# FCC SAR TEST REPORT

| | | |
|---|---|---|
| **FCC ID** | : | **PKRISGM2000A** |
| **Equipment** | : | **Wireless Hotspot Modem** |
| **Brand Name** | : | **Inseego** |
| **Model Name** | : | **M2000A** |
| **Marketing Name** | : | **M2000** |
| **Applicant** | : | **Inseego Corporation**<br>**9710 Scranton Road Suite 200, San Diego, CA 92121** |
| **Manufacturer** | : | **Inseego Corporation**<br>**9710 Scranton Road Suite 200, San Diego, CA 92121** |
| **Standard** | : | **FCC 47 CFR Part 2 (2.1093)** |

**The product was received on Aug. 06, 2020 and testing was started from Aug. 16, 2020 and completed on Sep. 11, 2020. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.**

**The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.**

**Approved by: Cona Huang / Deputy Manager**

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# History of this test report

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| FA041657-01A | 01 | Initial issue of report | Sep. 16, 2020 |
| FA041657-01A | 02 | Update Section 3.1 | Sep. 19, 2020 |
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# 1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Inseego Corporation, Wireless Hotspot Modem, M2000A, are as follows.

| Equipment Class | Frequency Band | Highest SAR Summary Body (Separation 10mm) 1g SAR (W/kg) | Highest Simultaneous Transmission 1g SAR (W/kg) |
|---|---|---|---|
| Licensed | WCDMA II | 0.79 | 1.34 |
| | WCDMA IV | 1.00 | |
| | WCDMA V | 0.94 | |
| | LTE Band 2 | 0.98 | |
| | LTE Band 7 | 0.99 | |
| | LTE Band 12 / 17 | 0.99 | |
| | LTE Band 13 | 0.92 | |
| | LTE Band 14 | 0.94 | |
| | LTE Band 2 / 25 | 0.91 | |
| | LTE Band 5 / 26 | 0.92 | |
| | LTE Band 30 | 0.51 | |
| | LTE Band 38 / 41 | 1.00 | |
| | LTE Band 48 | 0.40 | |
| | LTE Band 4 / 66 | 1.00 | |
| | LTE Band 71 | 0.49 | |
| | FR1 n2 | 1.00 | |
| | FR1 n5 | 0.80 | |
| | FR1 n12 | 0.89 | |
| | FR1 n66 | 1.00 | |
| | FR1 n71 | 0.66 | |
| Date of Testing: | | 2020/8/16 ~ 2020/9/11 | |

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

**Reviewed by: Jason Wang**
**Report Producer: Daisy Peng**

## 2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, if the KDB standards were not list within TAF approval, because it is include in the FCC KDB 447498.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 941225 D01 3G SAR Procedures v03r01
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01

# 3. Equipment Under Test (EUT) Information

## 3.1 General Information

| Product Feature & Specification | |
|---|---|
| Equipment Name | Wireless Hotspot Modem |
| Brand Name | Inseego |
| Model Name | M2000A |
| Marketing Name | M2000 |
| FCC ID | PKRISGM2000A |
| IMEI Code | 990016250010731 |
| Wireless Technology and Frequency Range | WCDMA Band II: 1850 MHz ~ 1910 MHz<br>WCDMA Band IV: 1710 MHz ~ 1755 MHz<br>WCDMA Band V: 824 MHz ~ 849 MHz<br>LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 7: 2500 MHz ~ 2570 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 14: 788 MHz ~ 798 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 25: 1850 MHz ~ 1915 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 30: 2305 MHz ~ 2315 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>LTE Band 71: 663 MHz ~ 698 MHz<br>5G NR n2 : 1850 MHz ~ 1910 MHz<br>5G NR n5 : 824 MHz ~ 849 MHz<br>5G NR n12 : 699 MHz ~ 716 MHz<br>5G NR n66 : 1710 MHz ~ 1780 MHz<br>5G NR n71 : 663 MHz ~ 698 MHz<br>5G NR n258a: 24.25GHz ~24.45GHz<br>5G NR n258b: 24.75GHz ~25.25GHz<br>5G NR n260: 37GHz ~ 40GHz<br>5G NR n261: 27.5GHz ~ 28.35GHz<br>WLAN 2.4GHz Band: 2400 MHz ~ 2483.5 MHz<br>WLAN 5.2GHz Band: 5150 MHz ~ 5250 MHz<br>WLAN 5.8GHz Band: 5725 MHz ~ 5825 MHz |
| Mode | RMC/AMR 12.2Kbps<br>HSDPA<br>HSUPA<br>DC-HSDPA<br>LTE: QPSK, 16QAM, 64QAM, 256QAM<br>5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM<br>WLAN: 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 |
| EUT Stage | Production Unit |

**Remark:**
1. There are two batteries selected battery 1 as the main testing and battery 2 will select worst case found in battery 1 performs.
2. The WLAN SAR result is referring to RF exposure lab SAR evaluation report, report no.: SAR.20200701 and use performed Sim_Tx analysis.

| Battery Information | | | | |
|---|---|---|---|---|
| Battery 1 | Brand Name | Inseego | | |
| | Manufacturer | Ningbo Veken Battery Co., Ltd | Model Name | 160007 |
| | Power Rating | 3.85Vdc, 3600mAh typical | Type | Li-ion polymer |
| Battery 2 | Brand Name | Inseego | | |
| | Manufacturer | Ningbo Veken Battery Co., Ltd | Model Name | 160006 |
| | Power Rating | 3.85Vdc, 050mAh typical | Type | Li-ion polymer |

## 3.2 General LTE SAR Test and Reporting Considerations

| Summarized necessary items addressed in KDB 941225 D05 v02r05 | |
|---|---|
| FCC ID | PKRISGM2000A |
| Equipment Name | Wireless Hotspot Modem |
| Operating Frequency Range of each LTE transmission band | LTE Band 2: 1850 MHz ~ 1910 MHz<br>LTE Band 4: 1710 MHz ~ 1755 MHz<br>LTE Band 5: 824 MHz ~ 849 MHz<br>LTE Band 7: 2500 MHz ~ 2570 MHz<br>LTE Band 12: 699 MHz ~ 716 MHz<br>LTE Band 13: 777 MHz ~ 787 MHz<br>LTE Band 14: 788 MHz ~ 798 MHz<br>LTE Band 17: 704 MHz ~ 716 MHz<br>LTE Band 25: 1850 MHz ~ 1915 MHz<br>LTE Band 26: 814 MHz ~ 849 MHz<br>LTE Band 30: 2305 MHz ~ 2315 MHz<br>LTE Band 38: 2570 MHz ~ 2620 MHz<br>LTE Band 41: 2496 MHz ~ 2690 MHz<br>LTE Band 48: 3550 MHz ~ 3700 MHz<br>LTE Band 66: 1710 MHz ~ 1780 MHz<br>LTE Band 71: 663 MHz ~ 698 MHz |
| Channel Bandwidth | LTE Band 02:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 04:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 05:1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 07: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 12:1.4MHz, 3MHz, 5MHz, 10MHz<br>LTE Band 13: 5MHz, 10MHz<br>LTE Band 14: 5MHz, 10MHz<br>LTE Band 17: 5MHz, 10MHz<br>LTE Band 25:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 26:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz<br>LTE Band 30: 5MHz, 10MHz<br>LTE Band 38: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 41: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz<br>LTE Band 71: 5MHz, 10MHz, 15MHz, 20MHz |
| uplink modulations used | QPSK / 16QAM / 64QAM / 256QAM |
| LTE Voice / Data requirements | Data only |
| LTE MPR permanently built-in by design | **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 |

| | |
|---|---|
| LTE A-MPR | In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI) |
| Spectrum plots for RB configuration | A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report. |

**Transmission (H, M, L) channel numbers and frequencies in each LTE band**

LTE Band 2

| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 18607 | 1850.7 | 18615 | 1851.5 | 18625 | 1852.5 | 18650 | 1855 | 18675 | 1857.5 | 18700 | 1860 |
| M | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 | 18900 | 1880 |
| H | 19193 | 1909.3 | 19185 | 1908.5 | 19175 | 1907.5 | 19150 | 1905 | 19125 | 1902.5 | 19100 | 1900 |

LTE Band 4

| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 19957 | 1710.7 | 19965 | 1711.5 | 19975 | 1712.5 | 20000 | 1715 | 20025 | 1717.5 | 20050 | 1720 |
| M | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 | 20175 | 1732.5 |
| H | 20393 | 1754.3 | 20385 | 1753.5 | 20375 | 1752.5 | 20350 | 1750 | 20325 | 1747.5 | 20300 | 1745 |

LTE Band 5

| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 20407 | 824.7 | 20415 | 825.5 | 20425 | 826.5 | 20450 | 829 |
| M | 20525 | 836.5 | 20525 | 836.5 | 20525 | 836.5 | 20525 | 836.5 |
| H | 20643 | 848.3 | 20635 | 847.5 | 20625 | 846.5 | 20600 | 844 |

LTE Band 7

| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 20775 | 2502.5 | 20800 | 2505 | 20825 | 2507.5 | 20850 | 2510 |
| M | 21100 | 2535 | 21100 | 2535 | 21100 | 2535 | 21100 | 2535 |
| H | 21425 | 2567.5 | 21400 | 2565 | 21375 | 2562.5 | 21350 | 2560 |

LTE Band 12

| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 23017 | 699.7 | 23025 | 700.5 | 23035 | 701.5 | 23060 | 704 |
| M | 23095 | 707.5 | 23095 | 707.5 | 23095 | 707.5 | 23095 | 707.5 |
| H | 23173 | 715.3 | 23165 | 714.5 | 23155 | 713.5 | 23130 | 711 |

LTE Band 13

| | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
|---|---|---|---|---|
| | Channel # | Freq.(MHz) | Channel # | Freq.(MHz) |
| L | 23205 | 779.5 | 23230 | 782 |
| M | 23230 | 782 | | |
| H | 23255 | 784.5 | | |

LTE Band 14

| | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
|---|---|---|---|---|
| | Channel # | Channel # | Channel # | Freq.(MHz) |
| L | 23305 | 790.5 | 23330 | 793 |
| M | 23330 | 793 | | |
| H | 23355 | 795.5 | | |

LTE Band 17

| | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
|---|---|---|---|---|
| | Channel # | Freq.(MHz) | Channel # | Freq. (MHz) |
| L | 23755 | 706.5 | 23780 | 709 |
| M | 23790 | 710 | 23790 | 710 |
| H | 23825 | 713.5 | 23800 | 711 |

LTE Band 25

| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 26047 | 1850.7 | 26055 | 1851.5 | 26065 | 1852.5 | 26090 | 1855 | 26115 | 1857.5 | 26140 | 1860 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| M | 26340 | 1880 | 26340 | 1880 | 26340 | 1880 | 26340 | 1880 | 26340 | 1880 | 26340 | 1880 |
| H | 26683 | 1914.3 | 26675 | 1913.5 | 26665 | 1912.5 | 26640 | 1910 | 26615 | 1907.5 | 26590 | 1905 |

| LTE Band 26 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 26697 | 814.7 | 26705 | 815.5 | 26715 | 816.5 | 26740 | 819 | 26765 | 821.5 |
| M | 26865 | 831.5 | 26865 | 831.5 | 26865 | 831.5 | 26865 | 831.5 | 26865 | 831.5 |
| H | 27033 | 848.3 | 27025 | 847.5 | 27015 | 846.5 | 26990 | 844 | 26965 | 841.5 |

| LTE Band 30 | | | | |
|---|---|---|---|---|
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | |
| | Channel # | Freq.(MHz) | Channel # | Freq.(MHz) |
| L | 27685 | 2307.5 | 27710 | 2310 |
| M | 27710 | 2310 | | |
| H | 27735 | 2312.5 | | |

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

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

| LTE Band 66 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bandwidth 1.4 MHz | | Bandwidth 3 MHz | | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 131979 | 1710.7 | 131987 | 1711.5 | 131997 | 1712.5 | 132022 | 1715 | 132047 | 1717.5 | 132072 | 1720 |
| M | 132322 | 1745 | 132322 | 1745 | 132322 | 1745 | 132322 | 1745 | 132322 | 1745 | 132322 | 1745 |
| H | 132665 | 1779.3 | 132657 | 1778.5 | 132647 | 1777.5 | 132622 | 1775 | 132597 | 1772.5 | 132572 | 1770 |

| LTE Band 71 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 133147 | 665.5 | 133172 | 668 | 133197 | 670.5 | 133222 | 673 |
| M | 133297 | 680.5 | 133297 | 680.5 | 133297 | 680.5 | 133297 | 680.5 |
| H | 133447 | 695.5 | 133422 | 693 | 133397 | 690.5 | 133372 | 688 |

| LTE Band 48 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 55265 | 3552.5 | 55290 | 3555 | 55315 | 3557.5 | 55340 | 3560 |
| L M | 55810 | 3607 | 55815 | 3607.5 | 55820 | 3608 | 55830 | 3609 |
| M H | 56170 | 3643 | 56165 | 3642.5 | 56160 | 3642 | 56150 | 3641 |
| H | 56715 | 3697.5 | 56690 | 3695 | 56665 | 3692.5 | 56640 | 3690 |

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

| 5G NR Information | |
|---|---|
| FCC | PKRISGM2000A |
| Equipment Name | Wireless Hotspot Modem |
| Operating Frequency Range of each 5G NR transmission band | 5G NR n2 : 1850 MHz ~ 1910 MHz<br>5G NR n5 : 824 MHz ~ 849 MHz<br>5G NR n12 : 699 MHz ~ 716 MHz<br>5G NR n66 : 1710 MHz ~ 1780 MHz<br>5G NR n71 : 663 MHz ~ 698 MHz |
| Channel Bandwidth | 5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz<br>5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz<br>5G NR n12: 5MHz, 10MHz, 15MHz<br>5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz<br>5G NR n71: 5MHz, 10MHz, 15MHz, 20MHz |
| SCS | FDD: SCS15KHz, TDD: SCS30KHz |
| uplink modulations used | DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM<br>CP-OFDM QPSK / 16QAM / 64QAM / 256QAM |
| A-MPR (Additional MPR) disabled for SAR Testing? | Yes |
| LTE Anchor Bands for n2 | LTE B5/12/66 |
| LTE Anchor Bands for n5 | LTE B2/66 |
| LTE Anchor Bands for n12 | LTE B2/66 |
| LTE Anchor Bands for n66 | LTE B2/5/12/66 |
| LTE Anchor Bands for n71 | LTE B2/66 |

**Transmission (H, M, L) channel numbers and frequencies in each 5G NR band**

NR Band 2

| | Bandwidth 5MHz | | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 370500 | 1852.5 | 371000 | 1855 | 371500 | 1857.5 | 372000 | 1860 |
| M | 376000 | 1880 | 376000 | 1880 | 376000 | 1880 | 376000 | 1880 |
| H | 381500 | 1907.5 | 381000 | 1905 | 380500 | 1902.5 | 380000 | 1900 |

NR Band 5

| | Bandwidth 5MHz | | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 165300 | 826.5 | 165800 | 829 | 166300 | 831.5 | 166800 | 834 |
| M | 167300 | 836.5 | 167300 | 836.5 | 167300 | 836.5 | 167300 | 836.5 |
| H | 169300 | 846.5 | 168800 | 844 | 168300 | 841.5 | 167800 | 839 |

NR Band 12

| | Bandwidth 5MHz | | Bandwidth 10MHz | | Bandwidth 15MHz | |
|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 140300 | 701.5 | 140800 | 704 | 141300 | 706.5 |
| M | 141500 | 707.5 | 141500 | 707.5 | 141500 | 707.5 |
| H | 142700 | 713.5 | 142200 | 711 | 141700 | 708.5 |

NR Band 66

| | Bandwidth 5MHz | | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 342500 | 1712.5 | 343000 | 1715 | 343500 | 1717.5 | 344000 | 1720 |
| M | 349000 | 1745 | 349000 | 1745 | 349000 | 1745 | 349000 | 1745 |
| H | 355500 | 1777.5 | 355000 | 1775 | 354500 | 1772.5 | 354000 | 1770 |

NR Band 71

| | Bandwidth 5MHz | | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | |
|---|---|---|---|---|---|---|---|---|
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 133100 | 665.5 | 133600 | 668 | 13410 | 670.5 | 134600 | 673 |
| M | 136100 | 680.5 | 136100 | 680.5 | 136100 | 680.5 | 136100 | 680.5 |
| H | 139100 | 695.5 | 138600 | 693 | 13810 | 690.5 | 137600 | 688 |

# 4. Smart Transmit feature for RF Exposure compliance

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of SAR_design_target or PD_design_target, below the predefined time-averaged power limit (i.e., input.power.limit for 5G mmW NR), for each characterized technology and band (refer to RF exposure part0 report)

Smart Transmit allows the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit EFS settings and maximum tune up output power Pmax configured for this EUT for various transmit conditions (Device State Index DSI).

**<$P_{limit}$ for supported technologies and bands ($P_{limit}$ in EFS file)>**

| Band | Antenna | Plimit* | Pmax * (dBm) |
|---|---|---|---|
| | | Time average | Time average |
| WCDMA II | 0 | 24.0 | 23.0 |
| WCDMA IV | 0 | 17.4 | 23.0 |
| WCDMA V | 0 | 23.3 | 23.0 |
| LTE B2 | 8 | 21.8 | 23.0 |
| LTE B66 | 8 | 24.0 | 23.0 |
| LTE B25/2 | 0 | 23.1 | 23.0 |
| LTE B66/4 | 0 | 21.0 | 23.0 |
| LTE B26/5 | 0 | 23.3 | 23.0 |
| LTE B7 | 0 | 17.5 | 23.0 |
| LTE B12 | 0 | 23.4 | 23.0 |
| LTE B13 | 0 | 23.2 | 23.0 |
| LTE B14 | 0 | 23.2 | 23.0 |
| LTE B30 | 0 | 22.9 | 20.0 |
| LTE B71 | 0 | 24.4 | 23.0 |
| LTE B41/38(PC3)** | 0 | 18.7 | 21.0 |
| LTE B41 (PC2)** | 0 | 18.7 | 21.9 |
| LTE B48* | 4 | 19.8 | 16.5 |
| FR1 n2 | 8 | 21.7 | 23.0 |
| FR1 n66 | 8 | 22.5 | 23.0 |
| FR1 n5 | 0 | 23.9 | 23.0 |
| FR1 n12 | 0 | 23.5 | 23.0 |
| FR1 n66 | 0 | 17.8 | 23.0 |
| FR1 n71 | 0 | 24.8 | 23.0 |

*$P_{max}$ is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + 1dB uncertainty.

**All $P_{limit}$ power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).

The max allowed output power is the $P_{limit}$ + 1dB device uncertainty, and if $P_{limit}$ is higher than $P_{max}$, the device output power will be $P_{max}$ instead.

# 5. RF Exposure Limits

## 5.1 Uncontrolled Environment

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

## 5.2 Controlled Environment

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

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

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

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

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

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

# 6. Specific Absorption Rate (SAR)

## 6.1 Introduction

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

## 6.2 SAR Definition

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

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

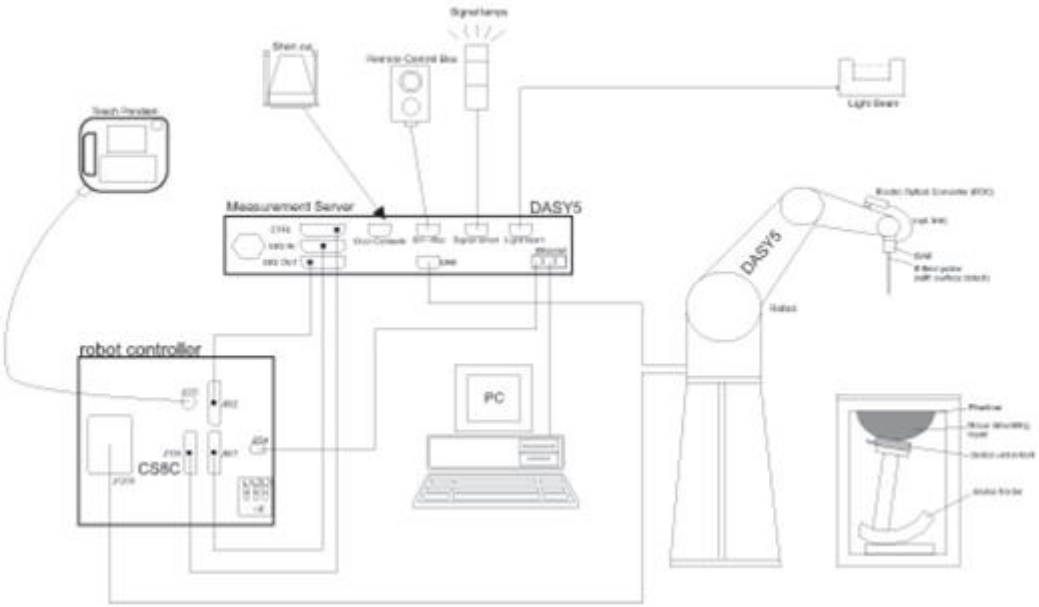
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

# 7. System Description and Setup

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




- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

## 7.1 Test Site Location

Sporton Lab and below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 0007) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

| Test Site | SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory | | | |
|---|---|---|---|---|
| Test Site Location | TW1190<br>No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333,<br>CHINESE TAIPEI | | TW0007<br>No. 58, Aly. 75, Ln. 564, Wehnua 3rd, Rd., Guishan Dist., Taoyuan City,<br>CHINESE TAIPEI | |
| Test Site No. | SAR01-HY | SAR03-HY | SAR08-HY | SAR09-HY |
| | SAR04-HY | SAR05-HY | SAR11-HY | SAR12-HY |
| | SAR06-HY | SAR10-HY | | |

## 7.2 E-Field Probe

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

**<ES3DV3 Probe>**

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

**<EX3DV4 Probe>**

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

## 7.3 Data Acquisition Electronics (DAE)

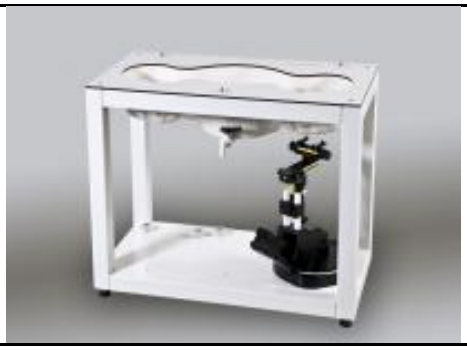
The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an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

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

**Fig 5.1 Photo of DAE**

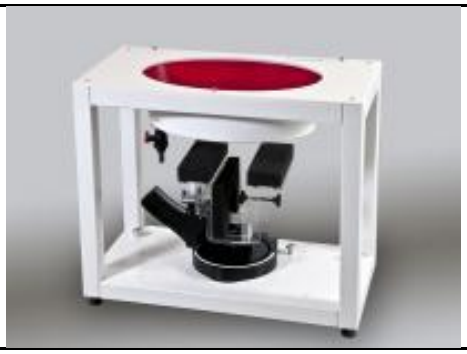
## 7.4 Phantom

**<SAM Twin Phantom>**

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

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

**<ELI Phantom>**

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

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

## 7.5 Device Holder

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

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

Mounting Device for Hand-Held Transmitters

Mounting Device Adaptor for Wide-Phones

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

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

Mounting Device for Laptops

# 8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

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

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

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

## 8.1 Spatial Peak SAR Evaluation

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

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

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

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

## 8.2 Power Reference Measurement

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

## 8.3 Area Scan

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

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

| | ≤ 3 GHz | > 3 GHz |
|---|---|---|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | 5 ± 1 mm | ½·δ·ln(2) ± 0.5 mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | 30° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: $\Delta x_{Area}$, $\Delta y_{Area}$ | ≤ 2 GHz: ≤ 15 mm<br>2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm<br>4 – 6 GHz: ≤ 10 mm |
| | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |

## 8.4 Zoom Scan

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

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

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

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

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

## 8.5 Volume Scan Procedures

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

## 8.6 Power Drift Monitoring

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

# 9. Test Equipment List

| Manufacturer | Name of Equipment | Type/Model | Serial Number | Calibration | |
|---|---|---|---|---|---|
| | | | | Last Cal. | Due Date |
| SPEAG | 750MHz System Validation Kit(2) | D750V3 | 1107 | Mar. 08, 2019 | Mar. 06, 2021 |
| SPEAG | 835MHz System Validation Kit | D835V2 | 4d167 | Nov. 25, 2019 | Nov. 24, 2020 |
| SPEAG | 1750MHz System Validation Kit(2) | D1750V2 | 1112 | Mar. 07, 2019 | Mar. 05, 2021 |
| SPEAG | 1900MHz System Validation Kit(2) | D1900V2 | 5d185 | Mar. 07, 2019 | Mar. 05, 2021 |
| SPEAG | 2300MHz System Validation Kit(2) | D2300V2 | 1006 | Jan. 28, 2019 | Jan. 26, 2021 |
| SPEAG | 2600MHz System Validation Kit(2) | D2600V2 | 1078 | Mar. 06, 2019 | Mar. 04, 2021 |
| SPEAG | 3500MHz System Validation Kit(2) | D3500V2 | 1014 | Jan. 29, 2019 | Jan. 27, 2021 |
| SPEAG | 3700MHz System Validation Kit(2) | D3700V2 | 1006 | Mar. 05, 2019 | Mar. 03, 2021 |
| SPEAG | Data Acquisition Electronics | DAE4 | 376 | Dec. 06, 2019 | Dec. 05, 2020 |
| SPEAG | Data Acquisition Electronics | DAE4 | 916 | Dec. 17, 2019 | Dec. 16, 2020 |
| SPEAG | Dosimetric E-Field Probe | ES3DV3 | 3071 | Dec. 18, 2019 | Dec. 17, 2020 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 3642 | Apr. 29, 2020 | Apr. 28, 2021 |
| RCPTWN | Thermometer | HTC-1 | TM685-1 | Nov. 12, 2019 | Nov. 11, 2020 |
| RCPTWN | Thermometer | HTC-1 | TM560-2 | Nov. 12, 2019 | Nov. 11, 2020 |
| Anritsu | Radio Communication Analyzer | MT8821C | 6201341950 | Oct. 31, 2019 | Oct. 30, 2020 |
| Agilent | Wireless Communication Test Set | E5515C | MY50266977 | May. 24, 2020 | May. 23, 2021 |
| SPEAG | Device Holder | N/A | N/A | N/A | N/A |
| Anritsu | Signal Generator | MG3710A | 6201502524 | Nov. 20, 2019 | Nov. 19, 2020 |
| Agilent | ENA Network Analyzer | E5071C | MY46101588 | Jun. 10, 2020 | Jun. 09, 2021 |
| SPEAG | Dielectric Probe Kit | DAK-3.5 | 1126 | Sep. 18, 2019 | Sep. 17, 2020 |
| LINE SEIKI | Digital Thermometer | DTM3000-spezial | 2942 | Nov. 18, 2019 | Nov. 17, 2020 |
| Anritsu | Power Meter | ML2495A | 0932001 | Oct. 03, 2019 | Oct. 02, 2020 |
| Anritsu | Power Sensor | MA2411B | 0846202 | Oct. 03, 2019 | Oct. 02, 2020 |
| Anritsu | Power Meter | ML2495A | 1218006 | Oct. 14, 2019 | Oct. 13, 2020 |
| Anritsu | Power Sensor | MA2411B | 1207363 | Oct. 14, 2019 | Oct. 13, 2020 |
| Anritsu | Spectrum Analyzer | MS2830A | 6201396378 | Jun. 30, 2020 | Jun. 29, 2021 |
| Anritsu | Spectrum Analyzer | N9010A | MY53470118 | Mar. 12, 2020 | Mar. 11, 2021 |
| Mini-Circuits | Power Amplifier | ZVE-8G+ | 6418 | Oct. 16, 2019 | Oct. 15, 2020 |
| Mini-Circuits | Power Amplifier | ZHL-42W+ | 321501827 | Aug. 06, 2020 | Aug. 05, 2021 |
| ATM | Dual Directional Coupler | C122H-10 | P610410z-02 | Note 1 | |
| Woken | Attenuator 1 | WK0602-XX | N/A | Note 1 | |
| PE | Attenuator 2 | PE7005-10 | N/A | Note 1 | |
| PE | Attenuator 3 | PE7005- 3 | N/A | Note 1 | |

**General Note:**

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

# 10. System Verification

## 10.1 Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 10.2.

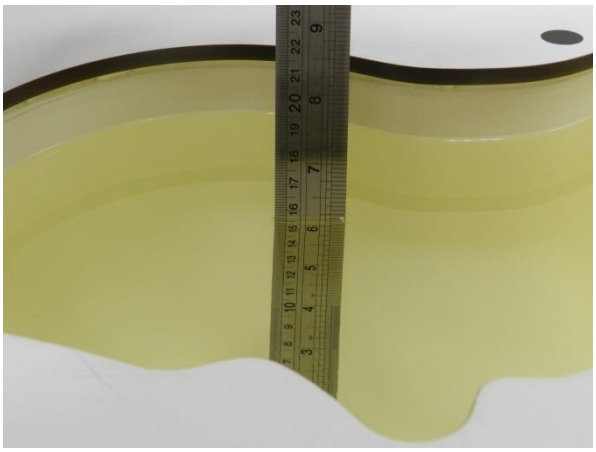


**Fig 10.1Photo of Liquid Height for Head SAR**

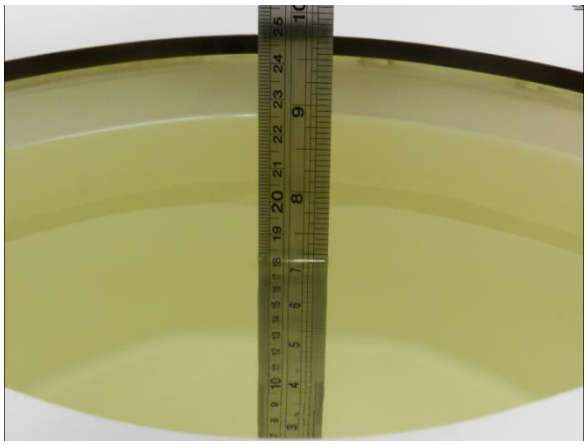


**Fig 10.2 Photo of Liquid Height for Body SAR**

## 10.2 Tissue Verification

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

| Frequency (MHz) | Water (%) | Sugar (%) | Cellulose (%) | Salt (%) | Preventol (%) | DGBE (%) | Conductivity (σ) | Permittivity (εr) |
|---|---|---|---|---|---|---|---|---|
| 750 | 41.1 | 57.0 | 0.2 | 1.4 | 0.2 | 0 | 0.89 | 41.9 |
| 835 | 40.3 | 57.9 | 0.2 | 1.4 | 0.2 | 0 | 0.90 | 41.5 |
| 900 | 40.3 | 57.9 | 0.2 | 1.4 | 0.2 | 0 | 0.97 | 41.5 |
| 1800, 1900, 2000 | 55.2 | 0 | 0 | 0.3 | 0 | 44.5 | 1.40 | 40.0 |
| 2450 | 55.0 | 0 | 0 | 0 | 0 | 45.0 | 1.80 | 39.2 |
| 2600 | 54.8 | 0 | 0 | 0.1 | 0 | 45.1 | 1.96 | 39.0 |

Simulating Liquid for 5GHz, Manufactured by SPEAG

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

### <Tissue Dielectric Parameter Check Results>

| Frequency (MHz) | Liquid Temp. (℃) | Conductivity (σ) | Permittivity ($\varepsilon_r$) | Conductivity Target (σ) | Permittivity Target ($\varepsilon_r$) | Delta (σ) (%) | Delta ($\varepsilon_r$) (%) | Limit (%) | Date |
|---|---|---|---|---|---|---|---|---|---|
| 750 | 22.9 | 0.889 | 41.279 | 0.89 | 41.90 | -0.11 | -1.48 | ±5 | 2020/8/16 |
| 750 | 22.7 | 0.915 | 41.988 | 0.89 | 41.90 | 2.81 | 0.21 | ±5 | 2020/8/17 |
| 835 | 22.9 | 0.887 | 41.951 | 0.90 | 41.50 | -1.44 | 1.09 | ±5 | 2020/8/16 |
| 1750 | 22.4 | 1.357 | 40.323 | 1.37 | 40.10 | -0.95 | 0.56 | ±5 | 2020/9/4 |
| 1750 | 22.3 | 1.396 | 39.267 | 1.37 | 40.10 | 1.90 | -2.08 | ±5 | 2020/9/7 |
| 1750 | 22.7 | 1.379 | 39.432 | 1.37 | 40.10 | 0.66 | -1.67 | ±5 | 2020/9/11 |
| 1900 | 22.4 | 1.443 | 39.949 | 1.40 | 40.00 | 3.07 | -0.13 | ±5 | 2020/8/18 |
| 1900 | 22.4 | 1.433 | 40.895 | 1.40 | 40.00 | 2.36 | 2.24 | ±5 | 2020/9/4 |
| 1900 | 22.4 | 1.421 | 39.521 | 1.40 | 40.00 | 1.50 | -1.20 | ±5 | 2020/9/10 |
| 1900 | 22.7 | 1.434 | 39.690 | 1.40 | 40.00 | 2.43 | -0.78 | ±5 | 2020/9/11 |
| 2300 | 22.4 | 1.646 | 39.655 | 1.67 | 39.50 | -1.44 | 0.39 | ±5 | 2020/9/4 |
| 2600 | 22.6 | 1.940 | 39.448 | 1.96 | 39.00 | -1.02 | 1.15 | ±5 | 2020/9/9 |
| 2600 | 22.7 | 1.968 | 38.191 | 1.96 | 39.00 | 0.41 | -2.07 | ±5 | 2020/9/11 |
| 3500 | 22.7 | 2.888 | 37.776 | 2.91 | 37.90 | -0.76 | -0.33 | ±5 | 2020/9/11 |
| 3700 | 22.6 | 3.163 | 38.545 | 3.12 | 37.70 | 1.38 | 2.24 | ±5 | 2020/9/6 |

## 10.3 System Performance Check Results

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

| Date | Frequency (MHz) | Input Power (mW) | Dipole S/N | Probe S/N | DAE S/N | Measured 1g SAR (W/kg) | Targeted 1g SAR (W/kg) | Normalized 1g SAR (W/kg) | Deviation (%) |
|---|---|---|---|---|---|---|---|---|---|
| 2020/8/16 | 750 | 250 | D750V3-1107 | EX3DV4 - SN3642 | DAE4 Sn376 | 2.16 | 8.32 | 8.64 | 3.85 |
| 2020/8/17 | 750 | 250 | D750V3-1107 | EX3DV4 - SN3642 | DAE4 Sn376 | 2.10 | 8.32 | 8.4 | 0.96 |
| 2020/8/16 | 835 | 250 | D835V2-4d167 | EX3DV4 - SN3642 | DAE4 Sn376 | 2.24 | 9.55 | 8.96 | -6.18 |
| 2020/9/4 | 1750 | 250 | D1750V2-1112 | EX3DV4 - SN3642 | DAE4 Sn376 | 9.16 | 36.70 | 36.64 | -0.16 |
| 2020/9/7 | 1750 | 250 | D1750V2-1112 | EX3DV4 - SN3642 | DAE4 Sn376 | 9.85 | 36.70 | 39.4 | 7.36 |
| 2020/9/11 | 1750 | 250 | D1750V2-1112 | ES3DV3 - SN3071 | DAE4 Sn916 | 8.44 | 36.70 | 33.76 | -8.01 |
| 2020/8/18 | 1900 | 250 | D1900V2-5d185 | EX3DV4 - SN3642 | DAE4 Sn376 | 10.10 | 39.40 | 40.4 | 2.54 |
| 2020/9/4 | 1900 | 250 | D1900V2-5d185 | EX3DV4 - SN3642 | DAE4 Sn376 | 10.10 | 39.40 | 40.4 | 2.54 |
| 2020/9/10 | 1900 | 250 | D1900V2-5d185 | ES3DV3 - SN3071 | DAE4 Sn916 | 9.77 | 39.40 | 39.08 | -0.81 |
| 2020/9/11 | 1900 | 250 | D1900V2-5d185 | ES3DV3 - SN3071 | DAE4 Sn916 | 9.86 | 39.40 | 39.44 | 0.10 |
| 2020/9/4 | 2300 | 250 | D2300V2-1006 | EX3DV4 - SN3642 | DAE4 Sn376 | 11.80 | 48.70 | 47.2 | -3.08 |
| 2020/9/9 | 2600 | 250 | D2600V2-1078 | ES3DV3 - SN3071 | DAE4 Sn916 | 15.20 | 57.60 | 60.8 | 5.56 |
| 2020/9/11 | 2600 | 250 | D2600V2-1078 | ES3DV3 - SN3071 | DAE4 Sn916 | 15.40 | 57.60 | 61.6 | 6.94 |
| 2020/9/11 | 3500 | 100 | D3500V2-1014 | EX3DV4 - SN3642 | DAE4 Sn376 | 6.34 | 67.90 | 63.4 | -6.63 |
| 2020/9/6 | 3700 | 100 | D3700V2-1006 | EX3DV4 - SN3642 | DAE4 Sn376 | 6.48 | 67.30 | 64.8 | -3.71 |

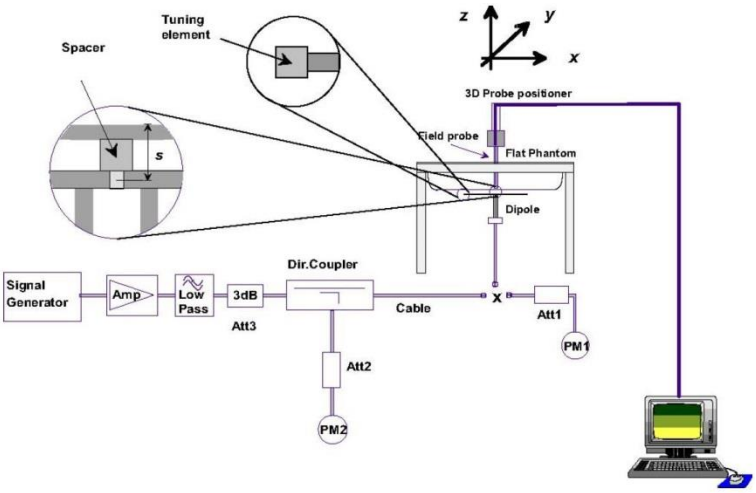



Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

# 11. RF Exposure Positions

## 11.1 Wireless Router

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

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

# 12. UMTS/LTE Output Power (Unit: dBm)

**<WCDMA Conducted Power>**

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

A summary of these settings are illustrated below:

**HSDPA Setup Configuration:**

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

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

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

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

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

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

Note 4: For subtest 2 the $\beta_c/\beta_d$ ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c$ = 11/15 and $\beta_d$ = 15/15.

**Setup Configuration**

**HSUPA Setup Configuration:**

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

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

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ (SF) | $\beta_c/\beta_d$ | $\beta_{HS}$ (Note1) | $\beta_{ec}$ | $\beta_{ed}$ (Note 4) (Note 5) | $\beta_{ed}$ (SF) | $\beta_{ed}$ (Codes) | CM (dB) (Note 2) | MPR (dB) (Note 2) (Note 6) | AG Index (Note 5) | E-TFCI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11/15 (Note 3) | 15/15 (Note 3) | 64 | 11/15 (Note 3) | 22/15 | 209/225 | 1309/225 | 4 | 1 | 1.0 | 0.0 | 20 | 75 |
| 2 | 6/15 | 15/15 | 64 | 6/15 | 12/15 | 12/15 | 94/75 | 4 | 1 | 3.0 | 2.0 | 12 | 67 |
| 3 | 15/15 | 9/15 | 64 | 15/9 | 30/15 | 30/15 | $\beta_{ed}1$: 47/15<br>$\beta_{ed}2$: 47/15 | 4<br>4 | 2 | 2.0 | 1.0 | 15 | 92 |
| 4 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 2/15 | 56/75 | 4 | 1 | 3.0 | 2.0 | 17 | 71 |
| 5 | 15/15 | 0 | - | - | 5/15 | 5/15 | 47/15 | 4 | 1 | 1.0 | 0.0 | 12 | 67 |

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

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

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

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

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

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

**Setup Configuration**

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

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors ($\beta_c$ and $\beta_d$) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: $\beta_c/\beta_d$=2/15
      b). Subtest 2: $\beta_c/\beta_d$=12/15
      c). Subtest 3: $\beta_c/\beta_d$=15/8
      d). Subtest 4: $\beta_c/\beta_d$=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

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

C.8.1.12 Fixed Reference Channel Definition H-Set 12

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

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

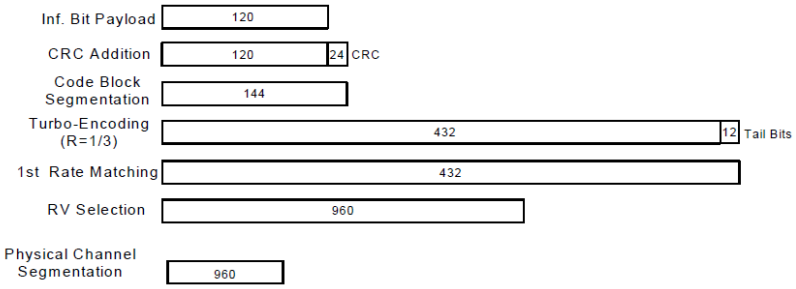



**Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)**

**Setup Configuration**

## <WCDMA Conducted Power>

**General Note:**

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

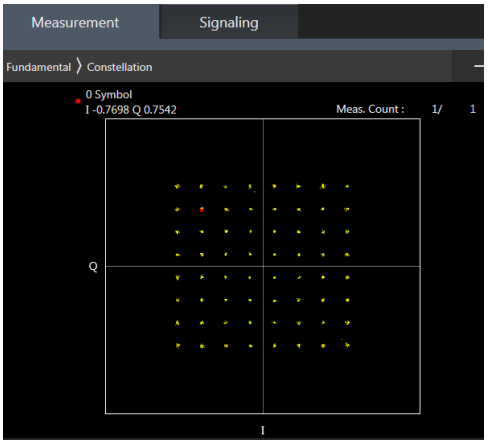
**Ant 0**

| Band | | WCDMA II | | | Tune-up Limit (dBm) | WCDMA IV | | | Tune-up Limit (dBm) | WCDMA V | | | Tune-up Limit (dBm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TX Channel | | 9262 | 9400 | 9538 | | 1312 | 1413 | 1513 | | 4132 | 4182 | 4233 | |
| Rx Channel | | 9662 | 9800 | 9938 | | 1537 | 1638 | 1738 | | 4357 | 4407 | 4458 | |
| Frequency (MHz) | | 1852.4 | 1880 | 1907.6 | | 1712.4 | 1732.6 | 1752.6 | | 826.4 | 836.4 | 846.6 | |
| 3GPP Rel 99 | RMC 12.2Kbps | 23.82 | 23.89 | 23.79 | 24.00 | 17.29 | 17.23 | 17.39 | 18.40 | 23.47 | 23.63 | 23.82 | 24.00 |
| 3GPP Rel 6 | HSDPA Subtest-1 | 22.84 | 22.93 | 22.83 | 23.00 | 16.12 | 16.33 | 16.42 | 17.40 | 22.47 | 22.60 | 22.81 | 23.00 |
| 3GPP Rel 6 | HSDPA Subtest-2 | 22.85 | 22.89 | 22.86 | 23.00 | 16.19 | 16.23 | 16.48 | 17.40 | 22.49 | 22.63 | 22.82 | 23.00 |
| 3GPP Rel 6 | HSDPA Subtest-3 | 22.34 | 22.41 | 22.37 | 22.50 | 15.63 | 15.74 | 15.90 | 16.90 | 21.96 | 22.10 | 22.34 | 22.50 |
| 3GPP Rel 6 | HSDPA Subtest-4 | 22.33 | 22.40 | 22.33 | 22.50 | 15.64 | 15.76 | 15.89 | 16.90 | 21.96 | 22.11 | 22.34 | 22.50 |
| 3GPP Rel 8 | DC-HSDPA Subtest-1 | 22.83 | 22.85 | 22.83 | 23.00 | 16.04 | 16.30 | 16.39 | 17.40 | 22.47 | 22.56 | 22.81 | 23.00 |
| 3GPP Rel 8 | DC-HSDPA Subtest-2 | 22.83 | 22.82 | 22.81 | 23.00 | 16.10 | 16.17 | 16.38 | 17.40 | 22.40 | 22.63 | 22.82 | 23.00 |
| 3GPP Rel 8 | DC-HSDPA Subtest-3 | 22.27 | 22.41 | 22.27 | 22.50 | 15.54 | 15.64 | 15.80 | 16.90 | 21.89 | 22.01 | 22.26 | 22.50 |
| 3GPP Rel 8 | DC-HSDPA Subtest-4 | 22.25 | 22.32 | 22.25 | 22.50 | 15.60 | 15.73 | 15.88 | 16.90 | 21.90 | 22.04 | 22.27 | 22.50 |
| 3GPP Rel 6 | HSUPA Subtest-1 | 22.87 | 22.96 | 22.88 | 23.00 | 16.11 | 16.23 | 16.39 | 17.40 | 22.28 | 22.48 | 22.65 | 23.00 |
| 3GPP Rel 6 | HSUPA Subtest-2 | 20.89 | 20.81 | 20.85 | 21.00 | 14.18 | 14.39 | 14.50 | 15.40 | 20.27 | 20.41 | 20.63 | 21.00 |
| 3GPP Rel 6 | HSUPA Subtest-3 | 21.87 | 21.95 | 21.82 | 22.00 | 15.12 | 15.41 | 15.43 | 16.40 | 21.30 | 21.43 | 21.69 | 22.00 |
| 3GPP Rel 6 | HSUPA Subtest-4 | 20.93 | 20.97 | 20.88 | 21.00 | 14.17 | 14.38 | 14.48 | 15.40 | 20.26 | 20.39 | 20.66 | 21.00 |
| 3GPP Rel 6 | HSUPA Subtest-5 | 22.80 | 23.00 | 22.90 | 23.00 | 16.09 | 16.28 | 16.42 | 17.40 | 22.30 | 22.40 | 22.70 | 23.00 |

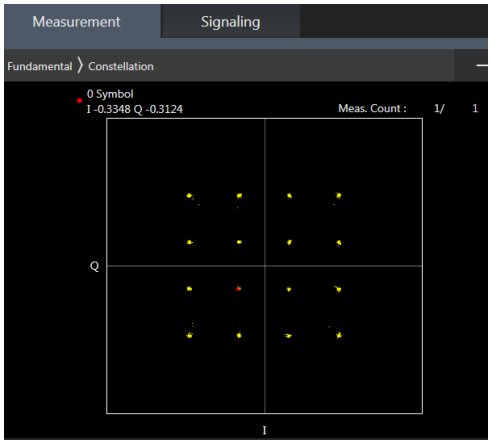
## <LTE Conducted Power>

**General Note:**

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B12/B26/B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
10. According to 2017 TCB workshop, for 64 QAM and 16 QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.




**64QAM**




**16QAM**

## Ant 0

### <LTE Band 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 18700 | 18900 | 19100 | | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | | |
| 20 | QPSK | 1 | 0 | 23.44 | 23.28 | 23.22 | 24 | 0 |
| 20 | QPSK | 1 | 49 | 23.37 | 23.29 | 23.23 | | |
| 20 | QPSK | 1 | 99 | 23.35 | 23.26 | 23.21 | | |
| 20 | QPSK | 50 | 0 | 22.54 | 22.30 | 22.28 | 23 | 1 |
| 20 | QPSK | 50 | 24 | 22.57 | 22.33 | 22.26 | | |
| 20 | QPSK | 50 | 50 | 22.52 | 22.41 | 22.34 | | |
| 20 | QPSK | 100 | 0 | 22.58 | 22.34 | 22.23 | | |
| 20 | 16QAM | 1 | 0 | 22.74 | 22.60 | 22.50 | 23 | 1 |
| 20 | 16QAM | 1 | 49 | 22.70 | 22.60 | 22.52 | | |
| 20 | 16QAM | 1 | 99 | 22.72 | 22.58 | 22.42 | | |
| 20 | 16QAM | 50 | 0 | 21.49 | 21.22 | 21.32 | 22 | 2 |
| 20 | 16QAM | 50 | 24 | 21.60 | 21.31 | 21.25 | | |
| 20 | 16QAM | 50 | 50 | 21.52 | 21.45 | 21.33 | | |
| 20 | 16QAM | 100 | 0 | 21.53 | 21.30 | 21.27 | | |
| 20 | 64QAM | 1 | 0 | 21.56 | 21.41 | 21.42 | 22 | 2 |
| 20 | 64QAM | 1 | 49 | 21.56 | 21.55 | 21.43 | | |
| 20 | 64QAM | 1 | 99 | 21.62 | 21.55 | 21.42 | | |
| 20 | 64QAM | 50 | 0 | 20.55 | 20.33 | 20.33 | 21 | 3 |
| 20 | 64QAM | 50 | 24 | 20.62 | 20.37 | 20.29 | | |
| 20 | 64QAM | 50 | 50 | 20.52 | 20.43 | 20.39 | | |
| 20 | 64QAM | 100 | 0 | 20.50 | 20.37 | 20.34 | | |
| 20 | 256QAM | 1 | 0 | 18.72 | 18.44 | 18.45 | 20 | 4 |
| 20 | 256QAM | 1 | 49 | 18.52 | 18.59 | 18.45 | | |
| 20 | 256QAM | 1 | 99 | 18.80 | 18.73 | 18.56 | | |
| 20 | 256QAM | 50 | 0 | 18.59 | 18.37 | 18.36 | 20 | 4 |
| 20 | 256QAM | 50 | 24 | 18.64 | 18.37 | 18.34 | | |
| 20 | 256QAM | 50 | 50 | 18.61 | 18.51 | 18.41 | | |
| 20 | 256QAM | 100 | 0 | 18.65 | 18.42 | 18.33 | | |
| Channel | | | | 18675 | 18900 | 19125 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | | |
| 15 | QPSK | 1 | 0 | 23.39 | 23.28 | 23.13 | 24 | 0 |
| 15 | QPSK | 1 | 37 | 23.28 | 23.21 | 23.16 | | |
| 15 | QPSK | 1 | 74 | 23.30 | 23.26 | 23.15 | | |
| 15 | QPSK | 36 | 0 | 22.53 | 22.21 | 22.26 | 23 | 1 |
| 15 | QPSK | 36 | 20 | 22.57 | 22.31 | 22.16 | | |
| 15 | QPSK | 36 | 39 | 22.51 | 22.34 | 22.30 | | |
| 15 | QPSK | 75 | 0 | 22.53 | 22.29 | 22.13 | | |
| 15 | 16QAM | 1 | 0 | 22.65 | 22.60 | 22.47 | 23 | 1 |
| 15 | 16QAM | 1 | 37 | 22.66 | 22.50 | 22.49 | | |
| 15 | 16QAM | 1 | 74 | 22.62 | 22.50 | 22.37 | | |
| 15 | 16QAM | 36 | 0 | 21.45 | 21.14 | 21.32 | 22 | 2 |
| 15 | 16QAM | 36 | 20 | 21.58 | 21.25 | 21.16 | | |
| 15 | 16QAM | 36 | 39 | 21.47 | 21.43 | 21.27 | | |
| 15 | 16QAM | 75 | 0 | 21.51 | 21.29 | 21.17 | | |
| 15 | 64QAM | 1 | 0 | 21.49 | 21.31 | 21.35 | 22 | 2 |
| 15 | 64QAM | 1 | 37 | 21.52 | 21.52 | 21.39 | | |
| 15 | 64QAM | 1 | 74 | 21.53 | 21.48 | 21.33 | | |
| 15 | 64QAM | 36 | 0 | 20.48 | 20.33 | 20.33 | 21 | 3 |
| 15 | 64QAM | 36 | 20 | 20.55 | 20.33 | 20.19 | | |

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|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 36 | 39 | 20.43 | 20.35 | 20.32 | | |
| 15 | 64QAM | 75 | 0 | 20.41 | 20.34 | 20.24 | | |
| 15 | 256QAM | 1 | 0 | 18.68 | 18.36 | 18.39 | 20 | 4 |
| 15 | 256QAM | 1 | 37 | 18.45 | 18.49 | 18.45 | | |
| 15 | 256QAM | 1 | 74 | 18.79 | 18.66 | 18.56 | | |
| 15 | 256QAM | 36 | 0 | 18.55 | 18.35 | 18.27 | 20 | 4 |
| 15 | 256QAM | 36 | 20 | 18.64 | 18.31 | 18.25 | | |
| 15 | 256QAM | 36 | 39 | 18.56 | 18.44 | 18.41 | | |
| 15 | 256QAM | 75 | 0 | 18.64 | 18.37 | 18.23 | | |
| Channel | | | | 18650 | 18900 | 19150 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | | |
| 10 | QPSK | 1 | 0 | 23.38 | 23.27 | 23.22 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 23.29 | 23.27 | 23.15 | | |
| 10 | QPSK | 1 | 49 | 23.32 | 23.25 | 23.19 | | |
| 10 | QPSK | 25 | 0 | 22.44 | 22.20 | 22.22 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.49 | 22.24 | 22.22 | | |
| 10 | QPSK | 25 | 25 | 22.47 | 22.33 | 22.31 | | |
| 10 | QPSK | 50 | 0 | 22.50 | 22.25 | 22.16 | | |
| 10 | 16QAM | 1 | 0 | 22.73 | 22.58 | 22.41 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.66 | 22.53 | 22.47 | | |
| 10 | 16QAM | 1 | 49 | 22.71 | 22.48 | 22.37 | | |
| 10 | 16QAM | 25 | 0 | 21.46 | 21.16 | 21.30 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.53 | 21.26 | 21.21 | | |
| 10 | 16QAM | 25 | 25 | 21.44 | 21.41 | 21.29 | | |
| 10 | 16QAM | 50 | 0 | 21.50 | 21.26 | 21.23 | | |
| 10 | 64QAM | 1 | 0 | 21.54 | 21.36 | 21.37 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.56 | 21.51 | 21.42 | | |
| 10 | 64QAM | 1 | 49 | 21.57 | 21.48 | 21.38 | | |
| 10 | 64QAM | 25 | 0 | 20.45 | 20.27 | 20.26 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.55 | 20.27 | 20.28 | | |
| 10 | 64QAM | 25 | 25 | 20.46 | 20.33 | 20.30 | | |
| 10 | 64QAM | 50 | 0 | 20.43 | 20.27 | 20.24 | | |
| 10 | 256QAM | 1 | 0 | 18.63 | 18.35 | 18.43 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 18.52 | 18.53 | 18.41 | | |
| 10 | 256QAM | 1 | 49 | 18.74 | 18.69 | 18.54 | | |
| 10 | 256QAM | 25 | 0 | 18.52 | 18.37 | 18.35 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 18.64 | 18.28 | 18.30 | | |
| 10 | 256QAM | 25 | 25 | 18.52 | 18.50 | 18.32 | | |
| 10 | 256QAM | 50 | 0 | 18.60 | 18.35 | 18.24 | | |
| Channel | | | | 18625 | 18900 | 19175 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | | |
| 5 | QPSK | 1 | 0 | 23.31 | 23.24 | 23.17 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.34 | 23.28 | 23.17 | | |
| 5 | QPSK | 1 | 24 | 23.29 | 23.21 | 23.19 | | |
| 5 | QPSK | 12 | 0 | 22.46 | 22.25 | 22.20 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.48 | 22.24 | 22.26 | | |
| 5 | QPSK | 12 | 13 | 22.46 | 22.39 | 22.30 | | |
| 5 | QPSK | 25 | 0 | 22.49 | 22.34 | 22.14 | | |
| 5 | 16QAM | 1 | 0 | 22.74 | 22.53 | 22.48 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.62 | 22.55 | 22.42 | | |
| 5 | 16QAM | 1 | 24 | 22.68 | 22.58 | 22.38 | | |
| 5 | 16QAM | 12 | 0 | 21.46 | 21.16 | 21.32 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.55 | 21.22 | 21.19 | | |
| 5 | 16QAM | 12 | 13 | 21.42 | 21.45 | 21.28 | | |
| 5 | 16QAM | 25 | 0 | 21.50 | 21.26 | 21.26 | | |
| 5 | 64QAM | 1 | 0 | 21.53 | 21.35 | 21.40 | 22 | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 1 | 12 | 21.55 | 21.47 | 21.39 | | |
| 5 | 64QAM | 1 | 24 | 21.53 | 21.47 | 21.37 | | |
| 5 | 64QAM | 12 | 0 | 20.51 | 20.27 | 20.26 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.62 | 20.34 | 20.19 | | |
| 5 | 64QAM | 12 | 13 | 20.49 | 20.43 | 20.37 | | |
| 5 | 64QAM | 25 | 0 | 20.43 | 20.32 | 20.25 | | |
| 5 | 256QAM | 1 | 0 | 18.65 | 18.41 | 18.39 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.47 | 18.58 | 18.39 | | |
| 5 | 256QAM | 1 | 24 | 18.70 | 18.68 | 18.54 | | |
| 5 | 256QAM | 12 | 0 | 18.56 | 18.27 | 18.27 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.62 | 18.35 | 18.31 | | |
| 5 | 256QAM | 12 | 13 | 18.60 | 18.50 | 18.34 | | |
| 5 | 256QAM | 25 | 0 | 18.65 | 18.40 | 18.29 | | |
| Channel | | | | 18615 | 18900 | 19185 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1908.5 | | |
| 3 | QPSK | 1 | 0 | 23.39 | 23.28 | 23.14 | 24 | 0 |
| 3 | QPSK | 1 | 8 | 23.35 | 23.26 | 23.21 | | |
| 3 | QPSK | 1 | 14 | 23.26 | 23.20 | 23.19 | | |
| 3 | QPSK | 8 | 0 | 22.44 | 22.20 | 22.20 | 23 | 1 |
| 3 | QPSK | 8 | 4 | 22.53 | 22.23 | 22.26 | | |
| 3 | QPSK | 8 | 7 | 22.44 | 22.37 | 22.26 | | |
| 3 | QPSK | 15 | 0 | 22.55 | 22.27 | 22.13 | | |
| 3 | 16QAM | 1 | 0 | 22.64 | 22.50 | 22.41 | 23 | 1 |
| 3 | 16QAM | 1 | 8 | 22.60 | 22.57 | 22.50 | | |
| 3 | 16QAM | 1 | 14 | 22.65 | 22.52 | 22.34 | | |
| 3 | 16QAM | 8 | 0 | 21.41 | 21.20 | 21.27 | 22 | 2 |
| 3 | 16QAM | 8 | 4 | 21.55 | 21.24 | 21.18 | | |
| 3 | 16QAM | 8 | 7 | 21.44 | 21.37 | 21.33 | | |
| 3 | 16QAM | 15 | 0 | 21.45 | 21.25 | 21.22 | | |
| 3 | 64QAM | 1 | 0 | 21.52 | 21.34 | 21.35 | 22 | 2 |
| 3 | 64QAM | 1 | 8 | 21.53 | 21.45 | 21.34 | | |
| 3 | 64QAM | 1 | 14 | 21.53 | 21.45 | 21.41 | | |
| 3 | 64QAM | 8 | 0 | 20.51 | 20.25 | 20.31 | 21 | 3 |
| 3 | 64QAM | 8 | 4 | 20.56 | 20.30 | 20.22 | | |
| 3 | 64QAM | 8 | 7 | 20.46 | 20.34 | 20.33 | | |
| 3 | 64QAM | 15 | 0 | 20.50 | 20.35 | 20.32 | | |
| 3 | 256QAM | 1 | 0 | 18.66 | 18.43 | 18.41 | 20 | 4 |
| 3 | 256QAM | 1 | 8 | 18.48 | 18.49 | 18.42 | | |
| 3 | 256QAM | 1 | 14 | 18.78 | 18.68 | 18.51 | | |
| 3 | 256QAM | 8 | 0 | 18.55 | 18.30 | 18.28 | 20 | 4 |
| 3 | 256QAM | 8 | 4 | 18.63 | 18.36 | 18.34 | | |
| 3 | 256QAM | 8 | 7 | 18.54 | 18.42 | 18.34 | | |
| 3 | 256QAM | 15 | 0 | 18.55 | 18.32 | 18.30 | | |
| Channel | | | | 18607 | 18900 | 19193 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1909.3 | | |
| 1.4 | QPSK | 1 | 0 | 23.41 | 23.21 | 23.14 | 24 | 0 |
| 1.4 | QPSK | 1 | 3 | 23.42 | 23.28 | 23.13 | | |
| 1.4 | QPSK | 1 | 5 | 23.40 | 23.20 | 23.16 | | |
| 1.4 | QPSK | 3 | 0 | 23.42 | 23.26 | 23.20 | | |
| 1.4 | QPSK | 3 | 1 | 23.43 | 23.28 | 23.19 | | |
| 1.4 | QPSK | 3 | 3 | 23.42 | 23.26 | 23.17 | | |
| 1.4 | QPSK | 6 | 0 | 22.50 | 22.32 | 22.20 | 23 | 1 |
| 1.4 | 16QAM | 1 | 0 | 22.69 | 22.50 | 22.54 | 23 | 1 |
| 1.4 | 16QAM | 1 | 3 | 22.75 | 22.54 | 22.47 | | |
| 1.4 | 16QAM | 1 | 5 | 22.73 | 22.58 | 22.47 | | |
| 1.4 | 16QAM | 3 | 0 | 22.52 | 22.32 | 22.23 | | |

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|---|---|---|---|---|---|---|---|---|
| 1.4 | 16QAM | 3 | 1 | 22.57 | 22.34 | 22.24 | | |
| 1.4 | 16QAM | 3 | 3 | 22.55 | 22.34 | 22.28 | | |
| 1.4 | 16QAM | 6 | 0 | 21.55 | 21.38 | 21.29 | 22 | 2 |
| 1.4 | 64QAM | 1 | 0 | 21.64 | 21.58 | 21.39 | 22 | 2 |
| 1.4 | 64QAM | 1 | 3 | 21.76 | 21.53 | 21.41 | | |
| 1.4 | 64QAM | 1 | 5 | 21.67 | 21.51 | 21.44 | | |
| 1.4 | 64QAM | 3 | 0 | 21.61 | 21.40 | 21.32 | | |
| 1.4 | 64QAM | 3 | 1 | 21.63 | 21.42 | 21.35 | | |
| 1.4 | 64QAM | 3 | 3 | 21.61 | 21.40 | 21.32 | | |
| 1.4 | 64QAM | 6 | 0 | 20.54 | 20.32 | 20.20 | 21 | 3 |
| 1.4 | 256QAM | 1 | 0 | 18.71 | 18.42 | 18.38 | 20 | 4 |
| 1.4 | 256QAM | 1 | 3 | 18.46 | 18.53 | 18.40 | | |
| 1.4 | 256QAM | 1 | 5 | 18.80 | 18.73 | 18.50 | | |
| 1.4 | 256QAM | 3 | 0 | 18.50 | 18.27 | 18.33 | | |
| 1.4 | 256QAM | 3 | 1 | 18.63 | 18.37 | 18.31 | | |
| 1.4 | 256QAM | 3 | 3 | 18.53 | 18.50 | 18.35 | | |
| 1.4 | 256QAM | 6 | 0 | 18.62 | 18.32 | 18.32 | 20 | 4 |

**<LTE Band 4>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 20050 | 20175 | 20300 | | |
| Frequency (MHz) | | | | 1720 | 1732.5 | 1745 | | |
| 20 | QPSK | 1 | 0 | 21.87 | 21.93 | 21.83 | 22 | 0 |
| 20 | QPSK | 1 | 49 | 21.71 | 21.71 | 21.61 | | |
| 20 | QPSK | 1 | 99 | 21.70 | 21.59 | 21.51 | | |
| 20 | QPSK | 50 | 0 | 21.96 | 21.93 | 21.94 | 22 | 0 |
| 20 | QPSK | 50 | 24 | 21.97 | 21.86 | 21.83 | | |
| 20 | QPSK | 50 | 50 | 21.87 | 21.74 | 21.73 | | |
| 20 | QPSK | 100 | 0 | 21.93 | 21.85 | 21.82 | | |
| 20 | 16QAM | 1 | 0 | 21.96 | 21.96 | 21.67 | 22 | 0 |
| 20 | 16QAM | 1 | 49 | 21.69 | 21.65 | 21.64 | | |
| 20 | 16QAM | 1 | 99 | 21.60 | 21.61 | 21.56 | | |
| 20 | 16QAM | 50 | 0 | 21.67 | 21.85 | 21.51 | 22 | 0 |
| 20 | 16QAM | 50 | 24 | 21.89 | 21.62 | 21.67 | | |
| 20 | 16QAM | 50 | 50 | 21.90 | 21.44 | 21.77 | | |
| 20 | 16QAM | 100 | 0 | 21.68 | 21.57 | 21.60 | | |
| 20 | 64QAM | 1 | 0 | 20.48 | 21.34 | 20.17 | 22 | 0 |
| 20 | 64QAM | 1 | 49 | 21.42 | 20.50 | 21.01 | | |
| 20 | 64QAM | 1 | 99 | 20.61 | 20.30 | 21.54 | | |
| 20 | 64QAM | 50 | 0 | 19.73 | 19.87 | 19.58 | 21 | 1 |
| 20 | 64QAM | 50 | 24 | 19.94 | 19.66 | 19.74 | | |
| 20 | 64QAM | 50 | 50 | 19.95 | 19.51 | 19.95 | | |
| 20 | 64QAM | 100 | 0 | 19.77 | 19.67 | 19.69 | | |
| 20 | 256QAM | 1 | 0 | 19.06 | 19.01 | 18.72 | 20 | 2 |
| 20 | 256QAM | 1 | 49 | 18.97 | 18.84 | 18.84 | | |
| 20 | 256QAM | 1 | 99 | 19.27 | 19.00 | 18.89 | | |
| 20 | 256QAM | 50 | 0 | 18.95 | 18.97 | 18.92 | 20 | 2 |
| 20 | 256QAM | 50 | 24 | 19.00 | 18.88 | 18.85 | | |
| 20 | 256QAM | 50 | 50 | 18.95 | 18.82 | 18.80 | | |
| 20 | 256QAM | 100 | 0 | 19.01 | 18.92 | 18.89 | | |
| Channel | | | | 20025 | 20175 | 20325 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1717.5 | 1732.5 | 1747.5 | | |
| 15 | QPSK | 1 | 0 | 21.94 | 21.92 | 21.86 | 22 | 0 |
| 15 | QPSK | 1 | 37 | 21.77 | 21.76 | 21.63 | | |
| 15 | QPSK | 1 | 74 | 21.76 | 21.68 | 21.59 | | |
| 15 | QPSK | 36 | 0 | 21.98 | 21.94 | 21.90 | 22 | 0 |
| 15 | QPSK | 36 | 20 | 21.96 | 21.85 | 21.80 | | |
| 15 | QPSK | 36 | 39 | 21.91 | 21.78 | 21.72 | | |
| 15 | QPSK | 75 | 0 | 21.96 | 21.86 | 21.83 | | |
| 15 | 16QAM | 1 | 0 | 21.99 | 21.98 | 21.65 | 22 | 0 |
| 15 | 16QAM | 1 | 37 | 21.74 | 21.71 | 21.73 | | |
| 15 | 16QAM | 1 | 74 | 21.74 | 21.52 | 21.54 | | |
| 15 | 16QAM | 36 | 0 | 21.55 | 21.74 | 21.57 | 22 | 0 |
| 15 | 16QAM | 36 | 20 | 21.79 | 21.56 | 21.77 | | |
| 15 | 16QAM | 36 | 39 | 21.89 | 21.42 | 21.76 | | |
| 15 | 16QAM | 75 | 0 | 21.66 | 21.58 | 21.69 | | |
| 15 | 64QAM | 1 | 0 | 20.40 | 21.34 | 20.20 | 22 | 0 |
| 15 | 64QAM | 1 | 37 | 21.05 | 20.39 | 21.03 | | |
| 15 | 64QAM | 1 | 74 | 21.19 | 20.23 | 21.37 | | |
| 15 | 64QAM | 36 | 0 | 19.58 | 19.81 | 19.61 | 21 | 1 |
| 15 | 64QAM | 36 | 20 | 19.91 | 19.65 | 19.87 | | |
| 15 | 64QAM | 36 | 39 | 20.05 | 19.45 | 20.07 | | |
| 15 | 64QAM | 75 | 0 | 19.69 | 19.54 | 19.76 | | |

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|---|---|---|---|---|---|---|---|---|
| 15 | 256QAM | 1 | 0 | 19.02 | 18.91 | 18.72 | 20 | 2 |
| 15 | 256QAM | 1 | 37 | 18.93 | 18.74 | 18.79 | | |
| 15 | 256QAM | 1 | 74 | 19.20 | 18.99 | 18.82 | | |
| 15 | 256QAM | 36 | 0 | 18.90 | 18.95 | 18.85 | 20 | 2 |
| 15 | 256QAM | 36 | 20 | 18.94 | 18.86 | 18.84 | | |
| 15 | 256QAM | 36 | 39 | 18.94 | 18.76 | 18.80 | | |
| 15 | 256QAM | 75 | 0 | 18.95 | 18.87 | 18.86 | | |
| Channel | | | | 20000 | 20175 | 20350 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1715 | 1732.5 | 1750 | | |
| 10 | QPSK | 1 | 0 | 21.85 | 21.83 | 21.72 | 22 | 0 |
| 10 | QPSK | 1 | 25 | 21.78 | 21.75 | 21.69 | | |
| 10 | QPSK | 1 | 49 | 21.80 | 21.75 | 21.64 | | |
| 10 | QPSK | 25 | 0 | 21.98 | 21.86 | 21.83 | 22 | 0 |
| 10 | QPSK | 25 | 12 | 21.99 | 21.88 | 21.83 | | |
| 10 | QPSK | 25 | 25 | 22.00 | 21.88 | 21.82 | | |
| 10 | QPSK | 50 | 0 | 21.99 | 21.85 | 21.85 | | |
| 10 | 16QAM | 1 | 0 | 21.91 | 21.88 | 21.67 | 22 | 0 |
| 10 | 16QAM | 1 | 25 | 21.66 | 21.64 | 21.66 | | |
| 10 | 16QAM | 1 | 49 | 21.65 | 21.47 | 21.46 | | |
| 10 | 16QAM | 25 | 0 | 21.46 | 21.73 | 21.79 | 22 | 0 |
| 10 | 16QAM | 25 | 12 | 21.62 | 21.59 | 21.86 | | |
| 10 | 16QAM | 25 | 25 | 21.79 | 21.46 | 21.81 | | |
| 10 | 16QAM | 50 | 0 | 21.55 | 21.51 | 21.82 | | |
| 10 | 64QAM | 1 | 0 | 20.30 | 21.08 | 20.61 | 22 | 0 |
| 10 | 64QAM | 1 | 25 | 20.85 | 20.76 | 21.21 | | |
| 10 | 64QAM | 1 | 49 | 21.04 | 20.26 | 21.40 | | |
| 10 | 64QAM | 25 | 0 | 19.52 | 19.77 | 19.88 | 21 | 1 |
| 10 | 64QAM | 25 | 12 | 19.68 | 19.63 | 20.03 | | |
| 10 | 64QAM | 25 | 25 | 19.84 | 19.46 | 20.17 | | |
| 10 | 64QAM | 50 | 0 | 19.56 | 19.59 | 19.92 | | |
| 10 | 256QAM | 1 | 0 | 18.96 | 19.01 | 18.67 | 20 | 2 |
| 10 | 256QAM | 1 | 25 | 18.92 | 18.78 | 18.75 | | |
| 10 | 256QAM | 1 | 49 | 19.22 | 18.91 | 18.81 | | |
| 10 | 256QAM | 25 | 0 | 18.89 | 18.89 | 18.86 | 20 | 2 |
| 10 | 256QAM | 25 | 12 | 18.90 | 18.86 | 18.76 | | |
| 10 | 256QAM | 25 | 25 | 18.92 | 18.81 | 18.75 | | |
| 10 | 256QAM | 50 | 0 | 18.94 | 18.85 | 18.82 | | |
| Channel | | | | 19975 | 20175 | 20375 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1712.5 | 1732.5 | 1752.5 | | |
| 5 | QPSK | 1 | 0 | 21.84 | 21.80 | 21.69 | 22 | 0 |
| 5 | QPSK | 1 | 12 | 21.95 | 21.91 | 21.75 | | |
| 5 | QPSK | 1 | 24 | 21.94 | 21.87 | 21.73 | | |
| 5 | QPSK | 12 | 0 | 21.98 | 21.90 | 21.79 | 22 | 0 |
| 5 | QPSK | 12 | 7 | 21.99 | 21.92 | 21.81 | | |
| 5 | QPSK | 12 | 13 | 21.98 | 21.94 | 21.83 | | |
| 5 | QPSK | 25 | 0 | 21.97 | 21.89 | 21.79 | | |
| 5 | 16QAM | 1 | 0 | 21.90 | 21.84 | 21.81 | 22 | 0 |
| 5 | 16QAM | 1 | 12 | 21.79 | 21.73 | 21.74 | | |
| 5 | 16QAM | 1 | 24 | 21.69 | 21.49 | 21.62 | | |
| 5 | 16QAM | 12 | 0 | 21.47 | 21.64 | 21.86 | 22 | 0 |
| 5 | 16QAM | 12 | 7 | 21.52 | 21.65 | 21.87 | | |
| 5 | 16QAM | 12 | 13 | 21.57 | 21.56 | 21.84 | | |
| 5 | 16QAM | 25 | 0 | 21.43 | 21.54 | 21.84 | | |
| 5 | 64QAM | 1 | 0 | 20.47 | 20.92 | 21.04 | 22 | 0 |
| 5 | 64QAM | 1 | 12 | 20.62 | 20.76 | 21.32 | | |
| 5 | 64QAM | 1 | 24 | 20.69 | 20.51 | 21.46 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 12 | 0 | 19.54 | 19.75 | 20.17 | 21 | 1 |
| 5 | 64QAM | 12 | 7 | 19.60 | 19.69 | 20.28 | | |
| 5 | 64QAM | 12 | 13 | 19.67 | 19.60 | 20.31 | | |
| 5 | 64QAM | 25 | 0 | 19.47 | 19.61 | 20.14 | | |
| 5 | 256QAM | 1 | 0 | 18.98 | 18.99 | 18.63 | 20 | 2 |
| 5 | 256QAM | 1 | 12 | 18.94 | 18.77 | 18.83 | | |
| 5 | 256QAM | 1 | 24 | 19.20 | 19.00 | 18.80 | | |
| 5 | 256QAM | 12 | 0 | 18.85 | 18.87 | 18.88 | 20 | 2 |
| 5 | 256QAM | 12 | 7 | 18.93 | 18.86 | 18.77 | | |
| 5 | 256QAM | 12 | 13 | 18.93 | 18.74 | 18.78 | | |
| 5 | 256QAM | 25 | 0 | 18.93 | 18.82 | 18.87 | | |
| Channel | | | | 19965 | 20175 | 20385 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1711.5 | 1732.5 | 1753.5 | | |
| 3 | QPSK | 1 | 0 | 21.88 | 21.77 | 21.70 | 22 | 0 |
| 3 | QPSK | 1 | 8 | 21.98 | 21.92 | 21.76 | | |
| 3 | QPSK | 1 | 14 | 21.92 | 21.85 | 21.73 | | |
| 3 | QPSK | 8 | 0 | 21.92 | 21.85 | 21.79 | 22 | 0 |
| 3 | QPSK | 8 | 4 | 21.96 | 21.95 | 21.83 | | |
| 3 | QPSK | 8 | 7 | 21.92 | 21.93 | 21.82 | | |
| 3 | QPSK | 15 | 0 | 21.97 | 21.87 | 21.79 | | |
| 3 | 16QAM | 1 | 0 | 21.79 | 22.00 | 21.79 | 22 | 0 |
| 3 | 16QAM | 1 | 8 | 21.73 | 21.70 | 21.56 | | |
| 3 | 16QAM | 1 | 14 | 21.69 | 21.53 | 21.55 | | |
| 3 | 16QAM | 8 | 0 | 21.43 | 21.64 | 21.86 | 22 | 0 |
| 3 | 16QAM | 8 | 4 | 21.46 | 21.61 | 21.94 | | |
| 3 | 16QAM | 8 | 7 | 21.46 | 21.53 | 21.84 | | |
| 3 | 16QAM | 15 | 0 | 21.41 | 21.54 | 21.86 | | |
| 3 | 64QAM | 1 | 0 | 20.50 | 20.80 | 21.22 | 22 | 0 |
| 3 | 64QAM | 1 | 8 | 20.64 | 20.78 | 21.44 | | |
| 3 | 64QAM | 1 | 14 | 20.60 | 20.63 | 21.45 | | |
| 3 | 64QAM | 8 | 0 | 19.46 | 19.65 | 20.24 | 21 | 1 |
| 3 | 64QAM | 8 | 4 | 19.56 | 19.67 | 20.33 | | |
| 3 | 64QAM | 8 | 7 | 19.50 | 19.59 | 20.33 | | |
| 3 | 64QAM | 15 | 0 | 19.40 | 19.60 | 20.26 | | |
| 3 | 256QAM | 1 | 0 | 19.00 | 18.93 | 18.72 | 20 | 2 |
| 3 | 256QAM | 1 | 8 | 18.96 | 18.77 | 18.77 | | |
| 3 | 256QAM | 1 | 14 | 19.25 | 18.95 | 18.88 | | |
| 3 | 256QAM | 8 | 0 | 18.93 | 18.97 | 18.87 | 20 | 2 |
| 3 | 256QAM | 8 | 4 | 18.94 | 18.81 | 18.84 | | |
| 3 | 256QAM | 8 | 7 | 18.86 | 18.73 | 18.70 | | |
| 3 | 256QAM | 15 | 0 | 18.97 | 18.86 | 18.86 | | |
| Channel | | | | 19957 | 20175 | 20393 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1710.7 | 1732.5 | 1754.3 | | |
| 1.4 | QPSK | 1 | 0 | 21.83 | 21.76 | 21.65 | 22 | 0 |
| 1.4 | QPSK | 1 | 3 | 21.90 | 21.84 | 21.73 | | |
| 1.4 | QPSK | 1 | 5 | 21.83 | 21.78 | 21.68 | | |
| 1.4 | QPSK | 3 | 0 | 21.86 | 21.83 | 21.68 | | |
| 1.4 | QPSK | 3 | 1 | 21.93 | 21.85 | 21.69 | | |
| 1.4 | QPSK | 3 | 3 | 21.89 | 21.83 | 21.71 | | |
| 1.4 | QPSK | 6 | 0 | 21.94 | 21.89 | 21.75 | 22 | 0 |
| 1.4 | 16QAM | 1 | 0 | 21.89 | 21.97 | 21.80 | 22 | 0 |
| 1.4 | 16QAM | 1 | 3 | 21.76 | 21.71 | 21.66 | | |
| 1.4 | 16QAM | 1 | 5 | 21.59 | 21.47 | 21.53 | | |
| 1.4 | 16QAM | 3 | 0 | 21.97 | 21.90 | 21.80 | | |
| 1.4 | 16QAM | 3 | 1 | 21.96 | 21.96 | 21.83 | | |
| 1.4 | 16QAM | 3 | 3 | 21.94 | 21.90 | 21.79 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1.4 | 16QAM | 6 | 0 | 21.34 | 21.51 | 21.82 | 22 | 0 |
| 1.4 | 64QAM | 1 | 0 | 20.36 | 20.60 | 21.28 | 22 | 0 |
| 1.4 | 64QAM | 1 | 3 | 20.52 | 20.66 | 21.41 | | |
| 1.4 | 64QAM | 1 | 5 | 20.48 | 20.56 | 21.32 | | |
| 1.4 | 64QAM | 3 | 0 | 20.41 | 20.62 | 21.29 | | |
| 1.4 | 64QAM | 3 | 1 | 20.53 | 20.73 | 21.40 | | |
| 1.4 | 64QAM | 3 | 3 | 20.44 | 20.61 | 21.32 | | |
| 1.4 | 64QAM | 6 | 0 | 19.34 | 19.50 | 20.21 | 21 | 1 |
| 1.4 | 256QAM | 1 | 0 | 19.03 | 18.99 | 18.63 | 20 | 2 |
| 1.4 | 256QAM | 1 | 3 | 18.97 | 18.84 | 18.74 | | |
| 1.4 | 256QAM | 1 | 5 | 19.26 | 18.91 | 18.88 | | |
| 1.4 | 256QAM | 3 | 0 | 18.91 | 18.89 | 18.90 | | |
| 1.4 | 256QAM | 3 | 1 | 18.99 | 18.81 | 18.78 | | |
| 1.4 | 256QAM | 3 | 3 | 18.91 | 18.78 | 18.80 | | |
| 1.4 | 256QAM | 6 | 0 | 18.97 | 18.92 | 18.88 | 20 | 2 |

**<LTE Band 5>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 20450 | 20525 | 20600 | | |
| Frequency (MHz) | | | | 829 | 836.5 | 844 | | |
| 10 | QPSK | 1 | 0 | 23.49 | 23.48 | 23.68 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 23.42 | 23.51 | 23.66 | | |
| 10 | QPSK | 1 | 49 | 23.47 | 23.60 | 23.62 | | |
| 10 | QPSK | 25 | 0 | 22.53 | 22.59 | 22.71 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.62 | 22.67 | 22.78 | | |
| 10 | QPSK | 25 | 25 | 22.60 | 22.69 | 22.80 | | |
| 10 | QPSK | 50 | 0 | 22.62 | 22.67 | 22.78 | | |
| 10 | 16QAM | 1 | 0 | 22.90 | 22.88 | 22.97 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.82 | 22.89 | 22.99 | | |
| 10 | 16QAM | 1 | 49 | 22.89 | 22.99 | 22.99 | | |
| 10 | 16QAM | 25 | 0 | 21.52 | 21.56 | 21.69 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.62 | 21.66 | 21.76 | | |
| 10 | 16QAM | 25 | 25 | 21.57 | 21.70 | 21.82 | | |
| 10 | 16QAM | 50 | 0 | 21.62 | 21.67 | 21.77 | | |
| 10 | 64QAM | 1 | 0 | 21.74 | 21.75 | 21.84 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.78 | 21.78 | 22.00 | | |
| 10 | 64QAM | 1 | 49 | 21.74 | 21.91 | 21.93 | | |
| 10 | 64QAM | 25 | 0 | 20.57 | 20.62 | 20.76 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.66 | 20.71 | 20.82 | | |
| 10 | 64QAM | 25 | 25 | 20.61 | 20.73 | 20.87 | | |
| 10 | 64QAM | 50 | 0 | 20.64 | 20.72 | 20.81 | | |
| 10 | 256QAM | 1 | 0 | 18.66 | 18.70 | 18.82 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 18.74 | 18.79 | 18.98 | | |
| 10 | 256QAM | 1 | 49 | 18.81 | 18.95 | 19.01 | | |
| 10 | 256QAM | 25 | 0 | 18.66 | 18.74 | 18.89 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 18.66 | 18.66 | 18.96 | | |
| 10 | 256QAM | 25 | 25 | 18.61 | 18.74 | 18.91 | | |
| 10 | 256QAM | 50 | 0 | 18.76 | 18.75 | 18.94 | | |
| Channel | | | | 20425 | 20525 | 20625 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 826.5 | 836.5 | 846.5 | | |
| 5 | QPSK | 1 | 0 | 23.49 | 23.40 | 23.59 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.40 | 23.41 | 23.57 | | |
| 5 | QPSK | 1 | 24 | 23.37 | 23.56 | 23.62 | | |
| 5 | QPSK | 12 | 0 | 22.48 | 22.50 | 22.65 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.57 | 22.64 | 22.72 | | |
| 5 | QPSK | 12 | 13 | 22.60 | 22.64 | 22.74 | | |
| 5 | QPSK | 25 | 0 | 22.53 | 22.60 | 22.71 | | |
| 5 | 16QAM | 1 | 0 | 22.84 | 22.83 | 22.94 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.74 | 22.88 | 22.91 | | |
| 5 | 16QAM | 1 | 24 | 22.86 | 22.98 | 22.93 | | |
| 5 | 16QAM | 12 | 0 | 21.45 | 21.51 | 21.60 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.59 | 21.60 | 21.67 | | |
| 5 | 16QAM | 12 | 13 | 21.47 | 21.70 | 21.79 | | |
| 5 | 16QAM | 25 | 0 | 21.58 | 21.65 | 21.73 | | |
| 5 | 64QAM | 1 | 0 | 21.65 | 21.75 | 21.80 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.72 | 21.75 | 21.97 | | |
| 5 | 64QAM | 1 | 24 | 21.71 | 21.91 | 21.88 | | |
| 5 | 64QAM | 12 | 0 | 20.55 | 20.55 | 20.73 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.57 | 20.66 | 20.78 | | |
| 5 | 64QAM | 12 | 13 | 20.52 | 20.67 | 20.82 | | |
| 5 | 64QAM | 25 | 0 | 20.64 | 20.70 | 20.76 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 256QAM | 1 | 0 | 18.65 | 18.70 | 18.78 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.72 | 18.70 | 18.91 | | |
| 5 | 256QAM | 1 | 24 | 18.75 | 18.93 | 18.92 | | |
| 5 | 256QAM | 12 | 0 | 18.58 | 18.66 | 18.83 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.61 | 18.59 | 18.86 | | |
| 5 | 256QAM | 12 | 13 | 18.52 | 18.64 | 18.83 | | |
| 5 | 256QAM | 25 | 0 | 18.72 | 18.72 | 18.93 | | |
| Channel | | | | 20415 | 20525 | 20635 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 825.5 | 836.5 | 847.5 | | |
| 3 | QPSK | 1 | 0 | 23.47 | 23.39 | 23.53 | 24 | 0 |
| 3 | QPSK | 1 | 8 | 23.42 | 23.46 | 23.65 | | |
| 3 | QPSK | 1 | 14 | 23.41 | 23.59 | 23.67 | | |
| 3 | QPSK | 8 | 0 | 22.47 | 22.50 | 22.64 | 23 | 1 |
| 3 | QPSK | 8 | 4 | 22.57 | 22.65 | 22.76 | | |
| 3 | QPSK | 8 | 7 | 22.51 | 22.65 | 22.75 | | |
| 3 | QPSK | 15 | 0 | 22.59 | 22.62 | 22.70 | | |
| 3 | 16QAM | 1 | 0 | 22.86 | 22.85 | 22.96 | 23 | 1 |
| 3 | 16QAM | 1 | 8 | 22.73 | 22.87 | 22.99 | | |
| 3 | 16QAM | 1 | 14 | 22.84 | 22.95 | 22.97 | | |
| 3 | 16QAM | 8 | 0 | 21.52 | 21.53 | 21.62 | 22 | 2 |
| 3 | 16QAM | 8 | 4 | 21.61 | 21.63 | 21.71 | | |
| 3 | 16QAM | 8 | 7 | 21.51 | 21.63 | 21.79 | | |
| 3 | 16QAM | 15 | 0 | 21.62 | 21.65 | 21.76 | | |
| 3 | 64QAM | 1 | 0 | 21.72 | 21.68 | 21.79 | 22 | 2 |
| 3 | 64QAM | 1 | 8 | 21.76 | 21.71 | 21.98 | | |
| 3 | 64QAM | 1 | 14 | 21.69 | 21.82 | 21.83 | | |
| 3 | 64QAM | 8 | 0 | 20.51 | 20.53 | 20.72 | 21 | 3 |
| 3 | 64QAM | 8 | 4 | 20.65 | 20.61 | 20.75 | | |
| 3 | 64QAM | 8 | 7 | 20.58 | 20.69 | 20.77 | | |
| 3 | 64QAM | 15 | 0 | 20.58 | 20.70 | 20.77 | | |
| 3 | 256QAM | 1 | 0 | 18.59 | 18.62 | 18.75 | 20 | 4 |
| 3 | 256QAM | 1 | 8 | 18.74 | 18.69 | 18.95 | | |
| 3 | 256QAM | 1 | 14 | 18.75 | 18.90 | 19.01 | | |
| 3 | 256QAM | 8 | 0 | 18.60 | 18.70 | 18.80 | 20 | 4 |
| 3 | 256QAM | 8 | 4 | 18.63 | 18.59 | 18.86 | | |
| 3 | 256QAM | 8 | 7 | 18.60 | 18.64 | 18.85 | | |
| 3 | 256QAM | 15 | 0 | 18.72 | 18.66 | 18.89 | | |
| Channel | | | | 20407 | 20525 | 20643 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 824.7 | 836.5 | 848.3 | | |
| 1.4 | QPSK | 1 | 0 | 23.52 | 23.53 | 23.59 | 24 | 0 |
| 1.4 | QPSK | 1 | 3 | 23.55 | 23.61 | 23.58 | | |
| 1.4 | QPSK | 1 | 5 | 23.44 | 23.52 | 23.51 | | |
| 1.4 | QPSK | 3 | 0 | 23.58 | 23.52 | 23.51 | | |
| 1.4 | QPSK | 3 | 1 | 23.58 | 23.55 | 23.51 | | |
| 1.4 | QPSK | 3 | 3 | 23.50 | 23.57 | 23.57 | | |
| 1.4 | QPSK | 6 | 0 | 22.59 | 22.65 | 22.84 | 23 | 1 |
| 1.4 | 16QAM | 1 | 0 | 22.86 | 22.82 | 22.97 | 23 | 1 |
| 1.4 | 16QAM | 1 | 3 | 22.92 | 22.94 | 23.00 | | |
| 1.4 | 16QAM | 1 | 5 | 22.82 | 22.89 | 22.97 | | |
| 1.4 | 16QAM | 3 | 0 | 22.63 | 22.62 | 22.86 | | |
| 1.4 | 16QAM | 3 | 1 | 22.68 | 22.67 | 22.92 | | |
| 1.4 | 16QAM | 3 | 3 | 22.57 | 22.67 | 22.83 | | |
| 1.4 | 16QAM | 6 | 0 | 21.67 | 21.73 | 21.95 | 22 | 2 |
| 1.4 | 64QAM | 1 | 0 | 21.75 | 21.79 | 21.95 | 22 | 2 |
| 1.4 | 64QAM | 1 | 3 | 21.83 | 21.88 | 21.99 | | |
| 1.4 | 64QAM | 1 | 5 | 21.76 | 21.78 | 21.96 | | |

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|---|---|---|---|---|---|---|---|---|
| 1.4 | 64QAM | 3 | 0 | 21.72 | 21.72 | 21.97 | | |
| 1.4 | 64QAM | 3 | 1 | 21.78 | 21.79 | 21.94 | | |
| 1.4 | 64QAM | 3 | 3 | 21.71 | 21.75 | 21.96 | | |
| 1.4 | 64QAM | 6 | 0 | 20.62 | 20.67 | 20.85 | 21 | 3 |
| 1.4 | 256QAM | 1 | 0 | 18.57 | 18.60 | 18.78 | 20 | 4 |
| 1.4 | 256QAM | 1 | 3 | 18.64 | 18.69 | 18.96 | | |
| 1.4 | 256QAM | 1 | 5 | 18.74 | 18.95 | 18.93 | | |
| 1.4 | 256QAM | 3 | 0 | 18.64 | 18.68 | 18.87 | | |
| 1.4 | 256QAM | 3 | 1 | 18.60 | 18.60 | 18.96 | | |
| 1.4 | 256QAM | 3 | 3 | 18.51 | 18.65 | 18.84 | | |
| 1.4 | 256QAM | 6 | 0 | 18.74 | 18.70 | 18.88 | 20 | 4 |

**<LTE Band 7>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 20850 | 21100 | 21350 | | |
| Frequency (MHz) | | | | 2510 | 2535 | 2560 | | |
| 20 | QPSK | 1 | 0 | 17.60 | 17.56 | 17.33 | 18.5 | 0 |
| 20 | QPSK | 1 | 49 | 17.62 | 17.56 | 17.32 | | |
| 20 | QPSK | 1 | 99 | 17.68 | 17.57 | 17.34 | | |
| 20 | QPSK | 50 | 0 | 17.73 | 17.67 | 17.53 | 18.5 | 0 |
| 20 | QPSK | 50 | 24 | 17.83 | 17.70 | 17.53 | | |
| 20 | QPSK | 50 | 50 | 17.82 | 17.68 | 17.49 | | |
| 20 | QPSK | 100 | 0 | 17.77 | 17.69 | 17.49 | | |
| 20 | 16QAM | 1 | 0 | 18.01 | 17.92 | 17.72 | 18.5 | 0 |
| 20 | 16QAM | 1 | 49 | 17.96 | 17.91 | 17.71 | | |
| 20 | 16QAM | 1 | 99 | 18.02 | 17.90 | 17.73 | | |
| 20 | 16QAM | 50 | 0 | 17.74 | 17.69 | 17.53 | 18.5 | 0 |
| 20 | 16QAM | 50 | 24 | 17.81 | 17.72 | 17.53 | | |
| 20 | 16QAM | 50 | 50 | 17.85 | 17.69 | 17.51 | | |
| 20 | 16QAM | 100 | 0 | 17.78 | 17.68 | 17.49 | | |
| 20 | 64QAM | 1 | 0 | 17.92 | 17.77 | 17.60 | 18.5 | 0 |
| 20 | 64QAM | 1 | 49 | 17.90 | 17.85 | 17.60 | | |
| 20 | 64QAM | 1 | 99 | 17.89 | 17.80 | 17.50 | | |
| 20 | 64QAM | 50 | 0 | 17.71 | 17.74 | 17.55 | 18.5 | 0 |
| 20 | 64QAM | 50 | 24 | 17.83 | 17.76 | 17.56 | | |
| 20 | 64QAM | 50 | 50 | 17.83 | 17.74 | 17.54 | | |
| 20 | 64QAM | 100 | 0 | 17.79 | 17.67 | 17.53 | | |
| 20 | 256QAM | 1 | 0 | 17.67 | 17.53 | 17.42 | 18.5 | 0 |
| 20 | 256QAM | 1 | 49 | 17.59 | 17.48 | 17.32 | | |
| 20 | 256QAM | 1 | 99 | 17.59 | 17.42 | 17.31 | | |
| 20 | 256QAM | 50 | 0 | 17.44 | 17.36 | 17.27 | 18.5 | 0 |
| 20 | 256QAM | 50 | 24 | 17.39 | 17.34 | 17.28 | | |
| 20 | 256QAM | 50 | 50 | 17.35 | 17.29 | 17.21 | | |
| 20 | 256QAM | 100 | 0 | 17.45 | 17.38 | 17.31 | | |
| Channel | | | | 20825 | 21100 | 21375 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2507.5 | 2535 | 2562.5 | | |
| 15 | QPSK | 1 | 0 | 17.53 | 17.51 | 17.30 | 18.5 | 0 |
| 15 | QPSK | 1 | 37 | 17.62 | 17.52 | 17.28 | | |
| 15 | QPSK | 1 | 74 | 17.64 | 17.51 | 17.18 | | |
| 15 | QPSK | 36 | 0 | 17.70 | 17.60 | 17.49 | 18.5 | 0 |
| 15 | QPSK | 36 | 20 | 17.83 | 17.65 | 17.50 | | |
| 15 | QPSK | 36 | 39 | 17.74 | 17.60 | 17.49 | | |
| 15 | QPSK | 75 | 0 | 17.75 | 17.66 | 17.49 | | |
| 15 | 16QAM | 1 | 0 | 17.99 | 17.87 | 17.69 | 18.5 | 0 |
| 15 | 16QAM | 1 | 37 | 17.94 | 17.82 | 17.64 | | |
| 15 | 16QAM | 1 | 74 | 18.01 | 17.89 | 17.71 | | |
| 15 | 16QAM | 36 | 0 | 17.73 | 17.63 | 17.43 | 18.5 | 0 |
| 15 | 16QAM | 36 | 20 | 17.76 | 17.67 | 17.45 | | |
| 15 | 16QAM | 36 | 39 | 17.80 | 17.68 | 17.51 | | |
| 15 | 16QAM | 75 | 0 | 17.75 | 17.62 | 17.47 | | |
| 15 | 64QAM | 1 | 0 | 17.84 | 17.67 | 17.57 | 18.5 | 0 |
| 15 | 64QAM | 1 | 37 | 17.85 | 17.85 | 17.59 | | |
| 15 | 64QAM | 1 | 74 | 17.85 | 17.76 | 17.40 | | |
| 15 | 64QAM | 36 | 0 | 17.64 | 17.69 | 17.54 | 18.5 | 0 |
| 15 | 64QAM | 36 | 20 | 17.73 | 17.69 | 17.53 | | |
| 15 | 64QAM | 36 | 39 | 17.73 | 17.73 | 17.45 | | |
| 15 | 64QAM | 75 | 0 | 17.73 | 17.65 | 17.51 | | |

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|---|---|---|---|---|---|---|---|---|
| 15 | 256QAM | 1 | 0 | 17.65 | 17.45 | 17.32 | 18.5 | 0 |
| 15 | 256QAM | 1 | 37 | 17.58 | 17.39 | 17.22 | | |
| 15 | 256QAM | 1 | 74 | 17.56 | 17.38 | 17.26 | | |
| 15 | 256QAM | 36 | 0 | 17.39 | 17.36 | 17.23 | 18.5 | 0 |
| 15 | 256QAM | 36 | 20 | 17.35 | 17.29 | 17.18 | | |
| 15 | 256QAM | 36 | 39 | 17.26 | 17.21 | 17.17 | | |
| 15 | 256QAM | 75 | 0 | 17.45 | 17.37 | 17.22 | | |
| Channel | | | | 20800 | 21100 | 21400 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2505 | 2535 | 2565 | | |
| 10 | QPSK | 1 | 0 | 17.53 | 17.56 | 17.25 | 18.5 | 0 |
| 10 | QPSK | 1 | 25 | 17.58 | 17.53 | 17.28 | | |
| 10 | QPSK | 1 | 49 | 17.64 | 17.46 | 17.21 | | |
| 10 | QPSK | 25 | 0 | 17.69 | 17.60 | 17.52 | 18.5 | 0 |
| 10 | QPSK | 25 | 12 | 17.79 | 17.64 | 17.44 | | |
| 10 | QPSK | 25 | 25 | 17.83 | 17.66 | 17.39 | | |
| 10 | QPSK | 50 | 0 | 17.71 | 17.66 | 17.45 | | |
| 10 | 16QAM | 1 | 0 | 18.00 | 17.88 | 17.62 | 18.5 | 0 |
| 10 | 16QAM | 1 | 25 | 17.95 | 17.90 | 17.64 | | |
| 10 | 16QAM | 1 | 49 | 17.97 | 17.82 | 17.65 | | |
| 10 | 16QAM | 25 | 0 | 17.65 | 17.61 | 17.47 | 18.5 | 0 |
| 10 | 16QAM | 25 | 12 | 17.76 | 17.65 | 17.52 | | |
| 10 | 16QAM | 25 | 25 | 17.85 | 17.65 | 17.43 | | |
| 10 | 16QAM | 50 | 0 | 17.69 | 17.59 | 17.39 | | |
| 10 | 64QAM | 1 | 0 | 17.82 | 17.71 | 17.51 | 18.5 | 0 |
| 10 | 64QAM | 1 | 25 | 17.89 | 17.84 | 17.56 | | |
| 10 | 64QAM | 1 | 49 | 17.86 | 17.77 | 17.46 | | |
| 10 | 64QAM | 25 | 0 | 17.66 | 17.74 | 17.48 | 18.5 | 0 |
| 10 | 64QAM | 25 | 12 | 17.75 | 17.71 | 17.53 | | |
| 10 | 64QAM | 25 | 25 | 17.77 | 17.72 | 17.51 | | |
| 10 | 64QAM | 50 | 0 | 17.71 | 17.64 | 17.47 | | |
| 10 | 256QAM | 1 | 0 | 17.61 | 17.51 | 17.33 | 18.5 | 0 |
| 10 | 256QAM | 1 | 25 | 17.50 | 17.47 | 17.26 | | |
| 10 | 256QAM | 1 | 49 | 17.57 | 17.33 | 17.24 | | |
| 10 | 256QAM | 25 | 0 | 17.39 | 17.32 | 17.19 | 18.5 | 0 |
| 10 | 256QAM | 25 | 12 | 17.30 | 17.29 | 17.20 | | |
| 10 | 256QAM | 25 | 25 | 17.32 | 17.21 | 17.18 | | |
| 10 | 256QAM | 50 | 0 | 17.36 | 17.34 | 17.21 | | |
| Channel | | | | 20775 | 21100 | 21425 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2502.5 | 2535 | 2567.5 | | |
| 5 | QPSK | 1 | 0 | 17.55 | 17.54 | 17.26 | 18.5 | 0 |
| 5 | QPSK | 1 | 12 | 17.56 | 17.51 | 17.24 | | |
| 5 | QPSK | 1 | 24 | 17.66 | 17.48 | 17.26 | | |
| 5 | QPSK | 12 | 0 | 17.72 | 17.62 | 17.47 | 18.5 | 0 |
| 5 | QPSK | 12 | 7 | 17.79 | 17.64 | 17.52 | | |
| 5 | QPSK | 12 | 13 | 17.75 | 17.62 | 17.42 | | |
| 5 | QPSK | 25 | 0 | 17.73 | 17.69 | 17.43 | | |
| 5 | 16QAM | 1 | 0 | 17.97 | 17.89 | 17.63 | 18.5 | 0 |
| 5 | 16QAM | 1 | 12 | 17.86 | 17.82 | 17.61 | | |
| 5 | 16QAM | 1 | 24 | 17.94 | 17.90 | 17.64 | | |
| 5 | 16QAM | 12 | 0 | 17.70 | 17.59 | 17.50 | 18.5 | 0 |
| 5 | 16QAM | 12 | 7 | 17.79 | 17.66 | 17.46 | | |
| 5 | 16QAM | 12 | 13 | 17.80 | 17.60 | 17.42 | | |
| 5 | 16QAM | 25 | 0 | 17.68 | 17.59 | 17.49 | | |
| 5 | 64QAM | 1 | 0 | 17.92 | 17.75 | 17.59 | 18.5 | 0 |
| 5 | 64QAM | 1 | 12 | 17.86 | 17.85 | 17.60 | | |
| 5 | 64QAM | 1 | 24 | 17.86 | 17.71 | 17.44 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 12 | 0 | 17.69 | 17.67 | 17.45 | 18.5 | 0 |
| 5 | 64QAM | 12 | 7 | 17.74 | 17.76 | 17.51 | | |
| 5 | 64QAM | 12 | 13 | 17.74 | 17.71 | 17.45 | | |
| 5 | 64QAM | 25 | 0 | 17.73 | 17.59 | 17.44 | | |
| 5 | 256QAM | 1 | 0 | 17.60 | 17.47 | 17.41 | 18.5 | 0 |
| 5 | 256QAM | 1 | 12 | 17.49 | 17.43 | 17.26 | | |
| 5 | 256QAM | 1 | 24 | 17.51 | 17.34 | 17.30 | | |
| 5 | 256QAM | 12 | 0 | 17.36 | 17.30 | 17.22 | 18.5 | 0 |
| 5 | 256QAM | 12 | 7 | 17.37 | 17.31 | 17.27 | | |
| 5 | 256QAM | 12 | 13 | 17.31 | 17.24 | 17.17 | | |
| 5 | 256QAM | 25 | 0 | 17.36 | 17.30 | 17.31 | | |

**<LTE Band 12>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 23060 | 23095 | 23130 | | |
| Frequency (MHz) | | | | 704 | 707.5 | 711 | | |
| 10 | QPSK | 1 | 0 | 23.33 | 23.37 | 23.44 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 23.29 | 23.36 | 23.41 | | |
| 10 | QPSK | 1 | 49 | 23.28 | 23.26 | 23.31 | | |
| 10 | QPSK | 25 | 0 | 22.50 | 22.51 | 22.51 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.47 | 22.49 | 22.48 | | |
| 10 | QPSK | 25 | 25 | 22.51 | 22.53 | 22.57 | | |
| 10 | QPSK | 50 | 0 | 22.51 | 22.52 | 22.51 | | |
| 10 | 16QAM | 1 | 0 | 22.70 | 22.80 | 22.80 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.81 | 22.91 | 22.78 | | |
| 10 | 16QAM | 1 | 49 | 22.79 | 22.70 | 22.72 | | |
| 10 | 16QAM | 25 | 0 | 21.36 | 21.51 | 21.53 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.55 | 21.53 | 21.55 | | |
| 10 | 16QAM | 25 | 25 | 21.49 | 21.54 | 21.49 | | |
| 10 | 16QAM | 50 | 0 | 21.56 | 21.51 | 21.51 | | |
| 10 | 64QAM | 1 | 0 | 21.65 | 21.77 | 21.77 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.69 | 21.63 | 21.74 | | |
| 10 | 64QAM | 1 | 49 | 21.66 | 21.52 | 21.64 | | |
| 10 | 64QAM | 25 | 0 | 20.52 | 20.59 | 20.52 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.61 | 20.62 | 20.51 | | |
| 10 | 64QAM | 25 | 25 | 20.50 | 20.47 | 20.55 | | |
| 10 | 64QAM | 50 | 0 | 20.56 | 20.55 | 20.58 | | |
| 10 | 256QAM | 1 | 0 | 18.50 | 18.48 | 18.60 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 18.62 | 18.62 | 18.57 | | |
| 10 | 256QAM | 1 | 49 | 18.58 | 18.62 | 18.53 | | |
| 10 | 256QAM | 25 | 0 | 18.53 | 18.49 | 18.52 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 18.49 | 18.53 | 18.55 | | |
| 10 | 256QAM | 25 | 25 | 18.40 | 18.44 | 18.53 | | |
| 10 | 256QAM | 50 | 0 | 18.53 | 18.48 | 18.49 | | |
| Channel | | | | 23035 | 23095 | 23155 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 701.5 | 707.5 | 713.5 | | |
| 5 | QPSK | 1 | 0 | 23.23 | 23.29 | 23.39 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.19 | 23.34 | 23.37 | | |
| 5 | QPSK | 1 | 24 | 23.26 | 23.18 | 23.22 | | |
| 5 | QPSK | 12 | 0 | 22.49 | 22.52 | 22.51 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.47 | 22.45 | 22.43 | | |
| 5 | QPSK | 12 | 13 | 22.43 | 22.51 | 22.50 | | |
| 5 | QPSK | 25 | 0 | 22.51 | 22.46 | 22.51 | | |
| 5 | 16QAM | 1 | 0 | 22.62 | 22.77 | 22.78 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.74 | 22.89 | 22.71 | | |
| 5 | 16QAM | 1 | 24 | 22.75 | 22.68 | 22.63 | | |
| 5 | 16QAM | 12 | 0 | 21.29 | 21.44 | 21.43 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.53 | 21.45 | 21.50 | | |
| 5 | 16QAM | 12 | 13 | 21.39 | 21.49 | 21.44 | | |
| 5 | 16QAM | 25 | 0 | 21.46 | 21.48 | 21.48 | | |
| 5 | 64QAM | 1 | 0 | 21.56 | 21.70 | 21.76 | 22 | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 1 | 12 | 21.67 | 21.59 | 21.67 | | |
| 5 | 64QAM | 1 | 24 | 21.61 | 21.46 | 21.63 | | |
| 5 | 64QAM | 12 | 0 | 20.44 | 20.50 | 20.43 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.51 | 20.56 | 20.48 | | |
| 5 | 64QAM | 12 | 13 | 20.47 | 20.44 | 20.55 | | |
| 5 | 64QAM | 25 | 0 | 20.52 | 20.51 | 20.51 | | |
| 5 | 256QAM | 1 | 0 | 18.41 | 18.41 | 18.58 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.56 | 18.55 | 18.57 | | |
| 5 | 256QAM | 1 | 24 | 18.53 | 18.55 | 18.43 | | |
| 5 | 256QAM | 12 | 0 | 18.48 | 18.39 | 18.51 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.43 | 18.52 | 18.47 | | |
| 5 | 256QAM | 12 | 13 | 18.31 | 18.39 | 18.48 | | |
| 5 | 256QAM | 25 | 0 | 18.53 | 18.41 | 18.42 | | |
| Channel | | | | 23025 | 23095 | 23165 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 700.5 | 707.5 | 714.5 | | |
| 3 | QPSK | 1 | 0 | 23.32 | 23.27 | 23.35 | 24 | 0 |
| 3 | QPSK | 1 | 8 | 23.29 | 23.33 | 23.40 | | |
| 3 | QPSK | 1 | 14 | 23.22 | 23.26 | 23.25 | | |
| 3 | QPSK | 8 | 0 | 22.42 | 22.50 | 22.44 | 23 | 1 |
| 3 | QPSK | 8 | 4 | 22.54 | 22.48 | 22.44 | | |
| 3 | QPSK | 8 | 7 | 22.46 | 22.43 | 22.54 | | |
| 3 | QPSK | 15 | 0 | 22.49 | 22.47 | 22.50 | | |
| 3 | 16QAM | 1 | 0 | 22.63 | 22.72 | 22.71 | 23 | 1 |
| 3 | 16QAM | 1 | 8 | 22.77 | 22.86 | 22.73 | | |
| 3 | 16QAM | 1 | 14 | 22.71 | 22.60 | 22.68 | | |
| 3 | 16QAM | 8 | 0 | 21.28 | 21.49 | 21.50 | 22 | 2 |
| 3 | 16QAM | 8 | 4 | 21.53 | 21.52 | 21.46 | | |
| 3 | 16QAM | 8 | 7 | 21.43 | 21.47 | 21.48 | | |
| 3 | 16QAM | 15 | 0 | 21.55 | 21.50 | 21.50 | | |
| 3 | 64QAM | 1 | 0 | 21.63 | 21.69 | 21.76 | 22 | 2 |
| 3 | 64QAM | 1 | 8 | 21.65 | 21.57 | 21.73 | | |
| 3 | 64QAM | 1 | 14 | 21.59 | 21.49 | 21.62 | | |
| 3 | 64QAM | 8 | 0 | 20.47 | 20.51 | 20.51 | 21 | 3 |
| 3 | 64QAM | 8 | 4 | 20.51 | 20.56 | 20.51 | | |
| 3 | 64QAM | 8 | 7 | 20.44 | 20.39 | 20.55 | | |
| 3 | 64QAM | 15 | 0 | 20.54 | 20.48 | 20.54 | | |
| 3 | 256QAM | 1 | 0 | 18.49 | 18.42 | 18.55 | 20 | 4 |
| 3 | 256QAM | 1 | 8 | 18.60 | 18.53 | 18.56 | | |
| 3 | 256QAM | 1 | 14 | 18.51 | 18.59 | 18.43 | | |
| 3 | 256QAM | 8 | 0 | 18.43 | 18.39 | 18.45 | 20 | 4 |
| 3 | 256QAM | 8 | 4 | 18.41 | 18.43 | 18.54 | | |
| 3 | 256QAM | 8 | 7 | 18.36 | 18.39 | 18.43 | | |
| 3 | 256QAM | 15 | 0 | 18.48 | 18.45 | 18.39 | | |
| Channel | | | | 23017 | 23095 | 23173 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 699.7 | 707.5 | 715.3 | | |
| 1.4 | QPSK | 1 | 0 | 23.32 | 23.28 | 23.30 | 24 | 0 |
| 1.4 | QPSK | 1 | 3 | 23.29 | 23.41 | 23.36 | | |
| 1.4 | QPSK | 1 | 5 | 23.19 | 23.31 | 23.23 | | |
| 1.4 | QPSK | 3 | 0 | 23.36 | 23.36 | 23.31 | | |
| 1.4 | QPSK | 3 | 1 | 23.33 | 23.31 | 23.34 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1.4 | QPSK | 3 | 3 | 23.27 | 23.37 | 23.27 | | |
| 1.4 | QPSK | 6 | 0 | 22.40 | 22.41 | 22.38 | 23 | 1 |
| 1.4 | 16QAM | 1 | 0 | 22.60 | 22.56 | 22.67 | 23 | 1 |
| 1.4 | 16QAM | 1 | 3 | 22.60 | 22.68 | 22.28 | | |
| 1.4 | 16QAM | 1 | 5 | 22.58 | 22.69 | 22.56 | | |
| 1.4 | 16QAM | 3 | 0 | 22.35 | 22.41 | 22.36 | | |
| 1.4 | 16QAM | 3 | 1 | 22.46 | 22.41 | 22.43 | | |
| 1.4 | 16QAM | 3 | 3 | 22.36 | 22.47 | 22.35 | | |
| 1.4 | 16QAM | 6 | 0 | 21.44 | 21.44 | 21.23 | 22 | 2 |
| 1.4 | 64QAM | 1 | 0 | 20.68 | 21.54 | 21.49 | 22 | 2 |
| 1.4 | 64QAM | 1 | 3 | 21.59 | 21.59 | 21.44 | | |
| 1.4 | 64QAM | 1 | 5 | 21.51 | 21.52 | 21.49 | | |
| 1.4 | 64QAM | 3 | 0 | 21.51 | 21.45 | 21.48 | | |
| 1.4 | 64QAM | 3 | 1 | 21.36 | 21.56 | 21.56 | | |
| 1.4 | 64QAM | 3 | 3 | 21.54 | 21.53 | 21.44 | | |
| 1.4 | 64QAM | 6 | 0 | 20.40 | 20.42 | 20.42 | 21 | 3 |
| 1.4 | 256QAM | 1 | 0 | 18.40 | 18.39 | 18.54 | 20 | 4 |
| 1.4 | 256QAM | 1 | 3 | 18.62 | 18.52 | 18.52 | | |
| 1.4 | 256QAM | 1 | 5 | 18.56 | 18.57 | 18.46 | | |
| 1.4 | 256QAM | 3 | 0 | 18.46 | 18.43 | 18.46 | | |
| 1.4 | 256QAM | 3 | 1 | 18.40 | 18.48 | 18.50 | | |
| 1.4 | 256QAM | 3 | 3 | 18.32 | 18.41 | 18.46 | | |
| 1.4 | 256QAM | 6 | 0 | 18.47 | 18.38 | 18.39 | 20 | 4 |

**<LTE Band 13>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | | 23230 | | | |
| Frequency (MHz) | | | | | 782 | | | |
| 10 | QPSK | 1 | 0 | | 23.68 | | 24 | 0 |
| 10 | QPSK | 1 | 25 | | 23.56 | | | |
| 10 | QPSK | 1 | 49 | | 23.61 | | | |
| 10 | QPSK | 25 | 0 | | 22.74 | | 23 | 1 |
| 10 | QPSK | 25 | 12 | | 22.79 | | | |
| 10 | QPSK | 25 | 25 | | 22.83 | | | |
| 10 | QPSK | 50 | 0 | | 22.81 | | | |
| 10 | 16QAM | 1 | 0 | | 22.87 | | 23 | 1 |
| 10 | 16QAM | 1 | 25 | | 23.00 | | | |
| 10 | 16QAM | 1 | 49 | | 22.99 | | | |
| 10 | 16QAM | 25 | 0 | | 21.72 | | 22 | 2 |
| 10 | 16QAM | 25 | 12 | | 21.80 | | | |
| 10 | 16QAM | 25 | 25 | | 21.83 | | | |
| 10 | 16QAM | 50 | 0 | | 21.78 | | | |
| 10 | 64QAM | 1 | 0 | | 21.70 | | 22 | 2 |
| 10 | 64QAM | 1 | 25 | | 21.89 | | | |
| 10 | 64QAM | 1 | 49 | | 22.00 | | | |
| 10 | 64QAM | 25 | 0 | | 20.74 | | 21 | 3 |
| 10 | 64QAM | 25 | 12 | | 20.81 | | | |
| 10 | 64QAM | 25 | 25 | | 20.85 | | | |
| 10 | 64QAM | 50 | 0 | | 20.82 | | | |
| 10 | 256QAM | 1 | 0 | | 18.94 | | 20 | 4 |
| 10 | 256QAM | 1 | 25 | | 19.13 | | | |
| 10 | 256QAM | 1 | 49 | | 19.12 | | | |
| 10 | 256QAM | 25 | 0 | | 18.74 | | 20 | 4 |
| 10 | 256QAM | 25 | 12 | | 18.83 | | | |
| 10 | 256QAM | 25 | 25 | | 18.92 | | | |
| 10 | 256QAM | 50 | 0 | | 18.94 | | | |
| Channel | | | | 23205 | 23230 | 23255 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 779.5 | 782 | 784.5 | | |
| 5 | QPSK | 1 | 0 | 23.44 | 23.47 | 23.43 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.46 | 23.56 | 23.49 | | |
| 5 | QPSK | 1 | 24 | 23.68 | 23.65 | 23.60 | | |
| 5 | QPSK | 12 | 0 | 22.67 | 22.71 | 22.64 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.74 | 22.69 | 22.72 | | |
| 5 | QPSK | 12 | 13 | 22.77 | 22.82 | 22.80 | | |
| 5 | QPSK | 25 | 0 | 22.77 | 22.76 | 22.79 | | |
| 5 | 16QAM | 1 | 0 | 22.83 | 22.78 | 22.84 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.93 | 22.97 | 23.00 | | |
| 5 | 16QAM | 1 | 24 | 22.96 | 22.95 | 22.89 | | |
| 5 | 16QAM | 12 | 0 | 21.69 | 21.69 | 21.67 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.74 | 21.79 | 21.73 | | |
| 5 | 16QAM | 12 | 13 | 21.73 | 21.82 | 21.80 | | |
| 5 | 16QAM | 25 | 0 | 21.74 | 21.71 | 21.70 | | |
| 5 | 64QAM | 1 | 0 | 21.60 | 21.64 | 21.66 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.84 | 21.81 | 21.82 | | |
| 5 | 64QAM | 1 | 24 | 22.00 | 22.00 | 21.90 | | |
| 5 | 64QAM | 12 | 0 | 20.66 | 20.66 | 20.66 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.81 | 20.71 | 20.78 | | |
| 5 | 64QAM | 12 | 13 | 20.79 | 20.81 | 20.75 | | |
| 5 | 64QAM | 25 | 0 | 20.76 | 20.74 | 20.82 | | |

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|---|---|---|---|---|---|---|---|---|
| 5 | 256QAM | 1 | 0 | 18.83 | 18.93 | 18.84 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 19.00 | 19.06 | 19.05 | | |
| 5 | 256QAM | 1 | 24 | 19.02 | 19.02 | 19.01 | | |
| 5 | 256QAM | 12 | 0 | 18.75 | 18.83 | 18.74 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.86 | 18.89 | 18.86 | | |
| 5 | 256QAM | 12 | 13 | 18.83 | 18.89 | 18.82 | | |
| 5 | 256QAM | 25 | 0 | 18.79 | 18.85 | 18.80 | | |

**<LTE Band 14>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | | 23330 | | | |
| Frequency (MHz) | | | | | 793 | | | |
| 10 | QPSK | 1 | 0 | | 23.80 | | 24 | 0 |
| 10 | QPSK | 1 | 25 | | 23.75 | | | |
| 10 | QPSK | 1 | 49 | | 23.76 | | | |
| 10 | QPSK | 25 | 0 | | 22.76 | | 23 | 1 |
| 10 | QPSK | 25 | 12 | | 22.84 | | | |
| 10 | QPSK | 25 | 25 | | 22.92 | | | |
| 10 | QPSK | 50 | 0 | | 22.84 | | | |
| 10 | 16QAM | 1 | 0 | | 22.99 | | 23 | 1 |
| 10 | 16QAM | 1 | 25 | | 22.99 | | | |
| 10 | 16QAM | 1 | 49 | | 23.00 | | | |
| 10 | 16QAM | 25 | 0 | | 21.74 | | 22 | 2 |
| 10 | 16QAM | 25 | 12 | | 21.84 | | | |
| 10 | 16QAM | 25 | 25 | | 21.90 | | | |
| 10 | 16QAM | 50 | 0 | | 21.82 | | | |
| 10 | 64QAM | 1 | 0 | | 21.93 | | 22 | 2 |
| 10 | 64QAM | 1 | 25 | | 21.99 | | | |
| 10 | 64QAM | 1 | 49 | | 21.98 | | | |
| 10 | 64QAM | 25 | 0 | | 20.79 | | 21 | 3 |
| 10 | 64QAM | 25 | 12 | | 20.90 | | | |
| 10 | 64QAM | 25 | 25 | | 20.95 | | | |
| 10 | 64QAM | 50 | 0 | | 20.87 | | | |
| 10 | 256QAM | 1 | 0 | | 18.54 | | 20 | 4 |
| 10 | 256QAM | 1 | 25 | | 18.72 | | | |
| 10 | 256QAM | 1 | 49 | | 18.67 | | | |
| 10 | 256QAM | 25 | 0 | | 18.43 | | 20 | 4 |
| 10 | 256QAM | 25 | 12 | | 18.52 | | | |
| 10 | 256QAM | 25 | 25 | | 18.49 | | | |
| 10 | 256QAM | 50 | 0 | | 18.50 | | | |
| Channel | | | | 23305 | 23330 | 23355 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 790.5 | 793 | 795.5 | | |
| 5 | QPSK | 1 | 0 | 23.61 | 23.69 | 23.63 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.65 | 23.72 | 23.72 | | |
| 5 | QPSK | 1 | 24 | 23.79 | 23.80 | 23.78 | | |
| 5 | QPSK | 12 | 0 | 22.74 | 22.71 | 22.67 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.75 | 22.74 | 22.75 | | |
| 5 | QPSK | 12 | 13 | 22.86 | 22.90 | 22.85 | | |
| 5 | QPSK | 25 | 0 | 22.77 | 22.79 | 22.76 | | |
| 5 | 16QAM | 1 | 0 | 22.97 | 22.97 | 22.96 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.92 | 22.91 | 22.98 | | |
| 5 | 16QAM | 1 | 24 | 22.98 | 22.95 | 22.91 | | |
| 5 | 16QAM | 12 | 0 | 21.65 | 21.72 | 21.68 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.82 | 21.74 | 21.81 | | |
| 5 | 16QAM | 12 | 13 | 21.87 | 21.89 | 21.83 | | |
| 5 | 16QAM | 25 | 0 | 21.75 | 21.79 | 21.80 | | |
| 5 | 64QAM | 1 | 0 | 21.93 | 21.91 | 21.90 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.91 | 21.97 | 21.94 | | |
| 5 | 64QAM | 1 | 24 | 21.88 | 21.94 | 21.96 | | |
| 5 | 64QAM | 12 | 0 | 20.73 | 20.76 | 20.77 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.81 | 20.87 | 20.84 | | |
| 5 | 64QAM | 12 | 13 | 20.87 | 20.93 | 20.91 | | |
| 5 | 64QAM | 25 | 0 | 20.85 | 20.78 | 20.87 | | |

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|---|---|---|---|---|---|---|---|---|
| 5 | 256QAM | 1 | 0 | 18.44 | 18.49 | 18.48 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.61 | 18.67 | 18.58 | | |
| 5 | 256QAM | 1 | 24 | 18.54 | 18.64 | 18.56 | | |
| 5 | 256QAM | 12 | 0 | 18.47 | 18.47 | 18.47 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.50 | 18.51 | 18.45 | | |
| 5 | 256QAM | 12 | 13 | 18.46 | 18.56 | 18.51 | | |
| 5 | 256QAM | 25 | 0 | 18.49 | 18.49 | 18.47 | | |

**<LTE Band 17>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 23780 | 23790 | 23800 | | |
| Frequency (MHz) | | | | 709 | 710 | 711 | | |
| 10 | QPSK | 1 | 0 | 23.49 | 23.52 | 23.50 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 23.38 | 23.48 | 23.37 | | |
| 10 | QPSK | 1 | 49 | 23.50 | 23.39 | 23.32 | | |
| 10 | QPSK | 25 | 0 | 22.57 | 22.57 | 22.57 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.62 | 22.62 | 22.58 | | |
| 10 | QPSK | 25 | 25 | 22.62 | 22.66 | 22.61 | | |
| 10 | QPSK | 50 | 0 | 22.64 | 22.57 | 22.57 | | |
| 10 | 16QAM | 1 | 0 | 22.89 | 22.87 | 22.87 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.83 | 22.79 | 22.83 | | |
| 10 | 16QAM | 1 | 49 | 22.79 | 22.85 | 22.74 | | |
| 10 | 16QAM | 25 | 0 | 21.47 | 21.56 | 21.56 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.69 | 21.62 | 21.57 | | |
| 10 | 16QAM | 25 | 25 | 21.63 | 21.67 | 21.60 | | |
| 10 | 16QAM | 50 | 0 | 21.65 | 21.58 | 21.58 | | |
| 10 | 64QAM | 1 | 0 | 21.78 | 21.66 | 21.66 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.83 | 21.83 | 21.79 | | |
| 10 | 64QAM | 1 | 49 | 21.63 | 21.70 | 21.74 | | |
| 10 | 64QAM | 25 | 0 | 20.59 | 20.65 | 20.63 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.67 | 20.66 | 20.57 | | |
| 10 | 64QAM | 25 | 25 | 20.70 | 20.67 | 20.67 | | |
| 10 | 64QAM | 50 | 0 | 20.67 | 20.63 | 20.61 | | |
| 10 | 256QAM | 1 | 0 | 18.65 | 18.64 | 18.63 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 18.71 | 18.74 | 18.80 | | |
| 10 | 256QAM | 1 | 49 | 18.79 | 18.88 | 18.84 | | |
| 10 | 256QAM | 25 | 0 | 18.66 | 18.66 | 18.68 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 18.73 | 18.60 | 18.65 | | |
| 10 | 256QAM | 25 | 25 | 18.75 | 18.66 | 18.73 | | |
| 10 | 256QAM | 50 | 0 | 18.75 | 18.67 | 18.66 | | |
| Channel | | | | 23755 | 23790 | 23825 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 706.5 | 710 | 713.5 | | |
| 5 | QPSK | 1 | 0 | 23.47 | 23.49 | 23.50 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.33 | 23.47 | 23.31 | | |
| 5 | QPSK | 1 | 24 | 23.44 | 23.36 | 23.31 | | |
| 5 | QPSK | 12 | 0 | 22.54 | 22.48 | 22.52 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.52 | 22.61 | 22.57 | | |
| 5 | QPSK | 12 | 13 | 22.52 | 22.58 | 22.51 | | |
| 5 | QPSK | 25 | 0 | 22.63 | 22.47 | 22.57 | | |
| 5 | 16QAM | 1 | 0 | 22.85 | 22.85 | 22.82 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.80 | 22.71 | 22.82 | | |
| 5 | 16QAM | 1 | 24 | 22.79 | 22.79 | 22.73 | | |
| 5 | 16QAM | 12 | 0 | 21.37 | 21.46 | 21.47 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.69 | 21.55 | 21.50 | | |
| 5 | 16QAM | 12 | 13 | 21.55 | 21.58 | 21.55 | | |
| 5 | 16QAM | 25 | 0 | 21.65 | 21.57 | 21.55 | | |
| 5 | 64QAM | 1 | 0 | 21.70 | 21.63 | 21.65 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.76 | 21.78 | 21.75 | | |
| 5 | 64QAM | 1 | 24 | 21.58 | 21.60 | 21.73 | | |
| 5 | 64QAM | 12 | 0 | 20.57 | 20.58 | 20.57 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.64 | 20.57 | 20.48 | | |
| 5 | 64QAM | 12 | 13 | 20.63 | 20.65 | 20.63 | | |
| 5 | 64QAM | 25 | 0 | 20.61 | 20.59 | 20.55 | | |

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|---|---|---|---|---|---|---|---|---|
| 5 | 256QAM | 1 | 0 | 18.64 | 18.64 | 18.54 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.70 | 18.69 | 18.75 | | |
| 5 | 256QAM | 1 | 24 | 18.78 | 18.81 | 18.76 | | |
| 5 | 256QAM | 12 | 0 | 18.58 | 18.60 | 18.62 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.63 | 18.54 | 18.65 | | |
| 5 | 256QAM | 12 | 13 | 18.71 | 18.63 | 18.73 | | |
| 5 | 256QAM | 25 | 0 | 18.67 | 18.59 | 18.66 | | |

**<LTE Band 25>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 26140 | 26340 | 26590 | | |
| Frequency (MHz) | | | | 1860 | 1880 | 1905 | | |
| 20 | QPSK | 1 | 0 | 23.40 | 23.35 | 23.37 | 24 | 0 |
| 20 | QPSK | 1 | 49 | 23.37 | 23.30 | 23.26 | | |
| 20 | QPSK | 1 | 99 | 23.32 | 23.29 | 23.31 | | |
| 20 | QPSK | 50 | 0 | 22.56 | 22.48 | 22.40 | 23 | 1 |
| 20 | QPSK | 50 | 24 | 22.55 | 22.47 | 22.43 | | |
| 20 | QPSK | 50 | 50 | 22.50 | 22.45 | 22.47 | | |
| 20 | QPSK | 100 | 0 | 22.53 | 22.45 | 22.41 | | |
| 20 | 16QAM | 1 | 0 | 22.79 | 22.71 | 22.66 | 23 | 1 |
| 20 | 16QAM | 1 | 49 | 22.73 | 22.62 | 22.67 | | |
| 20 | 16QAM | 1 | 99 | 22.69 | 22.66 | 22.69 | | |
| 20 | 16QAM | 50 | 0 | 21.57 | 21.49 | 21.42 | 22 | 2 |
| 20 | 16QAM | 50 | 24 | 21.55 | 21.48 | 21.42 | | |
| 20 | 16QAM | 50 | 50 | 21.50 | 21.45 | 21.49 | | |
| 20 | 16QAM | 100 | 0 | 21.54 | 21.43 | 21.43 | | |
| 20 | 64QAM | 1 | 0 | 21.65 | 21.50 | 21.53 | 22 | 2 |
| 20 | 64QAM | 1 | 49 | 21.58 | 21.57 | 21.55 | | |
| 20 | 64QAM | 1 | 99 | 21.59 | 21.53 | 21.58 | | |
| 20 | 64QAM | 50 | 0 | 20.57 | 20.49 | 20.46 | 21 | 3 |
| 20 | 64QAM | 50 | 24 | 20.58 | 20.48 | 20.46 | | |
| 20 | 64QAM | 50 | 50 | 20.53 | 20.45 | 20.48 | | |
| 20 | 64QAM | 100 | 0 | 20.56 | 20.47 | 20.42 | | |
| 20 | 256QAM | 1 | 0 | 18.86 | 18.65 | 18.69 | 20 | 4 |
| 20 | 256QAM | 1 | 49 | 18.66 | 18.57 | 18.56 | | |
| 20 | 256QAM | 1 | 99 | 18.69 | 18.65 | 18.54 | | |
| 20 | 256QAM | 50 | 0 | 18.68 | 18.53 | 18.49 | 20 | 4 |
| 20 | 256QAM | 50 | 24 | 18.67 | 18.52 | 18.48 | | |
| 20 | 256QAM | 50 | 50 | 18.58 | 18.47 | 18.53 | | |
| 20 | 256QAM | 100 | 0 | 18.63 | 18.51 | 18.44 | | |
| Channel | | | | 26115 | 26340 | 26615 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1907.5 | | |
| 15 | QPSK | 1 | 0 | 23.36 | 23.29 | 23.34 | 24 | 0 |
| 15 | QPSK | 1 | 37 | 23.28 | 23.28 | 23.21 | | |
| 15 | QPSK | 1 | 74 | 23.30 | 23.28 | 23.31 | | |
| 15 | QPSK | 36 | 0 | 22.56 | 22.38 | 22.35 | 23 | 1 |
| 15 | QPSK | 36 | 20 | 22.56 | 22.40 | 22.42 | | |
| 15 | QPSK | 36 | 39 | 22.42 | 22.37 | 22.37 | | |
| 15 | QPSK | 75 | 0 | 22.45 | 22.38 | 22.40 | | |
| 15 | 16QAM | 1 | 0 | 22.72 | 22.71 | 22.60 | 23 | 1 |
| 15 | 16QAM | 1 | 37 | 22.72 | 22.61 | 22.65 | | |
| 15 | 16QAM | 1 | 74 | 22.63 | 22.61 | 22.63 | | |
| 15 | 16QAM | 36 | 0 | 21.57 | 21.45 | 21.38 | 22 | 2 |
| 15 | 16QAM | 36 | 20 | 21.50 | 21.48 | 21.40 | | |
| 15 | 16QAM | 36 | 39 | 21.42 | 21.37 | 21.48 | | |
| 15 | 16QAM | 75 | 0 | 21.52 | 21.37 | 21.42 | | |
| 15 | 64QAM | 1 | 0 | 21.61 | 21.47 | 21.45 | 22 | 2 |
| 15 | 64QAM | 1 | 37 | 21.54 | 21.51 | 21.53 | | |
| 15 | 64QAM | 1 | 74 | 21.50 | 21.52 | 21.53 | | |
| 15 | 64QAM | 36 | 0 | 20.56 | 20.39 | 20.43 | 21 | 3 |
| 15 | 64QAM | 36 | 20 | 20.52 | 20.39 | 20.46 | | |
| 15 | 64QAM | 36 | 39 | 20.53 | 20.36 | 20.38 | | |
| 15 | 64QAM | 75 | 0 | 20.46 | 20.42 | 20.33 | | |

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|---|---|---|---|---|---|---|---|---|
| 15 | 256QAM | 1 | 0 | 18.82 | 18.64 | 18.69 | 20 | 4 |
| 15 | 256QAM | 1 | 37 | 18.64 | 18.49 | 18.54 | | |
| 15 | 256QAM | 1 | 74 | 18.60 | 18.61 | 18.48 | | |
| 15 | 256QAM | 36 | 0 | 18.66 | 18.46 | 18.47 | 20 | 4 |
| 15 | 256QAM | 36 | 20 | 18.65 | 18.49 | 18.41 | | |
| 15 | 256QAM | 36 | 39 | 18.49 | 18.47 | 18.53 | | |
| 15 | 256QAM | 75 | 0 | 18.56 | 18.42 | 18.34 | | |
| Channel | | | | 26090 | 26340 | 26640 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1855 | 1880 | 1910 | | |
| 10 | QPSK | 1 | 0 | 23.37 | 23.26 | 23.35 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 23.30 | 23.28 | 23.21 | | |
| 10 | QPSK | 1 | 49 | 23.26 | 23.22 | 23.25 | | |
| 10 | QPSK | 25 | 0 | 22.47 | 22.43 | 22.30 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.48 | 22.39 | 22.38 | | |
| 10 | QPSK | 25 | 25 | 22.42 | 22.45 | 22.47 | | |
| 10 | QPSK | 50 | 0 | 22.47 | 22.36 | 22.34 | | |
| 10 | 16QAM | 1 | 0 | 22.72 | 22.62 | 22.66 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.66 | 22.52 | 22.61 | | |
| 10 | 16QAM | 1 | 49 | 22.64 | 22.64 | 22.67 | | |
| 10 | 16QAM | 25 | 0 | 21.49 | 21.49 | 21.40 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.47 | 21.44 | 21.32 | | |
| 10 | 16QAM | 25 | 25 | 21.40 | 21.40 | 21.48 | | |
| 10 | 16QAM | 50 | 0 | 21.47 | 21.35 | 21.43 | | |
| 10 | 64QAM | 1 | 0 | 21.57 | 21.48 | 21.44 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.55 | 21.56 | 21.53 | | |
| 10 | 64QAM | 1 | 49 | 21.49 | 21.49 | 21.51 | | |
| 10 | 64QAM | 25 | 0 | 20.56 | 20.41 | 20.43 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.52 | 20.40 | 20.45 | | |
| 10 | 64QAM | 25 | 25 | 20.51 | 20.38 | 20.48 | | |
| 10 | 64QAM | 50 | 0 | 20.54 | 20.37 | 20.35 | | |
| 10 | 256QAM | 1 | 0 | 18.84 | 18.61 | 18.59 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 18.66 | 18.50 | 18.51 | | |
| 10 | 256QAM | 1 | 49 | 18.61 | 18.61 | 18.54 | | |
| 10 | 256QAM | 25 | 0 | 18.63 | 18.50 | 18.40 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 18.65 | 18.45 | 18.46 | | |
| 10 | 256QAM | 25 | 25 | 18.55 | 18.39 | 18.52 | | |
| 10 | 256QAM | 50 | 0 | 18.62 | 18.45 | 18.40 | | |
| Channel | | | | 26065 | 26340 | 26665 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1912.5 | | |
| 5 | QPSK | 1 | 0 | 23.24 | 23.28 | 23.35 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.33 | 23.36 | 23.35 | | |
| 5 | QPSK | 1 | 24 | 23.34 | 23.38 | 23.34 | | |
| 5 | QPSK | 12 | 0 | 22.29 | 22.38 | 22.37 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.42 | 22.45 | 22.45 | | |
| 5 | QPSK | 12 | 13 | 22.44 | 22.41 | 22.46 | | |
| 5 | QPSK | 25 | 0 | 22.41 | 22.41 | 22.42 | | |
| 5 | 16QAM | 1 | 0 | 22.57 | 22.66 | 22.66 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.65 | 22.65 | 22.60 | | |
| 5 | 16QAM | 1 | 24 | 22.66 | 22.68 | 22.72 | | |
| 5 | 16QAM | 12 | 0 | 21.32 | 21.36 | 21.38 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.42 | 21.44 | 21.45 | | |
| 5 | 16QAM | 12 | 13 | 21.46 | 21.46 | 21.47 | | |
| 5 | 16QAM | 25 | 0 | 21.42 | 21.44 | 21.42 | | |
| 5 | 64QAM | 1 | 0 | 21.63 | 21.64 | 21.63 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.47 | 21.48 | 21.56 | | |
| 5 | 64QAM | 1 | 24 | 21.56 | 21.53 | 21.59 | | |

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|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 12 | 0 | 20.39 | 20.44 | 20.43 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.53 | 20.52 | 20.52 | | |
| 5 | 64QAM | 12 | 13 | 20.50 | 20.54 | 20.52 | | |
| 5 | 64QAM | 25 | 0 | 20.44 | 20.41 | 20.46 | | |
| 5 | 256QAM | 1 | 0 | 18.78 | 18.65 | 18.69 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.62 | 18.52 | 18.55 | | |
| 5 | 256QAM | 1 | 24 | 18.63 | 18.65 | 18.53 | | |
| 5 | 256QAM | 12 | 0 | 18.59 | 18.52 | 18.46 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.67 | 18.44 | 18.48 | | |
| 5 | 256QAM | 12 | 13 | 18.50 | 18.46 | 18.51 | | |
| 5 | 256QAM | 25 | 0 | 18.55 | 18.48 | 18.36 | | |
| Channel | | | | 26055 | 26340 | 26675 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1913.5 | | |
| 3 | QPSK | 1 | 0 | 23.34 | 23.33 | 23.35 | 24 | 0 |
| 3 | QPSK | 1 | 8 | 23.28 | 23.25 | 23.26 | | |
| 3 | QPSK | 1 | 14 | 23.25 | 23.26 | 23.23 | | |
| 3 | QPSK | 8 | 0 | 22.48 | 22.38 | 22.31 | 23 | 1 |
| 3 | QPSK | 8 | 4 | 22.53 | 22.42 | 22.40 | | |
| 3 | QPSK | 8 | 7 | 22.48 | 22.41 | 22.39 | | |
| 3 | QPSK | 15 | 0 | 22.43 | 22.39 | 22.31 | | |
| 3 | 16QAM | 1 | 0 | 22.72 | 22.67 | 22.60 | 23 | 1 |
| 3 | 16QAM | 1 | 8 | 22.69 | 22.60 | 22.65 | | |
| 3 | 16QAM | 1 | 14 | 22.63 | 22.60 | 22.59 | | |
| 3 | 16QAM | 8 | 0 | 21.57 | 21.48 | 21.41 | 22 | 2 |
| 3 | 16QAM | 8 | 4 | 21.54 | 21.40 | 21.41 | | |
| 3 | 16QAM | 8 | 7 | 21.46 | 21.40 | 21.42 | | |
| 3 | 16QAM | 15 | 0 | 21.44 | 21.42 | 21.36 | | |
| 3 | 64QAM | 1 | 0 | 21.58 | 21.50 | 21.49 | 22 | 2 |
| 3 | 64QAM | 1 | 8 | 21.54 | 21.47 | 21.51 | | |
| 3 | 64QAM | 1 | 14 | 21.49 | 21.44 | 21.53 | | |
| 3 | 64QAM | 8 | 0 | 20.47 | 20.42 | 20.42 | 21 | 3 |
| 3 | 64QAM | 8 | 4 | 20.51 | 20.45 | 20.38 | | |
| 3 | 64QAM | 8 | 7 | 20.52 | 20.43 | 20.46 | | |
| 3 | 64QAM | 15 | 0 | 20.49 | 20.38 | 20.37 | | |
| 3 | 256QAM | 1 | 0 | 18.82 | 18.63 | 18.60 | 20 | 4 |
| 3 | 256QAM | 1 | 8 | 18.61 | 18.52 | 18.53 | | |
| 3 | 256QAM | 1 | 14 | 18.64 | 18.65 | 18.53 | | |
| 3 | 256QAM | 8 | 0 | 18.67 | 18.52 | 18.44 | 20 | 4 |
| 3 | 256QAM | 8 | 4 | 18.66 | 18.52 | 18.40 | | |
| 3 | 256QAM | 8 | 7 | 18.54 | 18.45 | 18.49 | | |
| 3 | 256QAM | 15 | 0 | 18.61 | 18.44 | 18.36 | | |
| Channel | | | | 26047 | 26340 | 26683 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1914.3 | | |
| 1.4 | QPSK | 1 | 0 | 23.32 | 23.18 | 23.21 | 24 | 0 |
| 1.4 | QPSK | 1 | 3 | 23.39 | 23.29 | 23.33 | | |
| 1.4 | QPSK | 1 | 5 | 23.37 | 23.26 | 23.30 | | |
| 1.4 | QPSK | 3 | 0 | 23.35 | 23.27 | 23.27 | | |
| 1.4 | QPSK | 3 | 1 | 23.39 | 23.29 | 23.28 | | |
| 1.4 | QPSK | 3 | 3 | 23.38 | 23.29 | 23.27 | | |
| 1.4 | QPSK | 6 | 0 | 22.40 | 22.31 | 22.34 | 23 | 1 |
| 1.4 | 16QAM | 1 | 0 | 22.64 | 22.53 | 22.54 | 23 | 1 |
| 1.4 | 16QAM | 1 | 3 | 22.74 | 22.65 | 22.63 | | |
| 1.4 | 16QAM | 1 | 5 | 22.70 | 22.59 | 22.63 | | |
| 1.4 | 16QAM | 3 | 0 | 22.45 | 22.35 | 22.36 | | |
| 1.4 | 16QAM | 3 | 1 | 22.50 | 22.39 | 22.41 | | |
| 1.4 | 16QAM | 3 | 3 | 22.44 | 22.35 | 22.37 | | |

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|---|---|---|---|---|---|---|---|---|
| 1.4 | 16QAM | 6 | 0 | 21.50 | 21.40 | 21.44 | 22 | 2 |
| 1.4 | 64QAM | 1 | 0 | 21.57 | 21.52 | 21.44 | 22 | 2 |
| 1.4 | 64QAM | 1 | 3 | 21.65 | 21.55 | 21.55 | | |
| 1.4 | 64QAM | 1 | 5 | 21.65 | 21.47 | 21.48 | | |
| 1.4 | 64QAM | 3 | 0 | 21.58 | 21.43 | 21.48 | | |
| 1.4 | 64QAM | 3 | 1 | 21.60 | 21.49 | 21.49 | | |
| 1.4 | 64QAM | 3 | 3 | 21.58 | 21.51 | 21.49 | | |
| 1.4 | 64QAM | 6 | 0 | 20.48 | 20.33 | 20.35 | 23 | 1 |
| 1.4 | 256QAM | 1 | 0 | 18.83 | 18.57 | 18.68 | 20 | 4 |
| 1.4 | 256QAM | 1 | 3 | 18.61 | 18.52 | 18.55 | | |
| 1.4 | 256QAM | 1 | 5 | 18.64 | 18.62 | 18.54 | | |
| 1.4 | 256QAM | 3 | 0 | 18.67 | 18.51 | 18.41 | | |
| 1.4 | 256QAM | 3 | 1 | 18.66 | 18.44 | 18.41 | | |
| 1.4 | 256QAM | 3 | 3 | 18.50 | 18.46 | 18.47 | | |
| 1.4 | 256QAM | 6 | 0 | 18.58 | 18.42 | 18.39 | 20 | 4 |

**<LTE Band 26>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 26765 | 26865 | 26965 | | |
| Frequency (MHz) | | | | 821.5 | 831.5 | 841.5 | | |
| 15 | QPSK | 1 | 0 | 23.68 | 23.62 | 23.81 | 24 | 0 |
| 15 | QPSK | 1 | 37 | 23.58 | 23.60 | 23.71 | | |
| 15 | QPSK | 1 | 74 | 23.63 | 23.55 | 23.66 | | |
| 15 | QPSK | 36 | 0 | 22.71 | 22.76 | 22.84 | 23 | 1 |
| 15 | QPSK | 36 | 20 | 22.76 | 22.82 | 22.88 | | |
| 15 | QPSK | 36 | 39 | 22.71 | 22.86 | 22.91 | | |
| 15 | QPSK | 75 | 0 | 22.76 | 22.82 | 22.86 | | |
| 15 | 16QAM | 1 | 0 | 23.00 | 22.96 | 22.99 | 23 | 1 |
| 15 | 16QAM | 1 | 37 | 22.93 | 22.97 | 22.99 | | |
| 15 | 16QAM | 1 | 74 | 22.93 | 22.92 | 22.95 | | |
| 15 | 16QAM | 36 | 0 | 21.74 | 21.76 | 21.85 | 22 | 2 |
| 15 | 16QAM | 36 | 20 | 21.76 | 21.82 | 21.87 | | |
| 15 | 16QAM | 36 | 39 | 21.72 | 21.87 | 21.90 | | |
| 15 | 16QAM | 75 | 0 | 21.76 | 21.82 | 21.88 | | |
| 15 | 64QAM | 1 | 0 | 21.86 | 21.81 | 21.91 | 22 | 2 |
| 15 | 64QAM | 1 | 37 | 21.85 | 21.94 | 21.99 | | |
| 15 | 64QAM | 1 | 74 | 21.82 | 21.96 | 21.88 | | |
| 15 | 64QAM | 36 | 0 | 20.78 | 20.80 | 20.92 | 21 | 3 |
| 15 | 64QAM | 36 | 20 | 20.78 | 20.85 | 20.93 | | |
| 15 | 64QAM | 36 | 39 | 20.77 | 20.92 | 20.94 | | |
| 15 | 64QAM | 75 | 0 | 20.77 | 20.82 | 20.89 | | |
| 15 | 256QAM | 1 | 0 | 18.76 | 18.72 | 18.84 | 20 | 4 |
| 15 | 256QAM | 1 | 37 | 18.71 | 18.80 | 18.98 | | |
| 15 | 256QAM | 1 | 74 | 18.73 | 18.89 | 18.84 | | |
| 15 | 256QAM | 36 | 0 | 18.64 | 18.75 | 18.86 | 20 | 4 |
| 15 | 256QAM | 36 | 20 | 18.70 | 18.73 | 18.85 | | |
| 15 | 256QAM | 36 | 39 | 18.63 | 18.75 | 18.86 | | |
| 15 | 256QAM | 75 | 0 | 18.66 | 18.73 | 18.84 | | |
| Channel | | | | 26740 | 26865 | 26990 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 819 | 831.5 | 844 | | |
| 10 | QPSK | 1 | 0 | 23.74 | 23.67 | 23.64 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 23.62 | 23.62 | 23.79 | | |
| 10 | QPSK | 1 | 49 | 23.67 | 23.78 | 23.76 | | |
| 10 | QPSK | 25 | 0 | 22.79 | 22.79 | 22.97 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.80 | 22.87 | 22.96 | | |
| 10 | QPSK | 25 | 25 | 22.72 | 22.84 | 22.95 | | |
| 10 | QPSK | 50 | 0 | 22.78 | 22.87 | 22.92 | | |
| 10 | 16QAM | 1 | 0 | 22.95 | 22.83 | 23.00 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.82 | 22.86 | 23.00 | | |
| 10 | 16QAM | 1 | 49 | 22.83 | 22.92 | 22.93 | | |
| 10 | 16QAM | 25 | 0 | 21.81 | 21.80 | 21.95 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.80 | 21.91 | 21.98 | | |
| 10 | 16QAM | 25 | 25 | 21.73 | 21.82 | 21.88 | | |
| 10 | 16QAM | 50 | 0 | 21.78 | 21.87 | 21.90 | | |
| 10 | 64QAM | 1 | 0 | 21.91 | 21.88 | 21.88 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.94 | 21.93 | 21.99 | | |
| 10 | 64QAM | 1 | 49 | 21.97 | 22.00 | 21.89 | | |
| 10 | 64QAM | 25 | 0 | 20.84 | 20.82 | 20.91 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.83 | 20.94 | 20.92 | | |
| 10 | 64QAM | 25 | 25 | 20.74 | 20.87 | 20.96 | | |
| 10 | 64QAM | 50 | 0 | 20.80 | 20.90 | 20.92 | | |

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|---|---|---|---|---|---|---|---|---|
| 10 | 256QAM | 1 | 0 | 18.74 | 18.67 | 18.79 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 18.69 | 18.71 | 18.94 | | |
| 10 | 256QAM | 1 | 49 | 18.73 | 18.80 | 18.74 | | |
| 10 | 256QAM | 25 | 0 | 18.55 | 18.67 | 18.77 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 18.69 | 18.70 | 18.81 | | |
| 10 | 256QAM | 25 | 25 | 18.60 | 18.68 | 18.83 | | |
| 10 | 256QAM | 50 | 0 | 18.59 | 18.64 | 18.74 | | |
| Channel | | | | 26715 | 26865 | 27015 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 816.5 | 831.5 | 846.5 | | |
| 5 | QPSK | 1 | 0 | 23.67 | 23.59 | 23.63 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 23.56 | 23.59 | 23.72 | | |
| 5 | QPSK | 1 | 24 | 23.61 | 23.68 | 23.65 | | |
| 5 | QPSK | 12 | 0 | 22.62 | 22.73 | 22.81 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.76 | 22.82 | 22.87 | | |
| 5 | QPSK | 12 | 13 | 22.70 | 22.86 | 22.84 | | |
| 5 | QPSK | 25 | 0 | 22.75 | 22.72 | 22.83 | | |
| 5 | 16QAM | 1 | 0 | 23.00 | 22.87 | 22.95 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.85 | 22.96 | 22.92 | | |
| 5 | 16QAM | 1 | 24 | 22.87 | 22.83 | 22.91 | | |
| 5 | 16QAM | 12 | 0 | 21.71 | 21.69 | 21.79 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.71 | 21.75 | 21.80 | | |
| 5 | 16QAM | 12 | 13 | 21.67 | 21.80 | 21.87 | | |
| 5 | 16QAM | 25 | 0 | 21.66 | 21.81 | 21.85 | | |
| 5 | 64QAM | 1 | 0 | 21.77 | 21.73 | 21.87 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.82 | 21.92 | 21.95 | | |
| 5 | 64QAM | 1 | 24 | 21.77 | 21.86 | 21.84 | | |
| 5 | 64QAM | 12 | 0 | 20.73 | 20.78 | 20.89 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.71 | 20.79 | 20.89 | | |
| 5 | 64QAM | 12 | 13 | 20.76 | 20.91 | 20.84 | | |
| 5 | 64QAM | 25 | 0 | 20.73 | 20.82 | 20.83 | | |
| 5 | 256QAM | 1 | 0 | 18.66 | 18.64 | 18.79 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 18.71 | 18.79 | 18.95 | | |
| 5 | 256QAM | 1 | 24 | 18.63 | 18.89 | 18.77 | | |
| 5 | 256QAM | 12 | 0 | 18.62 | 18.65 | 18.82 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 18.70 | 18.73 | 18.82 | | |
| 5 | 256QAM | 12 | 13 | 18.57 | 18.75 | 18.80 | | |
| 5 | 256QAM | 25 | 0 | 18.66 | 18.64 | 18.82 | | |
| Channel | | | | 26705 | 26865 | 27025 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 815.5 | 831.5 | 847.5 | | |
| 3 | QPSK | 1 | 0 | 23.68 | 23.60 | 23.62 | 24 | 0 |
| 3 | QPSK | 1 | 8 | 23.49 | 23.61 | 23.80 | | |
| 3 | QPSK | 1 | 14 | 23.58 | 23.75 | 23.61 | | |
| 3 | QPSK | 8 | 0 | 22.69 | 22.66 | 22.80 | 23 | 1 |
| 3 | QPSK | 8 | 4 | 22.76 | 22.80 | 22.87 | | |
| 3 | QPSK | 8 | 7 | 22.68 | 22.82 | 22.91 | | |
| 3 | QPSK | 15 | 0 | 22.70 | 22.77 | 22.86 | | |
| 3 | 16QAM | 1 | 0 | 22.93 | 22.91 | 22.93 | 23 | 1 |
| 3 | 16QAM | 1 | 8 | 22.92 | 22.89 | 22.89 | | |
| 3 | 16QAM | 1 | 14 | 22.93 | 22.84 | 22.85 | | |
| 3 | 16QAM | 8 | 0 | 21.64 | 21.67 | 21.85 | 22 | 2 |
| 3 | 16QAM | 8 | 4 | 21.73 | 21.80 | 21.83 | | |
| 3 | 16QAM | 8 | 7 | 21.66 | 21.78 | 21.80 | | |
| 3 | 16QAM | 15 | 0 | 21.72 | 21.75 | 21.84 | | |
| 3 | 64QAM | 1 | 0 | 21.78 | 21.72 | 21.87 | 22 | 2 |
| 3 | 64QAM | 1 | 8 | 21.82 | 21.89 | 21.98 | | |
| 3 | 64QAM | 1 | 14 | 21.75 | 21.92 | 21.78 | | |

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|---|---|---|---|---|---|---|---|---|
| 3 | 64QAM | 8 | 0 | 20.69 | 20.71 | 20.82 | 21 | 3 |
| 3 | 64QAM | 8 | 4 | 20.75 | 20.77 | 20.86 | | |
| 3 | 64QAM | 8 | 7 | 20.74 | 20.87 | 20.87 | | |
| 3 | 64QAM | 15 | 0 | 20.75 | 20.79 | 20.87 | | |
| 3 | 256QAM | 1 | 0 | 18.68 | 18.62 | 18.79 | 20 | 4 |
| 3 | 256QAM | 1 | 8 | 18.67 | 18.77 | 18.96 | | |
| 3 | 256QAM | 1 | 14 | 18.70 | 18.81 | 18.84 | | |
| 3 | 256QAM | 8 | 0 | 18.56 | 18.74 | 18.81 | 20 | 4 |
| 3 | 256QAM | 8 | 4 | 18.70 | 18.68 | 18.77 | | |
| 3 | 256QAM | 8 | 7 | 18.56 | 18.69 | 18.83 | | |
| 3 | 256QAM | 15 | 0 | 18.57 | 18.72 | 18.83 | | |
| Channel | | | | 26697 | 26865 | 27033 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 814.7 | 831.5 | 848.3 | | |
| 1.4 | QPSK | 1 | 0 | 23.56 | 23.46 | 23.61 | 24 | 0 |
| 1.4 | QPSK | 1 | 3 | 23.62 | 23.59 | 23.64 | | |
| 1.4 | QPSK | 1 | 5 | 23.51 | 23.52 | 23.53 | | |
| 1.4 | QPSK | 3 | 0 | 23.63 | 23.52 | 23.63 | | |
| 1.4 | QPSK | 3 | 1 | 23.61 | 23.55 | 23.66 | | |
| 1.4 | QPSK | 3 | 3 | 23.59 | 23.55 | 23.62 | | |
| 1.4 | QPSK | 6 | 0 | 22.62 | 22.65 | 22.69 | 23 | 1 |
| 1.4 | 16QAM | 1 | 0 | 22.90 | 22.80 | 22.93 | 23 | 1 |
| 1.4 | 16QAM | 1 | 3 | 22.95 | 22.92 | 22.99 | | |
| 1.4 | 16QAM | 1 | 5 | 22.88 | 22.85 | 22.88 | | |
| 1.4 | 16QAM | 3 | 0 | 22.71 | 22.59 | 22.73 | | |
| 1.4 | 16QAM | 3 | 1 | 22.74 | 22.65 | 22.76 | | |
| 1.4 | 16QAM | 3 | 3 | 22.68 | 22.64 | 22.68 | | |
| 1.4 | 16QAM | 6 | 0 | 21.73 | 21.73 | 21.76 | 22 | 2 |
| 1.4 | 64QAM | 1 | 0 | 21.85 | 21.76 | 21.88 | 22 | 2 |
| 1.4 | 64QAM | 1 | 3 | 21.88 | 21.85 | 21.89 | | |
| 1.4 | 64QAM | 1 | 5 | 21.80 | 21.76 | 21.81 | | |
| 1.4 | 64QAM | 3 | 0 | 21.80 | 21.71 | 21.83 | | |
| 1.4 | 64QAM | 3 | 1 | 21.87 | 21.78 | 21.87 | | |
| 1.4 | 64QAM | 3 | 3 | 21.76 | 21.72 | 21.77 | | |
| 1.4 | 64QAM | 6 | 0 | 20.68 | 20.68 | 20.74 | 21 | 3 |
| 1.4 | 256QAM | 1 | 0 | 18.74 | 18.66 | 18.76 | 20 | 4 |
| 1.4 | 256QAM | 1 | 3 | 18.68 | 18.77 | 18.98 | | |
| 1.4 | 256QAM | 1 | 5 | 18.67 | 18.83 | 18.77 | | |
| 1.4 | 256QAM | 3 | 0 | 18.62 | 18.71 | 18.76 | | |
| 1.4 | 256QAM | 3 | 1 | 18.62 | 18.68 | 18.84 | | |
| 1.4 | 256QAM | 3 | 3 | 18.61 | 18.72 | 18.85 | | |
| 1.4 | 256QAM | 6 | 0 | 18.60 | 18.64 | 18.84 | 20 | 4 |

**<LTE Band 30>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | | 27710 | | | |
| Frequency (MHz) | | | | | 2310 | | | |
| 10 | QPSK | 1 | 0 | | 20.77 | | 21 | 0 |
| 10 | QPSK | 1 | 25 | | 20.65 | | | |
| 10 | QPSK | 1 | 49 | | 20.53 | | | |
| 10 | QPSK | 25 | 0 | | 19.69 | | 20 | 1 |
| 10 | QPSK | 25 | 12 | | 19.75 | | | |
| 10 | QPSK | 25 | 25 | | 19.69 | | | |
| 10 | QPSK | 50 | 0 | | 19.71 | | | |
| 10 | 16QAM | 1 | 0 | | 19.98 | | 20 | 1 |
| 10 | 16QAM | 1 | 25 | | 19.99 | | | |
| 10 | 16QAM | 1 | 49 | | 19.92 | | | |
| 10 | 16QAM | 25 | 0 | | 18.71 | | 20 | 1 |
| 10 | 16QAM | 25 | 12 | | 18.70 | | | |
| 10 | 16QAM | 25 | 25 | | 18.80 | | | |
| 10 | 16QAM | 50 | 0 | | 18.64 | | | |
| 10 | 64QAM | 1 | 0 | | 19.06 | | 20 | 1 |
| 10 | 64QAM | 1 | 25 | | 19.12 | | | |
| 10 | 64QAM | 1 | 49 | | 18.85 | | | |
| 10 | 64QAM | 25 | 0 | | 17.68 | | 19 | 2 |
| 10 | 64QAM | 25 | 12 | | 17.74 | | | |
| 10 | 64QAM | 25 | 25 | | 17.79 | | | |
| 10 | 64QAM | 50 | 0 | | 17.71 | | | |
| 10 | 256QAM | 1 | 0 | | 15.91 | | 17 | 4 |
| 10 | 256QAM | 1 | 25 | | 15.88 | | | |
| 10 | 256QAM | 1 | 49 | | 15.95 | | | |
| 10 | 256QAM | 25 | 0 | | 15.73 | | 17 | 4 |
| 10 | 256QAM | 25 | 12 | | 15.71 | | | |
| 10 | 256QAM | 25 | 25 | | 15.73 | | | |
| 10 | 256QAM | 50 | 0 | | 15.67 | | | |
| Channel | | | | 27685 | 27710 | 27735 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2307.5 | 2310 | 2312.5 | | |
| 5 | QPSK | 1 | 0 | 20.59 | 20.60 | 20.63 | 21 | 0 |
| 5 | QPSK | 1 | 12 | 20.69 | 20.71 | 20.68 | | |
| 5 | QPSK | 1 | 24 | 20.72 | 20.62 | 20.56 | | |
| 5 | QPSK | 12 | 0 | 19.70 | 19.67 | 19.71 | 20 | 1 |
| 5 | QPSK | 12 | 7 | 19.80 | 19.70 | 19.76 | | |
| 5 | QPSK | 12 | 13 | 19.77 | 19.71 | 19.69 | | |
| 5 | QPSK | 25 | 0 | 19.76 | 19.68 | 19.71 | | |
| 5 | 16QAM | 1 | 0 | 19.99 | 19.82 | 20.00 | 20 | 1 |
| 5 | 16QAM | 1 | 12 | 19.97 | 20.00 | 20.00 | | |
| 5 | 16QAM | 1 | 24 | 19.99 | 19.94 | 19.97 | | |
| 5 | 16QAM | 12 | 0 | 18.71 | 18.67 | 18.75 | 20 | 1 |
| 5 | 16QAM | 12 | 7 | 18.79 | 18.77 | 18.78 | | |
| 5 | 16QAM | 12 | 13 | 18.74 | 18.74 | 18.68 | | |
| 5 | 16QAM | 25 | 0 | 18.77 | 18.73 | 18.74 | | |
| 5 | 64QAM | 1 | 0 | 18.84 | 18.83 | 18.90 | 20 | 1 |
| 5 | 64QAM | 1 | 12 | 18.82 | 18.88 | 18.91 | | |
| 5 | 64QAM | 1 | 24 | 18.87 | 18.82 | 18.82 | | |
| 5 | 64QAM | 12 | 0 | 17.80 | 17.78 | 17.80 | 19 | 2 |
| 5 | 64QAM | 12 | 7 | 17.91 | 17.72 | 17.85 | | |
| 5 | 64QAM | 12 | 13 | 17.79 | 17.72 | 17.71 | | |
| 5 | 64QAM | 25 | 0 | 17.81 | 17.73 | 17.71 | | |

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|---|---|---|---|---|---|---|---|---|
| 5 | 256QAM | 1 | 0 | 15.84 | 15.84 | 15.89 | 17 | 4 |
| 5 | 256QAM | 1 | 12 | 15.82 | 15.87 | 15.82 | | |
| 5 | 256QAM | 1 | 24 | 15.95 | 15.92 | 15.91 | | |
| 5 | 256QAM | 12 | 0 | 15.69 | 15.65 | 15.64 | 17 | 4 |
| 5 | 256QAM | 12 | 7 | 15.66 | 15.63 | 15.64 | | |
| 5 | 256QAM | 12 | 13 | 15.64 | 15.70 | 15.68 | | |
| 5 | 256QAM | 25 | 0 | 15.66 | 15.63 | 15.65 | | |

**<LTE Band 66>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 132072 | 132322 | 132572 | | |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | | |
| 20 | QPSK | 1 | 0 | 21.14 | 20.91 | 21.16 | 22 | 0 |
| 20 | QPSK | 1 | 49 | 20.74 | 20.85 | 20.90 | | |
| 20 | QPSK | 1 | 99 | 20.77 | 20.86 | 20.78 | | |
| 20 | QPSK | 50 | 0 | 20.84 | 20.97 | 21.06 | 22 | 0 |
| 20 | QPSK | 50 | 24 | 20.89 | 20.96 | 21.02 | | |
| 20 | QPSK | 50 | 50 | 20.86 | 20.96 | 20.99 | | |
| 20 | QPSK | 100 | 0 | 20.90 | 20.94 | 21.04 | | |
| 20 | 16QAM | 1 | 0 | 21.14 | 21.22 | 21.42 | 22 | 0 |
| 20 | 16QAM | 1 | 49 | 21.10 | 21.21 | 21.27 | | |
| 20 | 16QAM | 1 | 99 | 21.07 | 21.18 | 21.16 | | |
| 20 | 16QAM | 50 | 0 | 20.83 | 20.94 | 21.05 | 22 | 0 |
| 20 | 16QAM | 50 | 24 | 20.92 | 20.94 | 21.05 | | |
| 20 | 16QAM | 50 | 50 | 20.89 | 20.98 | 21.03 | | |
| 20 | 16QAM | 100 | 0 | 20.88 | 20.90 | 21.03 | | |
| 20 | 64QAM | 1 | 0 | 20.93 | 20.97 | 21.15 | 22 | 0 |
| 20 | 64QAM | 1 | 49 | 20.89 | 20.98 | 21.01 | | |
| 20 | 64QAM | 1 | 99 | 20.22 | 20.98 | 20.91 | | |
| 20 | 64QAM | 50 | 0 | 20.77 | 20.90 | 20.19 | 21 | 1 |
| 20 | 64QAM | 50 | 24 | 20.85 | 20.89 | 20.07 | | |
| 20 | 64QAM | 50 | 50 | 20.44 | 20.88 | 19.83 | | |
| 20 | 64QAM | 100 | 0 | 20.61 | 20.86 | 20.07 | | |
| 20 | 256QAM | 1 | 0 | 18.99 | 19.04 | 19.21 | 20 | 2 |
| 20 | 256QAM | 1 | 49 | 19.01 | 18.98 | 19.17 | | |
| 20 | 256QAM | 1 | 99 | 19.21 | 19.15 | 19.35 | | |
| 20 | 256QAM | 50 | 0 | 18.80 | 18.93 | 19.09 | 20 | 2 |
| 20 | 256QAM | 50 | 24 | 18.96 | 18.91 | 19.07 | | |
| 20 | 256QAM | 50 | 50 | 18.96 | 19.01 | 19.20 | | |
| 20 | 256QAM | 100 | 0 | 18.95 | 18.96 | 19.09 | | |
| Channel | | | | 132047 | 132322 | 132597 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | | |
| 15 | QPSK | 1 | 0 | 20.69 | 20.83 | 20.96 | 22 | 0 |
| 15 | QPSK | 1 | 37 | 20.66 | 20.79 | 20.85 | | |
| 15 | QPSK | 1 | 74 | 20.69 | 20.76 | 20.78 | | |
| 15 | QPSK | 36 | 0 | 20.72 | 20.88 | 20.94 | 22 | 0 |
| 15 | QPSK | 36 | 20 | 20.80 | 20.88 | 21.01 | | |
| 15 | QPSK | 36 | 39 | 20.75 | 20.87 | 20.94 | | |
| 15 | QPSK | 75 | 0 | 20.77 | 20.85 | 20.91 | | |
| 15 | 16QAM | 1 | 0 | 20.98 | 21.12 | 21.29 | 22 | 0 |
| 15 | 16QAM | 1 | 37 | 20.98 | 21.10 | 21.20 | | |
| 15 | 16QAM | 1 | 74 | 20.95 | 21.04 | 21.10 | | |
| 15 | 16QAM | 36 | 0 | 20.71 | 20.85 | 20.95 | 22 | 0 |
| 15 | 16QAM | 36 | 20 | 20.82 | 20.86 | 21.03 | | |
| 15 | 16QAM | 36 | 39 | 20.78 | 20.92 | 20.94 | | |
| 15 | 16QAM | 75 | 0 | 20.78 | 20.84 | 20.91 | | |
| 15 | 64QAM | 1 | 0 | 20.87 | 21.00 | 21.12 | 22 | 0 |
| 15 | 64QAM | 1 | 37 | 20.92 | 21.07 | 21.07 | | |
| 15 | 64QAM | 1 | 74 | 20.89 | 20.97 | 20.96 | | |
| 15 | 64QAM | 36 | 0 | 20.77 | 20.94 | 20.00 | 21 | 1 |
| 15 | 64QAM | 36 | 20 | 20.86 | 20.89 | 19.93 | | |
| 15 | 64QAM | 36 | 39 | 20.79 | 20.94 | 19.89 | | |
| 15 | 64QAM | 75 | 0 | 20.80 | 20.84 | 19.91 | | |

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|---|---|---|---|---|---|---|---|---|
| 15 | 256QAM | 1 | 0 | 18.89 | 19.02 | 19.19 | 20 | 2 |
| 15 | 256QAM | 1 | 37 | 19.00 | 18.92 | 19.16 | | |
| 15 | 256QAM | 1 | 74 | 19.19 | 19.06 | 19.34 | | |
| 15 | 256QAM | 36 | 0 | 18.75 | 18.89 | 19.07 | 20 | 2 |
| 15 | 256QAM | 36 | 20 | 18.91 | 18.91 | 19.06 | | |
| 15 | 256QAM | 36 | 39 | 18.96 | 19.00 | 19.18 | | |
| 15 | 256QAM | 75 | 0 | 18.93 | 18.90 | 19.01 | | |
| Channel | | | | 132022 | 132322 | 132622 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | | |
| 10 | QPSK | 1 | 0 | 20.90 | 20.98 | 21.04 | 22 | 0 |
| 10 | QPSK | 1 | 25 | 20.79 | 20.95 | 21.01 | | |
| 10 | QPSK | 1 | 49 | 20.76 | 20.90 | 20.90 | | |
| 10 | QPSK | 25 | 0 | 20.95 | 21.02 | 21.09 | 22 | 0 |
| 10 | QPSK | 25 | 12 | 20.97 | 21.04 | 21.10 | | |
| 10 | QPSK | 25 | 25 | 20.93 | 21.07 | 21.12 | | |
| 10 | QPSK | 50 | 0 | 20.95 | 21.05 | 21.07 | | |
| 10 | 16QAM | 1 | 0 | 21.25 | 21.38 | 21.36 | 22 | 0 |
| 10 | 16QAM | 1 | 25 | 21.15 | 21.34 | 21.38 | | |
| 10 | 16QAM | 1 | 49 | 21.13 | 21.34 | 21.34 | | |
| 10 | 16QAM | 25 | 0 | 20.94 | 21.02 | 21.10 | 22 | 0 |
| 10 | 16QAM | 25 | 12 | 20.96 | 21.07 | 21.10 | | |
| 10 | 16QAM | 25 | 25 | 20.91 | 21.16 | 21.10 | | |
| 10 | 16QAM | 50 | 0 | 20.94 | 21.04 | 21.10 | | |
| 10 | 64QAM | 1 | 0 | 21.15 | 20.93 | 20.36 | 22 | 0 |
| 10 | 64QAM | 1 | 25 | 21.07 | 21.25 | 20.94 | | |
| 10 | 64QAM | 1 | 49 | 21.03 | 21.17 | 20.84 | | |
| 10 | 64QAM | 25 | 0 | 21.00 | 20.36 | 19.58 | 21 | 1 |
| 10 | 64QAM | 25 | 12 | 21.00 | 20.68 | 19.85 | | |
| 10 | 64QAM | 25 | 25 | 20.96 | 20.45 | 19.80 | | |
| 10 | 64QAM | 50 | 0 | 20.99 | 20.51 | 19.63 | | |
| 10 | 256QAM | 1 | 0 | 18.89 | 18.99 | 19.14 | 20 | 2 |
| 10 | 256QAM | 1 | 25 | 18.99 | 18.94 | 19.14 | | |
| 10 | 256QAM | 1 | 49 | 19.20 | 19.05 | 19.34 | | |
| 10 | 256QAM | 25 | 0 | 18.72 | 18.86 | 19.04 | 20 | 2 |
| 10 | 256QAM | 25 | 12 | 18.87 | 18.87 | 18.97 | | |
| 10 | 256QAM | 25 | 25 | 18.91 | 18.93 | 19.14 | | |
| 10 | 256QAM | 50 | 0 | 18.94 | 18.86 | 19.08 | | |
| Channel | | | | 131997 | 132322 | 132647 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | | |
| 5 | QPSK | 1 | 0 | 20.68 | 20.73 | 20.87 | 22 | 0 |
| 5 | QPSK | 1 | 12 | 20.70 | 20.84 | 20.89 | | |
| 5 | QPSK | 1 | 24 | 20.63 | 20.76 | 20.82 | | |
| 5 | QPSK | 12 | 0 | 20.76 | 20.85 | 20.97 | 22 | 0 |
| 5 | QPSK | 12 | 7 | 20.78 | 20.93 | 20.95 | | |
| 5 | QPSK | 12 | 13 | 20.78 | 20.92 | 20.96 | | |
| 5 | QPSK | 25 | 0 | 20.75 | 20.83 | 20.96 | | |
| 5 | 16QAM | 1 | 0 | 21.01 | 21.07 | 21.22 | 22 | 0 |
| 5 | 16QAM | 1 | 12 | 20.99 | 21.10 | 21.24 | | |
| 5 | 16QAM | 1 | 24 | 20.92 | 21.14 | 21.16 | | |
| 5 | 16QAM | 12 | 0 | 20.81 | 20.91 | 21.00 | 22 | 0 |
| 5 | 16QAM | 12 | 7 | 20.82 | 21.02 | 21.00 | | |
| 5 | 16QAM | 12 | 13 | 20.78 | 20.96 | 20.97 | | |
| 5 | 16QAM | 25 | 0 | 20.77 | 20.88 | 20.98 | | |
| 5 | 64QAM | 1 | 0 | 20.93 | 21.04 | 21.00 | 22 | 0 |
| 5 | 64QAM | 1 | 12 | 20.93 | 21.10 | 21.17 | | |
| 5 | 64QAM | 1 | 24 | 20.88 | 21.03 | 21.07 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 12 | 0 | 20.84 | 20.95 | 20.09 | 21 | 1 |
| 5 | 64QAM | 12 | 7 | 20.83 | 20.99 | 20.30 | | |
| 5 | 64QAM | 12 | 13 | 20.79 | 20.95 | 20.30 | | |
| 5 | 64QAM | 25 | 0 | 20.80 | 20.88 | 20.17 | | |
| 5 | 256QAM | 1 | 0 | 18.92 | 18.98 | 19.16 | 20 | 2 |
| 5 | 256QAM | 1 | 12 | 19.01 | 18.89 | 19.07 | | |
| 5 | 256QAM | 1 | 24 | 19.18 | 19.11 | 19.34 | | |
| 5 | 256QAM | 12 | 0 | 18.72 | 18.83 | 19.09 | 20 | 2 |
| 5 | 256QAM | 12 | 7 | 18.87 | 18.88 | 18.98 | | |
| 5 | 256QAM | 12 | 13 | 18.96 | 18.96 | 19.15 | | |
| 5 | 256QAM | 25 | 0 | 18.95 | 18.93 | 19.04 | | |
| Channel | | | | 131987 | 132322 | 132657 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1711.5 | 1745 | 1778.5 | | |
| 3 | QPSK | 1 | 0 | 20.71 | 20.77 | 20.86 | 22 | 0 |
| 3 | QPSK | 1 | 8 | 20.77 | 20.90 | 20.91 | | |
| 3 | QPSK | 1 | 14 | 20.67 | 20.81 | 20.82 | | |
| 3 | QPSK | 8 | 0 | 20.76 | 20.89 | 20.95 | 22 | 0 |
| 3 | QPSK | 8 | 4 | 20.82 | 20.96 | 20.98 | | |
| 3 | QPSK | 8 | 7 | 20.74 | 20.92 | 20.93 | | |
| 3 | QPSK | 15 | 0 | 20.79 | 20.88 | 20.93 | | |
| 3 | 16QAM | 1 | 0 | 21.00 | 21.11 | 21.22 | 22 | 0 |
| 3 | 16QAM | 1 | 8 | 21.01 | 21.29 | 21.30 | | |
| 3 | 16QAM | 1 | 14 | 21.01 | 21.14 | 21.15 | | |
| 3 | 16QAM | 8 | 0 | 20.81 | 20.99 | 21.05 | 22 | 0 |
| 3 | 16QAM | 8 | 4 | 20.89 | 21.03 | 21.05 | | |
| 3 | 16QAM | 8 | 7 | 20.82 | 20.98 | 21.04 | | |
| 3 | 16QAM | 15 | 0 | 20.84 | 20.93 | 21.02 | | |
| 3 | 64QAM | 1 | 0 | 20.96 | 21.04 | 20.95 | 22 | 0 |
| 3 | 64QAM | 1 | 8 | 21.01 | 21.19 | 21.22 | | |
| 3 | 64QAM | 1 | 14 | 20.92 | 21.14 | 21.13 | | |
| 3 | 64QAM | 8 | 0 | 20.88 | 20.67 | 19.96 | 21 | 1 |
| 3 | 64QAM | 8 | 4 | 20.85 | 20.72 | 20.10 | | |
| 3 | 64QAM | 8 | 7 | 20.80 | 20.67 | 20.10 | | |
| 3 | 64QAM | 15 | 0 | 20.84 | 20.64 | 20.00 | | |
| 3 | 256QAM | 1 | 0 | 18.91 | 19.03 | 19.15 | 20 | 2 |
| 3 | 256QAM | 1 | 8 | 18.96 | 18.91 | 19.15 | | |
| 3 | 256QAM | 1 | 14 | 19.16 | 19.11 | 19.26 | | |
| 3 | 256QAM | 8 | 0 | 18.78 | 18.85 | 19.02 | 20 | 2 |
| 3 | 256QAM | 8 | 4 | 18.88 | 18.87 | 18.99 | | |
| 3 | 256QAM | 8 | 7 | 18.86 | 18.97 | 19.13 | | |
| 3 | 256QAM | 15 | 0 | 18.93 | 18.93 | 19.03 | | |
| Channel | | | | 131979 | 132322 | 132665 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1710.7 | 1745 | 1779.3 | | |
| 1.4 | QPSK | 1 | 0 | 20.63 | 20.75 | 20.78 | 22 | 0 |
| 1.4 | QPSK | 1 | 3 | 20.66 | 20.82 | 20.82 | | |
| 1.4 | QPSK | 1 | 5 | 20.59 | 20.76 | 20.76 | | |
| 1.4 | QPSK | 3 | 0 | 20.66 | 20.77 | 20.82 | | |
| 1.4 | QPSK | 3 | 1 | 20.69 | 20.84 | 20.88 | | |
| 1.4 | QPSK | 3 | 3 | 20.61 | 20.79 | 20.83 | | |
| 1.4 | QPSK | 6 | 0 | 20.68 | 20.83 | 20.88 | 22 | 0 |
| 1.4 | 16QAM | 1 | 0 | 20.92 | 21.02 | 21.13 | 22 | 0 |
| 1.4 | 16QAM | 1 | 3 | 21.01 | 21.19 | 21.22 | | |
| 1.4 | 16QAM | 1 | 5 | 20.94 | 21.15 | 21.12 | | |
| 1.4 | 16QAM | 3 | 0 | 20.75 | 20.90 | 21.00 | | |
| 1.4 | 16QAM | 3 | 1 | 20.80 | 20.97 | 21.02 | | |
| 1.4 | 16QAM | 3 | 3 | 20.74 | 20.92 | 20.92 | | |

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|---|---|---|---|---|---|---|---|---|
| 1.4 | 16QAM | 6 | 0 | 20.78 | 20.89 | 20.94 | 22 | 0 |
| 1.4 | 64QAM | 1 | 0 | 20.90 | 20.99 | 21.07 | 22 | 0 |
| 1.4 | 64QAM | 1 | 3 | 20.97 | 21.10 | 21.13 | | |
| 1.4 | 64QAM | 1 | 5 | 20.89 | 21.06 | 21.04 | | |
| 1.4 | 64QAM | 3 | 0 | 20.84 | 20.94 | 21.04 | | |
| 1.4 | 64QAM | 3 | 1 | 20.89 | 21.06 | 21.06 | | |
| 1.4 | 64QAM | 3 | 3 | 20.83 | 21.00 | 21.03 | | |
| 1.4 | 64QAM | 6 | 0 | 20.40 | 20.45 | 19.90 | 21 | 1 |
| 1.4 | 256QAM | 1 | 0 | 18.91 | 19.04 | 19.19 | 20 | 2 |
| 1.4 | 256QAM | 1 | 3 | 18.99 | 18.93 | 19.13 | | |
| 1.4 | 256QAM | 1 | 5 | 19.21 | 19.06 | 19.34 | | |
| 1.4 | 256QAM | 3 | 0 | 18.71 | 18.84 | 19.04 | | |
| 1.4 | 256QAM | 3 | 1 | 18.93 | 18.88 | 19.03 | | |
| 1.4 | 256QAM | 3 | 3 | 18.89 | 18.98 | 19.10 | | |
| 1.4 | 256QAM | 6 | 0 | 18.86 | 18.95 | 19.07 | 20 | 2 |

**<LTE Band 71>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 133222 | 133322 | 133372 | | |
| Frequency (MHz) | | | | 673 | 683 | 688 | | |
| 20 | QPSK | 1 | 0 | 23.24 | 23.94 | 23.64 | 24 | 0 |
| 20 | QPSK | 1 | 49 | 22.93 | 22.49 | 23.16 | | |
| 20 | QPSK | 1 | 99 | 22.40 | 23.91 | 23.10 | | |
| 20 | QPSK | 50 | 0 | 21.36 | 22.62 | 21.77 | 23 | 1 |
| 20 | QPSK | 50 | 24 | 22.37 | 21.83 | 22.43 | | |
| 20 | QPSK | 50 | 50 | 22.74 | 22.28 | 22.78 | | |
| 20 | QPSK | 100 | 0 | 22.64 | 22.71 | 22.48 | | |
| 20 | 16QAM | 1 | 0 | 22.57 | 22.91 | 22.90 | 23 | 1 |
| 20 | 16QAM | 1 | 49 | 22.15 | 21.89 | 22.52 | | |
| 20 | 16QAM | 1 | 99 | 21.68 | 23.00 | 22.39 | | |
| 20 | 16QAM | 50 | 0 | 20.50 | 21.54 | 20.89 | 22 | 2 |
| 20 | 16QAM | 50 | 24 | 21.12 | 20.91 | 21.33 | | |
| 20 | 16QAM | 50 | 50 | 21.56 | 21.28 | 21.77 | | |
| 20 | 16QAM | 100 | 0 | 20.95 | 21.30 | 21.30 | | |
| 20 | 64QAM | 1 | 0 | 20.23 | 21.01 | 21.05 | 22 | 2 |
| 20 | 64QAM | 1 | 49 | 20.06 | 20.09 | 20.44 | | |
| 20 | 64QAM | 1 | 99 | 20.04 | 21.75 | 20.48 | | |
| 20 | 64QAM | 50 | 0 | 19.01 | 19.52 | 19.08 | 21 | 3 |
| 20 | 64QAM | 50 | 24 | 19.16 | 19.00 | 19.31 | | |
| 20 | 64QAM | 50 | 50 | 19.50 | 19.20 | 19.81 | | |
| 20 | 64QAM | 100 | 0 | 19.00 | 19.33 | 19.27 | | |
| 20 | 256QAM | 1 | 0 | 19.29 | 19.17 | 19.19 | 20 | 4 |
| 20 | 256QAM | 1 | 49 | 19.07 | 18.93 | 19.25 | | |
| 20 | 256QAM | 1 | 99 | 18.91 | 19.19 | 19.10 | | |
| 20 | 256QAM | 50 | 0 | 19.01 | 19.17 | 19.00 | 20 | 4 |
| 20 | 256QAM | 50 | 24 | 19.18 | 19.10 | 19.30 | | |
| 20 | 256QAM | 50 | 50 | 19.12 | 19.06 | 19.06 | | |
| 20 | 256QAM | 100 | 0 | 19.17 | 19.11 | 19.11 | | |
| Channel | | | | 133197 | 133297 | 133397 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 670.5 | 680.5 | 690.5 | | |
| 15 | QPSK | 1 | 0 | 23.16 | 23.85 | 23.54 | 24 | 0 |
| 15 | QPSK | 1 | 37 | 22.85 | 22.46 | 23.06 | | |
| 15 | QPSK | 1 | 74 | 22.35 | 23.90 | 23.08 | | |
| 15 | QPSK | 36 | 0 | 21.26 | 22.54 | 21.70 | 23 | 1 |
| 15 | QPSK | 36 | 20 | 22.35 | 21.83 | 22.39 | | |
| 15 | QPSK | 36 | 39 | 22.68 | 22.27 | 22.68 | | |
| 15 | QPSK | 75 | 0 | 22.58 | 22.69 | 22.48 | | |
| 15 | 16QAM | 1 | 0 | 22.53 | 22.83 | 22.80 | 23 | 1 |
| 15 | 16QAM | 1 | 37 | 22.05 | 21.85 | 22.46 | | |
| 15 | 16QAM | 1 | 74 | 21.60 | 22.91 | 22.31 | | |
| 15 | 16QAM | 36 | 0 | 20.44 | 21.49 | 20.80 | 22 | 2 |
| 15 | 16QAM | 36 | 20 | 21.09 | 20.87 | 21.32 | | |
| 15 | 16QAM | 36 | 39 | 21.55 | 21.28 | 21.75 | | |
| 15 | 16QAM | 75 | 0 | 20.86 | 21.24 | 21.27 | | |
| 15 | 64QAM | 1 | 0 | 20.14 | 20.93 | 21.03 | 22 | 2 |

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|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 1 | 37 | 20.05 | 20.00 | 20.36 | | |
| 15 | 64QAM | 1 | 74 | 20.05 | 21.71 | 20.45 | | |
| 15 | 64QAM | 36 | 0 | 19.08 | 19.50 | 19.09 | 21 | 3 |
| 15 | 64QAM | 36 | 20 | 19.11 | 19.00 | 19.22 | | |
| 15 | 64QAM | 36 | 39 | 19.41 | 19.17 | 19.75 | | |
| 15 | 64QAM | 75 | 0 | 19.01 | 19.23 | 19.18 | | |
| 15 | 256QAM | 1 | 0 | 19.25 | 19.17 | 19.09 | 20 | 4 |
| 15 | 256QAM | 1 | 37 | 19.02 | 18.92 | 19.15 | | |
| 15 | 256QAM | 1 | 74 | 18.81 | 19.09 | 19.06 | | |
| 15 | 256QAM | 36 | 0 | 18.93 | 19.09 | 18.96 | 20 | 4 |
| 15 | 256QAM | 36 | 20 | 19.13 | 19.05 | 19.24 | | |
| 15 | 256QAM | 36 | 39 | 19.03 | 18.96 | 19.05 | | |
| 15 | 256QAM | 75 | 0 | 19.13 | 19.09 | 19.02 | | |
| Channel | | | | 133172 | 133272 | 133422 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 668 | 678 | 693 | | |
| 10 | QPSK | 1 | 0 | 23.21 | 23.81 | 23.59 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 22.85 | 22.42 | 23.14 | | |
| 10 | QPSK | 1 | 49 | 22.38 | 23.90 | 23.02 | | |
| 10 | QPSK | 25 | 0 | 21.35 | 22.52 | 21.77 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.27 | 21.78 | 22.33 | | |
| 10 | QPSK | 25 | 25 | 22.68 | 22.25 | 22.76 | | |
| 10 | QPSK | 50 | 0 | 22.58 | 22.63 | 22.40 | | |
| 10 | 16QAM | 1 | 0 | 22.53 | 22.89 | 22.89 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.12 | 21.85 | 22.46 | | |
| 10 | 16QAM | 1 | 49 | 21.68 | 22.98 | 22.37 | | |
| 10 | 16QAM | 25 | 0 | 20.43 | 21.50 | 20.81 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.05 | 20.83 | 21.28 | | |
| 10 | 16QAM | 25 | 25 | 21.47 | 21.26 | 21.74 | | |
| 10 | 16QAM | 50 | 0 | 20.92 | 21.20 | 21.26 | | |
| 10 | 64QAM | 1 | 0 | 20.20 | 20.93 | 20.95 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 20.07 | 20.01 | 20.35 | | |
| 10 | 64QAM | 1 | 49 | 20.04 | 21.70 | 20.41 | | |
| 10 | 64QAM | 25 | 0 | 19.05 | 19.43 | 19.06 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 19.08 | 19.01 | 19.29 | | |
| 10 | 64QAM | 25 | 25 | 19.42 | 19.11 | 19.76 | | |
| 10 | 64QAM | 50 | 0 | 19.02 | 19.27 | 19.21 | | |
| 10 | 256QAM | 1 | 0 | 19.19 | 19.07 | 19.18 | 20 | 4 |
| 10 | 256QAM | 1 | 25 | 19.02 | 18.91 | 19.16 | | |
| 10 | 256QAM | 1 | 49 | 18.91 | 19.13 | 19.06 | | |
| 10 | 256QAM | 25 | 0 | 18.95 | 19.10 | 18.91 | 20 | 4 |
| 10 | 256QAM | 25 | 12 | 19.09 | 19.04 | 19.27 | | |
| 10 | 256QAM | 25 | 25 | 19.10 | 18.99 | 18.97 | | |
| 10 | 256QAM | 50 | 0 | 19.10 | 19.01 | 19.04 | | |
| Channel | | | | 133147 | 133247 | 133447 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 665.5 | 675.5 | 695.5 | | |
| 5 | QPSK | 1 | 0 | 23.24 | 23.88 | 23.57 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 22.93 | 22.42 | 23.16 | | |
| 5 | QPSK | 1 | 24 | 22.31 | 23.89 | 23.08 | | |
| 5 | QPSK | 12 | 0 | 21.29 | 22.55 | 21.75 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.33 | 21.73 | 22.39 | | |

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|---|---|---|---|---|---|---|---|---|
| 5 | QPSK | 12 | 13 | 22.64 | 22.25 | 22.77 | | |
| 5 | QPSK | 25 | 0 | 22.58 | 22.70 | 22.43 | | |
| 5 | 16QAM | 1 | 0 | 22.50 | 22.81 | 22.85 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.06 | 21.88 | 22.51 | | |
| 5 | 16QAM | 1 | 24 | 21.58 | 22.94 | 22.29 | | |
| 5 | 16QAM | 12 | 0 | 20.46 | 21.50 | 20.81 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.03 | 20.85 | 21.28 | | |
| 5 | 16QAM | 12 | 13 | 21.55 | 21.18 | 21.67 | | |
| 5 | 16QAM | 25 | 0 | 20.91 | 21.25 | 21.20 | | |
| 5 | 64QAM | 1 | 0 | 20.15 | 20.97 | 21.02 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 20.05 | 20.02 | 20.35 | | |
| 5 | 64QAM | 1 | 24 | 20.00 | 21.71 | 20.41 | | |
| 5 | 64QAM | 12 | 0 | 19.00 | 19.47 | 19.02 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 19.09 | 19.03 | 19.26 | | |
| 5 | 64QAM | 12 | 13 | 19.50 | 19.17 | 19.77 | | |
| 5 | 64QAM | 25 | 0 | 19.00 | 19.23 | 19.20 | | |
| 5 | 256QAM | 1 | 0 | 19.22 | 19.10 | 19.12 | 20 | 4 |
| 5 | 256QAM | 1 | 12 | 19.06 | 18.90 | 19.25 | | |
| 5 | 256QAM | 1 | 24 | 18.87 | 19.14 | 19.09 | | |
| 5 | 256QAM | 12 | 0 | 19.00 | 19.08 | 19.00 | 20 | 4 |
| 5 | 256QAM | 12 | 7 | 19.09 | 19.08 | 19.24 | | |
| 5 | 256QAM | 12 | 13 | 19.12 | 19.06 | 19.03 | | |
| 5 | 256QAM | 25 | 0 | 19.12 | 19.01 | 19.09 | | |

## Ant 8

### <LTE Band 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 18700 | 18900 | 19100 | | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | | |
| 20 | QPSK | 1 | 0 | 22.00 | 21.71 | 21.71 | 22.8 | 0 |
| 20 | QPSK | 1 | 49 | 21.89 | 21.57 | 21.69 | | |
| 20 | QPSK | 1 | 99 | 21.85 | 21.56 | 21.70 | | |
| 20 | QPSK | 50 | 0 | 22.18 | 21.79 | 21.70 | 22.8 | 0 |
| 20 | QPSK | 50 | 24 | 22.20 | 21.85 | 21.79 | | |
| 20 | QPSK | 50 | 50 | 22.05 | 21.84 | 21.78 | | |
| 20 | QPSK | 100 | 0 | 22.14 | 21.75 | 21.70 | | |
| 20 | 16QAM | 1 | 0 | 22.45 | 22.15 | 22.15 | 22.8 | 0 |
| 20 | 16QAM | 1 | 49 | 22.27 | 21.97 | 21.98 | | |
| 20 | 16QAM | 1 | 99 | 22.28 | 22.01 | 22.06 | | |
| 20 | 16QAM | 50 | 0 | 21.85 | 21.58 | 21.42 | 22.8 | 0 |
| 20 | 16QAM | 50 | 24 | 21.95 | 21.66 | 21.62 | | |
| 20 | 16QAM | 50 | 50 | 21.90 | 21.63 | 21.62 | | |
| 20 | 16QAM | 100 | 0 | 21.87 | 21.61 | 21.53 | | |
| 20 | 64QAM | 1 | 0 | 21.00 | 20.80 | 20.82 | 22.8 | 0 |
| 20 | 64QAM | 1 | 49 | 21.82 | 21.57 | 21.48 | | |
| 20 | 64QAM | 1 | 99 | 21.83 | 21.58 | 21.57 | | |
| 20 | 64QAM | 50 | 0 | 20.90 | 20.64 | 20.62 | 21.8 | 1 |
| 20 | 64QAM | 50 | 24 | 20.84 | 20.63 | 20.60 | | |
| 20 | 64QAM | 50 | 50 | 20.90 | 20.65 | 20.56 | | |
| 20 | 64QAM | 100 | 0 | 20.91 | 20.64 | 20.55 | | |
| 20 | 256QAM | 1 | 0 | 18.96 | 18.68 | 18.66 | 19.8 | 3 |
| 20 | 256QAM | 1 | 49 | 18.72 | 18.52 | 18.48 | | |
| 20 | 256QAM | 1 | 99 | 18.71 | 18.42 | 18.33 | | |
| 20 | 256QAM | 50 | 0 | 18.96 | 18.68 | 18.60 | 19.8 | 3 |
| 20 | 256QAM | 50 | 24 | 18.96 | 18.73 | 18.69 | | |
| 20 | 256QAM | 50 | 50 | 19.00 | 18.72 | 18.65 | | |
| 20 | 256QAM | 100 | 0 | 18.94 | 18.74 | 18.69 | | |
| Channel | | | | 18675 | 18900 | 19125 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | | |
| 15 | QPSK | 1 | 0 | 21.97 | 21.70 | 21.64 | 22.8 | 0 |
| 15 | QPSK | 1 | 37 | 21.87 | 21.48 | 21.64 | | |
| 15 | QPSK | 1 | 74 | 21.80 | 21.56 | 21.70 | | |
| 15 | QPSK | 36 | 0 | 22.16 | 21.70 | 21.66 | 22.8 | 0 |
| 15 | QPSK | 36 | 20 | 22.20 | 21.76 | 21.62 | | |
| 15 | QPSK | 36 | 39 | 21.98 | 21.80 | 21.72 | | |
| 15 | QPSK | 75 | 0 | 22.09 | 21.75 | 21.70 | | |
| 15 | 16QAM | 1 | 0 | 22.37 | 22.10 | 22.06 | 22.8 | 0 |
| 15 | 16QAM | 1 | 37 | 22.26 | 21.87 | 21.90 | | |
| 15 | 16QAM | 1 | 74 | 22.18 | 22.01 | 22.03 | | |
| 15 | 16QAM | 36 | 0 | 21.76 | 21.49 | 21.39 | 22.8 | 0 |
| 15 | 16QAM | 36 | 20 | 21.86 | 21.65 | 21.55 | | |
| 15 | 16QAM | 36 | 39 | 21.90 | 21.60 | 21.61 | | |
| 15 | 16QAM | 75 | 0 | 21.79 | 21.53 | 21.45 | | |
| 15 | 64QAM | 1 | 0 | 20.93 | 20.83 | 20.84 | 22.8 | 0 |
| 15 | 64QAM | 1 | 37 | 21.80 | 21.57 | 21.45 | | |
| 15 | 64QAM | 1 | 74 | 21.75 | 21.51 | 21.57 | | |
| 15 | 64QAM | 36 | 0 | 20.86 | 20.63 | 20.56 | 21.8 | 1 |
| 15 | 64QAM | 36 | 20 | 20.81 | 20.61 | 20.56 | | |

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|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 36 | 39 | 20.87 | 20.64 | 20.56 | | |
| 15 | 64QAM | 75 | 0 | 20.81 | 20.54 | 20.54 | | |
| 15 | 256QAM | 1 | 0 | 18.91 | 18.66 | 18.62 | 19.8 | 3 |
| 15 | 256QAM | 1 | 37 | 18.67 | 18.48 | 18.46 | | |
| 15 | 256QAM | 1 | 74 | 18.69 | 18.39 | 18.26 | | |
| 15 | 256QAM | 36 | 0 | 18.96 | 18.62 | 18.50 | 19.8 | 3 |
| 15 | 256QAM | 36 | 20 | 18.95 | 18.63 | 18.69 | | |
| 15 | 256QAM | 36 | 39 | 18.94 | 18.71 | 18.65 | | |
| 15 | 256QAM | 75 | 0 | 18.85 | 18.70 | 18.64 | | |
| Channel | | | | 18650 | 18900 | 19150 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | | |
| 10 | QPSK | 1 | 0 | 21.92 | 21.66 | 21.66 | 22.8 | 0 |
| 10 | QPSK | 1 | 25 | 21.82 | 21.56 | 21.67 | | |
| 10 | QPSK | 1 | 49 | 21.75 | 21.56 | 21.65 | | |
| 10 | QPSK | 25 | 0 | 22.11 | 21.71 | 21.66 | 22.8 | 0 |
| 10 | QPSK | 25 | 12 | 22.12 | 21.85 | 21.67 | | |
| 10 | QPSK | 25 | 25 | 21.96 | 21.81 | 21.74 | | |
| 10 | QPSK | 50 | 0 | 22.10 | 21.69 | 21.67 | | |
| 10 | 16QAM | 1 | 0 | 22.43 | 22.14 | 22.13 | 22.8 | 0 |
| 10 | 16QAM | 1 | 25 | 22.24 | 21.97 | 21.92 | | |
| 10 | 16QAM | 1 | 49 | 22.25 | 21.99 | 21.99 | | |
| 10 | 16QAM | 25 | 0 | 21.80 | 21.56 | 21.35 | 22.8 | 0 |
| 10 | 16QAM | 25 | 12 | 21.85 | 21.61 | 21.52 | | |
| 10 | 16QAM | 25 | 25 | 21.89 | 21.53 | 21.57 | | |
| 10 | 16QAM | 50 | 0 | 21.84 | 21.51 | 21.52 | | |
| 10 | 64QAM | 1 | 0 | 20.93 | 20.80 | 20.84 | 22.8 | 0 |
| 10 | 64QAM | 1 | 25 | 21.82 | 21.52 | 21.48 | | |
| 10 | 64QAM | 1 | 49 | 21.77 | 21.49 | 21.54 | | |
| 10 | 64QAM | 25 | 0 | 20.86 | 20.55 | 20.55 | 21.8 | 1 |
| 10 | 64QAM | 25 | 12 | 20.75 | 20.55 | 20.53 | | |
| 10 | 64QAM | 25 | 25 | 20.86 | 20.59 | 20.54 | | |
| 10 | 64QAM | 50 | 0 | 20.88 | 20.63 | 20.46 | | |
| 10 | 256QAM | 1 | 0 | 18.87 | 18.59 | 18.56 | 19.8 | 3 |
| 10 | 256QAM | 1 | 25 | 18.72 | 18.50 | 18.42 | | |
| 10 | 256QAM | 1 | 49 | 18.62 | 18.32 | 18.25 | | |
| 10 | 256QAM | 25 | 0 | 18.86 | 18.67 | 18.50 | 19.8 | 3 |
| 10 | 256QAM | 25 | 12 | 18.91 | 18.72 | 18.65 | | |
| 10 | 256QAM | 25 | 25 | 18.96 | 18.71 | 18.55 | | |
| 10 | 256QAM | 50 | 0 | 18.92 | 18.70 | 18.62 | | |
| Channel | | | | 18625 | 18900 | 19175 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | | |
| 5 | QPSK | 1 | 0 | 21.92 | 21.62 | 21.65 | 22.8 | 0 |
| 5 | QPSK | 1 | 12 | 21.86 | 21.55 | 21.64 | | |
| 5 | QPSK | 1 | 24 | 21.76 | 21.54 | 21.67 | | |
| 5 | QPSK | 12 | 0 | 22.16 | 21.78 | 21.68 | 22.8 | 0 |
| 5 | QPSK | 12 | 7 | 22.12 | 21.78 | 21.71 | | |
| 5 | QPSK | 12 | 13 | 22.01 | 21.75 | 21.72 | | |
| 5 | QPSK | 25 | 0 | 22.04 | 21.65 | 21.67 | | |
| 5 | 16QAM | 1 | 0 | 22.39 | 22.11 | 22.07 | 22.8 | 0 |
| 5 | 16QAM | 1 | 12 | 22.19 | 21.93 | 21.95 | | |
| 5 | 16QAM | 1 | 24 | 22.28 | 21.96 | 22.05 | | |
| 5 | 16QAM | 12 | 0 | 21.85 | 21.51 | 21.37 | 22.8 | 0 |
| 5 | 16QAM | 12 | 7 | 21.86 | 21.58 | 21.58 | | |
| 5 | 16QAM | 12 | 13 | 21.86 | 21.54 | 21.60 | | |
| 5 | 16QAM | 25 | 0 | 21.82 | 21.60 | 21.44 | | |
| 5 | 64QAM | 1 | 0 | 20.91 | 20.84 | 20.83 | 22.8 | 0 |

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|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 1 | 12 | 21.80 | 21.51 | 21.38 | | |
| 5 | 64QAM | 1 | 24 | 21.81 | 21.54 | 21.48 | | |
| 5 | 64QAM | 12 | 0 | 20.89 | 20.64 | 20.57 | 21.8 | 1 |
| 5 | 64QAM | 12 | 7 | 20.77 | 20.58 | 20.59 | | |
| 5 | 64QAM | 12 | 13 | 20.87 | 20.60 | 20.52 | | |
| 5 | 64QAM | 25 | 0 | 20.81 | 20.55 | 20.52 | | |
| 5 | 256QAM | 1 | 0 | 18.88 | 18.64 | 18.58 | 19.8 | 3 |
| 5 | 256QAM | 1 | 12 | 18.62 | 18.47 | 18.41 | | |
| 5 | 256QAM | 1 | 24 | 18.64 | 18.41 | 18.26 | | |
| 5 | 256QAM | 12 | 0 | 18.86 | 18.67 | 18.58 | 19.8 | 3 |
| 5 | 256QAM | 12 | 7 | 18.93 | 18.66 | 18.64 | | |
| 5 | 256QAM | 12 | 13 | 18.95 | 18.64 | 18.58 | | |
| 5 | 256QAM | 25 | 0 | 18.91 | 18.70 | 18.67 | | |
| Channel | | | | 18615 | 18900 | 19185 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1908.5 | | |
| 3 | QPSK | 1 | 0 | 21.90 | 21.66 | 21.67 | 22.8 | 0 |
| 3 | QPSK | 1 | 8 | 21.80 | 21.51 | 21.65 | | |
| 3 | QPSK | 1 | 14 | 21.78 | 21.49 | 21.63 | | |
| 3 | QPSK | 8 | 0 | 22.17 | 21.79 | 21.66 | 22.8 | 0 |
| 3 | QPSK | 8 | 4 | 22.17 | 21.81 | 21.70 | | |
| 3 | QPSK | 8 | 7 | 21.98 | 21.75 | 21.73 | | |
| 3 | QPSK | 15 | 0 | 22.14 | 21.70 | 21.62 | | |
| 3 | 16QAM | 1 | 0 | 22.36 | 22.14 | 22.09 | 22.8 | 0 |
| 3 | 16QAM | 1 | 8 | 22.27 | 21.92 | 21.92 | | |
| 3 | 16QAM | 1 | 14 | 22.23 | 21.96 | 21.97 | | |
| 3 | 16QAM | 8 | 0 | 21.84 | 21.52 | 21.32 | 22.8 | 0 |
| 3 | 16QAM | 8 | 4 | 21.88 | 21.60 | 21.57 | | |
| 3 | 16QAM | 8 | 7 | 21.85 | 21.53 | 21.62 | | |
| 3 | 16QAM | 15 | 0 | 21.87 | 21.58 | 21.47 | | |
| 3 | 64QAM | 1 | 0 | 20.99 | 20.82 | 20.81 | 22.8 | 0 |
| 3 | 64QAM | 1 | 8 | 21.80 | 21.49 | 21.38 | | |
| 3 | 64QAM | 1 | 14 | 21.80 | 21.48 | 21.48 | | |
| 3 | 64QAM | 8 | 0 | 20.83 | 20.61 | 20.60 | 21.8 | 1 |
| 3 | 64QAM | 8 | 4 | 20.83 | 20.53 | 20.56 | | |
| 3 | 64QAM | 8 | 7 | 20.86 | 20.61 | 20.49 | | |
| 3 | 64QAM | 15 | 0 | 20.90 | 20.64 | 20.46 | | |
| 3 | 256QAM | 1 | 0 | 18.95 | 18.64 | 18.60 | 19.8 | 3 |
| 3 | 256QAM | 1 | 8 | 18.66 | 18.46 | 18.39 | | |
| 3 | 256QAM | 1 | 14 | 18.63 | 18.33 | 18.29 | | |
| 3 | 256QAM | 8 | 0 | 18.96 | 18.60 | 18.53 | 19.8 | 3 |
| 3 | 256QAM | 8 | 4 | 18.94 | 18.71 | 18.60 | | |
| 3 | 256QAM | 8 | 7 | 19.00 | 18.66 | 18.57 | | |
| 3 | 256QAM | 15 | 0 | 18.84 | 18.68 | 18.63 | | |
| Channel | | | | 18607 | 18900 | 19193 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1909.3 | | |
| 1.4 | QPSK | 1 | 0 | 21.94 | 21.67 | 21.63 | 22.8 | 0 |
| 1.4 | QPSK | 1 | 3 | 21.87 | 21.50 | 21.63 | | |
| 1.4 | QPSK | 1 | 5 | 21.75 | 21.52 | 21.68 | | |
| 1.4 | QPSK | 3 | 0 | 22.11 | 21.70 | 21.66 | | |
| 1.4 | QPSK | 3 | 1 | 22.14 | 21.77 | 21.70 | | |
| 1.4 | QPSK | 3 | 3 | 21.95 | 21.81 | 21.80 | | |
| 1.4 | QPSK | 6 | 0 | 22.11 | 21.69 | 21.60 | 22.8 | 0 |
| 1.4 | 16QAM | 1 | 0 | 22.43 | 22.13 | 22.13 | 22.8 | 0 |
| 1.4 | 16QAM | 1 | 3 | 22.17 | 21.94 | 21.96 | | |
| 1.4 | 16QAM | 1 | 5 | 22.18 | 21.92 | 22.02 | | |
| 1.4 | 16QAM | 3 | 0 | 21.79 | 21.52 | 21.37 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1.4 | 16QAM | 3 | 1 | 21.87 | 21.63 | 21.52 | | |
| 1.4 | 16QAM | 3 | 3 | 21.90 | 21.61 | 21.55 | | |
| 1.4 | 16QAM | 6 | 0 | 21.84 | 21.55 | 21.45 | 22.8 | 0 |
| 1.4 | 64QAM | 1 | 0 | 22.00 | 21.65 | 21.66 | 22.8 | 0 |
| 1.4 | 64QAM | 1 | 3 | 21.84 | 21.48 | 21.65 | | |
| 1.4 | 64QAM | 1 | 5 | 21.76 | 21.56 | 21.66 | | |
| 1.4 | 64QAM | 3 | 0 | 22.15 | 21.75 | 21.62 | | |
| 1.4 | 64QAM | 3 | 1 | 22.12 | 21.85 | 21.69 | | |
| 1.4 | 64QAM | 3 | 3 | 21.99 | 21.74 | 21.77 | | |
| 1.4 | 64QAM | 6 | 0 | 20.81 | 20.45 | 20.54 | 21.8 | 1 |
| 1.4 | 256QAM | 1 | 0 | 18.74 | 18.46 | 18.41 | 19.8 | 3 |
| 1.4 | 256QAM | 1 | 3 | 18.70 | 18.49 | 18.47 | | |
| 1.4 | 256QAM | 1 | 5 | 18.79 | 18.52 | 18.48 | | |
| 1.4 | 256QAM | 3 | 0 | 18.88 | 18.64 | 18.63 | | |
| 1.4 | 256QAM | 3 | 1 | 18.89 | 18.60 | 18.53 | | |
| 1.4 | 256QAM | 3 | 3 | 18.88 | 18.58 | 18.51 | | |
| 1.4 | 256QAM | 6 | 0 | 18.93 | 18.66 | 18.60 | 19.8 | 3 |

**<LTE Band 66>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 132072 | 132322 | 132572 | | |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | | |
| 20 | QPSK | 1 | 0 | 22.95 | 23.24 | 23.69 | 24 | 0 |
| 20 | QPSK | 1 | 49 | 22.75 | 23.15 | 23.23 | | |
| 20 | QPSK | 1 | 99 | 22.91 | 23.18 | 23.20 | | |
| 20 | QPSK | 50 | 0 | 22.71 | 22.97 | 22.95 | 23 | 1 |
| 20 | QPSK | 50 | 24 | 22.87 | 22.96 | 22.90 | | |
| 20 | QPSK | 50 | 50 | 22.82 | 22.97 | 22.95 | | |
| 20 | QPSK | 100 | 0 | 22.81 | 23.00 | 22.98 | | |
| 20 | 16QAM | 1 | 0 | 22.86 | 22.58 | 22.50 | 23 | 1 |
| 20 | 16QAM | 1 | 49 | 22.69 | 23.00 | 22.93 | | |
| 20 | 16QAM | 1 | 99 | 22.88 | 23.00 | 22.98 | | |
| 20 | 16QAM | 50 | 0 | 21.76 | 21.98 | 21.92 | 22 | 2 |
| 20 | 16QAM | 50 | 24 | 21.83 | 21.97 | 21.97 | | |
| 20 | 16QAM | 50 | 50 | 21.78 | 21.92 | 21.87 | | |
| 20 | 16QAM | 100 | 0 | 21.84 | 21.93 | 21.88 | | |
| 20 | 64QAM | 1 | 0 | 21.99 | 21.30 | 21.26 | 22 | 2 |
| 20 | 64QAM | 1 | 49 | 22.00 | 22.00 | 21.91 | | |
| 20 | 64QAM | 1 | 99 | 21.78 | 22.00 | 21.91 | | |
| 20 | 64QAM | 50 | 0 | 20.77 | 20.82 | 20.75 | 21 | 3 |
| 20 | 64QAM | 50 | 24 | 20.91 | 21.00 | 20.93 | | |
| 20 | 64QAM | 50 | 50 | 20.79 | 21.00 | 20.92 | | |
| 20 | 64QAM | 100 | 0 | 20.89 | 20.97 | 20.95 | | |
| 20 | 256QAM | 1 | 0 | 19.00 | 18.95 | 18.90 | 19 | 5 |
| 20 | 256QAM | 1 | 49 | 18.82 | 19.00 | 18.91 | | |
| 20 | 256QAM | 1 | 99 | 18.86 | 18.84 | 18.83 | | |
| 20 | 256QAM | 50 | 0 | 18.83 | 19.00 | 18.98 | 19 | 5 |
| 20 | 256QAM | 50 | 24 | 18.88 | 19.00 | 18.99 | | |
| 20 | 256QAM | 50 | 50 | 18.81 | 18.99 | 18.94 | | |
| 20 | 256QAM | 100 | 0 | 18.87 | 18.92 | 18.86 | | |
| Channel | | | | 132047 | 132322 | 132597 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | | |
| 15 | QPSK | 1 | 0 | 22.87 | 23.23 | 23.37 | 24 | 0 |
| 15 | QPSK | 1 | 37 | 22.74 | 23.08 | 23.22 | | |
| 15 | QPSK | 1 | 74 | 22.85 | 23.11 | 23.10 | | |
| 15 | QPSK | 36 | 0 | 22.62 | 22.90 | 22.95 | 23 | 1 |
| 15 | QPSK | 36 | 20 | 22.77 | 22.86 | 22.84 | | |
| 15 | QPSK | 36 | 39 | 22.78 | 22.87 | 22.88 | | |
| 15 | QPSK | 75 | 0 | 22.80 | 22.97 | 22.98 | | |
| 15 | 16QAM | 1 | 0 | 22.85 | 22.56 | 22.45 | 23 | 1 |
| 15 | 16QAM | 1 | 37 | 22.63 | 22.98 | 22.87 | | |
| 15 | 16QAM | 1 | 74 | 22.80 | 23.00 | 22.94 | | |
| 15 | 16QAM | 36 | 0 | 21.75 | 21.89 | 21.86 | 22 | 2 |
| 15 | 16QAM | 36 | 20 | 21.79 | 21.90 | 21.95 | | |
| 15 | 16QAM | 36 | 39 | 21.76 | 21.88 | 21.78 | | |
| 15 | 16QAM | 75 | 0 | 21.81 | 21.84 | 21.84 | | |
| 15 | 64QAM | 1 | 0 | 21.93 | 21.22 | 21.20 | 22 | 2 |
| 15 | 64QAM | 1 | 37 | 21.90 | 21.94 | 21.87 | | |
| 15 | 64QAM | 1 | 74 | 21.71 | 22.00 | 21.91 | | |
| 15 | 64QAM | 36 | 0 | 20.77 | 20.77 | 20.75 | 21 | 3 |
| 15 | 64QAM | 36 | 20 | 20.81 | 20.91 | 20.87 | | |
| 15 | 64QAM | 36 | 39 | 20.79 | 20.96 | 20.82 | | |
| 15 | 64QAM | 75 | 0 | 20.88 | 20.89 | 20.86 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 15 | 256QAM | 1 | 0 | 18.95 | 18.94 | 18.80 | 19 | 5 |
| 15 | 256QAM | 1 | 37 | 18.75 | 18.98 | 18.89 | | |
| 15 | 256QAM | 1 | 74 | 18.81 | 18.76 | 18.83 | | |
| 15 | 256QAM | 36 | 0 | 18.73 | 18.92 | 18.98 | 19 | 5 |
| 15 | 256QAM | 36 | 20 | 18.88 | 18.97 | 18.90 | | |
| 15 | 256QAM | 36 | 39 | 18.81 | 18.92 | 18.92 | | |
| 15 | 256QAM | 75 | 0 | 18.84 | 18.90 | 18.86 | | |
| Channel | | | | 132022 | 132322 | 132622 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | | |
| 10 | QPSK | 1 | 0 | 22.92 | 23.22 | 23.30 | 24 | 0 |
| 10 | QPSK | 1 | 25 | 22.72 | 23.06 | 23.21 | | |
| 10 | QPSK | 1 | 49 | 22.82 | 23.13 | 23.17 | | |
| 10 | QPSK | 25 | 0 | 22.67 | 22.94 | 22.91 | 23 | 1 |
| 10 | QPSK | 25 | 12 | 22.77 | 22.91 | 22.86 | | |
| 10 | QPSK | 25 | 25 | 22.80 | 22.88 | 22.87 | | |
| 10 | QPSK | 50 | 0 | 22.79 | 22.94 | 22.98 | | |
| 10 | 16QAM | 1 | 0 | 22.76 | 22.58 | 22.40 | 23 | 1 |
| 10 | 16QAM | 1 | 25 | 22.59 | 22.92 | 22.88 | | |
| 10 | 16QAM | 1 | 49 | 22.87 | 22.92 | 22.96 | | |
| 10 | 16QAM | 25 | 0 | 21.76 | 21.98 | 21.82 | 22 | 2 |
| 10 | 16QAM | 25 | 12 | 21.75 | 21.88 | 21.95 | | |
| 10 | 16QAM | 25 | 25 | 21.75 | 21.90 | 21.81 | | |
| 10 | 16QAM | 50 | 0 | 21.75 | 21.92 | 21.78 | | |
| 10 | 64QAM | 1 | 0 | 21.97 | 21.25 | 21.25 | 22 | 2 |
| 10 | 64QAM | 1 | 25 | 21.98 | 21.90 | 21.89 | | |
| 10 | 64QAM | 1 | 49 | 21.70 | 21.99 | 21.81 | | |
| 10 | 64QAM | 25 | 0 | 20.68 | 20.78 | 20.74 | 21 | 3 |
| 10 | 64QAM | 25 | 12 | 20.81 | 20.90 | 20.89 | | |
| 10 | 64QAM | 25 | 25 | 20.75 | 20.91 | 20.84 | | |
| 10 | 64QAM | 50 | 0 | 20.85 | 20.96 | 20.93 | | |
| 10 | 256QAM | 1 | 0 | 18.98 | 18.95 | 18.80 | 19 | 5 |
| 10 | 256QAM | 1 | 25 | 18.78 | 18.92 | 18.89 | | |
| 10 | 256QAM | 1 | 49 | 18.77 | 18.84 | 18.80 | | |
| 10 | 256QAM | 25 | 0 | 18.82 | 18.90 | 18.97 | 19 | 5 |
| 10 | 256QAM | 25 | 12 | 18.83 | 18.96 | 18.89 | | |
| 10 | 256QAM | 25 | 25 | 18.80 | 18.95 | 18.90 | | |
| 10 | 256QAM | 50 | 0 | 18.80 | 18.82 | 18.84 | | |
| Channel | | | | 131997 | 132322 | 132647 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | | |
| 5 | QPSK | 1 | 0 | 22.90 | 23.24 | 23.34 | 24 | 0 |
| 5 | QPSK | 1 | 12 | 22.73 | 23.06 | 23.19 | | |
| 5 | QPSK | 1 | 24 | 22.88 | 23.17 | 23.16 | | |
| 5 | QPSK | 12 | 0 | 22.62 | 22.93 | 22.93 | 23 | 1 |
| 5 | QPSK | 12 | 7 | 22.85 | 22.96 | 22.81 | | |
| 5 | QPSK | 12 | 13 | 22.75 | 22.97 | 22.94 | | |
| 5 | QPSK | 25 | 0 | 22.73 | 23.00 | 22.94 | | |
| 5 | 16QAM | 1 | 0 | 22.86 | 22.53 | 22.40 | 23 | 1 |
| 5 | 16QAM | 1 | 12 | 22.63 | 22.90 | 22.88 | | |
| 5 | 16QAM | 1 | 24 | 22.87 | 22.90 | 22.89 | | |
| 5 | 16QAM | 12 | 0 | 21.71 | 21.94 | 21.84 | 22 | 2 |
| 5 | 16QAM | 12 | 7 | 21.75 | 21.96 | 21.96 | | |
| 5 | 16QAM | 12 | 13 | 21.75 | 21.87 | 21.83 | | |
| 5 | 16QAM | 25 | 0 | 21.80 | 21.92 | 21.82 | | |
| 5 | 64QAM | 1 | 0 | 21.98 | 21.22 | 21.23 | 22 | 2 |
| 5 | 64QAM | 1 | 12 | 21.97 | 21.97 | 21.85 | | |
| 5 | 64QAM | 1 | 24 | 21.70 | 21.91 | 21.90 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 12 | 0 | 20.76 | 20.74 | 20.72 | 21 | 3 |
| 5 | 64QAM | 12 | 7 | 20.89 | 20.91 | 20.91 | | |
| 5 | 64QAM | 12 | 13 | 20.74 | 21.00 | 20.84 | | |
| 5 | 64QAM | 25 | 0 | 20.79 | 20.97 | 20.87 | | |
| 5 | 256QAM | 1 | 0 | 18.95 | 18.92 | 18.87 | 19 | 5 |
| 5 | 256QAM | 1 | 12 | 18.77 | 19.00 | 18.85 | | |
| 5 | 256QAM | 1 | 24 | 18.82 | 18.75 | 18.79 | | |
| 5 | 256QAM | 12 | 0 | 18.75 | 18.99 | 18.93 | 19 | 5 |
| 5 | 256QAM | 12 | 7 | 18.84 | 18.95 | 18.99 | | |
| 5 | 256QAM | 12 | 13 | 18.72 | 18.91 | 18.92 | | |
| 5 | 256QAM | 25 | 0 | 18.78 | 18.85 | 18.79 | | |
| Channel | | | | 131987 | 132322 | 132657 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1711.5 | 1745 | 1778.5 | | |
| 3 | QPSK | 1 | 0 | 22.95 | 23.21 | 23.36 | 24 | 0 |
| 3 | QPSK | 1 | 8 | 22.69 | 23.06 | 23.21 | | |
| 3 | QPSK | 1 | 14 | 22.83 | 23.14 | 23.14 | | |
| 3 | QPSK | 8 | 0 | 22.61 | 22.94 | 22.95 | 23 | 1 |
| 3 | QPSK | 8 | 4 | 22.86 | 22.89 | 22.81 | | |
| 3 | QPSK | 8 | 7 | 22.74 | 22.88 | 22.91 | | |
| 3 | QPSK | 15 | 0 | 22.80 | 23.00 | 22.89 | | |
| 3 | 16QAM | 1 | 0 | 22.78 | 22.48 | 22.42 | 23 | 1 |
| 3 | 16QAM | 1 | 8 | 22.60 | 22.94 | 22.89 | | |
| 3 | 16QAM | 1 | 14 | 22.85 | 22.97 | 22.92 | | |
| 3 | 16QAM | 8 | 0 | 21.72 | 21.91 | 21.88 | 22 | 2 |
| 3 | 16QAM | 8 | 4 | 21.74 | 21.96 | 21.97 | | |
| 3 | 16QAM | 8 | 7 | 21.75 | 21.82 | 21.81 | | |
| 3 | 16QAM | 15 | 0 | 21.76 | 21.93 | 21.82 | | |
| 3 | 64QAM | 1 | 0 | 21.93 | 21.28 | 21.18 | 22 | 2 |
| 3 | 64QAM | 1 | 8 | 21.93 | 21.94 | 21.83 | | |
| 3 | 64QAM | 1 | 14 | 21.75 | 21.93 | 21.90 | | |
| 3 | 64QAM | 8 | 0 | 20.76 | 20.82 | 20.72 | 21 | 3 |
| 3 | 64QAM | 8 | 4 | 20.87 | 20.99 | 20.83 | | |
| 3 | 64QAM | 8 | 7 | 20.73 | 20.94 | 20.91 | | |
| 3 | 64QAM | 15 | 0 | 20.79 | 20.97 | 20.91 | | |
| 3 | 256QAM | 1 | 0 | 18.92 | 18.89 | 18.82 | 19 | 5 |
| 3 | 256QAM | 1 | 8 | 18.75 | 18.94 | 18.86 | | |
| 3 | 256QAM | 1 | 14 | 18.82 | 18.80 | 18.81 | | |
| 3 | 256QAM | 8 | 0 | 18.77 | 18.97 | 18.90 | 19 | 5 |
| 3 | 256QAM | 8 | 4 | 18.85 | 18.95 | 18.96 | | |
| 3 | 256QAM | 8 | 7 | 18.74 | 18.90 | 18.85 | | |
| 3 | 256QAM | 15 | 0 | 18.83 | 18.90 | 18.80 | | |
| Channel | | | | 131979 | 132322 | 132665 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 1710.7 | 1745 | 1779.3 | | |
| 1.4 | QPSK | 1 | 0 | 22.91 | 23.19 | 23.32 | 24 | 0 |
| 1.4 | QPSK | 1 | 3 | 22.71 | 23.08 | 23.15 | | |
| 1.4 | QPSK | 1 | 5 | 22.91 | 23.10 | 23.15 | | |
| 1.4 | QPSK | 3 | 0 | 22.87 | 23.15 | 23.32 | | |
| 1.4 | QPSK | 3 | 1 | 22.72 | 23.14 | 23.19 | | |
| 1.4 | QPSK | 3 | 3 | 22.85 | 23.08 | 23.10 | | |
| 1.4 | QPSK | 6 | 0 | 22.70 | 22.95 | 22.89 | 23 | 1 |
| 1.4 | 16QAM | 1 | 0 | 22.85 | 22.96 | 22.81 | 23 | 1 |
| 1.4 | 16QAM | 1 | 3 | 22.74 | 22.88 | 22.90 | | |
| 1.4 | 16QAM | 1 | 5 | 22.81 | 23.00 | 22.89 | | |
| 1.4 | 16QAM | 3 | 0 | 22.82 | 22.51 | 22.50 | | |
| 1.4 | 16QAM | 3 | 1 | 22.66 | 22.92 | 22.93 | | |
| 1.4 | 16QAM | 3 | 3 | 22.79 | 22.93 | 22.95 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1.4 | 16QAM | 6 | 0 | 21.72 | 21.97 | 21.84 | 22 | 2 |
| 1.4 | 64QAM | 1 | 0 | 21.80 | 21.88 | 21.92 | 22 | 2 |
| 1.4 | 64QAM | 1 | 3 | 21.74 | 21.82 | 21.87 | | |
| 1.4 | 64QAM | 1 | 5 | 21.78 | 21.88 | 21.83 | | |
| 1.4 | 64QAM | 3 | 0 | 21.93 | 21.21 | 21.24 | | |
| 1.4 | 64QAM | 3 | 1 | 21.93 | 21.94 | 21.82 | | |
| 1.4 | 64QAM | 3 | 3 | 21.70 | 22.00 | 21.83 | | |
| 1.4 | 64QAM | 6 | 0 | 20.87 | 20.97 | 20.90 | 21 | 3 |
| 1.4 | 256QAM | 1 | 0 | 18.94 | 18.95 | 18.80 | 19 | 5 |
| 1.4 | 256QAM | 1 | 3 | 18.75 | 18.99 | 18.89 | | |
| 1.4 | 256QAM | 1 | 5 | 18.83 | 18.81 | 18.74 | | |
| 1.4 | 256QAM | 3 | 0 | 18.81 | 18.93 | 18.92 | | |
| 1.4 | 256QAM | 3 | 1 | 18.78 | 18.90 | 18.91 | | |
| 1.4 | 256QAM | 3 | 3 | 18.72 | 18.94 | 18.89 | | |
| 1.4 | 256QAM | 6 | 0 | 18.85 | 18.88 | 18.79 | 19 | 5 |

**<TDD LTE SAR Measurement>**

TDD LTE configuration setup for SAR measurement

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

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

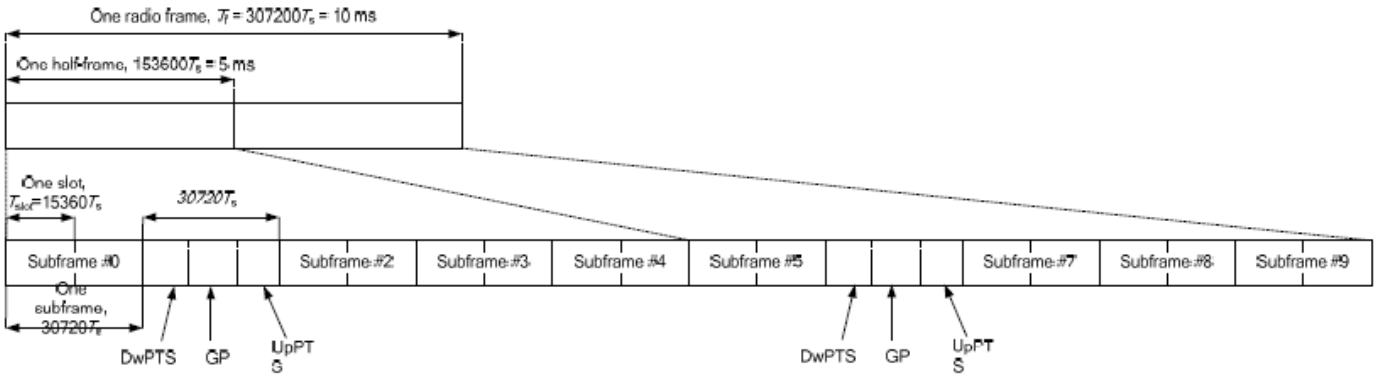


**Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).**

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

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

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

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

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

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

The highest duty factor is resulted from:

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

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

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

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

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

vi. The device supports Power Class 3 uplink-downlink configurations 0 and 6, and Power Class 2 uplink-downlink configurations 1 to 5 operations for LTE Band 41.

vii. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1, for Power Class 3 operation is 63.3% using UL-DL configuration 0. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR among all exposure condition.

## Ant 0

### <LTE Band 38>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|
| Channel | | | | 37850 | 38000 | 38150 | | |
| Frequency (MHz) | | | | 2580 | 2595 | 2610 | | |
| 20 | QPSK | 1 | 0 | 20.66 | 20.61 | 20.43 | 21.7 | 0 |
| 20 | QPSK | 1 | 49 | 20.56 | 20.42 | 20.24 | | |
| 20 | QPSK | 1 | 99 | 20.50 | 20.29 | 20.08 | | |
| 20 | QPSK | 50 | 0 | 20.85 | 20.59 | 20.42 | 21.7 | 0 |
| 20 | QPSK | 50 | 24 | 20.73 | 20.63 | 20.34 | | |
| 20 | QPSK | 50 | 50 | 20.70 | 20.52 | 20.32 | | |
| 20 | QPSK | 100 | 0 | 20.77 | 20.64 | 20.33 | | |
| 20 | 16QAM | 1 | 0 | 20.76 | 20.66 | 20.49 | 21.7 | 0 |
| 20 | 16QAM | 1 | 49 | 20.62 | 20.49 | 20.25 | | |
| 20 | 16QAM | 1 | 99 | 20.54 | 20.36 | 20.14 | | |
| 20 | 16QAM | 50 | 0 | 20.83 | 20.65 | 20.47 | 21.7 | 0 |
| 20 | 16QAM | 50 | 24 | 20.77 | 20.66 | 20.37 | | |
| 20 | 16QAM | 50 | 50 | 20.74 | 20.55 | 20.34 | | |
| 20 | 16QAM | 100 | 0 | 20.77 | 20.62 | 20.35 | | |
| 20 | 64QAM | 1 | 0 | 20.60 | 20.26 | 20.10 | 21.7 | 0 |
| 20 | 64QAM | 1 | 49 | 20.52 | 20.16 | 19.88 | | |
| 20 | 64QAM | 1 | 99 | 20.44 | 20.04 | 19.79 | | |
| 20 | 64QAM | 50 | 0 | 20.79 | 20.64 | 20.46 | 21.7 | 0 |
| 20 | 64QAM | 50 | 24 | 20.77 | 20.64 | 20.37 | | |
| 20 | 64QAM | 50 | 50 | 20.72 | 20.55 | 20.34 | | |
| 20 | 64QAM | 100 | 0 | 20.76 | 20.62 | 20.35 | | |
| 20 | 256QAM | 1 | 0 | 19.15 | 18.95 | 18.81 | 19.7 | 2 |
| 20 | 256QAM | 1 | 49 | 18.91 | 18.77 | 18.47 | | |
| 20 | 256QAM | 1 | 99 | 18.86 | 18.67 | 18.44 | | |
| 20 | 256QAM | 50 | 0 | 19.25 | 19.11 | 18.93 | 19.7 | 2 |
| 20 | 256QAM | 50 | 24 | 19.24 | 19.08 | 18.81 | | |
| 20 | 256QAM | 50 | 50 | 19.16 | 19.00 | 18.78 | | |
| 20 | 256QAM | 100 | 0 | 19.17 | 19.06 | 18.78 | | |
| Channel | | | | 37825 | 38000 | 38175 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2577.5 | 2595 | 2612.5 | | |
| 15 | QPSK | 1 | 0 | 20.64 | 20.57 | 20.33 | 21.7 | 0 |
| 15 | QPSK | 1 | 37 | 20.59 | 20.49 | 20.24 | | |
| 15 | QPSK | 1 | 74 | 20.55 | 20.39 | 20.12 | | |
| 15 | QPSK | 36 | 0 | 20.77 | 20.57 | 20.38 | 21.7 | 0 |
| 15 | QPSK | 36 | 20 | 20.73 | 20.61 | 20.27 | | |
| 15 | QPSK | 36 | 39 | 20.68 | 20.53 | 20.28 | | |
| 15 | QPSK | 75 | 0 | 20.75 | 20.58 | 20.28 | | |
| 15 | 16QAM | 1 | 0 | 20.72 | 20.63 | 20.44 | 21.7 | 0 |
| 15 | 16QAM | 1 | 37 | 20.54 | 20.40 | 20.16 | | |
| 15 | 16QAM | 1 | 74 | 20.63 | 20.43 | 20.15 | | |
| 15 | 16QAM | 36 | 0 | 20.74 | 20.56 | 20.31 | 21.7 | 0 |
| 15 | 16QAM | 36 | 20 | 20.69 | 20.57 | 20.25 | | |
| 15 | 16QAM | 36 | 39 | 20.67 | 20.47 | 20.24 | | |
| 15 | 16QAM | 75 | 0 | 20.75 | 20.62 | 20.29 | | |
| 15 | 64QAM | 1 | 0 | 20.36 | 20.20 | 20.02 | 21.7 | 0 |
| 15 | 64QAM | 1 | 37 | 20.30 | 20.16 | 19.92 | | |
| 15 | 64QAM | 1 | 74 | 20.25 | 20.08 | 19.77 | | |
| 15 | 64QAM | 36 | 0 | 20.77 | 20.58 | 20.37 | 21.7 | 0 |
| 15 | 64QAM | 36 | 20 | 20.73 | 20.57 | 20.30 | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 36 | 39 | 20.71 | 20.54 | 20.28 | | |
| 15 | 64QAM | 75 | 0 | 20.76 | 20.64 | 20.32 | | |
| 15 | 256QAM | 1 | 0 | 19.07 | 18.89 | 18.77 | 19.7 | 2 |
| 15 | 256QAM | 1 | 37 | 18.90 | 18.74 | 18.44 | | |
| 15 | 256QAM | 1 | 74 | 18.82 | 18.57 | 18.34 | | |
| 15 | 256QAM | 36 | 0 | 19.21 | 19.07 | 18.90 | 19.7 | 2 |
| 15 | 256QAM | 36 | 20 | 19.23 | 19.03 | 18.80 | | |
| 15 | 256QAM | 36 | 39 | 19.11 | 18.98 | 18.68 | | |
| 15 | 256QAM | 75 | 0 | 19.08 | 18.96 | 18.73 | | |
| Channel | | | | 37800 | 38000 | 38200 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2575 | 2595 | 2615 | | |
| 10 | QPSK | 1 | 0 | 20.70 | 20.53 | 20.32 | 21.7 | 0 |
| 10 | QPSK | 1 | 25 | 20.65 | 20.48 | 20.22 | | |
| 10 | QPSK | 1 | 49 | 20.63 | 20.39 | 20.12 | | |
| 10 | QPSK | 25 | 0 | 20.81 | 20.67 | 20.40 | 21.7 | 0 |
| 10 | QPSK | 25 | 12 | 20.80 | 20.65 | 20.38 | | |
| 10 | QPSK | 25 | 25 | 20.77 | 20.63 | 20.31 | | |
| 10 | QPSK | 50 | 0 | 20.79 | 20.66 | 20.36 | | |
| 10 | 16QAM | 1 | 0 | 20.83 | 20.69 | 20.43 | 21.7 | 0 |
| 10 | 16QAM | 1 | 25 | 20.70 | 20.56 | 20.28 | | |
| 10 | 16QAM | 1 | 49 | 20.75 | 20.50 | 20.21 | | |
| 10 | 16QAM | 25 | 0 | 20.72 | 20.60 | 20.36 | 21.7 | 0 |
| 10 | 16QAM | 25 | 12 | 20.75 | 20.60 | 20.33 | | |
| 10 | 16QAM | 25 | 25 | 20.71 | 20.54 | 20.23 | | |
| 10 | 16QAM | 50 | 0 | 20.82 | 20.68 | 20.41 | | |
| 10 | 64QAM | 1 | 0 | 20.37 | 20.25 | 19.98 | 21.7 | 0 |
| 10 | 64QAM | 1 | 25 | 20.36 | 20.19 | 19.88 | | |
| 10 | 64QAM | 1 | 49 | 20.30 | 20.10 | 19.78 | | |
| 10 | 64QAM | 25 | 0 | 20.83 | 20.69 | 20.43 | 21.7 | 0 |
| 10 | 64QAM | 25 | 12 | 20.83 | 20.68 | 20.42 | | |
| 10 | 64QAM | 25 | 25 | 20.80 | 20.64 | 20.36 | | |
| 10 | 64QAM | 50 | 0 | 20.79 | 20.63 | 20.39 | | |
| 10 | 256QAM | 1 | 0 | 19.11 | 18.88 | 18.81 | 19.7 | 2 |
| 10 | 256QAM | 1 | 25 | 18.85 | 18.77 | 18.41 | | |
| 10 | 256QAM | 1 | 49 | 18.82 | 18.63 | 18.39 | | |
| 10 | 256QAM | 25 | 0 | 19.15 | 19.05 | 18.86 | 19.7 | 2 |
| 10 | 256QAM | 25 | 12 | 19.24 | 18.98 | 18.74 | | |
| 10 | 256QAM | 25 | 25 | 19.13 | 18.90 | 18.71 | | |
| 10 | 256QAM | 50 | 0 | 19.13 | 18.96 | 18.71 | | |
| Channel | | | | 37775 | 38000 | 38225 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2572.5 | 2595 | 2617.5 | | |
| 5 | QPSK | 1 | 0 | 20.68 | 20.57 | 20.27 | 21.7 | 0 |
| 5 | QPSK | 1 | 12 | 20.63 | 20.50 | 20.21 | | |
| 5 | QPSK | 1 | 24 | 20.61 | 20.49 | 20.10 | | |
| 5 | QPSK | 12 | 0 | 20.76 | 20.62 | 20.32 | 21.7 | 0 |
| 5 | QPSK | 12 | 7 | 20.77 | 20.64 | 20.31 | | |
| 5 | QPSK | 12 | 13 | 20.75 | 20.59 | 20.28 | | |
| 5 | QPSK | 25 | 0 | 20.78 | 20.59 | 20.27 | | |
| 5 | 16QAM | 1 | 0 | 20.76 | 20.75 | 20.43 | 21.7 | 0 |
| 5 | 16QAM | 1 | 12 | 20.82 | 20.65 | 20.34 | | |
| 5 | 16QAM | 1 | 24 | 20.76 | 20.68 | 20.35 | | |
| 5 | 16QAM | 12 | 0 | 20.69 | 20.59 | 20.25 | 21.7 | 0 |
| 5 | 16QAM | 12 | 7 | 20.72 | 20.58 | 20.22 | | |
| 5 | 16QAM | 12 | 13 | 20.66 | 20.54 | 20.22 | | |
| 5 | 16QAM | 25 | 0 | 20.76 | 20.58 | 20.29 | | |
| 5 | 64QAM | 1 | 0 | 20.39 | 20.28 | 19.96 | 21.7 | 0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 1 | 12 | 20.38 | 20.27 | 19.90 | | |
| 5 | 64QAM | 1 | 24 | 20.39 | 20.22 | 19.88 | | |
| 5 | 64QAM | 12 | 0 | 20.80 | 20.65 | 20.36 | 21.7 | 0 |
| 5 | 64QAM | 12 | 7 | 20.80 | 20.64 | 20.35 | | |
| 5 | 64QAM | 12 | 13 | 20.79 | 20.63 | 20.28 | | |
| 5 | 64QAM | 25 | 0 | 20.80 | 20.64 | 20.31 | | |
| 5 | 256QAM | 1 | 0 | 19.05 | 18.87 | 18.81 | 19.7 | 2 |
| 5 | 256QAM | 1 | 12 | 18.82 | 18.71 | 18.47 | | |
| 5 | 256QAM | 1 | 24 | 18.79 | 18.67 | 18.44 | | |
| 5 | 256QAM | 12 | 0 | 19.24 | 19.07 | 18.89 | 19.7 | 2 |
| 5 | 256QAM | 12 | 7 | 19.23 | 19.07 | 18.76 | | |
| 5 | 256QAM | 12 | 13 | 19.13 | 19.00 | 18.76 | | |
| 5 | 256QAM | 25 | 0 | 19.12 | 19.05 | 18.75 | | |

**<LTE Band 41>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| Channel | | | | 39750 | 40185 | 40620 | 41055 | 41490 | | |
| Frequency (MHz) | | | | 2506 | 2549.5 | 2593 | 2636.5 | 2680 | | |
| 20 | QPSK | 1 | 0 | 21.13 | 20.74 | 20.71 | 20.34 | 20.75 | 21.7 | 0 |
| 20 | QPSK | 1 | 49 | 20.93 | 20.58 | 20.56 | 20.05 | 20.71 | | |
| 20 | QPSK | 1 | 99 | 20.79 | 20.63 | 20.53 | 20.03 | 20.68 | | |
| 20 | QPSK | 50 | 0 | 21.11 | 20.71 | 20.72 | 20.28 | 20.89 | 21.7 | 0 |
| 20 | QPSK | 50 | 24 | 21.26 | 20.78 | 20.74 | 20.32 | 20.90 | | |
| 20 | QPSK | 50 | 50 | 21.02 | 20.75 | 20.64 | 20.28 | 20.85 | | |
| 20 | QPSK | 100 | 0 | 21.16 | 20.80 | 20.76 | 20.32 | 20.92 | | |
| 20 | 16QAM | 1 | 0 | 21.21 | 20.79 | 20.83 | 20.41 | 20.80 | 21.7 | 0 |
| 20 | 16QAM | 1 | 49 | 21.04 | 20.65 | 20.61 | 20.19 | 20.86 | | |
| 20 | 16QAM | 1 | 99 | 20.90 | 20.69 | 20.56 | 20.19 | 20.97 | | |
| 20 | 16QAM | 50 | 0 | 21.12 | 20.71 | 20.75 | 20.28 | 20.91 | 21.7 | 0 |
| 20 | 16QAM | 50 | 24 | 21.16 | 20.80 | 20.76 | 20.32 | 20.93 | | |
| 20 | 16QAM | 50 | 50 | 21.04 | 20.75 | 20.67 | 20.31 | 20.98 | | |
| 20 | 16QAM | 100 | 0 | 21.15 | 20.81 | 20.77 | 20.36 | 20.95 | | |
| 20 | 64QAM | 1 | 0 | 20.77 | 20.39 | 20.51 | 20.04 | 20.47 | 21.7 | 0 |
| 20 | 64QAM | 1 | 49 | 20.69 | 20.31 | 20.38 | 19.90 | 20.61 | | |
| 20 | 64QAM | 1 | 99 | 20.53 | 20.32 | 20.27 | 19.95 | 20.67 | | |
| 20 | 64QAM | 50 | 0 | 20.36 | 19.98 | 19.98 | 19.73 | 20.15 | 21.7 | 0 |
| 20 | 64QAM | 50 | 24 | 20.39 | 20.01 | 19.99 | 19.74 | 20.15 | | |
| 20 | 64QAM | 50 | 50 | 20.30 | 19.98 | 19.91 | 19.70 | 20.21 | | |
| 20 | 64QAM | 100 | 0 | 20.33 | 19.99 | 19.95 | 19.74 | 20.11 | | |
| 20 | 256QAM | 1 | 0 | 17.74 | 17.83 | 17.84 | 17.76 | 17.75 | 18.7 | 3 |
| 20 | 256QAM | 1 | 49 | 17.63 | 17.60 | 17.64 | 17.59 | 17.55 | | |
| 20 | 256QAM | 1 | 99 | 17.58 | 17.57 | 17.60 | 17.50 | 17.56 | | |
| 20 | 256QAM | 50 | 0 | 17.93 | 17.91 | 17.97 | 17.87 | 17.94 | 18.7 | 3 |
| 20 | 256QAM | 50 | 24 | 18.01 | 17.96 | 18.01 | 17.94 | 17.94 | | |
| 20 | 256QAM | 50 | 50 | 17.85 | 17.85 | 17.91 | 17.91 | 17.91 | | |
| 20 | 256QAM | 100 | 0 | 17.90 | 17.94 | 17.95 | 17.86 | 17.94 | | |
| Channel | | | | 39725 | 40173 | 40620 | 41068 | 41515 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2503.5 | 2548.3 | 2593 | 2637.8 | 2682.5 | | |
| 15 | QPSK | 1 | 0 | 21.11 | 20.72 | 20.74 | 20.28 | 20.83 | 21.7 | 0 |
| 15 | QPSK | 1 | 37 | 21.03 | 20.66 | 20.64 | 20.17 | 20.89 | | |
| 15 | QPSK | 1 | 74 | 20.92 | 20.73 | 20.59 | 20.31 | 20.99 | | |
| 15 | QPSK | 36 | 0 | 21.07 | 20.69 | 20.78 | 20.20 | 20.91 | 21.7 | 0 |
| 15 | QPSK | 36 | 20 | 21.15 | 20.74 | 20.72 | 20.27 | 21.00 | | |
| 15 | QPSK | 36 | 39 | 21.01 | 20.70 | 20.64 | 20.27 | 20.98 | | |
| 15 | QPSK | 75 | 0 | 21.14 | 20.73 | 20.71 | 20.29 | 20.91 | | |
| 15 | 16QAM | 1 | 0 | 21.16 | 20.77 | 20.72 | 20.30 | 20.85 | 21.7 | 0 |
| 15 | 16QAM | 1 | 37 | 21.07 | 20.71 | 20.69 | 20.27 | 20.92 | | |
| 15 | 16QAM | 1 | 74 | 20.97 | 20.76 | 20.64 | 20.29 | 21.02 | | |
| 15 | 16QAM | 36 | 0 | 21.08 | 20.68 | 20.78 | 20.27 | 20.93 | 21.7 | 0 |
| 15 | 16QAM | 36 | 20 | 21.15 | 20.74 | 20.74 | 20.31 | 21.02 | | |
| 15 | 16QAM | 36 | 39 | 21.03 | 20.72 | 20.66 | 20.31 | 20.99 | | |
| 15 | 16QAM | 75 | 0 | 21.15 | 20.76 | 20.73 | 20.33 | 20.94 | | |
| 15 | 64QAM | 1 | 0 | 20.75 | 20.36 | 20.40 | 19.98 | 20.53 | 21.7 | 0 |
| 15 | 64QAM | 1 | 37 | 20.71 | 20.29 | 20.32 | 19.83 | 20.59 | | |
| 15 | 64QAM | 1 | 74 | 20.59 | 20.40 | 20.36 | 20.01 | 20.73 | | |
| 15 | 64QAM | 36 | 0 | 20.32 | 19.94 | 20.00 | 19.77 | 20.14 | 21.7 | 0 |
| 15 | 64QAM | 36 | 20 | 20.33 | 19.96 | 19.94 | 19.80 | 20.20 | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 36 | 39 | 20.26 | 19.95 | 19.89 | 19.72 | 20.22 | | |
| 15 | 64QAM | 75 | 0 | 20.40 | 20.00 | 19.99 | 19.76 | 20.18 | | |
| 15 | 256QAM | 1 | 0 | 17.68 | 17.80 | 17.77 | 17.76 | 17.70 | 18.7 | 3 |
| 15 | 256QAM | 1 | 37 | 17.55 | 17.54 | 17.55 | 17.55 | 17.45 | | |
| 15 | 256QAM | 1 | 74 | 17.54 | 17.52 | 17.56 | 17.48 | 17.54 | | |
| 15 | 256QAM | 36 | 0 | 17.84 | 17.90 | 17.93 | 17.81 | 17.87 | 18.7 | 3 |
| 15 | 256QAM | 36 | 20 | 17.98 | 17.91 | 17.96 | 17.90 | 17.91 | | |
| 15 | 256QAM | 36 | 39 | 17.79 | 17.82 | 17.81 | 17.90 | 17.91 | | |
| 15 | 256QAM | 75 | 0 | 17.90 | 17.86 | 17.90 | 17.77 | 17.90 | | |
| Channel | | | | 39700 | 40160 | 40620 | 41080 | 41540 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2501 | 2547 | 2593 | 2639 | 2685 | | |
| 10 | QPSK | 1 | 0 | 21.11 | 20.88 | 20.83 | 20.40 | 21.08 | 21.7 | 0 |
| 10 | QPSK | 1 | 25 | 21.11 | 20.87 | 20.74 | 20.32 | 21.06 | | |
| 10 | QPSK | 1 | 49 | 21.16 | 20.75 | 20.73 | 20.26 | 21.10 | | |
| 10 | QPSK | 25 | 0 | 21.11 | 20.68 | 20.75 | 20.25 | 20.97 | 21.7 | 0 |
| 10 | QPSK | 25 | 12 | 21.19 | 20.81 | 20.72 | 20.33 | 20.98 | | |
| 10 | QPSK | 25 | 25 | 21.10 | 20.77 | 20.67 | 20.28 | 21.04 | | |
| 10 | QPSK | 50 | 0 | 21.22 | 20.84 | 20.80 | 20.36 | 21.02 | | |
| 10 | 16QAM | 1 | 0 | 21.23 | 21.01 | 20.94 | 20.47 | 21.12 | 21.7 | 0 |
| 10 | 16QAM | 1 | 25 | 21.10 | 20.93 | 20.84 | 20.43 | 21.16 | | |
| 10 | 16QAM | 1 | 49 | 21.07 | 20.91 | 20.84 | 20.41 | 21.16 | | |
| 10 | 16QAM | 25 | 0 | 21.05 | 20.63 | 20.68 | 20.20 | 20.91 | 21.7 | 0 |
| 10 | 16QAM | 25 | 12 | 21.15 | 20.78 | 20.73 | 20.32 | 20.95 | | |
| 10 | 16QAM | 25 | 25 | 21.07 | 20.72 | 20.60 | 20.22 | 20.99 | | |
| 10 | 16QAM | 50 | 0 | 21.15 | 20.86 | 20.79 | 20.40 | 21.04 | | |
| 10 | 64QAM | 1 | 0 | 20.78 | 20.46 | 20.44 | 20.04 | 20.67 | 21.7 | 0 |
| 10 | 64QAM | 1 | 25 | 20.68 | 20.44 | 20.41 | 19.97 | 20.74 | | |
| 10 | 64QAM | 1 | 49 | 20.95 | 20.46 | 20.40 | 19.92 | 20.74 | | |
| 10 | 64QAM | 25 | 0 | 20.27 | 19.96 | 20.02 | 19.70 | 20.21 | 21.7 | 0 |
| 10 | 64QAM | 25 | 12 | 20.20 | 20.06 | 20.02 | 19.80 | 20.25 | | |
| 10 | 64QAM | 25 | 25 | 20.38 | 20.04 | 19.95 | 19.75 | 20.32 | | |
| 10 | 64QAM | 50 | 0 | 20.46 | 20.08 | 20.02 | 19.79 | 20.26 | | |
| 10 | 256QAM | 1 | 0 | 17.65 | 17.82 | 17.77 | 17.75 | 17.71 | 18.7 | 3 |
| 10 | 256QAM | 1 | 25 | 17.54 | 17.58 | 17.63 | 17.58 | 17.47 | | |
| 10 | 256QAM | 1 | 49 | 17.48 | 17.52 | 17.52 | 17.40 | 17.47 | | |
| 10 | 256QAM | 25 | 0 | 17.92 | 17.81 | 17.95 | 17.79 | 17.84 | 18.7 | 3 |
| 10 | 256QAM | 25 | 12 | 17.93 | 17.93 | 17.96 | 17.89 | 17.94 | | |
| 10 | 256QAM | 25 | 25 | 17.80 | 17.80 | 17.84 | 17.90 | 17.91 | | |
| 10 | 256QAM | 50 | 0 | 17.84 | 17.86 | 17.94 | 17.86 | 17.92 | | |
| Channel | | | | 39675 | 40148 | 40620 | 41093 | 41565 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2498.5 | 2545.8 | 2593 | 2640.30 | 2687.5 | | |
| 5 | QPSK | 1 | 0 | 21.15 | 20.66 | 20.76 | 20.28 | 21.07 | 21.7 | 0 |
| 5 | QPSK | 1 | 12 | 21.09 | 20.88 | 20.91 | 20.42 | 21.12 | | |
| 5 | QPSK | 1 | 24 | 21.14 | 20.65 | 20.67 | 20.35 | 21.04 | | |
| 5 | QPSK | 12 | 0 | 21.17 | 20.68 | 20.62 | 20.14 | 20.99 | 21.7 | 0 |
| 5 | QPSK | 12 | 7 | 21.15 | 20.69 | 20.65 | 20.24 | 20.98 | | |
| 5 | QPSK | 12 | 13 | 21.12 | 20.66 | 20.62 | 20.23 | 20.94 | | |
| 5 | QPSK | 25 | 0 | 21.23 | 20.74 | 20.76 | 20.33 | 21.10 | | |
| 5 | 16QAM | 1 | 0 | 21.22 | 20.71 | 20.76 | 20.29 | 21.11 | 21.7 | 0 |
| 5 | 16QAM | 1 | 12 | 21.14 | 20.77 | 20.71 | 20.29 | 21.03 | | |
| 5 | 16QAM | 1 | 24 | 21.20 | 20.73 | 20.70 | 20.35 | 21.04 | | |
| 5 | 16QAM | 12 | 0 | 21.21 | 20.74 | 20.73 | 20.25 | 21.06 | 21.7 | 0 |
| 5 | 16QAM | 12 | 7 | 21.21 | 20.75 | 20.74 | 20.34 | 21.05 | | |
| 5 | 16QAM | 12 | 13 | 21.18 | 20.55 | 20.69 | 20.32 | 21.02 | | |
| 5 | 16QAM | 25 | 0 | 21.14 | 20.68 | 20.66 | 20.24 | 20.99 | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 1 | 0 | 20.93 | 20.43 | 20.44 | 19.98 | 20.71 | 21.7 | 0 |
| 5 | 64QAM | 1 | 12 | 20.92 | 20.52 | 20.40 | 20.02 | 20.75 | | |
| 5 | 64QAM | 1 | 24 | 20.94 | 20.50 | 20.42 | 20.00 | 20.73 | | |
| 5 | 64QAM | 12 | 0 | 20.41 | 19.92 | 19.91 | 19.75 | 20.24 | 21.7 | 0 |
| 5 | 64QAM | 12 | 7 | 20.41 | 19.95 | 19.94 | 19.73 | 20.28 | | |
| 5 | 64QAM | 12 | 13 | 20.40 | 19.92 | 19.90 | 19.70 | 20.24 | | |
| 5 | 64QAM | 25 | 0 | 20.48 | 20.02 | 20.01 | 19.79 | 20.34 | | |
| 5 | 256QAM | 1 | 0 | 17.66 | 17.83 | 17.83 | 17.69 | 17.67 | 18.7 | 3 |
| 5 | 256QAM | 1 | 12 | 17.58 | 17.52 | 17.61 | 17.51 | 17.45 | | |
| 5 | 256QAM | 1 | 24 | 17.55 | 17.52 | 17.50 | 17.44 | 17.55 | | |
| 5 | 256QAM | 12 | 0 | 17.87 | 17.86 | 17.91 | 17.84 | 17.86 | 18.7 | 3 |
| 5 | 256QAM | 12 | 7 | 17.97 | 17.88 | 17.93 | 17.85 | 17.88 | | |
| 5 | 256QAM | 12 | 13 | 17.80 | 17.77 | 17.85 | 17.89 | 17.88 | | |
| 5 | 256QAM | 25 | 0 | 17.81 | 17.92 | 17.85 | 17.86 | 17.88 | | |

**<LTE Band 41 HPUE>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|---|
| Channel | | | | 39750 | 40185 | 40620 | 41055 | 41490 | | |
| Frequency (MHz) | | | | 2506 | 2549.5 | 2593 | 2636.5 | 2680 | | |
| 20 | QPSK | 1 | 0 | 22.50 | 22.24 | 22.03 | 21.70 | 22.16 | 23.3 | 0 |
| 20 | QPSK | 1 | 49 | 22.33 | 22.25 | 21.90 | 21.58 | 22.18 | | |
| 20 | QPSK | 1 | 99 | 22.30 | 22.20 | 21.91 | 21.77 | 22.29 | | |
| 20 | QPSK | 50 | 0 | 22.56 | 22.48 | 22.13 | 21.84 | 22.38 | 23.3 | 0 |
| 20 | QPSK | 50 | 24 | 22.66 | 22.56 | 22.18 | 21.92 | 22.41 | | |
| 20 | QPSK | 50 | 50 | 22.61 | 22.50 | 22.15 | 21.93 | 22.51 | | |
| 20 | QPSK | 100 | 0 | 22.64 | 22.55 | 22.19 | 21.92 | 22.40 | | |
| 20 | 16QAM | 1 | 0 | 22.75 | 22.62 | 22.35 | 22.08 | 22.46 | 23.3 | 0 |
| 20 | 16QAM | 1 | 49 | 22.73 | 22.62 | 22.25 | 21.96 | 22.54 | | |
| 20 | 16QAM | 1 | 99 | 22.74 | 22.62 | 22.28 | 22.05 | 22.65 | | |
| 20 | 16QAM | 50 | 0 | 22.61 | 22.49 | 22.17 | 21.85 | 22.40 | 23.3 | 0 |
| 20 | 16QAM | 50 | 24 | 22.67 | 22.60 | 22.24 | 21.96 | 22.43 | | |
| 20 | 16QAM | 50 | 50 | 22.66 | 22.57 | 22.19 | 21.96 | 22.53 | | |
| 20 | 16QAM | 100 | 0 | 22.65 | 22.59 | 22.21 | 21.93 | 22.43 | | |
| 20 | 64QAM | 1 | 0 | 22.53 | 22.49 | 22.10 | 21.84 | 22.22 | 23.3 | 0 |
| 20 | 64QAM | 1 | 49 | 22.58 | 22.48 | 22.06 | 21.78 | 22.40 | | |
| 20 | 64QAM | 1 | 99 | 22.50 | 22.46 | 22.08 | 21.85 | 22.03 | | |
| 20 | 64QAM | 50 | 0 | 22.11 | 22.02 | 21.68 | 21.21 | 21.88 | 22.3 | 1 |
| 20 | 64QAM | 50 | 24 | 22.20 | 22.12 | 21.53 | 21.31 | 21.72 | | |
| 20 | 64QAM | 50 | 50 | 22.16 | 22.05 | 21.24 | 21.44 | 21.14 | | |
| 20 | 64QAM | 100 | 0 | 22.19 | 22.09 | 21.39 | 21.38 | 21.31 | | |
| 20 | 256QAM | 1 | 0 | 20.46 | 19.98 | 19.95 | 19.53 | 20.06 | 20.8 | 2.5 |
| 20 | 256QAM | 1 | 49 | 20.41 | 19.96 | 19.91 | 19.50 | 20.01 | | |
| 20 | 256QAM | 1 | 99 | 20.36 | 19.89 | 19.87 | 19.46 | 19.99 | | |
| 20 | 256QAM | 50 | 0 | 20.43 | 19.90 | 19.86 | 19.47 | 19.96 | 20.8 | 2.5 |
| 20 | 256QAM | 50 | 24 | 20.36 | 19.93 | 19.82 | 19.41 | 19.95 | | |
| 20 | 256QAM | 50 | 50 | 20.26 | 19.80 | 19.87 | 19.42 | 19.93 | | |
| 20 | 256QAM | 100 | 0 | 20.42 | 19.88 | 19.78 | 19.42 | 19.89 | | |
| Channel | | | | 39725 | 40173 | 40620 | 41068 | 41515 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2503.5 | 2548.3 | 2593 | 2637.8 | 2682.5 | | |
| 15 | QPSK | 1 | 0 | 22.35 | 22.21 | 22.03 | 21.65 | 22.15 | 23.3 | 0 |
| 15 | QPSK | 1 | 37 | 22.25 | 22.19 | 21.84 | 21.52 | 22.17 | | |
| 15 | QPSK | 1 | 74 | 22.28 | 22.20 | 21.88 | 21.67 | 22.27 | | |
| 15 | QPSK | 36 | 0 | 22.50 | 22.46 | 22.04 | 21.77 | 22.35 | 23.3 | 0 |
| 15 | QPSK | 36 | 20 | 22.54 | 22.51 | 22.12 | 21.86 | 22.39 | | |
| 15 | QPSK | 36 | 39 | 22.61 | 22.42 | 22.08 | 21.90 | 22.44 | | |
| 15 | QPSK | 75 | 0 | 22.64 | 22.45 | 22.13 | 21.92 | 22.31 | | |
| 15 | 16QAM | 1 | 0 | 22.64 | 22.61 | 22.28 | 22.07 | 22.37 | 23.3 | 0 |
| 15 | 16QAM | 1 | 37 | 22.73 | 22.58 | 22.17 | 21.86 | 22.45 | | |
| 15 | 16QAM | 1 | 74 | 22.60 | 22.52 | 22.21 | 21.98 | 22.55 | | |
| 15 | 16QAM | 36 | 0 | 22.56 | 22.43 | 22.11 | 21.84 | 22.34 | 23.3 | 0 |
| 15 | 16QAM | 36 | 20 | 22.58 | 22.53 | 22.19 | 21.92 | 22.37 | | |
| 15 | 16QAM | 36 | 39 | 22.63 | 22.48 | 22.18 | 21.87 | 22.43 | | |
| 15 | 16QAM | 75 | 0 | 22.58 | 22.54 | 22.14 | 21.88 | 22.38 | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 1 | 0 | 22.44 | 22.43 | 22.06 | 21.81 | 22.15 | 23.3 | 0 |
| 15 | 64QAM | 1 | 37 | 22.54 | 22.41 | 21.98 | 21.68 | 22.39 | | |
| 15 | 64QAM | 1 | 74 | 22.42 | 22.42 | 22.04 | 21.76 | 21.98 | | |
| 15 | 64QAM | 36 | 0 | 22.11 | 21.96 | 21.61 | 21.13 | 21.86 | 22.3 | 1 |
| 15 | 64QAM | 36 | 20 | 22.16 | 22.05 | 21.43 | 21.26 | 21.68 | | |
| 15 | 64QAM | 36 | 39 | 22.10 | 21.98 | 21.16 | 21.43 | 21.09 | | |
| 15 | 64QAM | 75 | 0 | 22.15 | 22.05 | 21.30 | 21.35 | 21.24 | | |
| 15 | 256QAM | 1 | 0 | 20.36 | 19.93 | 19.93 | 19.46 | 20.03 | 20.8 | 2.5 |
| 15 | 256QAM | 1 | 37 | 20.31 | 19.92 | 19.81 | 19.42 | 20.00 | | |
| 15 | 256QAM | 1 | 74 | 20.36 | 19.86 | 19.87 | 19.37 | 19.98 | | |
| 15 | 256QAM | 36 | 0 | 20.37 | 19.83 | 19.85 | 19.43 | 19.92 | 20.8 | 2.5 |
| 15 | 256QAM | 36 | 20 | 20.31 | 19.86 | 19.72 | 19.32 | 19.89 | | |
| 15 | 256QAM | 36 | 39 | 20.19 | 19.80 | 19.87 | 19.42 | 19.86 | | |
| 15 | 256QAM | 75 | 0 | 20.39 | 19.85 | 19.74 | 19.40 | 19.88 | | |
| Channel | | | | 39700 | 40160 | 40620 | 41080 | 41540 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2501 | 2547 | 2593 | 2639 | 2685 | | |
| 10 | QPSK | 1 | 0 | 22.38 | 22.14 | 22.02 | 21.65 | 22.06 | 23.3 | 0 |
| 10 | QPSK | 1 | 25 | 22.26 | 22.18 | 21.80 | 21.50 | 22.11 | | |
| 10 | QPSK | 1 | 49 | 22.26 | 22.19 | 21.91 | 21.75 | 22.21 | | |
| 10 | QPSK | 25 | 0 | 22.55 | 22.48 | 22.03 | 21.77 | 22.28 | 23.3 | 0 |
| 10 | QPSK | 25 | 12 | 22.63 | 22.56 | 22.09 | 21.85 | 22.41 | | |
| 10 | QPSK | 25 | 25 | 22.56 | 22.46 | 22.11 | 21.90 | 22.46 | | |
| 10 | QPSK | 50 | 0 | 22.64 | 22.54 | 22.11 | 21.84 | 22.40 | | |
| 10 | 16QAM | 1 | 0 | 22.65 | 22.53 | 22.28 | 22.05 | 22.46 | 23.3 | 0 |
| 10 | 16QAM | 1 | 25 | 22.71 | 22.62 | 22.15 | 21.95 | 22.54 | | |
| 10 | 16QAM | 1 | 49 | 22.61 | 22.62 | 22.20 | 21.99 | 22.58 | | |
| 10 | 16QAM | 25 | 0 | 22.58 | 22.47 | 22.08 | 21.80 | 22.40 | 23.3 | 0 |
| 10 | 16QAM | 25 | 12 | 22.57 | 22.55 | 22.17 | 21.86 | 22.34 | | |
| 10 | 16QAM | 25 | 25 | 22.60 | 22.52 | 22.14 | 21.93 | 22.44 | | |
| 10 | 16QAM | 50 | 0 | 22.64 | 22.51 | 22.14 | 21.88 | 22.38 | | |
| 10 | 64QAM | 1 | 0 | 22.44 | 22.40 | 22.04 | 21.76 | 22.17 | 23.3 | 0 |
| 10 | 64QAM | 1 | 25 | 22.48 | 22.47 | 22.01 | 21.74 | 22.37 | | |
| 10 | 64QAM | 1 | 49 | 22.43 | 22.39 | 22.02 | 21.79 | 21.96 | | |
| 10 | 64QAM | 25 | 0 | 22.09 | 21.94 | 21.66 | 21.18 | 21.87 | 22.3 | 1 |
| 10 | 64QAM | 25 | 12 | 22.10 | 22.07 | 21.51 | 21.24 | 21.65 | | |
| 10 | 64QAM | 25 | 25 | 22.16 | 21.95 | 21.16 | 21.39 | 21.08 | | |
| 10 | 64QAM | 50 | 0 | 22.17 | 22.04 | 21.36 | 21.30 | 21.22 | | |
| 10 | 256QAM | 1 | 0 | 20.36 | 19.97 | 19.89 | 19.49 | 20.06 | 20.8 | 2.5 |
| 10 | 256QAM | 1 | 25 | 20.32 | 19.86 | 19.90 | 19.46 | 19.96 | | |
| 10 | 256QAM | 1 | 49 | 20.35 | 19.82 | 19.87 | 19.45 | 19.95 | | |
| 10 | 256QAM | 25 | 0 | 20.40 | 19.80 | 19.78 | 19.39 | 19.93 | 20.8 | 2.5 |
| 10 | 256QAM | 25 | 12 | 20.29 | 19.83 | 19.77 | 19.35 | 19.86 | | |
| 10 | 256QAM | 25 | 25 | 20.18 | 19.74 | 19.80 | 19.35 | 19.86 | | |
| 10 | 256QAM | 50 | 0 | 20.34 | 19.81 | 19.74 | 19.33 | 19.82 | | |
| Channel | | | | 39675 | 40148 | 40620 | 41093 | 41565 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 2498.5 | 2545.8 | 2593 | 2640.30 | 2687.5 | | |
| 5 | QPSK | 1 | 0 | 22.32 | 22.19 | 22.01 | 21.62 | 22.15 | 23.3 | 0 |
| 5 | QPSK | 1 | 12 | 22.26 | 22.20 | 21.86 | 21.54 | 22.18 | | |
| 5 | QPSK | 1 | 24 | 22.28 | 22.20 | 21.87 | 21.77 | 22.24 | | |
| 5 | QPSK | 12 | 0 | 22.54 | 22.47 | 22.12 | 21.83 | 22.30 | 23.3 | 0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5 | QPSK | 12 | 7 | 22.54 | 22.48 | 22.10 | 21.89 | 22.36 | | |
| 5 | QPSK | 12 | 13 | 22.59 | 22.50 | 22.10 | 21.85 | 22.44 | | |
| 5 | QPSK | 25 | 0 | 22.60 | 22.50 | 22.18 | 21.90 | 22.32 | | |
| 5 | 16QAM | 1 | 0 | 22.66 | 22.57 | 22.25 | 22.06 | 22.46 | 23.3 | 0 |
| 5 | 16QAM | 1 | 12 | 22.65 | 22.57 | 22.15 | 21.90 | 22.45 | | |
| 5 | 16QAM | 1 | 24 | 22.65 | 22.58 | 22.23 | 21.96 | 22.65 | | |
| 5 | 16QAM | 12 | 0 | 22.52 | 22.41 | 22.11 | 21.82 | 22.30 | 23.3 | 0 |
| 5 | 16QAM | 12 | 7 | 22.57 | 22.54 | 22.17 | 21.90 | 22.35 | | |
| 5 | 16QAM | 12 | 13 | 22.58 | 22.56 | 22.11 | 21.95 | 22.45 | | |
| 5 | 16QAM | 25 | 0 | 22.61 | 22.50 | 22.18 | 21.83 | 22.43 | | |
| 5 | 64QAM | 1 | 0 | 22.53 | 22.48 | 22.02 | 21.80 | 22.12 | 23.3 | 0 |
| 5 | 64QAM | 1 | 12 | 22.49 | 22.44 | 22.01 | 21.77 | 22.33 | | |
| 5 | 64QAM | 1 | 24 | 22.40 | 22.41 | 22.02 | 21.79 | 22.00 | | |
| 5 | 64QAM | 12 | 0 | 22.01 | 22.00 | 21.66 | 21.15 | 21.84 | 22.3 | 1 |
| 5 | 64QAM | 12 | 7 | 22.12 | 22.08 | 21.52 | 21.26 | 21.67 | | |
| 5 | 64QAM | 12 | 13 | 22.09 | 22.01 | 21.21 | 21.36 | 21.14 | | |
| 5 | 64QAM | 25 | 0 | 22.16 | 22.03 | 21.39 | 21.28 | 21.29 | | |
| 5 | 256QAM | 1 | 0 | 20.43 | 19.89 | 19.93 | 19.45 | 19.97 | 20.8 | 2.5 |
| 5 | 256QAM | 1 | 12 | 20.33 | 19.89 | 19.84 | 19.44 | 19.93 | | |
| 5 | 256QAM | 1 | 24 | 20.26 | 19.80 | 19.77 | 19.46 | 19.96 | | |
| 5 | 256QAM | 12 | 0 | 20.43 | 19.87 | 19.86 | 19.41 | 19.92 | 20.8 | 2.5 |
| 5 | 256QAM | 12 | 7 | 20.33 | 19.89 | 19.76 | 19.40 | 19.95 | | |
| 5 | 256QAM | 12 | 13 | 20.18 | 19.80 | 19.86 | 19.36 | 19.88 | | |
| 5 | 256QAM | 25 | 0 | 20.34 | 19.84 | 19.71 | 19.33 | 19.83 | | |

## Ant 4

### <LTE Band 48>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Low Middle Ch. / Freq. | Power High Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) | MPR (dB) |
|---|---|---|---|---|---|---|---|---|---|
| Channel | | | | 55340 | 55830 | 56150 | 56640 | | |
| Frequency (MHz) | | | | 3560 | 3609 | 3641 | 3690 | | |
| 20 | QPSK | 1 | 0 | 17.77 | 17.80 | 18.25 | 18.77 | 19.5 | 0 |
| 20 | QPSK | 1 | 49 | 17.71 | 17.77 | 18.01 | 18.75 | | |
| 20 | QPSK | 1 | 99 | 17.64 | 17.79 | 17.90 | 18.67 | | |
| 20 | QPSK | 50 | 0 | 16.79 | 16.87 | 17.05 | 17.81 | 18.5 | 1 |
| 20 | QPSK | 50 | 24 | 16.91 | 16.94 | 17.11 | 17.91 | | |
| 20 | QPSK | 50 | 50 | 16.91 | 16.91 | 17.26 | 17.90 | | |
| 20 | QPSK | 100 | 0 | 16.89 | 16.93 | 17.19 | 17.80 | | |
| 20 | 16QAM | 1 | 0 | 16.76 | 16.90 | 17.05 | 17.82 | 18.5 | 1 |
| 20 | 16QAM | 1 | 49 | 16.81 | 16.86 | 17.17 | 17.84 | | |
| 20 | 16QAM | 1 | 99 | 16.93 | 16.90 | 17.32 | 17.89 | | |
| 20 | 16QAM | 50 | 0 | 15.82 | 15.92 | 16.10 | 16.81 | 17.5 | 2 |
| 20 | 16QAM | 50 | 24 | 15.93 | 15.96 | 16.16 | 16.93 | | |
| 20 | 16QAM | 50 | 50 | 15.95 | 15.95 | 16.30 | 16.91 | | |
| 20 | 16QAM | 100 | 0 | 15.99 | 15.96 | 16.23 | 16.82 | | |
| 20 | 64QAM | 1 | 0 | 15.32 | 15.49 | 15.59 | 16.42 | 17.5 | 2 |
| 20 | 64QAM | 1 | 49 | 15.41 | 15.47 | 15.74 | 16.47 | | |
| 20 | 64QAM | 1 | 99 | 15.51 | 15.53 | 15.95 | 16.55 | | |
| 20 | 64QAM | 50 | 0 | 14.81 | 14.92 | 15.11 | 15.84 | 16.5 | 3 |
| 20 | 64QAM | 50 | 24 | 14.93 | 14.97 | 15.15 | 15.94 | | |
| 20 | 64QAM | 50 | 50 | 14.93 | 14.94 | 15.30 | 15.91 | | |
| 20 | 64QAM | 100 | 0 | 14.91 | 14.96 | 15.24 | 15.85 | | |
| 20 | 256QAM | 1 | 0 | 12.57 | 12.76 | 12.87 | 13.66 | 14.5 | 5 |
| 20 | 256QAM | 1 | 49 | 12.59 | 12.70 | 12.96 | 13.61 | | |
| 20 | 256QAM | 1 | 99 | 12.73 | 12.79 | 13.20 | 13.70 | | |
| 20 | 256QAM | 50 | 0 | 12.81 | 12.96 | 13.14 | 13.85 | 14.5 | 5 |
| 20 | 256QAM | 50 | 24 | 12.94 | 13.02 | 13.19 | 13.95 | | |
| 20 | 256QAM | 50 | 50 | 12.92 | 13.00 | 13.34 | 13.93 | | |
| 20 | 256QAM | 100 | 0 | 12.88 | 12.99 | 13.25 | 13.81 | | |
| Channel | | | | 55315 | 55820 | 56160 | 56665 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 3557.5 | 3608 | 3642 | 3692.5 | | |
| 15 | QPSK | 1 | 0 | 17.60 | 17.77 | 17.89 | 18.63 | 19.5 | 0 |
| 15 | QPSK | 1 | 37 | 17.70 | 17.71 | 17.94 | 18.74 | | |
| 15 | QPSK | 1 | 74 | 17.70 | 17.77 | 18.21 | 18.69 | | |
| 15 | QPSK | 36 | 0 | 16.76 | 16.77 | 16.96 | 17.73 | 18.5 | 1 |
| 15 | QPSK | 36 | 20 | 16.89 | 16.86 | 17.04 | 17.90 | | |
| 15 | QPSK | 36 | 39 | 16.85 | 16.85 | 17.25 | 17.90 | | |
| 15 | QPSK | 75 | 0 | 16.88 | 16.87 | 17.17 | 17.77 | | |
| 15 | 16QAM | 1 | 0 | 16.74 | 16.85 | 16.95 | 17.73 | 18.5 | 1 |
| 15 | 16QAM | 1 | 37 | 16.81 | 16.82 | 17.07 | 17.80 | | |
| 15 | 16QAM | 1 | 74 | 16.88 | 16.86 | 17.27 | 17.88 | | |
| 15 | 16QAM | 36 | 0 | 15.80 | 15.84 | 16.06 | 16.74 | 17.5 | 2 |
| 15 | 16QAM | 36 | 20 | 15.86 | 15.89 | 16.08 | 16.93 | | |
| 15 | 16QAM | 36 | 39 | 15.86 | 15.87 | 16.22 | 16.91 | | |
| 15 | 16QAM | 75 | 0 | 15.92 | 15.89 | 16.22 | 16.79 | | |
| 15 | 64QAM | 1 | 0 | 15.23 | 15.46 | 15.50 | 16.32 | 17.5 | 2 |
| 15 | 64QAM | 1 | 37 | 15.35 | 15.47 | 15.73 | 16.47 | | |
| 15 | 64QAM | 1 | 74 | 15.44 | 15.46 | 15.92 | 16.49 | | |
| 15 | 64QAM | 36 | 0 | 14.79 | 14.82 | 15.11 | 15.79 | 16.5 | 3 |
| 15 | 64QAM | 36 | 20 | 14.91 | 14.95 | 15.10 | 15.89 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 64QAM | 36 | 39 | 14.90 | 14.93 | 15.26 | 15.85 | | |
| 15 | 64QAM | 75 | 0 | 14.91 | 14.86 | 15.16 | 15.81 | | |
| 15 | 256QAM | 1 | 0 | 12.51 | 12.67 | 12.81 | 13.57 | 14.5 | 5 |
| 15 | 256QAM | 1 | 37 | 12.55 | 12.64 | 12.87 | 13.54 | | |
| 15 | 256QAM | 1 | 74 | 12.69 | 12.70 | 13.10 | 13.66 | | |
| 15 | 256QAM | 36 | 0 | 12.73 | 12.94 | 13.05 | 13.80 | 14.5 | 5 |
| 15 | 256QAM | 36 | 20 | 12.86 | 12.93 | 13.17 | 13.89 | | |
| 15 | 256QAM | 36 | 39 | 12.84 | 13.00 | 13.33 | 13.86 | | |
| 15 | 256QAM | 75 | 0 | 12.80 | 12.98 | 13.16 | 13.79 | | |
| Channel | | | | 55290 | 55815 | 56165 | 56690 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 3555 | 3607.5 | 3642.5 | 3695 | | |
| 10 | QPSK | 1 | 0 | 17.59 | 17.71 | 17.81 | 18.66 | 19.5 | 0 |
| 10 | QPSK | 1 | 25 | 17.67 | 17.73 | 17.96 | 18.72 | | |
| 10 | QPSK | 1 | 49 | 17.72 | 17.74 | 18.24 | 18.73 | | |
| 10 | QPSK | 25 | 0 | 16.75 | 16.77 | 17.00 | 17.78 | 18.5 | 1 |
| 10 | QPSK | 25 | 12 | 16.86 | 16.93 | 17.08 | 17.84 | | |
| 10 | QPSK | 25 | 25 | 16.83 | 16.86 | 17.24 | 17.83 | | |
| 10 | QPSK | 50 | 0 | 16.88 | 16.92 | 17.17 | 17.76 | | |
| 10 | 16QAM | 1 | 0 | 16.72 | 16.88 | 16.97 | 17.73 | 18.5 | 1 |
| 10 | 16QAM | 1 | 25 | 16.76 | 16.77 | 17.11 | 17.77 | | |
| 10 | 16QAM | 1 | 49 | 16.86 | 16.80 | 17.28 | 17.83 | | |
| 10 | 16QAM | 25 | 0 | 15.73 | 15.84 | 16.08 | 16.74 | 17.5 | 2 |
| 10 | 16QAM | 25 | 12 | 15.83 | 15.86 | 16.10 | 16.87 | | |
| 10 | 16QAM | 25 | 25 | 15.92 | 15.86 | 16.29 | 16.90 | | |
| 10 | 16QAM | 50 | 0 | 15.92 | 15.92 | 16.13 | 16.81 | | |
| 10 | 64QAM | 1 | 0 | 15.31 | 15.46 | 15.50 | 16.38 | 17.5 | 2 |
| 10 | 64QAM | 1 | 25 | 15.36 | 15.43 | 15.64 | 16.39 | | |
| 10 | 64QAM | 1 | 49 | 15.41 | 15.50 | 15.89 | 16.55 | | |
| 10 | 64QAM | 25 | 0 | 14.79 | 14.85 | 15.07 | 15.74 | 16.5 | 3 |
| 10 | 64QAM | 25 | 12 | 14.86 | 14.93 | 15.11 | 15.86 | | |
| 10 | 64QAM | 25 | 25 | 14.84 | 14.93 | 15.25 | 15.83 | | |
| 10 | 64QAM | 50 | 0 | 14.89 | 14.86 | 15.18 | 15.85 | | |
| 10 | 256QAM | 1 | 0 | 12.52 | 12.68 | 12.87 | 13.57 | 14.5 | 5 |
| 10 | 256QAM | 1 | 25 | 12.50 | 12.64 | 12.87 | 13.56 | | |
| 10 | 256QAM | 1 | 49 | 12.69 | 12.72 | 13.16 | 13.63 | | |
| 10 | 256QAM | 25 | 0 | 12.78 | 12.89 | 13.08 | 13.85 | 14.5 | 5 |
| 10 | 256QAM | 25 | 12 | 12.89 | 12.99 | 13.16 | 13.94 | | |
| 10 | 256QAM | 25 | 25 | 12.82 | 12.96 | 13.34 | 13.84 | | |
| 10 | 256QAM | 50 | 0 | 12.84 | 12.99 | 13.25 | 13.78 | | |
| Channel | | | | 55265 | 55810 | 56170 | 56715 | Tune-up limit (dBm) | MPR (dB) |
| Frequency (MHz) | | | | 3552.5 | 3607 | 3643 | 3697.5 | | |
| 5 | QPSK | 1 | 0 | 17.64 | 17.71 | 17.85 | 18.57 | 19.5 | 0 |
| 5 | QPSK | 1 | 12 | 17.62 | 17.71 | 17.95 | 18.65 | | |
| 5 | QPSK | 1 | 24 | 17.77 | 17.72 | 18.18 | 18.77 | | |
| 5 | QPSK | 12 | 0 | 16.71 | 16.80 | 17.01 | 17.79 | 18.5 | 1 |
| 5 | QPSK | 12 | 7 | 16.83 | 16.90 | 17.05 | 17.87 | | |
| 5 | QPSK | 12 | 13 | 16.85 | 16.91 | 17.21 | 17.84 | | |
| 5 | QPSK | 25 | 0 | 16.79 | 16.93 | 17.16 | 17.75 | | |
| 5 | 16QAM | 1 | 0 | 16.71 | 16.88 | 17.04 | 17.82 | 18.5 | 1 |
| 5 | 16QAM | 1 | 12 | 16.71 | 16.83 | 17.15 | 17.84 | | |
| 5 | 16QAM | 1 | 24 | 16.86 | 16.85 | 17.32 | 17.86 | | |
| 5 | 16QAM | 12 | 0 | 15.81 | 15.87 | 16.10 | 16.72 | 17.5 | 2 |
| 5 | 16QAM | 12 | 7 | 15.93 | 15.87 | 16.10 | 16.90 | | |
| 5 | 16QAM | 12 | 13 | 15.86 | 15.90 | 16.28 | 16.84 | | |
| 5 | 16QAM | 25 | 0 | 15.89 | 15.90 | 16.17 | 16.79 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 64QAM | 1 | 0 | 15.32 | 15.40 | 15.51 | 16.38 | 17.5 | 2 |
| 5 | 64QAM | 1 | 12 | 15.31 | 15.43 | 15.65 | 16.46 | | |
| 5 | 64QAM | 1 | 24 | 15.42 | 15.53 | 15.89 | 16.46 | | |
| 5 | 64QAM | 12 | 0 | 14.77 | 14.88 | 15.07 | 15.75 | 16.5 | 3 |
| 5 | 64QAM | 12 | 7 | 14.84 | 14.89 | 15.06 | 15.84 | | |
| 5 | 64QAM | 12 | 13 | 14.91 | 14.84 | 15.25 | 15.86 | | |
| 5 | 64QAM | 25 | 0 | 14.86 | 14.86 | 15.23 | 15.85 | | |
| 5 | 256QAM | 1 | 0 | 12.55 | 12.66 | 12.85 | 13.60 | 14.5 | 5 |
| 5 | 256QAM | 1 | 12 | 12.49 | 12.69 | 12.91 | 13.57 | | |
| 5 | 256QAM | 1 | 24 | 12.69 | 12.76 | 13.20 | 13.63 | | |
| 5 | 256QAM | 12 | 0 | 12.71 | 12.96 | 13.07 | 13.81 | 14.5 | 5 |
| 5 | 256QAM | 12 | 7 | 12.91 | 12.94 | 13.10 | 13.87 | | |
| 5 | 256QAM | 12 | 13 | 12.90 | 12.99 | 13.25 | 13.89 | | |
| 5 | 256QAM | 25 | 0 | 12.81 | 12.92 | 13.15 | 13.81 | | |

# 13. 5G NR Output Power (Unit: dBm)

**General Note:**

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM measurement is unnecessary.
   b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, full measurement on Pi/2 BPSK and QPSK, for16QAM/64QMA/256QAM spot check 1RB 1offset configuration to ensure the output power will not ½ dB higher than Pi/2 BPSK and QPSK, for smaller bandwidth output power will spot check 1RB 1offset configuration at Pi/2 BPSK to ensure output power will not ½ dB higher than largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   d. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure
   e. PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   f. QPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
2. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

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

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

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

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

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

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

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

**<EN-DC combination and combine Total Power>**

| FR1 UL EN-DC | |
|---|---|
| ANT/RF | Band |
| 0 + 8 | 5A-n2A |
| 0 + 8 | 12A-n2A |
| 0 + 8 | 66A-n2A |
| 8 + 0 | 2A-n5A |
| 8 + 0 | 66A-n5A |
| 8 + 0 | 2A-n12A |
| 8 + 0 | 66A-n12A |
| 8 + 0 | 2A-n66A |
| 0 + 8 | 5A-n66A |
| 0 + 8 | 12A-n66A |
| 8 + 0 | 2A-n71A |
| 8 + 0 | 66A-n71A |

## Ant 0

**<n5>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|---|---|---|---|---|---|---|---|
| Channel | | | | 166800 | 167300 | 167800 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 834 | 836.5 | 839 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.55 | 23.30 | 22.87 | 24.0 |
| 20 | PI/2 BPSK | 1 | 53 | 23.92 | 23.40 | 23.78 | |
| 20 | PI/2 BPSK | 1 | 104 | 22.82 | 22.00 | 22.22 | |
| 20 | PI/2 BPSK | 50 | 0 | 23.31 | 23.41 | 23.45 | 24.0 |
| 20 | PI/2 BPSK | 50 | 28 | 23.10 | 23.20 | 22.77 | |
| 20 | PI/2 BPSK | 50 | 56 | 22.51 | 22.11 | 22.00 | |
| 20 | PI/2 BPSK | 100 | 0 | 21.82 | 21.80 | 21.83 | 23.5 |
| 20 | QPSK | 1 | 1 | 23.44 | 23.43 | 23.37 | 24.0 |
| 20 | QPSK | 1 | 53 | 23.98 | 23.94 | 23.96 | |
| 20 | QPSK | 1 | 104 | 22.72 | 22.71 | 22.64 | |
| 20 | QPSK | 50 | 0 | 23.13 | 23.04 | 23.03 | 24.0 |
| 20 | QPSK | 50 | 28 | 23.66 | 23.63 | 23.57 | |
| 20 | QPSK | 50 | 56 | 22.95 | 22.85 | 22.87 | |
| 20 | QPSK | 100 | 0 | 22.90 | 22.89 | 22.87 | 23.0 |
| 20 | 16QAM | 1 | 1 | 22.68 | 22.66 | 22.58 | 23.0 |
| 20 | 64QAM | 1 | 1 | 21.43 | 21.35 | 21.38 | 21.5 |
| 20 | 256QAM | 1 | 1 | 19.50 | 19.43 | 19.48 | 19.5 |
| Channel | | | | 166300 | 167300 | 168300 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 831.5 | 836.5 | 841.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 23.66 | 23.40 | 23.20 | 24.0 |
| Channel | | | | 165800 | 167300 | 168800 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 829 | 836.5 | 844 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.59 | 23.33 | 23.55 | 24.0 |
| Channel | | | | 165300 | 167300 | 169300 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 826.5 | 836.5 | 846.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.78 | 23.37 | 23.48 | 24.0 |

**<n12>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|---|---|---|---|---|---|---|---|
| Channel | | | | 141300 | 141500 | 141700 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 706.5 | 707.5 | 708.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 23.53 | 23.69 | 23.63 | 24.0 |
| 15 | PI/2 BPSK | 1 | 40 | 23.46 | 23.60 | 23.58 | |
| 15 | PI/2 BPSK | 1 | 77 | 23.34 | 23.42 | 23.43 | |
| 15 | PI/2 BPSK | 36 | 0 | 23.39 | 23.46 | 23.51 | 24.0 |
| 15 | PI/2 BPSK | 36 | 22 | 23.39 | 23.46 | 23.44 | |
| 15 | PI/2 BPSK | 36 | 43 | 23.35 | 23.45 | 23.44 | |
| 15 | PI/2 BPSK | 75 | 0 | 23.39 | 23.45 | 23.46 | 23.5 |
| 15 | QPSK | 1 | 1 | 23.56 | 23.61 | 23.61 | 24.0 |
| 15 | QPSK | 1 | 40 | 23.44 | 23.50 | 23.53 | |
| 15 | QPSK | 1 | 77 | 23.39 | 23.41 | 23.40 | |
| 15 | QPSK | 36 | 0 | 23.23 | 23.36 | 23.42 | 24.0 |
| 15 | QPSK | 36 | 22 | 23.34 | 23.38 | 23.37 | |
| 15 | QPSK | 36 | 43 | 23.23 | 23.40 | 23.37 | |
| 15 | QPSK | 75 | 0 | 23.00 | 23.00 | 23.00 | 23.0 |
| 15 | 16QAM | 1 | 1 | 23.00 | 22.91 | 22.96 | 23.0 |
| 15 | 64QAM | 1 | 1 | 21.50 | 21.42 | 21.43 | 21.5 |
| 15 | 256QAM | 1 | 1 | 19.28 | 19.26 | 19.19 | 19.5 |
| Channel | | | | 140800 | 141500 | 142200 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 704 | 707.5 | 711 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.50 | 23.66 | 23.60 | 24.0 |
| Channel | | | | 140300 | 141500 | 142700 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 701.5 | 707.5 | 713.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.52 | 23.65 | 23.59 | 24.0 |

**<n66>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|---|---|---|---|---|---|---|---|
| Channel | | | | 344000 | 349000 | 354000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | |
| 20 | PI/2 BPSK | 1 | 1 | 18.31 | 17.83 | 17.82 | 18.8 |
| 20 | PI/2 BPSK | 1 | 53 | 17.97 | 17.85 | 17.77 | |
| 20 | PI/2 BPSK | 1 | 104 | 17.89 | 17.79 | 17.72 | |
| 20 | PI/2 BPSK | 50 | 0 | 17.92 | 17.82 | 17.65 | 18.8 |
| 20 | PI/2 BPSK | 50 | 28 | 17.88 | 17.74 | 17.58 | |
| 20 | PI/2 BPSK | 50 | 56 | 17.90 | 17.76 | 17.58 | |
| 20 | PI/2 BPSK | 100 | 0 | 17.89 | 17.75 | 17.60 | 18.8 |
| 20 | QPSK | 1 | 1 | 18.00 | 17.87 | 17.82 | 18.8 |
| 20 | QPSK | 1 | 53 | 17.98 | 17.84 | 17.78 | |
| 20 | QPSK | 1 | 104 | 17.89 | 17.79 | 17.72 | |
| 20 | QPSK | 50 | 0 | 17.92 | 17.78 | 17.65 | 18.8 |
| 20 | QPSK | 50 | 28 | 17.91 | 17.75 | 17.61 | |
| 20 | QPSK | 50 | 56 | 17.85 | 17.77 | 17.55 | |
| 20 | QPSK | 100 | 0 | 17.91 | 17.78 | 17.60 | 18.8 |
| 20 | 16QAM | 1 | 1 | 17.99 | 17.84 | 17.84 | 18.8 |
| 20 | 64QAM | 1 | 1 | 17.84 | 17.66 | 17.71 | 18.8 |
| 20 | 256QAM | 1 | 1 | 18.30 | 18.12 | 18.21 | 18.8 |
| Channel | | | | 343500 | 349000 | 354500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 17.92 | 17.77 | 17.75 | 18.8 |
| Channel | | | | 343000 | 349000 | 355000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | |
| 10 | PI/2 BPSK | 1 | 1 | 17.96 | 17.82 | 17.80 | 18.8 |
| Channel | | | | 342500 | 349000 | 355500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 17.89 | 17.73 | 17.69 | 18.8 |

**<n71>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|---|---|---|---|---|---|---|---|
| Channel | | | | 134600 | 136100 | 137600 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 673 | 680.5 | 688 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.30 | 23.10 | 22.89 | 24.0 |
| 20 | PI/2 BPSK | 1 | 53 | 23.21 | 23.30 | 23.46 | |
| 20 | PI/2 BPSK | 1 | 104 | 23.12 | 23.25 | 23.17 | |
| 20 | PI/2 BPSK | 50 | 0 | 22.92 | 22.83 | 23.05 | 24.0 |
| 20 | PI/2 BPSK | 50 | 28 | 23.04 | 23.17 | 23.34 | |
| 20 | PI/2 BPSK | 50 | 56 | 22.78 | 22.87 | 22.91 | |
| 20 | PI/2 BPSK | 100 | 0 | 20.39 | 20.22 | 22.93 | 23.5 |
| 20 | QPSK | 1 | 1 | 23.28 | 23.25 | 23.18 | 24.0 |
| 20 | QPSK | 1 | 53 | 23.13 | 23.04 | 23.08 | |
| 20 | QPSK | 1 | 104 | 23.15 | 23.15 | 23.13 | |
| 20 | QPSK | 50 | 0 | 22.32 | 22.32 | 22.25 | 24.0 |
| 20 | QPSK | 50 | 28 | 23.02 | 22.95 | 22.95 | |
| 20 | QPSK | 50 | 56 | 22.23 | 22.21 | 22.13 | |
| 20 | QPSK | 100 | 0 | 22.13 | 22.06 | 22.04 | 23.0 |
| 20 | 16QAM | 1 | 1 | 22.50 | 22.44 | 22.45 | 23.0 |
| 20 | 64QAM | 1 | 1 | 20.96 | 20.91 | 20.96 | 21.5 |
| 20 | 256QAM | 1 | 1 | 18.49 | 18.49 | 18.42 | 19.5 |
| Channel | | | | 134100 | 136100 | 138100 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 670.5 | 680.5 | 690.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 23.15 | 23.15 | 23.00 | 24.0 |
| Channel | | | | 133600 | 136100 | 138600 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 668 | 680.5 | 693 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.17 | 23.33 | 23.41 | 24.0 |
| Channel | | | | 133100 | 136100 | 139100 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 665.5 | 680.5 | 695.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.29 | 23.25 | 23.20 | 24.0 |

## Ant 8

**<n2>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|---|---|---|---|---|---|---|---|
| Channel | | | | 372000 | 376000 | 380000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | PI/2 BPSK | 1 | 1 | 21.86 | 21.66 | 21.63 | 22.7 |
| 20 | PI/2 BPSK | 1 | 53 | 21.88 | 21.67 | 21.69 | |
| 20 | PI/2 BPSK | 1 | 104 | 21.84 | 21.63 | 21.62 | |
| 20 | PI/2 BPSK | 50 | 0 | 21.85 | 21.65 | 21.65 | 22.7 |
| 20 | PI/2 BPSK | 50 | 28 | 21.84 | 21.75 | 21.67 | |
| 20 | PI/2 BPSK | 50 | 56 | 21.88 | 21.73 | 21.68 | |
| 20 | PI/2 BPSK | 100 | 0 | 21.96 | 21.65 | 21.64 | 22.7 |
| 20 | QPSK | 1 | 1 | 21.85 | 21.66 | 21.61 | 22.7 |
| 20 | QPSK | 1 | 53 | 21.92 | 21.74 | 21.69 | |
| 20 | QPSK | 1 | 104 | 21.83 | 21.63 | 21.61 | |
| 20 | QPSK | 50 | 0 | 21.84 | 21.64 | 21.65 | 22.7 |
| 20 | QPSK | 50 | 28 | 21.88 | 21.70 | 21.63 | |
| 20 | QPSK | 50 | 56 | 21.85 | 21.73 | 21.64 | |
| 20 | QPSK | 100 | 0 | 21.81 | 21.72 | 21.69 | 22.7 |
| 20 | 16QAM | 1 | 1 | 21.90 | 21.65 | 21.65 | 22.7 |
| 20 | 64QAM | 1 | 1 | 21.76 | 21.55 | 21.60 | 22.7 |
| 20 | 256QAM | 1 | 1 | 20.19 | 20.01 | 19.95 | 20.7 |
| Channel | | | | 371500 | 376000 | 380500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 21.94 | 21.81 | 21.76 | 22.7 |
| Channel | | | | 371000 | 376000 | 381000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | |
| 10 | PI/2 BPSK | 1 | 1 | 21.92 | 21.79 | 21.77 | 22.7 |
| Channel | | | | 370500 | 376000 | 381500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 21.88 | 21.72 | 21.70 | 22.7 |

**<n66>**

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|---|---|---|---|---|---|---|---|
| Channel | | | | 344000 | 349000 | 354000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.06 | 23.16 | 23.12 | 23.5 |
| 20 | PI/2 BPSK | 1 | 53 | 23.07 | 23.43 | 23.20 | |
| 20 | PI/2 BPSK | 1 | 104 | 22.99 | 23.08 | 23.14 | |
| 20 | PI/2 BPSK | 50 | 0 | 22.97 | 23.27 | 23.06 | 23.5 |
| 20 | PI/2 BPSK | 50 | 28 | 22.94 | 23.11 | 23.26 | |
| 20 | PI/2 BPSK | 50 | 56 | 22.94 | 23.07 | 23.02 | |
| 20 | PI/2 BPSK | 100 | 0 | 22.95 | 23.05 | 23.00 | 23.5 |
| 20 | QPSK | 1 | 1 | 23.05 | 23.09 | 23.05 | 23.5 |
| 20 | QPSK | 1 | 53 | 23.04 | 23.27 | 23.11 | |
| 20 | QPSK | 1 | 104 | 23.00 | 23.00 | 23.08 | |
| 20 | QPSK | 50 | 0 | 23.01 | 23.02 | 22.98 | 23.5 |
| 20 | QPSK | 50 | 28 | 22.98 | 23.11 | 23.08 | |
| 20 | QPSK | 50 | 56 | 22.96 | 23.06 | 22.98 | |
| 20 | QPSK | 100 | 0 | 22.96 | 22.97 | 23.00 | 23.5 |
| 20 | 16QAM | 1 | 1 | 23.04 | 22.97 | 22.98 | 23.5 |
| 20 | 64QAM | 1 | 1 | 21.80 | 21.76 | 21.70 | 22.5 |
| 20 | 256QAM | 1 | 1 | 20.08 | 19.99 | 20.06 | 20.5 |
| Channel | | | | 343500 | 349000 | 354500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 22.91 | 23.08 | 23.07 | 23.5 |
| Channel | | | | 343000 | 349000 | 355000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.08 | 23.08 | 23.04 | 23.5 |
| Channel | | | | 342500 | 349000 | 355500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.00 | 23.11 | 23.06 | 23.5 |

# 14. SAR Test Results

**General Note:**

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   d. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix 63.3%/62.9% = 1.006 is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.

**UMTS Note:**

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

**LTE Note:**

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B12/B26/B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 2/4/5/17/38 SAR test was covered by Band 25/66/26/12/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

**5G NR Note:**

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   b. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure
   c. PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   d. QPSK/16QAM/64QAM/256QAM output powers are not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
   e. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
   f. For 5G FR1 n2/n5/n12/n66/n71 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

## 14.1 Body SAR

### <WCDMA SAR>

| Plot No. | Band | Mode | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA II_Ant0 | RMC 12.2Kbps | Front | 10mm | Battery1 | 9400 | 1880 | 23.89 | 24.00 | 1.026 | 0.01 | 0.671 | 0.688 |
| | WCDMA II_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 9400 | 1880 | 23.89 | 24.00 | 1.026 | 0.03 | 0.682 | 0.699 |
| 01 | WCDMA II_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 9262 | 1852.4 | 23.82 | 24.00 | 1.042 | 0.05 | 0.755 | 0.787 |
| | WCDMA II_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 9538 | 1907.6 | 23.79 | 24.00 | 1.050 | 0.02 | 0.686 | 0.720 |
| | WCDMA II_Ant0 | RMC 12.2Kbps | Right Side | 10mm | Battery1 | 9400 | 1880 | 23.89 | 24.00 | 1.026 | 0 | 0.278 | 0.285 |
| | WCDMA II_Ant0 | RMC 12.2Kbps | Top Side | 10mm | Battery1 | 9400 | 1880 | 23.89 | 24.00 | 1.026 | 0.05 | 0.098 | 0.101 |
| | WCDMA II_Ant0 | RMC 12.2Kbps | Bottom Side | 10mm | Battery1 | 9400 | 1880 | 23.89 | 24.00 | 1.026 | 0.06 | 0.556 | 0.570 |
| | WCDMA II_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery2 | 9262 | 1852.4 | 23.82 | 24.00 | 1.042 | 0.01 | 0.683 | 0.712 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Front | 10mm | Battery1 | 1513 | 1752.6 | 17.39 | 18.40 | 1.262 | 0.16 | 0.274 | 0.346 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 1513 | 1752.6 | 17.39 | 18.40 | 1.262 | 0.07 | 0.318 | 0.401 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Right Side | 10mm | Battery1 | 1513 | 1752.6 | 17.39 | 18.40 | 1.262 | 0.06 | 0.371 | 0.468 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Right Side | 10mm | Battery1 | 1312 | 1712.4 | 17.29 | 18.40 | 1.291 | 0.16 | 0.693 | 0.895 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Right Side | 10mm | Battery1 | 1413 | 1732.6 | 17.23 | 18.40 | 1.309 | 0.13 | 0.507 | 0.664 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Top Side | 10mm | Battery1 | 1513 | 1752.6 | 17.39 | 18.40 | 1.262 | 0.04 | 0.021 | 0.026 |
| | WCDMA IV_Ant0 | RMC 12.2Kbps | Bottom Side | 10mm | Battery1 | 1513 | 1752.6 | 17.39 | 18.40 | 1.262 | 0.01 | 0.203 | 0.256 |
| 02 | WCDMA IV_Ant0 | RMC 12.2Kbps | Right Side | 10mm | Battery2 | 1312 | 1712.4 | 17.29 | 18.40 | 1.291 | -0.04 | 0.771 | 0.996 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Front | 10mm | Battery1 | 4233 | 846.6 | 23.82 | 24.00 | 1.042 | -0.09 | 0.761 | 0.793 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 4233 | 846.6 | 23.82 | 24.00 | 1.042 | -0.06 | 0.829 | 0.864 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 4132 | 826.4 | 23.47 | 24.00 | 1.130 | -0.01 | 0.794 | 0.897 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery1 | 4182 | 836.4 | 23.63 | 24.00 | 1.089 | -0.08 | 0.700 | 0.762 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Right Side | 10mm | Battery1 | 4233 | 846.6 | 23.82 | 24.00 | 1.042 | -0.05 | 0.163 | 0.170 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Top Side | 10mm | Battery1 | 4233 | 846.6 | 23.82 | 24.00 | 1.042 | -0.02 | 0.593 | 0.618 |
| | WCDMA V_Ant0 | RMC 12.2Kbps | Bottom Side | 10mm | Battery1 | 4233 | 846.6 | 23.82 | 24.00 | 1.042 | -0.03 | 0.482 | 0.502 |
| 03 | WCDMA V_Ant0 | RMC 12.2Kbps | Back | 10mm | Battery2 | 4132 | 826.4 | 23.47 | 24.00 | 1.130 | -0.14 | 0.831 | 0.939 |

## <FDD LTE SAR>

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 2_Ant8 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 18700 | 1860 | 22.00 | 22.80 | 1.202 | -0.02 | 0.279 | 0.335 |
| | LTE Band 2_Ant8 | 20M | QPSK | 50 | 24 | Front | 10mm | Battery1 | 18700 | 1860 | 22.20 | 22.80 | 1.148 | -0.01 | 0.277 | 0.318 |
| | LTE Band 2_Ant8 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 18700 | 1860 | 22.00 | 22.80 | 1.202 | -0.11 | 0.308 | 0.370 |
| | LTE Band 2_Ant8 | 20M | QPSK | 50 | 24 | Back | 10mm | Battery1 | 18700 | 1860 | 22.20 | 22.80 | 1.148 | 0.02 | 0.488 | 0.560 |
| 04 | LTE Band 2_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 18700 | 1860 | 22.00 | 22.80 | 1.202 | 0.07 | 0.817 | 0.982 |
| | LTE Band 2_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 18900 | 1880 | 21.71 | 22.80 | 1.285 | 0.14 | 0.715 | 0.919 |
| | LTE Band 2_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 19100 | 1900 | 21.71 | 22.80 | 1.285 | 0.1 | 0.621 | 0.798 |
| | LTE Band 2_Ant8 | 20M | QPSK | 50 | 24 | Top Side | 10mm | Battery1 | 18700 | 1860 | 22.20 | 22.80 | 1.148 | 0.11 | 0.773 | 0.888 |
| | LTE Band 2_Ant8 | 20M | QPSK | 50 | 24 | Top Side | 10mm | Battery1 | 18900 | 1880 | 21.85 | 22.80 | 1.245 | 0.17 | 0.676 | 0.841 |
| | LTE Band 2_Ant8 | 20M | QPSK | 50 | 24 | Top Side | 10mm | Battery1 | 19100 | 1900 | 21.79 | 22.80 | 1.262 | 0.11 | 0.618 | 0.780 |
| | LTE Band 2_Ant8 | 20M | QPSK | 100 | 0 | Top Side | 10mm | Battery1 | 18700 | 1860 | 22.14 | 22.80 | 1.164 | -0.05 | 0.778 | 0.906 |
| | LTE Band 2_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery2 | 18700 | 1860 | 22.00 | 22.80 | 1.202 | 0.12 | 0.742 | 0.892 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Front | 10mm | Battery1 | 20850 | 2510 | 17.68 | 18.50 | 1.208 | -0.02 | 0.185 | 0.223 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Front | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | -0.01 | 0.191 | 0.223 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Back | 10mm | Battery1 | 20850 | 2510 | 17.68 | 18.50 | 1.208 | -0.09 | 0.151 | 0.182 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Back | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | -0.11 | 0.161 | 0.188 |
| 05 | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Right Side | 10mm | Battery1 | 20850 | 2510 | 17.68 | 18.50 | 1.208 | 0.16 | 0.823 | 0.994 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Right Side | 10mm | Battery1 | 21100 | 2535 | 17.57 | 18.50 | 1.239 | 0.19 | 0.400 | 0.496 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Right Side | 10mm | Battery1 | 21350 | 2560 | 17.34 | 18.50 | 1.306 | 0.17 | 0.142 | 0.185 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | -0.17 | 0.821 | 0.958 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 21100 | 2535 | 17.70 | 18.50 | 1.202 | 0.12 | 0.543 | 0.653 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 21350 | 2560 | 17.53 | 18.50 | 1.250 | 0.11 | 0.216 | 0.270 |
| | LTE Band 7_Ant0 | 20M | QPSK | 100 | 0 | Right Side | 10mm | Battery1 | 20850 | 2510 | 17.77 | 18.50 | 1.183 | 0.14 | 0.813 | 0.962 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Top Side | 10mm | Battery1 | 20850 | 2510 | 17.68 | 18.50 | 1.208 | 0.11 | 0.049 | 0.059 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Top Side | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | 0.18 | 0.052 | 0.061 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Bottom Side | 10mm | Battery1 | 20850 | 2510 | 17.68 | 18.50 | 1.208 | -0.04 | 0.169 | 0.204 |
| | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Bottom Side | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | -0.04 | 0.168 | 0.196 |
| | LTE Band 7_Ant0 | 20M | QPSK | 1 | 99 | Right Side | 10mm | Battery2 | 20850 | 2510 | 17.68 | 18.50 | 1.208 | 0.12 | 0.812 | 0.981 |
| | LTE Band 12_Ant0 | 10M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 23095 | 707.5 | 23.37 | 24.00 | 1.156 | -0.09 | 0.852 | 0.985 |
| | LTE Band 12_Ant0 | 10M | QPSK | 25 | 25 | Front | 10mm | Battery1 | 23095 | 707.5 | 22.53 | 23.00 | 1.114 | -0.11 | 0.726 | 0.809 |
| | LTE Band 12_Ant0 | 10M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 23095 | 707.5 | 22.52 | 23.00 | 1.117 | -0.08 | 0.734 | 0.820 |
| 06 | LTE Band 12_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 23095 | 707.5 | 23.37 | 24.00 | 1.156 | -0.1 | 0.859 | 0.993 |
| | LTE Band 12_Ant0 | 10M | QPSK | 25 | 25 | Back | 10mm | Battery1 | 23095 | 707.5 | 22.53 | 23.00 | 1.114 | -0.06 | 0.732 | 0.816 |
| | LTE Band 12_Ant0 | 10M | QPSK | 50 | 0 | Back | 10mm | Battery1 | 23095 | 707.5 | 22.52 | 23.00 | 1.117 | -0.08 | 0.748 | 0.835 |
| | LTE Band 12_Ant0 | 10M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 23095 | 707.5 | 23.37 | 24.00 | 1.156 | -0.04 | 0.158 | 0.183 |
| | LTE Band 12_Ant0 | 10M | QPSK | 25 | 25 | Right Side | 10mm | Battery1 | 23095 | 707.5 | 22.53 | 23.00 | 1.114 | -0.12 | 0.103 | 0.115 |
| | LTE Band 12_Ant0 | 10M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 23095 | 707.5 | 23.37 | 24.00 | 1.156 | -0.07 | 0.350 | 0.405 |
| | LTE Band 12_Ant0 | 10M | QPSK | 25 | 25 | Top Side | 10mm | Battery1 | 23095 | 707.5 | 22.53 | 23.00 | 1.114 | -0.06 | 0.335 | 0.373 |
| | LTE Band 12_Ant0 | 10M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 23095 | 707.5 | 23.37 | 24.00 | 1.156 | -0.05 | 0.470 | 0.543 |
| | LTE Band 12_Ant0 | 10M | QPSK | 25 | 25 | Bottom Side | 10mm | Battery1 | 23095 | 707.5 | 22.53 | 23.00 | 1.114 | -0.11 | 0.401 | 0.447 |
| | LTE Band 12_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery2 | 23095 | 707.5 | 23.37 | 24.00 | 1.156 | -0.13 | 0.848 | 0.980 |

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 13_Ant0 | 10M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 23230 | 782 | 23.68 | 24.00 | 1.076 | -0.01 | 0.838 | 0.902 |
| | LTE Band 13_Ant0 | 10M | QPSK | 25 | 25 | Front | 10mm | Battery1 | 23230 | 782 | 22.83 | 23.00 | 1.040 | -0.02 | 0.688 | 0.715 |
| | LTE Band 13_Ant0 | 10M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 23230 | 782 | 22.81 | 23.00 | 1.045 | -0.05 | 0.692 | 0.723 |
| 07 | LTE Band 13_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 23230 | 782 | 23.68 | 24.00 | 1.076 | -0.04 | 0.854 | 0.919 |
| | LTE Band 13_Ant0 | 10M | QPSK | 25 | 25 | Back | 10mm | Battery1 | 23230 | 782 | 22.83 | 23.00 | 1.040 | -0.06 | 0.709 | 0.737 |
| | LTE Band 13_Ant0 | 10M | QPSK | 50 | 0 | Back | 10mm | Battery1 | 23230 | 782 | 22.81 | 23.00 | 1.045 | -0.02 | 0.710 | 0.742 |
| | LTE Band 13_Ant0 | 10M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 23230 | 782 | 23.68 | 24.00 | 1.076 | -0.08 | 0.122 | 0.131 |
| | LTE Band 13_Ant0 | 10M | QPSK | 25 | 25 | Right Side | 10mm | Battery1 | 23230 | 782 | 22.83 | 23.00 | 1.040 | -0.07 | 0.103 | 0.107 |
| | LTE Band 13_Ant0 | 10M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 23230 | 782 | 23.68 | 24.00 | 1.076 | -0.03 | 0.538 | 0.579 |
| | LTE Band 13_Ant0 | 10M | QPSK | 25 | 25 | Top Side | 10mm | Battery1 | 23230 | 782 | 22.83 | 23.00 | 1.040 | -0.02 | 0.470 | 0.489 |
| | LTE Band 13_Ant0 | 10M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 23230 | 782 | 23.68 | 24.00 | 1.076 | -0.01 | 0.549 | 0.591 |
| | LTE Band 13_Ant0 | 10M | QPSK | 25 | 25 | Bottom Side | 10mm | Battery1 | 23230 | 782 | 22.83 | 23.00 | 1.040 | -0.05 | 0.452 | 0.470 |
| | LTE Band 13_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery2 | 23230 | 782 | 23.68 | 24.00 | 1.076 | -0.09 | 0.810 | 0.872 |
| | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | -0.02 | 0.874 | 0.915 |
| | LTE Band 14_Ant0 | 10M | QPSK | 25 | 25 | Front | 10mm | Battery1 | 23330 | 793 | 22.92 | 23.00 | 1.019 | 0.03 | 0.675 | 0.688 |
| | LTE Band 14_Ant0 | 10M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 23330 | 793 | 22.84 | 23.00 | 1.038 | 0.02 | 0.682 | 0.708 |
| 08 | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | -0.01 | 0.901 | 0.943 |
| | LTE Band 14_Ant0 | 10M | QPSK | 25 | 25 | Back | 10mm | Battery1 | 23330 | 793 | 22.92 | 23.00 | 1.019 | 0 | 0.705 | 0.718 |
| | LTE Band 14_Ant0 | 10M | QPSK | 50 | 0 | Back | 10mm | Battery1 | 23330 | 793 | 22.84 | 23.00 | 1.038 | -0.02 | 0.714 | 0.741 |
| | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | -0.04 | 0.132 | 0.138 |
| | LTE Band 14_Ant0 | 10M | QPSK | 25 | 25 | Right Side | 10mm | Battery1 | 23330 | 793 | 22.92 | 23.00 | 1.019 | 0.01 | 0.094 | 0.096 |
| | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | 0.05 | 0.577 | 0.604 |
| | LTE Band 14_Ant0 | 10M | QPSK | 25 | 25 | Top Side | 10mm | Battery1 | 23330 | 793 | 22.92 | 23.00 | 1.019 | -0.03 | 0.458 | 0.467 |
| | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | 0.04 | 0.571 | 0.598 |
| | LTE Band 14_Ant0 | 10M | QPSK | 25 | 25 | Bottom Side | 10mm | Battery1 | 23330 | 793 | 22.92 | 23.00 | 1.019 | -0.02 | 0.445 | 0.453 |
| | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery2 | 23330 | 793 | 23.80 | 24.00 | 1.047 | -0.05 | 0.850 | 0.890 |
| 09 | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 26140 | 1860 | 23.40 | 24.00 | 1.148 | -0.01 | 0.794 | 0.912 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 26340 | 1880 | 23.35 | 24.00 | 1.161 | 0.17 | 0.678 | 0.787 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 26590 | 1905 | 23.37 | 24.00 | 1.156 | 0.12 | 0.565 | 0.653 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 26140 | 1860 | 22.56 | 23.00 | 1.107 | 0.06 | 0.807 | 0.893 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 26340 | 1880 | 22.48 | 23.00 | 1.127 | 0.08 | 0.647 | 0.729 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 50 | Front | 10mm | Battery1 | 26590 | 1905 | 22.47 | 23.00 | 1.130 | 0.16 | 0.602 | 0.680 |
| | LTE Band 25_Ant0 | 20M | QPSK | 100 | 0 | Front | 10mm | Battery1 | 26140 | 1860 | 22.53 | 23.00 | 1.114 | 0.05 | 0.731 | 0.815 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 26140 | 1860 | 23.40 | 24.00 | 1.148 | 0.08 | 0.710 | 0.815 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 0 | Back | 10mm | Battery1 | 26140 | 1860 | 22.56 | 23.00 | 1.107 | 0.02 | 0.707 | 0.782 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 26140 | 1860 | 23.40 | 24.00 | 1.148 | 0.04 | 0.250 | 0.287 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 0 | Right Side | 10mm | Battery1 | 26140 | 1860 | 22.56 | 23.00 | 1.107 | 0.01 | 0.240 | 0.266 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 26140 | 1860 | 23.40 | 24.00 | 1.148 | 0.16 | 0.081 | 0.093 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 0 | Top Side | 10mm | Battery1 | 26140 | 1860 | 22.56 | 23.00 | 1.107 | 0.02 | 0.084 | 0.093 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 26140 | 1860 | 23.40 | 24.00 | 1.148 | 0.12 | 0.518 | 0.595 |
| | LTE Band 25_Ant0 | 20M | QPSK | 50 | 0 | Bottom Side | 10mm | Battery1 | 26140 | 1860 | 22.56 | 23.00 | 1.107 | 0.07 | 0.531 | 0.588 |
| | LTE Band 25_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery2 | 26140 | 1860 | 23.40 | 24.00 | 1.148 | 0.07 | 0.684 | 0.785 |
| | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.05 | 0.817 | 0.892 |
| | LTE Band 26_Ant0 | 15M | QPSK | 36 | 39 | Front | 10mm | Battery1 | 26865 | 831.5 | 22.86 | 23.00 | 1.033 | -0.03 | 0.608 | 0.628 |
| | LTE Band 26_Ant0 | 15M | QPSK | 75 | 0 | Front | 10mm | Battery1 | 26865 | 831.5 | 22.82 | 23.00 | 1.042 | -0.02 | 0.648 | 0.675 |
| 10 | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.16 | 0.841 | 0.918 |
| | LTE Band 26_Ant0 | 15M | QPSK | 36 | 39 | Back | 10mm | Battery1 | 26865 | 831.5 | 22.86 | 23.00 | 1.033 | -0.04 | 0.630 | 0.651 |
| | LTE Band 26_Ant0 | 15M | QPSK | 75 | 0 | Back | 10mm | Battery1 | 26865 | 831.5 | 22.82 | 23.00 | 1.042 | -0.06 | 0.663 | 0.691 |
| | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.08 | 0.144 | 0.157 |
| | LTE Band 26_Ant0 | 15M | QPSK | 36 | 39 | Right Side | 10mm | Battery1 | 26865 | 831.5 | 22.86 | 23.00 | 1.033 | -0.05 | 0.122 | 0.126 |
| | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.04 | 0.599 | 0.654 |
| | LTE Band 26_Ant0 | 15M | QPSK | 36 | 39 | Top Side | 10mm | Battery1 | 26865 | 831.5 | 22.86 | 23.00 | 1.033 | -0.01 | 0.423 | 0.437 |
| | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.06 | 0.548 | 0.598 |
| | LTE Band 26_Ant0 | 15M | QPSK | 36 | 39 | Bottom Side | 10mm | Battery1 | 26865 | 831.5 | 22.86 | 23.00 | 1.033 | -0.09 | 0.391 | 0.404 |
| | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Back | 10mm | Battery2 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.06 | 0.819 | 0.894 |

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 30_Ant0 | 10M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 27710 | 2310 | 20.77 | 21.00 | 1.054 | 0.07 | 0.406 | 0.428 |
| | LTE Band 30_Ant0 | 10M | QPSK | 25 | 12 | Front | 10mm | Battery1 | 27710 | 2310 | 19.75 | 20.00 | 1.059 | 0.07 | 0.331 | 0.351 |
| | LTE Band 30_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 27710 | 2310 | 20.77 | 21.00 | 1.054 | 0.17 | 0.467 | 0.492 |
| | LTE Band 30_Ant0 | 10M | QPSK | 25 | 12 | Back | 10mm | Battery1 | 27710 | 2310 | 19.75 | 20.00 | 1.059 | 0.05 | 0.384 | 0.407 |
| 11 | LTE Band 30_Ant0 | 10M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 27710 | 2310 | 20.77 | 21.00 | 1.054 | -0.1 | 0.487 | 0.513 |
| | LTE Band 30_Ant0 | 10M | QPSK | 25 | 12 | Right Side | 10mm | Battery1 | 27710 | 2310 | 19.75 | 20.00 | 1.059 | 0.14 | 0.404 | 0.428 |
| | LTE Band 30_Ant0 | 10M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 27710 | 2310 | 20.77 | 21.00 | 1.054 | 0.17 | 0.063 | 0.066 |
| | LTE Band 30_Ant0 | 10M | QPSK | 25 | 12 | Top Side | 10mm | Battery1 | 27710 | 2310 | 19.75 | 20.00 | 1.059 | 0.01 | 0.053 | 0.056 |
| | LTE Band 30_Ant0 | 10M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 27710 | 2310 | 20.77 | 21.00 | 1.054 | 0.1 | 0.189 | 0.199 |
| | LTE Band 30_Ant0 | 10M | QPSK | 25 | 12 | Bottom Side | 10mm | Battery1 | 27710 | 2310 | 19.75 | 20.00 | 1.059 | 0.11 | 0.151 | 0.160 |
| | LTE Band 30_Ant0 | 10M | QPSK | 1 | 0 | Right Side | 10mm | Battery2 | 27710 | 2310 | 20.77 | 21.00 | 1.054 | 0.01 | 0.436 | 0.460 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 132572 | 1770 | 21.16 | 22.00 | 1.213 | 0.06 | 0.663 | 0.804 |
| 12 | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 132072 | 1720 | 21.14 | 22.00 | 1.219 | -0.12 | 0.818 | 0.997 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 132322 | 1745 | 20.91 | 22.00 | 1.285 | 0 | 0.590 | 0.759 |
| | LTE Band 66_Ant0 | 20M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 132572 | 1770 | 21.06 | 22.00 | 1.242 | 0.18 | 0.637 | 0.791 |
| | LTE Band 66_Ant0 | 20M | QPSK | 100 | 0 | Front | 10mm | Battery1 | 132572 | 1770 | 21.04 | 22.00 | 1.247 | 0.18 | 0.621 | 0.775 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 132572 | 1770 | 21.16 | 22.00 | 1.213 | 0.15 | 0.634 | 0.769 |
| | LTE Band 66_Ant0 | 20M | QPSK | 50 | 0 | Back | 10mm | Battery1 | 132572 | 1770 | 21.06 | 22.00 | 1.242 | 0.17 | 0.417 | 0.517 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 132572 | 1770 | 21.16 | 22.00 | 1.213 | 0.08 | 0.594 | 0.721 |
| | LTE Band 66_Ant0 | 20M | QPSK | 50 | 0 | Right Side | 10mm | Battery1 | 132572 | 1770 | 21.06 | 22.00 | 1.242 | 0.16 | 0.557 | 0.691 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 132572 | 1770 | 21.16 | 22.00 | 1.213 | 0.11 | 0.074 | 0.090 |
| | LTE Band 66_Ant0 | 20M | QPSK | 50 | 0 | Top Side | 10mm | Battery1 | 132572 | 1770 | 21.06 | 22.00 | 1.242 | 0.02 | 0.072 | 0.089 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 132572 | 1770 | 21.16 | 22.00 | 1.213 | 0.17 | 0.381 | 0.462 |
| | LTE Band 66_Ant0 | 20M | QPSK | 50 | 0 | Bottom Side | 10mm | Battery1 | 132572 | 1770 | 21.06 | 22.00 | 1.242 | 0.13 | 0.387 | 0.480 |
| | LTE Band 66_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery2 | 132072 | 1720 | 21.14 | 22.00 | 1.219 | 0.17 | 0.754 | 0.919 |
| | LTE Band 66_Ant8 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 132572 | 1770 | 23.69 | 24.00 | 1.074 | 0.06 | 0.317 | 0.340 |
| | LTE Band 66_Ant8 | 20M | QPSK | 50 | 50 | Front | 10mm | Battery1 | 132322 | 1745 | 22.97 | 23.00 | 1.007 | 0.07 | 0.293 | 0.295 |
| | LTE Band 66_Ant8 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 132572 | 1770 | 23.69 | 24.00 | 1.074 | 0.17 | 0.503 | 0.540 |
| | LTE Band 66_Ant8 | 20M | QPSK | 50 | 50 | Back | 10mm | Battery1 | 132322 | 1745 | 22.97 | 23.00 | 1.007 | 0.14 | 0.495 | 0.498 |
| | LTE Band 66_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 132572 | 1770 | 23.69 | 24.00 | 1.074 | 0.1 | 0.927 | 0.996 |
| | LTE Band 66_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 132072 | 1720 | 22.95 | 24.00 | 1.274 | 0.06 | 0.733 | 0.933 |
| | LTE Band 66_Ant8 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 132322 | 1745 | 23.24 | 24.00 | 1.191 | 0.1 | 0.769 | 0.916 |
| | LTE Band 66_Ant8 | 20M | QPSK | 50 | 50 | Top Side | 10mm | Battery1 | 132322 | 1745 | 22.97 | 23.00 | 1.007 | 0.03 | 0.773 | 0.778 |
| | LTE Band 66_Ant8 | 20M | QPSK | 100 | 0 | Top Side | 10mm | Battery1 | 132322 | 1745 | 23.00 | 23.00 | 1.000 | 0.01 | 0.749 | 0.749 |
| | LTE Band 66_Ant8 | 20M | BPSK | 1 | 0 | Top Side | 10mm | Battery2 | 132572 | 1770 | 23.69 | 24.00 | 1.074 | 0.09 | 0.905 | 0.972 |
| | LTE Band 71_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 133322 | 683 | 23.94 | 24.00 | 1.014 | -0.08 | 0.473 | 0.480 |
| | LTE Band 71_Ant0 | 20M | QPSK | 50 | 0 | Front | 10mm | Battery1 | 133322 | 683 | 22.62 | 23.00 | 1.091 | -0.06 | 0.321 | 0.350 |
| 13 | LTE Band 71_Ant0 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 133322 | 683 | 23.94 | 24.00 | 1.014 | -0.05 | 0.484 | 0.491 |
| | LTE Band 71_Ant0 | 20M | QPSK | 50 | 0 | Back | 10mm | Battery1 | 133322 | 683 | 22.62 | 23.00 | 1.091 | -0.11 | 0.315 | 0.344 |
| | LTE Band 71_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 133322 | 683 | 23.94 | 24.00 | 1.014 | -0.09 | 0.089 | 0.090 |
| | LTE Band 71_Ant0 | 20M | QPSK | 50 | 0 | Right Side | 10mm | Battery1 | 133322 | 683 | 22.62 | 23.00 | 1.091 | -0.05 | 0.066 | 0.072 |
| | LTE Band 71_Ant0 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 133322 | 683 | 23.94 | 24.00 | 1.014 | -0.07 | 0.151 | 0.153 |
| | LTE Band 71_Ant0 | 20M | QPSK | 50 | 0 | Top Side | 10mm | Battery1 | 133322 | 683 | 22.62 | 23.00 | 1.091 | -0.06 | 0.099 | 0.108 |
| | LTE Band 71_Ant0 | 20M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 133322 | 683 | 23.94 | 24.00 | 1.014 | -0.03 | 0.200 | 0.203 |
| | LTE Band 71_Ant0 | 20M | QPSK | 50 | 0 | Bottom Side | 10mm | Battery1 | 133322 | 683 | 22.62 | 23.00 | 1.091 | -0.01 | 0.120 | 0.131 |
| | LTE Band 71_Ant0 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery2 | 133322 | 683 | 23.94 | 24.00 | 1.014 | -0.15 | 0.333 | 0.338 |

## <TDD LTE SAR>

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 39750 | 2506 | 21.13 | 21.70 | 1.140 | 62.9 | 1.006 | 0.14 | 0.304 | 0.349 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Front | 10mm | Battery1 | 39750 | 2506 | 21.26 | 21.70 | 1.107 | 62.9 | 1.006 | 0.06 | 0.234 | 0.261 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 39750 | 2506 | 21.13 | 21.70 | 1.140 | 62.9 | 1.006 | 0.15 | 0.229 | 0.263 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Back | 10mm | Battery1 | 39750 | 2506 | 21.26 | 21.70 | 1.107 | 62.9 | 1.006 | 0.17 | 0.169 | 0.188 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 39750 | 2506 | 21.13 | 21.70 | 1.140 | 62.9 | 1.006 | -0.1 | 0.826 | 0.947 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 40185 | 2549.5 | 20.74 | 21.70 | 1.247 | 62.9 | 1.006 | 0.17 | 0.499 | 0.626 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 40620 | 2593 | 20.71 | 21.70 | 1.256 | 62.9 | 1.006 | 0.07 | 0.150 | 0.190 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 41055 | 2636.5 | 20.34 | 21.70 | 1.368 | 62.9 | 1.006 | 0.09 | 0.151 | 0.208 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 41490 | 2680 | 20.75 | 21.70 | 1.245 | 62.9 | 1.006 | 0.02 | 0.396 | 0.496 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 39750 | 2506 | 21.26 | 21.70 | 1.107 | 62.9 | 1.006 | 0.08 | 0.754 | 0.839 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 40185 | 2549.5 | 20.78 | 21.70 | 1.236 | 62.9 | 1.006 | 0.08 | 0.448 | 0.557 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 40620 | 2593 | 20.74 | 21.70 | 1.247 | 62.9 | 1.006 | -0.12 | 0.124 | 0.156 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 41055 | 2636.5 | 20.32 | 21.70 | 1.374 | 62.9 | 1.006 | -0.01 | 0.137 | 0.189 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 41490 | 2680 | 20.90 | 21.70 | 1.202 | 62.9 | 1.006 | -0.07 | 0.344 | 0.416 |
| | LTE Band 41_Ant0 | 20M | QPSK | 100 | 0 | Right Side | 10mm | Battery1 | 39750 | 2506 | 21.16 | 21.70 | 1.132 | 62.9 | 1.006 | 0.18 | 0.655 | 0.746 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 39750 | 2506 | 21.13 | 21.70 | 1.140 | 62.9 | 1.006 | 0.04 | 0.107 | 0.123 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Top Side | 10mm | Battery1 | 39750 | 2506 | 21.26 | 21.70 | 1.107 | 62.9 | 1.006 | 0.15 | 0.095 | 0.106 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 39750 | 2506 | 21.13 | 21.70 | 1.140 | 62.9 | 1.006 | 0.08 | 0.117 | 0.134 |
| | LTE Band 41_Ant0 | 20M | QPSK | 50 | 24 | Bottom Side | 10mm | Battery1 | 39750 | 2506 | 21.26 | 21.70 | 1.107 | 62.9 | 1.006 | 0.12 | 0.084 | 0.094 |
| | LTE Band 41_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery2 | 39750 | 2506 | 21.13 | 21.70 | 1.140 | 62.9 | 1.006 | 0.08 | 0.819 | 0.939 |
| 14 | LTE Band 41_HPUE_Ant0 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 39750 | 2506 | 22.50 | 23.30 | 1.202 | 42.9 | 1.009 | -0.12 | 0.821 | 0.996 |

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | LTE Band 48_Ant4 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery1 | 56640 | 3690 | 18.77 | 19.50 | 1.183 | 62.9 | 1.006 | -0.03 | 0.339 | 0.403 |
| | LTE Band 48_Ant4 | 20M | QPSK | 50 | 24 | Front | 10mm | Battery1 | 56640 | 3690 | 17.91 | 18.50 | 1.146 | 62.9 | 1.006 | 0.01 | 0.294 | 0.339 |
| | LTE Band 48_Ant4 | 20M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 56640 | 3690 | 18.77 | 19.50 | 1.183 | 62.9 | 1.006 | 0.04 | 0.172 | 0.205 |
| | LTE Band 48_Ant4 | 20M | QPSK | 50 | 24 | Back | 10mm | Battery1 | 56640 | 3690 | 17.91 | 18.50 | 1.146 | 62.9 | 1.006 | 0.06 | 0.136 | 0.157 |
| | LTE Band 48_Ant4 | 20M | QPSK | 1 | 0 | Right Side | 10mm | Battery1 | 56640 | 3690 | 18.77 | 19.50 | 1.183 | 62.9 | 1.006 | 0.03 | 0.196 | 0.233 |
| | LTE Band 48_Ant4 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 56640 | 3690 | 17.91 | 18.50 | 1.146 | 62.9 | 1.006 | 0.05 | 0.163 | 0.188 |
| | LTE Band 48_Ant4 | 20M | QPSK | 1 | 0 | Top Side | 10mm | Battery1 | 56640 | 3690 | 18.77 | 19.50 | 1.183 | 62.9 | 1.006 | 0.02 | 0.060 | 0.071 |
| | LTE Band 48_Ant4 | 20M | QPSK | 50 | 24 | Top Side | 10mm | Battery1 | 56640 | 3690 | 17.91 | 18.50 | 1.146 | 62.9 | 1.006 | 0.04 | 0.050 | 0.058 |
| | LTE Band 48_Ant4 | 20M | QPSK | 1 | 0 | Bottom Side | 10mm | Battery1 | 56640 | 3690 | 18.77 | 19.50 | 1.183 | 62.9 | 1.006 | 0.01 | 0.072 | 0.086 |
| | LTE Band 48_Ant4 | 20M | QPSK | 50 | 24 | Bottom Side | 10mm | Battery1 | 56640 | 3690 | 17.91 | 18.50 | 1.146 | 62.9 | 1.006 | 0.02 | 0.060 | 0.069 |
| | LTE Band 48_Ant4 | 20M | QPSK | 1 | 0 | Front | 10mm | Battery2 | 56640 | 3690 | 18.77 | 19.50 | 1.183 | 62.9 | 1.006 | 0.03 | 0.312 | 0.371 |

## <5G NR SAR>

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Front | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.12 | 0.319 | 0.385 |
| | FR1 n2_Ant8 | 20M | BPSK | 50 | 56 | Front | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.15 | 0.294 | 0.355 |
| | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Back | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0 | 0.479 | 0.578 |
| | FR1 n2_Ant8 | 20M | BPSK | 50 | 56 | Back | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.13 | 0.456 | 0.550 |
| 16 | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.06 | 0.824 | 0.995 |
| | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 376000 | 1880 | 21.67 | 22.70 | 1.268 | 0.15 | 0.753 | 0.954 |
| | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 380000 | 1900 | 21.69 | 22.70 | 1.262 | 0.16 | 0.655 | 0.826 |
| | FR1 n2_Ant8 | 20M | BPSK | 50 | 56 | Top Side | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.11 | 0.798 | 0.963 |
| | FR1 n2_Ant8 | 20M | BPSK | 50 | 28 | Top Side | 10mm | Battery1 | 376000 | 1880 | 21.75 | 22.70 | 1.245 | 0.05 | 0.713 | 0.888 |
| | FR1 n2_Ant8 | 20M | BPSK | 50 | 56 | Top Side | 10mm | Battery1 | 380000 | 1900 | 21.68 | 22.70 | 1.265 | 0.01 | 0.640 | 0.810 |
| | FR1 n2_Ant8 | 20M | BPSK | 100 | 0 | Top Side | 10mm | Battery1 | 372000 | 1860 | 21.96 | 22.70 | 1.186 | 0.12 | 0.821 | 0.974 |
| | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery2 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.16 | 0.784 | 0.947 |
| | FR1 n5_Ant0 | 20M | BPSK | 1 | 53 | Front | 10mm | Battery1 | 167300 | 836.5 | 23.40 | 24.00 | 1.148 | -0.01 | 0.692 | 0.795 |
| | FR1 n5_Ant0 | 20M | BPSK | 50 | 0 | Front | 10mm | Battery1 | 167300 | 836.5 | 23.41 | 24.00 | 1.146 | 0.05 | 0.546 | 0.625 |
| 17 | FR1 n5_Ant0 | 20M | BPSK | 1 | 53 | Back | 10mm | Battery1 | 167300 | 836.5 | 23.40 | 24.00 | 1.148 | -0.17 | 0.695 | 0.798 |
| | FR1 n5_Ant0 | 20M | BPSK | 50 | 0 | Back | 10mm | Battery1 | 167300 | 836.5 | 23.41 | 24.00 | 1.146 | -0.18 | 0.538 | 0.616 |
| | FR1 n5_Ant0 | 20M | BPSK | 1 | 53 | Right Side | 10mm | Battery1 | 167300 | 836.5 | 23.40 | 24.00 | 1.148 | 0.09 | 0.136 | 0.156 |
| | FR1 n5_Ant0 | 20M | BPSK | 50 | 0 | Right Side | 10mm | Battery1 | 167300 | 836.5 | 23.41 | 24.00 | 1.146 | -0.06 | 0.099 | 0.113 |
| | FR1 n5_Ant0 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 167300 | 836.5 | 23.40 | 24.00 | 1.148 | 0.01 | 0.470 | 0.540 |
| | FR1 n5_Ant0 | 20M | BPSK | 50 | 0 | Top Side | 10mm | Battery1 | 167300 | 836.5 | 23.41 | 24.00 | 1.146 | 0.08 | 0.380 | 0.435 |
| | FR1 n5_Ant0 | 20M | BPSK | 1 | 53 | Bottom Side | 10mm | Battery1 | 167300 | 836.5 | 23.40 | 24.00 | 1.148 | 0.09 | 0.445 | 0.511 |
| | FR1 n5_Ant0 | 20M | BPSK | 50 | 0 | Bottom Side | 10mm | Battery1 | 167300 | 836.5 | 23.41 | 24.00 | 1.146 | 0.06 | 0.355 | 0.407 |
| | FR1 n5_Ant0 | 20M | BPSK | 1 | 53 | Back | 10mm | Battery2 | 167300 | 836.5 | 23.40 | 24.00 | 1.148 | -0.08 | 0.667 | 0.766 |
| | FR1 n12_Ant0 | 15M | BPSK | 1 | 1 | Front | 10mm | Battery1 | 141500 | 707.5 | 23.69 | 24.00 | 1.074 | 0.12 | 0.808 | 0.868 |
| | FR1 n12_Ant0 | 15M | BPSK | 36 | 0 | Front | 10mm | Battery1 | 141500 | 707.5 | 23.46 | 24.00 | 1.132 | -0.09 | 0.772 | 0.874 |
| | FR1 n12_Ant0 | 15M | BPSK | 75 | 0 | Front | 10mm | Battery1 | 141500 | 707.5 | 23.45 | 23.50 | 1.012 | 0.1 | 0.792 | 0.801 |
| 18 | FR1 n12_Ant0 | 15M | BPSK | 1 | 1 | Back | 10mm | Battery1 | 141500 | 707.5 | 23.69 | 24.00 | 1.074 | -0.17 | 0.824 | 0.885 |
| | FR1 n12_Ant0 | 15M | BPSK | 36 | 0 | Back | 10mm | Battery1 | 141500 | 707.5 | 23.46 | 24.00 | 1.132 | 0.16 | 0.776 | 0.879 |
| | FR1 n12_Ant0 | 15M | BPSK | 75 | 0 | Back | 10mm | Battery1 | 141500 | 707.5 | 23.45 | 23.50 | 1.012 | -0.09 | 0.809 | 0.818 |
| | FR1 n12_Ant0 | 15M | BPSK | 1 | 1 | Right Side | 10mm | Battery1 | 141500 | 707.5 | 23.69 | 24.00 | 1.074 | -0.18 | 0.127 | 0.136 |
| | FR1 n12_Ant0 | 15M | BPSK | 36 | 0 | Right Side | 10mm | Battery1 | 141500 | 707.5 | 23.46 | 24.00 | 1.132 | 0.05 | 0.116 | 0.131 |
| | FR1 n12_Ant0 | 15M | BPSK | 1 | 1 | Top Side | 10mm | Battery1 | 141500 | 707.5 | 23.69 | 24.00 | 1.074 | 0.09 | 0.298 | 0.320 |
| | FR1 n12_Ant0 | 15M | BPSK | 36 | 0 | Top Side | 10mm | Battery1 | 141500 | 707.5 | 23.46 | 24.00 | 1.132 | 0.18 | 0.318 | 0.360 |
| | FR1 n12_Ant0 | 15M | BPSK | 1 | 1 | Bottom Side | 10mm | Battery1 | 141500 | 707.5 | 23.69 | 24.00 | 1.074 | -0.03 | 0.389 | 0.418 |
| | FR1 n12_Ant0 | 15M | BPSK | 36 | 0 | Bottom Side | 10mm | Battery1 | 141500 | 707.5 | 23.46 | 24.00 | 1.132 | -0.08 | 0.407 | 0.461 |
| | FR1 n12_Ant0 | 15M | BPSK | 1 | 1 | Back | 10mm | Battery2 | 141500 | 707.5 | 23.69 | 24.00 | 1.074 | 0.16 | 0.800 | 0.859 |

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Front | 10mm | Battery1 | 344000 | 1720 | 18.31 | 18.80 | 1.119 | 0.06 | 0.459 | 0.514 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Front | 10mm | Battery1 | 344000 | 1720 | 17.92 | 18.80 | 1.225 | 0.14 | 0.417 | 0.511 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Back | 10mm | Battery1 | 344000 | 1720 | 18.31 | 18.80 | 1.119 | 0.15 | 0.291 | 0.325 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Back | 10mm | Battery1 | 344000 | 1720 | 17.92 | 18.80 | 1.225 | 0.13 | 0.292 | 0.357 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Right Side | 10mm | Battery1 | 344000 | 1720 | 18.31 | 18.80 | 1.119 | 0.04 | 0.822 | 0.920 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 53 | Right Side | 10mm | Battery1 | 349000 | 1745 | 17.85 | 18.80 | 1.245 | 0.01 | 0.435 | 0.541 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Right Side | 10mm | Battery1 | 354000 | 1770 | 17.82 | 18.80 | 1.253 | 0.03 | 0.316 | 0.396 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Right Side | 10mm | Battery1 | 344000 | 1720 | 17.92 | 18.80 | 1.225 | 0.05 | 0.710 | 0.870 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Right Side | 10mm | Battery1 | 349000 | 1745 | 17.82 | 18.80 | 1.253 | 0.06 | 0.392 | 0.491 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Right Side | 10mm | Battery1 | 354000 | 1770 | 17.65 | 18.80 | 1.303 | 0.13 | 0.284 | 0.370 |
| | FR1 n66_Ant0 | 20M | BPSK | 100 | 0 | Right Side | 10mm | Battery1 | 344000 | 1720 | 17.89 | 18.80 | 1.233 | 0.16 | 0.641 | 0.790 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Top Side | 10mm | Battery1 | 344000 | 1720 | 18.31 | 18.80 | 1.119 | 0.04 | 0.001 | 0.001 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Top Side | 10mm | Battery1 | 344000 | 1720 | 17.92 | 18.80 | 1.225 | 0.01 | 0.001 | 0.001 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Bottom Side | 10mm | Battery1 | 344000 | 1720 | 18.31 | 18.80 | 1.119 | 0.05 | 0.158 | 0.177 |
| | FR1 n66_Ant0 | 20M | BPSK | 50 | 0 | Bottom Side | 10mm | Battery1 | 344000 | 1720 | 17.92 | 18.80 | 1.225 | 0.09 | 0.165 | 0.202 |
| | FR1 n66_Ant0 | 20M | BPSK | 1 | 1 | Right Side | 10mm | Battery2 | 344000 | 1720 | 18.31 | 18.80 | 1.119 | -0.05 | 0.888 | 0.994 |
| | FR1 n66_Ant8 | 20M | BPSK | 1 | 53 | Front | 10mm | Battery1 | 349000 | 1745 | 23.43 | 23.50 | 1.016 | 0.13 | 0.273 | 0.277 |
| | FR1 n66_Ant8 | 20M | BPSK | 50 | 0 | Front | 10mm | Battery1 | 349000 | 1745 | 23.27 | 23.50 | 1.054 | 0.11 | 0.283 | 0.298 |
| | FR1 n66_Ant8 | 20M | BPSK | 1 | 53 | Back | 10mm | Battery1 | 349000 | 1745 | 23.43 | 23.50 | 1.016 | 0.18 | 0.499 | 0.507 |
| | FR1 n66_Ant8 | 20M | BPSK | 50 | 0 | Back | 10mm | Battery1 | 349000 | 1745 | 23.27 | 23.50 | 1.054 | 0.09 | 0.508 | 0.536 |
| | FR1 n66_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 349000 | 1745 | 23.43 | 23.50 | 1.016 | 0.03 | 0.808 | 0.821 |
| | FR1 n66_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 344000 | 1720 | 23.07 | 23.50 | 1.104 | 0.16 | 0.759 | 0.838 |
| | FR1 n66_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 354000 | 1770 | 23.20 | 23.50 | 1.072 | 0.04 | 0.841 | 0.901 |
| | FR1 n66_Ant8 | 20M | BPSK | 50 | 0 | Top Side | 10mm | Battery1 | 349000 | 1745 | 23.27 | 23.50 | 1.054 | 0.01 | 0.793 | 0.836 |
| | FR1 n66_Ant8 | 20M | BPSK | 50 | 0 | Top Side | 10mm | Battery1 | 344000 | 1720 | 22.97 | 23.50 | 1.130 | 0.06 | 0.731 | 0.826 |
| | FR1 n66_Ant8 | 20M | BPSK | 50 | 28 | Top Side | 10mm | Battery1 | 354000 | 1770 | 23.26 | 23.50 | 1.057 | 0 | 0.882 | 0.932 |
| | FR1 n66_Ant8 | 20M | BPSK | 100 | 0 | Top Side | 10mm | Battery1 | 349000 | 1745 | 23.05 | 23.50 | 1.109 | 0.06 | 0.829 | 0.920 |
| 19 | FR1 n66_Ant8 | 20M | BPSK | 50 | 28 | Top Side | 10mm | Battery2 | 354000 | 1770 | 23.26 | 23.50 | 1.057 | 0.02 | 0.943 | 0.997 |
| | FR1 n71_Ant0 | 20M | BPSK | 1 | 53 | Front | 10mm | Battery1 | 136100 | 680.5 | 23.30 | 24.00 | 1.175 | 0.18 | 0.558 | 0.656 |
| | FR1 n71_Ant0 | 20M | BPSK | 50 | 28 | Front | 10mm | Battery1 | 136100 | 680.5 | 23.17 | 24.00 | 1.211 | -0.06 | 0.509 | 0.616 |
| 20 | FR1 n71_Ant0 | 20M | BPSK | 1 | 53 | Back | 10mm | Battery1 | 136100 | 680.5 | 23.30 | 24.00 | 1.175 | -0.05 | 0.564 | 0.663 |
| | FR1 n71_Ant0 | 20M | BPSK | 50 | 28 | Back | 10mm | Battery1 | 136100 | 680.5 | 23.17 | 24.00 | 1.211 | -0.08 | 0.512 | 0.620 |
| | FR1 n71_Ant0 | 20M | BPSK | 1 | 53 | Right Side | 10mm | Battery1 | 136100 | 680.5 | 23.30 | 24.00 | 1.175 | -0.15 | 0.119 | 0.140 |
| | FR1 n71_Ant0 | 20M | BPSK | 50 | 28 | Right Side | 10mm | Battery1 | 136100 | 680.5 | 23.17 | 24.00 | 1.211 | 0.08 | 0.097 | 0.117 |
| | FR1 n71_Ant0 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 136100 | 680.5 | 23.30 | 24.00 | 1.175 | 0.16 | 0.210 | 0.247 |
| | FR1 n71_Ant0 | 20M | BPSK | 50 | 28 | Top Side | 10mm | Battery1 | 136100 | 680.5 | 23.17 | 24.00 | 1.211 | -0.03 | 0.201 | 0.243 |
| | FR1 n71_Ant0 | 20M | BPSK | 1 | 53 | Bottom Side | 10mm | Battery1 | 136100 | 680.5 | 23.30 | 24.00 | 1.175 | 0.12 | 0.254 | 0.298 |
| | FR1 n71_Ant0 | 20M | BPSK | 50 | 28 | Bottom Side | 10mm | Battery1 | 136100 | 680.5 | 23.17 | 24.00 | 1.211 | 0.19 | 0.239 | 0.289 |
| | FR1 n71_Ant0 | 20M | BPSK | 1 | 53 | Back | 10mm | Battery2 | 136100 | 680.5 | 23.30 | 24.00 | 1.175 | 0.07 | 0.480 | 0.564 |

## 14.2 Repeated SAR Measurement

| No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Battery | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Ratio | Reported 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | -0.17 | 0.834 | | 0.973 |
| 2nd | LTE Band 7_Ant0 | 20M | QPSK | 50 | 24 | Right Side | 10mm | Battery1 | 20850 | 2510 | 17.83 | 18.50 | 1.167 | 0.02 | 0.812 | 1.03 | 0.947 |
| 1st | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | -0.01 | 0.901 | | 0.943 |
| 2nd | LTE Band 14_Ant0 | 10M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 23330 | 793 | 23.80 | 24.00 | 1.047 | 0.04 | 0.874 | 1.03 | 0.915 |
| 1st | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | -0.16 | 0.841 | | 0.918 |
| 2nd | LTE Band 26_Ant0 | 15M | QPSK | 1 | 0 | Back | 10mm | Battery1 | 26865 | 831.5 | 23.62 | 24.00 | 1.091 | 0.07 | 0.822 | 1.02 | 0.897 |
| 1st | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.06 | 0.824 | | 0.995 |
| 2nd | FR1 n2_Ant8 | 20M | BPSK | 1 | 53 | Top Side | 10mm | Battery1 | 372000 | 1860 | 21.88 | 22.70 | 1.208 | 0.01 | 0.814 | 1.01 | 0.983 |
| 1st | FR1 n66_Ant8 | 20M | BPSK | 50 | 28 | Top Side | 10mm | Battery2 | 354000 | 1770 | 23.26 | 23.50 | 1.057 | 0.02 | 0.943 | | 0.997 |
| 2nd | FR1 n66_Ant8 | 20M | BPSK | 50 | 28 | Top Side | 10mm | Battery2 | 354000 | 1770 | 23.26 | 23.50 | 1.057 | 0.17 | 0.922 | 1.02 | 0.974 |

**General Note:**

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

## 14.3 LTE Band 41 Power Class 2 and Power Class 3 Linearity

This device support Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operation is 43.3% using UL-DL configuration 1. Per FCC Guidance based on the device behavior, all SAR tests were performed using Power Class 3. Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination, according to the highest time averaged power for all applicable uplink-downlink configurations in Power Class 2. When the reported SAR vs. output power is linearly scaled with < 10% discrepancy between power classes and all reported SAR are < 1.4 W/kg, Separate SAR testing for Power Class 2 is not required

| | LTE Band 41 | LTE Band 41 |
|---|---|---|
| | (Power Class 3) | (Power Class 2) |
| Maximum Tune up Power (dBm) | 21.7 | 23.3 |
| Reported 1g SAR (W/kg) | 0.947 | 0.996 |
| Duty Cycle | 63.30% | 43.30% |
| Frame Averaged (mW) | 93.63 | 92.57 |
| Linearity SAR(W/kg) | 0.94 | |
| % deviation from expected linearity | | 6.37% |

# 15. Simultaneous Transmission Analysis

## 15.1 5G NR + LTE + WLAN Sim-Tx analysis

In 5G NR + LTE + WLAN simultaneous transmission, 5G NR and LTE transmission are managed and controlled by Qualcomm® Smart Transmit, while the RF exposure from WLAN radios is managed using legacy approach, i.e., through a fixed power back-off if needed.

Since WLAN do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN need to be conducted at their corresponding rated power following current FCC test procedures to determine reported SAR values.

Smart Transmit current implementation assumes hotspots from 5G NR and LTE are collocated. Therefore, for a total of 100% exposure margin, if LTE uses x%, then the exposure margin left for 5G NR is capped to (100-x)%. Thus, the compliance equation for LTE + 5G NR is

$$x\% * A + (100-x)\% * B \leq 1.0,$$

Where, A is normalized reported time-averaged SAR exposure ratio from LTE, and A ≤ 1.0; B is normalized reported time-averaged exposure ratio from 5G NR (i.e., PD exposure for 5G FR2 or SAR exposure for 5G FR1), and B ≤1.0.

Let C = normalized reported SAR exposure ratio from WLAN, then for compliance,

$$x\% * A + (100-x)\% * B + C \leq 1.0 \qquad (1)$$

$$x\% * A + (100-x)\% * B \leq x\% * \max(A, B) + (100-x)\% * \max(A, B) \leq \max(A, B)$$

$$x\% * A + (100-x)\% * B + C \leq \max(A, B) + C \leq 1.0 \qquad (2)$$

if A + C ≤ 1.0 and B + C ≤ 1.0 can be proven, then “x% * A + (100-x)% * B + C ≤ 1.0”. Therefore simultaneous transmission analysis for 5G NR + LTE + WLAN can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN < 1
Step 2: Prove total exposure ratio (TER) of 5G NR + WLAN < 1

## 15.2 Sim-Tx configuration

| NO. | Simultaneous Transmission Configurations | Exposure Positions |
|---|---|---|
| | | Body |
| 1. | UMTS + 2.4GHz WiFi 0 + 2.4GHz WiFi 1 | Yes |
| 2. | UMTS + 5GHz WiFi 0 + 5GHz WiFi 1 | Yes |
| 3. | LTE+ 2.4GHz WiFi 0 + 2.4GHz WiFi 1 | Yes |
| 4. | LTE + 5GHz WiFi 0 + 5GHz WiFi 1 | Yes |
| 5. | LTE + 5G FR1 + 2.4GHz WiFi 0 + 2.4GHz WiFi 1 | Yes |
| 6. | LTE + 5G FR1 + 5GHz WiFi 0 + 5GHz WiFi 1 | Yes |

**General Note:**

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04 for 1g SAR, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
3. The WLAN SAR results according to RF exposure lab SAR evaluation report, report no.: SAR.20200701, are use performed Sim-Tx analysis, and the Sim-Tx analysis is following step:
   a. For WLAN RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode
   b. If WLAN RF exposure assessment of MIMO mode simultaneous transmission exclusion analysis was performed with SAR test results of each antenna in SISO mode is > 1.6W/kg, the MIMO SAR result is used.

## 15.3 Body Exposure Conditions

| WWAN Band | Exposure Position | 1 WWAN 1g SAR (W/kg) | 2 2.4GHz Wi-Fi 0 1g SAR (W/kg) | 3 2.4GHz Wi-Fi 1 1g SAR (W/kg) | 4 5GHz Wi-Fi 0 1g SAR (W/kg) | 5 5GHz Wi-Fi 1 1g SAR (W/kg) | 1+2+3 Summed 1g SAR (W/kg) | 1+4+5 Summed 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|
| WCDMA II_Ant0 | Front | 0.688 | 0.140 | 0.070 | 0.190 | 0.150 | **0.898** | **1.028** |
| | Back | 0.787 | 0.110 | 0.080 | 0.200 | 0.150 | **0.977** | **1.137** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.285 | | | | | **0.285** | **0.285** |
| | Top side | 0.101 | | 0.190 | | 0.340 | **0.291** | **0.441** |
| | Bottom side | 0.570 | 0.410 | | 0.600 | | **0.980** | **1.170** |
| WCDMA IV_Ant0 | Front | 0.346 | 0.140 | 0.070 | 0.190 | 0.150 | **0.556** | **0.686** |
| | Back | 0.401 | 0.110 | 0.080 | 0.200 | 0.150 | **0.591** | **0.751** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.996 | | | | | **0.996** | **0.996** |
| | Top side | 0.026 | | 0.190 | | 0.340 | **0.216** | **0.366** |
| | Bottom side | 0.256 | 0.410 | | 0.600 | | **0.666** | **0.856** |
| WCDMA V_Ant0 | Front | 0.793 | 0.140 | 0.070 | 0.190 | 0.150 | **1.003** | **1.133** |
| | Back | 0.939 | 0.110 | 0.080 | 0.200 | 0.150 | **1.129** | **1.289** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.170 | | | | | **0.170** | **0.170** |
| | Top side | 0.618 | | 0.190 | | 0.340 | **0.808** | **0.958** |
| | Bottom side | 0.502 | 0.410 | | 0.600 | | **0.912** | **1.102** |
| LTE Band 2_Ant8 | Front | 0.335 | 0.140 | 0.070 | 0.190 | 0.150 | **0.545** | **0.675** |
| | Back | 0.560 | 0.110 | 0.080 | 0.200 | 0.150 | **0.750** | **0.910** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | | | | | | **0.000** | **0.000** |
| | Top side | 0.982 | | 0.190 | | 0.340 | **1.172** | **1.322** |
| | Bottom side | | 0.410 | | 0.600 | | **0.410** | **0.600** |
| LTE Band 7_Ant0 | Front | 0.223 | 0.140 | 0.070 | 0.190 | 0.150 | **0.433** | **0.563** |
| | Back | 0.188 | 0.110 | 0.080 | 0.200 | 0.150 | **0.378** | **0.538** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.973 | | | | | **0.973** | **0.973** |
| | Top side | 0.061 | | 0.190 | | 0.340 | **0.251** | **0.401** |
| | Bottom side | 0.204 | 0.410 | | 0.600 | | **0.614** | **0.804** |
| LTE Band 12_Ant0 | Front | 0.985 | 0.140 | 0.070 | 0.190 | 0.150 | **1.195** | **1.325** |
| | Back | 0.993 | 0.110 | 0.080 | 0.200 | 0.150 | **1.183** | **1.343** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.183 | | | | | **0.183** | **0.183** |
| | Top side | 0.405 | | 0.190 | | 0.340 | **0.595** | **0.745** |
| | Bottom side | 0.543 | 0.410 | | 0.600 | | **0.953** | **1.143** |
| LTE Band 13_Ant0 | Front | 0.902 | 0.140 | 0.070 | 0.190 | 0.150 | **1.112** | **1.242** |
| | Back | 0.919 | 0.110 | 0.080 | 0.200 | 0.150 | **1.109** | **1.269** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.131 | | | | | **0.131** | **0.131** |
| | Top side | 0.579 | | 0.190 | | 0.340 | **0.769** | **0.919** |
| | Bottom side | 0.591 | 0.410 | | 0.600 | | **1.001** | **1.191** |
| LTE Band 14_Ant0 | Front | 0.915 | 0.140 | 0.070 | 0.190 | 0.150 | **1.125** | **1.255** |
| | Back | 0.943 | 0.110 | 0.080 | 0.200 | 0.150 | **1.133** | **1.293** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.138 | | | | | **0.138** | **0.138** |
| | Top side | 0.604 | | 0.190 | | 0.340 | **0.794** | **0.944** |
| | Bottom side | 0.598 | 0.410 | | 0.600 | | **1.008** | **1.198** |
| LTE Band 25_Ant0 | Front | 0.912 | 0.140 | 0.070 | 0.190 | 0.150 | **1.122** | **1.252** |
| | Back | 0.815 | 0.110 | 0.080 | 0.200 | 0.150 | **1.005** | **1.165** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Right side | 0.287 | | | | | **0.287** | **0.287** |
| | Top side | 0.093 | | 0.190 | | 0.340 | **0.283** | **0.433** |
| | Bottom side | 0.595 | 0.410 | | 0.600 | | **1.005** | **1.195** |
| LTE Band 26_Ant0 | Front | 0.892 | 0.140 | 0.070 | 0.190 | 0.150 | **1.102** | **1.232** |
| | Back | 0.918 | 0.110 | 0.080 | 0.200 | 0.150 | **1.108** | **1.268** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.157 | | | | | **0.157** | **0.157** |
| | Top side | 0.654 | | 0.190 | | 0.340 | **0.844** | **0.994** |
| | Bottom side | 0.598 | 0.410 | | 0.600 | | **1.008** | **1.198** |
| LTE Band 30_Ant0 | Front | 0.428 | 0.140 | 0.070 | 0.190 | 0.150 | **0.638** | **0.768** |
| | Back | 0.492 | 0.110 | 0.080 | 0.200 | 0.150 | **0.682** | **0.842** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.513 | | | | | **0.513** | **0.513** |
| | Top side | 0.066 | | 0.190 | | 0.340 | **0.256** | **0.406** |
| | Bottom side | 0.199 | 0.410 | | 0.600 | | **0.609** | **0.799** |
| LTE Band 41_Ant0 | Front | 0.349 | 0.140 | 0.070 | 0.190 | 0.150 | **0.559** | **0.689** |
| | Back | 0.263 | 0.110 | 0.080 | 0.200 | 0.150 | **0.453** | **0.613** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.996 | | | | | **0.996** | **0.996** |
| | Top side | 0.123 | | 0.190 | | 0.340 | **0.313** | **0.463** |
| | Bottom side | 0.134 | 0.410 | | 0.600 | | **0.544** | **0.734** |
| LTE Band 48_Ant4 | Front | 0.403 | 0.140 | 0.070 | 0.190 | 0.150 | **0.613** | **0.743** |
| | Back | 0.205 | 0.110 | 0.080 | 0.200 | 0.150 | **0.395** | **0.555** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.233 | | | | | **0.233** | **0.233** |
| | Top side | 0.071 | | 0.190 | | 0.340 | **0.261** | **0.411** |
| | Bottom side | 0.086 | 0.410 | | 0.600 | | **0.496** | **0.686** |
| LTE Band 66_Ant0 | Front | 0.997 | 0.140 | 0.070 | 0.190 | 0.150 | **1.207** | **1.337** |
| | Back | 0.769 | 0.110 | 0.080 | 0.200 | 0.150 | **0.959** | **1.119** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.721 | | | | | **0.721** | **0.721** |
| | Top side | 0.090 | | 0.190 | | 0.340 | **0.280** | **0.430** |
| | Bottom side | 0.480 | 0.410 | | 0.600 | | **0.890** | **1.080** |
| LTE Band 66_Ant8 | Front | 0.340 | 0.140 | 0.070 | 0.190 | 0.150 | **0.550** | **0.680** |
| | Back | 0.540 | 0.110 | 0.080 | 0.200 | 0.150 | **0.730** | **0.890** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | | | | | | **0.000** | **0.000** |
| | Top side | 0.996 | | 0.190 | | 0.340 | **1.186** | **1.336** |
| | Bottom side | | 0.410 | | 0.600 | | **0.410** | **0.600** |
| LTE Band 71_Ant0 | Front | 0.480 | 0.140 | 0.070 | 0.190 | 0.150 | **0.690** | **0.820** |
| | Back | 0.491 | 0.110 | 0.080 | 0.200 | 0.150 | **0.681** | **0.841** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.090 | | | | | **0.090** | **0.090** |
| | Top side | 0.153 | | 0.190 | | 0.340 | **0.343** | **0.493** |
| | Bottom side | 0.203 | 0.410 | | 0.600 | | **0.613** | **0.803** |

| WWAN Band | Exposure Position | 1 | 2 | 3 | 4 | 5 | 1+2+3 Summed 1g SAR (W/kg) | 1+4+5 Summed 1g SAR (W/kg) |
|---|---|---|---|---|---|---|---|---|
| | | WWAN | 2.4GHz Wi-Fi 0 | 2.4GHz Wi-Fi 1 | 5GHz Wi-Fi 0 | 5GHz Wi-Fi 1 | | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | | |
| 5G FR1 n2_Ant8 | Front | 0.385 | 0.140 | 0.070 | 0.190 | 0.150 | **0.595** | **0.725** |
| | Back | 0.578 | 0.110 | 0.080 | 0.200 | 0.150 | **0.768** | **0.928** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | | | | | | **0.000** | **0.000** |
| | Top side | 0.995 | | 0.190 | | 0.340 | **1.185** | **1.335** |
| | Bottom side | | 0.410 | | 0.600 | | **0.410** | **0.600** |
| 5G FR1 n5_Ant0 | Front | 0.795 | 0.140 | 0.070 | 0.190 | 0.150 | **1.005** | **1.135** |
| | Back | 0.798 | 0.110 | 0.080 | 0.200 | 0.150 | **0.988** | **1.148** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.156 | | | | | **0.156** | **0.156** |
| | Top side | 0.540 | | 0.190 | | 0.340 | **0.730** | **0.880** |
| | Bottom side | 0.511 | 0.410 | | 0.600 | | **0.921** | **1.111** |
| 5G FR1 n12_Ant0 | Front | 0.874 | 0.140 | 0.070 | 0.190 | 0.150 | **1.084** | **1.214** |
| | Back | 0.885 | 0.110 | 0.080 | 0.200 | 0.150 | **1.075** | **1.235** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.136 | | | | | **0.136** | **0.136** |
| | Top side | 0.360 | | 0.190 | | 0.340 | **0.550** | **0.700** |
| | Bottom side | 0.461 | 0.410 | | 0.600 | | **0.871** | **1.061** |
| 5G FR1 n66_Ant0 | Front | 0.514 | 0.140 | 0.070 | 0.190 | 0.150 | **0.724** | **0.854** |
| | Back | 0.357 | 0.110 | 0.080 | 0.200 | 0.150 | **0.547** | **0.707** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.994 | | | | | **0.994** | **0.994** |
| | Top side | 0.001 | | 0.190 | | 0.340 | **0.191** | **0.341** |
| | Bottom side | 0.202 | 0.410 | | 0.600 | | **0.612** | **0.802** |
| 5G FR1 n66_Ant8 | Front | 0.298 | 0.140 | 0.070 | 0.190 | 0.150 | **0.508** | **0.638** |
| | Back | 0.536 | 0.110 | 0.080 | 0.200 | 0.150 | **0.726** | **0.886** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | | | | | | **0.000** | **0.000** |
| | Top side | 0.997 | | 0.190 | | 0.340 | **1.187** | **1.337** |
| | Bottom side | | 0.410 | | 0.600 | | **0.410** | **0.600** |
| 5G FR1 n71_Ant0 | Front | 0.656 | 0.140 | 0.070 | 0.190 | 0.150 | **0.866** | **0.996** |
| | Back | 0.663 | 0.110 | 0.080 | 0.200 | 0.150 | **0.853** | **1.013** |
| | Left side | | 0.050 | 0.020 | 0.080 | 0.070 | **0.070** | **0.150** |
| | Right side | 0.140 | | | | | **0.140** | **0.140** |
| | Top side | 0.247 | | 0.190 | | 0.340 | **0.437** | **0.587** |
| | Bottom side | 0.298 | 0.410 | | 0.600 | | **0.708** | **0.898** |

**Test Engineer**：Jordar Jhuang, Ginger Chiang and Charles Shen

# 16. Uncertainty Assessment

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

Declaration of Conformity:

The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

# 17. References


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

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

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

[4] SPEAG DASY System Handbook

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

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

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

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

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

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