RF Exposure report

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

Product Name	Portable Tablet Computer
Brand Name	Lenovo
Model No.	TB350FU
Applicant	Lenovo (Shanghai) Electronics Technology Co., Ltd. Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone
Standards	IEEE/ANSI C95.1-1992, IEEE 1528-2013
FCC ID	O57TB350FU
Date of EUT Receipt	Jul. 11, 2022
Date of Test(s)	Aug. 12, 2022 ~ Aug. 13, 2022
Date of Issue	Sep. 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 / Kimmy Chiou	PM / Kiki Lin	Approved By / John Yeh
Kimmy Chiou	Kiki Lin	John Yeh

Date: Sep. 14, 2022

Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2207000199ES	00	Initial creation of document	Aug. 18, 2022	Kimmy Chiou	*
TESA2207000199ES	01	Modify comment	Aug. 26, 2022	Kimmy Chiou	*
TESA2207000199ES	02	Modify comment	Aug. 30, 2022	Kimmy Chiou	*
TESA2207000199ES	03	Modify comment	Sep. 14, 2022	Kimmy Chiou	

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 Name	Portable Tablet Computer	
Brand Name	Lenovo	
Model No.	TB350FU	
FCC ID	O57TB350FU	
Mode	WLAN: 802.11ax HE20/HE40/HE80/HE160	
Duty Cycle	WLAN802.11	Refer to Page 46
Supported Radios	802.11ax	6.0GHz (5925.0 – 7125.0 MHz)

1.3 Maximum value

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)
6G WLAN	1.04	6.01	7.95

2 MEASUREMENT SYSTEM

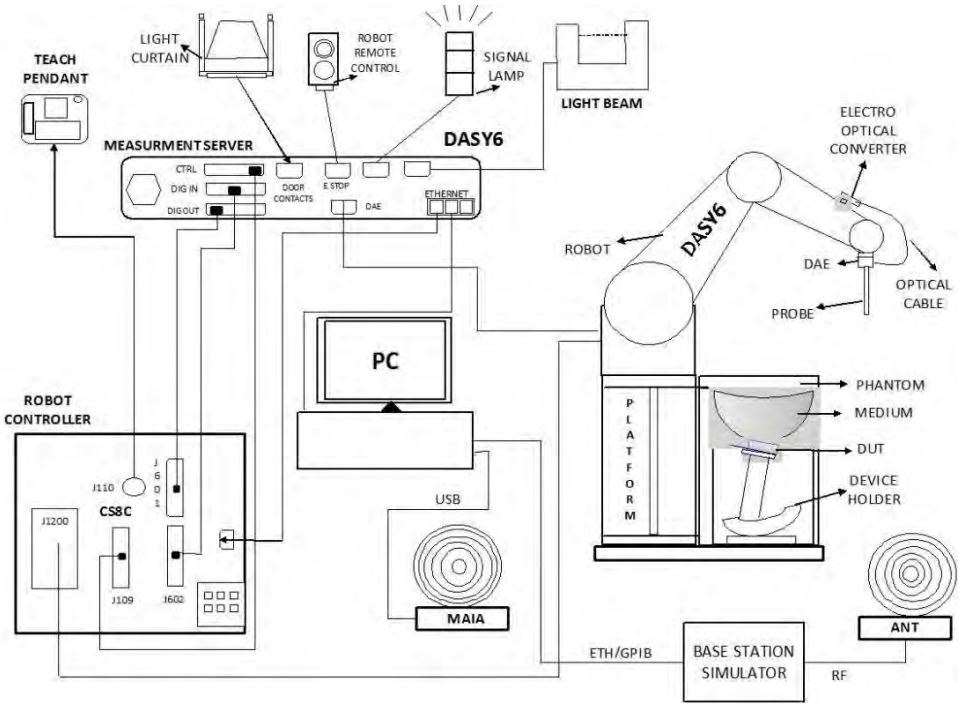
2.1 Test Facility

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 (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 6500/7000 MHz Additional CF for other liquids and frequencies upon request	
Frequency	10 MHz to > 6 GHz	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Tip diameter: 2.5 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

PHANTOM (ELI)

Model	ELI	
Construction	The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Shell Thickness	2 ± 0.2 mm	
Filling Volume	Approx. 30 liters	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	

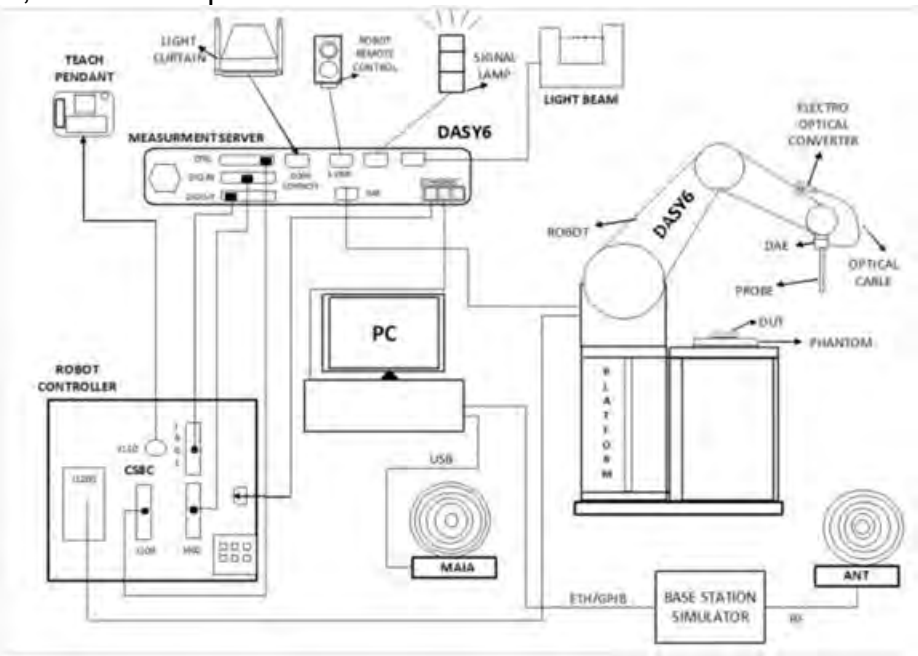
DEVICE HOLDER (ELI)

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

2.3 PD system

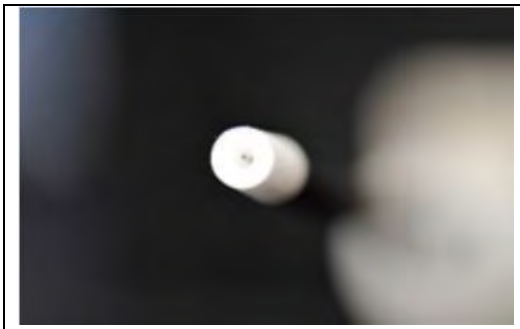
Block Diagram (DASY6)

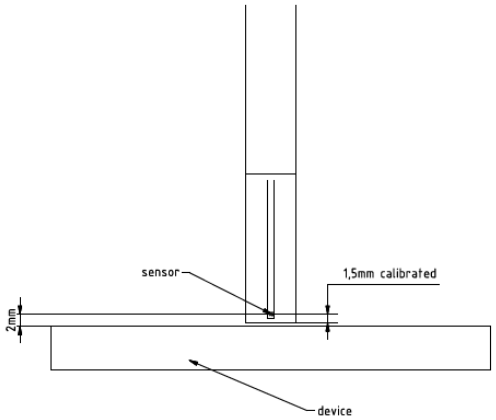
Power density measurements for mmWave frequencies were performed using SPEAG DASY6 with cDASY6 5G module. The DASY6 included a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the 5G phantom cover.



EUmmWVx probe

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

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

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

mmWave Phantom

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

3 SAR SYSTEM VERIFICATION

3.1 Tissue Simulating Liquid

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

3.2 Tissue Simulant Liquid measurement

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

3.3 Measurement results of Tissue Simulant Liquid

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
6025	22.3	35.070	5.510	35.753	5.524	1.95%	0.26%	± 5%	Aug. 12, 2022
6185	22.3	34.878	5.698	35.594	5.726	2.05%	0.49%	± 5%	Aug. 12, 2022
6345	22.3	34.686	5.887	35.263	5.896	1.66%	0.15%	± 5%	Aug. 12, 2022
6500	22.3	34.500	6.070	35.202	6.086	2.03%	0.26%	± 5%	Aug. 12, 2022
6505	22.3	34.494	6.076	35.202	6.106	2.05%	0.50%	± 5%	Aug. 12, 2022
6665	22.3	34.302	6.261	35.058	6.276	2.20%	0.23%	± 5%	Aug. 12, 2022
6825	22.3	34.110	6.447	34.874	6.457	2.24%	0.16%	± 5%	Aug. 12, 2022
6985	22.3	33.918	6.633	34.658	6.642	2.18%	0.14%	± 5%	Aug. 12, 2022
7000	22.3	33.900	6.650	34.608	6.667	2.09%	0.26%	± 5%	Aug. 12, 2022

3.4 The composition of the tissue simulating liquid:

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

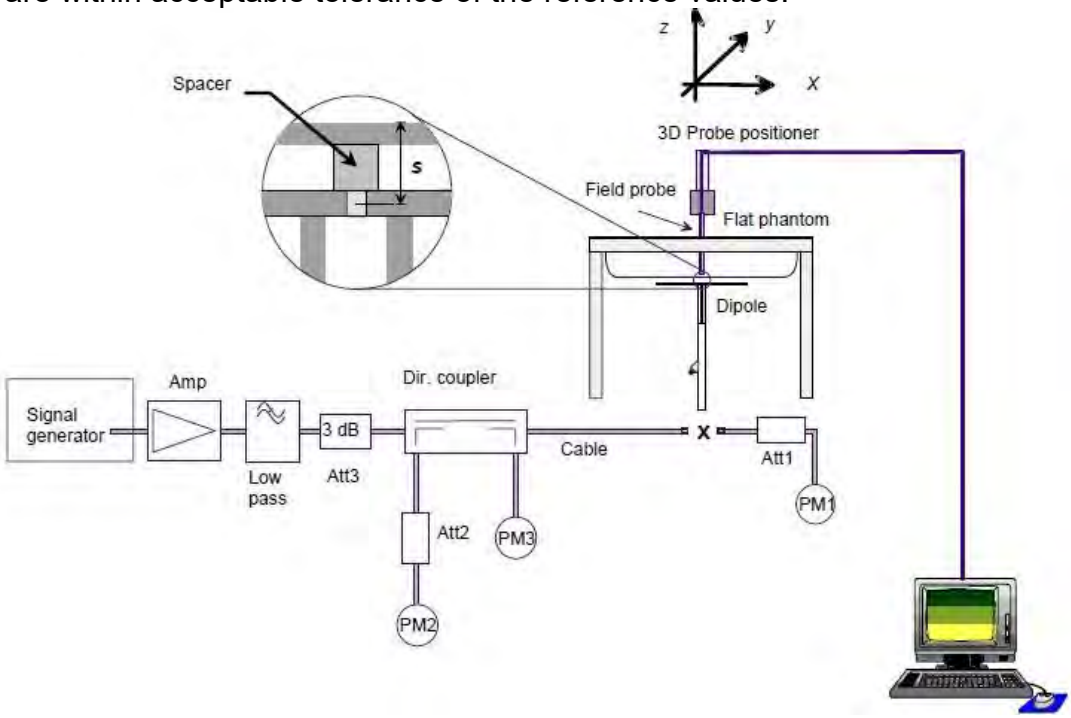
Broad-band head tissue simulating liquids	SPEAG Product	Frequency range (MHz)	Main Ingredients
	HBBL600-10000V6	600 - 10000	Water, Oil

3.5 System check

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

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

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



The block diagram of system check

3.6 System check results

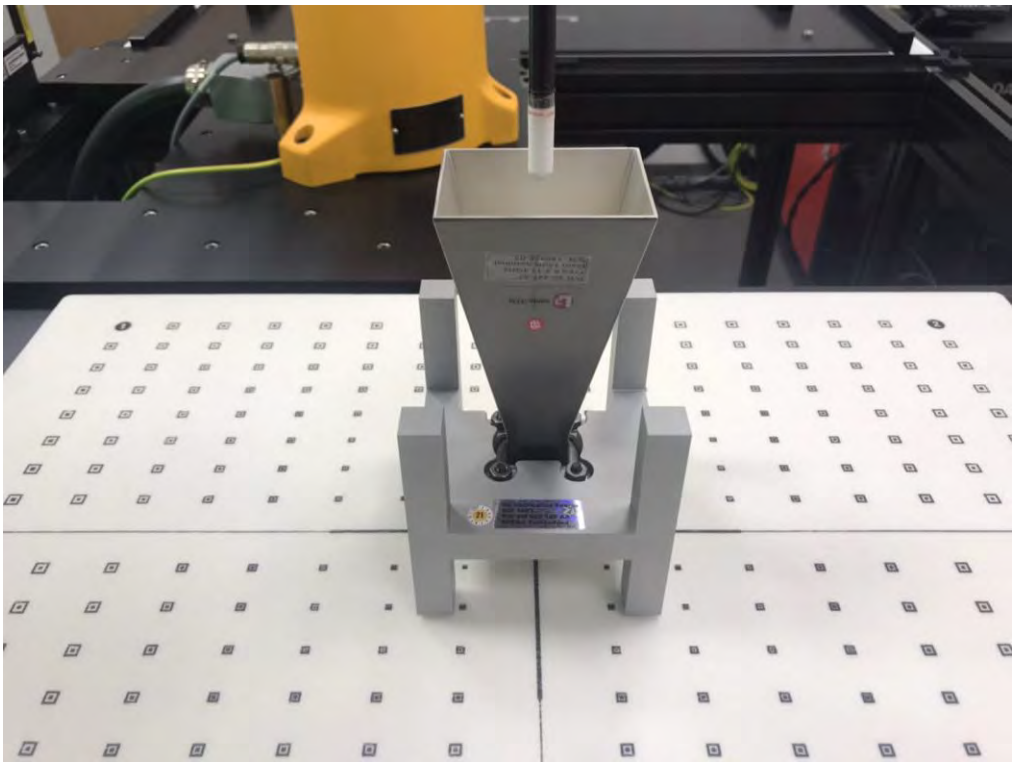
Validation Kit	S/N	Frequency (MHz)	1W Target 1g-SAR (W/kg)	pin=100mW Measured 1g-SAR (W/kg)	Normalized to 1W 1g-SAR (W/kg)	Deviation (%)	Limit	Measurement Date
D6.5GHzV2	1006	6500	291	29.1	291	0.00	± 10%	Aug.12,2022
D7GHzV2	1007	7000	275	25.9	259	-5.82	± 10%	Aug.12,2022

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	52.7	51.7	0.08	Aug.13,2022

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. 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 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.
- The device only supports full RU (Resource Unit) only for 802.11ax.

5.3 Test position

Tablet mode SAR test position (0mm)

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

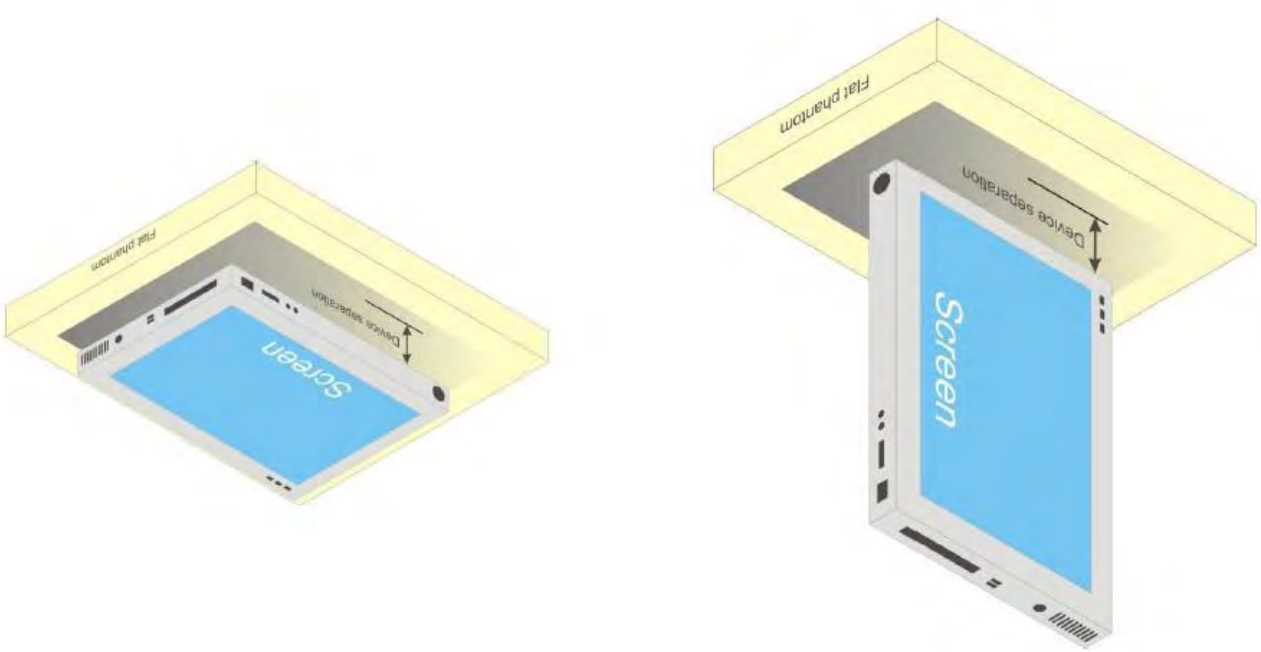


Illustration for Tablet Setup

5.4 Test limit

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

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

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

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

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

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

5.5 Proximity sensor operation description

The P-sensor being used to reduce output power is capacitive in which when the object such as human body, metal or plastic is being approached, the sensing capacitance would be increased with the antenna pad. Once the capacitance is accumulated, and reached over the threshold as set in MCU of the microchip, the interruption signal is pulled low (High state without trigger) and further inform modem module of the transmitter to make power reduction.

5.5.1 Proximity sensor measurement procedure

1. The proximity sensor is collocated with WLAN antenna.

2. Output power is measured, and monitored by using the base station simulator and power sensor/power meter. A RF cables with sufficient length was being attached from the antenna port of the module, and used for the measurement. The appropriate loss attenuated from cable is compensated in the test setup.

5.5.2 Trigger distances for back/top side

Test procedure:

1. The entire back surface or edge of the tablet is positioned below a flat phantom filled with the required tissue equivalent medium and positioned at least 20 mm further than the distance that triggers power reduction.

2. The back surface or edge is moved toward the phantom in 3 mm steps until the sensor triggers.

3. The back surface or edge is again moved toward the phantom, but in 1 mm steps, until it is at least 5 mm past the triggering point or touching the phantom

4. If the tablet is not touching the phantom, it is moved in 3 mm steps until it touches the phantom to confirm that the sensor remains triggered and the maximum power stays reduced.

5. The back surface or edge is then moved back (further away) from the phantom until maximum output power is returned to the normal maximum level.

6. The process is then reversed by moving the tablet away from the phantom to determine triggering release, until it is at least 10 mm beyond the point that triggers the return of normal maximum power.

7. The measured output power within ± 5 mm of the triggering points, or until the tablet is touching the phantom, for movements to and from the phantom should be tabulated.

8. To ensure all production units are compliant, it is generally necessary to reduce the triggering distance determined from the triggering tests by 1 mm, or more if it is necessary, and use the smallest distance for movements to and from the phantom, minus 1 mm, as the sensor triggering distance for determining the SAR measurement distance.

9. For back/top, the trigger distance of proximity sensor is 11mm.

5.5.3 Tilt angle testing

Test procedure:

1. The influence of table tilt angles to proximity sensor triggering is determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance determined in sections 1.6.2 by rotating the tablet around the edge next to the phantom in ≤ 10 deg increments until the tablet is +/- 45deg or more from the vertical position at 0 deg.

2. If sensor triggering is released and normal maximum output power is restored within the +/- 45deg range, the procedures in step 1) should be repeated by reducing the tablet to phantom separation distance by 1 mm until the proximity sensor no longer releases triggering, and maximum output power remains in the reduced mode.

3. The smallest separation distance determined in steps 1) and 2), minus 1 mm, is the sensor triggering distance for tablet tilt coverage. The smallest separation distance determined in sections 1.6.2, 1.6.3 minus 1 mm should be used in the SAR measurements.

4. The influence of tablet tilt angles to proximity sensor triggering is determined by positioning top and right sides, please refer to table 1.6.5 and 1.6.6.

5. After the tilt angle testing for top edge, the sensor is not released during +/- 45deg, so trigger distance - 1mm should be used in the SAR measurements.

5.5.4 Proximity sensor coverage

The following procedures do not apply and are not required since the antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

Test procedure:

1. The back surface or edges of the tablet is positioned at a test separation distance less than or equal to the distance required for back surface or edge triggering, with both the antenna and sensor pad located at least 20 mm laterally outside the edge (boundary) of the phantom, along the direction of maximum antenna and sensor offset.

2. The similar sequence of steps applied to determine sensor triggering distance in section 1.6.2 are used to verify back surface and edge sensor coverage by moving the tablet (sensor and antenna) horizontally toward the phantom while maintaining the same vertical separation between the back surface or edge and the phantom.

3. After the exact location where triggering of power reduction is determined, with respect to the sensor and antenna, the tablet movement should be continued, in 3 mm increments, until both the sensor and antenna(s) are fully under the phantom and at least 20 mm inside the phantom edge.

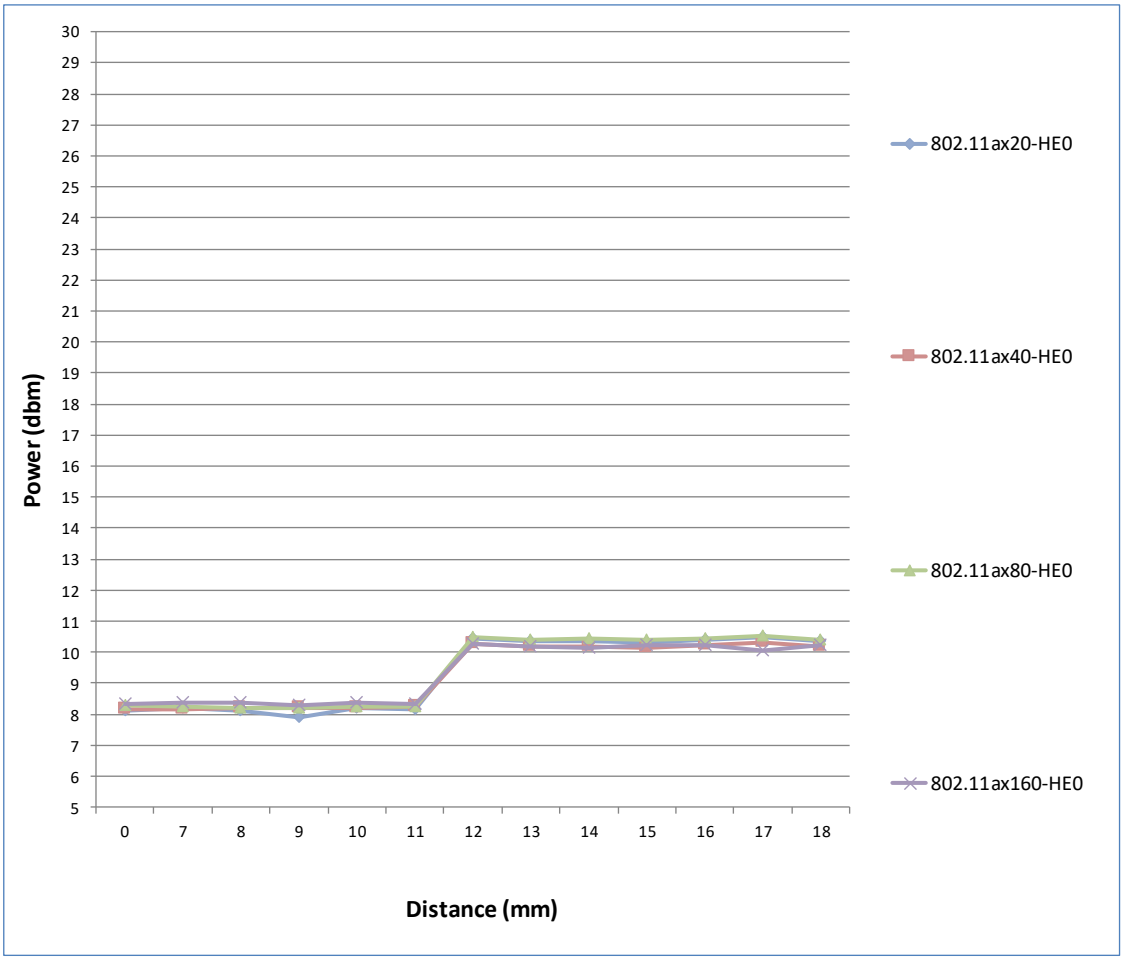
4. The process is then repeated from the other direction, at the opposite end of maximum antenna and sensor offset, by rotating the tablet 180 degrees.

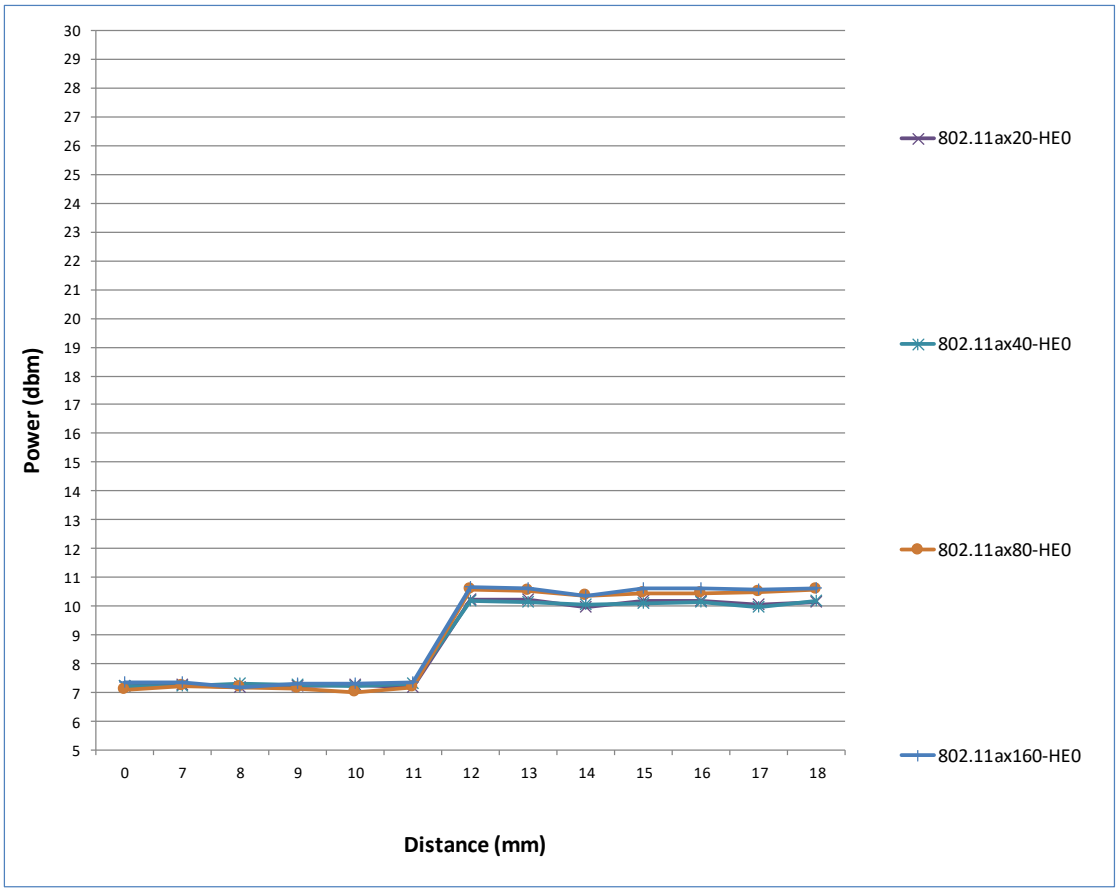
5.5.5 Results

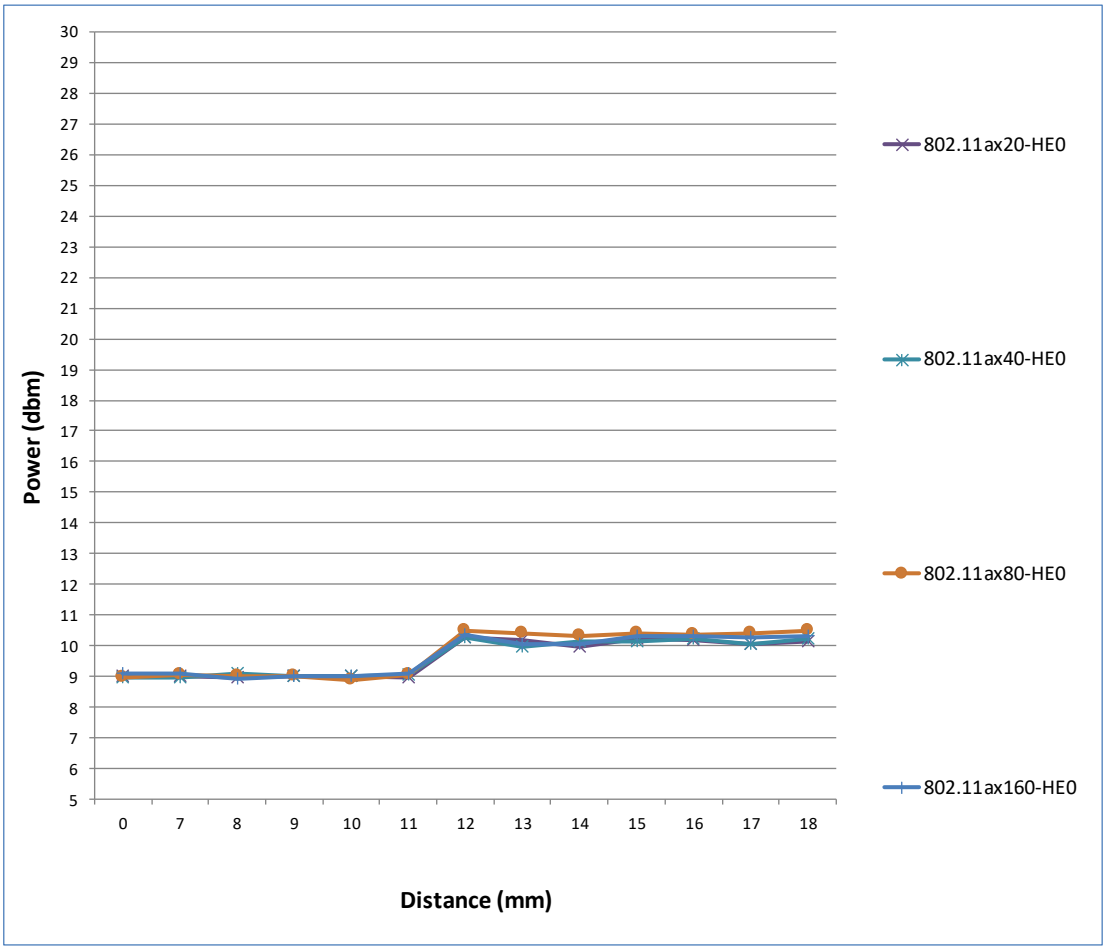
The measured output power within ± 5 mm of the triggering points, or until the tablet is touching the phantom, for movements to and from the phantom is tabulated in the following.

Back Surface

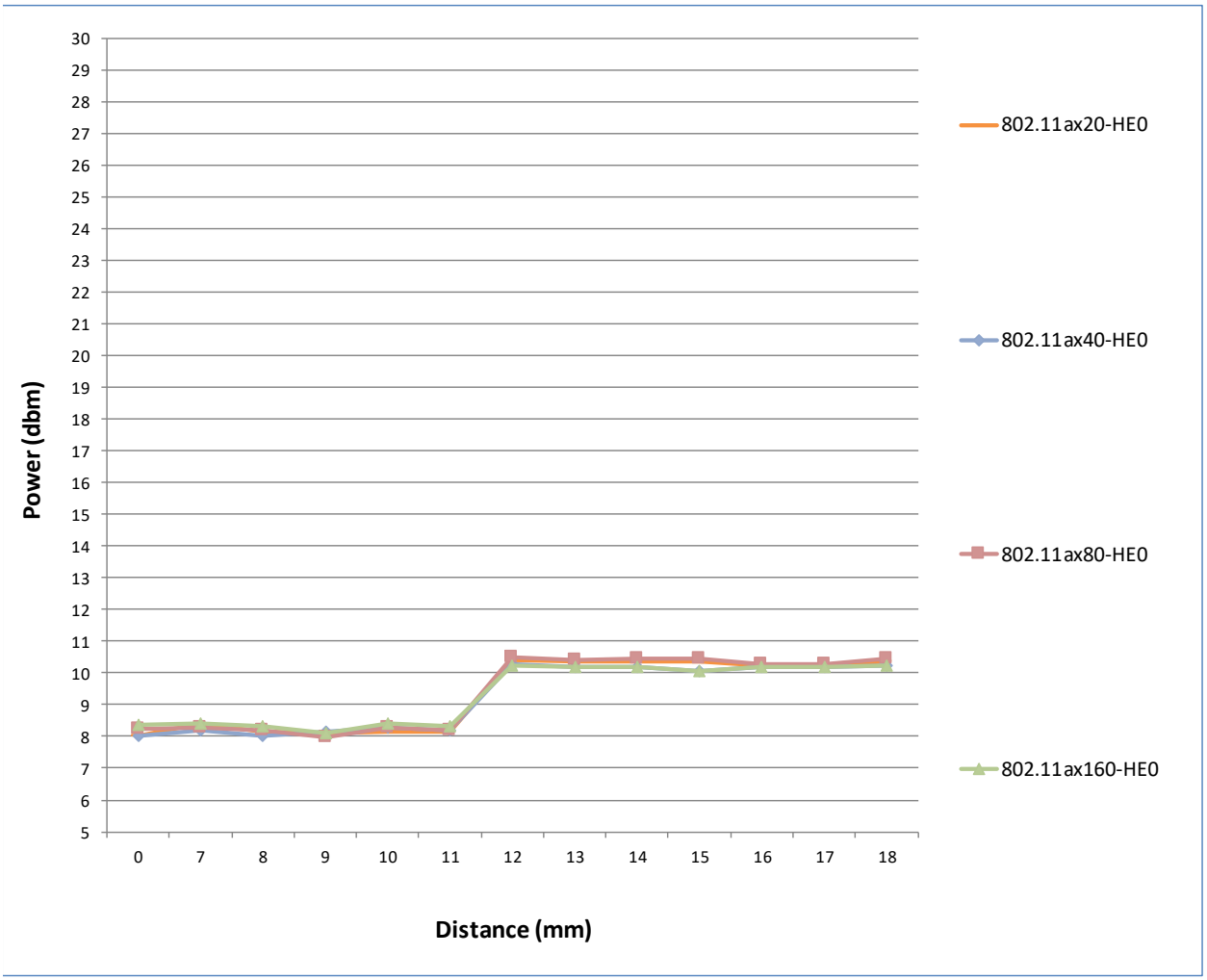
Moving device toward the phantom

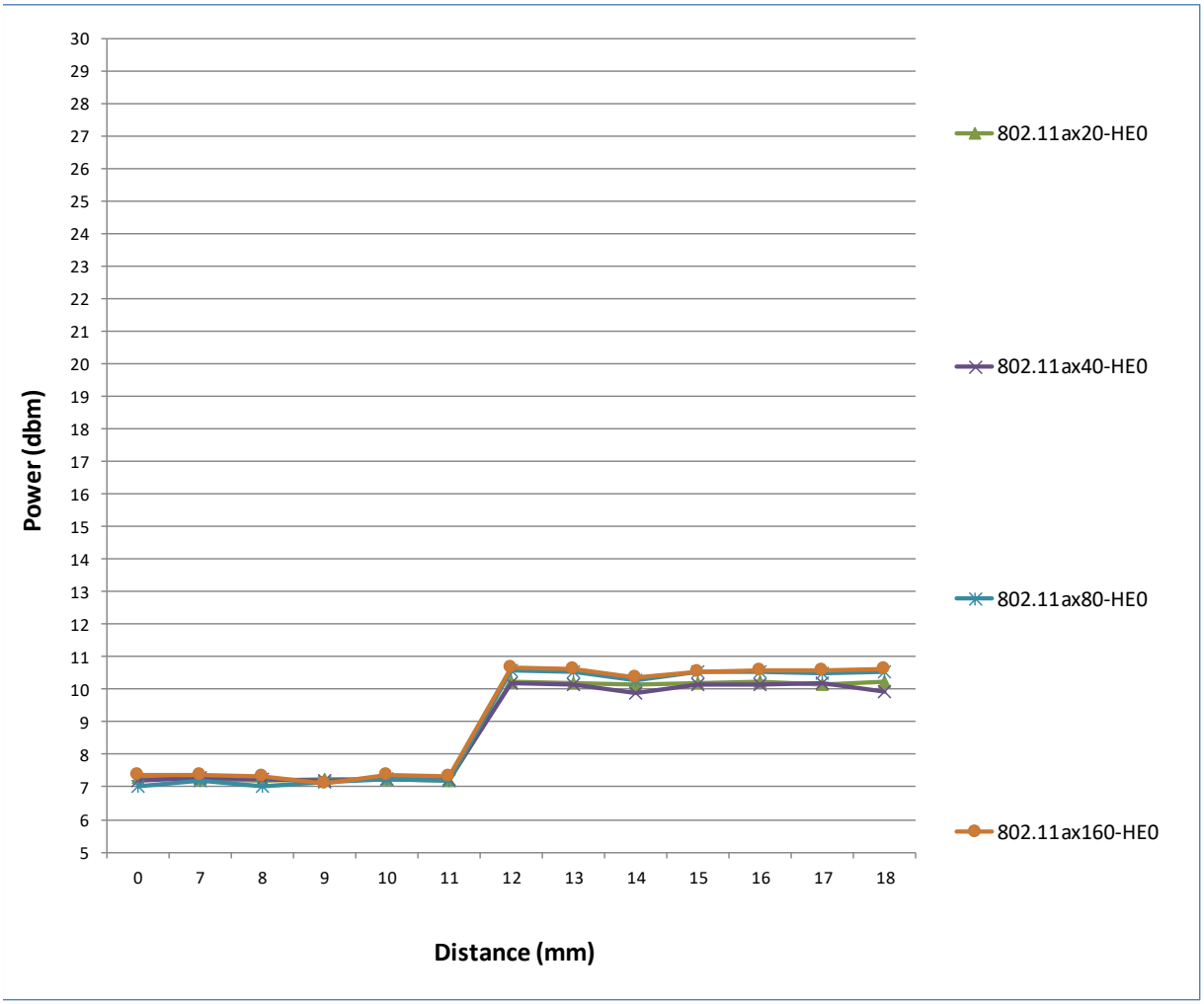


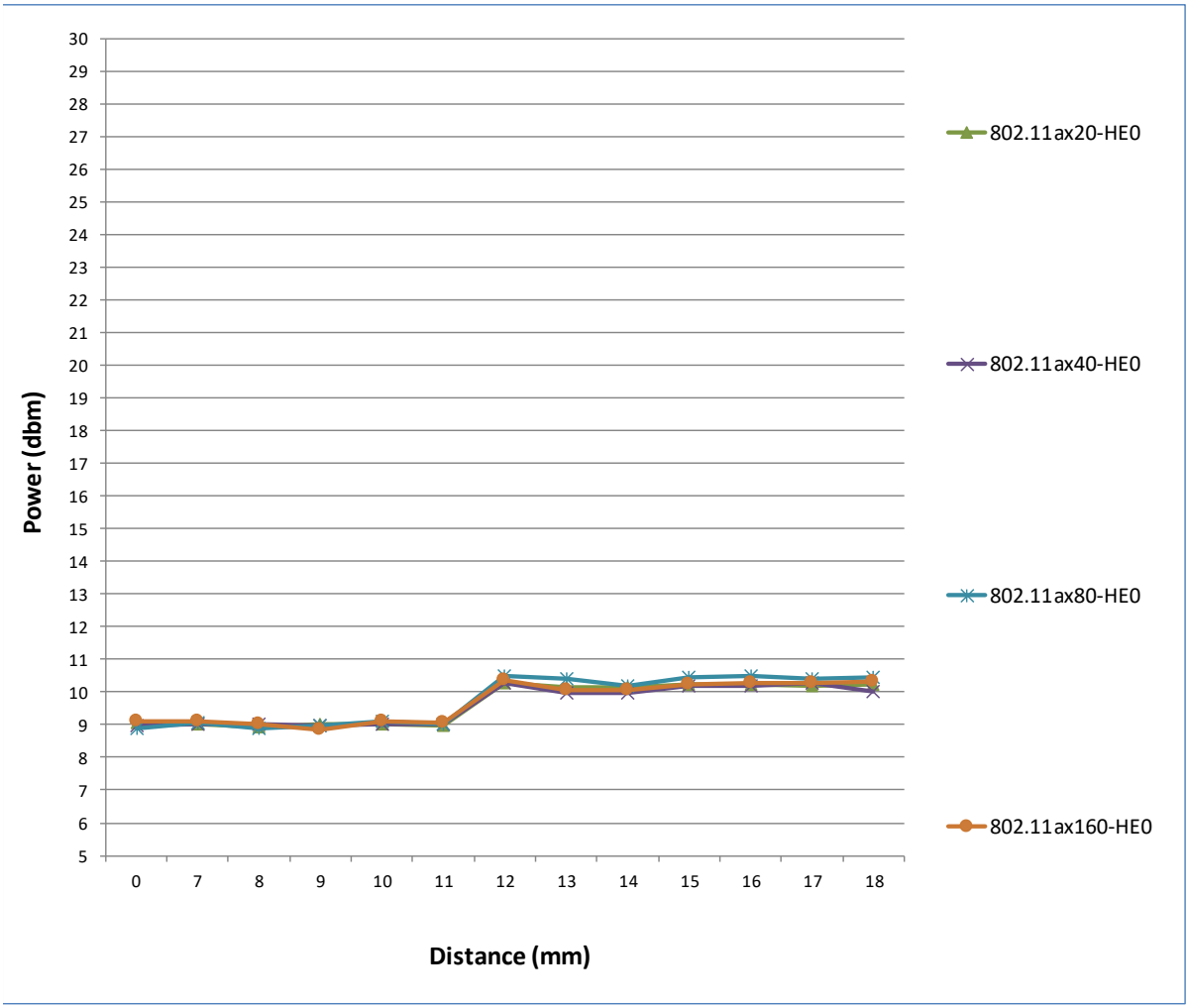




Moving device away from the phantom



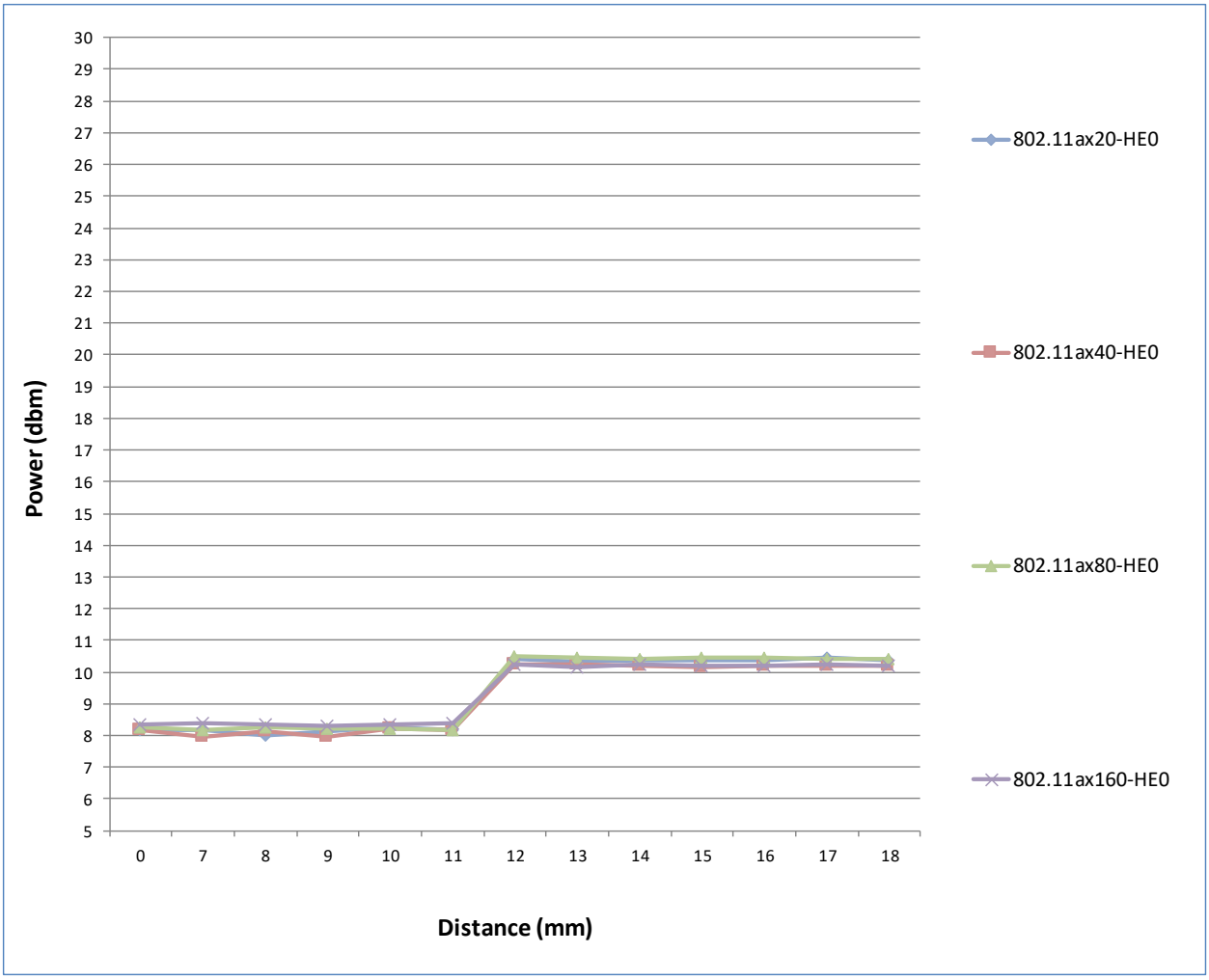


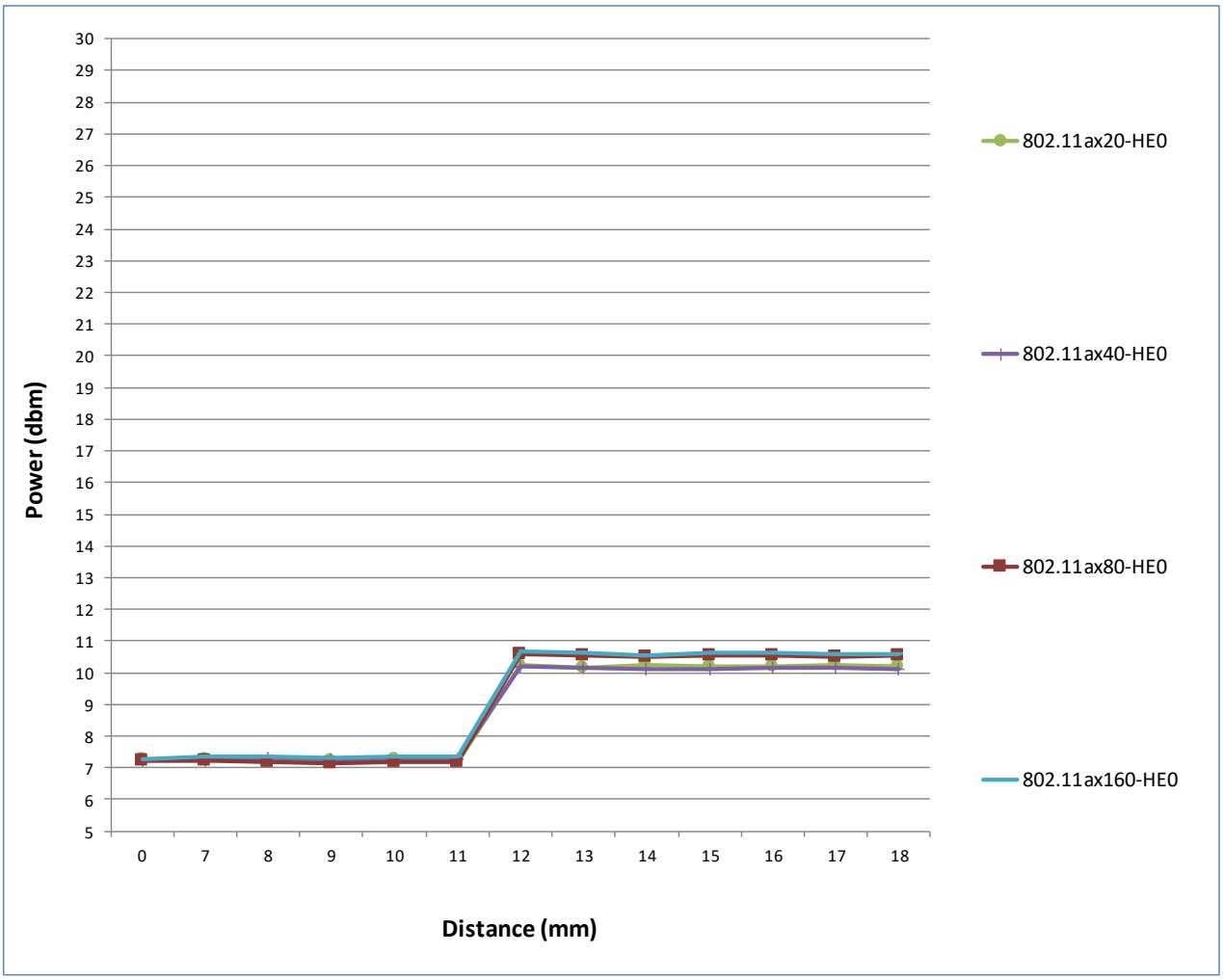


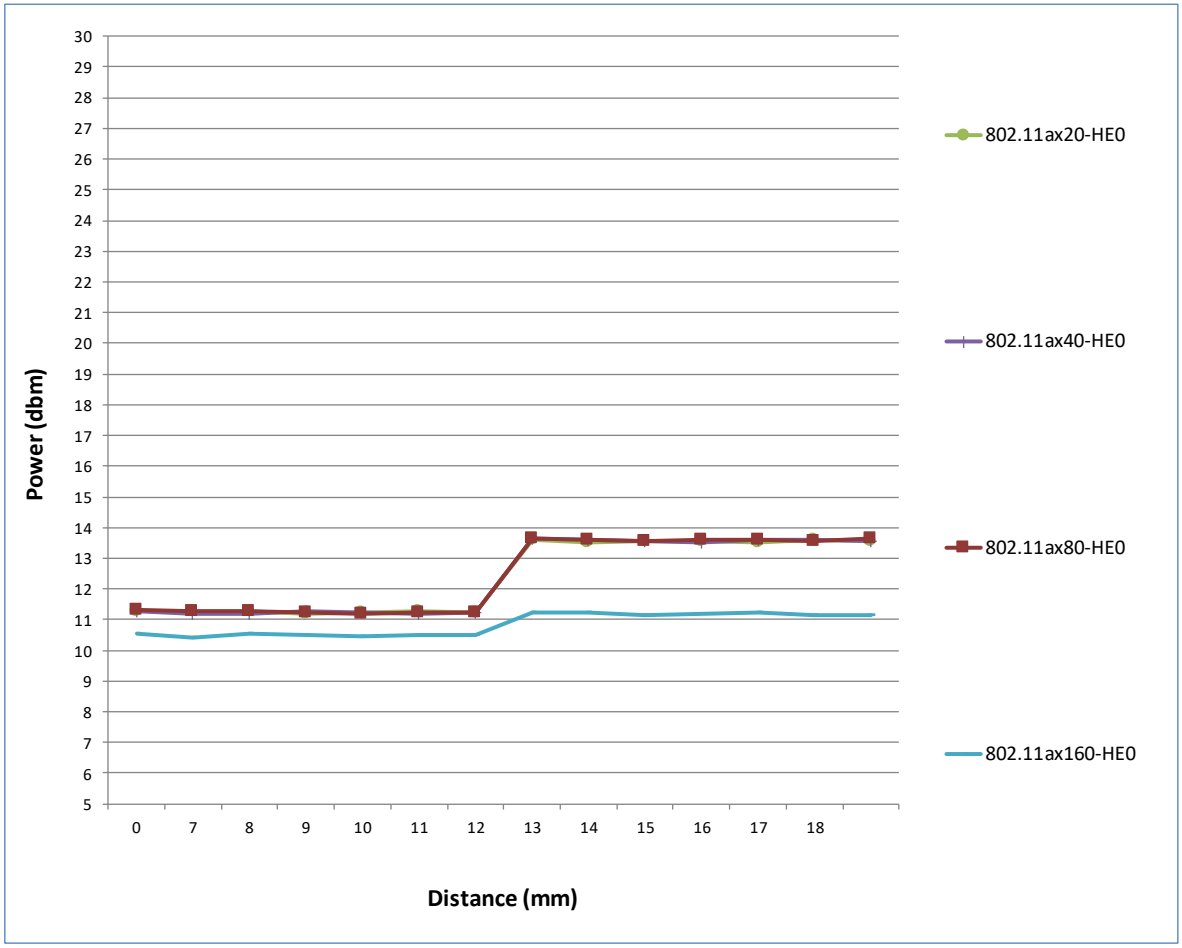
For back position, the worst trigger distance of proximity sensor is 11mm, and we test back SAR in 10mm with full power and 0mm with reduced power.

Top side

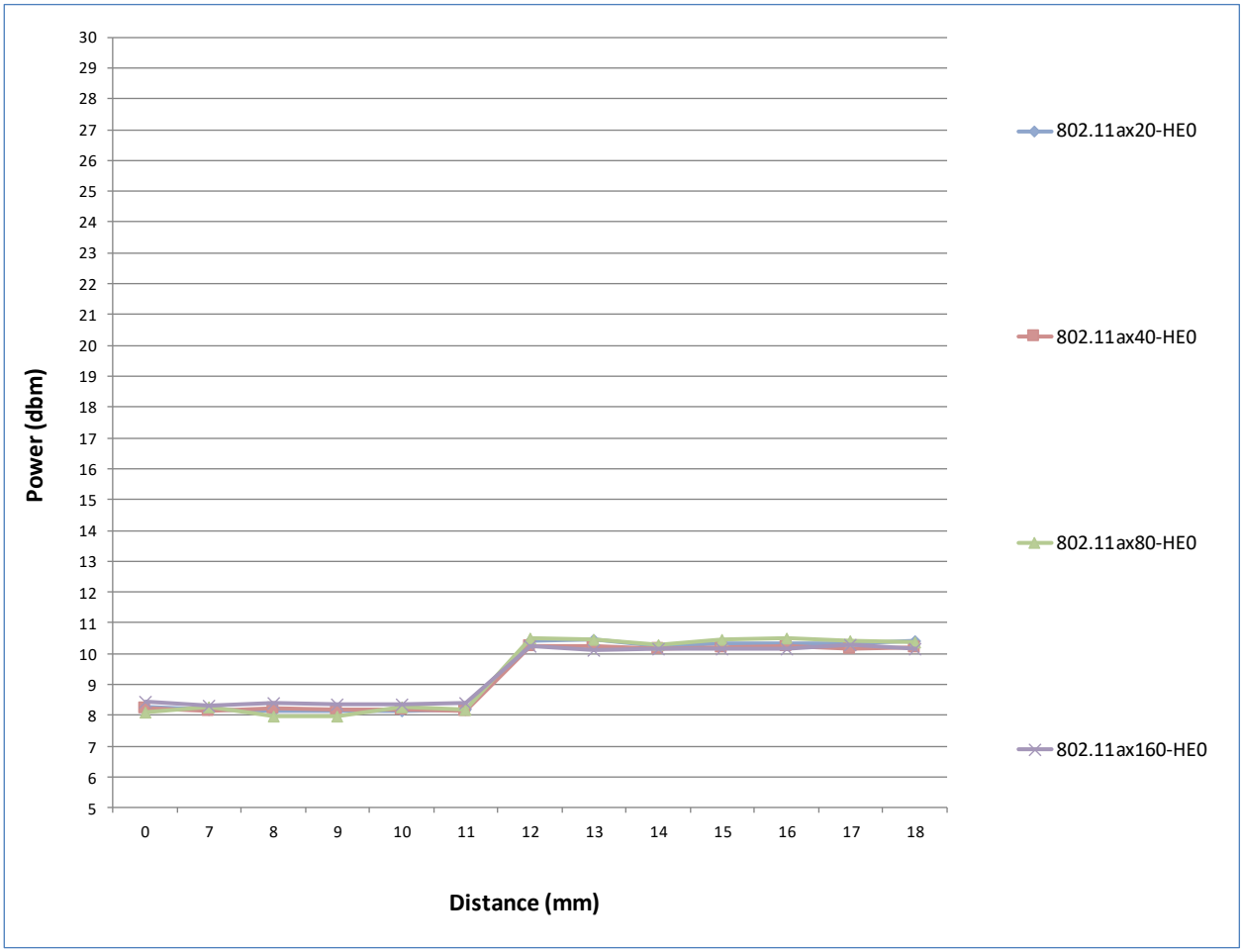
Moving device toward the phantom

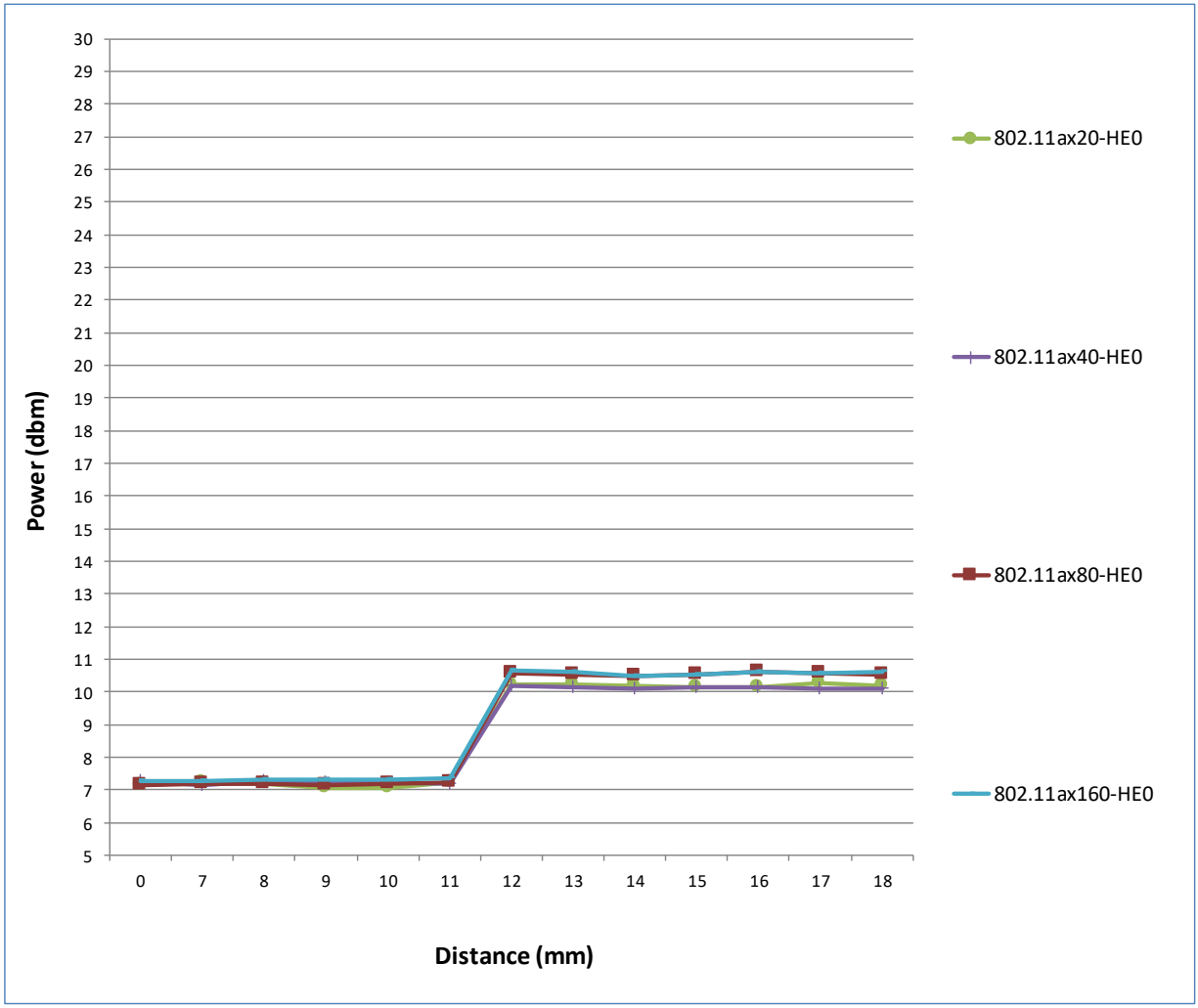






Moving device away from the phantom





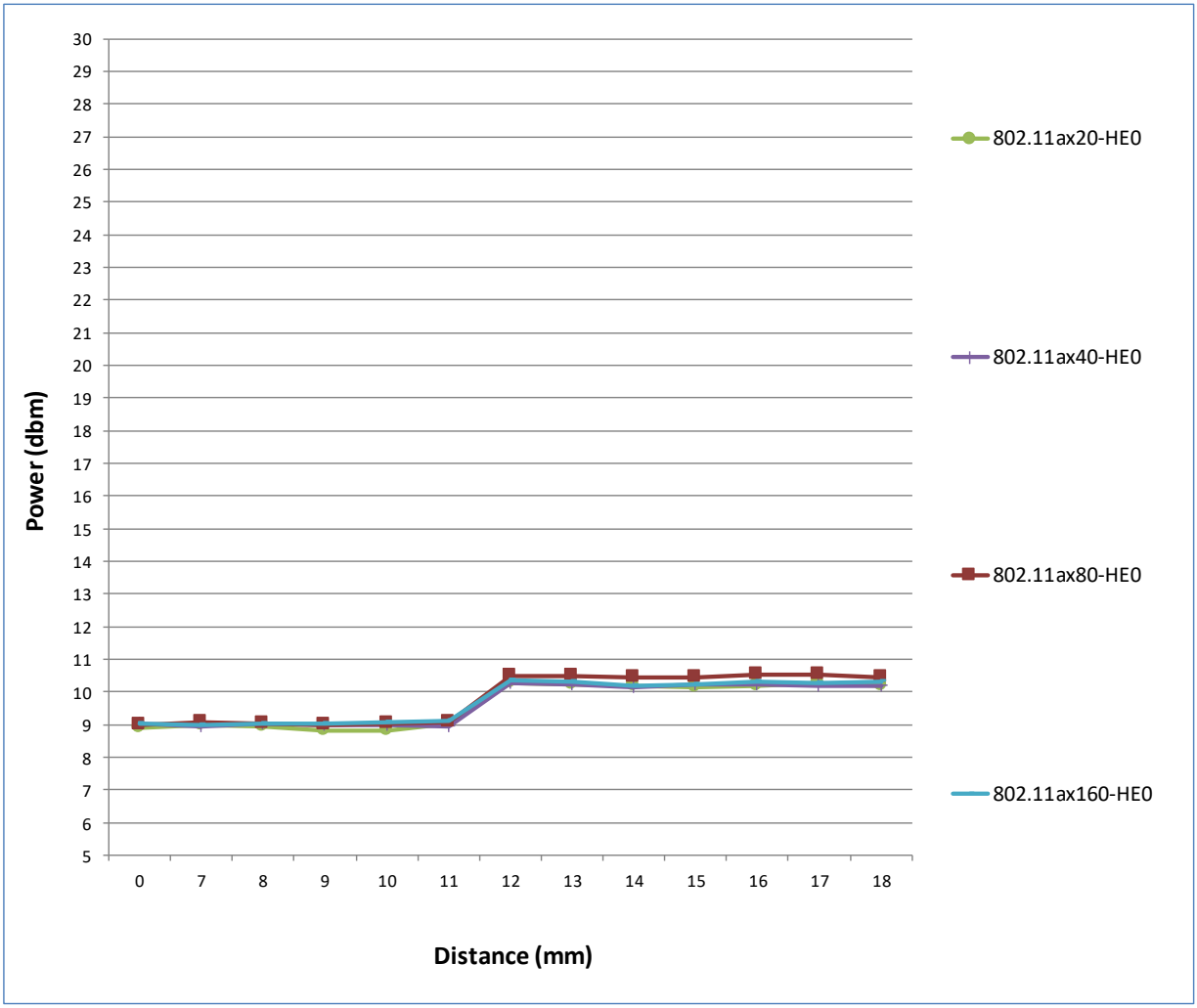


Table 5.5 Tilt angle test results for WLAN

P-sensor ON/OFF	-50 deg	-45 deg	-40 deg	-30 deg	-20 deg	-10 deg	0 deg	10 deg	20 deg	30 deg	40 deg	45 deg	50 deg
11mm	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

During the tilt angle testing, the sensor is not released in 11mm, so 11-1=10mm is used in the SAR measurement.

Note:

1. The triggering variations and hysteresis effect has been evaluated separately according to the tissue-equivalent medium required for each frequency band, and sensor triggering does not change with different tissue-equivalent media.

2. Conducted power is monitored qualitatively to identify the general triggering characteristics and recorded quantitatively, versus spacing.

5.5.6 Operation description for P-sensor

Power Reduction Design Specification (for P-sensor)

The mechanism of power reduction is used for WLAN. The reduced power for each technology/band is defined in Table1-1. With P-sensor mechanism, please refer to reduced power table in chapter 6 to be the default power when P-sensor failure or malfunction.

Table1-1：The power reduction scenario table

Band	Power Reduction
WLAN	YES

6 MAXIMUM OUTPUT POWER

6.1 WIFI 6E

WIFI 6E_SENSOR OFF

Ant 4						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11ax20-HE0	1	5955	MCS0	11.00	10.02
		45	6175		11.00	10.43
		93	6415		11.00	9.90
	802.11ax40-HE0	3	5965	MCS0	11.00	10.20
		43	6165		11.00	10.20
		91	6405		11.00	10.26
	802.11ax80-HE0	7	5985	MCS0	11.00	10.49
		39	6145		11.00	10.38
		87	6385		11.00	10.30
	802.11ax160-HE0	15	6025	MCS0	11.00	10.08
		47	6185		11.00	10.25
		79	6345		11.00	10.13
Ant 4						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-6 6.5GHz	802.11ax20-HE0	97	6435	MCS0	11.00	9.83
		105	6475		11.00	10.03
		113	6515		11.00	10.04
	802.11ax40-HE0	99	6445	MCS0	11.00	10.24
		107	6485		11.00	10.19
	802.11ax80-HE0	103	6465	MCS0	11.00	10.18
		119	6545		11.00	10.50
	802.11ax160-HE0	111	6505	MCS0	11.00	10.52

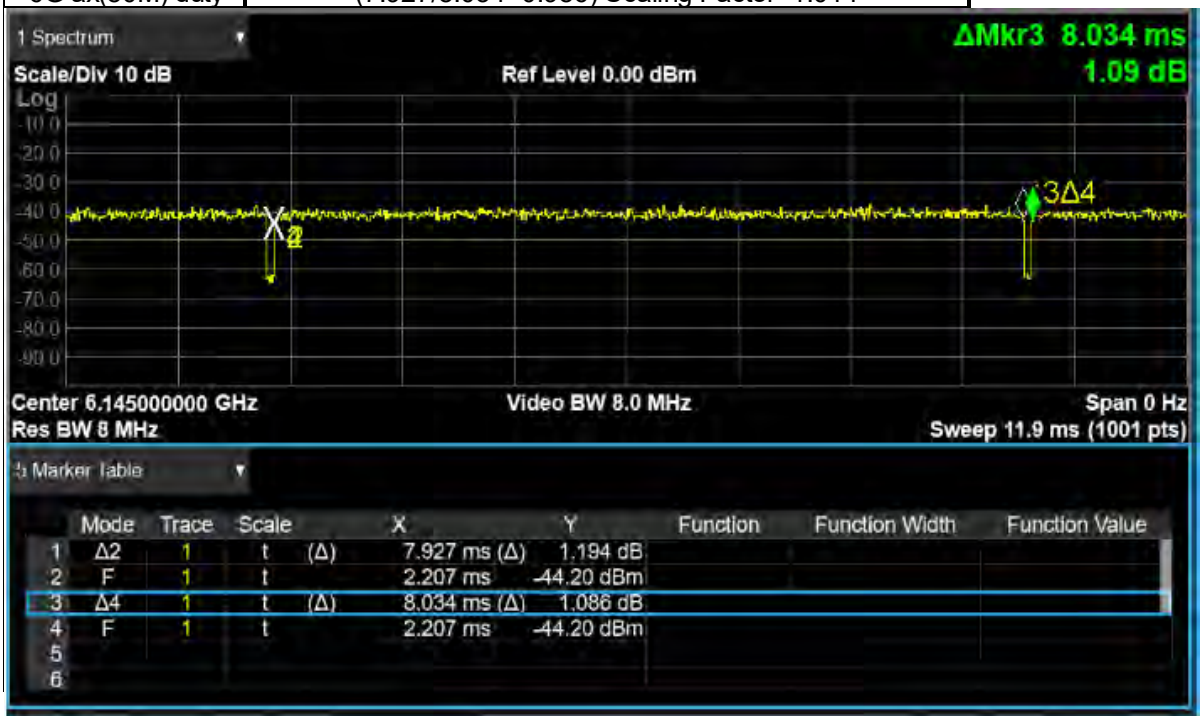
Ant 4						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11ax20-HE0	117	6535	MCS0	11.00	10.25
		149	6695		11.00	10.15
		181	6855		11.00	10.10
	802.11ax40-HE0	115	6525	MCS0	11.00	10.17
		147	6685		11.00	10.19
		179	6845		11.00	10.04
	802.11ax80-HE0	135	6625	MCS0	11.00	10.55
		151	6705		11.00	10.57
		167	6785		11.00	10.38
	802.11ax160-HE0	143	6665	MCS0	11.00	10.30
		175	6825		11.00	10.65
Ant 4						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11ax20-HE0	185	6875	MCS0	11.00	9.68
		209	6995		11.00	10.26
		233	7115		3.00	2.87
	802.11ax40-HE0	187	6885	MCS0	11.00	10.26
		227	7085		11.00	10.19
	802.11ax80-HE0	183	6865	MCS0	11.00	10.50
		199	6945		11.00	10.45
		215	7025		11.00	10.26
	802.11ax160-HE0	207	6985	MCS0	11.00	10.35

WIFI 6E_SENSOR ON

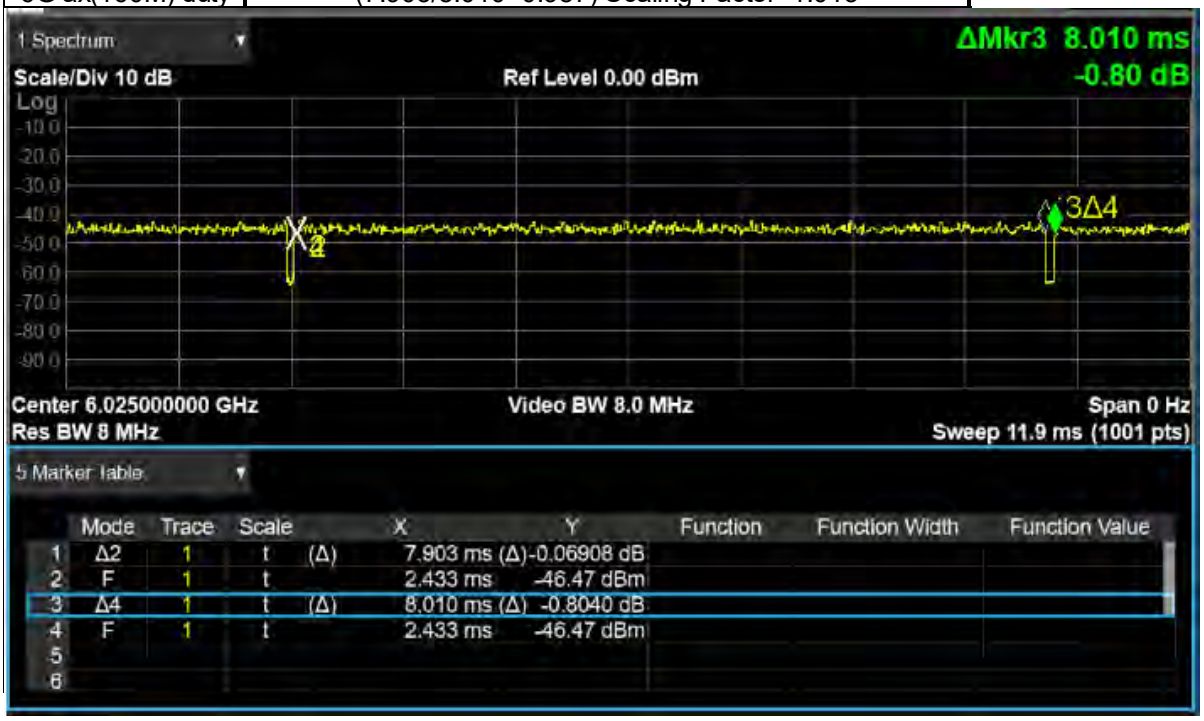
Ant 4						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-5 6.2GHz	802.11ax20-HE0	1	5955	MCS0	8.50	8.22
		45	6175		8.50	8.11
		93	6415		8.50	8.21
	802.11ax40-HE0	3	5965	MCS0	8.50	8.19
		43	6165		8.50	8.18
		91	6405		8.50	8.24
	802.11ax80-HE0	7	5985	MCS0	8.50	8.28
		39	6145		8.50	8.16
		87	6385		8.50	8.26
	802.11ax160-HE0	15	6025	MCS0	8.50	8.11
		47	6185		8.50	8.41
		79	6345		8.50	8.24

Ant 4						
Band	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-7 6.7GHz	802.11ax20-HE0	117	6535	MCS0	7.50	7.21
		149	6695		7.50	7.27
		181	6855		7.50	7.12
	802.11ax40-HE0	115	6525	MCS0	7.50	7.29
		147	6685		7.50	7.18
		179	6845		7.50	7.30
	802.11ax80-HE0	135	6625	MCS0	7.50	7.22
		151	6705		7.50	7.24
		167	6785		7.50	7.16
	802.11ax160-HE0	143	6665	MCS0	7.50	7.21
		175	6825		7.50	7.40
Ant 4						
Mode	Mode	Channel	Frequency (MHz)	Data Rate	Max. Rated Avg. Power + Max. Tolerance (dBm)	Average power (dBm)
U-NII-8 7.0GHz	802.11ax20-HE0	185	6875	MCS0	9.50	9.02
		209	6995		9.50	9.04
	802.11ax40-HE0	187	6885	MCS0	9.50	8.97
		227	7085		9.50	9.06
	802.11ax80-HE0	183	6865	MCS0	9.50	8.93
		199	6945		9.50	9.00
		215	7025		9.50	9.09
	802.11ax160-HE0	207	6985	MCS0	9.50	9.13

6G ax(80M) duty	(7.927/8.034=0.986) Scaling Factor=1.014



6G ax(160M) duty	(7.903/8.010=0.987) Scaling Factor=1.013



7 SUMMARY OF RESULTS

7.1 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.

7.2 Summary of SAR Results

Summary_6E_Sensor off

Ant 4

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-5 6.2GHz802.11ax(160M)	Back Surface	10	47	6185	11.00	10.25	1.01	118.85%	0.126	0.152	0.946	1.139	-
U-NII-5 6.2GHz802.11ax(160M)	Top Edge	10	15	6025	11.00	10.08	1.01	123.59%	0.199	0.249	1.510	1.891	-
U-NII-5 6.2GHz802.11ax(160M)	Top Edge	10	47	6185	11.00	10.25	1.01	118.85%	0.242	0.291	1.820	2.191	001
U-NII-5 6.2GHz802.11ax(160M)	Top Edge	10	79	6345	11.00	10.13	1.01	122.18%	0.211	0.261	1.630	2.017	-
U-NII-5 6.2GHz802.11ax(160M)	Bottom Edge	0	47	6185	11.00	10.25	1.01	118.85%	0.001	0.001	0.001	0.001	-
U-NII-5 6.2GHz802.11ax(160M)	Left Edge	0	47	6185	11.00	10.25	1.01	118.85%	0.001	0.001	0.001	0.001	-
U-NII-5 6.2GHz802.11ax(160M)	Right Edge	0	47	6185	11.00	10.25	1.01	118.85%	0.045	0.054	0.289	0.348	-
2nd source spot-check	Top Edge	10	47	6185	11.00	10.25	1.01	118.85%	0.221	0.266	1.680	2.023	-

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-6 6.5GHz802.11ax(160M)	Back Surface	0	111	6505	11.00	10.52	1.01	111.69%	0.655	0.741	3.920	4.435	-
U-NII-6 6.5GHz802.11ax(160M)	Top Edge	0	111	6505	11.00	10.52	1.01	111.69%	0.883	0.999	5.060	5.725	002
U-NII-6 6.5GHz802.11ax(160M)	Bottom Edge	0	111	6505	11.00	10.52	1.01	111.69%	0.001	0.001	0.001	0.001	-
U-NII-6 6.5GHz802.11ax(160M)	Left Edge	0	111	6505	11.00	10.52	1.01	111.69%	0.001	0.001	0.001	0.001	-
U-NII-6 6.5GHz802.11ax(160M)	Right Edge	0	111	6505	11.00	10.52	1.01	111.69%	0.034	0.038	0.212	0.240	-
2nd source spot-check	Top Edge	0	111	6505	11.00	10.52	1.01	111.69%	0.752	0.851	4.430	5.012	-

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-7 6.7GHz802.11ax(160M)	Back Surface	10	175	6825	11.00	10.65	1.01	108.39%	0.204	0.224	1.570	1.724	-
U-NII-7 6.7GHz802.11ax(160M)	Top Edge	10	143	6665	11.00	10.30	1.01	117.49%	0.336	0.400	2.750	3.273	-
U-NII-7 6.7GHz802.11ax(160M)	Top Edge	10	175	6825	11.00	10.65	1.01	108.39%	0.402	0.441	3.010	3.305	003
U-NII-7 6.7GHz802.11ax(160M)	Bottom Edge	0	175	6825	11.00	10.65	1.01	108.39%	0.001	0.001	0.001	0.001	-
U-NII-7 6.7GHz802.11ax(160M)	Left Edge	0	175	6825	11.00	10.65	1.01	108.39%	0.001	0.001	0.001	0.001	-
U-NII-7 6.7GHz802.11ax(160M)	Right Edge	0	175	6825	11.00	10.65	1.01	108.39%	0.053	0.058	0.334	0.367	-
2nd source spot-check	Top Edge	10	175	6825	11.00	10.65	1.01	108.39%	0.351	0.385	2.830	3.107	-

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-8 7.0GHz 802.11ax (160M)	Back Surface	10	207	6985	11.00	10.35	1.01	116.14%	0.139	0.164	1.010	1.188	-
U-NII-8 7.0GHz 802.11ax(160M)	Top Edge	10	207	6985	11.00	10.35	1.01	116.14%	0.241	0.284	1.810	2.130	004
U-NII-8 7.0GHz 802.11ax(160M)	Bottom Edge	0	207	6985	11.00	10.35	1.01	116.14%	0.001	0.001	0.001	0.001	-
U-NII-8 7.0GHz 802.11ax(160M)	Left Edge	0	207	6985	11.00	10.35	1.01	116.14%	0.001	0.001	0.001	0.001	-
U-NII-8 7.0GHz 802.11ax(160M)	Right Edge	0	207	6985	11.00	10.35	1.01	116.14%	0.042	0.049	0.271	0.319	-
2nd source spot-check	Top Edge	10	207	6985	11.00	10.35	1.01	116.14%	0.216	0.254	1.640	1.930	-

Summary_6E_Sensor on

Ant 4

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-5 6.2GHz802.11ax(160M)	Back Surface	0	47	6185	8.50	8.41	1.01	102.09%	0.678	0.701	3.920	4.054	-
U-NII-5 6.2GHz802.11ax(160M)	Back Surface	0	79	6345	8.50	8.24	1.01	106.17%	0.599	0.644	3.270	3.517	-
U-NII-5 6.2GHz802.11ax(160M)	Top Edge	0	15	6025	8.50	8.11	1.01	109.40%	0.900	0.997	4.890	5.419	-
U-NII-5 6.2GHz802.11ax(160M)	Top Edge	0	47	6185	8.50	8.41	1.01	102.09%	0.974	1.007	5.810	6.009	005
U-NII-5 6.2GHz802.11ax(160M)	Top Edge	0	79	6345	8.50	8.24	1.01	106.17%	0.922	0.992	5.210	5.603	-
2nd source spot-check	Top Edge	0	47	6185	8.50	8.41	1.01	102.09%	0.912	0.943	5.030	5.202	-

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-7 6.7GHz802.11ax(160M)	Back Surface	0	175	6825	7.50	7.40	1.01	102.33%	0.746	0.773	4.160	4.312	-
U-NII-7 6.7GHz802.11ax(160M)	Top Edge	0	143	6665	7.50	7.21	1.01	106.91%	0.938	1.016	4.860	5.263	-
U-NII-7 6.7GHz802.11ax(160M)	Top Edge	0	175	6825	7.50	7.40	1.01	102.33%	1.000	1.037	5.350	5.546	006
2nd source spot-check	Top Edge	0	175	6825	7.50	7.40	1.01	102.33%	0.889	0.922	4.500	4.665	-
Repeat	Top Edge	0	175	6825	7.50	7.40	1.01	102.33%	0.977	1.013	5.220	5.411	-

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Duty cycle scaling	Power scaling	Averaged SAR over 1g (W/kg)		Measured Estimated APD W/m^2 (4cm^2)	Reported Estimated APD W/m^2 (4cm^2)	Plot page
									Measured	Reported			
U-NII-8 7.0GHz 802.11ax (160M)	Back Surface	0	207	6985	9.50	9.13	1.01	108.89%	0.724	0.799	4.280	4.721	-
U-NII-8 7.0GHz 802.11ax (160M)	Top Edge	0	207	6985	9.50	9.13	1.01	108.89%	0.878	0.969	4.830	5.328	007
2nd source spot-check	Top Edge	0	207	6985	9.50	9.13	1.01	108.89%	0.845	0.932	4.610	5.085	-
Repeat	Top Edge	0	207	6985	9.50	9.13	1.01	108.89%	0.855	0.943	4.670	5.151	-

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

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

7.3 Summary of PD Results

Summary_6E-PD_Sensor on

Ant 4

Mode	Position	Distance (mm)	CH	Freq. (MHz)	Max. Rated Avg. Power + Max. Tolerance (dBm)	Measured Avg. Power (dBm)	Tune-up Scaling	Duty cycle scaling	Measurement uncertainty	PD result(4cm)				ID
										Measured Total psPD (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	Top Edge	2	47	6185	8.50	8.41	102.09%	1.01	1.55	4.660	7.470	3.940	6.316	008
	Top Edge	2	79	6345	8.50	8.24	106.17%	1.01	1.55	2.190	3.651	1.870	3.117	009
WLAN 6E 802.11ax(160M) U-NII-6	Top Edge	2	111	6505	11.00	10.52	111.69%	1.01	1.55	1.800	3.157	1.600	2.806	010
WLAN 6E 802.11ax(160M) U-NII-7	Top Edge	2	175	6825	7.50	7.40	102.33%	1.01	1.55	3.200	5.142	2.590	4.161	011
WLAN 6E 802.11ax(160M) U-NII-8	Top Edge	2	207	6985	9.50	9.13	108.89%	1.01	1.55	4.650	7.950	3.930	6.719	012

Note:
Reported PD = measured PD * Power scaling * Duty cycle scaling * Uncertainty scaling
Base on section 5.4, PD test limit is 1 mW/cm2 which is equal to 10 W/m2.

7.4 Reporting statements of conformity

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

7.5 Conclusion

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

8 SIMULTANEOUS TRANSMISSION ANALYSIS

8.1 PD Simultaneous transmission:

	Report SAR	PD	Ratio		TER
Exposure Position	1	2	1	2	1+2
	Bluetooth	WIFI 6E	Bluetooth	WIFI 6E	Summed
	1g SAR (W/kg)	Reported Total psPD (W/m^2)	SAR / SAR limit	PD / PD limit	Scenario 2
Back Surface	0.128	7.950	0.080	0.795	0.875
Left Edge	0.000	7.950	0.000	0.795	0.795
Right Edge	0.000	7.950	0.000	0.795	0.795
Top Edge	0.036	7.950	0.023	0.795	0.818
Bottom Edge	0.000	7.950	0.000	0.795	0.795

Note: * - Bluetooth value refer Test report: SEWM2207000107RG01.

Note：

Pre FCC guidance, address all applicable simultaneous transmission conditions using the compliance condition TER≤1, where TER (total exposure ratio) in this context is defined as:

$$TER = \sum_{k=1}^{N_S} \left(\frac{SAR_k}{SAR_{\lim}} \right) + \sum_{k=1}^{N_f} \left(\frac{MPE_{field,\,k}}{MPE_{field,\,\lim}} \right)^2 + \sum_{k=1}^{N_{PD}} \left(\frac{MPE_{PD,\,k}}{MPE_{PD,\,\lim}} \right)$$

with NS , Nf , and NPD referring to sources requiring SAR, field-MPE, or PD-MPE, respectively, k referring to measured or estimated values for the source k, and “lim” to the corresponding applicable compliance limit.

9 INSTRUMENTS LIST

SAR Test Site: SAR_3					
Manufacturer	**Device**	**Type**	**Serial number**	**Date of last calibration**	**Date of next calibration**
SPEAG	Dosimetric E-Field Probe	EX3DV4	7686	Oct/05/2021	Oct/04/2022
SPEAG	E-field Probe for Near Field Application	EUmmWV3	9399	Jan/26/2022	Jan/25/2023
SPEAG	System Validation Dipole	D6.5GHzV2	1006	Aug/26/2021	Aug/25/2022
SPEAG	System Validation Dipole	D7GHzV2	1007	Aug/26/2021	Aug/25/2022
SPEAG	5G Verification Source 10GHz	5G-Veri10	1021	Jan/24/2022	Jan/23/2023
SPEAG	Data acquisition Electronics	DAE4	1665	Feb/28/2022	Feb/27/2023
SPEAG	Software	DASY 6 V16.0.0.116	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
SPEAG	Dielectric Assessment Kit	DAKS-3.5	1053	Feb/28/2022	Feb/27/2023
Agilent	Dual-directional coupler	772D	MY52180142	Nov/02/2021	Nov/01/2022
Agilent	Dual-directional coupler	778D	MY52180302	Oct/29/2021	Oct/28/2022
EMCI	Amplifier	ZHL-42	980189	Calibration not required	Calibration not required
EMCI	Amplifier	ZVE-8G	980190	Calibration not required	Calibration not required
R&S	MXG Analog Signal Generator	SMB100A03	182996	Dec/08/2021	Dec/07/2022
R&S	Power Meter	NRX	102191	Jan/22/2022	Jan/21/2023
R&S	Power Sensor	NRP18S	101358	Jan/22/2022	Jan/21/2023
R&S	Power Sensor	NRP18S	109065	Oct/12/2021	Oct/11/2022
LKM	Digital thermometer	DTM3000	EC14010603	Nov/09/2021	Nov/08/2022
TECPEL	Digital thermometer	DTM-303A	TP190085	Jan/14/2022	Jan/13/2023

10 UNCERTAINTY BUDGET

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

a	b	c	d		e	e	f=b * e / d	f=b * e / d
Source of Uncertainty	Uncertainty Value (±%)	Probability Distributioin	Div.	Div. Value	(ci) 1g	(ci) 10g	Std. uncertainty (1g) (±%)	Std. uncertainty (10g) (±%)
Measurement system errors								
Probe calibration	18.6	N	2	2	1	1	9.3	9.3
Probe Calibration Drift	1.7	R	√3	1.732	1	1	1.0	1.0
Probe Linearity	4.7	R	√3	1.732	1	1	2.7	2.7
Broadband Signal	2.8	R	√3	1.732	1	1	1.6	1.6
Probe Isotropy	7.6	R	√3	1.732	1	1	4.4	4.4
Data Acquisition	0.3	N	1	1	1	1	0.3	0.3
RF Ambient	1.8	N	1	1	1	1	1.8	1.8
Probe positioning	0.2	N	1	1	0.67	0.67	0.1	0.1
Data Processing	3.5	N	1	1	1	1	3.5	3.5
Phantom and device errors								
Conductivity (meas.)DAK	2.5	N	1	1	0.78	0.71	2.0	1.8
Conductivity (temp.)BB	2.4	R	√3	1.732	0.78	0.71	1.1	1.0
Phantom Permittivity	14.0	R	√3	1.732	0.5	0.5	4.0	4.0
Distance DUT - TSL	2.0	N	1	1	2	2	4.0	4.0
Device Positioning (±0.5mm)	1.0	N	1	1	1	1	1.0	1.0
Device Holder	3.6	N	1	1	1	1	3.6	3.6
DUT Modulationm	2.4	R	√3	1.732	1	1	1.4	1.4
Time-average SAR	0.0	R	√3	1.732	1	1	0.0	0.0
DUT drift	2.5	N	1	1	1	1	2.5	2.5
Val Antenna Unc.	0.0	N	1	1	1	1	0.0	0.0
Unc. Input Power	0.0	N	1	1	1	1	0.0	0.0
Correction to the SAR results								
Deviation to Target	1.90	N	1	1	1	0.84	1.9	1.6
SAR scaling	1.037	R	√3	1.732	1	1	0.6	0.6
Combined Std. uncertainty							14.0	13.9
Expanded Std. uncertainty (95% confidence interval), K=2							28.0	27.8

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

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

11 SAR MEASUREMENT RESULTS

ID: 001

Report No. :TESA2207000199ES

Measurement Report for Device, Top Edge, U-NII-5,

IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_Ant4

Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 10.00	6.2	5.726	35.594

Hardware Setup

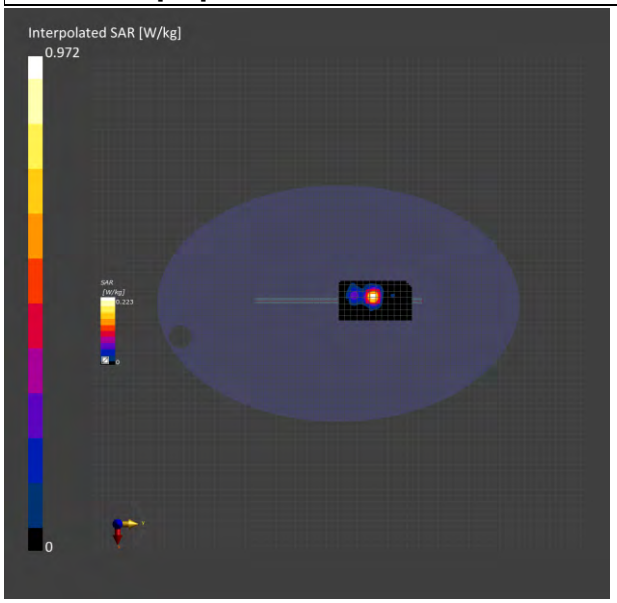
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-12	2022-08-12
psSAR1g [W/kg]	0.233	0.242
psSAR8g [W/kg]	0.088	0.091
psSAR10g [W/kg]	0.077	0.080
psPDab (4.0cm2, sq) [W/m2]		1.82
Power Drift [dB]	0.11	0.16
M2/M1 [%]		64.0
Dist 3dB Peak [mm]		9.1



ID: 002
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-6,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_Ant4
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 0.00	6.2	6.106	35.202

Hardware Setup

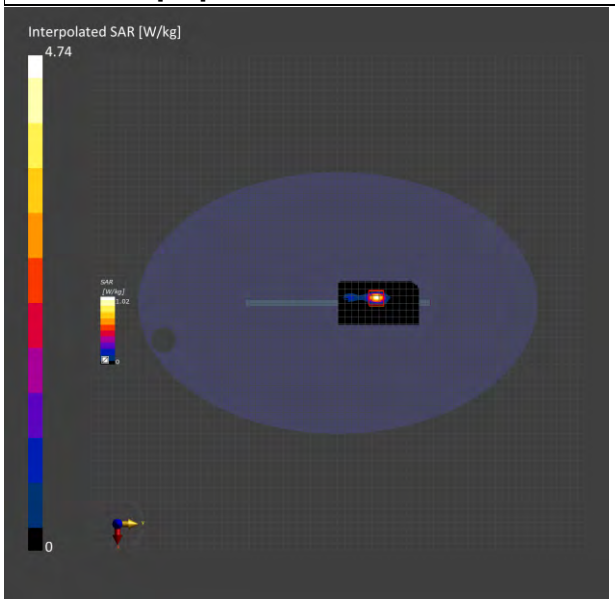
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-12	2022-08-12
psSAR1g [W/kg]	0.959	0.883
psSAR8g [W/kg]	0.261	0.253
psSAR10g [W/kg]	0.219	0.212
psPDab (4.0cm2, sq) [W/m2]		5.06
Power Drift [dB]	0.25	0.11
M2/M1 [%]		52.0
Dist 3dB Peak [mm]		3.7



ID: 003
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-7,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 175 (6825.0 MHz)_Ant4
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 10.00	6.2	6.457	34.874

Hardware Setup

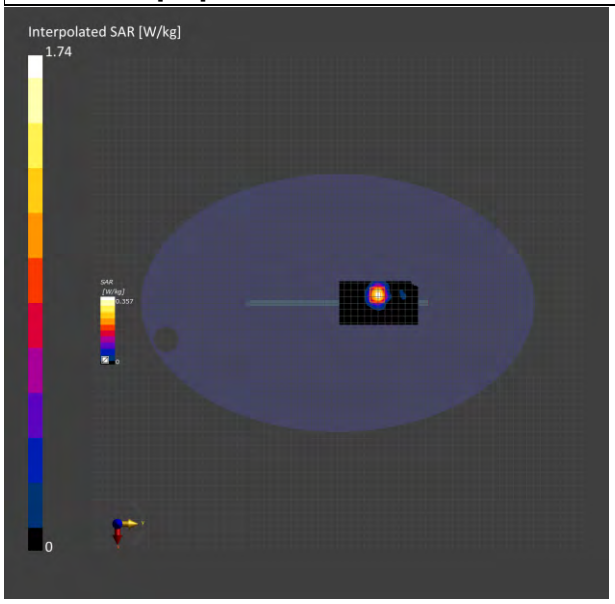
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-12	2022-08-12
psSAR1g [W/kg]	0.410	0.402
psSAR8g [W/kg]	0.153	0.150
psSAR10g [W/kg]	0.134	0.131
psPDab (4.0cm2, sq) [W/m2]		3.01
Power Drift [dB]	0.15	-0.11
M2/M1 [%]		57.0
Dist 3dB Peak [mm]		9.2



ID: 004
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-8,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_Ant4
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 10.00	6.14	6.642	34.658

Hardware Setup

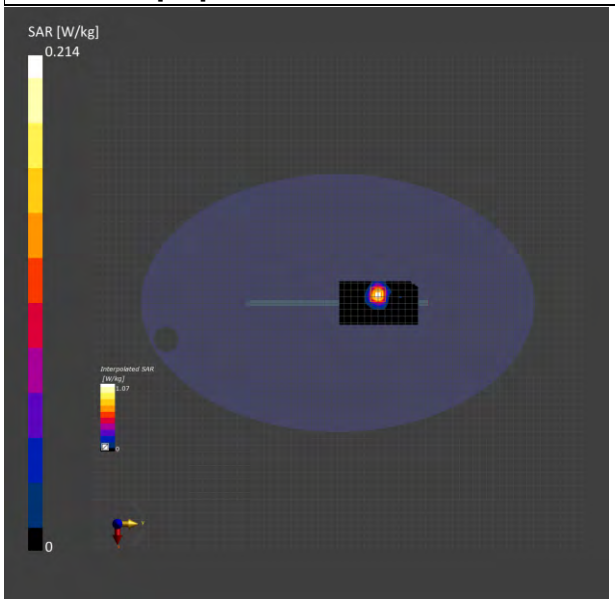
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-12	2022-08-12
psSAR1g [W/kg]	0.249	0.241
psSAR8g [W/kg]	0.093	0.090
psSAR10g [W/kg]	0.082	0.079
psPDab (4.0cm2, sq) [W/m2]		1.81
Power Drift [dB]	0.12	0.19
M2/M1 [%]		58.9
Dist 3dB Peak [mm]		8.4



ID: 005
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-5,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_Ant4
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 0.00	6.2	5.726	35.594

Hardware Setup

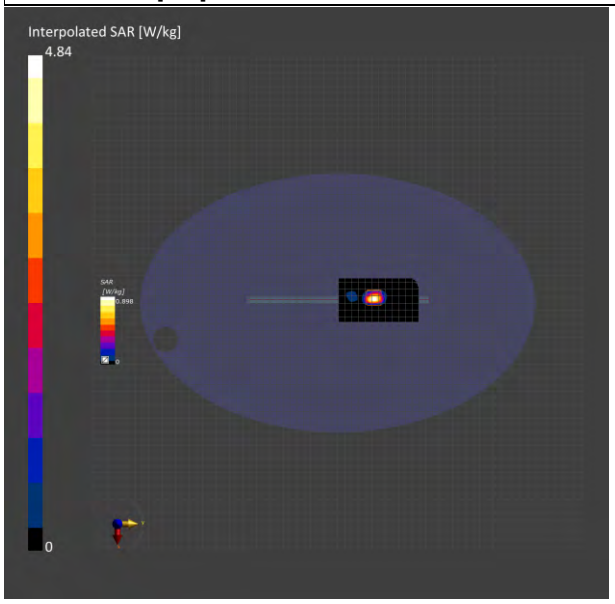
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-12	2022-08-12
psSAR1g [W/kg]	0.885	0.974
psSAR8g [W/kg]	0.279	0.291
psSAR10g [W/kg]	0.237	0.246
psPDab (4.0cm2, sq) [W/m2]		5.81
Power Drift [dB]	-0.01	0.04
M2/M1 [%]		55.1
Dist 3dB Peak [mm]		4.6



ID: 006
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-7,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 175 (6825.0 MHz)_Ant4
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 0.00	6.2	6.457	34.874

Hardware Setup

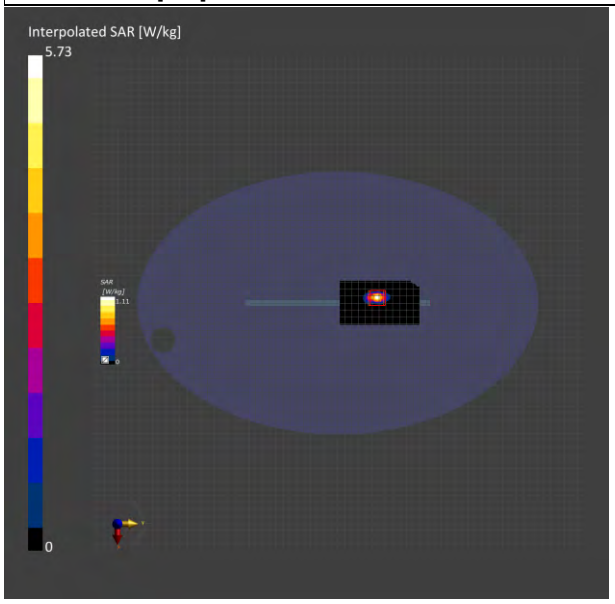
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	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	2022-08-12	2022-08-12
psSAR1g [W/kg]	1.10	1.00
psSAR8g [W/kg]	0.296	0.268
psSAR10g [W/kg]	0.250	0.220
psPDab (4.0cm2, sq) [W/m2]		5.35
Power Drift [dB]	0.10	-0.04
M2/M1 [%]		62.0
Dist 3dB Peak [mm]		4.3



ID: 007
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_Ant4
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Top Edge, 0.00	6.14	6.642	34.658

Hardware Setup

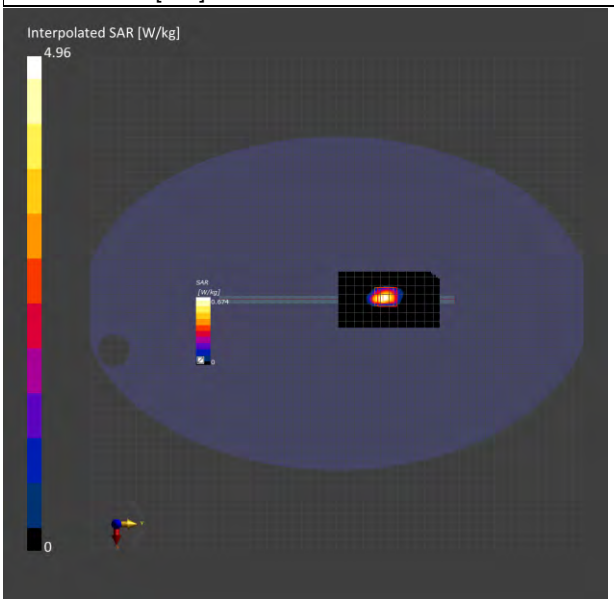
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	68.0 x 119.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-12	2022-08-12
psSAR1g [W/kg]	0.864	0.878
psSAR8g [W/kg]	0.263	0.242
psSAR10g [W/kg]	0.224	0.200
psPDab (4.0cm2, sq) [W/m2]		4.83
Power Drift [dB]	0.12	-0.04
M2/M1 [%]		54.8
Dist 3dB Peak [mm]		4.3



12 PD MEASUREMENT RESULT

ID: 008
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-5,
IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)_Ant4

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Top Edge, 2.00	1.0

Hardware Setup

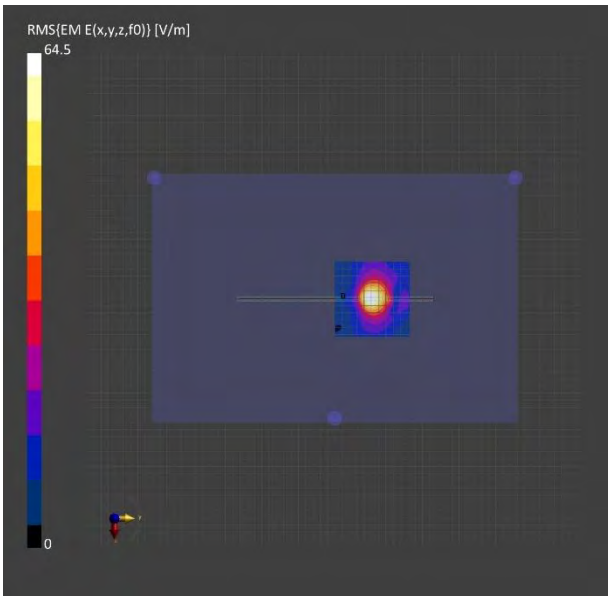
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

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

Measurement Results

Scan Type	5G Scan
Date	2022-08-13
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	3.94
psPDtot+ [W/m^2]	4.66
psPDmod+ [W/m^2]	5.97
E_{max} [V/m]	64.5
Power Drift [dB]	0.11



ID: 009
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 79 (6345.0 MHz)_Ant4

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Top Edge, 2.00	1.0

Hardware Setup

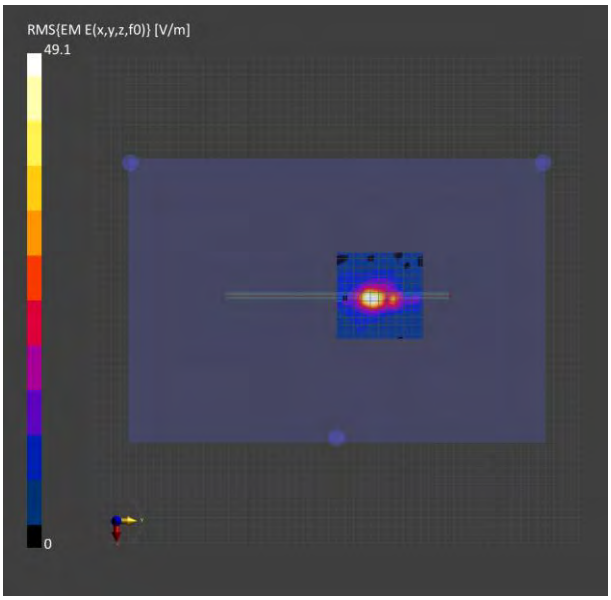
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

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

Measurement Results

Scan Type	5G Scan
Date	2022-08-13
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.87
psPDtot+ [W/m^2]	2.19
psPDmod+ [W/m^2]	2.95
E_{max} [V/m]	49.1
Power Drift [dB]	0.10



ID: 010
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-6, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)_Ant4

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Top Edge, 2.00	1.0

Hardware Setup

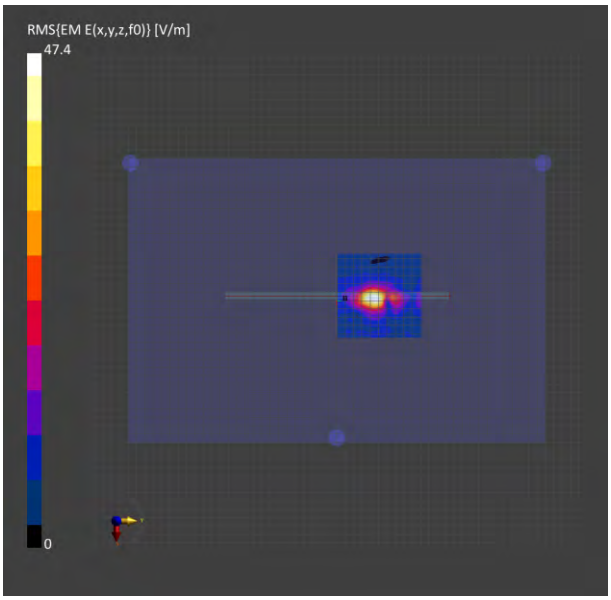
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

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

Measurement Results

Scan Type	5G Scan
Date	2022-08-13
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.60
psPDtot+ [W/m^2]	1.80
psPDmod+ [W/m^2]	2.45
E_{max} [V/m]	47.4
Power Drift [dB]	0.06



ID: 011
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-7, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 175 (6825.0 MHz)_Ant4

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Top Edge, 2.00	1.0

Hardware Setup

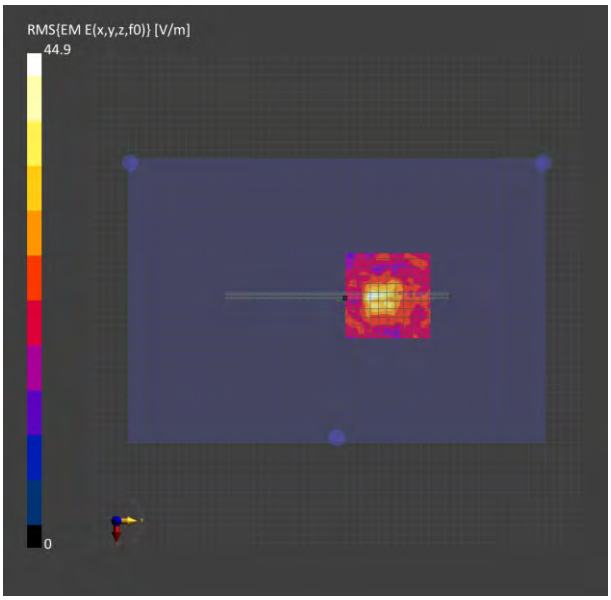
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

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

Measurement Results

Scan Type	5G Scan
Date	2022-08-13
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	2.59
psPDtot+ [W/m^2]	3.20
psPDmod+ [W/m^2]	3.86
E_{max} [V/m]	44.9
Power Drift [dB]	-0.17



ID: 012
Report No. :TESA2207000199ES
Measurement Report for Device, Top Edge, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)_Ant4

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Conversion Factor
5G	Top Edge, 2.00	1.0

Hardware Setup

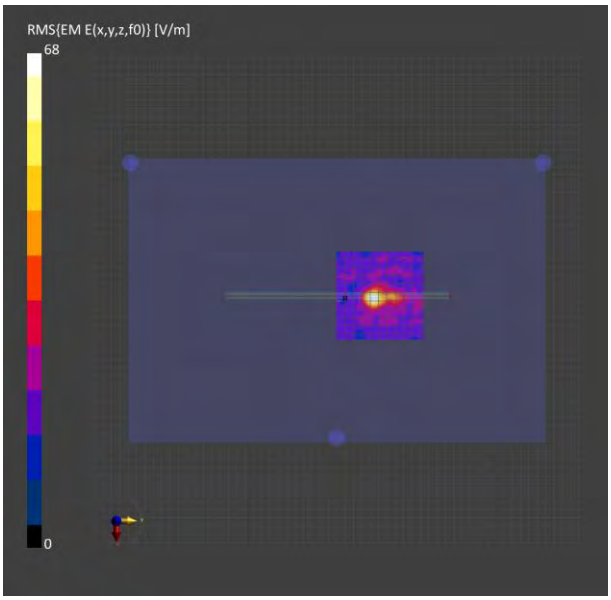
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

Scans Setup

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

Measurement Results

Scan Type	5G Scan
Date	2022-08-13
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	3.93
psPDtot+ [W/m^2]	4.65
psPDmod+ [W/m^2]	5.70
E_{max} [V/m]	68.0
Power Drift [dB]	0.14



13 SAR SYSTEM CHECK RESULTS

Report No. :TESA2207000199ES
Measurement Report for Device, FRONT, Validation band, CW, Channel 6500 (6500.0 MHz)_SN:1006
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 0.00	6.2	6.126	35.202

Hardware Setup

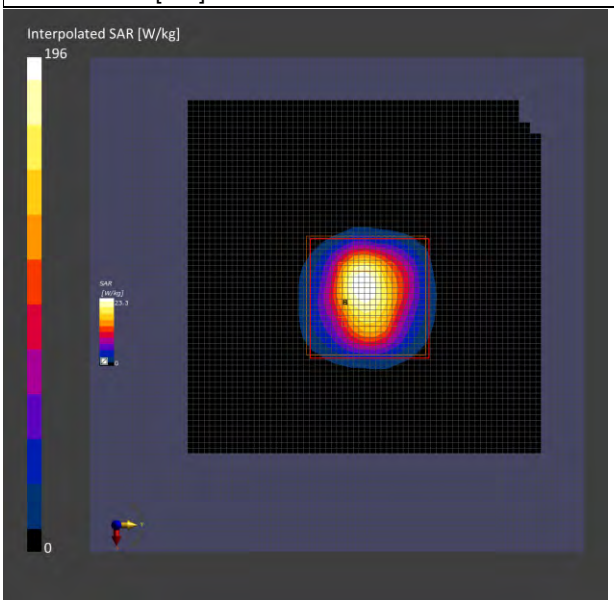
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

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	2022-08-12	2022-08-12
psSAR1g [W/kg]	25.3	29.1
psSAR8g [W/kg]	6.35	6.57
psSAR10g [W/kg]	5.23	5.35
psPDab (4.0cm2, sq) [W/m2]		131
Power Drift [dB]	-0.11	-0.02
M2/M1 [%]		50.8
Dist 3dB Peak [mm]		4.8



Report No. :TESA2207000199ES
Measurement Report for Device, FRONT, Validation band, CW, Channel 7000 (7000.0 MHz)_SN:1007
Ambient temperature: 22.3; Liquid temperature: 22.3

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT, 0.00	6.14	6.667	34.608

Hardware Setup

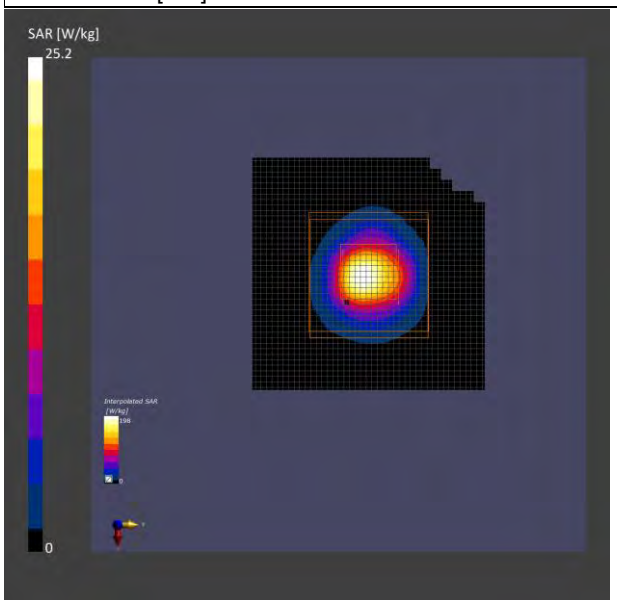
Phantom	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1141	EX3DV4 - SN7686, 2021-10-05	DAE4 Sn1665, 2022-02-28

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	2022-08-12	2022-08-12
psSAR1g [W/kg]	23.8	25.9
psSAR8g [W/kg]	5.47	5.57
psSAR10g [W/kg]	4.55	4.56
psPDab (4.0cm2, sq) [W/m2]		112
Power Drift [dB]	0.01	0.04
M2/M1 [%]		48.6
Dist 3dB Peak [mm]		4.6



14 PD SYSTEM CHECK RESULT

ID: 001
Report No. :TESA2207000200ES
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

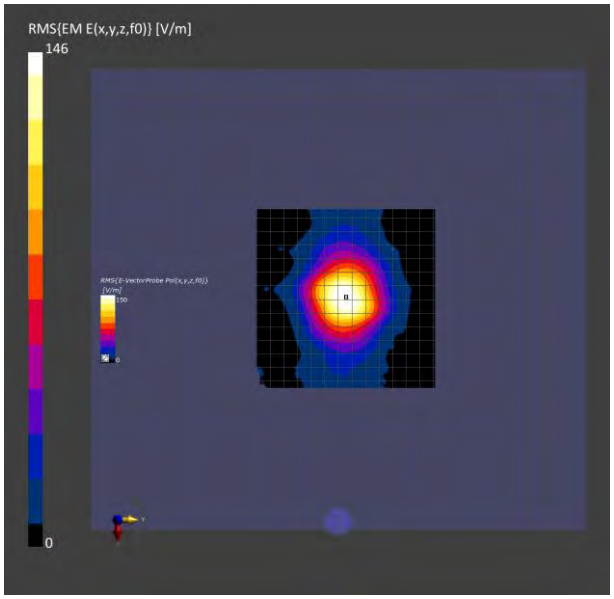
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1076	Air -	EUmmWV3 - SN9399_F1-55GHz, 2022-01-26	DAE4 Sn1665, 2022-02-28

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	2022-08-13
Avg. Area [cm2]	1.00
psPDn+ [W/m2]	52.6
psPDtot+ [W/m2]	52.7
psPDmod+ [W/m2]	52.8
Emax [V/m]	145
Power Drift [dB]	0.01



15 APPENDIXES

Refer to separated files for the following appendixes.

15.1 TESA2207000199ES SAR_Appendix A Photographs

15.2 TESA2207000199ES SAR_Appendix B DAE & Probe Cal. Certificate

15.3 TESA2207000199ES SAR_Appendix C Phantom Description & Dipole Cal. Certificate

- End of report -