



Report No.:

T220114R01-SF

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Rev.: 00

SAR TEST REPORT

FCC 47 CFR § 2.1093
IEEE Std 1528-2013

for

Mobile POS

Model Name.: M285

Prepared for:

FLYTECH Technology Co., Ltd.

No. 168, Sing-Ai Rd., Neihu District 11494, Taipei City, Taiwan

Prepared by

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Issue Date: April 14, 2022

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Revision History

| Rev. | Issue Date | Revisions | Revised By |
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| 00 | April 14, 2022 | Initial Issue | Doris Chu |

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1 Attestation of Test Results

| | | | | |
|--|---|--|--|-------|
| Applicant Name | FLYTECH Technology Co., Ltd. | | | |
| Model Name | M285 | | | |
| Applicable Standards | FCC 47 CFR § 2.1093 Published RF exposure KDB procedures IEEE Std 1528-2013 | | | |
| Exposure Category | SAR Limits (W/Kg) | | | |
| | Peak spatial-average (1g of tissue) | | Extremities (hands, wrists, ankles, etc.) (10g of tissue) | |
| General population | 1.6 | | 4 | |
| RF Exposure Conditions | Equipment Class - Highest Reported SAR (W/kg) | | | |
| | PCE | DTS | NII | DSS |
| Body | 0.788 | 0.974 | 0.559 | 0.172 |
| Simultaneous TX | 1.575 | | | |
| Receive EUT Date: | January 14, 2022 | | | |
| Date Tested | January 29 ~ February 24, 2022 | | | |
| Test Results | Pass | | | |
| <p>Compliance Certification Services Inc. , tested the above equipment in accordance with the requirements set forth in the above standards. Determination of compliance is based on the results of the compliance measurement,not taking into account measurement instrumentation uncertainty.All indications of Pass/Fail in this report are opinions expressed by Compliance Certification Services Inc, based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> | | | | |
| Approved & Released By: | | Tested by: | | |
|  | |  | | |
| Kevin Tsai Deputy Manager Compliance Certification Services Inc. | | Sky Zhou Asst. Section Manager Compliance Certification Services Inc. | | |



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, the following FCC Published RF exposure KDB procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v07
- 616217 D04 SAR for laptop and tablets v01r02
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D05 SAR for LTE Devices v02r05

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

- TCB workshop October, 2014; Page 37, RF Exposure Procedures Update (Other LTE Considerations)
- TCB workshop April 2015; Page 33, RF Exposure Procedures (Overlapping LTE Bands)
- TCB workshop October, 2015; Page 6, RF Exposure Procedures (KDB 941225 D05A)
- TCB workshop October, 2016; Page 7, RF Exposure Procedures (Bluetooth Duty Factor)

3 Device Under Test (DUT) Information

3.1 DUT Description

| | |
|----------------------|--|
| Applicant Name | FLYTECH Technology Co., Ltd. |
| Applicant Address | No. 168, Sing-Ai Rd., Neihu District 11494, Taipei City, Taiwan |
| Manufacturer Name | FLYTECH Technology Co., Ltd. |
| Manufacturer Address | No. 168, Sing-Ai Rd., Neihu District 11494, Taipei City, Taiwan |
| Product | Mobile POS |
| Trade Name | FLYTECH |
| Model No. | M285 |
| Model Discrepancy | N/A |
| Device Dimension | Overall (Length x Width): 275 mm x 198 mm Overall Diagonal: 325 mm Display Diagonal: 260 mm |
| Back Cover | <input checked="" type="checkbox"/> Normal Battery Cover <input type="checkbox"/> Normal Battery Cover with NFC <input type="checkbox"/> Wireless Charger Battery Cover <input type="checkbox"/> Wireless Charger Battery Cover with NFC <input type="checkbox"/> The Back Cover is not removable. |
| Battery Options | <input checked="" type="checkbox"/> Standard – Lithium-ion battery, Rating 11.4Vdc, 52.5Wh <input type="checkbox"/> Extended (large capacity) <input type="checkbox"/> The rechargeable battery is not user accessible. |
| Hardware Version | V09C |
| Software Version | F8B0-017 |
| Sample Stage | PVT |

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3.2 Wireless Technologies

| Wireless technologies | Frequency bands | Peak Antenna Gain (dBi) | Operating mode | Duty Cycle used for SAR testing | | | |
|------------------------|--|------------------------------|---------------------------------|---|--|-------------------------------|---|
| LTE(Main) | FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 12 FDD Band 13 FDD Band 14 FDD Band 26 TDD Band 41 TDD Band 48 | 3.99 | QPSK 16QAM 64QAM | 100% (FDD) 63.3% (TDD) ^{Power class3} | | | |
| | | | | | Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| Antenna Specification | Brand Name | ARISTOTLE | | | | | |
| | Type | Monopole | | | | | |
| | Parts Number | RFA-LTE-JP332M-4G350 | | | | | |
| Wi-Fi(Main) | 2.4 GHz | 2.99 | 802.11b | 99.05% (802.11b) | | | |
| | | | 802.11g | | 96.30% (802.11g) | | |
| | 802.11n (HT20) | 99.06% (802.11n/ax 20MHz BW) | | | | | |
| | 802.11n (HT40) | | 99.25% (802.11n/ax 40MHz BW) | | | | |
| 5.2 GHz ⁴ | 2.89 | 802.11ax (HE 20) | | 98.17% (802.11a) | | | |
| | | 802.11ax (HE40) | 99.25% (802.11n/ac/ax 20MHz BW) | | | | |
| | | 802.11a | | | 99.24% (802.11n/ac/ax 40MHz BW) | | |
| | | 802.11n (HT20) | | | | 99.24% (802.11ac/ax 80MHz BW) | |
| | | 802.11n (HT40) | | | | | Does this device support bands 5.60 ~ 5.65 GHz? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | | 802.11ac (VHT20) | | | | | |
| 802.11ac (VHT40) | | | | | | | |
| 802.11ac (VHT80) | | | | | | | |
| 802.11ax (HE20) | | | | | | | |
| 802.11ax (HE40) | | | | | | | |
| 802.11ax (HE80) | | | | | | | |
| Antenna Specification | Brand Name | ARISTOTLE | | | | | |
| | Type | Monopole | | | | | |
| | Parts Number | RFA-25-JP308-4G-350 | | | | | |
| Wi-Fi(Aux) | 2.4 GHz | 2.99 | 802.11b | 99.05% (802.11b) | | | |
| | | | 802.11g | | 96.30% (802.11g) | | |
| | 802.11n (HT20) | 99.06% (802.11n/ax 20MHz BW) | | | | | |
| | 802.11n (HT40) | | 99.25% (802.11n/ax 40MHz BW) | | | | |
| 5.2 GHz ⁴ | 2.89 | 802.11ax (HE 20) | | 98.17% (802.11a) | | | |
| | | 802.11ax (HE40) | 99.25% (802.11n/ac/ax 20MHz BW) | | | | |
| | | 802.11a | | | 99.24% (802.11n/ac/ax 40MHz BW) | | |
| | | 802.11n (HT20) | | | | 99.24% (802.11ac/ax 80MHz BW) | |
| | | 802.11n (HT40) | | | | | Does this device support bands 5.60 ~ 5.65 GHz? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| | | 802.11ac (VHT20) | | | | | |
| 802.11ac (VHT40) | | | | | | | |
| 802.11ac (VHT80) | | | | | | | |
| 802.11ax (HE20) | | | | | | | |
| 802.11ax (HE40) | | | | | | | |
| 802.11ax (HE80) | | | | | | | |
| Bluetooth ⁵ | 2.4 GHz | 2.99 | BLE_2 Mbps | 33.6% | | | |
| Antenna Specification | Brand Name | ARISTOTLE | | | | | |
| | Type | Monopole | | | | | |
| | Parts Number | RFA-25-JP308-4B-135 | | | | | |

Notes:

1. The sample selected for test was prototype that representative to production product and was provided by manufacturer
2. Variant information between/among model numbers / trademarks is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.
3. Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received
4. The device turns off U-NII-2A , U-NII-2C and U-NII-3.
5. The device turns off BR,EDR,LE(1 Mbps)

General LTE SAR Test and Reporting Considerations

| Item | Description | | | | | | |
|---|----------------------------------|---------------------|------------------|--------------------|--------------|--------------|--------------|
| Frequency range, Channel Bandwidth, Numbers and Frequencies | Frequency range: 1850 - 1910 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | Band 2 | 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 |
| | Frequency range: 1710 - 1755 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | Band 4 | 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 |
| | Frequency range: 824 - 849 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | Band 5 | 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 |
| | Frequency range: 698 - 716 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | Band 12 | 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 |
| | Frequency range: 777 - 787 MHz | | | | | | |
| | Channel Bandwidth | | | | | | |
| | Band 13 | 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 | | | |
| Frequency range: 788 - 798 MHz | | | | | | | |
| Channel Bandwidth | | | | | | | |
| Band 14 | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz | |
| Low | | | | 23305/790.5 | | | |
| Mid | | | 23330/793 | 23330/793 | | | |
| High | | | | 23355/795.5 | | | |

Frequency range, Channel Bandwidth, Numbers and Frequencies

| 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 |
| Band 41 ¹ | Frequency range: 2496 - 2690 MHz | | | | | |
| | Channel Bandwidth | | | | | |
| | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz |
| Low | 39750/2506 | | | | | |
| Low-Mid | 40185/2549.5 | | | | | |
| Mid | 40620/2593 | | | | | |
| Mid-High | 41055/2636.5 | | | | | |
| High | 41490/2680 | | | | | |
| Band 48 | Frequency range: 3550 - 3700 MHz | | | | | |
| | Channel Bandwidth | | | | | |
| | 20 MHz | 15 MHz | 10 MHz | 5 MHz | 3 MHz | 1.4 MHz |
| Low | 55340/3560 | 55315/3557.5 | 55290/3555 | 55265/3552.5 | | |
| Mid | 55990/3625 | 55990/3625 | 55990/3625 | 55990/3625 | | |
| High | 56640/3690 | 56665/3692.5 | 56690/3695 | 56715/3697.5 | | |

Maximum power reduction (MPR)

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 |

M

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

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:

1. LTE band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
2. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI)

3.3 LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices v02r02, 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 | $13168 \cdot T_s$ | | | - | | |
| 10 | $13168 \cdot T_s$ | $13152 \cdot T_s$ | $12800 \cdot T_s$ | | | |

Table 4.2-2: Uplink-downlink configurations & 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 x (T_s) x # of S + # of U

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

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

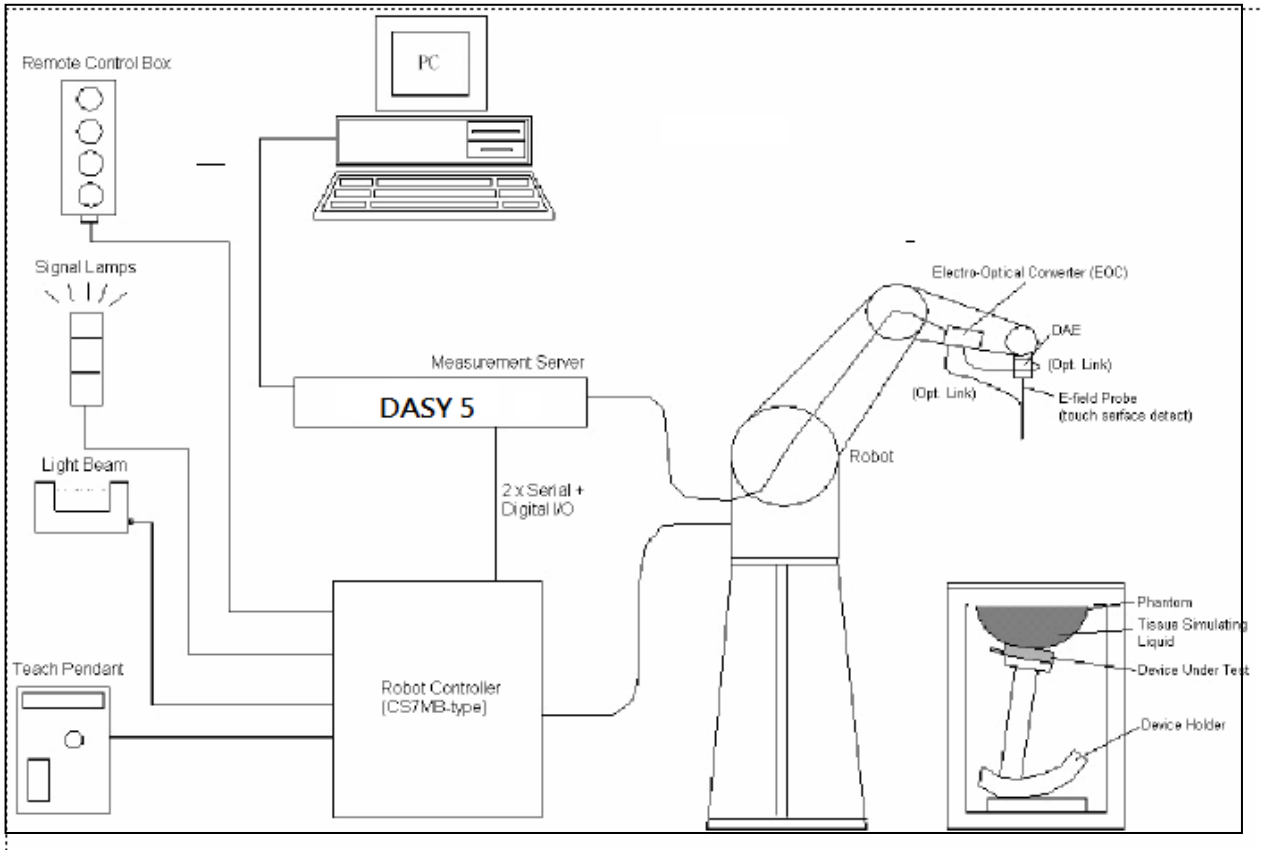
where

$T_s = 1/(15000 \times 2048)$ 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 and Special Subframe 7.

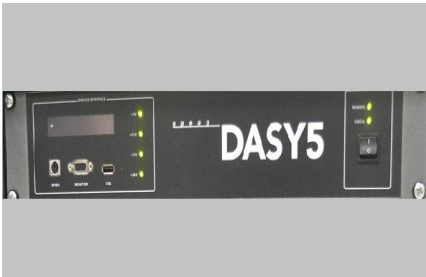


4 SAR Measurement System








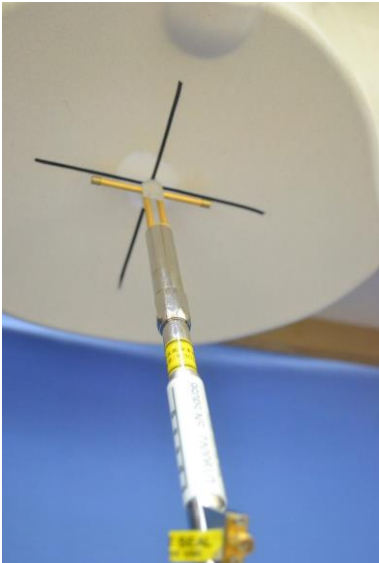

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- 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 between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 7 or Windows XP.
- DASY software version: NEO52 D10.3 S14.6.13.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing validating the proper functioning of the system.

4.1 System Components

| DASY5 Measurement Server | |
|---|--|
|  | <p>The DASY5 measurement server is based on a PC/104 CPU board with a 166MHz low-power Pentium, 32MB chip disk and 64MB RAM. The necessary circuits for communication with either the DAE4 electronic box as well as the 16-bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O-board, which is directly connected to the PC/104 bus of the CPU board.</p> <p>The measurement server performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.</p> |
|  | <p>The PC-operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with two expansion slots which are reserved for future applications. Please note that the expansion slots do not have a standardized pinout and therefore only the expansion cards provided by SPEAG can be inserted. Expansion cards from any other supplier could seriously damage the measurement server.</p> <p>Calibration: No calibration required.</p> |
| Data Acquisition Electronics (DAE) | |
|  | <p>The data acquisition electronics (DAE4) consists of a highly sensitive electrometer grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE4 box is 200MΩ; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.</p> |

| EX3DV4 Isotropic E-Field Probe for Dosimetric Measurements | |
|---|---|
|  | <p>Construction: Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)</p> <p>Calibration: Basic Broad Band Calibration in air: 10-3000 MHz. Conversion Factors (CF) for HSL 900 and HSL 1800 CF-Calibration for other liquids and frequencies upon request.</p> <p>Frequency: 10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)</p> <p>Directivity: ± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in HSL (rotation normal to probe axis)</p> <p>Dynamic Range: 10 μW/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 μW/g)</p> |
|  | <p>Dimensions: Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Distance from probe tip to dipole centers: 1 mm</p> <p>Application: High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.</p> |
| SAM Phantom | |
|  | <p>Construction: The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE1528: 2013. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.</p> <p>Shell Thickness: 2 ± 0.2 mm</p> <p>Filling Volume: Approx. 25 liters</p> <p>Dimensions: Height: 810mm; Length: 1000mm; Width: 500mm</p> |
| ELI Phantom | |
|  | <p>Construction: Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with the latest draft of the standard IEEE1528: 2013 and all known tissue simulating liquids. ELI4 has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is supported by software version DASY5 and higher and is compatible with all SPEAG dosimetric probes and dipoles</p> <p>Shell Thickness: 2.0 ± 0.2 mm (sagging: <1%)</p> <p>Filling Volume: Approx. 25 liters</p> <p>Dimensions: Major ellipse axis: 600 mm Minor axis: 400 mm 500mm</p> |

| Device Holder for SAM Twin Phantom | |
|---|---|
|  | <p>Construction: In combination with the Twin SAM Phantom V4.0 or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, and flat phantom).</p> |
| System Validation Kits for SAM Phantom | |
|  | <p>Construction: Symmetrical dipole with 1/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor.</p> <p>Frequency: 2450, 5300, 5600, 5800 MHz</p> <p>Return loss: > 20 dB at specified validation position</p> <p>Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz)</p> <p>Dimensions: D2450V2: dipole length: 51.5 mm; overall height: 290 mm D5GHzV2: dipole length: 20.6 mm; overall height: 300 mm</p> |
| System Validation Kits for ELI phantom | |
|  | <p>Construction: Symmetrical dipole with 1/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor.</p> <p>Frequency: 2450, 5300, 5600, 5800 MHz</p> <p>Return loss: > 20 dB at specified validation position</p> <p>Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz)</p> <p>Dimensions: D2450V2: dipole length: 51.5 mm; overall height: 290 mm D5GHzV2: dipole length: 20.6 mm; overall height: 300 mm</p> |

4.2 SAR Scan Procedures

Step 1: Power Reference Measurement

The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section's grid reference point or a user point in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

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 IEEE1528 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° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: Δx_{Zoom} , Δy_{Zoom} | ≤ 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 ≤ 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 losest 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 · $\Delta z_{Zoom}(n-1)$ | |
| Maximum zoom scan volume | x, y, z | ≥ 30 mm | 3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm | |

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

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction



5 Measurement Uncertainty

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 $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE1528: 2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.



6 RF Exposure Conditions (Test Configurations)

Refer to Appendixes 1 for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

6.1 Standalone SAR Test Exclusion Considerations

Since the Dedicated Host Approach is applied, the SAR-based exemption in Appendix B of KDB 447498 is applied together with KDB 616217 § 4.3 to determine the minimum test separation distance:

- When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- When the separation distance from the antenna to an adjacent edge is > 5 mm, the actual antenna-to-edge separation distance is applied to determine SAR test exclusion.

SAR Test Exclusion Calculations for $0.3 \text{ GHz} \leq f < 1.5 \text{ GHz}$

| Tx Interface | Frequency (GHz) | Output Power | | Separation Distances (cm) | | | | | P _{avg} (mW) | | | | | Exemption result | | | | |
|-------------------------------|-----------------|--------------|-----|---------------------------|-------|-------|-------|-------|-----------------------|-------|-------|-------|-------|------------------|-------|-------|-------|----------|
| | | dBm | mW | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 |
| 0.3GHz ≤ f < 1.5GHz | | | | | | | | | | | | | | | | | | |
| LTE Band 5 | 0.844 | 24.30 | 269 | 1 | 6.7 | 25.4 | 6.4 | 1 | 24 | 364 | 1722 | 341 | 24 | -MEASURE | 1.182 | 0.250 | 1.262 | -MEASURE |
| LTE Band 12 | 0.711 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 29 | 346 | 1450 | 326 | 29 | -MEASURE | 1.161 | 0.277 | 1.232 | -MEASURE |
| LTE Band 13 | 0.782 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 26 | 356 | 1595 | 334 | 26 | -MEASURE | 1.128 | 0.252 | 1.202 | -MEASURE |
| LTE Band 14 | 0.793 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 26 | 358 | 1618 | 336 | 26 | -MEASURE | 1.122 | 0.248 | 1.195 | -MEASURE |
| LTE Band 26 | 0.8415 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 24 | 364 | 1717 | 341 | 24 | -MEASURE | 1.103 | 0.234 | 1.178 | -MEASURE |

SAR Test Exclusion Calculations for $1.5 \text{ GHz} \leq f \leq 6 \text{ GHz}$

| Tx Interface | Frequency (GHz) | Output Power | | Separation Distances (cm) | | | | | P _{avg} (mW) | | | | | Exemption result | | | | |
|--------------------------|-----------------|--------------|-----|---------------------------|-------|-------|-------|-------|-----------------------|-------|-------|-------|-------|------------------|----------|----------|-------|----------|
| | | dBm | mW | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 |
| 1.5GHz ≤ f ≤ 6GHz | | | | | | | | | | | | | | | | | | |
| LTE Band 2 | 1.9 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 12 | 406 | 3060 | 373 | 12 | -MEASURE | 0.989 | 0.131 | 1.077 | -MEASURE |
| LTE Band 4 | 1.745 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 13 | 414 | 3060 | 381 | 13 | -MEASURE | 0.970 | 0.131 | 1.054 | -MEASURE |
| LTE Band 41 | 2.68 | 23.80 | 240 | 1 | 6.7 | 25.4 | 6.4 | 1 | 10 | 374 | 3060 | 343 | 10 | -MEASURE | 1.027 | 0.125 | 1.120 | -MEASURE |
| LTE Band 48 | 3.69 | 23.80 | 240 | 1 | 6.7 | 25.4 | 6.4 | 1 | 8 | 347 | 3060 | 317 | 8 | -MEASURE | 1.107 | 0.125 | 1.211 | -MEASURE |
| WiFi 2.4GHz(Main) | 2.462 | 21.50 | 141 | 0.6 | 6 | 0.9 | 11.5 | 26.3 | 4 | 309 | 8 | 1067 | 3060 | -MEASURE | 0.730 | -MEASURE | 0.211 | 0.074 |
| WiFi 5.2GHz(Main) | 5.24 | 15.50 | 35 | 0.6 | 6 | 0.9 | 11.5 | 26.3 | 2 | 254 | 5 | 975 | 3060 | -MEASURE | 0.220 | -MEASURE | 0.057 | 0.018 |
| WiFi 2.4GHz(Aux) | 2.462 | 19.50 | 89 | 0.6 | 3.2 | 26.1 | 14.3 | 1.1 | 4 | 94 | 3060 | 1615 | 12 | -MEASURE | 1.515 | 0.047 | 0.088 | -MEASURE |
| WiFi 5.2GHz(Aux) | 5.24 | 17.00 | 50 | 0.6 | 3.2 | 26.1 | 14.3 | 1.1 | 2 | 69 | 3060 | 1529 | 8 | -MEASURE | 1.159 | 0.026 | 0.052 | -MEASURE |
| WiFi 2.4GHz(MIMO) | 2.462 | 21.01 | 126 | 0.6 | 3.2 | 0.9 | 11.5 | 1.1 | 4 | 94 | 8 | 1067 | 12 | -MEASURE | -MEASURE | -MEASURE | 0.189 | -MEASURE |
| Bluetooth(Aux) | 2.48 | 10.00 | 10 | 0.6 | 3.2 | 26.1 | 14.3 | 1.1 | 4 | 93 | 3060 | 1615 | 12 | -MEASURE | 0.172 | 0.005 | 0.010 | 1.333 |

6.2 Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 6.1:

| Test Configurations | Rear | Edge1 | Edge2 | #REF! | Edge3 | Edge4 |
|---|------|-------|-------|-------|-------|-------|
| $0.3\text{GHz} \leq f < 1.5\text{GHz}$ | | | | | | |
| LTE Band 5 | Yes | No | No | No | No | Yes |
| LTE Band 12 | Yes | No | No | No | No | Yes |
| LTE Band 13 | Yes | No | No | No | No | Yes |
| LTE Band 14 | Yes | No | No | No | No | Yes |
| LTE Band 26 | Yes | No | No | No | No | Yes |
| $1.5\text{GHz} \leq f \leq 6\text{GHz}$ | | | | | | |
| LTE Band 2 | Yes | No | No | No | No | Yes |
| LTE Band 4 | Yes | No | No | No | No | Yes |
| LTE Band 41 | Yes | No | No | No | No | Yes |
| LTE Band 48 | Yes | No | No | No | No | Yes |
| WiFi 2.4GHz(Main) | Yes | No | Yes | No | No | No |
| WiFi 5.2GHz(Main) | Yes | No | Yes | No | No | No |
| WiFi 2.4GHz(Aux) | Yes | No | No | No | No | Yes |
| WiFi 5.2GHz(Aux) | Yes | No | No | No | No | Yes |
| WiFi 2.4GHz(MIMO) | Yes | Yes | Yes | No | No | Yes |
| Bluetooth(Aux) | Yes | No | No | No | No | Yes |

Note(s):

Yes = Testing is required.

No = Testing is not required.

7 Dielectric Property Measurements & System Check

7.1 Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 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.

The dielectric constant (ϵ_r) and conductivity (σ) of typical tissue-equivalent media recipes are expected to be within ± 5% of the required target values; but for SAR measurement systems that have implemented the SAR error compensation algorithms documented in IEEE Std 1528-2013, to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, the tolerance for ϵ_r and σ may be relaxed to ± 10%. This is limited to frequencies ≤ 3 GHz.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

| Target Frequency (MHz) | Head | | Body | |
|------------------------|--------------|----------------|--------------|----------------|
| | ϵ_r | σ (S/m) | ϵ_r | σ (S/m) |
| 150 | 52.3 | 0.76 | 61.9 | 0.80 |
| 300 | 45.3 | 0.87 | 58.2 | 0.92 |
| 450 | 43.5 | 0.87 | 56.7 | 0.94 |
| 835 | 41.5 | 0.90 | 55.2 | 0.97 |
| 900 | 41.5 | 0.97 | 55.0 | 1.05 |
| 915 | 41.5 | 0.98 | 55.0 | 1.06 |
| 1450 | 40.5 | 1.20 | 54.0 | 1.30 |
| 1610 | 40.3 | 1.29 | 53.8 | 1.40 |
| 1800 – 2000 | 40.0 | 1.40 | 53.3 | 1.52 |
| 2450 | 39.2 | 1.80 | 52.7 | 1.95 |
| 3000 | 38.5 | 2.40 | 52.0 | 2.73 |
| 5000 | 36.2 | 4.45 | 49.3 | 5.07 |
| 5100 | 36.1 | 4.55 | 49.1 | 5.18 |
| 5200 | 36.0 | 4.66 | 49.0 | 5.30 |
| 5300 | 35.9 | 4.76 | 48.9 | 5.42 |
| 5400 | 35.8 | 4.86 | 48.7 | 5.53 |
| 5500 | 35.6 | 4.96 | 48.6 | 5.65 |
| 5600 | 35.5 | 5.07 | 48.5 | 5.77 |
| 5700 | 35.4 | 5.17 | 48.3 | 5.88 |
| 5800 | 35.3 | 5.27 | 48.2 | 6.00 |

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

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Typical Composition of Ingredients for Liquid Tissue Phantoms

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

| Ingredients (% by weight) | Frequency (MHz) | | | | | | | | | |
|------------------------------|-----------------|-------|-------|------|-------|-------|-------|------|------|------|
| | 450 | | 835 | | 915 | | 1900 | | 2450 | |
| Tissue Type | Head | Body | Head | Body | Head | Body | Head | Body | Head | Body |
| Water | 38.56 | 51.16 | 41.45 | 52.4 | 41.05 | 56.0 | 54.9 | 40.4 | 62.7 | 73.2 |
| Salt (NaCl) | 3.95 | 1.49 | 1.45 | 1.4 | 1.35 | 0.76 | 0.18 | 0.5 | 0.5 | 0.04 |
| Sugar | 56.32 | 46.78 | 56.0 | 45.0 | 56.5 | 41.76 | 0.0 | 58.0 | 0.0 | 0.0 |
| HEC | 0.98 | 0.52 | 1.0 | 1.0 | 1.0 | 1.21 | 0.0 | 1.0 | 0.0 | 0.0 |
| Bactericide | 0.19 | 0.05 | 0.1 | 0.1 | 0.1 | 0.27 | 0.0 | 0.1 | 0.0 | 0.0 |
| Triton X-100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 36.8 | 0.0 |
| DGBE | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 44.92 | 0.0 | 0.0 | 26.7 |
| Dielectric Constant | 43.42 | 58.0 | 42.54 | 56.1 | 42.0 | 56.8 | 39.9 | 54.0 | 39.8 | 52.5 |
| Conductivity (S/m) | 0.85 | 0.83 | 0.91 | 0.95 | 1.0 | 1.07 | 1.42 | 1.45 | 1.88 | 1.78 |

alt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
 Water: De-ionized, 16 MΩ⁺ resistivity HEC: Hydroxy thyl Cellulose
 DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
 Triton X-100 (ultra-pure): Polyethylene glycol mono [4-(1, 1, 3, 3-tetramethylbutyl)phenyl]ether

Simulating Liquids for 5 GHz, Manufactured by SPEAG

| Ingredients | (% by weight) |
|--------------------|---------------|
| Water | 78 |
| Mineral oil | 11 |
| Emulsifiers | 9 |
| Additives and Salt | 2 |

Dielectric Property Measurements Results:

| Date | Tissue Type | Frequency (MHz) | Relative Permittivity (ϵ_r) | | | Conductivity (σ) | | |
|-----------|-------------|-----------------|--|--------|-----------|---------------------------|--------|-----------|
| | | | Measured | Target | Delta (%) | Measured | Target | Delta (%) |
| 2022/2/17 | Head | 700 | 40.92 | 42.17 | -2.96 | 0.84 | 0.89 | -4.85 |
| | | 750 | 40.75 | 41.90 | -2.74 | 0.86 | 0.89 | -3.48 |
| | | 810 | 40.54 | 41.62 | -2.59 | 0.88 | 0.90 | -1.90 |
| 2022/2/17 | Head | 810 | 40.54 | 41.62 | -2.59 | 0.88 | 0.90 | -1.90 |
| | | 835 | 40.43 | 41.50 | -2.58 | 0.89 | 0.90 | -1.22 |
| | | 860 | 40.39 | 41.50 | -2.67 | 0.90 | 0.93 | -3.13 |
| 2022/2/23 | Head | 1710 | 41.62 | 40.14 | 3.69 | 1.28 | 1.35 | -4.75 |
| | | 1750 | 41.63 | 40.10 | 3.82 | 1.32 | 1.37 | -4.01 |
| | | 1810 | 41.29 | 40.00 | 3.23 | 1.37 | 1.40 | -2.14 |
| 2022/2/18 | Head | 1810 | 40.28 | 40.00 | 0.70 | 1.34 | 1.40 | -4.64 |
| | | 1900 | 40.13 | 40.00 | 0.33 | 1.38 | 1.40 | -1.71 |
| | | 1920 | 40.13 | 40.00 | 0.33 | 1.38 | 1.40 | -1.14 |
| 2022/1/29 | Head | 2400 | 38.62 | 39.30 | -1.73 | 1.84 | 1.76 | 4.50 |
| | | 2450 | 38.51 | 39.20 | -1.76 | 1.88 | 1.80 | 4.28 |
| | | 2500 | 38.47 | 39.13 | -1.69 | 1.93 | 1.85 | 3.89 |
| 2022/2/24 | Head | 2400 | 40.03 | 39.30 | 1.86 | 1.84 | 1.76 | 4.89 |
| | | 2450 | 39.94 | 39.20 | 1.89 | 1.89 | 1.80 | 4.72 |
| | | 2500 | 39.90 | 39.13 | 1.97 | 1.93 | 1.85 | 4.32 |
| 2022/2/18 | Head | 2500 | 37.84 | 39.13 | -3.30 | 1.91 | 1.85 | 2.81 |
| | | 2600 | 37.48 | 39.00 | -3.90 | 2.02 | 1.96 | 2.86 |
| | | 2680 | 37.21 | 38.90 | -4.34 | 2.11 | 2.05 | 2.88 |
| 2022/2/23 | Head | 3500 | 38.36 | 37.95 | 1.08 | 2.80 | 2.92 | -3.88 |
| | | 3550 | 38.30 | 37.90 | 1.06 | 2.84 | 2.97 | -4.28 |
| | | 3600 | 38.19 | 37.84 | 0.92 | 2.88 | 3.02 | -4.64 |
| 2022/2/23 | Head | 3600 | 38.19 | 37.84 | 0.92 | 2.88 | 3.02 | -4.64 |
| | | 3650 | 38.09 | 37.79 | 0.79 | 2.92 | 3.07 | -4.89 |
| | | 3700 | 38.00 | 37.73 | 0.72 | 2.97 | 3.12 | -4.90 |
| 2022/2/7 | Head | 5090 | 35.64 | 36.11 | -1.30 | 4.54 | 4.55 | -0.13 |
| | | 5200 | 35.18 | 36.00 | -2.28 | 4.64 | 4.66 | -0.36 |
| | | 5250 | 35.01 | 35.95 | -2.61 | 4.71 | 4.71 | 0.08 |
| 2022/2/9 | Head | 5090 | 34.82 | 36.11 | -3.57 | 4.37 | 4.55 | -3.87 |
| | | 5200 | 34.46 | 36.00 | -4.28 | 4.45 | 4.66 | -4.53 |
| | | 5250 | 34.40 | 35.95 | -4.31 | 4.56 | 4.71 | -3.14 |

7.2 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 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.

System Performance Check Measurement Conditions

- 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 15 mm (below 1 GHz) and 10 mm (above 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
- Distance between probe sensors and phantom surface was set to 2 mm.
- The dipole input power (forward power) was 250 mW (below 2GHz) and 100 mW
- The results are normalized to 1 W input power.

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 $\pm 10\%$ of the manufacturer calibrated dipole SAR target. Refer to Appendix 2 for the SAR System Check Plots.

| Date | Tissue Type | Dipole S/N | Input Power (mW) | Measured 1g SAR (W/kg) | Targeted 1g SAR (W/kg) | Normalized 1g SAR (W/kg) | Delta 1g ± 10 (%) | Measured 10g SAR (W/kg) | Targeted 10g SAR (W/kg) | Normalized 10g SAR (W/kg) | Delta 10g ± 10 (%) | Plot No. |
|-----------|-------------|-------------------|------------------|------------------------|------------------------|--------------------------|-----------------------|-------------------------|-------------------------|---------------------------|------------------------|----------|
| 2022/2/17 | Head | D750V3-1078 | 250 | 2.30 | 8.58 | 9.2 | 7.23 | 1.49 | 5.59 | 5.96 | 6.62 | 1 |
| 2022/2/17 | Head | D835V2-4d063 | 250 | 2.31 | 9.64 | 9.24 | -4.15 | 1.49 | 6.29 | 5.96 | -5.25 | 2 |
| 2022/2/23 | Head | D1750V2-1111 | 250 | 8.80 | 36.40 | 35.2 | -3.30 | 4.61 | 19.00 | 18.44 | -2.95 | 3 |
| 2022/2/18 | Head | D1900V2-5d173 | 250 | 10.10 | 39.30 | 40.4 | 2.80 | 5.19 | 20.50 | 20.76 | 1.27 | 4 |
| 2022/1/29 | Head | D2450V2-727 | 250 | 12.20 | 53.90 | 48.8 | -9.46 | 5.87 | 25.10 | 23.48 | -6.45 | 5 |
| 2022/2/24 | Head | D2450V2-727 | 250 | 12.80 | 53.90 | 51.2 | -5.01 | 6.17 | 25.10 | 24.68 | -1.67 | 6 |
| 2022/2/18 | Head | D2600V2-1058 | 250 | 15.00 | 55.40 | 60 | 8.30 | 6.69 | 24.40 | 26.76 | 9.67 | 7 |
| 2022/2/23 | Head | D3500V2-1009 | 100 | 6.87 | 65.50 | 68.7 | 4.89 | 2.62 | 24.80 | 26.2 | 5.65 | 8 |
| 2022/2/23 | Head | D3700V2-1057 | 100 | 6.94 | 66.30 | 69.4 | 4.68 | 2.55 | 24.00 | 25.5 | 6.25 | 9 |
| 2022/2/7 | Head | D5GHzV2-1040-5200 | 100 | 7.89 | 76.90 | 78.9 | 2.60 | 2.24 | 21.80 | 22.4 | 2.75 | 10 |
| 2022/2/9 | Head | D5GHzV2-1040-5200 | 100 | 7.51 | 76.90 | 75.1 | -2.34 | 2.14 | 21.80 | 21.4 | -1.83 | 11 |

8 Conducted Output Power Measurements

8.1 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 |

LTE Band 2 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|----------|----------|---------------|-------|------|
| | | | | | | 18700 | 18900 | 19100 | | | |
| | | | | | | 1860 MHz | 1880 MHz | 1900 MHz | | | |
| LTE Band 2 | 20 | QPSK | 1 | 0 | 0 | 23.11 | 23.22 | 23.50 | 24.0 | | |
| | | | 1 | 49 | 0 | 22.92 | 23.14 | 23.26 | 24.0 | | |
| | | | 1 | 99 | 0 | 22.80 | 22.96 | 23.19 | 24.0 | | |
| | | | 50 | 0 | 1 | 22.02 | 22.18 | 22.41 | 23.0 | | |
| | | | 50 | 24 | 1 | 21.99 | 22.20 | 22.38 | 23.0 | | |
| | | | 50 | 50 | 1 | 21.88 | 22.16 | 22.27 | 23.0 | | |
| | | 16QAM | 100 | 0 | 1 | 22.04 | 22.21 | 22.37 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.31 | 22.36 | 22.77 | 23.0 | | |
| | | | 1 | 49 | 1 | 22.22 | 22.29 | 22.44 | 23.0 | | |
| | | | 1 | 99 | 1 | 22.05 | 22.26 | 22.41 | 23.0 | | |
| | | | 50 | 0 | 2 | 20.88 | 21.18 | 21.26 | 22.0 | | |
| | | | 50 | 24 | 2 | 20.79 | 21.07 | 21.13 | 22.0 | | |
| | | 64QAM | 50 | 50 | 2 | 20.70 | 20.99 | 21.10 | 22.0 | | |
| | | | 100 | 0 | 2 | 20.73 | 21.02 | 21.15 | 22.0 | | |
| | | | 1 | 0 | 2 | 22.32 | 22.38 | 22.70 | 22.0 | | |
| | | | 1 | 49 | 2 | 22.16 | 22.28 | 22.45 | 22.0 | | |
| | | | 1 | 99 | 2 | 21.88 | 22.14 | 22.32 | 22.0 | | |
| | | | 50 | 0 | 3 | 20.75 | 20.95 | 20.98 | 21.0 | | |
| | | LTE Band 2 | 15 | QPSK | 50 | 24 | 3 | 20.72 | 20.86 | 20.89 | 21.0 |
| | | | | | 50 | 50 | 3 | 20.64 | 20.85 | 20.92 | 21.0 |
| | | | | | 100 | 0 | 3 | 20.66 | 20.89 | 20.90 | 21.0 |
| 1 | 0 | | | | 0 | 23.10 | 23.19 | 23.37 | 24.0 | | |
| 1 | 37 | | | | 0 | 22.82 | 23.01 | 23.07 | 24.0 | | |
| 1 | 74 | | | | 0 | 22.77 | 22.94 | 23.08 | 24.0 | | |
| 16QAM | 36 | | | 0 | 1 | 21.87 | 21.99 | 22.24 | 23.0 | | |
| | 36 | | | 20 | 1 | 21.87 | 21.96 | 22.17 | 23.0 | | |
| | 36 | | | 39 | 1 | 21.78 | 21.82 | 22.14 | 23.0 | | |
| | 75 | | | 0 | 1 | 21.81 | 21.93 | 22.26 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.24 | 22.41 | 22.58 | 23.0 | | |
| | 1 | | | 37 | 1 | 22.08 | 22.33 | 22.52 | 23.0 | | |
| 64QAM | 1 | | | 74 | 1 | 22.00 | 22.34 | 22.45 | 23.0 | | |
| | 36 | | | 0 | 2 | 20.72 | 21.48 | 21.48 | 22.0 | | |
| | 36 | | | 20 | 2 | 20.66 | 21.41 | 21.55 | 22.0 | | |
| | 36 | | | 39 | 2 | 20.60 | 21.42 | 21.58 | 22.0 | | |
| | 75 | | | 0 | 2 | 20.65 | 21.42 | 21.47 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.40 | 21.50 | 21.70 | 22.0 | | |
| 64QAM | 1 | | | 37 | 2 | 21.13 | 21.69 | 21.56 | 22.0 | | |
| | 1 | | | 74 | 2 | 21.02 | 21.59 | 21.60 | 22.0 | | |
| | 36 | | | 0 | 3 | 19.84 | 20.65 | 20.56 | 21.0 | | |
| | 36 | 20 | 3 | 19.73 | 20.60 | 20.68 | 21.0 | | | | |
| | 36 | 39 | 3 | 19.68 | 20.56 | 20.55 | 21.0 | | | | |
| | 75 | 0 | 3 | 19.81 | 20.53 | 20.57 | 21.0 | | | | |

LTE Band 2 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|----------|----------|---------------|-------|------|
| | | | | | | 18650 | 18900 | 19150 | | | |
| | | | | | | 1855 MHz | 1880 MHz | 1905 MHz | | | |
| LTE Band 2 | 10 | QPSK | 1 | 0 | 0 | 22.96 | 23.10 | 23.32 | 24.0 | | |
| | | | 1 | 25 | 0 | 22.88 | 22.95 | 23.27 | 24.0 | | |
| | | | 1 | 49 | 0 | 22.74 | 22.82 | 23.18 | 24.0 | | |
| | | | 25 | 0 | 1 | 21.91 | 22.06 | 22.21 | 23.0 | | |
| | | | 25 | 12 | 1 | 21.84 | 22.00 | 22.12 | 23.0 | | |
| | | | 25 | 25 | 1 | 21.80 | 21.98 | 22.16 | 23.0 | | |
| | | 16QAM | 50 | 0 | 1 | 21.83 | 21.94 | 22.22 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.12 | 22.23 | 22.49 | 23.0 | | |
| | | | 1 | 25 | 1 | 22.05 | 22.33 | 22.47 | 23.0 | | |
| | | | 1 | 49 | 1 | 22.21 | 22.33 | 22.53 | 23.0 | | |
| | | | 25 | 0 | 2 | 21.04 | 21.19 | 21.43 | 22.0 | | |
| | | | 25 | 12 | 2 | 21.06 | 21.21 | 21.48 | 22.0 | | |
| | | 64QAM | 25 | 25 | 2 | 21.06 | 21.18 | 21.34 | 22.0 | | |
| | | | 50 | 0 | 2 | 21.12 | 21.30 | 21.41 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.42 | 21.53 | 21.79 | 22.0 | | |
| | | | 1 | 25 | 2 | 21.31 | 21.61 | 21.74 | 22.0 | | |
| | | | 1 | 49 | 2 | 21.44 | 21.56 | 21.86 | 22.0 | | |
| | | | 25 | 0 | 3 | 20.30 | 20.70 | 20.79 | 21.0 | | |
| | | LTE Band 2 | 5 | QPSK | 25 | 12 | 3 | 20.43 | 20.71 | 20.85 | 21.0 |
| | | | | | 25 | 25 | 3 | 20.42 | 20.70 | 20.71 | 21.0 |
| | | | | | 50 | 0 | 3 | 20.39 | 20.57 | 20.76 | 21.0 |
| 1 | 0 | | | | 2 | 21.32 | 21.44 | 21.75 | 22.0 | | |
| 1 | 12 | | | | 2 | 21.25 | 21.51 | 21.89 | 22.0 | | |
| 1 | 24 | | | | 2 | 21.23 | 21.45 | 21.79 | 22.0 | | |
| 16QAM | 12 | | | 0 | 3 | 20.28 | 20.56 | 20.88 | 21.0 | | |
| | 12 | | | 7 | 3 | 20.29 | 20.51 | 20.79 | 21.0 | | |
| | 12 | | | 13 | 3 | 20.24 | 20.58 | 20.78 | 21.0 | | |
| | 25 | | | 0 | 3 | 20.25 | 20.39 | 20.85 | 21.0 | | |
| | 1 | | | 0 | 1 | 22.05 | 22.14 | 22.32 | 23.0 | | |
| | 1 | | | 12 | 1 | 22.07 | 22.07 | 22.24 | 23.0 | | |
| 64QAM | 1 | | | 24 | 1 | 22.15 | 22.01 | 22.20 | 23.0 | | |
| | 12 | | | 0 | 2 | 21.11 | 21.06 | 21.31 | 22.0 | | |
| | 12 | | | 7 | 2 | 21.09 | 21.15 | 21.21 | 22.0 | | |
| | 12 | 13 | 2 | 21.05 | 21.11 | 21.15 | 22.0 | | | | |
| | 25 | 0 | 2 | 21.10 | 21.17 | 21.25 | 22.0 | | | | |
| | 1 | 0 | 1 | 22.91 | 23.04 | 23.22 | 24.0 | | | | |
| | 1 | 12 | 0 | 22.84 | 22.97 | 23.20 | 24.0 | | | | |
| | 1 | 24 | 0 | 22.83 | 22.88 | 23.26 | 24.0 | | | | |
| | 12 | 0 | 1 | 21.94 | 21.89 | 22.12 | 23.0 | | | | |

LTE Band 2 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|----------|------------|---------------|-------|------|
| | | | | | | 18615 | 18900 | 19185 | | | |
| | | | | | | 1851.5 MHz | 1880 MHz | 1908.5 MHz | | | |
| LTE Band 2 | 3 | QPSK | 1 | 0 | 0 | 22.84 | 23.02 | 23.15 | 24.0 | | |
| | | | 1 | 8 | 0 | 22.69 | 22.93 | 23.14 | 24.0 | | |
| | | | 1 | 14 | 0 | 22.76 | 22.98 | 23.18 | 24.0 | | |
| | | | 8 | 0 | 1 | 21.72 | 21.89 | 22.07 | 23.0 | | |
| | | | 8 | 4 | 1 | 21.78 | 22.04 | 22.22 | 23.0 | | |
| | | | 8 | 7 | 1 | 21.78 | 21.87 | 22.14 | 23.0 | | |
| | | 16QAM | 15 | 0 | 1 | 21.75 | 21.87 | 22.21 | 23.0 | | |
| | | | 1 | 0 | 1 | 21.94 | 22.04 | 22.24 | 23.0 | | |
| | | | 1 | 8 | 1 | 21.81 | 22.14 | 22.29 | 23.0 | | |
| | | | 1 | 14 | 1 | 21.79 | 22.05 | 22.14 | 23.0 | | |
| | | | 8 | 0 | 2 | 20.79 | 21.17 | 21.21 | 22.0 | | |
| | | | 8 | 4 | 2 | 20.86 | 21.03 | 21.14 | 22.0 | | |
| | | 64QAM | 8 | 7 | 2 | 20.98 | 21.16 | 21.18 | 22.0 | | |
| | | | 15 | 0 | 2 | 20.91 | 21.20 | 21.20 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.22 | 21.31 | 21.60 | 22.0 | | |
| | | | 1 | 8 | 2 | 21.21 | 21.38 | 21.62 | 22.0 | | |
| | | | 1 | 14 | 2 | 21.07 | 21.33 | 21.77 | 22.0 | | |
| | | | 8 | 0 | 3 | 20.12 | 20.34 | 20.69 | 21.0 | | |
| | | LTE Band 2 | 1.4 | QPSK | 8 | 4 | 3 | 20.22 | 20.41 | 20.69 | 21.0 |
| | | | | | 8 | 7 | 3 | 20.15 | 20.26 | 20.63 | 21.0 |
| | | | | | 15 | 0 | 3 | 20.09 | 20.29 | 20.63 | 21.0 |
| 1 | 0 | | | | 0 | 22.74 | 22.89 | 23.07 | 24.0 | | |
| 1 | 3 | | | | 0 | 22.77 | 22.95 | 23.03 | 24.0 | | |
| 1 | 5 | | | | 0 | 22.86 | 22.86 | 23.20 | 24.0 | | |
| 16QAM | 3 | | | 0 | 0 | 22.18 | 22.27 | 22.46 | 24.0 | | |
| | 3 | | | 1 | 0 | 22.27 | 22.27 | 22.44 | 24.0 | | |
| | 3 | | | 3 | 0 | 22.32 | 22.33 | 22.54 | 24.0 | | |
| | 6 | | | 0 | 1 | 21.77 | 22.04 | 22.02 | 23.0 | | |
| | 1 | | | 0 | 1 | 21.88 | 21.92 | 22.15 | 23.0 | | |
| | 1 | | | 3 | 1 | 21.84 | 21.82 | 22.20 | 23.0 | | |
| 64QAM | 1 | | | 5 | 1 | 21.89 | 21.84 | 22.10 | 23.0 | | |
| | 3 | | | 0 | 1 | 21.24 | 21.22 | 21.32 | 23.0 | | |
| | 3 | | | 1 | 1 | 21.26 | 21.15 | 21.45 | 23.0 | | |
| | 3 | | | 3 | 1 | 21.27 | 21.16 | 21.46 | 23.0 | | |
| | 6 | | | 0 | 2 | 20.84 | 20.84 | 21.12 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.01 | 21.09 | 21.13 | 22.0 | | |
| QPSK | 1 | | | 3 | 2 | 21.03 | 21.09 | 21.02 | 22.0 | | |
| | 1 | | | 5 | 2 | 20.99 | 21.03 | 20.96 | 22.0 | | |
| | 3 | | | 0 | 2 | 20.06 | 20.10 | 20.23 | 22.0 | | |
| | 3 | 1 | 2 | 20.18 | 20.11 | 20.33 | 22.0 | | | | |
| | 3 | 3 | 2 | 20.03 | 20.14 | 20.31 | 22.0 | | | | |
| | 6 | 0 | 3 | 20.03 | 20.00 | 20.13 | 21.0 | | | | |

LTE Band 4 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|------------|----------|---------------|-------|------|
| | | | | | | 20050 | 20175 | 20300 | | | |
| | | | | | | 1720 MHz | 1732.5 MHz | 1745 MHz | | | |
| LTE Band 4 | 20 | QPSK | 1 | 0 | 0 | 23.49 | 23.41 | 23.59 | 24.0 | | |
| | | | 1 | 49 | 0 | 23.47 | 23.40 | 23.53 | 24.0 | | |
| | | | 1 | 99 | 0 | 23.48 | 23.31 | 23.56 | 24.0 | | |
| | | | 50 | 0 | 1 | 22.37 | 22.26 | 22.42 | 23.0 | | |
| | | | 50 | 24 | 1 | 22.46 | 22.28 | 22.57 | 23.0 | | |
| | | | 50 | 50 | 1 | 22.31 | 22.34 | 22.39 | 23.0 | | |
| | | 16QAM | 100 | 0 | 1 | 22.41 | 22.29 | 22.53 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.52 | 22.52 | 22.65 | 23.0 | | |
| | | | 1 | 49 | 1 | 22.53 | 22.39 | 22.67 | 23.0 | | |
| | | | 1 | 99 | 1 | 22.50 | 22.38 | 22.72 | 23.0 | | |
| | | | 50 | 0 | 2 | 21.59 | 21.50 | 21.61 | 22.0 | | |
| | | | 50 | 24 | 2 | 21.60 | 21.48 | 21.65 | 22.0 | | |
| | | 64QAM | 50 | 50 | 2 | 21.44 | 21.38 | 21.67 | 22.0 | | |
| | | | 100 | 0 | 2 | 21.62 | 21.55 | 21.55 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.93 | 21.81 | 21.94 | 22.0 | | |
| | | | 1 | 49 | 2 | 21.77 | 21.82 | 21.93 | 22.0 | | |
| | | | 1 | 99 | 2 | 21.77 | 21.68 | 21.86 | 22.0 | | |
| | | | 50 | 0 | 3 | 20.86 | 20.71 | 20.98 | 21.0 | | |
| | | LTE Band 4 | 15 | QPSK | 50 | 24 | 3 | 20.83 | 20.83 | 20.96 | 21.0 |
| | | | | | 50 | 50 | 3 | 20.80 | 20.85 | 20.86 | 21.0 |
| | | | | | 100 | 0 | 3 | 20.88 | 20.76 | 20.96 | 21.0 |
| 1 | 0 | | | | 0 | 23.42 | 23.35 | 23.46 | 24.0 | | |
| 1 | 37 | | | | 0 | 23.53 | 23.29 | 23.45 | 24.0 | | |
| 1 | 74 | | | | 0 | 23.52 | 23.31 | 23.30 | 24.0 | | |
| 36 | 0 | | | | 1 | 22.45 | 22.45 | 22.38 | 23.0 | | |
| 16QAM | 36 | | | 20 | 1 | 22.56 | 22.46 | 22.44 | 23.0 | | |
| | 36 | | | 39 | 1 | 22.57 | 22.46 | 22.37 | 23.0 | | |
| | 75 | | | 0 | 1 | 22.43 | 22.35 | 22.38 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.48 | 22.49 | 22.59 | 23.0 | | |
| | 1 | | | 37 | 1 | 22.45 | 22.54 | 22.48 | 23.0 | | |
| | 1 | | | 74 | 1 | 22.39 | 22.45 | 22.49 | 23.0 | | |
| | 36 | | | 0 | 2 | 21.39 | 21.41 | 21.49 | 22.0 | | |
| 64QAM | 36 | | | 20 | 2 | 21.50 | 21.50 | 21.57 | 22.0 | | |
| | 36 | 39 | 2 | 21.48 | 21.54 | 21.54 | 22.0 | | | | |
| | 75 | 0 | 2 | 21.40 | 21.49 | 21.63 | 22.0 | | | | |
| | 1 | 0 | 2 | 21.66 | 21.59 | 21.75 | 22.0 | | | | |
| | 1 | 37 | 2 | 21.76 | 21.52 | 21.59 | 22.0 | | | | |
| | 1 | 74 | 2 | 21.69 | 21.54 | 21.65 | 22.0 | | | | |
| | 36 | 0 | 3 | 20.75 | 20.55 | 20.67 | 21.0 | | | | |
| | 36 | 20 | 3 | 20.69 | 20.59 | 20.73 | 21.0 | | | | |
| 64QAM | 36 | 39 | 3 | 20.75 | 20.65 | 20.66 | 21.0 | | | | |
| | 75 | 0 | 3 | 20.82 | 20.66 | 20.78 | 21.0 | | | | |

LTE Band 4 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|------------|----------|---------------|-------|------|
| | | | | | | 20000 | 20175 | 20350 | | | |
| | | | | | | 1715 MHz | 1732.5 MHz | 1750 MHz | | | |
| LTE Band 4 | 10 | QPSK | 1 | 0 | 0 | 23.24 | 23.23 | 23.40 | 24.0 | | |
| | | | 1 | 25 | 0 | 23.28 | 23.15 | 23.39 | 24.0 | | |
| | | | 1 | 49 | 0 | 23.20 | 23.23 | 23.35 | 24.0 | | |
| | | | 25 | 0 | 1 | 22.22 | 22.14 | 22.36 | 23.0 | | |
| | | | 25 | 12 | 1 | 22.29 | 22.18 | 22.30 | 23.0 | | |
| | | | 25 | 25 | 1 | 22.15 | 22.14 | 22.41 | 23.0 | | |
| | | 16QAM | 50 | 0 | 1 | 22.32 | 22.23 | 22.27 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.47 | 22.48 | 22.61 | 23.0 | | |
| | | | 1 | 25 | 1 | 22.39 | 22.57 | 22.55 | 23.0 | | |
| | | | 1 | 49 | 1 | 22.36 | 22.47 | 22.58 | 23.0 | | |
| | | | 25 | 0 | 2 | 21.35 | 21.47 | 21.45 | 22.0 | | |
| | | | 25 | 12 | 2 | 21.36 | 21.43 | 21.53 | 22.0 | | |
| | | 64QAM | 25 | 25 | 2 | 21.37 | 21.44 | 21.60 | 22.0 | | |
| | | | 50 | 0 | 2 | 21.47 | 21.54 | 21.52 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.62 | 21.62 | 21.72 | 22.0 | | |
| | | | 1 | 25 | 2 | 21.73 | 21.69 | 21.75 | 22.0 | | |
| | | | 1 | 49 | 2 | 21.62 | 21.59 | 21.71 | 22.0 | | |
| | | | 25 | 0 | 3 | 20.59 | 20.67 | 20.79 | 21.0 | | |
| | | LTE Band 4 | 5 | QPSK | 25 | 12 | 3 | 20.74 | 20.74 | 20.76 | 21.0 |
| | | | | | 25 | 25 | 3 | 20.71 | 20.75 | 20.68 | 21.0 |
| | | | | | 50 | 0 | 3 | 20.65 | 20.68 | 20.76 | 21.0 |
| 1 | 0 | | | | 0 | 23.20 | 23.29 | 23.32 | 24.0 | | |
| 1 | 12 | | | | 0 | 23.11 | 23.25 | 23.32 | 24.0 | | |
| 1 | 24 | | | | 0 | 23.13 | 23.28 | 23.18 | 24.0 | | |
| 16QAM | 12 | | | 0 | 1 | 22.16 | 22.25 | 22.27 | 23.0 | | |
| | 12 | | | 7 | 1 | 22.20 | 22.41 | 22.23 | 23.0 | | |
| | 12 | | | 13 | 1 | 22.20 | 22.27 | 22.24 | 23.0 | | |
| | 25 | | | 0 | 1 | 22.17 | 22.25 | 22.34 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.22 | 22.40 | 22.50 | 23.0 | | |
| | 1 | | | 12 | 1 | 22.24 | 22.28 | 22.46 | 23.0 | | |
| 64QAM | 1 | | | 24 | 1 | 22.38 | 22.40 | 22.46 | 23.0 | | |
| | 12 | | | 0 | 2 | 21.25 | 21.31 | 21.50 | 22.0 | | |
| | 12 | | | 7 | 2 | 21.33 | 21.29 | 21.51 | 22.0 | | |
| | 12 | | | 13 | 2 | 21.22 | 21.42 | 21.44 | 22.0 | | |
| | 25 | | | 0 | 2 | 21.28 | 21.26 | 21.41 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.60 | 21.66 | 21.74 | 22.0 | | |
| 64QAM | 1 | | | 12 | 2 | 21.48 | 21.65 | 21.65 | 22.0 | | |
| | 1 | | | 24 | 2 | 21.49 | 21.82 | 21.80 | 22.0 | | |
| | 12 | | | 0 | 3 | 20.56 | 20.71 | 20.70 | 21.0 | | |
| | 12 | 7 | 3 | 20.61 | 20.72 | 20.72 | 21.0 | | | | |
| | 12 | 13 | 3 | 20.61 | 20.84 | 20.79 | 21.0 | | | | |
| | 25 | 0 | 3 | 20.53 | 20.68 | 20.66 | 21.0 | | | | |

LTE Band 4 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|------------|------------|---------------|-------|------|
| | | | | | | 19965 | 20175 | 20385 | | | |
| | | | | | | 1711.5 MHz | 1732.5 MHz | 1753.5 MHz | | | |
| LTE Band 4 | 3 | QPSK | 1 | 0 | 0 | 23.12 | 23.43 | 23.13 | 24.0 | | |
| | | | 1 | 8 | 0 | 23.11 | 23.57 | 23.17 | 24.0 | | |
| | | | 1 | 14 | 0 | 22.98 | 23.58 | 23.15 | 24.0 | | |
| | | | 8 | 0 | 1 | 22.10 | 22.52 | 22.16 | 23.0 | | |
| | | | 8 | 4 | 1 | 22.09 | 22.44 | 22.23 | 23.0 | | |
| | | | 8 | 7 | 1 | 22.07 | 22.58 | 22.24 | 23.0 | | |
| | | 16QAM | 15 | 0 | 1 | 22.01 | 22.57 | 22.24 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.12 | 22.27 | 22.32 | 23.0 | | |
| | | | 1 | 8 | 1 | 22.10 | 22.39 | 22.43 | 23.0 | | |
| | | | 1 | 14 | 1 | 21.97 | 22.36 | 22.33 | 23.0 | | |
| | | | 8 | 0 | 2 | 21.07 | 21.32 | 21.40 | 22.0 | | |
| | | | 8 | 4 | 2 | 20.93 | 21.37 | 21.39 | 22.0 | | |
| | | 64QAM | 8 | 7 | 2 | 20.96 | 21.30 | 21.34 | 22.0 | | |
| | | | 15 | 0 | 2 | 21.09 | 21.33 | 21.39 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.42 | 21.64 | 21.45 | 22.0 | | |
| | | | 1 | 8 | 2 | 21.41 | 21.58 | 21.29 | 22.0 | | |
| | | | 1 | 14 | 2 | 21.45 | 21.64 | 21.38 | 22.0 | | |
| | | | 8 | 0 | 3 | 20.50 | 20.67 | 20.45 | 21.0 | | |
| | | LTE Band 4 | 1.4 | QPSK | 8 | 4 | 3 | 20.35 | 20.64 | 20.36 | 21.0 |
| | | | | | 8 | 7 | 3 | 20.46 | 20.66 | 20.38 | 21.0 |
| | | | | | 15 | 0 | 3 | 20.37 | 20.66 | 20.43 | 21.0 |
| 1 | 0 | | | | 0 | 22.00 | 22.21 | 22.27 | 24.0 | | |
| 1 | 3 | | | | 0 | 22.09 | 22.37 | 22.30 | 24.0 | | |
| 1 | 5 | | | | 0 | 22.05 | 22.26 | 22.21 | 24.0 | | |
| 16QAM | 3 | | | 0 | 0 | 22.05 | 22.23 | 22.28 | 24.0 | | |
| | 3 | | | 1 | 0 | 22.07 | 22.29 | 22.31 | 24.0 | | |
| | 3 | | | 3 | 0 | 22.06 | 22.29 | 22.22 | 24.0 | | |
| | 6 | | | 0 | 1 | 21.06 | 21.29 | 21.26 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.18 | 22.31 | 22.38 | 23.0 | | |
| | 1 | | | 3 | 1 | 22.05 | 22.21 | 22.32 | 23.0 | | |
| 64QAM | 1 | | | 5 | 1 | 22.16 | 22.28 | 22.34 | 23.0 | | |
| | 3 | | | 0 | 1 | 21.06 | 21.27 | 21.29 | 23.0 | | |
| | 3 | | | 1 | 1 | 21.10 | 21.35 | 21.28 | 23.0 | | |
| | 3 | | | 3 | 1 | 21.15 | 21.40 | 21.31 | 23.0 | | |
| | 6 | | | 0 | 2 | 21.06 | 21.34 | 21.35 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.27 | 21.37 | 21.17 | 22.0 | | |
| 64QAM | 1 | | | 3 | 2 | 21.28 | 21.34 | 21.17 | 22.0 | | |
| | 1 | | | 5 | 2 | 21.28 | 21.36 | 21.10 | 22.0 | | |
| | 3 | | | 0 | 2 | 20.28 | 20.29 | 20.17 | 22.0 | | |
| | 3 | 1 | 2 | 20.25 | 20.24 | 20.10 | 22.0 | | | | |
| | 3 | 3 | 2 | 20.20 | 20.34 | 20.15 | 22.0 | | | | |
| | 6 | 0 | 3 | 20.14 | 20.33 | 20.10 | 21.0 | | | | |

LTE Band 5 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|-----------|---------|---------------|-------|------|
| | | | | | | 20450 | 20525 | 20600 | | | |
| | | | | | | 829 MHz | 836.5 MHz | 844 MHz | | | |
| LTE Band 5 | 10 | QPSK | 1 | 0 | 0 | 24.03 | 23.89 | 23.88 | 24.3 | | |
| | | | 1 | 25 | 0 | 23.88 | 23.65 | 23.72 | 24.3 | | |
| | | | 1 | 49 | 0 | 23.66 | 23.59 | 23.69 | 24.3 | | |
| | | | 25 | 0 | 1 | 22.81 | 22.72 | 22.78 | 23.3 | | |
| | | | 25 | 12 | 1 | 22.84 | 22.70 | 22.84 | 23.3 | | |
| | | | 25 | 25 | 1 | 22.80 | 22.63 | 22.79 | 23.3 | | |
| | | 16QAM | 50 | 0 | 1 | 22.75 | 22.73 | 22.80 | 23.3 | | |
| | | | 1 | 0 | 1 | 23.24 | 23.08 | 23.06 | 23.3 | | |
| | | | 1 | 25 | 1 | 23.15 | 23.11 | 23.05 | 23.3 | | |
| | | | 1 | 49 | 1 | 23.19 | 23.01 | 23.00 | 23.3 | | |
| | | | 25 | 0 | 2 | 22.29 | 22.04 | 22.07 | 22.3 | | |
| | | | 25 | 12 | 2 | 22.18 | 22.02 | 21.98 | 22.3 | | |
| | | 64QAM | 25 | 25 | 2 | 22.14 | 22.18 | 22.11 | 22.3 | | |
| | | | 50 | 0 | 2 | 22.24 | 22.09 | 21.98 | 22.3 | | |
| | | | 1 | 0 | 2 | 22.22 | 22.09 | 22.05 | 22.3 | | |
| | | | 1 | 25 | 2 | 22.26 | 22.15 | 22.15 | 22.3 | | |
| | | | 1 | 49 | 2 | 22.15 | 22.06 | 21.99 | 22.3 | | |
| | | | 25 | 0 | 3 | 21.17 | 21.10 | 21.15 | 21.3 | | |
| | | LTE Band 5 | 5 | QPSK | 25 | 12 | 3 | 21.19 | 20.97 | 21.06 | 21.3 |
| | | | | | 25 | 25 | 3 | 21.28 | 20.98 | 21.16 | 21.3 |
| | | | | | 50 | 0 | 3 | 21.29 | 21.10 | 21.08 | 21.3 |
| 1 | 0 | | | | 0 | 23.78 | 23.94 | 23.65 | 24.3 | | |
| 1 | 12 | | | | 0 | 23.74 | 23.99 | 23.83 | 24.3 | | |
| 1 | 24 | | | | 0 | 23.73 | 23.98 | 23.81 | 24.3 | | |
| 16QAM | 12 | | | 0 | 1 | 22.68 | 22.91 | 22.64 | 23.3 | | |
| | 12 | | | 7 | 1 | 22.76 | 22.85 | 22.78 | 23.3 | | |
| | 12 | | | 13 | 1 | 22.72 | 22.80 | 22.67 | 23.3 | | |
| | 25 | | | 0 | 1 | 22.59 | 22.94 | 22.82 | 23.3 | | |
| | 1 | | | 0 | 1 | 22.85 | 22.98 | 22.88 | 23.3 | | |
| | 1 | | | 12 | 1 | 22.88 | 22.89 | 22.78 | 23.3 | | |
| 64QAM | 1 | | | 24 | 1 | 22.91 | 22.92 | 22.87 | 23.3 | | |
| | 12 | | | 0 | 2 | 21.94 | 21.85 | 21.92 | 22.3 | | |
| | 12 | | | 7 | 2 | 21.88 | 21.94 | 21.96 | 22.3 | | |
| | 12 | | | 13 | 2 | 21.91 | 21.87 | 21.81 | 22.3 | | |
| | 25 | | | 0 | 2 | 21.80 | 21.96 | 21.86 | 22.3 | | |
| | 1 | | | 0 | 2 | 20.74 | 20.92 | 20.84 | 22.3 | | |
| 64QAM | 1 | | | 12 | 2 | 22.09 | 22.02 | 21.88 | 22.3 | | |
| | 1 | | | 24 | 2 | 22.06 | 21.95 | 21.79 | 22.3 | | |
| | 12 | | | 0 | 3 | 20.93 | 20.94 | 20.72 | 21.3 | | |
| | 12 | 7 | 3 | 21.02 | 20.91 | 20.83 | 21.3 | | | | |
| | 12 | 13 | 3 | 21.05 | 20.89 | 20.70 | 21.3 | | | | |
| | 25 | 0 | 3 | 21.06 | 20.85 | 20.85 | 21.3 | | | | |

LTE Band 5 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|------------|----------|------------|---------------|-----------|-------|--------------------------|-----------|-----------|---------------|-------|------|
| | | | | | | 20415 | 20525 | 20635 | | | |
| | | | | | | 825.5 MHz | 836.5 MHz | 847.5 MHz | | | |
| LTE Band 5 | 3 | QPSK | 1 | 0 | 0 | 23.77 | 23.76 | 23.55 | 24.3 | | |
| | | | 1 | 8 | 0 | 23.83 | 23.77 | 23.49 | 24.3 | | |
| | | | 1 | 14 | 0 | 23.71 | 23.78 | 23.48 | 24.3 | | |
| | | | 8 | 0 | 1 | 22.80 | 22.63 | 22.56 | 23.3 | | |
| | | | 8 | 4 | 1 | 22.77 | 22.69 | 22.57 | 23.3 | | |
| | | | 8 | 7 | 1 | 22.69 | 22.75 | 22.59 | 23.3 | | |
| | | 16QAM | 15 | 0 | 1 | 22.79 | 22.75 | 22.65 | 23.3 | | |
| | | | 1 | 0 | 1 | 22.76 | 22.88 | 22.76 | 23.3 | | |
| | | | 1 | 8 | 1 | 22.77 | 23.00 | 22.73 | 23.3 | | |
| | | | 1 | 14 | 1 | 22.80 | 22.93 | 22.69 | 23.3 | | |
| | | | 8 | 0 | 2 | 21.72 | 21.99 | 21.61 | 22.3 | | |
| | | | 8 | 4 | 2 | 21.62 | 21.95 | 21.77 | 22.3 | | |
| | | 64QAM | 8 | 7 | 2 | 21.71 | 21.93 | 21.64 | 22.3 | | |
| | | | 15 | 0 | 2 | 21.66 | 22.03 | 21.79 | 22.3 | | |
| | | | 1 | 0 | 2 | 21.96 | 21.89 | 21.70 | 22.3 | | |
| | | | 1 | 8 | 2 | 21.88 | 21.86 | 21.57 | 22.3 | | |
| | | | 1 | 14 | 2 | 21.82 | 21.86 | 21.62 | 22.3 | | |
| | | | 8 | 0 | 3 | 20.83 | 20.91 | 20.55 | 21.3 | | |
| | | LTE Band 5 | 1.4 | QPSK | 8 | 4 | 3 | 20.90 | 20.94 | 20.60 | 21.3 |
| | | | | | 8 | 7 | 3 | 20.86 | 20.77 | 20.53 | 21.3 |
| | | | | | 15 | 0 | 3 | 20.85 | 20.85 | 20.62 | 21.3 |
| 1 | 0 | | | | 0 | 22.68 | 22.75 | 22.58 | 24.3 | | |
| 1 | 3 | | | | 0 | 22.76 | 22.90 | 22.59 | 24.3 | | |
| 1 | 5 | | | | 0 | 22.74 | 22.84 | 22.57 | 24.3 | | |
| 16QAM | 3 | | | 0 | 0 | 22.47 | 22.56 | 22.47 | 24.3 | | |
| | 3 | | | 1 | 0 | 22.42 | 22.65 | 22.33 | 24.3 | | |
| | 3 | | | 3 | 0 | 22.34 | 22.73 | 22.36 | 24.3 | | |
| | 6 | | | 0 | 1 | 21.69 | 21.93 | 21.56 | 23.3 | | |
| | 1 | | | 0 | 1 | 22.73 | 22.81 | 22.69 | 23.3 | | |
| | 1 | | | 3 | 1 | 22.54 | 22.73 | 22.67 | 23.3 | | |
| 64QAM | 1 | | | 5 | 1 | 22.71 | 22.80 | 22.66 | 23.3 | | |
| | 3 | | | 0 | 1 | 21.70 | 21.77 | 21.77 | 23.3 | | |
| | 3 | | | 1 | 1 | 21.65 | 21.75 | 21.68 | 23.3 | | |
| | 3 | | | 3 | 1 | 21.69 | 21.69 | 21.84 | 23.3 | | |
| | 6 | | | 0 | 2 | 21.69 | 21.75 | 21.81 | 22.3 | | |
| | 1 | | | 0 | 2 | 21.74 | 21.77 | 21.70 | 22.3 | | |
| 16QAM | 1 | | | 3 | 2 | 21.77 | 21.78 | 21.71 | 22.3 | | |
| | 1 | | | 5 | 2 | 21.71 | 21.81 | 21.58 | 22.3 | | |
| | 3 | | | 0 | 2 | 20.74 | 20.75 | 20.67 | 22.3 | | |
| | 3 | 1 | 2 | 20.77 | 20.76 | 20.71 | 22.3 | | | | |
| | 3 | 3 | 2 | 20.71 | 20.78 | 20.72 | 22.3 | | | | |
| | 6 | 0 | 3 | 20.65 | 20.71 | 20.72 | 21.3 | | | | |

LTE Band 12 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|-----------|---------|---------------|-------|------|
| | | | | | | 23060 | 23095 | 23130 | | | |
| | | | | | | 704 MHz | 707.5 MHz | 711 MHz | | | |
| LTE Band 12 | 10 | QPSK | 1 | 0 | 0 | 23.29 | 23.47 | 23.45 | 24.0 | | |
| | | | 1 | 25 | 0 | 23.28 | 23.28 | 23.31 | 24.0 | | |
| | | | 1 | 49 | 0 | 23.25 | 23.29 | 23.34 | 24.0 | | |
| | | | 25 | 0 | 1 | 22.12 | 22.28 | 22.29 | 23.0 | | |
| | | | 25 | 12 | 1 | 22.16 | 22.34 | 22.41 | 23.0 | | |
| | | | 25 | 25 | 1 | 22.21 | 22.45 | 22.43 | 23.0 | | |
| | | 16QAM | 50 | 0 | 1 | 22.27 | 22.33 | 22.38 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.58 | 22.77 | 22.89 | 23.0 | | |
| | | | 1 | 25 | 1 | 22.71 | 22.74 | 22.83 | 23.0 | | |
| | | | 1 | 49 | 1 | 22.65 | 22.91 | 22.85 | 23.0 | | |
| | | | 25 | 0 | 2 | 21.54 | 21.75 | 21.84 | 22.0 | | |
| | | | 25 | 12 | 2 | 21.58 | 21.73 | 21.73 | 22.0 | | |
| | | 64QAM | 25 | 25 | 2 | 21.58 | 21.82 | 21.81 | 22.0 | | |
| | | | 50 | 0 | 2 | 21.69 | 21.82 | 21.78 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.77 | 21.89 | 21.93 | 22.0 | | |
| | | | 1 | 25 | 2 | 21.68 | 21.89 | 21.91 | 22.0 | | |
| | | | 1 | 49 | 2 | 21.80 | 21.81 | 21.77 | 22.0 | | |
| | | | 25 | 0 | 3 | 20.80 | 20.83 | 20.81 | 21.0 | | |
| | | LTE Band 12 | 5 | QPSK | 25 | 12 | 3 | 20.74 | 20.80 | 20.83 | 21.0 |
| | | | | | 25 | 25 | 3 | 20.68 | 20.88 | 20.92 | 21.0 |
| | | | | | 50 | 0 | 3 | 20.78 | 20.83 | 20.77 | 21.0 |
| 1 | 0 | | | | 0 | 23.30 | 23.23 | 23.31 | 24.0 | | |
| 1 | 12 | | | | 0 | 23.31 | 23.31 | 23.27 | 24.0 | | |
| 1 | 24 | | | | 0 | 23.42 | 23.16 | 23.16 | 24.0 | | |
| 16QAM | 12 | | | 0 | 1 | 22.65 | 22.40 | 22.41 | 23.0 | | |
| | 12 | | | 7 | 1 | 22.65 | 22.39 | 22.53 | 23.0 | | |
| | 12 | | | 13 | 1 | 22.59 | 22.45 | 22.54 | 23.0 | | |
| | 25 | | | 0 | 1 | 22.68 | 22.39 | 22.44 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.71 | 22.59 | 22.78 | 23.0 | | |
| | 1 | | | 12 | 1 | 22.54 | 22.75 | 22.86 | 23.0 | | |
| 64QAM | 1 | | | 24 | 1 | 22.56 | 22.75 | 22.83 | 23.0 | | |
| | 12 | | | 0 | 2 | 21.58 | 21.70 | 21.82 | 22.0 | | |
| | 12 | | | 7 | 2 | 21.65 | 21.67 | 21.79 | 22.0 | | |
| | 12 | | | 13 | 2 | 21.62 | 21.64 | 21.85 | 22.0 | | |
| | 25 | | | 0 | 2 | 21.63 | 21.59 | 21.74 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.93 | 21.86 | 21.95 | 22.0 | | |
| 64QAM | 1 | | | 12 | 2 | 21.98 | 21.82 | 21.96 | 22.0 | | |
| | 1 | | | 24 | 2 | 21.88 | 21.81 | 21.98 | 22.0 | | |
| | 12 | | | 0 | 3 | 20.89 | 20.89 | 20.97 | 21.0 | | |
| | 12 | 7 | 3 | 20.82 | 20.92 | 20.90 | 21.0 | | | | |
| | 12 | 13 | 3 | 20.92 | 20.86 | 20.97 | 21.0 | | | | |
| | 25 | 0 | 3 | 20.82 | 20.87 | 20.91 | 21.0 | | | | |

LTE Band 12 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|-----------|-----------|---------------|-------|------|
| | | | | | | 23025 | 23095 | 23165 | | | |
| | | | | | | 700.5 MHz | 707.5 MHz | 714.5 MHz | | | |
| LTE Band 12 | 3 | QPSK | 1 | 0 | 0 | 23.42 | 23.37 | 23.44 | 24.0 | | |
| | | | 1 | 8 | 0 | 23.35 | 23.32 | 23.44 | 24.0 | | |
| | | | 1 | 14 | 0 | 23.43 | 23.34 | 23.45 | 24.0 | | |
| | | | 8 | 0 | 1 | 22.41 | 22.32 | 22.47 | 23.0 | | |
| | | | 8 | 4 | 1 | 22.37 | 22.36 | 22.52 | 23.0 | | |
| | | | 8 | 7 | 1 | 22.53 | 22.36 | 22.44 | 23.0 | | |
| | | 16QAM | 15 | 0 | 1 | 22.39 | 22.21 | 22.50 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.61 | 22.42 | 22.74 | 23.0 | | |
| | | | 1 | 8 | 1 | 22.45 | 22.46 | 22.77 | 23.0 | | |
| | | | 1 | 14 | 1 | 22.48 | 22.36 | 22.81 | 23.0 | | |
| | | | 8 | 0 | 2 | 21.57 | 21.53 | 21.79 | 22.0 | | |
| | | | 8 | 4 | 2 | 21.48 | 21.39 | 21.72 | 22.0 | | |
| | | 64QAM | 8 | 7 | 2 | 21.59 | 21.47 | 21.83 | 22.0 | | |
| | | | 15 | 0 | 2 | 21.61 | 21.52 | 21.73 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.86 | 21.80 | 21.82 | 22.0 | | |
| | | | 1 | 8 | 2 | 21.92 | 21.88 | 21.88 | 22.0 | | |
| | | | 1 | 14 | 2 | 21.76 | 21.78 | 21.96 | 22.0 | | |
| | | | 8 | 0 | 3 | 20.85 | 20.74 | 20.79 | 21.0 | | |
| | | LTE Band 12 | 1.4 | QPSK | 8 | 4 | 3 | 20.87 | 20.72 | 20.97 | 21.0 |
| | | | | | 8 | 7 | 3 | 20.75 | 20.82 | 20.93 | 21.0 |
| | | | | | 15 | 0 | 3 | 20.92 | 20.75 | 20.83 | 21.0 |
| 1 | 0 | | | | 0 | 23.42 | 23.37 | 23.38 | 24.0 | | |
| 1 | 3 | | | | 0 | 23.28 | 23.35 | 23.36 | 24.0 | | |
| 1 | 5 | | | | 0 | 23.40 | 23.20 | 23.42 | 24.0 | | |
| 16QAM | 3 | | | 0 | 0 | 22.37 | 22.35 | 22.67 | 24.0 | | |
| | 3 | | | 1 | 0 | 22.35 | 22.33 | 22.61 | 24.0 | | |
| | 3 | | | 3 | 0 | 22.34 | 22.20 | 22.63 | 24.0 | | |
| | 6 | | | 0 | 1 | 22.31 | 22.22 | 22.64 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.59 | 22.41 | 22.72 | 23.0 | | |
| | 1 | | | 3 | 1 | 22.59 | 22.53 | 22.76 | 23.0 | | |
| 64QAM | 1 | | | 5 | 1 | 22.62 | 22.58 | 22.70 | 23.0 | | |
| | 3 | | | 0 | 1 | 21.58 | 21.55 | 21.61 | 23.0 | | |
| | 3 | | | 1 | 1 | 21.60 | 21.44 | 21.79 | 23.0 | | |
| | 3 | | | 3 | 1 | 21.65 | 21.51 | 21.63 | 23.0 | | |
| | 6 | | | 0 | 2 | 21.59 | 21.51 | 21.61 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.80 | 21.64 | 21.88 | 22.0 | | |
| 64QAM | 1 | | | 3 | 2 | 21.68 | 21.67 | 21.88 | 22.0 | | |
| | 1 | | | 5 | 2 | 21.85 | 21.64 | 21.84 | 22.0 | | |
| | 3 | | | 0 | 2 | 20.75 | 20.54 | 20.84 | 22.0 | | |
| | 3 | 1 | 2 | 20.79 | 20.65 | 20.95 | 22.0 | | | | |
| | 3 | 3 | 2 | 20.85 | 20.61 | 20.81 | 22.0 | | | | |
| | 6 | 0 | 3 | 20.73 | 20.62 | 20.94 | 21.0 | | | | |

LTE Band 13 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|---------|-------|---------------|--|------|
| | | | | | | 23230 | 782 MHz | | | | |
| LTE Band 13 | 10 | QPSK | 1 | 0 | 0 | | 23.16 | | 24.0 | | |
| | | | 1 | 25 | 0 | | 23.15 | | 24.0 | | |
| | | | 1 | 49 | 0 | | 23.07 | | 24.0 | | |
| | | | 25 | 0 | 1 | | 22.05 | | 23.0 | | |
| | | | 25 | 12 | 1 | | 21.99 | | 23.0 | | |
| | | | 25 | 25 | 1 | | 22.00 | | 23.0 | | |
| | | 16QAM | 50 | 0 | 1 | | 22.11 | | 23.0 | | |
| | | | 1 | 0 | 1 | | 22.10 | | 23.0 | | |
| | | | 1 | 25 | 1 | | 22.09 | | 23.0 | | |
| | | | 1 | 49 | 1 | | 21.98 | | 23.0 | | |
| | | | 25 | 0 | 2 | | 21.04 | | 22.0 | | |
| | | | 25 | 12 | 2 | | 21.07 | | 22.0 | | |
| | | 64QAM | 25 | 25 | 2 | | 21.09 | | 22.0 | | |
| | | | 50 | 0 | 2 | | 21.07 | | 22.0 | | |
| | | | 1 | 0 | 2 | | 21.13 | | 22.0 | | |
| | | | 1 | 25 | 2 | | 21.16 | | 22.0 | | |
| | | | 1 | 49 | 2 | | 21.00 | | 22.0 | | |
| | | | 25 | 0 | 3 | | 20.03 | | 21.0 | | |
| | | LTE Band 13 | 5 | QPSK | 25 | 12 | 3 | | 20.02 | | 21.0 |
| | | | | | 25 | 25 | 3 | | 20.04 | | 21.0 |
| | | | | | 50 | 0 | 3 | | 19.99 | | 21.0 |
| 1 | 0 | | | | 1 | 23.13 | 23.09 | 23.04 | 24.0 | | |
| 1 | 12 | | | | 0 | 23.11 | 23.07 | 22.83 | 24.0 | | |
| 1 | 24 | | | | 0 | 23.08 | 23.05 | 22.93 | 24.0 | | |
| 16QAM | 12 | | | 0 | 1 | 22.15 | 22.13 | 22.26 | 23.0 | | |
| | 12 | | | 7 | 1 | 22.16 | 22.01 | 22.21 | 23.0 | | |
| | 12 | | | 13 | 1 | 22.21 | 22.12 | 22.23 | 23.0 | | |
| | 25 | | | 0 | 1 | 22.14 | 22.12 | 22.26 | 23.0 | | |
| 64QAM | 1 | 0 | 1 | 22.03 | 22.01 | 21.98 | 23.0 | | | | |
| | 1 | 12 | 1 | 22.29 | 22.13 | 22.11 | 23.0 | | | | |
| | 1 | 24 | 1 | 22.41 | 22.14 | 22.23 | 23.0 | | | | |
| | 12 | 0 | 2 | 21.18 | 21.04 | 21.23 | 22.0 | | | | |
| | 12 | 7 | 2 | 21.21 | 21.07 | 21.26 | 22.0 | | | | |
| | 12 | 13 | 2 | 21.26 | 21.01 | 21.24 | 22.0 | | | | |
| LTE Band 13 | 5 | 64QAM | 25 | 0 | 2 | 21.14 | 21.09 | 21.22 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.09 | 21.11 | 21.88 | 22.0 | | |
| | | | 1 | 12 | 2 | 21.72 | 21.15 | 21.49 | 22.0 | | |
| | | | 1 | 24 | 2 | 21.83 | 21.01 | 21.59 | 22.0 | | |
| | | | 12 | 0 | 3 | 19.85 | 19.97 | 19.96 | 21.0 | | |
| | | | 12 | 7 | 3 | 19.84 | 20.15 | 19.97 | 21.0 | | |
| | | | 12 | 13 | 3 | 19.91 | 20.03 | 19.92 | 21.0 | | |
| 25 | 0 | 3 | 19.83 | 20.09 | 19.94 | 21.0 | | | | | |

LTE Band 14 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|---------|-------|---------------|--|------|
| | | | | | | 23330 | 793 MHz | | | | |
| LTE Band 14 | 10 | QPSK | 1 | 0 | 0 | | 23.05 | | 24.0 | | |
| | | | 1 | 25 | 0 | | 22.87 | | 24.0 | | |
| | | | 1 | 49 | 0 | | 23.03 | | 24.0 | | |
| | | | 25 | 0 | 1 | | 22.03 | | 23.0 | | |
| | | | 25 | 12 | 1 | | 21.87 | | 23.0 | | |
| | | | 25 | 25 | 1 | | 21.99 | | 23.0 | | |
| | | 16QAM | 50 | 0 | 1 | | 21.92 | | 23.0 | | |
| | | | 1 | 0 | 1 | | 21.98 | | 23.0 | | |
| | | | 1 | 25 | 1 | | 21.94 | | 23.0 | | |
| | | | 1 | 49 | 1 | | 21.91 | | 23.0 | | |
| | | | 25 | 0 | 2 | | 20.95 | | 22.0 | | |
| | | | 25 | 12 | 2 | | 20.93 | | 22.0 | | |
| | | 64QAM | 25 | 25 | 2 | | 20.98 | | 22.0 | | |
| | | | 50 | 0 | 2 | | 20.99 | | 22.0 | | |
| | | | 1 | 0 | 2 | | 20.97 | | 22.0 | | |
| | | | 1 | 25 | 2 | | 20.87 | | 22.0 | | |
| | | | 1 | 49 | 2 | | 20.89 | | 22.0 | | |
| | | | 25 | 0 | 3 | | 19.99 | | 21.0 | | |
| | | LTE Band 14 | 5 | QPSK | 25 | 12 | 3 | | 19.92 | | 21.0 |
| | | | | | 25 | 25 | 3 | | 19.99 | | 21.0 |
| | | | | | 50 | 0 | 3 | | 20.04 | | 21.0 |
| 1 | 0 | | | | 1 | 22.92 | 22.95 | 22.90 | 24.0 | | |
| 1 | 12 | | | | 0 | 22.90 | 22.95 | 22.92 | 24.0 | | |
| 1 | 24 | | | | 0 | 22.87 | 23.05 | 22.95 | 24.0 | | |
| 16QAM | 12 | | | 0 | 1 | 21.97 | 21.88 | 21.97 | 23.0 | | |
| | 12 | | | 7 | 1 | 21.95 | 22.00 | 22.09 | 23.0 | | |
| | 12 | | | 13 | 1 | 21.92 | 21.99 | 22.03 | 23.0 | | |
| | 25 | | | 0 | 1 | 21.95 | 21.99 | 22.04 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.24 | 21.91 | 22.22 | 23.0 | | |
| | 1 | | | 12 | 1 | 22.17 | 21.86 | 22.28 | 23.0 | | |
| 64QAM | 1 | | | 24 | 1 | 22.18 | 21.90 | 22.27 | 23.0 | | |
| | 12 | | | 0 | 2 | 21.00 | 20.91 | 20.97 | 22.0 | | |
| | 12 | | | 7 | 2 | 21.02 | 20.95 | 21.08 | 22.0 | | |
| | 12 | 13 | 2 | 20.93 | 20.98 | 21.03 | 22.0 | | | | |
| | 25 | 0 | 2 | 20.96 | 21.01 | 21.07 | 22.0 | | | | |
| | 1 | 0 | 2 | 21.13 | 20.99 | 21.12 | 22.0 | | | | |
| 64QAM | 1 | 12 | 2 | 21.09 | 21.04 | 21.22 | 22.0 | | | | |
| | 1 | 24 | 2 | 21.05 | 21.04 | 21.16 | 22.0 | | | | |
| | 12 | 0 | 3 | 19.98 | 20.02 | 19.98 | 21.0 | | | | |
| | 12 | 7 | 3 | 19.98 | 19.91 | 20.09 | 21.0 | | | | |
| | 12 | 13 | 3 | 19.95 | 19.87 | 20.04 | 21.0 | | | | |
| | 25 | 0 | 3 | 19.94 | 20.03 | 20.05 | 21.0 | | | | |

LTE Band 26 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|-----------|-----------|---------------|-------|------|
| | | | | | | 26765 | 26865 | 26965 | | | |
| | | | | | | 821.5 MHz | 831.5 MHz | 841.5 MHz | | | |
| LTE Band 26 | 15 | QPSK | 1 | 0 | 0 | 23.52 | 23.62 | 23.79 | 24.0 | | |
| | | | 1 | 37 | 0 | 23.34 | 23.60 | 23.75 | 24.0 | | |
| | | | 1 | 74 | 0 | 23.28 | 23.55 | 23.66 | 24.0 | | |
| | | | 36 | 0 | 1 | 22.42 | 22.48 | 22.61 | 23.0 | | |
| | | | 36 | 20 | 1 | 22.30 | 22.50 | 22.69 | 23.0 | | |
| | | | 36 | 39 | 1 | 22.45 | 22.60 | 22.76 | 23.0 | | |
| | | 16QAM | 75 | 0 | 1 | 22.38 | 22.47 | 22.71 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.68 | 22.56 | 22.90 | 23.0 | | |
| | | | 1 | 37 | 1 | 22.66 | 22.62 | 22.88 | 23.0 | | |
| | | | 1 | 74 | 1 | 22.62 | 22.64 | 22.90 | 23.0 | | |
| | | | 36 | 0 | 2 | 21.80 | 21.47 | 21.80 | 22.0 | | |
| | | | 36 | 20 | 2 | 21.62 | 21.55 | 21.82 | 22.0 | | |
| | | 64QAM | 36 | 39 | 2 | 21.72 | 21.63 | 21.86 | 22.0 | | |
| | | | 75 | 0 | 2 | 21.67 | 21.49 | 21.78 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.69 | 21.67 | 21.84 | 22.0 | | |
| | | | 1 | 37 | 2 | 21.65 | 21.68 | 21.72 | 22.0 | | |
| | | | 1 | 74 | 2 | 21.63 | 21.72 | 21.83 | 22.0 | | |
| | | | 36 | 0 | 3 | 20.62 | 20.75 | 20.88 | 21.0 | | |
| | | LTE Band 26 | 10 | QPSK | 36 | 20 | 3 | 20.61 | 20.71 | 20.81 | 21.0 |
| | | | | | 36 | 39 | 3 | 20.71 | 20.85 | 20.81 | 21.0 |
| | | | | | 75 | 0 | 3 | 20.63 | 20.73 | 20.87 | 21.0 |
| 1 | 0 | | | | 0 | 23.43 | 23.56 | 23.51 | 24.0 | | |
| 1 | 25 | | | | 0 | 23.39 | 23.55 | 23.51 | 24.0 | | |
| 1 | 49 | | | | 0 | 23.30 | 23.36 | 23.60 | 24.0 | | |
| 16QAM | 25 | | | 0 | 1 | 22.36 | 22.43 | 22.44 | 23.0 | | |
| | 25 | | | 12 | 1 | 22.31 | 22.46 | 22.44 | 23.0 | | |
| | 25 | | | 25 | 1 | 22.47 | 22.43 | 22.44 | 23.0 | | |
| | 50 | | | 0 | 1 | 22.29 | 22.44 | 22.50 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.59 | 22.64 | 22.68 | 23.0 | | |
| | 1 | | | 25 | 1 | 22.65 | 22.55 | 22.77 | 23.0 | | |
| 64QAM | 1 | | | 49 | 1 | 22.60 | 22.57 | 22.68 | 23.0 | | |
| | 25 | | | 0 | 2 | 21.64 | 21.54 | 21.83 | 22.0 | | |
| | 25 | | | 12 | 2 | 21.63 | 21.56 | 21.71 | 22.0 | | |
| | 25 | | | 25 | 2 | 21.73 | 21.56 | 21.70 | 22.0 | | |
| | 50 | | | 0 | 2 | 21.62 | 21.64 | 21.75 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.62 | 21.75 | 21.71 | 22.0 | | |
| 16QAM | 1 | | | 25 | 2 | 21.71 | 21.86 | 21.66 | 22.0 | | |
| | 1 | | | 49 | 2 | 21.61 | 21.84 | 21.74 | 22.0 | | |
| | 25 | | | 0 | 3 | 20.62 | 20.76 | 20.70 | 21.0 | | |
| | 25 | 12 | 3 | 20.58 | 20.78 | 20.80 | 21.0 | | | | |
| | 25 | 25 | 3 | 20.64 | 20.84 | 20.71 | 21.0 | | | | |
| | 50 | 0 | 3 | 20.73 | 20.82 | 20.73 | 21.0 | | | | |

LTE Band 26 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|-----------|-----------|---------------|-------|------|
| | | | | | | 26715 | 26865 | 27015 | | | |
| | | | | | | 816.5 MHz | 831.5 MHz | 846.5 MHz | | | |
| LTE Band 26 | 5 | QPSK | 1 | 0 | 0 | 23.29 | 23.48 | 23.52 | 24.0 | | |
| | | | 1 | 12 | 0 | 23.14 | 23.52 | 23.56 | 24.0 | | |
| | | | 1 | 24 | 0 | 23.28 | 23.58 | 23.58 | 24.0 | | |
| | | | 12 | 0 | 1 | 22.25 | 22.50 | 22.40 | 23.0 | | |
| | | | 12 | 7 | 1 | 22.16 | 22.49 | 22.54 | 23.0 | | |
| | | | 12 | 13 | 1 | 22.16 | 22.52 | 22.42 | 23.0 | | |
| | | 16QAM | 25 | 0 | 1 | 22.25 | 22.41 | 22.55 | 23.0 | | |
| | | | 1 | 0 | 1 | 22.49 | 22.61 | 22.74 | 23.0 | | |
| | | | 1 | 12 | 1 | 22.49 | 22.61 | 22.73 | 23.0 | | |
| | | | 1 | 24 | 1 | 22.31 | 22.65 | 22.68 | 23.0 | | |
| | | | 12 | 0 | 2 | 21.48 | 21.68 | 21.86 | 22.0 | | |
| | | | 12 | 7 | 2 | 21.38 | 21.63 | 21.72 | 22.0 | | |
| | | 64QAM | 12 | 13 | 2 | 21.39 | 21.78 | 21.71 | 22.0 | | |
| | | | 25 | 0 | 2 | 21.46 | 21.69 | 21.70 | 22.0 | | |
| | | | 1 | 0 | 2 | 21.52 | 21.64 | 21.76 | 22.0 | | |
| | | | 1 | 12 | 2 | 21.44 | 21.71 | 21.82 | 22.0 | | |
| | | | 1 | 24 | 2 | 21.53 | 21.73 | 21.82 | 22.0 | | |
| | | | 12 | 0 | 3 | 20.39 | 20.63 | 20.69 | 21.0 | | |
| | | LTE Band 26 | 3 | QPSK | 12 | 7 | 3 | 20.48 | 20.74 | 20.85 | 21.0 |
| | | | | | 12 | 13 | 3 | 20.33 | 20.82 | 20.81 | 21.0 |
| | | | | | 25 | 0 | 3 | 20.38 | 20.81 | 20.81 | 21.0 |
| 1 | 0 | | | | 0 | 23.36 | 23.52 | 23.32 | 24.0 | | |
| 1 | 8 | | | | 0 | 23.36 | 23.46 | 23.17 | 24.0 | | |
| 1 | 14 | | | | 0 | 23.33 | 23.48 | 23.31 | 24.0 | | |
| 16QAM | 8 | | | 0 | 1 | 22.37 | 22.45 | 22.23 | 23.0 | | |
| | 8 | | | 4 | 1 | 22.41 | 22.50 | 22.33 | 23.0 | | |
| | 8 | | | 7 | 1 | 22.40 | 22.47 | 22.22 | 23.0 | | |
| | 15 | | | 0 | 1 | 22.31 | 22.49 | 22.14 | 23.0 | | |
| | 1 | | | 0 | 1 | 22.54 | 22.61 | 22.58 | 23.0 | | |
| | 1 | | | 8 | 1 | 22.59 | 22.52 | 22.59 | 23.0 | | |
| 64QAM | 1 | | | 14 | 1 | 22.53 | 22.52 | 22.53 | 23.0 | | |
| | 8 | | | 0 | 2 | 21.51 | 21.65 | 21.45 | 22.0 | | |
| | 8 | | | 4 | 2 | 21.65 | 21.69 | 21.55 | 22.0 | | |
| | 8 | | | 7 | 2 | 21.57 | 21.70 | 21.45 | 22.0 | | |
| | 15 | | | 0 | 2 | 21.64 | 21.51 | 21.49 | 22.0 | | |
| | 1 | | | 0 | 2 | 21.58 | 21.68 | 21.53 | 22.0 | | |
| 64QAM | 1 | | | 8 | 2 | 21.51 | 21.60 | 21.70 | 22.0 | | |
| | 1 | | | 14 | 2 | 21.48 | 21.79 | 21.66 | 22.0 | | |
| | 8 | | | 0 | 3 | 20.42 | 20.77 | 20.57 | 21.0 | | |
| | 8 | 4 | 3 | 20.56 | 20.61 | 20.56 | 21.0 | | | | |
| | 8 | 7 | 3 | 20.57 | 20.70 | 20.64 | 21.0 | | | | |
| | 15 | 0 | 3 | 20.55 | 20.65 | 20.53 | 21.0 | | | | |

LTE Band 26 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit |
|-------------|----------|-------|---------------|-----------|-----|--------------------------|-----------|-----------|---------------|
| | | | | | | 26697 | 26865 | 27033 | |
| | | | | | | 814.7 MHz | 831.5 MHz | 848.3 MHz | |
| LTE Band 26 | 1.4 | QPSK | 1 | 0 | 0 | 23.37 | 22.59 | 23.32 | 24.0 |
| | | | 1 | 3 | 0 | 23.32 | 22.66 | 23.37 | 24.0 |
| | | | 1 | 5 | 0 | 23.27 | 22.69 | 23.42 | 24.0 |
| | | | 3 | 0 | 0 | 22.85 | 22.17 | 22.93 | 24.0 |
| | | | 3 | 1 | 0 | 22.81 | 22.16 | 22.82 | 24.0 |
| | | | 3 | 3 | 0 | 22.88 | 22.05 | 22.80 | 24.0 |
| | | 16QAM | 6 | 0 | 1 | 22.32 | 21.70 | 22.36 | 23.0 |
| | | | 1 | 0 | 1 | 22.55 | 22.77 | 22.43 | 23.0 |
| | | | 1 | 3 | 1 | 22.65 | 22.77 | 22.41 | 23.0 |
| | | | 1 | 5 | 1 | 22.66 | 22.85 | 22.39 | 23.0 |
| | | | 3 | 0 | 1 | 21.54 | 21.78 | 21.37 | 23.0 |
| | | | 3 | 1 | 1 | 21.69 | 21.76 | 21.33 | 23.0 |
| | | 64QAM | 3 | 3 | 1 | 21.60 | 21.86 | 21.40 | 23.0 |
| | | | 6 | 0 | 2 | 21.67 | 21.80 | 21.39 | 22.0 |
| | | | 1 | 0 | 2 | 21.51 | 21.70 | 21.40 | 22.0 |
| | | | 1 | 3 | 2 | 21.61 | 21.61 | 21.33 | 22.0 |
| | | | 1 | 5 | 2 | 21.60 | 21.68 | 21.35 | 22.0 |
| | | | 3 | 0 | 2 | 20.43 | 20.62 | 20.51 | 22.0 |
| | | | 3 | 1 | 2 | 20.49 | 20.59 | 20.36 | 22.0 |
| | | | 3 | 3 | 2 | 20.50 | 20.58 | 20.38 | 22.0 |
| | | | 6 | 0 | 3 | 20.51 | 20.60 | 20.34 | 21.0 |

LTE Band 41 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|------------|----------|------------|----------|---------------|-------|------|
| | | | | | | 39750 | 40185 | 40620 | 41055 | 41490 | | | |
| | | | | | | 2506 MHz | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz | | | |
| LTE Band 41 | 20 | QPSK | 1 | 0 | 0 | 23.24 | 23.27 | 23.23 | 23.26 | 22.99 | 23.8 | | |
| | | | 1 | 49 | 0 | 23.06 | 23.23 | 23.14 | 23.20 | 22.86 | 23.8 | | |
| | | | 1 | 99 | 0 | 23.11 | 23.21 | 23.21 | 23.15 | 22.87 | 23.8 | | |
| | | | 50 | 0 | 1 | 22.08 | 22.09 | 22.39 | 22.08 | 21.80 | 22.8 | | |
| | | | 50 | 24 | 1 | 22.08 | 22.24 | 22.32 | 22.14 | 21.93 | 22.8 | | |
| | | | 50 | 50 | 1 | 22.07 | 22.21 | 22.27 | 22.17 | 21.96 | 22.8 | | |
| | | 16QAM | 100 | 0 | 1 | 22.07 | 22.14 | 22.29 | 22.25 | 21.87 | 22.8 | | |
| | | | 1 | 0 | 1 | 22.25 | 22.31 | 22.29 | 22.24 | 22.02 | 22.8 | | |
| | | | 1 | 49 | 1 | 22.17 | 22.31 | 22.35 | 22.17 | 21.91 | 22.8 | | |
| | | | 1 | 99 | 1 | 22.26 | 22.32 | 22.31 | 22.10 | 22.03 | 22.8 | | |
| | | | 50 | 0 | 2 | 21.10 | 21.37 | 21.35 | 21.05 | 20.90 | 21.8 | | |
| | | | 50 | 24 | 2 | 21.24 | 21.45 | 21.41 | 21.11 | 21.00 | 21.8 | | |
| | | 64QAM | 50 | 50 | 2 | 21.21 | 21.43 | 21.39 | 21.19 | 21.06 | 21.8 | | |
| | | | 100 | 0 | 2 | 21.15 | 21.34 | 21.40 | 21.17 | 21.03 | 21.8 | | |
| | | | 1 | 0 | 2 | 21.19 | 21.21 | 21.06 | 21.22 | 21.07 | 21.8 | | |
| | | | 1 | 49 | 2 | 21.13 | 21.21 | 21.03 | 21.13 | 21.12 | 21.8 | | |
| | | | 1 | 99 | 2 | 21.08 | 21.11 | 21.03 | 21.25 | 21.16 | 21.8 | | |
| | | | 50 | 0 | 3 | 20.17 | 20.21 | 20.12 | 20.20 | 20.26 | 20.8 | | |
| | | LTE Band 41 | 15 | QPSK | 50 | 24 | 2 | 20.20 | 20.25 | 20.21 | 20.21 | 20.12 | 20.8 |
| | | | | | 50 | 50 | 3 | 20.09 | 20.27 | 20.08 | 20.09 | 20.27 | 20.8 |
| | | | | | 100 | 0 | 3 | 20.22 | 20.17 | 20.11 | 20.27 | 20.13 | 20.8 |
| 1 | 0 | | | | 0 | 22.96 | 23.11 | 23.19 | 23.20 | 22.98 | 23.8 | | |
| 1 | 37 | | | | 0 | 22.82 | 23.06 | 23.26 | 23.24 | 22.94 | 23.8 | | |
| 1 | 74 | | | | 0 | 22.89 | 23.01 | 23.23 | 23.18 | 23.01 | 23.8 | | |
| 16QAM | 36 | | | 0 | 1 | 21.89 | 22.03 | 22.32 | 22.31 | 21.99 | 22.8 | | |
| | 36 | | | 20 | 1 | 21.91 | 22.08 | 22.35 | 22.25 | 22.04 | 22.8 | | |
| | 36 | | | 39 | 1 | 21.85 | 21.93 | 22.34 | 22.35 | 21.97 | 22.8 | | |
| | 75 | | | 0 | 1 | 21.95 | 22.00 | 22.20 | 22.20 | 21.96 | 22.8 | | |
| | 1 | | | 0 | 1 | 22.15 | 22.06 | 22.27 | 22.16 | 21.98 | 22.8 | | |
| | 1 | | | 37 | 1 | 22.01 | 22.14 | 22.42 | 22.17 | 22.08 | 22.8 | | |
| 64QAM | 1 | | | 74 | 1 | 22.14 | 22.13 | 22.25 | 22.20 | 22.00 | 22.8 | | |
| | 36 | | | 0 | 2 | 21.05 | 21.07 | 21.34 | 21.19 | 21.11 | 21.8 | | |
| | 36 | | | 20 | 2 | 21.19 | 21.05 | 21.23 | 21.07 | 21.11 | 21.8 | | |
| | 36 | | | 39 | 2 | 21.04 | 21.16 | 21.35 | 21.08 | 20.98 | 21.8 | | |
| | 75 | | | 0 | 2 | 21.10 | 21.08 | 21.26 | 21.03 | 20.97 | 21.8 | | |
| | 1 | | | 0 | 2 | 21.06 | 21.07 | 21.08 | 21.24 | 20.93 | 21.8 | | |
| 64QAM | 1 | | | 37 | 2 | 21.14 | 20.94 | 21.26 | 21.14 | 20.98 | 21.8 | | |
| | 1 | | | 74 | 2 | 21.16 | 20.99 | 21.12 | 21.23 | 20.90 | 21.8 | | |
| | 36 | | | 0 | 3 | 20.14 | 19.89 | 20.23 | 20.11 | 19.90 | 20.8 | | |
| | 36 | 20 | 3 | 20.04 | 20.02 | 20.12 | 20.26 | 19.88 | 20.8 | | | | |
| | 36 | 39 | 3 | 20.12 | 19.95 | 20.24 | 20.13 | 19.90 | 20.8 | | | | |
| | 75 | 0 | 3 | 20.18 | 20.07 | 20.18 | 20.13 | 19.88 | 20.8 | | | | |

LTE Band 41 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|------------|----------|------------|----------|---------------|-------|------|
| | | | | | | 39750 | 40185 | 40620 | 41055 | 41490 | | | |
| | | | | | | 2506 MHz | 2549.5 MHz | 2593 MHz | 2636.5 MHz | 2680 MHz | | | |
| LTE Band 41 | 10 | QPSK | 1 | 0 | 0 | 23.06 | 23.09 | 23.13 | 23.09 | 22.91 | 23.8 | | |
| | | | 1 | 25 | 0 | 23.04 | 22.98 | 23.23 | 23.11 | 22.78 | 23.8 | | |
| | | | 1 | 49 | 0 | 22.99 | 23.09 | 23.21 | 23.11 | 22.80 | 23.8 | | |
| | | | 25 | 0 | 1 | 22.02 | 22.01 | 22.29 | 22.09 | 21.77 | 22.8 | | |
| | | | 25 | 12 | 1 | 22.00 | 22.05 | 22.21 | 21.99 | 21.91 | 22.8 | | |
| | | | 25 | 25 | 1 | 21.92 | 21.99 | 22.10 | 22.13 | 21.88 | 22.8 | | |
| | | 16QAM | 50 | 0 | 1 | 22.09 | 21.95 | 22.11 | 22.10 | 21.86 | 22.8 | | |
| | | | 1 | 0 | 1 | 22.12 | 22.13 | 22.22 | 22.11 | 22.02 | 22.8 | | |
| | | | 1 | 25 | 1 | 22.21 | 22.20 | 22.17 | 22.18 | 22.01 | 22.8 | | |
| | | | 1 | 49 | 1 | 22.11 | 22.17 | 22.17 | 22.11 | 22.00 | 22.8 | | |
| | | | 25 | 0 | 2 | 21.05 | 21.14 | 21.22 | 21.04 | 21.00 | 21.8 | | |
| | | | 25 | 12 | 2 | 21.05 | 21.14 | 21.22 | 21.07 | 21.01 | 21.8 | | |
| | | 64QAM | 25 | 25 | 2 | 21.16 | 21.13 | 21.28 | 21.13 | 21.04 | 21.8 | | |
| | | | 50 | 0 | 2 | 21.16 | 21.24 | 21.30 | 21.22 | 21.11 | 21.8 | | |
| | | | 1 | 0 | 2 | 21.08 | 21.08 | 21.04 | 21.12 | 20.89 | 21.8 | | |
| | | | 1 | 25 | 2 | 21.09 | 21.02 | 21.04 | 21.14 | 21.00 | 21.8 | | |
| | | | 1 | 49 | 2 | 21.22 | 21.06 | 20.99 | 21.27 | 20.94 | 21.8 | | |
| | | | 25 | 0 | 3 | 20.12 | 20.03 | 19.96 | 20.16 | 20.03 | 20.8 | | |
| | | LTE Band 41 | 5 | QPSK | 25 | 12 | 3 | 20.20 | 19.95 | 19.99 | 20.12 | 20.02 | 20.8 |
| | | | | | 25 | 25 | 3 | 20.07 | 20.00 | 20.11 | 20.21 | 20.06 | 20.8 |
| | | | | | 50 | 0 | 3 | 20.22 | 19.95 | 20.01 | 20.20 | 19.93 | 20.8 |
| 1 | 0 | | | | 0 | 23.10 | 23.07 | 23.18 | 23.08 | 22.90 | 23.8 | | |
| 1 | 12 | | | | 0 | 23.11 | 23.05 | 23.13 | 22.98 | 22.89 | 23.8 | | |
| 1 | 24 | | | | 0 | 23.19 | 23.21 | 23.11 | 22.99 | 22.95 | 23.8 | | |
| 16QAM | 12 | | | 0 | 1 | 22.19 | 22.12 | 22.15 | 22.06 | 21.94 | 22.8 | | |
| | 12 | | | 7 | 1 | 22.20 | 22.17 | 22.13 | 21.91 | 22.03 | 22.8 | | |
| | 12 | | | 13 | 1 | 22.12 | 22.09 | 22.03 | 21.93 | 21.88 | 22.8 | | |
| | 25 | | | 0 | 1 | 22.10 | 22.21 | 22.09 | 22.06 | 21.90 | 22.8 | | |
| | 1 | | | 0 | 1 | 22.13 | 22.14 | 22.24 | 22.17 | 21.97 | 22.8 | | |
| | 1 | | | 12 | 1 | 22.26 | 22.02 | 22.19 | 22.19 | 21.90 | 22.8 | | |
| 64QAM | 1 | | | 24 | 1 | 22.19 | 22.07 | 22.12 | 22.14 | 21.93 | 22.8 | | |
| | 12 | | | 0 | 2 | 21.14 | 21.01 | 21.15 | 21.27 | 20.97 | 21.8 | | |
| | 12 | | | 7 | 2 | 21.20 | 21.03 | 21.23 | 21.10 | 20.87 | 21.8 | | |
| | 12 | | | 13 | 2 | 21.12 | 21.10 | 21.20 | 21.14 | 20.89 | 21.8 | | |
| | 25 | | | 0 | 2 | 21.09 | 21.09 | 21.19 | 21.17 | 20.97 | 21.8 | | |
| | 1 | | | 0 | 2 | 21.12 | 21.08 | 21.10 | 21.22 | 20.91 | 21.8 | | |
| 64QAM | 1 | | | 12 | 2 | 21.12 | 21.12 | 21.10 | 21.26 | 20.87 | 21.8 | | |
| | 1 | | | 24 | 2 | 21.01 | 21.08 | 21.18 | 21.20 | 20.90 | 21.8 | | |
| | 12 | | | 0 | 3 | 19.95 | 20.05 | 20.18 | 20.18 | 19.95 | 20.8 | | |
| | 12 | 7 | 3 | 20.01 | 20.11 | 20.09 | 20.24 | 19.87 | 20.8 | | | | |
| | 12 | 13 | 3 | 20.11 | 20.20 | 20.12 | 20.17 | 19.96 | 20.8 | | | | |
| | 25 | 0 | 3 | 20.05 | 20.14 | 20.05 | 20.22 | 19.82 | 20.8 | | | | |

LTE Band 48 Measured Results

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|----------|----------|---------------|-------|------|
| | | | | | | 55340 | 55990 | 56640 | | | |
| | | | | | | 3560 MHz | 3625 MHz | 3690 MHz | | | |
| LTE Band 48 | 20 | QPSK | 1 | 0 | 0 | 23.60 | 23.75 | 23.57 | 23.8 | | |
| | | | 1 | 49 | 0 | 23.33 | 23.38 | 23.32 | 23.8 | | |
| | | | 1 | 99 | 0 | 23.27 | 23.35 | 23.38 | 23.8 | | |
| | | | 50 | 0 | 1 | 21.99 | 22.05 | 21.78 | 22.8 | | |
| | | | 50 | 24 | 1 | 21.88 | 21.92 | 21.75 | 22.8 | | |
| | | | 50 | 50 | 1 | 21.87 | 21.89 | 21.64 | 22.8 | | |
| | | 16QAM | 100 | 0 | 1 | 21.98 | 21.93 | 21.79 | 22.8 | | |
| | | | 1 | 0 | 1 | 22.13 | 22.11 | 22.30 | 22.8 | | |
| | | | 1 | 49 | 1 | 21.75 | 21.91 | 21.99 | 22.8 | | |
| | | | 1 | 99 | 1 | 21.73 | 21.87 | 21.95 | 22.8 | | |
| | | | 50 | 0 | 2 | 20.99 | 21.07 | 20.87 | 21.8 | | |
| | | | 50 | 24 | 2 | 20.86 | 20.95 | 20.78 | 21.8 | | |
| | | 64QAM | 50 | 50 | 2 | 20.79 | 20.89 | 20.73 | 21.8 | | |
| | | | 100 | 0 | 2 | 20.87 | 20.98 | 20.81 | 21.8 | | |
| | | | 1 | 0 | 2 | 20.83 | 20.78 | 21.04 | 21.8 | | |
| | | | 1 | 49 | 2 | 20.62 | 20.57 | 20.80 | 21.8 | | |
| | | | 1 | 99 | 2 | 20.47 | 20.53 | 20.79 | 21.8 | | |
| | | | 50 | 0 | 3 | 19.86 | 19.79 | 19.90 | 20.8 | | |
| | | LTE Band 48 | 15 | QPSK | 50 | 24 | 3 | 19.90 | 20.10 | 19.77 | 20.8 |
| | | | | | 50 | 50 | 3 | 19.85 | 19.94 | 19.69 | 20.8 |
| | | | | | 100 | 0 | 3 | 19.93 | 20.06 | 19.83 | 20.8 |
| 1 | 0 | | | | 0 | 23.64 | 23.64 | 23.36 | 23.8 | | |
| 1 | 37 | | | | 0 | 23.38 | 23.39 | 23.26 | 23.8 | | |
| 1 | 74 | | | | 0 | 23.24 | 23.42 | 23.22 | 23.8 | | |
| 16QAM | 36 | | | 0 | 1 | 21.88 | 22.05 | 21.80 | 22.8 | | |
| | 36 | | | 20 | 1 | 21.77 | 21.90 | 21.72 | 22.8 | | |
| | 36 | | | 39 | 1 | 21.74 | 21.88 | 21.71 | 22.8 | | |
| | 75 | | | 0 | 1 | 21.78 | 21.92 | 21.75 | 22.8 | | |
| | 1 | | | 0 | 1 | 22.31 | 22.11 | 22.23 | 22.8 | | |
| | 1 | | | 37 | 1 | 22.18 | 21.91 | 22.08 | 22.8 | | |
| 64QAM | 1 | | | 74 | 1 | 22.08 | 21.86 | 22.02 | 22.8 | | |
| | 36 | | | 0 | 2 | 20.82 | 21.01 | 20.74 | 21.8 | | |
| | 36 | | | 20 | 2 | 20.79 | 20.99 | 20.83 | 21.8 | | |
| | 36 | | | 39 | 2 | 20.74 | 20.96 | 20.71 | 21.8 | | |
| | 75 | | | 0 | 2 | 20.85 | 20.92 | 20.78 | 21.8 | | |
| | 1 | | | 0 | 2 | 20.70 | 20.75 | 20.79 | 21.8 | | |
| 16QAM | 1 | | | 37 | 2 | 20.68 | 21.02 | 20.90 | 21.8 | | |
| | 1 | | | 74 | 2 | 20.57 | 20.73 | 20.86 | 21.8 | | |
| | 36 | | | 0 | 3 | 19.63 | 19.98 | 19.82 | 20.8 | | |
| | 36 | 20 | 3 | 19.74 | 20.03 | 19.85 | 20.8 | | | | |
| | 36 | 39 | 3 | 19.75 | 19.94 | 19.70 | 20.8 | | | | |
| | 75 | 0 | 3 | 19.93 | 19.98 | 19.68 | 20.8 | | | | |

LTE Band 48 Measured Results (continued)

| Band | BW (MHz) | Mode | RB Allocation | RB offset | MPR | Max. Meas. Avg Pwr (dBm) | | | Tune-up Limit | | |
|-------------|----------|-------------|---------------|-----------|-------|--------------------------|----------|----------|---------------|-------|------|
| | | | | | | 55290 | 55990 | 56690 | | | |
| | | | | | | 3555 MHz | 3625 MHz | 3695 MHz | | | |
| LTE Band 48 | 10 | QPSK | 1 | 0 | 0 | 23.54 | 23.58 | 23.29 | 23.8 | | |
| | | | 1 | 25 | 0 | 23.16 | 23.36 | 23.10 | 23.8 | | |
| | | | 1 | 49 | 0 | 23.14 | 23.40 | 23.01 | 23.8 | | |
| | | | 25 | 0 | 1 | 21.75 | 22.02 | 21.58 | 22.8 | | |
| | | | 25 | 12 | 1 | 21.68 | 21.76 | 21.59 | 22.8 | | |
| | | | 25 | 25 | 1 | 21.67 | 21.64 | 21.62 | 22.8 | | |
| | | 16QAM | 50 | 0 | 1 | 21.64 | 21.83 | 21.65 | 22.8 | | |
| | | | 1 | 0 | 1 | 22.28 | 22.06 | 22.27 | 22.8 | | |
| | | | 1 | 25 | 1 | 21.98 | 21.66 | 22.01 | 22.8 | | |
| | | | 1 | 49 | 1 | 22.05 | 21.78 | 22.02 | 22.8 | | |
| | | | 25 | 0 | 2 | 20.82 | 20.89 | 20.63 | 21.8 | | |
| | | | 25 | 12 | 2 | 20.65 | 20.98 | 20.73 | 21.8 | | |
| | | 64QAM | 25 | 25 | 2 | 20.62 | 20.89 | 20.77 | 21.8 | | |
| | | | 50 | 0 | 2 | 20.79 | 20.96 | 20.92 | 21.8 | | |
| | | | 1 | 0 | 2 | 20.68 | 20.71 | 20.75 | 21.8 | | |
| | | | 1 | 25 | 2 | 20.63 | 20.80 | 20.92 | 21.8 | | |
| | | | 1 | 49 | 2 | 20.51 | 20.60 | 20.90 | 21.8 | | |
| | | | 25 | 0 | 3 | 19.61 | 19.71 | 19.95 | 20.8 | | |
| | | LTE Band 48 | 5 | QPSK | 25 | 12 | 3 | 19.58 | 19.90 | 19.99 | 20.8 |
| | | | | | 25 | 25 | 3 | 19.70 | 19.81 | 19.86 | 20.8 |
| | | | | | 50 | 0 | 3 | 19.89 | 19.81 | 19.73 | 20.8 |
| 1 | 0 | | | | 0 | 23.29 | 23.58 | 23.25 | 23.8 | | |
| 1 | 12 | | | | 0 | 23.22 | 23.47 | 23.22 | 23.8 | | |
| 1 | 24 | | | | 0 | 23.26 | 23.34 | 23.08 | 23.8 | | |
| 16QAM | 12 | | | 0 | 1 | 22.35 | 22.45 | 22.30 | 22.8 | | |
| | 12 | | | 7 | 1 | 22.31 | 22.35 | 22.26 | 22.8 | | |
| | 12 | | | 13 | 1 | 22.24 | 22.36 | 22.23 | 22.8 | | |
| | 25 | | | 0 | 1 | 22.27 | 22.46 | 22.22 | 22.8 | | |
| | 1 | | | 0 | 1 | 22.01 | 22.60 | 21.93 | 22.8 | | |
| | 1 | | | 12 | 1 | 21.91 | 22.52 | 21.82 | 22.8 | | |
| 64QAM | 1 | | | 24 | 1 | 21.85 | 22.58 | 21.89 | 22.8 | | |
| | 12 | | | 0 | 2 | 21.34 | 21.36 | 21.31 | 21.8 | | |
| | 12 | | | 7 | 2 | 21.29 | 21.41 | 21.27 | 21.8 | | |
| | 12 | 13 | 2 | 21.28 | 21.34 | 21.22 | 21.8 | | | | |
| | 25 | 0 | 2 | 21.31 | 21.40 | 21.26 | 21.8 | | | | |
| | 1 | 0 | 2 | 21.41 | 21.31 | 21.26 | 21.8 | | | | |
| 64QAM | 1 | 12 | 2 | 21.38 | 21.28 | 21.43 | 21.8 | | | | |
| | 1 | 24 | 2 | 21.26 | 21.32 | 21.28 | 21.8 | | | | |
| | 12 | 0 | 3 | 20.30 | 20.35 | 20.32 | 20.8 | | | | |
| | 12 | 7 | 3 | 20.32 | 20.40 | 20.29 | 20.8 | | | | |
| | 12 | 13 | 3 | 20.36 | 20.36 | 20.13 | 20.8 | | | | |
| | 25 | 0 | 3 | 20.37 | 20.27 | 20.28 | 20.8 | | | | |

8.2 Wi-Fi 2.4GHz (DTS Band)

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

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 802.11g/n/ac/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.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Measured Results

| Band | Mode | Data Rate | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | | Tune-up Limit (dBm) | | SAR Test (Yes/No) | |
|--------------|---------|-----------|------|-------------|---------------------|--------------|---------------------|--------------|-------------------|--------------|
| | | | | | Chain A Aux | Chain B Main | Chain A Aux | Chain B Main | Chain A Aux | Chain B Main |
| 2.4GHz (DTS) | 802.11b | 1 Mbps | 1 | 2412 | 19.27 | 21.49 | 19.5 | 21.5 | Yes | Yes |
| | | | 6 | 2437 | 19.24 | 21.41 | | | | |
| | | | 11 | 2462 | 19.33 | 21.48 | | | | |
| | 802.11g | 6 Mbps | 1 | 2412 | 17.92 | 17.97 | 18.0 | 18.0 | No | No |
| | | | 6 | 2437 | 17.97 | 17.94 | | | | |
| | | | 11 | 2462 | 17.98 | 17.86 | | | | |

MIMO Measured Results

| Band | Mode | Data Rate | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | | | Tune-up Limit (dBm) | SAR Test (Yes/No) |
|--------------|-----------------|-----------|------|-------------|---------------------|--------------|-------|---------------------|-------------------|
| | | | | | Chain A Aux | Chain B Main | MIMO | MIMO | MIMO |
| 2.4GHz (DTS) | 802.11n (HT20) | MCS0 | 1 | 2412 | 17.91 | 17.88 | 20.91 | 21.0 | Yes |
| | | | 6 | 2437 | 17.88 | 17.86 | 20.88 | | |
| | | | 11 | 2462 | 17.86 | 17.81 | 20.85 | | |
| | 802.11ax (HE20) | MCS0 | 1 | 2412 | 17.77 | 17.83 | 20.81 | 21.0 | No |
| | | | 6 | 2437 | 17.72 | 17.75 | 20.75 | | |
| | | | 11 | 2462 | 17.75 | 17.67 | 20.72 | | |
| | 802.11n (HT40) | MCS0 | 3 | 2422 | 17.27 | 16.68 | 20.00 | 20.2 | No |
| | | | 6 | 2437 | 17.12 | 16.58 | 19.87 | | |
| | | | 9 | 2452 | 17.45 | 16.62 | 20.07 | | |
| | 802.11ax (HE40) | MCS0 | 3 | 2422 | 17.24 | 16.71 | 19.99 | 20.2 | No |
| | | | 6 | 2437 | 17.17 | 16.64 | 19.92 | | |
| | | | 9 | 2452 | 17.43 | 16.67 | 20.08 | | |

8.3 Wi-Fi 5GHz (U-NII Bands)

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

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.

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. Additional output power measurements were not deemed necessary.

Measured Results

| Band | Mode | Data Rate | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | | Tune-up Limit (dBm) | | SAR Test (Yes/No) | |
|------------------|------------------|-----------|------|-------------|---------------------|--------------|---------------------|--------------|-------------------|--------------|
| | | | | | Chain A Aux | Chain B Main | Chain A Aux | Chain B Main | Chain A Aux | Chain B Main |
| 5.2GHz (U-NII 1) | 802.11a | 6 Mbps | 36 | 5180 | 16.62 | 15.28 | 17.0 | 15.5 | Yes | Yes |
| | | | 40 | 5200 | 16.73 | 15.36 | | | | |
| | | | 44 | 5220 | 16.61 | 15.31 | | | | |
| | | | 48 | 5240 | 16.57 | 15.43 | | | | |
| | 802.11n (HT20) | MCS0 | 36 | 5180 | 16.73 | 15.28 | 17.0 | 15.5 | No | No |
| | | | 40 | 5200 | 16.71 | 15.29 | | | | |
| | | | 44 | 5220 | 16.68 | 15.24 | | | | |
| | | | 48 | 5240 | 16.65 | 15.11 | | | | |
| | 802.11ac (VHT20) | MCS0 | 36 | 5180 | 16.70 | 15.30 | 17.0 | 15.5 | No | No |
| | | | 40 | 5200 | 16.68 | 15.26 | | | | |
| | | | 44 | 5220 | 16.66 | 15.22 | | | | |
| | | | 48 | 5240 | 16.62 | 15.24 | | | | |
| | 802.11ax (HE20) | MCS0 | 36 | 5180 | 16.72 | 15.33 | 17.0 | 15.5 | No | No |
| | | | 40 | 5200 | 16.67 | 15.29 | | | | |
| | | | 44 | 5220 | 16.68 | 15.26 | | | | |
| | | | 48 | 5240 | 16.60 | 15.27 | | | | |
| | 802.11n (HT40) | MCS0 | 38 | 5190 | 16.42 | 14.94 | 16.5 | 15.0 | No | No |
| | | | 46 | 5230 | 16.23 | 14.73 | | | | |
| | 802.11ac (VHT40) | MCS0 | 38 | 5190 | 16.32 | 14.70 | 16.5 | 15.0 | No | No |
| | | | 46 | 5230 | 16.26 | 14.41 | | | | |
| 802.11ax (HE40) | MCS0 | 38 | 5190 | 16.28 | 14.68 | 16.5 | 15.0 | No | No | |
| | | 46 | 5230 | 16.23 | 14.37 | | | | | |
| 802.11ac (VHT80) | MCS0 | 42 | 5210 | 16.34 | 14.82 | 16.5 | 15.0 | No | No | |
| 802.11ax (HE80) | MCS0 | 42 | 5210 | 16.3 | 14.57 | 16.5 | 15.0 | No | No | |

8.4 Bluetooth.

Maximum tune-up tolerance limit is 10.00 dBm. This power level qualifies for Measure of SAR testing.

| Max. RF Output Power | Antenna Gain | 2.99 dBi | Frequency | At separation distance of | Exemption Limits (mW) | Result |
|----------------------|--------------|----------|-----------|---------------------------|-----------------------|-------------|
| | (dBm) | (mW) | | | | |
| Conducted | 10.00 | 10.00 | 2450 MHz | ≤ 5 mm | 4 | Measure SAR |
| E.I.R.P | 12.99 | 19.91 | | | | |

Average Power Measured Results

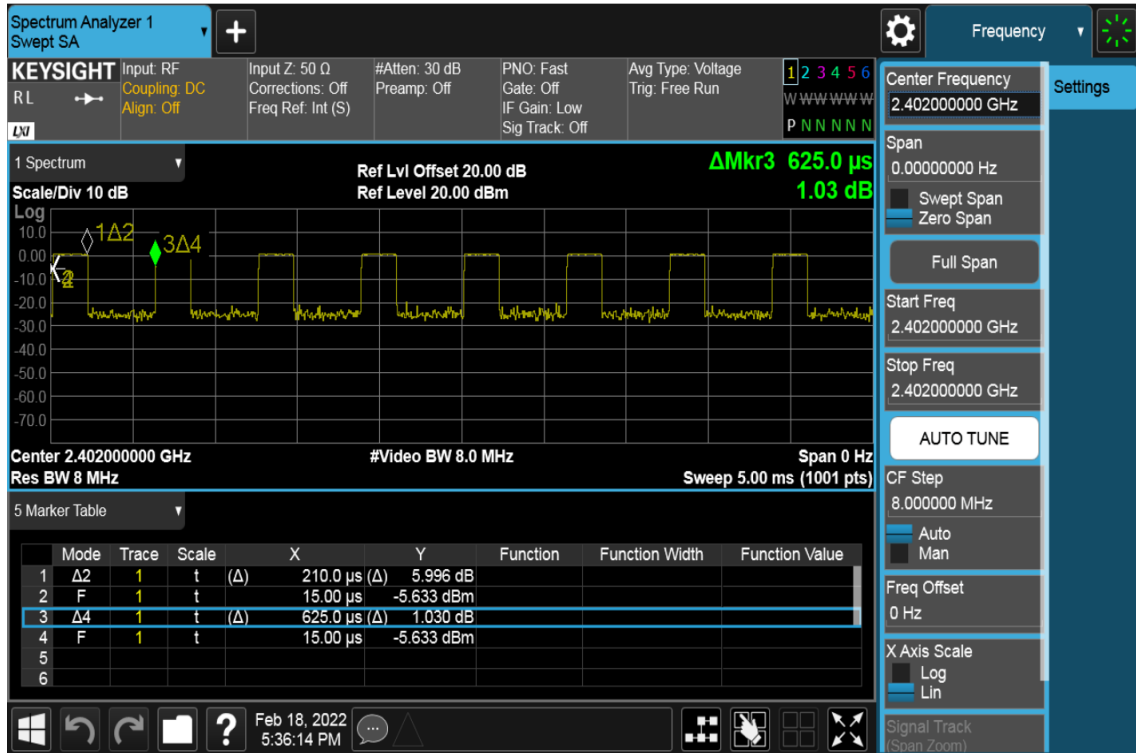
| Band (GHz) | Mode | Data Rate | Ch # | Freq. (MHz) | Meas. Avg Pwr (dBm) | Meas. Avg Pwr (mW) | Tune-up Limit (dBm) | SAR Test (Yes/No) |
|------------|----------|-----------|------|-------------|---------------------|--------------------|---------------------|-------------------|
| 2.4 | LE, GFSK | 2 Mbps | 0 | 2402 | 9.72 | 9.38 | 10.0 | Yes |
| | | | 19 | 2440 | 9.92 | 9.82 | | |
| | | | 39 | 2480 | 9.97 | 9.93 | | |

Duty Factor Measured Results

| Mode | Type | T on (ms) | Period (ms) | Duty Cycle | Crest Factor (1/duty cycle) |
|------|------|-----------|-------------|------------|-----------------------------|
| GFSK | DH5 | 0.21 | 0.625 | 33.60% | 2.98 |

Duty Cycle plots

GFSK



9 Measured and Reported (Scaled) SAR Results

9.1 LTE Band 1 (20MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 19100 | 1900.0 | 1 | 0 | 24.0 | 23.50 | 0.433 | 0.486 | 0.239 | 0.268 | |
| | | | Rear | | | | | 50 | 0 | 23.0 | 22.41 | 0.513 | 0.588 | |
| | | | Edge 4 | 19100 | 1900.0 | 1 | 0 | 24.0 | 23.50 | 0.702 | 0.788 | 0.375 | 0.421 | 1 |
| | | | Edge 4 | | | | | 50 | 0 | 23.0 | 22.41 | 0.597 | 0.684 | |

9.2 LTE Band 4 (20MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|-----------------|--------------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 20300 | 1745.0 | 1 | 0 | 24.0 | 23.59 | 0.604 | 0.664 | 0.330 | 0.363 | |
| | | | Rear | | | | | 50 | 24 | 23.0 | 22.57 | 0.627 | 0.692 | |
| | | | Edge 4 | 20300 | 1745.0 | 1 | 0 | 24.0 | 23.59 | 0.629 | 0.691 | 0.347 | 0.381 | |
| | | | Edge 4 | | | | | 50 | 24 | 23.0 | 22.57 | 0.677 | 0.747 | |

9.3 LTE Band 5 (10MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 20450 | 829.0 | 1 | 0 | 24.3 | 24.03 | 0.255 | 0.271 | 0.159 | 0.169 | |
| | | | Rear | | | | | 25 | 0 | 23.3 | 22.81 | 0.204 | 0.228 | |
| | | | Edge 4 | 20450 | 829.0 | 1 | 0 | 24.3 | 24.03 | 0.398 | 0.424 | 0.232 | 0.247 | 3 |
| | | | Edge 4 | | | | | 25 | 0 | 23.3 | 22.81 | 0.320 | 0.358 | |

9.4 LTE Band 12 (10MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 23095 | 707.5 | 1 | 0 | 24.0 | 23.47 | 0.291 | 0.329 | 0.213 | 0.241 | 4 |
| | | | Rear | | | | | 25 | 25 | 23.0 | 22.45 | 0.234 | 0.266 | |
| | | | Edge 4 | 23095 | 707.5 | 1 | 0 | 24.0 | 23.47 | 0.201 | 0.227 | 0.132 | 0.149 | |
| | | | Edge 4 | | | | | 25 | 25 | 23.0 | 22.45 | 0.159 | 0.180 | |

9.5 LTE Band 13 (10MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|-----------------|--------------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 23230 | 782.0 | 1 | 0 | 24.0 | 23.16 | 0.187 | 0.227 | 0.147 | 0.178 | |
| | | | Rear | | | | | 25 | 0 | 23.0 | 22.05 | 0.223 | 0.278 | |
| | | | Edge 4 | 23230 | 782.0 | 1 | 0 | 24.0 | 23.16 | 0.142 | 0.172 | 0.086 | 0.104 | |
| | | | Edge 4 | | | | | 25 | 0 | 23.0 | 22.05 | 0.203 | 0.253 | |

9.6 LTE Band 14 (10MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------|-----------------|--------------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 23330 | 793.0 | 1 | 0 | 24.0 | 23.05 | 0.211 | 0.263 | 0.135 | 0.168 | |
| | | | Rear | | | | | 25 | 0 | 23.0 | 22.03 | 0.171 | 0.214 | |
| | | | Edge 4 | 23330 | 793.0 | 1 | 0 | 24.0 | 23.05 | 0.145 | 0.180 | 0.085 | 0.106 | |
| | | | Edge 4 | | | | | 25 | 0 | 23.0 | 22.03 | 0.268 | 0.335 | |

9.7 LTE Band 26 (15MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 26965 | 841.5 | 1 | 0 | 24.0 | 23.79 | 0.230 | 0.241 | 0.141 | 0.148 | |
| | | | Rear | | | | | 36 | 39 | 23.0 | 22.76 | 0.180 | 0.190 | |
| | | | Edge 4 | 26965 | 841.5 | 1 | 0 | 24.0 | 23.79 | 0.371 | 0.389 | 0.217 | 0.228 | 7 |
| | | | Edge 4 | | | | | 36 | 39 | 23.0 | 22.76 | 0.303 | 0.320 | |

9.8 LTE Band 41 (20MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 39750 | 2506.0 | 1 | 0 | 23.8 | 23.24 | 0.198 | 0.225 | 0.099 | 0.113 | |
| | | | Rear | | | 50 | 0 | 22.8 | 22.08 | 0.156 | 0.184 | 0.078 | 0.092 | |
| | | | Rear | 40185 | 2549.5 | 1 | 0 | 23.8 | 23.27 | 0.295 | 0.333 | 0.244 | 0.276 | 8 |
| | | | Rear | | | 50 | 24 | 22.8 | 22.24 | 0.262 | 0.298 | 0.226 | 0.257 | |
| | | | Rear | 40620 | 2593.0 | 1 | 0 | 23.8 | 23.23 | 0.183 | 0.209 | 0.092 | 0.105 | |
| | | | Rear | | | 50 | 0 | 22.8 | 22.39 | 0.144 | 0.158 | 0.073 | 0.080 | |
| | | | Rear | 41055 | 2636.5 | 1 | 0 | 23.8 | 23.26 | 0.224 | 0.254 | 0.112 | 0.127 | |
| | | | Rear | | | 50 | 50 | 22.8 | 22.17 | 0.175 | 0.202 | 0.087 | 0.101 | |
| | | | Rear | 41490 | 2680.0 | 1 | 0 | 23.8 | 22.99 | 0.192 | 0.231 | 0.095 | 0.114 | |
| | | | Rear | | | 50 | 50 | 22.8 | 21.96 | 0.137 | 0.166 | 0.068 | 0.083 | |
| | | | Edge 4 | 40185 | 2549.5 | 1 | 0 | 23.8 | 23.27 | 0.230 | 0.260 | 0.116 | 0.131 | |
| | | | Edge 4 | | | 50 | 24 | 22.8 | 22.24 | 0.180 | 0.205 | 0.090 | 0.102 | |

9.9 LTE Band 48 (20MHz Bandwidth)

| RF Exposure Conditions | Mode | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | RB Allocation | RB offset | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|------|------------|---------------|-------|-------------|---------------|-----------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | QPSK | 0 | Rear | 55990 | 3625.0 | 1 | 0 | 23.8 | 23.75 | 0.476 | 0.482 | 0.202 | 0.204 | |
| | | | Rear | | | 50 | 0 | 22.8 | 22.05 | 0.232 | 0.276 | 0.099 | 0.118 | |
| | | | Edge 4 | 55990 | 3625.0 | 1 | 0 | 23.8 | 23.75 | 0.601 | 0.608 | 0.191 | 0.193 | 9 |
| | | | Edge 4 | | | 50 | 0 | 22.8 | 22.05 | 0.306 | 0.364 | 0.097 | 0.115 | |

9.10 Wi-Fi 2.4GHz

| RF Exposure Conditions | Mode | Antenna | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Duty Cycle | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. | | | |
|------------------------|----------------|-------------|------------|---------------|-------|-------------|------------|---------------|-------|----------------|--------|-----------------|--------|----------|--------------|-------|-------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | | | | |
| Body | 802.11b | SISO Main B | 0 | Rear | 1 | 2412 | 99.05% | 21.5 | 21.49 | 0.471 | 0.477 | 0.221 | 0.224 | | | | |
| | | | | Edge 2 | | | | 21.5 | 21.49 | 0.854 | 0.864 | 0.399 | 0.404 | | | | |
| | | | | Edge 2 | | | | 6 | 2437 | 99.05% | 21.5 | 21.41 | 0.837 | | 0.863 | 0.392 | 0.404 |
| | | | | Edge 2 | | | | 11 | 2462 | 99.05% | 21.5 | 21.48 | 0.960 | | 0.974 | 0.452 | 0.458 |
| Body | 802.11b | SISO Aux A | 0 | Rear | 11 | 2462 | 99.05% | 19.5 | 19.33 | 0.257 | 0.270 | 0.148 | 0.155 | | | | |
| | | | | Edge 4 | | | | 11 | 2462 | 99.05% | 19.5 | 19.33 | 0.656 | | 0.689 | 0.328 | 0.344 |
| Body | 802.11n (HT20) | MIMO A+B | 0 | Rear | 1 | 2412 | 99.06% | 21.0 | 20.91 | 0.211 | 0.218 | 0.118 | 0.122 | | | | |
| | | | | Edge 1 | | | | 1 | 2412 | 99.06% | 21.0 | 20.91 | 0.072 | | 0.074 | 0.038 | 0.039 |
| | | | | Edge 2 | | | | 1 | 2412 | 99.06% | 21.0 | 20.91 | 0.319 | | 0.330 | 0.151 | 0.156 |
| | | | | Edge 4 | | | | 1 | 2412 | 99.06% | 21.0 | 20.91 | 0.442 | | 0.457 | 0.222 | 0.229 |

9.11 Wi-Fi 5GHz

| Frequency Band | Mode | Antenna | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Duty Cycle | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------|---------|-------------|------------|---------------|-------|-------------|------------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| 5.2GHz (U-NII 1) | 802.11a | SISO Main B | 0 | Rear | 48 | 5240 | 98.17% | 15.5 | 15.43 | 0.271 | 0.281 | 0.097 | 0.100 | |
| | | | | Edge 2 | 48 | 5240 | 98.17% | 15.5 | 15.43 | 0.540 | 0.559 | 0.192 | 0.199 | 13 |
| 5.2GHz (U-NII 1) | 802.11a | SISO Aux A | 0 | Rear | 40 | 5200 | 98.17% | 17.0 | 16.73 | 0.486 | 0.527 | 0.183 | 0.198 | 14 |
| | | | | Edge 4 | 40 | 5200 | 98.17% | 17.0 | 16.73 | 0.388 | 0.421 | 0.131 | 0.142 | |

9.12 Bluetooth

| RF Exposure Conditions | Mode | Antenna | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Duty Cycle | Power (dBm) | | 1-g SAR (W/kg) | | 10-g SAR (W/kg) | | Plot No. |
|------------------------|----------|---------|------------|---------------|-------|-------------|------------|---------------|-------|----------------|--------------|-----------------|--------|----------|
| | | | | | | | | Tune-up Limit | Meas. | Meas. | Scaled | Meas. | Scaled | |
| Body | LE_2Mbps | Aux A | 0 | Rear | 39 | 2480 | 33.60% | 10.0 | 9.97 | 0.025 | 0.075 | 0.012 | 0.036 | |
| | | | | Edge 4 | 39 | 2480 | 33.60% | 10.0 | 9.97 | 0.057 | 0.172 | 0.029 | 0.088 | 15 |

10 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 <0.8 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 .

Test Results

WiFi 2.4GHz

| RF Exposure Conditions | Mode | Antenna | Dist. (mm) | Test Position | Ch #. | Freq. (MHz) | Meas. SAR (W/kg) | | Largest to Smallest SAR Ratio | Delta Target $\leq 5\%$ |
|------------------------|---------|-------------|------------|---------------|-------|-------------|------------------|----------|-------------------------------|-------------------------|
| | | | | | | | Original | Repeated | | |
| Body | 802.11b | SISO Main B | 0 | Edge 2 | 11 | 2462 | 0.960 | 0.955 | 1.01 | -1% |

Note(s):

Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is < 1.20 .

11 Simultaneous Transmission SAR Analysis

KDB 447498 D01 General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

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:

$$\text{SPLSR} = (\text{SAR}_1 + \text{SAR}_2)^{1.5} / R_i$$

Where:

SAR₁ is the highest measured 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 measured 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:

$$(\text{SAR}_1 + \text{SAR}_2)^{1.5} / R_i \leq 0.04$$

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

Simultaneous Transmission Condition

| RF Exposure Condition | Item | Capable Transmit Configurations | | | | |
|-----------------------|------|---------------------------------|--------------|--------------|----|----|
| Standalone | 1 | LTE | + | DTS (Main) | | |
| | 2 | LTE | + | DTS (Main) | + | BT |
| | 3 | LTE | + | DTS (Aux) | | |
| | 4 | LTE | + | U-NII (Main) | | |
| | 5 | LTE | + | U-NII (Main) | + | BT |
| | 6 | LTE | + | U-NII (Aux) | | |
| | 7 | LTE | + | BT | | |
| | 8 | LTE | + | DTS (MIMO) | | |
| | 9 | LTE | + | U-NII (MIMO) | + | BT |
| | 10 | | DTS (Main) | + | BT | |
| | 11 | | U-NII (Main) | + | BT | |
| | 12 | | U-NII (MIMO) | + | BT | |

Notes:

1. Wi-Fi 2.4GHz & Wi-Fi 5GHz cannot transmit simultaneously.
2. Bluetooth is used with Wi-Fi and WWAN antennas are active.
3. Wi-Fi SISO mode SAR result can also represent for MIMO mode SAR and is used for MIMO mode simultaneous transmission analysis because antennas are not overlapping and the MIMO mode maximum power is equal or less than SISO mode.

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Estimated SAR for Simultaneous Transmission SAR Analysis Considerations for SAR estimation

1. When standalone SAR test exclusion applies, standalone SAR must also be estimated to determine simultaneous transmission SAR test exclusion.
2. Please refer to Estimated SAR Tables to see which test positions are inherently compliant as they consist of only estimated SAR values for all applicable transmitters and consequently will always have sum of SAR values < 1.2 W/kg. Simultaneous transmission SAR analysis was therefore not performed for these test positions.
3. Refer to Appendix C of KDB 447498 D01 and multiply the corresponding ratio by the 1-g SAR limit of 1.6 W/kg SAR.

Estimated SAR for 0.3 GHz ≤ f < 1.5 GHz

| Tx Interface | Frequency (GHz) | Output Power | | Separation Distances (cm) | | | | | P _{EM} (mW) | | | | | Exemption result | | | | |
|--------------|-----------------|--------------|-----|---------------------------|-------|-------|-------|-------|----------------------|-------|-------|-------|-------|------------------|-------|-------|-------|-----------|
| | | dBm | mW | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 |
| LTE Band 5 | 0.844 | 24.30 | 269 | 1 | 6.7 | 25.4 | 6.4 | 1 | 24 | 364 | 1722 | 341 | 24 | -MEASURE- | 1.182 | 0.250 | 1.262 | -MEASURE- |
| LTE Band 12 | 0.711 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 29 | 346 | 1450 | 326 | 29 | -MEASURE- | 1.161 | 0.277 | 1.232 | -MEASURE- |
| LTE Band 13 | 0.782 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 26 | 356 | 1695 | 334 | 26 | -MEASURE- | 1.128 | 0.252 | 1.202 | -MEASURE- |
| LTE Band 14 | 0.793 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 26 | 358 | 1618 | 336 | 26 | -MEASURE- | 1.122 | 0.248 | 1.195 | -MEASURE- |
| LTE Band 26 | 0.8415 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 24 | 364 | 1717 | 341 | 24 | -MEASURE- | 1.103 | 0.234 | 1.178 | -MEASURE- |

Estimated SAR for 1.5 GHz ≤ f ≤ 6 GHz

| Tx Interface | Frequency (GHz) | Output Power | | Separation Distances (cm) | | | | | P _{EM} (mW) | | | | | Exemption result | | | | |
|-------------------|-----------------|--------------|-----|---------------------------|-------|-------|-------|-------|----------------------|-------|-------|-------|-------|------------------|-----------|-----------|-------|-----------|
| | | dBm | mW | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 | Rear | Edge1 | Edge2 | Edge3 | Edge4 |
| LTE Band 2 | 1.9 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 12 | 406 | 3060 | 373 | 12 | -MEASURE- | 0.989 | 0.131 | 1.077 | -MEASURE- |
| LTE Band 4 | 1.745 | 24.00 | 251 | 1 | 6.7 | 25.4 | 6.4 | 1 | 13 | 414 | 3060 | 381 | 13 | -MEASURE- | 0.970 | 0.131 | 1.054 | -MEASURE- |
| LTE Band 41 | 2.68 | 23.80 | 240 | 1 | 6.7 | 25.4 | 6.4 | 1 | 10 | 374 | 3060 | 343 | 10 | -MEASURE- | 1.027 | 0.125 | 1.120 | -MEASURE- |
| LTE Band 48 | 3.69 | 23.80 | 240 | 1 | 6.7 | 25.4 | 6.4 | 1 | 8 | 347 | 3060 | 317 | 8 | -MEASURE- | 1.107 | 0.125 | 1.211 | -MEASURE- |
| WiFi 2.4GHz(Main) | 2.462 | 21.50 | 141 | 0.6 | 6 | 0.9 | 11.5 | 26.3 | 4 | 309 | 8 | 1067 | 3060 | -MEASURE- | 0.730 | -MEASURE- | 0.211 | 0.074 |
| WiFi 5.2GHz(Main) | 5.24 | 15.50 | 35 | 0.6 | 6 | 0.9 | 11.5 | 26.3 | 2 | 254 | 5 | 975 | 3060 | -MEASURE- | 0.220 | -MEASURE- | 0.057 | 0.018 |
| WiFi 2.4GHz(Aux) | 2.462 | 19.50 | 89 | 0.6 | 3.2 | 26.1 | 14.3 | 1.1 | 4 | 94 | 3060 | 1616 | 12 | -MEASURE- | 1.515 | 0.047 | 0.088 | -MEASURE- |
| WiFi 5.2GHz(Aux) | 5.24 | 17.00 | 50 | 0.6 | 3.2 | 26.1 | 14.3 | 1.1 | 2 | 69 | 3060 | 1529 | 8 | -MEASURE- | 1.159 | 0.026 | 0.052 | -MEASURE- |
| WiFi 2.4GHz(MIMO) | 2.462 | 21.01 | 126 | 0.6 | 3.2 | 0.9 | 11.5 | 1.1 | 4 | 94 | 8 | 1067 | 12 | -MEASURE- | -MEASURE- | -MEASURE- | 0.189 | -MEASURE- |
| Bluetooth(Aux) | 2.48 | 10.00 | 10 | 0.6 | 3.2 | 26.1 | 14.3 | 1.1 | 4 | 93 | 3060 | 1615 | 12 | -MEASURE- | 0.172 | 0.005 | 0.010 | 1.333 |

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

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.588 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 1.065 | 1.140 | 0.858 | 0.663 | 0.806 | 0.869 | 0.944 | 1.115 | 1.471 |
| Edge 1 | 0.989 | | | 0.074 | | | 0.172 | | | | | 1.063 | | | | |
| Edge 2 | 0.131 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.105 | 1.110 | 0.178 | 0.136 | 0.461 | 0.690 | 0.695 | 0.157 | 0.721 |
| Edge 4 | 0.788 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.862 | 1.034 | 1.477 | 0.960 | 1.245 | 0.806 | 0.978 | 1.209 | 1.399 |

11.2 Sum of the SAR for LTE Band 4 & Wi-Fi & BT

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.692 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 1.169 | 1.244 | 0.962 | 0.767 | 0.910 | 0.973 | 1.048 | 1.219 | 1.575 |
| Edge 1 | 0.970 | | | 0.074 | | | 0.172 | | | | | 1.044 | | | | |
| Edge 2 | 0.131 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.105 | 1.110 | 0.178 | 0.136 | 0.461 | 0.690 | 0.695 | 0.157 | 0.721 |
| Edge 4 | 0.747 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.821 | 0.993 | 1.436 | 0.919 | 1.204 | 0.765 | 0.937 | 1.168 | 1.358 |

11.3 Sum of the SAR for LTE Band 5 & Wi-Fi & BT

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.271 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.748 | 0.823 | 0.541 | 0.346 | 0.489 | 0.552 | 0.627 | 0.798 | 1.154 |
| Edge 1 | 1.182 | | | 0.074 | | | 0.172 | | | | | 1.256 | | | | |
| Edge 2 | 0.250 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.224 | 1.229 | 0.297 | 0.255 | 0.580 | 0.809 | 0.814 | 0.276 | 0.840 |
| Edge 4 | 0.424 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.498 | 0.670 | 1.113 | 0.596 | 0.881 | 0.442 | 0.614 | 0.845 | 1.035 |

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

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.329 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.806 | 0.881 | 0.599 | 0.404 | 0.547 | 0.610 | 0.685 | 0.856 | 1.212 |
| Edge 1 | 1.161 | | | 0.074 | | | 0.172 | | | | | 1.235 | | | | |
| Edge 2 | 0.277 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.251 | 1.256 | 0.324 | 0.282 | 0.607 | 0.836 | 0.841 | 0.303 | 0.867 |
| Edge 4 | 0.227 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.301 | 0.473 | 0.916 | 0.399 | 0.684 | 0.245 | 0.417 | 0.648 | 0.838 |

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

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.278 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.755 | 0.830 | 0.548 | 0.353 | 0.496 | 0.559 | 0.634 | 0.805 | 1.161 |
| Edge 1 | 1.128 | | | 0.074 | | | 0.172 | | | | | 1.202 | | | | |
| Edge 2 | 0.252 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.226 | 1.231 | 0.299 | 0.257 | 0.582 | 0.811 | 0.816 | 0.278 | 0.842 |
| Edge 4 | 0.253 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.327 | 0.499 | 0.942 | 0.425 | 0.710 | 0.271 | 0.443 | 0.674 | 0.864 |

11.6 Sum of the SAR for LTE Band 14 & Wi-Fi & BT

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.263 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.740 | 0.815 | 0.533 | 0.338 | 0.481 | 0.544 | 0.619 | 0.790 | 1.146 |
| Edge 1 | 1.122 | | | 0.074 | | | 0.172 | | | | | 1.196 | | | | |
| Edge 2 | 0.248 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.222 | 1.227 | 0.295 | 0.253 | 0.578 | 0.807 | 0.812 | 0.274 | 0.838 |
| Edge 4 | 0.335 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.409 | 0.581 | 1.024 | 0.507 | 0.792 | 0.353 | 0.525 | 0.756 | 0.946 |

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

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.241 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.718 | 0.793 | 0.511 | 0.316 | 0.459 | 0.522 | 0.597 | 0.768 | 1.124 |
| Edge 1 | 1.103 | | | 0.074 | | | 0.172 | | | | | 1.177 | | | | |
| Edge 2 | 0.234 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.208 | 1.213 | 0.281 | 0.239 | 0.564 | 0.793 | 0.798 | 0.260 | 0.824 |
| Edge 4 | 0.389 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.463 | 0.635 | 1.078 | 0.561 | 0.846 | 0.407 | 0.579 | 0.810 | 1.000 |

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

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | DTS | | | U-NII | | BT | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.333 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.810 | 0.885 | 0.603 | 0.408 | 0.551 | 0.614 | 0.689 | 0.860 | 1.216 |
| Edge 1 | 1.027 | | | 0.074 | | | 0.172 | | | | | 1.101 | | | | |
| Edge 2 | 0.125 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.099 | 1.104 | 0.172 | 0.130 | 0.455 | 0.684 | 0.689 | 0.151 | 0.715 |
| Edge 4 | 0.260 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.334 | 0.506 | 0.949 | 0.432 | 0.717 | 0.278 | 0.450 | 0.681 | 0.871 |

11.9 Sum of the SAR for LTE Band 48 & Wi-Fi & BT

| Test Position | Standalone SAR (W/kg) | | | | | | | Σ 1-g SAR (W/kg) | | | | | | | | |
|---------------|-----------------------|-----------|-----------|--------|-----------|-----------|-------|------------------|-----------------|------------|-----------|------------|--------------|-------------------|--------------|-------------------|
| | WWAN | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | BT ⑦ | WWAN + DTS | WWAN + DTS + BT | WWAN + DTS | WWAN + BT | WWAN + DTS | WWAN + U-NII | WWAN + U-NII + BT | WWAN + U-NII | WWAN + U-NII + BT |
| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ①+② | ①+②+⑦ | ①+③ | ①+⑦ | ①+④ | ①+⑤ | ①+⑤+⑦ | ①+⑥ | ①+⑤+⑥+⑦ |
| Rear | 0.482 | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.959 | 1.034 | 0.752 | 0.557 | 0.700 | 0.763 | 0.838 | 1.009 | 1.365 |
| Edge 1 | 1.107 | | | 0.074 | | | 0.172 | | | | | 1.181 | | | | |
| Edge 2 | 0.125 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 1.099 | 1.104 | 0.172 | 0.130 | 0.455 | 0.684 | 0.689 | 0.151 | 0.715 |
| Edge 4 | 0.608 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.682 | 0.854 | 1.297 | 0.780 | 1.065 | 0.626 | 0.798 | 1.029 | 1.219 |

11.10 Sum of the SAR for Wi-Fi & BT

| Test Position | Standalone SAR (W/kg) | | | | | | Σ 1-g SAR (W/kg) | | | |
|---------------|-----------------------|-----------|--------|-----------|-----------|----------|------------------|------------|------------|-------|
| | DTS | | U-NII | | BT | DTS + BT | U-NII + U-NII | U-NII + BT | U-NII + BT | |
| | Chain B ② | Chain A ③ | MIMO ④ | Chain B ⑤ | Chain A ⑥ | ⑦ | ②+⑦ | ⑤+⑥ | ⑤+⑦ | ⑤+⑥+⑦ |
| Rear | 0.477 | 0.270 | 0.218 | 0.281 | 0.527 | 0.075 | 0.552 | 0.808 | 0.356 | 0.883 |
| Edge 1 | | | 0.074 | | | 0.172 | 0.172 | 0.000 | 0.172 | 0.172 |
| Edge 2 | 0.974 | 0.047 | 0.330 | 0.559 | 0.026 | 0.005 | 0.979 | 0.585 | 0.564 | 0.590 |
| Edge 4 | 0.074 | 0.689 | 0.457 | 0.018 | 0.421 | 0.172 | 0.246 | 0.439 | 0.190 | 0.611 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because either the sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

12 Equipment List & Calibration Status

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 | SPEAG | DAKS_VNA R140 | 0140417 | 2023/1/24 |
| Dielectric Assessment Kit | SPEAG | DAKS-3.5 | 1001 | 2023/1/26 |
| Thermometer | TES | TES-1306 | 210801061 | 2022/10/21 |

| System Check | | | | |
|--------------------------------|--------------|------------|------------|---------------|
| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Due Date |
| Signal Generator | Agilent | N5181A | MY50144143 | 2022/5/13 |
| Power Meter | Agilent | E4417A | MY52240003 | 2022/10/26 |
| Power Sensor | Agilent | E9301H | MY52200004 | 2022/10/24 |
| Power Sensor | Agilent | E9301H | MY51470002 | 2022/3/22 |
| Dual Directional Coupler | Agilent | 772D | MY46151242 | 2022/9/10 |
| Dual Directional Coupler(0-2G) | Agilent | 778D | MY48220468 | 2022/9/10 |
| Amplifier | EMCI | ZHL-42 | S1900976 | N/A |
| Amplifier | EMCI | ZVE-8G | S1900977 | N/A |
| Data Acquisition Electronic | SPEAG | DAE4 | 1260 | 2022/9/19 |
| Dosimetric E-Field Probe | SPEAG | EX3DV4 | 3665 | 2022/8/24 |
| Dosimetric E-Field Probe | SPEAG | EX3DV4 | 7686 | 2022/10/5 |
| System Validation Dipole | SPEAG | D750V3 | 1078 | 2022/6/21 |
| System Validation Dipole | SPEAG | D835V2 | 4d063 | 2022/10/18 |
| System Validation Dipole | SPEAG | D1750V2 | 1111 | 2022/4/14 |
| System Validation Dipole | SPEAG | D1900V2 | 5d173 | 2022/4/15 |
| System Validation Dipole | SPEAG | D2450V2 | 727 | 2022/4/14 |
| System Validation Dipole | SPEAG | D2600V2 | 1058 | 2022/8/26 |
| System Validation Dipole | SPEAG | D3500V2 | 1009 | 2022/10/21 |
| System Validation Dipole | SPEAG | D3700V2 | 1057 | 2022/11/23 |
| System Validation Dipole | SPEAG | D5GHzV2 | 1040 | 2022/6/3 |
| Humidity/Temp meter | TECPEL | DTM-303A | TP130074 | 2022/4/26 |
| Thermometer | TES | TES-1306 | 210801061 | 2022/10/21 |

| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Due Date |
|-------------------------------------|--------------|------------|------------|---------------|
| Wideband Radio Communication Tester | Anritsu | MT-8820C | 00000568 | 2022/12/21 |
| Wideband Radio Communication Tester | R&S | CMW500 | 165070 | 2022/10/11 |



13 Facilities

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

14 Appendixes

| Exhibit | Content |
|---------|--|
| 1 | SAR Setup Photos |
| 2 | SAR System Check Plots |
| 3 | Highest SAR Test Plots |
| 4 | SAR DAE and Probe Calibration Certificates |
| 5 | SAR Dipole Calibration Certificates |

END OF REPORT