# FCC SAR Test Report

| | |
|---|---|
| APPLICANT | : Motorola Mobility LLC |
| EQUIPMENT | : Mobile Cellular Phone |
| BRAND NAME | : Motorola |
| MODEL NAME | : XT2431-2, XT2431-3 |
| FCC ID | : IHDT56AM6 |
| STANDARD | : FCC 47 CFR Part 2 (2.1093) |

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Si Zhang

Approved by: Si Zhang

ACCREDITED Cert #5145.02

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*People's Republic of China*

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# Revision History

| REPORT NO. | VERSION | DESCRIPTION | ISSUED DATE |
|---|---|---|---|
| FA352916-13 | Rev. 01 | Initial issue of report. | Jan. 05, 2024 |
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# 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2431-2, XT2431-3,** are as follows.

| Highest 1g SAR Summary | | | | | | |
|---|---|---|---|---|---|---|
| Equipment Class | Frequency Band | | Head (Separation 0mm) | Hotspot (Separation 5mm) | Body-worn (Separation 5mm) | Highest Simultaneous Transmission 1g SAR (W/kg) |
| | | | 1g SAR (W/kg) | | | |
| Licensed | GSM | GSM850 | 0.67 | 1.34 | 1.34 | 1.59 |
| | | GSM1900 | 0.10 | 1.12 | 1.29 | |
| | WCDMA | WCDMA II | 0.13 | **1.42** | **1.44** | |
| | | WCDMA IV | 0.13 | 1.39 | 1.41 | |
| | | WCDMA V | 0.34 | 1.37 | 1.37 | |
| | LTE | LTE Band 2 | 0.13 | 1.38 | 1.31 | |
| | | LTE Band 4 | 0.11 | 1.14 | 1.07 | |
| | | LTE Band 12/17 | 0.22 | 0.77 | 0.69 | |
| | | LTE Band 26 | 0.29 | 1.33 | 1.33 | |
| | | LTE Band 41/38 | 1.11 | 1.38 | 1.38 | |
| | | LTE Band 42 | 0.90 | 0.65 | 0.86 | |
| | 5G NR | FR1 n41 | 1.00 | 0.58 | 1.02 | |
| | | FR1 n77/n78 | 0.74 | 0.74 | 1.02 | |
| DTS | WLAN | 2.4GHz WLAN | 0.93 | 0.65 | 1.39 | 1.57 |
| NII | | 5GHz WLAN | **1.19** | 0.71 | 1.13 | 1.59 |
| DSS | Bluetooth | 2.4GHz Bluetooth | 0.47 | 0.49 | 0.44 | 1.58 |

| Highest 10g SAR Summary | | | | |
|---|---|---|---|---|
| Equipment Class | Frequency Band | | Product Specific 10g SAR (W/kg) (Separation 0mm) | Highest Simultaneous Transmission 10g SAR (W/kg) |
| Licensed | GSM | GSM850 | 3.54 | 3.79 |
| | | GSM1900 | 3.41 | |
| | WCDMA | WCDMA II | **3.58** | |
| | | WCDMA IV | 3.37 | |
| | | WCDMA V | 1.57 | |
| | LTE | LTE Band 2 | 3.52 | |
| | | LTE Band 4 | 3.34 | |
| | | LTE Band 26 | 2.04 | |
| | | LTE Band 41/38 | 2.85 | |
| | | LTE Band 42 | 2.09 | |
| | 5G NR | FR1 n41 | 2.68 | |
| | | FR1 n77/n78 | 2.68 | |
| DTS | WLAN | 2.4GHz WLAN | 2.10 | 3.79 |
| NII | | 5GHz WLAN | 1.91 | 3.79 |
| Date of Testing: | | | 2023/12/1 ~ 2023/12/17 | |

**Remark:**
1. This device supports LTE B17 / B38 and B12 / B41. Since the supported frequency span for LTE B17 / B38 falls completely within the supports frequency span for LTE B12 / B41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B12 / B41.
2. This device supports 5GNR n78 and n77. Since the supported frequency span for 5GNR n78 falls completely within the supports frequency span for n77, both 5GNR bands have the same target power, and both 5GNR bands share the same transmission path; therefore, SAR was only assessed for n77.

Declaration of Conformity:

| |
|---|
| The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. |
| Comments and Explanations: |
| The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification. |

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR, 4.0 W/kg for Product Specific 10g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

## 2. Administration Data

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

| Testing Laboratory | | | |
|---|---|---|---|
| Test Firm | Sporton International Inc. (Kunshan) | | |
| Test Site Location | No. 1098, Pengxi North Road, Kunshan Economic Development Zone<br>Jiangsu Province 215300 People's Republic of China<br>TEL : +86-512-57900158 | | |
| Test Site No. | Sporton Site No. | FCC Designation No. | FCC Test Firm Registration No. |
| | SAR01-KS | CN1257 | 314309 |

| Applicant | |
|---|---|
| Company Name | Motorola Mobility LLC |
| Address | 222 W,Merchandise Mart Plaza, Chicago IL 60654 USA |

| Manufacturer | |
|---|---|
| Company Name | Motorola Mobility LLC |
| Address | 222 W,Merchandise Mart Plaza, Chicago IL 60654 USA |

# 3. Data Reuse Approach

## 3.1 Introduction Section

This application re-uses data collected on a similar device, FCC ID: IHDT56AM4 (reference model) and FCC ID: IHDT56AM6 (variant model). Due to the same design are identical between parent model and variant model, SAR data reuse is requested and spot check data in this report is used to justify the SAR data reuse.

Per KDB 484596 D01 v02r02, the deviation of variant model 1g SAR and 10g SAR spot check result was no larger than 3 dB, the WWAN/WLAN/BT maximum SAR summary was always choose the higher SAR between parent model and variant model.

The applicant should take full responsibility that the test data as referenced in this report represent compliance for this FCC ID: IHDT56AM6

## 3.2 Model Difference Information

The **main** difference between FCC ID: IHDT56AM4 and FCC ID: IHDT56AM6 is as below:

- Removed LTE B5/7/13/25/40/66 and 5G NR n2/n5/n7/n26/n40/n66
- Added LTE B11/18/19 and 5G NR n41 /n77.

Other differences and all the details of similarity and difference can be found in the confidential documents (XT2431-2, XT2431-3_Operational Description of Product Equality Declaration).

## 3.3 Reference detail Section

| Rule Part | Equipment Class | Wireless Technology | Frequency Band (MHz) | FCC ID (Reference) | Type Grant/ Permissive Change | Reference Title | FCC ID Filling (Variant) | Test on the variant |
|---|---|---|---|---|---|---|---|---|
| Part 2.1093 | PCE | GSM | GSM850/1900 | | | | IHDT56AM6 | Full Test |
| | | WCDMA | B2/4/5 | | | | IHDT56AM6 | Full Test |
| | | LTE | B41 (Ant 1) / B42 | IHDT56AM4 | Original Grant | FA352916 | IHDT56AM6 | Spot check |
| | | LTE | B2/4/12/17/26 B38/41 (Ant 4) | | | | IHDT56AM6 | Full Test |
| | | 5G NR | n41/n77/n78 | | | | IHDT56AM6 | Full Test |
| | DTS | BLE/ Wi-Fi | 2400~2483.5 | IHDT56AM4 | Original Grant | FA352916 | IHDT56AM6 | Spot check |
| | NII | Wi-Fi | 5150 ~ 5250<br>5250 ~ 5350<br>5470 ~ 5725<br>5725 ~ 5850 | IHDT56AM4 | Original Grant | FA352916 | IHDT56AM6 | Spot check |
| | DSS | Bluetooth | 2400~2483.5 | IHDT56AM4 | Original Grant | FA352916 | IHDT56AM6 | Spot check |
| | DXX | NFC | 13.56 | | | | IHDT56AM6 | Full Test |

# 4. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r03
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- FCC KDB 484596 D01 Referencing Test Data v02r02

# 5. Equipment Under Test (EUT) Information

## 5.1 General Information

| Product Feature & Specification | |
|---|---|
| **Equipment Name** | Mobile Cellular Phone |
| **Brand Name** | Motorola |
| **Model Name** | XT2431-2, XT2431-3 |
| **FCC ID** | IHDT56AM6 |
| **IMEI Code** | Sample 1:<br>IMEI 1: 355221240002579<br>IMEI 2: 355221240002587<br>Sample 2:<br>IMEI 1: 358738360011558<br>IMEI 2: 358738360011566 |
| **Wireless Technology and Frequency Range** | GSM850: 824 MHz ~ 849 MHz<br>GSM1900: 1850 MHz ~ 1910 MHz<br>WCDMA Band II: 1850 MHz ~ 1910 MHz<br>WCDMA Band IV: 1710 MHz ~ 1755 MHz<br>WCDMA Band V: 824 MHz ~ 849 MHz<br>LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 42: 3450 MHz ~ 3550 MHz<br>5G NR n41: 2496 MHz ~ 2690 MHz<br>5G NR n77: 3700 MHz ~ 3980 MHz<br>5G NR n78: 3700 MHz ~ 3800 MHz<br>WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz<br>WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz<br>WLAN 5.3GHz Band: 5260 MHz ~ 5320 MHz<br>WLAN 5.5GHz Band: 5500 MHz ~ 5720 MHz<br>WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz<br>Bluetooth: 2402 MHz ~ 2480 MHz<br>NFC: 13.56 MHz |
| **Mode** | GSM/GPRS/EGPRS<br>AMR / RMC 12.2Kbps<br>HSDPA<br>HSUPA<br>DC-HSDPA<br>HSPA+ (16QAM uplink is supported)<br>LTE: QPSK, 16QAM, 64QAM<br>5G NR : CP-OFDM / DFT-s-OFDM, PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM<br>WLAN 2.4GHz : 802.11b/g/n HT20<br>WLAN 5GHz : 802.11a/n/ac HT20/HT40/VHT20/VHT40/VHT80<br>Bluetooth BR/EDR/LE<br>NFC:ASK |
| **HW Version** | DVT |
| **SW Version** | U1TD34.37 |
| **GSM / (E)GPRS Transfer mode** | Class B – EUT cannot support Packet Switched and Circuit Switched Network simultaneously but can automatically switch between Packet and Circuit Switched Network. |
| **EUT Stage** | Identical Prototype |
| **Remark:**<br>1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.<br>2. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.<br>3. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports | |

WiFi Direct (GC/GO), and 5.3GHz / 5.5GHz supports WiFi Direct (GC only).
4. This device does not support DTM operation and supports GPRS/EGPRS mode up to multi-slot class 12.
5. For dual SIM card mobile has single SIM slots + eSIM (electronic SIM) and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (single active).
6. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
7. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head exposure conditions. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and Handheld exposure conditions.
8. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately.
9. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.
10. For 5GNR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
11. For 5GNR FDD/TDD supports SCS15KHz and SCS30KHz, after verification for 30KHz at FDD power level is less than 15KHz at FDD power level, also verification for 15KHz at TDD power level is less than 30KHz at TDD power level, so only show 15KHz at FDD power and 30KHz at TDD power, and chose higher power which is SCS15KHz for FDD bands and SCS30KHz for TDD bands to perform SAR testing.
12. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
13. There are two samples, the different between them refer to the XT2431-2, XT2431-3_Operational Description of Product Equality Declaration which is exhibit separately. According to the differences, we choose sample 1 to perform full SAR testing and sample 2 to verify the worst case of sample 1.
14. The two model names are only for different market purpose, and all the others are the same.
15. This device has NFC function and the NFC SAR report will be separately submitted.
16. This device supports 5GNR FR1 bands as following table, including NSA mode and SA mode. NSA and SA mode performed SAR separately.

**<5G NR>**

| Mode | Band | Duplex | SCS(KHz) | Bandwidths(BW) |
|---|---|---|---|---|
| NSA | n77 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |
| | n78 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |
| SA | n41 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |
| | n77 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |
| | n78 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |

## 5.2 General LTE SAR Test and Reporting Considerations

<table>
<tr><th colspan="2">Summarized necessary items addressed in KDB 941225 D05 v02r05</th></tr>
<tr><td>FCC ID</td><td>IHDT56AM6</td></tr>
<tr><td>Equipment Name</td><td>Mobile Cellular Phone</td></tr>
<tr><td>Operating Frequency Range of each LTE transmission band</td><td>LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 42: 3450 MHz ~ 3550MHz</td></tr>
<tr><td>Channel Bandwidth</td><td>LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 17: 5MHz, 10MHz<br>LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz<br>LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 42: 5MHz, 10MHz, 15MHz, 20MHz</td></tr>
<tr><td>uplink modulations used</td><td>QPSK / 16QAM / 64QAM</td></tr>
<tr><td>LTE Voice / Data requirements</td><td>Voice and Data</td></tr>
<tr><td>LTE Release Version</td><td>R15, Cat13</td></tr>
<tr><td>CA Support</td><td>Supported, Uplink and Downlink</td></tr>
<tr><td>LTE MPR permanently built-in by design</td><td>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth ($N_{RB}$)</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table></td></tr>
<tr><td>LTE A-MPR</td><td>In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)</td></tr>
<tr><td>Spectrum plots for RB configuration</td><td>A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.</td></tr>
<tr><td>Power reduction applied to satisfy SAR compliance</td><td>Yes, when operating in Proximity sensors/receiver/hotspot detect mechanism, head/body -worn /hotspot/extremity will trigger reduced power for some bands applied to satisfy SAR compliance, the detail please referred to section 14.</td></tr>
<tr><td>LTE Carrier Aggregation Combinations</td><td>Inter-Band and Intra-Band possible combinations and the detail power verification please referred to section 14.</td></tr>
<tr><td>LTE Carrier Aggregation Additional Information</td><td>1. This device supports LTE Carrier Aggregation (CA) in the uplink for intra-band with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per FCC Guidance.<br>2. This device supports maximum of 3 carriers in the downlink and 2 carriers in the uplink.</td></tr>
</table>

| Transmission (H, M, L) channel numbers and frequencies in each LTE band | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTE Band 2 | | | | | | | | | | | | |
| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 18607 | 1850.7 | 18615 | 1851.5 | 18625 | 1852.5 | 18650 | 1855 | 18675 | 1857.5 | 18700 | 1860 |
| M | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 |
| H | 19193 | 1909.3 | 19185 | 1908.5 | 19175 | 1907.5 | 19150 | 1905 | 19125 | 1902.5 | 19100 | 1900 |
| LTE Band 4 | | | | | | | | | | | | |
| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 19957 | 1710.7 | 19965 | 1711.5 | 19975 | 1712.5 | 20000 | 1715 | 20025 | 1717.5 | 20050 | 1720 |
| M | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 |
| H | 20393 | 1754.3 | 20385 | 1753.5 | 20375 | 1752.5 | 20350 | 1750 | 20325 | 1747.5 | 20300 | 1745 |
| LTE Band 12 | | | | | | | | |
| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 23017 | 699.7 | 23025 | 700.5 | 23035 | 701.5 | 23060 | 704 |
| M | 23095 | 707.5 | 23095 | 707.5 | 23095 | 707.5 | 23095 | 707.5 |
| H | 23173 | 715.3 | 23165 | 714.5 | 23155 | 713.5 | 23130 | 711 |
| LTE Band 17 | | | | |
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
| | Channel # | Freq.(MHz) | Channel # | Freq. (MHz) |
| L | 23755 | 706.5 | 23780 | 709 |
| M | 23790 | 710 | 23790 | 710 |
| H | 23825 | 713.5 | 23800 | 711 |
| LTE Band 26 | | | | | | | | | | |
| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 26697 | 814.7 | 26705 | 815.5 | 26715 | 816.5 | 26740 | 819 | 26765 | 821.5 |
| M | 26865 | 831.5 | 26865 | 831.5 | 26865 | 831.5 | 26865 | 831.5 | 26865 | 831.5 |
| H | 27033 | 848.3 | 27025 | 847.5 | 27015 | 846.5 | 26990 | 844 | 26965 | 841.5 |

| LTE Band 38 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 37775 | 2572.5 | 37800 | 2575 | 37825 | 2577.5 | 37850 | 2580 |
| M | 38000 | 2595 | 38000 | 2595 | 38000 | 2595 | 38000 | 2595 |
| H | 38225 | 2617.5 | 38200 | 2615 | 38175 | 2612.5 | 38150 | 2610 |

| LTE Band 41 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 39675 | 2498.5 | 39700 | 2501 | 39725 | 2503.5 | 39750 | 2506 |
| LM | 40148 | 2545.8 | 40160 | 2547 | 40173 | 2548.3 | 40185 | 2549.5 |
| M | 40620 | 2593 | 40620 | 2593 | 40620 | 2593 | 40620 | 2593 |
| HM | 41093 | 2640.3 | 41080 | 2639 | 41068 | 2637.8 | 41055 | 2636.5 |
| H | 41565 | 2687.5 | 41540 | 2685 | 41515 | 2682.5 | 41490 | 2680 |

**<3450 MHz ~ 3550 MHz>**

| LTE Band 42 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 42115 | 3452.5 | 42140 | 3455 | 42165 | 3457.5 | 42190 | 3460 |
| M | 42590 | 3500 | 42590 | 3500 | 42590 | 3500 | 42590 | 3500 |
| H | 43065 | 3547.5 | 43040 | 3545 | 43015 | 3542.5 | 42990 | 3540 |

**<For LTE Overlap Bands Description>**

1) LTE Bands BW

| Band | 1.4 MHz | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |
|---|---|---|---|---|---|---|
| LTE Band 12 | Yes | Yes | Yes | Yes | | |
| LTE Band 17 | | | Yes | Yes | | |
| LTE Band 38 | | | Yes | Yes | Yes | Yes |
| LTE Band 41 | | | Yes | Yes | Yes | Yes |

2) LTE Bands tune up:

| Band | Antenna | Head ECI 2 Receiver on Tune-up Limit | Body Worn ECI 3 Sensor on Tune-up Limit | Hotspot ECI 7 Tune-up Limit | Extremity ECI 6 Handheld Tune-up Limit | Sensor Off ECI4 Tune-up Limit | Default Tune-up Limit |
|---|---|---|---|---|---|---|---|
| LTE Band 12 | Ant 0 | 24 | 24 | 24 | 24 | 24 | 24 |
| LTE Band 17 | | 24 | 24 | 24 | 24 | 24 | 24 |
| LTE Band 38 | Ant 4 | 16 | 17.5 | 12 | 19 | 24 | 24 |
| LTE Band 41 | | 16 | 17.5 | 12 | 19 | 24 | 24 |

## 5.3 General 5G NR SAR Test and Reporting Considerations

| 5G NR Information | |
|---|---|
| Operating Frequency Range of each 5G NR transmission band | 5G NR n41: 2496 MHz ~ 2690 MHz<br>5G NR n77: 3700 MHz ~ 3980 MHz<br>5G NR n78: 3700 MHz ~ 3800 MHz |
| Channel Bandwidth | The detail please refers to section 4.1 5GNR FR1 bands table. |
| SCS | FDD/TDD: SCS15KHz/SCS30KHz |
| uplink modulations used | DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM<br>CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM |
| A-MPR (Additional MPR) disabled for SAR Testing? | Yes |
| LTE Anchor Bands for n77 | LTE B41 |
| LTE Anchor Bands for n78 | LTE B41 |

| NR Band 41 SCS15KHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 500202 | 2501.01 | 500700 | 2503.5 | 501204 | 2506.02 | 502200 | 2511 | 503202 | 2516.01 | 504204 | 2521.02 |
| M | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 |
| H | 537000 | 2685 | 536496 | 2682.48 | 535998 | 2679.99 | 534996 | 2674.98 | 534000 | 2670 | 532998 | 2664.99 |

| NR Band 41 SCS30KHz | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | | Bandwidth 60MHz | | Bandwidth 70MHz | | Bandwidth 80MHz | | Bandwidth 90MHz | | Bandwidth 100MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 500202 | 2501.01 | 500700 | 2503.5 | 501204 | 2506.02 | 502200 | 2511 | 503202 | 2516.01 | 504204 | 2521.02 | 505200 | 2526 | 500202 | 2501.01 | 507204 | 2536.02 | 508200 | 2541 | 509202 | 2546.01 |
| M | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 | 518598 | 2592.99 |
| H | 537000 | 2685 | 536496 | 2682.48 | 535998 | 2679.99 | 534996 | 2674.98 | 534000 | 2670 | 532998 | 2664.99 | 531996 | 2659.98 | 537000 | 2685 | 529998 | 2649.99 | 528996 | 2644.98 | 528000 | 2640 |

| NR Band 77 SCS15KHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 647000 | 3705 | 647168 | 3707.52 | 647334 | 3710.01 | 647668 | 3715.02 | 648000 | 3720 | 648334 | 3725.01 |
| M | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840.00 | 656000 | 3840 | 656000 | 3840 |
| H | 665000 | 3975 | 664832 | 3972.48 | 664666 | 3969.99 | 664332 | 3964.98 | 664000 | 3960 | 663666 | 3954.99 |

| NR Band 77 SCS30KHz | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | | Bandwidth 60MHz | | Bandwidth 70MHz | | Bandwidth 80MHz | | Bandwidth 90MHz | | Bandwidth 100MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 647000 | 3705 | 647168 | 3707.52 | 647334 | 3710.01 | 647668 | 3715.02 | 648000 | 3720 | 648334 | 3725.01 | 648668 | 3730.02 | 649000 | 3735 | 649334 | 3740.01 | 649668 | 3745.02 | 650000 | 3750 |
| M | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840.00 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 |
| H | 665000 | 3975 | 664832 | 3972.48 | 664666 | 3969.99 | 664332 | 3964.98 | 664000 | 3960 | 663666 | 3954.99 | 663332 | 3949.98 | 663000 | 3945 | 662666 | 3939.99 | 662332 | 3934.98 | 662000 | 3930 |

| NR Band 78 SCS15KHz | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 647000 | 3705 | 647168 | 3707.52 | 647334 | 3710.01 | 647668 | 3715.02 | 648000 | 3720 | 648334 | 3725.01 |
| M | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750.00 | 650000 | 3750 | 650000 | 3750 |
| H | 653000 | 3795 | 652832 | 3792.48 | 652666 | 3789.99 | 652332 | 3784.98 | 652000 | 3780 | 651666 | 3774.99 |

| NR Band 78 SCS30KHz | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | | Bandwidth 60MHz | | Bandwidth 70MHz | | Bandwidth 80MHz | | Bandwidth 90MHz | | Bandwidth 100MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 647000 | 3705 | 647168 | 3707.52 | 647334 | 3710.01 | 647668 | 3715.02 | 648000 | 3720 | 648334 | 3725.01 | 648668 | 3730.02 | 649000 | 3735 | 649334 | 3740.01 | 649668 | 3745.02 | | |
| M | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750.00 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 | 650000 | 3750 |
| H | 653000 | 3795 | 652832 | 3792.48 | 652666 | 3789.99 | 652332 | 3784.98 | 652000 | 3780 | 651666 | 3774.99 | 651332 | 3769.98 | 651000 | 3765 | 650666 | 3759.99 | 650332 | 3754.98 | | |

**<For NR Overlap Bands Description>**

1) NR Bands BW

| Band | Duplex | SCS(KHz) | Bandwidths(BW) |
|---|---|---|---|
| n77 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |
| n78 | TDD | 15 | 10, 15, 20, 30, 40, 50 |
| | | 30 | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 |

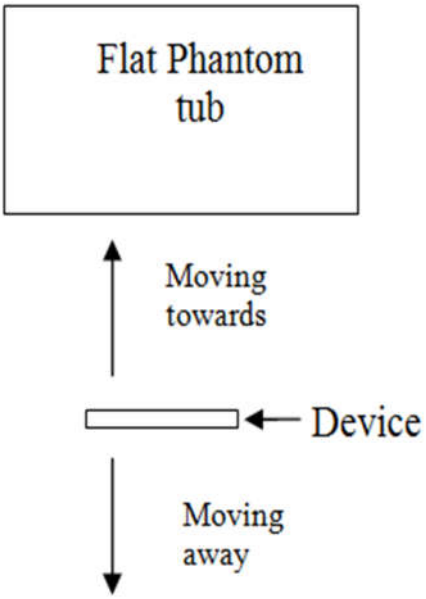
2) NR Bands Tune up:

| Band | Antenna | Head ECI 2 Receiver on Tune-up Limit | Body Worn ECI 3 Sensor on Tune-up Limit | Hotspot ECI 7 Tune-up Limit | Extremity ECI 6 Handheld Tune-up Limit | Sensor Off ECI4 Tune-up Limit | Default Tune-up Limit |
|---|---|---|---|---|---|---|---|
| 5G NR n77 | Ant 5 | 17 | 17 | 15 | 20.5 | 24 | 24 |
| 5G NR n78 | | 17 | 17 | 15 | 20.5 | 24 | 24 |
| 5G NR n77 | Ant 1 | 20 | 20 | 20 | 20 | 20 | 20 |
| 5G NR n78 | | 20 | 20 | 20 | 20 | 20 | 20 |
| 5G NR n77 | Ant 2 | 21 | 18 | 16 | 21 | 21 | 21 |
| 5G NR n78 | | 21 | 18 | 16 | 21 | 21 | 21 |
| 5G NR n77 | Ant 7 | 19.5 | 18.5 | 16.5 | 20.5 | 20.5 | 20.5 |
| 5G NR n78 | | 19.5 | 18.5 | 16.5 | 20.5 | 20.5 | 20.5 |

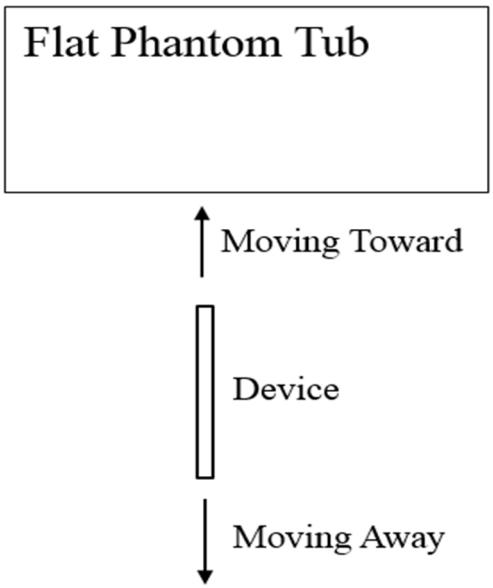
# 6. Proximity Sensor Triggering Test

**<Proximity Sensor Triggering Distance>:**

1. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed and the tissue-equivalent medium for highest frequency (5850MHz) and lowest (835MHz) frequency was used for proximity sensor triggering testing.
2. Capacitive proximity sensors placed coincident with antenna elements at the top and bottom ends of the phone are utilized to determine when the device comes in proximity of the user's body at the front or back of the device.
3. The output power will reduce to body worn power level when top and bottom sensor pad be detected.
4. The sensors used to detect the proximity of the user's body at the front or back surface of the device use a detection threshold distance. The data shown in the sections below shows the distance(s). When front or back body worn condition is detected reduced power will be active.
5. The device employs proximity sensors also can detect the presence of the user's a finger or hand when handheld state at the front/back/top/bottom/left/right sides of the device. When front/back/top/bottom/left/right sides of handheld condition is detected reduced power will be active.
6. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed:




Sensor/Handheld detection test set-up, Front and Back sides




Handheld detection test set-up, Left Side, Right Side, Bottom Side and Top Side

## <P-Sensor>

| Proximity Sensor Triggering Distance (mm) | | | | |
|---|---|---|---|---|
| Position | Front | | Back | |
| | Moving towards | Moving away | Moving towards | Moving away |
| Minimum | 13 | 17 | 18 | 25 |

## <Handheld for ANT 0>

| Proximity Sensor Triggering Distance (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Position | Front | | Back | | Right Side | | Bottom Side | |
| | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away |
| Minimum | 10 | 13 | 17 | 20 | 5 | 9 | 14 | 18 |

## <Handheld for ANT1>

| Proximity Sensor Triggering Distance (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Position | Front | | Back | | Left Side | | Bottom Side | |
| | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away |
| Minimum | 5 | 9 | 10 | 14 | 8 | 11 | 10 | 13 |

## <Handheld for ANT4>

| Proximity Sensor Triggering Distance (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Position | Front | | Back | | Left Side | | Top Side | |
| | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away |
| Minimum | 8 | 14 | 12 | 17 | 6 | 12 | 15 | 18 |

## <Handheld for ANT5>

| Proximity Sensor Triggering Distance (mm) | | | | | | |
|---|---|---|---|---|---|---|
| Position | Front | | Back | | Top Side | |
| | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away |
| Minimum | 7 | 8 | 14 | 16 | 16 | 19 |

## <Handheld for ANT6>

| Proximity Sensor Triggering Distance (mm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Position | Front | | Back | | Right Side | | Top Side | |
| | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away | Moving towards | Moving away |
| Minimum | 5 | 12 | 11 | 15 | 5 | 9 | 12 | 17 |

# 7. RF Exposure Limits

## 7.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

## 7.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**Limits for Occupational/Controlled Exposure (W/kg)**

| Whole-Body | Partial-Body | Hands, Wrists, Feet and Ankles |
|---|---|---|
| 0.4 | 8.0 | 20.0 |

**Limits for General Population/Uncontrolled Exposure (W/kg)**

| Whole-Body | Partial-Body | Hands, Wrists, Feet and Ankles |
|---|---|---|
| 0.08 | 1.6 | 4.0 |

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

# 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:

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

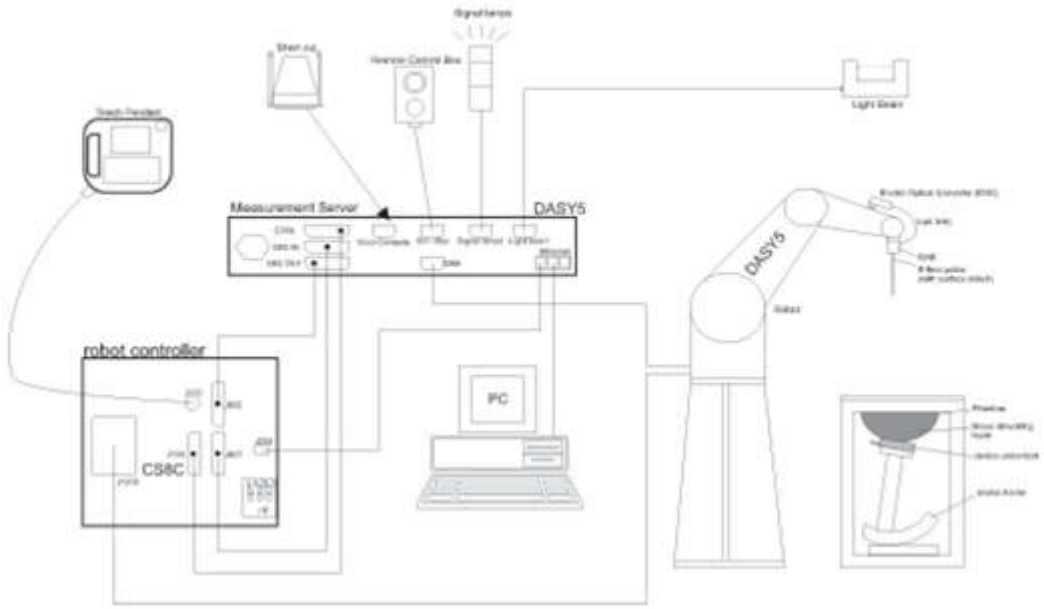
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

# 9. System Description and Setup

**The DASY5 system used for performing compliance tests consists of the following items:**




- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win10 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

## 9.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

**<EX3DV4 Probe>**

| | |
|---|---|
| **Construction** | Symmetric design with triangular core<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |
| **Frequency** | 10 MHz – >6 GHz<br>Linearity: ±0.2 dB (30 MHz – 6 GHz) |
| **Directivity** | ±0.3 dB in TSL (rotation around probe axis)<br>±0.5 dB in TSL (rotation normal to probe axis) |
| **Dynamic Range** | 10 µW/g – >100 mW/g<br>Linearity: ±0.2 dB (noise: typically <1 µW/g) |
| **Dimensions** | Overall length: 337 mm (tip: 20 mm)<br>Tip diameter: 2.5 mm (body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm |

**<ES3DV3 Probe>**

| | |
|---|---|
| **Construction** | Symmetric design with triangular core<br>Interleaved sensors<br>Built-in shielding against static charges<br>PEEK enclosure material (resistant to organic solvents, e.g., DGBE) |
| **Frequency** | 10 MHz – 4 GHz;<br>Linearity: ±0.2 dB (30 MHz – 4 GHz) |
| **Directivity** | ±0.2 dB in TSL (rotation around probe axis)<br>±0.3 dB in TSL (rotation normal to probe axis) |
| **Dynamic Range** | 5 µW/g – >100 mW/g;<br>Linearity: ±0.2 dB |
| **Dimensions** | Overall length: 337 mm (tip: 20 mm)<br>Tip diameter: 3.9 mm (body: 12 mm)<br>Distance from probe tip to dipole centers: 3.0 mm |

## 9.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

**Photo of DAE**

## 9.3 Phantom

**<SAM Twin Phantom>**

| | |
|---|---|
| **Shell Thickness** | 2 ± 0.2 mm;<br>Center ear point: 6 ± 0.2 mm |
| **Filling Volume** | Approx. 25 liters |
| **Dimensions** | Length: 1000 mm; Width: 500 mm; Height: adjustable feet |
| **Measurement Areas** | Left Hand, Right Hand, Flat Phantom |

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

**<ELI Phantom>**

| | |
|---|---|
| **Shell Thickness** | 2 ± 0.2 mm (sagging: <1%) |
| **Filling Volume** | Approx. 30 liters |
| **Dimensions** | Major ellipse axis: 600 mm<br>Minor axis: 400 mm |

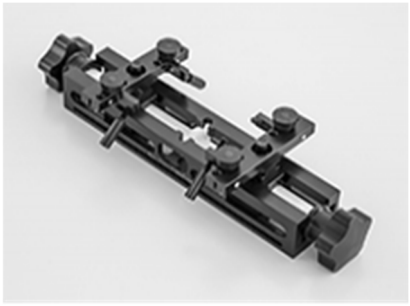
The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices or for evaluating transmitters operating at low frequencies. ELI is fully compatible with standard and all known tissue simulating liquids.

## 9.4 Device Holder

**<Mounting Device for Hand-Held Transmitter>**

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

**<Mounting Device for Laptops and other Body-Worn Transmitters>**

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

Mounting Device for Laptops

# 10. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

## 10.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

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 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

## 10.2 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. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

## 10.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

| | ≤ 3 GHz | > 3 GHz |
|---|---|---|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | 5 ± 1 mm | ½·δ·ln(2) ± 0.5 mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | 30° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: $\Delta x_{Area}$, $\Delta y_{Area}$ | ≤ 2 GHz: ≤ 15 mm<br>2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm<br>4 – 6 GHz: ≤ 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 ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |

## 10.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

| | | | ≤ 3 GHz | > 3 GHz |
|---|---|---|---|---|
| Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$, $\Delta y_{Zoom}$ | | | ≤ 2 GHz: ≤ 8 mm<br>2 – 3 GHz: ≤ 5 mm* | 3 – 4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm* |
| Maximum zoom scan spatial resolution, normal to phantom surface | uniform grid: $\Delta z_{Zoom}(n)$ | | ≤ 5 mm | 3 – 4 GHz: ≤ 4 mm<br>4 – 5 GHz: ≤ 3 mm<br>5 – 6 GHz: ≤ 2 mm |
| | graded grid | $\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface | ≤ 4 mm | 3 – 4 GHz: ≤ 3 mm<br>4 – 5 GHz: ≤ 2.5 mm<br>5 – 6 GHz: ≤ 2 mm |
| | | $\Delta z_{Zoom}(n>1)$: between subsequent points | ≤ 1.5·$\Delta z_{Zoom}(n-1)$ | |
| Minimum zoom scan volume | x, y, z | | ≥ 30 mm | 3 – 4 GHz: ≥ 28 mm<br>4 – 5 GHz: ≥ 25 mm<br>5 – 6 GHz: ≥ 22 mm |

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 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.

## 10.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

## 10.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

# 11. Test Equipment List

| Manufacturer | Name of Equipment | Type/Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Last Cal. | Due Date |
| SPEAG | 750MHz System Validation Kit | D750V3 | 1087 | 2022/2/24 | 2025/2/23 |
| SPEAG | 835MHz System Validation Kit | D835V2 | 4d091 | 2022/8/19 | 2025/8/18 |
| SPEAG | 1750MHz System Validation Kit | D1750V2 | 1090 | 2022/2/24 | 2025/2/23 |
| SPEAG | 1900MHz System Validation Kit | D1900V2 | 5d118 | 2022/3/30 | 2025/3/29 |
| SPEAG | 2450MHz System Validation Kit | D2450V2 | 1040 | 2023/4/25 | 2024/4/24 |
| SPEAG | 2600MHz System Validation Kit | D2600V2 | 1070 | 2021/12/20 | 2024/12/19 |
| SPEAG | 3500MHz System Validation Kit | D3500V2 | 1076 | 2022/5/9 | 2025/5/8 |
| SPEAG | 3700MHz System Validation Kit | D3700V2 | 1037 | 2022/5/9 | 2025/5/8 |
| SPEAG | 3900MHz System Validation Kit | D3900V2 | 1048 | 2023/3/9 | 2024/3/8 |
| SPEAG | 5000MHz System Validation Kit | D5GHzV2 | 1113 | 2022/9/23 | 2025/9/22 |
| SPEAG | Data Acquisition Electronics | DAE4 | 1279 | 2023/6/7 | 2024/6/6 |
| SPEAG | Dosimetric E-Field Probe | ES3DV3 | 3279 | 2023/8/18 | 2024/8/17 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 3857 | 2022/12/14 | 2023/12/13 |
| SPEAG | SAM Twin Phantom | SAM Twin | TP-1754 | NCR | NCR |
| CHIGO | Thermo-Hygrometer | HTC-1 | 55011 | 2023/1/8 | 2024/1/7 |
| SPEAG | Phone Positioner | N/A | N/A | NCR | NCR |
| Anritsu | Radio Communication Analyzer | MT8821C | 6262306175 | 2023/7/5 | 2024/7/4 |
| Agilent | ENA Series Network Analyzer | E5071C | MY46111157 | 2023/7/5 | 2024/7/4 |
| SPEAG | Dielectric Probe Kit | DAK-3.5 | 1071 | 2023/2/20 | 2024/2/19 |
| Anritsu | Vector Signal Generator | MG3710A | 6201682672 | 2023/1/5 | 2024/1/4 |
| Rohde & Schwarz | Power Meter | NRVD | 102081 | 2023/7/5 | 2024/7/4 |
| Rohde & Schwarz | Power Sensor | NRV-Z5 | 100538 | 2023/7/5 | 2024/7/4 |
| Rohde & Schwarz | Power Sensor | NRV-Z5 | 100539 | 2023/7/5 | 2024/7/4 |
| R&S | BLUETOOTH TESTER | CBT | 101246 | 2023/5/15 | 2024/5/14 |
| Rohde & Schwarz | Spectrum Analyzer | FSV7 | 101631 | 2023/10/12 | 2024/10/11 |
| TES | DIGITAC THERMOMETER | 1310 | 220305411 | 2023/1/8 | 2024/1/7 |
| ARRA | Power Divider | A3200-2 | N/A | Note 1 | |
| MCL | Attenuation1 | BW-S10W5+ | N/A | Note 1 | |
| MCL | Attenuation2 | BW-S10W5+ | N/A | Note 1 | |
| MCL | Attenuation3 | BW-S10W5+ | N/A | Note 1 | |
| BONN | POWER AMPLIFIER | BLMA 0830-3 | 087193A | Note 1 | |
| BONN | POWER AMPLIFIER | BLMA 2060-2 | 087193B | Note 1 | |
| Agilent | Dual Directional Coupler | 778D | 20500 | Note 1 | |
| Agilent | Dual Directional Coupler | 11691D | MY48151020 | Note 1 | |

**Note:**

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check
2. Referring to KDB 865664 D01v01r04, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.

# 12. System Verification

## 12.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 11.2.

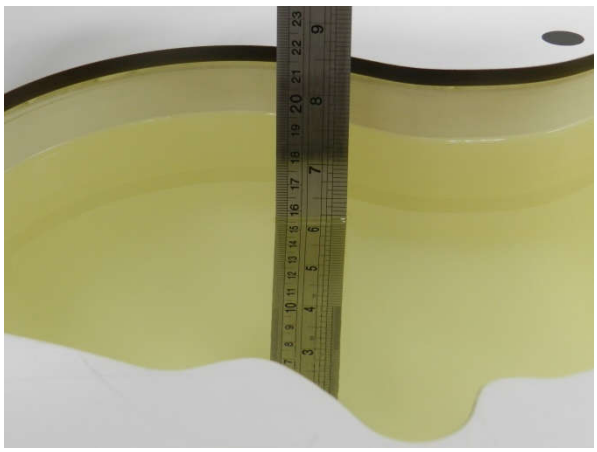


**Fig 11.1 Photo of Liquid Height for Head SAR**

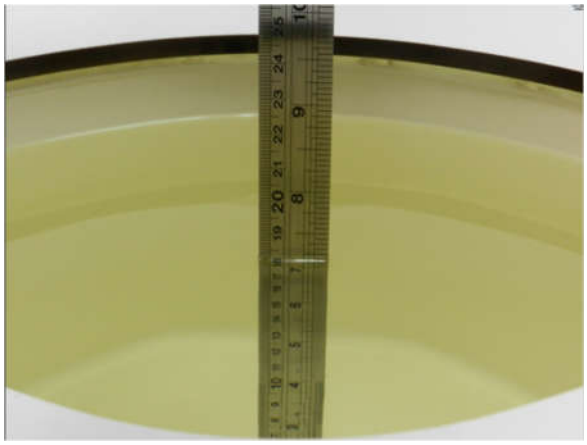


**Fig 11.2 Photo of Liquid Height for Body SAR**

## 12.2 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

| Frequency (MHz) | Water (%) | Sugar (%) | Cellulose (%) | Salt (%) | Preventol (%) | DGBE (%) | Conductivity (σ) | Permittivity (εr) |
|---|---|---|---|---|---|---|---|---|
| For Head | | | | | | | | |
| 750 | 41.1 | 57.0 | 0.2 | 1.4 | 0.2 | 0 | 0.89 | 41.9 |
| 835 | 40.3 | 57.9 | 0.2 | 1.4 | 0.2 | 0 | 0.90 | 41.5 |
| 1800, 1900, 2000 | 55.2 | 0 | 0 | 0.3 | 0 | 44.5 | 1.40 | 40.0 |
| 2450 | 55.0 | 0 | 0 | 0 | 0 | 45.0 | 1.80 | 39.2 |
| 2600 | 54.8 | 0 | 0 | 0.1 | 0 | 45.1 | 1.96 | 39.0 |

Simulating Liquid for 5GHz, Manufactured by SPEAG

| Ingredients | (% by weight) |
|---|---|
| Water | 64~78% |
| Mineral oil | 11~18% |
| Emulsifiers | 9~15% |
| Additives and Salt | 2~3% |

## <Tissue Dielectric Parameter Check Results>

| Frequency (MHz) | Tissue Type | Liquid Temp. (℃) | Conductivity (σ) | Permittivity ($\varepsilon_r$) | Conductivity Target (σ) | Permittivity Target ($\varepsilon_r$) | Delta (σ) (%) | Delta ($\varepsilon_r$) (%) | Limit (%) | Date |
|---|---|---|---|---|---|---|---|---|---|---|
| 750 | Head | 22.7 | 0.889 | 42.282 | 0.89 | 41.90 | -0.11 | 0.91 | ±5 | 2023/12/7 |
| 835 | Head | 22.8 | 0.912 | 41.952 | 0.90 | 41.50 | 1.33 | 1.09 | ±5 | 2023/12/8 |
| 1750 | Head | 22.8 | 1.317 | 40.226 | 1.37 | 40.10 | -3.87 | 0.31 | ±5 | 2023/12/9 |
| 1900 | Head | 22.8 | 1.407 | 40.217 | 1.40 | 40.00 | 0.50 | 0.54 | ±5 | 2023/12/10 |
| 2600 | Head | 22.8 | 1.872 | 39.219 | 1.96 | 39.00 | -4.49 | 0.56 | ±5 | 2023/12/11 |
| 3500 | Head | 22.8 | 2.810 | 38.714 | 2.91 | 37.90 | -3.44 | 2.15 | ±5 | 2023/12/12 |
| 3700 | Head | 22.8 | 2.988 | 38.362 | 3.12 | 37.70 | -4.23 | 1.76 | ±5 | 2023/12/12 |
| 3900 | Head | 22.7 | 3.171 | 38.039 | 3.32 | 37.50 | -4.49 | 1.44 | ±5 | 2023/12/12 |
| 750 | Head | 22.7 | 0.888 | 42.264 | 0.89 | 41.90 | -0.22 | 0.87 | ±5 | 2023/12/13 |
| 835 | Head | 22.7 | 0.911 | 41.930 | 0.90 | 41.50 | 1.22 | 1.04 | ±5 | 2023/12/14 |
| 1750 | Head | 22.8 | 1.316 | 40.209 | 1.37 | 40.10 | -3.94 | 0.27 | ±5 | 2023/12/15 |
| 1900 | Head | 22.8 | 1.406 | 40.194 | 1.40 | 40.00 | 0.43 | 0.49 | ±5 | 2023/12/16 |
| 2600 | Head | 22.8 | 2.030 | 40.346 | 1.96 | 39.00 | 3.57 | 3.45 | ±5 | 2023/12/17 |
| 3500 | Head | 22.8 | 2.879 | 38.500 | 2.91 | 37.90 | -1.07 | 1.58 | ±5 | 2023/12/5 |
| 3700 | Head | 22.8 | 3.076 | 38.038 | 3.12 | 37.70 | -1.41 | 0.90 | ±5 | 2023/12/5 |
| 3900 | Head | 22.8 | 3.279 | 37.617 | 3.32 | 37.50 | -1.23 | 0.31 | ±5 | 2023/12/6 |
| 2450 | Head | 22.8 | 1.824 | 39.239 | 1.80 | 39.20 | 1.33 | 0.10 | ±5 | 2023/12/1 |
| 5250 | Head | 22.7 | 4.579 | 35.733 | 4.71 | 35.90 | -2.78 | -0.47 | ±5 | 2023/12/2 |
| 5600 | Head | 22.7 | 4.954 | 35.113 | 5.07 | 35.50 | -2.29 | -1.09 | ±5 | 2023/12/3 |
| 5750 | Head | 22.7 | 5.113 | 34.880 | 5.22 | 35.40 | -2.05 | -1.47 | ±5 | 2023/12/4 |

## 12.3 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

**<1g SAR>**

| Date | Frequency (MHz) | Tissue Type | Input Power (mW) | Dipole S/N | Probe S/N | DAE S/N | Measured 1g SAR (W/kg) | Targeted 1g SAR (W/kg) | Normalized 1g SAR (W/kg) | Deviation (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023/12/7 | 750 | Head | 50 | 1087 | 3279 | 1279 | 0.453 | 8.58 | 9.06 | 5.59 |
| 2023/12/8 | 835 | Head | 50 | 4d091 | 3279 | 1279 | 0.468 | 9.45 | 9.36 | -0.95 |
| 2023/12/9 | 1750 | Head | 50 | 1090 | 3279 | 1279 | 1.810 | 37.00 | 36.2 | -2.16 |
| 2023/12/10 | 1900 | Head | 50 | 5d118 | 3279 | 1279 | 2.040 | 39.30 | 40.8 | 3.82 |
| 2023/12/11 | 2600 | Head | 50 | 1070 | 3279 | 1279 | 2.640 | 56.20 | 52.8 | -6.05 |
| 2023/12/12 | 3500 | Head | 50 | 1076 | 3857 | 1279 | 3.360 | 66.20 | 67.2 | 1.51 |
| 2023/12/12 | 3700 | Head | 50 | 1037 | 3857 | 1279 | 3.300 | 66.70 | 66 | -1.05 |
| 2023/12/12 | 3900 | Head | 50 | 1048 | 3857 | 1279 | 3.330 | 69.10 | 66.6 | -3.62 |
| 2023/12/13 | 750 | Head | 50 | 1087 | 3279 | 1279 | 0.397 | 8.58 | 7.94 | -7.46 |
| 2023/12/14 | 835 | Head | 50 | 4d091 | 3279 | 1279 | 0.474 | 9.45 | 9.48 | 0.32 |
| 2023/12/15 | 1750 | Head | 50 | 1090 | 3279 | 1279 | 1.850 | 37.00 | 37 | 0.00 |
| 2023/12/16 | 1900 | Head | 50 | 5d118 | 3279 | 1279 | 2.120 | 39.30 | 42.4 | 7.89 |
| 2023/12/17 | 2600 | Head | 50 | 1070 | 3279 | 1279 | 2.620 | 56.20 | 52.4 | -6.76 |
| 2023/12/5 | 3500 | Head | 50 | 1076 | 3857 | 1279 | 3.340 | 66.20 | 66.8 | 0.91 |
| 2023/12/5 | 3700 | Head | 50 | 1037 | 3857 | 1279 | 3.390 | 66.70 | 67.8 | 1.65 |
| 2023/12/6 | 3900 | Head | 50 | 1048 | 3857 | 1279 | 3.310 | 69.10 | 66.2 | -4.20 |
| 2023/12/1 | 2450 | Head | 50 | 1040 | 3857 | 1279 | 2.650 | 52.70 | 53 | 0.57 |
| 2023/12/2 | 5250 | Head | 50 | 1113 | 3857 | 1279 | 4.340 | 81.50 | 86.8 | 6.50 |
| 2023/12/3 | 5600 | Head | 50 | 1113 | 3857 | 1279 | 4.390 | 82.60 | 87.8 | 6.30 |
| 2023/12/4 | 5750 | Head | 50 | 1113 | 3857 | 1279 | 4.140 | 80.80 | 82.8 | 2.48 |

**<10g SAR>**

| Date | Frequency (MHz) | Tissue Type | Input Power (mW) | Dipole S/N | Probe S/N | DAE S/N | Measured 10g SAR (W/kg) | Targeted 10g SAR (W/kg) | Normalized 10g SAR (W/kg) | Deviation (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2023/12/7 | 750 | Head | 50 | 1087 | 3279 | 1279 | 0.279 | 5.65 | 5.58 | -1.24 |
| 2023/12/8 | 835 | Head | 50 | 4d091 | 3279 | 1279 | 0.294 | 6.22 | 5.88 | -5.47 |
| 2023/12/9 | 1750 | Head | 50 | 1090 | 3279 | 1279 | 0.961 | 19.50 | 19.22 | -1.44 |
| 2023/12/10 | 1900 | Head | 50 | 5d118 | 3279 | 1279 | 1.050 | 20.40 | 21 | 2.94 |
| 2023/12/11 | 2600 | Head | 50 | 1070 | 3279 | 1279 | 1.180 | 24.60 | 23.6 | -4.07 |
| 2023/12/12 | 3500 | Head | 50 | 1076 | 3857 | 1279 | 1.280 | 25.50 | 25.6 | 0.39 |
| 2023/12/12 | 3700 | Head | 50 | 1037 | 3857 | 1279 | 1.220 | 24.60 | 24.4 | -0.81 |
| 2023/12/12 | 3900 | Head | 50 | 1048 | 3857 | 1279 | 1.210 | 24.10 | 24.2 | 0.41 |
| 2023/12/13 | 750 | Head | 50 | 1087 | 3279 | 1279 | 0.260 | 5.65 | 5.2 | -7.96 |
| 2023/12/14 | 835 | Head | 50 | 4d091 | 3279 | 1279 | 0.315 | 6.22 | 6.3 | 1.29 |
| 2023/12/15 | 1750 | Head | 50 | 1090 | 3279 | 1279 | 1.020 | 19.50 | 20.4 | 4.62 |
| 2023/12/16 | 1900 | Head | 50 | 5d118 | 3279 | 1279 | 1.040 | 20.40 | 20.8 | 1.96 |
| 2023/12/17 | 2600 | Head | 50 | 1070 | 3279 | 1279 | 1.190 | 24.60 | 23.8 | -3.25 |
| 2023/12/5 | 3500 | Head | 50 | 1076 | 3857 | 1279 | 1.270 | 25.50 | 25.4 | -0.39 |
| 2023/12/5 | 3700 | Head | 50 | 1037 | 3857 | 1279 | 1.260 | 24.60 | 25.2 | 2.44 |
| 2023/12/6 | 3900 | Head | 50 | 1048 | 3857 | 1279 | 1.170 | 24.10 | 23.4 | -2.90 |
| 2023/12/1 | 2450 | Head | 50 | 1040 | 3857 | 1279 | 1.250 | 24.60 | 25 | 1.63 |
| 2023/12/2 | 5250 | Head | 50 | 1113 | 3857 | 1279 | 1.240 | 23.30 | 24.8 | 6.44 |
| 2023/12/3 | 5600 | Head | 50 | 1113 | 3857 | 1279 | 1.220 | 23.70 | 24.4 | 2.95 |
| 2023/12/4 | 5750 | Head | 50 | 1113 | 3857 | 1279 | 1.210 | 23.00 | 24.2 | 5.22 |

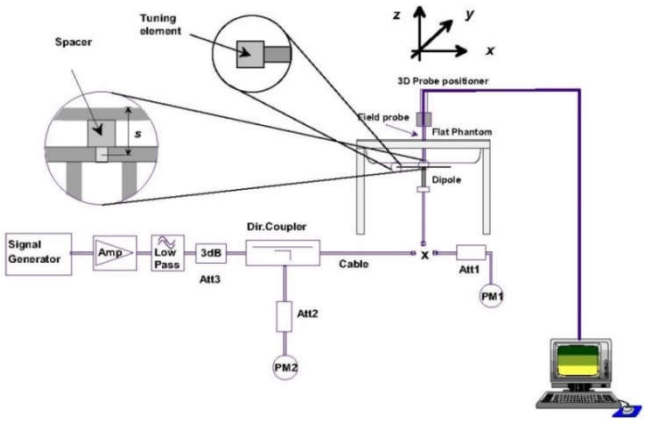



Fig 11.3.1 System Performance Check Setup

Fig 11.3.2 Setup Photo

# 13. RF Exposure Positions

## 13.1 Ear and handset reference point

Figure 12.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 12.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 12.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 12.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

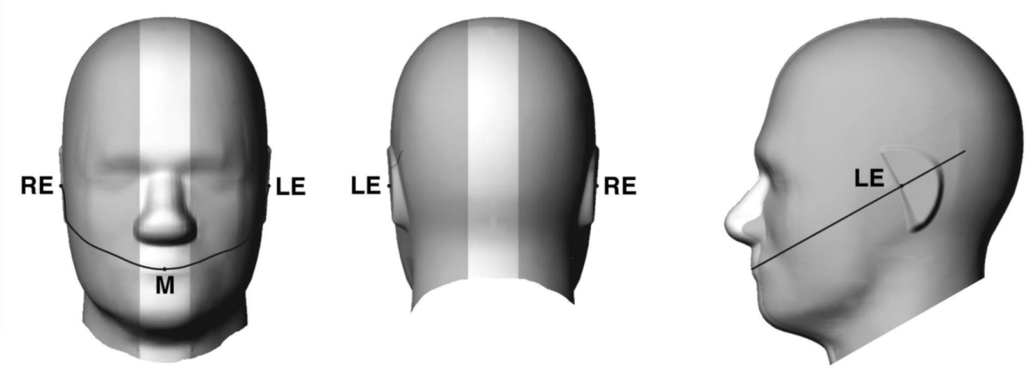



**Fig 12.1.1 Front, back, and side views of SAM twin phantom**

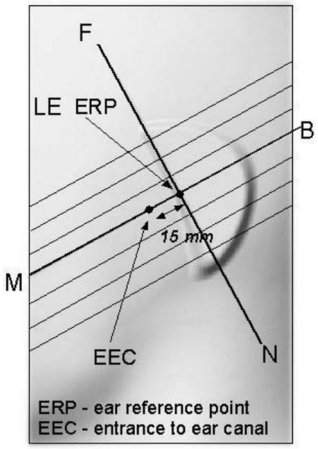



**Fig 12.1.2 Close-up side view of phantom showing the ear region.**

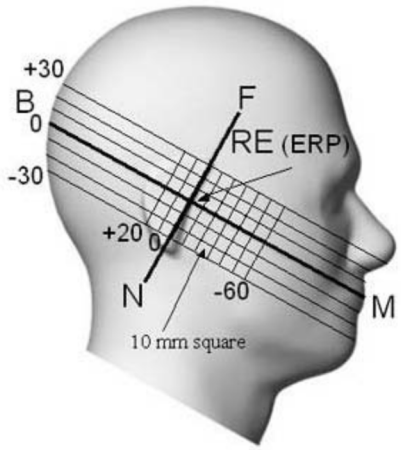



**Fig 12.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations**

## 13.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 12.2.1 and Figure 12.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 12.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 12.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 12.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 12.2.3. The actual rotation angles should be documented in the test report.

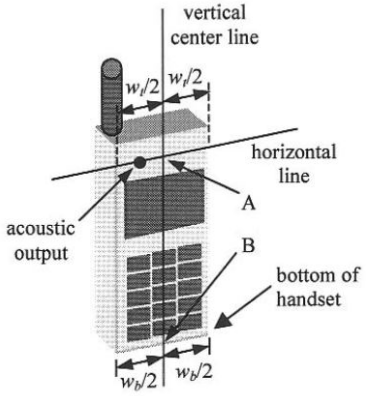



**Fig 12.2.1 Handset vertical and horizontal reference lines—"fixed case**

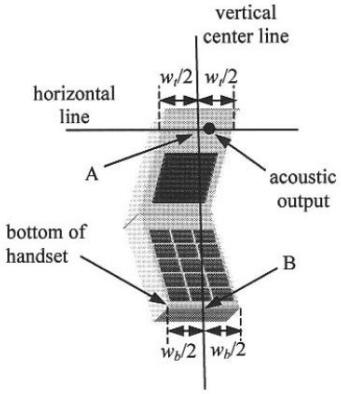



**Fig 12.2.2 Handset vertical and horizontal reference lines—"clam-shell case"**

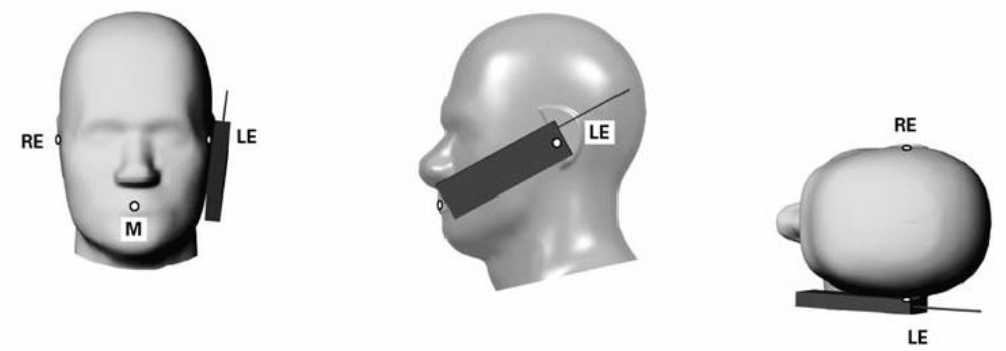



**Fig 12.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.**

## 13.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 12.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

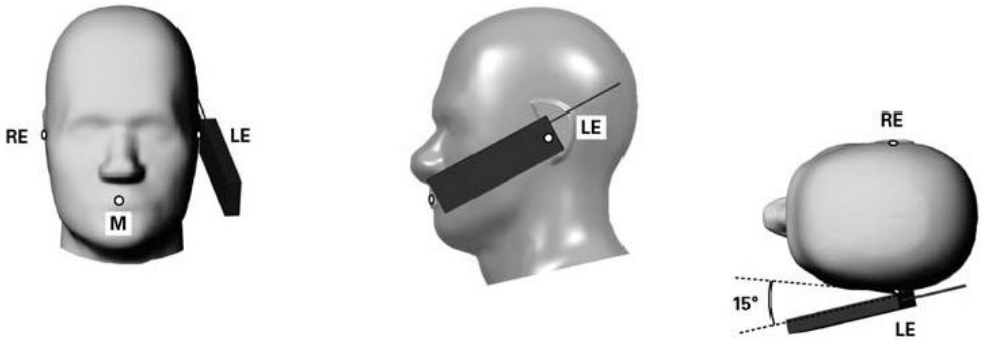



**Fig 12.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.**

## 13.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 11.4). Per KDB648474 D04v01r03, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

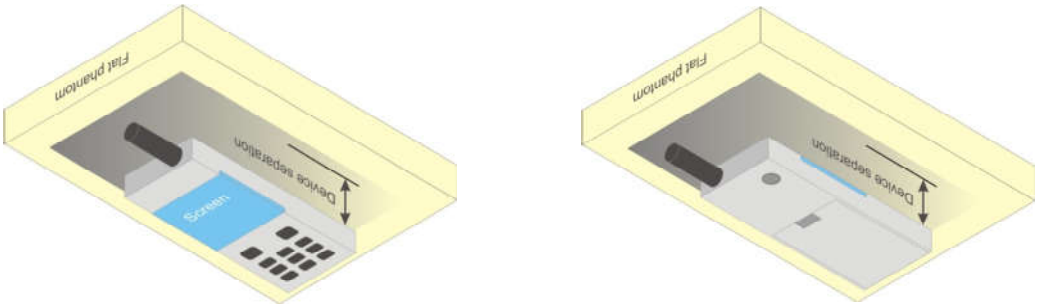



**Fig 12.4 Body Worn Position**

## 13.5 Product Specific 10g SAR Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, According to KDB648474 D04v01r03, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

## 13.6 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

# 14. Conducted RF Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

**<GSM Conducted Power>**

1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
3. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

**<WCDMA Conducted Power>**

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01v03r01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For HSPA+ devices supporting 16 QAM in the uplink, power measurements procedure is according to the configurations in Table C.11.1.4 of 3GPP TS 34.121-1.
4. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

**HSDPA Setup Configuration:**

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors ($\beta_c$ and $\beta_d$) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

**Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH**

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{HS}$ (Note1, Note 2) | CM (dB) (Note 3) | MPR (dB) (Note 3) |
|---|---|---|---|---|---|---|---|
| 1 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 0.0 | 0.0 |
| 2 | 12/15 (Note 4) | 15/15 (Note 4) | 64 | 12/15 (Note 4) | 24/15 | 1.0 | 0.0 |
| 3 | 15/15 | 8/15 | 64 | 15/8 | 30/15 | 1.5 | 0.5 |
| 4 | 15/15 | 4/15 | 64 | 15/4 | 30/15 | 1.5 | 0.5 |

Note 1: $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, $\Delta_{ACK}$ and $\Delta_{NACK}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$, and $\Delta_{CQI}$ = 24/15 with $\beta_{hs}$ = 24/15 * $\beta_c$.

Note 3: CM = 1 for $\beta_c/\beta_d$ =12/15, $\beta_{hs}/\beta_c$=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: 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 signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c$ = 11/15 and $\beta_d$ = 15/15.

**Setup Configuration**

**HSUPA Setup Configuration:**

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors ($\beta_c$ and $\beta_d$) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

**Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH**

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{HS}$ (Note1) | $\beta_{ec}$ | $\beta_{ed}$ (Note 4) (Note 5) | $\beta_{ed}$ (SF) | $\beta_{ed}$ (Codes) | CM (dB) (Note 2) | MPR (dB) (Note 2) (Note 6) | AG Index (Note 5) | E-TFCI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11/15 (Note 3) | 15/15 (Note 3) | 64 | 11/15 (Note 3) | 22/15 | 209/225 | 1309/225 | 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 | $\beta_{ed}1$: 47/15<br>$\beta_{ed}2$: 47/15 | 4<br>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 | 0 | - | - | 5/15 | 5/15 | 47/15 | 4 | 1 | 1.0 | 0.0 | 12 | 67 |

Note 1: For sub-test 1 to 4, $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs}$ = 30/15 * $\beta_c$. For sub-test 5, $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 5/15 with $\beta_{hs}$ = 5/15 * $\beta_c$.

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 signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c$ = 10/15 and $\beta_d$ = 15/15.

Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 5: $\beta_{ed}$ can not be set directly; it is set by Absolute Grant Value.

Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

**Setup Configuration**

**DC-HSDPA 3GPP release 8 Setup Configuration:**

a. The EUT was connected to Base Station referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors ($\beta_c$ and $\beta_d$) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: $\beta_c/\beta_d$=2/15
      b). Subtest 2: $\beta_c/\beta_d$=12/15
      c). Subtest 3: $\beta_c/\beta_d$=15/8
      d). Subtest 4: $\beta_c/\beta_d$=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification. A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

**Table C.8.1.12: Fixed Reference Channel H-Set 12**

| Parameter | Unit | Value |
|---|---|---|
| Nominal Avg. Inf. Bit Rate | kbps | 60 |
| Inter-TTI Distance | TTI's | 1 |
| Number of HARQ Processes | Proces ses | 6 |
| Information Bit Payload ( $N_{INF}$ ) | Bits | 120 |
| Number Code Blocks | Blocks | 1 |
| Binary Channel Bits Per TTI | Bits | 960 |
| Total Available SML's in UE | SML's | 19200 |
| Number of SML's per HARQ Proc. | SML's | 3200 |
| Coding Rate | | 0.15 |
| Number of Physical Channel Codes | Codes | 1 |
| Modulation | | QPSK |
| Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table. | | |
| Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used. | | |

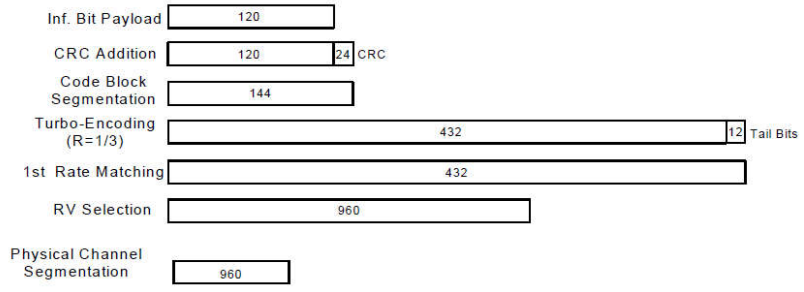



**Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)**

**Setup Configuration**

**HSPA+ 3GPP release 7 (uplink category 7) 16QAM, Setup Configuration:**

1. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
2. The RF path losses were compensated into the measurements.
3. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2E:HSPA+:UL with 16QAM
   ii. Set the Gain Factors ($\beta_c$ and $\beta_d$) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.4, quoted from the TS 34.121-1 s5.2E
   iii. Set Channel Parms
   iv. Set Cell Power = -86 dBm
   v. Set Channel Type = HSPA
   vi. Set UE Target Power =21 dBm
   vii. Power Ctrl Mode= All Up Bits
   viii. Set Manual Uplink DPCH Bc/Bd = Manual
   ix. Set Manual Uplink DPCH Bc and Bd=15,15(for 34.121-1 v8.10.0 table C11.1.4 sub-test 1)
   x. Set HSPA Conn DL Channel Levels
   xi. Set HS-SCCH Configs
   xii. Set RB Test Mode Setup
   xiii. Set Common HSUPA Parameters
   xiv. Set Serving Grant
   xv. Confirm that E-TFCI is equal to the target E-TFCI of 105 for sub-test 1, and other subtest's E-TFCI
4. The transmitted maximum output power was recorded.

**Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM**

| Sub-test | $\beta_c$ (Note3) | $\beta_d$ | $\beta_{HS}$ (Note1) | $\beta_{ec}$ | $\beta_{ed}$ (2xSF2) (Note 4) | $\beta_{ed}$ (2xSF4) (Note 4) | CM (dB) (Note 2) | MPR (dB) (Note 2) | AG Index (Note 4) | E-TFCI (Note 5) | E-TFCI (boost) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0 | 30/15 | 30/15 | $\beta_{ed}1$: 30/15<br>$\beta_{ed}2$: 30/15 | $\beta_{ed}3$: 24/15<br>$\beta_{ed}4$: 24/15 | 3.5 | 2.5 | 14 | 105 | 105 |

Note 1: $\Delta_{ACK}$, $\Delta_{NACK}$ and $\Delta_{CQI}$ = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the $\beta_c$ is set to 1 and $\beta_d$ = 0 by default.
Note 4: $\beta_{ed}$ can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signaled to use the extrapolation algorithm.

**Setup Configuration**

**<WCDMA Conducted Power>**

**General Note:**

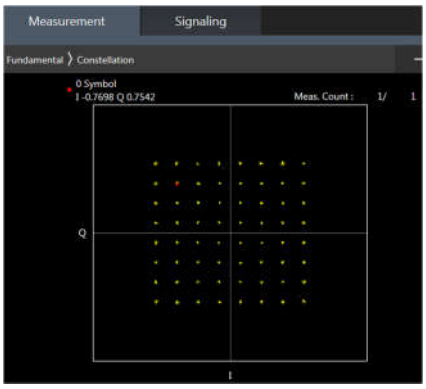
1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

## <LTE Conducted Power>

**General Note:**

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE B17 / B38 SAR test was covered by B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to May 2017 TCB workshop, for 16QAM and 64QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.


16QAM




64QAM

**<TDD LTE SAR Measurement>**

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

a. 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
b. "special subframe S" contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
c. Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Anritsu MT8820C (firmware: #22.52#004) was used for LTE output power measurements and SAR testing.

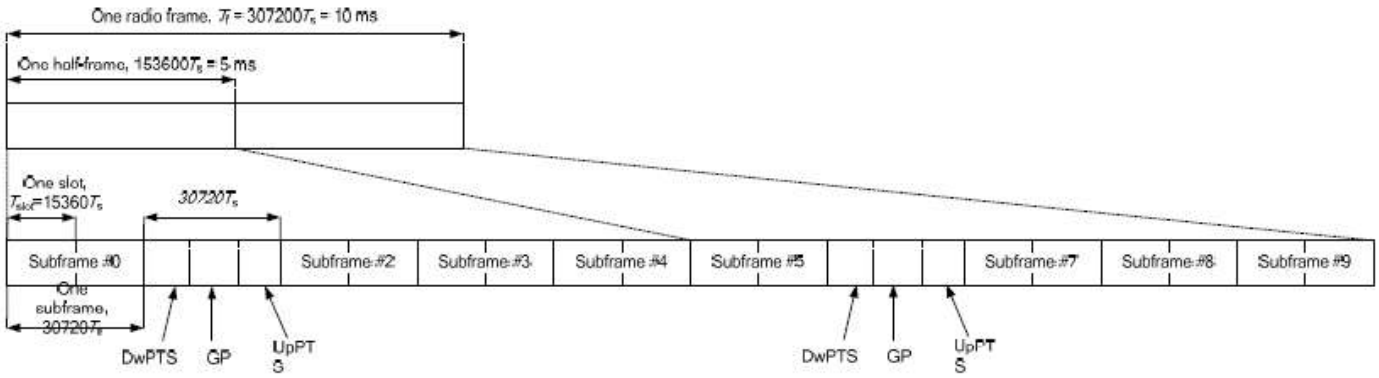



**Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).**

**Table 4.2-2: Uplink-downlink configurations.**

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D |

**Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).**

| Special subframe configuration | Normal cyclic prefix in downlink | | | Extended cyclic prefix in downlink | | |
|---|---|---|---|---|---|---|
| | DwPTS | UpPTS | | DwPTS | UpPTS | |
| | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0 | $6592 \cdot T_s$ | $2192 \cdot T_s$ | $2560 \cdot T_s$ | $7680 \cdot T_s$ | $2192 \cdot T_s$ | $2560 \cdot T_s$ |
| 1 | $19760 \cdot T_s$ | | | $20480 \cdot T_s$ | | |
| 2 | $21952 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 3 | $24144 \cdot T_s$ | | | $25600 \cdot T_s$ | | |
| 4 | $26336 \cdot T_s$ | | | $7680 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ |
| 5 | $6592 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ | $20480 \cdot T_s$ | | |
| 6 | $19760 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 7 | $21952 \cdot T_s$ | | | $12800 \cdot T_s$ | | |
| 8 | $24144 \cdot T_s$ | | | - | - | - |
| 9 | $13168 \cdot T_s$ | | | - | - | - |

| Special subframe (30720·$T_s$): Normal cyclic prefix in downlink (UpPTS) | | | |
|---|---|---|---|
| | **Special subframe configuration** | **Normal cyclic prefix in uplink** | **Extended cyclic prefix in uplink** |
| **Uplink duty factor in one special subframe** | **0~4** | 7.13% | 8.33% |
| | **5~9** | 14.3% | 16.7% |

| Special subframe(30720·$T_s$): Extended cyclic prefix in downlink (UpPTS) | | | |
|---|---|---|---|
| | **Special subframe configuration** | **Normal cyclic prefix in uplink** | **Extended cyclic prefix in uplink** |
| **Uplink duty factor in one special subframe** | **0~3** | 7.13% | 8.33% |
| | **4~7** | 14.3% | 16.7% |

The highest duty factor is resulted from:

For LTE TDD Power class 2

i. Uplink-downlink configuration: 1. In a half-frame consisted of 5 subfames, uplink operation is in 2 uplink subframes and 1 special subframe.

ii. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

iii. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (2+0.167)/5 = 43.3%

iv. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (2+0.143)/5 = 42.9%

v. For TDD LTE SAR measurement, the duty cycle 1:2.33 (42.9 %) was used perform testing and considering the theoretical duty cycle of 43.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 42.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 43.3%/42.9% = 1.009 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

For LTE TDD Power class 3

5. Uplink-downlink configuration: 0. In a half-frame consisted of 5 subfames, uplink operation is in 3 uplink subframes and 1 special subframe.

6. special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink

7. for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.167)/5 = 63.3%

8. for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is: (3+0.143)/5 = 62.9%

9. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

**<LTE Carrier Aggregation>**

**General Note:**

10. This device supports Carrier Aggregation on downlink for inter and intra band. For the device supports bands and bandwidths and configurations are provided as follow table was according to 3GPP.
11. In applying the existing power measurement procedures of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of frequency bands and CCs in each row need combination, and for this device that all the configurations were choose to power measurement.
12. The gray color table is covered by other combinations and no need to verify power

| 2CC Downlink Carrier Aggregation | | | | 3CC Downlink Carrier Aggregation | | | |
|---|---|---|---|---|---|---|---|
| Number | Combination | 4X4 MIMO | Covered by Measurement Superset | Number | Combination | 4X4 MIMO | Covered by Measurement Superset |
| 1 | CA_41A-42A | 41A-42A, 42A, 41A | | 1 | CA_41A-42C | 41A | |
| 2 | CA_41C | 41C, 41A | 3CC-2 | 2 | CA_41C-42A | 42A | |
| 3 | CA_42C | 42C, 42A | 3CC-1 | 3 | CA_42D | | |

## LTE Carrier Aggregation Conducted Power (Downlink)

i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.

ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.

iii. The device supports downlink three carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.

iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

v. For inter-band CA, the SCC selected highest bandwidth and near the middle of its transmission band. For SCC DL RB size and offset will base on the PCC corresponding RB allocation.

vi. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.

vii. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lfloor \frac{BW_{Channel(1)} + BW_{Channel(2)} - 0.1\left|BW_{Channel(1)} - BW_{Channel(2)}\right|}{0.6} \right\rfloor 0.3 \ \ [\text{MHz}]$$

## LTE 4x4 MIMO (Downlink)

This device supports downlink 4x4 MIMO operations for LTE Band 41/42 only. Uplink transmission is limited to a single output stream. Power measurements were performed with downlink 4x4 MIMO active for the configuration with highest measured maximum conducted power with 4x4 downlink MIMO inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.

Per FCC Guidance, SAR for downlink 4x4 MIMO was not needed since the maximum average output power in 4x4 downlink MIMO mode was not > 0.25 dB higher than the maximum output power with downlink 4x4 MIMO inactive. When carrier aggregation is applicable, power measurements were performed with the downlink carrier aggregation and 4x4 DL MIMO 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.

| 4X4 MIMO | Band |
|---|---|
| | LTE Band 41/42 |

## LTE Carrier Aggregation Conducted Power (Uplink)

| LTE Uplink CA | 2CC Uplink Carrier Aggregation |
|---|---|
| Intra-band | Antenna Tx |
| CA_41C | Ant 4 |
| CA_42C | Ant 5 |

### <Intra-band>

**General Note:**

i. The device supports intra-band uplink carrier aggregation for LTE B41/42 with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.

ii. The device supports uplink carrier aggregation with a maximum of two uplink component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.

iii. According Nov. 2017 TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.

iv. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

**5G NR Output Power (Unit: dBm)**

**General Note:**

1. 5G NR n77 /n78 is NSA mode.
2. 5G NR n41/n77/ n78 is SA mode.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s QPSK and the reported SAR for the DFT-s QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class2 and 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel
   d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested
   f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
4. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.
5. NSA and SA mode should perform SAR separately. For the maximum power of NSA mode is the same as SA total power level, so SA SAR can represent NSA mode SAR.
6. 5GNR NSA mode, the power level is the same as 5GNR SA mode, so 5GNR NSA mode and SA mode power table only show one time.
7. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, for DFT-s-OFDM power is higher than CP-OFDM, so only show DFT-s-OFDM power table and chose DFT-s-OFDM to perform SAR testing.
8. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, CP-OFDM measurement is unnecessary.
9. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.

**<3GPP 38.101 MPR for EN-DC>**

**Table 6.2.2-1 Maximum power reduction (MPR) for power class 3**

| Modulation | | MPR (dB) | | |
|---|---|---|---|---|
| | | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | ≤ 3.5[1] | ≤ 1.2[1] | ≤ 0.2[1] |
| | | ≤ 0.5[2] | ≤ 0.5[2] | 0[2] |
| | QPSK | ≤ 1 | | 0 |
| | 16 QAM | ≤ 2 | | ≤ 1 |
| | 64 QAM | ≤ 2.5 | | |
| | 256 QAM | ≤ 4.5 | | |
| CP-OFDM | QPSK | ≤ 3 | | ≤ 1.5 |
| | 16 QAM | ≤ 3 | | ≤ 2 |
| | 64 QAM | ≤ 3.5 | | |
| | 256 QAM | ≤ 6.5 | | |

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

**Table 6.2.2-2 Maximum power reduction (MPR) for power class 2**

| Modulation | | MPR (dB) | | |
|---|---|---|---|---|
| | | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | ≤ 3.5 | ≤ 0.5 | 0 |
| | QPSK | ≤ 3.5 | ≤ 1 | 0 |
| | 16 QAM | ≤ 3.5 | ≤ 2 | ≤ 1 |
| | 64 QAM | ≤ 3.5 | ≤ 2.5 | |
| | 256 QAM | ≤ 4.5 | | |
| CP-OFDM | QPSK | ≤ 3.5 | ≤ 3 | ≤ 1.5 |
| | 16 QAM | ≤ 3.5 | ≤ 3 | ≤ 2 |
| | 64 QAM | ≤ 3.5 | | |
| | 256 QAM | ≤ 6.5 | | |

**<EN-DC combination>**

| ENDC | Antenna Tx | |
|---|---|---|
| | LTE TX | NR TX |
| DC_41A_n77A | Ant 1 | Ant 5 |
| DC_41A_n78A | Ant 1 | Ant 5 |

## 15. Antenna Location

The detailed antenna location information can refer to SAR Test Setup Photos.

# 16. Spot Check SAR Test Results

**Spot Check General Note:**

1. According to section 3.3, spot check conducted power test against the variant project based on the worst-case SAR condition from the original project was performed in this filing to demonstrate the test data from original project remains representative for the variant project. Detail Conducted power measurement referred to appendix E.
2. SAR spot check verification on the worst cases from the original model was performed to demonstrate the test data from original model remains representative for the variant model.
3. Per KDB 484596 D01 v02r02, the variant filings must demonstrate that the referenced test data remain valid for the variant device by including spot-check measurements that meet the following criteria:
   a. Spot-check measurements shall be made in correspondence to the worst-case scenario reported in the reference device filing, i.e., for those conditions that are the closest to non-compliance
   b. Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, may show a deviation ddB from the reference data no larger than 3 dB:
   $$d_{dB} = | VdB – RdB | \leq 3\ dB \quad (1)$$
   where between VdB, the variant spot-check level in dB, and RdB is the corresponding measurement level in dB for the reference model.
4. The Spot check results showed that deviation of the SAR results did not exceed 3 dB, therefore referring to the guidance in the KDB inquiry, SAR data reuse is justified.
5. 1st as parent model, 2nd as variant model.

**General Note:**

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For SAR testing of Bluetooth signal with 83.3% theoretical duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle) *83.3%".
   d. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   e. For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
   f. For TDD LTE SAR measurement of power class 3, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The reported TDD LTE SAR (W/kg) = Measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required when the measured SAR is ≥ 0.8W/kg. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The device implements Proximity sensors/receiver detect mechanism/hotspot trigger reduced power for the power management for SAR compliance at different exposure conditions (head, body-worn, hotspot, extremity). The device will invoke corresponding work scenarios power level base on frequency bands/antennas, which can refer to appendix E. power table.
5. For WLAN when transmit simultaneous with WWAN, power reduction will be activated to head exposure conditions. For WLAN when transmit simultaneous with WWAN and Proximity sensors trigger, power reduction will be activated to body-worn and Handheld exposure conditions.
6. For some WWAN bands, sensor on power level is higher than hotspot power level, so front/back sensor on SAR can represent hotspot conservatively.

7. This device supports HPUE for LTE Band 41 with class 2 level, HPUE power has been measured separately.
8. For 5GNR FDD/TDD supports SCS15KHz and SCS30KHz, after verification for 30KHz at FDD power level is less than 15KHz at FDD power level, also verification for 15KHz at TDD power level is less than 30KHz at TDD power level, so only show 15KHz at FDD power and 30KHz at TDD power, and chose higher power which is SCS15KHz for FDD bands and SCS30KHz for TDD bands to perform SAR testing.
9. For 5GNR test, using FTM (Factory Test Mode) to perform SAR with default 100% transmission.
10. Per KDB648474 D04v01r03, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power (for handheld on state, the maximum full power means reduced power), including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.
    a. For this device SAR for WWAN/WLAN transmitter scaled to maximum output power mode for product specific 10g SAR is higher than 1.2W/kg of GSM850/1900, WCDMA Band II/IV/V, LTE Band 2/4/26/38/41/42, 5GNR n41/ n77 / n78, WLAN2.4/5.2/5.8GHz, therefore product specific 10g SAR is necessary.
    b. WLAN 5.3/5.5GHz tested the product specific 10g SAR since it has no hotspot mode.
    c. When 10-g product specific 10g SAR is considered, SAR thresholds is specified in the procedures for SAR test reduction and exclusion should be multiplied by 2.5.
11. Although the headset SAR is greater than 0.8 W/kg, the headset SAR verified the worst of the non-headset SAR and less than non-headset SAR, so there is no need to be tested other channels.
12. According to Nov. 2017 TCB workshop, when the reported SAR for UL CA configuration 1g SAR is <1.2 W/kg, UL CA SAR is not required for all required test channels (PCC based).
13. LTE B2/4 at ant0 at ant4 support different PAs for some antennas and som LTE bands support Other PA only under ENDC & UL CA. Some LTE bands support different PAs for some antennas, whether it is the maximum power of Main PA is higher than and very close to the other PA, for RF exposure, after verification all PAs in a same position, so the worst-case PA was chosen to perform full SAR testing to ensure the RF exposure is compliance and another PA verify the worst case.

**GSM Note:**

1. Per KDB 941225 D01v03r01, for SAR test reduction for GSM / GPRS / EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance. The mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
2. Other configurations of GSM / GPRS / EDGE are considered as secondary modes. The 3G SAR test reduction procedure is applied, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode, SAR measurement is not required for the secondary mode.

**WCDMA Note:**

1. Per KDB 941225 D01v03r01, for SAR testing is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03r01, RMC 12.2kbps setting is used to evaluate SAR. The maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA / HSPA+ is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA / HSPA+ to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+, and according to the following RF output power, the output power results of the secondary modes (HSDPA / HSUPA / DC-HSDPA / HSPA+) are less than ¼ dB higher than the primary modes; therefore, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA / HSPA+.

**LTE Note:**

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM/64QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM/64QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4 / B12 / B17 / B26 / B38 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE B17/B38 SAR test was covered by B12 / B41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

**5G NR Note:**

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   b. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
   c. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   d. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK /16QAM/64QAM/256QAM SAR testing are not required.
   e. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
   f. For 5G FR1 n77/n78 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

## 16.1 Head SAR

| Plot No. | No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **750MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| 01 | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.09 | 0.159 | **0.216** | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.08 | 0.129 | 0.177 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.01 | 0.084 | 0.114 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.03 | 0.070 | 0.096 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | -0.08 | 0.139 | 0.189 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | -0.08 | 0.110 | 0.151 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.1 | 0.084 | 0.114 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | -0.18 | 0.071 | 0.098 | | |
| **835MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| 02 | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Right Cheek | 0mm | Ant 0 | ECI2 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | -0.02 | 0.513 | **0.669** | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Right Tilted | 0mm | Ant 0 | ECI2 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.08 | 0.288 | 0.375 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Left Cheek | 0mm | Ant 0 | ECI2 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.01 | 0.423 | 0.551 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Left Tilted | 0mm | Ant 0 | ECI2 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.03 | 0.261 | 0.340 | | |
| 03 | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Right Cheek | 0mm | Ant 0 | ECI2 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | 0.04 | 0.267 | **0.344** | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Right Tilted | 0mm | Ant 0 | ECI2 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | -0.08 | 0.151 | 0.195 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Left Cheek | 0mm | Ant 0 | ECI2 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | 0.1 | 0.211 | 0.272 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Left Tilted | 0mm | Ant 0 | ECI2 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | -0.18 | 0.131 | 0.169 | | |
| 04 | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.05 | 0.216 | **0.285** | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.1 | 0.171 | 0.215 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.12 | 0.122 | 0.161 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.08 | 0.100 | 0.126 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | -0.17 | 0.180 | 0.237 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | -0.03 | 0.147 | 0.185 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.14 | 0.108 | 0.142 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.11 | 0.095 | 0.119 | | |
| **1750MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| 05 | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Right Cheek | 0mm | Ant 0 | ECI2 | 1413 | 1732.6 | 1 | 22.76 | 24.00 | 1.330 | - | - | -0.05 | 0.096 | **0.128** | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Right Tilted | 0mm | Ant 0 | ECI2 | 1413 | 1732.6 | 1 | 22.76 | 24.00 | 1.330 | - | - | 0.18 | 0.050 | 0.067 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Left Cheek | 0mm | Ant 0 | ECI2 | 1413 | 1732.6 | 1 | 22.76 | 24.00 | 1.330 | - | - | 0.14 | 0.089 | 0.118 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Left Tilted | 0mm | Ant 0 | ECI2 | 1413 | 1732.6 | 1 | 22.76 | 24.00 | 1.330 | - | - | -0.17 | 0.053 | 0.071 | | |
| 06 | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.02 | 0.072 | **0.109** | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 50 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 20.78 | 22.50 | 1.486 | - | - | 0.17 | 0.056 | 0.083 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | -0.05 | 0.032 | 0.049 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 20.78 | 22.50 | 1.486 | - | - | 0.01 | 0.000 | 0.000 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.1 | 0.059 | 0.090 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 50 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 20.78 | 22.50 | 1.486 | - | - | -0.17 | 0.052 | 0.077 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.04 | 0.036 | 0.055 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 50 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 20.78 | 22.50 | 1.486 | - | - | -0.01 | 0.000 | 0.000 | | |
| | 2nd | LTE Band 4 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 20175 | 1732.5 | 1 | 22.35 | 23.00 | 1.161 | - | - | 0.01 | 0.052 | 0.060 | | |
| **1900MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Right Cheek | 0mm | Ant 0 | ECI2 | 661 | 1880 | 1 | 25.59 | 26.50 | 1.233 | - | - | 0.05 | 0.001 | 0.001 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Right Tilted | 0mm | Ant 0 | ECI2 | 661 | 1880 | 1 | 25.59 | 26.50 | 1.233 | - | - | 0.06 | 0.001 | 0.001 | | |
| 07 | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Left Cheek | 0mm | Ant 0 | ECI2 | 661 | 1880 | 1 | 25.59 | 26.50 | 1.233 | - | - | 0.08 | 0.081 | **0.100** | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Left Tilted | 0mm | Ant 0 | ECI2 | 661 | 1880 | 1 | 25.59 | 26.50 | 1.233 | - | - | -0.09 | 0.000 | 0.000 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Right Cheek | 0mm | Ant 0 | ECI2 | 9400 | 1880 | 1 | 22.61 | 24.00 | 1.377 | - | - | -0.08 | 0.056 | 0.077 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Right Tilted | 0mm | Ant 0 | ECI2 | 9400 | 1880 | 1 | 22.61 | 24.00 | 1.377 | - | - | 0.13 | 0.001 | 0.001 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08 | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Left Cheek | 0mm | Ant 0 | ECI2 | 9400 | 1880 | 1 | 22.61 | 24.00 | 1.377 | - | - | 0.12 | 0.092 | **0.127** | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Left Tilted | 0mm | Ant 0 | ECI2 | 9400 | 1880 | 1 | 22.61 | 24.00 | 1.377 | - | - | 0.03 | 0.001 | 0.001 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.16 | 0.056 | 0.086 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Right Cheek | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 21.15 | 23.00 | 1.531 | - | - | -0.1 | 0.001 | 0.002 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.07 | 0.001 | 0.002 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 21.15 | 23.00 | 1.531 | - | - | 0.18 | 0.001 | 0.002 | | |
| 09 | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.05 | 0.088 | **0.134** | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 21.15 | 23.00 | 1.531 | - | - | -0.1 | 0.071 | 0.109 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.01 | 0.001 | 0.002 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Left Tilted | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 21.15 | 23.00 | 1.531 | - | - | -0.15 | 0.001 | 0.002 | | |
| | 2nd | LTE Band 2 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 0 | ECI2 | 18900 | 1880 | 1 | 22.46 | 23.00 | 1.132 | - | - | 0.01 | 0.055 | 0.062 | | |
| **2600MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 1 | ECI2 | 40620 | 2593 | 1 | 22.97 | 24.00 | 1.268 | 62.9 | 1.006 | 0.03 | 0.370 | 0.472 | -14.83% | 0.70 |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 1 | ECI2 | 40620 | 2593 | 1 | 22.93 | 24.00 | 1.279 | 62.9 | 1.006 | -0.01 | 0.312 | 0.402 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Right Cheek | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.79 | 16.00 | 1.321 | 62.9 | 1.006 | 0.19 | 0.427 | 0.568 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Right Cheek | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.74 | 16.00 | 1.337 | 62.9 | 1.006 | 0.07 | 0.396 | 0.532 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.79 | 16.00 | 1.321 | 62.9 | 1.006 | 0.07 | 0.674 | 0.896 | | |
| | 2nd | LTE Band 41C | 20M | QPSK | 1 | 99 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620+ 40818 | 2593+ 2612.8 | 1 | 14.64 | 16.00 | 1.368 | 62.9 | 1.006 | 0.01 | 0.611 | 0.841 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 39750 | 2506 | 1 | 14.67 | 16.00 | 1.358 | 62.9 | 1.006 | 0.01 | 0.551 | 0.753 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40185 | 2549.5 | 1 | 14.72 | 16.00 | 1.343 | 62.9 | 1.006 | 0.02 | 0.555 | 0.750 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41055 | 2636.5 | 1 | 14.74 | 16.00 | 1.337 | 62.9 | 1.006 | 0.05 | 0.535 | 0.719 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41490 | 2680 | 1 | 14.65 | 16.00 | 1.365 | 62.9 | 1.006 | 0.01 | 0.578 | 0.793 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.74 | 16.00 | 1.337 | 62.9 | 1.006 | 0.01 | 0.488 | 0.656 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 39750 | 2506 | 1 | 14.62 | 16.00 | 1.374 | 62.9 | 1.006 | -0.15 | 0.471 | 0.651 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40185 | 2549.5 | 1 | 14.66 | 16.00 | 1.361 | 62.9 | 1.006 | -0.05 | 0.475 | 0.651 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41055 | 2636.5 | 1 | 14.64 | 16.00 | 1.368 | 62.9 | 1.006 | 0.03 | 0.455 | 0.626 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41490 | 2680 | 1 | 14.64 | 16.00 | 1.368 | 62.9 | 1.006 | 0.01 | 0.498 | 0.685 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 100 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.72 | 16.00 | 1.343 | 62.9 | 1.006 | 0.01 | 0.585 | 0.790 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Cheek | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.79 | 16.00 | 1.321 | 62.9 | 1.006 | -0.15 | 0.200 | 0.266 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Left Cheek | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.74 | 16.00 | 1.337 | 62.9 | 1.006 | -0.15 | 0.171 | 0.230 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.79 | 16.00 | 1.321 | 62.9 | 1.006 | 0.11 | 0.266 | 0.354 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Left Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 14.74 | 16.00 | 1.337 | 62.9 | 1.006 | -0.08 | 0.228 | 0.307 | | |
| 10 | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 17.63 | 19.00 | 1.371 | 42.9 | 1.009 | 0.01 | 0.801 | **1.108** | | |
| | 2nd | LTE Band 41C HPUE | 20M | QPSK | 1 | 99 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620+ 40818 | 2593+ 2612.8 | 1 | 17.43 | 19.00 | 1.435 | 42.9 | 1.009 | 0.02 | 0.751 | 1.088 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 39750 | 2506 | 1 | 17.52 | 19.00 | 1.406 | 42.9 | 1.009 | 0.01 | 0.751 | 1.065 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40185 | 2549.5 | 1 | 17.50 | 19.00 | 1.413 | 42.9 | 1.009 | 0.01 | 0.762 | 1.086 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41055 | 2636.5 | 1 | 17.53 | 19.00 | 1.403 | 42.9 | 1.009 | 0.01 | 0.721 | 1.021 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41490 | 2680 | 1 | 17.43 | 19.00 | 1.435 | 42.9 | 1.009 | 0.08 | 0.712 | 1.031 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 17.58 | 19.00 | 1.387 | 42.9 | 1.009 | 0.08 | 0.581 | 0.813 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 39750 | 2506 | 1 | 17.49 | 19.00 | 1.416 | 42.9 | 1.009 | -0.08 | 0.652 | 0.931 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40185 | 2549.5 | 1 | 17.50 | 19.00 | 1.413 | 42.9 | 1.009 | -0.05 | 0.691 | 0.985 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41055 | 2636.5 | 1 | 17.42 | 19.00 | 1.439 | 42.9 | 1.009 | 0.03 | 0.631 | 0.916 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 41490 | 2680 | 1 | 17.43 | 19.00 | 1.435 | 42.9 | 1.009 | 0.01 | 0.712 | 1.031 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 100 | 0 | - | Right Tilted | 0mm | Ant 4 | ECI2 | 40620 | 2593 | 1 | 17.55 | 19.00 | 1.396 | 42.9 | 1.009 | 0.01 | 0.781 | 1.100 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.89 | 15.00 | 1.291 | - | - | 0.08 | 0.410 | 0.529 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.76 | 15.00 | 1.330 | - | - | 0.01 | 0.522 | 0.694 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.89 | 15.00 | 1.291 | - | - | 0.01 | 0.705 | 0.910 | | |
| 11 | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.76 | 15.00 | 1.330 | - | - | 0.08 | 0.750 | **0.998** | | |
| | 2nd | FR1 n41 | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.73 | 15.00 | 1.340 | - | - | 0.08 | 0.689 | 0.923 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.89 | 15.00 | 1.291 | - | - | -0.08 | 0.171 | 0.221 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.76 | 15.00 | 1.330 | - | - | 0.1 | 0.250 | 0.333 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.89 | 15.00 | 1.291 | - | - | -0.18 | 0.229 | 0.296 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 4 | ECI2 | 518598 | 2592.99 | 1 | 13.76 | 15.00 | 1.330 | - | - | 0.1 | 0.339 | 0.451 | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3500MHz | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 5 | ECI2 | 42190 | 3460 | 1 | 15.87 | 17.50 | 1.455 | 62.9 | 1.006 | -0.02 | 0.613 | 0.898 | -2.45% | 0.11 |
| 12 | 2nd | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 5 | ECI2 | 42190 | 3460 | 1 | 15.81 | 17.50 | 1.476 | 62.9 | 1.006 | -0.08 | 0.590 | **0.876** | | |
| | 2nd | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Left Tilted | 0mm | Ant 5 | ECI2 | 42190 | 3460 | 2 | 15.81 | 17.50 | 1.476 | 62.9 | 1.006 | -0.02 | 0.567 | 0.842 | | |
| | 2nd | LTE Band 42C | 20M | QPSK | 1 | 99 | - | Left Tilted | 0mm | Ant 5 | ECI2 | 42190+ 42388 | 3460+ 3479.8 | 1 | 15.68 | 17.50 | 1.521 | 62.9 | 1.006 | 0.01 | 0.451 | 0.690 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.51 | 17.00 | 1.409 | - | - | 0.08 | 0.279 | 0.393 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.38 | 17.00 | 1.452 | - | - | 0.01 | 0.368 | 0.534 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.51 | 17.00 | 1.409 | - | - | -0.08 | 0.309 | 0.435 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.38 | 17.00 | 1.452 | - | - | -0.08 | 0.403 | 0.585 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.51 | 17.00 | 1.409 | - | - | -0.18 | 0.378 | 0.533 | | |
| 13 | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.38 | 17.00 | 1.452 | - | - | 0.1 | 0.512 | **0.743** | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.51 | 17.00 | 1.409 | - | - | 0.08 | 0.388 | 0.547 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 5 | ECI2 | 656000 | 3840 | 1 | 15.38 | 17.00 | 1.452 | - | - | -0.17 | 0.510 | 0.741 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | -0.01 | 0.042 | 0.055 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | -0.08 | 0.048 | 0.068 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | 0.09 | 0.052 | 0.069 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | 0.08 | 0.059 | 0.083 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | 0.12 | 0.083 | 0.110 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | 0.03 | 0.108 | 0.153 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | -0.12 | 0.000 | 0.000 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 1 | ECI2 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | 0.04 | 0.038 | 0.054 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | 0.04 | 0.094 | 0.133 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.39 | 21.00 | 1.449 | - | - | 0.12 | 0.133 | 0.193 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | -0.12 | 0.060 | 0.085 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.39 | 21.00 | 1.449 | - | - | -0.04 | 0.090 | 0.130 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | -0.07 | 0.070 | 0.099 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.39 | 21.00 | 1.449 | - | - | 0.02 | 0.081 | 0.117 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | -0.09 | 0.000 | 0.000 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 2 | ECI2 | 656000 | 3840 | 1 | 19.39 | 21.00 | 1.449 | - | - | 0.06 | 0.043 | 0.062 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.70 | 19.50 | 1.202 | - | - | 0.17 | 0.139 | 0.167 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Cheek | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.51 | 19.50 | 1.256 | - | - | 0.09 | 0.191 | 0.240 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.70 | 19.50 | 1.202 | - | - | 0.13 | 0.122 | 0.147 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Tilted | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.51 | 19.50 | 1.256 | - | - | 0.04 | 0.172 | 0.216 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.70 | 19.50 | 1.202 | - | - | 0.19 | 0.438 | 0.527 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.51 | 19.50 | 1.256 | - | - | 0.05 | 0.520 | 0.653 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Cheek | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 2 | 18.51 | 19.50 | 1.256 | - | - | 0.01 | 0.512 | 0.643 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.70 | 19.50 | 1.202 | - | - | 0.07 | 0.242 | 0.291 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Tilted | 0mm | Ant 7 | ECI2 | 656000 | 3840 | 1 | 18.51 | 19.50 | 1.256 | - | - | 0.11 | 0.340 | 0.427 | | |

| Plot No. | No. | Band | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2450MHz** | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN2.4GHz | 802.11b 1Mbps | Left Tilted | 0mm | Ant 6 | standalone | 6 | 2437 | 1 | 16.94 | 17.50 | 1.138 | 100 | 1.000 | 0.02 | 0.813 | 0.925 | -13.19% | 0.61 |
| 14 | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Left Tilted | 0mm | Ant 6 | standalone | 6 | 2437 | 1 | 16.83 | 17.50 | 1.167 | 100 | 1.000 | -0.06 | 0.688 | **0.803** | | |
| | 1st | Bluetooth | 1Mbps | Left Tilted | 0mm | Ant 6 | Full Power | 0 | 2402 | 1 | 14.67 | 15.50 | 1.211 | 76.73 | 1.086 | -0.13 | 0.360 | 0.473 | -19.66% | 0.95 |
| 15 | 2nd | Bluetooth | 1Mbps | Left Tilted | 0mm | Ant 6 | Full Power | 0 | 2402 | 1 | 14.59 | 15.50 | 1.233 | 76.73 | 1.086 | -0.01 | 0.284 | **0.380** | | |
| **5000MHz** | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Right Tilted | 0mm | Ant 6 | standalone | 58 | 5290 | 1 | 14.27 | 16.00 | 1.489 | 100 | 1.000 | 0.01 | 0.689 | 1.026 | -16.76% | 0.80 |
| | 2nd | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Right Tilted | 0mm | Ant 6 | standalone | 58 | 5290 | 1 | 14.45 | 16.00 | 1.429 | 100 | 1.000 | 0.02 | 0.598 | 0.854 | | |
| | 1st | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Left Cheek | 0mm | Ant 6 | standalone | 58 | 5290 | 1 | 14.27 | 16.00 | 1.489 | 100 | 1.000 | -0.08 | 0.752 | 1.120 | -4.73% | 0.21 |
| 16 | 2nd | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Left Cheek | 0mm | Ant 6 | standalone | 58 | 5290 | 1 | 14.45 | 16.00 | 1.429 | 100 | 1.000 | 0.01 | 0.747 | **1.067** | | |
| | 2nd | WLAN5.3GHz | 802.11ac-VHT80 MCS0 | Left Cheek | 0mm | Ant 6 | standalone | 58 | 5290 | 2 | 14.45 | 16.00 | 1.429 | 100 | 1.000 | 0.03 | 0.715 | 1.022 | | |
| | 1st | WLAN5.5GHz | 802.11n-HT40 MCS0 | Right Tilted | 0mm | Ant 6 | standalone | 142 | 5710 | 1 | 15.43 | 17.00 | 1.435 | 100 | 1.000 | -0.01 | 0.583 | 0.837 | -3.82% | 0.17 |
| | 2nd | WLAN5.5GHz | 802.11n-HT40 MCS0 | Right Tilted | 0mm | Ant 6 | standalone | 142 | 5710 | 1 | 15.57 | 17.00 | 1.390 | 100 | 1.000 | 0.02 | 0.579 | 0.805 | | |
| | 1st | WLAN5.5GHz | 802.11n-HT40 MCS0 | Left Cheek | 0mm | Ant 6 | standalone | 142 | 5710 | 1 | 15.43 | 17.00 | 1.435 | 100 | 1.000 | -0.07 | 0.699 | 1.003 | -13.56% | 0.63 |
| 17 | 2nd | WLAN5.5GHz | 802.11n-HT40 MCS0 | Left Cheek | 0mm | Ant 6 | standalone | 142 | 5710 | 1 | 15.57 | 17.00 | 1.390 | 100 | 1.000 | -0.08 | 0.624 | **0.867** | | |
| | 1st | WLAN5.8GHz | 802.11a 6Mbps | Left Cheek | 0mm | Ant 6 | standalone | 149 | 5745 | 1 | 17.59 | 19.00 | 1.384 | 100 | 1.000 | 0.01 | 0.671 | 0.928 | -0.86% | 0.04 |
| | 2nd | WLAN5.8GHz | 802.11a 6Mbps | Left Cheek | 0mm | Ant 6 | standalone | 149 | 5745 | 1 | 17.50 | 19.00 | 1.413 | 100 | 1.000 | 0.02 | 0.651 | 0.920 | | |
| | 1st | WLAN5.8GHz | 802.11a 6Mbps | Left Tilted | 0mm | Ant 6 | standalone | 157 | 5785 | 1 | 17.51 | 19.00 | 1.409 | 100 | 1.000 | 0.19 | 0.842 | 1.187 | -6.49% | 0.29 |
| 18 | 2nd | WLAN5.8GHz | 802.11a 6Mbps | Left Tilted | 0mm | Ant 6 | standalone | 157 | 5785 | 1 | 17.48 | 19.00 | 1.419 | 100 | 1.000 | -0.09 | 0.782 | **1.110** | | |
| | 2nd | WLAN5.8GHz | 802.11a 6Mbps | Left Tilted | 0mm | Ant 6 | standalone | 157 | 5785 | 2 | 17.48 | 19.00 | 1.419 | 100 | 1.000 | 0.02 | 0.732 | 1.039 | | |

## 16.2 Hotspot SAR

| Plot No. | No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **750MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.06 | 0.190 | 0.258 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.01 | 0.160 | 0.220 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.08 | 0.440 | 0.598 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.03 | 0.369 | 0.507 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | -0.05 | 0.189 | 0.257 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.18 | 0.149 | 0.205 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.14 | 0.361 | 0.490 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | -0.17 | 0.290 | 0.398 | | |
| 19 | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.19 | 0.567 | **0.770** | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 2 | 22.67 | 24.00 | 1.358 | - | - | 0.01 | 0.456 | 0.619 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.17 | 0.442 | 0.607 | | |
| **835MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Front | 5mm | Ant 0 | ECI7 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.02 | 0.418 | 0.535 | | |
| 20 | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | ECI7 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.01 | 1.050 | **1.343** | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | ECI7 | 128 | 824.2 | 1 | 25.34 | 26.50 | 1.306 | - | - | 0.01 | 1.020 | 1.332 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | ECI7 | 251 | 848.8 | 1 | 25.20 | 26.50 | 1.349 | - | - | 0.06 | 0.915 | 1.234 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Left Side | 5mm | Ant 0 | ECI7 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.08 | 0.251 | 0.321 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Right Side | 5mm | Ant 0 | ECI7 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.01 | 0.462 | 0.591 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 5mm | Ant 0 | ECI7 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | -0.08 | 0.947 | 1.212 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 5mm | Ant 0 | ECI7 | 128 | 824.2 | 1 | 25.34 | 26.50 | 1.306 | - | - | -0.08 | 0.920 | 1.202 | | |
| | 2nd | GSM850 | | | | | GPRS (4 Tx slots) | Bottom Side | 5mm | Ant 0 | ECI7 | 251 | 848.8 | 1 | 25.20 | 26.50 | 1.349 | | | -0.08 | 0.867 | 1.170 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.01 | 0.409 | 0.524 | | |
| 21 | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.06 | 1.070 | **1.372** | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 2 | 21.92 | 23.00 | 1.282 | - | - | 0.01 | 0.889 | 1.140 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 4132 | 826.4 | 1 | 21.83 | 23.00 | 1.309 | - | - | 0.01 | 1.000 | 1.309 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 4233 | 846.6 | 1 | 21.76 | 23.00 | 1.330 | - | - | 0.02 | 0.998 | 1.328 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Left Side | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | -0.05 | 0.229 | 0.294 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Right Side | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.01 | 0.473 | 0.607 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.1 | 0.917 | 1.176 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 4132 | 826.4 | 1 | 21.83 | 23.00 | 1.309 | - | - | -0.17 | 0.831 | 1.088 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 4233 | 846.6 | 1 | 21.76 | 23.00 | 1.330 | - | - | 0.04 | 0.967 | 1.287 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.08 | 0.408 | 0.538 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.01 | 0.413 | 0.519 | | |
| 22 | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.08 | 1.010 | **1.331** | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.03 | 0.859 | 1.079 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 75 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 21.95 | 23.00 | 1.274 | - | - | -0.08 | 0.868 | 1.105 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.01 | 0.194 | 0.256 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.04 | 0.158 | 0.198 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.04 | 0.365 | 0.481 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | -0.08 | 0.311 | 0.391 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.03 | 0.923 | 1.217 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.03 | 0.899 | 1.129 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 75 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 26865 | 831.5 | 1 | 21.95 | 23.00 | 1.274 | - | - | 0.02 | 0.653 | 0.832 | | |
| **1750MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | ECI7 | 1413 | 1732.6 | 1 | 17.29 | 18.50 | 1.321 | - | - | 0.04 | 0.502 | 0.663 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 1413 | 1732.6 | 1 | 17.29 | 18.50 | 1.321 | - | - | -0.08 | 1.040 | 1.374 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 1312 | 1712.4 | 1 | 17.20 | 18.50 | 1.349 | - | - | 0.01 | 0.885 | 1.194 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 1513 | 1752.6 | 1 | 17.13 | 18.50 | 1.371 | - | - | 0.03 | 0.751 | 1.030 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Left Side | 5mm | Ant 0 | ECI7 | 1413 | 1732.6 | 1 | 17.29 | 18.50 | 1.321 | - | - | -0.08 | 0.075 | 0.099 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Right Side | 5mm | Ant 0 | ECI7 | 1413 | 1732.6 | 1 | 17.29 | 18.50 | 1.321 | - | - | -0.13 | 0.085 | 0.112 | | |
| 23 | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 1413 | 1732.6 | 1 | 17.29 | 18.50 | 1.321 | - | - | 0.01 | 1.050 | **1.387** | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 1312 | 1712.4 | 1 | 17.20 | 18.50 | 1.349 | - | - | 0.03 | 0.911 | 1.229 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 1513 | 1752.6 | 1 | 17.13 | 18.50 | 1.371 | - | - | 0.06 | 0.940 | 1.289 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.66 | 18.00 | 1.361 | - | - | 0.01 | 0.415 | 0.565 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.61 | 18.00 | 1.377 | - | - | 0.02 | 0.359 | 0.494 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.66 | 18.00 | 1.361 | - | - | 0.07 | 0.549 | 0.747 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.61 | 18.00 | 1.377 | - | - | 0.01 | 0.500 | 0.689 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.66 | 18.00 | 1.361 | - | - | 0.08 | 0.051 | 0.069 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.61 | 18.00 | 1.377 | - | - | 0.01 | 0.048 | 0.066 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.66 | 18.00 | 1.361 | - | - | 0.03 | 0.070 | 0.095 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.61 | 18.00 | 1.377 | - | - | -0.08 | 0.055 | 0.076 | | |
| 24 | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.66 | 18.00 | 1.361 | - | - | 0.04 | 0.836 | **1.138** | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.61 | 18.00 | 1.377 | - | - | -0.08 | 0.706 | 0.972 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 100 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.60 | 18.00 | 1.380 | - | - | 0.1 | 0.685 | 0.946 | | |
| | 2nd | LTE Band 4 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 20175 | 1732.5 | 1 | 16.99 | 17.50 | 1.125 | - | - | 0.05 | 0.713 | 0.802 | | |
| **1900MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Front | 5mm | Ant 0 | ECI7 | 661 | 1880 | 1 | 17.97 | 19.00 | 1.268 | - | - | -0.08 | 0.185 | 0.235 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | ECI7 | 661 | 1880 | 1 | 17.97 | 19.00 | 1.268 | - | - | -0.17 | 0.664 | 0.842 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | ECI7 | 512 | 1850.2 | 1 | 17.81 | 19.00 | 1.315 | - | - | -0.08 | 0.566 | 0.744 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | ECI7 | 810 | 1909.8 | 1 | 17.60 | 19.00 | 1.380 | - | - | -0.04 | 0.433 | 0.598 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Left Side | 5mm | Ant 0 | ECI7 | 661 | 1880 | 1 | 17.97 | 19.00 | 1.268 | - | - | -0.08 | 0.023 | 0.029 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Right Side | 5mm | Ant 0 | ECI7 | 661 | 1880 | 1 | 17.97 | 19.00 | 1.268 | - | - | 0.17 | 0.023 | 0.029 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 5mm | Ant 0 | ECI7 | 661 | 1880 | 1 | 17.97 | 19.00 | 1.268 | - | - | 0.18 | 0.678 | 0.859 | | |
| 25 | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 5mm | Ant 0 | ECI7 | 512 | 1850.2 | 1 | 17.81 | 19.00 | 1.315 | - | - | 0.06 | 0.849 | **1.117** | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 5mm | Ant 0 | ECI7 | 810 | 1909.8 | 1 | 17.60 | 19.00 | 1.380 | - | - | -0.04 | 0.620 | 0.856 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | ECI7 | 9400 | 1880 | 1 | 15.13 | 16.50 | 1.371 | - | - | 0.03 | 0.213 | 0.292 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 9400 | 1880 | 1 | 15.13 | 16.50 | 1.371 | - | - | 0.01 | 0.816 | 1.119 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 9262 | 1852.4 | 1 | 15.02 | 16.50 | 1.406 | - | - | -0.04 | 0.807 | 1.135 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 9538 | 1907.6 | 1 | 15.10 | 16.50 | 1.380 | - | - | 0.03 | 0.918 | 1.267 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Left Side | 5mm | Ant 0 | ECI7 | 9400 | 1880 | 1 | 15.13 | 16.50 | 1.371 | - | - | 0.1 | 0.030 | 0.041 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Right Side | 5mm | Ant 0 | ECI7 | 9400 | 1880 | 1 | 15.13 | 16.50 | 1.371 | - | - | -0.1 | 0.030 | 0.041 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 9400 | 1880 | 1 | 15.13 | 16.50 | 1.371 | - | - | 0.02 | 1.020 | 1.398 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 9262 | 1852.4 | 1 | 15.02 | 16.50 | 1.406 | - | - | 0.01 | 0.940 | 1.322 | | |
| 26 | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 9538 | 1907.6 | 1 | 15.10 | 16.50 | 1.380 | 1 | 1 | 0.03 | 1.030 | **1.422** | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 5mm | Ant 0 | ECI7 | 9538 | 1907.6 | 2 | 15.10 | 16.50 | 1.380 | - | - | 0.01 | 0.895 | 1.235 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.19 | 16.50 | 1.352 | - | - | 0.08 | 0.210 | 0.284 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Front | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.17 | 16.50 | 1.358 | - | - | 0.01 | 0.165 | 0.224 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.19 | 16.50 | 1.352 | - | - | -0.08 | 0.793 | 1.072 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 18700 | 1860 | 1 | 15.10 | 16.50 | 1.380 | - | - | -0.08 | 0.750 | 1.035 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 19100 | 1900 | 1 | 15.09 | 16.50 | 1.384 | - | - | 0.02 | 0.771 | 1.067 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.17 | 16.50 | 1.358 | - | - | 0.1 | 0.578 | 0.785 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 100 | 0 | - | Back | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.16 | 16.50 | 1.361 | - | - | -0.18 | 0.615 | 0.837 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.19 | 16.50 | 1.352 | - | - | 0.1 | 0.032 | 0.043 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Left Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.17 | 16.50 | 1.358 | - | - | 0.12 | 0.025 | 0.034 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.19 | 16.50 | 1.352 | - | - | 0.08 | 0.031 | 0.042 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Right Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.17 | 16.50 | 1.358 | - | - | -0.17 | 0.026 | 0.035 | | |
| 27 | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.19 | 16.50 | 1.352 | - | - | 0.07 | 1.020 | **1.379** | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 18700 | 1860 | 1 | 15.10 | 16.50 | 1.380 | - | - | -0.03 | 0.895 | 1.235 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 19100 | 1900 | 1 | 15.09 | 16.50 | 1.384 | - | - | 0.14 | 0.993 | 1.374 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.17 | 16.50 | 1.358 | - | - | 0.11 | 0.827 | 1.123 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 18700 | 1860 | 1 | 15.11 | 16.50 | 1.377 | - | - | -0.05 | 0.727 | 1.001 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 50 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 19100 | 1900 | 1 | 15.13 | 16.50 | 1.371 | - | - | 0.18 | 0.802 | 1.099 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 100 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.16 | 16.50 | 1.361 | - | - | 0.01 | 0.827 | 1.126 | | |
| | 2nd | LTE Band 2 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Bottom Side | 5mm | Ant 0 | ECI7 | 18900 | 1880 | 1 | 15.35 | 15.50 | 1.035 | - | - | 0.08 | 0.891 | 0.922 | | |
| **2600MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | ECI7 | 41055 | 2636.5 | 1 | 20.81 | 22.00 | 1.315 | 62.9 | 1.006 | 0.06 | 1.04 | 1.376 | | |
| 28 | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | ECI7 | 41055 | 2636.5 | 1 | 20.93 | 22.00 | 1.279 | 62.9 | 1.006 | 0.01 | 1.01 | **1.300** | -5.52% | 0.25 |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | ECI7 | 41055 | 2636.5 | 2 | 20.93 | 22.00 | 1.279 | 62.9 | 1.006 | 0.02 | 0.80 | 1.027 | | |
| | 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 1 | ECI7 | 41490 | 2680 | 1 | 20.76 | 22.00 | 1.330 | 62.9 | 1.006 | 0.06 | 0.710 | 0.950 | -4.11% | 0.18 |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 1 | ECI7 | 41490 | 2680 | 1 | 20.56 | 22.00 | 1.393 | 62.9 | 1.006 | 0.06 | 0.65 | 0.911 | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.39 | 12.00 | 1.151 | 62.9 | 1.006 | 0.01 | 0.134 | 0.155 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.38 | 12.00 | 1.153 | 62.9 | 1.006 | 0.1 | 0.129 | 0.150 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.39 | 12.00 | 1.151 | 62.9 | 1.006 | -0.17 | 0.246 | 0.285 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.38 | 12.00 | 1.153 | 62.9 | 1.006 | 0.04 | 0.251 | 0.291 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Left Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.39 | 12.00 | 1.151 | 62.9 | 1.006 | -0.01 | 0.053 | 0.061 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Left Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.38 | 12.00 | 1.153 | 62.9 | 1.006 | -0.08 | 0.053 | 0.061 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.39 | 12.00 | 1.151 | 62.9 | 1.006 | 0.05 | 0.445 | 0.515 | | |
| | 2nd | LTE Band 41C | 20M | QPSK | 1 | 99 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620+ 40818 | 2593+ 2612.8 | 1 | 11.29 | 12.00 | 1.178 | 62.9 | 1.006 | 0.01 | 0.413 | 0.489 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 11.38 | 12.00 | 1.153 | 62.9 | 1.006 | 0.06 | 0.414 | 0.480 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 13.98 | 15.00 | 1.265 | 42.9 | 1.009 | 0.03 | 0.512 | 0.653 | | |
| | 2nd | LTE Band 41C HPUE | 20M | QPSK | 1 | 99 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620+ 40818 | 2593+ 2612.8 | 1 | 13.88 | 15.00 | 1.294 | 42.9 | 1.009 | 0.01 | 0.485 | 0.633 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 39750 | 2506 | 1 | 13.68 | 15.00 | 1.355 | 42.9 | 1.009 | 0.04 | 0.431 | 0.589 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40185 | 2549.5 | 1 | 13.84 | 15.00 | 1.306 | 42.9 | 1.009 | 0.13 | 0.426 | 0.561 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 41055 | 2636.5 | 1 | 13.73 | 15.00 | 1.340 | 42.9 | 1.009 | 0.02 | 0.401 | 0.542 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 41490 | 2680 | 1 | 13.71 | 15.00 | 1.346 | 42.9 | 1.009 | 0.03 | 0.392 | 0.532 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 13.82 | 15.00 | 1.312 | 42.9 | 1.009 | 0.04 | 0.457 | 0.605 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 39750 | 2506 | 1 | 13.73 | 15.00 | 1.340 | 42.9 | 1.009 | -0.01 | 0.467 | 0.631 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40185 | 2549.5 | 1 | 13.82 | 15.00 | 1.312 | 42.9 | 1.009 | 0.04 | 0.467 | 0.618 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 41055 | 2636.5 | 1 | 13.73 | 15.00 | 1.340 | 42.9 | 1.009 | 0.02 | 0.464 | 0.627 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 41490 | 2680 | 1 | 13.70 | 15.00 | 1.349 | 42.9 | 1.009 | 0.03 | 0.431 | 0.587 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 100 | 0 | - | Top Side | 5mm | Ant 4 | ECI7 | 40620 | 2593 | 1 | 13.90 | 15.00 | 1.288 | 42.9 | 1.009 | 0.04 | 0.447 | 0.581 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.39 | 11.00 | 1.151 | - | - | -0.01 | 0.182 | 0.209 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.16 | 11.00 | 1.213 | - | - | -0.08 | 0.105 | 0.127 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.39 | 11.00 | 1.151 | - | - | 0.05 | 0.189 | 0.218 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.16 | 11.00 | 1.213 | - | - | 0.06 | 0.340 | 0.413 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Side | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.39 | 11.00 | 1.151 | - | - | -0.08 | 0.037 | 0.043 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Side | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.16 | 11.00 | 1.213 | - | - | 0.13 | 0.077 | 0.093 | | |
| 29 | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.39 | 11.00 | 1.151 | - | - | 0.12 | 0.507 | **0.583** | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 5mm | Ant 4 | ECI7 | 518598 | 2592.99 | 1 | 10.16 | 11.00 | 1.213 | - | - | 0.11 | 0.444 | 0.539 | | |
| **3500MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 5 | ECI7 | 42990 | 3540 | 1 | 14.39 | 16.00 | 1.449 | 62.9 | 1.006 | -0.05 | 0.446 | 0.650 | | |
| 30 | 2nd | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 5 | ECI7 | 42990 | 3540 | 1 | 14.41 | 16.00 | 1.442 | 62.9 | 1.006 | 0.04 | 0.437 | **0.634** | -2.46% | 0.11 |
| | 2nd | LTE Band 42C | 20M | QPSK | 1 | 99 | - | Back | 5mm | Ant 5 | ECI7 | 42990 +42792 | 3540 +3520 | 1 | 14.20 | 16.00 | 1.514 | 62.9 | 1.006 | 0.1 | 0.412 | 0.627 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.62 | 15.00 | 1.374 | - | - | 0.03 | 0.228 | 0.313 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.50 | 14.00 | 1.122 | - | - | 0.03 | 0.210 | 0.236 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.62 | 15.00 | 1.374 | - | - | 0.16 | 0.490 | 0.673 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.50 | 14.00 | 1.122 | - | - | 0.01 | 0.411 | 0.461 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Side | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.62 | 15.00 | 1.374 | - | - | 0.01 | 0.036 | 0.049 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Side | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.50 | 14.00 | 1.122 | - | - | 0.03 | 0.046 | 0.052 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Side | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.62 | 15.00 | 1.374 | - | - | -0.08 | 0.105 | 0.144 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Side | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.50 | 14.00 | 1.122 | - | - | -0.08 | 0.165 | 0.185 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.62 | 15.00 | 1.374 | - | - | 0.1 | 0.307 | 0.422 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 5mm | Ant 5 | ECI7 | 656000 | 3840 | 1 | 13.50 | 14.00 | 1.122 | - | - | -0.18 | 0.419 | 0.470 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | -0.17 | 0.277 | 0.366 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | -0.03 | 0.415 | 0.586 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | 0.14 | 0.324 | 0.428 | | |
| 31 | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | 0.11 | 0.521 | **0.736** | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 2 | 18.50 | 20.00 | 1.413 | - | - | 0.01 | 0.508 | 0.718 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Side | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | -0.05 | 0.327 | 0.432 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Side | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | 0.18 | 0.517 | 0.730 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Bottom Side | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | 0.14 | 0.088 | 0.116 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Bottom Side | 5mm | Ant 1 | ECI7 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | -0.17 | 0.176 | 0.249 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.06 | 16.00 | 1.242 | - | - | 0.03 | 0.009 | 0.011 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.00 | 16.00 | 1.259 | - | - | 0.18 | 0.004 | 0.005 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.06 | 16.00 | 1.242 | - | - | 0.16 | 0.388 | 0.482 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.00 | 16.00 | 1.259 | - | - | 0.02 | 0.372 | 0.468 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Left Side | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.06 | 16.00 | 1.242 | - | - | 0.07 | 0.130 | 0.161 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Left Side | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.00 | 16.00 | 1.259 | - | - | 0.18 | 0.154 | 0.194 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.06 | 16.00 | 1.242 | - | - | -0.1 | 0.000 | 0.000 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 5mm | Ant 2 | ECI7 | 656000 | 3840 | 1 | 15.00 | 16.00 | 1.259 | - | - | 0.01 | 0.023 | 0.029 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.96 | 16.50 | 1.132 | - | - | -0.13 | 0.094 | 0.106 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.86 | 16.50 | 1.159 | - | - | -0.13 | 0.079 | 0.092 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.96 | 16.50 | 1.132 | - | - | 0.06 | 0.300 | 0.340 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.86 | 16.50 | 1.159 | - | - | -0.07 | 0.220 | 0.255 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Right Side | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.96 | 16.50 | 1.132 | - | - | 0.08 | 0.161 | 0.182 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Right Side | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.86 | 16.50 | 1.159 | - | - | -0.07 | 0.192 | 0.222 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.96 | 16.50 | 1.132 | - | - | -0.11 | 0.049 | 0.055 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 5mm | Ant 7 | ECI7 | 656000 | 3840 | 1 | 15.86 | 16.50 | 1.159 | - | - | -0.12 | 0.080 | 0.093 | | |

| Plot No. | No. | Band | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2450MHz** | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN2.4GHz | 802.11b 1Mbps | Top Side | 5mm | Ant 6 | standalone | 11 | 2462 | 1 | 14.14 | 15.50 | 1.368 | 100 | 1.000 | -0.03 | 0.477 | 0.652 | -10.28% | 0.47 |
| 32 | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Top Side | 5mm | Ant 6 | standalone | 11 | 2462 | 1 | 14.21 | 15.50 | 1.346 | 100 | 1.000 | 0.06 | 0.435 | **0.585** | | |
| | 1st | Bluetooth | 1Mbps | Top Side | 5mm | Ant 6 | Full Power | 0 | 2402 | 1 | 14.67 | 15.50 | 1.211 | 76.73 | 1.086 | -0.03 | 0.373 | 0.490 | -5.92% | 0.26 |
| 33 | 2nd | Bluetooth | 1Mbps | Top Side | 5mm | Ant 6 | Full Power | 0 | 2402 | 1 | 14.59 | 15.50 | 1.233 | 76.73 | 1.086 | 0.07 | 0.344 | **0.461** | | |
| **5000MHz** | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN5.2GHz | 802.11ac-VHT80 MCS0 | Top Side | 5mm | Ant 6 | standalone | 42 | 5210 | 1 | 13.41 | 15.00 | 1.442 | 100 | 1.000 | 0.02 | 0.429 | 0.619 | -5.98% | 0.27 |
| 34 | 2nd | WLAN5.2GHz | 802.11ac-VHT80 MCS0 | Top Side | 5mm | Ant 6 | standalone | 42 | 5210 | 1 | 13.49 | 15.00 | 1.416 | 100 | 1.000 | 0.06 | 0.411 | **0.582** | | |
| | 1st | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Top Side | 5mm | Ant 6 | standalone | 155 | 5775 | 1 | 9.77 | 11.00 | 1.327 | 100 | 1.000 | -0.01 | 0.531 | 0.705 | -2.98% | 0.13 |
| 35 | 2nd | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Top Side | 5mm | Ant 6 | standalone | 155 | 5775 | 1 | 9.65 | 11.00 | 1.365 | 100 | 1.000 | 0.05 | 0.501 | **0.684** | | |

## 16.3 Body Worn Accessory SAR

| Plot No. | No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Mode | Test Position | Gap (mm) | Antenna | Headset | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **750MHz** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.06 | 0.262 | 0.356 | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.01 | 0.220 | 0.302 | | |
| 36 | 2nd | LTE Band 12 | 10M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 23095 | 707.5 | 1 | 22.67 | 24.00 | 1.358 | - | - | 0.08 | 0.505 | **0.686** | | |
| | 2nd | LTE Band 12 | 10M | QPSK | 25 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 23095 | 707.5 | 1 | 21.62 | 23.00 | 1.374 | - | - | 0.03 | 0.485 | 0.666 | | |
| **835MHz** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Front | 5mm | Ant 0 | - | ECI3 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.02 | 0.418 | 0.535 | | |
| 37 | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | - | ECI3 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.01 | 1.050 | **1.343** | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | Headset | ECI3 | 189 | 836.4 | 1 | 25.43 | 26.50 | 1.279 | - | - | 0.08 | 1.000 | 1.279 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | - | ECI3 | 128 | 824.2 | 1 | 25.34 | 26.50 | 1.306 | - | - | 0.01 | 1.020 | 1.332 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | - | ECI3 | 251 | 848.8 | 1 | 25.20 | 26.50 | 1.349 | - | - | 0.06 | 0.915 | 1.234 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Front | 12mm | Ant 0 | - | ECI4 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.01 | 0.311 | 0.405 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 17mm | Ant 0 | - | ECI4 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.02 | 0.358 | 0.467 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | - | ECI3 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.01 | 0.409 | 0.524 | | |
| 38 | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.06 | 1.070 | **1.372** | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | Headset | ECI3 | 4182 | 836.4 | 1 | 21.92 | 23.00 | 1.282 | - | - | 0.03 | 0.998 | 1.280 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 4132 | 826.4 | 1 | 21.83 | 23.00 | 1.309 | - | - | 0.01 | 1.000 | 1.309 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 4233 | 846.6 | 1 | 21.76 | 23.00 | 1.330 | - | - | 0.02 | 0.998 | 1.328 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Front | 12mm | Ant 0 | - | ECI4 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | 0.03 | 0.241 | 0.310 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 17mm | Ant 0 | - | ECI4 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | 0.04 | 0.279 | 0.359 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.08 | 0.408 | 0.538 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.01 | 0.413 | 0.519 | | |
| 39 | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.08 | 1.010 | **1.331** | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | Headset | ECI3 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | - | - | 0.01 | 0.971 | 1.280 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | - | - | 0.03 | 0.859 | 1.079 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 75 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 26865 | 831.5 | 1 | 21.95 | 23.00 | 1.274 | - | - | -0.08 | 0.868 | 1.105 | | |
| **1750MHz** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | - | ECI3 | 1413 | 1732.6 | 1 | 18.31 | 19.50 | 1.315 | - | - | 0.03 | 0.612 | 0.805 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | - | ECI3 | 1312 | 1712.4 | 1 | 18.25 | 19.50 | 1.334 | - | - | 0.02 | 0.596 | 0.795 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | - | ECI3 | 1513 | 1752.6 | 1 | 18.19 | 19.50 | 1.352 | - | - | 0.08 | 0.600 | 0.811 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 1413 | 1732.6 | 1 | 18.31 | 19.50 | 1.315 | - | - | 0.01 | 0.871 | 1.146 | | |
| 40 | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 1312 | 1712.4 | 1 | 18.25 | 19.50 | 1.334 | - | - | 0.04 | 1.060 | **1.414** | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 1312 | 1712.4 | 2 | 18.25 | 19.50 | 1.334 | - | - | 0.03 | 0.915 | 1.220 | | |
| | 2nd | WCDMA IV | | | | | RMC 12.2Kbps | Back | 5mm | Ant 0 | Headset | ECI3 | 1312 | 1712.4 | 1 | 18.25 | 19.50 | 1.334 | | | 0.04 | 0.990 | 1.320 | | |
| | 2nd | WCDMA IV | | | | | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 1513 | 1752.6 | 1 | 18.19 | 19.50 | 1.352 | | | 0.04 | 0.763 | 1.032 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 12mm | Ant 0 | - | ECI4 | 1513 | 1752.6 | 1 | 22.69 | 24.00 | 1.352 | - | - | 0.01 | 0.588 | 0.795 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 17mm | Ant 0 | - | ECI4 | 1312 | 1712.4 | 1 | 22.69 | 24.00 | 1.352 | - | - | 0.02 | 0.579 | 0.783 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.55 | 19.00 | 1.396 | - | - | 0.01 | 0.540 | 0.754 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 50 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.53 | 19.00 | 1.403 | - | - | 0.04 | 0.477 | 0.669 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 100 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.50 | 19.00 | 1.413 | - | - | 0.01 | 0.504 | 0.712 | | |
| 41 | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.55 | 19.00 | 1.396 | - | - | 0.07 | 0.767 | **1.071** | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.53 | 19.00 | 1.403 | - | - | 0.01 | 0.651 | 0.913 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 100 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.50 | 19.00 | 1.413 | - | - | 0.03 | 0.705 | 0.996 | | |
| | 2nd | LTE Band 4 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 20175 | 1732.5 | 1 | 17.95 | 18.50 | 1.135 | - | - | 0.01 | 0.559 | 0.634 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Front | 12mm | Ant 0 | - | ECI4 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.03 | 0.512 | 0.777 | | |
| | 2nd | LTE Band 4 Main PA | 20M | QPSK | 1 | 0 | - | Back | 17mm | Ant 0 | - | ECI4 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.05 | 0.504 | 0.765 | | |
| **1900MHz** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Front | 5mm | Ant 0 | - | ECI3 | 661 | 1880 | 1 | 18.45 | 19.50 | 1.274 | - | - | 0.01 | 0.273 | 0.348 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | - | ECI3 | 661 | 1880 | 1 | 18.45 | 19.50 | 1.274 | - | - | 0.02 | 0.837 | 1.066 | | |
| 42 | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | - | ECI3 | 512 | 1850.2 | 1 | 18.30 | 19.50 | 1.318 | - | - | 0.08 | 0.981 | **1.293** | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | - | ECI3 | 810 | 1909.8 | 1 | 18.13 | 19.50 | 1.371 | - | - | 0.01 | 0.639 | 0.876 | | |
| | 2nd | GSM1900 | | | | | GPRS (4 Tx slots) | Back | 5mm | Ant 0 | Headset | ECI3 | 512 | 1850.2 | | 18.30 | 19.50 | 1.318 | | | 0.08 | 0.854 | 1.126 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Front | 12mm | Ant 0 | - | ECI4 | 661 | 1880 | 1 | 25.59 | 26.50 | 1.233 | - | - | 0.03 | 0.455 | 0.561 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 17mm | Ant 0 | - | ECI4 | 512 | 1850.2 | 1 | 25.58 | 26.50 | 1.236 | - | - | 0.01 | 0.654 | 0.808 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Front | 5mm | Ant 0 | - | ECI3 | 9400 | 1880 | 1 | 16.63 | 18.00 | 1.371 | - | - | 0.03 | 0.244 | 0.334 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 9400 | 1880 | 1 | 16.63 | 18.00 | 1.371 | - | - | 0.03 | 0.933 | 1.279 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | Headset | ECI3 | 9538 | 1907.6 | 1 | 16.60 | 18.00 | 1.380 | - | - | 0.17 | 0.917 | 1.266 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 9262 | 1852.4 | 1 | 16.57 | 18.00 | 1.390 | - | - | 0.01 | 0.923 | 1.283 | | |
| 43 | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 9538 | 1907.6 | 1 | 16.60 | 18.00 | 1.380 | - | - | -0.05 | 1.040 | **1.436** | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | - | ECI3 | 9538 | 1907.6 | 2 | 16.60 | 18.00 | 1.380 | - | - | 0.01 | 0.811 | 1.119 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Front | 12mm | Ant 0 | - | ECI4 | 9400 | 1880 | 1 | 22.61 | 24.00 | 1.377 | - | - | 0.01 | 0.471 | 0.649 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 17mm | Ant 0 | - | ECI4 | 9538 | 1907.6 | 1 | 22.59 | 24.00 | 1.384 | - | - | 0.03 | 0.812 | 1.123 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 18900 | 1880 | 1 | 16.49 | 18.00 | 1.416 | - | - | 0.08 | 0.232 | 0.328 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Front | 5mm | Ant 0 | - | ECI3 | 18900 | 1880 | 1 | 16.45 | 18.00 | 1.429 | - | - | 0.01 | 0.183 | 0.261 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 18900 | 1880 | 1 | 16.49 | 18.00 | 1.416 | - | - | 0.03 | 0.853 | 1.208 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 18700 | 1860 | 1 | 16.27 | 18.00 | 1.489 | - | - | -0.08 | 0.830 | 1.236 | | |
| 44 | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 19100 | 1900 | 1 | 16.20 | 18.00 | 1.514 | - | - | -0.04 | 0.866 | **1.311** | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | Headset | ECI3 | 19100 | 1900 | 1 | 16.20 | 18.00 | 1.514 | - | - | 0.01 | 0.820 | 1.241 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 18900 | 1880 | 1 | 16.45 | 18.00 | 1.429 | - | - | -0.08 | 0.640 | 0.914 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 18700 | 1860 | 1 | 16.35 | 18.00 | 1.462 | - | - | 0.03 | 0.613 | 0.896 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 19100 | 1900 | 1 | 16.41 | 18.00 | 1.442 | - | - | 0.08 | 0.596 | 0.860 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 100 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 18900 | 1880 | 1 | 16.29 | 18.00 | 1.483 | - | - | 0.1 | 0.680 | 1.008 | | |
| | 2nd | LTE Band 2 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 0 | - | ECI3 | 19100 | 1900 | 1 | 16.59 | 17.00 | 1.099 | - | - | 0.01 | 0.711 | 0.781 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Front | 12mm | Ant 0 | - | ECI4 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.01 | 0.451 | 0.689 | | |
| | 2nd | LTE Band 2 Main PA | 20M | QPSK | 1 | 0 | - | Back | 17mm | Ant 0 | - | ECI4 | 19100 | 1900 | 1 | 22.11 | 24.00 | 1.545 | - | - | 0.03 | 0.735 | 1.136 | | |
| **2600MHz** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 1 | - | ECI3 | 41055 | 2636.5 | 1 | 20.81 | 22.00 | 1.315 | 62.9 | 1.006 | 0.09 | 0.667 | 0.883 | -6.57% | 0.30 |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 1 | - | ECI3 | 41055 | 2636.5 | 1 | 20.93 | 22.00 | 1.279 | 62.9 | 1.006 | 0.03 | 0.641 | 0.825 | | |
| | 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | - | ECI3 | 41055 | 2636.5 | 1 | 20.81 | 22.00 | 1.315 | 62.9 | 1.006 | 0.06 | 1.040 | 1.376 | -5.52% | 0.25 |
| 45 | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | - | ECI3 | 41055 | 2636.5 | 1 | 20.93 | 22.00 | 1.279 | 62.9 | 1.006 | 0.01 | 1.01 | **1.300** | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 16.39 | 17.50 | 1.291 | 62.9 | 1.006 | -0.08 | 0.433 | 0.562 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 16.34 | 17.50 | 1.306 | 62.9 | 1.006 | -0.04 | 0.403 | 0.530 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 16.39 | 17.50 | 1.291 | 62.9 | 1.006 | 0.02 | 0.705 | 0.916 | | |
| | 2nd | LTE Band 41C | 20M | QPSK | 1 | 99 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 +40818 | 2593 +2612.8 | 1 | 16.28 | 17.50 | 1.324 | 62.9 | 1.006 | 0.01 | 0.651 | 0.867 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 39750 | 2506 | 1 | 16.06 | 17.50 | 1.393 | 62.9 | 1.006 | 0.12 | 0.605 | 0.848 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40185 | 2549.5 | 1 | 16.13 | 17.50 | 1.371 | 62.9 | 1.006 | 0.03 | 0.606 | 0.836 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41055 | 2636.5 | 1 | 16.08 | 17.50 | 1.387 | 62.9 | 1.006 | 0.01 | 0.593 | 0.827 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41490 | 2680 | 1 | 16.30 | 17.50 | 1.318 | 62.9 | 1.006 | 0.03 | 0.631 | 0.837 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 16.34 | 17.50 | 1.306 | 62.9 | 1.006 | 0.02 | 0.618 | 0.812 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 39750 | 2506 | 1 | 16.05 | 17.50 | 1.396 | 62.9 | 1.006 | 0.04 | 0.539 | 0.757 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40185 | 2549.5 | 1 | 16.10 | 17.50 | 1.380 | 62.9 | 1.006 | -0.01 | 0.548 | 0.761 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41055 | 2636.5 | 1 | 16.07 | 17.50 | 1.390 | 62.9 | 1.006 | 0.02 | 0.601 | 0.840 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41490 | 2680 | 1 | 16.29 | 17.50 | 1.321 | 62.9 | 1.006 | 0.03 | 0.548 | 0.728 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 100 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 16.38 | 17.50 | 1.294 | 62.9 | 1.006 | 0.04 | 0.565 | 0.736 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 19.19 | 20.50 | 1.352 | 42.9 | 1.009 | 0.01 | 0.829 | 1.131 | | |
| | 2nd | LTE Band 41C HPUE | 20M | QPSK | 1 | 99 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620+ 40818 | 2593+ 2612.8 | 1 | 19.03 | 20.50 | 1.403 | 42.9 | 1.009 | 0.02 | 0.715 | 1.012 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 2 | 19.19 | 20.50 | 1.352 | 42.9 | 1.009 | 0.12 | 0.781 | 1.065 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 39750 | 2506 | 1 | 19.00 | 20.50 | 1.413 | 42.9 | 1.009 | 0.12 | 0.715 | 1.019 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40185 | 2549.5 | 1 | 19.12 | 20.50 | 1.374 | 42.9 | 1.009 | 0.03 | 0.716 | 0.993 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41055 | 2636.5 | 1 | 19.00 | 20.50 | 1.413 | 42.9 | 1.009 | 0.01 | 0.703 | 1.002 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41490 | 2680 | 1 | 19.01 | 20.50 | 1.409 | 42.9 | 1.009 | 0.03 | 0.741 | 1.054 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 19.18 | 20.50 | 1.355 | 42.9 | 1.009 | 0.02 | 0.668 | 0.913 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 39750 | 2506 | 1 | 19.01 | 20.50 | 1.409 | 42.9 | 1.009 | 0.04 | 0.649 | 0.923 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40185 | 2549.5 | 1 | 19.16 | 20.50 | 1.361 | 42.9 | 1.009 | -0.01 | 0.658 | 0.904 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41055 | 2636.5 | 1 | 19.04 | 20.50 | 1.400 | 42.9 | 1.009 | 0.02 | 0.711 | 1.004 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 41490 | 2680 | 1 | 19.00 | 20.50 | 1.413 | 42.9 | 1.009 | 0.03 | 0.658 | 0.938 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 100 | 0 | - | Back | 5mm | Ant 4 | - | ECI3 | 40620 | 2593 | 1 | 19.17 | 20.50 | 1.358 | 42.9 | 1.009 | 0.04 | 0.675 | 0.925 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 12mm | Ant 4 | - | ECI4 | 40620 | 2593 | 1 | 22.65 | 24.00 | 1.365 | 62.9 | 1.006 | 0.03 | 0.431 | 0.592 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 17mm | Ant 4 | - | ECI4 | 40620 | 2593 | 1 | 22.65 | 24.00 | 1.365 | 62.9 | 1.006 | 0.01 | 0.408 | 0.560 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Front | 12mm | Ant 4 | - | ECI4 | 40620 | 2593 | 1 | 25.46 | 27.00 | 1.426 | 42.9 | 1.009 | 0.02 | 0.551 | 0.793 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 17mm | Ant 4 | - | ECI4 | 40620 | 2593 | 1 | 25.46 | 27.00 | 1.426 | 42.9 | 1.009 | 0.04 | 0.533 | 0.767 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 4 | - | ECI3 | 518598 | 2592.99 | 1 | 14.40 | 15.50 | 1.288 | - | - | 0.01 | 0.424 | 0.546 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 4 | - | ECI3 | 518598 | 2592.99 | 1 | 14.29 | 15.50 | 1.321 | - | - | 0.02 | 0.244 | 0.322 | | |
| 46 | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 4 | - | ECI3 | 518598 | 2592.99 | 1 | 14.40 | 15.50 | 1.288 | - | - | -0.16 | 0.794 | **1.023** | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 4 | - | ECI3 | 518598 | 2592.99 | 1 | 14.29 | 15.50 | 1.321 | - | - | 0.01 | 0.742 | 0.980 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Back | 5mm | Ant 4 | - | ECI3 | 518598 | 2592.99 | 1 | 14.19 | 15.50 | 1.352 | - | - | 0.02 | 0.690 | 0.933 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 12mm | Ant 4 | - | ECI4 | 518598 | 2592.99 | 1 | 21.78 | 23.00 | 1.324 | - | - | 0.01 | 0.513 | 0.679 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 17mm | Ant 4 | - | ECI4 | 518598 | 2592.99 | 1 | 21.78 | 23.00 | 1.324 | - | - | 0.03 | 0.458 | 0.607 | | |
| **3500MHz** | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 5 | - | ECI3 | 42990 | 3540 | 1 | 15.81 | 17.50 | 1.476 | 62.9 | 1.006 | -0.04 | 0.576 | 0.855 | | |
| 47 | 2nd | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 5 | - | ECI3 | 42990 | 3540 | 1 | 15.69 | 17.50 | 1.517 | 62.9 | 1.006 | 0.04 | 0.532 | **0.812** | -5.03% | 0.22 |
| | 2nd | LTE Band 42C | 20M | QPSK | 1 | 99 | - | Back | 5mm | Ant 5 | - | ECI3 | 42990 +42792 | 3540 +3520 | 1 | 15.61 | 17.50 | 1.545 | 62.9 | 1.006 | 0.01 | 0.503 | 0.782 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 5 | - | ECI3 | 656000 | 3840 | 1 | 15.60 | 17.00 | 1.380 | - | - | 0.03 | 0.422 | 0.583 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 5 | - | ECI3 | 656000 | 3840 | 1 | 15.49 | 17.00 | 1.416 | - | - | 0.03 | 0.560 | 0.793 | | |
| 48 | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 5 | - | ECI3 | 656000 | 3840 | 1 | 15.60 | 17.00 | 1.380 | - | - | 0.16 | 0.741 | **1.023** | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 5 | - | ECI3 | 656000 | 3840 | 1 | 15.60 | 17.00 | 1.380 | - | - | 0.01 | 0.721 | 0.995 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 5 | - | ECI3 | 656000 | 3840 | 2 | 15.49 | 17.00 | 1.416 | - | - | 0.01 | 0.703 | 0.995 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Back | 5mm | Ant 5 | - | ECI3 | 656000 | 3840 | 1 | 15.40 | 17.00 | 1.445 | - | - | 0.05 | 0.691 | 0.999 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 12mm | Ant 5 | - | ECI4 | 656000 | 3840 | 1 | 22.51 | 24.00 | 1.409 | - | - | 0.03 | 0.489 | 0.689 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 17mm | Ant 5 | - | ECI4 | 656000 | 3840 | 1 | 22.51 | 24.00 | 1.409 | - | - | 0.01 | 0.331 | 0.466 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 1 | - | ECI3 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | -0.17 | 0.277 | 0.366 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 1 | - | ECI3 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | -0.03 | 0.415 | 0.586 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 1 | - | ECI3 | 656000 | 3840 | 1 | 18.79 | 20.00 | 1.321 | - | - | 0.14 | 0.324 | 0.428 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 1 | - | ECI3 | 656000 | 3840 | 1 | 18.50 | 20.00 | 1.413 | - | - | 0.11 | 0.521 | 0.736 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 2 | - | ECI3 | 656000 | 3840 | 1 | 16.89 | 18.00 | 1.291 | - | - | 0.03 | 0.015 | 0.019 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 2 | - | ECI3 | 656000 | 3840 | 1 | 16.79 | 18.00 | 1.321 | - | - | 0.18 | 0.006 | 0.008 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 2 | - | ECI3 | 656000 | 3840 | 1 | 16.89 | 18.00 | 1.291 | - | - | 0.16 | 0.615 | 0.794 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 2 | - | ECI3 | 656000 | 3840 | 2 | 16.89 | 18.00 | 1.291 | - | - | 0.01 | 0.605 | 0.781 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 2 | - | ECI3 | 656000 | 3840 | 1 | 16.79 | 18.00 | 1.321 | - | - | 0.02 | 0.589 | 0.778 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 12mm | Ant 2 | - | ECI4 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | 0.01 | 0.105 | 0.149 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 17mm | Ant 2 | - | ECI4 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | 0.03 | 0.134 | 0.190 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 5mm | Ant 7 | - | ECI3 | 656000 | 3840 | 1 | 17.74 | 18.50 | 1.191 | - | - | -0.13 | 0.149 | 0.177 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 5mm | Ant 7 | - | ECI3 | 656000 | 3840 | 1 | 17.64 | 18.50 | 1.219 | - | - | -0.13 | 0.125 | 0.152 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 5mm | Ant 7 | - | ECI3 | 656000 | 3840 | 1 | 17.74 | 18.50 | 1.191 | - | - | 0.06 | 0.476 | 0.567 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 5mm | Ant 7 | - | ECI3 | 656000 | 3840 | 1 | 17.64 | 18.50 | 1.219 | - | - | -0.07 | 0.348 | 0.424 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 12mm | Ant 7 | - | ECI4 | 656000 | 3840 | 1 | 19.69 | 20.50 | 1.205 | - | - | 0.01 | 0.561 | 0.676 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 17mm | Ant 7 | - | ECI4 | 656000 | 3840 | 1 | 19.69 | 20.50 | 1.205 | - | - | 0.03 | 0.351 | 0.423 | | |

| Plot No. | No. | Band | Mode | Test Position | Gap (mm) | Antenna | Headset | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2450MHz** | | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN2.4GHz | 802.11b 1Mbps | Front | 5mm | Ant 6 | - | Standalone | 6 | 2437 | 1 | 18.89 | 20.50 | 1.449 | 100 | 1.000 | -0.01 | 0.741 | 1.074 | -0.37% | 0.02 |
| | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Front | 5mm | Ant 6 | - | Standalone | 6 | 2437 | 1 | 18.87 | 20.50 | 1.455 | 100 | 1.000 | 0.02 | 0.735 | 1.070 | | |
| | 1st | WLAN2.4GHz | 802.11b 1Mbps | Back | 5mm | Ant 6 | - | Standalone | 11 | 2462 | 1 | 19.16 | 20.50 | 1.361 | 100 | 1.000 | 0.18 | 1.020 | 1.389 | -4.61% | 0.20 |
| 49 | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Back | 5mm | Ant 6 | - | Standalone | 11 | 2462 | 1 | 19.11 | 20.50 | 1.377 | 100 | 1.000 | 0.17 | 0.962 | **1.325** | | |
| | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Back | 5mm | Ant 6 | - | Standalone | 11 | 2462 | 2 | 19.11 | 20.50 | 1.377 | 100 | 1.000 | 0.02 | 0.815 | 1.122 | | |
| | 1st | Bluetooth | 1Mbps | Back | 5mm | Ant 6 | - | Full Power | 0 | 2402 | 1 | 14.67 | 15.50 | 1.211 | 76.73 | 1.086 | -0.05 | 0.337 | 0.443 | 0.00% | 0.00 |
| 50 | 2nd | Bluetooth | 1Mbps | Back | 5mm | Ant 6 | - | Full Power | 0 | 2402 | 1 | 14.59 | 15.50 | 1.233 | 76.73 | 1.086 | 0.03 | 0.331 | **0.443** | | |
| **5000MHz** | | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN5.3GHz | 802.11a 6Mbps | Front | 5mm | Ant 6 | - | Standalone | 60 | 5300 | 1 | 17.38 | 19.00 | 1.452 | 100 | 1.000 | 0.01 | 0.738 | 1.072 | -0.28% | 0.01 |
| | 2nd | WLAN5.3GHz | 802.11a 6Mbps | Front | 5mm | Ant 6 | - | Standalone | 60 | 5300 | 1 | 17.35 | 19.00 | 1.462 | 100 | 1.000 | 0.02 | 0.731 | 1.069 | | |
| | 1st | WLAN5.3GHz | 802.11a 6Mbps | Back | 5mm | Ant 6 | - | Standalone | 60 | 5300 | 1 | 17.38 | 19.00 | 1.452 | 100 | 1.000 | 0.01 | 0.776 | 1.127 | -0.71% | 0.03 |
| 51 | 2nd | WLAN5.3GHz | 802.11a 6Mbps | Back | 5mm | Ant 6 | - | Standalone | 60 | 5300 | 1 | 17.35 | 19.00 | 1.462 | 100 | 1.000 | -0.03 | 0.765 | **1.119** | | |
| | 1st | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Front | 5mm | Ant 6 | - | Standalone | 122 | 5610 | 1 | 12.72 | 14.00 | 1.343 | 100 | 1.000 | 0.04 | 0.277 | 0.372 | -25.54% | 1.28 |
| | 2nd | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Front | 5mm | Ant 6 | - | Standalone | 122 | 5610 | 1 | 12.71 | 14.00 | 1.346 | 100 | 1.000 | 0.01 | 0.206 | 0.277 | | |
| | 1st | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Back | 5mm | Ant 6 | - | Standalone | 138 | 5690 | 1 | 12.68 | 14.00 | 1.355 | 100 | 1.000 | -0.06 | 0.783 | 1.061 | -16.87% | 0.80 |
| 52 | 2nd | WLAN5.5GHz | 802.11ac-VHT80 MCS0 | Back | 5mm | Ant 6 | - | Standalone | 138 | 5690 | 1 | 12.74 | 14.00 | 1.337 | 100 | 1.000 | -0.09 | 0.660 | **0.882** | | |
| | 1st | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Front | 5mm | Ant 6 | - | Standalone | 155 | 5775 | 1 | 12.87 | 14.00 | 1.297 | 100 | 1.000 | 0.04 | 0.140 | 0.182 | -22.53% | 1.11 |
| | 2nd | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Front | 5mm | Ant 6 | - | Standalone | 155 | 5775 | 1 | 12.95 | 14.00 | 1.274 | 100 | 1.000 | 0.01 | 0.111 | 0.141 | | |
| | 1st | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Back | 5mm | Ant 6 | - | Standalone | 155 | 5775 | 1 | 12.87 | 14.00 | 1.297 | 100 | 1.000 | -0.07 | 0.813 | 1.055 | -2.46% | 0.11 |
| 53 | 2nd | WLAN5.8GHz | 802.11ac-VHT80 MCS0 | Back | 5mm | Ant 6 | - | Standalone | 155 | 5775 | 1 | 12.95 | 14.00 | 1.274 | 100 | 1.000 | -0.09 | 0.808 | **1.029** | | |

## 16.4 Product specific 10g SAR

| Plot No. | No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 10g SAR (W/kg) | Reported 10g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **835MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 0mm | Ant 0 | ECI6 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.1 | 1.87 | 2.437 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 0mm | Ant 0 | ECI6 | 128 | 824.2 | 1 | 28.23 | 29.50 | 1.340 | - | - | -0.18 | 2.07 | 2.773 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Back | 0mm | Ant 0 | ECI6 | 251 | 848.8 | 1 | 28.13 | 29.50 | 1.371 | - | - | 0.1 | 1.68 | 2.303 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 189 | 836.4 | 1 | 28.35 | 29.50 | 1.303 | - | - | 0.12 | 2.40 | 3.128 | | |
| 54 | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 128 | 824.2 | 1 | 28.23 | 29.50 | 1.340 | - | - | 0.04 | 2.64 | **3.537** | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 128 | 824.2 | 2 | 28.23 | 29.50 | 1.340 | - | - | 0.05 | 2.05 | 2.746 | | |
| | 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 251 | 848.8 | 1 | 28.13 | 29.50 | 1.371 | - | - | 0.08 | 2.50 | 3.427 | | |
| | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 0mm | Ant 0 | ECI6 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | 0.08 | 1.15 | 1.481 | | |
| 55 | 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 4182 | 836.4 | 1 | 22.90 | 24.00 | 1.288 | - | - | 0.08 | 1.22 | **1.572** | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | 1 | 1 | 0.08 | 0.779 | 1.027 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | 1 | 1 | 0.03 | 0.651 | 0.818 | | |
| 56 | 2nd | LTE Band 26 | 15M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 26865 | 831.5 | 1 | 22.80 | 24.00 | 1.318 | 1 | 1 | 0.01 | 1.55 | **2.043** | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 36 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 26865 | 831.5 | 1 | 22.01 | 23.00 | 1.256 | 1 | 1 | 0.14 | 1.25 | 1.570 | | |
| | 2nd | LTE Band 26 | 15M | QPSK | 75 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 26865 | 831.5 | 1 | 21.95 | 23.00 | 1.274 | 1 | 1 | 0.11 | 1.34 | 1.706 | | |
| **1750MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 0mm | Ant 0 | ECI6 | 1413 | 1732.6 | 1 | 20.75 | 22.00 | 1.334 | - | - | -0.08 | 0.899 | 1.199 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 0mm | Ant 0 | ECI6 | 1413 | 1732.6 | 1 | 20.75 | 22.00 | 1.334 | - | - | -0.08 | 1.21 | 1.614 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 1413 | 1732.6 | 1 | 20.75 | 22.00 | 1.334 | - | - | 0.08 | 2.44 | 3.254 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 1312 | 1712.4 | 1 | 20.74 | 22.00 | 1.337 | - | - | 0.01 | 2.25 | 3.007 | | |
| 57 | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 1513 | 1752.6 | 1 | 20.71 | 22.00 | 1.346 | - | - | 0.09 | 2.50 | **3.365** | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 1513 | 1752.6 | 2 | 20.71 | 22.00 | 1.346 | - | - | 0.01 | 2.29 | 3.082 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Front | 9mm | Ant 0 | ECI4 | 1413 | 1732.6 | 1 | 22.76 | 24.00 | 1.330 | - | - | -0.08 | 0.581 | 0.773 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 16mm | Ant 0 | ECI4 | 1413 | 1732.6 | 1 | 22.76 | 24.00 | 1.330 | - | - | -0.08 | 0.405 | 0.539 | | |
| | 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 13mm | Ant 0 | ECI4 | 1513 | 1752.6 | 1 | 22.69 | 24.00 | 1.352 | - | - | 0.08 | 0.759 | 1.026 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Front | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.92 | 21.50 | 1.439 | - | - | 0.01 | 1.15 | 1.655 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.92 | 21.50 | 1.439 | - | - | 0.02 | 1.04 | 1.496 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.92 | 21.50 | 1.439 | - | - | 0.01 | 1.35 | 1.942 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.92 | 21.50 | 1.439 | - | - | 0.02 | 1.31 | 1.885 | | |
| 58 | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.92 | 21.50 | 1.439 | - | - | 0.17 | 2.32 | **3.338** | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 50 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.92 | 21.50 | 1.439 | - | - | 0.03 | 1.86 | 2.676 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 100 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 19.88 | 21.50 | 1.452 | - | - | -0.08 | 1.90 | 2.759 | | |
| | 2nd | LTE Band 4 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 20175 | 1732.5 | 1 | 20.52 | 21.00 | 1.117 | - | - | 0.1 | 2.07 | 2.312 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Front | 9mm | Ant 0 | ECI4 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.02 | 0.569 | 0.863 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Back | 16mm | Ant 0 | ECI4 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | 0.17 | 0.395 | 0.599 | | |
| | 2nd | LTE Band 4 | 20M | QPSK | 1 | 0 | - | Bottom Side | 13mm | Ant 0 | ECI4 | 20175 | 1732.5 | 1 | 21.69 | 23.50 | 1.517 | - | - | -0.17 | 0.589 | 0.894 | | |
| **1900MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 0mm | Ant 0 | ECI6 | 661 | 1880 | 1 | 22.65 | 23.50 | 1.216 | - | - | 0.01 | 2.05 | 2.493 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 0mm | Ant 0 | ECI6 | 512 | 1850.2 | 1 | 22.61 | 23.50 | 1.227 | - | - | 0.01 | 2.01 | 2.467 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 0mm | Ant 0 | ECI6 | 810 | 1909.8 | 1 | 22.63 | 23.50 | 1.222 | - | - | 0.13 | 1.98 | 2.419 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 661 | 1880 | 1 | 22.65 | 23.50 | 1.216 | - | - | 0.01 | 2.67 | 3.247 | | |
| 59 | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 512 | 1850.2 | 1 | 22.61 | 23.50 | 1.227 | - | - | 0.13 | 2.78 | **3.412** | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 810 | 1909.8 | 1 | 22.63 | 23.50 | 1.222 | - | - | 0.02 | 2.38 | 2.908 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Back | 16mm | Ant 0 | ECI4 | 661 | 1880 | 1 | 25.59 | 26.50 | 1.233 | - | - | 0.01 | 0.511 | 0.630 | | |
| | 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 13mm | Ant 0 | ECI4 | 512 | 1850.2 | 1 | 25.58 | 26.50 | 1.236 | - | - | 0.03 | 0.578 | 0.714 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 0mm | Ant 0 | ECI6 | 9400 | 1880 | 1 | 18.63 | 20.00 | 1.371 | - | - | 0.08 | 2.03 | 2.783 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 0mm | Ant 0 | ECI6 | 9262 | 1852.4 | 1 | 18.54 | 20.00 | 1.400 | - | - | 0.01 | 1.74 | 2.435 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 0mm | Ant 0 | ECI6 | 9538 | 1907.6 | 1 | 18.58 | 20.00 | 1.387 | - | - | 0.03 | 1.89 | 2.621 | | |
| 60 | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 9400 | 1880 | 1 | 18.63 | 20.00 | 1.371 | - | - | 0.03 | 2.61 | **3.578** | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 9400 | 1880 | 2 | 18.63 | 20.00 | 1.371 | - | - | 0.02 | 2.35 | 3.222 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 9262 | 1852.4 | 1 | 18.54 | 20.00 | 1.400 | - | - | -0.08 | 2.31 | 3.233 | | |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 9538 | 1907.6 | 1 | 18.58 | 20.00 | 1.387 | - | - | -0.08 | 2.38 | 3.300 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 16mm | Ant 0 | ECI4 | 9538 | 1907.6 | 1 | 22.59 | 24.00 | 1.384 | - | - | 0.03 | 0.501 | 0.693 | | |
| | 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Bottom Side | 13mm | Ant 0 | ECI4 | 9538 | 1907.6 | 1 | 22.59 | 24.00 | 1.384 | - | - | 0.01 | 0.731 | 1.011 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 18900 | 1880 | 1 | 17.89 | 19.50 | 1.449 | - | - | 0.18 | 1.85 | 2.680 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 18700 | 1860 | 1 | 17.81 | 19.50 | 1.476 | - | - | 0.14 | 1.75 | 2.582 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 0 | ECI6 | 19100 | 1900 | 1 | 17.83 | 19.50 | 1.469 | - | - | 0.02 | 1.69 | 2.482 | | |
| 61 | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 18900 | 1880 | 1 | 17.89 | 19.50 | 1.449 | - | - | -0.05 | 2.43 | **3.521** | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 18700 | 1860 | 1 | 17.81 | 19.50 | 1.476 | - | - | 0.17 | 2.13 | 3.143 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 19100 | 1900 | 1 | 17.83 | 19.50 | 1.469 | - | - | -0.05 | 2.28 | 3.349 | | |
| | 2nd | LTE Band 2 Other PA_NSA | 20M | QPSK | 1 | 0 | - | Bottom Side | 0mm | Ant 0 | ECI6 | 18900 | 1880 | 1 | 18.02 | 18.50 | 1.117 | - | - | 0.03 | 2.20 | 2.457 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Back | 16mm | Ant 0 | ECI4 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.01 | 0.501 | 0.765 | | |
| | 2nd | LTE Band 2 | 20M | QPSK | 1 | 0 | - | Bottom Side | 13mm | Ant 0 | ECI4 | 18900 | 1880 | 1 | 22.16 | 24.00 | 1.528 | - | - | 0.03 | 0.754 | 1.152 | | |
| **2600MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 1 | ECI6 | 39750 | 2506 | 1 | 21.34 | 22.50 | 1.306 | 62.9 | 1.006 | -0.05 | 1.72 | 2.260 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 1 | ECI6 | 39750 | 2506 | 1 | 21.11 | 22.50 | 1.377 | 62.9 | 1.006 | 0.01 | 1.360 | 1.884 | -16.64% | 0.79 |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 1 | ECI6 | 39750 | 2506 | 2 | 21.11 | 22.50 | 1.377 | 62.9 | 1.006 | 0.02 | 1.310 | 1.815 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.79 | 19.00 | 1.321 | 62.9 | 1.006 | -0.01 | 1.61 | 2.140 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.43 | 19.00 | 1.435 | 62.9 | 1.006 | 0.04 | 1.46 | 2.108 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 40185 | 2549.5 | 1 | 17.53 | 19.00 | 1.403 | 62.9 | 1.006 | -0.01 | 1.43 | 2.018 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 41055 | 2636.5 | 1 | 17.50 | 19.00 | 1.413 | 62.9 | 1.006 | 0.01 | 1.35 | 1.918 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 41490 | 2680 | 1 | 17.69 | 19.00 | 1.352 | 62.9 | 1.006 | 0.02 | 1.36 | 1.850 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.78 | 19.00 | 1.324 | 62.9 | 1.006 | 0.03 | 1.59 | 2.118 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.45 | 19.00 | 1.429 | 62.9 | 1.006 | 0.04 | 1.44 | 2.070 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 40185 | 2549.5 | 1 | 17.53 | 19.00 | 1.403 | 62.9 | 1.006 | -0.01 | 1.43 | 2.018 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 41055 | 2636.5 | 1 | 17.46 | 19.00 | 1.426 | 62.9 | 1.006 | 0.01 | 1.34 | 1.922 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 41490 | 2680 | 1 | 17.73 | 19.00 | 1.340 | 62.9 | 1.006 | 0.02 | 1.38 | 1.860 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.78 | 19.00 | 1.324 | 62.9 | 1.006 | 0.13 | 1.33 | 1.772 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 100 | 0 | - | Front | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.47 | 19.00 | 1.422 | 62.9 | 1.006 | 0.04 | 1.36 | 1.946 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.79 | 19.00 | 1.321 | 62.9 | 1.006 | -0.09 | 1.81 | 2.406 | | |
| | 2nd | LTE Band 41C | 20M | QPSK | 1 | 99 | - | Back | 0mm | Ant 4 | ECI6 | 40620+ 40818 | 2593+ 2612.8 | 1 | 17.66 | 19.00 | 1.361 | 62.9 | 1.006 | 0.02 | 1.56 | 2.137 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.43 | 19.00 | 1.435 | 62.9 | 1.006 | 0.04 | 1.61 | 2.324 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40185 | 2549.5 | 1 | 17.53 | 19.00 | 1.403 | 62.9 | 1.006 | -0.01 | 1.61 | 2.272 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41055 | 2636.5 | 1 | 17.50 | 19.00 | 1.413 | 62.9 | 1.006 | 0.01 | 1.59 | 2.259 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41490 | 2680 | 1 | 17.69 | 19.00 | 1.352 | 62.9 | 1.006 | 0.02 | 1.54 | 2.095 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.78 | 19.00 | 1.324 | 62.9 | 1.006 | -0.08 | 1.59 | 2.118 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.45 | 19.00 | 1.429 | 62.9 | 1.006 | 0.04 | 1.42 | 2.041 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40185 | 2549.5 | 1 | 17.53 | 19.00 | 1.403 | 62.9 | 1.006 | -0.01 | 1.44 | 2.032 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41055 | 2636.5 | 1 | 17.46 | 19.00 | 1.426 | 62.9 | 1.006 | 0.01 | 1.47 | 2.108 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41490 | 2680 | 1 | 17.73 | 19.00 | 1.340 | 62.9 | 1.006 | 0.02 | 1.51 | 2.035 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 100 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.47 | 19.00 | 1.422 | 62.9 | 1.006 | 0.04 | 1.61 | 2.304 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Top Side | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.79 | 19.00 | 1.321 | 62.9 | 1.006 | 0.12 | 1.12 | 1.489 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 50 | 0 | - | Top Side | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 17.78 | 19.00 | 1.324 | 62.9 | 1.006 | 0.12 | 1.10 | 1.466 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 100 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 17.47 | 19.00 | 1.422 | 62.9 | 1.006 | 0.04 | 1.61 | 2.304 | | |
| 62 | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 20.61 | 22.00 | 1.377 | 42.9 | 1.009 | 0.03 | 2.05 | **2.849** | | |
| | 2nd | LTE Band 41C HPUE | 20M | QPSK | 1 | 99 | - | Back | 0mm | Ant 4 | ECI6 | 40620+ 40818 | 2593+ 2612.8 | 1 | 20.48 | 22.00 | 1.419 | 42.9 | 1.009 | 0.01 | 1.95 | 2.792 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 2 | 20.61 | 22.00 | 1.377 | 42.9 | 1.009 | 0.01 | 1.89 | 2.626 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 20.41 | 22.00 | 1.442 | 42.9 | 1.009 | 0.02 | 1.85 | 2.692 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40185 | 2549.5 | 1 | 20.55 | 22.00 | 1.396 | 42.9 | 1.009 | -0.08 | 1.86 | 2.621 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41055 | 2636.5 | 1 | 20.40 | 22.00 | 1.445 | 42.9 | 1.009 | 0.04 | 1.84 | 2.684 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41490 | 2680 | 1 | 20.44 | 22.00 | 1.432 | 42.9 | 1.009 | -0.01 | 1.79 | 2.587 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 1 | 20.58 | 22.00 | 1.387 | 42.9 | 1.009 | -0.08 | 1.74 | 2.435 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 20.41 | 22.00 | 1.442 | 42.9 | 1.009 | 0.13 | 1.67 | 2.430 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40185 | 2549.5 | 1 | 20.54 | 22.00 | 1.400 | 42.9 | 1.009 | 0.12 | 1.69 | 2.387 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41055 | 2636.5 | 1 | 20.45 | 22.00 | 1.429 | 42.9 | 1.009 | 0.01 | 1.72 | 2.480 | | |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 50 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 41490 | 2680 | 1 | 20.38 | 22.00 | 1.452 | 42.9 | 1.009 | 0.02 | 1.76 | 2.579 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 100 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 39750 | 2506 | 1 | 20.55 | 22.00 | 1.396 | 42.9 | 1.009 | 0.04 | 1.84 | 2.592 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Front | 7mm | Ant 4 | ECI4 | 40620 | 2593 | 1 | 22.65 | 24.00 | 1.365 | 62.9 | 1.006 | 0.02 | 0.635 | 0.872 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 11mm | Ant 4 | ECI4 | 40620 | 2593 | 1 | 22.65 | 24.00 | 1.365 | 62.9 | 1.006 | -0.09 | 0.731 | 1.003 | | |
| | 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Top Side | 14mm | Ant 4 | ECI4 | 40620 | 2593 | 1 | 22.65 | 24.00 | 1.365 | 62.9 | 1.006 | 0.06 | 0.689 | 0.946 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Front | 7mm | Ant 4 | ECI4 | 40620 | 2593 | 1 | 25.46 | 27.00 | 1.426 | 42.9 | 1.009 | -0.08 | 0.859 | 1.236 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 11mm | Ant 4 | ECI4 | 40620 | 2593 | 1 | 25.46 | 27.00 | 1.426 | 42.9 | 1.009 | 0.13 | 0.958 | 1.378 | | |
| | 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Top Side | 14mm | Ant 4 | ECI4 | 40620 | 2593 | 1 | 25.46 | 27.00 | 1.426 | 42.9 | 1.009 | 0.13 | 0.831 | 1.195 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.29 | 19.50 | 1.321 | - | - | -0.01 | 1.75 | 2.312 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Front | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.24 | 19.50 | 1.337 | - | - | -0.08 | 1.65 | 2.205 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Front | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.11 | 19.50 | 1.377 | - | - | -0.08 | 1.58 | 2.176 | | |
| 63 | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.29 | 19.50 | 1.321 | - | - | 0.08 | 2.03 | **2.682** | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.24 | 19.50 | 1.337 | - | - | 0.08 | 1.82 | 2.433 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Back | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.11 | 19.50 | 1.377 | - | - | 0.16 | 1.70 | 2.341 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.29 | 19.50 | 1.321 | - | - | -0.1 | 1.82 | 2.405 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.24 | 19.50 | 1.337 | - | - | 0.07 | 1.61 | 2.152 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Top Side | 0mm | Ant 4 | ECI6 | 518598 | 2592.99 | 1 | 18.11 | 19.50 | 1.377 | - | - | 0.18 | 1.68 | 2.314 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Front | 7mm | Ant 4 | ECI4 | 518598 | 2592.99 | 1 | 21.78 | 23.00 | 1.324 | - | - | 0.01 | 0.851 | 1.127 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 11mm | Ant 4 | ECI4 | 518598 | 2592.99 | 1 | 21.78 | 23.00 | 1.324 | - | - | 0.03 | 0.935 | 1.238 | | |
| | 2nd | FR1 n41 | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 14mm | Ant 4 | ECI4 | 518598 | 2592.99 | 1 | 21.78 | 23.00 | 1.324 | - | - | 0.01 | 0.771 | 1.021 | | |
| **3500MHz** | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1st | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 5 | ECI6 | 42990 | 3540 | 1 | 19.72 | 21.50 | 1.507 | 62.9 | 1.006 | 0.04 | 1.38 | 2.092 | | |
| 64 | 2nd | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 5 | ECI6 | 42990 | 3540 | 1 | 20.06 | 21.50 | 1.393 | 62.9 | 1.006 | 0.05 | 1.28 | **1.794** | -14.24% | 0.67 |
| | 2nd | LTE Band 42 | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 5 | ECI6 | 42990 | 3540 | 2 | 20.06 | 21.50 | 1.393 | 62.9 | 1.006 | 0.05 | 1.19 | 1.668 | | |
| | 2nd | LTE Band 42C | 20M | QPSK | 1 | 99 | - | Back | 0mm | Ant 5 | ECI6 | 42990+ 42792 | 3540+ 3520 | 1 | 19.56 | 21.50 | 1.563 | 62.9 | 1.006 | 0.03 | 1.01 | 1.588 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 1 | 19.08 | 20.50 | 1.387 | - | - | -0.12 | 1.85 | 2.565 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 2 | 19.08 | 20.50 | 1.387 | - | - | 0.02 | 1.59 | 2.205 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 650000 | 3750 | 1 | 18.96 | 20.50 | 1.426 | - | - | -0.12 | 1.65 | 2.352 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 662000 | 3930 | 1 | 18.99 | 20.50 | 1.416 | - | - | -0.12 | 1.58 | 2.237 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 1 | 19.00 | 20.50 | 1.413 | - | - | -0.02 | 1.40 | 1.978 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 650000 | 3750 | 1 | 18.73 | 20.50 | 1.503 | - | - | -0.12 | 1.25 | 1.879 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 662000 | 3930 | 1 | 18.83 | 20.50 | 1.469 | - | - | -0.12 | 1.29 | 1.895 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Back | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 1 | 18.87 | 20.50 | 1.455 | - | - | 0.02 | 1.33 | 1.936 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 1 | 19.08 | 20.50 | 1.387 | - | - | -0.03 | 1.79 | 2.482 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 650000 | 3750 | 1 | 18.96 | 20.50 | 1.426 | - | - | -0.12 | 1.61 | 2.295 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 662000 | 3930 | 1 | 18.99 | 20.50 | 1.416 | - | - | -0.12 | 1.66 | 2.350 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 1 | 19.00 | 20.50 | 1.413 | - | - | 0.02 | 1.59 | 2.246 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 650000 | 3750 | 1 | 18.73 | 20.50 | 1.503 | - | - | -0.12 | 1.46 | 2.195 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 662000 | 3930 | 1 | 18.83 | 20.50 | 1.469 | - | - | -0.12 | 1.58 | 2.321 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Top Side | 0mm | Ant 5 | ECI6 | 656000 | 3840 | 1 | 18.87 | 20.50 | 1.455 | - | - | 0.02 | 1.31 | 1.907 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 13mm | Ant 5 | Ant 4 | 656000 | 3840 | 1 | 22.51 | 24.00 | 1.409 | - | - | 0.05 | 0.121 | 0.171 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Top Side | 15mm | Ant 5 | Ant 4 | 656000 | 3840 | 1 | 22.51 | 24.00 | 1.409 | - | - | 0.01 | 0.061 | 0.086 | | |
| 65 | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 2 | ECI6 | 656000 | 3840 | 1 | 19.49 | 21.00 | 1.416 | - | - | -0.15 | 1.89 | **2.676** | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 2 | ECI6 | 656000 | 3840 | 2 | 19.49 | 21.00 | 1.416 | - | - | 0.01 | 1.61 | 2.279 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 0mm | Ant 2 | ECI6 | 656000 | 3840 | 1 | 19.39 | 21.00 | 1.449 | - | - | 0.01 | 1.59 | 2.304 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 270 | 0 | DFT-SCS-30KHz | Back | 0mm | Ant 2 | ECI6 | 656000 | 3840 | 1 | 18.46 | 20.00 | 1.426 | - | - | 0.07 | 1.55 | 2.210 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 7 | ECI6 | 656000 | 3840 | 1 | 19.69 | 20.50 | 1.205 | - | - | 0.03 | 0.867 | 1.045 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 1 | 1 | DFT-SCS-30KHz | Back | 0mm | Ant 7 | ECI6 | 656000 | 3840 | 2 | 19.69 | 20.50 | 1.205 | - | - | 0.01 | 0.857 | 1.033 | | |
| | 2nd | FR1 n77 Part 27O | 100M | QPSK | 135 | 69 | DFT-SCS-30KHz | Back | 0mm | Ant 7 | ECI6 | 656000 | 3840 | 1 | 19.40 | 20.50 | 1.288 | - | - | -0.16 | 0.801 | 1.032 | | |

| Plot No. | No. | Band | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Sample | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 10g SAR (W/kg) | Reported 10g SAR (W/kg) | Deviation (%) | Deviation $d_{dB}$(dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2450MHz** | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN2.4GHz | 802.11b 1Mbps | Top Side | 0mm | Ant 6 | Full Power | 11 | 2462 | 1 | 19.16 | 20.50 | 1.361 | 100 | 1.000 | -0.01 | 1.540 | 2.097 | -6.10% | 0.27 |
| 66 | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Top Side | 0mm | Ant 6 | Full Power | 11 | 2462 | 1 | 19.11 | 20.50 | 1.377 | 100 | 1.000 | 0.03 | 1.430 | **1.969** | | |
| | 2nd | WLAN2.4GHz | 802.11b 1Mbps | Top Side | 0mm | Ant 6 | Full Power | 11 | 2462 | 2 | 19.11 | 20.50 | 1.377 | 100 | 1.000 | 0.03 | 1.310 | 1.804 | | |
| **5000MHz** | | | | | | | | | | | | | | | | | | | | |
| | 1st | WLAN5.2GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 44 | 5220 | 1 | 17.96 | 19.50 | 1.426 | 100 | 1.000 | -0.07 | 1.080 | 1.540 | -4.09% | 0.18 |
| 67 | 2nd | WLAN5.2GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 44 | 5220 | 1 | 17.85 | 19.50 | 1.462 | 100 | 1.000 | -0.06 | 1.010 | **1.477** | | |
| | 1st | WLAN5.3GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 56 | 5280 | 1 | 18.51 | 20.00 | 1.409 | 100 | 1.000 | -0.04 | 1.270 | 1.790 | -1.62% | 0.07 |
| 68 | 2nd | WLAN5.3GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 56 | 5280 | 1 | 18.37 | 20.00 | 1.455 | 100 | 1.000 | 0.02 | 1.210 | **1.761** | | |
| | 2nd | WLAN5.3GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 56 | 5280 | 2 | 18.37 | 20.00 | 1.455 | 100 | 1.000 | 0.02 | 1.120 | 1.630 | | |
| | 1st | WLAN5.5GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 100 | 5500 | 1 | 17.63 | 19.00 | 1.371 | 100 | 1.000 | 0.09 | 1.130 | 1.549 | -0.45% | 0.02 |
| 69 | 2nd | WLAN5.5GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 100 | 5500 | 1 | 17.61 | 19.00 | 1.377 | 100 | 1.000 | 0.06 | 1.120 | **1.542** | | |
| | 2nd | WLAN5.5GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 100 | 5500 | 2 | 17.61 | 19.00 | 1.377 | 100 | 1.000 | 0.02 | 1.110 | 1.529 | | |
| | 1st | WLAN5.8GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 149 | 5745 | 1 | 17.59 | 19.00 | 1.384 | 100 | 1.000 | 0.07 | 1.380 | 1.909 | -1.57% | 0.07 |
| 70 | 2nd | WLAN5.8GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 149 | 5745 | 1 | 17.50 | 19.00 | 1.413 | 100 | 1.000 | 0.09 | 1.330 | **1.879** | | |
| | 2nd | WLAN5.8GHz | 802.11a 6Mbps | Top Side | 0mm | Ant 6 | Full Power | 149 | 5745 | 2 | 17.50 | 19.00 | 1.413 | 100 | 1.000 | 0.01 | 1.250 | 1.766 | | |

## 16.5 Repeated SAR Measurement

**<1g>**

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Ratio | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 21.92 | 23.00 | 1.282 | - | - | 0.06 | 1.070 | 1 | 1.372 |
| 2nd | WCDMA V | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI7 | 4182 | 836.4 | 21.92 | 23.00 | 1.282 | - | - | 0.06 | 1.000 | 1.070 | 1.282 |
| 1st | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | ECI7 | 41055 | 2636.5 | 20.93 | 22.00 | 1.279 | 62.9 | 1.006 | 0.01 | 1.01 | 1 | 1.300 |
| 2nd | LTE Band 41 | 20M | QPSK | 1 | 0 | - | Back | 5mm | Ant 1 | ECI7 | 41055 | 2636.5 | 20.93 | 22.00 | 1.279 | 62.9 | 1.006 | 0.05 | 0.98 | 1.031 | 1.261 |
| 1st | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI3 | 1312 | 1712.4 | 18.25 | 19.50 | 1.334 | - | - | 0.04 | 1.060 | 1 | 1.414 |
| 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI3 | 1312 | 1712.4 | 18.25 | 19.50 | 1.334 | - | - | 0.01 | 0.895 | 1.158 | 1.194 |
| 1st | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI3 | 9538 | 1907.6 | 16.60 | 18.00 | 1.380 | - | - | -0.05 | 1.040 | 1 | 1.436 |
| 2nd | WCDMA II | - | - | - | - | RMC 12.2Kbps | Back | 5mm | Ant 0 | ECI3 | 9538 | 1907.6 | 16.60 | 18.00 | 1.380 | - | - | 0.1 | 0.980 | 1.061 | 1.353 |
| 1st | WLAN2.4GHz | - | - | - | - | 802.11b 1Mbps | Back | 5mm | Ant 6 | Standalone | 11 | 2462 | 19.11 | 20.50 | 1.377 | 100 | 1.000 | 0.17 | 0.962 | 1 | 1.325 |
| 2nd | WLAN2.4GHz | - | - | - | - | 802.11b 1Mbps | Back | 5mm | Ant 6 | Standalone | 11 | 2462 | 19.11 | 20.50 | 1.377 | 100 | 1.000 | 0.01 | 0.941 | 1.022 | 1.296 |
| 1st | WLAN5.8GHz | - | - | - | - | 802.11ac-VHT80 MCS0 | Back | 5mm | Ant 6 | Standalone | 155 | 5775 | 12.95 | 14.00 | 1.274 | 100 | 1.000 | -0.09 | 0.808 | 1 | 1.029 |
| 2nd | WLAN5.8GHz | - | - | - | - | 802.11ac-VHT80 MCS0 | Back | 5mm | Ant 6 | Standalone | 155 | 5775 | 12.95 | 14.00 | 1.274 | 100 | 1.000 | 0.12 | 0.785 | 1.022 | 1.000 |

**<10g>**

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Mode | Test Position | Gap (mm) | Antenna | Power State | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 10g SAR (W/kg) | Ratio | Reported 10g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 128 | 824.2 | 28.23 | 29.50 | 1.340 | - | - | 0.04 | 2.64 | 1 | 3.537 |
| 2nd | GSM850 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 128 | 824.2 | 28.23 | 29.50 | 1.340 | - | - | 0.07 | 2.43 | 1.086 | 3.255 |
| 1st | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 1513 | 1752.6 | 20.71 | 22.00 | 1.346 | - | - | 0.09 | 2.50 | 1 | 3.365 |
| 2nd | WCDMA IV | - | - | - | - | RMC 12.2Kbps | Bottom Side | 0mm | Ant 0 | ECI6 | 1513 | 1752.6 | 20.71 | 22.00 | 1.346 | - | - | 0.02 | 2.32 | 1.078 | 3.122 |
| 1st | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 512 | 1850.2 | 22.61 | 23.50 | 1.227 | - | - | 0.13 | 2.78 | 1 | 3.412 |
| 2nd | GSM1900 | - | - | - | - | GPRS (4 Tx slots) | Bottom Side | 0mm | Ant 0 | ECI6 | 512 | 1850.2 | 22.61 | 23.50 | 1.227 | - | - | 0.02 | 2.56 | 1.086 | 3.142 |
| 1st | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 20.61 | 22.00 | 1.377 | 42.9 | 1.009 | 0.03 | 2.05 | 1 | 2.849 |
| 2nd | LTE Band 41 HPUE | 20M | QPSK | 1 | 0 | - | Back | 0mm | Ant 4 | ECI6 | 40620 | 2593 | 20.61 | 22.00 | 1.377 | 42.9 | 1.009 | 0.03 | 1.86 | 1.102 | 2.585 |

**General Note:**

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r04, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

# 17. Simultaneous Transmission Analysis

| No. | Simultaneous Transmission Configurations | Portable Handset | | | |
|---|---|---|---|---|---|
| | | Head | Body-worn | Hotspot | Product specific 10g SAR |
| 1. | WWAN + WLAN2.4GHz | Yes | Yes | Yes | Yes |
| 2. | WWAN + WLAN5GHz | Yes | Yes | Yes | Yes |
| 3. | WWAN + Bluetooth | Yes | Yes | Yes | Yes |
| 4. | WWAN + WLAN2.4GHz + NFC | | | | Yes |
| 5. | WWAN + WLAN5GHz + NFC | | | | Yes |
| 6. | WWAN + Bluetooth + NFC | | | | Yes |

**General Note:**

1. This device supports VoIP in GPRS, EGPRS, WCDMA, LTE and 5GNR (e.g. for 3rd-party VoIP), LTE supports VoLTE operation.
2. WWAN above includes 5G NR bands and EN-DC combination.
3. EUT will choose each GSM, WCDMA, LTE and 5GNR according to the network signal condition; therefore, they will not operate simultaneously at any moment.
4. This device 2.4GHz WLAN support hotspot operation and Bluetooth support tethering applications.
5. This device 5.2GHz WLAN/5.8GHz WLAN support hotspot operation, and 5.2GHz WLAN/5.8GHz WLAN supports WLAN Direct (GC/GO), and 5.3GHz / 5.5GHz supports WLAN Direct (GC only).
6. According to the EUT characteristic, WLAN 5GHz and Bluetooth can not transmit simultaneously.
7. According to the EUT characteristic, WLAN 5GHz and WLAN 2.4GHz can not transmit simultaneously.
8. WLAN 2.4GHz and Bluetooth share the same antenna and they cannot transmit simultaneously.
9. NFC can transmit simultaneously with other Radios in extremity exposure condition.
10. The worst case 5 GHz WLAN SAR for each configuration was used for SAR summation.
11. For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis.
12. For 5GNR EN-DC mode, standalone SAR performed for 5GNR NSA band with the maximum power, EN-DC SAR summed EN-DC mode 5GNR standalone SAR and LTE standalone SAR, the result of EN-DC SAR is more conservatively.
13. When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
14. For standalone WWAN, always choose the highest SAR among all WWAN bands within the selected antenna for each exposure position (except Head/Extremity exposure Conditions) to perform simultaneous transmission analysis with WLAN/BT. This is the worst co-located analysis and can represent each band. If the co-located analysis within standalone SAR is higher SAR limit (1.6W/kg for 1g SAR), always choose the highest SAR among the selected WWAN bands within the selected antenna for each exposure position to perform simultaneous transmission analysis with WLAN/BT.
15. For inter-band UL CA SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands.
16. For EN-DC SAR co-located with WLAN/Bluetooth, chose the worst SAR among the selected LTE bands within the selected antenna per each test position and also the worst SAR of the selected 5GNR Bands within the selected antenna to do co-located with WLAN/Bluetooth. This is the worst co-located analysis and can represent each LTE bands and each 5GNR bands.
17. For Headset SAR and non-Headset SAR always chose higher SAR to do co-located analysis
18. The maximum SAR summation is calculated based on the same configuration and test position.
19. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
    i) 1g Scalar SAR summation < 1.6W/kg and 10g Scalar SAR summation < 4.0W/kg.
    ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
    iii) If SPLSR ≤ 0.04 for 1g SAR and SPLSR≤ 0.10 for 10g SAR , simultaneously transmission SAR measurement is not necessary.
    iv) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg and 10g SAR < 4.0W/kg.
    v) The SPLSR calculated results please refer to section 17.5.

**Conclusion:**

1. The Spot check results showed that Deviation of the SAR results did not exceed 3dB, SAR data reuse is justified.
2. Simultaneous transmission analysis for all bands and all position are based on maximum SAR results chosen between the original filing and Spot check Verification Data

## *17.1 Head Exposure Conditions*

| WWAN Band | Exposure Position | 1 WWAN 1g SAR (W/kg) | 2 WLAN2.4GHz Ant 6 1g SAR (W/kg) | 3 WLAN5GHz Ant 6 1g SAR (W/kg) | 4 Bluetooth Ant 6 1g SAR (W/kg) | 1+2 Summed 1g SAR (W/kg) | 1+3 Summed 1g SAR (W/kg) | 1+4 Summed 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|
| All Bands Ant0 | Right Cheek | 0.669 | 0.095 | 0.339 | 0.124 | 0.76 | 1.01 | 0.79 |
| | Right Tilted | 0.375 | 0.119 | 0.371 | 0.158 | 0.49 | 0.75 | 0.53 |
| | Left Cheek | 0.551 | 0.299 | 0.404 | 0.393 | 0.85 | 0.96 | 0.94 |
| | Left Tilted | 0.340 | 0.372 | 0.366 | 0.473 | 0.71 | 0.71 | 0.81 |
| All Bands Ant1 | Right Cheek | 0.291 | 0.095 | 0.339 | 0.124 | 0.39 | 0.63 | 0.42 |
| | Right Tilted | 0.217 | 0.119 | 0.371 | 0.158 | 0.34 | 0.59 | 0.38 |
| | Left Cheek | 0.472 | 0.299 | 0.404 | 0.393 | 0.77 | 0.88 | 0.87 |
| | Left Tilted | 0.147 | 0.372 | 0.366 | 0.473 | 0.52 | 0.51 | 0.62 |
| All Bands Ant2 | Right Cheek | 0.193 | 0.095 | 0.339 | 0.124 | 0.29 | 0.53 | 0.32 |
| | Right Tilted | 0.130 | 0.119 | 0.371 | 0.158 | 0.25 | 0.50 | 0.29 |
| | Left Cheek | 0.117 | 0.299 | 0.404 | 0.393 | 0.42 | 0.52 | 0.51 |
| | Left Tilted | 0.062 | 0.372 | 0.366 | 0.473 | 0.43 | 0.43 | 0.54 |
| All Bands Ant4 | Right Cheek | 0.694 | 0.095 | 0.339 | 0.124 | 0.79 | 1.03 | 0.82 |
| | Right Tilted | 1.108 | 0.119 | 0.371 | 0.158 | 1.23 | 1.48 | 1.27 |
| | Left Cheek | 0.333 | 0.299 | 0.404 | 0.393 | 0.63 | 0.74 | 0.73 |
| | Left Tilted | 0.451 | 0.372 | 0.366 | 0.473 | 0.82 | 0.82 | 0.92 |
| All Bands Ant5 | Right Cheek | 0.534 | 0.095 | 0.339 | 0.124 | 0.63 | 0.87 | 0.66 |
| | Right Tilted | 0.585 | 0.119 | 0.371 | 0.158 | 0.70 | 0.96 | 0.74 |
| | Left Cheek | 0.743 | 0.299 | 0.404 | 0.393 | 1.04 | 1.15 | 1.14 |
| | Left Tilted | 0.741 | 0.372 | 0.366 | 0.473 | 1.11 | 1.11 | 1.21 |
| All Bands Ant7 | Right Cheek | 0.240 | 0.095 | 0.339 | 0.124 | 0.34 | 0.58 | 0.36 |
| | Right Tilted | 0.216 | 0.119 | 0.371 | 0.158 | 0.34 | 0.59 | 0.37 |
| | Left Cheek | 0.653 | 0.299 | 0.404 | 0.393 | 0.95 | 1.06 | 1.05 |
| | Left Tilted | 0.427 | 0.372 | 0.366 | 0.473 | 0.80 | 0.79 | 0.90 |

**EN-DC**

| WWAN Band | | Exposure Position | 1 WWAN 1g SAR (W/kg) | 2 FR1 1g SAR (W/kg) | 3 WLAN2.4GHz Ant 6 1g SAR (W/kg) | 4 WLAN5GHz Ant 6 1g SAR (W/kg) | 5 Bluetooth Ant 6 1g SAR (W/kg) | 1+2+3 Summed 1g SAR (W/kg) | 1+2+4 Summed 1g SAR (W/kg) | 1+2+5 Summed 1g SAR (W/kg) | Case No |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LTE Band 41 Ant1 | FR1 n77 Ant 5 | Right Cheek | 0.291 | 0.534 | 0.095 | 0.339 | 0.124 | 0.92 | 1.16 | 0.95 | |
| | | Right Tilted | 0.217 | 0.585 | 0.119 | 0.371 | 0.158 | 0.92 | 1.17 | 0.96 | |
| | | Left Cheek | 0.472 | 0.743 | 0.299 | 0.404 | 0.393 | 1.51 | **1.62** | **1.61** | **1&2** |
| | | Left Tilted | 0.147 | 0.741 | 0.372 | 0.366 | 0.473 | 1.26 | 1.25 | 1.36 | |

## 17.2 Hotspot Exposure Conditions

| WWAN Band | Exposure Position | 1 WWAN 1g SAR (W/kg) | 2 WLAN2.4GHz Ant 6 1g SAR (W/kg) | 3 WLAN5GHz Ant 6 1g SAR (W/kg) | 4 Bluetooth Ant 6 1g SAR (W/kg) | 1+2 Summed 1g SAR (W/kg) | 1+3 Summed 1g SAR (W/kg) | 1+4 Summed 1g SAR (W/kg) | Case No |
|---|---|---|---|---|---|---|---|---|---|
| All Band Ant2&4&5&7 | Front | 0.313 | 0.245 | 0.395 | 0.183 | 0.56 | 0.71 | 0.50 | |
| | Back | 0.673 | 0.408 | 0.487 | 0.310 | 1.08 | 1.16 | 0.98 | |
| | Left side | 0.194 | | | | 0.19 | 0.19 | 0.19 | |
| | Right side | 0.222 | 0.220 | 0.415 | 0.151 | 0.44 | 0.64 | 0.37 | |
| | Top side | 0.653 | 0.652 | 0.705 | 0.490 | 1.31 | 1.36 | 1.14 | |
| | Bottom side | | | | | 0.00 | 0.00 | 0.00 | |
| GSM850 Ant0 | Front | 0.535 | 0.245 | 0.395 | 0.183 | 0.78 | 0.93 | 0.72 | |
| | Back | 1.343 | 0.408 | 0.487 | 0.310 | **1.75** | **1.83** | **1.65** | **21&22&23** |
| | Left side | 0.321 | | | | 0.32 | 0.32 | 0.32 | |
| | Right side | 0.591 | 0.220 | 0.415 | 0.151 | 0.81 | 1.01 | 0.74 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.212 | | | | 1.21 | 1.21 | 1.21 | |
| GSM1900 Ant0 | Front | 0.235 | 0.245 | 0.395 | 0.183 | 0.48 | 0.63 | 0.42 | |
| | Back | 0.842 | 0.408 | 0.487 | 0.310 | 1.25 | 1.33 | 1.15 | |
| | Left side | 0.029 | | | | 0.03 | 0.03 | 0.03 | |
| | Right side | 0.029 | 0.220 | 0.415 | 0.151 | 0.25 | 0.44 | 0.18 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.117 | | | | 1.12 | 1.12 | 1.12 | |
| WCDMA II Ant0 | Front | 0.292 | 0.245 | 0.395 | 0.183 | 0.54 | 0.69 | 0.48 | |
| | Back | 1.267 | 0.408 | 0.487 | 0.310 | **1.68** | **1.75** | **1.58** | **24&25** |
| | Left side | 0.041 | | | | 0.04 | 0.04 | 0.04 | |
| | Right side | 0.041 | 0.220 | 0.415 | 0.151 | 0.26 | 0.46 | 0.19 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.422 | | | | 1.42 | 1.42 | 1.42 | |
| WCDMA IV Ant0 | Front | 0.663 | 0.245 | 0.395 | 0.183 | 0.91 | 1.06 | 0.85 | |
| | Back | 1.374 | 0.408 | 0.487 | 0.310 | **1.78** | **1.86** | **1.68** | **26&27&28** |
| | Left side | 0.099 | | | | 0.10 | 0.10 | 0.10 | |
| | Right side | 0.112 | 0.220 | 0.415 | 0.151 | 0.33 | 0.53 | 0.26 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.387 | | | | 1.39 | 1.39 | 1.39 | |
| WCDMA V Ant0 | Front | 0.524 | 0.245 | 0.395 | 0.183 | 0.77 | 0.92 | 0.71 | |
| | Back | 1.372 | 0.408 | 0.487 | 0.310 | **1.78** | **1.86** | **1.68** | **29&30&31** |
| | Left side | 0.294 | | | | 0.29 | 0.29 | 0.29 | |
| | Right side | 0.607 | 0.220 | 0.415 | 0.151 | 0.83 | 1.02 | 0.76 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.287 | | | | 1.29 | 1.29 | 1.29 | |
| LTE Band 2 Ant0 | Front | 0.284 | 0.245 | 0.395 | 0.183 | 0.53 | 0.68 | 0.47 | |
| | Back | 1.072 | 0.408 | 0.487 | 0.310 | 1.48 | 1.56 | 1.38 | |
| | Left side | 0.043 | | | | 0.04 | 0.04 | 0.04 | |
| | Right side | 0.042 | 0.220 | 0.415 | 0.151 | 0.26 | 0.46 | 0.19 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.379 | | | | 1.38 | 1.38 | 1.38 | |
| LTE Band 4 Ant0 | Front | 0.565 | 0.245 | 0.395 | 0.183 | 0.81 | 0.96 | 0.75 | |
| | Back | 0.747 | 0.408 | 0.487 | 0.310 | 1.16 | 1.23 | 1.06 | |
| | Left side | 0.069 | | | | 0.07 | 0.07 | 0.07 | |
| | Right side | 0.095 | 0.220 | 0.415 | 0.151 | 0.32 | 0.51 | 0.25 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.138 | | | | 1.14 | 1.14 | 1.14 | |
| LTE Band 12 Ant0 | Front | 0.258 | 0.245 | 0.395 | 0.183 | 0.50 | 0.65 | 0.44 | |
| | Back | 0.598 | 0.408 | 0.487 | 0.310 | 1.01 | 1.09 | 0.91 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Left side | 0.257 | | | | 0.26 | 0.26 | 0.26 | |
| | Right side | 0.490 | 0.220 | 0.415 | 0.151 | 0.71 | 0.91 | 0.64 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 0.770 | | | | 0.77 | 0.77 | 0.77 | |
| LTE Band 26 Ant0 | Front | 0.538 | 0.245 | 0.395 | 0.183 | 0.78 | 0.93 | 0.72 | |
| | Back | 1.331 | 0.408 | 0.487 | 0.310 | **1.74** | **1.82** | **1.64** | **32&33&34** |
| | Left side | 0.256 | | | | 0.26 | 0.26 | 0.26 | |
| | Right side | 0.481 | 0.220 | 0.415 | 0.151 | 0.70 | 0.90 | 0.63 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 1.217 | | | | 1.22 | 1.22 | 1.22 | |
| LTE Band 41 Ant1 | Front | 0.883 | 0.245 | 0.395 | 0.183 | 1.13 | 1.28 | 1.07 | |
| | Back | 1.376 | 0.408 | 0.487 | 0.310 | **1.78** | **1.86** | **1.69** | **35&36&37** |
| | Left side | 0.950 | | | | 0.95 | 0.95 | 0.95 | |
| | Right side | | 0.220 | 0.415 | 0.151 | 0.22 | 0.42 | 0.15 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 0.309 | | | | 0.31 | 0.31 | 0.31 | |
| FR1 n77 Ant 1 | Front | 0.586 | 0.245 | 0.395 | 0.183 | 0.83 | 0.98 | 0.77 | |
| | Back | 0.736 | 0.408 | 0.487 | 0.310 | 1.14 | 1.22 | 1.05 | |
| | Left side | 0.730 | | | | 0.73 | 0.73 | 0.73 | |
| | Right side | | 0.220 | 0.415 | 0.151 | 0.22 | 0.42 | 0.15 | |
| | Top side | | 0.652 | 0.705 | 0.490 | 0.65 | 0.71 | 0.49 | |
| | Bottom side | 0.249 | | | | 0.25 | 0.25 | 0.25 | |

## EN-DC

| WWAN Band | | Exposure Position | 1 | 2 | 3 | 4 | 5 | 1+2+3 | 1+2+4 | 1+2+5 | Case No |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WWAN | FR1 | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | Bluetooth Ant 6 | Summed | Summed | Summed | |
| | | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| LTE Band 41 Ant1 | FR1 n77 Ant 5 | Front | 0.883 | 0.313 | 0.245 | 0.395 | 0.183 | 1.44 | **1.59** | 1.38 | |
| | | Back | 1.376 | 0.673 | 0.408 | 0.487 | 0.310 | **2.46** | **2.54** | **2.36** | **38&39&40** |
| | | Left side | 0.950 | 0.052 | | | | 1.00 | 1.00 | 1.00 | |
| | | Right side | 0.062 | 0.185 | 0.220 | 0.415 | 0.151 | 0.47 | 0.66 | 0.40 | |
| | | Top side | | 0.470 | 0.652 | 0.705 | 0.490 | 1.12 | 1.18 | 0.96 | |
| | | Bottom side | 1.229 | | | | | 1.23 | 1.23 | 1.23 | |

## 17.3 Body-Worn Accessory Exposure Conditions

| WWAN Band | Exposure Position | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | Case No |
|---|---|---|---|---|---|---|---|---|---|
| | | WWAN | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | Bluetooth Ant 6 | Summed | Summed | Summed | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| GSM850 Ant 0 | Front | 0.535 | 0.318 | 0.383 | 0.260 | 0.85 | 0.92 | 0.80 | |
| | Back | 1.343 | 0.440 | 0.431 | 0.443 | **1.78** | **1.77** | **1.79** | **50&51&52** |
| GSM1900 Ant 0 | Front | 0.348 | 0.318 | 0.383 | 0.260 | 0.67 | 0.73 | 0.61 | |
| | Back | 1.293 | 0.440 | 0.431 | 0.443 | **1.73** | **1.72** | **1.74** | **53&54&55** |
| WCDMA II Ant 0 | Front | 0.334 | 0.318 | 0.383 | 0.260 | 0.65 | 0.72 | 0.59 | |
| | Back | 1.436 | 0.440 | 0.431 | 0.443 | **1.88** | **1.87** | **1.88** | **7&8&9** |
| WCDMA IV Ant 0 | Front | 0.811 | 0.318 | 0.383 | 0.260 | 1.13 | 1.19 | 1.07 | |
| | Back | 1.414 | 0.440 | 0.431 | 0.443 | **1.85** | **1.85** | **1.86** | **56&57&58** |
| WCDMA V Ant 0 | Front | 0.524 | 0.318 | 0.383 | 0.260 | 0.84 | 0.91 | 0.78 | |
| | Back | 1.372 | 0.440 | 0.431 | 0.443 | **1.81** | **1.80** | **1.82** | **59&60&61** |
| LTE Band 2 Ant 0 | Front | 0.328 | 0.318 | 0.383 | 0.260 | 0.65 | 0.71 | 0.59 | |
| | Back | 1.311 | 0.440 | 0.431 | 0.443 | **1.75** | **1.74** | **1.75** | **62&63&64** |
| LTE Band 4 Ant 0 | Front | 0.754 | 0.318 | 0.383 | 0.260 | 1.07 | 1.14 | 1.01 | |
| | Back | 1.071 | 0.440 | 0.431 | 0.443 | 1.51 | 1.50 | 1.51 | |
| LTE Band 12 Ant 0 | Front | 0.356 | 0.318 | 0.383 | 0.260 | 0.67 | 0.74 | 0.62 | |
| | Back | 0.686 | 0.440 | 0.431 | 0.443 | 1.13 | 1.12 | 1.13 | |
| LTE Band 26 Ant 0 | Front | 0.538 | 0.318 | 0.383 | 0.260 | 0.86 | 0.92 | 0.80 | |
| | Back | 1.331 | 0.440 | 0.431 | 0.443 | **1.77** | **1.76** | **1.77** | **65&66&67** |
| LTE Band 41 Ant 1 | Front | 0.883 | 0.318 | 0.383 | 0.260 | 1.20 | 1.27 | 1.14 | |
| | Back | 1.376 | 0.440 | 0.431 | 0.443 | **1.82** | **1.81** | **1.82** | **10&11&12** |
| FR1 n77 Part 27O Ant 1 | Front | 0.586 | 0.318 | 0.383 | 0.260 | 0.90 | 0.97 | 0.85 | |
| | Back | 0.736 | 0.440 | 0.431 | 0.443 | 1.18 | 1.17 | 1.18 | |
| All Bands Ant2 | Front | 0.149 | 0.318 | 0.383 | 0.260 | 0.47 | 0.53 | 0.41 | |
| | Back | 0.794 | 0.440 | 0.431 | 0.443 | 1.23 | 1.23 | 1.24 | |
| All Bands Ant4 | Front | 0.793 | 0.318 | 0.383 | 0.260 | 1.11 | 1.18 | 1.05 | |
| | Back | 1.131 | 0.440 | 0.431 | 0.443 | **1.57** | 1.56 | 1.57 | |
| All Bands Ant5 | Front | 0.793 | 0.318 | 0.383 | 0.260 | 1.11 | 1.18 | 1.05 | |
| | Back | 1.023 | 0.440 | 0.431 | 0.443 | 1.46 | 1.45 | 1.47 | |
| All Bands Ant7 | Front | 0.676 | 0.318 | 0.383 | 0.260 | 0.99 | 1.06 | 0.94 | |
| | Back | 0.567 | 0.440 | 0.431 | 0.443 | 1.01 | 1.00 | 1.01 | |

**EN-DC**

| WWAN Band | | Exposure Position | 1 | 2 | 3 | 4 | 5 | 1+2+3 | 1+2+4 | 1+2+5 | Case No |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WWAN | FR1 Band | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | Bluetooth Ant 6 | Summed | Summed | Summed | |
| | | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| LTE Band 41 Ant1 | FR1 n77 Ant 5 | Front | 0.883 | 0.793 | 0.318 | 0.383 | 0.260 | **1.99** | **2.06** | **1.94** | **13&14&15** |
| | | Back | 1.376 | 1.023 | 0.440 | 0.431 | 0.443 | **2.84** | **2.83** | **2.84** | **16&17&18** |

## Sensor-Off

| WWAN Band | Exposure Position | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | Case No |
|---|---|---|---|---|---|---|---|---|---|
| | | WWAN | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | Bluetooth Ant 6 | Summed | Summed | Summed | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| All Band Ant1&2&4&5&7 | Front at 12mm | 0.793 | 0.244 | 0.389 | 0.260 | 1.04 | 1.18 | 1.05 | |
| | Back at 17mm | 0.767 | 0.125 | 0.654 | 0.443 | 0.89 | 1.42 | 1.21 | |
| GSM850 Ant 0 | Front at 12mm | 0.405 | 0.244 | 0.389 | 0.260 | 0.65 | 0.79 | 0.67 | |
| | Back at 17mm | 0.467 | 0.125 | 0.654 | 0.443 | 0.59 | 1.12 | 0.91 | |
| GSM1900 Ant 0 | Front at 12mm | 0.561 | 0.244 | 0.389 | 0.260 | 0.81 | 0.95 | 0.82 | |
| | Back at 17mm | 0.808 | 0.125 | 0.654 | 0.443 | 0.93 | 1.46 | 1.25 | |
| WCDMA II Ant 0 | Front at 12mm | 0.649 | 0.244 | 0.389 | 0.260 | 0.89 | 1.04 | 0.91 | |
| | Back at 17mm | 1.123 | 0.125 | 0.654 | 0.443 | 1.25 | **1.78** | 1.57 | **19** |
| WCDMA IV Ant 0 | Front at 12mm | 0.795 | 0.244 | 0.389 | 0.260 | 1.04 | 1.18 | 1.06 | |
| | Back at 17mm | 0.783 | 0.125 | 0.654 | 0.443 | 0.91 | 1.44 | 1.23 | |
| WCDMA V Ant 0 | Front at 12mm | 0.310 | 0.244 | 0.389 | 0.260 | 0.55 | 0.70 | 0.57 | |
| | Back at 17mm | 0.359 | 0.125 | 0.654 | 0.443 | 0.48 | 1.01 | 0.80 | |
| LTE Band 2 Ant 0 | Front at 12mm | 0.689 | 0.244 | 0.389 | 0.260 | 0.93 | 1.08 | 0.95 | |
| | Back at 17mm | 1.136 | 0.125 | 0.654 | 0.443 | 1.26 | **1.79** | 1.58 | **20** |
| LTE Band 4 Ant 0 | Front at 12mm | 0.777 | 0.244 | 0.389 | 0.260 | 1.02 | 1.17 | 1.04 | |
| | Back at 17mm | 0.765 | 0.125 | 0.654 | 0.443 | 0.89 | 1.42 | 1.21 | |

## EN-DC

| WWAN Band | FR1 Band | Exposure Position | 1 | 2 | 3 | 4 | 5 | 1+2+3 | 1+2+4 | 1+2+5 | Case No |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | WWAN | FR1 Band | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | Bluetooth Ant 6 | Summed | Summed | Summed | |
| | | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| LTE Band 41 Ant1 | FR1 n77 Ant 5 | Front at 12mm | 0.513 | 0.689 | 0.244 | 0.389 | 0.260 | 1.45 | 1.59 | 1.46 | |
| | | Back at 17mm | 0.334 | 0.466 | 0.125 | 0.654 | 0.443 | 0.93 | 1.45 | 1.24 | |

## 17.4 Product specific 10g SAR Exposure Conditions

**Remark:**

1. For Bluetooth Product specific 10g stand-alone SAR is not required for a transmitter or antenna, due to 1g hotspot SAR is <1.2W/kg.

| WWAN Band | Exposure Position | 1 | 2 | 3 | 4 | 1+2+4 | 1+3+4 |
|---|---|---|---|---|---|---|---|
| | | WWAN | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | NFC | Summed | Summed |
| | | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) |
| WWAN All Bands | Front | 2.312 | | 0.809 | 0.031 | 2.34 | 3.15 |
| | Back | 2.849 | 0.868 | 0.863 | 0.077 | **3.79** | **3.79** |
| | Left side | | | | | 0.00 | 0.00 |
| | Right side | | | 0.843 | | 0.00 | 0.84 |
| | Top side | 2.482 | 1.179 | 1.025 | | 3.66 | 3.51 |
| | Bottom side | 3.578 | | | | 3.58 | 3.58 |

### EN-DC

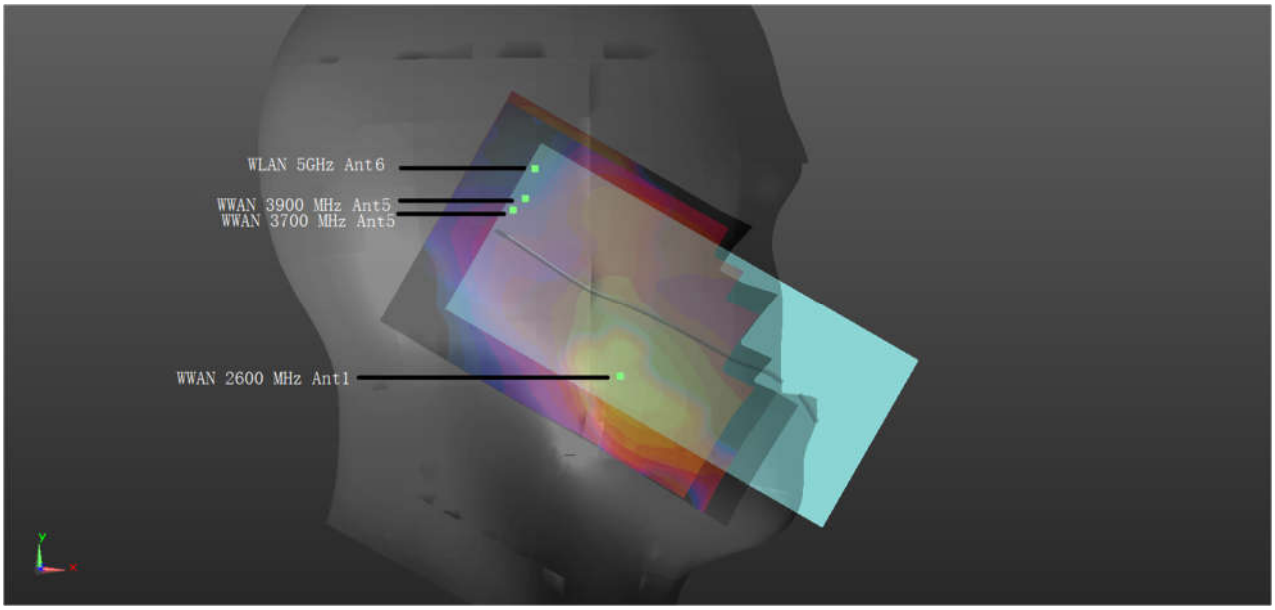
| WWAN Band | | Exposure Position | 1 | 2 | 3 | 4 | 5 | 1+2+3+5 | 1+2+4+5 | Case No |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | WWAN | FR1 | WLAN2.4GHz Ant 6 | WLAN5GHz Ant 6 | NFC | Summed | Summed | |
| | | | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | 10g SAR (W/kg) | |
| LTE Band 41 Ant1 | FR1 n77 Ant 5 | Front | | | | 0.809 | 0.031 | 0.03 | 0.84 | |
| | | Back | 2.260 | 2.565 | 0.868 | 0.863 | 0.077 | **5.77** | **5.77** | **41&42** |
| | | Left side | | | | | | 0.00 | 0.00 | |
| | | Right side | | | | 0.843 | | 0.00 | 0.84 | |
| | | Top side | | 2.482 | 1.179 | 1.025 | | 3.66 | 3.51 | |
| | | Bottom side | | | | | | 0.00 | 0.00 | |

## 17.5 SPLSR Evaluation and Analysis

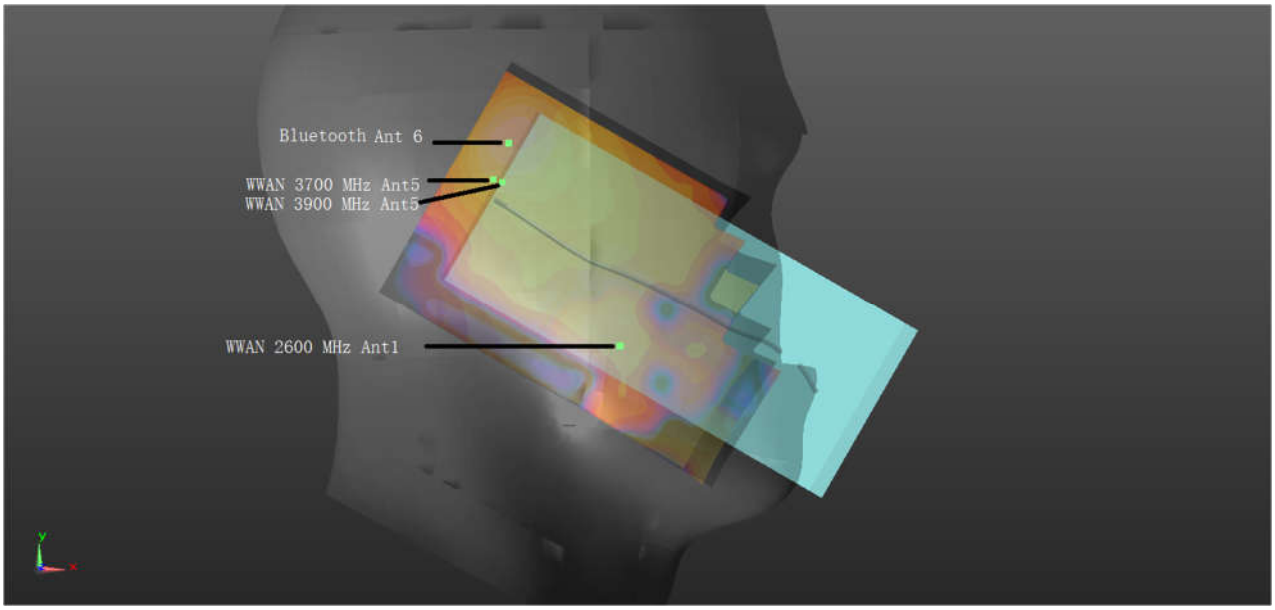
**General Note:**

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm). If SPLSR ≤ 0.04 for 1g SAR and SPLSR ≤ 0.10 for 10g SAR, simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, WWAN band antenna 5 was summed algebraically with the NFC and BT/WIFI Antenna 6 separately for the purposes of hybrid SPLSR combination and they are located at the top of the device.
4. Per April 2022 TCB Workshop, instead of doing a small volume scan over a co-located antenna pair, used summing the SAR values of the co-located pair and using that value in SPLSR calculation. In the calculation used the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

**For Head**

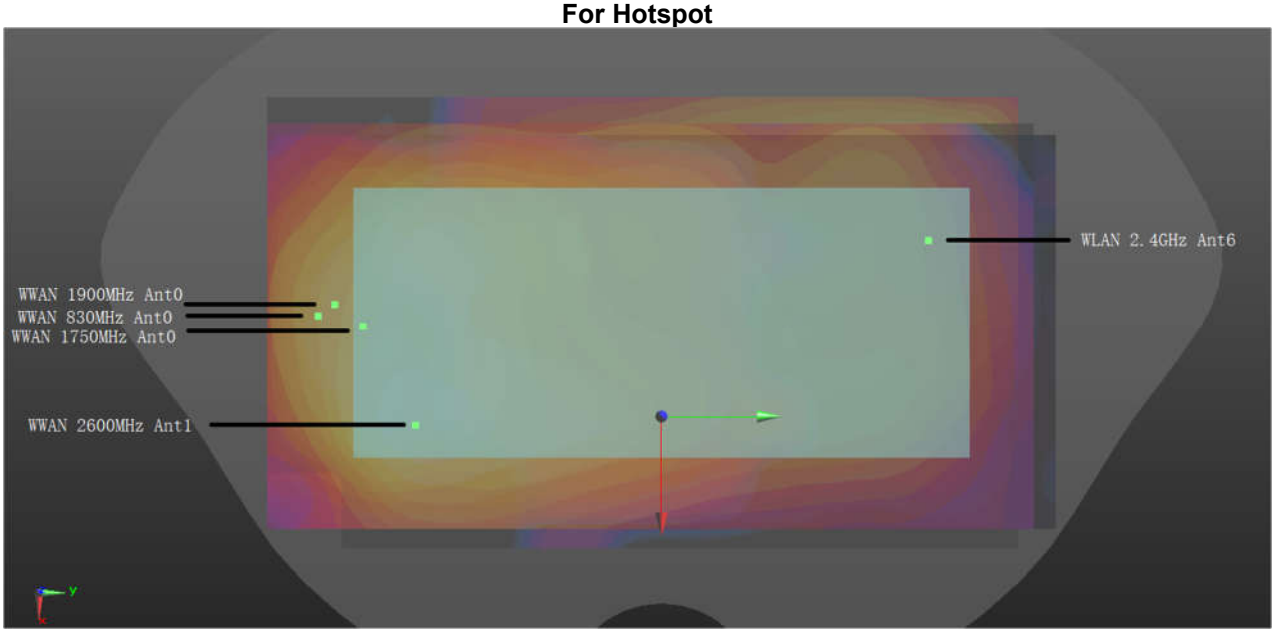



**WWAN+FR1+5GHz WIFI Left Cheek**

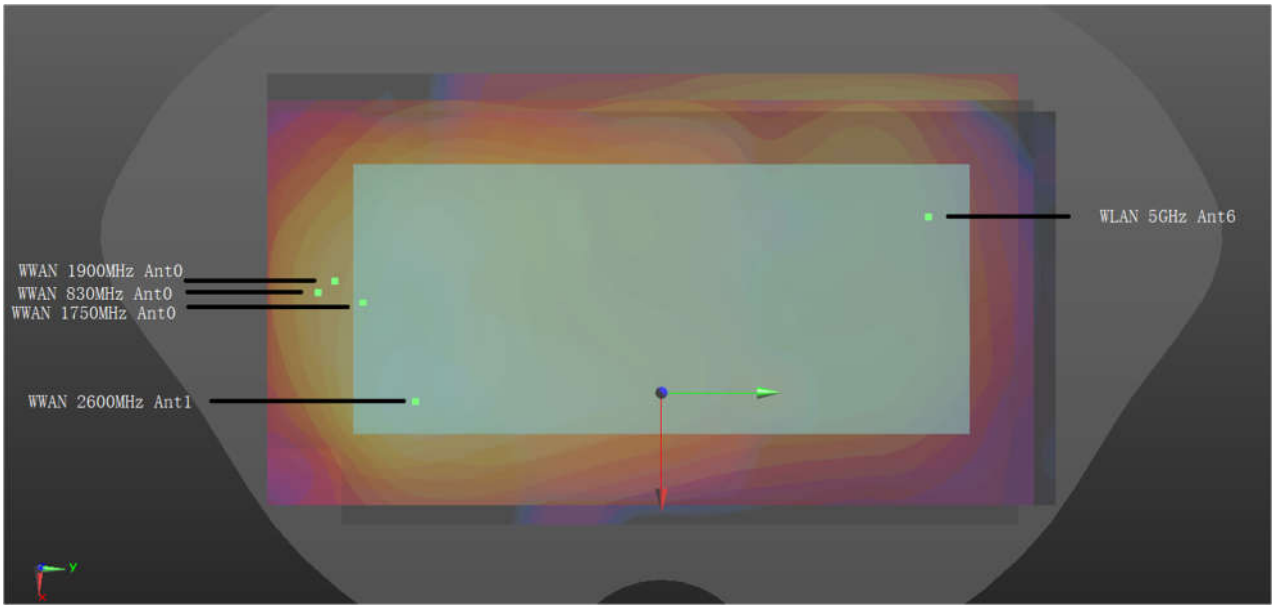



**WWAN+FR1+BT Left Cheek**

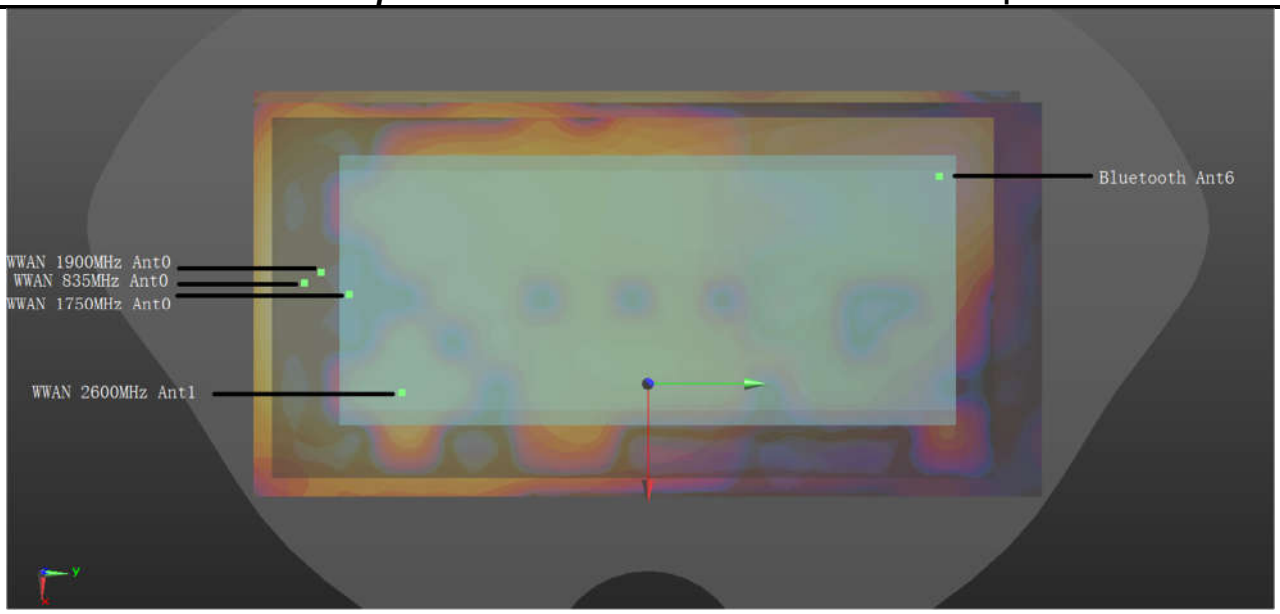
**For Hotspot**



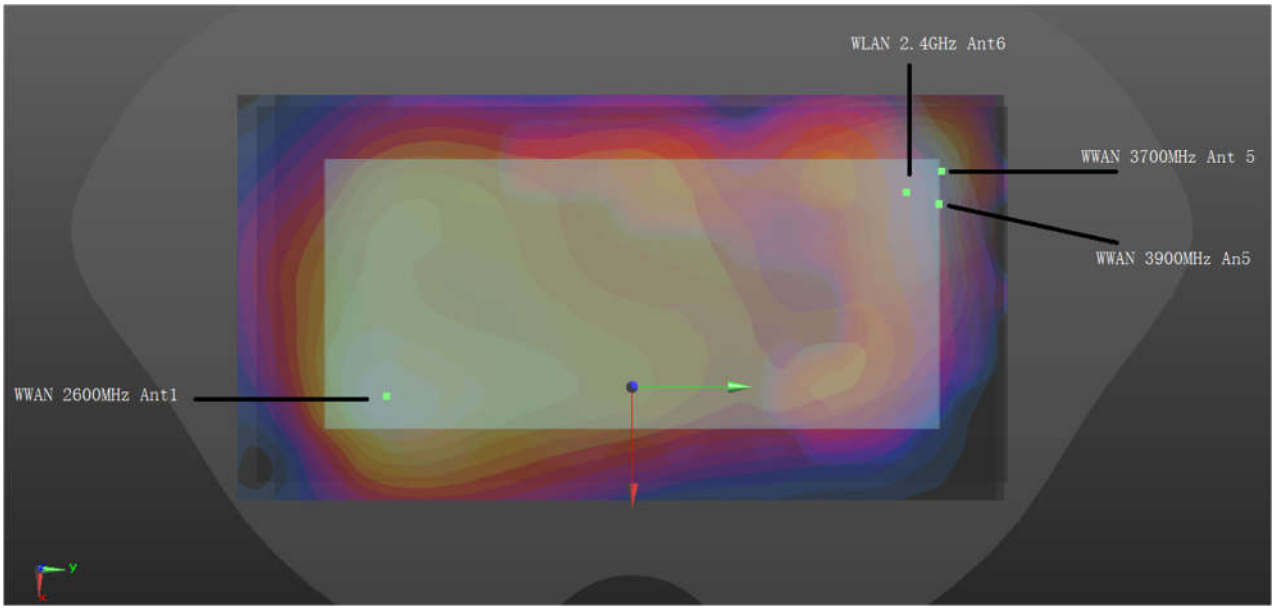

**WWAN+2.4GHz WIFI Back 5mm**



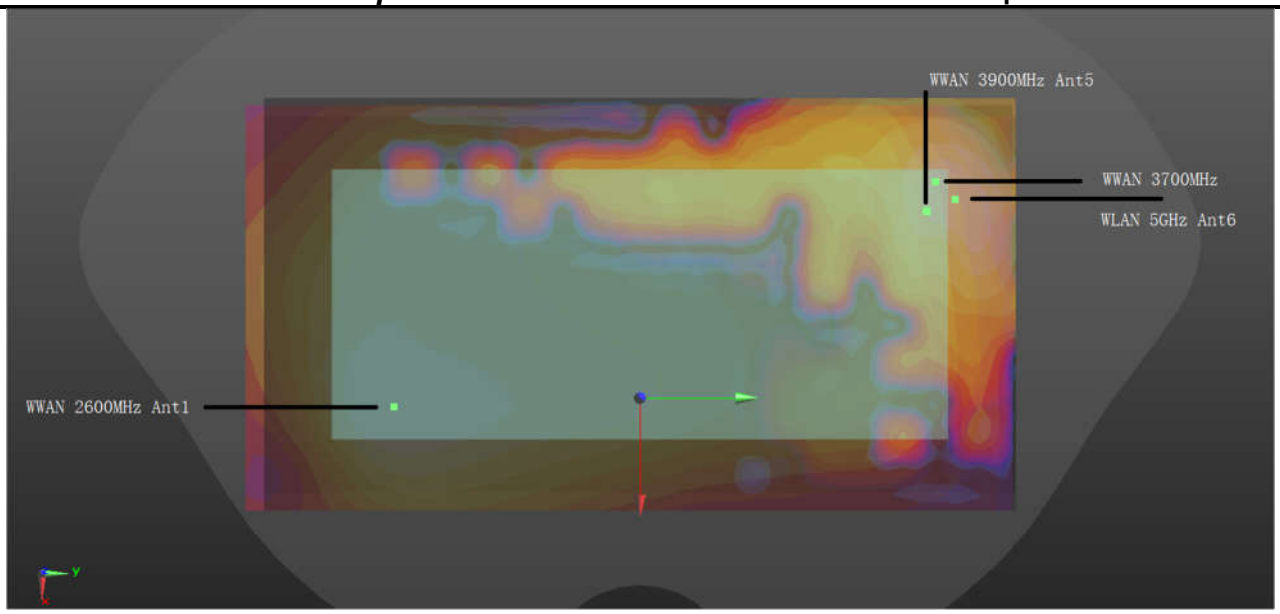

**WWAN+5GHz WIFI Back 5mm**



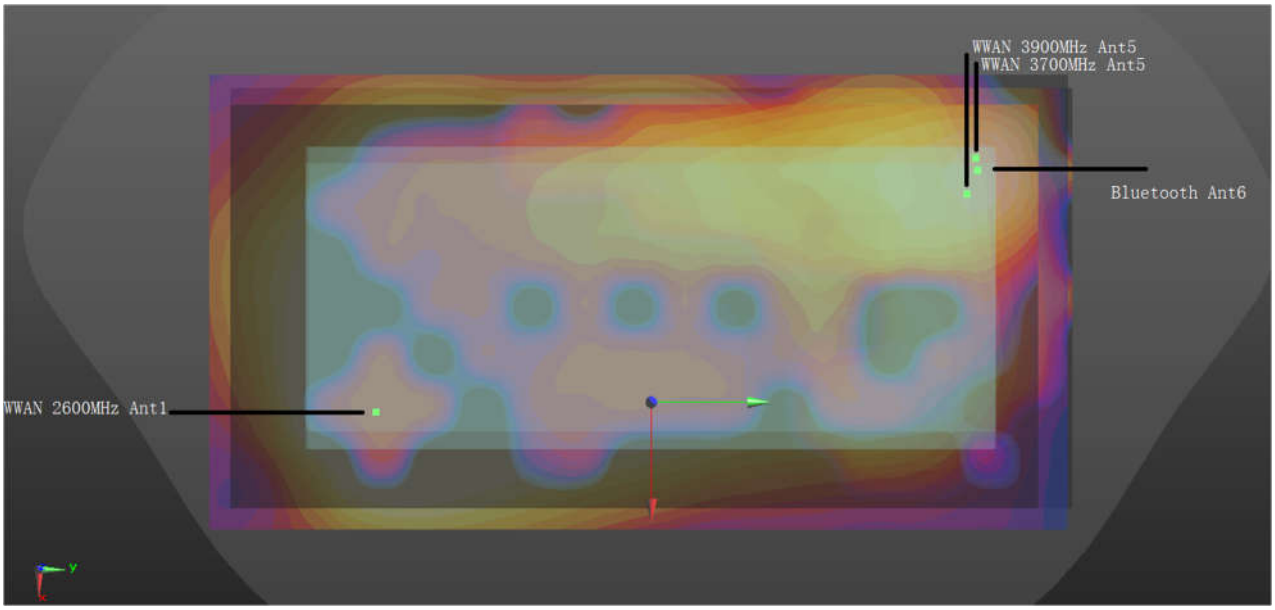

**WWAN+BT Back 5mm**




**WWAN+FR1+2.4GHz WIFI Back 5mm**



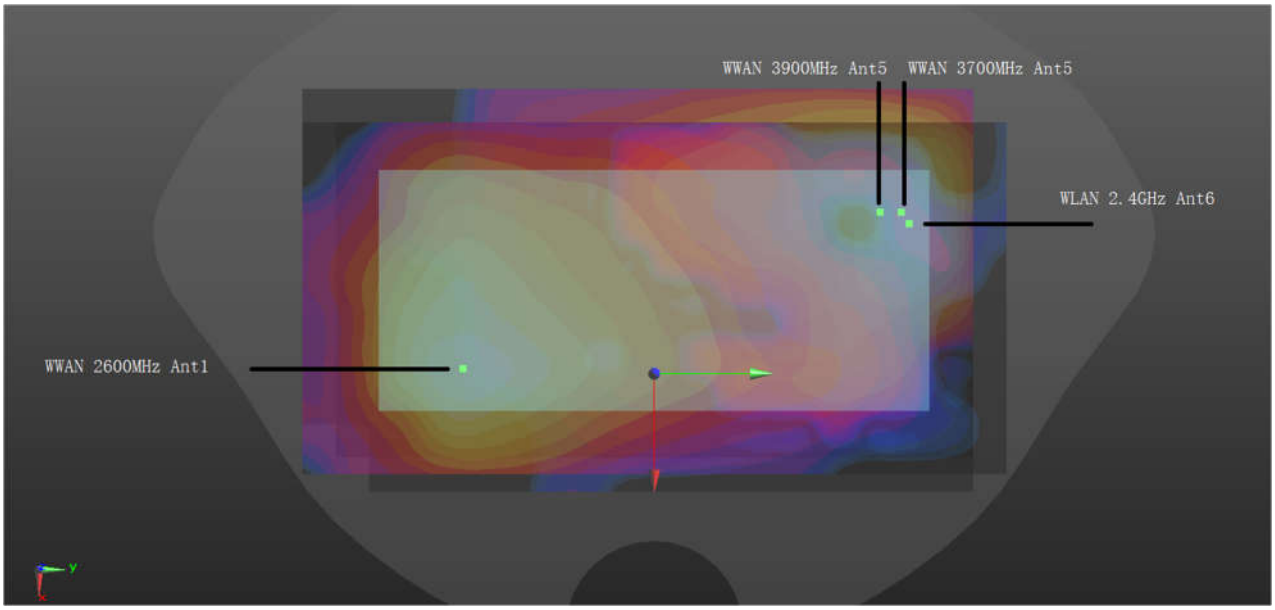

**WWAN+FR1+5GHz WIFI Back 5mm**



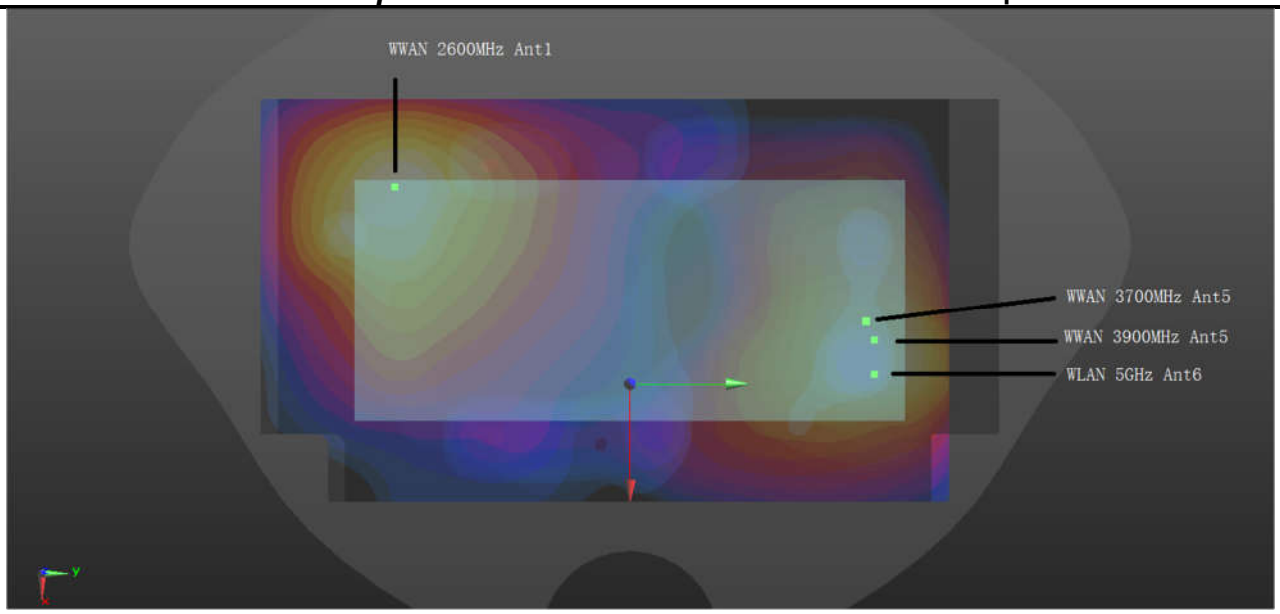

**WWAN+FR1+BT Back 5mm**

**For Body-worn**

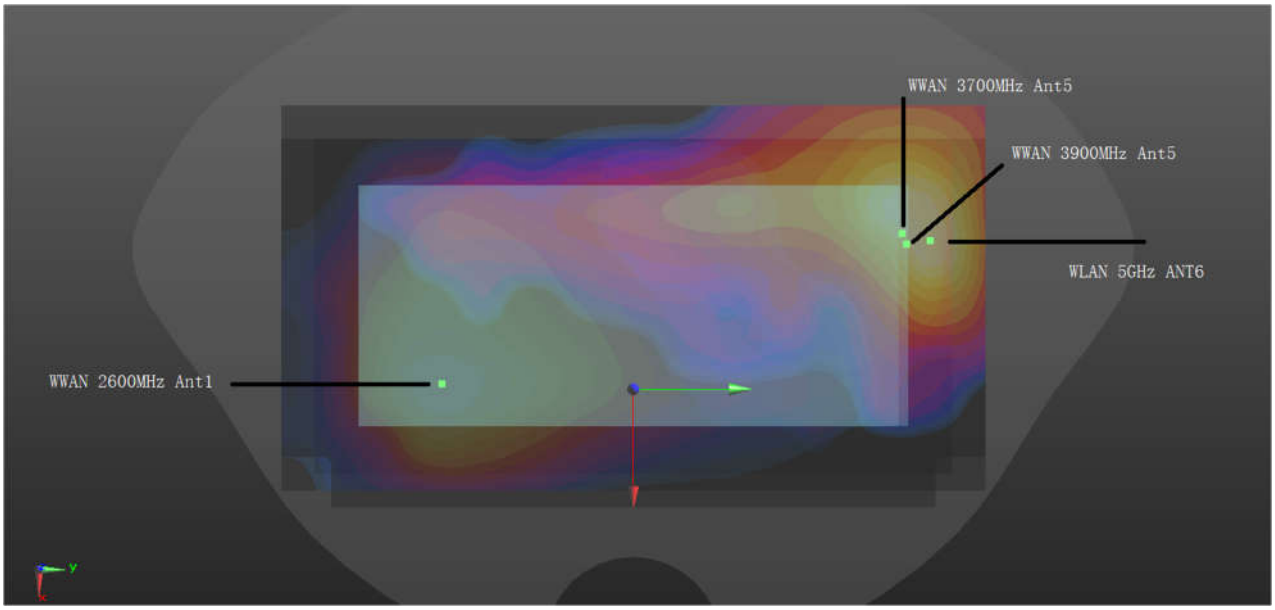

**WWAN Ant1+FR1+2.4GHz WIFI Front 5mm**



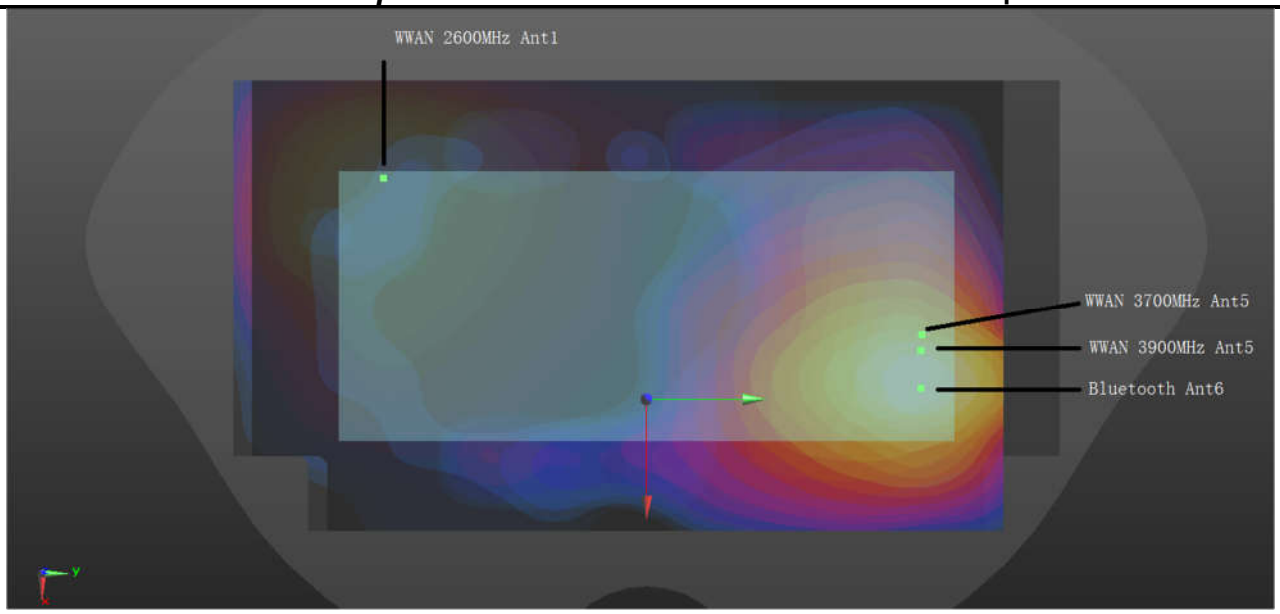

**WWAN Ant1+FR1+2.4GHz WIFI Back 5mm**



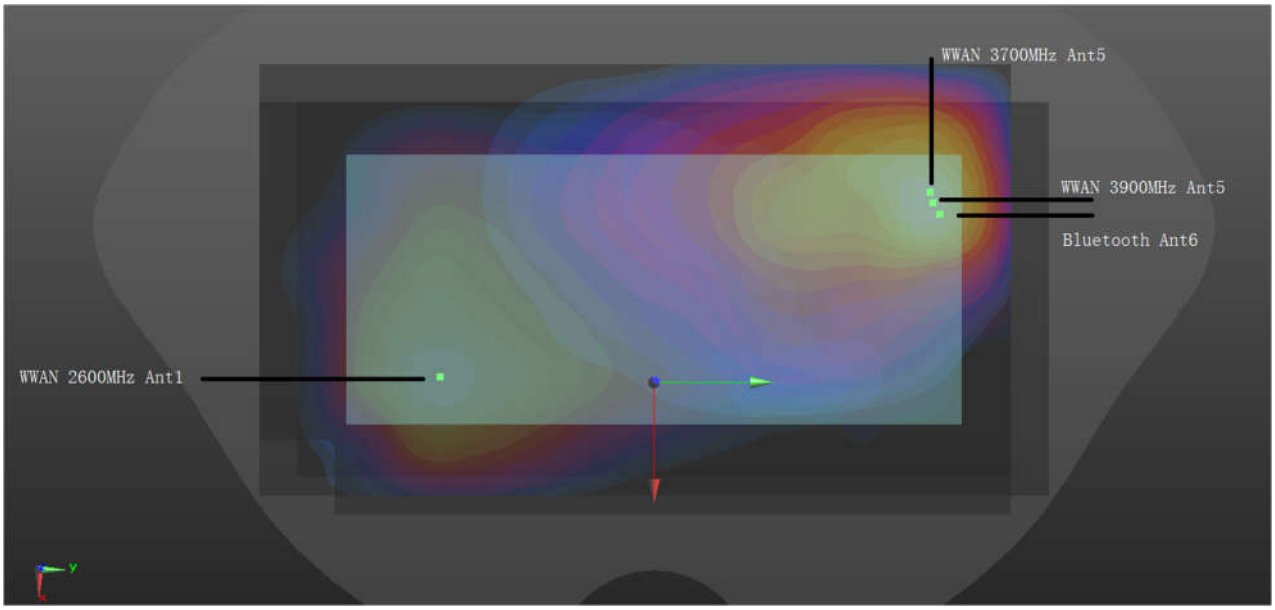

**WWAN Ant1+FR1+5GHz WIFI Front 5mm**



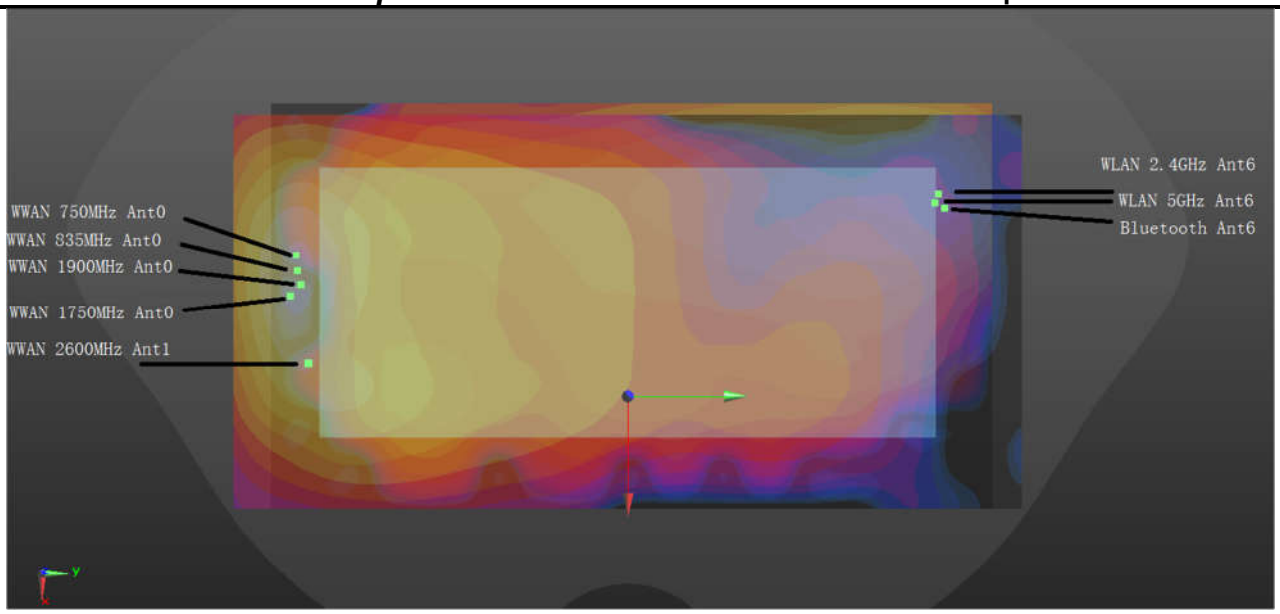

**WWAN Ant1+FR1+5GHz WIFI Back 5mm**




**WWAN Ant1+FR1+ BT Front 5mm**

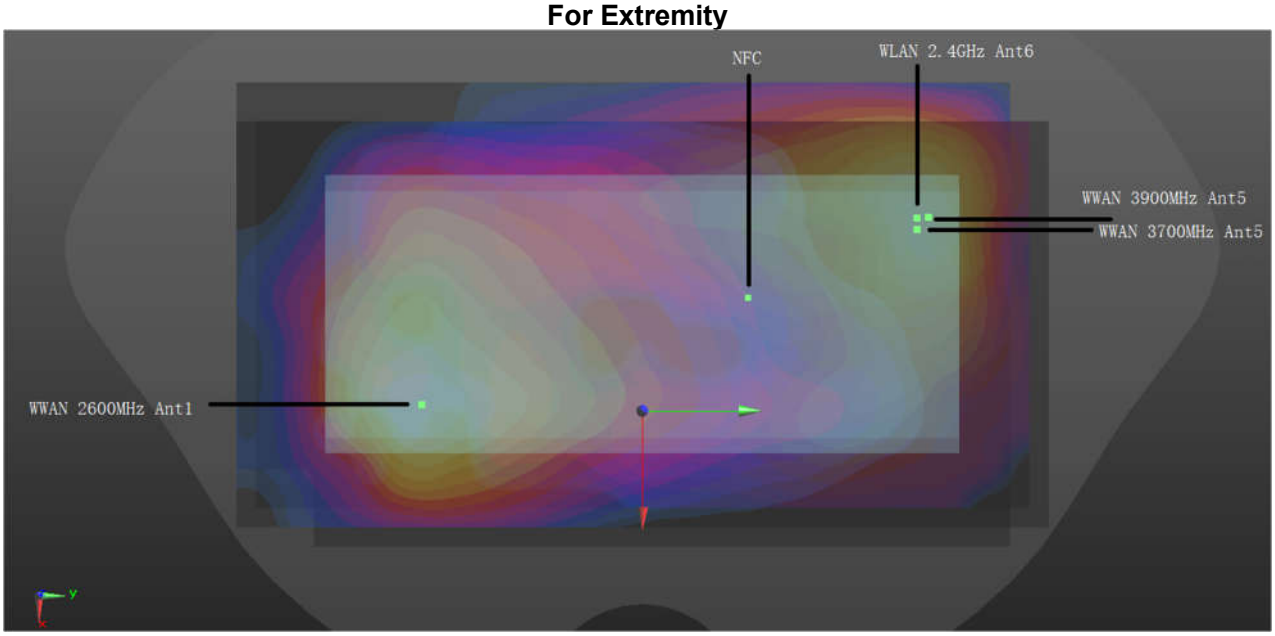



**WWAN Ant1+FR1+BT Back 5mm**

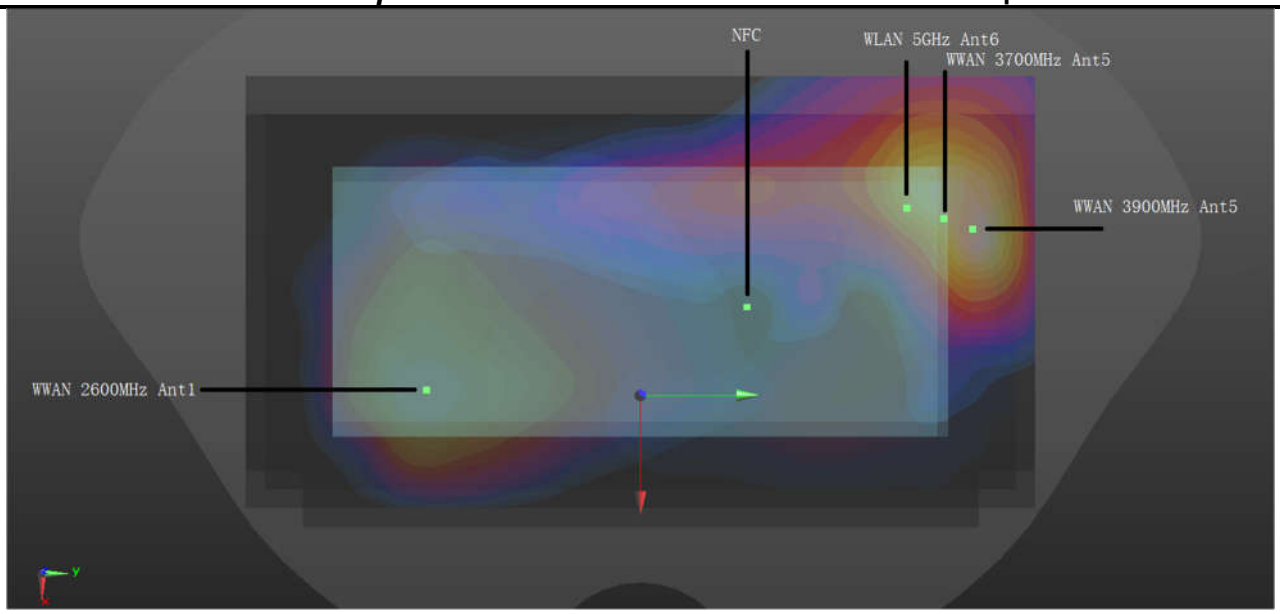



**WWAN+2.4G+5G+BT Back 5mm**

**For Extremity**




**WWAN+FR1+2.4G+NFC Back 0mm**




**WWAN+FR1+5G+NFC Back 0mm**

**For Head**

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 1 | LTE Band 41 Ant 1 | Left Cheek | 0.472 | 0.472 | 0mm | 49.97 | -57.61 | -1.67 | 106.5 | 1.62 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.743 | 1.15 | 0mm | | | | | | | |
| | WLAN5GHz Ant 6 | | 0.404 | | 0mm | 10.01 | 41.05 | 0.89 | | | | |
| | LTE Band 41 Ant 1 | Left Cheek | 0.472 | 0.472 | 0mm | 49.97 | -57.61 | -1.67 | 84.4 | 1.62 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.743 | 1.15 | 0mm | 4.15 | 13.28 | -0.57 | | | | |
| | WLAN5GHz Ant 6 | | 0.404 | | 0mm | | | | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 2 | LTE Band 41 Ant 1 | Left Cheek | 0.472 | 0.472 | 0mm | 49.97 | -57.61 | -1.67 | 91.2 | 1.61 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.743 | 1.14 | 0mm | | | | | | | |
| | Bluetooth Ant 6 | | 0.393 | | 0mm | 9.53 | 24.09 | 0.29 | | | | |
| | LTE Band 41 Ant 1 | Left Cheek | 0.472 | 0.472 | 0mm | 49.97 | -57.61 | -1.67 | 84.4 | 1.61 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.743 | 1.14 | 0mm | 4.15 | 13.28 | -0.57 | | | | |
| | Bluetooth Ant 6 | | 0.393 | | 0mm | | | | | | | |

**For Hotspot**

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 21 | GSM850 Ant 0 | Back | 1.343 | 1.75 | 5mm | -6.9 | -78.5 | -1.57 | 153.9 | 1.75 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 22 | GSM850 Ant 0 | Back | 1.343 | 1.83 | 5mm | -6.9 | -78.5 | -1.57 | 153.8 | 1.83 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 23 | GSM850 Ant 0 | Back | 1.343 | 1.65 | 5mm | -6.9 | -78.5 | -1.57 | 156.5 | 1.65 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case | Band | Position | SAR 1g SAR (W/kg) | Summed | Gap | SAR peak location (mm) | | | 3D | Summed | SPLSR | Simultaneous |

| No | | | | 1g SAR (W/kg) | (mm) | X | Y | Z | distance (mm) | SAR (W/kg) | Results | SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 24 | WCDMA II Ant 0 | Back | 1.267 | 1.68 | 5mm | -5 | -87 | -1.3 | 162.6 | 1.68 | 0.01 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 25 | WCDMA II Ant 0 | Back | 1.267 | 1.75 | 5mm | -5 | -87 | -1.3 | 162.4 | 1.75 | 0.01 | Not required |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 26 | WCDMA IV Ant 0 | Back | 1.374 | 1.78 | 5mm | 8.5 | -76.5 | -1.25 | 155.2 | 1.78 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 27 | WCDMA IV Ant 0 | Back | 1.374 | 1.86 | 5mm | 8.5 | -76.5 | -1.25 | 154.0 | 1.86 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 28 | WCDMA IV Ant 0 | Back | 1.374 | 1.68 | 5mm | 8.5 | -76.5 | -1.25 | 157.3 | 1.68 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 29 | WCDMA V Ant 0 | Back | 1.372 | 1.78 | 5mm | 2.6 | -76.3 | -1.3 | 153.6 | 1.78 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 30 | WCDMA V Ant 0 | Back | 1.372 | 1.86 | 5mm | 2.6 | -76.3 | -1.3 | 152.8 | 1.86 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 31 | WCDMA V Ant 0 | Back | 1.372 | 1.68 | 5mm | 2.6 | -76.3 | -1.3 | 155.9 | 1.68 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 32 | LTE Band 26 Ant 0 | Back | 1.331 | 1.74 | 5mm | 4.5 | -75.6 | -0.98 | 153.3 | 1.74 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 33 | LTE Band 26 Ant 0 | Back | 1.331 | 1.82 | 5mm | 4.5 | -75.6 | -0.98 | 152.4 | 1.82 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 34 | LTE Band 26 Ant 0 | Back | 1.331 | 1.64 | 5mm | 4.5 | -75.6 | -0.98 | 155.5 | 1.64 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 35 | LTE Band 41 Ant 1 | Back | 1.376 | 1.78 | 5mm | 27.4 | -67.4 | -1.24 | 152.6 | 1.78 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 36 | LTE Band 41 Ant 1 | Back | 1.376 | 1.86 | 5mm | 27.4 | -67.4 | -1.24 | 150.2 | 1.86 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 37 | LTE Band 41 Ant 1 | Back | 1.376 | 1.69 | 5mm | 27.4 | -67.4 | -1.24 | 154.1 | 1.69 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 38 | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 152.6 | 2.46 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 0.673 | 1.08 | 5mm | | | | | | | |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 143.2 | 2.46 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 0.673 | 1.08 | 5mm | -10.8 | 70.6 | -1.35 | | | | |
| | WLAN2.4GHz Ant 6 | | 0.408 | | 5mm | | | | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 39 | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 150.2 | 2.54 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 0.673 | 1.16 | 5mm | | | | | | | |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 143.2 | 2.54 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 0.673 | 1.16 | 5mm | -10.8 | 70.6 | -1.35 | | | | |
| | WLAN5GHz Ant 6 | | 0.487 | | 5mm | | | | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 40 | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 154.1 | 2.36 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.673 | 0.98 | 5mm | | | | | | | |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 143.2 | 2.36 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 0.673 | 0.98 | 5mm | -10.8 | 70.6 | -1.35 | | | | |
| | Bluetooth Ant 6 | | 0.31 | | 5mm | | | | | | | |

**For Body worn**

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 7 | WCDMA II Ant 0 | Back | 1.436 | 1.88 | 5mm | -5 | -87 | -1.3 | 162.6 | 1.88 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 8 | WCDMA II Ant 0 | Back | 1.436 | 1.87 | 5mm | -5 | -87 | -1.3 | 162.4 | 1.87 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 9 | WCDMA II Ant 0 | Back | 1.436 | 1.88 | 5mm | -5 | -87 | -1.3 | 165.2 | 1.88 | 0.02 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 10 | LTE Band 41 Ant 1 | Back | 1.376 | 1.82 | 5mm | 27.4 | -67.4 | -1.24 | 152.6 | 1.82 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 11 | LTE Band 41 Ant 1 | Back | 1.376 | 1.81 | 5mm | 27.4 | -67.4 | -1.24 | 150.2 | 1.81 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 12 | LTE Band 41 Ant 1 | Back | 1.376 | 1.82 | 5mm | 27.4 | -67.4 | -1.24 | 154.1 | 1.82 | 0.02 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 13 | LTE Band 41 Ant 1 | Front | 0.883 | 0.883 | 5mm | -31.6 | -74.2 | -0.95 | 161.4 | 1.99 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.793 | 1.11 | 5mm | | | | | | | |
| | WLAN2.4GHz Ant 6 | | 0.318 | | 5mm | 21.3 | 78.3 | -0.91 | | | | |
| | LTE Band 41 Ant 1 | Front | 0.883 | 0.883 | 5mm | -31.6 | -74.2 | -0.95 | 153.3 | 1.99 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.793 | 1.11 | 5mm | 10.5 | 73.2 | -1.35 | | | | |
| | WLAN2.4GHz Ant 6 | | 0.318 | | 5mm | | | | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 14 | LTE Band 41 Ant 1 | Front | 0.883 | 0.883 | 5mm | -31.6 | -74.2 | -0.95 | 151.7 | 2.06 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.793 | 1.18 | 5mm | | | | | | | |
| | WLAN5GHz Ant 6 | | 0.383 | | 5mm | 28.1 | 65.3 | -0.86 | | | | |
| | LTE Band 41 Ant 1 | Front | 0.883 | 0.883 | 5mm | -31.6 | -74.2 | -0.95 | 153.3 | 2.06 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.793 | 1.18 | 5mm | 10.5 | 73.2 | -1.35 | | | | |
| | WLAN5GHz Ant 6 | | 0.383 | | 5mm | | | | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 15 | LTE Band 41 Ant 1 | Front | 0.883 | 0.883 | 5mm | -31.6 | -74.2 | -0.95 | 160.6 | 1.94 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.793 | 1.05 | 5mm | | | | | | | |
| | Bluetooth Ant 6 | | 0.26 | | 5mm | 22.8 | 76.9 | -0.95 | | | | |
| | LTE Band 41 Ant 1 | Front | 0.883 | 0.883 | 5mm | -31.6 | -74.2 | -0.95 | 153.3 | 1.94 | 0.02 | Not required |
| | FR1 n77 Ant 5 | | 0.793 | 1.05 | 5mm | 10.5 | 73.2 | -1.35 | | | | |
| | Bluetooth Ant 6 | | 0.26 | | 5mm | | | | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 16 | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 152.6 | 2.84 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 1.023 | 1.46 | 5mm | | | | | | | |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 143.2 | 2.84 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 1.023 | 1.46 | 5mm | -10.8 | 70.6 | -1.35 | | | | |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | | | | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 17 | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 150.2 | 2.83 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 1.023 | 1.45 | 5mm | | | | | | | |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 143.2 | 2.83 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 1.023 | 1.45 | 5mm | -10.8 | 70.6 | -1.35 | | | | |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | | | | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 18 | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 154.1 | 2.84 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 1.023 | 1.47 | 5mm | | | | | | | |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| | LTE Band 41 Ant 1 | Back | 1.376 | 1.376 | 5mm | 27.4 | -67.4 | -1.24 | 143.2 | 2.84 | 0.03 | Not required |
| | FR1 n77 Ant 5 | | 1.023 | 1.47 | 5mm | -10.8 | 70.6 | -1.35 | | | | |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | | | | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 50 | GSM850 Ant 0 | Back | 1.343 | 1.78 | 5mm | -6.9 | -78.5 | -1.57 | 153.9 | 1.78 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 51 | GSM850 Ant 0 | Back | 1.343 | 1.77 | 5mm | -6.9 | -78.5 | -1.57 | 153.8 | 1.77 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 52 | GSM850 Ant 0 | Back | 1.343 | 1.79 | 5mm | -6.9 | -78.5 | -1.57 | 156.5 | 1.79 | 0.02 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 53 | GSM1900 Ant 0 | Back | 1.293 | 1.73 | 5mm | -8.1 | -90.3 | -1.13 | 165.4 | 1.73 | 0.01 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 54 | GSM1900 Ant 0 | Back | 1.293 | 1.72 | 5mm | -8.1 | -90.3 | -1.13 | 165.4 | 1.72 | 0.01 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 55 | GSM1900 Ant 0 | Back | 1.293 | 1.74 | 5mm | -8.1 | -90.3 | -1.13 | 168.1 | 1.74 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 56 | WCDMA IV Ant 0 | Back | 1.414 | 1.85 | 5mm | 8.5 | -76.5 | -1.25 | 155.2 | 1.85 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 57 | WCDMA IV Ant 0 | Back | 1.414 | 1.85 | 5mm | 8.5 | -76.5 | -1.25 | 154.0 | 1.85 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 58 | WCDMA IV Ant 0 | Back | 1.414 | 1.86 | 5mm | 8.5 | -76.5 | -1.25 | 157.3 | 1.86 | 0.02 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 59 | WCDMA V Ant 0 | Back | 1.372 | 1.81 | 5mm | 2.6 | -76.3 | -1.3 | 153.6 | 1.81 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 60 | WCDMA V Ant 0 | Back | 1.372 | 1.80 | 5mm | 2.6 | -76.3 | -1.3 | 152.8 | 1.80 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 61 | WCDMA V Ant 0 | Back | 1.372 | 1.82 | 5mm | 2.6 | -76.3 | -1.3 | 155.9 | 1.82 | 0.02 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 62 | LTE Band 2 Ant 0 | Back | 1.311 | 1.75 | 5mm | -7.1 | -89.6 | -1.01 | 164.9 | 1.75 | 0.01 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 63 | LTE Band 2 Ant 0 | Back | 1.311 | 1.74 | 5mm | -7.1 | -89.6 | -1.01 | 164.8 | 1.74 | 0.01 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 64 | LTE Band 2 Ant 0 | Back | 1.311 | 1.75 | 5mm | -7.1 | -89.6 | -1.01 | 167.5 | 1.75 | 0.01 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 65 | LTE Band 26 Ant 0 | Back | 1.331 | 1.77 | 5mm | 4.5 | -75.6 | -0.98 | 153.3 | 1.77 | 0.02 | Not required |
| | WLAN2.4GHz Ant 6 | | 0.44 | | 5mm | -31.2 | 73.5 | -1.05 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 66 | LTE Band 26 Ant 0 | Back | 1.331 | 1.76 | 5mm | 4.5 | -75.6 | -0.98 | 152.4 | 1.76 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.431 | | 5mm | -21.5 | 74.6 | -1.23 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 67 | LTE Band 26 Ant 0 | Back | 1.331 | 1.77 | 5mm | 4.5 | -75.6 | -0.98 | 155.5 | 1.77 | 0.02 | Not required |
| | Bluetooth Ant 6 | | 0.443 | | 5mm | -27.1 | 76.7 | -1.21 | | | | |

## For Body worn Sensor-off

| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 19 | WCDMA II Ant 0 | Back | 1.123 | 1.78 | 17mm | -6 | -89.5 | -1.25 | 163.3 | 1.78 | 0.01 | Not required |
| | WLAN5GHz Ant 6 | | 0.654 | | 17mm | -20.7 | 73.1 | -1.02 | | | | |
| Case No | Band | Position | SAR 1g SAR (W/kg) | Summed 1g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 20 | LTE Band 2 Ant 0 | Back | 1.136 | 1.79 | 17mm | -7.8 | -81.5 | -1.35 | 155.1 | 1.79 | 0.02 | Not required |
| | WLAN5GHz Ant 6 | | 0.654 | | 17mm | -20.7 | 73.1 | -1.02 | | | | |

## For Extremity

| Case No | Band | Position | SAR 10g SAR (W/kg) | Summed 10g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Case 41 | LTE Band 41 Ant 1 | Back | 2.26 | 2.26 | 0mm | 32.9 | -79.7 | -1.05 | 139.8 | 5.77 | 0.10 | Not required |
| | FR1 n78 Ant 5 | | 2.565 | 3.51 | 0mm | | | | | | | |
| | WLAN2.4GHz Ant 6 | | 0.868 | | 0mm | | | | | | | |
| | NFC | | 0.077 | | 0mm | -9.5 | 53.5 | -1.45 | | | | |
| Case 41 | LTE Band 41 Ant 1 | Back | 2.26 | 2.26 | 0mm | 32.9 | -79.7 | -1.05 | 164.8 | 5.77 | 0.08 | Not required |
| | FR1 n78 Ant 5 | | 2.565 | 3.51 | 0mm | | | | | | | |
| | WLAN2.4GHz Ant 6 | | 0.868 | | 0mm | -33.1 | 71.3 | -1.06 | | | | |
| | NFC | | 0.077 | | 0mm | | | | | | | |
| Case 41 | LTE Band 41 Ant 1 | Back | 2.26 | 2.26 | 0mm | 32.9 | -79.7 | -1.05 | 156.7 | 5.77 | 0.09 | Not required |
| | FR1 n78 Ant 5 | | 2.565 | 3.51 | 0mm | -12.6 | 70.2 | -1.05 | | | | |
| | WLAN2.4GHz Ant 6 | | 0.868 | | 0mm | | | | | | | |
| | NFC | | 0.077 | | 0mm | | | | | | | |
| Case No | Band | Position | SAR 10g SAR (W/kg) | Summed 10g SAR (W/kg) | Gap (mm) | SAR peak location (mm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
| Case 42 | LTE Band 41 Ant 1 | Back | 2.26 | 2.26 | 0mm | 32.9 | -79.7 | -1.05 | 139.8 | 5.77 | 0.10 | Not required |
| | FR1 n78 Ant 5 | | 2.565 | 3.51 | 0mm | | | | | | | |
| | WLAN5GHz Ant 6 | | 0.868 | | 0mm | | | | | | | |
| | NFC | | 0.077 | | 0mm | -9.5 | 53.5 | -1.45 | | | | |
| Case 42 | LTE Band 41 Ant 1 | Back | 1.714 | 2.26 | 0mm | 32.9 | -79.7 | -1.05 | 161.9 | 5.77 | 0.09 | Not required |
| | FR1 n78 Ant 5 | | 2.565 | 3.51 | 0mm | | | | | | | |
| | WLAN5GHz Ant 6 | | 0.868 | | 0mm | -29.3 | 69.8 | -0.85 | | | | |
| | NFC | | 0.077 | | 0mm | | | | | | | |
| Case 42 | LTE Band 41 Ant 1 | Back | 1.714 | 2.26 | 0mm | 32.9 | -79.7 | -1.05 | 156.7 | 5.77 | 0.09 | Not required |
| | FR1 n78 Ant 5 | | 2.565 | 3.51 | 0mm | -12.6 | 70.2 | -1.05 | | | | |
| | WLAN5GHz Ant 6 | | 0.868 | | 0mm | | | | | | | |
| | NFC | | 0.077 | | 0mm | | | | | | | |

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# 18. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report.

## 19. References


[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[6] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015.

[7] FCC KDB 648474 D04 v01r03, “SAR Evaluation Considerations for Wireless Handsets”, Oct 2015.

[8] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[9] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

[10] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[11] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[12] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

[13] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

[14] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[15] FCC KDB 484596 D01 v02r02, “Test Reductions Via Data Referencing”, Dec. 2023


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