

FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT

FOR

GSM/WCDMA/LTE + BT/BLE, DTS/UNII a/b/g/n/ac and NFC

MODEL NUMBER: SM-A165M/DS, SM-A165M

FCC ID: A3LSMA165M

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Testing Laboratory

TL-637

Revision History

| Rev. | Date | Revisions | Revised By |
|------|------------|---|------------|
| V1 | 2024-09-13 | Initial Issue | -- |
| V2 | 9/23/2024 | 1. Revised UNII's Highest SAR value in Sec.1 2. Changed WCDMA Band II's Reduced tune-up power. -Revised Simultaneous Tx SAR value in Sec.1. -Revised WCDMA Band II SAR results in Sec.1.1. -Revised WCDMA Band II target power in Sec.6.3 & 6.4. -Added Dielectric Property & System check result in Sec.8. -Revised WCDMA Band II output power results in Sec.9.2. -Revised WCDMA Band II SAR results in Sec.10.3 & 12. -Revised Appendix B, C, G. | Gyurim Lee |
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1. Attestation of Test Results

| | | | | | | |
|---|----------------------|---|--------|------|---|--------|
| Applicant Name | | SAMSUNG ELECTRONICS CO.,LTD. | | | | |
| FCC ID | | A3LSMA165M | | | | |
| Model Number | | SM-A165M/DS, SM-A165M | | | | |
| Applicable Standards | | FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures | | | | |
| Exposure Category | | SAR Limits (W/Kg) | | | | |
| | | Peak spatial-average (1g of tissue) | | | Product Specific 10g (10g of tissue) | |
| General population / Uncontrolled exposure | | 1.6 | | | 4.0 | |
| RF Exposure Conditions | | Equipment Class - The Highest <i>Reported</i> SAR (W/kg) | | | | |
| | | PCE | DTS | NII | DSS | DXX |
| Head | | 0.51 | < 0.10 | 0.20 | 0.24 | N/A |
| Body-worn | | 0.81 | 0.36 | 0.58 | 0.14 | N/A |
| Hotspot | | 0.86 | 0.60 | 1.01 | 0.29 | N/A |
| Product Specific 10g | | 2.88 | N/A | 1.38 | N/A | < 0.10 |
| Simultaneous TX | Head | 0.94 | 0.60 | 0.94 | 0.94 | N/A |
| | Body-worn | 1.53 | 1.17 | 1.53 | 1.53 | N/A |
| | Hotspot | 1.57 | 1.41 | 1.57 | 1.49 | N/A |
| | Product Specific 10g | 3.14 | N/A | 3.14 | N/A | 3.14 |
| Date Tested | | 2024-08-12 to 2024-09-23 | | | | |
| Test Results | | Pass | | | | |

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

| | |
|---|--|
| Approved & Released By: | Prepared By: |
|  |  |
| Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory | Gyurim Lee Laboratory Engineer UL Korea, Ltd. Suwon Laboratory |

1.1. The Highest Reported SAR Results

| Equipment Class | Band | Antenna | The Highest Reported SAR (W/kg) of RF exposure conditions | | | |
|-----------------|------------------|---------|---|--------------------|------------------|---------------------------|
| | | | 1g of tissue | | | 10g of tissue |
| | | | Head Exposure | Body-worn Exposure | Hotspot Exposure | Product Specific Exposure |
| PCE | GSM 850 | Main.1 | 0.508 | 0.542 | 0.556 | N/A |
| | GSM 1900 | Main.1 | 0.195 | 0.322 | 0.452 | N/A |
| | WCDMA II | Main.1 | 0.284 | 0.530 | 0.635 | 1.719 |
| | WCDMA Band IV | Main.1 | 0.273 | 0.694 | 0.856 | 2.875 |
| | WCDMA Band V | Main.1 | 0.349 | 0.382 | 0.692 | N/A |
| | LTE Band 2 | Main.1 | 0.223 | 0.451 | 0.682 | N/A |
| | LTE Band 12 (17) | Main.1 | 0.260 | 0.245 | 0.335 | N/A |
| | LTE Band 13 | Main.1 | 0.273 | 0.389 | 0.461 | N/A |
| | LTE Band 26 (5) | Main.1 | 0.419 | 0.442 | 0.717 | N/A |
| | LTE Band 41 | Main.1 | 0.294 | 0.307 | 0.499 | N/A |
| LTE Band 66 | Main.1 | 0.378 | 0.813 | 0.843 | 1.680 | |
| DTS | 2.4GHz WLAN | | 0.091 | 0.357 | 0.600 | N/A |
| NII | 5GHz WLAN | | 0.196 | 0.575 | 1.008 | 1.376 |
| DSS | Bluetooth | | 0.235 | 0.139 | 0.294 | N/A |
| DXX | NFC | | N/A | N/A | N/A | 0.049 |

Note(s):

- The Highest Reported SAR Results were listed for each RF exposure conditions for each supported bands based on SAR test results of Section.10.

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D04 Interim General RF Exposure Guidance v01
- 648474 D04 Handset SAR v01r03
- 690783 D01 SAR Listings on Grants v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D06 Hotspot Mode v02r01
- 941225 D07 UMPC Mini Tablet v01r02
- 971168 D01 Power Meas License Digital System v03r01

In addition to the above, the following information was used:

- [TCB workshop](#) October, 2014; RF Exposure Procedures Update (Overlapping LTE Bands)
- [TCB workshop](#) October, 2014; RF Exposure Procedures Update (Other LTE Considerations)
- [TCB workshop](#) October, 2016; RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB workshop](#) October, 2016; RF Exposure Procedures (DUT Holder Perturbations)
- [TCB workshop](#) April, 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))
- [TCB workshop](#) April, 2022; RF Exposure Procedures (Sum-Peak Location Separation Ratio)

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

| Suwon | |
|------------|------------|
| SAR 2 Room | SAR 3 Room |
| SAR 4 Room | SAR 5 Room |
| SAR 7 Room | SAR 8 Room |
| SAR 9 Room | |

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.

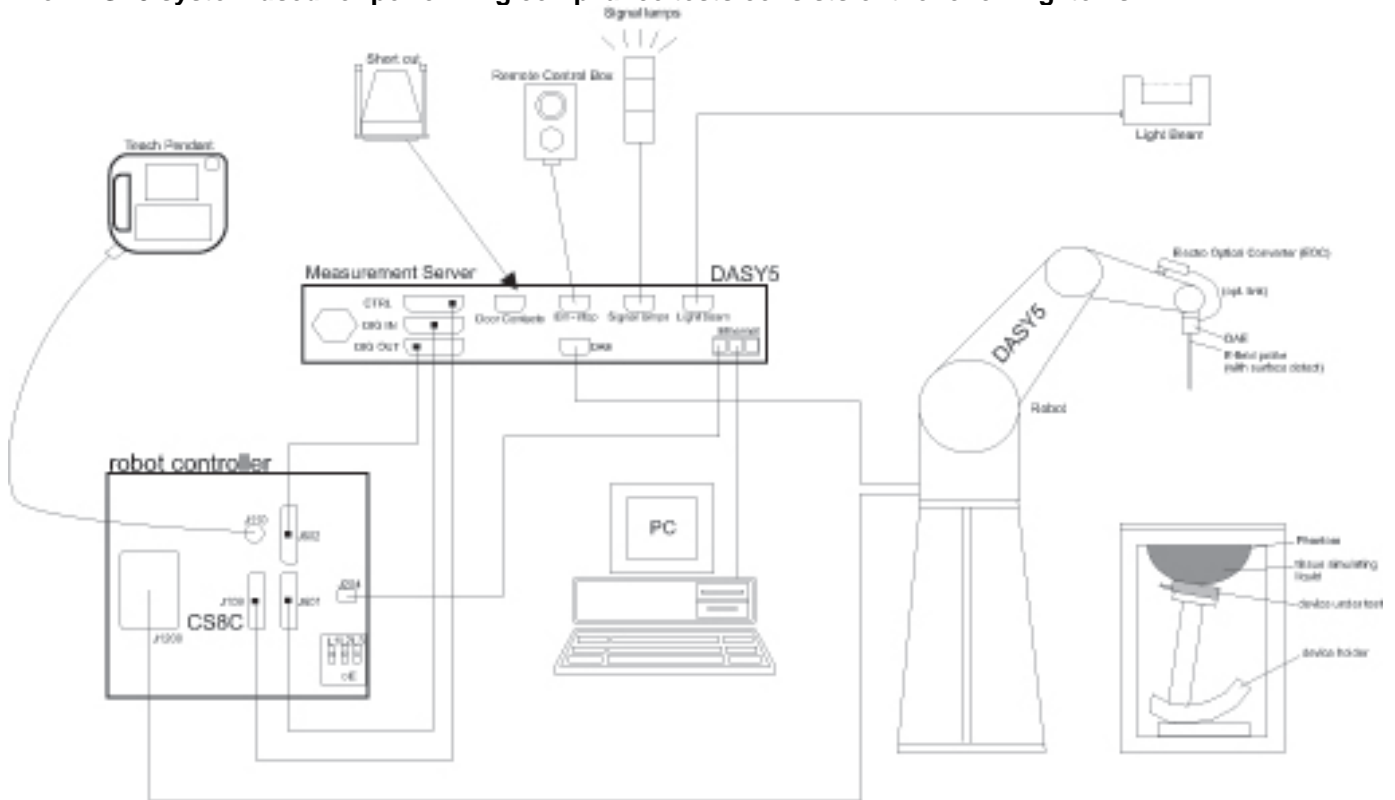
The full scope of accreditation can be viewed at;

<https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. SAR Measurement System & Test Equipment

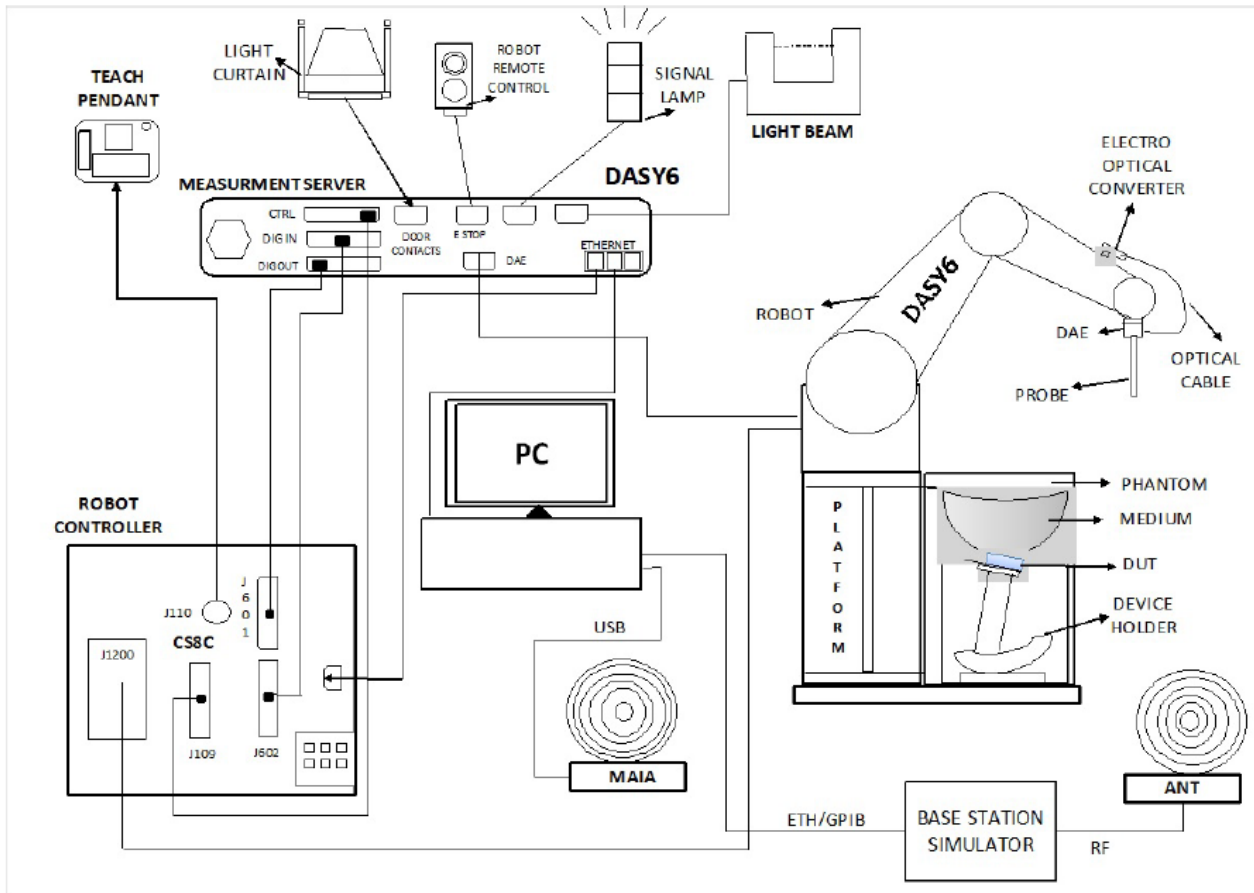
4.1. SAR Measurement System

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 Win7 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.

The DASY6 & 8 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 Win10 and the DASY6 or 8 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.

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: 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 locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) 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 KDB 865664 D01 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 | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | $30^\circ \pm 1^\circ$ | $20^\circ \pm 1^\circ$ |
| Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area} | ≤ 2 GHz: ≤ 15 mm $2 - 3$ GHz: ≤ 12 mm | $3 - 4$ GHz: ≤ 12 mm $4 - 6$ 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 \leq the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose 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 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 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 2 – 3 GHz: ≤ 5 mm* | 3 – 4 GHz: ≤ 5 mm* 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 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm |
| | graded grid | $\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface | ≤ 4 mm | 3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 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 4 – 5 GHz: ≥ 25 mm 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 <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> 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. | | | | |

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

4.3. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

Dielectric Property Measurements

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Due Date |
|---------------------------|-----------------|---------------|---------------|---------------|
| Network Analyzer | Agilent | E5071C | MY46522054 | 2025-07-24 |
| Network Analyzer | ROHDE & SCHWARZ | ZNB 20 | 102256 | 2025-07-22 |
| Dielectric Assessment Kit | SPEAG | DAK-12 | 1158 | 2024-09-20 |
| Dielectric Assessment Kit | SPEAG | DAK-3.5 | 1133 | 2025-02-19 |
| Dielectric Assessment Kit | SPEAG | DAK-3.5 | 1134 | 2025-04-22 |
| Dielectric Assessment Kit | SPEAG | DAK-3.5 | 1196 | 2025-06-10 |
| Vector Network Analyzer | SPEAG | DAKS_VNA R140 | SN0050221 | 2025-04-15 |
| Vector Network Analyzer | SPEAG | DAKS_VNA R140 | SN0060221 | 2025-03-21 |
| Shorting block | SPEAG | DAK-3.5 Short | SM DAK 200 BA | N/A |
| Shorting block | SPEAG | DAK-12 Short | SM DAK 220 AD | N/A |
| Thermometer | LKM | DTM3000 | 3851 | 2025-07-23 |
| Thermometer | LKM | DTM3000 | 3862 | 2025-07-23 |

System Check

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Due Date |
|-----------------------------|---------------|-------------------------------|-----------------------|---------------|
| MXG Analog Signal Generator | Keysight | N5181B | MY59100587 | 2025-07-25 |
| MXG Analog Signal Generator | Keysight | N5173B | MY59101083 | 2025-07-23 |
| MXG Analog Signal Generator | Agilent | E8257D | MY53400994 | 2025-07-24 |
| Power Sensor | KEYSIGHT | U2000A | MY60180020 | 2025-07-25 |
| Power Sensor | KEYSIGHT | U2000A | MY60490008 | 2025-07-23 |
| Power Sensor | KEYSIGHT | U2000A | MY60160004 | 2025-07-23 |
| Power Sensor | KEYSIGHT | U2000A | MY61010006 | 2025-07-23 |
| Power Sensor | KEYSIGHT | U2000A | MY54260007 | 2025-07-25 |
| Power Sensor | KEYSIGHT | U2004A USB Sensor | MY61200006 | 2025-01-03 |
| Power Sensor | KEYSIGHT | U2004A USB Sensor | MY61280010 | 2025-01-03 |
| Power Amplifier | EXODUS | AMP2027 | 1410025-AMP2027-10003 | 2025-02-14 |
| Power Amplifier | MINI-CIRCUITS | TVA-R5-13A+ | 2111006 | 2025-01-03 |
| Power Amplifier | EXODUS | AMP2027ADB | 10002 | 2025-01-05 |
| Power Amplifier | Sambo | BA00T60W2D | S3010-0001 | 2025-02-21 |
| Directional Coupler | Agilent | 772D | MY52180193 | 2025-07-25 |
| Directional Coupler | H.P | 778D | 16133 | 2025-07-25 |
| Directional Coupler | NARDA | 4216-10 | 02835 | 2025-07-24 |
| Directional Coupler | MINI-CIRCUITS | ZMDC-30-1+ | SF569102123 | 2025-07-24 |
| Directional Coupler | MINI-CIRCUITS | ZUDC20-183+ | N/A | 2025-07-24 |
| Directional Coupler | MINI-CIRCUITS | ZUDC20-183+ | N/A | 2025-07-24 |
| Directional Coupler | KRYTAR | 100318010 | 215541 | 2025-01-04 |
| Directional Coupler | KRYTAR | 100318010 | 215542 | 2025-01-04 |
| Directional Coupler | MINI-CIRCUITS | ZMDC10-83-S+ | 2316 | 2025-03-01 |
| Directional Coupler | MINI-CIRCUITS | ZMDC10-83-S+ | 2316 | 2025-03-01 |
| Low Pass Filter | FILTRON | L14012FL | 1410003S | 2025-07-24 |
| Low Pass Filter | MICROLAB | LA-60N | 3942 | 2025-07-24 |
| Low Pass Filter | MICROLAB | LA-15N | 3943 | 2025-07-24 |
| Low Pass Filter | MINI-CIRCUITS | VLF-6000+ | S0141 | 2025-07-23 |
| Low Pass Filter | MINI-CIRCUITS | VLF-6000+ | S0142 | 2025-07-24 |
| Low Pass Filter | MINI-CIRCUITS | VLF-3000+ | S0143 | 2025-07-24 |
| Low Pass Filter | MINI-CIRCUITS | NLP-1200+ | VUU19301915 | 2025-01-04 |
| Low Pass Filter | MINI-CIRCUITS | NLP-1200+ | VUU19301915 | 2025-01-04 |
| Low Pass Filter | MINI-CIRCUITS | NLP-1200 | VUU19301915 | 2025-07-24 |
| Low Pass Filter | KRYTAR | WLKX10-11000-13640-21000-60TS | 1 | 2025-07-23 |
| Low Pass Filter | MINI-CIRCUITS | VLF-1500+ | 32333 | 2025-03-01 |
| Low Pass Filter | MINI-CIRCUITS | VLF-1500+ | 32241 | 2025-03-01 |
| Low Pass Filter | MINI-CIRCUITS | VLF-3000+ | 32226 | 2025-03-01 |
| Attenuator | KEYSIGHT | BW-N10W5+ | N/A | 2025-07-23 |
| Attenuator | KEYSIGHT | BW-N10W5+ | N/A | 2025-07-23 |
| Attenuator | KEYSIGHT | BW-N20W5+ | N/A | 2025-07-23 |
| Attenuator | KEYSIGHT | BW-N20W5+ | N/A | 2025-07-23 |
| Attenuator | KEYSIGHT | BW-S3W10+ | N/A | 2025-01-04 |
| Attenuator | KEYSIGHT | BW-S3W10+ | N/A | 2025-01-04 |
| Attenuator | KEYSIGHT | BW-S3W10+ | N/A | 2025-01-04 |

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due date.

| | | | | |
|------------------------------|-----------|-----------|------------|------------|
| Attenuator | KEY SIGHT | 8491B003 | MY39272275 | 2025-07-23 |
| Attenuator | KEY SIGHT | 8491B/003 | MY39272276 | 2025-07-23 |
| Attenuator | KEY SIGHT | 8491B/010 | MY39271981 | 2025-07-24 |
| Attenuator | KEY SIGHT | 8491B/010 | MY39272011 | 2025-07-24 |
| Attenuator | KEY SIGHT | 8491B010 | MY39272293 | 2025-07-23 |
| Attenuator | KEY SIGHT | 8491B010 | MY39272306 | 2025-07-24 |
| Attenuator | KEY SIGHT | 8491B020 | MY39272300 | 2025-07-23 |
| Attenuator | KEY SIGHT | 8491B/020 | MY39272302 | 2025-07-24 |
| Attenuator | KEY SIGHT | 8491B/020 | MY39271973 | 2025-07-24 |
| E-Field Probe | SPEAG | EX3DV4 | 7313 | 2025-02-21 |
| E-Field Probe | SPEAG | EX3DV4 | 7314 | 2025-05-23 |
| E-Field Probe | SPEAG | EX3DV4 | 7330 | 2025-01-22 |
| E-Field Probe | SPEAG | EX3DV4 | 7645 | 2024-09-20 |
| E-Field Probe | SPEAG | EX3DV4 | 7651 | 2025-03-18 |
| E-Field Probe | SPEAG | EX3DV4 | 7646 | 2025-03-15 |
| E-Field Probe | SPEAG | EX3DV4 | 7652 | 2025-04-22 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1494 | 2025-07-15 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1447 | 2025-03-13 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1591 | 2025-02-16 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1670 | 2025-05-15 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1671 | 2025-04-18 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1343 | 2025-07-12 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1668 | 2025-04-18 |
| System Validation Dipole | SPEAG | CLA -13 | 1015 | 2025-08-22 |
| System Validation Dipole | SPEAG | D750V3 | 1205 | 2025-04-18 |
| System Validation Dipole | SPEAG | D750V3 | 1122 | 2025-02-22 |
| System Validation Dipole | SPEAG | D835V2 | 4d194 | 2025-03-11 |
| System Validation Dipole | SPEAG | D835V2 | 4d174 | 2024-09-21 |
| System Validation Dipole | SPEAG | D1750V2 | 1125 | 2024-11-30 |
| System Validation Dipole | SPEAG | D1900V2 | 5d190 | 2024-11-16 |
| System Validation Dipole | SPEAG | D2450V2 | 960 | 2025-03-14 |
| System Validation Dipole | SPEAG | D5GHzV2 | 1209 | 2025-02-28 |
| System Validation Dipole | SPEAG | D5GHzV2 | 1325 | 2025-04-21 |
| System Validation Dipole | SPEAG | D2600V2 | 1178 | 2025-04-25 |
| System Validation Dipole | SPEAG | D2600V2 | 1097 | 2024-09-26 |
| Thermometer | Lutron | MHB-382SD | AH.50215 | 2025-01-04 |
| Thermometer | Lutron | MHB-382SD | AH.50213 | 2025-01-04 |
| Thermometer | Lutron | MHB-382SD | AH.91463 | 2025-01-04 |
| Thermometer | Lutron | MHB-382SD | AJ.42446 | 2025-07-24 |
| Thermometer | Lutron | MHB-382SD | AK.12102 | 2025-07-24 |
| Thermometer | Lutron | MHB-382SD | AK.12103 | 2025-07-24 |
| Thermometer | Lutron | MHB-382SD | AK.12123 | 2025-01-04 |
| Thermometer | Lutron | MHB-382SD | AK.18789 | 2025-07-24 |
| Thermometer | Lutron | MHB-382SD | AJ.45903 | 2025-01-04 |

Others

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Due Date |
|------------------------------|--------------|------------|------------|---------------|
| Base Station Simulator | R & S | CMW500 | 150313 | 2025-07-24 |
| Base Station Simulator | R & S | CMW500 | 150314 | 2025-07-24 |
| Base Station Simulator | R & S | CMW500 | 162790 | 2025-07-25 |
| Base Station Simulator | R & S | CMW500 | 169803 | 2025-03-25 |
| Base Station Simulator | R & S | CMW500 | 169801 | 2025-01-03 |
| Base Station Simulator | R & S | CMW500 | 169802 | 2025-01-03 |
| Base Station Simulator | R & S | CMW500 | 169799 | 2025-07-25 |
| Base Station Simulator | R & S | CMW500 | 169800 | 2025-07-24 |
| Radio Communication Analyzer | Anritsu | MT8821C | 6161094351 | 2024-11-30 |

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due data.

5. Measurement Uncertainty

Measurement Uncertainty of 100MHz to 6GHz

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, 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.

Measurement Uncertainty of 9MHz to 19MHz

Measurement uncertainty for 9 MHz to 19 MHz (According to IEEE 62209-1528)

| a | b | c | | d | e f(d,k) | f | g | h = cx _i /e | l = cx _g /e | k |
|--|-----------|------------------|-------------------|----------------|-------------|-------------------------|--------------------------|-------------------------------|--------------------------------|-----------|
| Uncertainty component | Reference | Tol. 1 g (±%) | Tol. 10 g (±%) | Prob. Dist. | Div. | c _i (1 g) | c _i (10 g) | 1 g u _i (±%) | 10 g u _i (±%) | vi |
| Measurement System Errors | | | | | | | | | | |
| Probe Calibration | 8.4.1.1 | 13.3 | | Normal | 2 | 1 | 1 | 6.7 | 6.7 | ∞ |
| Probe Calibration Drift | 8.4.1.2 | 1.7 | | Rectangular | 1.732 | 1 | 1 | 1.0 | 1.0 | ∞ |
| Probe Linearity | 8.4.1.3 | 4.7 | | Rectangular | 1.732 | 1 | 1 | 2.7 | 2.7 | ∞ |
| Broadband Signal | 8.4.1.4 | 0.8 | | Rectangular | 1.732 | 1 | 1 | 0.5 | 0.5 | ∞ |
| Probe Isotropy | 8.4.1.5 | 7.6 | | Rectangular | 1.732 | 1 | 1 | 4.4 | 4.4 | ∞ |
| Data Acquisition | 8.4.1.6 | 0.3 | | Normal | 1 | 1 | 1 | 0.3 | 0.3 | ∞ |
| RF Ambient | 8.4.1.7 | 1.8 | | Normal | 1 | 1 | 1 | 1.8 | 1.8 | ∞ |
| Probe Positioning | 8.4.1.8 | 0.006 | | Normal | 1 | 0.14 | 0.14 | 0.10 | 0.10 | ∞ |
| Data Processing | 8.4.1.9 | 1.2 | | Normal | 1 | 1 | 1 | 1.2 | 1.2 | ∞ |
| Phantom and Device Errors | | | | | | | | | | |
| Conductivity (meas.)DAK | 8.4.2.1 | 2.5 | | Normal | 1 | 0.78 | 0.71 | 2.0 | 1.8 | ∞ |
| Conductivity (temp.)BB | 8.4.2.2 | 5.4 | | Rectangular | 1.732 | 0.78 | 0.71 | 2.4 | 2.2 | ∞ |
| Phantom Permittivity | 8.4.2.3 | 14.0 | | Rectangular | 1.732 | 0 | 0 | 0.0 | 0.0 | ∞ |
| Distance DUT -TSL | 8.4.2.4 | 2.0 | | Normal | 1 | 2 | 2 | 4.0 | 4.0 | ∞ |
| Device Positioning | 8.4.2.5 | 1.0 | 2.3 | Normal | 1 | 1 | 1 | 1.0 | 2.3 | 40 |
| Device Holder | 8.4.2.6 | 3.6 | | Normal | 1 | 1 | 1 | 3.6 | 3.6 | ∞ |
| DUT Modulation | 8.4.2.7 | 2.4 | | Rectangular | 1.732 | 1 | 1 | 1.4 | 1.4 | ∞ |
| Time-average SAR | 8.4.2.8 | 1.7 | | Rectangular | 1.732 | 1 | 1 | 1.0 | 1.0 | ∞ |
| DUT drift | 8.4.2.9 | 5.0 | | Normal | 1 | 1 | 1 | 5.0 | 5.0 | ∞ |
| Correction to the SAR results | | | | | | | | | | |
| Deviation to Target | 8.4.3.1 | 1.9 | | Normal | 1 | 1 | 0.84 | 1.9 | 1.6 | ∞ |
| Combined Standard Uncertainty U _c (y) = | | | | | | | | RSS | | |
| | | | | | | | | 12.16 | 12.23 | |
| Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = | | | | | | | | 24.33 | 24.47 | |

5.1. DECISION RULE

Measurement Uncertainty is not applied when providing statements of conformity in accordance with IEC Guide 115:2023, 4.3.3.

6. Device Under Test (DUT) Information

6.1. DUT Description

| | | | | | | |
|---------------------------|---|------------------|----------------|------------|------------------|----------------|
| Device Dimension | Refer to Appendix A. | | | | | |
| Back Cover | <input checked="" type="checkbox"/> The Back Cover is not removable. | | | | | |
| Battery Options | <input checked="" type="checkbox"/> The rechargeable battery is not user accessible | | | | | |
| Wireless Router (Hotspot) | Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. <input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 2.4 GHz) <input checked="" type="checkbox"/> Mobile Hotspot (UNII-1_Ch 36 only, UNII-3) | | | | | |
| Wi-Fi Direct | Wi-Fi Direct enabled devices transfer data directly between each other <input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 2.4 GHz) <input checked="" type="checkbox"/> Wi-Fi Direct (UNII-1, UNII-3) | | | | | |
| Test Sample Information | No. | S/N | Notes | No. | S/N | Notes |
| | 1 | R38X7005LAP | Main Conducted | 8 | 823DF62CCE347ECE | SAR |
| | 2 | R38X7005LFD | Main Conducted | 9 | R38X7005NNF | WLAN Conducted |
| | 3 | R38X7005LEZ | Main Conducted | 10 | R38X7005NPM | WLAN Conducted |
| | 4 | R38X7005L7H | SAR | 11 | R38X7005NRY | SAR |
| | 5 | R38X7005L1X | SAR | 12 | R38X7005NTR | SAR |
| | 6 | R38X7005L9K | SAR | 13 | R38X7005NQT | SAR |
| | 7 | 823DF62CD7347ECE | SAR | 14 | R38X8009FQE | SAR |

6.2. Wireless Technologies

| Wireless technologies | Frequency bands | Operating mode | | Duty Cycle used for SAR testing |
|-----------------------|---|---|--|--|
| GSM | 850 1900 | Voice (GMSK) GPRS (GMSK) EGPRS (8PSK) | GPRS Multi-Slot Class: <input type="checkbox"/> Class 8 - 1 Up, 4 Down <input type="checkbox"/> Class 10 - 2 Up, 4 Down <input checked="" type="checkbox"/> Class 12 - 4 Up, 4 Down <input type="checkbox"/> Class 33 - 4 Up, 5 Down | GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50% |
| | Does this device support DTM (Dual Transfer Mode)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| W-CDMA (UMTS) | Band II Band IV Band V | UMTS Rel. 99 (Voice & Data) HSDPA/DC-HSDPA (Category 24, 64QAM) HSUPA (Category 6, QPSK) HSPA+ (DL only) | | 100% |
| LTE | FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 12 FDD Band 13 FDD Band 17 FDD Band 26 TDD Band 41 <small>Power Class 3</small> FDD Band 66 | QPSK 16QAM 64QAM | | 100% (FDD) 63.3% (TDD) <small>Power Class 3</small> |
| | Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| Wi-Fi | 2.4 GHz | 802.11b, 802.11g, 802.11n (HT20) | | 99.55% <small>(802.11b)</small> |
| | 5 GHz | 802.11a / 802.11n (HT20/40) 802.11ac (VHT20/40/80) | | 98.45% <small>(802.11a)</small> 88.09% <small>(802.11ac (VHT80))</small> |
| | Does this device support bands 5.60 ~ 5.65 GHz? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| | Does this device support Band gap channel(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| Bluetooth | 2.4 GHz | Version 5.3+LE | | 76.74% _(BDR) |
| NFC | 13.56 MHz | Type A/B/F/V | | 100% |

Notes:

- The Bluetooth protocol is considered source-based averaging. For duty used in Wi-Fi/BT SAR testing, Please refer to section.9.

6.3. Nominal and Maximum Output power

KDB 447498 sec.4.1. at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit

GSM Bands

| RF Air interface | Antenna | Mode | Time Slots | Max. RF Output Power (dBm) | | Reduced. RF Output Power (Hotspot & Proximity sensor) (dBm) | |
|------------------|-------------|-------|------------|----------------------------|-----------|---|-----------|
| | | | | Tune-up Limit | Frame Pwr | Tune-up Limit | Frame Pwr |
| GSM850 | Main 1 Ant. | Voice | 1 | 34.00 | 24.97 | 34.00 | 24.97 |
| | | GPRS | 1 | 34.00 | 24.97 | 33.00 | 23.97 |
| | | GPRS | 2 | 32.50 | 26.48 | 31.50 | 25.48 |
| | | GPRS | 3 | 30.50 | 26.24 | 29.50 | 25.24 |
| | | GPRS | 4 | 29.50 | 26.49 | 28.50 | 25.49 |
| | | EGPRS | 1 | 28.00 | 18.97 | 27.00 | 17.97 |
| | | EGPRS | 2 | 26.50 | 20.48 | 25.50 | 19.48 |
| | | EGPRS | 3 | 24.50 | 20.24 | 23.50 | 19.24 |
| GSM1900 | Main 1 Ant. | Voice | 1 | 31.50 | 22.47 | 31.50 | 22.47 |
| | | GPRS | 1 | 31.50 | 22.47 | 29.50 | 20.47 |
| | | GPRS | 2 | 30.00 | 23.98 | 28.00 | 21.98 |
| | | GPRS | 3 | 27.50 | 23.24 | 25.50 | 21.24 |
| | | GPRS | 4 | 26.00 | 22.99 | 24.00 | 20.99 |
| | | EGPRS | 1 | 27.00 | 17.97 | 25.00 | 15.97 |
| | | EGPRS | 2 | 25.50 | 19.48 | 23.50 | 17.48 |
| | | EGPRS | 3 | 23.50 | 19.24 | 21.50 | 17.24 |
| GSM1900 | Main 1 Ant. | EGPRS | 4 | 22.50 | 19.49 | 20.50 | 17.49 |

WCDMA Bands

| RF Air interface | Antenna | Mode | Max. RF Output Power (dBm) | Reduced. RF Output Power (dBm) | |
|------------------|-------------|------------|----------------------------|-------------------------------------|--|
| | | | | Hotspot back-off & Proximity sensor | |
| W-CDMA Band V | Main 1 Ant. | Rel.99 RMC | 25.50 | | |
| W-CDMA Band IV | Main 1 Ant. | Rel.99 RMC | 24.50 | 22.50 | |
| W-CDMA Band II | Main 1 Ant. | Rel.99 RMC | 24.50 | 21.50 | |

| RF Air interface | Antenna | Mode | Max. RF Output Power (dBm) | | | | Reduced. RF Output Power (dBm) | | | |
|------------------|-------------|----------------|-------------------------------------|-----------|-----------|-----------|--------------------------------|-----------|-----------|-----------|
| | | | Hotspot back-off & Proximity sensor | | | | | | | |
| | | | Subtest 1 | Subtest 2 | Subtest 3 | Subtest 4 | Subtest 1 | Subtest 2 | Subtest 3 | Subtest 4 |
| W-CDMA Band V | Main 1 Ant. | HSDPA/DC-HSDPA | 24.50 | 24.50 | 24.00 | 24.00 | | | | |
| W-CDMA Band IV | Main 1 Ant. | HSDPA/DC-HSDPA | 23.50 | 23.50 | 23.00 | 23.00 | 21.50 | 21.50 | 21.00 | 21.00 |
| W-CDMA Band II | Main 1 Ant. | HSDPA/DC-HSDPA | 23.50 | 23.50 | 23.00 | 23.00 | 20.50 | 20.50 | 20.00 | 20.00 |

| RF Air interface | Antenna | Mode | Max. RF Output Power (dBm) | | | | | Reduced. RF Output Power (dBm) | | | | |
|------------------|-------------|-------|-------------------------------------|-----------|-----------|-----------|-----------|--------------------------------|-----------|-----------|-----------|-----------|
| | | | Hotspot back-off & Proximity sensor | | | | | | | | | |
| | | | Subtest 1 | Subtest 2 | Subtest 3 | Subtest 4 | Subtest 5 | Subtest 1 | Subtest 2 | Subtest 3 | Subtest 4 | Subtest 5 |
| W-CDMA Band V | Main 1 Ant. | HSUPA | 22.50 | 22.50 | 23.50 | 22.00 | 23.50 | | | | | |
| W-CDMA Band IV | Main 1 Ant. | HSUPA | 21.50 | 21.50 | 22.50 | 21.00 | 22.50 | 19.50 | 19.50 | 20.50 | 19.00 | 20.50 |
| W-CDMA Band II | Main 1 Ant. | HSUPA | 21.50 | 21.50 | 22.50 | 21.00 | 22.50 | 18.50 | 18.50 | 19.50 | 18.00 | 19.50 |

LTE Bands

| RF Air interface | Antenna | Mode | Max. RF Output Power (dBm) | Reduced. RF Output Power (dBm) |
|------------------|---------|------|----------------------------|-------------------------------------|
| | | | | Hotspot back-off & Proximity sensor |
| LTE Band 2 | Main.1 | QPSK | 24.00 | 22.00 |
| LTE Band 4 | | QPSK | 25.00 | 22.00 |
| LTE Band 5 | | QPSK | 25.50 | |
| LTE Band 12 | | QPSK | 25.00 | |
| LTE Band 13 | | QPSK | 25.00 | |
| LTE Band 17 | | QPSK | 25.00 | |
| LTE Band 26 | | QPSK | 25.50 | |
| LTE Band 41 | | QPSK | 24.00 | 22.00 |
| LTE Band 66 | | QPSK | 25.00 | 22.00 |

WLAN/BT output power

Maximum Power

| RF Air interface | Band | 802.11 mode | | | | | |
|----------------------------|------------------|---|---|----|----|------|--|
| | | 2.4GHz SISO (Sub.2-2) / 5GHz SISO (Sub.2-3) | | | | | |
| | | a | b | g | n | ac | |
| WiFi 2.4 GHz | DTS | Ch 1 | | 20 | 19 | 17.5 | |
| | | Ch 2 - 10 | | 20 | 19 | 18 | |
| | | Ch 11 | | 20 | 16 | 15 | |
| | | Ch 12 | | 8 | 8 | 8 | |
| | | Ch 13 | | 6 | 6 | 6 | |
| WiFi 5 GHz (BW : 20MHz) | UNII-1 | 17 | | | 16 | 17 | |
| | UNII-2A | 17 | | | 16 | 17 | |
| | UNII-2C | 17 | | | 16 | 17 | |
| | UNII-2C (Ch.140) | 16 | | | 15 | 15 | |
| | UNII-3 | 17 | | | 16 | 17 | |
| WiFi 5 GHz (BW : 40MHz) | UNII-1 | | | | 15 | 15 | |
| | UNII-2A | | | | 15 | 15 | |
| | UNII-2C | | | | 15 | 15 | |
| | UNII-2C (Ch.102) | | | | 14 | 14 | |
| | UNII-3 | | | | 15 | 15 | |
| WiFi 5 GHz (BW : 80MHz) | UNII-1 | | | | | 13 | |
| | UNII-2A | | | | | 13 | |
| | UNII-2C | | | | | 13 | |
| | UNII-3 | | | | | 13 | |

Reduced Power

| RF Air interface | Band | 802.11 mode | | | | | |
|----------------------------|------------------|---|---|----|----|----|--|
| | | 2.4GHz SISO (Sub.2-2) / 5GHz SISO (Sub.2-3) | | | | | |
| | | a | b | g | n | ac | |
| WiFi 2.4 GHz | DTS | Ch 1 | | 12 | 12 | 12 | |
| | | Ch 2 - 10 | | 12 | 12 | 12 | |
| | | Ch 11 | | 12 | 12 | 12 | |
| | | Ch 12 | | 8 | 8 | 8 | |
| | | Ch 13 | | 6 | 6 | 6 | |
| WiFi 5 GHz (BW : 20MHz) | UNII-1 | 11 | | | 11 | 11 | |
| | UNII-2A | 11 | | | 11 | 11 | |
| | UNII-2C | 11 | | | 11 | 11 | |
| | UNII-2C (Ch.140) | 11 | | | 11 | 11 | |
| | UNII-3 | 11 | | | 11 | 11 | |
| WiFi 5 GHz (BW : 40MHz) | UNII-1 | | | | 11 | 11 | |
| | UNII-2A | | | | 11 | 11 | |
| | UNII-2C | | | | 11 | 11 | |
| | UNII-2C (Ch.102) | | | | 11 | 11 | |
| | UNII-3 | | | | 11 | 11 | |
| WiFi 5 GHz (BW : 80MHz) | UNII-1 | | | | | 11 | |
| | UNII-2A | | | | | 11 | |
| | UNII-2C | | | | | 11 | |
| | UNII-3 | | | | | 11 | |

BT(Bluetooth) Max power

| RF Air interface | Max. Output Power (dBm) |
|----------------------------|-------------------------|
| | Sub.2-2 |
| Bluetooth (BDR) (1Mbps) | 17 |
| Bluetooth (EDR) | 13 |
| Bluetooth LE | 8 |
| Bluetooth LE (2M) | 8 |

Note(s):

1. This device uses an independent fixed level power reduction mechanism for WLAN mode operations during RCV operation. Detailed descriptions of the power reduction mechanism are included in the operational description..

6.4. Power Back-off Operation

This device supports multiple power back-off modes: WWAN (Hotspot), WWAN (Proximity sensor) and WLAN (RCV). Each of the power back-off operates within specific exposure conditions for certain technologies. For full details on how each power back-off mode operates, refer to the Operational Description.

| Power Back-off mode | Technologies Supported | Exposure Conditions Active | | | |
|-------------------------|---|----------------------------|-----------|---------|-----------------------|
| | | Head | Body-worn | Hotspot | Product Specific 10-g |
| WWAN (Hotspot) | GSM 850/1900 W-CDMA B2/4 LTE B2/4/41/66 | N/A | N/A | ✓ | N/A |
| WWAN (Proximity sensor) | GSM 850/1900 W-CDMA B2/4 LTE B2/4/41/66 | N/A | N/A | N/A | ✓ |
| WLAN (RCV) | Wi-Fi 2.4GHz Wi-Fi 5GHz | ✓ | N/A | N/A | N/A |

Note(s):

1. Back-off priority: RCV → Hotspot → Proximity sensor

Product Specific 10g Adjusted SAR Calculation

| Wireless technologies | Max Tune-up Limit (dBm) | Reduced Tune-Up Limit (dBm) | Power Factor | Reported SAR Limit (W/kg) |
|-----------------------|-------------------------|-----------------------------|--------------|---------------------------|
| GSM850 | 26.3 | 25.3 | 1.26 | 0.953 |
| GSM1900 | 23.8 | 21.8 | 1.58 | 0.757 |
| W-CDMA B2 | 24.5 | 21.5 | 2.00 | 0.601 |
| W-CDMA B4 | 24.5 | 22.5 | 1.58 | 0.757 |
| LTE B2 | 24.0 | 22.0 | 1.58 | 0.757 |
| LTE B4 | 25.0 | 22.0 | 2.00 | 0.601 |
| LTE B41 | 24.0 | 22.0 | 1.58 | 0.757 |
| LTE B66 | 25.0 | 22.0 | 2.00 | 0.601 |

Note(s):

1. Tune-up limit powers for GSM 850, GSM 1900 are frame power(dBm).
2. Hotspot mode supports power reduction. When the measured SAR is scaled to the maximum tune-up limit, the adjusted SAR is < 1.2 W/kg. Therefore, Extremity SAR testing is not required for this band in accordance with KDB 648474 §2.5 b. Refer to §10 for Reported SAR results. If the Reported SAR 1g value in §10 is less than the Reported SAR Limit listed above, then Extremity SAR is not required.
3. LTE 50% RB is scaled up to the Max Tune-Up Limit with MPR included.
4. For Reported SAR limit in above table, it was calculated using Max tune-up Limit & Reduced Tune-up limit & Reported SAR 1.2 W/kg.
(Reported SAR Limit = 1.2 W/kg / Power factor, Power factor = $10^{((\text{Max tune-up limit} - \text{Reduced tune-up limit})/10)}$)

6.5. General LTE SAR Test and Reporting Considerations

| Item | Description | | | | | | |
|---|--------------------------------|----------------------------------|------------------|------------------|------------------|------------------|------------------|
| Frequency range, Channel Bandwidth, Numbers and Frequencies | Band 2 | Frequency range: 1850 - 1910 MHz | | | | | |
| | | Channel Bandwidth | | | | | |
| | | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz |
| | Low | 18700/ 1860 | 18675/ 1857.5 | 18650/ 1855 | 18625/ 1852.5 | 18615/ 1851.5 | 18607/ 1850.7 |
| | Mid | 18900/ 1880 | 18900/ 1880 | 18900/ 1880 | 18900/ 1880 | 18900/ 1880 | 18900/ 1880 |
| | High | 19100/ 1900 | 19125/ 1902.5 | 19150/ 1905 | 19175/ 1907.5 | 19185/ 1908.5 | 19193/ 1909.3 |
| | Band 4 | Frequency range: 1710 - 1755 MHz | | | | | |
| | | Channel Bandwidth | | | | | |
| | | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz |
| | Low | 20050/ 1720 | 20025/ 1717.5 | 20000/ 1715 | 19975/ 1712.5 | 19965/ 1711.5 | 19957/ 1710.7 |
| | Mid | 20175/ 1732.5 | 20175/ 1732.5 | 20175/ 1732.5 | 20175/ 1732.5 | 20175/ 1732.5 | 20175/ 1732.5 |
| | High | 20300/ 1745 | 20325/ 1747.5 | 20350/ 1750 | 20375/ 1752.5 | 20385/ 1753.5 | 20393/ 1754.3 |
| | Band 5 | Frequency range: 824 - 849 MHz | | | | | |
| | | Channel Bandwidth | | | | | |
| | | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz |
| | Low | | | 20450/ 829 | 20425/ 826.5 | 20415/ 825.5 | 20407/ 824.7 |
| | Mid | | | 20525/ 836.5 | 20525/ 836.5 | 20525/ 836.5 | 20525/ 836.5 |
| | High | | | 20600/ 844 | 20625/ 846.5 | 20635/ 847.5 | 20643/ 848.3 |
| | Band 12 | Frequency range: 699 - 716 MHz | | | | | |
| | | Channel Bandwidth | | | | | |
| | | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz |
| Low | | | 23060/ 704 | 23035/ 701.5 | 23025/ 700.5 | 23017/ 699.7 | |
| Mid | | | 23095/ 707.5 | 23095/ 707.5 | 23095/ 707.5 | 23095/ 707.5 | |
| High | | | 23130/ 711 | 23155/ 713.5 | 23165/ 714.5 | 23173/ 715.3 | |
| Band 13 | Frequency range: 777 - 787 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz | |
| Low | | | | 23205/ 779.5 | | | |
| Mid | | | 23230/ 782 | 23230/ 782 | | | |
| High | | | | 23255/ 784.5 | | | |
| Band 17 | Frequency range: 704 - 716 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz | |
| Low | | | 23780/ 709 | 23755/ 706.5 | | | |
| Mid | | | 23790/ 710 | 23790/ 710 | | | |
| High | | | 23800/ 711 | 23825/ 713.5 | | | |
| Band 26 | Frequency range: 814 - 849 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz | |
| Low | | 26765/ 821.5 | 26740/ 819 | 26715/ 816.5 | 26705/ 815.5 | 26697/ 814.7 | |
| Mid | | 26865/ 831.5 | 26865/ 831.5 | 26865/ 831.5 | 26865/ 831.5 | 26865/ 831.5 | |
| High | | 26965/ 841.5 | 26990/ 844 | 27015/ 846.5 | 27025/ 847.5 | 27033/ 848.3 | |

General LTE SAR Test and Reporting Considerations (Continued)

| Item | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---|-------------------|-------------------|-------------------|-------------------|-------------------|------------|---|--|--|--|--|--|----------|---------|---------|-------|--------|--------|--------|------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|---------|--|--|-----|--|--|--|-----|
| Frequency range, Channel Bandwidth, Numbers and Frequencies | Band 41 | Frequency range: 2496 - 2690 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Channel Bandwidth | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Low | 39750 / 2506.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Low-Mid | 40185 / 2549.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Mid | 40620 / 2593.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Mid-High | 41055 / 2636.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | High | 41490 / 2680.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Band 66 | Frequency range: 1710 - 1780 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Channel Bandwidth | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Low | 132072/ 1720 | 132047/ 1717.5 | 132022/ 1715 | 131997/ 1712.5 | 131987/ 1711.5 | 131979/ 1710.7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mid | 132322/ 1745 | 132322/ 1745 | 132322/ 1745 | 132322/ 1745 | 132322/ 1745 | 132322/ 1745 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 132572/ 1770 | 132597/ 1772.5 | 132622/ 1775 | 132647/ 1777.5 | 132657/ 1778.5 | 132665/ 1779.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LTE transmitter and antenna implementation | Refer to Appendix A. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maximum power reduction (MPR) | <p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <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> </thead> <tbody> <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></td> <td></td> <td>≤ 1</td> <td></td> <td></td> <td></td> <td>≤ 5</td> </tr> </tbody> </table> | | | | | | | Modulation | Channel bandwidth / Transmission bandwidth (N _{RB}) | | | | | | MPR (dB) | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 | 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 | 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 | 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 | 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 | 256 QAM | | | ≤ 1 | | | | ≤ 5 |
| | Modulation | Channel bandwidth / Transmission bandwidth (N _{RB}) | | | | | | | MPR (dB) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 MHz | | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 256 QAM | | | ≤ 1 | | | | ≤ 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MPR Built-in by design The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values. A-MPR (additional MPR) was disabled during SAR testing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power reduction | Yes. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spectrum plots for RB configurations | A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes:

- Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. 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 per KDB 941225 D05 SAR for LTE devices.
- LTE Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
- SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.6. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

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 | $26336 \cdot T_s$ | | | $7680 \cdot T_s$ | | |
| 5 | $6592 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ | $20480 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ |
| 6 | $19760 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 7 | $21952 \cdot T_s$ | | | $12800 \cdot T_s$ | | |
| 8 | $24144 \cdot T_s$ | | | - | | |
| 9 | $13168 \cdot T_s$ | | | - | | |

Calculated Duty Cycle

| Uplink-Downlink Configuration | Downlink-to-Uplink Switch-point Periodicity | Subframe Number | | | | | | | | | | Calculated Duty Cycle (%) |
|-------------------------------|---|-----------------|---|---|---|---|---|---|---|---|---|---------------------------|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U | 63.33 |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D | 43.33 |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D | 23.33 |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D | 31.67 |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D | 21.67 |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D | 11.67 |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D | 53.33 |

Calculated Duty Cycle = Extended cyclic prefix in uplink $\times (T_s) \times \#$ of S + $\#$ of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ seconds

Note(s):

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3% duty cycle in power class 3.

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

| Wireless technologies | RF Exposure Conditions | Antennaa | DUT-to-User Separation | Test Positions | | | |
|-----------------------|------------------------|--|------------------------|----------------|------------|------------|-----------|
| | | | | Right Touch | Right Tilt | Left Touch | Left Tilt |
| WWAN & WLAN/BT | Head | All WWAN/WLAN/BT Antennas (Main.1/Sub.2-2/Sub.2-3) | 0 mm | Yes | Yes | Yes | Yes |

| Wireless technologies | RF Exposure Conditions | Antennaa | DUT-to-User Separation | Test Positions | | | | | |
|-----------------------|------------------------|--|------------------------|------------------------|-------|-----|------|--------|-------|
| | | | | Rear | Front | Top | Left | Bottom | Right |
| WWAN | Body-worn | Main.1 | 15 mm | Yes | Yes | No | No | No | No |
| | Hotspot | Main.1 | 10 mm | Yes | Yes | No | Yes | Yes | Yes |
| | Product Specific 10-g | Main.1 | 0 mm | Refer to note 2 & 3. | | | | | |
| WLAN/BT | Body-worn | All WLAN/BT Antennas (Sub.2-2/Sub.2-3) | 15 mm | Yes | Yes | No | No | No | No |
| | Hotspot | All WLAN/BT Antennas (Sub.2-2/Sub.2-3) | 10 mm | Yes | Yes | Yes | Yes | No | No |
| | Product Specific 10-g | All WLAN/BT Antennas (Sub.2-2/Sub.2-3) | 0 mm | Refer to note 2 and 4. | | | | | |
| NFC | Product Specific 10-g | NFC Ant. | 0 mm | Yes | Yes | Yes | Yes | No | No |

Notes:

- For Hotspot exposure condition, SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
- For Phablet devices: When hotspot mode applies, Product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
- For Phablet devices: When hotspot mode applies and power reduction applies to hotspot mode, Product specific 10-g SAR is required for each test position that has and adjusted SAR to maximum power that is > 1.2 W/kg.
- For Phablet devices: When hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.
- Per manufacturer guide, NFC SAR was considered about only hand held condition (Product Specific 10-g).
- For Body-worn exposure condition, SAR test is considered for Rear and Front test positions.
- For Head exposure condition, All WWAN/WLAN/BT Antennas are required Head SAR test.

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The Tissue Dielectric parameters (100MHz to 6GHz) should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

For The Tissue Dielectric parameters (9MHz to 19MHz). The parameters must be measured before 24 hours.

1. Tissue Dielectric Parameters (100MHz to 6GHz)

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

| Target Frequency (MHz) | Head | |
|------------------------|--------------|----------------|
| | ϵ_r | σ (S/m) |
| 150 | 52.3 | 0.76 |
| 300 | 45.3 | 0.87 |
| 450 | 43.5 | 0.87 |
| 835 | 41.5 | 0.90 |
| 900 | 41.5 | 0.97 |
| 915 | 41.5 | 0.98 |
| 1450 | 40.5 | 1.20 |
| 1610 | 40.3 | 1.29 |
| 1800 – 2000 | 40.0 | 1.40 |
| 2450 | 39.2 | 1.80 |
| 3000 | 38.5 | 2.40 |
| 5000 | 36.2 | 4.45 |
| 5100 | 36.1 | 4.55 |
| 5200 | 36.0 | 4.66 |
| 5300 | 35.9 | 4.76 |
| 5400 | 35.8 | 4.86 |
| 5500 | 35.6 | 4.96 |
| 5600 | 35.5 | 5.07 |
| 5700 | 35.4 | 5.17 |
| 5800 | 35.3 | 5.27 |
| 6000 | 35.1 | 5.48 |

SAR test were performed in All RF exposure conditions using Head tissue according to TCB workshop note of April. 2019.

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

2. Tissue Dielectric Parameters (9MHz to 19MHz)

| Target Frequency (MHz) | Head | |
|------------------------|--------------|----------------|
| | ϵ_r | σ (S/m) |
| 9 | 55.0 | 0.75 |
| 13 | 55.0 | 0.75 |
| 19 | 55.0 | 0.75 |

IEC_IEEE Std 62209-1528 : 2020

Refer to Table 2 within the IEC_IEEE Std 62209-1528 : 2020.

Dielectric Property Measurements Results:

SAR 2 Room

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 2024-08-12 | Head 750 | e' | 41.2100 | Relative Permittivity (ϵ_r): | 40.58 | 41.96 | -3.29 | 5 |
| | | e" | 21.4000 | Conductivity (σ): | 0.91 | 0.89 | 1.89 | 5 |
| | Head 660 | e' | 41.5400 | Relative Permittivity (ϵ_r): | 40.88 | 42.42 | -3.64 | 5 |
| | | e" | 23.4700 | Conductivity (σ): | 0.88 | 0.89 | -0.58 | 5 |
| | Head 800 | e' | 41.0700 | Relative Permittivity (ϵ_r): | 40.45 | 41.71 | -3.01 | 5 |
| | | e" | 20.4700 | Conductivity (σ): | 0.93 | 0.90 | 3.58 | 5 |
| 2024-08-12 | Head 2600 | e' | 37.8500 | Relative Permittivity (ϵ_r): | 37.62 | 39.01 | -3.57 | 5 |
| | | e" | 13.5600 | Conductivity (σ): | 1.96 | 1.96 | -0.11 | 5 |
| | Head 2495 | e' | 38.0100 | Relative Permittivity (ϵ_r): | 37.78 | 39.14 | -3.48 | 5 |
| | | e" | 13.5000 | Conductivity (σ): | 1.88 | 1.85 | 1.48 | 5 |
| | Head 2700 | e' | 37.6700 | Relative Permittivity (ϵ_r): | 37.44 | 38.88 | -3.72 | 5 |
| | | e" | 13.6500 | Conductivity (σ): | 2.04 | 2.07 | -1.37 | 5 |
| 2024-08-16 | Head 750 | e' | 41.2200 | Relative Permittivity (ϵ_r): | 40.58 | 41.96 | -3.29 | 5 |
| | | e" | 22.3300 | Conductivity (σ): | 0.91 | 0.89 | 1.89 | 5 |
| | Head 660 | e' | 41.4600 | Relative Permittivity (ϵ_r): | 40.88 | 42.42 | -3.64 | 5 |
| | | e" | 24.5800 | Conductivity (σ): | 0.88 | 0.89 | -0.58 | 5 |
| | Head 800 | e' | 41.1000 | Relative Permittivity (ϵ_r): | 40.45 | 41.71 | -3.01 | 5 |
| | | e" | 21.2900 | Conductivity (σ): | 0.93 | 0.90 | 3.58 | 5 |
| 2024-08-20 | Head 2600 | e' | 40.2800 | Relative Permittivity (ϵ_r): | 37.62 | 39.01 | -3.57 | 5 |
| | | e" | 13.1100 | Conductivity (σ): | 1.96 | 1.96 | -0.11 | 5 |
| | Head 2495 | e' | 40.3600 | Relative Permittivity (ϵ_r): | 37.78 | 39.14 | -3.48 | 5 |
| | | e" | 13.1000 | Conductivity (σ): | 1.88 | 1.85 | 1.48 | 5 |
| | Head 2700 | e' | 40.2000 | Relative Permittivity (ϵ_r): | 37.44 | 38.88 | -3.72 | 5 |
| | | e" | 13.2700 | Conductivity (σ): | 2.04 | 2.07 | -1.37 | 5 |

SAR 3 Room

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 2024-08-13 | Head 1750 | e' | 41.0000 | Relative Permittivity (ϵ_r): | 41.00 | 40.08 | 2.28 | 5 |
| | | e" | 14.1300 | Conductivity (σ): | 1.37 | 1.37 | 0.43 | 5 |
| | Head 1710 | e' | 41.1100 | Relative Permittivity (ϵ_r): | 41.11 | 40.15 | 2.40 | 5 |
| | | e" | 14.2200 | Conductivity (σ): | 1.35 | 1.35 | 0.42 | 5 |
| | Head 1780 | e' | 40.9400 | Relative Permittivity (ϵ_r): | 40.94 | 40.04 | 2.25 | 5 |
| | | e" | 14.0500 | Conductivity (σ): | 1.39 | 1.39 | 0.34 | 5 |
| 2024-08-13 | Head 1900 | e' | 40.8600 | Relative Permittivity (ϵ_r): | 40.86 | 40.00 | 2.15 | 5 |
| | | e" | 13.8000 | Conductivity (σ): | 1.46 | 1.40 | 4.14 | 5 |
| | Head 1850 | e' | 40.8800 | Relative Permittivity (ϵ_r): | 40.88 | 40.00 | 2.20 | 5 |
| | | e" | 13.8600 | Conductivity (σ): | 1.43 | 1.40 | 1.84 | 5 |
| | Head 1915 | e' | 40.8500 | Relative Permittivity (ϵ_r): | 40.85 | 40.00 | 2.13 | 5 |
| | | e" | 13.8000 | Conductivity (σ): | 1.47 | 1.40 | 4.96 | 5 |
| 2024-08-19 | Head 1750 | e' | 41.3900 | Relative Permittivity (ϵ_r): | 41.39 | 40.08 | 3.26 | 5 |
| | | e" | 14.0400 | Conductivity (σ): | 1.37 | 1.37 | -0.20 | 5 |
| | Head 1710 | e' | 41.4700 | Relative Permittivity (ϵ_r): | 41.47 | 40.15 | 3.30 | 5 |
| | | e" | 14.1100 | Conductivity (σ): | 1.34 | 1.35 | -0.36 | 5 |
| | Head 1780 | e' | 41.3100 | Relative Permittivity (ϵ_r): | 41.31 | 40.04 | 3.18 | 5 |
| | | e" | 13.9700 | Conductivity (σ): | 1.38 | 1.39 | -0.23 | 5 |
| 2024-08-19 | Head 1900 | e' | 41.1900 | Relative Permittivity (ϵ_r): | 41.19 | 40.00 | 2.97 | 5 |
| | | e" | 13.6700 | Conductivity (σ): | 1.44 | 1.40 | 3.16 | 5 |
| | Head 1850 | e' | 41.2200 | Relative Permittivity (ϵ_r): | 41.22 | 40.00 | 3.05 | 5 |
| | | e" | 13.7700 | Conductivity (σ): | 1.42 | 1.40 | 1.18 | 5 |
| | Head 1915 | e' | 41.1800 | Relative Permittivity (ϵ_r): | 41.18 | 40.00 | 2.95 | 5 |
| | | e" | 13.6500 | Conductivity (σ): | 1.45 | 1.40 | 3.82 | 5 |

SAR 4 Room

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 2024-08-21 | Head 835 | e' | 42.7400 | Relative Permittivity (ϵ_r): | 42.74 | 41.50 | 2.99 | 5 |
| | | e" | 19.9900 | Conductivity (σ): | 0.93 | 0.90 | 3.12 | 5 |
| | Head 810 | e' | 42.8300 | Relative Permittivity (ϵ_r): | 42.83 | 41.65 | 2.82 | 5 |
| | | e" | 20.4300 | Conductivity (σ): | 0.92 | 0.90 | 2.50 | 5 |
| | Head 850 | e' | 42.7000 | Relative Permittivity (ϵ_r): | 42.70 | 41.50 | 2.89 | 5 |
| | | e" | 19.7500 | Conductivity (σ): | 0.93 | 0.92 | 2.02 | 5 |
| 2024-08-26 | Head 2450 | e' | 39.8900 | Relative Permittivity (ϵ_r): | 39.89 | 39.20 | 1.76 | 5 |
| | | e" | 13.3900 | Conductivity (σ): | 1.82 | 1.80 | 1.34 | 5 |
| | Head 2400 | e' | 40.0200 | Relative Permittivity (ϵ_r): | 40.02 | 39.30 | 1.84 | 5 |
| | | e" | 13.3200 | Conductivity (σ): | 1.78 | 1.75 | 1.48 | 5 |
| | Head 2500 | e' | 39.8100 | Relative Permittivity (ϵ_r): | 39.81 | 39.14 | 1.72 | 5 |
| | | e" | 13.3100 | Conductivity (σ): | 1.85 | 1.85 | -0.21 | 5 |

SAR 5 Room

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 2024-08-26 | Head 5180 | e' | 36.6600 | Relative Permittivity (ϵ_r): | 36.66 | 36.01 | 1.80 | 5 |
| | | e" | 15.5800 | Conductivity (σ): | 4.49 | 4.63 | -3.09 | 5 |
| | Head 5200 | e' | 36.6100 | Relative Permittivity (ϵ_r): | 36.61 | 35.99 | 1.72 | 5 |
| | | e" | 15.6300 | Conductivity (σ): | 4.52 | 4.65 | -2.83 | 5 |
| | Head 5600 | e' | 35.9200 | Relative Permittivity (ϵ_r): | 35.92 | 35.53 | 1.09 | 5 |
| | | e" | 15.6900 | Conductivity (σ): | 4.89 | 5.06 | -3.45 | 5 |
| | Head 5800 | e' | 35.6500 | Relative Permittivity (ϵ_r): | 35.65 | 35.30 | 0.99 | 5 |
| | | e" | 15.7400 | Conductivity (σ): | 5.08 | 5.27 | -3.68 | 5 |
| | Head 5825 | e' | 35.6300 | Relative Permittivity (ϵ_r): | 35.63 | 35.30 | 0.93 | 5 |
| | | e" | 15.7800 | Conductivity (σ): | 5.11 | 5.27 | -3.02 | 5 |
| 2024-08-30 | Head 5180 | e' | 36.6300 | Relative Permittivity (ϵ_r): | 36.63 | 36.01 | 1.71 | 5 |
| | | e" | 15.3400 | Conductivity (σ): | 4.42 | 4.63 | -4.58 | 5 |
| | Head 5200 | e' | 36.5800 | Relative Permittivity (ϵ_r): | 36.58 | 35.99 | 1.64 | 5 |
| | | e" | 15.3800 | Conductivity (σ): | 4.45 | 4.65 | -4.39 | 5 |
| | Head 5600 | e' | 35.9100 | Relative Permittivity (ϵ_r): | 35.91 | 35.53 | 1.06 | 5 |
| | | e" | 15.7100 | Conductivity (σ): | 4.89 | 5.06 | -3.33 | 5 |
| | Head 5800 | e' | 35.5100 | Relative Permittivity (ϵ_r): | 35.51 | 35.30 | 0.59 | 5 |
| | | e" | 15.7700 | Conductivity (σ): | 5.09 | 5.27 | -3.50 | 5 |
| | Head 5825 | e' | 35.4900 | Relative Permittivity (ϵ_r): | 35.49 | 35.30 | 0.54 | 5 |
| | | e" | 15.8200 | Conductivity (σ): | 5.12 | 5.27 | -2.77 | 5 |
| 2024-09-02 | Head 5180 | e' | 37.6000 | Relative Permittivity (ϵ_r): | 37.60 | 36.01 | 4.41 | 5 |
| | | e" | 15.7500 | Conductivity (σ): | 4.54 | 4.63 | -2.03 | 5 |
| | Head 5200 | e' | 37.5300 | Relative Permittivity (ϵ_r): | 37.53 | 35.99 | 4.28 | 5 |
| | | e" | 15.7900 | Conductivity (σ): | 4.57 | 4.65 | -1.84 | 5 |
| | Head 5600 | e' | 36.6800 | Relative Permittivity (ϵ_r): | 36.68 | 35.53 | 3.23 | 5 |
| | | e" | 16.0100 | Conductivity (σ): | 4.99 | 5.06 | -1.48 | 5 |
| | Head 5800 | e' | 36.4100 | Relative Permittivity (ϵ_r): | 36.41 | 35.30 | 3.14 | 5 |
| | | e" | 16.0000 | Conductivity (σ): | 5.16 | 5.27 | -2.09 | 5 |
| | Head 5825 | e' | 36.3700 | Relative Permittivity (ϵ_r): | 36.37 | 35.30 | 3.03 | 5 |
| | | e" | 16.0500 | Conductivity (σ): | 5.20 | 5.27 | -1.36 | 5 |

SAR 7 Room

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|-----------|---|--------|-----------|------------|---|
| 2024-08-19 | Head 2600 | e' | 38.4700 | Relative Permittivity (ϵ_r): | 38.47 | 39.01 | -1.39 | 5 |
| | | e" | 13.2800 | Conductivity (σ): | 1.92 | 1.96 | -2.16 | 5 |
| | Head 2495 | e' | 38.6600 | Relative Permittivity (ϵ_r): | 38.66 | 39.14 | -1.23 | 5 |
| | | e" | 13.0900 | Conductivity (σ): | 1.82 | 1.85 | -1.77 | 5 |
| | Head 2700 | e' | 38.2300 | Relative Permittivity (ϵ_r): | 38.23 | 38.88 | -1.68 | 5 |
| | | e" | 13.4200 | Conductivity (σ): | 2.01 | 2.07 | -2.68 | 5 |
| 2024-08-21 | Head 835 | e' | 41.8300 | Relative Permittivity (ϵ_r): | 41.83 | 41.50 | 0.80 | 5 |
| | | e" | 19.2400 | Conductivity (σ): | 0.89 | 0.90 | -0.75 | 5 |
| | Head 810 | e' | 41.8900 | Relative Permittivity (ϵ_r): | 41.89 | 41.65 | 0.57 | 5 |
| | | e" | 19.6700 | Conductivity (σ): | 0.89 | 0.90 | -1.31 | 5 |
| | Head 850 | e' | 41.7800 | Relative Permittivity (ϵ_r): | 41.78 | 41.50 | 0.67 | 5 |
| | | e" | 19.0000 | Conductivity (σ): | 0.90 | 0.92 | -1.86 | 5 |
| 2024-09-02 | Head 13 | e' | 55.7500 | Relative Permittivity (ϵ_r): | 55.75 | 55.00 | 1.36 | 5 |
| | | e" | 992.1800 | Conductivity (σ): | 0.72 | 0.75 | -4.37 | 5 |
| | Head 12 | e' | 55.7400 | Relative Permittivity (ϵ_r): | 55.74 | 55.00 | 1.35 | 5 |
| | | e" | 1075.5500 | Conductivity (σ): | 0.72 | 0.75 | -4.31 | 5 |
| | Head 14 | e' | 55.7600 | Relative Permittivity (ϵ_r): | 55.76 | 55.00 | 1.38 | 5 |
| | | e" | 921.2900 | Conductivity (σ): | 0.72 | 0.75 | -4.38 | 5 |

SAR 8 Room

| Date | Freq. (MHz) | | Liquid Parameters | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|----|-------------------|--|--------|-----------|------------|---|
| 2024-08-20 | Head 750 | e' | 42.4100 | Relative Permittivity (ε _r): | 42.41 | 41.96 | 1.07 | 5 |
| | | e" | 21.0300 | Conductivity (σ): | 0.88 | 0.89 | -1.80 | 5 |
| | Head 660 | e' | 42.5900 | Relative Permittivity (ε _r): | 42.59 | 42.42 | 0.39 | 5 |
| | | e" | 23.0600 | Conductivity (σ): | 0.85 | 0.89 | -4.50 | 5 |
| | Head 800 | e' | 42.2700 | Relative Permittivity (ε _r): | 42.27 | 41.71 | 1.35 | 5 |
| | | e" | 20.1200 | Conductivity (σ): | 0.89 | 0.90 | -0.22 | 5 |
| 2024-08-27 | Head 750 | e' | 43.8700 | Relative Permittivity (ε _r): | 43.87 | 41.96 | 4.55 | 5 |
| | | e" | 21.7300 | Conductivity (σ): | 0.91 | 0.89 | 1.47 | 5 |
| | Head 660 | e' | 44.2400 | Relative Permittivity (ε _r): | 44.24 | 42.42 | 4.28 | 5 |
| | | e" | 23.9000 | Conductivity (σ): | 0.88 | 0.89 | -1.02 | 5 |
| | Head 800 | e' | 43.5500 | Relative Permittivity (ε _r): | 43.55 | 41.71 | 4.42 | 5 |
| | | e" | 20.7100 | Conductivity (σ): | 0.92 | 0.90 | 2.71 | 5 |
| 2024-08-27 | Head 5200 | e' | 36.4400 | Relative Permittivity (ε _r): | 36.44 | 35.99 | 1.25 | 5 |
| | | e" | 15.6400 | Conductivity (σ): | 4.52 | 4.65 | -2.77 | 5 |
| | Head 5250 | e' | 36.3600 | Relative Permittivity (ε _r): | 36.36 | 35.93 | 1.19 | 5 |
| | | e" | 15.6800 | Conductivity (σ): | 4.58 | 4.70 | -2.66 | 5 |
| | Head 5600 | e' | 35.7400 | Relative Permittivity (ε _r): | 35.74 | 35.53 | 0.58 | 5 |
| | | e" | 15.9800 | Conductivity (σ): | 4.98 | 5.06 | -1.67 | 5 |
| | Head 5800 | e' | 35.4000 | Relative Permittivity (ε _r): | 35.40 | 35.30 | 0.28 | 5 |
| | | e" | 16.1400 | Conductivity (σ): | 5.21 | 5.27 | -1.23 | 5 |
| | Head 5925 | e' | 35.2000 | Relative Permittivity (ε _r): | 35.20 | 35.20 | 0.00 | 5 |
| | | e" | 16.2300 | Conductivity (σ): | 5.35 | 5.40 | -0.98 | 5 |
| 2024-09-05 | Head 5200 | e' | 36.1287 | Relative Permittivity (ε _r): | 36.13 | 35.99 | 0.38 | 5 |
| | | e" | 15.6984 | Conductivity (σ): | 4.54 | 4.65 | -2.41 | 5 |
| | Head 5250 | e' | 36.0129 | Relative Permittivity (ε _r): | 36.01 | 35.93 | 0.22 | 5 |
| | | e" | 15.7333 | Conductivity (σ): | 4.59 | 4.70 | -2.33 | 5 |
| | Head 5600 | e' | 35.3214 | Relative Permittivity (ε _r): | 35.32 | 35.53 | -0.60 | 5 |
| | | e" | 16.0191 | Conductivity (σ): | 4.99 | 5.06 | -1.43 | 5 |
| | Head 5800 | e' | 34.9604 | Relative Permittivity (ε _r): | 34.96 | 35.30 | -0.96 | 5 |
| | | e" | 16.2074 | Conductivity (σ): | 5.23 | 5.27 | -0.82 | 5 |
| | Head 5925 | e' | 34.7153 | Relative Permittivity (ε _r): | 34.72 | 35.20 | -1.38 | 5 |
| | | e" | 16.3005 | Conductivity (σ): | 5.37 | 5.40 | -0.55 | 5 |
| 2024-09-10 | Head 5200 | e' | 35.5100 | Relative Permittivity (ε _r): | 35.51 | 35.99 | -1.33 | 5 |
| | | e" | 16.0500 | Conductivity (σ): | 4.64 | 4.65 | -0.22 | 5 |
| | Head 5250 | e' | 35.3300 | Relative Permittivity (ε _r): | 35.33 | 35.93 | -1.68 | 5 |
| | | e" | 16.2500 | Conductivity (σ): | 4.74 | 4.70 | 0.88 | 5 |
| | Head 5600 | e' | 34.8500 | Relative Permittivity (ε _r): | 34.85 | 35.53 | -1.92 | 5 |
| | | e" | 16.3900 | Conductivity (σ): | 5.10 | 5.06 | 0.85 | 5 |
| | Head 5800 | e' | 34.4000 | Relative Permittivity (ε _r): | 34.40 | 35.30 | -2.55 | 5 |
| | | e" | 16.6200 | Conductivity (σ): | 5.36 | 5.27 | 1.71 | 5 |
| | Head 5925 | e' | 34.1100 | Relative Permittivity (ε _r): | 34.11 | 35.20 | -3.10 | 5 |
| | | e" | 16.3600 | Conductivity (σ): | 5.39 | 5.40 | -0.19 | 5 |
| 2024-09-12 | Head 5200 | e' | 36.1900 | Relative Permittivity (ε _r): | 36.19 | 35.99 | 0.56 | 5 |
| | | e" | 15.8700 | Conductivity (σ): | 4.59 | 4.65 | -1.34 | 5 |
| | Head 5250 | e' | 35.9600 | Relative Permittivity (ε _r): | 35.96 | 35.93 | 0.07 | 5 |
| | | e" | 15.9600 | Conductivity (σ): | 4.66 | 4.70 | -0.92 | 5 |
| | Head 5600 | e' | 35.5300 | Relative Permittivity (ε _r): | 35.53 | 35.53 | -0.01 | 5 |
| | | e" | 16.1400 | Conductivity (σ): | 5.03 | 5.06 | -0.68 | 5 |
| | Head 5800 | e' | 35.1900 | Relative Permittivity (ε _r): | 35.19 | 35.30 | -0.31 | 5 |
| | | e" | 16.3700 | Conductivity (σ): | 5.28 | 5.27 | 0.18 | 5 |
| | Head 5925 | e' | 34.8500 | Relative Permittivity (ε _r): | 34.85 | 35.20 | -0.99 | 5 |
| | | e" | 16.1000 | Conductivity (σ): | 5.30 | 5.40 | -1.78 | 5 |
| 2024-09-19 | Head 1900 | e' | 39.6700 | Relative Permittivity (ε _r): | 39.67 | 40.00 | -0.82 | 5 |
| | | e" | 13.6200 | Conductivity (σ): | 1.44 | 1.40 | 2.78 | 5 |
| | Head 1850 | e' | 39.6400 | Relative Permittivity (ε _r): | 39.64 | 40.00 | -0.90 | 5 |
| | | e" | 13.6900 | Conductivity (σ): | 1.41 | 1.40 | 0.59 | 5 |
| | Head 1915 | e' | 39.6700 | Relative Permittivity (ε _r): | 39.67 | 40.00 | -0.82 | 5 |
| | | e" | 13.6200 | Conductivity (σ): | 1.45 | 1.40 | 3.59 | 5 |

SAR 9 Room

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 2024-08-20 | Head 1750 | e' | 39.4500 | Relative Permittivity (ϵ_r): | 39.45 | 40.08 | -1.58 | 5 |
| | | e" | 13.5000 | Conductivity (σ): | 1.31 | 1.37 | -4.04 | 5 |
| | Head 1695 | e' | 39.5500 | Relative Permittivity (ϵ_r): | 39.55 | 40.17 | -1.54 | 5 |
| | | e" | 13.6600 | Conductivity (σ): | 1.29 | 1.34 | -3.78 | 5 |
| | Head 1780 | e' | 39.4100 | Relative Permittivity (ϵ_r): | 39.41 | 40.04 | -1.57 | 5 |
| | | e" | 13.4100 | Conductivity (σ): | 1.33 | 1.39 | -4.23 | 5 |
| 2024-08-20 | Head 1900 | e' | 39.3800 | Relative Permittivity (ϵ_r): | 39.38 | 40.00 | -1.55 | 5 |
| | | e" | 13.1200 | Conductivity (σ): | 1.39 | 1.40 | -0.99 | 5 |
| | Head 1850 | e' | 39.3600 | Relative Permittivity (ϵ_r): | 39.36 | 40.00 | -1.60 | 5 |
| | | e" | 13.2000 | Conductivity (σ): | 1.36 | 1.40 | -3.01 | 5 |
| | Head 1915 | e' | 39.3800 | Relative Permittivity (ϵ_r): | 39.38 | 40.00 | -1.55 | 5 |
| | | e" | 13.1100 | Conductivity (σ): | 1.40 | 1.40 | -0.29 | 5 |

8.2. System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification of 100MHz to 6GHz frequency range should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements. For The System verification of 9MHz to 19MHz frequency range, The System verification must be performed before 24 hours.

System Performance Check Measurement Conditions (100MHz to 6GHz):

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 2.5 mm.
For 5 GHz band - Distance between probe sensors and phantom surface was set to 1.4 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

System Performance Check Measurement Conditions (13MHz):

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements
- The DASY system with an E-Field Probe was used for the measurements.
- The CLA(Confined Loop Antennas) was mounted on the small tripod so that the CLA feed point was positioned below the center marking of the flat phantom section and the CLA was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 0 mm separation distance from CLA center to the Phantom surface.
- The CLA input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

Reference Target SAR Values

The reference SAR values can be obtained from the calibration certificate of system validation dipoles.

| System Dipole | Serial No. | Cal. Date | Cal. Due Date | Target SAR Values (W/kg) | |
|------------------------|------------|------------|---------------|--------------------------|-------|
| | | | | 1g/10g | Head |
| D750V3 | 1122 | 2024-02-22 | 2025-02-22 | 1g | 8.58 |
| | | | | 10g | 5.62 |
| D750V3 | 1205 | 2023-04-18 | 2025-04-18 | 1g | 8.55 |
| | | | | 10g | 5.59 |
| D835V2 | 4d174 | 2022-09-21 | 2024-09-21 | 1g | 9.63 |
| | | | | 10g | 6.29 |
| D835V2 | 4d194 | 2024-03-11 | 2025-03-11 | 1g | 9.86 |
| | | | | 10g | 6.45 |
| D1750V2 | 1125 | 2022-11-30 | 2024-11-30 | 1g | 37.40 |
| | | | | 10g | 19.70 |
| D1900V2 | 5d190 | 2022-11-16 | 2024-11-16 | 1g | 39.7 |
| | | | | 10g | 20.7 |
| D2450V2 | 960 | 2024-03-14 | 2025-03-14 | 1g | 51.90 |
| | | | | 10g | 24.00 |
| D2600V2 | 1097 | 2023-09-26 | 2024-09-26 | 1g | 57.3 |
| | | | | 10g | 25.7 |
| D2600V2 | 1178 | 2023-04-25 | 2025-04-25 | 1g | 57.40 |
| | | | | 10g | 25.70 |
| D5GHz V2 (5250 MHz) | 1325 | 2023-04-21 | 2025-04-21 | 1g | 79.6 |
| | | | | 10g | 22.7 |
| D5GHz V2 (5600 MHz) | 1325 | 2023-04-21 | 2025-04-21 | 1g | 83.9 |
| | | | | 10g | 23.8 |
| D5GHz V2 (5600 MHz) | 1209 | 2023-02-28 | 2025-02-28 | 1g | 83.1 |
| | | | | 10g | 23.6 |
| D5GHz V2 (5750 MHz) | 1209 | 2023-02-28 | 2025-02-28 | 1g | 78.9 |
| | | | | 10g | 22.2 |
| D5GHz V2 (5800 MHz) | 1209 | 2023-02-28 | 2025-02-28 | 1g | 81.2 |
| | | | | 10g | 22.9 |
| CLA-13 | 1015 | 2024-08-22 | 2025-08-22 | 10g | 0.33 |

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. For CLA, Calibration interval applied every year.
3. Refer to Appendix F that mentioned about justification

System Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

SAR 2 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|---------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|---|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-12 | D750V3 | 1122 | Head | 1g | 0.85 | 8.5 | 8.58 | -0.58 | |
| | | | | 10g | 0.57 | 5.7 | 5.62 | 0.53 | |
| 2024-08-12 | D2600V2 | 1097 | Head | 1g | 5.27 | 52.7 | 57.30 | -8.03 | 1 |
| | | | | 10g | 2.37 | 23.7 | 25.70 | -7.78 | |
| 2024-08-16 | D750V3 | 1122 | Head | 1g | 0.85 | 8.5 | 8.58 | -1.17 | 2 |
| | | | | 10g | 0.56 | 5.6 | 5.62 | -1.07 | |
| 2024-08-20 | D2600V2 | 1097 | Head | 1g | 5.52 | 55.2 | 57.30 | -3.66 | |
| | | | | 10g | 2.49 | 24.9 | 25.70 | -3.11 | |

SAR 3 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|---------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|---|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-13 | D1750V2 | 1125 | Head | 1g | 3.55 | 35.5 | 37.40 | -5.08 | |
| | | | | 10g | 1.89 | 18.9 | 19.70 | -4.06 | |
| 2024-08-13 | D1900V2 | 5d190 | Head | 1g | 4.07 | 40.7 | 39.70 | 2.52 | |
| | | | | 10g | 2.12 | 21.2 | 20.70 | 2.42 | |
| 2024-08-19 | D1750V2 | 1125 | Head | 1g | 3.53 | 35.3 | 37.40 | -5.61 | 3 |
| | | | | 10g | 1.90 | 19.0 | 19.70 | -3.55 | |
| 2024-08-19 | D1900V2 | 5d190 | Head | 1g | 4.20 | 42.0 | 39.70 | 5.79 | 4 |
| | | | | 10g | 2.22 | 22.2 | 20.70 | 7.25 | |

SAR 4 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|---------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|---|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-21 | D835V2 | 4d194 | Head | 1g | 1.04 | 10.4 | 9.86 | 5.48 | 5 |
| | | | | 10g | 0.69 | 6.9 | 6.45 | 7.29 | |
| 2024-08-26 | D2450V2 | 960 | Head | 1g | 5.14 | 51.4 | 51.90 | -0.96 | 6 |
| | | | | 10g | 2.46 | 24.6 | 24.00 | 2.50 | |

SAR 5 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|----------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|---|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-26 | D5GHzV2 (5250) | 1325 | Head | 1g | 7.89 | 78.9 | 79.60 | -0.88 | |
| | | | | 10g | 2.23 | 22.3 | 22.70 | -1.76 | |
| 2024-08-26 | D5GHzV2 (5600) | 1325 | Head | 1g | 8.24 | 82.4 | 83.90 | -1.79 | 7 |
| | | | | 10g | 2.32 | 23.2 | 23.80 | -2.52 | |
| 2024-08-30 | D5GHzV2 (5600) | 1325 | Head | 1g | 8.41 | 84.1 | 83.90 | 0.24 | |
| | | | | 10g | 2.37 | 23.7 | 23.80 | -0.42 | |
| 2024-09-02 | D5GHzV2 (5250) | 1325 | Head | 1g | 8.00 | 80.0 | 79.60 | 0.50 | |
| | | | | 10g | 2.17 | 21.7 | 22.70 | -4.41 | |

SAR 7 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|---------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|----|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-19 | D2600V2 | 1178 | Head | 1g | 5.77 | 57.7 | 57.40 | 0.52 | 8 |
| | | | | 10g | 2.68 | 26.8 | 25.70 | 4.28 | |
| 2024-08-21 | D835V2 | 4d174 | Head | 1g | 0.94 | 9.4 | 9.63 | -2.80 | 9 |
| | | | | 10g | 0.64 | 6.4 | 6.29 | 1.27 | |
| 2024-09-02 | CLA-13 | 1015 | Head | 1g | 0.06 | 0.6 | 0.537 | 2.42 | 10 |
| | | | | 10g | 0.03 | 0.3 | 0.333 | 2.10 | |

SAR 8 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|----------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|----|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-20 | D750V3 | 1205 | Head | 1g | 0.81 | 8.1 | 8.55 | -5.85 | 11 |
| | | | | 10g | 0.54 | 5.4 | 5.59 | -3.04 | |
| 2024-08-27 | D5GHzV2 (5600) | 1209 | Head | 1g | 8.67 | 86.7 | 83.10 | 4.33 | |
| | | | | 10g | 2.49 | 24.9 | 23.60 | 5.51 | |
| 2024-08-27 | D5GHzV2 (5750) | 1209 | Head | 1g | 8.23 | 82.3 | 78.90 | 4.31 | |
| | | | | 10g | 2.36 | 23.6 | 22.20 | 6.31 | |
| 2024-08-27 | D5GHzV2 (5800) | 1209 | Head | 1g | 8.17 | 81.7 | 81.20 | 0.62 | |
| | | | | 10g | 2.33 | 23.3 | 22.90 | 1.75 | |
| 2024-08-27 | D750V3 | 1205 | Head | 1g | 0.88 | 8.8 | 8.55 | 2.92 | |
| | | | | 10g | 0.58 | 5.8 | 5.59 | 4.29 | |
| 2024-09-05 | D5GHzV2 (5750) | 1209 | Head | 1g | 7.52 | 75.2 | 78.90 | -4.69 | 12 |
| | | | | 10g | 2.22 | 22.2 | 22.20 | 0.00 | |
| 2024-09-05 | D5GHzV2 (5800) | 1209 | Head | 1g | 8.14 | 81.4 | 81.20 | 0.25 | |
| | | | | 10g | 2.39 | 23.9 | 22.90 | 4.37 | |
| 2024-09-10 | D5GHzV2 (5750) | 1209 | Head | 1g | 7.74 | 77.4 | 78.90 | -1.90 | |
| | | | | 10g | 2.28 | 22.8 | 22.20 | 2.70 | |
| 2024-09-10 | D5GHzV2 (5800) | 1209 | Head | 1g | 7.88 | 78.8 | 81.20 | -2.96 | |
| | | | | 10g | 2.31 | 23.1 | 22.90 | 0.87 | |
| 2024-09-12 | D5GHzV2 (5250) | 1209 | Head | 1g | 7.93 | 79.3 | 80.40 | -1.37 | |
| | | | | 10g | 2.34 | 23.4 | 22.90 | 2.18 | |
| 2024-09-19 | D1900V2 | 5d190 | Head | 1g | 3.82 | 38.2 | 39.70 | -3.78 | 13 |
| | | | | 10g | 2.02 | 20.2 | 20.70 | -2.42 | |

SAR 9 Room

| Date Tested | System Dipole | | T.S. Liquid | Measured Results | | Target (Ref. Value) | Delta ±10 % | Plot No. | |
|-------------|---------------|----------|-------------|---------------------|------------------|---------------------|-------------|----------|----|
| | Type | Serial # | | Zoom Scan to 100 mW | Normalize to 1 W | | | | |
| 2024-08-20 | D1750V2 | 1125 | Head | 1g | 3.47 | 34.7 | 37.40 | -7.22 | 14 |
| | | | | 10g | 1.85 | 18.5 | 19.70 | -6.09 | |
| 2024-08-20 | D1900V2 | 5d190 | Head | 1g | 3.80 | 38.0 | 39.40 | -3.55 | 15 |
| | | | | 10g | 1.98 | 19.8 | 20.50 | -3.41 | |

9. Conducted Output Power Measurements

9.1. GSM

Per KDB 941225 D01 3G SAR Procedures:

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data 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.

GSM850 Measured Results

| Mode | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Maximum Average Power (dBm) | | | | Reduced Average Power (dBm) Hotspot back-off | | | |
|--------------|---------------|------------|--------|-------------|-----------------------------|-----------|---------------|-----------|--|-----------|---------------|-----------|
| | | | | | Measured | | Tune-up Limit | | Measured | | Tune-up Limit | |
| | | | | | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr |
| GSM (Voice) | CS1 | 1 | 128 | 824.2 | 32.44 | 23.25 | 34.0 | 24.8 | 32.42 | 23.23 | 34.0 | 24.8 |
| | | | 190 | 836.6 | 32.40 | 23.21 | | | 32.46 | 23.27 | | |
| | | | 251 | 848.8 | 32.32 | 23.13 | | | 32.29 | 23.10 | | |
| GPRS (GMSK) | CS1 | 1 | 128 | 824.2 | 32.44 | 23.25 | 34.0 | 24.8 | 31.79 | 22.60 | 33.0 | 23.8 |
| | | | 190 | 836.6 | 32.37 | 23.18 | | | 31.70 | 22.51 | | |
| | | | 251 | 848.8 | 32.29 | 23.10 | | | 31.64 | 22.45 | | |
| | | 2 | 128 | 824.2 | 31.37 | 25.19 | 32.5 | 26.3 | 30.03 | 23.85 | 31.5 | 25.3 |
| | | | 190 | 836.6 | 31.30 | 25.12 | | | 29.96 | 23.78 | | |
| | | | 251 | 848.8 | 31.21 | 25.03 | | | 29.90 | 23.72 | | |
| | | 3 | 128 | 824.2 | 29.22 | 24.80 | 30.5 | 26.1 | 27.83 | 23.41 | 29.5 | 25.1 |
| | | | 190 | 836.6 | 29.13 | 24.71 | | | 27.76 | 23.34 | | |
| | | | 251 | 848.8 | 29.06 | 24.64 | | | 27.73 | 23.31 | | |
| | | 4 | 128 | 824.2 | 27.97 | 24.80 | 29.5 | 26.3 | 26.62 | 23.45 | 28.5 | 25.3 |
| | | | 190 | 836.6 | 27.91 | 24.74 | | | 26.54 | 23.37 | | |
| | | | 251 | 848.8 | 27.85 | 24.68 | | | 26.53 | 23.36 | | |
| EGPRS (8PSK) | MCS5 | 1 | 128 | 824.2 | 26.69 | 17.50 | 28.0 | 18.8 | 25.83 | 16.64 | 27.0 | 17.8 |
| | | | 190 | 836.6 | 26.69 | 17.50 | | | 25.82 | 16.63 | | |
| | | | 251 | 848.8 | 26.65 | 17.46 | | | 25.77 | 16.58 | | |
| | | 2 | 128 | 824.2 | 25.50 | 19.32 | 26.5 | 20.3 | 24.15 | 17.97 | 25.5 | 19.3 |
| | | | 190 | 836.6 | 25.50 | 19.32 | | | 24.17 | 17.99 | | |
| | | | 251 | 848.8 | 25.46 | 19.28 | | | 24.11 | 17.93 | | |
| | | 3 | 128 | 824.2 | 23.29 | 18.87 | 24.5 | 20.1 | 21.90 | 17.48 | 23.5 | 19.1 |
| | | | 190 | 836.6 | 23.29 | 18.87 | | | 21.91 | 17.49 | | |
| | | | 251 | 848.8 | 23.25 | 18.83 | | | 21.85 | 17.43 | | |
| | | 4 | 128 | 824.2 | 22.01 | 18.84 | 23.5 | 20.3 | 20.60 | 17.43 | 22.5 | 19.3 |
| | | | 190 | 836.6 | 22.02 | 18.85 | | | 20.61 | 17.44 | | |
| | | | 251 | 848.8 | 21.99 | 18.82 | | | 20.58 | 17.41 | | |

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 4 time slots for Maximum power based on the Tune-up Procedure. Refer to §6.3.
- GMSK (GPRS) mode with 4 time slots for Reduced power(Hotspot back-off), based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

GSM850 Measured Results(Continued)

| Mode | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Reduced Average Power (dBm) Proximity sensor back-off | | | |
|--------------|---------------|------------|--------|-------------|--|-----------|---------------|-----------|
| | | | | | Measured | | Tune-up Limit | |
| | | | | | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr |
| GSM (Voice) | CS1 | 1 | 128 | 824.2 | 32.47 | 23.28 | 34.0 | 24.8 |
| | | | 190 | 836.6 | 32.41 | 23.22 | | |
| | | | 251 | 848.8 | 32.39 | 23.20 | | |
| GPRS (GMSK) | CS1 | 1 | 128 | 824.2 | 31.55 | 22.36 | 33.0 | 23.8 |
| | | | 190 | 836.6 | 31.48 | 22.29 | | |
| | | | 251 | 848.8 | 31.43 | 22.24 | | |
| | | 2 | 128 | 824.2 | 29.84 | 23.66 | 31.5 | 25.3 |
| | | | 190 | 836.6 | 29.77 | 23.59 | | |
| | | | 251 | 848.8 | 29.74 | 23.56 | | |
| | | 3 | 128 | 824.2 | 27.69 | 23.27 | 29.5 | 25.1 |
| | | | 190 | 836.6 | 27.64 | 23.22 | | |
| | | | 251 | 848.8 | 27.63 | 23.21 | | |
| | | 4 | 128 | 824.2 | 26.55 | 23.38 | 28.5 | 25.3 |
| | | | 190 | 836.6 | 26.51 | 23.34 | | |
| | | | 251 | 848.8 | 26.51 | 23.34 | | |
| EGPRS (8PSK) | MCS5 | 1 | 128 | 824.2 | 25.64 | 16.45 | 27.0 | 17.8 |
| | | | 190 | 836.6 | 25.66 | 16.47 | | |
| | | | 251 | 848.8 | 25.61 | 16.42 | | |
| | | 2 | 128 | 824.2 | 24.03 | 17.85 | 25.5 | 19.3 |
| | | | 190 | 836.6 | 24.05 | 17.87 | | |
| | | | 251 | 848.8 | 23.99 | 17.81 | | |
| | | 3 | 128 | 824.2 | 21.82 | 17.40 | 23.5 | 19.1 |
| | | | 190 | 836.6 | 21.83 | 17.41 | | |
| | | | 251 | 848.8 | 21.80 | 17.38 | | |
| | | 4 | 128 | 824.2 | 20.57 | 17.40 | 22.5 | 19.3 |
| | | | 190 | 836.6 | 20.61 | 17.44 | | |
| | | | 251 | 848.8 | 20.59 | 17.42 | | |

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 4 time slots for Reduced power(Proximity sensor back-off), based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

GSM1900 Measured Results

| Mode | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Maximum Average Power (dBm) | | | |
|--------------|---------------|------------|--------|-------------|-----------------------------|-----------|---------------|-----------|
| | | | | | Measured | | Tune-up Limit | |
| | | | | | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr |
| GSM (Voice) | CS1 | 1 | 512 | 1850.2 | 30.45 | 21.26 | 31.5 | 22.3 |
| | | | 661 | 1880.0 | 30.17 | 20.98 | | |
| | | | 810 | 1909.8 | 29.77 | 20.58 | | |
| GPRS (GMSK) | CS1 | 1 | 512 | 1850.2 | 30.46 | 21.27 | 31.5 | 22.3 |
| | | | 661 | 1880.0 | 30.12 | 20.93 | | |
| | | | 810 | 1909.8 | 29.71 | 20.52 | | |
| | | 2 | 512 | 1850.2 | 29.32 | 23.14 | 30.0 | 23.8 |
| | | | 661 | 1880.0 | 28.94 | 22.76 | | |
| | | | 810 | 1909.8 | 28.46 | 22.28 | | |
| | 3 | 512 | 1850.2 | 26.99 | 22.57 | 27.5 | 23.1 | |
| | | 661 | 1880.0 | 26.55 | 22.13 | | | |
| | | 810 | 1909.8 | 26.09 | 21.67 | | | |
| | 4 | 512 | 1850.2 | 25.81 | 22.64 | 26.0 | 22.8 | |
| | | 661 | 1880.0 | 25.36 | 22.19 | | | |
| | | 810 | 1909.8 | 24.85 | 21.68 | | | |
| EGPRS (8PSK) | MCS5 | 1 | 512 | 1850.2 | 25.81 | 16.62 | 27.0 | 17.8 |
| | | | 661 | 1880.0 | 25.77 | 16.58 | | |
| | | | 810 | 1909.8 | 25.49 | 16.30 | | |
| | | 2 | 512 | 1850.2 | 24.62 | 18.44 | 25.5 | 19.3 |
| | | | 661 | 1880.0 | 24.59 | 18.41 | | |
| | | | 810 | 1909.8 | 24.35 | 18.17 | | |
| | 3 | 512 | 1850.2 | 22.38 | 17.96 | 23.5 | 19.1 | |
| | | 661 | 1880.0 | 22.45 | 18.03 | | | |
| | | 810 | 1909.8 | 22.23 | 17.81 | | | |
| | 4 | 512 | 1850.2 | 21.17 | 18.00 | 22.5 | 19.3 | |
| | | 661 | 1880.0 | 21.09 | 17.92 | | | |
| | | 810 | 1909.8 | 20.88 | 17.71 | | | |

GSM1900 Measured Results (Continued)

| Mode | Coding Scheme | Time Slots | Ch No. | Freq. (MHz) | Reduced Average Power (dBm) | | | | Reduced Average Power (dBm) | | | |
|--------------|---------------|------------|-----------|-------------|-----------------------------|-----------|---------------------------|-----------|-----------------------------|-----------|---------------------------|------|
| | | | | | Hotspot back-off | | Proximity sensor back-off | | Hotspot back-off | | Proximity sensor back-off | |
| | | | | | Measured | | Tune-up Limit | | Measured | | Tune-up Limit | |
| Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | Burst Pwr | Frame Pwr | |
| GSM (Voice) | CS1 | 1 | 512 | 1850.2 | 30.35 | 21.16 | 31.5 | 22.3 | 30.38 | 21.19 | 31.5 | 22.3 |
| | | | 661 | 1880.0 | 30.35 | 21.16 | | | 30.41 | 21.22 | | |
| | | | 810 | 1909.8 | 30.48 | 21.29 | | | 30.42 | 21.23 | | |
| GPRS (GMSK) | CS1 | 1 | 512 | 1850.2 | 28.10 | 18.91 | 29.5 | 20.3 | 28.21 | 19.02 | 29.5 | 20.3 |
| | | | 661 | 1880.0 | 27.56 | 18.37 | | | 27.68 | 18.49 | | |
| | | | 810 | 1909.8 | 27.18 | 17.99 | | | 27.35 | 18.16 | | |
| | | 2 | 512 | 1850.2 | 26.50 | 20.32 | 28.0 | 21.8 | 26.61 | 20.43 | 28.0 | 21.8 |
| | | | 661 | 1880.0 | 25.95 | 19.77 | | | 26.07 | 19.89 | | |
| | | | 810 | 1909.8 | 25.58 | 19.40 | | | 25.75 | 19.57 | | |
| | 3 | 512 | 1850.2 | 24.38 | 19.96 | 25.5 | 21.1 | 24.46 | 20.04 | 25.5 | 21.1 | |
| | | 661 | 1880.0 | 23.80 | 19.38 | | | 23.89 | 19.47 | | | |
| | | 810 | 1909.8 | 23.44 | 19.02 | | | 23.57 | 19.15 | | | |
| | 4 | 512 | 1850.2 | 23.23 | 20.06 | 24.0 | 20.8 | 23.32 | 20.15 | 24.0 | 20.8 | |
| | | 661 | 1880.0 | 22.68 | 19.51 | | | 22.82 | 19.65 | | | |
| | | 810 | 1909.8 | 22.29 | 19.12 | | | 22.44 | 19.27 | | | |
| EGPRS (8PSK) | MCS5 | 1 | 512 | 1850.2 | 23.98 | 14.79 | 25.0 | 15.8 | 23.81 | 14.62 | 25.0 | 15.8 |
| | | | 661 | 1880.0 | 23.91 | 14.72 | | | 23.76 | 14.57 | | |
| | | | 810 | 1909.8 | 23.72 | 14.53 | | | 23.57 | 14.38 | | |
| | | 2 | 512 | 1850.2 | 22.37 | 16.19 | 23.5 | 17.3 | 22.20 | 16.02 | 23.5 | 17.3 |
| | | | 661 | 1880.0 | 22.25 | 16.07 | | | 22.13 | 15.95 | | |
| | | | 810 | 1909.8 | 22.07 | 15.89 | | | 21.93 | 15.75 | | |
| | 3 | 512 | 1850.2 | 20.07 | 15.65 | 21.5 | 17.1 | 19.95 | 15.53 | 21.5 | 17.1 | |
| | | 661 | 1880.0 | 20.00 | 15.58 | | | 19.89 | 15.47 | | | |
| | | 810 | 1909.8 | 19.78 | 15.36 | | | 19.69 | 15.27 | | | |
| | 4 | 512 | 1850.2 | 18.83 | 15.66 | 20.5 | 17.3 | 18.74 | 15.57 | 20.5 | 17.3 | |
| | | 661 | 1880.0 | 18.74 | 15.57 | | | 18.69 | 15.52 | | | |
| | | 810 | 1909.8 | 18.53 | 15.36 | | | 18.49 | 15.32 | | | |

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GMSK (GPRS) mode with 4 time slots for Maximum power based on the Tune-up Procedure. Refer to §6.3.
- GMSK (GPRS) mode with 4 time slots for Reduced power, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg

9.2. W-CDMA

Release 99 Setup Procedures used to establish the test signals

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

| Mode | Subtest | Rel99 |
|------------------------|-------------------------|--------------|
| WCDMA General Settings | Loopback Mode | Test Mode 2 |
| | Rel99 RMC | 12.2kbps RMC |
| | Power Control Algorithm | Algorithm2 |
| | β_c/β_d | 8/15 |

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| Mode | Subtest | HSDPA | HSDPA | HSDPA | HSDPA |
|-------------------------------|--------------------------------------|--------------|-------|-------|-------|
| | | 1 | 2 | 3 | 4 |
| W-CDMA General Settings | Loopback Mode | Test Mode 1 | | | |
| | Rel99 RMC | 12.2kbps RMC | | | |
| | HSDPA FRC | H-Set 1 | | | |
| | Power Control Algorithm | Algorithm 2 | | | |
| | β_c | 2/15 | 11/15 | 15/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 8/15 | 4/15 |
| | Bd (SF) | 64 | | | |
| | β_c/β_d | 2/15 | 11/15 | 15/8 | 15/4 |
| | β_{hs} | 4/15 | 24/15 | 30/15 | 30/15 |
| MPR (dB) | 0 | 0 | 0.5 | 0.5 | |
| HSDPA Specific Settings | D_{ACK} | 8 | | | |
| | D_{NAK} | 8 | | | |
| | DCQI | 8 | | | |
| | Ack-Nack repetition factor | 3 | | | |
| | CQI Feedback (Table 5.2B.4) | 4ms | | | |
| | CQI Repetition Factor (Table 5.2B.4) | 2 | | | |
| | $A_{hs}=\beta_{hs}/\beta_c$ | 30/15 | | | |

HSPA (HSDPA & HSUPA) Setup Procedures used to establish the test signals

The following 5 Sub-tests were completed according to Release 6 procedures in table C,11.1.3 of 3GPP TS 34.121-1 v13. A summary of these settings are illustrated below:

| | Mode | HSPA | | | | |
|-------------------------------|--|---------------|-------|-------|-------|-------------|
| | Subtest | 1 | 2 | 3 | 4 | 5 |
| WCDMA General Settings | Loopback Mode | Test Mode 1 | | | | |
| | Rel99 RMC | 12.2 kbps RMC | | | | |
| | HSDPA FRC | H-Set 1 | | | | |
| | HSUPA Test | HSPA | | | | |
| | Power Control Algorithm | Algorithm 2 | | | | Algorithm 1 |
| | β_c | 11/15 | 6/15 | 15/15 | 2/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 9/15 | 15/15 | 0 |
| | β_{ec} | 209/225 | 12/15 | 30/15 | 2/15 | 5/15 |
| | β_c/β_d | 11/15 | 6/15 | 15/9 | 2/15 | - |
| | β_{hs} | 22/15 | 12/15 | 30/15 | 4/15 | 5/15 |
| | β_{ed} | 1309/225 | 94/75 | 47/15 | 56/75 | 47/15 |
| CM (dB) | 1 | 3 | 2 | 3 | 1 | |
| MPR (dB) | 0 | 2 | 1 | 2 | 0 | |
| HSDPA Specific Settings | DACK | 8 | | | | 0 |
| | DNAK | 8 | | | | 0 |
| | DCQI | 8 | | | | 0 |
| | Ack-Nack repetition factor | 3 | | | | |
| | CQI Feedback (Table 5.2B.4) | 4ms | | | | |
| | CQI Repetition Factor (Table 5.2B.4) | 2 | | | | |
| | A _{hs} = β_{hs}/β_c | 30/15 | | | | |
| HSUPA Specific Settings | E-DPDCH | 6 | 8 | 8 | 5 | 0 |
| | DHARQ | 0 | 0 | 0 | 0 | 0 |
| | AG Index | 20 | 12 | 15 | 17 | 12 |
| | ETFCI (from 34.121 Table C.11.1.3) | 75 | 67 | 92 | 71 | 67 |
| | Associated Max UL Data Rate kbps | 242.1 | 174.9 | 482.8 | 205.8 | 308.9 |
| | Reference E-TFCIs | 5 | 5 | 2 | 5 | 1 |
| | Reference E-TFCI | 11 | 11 | 11 | 11 | 67 |
| | Reference E-TFCI PO | 4 | 4 | 4 | 4 | 18 |
| | Reference E-TFCI | 67 | 67 | 92 | 67 | 67 |
| | Reference E-TFCI PO | 18 | 18 | 18 | 18 | 18 |
| | Reference E-TFCI | 71 | 71 | 71 | 71 | 71 |
| | Reference E-TFCI PO | 23 | 23 | 23 | 23 | 23 |
| | Reference E-TFCI | 75 | 75 | 75 | 75 | 75 |
| | Reference E-TFCI PO | 26 | 26 | 26 | 26 | 26 |
| | Reference E-TFCI | 81 | 81 | 81 | 81 | 81 |
| Reference E-TFCI PO | 27 | 27 | 27 | 27 | 27 | |
| Maximum Channelization Codes | 2xSF2 | | | | SF4 | |

DC-HSDPA Setup Procedures used to establish the test signals

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

| Parameter During Connection setup | Unit | Value |
|-----------------------------------|------|-------|
| P-CPICH_Ec/Ior | dB | -10 |
| P-CCPCH and SCH_Ec/Ior | dB | -12 |
| PICH_Ec/Ior | dB | -15 |
| HS-PDSCH | dB | off |
| HS-SCCH_1 | dB | off |
| DPCH_Ec/Ior | dB | -5 |
| OCNS_Ec/Ior | dB | -3.1 |

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

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 | Processes | 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. | | |

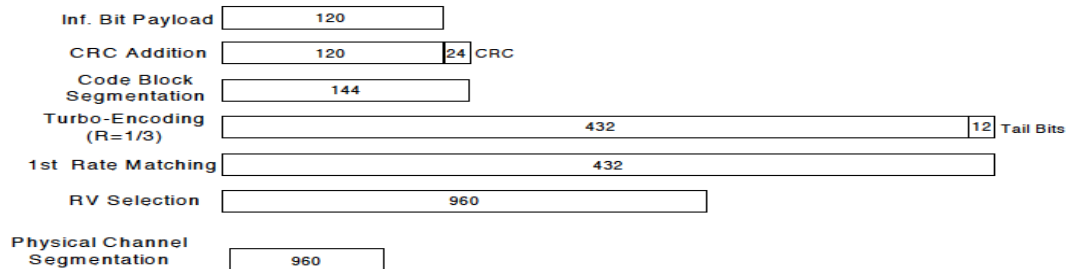


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

| Mode | HSDPA | HSDPA | HSDPA | HSDPA | |
|-------------------------|--|--------------|-------|-------|-------|
| Subtest | 1 | 2 | 3 | 4 | |
| WCDMA General Settings | Loopback Mode | Test Mode 1 | | | |
| | Rel99 RMC | 12.2kbps RMC | | | |
| | HSDPA FRC | H-Set 12 | | | |
| | Power Control Algorithm | Algorithm2 | | | |
| | β_c | 2/15 | 11/15 | 15/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 8/15 | 4/15 |
| | β_d (SF) | 64 | | | |
| | β_c/β_d | 2/15 | 11/15 | 15/8 | 15/4 |
| | β_{hs} | 4/15 | 24/15 | 30/15 | 30/15 |
| MPR (dB) | 0 | 0 | 0.5 | 0.5 | |
| HSDPA Specific Settings | DACK | 8 | | | |
| | DNAK | 8 | | | |
| | DCQI | 8 | | | |
| | Ack-Nack Repetition factor | 3 | | | |
| | CQI Feedback | 4ms | | | |
| | CQI Repetition Factor | 2 | | | |
| | A _{hs} = β_{hs}/β_c | 30/15 | | | |

HSPA+

HSPA+ is only supported to down link. Therefore, the RF conducted power is not measured.

W-CDMA Band II Measured Results

| Mode | | UL Ch No. | Freq. (MHz) | Maximum Average Power (dBm) | | | Reduced Average Power (dBm) Hotspot back-off | | | Reduced Average Power (dBm) Proximity sensor back-off | | |
|------------|-------------------------|-----------|-------------|-----------------------------|-----|---------------|---|-----|---------------|--|-----|---------------|
| | | | | Measured Pwr | MPR | Tune-up Limit | Measured Pwr | MPR | Tune-up Limit | Measured Pwr | MPR | Tune-up Limit |
| Release 99 | Rel 99 (RMC, 12.2 kbps) | 9262 | 1852.4 | 23.67 | N/A | 24.5 | 20.69 | N/A | 21.5 | 20.80 | N/A | 21.5 |
| | | 9400 | 1880.0 | 23.52 | | | 20.59 | | | 20.73 | | |
| | | 9538 | 1907.6 | 23.40 | | | 20.53 | | | 20.74 | | |
| HSDPA | Subtest 1 | 9262 | 1852.4 | 22.70 | 1 | 23.5 | 19.74 | 1 | 20.5 | 19.84 | 1 | 20.5 |
| | | 9400 | 1880.0 | 22.55 | | | 19.69 | | | 19.77 | | |
| | | 9538 | 1907.6 | 22.43 | | | 19.70 | | | 19.78 | | |
| | Subtest 2 | 9262 | 1852.4 | 22.65 | 1 | 23.5 | 19.69 | 1 | 20.5 | 19.76 | 1 | 20.5 |
| | | 9400 | 1880.0 | 22.51 | | | 19.63 | | | 19.70 | | |
| | | 9538 | 1907.6 | 22.36 | | | 19.62 | | | 19.71 | | |
| | Subtest 3 | 9262 | 1852.4 | 22.16 | 1.5 | 23.0 | 19.20 | 1.5 | 20.0 | 19.29 | 1.5 | 20.0 |
| | | 9400 | 1880.0 | 22.05 | | | 19.13 | | | 19.22 | | |
| | | 9538 | 1907.6 | 21.88 | | | 19.13 | | | 19.21 | | |
| | Subtest 4 | 9262 | 1852.4 | 22.16 | 1.5 | 23.0 | 19.20 | 1.5 | 20.0 | 19.27 | 1.5 | 20.0 |
| | | 9400 | 1880.0 | 22.03 | | | 19.14 | | | 19.22 | | |
| | | 9538 | 1907.6 | 21.89 | | | 19.13 | | | 19.22 | | |
| HSUPA | Subtest 1 | 9262 | 1852.4 | 20.82 | 3 | 21.5 | 17.60 | 3 | 18.5 | 17.41 | 3 | 18.5 |
| | | 9400 | 1880.0 | 20.92 | | | 17.82 | | | 17.66 | | |
| | | 9538 | 1907.6 | 20.66 | | | 17.33 | | | 17.35 | | |
| | Subtest 2 | 9262 | 1852.4 | 20.75 | 3 | 21.5 | 17.24 | 3 | 18.5 | 17.35 | 3 | 18.5 |
| | | 9400 | 1880.0 | 20.76 | | | 17.08 | | | 17.09 | | |
| | | 9538 | 1907.6 | 20.70 | | | 17.09 | | | 17.11 | | |
| | Subtest 3 | 9262 | 1852.4 | 21.68 | 2 | 22.5 | 18.65 | 2 | 19.5 | 18.48 | 2 | 19.5 |
| | | 9400 | 1880.0 | 21.70 | | | 18.71 | | | 18.37 | | |
| | | 9538 | 1907.6 | 21.73 | | | 18.56 | | | 18.25 | | |
| | Subtest 4 | 9262 | 1852.4 | 20.41 | 3.5 | 21.0 | 17.20 | 3.5 | 18.0 | 17.23 | 3.5 | 18.0 |
| | | 9400 | 1880.0 | 20.21 | | | 17.12 | | | 17.15 | | |
| | | 9538 | 1907.6 | 20.34 | | | 17.09 | | | 17.13 | | |
| | Subtest 5 | 9262 | 1852.4 | 21.81 | 2 | 22.5 | 18.51 | 2 | 19.5 | 18.36 | 2 | 19.5 |
| | | 9400 | 1880.0 | 21.84 | | | 18.31 | | | 18.49 | | |
| | | 9538 | 1907.6 | 21.79 | | | 18.26 | | | 18.62 | | |
| DC-HSDPA | Subtest 1 | 9262 | 1852.4 | 22.74 | 1 | 23.5 | 19.75 | 1 | 20.5 | 19.83 | 1 | 20.5 |
| | | 9400 | 1880.0 | 22.61 | | | 19.73 | | | 19.76 | | |
| | | 9538 | 1907.6 | 22.45 | | | 19.74 | | | 19.77 | | |
| | Subtest 2 | 9262 | 1852.4 | 22.76 | 1 | 23.5 | 19.75 | 1 | 20.5 | 19.76 | 1 | 20.5 |
| | | 9400 | 1880.0 | 22.61 | | | 19.71 | | | 19.68 | | |
| | | 9538 | 1907.6 | 22.46 | | | 19.73 | | | 19.69 | | |
| | Subtest 3 | 9262 | 1852.4 | 22.24 | 1.5 | 23.0 | 19.25 | 1.5 | 20.0 | 19.29 | 1.5 | 20.0 |
| | | 9400 | 1880.0 | 22.08 | | | 19.21 | | | 19.22 | | |
| | | 9538 | 1907.6 | 21.95 | | | 19.20 | | | 19.21 | | |
| | Subtest 4 | 9262 | 1852.4 | 22.23 | 1.5 | 23.0 | 19.26 | 1.5 | 20.0 | 19.26 | 1.5 | 20.0 |
| | | 9400 | 1880.0 | 22.09 | | | 19.21 | | | 19.19 | | |
| | | 9538 | 1907.6 | 21.95 | | | 19.22 | | | 19.00 | | |

W-CDMA Band IV Measured Results

| Mode | UL Ch No. | Freq. (MHz) | Maximum Average Power (dBm) | | | Reduced Average Power (dBm) Hotspot back-off | | | Reduced Average Power (dBm) Proximity sensor back-off | | | |
|------------|-----------|-------------|-----------------------------|-------|---------------|---|-------|---------------|--|-------|---------------|------|
| | | | Measured Pwr | MPR | Tune-up Limit | Measured Pwr | MPR | Tune-up Limit | Measured Pwr | MPR | Tune-up Limit | |
| Release 99 | Rel 99 | 1312 | 1712.4 | 23.48 | N/A | 24.5 | 21.59 | N/A | 22.5 | 21.53 | N/A | 22.5 |
| | | 1413 | 1732.6 | 23.52 | | | 21.62 | | | 21.60 | | |
| | | 1513 | 1752.6 | 23.70 | | | 21.77 | | | 21.77 | | |
| HSDPA | Subtest 1 | 1312 | 1712.4 | 22.52 | 1 | 23.5 | 20.61 | 1 | 21.5 | 20.57 | 1 | 21.5 |
| | | 1413 | 1732.6 | 22.56 | | | 20.65 | | | 20.62 | | |
| | | 1513 | 1752.6 | 22.72 | | | 20.80 | | | 20.79 | | |
| | Subtest 2 | 1312 | 1712.4 | 22.44 | 1 | 23.5 | 20.58 | 1 | 21.5 | 20.51 | 1 | 21.5 |
| | | 1413 | 1732.6 | 22.51 | | | 20.61 | | | 20.56 | | |
| | | 1513 | 1752.6 | 22.68 | | | 20.75 | | | 20.73 | | |
| | Subtest 3 | 1312 | 1712.4 | 22.00 | 1.5 | 23.0 | 20.10 | 1.5 | 21.0 | 20.02 | 1.5 | 21.0 |
| | | 1413 | 1732.6 | 22.05 | | | 20.08 | | | 20.08 | | |
| | | 1513 | 1752.6 | 22.17 | | | 20.26 | | | 20.23 | | |
| | Subtest 4 | 1312 | 1712.4 | 22.01 | 1.5 | 23.0 | 20.06 | 1.5 | 21.0 | 20.01 | 1.5 | 21.0 |
| | | 1413 | 1732.6 | 22.06 | | | 20.07 | | | 20.07 | | |
| | | 1513 | 1752.6 | 22.17 | | | 20.24 | | | 20.23 | | |
| HSUPA | Subtest 1 | 1312 | 1712.4 | 20.61 | 3 | 21.5 | 18.52 | 3 | 19.5 | 18.56 | 3 | 19.5 |
| | | 1413 | 1732.6 | 20.56 | | | 18.44 | | | 18.54 | | |
| | | 1513 | 1752.6 | 20.54 | | | 18.49 | | | 18.48 | | |
| | Subtest 2 | 1312 | 1712.4 | 20.35 | 3 | 21.5 | 18.46 | 3 | 19.5 | 18.46 | 3 | 19.5 |
| | | 1413 | 1732.6 | 20.41 | | | 18.43 | | | 18.47 | | |
| | | 1513 | 1752.6 | 20.36 | | | 18.43 | | | 18.43 | | |
| | Subtest 3 | 1312 | 1712.4 | 21.44 | 2 | 22.5 | 19.21 | 2 | 20.5 | 19.29 | 2 | 20.5 |
| | | 1413 | 1732.6 | 21.34 | | | 19.25 | | | 19.25 | | |
| | | 1513 | 1752.6 | 21.42 | | | 19.25 | | | 19.25 | | |
| | Subtest 4 | 1312 | 1712.4 | 19.94 | 3.5 | 21.0 | 17.88 | 3.5 | 19.0 | 17.98 | 3.5 | 19.0 |
| | | 1413 | 1732.6 | 19.91 | | | 17.92 | | | 17.89 | | |
| | | 1513 | 1752.6 | 19.88 | | | 17.94 | | | 17.93 | | |
| | Subtest 5 | 1312 | 1712.4 | 21.69 | 2 | 22.5 | 19.73 | 2 | 20.5 | 19.68 | 2 | 20.5 |
| | | 1413 | 1732.6 | 21.71 | | | 19.73 | | | 19.72 | | |
| | | 1513 | 1752.6 | 21.72 | | | 19.65 | | | 19.65 | | |
| DC-HSDPA | Subtest 1 | 1312 | 1712.4 | 22.54 | 1 | 23.5 | 20.65 | 1 | 21.5 | 20.60 | 1 | 21.5 |
| | | 1413 | 1732.6 | 22.59 | | | 20.69 | | | 20.63 | | |
| | | 1513 | 1752.6 | 22.72 | | | 20.85 | | | 20.78 | | |
| | Subtest 2 | 1312 | 1712.4 | 22.51 | 1 | 23.5 | 20.67 | 1 | 21.5 | 20.57 | 1 | 21.5 |
| | | 1413 | 1732.6 | 22.59 | | | 20.71 | | | 20.63 | | |
| | | 1513 | 1752.6 | 22.72 | | | 20.87 | | | 20.78 | | |
| | Subtest 3 | 1312 | 1712.4 | 22.07 | 1.5 | 23.0 | 20.16 | 1.5 | 21.0 | 20.06 | 1.5 | 21.0 |
| | | 1413 | 1732.6 | 22.10 | | | 20.16 | | | 20.11 | | |
| | | 1513 | 1752.6 | 22.21 | | | 20.31 | | | 20.27 | | |
| | Subtest 4 | 1312 | 1712.4 | 22.07 | 1.5 | 23.0 | 20.16 | 1.5 | 21.0 | 20.08 | 1.5 | 21.0 |
| | | 1413 | 1732.6 | 22.10 | | | 20.16 | | | 20.12 | | |
| | | 1513 | 1752.6 | 22.20 | | | 20.30 | | | 20.25 | | |

W-CDMA Band V Measured Results

| Mode | | UL Ch No. | Freq. (MHz) | Maximum Average Power (dBm) | | |
|------------|-------------------------|-----------|-------------|-----------------------------|-----|---------------|
| | | | | Measured Pwr | MPR | Tune-up Limit |
| Release 99 | Rel 99 (RMC, 12.2 kbps) | 4132 | 826.4 | 24.42 | N/A | 25.5 |
| | | 4183 | 836.6 | 24.39 | | |
| | | 4233 | 846.6 | 24.32 | | |
| HSDPA | Subtest 1 | 4132 | 826.4 | 23.43 | 1 | 24.5 |
| | | 4183 | 836.6 | 23.42 | | |
| | | 4233 | 846.6 | 23.34 | | |
| | Subtest 2 | 4132 | 826.4 | 23.41 | 1 | 24.5 |
| | | 4183 | 836.6 | 23.38 | | |
| | | 4233 | 846.6 | 23.29 | | |
| | Subtest 3 | 4132 | 826.4 | 22.94 | 1.5 | 24.0 |
| | | 4183 | 836.6 | 22.94 | | |
| | | 4233 | 846.6 | 22.79 | | |
| | Subtest 4 | 4132 | 826.4 | 22.91 | 1.5 | 24.0 |
| | | 4183 | 836.6 | 22.89 | | |
| | | 4233 | 846.6 | 22.80 | | |
| HSUPA | Subtest 1 | 4132 | 826.4 | 21.23 | 3 | 22.5 |
| | | 4183 | 836.6 | 21.24 | | |
| | | 4233 | 846.6 | 21.17 | | |
| | Subtest 2 | 4132 | 826.4 | 21.41 | 3 | 22.5 |
| | | 4183 | 836.6 | 21.36 | | |
| | | 4233 | 846.6 | 21.37 | | |
| | Subtest 3 | 4132 | 826.4 | 22.55 | 2 | 23.5 |
| | | 4183 | 836.6 | 22.50 | | |
| | | 4233 | 846.6 | 22.48 | | |
| | Subtest 4 | 4132 | 826.4 | 20.97 | 3.5 | 22.0 |
| | | 4183 | 836.6 | 21.02 | | |
| | | 4233 | 846.6 | 21.13 | | |
| | Subtest 5 | 4132 | 826.4 | 22.67 | 2 | 23.5 |
| | | 4183 | 836.6 | 22.44 | | |
| | | 4233 | 846.6 | 22.51 | | |
| DC-HSDPA | Subtest 1 | 4132 | 826.4 | 23.40 | 1 | 24.5 |
| | | 4183 | 836.6 | 23.36 | | |
| | | 4233 | 846.6 | 23.30 | | |
| | Subtest 2 | 4132 | 826.4 | 23.41 | 1 | 24.5 |
| | | 4183 | 836.6 | 23.38 | | |
| | | 4233 | 846.6 | 23.32 | | |
| | Subtest 3 | 4132 | 826.4 | 22.92 | 1.5 | 24.0 |
| | | 4183 | 836.6 | 22.90 | | |
| | | 4233 | 846.6 | 22.80 | | |
| | Subtest 4 | 4132 | 826.4 | 22.90 | 1.5 | 24.0 |
| | | 4183 | 836.6 | 22.89 | | |
| | | 4233 | 846.6 | 22.78 | | |

9.3. LTE

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

| Modulation | Channel bandwidth / Transmission bandwidth (N_{RB}) | | | | | | MPR (dB) |
|------------|---|---------|-------|--------|--------|--------|----------|
| | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | |
| QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 |
| 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 |
| 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 |
| 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 |
| 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 |
| 256 QAM | ≥ 1 | | | | | | ≤ 5 |

The allowed A-MPR values specified below in Table 6.2.4-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

| Network Signalling value | Requirements (subclause) | E-UTRA Band | Channel bandwidth (MHz) | Resources Blocks (N_{RB}) | A-MPR (dB) |
|--------------------------|--------------------------|-------------|-------------------------|-------------------------------|------------|
| NS_01 | 6.6.2.1.1 | Table 5.5-1 | 1.4, 3, 5, 10, 15, 20 | Table 5.6-1 | N/A |

Maximum Output Power (Tune-up Limit) for LTE

According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands as follows:

- a) The maximum output power, including tolerance, for the smaller band must be ≤ the larger band to qualify for the SAR test exclusion.
- b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.
 - LTE Band 5 (824 – 849 MHz) is covered by LTE Band 26 (814 – 849MHz) in case of Head, Body-worn, Hotspot.
 - LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz) in case of Head, Body-worn, Hotspot.
 - LTE Band 17 (704 - 716 MHz) is covered by LTE Band 12 (699 - 716 MHz) in case of Head, Body-worn, Hotspot.

Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths.

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 per KDB 941225 D05 SAR for LTE Devices.

LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

SAR measurement is not required for Higher order modulations. When the highest maximum output power for Higher order modulations are ≤ 0.5 dB higher than the QPSK or when the reported SAR for QPSK configuration is ≤ 1.45 W/kg.

LTE Band 2 Measured Results

| BW (MHz) | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | Reduced Average Power (dBm) Hotspot back-off | | | | | Reduced Average Power (dBm) Proximity sensor back-off | | | | | |
|----------|-------|---------------|-----------|-----------------------------|----------|----------|-------|---------------|---|----------|----------|-------|---------------|--|----------|----------|-------|---------------|------|
| | | | | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | |
| | | | | 18700 | 18900 | 19100 | | | 18700 | 18900 | 19100 | | | 18700 | 18900 | 19100 | | | |
| | | | | 1860 MHz | 1880 MHz | 1900 MHz | | | 1860 MHz | 1880 MHz | 1900 MHz | | | 1860 MHz | 1880 MHz | 1900 MHz | | | |
| 20 MHz | QPSK | 1 | 0 | 22.98 | 22.96 | 22.90 | 0.0 | 24.0 | 20.97 | 20.92 | 20.81 | 0.0 | 22.0 | 21.12 | 20.99 | 20.91 | 0.0 | 22.0 | |
| | | 1 | 49 | 23.20 | 23.21 | 23.12 | 0.0 | 24.0 | 21.12 | 21.18 | 20.99 | 0.0 | 22.0 | 21.20 | 21.24 | 21.05 | 0.0 | 22.0 | |
| | | 1 | 99 | 23.00 | 22.91 | 22.88 | 0.0 | 24.0 | 20.92 | 20.87 | 20.74 | 0.0 | 22.0 | 21.04 | 20.93 | 20.75 | 0.0 | 22.0 | |
| | | 50 | 0 | 22.16 | 21.96 | 22.02 | 1.0 | 23.0 | 21.12 | 20.97 | 21.03 | 0.0 | 22.0 | 21.20 | 20.96 | 21.03 | 0.0 | 22.0 | |
| | | 50 | 24 | 22.10 | 22.17 | 21.97 | 1.0 | 23.0 | 21.16 | 21.20 | 21.03 | 0.0 | 22.0 | 21.20 | 21.21 | 21.12 | 0.0 | 22.0 | |
| | 16QAM | 50 | 50 | 22.12 | 22.05 | 21.91 | 1.0 | 23.0 | 21.10 | 20.99 | 20.93 | 0.0 | 22.0 | 21.21 | 21.12 | 20.93 | 0.0 | 22.0 | |
| | | 100 | 0 | 22.21 | 21.99 | 22.00 | 1.0 | 23.0 | 21.10 | 20.99 | 20.98 | 0.0 | 22.0 | 21.19 | 21.00 | 20.95 | 0.0 | 22.0 | |
| | | 1 | 0 | 22.62 | 22.53 | 21.95 | 1.0 | 23.0 | 21.48 | 21.49 | 21.42 | 0.0 | 22.0 | 21.54 | 21.24 | 21.07 | 0.0 | 22.0 | |
| | | 1 | 49 | 22.20 | 22.46 | 22.63 | 1.0 | 23.0 | 21.67 | 21.66 | 21.58 | 0.0 | 22.0 | 21.56 | 21.47 | 21.04 | 0.0 | 22.0 | |
| | | 1 | 99 | 22.44 | 22.23 | 21.59 | 1.0 | 23.0 | 21.45 | 21.43 | 21.27 | 0.0 | 22.0 | 20.91 | 21.73 | 21.16 | 0.0 | 22.0 | |
| | | 50 | 0 | 21.19 | 21.00 | 21.16 | 2.0 | 22.0 | 21.15 | 21.07 | 21.11 | 0.0 | 22.0 | 21.23 | 20.93 | 21.15 | 0.0 | 22.0 | |
| | | 50 | 24 | 21.32 | 21.11 | 21.07 | 2.0 | 22.0 | 21.19 | 21.17 | 21.09 | 0.0 | 22.0 | 21.26 | 21.19 | 21.21 | 0.0 | 22.0 | |
| | | 50 | 50 | 21.20 | 21.12 | 21.01 | 2.0 | 22.0 | 21.14 | 21.09 | 20.99 | 0.0 | 22.0 | 21.21 | 21.16 | 20.98 | 0.0 | 22.0 | |
| | | 100 | 0 | 21.24 | 21.15 | 20.97 | 2.0 | 22.0 | 21.15 | 21.08 | 20.99 | 0.0 | 22.0 | 21.19 | 20.96 | 20.96 | 0.0 | 22.0 | |
| | | 64QAM | 1 | 0 | 21.44 | 21.01 | 21.32 | 2.0 | 22.0 | 20.98 | 21.32 | 21.57 | 0.0 | 22.0 | 21.33 | 21.25 | 21.02 | 0.0 | 22.0 |
| | 1 | | 49 | 21.22 | 21.53 | 21.08 | 2.0 | 22.0 | 21.48 | 21.50 | 21.75 | 0.0 | 22.0 | 21.47 | 21.54 | 21.35 | 0.0 | 22.0 | |
| | 1 | | 99 | 20.95 | 21.21 | 21.14 | 2.0 | 22.0 | 21.29 | 21.29 | 21.44 | 0.0 | 22.0 | 21.31 | 21.26 | 20.84 | 0.0 | 22.0 | |
| | 50 | | 0 | 20.28 | 20.10 | 20.06 | 3.0 | 21.0 | 20.25 | 20.15 | 20.12 | 1.0 | 21.0 | 20.26 | 20.02 | 20.07 | 1.0 | 21.0 | |
| | 50 | | 24 | 20.23 | 20.20 | 20.13 | 3.0 | 21.0 | 20.30 | 20.28 | 20.12 | 1.0 | 21.0 | 20.25 | 20.22 | 20.04 | 1.0 | 21.0 | |
| | 50 | | 50 | 20.26 | 20.14 | 20.13 | 3.0 | 21.0 | 20.23 | 20.18 | 20.04 | 1.0 | 21.0 | 20.27 | 20.21 | 20.00 | 1.0 | 21.0 | |
| 100 | 0 | | 20.18 | 20.17 | 20.08 | 3.0 | 21.0 | 20.23 | 20.12 | 20.03 | 1.0 | 21.0 | 20.23 | 20.07 | 20.10 | 1.0 | 21.0 | | |
| 15 MHz | QPSK | | 1 | 0 | 23.02 | 23.01 | 22.90 | 0.0 | 24.0 | 21.13 | 20.94 | 20.92 | 0.0 | 22.0 | 21.12 | 20.99 | 20.91 | 0.0 | 22.0 |
| | | | 1 | 37 | 23.14 | 23.10 | 23.02 | 0.0 | 24.0 | 21.14 | 21.01 | 21.00 | 0.0 | 22.0 | 21.20 | 21.12 | 21.05 | 0.0 | 22.0 |
| | | | 1 | 74 | 23.09 | 22.96 | 22.72 | 0.0 | 24.0 | 21.08 | 20.88 | 20.85 | 0.0 | 22.0 | 21.04 | 20.93 | 20.75 | 0.0 | 22.0 |
| | | 36 | 0 | 22.11 | 22.08 | 21.92 | 1.0 | 23.0 | 21.09 | 20.93 | 20.88 | 0.0 | 22.0 | 21.25 | 20.96 | 21.03 | 0.0 | 22.0 | |
| | | 36 | 20 | 22.16 | 22.18 | 22.02 | 1.0 | 23.0 | 21.10 | 21.00 | 20.91 | 0.0 | 22.0 | 21.27 | 21.13 | 21.12 | 0.0 | 22.0 | |
| | 16QAM | 36 | 39 | 22.18 | 22.08 | 21.91 | 1.0 | 23.0 | 21.08 | 20.96 | 20.85 | 0.0 | 22.0 | 21.21 | 21.13 | 20.93 | 0.0 | 22.0 | |
| | | 75 | 0 | 22.06 | 22.10 | 22.01 | 1.0 | 23.0 | 21.14 | 20.98 | 20.90 | 0.0 | 22.0 | 21.19 | 21.00 | 20.95 | 0.0 | 22.0 | |
| | | 1 | 0 | 22.08 | 22.84 | 21.93 | 1.0 | 23.0 | 21.65 | 20.97 | 21.31 | 0.0 | 22.0 | 21.54 | 21.24 | 21.07 | 0.0 | 22.0 | |
| | | 1 | 37 | 22.47 | 22.80 | 22.22 | 1.0 | 23.0 | 21.72 | 21.05 | 21.37 | 0.0 | 22.0 | 21.56 | 21.47 | 21.04 | 0.0 | 22.0 | |
| | | 1 | 74 | 22.33 | 22.35 | 22.50 | 1.0 | 23.0 | 21.65 | 20.93 | 21.22 | 0.0 | 22.0 | 20.91 | 21.73 | 21.16 | 0.0 | 22.0 | |
| | | 36 | 0 | 21.23 | 21.07 | 21.03 | 2.0 | 22.0 | 21.13 | 20.99 | 21.00 | 0.0 | 22.0 | 21.23 | 20.93 | 21.15 | 0.0 | 22.0 | |
| | | 36 | 20 | 21.17 | 21.13 | 21.08 | 2.0 | 22.0 | 21.15 | 21.06 | 20.97 | 0.0 | 22.0 | 21.26 | 21.19 | 21.21 | 0.0 | 22.0 | |
| | | 36 | 39 | 21.20 | 21.17 | 21.04 | 2.0 | 22.0 | 21.13 | 21.01 | 20.95 | 0.0 | 22.0 | 21.21 | 21.16 | 20.98 | 0.0 | 22.0 | |
| | | 75 | 0 | 21.28 | 21.07 | 20.95 | 2.0 | 22.0 | 21.16 | 21.03 | 20.96 | 0.0 | 22.0 | 21.19 | 20.96 | 20.96 | 0.0 | 22.0 | |
| | | 64QAM | 1 | 0 | 21.32 | 21.12 | 21.34 | 2.0 | 22.0 | 21.16 | 21.38 | 21.07 | 0.0 | 22.0 | 21.33 | 21.25 | 21.02 | 0.0 | 22.0 |
| | 1 | | 37 | 21.57 | 21.44 | 21.06 | 2.0 | 22.0 | 21.86 | 21.45 | 21.13 | 0.0 | 22.0 | 21.47 | 21.54 | 21.35 | 0.0 | 22.0 | |
| | 1 | | 74 | 20.94 | 21.14 | 21.18 | 2.0 | 22.0 | 21.79 | 21.34 | 20.96 | 0.0 | 22.0 | 21.31 | 21.26 | 20.84 | 0.0 | 22.0 | |
| | 36 | | 0 | 20.25 | 20.07 | 20.09 | 3.0 | 21.0 | 20.18 | 20.10 | 20.03 | 1.0 | 21.0 | 20.26 | 20.02 | 20.07 | 1.0 | 21.0 | |
| | 36 | | 20 | 20.31 | 20.20 | 20.04 | 3.0 | 21.0 | 20.19 | 20.14 | 20.03 | 1.0 | 21.0 | 20.25 | 20.22 | 20.04 | 1.0 | 21.0 | |
| | 36 | | 39 | 20.22 | 20.13 | 20.04 | 3.0 | 21.0 | 20.17 | 20.14 | 20.00 | 1.0 | 21.0 | 20.27 | 20.21 | 20.00 | 1.0 | 21.0 | |
| 75 | 0 | | 20.24 | 20.15 | 20.10 | 3.0 | 21.0 | 20.23 | 20.09 | 19.94 | 1.0 | 21.0 | 20.23 | 20.07 | 20.10 | 1.0 | 21.0 | | |
| 10 MHz | QPSK | | 1 | 0 | 23.16 | 23.07 | 22.90 | 0.0 | 24.0 | 21.18 | 20.98 | 20.95 | 0.0 | 22.0 | 21.20 | 21.08 | 20.81 | 0.0 | 22.0 |
| | | | 1 | 25 | 23.25 | 23.17 | 23.04 | 0.0 | 24.0 | 21.19 | 21.03 | 21.00 | 0.0 | 22.0 | 21.27 | 21.13 | 20.93 | 0.0 | 22.0 |
| | | | 1 | 49 | 23.26 | 22.94 | 22.87 | 0.0 | 24.0 | 21.09 | 20.94 | 20.88 | 0.0 | 22.0 | 21.15 | 21.03 | 20.95 | 0.0 | 22.0 |
| | | 25 | 0 | 22.08 | 21.93 | 21.87 | 1.0 | 23.0 | 21.13 | 20.97 | 20.87 | 0.0 | 22.0 | 21.13 | 21.11 | 20.96 | 0.0 | 22.0 | |
| | | 25 | 12 | 22.24 | 22.18 | 21.99 | 1.0 | 23.0 | 21.17 | 21.06 | 20.91 | 0.0 | 22.0 | 21.20 | 21.07 | 21.03 | 0.0 | 22.0 | |
| | 16QAM | 25 | 25 | 22.19 | 22.09 | 21.89 | 1.0 | 23.0 | 21.13 | 20.99 | 20.81 | 0.0 | 22.0 | 21.07 | 21.06 | 20.98 | 0.0 | 22.0 | |
| | | 50 | 0 | 22.19 | 22.05 | 21.87 | 1.0 | 23.0 | 21.14 | 21.00 | 20.87 | 0.0 | 22.0 | 21.16 | 21.09 | 20.98 | 0.0 | 22.0 | |
| | | 1 | 0 | 22.40 | 22.43 | 22.78 | 1.0 | 23.0 | 21.26 | 21.03 | 21.32 | 0.0 | 22.0 | 21.37 | 21.21 | 21.18 | 0.0 | 22.0 | |
| | | 1 | 25 | 22.56 | 22.37 | 21.80 | 1.0 | 23.0 | 21.29 | 21.07 | 21.37 | 0.0 | 22.0 | 21.95 | 21.28 | 21.65 | 0.0 | 22.0 | |
| | | 1 | 49 | 22.57 | 22.24 | 22.25 | 1.0 | 23.0 | 21.20 | 20.99 | 21.25 | 0.0 | 22.0 | 21.37 | 21.48 | 21.20 | 0.0 | 22.0 | |
| | | 25 | 0 | 21.27 | 21.14 | 21.09 | 2.0 | 22.0 | 21.26 | 21.03 | 20.93 | 0.0 | 22.0 | 21.31 | 21.14 | 21.04 | 0.0 | 22.0 | |
| | | 25 | 12 | 21.32 | 21.17 | 20.99 | 2.0 | 22.0 | 21.32 | 21.12 | 21.01 | 0.0 | 22.0 | 21.16 | 21.12 | 21.06 | 0.0 | 22.0 | |
| | | 25 | 25 | 21.22 | 21.06 | 20.98 | 2.0 | 22.0 | 21.28 | 21.07 | 20.90 | 0.0 | 22.0 | 21.20 | 21.06 | 20.97 | 0.0 | 22.0 | |
| | | 50 | 0 | 21.29 | 21.16 | 20.93 | 2.0 | 22.0 | 21.21 | 21.01 | 20.92 | 0.0 | 22.0 | 21.14 | 21.10 | 21.05 | 0.0 | 22.0 | |
| | | 64QAM | 1 | 0 | 21.55 | 21.56 | 21.33 | 2.0 | 22.0 | 21.56 | 21.20 | 21.11 | 0.0 | 22.0 | 21.44 | 21.03 | 21.01 | 0.0 | 22.0 |
| | 1 | | 25 | 21.51 | 21.14 | 21.16 | 2.0 | 22.0 | 21.60 | 21.26 | 21.13 | 0.0 | 22.0 | 21.63 | 21.12 | 21.34 | 0.0 | 22.0 | |
| | 1 | | 49 | 21.40 | 21.05 | 21.32 | 2.0 | 22.0 | 21.51 | 21.17 | 21.01 | 0.0 | 22.0 | 21.50 | 21.27 | 21.32 | 0.0 | 22.0 | |
| | 25 | | 0 | 20.20 | 20.07 | 20.00 | 3.0 | 21.0 | 20.27 | 20.16 | 20.00 | 1.0 | 21.0 | 20.28 | 20.11 | 20.09 | 1.0 | 21.0 | |
| | 25 | | 12 | 20.25 | 20.20 | 20.13 | 3.0 | 21.0 | 20.34 | 20.27 | 20.06 | 1.0 | 21.0 | 20.34 | 20.20 | 20.09 | 1.0 | 21.0 | |
| | 25 | | 25 | 20.17 | 20.21 | 20.04 | 3.0 | 21.0 | 20.28 | 20.21 | 19.96 | 1.0 | 21.0 | 20.26 | 20.17 | 20.01 | 1.0 | 21.0 | |
| 50 | 0 | | 20.23 | 20.21 | 20.07 | 3.0 | 21.0 | 20.25 | 20.18 | 19.89 | 1.0 | 21.0 | 20.22 | 20.13 | 20.08 | 1.0 | 21.0 | | |

LTE Band 2 Measured Results(Continued)

| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | |
|----------|-------|---------------|-----------|--------------------|----------|------------|-------|---------------|--------------------|----------|------------|-------|---------------|--------------------|----------|------------|-------|---------------|------|
| | | | | 18625 | 18900 | 19175 | | | 18625 | 18900 | 19175 | | | 18625 | 18900 | 19175 | | | |
| | | | | 1852.5 MHz | 1880 MHz | 1907.5 MHz | | | 1852.5 MHz | 1880 MHz | 1907.5 MHz | | | 1852.5 MHz | 1880 MHz | 1907.5 MHz | | | |
| 5 MHz | QPSK | 1 | 0 | 23.07 | 22.93 | 22.88 | 0.0 | 24.0 | 21.20 | 21.00 | 20.81 | 0.0 | 22.0 | 21.25 | 21.12 | 20.96 | 0.0 | 22.0 | |
| | | 1 | 12 | 23.18 | 23.10 | 23.02 | 0.0 | 24.0 | 21.32 | 21.13 | 20.92 | 0.0 | 22.0 | 21.30 | 21.05 | 21.10 | 0.0 | 22.0 | |
| | | 1 | 24 | 23.06 | 23.06 | 22.87 | 0.0 | 24.0 | 21.17 | 20.97 | 20.77 | 0.0 | 22.0 | 21.16 | 21.10 | 20.82 | 0.0 | 22.0 | |
| | | 12 | 0 | 22.06 | 22.03 | 21.86 | 1.0 | 23.0 | 21.17 | 20.95 | 20.82 | 0.0 | 22.0 | 21.09 | 20.98 | 20.98 | 0.0 | 22.0 | |
| | | 12 | 7 | 22.17 | 22.11 | 21.93 | 1.0 | 23.0 | 21.24 | 21.00 | 20.87 | 0.0 | 22.0 | 21.19 | 21.19 | 20.98 | 0.0 | 22.0 | |
| | 16QAM | 12 | 13 | 22.08 | 22.03 | 21.81 | 1.0 | 23.0 | 21.17 | 21.00 | 20.82 | 0.0 | 22.0 | 21.19 | 21.06 | 20.94 | 0.0 | 22.0 | |
| | | 25 | 0 | 22.18 | 22.10 | 21.83 | 1.0 | 23.0 | 21.18 | 20.99 | 20.82 | 0.0 | 22.0 | 21.11 | 21.00 | 20.97 | 0.0 | 22.0 | |
| | | 1 | 0 | 22.80 | 22.11 | 22.39 | 1.0 | 23.0 | 21.29 | 21.16 | 21.31 | 0.0 | 22.0 | 21.96 | 21.20 | 21.51 | 0.0 | 22.0 | |
| | | 1 | 12 | 22.83 | 22.18 | 22.26 | 1.0 | 23.0 | 21.42 | 21.29 | 21.46 | 0.0 | 22.0 | 21.94 | 21.97 | 21.36 | 0.0 | 22.0 | |
| | | 1 | 24 | 21.98 | 22.46 | 21.83 | 1.0 | 23.0 | 21.27 | 21.16 | 21.30 | 0.0 | 22.0 | 21.14 | 20.98 | 21.14 | 0.0 | 22.0 | |
| | | 12 | 0 | 21.32 | 21.21 | 20.89 | 2.0 | 22.0 | 21.25 | 21.08 | 20.99 | 0.0 | 22.0 | 21.15 | 21.06 | 20.95 | 0.0 | 22.0 | |
| | | 12 | 7 | 21.20 | 21.30 | 21.03 | 2.0 | 22.0 | 21.31 | 21.15 | 21.05 | 0.0 | 22.0 | 21.23 | 21.19 | 21.08 | 0.0 | 22.0 | |
| | | 12 | 13 | 21.28 | 21.03 | 20.97 | 2.0 | 22.0 | 21.26 | 21.13 | 20.96 | 0.0 | 22.0 | 21.24 | 21.11 | 20.98 | 0.0 | 22.0 | |
| | | 25 | 0 | 21.35 | 21.13 | 20.96 | 2.0 | 22.0 | 21.17 | 21.08 | 20.96 | 0.0 | 22.0 | 21.24 | 21.09 | 20.96 | 0.0 | 22.0 | |
| | | 64QAM | 1 | 0 | 21.62 | 21.04 | 21.30 | 2.0 | 22.0 | 21.12 | 21.24 | 21.18 | 0.0 | 22.0 | 21.27 | 21.35 | 21.40 | 0.0 | 22.0 |
| | 1 | 12 | 21.37 | 20.98 | 21.20 | 2.0 | 22.0 | 21.27 | 21.39 | 21.29 | 0.0 | 22.0 | 21.90 | 21.50 | 21.59 | 0.0 | 22.0 | | |
| | 1 | 24 | 20.86 | 21.23 | 20.87 | 2.0 | 22.0 | 21.12 | 21.25 | 21.13 | 0.0 | 22.0 | 21.64 | 21.31 | 21.05 | 0.0 | 22.0 | | |
| | 12 | 0 | 20.23 | 20.20 | 19.89 | 3.0 | 21.0 | 20.30 | 20.17 | 19.84 | 1.0 | 21.0 | 20.20 | 20.10 | 19.97 | 1.0 | 21.0 | | |
| | 12 | 7 | 20.35 | 20.28 | 20.13 | 3.0 | 21.0 | 20.31 | 20.23 | 19.89 | 1.0 | 21.0 | 20.33 | 20.18 | 20.12 | 1.0 | 21.0 | | |
| | 12 | 13 | 20.28 | 20.19 | 19.95 | 3.0 | 21.0 | 20.27 | 20.21 | 19.84 | 1.0 | 21.0 | 20.23 | 20.13 | 19.98 | 1.0 | 21.0 | | |
| | 25 | 0 | 20.20 | 20.11 | 19.93 | 3.0 | 21.0 | 20.25 | 20.17 | 19.90 | 1.0 | 21.0 | 20.19 | 20.09 | 19.94 | 1.0 | 21.0 | | |
| | 3 MHz | QPSK | 1 | 0 | 22.74 | 22.67 | 22.56 | 0.0 | 24.0 | 20.86 | 20.60 | 20.58 | 0.0 | 22.0 | 21.16 | 20.95 | 20.83 | 0.0 | 22.0 |
| | | | 1 | 8 | 22.99 | 22.73 | 22.65 | 0.0 | 24.0 | 20.94 | 20.73 | 20.66 | 0.0 | 22.0 | 21.23 | 21.08 | 20.89 | 0.0 | 22.0 |
| | | | 1 | 14 | 22.82 | 22.66 | 22.53 | 0.0 | 24.0 | 20.82 | 20.60 | 20.53 | 0.0 | 22.0 | 21.10 | 20.95 | 20.78 | 0.0 | 22.0 |
| | 8 | | 0 | 22.05 | 21.91 | 21.80 | 1.0 | 23.0 | 21.09 | 20.89 | 20.75 | 0.0 | 22.0 | 21.05 | 21.02 | 20.95 | 0.0 | 22.0 | |
| 8 | 4 | | 22.12 | 22.05 | 21.81 | 1.0 | 23.0 | 21.14 | 20.92 | 20.79 | 0.0 | 22.0 | 21.25 | 21.02 | 20.91 | 0.0 | 22.0 | | |
| 16QAM | 8 | 7 | 22.01 | 22.01 | 21.81 | 1.0 | 23.0 | 21.12 | 20.91 | 20.73 | 0.0 | 22.0 | 21.16 | 20.98 | 20.83 | 0.0 | 22.0 | | |
| | 15 | 0 | 22.07 | 21.95 | 21.75 | 1.0 | 23.0 | 21.07 | 20.87 | 20.68 | 0.0 | 22.0 | 21.10 | 21.03 | 20.95 | 0.0 | 22.0 | | |
| | 1 | 0 | 22.03 | 21.88 | 21.56 | 1.0 | 23.0 | 20.99 | 20.65 | 20.94 | 0.0 | 22.0 | 21.77 | 21.32 | 21.61 | 0.0 | 22.0 | | |
| | 1 | 8 | 22.34 | 22.15 | 21.70 | 1.0 | 23.0 | 21.09 | 20.78 | 21.06 | 0.0 | 22.0 | 21.27 | 21.74 | 21.01 | 0.0 | 22.0 | | |
| | 1 | 14 | 21.98 | 22.00 | 21.80 | 1.0 | 23.0 | 20.94 | 20.61 | 20.90 | 0.0 | 22.0 | 21.29 | 20.77 | 20.84 | 0.0 | 22.0 | | |
| | 8 | 0 | 21.18 | 21.17 | 20.93 | 2.0 | 22.0 | 21.16 | 21.05 | 20.88 | 0.0 | 22.0 | 21.10 | 21.03 | 20.83 | 0.0 | 22.0 | | |
| | 8 | 4 | 21.15 | 21.19 | 20.99 | 2.0 | 22.0 | 21.22 | 21.09 | 20.93 | 0.0 | 22.0 | 21.25 | 21.16 | 20.88 | 0.0 | 22.0 | | |
| | 8 | 7 | 21.10 | 21.19 | 21.02 | 2.0 | 22.0 | 21.21 | 21.08 | 20.90 | 0.0 | 22.0 | 21.21 | 20.99 | 20.97 | 0.0 | 22.0 | | |
| | 15 | 0 | 21.24 | 21.19 | 20.82 | 2.0 | 22.0 | 21.06 | 20.95 | 20.75 | 0.0 | 22.0 | 21.19 | 21.00 | 20.87 | 0.0 | 22.0 | | |
| | 64QAM | 1 | 0 | 21.35 | 21.15 | 20.97 | 2.0 | 22.0 | 21.40 | 21.04 | 20.80 | 0.0 | 22.0 | 21.11 | 21.04 | 20.90 | 0.0 | 22.0 | |
| 1 | 8 | 21.50 | 21.13 | 20.96 | 2.0 | 22.0 | 21.50 | 21.18 | 20.93 | 0.0 | 22.0 | 21.37 | 21.42 | 21.11 | 0.0 | 22.0 | | | |
| 1 | 14 | 21.29 | 20.97 | 20.93 | 2.0 | 22.0 | 21.36 | 20.98 | 20.82 | 0.0 | 22.0 | 21.19 | 20.98 | 20.87 | 0.0 | 22.0 | | | |
| 8 | 0 | 20.27 | 19.93 | 19.97 | 3.0 | 21.0 | 20.30 | 20.00 | 19.85 | 1.0 | 21.0 | 20.13 | 20.11 | 19.87 | 1.0 | 21.0 | | | |
| 8 | 4 | 20.18 | 20.14 | 20.13 | 3.0 | 21.0 | 20.32 | 20.03 | 19.91 | 1.0 | 21.0 | 20.27 | 20.26 | 20.05 | 1.0 | 21.0 | | | |
| 8 | 7 | 20.19 | 20.12 | 19.77 | 3.0 | 21.0 | 20.27 | 19.99 | 19.86 | 1.0 | 21.0 | 20.31 | 20.21 | 20.05 | 1.0 | 21.0 | | | |
| 15 | 0 | 20.07 | 19.93 | 20.00 | 3.0 | 21.0 | 20.17 | 20.04 | 19.80 | 1.0 | 21.0 | 20.15 | 20.15 | 19.91 | 1.0 | 21.0 | | | |
| 1.4 MHz | QPSK | 1 | 0 | 22.93 | 22.88 | 22.64 | 0.0 | 24.0 | 20.93 | 20.76 | 20.65 | 0.0 | 22.0 | 20.89 | 20.69 | 20.50 | 0.0 | 22.0 | |
| | | 1 | 3 | 22.94 | 22.92 | 22.74 | 0.0 | 24.0 | 21.01 | 20.81 | 20.70 | 0.0 | 22.0 | 20.93 | 20.91 | 20.73 | 0.0 | 22.0 | |
| | | 1 | 5 | 22.86 | 22.78 | 22.60 | 0.0 | 24.0 | 20.95 | 20.74 | 20.63 | 0.0 | 22.0 | 20.69 | 20.66 | 20.63 | 0.0 | 22.0 | |
| | | 3 | 0 | 22.93 | 22.88 | 22.78 | 0.0 | 24.0 | 21.13 | 20.92 | 20.78 | 0.0 | 22.0 | 21.08 | 20.90 | 20.85 | 0.0 | 22.0 | |
| | | 3 | 1 | 23.00 | 22.96 | 22.67 | 0.0 | 24.0 | 21.16 | 20.93 | 20.78 | 0.0 | 22.0 | 21.16 | 21.06 | 20.91 | 0.0 | 22.0 | |
| | | 3 | 3 | 23.02 | 22.84 | 22.77 | 0.0 | 24.0 | 21.14 | 20.92 | 20.77 | 0.0 | 22.0 | 20.96 | 20.93 | 20.81 | 0.0 | 22.0 | |
| | 16QAM | 6 | 0 | 22.03 | 22.09 | 21.94 | 1.0 | 23.0 | 21.14 | 20.93 | 20.79 | 0.0 | 22.0 | 21.06 | 20.89 | 20.70 | 0.0 | 22.0 | |
| | | 1 | 0 | 22.03 | 22.53 | 21.91 | 1.0 | 23.0 | 21.06 | 20.97 | 21.04 | 0.0 | 22.0 | 21.36 | 20.97 | 21.25 | 0.0 | 22.0 | |
| | | 1 | 3 | 22.56 | 21.66 | 22.26 | 1.0 | 23.0 | 21.13 | 21.04 | 21.10 | 0.0 | 22.0 | 21.22 | 20.94 | 20.53 | 0.0 | 22.0 | |
| | | 1 | 5 | 22.20 | 21.89 | 22.04 | 1.0 | 23.0 | 21.09 | 20.96 | 21.03 | 0.0 | 22.0 | 21.38 | 21.54 | 20.93 | 0.0 | 22.0 | |
| | | 3 | 0 | 22.03 | 21.84 | 21.70 | 1.0 | 23.0 | 21.36 | 21.04 | 20.99 | 0.0 | 22.0 | 21.09 | 21.01 | 20.88 | 0.0 | 22.0 | |
| | | 3 | 1 | 22.07 | 21.88 | 21.71 | 1.0 | 23.0 | 21.39 | 21.05 | 21.00 | 0.0 | 22.0 | 21.29 | 21.19 | 20.97 | 0.0 | 22.0 | |
| | | 3 | 3 | 21.96 | 21.83 | 21.68 | 1.0 | 23.0 | 21.39 | 21.03 | 20.99 | 0.0 | 22.0 | 21.02 | 21.16 | 20.84 | 0.0 | 22.0 | |
| | | 6 | 0 | 21.34 | 21.04 | 20.99 | 2.0 | 22.0 | 21.40 | 21.16 | 20.75 | 0.0 | 22.0 | 20.99 | 20.95 | 20.75 | 0.0 | 22.0 | |
| | | 64QAM | 1 | 0 | 20.96 | 21.18 | 20.97 | 2.0 | 22.0 | 21.55 | 21.14 | 20.93 | 0.0 | 22.0 | 21.06 | 21.20 | 20.73 | 0.0 | 22.0 |
| | | | 1 | 3 | 21.37 | 21.42 | 20.83 | 2.0 | 22.0 | 21.67 | 21.20 | 20.99 | 0.0 | 22.0 | 21.29 | 21.29 | 21.36 | 0.0 | 22.0 |
| | 1 | | 5 | 21.60 | 21.44 | 21.13 | 2.0 | 22.0 | 21.54 | 21.06 | 20.96 | 0.0 | 22.0 | 21.41 | 20.91 | 20.86 | 0.0 | 22.0 | |
| | 3 | | 0 | 21.41 | 21.15 | 21.13 | 2.0 | 22.0 | 20.61 | 20.20 | 20.83 | 1.0 | 21.0 | 19.95 | 20.06 | 19.76 | 1.0 | 21.0 | |
| | 3 | | 1 | 21.31 | 21.43 | 21.18 | 2.0 | 22.0 | 20.61 | 20.24 | 20.86 | 1.0 | 21.0 | 20.27 | 19.96 | 20.00 | 1.0 | 21.0 | |
| | 3 | | 3 | 21.51 | 21.16 | 20.72 | 2.0 | 22.0 | 20.60 | 20.24 | 20.85 | 1.0 | 21.0 | 20.22 | 20.08 | 19.85 | 1.0 | 21.0 | |
| | 6 | | 0 | 20.13 | 20.18 | 19.88 | 3.0 | 21.0 | 20.21 | 20.41 | 19.95 | 1.0 | 21.0 | 19.96 | 20.07 | 19.86 | 1.0 | 21.0 | |

LTE Band 12 Measured Results

| BW (MHz) | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | |
|----------|-------|---------------|-----------|-----------------------------|-----------|-----------|-----|---------------|
| | | | | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
| | | | | 23095 | 707.5 MHz | 23155 | | |
| 10 MHz | QPSK | 1 | 0 | 24.05 | | | 0.0 | 25.0 |
| | | 1 | 25 | 24.01 | | | 0.0 | 25.0 |
| | | 1 | 49 | 23.93 | | | 0.0 | 25.0 |
| | | 25 | 0 | 23.01 | | | 1.0 | 24.0 |
| | | 25 | 12 | 23.05 | | | 1.0 | 24.0 |
| | | 25 | 25 | 22.95 | | | 1.0 | 24.0 |
| | | 50 | 0 | 22.96 | | | 1.0 | 24.0 |
| | 16QAM | 1 | 0 | 23.27 | | | 1.0 | 24.0 |
| | | 1 | 25 | 23.07 | | | 1.0 | 24.0 |
| | | 1 | 49 | 22.94 | | | 1.0 | 24.0 |
| | | 25 | 0 | 21.96 | | | 2.0 | 23.0 |
| | | 25 | 12 | 22.07 | | | 2.0 | 23.0 |
| | | 25 | 25 | 22.11 | | | 2.0 | 23.0 |
| | | 50 | 0 | 21.99 | | | 2.0 | 23.0 |
| | 64QAM | 1 | 0 | 22.31 | | | 2.0 | 23.0 |
| | | 1 | 25 | 22.00 | | | 2.0 | 23.0 |
| | | 1 | 49 | 21.60 | | | 2.0 | 23.0 |
| | | 25 | 0 | 21.01 | | | 3.0 | 22.0 |
| | | 25 | 12 | 20.95 | | | 3.0 | 22.0 |
| | | 25 | 25 | 20.98 | | | 3.0 | 22.0 |
| | | 50 | 0 | 21.05 | | | 3.0 | 22.0 |
| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
| | | | | 23035 | 23095 | 23155 | | |
| | | | | 701.5 MHz | 707.5 MHz | 713.5 MHz | | |
| 5 MHz | QPSK | 1 | 0 | 23.86 | 23.97 | 23.81 | 0.0 | 25.0 |
| | | 1 | 12 | 23.90 | 23.98 | 23.95 | 0.0 | 25.0 |
| | | 1 | 24 | 23.94 | 23.84 | 23.75 | 0.0 | 25.0 |
| | | 12 | 0 | 22.86 | 22.95 | 22.91 | 1.0 | 24.0 |
| | | 12 | 7 | 22.97 | 23.05 | 22.82 | 1.0 | 24.0 |
| | | 12 | 13 | 22.88 | 23.03 | 22.80 | 1.0 | 24.0 |
| | | 25 | 0 | 22.94 | 23.03 | 22.85 | 1.0 | 24.0 |
| | 16QAM | 1 | 0 | 23.40 | 23.02 | 23.34 | 1.0 | 24.0 |
| | | 1 | 12 | 23.16 | 23.88 | 23.21 | 1.0 | 24.0 |
| | | 1 | 24 | 22.99 | 23.54 | 22.83 | 1.0 | 24.0 |
| | | 12 | 0 | 21.88 | 21.98 | 21.80 | 2.0 | 23.0 |
| | | 12 | 7 | 21.98 | 22.04 | 21.87 | 2.0 | 23.0 |
| | | 12 | 13 | 21.91 | 22.02 | 21.79 | 2.0 | 23.0 |
| | | 25 | 0 | 21.93 | 21.97 | 21.98 | 2.0 | 23.0 |
| | 64QAM | 1 | 0 | 22.20 | 21.90 | 22.19 | 2.0 | 23.0 |
| | | 1 | 12 | 22.25 | 21.98 | 22.11 | 2.0 | 23.0 |
| | | 1 | 24 | 22.04 | 22.41 | 21.88 | 2.0 | 23.0 |
| | | 12 | 0 | 20.99 | 21.20 | 20.80 | 3.0 | 22.0 |
| | | 12 | 7 | 21.18 | 21.15 | 21.07 | 3.0 | 22.0 |
| | | 12 | 13 | 21.05 | 20.98 | 20.89 | 3.0 | 22.0 |
| | | 25 | 0 | 21.01 | 21.11 | 20.91 | 3.0 | 22.0 |

LTE Band 12 Measured Results(Continued)

| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
|----------|-------|---------------|-----------|--------------------|-----------|-----------|------|---------------|
| | | | | 23025 | 23095 | 23165 | | |
| | | | | 700.5 MHz | 707.5 MHz | 714.5 MHz | | |
| 3 MHz | QPSK | 1 | 0 | 23.55 | 23.56 | 23.55 | 0.0 | 25.0 |
| | | 1 | 8 | 23.74 | 23.66 | 23.64 | 0.0 | 25.0 |
| | | 1 | 14 | 23.57 | 23.60 | 23.67 | 0.0 | 25.0 |
| | | 8 | 0 | 22.78 | 22.80 | 22.78 | 1.0 | 24.0 |
| | | 8 | 4 | 22.87 | 23.00 | 22.83 | 1.0 | 24.0 |
| | | 8 | 7 | 22.92 | 22.90 | 22.85 | 1.0 | 24.0 |
| | | 15 | 0 | 22.85 | 22.82 | 22.78 | 1.0 | 24.0 |
| | 16QAM | 1 | 0 | 22.60 | 23.15 | 22.87 | 1.0 | 24.0 |
| | | 1 | 8 | 22.94 | 23.02 | 22.57 | 1.0 | 24.0 |
| | | 1 | 14 | 22.86 | 22.77 | 23.00 | 1.0 | 24.0 |
| | | 8 | 0 | 21.95 | 21.96 | 21.82 | 2.0 | 23.0 |
| | | 8 | 4 | 22.10 | 22.01 | 21.99 | 2.0 | 23.0 |
| | | 8 | 7 | 21.89 | 21.98 | 21.89 | 2.0 | 23.0 |
| | 64QAM | 15 | 0 | 21.81 | 21.86 | 21.74 | 2.0 | 23.0 |
| | | 1 | 0 | 21.94 | 22.09 | 21.75 | 2.0 | 23.0 |
| | | 1 | 8 | 22.02 | 22.03 | 21.95 | 2.0 | 23.0 |
| | | 1 | 14 | 21.94 | 22.01 | 22.09 | 2.0 | 23.0 |
| | | 8 | 0 | 20.93 | 20.97 | 20.97 | 3.0 | 22.0 |
| 8 | | 4 | 20.87 | 21.06 | 20.96 | 3.0 | 22.0 | |
| 8 | | 7 | 20.89 | 20.79 | 20.66 | 3.0 | 22.0 | |
| 15 | 0 | 20.71 | 20.97 | 20.71 | 3.0 | 22.0 | | |
| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
| | | | | 23017 | 23095 | 23173 | | |
| | | | | 699.7 MHz | 707.5 MHz | 715.3 MHz | | |
| 1.4 MHz | QPSK | 1 | 0 | 23.63 | 23.74 | 23.61 | 0.0 | 25.0 |
| | | 1 | 3 | 23.75 | 23.98 | 23.68 | 0.0 | 25.0 |
| | | 1 | 5 | 23.71 | 23.69 | 23.59 | 0.0 | 25.0 |
| | | 3 | 0 | 23.87 | 23.87 | 23.76 | 0.0 | 25.0 |
| | | 3 | 1 | 23.87 | 23.89 | 23.81 | 0.0 | 25.0 |
| | | 3 | 3 | 23.86 | 23.80 | 23.91 | 0.0 | 25.0 |
| | | 6 | 0 | 22.88 | 22.92 | 23.02 | 1.0 | 24.0 |
| | 16QAM | 1 | 0 | 23.10 | 23.54 | 22.63 | 1.0 | 24.0 |
| | | 1 | 3 | 22.75 | 23.24 | 22.89 | 1.0 | 24.0 |
| | | 1 | 5 | 23.27 | 22.97 | 23.18 | 1.0 | 24.0 |
| | | 3 | 0 | 22.92 | 23.01 | 22.64 | 1.0 | 24.0 |
| | | 3 | 1 | 22.73 | 22.83 | 22.88 | 1.0 | 24.0 |
| | | 3 | 3 | 22.71 | 22.83 | 22.73 | 1.0 | 24.0 |
| | 64QAM | 6 | 0 | 21.98 | 22.20 | 22.01 | 2.0 | 23.0 |
| | | 1 | 0 | 22.11 | 21.97 | 21.80 | 2.0 | 23.0 |
| | | 1 | 3 | 22.01 | 22.22 | 22.20 | 2.0 | 23.0 |
| | | 1 | 5 | 22.13 | 22.28 | 22.15 | 2.0 | 23.0 |
| | | 3 | 0 | 22.04 | 22.23 | 22.01 | 2.0 | 23.0 |
| 3 | | 1 | 21.87 | 22.12 | 22.10 | 2.0 | 23.0 | |
| 3 | | 3 | 22.25 | 22.18 | 22.19 | 2.0 | 23.0 | |
| 6 | 0 | 21.08 | 21.16 | 20.93 | 3.0 | 22.0 | | |

LTE Band 13 Measured Results

| BW (MHz) | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | |
|----------|-------|---------------|-----------|-----------------------------|---------|------|---------------|
| | | | | Measured Pwr (dBm) | | MPR | Tune-up Limit |
| | | | | 23230 | 782 MHz | | |
| 10 MHz | QPSK | 1 | 0 | 24.00 | | 0.0 | 25.0 |
| | | 1 | 25 | 23.90 | | 0.0 | 25.0 |
| | | 1 | 49 | 23.78 | | 0.0 | 25.0 |
| | | 25 | 0 | 22.86 | | 1.0 | 24.0 |
| | | 25 | 12 | 22.99 | | 1.0 | 24.0 |
| | | 25 | 25 | 22.81 | | 1.0 | 24.0 |
| | 16QAM | 50 | 0 | 22.86 | | 1.0 | 24.0 |
| | | 1 | 0 | 23.12 | | 1.0 | 24.0 |
| | | 1 | 25 | 23.69 | | 1.0 | 24.0 |
| | | 1 | 49 | 23.71 | | 1.0 | 24.0 |
| | | 25 | 0 | 21.79 | | 2.0 | 23.0 |
| | | 25 | 12 | 21.96 | | 2.0 | 23.0 |
| | 64QAM | 25 | 25 | 21.85 | | 2.0 | 23.0 |
| | | 50 | 0 | 21.80 | | 2.0 | 23.0 |
| | | 1 | 0 | 22.00 | | 2.0 | 23.0 |
| | | 1 | 25 | 22.18 | | 2.0 | 23.0 |
| | | 1 | 49 | 21.92 | | 2.0 | 23.0 |
| | | 25 | 0 | 20.73 | | 3.0 | 22.0 |
| 5 MHz | QPSK | 25 | 12 | 21.11 | | 3.0 | 22.0 |
| | | 25 | 25 | 20.77 | | 3.0 | 22.0 |
| | | 50 | 0 | 20.94 | | 3.0 | 22.0 |
| | | 1 | 0 | 23.73 | | 0.0 | 25.0 |
| | | 1 | 12 | 24.00 | | 0.0 | 25.0 |
| | | 1 | 24 | 23.81 | | 0.0 | 25.0 |
| | 16QAM | 12 | 0 | 22.88 | | 1.0 | 24.0 |
| | | 12 | 7 | 22.97 | | 1.0 | 24.0 |
| | | 12 | 13 | 22.88 | | 1.0 | 24.0 |
| | | 25 | 0 | 22.88 | | 1.0 | 24.0 |
| | | 1 | 0 | 23.16 | | 1.0 | 24.0 |
| | | 1 | 12 | 22.69 | | 1.0 | 24.0 |
| | 64QAM | 1 | 24 | 22.61 | | 1.0 | 24.0 |
| | | 12 | 0 | 21.84 | | 2.0 | 23.0 |
| | | 12 | 7 | 21.86 | | 2.0 | 23.0 |
| | | 12 | 13 | 21.97 | | 2.0 | 23.0 |
| | | 25 | 0 | 21.81 | | 2.0 | 23.0 |
| | | 1 | 0 | 21.79 | | 2.0 | 23.0 |
| 64QAM | 1 | 12 | 21.86 | | 2.0 | 23.0 | |
| | 1 | 24 | 21.77 | | 2.0 | 23.0 | |
| | 12 | 0 | 20.71 | | 3.0 | 22.0 | |
| | 12 | 7 | 20.91 | | 3.0 | 22.0 | |
| | 12 | 13 | 20.99 | | 3.0 | 22.0 | |
| | 25 | 0 | 20.80 | | 3.0 | 22.0 | |

LTE Band 26 Measured Results

| BW (MHz) | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | |
|----------|-------|---------------|-----------|-----------------------------|-----------|---------|-----|---------------|
| | | | | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
| | | | | 26740 | 26865 | 26990 | | |
| | | | | 819 MHz | 831.5 MHz | 844 MHz | | |
| 15 MHz | QPSK | 1 | 0 | 23.72 | | | 0.0 | 25.5 |
| | | 1 | 37 | 23.76 | | | 0.0 | 25.5 |
| | | 1 | 74 | 23.63 | | | 0.0 | 25.5 |
| | | 36 | 0 | 22.62 | | | 1.0 | 24.5 |
| | | 36 | 20 | 22.74 | | | 1.0 | 24.5 |
| | | 36 | 39 | 22.72 | | | 1.0 | 24.5 |
| | | 75 | 0 | 22.66 | | | 1.0 | 24.5 |
| | 16QAM | 1 | 0 | 23.03 | | | 1.0 | 24.5 |
| | | 1 | 37 | 22.77 | | | 1.0 | 24.5 |
| | | 1 | 74 | 22.62 | | | 1.0 | 24.5 |
| | | 36 | 0 | 21.62 | | | 2.0 | 23.5 |
| | | 36 | 20 | 21.69 | | | 2.0 | 23.5 |
| | | 36 | 39 | 21.65 | | | 2.0 | 23.5 |
| | | 75 | 0 | 21.62 | | | 2.0 | 23.5 |
| | 64QAM | 1 | 0 | 21.89 | | | 2.0 | 23.5 |
| | | 1 | 37 | 22.15 | | | 2.0 | 23.5 |
| | | 1 | 74 | 21.65 | | | 2.0 | 23.5 |
| | | 36 | 0 | 20.72 | | | 3.0 | 22.5 |
| | | 36 | 20 | 20.76 | | | 3.0 | 22.5 |
| | | 36 | 39 | 20.74 | | | 3.0 | 22.5 |
| | | 75 | 0 | 20.65 | | | 3.0 | 22.5 |
| 10 MHz | QPSK | 1 | 0 | 23.71 | 23.67 | 23.68 | 0.0 | 25.5 |
| | | 1 | 25 | 23.88 | 23.74 | 23.69 | 0.0 | 25.5 |
| | | 1 | 49 | 23.67 | 23.58 | 23.49 | 0.0 | 25.5 |
| | | 25 | 0 | 22.67 | 22.66 | 22.63 | 1.0 | 24.5 |
| | | 25 | 12 | 22.71 | 22.60 | 22.62 | 1.0 | 24.5 |
| | | 25 | 25 | 22.68 | 22.60 | 22.59 | 1.0 | 24.5 |
| | | 50 | 0 | 22.72 | 22.70 | 22.69 | 1.0 | 24.5 |
| | 16QAM | 1 | 0 | 23.08 | 23.06 | 22.70 | 1.0 | 24.5 |
| | | 1 | 25 | 23.09 | 23.49 | 22.81 | 1.0 | 24.5 |
| | | 1 | 49 | 23.04 | 23.04 | 22.61 | 1.0 | 24.5 |
| | | 25 | 0 | 21.78 | 21.62 | 21.75 | 2.0 | 23.5 |
| | | 25 | 12 | 21.81 | 21.67 | 21.68 | 2.0 | 23.5 |
| | | 25 | 25 | 21.84 | 21.71 | 21.57 | 2.0 | 23.5 |
| | | 50 | 0 | 21.74 | 21.63 | 21.68 | 2.0 | 23.5 |
| | 64QAM | 1 | 0 | 21.67 | 21.81 | 22.09 | 2.0 | 23.5 |
| | | 1 | 25 | 22.01 | 22.20 | 22.02 | 2.0 | 23.5 |
| | | 1 | 49 | 22.19 | 21.87 | 22.13 | 2.0 | 23.5 |
| | | 25 | 0 | 20.79 | 20.65 | 20.70 | 3.0 | 22.5 |
| | | 25 | 12 | 20.85 | 20.81 | 20.75 | 3.0 | 22.5 |
| | | 25 | 25 | 20.75 | 20.74 | 20.68 | 3.0 | 22.5 |
| | | 50 | 0 | 20.78 | 20.71 | 20.57 | 3.0 | 22.5 |

LTE Band 26 Measured Results(Continued)

| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
|----------|-------|---------------|-----------|--------------------|-----------|-----------|------|---------------|
| | | | | 26715 | 26865 | 27015 | | |
| | | | | 816.5 MHz | 831.5 MHz | 846.5 MHz | | |
| 5 MHz | QPSK | 1 | 0 | 23.62 | 23.54 | 23.47 | 0.0 | 25.5 |
| | | 1 | 12 | 23.73 | 23.62 | 23.59 | 0.0 | 25.5 |
| | | 1 | 24 | 23.71 | 23.54 | 23.53 | 0.0 | 25.5 |
| | | 12 | 0 | 22.65 | 22.60 | 22.58 | 1.0 | 24.5 |
| | | 12 | 7 | 22.75 | 22.64 | 22.73 | 1.0 | 24.5 |
| | | 12 | 13 | 22.68 | 22.66 | 22.53 | 1.0 | 24.5 |
| | 25 | 0 | 22.69 | 22.62 | 22.61 | 1.0 | 24.5 | |
| | 16QAM | 1 | 0 | 22.69 | 22.63 | 22.80 | 1.0 | 24.5 |
| | | 1 | 12 | 23.07 | 22.84 | 23.49 | 1.0 | 24.5 |
| | | 1 | 24 | 23.45 | 22.94 | 22.97 | 1.0 | 24.5 |
| | | 12 | 0 | 21.72 | 21.65 | 21.65 | 2.0 | 23.5 |
| | | 12 | 7 | 21.87 | 21.58 | 21.68 | 2.0 | 23.5 |
| | | 12 | 13 | 21.70 | 21.63 | 21.55 | 2.0 | 23.5 |
| | 25 | 0 | 21.71 | 21.58 | 21.68 | 2.0 | 23.5 | |
| | 64QAM | 1 | 0 | 21.99 | 21.61 | 21.76 | 2.0 | 23.5 |
| | | 1 | 12 | 22.36 | 22.08 | 22.09 | 2.0 | 23.5 |
| | | 1 | 24 | 22.04 | 21.72 | 21.54 | 2.0 | 23.5 |
| | | 12 | 0 | 20.65 | 20.70 | 20.70 | 3.0 | 22.5 |
| 12 | | 7 | 20.83 | 20.85 | 20.86 | 3.0 | 22.5 | |
| 12 | | 13 | 20.84 | 20.70 | 20.55 | 3.0 | 22.5 | |
| 25 | 0 | 20.71 | 20.77 | 20.66 | 3.0 | 22.5 | | |
| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
| | | | | 26705 | 26865 | 27025 | | |
| | | | | 815.5 MHz | 831.5 MHz | 847.5 MHz | | |
| 3 MHz | QPSK | 1 | 0 | 23.34 | 23.32 | 23.38 | 0.0 | 25.5 |
| | | 1 | 8 | 23.40 | 23.38 | 23.39 | 0.0 | 25.5 |
| | | 1 | 14 | 23.33 | 23.33 | 23.33 | 0.0 | 25.5 |
| | | 8 | 0 | 22.62 | 22.49 | 22.49 | 1.0 | 24.5 |
| | | 8 | 4 | 22.72 | 22.63 | 22.54 | 1.0 | 24.5 |
| | | 8 | 7 | 22.65 | 22.50 | 22.46 | 1.0 | 24.5 |
| | 15 | 0 | 22.68 | 22.50 | 22.55 | 1.0 | 24.5 | |
| | 16QAM | 1 | 0 | 22.50 | 23.11 | 22.44 | 1.0 | 24.5 |
| | | 1 | 8 | 22.93 | 22.60 | 22.49 | 1.0 | 24.5 |
| | | 1 | 14 | 22.56 | 22.48 | 22.28 | 1.0 | 24.5 |
| | | 8 | 0 | 21.73 | 21.47 | 21.62 | 2.0 | 23.5 |
| | | 8 | 4 | 21.68 | 21.68 | 21.70 | 2.0 | 23.5 |
| | | 8 | 7 | 21.67 | 21.55 | 21.55 | 2.0 | 23.5 |
| | 15 | 0 | 21.54 | 21.48 | 21.57 | 2.0 | 23.5 | |
| | 64QAM | 1 | 0 | 21.40 | 21.41 | 21.63 | 2.0 | 23.5 |
| | | 1 | 8 | 21.95 | 21.74 | 21.58 | 2.0 | 23.5 |
| | | 1 | 14 | 21.89 | 21.55 | 21.72 | 2.0 | 23.5 |
| | | 8 | 0 | 20.72 | 20.59 | 20.58 | 3.0 | 22.5 |
| 8 | | 4 | 20.84 | 20.63 | 20.61 | 3.0 | 22.5 | |
| 8 | | 7 | 20.78 | 20.67 | 20.73 | 3.0 | 22.5 | |
| 15 | 0 | 20.67 | 20.68 | 20.41 | 3.0 | 22.5 | | |

LTE Band 26 Measured Results(Continued)

| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit |
|----------|-------|---------------|-----------|--------------------|-----------|-----------|-----|---------------|
| | | | | 26697 | 26865 | 27033 | | |
| | | | | 814.7 MHz | 831.5 MHz | 848.3 MHz | | |
| 1.4 MHz | QPSK | 1 | 0 | 23.7 | 23.3 | 23.4 | 0.0 | 25.5 |
| | | 1 | 3 | 23.6 | 23.4 | 23.4 | 0.0 | 25.5 |
| | | 1 | 5 | 23.5 | 23.4 | 23.3 | 0.0 | 25.5 |
| | | 3 | 0 | 23.6 | 23.4 | 23.5 | 0.0 | 25.5 |
| | | 3 | 1 | 23.6 | 23.5 | 23.6 | 0.0 | 25.5 |
| | | 3 | 3 | 23.6 | 23.4 | 23.6 | 0.0 | 25.5 |
| | | 6 | 0 | 22.8 | 22.6 | 22.6 | 1.0 | 24.5 |
| | 16QAM | 1 | 0 | 22.6 | 23.0 | 22.4 | 1.0 | 24.5 |
| | | 1 | 3 | 22.8 | 22.5 | 23.1 | 1.0 | 24.5 |
| | | 1 | 5 | 22.8 | 22.6 | 22.2 | 1.0 | 24.5 |
| | | 3 | 0 | 22.7 | 22.4 | 22.4 | 1.0 | 24.5 |
| | | 3 | 1 | 22.5 | 22.4 | 22.5 | 1.0 | 24.5 |
| | | 3 | 3 | 22.6 | 22.5 | 22.4 | 1.0 | 24.5 |
| | | 6 | 0 | 21.8 | 21.8 | 21.8 | 2.0 | 23.5 |
| | 64QAM | 1 | 0 | 21.5 | 21.8 | 21.6 | 2.0 | 23.5 |
| | | 1 | 3 | 21.8 | 21.8 | 21.8 | 2.0 | 23.5 |
| | | 1 | 5 | 21.9 | 21.7 | 21.9 | 2.0 | 23.5 |
| | | 3 | 0 | 22.0 | 21.6 | 21.7 | 2.0 | 23.5 |
| | | 3 | 1 | 21.8 | 21.8 | 21.5 | 2.0 | 23.5 |
| | | 3 | 3 | 21.9 | 21.8 | 21.7 | 2.0 | 23.5 |
| | | 6 | 0 | 21.0 | 20.6 | 20.7 | 3.0 | 22.5 |

LTE Band 41 Measured Results

| BW (MHz) | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | | Reduced Average Power (dBm) Hotspot back-off | | | | | | | Reduced Average Power (dBm) Proximity sensor back-off | | | | | | | | | | | | |
|----------|-------|---------------|-----------|-----------------------------|-------|-------|-------|-------|----------|-------|---|--------------------|----------|------------|----------|-------|-------|--|---------------|--------------------|-------|-------|----------|------------|----------|-------|---------------|------------|----------|------|
| | | | | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit | | | |
| | | | | 39750 | 40185 | 40620 | 41055 | 41490 | 2506 MHz | | | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz | 39750 | 40185 | | | 40620 | 41055 | 41490 | 2506 MHz | 2549.5 MHz | 2593 MHz | | | 2636.5 MHz | 2680 MHz | |
| 20 MHz | QPSK | 16QAM | 1 | 0 | 22.80 | 22.28 | 22.77 | 22.41 | 22.72 | 0.0 | 24.0 | 20.73 | 20.55 | 20.48 | 20.55 | 20.93 | 0.0 | 22.0 | 20.67 | 20.36 | 20.66 | 20.42 | 20.69 | 0.0 | 22.0 | | | | | |
| | | | | 1 | 49 | 22.86 | 22.57 | 22.87 | 22.63 | 22.78 | 0.0 | 24.0 | 20.73 | 20.79 | 21.11 | 20.81 | 21.10 | 0.0 | 22.0 | 20.76 | 20.45 | 20.73 | 20.51 | 20.61 | 0.0 | 22.0 | | | | |
| | | | | 1 | 99 | 22.51 | 22.41 | 22.54 | 22.55 | 22.51 | 0.0 | 24.0 | 20.70 | 20.59 | 20.56 | 20.72 | 20.98 | 0.0 | 22.0 | 20.41 | 20.43 | 20.54 | 20.43 | 20.55 | 0.0 | 22.0 | | | | |
| | | | | 50 | 0 | 21.74 | 21.37 | 21.68 | 21.45 | 21.76 | 1.0 | 23.0 | 20.71 | 20.61 | 20.60 | 20.68 | 20.89 | 0.0 | 22.0 | 20.75 | 20.30 | 20.83 | 20.51 | 20.67 | 0.0 | 22.0 | | | | |
| | | | | 50 | 24 | 21.75 | 21.44 | 21.79 | 21.53 | 21.75 | 1.0 | 23.0 | 20.86 | 20.72 | 20.92 | 20.77 | 20.90 | 0.0 | 22.0 | 20.84 | 20.53 | 20.86 | 20.63 | 20.75 | 0.0 | 22.0 | | | | |
| | | | | 50 | 50 | 21.84 | 21.37 | 21.61 | 21.47 | 21.59 | 1.0 | 23.0 | 20.85 | 20.66 | 20.64 | 20.72 | 20.87 | 0.0 | 22.0 | 20.76 | 20.45 | 20.73 | 20.51 | 20.61 | 0.0 | 22.0 | | | | |
| | | | | 100 | 0 | 21.66 | 21.40 | 21.70 | 21.48 | 21.71 | 1.0 | 23.0 | 20.77 | 20.63 | 20.57 | 20.66 | 20.86 | 0.0 | 22.0 | 20.67 | 20.46 | 20.75 | 20.55 | 20.69 | 0.0 | 22.0 | | | | |
| | | | | 1 | 0 | 21.80 | 21.36 | 21.73 | 21.44 | 21.68 | 1.0 | 23.0 | 20.68 | 20.50 | 20.34 | 20.41 | 20.93 | 0.0 | 22.0 | 20.81 | 20.30 | 20.88 | 20.46 | 20.72 | 0.0 | 22.0 | | | | |
| | | | | 1 | 49 | 21.95 | 21.61 | 21.95 | 21.67 | 21.79 | 1.0 | 23.0 | 20.88 | 20.74 | 20.59 | 20.66 | 21.15 | 0.0 | 22.0 | 20.93 | 20.60 | 20.97 | 20.68 | 20.80 | 0.0 | 22.0 | | | | |
| | | | | 1 | 99 | 21.54 | 21.43 | 21.58 | 21.48 | 21.49 | 1.0 | 23.0 | 20.66 | 20.53 | 20.43 | 20.58 | 20.98 | 0.0 | 22.0 | 20.58 | 20.44 | 20.64 | 20.54 | 20.51 | 0.0 | 22.0 | | | | |
| | 50 | 0 | 20.74 | 20.53 | 20.85 | 20.49 | 20.73 | 2.0 | 22.0 | 20.71 | 20.63 | 20.60 | 20.69 | 21.01 | 0.0 | 22.0 | 20.77 | 20.47 | 20.79 | 20.58 | 20.74 | 0.0 | 22.0 | | | | | | | |
| | 50 | 24 | 20.89 | 20.57 | 20.86 | 20.67 | 20.74 | 2.0 | 22.0 | 20.86 | 20.72 | 20.70 | 20.77 | 21.05 | 0.0 | 22.0 | 20.86 | 20.54 | 20.82 | 20.54 | 20.77 | 0.0 | 22.0 | | | | | | | |
| | 50 | 50 | 20.72 | 20.52 | 20.71 | 20.52 | 20.60 | 2.0 | 22.0 | 20.86 | 20.66 | 20.64 | 20.71 | 20.92 | 0.0 | 22.0 | 20.78 | 20.41 | 20.74 | 20.53 | 20.61 | 0.0 | 22.0 | | | | | | | |
| | 100 | 0 | 20.71 | 20.45 | 20.74 | 20.56 | 20.65 | 2.0 | 22.0 | 20.79 | 20.66 | 20.59 | 20.69 | 20.93 | 0.0 | 22.0 | 20.75 | 20.47 | 20.75 | 20.58 | 20.70 | 0.0 | 22.0 | | | | | | | |
| | 1 | 0 | 20.48 | 20.01 | 20.33 | 20.09 | 20.33 | 2.0 | 22.0 | 21.15 | 20.76 | 20.84 | 21.23 | 21.03 | 0.0 | 22.0 | 20.35 | 20.40 | 20.31 | 20.11 | 20.31 | 0.0 | 22.0 | | | | | | | |
| | 1 | 49 | 20.60 | 20.15 | 20.57 | 20.32 | 20.44 | 2.0 | 22.0 | 21.34 | 20.98 | 21.08 | 21.48 | 21.26 | 0.0 | 22.0 | 20.44 | 20.10 | 20.54 | 20.34 | 20.40 | 0.0 | 22.0 | | | | | | | |
| | 1 | 99 | 20.12 | 19.99 | 20.17 | 20.17 | 20.09 | 2.0 | 22.0 | 21.12 | 20.80 | 20.92 | 21.37 | 21.28 | 0.0 | 22.0 | 20.16 | 20.08 | 20.09 | 20.14 | 20.17 | 0.0 | 22.0 | | | | | | | |
| | 64QAM | 16QAM | 16QAM | 0 | 0 | 19.85 | 19.55 | 19.86 | 19.59 | 19.76 | 3.0 | 21.0 | 19.80 | 19.97 | 19.97 | 20.03 | 20.09 | 1.0 | 21.0 | 19.79 | 19.55 | 19.88 | 19.60 | 19.76 | 1.0 | 21.0 | | | | |
| | | | | | 50 | 24 | 19.86 | 19.64 | 19.87 | 19.71 | 19.82 | 3.0 | 21.0 | 19.93 | 20.08 | 20.06 | 20.12 | 20.35 | 1.0 | 21.0 | 19.92 | 19.54 | 19.91 | 19.74 | 19.79 | 1.0 | 21.0 | | | |
| | | | | | 50 | 50 | 19.84 | 19.55 | 19.76 | 19.58 | 19.62 | 3.0 | 21.0 | 19.92 | 20.01 | 20.01 | 20.04 | 20.20 | 1.0 | 21.0 | 19.83 | 19.54 | 19.76 | 19.64 | 19.62 | 1.0 | 21.0 | | | |
| 100 | | | | | 0 | 19.71 | 19.54 | 19.70 | 19.63 | 19.69 | 3.0 | 21.0 | 19.83 | 19.98 | 19.98 | 19.99 | 20.25 | 1.0 | 21.0 | 19.74 | 19.50 | 19.71 | 19.64 | 19.74 | 1.0 | 21.0 | | | | |
| 15 MHz | | | | | QPSK | 16QAM | 1 | 0 | 22.84 | 22.42 | 22.83 | 22.43 | 22.77 | 0.0 | 24.0 | 21.14 | 20.84 | 20.96 | 20.89 | 21.19 | 0.0 | 22.0 | 20.74 | 20.33 | 20.76 | 20.45 | 20.72 | 0.0 | 22.0 | |
| | | | | | | | | 1 | 37 | 22.86 | 22.48 | 22.86 | 22.62 | 22.78 | 0.0 | 24.0 | 21.22 | 20.92 | 21.18 | 21.04 | 21.33 | 0.0 | 22.0 | 20.72 | 20.42 | 20.74 | 20.64 | 20.77 | 0.0 | 22.0 |
| | | | | | | | | 1 | 74 | 22.71 | 22.51 | 22.67 | 22.52 | 22.64 | 0.0 | 24.0 | 21.09 | 20.85 | 21.05 | 21.04 | 21.25 | 0.0 | 22.0 | 20.58 | 20.55 | 20.59 | 20.60 | 20.63 | 0.0 | 22.0 |
| | | | | | | | | 36 | 0 | 21.73 | 21.36 | 21.72 | 21.48 | 21.87 | 1.0 | 23.0 | 21.06 | 20.88 | 20.88 | 20.96 | 21.29 | 0.0 | 22.0 | 20.73 | 20.46 | 20.77 | 20.50 | 20.77 | 0.0 | 22.0 |
| | | | | | | | | 36 | 20 | 21.82 | 21.45 | 21.76 | 21.55 | 21.80 | 1.0 | 23.0 | 21.14 | 20.85 | 20.95 | 21.05 | 21.32 | 0.0 | 22.0 | 20.78 | 20.40 | 20.73 | 20.52 | 20.79 | 0.0 | 22.0 |
| | | | | | | | | 36 | 38 | 21.64 | 21.37 | 21.70 | 21.56 | 21.70 | 1.0 | 23.0 | 21.15 | 20.92 | 20.98 | 21.00 | 21.31 | 0.0 | 22.0 | 20.71 | 20.37 | 20.65 | 20.51 | 20.65 | 0.0 | 22.0 |
| | 75 | 0 | 21.68 | 21.39 | | | | 21.76 | 21.53 | 21.74 | 1.0 | 23.0 | 21.14 | 20.90 | 20.95 | 21.01 | 21.31 | 0.0 | 22.0 | 20.80 | 20.45 | 20.75 | 20.52 | 20.67 | 0.0 | 22.0 | | | | |
| | 1 | 0 | 21.85 | 21.47 | | | | 21.82 | 21.55 | 21.68 | 1.0 | 23.0 | 21.18 | 20.86 | 20.87 | 20.95 | 21.14 | 0.0 | 22.0 | 20.92 | 20.42 | 20.86 | 20.58 | 20.77 | 0.0 | 22.0 | | | | |
| | 1 | 37 | 21.92 | 21.61 | | | | 21.83 | 21.62 | 21.76 | 1.0 | 23.0 | 21.31 | 20.93 | 21.10 | 21.08 | 21.27 | 0.0 | 22.0 | 20.87 | 20.60 | 20.84 | 20.67 | 20.75 | 0.0 | 22.0 | | | | |
| | 1 | 74 | 21.65 | 21.59 | | | | 21.67 | 21.57 | 21.56 | 1.0 | 23.0 | 21.16 | 20.86 | 20.97 | 21.07 | 21.17 | 0.0 | 22.0 | 20.71 | 20.63 | 20.73 | 20.65 | 20.64 | 0.0 | 22.0 | | | | |
| | 36 | 0 | 20.68 | 20.44 | 20.72 | 20.53 | 20.71 | 2.0 | 22.0 | 21.11 | 20.91 | 20.88 | 21.00 | 21.27 | 0.0 | 22.0 | 20.72 | 20.36 | 20.70 | 20.51 | 20.74 | 0.0 | 22.0 | | | | | | | |
| | 36 | 20 | 20.75 | 20.46 | 20.71 | 20.53 | 20.76 | 2.0 | 22.0 | 21.17 | 20.98 | 20.96 | 21.08 | 21.27 | 0.0 | 22.0 | 20.72 | 20.39 | 20.67 | 20.53 | 20.75 | 0.0 | 22.0 | | | | | | | |
| | 36 | 39 | 20.73 | 20.43 | 20.65 | 20.51 | 20.65 | 2.0 | 22.0 | 21.19 | 20.94 | 20.97 | 21.03 | 21.26 | 0.0 | 22.0 | 20.61 | 20.44 | 20.65 | 20.50 | 20.62 | 0.0 | 22.0 | | | | | | | |
| | 75 | 0 | 20.74 | 20.47 | 20.75 | 20.58 | 20.69 | 2.0 | 22.0 | 21.17 | 20.93 | 20.97 | 21.02 | 21.28 | 0.0 | 22.0 | 20.76 | 20.45 | 20.77 | 20.57 | 20.71 | 0.0 | 22.0 | | | | | | | |
| | 1 | 0 | 20.55 | 20.02 | 20.39 | 20.20 | 20.37 | 2.0 | 22.0 | 20.72 | 20.77 | 21.16 | 20.51 | 20.98 | 0.0 | 22.0 | 20.45 | 20.11 | 20.39 | 20.14 | 20.36 | 0.0 | 22.0 | | | | | | | |
| | 1 | 37 | 20.57 | 20.20 | 20.49 | 20.30 | 20.42 | 2.0 | 22.0 | 20.82 | 20.85 | 21.37 | 20.64 | 21.13 | 0.0 | 22.0 | 20.56 | 20.16 | 20.47 | 20.29 | 20.43 | 0.0 | 22.0 | | | | | | | |
| | 1 | 74 | 20.23 | 20.22 | 20.23 | 20.20 | 20.28 | 2.0 | 22.0 | 20.67 | 20.77 | 21.26 | 20.65 | 21.01 | 0.0 | 22.0 | 20.31 | 20.06 | 20.32 | 20.22 | 20.22 | 0.0 | 22.0 | | | | | | | |
| | 36 | 0 | 19.70 | 19.45 | 19.80 | 19.58 | 19.77 | 3.0 | 21.0 | 20.15 | 19.89 | 19.99 | 20.06 | 20.22 | 1.0 | 21.0 | 19.73 | 19.67 | 19.79 | 19.59 | 19.75 | 1.0 | 21.0 | | | | | | | |
| | 36 | 20 | 19.86 | 19.40 | 19.82 | 19.59 | 19.76 | 3.0 | 21.0 | 20.22 | 19.97 | 20.04 | 20.12 | 20.25 | 1.0 | 21.0 | 19.83 | 19.54 | 19.70 | 19.59 | 19.77 | 1.0 | 21.0 | | | | | | | |
| | 36 | 38 | 19.70 | 19.49 | 19.69 | 19.50 | 19.66 | 3.0 | 21.0 | 20.24 | 19.93 | 20.08 | 20.10 | 20.19 | 1.0 | 21.0 | 19.75 | 19.57 | 19.75 | 19.59 | 19.67 | 1.0 | 21.0 | | | | | | | |
| 75 | 0 | 19.89 | 19.56 | 19.82 | 19.60 | 19.73 | 3.0 | 21.0 | 20.15 | 19.96 | 19.98 | 20.02 | 20.26 | 1.0 | 21.0 | 19.87 | 19.54 | 19.85 | 19.59 | 19.70 | 1.0 | 21.0 | | | | | | | | |
| 10 MHz | QPSK | 16QAM | 1 | 0 | 22.88 | 22.51 | 22.89 | 22.55 | 22.77 | 0.0 | 24.0 | 21.10 | 20.93 | 21.04 | 20.94 | 21.21 | 0.0 | 22.0 | 20.85 | 20.46 | 20.81 | 20.55 | 20.80 | 0.0 | 22.0 | | | | | |
| | | | | 1 | 25 | 22.79 | 22.52 | 22.82 | 22.62 | 22.77 | 0.0 | 24.0 | 21.16 | 20.99 | 21.14 | 21.02 | 21.31 | 0.0 | 22.0 | 20.80 | 20.46 | 20.85 | 20.62 | 20.78 | 0.0 | 22.0 | | | | |
| | | | | 1 | 49 | 22.66 | 22.52 | 22.70 | 22.64 | 22.65 | 0.0 | 24.0 | 21.05 | 20.91 | 21.07 | 21.02 | 21.24 | 0.0 | 22.0 | 20.71 | 20.43 | 20.70 | 20.61 | 20.66 | 0.0 | 22.0 | | | | |
| | | | | 25 | 0 | 21.77 | 21.42 | 21.82 | 21.60 | 21.72 | 1.0 | 23.0 | 21.10 | 20.98 | 20.97 | 21.00 | 21.26 | 0.0 | 22.0 | 20.70 | 20.39 | 20.75 | 20.56 | 20.72 | 0.0 | 22.0 | | | | |
| | | | | 25 | 12 | 21.77 | 21.55 | 21.76 | 21.58 | 21.79 | 1.0 | 23.0 | 21.19 | 21.01 | 20.99 | 21.08 | 21.28 | 0.0 | 22.0 | 20.79 | 20.42 | 20.79 | 20.59 | 20.82 | 0.0 | 22.0 | | | | |
| | | | | 25 | 25 | 21.79 | 21.45 | 21.79 | 21.65 | 21.68 | 1.0 | 23.0 | 21.17 | 20.97 | 20.97 | 21.02 | 21.22 | 0.0 | 22.0 | 20.81 | 20.38 | 20.72 | 20.58 | 20.66 | 0.0 | 22.0 | | | | |
| | | | | 50 | 0 | 21.72 | 21.37 | 21.67 | 21.48 | 21.71 | 1.0 | 23.0 | 21.18 | 20.99 | 21.01 | 21.03 | 21.29 | 0.0 | 22.0 | 20.85 | 20.49 | 20.79 | 20.49 | 20.64 | 0.0 | 22.0 | | | | |
| | | | | 1 | 0 | 21.84 | 21.58 | 21.94 | 21.62 | 21.75 | 1.0 | 23.0 | 21.30 | 20.95 | 20.95 | 21.11 | 21.16 | 0.0 | 22.0 | 20.94 | 20.53 | 20.92 | 20.65 | 20.81 | 0.0 | 22.0 | | | | |
| | | | | 1 | 25 | 21.88 | 21.55 | 21.95 | 21.61 | 21.75 | 1.0 | 23.0 | 21.37 | 20.99 | 21.02 | 21.18 | 21.24 | 0.0 | 22.0 | 20.90 | 20.57 | 20.98 | 20.72 | 20.80 | 0.0 | 22.0 | | | | |
| | | | | 1 | 49 | 21.73 | 21.54 | 21.81 | 21.59 | 21.63 | 1.0 | 23.0 | 21.26 | 20.93 | 20.96 | 21.18 | 21.18 | 0.0 | 22.0 | 20.74 | 20.68 | 20.79 | 20.72 | 20.70 | 0.0 | | | | | |

LTE Band 66 Measured Results

| BW (MHz) | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | Reduced Average Power (dBm) Hotspot back-off | | | | | Reduced Average Power (dBm) Proximity sensor back-off | | | | | |
|----------|--------|---------------|-----------|-----------------------------|----------|----------|-------|---------------|---|----------|----------|-------|---------------|--|----------|----------|-------|---------------|------|
| | | | | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | |
| | | | | 132072 | 132322 | 132572 | | | 132072 | 132322 | 132572 | | | 132072 | 132322 | 132572 | | | |
| | | | | 1720 MHz | 1745 MHz | 1770 MHz | | | 1720 MHz | 1745 MHz | 1770 MHz | | | 1720 MHz | 1745 MHz | 1770 MHz | | | |
| 20 MHz | QPSK | 1 | 0 | 23.76 | 23.68 | 23.78 | 0.0 | 25.0 | 20.81 | 20.93 | 20.97 | 0.0 | 22.0 | 20.69 | 20.69 | 20.81 | 0.0 | 22.0 | |
| | | 1 | 49 | 24.18 | 24.06 | 24.19 | 0.0 | 25.0 | 21.05 | 21.18 | 21.21 | 0.0 | 22.0 | 20.90 | 21.01 | 21.05 | 0.0 | 22.0 | |
| | | 1 | 99 | 23.68 | 23.88 | 23.98 | 0.0 | 25.0 | 20.89 | 21.02 | 21.07 | 0.0 | 22.0 | 20.81 | 20.87 | 20.91 | 0.0 | 22.0 | |
| | | 50 | 0 | 22.87 | 22.81 | 23.10 | 1.0 | 24.0 | 20.91 | 21.01 | 21.21 | 0.0 | 22.0 | 20.85 | 20.74 | 21.05 | 0.0 | 22.0 | |
| | | 50 | 24 | 22.92 | 23.09 | 23.15 | 1.0 | 24.0 | 21.05 | 21.13 | 21.26 | 0.0 | 22.0 | 20.91 | 20.98 | 21.11 | 0.0 | 22.0 | |
| | | 50 | 50 | 22.94 | 23.01 | 23.16 | 1.0 | 24.0 | 21.06 | 21.10 | 21.27 | 0.0 | 22.0 | 21.05 | 21.01 | 21.14 | 0.0 | 22.0 | |
| | 16QAM | 100 | 0 | 22.93 | 22.91 | 23.13 | 1.0 | 24.0 | 20.97 | 21.04 | 21.20 | 0.0 | 22.0 | 20.93 | 20.92 | 21.04 | 0.0 | 22.0 | |
| | | 1 | 0 | 23.14 | 23.17 | 23.25 | 1.0 | 24.0 | 21.28 | 21.44 | 21.53 | 0.0 | 22.0 | 21.01 | 20.98 | 21.14 | 0.0 | 22.0 | |
| | | 1 | 49 | 22.98 | 23.31 | 23.75 | 1.0 | 24.0 | 21.50 | 21.71 | 21.79 | 0.0 | 22.0 | 20.93 | 21.27 | 21.41 | 0.0 | 22.0 | |
| | | 1 | 99 | 23.54 | 22.82 | 23.14 | 1.0 | 24.0 | 21.38 | 21.53 | 21.62 | 0.0 | 22.0 | 20.85 | 21.29 | 20.86 | 0.0 | 22.0 | |
| | | 50 | 0 | 21.79 | 21.88 | 22.05 | 2.0 | 23.0 | 20.94 | 21.07 | 21.27 | 0.0 | 22.0 | 20.93 | 20.72 | 21.12 | 0.0 | 22.0 | |
| | | 50 | 24 | 22.02 | 22.02 | 22.11 | 2.0 | 23.0 | 21.04 | 21.20 | 21.31 | 0.0 | 22.0 | 20.92 | 20.96 | 21.16 | 0.0 | 22.0 | |
| | 64QAM | 50 | 50 | 22.01 | 21.96 | 22.15 | 2.0 | 23.0 | 21.07 | 21.17 | 21.28 | 0.0 | 22.0 | 20.99 | 21.04 | 21.08 | 0.0 | 22.0 | |
| | | 100 | 0 | 21.85 | 21.91 | 22.00 | 2.0 | 23.0 | 21.00 | 21.09 | 21.25 | 0.0 | 22.0 | 20.92 | 20.87 | 21.06 | 0.0 | 22.0 | |
| | | 1 | 0 | 21.74 | 21.90 | 21.70 | 2.0 | 23.0 | 21.29 | 21.62 | 21.10 | 0.0 | 22.0 | 20.96 | 20.75 | 20.78 | 0.0 | 22.0 | |
| | | 1 | 49 | 22.49 | 21.81 | 22.33 | 2.0 | 23.0 | 21.57 | 21.84 | 21.33 | 0.0 | 22.0 | 21.11 | 20.98 | 20.86 | 0.0 | 22.0 | |
| | | 1 | 99 | 22.21 | 21.83 | 22.12 | 2.0 | 23.0 | 21.42 | 21.67 | 21.20 | 0.0 | 22.0 | 21.13 | 21.27 | 20.72 | 0.0 | 22.0 | |
| | | 50 | 0 | 20.87 | 20.88 | 21.18 | 3.0 | 22.0 | 21.25 | 21.08 | 21.00 | 0.0 | 22.0 | 20.86 | 20.81 | 21.09 | 0.0 | 22.0 | |
| | 15 MHz | QPSK | 50 | 24 | 21.07 | 21.03 | 21.13 | 3.0 | 22.0 | 21.32 | 21.22 | 21.10 | 0.0 | 22.0 | 21.05 | 21.01 | 21.12 | 0.0 | 22.0 |
| | | | 50 | 50 | 21.10 | 21.08 | 21.20 | 3.0 | 22.0 | 21.30 | 21.17 | 21.12 | 0.0 | 22.0 | 20.93 | 21.06 | 21.11 | 0.0 | 22.0 |
| | | | 100 | 0 | 20.99 | 20.91 | 21.11 | 3.0 | 22.0 | 21.23 | 21.07 | 21.05 | 0.0 | 22.0 | 20.93 | 20.81 | 21.13 | 0.0 | 22.0 |
| | | | 1 | 0 | 23.92 | 23.75 | 23.95 | 0.0 | 25.0 | 20.75 | 20.80 | 21.00 | 0.0 | 22.0 | 20.75 | 20.76 | 20.79 | 0.0 | 22.0 |
| | | | 1 | 37 | 23.89 | 24.06 | 24.04 | 0.0 | 25.0 | 20.86 | 20.96 | 21.15 | 0.0 | 22.0 | 20.86 | 20.84 | 20.90 | 0.0 | 22.0 |
| | | | 1 | 74 | 23.88 | 23.95 | 24.02 | 0.0 | 25.0 | 20.82 | 20.88 | 21.09 | 0.0 | 22.0 | 20.80 | 20.88 | 20.98 | 0.0 | 22.0 |
| 16QAM | 36 | 0 | 22.80 | 22.93 | 22.97 | 1.0 | 24.0 | 20.77 | 20.85 | 21.02 | 0.0 | 22.0 | 20.84 | 20.71 | 20.88 | 0.0 | 22.0 | | |
| | 36 | 20 | 22.86 | 22.94 | 22.98 | 1.0 | 24.0 | 20.82 | 20.95 | 21.07 | 0.0 | 22.0 | 20.81 | 20.98 | 20.95 | 0.0 | 22.0 | | |
| | 36 | 39 | 22.89 | 22.96 | 23.08 | 1.0 | 24.0 | 20.81 | 20.95 | 21.11 | 0.0 | 22.0 | 20.81 | 20.92 | 20.91 | 0.0 | 22.0 | | |
| | 75 | 0 | 22.88 | 22.90 | 23.05 | 1.0 | 24.0 | 20.79 | 20.93 | 21.09 | 0.0 | 22.0 | 20.75 | 20.89 | 21.00 | 0.0 | 22.0 | | |
| | 1 | 0 | 22.83 | 22.72 | 22.87 | 1.0 | 24.0 | 21.27 | 20.80 | 21.37 | 0.0 | 22.0 | 21.63 | 20.95 | 21.24 | 0.0 | 22.0 | | |
| | 1 | 37 | 23.08 | 23.27 | 23.22 | 1.0 | 24.0 | 21.39 | 20.94 | 21.50 | 0.0 | 22.0 | 21.20 | 21.19 | 20.79 | 0.0 | 22.0 | | |
| 64QAM | 1 | 74 | 22.87 | 23.31 | 22.95 | 1.0 | 24.0 | 21.33 | 20.89 | 21.42 | 0.0 | 22.0 | 21.12 | 21.58 | 21.04 | 0.0 | 22.0 | | |
| | 36 | 0 | 21.86 | 21.82 | 21.99 | 2.0 | 23.0 | 20.76 | 20.85 | 21.09 | 0.0 | 22.0 | 20.81 | 20.86 | 21.01 | 0.0 | 22.0 | | |
| | 36 | 20 | 21.84 | 21.93 | 22.02 | 2.0 | 23.0 | 20.80 | 20.94 | 21.14 | 0.0 | 22.0 | 20.82 | 20.88 | 20.97 | 0.0 | 22.0 | | |
| | 36 | 39 | 21.81 | 21.84 | 22.01 | 2.0 | 23.0 | 20.82 | 20.93 | 21.15 | 0.0 | 22.0 | 20.81 | 20.88 | 20.98 | 0.0 | 22.0 | | |
| | 75 | 0 | 21.85 | 21.92 | 22.06 | 2.0 | 23.0 | 20.76 | 20.92 | 21.09 | 0.0 | 22.0 | 20.76 | 20.90 | 20.93 | 0.0 | 22.0 | | |
| | 1 | 0 | 22.07 | 22.05 | 22.22 | 2.0 | 23.0 | 21.16 | 21.52 | 21.14 | 0.0 | 22.0 | 21.00 | 21.38 | 21.23 | 0.0 | 22.0 | | |
| 10 MHz | QPSK | 1 | 37 | 22.14 | 22.10 | 22.28 | 2.0 | 23.0 | 21.30 | 21.65 | 21.24 | 0.0 | 22.0 | 21.22 | 20.84 | 20.99 | 0.0 | 22.0 | |
| | | 1 | 74 | 22.27 | 22.26 | 22.21 | 2.0 | 23.0 | 21.20 | 21.58 | 21.18 | 0.0 | 22.0 | 20.96 | 21.13 | 21.23 | 0.0 | 22.0 | |
| | | 36 | 0 | 20.97 | 20.97 | 21.04 | 3.0 | 22.0 | 21.11 | 20.92 | 20.85 | 0.0 | 22.0 | 20.80 | 20.87 | 20.96 | 0.0 | 22.0 | |
| | | 36 | 20 | 21.05 | 21.00 | 21.21 | 3.0 | 22.0 | 21.21 | 21.00 | 20.90 | 0.0 | 22.0 | 20.92 | 20.95 | 21.05 | 0.0 | 22.0 | |
| | | 36 | 39 | 21.02 | 21.01 | 21.20 | 3.0 | 22.0 | 21.22 | 21.00 | 20.91 | 0.0 | 22.0 | 20.79 | 20.90 | 21.00 | 0.0 | 22.0 | |
| | | 75 | 0 | 20.92 | 20.94 | 21.06 | 3.0 | 22.0 | 21.15 | 21.01 | 20.86 | 0.0 | 22.0 | 20.78 | 20.94 | 20.89 | 0.0 | 22.0 | |
| 10 MHz | 16QAM | 1 | 0 | 23.83 | 23.95 | 24.00 | 0.0 | 25.0 | 20.79 | 20.87 | 21.07 | 0.0 | 22.0 | 20.86 | 20.73 | 20.86 | 0.0 | 22.0 | |
| | | 1 | 25 | 24.02 | 24.03 | 24.05 | 0.0 | 25.0 | 20.80 | 20.94 | 21.17 | 0.0 | 22.0 | 20.81 | 20.91 | 21.03 | 0.0 | 22.0 | |
| | | 1 | 49 | 23.96 | 24.01 | 23.99 | 0.0 | 25.0 | 20.78 | 20.94 | 21.13 | 0.0 | 22.0 | 20.85 | 20.98 | 20.90 | 0.0 | 22.0 | |
| | | 25 | 0 | 22.85 | 22.84 | 22.93 | 1.0 | 24.0 | 20.70 | 20.86 | 21.01 | 0.0 | 22.0 | 20.68 | 20.79 | 20.90 | 0.0 | 22.0 | |
| | | 25 | 12 | 22.89 | 23.05 | 23.13 | 1.0 | 24.0 | 20.81 | 20.91 | 21.08 | 0.0 | 22.0 | 20.86 | 20.95 | 20.97 | 0.0 | 22.0 | |
| | | 25 | 25 | 22.90 | 22.97 | 22.99 | 1.0 | 24.0 | 20.75 | 20.89 | 21.06 | 0.0 | 22.0 | 20.74 | 20.91 | 21.02 | 0.0 | 22.0 | |
| | 64QAM | 50 | 0 | 22.84 | 22.95 | 23.12 | 1.0 | 24.0 | 20.76 | 20.84 | 21.05 | 0.0 | 22.0 | 20.80 | 20.83 | 20.97 | 0.0 | 22.0 | |
| | | 1 | 0 | 23.08 | 23.28 | 23.16 | 1.0 | 24.0 | 20.87 | 20.86 | 21.43 | 0.0 | 22.0 | 20.93 | 21.13 | 20.99 | 0.0 | 22.0 | |
| | | 1 | 25 | 23.34 | 23.33 | 23.31 | 1.0 | 24.0 | 20.91 | 20.93 | 21.51 | 0.0 | 22.0 | 21.22 | 21.00 | 21.07 | 0.0 | 22.0 | |
| | | 1 | 49 | 22.86 | 23.05 | 23.08 | 1.0 | 24.0 | 20.87 | 20.89 | 21.46 | 0.0 | 22.0 | 20.82 | 21.10 | 21.63 | 0.0 | 22.0 | |
| | | 25 | 0 | 21.90 | 21.93 | 22.09 | 2.0 | 23.0 | 20.87 | 20.90 | 21.09 | 0.0 | 22.0 | 20.68 | 20.80 | 20.91 | 0.0 | 22.0 | |
| | | 25 | 12 | 22.04 | 21.93 | 22.11 | 2.0 | 23.0 | 20.93 | 21.00 | 21.17 | 0.0 | 22.0 | 20.91 | 20.90 | 21.07 | 0.0 | 22.0 | |
| | QPSK | 25 | 25 | 21.85 | 21.97 | 22.16 | 2.0 | 23.0 | 20.91 | 20.99 | 21.11 | 0.0 | 22.0 | 20.82 | 20.89 | 20.93 | 0.0 | 22.0 | |
| | | 50 | 0 | 21.86 | 22.01 | 22.10 | 2.0 | 23.0 | 20.85 | 20.94 | 21.11 | 0.0 | 22.0 | 20.82 | 20.84 | 21.06 | 0.0 | 22.0 | |
| | | 1 | 0 | 22.03 | 21.78 | 22.19 | 2.0 | 23.0 | 21.26 | 21.29 | 21.02 | 0.0 | 22.0 | 21.01 | 21.34 | 20.95 | 0.0 | 22.0 | |
| | | 1 | 25 | 22.15 | 22.42 | 22.55 | 2.0 | 23.0 | 21.34 | 21.32 | 21.06 | 0.0 | 22.0 | 21.49 | 21.03 | 21.06 | 0.0 | 22.0 | |
| | | 1 | 49 | 21.74 | 22.14 | 22.21 | 2.0 | 23.0 | 21.27 | 21.33 | 21.00 | 0.0 | 22.0 | 20.94 | 21.25 | 21.20 | 0.0 | 22.0 | |
| | | 25 | 0 | 20.85 | 21.00 | 21.13 | 3.0 | 22.0 | 21.18 | 20.97 | 20.91 | 0.0 | 22.0 | 20.80 | 20.74 | 20.88 | 0.0 | 22.0 | |
| 16QAM | 25 | 12 | 20.97 | 21.06 | 21.21 | 3.0 | 22.0 | 21.23 | 21.07 | 20.99 | 0.0 | 22.0 | 20.95 | 20.99 | 21.04 | 0.0 | 22.0 | | |
| | 25 | 25 | 20.91 | 21.00 | 21.10 | 3.0 | 22.0 | 21.20 | 21.02 | 20.97 | 0.0 | 22.0 | 20.87 | 20.90 | 20.99 | 0.0 | 22.0 | | |
| | 50 | 0 | 20.93 | 20.99 | 21.11 | 3.0 | 22.0 | 21.13 | 20.96 | 20.88 | 0.0 | 22.0 | 20.83 | 20.92 | 20.97 | 0.0 | 22.0 | | |

LTE Band 66 Measured Results(Continued)

| BW (MHz) | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | Measured Pwr (dBm) | | | MPR | Tune-up Limit | |
|----------|-------|---------------|-----------|--------------------|----------|------------|------|---------------|--------------------|----------|------------|------|---------------|--------------------|----------|------------|------|---------------|------|
| | | | | 18625 | 18900 | 19175 | | | 18625 | 18900 | 19175 | | | 18625 | 18900 | 19175 | | | |
| | | | | 1852.5 MHz | 1880 MHz | 1907.5 MHz | | | 1852.5 MHz | 1880 MHz | 1907.5 MHz | | | 1852.5 MHz | 1880 MHz | 1907.5 MHz | | | |
| 5 MHz | QPSK | 1 | 0 | 23.07 | 22.93 | 22.88 | 0.0 | 24.0 | 21.20 | 21.00 | 20.81 | 0.0 | 22.0 | 21.25 | 21.12 | 20.96 | 0.0 | 22.0 | |
| | | 1 | 12 | 23.18 | 23.10 | 23.02 | 0.0 | 24.0 | 21.32 | 21.13 | 20.92 | 0.0 | 22.0 | 21.30 | 21.05 | 21.10 | 0.0 | 22.0 | |
| | | 1 | 24 | 23.06 | 23.06 | 22.87 | 0.0 | 24.0 | 21.17 | 20.97 | 20.77 | 0.0 | 22.0 | 21.16 | 21.10 | 20.82 | 0.0 | 22.0 | |
| | | 12 | 0 | 22.06 | 22.03 | 21.86 | 1.0 | 23.0 | 21.17 | 20.95 | 20.82 | 0.0 | 22.0 | 21.09 | 20.98 | 20.98 | 0.0 | 22.0 | |
| | | 12 | 7 | 22.17 | 22.11 | 21.93 | 1.0 | 23.0 | 21.24 | 21.00 | 20.87 | 0.0 | 22.0 | 21.19 | 21.19 | 20.98 | 0.0 | 22.0 | |
| | | 12 | 13 | 22.08 | 22.03 | 21.81 | 1.0 | 23.0 | 21.17 | 21.00 | 20.82 | 0.0 | 22.0 | 21.19 | 21.06 | 20.94 | 0.0 | 22.0 | |
| | | 25 | 0 | 22.18 | 22.10 | 21.83 | 1.0 | 23.0 | 21.18 | 20.99 | 20.82 | 0.0 | 22.0 | 21.11 | 21.00 | 20.97 | 0.0 | 22.0 | |
| | 16QAM | 1 | 0 | 22.80 | 22.11 | 22.39 | 1.0 | 23.0 | 21.29 | 21.16 | 21.31 | 0.0 | 22.0 | 21.96 | 21.20 | 21.51 | 0.0 | 22.0 | |
| | | 1 | 12 | 22.83 | 22.18 | 22.26 | 1.0 | 23.0 | 21.42 | 21.29 | 21.46 | 0.0 | 22.0 | 21.94 | 21.97 | 21.36 | 0.0 | 22.0 | |
| | | 1 | 24 | 21.98 | 22.46 | 21.83 | 1.0 | 23.0 | 21.27 | 21.16 | 21.30 | 0.0 | 22.0 | 21.14 | 20.98 | 21.14 | 0.0 | 22.0 | |
| | | 12 | 0 | 21.32 | 21.21 | 20.89 | 2.0 | 22.0 | 21.25 | 21.08 | 20.99 | 0.0 | 22.0 | 21.15 | 21.06 | 20.95 | 0.0 | 22.0 | |
| | | 12 | 7 | 21.20 | 21.30 | 21.03 | 2.0 | 22.0 | 21.31 | 21.15 | 21.05 | 0.0 | 22.0 | 21.23 | 21.19 | 21.08 | 0.0 | 22.0 | |
| | | 12 | 13 | 21.28 | 21.03 | 20.97 | 2.0 | 22.0 | 21.26 | 21.13 | 20.96 | 0.0 | 22.0 | 21.24 | 21.11 | 20.98 | 0.0 | 22.0 | |
| | | 25 | 0 | 21.35 | 21.13 | 20.96 | 2.0 | 22.0 | 21.17 | 21.08 | 20.96 | 0.0 | 22.0 | 21.24 | 21.09 | 20.96 | 0.0 | 22.0 | |
| | 64QAM | 1 | 0 | 21.62 | 21.04 | 21.30 | 2.0 | 22.0 | 21.12 | 21.24 | 21.18 | 0.0 | 22.0 | 21.27 | 21.35 | 21.40 | 0.0 | 22.0 | |
| | | 1 | 12 | 21.37 | 20.98 | 21.20 | 2.0 | 22.0 | 21.27 | 21.39 | 21.29 | 0.0 | 22.0 | 21.90 | 21.50 | 21.59 | 0.0 | 22.0 | |
| | | 1 | 24 | 20.86 | 21.23 | 20.87 | 2.0 | 22.0 | 21.12 | 21.25 | 21.13 | 0.0 | 22.0 | 21.64 | 21.31 | 21.05 | 0.0 | 22.0 | |
| | | 12 | 0 | 20.23 | 20.20 | 19.89 | 3.0 | 21.0 | 20.30 | 20.17 | 19.84 | 0.0 | 22.0 | 20.20 | 20.10 | 19.97 | 0.0 | 22.0 | |
| | | 12 | 7 | 20.35 | 20.28 | 20.13 | 3.0 | 21.0 | 20.31 | 20.23 | 19.89 | 0.0 | 22.0 | 20.33 | 20.18 | 20.12 | 0.0 | 22.0 | |
| | | 12 | 13 | 20.28 | 20.19 | 19.95 | 3.0 | 21.0 | 20.27 | 20.21 | 19.84 | 0.0 | 22.0 | 20.23 | 20.13 | 19.98 | 0.0 | 22.0 | |
| | | 25 | 0 | 20.20 | 20.11 | 19.93 | 3.0 | 21.0 | 20.25 | 20.17 | 19.90 | 0.0 | 22.0 | 20.19 | 20.09 | 19.94 | 0.0 | 22.0 | |
| | 3 MHz | QPSK | 1 | 0 | 22.7 | 22.7 | 22.6 | 0.0 | 24.0 | 20.9 | 20.6 | 20.6 | 0.0 | 22.0 | 21.2 | 21.0 | 20.8 | 0.0 | 22.0 |
| | | | 1 | 8 | 23.0 | 22.7 | 22.7 | 0.0 | 24.0 | 20.9 | 20.7 | 20.7 | 0.0 | 22.0 | 21.2 | 21.1 | 20.9 | 0.0 | 22.0 |
| | | | 1 | 14 | 22.8 | 22.7 | 22.5 | 0.0 | 24.0 | 20.8 | 20.6 | 20.5 | 0.0 | 22.0 | 21.1 | 21.0 | 20.8 | 0.0 | 22.0 |
| | 8 | | 0 | 22.1 | 21.9 | 21.8 | 1.0 | 23.0 | 21.1 | 20.9 | 20.8 | 0.0 | 22.0 | 21.1 | 21.0 | 21.0 | 0.0 | 22.0 | |
| 8 | 4 | | 22.1 | 22.1 | 21.8 | 1.0 | 23.0 | 21.1 | 20.9 | 20.8 | 0.0 | 22.0 | 21.3 | 21.0 | 20.9 | 0.0 | 22.0 | | |
| 8 | 7 | | 22.0 | 22.0 | 21.8 | 1.0 | 23.0 | 21.1 | 20.9 | 20.7 | 0.0 | 22.0 | 21.2 | 21.0 | 20.8 | 0.0 | 22.0 | | |
| 15 | 0 | | 22.1 | 22.0 | 21.8 | 1.0 | 23.0 | 21.1 | 20.9 | 20.7 | 0.0 | 22.0 | 21.1 | 21.0 | 21.0 | 0.0 | 22.0 | | |
| 16QAM | 1 | 0 | 22.0 | 21.9 | 21.6 | 1.0 | 23.0 | 21.0 | 20.7 | 20.9 | 0.0 | 22.0 | 21.8 | 21.3 | 21.6 | 0.0 | 22.0 | | |
| | 1 | 8 | 22.3 | 22.2 | 21.7 | 1.0 | 23.0 | 21.1 | 20.8 | 21.1 | 0.0 | 22.0 | 21.3 | 21.7 | 21.0 | 0.0 | 22.0 | | |
| | 1 | 14 | 22.0 | 22.0 | 21.8 | 1.0 | 23.0 | 20.9 | 20.6 | 20.9 | 0.0 | 22.0 | 21.3 | 20.8 | 20.8 | 0.0 | 22.0 | | |
| | 8 | 0 | 21.2 | 21.2 | 20.9 | 2.0 | 22.0 | 21.2 | 21.1 | 20.9 | 0.0 | 22.0 | 21.1 | 21.0 | 20.8 | 0.0 | 22.0 | | |
| | 8 | 4 | 21.2 | 21.2 | 21.0 | 2.0 | 22.0 | 21.2 | 21.1 | 20.9 | 0.0 | 22.0 | 21.3 | 21.2 | 20.9 | 0.0 | 22.0 | | |
| | 8 | 7 | 21.1 | 21.2 | 21.0 | 2.0 | 22.0 | 21.2 | 21.1 | 20.9 | 0.0 | 22.0 | 21.2 | 21.0 | 21.0 | 0.0 | 22.0 | | |
| | 15 | 0 | 21.2 | 21.2 | 20.8 | 2.0 | 22.0 | 21.1 | 21.0 | 20.8 | 0.0 | 22.0 | 21.2 | 21.0 | 20.9 | 0.0 | 22.0 | | |
| 64QAM | 1 | 0 | 21.4 | 21.2 | 21.0 | 2.0 | 22.0 | 21.4 | 21.0 | 20.8 | 0.0 | 22.0 | 21.1 | 21.0 | 20.9 | 0.0 | 22.0 | | |
| | 1 | 8 | 21.5 | 21.1 | 21.0 | 2.0 | 22.0 | 21.5 | 21.2 | 20.9 | 0.0 | 22.0 | 21.4 | 21.4 | 21.1 | 0.0 | 22.0 | | |
| | 1 | 14 | 21.3 | 21.0 | 20.9 | 2.0 | 22.0 | 21.4 | 21.0 | 20.8 | 0.0 | 22.0 | 21.2 | 21.0 | 20.9 | 0.0 | 22.0 | | |
| | 8 | 0 | 20.3 | 19.9 | 20.0 | 3.0 | 21.0 | 20.3 | 20.0 | 19.9 | 0.0 | 22.0 | 20.1 | 20.1 | 19.9 | 0.0 | 22.0 | | |
| | 8 | 4 | 20.2 | 20.1 | 20.1 | 3.0 | 21.0 | 20.3 | 20.0 | 19.9 | 0.0 | 22.0 | 20.3 | 20.3 | 20.1 | 0.0 | 22.0 | | |
| | 8 | 7 | 20.2 | 20.1 | 19.8 | 3.0 | 21.0 | 20.3 | 20.0 | 19.9 | 0.0 | 22.0 | 20.3 | 20.2 | 20.1 | 0.0 | 22.0 | | |
| | 15 | 0 | 20.1 | 19.9 | 20.0 | 3.0 | 21.0 | 20.2 | 20.0 | 19.8 | 0.0 | 22.0 | 20.2 | 20.2 | 19.9 | 0.0 | 22.0 | | |
| 1.4 MHz | QPSK | 1 | 0 | 22.9 | 22.9 | 22.6 | 0.0 | 24.0 | 20.9 | 20.8 | 20.7 | 0.0 | 22.0 | 20.9 | 20.7 | 20.5 | 0.0 | 22.0 | |
| | | 1 | 3 | 22.9 | 22.9 | 22.7 | 0.0 | 24.0 | 21.0 | 20.8 | 20.7 | 0.0 | 22.0 | 20.9 | 20.9 | 20.7 | 0.0 | 22.0 | |
| | | 1 | 5 | 22.9 | 22.8 | 22.6 | 0.0 | 24.0 | 21.0 | 20.7 | 20.6 | 0.0 | 22.0 | 20.7 | 20.7 | 20.6 | 0.0 | 22.0 | |
| | | 3 | 0 | 22.9 | 22.9 | 22.8 | 0.0 | 24.0 | 21.1 | 20.9 | 20.8 | 0.0 | 22.0 | 21.1 | 20.9 | 20.9 | 0.0 | 22.0 | |
| | | 3 | 1 | 23.0 | 23.0 | 22.7 | 0.0 | 24.0 | 21.2 | 20.9 | 20.8 | 0.0 | 22.0 | 21.2 | 21.1 | 20.9 | 0.0 | 22.0 | |
| | | 3 | 3 | 23.0 | 22.8 | 22.8 | 0.0 | 24.0 | 21.1 | 20.9 | 20.8 | 0.0 | 22.0 | 21.0 | 20.9 | 20.8 | 0.0 | 22.0 | |
| | | 6 | 0 | 22.0 | 22.1 | 21.9 | 1.0 | 23.0 | 21.1 | 20.9 | 20.8 | 0.0 | 22.0 | 21.1 | 20.9 | 20.7 | 0.0 | 22.0 | |
| | 16QAM | 1 | 0 | 22.0 | 22.5 | 21.9 | 1.0 | 23.0 | 21.1 | 21.0 | 21.0 | 0.0 | 22.0 | 21.4 | 21.0 | 21.3 | 0.0 | 22.0 | |
| | | 1 | 3 | 22.6 | 21.7 | 22.3 | 1.0 | 23.0 | 21.1 | 21.0 | 21.1 | 0.0 | 22.0 | 21.2 | 20.9 | 20.5 | 0.0 | 22.0 | |
| | | 1 | 5 | 22.2 | 21.9 | 22.0 | 1.0 | 23.0 | 21.1 | 21.0 | 21.0 | 0.0 | 22.0 | 21.4 | 21.5 | 20.9 | 0.0 | 22.0 | |
| | | 3 | 0 | 22.0 | 21.8 | 21.7 | 1.0 | 23.0 | 21.4 | 21.0 | 21.0 | 0.0 | 22.0 | 21.1 | 21.0 | 20.9 | 0.0 | 22.0 | |
| | | 3 | 1 | 22.1 | 21.9 | 21.7 | 1.0 | 23.0 | 21.4 | 21.1 | 21.0 | 0.0 | 22.0 | 21.3 | 21.2 | 21.0 | 0.0 | 22.0 | |
| | | 3 | 3 | 22.0 | 21.8 | 21.7 | 1.0 | 23.0 | 21.4 | 21.0 | 21.0 | 0.0 | 22.0 | 21.0 | 21.2 | 20.8 | 0.0 | 22.0 | |
| | | 6 | 0 | 21.3 | 21.0 | 21.0 | 2.0 | 22.0 | 21.4 | 21.2 | 20.8 | 0.0 | 22.0 | 21.0 | 21.0 | 20.8 | 0.0 | 22.0 | |
| | 64QAM | 1 | 0 | 21.0 | 21.2 | 21.0 | 2.0 | 22.0 | 21.6 | 21.1 | 20.9 | 0.0 | 22.0 | 21.1 | 21.2 | 20.7 | 0.0 | 22.0 | |
| | | 1 | 3 | 21.4 | 21.4 | 20.8 | 2.0 | 22.0 | 21.7 | 21.2 | 21.0 | 0.0 | 22.0 | 21.3 | 21.3 | 21.4 | 0.0 | 22.0 | |
| | | 1 | 5 | 21.6 | 21.4 | 21.1 | 2.0 | 22.0 | 21.5 | 21.1 | 21.0 | 0.0 | 22.0 | 21.4 | 20.9 | 20.9 | 0.0 | 22.0 | |
| | | 3 | 0 | 21.4 | 21.2 | 21.1 | 2.0 | 22.0 | 21.6 | 21.2 | 20.8 | 0.0 | 22.0 | 20.0 | 20.1 | 19.8 | 0.0 | 22.0 | |
| | | 3 | 1 | 21.3 | 21.4 | 21.2 | 2.0 | 22.0 | 21.6 | 21.2 | 20.9 | 0.0 | 22.0 | 20.3 | 20.0 | 20.0 | 0.0 | 22.0 | |
| | | 3 | 3 | 21.5 | 21.2 | 20.7 | 2.0 | 22.0 | 21.6 | 21.2 | 20.9 | 0.0 | 22.0 | 20.2 | 20.1 | 19.9 | 0.0 | 22.0 | |
| | | 6 | 0 | 20.1 | 20.2 | 19.9 | 3.0 | 21.0 | 20.2 | 20.4 | 20.0 | 0.0 | 22.0 | 20.0 | 20.1 | 19.9 | 0.0 | 22.0 | |

9.4. Wi-Fi 2.4 GHz (DTS Band)

WLAN SISO output power results (Maximum Power)

| Band | Mode | Data Rate | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) | |
|-----------|----------------|-----------|--------------|-------------|---------------------|--------------------------|-------------------|----|
| WiFi 2.4G | 802.11b | 1 Mbps | 1 | 2412 | 19.19 | 20 | Yes | |
| | | | 6 | 2437 | 18.99 | | | |
| | | | 11 | 2462 | 18.78 | | | |
| | | | 12 | 2467 | Not Required | 8 | | No |
| | | | 13 | 2472 | | 6 | | |
| | 802.11g | 6 Mbps | Not Required | | | 19 | No | |
| | | | | | | 8 | | |
| | | | | | | 6 | | |
| | 802.11n (HT20) | MCS 0 | Not Required | | | 18 | No | |
| | | | | | | 8 | | |
| | | | | | | 6 | | |

WLAN SISO output power results (Reduced Power)

| Band | Mode | Data Rate | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) | |
|-----------|----------------|-----------|--------------|-------------|---------------------|--------------------------|-------------------|----|
| WiFi 2.4G | 802.11b | 1 Mbps | 1 | 2412 | 11.41 | 12 | Yes | |
| | | | 6 | 2437 | 11.20 | | | |
| | | | 11 | 2462 | 10.94 | | | |
| | | | 12 | 2467 | Not Required | 8 | | No |
| | | | 13 | 2472 | | 6 | | |
| | 802.11g | 6 Mbps | Not Required | | | 11 | No | |
| | | | | | | 8 | | |
| | | | | | | 6 | | |
| | 802.11n (HT20) | MCS 0 | Not Required | | | 11 | No | |
| | | | | | | 8 | | |
| | | | | | | 6 | | |

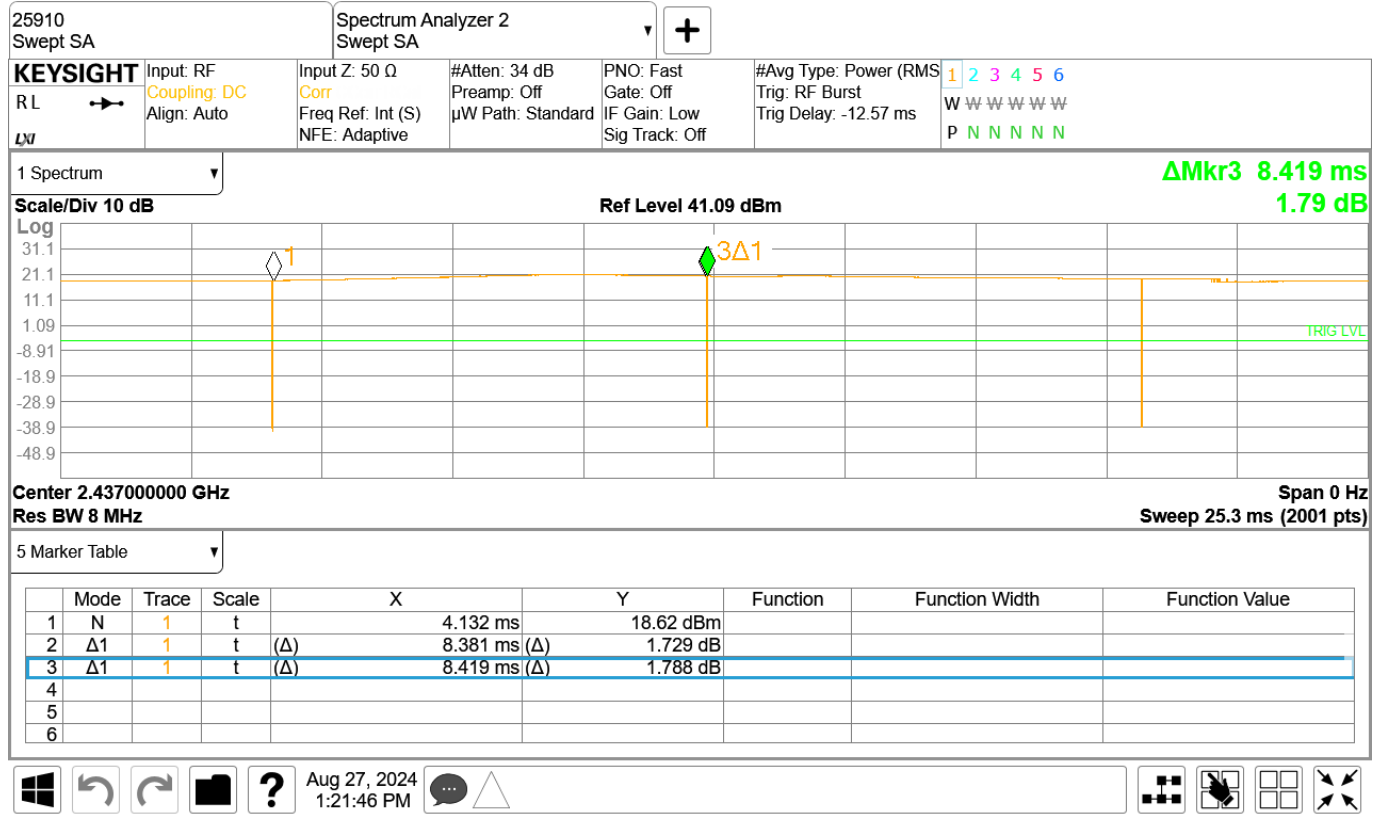
Note(s):

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11n/g/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.

Duty Factor Measured Result

| Mode | T on (ms) | Period (ms) | Maximum Duty Cycle | Measured Duty Cycle | Crest Factor (maximum duty/ measured duty cycle) |
|---------|-----------|-------------|--------------------|---------------------|--|
| 802.11b | 8.381 | 8.419 | 100.00% | 99.55% | 1.00 |

Duty Cycle plot (802.11b)



9.5. Wi-Fi 5GHz (U-NII Bands)

WLAN SISO output power Results (Maximum Power)

| Band (GHz) | Mode | Data Rate | Ch # | Freq. (MHz) | Avg Pwr (dBm) | Max.Tune-up Limit (dBm) | SAR Test (Yes/No) | |
|-------------------|-------------------|------------------|--------|--------------|---------------|-------------------------|-------------------|-----|
| UNII-1 | 802.11ac (VHT20) | MCS0 | 36 | 5180 | 15.71 | 17 | Yes | |
| | | | 40 | 5200 | 15.80 | | | |
| | | | 44 | 5220 | 15.85 | | | |
| | | | 48 | 5240 | 15.89 | | | |
| UNII-2A | 802.11a | 6 Mbps | 52 | 5260 | 16.03 | 17 | Yes | |
| | | | 56 | 5280 | 16.06 | | | |
| | | | 60 | 5300 | 16.12 | | | |
| | | | 64 | 5320 | 16.12 | | | |
| | UNII-2A | 802.11n (HT20) | MCS0 | Not Required | | | 16 | No |
| | | 802.11n (HT40) | MCS0 | Not Required | | | 15 | No |
| | | 802.11ac (VHT80) | MCS0 | Not Required | | | 13 | No |
| | UNII-2C | 802.11a | 6 Mbps | 100 | 5500 | 16.40 | 17 | Yes |
| 120 | | | | 5600 | 15.81 | | | |
| 124 | | | | 5620 | 15.83 | | | |
| 144 | | | | 5720 | 15.78 | | | |
| UNII-2C | | 802.11n (HT20) | MCS0 | Not Required | | | 16 | No |
| | | 802.11n (HT40) | MCS0 | Not Required | | | 15 | No |
| | | 802.11ac (VHT80) | MCS0 | Not Required | | | 13 | No |
| UNII-3 or §15.247 | | 802.11a | 6 Mbps | 149 | 5745 | 16.22 | 17 | Yes |
| | 157 | | | 5785 | 16.29 | | | |
| | 165 | | | 5825 | 16.22 | | | |
| | UNII-3 or §15.247 | 802.11n (HT20) | MCS0 | Not Required | | | 16 | No |
| | | 802.11n (HT40) | MCS0 | Not Required | | | 15 | No |
| | | 802.11ac (VHT80) | MCS0 | Not Required | | | 13 | No |

Note(s):

- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
 - ≤ 1.2 W/kg, SAR is not required for UNII band I
 - > 1.2 W/kg, both bands should be tested independently for SAR.

WLAN SISO output power Results (Reduced Power)

| Band (GHz) | Mode | Data Rate | Ch # | Freq. (MHz) | Avg Pwr (dBm) | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) |
|-------------------|------------------|-----------|--------------|-------------|---------------|--------------------------|-------------------|
| UNII-2A | 802.11a | 6 Mbps | Not Required | | | 11 | No |
| | 802.11n (HT20) | MCS0 | Not Required | | | 11 | No |
| | 802.11n (HT40) | MCS0 | Not Required | | | 11 | No |
| | 802.11ac (VHT80) | MCS0 | 58 | 5290 | 10.25 | 11 | Yes |
| UNII-2C | 802.11a | 6 Mbps | Not Required | | | 11 | No |
| | 802.11n (HT20) | MCS0 | Not Required | | | 11 | No |
| | 802.11n (HT40) | MCS0 | Not Required | | | 11 | No |
| | 802.11ac (VHT80) | MCS0 | 106 | 5530 | 9.94 | 11 | Yes |
| | | | 122 | 5610 | 10.13 | 11 | |
| 138 | | | 5690 | 10.00 | 11 | | |
| UNII-3 or §15.247 | 802.11a | 6 Mbps | Not Required | | | 11 | No |
| | 802.11n (HT20) | MCS0 | Not Required | | | 11 | No |
| | 802.11n (HT40) | MCS0 | Not Required | | | 11 | No |
| | 802.11ac (VHT80) | MCS0 | 155 | 5775 | 9.93 | 11 | Yes |

Note(s):

- For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
 - ≤ 1.2 W/kg, SAR is not required for UNII band I
 - > 1.2 W/kg, both bands should be tested independently for SAR.

Duty Factor Measured Results

| Mode | T on (ms) | Period (ms) | Maximum Duty Cycle | Measured Duty Cycle | Crest Factor (1/duty cycle) |
|-----------------|-----------|-------------|--------------------|---------------------|-----------------------------|
| 802.11a | 2.755 | 2.798 | 100.00% | 98.45% | 1.02 |
| 802.11ac VHT 80 | 0.324 | 0.368 | 100.00% | 88.09% | 1.14 |

Duty Cycle plots (802.11a)

25910 Swept SA
Spectrum Analyzer 2 Swept SA

KEYSIGHT
 RL →
 LN

Input: RF
 Coupling: DC
 Align: Auto

Input Z: 50 Ω
 Corr
 Freq Ref: Int (S)
 NFE: Adaptive

#Atten: 34 dB
 Preamp: Off
 μW Path: Standard

PNO: Fast
 Gate: Off
 IF Gain: Low
 Sig Track: Off

#Avg Type: Power (RMS)
 Trig: RF Burst
 Trig Delay: -4.125 ms

1 2 3 4 5 6
 W W W W W W
 P N N N N N

1 Spectrum ΔMkr2 2.755 ms

Scale/Div 10 dB Ref Level 44.30 dBm

Log -5.51 dB

Center 5.580000000 GHz Span 0 Hz

Res BW 8 MHz Sweep 8.67 ms (2001 pts)

5 Marker Table

| | Mode | Trace | Scale | X | Y | Function | Function Width | Function Value |
|---|------|-------|-------|--------------|------------|----------|----------------|----------------|
| 1 | N | 1 | t | 1.318 ms | 18.73 dBm | | | |
| 2 | Δ1 | 1 | t (Δ) | 2.755 ms (Δ) | -5.512 dB | | | |
| 3 | Δ1 | 1 | t (Δ) | 2.798 ms (Δ) | -0.6703 dB | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |

Duty Cycle plots (802.11ac VHT80)

25910 Swept SA
Spectrum Analyzer 2 Swept SA

KEYSIGHT
 RL **Coupling: DC**
 Align: Auto

Input Z: 50 Ω
 Corr
 Freq Ref: Int (S)
 NFE: Adaptive

#Atten: 34 dB
 Preamp: Off
 μW Path: Standard

PNO: Fast
 Gate: Off
 IF Gain: Low
 Sig Track: Off

#Avg Type: Power (RMS)
 Trig: RF Burst
 Trig Delay: -480.0 μs

1 2 3 4 5 6
 W W W W W W
 P N N N N N

1 Spectrum
ΔMkr3 367.8 μs

Scale/Div 10 dB
Ref Level 39.59 dBm

Center 5.530000000 GHz
Span 0 Hz

Res BW 8 MHz
Sweep 1.11 ms (2001 pts)

5 Marker Table

| | Mode | Trace | Scale | X | Y | Function | Function Width | Function Value |
|---|------|-------|-------|--------------|------------|----------|----------------|----------------|
| 1 | N | 1 | t | 478.5 μs | 7.899 dBm | | | |
| 2 | Δ1 | 1 | t (Δ) | 324.0 μs (Δ) | -0.9194 dB | | | |
| 3 | Δ1 | 1 | t (Δ) | 367.8 μs (Δ) | 2.860 dB | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |

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9.6. Bluetooth

Bluetooth SISO output power Results

| Band (GHz) | Antenna | Mode | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | Max. Tune-up Limit (dBm) | SAR Test (Yes/No) |
|----------------|---------|-------------------|------|-------------|---------------------|--------------------------|-------------------|
| Bluetooth 2.4G | Sub.2-2 | Bluetooth (BDR) | 0 | 2402 | 15.31 | 17 | Yes |
| | | | 39 | 2441 | 15.99 | | |
| | | | 78 | 2480 | 16.09 | | |
| | | Bluetooth (EDR) | 0 | 2402 | Not Required | 13 | No |
| | | | 39 | 2441 | | | |
| | | | 78 | 2480 | | | |
| | | Bluetooth (LE) | 0 | 2402 | Not Required | 8 | No |
| | | | 19 | 2440 | | | |
| | | | 39 | 2480 | | | |
| | | Bluetooth (LE 2M) | 0 | 2402 | Not Required | 8 | No |
| | | | 19 | 2440 | | | |
| | | | 39 | 2480 | | | |

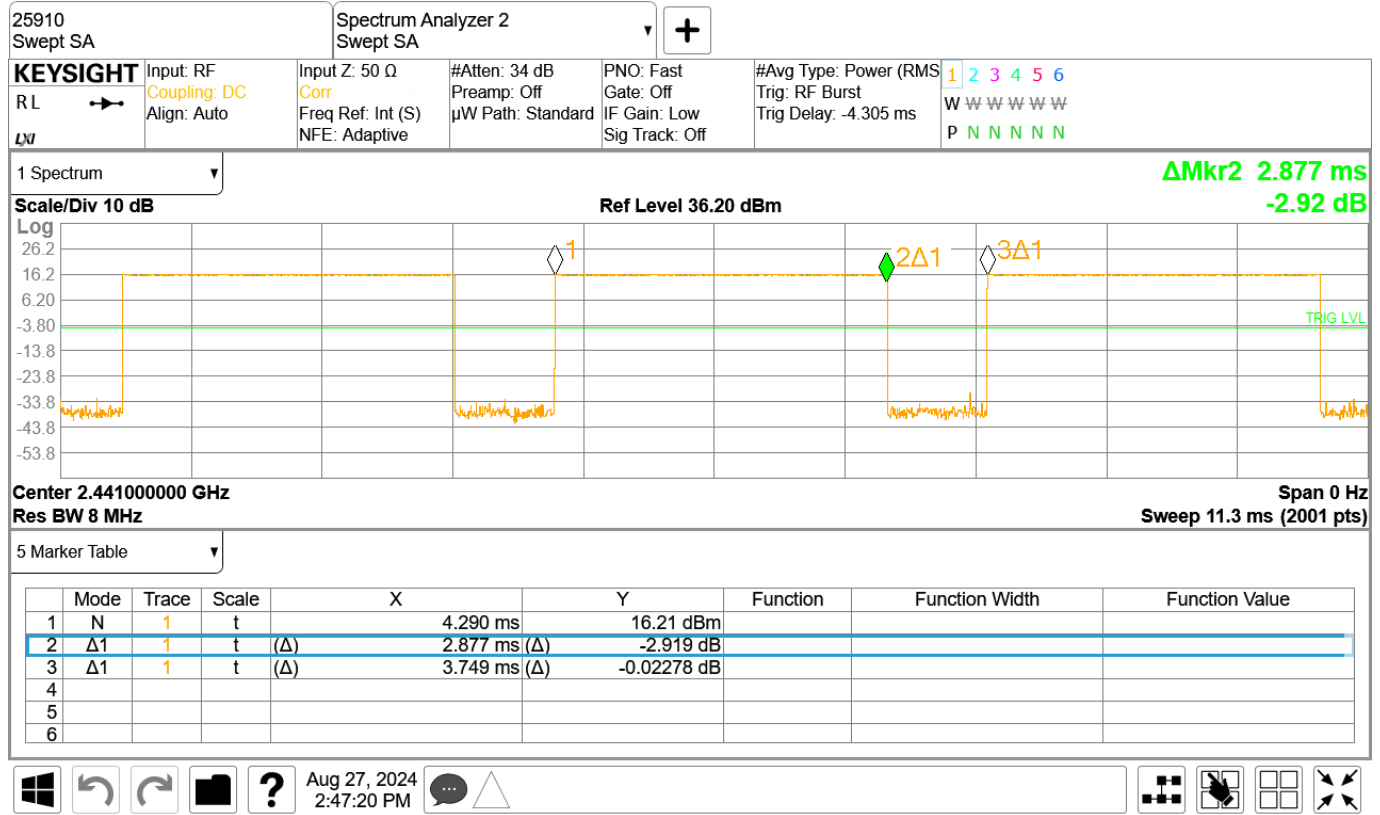
Note(s):

SAR test is evaluated at GFSK mode in Bluetooth.

Duty Factor Measured Results

| Mode | Type | T on (ms) | Period (ms) | Maximum Duty Cycle | Measured Duty Cycle |
|------|------|-----------|-------------|--------------------|---------------------|
| GFSK | DH5 | 2.877 | 3.749 | 77.00% | 76.74% |

Duty Cycle plot



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN= Measured SAR *Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth= Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Wi-Fi Duty Cycle scaling factor = 1 / Duty cycle (%)
- BT Duty Cycle scaling factor = Maximum Duty cycle / Duty cycle (%)

KDB 447498 D01 General RF Exposure Guidance:

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

KDB 648474 D04 Handset SAR:

With headset attached, 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 headset attached to the handset.

KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm.

When hotspot mode does not apply, 10-g extremity SAR is required for all surfaces and edges with an antenna located at ≤ 25 mm From that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. 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, Including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Additional 1-g SAR testing at 5 mm is not required when hotspot mode 10-g extremity SAR is not required for the surfaces and edges; since all 1-g reported SAR < 1.2 W/kg.

KDB 941225 D01 SAR test for 3G devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
- For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. 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; therefore, the requirement for H, M and L channels may not fully apply.

KDB 248227 D01 SAR meas for 802.11:

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

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

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
 - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
 - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

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

10.1. GSM 850

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|-------------|------------|-----------|---------------|---------|-------------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | GPRS4 Slots | OFF | 0 | Left Touch | 190 | 836.6 | 29.50 | 27.91 | 0.316 | 0.456 | |
| Main 1 | Head | GPRS4 Slots | OFF | 0 | Left Tilt | 190 | 836.6 | 29.50 | 27.91 | 0.203 | 0.293 | |
| Main 1 | Head | GPRS4 Slots | OFF | 0 | Right Touch | 190 | 836.6 | 29.50 | 27.91 | 0.352 | 0.508 | 1 |
| Main 1 | Head | GPRS4 Slots | OFF | 0 | Right Tilt | 190 | 836.6 | 29.50 | 27.91 | 0.199 | 0.287 | |
| Main 1 | Body-worn | GPRS4 Slots | OFF | 15 | Rear | 190 | 836.6 | 29.50 | 27.91 | 0.376 | 0.542 | 2 |
| Main 1 | Body-worn | GPRS4 Slots | OFF | 15 | Front | 190 | 836.6 | 29.50 | 27.91 | 0.305 | 0.440 | |
| Main 1 | Hotspot | GPRS4 Slots | ON | 10 | Rear | 190 | 836.6 | 28.50 | 26.54 | 0.354 | 0.556 | 3 |
| Main 1 | Hotspot | GPRS4 Slots | ON | 10 | Front | 190 | 836.6 | 28.50 | 26.54 | 0.229 | 0.360 | |
| Main 1 | Hotspot | GPRS4 Slots | ON | 10 | Left | 190 | 836.6 | 28.50 | 26.54 | 0.182 | 0.286 | |
| Main 1 | Hotspot | GPRS4 Slots | ON | 10 | Bottom | 190 | 836.6 | 28.50 | 26.54 | 0.156 | 0.245 | |
| Main 1 | Hotspot | GPRS4 Slots | ON | 10 | Right | 190 | 836.6 | 28.50 | 26.54 | 0.295 | 0.463 | |

10.2. GSM 1900

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|-------------|------------|-----------|---------------|---------|-------------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | GPRS2 Slots | OFF | 0 | Left Touch | 512 | 1850.2 | 30.00 | 29.32 | 0.136 | 0.159 | |
| Main 1 | Head | GPRS2 Slots | OFF | 0 | Left Tilt | 512 | 1850.2 | 30.00 | 29.32 | 0.129 | 0.151 | |
| Main 1 | Head | GPRS2 Slots | OFF | 0 | Right Touch | 512 | 1850.2 | 30.00 | 29.32 | 0.167 | 0.195 | 4 |
| Main 1 | Head | GPRS2 Slots | OFF | 0 | Right Tilt | 512 | 1850.2 | 30.00 | 29.32 | 0.099 | 0.116 | |
| Main 1 | Body-worn | GPRS2 Slots | OFF | 15 | Rear | 512 | 1850.2 | 30.00 | 29.32 | 0.275 | 0.322 | 5 |
| Main 1 | Body-worn | GPRS2 Slots | OFF | 15 | Front | 512 | 1850.2 | 30.00 | 29.32 | 0.148 | 0.173 | |
| Main 1 | Hotspot | GPRS2 Slots | ON | 10 | Rear | 512 | 1850.2 | 28.00 | 26.50 | 0.320 | 0.452 | 6 |
| Main 1 | Hotspot | GPRS2 Slots | ON | 10 | Front | 512 | 1850.2 | 28.00 | 26.50 | 0.167 | 0.236 | |
| Main 1 | Hotspot | GPRS2 Slots | ON | 10 | Left | 512 | 1850.2 | 28.00 | 26.50 | 0.113 | 0.160 | |
| Main 1 | Hotspot | GPRS2 Slots | ON | 10 | Bottom | 512 | 1850.2 | 28.00 | 26.50 | 0.247 | 0.349 | |
| Main 1 | Hotspot | GPRS2 Slots | ON | 10 | Right | 512 | 1850.2 | 28.00 | 26.50 | 0.065 | 0.092 | |

10.3. WCDMA Band II

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|---------------------------|------------|------------|-----------|---------------|---------|-------------|---------------------|-------------|------------------|----------------------|----------|
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Left Touch | 9400 | 1880 | 24.50 | 23.52 | 0.197 | 0.247 | |
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Left Tilt | 9400 | 1880 | 24.50 | 23.52 | 0.165 | 0.207 | |
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Right Touch | 9400 | 1880 | 24.50 | 23.52 | 0.227 | 0.284 | 7 |
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Right Tilt | 9400 | 1880 | 24.50 | 23.52 | 0.107 | 0.134 | |
| Main 1 | Body-worn | Rel 99 RMC | OFF | 15 | Rear | 9400 | 1880.0 | 24.50 | 23.52 | 0.423 | 0.530 | 8 |
| Main 1 | Body-worn | Rel 99 RMC | OFF | 15 | Front | 9400 | 1880.0 | 24.50 | 23.52 | 0.171 | 0.214 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Rear | 9400 | 1880.0 | 21.50 | 20.59 | 0.515 | 0.635 | 9 |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Front | 9400 | 1880.0 | 21.50 | 20.59 | 0.236 | 0.291 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Left | 9400 | 1880.0 | 21.50 | 20.59 | 0.155 | 0.191 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Bottom | 9400 | 1880.0 | 21.50 | 20.59 | 0.367 | 0.453 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Right | 9400 | 1880.0 | 21.50 | 20.59 | 0.075 | 0.092 | |
| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 10g (W/kg) | Reported. 10g (W/kg) | Plot No. |
| Main 1 | Product specific 10-g SAR | Rel 99 RMC | Off | 15 | Rear | 9400 | 1880.0 | 24.50 | 23.52 | 0.223 | 0.279 | |
| Main 1 | Product specific 10-g SAR | Rel 99 RMC | ON | 0 | Rear | 9400 | 1880.0 | 21.50 | 20.73 | 1.440 | 1.719 | 10 |

10.4. WCDMA Band IV

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|---------------------------|------------|------------|-----------|---------------|---------|-------------|---------------------|-------------|------------------|----------------------|----------|
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Left Touch | 1413 | 1732.6 | 24.50 | 23.52 | 0.218 | 0.273 | 11 |
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Left Tilt | 1413 | 1732.6 | 24.50 | 23.52 | 0.179 | 0.224 | |
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Right Touch | 1413 | 1732.6 | 24.50 | 23.52 | 0.180 | 0.226 | |
| Main 1 | Head | Rel 99 RMC | OFF | 0 | Right Tilt | 1413 | 1732.6 | 24.50 | 23.52 | 0.137 | 0.172 | |
| Main 1 | Body-worn | Rel 99 RMC | OFF | 15 | Rear | 1413 | 1732.6 | 24.50 | 23.52 | 0.554 | 0.694 | 12 |
| Main 1 | Body-worn | Rel 99 RMC | OFF | 15 | Front | 1413 | 1732.6 | 24.50 | 23.52 | 0.174 | 0.218 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Rear | 1413 | 1732.6 | 22.50 | 21.62 | 0.611 | 0.748 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Front | 1413 | 1732.6 | 22.50 | 21.62 | 0.233 | 0.285 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Left | 1413 | 1732.6 | 22.50 | 21.62 | 0.074 | 0.091 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Bottom | 1312 | 1712.4 | 22.50 | 21.59 | 0.656 | 0.809 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Bottom | 1413 | 1732.6 | 22.50 | 21.62 | 0.699 | 0.856 | 13 |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Bottom | 1513 | 1752.6 | 22.50 | 21.77 | 0.723 | 0.855 | |
| Main 1 | Hotspot | Rel 99 RMC | ON | 10 | Right | 1413 | 1732.6 | 22.50 | 21.62 | 0.074 | 0.090 | |
| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 10g (W/kg) | Reported. 10g (W/kg) | Plot No. |
| Main 1 | Product specific 10-g SAR | Rel 99 RMC | OFF | 11 | Bottom | 1413 | 1732.6 | 24.50 | 23.52 | 0.454 | 0.569 | |
| Main 1 | Product specific 10-g SAR | Rel 99 RMC | ON | 0 | Bottom | 1312 | 1712.4 | 22.50 | 21.53 | 1.900 | 2.375 | |
| Main 1 | Product specific 10-g SAR | Rel 99 RMC | ON | 0 | Bottom | 1413 | 1732.6 | 22.50 | 21.60 | 2.150 | 2.645 | |
| Main 1 | Product specific 10-g SAR | Rel 99 RMC | ON | 0 | Bottom | 1513 | 1752.6 | 22.50 | 21.77 | 2.430 | 2.875 | 14 |

10.5. WCDMA Band V

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|------------|------------|-----------|---------------|---------|-------------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | Rel 99 RMC | N/A | 0 | Left Touch | 4183 | 836.6 | 25.50 | 24.39 | 0.269 | 0.347 | |
| Main 1 | Head | Rel 99 RMC | N/A | 0 | Left Tilt | 4183 | 836.6 | 25.50 | 24.39 | 0.150 | 0.194 | |
| Main 1 | Head | Rel 99 RMC | N/A | 0 | Right Touch | 4183 | 836.6 | 25.50 | 24.39 | 0.270 | 0.349 | 15 |
| Main 1 | Head | Rel 99 RMC | N/A | 0 | Right Tilt | 4183 | 836.6 | 25.50 | 24.39 | 0.154 | 0.199 | |
| Main 1 | Body-worn | Rel 99 RMC | N/A | 15 | Rear | 4183 | 836.6 | 25.50 | 24.39 | 0.296 | 0.382 | 16 |
| Main 1 | Body-worn | Rel 99 RMC | N/A | 15 | Front | 4183 | 836.6 | 25.50 | 24.39 | 0.246 | 0.318 | |
| Main 1 | Hotspot | Rel 99 RMC | N/A | 10 | Rear | 4183 | 836.6 | 25.50 | 24.39 | 0.536 | 0.692 | 17 |
| Main 1 | Hotspot | Rel 99 RMC | N/A | 10 | Front | 4183 | 836.6 | 25.50 | 24.39 | 0.263 | 0.340 | |
| Main 1 | Hotspot | Rel 99 RMC | N/A | 10 | Left | 4183 | 836.6 | 25.50 | 24.39 | 0.195 | 0.252 | |
| Main 1 | Hotspot | Rel 99 RMC | N/A | 10 | Bottom | 4183 | 836.6 | 25.50 | 24.39 | 0.324 | 0.418 | |
| Main 1 | Hotspot | Rel 99 RMC | N/A | 10 | Right | 4183 | 836.6 | 25.50 | 24.39 | 0.302 | 0.390 | |

10.6. LTE Band 2 (20MHz Bandwidth)

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|------|------------|-----------|---------------|---------|-------------|---------------|-----------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | QPSK | OFF | 0 | Left Touch | 18900 | 1880.0 | 1 | 49 | 24.00 | 23.21 | 0.168 | 0.202 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Touch | 18900 | 1880.0 | 50 | 24 | 23.00 | 22.17 | 0.133 | 0.161 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Tilt | 18900 | 1880.0 | 1 | 49 | 24.00 | 23.21 | 0.145 | 0.174 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Tilt | 18900 | 1880.0 | 50 | 24 | 23.00 | 22.17 | 0.116 | 0.140 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Touch | 18900 | 1880.0 | 1 | 49 | 24.00 | 23.21 | 0.186 | 0.223 | 18 |
| Main 1 | Head | QPSK | OFF | 0 | Right Touch | 18900 | 1880.0 | 50 | 24 | 23.00 | 22.17 | 0.146 | 0.177 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Tilt | 18900 | 1880.0 | 1 | 49 | 24.00 | 23.21 | 0.086 | 0.103 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Tilt | 18900 | 1880.0 | 50 | 24 | 23.00 | 22.17 | 0.067 | 0.081 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 18900 | 1880.0 | 1 | 49 | 24.00 | 23.21 | 0.376 | 0.451 | 19 |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 18900 | 1880.0 | 50 | 24 | 23.00 | 22.17 | 0.291 | 0.352 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Front | 18900 | 1880.0 | 1 | 49 | 24.00 | 23.21 | 0.154 | 0.185 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Front | 18900 | 1880.0 | 50 | 24 | 23.00 | 22.17 | 0.119 | 0.144 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 18900 | 1880.0 | 1 | 49 | 22.00 | 21.18 | 0.467 | 0.564 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 18900 | 1880.0 | 50 | 24 | 22.00 | 21.20 | 0.468 | 0.563 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Front | 18900 | 1880.0 | 1 | 49 | 22.00 | 21.18 | 0.177 | 0.214 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Front | 18900 | 1880.0 | 50 | 24 | 22.00 | 21.20 | 0.185 | 0.222 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Left | 18900 | 1880.0 | 1 | 49 | 22.00 | 21.18 | 0.147 | 0.178 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Left | 18900 | 1880.0 | 50 | 24 | 22.00 | 21.20 | 0.145 | 0.174 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 18900 | 1880.0 | 1 | 49 | 22.00 | 21.18 | 0.565 | 0.682 | 20 |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 18900 | 1880.0 | 50 | 24 | 22.00 | 21.20 | 0.565 | 0.679 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Right | 18900 | 1880.0 | 1 | 49 | 22.00 | 21.18 | 0.146 | 0.176 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Right | 18900 | 1880.0 | 50 | 24 | 22.00 | 21.20 | 0.113 | 0.136 | |

10.7. LTE Band 12 (10MHz Bandwidth)

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|------|------------|-----------|---------------|---------|-------------|---------------|-----------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | QPSK | N/A | 0 | Left Touch | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.197 | 0.245 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Touch | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.154 | 0.192 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Tilt | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.093 | 0.116 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Tilt | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.074 | 0.092 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Touch | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.209 | 0.260 | 21 |
| Main 1 | Head | QPSK | N/A | 0 | Right Touch | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.167 | 0.208 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Tilt | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.105 | 0.131 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Tilt | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.085 | 0.106 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Rear | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.197 | 0.245 | 22 |
| Main 1 | Body-worn | QPSK | N/A | 15 | Rear | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.178 | 0.222 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Front | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.149 | 0.185 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Front | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.111 | 0.138 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Rear | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.269 | 0.335 | 23 |
| Main 1 | Hotspot | QPSK | N/A | 10 | Rear | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.213 | 0.265 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Front | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.135 | 0.168 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Front | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.122 | 0.152 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Left | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.130 | 0.162 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Left | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.093 | 0.116 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Bottom | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.202 | 0.251 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Bottom | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.161 | 0.200 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Right | 23095 | 707.5 | 1 | 0 | 25.00 | 24.05 | 0.167 | 0.208 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Right | 23095 | 707.5 | 25 | 12 | 24.00 | 23.05 | 0.140 | 0.174 | |

10.8. LTE Band 13 (10MHz Bandwidth)

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|------|------------|-----------|---------------|---------|-------------|---------------|-----------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | QPSK | N/A | 0 | Left Touch | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.214 | 0.269 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Touch | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.166 | 0.209 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Tilt | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.113 | 0.142 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Tilt | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.089 | 0.112 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Touch | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.217 | 0.273 | 24 |
| Main 1 | Head | QPSK | N/A | 0 | Right Touch | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.166 | 0.209 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Tilt | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.133 | 0.167 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Tilt | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.104 | 0.131 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Rear | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.309 | 0.389 | 25 |
| Main 1 | Body-worn | QPSK | N/A | 15 | Rear | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.256 | 0.323 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Front | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.250 | 0.315 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Front | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.208 | 0.262 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Rear | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.366 | 0.461 | 26 |
| Main 1 | Hotspot | QPSK | N/A | 10 | Rear | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.292 | 0.368 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Front | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.236 | 0.297 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Front | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.195 | 0.246 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Left | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.258 | 0.325 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Left | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.206 | 0.260 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Bottom | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.219 | 0.276 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Bottom | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.174 | 0.220 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Right | 23230 | 782.0 | 1 | 0 | 25.00 | 24.00 | 0.323 | 0.407 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Right | 23230 | 782.0 | 25 | 12 | 24.00 | 22.99 | 0.267 | 0.337 | |

10.9. LTE Band 26 (15MHz Bandwidth)

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. dBm | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|------|------------|-----------|---------------|---------|-------------|---------------|-----------|---------------------|-----------|-----------------|---------------------|----------|
| Main 1 | Head | QPSK | N/A | 0 | Left Touch | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.234 | 0.349 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Touch | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.182 | 0.273 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Tilt | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.135 | 0.202 | |
| Main 1 | Head | QPSK | N/A | 0 | Left Tilt | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.106 | 0.159 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Touch | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.281 | 0.419 | 27 |
| Main 1 | Head | QPSK | N/A | 0 | Right Touch | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.220 | 0.330 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Tilt | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.140 | 0.209 | |
| Main 1 | Head | QPSK | N/A | 0 | Right Tilt | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.110 | 0.165 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Rear | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.296 | 0.442 | 28 |
| Main 1 | Body-worn | QPSK | N/A | 15 | Rear | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.234 | 0.351 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Front | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.238 | 0.355 | |
| Main 1 | Body-worn | QPSK | N/A | 15 | Front | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.188 | 0.282 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Rear | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.480 | 0.717 | 29 |
| Main 1 | Hotspot | QPSK | N/A | 10 | Rear | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.378 | 0.567 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Front | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.243 | 0.363 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Front | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.192 | 0.288 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Left | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.234 | 0.349 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Left | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.186 | 0.279 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Bottom | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.353 | 0.527 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Bottom | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.274 | 0.411 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Right | 26865 | 831.5 | 1 | 37 | 25.50 | 23.76 | 0.328 | 0.490 | |
| Main 1 | Hotspot | QPSK | N/A | 10 | Right | 26865 | 831.5 | 36 | 20 | 24.50 | 22.74 | 0.259 | 0.388 | |

10.10. LTE Band 41 (20MHz Bandwidth)

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|------|------------|-----------|---------------|---------|-------------|---------------|-----------|---------------------|-------------|-----------------|---------------------|----------|
| Main 1 | Head | QPSK | OFF | 0 | Left Touch | 40620 | 2593.0 | 1 | 49 | 24.00 | 22.87 | 0.227 | 0.294 | 30 |
| Main 1 | Head | QPSK | OFF | 0 | Left Touch | 40620 | 2593.0 | 50 | 24 | 23.00 | 21.79 | 0.174 | 0.230 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Tilt | 40620 | 2593.0 | 1 | 49 | 24.00 | 22.87 | 0.055 | 0.071 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Tilt | 40620 | 2593.0 | 50 | 24 | 23.00 | 21.79 | 0.041 | 0.054 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Touch | 40620 | 2593.0 | 1 | 49 | 24.00 | 22.87 | 0.120 | 0.156 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Touch | 40620 | 2593.0 | 50 | 24 | 23.00 | 21.79 | 0.058 | 0.077 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Tilt | 40620 | 2593.0 | 1 | 49 | 24.00 | 22.87 | 0.109 | 0.141 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Tilt | 40620 | 2593.0 | 50 | 24 | 23.00 | 21.79 | 0.084 | 0.111 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 40620 | 2593.0 | 1 | 49 | 24.00 | 22.87 | 0.237 | 0.307 | 31 |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 40620 | 2593.0 | 50 | 24 | 23.00 | 21.79 | 0.187 | 0.247 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Front | 40620 | 2593.0 | 1 | 49 | 24.00 | 22.87 | 0.122 | 0.158 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Front | 40620 | 2593.0 | 50 | 24 | 23.00 | 21.79 | 0.098 | 0.129 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 40620 | 2593.0 | 1 | 49 | 22.00 | 21.11 | 0.354 | 0.435 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 40620 | 2593.0 | 50 | 24 | 22.00 | 20.92 | 0.350 | 0.449 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Front | 40620 | 2593.0 | 1 | 49 | 22.00 | 21.11 | 0.160 | 0.196 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Front | 40620 | 2593.0 | 50 | 24 | 22.00 | 20.92 | 0.159 | 0.204 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Left | 40620 | 2593.0 | 1 | 49 | 22.00 | 21.11 | 0.073 | 0.090 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Left | 40620 | 2593.0 | 50 | 24 | 22.00 | 20.92 | 0.075 | 0.096 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 40620 | 2593.0 | 1 | 49 | 22.00 | 21.11 | 0.392 | 0.481 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 40620 | 2593.0 | 50 | 24 | 22.00 | 20.92 | 0.389 | 0.499 | 32 |
| Main 1 | Hotspot | QPSK | ON | 10 | Right | 40620 | 2593.0 | 1 | 49 | 22.00 | 21.11 | 0.055 | 0.067 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Right | 40620 | 2593.0 | 50 | 24 | 22.00 | 20.92 | 0.069 | 0.088 | |

10.11. LTE Band 66 (20MHz Bandwidth)

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|---------------------------|------|------------|-----------|---------------|---------|-------------|---------------|-----------|---------------------|-------------|------------------|----------------------|----------|
| Main 1 | Head | QPSK | OFF | 0 | Left Touch | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.314 | 0.378 | 33 |
| Main 1 | Head | QPSK | OFF | 0 | Left Touch | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.245 | 0.297 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Tilt | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.247 | 0.298 | |
| Main 1 | Head | QPSK | OFF | 0 | Left Tilt | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.191 | 0.232 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Touch | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.189 | 0.228 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Touch | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.155 | 0.188 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Tilt | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.184 | 0.222 | |
| Main 1 | Head | QPSK | OFF | 0 | Right Tilt | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.145 | 0.176 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 132072 | 1720.0 | 1 | 49 | 25.00 | 24.18 | 0.569 | 0.687 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 132322 | 1745.0 | 1 | 49 | 25.00 | 24.06 | 0.636 | 0.790 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.675 | 0.813 | 34 |
| Main 1 | Body-worn | QPSK | OFF | 15 | Rear | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.496 | 0.602 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Front | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.272 | 0.328 | |
| Main 1 | Body-worn | QPSK | OFF | 15 | Front | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.218 | 0.265 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 132072 | 1720.0 | 1 | 49 | 22.00 | 21.05 | 0.537 | 0.668 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 132322 | 1745.0 | 1 | 49 | 22.00 | 21.18 | 0.628 | 0.759 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.21 | 0.676 | 0.811 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Rear | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.27 | 0.644 | 0.762 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Front | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.21 | 0.282 | 0.338 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Front | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.27 | 0.281 | 0.332 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Left | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.21 | 0.186 | 0.223 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Left | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.27 | 0.180 | 0.213 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 132072 | 1720.0 | 1 | 49 | 22.00 | 21.05 | 0.629 | 0.783 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 132322 | 1745.0 | 1 | 49 | 22.00 | 21.18 | 0.661 | 0.798 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.21 | 0.703 | 0.843 | 35 |
| Main 1 | Hotspot | QPSK | ON | 10 | Bottom | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.27 | 0.665 | 0.787 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Right | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.21 | 0.072 | 0.087 | |
| Main 1 | Hotspot | QPSK | ON | 10 | Right | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.27 | 0.072 | 0.085 | |
| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | RB Allocation | RB Offset | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 10g (W/kg) | Reported. 10g (W/kg) | Plot No. |
| Main 1 | Product specific 10-g SAR | QPSK | OFF | 15 | Rear | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.348 | 0.419 | |
| Main 1 | Product specific 10-g SAR | QPSK | OFF | 15 | Rear | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.256 | 0.311 | |
| Main 1 | Product specific 10-g SAR | QPSK | OFF | 11 | Bottom | 132572 | 1770.0 | 1 | 49 | 25.00 | 24.19 | 0.532 | 0.641 | |
| Main 1 | Product specific 10-g SAR | QPSK | OFF | 11 | Bottom | 132572 | 1770.0 | 50 | 50 | 24.00 | 23.16 | 0.408 | 0.495 | |
| Main 1 | Product specific 10-g SAR | QPSK | ON | 0 | Rear | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.05 | 1.350 | 1.680 | 36 |
| Main 1 | Product specific 10-g SAR | QPSK | ON | 0 | Rear | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.14 | 1.350 | 1.646 | |
| Main 1 | Product specific 10-g SAR | QPSK | ON | 0 | Bottom | 132572 | 1770.0 | 1 | 49 | 22.00 | 21.05 | 1.120 | 1.394 | |
| Main 1 | Product specific 10-g SAR | QPSK | ON | 0 | Bottom | 132572 | 1770.0 | 50 | 50 | 22.00 | 21.14 | 1.110 | 1.353 | |

10.12. Wi-Fi (DTS Band)

DTS SISO SAR results

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|---------------|------------|-----------|---------------|---------|-------------|---------------------------|----------------|---------------------|-------------|-----------------|---------------------|----------|
| Sub.2-2 | Head | 802.11b 1Mbps | ON | 0 | Left Touch | 1 | 2412.0 | 0.034 | 99.55 | 12.00 | 11.41 | | | |
| Sub.2-2 | Head | 802.11b 1Mbps | ON | 0 | Left Tilt | 1 | 2412.0 | 0.034 | 99.55 | 12.00 | 11.41 | | | |
| Sub.2-2 | Head | 802.11b 1Mbps | ON | 0 | Right Touch | 1 | 2412.0 | 0.104 | 99.55 | 12.00 | 11.41 | 0.079 | 0.091 | 37 |
| Sub.2-2 | Head | 802.11b 1Mbps | ON | 0 | Right Tilt | 1 | 2412.0 | 0.072 | 99.55 | 12.00 | 11.41 | | | |
| Sub.2-2 | Body-worn | 802.11b 1Mbps | OFF | 15 | Rear | 1 | 2412.0 | 0.349 | 99.55 | 20.00 | 19.19 | 0.295 | 0.357 | 38 |
| Sub.2-2 | Body-worn | 802.11b 1Mbps | OFF | 15 | Front | 1 | 2412.0 | 0.1 | 99.55 | 20.00 | 19.19 | | | |
| Sub.2-2 | Hotspot | 802.11b 1Mbps | OFF | 10 | Rear | 1 | 2412.0 | 0.609 | 99.55 | 20.00 | 19.19 | 0.496 | 0.600 | 39 |
| Sub.2-2 | Hotspot | 802.11b 1Mbps | OFF | 10 | Front | 1 | 2412.0 | 0.172 | 99.55 | 20.00 | 19.19 | | | |
| Sub.2-2 | Hotspot | 802.11b 1Mbps | OFF | 10 | Top | 1 | 2412.0 | 0.084 | 99.55 | 20.00 | 19.19 | | | |
| Sub.2-2 | Hotspot | 802.11b 1Mbps | OFF | 10 | Left | 1 | 2412.0 | 0.279 | 99.55 | 20.00 | 19.19 | 0.225 | 0.272 | |

Note(s):

- When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.

10.13. Wi-Fi (U-NII Bands)

U-NII 1 SAR results

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|---------------|------------|-----------|---------------|---------|-------------|---------------------------|----------------|---------------------|-------------|-----------------|---------------------|----------|
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Rear | 36 | 5180.0 | 0.589 | 98.5 | 17.00 | 15.71 | 0.466 | 0.615 | 40 |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Front | 36 | 5180.0 | 0.104 | 98.5 | 17.00 | 15.71 | | | |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Top | 36 | 5180.0 | 0.508 | 98.5 | 17.00 | 15.71 | 0.388 | 0.512 | |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Left | 36 | 5180.0 | 0.050 | 98.5 | 17.00 | 15.71 | | | |

Note(s):

- For U-NII-1 Head, Body-worn and Product Specific 10-g exposure, SAR Test reduction was applied from KDB 248227 guidance, Sec. 5.3.1 a) when the same maximum output power is specified for U-NII-1 and U-NII-2A bands, Hotspot exposure condition is only considered in UNII-1.
- When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.

U-NII 2A SAR results

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Meas. 10g (W/kg) | Reported. 10g (W/kg) | Plot No. |
|---------|---------------------------|----------------|------------|-----------|---------------|---------|-------------|---------------------------|----------------|---------------------|-------------|-----------------|---------------------|------------------|----------------------|----------|
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Left Touch | 58 | 5290.0 | 0.145 | 88.1 | 11.00 | 10.25 | | | | | |
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Left Tilt | 58 | 5290.0 | 0.178 | 88.1 | 11.00 | 10.25 | | | | | |
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Right Touch | 58 | 5290.0 | 0.163 | 88.1 | 11.00 | 10.25 | | | | | |
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Right Tilt | 58 | 5290.0 | 0.192 | 88.1 | 11.00 | 10.25 | 0.073 | 0.098 | | | 41 |
| Sub.2-3 | Body-worn | 802.11a 6Mbps | OFF | 15 | Rear | 60 | 5300.0 | 0.618 | 98.5 | 17.00 | 16.12 | 0.279 | 0.347 | | | 42 |
| Sub.2-3 | Body-worn | 802.11a 6Mbps | OFF | 15 | Front | 60 | 5300.0 | 0.130 | 98.5 | 17.00 | 16.12 | | | | | |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Rear | 60 | 5300.0 | 11.523 | 98.5 | 17.00 | 16.12 | | | 0.915 | 1.138 | 43 |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Front | 60 | 5300.0 | 1.052 | 98.5 | 17.00 | 16.12 | | | | | |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Top | 60 | 5300.0 | 9.114 | 98.5 | 17.00 | 16.12 | | | 0.677 | 0.842 | |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Left | 60 | 5300.0 | 0.323 | 98.5 | 17.00 | 16.12 | | | | | |

Note(s):

- When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.

U-NII 2C SAR results

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Meas. 10g (W/kg) | Reported. 10g (W/kg) | Plot No. |
|---------|---------------------------|----------------|------------|-----------|---------------|---------|-------------|---------------------------|----------------|---------------------|-------------|-----------------|---------------------|------------------|----------------------|----------|
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Left Touch | 122 | 5610.0 | 0.169 | 88.1 | 11.00 | 10.13 | | | | | |
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Left Tilt | 122 | 5610.0 | 0.219 | 88.1 | 11.00 | 10.13 | | | | | |
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Right Touch | 122 | 5610.0 | 0.214 | 88.1 | 11.00 | 10.13 | | | | | |
| Sub.2-3 | Head | 802.11ac MCS 0 | ON | 0 | Right Tilt | 122 | 5610.0 | 0.258 | 88.1 | 11.00 | 10.13 | 0.106 | 0.147 | | | 44 |
| Sub.2-3 | Body-worn | 802.11a 6Mbps | OFF | 15 | Rear | 100 | 5500.0 | 1.105 | 98.5 | 17.00 | 16.40 | 0.493 | 0.575 | | | 45 |
| Sub.2-3 | Body-worn | 802.11a 6Mbps | OFF | 15 | Front | 100 | 5500.0 | 0.200 | 98.5 | 17.00 | 16.40 | 0.086 | 0.101 | | | |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Rear | 100 | 5500.0 | 10.671 | 98.5 | 17.00 | 16.40 | | | 1.180 | 1.376 | 46 |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Front | 100 | 5500.0 | 1.335 | 98.5 | 17.00 | 16.40 | | | | | |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Top | 100 | 5500.0 | 12.317 | 98.5 | 17.00 | 16.40 | | | 0.949 | 1.107 | |
| Sub.2-3 | Product specific 10-g SAR | 802.11a 6Mbps | OFF | 0 | Left | 100 | 5500.0 | 0.562 | 98.5 | 17.00 | 16.40 | | | | | |

Note(s):

- When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.

U-NII 3 SAR results

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Area Scan Max. SAR (W/kg) | Duty Cycle (%) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Meas. 10g (W/kg) | Reported. 10g (W/kg) | Plot No. |
|---------|-----------------------|--------------------|------------|-----------|---------------|---------|-------------|---------------------------|----------------|---------------------|-------------|-----------------|---------------------|------------------|----------------------|----------|
| Sub.2-3 | Head | 802.11acVHT80MCS 0 | ON | 0 | Left Touch | 155 | 5775.0 | 0.123 | 88.1 | 11.00 | 9.93 | | | | | |
| Sub.2-3 | Head | 802.11acVHT80MCS 0 | ON | 0 | Left Tilt | 155 | 5775.0 | 0.146 | 88.1 | 11.00 | 9.93 | | | | | |
| Sub.2-3 | Head | 802.11acVHT80MCS 0 | ON | 0 | Right Touch | 155 | 5775.0 | 0.112 | 88.1 | 11.00 | 9.93 | | | | | |
| Sub.2-3 | Head | 802.11acVHT80MCS 0 | ON | 0 | Right Tilt | 155 | 5775.0 | 0.201 | 88.1 | 11.00 | 9.93 | 0.135 | 0.196 | | | 47 |
| Sub.2-3 | Body-worn | 802.11a 6Mbps | OFF | 15 | Rear | 157 | 5785.0 | 0.494 | 98.5 | 17.00 | 16.29 | 0.376 | 0.450 | | | 48 |
| Sub.2-3 | Body-worn | 802.11a 6Mbps | OFF | 15 | Front | 157 | 5785.0 | 0.159 | 98.5 | 17.00 | 16.29 | 0.102 | 0.122 | | | |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Rear | 157 | 5785.0 | 1.210 | 98.5 | 17.00 | 16.29 | 0.843 | 1.008 | | | 49 |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Rear | 165 | 5825.0 | 1.170 | 98.5 | 17.00 | 16.22 | 0.794 | 0.965 | | | |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Front | 157 | 5785.0 | 0.196 | 98.5 | 17.00 | 16.29 | | | | | |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Top | 157 | 5785.0 | 0.525 | 98.5 | 17.00 | 16.29 | 0.406 | 0.486 | | | |
| Sub.2-3 | Hotspot | 802.11a 6Mbps | OFF | 10 | Left | 157 | 5785.0 | 0.178 | 98.5 | 17.00 | 16.29 | | | | | |

Note(s):

- When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
- Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
- Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).

10.14. Bluetooth

| Antenna | RF Exposure Condition | Mode | Power Mode | Dist (mm) | Test Position | Channel | Freq. (MHz) | Duty Cycle (%) | Tune-up Limit (dBm) | Meas. (dBm) | Meas. 1g (W/kg) | Reported. 1g (W/kg) | Plot No. |
|---------|-----------------------|----------|------------|-----------|---------------|---------|-------------|----------------|---------------------|-------------|-----------------|---------------------|----------|
| Sub.2-2 | Head | GFSK DH5 | OFF | 0 | Left Touch | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.067 | 0.083 | |
| Sub.2-2 | Head | GFSK DH5 | OFF | 0 | Left Tilt | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.049 | 0.061 | |
| Sub.2-2 | Head | GFSK DH5 | OFF | 0 | Right Touch | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.190 | 0.235 | 50 |
| Sub.2-2 | Head | GFSK DH5 | OFF | 0 | Right Tilt | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.138 | 0.171 | |
| Sub.2-2 | Body-worn | GFSK DH5 | OFF | 15 | Rear | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.112 | 0.139 | 51 |
| Sub.2-2 | Body-worn | GFSK DH5 | OFF | 15 | Front | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.030 | 0.037 | |
| Sub.2-2 | Hotspot | GFSK DH5 | OFF | 10 | Rear | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.238 | 0.294 | 52 |
| Sub.2-2 | Hotspot | GFSK DH5 | OFF | 10 | Front | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.057 | 0.070 | |
| Sub.2-2 | Hotspot | GFSK DH5 | OFF | 10 | Top | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.031 | 0.038 | |
| Sub.2-2 | Hotspot | GFSK DH5 | OFF | 10 | Left | 78 | 2480.0 | 76.7 | 17.00 | 16.09 | 0.109 | 0.135 | |

10.15. NFC

| Mode | RF Exposure Conditions | Dist. (mm) | Test Position | Test setup | | Freq. (MHz) | 10-g SAR (W/kg) | Plot No. |
|------|------------------------|------------|---------------|------------|---------|-------------|-----------------|----------|
| | | | | Type | Bitrate | | Meas. | |
| PBRS | Product Specific 10-g | 0 | Rear | A | 106 | 13.56 | 0.049 | 53 |
| | | | Front | A | 106 | 13.56 | 0.000 | |
| | | | Top | A | 106 | 13.56 | 0.000 | |
| | | | Left | A | 106 | 13.56 | 0.000 | |

11. SAR Measurement Variability

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is <math>< 0.8</math> or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), repeat that measurement once.
- 3) Perform a second repeated measurement only if the **ratio of largest to smallest SAR** for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

Peak spatial-average (1g of tissue)

| Frequency Band (MHz) | Air Interface | Antenna | RF Exposure Conditions | Test Position | Repeated SAR (Yes/No) | Highest Measured SAR (W/kg) | Repeated Measured SAR (W/kg) | Largest to Smallest SAR Ratio |
|----------------------|---------------|---------|------------------------|---------------|-----------------------|-----------------------------|------------------------------|-------------------------------|
| 5800 | U-NII 3 | Sub.2-3 | Hotspot | Rear | Yes | 0.843 | 0.816 | 1.03 |

Peak spatial-average (10g of tissue)

| Frequency Band (MHz) | Air Interface | Antenna | RF Exposure Conditions | Test Position | Repeated SAR (Yes/No) | Highest Measured SAR (W/kg) | Repeated Measured SAR (W/kg) | Largest to Smallest SAR Ratio |
|----------------------|---------------|---------|------------------------|---------------|-----------------------|-----------------------------|------------------------------|-------------------------------|
| 1750 | WCDMA IV | Main.1 | Product specific 10-g | Bottom | Yes | 2.430 | 2.400 | 1.01 |

Note(s):

1. In above table, Only some bands above 0.8 or 2.0 W/kg (1-g or 10-g Measured SAR) were listed.
2. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20 .

12. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

| RF Exposure Condition | Item | Simultaneous transmission scenarios | | | |
|---|------|-------------------------------------|---|------|---|
| Head & Body-worn & Hotspot & Phablet-10g | 1 | WWAN (2G/3G/LTE) | + | DTS | |
| | 2 | WWAN (2G/3G/LTE) | + | UNII | |
| | 3 | WWAN (2G/3G/LTE) | + | BT | |
| | 4 | WWAN (2G/3G/LTE) | + | UNII | + |
| Phablet-10g | 5 | Scenarios item (1-4) | + | NFC | |

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. GPRS, W-CDMA, LTE supports Hotspot and VoIP
4. U-NII Radio can transmit simultaneously with Bluetooth Radio.
5. DTS Radio cannot transmit simultaneously with UNII Radio.
6. DTS Radio cannot transmit simultaneously with Bluetooth Radio.
7. BT tethering is considered about each RF exposure conditions.
8. NFC can transmit simultaneously with other Radios in Phablet-10g condition.

Simultaneous transmission SAR test exclusion considerations

KDB 447498 D04 Interim General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR

Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / R_i$$

Where:

SAR₁ is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR₂ is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

R_i is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

$$[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / R_i \leq 0.04$$

When an individual antenna transmits at on two bands simultaneously, the sum of the highest *reported* SAR for the frequency bands should be used to determine **SAR₁**, or **SAR₂**. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

The antennas in all antenna pairs that do not qualify for simultaneous transmission SAR test exclusion must be tested for SAR compliance, according to the enlarged zoom scan and volume scan post-processing procedures in KDB Publication 865664 D01

The antennas for the unlicensed transmitters are closely situated. As a result, the associated SAR hotspots are also closely situated. Some of the sum of SAR calculations yielded results over 1.6 W/kg. The SPLSR calculations for these situations were performed by treating the unlicensed SAR values as a single transmitter. The most conservative distance between all the unlicensed hotspots to the licensed hotspot was used for the value of *d* in the SPLSR calculation.

Sum to Peak Location Separation Ratio

Instead of doing a small volume scan over a co-located antenna pair (Hybrid SPLSR guide), Simultaneous transmission SAR test exclusion may algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation;

In the calculation Separation distance must use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

12.1. Sum of the SAR for WWAN & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | | Sum of SAR (W/kg) | | | | |
|-----------------------------|---------------|-----------------------|-------|-------|-------|-------|-------------------|-------------|-----------|------------------|------------------------|
| | | WWAN | DTS | UNII | BT | NFC | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT | WWAN + UNII + BT + NFC |
| | | 1 | 2 | 3 | 4 | 5 | 1+2 | 1+3 | 1+4 | 1+3+4 | 1+3+4+5 |
| Head (1-g SAR) | All positions | 0.508 | 0.091 | 0.196 | 0.235 | | 0.599 | 0.704 | 0.743 | 0.939 | |
| Body-Worn (1-g SAR) | All positions | 0.813 | 0.357 | 0.575 | 0.139 | | 1.170 | 1.388 | 0.952 | 1.527 | |
| Hotspot (1-g SAR) | Rear | 0.811 | 0.600 | 1.008 | 0.294 | | 1.411 | 1.819 | 1.105 | 2.113 | |
| | Front | 0.363 | 0.600 | 1.008 | 0.070 | | 0.963 | 1.371 | 0.433 | 1.441 | |
| | Top | | 0.600 | 0.486 | 0.038 | | | | 0.038 | 0.524 | |
| | Left | 0.349 | 0.272 | 1.008 | 0.135 | | 0.621 | 1.357 | 0.484 | 1.492 | |
| | Bottom | 0.856 | | | | | 0.856 | 0.856 | 0.856 | 0.856 | |
| | Right | 0.490 | | | | | 0.490 | 0.490 | 0.490 | 0.490 | |
| Product Specific (10-g SAR) | Rear | 1.719 | | 1.376 | | 0.049 | 1.719 | 3.095 | 1.719 | 3.095 | 3.144 |
| | Front | | | 1.376 | | 0.000 | | 1.376 | | 1.376 | 1.376 |
| | Top | | | 1.107 | | 0.000 | | 1.107 | | 1.107 | 1.107 |
| | Left | | | 1.376 | | 0.000 | | 1.376 | | 1.376 | 1.376 |
| | Bottom | 2.875 | | | | | 2.875 | 2.875 | 2.875 | 2.875 | 2.875 |
| | Right | | | | | | | | | | |

12.2. Sum of the SAR for GSM850 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.508 | 0.091 | 0.196 | 0.235 | 0.599 | 0.704 | 0.749 | 0.945 |
| Body-Worn (1-g SAR) | All position | 0.542 | 0.357 | 0.575 | 0.139 | 0.899 | 1.117 | 0.684 | 1.259 |
| Hotspot (1-g SAR) | Rear | 0.556 | 0.600 | 1.008 | 0.294 | 1.156 | 1.564 | 0.858 | 1.858 |
| | Front | 0.360 | 0.600 | 1.008 | 0.070 | 0.960 | 1.368 | 0.432 | 1.438 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.286 | 0.272 | 1.008 | 0.135 | 0.558 | 1.294 | 0.424 | 1.429 |
| | Bottom | 0.245 | | | | 0.245 | 0.245 | 0.245 | 0.245 |
| | Right | 0.463 | | | | 0.463 | 0.463 | 0.463 | 0.463 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (<=0.04) or 10-g SPLSR (<=0.10) | Volume Scan (Yes/No) | Figure |
|------------------------------------|---------------|-----------------------|-----|-------|-------|---------------------------------|---------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3+4 | 1+(3+4) | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.556 | | 1.008 | 0.294 | 1+3+4 | 1.858 | | | 1 | |
| | | 0.556 | | 1.302 | | 1+(3+4) | 1.858 | 160.9 | 0.02 | | No |
| Sum-Peak Location Separation Ratio | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

12.3. Sum of the SAR for GSM1900 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.195 | 0.091 | 0.196 | 0.235 | 0.286 | 0.391 | 0.436 | 0.632 |
| Body-Worn (1-g SAR) | All position | 0.322 | 0.357 | 0.575 | 0.139 | 0.679 | 0.897 | 0.464 | 1.039 |
| Hotspot (1-g SAR) | Rear | 0.452 | 0.600 | 1.008 | 0.294 | 1.052 | 1.460 | 0.754 | 1.754 |
| | Front | 0.236 | 0.600 | 1.008 | 0.070 | 0.836 | 1.244 | 0.308 | 1.314 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.160 | 0.272 | 1.008 | 0.135 | 0.432 | 1.168 | 0.298 | 1.303 |
| | Bottom | 0.349 | | | | 0.349 | 0.349 | 0.349 | 0.349 |
| | Right | 0.092 | | | | 0.092 | 0.092 | 0.092 | 0.092 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤ 0.04) or 10-g SPPLSR (≤ 0.10) | Volume Scan (Yes/No) | Figure |
|------------------------------------|---------------|-----------------------|-----|-------|-------|---------------------------------|---------|--------------------------|--|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3+4 | 1+(3+4) | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.452 | | 1.008 | 0.294 | 1+3+4 | 1.754 | | | 2 | |
| Sum-Peak Location Separation Ratio | | 0.452 | | 1.302 | | 1+(3+4) | 1.754 | 135.0 | 0.02 | | No |
| Sum-Peak Location Separation Ratio | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note.2

12.4. Sum of the SAR for WCDMA Band II & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.284 | 0.091 | 0.196 | 0.235 | 0.375 | 0.480 | 0.525 | 0.721 |
| Body-Worn (1-g SAR) | All position | 0.530 | 0.357 | 0.575 | 0.139 | 0.887 | 1.105 | 0.672 | 1.247 |
| Hotspot (1-g SAR) | Rear | 0.635 | 0.600 | 1.008 | 0.294 | 1.235 | 1.643 | 0.929 | 1.937 |
| | Front | 0.291 | 0.600 | 1.008 | 0.070 | 0.849 | 1.257 | 0.321 | 1.327 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.191 | 0.272 | 1.008 | 0.135 | 0.514 | 1.250 | 0.380 | 1.385 |
| | Bottom | 0.453 | | | | 0.753 | 0.753 | 0.753 | 0.753 |
| | Right | 0.092 | | | | 0.194 | 0.194 | 0.194 | 0.194 |
| Product Specific 10-g (10-g SAR) | Rear | 1.719 | | 1.376 | | | 3.095 | | 3.095 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|-------------------|---------------|-----------------------|-----|-------|----|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.635 | | 1.008 | | 1+3 | 1.643 | 156.4 | 0.01 | No | 3 |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|---|---------------|-----------------------|-----|-------|-------|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.635 | | 1.008 | 0.294 | 1+3+4 | 1.937 | | | | 4 |
| | | 0.635 | | 1.302 | | 1+3+4 | 1.937 | 153.4 | 0.02 | No | |
| Sum-Peak Location Separation Ratio <i>Note.2</i> | | | | 1.302 | | 3+4 | 1.302 | | | | |

12.5. Sum of the SAR for WCDMA Band IV & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.273 | 0.091 | 0.196 | 0.235 | 0.364 | 0.469 | 0.514 | 0.710 |
| Body-Worn (1-g SAR) | All position | 0.694 | 0.357 | 0.575 | 0.139 | 1.051 | 1.269 | 0.836 | 1.411 |
| Hotspot (1-g SAR) | Rear | 0.748 | 0.600 | 1.008 | 0.294 | 1.348 | 1.756 | 1.050 | 2.050 |
| | Front | 0.285 | 0.600 | 1.008 | 0.070 | 0.885 | 1.293 | 0.357 | 1.363 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.091 | 0.272 | 1.008 | 0.135 | 0.363 | 1.099 | 0.229 | 1.234 |
| | Bottom | 0.856 | | | | 0.856 | 0.856 | 0.856 | 0.856 |
| | Right | 0.090 | | | | 0.090 | 0.090 | 0.090 | 0.090 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | 2.875 | | | | 2.875 | 2.875 | 2.875 | 2.875 |
| | Right | | | | | | | | |

SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|-------------------|---------------|-----------------------|-----|-------|----|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.748 | | 1.008 | | 1+3 | 1.756 | 154.9 | 0.02 | No | 5 |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|---|---------------|-----------------------|-----|-------|-------|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.748 | | 1.008 | 0.294 | 1+3+4 | 2.050 | | | | 6 |
| | | 0.748 | | 1.302 | | 1+3+4 | 2.050 | 151.3 | 0.02 | No | |
| Sum-Peak Location Separation Ratio <i>Note.2</i> | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

12.6. Sum of the SAR for WCDMA Band V & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.349 | 0.091 | 0.196 | 0.235 | 0.440 | 0.545 | 0.590 | 0.786 |
| Body-Worn (1-g SAR) | All position | 0.382 | 0.357 | 0.575 | 0.139 | 0.739 | 0.957 | 0.524 | 1.099 |
| Hotspot (1-g SAR) | Rear | 0.692 | 0.600 | 1.008 | 0.294 | 1.292 | 1.700 | 0.994 | 1.994 |
| | Front | 0.340 | 0.600 | 1.008 | 0.070 | 0.940 | 1.348 | 0.412 | 1.418 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.252 | 0.272 | 1.008 | 0.135 | 0.524 | 1.260 | 0.390 | 1.395 |
| | Bottom | 0.418 | | | | 0.418 | 0.418 | 0.418 | 0.418 |
| | Right | 0.390 | | | | 0.390 | 0.390 | 0.390 | 0.390 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (=<0.04) or 10-g SPLSR (=<0.10) | Volume Scan (Yes/No) | Figure |
|-------------------|---------------|-----------------------|-----|-------|----|---------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3 | 1.700 | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.692 | | 1.008 | | 1+3 | 1.700 | 165.3 | 0.01 | No | 7 |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (=<0.04) or 10-g SPLSR (=<0.10) | Volume Scan (Yes/No) | Figure |
|------------------------------------|---------------|-----------------------|-----|-------|-------|---------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3+4 | 1.994 | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.692 | | 1.008 | 0.294 | 1+3+4 | 1.994 | | | | 8 |
| | | 0.692 | | 1.302 | | 1+3+4 | 1.994 | 162.4 | 0.02 | No | |
| Sum-Peak Location Separation Ratio | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

12.7. Sum of the SAR for LTE Band 2 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.223 | 0.091 | 0.196 | 0.235 | 0.314 | 0.419 | 0.464 | 0.660 |
| Body-Worn (1-g SAR) | All position | 0.451 | 0.357 | 0.575 | 0.139 | 0.808 | 1.026 | 0.593 | 1.168 |
| Hotspot (1-g SAR) | Rear | 0.564 | 0.600 | 1.008 | 0.294 | 1.164 | 1.572 | 0.866 | 1.866 |
| | Front | 0.222 | 0.600 | 1.008 | 0.070 | 0.822 | 1.230 | 0.294 | 1.300 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.178 | 0.272 | 1.008 | 0.135 | 0.450 | 1.186 | 0.316 | 1.321 |
| | Bottom | 0.682 | | | | 0.682 | 0.682 | 0.682 | 0.682 |
| | Right | 0.176 | | | | 0.176 | 0.176 | 0.176 | 0.176 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (<=0.04) or 10-g SPPLSR (<=0.10) | Volume Scan (Yes/No) | Figure |
|------------------------------------|---------------|-----------------------|-----|-------|-------|---------------------------------|-------|--------------------------|--|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3+4 | 1.866 | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.564 | | 1.008 | 0.294 | 1+3+4 | 1.866 | | | 9 | |
| | | 0.564 | | 1.302 | | 1+3+4 | 1.866 | 152.3 | 0.02 | | No |
| Sum-Peak Location Separation Ratio | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note.2

12.8. Sum of the SAR for LTE Band 12 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.260 | 0.091 | 0.196 | 0.235 | 0.351 | 0.456 | 0.501 | 0.697 |
| Body-Worn (1-g SAR) | All position | 0.245 | 0.357 | 0.575 | 0.139 | 0.602 | 0.820 | 0.387 | 0.962 |
| Hotspot (1-g SAR) | Rear | 0.335 | 0.600 | 1.008 | 0.294 | 0.935 | 1.343 | 0.637 | 1.637 |
| | Front | 0.168 | 0.600 | 1.008 | 0.070 | 0.768 | 1.176 | 0.240 | 1.246 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.162 | 0.272 | 1.008 | 0.135 | 0.434 | 1.170 | 0.300 | 1.305 |
| | Bottom | 0.251 | | | | 0.251 | 0.251 | 0.251 | 0.251 |
| | Right | 0.208 | | | | 0.208 | 0.208 | 0.208 | 0.208 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|---|---------------|-----------------------|-----|-------|-------|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.335 | | 1.008 | 0.294 | 1+3+4 | 1.637 | | | | 10 |
| | | 0.335 | | 1.302 | | 1+3+4 | 1.637 | 155.8 | 0.01 | No | |
| Sum-Peak Location Separation Ratio <i>Note.2</i> | | | | 1.302 | | 3+4 | 1.302 | | | | |

12.9. Sum of the SAR for LTE Band 13 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.273 | 0.091 | 0.196 | 0.235 | 0.364 | 0.469 | 0.514 | 0.710 |
| Body-Worn (1-g SAR) | All position | 0.389 | 0.357 | 0.575 | 0.139 | 0.746 | 0.964 | 0.531 | 1.106 |
| Hotspot (1-g SAR) | Rear | 0.461 | 0.600 | 1.008 | 0.294 | 1.061 | 1.469 | 0.763 | 1.763 |
| | Front | 0.297 | 0.600 | 1.008 | 0.070 | 0.897 | 1.305 | 0.369 | 1.375 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.325 | 0.272 | 1.008 | 0.135 | 0.597 | 1.333 | 0.463 | 1.468 |
| | Bottom | 0.276 | | | | 0.276 | 0.276 | 0.276 | 0.276 |
| | Right | 0.407 | | | | 0.407 | 0.407 | 0.407 | 0.407 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|---|---------------|-----------------------|-----|-------|-------|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.461 | | 1.008 | 0.294 | 1+3+4 | 1.763 | | | | 11 |
| | | 0.461 | | 1.302 | | 1+3+4 | 1.763 | 70.2 | 0.03 | No | |
| Sum-Peak Location Separation Ratio <i>Note.2</i> | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

12.10. Sum of the SAR for LTE Band 26 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.419 | 0.091 | 0.196 | 0.235 | 0.510 | 0.615 | 0.660 | 0.856 |
| Body-Worn (1-g SAR) | All position | 0.442 | 0.357 | 0.575 | 0.139 | 0.799 | 1.017 | 0.584 | 1.159 |
| Hotspot (1-g SAR) | Rear | 0.717 | 0.600 | 1.008 | 0.294 | 1.317 | 1.725 | 1.019 | 2.019 |
| | Front | 0.363 | 0.600 | 1.008 | 0.070 | 0.963 | 1.371 | 0.435 | 1.441 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.349 | 0.272 | 1.008 | 0.135 | 0.621 | 1.357 | 0.487 | 1.492 |
| | Bottom | 0.527 | | | | 0.527 | 0.527 | 0.527 | 0.527 |
| | Right | 0.490 | | | | 0.490 | 0.490 | 0.490 | 0.490 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤ 0.04) or 10-g SPLSR (≤ 0.10) | Volume Scan (Yes/No) | Figure |
|-------------------|---------------|-----------------------|-----|-------|----|---------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3 | 1.725 | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.717 | | 1.008 | | 1+3 | 1.725 | 152.9 | 0.01 | No | 12 |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤ 0.04) or 10-g SPLSR (≤ 0.10) | Volume Scan (Yes/No) | Figure |
|------------------------------------|---------------|-----------------------|-----|-------|-------|---------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | 1+3+4 | 2.019 | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.717 | | 1.008 | 0.294 | 1+3+4 | 2.019 | | | | 13 |
| | | 0.717 | | 1.302 | | 1+3+4 | 2.019 | 149.0 | 0.02 | No | |
| Sum-Peak Location Separation Ratio | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

12.11. Sum of the SAR for LTE Band 41 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.294 | 0.091 | 0.196 | 0.235 | 0.385 | 0.490 | 0.535 | 0.731 |
| Body-Worn (1-g SAR) | All position | 0.307 | 0.357 | 0.575 | 0.139 | 0.664 | 0.882 | 0.449 | 1.024 |
| Hotspot (1-g SAR) | Rear | 0.449 | 0.600 | 1.008 | 0.294 | 1.049 | 1.457 | 0.751 | 1.751 |
| | Front | 0.204 | 0.600 | 1.008 | 0.070 | 0.804 | 1.212 | 0.276 | 1.282 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.096 | 0.272 | 1.008 | 0.135 | 0.368 | 1.104 | 0.234 | 1.239 |
| | Bottom | 0.499 | | | | 0.499 | 0.499 | 0.499 | 0.499 |
| | Right | 0.088 | | | | 0.088 | 0.088 | 0.088 | 0.088 |
| Product Specific 10-g (10-g SAR) | Rear | | | 1.376 | | | 1.376 | | 1.376 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | | | | | | | | |
| | Right | | | | | | | | |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|------------------------------------|---------------|-----------------------|-----|-------|-------|---------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.449 | | 1.008 | 0.294 | 1+3+4 | 1.751 | | | 14 | |
| | | 0.449 | | 1.302 | | 1+3+4 | 1.751 | 138.6 | 0.02 | | No |
| Sum-Peak Location Separation Ratio | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note.2

12.12. Sum of the SAR for LTE Band 66 & Wi-Fi & BT

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) | | | |
|----------------------------------|---------------|-----------------------|-------|-------|-------|-------------------|-------------|-----------|------------------|
| | | WWAN | DTS | UNII | BT | WWAN + DTS | WWAN + UNII | WWAN + BT | WWAN + UNII + BT |
| | | 1 | 2 | 3 | 4 | 1+2 | 1+3 | 1+4 | 1+3+4 |
| Head (1-g SAR) | All position | 0.378 | 0.091 | 0.196 | 0.235 | 0.469 | 0.574 | 0.619 | 0.815 |
| Body-Worn (1-g SAR) | All position | 0.813 | 0.357 | 0.575 | 0.139 | 1.170 | 1.388 | 0.955 | 1.530 |
| Hotspot (1-g SAR) | Rear | 0.811 | 0.600 | 1.008 | 0.294 | 1.411 | 1.819 | 1.113 | 2.113 |
| | Front | 0.338 | 0.600 | 1.008 | 0.070 | 0.938 | 1.346 | 0.410 | 1.416 |
| | Top | | 0.600 | 0.486 | 0.038 | 0.600 | 0.486 | 0.039 | 0.524 |
| | Left | 0.223 | 0.272 | 1.008 | 0.135 | 0.495 | 1.231 | 0.361 | 1.366 |
| | Bottom | 0.843 | | | | 0.843 | 0.843 | 0.843 | 0.843 |
| | Right | 0.087 | | | | 0.087 | 0.087 | 0.087 | 0.087 |
| Product Specific 10-g (10-g SAR) | Rear | 1.680 | | 1.376 | | 1.680 | 3.056 | 1.680 | 3.056 |
| | Front | | | 1.376 | | | 1.376 | | 1.376 |
| | Top | | | 1.107 | | | 1.107 | | 1.107 |
| | Left | | | 1.376 | | | 1.376 | | 1.376 |
| | Bottom | 1.394 | | | | 1.394 | 1.394 | 1.394 | 1.394 |
| | Right | | | | | | | | |

Note(s):

- Green values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.
- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

SAR to Peak Location Separation Ratio (SPLSR)

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|-------------------|---------------|-----------------------|-----|-------|----|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.811 | | 1.008 | | 1+3 | 1.819 | 154.6 | 0.02 | No | 15 |

Sum-Peak Location Separation Ratio

| RF Exposure | Test Position | Standalone SAR (W/kg) | | | | Sum of SAR (W/kg) (1-g or 10-g) | | Calculated Distance (mm) | 1-g SPLSR (≤0.04) or 10-g SPLSR (≤0.10) | Volume Scan (Yes/No) | Figure |
|---|---------------|-----------------------|-----|-------|-------|------------------------------------|-------|--------------------------|---|----------------------|--------|
| | | WWAN | DTS | UNII | BT | | | | | | |
| | | 1 | 2 | 3 | 4 | | | | | | |
| Hotspot (1-g SAR) | Rear | 0.811 | | 1.008 | 0.294 | 1+3+4 | 2.113 | | | | 16 |
| | | 0.811 | | 1.302 | | 1+3+4 | 2.113 | 151.7 | 0.02 | No | |
| Sum-Peak Location Separation Ratio <i>Note.2</i> | | | | 1.302 | | 3+4 | 1.302 | | | | |

Note(s):

- According to 2022 Apr TCBC Workshop, SPLSR (Sum-Peak Location Separation Ratio) can algebraically sum the SAR values of the co-located pair and use that value in SPLSR calculation. Use the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

Conclusion:

- Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to procedure with “Sum of SAR” or “SAR to Peak Location Separation Ratio” or “Sum-Peak Location Separation Ratio”.

Figure (1)

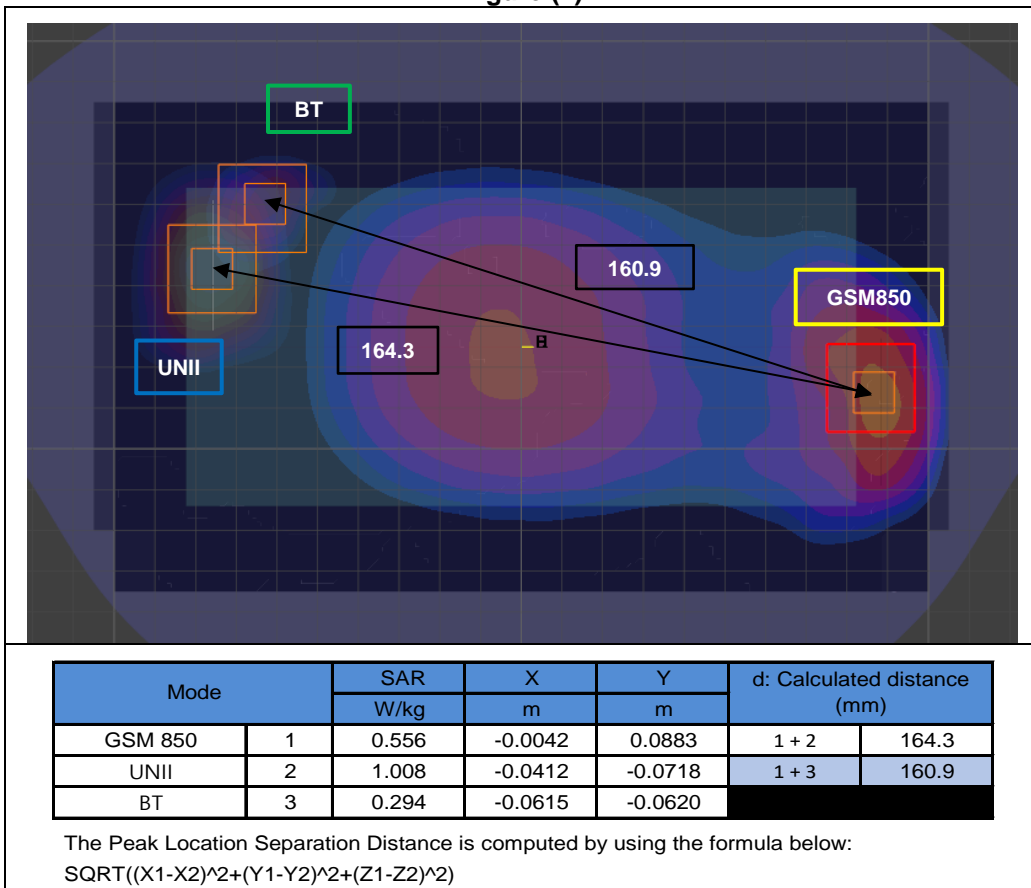


Figure (2)

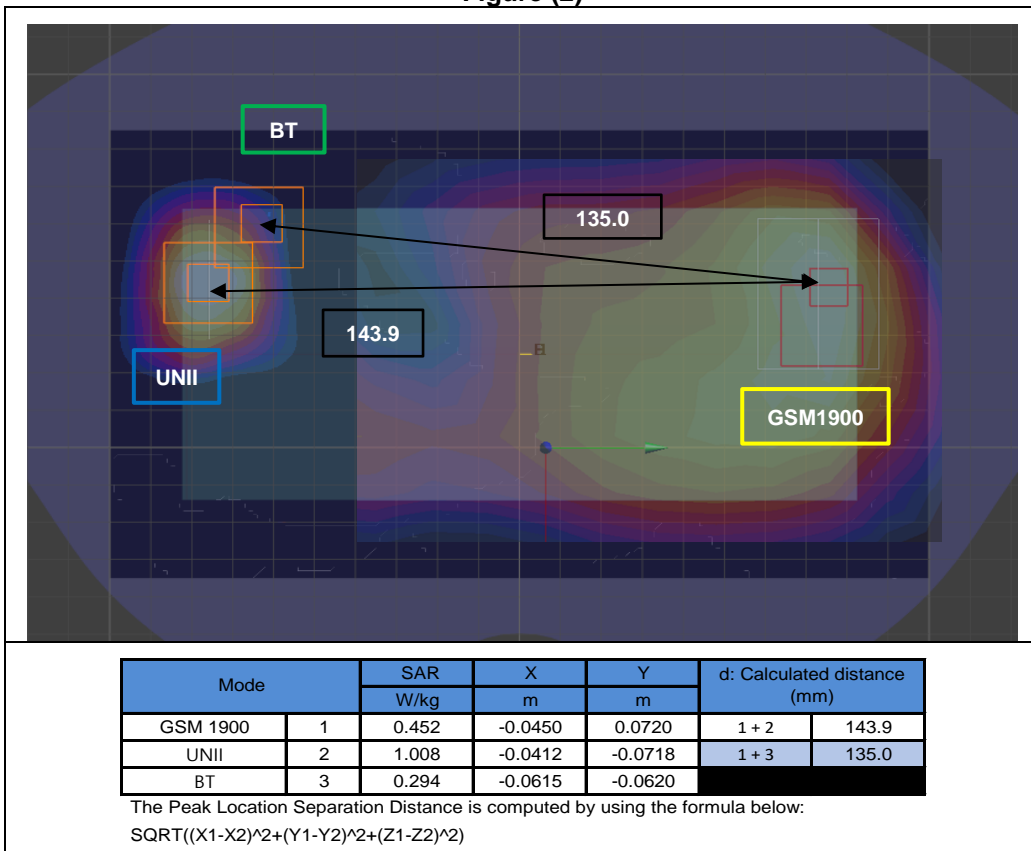


Figure (3)

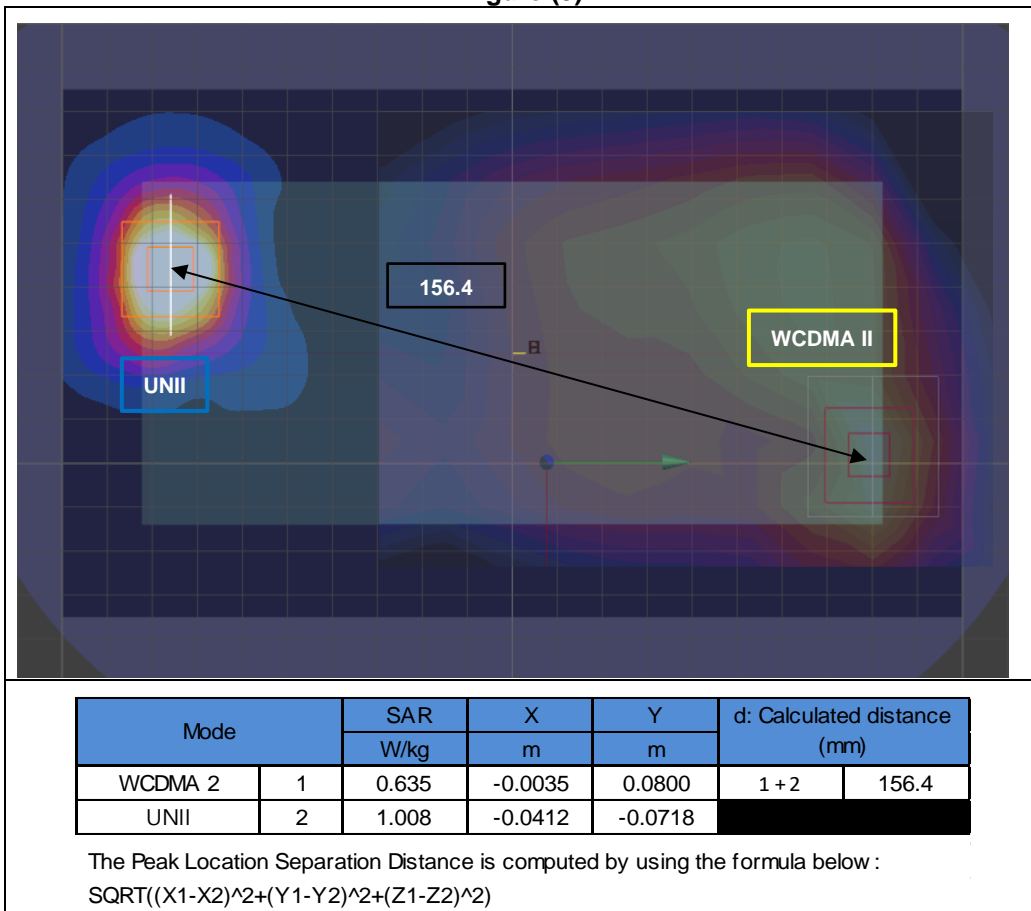


Figure (4)

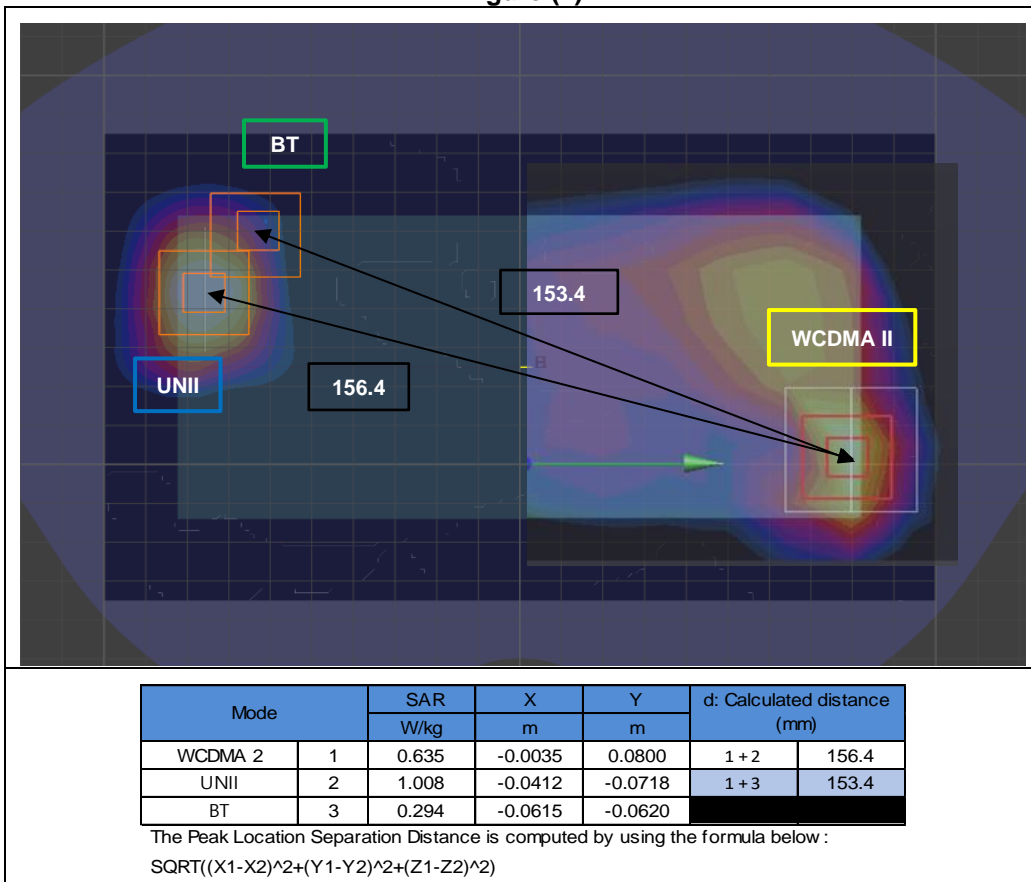


Figure (5)

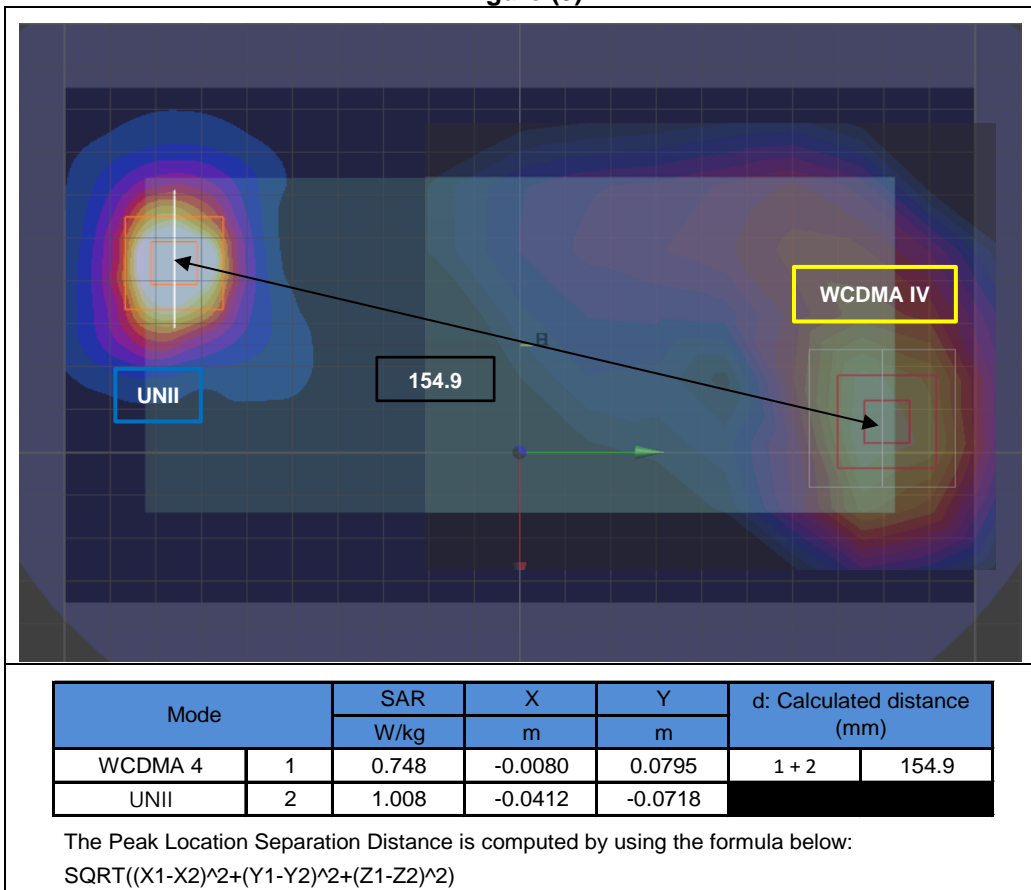


Figure (6)

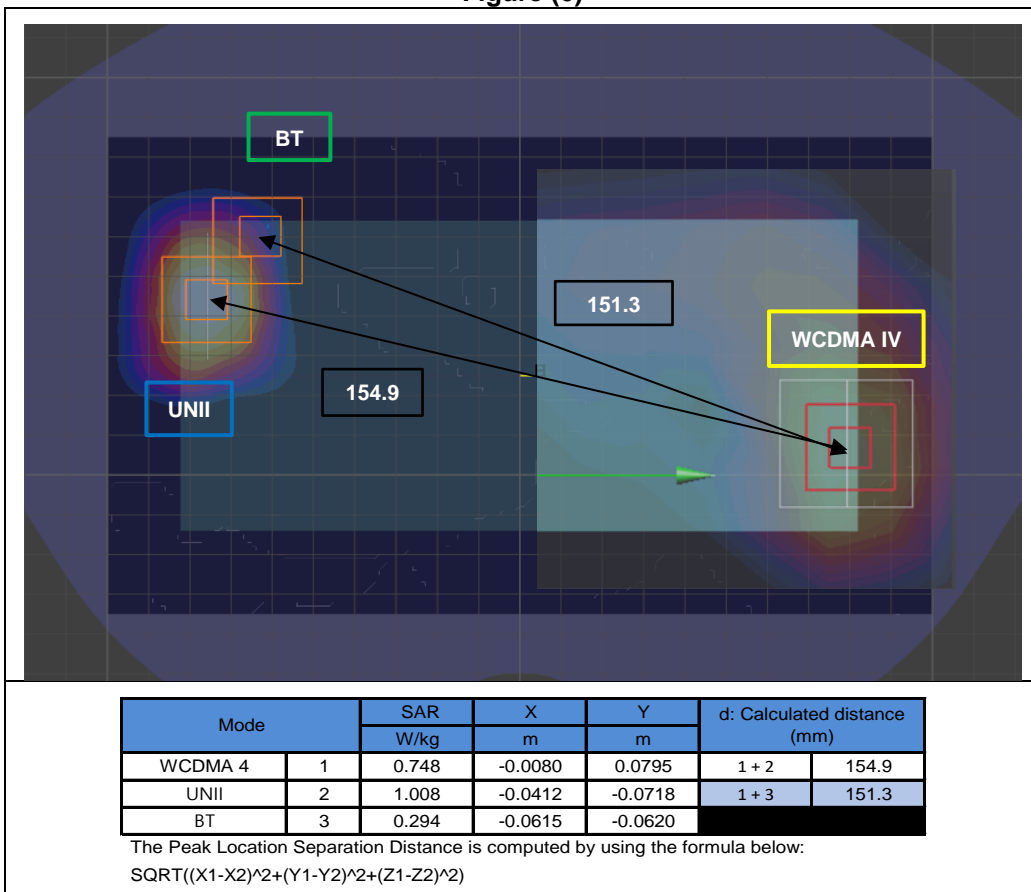


Figure (7)

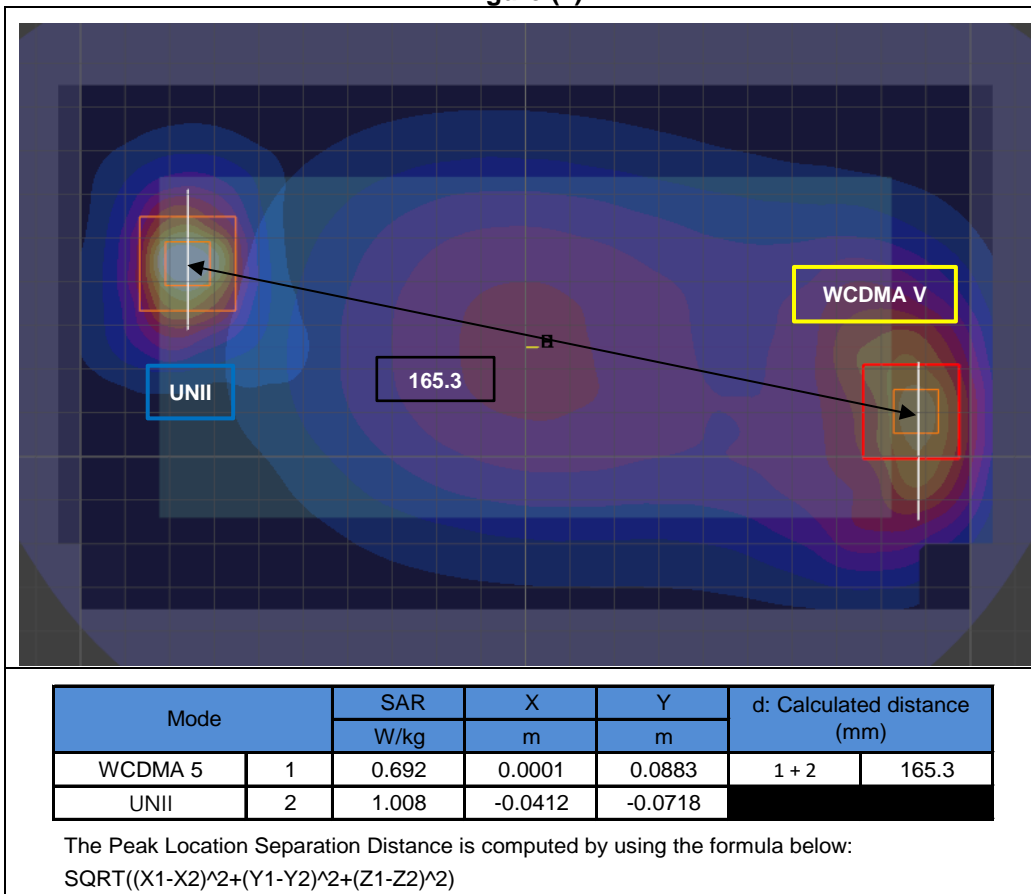


Figure (8)

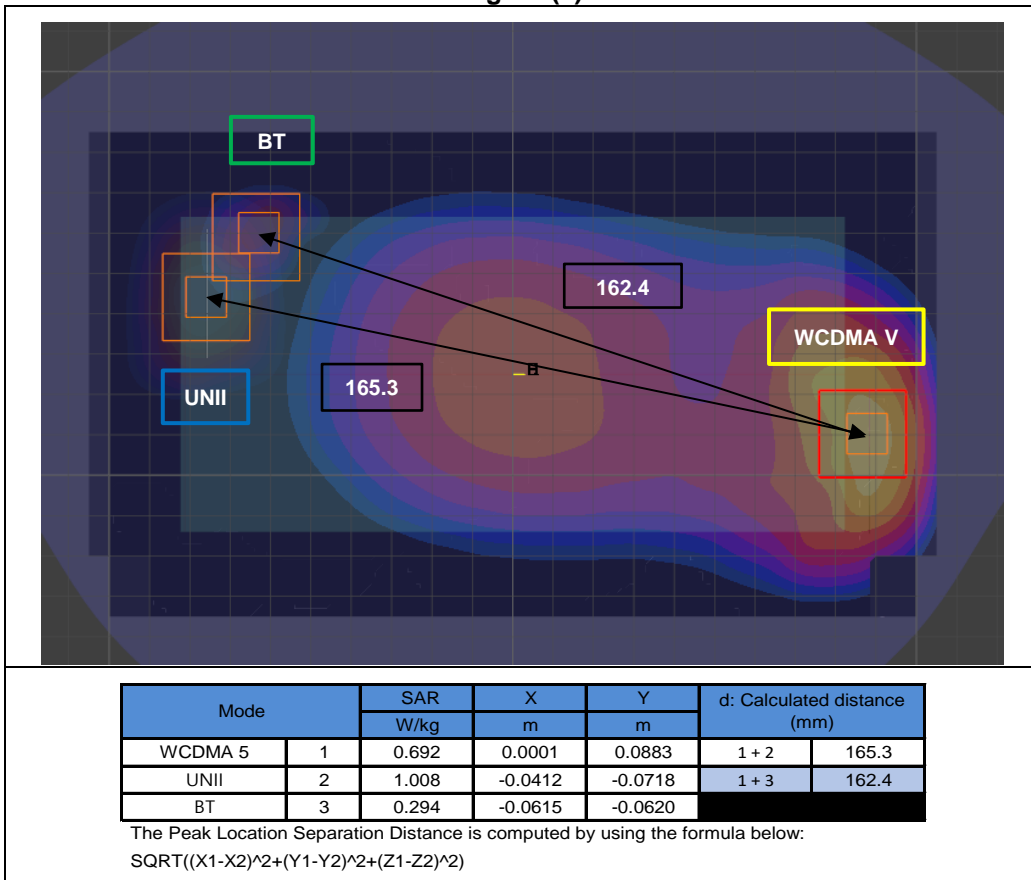
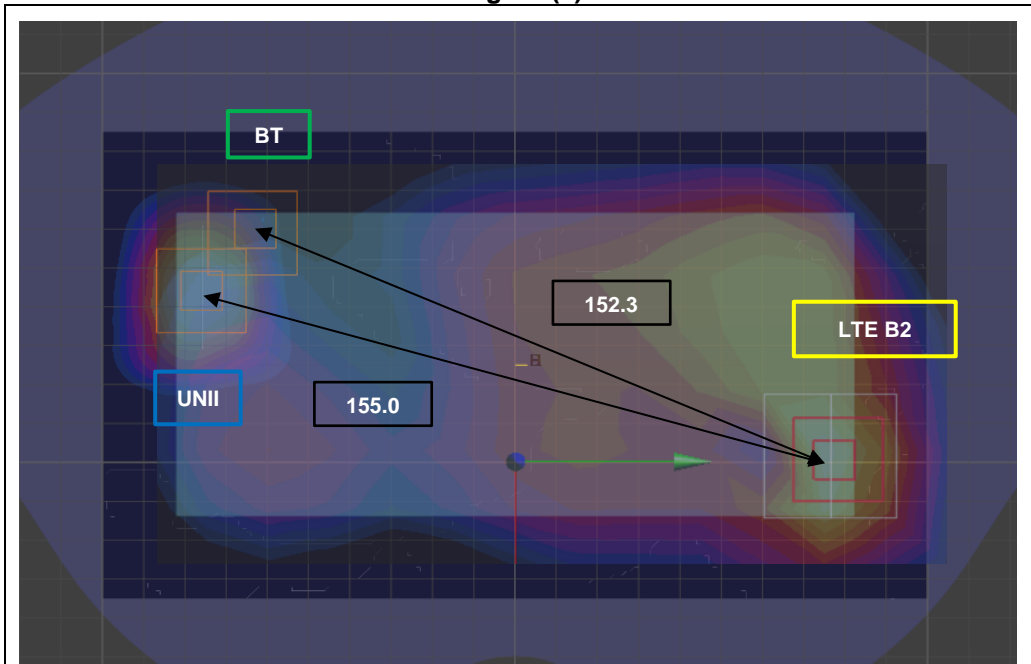


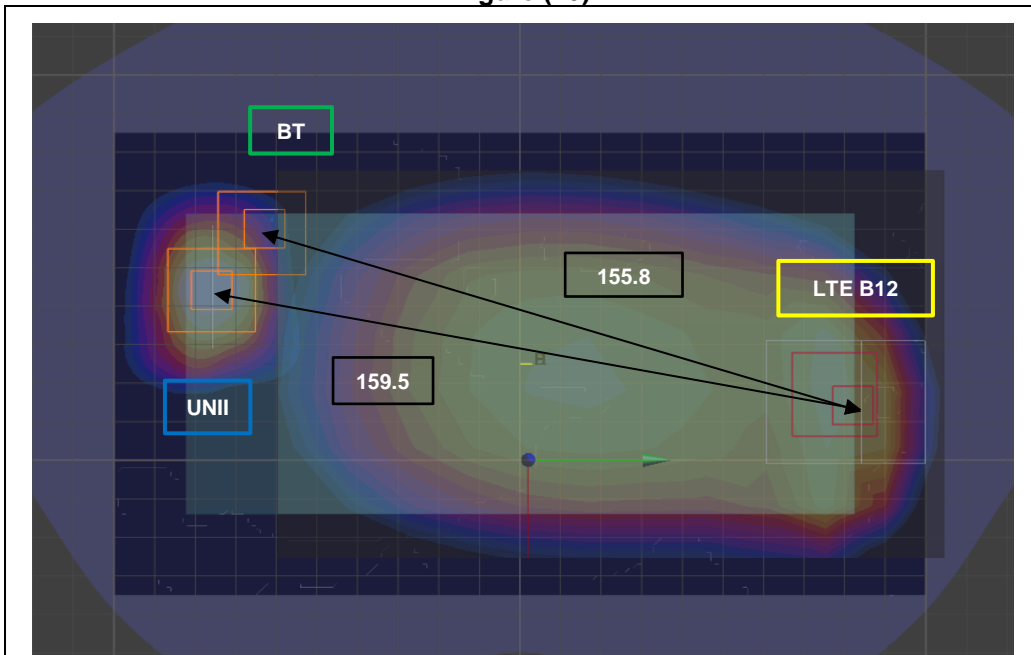
Figure (9)



| Mode | | SAR W/kg | X m | Y m | d: Calculated distance (mm) | |
|--------|---|-------------|---------|---------|--------------------------------|-------|
| LTE B2 | 1 | 0.564 | -0.0015 | 0.0780 | 1 + 2 | 155.0 |
| UNII | 2 | 1.008 | -0.0412 | -0.0718 | 1 + 3 | 152.3 |
| BT | 3 | 0.294 | -0.0615 | -0.0620 | | |

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

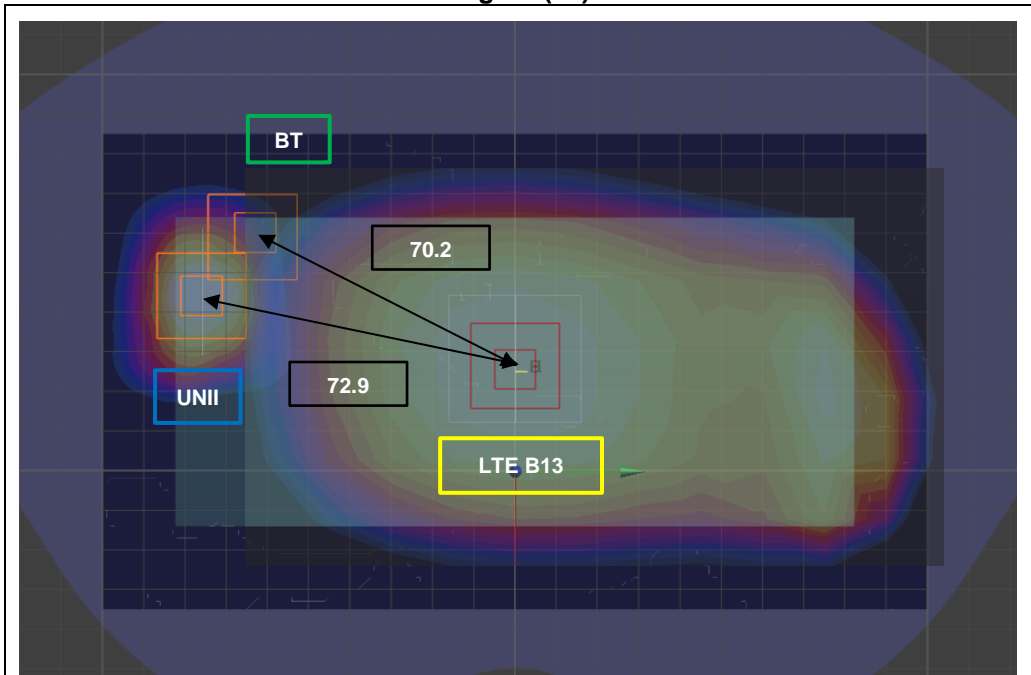
Figure (10)



| Mode | | SAR W/kg | X m | Y m | d: Calculated distance (mm) | |
|---------|---|-------------|---------|---------|--------------------------------|-------|
| LTE B12 | 1 | 0.335 | -0.0070 | 0.0840 | 1 + 2 | 159.5 |
| UNII | 2 | 1.008 | -0.0412 | -0.0718 | 1 + 3 | 155.8 |
| BT | 3 | 0.294 | -0.0615 | -0.0620 | | |

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

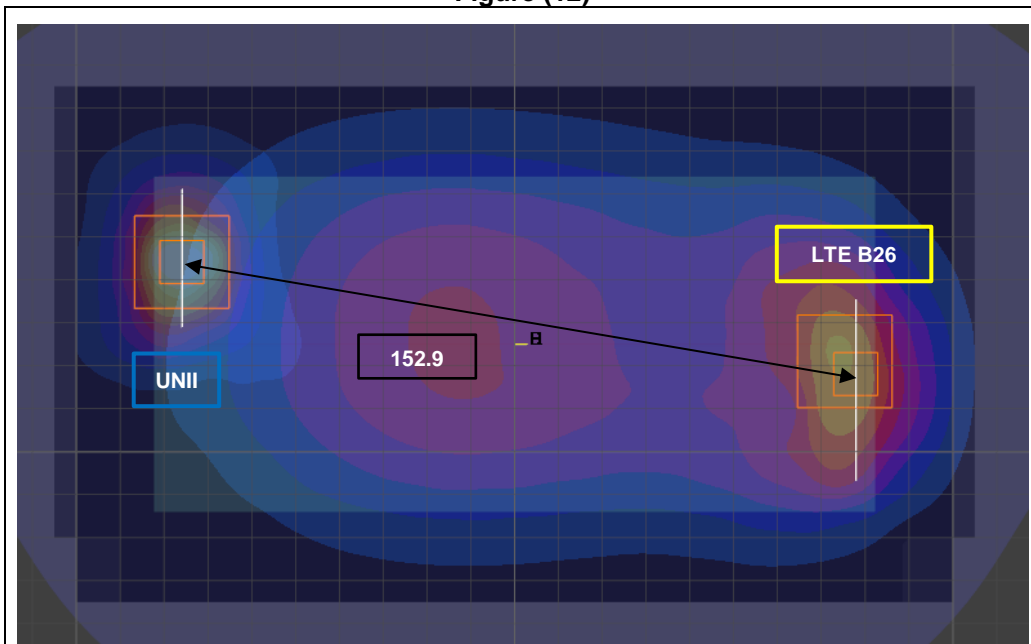
Figure (11)



| Mode | | SAR | X | Y | d: Calculated distance (mm) | |
|---------|---|-------|---------|---------|-----------------------------|------|
| | | W/kg | m | m | | |
| LTE B13 | 1 | 0.461 | -0.0285 | 0.0000 | 1 + 2 | 72.9 |
| UNII | 2 | 1.008 | -0.0412 | -0.0718 | 1 + 3 | 70.2 |
| BT | 3 | 0.294 | -0.0615 | -0.0620 | | |

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

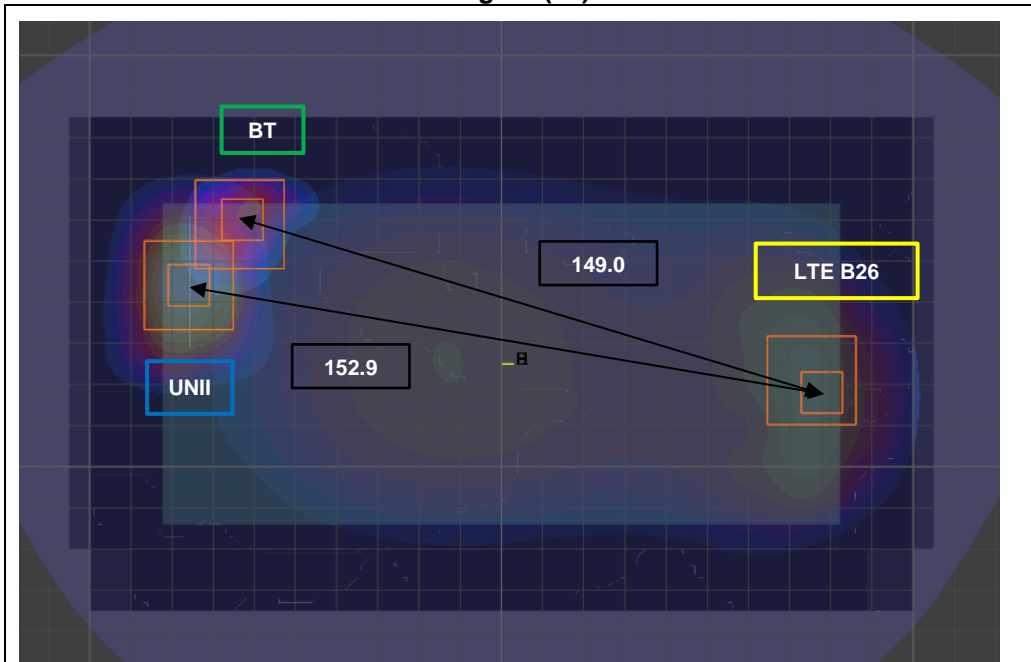
Figure (12)



| Mode | | SAR | X | Y | d: Calculated distance (mm) | |
|---------|---|-------|---------|---------|-----------------------------|-------|
| | | W/kg | m | m | | |
| LTE B26 | 1 | 0.717 | -0.0103 | 0.0779 | 1 + 2 | 152.9 |
| UNII | 2 | 1.008 | -0.0412 | -0.0718 | | |

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

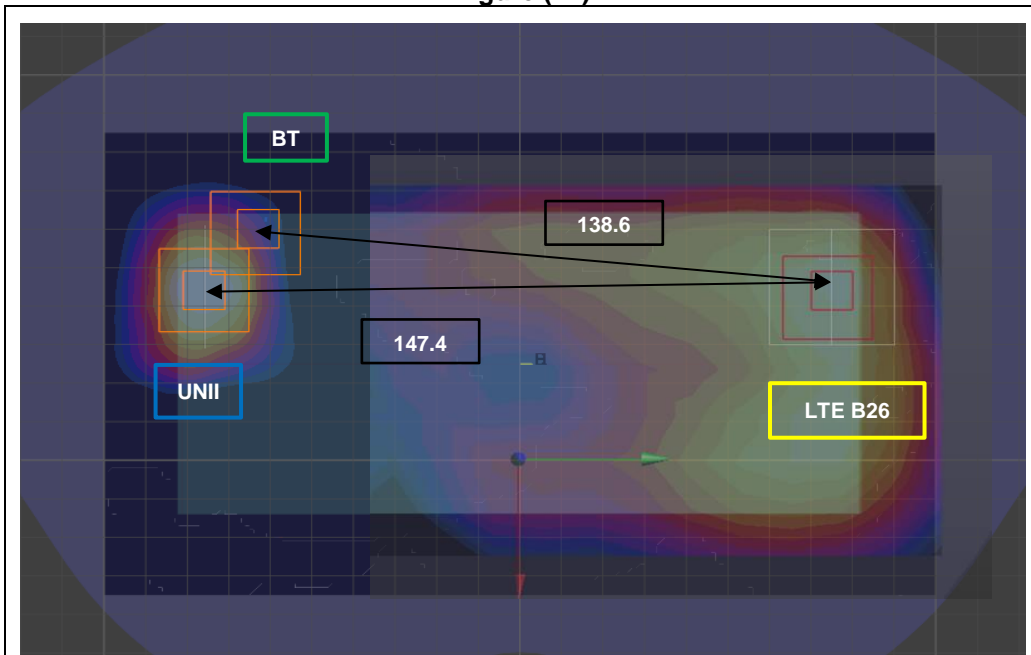
Figure (13)



| Mode | | SAR W/kg | X m | Y m | d: Calculated distance (mm) | |
|---------|---|-------------|---------|---------|--------------------------------|-------|
| LTE B26 | 1 | 0.717 | -0.0103 | 0.0779 | 1 + 2 | 152.9 |
| UNII | 2 | 1.008 | -0.0412 | -0.0718 | 1 + 3 | 149.0 |
| BT | 3 | 0.294 | -0.0615 | -0.0620 | | |

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (14)



| Mode | | SAR W/kg | X m | Y m | d: Calculated distance (mm) | |
|---------|---|-------------|---------|---------|--------------------------------|-------|
| LTE B41 | 1 | 0.449 | -0.0446 | 0.0756 | 1 + 2 | 147.4 |
| UNII | 2 | 1.008 | -0.0412 | -0.0718 | 1 + 3 | 138.6 |
| BT | 3 | 0.294 | -0.0615 | -0.0620 | | |

The Peak Location Separation Distance is computed by using the formula below:
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (15)

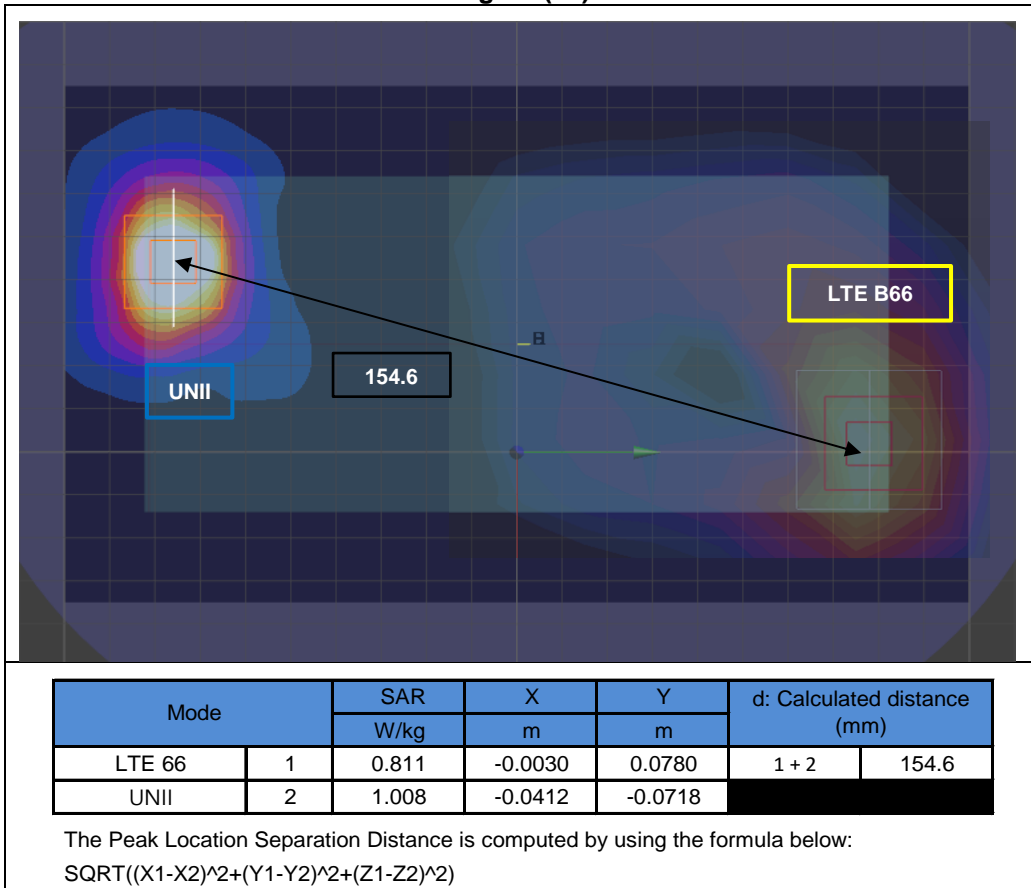
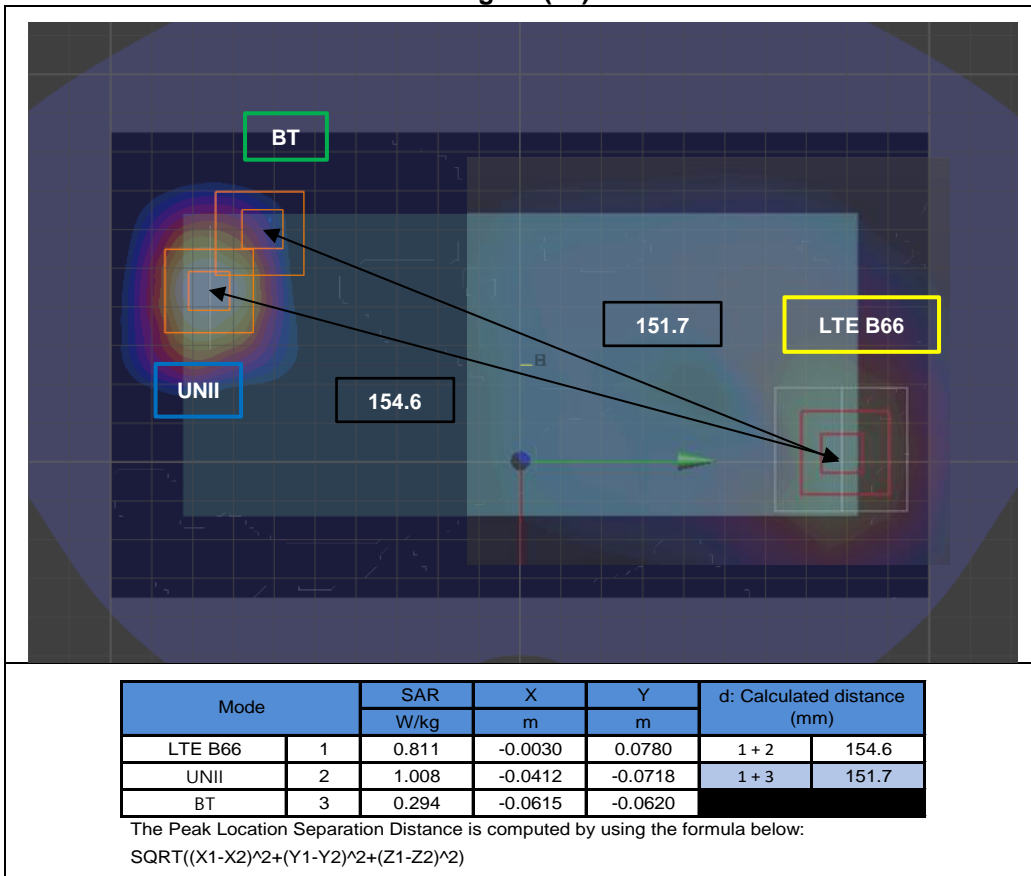


Figure (16)



Appendixes

Refer to separated files for the following appendixes.

S-4791427005-S1 FCC Report SAR_App A_Photos & Ant. Locations

S-4791427005-S1 FCC Report SAR_App B_Highest SAR Test Plots

S-4791427005-S1 FCC Report SAR_App C_System Check Plots

S-4791427005-S1 FCC Report SAR_App D_SAR Tissue Ingredients

S-4791427005-S1 FCC Report SAR_App E_Probe Cal. Certificates

S-4791427005-S1 FCC Report SAR_App F_Dipole Cal. Certificates

S-4791427005-S1 FCC Report SAR_App G_Proximity Sensor feature

END OF REPORT