# RF Exposure report

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

| | |
|---|---|
| **Product Name** | Headset |
| **Brand Name** | VIVE |
| **Model No.** | 2QBB100 |
| **Applicant** | HTC Corporation<br>No. 88, Section 3, Zhongxing Rd. Xindian Dist., New Taipei City 231, Taiwan |
| **Standards** | IEEE/ANSI C95.1-1992, IEEE 1528-2013 |
| **FCC ID** | NM82QBB100 |
| **Date of EUT Receipt** | Sep. 06, 2022 |
| **Date of Test(s)** | Sep. 19, 2022 ~ Sep. 22, 2022 |
| **Date of Issue** | Nov. 08, 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: Nov. 08, 2022**

# Revision History

| Report Number | Revision | Description | Issue Date | Revised By | Remark |
|---|---|---|---|---|---|
| TESA2207000216ES | 00 | Initial creation of document | Nov. 08, 2022 | Kimmy Chiou | |
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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
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 | Headset | |
| Brand Name | VIVE | |
| Model No. | 2QBB100 | |
| FCC ID | NM82QBB100 | |
| Mode | WLAN: 802.11a/b/g/n/ac/ax<br>HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160<br>Bluetooth BR/EDR/LE | |
| Duty Cycle | WLAN802.11 | Please refer to section 42~45 |
| | Bluetooth | Please refer to section 42 |
| 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)<br>5.6GHz (5470.0 – 5725.0 MHz)<br>5.8GHz (5725.0 – 5850.0 MHz) |
| | 802.11ax | 6.2GHz (5925.0 – 6425.0 MHz)<br>6.5GHz (6425.0 – 6525.0 MHz)<br>6.7GHz (6525.0 – 6875.0 MHz)<br>7.0GHz (6875.0 – 7125.0 MHz) |
| | Bluetooth 5.2 | 2.4GHz (2400.0 – 2483.5 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) |
| Bluetooth(GFSK) | 0.06 | N/A | N/A |
| 2.4G WLAN | 0.2 | N/A | N/A |
| 5G WLAN | 0.33 | N/A | N/A |
| 6G WLAN | 0.23 | 1.84 | 3.26 |

# 2 MEASUREMENT SYSTEM

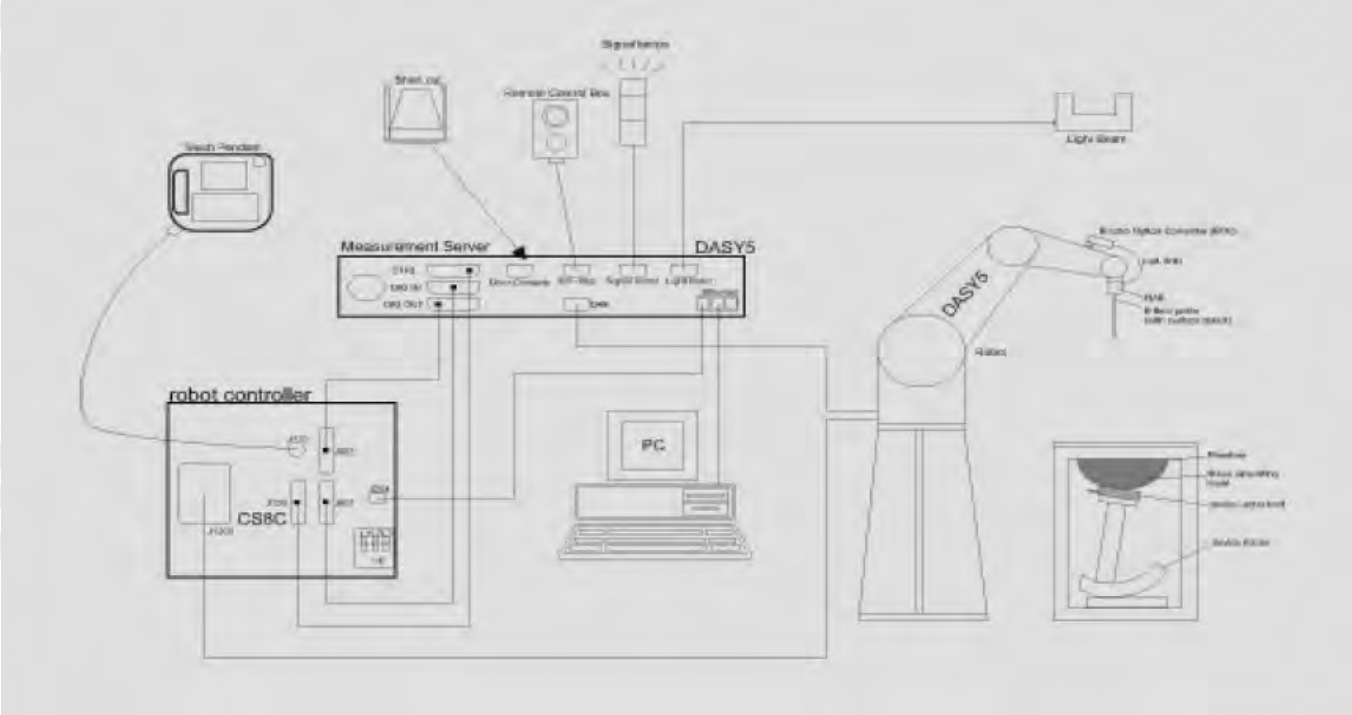
## 2.1 Test Facility

| 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

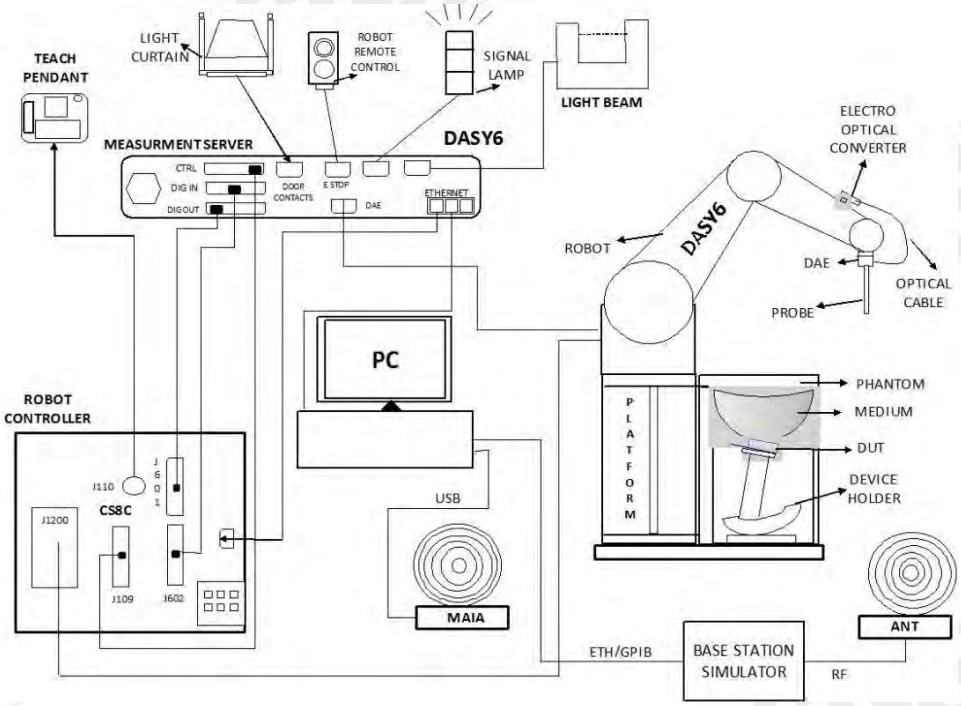
### Block Diagram (DASY5)

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<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |  |
| Calibration | Basic Broad Band Calibration in air<br>Conversion Factors (CF) for HSL 2450/5250/5600/5750/6500/7000 MHz<br>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)<br>± 0.5 dB in tissue material (rotation normal to probe axis) | |
| Dynamic Range | 10 µW/g to > 100 mW/g<br>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<br>Minor axis: 400 mm | |

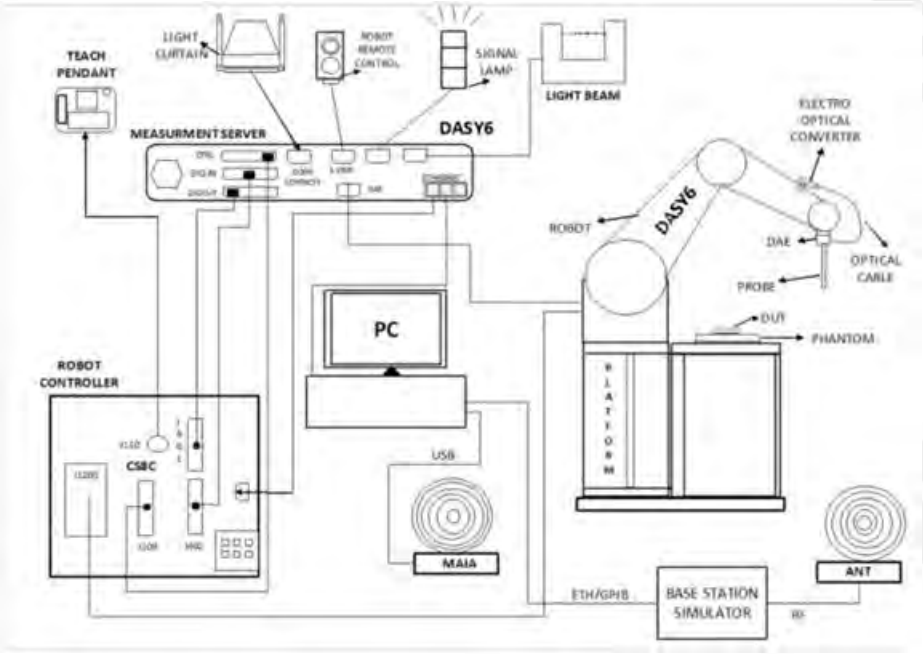
## DEVICE HOLDER (ELI)

| | | |
|---|---|---|
| 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. |  <br>Device Holder |

## 2.3 PD system

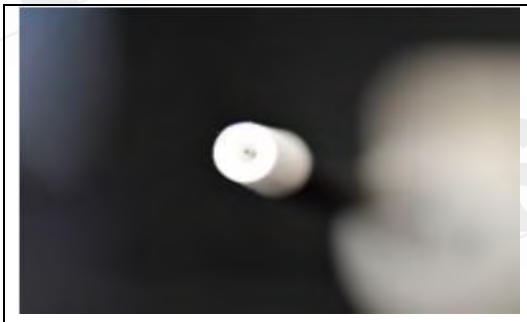
### Block Diagram (DASY6)

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.

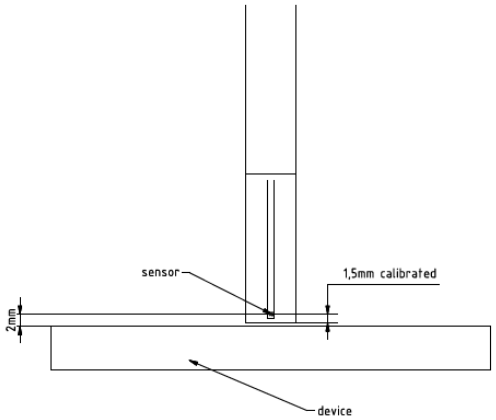



### EUmmWVx probe

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.<br>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)<br>Tip diameter: encapsulation 8 mm<br>(internal sensor < 1mm)<br>Distance from probe tip to dipole centers:<br>< 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 ($\epsilon r$) $\leq$ 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 | 22.4°C | 39.282 | 1.757 | 39.718 | 1.797 | 1.11% | 2.25% | ± 5% | Sep. 19, 2022 |
| 2412 | 22.4°C | 39.265 | 1.766 | 39.698 | 1.807 | 1.10% | 2.30% | ± 5% | Sep. 19, 2022 |
| 2437 | 22.4°C | 39.222 | 1.788 | 39.651 | 1.829 | 1.09% | 2.27% | ± 5% | Sep. 19, 2022 |
| 2441 | 22.4°C | 39.215 | 1.792 | 39.638 | 1.833 | 1.08% | 2.29% | ± 5% | Sep. 19, 2022 |
| 2450 | 22.4°C | 39.200 | 1.800 | 39.629 | 1.841 | 1.09% | 2.28% | ± 5% | Sep. 19, 2022 |
| 2462 | 22.4°C | 39.184 | 1.813 | 39.614 | 1.854 | 1.10% | 2.27% | ± 5% | Sep. 19, 2022 |
| 2480 | 22.4°C | 39.160 | 1.832 | 39.594 | 1.873 | 1.11% | 2.24% | ± 5% | Sep. 19, 2022 |
| 5250 | 22.2°C | 35.950 | 4.710 | 36.449 | 4.774 | 1.39% | 1.36% | ± 5% | Sep. 20, 2022 |
| 5270 | 22.2°C | 35.930 | 4.730 | 36.278 | 4.836 | 0.97% | 2.24% | ± 5% | Sep. 20, 2022 |
| 5310 | 22.2°C | 35.890 | 4.770 | 36.180 | 4.885 | 0.81% | 2.41% | ± 5% | Sep. 20, 2022 |
| 5530 | 22.2°C | 35.605 | 4.997 | 36.113 | 5.133 | 1.43% | 2.73% | ± 5% | Sep. 21, 2022 |
| 5570 | 22.2°C | 35.545 | 5.039 | 35.936 | 5.150 | 1.10% | 2.21% | ± 5% | Sep. 21, 2022 |
| 5600 | 22.2°C | 35.500 | 5.070 | 35.931 | 5.161 | 1.21% | 1.79% | ± 5% | Sep. 21, 2022 |
| 5690 | 22.2°C | 35.410 | 5.160 | 35.530 | 5.281 | 0.34% | 2.34% | ± 5% | Sep. 21, 2022 |
| 5750 | 22.2°C | 35.350 | 5.220 | 35.442 | 5.337 | 0.26% | 2.24% | ± 5% | Sep. 21, 2022 |
| 5775 | 22.2°C | 35.325 | 5.245 | 35.299 | 5.397 | -0.07% | 2.90% | ± 5% | Sep. 21, 2022 |
| 6025 | 22.1°C | 35.070 | 5.510 | 35.027 | 5.662 | -0.12% | 2.77% | ± 5% | Sep. 22, 2022 |
| 6185 | 22.1°C | 34.878 | 5.698 | 34.790 | 5.854 | -0.25% | 2.73% | ± 5% | Sep. 22, 2022 |
| 6345 | 22.1°C | 34.686 | 5.887 | 34.583 | 6.026 | -0.30% | 2.36% | ± 5% | Sep. 22, 2022 |
| 6500 | 22.1°C | 34.500 | 6.070 | 34.471 | 6.194 | -0.08% | 2.04% | ± 5% | Sep. 22, 2022 |
| 6505 | 22.1°C | 34.494 | 6.076 | 34.466 | 6.224 | -0.08% | 2.44% | ± 5% | Sep. 22, 2022 |
| 6665 | 22.1°C | 34.302 | 6.261 | 34.295 | 6.393 | -0.02% | 2.10% | ± 5% | Sep. 22, 2022 |
| 6825 | 22.1°C | 34.110 | 6.447 | 34.077 | 6.569 | -0.10% | 1.89% | ± 5% | Sep. 22, 2022 |
| 6985 | 22.1°C | 33.918 | 6.633 | 33.782 | 6.775 | -0.40% | 2.15% | ± 5% | Sep. 22, 2022 |
| 7000 | 22.1°C | 33.900 | 6.650 | 33.671 | 6.818 | -0.68% | 2.53% | ± 5% | Sep. 22, 2022 |

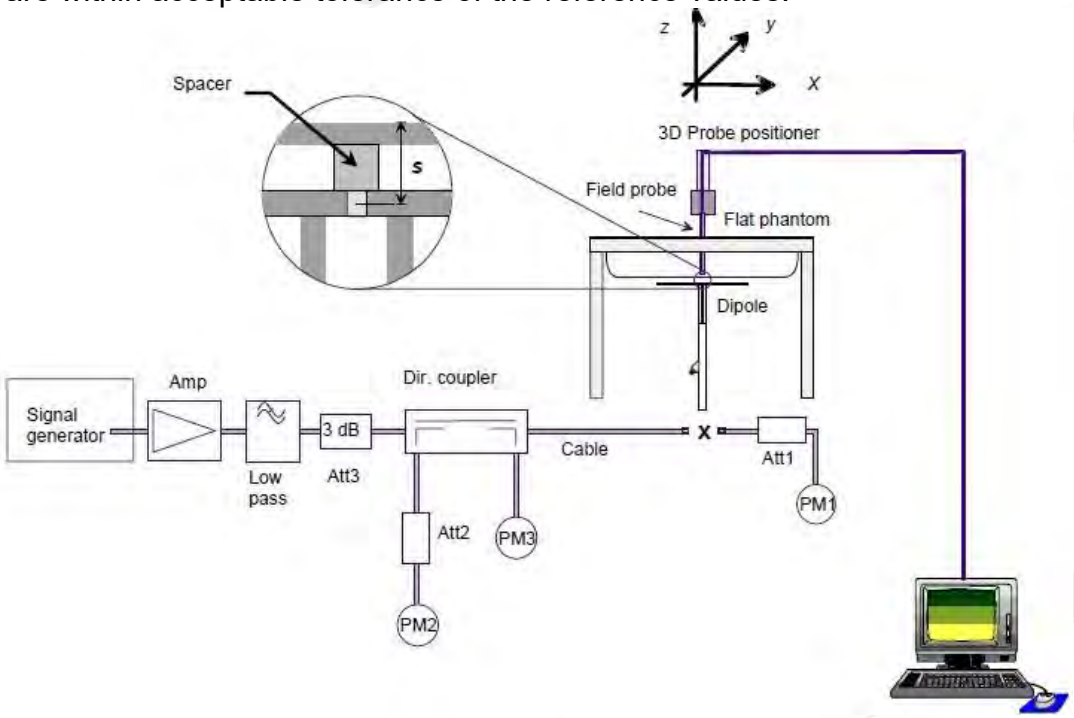
### 3.4 The composition of the tissue simulating liquid:

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

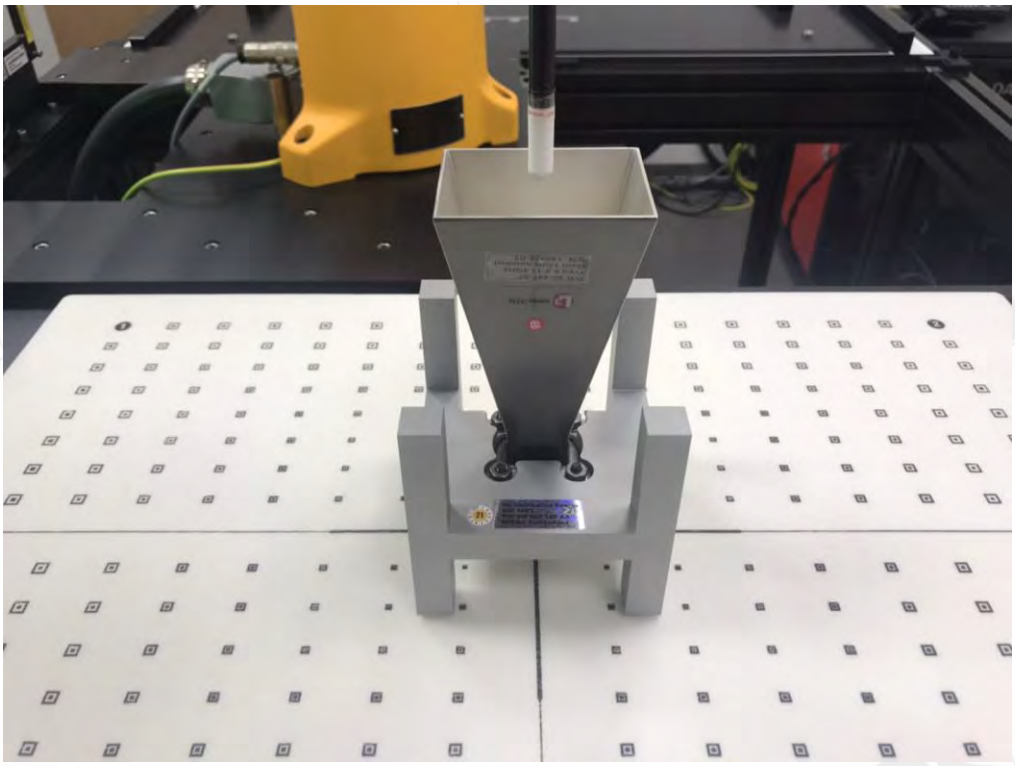
| Validation Kit | S/N | Frequency (MHz) | 1W Target 1g-SAR (W/kg) | pin=250mW Measured 1g-SAR (W/kg) | Normalized to 1W 1g-SAR (W/kg) | Deviation (%) | Limit | Measurement Date |
|---|---|---|---|---|---|---|---|---|
| D2450V2 | 727 | 2450 | 52.8 | 14 | 56 | 6.06 | ± 10% | Sep.19,2022 |
| Validation 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 | 7.66 | 76.6 | -5.43 | ± 10% | Sep.20,2022 |
| D5GHzV2 | 1023 | 5600 | 84.4 | 8.22 | 82.2 | -2.61 | ± 10% | Sep.21,2022 |
| D5GHzV2 | 1023 | 5750 | 81 | 8.49 | 84.9 | 4.81 | ± 10% | Sep.21,2022 |
| 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 | 28.7 | 287 | -1.71 | ± 10% | Sep.22,2022 |
| D7GHzV2 | 1007 | 7000 | 278 | 26.3 | 263 | -5.40 | ± 10% | Sep.22,2022 |

# 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 | 2 | 86.1 | 51 | 51.7 | -0.06 | Sep.22,2022 |

# 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

**Back surface (0mm)**

The device was tested based on FCC guidance via KDB inquiry.

## 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

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 15.33 |
| | | 6 | 2437 | | 18.50 | 18.11 |
| | | 11 | 2462 | | 13.00 | 12.75 |
| | 802.11g | 1 | 2412 | 6Mbps | 17.00 | 16.75 |
| | | 6 | 2437 | | 17.00 | 16.92 |
| | | 11 | 2462 | | 17.00 | 16.84 |
| | 802.11n20-HT0 | 1 | 2412 | MCS0 | 17.00 | 16.88 |
| | | 6 | 2437 | | 17.00 | 16.79 |
| | | 11 | 2462 | | 17.00 | 16.80 |
| | 802.11ax20-HE0 | 1 | 2412 | MCS0 | 16.50 | 16.27 |
| | | 6 | 2437 | | 17.00 | 16.82 |
| | | 11 | 2462 | | 16.50 | 16.11 |
| | 802.11n40-HT0 | 3 | 2422 | MCS0 | 15.50 | 15.37 |
| | | 6 | 2437 | | 17.00 | 16.92 |
| | | 9 | 2452 | | 15.00 | 14.88 |
| | 802.11ax40-HE0 | 3 | 2422 | MCS0 | 15.50 | 15.35 |
| | | 6 | 2437 | | 17.00 | 16.90 |
| | | 9 | 2452 | | 14.50 | 14.21 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 13.77 |
| | | 40 | 5200 | | 14.00 | 13.76 |
| | | 44 | 5220 | | 14.00 | 13.67 |
| | | 48 | 5240 | | 14.00 | 13.72 |
| | 802.11n20-HT0 | 36 | 5180 | MCS0 | 14.00 | 13.63 |
| | | 40 | 5200 | | 14.00 | 13.78 |
| | | 44 | 5220 | | 14.00 | 13.78 |
| | | 48 | 5240 | | 14.00 | 13.61 |
| | 802.11ac20-VHT0 | 36 | 5180 | MCS0 | 14.00 | 13.72 |
| | | 40 | 5200 | | 14.00 | 13.71 |
| | | 44 | 5220 | | 14.00 | 13.67 |
| | | 48 | 5240 | | 14.00 | 13.71 |
| | 802.11ax20-HE0 | 36 | 5180 | MCS0 | 15.00 | 14.74 |
| | | 40 | 5200 | | 15.00 | 14.77 |
| | | 44 | 5220 | | 15.00 | 14.72 |
| | | 48 | 5240 | | 15.00 | 14.73 |
| | 802.11n40-HT0 | 38 | 5190 | MCS0 | 15.00 | 14.69 |
| | | 46 | 5230 | | 15.00 | 14.67 |
| | 802.11ac40-VHT0 | 38 | 5190 | MCS0 | 15.00 | 14.78 |
| | | 46 | 5230 | | 15.00 | 14.65 |
| | 802.11ax40-HE0 | 38 | 5190 | MCS0 | 15.00 | 14.68 |
| | | 46 | 5230 | | 15.00 | 14.68 |
| | 802.11ac80-VHT0 | 42 | 5210 | MCS0 | 15.00 | 14.75 |
| | 802.11ax80-HE0 | 42 | 5210 | MCS0 | 15.00 | 14.70 |
| | 802.11ac160-VHT0 | 50 | 5250 | MCS0 | 14.50 | 14.22 |
| | 802.11ax160-HE0 | 50 | 5250 | MCS0 | 15.50 | 15.25 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 17.00 | 16.63 |
| | | 56 | 5280 | | 17.00 | 16.65 |
| | | 60 | 5300 | | 17.00 | 16.61 |
| | | 64 | 5320 | | 17.00 | 16.67 |
| | 802.11n20-HT0 | 52 | 5260 | MCS0 | 17.00 | 16.74 |
| | | 56 | 5280 | | 17.00 | 16.62 |
| | | 60 | 5300 | | 17.00 | 16.57 |
| | | 64 | 5320 | | 17.00 | 16.66 |
| | 802.11ac20-VHT0 | 52 | 5260 | MCS0 | 17.00 | 16.58 |
| | | 56 | 5280 | | 17.00 | 16.69 |
| | | 60 | 5300 | | 17.00 | 16.73 |
| | | 64 | 5320 | | 17.00 | 16.66 |
| | 802.11ax20-HE0 | 52 | 5260 | MCS0 | 17.00 | 16.62 |
| | | 56 | 5280 | | 17.00 | 16.57 |
| | | 60 | 5300 | | 17.00 | 16.74 |
| | | 64 | 5320 | | 17.00 | 16.61 |
| | 802.11n40-HT0 | 54 | 5270 | MCS0 | 17.00 | 16.86 |
| | | 62 | 5310 | | 17.00 | 16.98 |
| | 802.11ac40-VHT0 | 54 | 5270 | MCS0 | 17.00 | 16.59 |
| | | 62 | 5310 | | 17.00 | 16.69 |
| | 802.11ax40-HE0 | 54 | 5270 | MCS0 | 17.00 | 16.64 |
| | | 62 | 5310 | | 17.00 | 16.63 |
| | 802.11ac80-VHT0 | 58 | 5290 | MCS0 | 16.50 | 16.20 |
| | 802.11ax80-HE0 | 58 | 5290 | MCS0 | 16.00 | 15.75 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| Band | Mode | Channel | Frequency (MHz) | Data Rate | Max. Rated Avg. Power + Max. Tolerance (dBm) | Average power (dBm) |
| 5.6GHz | 802.11a | 100 | 5500 | 6Mbps | 17.00 | 16.70 |
| | | 120 | 5600 | | 17.00 | 16.74 |
| | | 140 | 5700 | | 17.00 | 16.69 |
| | | 144 | 5720 | | 17.00 | 16.85 |
| | 802.11n20-HT0 | 100 | 5500 | MCS0 | 17.00 | 16.84 |
| | | 120 | 5600 | | 17.00 | 16.86 |
| | | 140 | 5700 | | 17.00 | 16.69 |
| | | 144 | 5720 | | 17.00 | 16.70 |
| | 802.11ac20-VHT0 | 100 | 5500 | MCS0 | 17.00 | 16.79 |
| | | 120 | 5600 | | 17.00 | 16.72 |
| | | 140 | 5700 | | 17.00 | 16.85 |
| | | 144 | 5720 | | 17.00 | 16.76 |
| | 802.11ax20-HE0 | 100 | 5500 | MCS0 | 17.00 | 16.79 |
| | | 120 | 5600 | | 17.00 | 16.85 |
| | | 140 | 5700 | | 16.50 | 16.30 |
| | | 144 | 5720 | | 17.00 | 16.81 |
| | 802.11n40-HT0 | 102 | 5510 | MCS0 | 17.00 | 16.85 |
| | | 118 | 5590 | | 17.00 | 16.75 |
| | | 134 | 5670 | | 17.00 | 16.78 |
| | | 142 | 5710 | | 17.00 | 16.67 |
| | 802.11ac40-VHT0 | 102 | 5510 | MCS0 | 17.00 | 16.70 |
| | | 118 | 5590 | | 17.00 | 16.83 |
| | | 134 | 5670 | | 17.00 | 16.84 |
| | | 142 | 5710 | | 17.00 | 16.68 |
| | 802.11ax40-HE0 | 102 | 5510 | MCS0 | 17.00 | 16.85 |
| | | 118 | 5590 | | 17.00 | 16.84 |
| | | 134 | 5670 | | 17.00 | 16.70 |
| | | 142 | 5710 | | 17.00 | 16.85 |
| | 802.11ac80-VHT0 | 106 | 5530 | MCS0 | 15.50 | 15.19 |
| | | 122 | 5610 | | 17.00 | 16.94 |
| | | 138 | 5690 | | 17.00 | 16.98 |
| | 802.11ax80-HE0 | 106 | 5530 | MCS0 | 15.00 | 14.58 |
| | | 122 | 5610 | | 17.00 | 16.74 |
| | | 138 | 5690 | | 17.00 | 16.77 |
| | 802.11ac160-VHT0 | 114 | 5570 | MCS0 | 14.50 | 14.07 |
| | 802.11ax160-HE0 | 114 | 5570 | MCS0 | 15.00 | 14.66 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| Mode | Mode | Channel | Frequency (MHz) | Data Rate | Max. Rated Avg. Power + Max. Tolerance (dBm) | Average power (dBm) |
| 5.8GHz | 802.11a | 149 | 5745 | 6Mbps | 17.00 | 16.82 |
| | | 157 | 5785 | | 17.00 | 16.70 |
| | | 165 | 5825 | | 17.00 | 16.78 |
| | 802.11n20-HT0 | 149 | 5745 | MCS0 | 17.00 | 16.69 |
| | | 157 | 5785 | | 17.00 | 16.86 |
| | | 165 | 5825 | | 17.00 | 16.85 |
| | 802.11ac20-VHT0 | 149 | 5745 | MCS0 | 17.00 | 16.81 |
| | | 157 | 5785 | | 17.00 | 16.74 |
| | | 165 | 5825 | | 17.00 | 16.76 |
| | 802.11ax20-HE0 | 149 | 5745 | MCS0 | 17.00 | 16.83 |
| | | 157 | 5785 | | 17.00 | 16.78 |
| | | 165 | 5825 | | 17.00 | 16.70 |
| | 802.11n40-HT0 | 151 | 5755 | MCS0 | 17.00 | 16.76 |
| | | 159 | 5795 | | 17.00 | 16.72 |
| | 802.11ac40-VHT0 | 151 | 5755 | MCS0 | 17.00 | 16.78 |
| | | 159 | 5795 | | 17.00 | 16.85 |
| | 802.11ax40-HE0 | 151 | 5755 | MCS0 | 17.00 | 16.81 |
| | | 159 | 5795 | | 17.00 | 16.80 |
| | 802.11ac80-VHT0 | 155 | 5775 | MCS0 | 17.00 | 16.87 |
| | 802.11ax80-HE0 | 155 | 5775 | MCS0 | 17.00 | 16.75 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 15.16 |
| | | 6 | 2437 | | 18.50 | 17.99 |
| | | 11 | 2462 | | 13.00 | 12.55 |
| | 802.11g | 1 | 2412 | 6Mbps | 17.00 | 16.78 |
| | | 6 | 2437 | | 17.00 | 16.89 |
| | | 11 | 2462 | | 17.00 | 16.81 |
| | 802.11n20-HT0 | 1 | 2412 | MCS0 | 17.00 | 16.89 |
| | | 6 | 2437 | | 17.00 | 16.89 |
| | | 11 | 2462 | | 17.00 | 16.78 |
| | 802.11ax20-HE0 | 1 | 2412 | MCS0 | 16.50 | 16.19 |
| | | 6 | 2437 | | 17.00 | 16.92 |
| | | 11 | 2462 | | 16.50 | 16.09 |
| | 802.11n40-HT0 | 3 | 2422 | MCS0 | 15.50 | 15.31 |
| | | 6 | 2437 | | 17.00 | 16.89 |
| | | 9 | 2452 | | 15.00 | 14.77 |
| | 802.11ax40-HE0 | 3 | 2422 | MCS0 | 15.50 | 15.38 |
| | | 6 | 2437 | | 17.00 | 16.92 |
| | | 9 | 2452 | | 14.50 | 14.15 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 13.76 |
| | | 40 | 5200 | | 14.00 | 13.60 |
| | | 44 | 5220 | | 14.00 | 13.77 |
| | | 48 | 5240 | | 14.00 | 13.73 |
| | 802.11n20-HT0 | 36 | 5180 | MCS0 | 14.00 | 13.79 |
| | | 40 | 5200 | | 14.00 | 13.78 |
| | | 44 | 5220 | | 14.00 | 13.76 |
| | | 48 | 5240 | | 14.00 | 13.62 |
| | 802.11ac20-VHT0 | 36 | 5180 | MCS0 | 14.00 | 13.68 |
| | | 40 | 5200 | | 14.00 | 13.78 |
| | | 44 | 5220 | | 14.00 | 13.64 |
| | | 48 | 5240 | | 14.00 | 13.61 |
| | 802.11ax20-HE0 | 36 | 5180 | MCS0 | 15.00 | 14.75 |
| | | 40 | 5200 | | 15.00 | 14.74 |
| | | 44 | 5220 | | 15.00 | 14.70 |
| | | 48 | 5240 | | 15.00 | 14.71 |
| | 802.11n40-HT0 | 38 | 5190 | MCS0 | 15.00 | 14.78 |
| | | 46 | 5230 | | 15.00 | 14.63 |
| | 802.11ac40-VHT0 | 38 | 5190 | MCS0 | 15.00 | 14.75 |
| | | 46 | 5230 | | 15.00 | 14.78 |
| | 802.11ax40-HE0 | 38 | 5190 | MCS0 | 15.00 | 14.73 |
| | | 46 | 5230 | | 15.00 | 14.70 |
| | 802.11ac80-VHT0 | 42 | 5210 | MCS0 | 15.00 | 14.79 |
| | 802.11ax80-HE0 | 42 | 5210 | MCS0 | 15.00 | 14.74 |
| | 802.11ac160-VHT0 | 50 | 5250 | MCS0 | 14.50 | 14.12 |
| | 802.11ax160-HE0 | 50 | 5250 | MCS0 | 15.50 | 15.17 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 17.00 | 16.77 |
| | | 56 | 5280 | | 17.00 | 16.84 |
| | | 60 | 5300 | | 17.00 | 16.81 |
| | | 64 | 5320 | | 17.00 | 16.90 |
| | 802.11n20-HT0 | 52 | 5260 | MCS0 | 17.00 | 16.83 |
| | | 56 | 5280 | | 17.00 | 16.77 |
| | | 60 | 5300 | | 17.00 | 16.83 |
| | | 64 | 5320 | | 17.00 | 16.89 |
| | 802.11ac20-VHT0 | 52 | 5260 | MCS0 | 17.00 | 16.79 |
| | | 56 | 5280 | | 17.00 | 16.87 |
| | | 60 | 5300 | | 17.00 | 16.88 |
| | | 64 | 5320 | | 17.00 | 16.93 |
| | 802.11ax20-HE0 | 52 | 5260 | MCS0 | 17.00 | 16.79 |
| | | 56 | 5280 | | 17.00 | 16.88 |
| | | 60 | 5300 | | 17.00 | 16.86 |
| | | 64 | 5320 | | 17.00 | 16.81 |
| | 802.11n40-HT0 | 54 | 5270 | MCS0 | 17.00 | 16.75 |
| | | 62 | 5310 | | 17.00 | 16.68 |
| | 802.11ac40-VHT0 | 54 | 5270 | MCS0 | 17.00 | 16.81 |
| | | 62 | 5310 | | 17.00 | 16.91 |
| | 802.11ax40-HE0 | 54 | 5270 | MCS0 | 17.00 | 16.89 |
| | | 62 | 5310 | | 17.00 | 16.76 |
| | 802.11ac80-VHT0 | 58 | 5290 | MCS0 | 16.50 | 16.16 |
| | 802.11ax80-HE0 | 58 | 5290 | MCS0 | 16.00 | 15.63 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| Band | Mode | Channel | Frequency (MHz) | Data Rate | Max. Rated Avg. Power + Max. Tolerance (dBm) | Average power (dBm) |
| 5.6GHz | 802.11a | 100 | 5500 | 6Mbps | 17.00 | 16.78 |
| | | 120 | 5600 | | 17.00 | 16.77 |
| | | 140 | 5700 | | 17.00 | 16.91 |
| | | 144 | 5720 | | 17.00 | 16.81 |
| | 802.11n20-HT0 | 100 | 5500 | MCS0 | 17.00 | 16.94 |
| | | 120 | 5600 | | 17.00 | 16.80 |
| | | 140 | 5700 | | 17.00 | 16.87 |
| | | 144 | 5720 | | 17.00 | 16.88 |
| | 802.11ac20-VHT0 | 100 | 5500 | MCS0 | 17.00 | 16.84 |
| | | 120 | 5600 | | 17.00 | 16.93 |
| | | 140 | 5700 | | 17.00 | 16.83 |
| | | 144 | 5720 | | 17.00 | 16.87 |
| | 802.11ax20-HE0 | 100 | 5500 | MCS0 | 17.00 | 16.96 |
| | | 120 | 5600 | | 17.00 | 16.92 |
| | | 140 | 5700 | | 16.50 | 16.22 |
| | | 144 | 5720 | | 17.00 | 16.82 |
| | 802.11n40-HT0 | 102 | 5510 | MCS0 | 17.00 | 16.93 |
| | | 118 | 5590 | | 17.00 | 16.84 |
| | | 134 | 5670 | | 17.00 | 16.89 |
| | | 142 | 5710 | | 17.00 | 16.88 |
| | 802.11ac40-VHT0 | 102 | 5510 | MCS0 | 17.00 | 16.81 |
| | | 118 | 5590 | | 17.00 | 16.87 |
| | | 134 | 5670 | | 17.00 | 16.92 |
| | | 142 | 5710 | | 17.00 | 16.86 |
| | 802.11ax40-HE0 | 102 | 5510 | MCS0 | 17.00 | 16.88 |
| | | 118 | 5590 | | 17.00 | 16.83 |
| | | 134 | 5670 | | 17.00 | 16.86 |
| | | 142 | 5710 | | 17.00 | 16.79 |
| | 802.11ac80-VHT0 | 106 | 5530 | MCS0 | 15.50 | 15.06 |
| | | 122 | 5610 | | 17.00 | 16.99 |
| | | 138 | 5690 | | 17.00 | 16.73 |
| | 802.11ax80-HE0 | 106 | 5530 | MCS0 | 15.00 | 14.70 |
| | | 122 | 5610 | | 17.00 | 16.79 |
| | | 138 | 5690 | | 17.00 | 16.81 |
| | 802.11ac160-VHT0 | 114 | 5570 | MCS0 | 14.50 | 14.07 |
| | 802.11ax160-HE0 | 114 | 5570 | MCS0 | 15.00 | 14.62 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| Mode | Mode | Channel | Frequency (MHz) | Data Rate | Max. Rated Avg. Power + Max. Tolerance (dBm) | Average power (dBm) |
| 5.8GHz | 802.11a | 149 | 5745 | 6Mbps | 17.00 | 16.87 |
| | | 157 | 5785 | | 17.00 | 16.88 |
| | | 165 | 5825 | | 17.00 | 16.91 |
| | 802.11n20-HT0 | 149 | 5745 | MCS0 | 17.00 | 16.94 |
| | | 157 | 5785 | | 17.00 | 16.86 |
| | | 165 | 5825 | | 17.00 | 16.92 |
| | 802.11ac20-VHT0 | 149 | 5745 | MCS0 | 17.00 | 16.92 |
| | | 157 | 5785 | | 17.00 | 16.87 |
| | | 165 | 5825 | | 17.00 | 16.92 |
| | 802.11ax20-HE0 | 149 | 5745 | MCS0 | 17.00 | 16.79 |
| | | 157 | 5785 | | 17.00 | 16.88 |
| | | 165 | 5825 | | 17.00 | 16.90 |
| | 802.11n40-HT0 | 151 | 5755 | MCS0 | 17.00 | 16.87 |
| | | 159 | 5795 | | 17.00 | 16.94 |
| | 802.11ac40-VHT0 | 151 | 5755 | MCS0 | 17.00 | 16.89 |
| | | 159 | 5795 | | 17.00 | 16.92 |
| | 802.11ax40-HE0 | 151 | 5755 | MCS0 | 17.00 | 16.74 |
| | | 159 | 5795 | | 17.00 | 16.89 |
| | 802.11ac80-VHT0 | 155 | 5775 | MCS0 | 17.00 | 16.95 |
| | 802.11ax80-HE0 | 155 | 5775 | MCS0 | 17.00 | 16.87 |

## 2.4GHz SRD_ant2

| Mode | Channel | Frequency (MHz) | GFSK | |
|---|---|---|---|---|
| | | | Max. Rated Avg.Power + Max. Tolerance (dBm) | Average Output Power (dBm) |
| 2.4GHz SRD | CH 00 | 2402 | 5 | 4.11 |
| | CH 19 | 2440 | | 4.05 |
| | CH 39 | 2480 | | 4.04 |

## 6.2 WIFI 6E

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 4.00 | 3.87 |
| | | 45 | 6175 | | 4.00 | 3.83 |
| | | 93 | 6415 | | 4.00 | 3.81 |
| | 802.11ax40-HE0 | 3 | 5965 | MCS0 | 6.00 | 5.96 |
| | | 43 | 6165 | | 6.00 | 5.89 |
| | | 91 | 6405 | | 6.00 | 5.91 |
| | 802.11ax80-HE0 | 7 | 5985 | MCS0 | 9.00 | 8.93 |
| | | 39 | 6145 | | 9.00 | 8.83 |
| | | 87 | 6385 | | 9.00 | 8.89 |
| | 802.11ax160-HE0 | 15 | 6025 | MCS0 | 11.00 | 10.98 |
| | | 47 | 6185 | | 11.00 | 10.85 |
| | | 79 | 6345 | | 11.00 | 10.81 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 4.00 | 3.83 |
| | | 105 | 6475 | | 4.00 | 3.86 |
| | | 113 | 6515 | | 4.00 | 3.81 |
| | 802.11ax40-HE0 | 99 | 6445 | MCS0 | 6.00 | 5.88 |
| | | 107 | 6485 | | 6.00 | 5.83 |
| | 802.11ax80-HE0 | 103 | 6465 | MCS0 | 10.00 | 9.91 |
| | | 119 | 6545 | | 10.00 | 9.86 |
| | 802.11ax160-HE0 | 111 | 6505 | MCS0 | 14.00 | 13.75 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| Band | Mode | Channel | Frequency (MHz) | Data Rate | Max. Rated Avg. Power + Max. Tolerance (dBm) | Average power (dBm) |
| U-NII-7 6.7GHz | 802.11ax20-HE0 | 117 | 6535 | MCS0 | 4.00 | 3.86 |
| | | 149 | 6695 | | 4.00 | 3.97 |
| | | 181 | 6855 | | 4.00 | 3.91 |
| | 802.11ax40-HE0 | 115 | 6525 | MCS0 | 9.00 | 8.78 |
| | | 147 | 6685 | | 7.00 | 6.79 |
| | | 179 | 6845 | | 4.00 | 3.77 |
| | 802.11ax80-HE0 | 135 | 6625 | MCS0 | 10.00 | 9.79 |
| | | 151 | 6705 | | 10.00 | 9.89 |
| | | 167 | 6785 | | 10.00 | 9.87 |
| | 802.11ax160-HE0 | 143 | 6665 | MCS0 | 13.00 | 12.73 |
| | | 175 | 6825 | | 13.00 | 12.82 |

| Ant 0 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 6.00 | 5.92 |
| | | 209 | 6995 | | 4.00 | 3.82 |
| | | 233 | 7115 | | 4.00 | 3.92 |
| | 802.11ax40-HE0 | 187 | 6885 | MCS0 | 8.00 | 7.93 |
| | | 227 | 7085 | | 6.00 | 5.95 |
| | 802.11ax80-HE0 | 183 | 6865 | MCS0 | 12.00 | 11.95 |
| | | 199 | 6945 | | 9.00 | 8.77 |
| | | 215 | 7025 | | 9.00 | 8.88 |
| | 802.11ax160-HE0 | 207 | 6985 | MCS0 | 13.00 | 12.98 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 4.00 | 3.90 |
| | | 45 | 6175 | | 4.00 | 3.95 |
| | | 93 | 6415 | | 4.00 | 3.82 |
| | 802.11ax40-HE0 | 3 | 5965 | MCS0 | 6.00 | 5.84 |
| | | 43 | 6165 | | 6.00 | 5.93 |
| | | 91 | 6405 | | 6.00 | 5.91 |
| | 802.11ax80-HE0 | 7 | 5985 | MCS0 | 9.00 | 8.85 |
| | | 39 | 6145 | | 9.00 | 8.92 |
| | | 87 | 6385 | | 9.00 | 8.91 |
| | 802.11ax160-HE0 | 15 | 6025 | MCS0 | 11.00 | 10.99 |
| | | 47 | 6185 | | 11.00 | 10.97 |
| | | 79 | 6345 | | 11.00 | 10.95 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 4.00 | 3.96 |
| | | 105 | 6475 | | 4.00 | 3.88 |
| | | 113 | 6515 | | 4.00 | 3.85 |
| | 802.11ax40-HE0 | 99 | 6445 | MCS0 | 6.00 | 5.77 |
| | | 107 | 6485 | | 6.00 | 5.84 |
| | 802.11ax80-HE0 | 103 | 6465 | MCS0 | 10.00 | 9.82 |
| | | 119 | 6545 | | 10.00 | 9.94 |
| | 802.11ax160-HE0 | 111 | 6505 | MCS0 | 14.00 | 13.95 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| Band | Mode | Channel | Frequency (MHz) | Data Rate | Max. Rated Avg. Power + Max. Tolerance (dBm) | Average power (dBm) |
| U-NII-7 6.7GHz | 802.11ax20-HE0 | 117 | 6535 | MCS0 | 4.00 | 3.83 |
| | | 149 | 6695 | | 4.00 | 3.91 |
| | | 181 | 6855 | | 4.00 | 3.87 |
| | 802.11ax40-HE0 | 115 | 6525 | MCS0 | 9.00 | 8.86 |
| | | 147 | 6685 | | 7.00 | 6.77 |
| | | 179 | 6845 | | 4.00 | 3.95 |
| | 802.11ax80-HE0 | 135 | 6625 | MCS0 | 10.00 | 9.79 |
| | | 151 | 6705 | | 10.00 | 9.94 |
| | | 167 | 6785 | | 10.00 | 9.80 |
| | 802.11ax160-HE0 | 143 | 6665 | MCS0 | 13.00 | 12.75 |
| | | 175 | 6825 | | 13.00 | 12.70 |

| Ant 1 | | | | | | |
|---|---|---|---|---|---|---|
| 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 | 6.00 | 5.82 |
| | | 209 | 6995 | | 4.00 | 3.85 |
| | | 233 | 7115 | | 4.00 | 3.95 |
| | 802.11ax40-HE0 | 187 | 6885 | MCS0 | 8.00 | 7.95 |
| | | 227 | 7085 | | 6.00 | 5.96 |
| | 802.11ax80-HE0 | 183 | 6865 | MCS0 | 12.00 | 11.90 |
| | | 199 | 6945 | | 9.00 | 8.95 |
| | | 215 | 7025 | | 9.00 | 8.91 |
| | 802.11ax160-HE0 | 207 | 6985 | MCS0 | 13.00 | 12.93 |

## 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 | 9.00 | 8.55 | 9.00 | 8.23 | 9.00 | 8.37 |
| | CH 39 | 2441 | | 8.89 | | 8.55 | | 8.42 |
| | CH 78 | 2480 | | 8.46 | | 8.32 | | 8.12 |

## 6.4 BLE

| Mode | Channel | Frequency (MHz) | GFSK | |
|---|---|---|---|---|
| | | | Max. Rated Avg.Power + Max. Tolerance (dBm) | Average Output Power (dBm) |
| BLE_1M | CH 00 | 2402 | 9 | 7.91 |
| | CH 19 | 2440 | | 8.14 |
| | CH 39 | 2480 | | 7.73 |

| Mode | Channel | Frequency (MHz) | GFSK | |
|---|---|---|---|---|
| | | | Max. Rated Avg.Power + Max. Tolerance (dBm) | Average Output Power (dBm) |
| BLE_2M | CH 00 | 2402 | 9 | 8.07 |
| | CH 19 | 2440 | | 8.13 |
| | CH 39 | 2480 | | 7.95 |

## 7 DUTY CYCLE

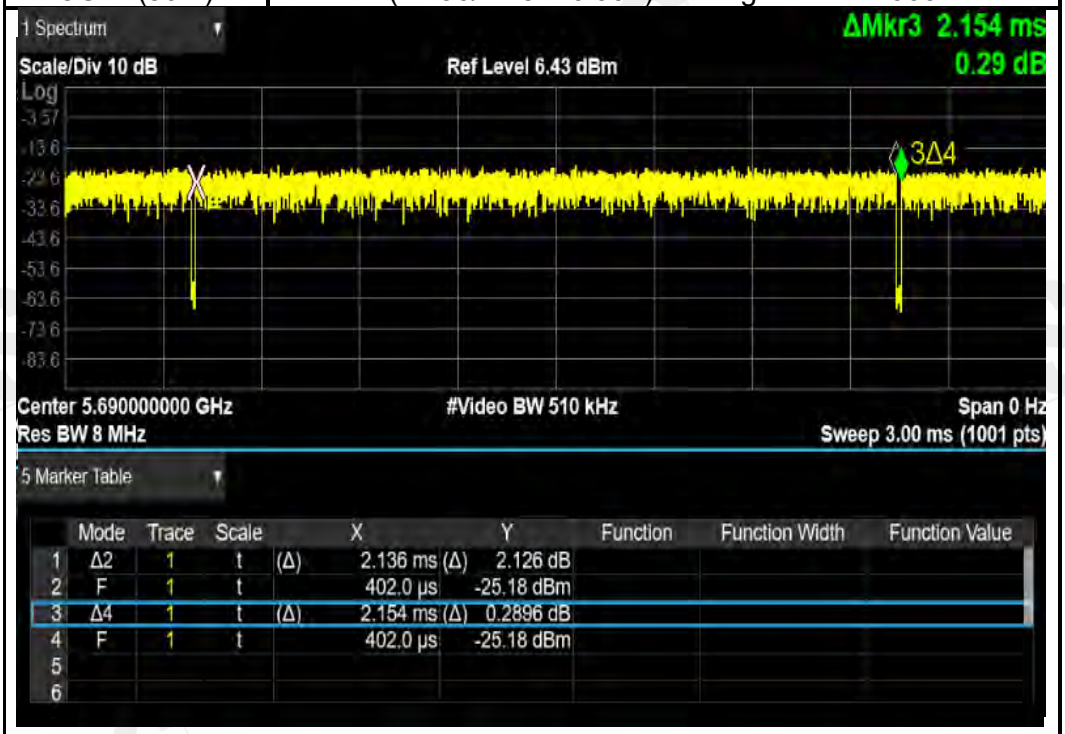
| 2.45 b | (664.0/6760=0.98) Scaling Factor=1.01 |
|---|---|


| BT | (2.370/3.750=0.632) Scaling Factor=1.582 |
|---|---|

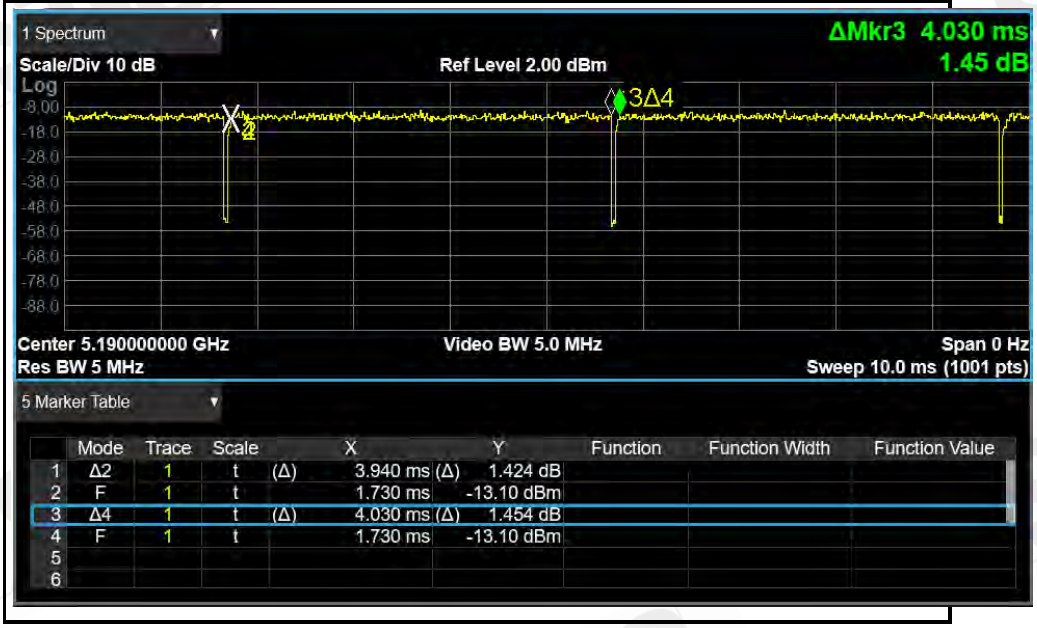
| 2.4GHz SRD | (390/626=0.623) Scaling Factor=1.605 |
|---|---|


| 5G ax(160M) | (2.136/2.154=0.991) Scaling Factor=1.009 |
|---|---|

| 5G ac(80M) | (2.136/2.154=0.991) Scaling Factor=1.009 |
|---|---|




| 5G n(40M) | (3.94/4.03=0.978) Scaling Factor=1.022 |
|---|---|



| 6G ax160 | (2.130/2.148=0.991) Scaling Factor=1.009 |
|---|---|

# 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

| 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 | Ant 0 | Back Surface | 0 | 1 | 2412 | 15.50 | 15.33 | 1.02 | 103.99% | 0.165 | 0.175 | - |
| WLAN 802.11b | Ant 0 | Back Surface | 0 | 6 | 2437 | 18.50 | 18.11 | 1.02 | 109.40% | 0.181 | 0.202 | 001 |
| WLAN 802.11b | Ant 0 | Back Surface | 0 | 11 | 2462 | 13.00 | 12.75 | 1.02 | 105.93% | 0.171 | 0.185 | - |
| 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) | Ant 0 | Back Surface | 0 | 39 | 2441 | 9.00 | 8.89 | 1.58 | 102.57% | 0.034 | 0.055 | 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 802.11ax(160M) 5.2G | Ant 0 | Back Surface | 0 | 50 | 5250 | 15.50 | 15.25 | 1.01 | 105.93% | 0.304 | 0.325 | 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 802.11n(40M) 5.3G | Ant 0 | Back Surface | 0 | 62 | 5310 | 17.00 | 16.98 | 1.02 | 100.46% | 0.300 | 0.308 | 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) 5.6G | Ant 0 | Back Surface | 0 | 138 | 5690 | 17.00 | 16.98 | 1.01 | 100.46% | 0.260 | 0.264 | 005 |
| | | | | | | | | | | | | |
| 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 | Ant 0 | Back Surface | 0 | 155 | 5775 | 17.00 | 16.87 | 1.01 | 103.04% | 0.302 | 0.314 | 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 | Ant 1 | Back Surface | 0 | 1 | 2412 | 15.50 | 15.16 | 1.02 | 108.14% | 0.119 | 0.131 | - |
| WLAN 802.11b | Ant 1 | Back Surface | 0 | 6 | 2437 | 18.50 | 17.99 | 1.02 | 112.46% | 0.164 | 0.188 | 007 |
| WLAN 802.11b | Ant 1 | Back Surface | 0 | 11 | 2462 | 13.00 | 12.55 | 1.02 | 110.92% | 0.127 | 0.144 | - |
| Mode | Antenna | Position | Distance (mm) | Channel | Freq. (MHz) | Max. Rated Avg. Power + Max. Tolerance (dBm) | Measured Avg. Power (dBm) | Duty cycle scaling | Power scaling | Averaged SAR over 1g (W/kg) | | ID |
| | | | | | | | | | | Measured | Reported | |
| WLAN 802.11ax(160M) 5.2G | Ant 1 | Back Surface | 0 | 50 | 5250 | 15.50 | 15.17 | 1.01 | 107.89% | 0.068 | 0.074 | 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 802.11n(40M) 5.3G | Ant 1 | Back Surface | 0 | 54 | 5270 | 17.00 | 16.75 | 1.02 | 105.93% | 0.084 | 0.091 | 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) 5.6G | Ant 1 | Back Surface | 0 | 138 | 5690 | 17.00 | 16.73 | 1.01 | 106.41% | 0.045 | 0.048 | 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) 5.8G | Ant 1 | Back Surface | 0 | 155 | 5775 | 17.00 | 16.95 | 1.01 | 101.16% | 0.053 | 0.054 | 011 |

Ant 2

| Mode | 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 | |
| 2.4GHz SRD | Back Surface | 0 | 0 | 2402 | 5.00 | 4.11 | 1.61 | 122.74% | 0.003 | 0.006 | 012 |
| 2.4GHz SRD | Back Surface | 0 | 39 | 2441 | 5.00 | 4.05 | 1.61 | 124.45% | 0.002 | 0.004 | - |
| 2.4GHz SRD | Back Surface | 0 | 78 | 2480 | 5.00 | 4.04 | 1.61 | 124.74% | 0.002 | 0.004 | - |

WIFI 6E

| 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) | Ant 0 | Back Surface | 0 | 15 | 6025 | 11.00 | 10.98 | 1.01 | 100.46% | 0.111 | 0.113 | 1.01 | 1.024 | 013 |
| U-NII-5 6.2GHz802.11ax(160M) | Ant 0 | Back Surface | 0 | 47 | 6185 | 11.00 | 10.85 | 1.01 | 103.51% | 0.134 | 0.140 | 1.12 | 1.170 | 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) | | Estimated Measured APD W/m^2 (4cm^2) | Estimated Reported APD W/m^2 (4cm^2) | ID |
| | | | | | | | | | | Measured | Reported | | | |
| U-NII-6 6.5GHz802.11ax(160M) | Ant 0 | Back Surface | 0 | 111 | 6505 | 14.00 | 13.75 | 1.01 | 105.93% | 0.123 | 0.131 | 1.05 | 1.122 | 015 |
| 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-7 6.7GHz802.11ax(160M) | Ant 0 | Back Surface | 0 | 175 | 6825 | 13.00 | 12.82 | 1.01 | 104.23% | 0.219 | 0.230 | 1.75 | 1.840 | 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) | | Estimated Measured APD W/m^2 (4cm^2) | Estimated Reported APD W/m^2 (4cm^2) | ID |
| | | | | | | | | | | Measured | Reported | | | |
| U-NII-8 7.0GHz 802.11ax (160M) | Ant 0 | Back Surface | 0 | 207 | 6985 | 13.00 | 12.98 | 1.02 | 100.46% | 0.196 | 0.201 | 1.58 | 1.619 | 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) | | 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) | Ant 1 | Back Surface | 0 | 15 | 6025 | 11.00 | 10.99 | 1.01 | 100.23% | 0.017 | 0.017 | 0.095 | 0.096 | 018 |
| U-NII-5 6.2GHz802.11ax(160M) | Ant 1 | Back Surface | 0 | 47 | 6185 | 11.00 | 10.97 | 1.01 | 100.69% | 0.029 | 0.029 | 0.154 | 0.156 | 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) | | Estimated Measured APD W/m^2 (4cm^2) | Estimated Reported APD W/m^2 (4cm^2) | ID |
| | | | | | | | | | | Measured | Reported | | | |
| U-NII-6 6.5GHz802.11ax(160M) | Ant 1 | Back Surface | 0 | 111 | 6505 | 14.00 | 13.95 | 1.01 | 101.16% | 0.059 | 0.060 | 0.281 | 0.287 | 020 |
| 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-7 6.7GHz802.11ax(160M) | Ant 1 | Back Surface | 0 | 143 | 6665 | 13.00 | 12.75 | 1.01 | 105.93% | 0.040 | 0.043 | 0.335 | 0.358 | 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) | | Estimated Measured APD W/m^2 (4cm^2) | Estimated Reported APD W/m^2 (4cm^2) | ID |
| | | | | | | | | | | Measured | Reported | | | |
| U-NII-8 7.0GHz 802.11ax (160M) | Ant 1 | Back Surface | 0 | 207 | 6985 | 13.00 | 12.93 | 1.02 | 101.62% | 0.043 | 0.045 | 0.371 | 0.385 | 022 |

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

## 8.3 Summary of PD Results

| Mode | 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 | Back Surface | 2 | 15 | 6025 | 11.00 | 10.98 | 100.46% | 1.01 | 1.55 | 0.594 | 0.933 | 0.567 | 0.891 | 023 |
| | Back Surface | 2 | 47 | 6185 | 11.00 | 10.85 | 103.51% | 1.01 | 1.55 | 0.535 | 0.866 | 0.502 | 0.813 | 024 |
| WLAN 6E 802.11ax(160M) U-NII-6 | Back Surface | 2 | 111 | 6505 | 14.00 | 13.75 | 105.93% | 1.01 | 1.55 | 1.970 | 3.264 | 1.880 | 3.114 | 025 |
| WLAN 6E 802.11ax(160M) U-NII-7 | Back Surface | 2 | 175 | 6825 | 13.00 | 12.82 | 104.23% | 1.01 | 1.55 | 0.747 | 1.218 | 0.684 | 1.115 | 026 |
| WLAN 6E 802.11ax(160M) U-NII-8 | Back Surface | 2 | 207 | 6985 | 13.00 | 12.98 | 100.46% | 1.01 | 1.55 | 0.678 | 1.065 | 0.573 | 0.900 | 027 |

| Mode | 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 | Back Surface | 2 | 15 | 6025 | 11.00 | 10.99 | 100.23% | 1.01 | 1.55 | 0.376 | 0.589 | 0.370 | 0.580 | 028 |
| | Back Surface | 2 | 47 | 6185 | 11.00 | 10.97 | 100.69% | 1.01 | 1.55 | 0.208 | 0.328 | 0.200 | 0.315 | 029 |
| WLAN 6E 802.11ax(160M) U-NII-6 | Back Surface | 2 | 111 | 6505 | 14.00 | 13.95 | 101.16% | 1.01 | 1.55 | 0.355 | 0.562 | 0.334 | 0.528 | 030 |
| WLAN 6E 802.11ax(160M) U-NII-7 | Back Surface | 2 | 143 | 6665 | 13.00 | 12.75 | 105.93% | 1.01 | 1.55 | 1.860 | 3.081 | 1.830 | 3.032 | 031 |
| WLAN 6E 802.11ax(160M) U-NII-8 | Back Surface | 2 | 207 | 6985 | 13.00 | 12.93 | 101.62% | 1.01 | 1.55 | 2.010 | 3.195 | 1.980 | 3.147 | 032 |

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 Ant0 + WLAN 2.4GHz Ant1 + SRD 2.4GHz Ant2 | Yes |
| WLAN 2.4GHz Ant0 + WLAN 5GHz Ant1 + SRD 2.4GHz Ant2 | Yes |
| WLAN 5GHz Ant0 + WLAN 2.4GHz Ant1 + SRD 2.4GHz Ant2 | Yes |
| WLAN 2.4GHz Ant0 + WLAN 6E Ant1 + SRD 2.4GHz Ant2 | Yes |
| WLAN 6E Ant0 + WLAN 2.4GHz Ant1 + SRD 2.4GHz Ant2 | Yes |
| WLAN 5GHz Ant0 + WLAN 5GHz Ant1 + SRD 2.4GHz Ant2 | Yes |
| BT 2.4GHz Ant0 + WLAN 5GHz Ant1 + SRD 2.4GHz Ant2 | Yes |
| BT 2.4GHz Ant0 + WLAN 6E Ant1 + SRD 2.4GHz Ant2 | 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

| Exposure Position | | FCC Reported SAR | | | | | | | | Scenario1 | Scenario2 | Scenario3 | Scenario4 | Scenario5 | Scenario6 | Scenario7 | Scenario8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 9 | 1+2+3 | 1+2+5 | 1+3+4 | 1+2+9 | 1+3+8 | 1+4+5 | 1+5+6 | 1+6+9 |
| | | 2.4GHz SRD Ant 2 | 2.4GHz WLAN Ant 0 | 2.4GHz WLAN Ant 1 | 5GHz WLAN Ant 0 | 5GHz WLAN Ant 1 | Bluetooth Ant 0 | 6GHz WLAN Ant 0 | 6GHz WLAN Ant 1 | Summed | Summed | Summed | Summed | Summed | Summed | Summed | Summed |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) |
| Back Surface | 0 | 0.006 | 0.202 | 0.188 | 0.325 | 0.091 | 0.055 | 0.230 | 0.060 | 0.396 | 0.299 | 0.519 | 0.268 | 0.424 | 0.422 | 0.152 | 0.121 |

## 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 | 1146 | Feb/21/2022 | Feb/20/2023 |
| R&S | MXG Analog Signal Generator | SMB100A03 | 182012 | Jun/13/2022 | Jun/12/2023 |
| 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 | Power Meter | NRX | 102034 | Dec/28/2021 | Dec/27/2022 |
| R&S | Power Sensor | NRP18S | 101974 | Oct/12/2021 | Oct/11/2022 |
| R&S | Power Sensor | NRP18S | 109066 | Oct/12/2021 | Oct/11/2022 |
| SPEAG | Software | DASY 6 V16.0.2.136 | N/A | Calibration not required | Calibration not required |
| SPEAG | Software | DASY 52 V52.10.4.1527 | N/A | Calibration not required | Calibration not required |
| SPEAG | Software | DASY 6 mmWave V2.4.2.62 | 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 | Nr3192 | Nov/09/2021 | Nov/08/2022 |
| TECPEL | Digital thermometer | DTM-303A | TP130077 | Oct/28/2021 | Oct/27/2022 |

# 11 UNCERTAINTY BUDGET

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

| A | c | D | e | | f | g | h=c * f / e | i=c * g / e | k |
|---|---|---|---|---|---|---|---|---|---|
| Source of Uncertainty | Tolerance/ Uncertainty | Probability Distributio | Div | Div Value | ci (1g) | ci (10g) | Standard uncertainty | Standard uncertainty | vi, or Veff |
| | | | | | | | | | |
| **Measurement system** | | | | | | | | | |
| Probe calibration | 6.55% | N | 1 | 1 | 1 | 1 | 6.55% | 6.55% | ∞ |
| ***Isotropy , Axial*** | 3.50% | R | √3 | 1.732 | 1 | 1 | 2.02% | 2.02% | ∞ |
| ***Isotropy, Hemispherical*** | 9.60% | R | √3 | 1.732 | 1 | 1 | 5.54% | 5.54% | ∞ |
| Modulation Response | 2.40% | R | √3 | 1.732 | 1 | 1 | 1.40% | 1.40% | ∞ |
| Boundary Effect | 1.00% | R | √3 | 1.732 | 1 | 1 | 0.58% | 0.58% | ∞ |
| Linearity | 4.70% | R | √3 | 1.732 | 1 | 1 | 2.71% | 2.71% | ∞ |
| Detection Limits | 1.00% | R | √3 | 1.732 | 1 | 1 | 0.58% | 0.58% | ∞ |
| Readout Electronics | 0.30% | N | 1 | 1 | 1 | 1 | 0.30% | 0.30% | ∞ |
| Response time | 0.80% | R | √3 | 1.732 | 1 | 1 | 0.46% | 0.46% | ∞ |
| Integration Time | 2.60% | R | √3 | 1.732 | 1 | 1 | 1.50% | 1.50% | ∞ |
| ***Measurement drift (class A evaluation)*** | 1.75% | R | √3 | 1.732 | 1 | 1 | 1.01% | 1.01% | ∞ |
| RF ambient condition - noise | 3.00% | R | √3 | 1.732 | 1 | 1 | 1.73% | 1.73% | ∞ |
| RF ambient conditions - reflections | 3.00% | R | √3 | 1.732 | 1 | 1 | 1.73% | 1.73% | ∞ |
| Probe positioner Mechanical restrictions | 0.40% | R | √3 | 1.732 | 1 | 1 | 0.23% | 0.23% | ∞ |
| Probe Positioning with respect to phantom shell | 2.90% | R | √3 | 1.732 | 1 | 1 | 1.67% | 1.67% | ∞ |
| Post-processing | 1.00% | R | √3 | 1.732 | 1 | 1 | 0.58% | 0.58% | ∞ |
| Max SAR Eval | 1.00% | R | √3 | 1.732 | 1 | 1 | 0.58% | 0.58% | ∞ |
| | | | | | | | | | |
| **Test Sample related** | | | | | | | | | |
| Test sample positioning | 2.90% | N | 1 | 1 | 1 | 1 | 2.90% | 2.90% | M-1 |
| Device Holder Uncertainty | 3.60% | N | 1 | 1 | 1 | 1 | 3.60% | 3.60% | M-1 |
| Drift of output power | 5.00% | R | √3 | 1.732 | 1 | 1 | 2.89% | 2.89% | ∞ |
| | | | | | | | | | |
| **Phantom and Setup** | | | | | | | | | |
| Phantom Uncertainty | 4.00% | R | √3 | 1.732 | 1 | 1 | 2.31% | 2.31% | ∞ |
| Liquid permittivity (mea.) | 1.43% | N | 1 | 1 | 0.64 | 0.43 | 0.92% | 0.61% | M |
| Liquid Conductivity (mea.) | 2.90% | N | 1 | 1 | 0.6 | 0.49 | 1.74% | 1.42% | M |
| Combined standard uncertainty | | RSS | | | | | 11.88% | 11.81% | |
| Expant uncertainty (95% confidence interval), K=2 | | | | | | | 23.76% | 23.62% | |

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.) | 1.11% | N | 1 | 1 | 0.64 | 0.43 | 0.71% | 0.48% | M |
| Liquid Conductivity (mea.) | 2.30% | N | 1 | 1 | 0.6 | 0.49 | 1.38% | 1.13% | M |
| Combined standard uncertainty | | RSS | | | | | 11.52% | 11.47% | |
| Expant uncertainty (95% confidence interval), K=2 | | | | | | | 23.05% | 22.95% | |

# 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 | 0.230 | R | √3 | 1.732 | 1 | 1 | 0.1 | 0.1 |
| 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: 2022/9/19

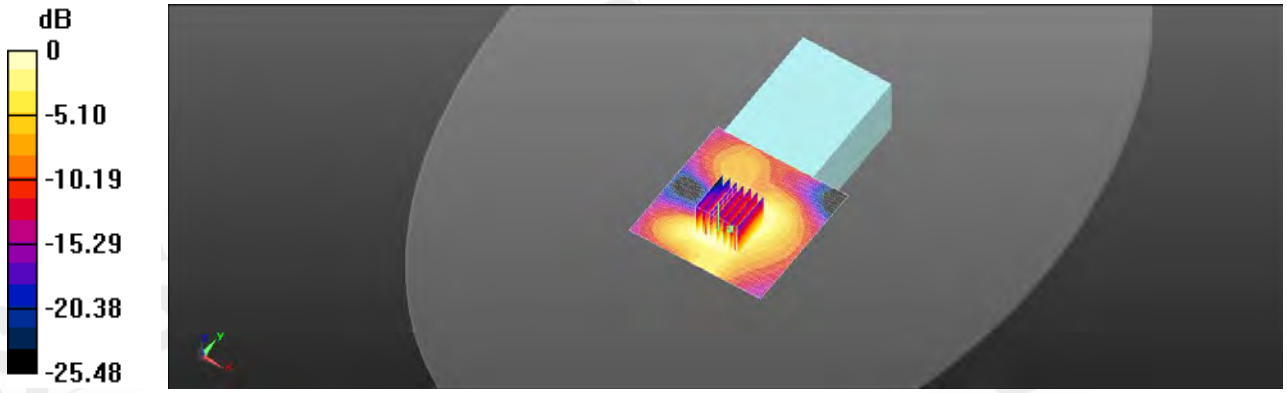
**ID: 001**
**Report No. :TESA2207000216ES**
**WLAN 802.11b_Body_Back Surface_CH 6_0mm_Ant0**
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1.02
Medium parameters used: f = 2437 MHz; $\sigma$ = 1.829 S/m; $\varepsilon_r$ = 39.651; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.4°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 (81x81x1):** 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 = 1.745 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.375 W/kg
**SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.093 W/kg**
Smallest distance from peaks to all points 3 dB below = 8.9 mm
Ratio of SAR at M2 to SAR at M1 = 47.2%
Maximum value of SAR (measured) = 0.271 W/kg




0 dB = 0.271 W/kg = -5.67 dBW/kg

Date: 2022/9/19

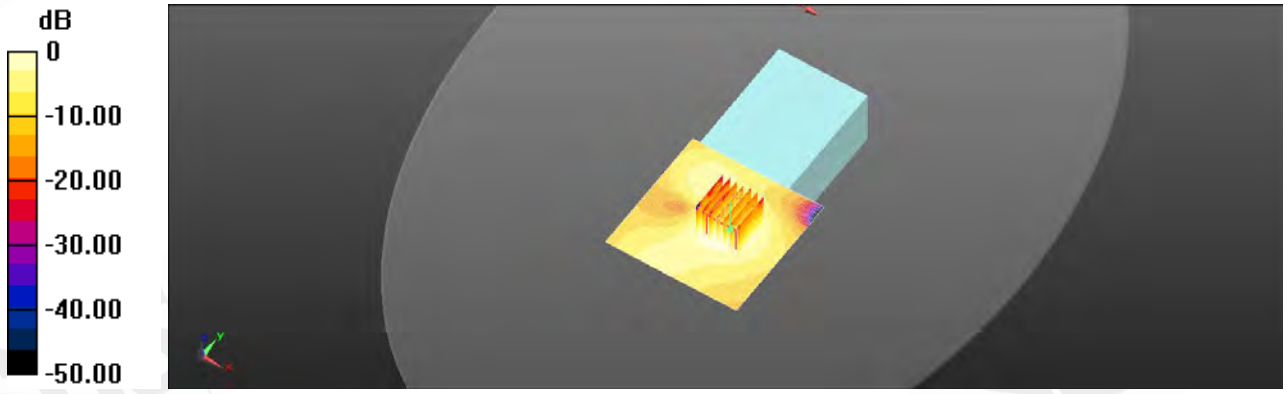
**ID: 002**
**Report No. :TESA2207000216ES**
**Bluetooth(GFSK)_Body_Back Surface_CH 39_0mm_Ant0**
Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1.582
Medium parameters used: f = 2441 MHz; $\sigma$ = 1.833 S/m; $\varepsilon_r$ = 39.638; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.4°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 (81x81x1):** Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.0483 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.7425 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.0640 W/kg
**SAR(1 g) = 0.034 W/kg; SAR(10 g) = 0.018 W/kg**
Smallest distance from peaks to all points 3 dB below = 12 mm
Ratio of SAR at M2 to SAR at M1 = 53.9%
Maximum value of SAR (measured) = 0.0485 W/kg




0 dB = 0.0485 W/kg = -13.14 dBW/kg

Date: 2022/9/20

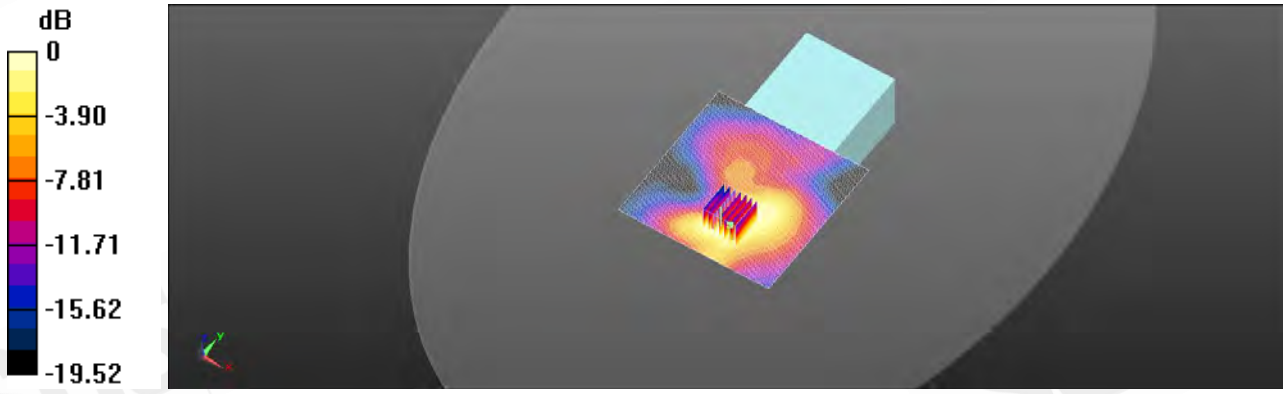
**ID: 003**
**Report No. :TESA2207000216ES**
**WLAN 802.11ax(160M) 5.2G_Body_Back Surface_CH 50_0mm_Ant0**
Communication System: WLAN; Frequency: 5250 MHz;Duty Cycle: 1:1.009
Medium parameters used: f = 5250 MHz; $\sigma$ = 4.774 S/m; $\varepsilon_r$ = 36.449; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.2°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 (111x111x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.351 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.912 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.525 W/kg
**SAR(1 g) = 0.304 W/kg; SAR(10 g) = 0.178 W/kg**
Smallest distance from peaks to all points 3 dB below = 8.9 mm
Ratio of SAR at M2 to SAR at M1 = 72.3%
Maximum value of SAR (measured) = 0.371 W/kg




0 dB = 0.371 W/kg = -4.30 dBW/kg

Date: 2022/9/20

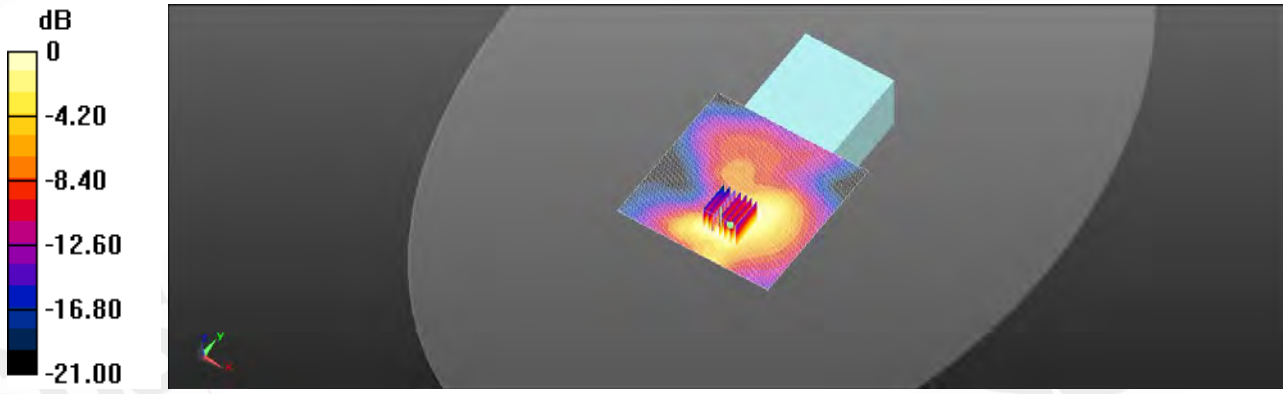
**ID: 004**
**Report No. :TESA2207000216ES**
**WLAN 802.11n(40M) 5.3G_Body_Back Surface_CH 62_0mm_Ant0**
Communication System: WLAN; Frequency: 5310 MHz;Duty Cycle: 1:1.022
Medium parameters used: f = 5310 MHz; $\sigma$ = 4.885 S/m; $\varepsilon_r$ = 36.18; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.2°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 (111x111x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.328 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.430 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.526 W/kg
**SAR(1 g) = 0.300 W/kg; SAR(10 g) = 0.176 W/kg**
Smallest distance from peaks to all points 3 dB below = 8.9 mm
Ratio of SAR at M2 to SAR at M1 = 70.2%
Maximum value of SAR (measured) = 0.351 W/kg




0 dB = 0.351 W/kg = -4.54 dBW/kg

Date: 2022/9/21

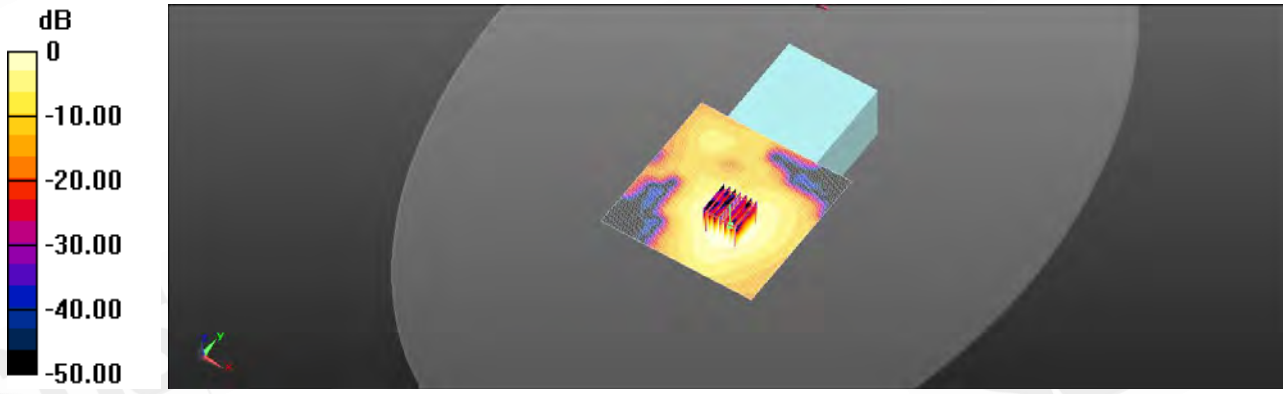
**ID: 005**
**Report No. :TESA2207000216ES**
**WLAN 802.11ac(80M) 5.6G_Body_Back Surface_CH 138_0mm_Ant0**
Communication System: WLAN; Frequency: 5690 MHz;Duty Cycle: 1:1.009
Medium parameters used: f = 5690 MHz; $\sigma$ = 5.281 S/m; $\varepsilon_r$ = 35.53; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 21.9°C; Liquid temperature: 22.2°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 (111x111x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.469 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.711 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.933 W/kg
**SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.104 W/kg**
Smallest distance from peaks to all points 3 dB below = 10.4 mm
Ratio of SAR at M2 to SAR at M1 = 54.2%
Maximum value of SAR (measured) = 0.474 W/kg




0 dB = 0.474 W/kg = -3.24 dBW/kg

Date: 2022/9/21

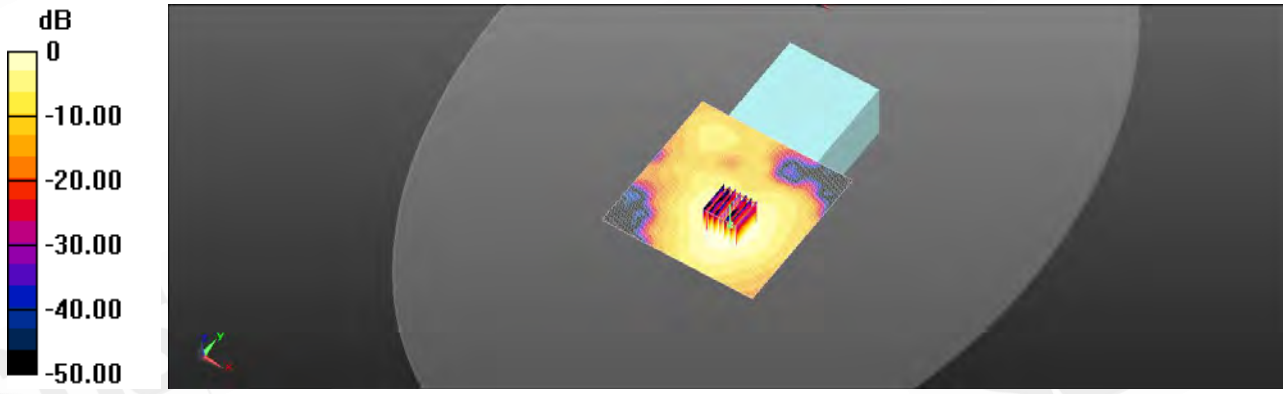
**ID: 006**
**Report No. :TESA2207000216ES**
**WLAN 802.11ac(80M) 5.8G_Body_Back Surface_CH 155_0mm_Ant0**
Communication System: WLAN; Frequency: 5775 MHz;Duty Cycle: 1:1.009
Medium parameters used: f = 5775 MHz; $\sigma$ = 5.397 S/m; $\varepsilon_r$ = 35.299; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 21.9°C; Liquid temperature: 22.2°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 (111x111x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.544 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.923 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.11 W/kg
**SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.122 W/kg**
Smallest distance from peaks to all points 3 dB below = 12 mm
Ratio of SAR at M2 to SAR at M1 = 53%
Maximum value of SAR (measured) = 0.548 W/kg




0 dB = 0.548 W/kg = -2.61 dBW/kg

Date: 2022/9/19

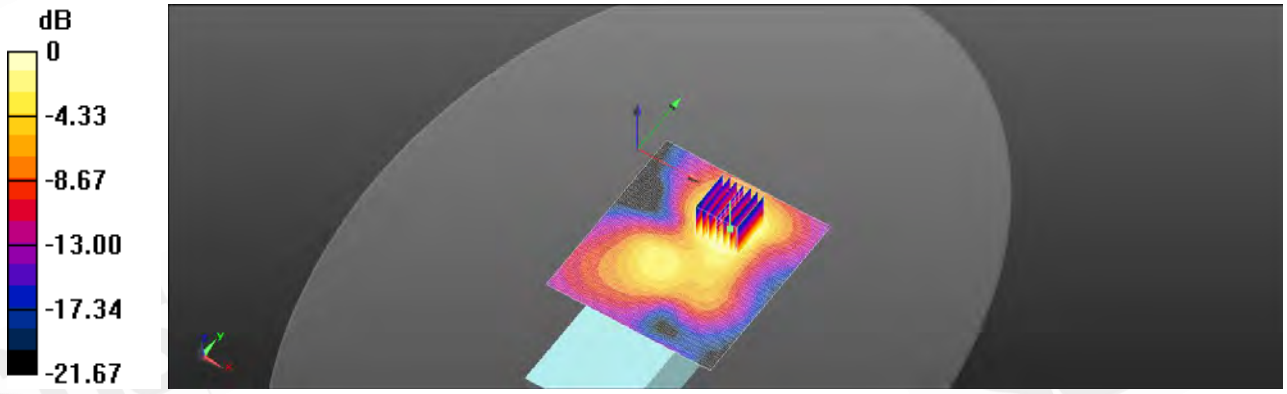
**ID: 007**
**Report No. :TESA2207000216ES**
**WLAN 802.11b_Body_Back Surface_CH 6_0mm_Ant1**
Communication System: WLAN; Frequency: 2437 MHz;Duty Cycle: 1:1.01
Medium parameters used: f = 2437 MHz; $\sigma$ = 1.829 S/m; $\varepsilon_r$ = 39.651; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.4°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 (101x111x1):** Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.235 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.233 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.299 W/kg
**SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.088 W/kg**
Smallest distance from peaks to all points 3 dB below = 13 mm
Ratio of SAR at M2 to SAR at M1 = 54.1%
Maximum value of SAR (measured) = 0.232 W/kg




0 dB = 0.232 W/kg = -6.35 dBW/kg

Date: 2022/9/20

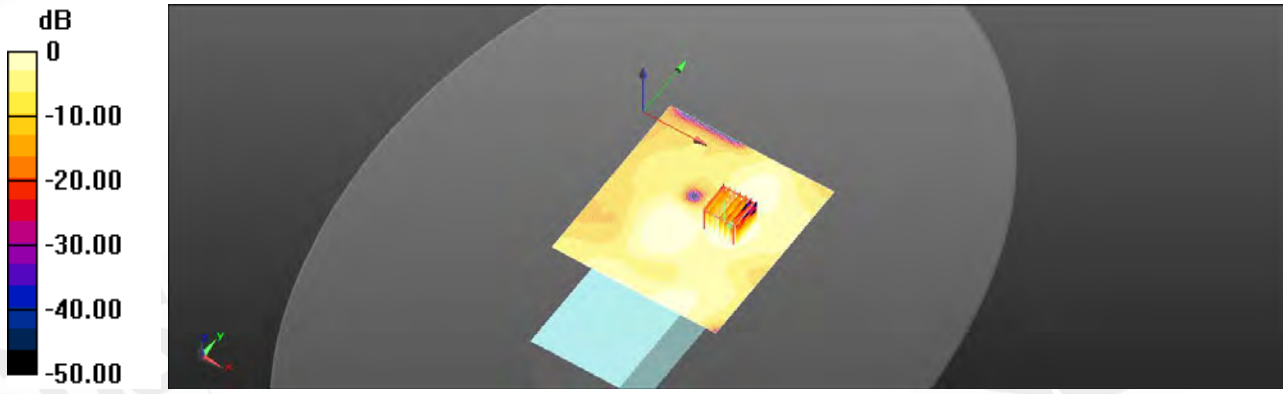
**ID: 008**
**Report No. :TESA2207000216ES**
**WLAN 802.11ax(160M) 5.2G_Body_Back Surface_CH 50_0mm_Ant1**
Communication System: WLAN; Frequency: 5250 MHz;Duty Cycle: 1:1.009
Medium parameters used: f = 5250 MHz; $\sigma$ = 4.774 S/m; $\varepsilon_r$ = 36.449; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.2°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 (121x131x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.113 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.521 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.182 W/kg
**SAR(1 g) = 0.068 W/kg; SAR(10 g) = 0.030 W/kg**
Smallest distance from peaks to all points 3 dB below = 11.1 mm
Ratio of SAR at M2 to SAR at M1 = 65.8%
Maximum value of SAR (measured) = 0.111 W/kg




0 dB = 0.111 W/kg = -9.56 dBW/kg

Date: 2022/9/20

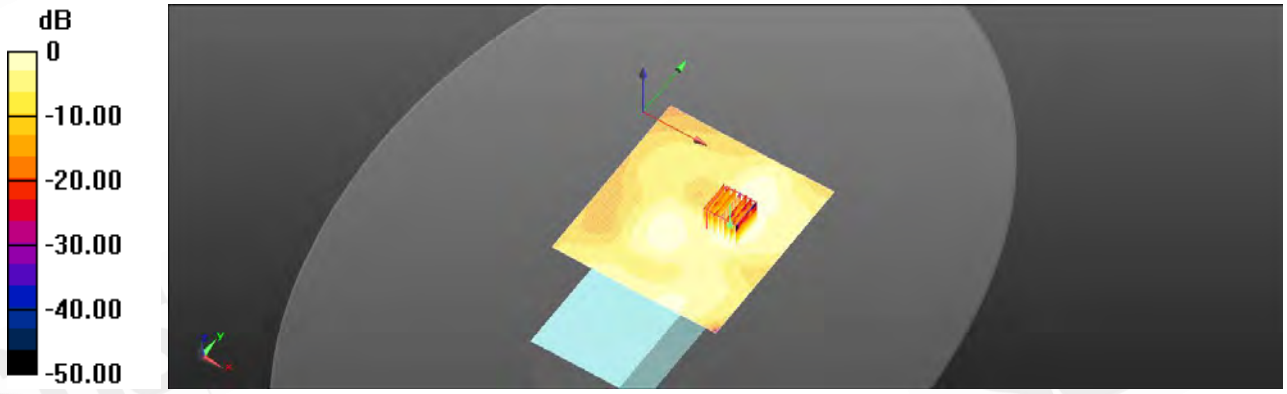
**ID: 009**
**Report No. :TESA2207000216ES**
**WLAN 802.11n(40M) 5.3G_Body_Back Surface_CH 54_0mm_Ant1**
Communication System: WLAN 5G; Frequency: 5270 MHz;Duty Cycle: 1:1.022
Medium parameters used: f = 5270 MHz; $\sigma$ = 4.836 S/m; $\varepsilon_r$ = 36.278; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.2°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 (121x131x1):** 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 = 2.760 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.249 W/kg
**SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.037 W/kg**
Smallest distance from peaks to all points 3 dB below = 13.2 mm
Ratio of SAR at M2 to SAR at M1 = 61.6%
Maximum value of SAR (measured) = 0.142 W/kg




0 dB = 0.142 W/kg = -8.48 dBW/kg

Date: 2022/9/21

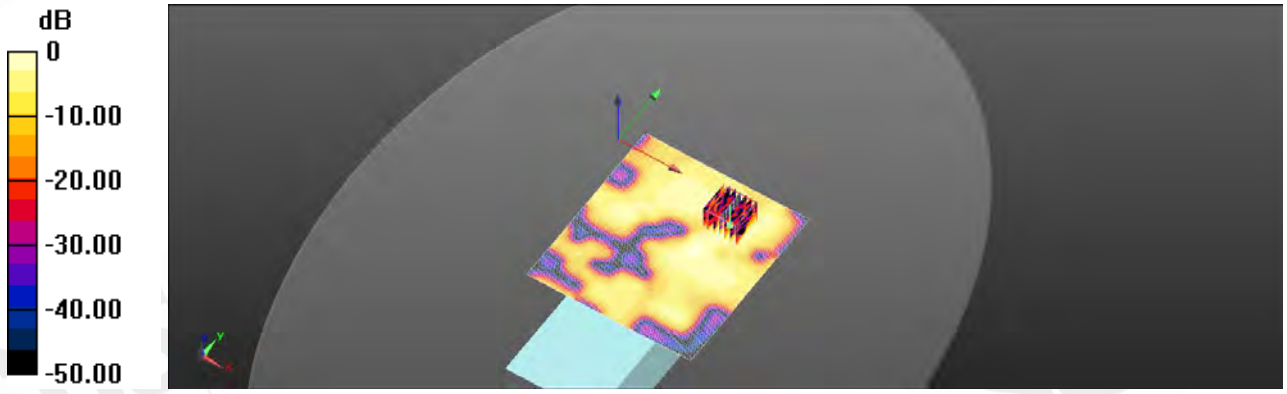
**ID: 010**
**Report No. :TESA2207000216ES**
**WLAN 802.11ac(80M) 5.6G_Body_Back Surface_CH 138_0mm_Ant1_IC**
Communication System: WLAN; Frequency: 5690 MHz;Duty Cycle: 1:1.009
Medium parameters used: f = 5690 MHz; $\sigma$ = 5.281 S/m; $\varepsilon_r$ = 35.53; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 21.9°C; Liquid temperature: 22.2°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 (121x131x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.105 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.038 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.211 W/kg
**SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.014 W/kg**
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 46.5%
Maximum value of SAR (measured) = 0.109 W/kg




0 dB = 0.109 W/kg = -9.64 dBW/kg

Date: 2022/9/21

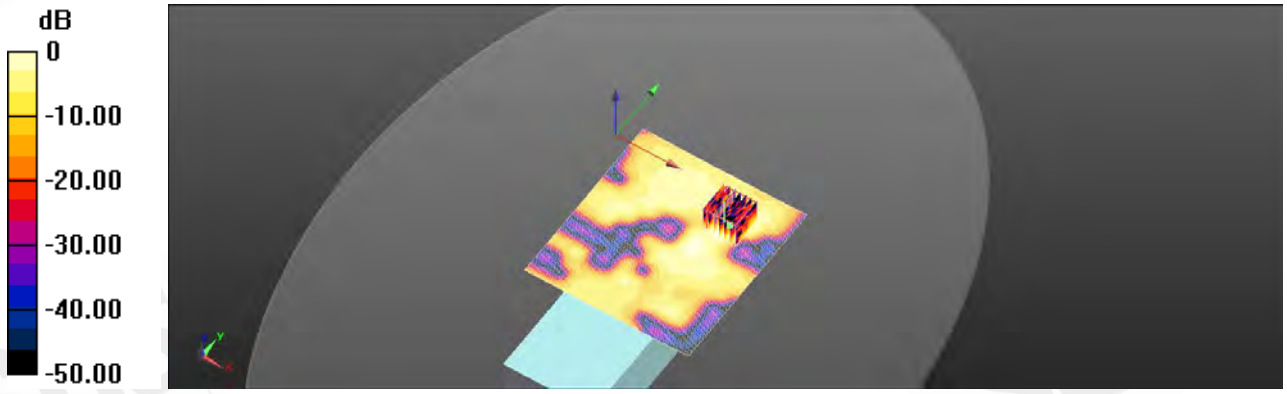
**ID: 011**
**Report No. :TESA2207000216ES**
**WLAN 802.11ac(80M) 5.8G_Body_Back Surface_CH 155_0mm_Ant1**
Communication System: WLAN; Frequency: 5775 MHz;Duty Cycle: 1:1.009
Medium parameters used: f = 5775 MHz; $\sigma$ = 5.397 S/m; $\varepsilon_r$ = 35.299; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 21.9°C; Liquid temperature: 22.2°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 (121x131x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 0.140 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.236 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.237 W/kg
**SAR(1 g) = 0.053 W/kg; SAR(10 g) = 0.018 W/kg**
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 46.4%
Maximum value of SAR (measured) = 0.121 W/kg




0 dB = 0.121 W/kg = -9.16 dBW/kg

Date: 2022/9/19

**ID: 012**

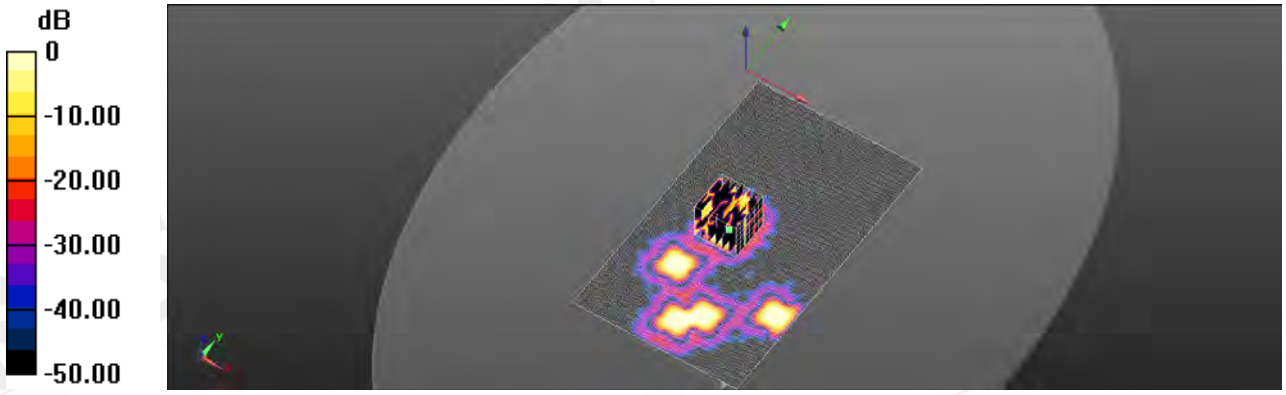
**Report No. :TESA2207000216ES**
**SRD_Body_Back Surface_CH 0_0mm_Ant2**
Communication System: SRD; Frequency: 2402 MHz;Duty Cycle: 1:1.61
Medium parameters used: f = 2402 MHz; $\sigma$ = 1.797 S/m; $\varepsilon_r$ = 39.718; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.4°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 (101x171x1):** Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 0.00939 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.1250 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.0000629 W/kg
**SAR(1 g) = 0.00281 W/kg; SAR(10 g) = 0.00116 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 = 46.5%
Maximum value of SAR (measured) = 0.000547 W/kg




0 dB = 0.000547 W/kg = -32.62 dBW/kg

## ID: 013
## Report No. :TESA2207000218ES
## Measurement Report for Device, BACK SURFACE, U-NII-5, 0mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1

### Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 5.662 | 35.027 |

### Hardware Setup

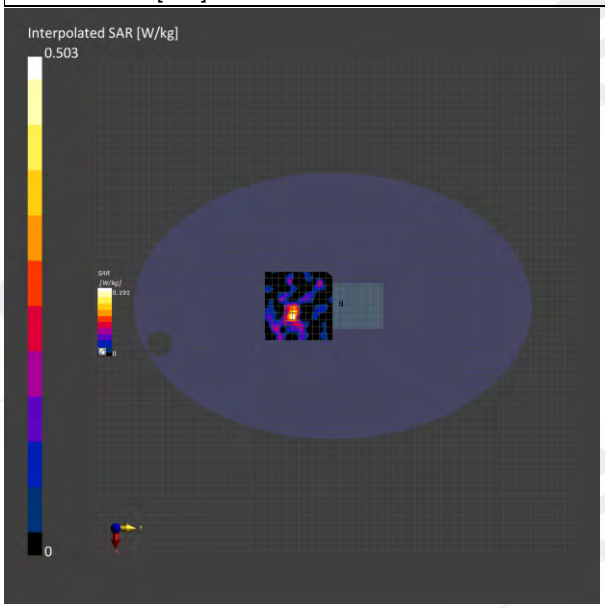
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

### Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.045 | 0.111 |
| psSAR8g [W/kg] | 0.015 | 0.052 |
| psSAR10g [W/kg] | 0.013 | 0.047 |
| psPDab (4.0cm2, sq) [W/m2] | | 1.01 |
| Power Drift [dB] | 0.14 | 0.11 |
| M2/M1 [%] | | 57.8 |
| Dist 3dB Peak [mm] | | 11.2 |



## ID: 014
## Report No. :TESA2207000218ES
## Measurement Report for Device, BACK SURFACE, U-NII-5, 0mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1

### Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 5.854 | 34.79 |

### Hardware Setup

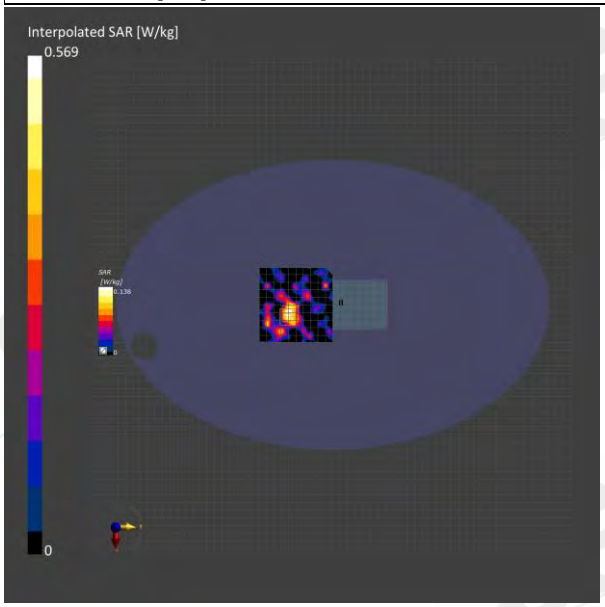
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

### Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.127 | 0.134 |
| psSAR8g [W/kg] | 0.054 | 0.056 |
| psSAR10g [W/kg] | 0.048 | 0.050 |
| psPDab (4.0cm2, sq) [W/m2] | | 1.12 |
| Power Drift [dB] | -0.16 | 0.13 |
| M2/M1 [%] | | 55.5 |
| Dist 3dB Peak [mm] | | 10.8 |



## ID: 015
## Report No. :TESA2207000218ES
## Measurement Report for Device, BACK SURFACE, U-NII-6, 0mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1

### Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 6.224 | 34.466 |

### Hardware Setup

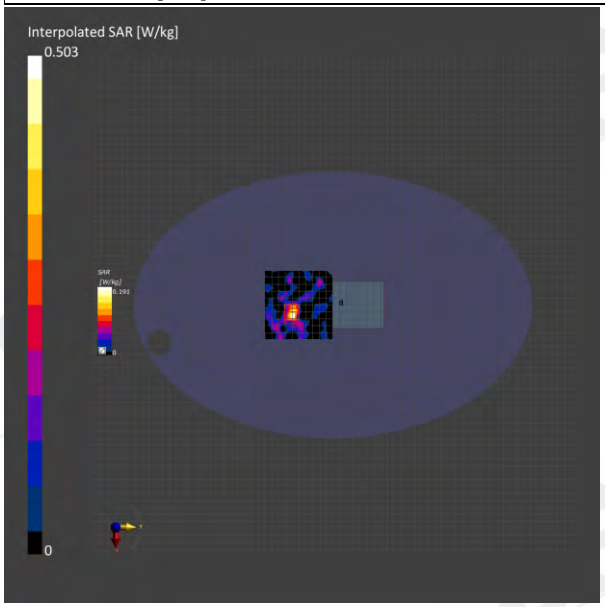
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

### Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.045 | 0.123 |
| psSAR8g [W/kg] | 0.015 | 0.052 |
| psSAR10g [W/kg] | 0.013 | 0.047 |
| psPDab (4.0cm2, sq) [W/m2] | | 1.05 |
| Power Drift [dB] | 0.14 | 0.11 |
| M2/M1 [%] | | 57.8 |
| Dist 3dB Peak [mm] | | 11.2 |



# ID: 016
# Report No. :TESA2207000218ES
# Measurement Report for Device, BACK SURFACE, U-NII-7, 0mm, Ant 0
# IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 175 (6825.0 MHz)
# Ambient temperature: 21.8; Liquid temperature: 22.1

## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 6.569 | 34.077 |

## Hardware Setup

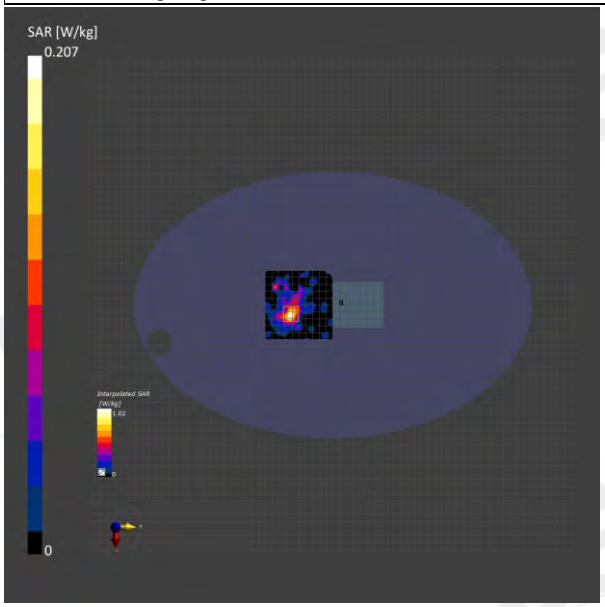
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.220 | 0.219 |
| psSAR8g [W/kg] | 0.088 | 0.088 |
| psSAR10g [W/kg] | 0.078 | 0.077 |
| psPDab (4.0cm2, sq) [W/m2] | | 1.75 |
| Power Drift [dB] | -0.15 | 0.18 |
| M2/M1 [%] | | 49.9 |
| Dist 3dB Peak [mm] | | 10.0 |



## ID: 017
## Report No. :TESA2207000218ES
## Measurement Report for Device, BACK SURFACE, U-NII-8, 0mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1
## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.7 | 6.775 | 33.782 |

## Hardware Setup

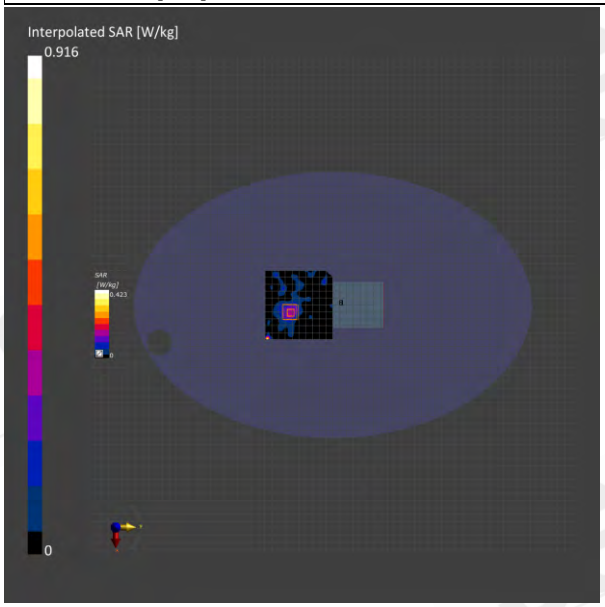
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.206 | 0.196 |
| psSAR8g [W/kg] | 0.082 | 0.079 |
| psSAR10g [W/kg] | 0.073 | 0.070 |
| psPDab (4.0cm2, sq) [W/m2] | | 1.58 |
| Power Drift [dB] | -0.10 | 0.13 |
| M2/M1 [%] | | 50.3 |
| Dist 3dB Peak [mm] | | 10.1 |



## ID: 018
## Measurement Report for Device, BACK SURFACE, U-NII-5, 0mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1

### Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 5.662 | 35.027 |

### Hardware Setup

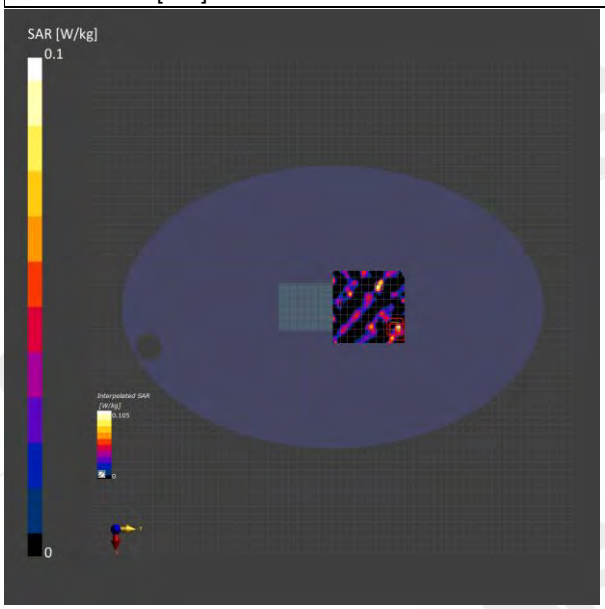
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

### Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.016 | 0.017 |
| psSAR8g [W/kg] | 0.005 | 0.005 |
| psSAR10g [W/kg] | 0.005 | 0.004 |
| psPDab (4.0cm2, sq) [W/m2] | | 0.095 |
| Power Drift [dB] | -0.17 | 0.09 |
| M2/M1 [%] | | 55.6 |
| Dist 3dB Peak [mm] | | > 11.0 |



# ID: 019
# Report No. :TESA2207000218ES
# Measurement Report for Device, BACK SURFACE, U-NII-5, 0mm, Ant 1
# IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)
# Ambient temperature: 21.8; Liquid temperature: 22.1

## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 5.854 | 34.79 |

## Hardware Setup

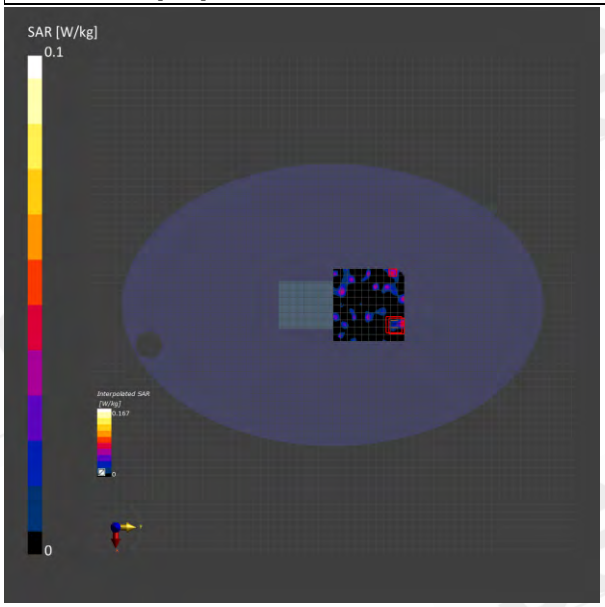
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.023 | 0.029 |
| psSAR8g [W/kg] | 0.006 | 0.008 |
| psSAR10g [W/kg] | 0.005 | 0.006 |
| psPDab (4.0cm2, sq) [W/m2] | | 0.154 |
| Power Drift [dB] | -0.15 | 0.13 |
| M2/M1 [%] | | 48.9 |
| Dist 3dB Peak [mm] | | 11.0 |



## ID: 020
## Report No. :TESA2207000218ES
## Measurement Report for Device, BACK SURFACE, U-NII-6, 0mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1
## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 6.224 | 34.466 |

## Hardware Setup

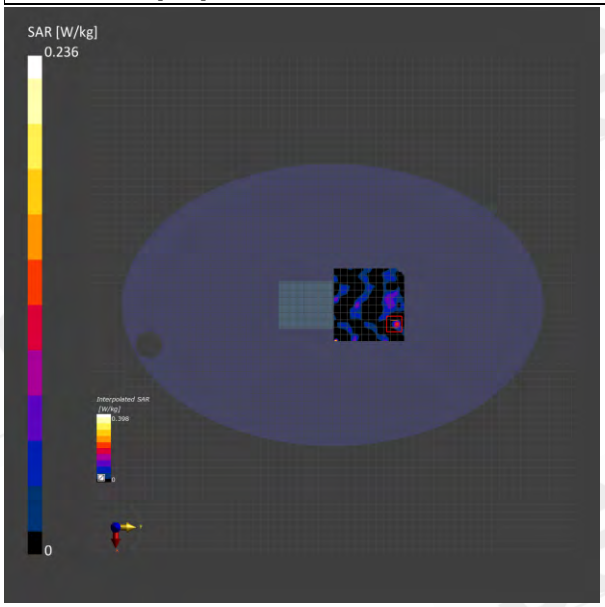
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.047 | 0.059 |
| psSAR8g [W/kg] | 0.020 | 0.014 |
| psSAR10g [W/kg] | 0.018 | 0.012 |
| psPDab (4.0cm2, sq) [W/m2] | | 0.281 |
| Power Drift [dB] | 0.18 | 0.16 |
| M2/M1 [%] | | 51.3 |
| Dist 3dB Peak [mm] | | 3.4 |



## ID: 021
## Report No. :TESA2207000218ES
## Measurement Report for Device, BACK SURFACE, U-NII-7, 0mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)
## Ambient temperature: 21.8; Liquid temperature: 22.1

### Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.8 | 6.393 | 34.295 |

### Hardware Setup

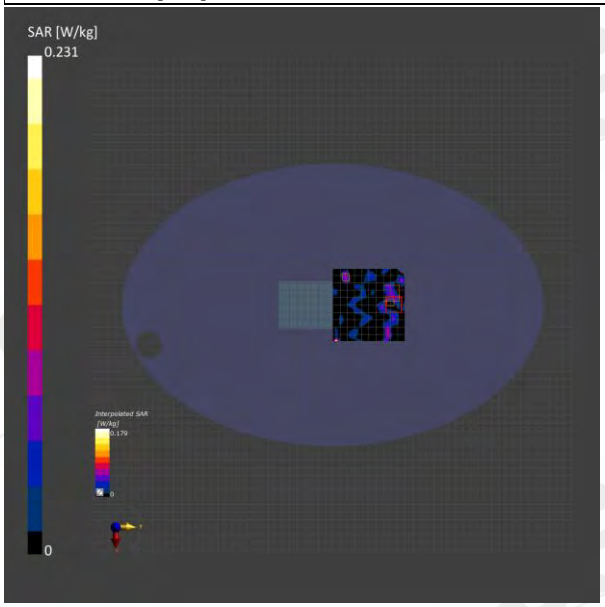
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

### Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.039 | 0.040 |
| psSAR8g [W/kg] | 0.017 | 0.017 |
| psSAR10g [W/kg] | 0.016 | 0.015 |
| psPDab (4.0cm2, sq) [W/m2] | | 0.335 |
| Power Drift [dB] | -0.16 | 0.14 |
| M2/M1 [%] | | 54.0 |
| Dist 3dB Peak [mm] | | 10.9 |



**ID: 022**
**Report No. :TESA2207000218ES**
**Measurement Report for Device, BACK SURFACE, U-NII-8, 0mm, Ant 1**
**IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)**
**Ambient temperature: 21.8; Liquid temperature: 22.1**

## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | BACK SURFACE, 0.00 | 5.7 | 6.775 | 33.782 |

## Hardware Setup

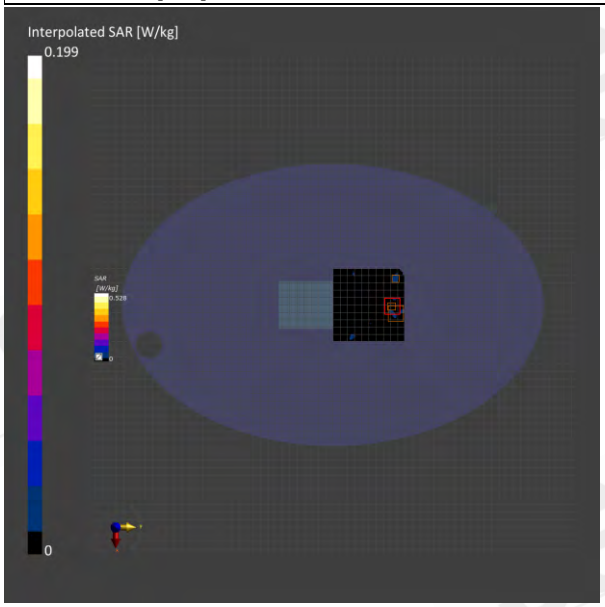
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 102.0 x 102.0 | 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 0.044 | 0.043 |
| psSAR8g [W/kg] | 0.018 | 0.019 |
| psSAR10g [W/kg] | 0.016 | 0.017 |
| psPDab (4.0cm2, sq) [W/m2] | | 0.371 |
| Power Drift [dB] | -0.18 | -0.08 |
| M2/M1 [%] | | 57.2 |
| Dist 3dB Peak [mm] | | 10.0 |



# 13 PD MEASUREMENT RESULTS

## ID: 023
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-5, 2mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

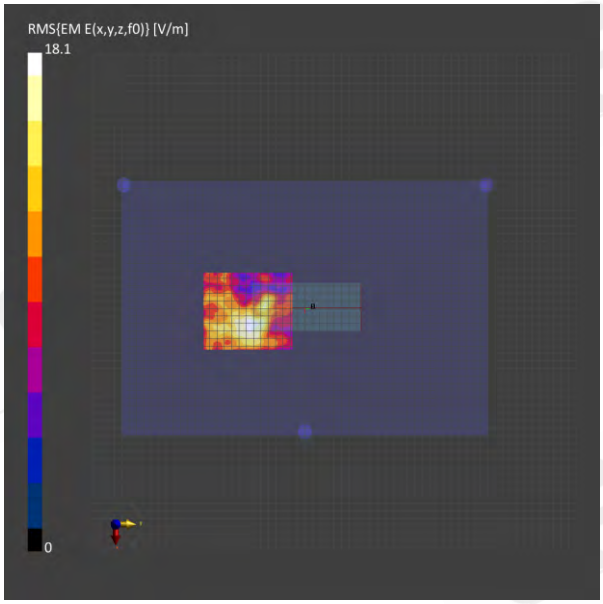
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [cm$^2$] | 4.00 |
| psPDn+ [W/m$^2$] | 0.567 |
| psPDtot+ [W/m$^2$] | 0.594 |
| psPDmod+ [W/m$^2$] | 0.630 |
| $E_{max}$ [V/m] | 18.1 |
| Power Drift [dB] | 0.18 |



## ID: 024
## Measurement Report for Device, BACK SURFACE, U-NII-5, 2mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

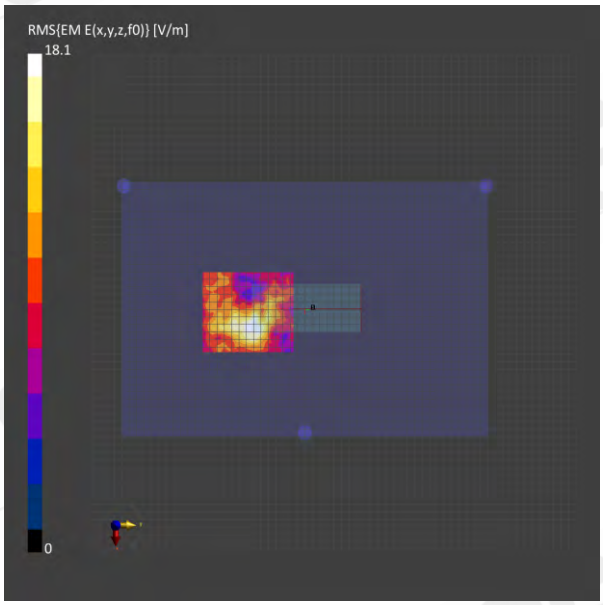
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [cm$^2$] | 4.00 |
| psPDn+ [W/m$^2$] | 0.502 |
| psPDtot+ [W/m$^2$] | 0.535 |
| psPDmod+ [W/m$^2$] | 0.596 |
| $E_{max}$ [V/m] | 18.0 |
| Power Drift [dB] | 0.12 |



## ID: 025
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-6, 2mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

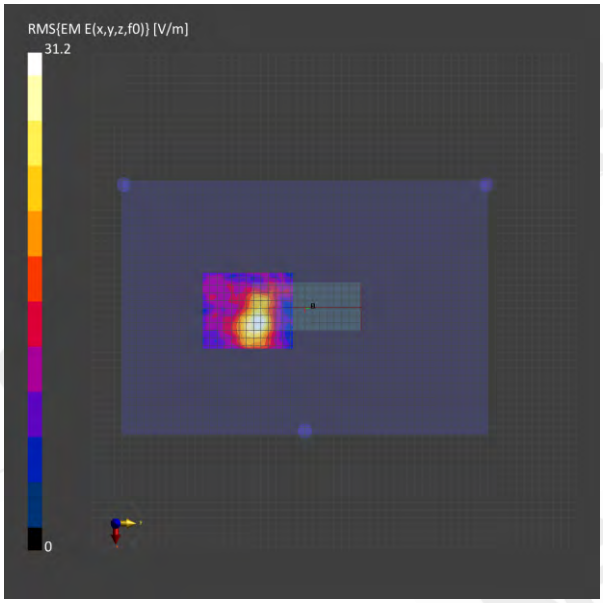
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 1.88 |
| psPDtot+ [$W/m^2$] | 1.97 |
| psPDmod+ [$W/m^2$] | 2.02 |
| $E_{max}$ [V/m] | 31.2 |
| Power Drift [dB] | -0.14 |



## ID: 026
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-7, 2mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 175 (6825.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

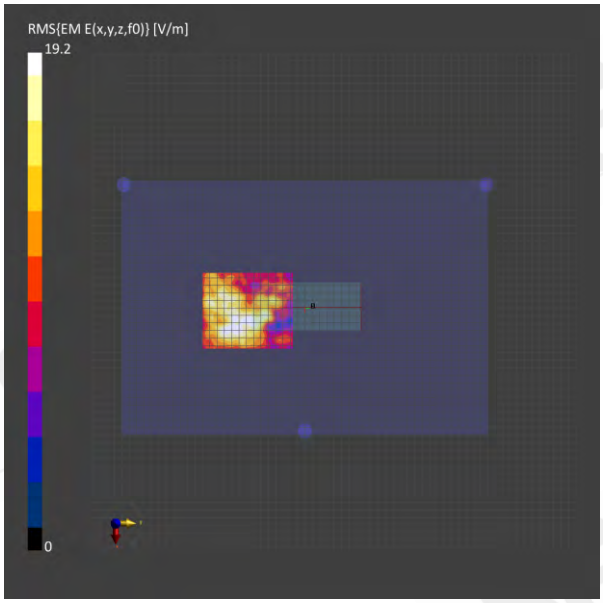
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 0.684 |
| psPDtot+ [$W/m^2$] | 0.747 |
| psPDmod+ [$W/m^2$] | 0.792 |
| $E_{max}$ [V/m] | 19.2 |
| Power Drift [dB] | -0.15 |



## ID: 027
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-8, 2mm, Ant 0
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

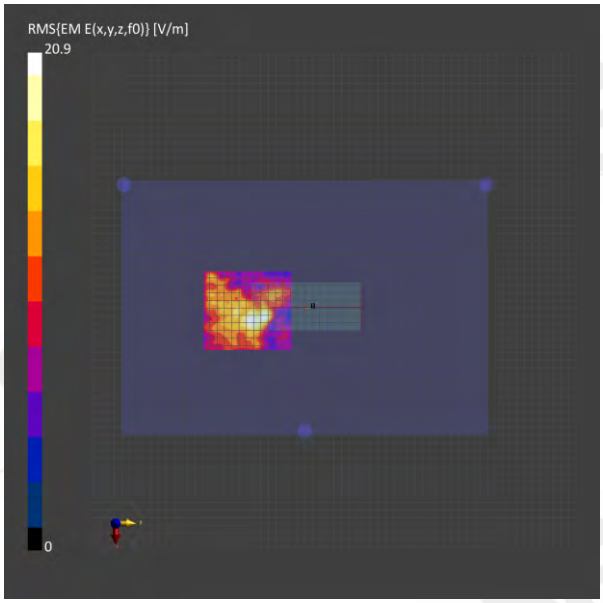
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 0.573 |
| psPDtot+ [$W/m^2$] | 0.678 |
| psPDmod+ [$W/m^2$] | 0.775 |
| $E_{max}$ [V/m] | 20.9 |
| Power Drift [dB] | 0.12 |



## ID: 028
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-5, 2mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 15 (6025.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

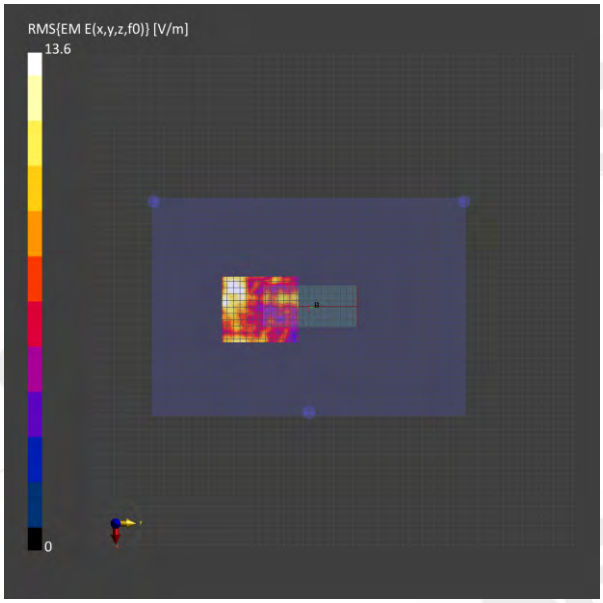
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 0.370 |
| psPDtot+ [$W/m^2$] | 0.376 |
| psPDmod+ [$W/m^2$] | 0.388 |
| $E_{max}$ [V/m] | 13.6 |
| Power Drift [dB] | -0.14 |



## ID: 029
## Measurement Report for Device, BACK SURFACE, U-NII-5, 2mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 47 (6185.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

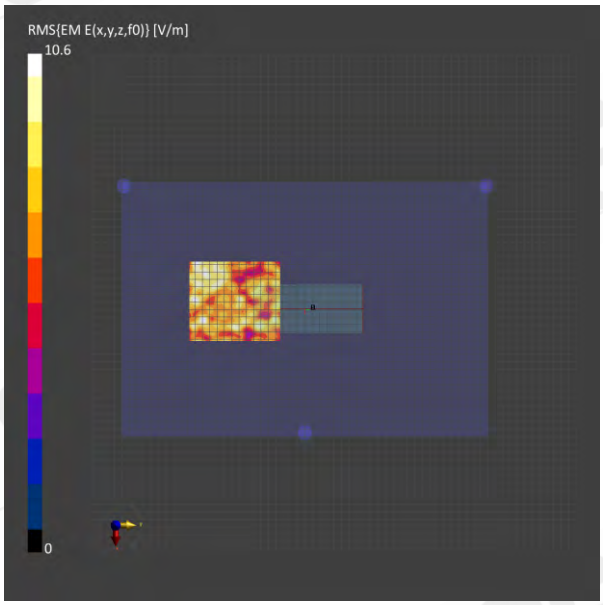
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [cm$^2$] | 4.00 |
| psPDn+ [W/m$^2$] | 0.200 |
| psPDtot+ [W/m$^2$] | 0.208 |
| psPDmod+ [W/m$^2$] | 0.214 |
| $E_{max}$ [V/m] | 10.6 |
| Power Drift [dB] | -0.08 |



## ID: 030
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-6, 2mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 111 (6505.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

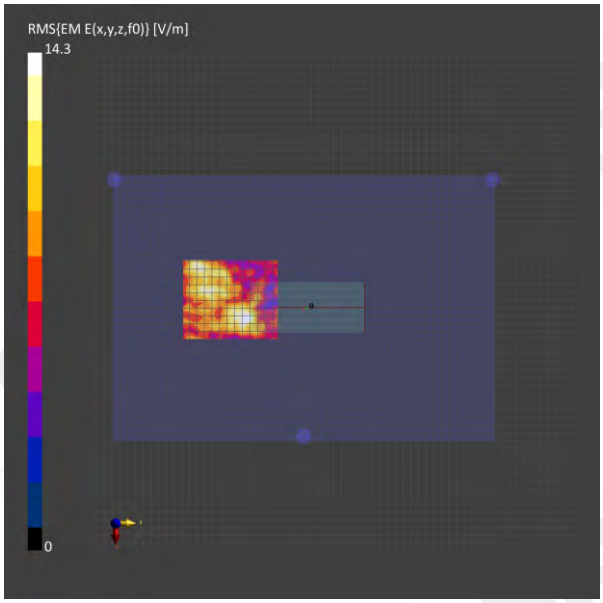
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 0.334 |
| psPDtot+ [$W/m^2$] | 0.355 |
| psPDmod+ [$W/m^2$] | 0.380 |
| $E_{max}$ [V/m] | 14.3 |
| Power Drift [dB] | 0.11 |



## ID: 031
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-7, 2mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 143 (6665.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

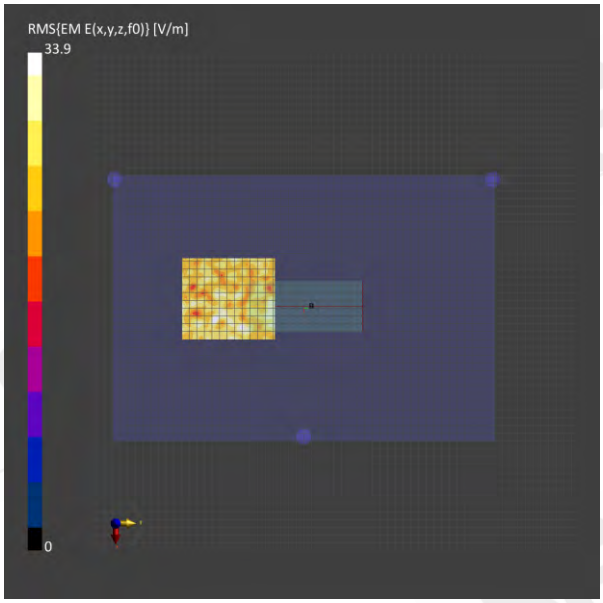
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 1.83 |
| psPDtot+ [$W/m^2$] | 1.86 |
| psPDmod+ [$W/m^2$] | 2.03 |
| $E_{max}$ [V/m] | 33.9 |
| Power Drift [dB] | -0.12 |



## ID: 032
## Report No. :TESA2207000216ES
## Measurement Report for Device, BACK SURFACE, U-NII-8, 2mm, Ant 1
## IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)
## Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Conversion Factor |
|---|---|---|
| 5G | BACK SURFACE, 2.00 | 1.0 |

## Hardware Setup

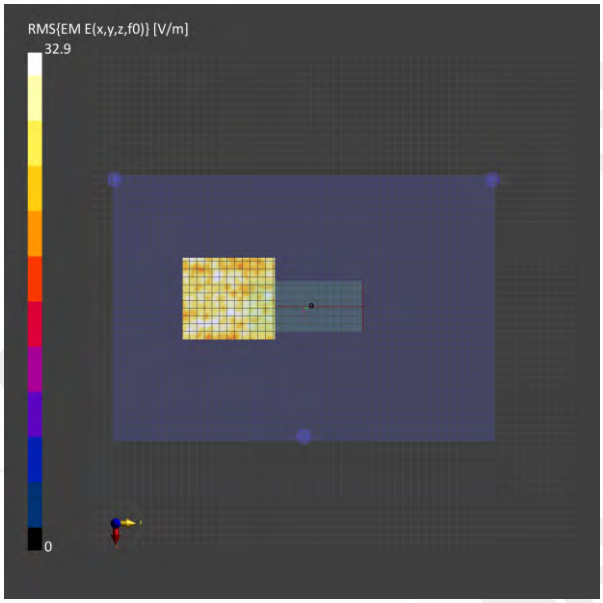
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## 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 | 2022-09-22 |
| Avg. Area [$cm^2$] | 4.00 |
| psPDn+ [$W/m^2$] | 1.98 |
| psPDtot+ [$W/m^2$] | 2.01 |
| psPDmod+ [$W/m^2$] | 2.16 |
| $E_{max}$ [V/m] | 32.9 |
| Power Drift [dB] | -0.19 |



# 14 SAR SYSTEM CHECK RESULTS

Date: 2022/9/19

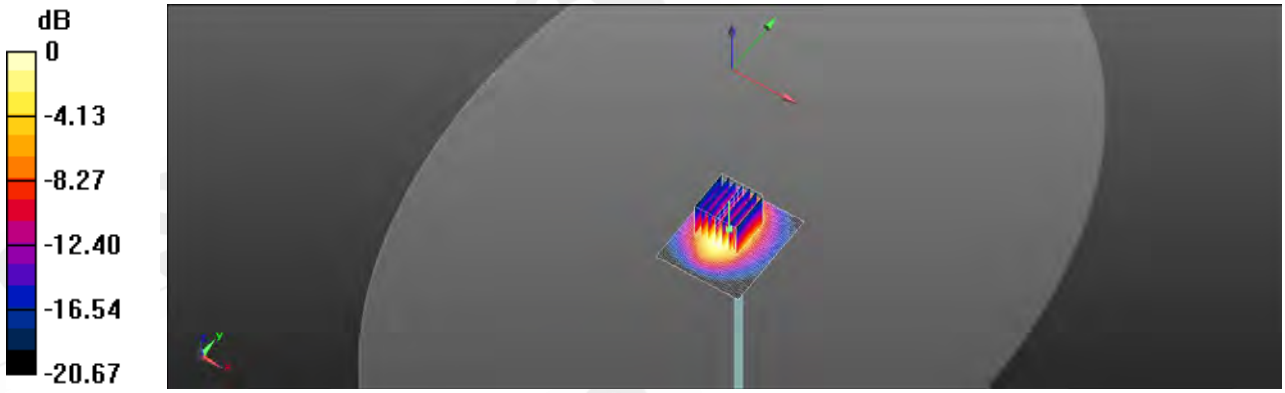
**Report No. :TESA2207000216ES**
**Dipole 2450 MHz_SN:727**
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.841 S/m; $\varepsilon_r$ = 39.629; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.3°C; Liquid temperature: 22.4°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 (51x61x1):** Interpolated grid: dx=12 mm, dy=12 mm
Maximum value of SAR (interpolated) = 22.4 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.65 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 28.0 W/kg
**SAR(1 g) = 14 W/kg; SAR(10 g) = 6.82 W/kg**
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 49.5%
Maximum value of SAR (measured) = 21.0 W/kg




0 dB = 21.0 W/kg = 13.22 dBW/kg

Date: 2022/9/20

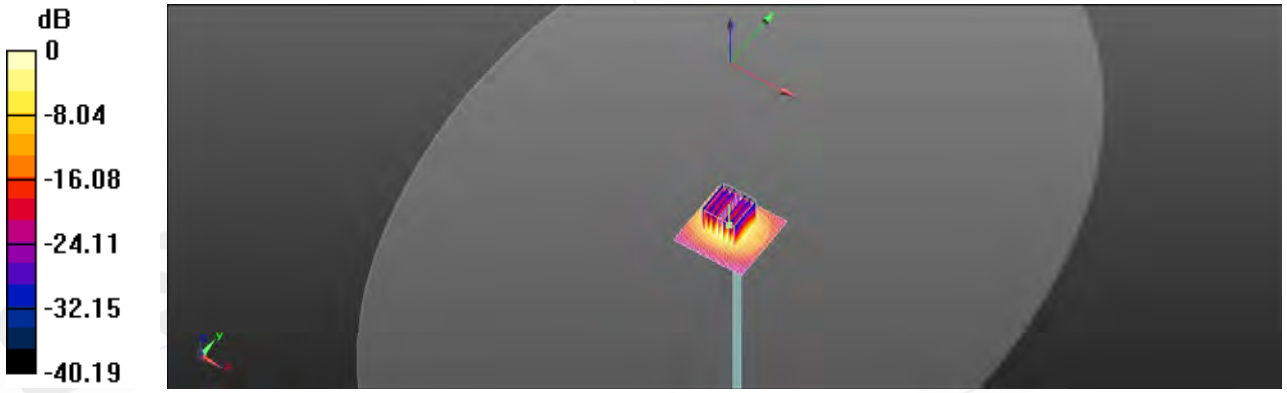
**Report No. :TESA2207000216ES**
**Dipole 5250 MHz_SN:1023**
Communication System: CW; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; $\sigma$ = 4.774 S/m; $\varepsilon_r$ = 36.449; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 22.1°C; Liquid temperature: 22.2°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 (51x51x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 15.4 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 55.92 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 30.1 W/kg
**SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.18 W/kg**
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 56.1%
Maximum value of SAR (measured) = 16.0 W/kg




0 dB = 16.0 W/kg = 12.04 dBW/kg

Date: 2022/9/21

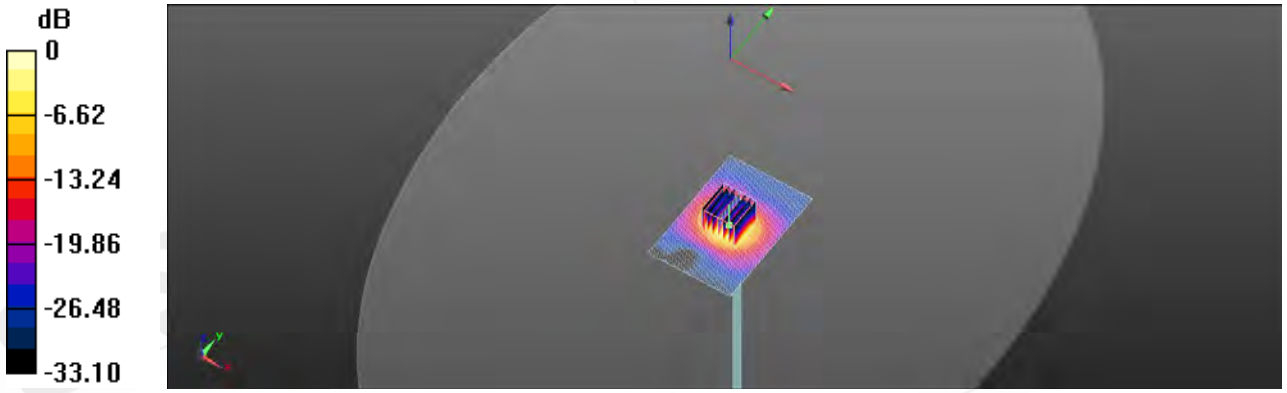
**Report No. :TESA2207000216ES**
**Dipole 5600 MHz_SN:1023**
Communication System: CW; Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; $\sigma$ = 5.161 S/m; $\varepsilon_r$ = 35.931; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 21.9°C; Liquid temperature: 22.2°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 (61x91x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 18.4 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 63.17 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 35.5 W/kg
**SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.29 W/kg**
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 53.3%
Maximum value of SAR (measured) = 17.5 W/kg




0 dB = 17.5 W/kg = 12.43 dBW/kg

Date: 2022/9/21

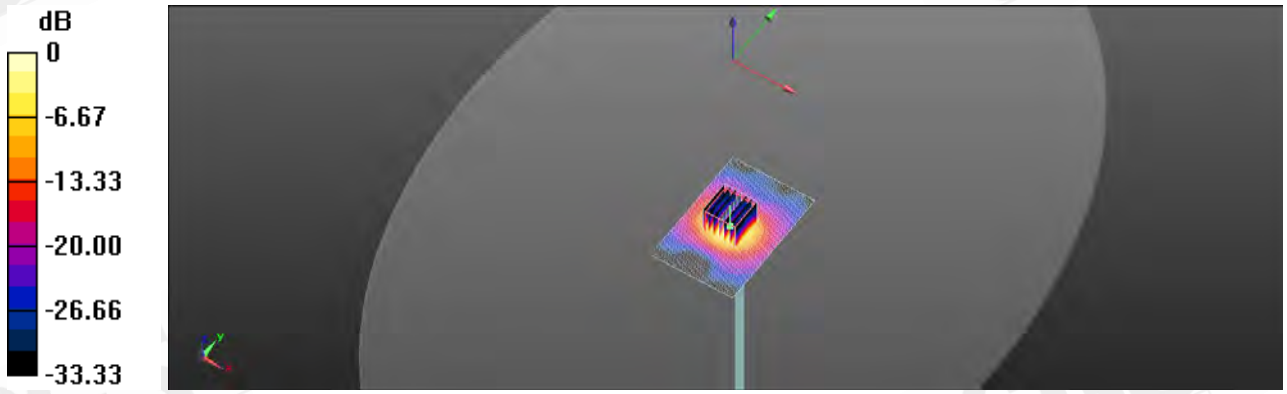
**Report No. :TESA2207000216ES**
**Dipole 5750 MHz_SN:1023**
Communication System: CW; Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; $\sigma$ = 5.337 S/m; $\varepsilon_r$ = 35.442; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Ambient temperature: 21.9°C; Liquid temperature: 22.2°C

DASY5 Configuration:

- Probe: EX3DV4 - SN7686; ConvF(5.3, 5.3, 5.3); Calibrated: 2021/10/05
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1665; Calibrated: 2022/02/28
- Phantom: ELI
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**Area Scan (61x91x1):** Interpolated grid: dx=10 mm, dy=10 mm
Maximum value of SAR (interpolated) = 19.2 W/kg

**Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 61.01 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 39.4 W/kg
**SAR(1 g) = 8.49 W/kg; SAR(10 g) = 2.35 W/kg**
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 50.7%
Maximum value of SAR (measured) = 18.3 W/kg




0 dB = 18.3 W/kg = 12.63 dBW/kg

**Report No. :TESA2207000216ES**
**Measurement Report for Device, FRONT, Validation band, CW, Channel 6500 (6500.0 MHz)_SN:1006**
**Ambient temperature: 21.8; Liquid temperature: 22.1**

## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | FRONT, 0.00 | 5.8 | 6.194 | 34.471 |

## Hardware Setup

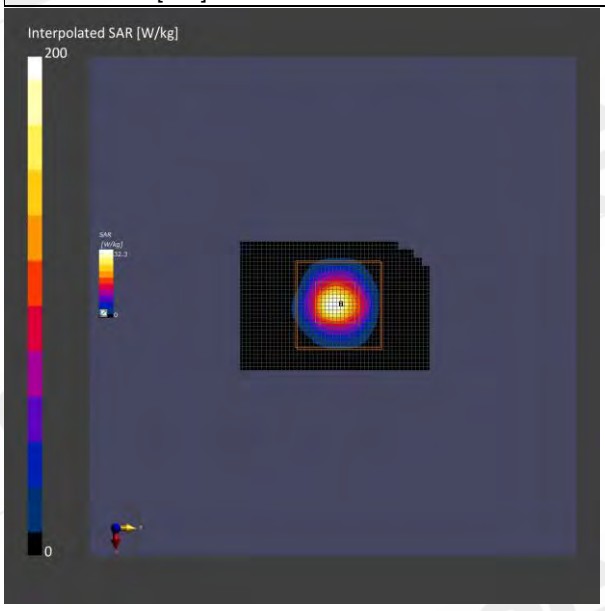
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 36.0 x 51.0 | 28.0 x 28.0 x 24.0 |
| 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 | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 24.4 | 28.7 |
| psSAR8g [W/kg] | 6.17 | 6.55 |
| psSAR10g [W/kg] | 4.95 | 5.28 |
| psPDab (4.0cm2, sq) [W/m2] | | 129 |
| Power Drift [dB] | -0.08 | -0.04 |
| M2/M1 [%] | | 51.6 |
| Dist 3dB Peak [mm] | | 4.8 |



**Report No. :TESA2207000216ES**
**Measurement Report for Device, FRONT, Validation band, CW, Channel 7000 (7000.0 MHz)_SN:1007**
**Ambient temperature: 21.8; Liquid temperature: 22.1**

## Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|---|---|---|---|---|
| Flat, HSL | FRONT, 0.00 | 5.7 | 6.818 | 33.671 |

## Hardware Setup

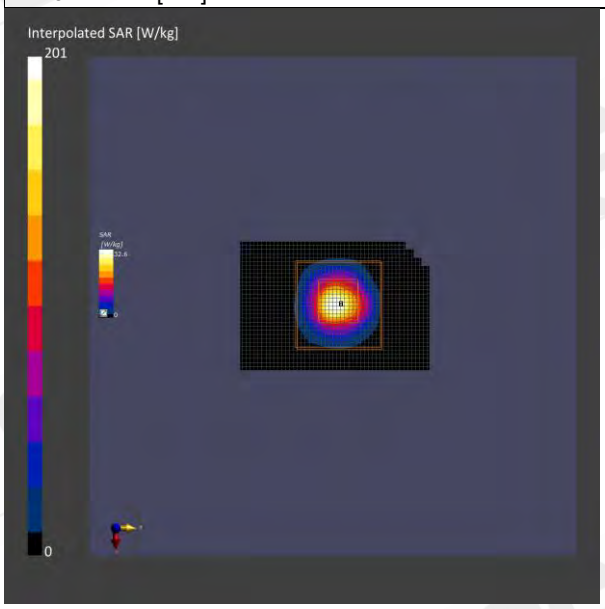
| Phantom | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|
| ELI V5.0 (20deg probe tilt) - 1141 | EX3DV4 - SN7642, 2022-03-02 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | Area Scan | Zoom Scan |
|---|---|---|
| Grid Extents [mm] | 36.0 x 45.0 | 28.0 x 28.0 x 24.0 |
| Grid Steps [mm] | 6.0 x 7.5 | 3.4 x 3.4 x 1.4 |
| Sensor Surface [mm] | 3.0 | 1.4 |

## Measurement Results

| | Area Scan | Zoom Scan |
|---|---|---|
| Date | 2022-09-22 | 2022-09-22 |
| psSAR1g [W/kg] | 25.0 | 26.3 |
| psSAR8g [W/kg] | 5.56 | 5.64 |
| psSAR10g [W/kg] | 4.58 | 4.62 |
| psPDab (4.0cm2, sq) [W/m2] | | 113 |
| Power Drift [dB] | 0.04 | 0.04 |
| M2/M1 [%] | | 48.5 |
| Dist 3dB Peak [mm] | | 4.6 |



# 15 PD SYSTEM CHECK RESULTS

**Report No. :TESA2207000216ES**
**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, 2.00 | 1.0 |

## Hardware Setup

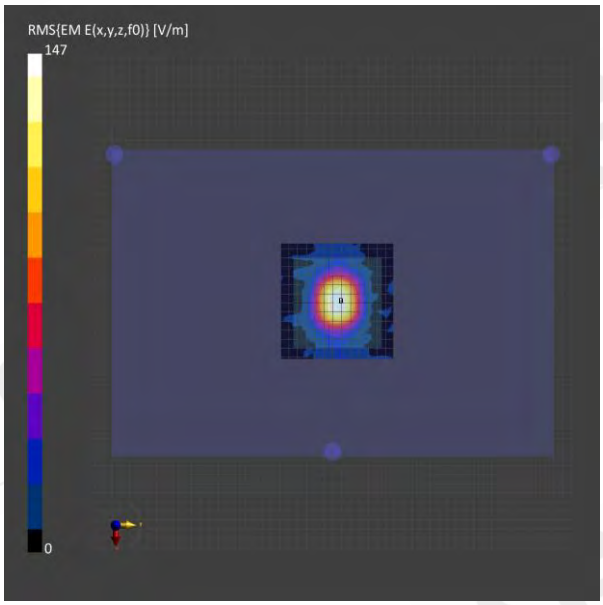
| Phantom | Medium | Probe, Calibration Date | DAE, Calibration Date |
|---|---|---|---|
| mmWave - 1076 | Air - | EUmmWV3 - SN9399_F1-55GHz, 2022-01-26 | DAE4 Sn1665, 2022-02-28 |

## Scans Setup

| | |
|---|---|
| Scan Type | 5G Scan |
| Grid Extents [mm] | 120.0 x 120.0 |
| Grid Steps [lambda] | 0.25 x 0.25 |
| Sensor Surface [mm] | 2.0 |

## Measurement Results

| | |
|---|---|
| Scan Type | 5G Scan |
| Date | 2022-09-22 |
| Avg. Area [$cm^2$] | 1.00 |
| psPDn+ [$W/m^2$] | 50.9 |
| psPDtot+ [$W/m^2$] | 51.0 |
| psPDmod+ [$W/m^2$] | 51.2 |
| $E_{max}$ [V/m] | 144 |
| Power Drift [dB] | 0.11 |



# 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 -**