

# TEST REPORT

**Applicant** J.C. Technology Inc.  
dba Ace Computers

**FCC ID** 2BG3F-T630V2

**Product** Notebook

**Model** Ace Mustang T630 V2;  
Ace Mustang T730

**Report No.** R2405A0567-S1V1

**Issue Date** August 21, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **IEEE 1528-2013, IEC/IEEE 62209-1528:2020, ANSI C95.1: 1992, IEEE C95.1: 1991**. The test results show that the equipment tested can demonstrate the compliance with the requirements as documented in this report.



*Prepared by: Wei Fangying*



*Approved by: Fan Guangchang*

**Eurofins TA Technology (Shanghai) Co., Ltd.**

*Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China*

*TEL: +86-021-50791141/2/3*

*FAX: +86-021-50791141/2/3-8000*

## Table of Contents

|       |  |     |
|-------|--|-----|
| 1     | Test Laboratory .....  | 5   |
| 1.1   | Notes of the Test Report.....                                | 5   |
| 1.2   | Test Facility.....   | 5   |
| 1.3   | Testing Location.....  | 5   |
| 1.4   | Laboratory Environment .....                                 | 5   |
| 2     | Statement of Compliance.....                                 | 6   |
| 3     | Description of Equipment Under Test .....                    | 7   |
| 4     | Test Specification, Methods and Procedures .....             | 9   |
| 5     | Operational Conditions during Test.....                      | 10  |
| 5.1   | Test Positions .....   | 10  |
| 5.2   | Measurement Variability .....                                | 11  |
| 5.3   | Test Configuration .....                                     | 12  |
| 5.2.1 | Wi-Fi Test Configuration .....                               | 12  |
| 5.2.2 | Bluetooth Test Configuration.....                            | 13  |
| 6     | Test System Configuration .....                              | 14  |
| 6.1   | Test System Set-up .....                                     | 14  |
| 6.2   | Probe Specification .....                                    | 15  |
| 6.3   | Measurement Procedure .....                                  | 17  |
| 6.4   | PD Measurement Procedure .....                               | 21  |
| 7     | Main Test Equipment.....                                     | 23  |
| 8     | Tissue Dielectric Parameter Measurements & System Check..... | 24  |
| 8.1   | Tissue Verification .....                                    | 24  |
| 8.2   | System Check.....  | 25  |
| 8.2.1 | System Check Configuration .....                             | 25  |
| 8.2.2 | SAR&APD System Check Results .....                           | 26  |
| 8.2.3 | PD System Check Result .....                                 | 27  |
| 9     | Normal and Maximum Output Power.....                         | 28  |
| 9.1   | WLAN Mode.....   | 28  |
| 9.2   | Bluetooth Mode.....  | 40  |
| 10    | Test Results.....  | 41  |
| 10.1  | EUT Antenna Locations.....                                   | 41  |
| 10.2  | SAR & APD Test Results.....                                  | 42  |
| 10.3  | PD Test Results .....  | 44  |
| 10.4  | Simultaneous Transmission Analysis .....                     | 45  |
| 11    | Measurement Uncertainty .....                                | 46  |
|       | ANNEX A: Test Layout .....                                   | 49  |
|       | ANNEX B: System Check Results .....                          | 51  |
|       | ANNEX C: Highest Graph Results .....                         | 60  |
|       | ANNEX D: Probe Calibration Certificate (SN: 3677) .....      | 71  |
|       | ANNEX E: Probe Calibration Certificate (SN: 9642).....       | 93  |
|       | ANNEX F: D2450V2 Dipole Calibration Certificate.....         | 111 |

|  |     |
|--|-----|
| ANNEX G: D5GHzV2 Dipole Calibration Certificate .....                | 117 |
| ANNEX H: D6.5GHzV2 Dipole Calibration Certificate .....              | 126 |
| ANNEX I: 5G Verification Source 10 GHz Calibration Certificate ..... | 132 |
| ANNEX J: DAE4 Calibration Certificate (SN: 1317) .....               | 139 |
| ANNEX K: The EUT Appearance .....                                    | 144 |
| ANNEX L: Test Setup Photos .....                                     | 145 |

| Version   | Revision Description     | Issue Date      |
|---|--------------------------|-----------------|
| Rev.0   | Initial issue of report. | August 8, 2024  |
| Rev.1   | Updated information.     | August 21, 2024 |
| Note: This revised report (Report No.: R2405A0567-S1V1) supersedes and replaces the previously issued report (Report No.: R2405A0567-S1). Please discard or destroy the previously issued report and dispose of it accordingly. |                          |                 |

# 1 Test Laboratory

## 1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

## 1.2 Test Facility

### FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

### A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

## 1.3 Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.  
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China  
City: Shanghai  
Post code: 201201  
Country: P. R. China  
Contact: Fan Guangchang  
Telephone: +86-021-50791141/2/3  
Fax: +86-021-50791141/2/3-8000  
Website: <https://www.eurofins.com/electrical-and-electronics>  
E-mail: Jack.Fan@cpt.eurofinscn.com

## 1.4 Laboratory Environment

|   |                          |
|---|--------------------------|
| Temperature   | Min. = 18°C, Max. = 25°C |
| Relative humidity   | Min. = 20%, Max. = 80%   |
| Ground system resistance  | < 0.5 $\Omega$           |
| Ambient noise is checked and found very low and in compliance with requirement of standards.<br>Reflection of surrounding objects is minimized and in compliance with requirement of standards. |                          |

## 2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) and PD found during testing for the EUT are as follows:

Table 1: Highest Reported SAR and PD

| Mode  | Highest Reported SAR (W/kg)                      |                               |
|---|--|-------------------------------|
|   | 1g SAR Body<br>(Separation 0mm)                  |                               |
| Wi-Fi 2.4G  | 0.509  |                               |
| Wi-Fi 5G  | 0.429  |                               |
| Wi-Fi 6G  | 0.221  |                               |
| Bluetooth   | 0.121  |                               |
| Mode  | Highest PD (W/m <sup>2</sup> @4cm <sup>2</sup> ) |                               |
|   | Test Distance: 2 mm                              | Test Distance: $\lambda/5$ mm |
| Wi-Fi 6G  | 1.579  | 1.173                         |
| Date of Testing: May 31, 2024 ~ June 5, 2024  |  |                               |
| Date of Sample Received: May 24, 2024   |  |                               |
| Note:   |  |                               |
| 1. The device is in compliance with Uncontrolled Environment /General Population exposure limits (1.6 W/kg for SAR / 10 W/m <sup>2</sup> @4 cm <sup>2</sup> for PD) specified in ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and IEC/IEEE 62209-1528:2020. |  |                               |
| 2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.   |  |                               |

### 3 Description of Equipment Under Test

#### Client Information

|                      |   |
|----------------------|---|
| Applicant            | J.C. Technology Inc. dba Ace Computers    |
| Applicant address    | 340 Howard Ave Des Plaines, IL 60018, USA |
| Manufacturer         | J.C. Technology Inc. dba Ace Computers    |
| Manufacturer address | 340 Howard Ave Des Plaines, IL 60018, USA |

#### General Technologies

|  |  |
|--|--|
| EUT Stage  | Identical Prototype                    |
| Model  | Ace Mustang T630 V2; Ace Mustang T730  |
| Device ID  | E5E049E3-D958-46BC-B4AC-DBCC7709324B   |
| Hardware Version   | /                                      |
| Software Version   | 22H2                                   |
| Antenna Type   | Internal Antenna                       |
| Wi-Fi Hotspot  | Wi-Fi 2.4G<br>Wi-Fi 5G U-NII-1&U-NII-3 |
| EUT Accessory  |  |
| Battery  | Manufacturer: /<br>Model: 626872-3S    |
| Adapter  | Manufacturer: /<br>Model: TYPE-C60IC   |
| Note:<br>1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.<br>2. The customer declares that Ace Mustang T630 V2 and Ace Mustang T730 are the same except for different model name. This report only tests Ace Mustang T630 V2. |  |

## Wireless Technology and Frequency Range

| Wireless Technology   |      | Modulation              | Operating mode  | Tx (MHz)    | Rx (MHz)    |
|---|------|-------------------------|---|-------------|-------------|
| Bluetooth   | 2.4G | Version 5.3 BR/EDR + LE |   | 2402 ~2480  | 2402 ~2480  |
| Wi-Fi   | 2.4G | DSSS, OFDM              | 802.11b/g/n HT20  | 2412 ~ 2462 | 2412 ~ 2462 |
|   |      | OFDM                    | 802.11n HT40  | 2422 ~ 2452 | 2422 ~ 2452 |
|   | 5G   | OFDM                    | 802.11a/ 802.11n HT20/ HT40/ 802.11ac VHT20/ VHT40/ VHT80 | 5150 ~ 5250 | 5150 ~ 5250 |
|   |      |                         |   | 5725 ~ 5850 | 5725 ~ 5850 |
|   | 6G   | OFDMA                   | 802.11a/ 802.11ax HE20/ HE40/ HE80                        | 5925 ~ 6425 | 5925 ~ 6425 |
|   |      |                         |   | 6425 ~ 6525 | 6425 ~ 6525 |
|   |      |                         |   | 6525 ~ 6875 | 6525 ~ 6875 |
| 6875 ~ 7125   |      |                         |   | 6875 ~ 7125 |             |
| Does this device support MIMO <input checked="" type="checkbox"/> Yes(2TX, 2RX) <input type="checkbox"/> No |      |                         |   |             |             |



## 4 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, ANSI C95.1: 1992, IEEE C95.1: 1991, the following FCC Published RF exposure KDB procedures:

IEEE 1528- 2013

IEC 62479:2010

IEC/IEEE 62209-1528:2020

DASY8 MODULE SAR SYSTEM HANDBOOK

DASY8 MODULE mmWAVE SYSTEM HANDBOOK

KDB 248227 D01 802.11Wi-Fi SAR v02r02

KDB 447498 D01 General RF Exposure Guidance v06

KDB 690783 D01 SAR Listings on Grants v01r03

KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04

KDB 865664 D02 RF Exposure Reporting v01r02

KDB 941225 D06 Hotspot Mode v02r01

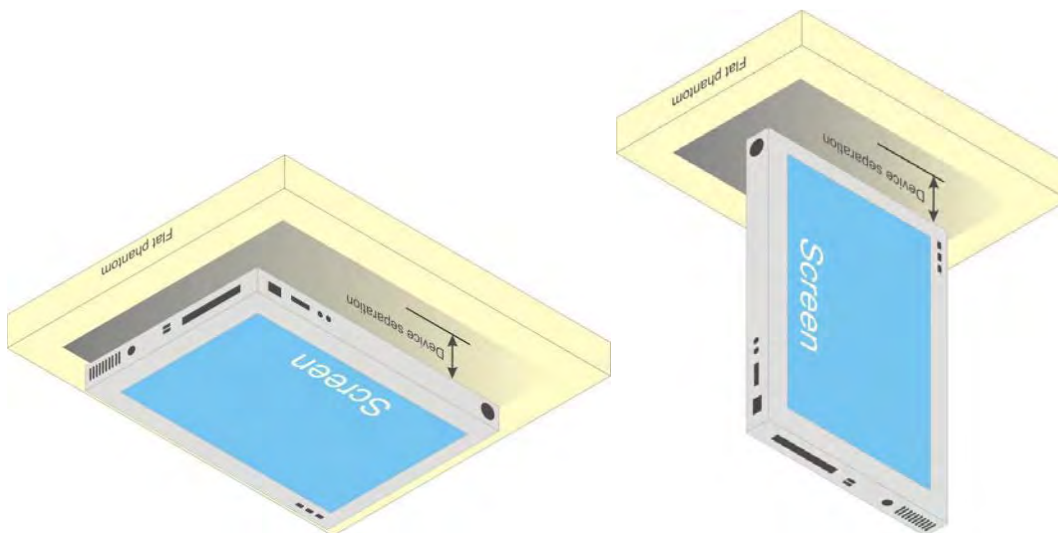
KDB 616217 D04 SAR for laptop and tablets v01r02

KDB 987594 D04 UN6GHZ Pre-Approval Guidance Checklist v01

## 5 Operational Conditions during Test

### 5.1 Test Positions

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



**Tablet Setup**

## 5.2 Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

- 1) When the original highest measured SAR is  $\geq 0.80$  W/kg, the measurement was repeated once.
- 2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was  $> 1.20$  or when the original or repeated measurement was  $\geq 1.45$  W/kg ( $\sim 10\%$  from the 1-g SAR limit).
- 3) A third repeated measurement was performed only if the original, first or second repeated measurement was  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .
- 4) Repeated measurements are not required when the original highest measured SAR is  $< 0.80$  W/kg

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

## 5.3 Test Configuration

### 5.2.1 Wi-Fi Test Configuration

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; These are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the *initial test position(s)* by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The *initial test position(s)* is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the *reported SAR* for the *initial test position* is:

- $\leq 0.4$  W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported SAR* is  $\leq 0.8$  W/kg or all required test positions are tested.
  - ✧ For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - ✧ When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported SAR* is  $> 0.8$  W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported SAR* is  $\leq 1.2$  W/kg or all required test channels are considered.
  - ✧ The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel

bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

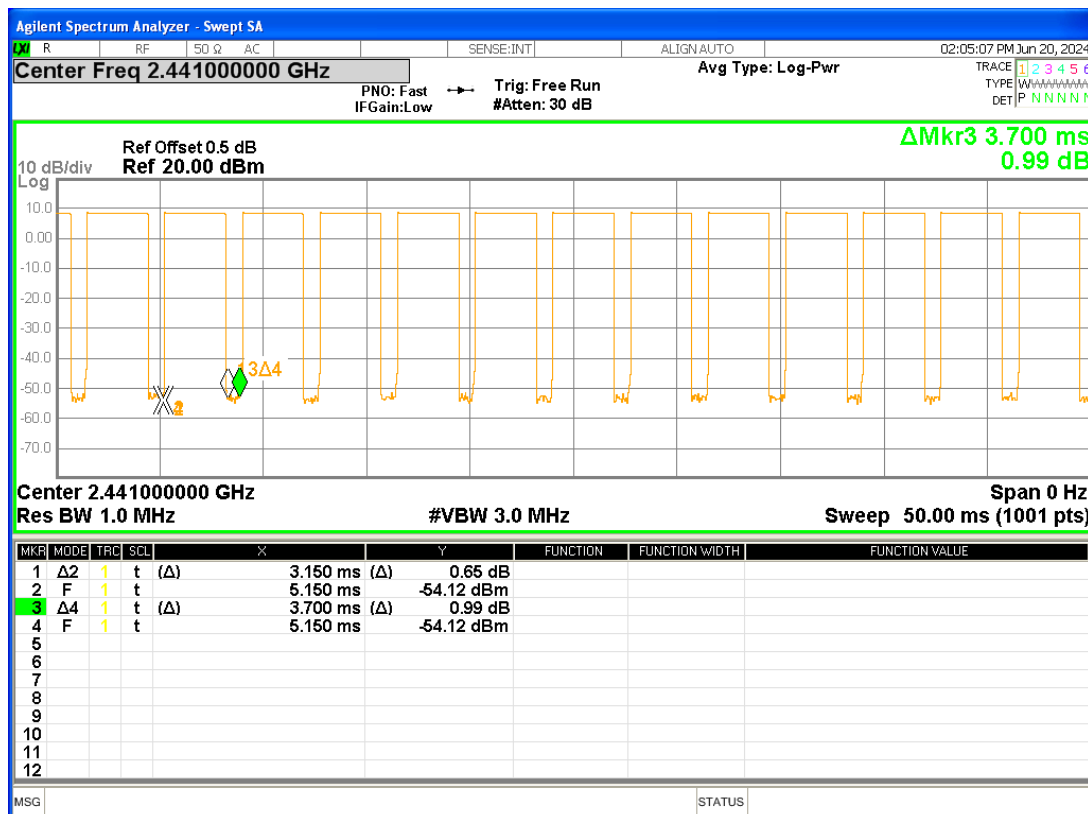
According to 201904 TCBC workshop KDB 248227 D01 can be used for SAR initial test configurations and test reduction for 802.11ax.

KDB 248227 D01 section 5.3.2 a) should be applied for SAR test configuration selection with maximum output power. The 802.11ax should be considered as the highest 801.11 mode for the appropriate frequency bands.

## 5.2.2 Bluetooth Test Configuration

For Bluetooth SAR testing, Bluetooth engineering testing software installed on the EUT can provide continuous transmitting RF signal with maximum output power. And the CBT control the EUT operating with hopping off and data rate set for DH5.

The SAR measurement takes full account of the Bluetooth duty cycle and is reflected in the report, and the duty factor of the device is as follow:

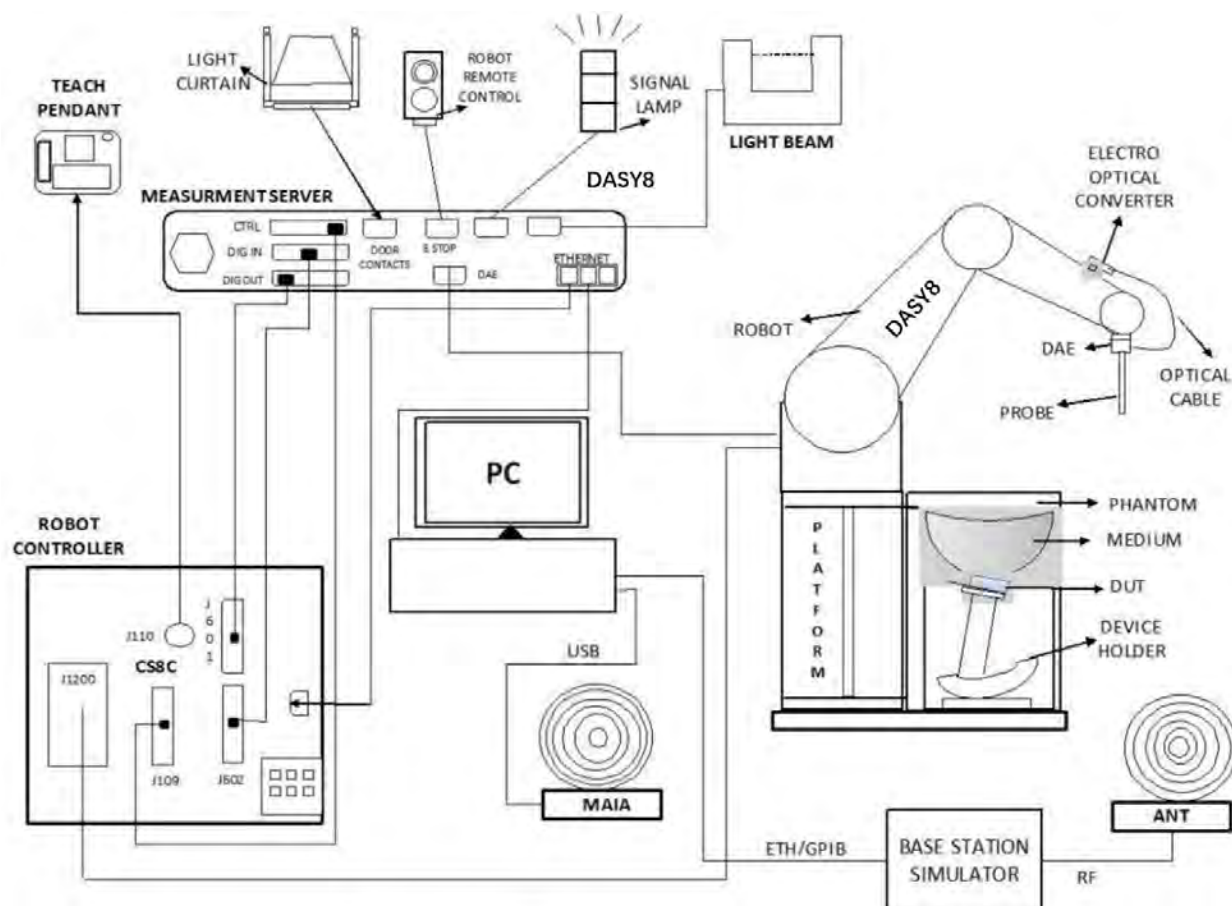


Note: Duty factor= Ton (ms)/ T(on+off) (ms)=85.1%

## 6 Test System Configuration

### 6.1 Test System Set-up

The DASY system 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 64-bit Operating System and the DASY 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.

## 6.2 Probe Specification

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

### EX3DV4 Probe Specification

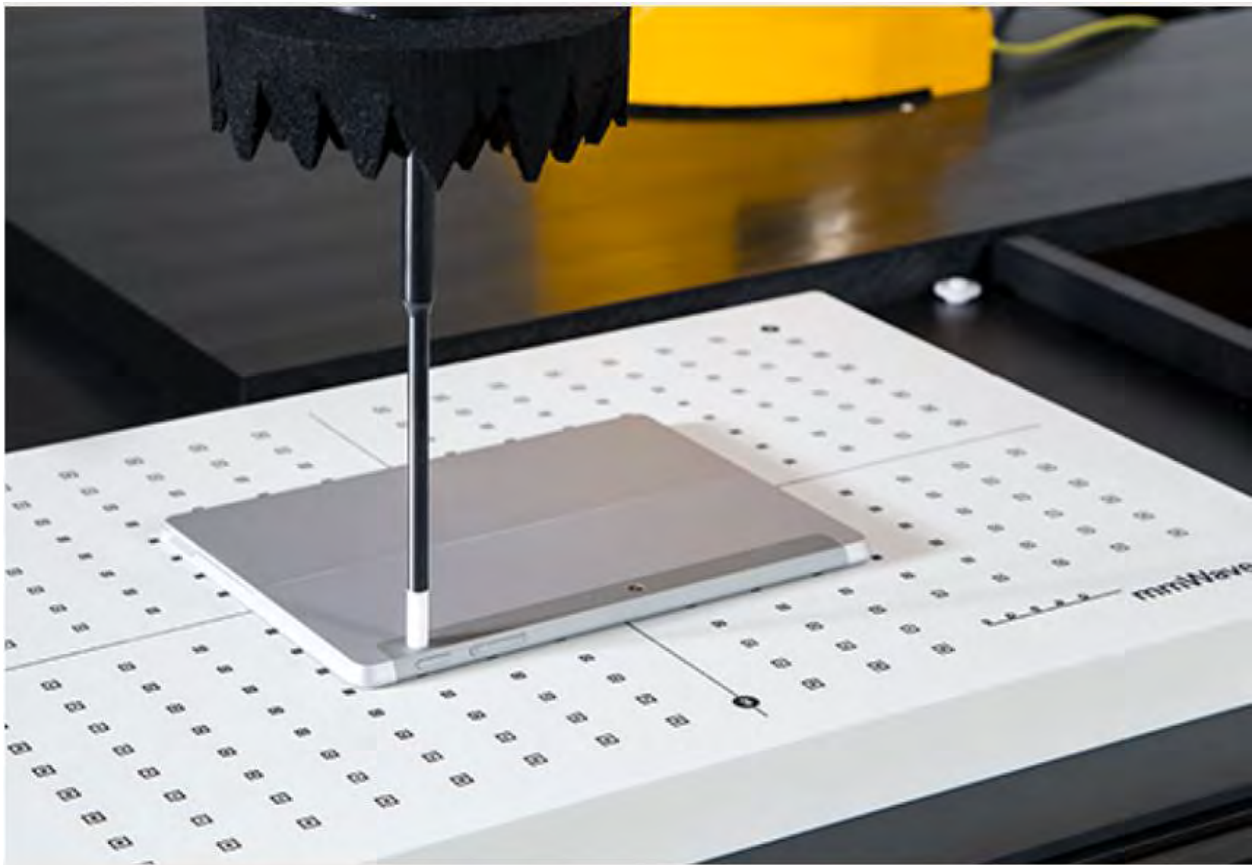
|               |  |
|---------------|--|
| Construction  | Symmetrical design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE)  |
| Calibration   | ISO/IEC 17025 calibration<br>service available   |
| Frequency     | 10 MHz to > 6 GHz<br>Linearity: $\pm 0.2$ dB<br>(30 MHz to 6 GHz)  |
| Directivity   | $\pm 0.3$ dB in HSL (rotation around probe axis) $\pm 0.5$ dB in tissue material (rotation normal to probe axis)   |
| Dynamic Range | 10 $\mu$ W/g to > 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)  |
| Dimensions    | Overall length: 330 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 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%. |





### EUmmWV4 Probe Specification

|                 |  |
|-----------------|--|
| Frequency Range | 750MHz-110GHz  |
| Dynamic Range   | < 50-3000V/m (up to 10000V/m with additional PER-10 voltage divider)   |
| Dimensions      | Probe Overall Length: 320 mm<br>Probe Body Diameter: 8 mm<br>Probe Tip Length: 23 mm<br>Probe Tip Diameter: Encapsulation 8 mm<br>Distance from Probe Tip to Sensor X Calibration Point: 1.5 mm<br>Distance from Probe Tip to Sensor Y Calibration Point: 1.5 mm |
| Applications    | E-field measurements of 5G devices and other mm-wave transmitters operating above 10 GHz in < 2 mm distance from device (free-space)<br>Power density, H-field and far-field analysis using total field reconstruction   |
| Compatibility   | DASY8: Full file compatibility   |





## 6.3 Measurement Procedure

### Fast Area Scan

Fast Area Scan is a novel scan available in DASY8. The sensor voltages are sampled continuously while the robot is moving which reduces the scan duration to <30 s for most configurations.

The Fast Area Scan provides an easy, time efficient and accurate way to define the optimal power reference location. The location of the power reference and power drift measurements for the subsequent Area, Fast Volume and Zoom Scans will be automatically set at the maximum of the Fast Area Scan.

The Fast Area Scan is mainly used to assess psSAR1g/10g values:

- 1) The post processing algorithm used for regular Area Scans is applied to Fast Area Scans as well to compute psSAR1g/10 values.
- 2) The measured pattern of the given test configuration is compared to the ones measured previously in the project. If a similar pattern shape (matching configuration) is found, a scaling factor defined as difference in amplitude of the two configurations is computed. The Area Scan and Zoom Scan results available for the matching configuration are then scaled to assess the psSAR1g/10g of the measured configuration.

Fast Area Scans default grid settings are the same as Area Scans. They are described in Table(a) and Table (b)

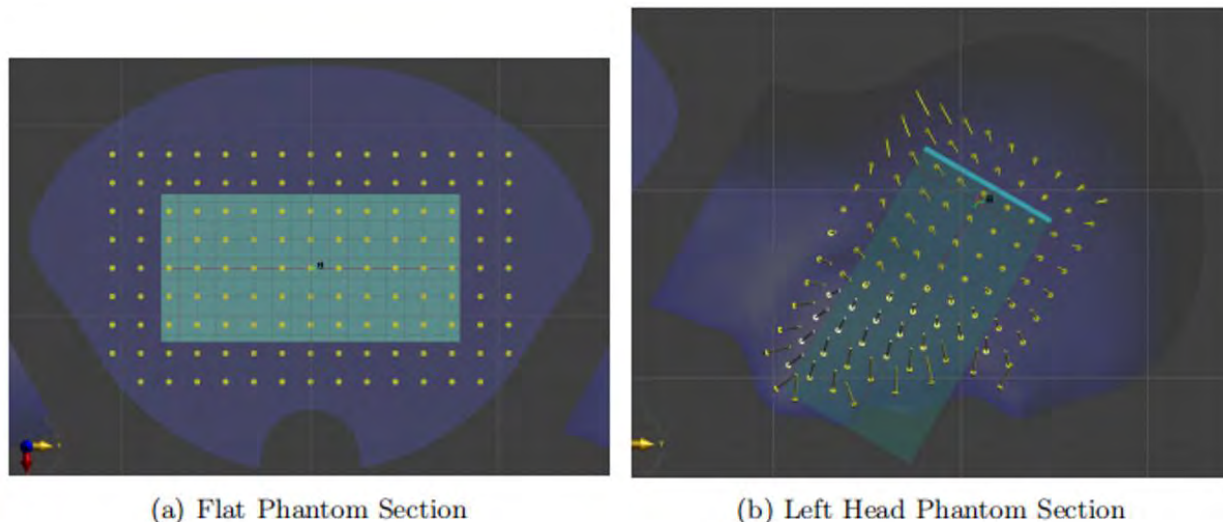
### Area Scan

Area Scans are used to determine the peak location of the measured field before doing a finer measurement around the hotspot. Peak location can be found accurately even on coarse grids using the advanced interpolation routines implemented in DASY8. Area Scans measure a two dimensional volume covering the full device under test area. DASY8 uses Fast Averaged SAR algorithm to compute the 1g and 10g of simulated tissue from the Area Scan.

DASY8 automatically generates Area Scan grid settings based on device dimensions. The scan extent is defined by the device dimensions plus additional 15 mm on each side.

For Flat phantom sections both the device under test and the area scan are centered around the phantom device reference point. For Left Head and Right Head phantom sections, Area Scans are anchored to the ERP (Ear Reference Point) and oriented along the Ear Mouth line. The device under test position on this line is given by the speaker position which is always placed at the ERP. The scans extents are defined by the device height and width increased by 15 mm on each side.

Figure (a) and Figure (b) show a typical area scan grid for Flat and Left Head phantom sections.



### Measurement Grid for Area Scans

Table A describe the Area Scan grid extents used in Flat, Left Head and Right Head phantom sections.

Area Scan grid steps and distance sensor to surface are defined in Table B. Please note that the settings are sufficient to determine accurately the position of the maximum SAR. For accurate psSAR estimation, finer settings might be used.

Table A: Area Scan Grid Extents in Flat, Left Head and Right Head Phantom Sections

| Section           | Position    | Extent X<br>[mm] | Extent Y<br>[mm] |
|-------------------|-------------|------------------|------------------|
| Flat              | TOP         | Width + 30       | Height + 30      |
| Flat              | BOTTOM      | Width + 30       | Height + 30      |
| Flat              | EDGE TOP    | Thickness + 30   | Width + 30       |
| Flat              | EDGE BOTTOM | Thickness + 30   | Width + 30       |
| Flat              | EDGE LEFT   | Thickness + 30   | Height + 30      |
| Flat              | EDGE RIGHT  | Thickness + 30   | Height + 30      |
| Left / Right Head | CHEEK       | Width + 30       | Height + 30      |
| Left / Right Head | TILT        | Width + 30       | Height + 30      |

Table B: Area Scan Grid Steps in Flat, Left Head and Right Head Phantom Sections

| f<br>[GHz] | d sensor-surface<br>[mm] | Step X, Y<br>[mm] |
|------------|--------------------------|-------------------|
| 0 - 2      | 3                        | 15                |
| 2 - 3      | 3                        | 15                |
| 3 - 4      | 3                        | 10                |
| 4 - 6      | 3                        | 10                |
| 6 - 7      | 3                        | 8.5               |
| 7 - 8      | 3                        | 7.5               |
| 8 - 9      | 3                        | 6.5               |
| 9 - 10     | 3                        | 6                 |

In DASY8 user defined grid settings can be applied as well. In the scan properties of the measurement the grid extent, grid step and grid offset can be changed after changing the default selection 'DUT dimensions + 15 mm' to 'User defined' (see Figure (c) and Figure (d)).

Figure (c): Default grid settings based on DUT dimensions.

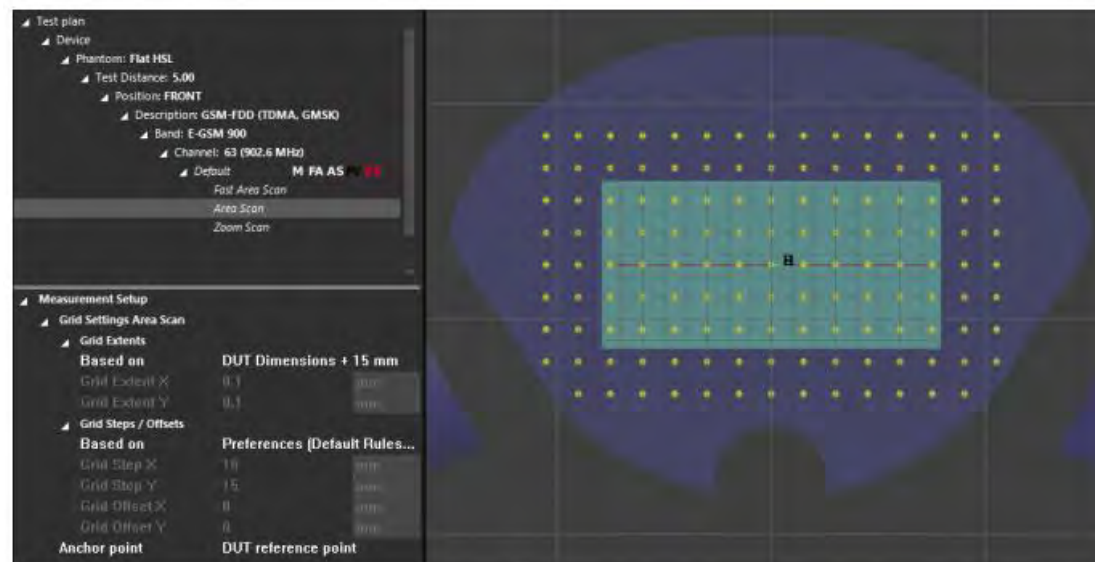
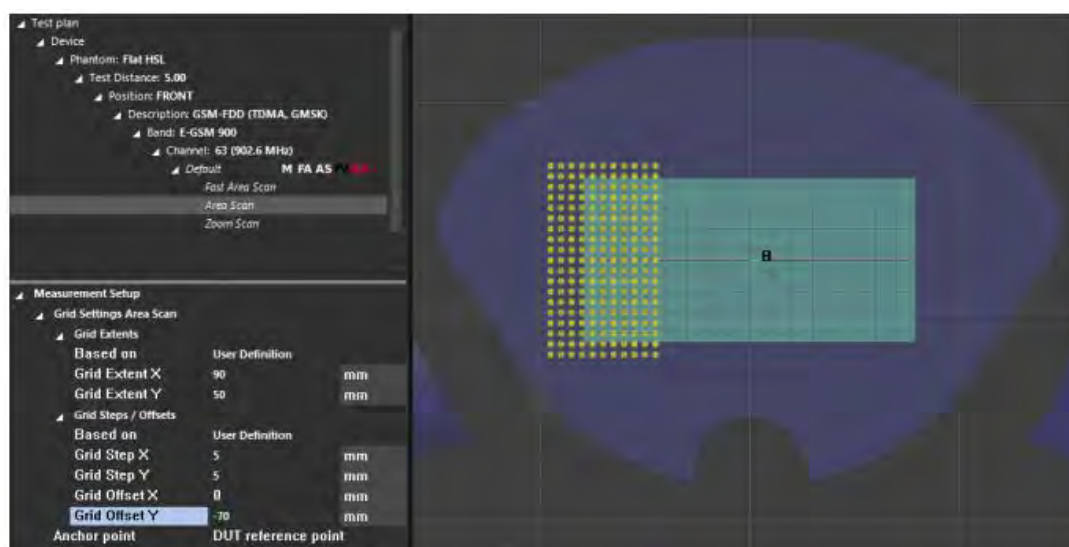


Figure (d): Grid settings as specified by the user



## Fast Volume Scan

Fast Volume Scans are 3D scans used to assess the peak spatial SAR values within an averaging volume containing 1g and 10g of simulated tissue. It is compatible with any phantom. For regular phantoms, the measurement grid is generated by projecting a plane onto the phantom surface as for Area and Zoom scans. For specific phantoms, the measurement grid is generated by a conformal offset to the phantom surface at the desired distances. The grid extents can be set by the end user to cover the DUT dimensions or the whole measurable area of the phantom.

The grid extents are defined as for the area scan. The number of measured layers and the spacing between the points are optimized based on measurement frequency as shown in Table C.

Table C: Fast Volume Scan Grid Settings

| Frequency [GHz] | Phantom Type | d sensor-surface [mm] | Step X, Y [mm] |
|-----------------|--------------|-----------------------|----------------|
| 0 - 4           | Regular      | 2, 5, 8, 15           | 10             |
| 0 - 4           | Specific     | 3, 7, 15              | 10             |
| 4 - 10          | Regular      | 2, 5, 8, 15           | 5              |
| 4 - 10          | Specific     | 3, 7, 15              | 5              |

For regular phantoms, the grid extents are based on the DUT dimensions as for the Area Scans (see Area Scan).

## Zoom Scan

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1g and 10g of simulated tissue. Zoom scans measure a three dimensional volume (cube). The bottom face of the cube is centered on the maximum of the preceding Area Scan in the same measurement group. For maxima at border of the phantom, Auto extend zoom scan when maxima on boundary feature can be enabled in Application Preferences \_x001D\_ Scan Settings with Administrator access level.

Zoom Scans can be performed in two different modes:

(1) Smart Mode: the grid settings are adjusted on the fly based on the distribution being measured to fulfill to the IEC/IEEE 62209-1528 criteria on grid resolution. This is the recommended operating mode.

(2) Custom Mode: the user specifies the grid settings to be used.

In both modes, Zoom Scans are always anchored to the peak location of the preceding Fast Area / Area / Fast Volume Scan. The sensor distance to the surface depends on the probe type used during measurement: 1.4 mm for EX probes and 3 mm for ES probes.

The Smart Zoom Scan is the highly recommended measurement mode as it minimizes the number of measured points, ensures that all standard requirements are met and guarantees that the uncertainty budget provided by SPEAG is always valid.

In this mode, a 2D Scan on a fine grid resolution of 30 mm x 30 mm with grid step of 5 mm is performed before each Zoom Scan at the maximum location of the preceding Area Scan. The 3 dB



requirement of the IEC/IEEE 62209-1528 standard is then calculated. Based on these measurements, the zoom grid parameters are determined:

- (1) the grid step in XY-planes (planes parallel to phantom surface) for the following Zoom Scan is determined to ensure minimal number of points while meeting the requirements for DASY's uncertainty budget and the 3 dB requirement of the IEC/IEEE 62209-1528 standard.
- (2) the grid step normal to the surface, is also determined to ensure minimal number of z-planes while meeting the requirements for DASY's uncertainty budget and the requirements of IEC/IEEE 62209-1528 standard.

The Zoom Scan is then performed with the optimized grid settings computed above. In all cases, the grid steps will not exceed the ones presented in Table D.

Table D: Default Zoom Scan Grid Settings

| Frequency<br>[GHz] | Extend XYZ<br>[mm] | Step XY<br>[mm] | Step Z<br>[mm] | Graded | Grading Ratio<br>[mm] |
|--------------------|--------------------|-----------------|----------------|--------|-----------------------|
| 0 - 2              | 30 x 30 x 30       | 6               | 1.5            | Yes    | 1.5                   |
| 2 - 3              | 30 x 30 x 30       | 5               | 1.5            | Yes    | 1.5                   |
| 3 - 4              | 28 x 28 x 28       | 5               | 1.4            | Yes    | 1.5                   |
| 4 - 5              | 25 x 25 x 25       | 4               | 1.4            | Yes    | 1.4                   |
| 5 - 6              | 22 x 22 x 22       | 4               | 1.4            | Yes    | 1.4                   |
| 6 - 7              | 22 x 22 x 22       | 3.4             | 1.4            | Yes    | 1.4                   |
| 7 - 8              | 22 x 22 x 22       | 3               | 1.4            | Yes    | 1.4                   |
| 8 - 9              | 22 x 22 x 22       | 2.7             | 1.3            | Yes    | 1.4                   |
| 9 - 10             | 22 x 22 x 22       | 2.4             | 1.2            | Yes    | 1.4                   |

In Custom mode, the user can specify the grid settings to be used. This mode can be useful for trouble-shooting purposes. A warning will be issued if the specified settings do not fulfill the DASY's uncertainty budget and the 3 dB requirement of IEC/IEEE 62209-1528 standard.

### Power Monitoring Scan

Power monitoring scans are used to monitor the power drift of the device under test. The local SAR strength is measured at a reference position at the beginning and at the end of the scan. The power drift is computed using the below formula:

$$P_{\text{drift}}[\text{dB}] = 10 \cdot \log_{10}(\text{SAR beginning} / \text{SAR end})$$

Power monitoring scans are available for fully integrated in Area and Zoom Scans. They can be enabled in Application Preferences\_x001D\_Scan Settings. For Area Scans, the reference point is defined as the maximum location of the preceding Fast Scan. A Fast Scan will be automatically performed if none has been performed and power monitoring is enabled. For Zoom Scans, it is defined at the first point of the measured grid. If the power drifts more than 5%, the SAR will be retested.

## 6.4 PD Measurement Procedure

The measurements to be performed are selected in the Project Overview window. DASY8 supports

five different scan types:

- **Fast Area Scan** – a measurement scan where sensor voltages are sampled continuously while the robot is moving – is used to determine the radiation pattern and the E-field maximum location.
- **Generic Scan** – a flexible measurement scan – is used to measure the E-field on a 1D, 2D, or 3D grid. The PD, valid in the far-field only, is calculated as  $S = E^2 / 120 \cdot \pi$ .
- **5G Scan** – a fine resolution scan performed on two different planes – is used to reconstruct the E and H-fields as well as the PD on the measurement plane; the average PD is derived from this measurement.
- **Forward Transform Scan** – a fine resolution scan performed on three different planes – is used to reconstruct the E- and H- fields as well as the PD. In addition to the 5G Scan, the PD can be evaluated on any surface in the half space above the measurement plane.  
Forward Transform (FT) Scans are also used as input of the MEO (Maximum Exposure Optimizer) option which assesses the maximized spatial averaged power density (mpsPD) for phased array antennas with a complex codebook from a reduced set of measurements.
- **Time-Averaged Scan** – a measurement scan where sensor voltages are sampled continuously at a fixed probe location – is used for compliance testing of devices that can monitor the transmitted power during a certain time interval.

## 7 Main Test Equipment

| Name of Equipment                  | Manufacturer | Type/Model       | Serial Number       | Software Version | Last Cal.  | Cal. Due Date |
|------------------------------------|--------------|------------------|---------------------|------------------|------------|---------------|
| Signal Generator                   | KEYSIGHT     | N5182B-X07       | MY51350303          | /                | 2023-12-05 | 2024-12-04    |
| Network Analyzer                   | Agilent      | E5071B           | MY42404014          | /                | 2024-05-07 | 2025-05-06    |
| Dielectric Probe Kit               | SPEAG        | DAK-3.5          | 1132                | /                | 2023-07-17 | 2024-07-16    |
| Power Meter                        | Agilent      | E4417A           | GB41291714          | /                | 2024-05-07 | 2025-05-06    |
| Power Sensor                       | Agilent      | N8481H           | MY50350004          | /                | 2024-05-07 | 2025-05-06    |
| Power Sensor                       | Agilent      | E9327A           | US40441622          | /                | 2024-05-07 | 2025-05-06    |
| KEYSIGHT                           | 87300B       | US5514149<br>4   | KEYSIGHT            | /                | /          | /             |
| Amplifier                          | R&S          | SCU18F           | 101022              | /                | /          | /             |
| Wireless Communication Tester      | R&S          | CMW 500          | 146734              | /                | 2024-05-07 | 2025-05-06    |
| E-field Probe                      | SPEAG        | EX3DV4           | 3677                | /                | 2023-07-20 | 2024-07-19    |
| DAE                                | SPEAG        | DAE4             | 1317                | /                | 2023-09-13 | 2024-09-12    |
| PD Probe                           | SPEAG        | EUmmWV4          | 9642                | /                | 2023-07-11 | 2024-07-10    |
| 5G Verification Source<br>10GHz    | SPEAG        | 5G Veri10        | 1054                | /                | 2022-09-09 | 2025-09-08    |
| Validation Kit 2450MHz             | SPEAG        | D2450V2          | 786                 | /                | 2023-09-12 | 2026-09-11    |
| Validation Kit 5GHz                | SPEAG        | D5GHzV2          | 1203                | /                | 2022-12-09 | 2025-12-08    |
| 6.5GHz SAR Dipole                  | SPEAG        | D6.5GHzV2        | 1046                | /                | 2021-10-04 | 2024-10-03    |
| Test Software for Tissue           | SPEAG        | /                | /                   | DAK 3.0.4.1      | /          | /             |
| Temperature Probe                  | Auden        | DTM3000          | 3905                | /                | 2023-12-05 | 2024-12-04    |
| SAR Test System                    | SPEAG        | TX90<br>XLspeag  | F11/5H7CA1/<br>A/01 | 52.10.4.152<br>7 | /          | /             |
| DASY8 Module SAR<br>Test System    | SPEAG        | TX2-90 XL<br>spe | /                   | 16.2.4.2524      | /          | /             |
| DASY8 Module<br>mmWave Test System | SPEAG        | TX2-90 XL<br>spe | /                   | 3.0.0.841        | /          | /             |

## 8 Tissue Dielectric Parameter Measurements & System Check

### 8.1 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within  $\pm 2^\circ\text{C}$  of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 24 hours of use; or earlier if the dielectric parameters can become out of tolerance.

#### Target values

| Frequency (MHz) | $\epsilon_r$ | $\sigma(\text{s/m})$ |
|-----------------|--------------|----------------------|
| 2450            | 39.2         | 1.80                 |
| 5250            | 35.9         | 4.71                 |
| 5750            | 35.4         | 5.22                 |
| 6500            | 34.5         | 6.07                 |

#### Measurements results

| Frequency (MHz)  | Test Date | Temp °C | Measured Dielectric Parameters |                      | Target Dielectric Parameters |                      | Limit (Within $\pm 5\%$ ) |                  |
|--|-----------|---------|--------------------------------|----------------------|------------------------------|----------------------|---------------------------|------------------|
|  |           |         | $\epsilon_r$                   | $\sigma(\text{s/m})$ | $\epsilon_r$                 | $\sigma(\text{s/m})$ | Dev $\epsilon_r(\%)$      | Dev $\sigma(\%)$ |
| 2450   | 2024/5/31 | 21.5    | 38.6                           | 1.81                 | 39.2                         | 1.80                 | -1.53                     | 0.56             |
| 5250   | 2024/5/31 | 21.5    | 35.5                           | 4.80                 | 35.9                         | 4.71                 | -1.11                     | 1.91             |
| 5750   | 2024/5/31 | 21.5    | 34.9                           | 5.21                 | 35.4                         | 5.22                 | -1.41                     | -0.19            |
| 6500   | 2024/6/3  | 21.5    | 34.0                           | 6.08                 | 34.5                         | 6.07                 | -1.45                     | 0.16             |
| Note: The depth of tissue-equivalent liquid in a phantom must be $\geq 15.0$ cm. |           |         |                                |                      |                              |                      |                           |                  |



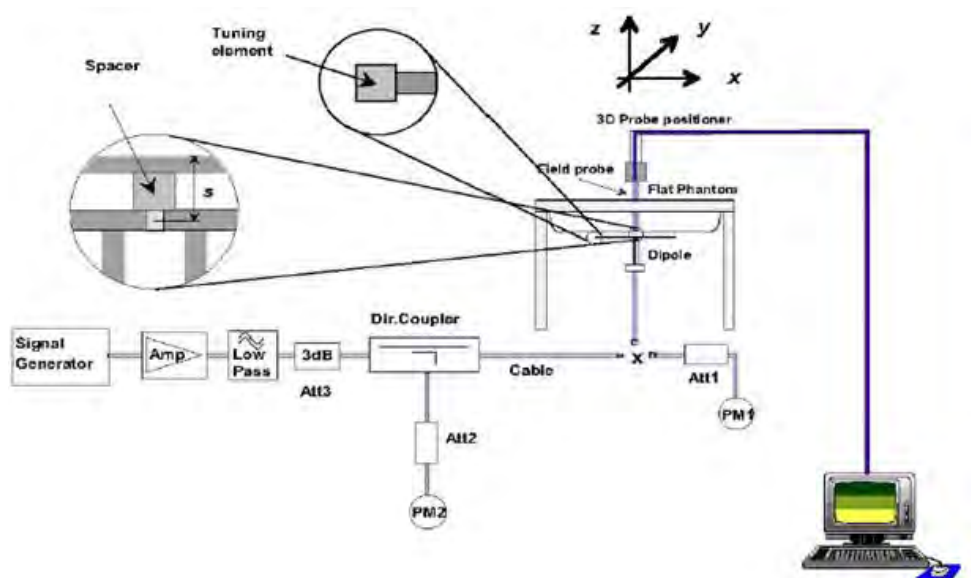
## 8.2 System Check

Note: The test data in this report is jointly completed by DASY5 and DASY8, and only the measurement procedure/set up of the DASY8 test system is put in this report.

### 8.2.1 System Check Configuration

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured using the dielectric probe kit and the network analyzer. A system check measurement for every day was made following the determination of the dielectric parameters of the Tissue simulates, using the dipole validation kit. The dipole antenna was placed under the flat section of the twin SAM phantom.

System check is performed regularly on all frequency bands where tests are performed with the DASY system.



Picture 1 System Check setup



Picture 2 Setup Photo

### Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss ( $> 20$  dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

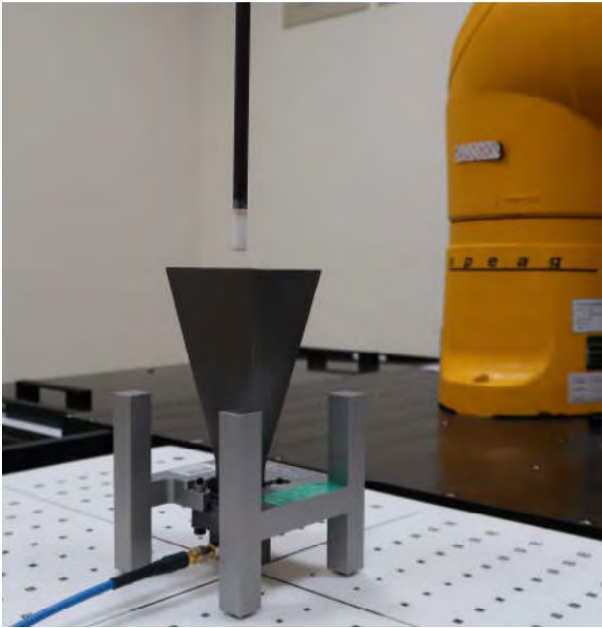
| Dipole                                |             | Date of Measurement | Return Loss (dB) | $\Delta$ % | Impedance ( $\Omega$ ) |                |           |                |
|---------------------------------------|-------------|---------------------|------------------|------------|------------------------|----------------|-----------|----------------|
|                                       |             |                     |                  |            | Real                   | $\Delta\Omega$ | Imaginary | $\Delta\Omega$ |
| Dipole D5GHzV2 (5250 MHz)<br>SN: 1203 | Head Liquid | 12/9/2022           | 29.0             | /          | 48.5                   | /              | -3.20     | /              |
|                                       |             | 12/8/2023           | 28.4             | -2.1       | 48.4                   | -0.1           | -3.4      | -0.2           |
| Dipole D5GHzV2 (5750 MHz)<br>SN: 1203 | Head Liquid | 12/9/2022           | 25.3             | /          | 53.6                   | /              | 4.30      | /              |
|                                       |             | 12/8/2023           | 25.7             | 1.6%       | 53.1                   | -0.5           | 4.7       | 0.4            |
| Dipole D6.5GHzV2<br>SN: 1046          | Head Liquid | 10/4/2021           | 42.5             | /          | 50.5                   | /              | 0.6       | /              |
|                                       |             | 10/3/2022           | 41.8             | -1.6       | 50.3                   | -0.2           | 0.5       | -0.1           |
|                                       |             | 10/2/2023           | 42.7             | 2.2        | 50.4                   | 0.1            | 0.7       | 0.2            |

### 8.2.2 SAR&APD System Check Results

| Frequency (MHz) | Test Date | Temp $^{\circ}\text{C}$ | 250mW Measured SAR <sub>1g</sub> (W/kg)                 | 1W Normalized SAR <sub>1g</sub> (W/kg)                 | 1W Target SAR <sub>1g</sub> (W/kg)                 | $\Delta$ % (Limit $\pm 10\%$ ) | Plot No. |
|-----------------|-----------|-------------------------|---|--|--|--------------------------------|----------|
| 2450            | 2024/5/31 | 21.5                    | 13.70   | 54.80  | 52.60  | 4.18                           | 1        |
| Frequency (MHz) | Test Date | Temp $^{\circ}\text{C}$ | 100mW Measured SAR <sub>1g</sub> (W/kg)                 | 1W Normalized SAR <sub>1g</sub> (W/kg)                 | 1W Target SAR <sub>1g</sub> (W/kg)                 | $\Delta$ % (Limit $\pm 10\%$ ) | Plot No. |
| 5250            | 2024/5/31 | 21.5                    | 7.87  | 78.70  | 77.70  | 1.29                           | 2        |
| 5750            | 2024/5/31 | 21.5                    | 7.66  | 76.60  | 76.80  | -0.26                          | 3        |
| 6500            | 2024/6/3  | 21.5                    | 30.40   | 304.00   | 291.00   | 4.47                           | 4        |
| Frequency (MHz) | Test Date | Temp $^{\circ}\text{C}$ | 100mW Measured 4cm <sup>2</sup> APD (W/m <sup>2</sup> ) | 1W Normalized 4cm <sup>2</sup> APD (W/m <sup>2</sup> ) | 1W Target 4cm <sup>2</sup> APD (W/m <sup>2</sup> ) | Limit For APD ( $\pm 10\%$ )   | Plot No. |
| 6500            | 2024/6/5  | 22.0                    | 128   | 1280   | 1330   | -4                             | 5        |

Note: Target Values used derive from the calibration certificate data storage and evaluation.

8.2.3 PD System Cheek Result



| Frequency (GHz) | 5G Verification Source | Test Date | Distance (mm) | Measured 4cm <sup>2</sup> (W/m <sup>2</sup> ) | Targeted 4cm <sup>2</sup> (W/m <sup>2</sup> ) | Deviation (dB) | Plot No. |
|-----------------|------------------------|-----------|---------------|---|---|----------------|----------|
| 10              | 10GHz-                 | 2024/6/5  | 10            | 51.6  | 50  | 0.03           | 6        |

## 9 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

### 9.1 WLAN Mode

| Wi-Fi 2.4G<br>Antenna 1 | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |              |
|-------------------------|----------------------------|----------------------------|--------------|
|                         |                            | Tune-up                    | Meas.        |
| Mode                    |                            |                            |              |
| 802.11b<br>(1M)         | 1/2412                     | 15.00                      | 13.96        |
|                         | 6/2437                     | 15.00                      | 14.14        |
|                         | 11/2462                    | 15.00                      | <b>14.20</b> |
| 802.11g<br>(6M)         | 1/2412                     | 19.00                      | 18.15        |
|                         | 6/2437                     | 19.00                      | 18.13        |
|                         | 11/2462                    | 19.00                      | 18.23        |
| 802.11n-HT20<br>(MCS0)  | 1/2412                     | 19.00                      | 17.88        |
|                         | 6/2437                     | 19.00                      | 17.93        |
|                         | 11/2462                    | 19.00                      | 18.00        |
| 802.11n-HT40<br>(MCS0)  | 3/2422                     | 19.50                      | <b>19.18</b> |
|                         | 6/2437                     | 19.50                      | 18.08        |
|                         | 9/2452                     | 19.50                      | 18.15        |
| 802.11ax-HE20<br>(MCS0) | 1/2412                     | 19.00                      | 17.90        |
|                         | 6/2437                     | 19.00                      | 17.86        |
|                         | 11/2462                    | 19.00                      | 17.70        |
| 802.11ax-HE40<br>(MCS0) | 3/2422                     | 19.00                      | 18.21        |
|                         | 6/2437                     | 19.00                      | 18.35        |
|                         | 9/2452                     | 19.00                      | 18.02        |

Note: Initial test configuration is 802.11b / 802.11n-HT40 mode.

| Wi-Fi 2.4G<br>Antenna 2 | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |              |
|-------------------------|----------------------------|----------------------------|--------------|
|                         |                            | Tune-up                    | Meas.        |
| Mode                    |                            |                            |              |
| 802.11b<br>(1M)         | 1/2412                     | 15.00                      | 13.64        |
|                         | 6/2437                     | 15.00                      | 13.83        |
|                         | 11/2462                    | 15.00                      | <b>14.17</b> |
| 802.11g<br>(6M)         | 1/2412                     | 19.00                      | 17.90        |
|                         | 6/2437                     | 19.00                      | 18.05        |
|                         | 11/2462                    | 19.00                      | 18.32        |
| 802.11n-HT20            | 1/2412                     | 19.00                      | 17.69        |

|                         |         |       |              |
|-------------------------|---------|-------|--------------|
| (MCS0)                  | 6/2437  | 19.00 | 17.75        |
|                         | 11/2462 | 19.00 | 18.14        |
| 802.11n-HT40<br>(MCS0)  | 3/2422  | 19.50 | <b>19.28</b> |
|                         | 6/2437  | 19.50 | 18.21        |
|                         | 9/2452  | 19.50 | 18.27        |
| 802.11ax-HE20<br>(MCS0) | 1/2412  | 19.00 | 17.65        |
|                         | 6/2437  | 19.00 | 17.87        |
|                         | 11/2462 | 19.00 | 18.09        |
| 802.11ax-HE40<br>(MCS0) | 3/2422  | 19.00 | 18.19        |
|                         | 6/2437  | 19.00 | 18.27        |
|                         | 9/2452  | 19.00 | 18.29        |

Note: Initial test configuration is 802.11b / 802.11n-HT40 mode.

| Wi-Fi 2.4G<br>MIMO<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |              |
|----------------------------|----------------------------|----------------------------|--------------|
|                            |                            | Tune-up                    | Meas.        |
| 802.11n-HT20<br>(MCS0)     | 1/2412                     | 22.00                      | 20.80        |
|                            | 6/2437                     | 22.00                      | 20.85        |
|                            | 11/2462                    | 22.00                      | 21.08        |
| 802.11n-HT40<br>(MCS0)     | 3/2422                     | 22.50                      | <b>22.24</b> |
|                            | 6/2437                     | 22.50                      | 21.16        |
|                            | 9/2452                     | 22.50                      | 21.22        |
| 802.11ax-HE20<br>(MCS0)    | 1/2412                     | 22.00                      | 20.79        |
|                            | 6/2437                     | 22.00                      | 20.88        |
|                            | 11/2462                    | 22.00                      | 20.91        |
| 802.11ax-HE40<br>(MCS0)    | 3/2422                     | 22.00                      | 21.21        |
|                            | 6/2437                     | 22.00                      | 21.32        |
|                            | 9/2452                     | 22.00                      | 21.17        |

Note: Initial test configuration is 802.11n-HT40 mode.

| Wi-Fi 5G (U-NII-1)<br>Antenna 1<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|---|----------------------------|----------------------------|-------------|
|   |                            | Tune-up                    | Meas.       |
| 802.11a<br>(6M)                         | 36/5180                    | 10.50                      | 8.65        |
|   | 40/5200                    | 10.50                      | 8.72        |
|   | 48/5240                    | 10.50                      | <b>9.75</b> |
| 802.11n-HT20<br>(MCS0)                  | 36/5180                    | 10.00                      | 8.40        |
|   | 40/5200                    | 10.00                      | 8.42        |
|   | 48/5240                    | 10.50                      | 9.32        |

|                          |         |       |      |
|--------------------------|---------|-------|------|
| 802.11n-HT40<br>(MCS0)   | 38/5190 | 9.50  | 7.65 |
|                          | 46/5230 | 9.50  | 8.08 |
| 802.11ac-VHT20<br>(MCS0) | 36/5180 | 10.50 | 8.77 |
|                          | 40/5200 | 10.50 | 8.68 |
|                          | 48/5240 | 10.50 | 9.78 |
| 802.11ac-VHT40<br>(MCS0) | 38/5190 | 9.50  | 8.10 |
|                          | 46/5230 | 9.50  | 8.84 |
| 802.11ac-VHT80<br>(MCS0) | 42/5210 | 9.00  | 7.57 |
| 802.11ax-HE20<br>(MCS0)  | 36/5180 | 9.50  | 7.92 |
|                          | 40/5200 | 9.50  | 7.90 |
|                          | 48/5240 | 10.50 | 8.91 |
| 802.11ax-HE40<br>(MCS0)  | 38/5190 | 9.50  | 7.70 |
|                          | 46/5230 | 9.50  | 8.64 |
| 802.11ax-HE80<br>(MCS0)  | 42/5210 | 9.00  | 7.19 |

Note. Initial test configuration is 802.11a mode, since the highest maximum output power.

| Wi-Fi 5G (U-NII-1)<br>Antenna 2<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |              |
|---|----------------------------|----------------------------|--------------|
|   |                            | Tune-up                    | Meas.        |
| 802.11a<br>(6M)                         | 36/5180                    | 11.00                      | 9.85         |
|   | 40/5200                    | 11.00                      | 9.95         |
|   | 48/5240                    | 11.00                      | 10.03        |
| 802.11n-HT20<br>(MCS0)                  | 36/5180                    | 11.00                      | 9.44         |
|   | 40/5200                    | 11.00                      | 9.45         |
|   | 48/5240                    | 11.00                      | 9.62         |
| 802.11n-HT40<br>(MCS0)                  | 38/5190                    | 11.00                      | 9.79         |
|   | 46/5230                    | 11.00                      | <b>10.04</b> |
| 802.11ac-VHT20<br>(MCS0)                | 36/5180                    | 11.00                      | 9.78         |
|   | 40/5200                    | 11.00                      | 9.79         |
|   | 48/5240                    | 11.00                      | 10.04        |
| 802.11ac-VHT40<br>(MCS0)                | 38/5190                    | 11.00                      | 10.34        |
|   | 46/5230                    | 11.00                      | 10.67        |
| 802.11ac-VHT80<br>(MCS0)                | 42/5210                    | 10.50                      | 9.64         |
| 802.11ax-HE20<br>(MCS0)                 | 36/5180                    | 10.50                      | 9.20         |
|   | 40/5200                    | 10.50                      | 9.21         |
|   | 48/5240                    | 10.50                      | 9.34         |

|                         |         |       |      |
|-------------------------|---------|-------|------|
| 802.11ax-HE40<br>(MCS0) | 38/5190 | 10.50 | 9.10 |
|                         | 46/5230 | 10.50 | 9.35 |
| 802.11ax-HE80<br>(MCS0) | 42/5210 | 10.00 | 8.32 |

Note. Initial test configuration is 802.11n-HT40 mode, since the highest maximum output power.

| Wi-Fi 5G (U-NII-1)<br>MIMO<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |              |
|------------------------------------|----------------------------|----------------------------|--------------|
|                                    |                            | Tune-up                    | Meas.        |
| 802.11n-HT20<br>(MCS0)             | 36/5180                    | 13.50                      | 11.96        |
|                                    | 40/5200                    | 13.50                      | 11.98        |
|                                    | 48/5240                    | 13.50                      | 12.48        |
| 802.11n-HT40<br>(MCS0)             | 38/5190                    | 13.00                      | 11.86        |
|                                    | 46/5230                    | 13.00                      | 12.18        |
| 802.11ac-VHT20<br>(MCS0)           | 36/5180                    | 13.50                      | 12.31        |
|                                    | 40/5200                    | 13.50                      | 12.28        |
|                                    | 48/5240                    | 13.50                      | 12.92        |
| 802.11ac-VHT40<br>(MCS0)           | 38/5190                    | 13.50                      | 12.37        |
|                                    | 46/5230                    | 13.50                      | <b>12.86</b> |
| 802.11ac-VHT80<br>(MCS0)           | 42/5210                    | 13.00                      | 11.74        |
| 802.11ax-HE20<br>(MCS0)            | 36/5180                    | 13.50                      | 11.62        |
|                                    | 40/5200                    | 13.50                      | 11.61        |
|                                    | 48/5240                    | 13.50                      | 12.14        |
| 802.11ax-HE40<br>(MCS0)            | 38/5190                    | 13.00                      | 11.47        |
|                                    | 46/5230                    | 13.00                      | 12.02        |
| 802.11ax-HE80<br>(MCS0)            | 42/5210                    | 12.50                      | 10.80        |

Note. Initial test configuration is 802.11ac-VHT40 mode, since the highest maximum output power.

| Wi-Fi 5G (U-NII-3)<br>Antenna 1<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |       |
|---|----------------------------|----------------------------|-------|
|   |                            | Tune-up                    | Meas. |
| 802.11a<br>(6M)                         | 149/5745                   | 9.00                       | 7.55  |
|   | 157/5785                   | 9.00                       | 8.27  |
|   | 165/5825                   | 9.00                       | 8.03  |
| 802.11n-HT20<br>(MCS0)                  | 149/5745                   | 9.00                       | 7.73  |
|   | 157/5785                   | 9.00                       | 8.28  |
|   | 165/5825                   | 9.00                       | 8.35  |

|                          |          |      |             |
|--------------------------|----------|------|-------------|
| 802.11n-HT40<br>(MCS0)   | 151/5755 | 9.00 | 7.71        |
|                          | 159/5795 | 9.00 | 8.36        |
| 802.11ac-VHT20<br>(MCS0) | 149/5745 | 9.00 | 7.62        |
|                          | 157/5785 | 9.00 | 8.08        |
|                          | 165/5825 | 9.00 | 8.07        |
| 802.11ac-VHT40<br>(MCS0) | 151/5755 | 9.00 | 7.76        |
|                          | 159/5795 | 9.00 | 8.55        |
| 802.11ac-VHT80<br>(MCS0) | 155/5775 | 9.00 | <b>7.53</b> |
| 802.11ax-HE20<br>(MCS0)  | 149/5745 | 9.00 | 7.63        |
|                          | 157/5785 | 9.00 | 8.15        |
|                          | 165/5825 | 9.00 | 8.44        |
| 802.11ax-HE40<br>(MCS0)  | 151/5755 | 9.00 | 7.74        |
|                          | 159/5795 | 9.00 | 8.33        |
| 802.11ax-HE80<br>(MCS0)  | 155/5775 | 9.00 | 7.00        |

Note. Initial test configuration is 802.11ac-VHT80 mode, since the highest maximum output power.

| Wi-Fi 5G (U-NII-3)<br>Antenna 2 | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|---------------------------------|----------------------------|----------------------------|-------------|
|                                 |                            | Tune-up                    | Meas.       |
| 802.11a<br>(6M)                 | 149/5745                   | 10.00                      | 9.51        |
|                                 | 157/5785                   | 10.00                      | 9.66        |
|                                 | 165/5825                   | 10.00                      | 9.55        |
| 802.11n-HT20<br>(MCS0)          | 149/5745                   | 10.00                      | 9.02        |
|                                 | 157/5785                   | 10.00                      | 9.50        |
|                                 | 165/5825                   | 10.00                      | 9.32        |
| 802.11n-HT40<br>(MCS0)          | 151/5755                   | 10.00                      | 9.75        |
|                                 | 159/5795                   | 10.00                      | 9.73        |
| 802.11ac-VHT20<br>(MCS0)        | 149/5745                   | 10.00                      | 9.37        |
|                                 | 157/5785                   | 10.00                      | 9.56        |
|                                 | 165/5825                   | 10.00                      | 9.64        |
| 802.11ac-VHT40<br>(MCS0)        | 151/5755                   | 10.00                      | 9.63        |
|                                 | 159/5795                   | 10.00                      | 9.83        |
| 802.11ac-VHT80<br>(MCS0)        | 155/5775                   | 10.00                      | <b>9.10</b> |
| 802.11ax-HE20<br>(MCS0)         | 149/5745                   | 10.00                      | 8.36        |
|                                 | 157/5785                   | 10.00                      | 8.65        |
|                                 | 165/5825                   | 10.00                      | 8.85        |
| 802.11ax-HE40                   | 151/5755                   | 10.00                      | 8.51        |



|                         |          |       |      |
|-------------------------|----------|-------|------|
| (MCS0)                  | 159/5795 | 10.00 | 8.89 |
| 802.11ax-HE80<br>(MCS0) | 155/5775 | 9.50  | 7.89 |

Note. Initial test configuration is 802.11ac-VHT80 mode, since the highest maximum output power.

| Wi-Fi 5G (U-NII-3)<br>MIMO<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |              |
|------------------------------------|----------------------------|----------------------------|--------------|
|                                    |                            | Tune-up                    | Meas.        |
| 802.11n-HT20<br>(MCS0)             | 149/5745                   | 12.50                      | 11.43        |
|                                    | 157/5785                   | 12.50                      | 11.94        |
|                                    | 165/5825                   | 12.50                      | 11.87        |
| 802.11n-HT40<br>(MCS0)             | 151/5755                   | 12.50                      | 11.86        |
|                                    | 159/5795                   | 12.50                      | 12.11        |
| 802.11ac-VHT20<br>(MCS0)           | 149/5745                   | 12.50                      | 11.59        |
|                                    | 157/5785                   | 12.50                      | 11.89        |
|                                    | 165/5825                   | 12.50                      | 11.94        |
| 802.11ac-VHT40<br>(MCS0)           | 151/5755                   | 12.50                      | 11.81        |
|                                    | 159/5795                   | 12.50                      | 12.25        |
| 802.11ac-VHT80<br>(MCS0)           | 155/5775                   | 12.50                      | <b>11.40</b> |
| 802.11ax-HE20<br>(MCS0)            | 149/5745                   | 12.50                      | 11.02        |
|                                    | 157/5785                   | 12.50                      | 11.42        |
|                                    | 165/5825                   | 12.50                      | 11.66        |
| 802.11ax-HE40<br>(MCS0)            | 151/5755                   | 12.50                      | 11.15        |
|                                    | 159/5795                   | 12.50                      | 11.63        |
| 802.11ax-HE80<br>(MCS0)            | 155/5775                   | 12.00                      | 10.48        |

Note. Initial test configuration is 802.11ac-VHT80 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-5)<br>Antenna 1<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |       |
|---|----------------------------|----------------------------|-------|
|   |                            | Tune-up                    | Meas. |
| 802.11a<br>(6M)                         | 1/5955                     | 5.50                       | 4.30  |
|   | 45/6175                    | 5.50                       | 4.93  |
|   | 93/6415                    | 5.50                       | 3.98  |
| 802.11ax-HE20<br>(MCS0)                 | 1/5955                     | 3.00                       | 1.80  |
|   | 45/6175                    | 3.00                       | 2.46  |
|   | 93/6415                    | 3.00                       | 1.62  |
| 802.11ax-HE40<br>(MCS0)                 | 3/5965                     | 6.50                       | 5.48  |
|   | 43/6165                    | 6.50                       | 6.08  |

|  |         |      |             |
|--|---------|------|-------------|
|  | 91/6405 | 6.50 | 5.16        |
| 802.11ax-HE80<br>(MCS0)  | 7/5985  | 7.00 | 5.74        |
|  | 39/6145 | 7.00 | 6.01        |
|  | 87/6385 | 7.00 | 5.56        |
| 802.11ax-HE160<br>(MCS0)   | 15/6025 | 7.00 | 6.23        |
|  | 47/6185 | 7.00 | 6.10        |
|  | 79/6345 | 7.00 | <b>5.80</b> |
| Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power. |         |      |             |

| Wi-Fi 6G (U-NII-5)<br>Antenna 2<br>Mode  | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|--|----------------------------|----------------------------|-------------|
|  |                            | Tune-up                    | Meas.       |
| 802.11a<br>(6M)  | 1/5955                     | 6.50                       | 5.35        |
|  | 45/6175                    | 6.50                       | 5.77        |
|  | 93/6415                    | 6.50                       | 5.48        |
| 802.11ax-HE20<br>(MCS0)  | 1/5955                     | 4.00                       | 2.93        |
|  | 45/6175                    | 4.00                       | 3.50        |
|  | 93/6415                    | 4.00                       | 3.22        |
| 802.11ax-HE40<br>(MCS0)  | 3/5965                     | 8.00                       | 6.55        |
|  | 43/6165                    | 8.00                       | 6.99        |
|  | 91/6405                    | 8.00                       | 6.50        |
| 802.11ax-HE80<br>(MCS0)  | 7/5985                     | 8.00                       | 6.92        |
|  | 39/6145                    | 8.00                       | 7.35        |
|  | 87/6385                    | 8.00                       | 6.89        |
| 802.11ax-HE160<br>(MCS0)   | 15/6025                    | 8.00                       | 7.12        |
|  | 47/6185                    | 8.00                       | 7.19        |
|  | 79/6345                    | 8.00                       | <b>7.33</b> |
| Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power. |                            |                            |             |

| Wi-Fi 6G (U-NII-5)<br>MIMO<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |       |
|------------------------------------|----------------------------|----------------------------|-------|
|                                    |                            | Tune-up                    | Meas. |
| 802.11ax-HE20<br>(MCS0)            | 1/5955                     | 4.00                       | 2.93  |
|                                    | 45/6175                    | 4.00                       | 3.50  |
|                                    | 93/6415                    | 4.00                       | 3.22  |
| 802.11ax-HE40<br>(MCS0)            | 3/5965                     | 8.00                       | 6.55  |
|                                    | 43/6165                    | 8.00                       | 6.99  |
|                                    | 91/6405                    | 8.00                       | 6.50  |
| 802.11ax-HE80<br>(MCS0)            | 7/5985                     | 8.00                       | 6.93  |
|                                    | 39/6145                    | 8.00                       | 7.35  |

|  |         |      |             |
|--|---------|------|-------------|
|  | 87/6385 | 8.00 | 6.89        |
| 802.11ax-HE160<br>(MCS0)   | 15/6025 | 8.00 | 7.12        |
|  | 47/6185 | 8.00 | 7.19        |
|  | 79/6345 | 8.00 | <b>7.33</b> |
| Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power. |         |      |             |

| Wi-Fi 6G (U-NII-6)<br>Antenna 1  | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|--|----------------------------|----------------------------|-------------|
|  |                            | Tune-up                    | Meas.       |
| Mode   |                            |                            |             |
| 802.11a<br>(6M)  | 97/6435                    | 5.50                       | 4.04        |
|  | 105/6475                   | 5.50                       | 4.25        |
|  | 113/6515                   | 5.50                       | 4.41        |
| 802.11ax-HE20<br>(MCS0)  | 97/6435                    | 3.00                       | 1.31        |
|  | 105/6475                   | 3.00                       | 1.66        |
|  | 113/6515                   | 3.00                       | 1.91        |
| 802.11ax-HE40<br>(MCS0)  | 99/6445                    | 6.50                       | 4.83        |
|  | 107/6485                   | 6.50                       | 4.94        |
| 802.11ax-HE80<br>(MCS0)  | 103/6465                   | 7.00                       | 5.33        |
| 802.11ax-HE160<br>(MCS0)   | 111/6505                   | 7.00                       | <b>5.80</b> |
| Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power. |                            |                            |             |

| Wi-Fi 6G (U-NII-6)<br>Antenna 2  | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|--|----------------------------|----------------------------|-------------|
|  |                            | Tune-up                    | Meas.       |
| Mode   |                            |                            |             |
| 802.11a<br>(6M)  | 97/6435                    | 6.50                       | 5.61        |
|  | 105/6475                   | 6.50                       | 5.75        |
|  | 113/6515                   | 6.50                       | 5.66        |
| 802.11ax-HE20<br>(MCS0)  | 97/6435                    | 4.00                       | 3.08        |
|  | 105/6475                   | 4.00                       | 3.43        |
|  | 113/6515                   | 4.00                       | 3.14        |
| 802.11ax-HE40<br>(MCS0)  | 99/6445                    | 8.00                       | 6.46        |
|  | 107/6485                   | 8.00                       | 6.68        |
| 802.11ax-HE80<br>(MCS0)  | 103/6465                   | 8.00                       | 6.96        |
| 802.11ax-HE160<br>(MCS0)   | 111/6505                   | 8.00                       | <b>7.08</b> |
| Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power. |                            |                            |             |

| Wi-Fi 6G (U-NII-6)<br>MIMO<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|------------------------------------|----------------------------|----------------------------|-------------|
|                                    |                            | Tune-up                    | Meas.       |
| 802.11ax-HE20<br>(MCS0)            | 97/6435                    | 4.00                       | 3.08        |
|                                    | 105/6475                   | 4.00                       | 3.43        |
|                                    | 113/6515                   | 4.00                       | 3.14        |
| 802.11ax-HE40<br>(MCS0)            | 99/6445                    | 8.00                       | 6.46        |
|                                    | 107/6485                   | 8.00                       | 6.68        |
| 802.11ax-HE80<br>(MCS0)            | 103/6465                   | 8.00                       | 6.96        |
| 802.11ax-HE160<br>(MCS0)           | 111/6505                   | 8.00                       | <b>7.08</b> |

Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-7)<br>Antenna 1<br>Mode | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|---|----------------------------|----------------------------|-------------|
|   |                            | Tune-up                    | Meas.       |
| 802.11a<br>(6M)                         | 117/6535                   | 5.00                       | 3.36        |
|   | 149/6695                   | 5.00                       | 3.50        |
|   | 185/6875                   | 5.00                       | 3.44        |
| 802.11ax-HE20<br>(MCS0)                 | 117/6535                   | 2.50                       | 0.98        |
|   | 149/6695                   | 2.50                       | 0.95        |
|   | 185/6875                   | 2.50                       | 1.00        |
| 802.11ax-HE40<br>(MCS0)                 | 119/6525                   | 6.00                       | 5.17        |
|   | 147/6685                   | 6.00                       | 4.30        |
|   | 187/6885                   | 6.00                       | 4.35        |
| 802.11ax-HE80<br>(MCS0)                 | 119/6545                   | 7.00                       | 5.45        |
|   | 151/6705                   | 7.00                       | 5.31        |
|   | 183/6865                   | 7.00                       | 5.17        |
| 802.11ax-HE160<br>(MCS0)                | 143/6665                   | 7.00                       | 5.21        |
|   | 175/6825                   | 7.00                       | <b>5.80</b> |

Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-7)<br>Antenna 2 | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|---------------------------------|----------------------------|----------------------------|-------------|
|                                 |                            | Tune-up                    | Meas.       |
| Mode                            |                            |                            |             |
| 802.11a<br>(6M)                 | 117/6535                   | 6.50                       | 5.03        |
|                                 | 149/6695                   | 6.50                       | 4.78        |
|                                 | 185/6875                   | 6.50                       | 4.87        |
| 802.11ax-HE20<br>(MCS0)         | 117/6535                   | 4.00                       | 2.53        |
|                                 | 149/6695                   | 4.00                       | 2.25        |
|                                 | 185/6875                   | 4.00                       | 2.31        |
| 802.11ax-HE40<br>(MCS0)         | 119/6525                   | 8.00                       | 6.57        |
|                                 | 147/6685                   | 7.50                       | 5.65        |
|                                 | 187/6885                   | 7.50                       | 5.73        |
| 802.11ax-HE80<br>(MCS0)         | 119/6545                   | 8.00                       | 6.73        |
|                                 | 151/6705                   | 8.00                       | 6.51        |
|                                 | 183/6865                   | 8.00                       | 6.63        |
| 802.11ax-HE160<br>(MCS0)        | 143/6665                   | 8.00                       | 6.89        |
|                                 | 175/6825                   | 8.00                       | <b>7.04</b> |

Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-7)<br>MIMO | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|----------------------------|----------------------------|----------------------------|-------------|
|                            |                            | Tune-up                    | Meas.       |
| Mode                       |                            |                            |             |
| 802.11ax-HE20<br>(MCS0)    | 117/6535                   | 4.00                       | 2.53        |
|                            | 149/6695                   | 4.00                       | 2.25        |
|                            | 185/6875                   | 4.00                       | 2.31        |
| 802.11ax-HE40<br>(MCS0)    | 119/6525                   | 8.00                       | 6.57        |
|                            | 147/6685                   | 7.50                       | 5.65        |
|                            | 187/6885                   | 7.50                       | 5.73        |
| 802.11ax-HE80<br>(MCS0)    | 119/6545                   | 8.00                       | 6.73        |
|                            | 151/6705                   | 8.00                       | 6.51        |
|                            | 183/6865                   | 8.00                       | 6.63        |
| 802.11ax-HE160<br>(MCS0)   | 143/6665                   | 8.00                       | 6.89        |
|                            | 175/6825                   | 8.00                       | <b>7.04</b> |

Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-8)<br>Antenna 1 | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|---------------------------------|----------------------------|----------------------------|-------------|
|                                 |                            | Tune-up                    | Meas.       |
| Mode                            |                            |                            |             |
| 802.11a<br>(6M)                 | 185/6875                   | 4.00                       | 3.10        |
|                                 | 209/6995                   | 4.00                       | 2.22        |
|                                 | 233/7115                   | 0.00                       | -1.68       |
| 802.11ax-HE20<br>(MCS0)         | 185/6875                   | 2.00                       | 0.62        |
|                                 | 209/6995                   | 1.50                       | -0.30       |
|                                 | 233/7115                   | -4.00                      | -5.53       |
| 802.11ax-HE40<br>(MCS0)         | 195/6925                   | 5.00                       | 4.01        |
|                                 | 211/7005                   | 5.00                       | 3.21        |
|                                 | 227/7085                   | 5.00                       | 3.75        |
| 802.11ax-HE80<br>(MCS0)         | 199/6945                   | 6.00                       | 4.61        |
|                                 | 215/7025                   | 6.00                       | 4.29        |
| 802.11ax-HE160<br>(MCS0)        | 207/6985                   | 6.00                       | <b>4.81</b> |

Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-8)<br>Antenna 2 | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|---------------------------------|----------------------------|----------------------------|-------------|
|                                 |                            | Tune-up                    | Meas.       |
| Mode                            |                            |                            |             |
| 802.11a<br>(6M)                 | 185/6875                   | 5.00                       | 4.54        |
|                                 | 209/6995                   | 5.00                       | 4.17        |
|                                 | 233/7115                   | 1.00                       | -0.31       |
| 802.11ax-HE20<br>(MCS0)         | 185/6875                   | 3.00                       | 1.90        |
|                                 | 209/6995                   | 2.50                       | 1.44        |
|                                 | 233/7115                   | -5.00                      | -6.33       |
| 802.11ax-HE40<br>(MCS0)         | 195/6925                   | 6.50                       | 5.26        |
|                                 | 211/7005                   | 6.50                       | 4.98        |
|                                 | 227/7085                   | 6.50                       | 4.61        |
| 802.11ax-HE80<br>(MCS0)         | 199/6945                   | 7.00                       | 6.12        |
|                                 | 215/7025                   | 7.00                       | 5.71        |
| 802.11ax-HE160<br>(MCS0)        | 207/6985                   | 7.00                       | <b>6.25</b> |

Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power.

| Wi-Fi 6G (U-NII-8)<br>MIMO<br>Mode   | Channel<br>/Frequency(MHz) | Maximum Output Power (dBm) |             |
|--|----------------------------|----------------------------|-------------|
|  |                            | Tune-up                    | Meas.       |
| 802.11ax-HE20<br>(MCS0)  | 185/6875                   | 3.00                       | 1.90        |
|  | 209/6995                   | 2.50                       | 1.44        |
|  | 233/7115                   | -5.00                      | -5.53       |
| 802.11ax-HE40<br>(MCS0)  | 195/6925                   | 6.50                       | 5.26        |
|  | 211/7005                   | 6.50                       | 4.98        |
|  | 227/7085                   | 6.50                       | 4.61        |
| 802.11ax-HE80<br>(MCS0)  | 199/6945                   | 7.00                       | 6.12        |
|  | 215/7025                   | 7.00                       | 5.71        |
| 802.11ax-HE160<br>(MCS0)   | 207/6985                   | 7.00                       | <b>6.25</b> |
| Note. Initial test configuration is 802.11ax-HE160 mode, since the highest maximum output power. |                            |                            |             |

## 9.2 Bluetooth Mode

| Bluetooth | Conducted Power(dBm)    |                |                | Tune-up Limit<br>(dBm) |
|-----------|-------------------------|----------------|----------------|------------------------|
|           | Channel/Frequency (MHz) |                |                |                        |
|           | Ch 0/2402 MHz           | Ch 39/2441 MHz | Ch 78/2480 MHz |                        |
| GFSK      | 5.70                    | 5.88           | 6.52           | 7.50                   |
| π/4DQPSK  | 6.79                    | 6.64           | 6.84           | 7.50                   |
| 8DPSK     | 6.92                    | 6.77           | 6.90           | 7.50                   |
| BLE       | Ch 0/2402 MHz           | Ch 19/2440 MHz | Ch 39/2480 MHz | Tune-up Limit<br>(dBm) |
| GFSK(1M)  | 5.45                    | 5.15           | 5.41           | 6.50                   |
| GFSK(2M)  | 5.35                    | 5.15           | 5.42           | 6.50                   |



## 10 Test Results

### 10.1 EUT Antenna Locations

The Detailed Antenna Locations Refer to *Antenna Locations*.

## 10.2 SAR & APD Test Results

Note:

1. The value with blue color is the maximum SAR Value of each test band.
2. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
3. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
4. WIFI 6GHz operations are limited to MIMO operations only (does not supported standalone mode) Per KDB 248227, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB 447498 by making a SAR measurement with both antennas transmitting simultaneously.
5. SAR assessment for 6G-7.2G is according to IEC/IEEE 62209-1528:2020
6. FCC Guidance for portable devices, TCBC workshop October 2020 and CBC workshop October 2022: Interim procedures allow for SAR measurement using the 2020 version of IEC/IEEE 62209-1528:2020 supplemented with absorbed(epithelial) power density derived from SAR measurements.
7. Where supported by the test system, also report estimated absorbed (epithelial) power density (for reference purposes only, not specifically for compliance) derived from measured SAR, and estimated incident PD.

### Body SAR

| Band             | Antenna | Test Position | Dist. (mm) | Mode           | Duty Cycle | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Measured SAR1g (W/Kg) | Measured APD (W/m²) | Power Drift (dB) | Scaling Factor | Report SAR1g (W/kg) | Report APD (W/m²) | Plot No. |
|------------------|---------|---------------|------------|----------------|------------|-----------------|---------------|----------------------|-----------------------|---------------------|------------------|----------------|---------------------|-------------------|----------|
| Wi-Fi 2.4G       | Ant 1   | Back Side     | 0          | 802.11b        | 97.0%      | 11/2462         | 15.00         | 14.20                | 0.118                 | N/A                 | 0.031            | 1.24           | 0.146               | N/A               | /        |
|                  |         | Back Side     | 0          | 802.11n HT40   | 80.5%      | 3/2422          | 19.50         | 19.18                | 0.132                 | N/A                 | 0.019            | 1.34           | 0.177               | N/A               | /        |
|                  | Ant 2   | Back Side     | 0          | 802.11b        | 97.0%      | 11/2462         | 15.00         | 14.17                | 0.408                 | N/A                 | 0.040            | 1.25           | 0.509               | N/A               | 7        |
|                  |         | Back Side     | 0          | 802.11n HT40   | 80.5%      | 3/2422          | 19.50         | 19.28                | 0.370                 | N/A                 | -0.026           | 1.31           | 0.484               | N/A               | /        |
|                  | MIMO    | Back Side     | 0          | 802.11n HT40   | 80.5%      | 3/2422          | 22.50         | 22.24                | 0.351                 | N/A                 | 0.015            | 1.32           | 0.463               | N/A               | /        |
| Wi-Fi 5G U-NII-1 | Ant 1   | Back Side     | 0          | 802.11a        | 94.1%      | 48/5240         | 10.50         | 9.75                 | 0.292                 | N/A                 | 0.020            | 1.26           | 0.369               | N/A               | /        |
|                  | Ant 2   | Back Side     | 0          | 802.11n HT40   | 80.6%      | 46/5230         | 11.00         | 10.04                | 0.277                 | N/A                 | 0.013            | 1.55           | 0.429               | N/A               | /        |
|                  | MIMO    | Back Side     | 0          | 802.11ac-VHT40 | 88.5%      | 46/5230         | 13.50         | 12.86                | 0.302                 | N/A                 | 0.086            | 1.31           | 0.395               | N/A               | 8        |
| Wi-Fi 5G U-NII-3 | ANT1    | Back Side     | 0          | 802.11ac-VHT80 | 79.6%      | 155/5775        | 9.00          | 7.53                 | 0.202                 | N/A                 | 0.040            | 1.76           | 0.356               | N/A               | /        |
|                  | Ant 2   | Back Side     | 0          | 802.11ac-VHT80 | 79.6%      | 155/5775        | 10.00         | 9.10                 | 0.230                 | N/A                 | 0.026            | 1.55           | 0.355               | N/A               | /        |
|                  | MIMO    | Back Side     | 0          | 802.11ac-VHT80 | 79.6%      | 155/5775        | 12.50         | 11.40                | 0.232                 | N/A                 | -0.088           | 1.62           | 0.375               | N/A               | /        |
| Bluetooth        | Ant 2   | Back Side     | 0          | GFSK           | 85.1%      | 78/2480         | 7.50          | 6.52                 | 0.082                 | N/A                 | 0.015            | 1.47           | 0.121               | N/A               | 9        |
| Wi-Fi 6G U-NII-5 | Ant 1   | Back Side     | 0          | 802.11ax-HE160 | 84.1%      | 79/6345         | 7.00          | 5.80                 | 0.087                 | 0.514               | 0.010            | 1.57           | 0.136               | 0.806             | /        |
|                  | Ant 2   | Back Side     | 0          | 802.11ax-HE160 | 84.1%      | 79/6345         | 8.00          | 7.33                 | 0.074                 | 0.446               | 0.180            | 1.39           | 0.103               | 0.619             | /        |
|                  | MIMO    | Back Side     | 0          | 802.11ax-HE160 | 84.1%      | 79/6345         | 8.00          | 7.33                 | 0.069                 | 0.428               | 0.030            | 1.39           | 0.096               | 0.594             | /        |
| Wi-Fi 6G U-NII-6 | Ant 1   | Back Side     | 0          | 802.11ax-HE160 | 84.3%      | 111/6505        | 7.00          | 5.80                 | 0.105                 | 0.487               | 0.029            | 1.56           | 0.164               | 0.762             | /        |
|                  | Ant 2   | Back Side     | 0          | 802.11ax-HE160 | 84.3%      | 111/6505        | 8.00          | 7.08                 | 0.048                 | 0.232               | 0.017            | 1.47           | 0.070               | 0.340             | /        |
|                  | MIMO    | Back Side     | 0          | 802.11ax-HE160 | 84.3%      | 111/6505        | 8.00          | 7.08                 | 0.104                 | 0.469               | 0.014            | 1.47           | 0.152               | 0.688             | /        |
| Wi-Fi 6G         | Ant 1   | Back Side     | 0          | 802.11ax-HE160 | 84.3%      | 175/6825        | 7.00          | 5.80                 | 0.117                 | 0.622               | 0.060            | 1.56           | 0.183               | 0.973             | /        |

**SAR Test Report**
**Report No.: R2405A0567-S1V1**

|                     |       |           |   |                |       |          |      |      |       |       |        |      |       |       |    |
|---------------------|-------|-----------|---|----------------|-------|----------|------|------|-------|-------|--------|------|-------|-------|----|
| U-NII-7             | Ant 2 | Back Side | 0 | 802.11ax-HE160 | 84.3% | 175/6825 | 8.00 | 7.04 | 0.044 | 0.265 | -0.025 | 1.48 | 0.065 | 0.392 | /  |
|                     | MIMO  | Back Side | 0 | 802.11ax-HE160 | 84.3% | 175/6825 | 8.00 | 7.04 | 0.120 | 0.610 | 0.018  | 1.48 | 0.178 | 0.903 | /  |
| Wi-Fi 6G<br>U-NII-8 | Ant 1 | Back Side | 0 | 802.11ax-HE160 | 84.3% | 207/6985 | 6.00 | 4.81 | 0.116 | 0.621 | 0.060  | 1.56 | 0.181 | 0.969 | /  |
|                     | Ant 2 | Back Side | 0 | 802.11ax-HE160 | 84.3% | 207/6985 | 7.00 | 6.25 | 0.128 | 0.695 | -0.011 | 1.41 | 0.180 | 0.980 | /  |
|                     | MIMO  | Back Side | 0 | 802.11ax-HE160 | 84.3% | 207/6985 | 7.00 | 6.25 | 0.157 | 0.790 | 0.020  | 1.41 | 0.221 | 1.114 | 10 |

### 10.3 PD Test Results

- The value with blue color is the maximum PD Value of each test band.
- FCC Guidance for portable devices, TCBC workshop October 2020 and CBC workshop October 2022: Interim procedures allow for SAR measurement using the 2020 version of IEC/IEEE 62209-1528:2020 supplemented with measured incident PD for highest SAR configuration.
- PD exposure is considered with two distances: 2mm (compliant distance) and  $\lambda/5$ .
- According to DASY8 MODULE mmWAVE SYSTEM HANDBOOK and IEC/IEEE 63195:2020.  
DASY8 Module mmWave V3.0 features the Equivalent Source Reconstruction (ESR) method to compute the incident PD values averaged over an area of 1 cm<sup>2</sup> and 4 cm<sup>2</sup>. With this method, the reconstruction uncertainty (REC) is below 0.6 dB for  $d > \lambda/25$ , corresponding to a test distance of 2 mm at 6 GHz. The REC value 0.6dB is valid if the following conditions on the grid resolution ( $\ell_{grid}$ ) and grid extent ( $v_{grid}$ ) are met. The grid is based on  $\lambda$  per DASY8 MODULE mmWAVE SYSTEM HANDBOOK and IEC/IEEE 63195: 2020.
- Per FCC guidance and equipment manufacturer guidance, power density results were scaled by IEC 62479: 2020 for the measurement uncertainty > 30%. The uncertainty of the assessment method shall be determined by calculating the expanded uncertainty using a confidence interval of 95 % (see IEC 62479:2010). In this report, the total expanded uncertainty of 1.99 (1.58%) is used for scaling factor, which is larger than the maximum default uncertainty value of 30 %, so a penalty value shall be added to the assessment result before comparison with the limit.

| Band    | Antenna | Test Position | Dist. (mm) | Mode           | Duty Cycle | Ch./Freq. (MHz) | Tune-up (dBm) | Measured power (dBm) | Normal psPD (W/m <sup>2</sup> ) | Total psPD (W/m <sup>2</sup> ) | Power Drift [dB] | Measurement Uncertainty Scaling Factor | Tune up Scaling Factor | Scaled Normal psPD (W/m <sup>2</sup> ) | Scaled Total psPD (W/m <sup>2</sup> ) | Plot No. |
|---------|---------|---------------|------------|----------------|------------|-----------------|---------------|----------------------|---------------------------------|--------------------------------|------------------|--|------------------------|--|---------------------------------------|----------|
| U-NII-5 | Ant 1   | Back Side     | 2          | 802.11ax HE160 | 84.1%      | 79/6345         | 7.00          | 5.80                 | 0.472                           | 0.781                          | -0.044           | 1.280                                  | 1.57                   | 0.947                                  | 1.567                                 | 11       |
|         |         | Back Side     | 9.5        | 802.11ax HE160 | 84.1%      | 79/6345         | 7.00          | 5.80                 | 0.289                           | 0.510                          | -0.040           | 1.280                                  | 1.57                   | 0.580                                  | 1.023                                 | /        |
| U-NII-6 | Ant 1   | Back Side     | 2          | 802.11ax HE160 | 84.3%      | 111/6505        | 7.00          | 5.80                 | 0.368                           | 0.623                          | -0.038           | 1.280                                  | 1.56                   | 0.737                                  | 1.247                                 | /        |
|         |         | Back Side     | 9.2        | 802.11ax HE160 | 84.3%      | 111/6505        | 7.00          | 5.80                 | 0.244                           | 0.407                          | 0.010            | 1.280                                  | 1.56                   | 0.488                                  | 0.815                                 | /        |
| U-NII-7 | Ant 1   | Back Side     | 2          | 802.11ax HE160 | 84.3%      | 175/6825        | 7.00          | 5.80                 | 0.429                           | 0.762                          | -0.044           | 1.280                                  | 1.56                   | 0.859                                  | 1.525                                 | /        |
|         |         | Back Side     | 9.2        | 802.11ax HE160 | 84.3%      | 175/6825        | 7.00          | 5.80                 | 0.301                           | 0.586                          | -0.060           | 1.280                                  | 1.56                   | 0.602                                  | 1.173                                 | /        |
| U-NII-8 | MIMO    | Back Side     | 2          | 802.11ax HE160 | 84.3%      | 207/6985        | 7.00          | 6.25                 | 0.378                           | 0.875                          | -0.165           | 1.280                                  | 1.41                   | 0.682                                  | 1.579                                 | 12       |
|         |         | Back Side     | 8.6        | 802.11ax HE160 | 84.3%      | 207/6985        | 7.00          | 6.25                 | 0.209                           | 0.479                          | -0.066           | 1.280                                  | 1.41                   | 0.377                                  | 0.864                                 | /        |

## 10.4 Simultaneous Transmission Analysis

| Simultaneous Transmission Configurations        | Body |
|---|------|
| Wi-Fi 2.4GHz Antenna 1 + Wi-Fi 2.4GHz Antenna 2 | Yes  |
| Wi-Fi 5GHz Antenna 1 + Wi-Fi 5GHz Antenna 2     | Yes  |
| Wi-Fi 6GHz Antenna 1 + Wi-Fi 6GHz Antenna 2     | Yes  |
| Wi-Fi 2.4GHz + Wi-Fi 5GHz                       | N/A  |
| Wi-Fi 2.4GHz + Wi-Fi 6GHz                       | N/A  |
| Wi-Fi 5GHz + Wi-Fi 6GHz                         | N/A  |
| Wi-Fi 2.4GHz + Bluetooth                        | N/A  |
| Wi-Fi 5GHz + Bluetooth                          | N/A  |
| Wi-Fi 6GHz + Bluetooth                          | N/A  |

### General Note:

Per 987594 D04,  $TER < 1$ .

Address all applicable simultaneous transmission conditions using the compliance condition  $TER \leq 1$ , where TER (total exposure ratio) in this context is defined as:

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

with  $N_s$ ,  $N_f$ , and  $N_{PD}$  referring to sources requiring SAR, field-MPE, or PD-MPE, respectively,  $k$  referring to measured or estimated values for the source  $k$ , and “lim” to the corresponding applicable compliance limit.

### The Maximum SAR<sub>1g</sub> Value

| SAR <sub>1g</sub> (W/kg) | Wi-Fi 2.4G | Wi-Fi 5G<br>U-NII-1 | Wi-Fi 5G<br>U-NII-3 | Wi-Fi 6G<br>U-NII-5 | Wi-Fi 6G<br>U-NII-6 | Wi-Fi 6G<br>U-NII-7 | Wi-Fi 6G<br>U-NII-8 | MAX.<br>ΣSAR <sub>1g</sub> | Ratio |
|--------------------------|------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------------|-------|
| Test Position            |            |                     |                     |                     |                     |                     |                     |                            |       |
| Back Side                | 0.463      | 0.395               | 0.375               | 0.096               | 0.152               | 0.178               | 0.221               | 0.463                      | 0.289 |

Note: Ratio = MAX. SAR<sub>1g</sub> / SAR<sub>lim</sub>

SAR<sub>lim</sub> = 1.60 W/kg

### For PD

| PD (W/m <sup>2</sup> ) | MAX. PD | Ratio |
|------------------------|---------|-------|
| Test Position          |         |       |
| Back Side              | 1.579   | 0.158 |

Note: Ratio = MAX. PD / PD<sub>lim</sub>

PD<sub>lim</sub> = 10 W/m<sup>2</sup>

So the simultaneous transmitting antenna pairs as below:

$$TER = 0.289 + 0.158 = 0.447 < 1$$

So the limit is kept.

# 11 Measurement Uncertainty

## For SAR

| Source of Uncertainty   | Uncertainty<br>± % | Probability<br>Distribution | Div.  | ci (1 g) | ci (10<br>g) | Standard<br>uncer-<br>tainty ± %,<br>(1 g) | Standard<br>uncer-<br>tainty ± %,<br>(10 g) | vi or<br>veff |
|---|--------------------|-----------------------------|-------|----------|--------------|--|---|---------------|
| <b>Measurement system</b>   |                    |                             |       |          |              |  |   |               |
| Probe calibration   | 6.65               | N                           | 1     | 1        | 1            | 6.65                                       | 6.65  | ∞             |
| Axial isotropy  | 4.7                | R                           | 1.732 | 0.71     | 0.71         | 1.9  | 1.9   | ∞             |
| Hemispherical isotropy  | 9.6                | R                           | 1.732 | 0.71     | 0.71         | 3.9  | 3.9   | ∞             |
| Boundary effect   | 1.9                | R                           | 1.732 | 1        | 1            | 1.1  | 1.1   | ∞             |
| Linearity   | 4.7                | R                           | 1.732 | 1        | 1            | 2.7  | 2.7   | ∞             |
| Detection limits  | 1.0                | R                           | 1.732 | 1        | 1            | 0.6  | 0.6   | ∞             |
| Modulation response   | 2.4                | R                           | 1.732 | 1        | 1            | 1.4  | 1.4   | ∞             |
| Readout electronics   | 1.0                | N                           | 1     | 1        | 1            | 1.0  | 1.0   | ∞             |
| Response time   | 0.8                | R                           | 1.732 | 1        | 1            | 0.5  | 0.5   | ∞             |
| Integration time  | 2.2                | R                           | 1.732 | 1        | 1            | 1.3  | 1.3   | ∞             |
| RF ambient conditions-noise   | 3.0                | R                           | 1.732 | 1        | 1            | 1.7  | 1.7   | ∞             |
| RF ambient conditions-reflections   | 3.0                | R                           | 1.732 | 1        | 1            | 1.7  | 1.7   | ∞             |
| Probe positioner mechanical tolerance   | 0.4                | R                           | 1.732 | 1        | 1            | 0.2  | 0.2   | ∞             |
| Probe positioning with respect to<br>phantom shell                                  | 2.9                | R                           | 1.732 | 1        | 1            | 1.7  | 1.7   | ∞             |
| Post-processing   | 2.0                | R                           | 1.732 | 1        | 1            | 1.2  | 1.2   | ∞             |
| <b>Test sample related</b>  |                    |                             |       |          |              |  |   |               |
| Test sample positioning   | 3.0                | N                           | 1     | 1        | 1            | 3.0  | 3.0   | 11            |
| Device holder uncertainty   | 3.6                | N                           | 1     | 1        | 1            | 3.6  | 3.6   | 7             |
| SAR drift measurement   | 5.0                | R                           | 1.732 | 1        | 1            | 2.9  | 2.9   | ∞             |
| SAR scaling   | 0.0                | R                           | 1.732 | 1        | 1            | 0.0  | 0.0   | ∞             |
| <b>Phantom and set-up</b>   |                    |                             |       |          |              |  |   |               |
| Phantom uncertainty   | 4.0                | R                           | 1.732 | 1        | 1            | 2.3  | 2.3   | ∞             |
| Uncertainty in SAR correction for<br>deviations in permittivity and<br>conductivity | 1.9                | N                           | 1     | 1        | 0.84         | 1.9  | 1.6   | ∞             |
| Liquid conductivity (temperature<br>uncertainty)                                    | 2.5                | R                           | 1.732 | 0.78     | 0.71         | 1.1  | 1.0   | ∞             |
| Liquid conductivity (measured)  | 5.0                | N                           | 1     | 0.78     | 0.71         | 3.9  | 3.6   | 5             |
| Liquid permittivity (temperature<br>uncertainty)                                    | 2.5                | R                           | 1.732 | 0.23     | 0.26         | 0.3  | 0.4   | ∞             |
| Liquid permittivity (measured)  | 5.0                | N                           | 1     | 0.23     | 0.26         | 1.2  | 1.3   | 5             |
| Combined standard uncertainty   |                    | RSS                         |       |          |              | 12.0                                       | 11.9  |               |
| Expanded uncertainty (95% confidence interval)                                      |                    | k = 2                       |       |          |              | 24.1                                       | 23.8  |               |

| Source of Uncertainty  | Tolerance/<br>Uncertainty<br>value $\pm$ % | Probability<br>Distribution | Div.  | ci (1 g) | ci (10<br>g) | Standard<br>uncer-<br>tainty $\pm$ %, (1 g) | Standard<br>uncer-<br>tainty $\pm$ %, (10 g) | vi or<br>veff |
|--|--|-----------------------------|-------|----------|--------------|---|--|---------------|
| <b>Measurement system</b>  |  |                             |       |          |              |   |  |               |
| Probe calibration  | 6.65                                       | N                           | 1     | 1        | 1            | 6.65  | 6.65   | $\infty$      |
| Axial isotropy   | 4.7  | R                           | 1.732 | 1        | 1            | 2.7   | 2.7  | $\infty$      |
| Hemispherical isotropy   | 9.6  | R                           | 1.732 | 1        | 1            | 5.5   | 5.5  | $\infty$      |
| Linearity  | 4.7  | R                           | 1.732 | 1        | 1            | 2.7   | 2.7  | $\infty$      |
| Probe modulation response  | 2.4  | R                           | 1.732 | 1        | 1            | 1.4   | 1.4  | $\infty$      |
| Detection limits   | 1.0  | R                           | 1.732 | 1        | 1            | 0.6   | 0.6  | $\infty$      |
| Boundary effect  | 1.9  | R                           | 1.732 | 1        | 1            | 1.1   | 1.1  | $\infty$      |
| Readout electronics  | 1.0  | N                           | 1     | 1        | 1            | 1.0   | 1.0  | $\infty$      |
| Response time  | 0.8  | R                           | 1.732 | 1        | 1            | 0.5   | 0.5  | $\infty$      |
| Integration time   | 2.2  | R                           | 1.732 | 1        | 1            | 1.3   | 1.3  | $\infty$      |
| RF ambient conditions-noise  | 3.0  | R                           | 1.732 | 1        | 1            | 1.7   | 1.7  | $\infty$      |
| RF ambient conditions-reflections  | 3.0  | R                           | 1.732 | 1        | 1            | 1.7   | 1.7  | $\infty$      |
| Probe positioner mech.restrictions   | 0.4  | R                           | 1.732 | 1        | 1            | 0.2   | 0.2  | $\infty$      |
| Probe positioning with respect to phantom shell                              | 2.9  | R                           | 1.732 | 1        | 1            | 1.7   | 1.7  | $\infty$      |
| Post-processing  | 2.0  | R                           | 1.732 | 1        | 1            | 1.2   | 1.2  | $\infty$      |
| <b>Test sample related</b>   |  |                             |       |          |              |   |  |               |
| Device holder uncertainty  | 3.6  | N                           | 1     | 1        | 1            | 3.6   | 3.6  | M-1           |
| Test sample positioning  | 3.0  | N                           | 1     | 1        | 1            | 3.0   | 3.0  | M-1           |
| Power scaling  | 0.0  | R                           | 1.732 | 1        | 1            | 0.0   | 0.0  | $\infty$      |
| Drift of output power (measured SAR drift)                                   | 5.0  | R                           | 1.732 | 1        | 1            | 2.9   | 2.9  | $\infty$      |
| <b>Phantom and set-up</b>  |  |                             |       |          |              |   |  |               |
| Phantom uncertainty (shape and thickness tolerances)                         | 4.0  | R                           | 1.732 | 1        | 1            | 2.3   | 2.3  | $\infty$      |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | 1.9  | N                           | 1     | 1        | 0.84         | 1.9   | 1.6  | $\infty$      |
| Liquid conductivity (meas.)  | 5.0  | N                           | 1     | 0.78     | 0.71         | 3.9   | 3.6  | M-1           |
| Liquid permittivity (meas.)  | 5.0  | N                           | 1     | 0.23     | 0.26         | 1.2   | 1.3  | M             |
| Liquid conductivity-temperature uncertainty                                  | 2.5  | R                           | 1.732 | 0.78     | 0.71         | 1.1   | 1.0  | $\infty$      |
| Liquid permittivity-temperature uncertainty                                  | 2.5  | R                           | 1.732 | 0.23     | 0.26         | 0.3   | 0.4  | $\infty$      |
| Combined standard uncertainty  |  | RSS                         |       |          |              | 12.8  | 12.7   |               |
| Expanded uncertainty (95% confidence interval)                               |  | k = 2                       |       |          |              | 25.6  | 25.3   |               |

**For PD**

| <b>DASY8 Uncertainty Budget for PD (avg <math>\geq 1 \text{ cm}^2</math>)</b><br><b>Evaluation Distances to the Antennas <math>\leq \lambda/5</math></b> |   |           |                 |            |      |                              |          |
|--|---|-----------|-----------------|------------|------|------------------------------|----------|
| Error Description  |   | Unc.value | Probab. Distri. | Div        | (Ci) | Std.Unc. ( $\pm \text{dB}$ ) | (vi)veff |
| <b>Uncertainty terms dependent on the measurement system</b>   |   |           |                 |            |      |                              | $\infty$ |
| CAL  | Calibration                                   | 0.98      | N               | 1          | 1    | 0.98                         | $\infty$ |
| COR  | Probe correction                              | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| FRS  | Frequency response (BW $\leq 1 \text{ GHz}$ ) | 0.2       | R               | $\sqrt{3}$ | 1    | 0.12                         | $\infty$ |
| SCC  | Sensor cross coupling                         | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| ISO  | Isotropy                                      | 0.5       | R               | $\sqrt{3}$ | 1    | 0.29                         | $\infty$ |
| LIN  | Linearity                                     | 0.2       | R               | $\sqrt{3}$ | 1    | 0.12                         | $\infty$ |
| PSC  | Probe scattering                              | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| PPO  | Probe positioning offset                      | 0.3       | R               | $\sqrt{3}$ | 1    | 0.17                         | $\infty$ |
| PPR  | Probe positioning repeatability               | 0.04      | R               | $\sqrt{3}$ | 1    | 0.02                         | $\infty$ |
| SMO  | Sensor mechanical offset                      | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| PSR  | Probe spatial resolution                      | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| FLD  | Field impedance dependence                    | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| APD  | Amplitude and phase drift                     | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| APN  | Amplitude and phase noise                     | 0.04      | R               | $\sqrt{3}$ | 1    | 0.02                         | $\infty$ |
| TR   | Measurement area truncation                   | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| DAQ  | Data acquisition                              | 0.03      | N               | 1          | 1    | 0.03                         | $\infty$ |
| SMP  | Sampling                                      | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| REC  | Field reconstruction                          | 0.6       | R               | $\sqrt{3}$ | 1    | 0.35                         | $\infty$ |
| TRA  | FTE/MEO                                       | 0(0.7)    | R               | $\sqrt{3}$ | 1    | 0 (0.4)                      | $\infty$ |
| SCA  | Power density scaling                         | -         | R               | $\sqrt{3}$ | 1    | -                            | $\infty$ |
| SAV  | Spatial averaging                             | 0.1       | R               | $\sqrt{3}$ | 1    | 0.06                         | $\infty$ |
| SDL  | System detection limit                        | 0.04      | R               | $\sqrt{3}$ | 1    | 0.02                         | $\infty$ |
| <b>Uncertainty terms dependent on the DUT and environmental factors</b>  |   |           |                 |            |      |                              |          |
| PC   | Probe coupling with DUT                       | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| MOD  | Modulation response                           | 0.4       | R               | $\sqrt{3}$ | 1    | 0.23                         | $\infty$ |
| IT   | Integration time                              | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| RT   | Response time                                 | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| DH   | Device holder influenc                        | 0.1       | R               | $\sqrt{3}$ | 1    | 0.06                         | $\infty$ |
| DA   | DUT alignment                                 | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| AC   | RF ambient conditions                         | 0.04      | R               | $\sqrt{3}$ | 1    | 0.02                         | $\infty$ |
| AR   | Ambient reflections                           | 0.04      | R               | $\sqrt{3}$ | 1    | 0.02                         | $\infty$ |
| MSI  | Immunity / secondary reception                | 0         | R               | $\sqrt{3}$ | 1    | 0                            | $\infty$ |
| DRI  | Drift of the DUT                              | -         | R               | $\sqrt{3}$ | 1    | -                            | $\infty$ |
| Combined Std Uncertainty   |   |           |                 |            |      | 1.24                         |          |
| Expanded Std Uncertainty (95%)   |   |           |                 |            |      | 1.99                         |          |



## ANNEX A: Test Layout



**DASY 5 test system**



**DASY 8 test system**

### Tissue Simulating Liquids

For the measurement of the field distribution inside the flat phantom with DASY, the phantom must be filled with around 25 liters of homogeneous tissue simulating liquid. For SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is  $>15$  cm, which is shown as below.



Picture 3: Liquid depth in the flat Phantom

## ANNEX B: System Check Results

### Plot 1 System Performance Check at 2450 MHz TSL

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2**

Date: 2024/5/31

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.81$  S/m;  $\epsilon_r = 38.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.18, 7.67, 7.29); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: ELI v4.0; Type: QDOVA001BB;

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=250mW/Area Scan (4x7x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 14.26 W/kg

**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.834 V/m; Power Drift = 0.015 dB

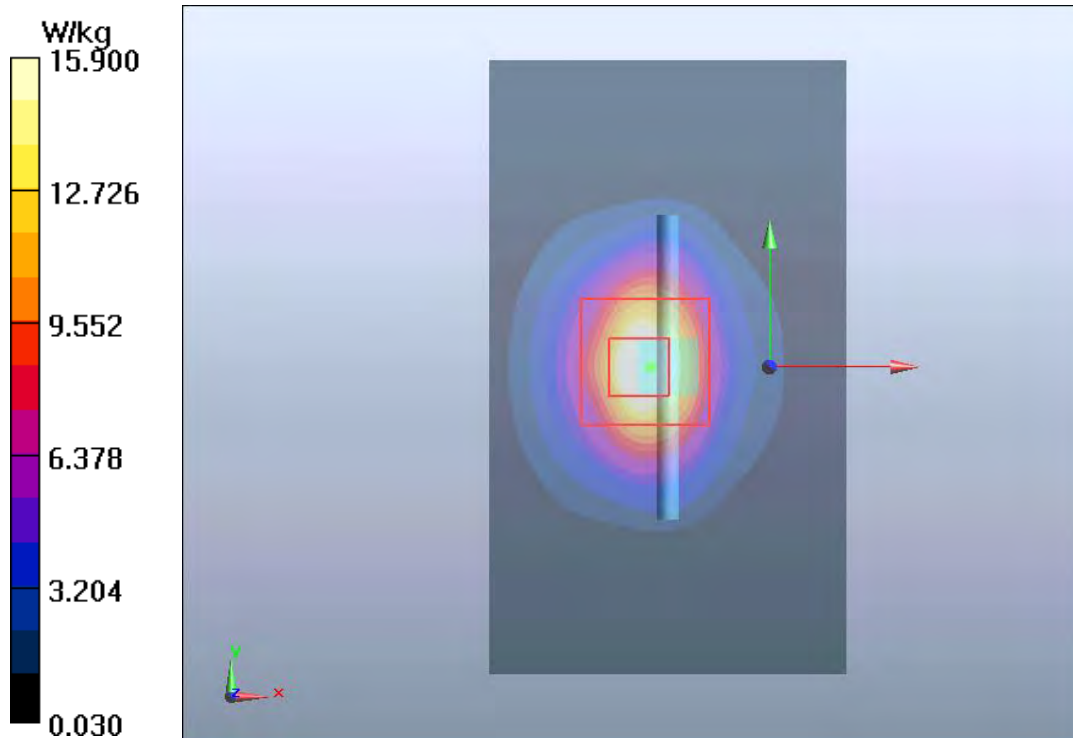
Peak SAR (extrapolated) = 30.10 W/kg

**SAR(1 g) = 13.7 W/kg; SAR(10 g) = 6.22 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%

Maximum value of SAR (measured) = 15.90 W/kg



**Plot 2 System Performance Check at 5250 MHz TSL**

**DUT: Dipole 5250 MHz; Type: D5GHzV2; Serial: D5GHzV2**

Date: 2024/5/31

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.80$  S/m;  $\epsilon_r = 35.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.65, 5.99, 5.81); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: ELI v4.0; Type: QDOVA001BB;

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=100mW/Area Scan (6x10x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 9.14 W/kg

**d=10mm, Pin=100mW/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 33.654 V/m; Power Drift = -0.095 dB

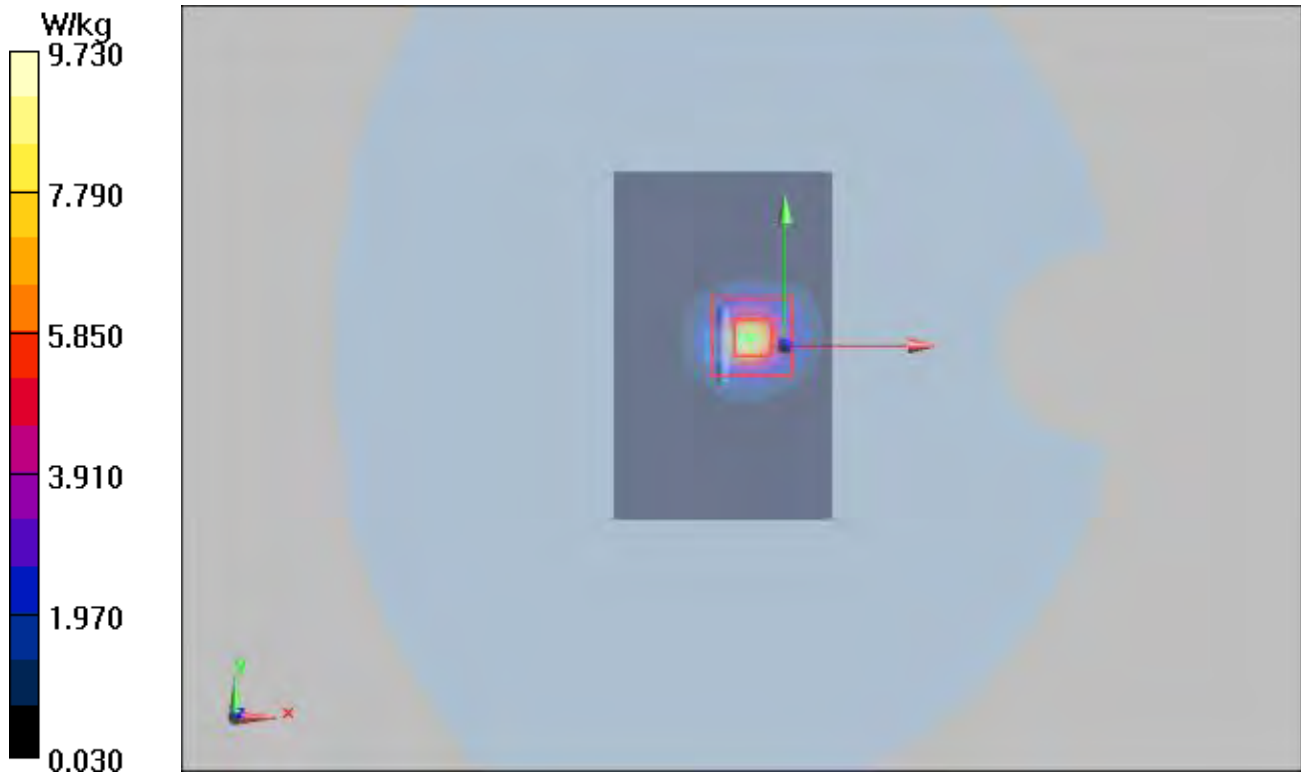
Peak SAR (extrapolated) = 52.20 W/kg

**SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.25 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 63%

Maximum value of SAR (measured) = 9.73 W/kg



**Plot 3 System Performance Check at 5750 MHz TSL**

**DUT: Dipole 5750 MHz; Type: D5GHzV2; Serial: D5GHzV2**

Date: 2024/5/31

Communication System: CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.21$  S/m;  $\epsilon_r = 34.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.14, 5.41, 5.20); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: ELI v4.0; Type: QDOVA001BB;

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**d=10mm, Pin=100mW/Area Scan (6x10x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 8.31 W/kg

**d=10mm, Pin=100mW/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 25.26 V/m; Power Drift = 0.044 dB

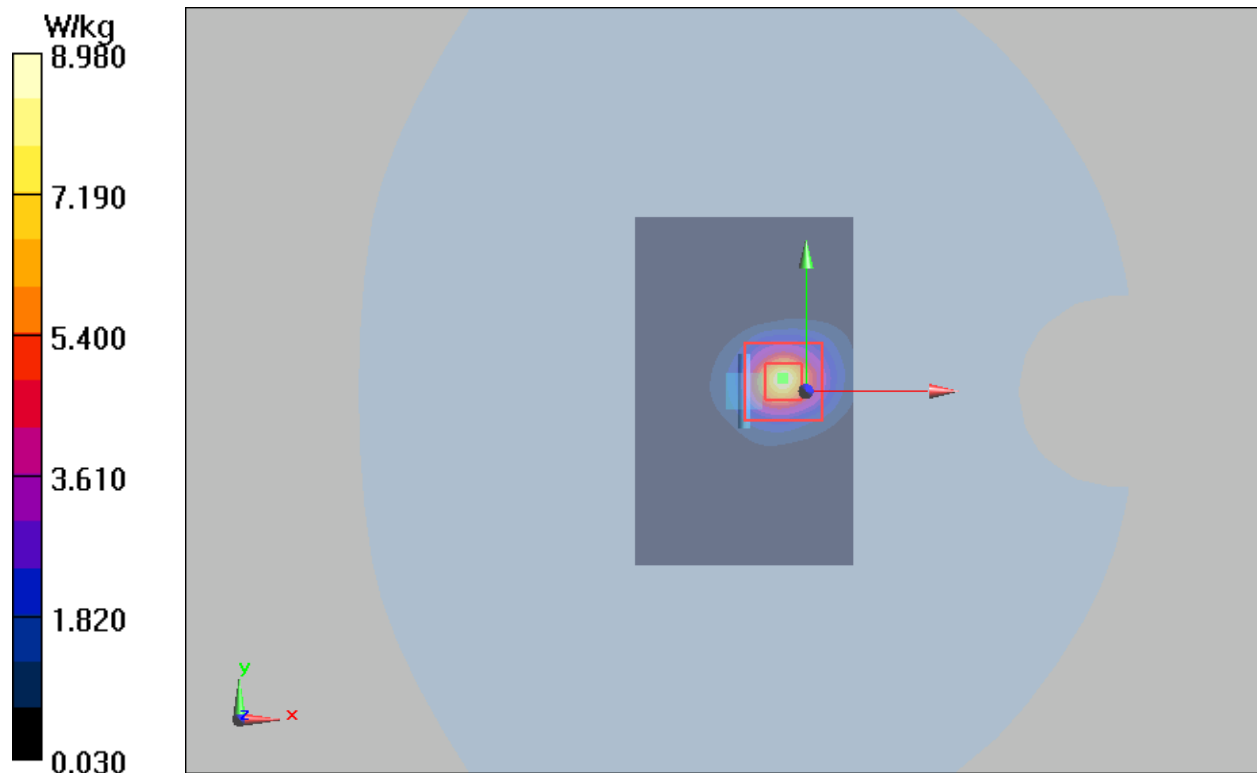
Peak SAR (extrapolated) = 23.4 W/kg

**SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.27 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.8 mm

Ratio of SAR at M2 to SAR at M1 = 59.4%

Maximum value of SAR (measured) = 8.98 W/kg



## Plot 4 System Performance Check at 6500 MHz TSL

### Measurement Report for Device, CW, Channel 0 (6500.0 MHz)

#### Device Under Test Properties

| Model,<br>Manufacturer | Dimensions<br>[mm] | IMEI                                     | DUT Type            |
|------------------------|--------------------|--|---------------------|
| Device,                | 16 x 6 x 300       | E5E049E3-D958-46BC-<br>B4AC-DBCC7709324B | Ace Mustang<br>T630 |

#### Exposure Conditions

| Phantom<br>Section,<br>TSL | Position,<br>Test<br>Distance<br>[mm] | Band | Group,<br>UID | Frequency<br>[MHz],<br>Channel<br>Number | Conversion<br>Factor | TSL<br>Conductivity<br>[S/m] | TSL<br>Permittivity |
|----------------------------|---------------------------------------|------|---------------|--|----------------------|------------------------------|---------------------|
| Flat, HSL                  | 5.00                                  |      | CW,<br>0--    | 6500.0, 0                                | 5.95                 | 6.08                         | 34.0                |

#### Hardware Setup

| Phantom                                    | TSL, Measured  | Probe, Calibration Date        | DAE, Calibration<br>Date   |
|--|----------------|--------------------------------|----------------------------|
| Twin-SAM V8.0 (30deg<br>probe tilt) - 2072 | HBBL-600-10000 | EX3DV4 - SN3677,<br>2023-07-20 | DAE4 Sn1317,<br>2023-09-13 |

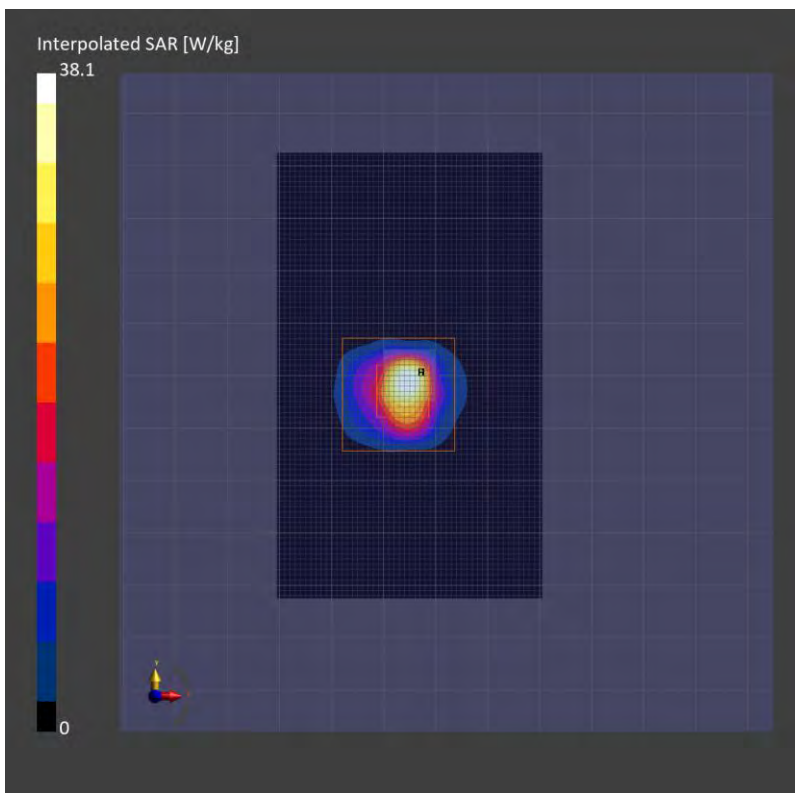
#### Scans Setup

|                     | Area Scan   | Zoom Scan          |
|---------------------|-------------|--------------------|
| Grid Extents [mm]   | 51.0 x 85.0 | 22.0 x 22.0 x 22.0 |
| Grid Steps [mm]     | 8.5 x 8.5   | 3.4 x 3.4 x 1.4    |
| Sensor Surface [mm] | 3.0         | 1.4                |
| Graded Grid         | n/a         | Yes                |
| Grading Ratio       | n/a         | 1.4                |
| MAIA                | N/A         | N/A                |
| Surface Detection   | VMS + 6p    | All points         |
| Scan Method         | Measured    | Measured           |

#### Measurement Results

|      | Area Scan  | Zoom Scan  |
|------|------------|------------|
| Date | 2024-06-03 | 2024-06-03 |

|                     |               |               |
|---------------------|---------------|---------------|
| psSAR1g [W/Kg]      | 23.6          | 30.4          |
| psSAR10g [W/Kg]     | 5.14          | 5.79          |
| Power Drift [dB]    | -0.02         | -0.09         |
| Power Scaling       | Disabled      | Disabled      |
| Scaling Factor [dB] |               |               |
| TSL Correction      | No correction | No correction |
| M2/M1 [%]           |               | 55.2          |
| Dist 3dB Peak [mm]  |               | 4.8           |





## Plot 5 Measurement Report for Device, UID 0 -, Channel 0 (6500.000MHz)

### Device under Test Properties

| Model, Manufacturer | Dimensions [mm] | IMEI                                 | DUT Type         |
|---------------------|-----------------|--------------------------------------|------------------|
| Device,             | 16 x 6 x 300    | E5E049E3-D958-46BC-B4AC-DBCC7709324B | Ace Mustang T630 |

### Exposure Conditions

| Phantom Section, TSL | Position, Test Distance [mm] | Band | Group, UID | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|------------------------------|------|------------|---------------------------------|-------------------|------------------------|------------------|
| Flat, HSL            | 5.00                         |      | CW, 0--    | 6500.000, 0                     | 5.85              | 6.08                   | 34.0             |

### Hardware Setup

| Phantom                                 | TSL, Measured  | Probe, Calibration Date     | DAE, Calibration Date   |
|---|----------------|-----------------------------|-------------------------|
| Twin-SAM V8.0 (30deg probe tilt) - 2072 | HBBL-600-10000 | EX3DV4 - SN3677, 2023-07-20 | DAE4 Sn1317, 2023-09-13 |

### Scan Setup

|                     | Area Scan   | Zoom Scan          |
|---------------------|-------------|--------------------|
| Grid Extents [mm]   | 51.0 x 85.0 | 22.0 x 22.0 x 22.0 |
| Grid Steps [mm]     | 8.5 x 8.5   | 3.4 x 3.4 x 1.4    |
| Sensor Surface [mm] | 3.0         | 1.4                |
| Graded Grid         | N/A         | Yes                |
| Grading Ratio       | N/A         | 1.4                |
| MAIA                | N/A         | N/A                |
| Surface Detection   | VMS + 6p    | VMS + 6p           |
| Scan Method         | Measured    | Measured           |

### Measurement Results

|                           | Area Scan     | Zoom Scan     |
|---------------------------|---------------|---------------|
| Date                      | 2024-06-05    | 2024-06-05    |
| psSAR1g [W/kg]            | 24.7          | 28.1          |
| psSAR10g [W/kg]           | 4.78          | 5.25          |
| psAPD (1.0cm2, sq) [W/m2] |               | 281           |
| psAPD (4.0cm2, sq) [W/m2] |               | 128           |
| Power Drift [dB]          | -0.02         | 0.01          |
| Power Scaling             | Disabled      | Disabled      |
| Scaling Factor [dB]       |               |               |
| TSL Correction            | No correction | No correction |
| M2/M1 [%]                 |               | 52.6          |
| Dist 3dB Peak [mm]        |               | 4.8           |



**Warning(s) / Error(s)**

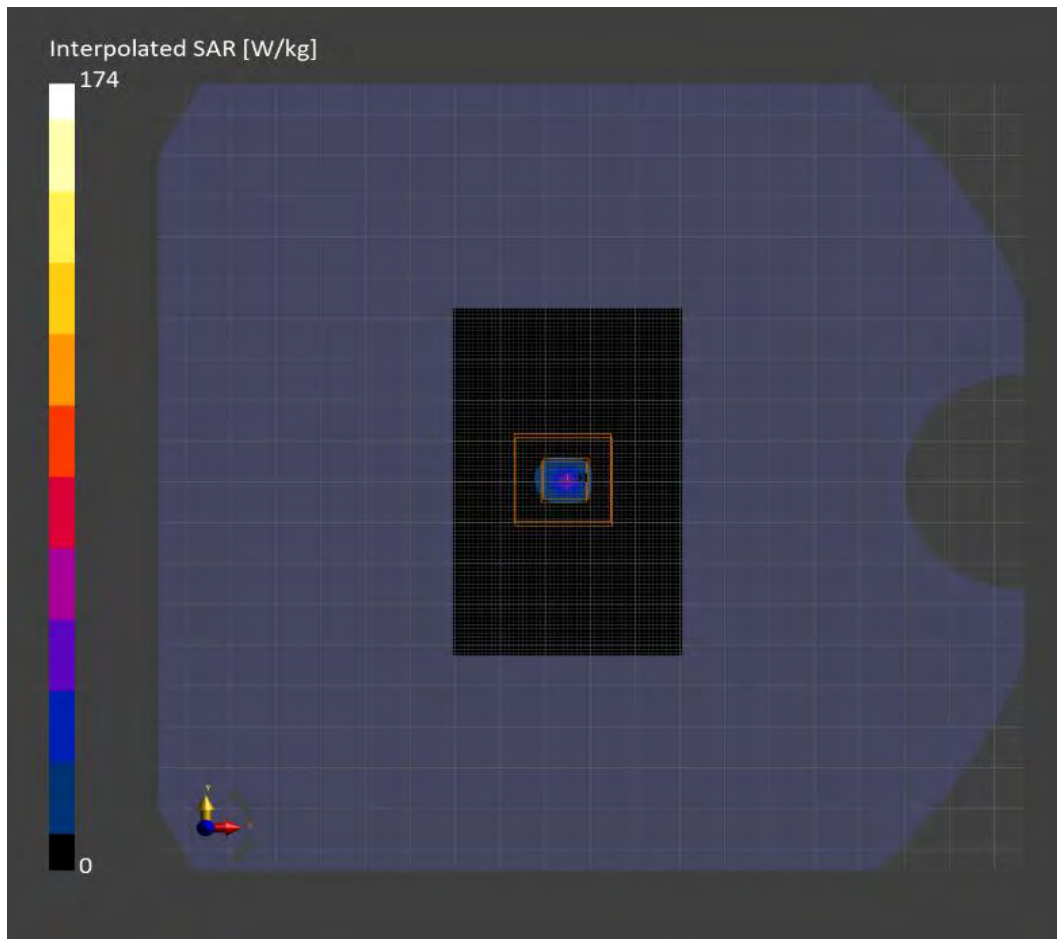
Details

Area Scan

Zoom Scan

Warning(s)

Error(s)



## Plot 6 Measurement Report for Device, BACK, Validation band, CW, Channel 10000 (10000.0 MHz)

### Device Under Test Properties

| Model, Manufacturer | Dimensions [mm]       | IMEI                                 | DUT Type         |
|---------------------|-----------------------|--------------------------------------|------------------|
| Device,             | 100.0 x 100.0 x 172.0 | E5E049E3-D958-46BC-B4AC-DBCC7709324B | Ace Mustang T630 |

### Exposure Conditions

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

### Hardware Setup

| Phantom       | Medium | Probe, Calibration Date               | DAE, Calibration Date   |
|---------------|--------|---------------------------------------|-------------------------|
| mmWave - xxxx | Air -  | EUmmWV4 - SN9642_F1-55GHz, 2023-07-11 | DAE4 Sn1317, 2023-09-13 |

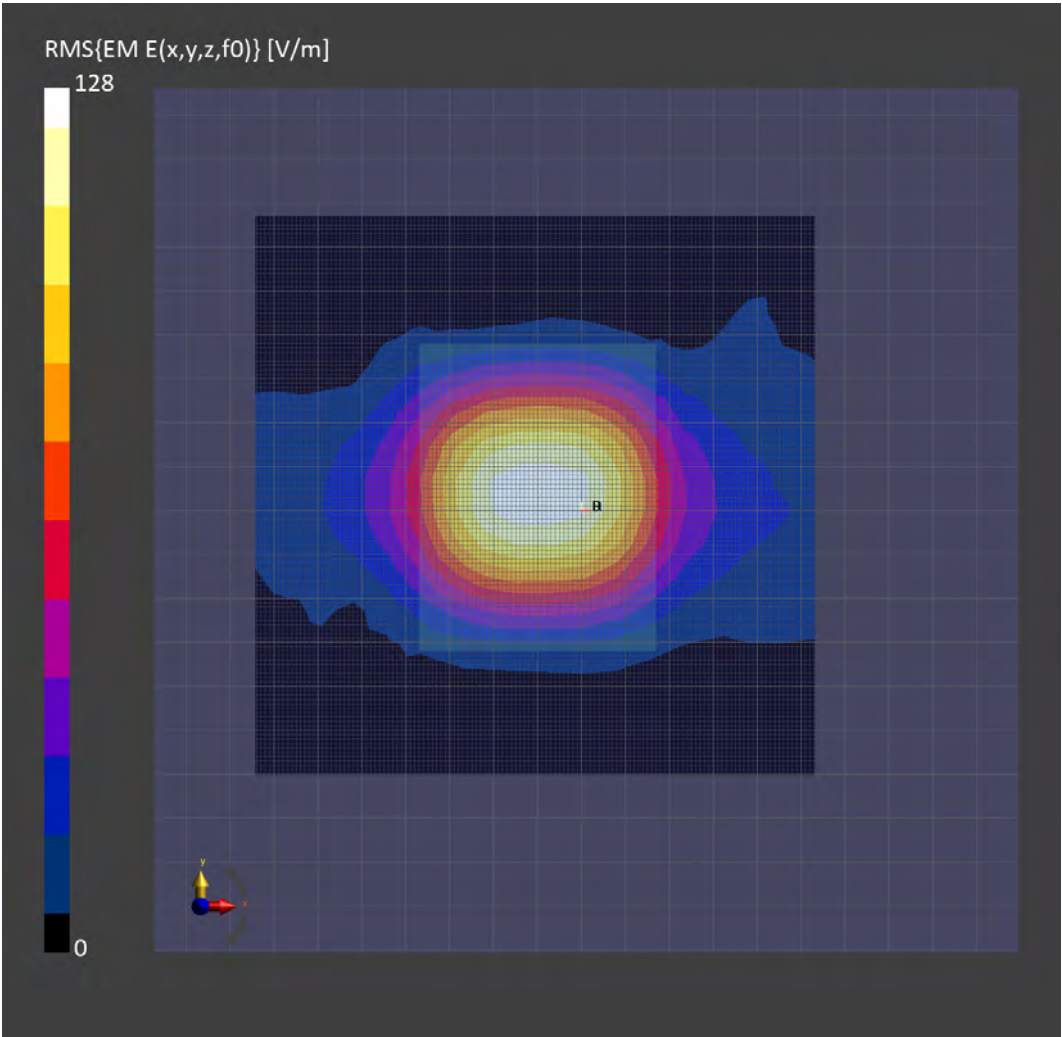
### Scans Setup

|                          |               |
|--------------------------|---------------|
| Scan Type                | 5G Scan       |
| Grid Extents [mm]        | 120.0 x 120.0 |
| Grid Steps [ $\lambda$ ] | 0.25 x 0.25   |
| Sensor Surface [mm]      | 10.0          |
| MAIA                     | Y             |

### Measurement Results

|                             |            |
|-----------------------------|------------|
| Scan Type                   | 5G Scan    |
| Date                        | 2024-06-05 |
| Avg. Area [ $\text{cm}^2$ ] | 1.00       |
| psPDn+ [ $\text{W/m}^2$ ]   | 51.2       |
| psPDtot+ [ $\text{W/m}^2$ ] | 51.3       |
| psPDmod+ [ $\text{W/m}^2$ ] | 51.6       |
| $E_{\text{max}}$ [V/m]      | 126        |

|                  |      |
|------------------|------|
| Power Drift [dB] | 0.03 |
|------------------|------|



## ANNEX C: Highest Graph Results

### Plot 7 802.11b Back Side 0mm High

Date: 2024/5/31

Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz; Duty Cycle: 1:1.031

Medium parameters used:  $f = 2462$  MHz;  $\sigma = 1.859$  S/m;  $\epsilon_r = 37.58$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.18, 7.67, 7.29); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: ELI v4.0; Type: QDOVA001BB;

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side 0mm/High/Area Scan (14x19x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.508 W/kg

**Back Side 0mm/High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.211 V/m; Power Drift = 0.040 dB

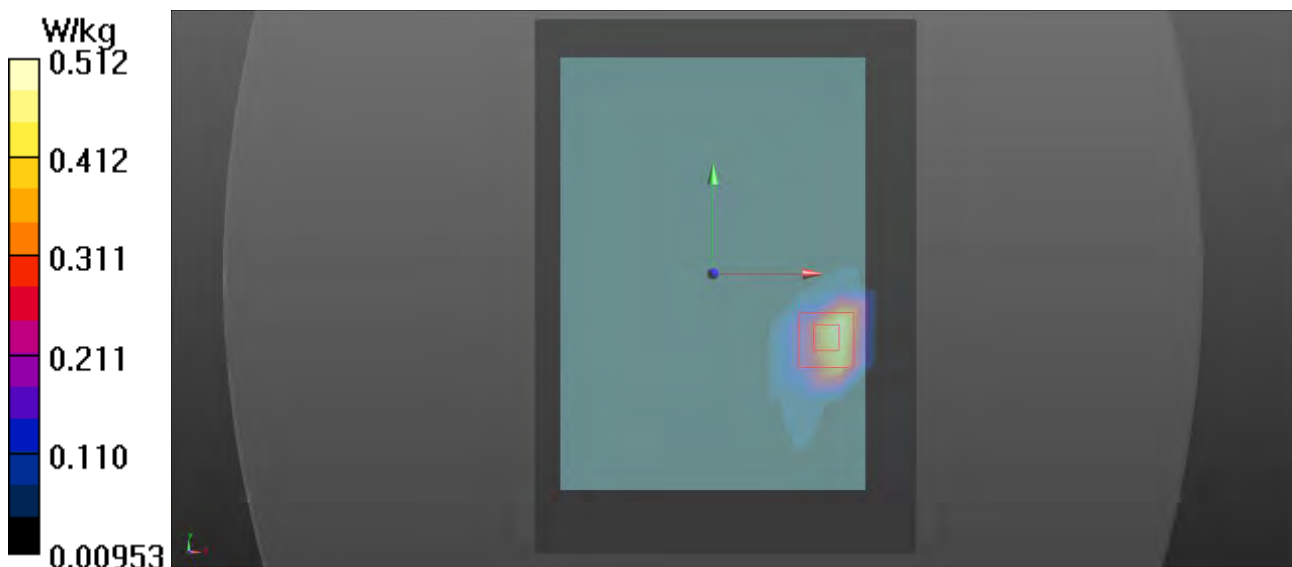
Peak SAR (extrapolated) = 1.72 W/kg

**SAR(1 g) = 0.408 W/kg; SAR(10 g) = 0.161 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.4 mm

Ratio of SAR at M2 to SAR at M1 = 50.9%

Maximum value of SAR (measured) = 0.512 W/kg



**Plot 8 802.11ac-VHT40 Back Side 0mm Middle**

Date: 2024/5/31

Communication System: UID 0, 802.11 ac 40 (0); Frequency: 5230 MHz; Duty Cycle: 1:1.130

Medium parameters used:  $f = 5230$  MHz;  $\sigma = 4.858$  S/m;  $\epsilon_r = 36.82$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(5.65, 5.99, 5.81); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: ELI v4.0; Type: QDOVA001BB;

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side 0mm/ Middle /Area Scan (17x23x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.432 W/kg

**Back Side 0mm/ Middle /Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.5080 V/m; Power Drift = 0.086 dB

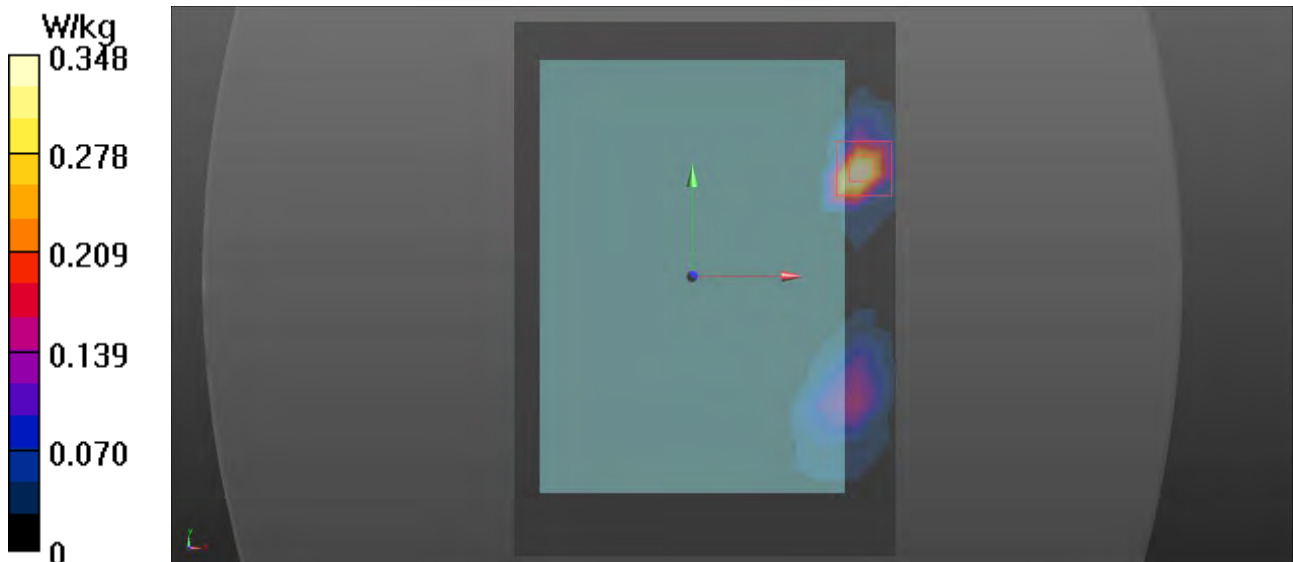
Peak SAR (extrapolated) = 0.832 W/kg

**SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.097 W/kg**

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 28.2%

Maximum value of SAR (measured) = 0.348 W/kg



## Plot 9 DH5 Back Side 0mm High

Date: 2024/5/31

Communication System: UID 0, BT (0); Frequency: 2480 MHz; Duty Cycle: 1:1.175

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.878$  S/m;  $\epsilon_r = 37.511$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.18, 7.67, 7.29); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: ELI v4.0; Type: QDOVA001BB;

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Back Side 0mm/High/Area Scan (14x19x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.089 W/kg

**Back Side 0mm/High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.7455 V/m; Power Drift = 0.015 dB

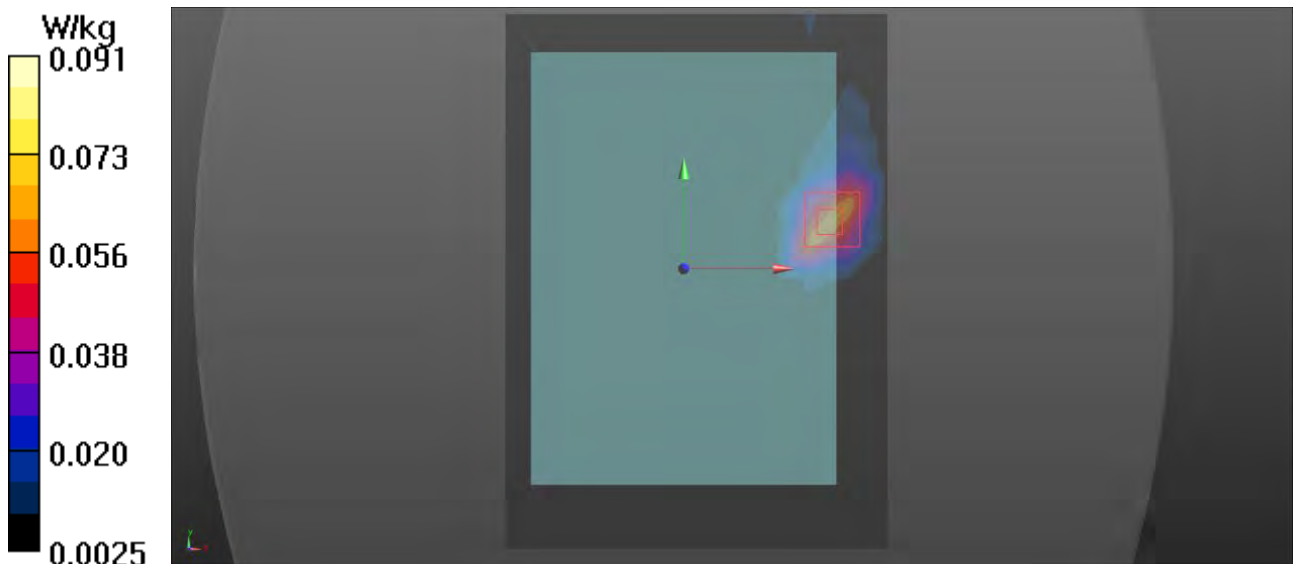
Peak SAR (extrapolated) = 0.307 W/kg

**SAR(1 g) = 0.082 W/kg; SAR(10 g) = 0.030 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.4 mm

Ratio of SAR at M2 to SAR at M1 = 50.3%

Maximum value of SAR (measured) = 0.091 W/kg



## Plot 10 Measurement Report for Device, BACK, U-NII-8, UID 10743 AAC, Channel 207 (6985.000MHz)

### Device under Test Properties

| Model,<br>Manufacturer | Dimensions [mm]    | IMEI                                 | DUT Type         |
|------------------------|--------------------|--------------------------------------|------------------|
| Device,                | 315.6 x 229 x 18.9 | E5E049E3-D958-46BC-B4AC-DBCC7709324B | Ace Mustang T630 |

### Exposure Conditions

| Phantom<br>Section,<br>TSL | Position,<br>Test<br>Distance<br>[mm] | Band    | Group,<br>UID      | Frequency<br>[MHz],<br>Channel<br>Number | Conversion<br>Factor | TSL<br>Conductivity<br>[S/m] | TSL<br>Permittivity |
|----------------------------|---------------------------------------|---------|--------------------|--|----------------------|------------------------------|---------------------|
| Flat,<br>HSL               | BACK,<br>0.00                         | U-NII-8 | WLAN,<br>10743-AAC | 6985.000,<br>207                         | 5.51                 | 6.69                         | 33.2                |

### Hardware Setup

| Phantom                                       | TSL, Measured  | Probe, Calibration Date        | DAE, Calibration Date      |
|---|----------------|--------------------------------|----------------------------|
| Twin-SAM V8.0<br>(30deg probe tilt) -<br>2072 | HBBL-600-10000 | EX3DV4 - SN3677,<br>2023-07-20 | DAE4 Sn1317,<br>2023-09-13 |

### Scan Setup

|                        | Area Scan        | Zoom Scan             |
|------------------------|------------------|-----------------------|
| Grid Extents<br>[mm]   | 346.0 x<br>260.0 | 22.0 x 22.0 x<br>22.0 |
| Grid Steps [mm]        | 8.5 x 8.5        | 3.4 x 3.4 x<br>1.4    |
| Sensor Surface<br>[mm] | 3.0              | 1.4                   |
| Graded Grid            | N/A              | Yes                   |
| Grading Ratio          | N/A              | 1.4                   |
| MAIA                   | Y                | Y                     |
| Surface<br>Detection   | VMS + 6p         | VMS + 6p              |
| Scan Method            | Measured         | Measured              |

### Measurement Results

|                       | Area Scan        | Zoom Scan        |
|-----------------------|------------------|------------------|
| Date                  | 2024-06-03       | 2024-06-03       |
| psSAR1g [W/kg]        | 0.161            | 0.157            |
| psSAR10g [W/kg]       | 0.058            | 0.033            |
| Power Drift [dB]      | -0.055           | 0.02             |
| Power Scaling         | Disabled         | Disabled         |
| Scaling Factor [dB]   |                  |                  |
| TSL Correction        | No<br>correction | No<br>correction |
| M2/M1 [%]             |                  | 47.1             |
| Dist 3dB Peak<br>[mm] |                  | 4.8              |



## Warning(s) / Error(s)

Details

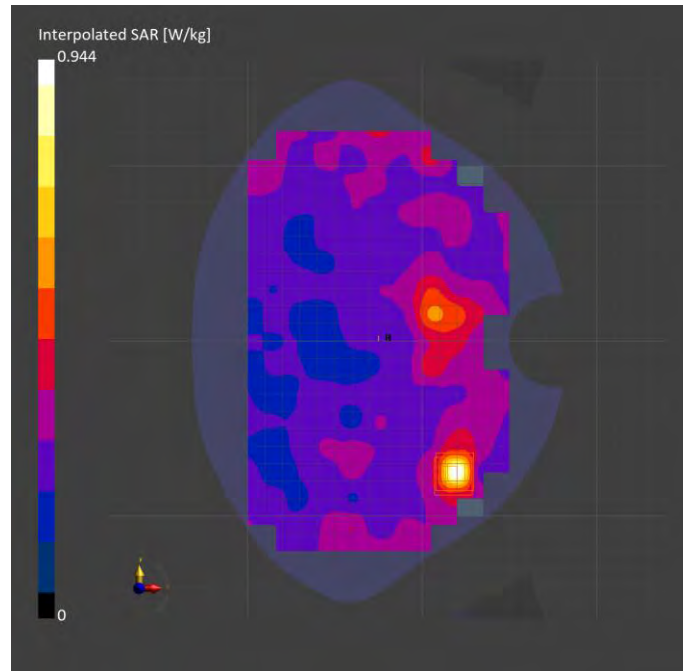
Area Scan

Zoom Scan

Warning(s) Power drift exceeds warning threshold.

Power drift exceeds warning threshold.

Error(s)





**Measurement Report for Device, BACK, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle), Channel 207 (6985.000 MHz)**
**Device Under Test Properties**

| Model, Manufacturer | Dimensions [mm]    | IMEI                                 | DUT Type         |
|---------------------|--------------------|--------------------------------------|------------------|
| Device,             | 315.6 x 229 x 18.9 | E5E049E3-D958-46BC-B4AC-DBCC7709324B | Ace Mustang T630 |

**Exposure Conditions**

| Phantom Section, TSL | Position, Test Distance [mm] | Band    | Group, UID      | Frequency [MHz], Channel Number | Conversion Factor | TSL Conductivity [S/m] | TSL Permittivity |
|----------------------|------------------------------|---------|-----------------|---------------------------------|-------------------|------------------------|------------------|
| Flat, HSL            | BACK, 0.00                   | U-NII-8 | WLAN, 10743-AAC | 6985.000, 207                   | 5.51              | 6.69                   | 33.2             |

**Hardware Setup**

| Phantom                                 | TSL, Measured  | Probe, Calibration Date     | DAE, Calibration Date   |
|---|----------------|-----------------------------|-------------------------|
| Twin-SAM V8.0 (30deg probe tilt) - 2072 | HBBL-600-10000 | EX3DV4 - SN3677, 2023-07-20 | DAE4 Sn1317, 2023-09-13 |

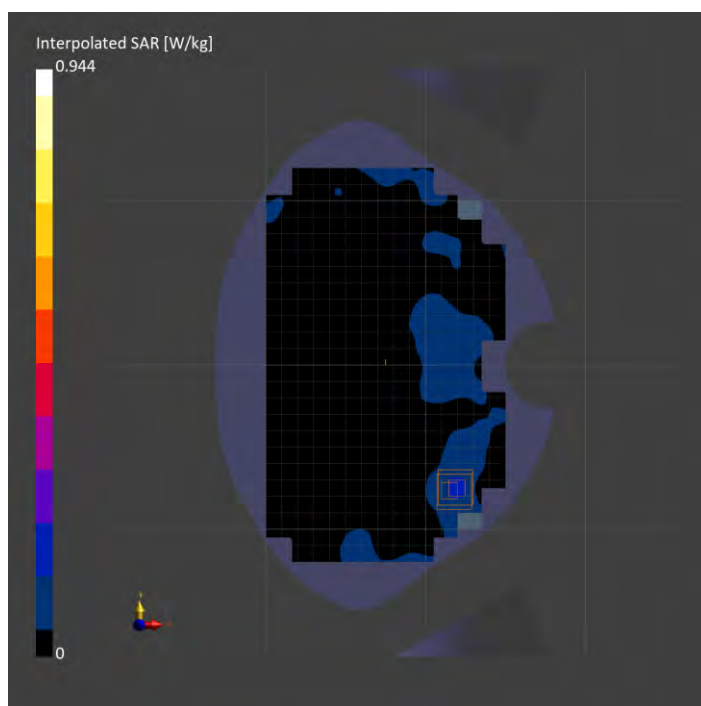
**Scans Setup**

|                     | Area Scan     | Zoom Scan          |
|---------------------|---------------|--------------------|
| Grid Extents [mm]   | 346.0 x 260.0 | 22.0 x 22.0 x 22.0 |
| Grid Steps [mm]     | 8.5 x 8.5     | 3.4 x 3.4 x 1.4    |
| Sensor Surface [mm] | 3.0           | 1.4                |
| Graded Grid         | N/A           | Yes                |
| Grading Ratio       | N/A           | 1.4                |
| MAIA                | Y             | Y                  |
| Surface Detection   | VMS + 6p      | VMS + 6p           |
| Scan Method         | Measured      | Measured           |

**Measurement Results**

|      | Area Scan  | Zoom Scan  |
|------|------------|------------|
| Date | 2024-06-03 | 2024-06-03 |

|   |               |               |
|---|---------------|---------------|
| psSAR1g [W/kg]                                      | 0.161         | 0.157         |
| psSAR10g [W/kg]                                     | 0.058         | 0.033         |
| psAPD (1.0cm <sup>2</sup> , sq) [W/m <sup>2</sup> ] |               | 1.57          |
| psAPD (4.0cm <sup>2</sup> , sq) [W/m <sup>2</sup> ] |               | 0.790         |
| Power Drift [dB]                                    | -0.055        | 0.02          |
| Power Scaling                                       | Disabled      | Disabled      |
| Scaling Factor [dB]                                 |               |               |
| TSL Correction                                      | No correction | No correction |
| M2/M1 [%]   |               | 47.1          |
| Dist 3dB Peak [mm]                                  |               | 4.8           |



## Plot 11 Measurement Report for Device, BACK, U-NII-5, IEEE 802.11ax (160MHz, MCS0, 90pc duty cycle), Channel 79 (6345.0 MHz)

### Device Under Test Properties

| Model, Manufacturer | Dimensions [mm]    | IMEI                                 | DUT Type         |
|---------------------|--------------------|--------------------------------------|------------------|
| Device,             | 315.6 x 229 x 18.9 | E5E049E3-D958-46BC-B4AC-DBCC7709324B | Ace Mustang T630 |

### Exposure Conditions

| Phantom Section | Position, Test Distance [mm] | Band    | Group, UID      | Frequency [MHz], Channel Number | Conversion Factor |
|-----------------|------------------------------|---------|-----------------|---------------------------------|-------------------|
| 5G              | BACK, 2.00                   | U-NII-5 | WLAN, 10743-AAC | 6345.0, 79                      | 1.0               |

### Hardware Setup

| Phantom       | Medium | Probe, Calibration Date               | DAE, Calibration Date   |
|---------------|--------|---------------------------------------|-------------------------|
| mmWave - xxxx | Air -  | EUmmWV4 - SN9642_F1-55GHz, 2023-07-11 | DAE4 Sn1317, 2023-09-13 |

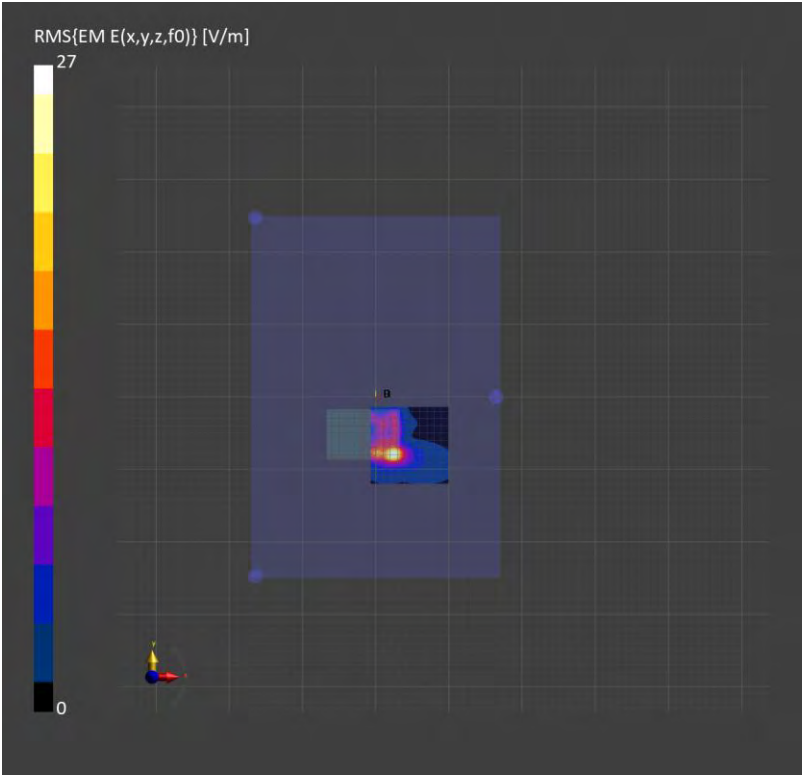
### Scans Setup

|                          |               |
|--------------------------|---------------|
| Scan Type                | 5G Scan       |
| Grid Extents [mm]        | 100.0 x 100.0 |
| Grid Steps [ $\lambda$ ] | 2.5 x 2.5     |
| Sensor Surface [mm]      | 4.0           |
| MAIA                     | Y             |

### Measurement Results

|                             |            |
|-----------------------------|------------|
| Scan Type                   | 5G Scan    |
| Date                        | 2024-06-05 |
| Avg. Area [ $\text{cm}^2$ ] | 4.00       |
| psPDn+ [ $\text{W/m}^2$ ]   | 0.472      |
| psPDtot+ [ $\text{W/m}^2$ ] | 0.781      |
| psPDmod+ [ $\text{W/m}^2$ ] | 0.901      |
| $E_{\text{max}}$ [V/m]      | 27.0       |

|                  |        |
|------------------|--------|
| Power Drift [dB] | -0.044 |
|------------------|--------|



## Plot 12 Measurement Report for Device, BACK, U-NII-8, IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle), Channel 207 (6985.0 MHz)

### Device Under Test Properties

| Model, Manufacturer | Dimensions [mm]    | IMEI                                 | DUT Type         |
|---------------------|--------------------|--------------------------------------|------------------|
| Device,             | 315.6 x 229 x 18.9 | E5E049E3-D958-46BC-B4AC-DBCC7709324B | Ace Mustang T630 |

### Exposure Conditions

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

### Hardware Setup

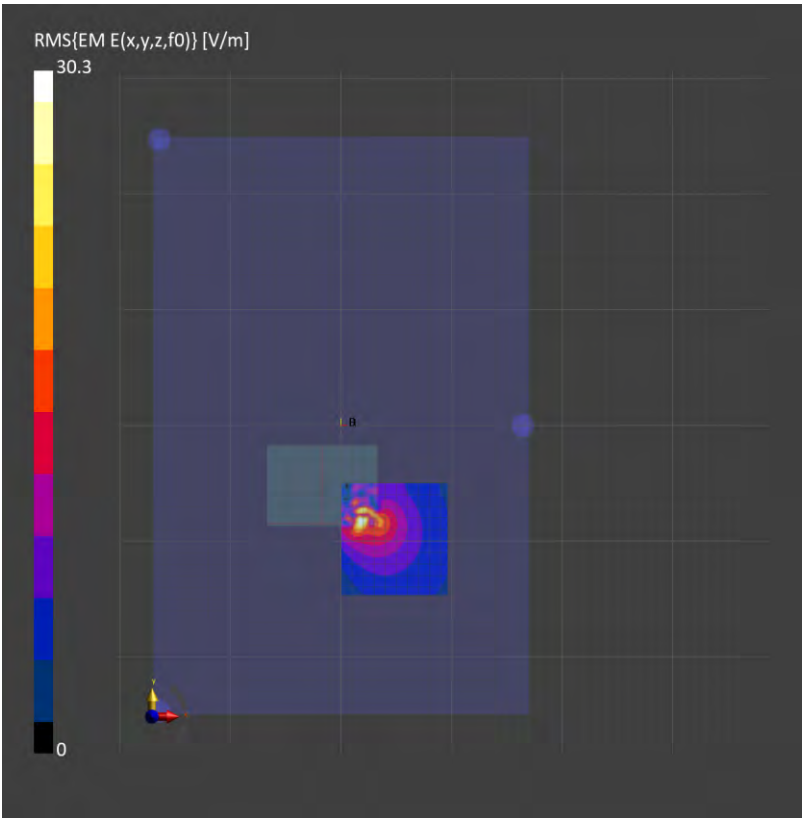
| Phantom       | Medium | Probe, Calibration Date               | DAE, Calibration Date   |
|---------------|--------|---------------------------------------|-------------------------|
| mmWave - xxxx | Air -  | EUmmWV4 - SN9642_F1-55GHz, 2023-07-11 | DAE4 Sn1317, 2023-09-13 |

### Scans Setup

|                     |             |
|---------------------|-------------|
| Scan Type           | 5G Scan     |
| Grid Extents [mm]   | 90.0 x 90.0 |
| Grid Steps [lambda] | 2.5 x 2.5   |
| Sensor Surface [mm] | 4.0         |
| MAIA                | Y           |

### Measurement Results

|                              |            |
|------------------------------|------------|
| Scan Type                    | 5G Scan    |
| Date                         | 2024-06-05 |
| Avg. Area [cm <sup>2</sup> ] | 4.00       |
| psPDn+ [W/m <sup>2</sup> ]   | 0.378      |
| psPDtot+ [W/m <sup>2</sup> ] | 0.875      |
| psPDmod+ [W/m <sup>2</sup> ] | 1.73       |
| E <sub>max</sub> [V/m]       | 30.3       |
| Power Drift [dB]             | -0.165     |



# ANNEX D: Probe Calibration Certificate (SN: 3677)

**Calibration Laboratory of**  
Schmid & Partner  
Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **TA**  
**Shanghai City**

Certificate No. **EX-3677\_Jul23**

## CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3677**



Calibration procedure(s) **QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6,  
QA CAL-25.v8  
Calibration procedure for dosimetric E-field probes**

Calibration date **July 20, 2023**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.  
All calibrations have been conducted in the closed laboratory facility; environment temperature  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .  
Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration |
|----------------------------|------------------|-----------------------------------|-----------------------|
| Power meter NRP2           | SN: 104778       | 30-Mar-23 (No. 217-03804/03805)   | Mar-24                |
| Power sensor NRP-Z91       | SN: 103244       | 30-Mar-23 (No. 217-03804)         | Mar-24                |
| OCP DAK-3.5 (weighted)     | SN: 1249         | 20-Oct-22 (OCP-DAK3.5-1249_Oct22) | Oct-23                |
| OCP DAK-12                 | SN: 1016         | 20-Oct-22 (OCP-DAK12-1016_Oct22)  | Oct-23                |
| Reference 20 dB Attenuator | SN: CC2552 (20x) | 30-Mar-23 (No. 217-03809)         | Mar-24                |
| DAE4                       | SN: 660          | 16-Mar-23 (No. DAE4-660_Mar23)    | Mar-24                |
| Reference Probe ES3DV2     | SN: 3013         | 06-Jan-23 (No. ES3-3013_Jan23)    | Jan-24                |

| Secondary Standards     | ID               | Check Date (in house)             | Scheduled Check        |
|-------------------------|------------------|-----------------------------------|------------------------|
| Power meter E4419B      | SN: GB41293874   | 06-Apr-16 (in house check Jun-22) | In house check: Jun-24 |
| Power sensor E4412A     | SN: MY41498087   | 06-Apr-16 (in house check Jun-22) | In house check: Jun-24 |
| Power sensor E4412A     | SN: 000110210    | 06-Apr-16 (in house check Jun-22) | In house check: Jun-24 |
| RF generator HP 8648C   | SN: US3642U01700 | 04-Aug-99 (in house check Jun-22) | In house check: Jun-24 |
| Network Analyzer E8358A | SN: US41080477   | 31-Mar-14 (in house check Oct-22) | In house check: Oct-24 |

|               |                |                       |   |
|---------------|----------------|-----------------------|---|
|               | Name           | Function              | Signature   |
| Calibrated by | Joanna Lleshaj | Laboratory Technician |  |
| Approved by   | Sven Kühn      | Technical Manager     |  |

Issued: July 20, 2023

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



**Calibration Laboratory of**  
Schmid & Partner  
Engineering AG  
Zeughausstrasse 43, 8004 Zurich, Switzerland



**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

## Glossary

|                        |  |
|------------------------|--|
| TSL                    | tissue simulating liquid   |
| NORM <sub>x,y,z</sub>  | sensitivity in free space  |
| ConvF                  | sensitivity in TSL / NORM <sub>x,y,z</sub>   |
| DCP                    | diode compression point  |
| CF                     | crest factor (1/duty_cycle) of the RF signal   |
| A, B, C, D             | modulation dependent linearization parameters  |
| Polarization $\varphi$ | $\varphi$ rotation around probe axis   |
| Polarization $\theta$  | $\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\theta = 0$ is normal to probe axis |
| Connector Angle        | information used in DASY system to align probe sensor X to the robot coordinate system   |

## Calibration is Performed According to the Following Standards:

- IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices – Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\theta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal. DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).



EX3DV4 - SN:3677

July 20, 2023

## Parameters of Probe: EX3DV4 - SN:3677

### Basic Calibration Parameters

|   | Sensor X | Sensor Y | Sensor Z | Unc (k = 2)  |
|---|----------|----------|----------|--------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 0.40     | 0.45     | 0.39     | $\pm 10.1\%$ |
| DCP (mV) <sup>B</sup>                                     | 101.0    | 102.0    | 102.5    | $\pm 4.7\%$  |

### Calibration Results for Modulation Response

| UID   | Communication System Name   |   | A<br>dB | B<br>dB $\sqrt{\mu\text{V}}$ | C     | D<br>dB | VR<br>mV | Max<br>dev. | Max<br>Unc <sup>E</sup><br>k = 2 |
|-------|-----------------------------|---|---------|------------------------------|-------|---------|----------|-------------|----------------------------------|
| 0     | CW                          | X | 0.00    | 0.00                         | 1.00  | 0.00    | 125.6    | $\pm 1.9\%$ | $\pm 4.7\%$                      |
|       |                             | Y | 0.00    | 0.00                         | 1.00  |         | 121.0    |             |                                  |
|       |                             | Z | 0.00    | 0.00                         | 1.00  |         | 122.5    |             |                                  |
| 10352 | Pulse Waveform (200Hz, 10%) | X | 20.00   | 89.56                        | 19.55 | 10.00   | 60.0     | $\pm 2.7\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 88.90                        | 19.41 |         | 60.0     |             |                                  |
|       |                             | Z | 20.00   | 87.18                        | 18.16 |         | 60.0     |             |                                  |
| 10353 | Pulse Waveform (200Hz, 20%) | X | 20.00   | 91.43                        | 19.38 | 6.99    | 80.0     | $\pm 1.5\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 89.58                        | 18.35 |         | 80.0     |             |                                  |
|       |                             | Z | 20.00   | 88.39                        | 17.59 |         | 80.0     |             |                                  |
| 10354 | Pulse Waveform (200Hz, 40%) | X | 20.00   | 95.46                        | 19.97 | 3.98    | 95.0     | $\pm 1.3\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 89.26                        | 16.58 |         | 95.0     |             |                                  |
|       |                             | Z | 20.00   | 91.18                        | 17.61 |         | 95.0     |             |                                  |
| 10355 | Pulse Waveform (200Hz, 60%) | X | 20.00   | 99.05                        | 20.33 | 2.22    | 120.0    | $\pm 1.2\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 20.00   | 83.90                        | 12.80 |         | 120.0    |             |                                  |
|       |                             | Z | 20.00   | 93.78                        | 17.60 |         | 120.0    |             |                                  |
| 10387 | QPSK Waveform, 1 MHz        | X | 1.51    | 66.00                        | 14.40 | 1.00    | 150.0    | $\pm 3.5\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 1.29    | 64.03                        | 13.00 |         | 150.0    |             |                                  |
|       |                             | Z | 1.42    | 66.25                        | 14.23 |         | 150.0    |             |                                  |
| 10388 | QPSK Waveform, 10 MHz       | X | 2.03    | 67.08                        | 15.21 | 0.00    | 150.0    | $\pm 1.0\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 1.77    | 65.25                        | 14.04 |         | 150.0    |             |                                  |
|       |                             | Z | 1.91    | 66.70                        | 15.02 |         | 150.0    |             |                                  |
| 10396 | 64-QAM Waveform, 100 kHz    | X | 2.64    | 69.26                        | 18.29 | 3.01    | 150.0    | $\pm 1.1\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 2.33    | 66.49                        | 16.64 |         | 150.0    |             |                                  |
|       |                             | Z | 2.02    | 65.39                        | 16.32 |         | 150.0    |             |                                  |
| 10399 | 64-QAM Waveform, 40 MHz     | X | 3.37    | 66.69                        | 15.51 | 0.00    | 150.0    | $\pm 2.6\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 3.33    | 66.54                        | 15.28 |         | 150.0    |             |                                  |
|       |                             | Z | 3.28    | 66.50                        | 15.39 |         | 150.0    |             |                                  |
| 10414 | WLAN CCDF, 64-QAM, 40 MHz   | X | 4.70    | 65.49                        | 15.43 | 0.00    | 150.0    | $\pm 4.5\%$ | $\pm 9.6\%$                      |
|       |                             | Y | 4.69    | 65.54                        | 15.36 |         | 150.0    |             |                                  |
|       |                             | Z | 4.55    | 65.38                        | 15.33 |         | 150.0    |             |                                  |

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Linearization parameter uncertainty for maximum specified field strength.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

EX3DV4 - SN:3677

July 20, 2023

### Parameters of Probe: EX3DV4 - SN:3677

#### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>$V^{-1}$ | T1<br>$ms V^{-2}$ | T2<br>$ms V^{-1}$ | T3<br>ms | T4<br>$V^{-2}$ | T5<br>$V^{-1}$ | T6   |
|---|----------|----------|----------------------|-------------------|-------------------|----------|----------------|----------------|------|
| x | 36.2     | 270.59   | 35.62                | 12.53             | 0.00              | 5.08     | 0.93           | 0.23           | 1.01 |
| y | 35.7     | 269.30   | 35.97                | 8.51              | 0.37              | 5.07     | 0.00           | 0.44           | 1.01 |
| z | 30.7     | 227.00   | 34.93                | 10.81             | 0.00              | 5.06     | 0.00           | 0.25           | 1.00 |

#### Other Probe Parameters

|   |            |
|---|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle                               | -66.7°     |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 9 mm       |
| Tip Diameter                                  | 2.5 mm     |
| Probe Tip to Sensor X Calibration Point       | 1 mm       |
| Probe Tip to Sensor Y Calibration Point       | 1 mm       |
| Probe Tip to Sensor Z Calibration Point       | 1 mm       |
| Recommended Measurement Distance from Surface | 1.4 mm     |

**Note:** Measurement distance from surface can be increased to 3–4 mm for an *Area Scan* job.

EX3DV4 - SN:3677

July 20, 2023

### Parameters of Probe: EX3DV4 - SN:3677

#### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity <sup>F</sup> (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-------------|
| 13                   | 55.0                               | 0.75                            | 15.21   | 15.21   | 15.21   | 0.00               | 1.25                    | ±13.3%      |
| 750                  | 41.9                               | 0.89                            | 9.03    | 9.80    | 9.03    | 0.45               | 1.27                    | ±12.0%      |
| 835                  | 41.5                               | 0.90                            | 8.66    | 9.52    | 8.51    | 0.43               | 1.27                    | ±12.0%      |
| 1750                 | 40.1                               | 1.37                            | 7.80    | 8.35    | 7.88    | 0.29               | 1.27                    | ±12.0%      |
| 1900                 | 40.0                               | 1.40                            | 7.70    | 8.25    | 7.79    | 0.31               | 1.27                    | ±12.0%      |
| 2000                 | 40.0                               | 1.40                            | 7.55    | 8.11    | 7.69    | 0.32               | 1.27                    | ±12.0%      |
| 2300                 | 39.5                               | 1.67                            | 7.45    | 8.00    | 7.60    | 0.33               | 1.27                    | ±12.0%      |
| 2450                 | 39.2                               | 1.80                            | 7.18    | 7.67    | 7.29    | 0.32               | 1.27                    | ±12.0%      |
| 2600                 | 39.0                               | 1.96                            | 7.10    | 7.59    | 7.21    | 0.32               | 1.27                    | ±12.0%      |
| 3300                 | 38.2                               | 2.71                            | 6.95    | 7.41    | 7.04    | 0.35               | 1.27                    | ±14.0%      |
| 3500                 | 37.9                               | 2.91                            | 6.87    | 7.33    | 6.99    | 0.34               | 1.27                    | ±14.0%      |
| 3700                 | 37.7                               | 3.12                            | 6.80    | 7.27    | 6.93    | 0.33               | 1.27                    | ±14.0%      |
| 3900                 | 37.5                               | 3.32                            | 6.85    | 7.30    | 6.98    | 0.33               | 1.27                    | ±14.0%      |
| 4100                 | 37.2                               | 3.53                            | 6.65    | 7.07    | 6.82    | 0.34               | 1.27                    | ±14.0%      |
| 4400                 | 36.9                               | 3.84                            | 6.55    | 6.97    | 6.67    | 0.34               | 1.27                    | ±14.0%      |
| 4600                 | 36.7                               | 4.04                            | 6.50    | 6.92    | 6.63    | 0.35               | 1.27                    | ±14.0%      |
| 4800                 | 36.4                               | 4.25                            | 6.40    | 6.81    | 6.55    | 0.39               | 1.27                    | ±14.0%      |
| 4950                 | 36.3                               | 4.40                            | 6.00    | 6.39    | 6.14    | 0.44               | 1.36                    | ±14.0%      |
| 5250                 | 35.9                               | 4.71                            | 5.65    | 5.99    | 5.81    | 0.43               | 1.53                    | ±14.0%      |
| 5600                 | 35.5                               | 5.07                            | 4.92    | 5.23    | 5.04    | 0.41               | 1.75                    | ±14.0%      |
| 5750                 | 35.4                               | 5.22                            | 5.14    | 5.41    | 5.20    | 0.39               | 1.84                    | ±14.0%      |

<sup>C</sup> Frequency validity above 300 MHz of ±100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ±50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ±10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4–9 MHz, and ConvF assessed at 13 MHz is 9–19 MHz. Above 5 GHz frequency validity can be extended to ±110 MHz.

<sup>F</sup> The probes are calibrated using tissue simulating liquids (TSL) that deviate for  $\epsilon$  and  $\sigma$  by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10%. If TSL with deviations from the target of less than ±5% are used, the calibration uncertainties are 11.1% for 0.7–3 GHz and 13.1% for 3–6 GHz.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz and below ±2% for frequencies between 3–6 GHz at any distance larger than half the probe tip diameter from the boundary.

EX3DV4 - SN:3677

July 20, 2023

### Parameters of Probe: EX3DV4 - SN:3677

#### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity <sup>F</sup> (S/m) | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k = 2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-------------|
| 6500                 | 34.5                               | 6.07                            | 5.51    | 5.85    | 5.61    | 0.20               | 2.00                    | ±18.6%      |

<sup>C</sup> Frequency validity at 6.5 GHz is -600/+700 MHz, and ±700 MHz at or above 7 GHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

<sup>F</sup> The probes are calibrated using tissue simulating liquids (TSL) that deviate for  $\epsilon$  and  $\sigma$  by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.

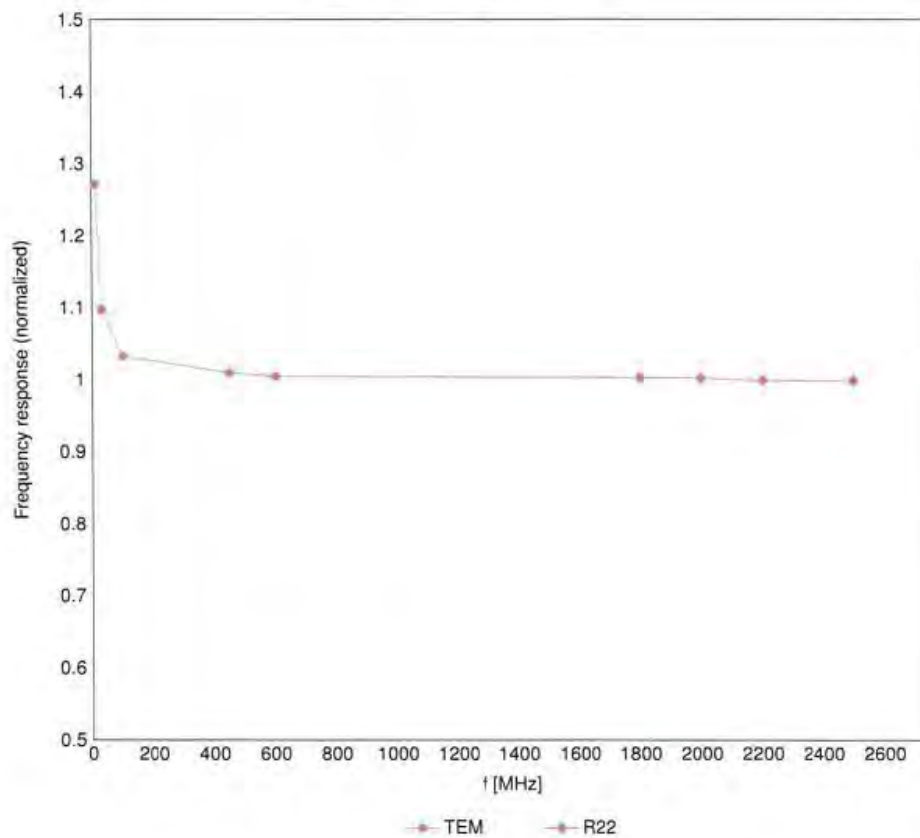
<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3–6 GHz; and below ±4% for frequencies between 6–10 GHz at any distance larger than half the probe tip diameter from the boundary.

EX3DV4 - SN:3677

July 20, 2023

### Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide:R22)



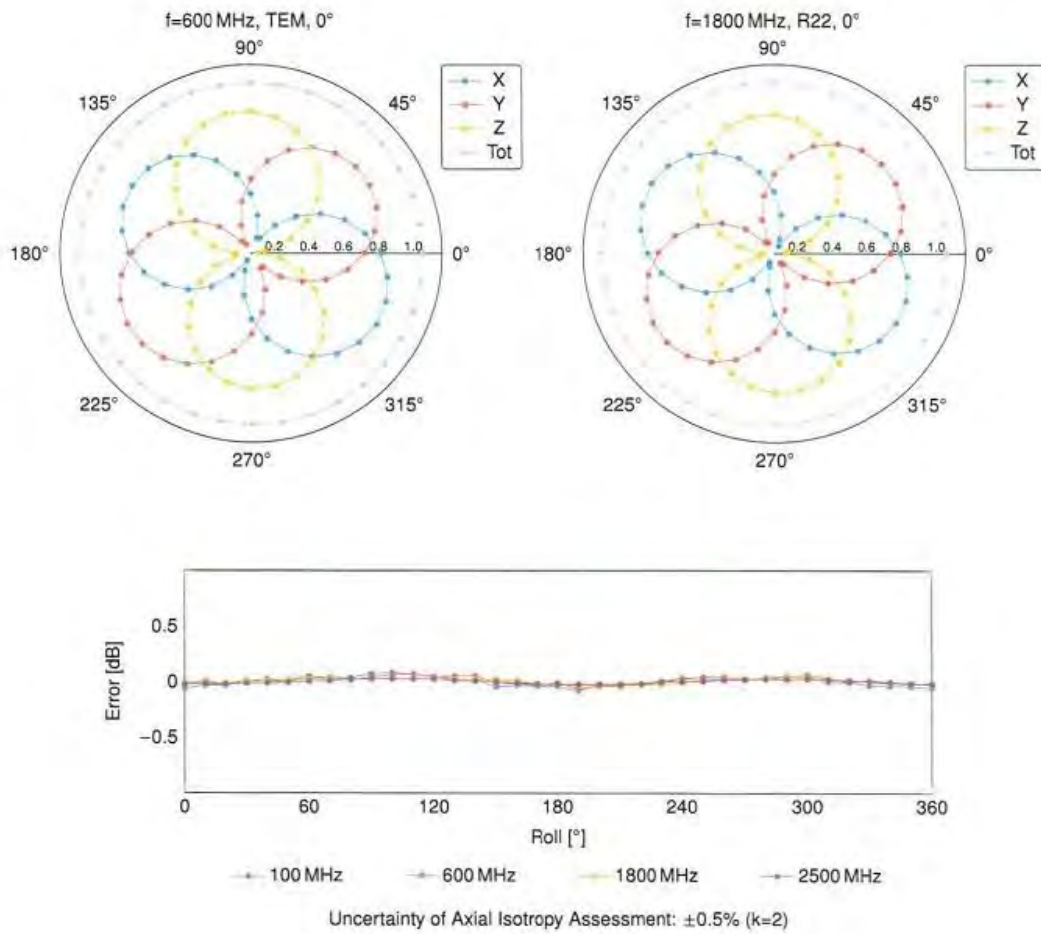
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )



EX3DV4 - SN:3677

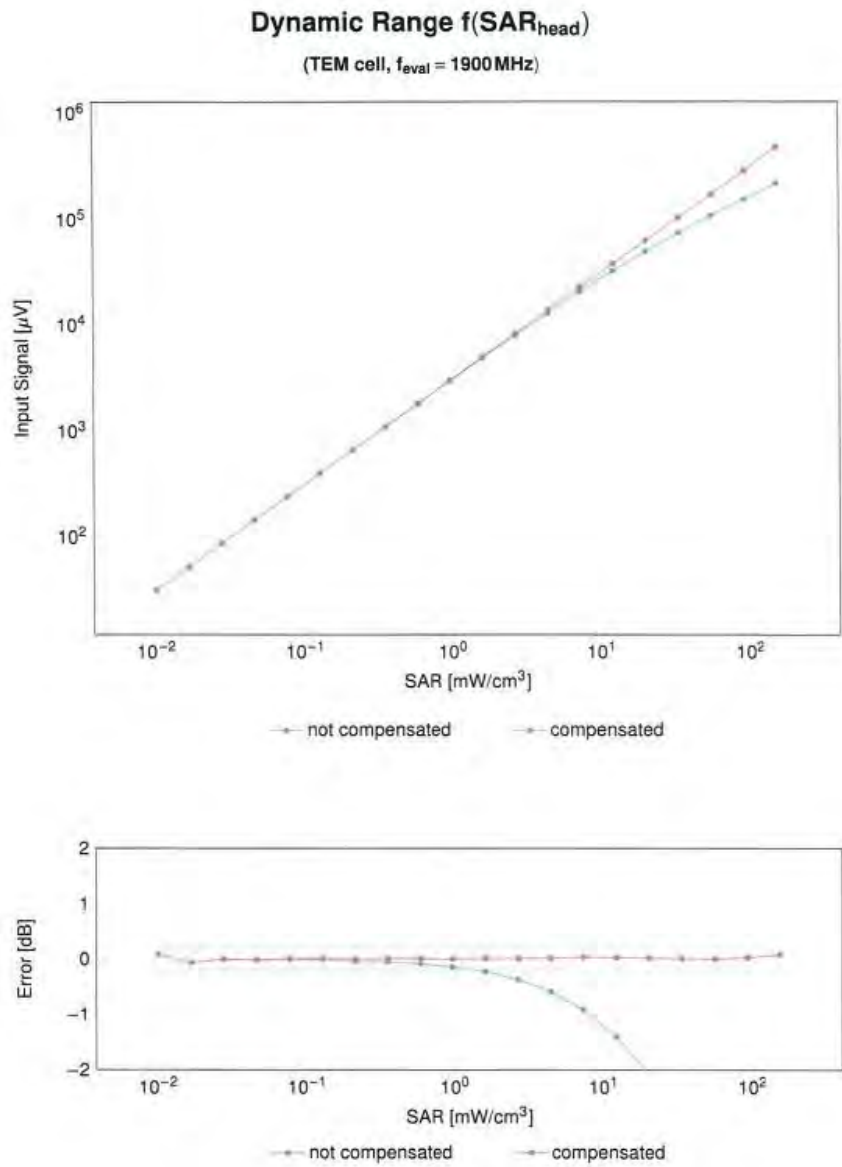
July 20, 2023

### Receiving Pattern ( $\phi$ ), $\vartheta = 0^\circ$



EX3DV4 - SN:3677

July 20, 2023

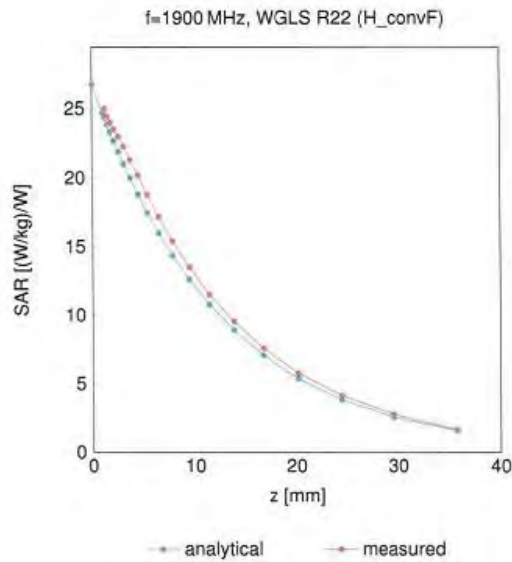


Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

EX3DV4 - SN:3677

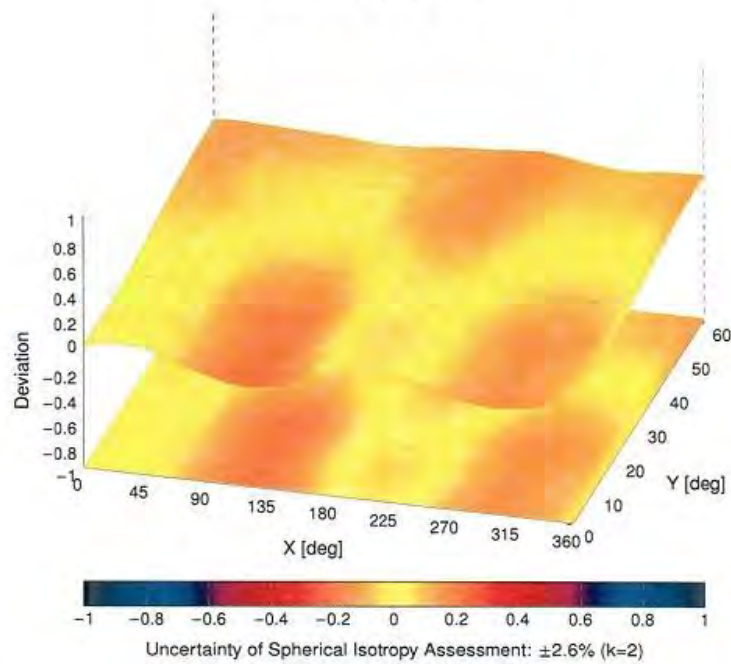
July 20, 2023

### Conversion Factor Assessment



### Deviation from Isotropy in Liquid

Error ( $\phi, \theta$ ),  $f = 900$  MHz





EX3DV4 - SN:3677

July 20, 2023

## Appendix: Modulation Calibration Parameters

| UID   | Rev | Communication System Name                            | Group     | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|--|-----------|----------|------------------------|
| 0     |     | CW   | CW        | 0.00     | ±4.7                   |
| 10010 | CAB | SAR Validation (Square, 100 ms, 10 ms)               | Test      | 10.00    | ±9.6                   |
| 10011 | CAC | UMTS-FDD (WCDMA)                                     | WCDMA     | 2.91     | ±9.6                   |
| 10012 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)             | WLAN      | 1.87     | ±9.6                   |
| 10013 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)        | WLAN      | 9.46     | ±9.6                   |
| 10021 | DAC | GSM-FDD (TDMA, GMSK)                                 | GSM       | 9.39     | ±9.6                   |
| 10023 | DAC | GPRS-FDD (TDMA, GMSK, TN 0)                          | GSM       | 9.57     | ±9.6                   |
| 10024 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1)                        | GSM       | 6.56     | ±9.6                   |
| 10025 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0)                          | GSM       | 12.62    | ±9.6                   |
| 10026 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1)                        | GSM       | 9.55     | ±9.6                   |
| 10027 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2)                      | GSM       | 4.80     | ±9.6                   |
| 10028 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)                    | GSM       | 3.55     | ±9.6                   |
| 10029 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2)                      | GSM       | 7.78     | ±9.6                   |
| 10030 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1)                  | Bluetooth | 5.30     | ±9.6                   |
| 10031 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3)                  | Bluetooth | 1.87     | ±9.6                   |
| 10032 | CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5)                  | Bluetooth | 1.16     | ±9.6                   |
| 10033 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)            | Bluetooth | 7.74     | ±9.6                   |
| 10034 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)            | Bluetooth | 4.53     | ±9.6                   |
| 10035 | CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)            | Bluetooth | 3.83     | ±9.6                   |
| 10036 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1)                | Bluetooth | 8.01     | ±9.6                   |
| 10037 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3)                | Bluetooth | 4.77     | ±9.6                   |
| 10038 | CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5)                | Bluetooth | 4.10     | ±9.6                   |
| 10039 | CAB | CDMA2000 (1xRTT, RC1)                                | CDMA2000  | 4.57     | ±9.6                   |
| 10042 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Half-rate) | AMPS      | 7.78     | ±9.6                   |
| 10044 | CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM)                     | AMPS      | 0.00     | ±9.6                   |
| 10048 | CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)            | DECT      | 13.80    | ±9.6                   |
| 10049 | CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)          | DECT      | 10.79    | ±9.6                   |
| 10056 | CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps)                       | TD-SCDMA  | 11.01    | ±9.6                   |
| 10058 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)                    | GSM       | 6.52     | ±9.6                   |
| 10059 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)             | WLAN      | 2.12     | ±9.6                   |
| 10060 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)           | WLAN      | 2.83     | ±9.6                   |
| 10061 | CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)            | WLAN      | 3.50     | ±9.6                   |
| 10062 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)             | WLAN      | 8.88     | ±9.6                   |
| 10063 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)             | WLAN      | 8.63     | ±9.6                   |
| 10064 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)            | WLAN      | 9.09     | ±9.6                   |
| 10065 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)            | WLAN      | 9.00     | ±9.6                   |
| 10066 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)            | WLAN      | 9.38     | ±9.6                   |
| 10067 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)            | WLAN      | 10.12    | ±9.6                   |
| 10068 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)            | WLAN      | 10.24    | ±9.6                   |
| 10069 | CAD | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)            | WLAN      | 10.56    | ±9.6                   |
| 10071 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)        | WLAN      | 9.83     | ±9.6                   |
| 10072 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)       | WLAN      | 9.62     | ±9.6                   |
| 10073 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)       | WLAN      | 9.94     | ±9.6                   |
| 10074 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)       | WLAN      | 10.30    | ±9.6                   |
| 10075 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)       | WLAN      | 10.77    | ±9.6                   |
| 10076 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)       | WLAN      | 10.94    | ±9.6                   |
| 10077 | CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)       | WLAN      | 11.00    | ±9.6                   |
| 10081 | CAB | CDMA2000 (1xRTT, RC3)                                | CDMA2000  | 3.97     | ±9.6                   |
| 10082 | CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Full-rate) | AMPS      | 4.77     | ±9.6                   |
| 10090 | DAC | GPRS-FDD (TDMA, GMSK, TN 0-4)                        | GSM       | 6.56     | ±9.6                   |
| 10097 | CAC | UMTS-FDD (HSDPA)                                     | WCDMA     | 3.98     | ±9.6                   |
| 10098 | CAC | UMTS-FDD (HSUPA, Subtest 2)                          | WCDMA     | 3.98     | ±9.6                   |
| 10099 | DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4)                        | GSM       | 9.55     | ±9.6                   |
| 10100 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)             | LTE-FDD   | 5.67     | ±9.6                   |
| 10101 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)           | LTE-FDD   | 6.42     | ±9.6                   |
| 10102 | CAF | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)           | LTE-FDD   | 6.60     | ±9.6                   |
| 10103 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)             | LTE-TDD   | 9.29     | ±9.6                   |
| 10104 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)           | LTE-TDD   | 9.97     | ±9.6                   |
| 10105 | CAH | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)           | LTE-TDD   | 10.01    | ±9.6                   |
| 10108 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)             | LTE-FDD   | 5.80     | ±9.6                   |
| 10109 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)           | LTE-FDD   | 6.43     | ±9.6                   |
| 10110 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)              | LTE-FDD   | 5.75     | ±9.6                   |
| 10111 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)            | LTE-FDD   | 6.44     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 11 of 22

EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                      | Group   | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|--|---------|----------|------------------------|
| 10112 | CAH | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)     | LTE-FDD | 6.59     | ±9.6                   |
| 10113 | CAH | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)      | LTE-FDD | 6.62     | ±9.6                   |
| 10114 | CAD | IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)  | WLAN    | 8.10     | ±9.6                   |
| 10115 | CAD | IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)  | WLAN    | 8.46     | ±9.6                   |
| 10116 | CAD | IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM) | WLAN    | 8.15     | ±9.6                   |
| 10117 | CAD | IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)       | WLAN    | 8.07     | ±9.6                   |
| 10118 | CAD | IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)       | WLAN    | 8.59     | ±9.6                   |
| 10119 | CAD | IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)      | WLAN    | 8.13     | ±9.6                   |
| 10140 | CAF | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)     | LTE-FDD | 6.49     | ±9.6                   |
| 10141 | CAF | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)     | LTE-FDD | 6.53     | ±9.6                   |
| 10142 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)        | LTE-FDD | 5.73     | ±9.6                   |
| 10143 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)      | LTE-FDD | 6.35     | ±9.6                   |
| 10144 | CAF | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)      | LTE-FDD | 6.65     | ±9.6                   |
| 10145 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)      | LTE-FDD | 5.76     | ±9.6                   |
| 10146 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)    | LTE-FDD | 6.41     | ±9.6                   |
| 10147 | CAG | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)    | LTE-FDD | 6.72     | ±9.6                   |
| 10149 | CAF | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)      | LTE-FDD | 6.42     | ±9.6                   |
| 10150 | CAF | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)      | LTE-FDD | 6.60     | ±9.6                   |
| 10151 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)        | LTE-TDD | 9.28     | ±9.6                   |
| 10152 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)      | LTE-TDD | 9.82     | ±9.6                   |
| 10153 | CAH | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)      | LTE-TDD | 10.05    | ±9.6                   |
| 10154 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)        | LTE-FDD | 5.75     | ±9.6                   |
| 10155 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)      | LTE-FDD | 6.43     | ±9.6                   |
| 10156 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)         | LTE-FDD | 5.79     | ±9.6                   |
| 10157 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)       | LTE-FDD | 6.49     | ±9.6                   |
| 10158 | CAH | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)      | LTE-FDD | 6.82     | ±9.6                   |
| 10159 | CAH | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)       | LTE-FDD | 6.56     | ±9.6                   |
| 10160 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)        | LTE-FDD | 5.82     | ±9.6                   |
| 10161 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)      | LTE-FDD | 6.43     | ±9.6                   |
| 10162 | CAF | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)      | LTE-FDD | 6.58     | ±9.6                   |
| 10166 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)       | LTE-FDD | 5.46     | ±9.6                   |
| 10167 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)     | LTE-FDD | 6.21     | ±9.6                   |
| 10168 | CAG | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)     | LTE-FDD | 6.79     | ±9.6                   |
| 10169 | CAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)          | LTE-FDD | 5.73     | ±9.6                   |
| 10170 | CAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)        | LTE-FDD | 6.52     | ±9.6                   |
| 10171 | AAF | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)        | LTE-FDD | 6.49     | ±9.6                   |
| 10172 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)          | LTE-TDD | 9.21     | ±9.6                   |
| 10173 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)        | LTE-TDD | 9.48     | ±9.6                   |
| 10174 | CAH | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)        | LTE-TDD | 10.25    | ±9.6                   |
| 10175 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)          | LTE-FDD | 5.72     | ±9.6                   |
| 10176 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)        | LTE-FDD | 6.52     | ±9.6                   |
| 10177 | CAJ | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)           | LTE-FDD | 5.73     | ±9.6                   |
| 10178 | CAH | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)         | LTE-FDD | 6.52     | ±9.6                   |
| 10179 | CAH | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)        | LTE-FDD | 6.50     | ±9.6                   |
| 10180 | CAH | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)         | LTE-FDD | 6.50     | ±9.6                   |
| 10181 | CAF | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)          | LTE-FDD | 5.72     | ±9.6                   |
| 10182 | CAF | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)        | LTE-FDD | 6.52     | ±9.6                   |
| 10183 | AAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)        | LTE-FDD | 6.60     | ±9.6                   |
| 10184 | CAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)           | LTE-FDD | 5.73     | ±9.6                   |
| 10185 | CAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)         | LTE-FDD | 6.51     | ±9.6                   |
| 10186 | AAF | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)         | LTE-FDD | 6.50     | ±9.6                   |
| 10187 | CAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)         | LTE-FDD | 5.73     | ±9.6                   |
| 10188 | CAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)       | LTE-FDD | 6.52     | ±9.6                   |
| 10189 | AAG | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)       | LTE-FDD | 6.50     | ±9.6                   |
| 10193 | CAD | IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)   | WLAN    | 8.09     | ±9.6                   |
| 10194 | CAD | IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)  | WLAN    | 8.12     | ±9.6                   |
| 10195 | CAD | IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)  | WLAN    | 8.21     | ±9.6                   |
| 10196 | CAD | IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)        | WLAN    | 8.10     | ±9.6                   |
| 10197 | CAD | IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)       | WLAN    | 8.13     | ±9.6                   |
| 10198 | CAD | IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)       | WLAN    | 8.27     | ±9.6                   |
| 10219 | CAD | IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)        | WLAN    | 8.03     | ±9.6                   |
| 10220 | CAD | IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)     | WLAN    | 8.13     | ±9.6                   |
| 10221 | CAD | IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)     | WLAN    | 8.27     | ±9.6                   |
| 10222 | CAD | IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)         | WLAN    | 8.06     | ±9.6                   |
| 10223 | CAD | IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)       | WLAN    | 8.48     | ±9.6                   |
| 10224 | CAD | IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)      | WLAN    | 8.08     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 12 of 22



EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name  | Group    | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|--|----------|----------|------------------------|
| 10225 | CAC | UMTS-FDD (HSPA+)   | WCDMA    | 5.97     | ±9.6                   |
| 10226 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)                             | LTE-TDD  | 9.49     | ±9.6                   |
| 10227 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)                             | LTE-TDD  | 10.26    | ±9.6                   |
| 10228 | CAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)                               | LTE-TDD  | 9.22     | ±9.6                   |
| 10229 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)                               | LTE-TDD  | 9.48     | ±9.6                   |
| 10230 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)                               | LTE-TDD  | 10.25    | ±9.6                   |
| 10231 | CAE | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)                                 | LTE-TDD  | 9.19     | ±9.6                   |
| 10232 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)                               | LTE-TDD  | 9.48     | ±9.6                   |
| 10233 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)                               | LTE-TDD  | 10.25    | ±9.6                   |
| 10234 | CAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)                                 | LTE-TDD  | 9.21     | ±9.6                   |
| 10235 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)                              | LTE-TDD  | 9.48     | ±9.6                   |
| 10236 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)                              | LTE-TDD  | 10.25    | ±9.6                   |
| 10237 | CAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)                                | LTE-TDD  | 9.21     | ±9.6                   |
| 10238 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)                              | LTE-TDD  | 9.48     | ±9.6                   |
| 10239 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)                              | LTE-TDD  | 10.25    | ±9.6                   |
| 10240 | CAG | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)                                | LTE-TDD  | 9.21     | ±9.6                   |
| 10241 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)                           | LTE-TDD  | 9.82     | ±9.6                   |
| 10242 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)                           | LTE-TDD  | 9.85     | ±9.6                   |
| 10243 | CAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)                             | LTE-TDD  | 9.46     | ±9.6                   |
| 10244 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)                             | LTE-TDD  | 10.06    | ±9.6                   |
| 10245 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                             | LTE-TDD  | 10.06    | ±9.6                   |
| 10246 | CAE | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)                               | LTE-TDD  | 9.30     | ±9.6                   |
| 10247 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)                             | LTE-TDD  | 9.81     | ±9.6                   |
| 10248 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)                             | LTE-TDD  | 10.09    | ±9.6                   |
| 10249 | CAH | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)                               | LTE-TDD  | 9.29     | ±9.6                   |
| 10250 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)                            | LTE-TDD  | 9.81     | ±9.6                   |
| 10251 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)                            | LTE-TDD  | 10.17    | ±9.6                   |
| 10252 | CAH | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)                              | LTE-TDD  | 9.24     | ±9.6                   |
| 10253 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)                            | LTE-TDD  | 9.90     | ±9.6                   |
| 10254 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)                            | LTE-TDD  | 10.14    | ±9.6                   |
| 10255 | CAG | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)                              | LTE-TDD  | 9.20     | ±9.6                   |
| 10256 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)                          | LTE-TDD  | 9.96     | ±9.6                   |
| 10257 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)                          | LTE-TDD  | 10.08    | ±9.6                   |
| 10258 | CAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)                            | LTE-TDD  | 9.34     | ±9.6                   |
| 10259 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)                            | LTE-TDD  | 9.98     | ±9.6                   |
| 10260 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)                            | LTE-TDD  | 9.97     | ±9.6                   |
| 10261 | CAE | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)                              | LTE-TDD  | 9.24     | ±9.6                   |
| 10262 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)                            | LTE-TDD  | 9.83     | ±9.6                   |
| 10263 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)                            | LTE-TDD  | 10.16    | ±9.6                   |
| 10264 | CAH | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)                              | LTE-TDD  | 9.23     | ±9.6                   |
| 10265 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)                           | LTE-TDD  | 9.92     | ±9.6                   |
| 10266 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)                           | LTE-TDD  | 10.07    | ±9.6                   |
| 10267 | CAH | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)                             | LTE-TDD  | 9.30     | ±9.6                   |
| 10268 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)                           | LTE-TDD  | 10.06    | ±9.6                   |
| 10269 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)                           | LTE-TDD  | 10.13    | ±9.6                   |
| 10270 | CAG | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)                             | LTE-TDD  | 9.58     | ±9.6                   |
| 10274 | CAC | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)                            | WCDMA    | -4.87    | ±9.6                   |
| 10275 | CAC | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)                             | WCDMA    | -3.96    | ±9.6                   |
| 10277 | CAA | PHS (QPSK)   | PHS      | 11.81    | ±9.6                   |
| 10278 | CAA | PHS (QPSK, BW 884 MHz, Roll-off 0.5)                                 | PHS      | 11.81    | ±9.6                   |
| 10279 | CAA | PHS (QPSK, BW 884 MHz, Roll-off 0.38)                                | PHS      | 12.18    | ±9.6                   |
| 10290 | AAB | CDMA2000, RC1, SO55, Full Rate                                       | CDMA2000 | 3.91     | ±9.6                   |
| 10291 | AAB | CDMA2000, RC3, SO65, Full Rate                                       | CDMA2000 | 3.46     | ±9.6                   |
| 10292 | AAB | CDMA2000, RC3, SO32, Full Rate                                       | CDMA2000 | 3.39     | ±9.6                   |
| 10293 | AAB | CDMA2000, RC3, SO3, Full Rate  | CDMA2000 | 3.50     | ±9.6                   |
| 10295 | AAB | CDMA2000, RC1, SO3, 1/8th Rate 25 fr.                                | CDMA2000 | 12.49    | ±9.6                   |
| 10297 | AAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)                              | LTE-FDD  | 5.81     | ±9.6                   |
| 10298 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)                               | LTE-FDD  | 5.72     | ±9.6                   |
| 10299 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)                             | LTE-FDD  | 6.39     | ±9.6                   |
| 10300 | AAE | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                             | LTE-FDD  | 6.60     | ±9.6                   |
| 10301 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC)                 | WiMAX    | 12.03    | ±9.6                   |
| 10302 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols) | WiMAX    | 12.57    | ±9.6                   |
| 10303 | AAA | IEEE 802.16e WiMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC)                | WiMAX    | 12.52    | ±9.6                   |
| 10304 | AAA | IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC)                | WiMAX    | 11.86    | ±9.6                   |
| 10305 | AAA | IEEE 802.16e WiMAX (31:15, 10 ms, 10 MHz, 64QAM, PUSC, 15 symbols)   | WiMAX    | 15.24    | ±9.6                   |
| 10306 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols)   | WiMAX    | 14.67    | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 13 of 22

EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name   | Group    | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|---|----------|----------|------------------------|
| 10307 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, PUSC, 18 symbols)               | WiMAX    | 14.49    | ±9.6                   |
| 10308 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, PUSC)                          | WiMAX    | 14.46    | ±9.6                   |
| 10309 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, AMC 2x3, 18 symbols)           | WiMAX    | 14.58    | ±9.6                   |
| 10310 | AAA | IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, AMC 2x3, 18 symbols)            | WiMAX    | 14.57    | ±9.6                   |
| 10311 | AAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)  | LTE-FDD  | 6.06     | ±9.6                   |
| 10313 | AAA | IDEN 1:3  | IDEN     | 10.51    | ±9.6                   |
| 10314 | AAA | IDEN 1:6  | IDEN     | 13.48    | ±9.6                   |
| 10315 | AAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)                       | WLAN     | 1.71     | ±9.6                   |
| 10316 | AAB | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)                   | WLAN     | 8.36     | ±9.6                   |
| 10317 | AAD | IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)                         | WLAN     | 8.36     | ±9.6                   |
| 10352 | AAA | Pulse Waveform (200Hz, 10%)   | Generic  | 10.00    | ±9.6                   |
| 10353 | AAA | Pulse Waveform (200Hz, 20%)   | Generic  | 6.99     | ±9.6                   |
| 10354 | AAA | Pulse Waveform (200Hz, 40%)   | Generic  | 3.98     | ±9.6                   |
| 10355 | AAA | Pulse Waveform (200Hz, 60%)   | Generic  | 2.22     | ±9.6                   |
| 10356 | AAA | Pulse Waveform (200Hz, 80%)   | Generic  | 0.97     | ±9.6                   |
| 10387 | AAA | QPSK Waveform, 1 MHz  | Generic  | 5.10     | ±9.6                   |
| 10388 | AAA | QPSK Waveform, 10 MHz   | Generic  | 5.22     | ±9.6                   |
| 10396 | AAA | 64-QAM Waveform, 100 kHz  | Generic  | 6.27     | ±9.6                   |
| 10399 | AAA | 64-QAM Waveform, 40 MHz   | Generic  | 6.27     | ±9.6                   |
| 10400 | AAE | IEEE 802.11ac WiFi (20 MHz, 64-QAM, 99pc duty cycle)                            | WLAN     | 8.37     | ±9.6                   |
| 10401 | AAE | IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle)                            | WLAN     | 8.60     | ±9.6                   |
| 10402 | AAE | IEEE 802.11ac WiFi (80 MHz, 64-QAM, 99pc duty cycle)                            | WLAN     | 8.53     | ±9.6                   |
| 10403 | AAB | CDMA2000 (1xEV-DO, Rev. 0)  | CDMA2000 | 3.76     | ±9.6                   |
| 10404 | AAB | CDMA2000 (1xEV-DO, Rev. A)  | CDMA2000 | 3.77     | ±9.6                   |
| 10406 | AAB | CDMA2000, RC3, SO32, SCH0, Full Rate  | CDMA2000 | 5.22     | ±9.6                   |
| 10410 | AAH | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Cont=4) | LTE-TDD  | 7.82     | ±9.6                   |
| 10414 | AAA | WLAN CCDF, 64-QAM, 40 MHz   | Generic  | 8.54     | ±9.6                   |
| 10415 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)                       | WLAN     | 1.54     | ±9.6                   |
| 10416 | AAA | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)                   | WLAN     | 8.23     | ±9.6                   |
| 10417 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)                       | WLAN     | 8.23     | ±9.6                   |
| 10418 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)   | WLAN     | 8.14     | ±9.6                   |
| 10419 | AAA | IEEE 802.11n WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)  | WLAN     | 8.19     | ±9.6                   |
| 10422 | AAC | IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)                                    | WLAN     | 8.32     | ±9.6                   |
| 10423 | AAC | IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)                                 | WLAN     | 8.47     | ±9.6                   |
| 10424 | AAC | IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)                                 | WLAN     | 8.40     | ±9.6                   |
| 10425 | AAC | IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)                                     | WLAN     | 8.41     | ±9.6                   |
| 10426 | AAC | IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)                                   | WLAN     | 8.45     | ±9.6                   |
| 10427 | AAC | IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)                                  | WLAN     | 8.41     | ±9.6                   |
| 10430 | AAE | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)  | LTE-FDD  | 8.28     | ±9.6                   |
| 10431 | AAE | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)   | LTE-FDD  | 8.38     | ±9.6                   |
| 10432 | AAD | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)   | LTE-FDD  | 8.34     | ±9.6                   |
| 10433 | AAD | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)   | LTE-FDD  | 8.34     | ±9.6                   |
| 10434 | AAB | W-CDMA (BS Test Model 1, 64 DPCH)   | WCDMA    | 8.60     | ±9.6                   |
| 10435 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                  | LTE-TDD  | 7.82     | ±9.6                   |
| 10447 | AAE | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)                                  | LTE-FDD  | 7.56     | ±9.6                   |
| 10448 | AAE | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.53     | ±9.6                   |
| 10449 | AAD | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.51     | ±9.6                   |
| 10450 | AAD | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)                                 | LTE-FDD  | 7.48     | ±9.6                   |
| 10451 | AAB | W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)                                 | WCDMA    | 7.59     | ±9.6                   |
| 10453 | AAE | Validation (Square, 10 ms, 1 ms)  | Test     | 10.00    | ±9.6                   |
| 10456 | AAC | IEEE 802.11ac WiFi (160 MHz, 64-QAM, 99pc duty cycle)                           | WLAN     | 8.63     | ±9.6                   |
| 10457 | AAB | UMTS-FDD (DC-HSDPA)   | WCDMA    | 6.62     | ±9.6                   |
| 10458 | AAA | CDMA2000 (1xEV-DO, Rev. B, 2 carriers)  | CDMA2000 | 6.55     | ±9.6                   |
| 10459 | AAA | CDMA2000 (1xEV-DO, Rev. B, 3 carriers)  | CDMA2000 | 8.25     | ±9.6                   |
| 10460 | AAB | UMTS-FDD (WCDMA, AMR)   | WCDMA    | 2.39     | ±9.6                   |
| 10461 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 7.82     | ±9.6                   |
| 10462 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)               | LTE-TDD  | 8.30     | ±9.6                   |
| 10463 | AAC | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)               | LTE-TDD  | 8.56     | ±9.6                   |
| 10464 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                   | LTE-TDD  | 7.82     | ±9.6                   |
| 10465 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.32     | ±9.6                   |
| 10466 | AAD | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.57     | ±9.6                   |
| 10467 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                   | LTE-TDD  | 7.82     | ±9.6                   |
| 10468 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.32     | ±9.6                   |
| 10469 | AAG | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)                 | LTE-TDD  | 8.56     | ±9.6                   |
| 10470 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)                  | LTE-TDD  | 7.82     | ±9.6                   |
| 10471 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)                | LTE-TDD  | 8.32     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 14 of 22



EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name  | Group   | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|--|---------|----------|------------------------|
| 10472 | AAG | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.57     | ±9.6                   |
| 10473 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)       | LTE-TDD | 7.82     | ±9.6                   |
| 10474 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.32     | ±9.6                   |
| 10475 | AAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.57     | ±9.6                   |
| 10477 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.32     | ±9.6                   |
| 10478 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 8.57     | ±9.6                   |
| 10479 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74     | ±9.6                   |
| 10480 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.18     | ±9.6                   |
| 10481 | AAC | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.45     | ±9.6                   |
| 10482 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)      | LTE-TDD | 7.71     | ±9.6                   |
| 10483 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.39     | ±9.6                   |
| 10484 | AAD | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.47     | ±9.6                   |
| 10485 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)      | LTE-TDD | 7.59     | ±9.6                   |
| 10486 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.38     | ±9.6                   |
| 10487 | AAG | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 8.90     | ±9.6                   |
| 10488 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.70     | ±9.6                   |
| 10489 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.31     | ±9.6                   |
| 10490 | AAG | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54     | ±9.6                   |
| 10491 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.74     | ±9.6                   |
| 10492 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.41     | ±9.6                   |
| 10493 | AAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.55     | ±9.6                   |
| 10494 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.74     | ±9.6                   |
| 10495 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.37     | ±9.6                   |
| 10496 | AAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54     | ±9.6                   |
| 10497 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 7.67     | ±9.6                   |
| 10498 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.40     | ±9.6                   |
| 10499 | AAC | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | LTE-TDD | 8.68     | ±9.6                   |
| 10500 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.67     | ±9.6                   |
| 10501 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.44     | ±9.6                   |
| 10502 | AAD | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.52     | ±9.6                   |
| 10503 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | LTE-TDD | 7.72     | ±9.6                   |
| 10504 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.31     | ±9.6                   |
| 10505 | AAG | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | LTE-TDD | 8.54     | ±9.6                   |
| 10506 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74     | ±9.6                   |
| 10507 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.36     | ±9.6                   |
| 10508 | AAG | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.55     | ±9.6                   |
| 10509 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.99     | ±9.6                   |
| 10510 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.49     | ±9.6                   |
| 10511 | AAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.51     | ±9.6                   |
| 10512 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | LTE-TDD | 7.74     | ±9.6                   |
| 10513 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.42     | ±9.6                   |
| 10514 | AAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | LTE-TDD | 8.45     | ±9.6                   |
| 10515 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2Mbps, 99pc duty cycle)             | WLAN    | 1.58     | ±9.6                   |
| 10516 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5Mbps, 99pc duty cycle)           | WLAN    | 1.57     | ±9.6                   |
| 10517 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11Mbps, 99pc duty cycle)            | WLAN    | 1.58     | ±9.6                   |
| 10518 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9Mbps, 99pc duty cycle)             | WLAN    | 8.23     | ±9.6                   |
| 10519 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12Mbps, 99pc duty cycle)            | WLAN    | 8.39     | ±9.6                   |
| 10520 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18Mbps, 99pc duty cycle)            | WLAN    | 8.12     | ±9.6                   |
| 10521 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24Mbps, 99pc duty cycle)            | WLAN    | 7.97     | ±9.6                   |
| 10522 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36Mbps, 99pc duty cycle)            | WLAN    | 8.45     | ±9.6                   |
| 10523 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48Mbps, 99pc duty cycle)            | WLAN    | 8.08     | ±9.6                   |
| 10524 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54Mbps, 99pc duty cycle)            | WLAN    | 8.27     | ±9.6                   |
| 10525 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS0, 99pc duty cycle)                   | WLAN    | 8.36     | ±9.6                   |
| 10526 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS1, 99pc duty cycle)                   | WLAN    | 8.42     | ±9.6                   |
| 10527 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS2, 99pc duty cycle)                   | WLAN    | 8.21     | ±9.6                   |
| 10528 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS3, 99pc duty cycle)                   | WLAN    | 8.36     | ±9.6                   |
| 10529 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS4, 99pc duty cycle)                   | WLAN    | 8.36     | ±9.6                   |
| 10531 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS6, 99pc duty cycle)                   | WLAN    | 8.43     | ±9.6                   |
| 10532 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS7, 99pc duty cycle)                   | WLAN    | 8.29     | ±9.6                   |
| 10533 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS8, 99pc duty cycle)                   | WLAN    | 8.38     | ±9.6                   |
| 10534 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS0, 99pc duty cycle)                   | WLAN    | 8.45     | ±9.6                   |
| 10535 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS1, 99pc duty cycle)                   | WLAN    | 8.45     | ±9.6                   |
| 10536 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS2, 99pc duty cycle)                   | WLAN    | 8.32     | ±9.6                   |
| 10537 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS3, 99pc duty cycle)                   | WLAN    | 8.44     | ±9.6                   |
| 10538 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS4, 99pc duty cycle)                   | WLAN    | 8.54     | ±9.6                   |
| 10540 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS6, 99pc duty cycle)                   | WLAN    | 8.39     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 15 of 22

EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                                       | Group | PAR (dB) | Unc <sup>1</sup> k = 2 |
|-------|-----|---|-------|----------|------------------------|
| 10541 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS7, 99pc duty cycle)              | WLAN  | 8.46     | ±9.6                   |
| 10542 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS8, 99pc duty cycle)              | WLAN  | 8.65     | ±9.6                   |
| 10543 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS9, 99pc duty cycle)              | WLAN  | 8.65     | ±9.6                   |
| 10544 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS0, 99pc duty cycle)              | WLAN  | 8.47     | ±9.6                   |
| 10545 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS1, 99pc duty cycle)              | WLAN  | 8.55     | ±9.6                   |
| 10546 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS2, 99pc duty cycle)              | WLAN  | 8.35     | ±9.6                   |
| 10547 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS3, 99pc duty cycle)              | WLAN  | 8.49     | ±9.6                   |
| 10548 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS4, 99pc duty cycle)              | WLAN  | 8.37     | ±9.6                   |
| 10550 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS6, 99pc duty cycle)              | WLAN  | 8.38     | ±9.6                   |
| 10551 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS7, 99pc duty cycle)              | WLAN  | 8.50     | ±9.6                   |
| 10552 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS8, 99pc duty cycle)              | WLAN  | 8.42     | ±9.6                   |
| 10553 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS9, 99pc duty cycle)              | WLAN  | 8.45     | ±9.6                   |
| 10554 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS0, 99pc duty cycle)             | WLAN  | 8.48     | ±9.6                   |
| 10555 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS1, 99pc duty cycle)             | WLAN  | 8.47     | ±9.6                   |
| 10556 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS2, 99pc duty cycle)             | WLAN  | 8.50     | ±9.6                   |
| 10557 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS3, 99pc duty cycle)             | WLAN  | 8.52     | ±9.6                   |
| 10558 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS4, 99pc duty cycle)             | WLAN  | 8.61     | ±9.6                   |
| 10560 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS6, 99pc duty cycle)             | WLAN  | 8.73     | ±9.6                   |
| 10561 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS7, 99pc duty cycle)             | WLAN  | 8.56     | ±9.6                   |
| 10562 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS8, 99pc duty cycle)             | WLAN  | 8.69     | ±9.6                   |
| 10563 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS9, 99pc duty cycle)             | WLAN  | 8.77     | ±9.6                   |
| 10564 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)  | WLAN  | 8.25     | ±9.6                   |
| 10565 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | WLAN  | 8.45     | ±9.6                   |
| 10566 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | WLAN  | 8.13     | ±9.6                   |
| 10567 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | WLAN  | 8.00     | ±9.6                   |
| 10568 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | WLAN  | 8.37     | ±9.6                   |
| 10569 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | WLAN  | 8.10     | ±9.6                   |
| 10570 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | WLAN  | 8.30     | ±9.6                   |
| 10571 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)       | WLAN  | 1.99     | ±9.6                   |
| 10572 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)       | WLAN  | 1.99     | ±9.6                   |
| 10573 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)     | WLAN  | 1.98     | ±9.6                   |
| 10574 | AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)      | WLAN  | 1.98     | ±9.6                   |
| 10575 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)  | WLAN  | 8.59     | ±9.6                   |
| 10576 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)  | WLAN  | 8.60     | ±9.6                   |
| 10577 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | WLAN  | 8.70     | ±9.6                   |
| 10578 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | WLAN  | 8.49     | ±9.6                   |
| 10579 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | WLAN  | 8.36     | ±9.6                   |
| 10580 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | WLAN  | 8.76     | ±9.6                   |
| 10581 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | WLAN  | 8.35     | ±9.6                   |
| 10582 | AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | WLAN  | 8.67     | ±9.6                   |
| 10583 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)       | WLAN  | 8.59     | ±9.6                   |
| 10584 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)       | WLAN  | 8.60     | ±9.6                   |
| 10585 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)      | WLAN  | 8.70     | ±9.6                   |
| 10586 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)      | WLAN  | 8.49     | ±9.6                   |
| 10587 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)      | WLAN  | 8.36     | ±9.6                   |
| 10588 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)      | WLAN  | 8.76     | ±9.6                   |
| 10589 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)      | WLAN  | 8.35     | ±9.6                   |
| 10590 | AAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)      | WLAN  | 8.67     | ±9.6                   |
| 10591 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS0, 90pc duty cycle)          | WLAN  | 8.63     | ±9.6                   |
| 10592 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 90pc duty cycle)          | WLAN  | 8.79     | ±9.6                   |
| 10593 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS2, 90pc duty cycle)          | WLAN  | 8.64     | ±9.6                   |
| 10594 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 90pc duty cycle)          | WLAN  | 8.74     | ±9.6                   |
| 10595 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS4, 90pc duty cycle)          | WLAN  | 8.74     | ±9.6                   |
| 10596 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS5, 90pc duty cycle)          | WLAN  | 8.71     | ±9.6                   |
| 10597 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 90pc duty cycle)          | WLAN  | 8.72     | ±9.6                   |
| 10598 | AAC | IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 90pc duty cycle)          | WLAN  | 8.50     | ±9.6                   |
| 10599 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS0, 90pc duty cycle)          | WLAN  | 8.79     | ±9.6                   |
| 10600 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS1, 90pc duty cycle)          | WLAN  | 8.88     | ±9.6                   |
| 10601 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS2, 90pc duty cycle)          | WLAN  | 8.62     | ±9.6                   |
| 10602 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 90pc duty cycle)          | WLAN  | 8.94     | ±9.6                   |
| 10603 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS4, 90pc duty cycle)          | WLAN  | 9.03     | ±9.6                   |
| 10604 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS5, 90pc duty cycle)          | WLAN  | 8.76     | ±9.6                   |
| 10605 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS6, 90pc duty cycle)          | WLAN  | 8.87     | ±9.6                   |
| 10606 | AAC | IEEE 802.11n (HT Mixed, 40 MHz, MCS7, 90pc duty cycle)          | WLAN  | 8.82     | ±9.6                   |
| 10607 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS0, 90pc duty cycle)              | WLAN  | 8.64     | ±9.6                   |
| 10608 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS1, 90pc duty cycle)              | WLAN  | 8.77     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 16 of 22



EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                              | Group     | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|--|-----------|----------|------------------------|
| 10609 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle)     | WLAN      | 8.57     | ±9.6                   |
| 10610 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS3, 90pc duty cycle)     | WLAN      | 8.78     | ±9.6                   |
| 10611 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc duty cycle)     | WLAN      | 8.70     | ±9.6                   |
| 10612 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS5, 90pc duty cycle)     | WLAN      | 8.77     | ±9.6                   |
| 10613 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle)     | WLAN      | 8.94     | ±9.6                   |
| 10614 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle)     | WLAN      | 8.59     | ±9.6                   |
| 10615 | AAC | IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc duty cycle)     | WLAN      | 8.82     | ±9.6                   |
| 10616 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS0, 90pc duty cycle)     | WLAN      | 8.82     | ±9.6                   |
| 10617 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS1, 90pc duty cycle)     | WLAN      | 8.81     | ±9.6                   |
| 10618 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS2, 90pc duty cycle)     | WLAN      | 8.58     | ±9.6                   |
| 10619 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS3, 90pc duty cycle)     | WLAN      | 8.86     | ±9.6                   |
| 10620 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS4, 90pc duty cycle)     | WLAN      | 8.87     | ±9.6                   |
| 10621 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS5, 90pc duty cycle)     | WLAN      | 8.77     | ±9.6                   |
| 10622 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS6, 90pc duty cycle)     | WLAN      | 8.68     | ±9.6                   |
| 10623 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS7, 90pc duty cycle)     | WLAN      | 8.82     | ±9.6                   |
| 10624 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)     | WLAN      | 8.96     | ±9.6                   |
| 10625 | AAC | IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle)     | WLAN      | 8.96     | ±9.6                   |
| 10626 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS0, 90pc duty cycle)     | WLAN      | 8.83     | ±9.6                   |
| 10627 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS1, 90pc duty cycle)     | WLAN      | 8.88     | ±9.6                   |
| 10628 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle)     | WLAN      | 8.71     | ±9.6                   |
| 10629 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle)     | WLAN      | 8.85     | ±9.6                   |
| 10630 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS4, 90pc duty cycle)     | WLAN      | 8.72     | ±9.6                   |
| 10631 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS5, 90pc duty cycle)     | WLAN      | 8.81     | ±9.6                   |
| 10632 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS6, 90pc duty cycle)     | WLAN      | 8.74     | ±9.6                   |
| 10633 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle)     | WLAN      | 8.83     | ±9.6                   |
| 10634 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)     | WLAN      | 8.80     | ±9.6                   |
| 10635 | AAC | IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)     | WLAN      | 8.81     | ±9.6                   |
| 10636 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS0, 90pc duty cycle)    | WLAN      | 8.83     | ±9.6                   |
| 10637 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS1, 90pc duty cycle)    | WLAN      | 8.79     | ±9.6                   |
| 10638 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS2, 90pc duty cycle)    | WLAN      | 8.86     | ±9.6                   |
| 10639 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle)    | WLAN      | 8.85     | ±9.6                   |
| 10640 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS4, 90pc duty cycle)    | WLAN      | 8.96     | ±9.6                   |
| 10641 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle)    | WLAN      | 9.06     | ±9.6                   |
| 10642 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS6, 90pc duty cycle)    | WLAN      | 9.06     | ±9.6                   |
| 10643 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS7, 90pc duty cycle)    | WLAN      | 8.89     | ±9.6                   |
| 10644 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS8, 90pc duty cycle)    | WLAN      | 9.05     | ±9.6                   |
| 10645 | AAD | IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)    | WLAN      | 9.11     | ±9.6                   |
| 10646 | AAH | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)  | LTE-TDD   | 11.96    | ±9.6                   |
| 10647 | AAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7) | LTE-TDD   | 11.96    | ±9.6                   |
| 10648 | AAA | CDMA2000 (1x Advanced)                                 | CDMA2000  | 3.45     | ±9.6                   |
| 10652 | AAF | LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)         | LTE-TDD   | 6.91     | ±9.6                   |
| 10653 | AAF | LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)        | LTE-TDD   | 7.42     | ±9.6                   |
| 10654 | AAE | LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)        | LTE-TDD   | 6.96     | ±9.6                   |
| 10655 | AAF | LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)        | LTE-TDD   | 7.21     | ±9.6                   |
| 10658 | AAB | Pulse Waveform (200Hz, 10%)                            | Test      | 10.00    | ±9.6                   |
| 10659 | AAB | Pulse Waveform (200Hz, 20%)                            | Test      | 6.99     | ±9.6                   |
| 10660 | AAB | Pulse Waveform (200Hz, 40%)                            | Test      | 3.98     | ±9.6                   |
| 10661 | AAB | Pulse Waveform (200Hz, 60%)                            | Test      | 2.22     | ±9.6                   |
| 10662 | AAB | Pulse Waveform (200Hz, 80%)                            | Test      | 0.97     | ±9.6                   |
| 10670 | AAA | Bluetooth Low Energy                                   | Bluetooth | 2.19     | ±9.6                   |
| 10671 | AAC | IEEE 802.11ax (20 MHz, MCS0, 90pc duty cycle)          | WLAN      | 9.09     | ±9.6                   |
| 10672 | AAC | IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle)          | WLAN      | 8.57     | ±9.6                   |
| 10673 | AAC | IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle)          | WLAN      | 8.78     | ±9.6                   |
| 10674 | AAC | IEEE 802.11ax (20 MHz, MCS3, 90pc duty cycle)          | WLAN      | 8.74     | ±9.6                   |
| 10675 | AAC | IEEE 802.11ax (20 MHz, MCS4, 90pc duty cycle)          | WLAN      | 8.90     | ±9.6                   |
| 10676 | AAC | IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle)          | WLAN      | 8.77     | ±9.6                   |
| 10677 | AAC | IEEE 802.11ax (20 MHz, MCS6, 90pc duty cycle)          | WLAN      | 8.73     | ±9.6                   |
| 10678 | AAC | IEEE 802.11ax (20 MHz, MCS7, 90pc duty cycle)          | WLAN      | 8.78     | ±9.6                   |
| 10679 | AAC | IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle)          | WLAN      | 8.89     | ±9.6                   |
| 10680 | AAC | IEEE 802.11ax (20 MHz, MCS9, 90pc duty cycle)          | WLAN      | 8.80     | ±9.6                   |
| 10681 | AAC | IEEE 802.11ax (20 MHz, MCS10, 90pc duty cycle)         | WLAN      | 8.62     | ±9.6                   |
| 10682 | AAC | IEEE 802.11ax (20 MHz, MCS11, 90pc duty cycle)         | WLAN      | 8.83     | ±9.6                   |
| 10683 | AAC | IEEE 802.11ax (20 MHz, MCS0, 99pc duty cycle)          | WLAN      | 8.42     | ±9.6                   |
| 10684 | AAC | IEEE 802.11ax (20 MHz, MCS1, 99pc duty cycle)          | WLAN      | 8.26     | ±9.6                   |
| 10685 | AAC | IEEE 802.11ax (20 MHz, MCS2, 99pc duty cycle)          | WLAN      | 8.33     | ±9.6                   |
| 10686 | AAC | IEEE 802.11ax (20 MHz, MCS3, 99pc duty cycle)          | WLAN      | 8.28     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 17 of 22

EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                      | Group | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|--|-------|----------|------------------------|
| 10687 | AAC | IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)  | WLAN  | 8.45     | ±9.6                   |
| 10688 | AAC | IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10689 | AAC | IEEE 802.11ax (20 MHz, MCS6, 99pc duty cycle)  | WLAN  | 8.55     | ±9.6                   |
| 10690 | AAC | IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10691 | AAC | IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)  | WLAN  | 8.25     | ±9.6                   |
| 10692 | AAC | IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10693 | AAC | IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle) | WLAN  | 8.25     | ±9.6                   |
| 10694 | AAC | IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle) | WLAN  | 8.57     | ±9.6                   |
| 10695 | AAC | IEEE 802.11ax (40 MHz, MCS0, 90pc duty cycle)  | WLAN  | 8.78     | ±9.6                   |
| 10696 | AAC | IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle)  | WLAN  | 8.91     | ±9.6                   |
| 10697 | AAC | IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle)  | WLAN  | 8.61     | ±9.6                   |
| 10698 | AAC | IEEE 802.11ax (40 MHz, MCS3, 90pc duty cycle)  | WLAN  | 8.89     | ±9.6                   |
| 10699 | AAC | IEEE 802.11ax (40 MHz, MCS4, 90pc duty cycle)  | WLAN  | 8.82     | ±9.6                   |
| 10700 | AAC | IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle)  | WLAN  | 8.73     | ±9.6                   |
| 10701 | AAC | IEEE 802.11ax (40 MHz, MCS6, 90pc duty cycle)  | WLAN  | 8.86     | ±9.6                   |
| 10702 | AAC | IEEE 802.11ax (40 MHz, MCS7, 90pc duty cycle)  | WLAN  | 8.70     | ±9.6                   |
| 10703 | AAC | IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)  | WLAN  | 8.82     | ±9.6                   |
| 10704 | AAC | IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle)  | WLAN  | 8.56     | ±9.6                   |
| 10705 | AAC | IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle) | WLAN  | 8.69     | ±9.6                   |
| 10706 | AAC | IEEE 802.11ax (40 MHz, MCS11, 90pc duty cycle) | WLAN  | 8.66     | ±9.6                   |
| 10707 | AAC | IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle)  | WLAN  | 8.32     | ±9.6                   |
| 10708 | AAC | IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle)  | WLAN  | 8.55     | ±9.6                   |
| 10709 | AAC | IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)  | WLAN  | 8.33     | ±9.6                   |
| 10710 | AAC | IEEE 802.11ax (40 MHz, MCS3, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10711 | AAC | IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)  | WLAN  | 8.39     | ±9.6                   |
| 10712 | AAC | IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)  | WLAN  | 8.67     | ±9.6                   |
| 10713 | AAC | IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)  | WLAN  | 8.93     | ±9.6                   |
| 10714 | AAC | IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)  | WLAN  | 8.26     | ±9.6                   |
| 10715 | AAC | IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)  | WLAN  | 8.45     | ±9.6                   |
| 10716 | AAC | IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)  | WLAN  | 8.30     | ±9.6                   |
| 10717 | AAC | IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle) | WLAN  | 8.48     | ±9.6                   |
| 10718 | AAC | IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle) | WLAN  | 8.24     | ±9.6                   |
| 10719 | AAC | IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle)  | WLAN  | 8.81     | ±9.6                   |
| 10720 | AAC | IEEE 802.11ax (80 MHz, MCS1, 90pc duty cycle)  | WLAN  | 8.87     | ±9.6                   |
| 10721 | AAC | IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle)  | WLAN  | 8.76     | ±9.6                   |
| 10722 | AAC | IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle)  | WLAN  | 8.55     | ±9.6                   |
| 10723 | AAC | IEEE 802.11ax (80 MHz, MCS4, 90pc duty cycle)  | WLAN  | 8.70     | ±9.6                   |
| 10724 | AAC | IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle)  | WLAN  | 8.90     | ±9.6                   |
| 10725 | AAC | IEEE 802.11ax (80 MHz, MCS6, 90pc duty cycle)  | WLAN  | 8.74     | ±9.6                   |
| 10726 | AAC | IEEE 802.11ax (80 MHz, MCS7, 90pc duty cycle)  | WLAN  | 8.72     | ±9.6                   |
| 10727 | AAC | IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)  | WLAN  | 8.65     | ±9.6                   |
| 10728 | AAC | IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle)  | WLAN  | 8.65     | ±9.6                   |
| 10729 | AAC | IEEE 802.11ax (80 MHz, MCS10, 90pc duty cycle) | WLAN  | 8.64     | ±9.6                   |
| 10730 | AAC | IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle) | WLAN  | 8.67     | ±9.6                   |
| 10731 | AAC | IEEE 802.11ax (80 MHz, MCS0, 99pc duty cycle)  | WLAN  | 8.42     | ±9.6                   |
| 10732 | AAC | IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)  | WLAN  | 8.46     | ±9.6                   |
| 10733 | AAC | IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)  | WLAN  | 8.40     | ±9.6                   |
| 10734 | AAC | IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)  | WLAN  | 8.25     | ±9.6                   |
| 10735 | AAC | IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)  | WLAN  | 8.33     | ±9.6                   |
| 10736 | AAC | IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle)  | WLAN  | 8.27     | ±9.6                   |
| 10737 | AAC | IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)  | WLAN  | 8.36     | ±9.6                   |
| 10738 | AAC | IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)  | WLAN  | 8.42     | ±9.6                   |
| 10739 | AAC | IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)  | WLAN  | 8.29     | ±9.6                   |
| 10740 | AAC | IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)  | WLAN  | 8.48     | ±9.6                   |
| 10741 | AAC | IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle) | WLAN  | 8.40     | ±9.6                   |
| 10742 | AAC | IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle) | WLAN  | 8.43     | ±9.6                   |
| 10743 | AAC | IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle) | WLAN  | 8.94     | ±9.6                   |
| 10744 | AAC | IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle) | WLAN  | 9.16     | ±9.6                   |
| 10745 | AAC | IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle) | WLAN  | 8.93     | ±9.6                   |
| 10746 | AAC | IEEE 802.11ax (160 MHz, MCS3, 90pc duty cycle) | WLAN  | 9.11     | ±9.6                   |
| 10747 | AAC | IEEE 802.11ax (160 MHz, MCS4, 90pc duty cycle) | WLAN  | 9.04     | ±9.6                   |
| 10748 | AAC | IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle) | WLAN  | 8.93     | ±9.6                   |
| 10749 | AAC | IEEE 802.11ax (160 MHz, MCS6, 90pc duty cycle) | WLAN  | 8.90     | ±9.6                   |
| 10750 | AAC | IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle) | WLAN  | 8.79     | ±9.6                   |
| 10751 | AAC | IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycle) | WLAN  | 8.82     | ±9.6                   |
| 10752 | AAC | IEEE 802.11ax (160 MHz, MCS9, 90pc duty cycle) | WLAN  | 8.81     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 18 of 22



EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                       | Group         | PAR (dB) | Unc <sup>k</sup> k = 2 |
|-------|-----|---|---------------|----------|------------------------|
| 10753 | AAC | IEEE 802.11ax (160 MHz, MCS10, 90pc duty cycle) | WLAN          | 9.00     | ±9.6                   |
| 10754 | AAC | IEEE 802.11ax (160 MHz, MCS11, 90pc duty cycle) | WLAN          | 8.94     | ±9.6                   |
| 10755 | AAC | IEEE 802.11ax (160 MHz, MCS0, 99pc duty cycle)  | WLAN          | 8.64     | ±9.6                   |
| 10756 | AAC | IEEE 802.11ax (160 MHz, MCS1, 99pc duty cycle)  | WLAN          | 8.77     | ±9.6                   |
| 10757 | AAC | IEEE 802.11ax (160 MHz, MCS2, 99pc duty cycle)  | WLAN          | 8.77     | ±9.6                   |
| 10758 | AAC | IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle)  | WLAN          | 8.69     | ±9.6                   |
| 10759 | AAC | IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle)  | WLAN          | 8.58     | ±9.6                   |
| 10760 | AAC | IEEE 802.11ax (160 MHz, MCS5, 99pc duty cycle)  | WLAN          | 8.49     | ±9.6                   |
| 10761 | AAC | IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle)  | WLAN          | 8.58     | ±9.6                   |
| 10762 | AAC | IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycle)  | WLAN          | 8.49     | ±9.6                   |
| 10763 | AAC | IEEE 802.11ax (160 MHz, MCS8, 99pc duty cycle)  | WLAN          | 8.53     | ±9.6                   |
| 10764 | AAC | IEEE 802.11ax (160 MHz, MCS9, 99pc duty cycle)  | WLAN          | 8.54     | ±9.6                   |
| 10765 | AAC | IEEE 802.11ax (160 MHz, MCS10, 99pc duty cycle) | WLAN          | 8.54     | ±9.6                   |
| 10766 | AAC | IEEE 802.11ax (160 MHz, MCS11, 99pc duty cycle) | WLAN          | 8.51     | ±9.6                   |
| 10767 | AAE | 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)      | 5G NR FR1 TDD | 7.99     | ±9.6                   |
| 10768 | AAD | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.01     | ±9.6                   |
| 10769 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.01     | ±9.6                   |
| 10770 | AAD | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.02     | ±9.6                   |
| 10771 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.02     | ±9.6                   |
| 10772 | AAD | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.23     | ±9.6                   |
| 10773 | AAD | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.03     | ±9.6                   |
| 10774 | AAD | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)     | 5G NR FR1 TDD | 8.02     | ±9.6                   |
| 10775 | AAD | 5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)    | 5G NR FR1 TDD | 8.31     | ±9.6                   |
| 10776 | AAD | 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.30     | ±9.6                   |
| 10777 | AAC | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.30     | ±9.6                   |
| 10778 | AAD | 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10779 | AAC | 5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.42     | ±9.6                   |
| 10780 | AAD | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.38     | ±9.6                   |
| 10781 | AAD | 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.38     | ±9.6                   |
| 10782 | AAD | 5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.43     | ±9.6                   |
| 10783 | AAE | 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)   | 5G NR FR1 TDD | 8.31     | ±9.6                   |
| 10784 | AAD | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.29     | ±9.6                   |
| 10785 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.40     | ±9.6                   |
| 10786 | AAD | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10787 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.44     | ±9.6                   |
| 10788 | AAD | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.39     | ±9.6                   |
| 10789 | AAD | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10790 | AAD | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)  | 5G NR FR1 TDD | 8.39     | ±9.6                   |
| 10791 | AAE | 5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 7.83     | ±9.6                   |
| 10792 | AAD | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.92     | ±9.6                   |
| 10793 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.95     | ±9.6                   |
| 10794 | AAD | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.82     | ±9.6                   |
| 10795 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.84     | ±9.6                   |
| 10796 | AAD | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.82     | ±9.6                   |
| 10797 | AAD | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 8.01     | ±9.6                   |
| 10798 | AAD | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.89     | ±9.6                   |
| 10799 | AAD | 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.93     | ±9.6                   |
| 10801 | AAD | 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.89     | ±9.6                   |
| 10802 | AAD | 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 7.87     | ±9.6                   |
| 10803 | AAD | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 7.93     | ±9.6                   |
| 10805 | AAD | 5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10806 | AAD | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10809 | AAD | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10810 | AAD | 5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10812 | AAD | 5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10817 | AAE | 5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10818 | AAD | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10819 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.33     | ±9.6                   |
| 10820 | AAD | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.30     | ±9.6                   |
| 10821 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10822 | AAD | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10823 | AAD | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.36     | ±9.6                   |
| 10824 | AAD | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.39     | ±9.6                   |
| 10825 | AAD | 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10827 | AAD | 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.42     | ±9.6                   |
| 10828 | AAD | 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)  | 5G NR FR1 TDD | 8.43     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 19 of 22

EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                            | Group         | PAR (dB) | Unc <sup>k</sup> k = 2 |
|-------|-----|--|---------------|----------|------------------------|
| 10829 | AAD | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 8.40     | ±9.6                   |
| 10830 | AAD | 5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.63     | ±9.6                   |
| 10831 | AAD | 5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.73     | ±9.6                   |
| 10832 | AAD | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.74     | ±9.6                   |
| 10833 | AAD | 5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.70     | ±9.6                   |
| 10834 | AAD | 5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.75     | ±9.6                   |
| 10835 | AAD | 5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.70     | ±9.6                   |
| 10836 | AAD | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.66     | ±9.6                   |
| 10837 | AAD | 5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.68     | ±9.6                   |
| 10839 | AAD | 5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.70     | ±9.6                   |
| 10840 | AAD | 5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)          | 5G NR FR1 TDD | 7.67     | ±9.6                   |
| 10841 | AAD | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)         | 5G NR FR1 TDD | 7.71     | ±9.6                   |
| 10843 | AAD | 5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)        | 5G NR FR1 TDD | 8.49     | ±9.6                   |
| 10844 | AAD | 5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)        | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10846 | AAD | 5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)        | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10854 | AAD | 5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10855 | AAD | 5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.36     | ±9.6                   |
| 10856 | AAD | 5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10857 | AAD | 5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.35     | ±9.6                   |
| 10858 | AAD | 5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.36     | ±9.6                   |
| 10859 | AAD | 5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.34     | ±9.6                   |
| 10860 | AAD | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10861 | AAD | 5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.40     | ±9.6                   |
| 10863 | AAD | 5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10864 | AAD | 5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)       | 5G NR FR1 TDD | 8.37     | ±9.6                   |
| 10865 | AAD | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)      | 5G NR FR1 TDD | 8.41     | ±9.6                   |
| 10866 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10868 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.69     | ±9.6                   |
| 10869 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)     | 5G NR FR2 TDD | 5.75     | ±9.6                   |
| 10870 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)  | 5G NR FR2 TDD | 5.66     | ±9.6                   |
| 10871 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)    | 5G NR FR2 TDD | 5.75     | ±9.6                   |
| 10872 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz) | 5G NR FR2 TDD | 6.52     | ±9.6                   |
| 10873 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)    | 5G NR FR2 TDD | 6.61     | ±9.6                   |
| 10874 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz) | 5G NR FR2 TDD | 6.65     | ±9.6                   |
| 10875 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)        | 5G NR FR2 TDD | 7.78     | ±9.6                   |
| 10876 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)     | 5G NR FR2 TDD | 8.39     | ±9.6                   |
| 10877 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)       | 5G NR FR2 TDD | 7.95     | ±9.6                   |
| 10878 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)    | 5G NR FR2 TDD | 8.41     | ±9.6                   |
| 10879 | AAE | 5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)       | 5G NR FR2 TDD | 8.12     | ±9.6                   |
| 10880 | AAE | 5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)    | 5G NR FR2 TDD | 8.38     | ±9.6                   |
| 10881 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)      | 5G NR FR2 TDD | 5.75     | ±9.6                   |
| 10882 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)   | 5G NR FR2 TDD | 5.96     | ±9.6                   |
| 10883 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)     | 5G NR FR2 TDD | 6.57     | ±9.6                   |
| 10884 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)  | 5G NR FR2 TDD | 6.53     | ±9.6                   |
| 10885 | AAE | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)     | 5G NR FR2 TDD | 6.61     | ±9.6                   |
| 10886 | AAE | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)  | 5G NR FR2 TDD | 6.65     | ±9.6                   |
| 10887 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)         | 5G NR FR2 TDD | 7.78     | ±9.6                   |
| 10888 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)      | 5G NR FR2 TDD | 8.35     | ±9.6                   |
| 10889 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)        | 5G NR FR2 TDD | 8.02     | ±9.6                   |
| 10890 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)     | 5G NR FR2 TDD | 8.40     | ±9.6                   |
| 10891 | AAE | 5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)        | 5G NR FR2 TDD | 8.13     | ±9.6                   |
| 10892 | AAE | 5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)     | 5G NR FR2 TDD | 8.41     | ±9.6                   |
| 10897 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)        | 5G NR FR1 TDD | 5.66     | ±9.6                   |
| 10898 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.67     | ±9.6                   |
| 10899 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.67     | ±9.6                   |
| 10900 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10901 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10902 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10903 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10904 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10905 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10906 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)       | 5G NR FR1 TDD | 5.68     | ±9.6                   |
| 10907 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)      | 5G NR FR1 TDD | 5.78     | ±9.6                   |
| 10908 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 5.93     | ±9.6                   |
| 10909 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 5.96     | ±9.6                   |
| 10910 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 5.83     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 20 of 22



EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                           | Group         | PAR (dB) | Unc <sup>F</sup> k = 2 |
|-------|-----|---|---------------|----------|------------------------|
| 10911 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.93     | ±9.6                   |
| 10912 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10913 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10914 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.85     | ±9.6                   |
| 10915 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.83     | ±9.6                   |
| 10916 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.87     | ±9.6                   |
| 10917 | AAB | 5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.94     | ±9.6                   |
| 10918 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)    | 5G NR FR1 TDD | 5.86     | ±9.6                   |
| 10919 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.86     | ±9.6                   |
| 10920 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.87     | ±9.6                   |
| 10921 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10922 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.82     | ±9.6                   |
| 10923 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10924 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10925 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.95     | ±9.6                   |
| 10926 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.84     | ±9.6                   |
| 10927 | AAB | 5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)   | 5G NR FR1 TDD | 5.94     | ±9.6                   |
| 10928 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)       | 5G NR FR1 FDD | 5.52     | ±9.6                   |
| 10929 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.52     | ±9.6                   |
| 10930 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.52     | ±9.6                   |
| 10931 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10932 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10933 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10934 | AAC | 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10935 | AAD | 5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)      | 5G NR FR1 FDD | 5.51     | ±9.6                   |
| 10936 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)     | 5G NR FR1 FDD | 5.90     | ±9.6                   |
| 10937 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.77     | ±9.6                   |
| 10938 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.90     | ±9.6                   |
| 10939 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.82     | ±9.6                   |
| 10940 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.89     | ±9.6                   |
| 10941 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.83     | ±9.6                   |
| 10942 | AAC | 5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.85     | ±9.6                   |
| 10943 | AAD | 5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.95     | ±9.6                   |
| 10944 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)    | 5G NR FR1 FDD | 5.81     | ±9.6                   |
| 10945 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.85     | ±9.6                   |
| 10946 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.83     | ±9.6                   |
| 10947 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.87     | ±9.6                   |
| 10948 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.94     | ±9.6                   |
| 10949 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.87     | ±9.6                   |
| 10950 | AAC | 5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.84     | ±9.6                   |
| 10951 | AAD | 5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)   | 5G NR FR1 FDD | 5.92     | ±9.6                   |
| 10952 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)   | 5G NR FR1 FDD | 8.25     | ±9.6                   |
| 10953 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 FDD | 8.15     | ±9.6                   |
| 10954 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 FDD | 8.23     | ±9.6                   |
| 10955 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 FDD | 8.42     | ±9.6                   |
| 10956 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)   | 5G NR FR1 FDD | 8.14     | ±9.6                   |
| 10957 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 FDD | 8.31     | ±9.6                   |
| 10958 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 FDD | 8.61     | ±9.6                   |
| 10959 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 FDD | 8.33     | ±9.6                   |
| 10960 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)   | 5G NR FR1 TDD | 9.32     | ±9.6                   |
| 10961 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 TDD | 9.36     | ±9.6                   |
| 10962 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 TDD | 9.40     | ±9.6                   |
| 10963 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)  | 5G NR FR1 TDD | 9.55     | ±9.6                   |
| 10964 | AAC | 5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)   | 5G NR FR1 TDD | 9.29     | ±9.6                   |
| 10965 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 TDD | 9.37     | ±9.6                   |
| 10966 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 TDD | 9.55     | ±9.6                   |
| 10967 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)  | 5G NR FR1 TDD | 9.42     | ±9.6                   |
| 10968 | AAB | 5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.49     | ±9.6                   |
| 10972 | AAB | 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)         | 5G NR FR1 TDD | 11.59    | ±9.6                   |
| 10973 | AAB | 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)     | 5G NR FR1 TDD | 9.06     | ±9.6                   |
| 10974 | AAB | 5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)  | 5G NR FR1 TDD | 10.28    | ±9.6                   |
| 10978 | AAA | ULLA BDR  | ULLA          | 1.16     | ±9.6                   |
| 10979 | AAA | ULLA HDR4   | ULLA          | 8.58     | ±9.6                   |
| 10980 | AAA | ULLA HDR8   | ULLA          | 10.32    | ±9.6                   |
| 10981 | AAA | ULLA HDRp4  | ULLA          | 3.19     | ±9.6                   |
| 10982 | AAA | ULLA HDRp8  | ULLA          | 3.43     | ±9.6                   |

Certificate No: EX-3677\_Jul23

Page 21 of 22

EX3DV4 - SN:3677

July 20, 2023

| UID   | Rev | Communication System Name                          | Group         | PAR (dB) | Unc <sup>E</sup> k = 2 |
|-------|-----|--|---------------|----------|------------------------|
| 10983 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.31     | ±9.6                   |
| 10984 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 9.42     | ±9.6                   |
| 10985 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.54     | ±9.6                   |
| 10986 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.50     | ±9.6                   |
| 10987 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.53     | ±9.6                   |
| 10988 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.38     | ±9.6                   |
| 10989 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.33     | ±9.6                   |
| 10990 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 9.52     | ±9.6                   |
| 11003 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) | 5G NR FR1 TDD | 10.24    | ±9.6                   |
| 11004 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) | 5G NR FR1 TDD | 10.73    | ±9.6                   |
| 11005 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.70     | ±9.6                   |
| 11006 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.55     | ±9.6                   |
| 11007 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.46     | ±9.6                   |
| 11008 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz) | 5G NR FR1 FDD | 8.51     | ±9.6                   |
| 11009 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.76     | ±9.6                   |
| 11010 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.95     | ±9.6                   |
| 11011 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.96     | ±9.6                   |
| 11012 | AAA | 5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz) | 5G NR FR1 FDD | 8.68     | ±9.6                   |
| 11013 | AAA | IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle)     | WLAN          | 8.47     | ±9.6                   |
| 11014 | AAA | IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle)     | WLAN          | 8.45     | ±9.6                   |
| 11015 | AAA | IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle)     | WLAN          | 8.44     | ±9.6                   |
| 11016 | AAA | IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle)     | WLAN          | 8.44     | ±9.6                   |
| 11017 | AAA | IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle)     | WLAN          | 8.41     | ±9.6                   |
| 11018 | AAA | IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle)     | WLAN          | 8.40     | ±9.6                   |
| 11019 | AAA | IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle)     | WLAN          | 8.29     | ±9.6                   |
| 11020 | AAA | IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)     | WLAN          | 8.27     | ±9.6                   |
| 11021 | AAA | IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle)     | WLAN          | 8.46     | ±9.6                   |
| 11022 | AAA | IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle)    | WLAN          | 8.36     | ±9.6                   |
| 11023 | AAA | IEEE 802.11be (320 MHz, MCS11, 99pc duty cycle)    | WLAN          | 8.09     | ±9.6                   |
| 11024 | AAA | IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle)    | WLAN          | 8.42     | ±9.6                   |
| 11025 | AAA | IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle)    | WLAN          | 8.37     | ±9.6                   |
| 11026 | AAA | IEEE 802.11be (320 MHz, MCS0, 99pc duty cycle)     | WLAN          | 8.39     | ±9.6                   |

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.