HE0	52	5260	MCS0	14.00	13.70
		56	5280		14.00	13.76
		60	5300		14.00	13.64
		64	5320		14.00	13.72
	802.11n40-HT0	54	5270	MCS0	14.00	13.73
		62	5310		14.00	13.60
	802.11ac40-VHT0	54	5270	MCS0	14.00	13.68
		62	5310		14.00	13.73
	802.11ax40-HE0	54	5270	MCS0	14.00	13.70
		62	5310		14.00	13.78
	802.11ac80-VHT0	58	5290	MCS0	14.00	13.84
	802.11ax80-HE0	58	5290	MCS0	14.00	13.69

Aux						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.6GHz	802.11a	100	5500	6Mbps	14.00	13.51
		120	5600		14.00	13.54
		140	5700		14.00	13.41
		144	5720		14.00	13.55
	802.11n20-HT0	100	5500	MCS0	14.00	13.59
		120	5600		14.00	13.48
		140	5700		14.00	13.47
		144	5720		14.00	13.40
	802.11ac20-VHT0	100	5500	MCS0	14.00	13.43
		120	5600		14.00	13.56
		140	5700		14.00	13.44
		144	5720		14.00	13.46
	802.11ax20-HE0	100	5500	MCS0	14.00	13.41
		120	5600		14.00	13.56
		140	5700		14.00	13.58
		144	5720		14.00	13.52
	802.11n40-HT0	102	5510	MCS0	14.00	13.56
		118	5590		14.00	13.43
		134	5670		14.00	13.55
		142	5710		14.00	13.54
	802.11ac40-VHT0	102	5510	MCS0	14.00	13.47
		118	5590		14.00	13.45
		134	5670		14.00	13.45
		142	5710		14.00	13.59
	802.11ax40-HE0	102	5510	MCS0	14.00	13.61
		118	5590		14.00	13.54
		134	5670		14.00	13.59
		142	5710		14.00	13.51
	802.11ac80-VHT0	106	5530	MCS0	14.00	13.62
		122	5610		14.00	13.67
		138	5690		14.00	13.69
	802.11ax80-HE0	106	5530	MCS0	14.00	13.55
		122	5610		14.00	13.59
		138	5690		14.00	13.57
	802.11ac160-VHT0	114	5570	MCS0	12.50	11.92
	802.11ax160-HE0	114	5570	MCS0	12.50	11.91

Aux						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.8GHz	802.11a	149	5745	6Mbps	14.00	13.84
		157	5785		14.00	13.75
		165	5825		14.00	13.82
	802.11n20-HT0	149	5745	MCS0	14.00	13.73
		157	5785		14.00	13.81
		165	5825		14.00	13.83
	802.11ac20-VHT0	149	5745	MCS0	14.00	13.71
		157	5785		14.00	13.87
		165	5825		14.00	13.85
	802.11ax20-HE0	149	5745	MCS0	14.00	13.90
		157	5785		14.00	13.76
		165	5825		14.00	13.88
	802.11n40-HT0	151	5755	MCS0	14.00	13.75
		159	5795		14.00	13.72
	802.11ac40-VHT0	151	5755	MCS0	14.00	13.71
		159	5795		14.00	13.84
	802.11ax40-HE0	151	5755	MCS0	14.00	13.73
		159	5795		14.00	13.78
	802.11ac80-VHT0	155	5775	MCS0	14.00	13.91
	802.11ax80-HE0	155	5775	MCS0	14.00	13.73

Aux						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
5.9GHz	802.11a	169	5845	6Mbps	14.00	13.75
		173	5865		14.00	13.85
		177	5885		14.00	13.82
	802.11n20-HT0	169	5845	MCS0	14.00	13.70
		173	5865		14.00	13.80
		177	5885		14.00	13.71
	802.11ac20-VHT0	169	5845	MCS0	14.00	13.73
		173	5865		14.00	13.78
		177	5885		14.00	13.69
	802.11ax20-HE0	169	5845	MCS0	14.00	13.78
		173	5865		14.00	13.72
		177	5885		14.00	13.73
	802.11n40-HT0	167	5835	MCS0	14.00	13.70
		175	5875		14.00	13.71
	802.11ac40-VHT0	167	5835	MCS0	14.00	13.70
		175	5875		14.00	13.80
	802.11ax40-HE0	167	5835	MCS0	14.00	13.87
		175	5875		14.00	13.82
	802.11ac80-VHT0	171	5855	MCS0	14.00	13.86
	802.11ax80-HE0	171	5855	MCS0	14.00	13.87
	802.11ac160-VHT0	163	5815	MCS0	14.00	13.88
	802.11ax160-HE0	163	5815	MCS0	14.00	13.85

6.2 WIFI 6E

Main						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11a	1	5955	6Mbps	1.00	0.94
		45	6175		1.00	0.81
		93	6415		1.00	0.78
	802.11ax20-HE0	1	5955	MCS0	1.00	0.90
		45	6175		1.00	0.91
		93	6415		1.00	0.81
	802.11ax40-HE0	3	5965	MCS0	3.50	3.35
		43	6165		3.50	3.27
		91	6405		3.50	3.44
	802.11ax80-HE0	7	5985	MCS0	7.00	6.94
		39	6145		7.00	6.86
		87	6385		7.00	6.85
	802.11ax160-HE0	15	6025	MCS0	12.50	12.49
		47	6185		12.50	12.48
		79	6345		12.50	12.47

Main						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11a	97	6435	6Mbps	1.50	1.35
		105	6475		1.50	1.26
		113	6515		1.50	1.42
	802.11ax20-HE0	97	6435	MCS0	1.50	1.28
		105	6475		1.50	1.33
		113	6515		1.50	1.33
	802.11ax40-HE0	99	6445	MCS0	4.00	3.82
		107	6485		4.00	3.94
	802.11ax80-HE0	103	6465	MCS0	7.00	6.78
		119	6545		7.00	6.91
	802.11ax160-HE0	111	6505	MCS0	13.00	12.89

Main						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11a	117	6535	6Mbps	1.50	1.44
		149	6695		1.50	1.32
		181	6855		1.50	1.35
	802.11ax20-HE0	117	6535	MCS0	1.50	1.39
		149	6695		1.50	1.34
		181	6855		1.50	1.40
	802.11ax40-HE0	115	6525	MCS0	4.00	3.80
		147	6685		4.00	3.94
		179	6845		4.00	3.78
	802.11ax80-HE0	135	6625	MCS0	7.00	6.77
		151	6705		7.00	6.82
		167	6785		7.00	6.83
	802.11ax160-HE0	143	6665	MCS0	12.50	12.49
		175	6825		12.50	12.28

Main						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11a	185	6875	6Mbps	2.00	1.89
		209	6995		2.00	1.86
		233	7115		2.00	1.89
	802.11ax20-HE0	185	6875	MCS0	2.00	1.81
		209	6995		2.00	1.90
		233	7115		2.00	1.83
	802.11ax40-HE0	187	6885	MCS0	4.50	4.30
		227	7085		4.50	4.33
	802.11ax80-HE0	183	6865	MCS0	7.00	6.77
		199	6945		7.50	7.27
		215	7025		7.50	7.38
	802.11ax160-HE0	207	6985	MCS0	13.00	12.99

Aux						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11a	1	5955	6Mbps	1.00	0.85
		45	6175		1.00	0.89
		93	6415		1.00	0.93
	802.11ax20-HE0	1	5955	MCS0	1.00	0.87
		45	6175		1.00	0.81
		93	6415		1.00	0.92
	802.11ax40-HE0	3	5965	MCS0	3.50	3.41
		43	6165		3.50	3.38
		91	6405		3.50	3.34
	802.11ax80-HE0	7	5985	MCS0	7.00	6.83
		39	6145		7.00	6.77
		87	6385		7.00	6.92
	802.11ax160-HE0	15	6025	MCS0	12.50	12.49
		47	6185		12.50	12.38
		79	6345		12.50	12.47

Aux						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11a	97	6435	6Mbps	1.50	1.36
		105	6475		1.50	1.32
		113	6515		1.50	1.27
	802.11ax20-HE0	97	6435	MCS0	1.50	1.25
		105	6475		1.50	1.36
		113	6515		1.50	1.31
	802.11ax40-HE0	99	6445	MCS0	4.00	3.83
		107	6485		4.00	3.93
	802.11ax80-HE0	103	6465	MCS0	7.00	6.84
		119	6545		7.00	6.76
	802.11ax160-HE0	111	6505	MCS0	13.00	12.99

Aux						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11a	117	6535	6Mbps	1.50	1.34
		149	6695		1.50	1.29
		181	6855		1.50	1.41
	802.11ax20-HE0	117	6535	MCS0	1.50	1.44
		149	6695		1.50	1.32
		181	6855		1.50	1.27
	802.11ax40-HE0	115	6525	MCS0	4.00	3.89
		147	6685		4.00	3.93
		179	6845		4.00	3.81
	802.11ax80-HE0	135	6625	MCS0	7.00	6.80
		151	6705		7.00	6.88
		167	6785		7.00	6.79
	802.11ax160-HE0	143	6665	MCS0	12.50	12.49
		175	6825		12.50	12.48

Aux						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11a	185	6875	6Mbps	2.00	1.77
		209	6995		2.00	1.91
		233	7115		2.00	1.89
	802.11ax20-HE0	185	6875	MCS0	2.00	1.87
		209	6995		2.00	1.94
		233	7115		2.00	1.90
	802.11ax40-HE0	187	6885	MCS0	4.50	4.38
		227	7085		4.50	4.38
	802.11ax80-HE0	183	6865	MCS0	7.00	6.86
		199	6945		7.50	7.33
		215	7025		7.50	7.26
	802.11ax160-HE0	207	6985	MCS0	13.00	12.99

6.3 Bluetooth

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	11.50	11.13	8.50	8.46	8.50	8.48
	CH 39	2441		11.02		8.32		8.34
	CH 78	2480		10.99		8.17		8.21

6.4 BLE

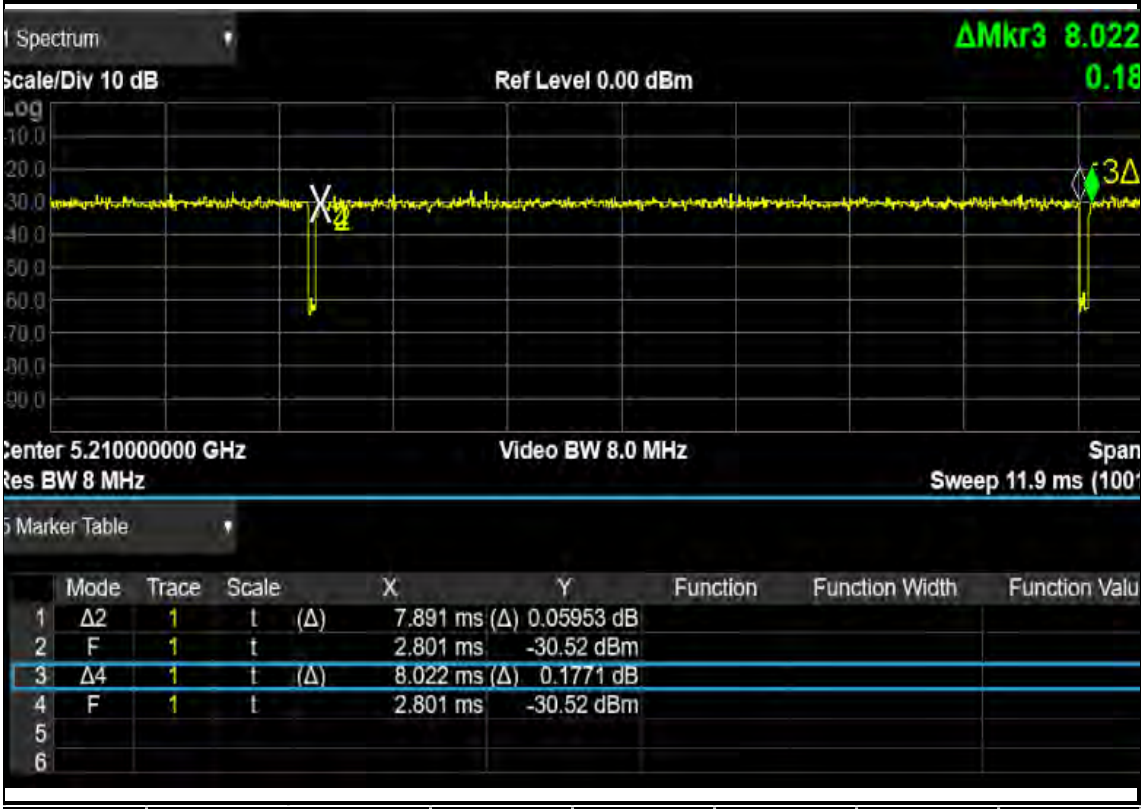
Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)
BLE_1M	CH 00	2402	11.5	11.03
	CH 19	2440		10.10
	CH 39	2480		10.89

Mode	Channel	Frequency (MHz)	GFSK	
			Max. Rated Avg.Power + Max. Tolerance (dBm)	Average Output Power (dBm)
BLE_2M	CH 00	2402	11.5	11.02
	CH 19	2440		10.98
	CH 39	2480		11.01

7 DUTY CYCLE

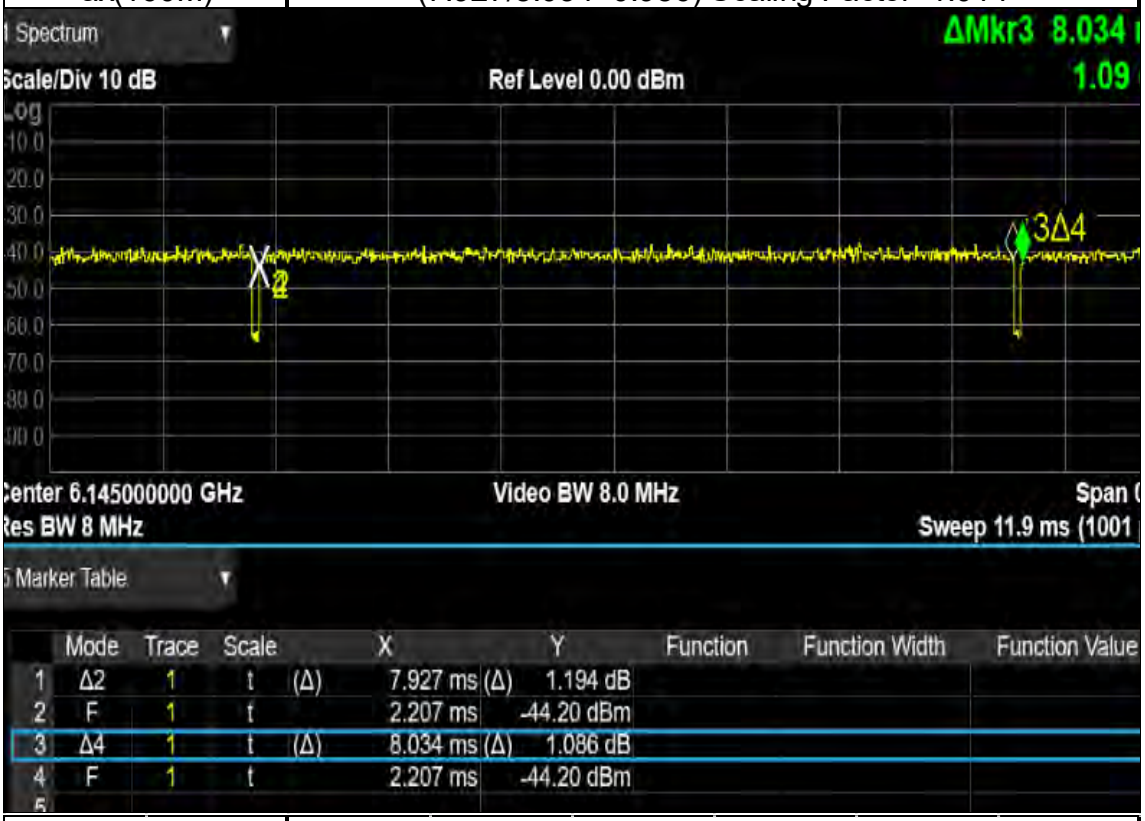
2.4G b	(8.355/8.445=0.989) Scaling Factor=1.011

ac(80M)	(7.891/8.022=0.983) Scaling Factor=1.017

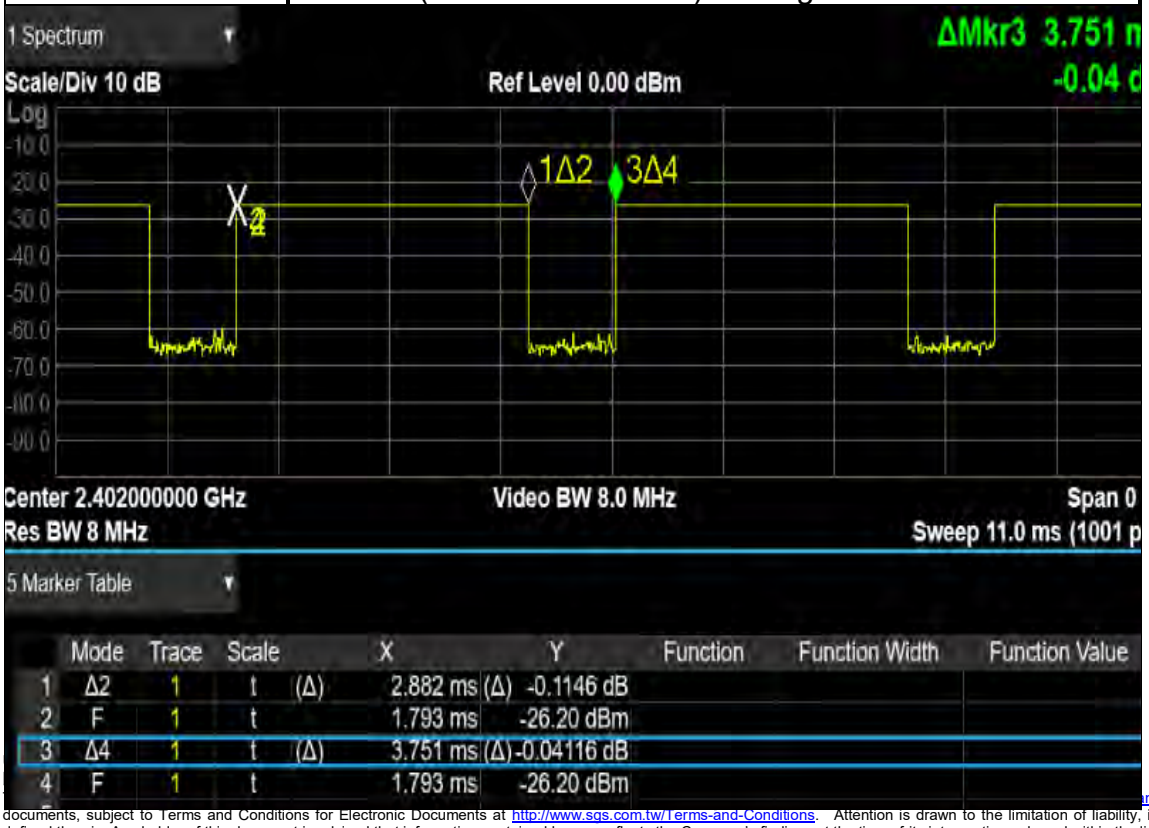


ac(160M)	(5.518/5.613=0.983) Scaling Factor=1.017

ax(160M)	(7.927/8.034=0.986) Scaling Factor=1.014



BT	(2.882/3.751=0.768) Scaling Factor=1.302



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

INPAQ

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 802.11b	Main	Bottom Surface	0	1	2412	15.50	15.24	1.01	106.17%	0.125	0.134	-
WLAN 802.11b	Main	Bottom Surface	0	6	2437	15.50	15.39	1.01	102.57%	0.164	0.170	001
WLAN 802.11b	Main	Bottom Surface	0	11	2462	15.50	15.21	1.01	106.91%	0.113	0.122	-
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(80M) 5.2G	Main	Bottom Surface	0	42	5210	14.00	13.56	1.02	110.66%	0.776	0.873	002
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(80M) 5.3G	Main	Bottom Surface	0	58	5290	14.00	13.54	1.02	111.17%	0.653	0.738	003
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(80M) 5.6G	Main	Bottom Surface	0	138	5690	14.00	13.87	1.02	103.04%	0.677	0.709	004
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(80M) 5.8G	Main	Bottom Surface	0	155	5775	14.00	13.72	1.02	106.66%	0.870	0.944	005
Repeat	Main	Bottom Surface	0	155	5775	14.00	13.72	1.02	106.66%	0.845	0.917	-
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	Main	Bottom Surface	0	163	5815	14.00	13.65	1.02	108.39%	0.569	0.627	006
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 802.11b	Aux	Bottom Surface	0	1	2412	15.50	15.12	1.01	109.14%	0.062	0.068	-
WLAN 802.11b	Aux	Bottom Surface	0	6	2437	15.50	15.08	1.01	110.15%	0.053	0.059	-
WLAN 802.11b	Aux	Bottom Surface	0	11	2462	15.50	15.18	1.01	107.65%	0.071	0.077	007
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	
Bluetooth(GFSK)	Aux	Bottom Surface	0	0	2402	11.50	11.13	1.30	108.89%	0.055	0.078	008
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(80M) 5.2G	Aux	Bottom Surface	0	42	5210	14.00	13.62	1.02	109.14%	0.046	0.051	009
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(80M) 5.3G	Aux	Bottom Surface	0	58	5290	14.00	13.84	1.02	103.75%	0.035	0.037	010
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(80M) 5.6G	Aux	Bottom Surface	0	138	5690	14.00	13.69	1.02	107.40%	0.047	0.051	011
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(80M) 5.8G	Aux	Bottom Surface	0	155	5775	14.00	13.91	1.02	102.09%	0.050	0.052	012
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	Bottom Surface	0	163	5815	14.00	13.88	1.02	102.80%	0.108	0.113	013

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

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 802.11b	Main	Bottom Surface	0	1	2412	15.50	15.24	1.01	106.17%	0.227	0.244	-
WLAN 802.11b	Main	Bottom Surface	0	6	2437	15.50	15.39	1.01	102.57%	0.231	0.240	-
WLAN 802.11b	Main	Bottom Surface	0	11	2462	15.50	15.21	1.01	106.91%	0.252	0.272	014
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(80M) 5.2G	Main	Bottom Surface	0	42	5210	14.00	13.56	1.02	110.66%	1.010	1.137	015
Repeat		Bottom Surface	0	42	5210	14.00	13.56	1.02	110.66%	0.993	1.118	-
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(80M) 5.3G	Main	Bottom Surface	0	58	5290	14.00	13.54	1.02	111.17%	0.665	0.752	016
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(80M) 5.6G	Main	Bottom Surface	0	138	5690	14.00	13.87	1.02	103.04%	0.637	0.668	017
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(80M) 5.8G	Main	Bottom Surface	0	155	5775	14.00	13.72	1.02	106.66%	0.486	0.527	018
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	Main	Bottom Surface	0	163	5815	14.00	13.65	1.02	108.39%	0.507	0.559	019
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 802.11b	Aux	Bottom Surface	0	1	2412	15.50	15.12	1.01	109.14%	0.214	0.236	020
WLAN 802.11b	Aux	Bottom Surface	0	6	2437	15.50	15.08	1.01	110.15%	0.202	0.225	-
WLAN 802.11b	Aux	Bottom Surface	0	11	2462	15.50	15.18	1.01	107.65%	0.209	0.227	-
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	
Bluetooth(GFSK)	Aux	Bottom Surface	0	0	2402	11.50	11.13	1.30	108.89%	0.051	0.072	021
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(80M) 5.2G	Aux	Bottom Surface	0	42	5210	14.00	13.62	1.02	109.14%	0.099	0.110	022
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(80M) 5.3G	Aux	Bottom Surface	0	58	5290	14.00	13.84	1.02	103.75%	0.086	0.091	023
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(80M) 5.6G	Aux	Bottom Surface	0	106	5530	14.00	13.62	1.02	109.14%	0.099	0.110	024
WLAN 802.11ac(80M) 5.6G	Aux	Bottom Surface	0	138	5690	14.00	13.69	1.02	107.40%	0.089	0.097	-
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(80M) 5.8G	Aux	Bottom Surface	0	155	5775	14.00	13.91	1.02	102.09%	0.121	0.126	025
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	Bottom Surface	0	163	5815	14.00	13.88	1.02	102.80%	0.112	0.117	026

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

WIFI 6E

INPAQ

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)		Estimated Measured APD W/m^2 (4cm^2)	Estimated Reported APD W/m^2 (4cm^2)	ID
										Measured	Reported			
U-NII-5 6.2GHz802.11ax(160M)	Main	Bottom Surface	0	15	6025	12.50	12.49	1.01	100.23%	0.311	0.316	1.910	1.941	027
U-NII-5 6.2GHz802.11ax(160M)	Main	Bottom Surface	0	47	6185	12.50	12.48	1.01	100.46%	0.238	0.242	1.560	1.589	028
U-NII-6 6.5GHz802.11ax(160M)	Main	Bottom Surface	0	111	6505	13.00	12.89	1.01	102.57%	0.601	0.625	3.730	3.879	029
U-NII-7 6.7GHz802.11ax(160M)	Main	Bottom Surface	0	143	6665	12.50	12.49	1.01	100.23%	0.556	0.565	3.230	3.283	030
U-NII-8 7.0GHz 802.11ax (160M)	Main	Bottom Surface	0	207	6985	13.00	12.99	1.01	100.23%	0.719	0.729	3.750	3.800	031
U-NII-5 6.2GHz802.11ax(160M)	Aux	Bottom Surface	0	15	6025	12.50	12.49	1.01	100.23%	0.075	0.076	0.493	0.501	032
U-NII-5 6.2GHz802.11ax(160M)	Aux	Bottom Surface	0	79	6345	12.50	12.47	1.01	100.69%	0.096	0.098	0.687	0.701	033
U-NII-6 6.5GHz802.11ax(160M)	Aux	Bottom Surface	0	111	6505	13.00	12.99	1.01	100.23%	0.090	0.091	0.633	0.643	034
U-NII-7 6.7GHz802.11ax(160M)	Aux	Bottom Surface	0	143	6665	12.50	12.49	1.01	100.23%	0.039	0.040	0.263	0.267	035
U-NII-8 7.0GHz 802.11ax (160M)	Aux	Bottom Surface	0	207	6985	13.00	12.99	1.01	100.23%	0.021	0.021	0.128	0.130	036

INNOWAVE

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)		Estimated Measured APD W/m^2 (4cm^2)	Estimated Reported APD W/m^2 (4cm^2)	ID
										Measured	Reported			
U-NII-5 6.2GHz802.11ax(160M)	Main	Bottom Surface	0	15	6025	12.50	12.49	1.01	100.23%	0.972	0.988	6.130	6.230	037
U-NII-5 6.2GHz802.11ax(160M)	Main	Bottom Surface	0	47	6185	12.50	12.48	1.01	100.46%	0.759	0.773	4.620	4.706	038
U-NII-5 6.2GHz802.11ax(160M)	Main	Bottom Surface	0	79	6345	12.50	12.47	1.01	100.69%	0.732	0.747	4.430	4.523	-
Repeat	Main	Bottom Surface	0	15	6025	12.50	12.49	1.01	100.23%	0.951	0.967	5.950	6.047	-
U-NII-6 6.5GHz802.11ax(160M)	Main	Bottom Surface	0	111	6505	13.00	12.89	1.01	102.57%	0.440	0.458	2.550	2.652	039
U-NII-7 6.7GHz802.11ax(160M)	Main	Bottom Surface	0	143	6665	12.50	12.49	1.01	100.23%	0.328	0.333	1.980	2.012	040
U-NII-8 7.0GHz 802.11ax (160M)	Main	Bottom Surface	0	207	6985	13.00	12.99	1.01	100.23%	0.343	0.348	1.870	1.895	041
U-NII-5 6.2GHz802.11ax(160M)	Aux	Bottom Surface	0	15	6025	12.50	12.49	1.01	100.23%	0.337	0.343	2.000	2.033	042
U-NII-5 6.2GHz802.11ax(160M)	Aux	Bottom Surface	0	47	6185	12.50	12.38	1.01	102.80%	0.201	0.210	1.470	1.532	-
U-NII-5 6.2GHz802.11ax(160M)	Aux	Bottom Surface	0	79	6345	12.50	12.47	1.01	100.69%	0.216	0.221	1.520	1.552	043
U-NII-6 6.5GHz802.11ax(160M)	Aux	Bottom Surface	0	111	6505	13.00	12.99	1.01	100.23%	0.282	0.287	1.940	1.972	044
U-NII-7 6.7GHz802.11ax(160M)	Aux	Bottom Surface	0	143	6665	12.50	12.49	1.01	100.23%	0.203	0.206	1.410	1.433	045
U-NII-8 7.0GHz 802.11ax (160M)	Aux	Bottom Surface	0	207	6985	13.00	12.99	1.01	100.23%	0.150	0.152	1.020	1.034	046

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

Note:
Reported SAR = measured SAR * Power scaling * Duty cycle scaling

8.3 Summary of PD Results

INPAQ

Mode	Antenna	Position	Distance (mm)	Channel	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 (W/m^2)	Reported Total psPD (W/m^2)	Measured Normal psPD (W/m^2)	Reported Normal psPD (W/m^2)	
WLAN 6E 802.11ax(160M) U-NII-5	Main	Bottom Surface	2	15	6025	12.50	12.49	100.23%	1.01	1.55	1.060	1.670	0.981	1.545	047
	Main	Bottom Surface	2	47	6185	12.50	12.48	100.46%	1.01	1.55	1.250	1.974	1.180	1.863	048
WLAN 6E 802.11ax(160M) U-NII-6	Main	Bottom Surface	2	111	6505	13.00	12.89	102.57%	1.01	1.55	1.510	2.434	1.460	2.354	049
WLAN 6E 802.11ax(160M) U-NII-7	Main	Bottom Surface	2	143	6665	12.50	12.49	100.23%	1.01	1.55	1.380	2.174	1.340	2.111	050
WLAN 6E 802.11ax(160M) U-NII-8	Main	Bottom Surface	2	207	6985	13.00	12.99	100.23%	1.01	1.55	2.680	4.222	2.340	3.686	051

INNOWAVE

Mode	Antenna	Position	Distance (mm)	Channel	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 (W/m^2)	Reported Total psPD (W/m^2)	Measured Normal psPD (W/m^2)	Reported Normal psPD (W/m^2)	
WLAN 6E 802.11ax(160M) U-NII-5	Main	Bottom Surface	2	15	6025	12.50	12.49	100.23%	1.01	1.55	1.140	1.796	0.946	1.490	052
	Main	Bottom Surface	2	47	6185	12.50	12.48	100.46%	1.01	1.55	0.656	1.036	0.633	0.999	053
WLAN 6E 802.11ax(160M) U-NII-6	Main	Bottom Surface	2	111	6505	13.00	12.89	102.57%	1.01	1.55	1.710	2.757	1.650	2.660	054
WLAN 6E 802.11ax(160M) U-NII-7	Main	Bottom Surface	2	143	6665	12.50	12.49	100.23%	1.01	1.55	1.910	3.009	1.660	2.615	055
WLAN 6E 802.11ax(160M) U-NII-8	Main	Bottom Surface	2	207	6985	13.00	12.99	100.23%	1.01	1.55	1.800	2.836	1.670	2.631	056

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 + WLAN 2.4GHz Aux + BT Aux	Yes
WLAN 5GHz Main + WLAN 5GHz Aux	Yes
WLAN 5GHz Main + WLAN 5GHz Aux + BT Aux	Yes
WLAN 6GHz Main + WLAN 6GHz Aux	Yes
WLAN 6GHz Main + WLAN 6GHz Aux + BT Aux	Yes

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

INPAQ

Exposure Position		FCC Reported SAR							Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
		2	3	4	5	7	8	9	2+3+7	4+5	4+5+7	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
		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	0.170	0.077	0.944	0.052	0.078	0.729	0.098	**0.325**	**0.996**	**1.074**	**0.827**	**0.905**

INNOWAVE

Exposure Position		FCC Reported SAR							Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
		2	3	4	5	7	8	9	2+3+7	4+5	4+5+7	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
		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	0.272	0.236	1.137	0.126	0.072	0.988	0.343	**0.580**	**1.263**	**1.335**	**1.331**	**1.403**

9.4 Conclusion

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

10 INSTRUMENTS LIST

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	E-field Probe for Near Field Application	EUmmWV3	9399	Jan/26/2022	Jan/25/2023
SPEAG	System Validation Dipole	D2450V2	727	Apr/25/2022	Apr/24/2023
SPEAG	System Validation Dipole	D5GHzV2	1023	Jan/27/2022	Jan/26/2023
SPEAG	System Validation Dipole	D6.5GHzV2	1006	Aug/23/2022	Aug/22/2023
SPEAG	System Validation Dipole	D7GHzV2	1007	Aug/24/2022	Aug/23/2023
SPEAG	5G Verification Source 10GHz	5G-Veri10	1021	Jan/24/2022	Jan/23/2023
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 6 V16.0.0.116	N/A	Calibration not required	Calibration not required
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
SPEAG	Phantom	mmWave Phantom	N/A	Calibration not required	Calibration not required
LKM	Digital thermometer	DTM3000	EC14010603	Sep/27/2022	Sep/26/2023
TECPEL	Digital thermometer	DTM-303A	TP130057	Sep/29/2022	Sep/28/2023

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.)	2.64%	N	1	1	0.64	0.43	1.69%	1.14%	M
Liquid Conductivity (mea.)	2.05%	N	1	1	0.6	0.49	1.23%	1.00%	M
Combined standard uncertainty		RSS					11.90%	11.80%	
Expant uncertainty (95% confidence interval), K=2							23.80%	23.61%	

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.)	1.59%	N	1	1	0.64	0.43	1.02%	0.68%	M
Liquid Conductivity (mea.)	2.67%	N	1	1	0.6	0.49	1.60%	1.31%	M
Combined standard uncertainty		RSS					11.57%	11.50%	
Expant uncertainty (95% confidence interval), K=2							23.15%	23.01%	

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	0.600	R	√3	1.732	1	1	0.3	0.3
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: 2022/12/1

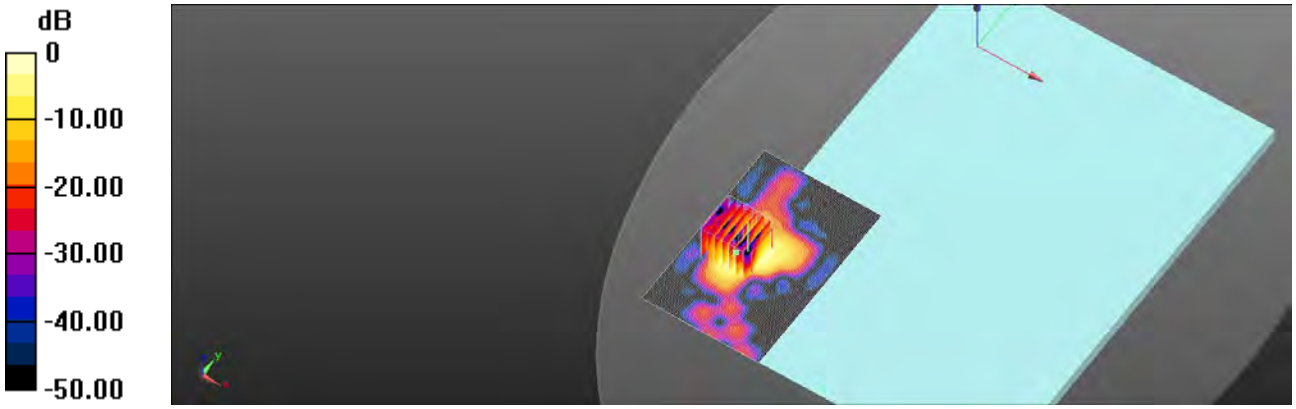
ID: 001
Report No. :TESA2211000524ES
WLAN 802.11b_Body_Bottom Surface_CH 6_Main_0mm
Communication System: WLAN; Frequency: 2437 MHz; Duty cycle= 1:1.011
Medium parameters used: f = 2437 MHz; σ = 1.835 S/m; ε_r = 39.778; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.260 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.254 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.471 W/kg
SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.056 W/kg
Smallest distance from peaks to all points 3 dB below = 6 mm
Ratio of SAR at M2 to SAR at M1 = 37.1%
Maximum value of SAR (measured) = 0.302 W/kg



0 dB = 0.302 W/kg = -5.85 dBW/kg

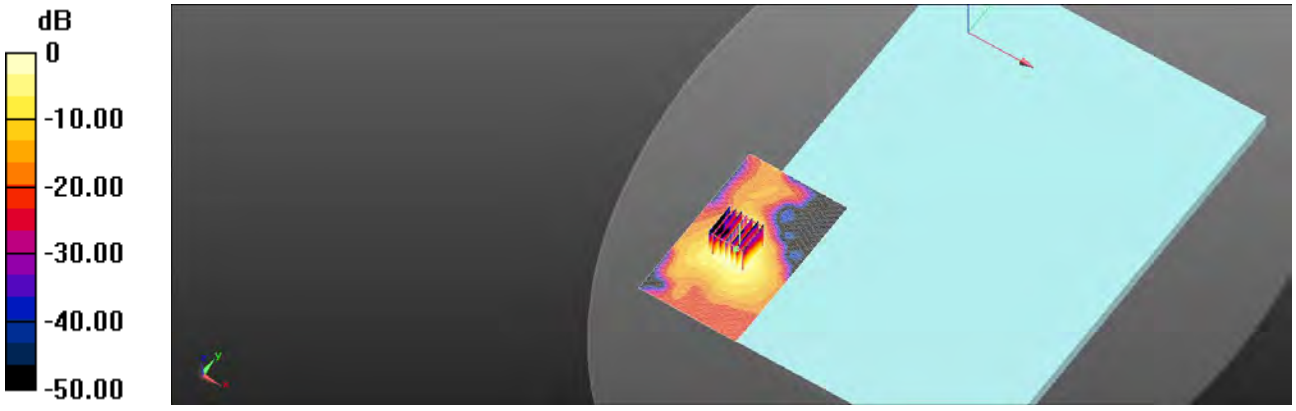
ID: 002
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.2G_Body_Bottom Surface_CH 42_Main_0mm
Communication System: WLAN; Frequency: 5210 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5210 MHz; σ = 4.729 S/m; ε_r = 35.341; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.72 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.29 W/kg
SAR(1 g) = 0.776 W/kg; SAR(10 g) = 0.250 W/kg
Smallest distance from peaks to all points 3 dB below = 6.1 mm
Ratio of SAR at M2 to SAR at M1 = 54.7%
Maximum value of SAR (measured) = 1.64 W/kg



0 dB = 1.64 W/kg = 2.36 dBW/kg

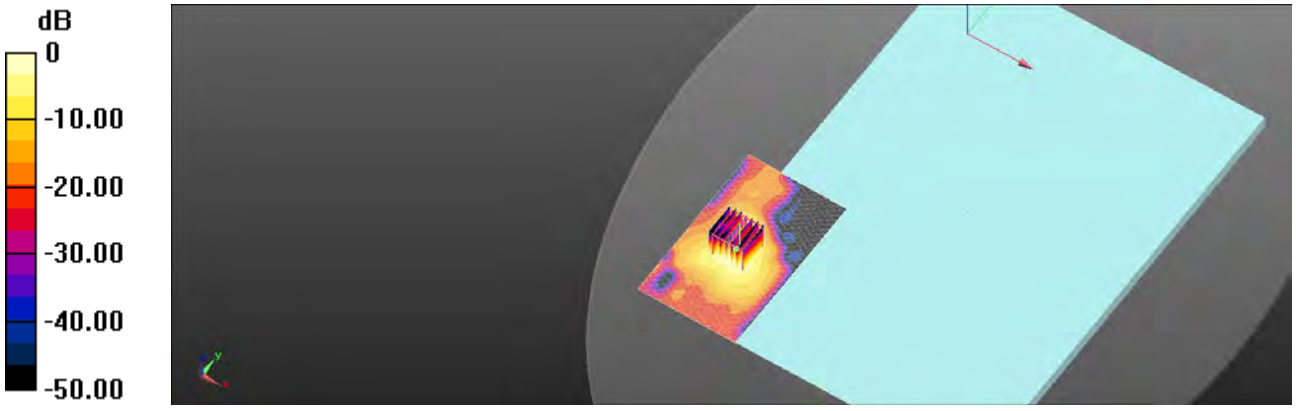
ID: 003
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Main_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5290 MHz; σ = 4.789 S/m; ε_r = 35.259; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.40 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.90 W/kg
SAR(1 g) = 0.653 W/kg; SAR(10 g) = 0.202 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 53.7%
Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

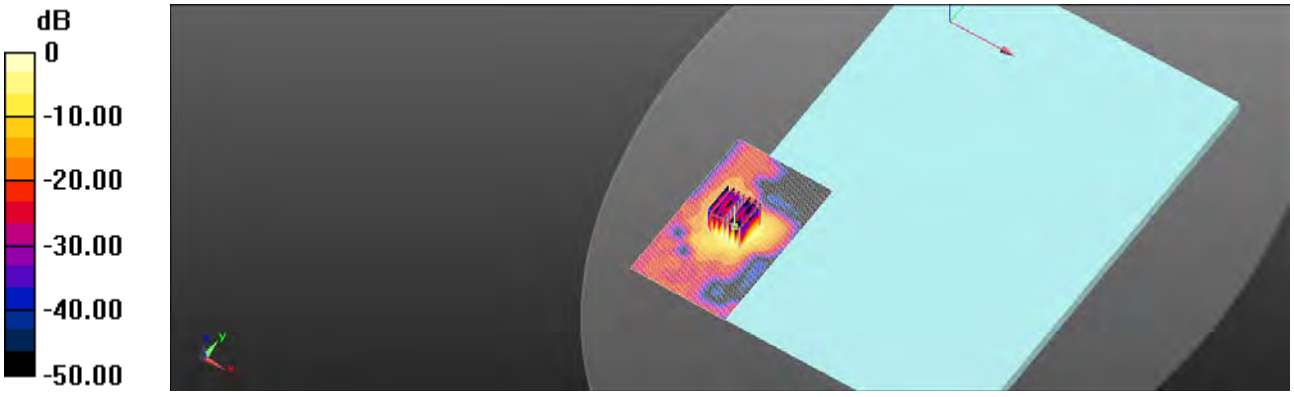
ID: 004
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.6G_Body_Bottom Surface_CH 138_Main_0mm
Communication System: WLAN; Frequency: 5690 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5690 MHz; σ = 5.266 S/m; ε_r = 35.149; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.05, 5.05, 5.05); 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 (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.564 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 0.677 W/kg; SAR(10 g) = 0.166 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 49.8%
Maximum value of SAR (measured) = 1.52 W/kg



0 dB = 1.52 W/kg = 1.81 dBW/kg

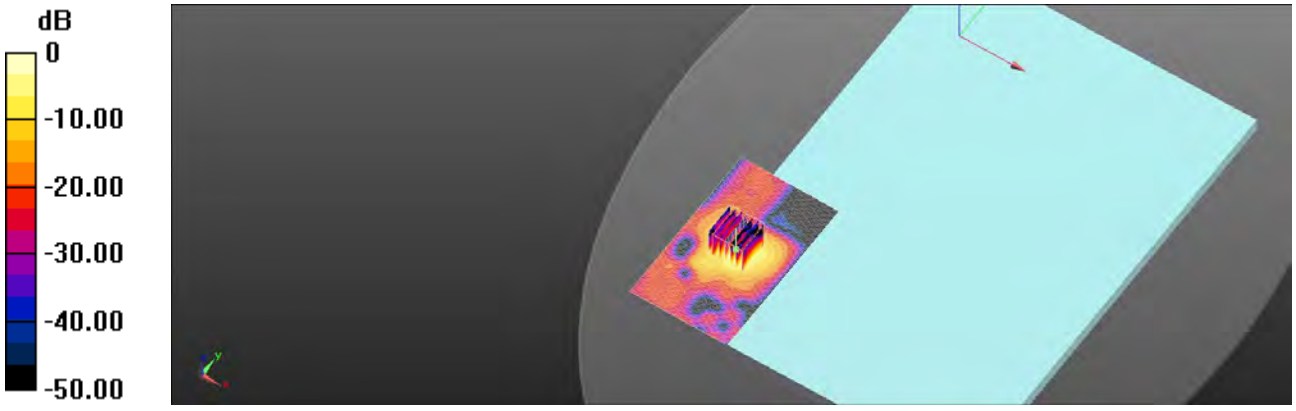
ID: 005
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Main_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5775 MHz; σ = 5.321 S/m; ε_r = 34.771; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (71x121x1): 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 = 3.256 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 4.79 W/kg
SAR(1 g) = 0.870 W/kg; SAR(10 g) = 0.208 W/kg
Smallest distance from peaks to all points 3 dB below = 4.7 mm
Ratio of SAR at M2 to SAR at M1 = 49.5%
Maximum value of SAR (measured) = 2.00 W/kg



0 dB = 2.00 W/kg = 2.60 dBW/kg

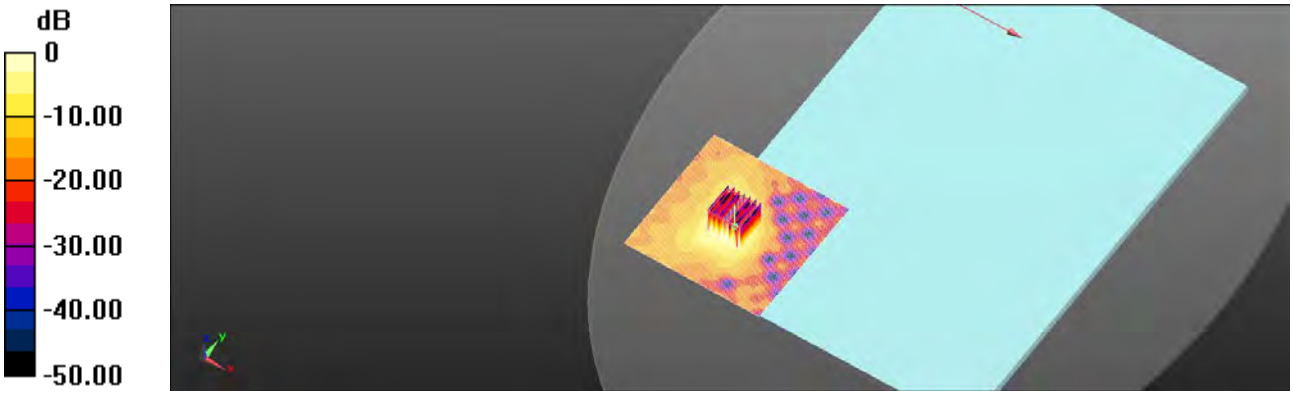
ID: 006
Report No. :TESA2211000524ES
WLAN 802.11ac(160M) 5.9G_Body_Bottom Surface_CH 163_Main_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5815 MHz; σ = 5.364 S/m; ε_r = 34.765; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (101x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.22 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.671 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.61 W/kg
SAR(1 g) = 0.569 W/kg; SAR(10 g) = 0.169 W/kg
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 52.6%
Maximum value of SAR (measured) = 1.19 W/kg



0 dB = 1.19 W/kg = 0.76 dBW/kg

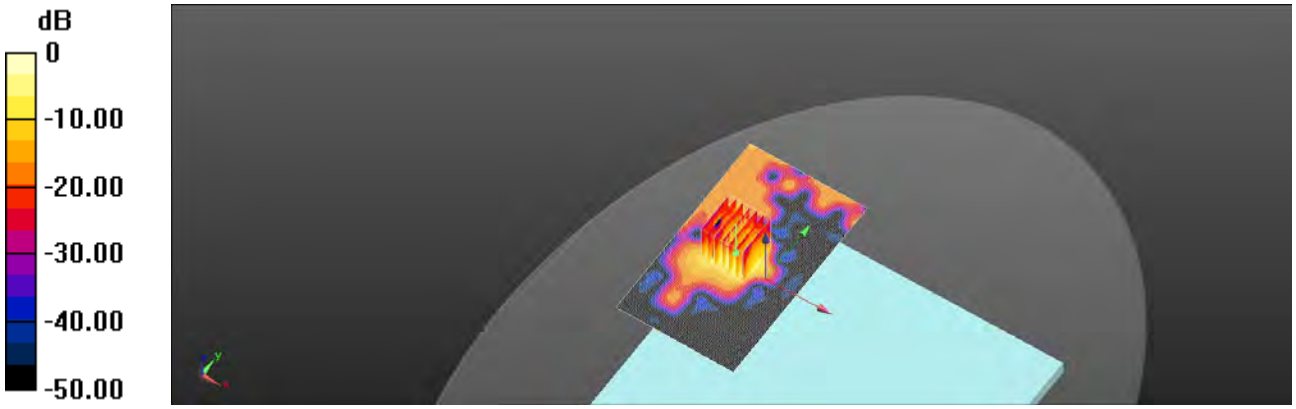
ID: 007
Report No. :TESA2211000524ES
WLAN 802.11b_Body_Bottom Surface_CH 11_Aux_0mm
Communication System: WLAN; Frequency: 2462 MHz; Duty cycle= 1:1.011
Medium parameters used: f = 2462 MHz; σ = 1.860 S/m; ε_r = 39.744; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.138 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.546 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.184 W/kg
SAR(1 g) = 0.071 W/kg; SAR(10 g) = 0.024 W/kg
Smallest distance from peaks to all points 3 dB below = 6.1 mm
Ratio of SAR at M2 to SAR at M1 = 43%
Maximum value of SAR (measured) = 0.126 W/kg



0 dB = 0.126 W/kg = -8.60 dBW/kg

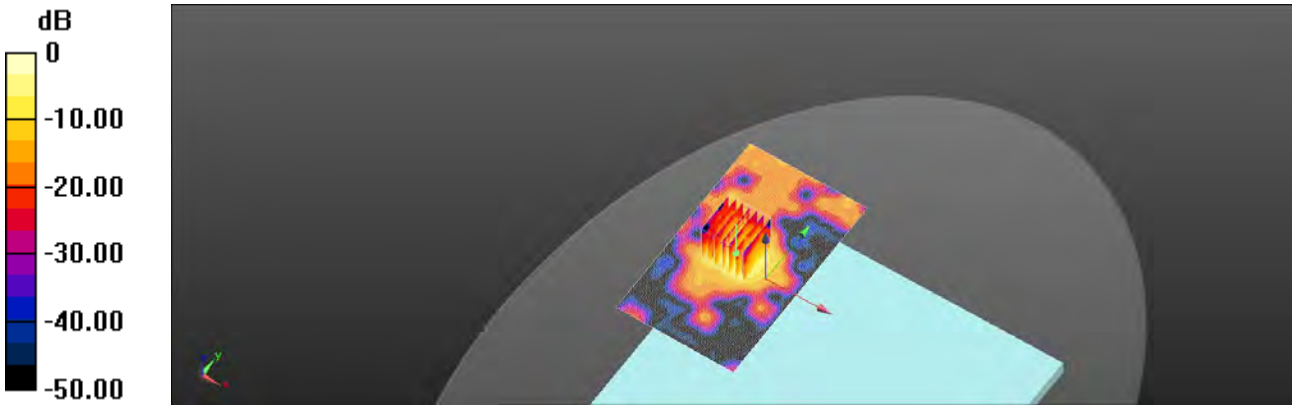
ID: 008
Report No. :TESA2211000524ES
Bluetooth(GFSK)_Body_Bottom Surface_CH 0_Aux_0mm
Communication System: Bluetooth; Frequency: 2402 MHz; Duty cycle= 1:1.302
Medium parameters used: f = 2402 MHz; σ = 1.789 S/m; ε_r = 39.905; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.106 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.254 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.145 W/kg
SAR(1 g) = 0.055 W/kg; SAR(10 g) = 0.018 W/kg
Smallest distance from peaks to all points 3 dB below = 6.3 mm
Ratio of SAR at M2 to SAR at M1 = 42.3%
Maximum value of SAR (measured) = 0.102 W/kg



0 dB = 0.102 W/kg = -9.75 dBW/kg

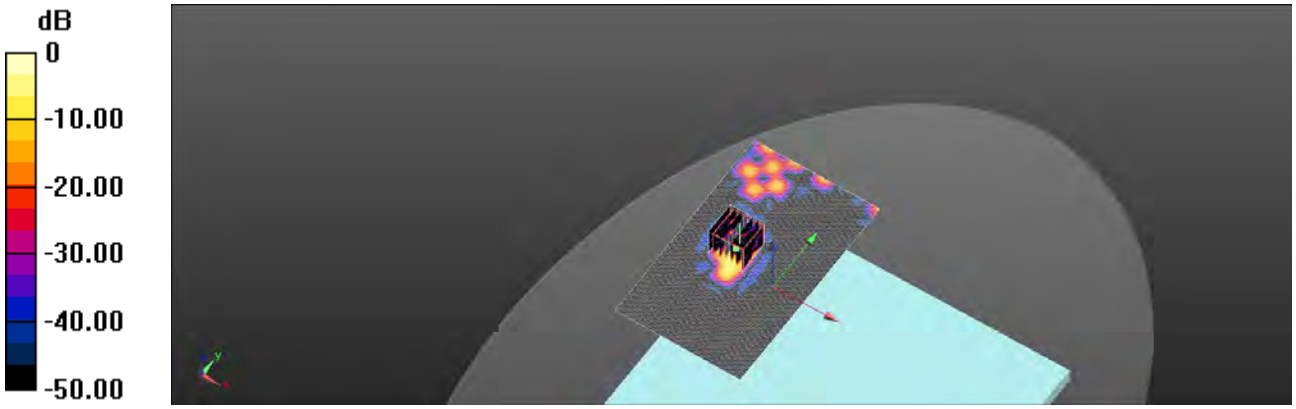
ID: 009
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.2G_Body_Bottom Surface_CH 42_Aux_0mm
Communication System: WLAN; Frequency: 5210 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5210 MHz; σ = 4.729 S/m; ε_r = 35.341; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (91x151x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.158 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.203 W/kg
SAR(1 g) = 0.046 W/kg; SAR(10 g) = 0.00899 W/kg
Smallest distance from peaks to all points 3 dB below = 4.3 mm
Ratio of SAR at M2 to SAR at M1 = 55.8%
Maximum value of SAR (measured) = 0.118 W/kg



0 dB = 0.118 W/kg = -8.01 dBW/kg

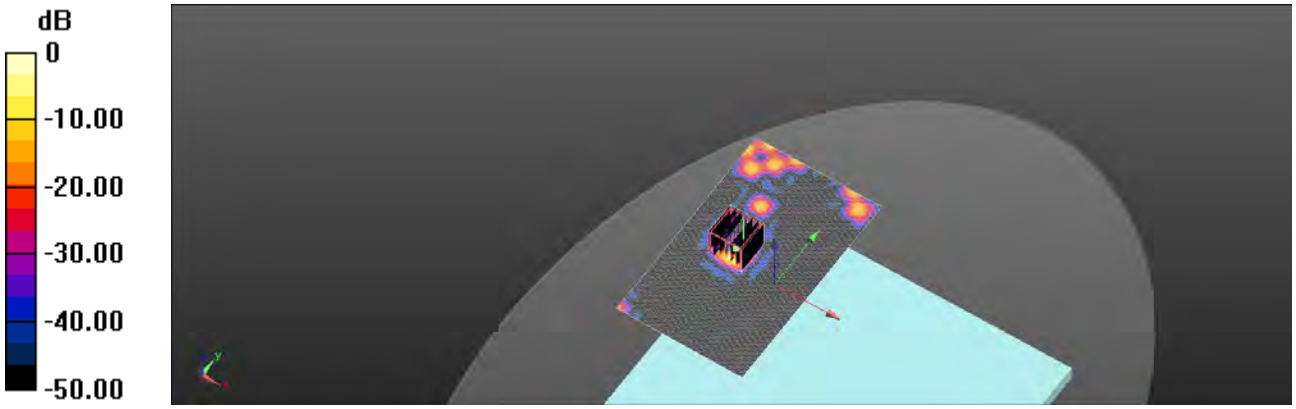
ID: 010
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Aux_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5290 MHz; σ = 4.789 S/m; ε_r = 35.259; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (91x151x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.155 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.182 W/kg
SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.00581 W/kg
Smallest distance from peaks to all points 3 dB below = 4.1 mm
Ratio of SAR at M2 to SAR at M1 = 51.5%
Maximum value of SAR (measured) = 0.0956 W/kg



0 dB = 0.0956 W/kg = -8.10 dBW/kg

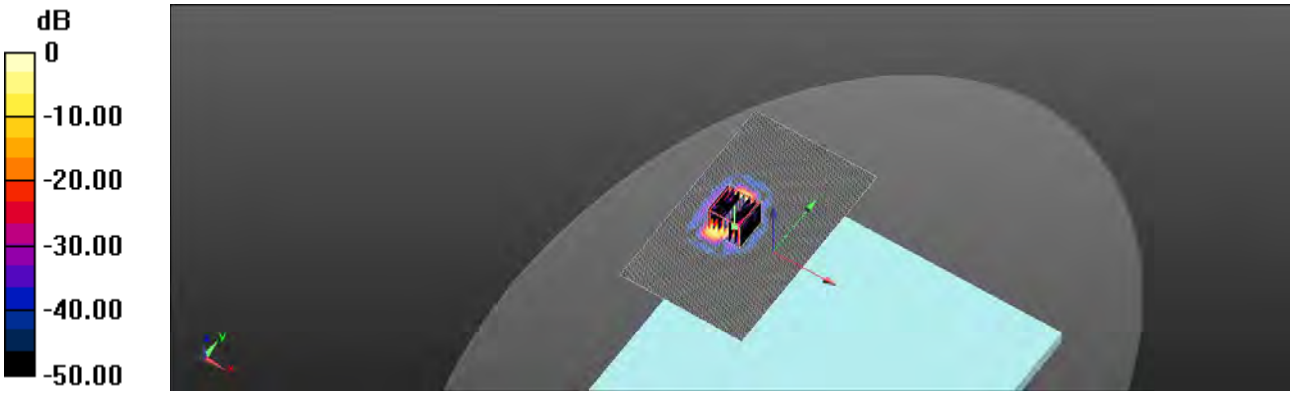
ID: 011
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.6G_Body_Bottom Surface_CH 138_Aux_0mm
Communication System: WLAN; Frequency: 5690 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5690 MHz; σ = 5.266 S/m; ε_r = 35.149; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.05, 5.05, 5.05); 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 (91x151x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.151 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.765 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.291 W/kg
SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.011 W/kg
Smallest distance from peaks to all points 3 dB below = 6.2 mm
Ratio of SAR at M2 to SAR at M1 = 42.7%
Maximum value of SAR (measured) = 0.135 W/kg



0 dB = 0.135 W/kg = -8.70 dBW/kg

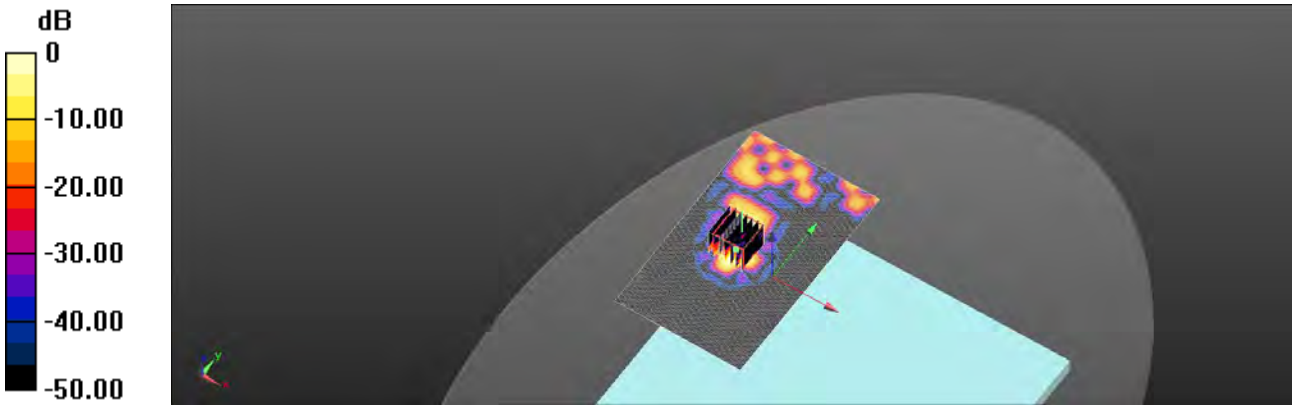
ID: 012
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Aux_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5775 MHz; σ = 5.321 S/m; ε_r = 34.771; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (91x151x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.146 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.266 W/kg
SAR(1 g) = 0.050 W/kg; SAR(10 g) = 0.011 W/kg
Smallest distance from peaks to all points 3 dB below = 6 mm
Ratio of SAR at M2 to SAR at M1 = 48.3%
Maximum value of SAR (measured) = 0.138 W/kg



0 dB = 0.138 W/kg = -8.36 dBW/kg

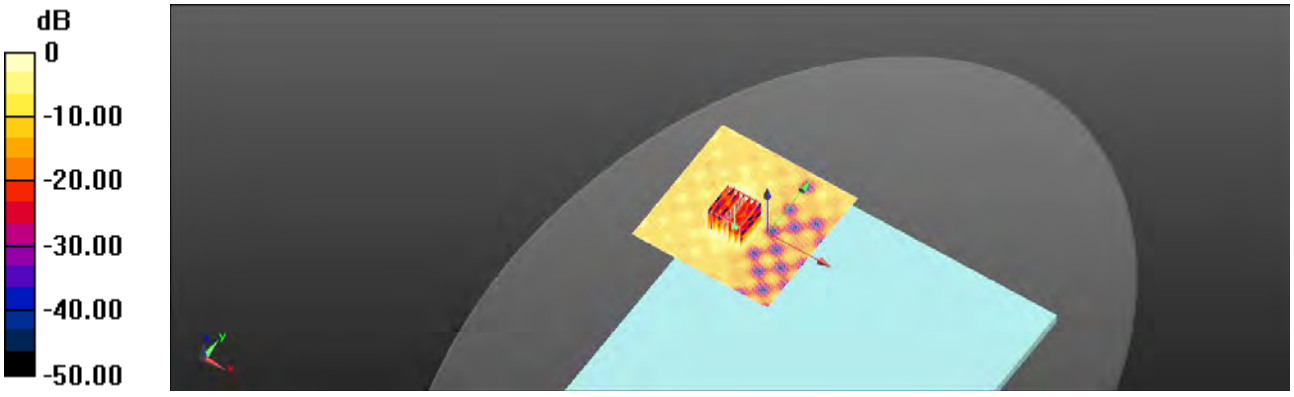
ID: 013
Report No. :TESA2211000524ES
WLAN 802.11ac(160M) 5.9G_Body_Bottom Surface_CH 163_Aux_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5815 MHz; σ = 5.364 S/m; ε_r = 34.765; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (101x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.264 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.866 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.877 W/kg
SAR(1 g) = 0.108 W/kg; SAR(10 g) = 0.028 W/kg
Smallest distance from peaks to all points 3 dB below = 4.8 mm
Ratio of SAR at M2 to SAR at M1 = 47.5%
Maximum value of SAR (measured) = 0.252 W/kg



0 dB = 0.252 W/kg = -5.99 dBW/kg

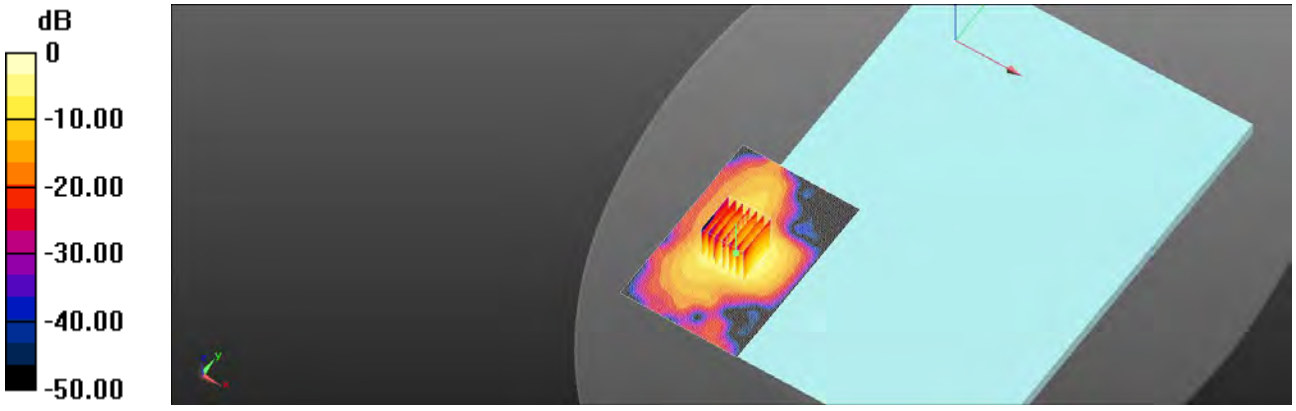
ID: 014
Report No. :TESA2211000524ES
WLAN 802.11b_Body_Bottom Surface_CH 11_Main_0mm
Communication System: WLAN; Frequency: 2462 MHz; Duty cycle= 1:1.011
Medium parameters used: f = 2462 MHz; σ = 1.860 S/m; ε_r = 39.744; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x111x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.380 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.749 V/m; Power Drift = 0.11dB
Peak SAR (extrapolated) = 0.636 W/kg
SAR(1 g) = 0.252 W/kg; SAR(10 g) = 0.097 W/kg
Smallest distance from peaks to all points 3 dB below = 7 mm
Ratio of SAR at M2 to SAR at M1 = 41.8%
Maximum value of SAR (measured) = 0.431 W/kg



0 dB = 0.431 W/kg = -4.20 dBW/kg

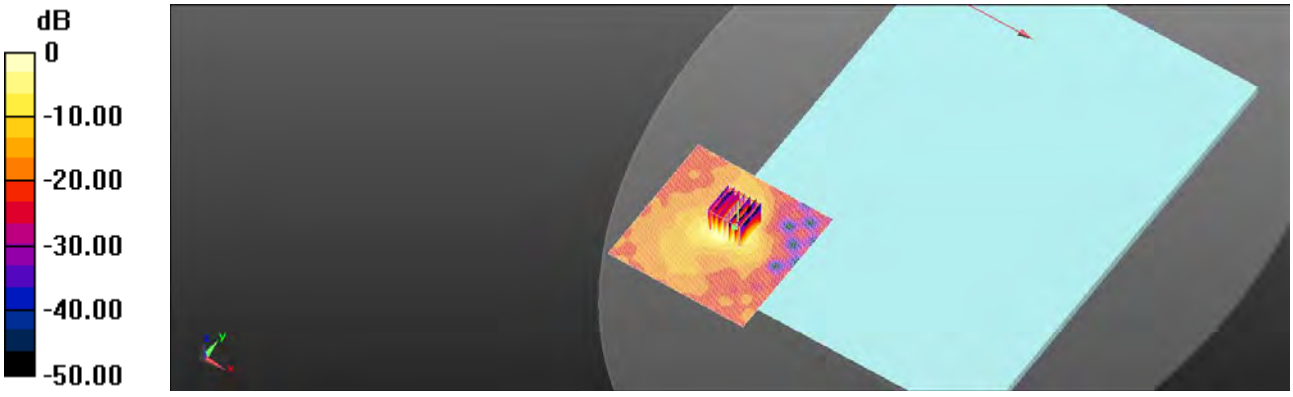
ID: 015
Report No. : TESA2211000524ES
WLAN 802.11ac(80M) 5.2G_Body_Bottom Surface_CH 42_Main_0mm
Communication System: WLAN; Frequency: 5210 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5210 MHz; σ = 4.729 S/m; ε_r = 35.341; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (101x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.961 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 4.27 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.264 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 57.5%
Maximum value of SAR (measured) = 2.05 W/kg



0 dB = 2.05 W/kg = 3.12 dBW/kg

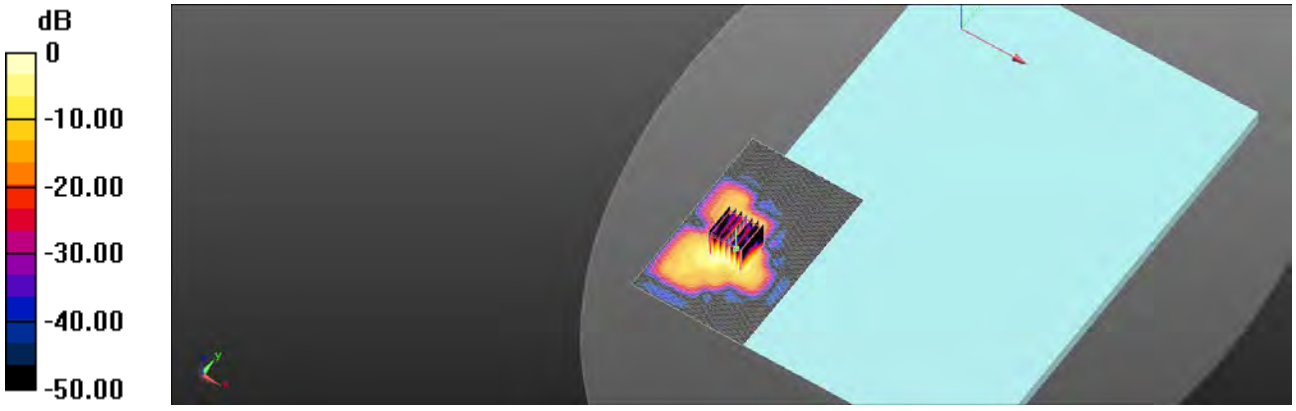
ID: 016
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Main_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5290 MHz; σ = 4.789 S/m; ε_r = 35.259; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (81x131x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.46 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.232 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.88 W/kg
SAR(1 g) = 0.665 W/kg; SAR(10 g) = 0.180 W/kg
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 55.1%
Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.64 dBW/kg

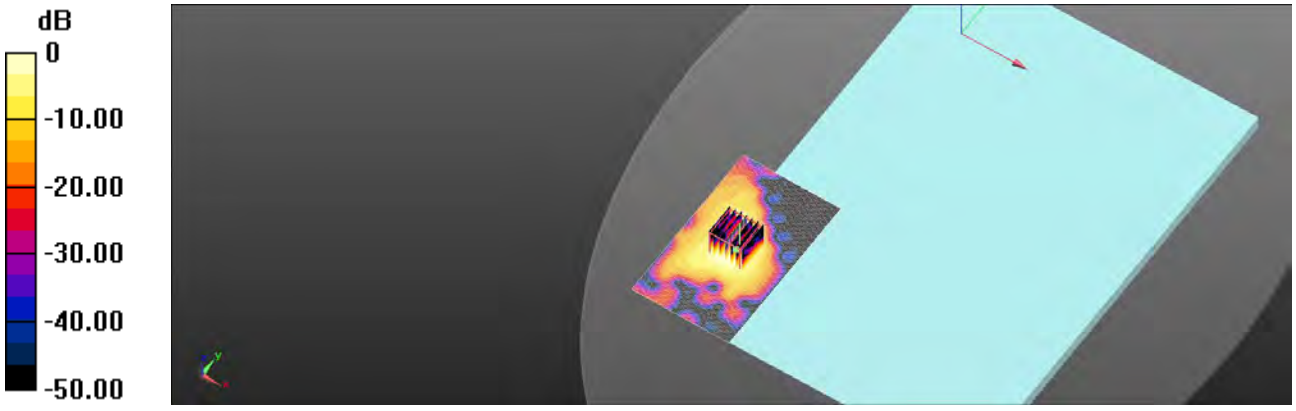
ID: 017
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.6G_Body_Bottom Surface_CH 138_Main_0mm
Communication System: WLAN; Frequency: 5690 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5690 MHz; σ = 5.266 S/m; ε_r = 35.149; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.05, 5.05, 5.05); 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 (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 1.09 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.354 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.97 W/kg
SAR(1 g) = 0.637 W/kg; SAR(10 g) = 0.181 W/kg
Smallest distance from peaks to all points 3 dB below = 6.1 mm
Ratio of SAR at M2 to SAR at M1 = 51.1%
Maximum value of SAR (measured) = 1.33 W/kg



0 dB = 1.33 W/kg = 0.37 dBW/kg

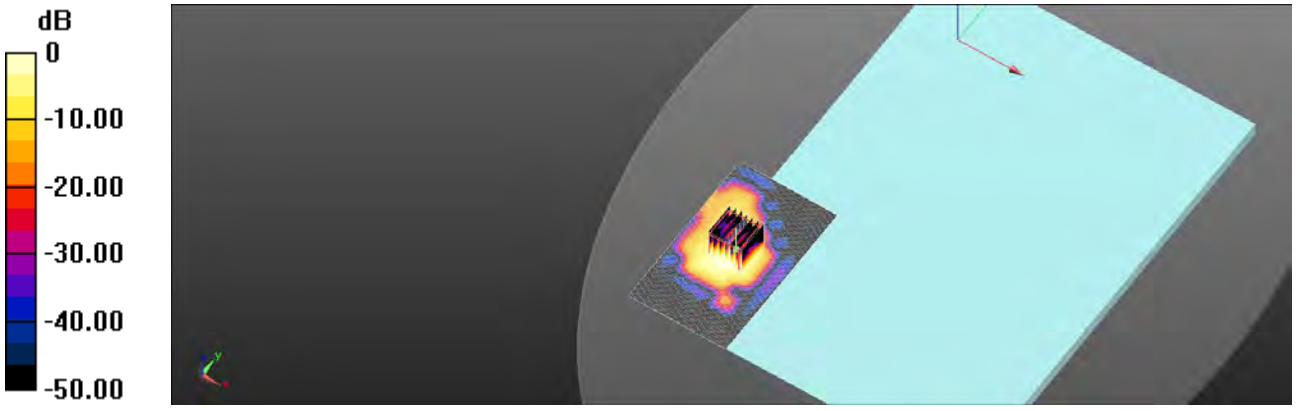
ID: 018
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Main_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5775 MHz; σ = 5.321 S/m; ε_r = 34.771; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.865 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 6.254 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 2.27 W/kg
SAR(1 g) = 0.486 W/kg; SAR(10 g) = 0.136 W/kg
Smallest distance from peaks to all points 3 dB below = 5.8 mm
Ratio of SAR at M2 to SAR at M1 = 51.4%
Maximum value of SAR (measured) = 1.03 W/kg



0 dB = 1.03 W/kg = -0.63 dBW/kg

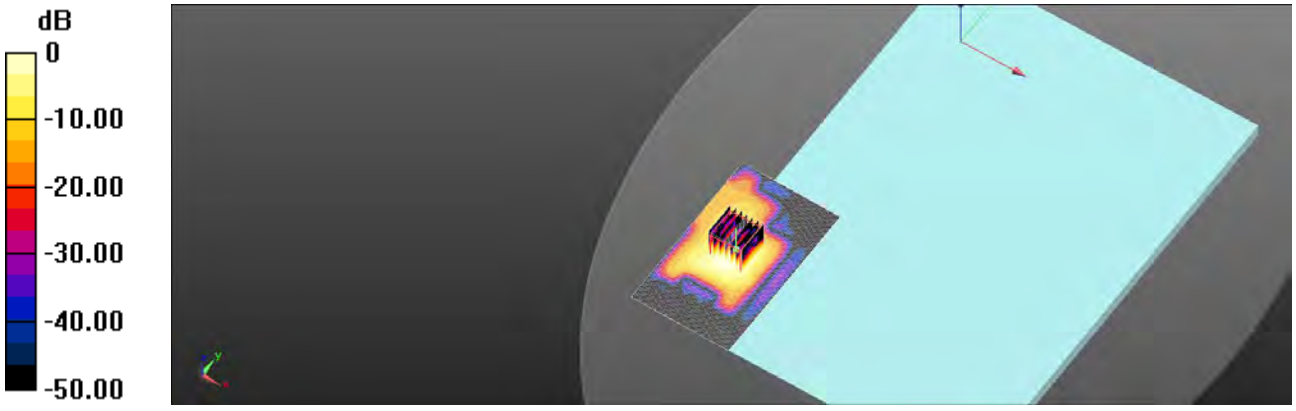
ID: 019
Report No. :TESA2211000524ES
WLAN 802.11ac(160M) 5.9G_Body_Bottom Surface_CH 163_Main_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5815 MHz; σ = 5.364 S/m; ε_r = 34.765; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (71x121x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.861 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 5.325 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 2.38 W/kg
SAR(1 g) = 0.507 W/kg; SAR(10 g) = 0.145 W/kg
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 50.8%
Maximum value of SAR (measured) = 1.04 W/kg



0 dB = 1.04 W/kg = -0.65 dBW/kg

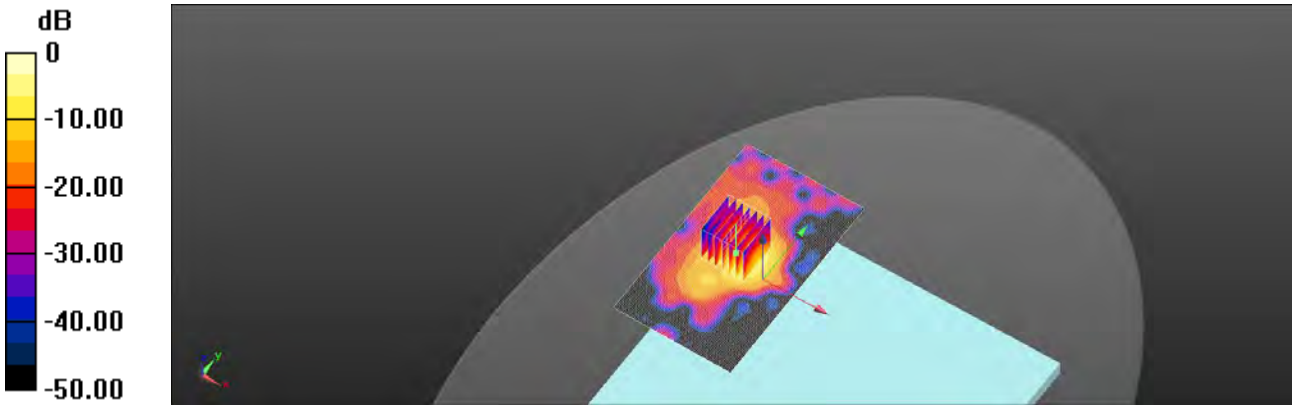
ID: 020
Report No. :TESA2211000524ES
WLAN 802.11b_Body_Bottom Surface_CH 1_Aux_0mm
Communication System: WLAN; Frequency: 2412 MHz; Duty cycle= 1:1.011
Medium parameters used: f = 2412 MHz; σ = 1.812 S/m; ε_r = 39.829; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.346 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.315 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.549 W/kg
SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.076 W/kg
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 42.7%
Maximum value of SAR (measured) = 0.379 W/kg



0 dB = 0.379 W/kg = -4.61 dBW/kg

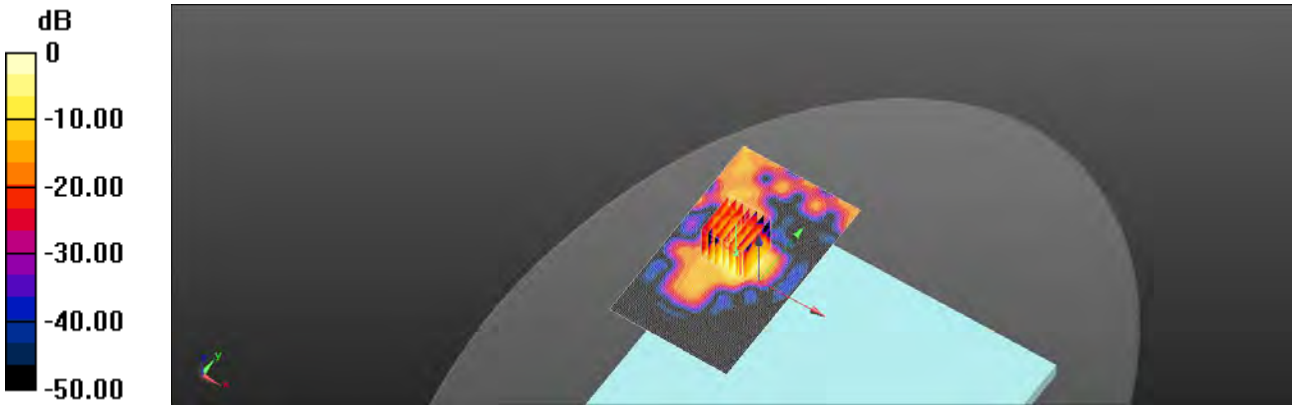
ID: 021
Report No. :TESA2211000524ES
Bluetooth(GFSK)_Body_Bottom Surface_CH 0_Aux_0mm
Communication System: Bluetooth; Frequency: 2402 MHz; Duty cycle= 1:1.302
Medium parameters used: f = 2402 MHz; σ = 1.789 S/m; ε_r = 39.905; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x121x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.101 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.254 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.132 W/kg
SAR(1 g) = 0.051 W/kg; SAR(10 g) = 0.018 W/kg
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid
Ratio of SAR at M2 to SAR at M1 = 44.1%
Maximum value of SAR (measured) = 0.0886 W/kg



0 dB = 0.0886 W/kg = -9.96 dBW/kg

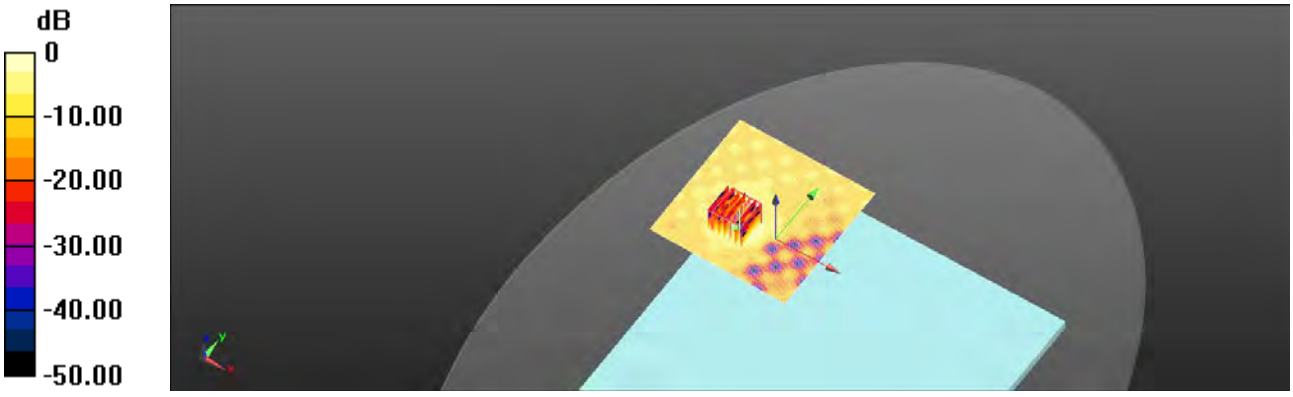
ID: 022
Report No. : TESA2211000524ES
WLAN 802.11ac(80M) 5.2G_Body_Bottom Surface_CH 42_Aux_0mm
Communication System: WLAN; Frequency: 5210 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5210 MHz; σ = 4.729 S/m; ε_r = 35.341; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (101x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.164 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.089 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.556 W/kg
SAR(1 g) = 0.099 W/kg; SAR(10 g) = 0.027 W/kg
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 47.4%
Maximum value of SAR (measured) = 0.201 W/kg



0 dB = 0.201 W/kg = -6.96 dBW/kg

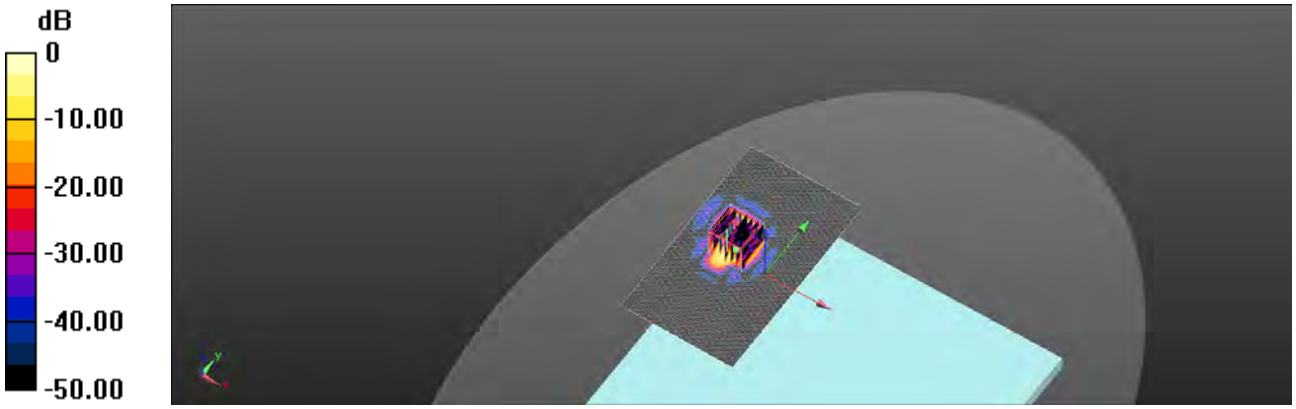
ID: 023
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.3G_Body_Bottom Surface_CH 58_Aux_0mm
Communication System: WLAN; Frequency: 5290 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5290 MHz; σ = 4.789 S/m; ε_r = 35.259; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.352 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.732 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.392 W/kg
SAR(1 g) = 0.086 W/kg; SAR(10 g) = 0.022 W/kg
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 50.5%
Maximum value of SAR (measured) = 0.198 W/kg



0 dB = 0.198 W/kg = -4.53 dBW/kg

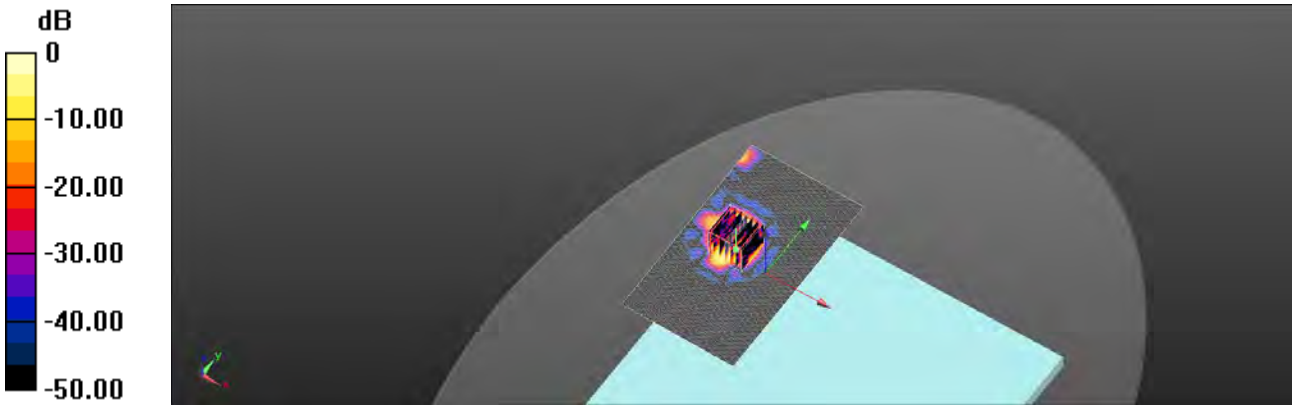
ID: 024
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.6G_Body_Bottom Surface_CH 106_Aux_0mm
Communication System: WLAN; Frequency: 5530 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5530 MHz; σ = 5.053 S/m; ε_r = 34.664; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.05, 5.05, 5.05); 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 (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.317 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.483 W/kg
SAR(1 g) = 0.099 W/kg; SAR(10 g) = 0.023 W/kg
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 43.1%
Maximum value of SAR (measured) = 0.228 W/kg



0 dB = 0.228 W/kg = -4.99 dBW/kg

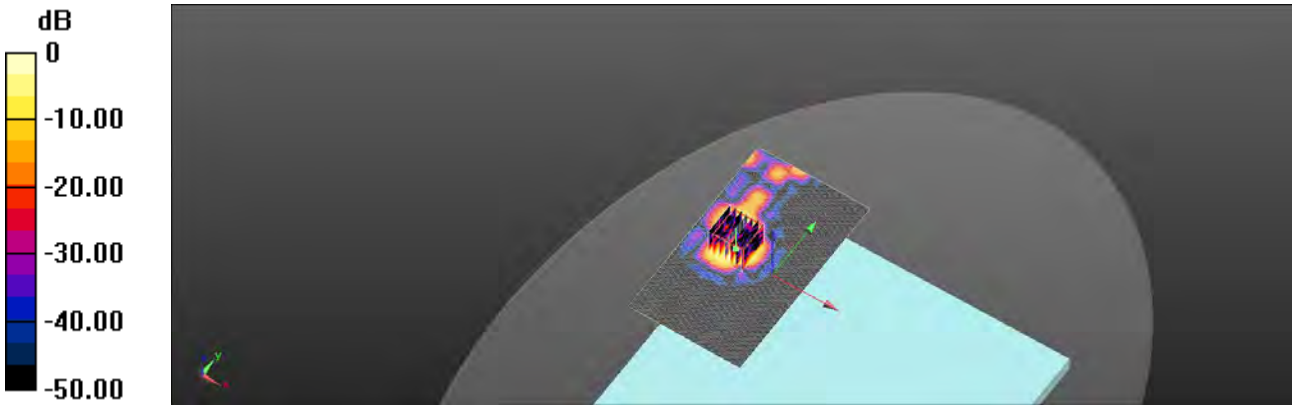
ID: 025
Report No. :TESA2211000524ES
WLAN 802.11ac(80M) 5.8G_Body_Bottom Surface_CH 155_Aux_0mm
Communication System: WLAN; Frequency: 5775 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5775 MHz; σ = 5.321 S/m; ε_r = 34.771; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.316 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.359 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.599 W/kg
SAR(1 g) = 0.121 W/kg; SAR(10 g) = 0.028 W/kg
Smallest distance from peaks to all points 3 dB below = 5.7 mm
Ratio of SAR at M2 to SAR at M1 = 44.7%
Maximum value of SAR (measured) = 0.293 W/kg



0 dB = 0.293 W/kg = -5.00 dBW/kg

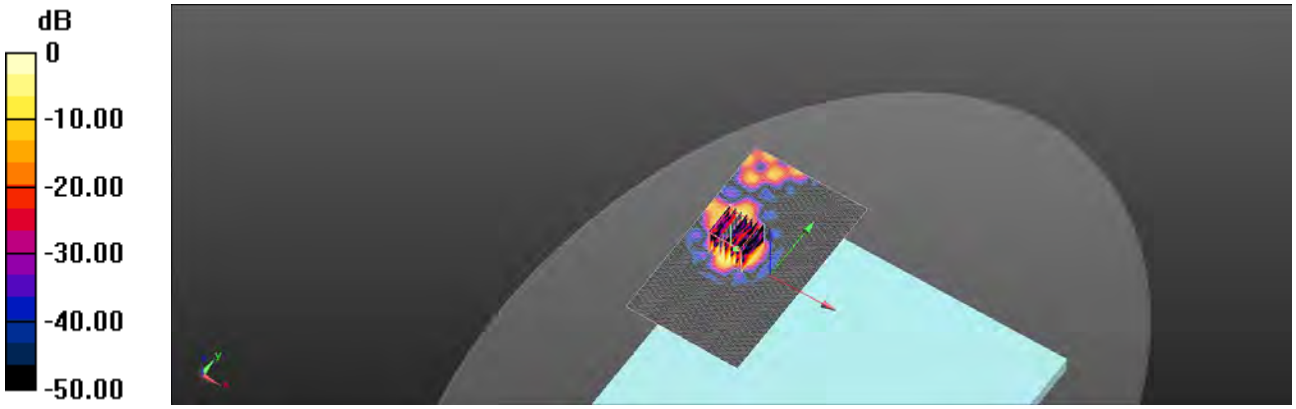
ID: 026
Report No. :TESA2211000524ES
WLAN 802.11ac(160M) 5.9G_Body_Bottom Surface_CH 163_Aux_0mm
Communication System: WLAN; Frequency: 5815 MHz; Duty cycle= 1:1.017
Medium parameters used: f = 5815 MHz; σ = 5.364 S/m; ε_r = 34.765; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (81x141x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.326 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.254 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.557 W/kg
SAR(1 g) = 0.112 W/kg; SAR(10 g) = 0.027 W/kg
Smallest distance from peaks to all points 3 dB below = 5.1 mm
Ratio of SAR at M2 to SAR at M1 = 44.9%
Maximum value of SAR (measured) = 0.254 W/kg



0 dB = 0.254 W/kg = -4.87 dBW/kg

ID: 027
Report No. : TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.572	34.573

Hardware Setup

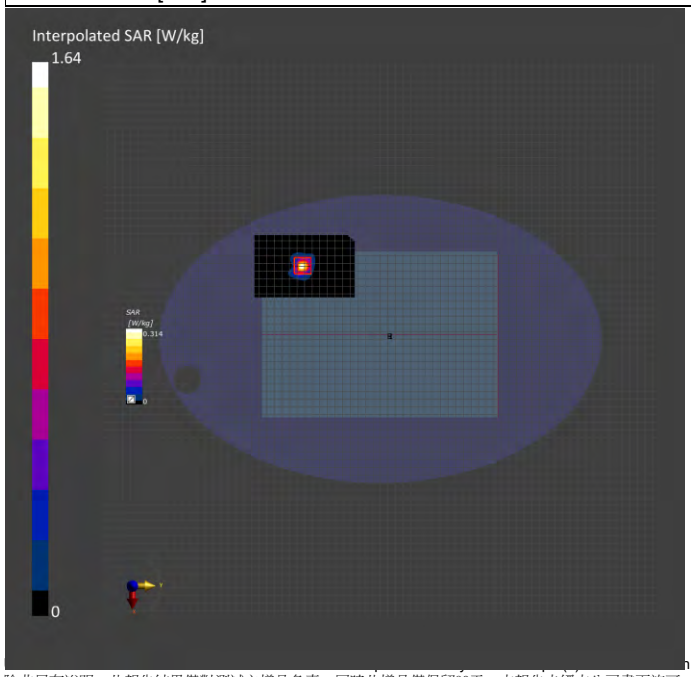
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.244	0.311
psSAR8g [W/kg]	0.083	0.095
psSAR10g [W/kg]	0.072	0.082
psPDab (4.0cm2, sq) [W/m2]		1.91
Power Drift [dB]	-0.17	-0.11
M2/M1 [%]		57.4
Dist 3dB Peak [mm]		4.6



ID: 028
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.740	34.444

Hardware Setup

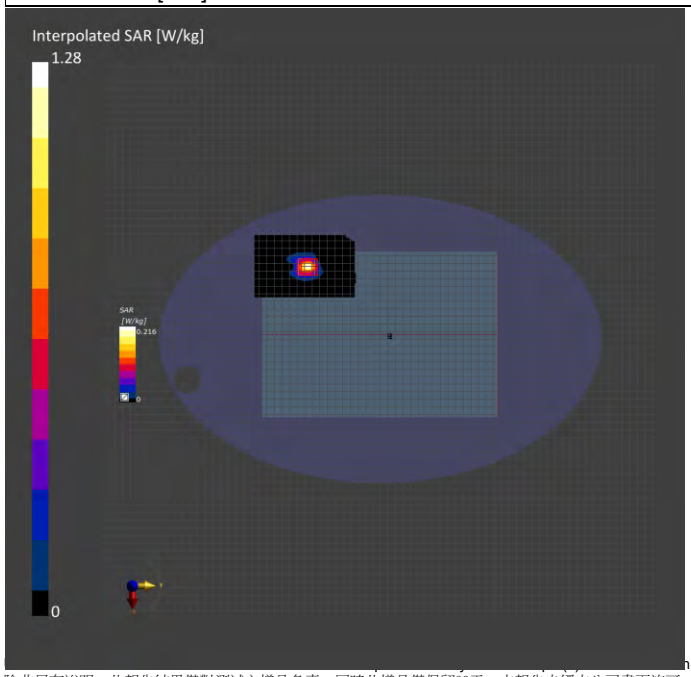
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.209	0.238
psSAR8g [W/kg]	0.074	0.078
psSAR10g [W/kg]	0.065	0.066
psPDab (4.0cm2, sq) [W/m2]		1.56
Power Drift [dB]	-0.13	-0.12
M2/M1 [%]		52.4
Dist 3dB Peak [mm]		5.5



ID: 029
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.079	34.189

Hardware Setup

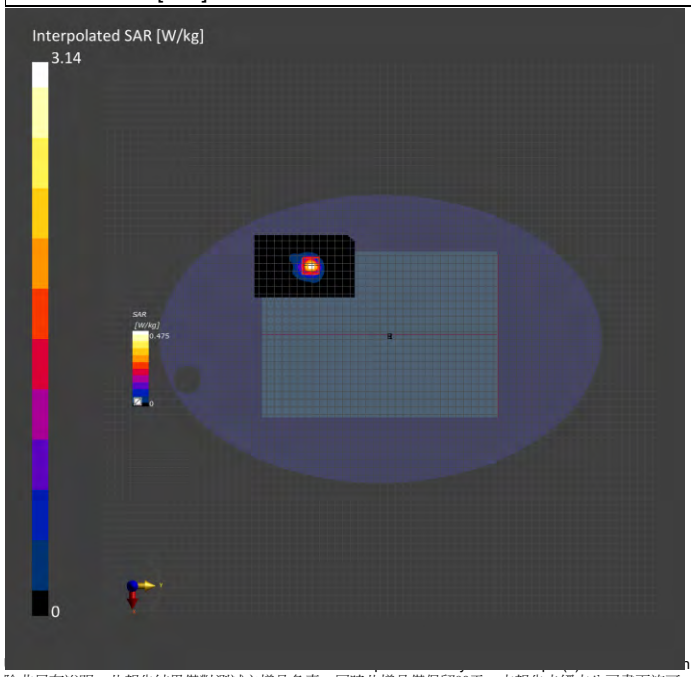
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.531	0.601
psSAR8g [W/kg]	0.170	0.186
psSAR10g [W/kg]	0.148	0.159
psPDab (4.0cm2, sq) [W/m2]		3.73
Power Drift [dB]	-0.17	-0.03
M2/M1 [%]		51.7
Dist 3dB Peak [mm]		5.8



ID: 030
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.34	36.9

Hardware Setup

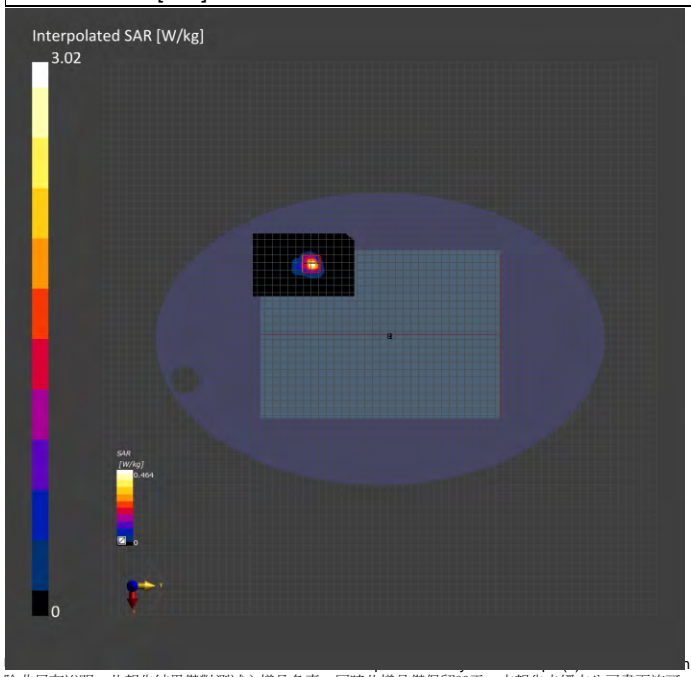
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.462	0.556
psSAR8g [W/kg]	0.145	0.161
psSAR10g [W/kg]	0.124	0.136
psPDab (4.0cm2, sq) [W/m2]		3.23
Power Drift [dB]	-0.12	-0.14
M2/M1 [%]		52.2
Dist 3dB Peak [mm]		5.5



ID: 031
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.7	6.591	34.148

Hardware Setup

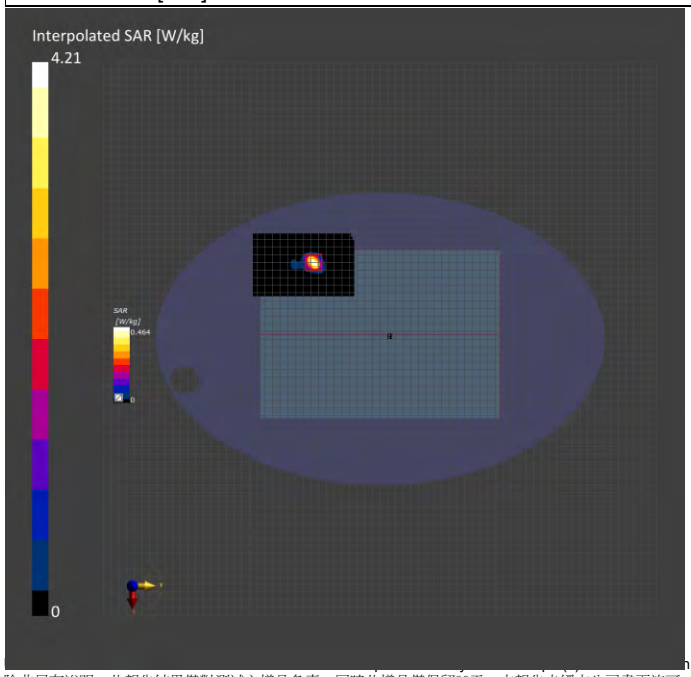
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.555	0.719
psSAR8g [W/kg]	0.170	0.187
psSAR10g [W/kg]	0.143	0.157
psPDab (4.0cm2, sq) [W/m2]		3.75
Power Drift [dB]	-0.14	-0.07
M2/M1 [%]		50.6
Dist 3dB Peak [mm]		4.6



ID: 032
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.572	34.573

Hardware Setup

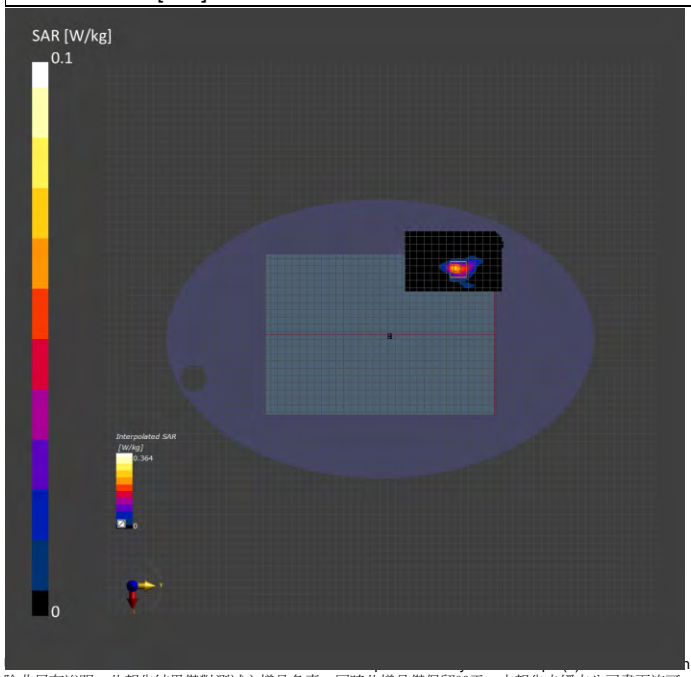
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.063	0.075
psSAR8g [W/kg]	0.021	0.025
psSAR10g [W/kg]	0.018	0.021
psPDab (4.0cm2, sq) [W/m2]		0.493
Power Drift [dB]	-0.05	-0.17
M2/M1 [%]		53.2
Dist 3dB Peak [mm]		6.4



ID: 033
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 79 (6345.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.908	34.245

Hardware Setup

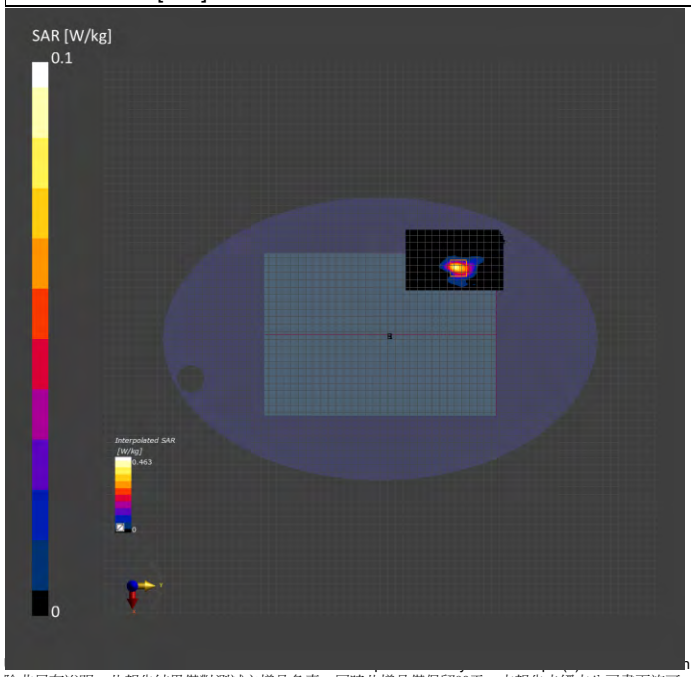
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.083	0.096
psSAR8g [W/kg]	0.029	0.034
psSAR10g [W/kg]	0.025	0.030
psPDab (4.0cm2, sq) [W/m2]		0.687
Power Drift [dB]	-0.08	-0.16
M2/M1 [%]		51.8
Dist 3dB Peak [mm]		7.1



ID: 034
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-6,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.079	34.189

Hardware Setup

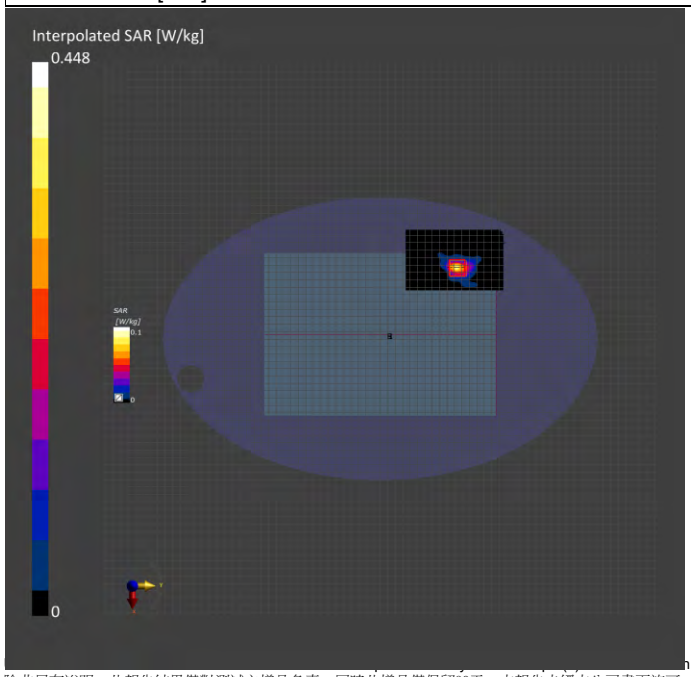
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.079	0.090
psSAR8g [W/kg]	0.027	0.032
psSAR10g [W/kg]	0.024	0.028
psPDab (4.0cm2, sq) [W/m2]		0.633
Power Drift [dB]	-0.16	-0.12
M2/M1 [%]		52.4
Dist 3dB Peak [mm]		7.1



ID: 035
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.248	34.171

Hardware Setup

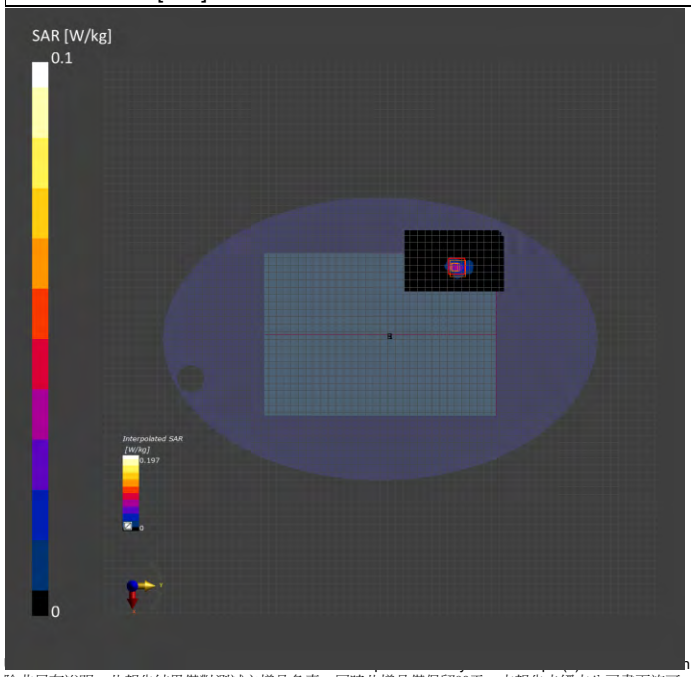
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.031	0.039
psSAR8g [W/kg]	0.009	0.013
psSAR10g [W/kg]	0.007	0.011
psPDab (4.0cm2, sq) [W/m2]		0.263
Power Drift [dB]	-0.07	-0.15
M2/M1 [%]		44.2
Dist 3dB Peak [mm]		6.1



ID: 036
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-8,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.7	6.591	34.148

Hardware Setup

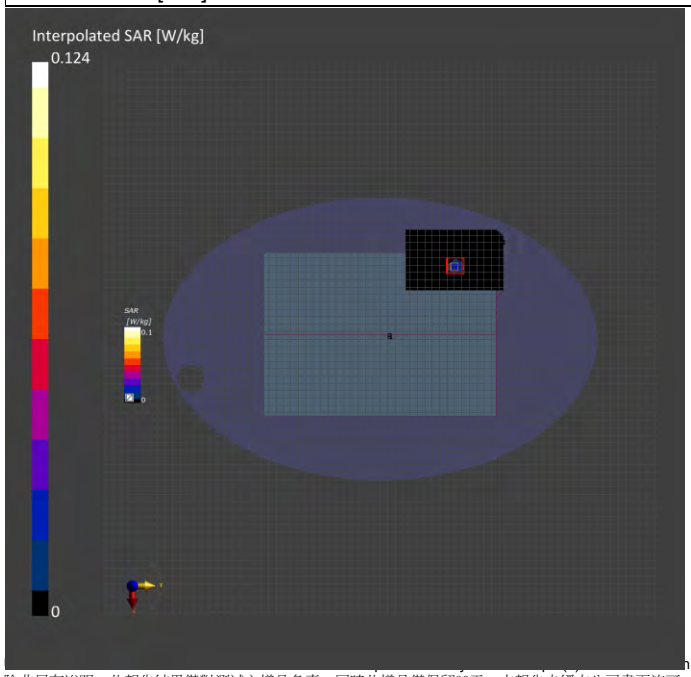
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.011	0.021
psSAR8g [W/kg]	0.002	0.006
psSAR10g [W/kg]	0.002	0.005
psPDab (4.0cm2, sq) [W/m2]		0.128
Power Drift [dB]	0.05	0.07
M2/M1 [%]		56.4
Dist 3dB Peak [mm]		> 11.0



ID: 037
Report No. :TESA2211000524ES

Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)_0mm_Main Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.572	34.573

Hardware Setup

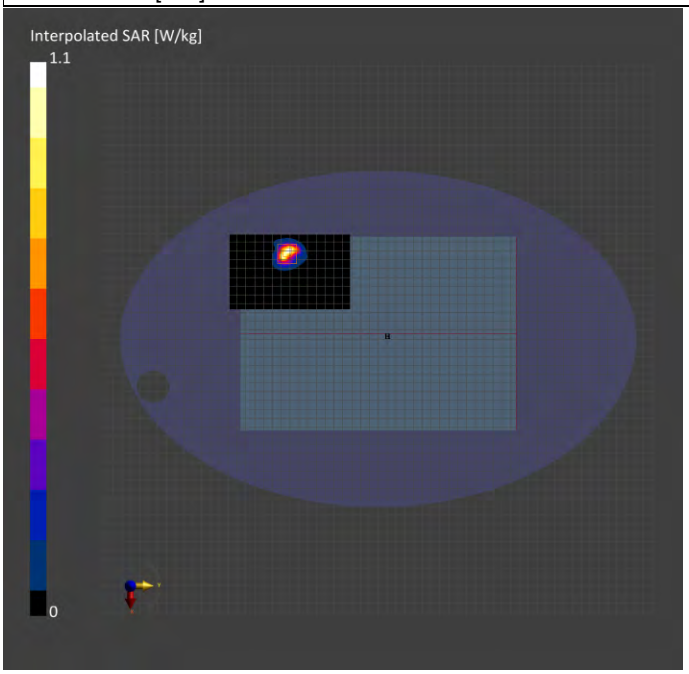
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.739	0.972
psSAR8g [W/kg]	0.268	0.307
psSAR10g [W/kg]	0.233	0.262
psPDab (4.0cm2, sq) [W/m2]		6.13
Power Drift [dB]	-0.05	-0.01
M2/M1 [%]		53.9
Dist 3dB Peak [mm]		4.9



ID: 038
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.740	34.444

Hardware Setup

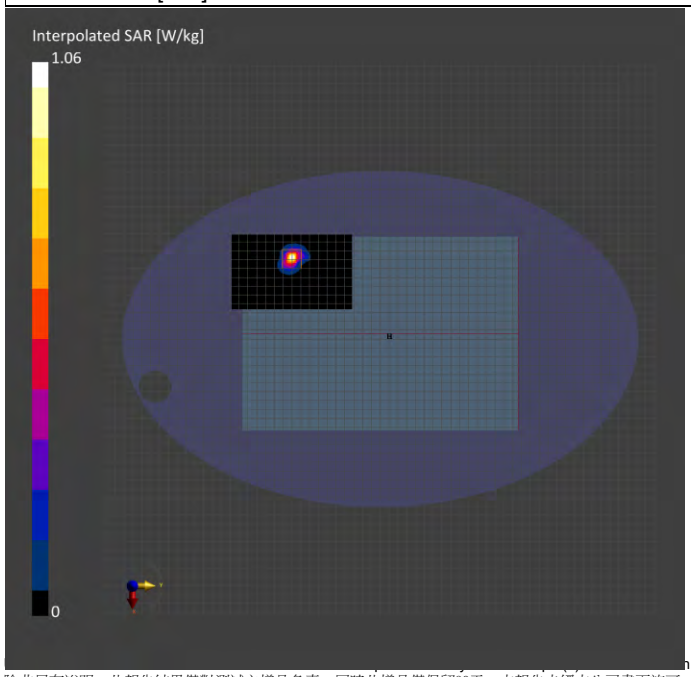
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.637	0.759
psSAR8g [W/kg]	0.201	0.231
psSAR10g [W/kg]	0.174	0.196
psPDab (4.0cm2, sq) [W/m2]		4.62
Power Drift [dB]	0.03	0.04
M2/M1 [%]		52.3
Dist 3dB Peak [mm]		4.6



ID: 039
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.079	34.189

Hardware Setup

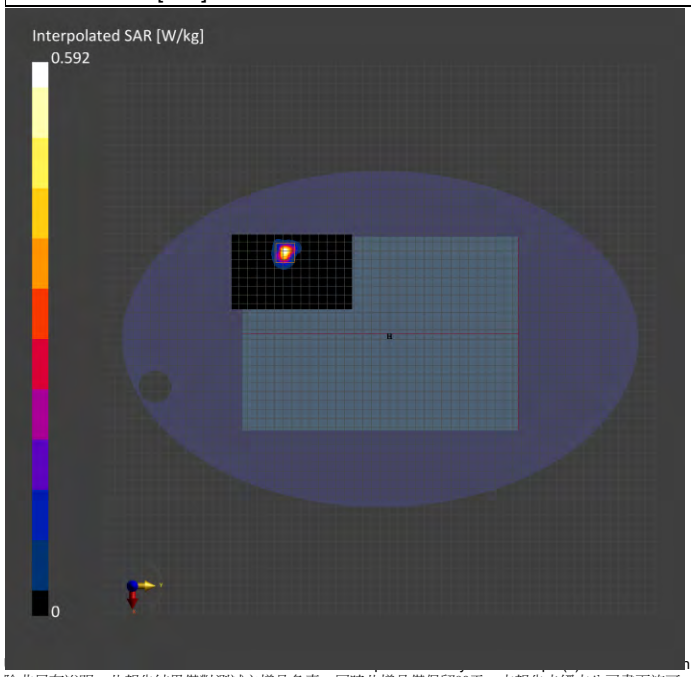
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.393	0.440
psSAR8g [W/kg]	0.122	0.127
psSAR10g [W/kg]	0.104	0.108
psPDab (4.0cm2, sq) [W/m2]		2.55
Power Drift [dB]	0.01	0.07
M2/M1 [%]		50.0
Dist 3dB Peak [mm]		4.6



ID: 040
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-7,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.248	34.171

Hardware Setup

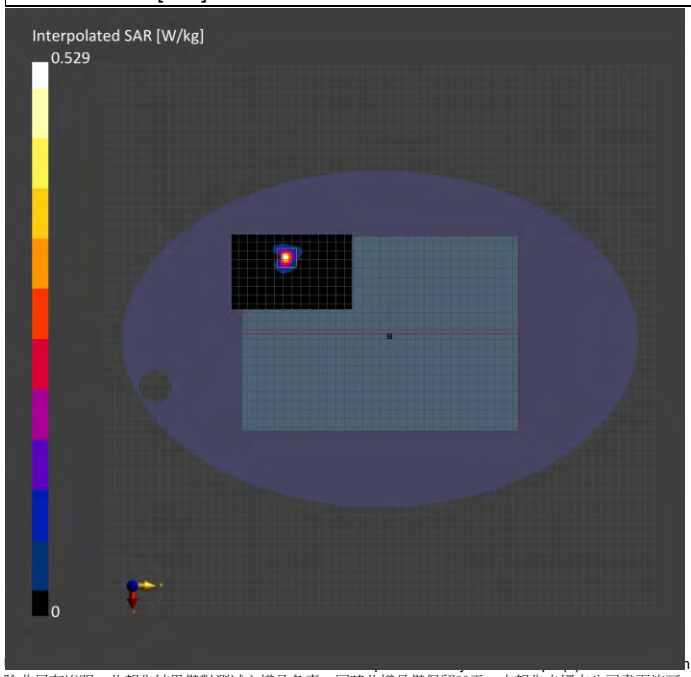
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.1 x 3.1 x 1.2
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.312	0.328
psSAR8g [W/kg]	0.093	0.099
psSAR10g [W/kg]	0.080	0.085
psPDab (4.0cm2, sq) [W/m2]		1.98
Power Drift [dB]	-0.05	-0.13
M2/M1 [%]		54.1
Dist 3dB Peak [mm]		3.8



ID: 041
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_0mm_Main
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.7	6.591	34.148

Hardware Setup

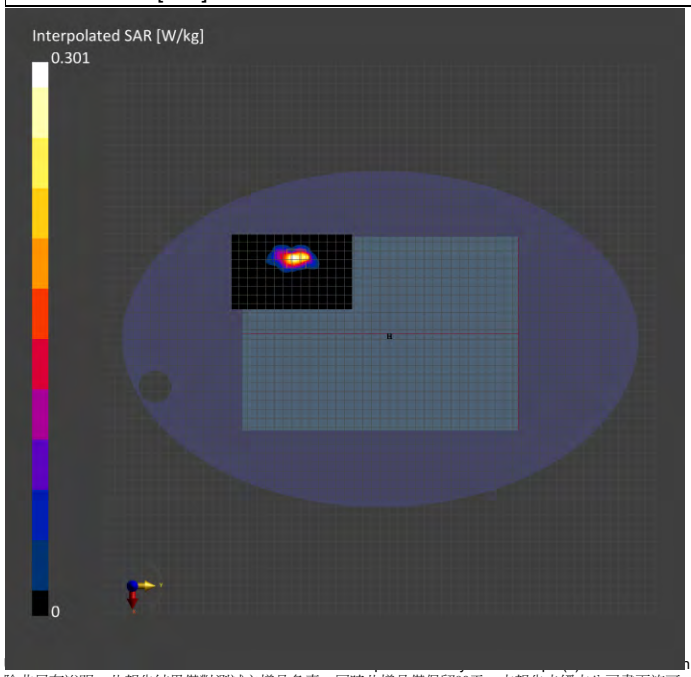
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.1 x 3.1 x 1.2
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.227	0.343
psSAR8g [W/kg]	0.083	0.094
psSAR10g [W/kg]	0.073	0.080
psPDab (4.0cm2, sq) [W/m2]		1.87
Power Drift [dB]	-0.04	0.16
M2/M1 [%]		52.5
Dist 3dB Peak [mm]		3.8



Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)_0mm_Aux Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.572	34.573

Hardware Setup

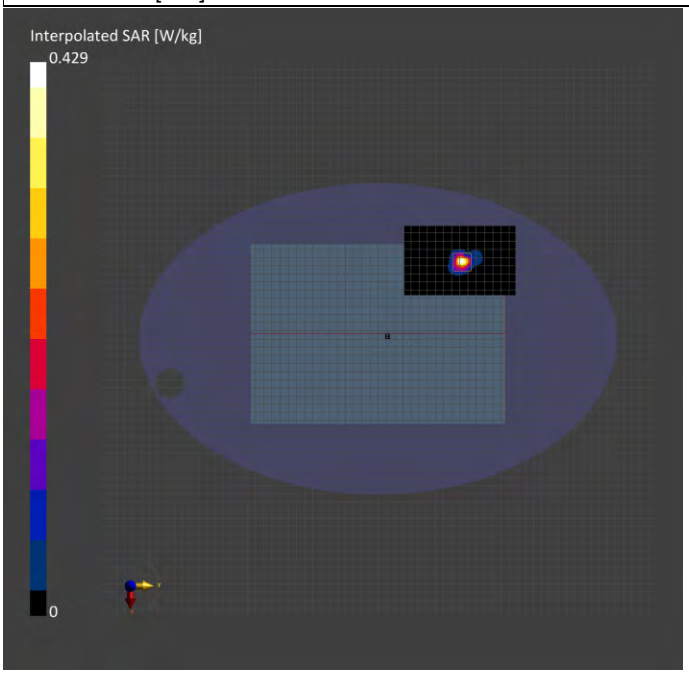
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.286	0.337
psSAR8g [W/kg]	0.093	0.100
psSAR10g [W/kg]	0.080	0.085
psPDab (4.0cm2, sq) [W/m2]		2.00
Power Drift [dB]	0.09	-0.13
M2/M1 [%]		52.4
Dist 3dB Peak [mm]		4.8



ID: 043
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 79 (6345.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	5.908	34.245

Hardware Setup

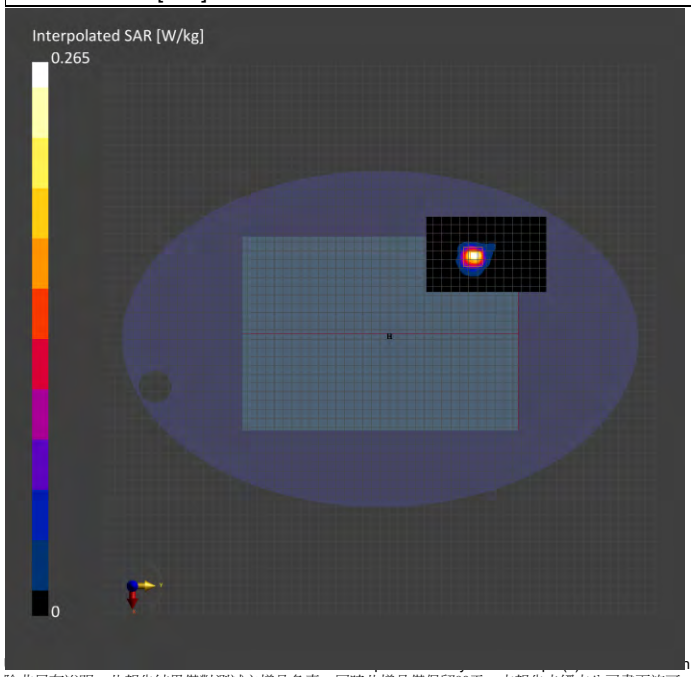
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.197	0.216
psSAR8g [W/kg]	0.071	0.076
psSAR10g [W/kg]	0.062	0.065
psPDab (4.0cm2, sq) [W/m2]		1.52
Power Drift [dB]	-0.11	-0.14
M2/M1 [%]		53.3
Dist 3dB Peak [mm]		6.3



ID: 044
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-6,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.079	34.189

Hardware Setup

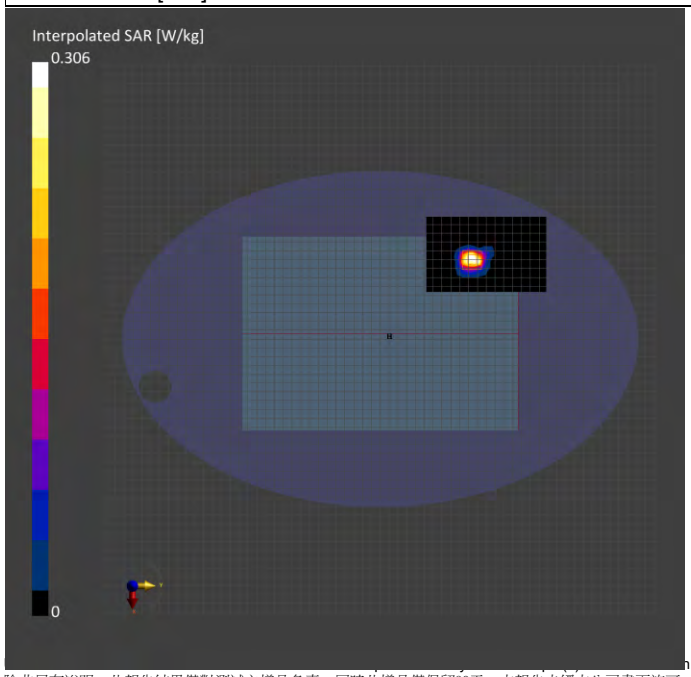
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.242	0.282
psSAR8g [W/kg]	0.094	0.097
psSAR10g [W/kg]	0.082	0.082
psPDab (4.0cm2, sq) [W/m2]		1.94
Power Drift [dB]	0.11	-0.12
M2/M1 [%]		50.5
Dist 3dB Peak [mm]		6.1



ID: 045
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-7,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.8	6.248	34.171

Hardware Setup

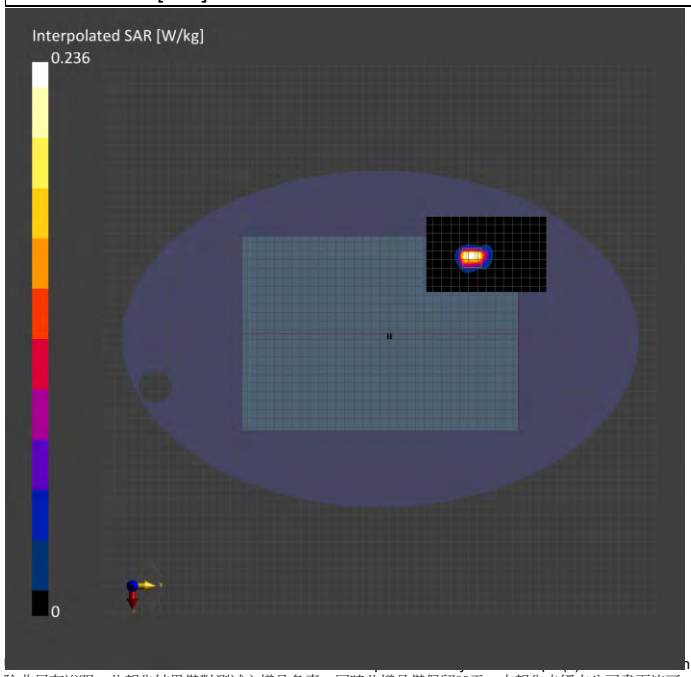
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.181	0.203
psSAR8g [W/kg]	0.068	0.071
psSAR10g [W/kg]	0.059	0.061
psPDab (4.0cm2, sq) [W/m2]		1.41
Power Drift [dB]	-0.02	-0.13
M2/M1 [%]		50.6
Dist 3dB Peak [mm]		5.8



ID: 046
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_0mm_Aux
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Bottom Surface, 0.00	5.7	6.591	34.148

Hardware Setup

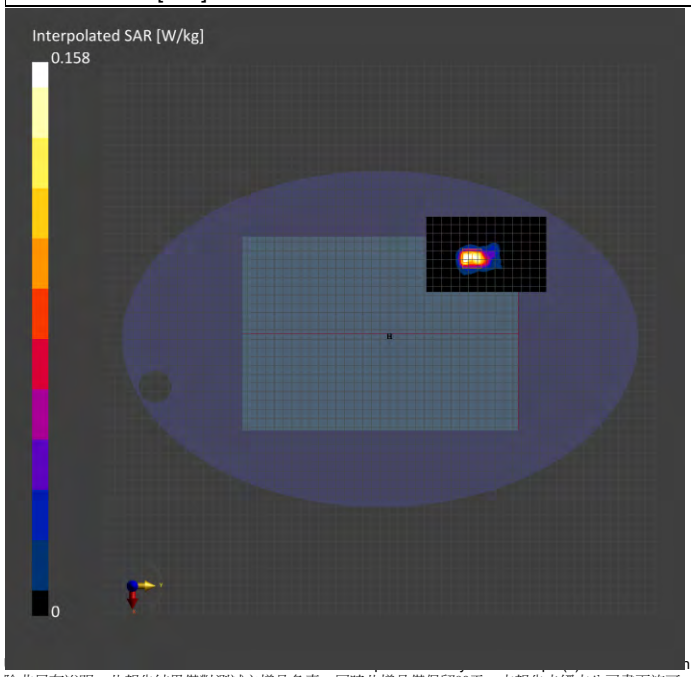
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 136.0	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

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	0.129	0.150
psSAR8g [W/kg]	0.050	0.051
psSAR10g [W/kg]	0.044	0.043
psPDab (4.0cm2, sq) [W/m2]		1.02
Power Drift [dB]	-0.03	-0.13
M2/M1 [%]		47.0
Dist 3dB Peak [mm]		6.1



13 PD MEASUREMENT RESULTS

ID: 047
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

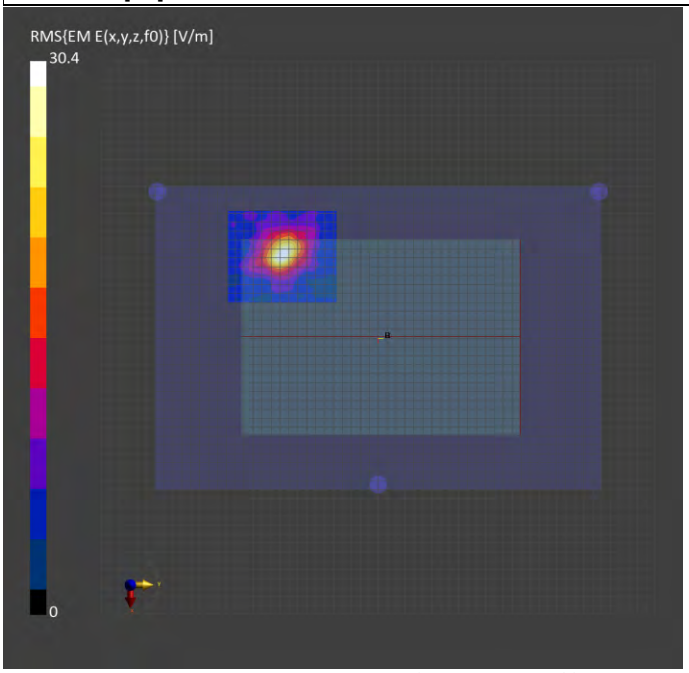
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	0.981
psPDtot+ [W/m^2]	1.06
psPDmod+ [W/m^2]	1.21
E_{max} [V/m]	30.4
Power Drift [dB]	0.14



ID: 048
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

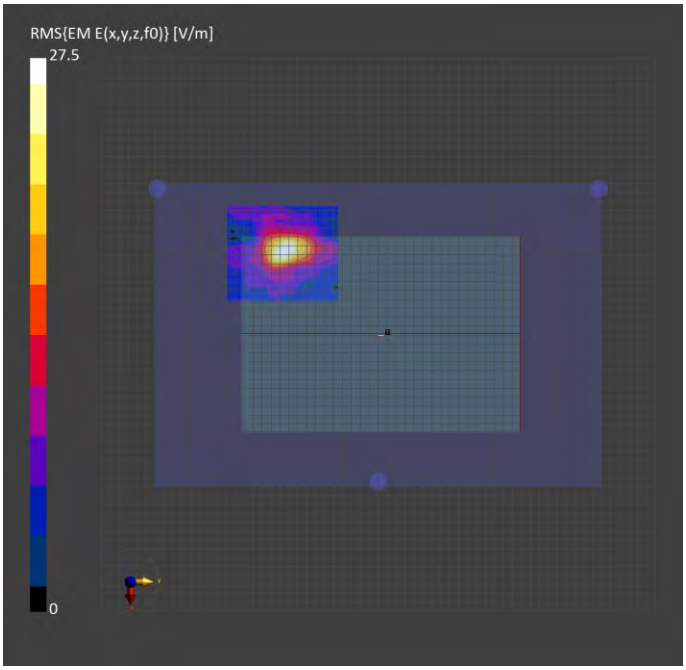
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.18
psPDtot+ [W/m^2]	1.25
psPDmod+ [W/m^2]	1.29
E_{max} [V/m]	27.5
Power Drift [dB]	-0.17



ID: 049
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

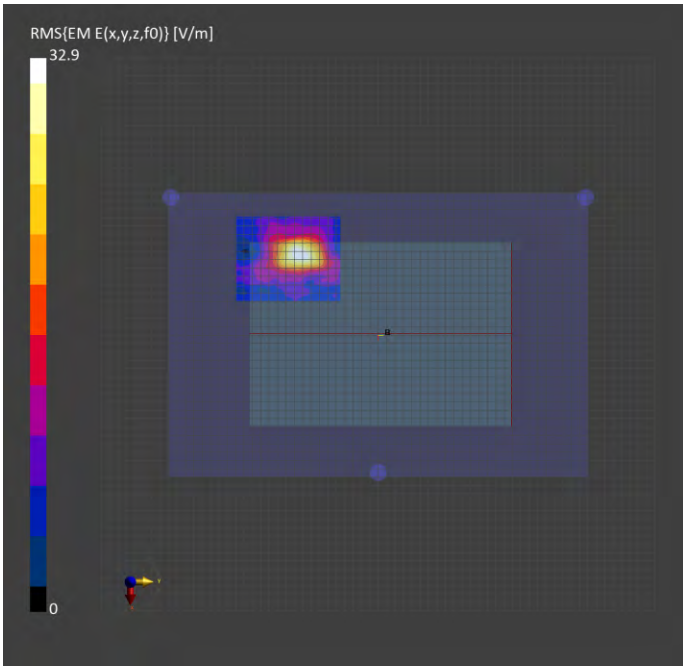
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.46
psPDtot+ [W/m^2]	1.51
psPDmod+ [W/m^2]	1.67
E_{max} [V/m]	32.9
Power Drift [dB]	0.13



ID: 050
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

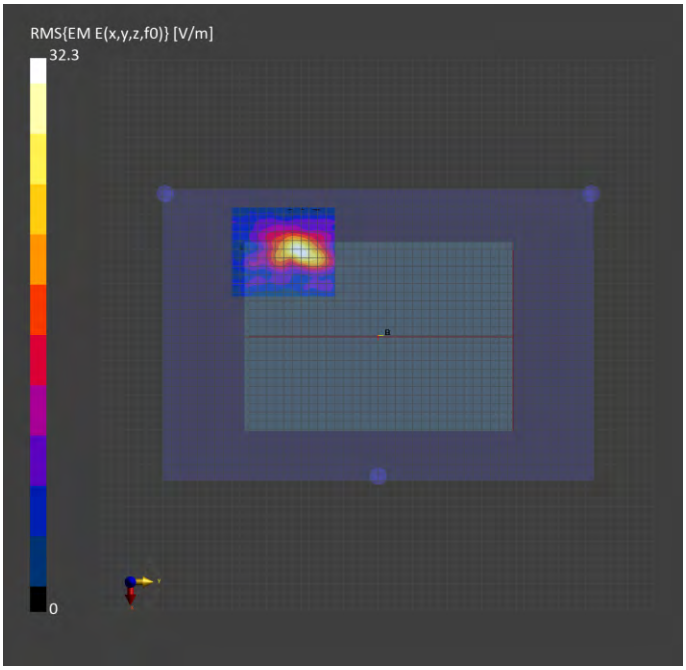
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.34
psPDtot+ [W/m^2]	1.38
psPDmod+ [W/m^2]	1.52
E_{max} [V/m]	32.3
Power Drift [dB]	-0.17



ID: 051
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

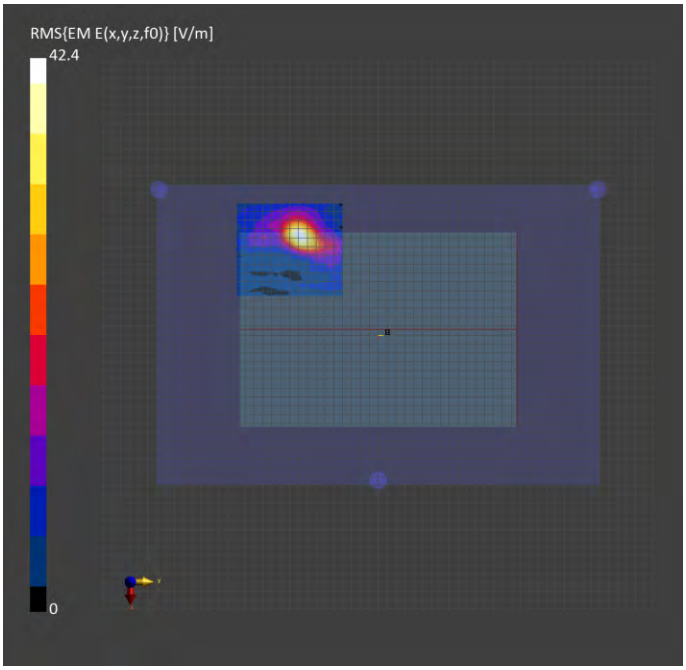
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	2.34
psPDtot+ [W/m^2]	2.68
psPDmod+ [W/m^2]	2.83
E_{max} [V/m]	42.4
Power Drift [dB]	-0.13



SGS Taiwan Ltd. 台灣檢驗科技股份有限公司 | No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號
t (886-2) 2299-3279 f (886-2) 2298-0488 www.sgs.com.tw
Member of SGS Group

Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

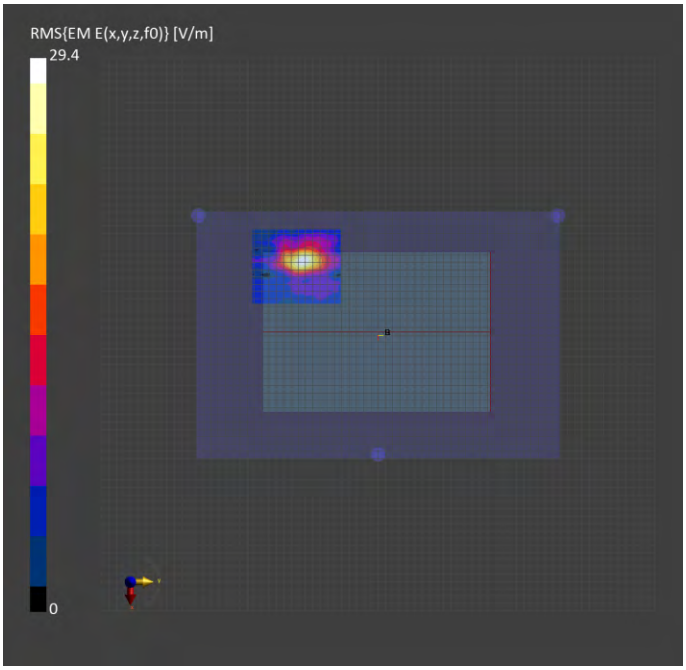
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	0.946
psPDtot+ [W/m^2]	1.14
psPDmod+ [W/m^2]	1.30
E_{max} [V/m]	29.4
Power Drift [dB]	-0.11



ID: 053
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

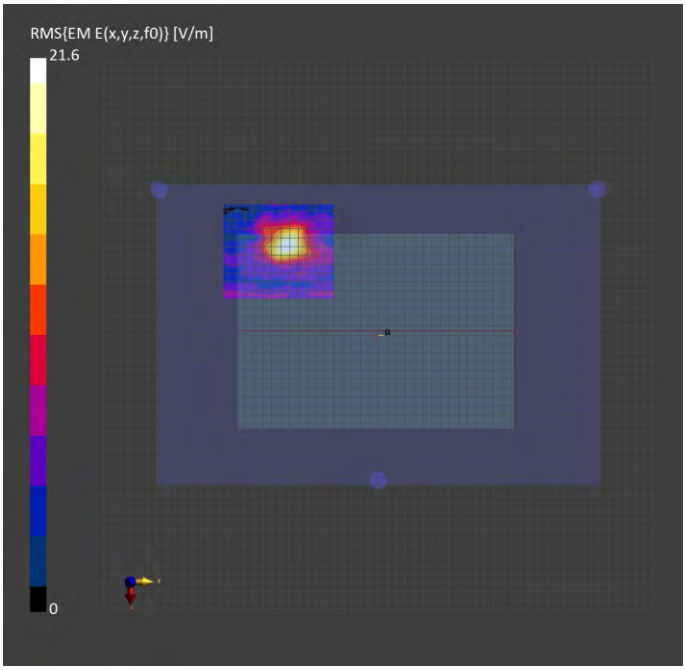
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	0.633
psPDtot+ [W/m^2]	0.656
psPDmod+ [W/m^2]	0.744
E_{max} [V/m]	21.6
Power Drift [dB]	0.07



ID: 054
Report No. : TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-6, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

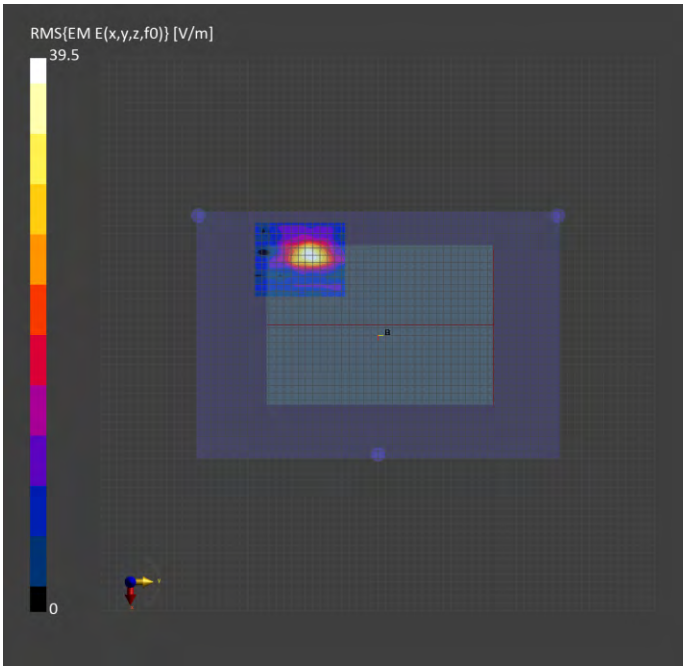
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.65
psPDtot+ [W/m^2]	1.71
psPDmod+ [W/m^2]	2.10
E_{max} [V/m]	39.5
Power Drift [dB]	-0.10



Measurement Report for Device, Bottom Surface, U-NII-7, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

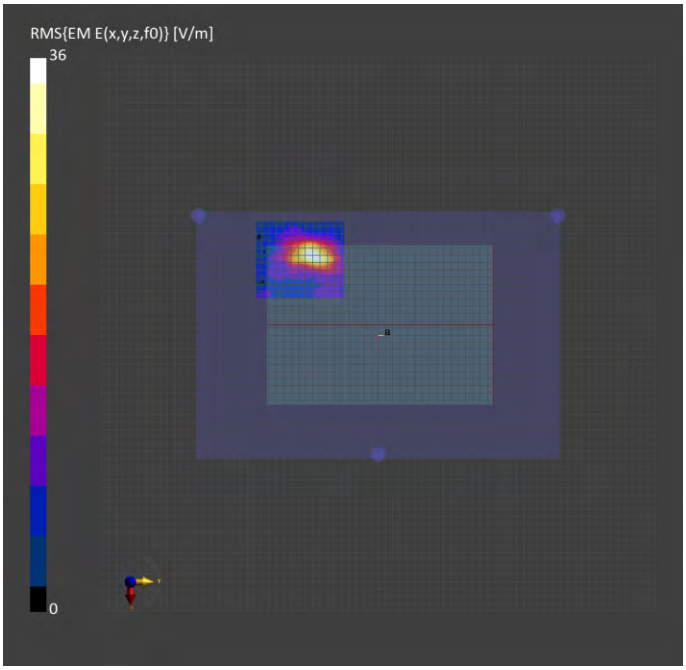
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - xxxx	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.66
psPDtot+ [W/m^2]	1.91
psPDmod+ [W/m^2]	2.18
E_{max} [V/m]	36.0
Power Drift [dB]	-0.11



ID: 056
Report No. :TESA2211000524ES
Measurement Report for Device, Bottom Surface, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_2mm_Main

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Bottom Surface, 2.00	1.0

Hardware Setup

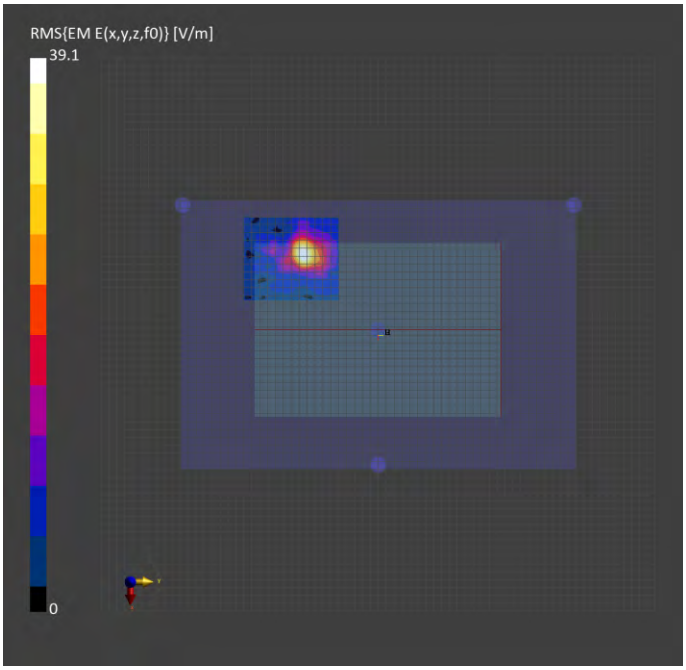
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	100.0 x 120.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.67
psPDtot+ [W/m^2]	1.80
psPDmod+ [W/m^2]	2.02
E_{max} [V/m]	39.1
Power Drift [dB]	-0.14



14 SAR SYSTEM CHECK RESULTS

Date: 2022/12/1

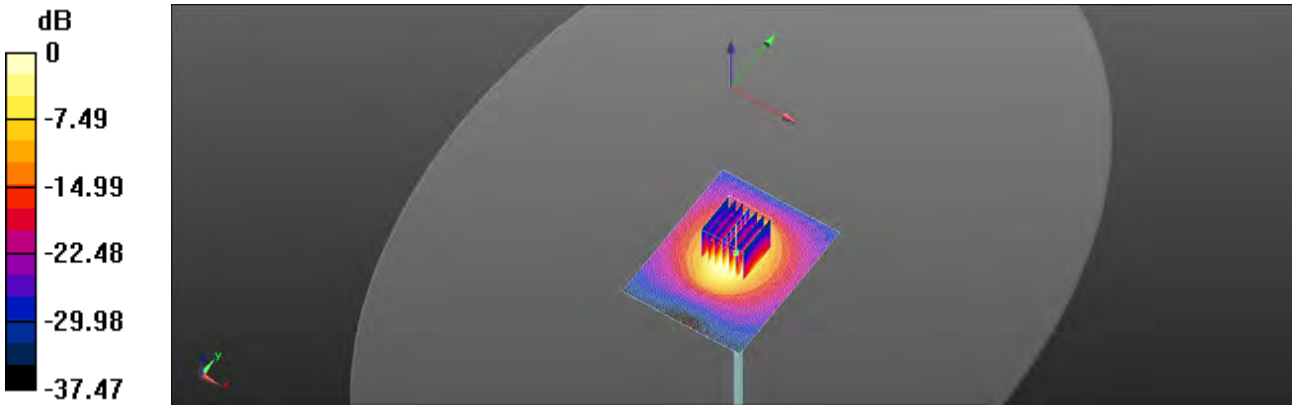
Report No. :TESA2210000524ES
Dipole 2450 MHz_SN:727
Communication System: CW; Frequency: 2450 MHz; Duty cycle= 1:1
Medium parameters used: f = 2450 MHz; σ = 1.848 S/m; ε_r = 39.765; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(8.12, 8.12, 8.12); 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 (71x91x1): Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 20.8 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 103.5 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.37 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 50.6%
Maximum value of SAR (measured) = 20.5 W/kg



0 dB = 20.5 W/kg = 13.18 dBW/kg

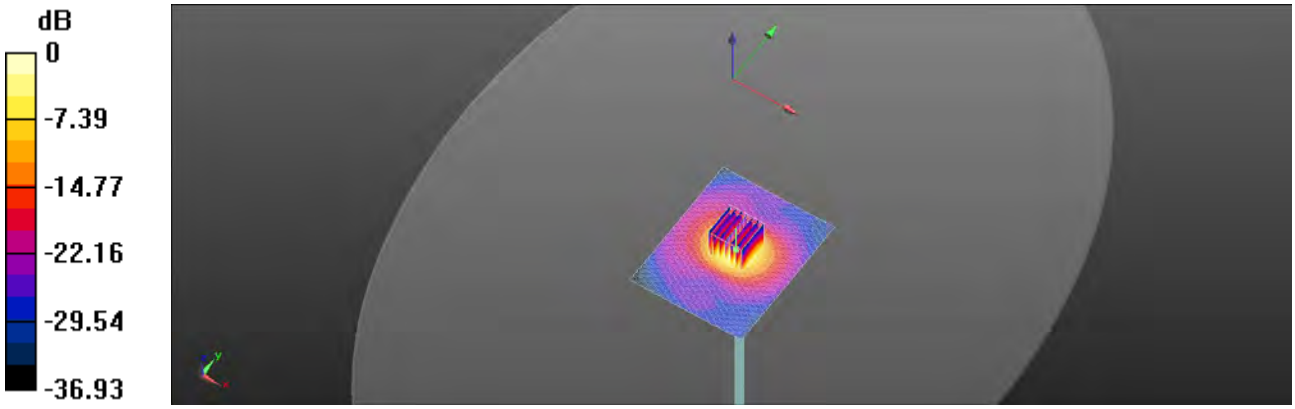
Report No. :TESA2210000524ES
Dipole 5250 MHz_SN:1023
Communication System: CW; Frequency: 5250 MHz; Duty cycle= 1:1
Medium parameters used: f = 5250 MHz; σ = 4.731 S/m; ε_r = 35.294; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.0°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.69, 5.69, 5.69); 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 (81x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 19.7 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 60.51 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 35.8 W/kg
SAR(1 g) = 8.03 W/kg; SAR(10 g) = 2.19 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 55.8%
Maximum value of SAR (measured) = 18.6 W/kg



0 dB = 18.6 W/kg = 12.94 dBW/kg

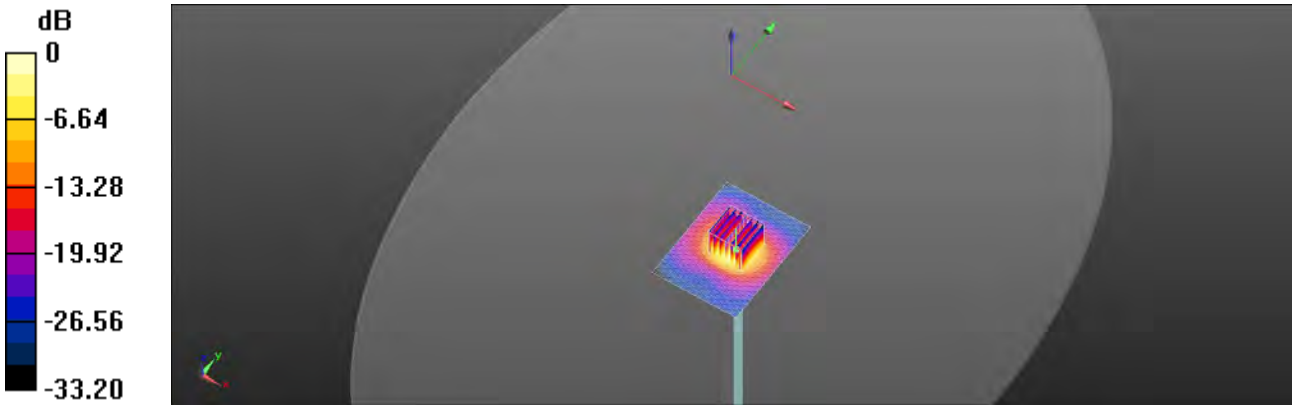
Report No. :TESA2210000524ES
Dipole 5600 MHz_SN:1023
Communication System: CW; Frequency: 5600 MHz; Duty cycle= 1:1
Medium parameters used: f = 5600 MHz; σ = 5.124 S/m; ε_r = 35.186; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.6°C; Liquid temperature: 22.5°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7642; ConvF(5.05, 5.05, 5.05); 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 (61x81x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 17.4 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 60.54 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 34.7 W/kg
SAR(1 g) = 8.07 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 = 53.1%
Maximum value of SAR (measured) = 16.8 W/kg



0 dB = 16.8 W/kg = 12.41 dBW/kg

Date: 2022/12/4

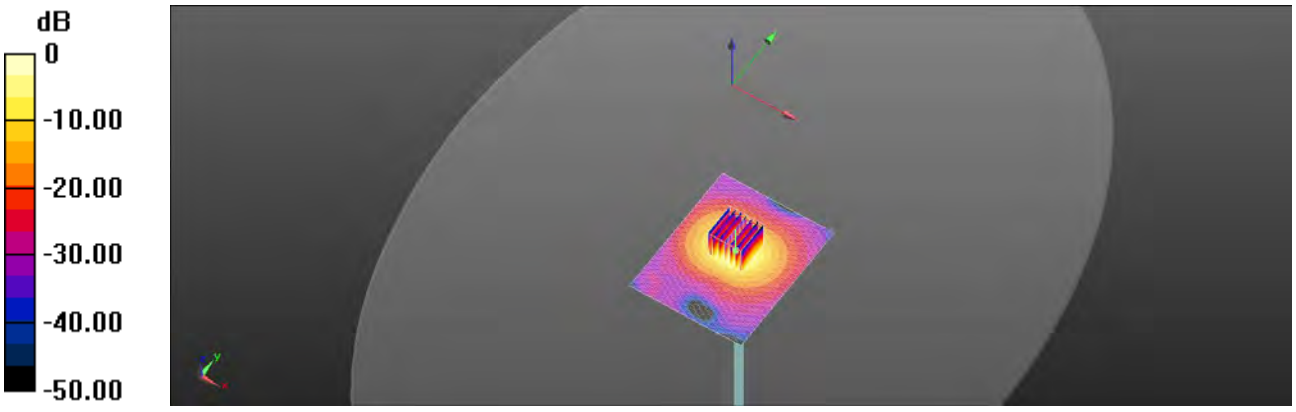
Report No. :TESA2210000524ES
Dipole 5750 MHz_SN:1023
Communication System: CW; Frequency: 5750 MHz; Duty cycle= 1:1
Medium parameters used: f = 5750 MHz; σ = 5.305 S/m; ε_r = 34.957; ρ = 1000 kg/m^3
Phantom section: Flat Section
Ambient temperature: 22.4°C; Liquid temperature: 22.3°C

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 (81x101x1): Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 17.7 W/kg

Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 44.45 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 37.1 W/kg
SAR(1 g) = 8.3 W/kg; SAR(10 g) = 2.35 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 51.8%
Maximum value of SAR (measured) = 17.7 W/kg



0 dB = 17.7 W/kg = 12.48 dBW/kg

Report No. : TESA2211000524ES
Measurement Report for Device, FRONT, Validation band, CW, Channel 6500 (6500.0 MHz) SN:1006
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 0.00	6.2	6.073	34.240

Hardware Setup

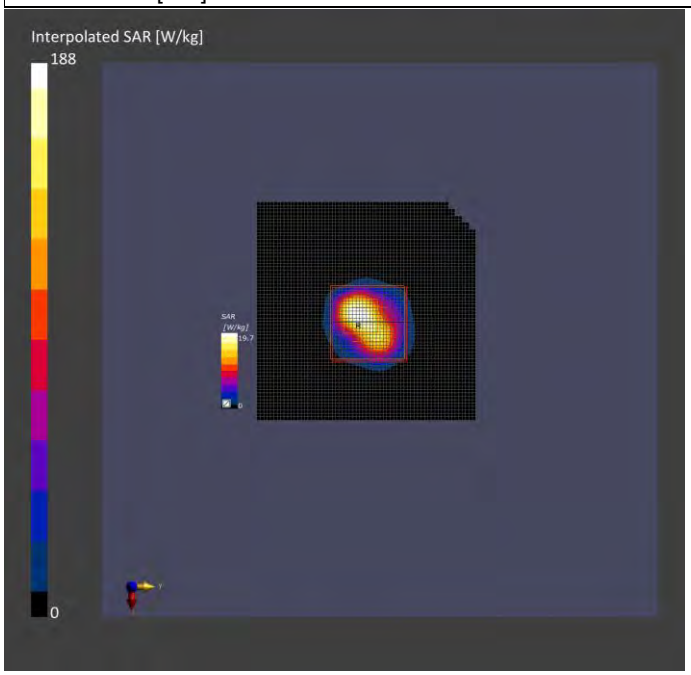
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 68.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	6.0 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	25.6	29.1
psSAR8g [W/kg]		
psSAR10g [W/kg]	5.27	5.35
psPDab (4.0cm2, sq) [W/m2]		130
Power Drift [dB]	0.01	-0.03
M2/M1 [%]		52.4
Dist 3dB Peak [mm]		4.8



Report No. : TESA2211000524ES
Measurement Report for Device, FRONT, Validation band, CW, Channel 7000 (7000.0 MHz) SN:1007
Ambient temperature: 22.5; Liquid temperature: 22.4

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 0.00	6.14	6.607	33.976

Hardware Setup

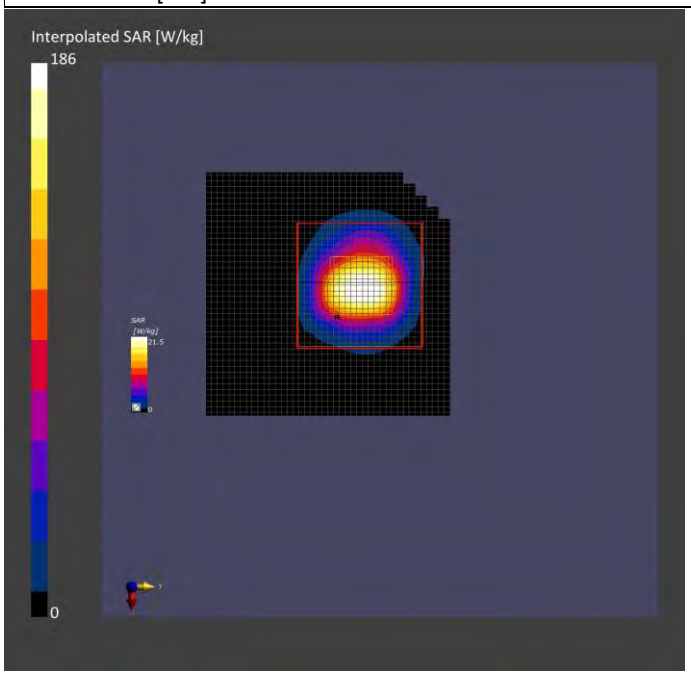
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7642, 2022-03-02	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 45.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	7.5 x 7.5	3.0 x 3.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-05	2022-12-05
psSAR1g [W/kg]	23.8	25.9
psSAR8g [W/kg]		
psSAR10g [W/kg]	4.54	4.56
psPDab (4.0cm2, sq) [W/m2]		112
Power Drift [dB]	0.03	0.06
M2/M1 [%]		48.7
Dist 3dB Peak [mm]		4.4



15 PD SYSTEM CHECK RESULTS

Report No. :TESA2211000524ES
Measurement Report for Device, FRONT, Validation band, CW, Channel 10000 (10000.0 MHz) SN:1021

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	FRONT, 10.00	1.0

Hardware Setup

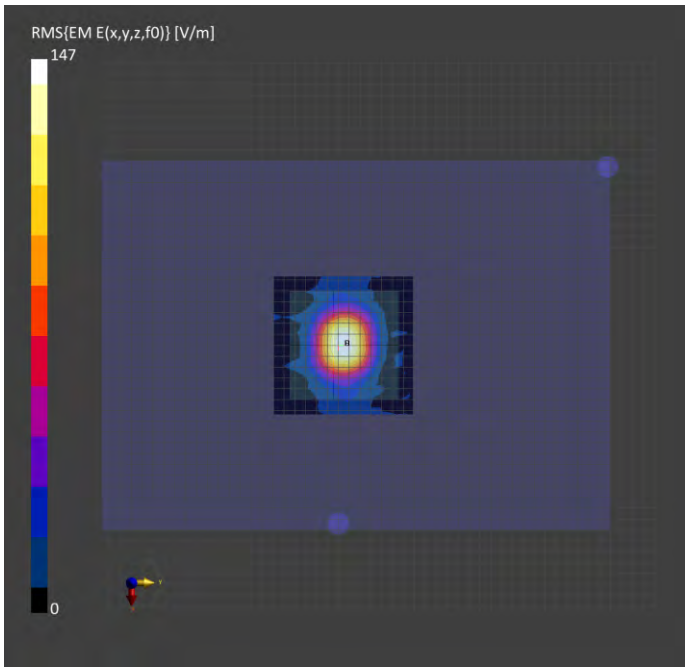
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

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

Measurement Results

Scan Type	5G Scan
Date	2022-12-06
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	52.3
psPDtot+ [W/m^2]	52.5
psPDmod+ [W/m^2]	52.7
E_{max} [V/m]	144
Power Drift [dB]	-0.01



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 -