

# FCC SAR TEST REPORT

**Test File No : F690501-RF-SAR000491**

|                             |                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------|
| <b>Equipment Under Test</b> | Telematics                                                                            |
| <b>Model Name</b>           | TFBMEIBN3EU                                                                           |
| <b>Variant Model</b>        | TFBMNINN0EN, TFBMEIBN3FR                                                              |
| <b>Applicant</b>            | LG Electronics USA, Inc.                                                              |
| <b>Address of Applicant</b> | 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, United States, 07632 |
| <b>FCC ID</b>               | BEJTFBMEIBN3EU                                                                        |
| <b>Exposure Category</b>    | General Population/Uncontrolled Exposure                                              |
| <b>Standards</b>            | FCC 47 CFR Part 2 (2.1093)<br>IEEE 1528, 2013                                         |
| <b>Receipt No.</b>          | GPRI2312000883SR                                                                      |
| <b>Date of Receipt</b>      | 2023-12-13                                                                            |
| <b>Date of SAR Test(s)</b>  | 2024-02-27 ~2024-04-30                                                                |
| <b>Date of Issue</b>        | 2024-09-04                                                                            |
| <b>Test Result</b>          | Refer to the Page 07                                                                  |

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

This test report does not assure KOLAS accreditation.

## Remarks:

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.



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Date of Issue : 2024-09-04

(All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.)



**Revision history**

| Revision | Date of issue | Revisions     | Revised By |
|----------|---------------|---------------|------------|
| -        | Sep 04, 2024  | Initial issue |            |

## Table of Contents

|        |                                                                         |    |
|--------|-------------------------------------------------------------------------|----|
| 1      | Testing Laboratory .....                                                | 5  |
| 2      | Details of Applicant .....                                              | 5  |
| 3      | Details of Manufacturer .....                                           | 5  |
| 4      | Description of EUT(s) .....                                             | 5  |
| 5      | The Highest Reported SAR Values .....                                   | 7  |
| 6      | Test Methodology .....                                                  | 8  |
| 7      | Testing Environment .....                                               | 8  |
| 8      | Specific Absorption Rate (SAR) .....                                    | 9  |
| 8.1    | Introduction .....                                                      | 9  |
| 8.2    | SAR Definition .....                                                    | 9  |
| 8.3    | Test Standards and Limits .....                                         | 9  |
| 9      | The SAR Measurement System .....                                        | 11 |
| 10     | System Components .....                                                 | 12 |
| 10.1   | Probe .....                                                             | 12 |
| 10.2   | ELI Phantom .....                                                       | 12 |
| 10.3   | Device Holder .....                                                     | 13 |
| 11     | SAR Measurement Procedures .....                                        | 14 |
| 11.1   | Normal SAR Measurement Procedure .....                                  | 14 |
| 12     | Definition of Reference* .....                                          | 16 |
| 12.1   | Other consumer electronic devices .....                                 | 16 |
| 13     | SAR System Verification .....                                           | 17 |
| 14     | Tissue Simulant Fluid for the Frequency Band .....                      | 20 |
| 15     | Justification for Extended SAR Dipole Calibrations .....                | 23 |
| 16     | Instruments List .....                                                  | 24 |
| 17     | FCC Power Measurement Procedures .....                                  | 26 |
| 18     | Measured and Reported SAR .....                                         | 26 |
| 19     | 5G NR FR1* .....                                                        | 27 |
| 19.1   | 5G NR FR1 Test Application .....                                        | 27 |
| 20     | Maximum Output Power Specifications .....                               | 28 |
| 21     | RF Conducted Power Measurement .....                                    | 32 |
| 21.1   | WCDMA .....                                                             | 32 |
| 21.1.1 | Output Power Verification .....                                         | 32 |
| 21.1.2 | Output Body SAR Measurements .....                                      | 32 |
| 21.1.3 | Procedures Used to Establish RF Signal for SAR HSDPA Data Devices ..... | 32 |
| 21.1.4 | SAR Measurements for Conditions for HSUPA Data Devices .....            | 32 |
| 21.2   | LTE .....                                                               | 34 |
| 21.2.1 | SAR measurement Conditions for LTE .....                                | 34 |
| 21.2.2 | Spectrum Plots for RB Configurations .....                              | 34 |
| 21.2.3 | MPR .....                                                               | 34 |
| 21.2.4 | A-MPR .....                                                             | 34 |
| 21.2.5 | Required RB Size and RB Offsets for SAR Testing .....                   | 34 |
| 21.2.6 | TDD .....                                                               | 35 |
| 21.2.7 | Downlink Only Carrier Aggregation .....                                 | 35 |
| 21.2.8 | 5G NR .....                                                             | 35 |
| 22     | RF Conducted Power .....                                                | 36 |
| 23     | DUT Antenna Locations* .....                                            | 36 |
| 24     | SAR Test Exclusion Applied .....                                        | 37 |
| 25     | SAR Data Summary .....                                                  | 38 |
| 25.1   | SAR data .....                                                          | 38 |
| 26     | LTE Downlink Carrier Aggregation .....                                  | 51 |
| 27     | Simultaneous SAR Results .....                                          | 51 |
| 27.1   | Simultaneous Scenario .....                                             | 51 |
| 27.2   | Simultaneous SAR Results .....                                          | 51 |
| 28     | SAR Measurement Variability .....                                       | 56 |



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Page : 4/57

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|           |                               |    |
|-----------|-------------------------------|----|
| 28.1      | Measurement Variability ..... | 56 |
| 29        | Appendixes List .....         | 57 |
| -THE END- | .....                         | 57 |

## 1 Testing Laboratory

|                     |                                                                      |
|---------------------|----------------------------------------------------------------------|
| <b>Company Name</b> | SGS Korea Co., Ltd. (Gunpo Laboratory)                               |
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## 2 Details of Applicant

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| <b>Applicant</b> | LG Electronics USA, Inc.                                                              |
| <b>Address</b>   | 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, United States, 07632 |
| <b>Email</b>     | David6.kim@lge.com                                                                    |
| <b>Phone No.</b> | +1 201 470 2696                                                                       |

## 3 Details of Manufacturer

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| <b>Applicant</b> | LG Electronics Inc.                                                |
| <b>Address</b>   | 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea, 07336 |

## 4 Description of EUT(s)

|                                        |                                                                                      |         |                                 |      |      |           |                |              |        |
|----------------------------------------|--------------------------------------------------------------------------------------|---------|---------------------------------|------|------|-----------|----------------|--------------|--------|
| EUT Type                               | Telematics                                                                           |         |                                 |      |      |           |                |              |        |
| Model Name                             | TFBMEIBN3EU                                                                          |         |                                 |      |      |           |                |              |        |
| Variant Model                          | TFBMNINN0EN, TFBMEIBN3FR                                                             |         |                                 |      |      |           |                |              |        |
| TFBMEIBN3EU & Variant Model Difference | Those models are technically identical, but the only difference is digital portions. |         |                                 |      |      |           |                |              |        |
|                                        | Model Name                                                                           |         | *Installation capability on PCB |      | GNSS | WiFi / BT | Backup Battery | Model Remark |        |
|                                        | TFBMEIBN3EU                                                                          |         | O                               |      | O    | O         | O              | Basic Model  |        |
|                                        | TFBMNINN0EN                                                                          |         | X                               |      | O    | O         | X              |              |        |
|                                        | TFBMEIBN3FR                                                                          |         | O                               |      | O    | O         | O              |              |        |
|                                        | * Cellular Antennas is mounted on TFBMEIBN3EU, TFBMNINN0EN, TFBMEIBN3FR              |         |                                 |      |      |           |                |              |        |
| O: Popped<br>X: De-Popped              |                                                                                      |         |                                 |      |      |           |                |              |        |
| WLAN/BT Antenna Gain                   |                                                                                      |         |                                 |      |      |           |                |              |        |
|                                        | Band                                                                                 |         | Ant1                            | Ant2 | Ant3 | Ant4      | Ant1+2         | Ant1+3       | Ant1+4 |
|                                        | 2.4GHz                                                                               |         | 5.06                            | 4.96 | 1.40 | 2.90      | 8.02           | 6.43         | 7.06   |
|                                        | 5GHz                                                                                 | UNII 1  | 6.46                            | 6.43 | 2.20 | 5.00      | 9.46           | 7.60         | 8.77   |
|                                        |                                                                                      | UNII 2A | 5.73                            | 5.84 | 2.20 | 5.00      | 8.80           | 7.15         | 8.38   |
|                                        |                                                                                      | UNII 2C | 6.86                            | 5.21 | 1.90 | 5.00      | 9.08           | 7.74         | 8.99   |
|                                        |                                                                                      | UNII 3  | 5.67                            | 4.29 | 2.40 | 5.00      | 8.02           | 7.20         | 8.35   |
|                                        | 6GHz                                                                                 | UNII 5  | 2.86                            | 0.77 | 2.40 | -         | 4.89           | 5.64         | -      |
|                                        |                                                                                      | UNII 7  | 1.11                            | 0.02 | 2.50 | -         | 3.59           | 4.84         | -      |
|                                        | BT                                                                                   |         | 5.06                            | -    |      |           |                |              |        |
| Software Version                       | v010.038.045                                                                         |         |                                 |      |      |           |                |              |        |
| Hardware Version                       | Rev. C3                                                                              |         |                                 |      |      |           |                |              |        |
| Serial Number                          | 355353850006970, 355353850006940, 355353850006950                                    |         |                                 |      |      |           |                |              |        |

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mode of Operation</b>  | WCDMA II / WCDMA V / LTE Band 2 / LTE Band 4 / LTE Band 5 / LTE Band 7 / LTE Band 12 / LTE Band 13 / LTE Band 17 / LTE Band 25 / LTE Band 26 / LTE Band 38 / LTE Band 48 / LTE Band 66 / LTE Band 71 / 5G NR n2 / 5G NR n5 / 5G NR n7 / 5G NR n12 / 5G NR n25 / 5G NR n41 / 5G NR n48 / 5G NR n66 / 5G NR n71 / 5G NR n77 / 5G NR n78 / WLAN / Bluetooth LE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Tx Frequency Range</b> | WCDMA II : 1850.0 ~ 1910.0 MHz<br>WCDMA V : 824.0 ~ 849.0 MHz<br>LTE Band 2 : 1850.0 ~ 1910.0 MHz<br>LTE Band 4 : 1710.0 ~ 1755.0 MHz<br>LTE Band 5 : 824.0 ~ 849.0 MHz<br>LTE Band 7 : 2500.0 ~ 2570.0 MHz<br>LTE Band 12 : 699.0 ~ 716.0 MHz<br>LTE Band 13 : 777.0 ~ 787.0 MHz<br>LTE Band 17 : 704.0 ~ 716.0 MHz<br>LTE Band 25 : 1850 ~ 1915.0 MHz<br>LTE Band 26 : 814.0 ~ 849.0 MHz<br>LTE Band 38 : 2570.0 ~ 2620.0 MHz<br>LTE Band 48 : 3550.0 ~ 3700.0 MHz<br>LTE Band 66 : 1710.0 ~ 1780.0 MHz<br>LTE Band 71 : 663.0 ~ 698.0 MHz<br>5G NR n2 : 1850.0 ~ 1910.0 MHz<br>5G NR n5 : 824.0 ~ 849.0 MHz<br>5G NR n7 : 2500.0 ~ 2570.0 MHz<br>5G NR n12 : 699.0 ~ 716.0 MHz<br>5G NR n25 : 1850.0 ~ 1915.0 MHz<br>5G NR n41 : 2496.0 ~ 2690.0 MHz<br>5G NR n48 : 3550.0 ~ 3700.0 MHz<br>5G NR n66 : 1710.0 ~ 1780.0 MHz<br>5G NR n71 : 663.0 ~ 698.0 MHz<br>5G NR n77 DoD : 3450.0 ~ 3550.0 MHz<br>5G NR n77 : 3700.0 ~ 3980.0 MHz<br>5G NR n78 : 3700.0 ~ 3800.0 MHz<br>WLAN 2.4 GHz : 2412.0 MHz ~ 2462.0 MHz<br>U-NII 1 : 5180.0 MHz ~ 5240.0 MHz<br>U-NII 2A : 5260.0 MHz ~ 5320.0 MHz<br>U-NII 2C : 5500.0 MHz ~ 5720.0 MHz<br>U-NII 3 : 5745.0 MHz ~ 5825.0 MHz<br>U-NII 5 : 5925.0 ~ 6425.0 MHz<br>U-NII 7 : 6525.0 ~ 6875.0 MHz<br>Bluetooth LE : 2402.0 MHz ~ 2480.0 MHz |

## 5 The Highest Reported SAR Values

| Band                                                    | Highest Reported SAR<br>1g (W/kg) |
|---------------------------------------------------------|-----------------------------------|
| WCDMA II Ant1                                           | 0.232                             |
| WCDMA II Ant3                                           | 0.058                             |
| WCDMA V Ant1                                            | 0.066                             |
| WCDMA V Ant3                                            | 0.021                             |
| LTE Band 7 Ant1                                         | 0.072                             |
| LTE Band 7 Ant3                                         | 0.063                             |
| LTE Band 12 Ant1                                        | 0.032                             |
| LTE Band 12 Ant3                                        | 0.007                             |
| LTE Band 13 Ant1                                        | 0.040                             |
| LTE Band 13 Ant3                                        | 0.033                             |
| LTE Band 25 Ant1                                        | 0.163                             |
| LTE Band 25 Ant3                                        | 0.034                             |
| LTE Band 26 Ant1                                        | 0.047                             |
| LTE Band 26 Ant3                                        | 0.016                             |
| LTE Band 38 Ant1                                        | 0.025                             |
| LTE Band 38 Ant3                                        | 0.039                             |
| LTE Band 48 Ant2                                        | 0.012                             |
| LTE Band 66 Ant1                                        | 0.144                             |
| LTE Band 66 Ant3                                        | 0.069                             |
| LTE Band 71 Ant1                                        | 0.026                             |
| LTE Band 71 Ant3                                        | 0.014                             |
| 5G NR n5 Ant1                                           | 0.041                             |
| 5G NR n5 Ant3                                           | 0.018                             |
| 5G NR n7 Ant1                                           | 0.070                             |
| 5G NR n7 Ant3                                           | 0.065                             |
| 5G NR n12 Ant1                                          | 0.026                             |
| 5G NR n12 Ant3                                          | 0.011                             |
| 5G NR n25 Ant1                                          | 0.149                             |
| 5G NR n25 Ant3                                          | 0.039                             |
| 5G NR n41 Ant1                                          | 0.049                             |
| 5G NR n41 Ant3                                          | 0.055                             |
| 5G NR n48 Ant2                                          | 0.035                             |
| 5G NR n66 Ant1                                          | 0.152                             |
| 5G NR n66 Ant3                                          | 0.066                             |
| 5G NR n71 Ant1                                          | 0.037                             |
| 5G NR n71 Ant3                                          | 0.020                             |
| 5G NR n77 Ant2                                          | 0.035                             |
| 5G NR n77 DoD Ant2                                      | 0.014                             |
| <b>Simultaneous SAR(TER) per KDB 690783 D01v01r03 :</b> | <b>0.303</b>                      |

## 6 Test Methodology

ANSI/IEEE C95.1-1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

Test tests documented in this report were performed in accordance with IEEE Standard 1528-2013 and the following published KDB procedures.

|                                     |                             |                                                                                                    |
|-------------------------------------|-----------------------------|----------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <b>KDB 865664 D01v01r04</b> | <b>SAR Measurement Requirements for 100 MHz to 6 GHz</b>                                           |
| <input checked="" type="checkbox"/> | <b>KDB 865664 D02v01r02</b> | <b>RF Exposure Compliance Reporting and Documentation Considerations</b>                           |
| <input type="checkbox"/>            | KDB 447498 D01v06           | Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies            |
| <input checked="" type="checkbox"/> | <b>KDB 447498 D04v01</b>    | <b>Interim General RF Exposure Guidance</b>                                                        |
| <input type="checkbox"/>            | KDB 447498 D02v02r01        | SAR Measurement Procedures for USB Dongle Transmitters                                             |
| <input type="checkbox"/>            | KDB 248227 D01v02r02        | SAR Guidance For IEEE 802.11 (Wi-Fi) Transmitters                                                  |
| <input type="checkbox"/>            | KDB 615223 D01v01r01        | 802.16e/WiMax SAR Measurement Guidance                                                             |
| <input type="checkbox"/>            | KDB 616217 D04v01r02        | SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers                   |
| <input type="checkbox"/>            | KDB 643646 D01v01r03        | SAR Test Considerations for Occupational PTT Radios                                                |
| <input type="checkbox"/>            | KDB 648474 D03v01r04        | Evaluation and Approval Considerations for Handsets with Specific Wireless Charging Battery Covers |
| <input type="checkbox"/>            | KDB 648474 D04v01r03        | SAR Evaluation Considerations for Wireless Handsets                                                |
| <input type="checkbox"/>            | KDB 680106 D01v03r01        | RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications             |
| <input checked="" type="checkbox"/> | <b>KDB 941225 D01v03r01</b> | <b>3G SAR Measurement Procedures</b>                                                               |
| <input checked="" type="checkbox"/> | <b>KDB 941225 D05v02r05</b> | <b>SAR Evaluation Considerations for LTE Devices</b>                                               |
| <input type="checkbox"/>            | KDB 941225 D06v02r01        | SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities                   |
| <input type="checkbox"/>            | KDB 941225 D07v01r02        | SAR Evaluation Procedures for UMPC Mini-Tablet Devices                                             |

## 7 Testing Environment

|                                       |                           |
|---------------------------------------|---------------------------|
| Ambient temperature                   | : 18°C ~ 25°C             |
| Relative humidity                     | : 30% ~ 70%               |
| Liquid temperature of during the test | : $\pm 2^{\circ}\text{C}$ |
| Ambient noise & Reflection            | : $< 0.012 \text{ W/kg}$  |

## 8 Specific Absorption Rate (SAR)

### 8.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled

### 8.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dv} \right)$$

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C \left( \frac{\delta T}{\delta t} \right)$$

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

$$SAR = \frac{\sigma |E|^2}{\rho}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

### 8.3 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.3-2003, Copyright 2003 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified

in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

| Human Exposure                                      | Uncontrolled Environment<br>General Population | Controlled Environment<br>Occupational |
|-----------------------------------------------------|------------------------------------------------|----------------------------------------|
| <b>Partial Peak SAR</b><br>(Partial)                | 1.60 mW/g                                      | 8.00 mW/g                              |
| <b>Partial Average SAR</b><br>(Whole Body)          | 0.08 mW/g                                      | 0.40 mW/g                              |
| <b>Partial Peak SAR</b><br>(Hands/Feet/Ankle/Wrist) | 4.00 mW/g                                      | 20.00 mW/g                             |

1. The spatial Peak value of the SAR averaged over any 1g gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

## 9 The SAR Measurement System

A block diagram of the SAR measurement System is given in Fig. 1. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY system). The model EX3DV4 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation  $SAR = \sigma (|E_i|^2) / \rho$  where  $\sigma$  and  $\rho$  are the conductivity and mass density of the tissue-simulant.

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

- A standard high precision 6-axis robot (Staubli TX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
- A dosimeter probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- 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.

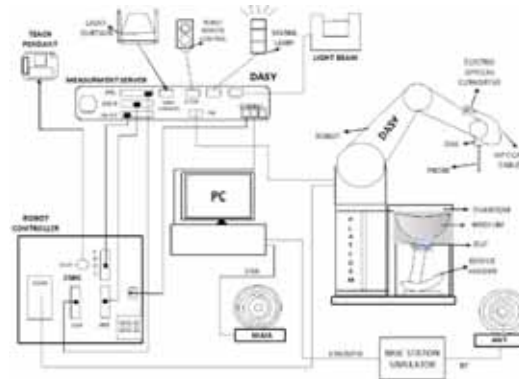


Fig a. The microwave circuit arrangement used for SAR system verification

- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected 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.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows.
- DASY software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Verification dipole kits allowing to validate the proper functioning of the system.

## 10 System Components

### 10.1 Probe

|                      |                                                                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction</b>  | : Symmetrical design with triangular core.<br>Built-in shielding against static charges.<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE)                                             |
| <b>Calibration</b>   | : Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 835 and HSL1900.<br>Additional CF-Calibration for other liquids and frequencies upon request.                                         |
| <b>Frequency</b>     | : 10 MHz to 6 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)                                                                                                                                                |
| <b>Directivity</b>   | : $\pm 0.3$ dB in HSL (rotation around probe axis)<br>$\pm 0.5$ dB in tissue material (rotation normal to probe axis)                                                                                       |
| <b>Dynamic Range</b> | : $10\mu\text{W/g}$ to $> 100$ mW/g;<br>Linearity: $\pm 0.2$ dB(noise: typically $< 1\mu\text{W/g}$ )                                                                                                       |
| <b>Dimensions</b>    | : Overall length: 337 mm (Tip length: 20 mm)<br>Tip diameter: 2.5 mm (Body diameter: 12 mm)<br>Distance from probe tip to dipole centers: 1 mm                                                              |
| <b>Application</b>   | : 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% |



EX3DV4 E-Field Probe

#### NOTE:

1. The Probe parameters have been calibrated by the SPEAG. Please reference “APPENDIX C” for the Calibration Certification Report.

### 10.2 ELI Phantom

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Construction</b> | : Phantom for compliance testing of handheld and bodymounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles. |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure



ELI Phantom

|                        |                                              |
|------------------------|----------------------------------------------|
| <b>Shell Thickness</b> | : 2.0 mm $\pm$ 0.1 mm                        |
| <b>Dimensions</b>      | : Major axis : 600 mm<br>Minor axis : 400 mm |

### 10.3 Device Holder

Construction: : In combination with the Twin SAM PhantomV4.0/V4.0C or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).



Device Holder

## **11 SAR Measurement Procedures**

### **11.1 Normal SAR Measurement Procedure**

#### **Step 1: Power Reference Measurement**

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 mm. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties.

#### **Step 2 and 3: Area Scan & Zoom Scan Procedures**

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan.
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. The generation of a high-resolution mesh within the measured volume
4. The interpolation of all measured values from the measurement grid to the high-resolution grid
5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. The calculation of the averaged SAR within masses of 1 g and 10 g.

#### **Step 4: Power drift measurement**

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1. SAR drift shall be kept within  $\pm 5\%$  and if it without  $\pm 5\%$ , SAR retest according to measurement procedure step 1~4.

## &lt; Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04 &gt;

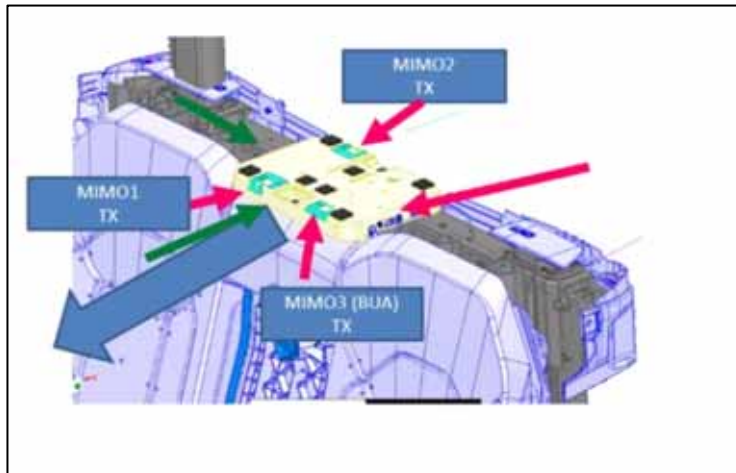
|                                                                                                                                                                                                                                                                                                                         |                                    |                                                                                      | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface                                                                                                                                                                                                                  |                                    |                                                                                      | 5 mm $\pm$ 1 mm                                                                                                                                                                                                                                                        | $\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm $\pm$ 0.5 mm                       |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location                                                                                                                                                                                                                               |                                    |                                                                                      | $30^{\circ} \pm 1^{\circ}$                                                                                                                                                                                                                                             | $20^{\circ} \pm 1^{\circ}$                                                    |
| Maximum area scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$                                                                                                                                                                                                                                             |                                    |                                                                                      | $\leq 2$ GHz: $\leq 15$ mm<br>2 – 3 GHz: $\leq 12$ mm                                                                                                                                                                                                                  | 3 – 4 GHz: $\leq 12$ mm<br>4 – 6 GHz: $\leq 10$ mm                            |
|                                                                                                                                                                                                                                                                                                                         |                                    |                                                                                      | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                                                               |
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$ , $\Delta y_{Zoom}$                                                                                                                                                                                                                                             |                                    |                                                                                      | $\leq 2$ GHz: $\leq 8$ mm<br>2 – 3 GHz: $\leq 5$ mm*                                                                                                                                                                                                                   | 3 – 4 GHz: $\leq 5$ mm*<br>4 – 6 GHz: $\leq 4$ mm*                            |
| Maximum zoom scan spatial resolution, normal to phantom surface                                                                                                                                                                                                                                                         | uniform grid: $\Delta z_{Zoom}(n)$ |                                                                                      | $\leq 5$ mm                                                                                                                                                                                                                                                            | 3 – 4 GHz: $\leq 4$ mm<br>4 – 5 GHz: $\leq 3$ mm<br>5 – 6 GHz: $\leq 2$ mm    |
|                                                                                                                                                                                                                                                                                                                         | graded grid                        | $\Delta z_{Zoom}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface | $\leq 4$ mm                                                                                                                                                                                                                                                            | 3 – 4 GHz: $\leq 3$ mm<br>4 – 5 GHz: $\leq 2.5$ mm<br>5 – 6 GHz: $\leq 2$ mm  |
|                                                                                                                                                                                                                                                                                                                         |                                    | $\Delta z_{Zoom}(n>1)$ : between subsequent points                                   | $\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ mm                                                                                                                                                                                                                               |                                                                               |
| Minimum zoom scan volume                                                                                                                                                                                                                                                                                                | x, y, z                            |                                                                                      | $\geq 30$ mm                                                                                                                                                                                                                                                           | 3 – 4 GHz: $\geq 28$ mm<br>4 – 5 GHz: $\geq 25$ mm<br>5 – 6 GHz: $\geq 22$ mm |
| Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.                                                                                                                                                                                   |                                    |                                                                                      |                                                                                                                                                                                                                                                                        |                                                                               |
| * When zoom scan is required and the <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB Publication 447498 is $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                                    |                                                                                      |                                                                                                                                                                                                                                                                        |                                                                               |

## 12 Definition of Reference<sup>※</sup>

### 12.1 Other consumer electronic devices

The exposure conditions of transmitters and modules incorporated in certain consumer electronic devices, such as printers, cameras, and camcorders may vary according to the installation and operating configurations required by the host products. Details of the transmitter and antenna configurations, antenna to user test separation distance, device operating configurations, etc., are required to determine SAR test exclusion or SAR measurement requirements for each host product. When SAR tests are required, a KDB inquiry is recommended to confirm the test setup. Unless the transmitter is used in a specific/dedicated host device, the standalone and simultaneous transmission SAR procedures for transmitters and modules should be applied. These must be fully explained in the permissive change documentation or equipment approval filing, whichever is applicable.

“Intended use distance” specified by the manufacturer: When there is no regulatory requirement, the intended use condition or distance specified by the manufacturer shall be used. This information shall be acquired from the user documentation accompanying the DUT. This device is mounted on the vehicle, and the physical distance from the device is 45mm. By manufacturer declaration, the test distance is 45mm. Testing of all six faces of the DUT might not be required; justification shall be provided when omitting testing of some faces. The SAR was tested only in two positions, the Front and Right Edge.



- The data marked <sup>※</sup> in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(<sup>※</sup>) provided by the customer.

### 13 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig 1. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within  $\pm 10\%$  from the target SAR values. These tests were done at 750 / 835 / 1750 / 1900 / 2600 / 3500 / 3700 / 3900 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1. (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was in the range  $(22 \pm 2)^\circ \text{C}$ , the relative humidity was in the range  $(55 \pm 5) \% \text{ R.H}$  and the liquid depth above the ear reference points was  $\geq 15 \text{ cm} \pm 5 \text{ mm}$  (frequency  $\leq 3 \text{ GHz}$ ) or  $\geq 10 \text{ cm} \pm 5 \text{ mm}$  (frequency  $> 3 \text{ GHz}$ ) in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

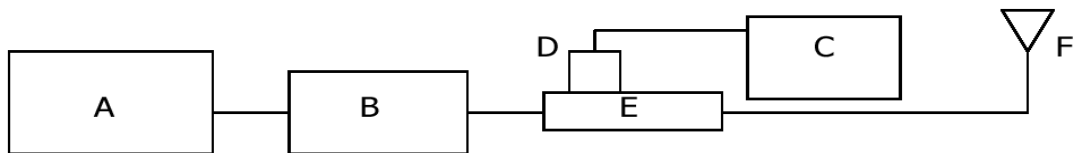


Fig 1. The microwave circuit arrangement used for SAR system verification

- A. Signal Generator
- B. RF Amplifier
- C. Power Meter
- D. Power Sensor
- E. Dual Directional Coupler
- F. Reference dipole Antenna



Photo of the dipole Antenna

**SAR System Verification**

| Dipole Validation Kits |       | Probe S/N | Freq. (MHz) | Input Power (W) | Target SAR values (W/Kg) | 1 W normalized Measured SAR (W/Kg) | SAR Deviation (%) | Date       | Temperature (°C) |        |
|------------------------|-------|-----------|-------------|-----------------|--------------------------|------------------------------------|-------------------|------------|------------------|--------|
|                        |       |           |             |                 | 1g                       | 1g                                 | 1g                |            | Ambient          | Liquid |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.17                               | -3.77             | 2024-02-28 | 22.0             | 21.4   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.52                               | 0.35              | 2024-03-04 | 21.6             | 21.4   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.46                               | -0.35             | 2024-03-05 | 22.3             | 22.2   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.49                               | 0.00              | 2024-03-05 | 22.3             | 22.2   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.66                               | 2.00              | 2024-03-11 | 21.6             | 21.4   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.65                               | 1.88              | 2024-03-12 | 21.4             | 20.9   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.65                               | 1.88              | 2024-03-22 | 22.4             | 22.3   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.26                               | -2.71             | 2024-03-23 | 23.2             | 21.8   |
| D750V3                 | 1085  | 3791      | 750         | 0.10            | 8.49                     | 8.34                               | -1.77             | 2024-03-25 | 21.6             | 21.4   |
| D835V2                 | 4d138 | 3791      | 835         | 0.10            | 9.81                     | 9.31                               | -5.10             | 2024-02-27 | 21.5             | 21.3   |
| D835V2                 | 4d138 | 3791      | 835         | 0.10            | 9.81                     | 9.50                               | -3.16             | 2024-02-28 | 22.0             | 21.6   |
| D835V2                 | 4d138 | 3791      | 835         | 0.10            | 9.81                     | 9.72                               | -0.92             | 2024-03-13 | 22.1             | 22.1   |
| D835V2                 | 4d138 | 3791      | 835         | 0.10            | 9.81                     | 9.55                               | -2.65             | 2024-03-25 | 22.2             | 22.1   |
| D835V2                 | 4d138 | 3791      | 835         | 0.10            | 9.81                     | 10.00                              | 1.94              | 2024-03-26 | 22.3             | 22.1   |
| D835V2                 | 4d138 | 3791      | 835         | 0.10            | 9.81                     | 9.87                               | 0.61              | 2024-03-27 | 23.3             | 23.3   |
| D1750V2                | 1116  | 3791      | 1750        | 0.10            | 35.50                    | 36.90                              | 3.94              | 2024-02-29 | 21.5             | 20.9   |
| D1750V2                | 1116  | 3791      | 1750        | 0.10            | 35.50                    | 37.00                              | 4.23              | 2024-03-14 | 21.6             | 21.6   |
| D1750V2                | 1116  | 3791      | 1750        | 0.10            | 35.50                    | 36.50                              | 2.82              | 2024-03-22 | 23.2             | 23.1   |
| D1900V2                | 5d158 | 7574      | 1900        | 0.10            | 39.80                    | 37.60                              | -5.53             | 2024-02-28 | 22.2             | 21.9   |
| D1900V2                | 5d158 | 7574      | 1900        | 0.10            | 39.80                    | 39.20                              | -1.51             | 2024-02-29 | 22.0             | 21.7   |
| D1900V2                | 5d158 | 7574      | 1900        | 0.10            | 39.80                    | 40.40                              | 1.51              | 2024-03-18 | 22.1             | 21.2   |
| D1900V2                | 5d158 | 7574      | 1900        | 0.10            | 39.80                    | 40.70                              | 2.26              | 2024-03-19 | 22.2             | 21.5   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 56.10                              | 0.72              | 2024-03-04 | 22.2             | 21.8   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 56.80                              | 1.97              | 2024-03-05 | 22.0             | 21.7   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 55.60                              | -0.18             | 2024-03-12 | 21.9             | 21.8   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 53.60                              | -3.77             | 2024-03-13 | 22.7             | 22.6   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 55.10                              | -1.08             | 2024-03-19 | 22.2             | 22.0   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 57.40                              | 3.05              | 2024-03-20 | 22.6             | 22.4   |
| D2600V2                | 1038  | 7574      | 2600        | 0.10            | 55.70                    | 58.20                              | 4.49              | 2024-03-21 | 22.4             | 22.2   |

| Dipole Validation Kits |      | Probe<br>S/N | Freq.<br>(MHz) | Input<br>Power<br>(W) | Target<br>SAR<br>values<br>(W/Kg) | 1 W<br>normalized<br>Measured<br>SAR<br>(W/Kg) | SAR<br>Deviation<br>(%) | Date       | Temperature<br>(°C) |        |
|------------------------|------|--------------|----------------|-----------------------|-----------------------------------|------------------------------------------------|-------------------------|------------|---------------------|--------|
| Model                  | S/N  |              |                |                       | 1g                                | 1g                                             | 1g                      |            | Ambient             | Liquid |
| D3500V2                | 1058 | 7574         | 3500           | 0.10                  | 65.30                             | 62.70                                          | -3.98                   | 2024-03-08 | 22.3                | 21.9   |
| D3500V2                | 1058 | 7574         | 3500           | 0.10                  | 65.30                             | 62.80                                          | -3.83                   | 2024-03-11 | 22.7                | 22.6   |
| D3500V2                | 1058 | 7574         | 3500           | 0.10                  | 65.30                             | 63.70                                          | -2.45                   | 2024-04-30 | 22.7                | 22.6   |
| D3700V2                | 1005 | 7574         | 3700           | 0.10                  | 65.70                             | 63.70                                          | -3.04                   | 2024-03-08 | 22.3                | 21.9   |
| D3700V2                | 1005 | 7574         | 3700           | 0.10                  | 65.70                             | 63.00                                          | -4.11                   | 2024-03-28 | 22.8                | 22.1   |
| D3700V2                | 1005 | 7574         | 3700           | 0.10                  | 65.70                             | 63.30                                          | -3.65                   | 2024-04-29 | 22.9                | 22.8   |
| D3900V2                | 1036 | 7574         | 3900           | 0.10                  | 68.00                             | 65.70                                          | -3.38                   | 2024-03-11 | 22.7                | 22.6   |
| D3900V2                | 1036 | 7574         | 3900           | 0.10                  | 68.00                             | 65.70                                          | -3.38                   | 2024-04-30 | 22.7                | 22.6   |

Table 1 Results system verification

## 14 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this simulant fluid were measured by using the Speag Model DAK-3.5 in conjunction with Keysight E5063A Network Analyzer by using a procedure.

| Freq.<br>(MHz) | Target Value |                       | Measure Value |                       | Deviation (%) |                       | Date       | Liquid<br>Temperature<br>(°C) |
|----------------|--------------|-----------------------|---------------|-----------------------|---------------|-----------------------|------------|-------------------------------|
|                | Permittivity | Conductivity<br>(S/m) | Permittivity  | Conductivity<br>(S/m) | Permittivity  | Conductivity<br>(S/m) |            |                               |
| 750*           | 41.90        | 0.89                  | 43.912        | 0.865                 | 4.80          | -2.81                 | 2024-02-28 | 21.4                          |
| 782.00         | 41.90        | 0.89                  | 43.502        | 0.903                 | 3.82          | 1.46                  |            |                               |
| 750*           | 41.90        | 0.89                  | 43.413        | 0.890                 | 3.61          | 0.00                  | 2024-03-04 | 21.4                          |
| 707.50         | 41.90        | 0.89                  | 43.703        | 0.872                 | 4.30          | -2.02                 |            |                               |
| 750*           | 41.90        | 0.89                  | 42.858        | 0.899                 | 2.29          | 1.01                  | 2024-03-05 | 22.2                          |
| 707.50         | 41.90        | 0.89                  | 43.198        | 0.880                 | 3.10          | -1.12                 |            |                               |
| 750*           | 41.90        | 0.89                  | 43.277        | 0.896                 | 4.27          | -1.57                 | 2024-03-05 | 22.2                          |
| 680.50         | 41.90        | 0.89                  | 43.688        | 0.876                 | 3.33          | -2.47                 |            |                               |
| 750*           | 41.90        | 0.89                  | 43.296        | 0.868                 | 3.33          | -2.47                 | 2024-03-11 | 21.4                          |
| 707.50         | 41.90        | 0.89                  | 43.567        | 0.851                 | 3.98          | -4.38                 |            |                               |
| 750*           | 41.90        | 0.89                  | 43.600        | 0.900                 | 4.06          | 1.12                  | 2024-03-12 | 20.9                          |
| 680.50         | 41.90        | 0.89                  | 43.817        | 0.876                 | 4.58          | -1.57                 |            |                               |
| 750*           | 41.90        | 0.89                  | 40.631        | 0.901                 | -3.03         | 1.24                  | 2024-03-22 | 22.3                          |
| 782.00         | 41.90        | 0.89                  | 40.599        | 0.915                 | -3.11         | 2.81                  |            |                               |
| 750*           | 41.90        | 0.89                  | 41.075        | 0.884                 | -1.97         | -0.67                 | 2024-03-23 | 21.8                          |
| 680.50         | 41.90        | 0.89                  | 41.435        | 0.863                 | -1.11         | -3.03                 |            |                               |
| 707.50         | 41.90        | 0.89                  | 41.402        | 0.867                 | -1.19         | -2.58                 |            |                               |
| 750*           | 41.90        | 0.89                  | 41.089        | 0.908                 | -1.94         | 2.02                  | 2024-03-25 | 21.4                          |
| 680.50         | 41.90        | 0.89                  | 41.457        | 0.888                 | -1.06         | -0.22                 |            |                               |
| 707.50         | 41.90        | 0.89                  | 41.420        | 0.892                 | -1.15         | 0.22                  |            |                               |
| 835*           | 41.50        | 0.90                  | 41.555        | 0.905                 | 0.13          | 0.56                  | 2024-02-27 | 21.3                          |
| 831.50         | 41.50        | 0.90                  | 41.576        | 0.905                 | 0.18          | 0.56                  |            |                               |
| 835*           | 41.50        | 0.90                  | 41.243        | 0.921                 | -0.62         | 2.33                  | 2024-02-28 | 21.6                          |
| 836.60         | 41.50        | 0.90                  | 41.232        | 0.921                 | -0.65         | 2.33                  |            |                               |
| 835*           | 41.50        | 0.90                  | 43.092        | 0.901                 | 3.84          | 0.11                  | 2024-03-13 | 22.1                          |
| 836.50         | 41.50        | 0.90                  | 43.084        | 0.902                 | 3.82          | 0.22                  |            |                               |
| 835*           | 41.50        | 0.90                  | 40.124        | 0.876                 | -3.32         | -2.67                 | 2024-03-25 | 22.1                          |
| 836.50         | 41.50        | 0.90                  | 40.113        | 0.876                 | -3.34         | -2.67                 |            |                               |

| Freq.<br>(MHz) | Target Value |                       | Measure Value |                       | Deviation (%) |                       | Date       | Liquid<br>Temperature<br>(°C) |
|----------------|--------------|-----------------------|---------------|-----------------------|---------------|-----------------------|------------|-------------------------------|
|                | Permittivity | Conductivity<br>(S/m) | Permittivity  | Conductivity<br>(S/m) | Permittivity  | Conductivity<br>(S/m) |            |                               |
| 835*           | 41.50        | 0.90                  | 40.617        | 0.863                 | -2.13         | -4.11                 | 2024-03-26 | 22.1                          |
| 831.50         | 41.50        | 0.90                  | 40.637        | 0.862                 | -2.08         | -4.22                 |            |                               |
| 835*           | 41.50        | 0.90                  | 41.943        | 0.903                 | 1.07          | 0.33                  | 2024-03-27 | 23.3                          |
| 836.60         | 41.50        | 0.90                  | 41.910        | 0.905                 | 0.99          | 0.56                  |            |                               |
| 1750*          | 40.07        | 1.37                  | 38.577        | 1.386                 | -3.73         | 1.17                  | 2024-02-29 | 20.9                          |
| 1745.00        | 40.07        | 1.37                  | 38.594        | 1.381                 | -3.68         | 0.80                  |            |                               |
| 1750*          | 40.07        | 1.37                  | 39.115        | 1.396                 | -2.38         | 1.90                  | 2024-03-14 | 21.6                          |
| 1745.00        | 40.07        | 1.37                  | 39.131        | 1.391                 | -2.34         | 1.53                  |            |                               |
| 1750*          | 40.07        | 1.37                  | 40.415        | 1.375                 | 0.86          | 0.36                  | 2024-03-22 | 23.1                          |
| 1745.00        | 40.07        | 1.37                  | 40.428        | 1.371                 | 0.89          | 0.07                  |            |                               |
| 1900*          | 40.00        | 1.40                  | 38.959        | 1.420                 | -2.60         | 1.43                  | 2024-02-28 | 21.9                          |
| 1880.00        | 40.00        | 1.40                  | 38.928        | 1.413                 | -2.68         | 0.93                  |            |                               |
| 1900*          | 40.00        | 1.40                  | 39.295        | 1.428                 | -1.76         | 2.00                  | 2024-02-29 | 21.7                          |
| 1882.50        | 40.00        | 1.40                  | 39.265        | 1.422                 | -1.84         | 1.57                  |            |                               |
| 1900*          | 40.00        | 1.40                  | 40.640        | 1.461                 | 1.60          | 4.36                  | 2024-03-18 | 21.2                          |
| 1882.50        | 40.00        | 1.40                  | 40.619        | 1.455                 | 1.55          | 3.93                  |            |                               |
| 1900*          | 40.00        | 1.40                  | 39.431        | 1.454                 | -1.42         | 3.86                  | 2024-03-19 | 21.5                          |
| 1880.00        | 40.00        | 1.40                  | 39.410        | 1.446                 | -1.48         | 3.29                  |            |                               |
| 1882.50        | 40.00        | 1.40                  | 39.412        | 1.447                 | -1.47         | 3.36                  |            |                               |
| 2600*          | 39.00        | 1.96                  | 38.603        | 1.981                 | -1.02         | 1.07                  | 2024-03-04 | 21.8                          |
| 2535.00        | 39.00        | 1.96                  | 38.751        | 1.917                 | -0.64         | -2.19                 |            |                               |
| 2600*          | 39.00        | 1.96                  | 38.398        | 1.973                 | -1.54         | 0.66                  | 2024-03-05 | 21.7                          |
| 2595.00        | 39.00        | 1.96                  | 38.410        | 1.967                 | -1.51         | 0.36                  |            |                               |
| 2600*          | 39.00        | 1.96                  | 37.710        | 2.004                 | -3.31         | 2.24                  | 2024-03-12 | 21.8                          |
| 2592.99        | 39.00        | 1.96                  | 37.720        | 1.995                 | -3.28         | 1.79                  |            |                               |
| 2600*          | 39.00        | 1.96                  | 37.169        | 1.936                 | -4.69         | -1.22                 | 2024-03-13 | 22.6                          |
| 2535.00        | 39.00        | 1.96                  | 37.215        | 1.883                 | -4.58         | -3.93                 |            |                               |
| 2600*          | 39.00        | 1.96                  | 39.158        | 1.957                 | 0.41          | -0.15                 | 2024-03-19 | 22.0                          |
| 2535.00        | 39.00        | 1.96                  | 39.270        | 1.898                 | 0.69          | -3.16                 |            |                               |

| Freq.<br>(MHz) | Target Value |                       | Measure Value |                       | Deviation (%) |                       | Date       | Liquid<br>Temperature<br>(°C) |
|----------------|--------------|-----------------------|---------------|-----------------------|---------------|-----------------------|------------|-------------------------------|
|                | Permittivity | Conductivity<br>(S/m) | Permittivity  | Conductivity<br>(S/m) | Permittivity  | Conductivity<br>(S/m) |            |                               |
| 2600*          | 39.00        | 1.96                  | 39.786        | 1.957                 | 2.02          | -0.15                 | 2024-03-20 | 22.4                          |
| 2535.00        | 39.00        | 1.96                  | 40.000        | 1.901                 | 2.56          | -3.01                 |            |                               |
| 2595.00        | 39.00        | 1.96                  | 39.793        | 1.952                 | 2.03          | -0.41                 |            |                               |
| 2600*          | 39.00        | 1.96                  | 38.933        | 1.946                 | -0.17         | -0.71                 | 2024-03-21 | 22.2                          |
| 2535.00        | 39.00        | 1.96                  | 39.048        | 1.888                 | 0.12          | -3.67                 |            |                               |
| 2592.99        | 39.00        | 1.96                  | 38.944        | 1.938                 | -0.14         | -1.12                 |            |                               |
| 3500*          | 37.90        | 2.91                  | 38.718        | 2.916                 | 2.16          | 0.21                  | 2024-03-08 | 21.9                          |
| 3500.01        | 37.90        | 2.91                  | 38.718        | 2.916                 | 2.16          | 0.21                  |            |                               |
| 3500*          | 37.90        | 2.91                  | 38.308        | 2.895                 | 1.08          | -0.52                 | 2024-03-11 | 22.6                          |
| 3500.01        | 37.90        | 2.91                  | 38.308        | 2.895                 | 1.08          | -0.52                 |            |                               |
| 3500*          | 37.90        | 2.91                  | 38.164        | 2.890                 | 0.70          | -0.69                 | 2024-04-30 | 22.6                          |
| 3500.01        | 37.90        | 2.91                  | 38.164        | 2.890                 | 0.70          | -0.69                 |            |                               |
| 3700*          | 37.70        | 3.12                  | 38.332        | 3.128                 | 1.68          | 0.26                  | 2024-03-08 | 21.9                          |
| 3646.70        | 37.70        | 3.12                  | 38.465        | 3.074                 | 2.03          | -1.47                 |            |                               |
| 3700*          | 37.70        | 3.12                  | 37.442        | 3.164                 | -0.68         | 1.41                  | 2024-03-28 | 22.1                          |
| 3624.99        | 37.70        | 3.12                  | 37.630        | 3.085                 | -0.19         | -1.12                 |            |                               |
| 3700*          | 37.70        | 3.12                  | 37.030        | 3.072                 | -1.78         | -1.54                 | 2024-04-29 | 22.8                          |
| 3624.99        | 37.70        | 3.12                  | 37.157        | 2.998                 | -1.44         | -3.91                 |            |                               |
| 3646.70        | 37.70        | 3.12                  | 37.142        | 3.020                 | -1.48         | -3.21                 |            |                               |
| 3900*          | 37.50        | 3.33                  | 36.844        | 3.256                 | -1.75         | -2.22                 | 2024-03-11 | 22.6                          |
| 3840.00        | 37.50        | 3.33                  | 37.095        | 3.215                 | -1.08         | -3.45                 |            |                               |
| 3900*          | 37.50        | 3.33                  | 37.449        | 3.274                 | -0.14         | -1.68                 | 2024-04-30 | 22.6                          |
| 3840.00        | 37.50        | 3.33                  | 37.545        | 3.220                 | 0.12          | -3.30                 |            |                               |

Note: The data marked (\*) in this table was Permittivity/Conductivity results of Verification

The brain mixtures consist of a viscous gel using hydroxethylcellulose(HEC) gelling agent and saline solution. Preservation with a bactericide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation. The dielectric properties of the liquid material required to fill the phantom shell shall be target. For 3.4 to 10.0 GHz, the tests were done with using stimulating liquid made by SPEAG.

| Frequency (MHz)                                                                     | 450   | 835   | 900   | 1800-2000                                                 | 2450 | 2600 |
|-------------------------------------------------------------------------------------|-------|-------|-------|-----------------------------------------------------------|------|------|
| Tissue Type                                                                         | Body  |       |       |                                                           |      |      |
| Ingredient (% by weight)                                                            |       |       |       |                                                           |      |      |
| Water                                                                               | 38.91 | 40.29 | 40.29 | 55.24                                                     | 45.0 | 45.0 |
| Salt (NaCl)                                                                         | 3.79  | 1.38  | 1.38  | 0.31                                                      | 0    | 0    |
| Sugar                                                                               | 56.93 | 57.90 | 57.90 | 0                                                         | 0    | 0    |
| HEC                                                                                 | 0.25  | 0.24  | 0.24  | 0                                                         | 0    | 0    |
| Bactericide                                                                         | 0.12  | 0.18  | 0.18  | 0                                                         | 0    | 0    |
| Triton X-100                                                                        | 0     | 0     | 0     | 0                                                         | 0    | 0    |
| DGBE                                                                                | 0     | 0     | 0     | 44.45                                                     | 55.0 | 55.0 |
| Tissue parameter target by IEEE 1528-2013                                           |       |       |       |                                                           |      |      |
| Dielectric Constant                                                                 | 43.5  | 41.5  | 41.5  | 40.0                                                      | 39.2 | 39.0 |
| Conductivity (S/m)                                                                  | 0.87  | 0.90  | 0.97  | 1.40                                                      | 1.80 | 1.96 |
| Salt: 99+% Pure Sodium Chloride<br>Water: De-ionized, 16 M <sup>+</sup> resistivity |       |       |       | Sucrose: 98+% Pure Sucrose<br>HEC: Hydroxyethyl Cellulose |      |      |
| DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]             |       |       |       |                                                           |      |      |

## 15 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 publication 865664 D01V01r04:

| 750V3 Head (SN : 1085) |                  |      |               |      |
|------------------------|------------------|------|---------------|------|
| 750 GHz                |                  |      |               |      |
| Measurement Date       | Return Loss (dB) | Δ%   | Impedance (Ω) | ΔΩ   |
| 2024-02-28             | -28.120          | 1.08 | 51.77         | 1.63 |

## 16 Instruments List

| <b>Test Platform</b>      | SPEAG DASY System                                |               |            |              |            |
|---------------------------|--------------------------------------------------|---------------|------------|--------------|------------|
| <b>Manufacture</b>        | SPEAG                                            |               |            |              |            |
| <b>Description</b>        | SAR Test System                                  |               |            |              |            |
| <b>Software Reference</b> | DASY52: 52.10.4(1527)<br>SEMCAD X: 14.6.14(7483) |               |            |              |            |
| Equipment                 | Type                                             | Serial Number | Cal Date   | Cal Interval | Cal Due    |
| Phantom                   | ELI Phantom                                      | TP-1169       | N/A        | N/A          | N/A        |
| Phantom                   | ELI Phantom                                      | TP-1244       | N/A        | N/A          | N/A        |
| Verification Dipole       | D750V3                                           | 1085          | 2023-03-21 | Biennial     | 2025-03-21 |
| Verification Dipole       | D835V2                                           | 4d138         | 2023-04-24 | Biennial     | 2025-04-24 |
| Verification Dipole       | D1750V2                                          | 1116          | 2023-07-12 | Biennial     | 2025-07-12 |
| Verification Dipole       | D1900V2                                          | 5d158         | 2023-04-26 | Biennial     | 2025-04-26 |
| Verification Dipole       | D2600V2                                          | 1038          | 2023-06-16 | Biennial     | 2025-06-16 |
| Verification Dipole       | D3500V2                                          | 1058          | 2023-09-28 | Biennial     | 2025-09-28 |
| Verification Dipole       | D3700V2                                          | 1005          | 2023-09-27 | Biennial     | 2025-09-27 |
| Verification Dipole       | D3900V2                                          | 1036          | 2023-09-27 | Biennial     | 2025-09-27 |
| Dielectric Assessment Kit | DAK-3.5                                          | 1107          | 2024-05-21 | Annual       | 2025-05-21 |
| Dielectric Assessment Kit | DAK-3.5                                          | 1228          | 2023-11-20 | Annual       | 2024-11-20 |
| DAE                       | DAE4                                             | 1430          | 2023-03-22 | Annual       | 2024-03-22 |
| DAE                       | DAE4                                             | 1507          | 2023-09-20 | Annual       | 2024-09-20 |
| DAE                       | DAE4                                             | 1503          | 2023-08-28 | Annual       | 2024-08-28 |
| E-Field Probe             | EX3DV4                                           | 3791          | 2023-05-23 | Annual       | 2024-05-23 |
| E-Field Probe             | EX3DV4                                           | 7574          | 2023-07-18 | Annual       | 2024-07-18 |
| Network Analyzer          | E5063A                                           | MY54706220    | 2024-01-10 | Annual       | 2025-01-10 |
| Power Meter               | N1914A                                           | MY56120017    | 2023-06-09 | Annual       | 2024-06-09 |
| Power Meter               | E4416A                                           | GB41292123    | 2023-06-29 | Annual       | 2024-06-29 |
| Power Meter               | E4416A                                           | GB41291455    | 2023-06-29 | Annual       | 2024-06-29 |
| Power Sensor              | E9300H                                           | MY41495307    | 2024-04-17 | Annual       | 2025-04-17 |
| Power Sensor              | E9300H                                           | MY41495314    | 2024-04-17 | Annual       | 2025-04-17 |
| Power Sensor              | N8481A                                           | MY56120026    | 2023-12-01 | Annual       | 2024-12-01 |
| Power Sensor              | N8481A                                           | MY56120030    | 2024-02-19 | Annual       | 2025-02-19 |
| Power Sensor              | N8481A                                           | MY63190004    | 2023-07-07 | Annual       | 2024-07-07 |
| Signal Generator          | SMBV100A                                         | 262093        | 2023-05-10 | Annual       | 2024-05-10 |
| CW Signal Generator       | E8247C                                           | MY43321024    | 2023-06-07 | Annual       | 2024-06-07 |
| RF Amplifier              | AMP2027                                          | 10008         | 2024-03-07 | Annual       | 2025-03-07 |
| RF Amplifier              | AMP2027ADB                                       | 10001         | 2023-09-01 | Annual       | 2024-09-01 |
| RF Amplifier              | AMP2027ADB                                       | 10006         | 2024-01-15 | Annual       | 2025-01-15 |
| Dual Directional Coupler  | 778D                                             | MY52180578    | 2023-06-07 | Annual       | 2024-06-07 |
| Dual Directional Coupler  | 772D                                             | MY52180226    | 2024-03-05 | Annual       | 2025-03-05 |
| Dual Directional Coupler  | 772D                                             | MY52180259    | 2023-06-07 | Annual       | 2024-06-07 |
| Dual Directional Coupler  | 777D                                             | 50128         | 2023-06-07 | Annual       | 2024-06-07 |
| LP Filter                 | LA-30N                                           | LF03          | 2024-03-05 | Annual       | 2025-03-05 |
| LP Filter                 | LA-60N                                           | LF04          | 2024-03-05 | Annual       | 2025-03-05 |
| LP Filter                 | WLJ5-1500-2355-6000-60EF                         | 1             | 2023-06-09 | Annual       | 2024-06-09 |
| LP Filter                 | WLJ4-3000-5850-8000-60EF                         | 1             | 2023-06-09 | Annual       | 2024-06-09 |
| LP Filter                 | WLJ8-6000-7440-8000-60EF                         | 1             | 2023-06-05 | Annual       | 2024-06-05 |
| Digital Thermometer       | SDT25                                            | 19041500179   | 2023-09-01 | Annual       | 2024-09-01 |

| Equipment                        | Type        | Serial Number | Cal Date   | Cal Interval | Cal Due    |
|----------------------------------|-------------|---------------|------------|--------------|------------|
| Hygro-Thermometer                | 303C        | 210609816     | 2024-01-30 | Annual       | 2025-01-30 |
| Hygro-Thermometer                | 303         | 210700311     | 2024-01-30 | Annual       | 2025-01-30 |
| Communication Tester             | MT8820C     | 6201074216    | 2023-11-27 | Annual       | 2024-11-27 |
| Communication Tester             | MT8821C     | 6201502996    | 2023-08-24 | Annual       | 2024-08-24 |
| Communication Tester             | MT8821C     | 6262044721    | 2023-12-07 | Annual       | 2024-12-07 |
| Radio Communication Test Station | MT8000A     | 6261906013    | 2023-09-20 | Annual       | 2024-09-20 |
| Radio Communication Test Station | MT8000A     | 6262036831    | 2024-02-08 | Annual       | 2025-02-08 |
| Spectrum Analyzer                | FSP         | 100007        | 2023-12-01 | Annual       | 2024-12-01 |
| Attenuator                       | 05AS102-K03 | A1            | 2023-12-01 | Annual       | 2024-12-01 |
| Attenuator                       | 05AS102-K20 | A4            | 2023-12-01 | Annual       | 2024-12-01 |
| Attenuator                       | RFHB1203NC2 | A9            | 2023-11-30 | Annual       | 2024-11-30 |

## 17 FCC Power Measurement Procedures

The SAR measurement Software calculates a reference point at the start and end of the test to check for power drifts. If conducted power deviations of more than 5 % occurred, the tests were repeated.

## 18 Measured and Reported SAR

Per FCC KDB Publication 447498 D04v01, When SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported SAR. Test highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

## 19 5G NR FR1<sup>※</sup>

### 19.1 5G NR FR1 Test Application

This device supports 5G NR FR1 Band n2, n5, n7, n12, n25, n41, n48, n66, n71, n77 and n78 is declared by the manufacturer used to configuration for frequency, SCS, Bandwidth, Target power, and etc. The RB Configuration was evaluated all using reference to SCS / Bandwidth / Modulation supported by Section 6.1-1 of TS38.521-1.

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to MPR is 3GPP TS38.101-1 Section 6.2.2.

NR test was evaluated under Maximum power in NR single mode. In NR standalone mode, NR power states in the highest power, and the SAR measurement is determined by measuring LTE and 5G NR respectively.

| 5G NR Band | Mode   | SCS (kHz) | Bandwidth (MHz)                     | Waveform                   | UL Modulation                                 | RB Configuration                                                                                                                      | EN-DC (LTE Band)  |
|------------|--------|-----------|-------------------------------------|----------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| n2         | NSA/SA | 15        | 5, 10, 15, 20, 25, 30, 40           | DFT-s-OFDM<br>/<br>CP OFDM | PI/2 BPSK<br>QPSK<br>16QAM<br>64QAM<br>256QAM | Inner 1RB left<br>Inner 1RB Right<br>Inner Full<br>Outer Full<br>Edge 1RB Left<br>Edge Full Left<br>Edge 1RB Right<br>Edge Full Right | 5,12,13,48        |
| n5         | NSA/SA | 15        | 5, 10, 15, 20                       |                            |                                               |                                                                                                                                       | 2,66              |
| n7         | SA     | 15        | 5, 10, 15, 20                       |                            |                                               |                                                                                                                                       | -                 |
| n12        | SA     | 15        | 5, 10, 15                           |                            |                                               |                                                                                                                                       | -                 |
| n25        | SA     | 15        | 5, 10, 15, 20, 25, 30, 40           |                            |                                               |                                                                                                                                       | -                 |
| n41        | SA     | 30        | 20, 30, 40, 50, 60, 70, 80, 90, 100 |                            |                                               |                                                                                                                                       | -                 |
| n48        | SA     | 30        | 20, 30, 40                          |                            |                                               |                                                                                                                                       | -                 |
| n66        | NSA/SA | 15        | 5, 10, 15, 20, 25, 30, 40           |                            |                                               |                                                                                                                                       | 2,5,13            |
| n71        | NSA/SA | 15        | 5, 10, 15, 20                       |                            |                                               |                                                                                                                                       | 2,7,66            |
| n77        | NSA/SA | 30        | 20, 30, 40, 50, 60, 70, 80, 90, 100 |                            |                                               |                                                                                                                                       | 2,5,7,12,13,25,66 |
| n78        | NSA/SA | 30        | 20, 30, 40, 50, 60, 70, 80, 90, 100 |                            |                                               |                                                                                                                                       | 2,7,12,25,66      |

- The data marked <sup>※</sup> in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(<sup>※</sup>) provided by the customer.

## 20 Maximum Output Power Specifications

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D04v01

### WCDMA Maximum Power

| Mode     | Maximum/Normal | Maximum / Normal Output Power (dBm) |            |            |                  |
|----------|----------------|-------------------------------------|------------|------------|------------------|
|          |                | 3GPP WCDMA<br>AMR / RMC             | 3GPP HSDPA | 3GPP HSUPA | 3GPP<br>DC-HSDPA |
| WCDMA II | Maximum        | 25.50                               | 25.50      | 25.50      | 25.50            |
|          | Normal         | 24.00                               | 24.00      | 24.00      | 24.00            |
| WCDMA V  | Maximum        | 25.50                               | 25.50      | 25.50      | 25.50            |
|          | Normal         | 24.00                               | 24.00      | 24.00      | 24.00            |

### LTE Maximum Power

| Mode        | Maximum / Normal | Maximum / Normal Output Power (dBm) |
|-------------|------------------|-------------------------------------|
| LTE Band 2  | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 4  | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 5  | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 7  | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 12 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 13 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 17 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 25 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 26 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 38 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 48 | Maximum          | 23.00                               |
|             | Nominal          | 22.00                               |
| LTE Band 66 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |
| LTE Band 71 | Maximum          | 24.50                               |
|             | Nominal          | 23.00                               |

**5G NR Maximum Power**

| Mode          | Maximum / Normal | Maximum / Normal Output Power (dBm) |
|---------------|------------------|-------------------------------------|
| 5G NR n2      | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n5      | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n7      | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n12     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n25     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n41     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n48     | <b>Maximum</b>   | <b>23.00</b>                        |
|               | Normal           | 22.00                               |
| 5G NR n66     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n71     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n77     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n77 DoD | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n78     | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |
| 5G NR n78 DoD | <b>Maximum</b>   | <b>24.50</b>                        |
|               | Normal           | 23.00                               |

**Bluetooth LE Maximum Power**

| Mode            | Maximum / Normal | Maximum / Normal Output Power (dBm) |
|-----------------|------------------|-------------------------------------|
| Bluetooth LE 1M | <b>Maximum</b>   | <b>3.00</b>                         |
|                 | Normal           | 0.00                                |
| Bluetooth LE 2M | <b>Maximum</b>   | <b>3.00</b>                         |
|                 | Normal           | 0.00                                |

**WLAN SISO Maximum Power (WIFI3,WIFI4)**

| Band   | Bandwidth | SISO                                      |     |     |                                           |                                           |                                           | tolerance                            |
|--------|-----------|-------------------------------------------|-----|-----|-------------------------------------------|-------------------------------------------|-------------------------------------------|--------------------------------------|
|        |           | a                                         | b   | g   | n                                         | ac                                        | ax(SU)                                    |                                      |
| 2.4GHz | 20MHz     | NA                                        | 5.5 | 5.5 | 5.5                                       | 5.5                                       | 5.5                                       | - 2 / + 2 dB                         |
|        | 40MHz     | NA                                        | -   | -   | 5.5                                       | 5.5                                       | 5.5                                       | - 2 / + 2 dB                         |
| 5GHz   | 20MHz     | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | NA  | NA  | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB<br>- 8 / + 2 dB (UNII3) |
|        | 40MHz     | NA                                        | NA  | NA  | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB                         |
|        | 80MHz     | NA                                        | NA  | NA  | NA                                        | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB                         |
|        | 160MHz    | NA                                        | NA  | NA  | NA                                        | NA                                        | NA                                        | -                                    |
| 6GHz   | 20MHz     | -3dB                                      | NA  | NA  | NA                                        | NA                                        | -3dB                                      | - 2 / + 2 dB                         |
|        | 40MHz     | NA                                        | NA  | NA  | NA                                        | NA                                        | -1dB                                      | - 2 / + 2 dB                         |
|        | 80MHz     | NA                                        | NA  | NA  | NA                                        | NA                                        | 1dB                                       | - 2 / + 2 dB                         |
|        | 160MHz    | NA                                        | NA  | NA  | NA                                        | NA                                        | 1dB                                       | - 2 / + 2 dB                         |

| Band   | Bandwidth | SISO                                     |                                           |                                           |                                           |                                           |                                           | tolerance                                                             |
|--------|-----------|------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|
|        |           | 26T                                      | 52T                                       | 106T                                      | 242T                                      | 484T                                      | 996T                                      |                                                                       |
| 2.4GHz | 20MHz     | 5.5                                      | 5.5                                       | 5.5                                       | 5.5                                       | NA                                        | NA                                        | - 2 / + 2 dB                                                          |
|        | 40MHz     | 5.5                                      | 5.5                                       | 5.5                                       | 5.5                                       | 5.5                                       | NA                                        | - 2 / + 2 dB                                                          |
| 5GHz   | 20MHz     | UNII1&2A -1dB<br>UNII2C 2dB<br>UNII3 4dB | UNII1&2A 1dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | NA                                        | NA                                        | - 2 / + 2 dB<br>- 4 / + 2dB<br>(UNII1&2A)<br>- 17 / + 2 dB<br>(UNII3) |
|        | 40MHz     | UNII1&2A -1dB<br>UNII2C 2dB<br>UNII3 4dB | UNII1&2A 1dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | NA                                        | - 2 / + 2 dB<br>- 4 / + 2dB<br>(UNII1&2A)                             |
|        | 80MHz     | UNII1&2A -1dB<br>UNII2C 2dB<br>UNII3 4dB | UNII1&2A 1dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB<br>- 3 / + 2dB<br>(UNII1&2A)                             |
|        | 160MHz    | NA                                       | NA                                        | NA                                        | NA                                        | NA                                        | NA                                        | -                                                                     |
| 6GHz   | 20MHz     | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | NA                                        | NA                                        | - 2 / + 2 dB<br>- 5 / + 2 dB<br>(UNII5)                               |
|        | 40MHz     | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | -1dB                                      | NA                                        | - 2 / + 2 dB<br>- 10 / + 2 dB<br>(UNII5)                              |
|        | 80MHz     | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | -1dB                                      | 1dB                                       | - 2 / + 2 dB<br>- 9 / + 2 dB<br>(UNII5)                               |
|        | 160MHz    | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | -1dB                                      | 1dB                                       | - 2 / + 2 dB<br>- 8 / + 2 dB<br>(UNII5)                               |

**WLAN MIMO Maximum Power (WIFI 1+2,WIFI 1+3, WIFI 1+4)**

| Band   | Bandwidth | MIMO                                      |     |     |                                           |                                           |                                           | tolerance                                 |
|--------|-----------|-------------------------------------------|-----|-----|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
|        |           | a                                         | b   | g   | n                                         | ac                                        | ax(SU)                                    |                                           |
| 2.4GHz | 20MHz     | NA                                        | 5.5 | 5.5 | 5.5                                       | 5.5                                       | 5.5                                       | - 2 / + 2 dB                              |
|        | 40MHz     | NA                                        | -   | -   | 5.5                                       | 5.5                                       | 5.5                                       | - 2 / + 2 dB                              |
| 5GHz   | 20MHz     | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | NA  | NA  | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB<br>- 8 / + 2 dB<br>(UNII 3)  |
|        | 40MHz     | NA                                        | NA  | NA  | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB<br>- 4 / + 2 dB<br>(UNII 2C) |
|        | 80MHz     | NA                                        | NA  | NA  | NA                                        | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB<br>- 4 / + 2 dB<br>(UNII 2C) |
|        | 160MHz    | NA                                        | NA  | NA  | NA                                        | NA                                        | NA                                        | -                                         |
| 6GHz   | 20MHz     | -3dB                                      | NA  | NA  | NA                                        | NA                                        | -3dB                                      | - 2 / + 2 dB                              |
|        | 40MHz     | NA                                        | NA  | NA  | NA                                        | NA                                        | -1dB                                      | - 2 / + 2 dB                              |
|        | 80MHz     | NA                                        | NA  | NA  | NA                                        | NA                                        | 1dB                                       | - 2 / + 2 dB                              |
|        | 160MHz    | NA                                        | NA  | NA  | NA                                        | NA                                        | 1dB                                       | - 2 / + 2 dB                              |

| Band   | Bandwidth | MIMO                                     |                                           |                                           |                                           |                                           |                                           | tolerance                                                       |
|--------|-----------|------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-----------------------------------------------------------------|
|        |           | 26T                                      | 52T                                       | 106T                                      | 242T                                      | 484T                                      | 996T                                      |                                                                 |
| 2.4GHz | 20MHz     | 5.5                                      | 5.5                                       | 5.5                                       | 5.5                                       | NA                                        | NA                                        | - 2 / + 2 dB                                                    |
|        | 40MHz     | 5.5                                      | 5.5                                       | 5.5                                       | 5.5                                       | 5.5                                       | NA                                        | - 2 / + 2 dB                                                    |
| 5GHz   | 20MHz     | UNII1&2A -1dB<br>UNII2C 2dB<br>UNII3 4dB | UNII1&2A 1dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | NA                                        | NA                                        | - 2 / + 2 dB<br>-4 / +2dB<br>(UNII1&2A)<br>-16/+2dB<br>(UNII 3) |
|        | 40MHz     | UNII1&2A -1dB<br>UNII2C 2dB<br>UNII3 4dB | UNII1&2A 1dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | NA                                        | - 2 / + 2 dB<br>-4 / +2dB<br>(UNII1&2A)                         |
|        | 80MHz     | UNII1&2A -1dB<br>UNII2C 2dB<br>UNII3 4dB | UNII1&2A 1dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | UNII1&2A 2dB<br>UNII2C 3.5dB<br>UNII3 4dB | - 2 / + 2 dB<br>-3 / +2dB<br>(UNII1&2A)                         |
|        | 160MHz    | NA                                       | NA                                        | NA                                        | NA                                        | NA                                        | NA                                        | -                                                               |
| 6GHz   | 20MHz     | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | NA                                        | NA                                        | -13/+2dB                                                        |
|        | 40MHz     | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | -1dB                                      | NA                                        | -17/+2dB                                                        |
|        | 80MHz     | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | -1dB                                      | 1dB                                       | -16/+2dB                                                        |
|        | 160MHz    | -9dB                                     | -7dB                                      | -5dB                                      | -3dB                                      | -1dB                                      | 1dB                                       | -18/+2dB                                                        |

## 21 RF Conducted Power Measurement

### 21.1 WCDMA

#### 21.1.1 Output Power Verification

Maximum output power is measured on the High, Middle and Low channels for each applicable transmission band according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1s”.

#### 21.1.2 Output Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all “1s”.

#### 21.1.3 Procedures Used to Establish RF Signal for SAR HSDPA Data Devices

Body SAR is not required for handsets with HSDPA capabilities when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is ≤ 75 % of the SAR limit. Otherwise, SAR is Measured for HSDPA, using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA, on the maximum output channel with the body exposure configuration that results in the highest SAR in 12.2 kbps RMC for that RF channel.

**Sub-Test 1 Setup for Release 5 HSDPA**

| Sub-test | $\beta_c$            | $\beta_d$            | $\beta_d$<br>(SF) | $\beta_c/\beta_d$    | $\beta_{hs}^{(2)}$ | CM (dB) <sup>(2)</sup> |
|----------|----------------------|----------------------|-------------------|----------------------|--------------------|------------------------|
| 1        | 2/15                 | 15/15                | 64                | 2/15                 | 4/15               | 0.0                    |
| 2        | 12/15 <sup>(1)</sup> | 15/15 <sup>(1)</sup> | 64                | 12/15 <sup>(1)</sup> | 24/15              | 1.0                    |
| 3        | 15/15                | 8/15                 | 64                | 15/8                 | 30/15              | 1.5                    |
| 4        | 15/15                | 4/15                 | 64                | 15/4                 | 30/15              | 1.5                    |

Note 1:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$   
 Note 2: CM = 1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ .  
 Note 3: For subtest 2 the  $\beta_c/\beta_d$  ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 11/15$  and  $\beta_d = 15/15$ .

#### 21.1.4 SAR Measurements for Conditions for HSUPA Data Devices

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is ≤ 75 % of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.1 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurement should be used to test for head exposure.

| Sub-test | $\beta_c$            | $\beta_d$            | $\beta_d$ (SF) | $\beta_c/\beta_d$    | $\beta_{hs}^{(1)}$ | $\beta_{ec}$ | $\beta_{ed}$                               | $\beta_{ed}$ (SF) | $\beta_{ed}$ (codes) | CM <sup>(2)</sup> (dB) | MPR (dB) | AG <sup>(4)</sup> Index | E-TFCI |
|----------|----------------------|----------------------|----------------|----------------------|--------------------|--------------|--------------------------------------------|-------------------|----------------------|------------------------|----------|-------------------------|--------|
| 1        | 11/15 <sup>(3)</sup> | 15/15 <sup>(3)</sup> | 64             | 11/15 <sup>(3)</sup> | 22/15              | 209/225      | 1039/225                                   | 4                 | 1                    | 1.0                    | 0.0      | 20                      | 75     |
| 2        | 6/15                 | 15/15                | 64             | 6/15                 | 12/15              | 12/15        | 94/75                                      | 4                 | 1                    | 3.0                    | 2.0      | 12                      | 67     |
| 3        | 15/15                | 9/15                 | 64             | 15/9                 | 30/15              | 30/15        | $\beta_{ed}: 47/15$<br>$\beta_{ed}: 47/15$ | 4                 | 2                    | 2.0                    | 1.0      | 15                      | 92     |
| 4        | 2/15                 | 15/15                | 64             | 2/15                 | 4/15               | 2/15         | 56/75                                      | 4                 | 1                    | 3.0                    | 2.0      | 17                      | 71     |
| 5        | 15/15 <sup>(4)</sup> | 15/15 <sup>(4)</sup> | 64             | 15/15 <sup>(4)</sup> | 30/15              | 24/15        | 134/15                                     | 4                 | 1                    | 1.0                    | 0.0      | 21                      | 81     |

Note 1:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8 \Leftrightarrow A_{\text{all}} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$ .

Note 2: CM = 1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ . For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the  $\beta_c/\beta_d$  ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 10/15$  and  $\beta_d = 15/15$ .

Note 4: For subtest 5 the  $\beta_c/\beta_d$  ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to  $\beta_c = 14/15$  and  $\beta_d = 15/15$ .

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.

Note 6:  $\beta_{ed}$  can not be set directly; it is set by Absolute Grant Value.

## 21.2 LTE

### 21.2.1 SAR measurement Conditions for LTE

LTE modes were tested according to FCC KDB 941225 D05v02r05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluation SAR. Anritsu MT8821C was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

### 21.2.2 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

### 21.2.3 MPR

MPR is permanently implemented for this device by the manufacture. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3.-1

### 21.2.4 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

### 21.2.5 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05V02r05

- a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
  - i. The required channel and offset combination with the highest maximum output power is required for SAR.
  - ii. When the reported SAR is  $\leq 0.8$  W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel
  - iii. When the reported SAR for a required test channel is  $> 1.45$  W/kg, SAR is required for all RB offset configurations for that channel.
- b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
- c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is  $< 0.8$  W/kg.
- d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Section 5.2.1, through 5.2.3 is less than or equal to 1/2 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is  $< 1.45$  W/kg.

### 21.2.6 TDD

LTE TDD testing is performed using the SAR test guidance provided in FCC KDB 941225 D05V02r04.

TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05v02r04. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211 Section 4.

### 21.2.7 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB 941225 D05Av01r02. The RRC connection is only handle by one cell, the primary component carrier(PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation and RB combinations in each frequency band. Per FCC KDB 941125 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

### 21.2.8 5G NR

According to October 2020 TCB Workshop Guidance, NR FR1 SAR evaluations are being generally based on adapting the existing LTE SAR procedures (FCC KDB 941225 D05V02r05). Therefore, NR SAR for the lower bandwidths was not required for testing based on the measured output power and the reported NR SAR for the highest bandwidth.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS38.521-1 specification.

The allowed Maximum Power Reduction(MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS38.521-1.

The allowed A-MPR values specified Table 6.2.3.3.1-1 of 3GPP TS38.521-1 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS\_01"

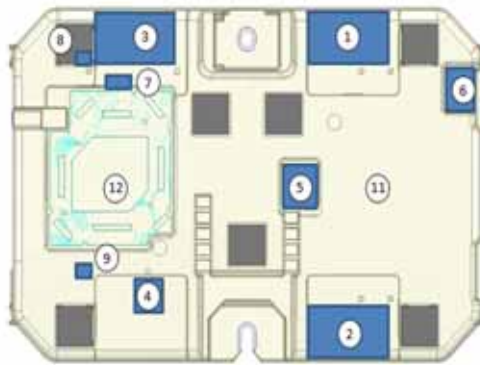
Uplink RB allocations were used to Table 6.1-1 of the 3GPP TS38.521-1.

## 22 RF Conducted Power

- Refer to Appendix E.

## 23 DUT Antenna Locations<sup>※</sup>

Rear View



| No. | Antenna | TX | Band                         |
|-----|---------|----|------------------------------|
| 1   | MIMO1   | O  | 2G, 3G, LTE<br>NR below 3GHz |
| 2   | MIMO2   | O  | LTE, NR above<br>3GHz        |
| 3   | MIMO3   | O  | 2G, 3G, LTE<br>NR below 3GHz |
| 4   | Wi-Fi1  | O  | BT LE / <u>WiFi 1</u>        |
| 5   | Wi-Fi2  | O  | <u>WiFi 2</u>                |
| 6   | Wi-Fi3  | O  | <u>WiFi 3</u>                |
| 7   | Wi-Fi4  | O  | <u>WiFi 4</u>                |

<The Distance information of Antenna to Edges of Car Telematics Modem>

- The data marked <sup>※</sup> in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(<sup>※</sup>) provided by the customer.

## 24 SAR Test Exclusion Applied

Based on the maximum tune-up tolerance limit of WLAN, BT and the antenna to use separation distance, Table “Exempt” SAR was not required and Table “Measure” SAR was required.

The threshold power for frequency bands below 6 GHz was calculated with the SAR-based Exemption formula shown in 447498 D04.

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

The threshold power for frequency bands above 6 GHz has been calculated by the formula in Table b.1 of 447498 D04.

| RF Source Frequency                                                                                                                      |   |           | Minimum Distance   |   |                    | Threshold ERP   |
|------------------------------------------------------------------------------------------------------------------------------------------|---|-----------|--------------------|---|--------------------|-----------------|
| $f_L$ MHz                                                                                                                                |   | $f_H$ MHz | $\lambda_L / 2\pi$ |   | $\lambda_H / 2\pi$ | W               |
| 0.3                                                                                                                                      | – | 1.34      | 159 m              | – | 35.6 m             | $1,920 R^2$     |
| 1.34                                                                                                                                     | – | 30        | 35.6 m             | – | 1.6 m              | $3,450 R^2/f^2$ |
| 30                                                                                                                                       | – | 300       | 1.6 m              | – | 159 mm             | $3.83 R^2$      |
| 300                                                                                                                                      | – | 1,500     | 159 mm             | – | 31.8 mm            | $0.0128 R^2 f$  |
| 1,500                                                                                                                                    | – | 100,000   | 31.8 mm            | – | 0.5 mm             | $19.2 R^2$      |
| Subscripts L and H are low and high; $\lambda$ is wavelength.<br>From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns. |   |           |                    |   |                    |                 |

| WLAN Ant         | Frequency (GHz) | ERP   |       | Distance (mm) |            | Power Threshold (mW) |            | SAR Exemption |            |
|------------------|-----------------|-------|-------|---------------|------------|----------------------|------------|---------------|------------|
|                  |                 | dBm   | mw    | Front         | Right Edge | Front                | Right Edge | Front         | Right Edge |
| WLAN 2.4GHz Ant3 | 2.462           | 6.75  | 4.73  | 45            | 45         | 178.97               | 178.97     | Exempt        | Exempt     |
| WLAN 2.4GHz Ant4 | 2.462           | 8.25  | 6.68  | 45            | 45         | 178.97               | 178.97     | Exempt        | Exempt     |
| WLAN 2.4GHz MIMO | 2.462           | 13.37 | 21.73 | 45            | 45         | 178.97               | 178.97     | Exempt        | Exempt     |
| WLAN 5GHz Ant3   | 5.825           | 6.25  | 4.22  | 45            | 45         | 135.41               | 135.41     | Exempt        | Exempt     |
| WLAN 5GHz Ant4   | 5.825           | 8.85  | 7.67  | 45            | 45         | 135.41               | 135.41     | Exempt        | Exempt     |
| WLAN 5GHz MIMO   | 5.825           | 13.51 | 22.44 | 45            | 45         | 135.41               | 135.41     | Exempt        | Exempt     |
| WLAN 6GHz Ant3   | 6.855           | 3.35  | 2.16  | 45            | 45         | 38.88                | 38.88      | Exempt        | Exempt     |
| WLAN 6GHz MIMO   | 6.855           | 6.54  | 4.51  | 45            | 45         | 38.88                | 38.88      | Exempt        | Exempt     |
| BT LE            | 2.480           | 5.91  | 3.90  | 45            | 45         | 178.55               | 178.55     | Exempt        | Exempt     |

## 25 SAR Data Summary

### 25.1 SAR data

| WCDMA 2 Ant1 Body SAR |      |            |      | Ambient Temperature (°C) |            |                     | 22.2                  |                     |                      |                       |
|-----------------------|------|------------|------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                       |      |            |      | Liquid Temperature (°C)  |            |                     | 21.9                  |                     |                      |                       |
|                       |      |            |      | Date                     |            |                     | 2024-02-28            |                     |                      |                       |
| Position              | Mode | Freq (MHz) | Ch.  | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                 | RMC  | 1880.00    | 9400 | N/A                      | 45         | 23.57               | 0.060                 | 25.50               | 1.560                | 0.094                 |
| Right Edge            | RMC  | 1880.00    | 9400 | N/A                      | 45         | 23.57               | 0.149                 | 25.50               | 1.560                | <b>0.232</b>          |

| WCDMA 2 Ant3 Body SAR |      |            |      | Ambient Temperature (°C) |            |                     | 22.2                  |                     |                      |                       |
|-----------------------|------|------------|------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                       |      |            |      | Liquid Temperature (°C)  |            |                     | 21.5                  |                     |                      |                       |
|                       |      |            |      | Date                     |            |                     | 2024-03-19            |                     |                      |                       |
| Position              | Mode | Freq (MHz) | Ch.  | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                 | RMC  | 1880.00    | 9400 | N/A                      | 45         | 23.57               | 0.033                 | 25.50               | 1.560                | 0.051                 |
| Right Edge            | RMC  | 1880.00    | 9400 | N/A                      | 45         | 23.57               | 0.037                 | 25.50               | 1.560                | <b>0.058</b>          |

| WCDMA 5 Ant1 Body SAR |      |            |      | Ambient Temperature (°C) |            |                     | 22.0                  |                     |                      |                       |
|-----------------------|------|------------|------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                       |      |            |      | Liquid Temperature (°C)  |            |                     | 21.6                  |                     |                      |                       |
|                       |      |            |      | Date                     |            |                     | 2024-02-28            |                     |                      |                       |
| Position              | Mode | Freq (MHz) | Ch.  | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                 | RMC  | 836.60     | 4183 | N/A                      | 45         | 23.95               | 0.046                 | 25.50               | 1.429                | <b>0.066</b>          |
| Right Edge            | RMC  | 836.60     | 4183 | N/A                      | 45         | 23.95               | 0.035                 | 25.50               | 1.429                | 0.050                 |

| WCDMA 5 Ant3 Body SAR |      |            |      | Ambient Temperature (°C) |            |                     | 23.3                  |                     |                      |                       |
|-----------------------|------|------------|------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                       |      |            |      | Liquid Temperature (°C)  |            |                     | 23.3                  |                     |                      |                       |
|                       |      |            |      | Date                     |            |                     | 2024-03-27            |                     |                      |                       |
| Position              | Mode | Freq (MHz) | Ch.  | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                 | RMC  | 836.60     | 4183 | N/A                      | 45         | 23.95               | 0.015                 | 25.50               | 1.429                | <b>0.021</b>          |
| Right Edge            | RMC  | 836.60     | 4183 | N/A                      | 45         | 23.95               | 0.015                 | 25.50               | 1.429                | 0.021                 |

| LTE Band 7 Ant1 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.2                |                       |                     |                      |                       |
|--------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                          |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.8                |                       |                     |                      |                       |
|                          |      |          |            |       |         |           | Date                     |            | 2024-03-04          |                       |                     |                      |                       |
| Position                 | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                    | QPSK | 20       | 2535.00    | 21100 | 1       | 50        | N/A                      | 45         | 23.41               | 0.010                 | 24.50               | 1.285                | 0.013                 |
| Front                    | QPSK | 20       | 2535.00    | 21100 | 50      | 25        | N/A                      | 45         | 22.69               | 0.013                 | 23.50               | 1.205                | 0.016                 |
| Right Edge               | QPSK | 20       | 2535.00    | 21100 | 1       | 50        | N/A                      | 45         | 23.41               | 0.056                 | 24.50               | 1.285                | <b>0.072</b>          |
| Right Edge               | QPSK | 20       | 2535.00    | 21100 | 50      | 25        | N/A                      | 45         | 22.69               | 0.043                 | 23.50               | 1.205                | 0.052                 |

| LTE Band 7 Ant3 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.2                |                       | 22.6                |                      |                       |
|--------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                          |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 22.0                |                       | 22.4                |                      |                       |
|                          |      |          |            |       |         |           | Date                     |            | 2024-03-19          |                       | 2024-03-20          |                      |                       |
| Position                 | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                    | QPSK | 20       | 2535.00    | 21100 | 1       | 50        | N/A                      | 45         | 23.41               | 0.004                 | 24.50               | 1.285                | 0.005                 |
| Front                    | QPSK | 20       | 2535.00    | 21100 | 50      | 25        | N/A                      | 45         | 22.69               | 0.009                 | 23.50               | 1.205                | 0.011                 |
| Right Edge               | QPSK | 20       | 2535.00    | 21100 | 1       | 50        | N/A                      | 45         | 23.41               | 0.049                 | 24.50               | 1.285                | <b>0.063</b>          |
| Right Edge               | QPSK | 20       | 2535.00    | 21100 | 50      | 25        | N/A                      | 45         | 22.69               | 0.039                 | 23.50               | 1.205                | 0.047                 |

| LTE Band 12 Ant1 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 21.6                |                       | 22.3                |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.4                |                       | 22.2                |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-04          |                       | 2024-03-05          |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 10       | 707.50     | 23095 | 1       | 0         | N/A                      | 45         | 23.54               | 0.026                 | 24.50               | 1.247                | <b>0.032</b>          |
| Front                     | QPSK | 10       | 707.50     | 23095 | 25      | 12        | N/A                      | 45         | 23.47               | 0.021                 | 23.50               | 1.007                | 0.021                 |
| Right Edge                | QPSK | 10       | 707.50     | 23095 | 1       | 0         | N/A                      | 45         | 23.54               | 0.025                 | 24.50               | 1.247                | 0.031                 |
| Right Edge                | QPSK | 10       | 707.50     | 23095 | 25      | 12        | N/A                      | 45         | 23.47               | 0.022                 | 23.50               | 1.007                | 0.022                 |

| LTE Band 12 Ant3 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 23.2                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.8                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-23          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 10       | 707.50     | 23095 | 1       | 0         | N/A                      | 45         | 23.54               | 0.006                 | 24.50               | 1.247                | <b>0.007</b>          |
| Front                     | QPSK | 10       | 707.50     | 23095 | 25      | 12        | N/A                      | 45         | 23.47               | 0.005                 | 23.50               | 1.007                | 0.005                 |
| Right Edge                | QPSK | 10       | 707.50     | 23095 | 1       | 0         | N/A                      | 45         | 23.54               | 0.002                 | 24.50               | 1.247                | 0.002                 |
| Right Edge                | QPSK | 10       | 707.50     | 23095 | 25      | 12        | N/A                      | 45         | 23.47               | 0.002                 | 23.50               | 1.007                | 0.002                 |

| LTE Band 13 Ant1 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.0                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.4                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-02-28          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 10       | 782.00     | 23230 | 1       | 49        | N/A                      | 45         | 23.52               | 0.032                 | 24.50               | 1.253                | <b>0.040</b>          |
| Front                     | QPSK | 10       | 782.00     | 23230 | 25      | 25        | N/A                      | 45         | 22.44               | 0.028                 | 23.50               | 1.276                | 0.036                 |
| Right Edge                | QPSK | 10       | 782.00     | 23230 | 1       | 49        | N/A                      | 45         | 23.52               | 0.017                 | 24.50               | 1.253                | 0.021                 |
| Right Edge                | QPSK | 10       | 782.00     | 23230 | 25      | 25        | N/A                      | 45         | 22.44               | 0.014                 | 23.50               | 1.276                | 0.018                 |

| LTE Band 13 Ant3 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.4                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 22.3                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-22          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 10       | 782.00     | 23230 | 1       | 49        | N/A                      | 45         | 23.52               | 0.026                 | 24.50               | 1.253                | <b>0.033</b>          |
| Front                     | QPSK | 10       | 782.00     | 23230 | 25      | 25        | N/A                      | 45         | 22.44               | 0.021                 | 23.50               | 1.276                | 0.027                 |
| Right Edge                | QPSK | 10       | 782.00     | 23230 | 1       | 49        | N/A                      | 45         | 23.52               | 0.021                 | 24.50               | 1.253                | 0.026                 |
| Right Edge                | QPSK | 10       | 782.00     | 23230 | 25      | 25        | N/A                      | 45         | 22.44               | 0.016                 | 23.50               | 1.276                | 0.020                 |

| LTE Band 25 Ant1 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.0                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.7                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-02-29          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 1882.50    | 26365 | 1       | 0         | N/A                      | 45         | 23.49               | 0.047                 | 24.50               | 1.262                | 0.059                 |
| Front                     | QPSK | 20       | 1882.50    | 26365 | 50      | 25        | N/A                      | 45         | 23.36               | 0.043                 | 23.50               | 1.033                | 0.044                 |
| Right Edge                | QPSK | 20       | 1882.50    | 26365 | 1       | 0         | N/A                      | 45         | 23.49               | 0.129                 | 24.50               | 1.262                | <b>0.163</b>          |
| Right Edge                | QPSK | 20       | 1882.50    | 26365 | 50      | 25        | N/A                      | 45         | 23.36               | 0.105                 | 23.50               | 1.033                | 0.108                 |

| LTE Band 25 Ant3 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.2                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.5                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-19          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 1882.50    | 26365 | 1       | 0         | N/A                      | 45         | 23.49               | 0.027                 | 24.50               | 1.262                | <b>0.034</b>          |
| Front                     | QPSK | 20       | 1882.50    | 26365 | 50      | 25        | N/A                      | 45         | 23.36               | 0.019                 | 23.50               | 1.033                | 0.020                 |
| Right Edge                | QPSK | 20       | 1882.50    | 26365 | 1       | 0         | N/A                      | 45         | 23.49               | 0.024                 | 24.50               | 1.262                | 0.030                 |
| Right Edge                | QPSK | 20       | 1882.50    | 26365 | 50      | 25        | N/A                      | 45         | 23.36               | 0.017                 | 23.50               | 1.033                | 0.018                 |

| LTE Band 26 Ant1 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 21.5                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.3                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-02-27          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 15       | 831.50     | 26865 | 1       | 74        | N/A                      | 45         | 23.34               | 0.036                 | 24.50               | 1.306                | <b>0.047</b>          |
| Front                     | QPSK | 15       | 831.50     | 26865 | 36      | 37        | N/A                      | 45         | 23.31               | 0.027                 | 23.50               | 1.045                | 0.028                 |
| Right Edge                | QPSK | 15       | 831.50     | 26865 | 1       | 74        | N/A                      | 45         | 23.34               | 0.023                 | 24.50               | 1.306                | 0.030                 |
| Right Edge                | QPSK | 15       | 831.50     | 26865 | 36      | 37        | N/A                      | 45         | 23.31               | 0.018                 | 23.50               | 1.045                | 0.019                 |

| LTE Band 26 Ant3 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.3                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 22.1                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-26          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 15       | 831.50     | 26865 | 1       | 74        | N/A                      | 45         | 23.34               | 0.012                 | 24.50               | 1.306                | <b>0.016</b>          |
| Front                     | QPSK | 15       | 831.50     | 26865 | 36      | 37        | N/A                      | 45         | 23.31               | 0.011                 | 23.50               | 1.045                | 0.011                 |
| Right Edge                | QPSK | 15       | 831.50     | 26865 | 1       | 74        | N/A                      | 45         | 23.34               | 0.012                 | 24.50               | 1.306                | 0.016                 |
| Right Edge                | QPSK | 15       | 831.50     | 26865 | 36      | 37        | N/A                      | 45         | 23.31               | 0.009                 | 23.50               | 1.045                | 0.009                 |

| LTE Band 38 Ant1 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.0                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.7                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-05          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 2595.00    | 38000 | 1       | 0         | N/A                      | 45         | 22.79               | 0.002                 | 24.50               | 1.483                | 0.003                 |
| Front                     | QPSK | 20       | 2595.00    | 38000 | 50      | 0         | N/A                      | 45         | 21.85               | N/A                   | 23.50               | 1.462                | N/A                   |
| Right Edge                | QPSK | 20       | 2595.00    | 38000 | 1       | 0         | N/A                      | 45         | 22.79               | 0.017                 | 24.50               | 1.483                | <b>0.025</b>          |
| Right Edge                | QPSK | 20       | 2595.00    | 38000 | 50      | 0         | N/A                      | 45         | 21.85               | 0.015                 | 23.50               | 1.462                | 0.022                 |

| LTE Band 38 Ant3 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.6                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 22.4                |                       |                     |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-20          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 2595.00    | 38000 | 1       | 0         | N/A                      | 45         | 22.79               | 0.015                 | 24.50               | 1.483                | 0.022                 |
| Front                     | QPSK | 20       | 2595.00    | 38000 | 50      | 0         | N/A                      | 45         | 21.85               | 0.012                 | 23.50               | 1.462                | 0.018                 |
| Right Edge                | QPSK | 20       | 2595.00    | 38000 | 1       | 0         | N/A                      | 45         | 22.79               | 0.026                 | 24.50               | 1.483                | <b>0.039</b>          |
| Right Edge                | QPSK | 20       | 2595.00    | 38000 | 50      | 0         | N/A                      | 45         | 21.85               | 0.025                 | 23.50               | 1.462                | 0.037                 |

| LTE Band 48 Ant2 Body SAR |      |          |            |       |         |           | Ambient Temperature (°C) |            | 22.3                |                       | 22.9                |                      |                       |
|---------------------------|------|----------|------------|-------|---------|-----------|--------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |       |         |           | Liquid Temperature (°C)  |            | 21.9                |                       | 22.8                |                      |                       |
|                           |      |          |            |       |         |           | Date                     |            | 2024-03-08          |                       | 2024-04-29          |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.   | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 3646.70    | 56207 | 1       | 50        | N/A                      | 45         | 22.87               | 0.012                 | 23.00               | 1.030                | <b>0.012</b>          |
| Front                     | QPSK | 20       | 3646.70    | 56207 | 50      | 25        | N/A                      | 45         | 21.89               | 0.010                 | 22.00               | 1.026                | 0.010                 |
| Right Edge                | QPSK | 20       | 3646.70    | 56207 | 1       | 50        | N/A                      | 45         | 22.87               | N/A                   | 23.00               | 1.030                | N/A                   |
| Right Edge                | QPSK | 20       | 3646.70    | 56207 | 50      | 25        | N/A                      | 45         | 21.89               | 0.0007                | 22.00               | 1.026                | 0.0007                |

| LTE Band 66 Ant1 Body SAR |      |          |            |        |         |           | Ambient Temperature(°C) |            | 21.5                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|--------|---------|-----------|-------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |        |         |           | Liquid Temperature (°C) |            | 20.9                |                       |                     |                      |                       |
|                           |      |          |            |        |         |           | Date                    |            | 2024-02-29          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)     | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 1745.00    | 132322 | 1       | 99        | N/A                     | 45         | 23.12               | 0.053                 | 24.50               | 1.374                | 0.073                 |
| Front                     | QPSK | 20       | 1745.00    | 132322 | 50      | 13        | N/A                     | 45         | 23.05               | 0.035                 | 23.50               | 1.109                | 0.039                 |
| Right Edge                | QPSK | 20       | 1745.00    | 132322 | 1       | 99        | N/A                     | 45         | 23.12               | 0.105                 | 24.50               | 1.374                | <b>0.144</b>          |
| Right Edge                | QPSK | 20       | 1745.00    | 132322 | 50      | 13        | N/A                     | 45         | 23.05               | 0.090                 | 23.50               | 1.109                | 0.100                 |

| LTE Band 66 Ant3 Body SAR |      |          |            |        |         |           | Ambient Temperature(°C) |            | 23.2                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|--------|---------|-----------|-------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |        |         |           | Liquid Temperature (°C) |            | 23.1                |                       |                     |                      |                       |
|                           |      |          |            |        |         |           | Date                    |            | 2024-03-22          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)     | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 1745.00    | 132322 | 1       | 99        | N/A                     | 45         | 23.12               | 0.038                 | 24.50               | 1.374                | 0.052                 |
| Front                     | QPSK | 20       | 1745.00    | 132322 | 50      | 13        | N/A                     | 45         | 23.05               | 0.032                 | 23.50               | 1.109                | 0.035                 |
| Right Edge                | QPSK | 20       | 1745.00    | 132322 | 1       | 99        | N/A                     | 45         | 23.12               | 0.050                 | 24.50               | 1.374                | <b>0.069</b>          |
| Right Edge                | QPSK | 20       | 1745.00    | 132322 | 50      | 13        | N/A                     | 45         | 23.05               | 0.041                 | 23.50               | 1.109                | 0.045                 |

| LTE Band 71 Ant1 Body SAR |      |          |            |        |         |           | Ambient Temperature(°C) |            | 22.3                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|--------|---------|-----------|-------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |        |         |           | Liquid Temperature (°C) |            | 22.2                |                       |                     |                      |                       |
|                           |      |          |            |        |         |           | Date                    |            | 2024-03-05          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)     | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 680.50     | 133297 | 1       | 99        | N/A                     | 45         | 23.39               | 0.020                 | 24.50               | 1.291                | <b>0.026</b>          |
| Front                     | QPSK | 20       | 680.50     | 133297 | 50      | 0         | N/A                     | 45         | 23.22               | 0.012                 | 23.50               | 1.067                | 0.013                 |
| Right Edge                | QPSK | 20       | 680.50     | 133297 | 1       | 99        | N/A                     | 45         | 23.39               | 0.019                 | 24.50               | 1.291                | 0.025                 |
| Right Edge                | QPSK | 20       | 680.50     | 133297 | 50      | 0         | N/A                     | 45         | 23.22               | 0.013                 | 23.50               | 1.067                | 0.014                 |

| LTE Band 71 Ant3 Body SAR |      |          |            |        |         |           | Ambient Temperature(°C) |            | 23.2                |                       |                     |                      |                       |
|---------------------------|------|----------|------------|--------|---------|-----------|-------------------------|------------|---------------------|-----------------------|---------------------|----------------------|-----------------------|
|                           |      |          |            |        |         |           | Liquid Temperature (°C) |            | 21.8                |                       |                     |                      |                       |
|                           |      |          |            |        |         |           | Date                    |            | 2024-03-23          |                       |                     |                      |                       |
| Position                  | Mod. | BW (MHz) | Freq (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)     | Space (mm) | Measure Power (dBm) | Measure 1g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1g SAR (W/kg) |
| Front                     | QPSK | 20       | 680.50     | 133297 | 1       | 99        | N/A                     | 45         | 23.39               | 0.011                 | 24.50               | 1.291                | <b>0.014</b>          |
| Front                     | QPSK | 20       | 680.50     | 133297 | 50      | 0         | N/A                     | 45         | 23.22               | 0.010                 | 23.50               | 1.067                | 0.011                 |
| Right Edge                | QPSK | 20       | 680.50     | 133297 | 1       | 99        | N/A                     | 45         | 23.39               | 0.008                 | 24.50               | 1.291                | 0.010                 |
| Right Edge                | QPSK | 20       | 680.50     | 133297 | 50      | 0         | N/A                     | 45         | 23.22               | 0.008                 | 23.50               | 1.067                | 0.009                 |

| 5G NR n5 Ant1 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.1                |                        |                     |                      |                        |
|------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                        |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 22.1                |                        |                     |                      |                        |
|                        |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-13          |                        |                     |                      |                        |
| Position               | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                  | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 1       | 1         | N/A                      | 45         | 23.01               | 0.027                  | 24.50               | 1.409                | 0.038                  |
| Front                  | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 50      | 25        | N/A                      | 45         | 22.84               | 0.028                  | 24.50               | 1.466                | <b>0.041</b>           |
| Right Edge             | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 1       | 1         | N/A                      | 45         | 23.01               | 0.023                  | 24.50               | 1.409                | 0.032                  |
| Right Edge             | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 50      | 25        | N/A                      | 45         | 22.84               | 0.025                  | 24.50               | 1.466                | 0.037                  |

| 5G NR n5 Ant3 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.2                |                        |                     |                      |                        |
|------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                        |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 22.1                |                        |                     |                      |                        |
|                        |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-25          |                        |                     |                      |                        |
| Position               | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                  | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 1       | 1         | N/A                      | 45         | 23.01               | 0.012                  | 24.50               | 1.409                | 0.017                  |
| Front                  | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 50      | 25        | N/A                      | 45         | 22.84               | 0.012                  | 24.50               | 1.466                | 0.018                  |
| Right Edge             | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 1       | 1         | N/A                      | 45         | 23.01               | 0.012                  | 24.50               | 1.409                | 0.017                  |
| Right Edge             | DFT-s-OFDM | QPSK | 15        | 20       | 836.50      | 167300 | 50      | 25        | N/A                      | 45         | 22.84               | 0.012                  | 24.50               | 1.466                | <b>0.018</b>           |

| 5G NR n7 Ant1 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.7                |                        |                     |                      |                        |
|------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                        |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 22.6                |                        |                     |                      |                        |
|                        |            |           |           |          |             |        |         |           | Date                     |            | 2024-03-13          |                        |                     |                      |                        |
| Position               | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                  | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 1       | 1         | N/A                      | 45         | 23.85               | 0.014                  | 24.50               | 1.161                | 0.016                  |
| Front                  | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 50      | 25        | N/A                      | 45         | 23.79               | 0.015                  | 24.50               | 1.178                | 0.018                  |
| Right Edge             | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 1       | 1         | N/A                      | 45         | 23.85               | 0.060                  | 24.50               | 1.161                | <b>0.070</b>           |
| Right Edge             | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 50      | 25        | N/A                      | 45         | 23.79               | 0.058                  | 24.50               | 1.178                | 0.068                  |

| 5G NR n7 Ant3 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            |                     | 22.6                   |                     | 22.4                 |                        |
|------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                        |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            |                     | 22.4                   |                     | 22.2                 |                        |
|                        |            |           |           |          |             |        |         |           | Date                     |            |                     | 2024-03-20             |                     | 2024-03-21           |                        |
| Position               | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                  | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 1       | 1         | N/A                      | 45         | 23.85               | 0.005                  | 24.50               | 1.161                | 0.006                  |
| Front                  | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 50      | 25        | N/A                      | 45         | 23.79               | 0.019                  | 24.50               | 1.178                | 0.022                  |
| Right Edge             | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 1       | 1         | N/A                      | 45         | 23.85               | 0.041                  | 24.50               | 1.161                | 0.048                  |
| Right Edge             | DFT-s-OFDM | Pi/2 BPSK | 15        | 20       | 2535.00     | 507000 | 50      | 25        | N/A                      | 45         | 23.79               | 0.055                  | 24.50               | 1.178                | <b>0.065</b>           |

| 5G NR n12 Ant1 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            |                     | 21.6                   |                     | 21.4                 |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            |                     | 21.4                   |                     | 21.4                 |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            |                     | 2024-03-11             |                     | 2024-03-11           |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 1       | 1         | N/A                      | 45         | 22.96               | 0.018                  | 24.50               | 1.426                | 0.026                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 36      | 18        | N/A                      | 45         | 22.94               | 0.015                  | 24.50               | 1.432                | 0.021                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 1       | 1         | N/A                      | 45         | 22.96               | 0.018                  | 24.50               | 1.426                | <b>0.026</b>           |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 36      | 18        | N/A                      | 45         | 22.94               | 0.018                  | 24.50               | 1.432                | 0.026                  |

| 5G NR n12 Ant3 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            |                     | 21.6                   |                     | 21.4                 |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            |                     | 21.4                   |                     | 21.4                 |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            |                     | 2024-03-25             |                     | 2024-03-25           |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 1       | 1         | N/A                      | 45         | 22.96               | 0.006                  | 24.50               | 1.426                | 0.009                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 36      | 18        | N/A                      | 45         | 22.94               | 0.008                  | 24.50               | 1.432                | <b>0.011</b>           |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 1       | 1         | N/A                      | 45         | 22.96               | 0.002                  | 24.50               | 1.426                | 0.003                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 15       | 707.50      | 141500 | 36      | 18        | N/A                      | 45         | 22.94               | 0.002                  | 24.50               | 1.432                | 0.003                  |

| 5G NR n25 Ant1 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.2                |                        |                     |                      |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 21.5                |                        |                     |                      |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-19          |                        |                     |                      |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 1       | 1         | N/A                      | 45         | 23.75               | 0.053                  | 24.50               | 1.189                | 0.063                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 108     | 54        | N/A                      | 45         | 23.68               | 0.052                  | 24.50               | 1.208                | 0.063                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 1       | 1         | N/A                      | 45         | 23.75               | 0.121                  | 24.50               | 1.189                | 0.144                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 108     | 54        | N/A                      | 45         | 23.68               | 0.123                  | 24.50               | 1.208                | <b>0.149</b>           |

| 5G NR n25 Ant3 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.1                |                        |                     |                      |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 21.2                |                        |                     |                      |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-18          |                        |                     |                      |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 1       | 1         | N/A                      | 45         | 23.75               | 0.028                  | 24.50               | 1.189                | 0.033                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 108     | 54        | N/A                      | 45         | 23.68               | 0.027                  | 24.50               | 1.208                | 0.033                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 1       | 1         | N/A                      | 45         | 23.75               | 0.030                  | 24.50               | 1.189                | 0.036                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1882.50     | 376500 | 108     | 54        | N/A                      | 45         | 23.68               | 0.032                  | 24.50               | 1.208                | <b>0.039</b>           |

| 5G NR n41 Ant1 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            | 21.9                |                        |                     |                      |                        |
|-------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 21.8                |                        |                     |                      |                        |
|                         |            |           |           |          |             |        |         |           | Date                     |            | 2024-03-12          |                        |                     |                      |                        |
| Position                | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 1       | 1         | N/A                      | 45         | 24.50               | 0.003                  | 24.50               | 1.000                | 0.003                  |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 135     | 67        | N/A                      | 45         | 24.10               | 0.008                  | 24.50               | 1.096                | 0.009                  |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 1       | 1         | N/A                      | 45         | 24.50               | 0.049                  | 24.50               | 1.000                | <b>0.049</b>           |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 135     | 67        | N/A                      | 45         | 24.10               | 0.038                  | 24.50               | 1.096                | 0.042                  |

| 5G NR n41 Ant3 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.4                |                        |                     |                      |                        |
|-------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 22.2                |                        |                     |                      |                        |
|                         |            |           |           |          |             |        |         |           | Date                     |            | 2024-03-21          |                        |                     |                      |                        |
| Position                | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 1       | 1         | N/A                      | 45         | 24.50               | 0.040                  | 24.50               | 1.000                | 0.040                  |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 135     | 67        | N/A                      | 45         | 24.10               | 0.036                  | 24.50               | 1.096                | 0.039                  |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 1       | 1         | N/A                      | 45         | 24.50               | 0.047                  | 24.50               | 1.000                | 0.047                  |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 2592.99     | 518598 | 135     | 67        | N/A                      | 45         | 24.10               | 0.050                  | 24.50               | 1.096                | <b>0.055</b>           |

| 5G NR n48 Ant2 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            | 22.8                |                        | 22.9                |                      |                        |
|-------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 22.1                |                        | 22.8                |                      |                        |
|                         |            |           |           |          |             |        |         |           | Date                     |            | 2024-03-28          |                        | 2024-04-29          |                      |                        |
| Position                | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 40       | 3624.99     | 641666 | 1       | 1         | N/A                      | 45         | 21.69               | 0.024                  | 23.00               | 1.352                | 0.032                  |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 40       | 3624.99     | 641666 | 50      | 25        | N/A                      | 45         | 21.57               | 0.025                  | 23.00               | 1.390                | <b>0.035</b>           |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 40       | 3624.99     | 641666 | 1       | 1         | N/A                      | 45         | 21.69               | 0.003                  | 23.00               | 1.352                | 0.004                  |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 40       | 3624.99     | 641666 | 50      | 25        | N/A                      | 45         | 21.57               | 0.005                  | 23.00               | 1.390                | 0.007                  |

| 5G NR n66 Ant1 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 21.6                |                        |                     |                      |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 21.6                |                        |                     |                      |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-14          |                        |                     |                      |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 1       | 1         | N/A                      | 45         | 23.55               | 0.048                  | 24.50               | 1.245                | 0.060                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 108     | 54        | N/A                      | 45         | 23.52               | 0.046                  | 24.50               | 1.253                | 0.058                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 1       | 1         | N/A                      | 45         | 23.55               | 0.107                  | 24.50               | 1.245                | 0.133                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 108     | 54        | N/A                      | 45         | 23.52               | 0.121                  | 24.50               | 1.253                | <b>0.152</b>           |

| 5G NR n66 Ant3 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 23.2                |                        |                     |                      |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 23.1                |                        |                     |                      |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-22          |                        |                     |                      |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 1       | 1         | N/A                      | 45         | 23.55               | 0.031                  | 24.50               | 1.245                | 0.039                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 108     | 54        | N/A                      | 45         | 23.52               | 0.036                  | 24.50               | 1.253                | 0.045                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 1       | 1         | N/A                      | 45         | 23.55               | 0.051                  | 24.50               | 1.245                | 0.063                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 40       | 1745.00     | 349000 | 108     | 54        | N/A                      | 45         | 23.52               | 0.053                  | 24.50               | 1.253                | <b>0.066</b>           |

| 5G NR n71 Ant1 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 21.4                |                        |                     |                      |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 20.9                |                        |                     |                      |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-12          |                        |                     |                      |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 1       | 104       | N/A                      | 45         | 22.98               | 0.026                  | 24.50               | 1.419                | <b>0.037</b>           |
| Front                   | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 50      | 25        | N/A                      | 45         | 22.86               | 0.024                  | 24.50               | 1.459                | 0.035                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 1       | 104       | N/A                      | 45         | 22.98               | 0.020                  | 24.50               | 1.419                | 0.028                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 50      | 25        | N/A                      | 45         | 22.86               | 0.019                  | 24.50               | 1.459                | 0.028                  |

| 5G NR n71 Ant3 Body SAR |            |      |           |          |             |        |         |           | Ambient Temperature (°C) |            | 21.6                |                        |                     |                      |                        |
|-------------------------|------------|------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |      |           |          |             |        |         |           | Liquid Temperature (°C)  |            | 21.4                |                        |                     |                      |                        |
|                         |            |      |           |          |             |        |         |           | Date                     |            | 2024-03-25          |                        |                     |                      |                        |
| Position                | Wave form  | Mod. | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 1       | 104       | N/A                      | 45         | 22.98               | 0.011                  | 24.50               | 1.419                | 0.016                  |
| Front                   | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 50      | 25        | N/A                      | 45         | 22.86               | 0.014                  | 24.50               | 1.459                | <b>0.020</b>           |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 1       | 104       | N/A                      | 45         | 22.98               | 0.006                  | 24.50               | 1.419                | 0.009                  |
| Right Edge              | DFT-s-OFDM | QPSK | 15        | 20       | 680.50      | 136100 | 50      | 25        | N/A                      | 45         | 22.86               | 0.011                  | 24.50               | 1.459                | 0.016                  |

| 5G NR n77 Ant2 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            |                     | 22.7                   |                     | 22.7                 |                        |
|-------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|
|                         |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            |                     | 22.6                   |                     | 22.6                 |                        |
|                         |            |           |           |          |             |        |         |           | Date                     |            |                     | 2024-03-11             |                     | 2024-04-30           |                        |
| Position                | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3840.00     | 656000 | 1       | 1         | N/A                      | 45         | 23.75               | 0.025                  | 24.50               | 1.189                | 0.030                  |
| Front                   | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3840.00     | 656000 | 135     | 67        | N/A                      | 45         | 23.50               | 0.028                  | 24.50               | 1.259                | 0.035                  |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3840.00     | 656000 | 1       | 1         | N/A                      | 45         | 23.75               | 0.007                  | 24.50               | 1.189                | 0.008                  |
| Right Edge              | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3840.00     | 656000 | 135     | 67        | N/A                      | 45         | 23.50               | 0.008                  | 24.50               | 1.259                | 0.010                  |

| 5G NR n77 DoD Ant2 Body SAR |            |           |           |          |             |        |         |           | Ambient Temperature (°C) |            |                     | 22.3                   |                     | 22.7                 |                        | 22.7       |  |
|-----------------------------|------------|-----------|-----------|----------|-------------|--------|---------|-----------|--------------------------|------------|---------------------|------------------------|---------------------|----------------------|------------------------|------------|--|
|                             |            |           |           |          |             |        |         |           | Liquid Temperature (°C)  |            |                     | 21.9                   |                     | 22.6                 |                        | 22.6       |  |
|                             |            |           |           |          |             |        |         |           | Date                     |            |                     | 2024-03-08             |                     | 2024-03-11           |                        | 2024-04-30 |  |
| Position                    | Wave form  | Mod.      | SCS (kHz) | BW (MHz) | Freq. (MHz) | Ch.    | RB Size | RB Offset | Sensor State (Grip)      | Space (mm) | Measure Power (dBm) | Measure 1 g SAR (W/kg) | Tune-Up Limit (dBm) | Power Scaling Factor | Scaling 1 g SAR (W/kg) |            |  |
| Front                       | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3500.01     | 633334 | 1       | 1         | N/A                      | 45         | 23.62               | 0.005                  | 24.50               | 1.225                | 0.006                  |            |  |
| Front                       | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3500.01     | 633334 | 135     | 67        | N/A                      | 45         | 23.46               | 0.004                  | 24.50               | 1.271                | 0.005                  |            |  |
| Right Edge                  | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3500.01     | 633334 | 1       | 1         | N/A                      | 45         | 23.62               | 0.011                  | 24.50               | 1.225                | 0.013                  |            |  |
| Right Edge                  | DFT-s-OFDM | Pi/2 BPSK | 30        | 100      | 3500.01     | 633334 | 135     | 67        | N/A                      | 45         | 23.46               | 0.011                  | 24.50               | 1.271                | 0.014                  |            |  |

**General Notes:**

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 447498 D04v01.
2. Liquid tissue depth was at least 15 cm for all frequencies.
3. All modes of operation were investigated, and worst-case results are reported.
4. The EUT is tested 2<sup>nd</sup> hot-spot peak, if it is less than 2 dB below the highest peak.
5. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D04v01.
7. The "N/A" means there is no SAR value or the SAR is too low to be measured.

**WCDMA Notes:**

1. WCDMA mode in Body SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB Publication 941225 D01v03r01. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25 dB higher than the RMC level and SAR was less than 1.2 W/kg.
2. Per FCC KDB Publication 447498 D04v01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is  $\leq 0.8$  W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is  $> \frac{1}{2}$  dB, instead of the middle channel, the highest output power channel must be used.

**LTE Notes:**

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r05. The general test procedures used for testing can be found in Section 5.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3-6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
4. This device supports LTE capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE Band falls completely within an LTE band with a larger transmission frequency range, both LTE bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with larger transmission frequency range.

**5G NR Notes:**

1. According to FCC guidance, SAR test for NR bands and LTE anchor Bands were performed separately due to limitations in SAR probe calibration factors. And, Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
2. NR configurations of SAR test were determined according to Section 5.2 of KDB 941225 D05.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
4. According to FCC guidance, NR modulations and RB sizes/offsets were selected for testing such that configurations with the highest output power were evaluated for SAR tests.
5. This device supports 5G FR1 capabilities with overlapping transmission frequency ranges. When the supported frequency range of an NR band falls completely within an NR band with a larger transmission frequency range, both NR bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both NR bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.
6. 5G NR n41, n48 and n77 is synchronized using maximum duty cycle of 100 %. SAR testing was performed using FTM mode with a 100 % duty cycle applied to match final duty cycle.

## 26 LTE Downlink Carrier Aggregation

- Refer to Appendix F

## 27 Simultaneous SAR Results

### 27.1 Simultaneous Scenario

| Simultaneous scenario | WWAN | Bluetooth LE Ant1 | WLAN 2.4/5/6GHz Ant3 | WLAN 2.4/5GHz Ant4 | WLAN 2.4/5/6GHz Ant1+2 | WLAN 2.4/5/6GHz Ant1+3 | WLAN 2.4/5GHz Ant1+4 |
|-----------------------|------|-------------------|----------------------|--------------------|------------------------|------------------------|----------------------|
| 1                     | O    | X                 | X                    | X                  | X                      | X                      | X                    |
| 2                     | O    | O                 | X                    | X                  | X                      | X                      | X                    |
| 3                     | O    | X                 | O                    | X                  | X                      | X                      | X                    |
| 4                     | O    | X                 | X                    | O                  | X                      | X                      | X                    |
| 5                     | O    | X                 | X                    | X                  | O                      | X                      | X                    |
| 6                     | O    | X                 | X                    | X                  | X                      | O                      | X                    |
| 7                     | O    | X                 | X                    | X                  | X                      | X                      | O                    |

### 27.2 Simultaneous SAR Results

Simultaneous Transmission SAR were calculated by TER through the formula of 447498 D04.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

| ANT         | Ant Gain (dB) |        |         |         |        |        |        | ERP    |        |         |         |        |        |        |
|-------------|---------------|--------|---------|---------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|
|             | 2.4GHz        | 5GHz   |         |         |        | 6GHz   |        | 2.4GHz | 5GHz   |         |         |        | 6GHz   |        |
|             |               | UNII 1 | UNII 2A | UNII 2C | UNII 3 | UNII 5 | UNII 7 |        | UNII 1 | UNII 2A | UNII 2C | UNII 3 | UNII 5 | UNII 7 |
| WLAN Ant3   | 1.40          | 2.20   | 2.20    | 1.90    | 2.40   | 2.40   | 2.50   | 6.75   | 6.05   | 6.05    | 5.75    | 6.25   | 3.25   | 3.35   |
| WLAN Ant4   | 2.90          | 5.00   | 5.00    | 5.00    | 5.00   | -      | -      | 8.25   | 8.85   | 8.85    | 8.85    | 8.85   | -      | -      |
| WLAN Ant1+2 | 8.02          | 9.46   | 8.80    | 9.08    | 8.02   | 4.89   | 3.59   | 13.37  | 13.31  | 12.65   | 12.93   | 11.87  | 5.74   | 4.44   |
| WLAN Ant1+3 | 6.43          | 7.60   | 7.15    | 7.74    | 7.20   | 5.64   | 4.84   | 11.78  | 11.45  | 11.00   | 11.59   | 11.05  | 6.49   | 5.69   |
| WLAN Ant1+4 | 7.06          | 8.77   | 8.38    | 8.99    | 8.35   | -      | -      | 12.41  | 12.62  | 12.23   | 12.84   | 12.20  | -      | -      |
| BT LE Ant1  | 5.06          | -      | -       | -       | -      | -      | -      | 5.91   | -      | -       | -       | -      | -      | -      |

| ANT         | TER          |              |         |              |              |              |              |
|-------------|--------------|--------------|---------|--------------|--------------|--------------|--------------|
|             | 2.4GHz       | 5GHz         |         |              |              | 6GHz         |              |
|             |              | UNII 1       | UNII 2A | UNII 2C      | UNII 3       | UNII 5       | UNII 7       |
| WLAN Ant3   | <b>0.026</b> | 0.030        | 0.030   | 0.028        | <b>0.031</b> | 0.054        | <b>0.056</b> |
| WLAN Ant4   | <b>0.037</b> | <b>0.057</b> | 0.057   | 0.057        | 0.057        | -            | -            |
| WLAN Ant1+2 | <b>0.121</b> | <b>0.158</b> | 0.136   | 0.145        | 0.114        | <b>0.096</b> | 0.071        |
| WLAN Ant1+3 | <b>0.084</b> | 0.103        | 0.093   | <b>0.106</b> | 0.094        | <b>0.115</b> | 0.095        |
| WLAN Ant1+4 | <b>0.097</b> | 0.135        | 0.123   | <b>0.142</b> | 0.123        | -            | -            |
| BT LE Ant1  | <b>0.022</b> | -            | -       | -            | -            | -            | -            |



- WWAN+WLAN 2.4GHz / Position: Front

| WWAN Configuration | SAR              | WLAN 2.4GHz TER |       |       |         |         |         | Simultaneous TER |                |                  |                  |                  |       |
|--------------------|------------------|-----------------|-------|-------|---------|---------|---------|------------------|----------------|------------------|------------------|------------------|-------|
|                    |                  | TER             | Ant3  | Ant4  | Ant 1+2 | Ant 1+3 | Ant 1+4 | WWAN+WLAN Ant3   | WWAN+WLAN Ant4 | WWAN+WLAN Ant1+2 | WWAN+WLAN Ant1+3 | WWAN+WLAN Ant1+4 |       |
| WCDMA II Ant1      | -                | 0.094           | 0.059 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.085          | 0.096            | 0.180            | 0.143            | 0.156 |
| WCDMA II Ant3      | -                | 0.051           | 0.032 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.058          | 0.069            | 0.153            | 0.116            | 0.129 |
| WCDMA V Ant1       | -                | 0.066           | 0.041 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.067          | 0.078            | 0.162            | 0.125            | 0.138 |
| WCDMA V Ant3       | -                | 0.021           | 0.013 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.039          | 0.050            | 0.134            | 0.097            | 0.110 |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.053           | 0.033 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.059          | 0.070            | 0.154            | 0.117            | 0.130 |
| LTE Band 7 Ant1    | 5G NR n77 Ant2   | 0.051           | 0.032 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.058          | 0.069            | 0.153            | 0.116            | 0.129 |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.031           | 0.019 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.044          | 0.056            | 0.140            | 0.103            | 0.116 |
| LTE Band 7 Ant3    | 5G NR n77 Ant2   | 0.046           | 0.029 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.055          | 0.066            | 0.150            | 0.113            | 0.126 |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.105           | 0.066 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.092          | 0.103            | 0.187            | 0.150            | 0.163 |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.084           | 0.053 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.079          | 0.090            | 0.174            | 0.137            | 0.150 |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.067           | 0.042 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.068          | 0.079            | 0.163            | 0.126            | 0.139 |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.042           | 0.026 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.052          | 0.063            | 0.147            | 0.110            | 0.123 |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.100           | 0.063 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.089          | 0.100            | 0.184            | 0.147            | 0.160 |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.075           | 0.047 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.073          | 0.084            | 0.168            | 0.131            | 0.144 |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.078           | 0.049 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.075          | 0.086            | 0.170            | 0.133            | 0.146 |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.068           | 0.043 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.069          | 0.080            | 0.164            | 0.127            | 0.140 |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.094           | 0.059 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.085          | 0.096            | 0.180            | 0.143            | 0.156 |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.069           | 0.043 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.069          | 0.080            | 0.164            | 0.127            | 0.140 |
| LTE Band 26 Ant1   | -                | 0.047           | 0.029 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.055          | 0.066            | 0.150            | 0.113            | 0.126 |
| LTE Band 26 Ant3   | -                | 0.010           | 0.006 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.036          | 0.047            | 0.131            | 0.094            | 0.107 |
| LTE Band 38 Ant1   | -                | 0.003           | 0.002 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.028          | 0.039            | 0.123            | 0.086            | 0.099 |
| LTE Band 38 Ant3   | -                | 0.022           | 0.014 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.040          | 0.051            | 0.135            | 0.098            | 0.111 |
| LTE Band 48 Ant2   | -                | 0.012           | 0.008 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.034          | 0.045            | 0.129            | 0.092            | 0.105 |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.114           | 0.071 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.097          | 0.108            | 0.192            | 0.155            | 0.168 |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.110           | 0.069 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.095          | 0.106            | 0.190            | 0.153            | 0.166 |
| LTE Band 66 Ant1   | 5G NR n77 Ant2   | 0.108           | 0.068 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.094          | 0.105            | 0.189            | 0.152            | 0.165 |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.070           | 0.044 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.070          | 0.081            | 0.165            | 0.128            | 0.141 |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.072           | 0.045 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.071          | 0.082            | 0.166            | 0.129            | 0.142 |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.087           | 0.054 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.080          | 0.091            | 0.175            | 0.138            | 0.151 |
| LTE Band 71 Ant1   | -                | 0.026           | 0.016 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.042          | 0.053            | 0.137            | 0.100            | 0.113 |
| LTE Band 71 Ant3   | -                | 0.014           | 0.009 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.035          | 0.046            | 0.130            | 0.093            | 0.106 |
| 5G NR n7 Ant1      | -                | 0.018           | 0.011 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.037          | 0.048            | 0.132            | 0.095            | 0.108 |
| 5G NR n7 Ant3      | -                | 0.022           | 0.014 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.040          | 0.051            | 0.135            | 0.098            | 0.111 |
| 5G NR n12 Ant1     | -                | 0.026           | 0.016 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.042          | 0.053            | 0.137            | 0.100            | 0.113 |
| 5G NR n12 Ant3     | -                | 0.011           | 0.007 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.033          | 0.044            | 0.128            | 0.091            | 0.104 |
| 5G NR n25 Ant1     | -                | 0.063           | 0.039 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.065          | 0.076            | 0.160            | 0.123            | 0.136 |
| 5G NR n25 Ant3     | -                | 0.033           | 0.021 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.047          | 0.058            | 0.142            | 0.105            | 0.118 |
| 5G NR n41 Ant1     | -                | 0.009           | 0.006 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.032          | 0.043            | 0.127            | 0.090            | 0.103 |
| 5G NR n41 Ant3     | -                | 0.040           | 0.025 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.051          | 0.062            | 0.151            | 0.109            | 0.122 |
| 5G NR n48 Ant2     | -                | 0.035           | 0.022 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.048          | 0.059            | 0.143            | 0.106            | 0.119 |

- WWAN+WLAN 2.4GHz / Position: Right Edge

| WWAN Configuration | SAR              | WLAN 2.4GHz TER |       |       |         |         |         | Simultaneous TER |                |                  |                  |                  |       |
|--------------------|------------------|-----------------|-------|-------|---------|---------|---------|------------------|----------------|------------------|------------------|------------------|-------|
|                    |                  | TER             | Ant3  | Ant4  | Ant 1+2 | Ant 1+3 | Ant 1+4 | WWAN+WLAN Ant3   | WWAN+WLAN Ant4 | WWAN+WLAN Ant1+2 | WWAN+WLAN Ant1+3 | WWAN+WLAN Ant1+4 |       |
| WCDMA II Ant1      | -                | 0.232           | 0.145 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.171          | 0.182            | 0.266            | 0.229            | 0.242 |
| WCDMA II Ant3      | -                | 0.058           | 0.036 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.062          | 0.073            | 0.157            | 0.120            | 0.133 |
| WCDMA V Ant1       | -                | 0.050           | 0.031 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.057          | 0.068            | 0.152            | 0.115            | 0.128 |
| WCDMA V Ant3       | -                | 0.021           | 0.013 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.039          | 0.050            | 0.134            | 0.097            | 0.110 |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.100           | 0.063 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.089          | 0.100            | 0.184            | 0.147            | 0.160 |
| LTE Band 7 Ant1    | 5G NR n77 Ant2   | 0.082           | 0.051 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.077          | 0.088            | 0.172            | 0.135            | 0.148 |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.079           | 0.049 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.075          | 0.086            | 0.170            | 0.133            | 0.146 |
| LTE Band 7 Ant3    | 5G NR n77 Ant2   | 0.073           | 0.046 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.072          | 0.083            | 0.167            | 0.130            | 0.143 |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.175           | 0.109 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.135          | 0.146            | 0.230            | 0.193            | 0.206 |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.100           | 0.063 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.089          | 0.100            | 0.184            | 0.147            | 0.160 |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.041           | 0.026 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.052          | 0.063            | 0.147            | 0.110            | 0.123 |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.012           | 0.008 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.034          | 0.045            | 0.129            | 0.092            | 0.105 |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.173           | 0.108 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.134          | 0.145            | 0.229            | 0.192            | 0.205 |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.031           | 0.019 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.045          | 0.056            | 0.140            | 0.103            | 0.116 |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.092           | 0.058 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.084          | 0.095            | 0.179            | 0.142            | 0.155 |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.036           | 0.023 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.049          | 0.060            | 0.144            | 0.107            | 0.120 |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.173           | 0.108 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.134          | 0.145            | 0.229            | 0.192            | 0.205 |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.040           | 0.025 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.051          | 0.062            | 0.146            | 0.109            | 0.122 |
| LTE Band 26 Ant1   | -                | 0.030           | 0.019 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.045          | 0.056            | 0.140            | 0.103            | 0.116 |
| LTE Band 26 Ant3   | -                | 0.016           | 0.010 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.036          | 0.047            | 0.131            | 0.094            | 0.107 |
| LTE Band 38 Ant1   | -                | 0.025           | 0.016 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.042          | 0.053            | 0.137            | 0.100            | 0.113 |
| LTE Band 38 Ant3   | -                | 0.039           | 0.024 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.050          | 0.061            | 0.145            | 0.108            | 0.121 |
| LTE Band 48 Ant2   | -                | 0.001           | 0.001 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.027          | 0.038            | 0.122            | 0.085            | 0.098 |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.181           | 0.113 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.139          | 0.150            | 0.234            | 0.197            | 0.210 |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.172           | 0.108 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.134          | 0.145            | 0.229            | 0.192            | 0.205 |
| LTE Band 66 Ant1   | 5G NR n77 Ant2   | 0.154           | 0.096 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.122          | 0.133            | 0.217            | 0.180            | 0.193 |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.087           | 0.054 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.080          | 0.091            | 0.175            | 0.138            | 0.151 |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.085           | 0.053 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.079          | 0.090            | 0.174            | 0.137            | 0.150 |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.079           | 0.049 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.075          | 0.086            | 0.170            | 0.133            | 0.146 |
| LTE Band 71 Ant1   | -                | 0.025           | 0.016 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.042          | 0.053            | 0.137            | 0.100            | 0.113 |
| LTE Band 71 Ant3   | -                | 0.010           | 0.006 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.032          | 0.043            | 0.127            | 0.090            | 0.103 |
| 5G NR n7 Ant1      | -                | 0.070           | 0.044 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.070          | 0.081            | 0.165            | 0.128            | 0.141 |
| 5G NR n7 Ant3      | -                | 0.065           | 0.041 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.067          | 0.078            | 0.162            | 0.125            | 0.138 |
| 5G NR n12 Ant1     | -                | 0.026           | 0.016 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.042          | 0.053            | 0.137            | 0.100            | 0.113 |
| 5G NR n12 Ant3     | -                | 0.003           | 0.002 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.028          | 0.039            | 0.123            | 0.086            | 0.099 |
| 5G NR n25 Ant1     | -                | 0.149           | 0.093 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.119          | 0.130            | 0.214            | 0.177            | 0.190 |
| 5G NR n25 Ant3     | -                | 0.039           | 0.024 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.050          | 0.061            | 0.145            | 0.108            | 0.121 |
| 5G NR n41 Ant1     | -                | 0.049           | 0.031 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.057          | 0.068            | 0.152            | 0.115            | 0.128 |
| 5G NR n41 Ant3     | -                | 0.055           | 0.034 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.060          | 0.071            | 0.155            | 0.118            | 0.131 |
| 5G NR n48 Ant2     | -                | 0.007           | 0.004 | 0.026 | 0.037   | 0.121   | 0.084   | 0.097            | 0.030          | 0.041            | 0.125            | 0.088            | 0.101 |



- WWAN+WLAN 5GHz / Position: Front

| WWAN Configuration | SAR              | WLAN 5GHz TER |       |       |         |         | Simultaneous TER |                |                |                  |                  |                  |       |
|--------------------|------------------|---------------|-------|-------|---------|---------|------------------|----------------|----------------|------------------|------------------|------------------|-------|
|                    |                  | TER           | Ant3  | Ant4  | Ant 1+2 | Ant 1+3 | Ant 1+4          | WWAN+WLAN Ant3 | WWAN+WLAN Ant4 | WWAN+WLAN Ant1+2 | WWAN+WLAN Ant1+3 | WWAN+WLAN Ant1+4 |       |
| WCDMA II Ant1      | -                | 0.094         | 0.059 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.090          | 0.116            | 0.217            | 0.165            | 0.201 |
| WCDMA II Ant3      | -                | 0.051         | 0.032 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.063          | 0.089            | 0.190            | 0.138            | 0.174 |
| WCDMA V Ant1       | -                | 0.066         | 0.041 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.072          | 0.098            | 0.199            | 0.147            | 0.183 |
| WCDMA V Ant3       | -                | 0.021         | 0.013 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.044          | 0.070            | 0.171            | 0.119            | 0.155 |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.053         | 0.033 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.064          | 0.090            | 0.191            | 0.139            | 0.175 |
| LTE Band 7 Ant1    | 5G NR n71 Ant2   | 0.051         | 0.032 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.063          | 0.089            | 0.190            | 0.138            | 0.174 |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.031         | 0.019 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.050          | 0.076            | 0.177            | 0.125            | 0.161 |
| LTE Band 7 Ant3    | 5G NR n71 Ant2   | 0.046         | 0.029 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.060          | 0.086            | 0.187            | 0.135            | 0.171 |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.105         | 0.066 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.097          | 0.123            | 0.224            | 0.172            | 0.208 |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.084         | 0.053 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.084          | 0.110            | 0.211            | 0.159            | 0.195 |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.067         | 0.042 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.073          | 0.099            | 0.200            | 0.148            | 0.184 |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.042         | 0.026 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.057          | 0.083            | 0.184            | 0.132            | 0.168 |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.100         | 0.063 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.094          | 0.120            | 0.221            | 0.169            | 0.205 |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.075         | 0.047 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.078          | 0.104            | 0.203            | 0.153            | 0.189 |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.078         | 0.049 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.080          | 0.106            | 0.207            | 0.155            | 0.191 |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.068         | 0.043 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.074          | 0.100            | 0.201            | 0.149            | 0.185 |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.094         | 0.059 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.090          | 0.116            | 0.217            | 0.165            | 0.201 |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.069         | 0.043 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.074          | 0.100            | 0.201            | 0.149            | 0.185 |
| LTE Band 26 Ant1   | -                | 0.047         | 0.029 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.060          | 0.086            | 0.187            | 0.135            | 0.171 |
| LTE Band 26 Ant3   | -                | 0.016         | 0.010 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.041          | 0.067            | 0.168            | 0.116            | 0.152 |
| LTE Band 38 Ant1   | -                | 0.003         | 0.002 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.033          | 0.059            | 0.160            | 0.108            | 0.144 |
| LTE Band 38 Ant3   | -                | 0.022         | 0.014 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.045          | 0.071            | 0.172            | 0.120            | 0.156 |
| LTE Band 48 Ant2   | -                | 0.012         | 0.008 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.039          | 0.065            | 0.166            | 0.114            | 0.150 |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.114         | 0.071 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.102          | 0.128            | 0.229            | 0.177            | 0.213 |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.110         | 0.069 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.100          | 0.126            | 0.227            | 0.175            | 0.211 |
| LTE Band 66 Ant1   | 5G NR n71 Ant2   | 0.108         | 0.068 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.099          | 0.125            | 0.226            | 0.174            | 0.210 |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.070         | 0.044 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.075          | 0.101            | 0.202            | 0.150            | 0.186 |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.072         | 0.045 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.076          | 0.102            | 0.203            | 0.151            | 0.187 |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.087         | 0.054 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.085          | 0.111            | 0.212            | 0.160            | 0.196 |
| LTE Band 71 Ant1   | -                | 0.026         | 0.016 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.047          | 0.073            | 0.174            | 0.122            | 0.158 |
| LTE Band 71 Ant3   | -                | 0.014         | 0.009 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.040          | 0.066            | 0.167            | 0.115            | 0.151 |
| 5G NR n7 Ant1      | -                | 0.018         | 0.011 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.042          | 0.068            | 0.169            | 0.117            | 0.153 |
| 5G NR n7 Ant3      | -                | 0.022         | 0.014 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.045          | 0.071            | 0.172            | 0.120            | 0.156 |
| 5G NR n12 Ant1     | -                | 0.026         | 0.016 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.047          | 0.073            | 0.174            | 0.122            | 0.158 |
| 5G NR n12 Ant3     | -                | 0.011         | 0.007 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.038          | 0.064            | 0.165            | 0.113            | 0.149 |
| 5G NR n25 Ant1     | -                | 0.063         | 0.039 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.070          | 0.096            | 0.197            | 0.145            | 0.181 |
| 5G NR n25 Ant3     | -                | 0.033         | 0.021 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.052          | 0.078            | 0.179            | 0.127            | 0.163 |
| 5G NR n41 Ant1     | -                | 0.009         | 0.006 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.037          | 0.063            | 0.164            | 0.112            | 0.148 |
| 5G NR n41 Ant3     | -                | 0.040         | 0.025 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.056          | 0.082            | 0.183            | 0.131            | 0.167 |
| 5G NR n48 Ant2     | -                | 0.035         | 0.022 | 0.031 | 0.057   | 0.158   | 0.106            | 0.142          | 0.053          | 0.079            | 0.180            | 0.128            | 0.164 |

- WWAN+WLAN 5GHz / Position: Right Edge

| WWAN Configuration | SAR              | SAR   |       |       |         | WLAN 5GHz TER |         |                |                | Simultaneous TER |                  |                  |       |  |
|--------------------|------------------|-------|-------|-------|---------|---------------|---------|----------------|----------------|------------------|------------------|------------------|-------|--|
|                    |                  | TER   | Ant3  | Ant4  | Ant 1+2 | Ant 1+3       | Ant 1+4 | WWAN+WLAN Ant3 | WWAN+WLAN Ant4 | WWAN+WLAN Ant1+2 | WWAN+WLAN Ant1+3 | WWAN+WLAN Ant1+4 |       |  |
| WCDMA II Ant1      | -                | 0.232 | 0.145 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.176          | 0.202            | 0.303            | 0.251            | 0.287 |  |
| WCDMA II Ant3      | -                | 0.058 | 0.036 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.067          | 0.093            | 0.194            | 0.142            | 0.178 |  |
| WCDMA V Ant1       | -                | 0.050 | 0.031 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.062          | 0.088            | 0.189            | 0.137            | 0.173 |  |
| WCDMA V Ant3       | -                | 0.021 | 0.013 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.044          | 0.070            | 0.171            | 0.119            | 0.155 |  |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.100 | 0.063 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.094          | 0.120            | 0.221            | 0.169            | 0.205 |  |
| LTE Band 7 Ant1    | 5G NR n71 Ant2   | 0.082 | 0.051 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.082          | 0.108            | 0.209            | 0.157            | 0.193 |  |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.079 | 0.049 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.080          | 0.106            | 0.207            | 0.155            | 0.191 |  |
| LTE Band 7 Ant3    | 5G NR n71 Ant2   | 0.073 | 0.046 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.077          | 0.103            | 0.204            | 0.152            | 0.188 |  |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.175 | 0.109 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.140          | 0.166            | 0.267            | 0.215            | 0.251 |  |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.100 | 0.063 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.094          | 0.120            | 0.221            | 0.169            | 0.205 |  |
| LTE Band 12 Ant1   | 5G NR n71 Ant2   | 0.041 | 0.026 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.057          | 0.083            | 0.184            | 0.132            | 0.168 |  |
| LTE Band 12 Ant3   | 5G NR n71 Ant2   | 0.012 | 0.008 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.039          | 0.065            | 0.166            | 0.114            | 0.150 |  |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.173 | 0.108 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.139          | 0.165            | 0.266            | 0.214            | 0.250 |  |
| LTE Band 13 Ant1   | 5G NR n71 Ant2   | 0.031 | 0.019 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.050          | 0.076            | 0.177            | 0.125            | 0.161 |  |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.092 | 0.058 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.089          | 0.115            | 0.216            | 0.164            | 0.200 |  |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.036 | 0.023 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.054          | 0.080            | 0.181            | 0.129            | 0.165 |  |
| LTE Band 25 Ant1   | 5G NR n71 Ant2   | 0.173 | 0.108 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.139          | 0.165            | 0.266            | 0.214            | 0.250 |  |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.040 | 0.025 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.056          | 0.082            | 0.183            | 0.131            | 0.167 |  |
| LTE Band 26 Ant1   | -                | 0.030 | 0.019 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.050          | 0.076            | 0.177            | 0.125            | 0.161 |  |
| LTE Band 26 Ant3   | -                | 0.016 | 0.010 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.041          | 0.067            | 0.168            | 0.116            | 0.152 |  |
| LTE Band 38 Ant1   | -                | 0.025 | 0.016 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.047          | 0.073            | 0.174            | 0.122            | 0.158 |  |
| LTE Band 38 Ant3   | -                | 0.039 | 0.024 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.055          | 0.081            | 0.182            | 0.130            | 0.166 |  |
| LTE Band 48 Ant2   | -                | 0.001 | 0.001 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.032          | 0.058            | 0.159            | 0.107            | 0.143 |  |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.181 | 0.113 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.144          | 0.170            | 0.271            | 0.219            | 0.255 |  |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.172 | 0.108 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.139          | 0.165            | 0.266            | 0.214            | 0.250 |  |
| LTE Band 66 Ant1   | 5G NR n71 Ant2   | 0.154 | 0.096 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.127          | 0.153            | 0.254            | 0.202            | 0.238 |  |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.087 | 0.054 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.085          | 0.111            | 0.212            | 0.160            | 0.196 |  |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.085 | 0.053 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.084          | 0.110            | 0.211            | 0.159            | 0.195 |  |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.079 | 0.049 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.080          | 0.106            | 0.207            | 0.155            | 0.191 |  |
| LTE Band 71 Ant1   | -                | 0.025 | 0.016 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.047          | 0.073            | 0.174            | 0.122            | 0.158 |  |
| LTE Band 71 Ant3   | -                | 0.010 | 0.006 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.037          | 0.063            | 0.164            | 0.112            | 0.148 |  |
| 5G NR n7 Ant1      | -                | 0.070 | 0.044 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.075          | 0.101            | 0.202            | 0.150            | 0.186 |  |
| 5G NR n7 Ant3      | -                | 0.065 | 0.041 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.072          | 0.098            | 0.199            | 0.147            | 0.183 |  |
| 5G NR n12 Ant1     | -                | 0.026 | 0.016 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.047          | 0.073            | 0.174            | 0.122            | 0.158 |  |
| 5G NR n12 Ant3     | -                | 0.003 | 0.002 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.033          | 0.059            | 0.160            | 0.108            | 0.144 |  |
| 5G NR n25 Ant1     | -                | 0.149 | 0.093 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.124          | 0.150            | 0.251            | 0.199            | 0.235 |  |
| 5G NR n25 Ant3     | -                | 0.039 | 0.024 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.055          | 0.081            | 0.182            | 0.130            | 0.166 |  |
| 5G NR n41 Ant1     | -                | 0.049 | 0.031 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.062          | 0.088            | 0.189            | 0.137            | 0.173 |  |
| 5G NR n41 Ant3     | -                | 0.055 | 0.034 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.065          | 0.091            | 0.192            | 0.140            | 0.176 |  |
| 5G NR n48 Ant2     | -                | 0.007 | 0.004 | 0.031 | 0.057   | 0.158         | 0.106   | 0.142          | 0.035          | 0.061            | 0.162            | 0.110            | 0.146 |  |



- WWAN+WLAN 6GHz / Position: Front

| WWAN Configuration |                  | SAR   | SAR   |       | WLAN 6GHz TER |        |                | Simultaneous TER |       | WWAN+ WLAN Ant1+3 |
|--------------------|------------------|-------|-------|-------|---------------|--------|----------------|------------------|-------|-------------------|
|                    |                  |       | TER   | Ant3  | Ant1+2        | Ant1+3 | WWAN+WLAN Ant3 | WWAN+WLAN Ant1+2 |       |                   |
| WCDMA II Ant1      | -                | 0.094 | 0.059 | 0.056 | 0.096         | 0.115  | 0.115          | 0.155            | 0.174 |                   |
| WCDMA Ant3         | -                | 0.051 | 0.032 | 0.056 | 0.096         | 0.115  | 0.088          | 0.128            | 0.147 |                   |
| WCDMA V Ant1       | -                | 0.066 | 0.041 | 0.056 | 0.096         | 0.115  | 0.107          | 0.137            | 0.156 |                   |
| WCDMA V Ant3       | -                | 0.021 | 0.013 | 0.056 | 0.096         | 0.115  | 0.069          | 0.109            | 0.128 |                   |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.053 | 0.033 | 0.056 | 0.096         | 0.115  | 0.089          | 0.129            | 0.148 |                   |
| LTE Band 7 Ant1    | 5G NR n77 Ant2   | 0.051 | 0.032 | 0.056 | 0.096         | 0.115  | 0.088          | 0.128            | 0.147 |                   |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.031 | 0.019 | 0.056 | 0.096         | 0.115  | 0.075          | 0.115            | 0.134 |                   |
| LTE Band 7 Ant3    | 5G NR n77 Ant2   | 0.046 | 0.029 | 0.056 | 0.096         | 0.115  | 0.085          | 0.125            | 0.144 |                   |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.105 | 0.066 | 0.056 | 0.096         | 0.115  | 0.122          | 0.162            | 0.181 |                   |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.084 | 0.053 | 0.056 | 0.096         | 0.115  | 0.109          | 0.149            | 0.168 |                   |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.067 | 0.042 | 0.056 | 0.096         | 0.115  | 0.098          | 0.138            | 0.157 |                   |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.042 | 0.026 | 0.056 | 0.096         | 0.115  | 0.082          | 0.122            | 0.141 |                   |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.100 | 0.063 | 0.056 | 0.096         | 0.115  | 0.119          | 0.159            | 0.178 |                   |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.075 | 0.047 | 0.056 | 0.096         | 0.115  | 0.103          | 0.143            | 0.162 |                   |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.078 | 0.049 | 0.056 | 0.096         | 0.115  | 0.105          | 0.145            | 0.164 |                   |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.068 | 0.043 | 0.056 | 0.096         | 0.115  | 0.099          | 0.139            | 0.158 |                   |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.094 | 0.059 | 0.056 | 0.096         | 0.115  | 0.115          | 0.155            | 0.174 |                   |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.069 | 0.043 | 0.056 | 0.096         | 0.115  | 0.099          | 0.139            | 0.158 |                   |
| LTE Band 26 Ant1   | -                | 0.047 | 0.029 | 0.056 | 0.096         | 0.115  | 0.085          | 0.125            | 0.144 |                   |
| LTE Band 26 Ant3   | -                | 0.016 | 0.010 | 0.056 | 0.096         | 0.115  | 0.066          | 0.106            | 0.125 |                   |
| LTE Band 38 Ant1   | -                | 0.003 | 0.002 | 0.056 | 0.096         | 0.115  | 0.058          | 0.098            | 0.117 |                   |
| LTE Band 38 Ant3   | -                | 0.022 | 0.014 | 0.056 | 0.096         | 0.115  | 0.070          | 0.110            | 0.129 |                   |
| LTE Band 48 Ant2   | -                | 0.012 | 0.008 | 0.056 | 0.096         | 0.115  | 0.064          | 0.104            | 0.123 |                   |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.114 | 0.071 | 0.056 | 0.096         | 0.115  | 0.127          | 0.167            | 0.186 |                   |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.110 | 0.069 | 0.056 | 0.096         | 0.115  | 0.125          | 0.165            | 0.184 |                   |
| LTE Band 66 Ant1   | 5G NR n77 Ant2   | 0.108 | 0.068 | 0.056 | 0.096         | 0.115  | 0.124          | 0.164            | 0.183 |                   |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.070 | 0.044 | 0.056 | 0.096         | 0.115  | 0.100          | 0.140            | 0.159 |                   |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.072 | 0.045 | 0.056 | 0.096         | 0.115  | 0.101          | 0.141            | 0.160 |                   |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.087 | 0.054 | 0.056 | 0.096         | 0.115  | 0.110          | 0.150            | 0.169 |                   |
| LTE Band 71 Ant1   | -                | 0.026 | 0.016 | 0.056 | 0.096         | 0.115  | 0.072          | 0.112            | 0.131 |                   |
| LTE Band 71 Ant3   | -                | 0.014 | 0.009 | 0.056 | 0.096         | 0.115  | 0.065          | 0.105            | 0.124 |                   |
| 5G NR n7 Ant1      | -                | 0.018 | 0.011 | 0.056 | 0.096         | 0.115  | 0.067          | 0.107            | 0.126 |                   |
| 5G NR n7 Ant3      | -                | 0.022 | 0.014 | 0.056 | 0.096         | 0.115  | 0.070          | 0.110            | 0.129 |                   |
| 5G NR n12 Ant1     | -                | 0.026 | 0.016 | 0.056 | 0.096         | 0.115  | 0.072          | 0.112            | 0.131 |                   |
| 5G NR n12 Ant3     | -                | 0.011 | 0.007 | 0.056 | 0.096         | 0.115  | 0.063          | 0.103            | 0.122 |                   |
| 5G NR n25 Ant1     | -                | 0.063 | 0.039 | 0.056 | 0.096         | 0.115  | 0.095          | 0.135            | 0.154 |                   |
| 5G NR n25 Ant3     | -                | 0.033 | 0.021 | 0.056 | 0.096         | 0.115  | 0.077          | 0.117            | 0.136 |                   |
| 5G NR n41 Ant1     | -                | 0.009 | 0.006 | 0.056 | 0.096         | 0.115  | 0.062          | 0.102            | 0.121 |                   |
| 5G NR n41 Ant3     | -                | 0.040 | 0.025 | 0.056 | 0.096         | 0.115  | 0.081          | 0.121            | 0.140 |                   |
| 5G NR n48 Ant2     | -                | 0.035 | 0.022 | 0.056 | 0.096         | 0.115  | 0.078          | 0.118            | 0.137 |                   |

- WWAN+WLAN 6GHz / Position: Right Edge

| WWAN Configuration | SAR              | SAR   |       | WLAN 6GHz TER |        |                | Simultaneous TER |                   |       |
|--------------------|------------------|-------|-------|---------------|--------|----------------|------------------|-------------------|-------|
|                    |                  | TER   | Ant3  | Ant1+2        | Ant1+3 | WWAN+WLAN Ant3 | WWAN+WLAN Ant1+2 | WWAN+ WLAN Ant1+3 |       |
| WCDMA II Ant1      | -                | 0.232 | 0.145 | 0.056         | 0.096  | 0.115          | 0.201            | 0.241             | 0.260 |
| WCDMA II Ant3      | -                | 0.058 | 0.036 | 0.056         | 0.096  | 0.115          | 0.092            | 0.132             | 0.151 |
| WCDMA V Ant1       | -                | 0.050 | 0.031 | 0.056         | 0.096  | 0.115          | 0.087            | 0.127             | 0.146 |
| WCDMA V Ant3       | -                | 0.021 | 0.013 | 0.056         | 0.096  | 0.115          | 0.069            | 0.109             | 0.128 |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.100 | 0.063 | 0.056         | 0.096  | 0.115          | 0.119            | 0.159             | 0.178 |
| LTE Band 7 Ant1    | 5G NR n77 Ant2   | 0.082 | 0.051 | 0.056         | 0.096  | 0.115          | 0.107            | 0.147             | 0.166 |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.079 | 0.049 | 0.056         | 0.096  | 0.115          | 0.105            | 0.145             | 0.164 |
| LTE Band 7 Ant3    | 5G NR n77 Ant2   | 0.073 | 0.046 | 0.056         | 0.096  | 0.115          | 0.102            | 0.142             | 0.161 |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.175 | 0.109 | 0.056         | 0.096  | 0.115          | 0.165            | 0.205             | 0.224 |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.100 | 0.063 | 0.056         | 0.096  | 0.115          | 0.119            | 0.159             | 0.178 |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.041 | 0.026 | 0.056         | 0.096  | 0.115          | 0.082            | 0.122             | 0.141 |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.012 | 0.008 | 0.056         | 0.096  | 0.115          | 0.064            | 0.104             | 0.123 |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.173 | 0.108 | 0.056         | 0.096  | 0.115          | 0.164            | 0.204             | 0.223 |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.031 | 0.019 | 0.056         | 0.096  | 0.115          | 0.075            | 0.115             | 0.134 |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.092 | 0.058 | 0.056         | 0.096  | 0.115          | 0.114            | 0.154             | 0.173 |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.036 | 0.023 | 0.056         | 0.096  | 0.115          | 0.079            | 0.119             | 0.138 |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.173 | 0.108 | 0.056         | 0.096  | 0.115          | 0.164            | 0.204             | 0.223 |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.040 | 0.025 | 0.056         | 0.096  | 0.115          | 0.081            | 0.121             | 0.140 |
| LTE Band 26 Ant1   | -                | 0.030 | 0.019 | 0.056         | 0.096  | 0.115          | 0.075            | 0.115             | 0.134 |
| LTE Band 26 Ant3   | -                | 0.016 | 0.010 | 0.056         | 0.096  | 0.115          | 0.066            | 0.106             | 0.125 |
| LTE Band 38 Ant1   | -                | 0.025 | 0.016 | 0.056         | 0.096  | 0.115          | 0.072            | 0.112             | 0.131 |
| LTE Band 38 Ant3   | -                | 0.039 | 0.024 | 0.056         | 0.096  | 0.115          | 0.080            | 0.120             | 0.139 |
| LTE Band 48 Ant2   | -                | 0.001 | 0.001 | 0.056         | 0.096  | 0.115          | 0.057            | 0.097             | 0.116 |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.181 | 0.113 | 0.056         | 0.096  | 0.115          | 0.169            | 0.209             | 0.228 |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.172 | 0.108 | 0.056         | 0.096  | 0.115          | 0.164            | 0.204             | 0.223 |
| LTE Band 66 Ant1   | 5G NR n77 Ant2   | 0.154 | 0.096 | 0.056         | 0.096  | 0.115          | 0.152            | 0.192             | 0.211 |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.087 | 0.054 | 0.056         | 0.096  | 0.115          | 0.110            | 0.150             | 0.169 |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.085 | 0.053 | 0.056         | 0.096  | 0.115          | 0.109            | 0.149             | 0.168 |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.079 | 0.049 | 0.056         | 0.096  | 0.115          | 0.105            | 0.145             | 0.164 |
| LTE Band 71 Ant1   | -                | 0.025 | 0.016 | 0.056         | 0.096  | 0.115          | 0.072            | 0.112             | 0.131 |
| LTE Band 71 Ant3   | -                | 0.010 | 0.006 | 0.056         | 0.096  | 0.115          | 0.062            | 0.102             | 0.121 |
| 5G NR n7 Ant1      | -                | 0.070 | 0.044 | 0.056         | 0.096  | 0.115          | 0.140            | 0.180             | 0.199 |
| 5G NR n7 Ant3      | -                | 0.065 | 0.041 | 0.056         | 0.096  | 0.115          | 0.137            | 0.177             | 0.196 |
| 5G NR n12 Ant1     | -                | 0.026 | 0.016 | 0.056         | 0.096  | 0.115          | 0.072            | 0.112             | 0.131 |
| 5G NR n12 Ant3     | -                | 0.003 | 0.002 | 0.056         | 0.096  | 0.115          | 0.058            | 0.098             | 0.117 |
| 5G NR n25 Ant1     | -                | 0.149 | 0.093 | 0.056         | 0.096  | 0.115          | 0.149            | 0.189             | 0.208 |
| 5G NR n25 Ant3     | -                | 0.039 | 0.024 | 0.056         | 0.096  | 0.115          | 0.080            | 0.120             | 0.139 |
| 5G NR n41 Ant1     | -                | 0.049 | 0.031 | 0.056         | 0.096  | 0.115          | 0.087            | 0.127             | 0.146 |
| 5G NR n41 Ant3     | -                | 0.055 | 0.034 | 0.056         | 0.096  | 0.115          | 0.130            | 0.170             | 0.189 |
| 5G NR n48 Ant2     | -                | 0.007 | 0.004 | 0.056         | 0.096  | 0.115          | 0.060            | 0.100             | 0.119 |

- WWAN+BT / Position: Front

| WWAN Configuration |                  | SAR   | SAR<br>TER | BT LE TER<br>Ant1 | Simultaneous TER<br>WWAN + BT Ant1 |
|--------------------|------------------|-------|------------|-------------------|------------------------------------|
| WCDMA II Ant1      | -                | 0.094 | 0.059      | 0.022             | 0.081                              |
| WCDMA II Ant3      | -                | 0.051 | 0.032      | 0.022             | 0.054                              |
| WCDMA V Ant1       | -                | 0.066 | 0.041      | 0.022             | 0.063                              |
| WCDMA V Ant3       | -                | 0.021 | 0.013      | 0.022             | 0.035                              |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.053 | 0.033      | 0.022             | 0.055                              |
| LTE Band 7 Ant1    | 5G NR n77 Ant2   | 0.051 | 0.032      | 0.022             | 0.054                              |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.031 | 0.019      | 0.022             | 0.041                              |
| LTE Band 7 Ant3    | 5G NR n77 Ant2   | 0.046 | 0.029      | 0.022             | 0.051                              |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.105 | 0.066      | 0.022             | 0.088                              |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.084 | 0.053      | 0.022             | 0.075                              |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.067 | 0.042      | 0.022             | 0.064                              |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.042 | 0.026      | 0.022             | 0.048                              |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.100 | 0.063      | 0.022             | 0.085                              |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.075 | 0.047      | 0.022             | 0.069                              |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.078 | 0.049      | 0.022             | 0.071                              |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.068 | 0.043      | 0.022             | 0.065                              |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.094 | 0.059      | 0.022             | 0.081                              |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.069 | 0.043      | 0.022             | 0.065                              |
| LTE Band 26 Ant1   | -                | 0.047 | 0.029      | 0.022             | 0.051                              |
| LTE Band 26 Ant3   | -                | 0.016 | 0.010      | 0.022             | 0.032                              |
| LTE Band 38 Ant1   | -                | 0.003 | 0.002      | 0.022             | 0.024                              |
| LTE Band 38 Ant3   | -                | 0.022 | 0.014      | 0.022             | 0.036                              |
| LTE Band 48 Ant2   | -                | 0.012 | 0.008      | 0.022             | 0.030                              |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.114 | 0.071      | 0.022             | 0.093                              |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.110 | 0.069      | 0.022             | 0.091                              |
| LTE Band 66 Ant1   | 5G NR n77 Ant2   | 0.108 | 0.068      | 0.022             | 0.090                              |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.070 | 0.044      | 0.022             | 0.066                              |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.072 | 0.045      | 0.022             | 0.067                              |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.087 | 0.054      | 0.022             | 0.076                              |
| LTE Band 71 Ant1   | -                | 0.026 | 0.016      | 0.022             | 0.038                              |
| LTE Band 71 Ant3   | -                | 0.014 | 0.009      | 0.022             | 0.031                              |
| 5G NR n7 Ant1      | -                | 0.018 | 0.011      | 0.022             | 0.033                              |
| 5G NR n7 Ant3      | -                | 0.022 | 0.014      | 0.022             | 0.036                              |
| 5G NR n12 Ant1     | -                | 0.026 | 0.016      | 0.022             | 0.038                              |
| 5G NR n12 Ant3     | -                | 0.011 | 0.007      | 0.022             | 0.029                              |
| 5G NR n25 Ant1     | -                | 0.063 | 0.039      | 0.022             | 0.061                              |
| 5G NR n25 Ant3     | -                | 0.033 | 0.021      | 0.022             | 0.043                              |
| 5G NR n41 Ant1     | -                | 0.009 | 0.006      | 0.022             | 0.028                              |
| 5G NR n41 Ant3     | -                | 0.040 | 0.025      | 0.022             | 0.047                              |
| 5G NR n48 Ant2     | -                | 0.035 | 0.022      | 0.022             | 0.044                              |

- WWAN+BT / Position: Right Edge

| WWAN Configuration |                  | SAR   | SAR<br>TER | BT LE TER<br>Ant1 | Simultaneous TER<br>WWAN + BT Ant1 |
|--------------------|------------------|-------|------------|-------------------|------------------------------------|
| WCDMA II Ant1      | -                | 0.232 | 0.145      | 0.022             | 0.167                              |
| WCDMA II Ant3      | -                | 0.058 | 0.036      | 0.022             | 0.058                              |
| WCDMA V Ant1       | -                | 0.050 | 0.031      | 0.022             | 0.053                              |
| WCDMA V Ant3       | -                | 0.021 | 0.013      | 0.022             | 0.035                              |
| LTE Band 7 Ant1    | 5G NR n71 Ant1   | 0.100 | 0.063      | 0.022             | 0.085                              |
| LTE Band 7 Ant1    | 5G NR n77 Ant2   | 0.082 | 0.051      | 0.022             | 0.073                              |
| LTE Band 7 Ant3    | 5G NR n71 Ant3   | 0.079 | 0.049      | 0.022             | 0.071                              |
| LTE Band 7 Ant3    | 5G NR n77 Ant2   | 0.073 | 0.046      | 0.022             | 0.068                              |
| LTE Band 12 Ant1   | LTE Band 66 Ant1 | 0.175 | 0.109      | 0.022             | 0.131                              |
| LTE Band 12 Ant1   | LTE Band 66 Ant3 | 0.100 | 0.063      | 0.022             | 0.085                              |
| LTE Band 12 Ant1   | 5G NR n77 Ant2   | 0.041 | 0.026      | 0.022             | 0.048                              |
| LTE Band 12 Ant3   | 5G NR n77 Ant2   | 0.012 | 0.008      | 0.022             | 0.030                              |
| LTE Band 13 Ant1   | 5G NR n66 Ant1   | 0.173 | 0.108      | 0.022             | 0.130                              |
| LTE Band 13 Ant1   | 5G NR n77 Ant2   | 0.031 | 0.019      | 0.022             | 0.041                              |
| LTE Band 13 Ant3   | 5G NR n66 Ant3   | 0.092 | 0.058      | 0.022             | 0.080                              |
| LTE Band 13 Ant3   | 5G NR n77 Ant2   | 0.036 | 0.023      | 0.022             | 0.045                              |
| LTE Band 25 Ant1   | 5G NR n77 Ant2   | 0.173 | 0.108      | 0.022             | 0.130                              |
| LTE Band 25 Ant3   | 5G NR n77 Ant2   | 0.040 | 0.025      | 0.022             | 0.047                              |
| LTE Band 26 Ant1   | -                | 0.030 | 0.019      | 0.022             | 0.041                              |
| LTE Band 26 Ant3   | -                | 0.016 | 0.010      | 0.022             | 0.032                              |
| LTE Band 38 Ant1   | -                | 0.025 | 0.016      | 0.022             | 0.038                              |
| LTE Band 38 Ant3   | -                | 0.039 | 0.024      | 0.022             | 0.046                              |
| LTE Band 48 Ant2   | -                | 0.001 | 0.001      | 0.022             | 0.023                              |
| LTE Band 66 Ant1   | 5G NR n5 Ant1    | 0.181 | 0.113      | 0.022             | 0.135                              |
| LTE Band 66 Ant1   | 5G NR n71 Ant1   | 0.172 | 0.108      | 0.022             | 0.130                              |
| LTE Band 66 Ant1   | 5G NR n77 Ant2   | 0.154 | 0.096      | 0.022             | 0.118                              |
| LTE Band 66 Ant3   | 5G NR n5 Ant3    | 0.087 | 0.054      | 0.022             | 0.076                              |
| LTE Band 66 Ant3   | 5G NR n71 Ant3   | 0.085 | 0.053      | 0.022             | 0.075                              |
| LTE Band 66 Ant3   | 5G NR n77 Ant2   | 0.079 | 0.049      | 0.022             | 0.071                              |
| LTE Band 71 Ant1   | -                | 0.025 | 0.016      | 0.022             | 0.038                              |
| LTE Band 71 Ant3   | -                | 0.010 | 0.006      | 0.022             | 0.028                              |
| 5G NR n7 Ant1      | -                | 0.070 | 0.044      | 0.022             | 0.066                              |
| 5G NR n7 Ant3      | -                | 0.065 | 0.041      | 0.022             | 0.063                              |
| 5G NR n12 Ant1     | -                | 0.026 | 0.016      | 0.022             | 0.038                              |
| 5G NR n12 Ant3     | -                | 0.003 | 0.002      | 0.022             | 0.024                              |
| 5G NR n25 Ant1     | -                | 0.149 | 0.093      | 0.022             | 0.115                              |
| 5G NR n25 Ant3     | -                | 0.039 | 0.024      | 0.022             | 0.046                              |
| 5G NR n41 Ant1     | -                | 0.049 | 0.031      | 0.022             | 0.053                              |
| 5G NR n41 Ant3     | -                | 0.055 | 0.034      | 0.022             | 0.056                              |
| 5G NR n48 Ant2     | -                | 0.007 | 0.004      | 0.022             | 0.026                              |

## **28 SAR Measurement Variability**

### **28.1 Measurement Variability**

Per FCC KDB Publication 865664 D01v01r04, 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 power supply 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

## 29 Appendixes List

|                   |                                                           |
|-------------------|-----------------------------------------------------------|
| <b>Appendix A</b> | Appendix A Verification Plots                             |
| <b>Appendix B</b> | Appendix B Test Plots                                     |
| <b>Appendix C</b> | Appendix C Photograph                                     |
| <b>Appendix D</b> | Appendix D Probe, DAE and Dipole Calibration Certificates |
| <b>Appendix E</b> | Appendix E RF Conducted Power                             |
| <b>Appendix F</b> | Appendix F LTE Downlink Carrier Aggregation               |

**-THE END-**