

FCC SAR TEST REPORT

FCC ID : IHDT56AA6
Equipment : Wearable Cellular Device
Brand Name : Motorola
Model Name : XT2209-1
Applicant : Motorola Mobility, LLC
222 W Merchandise Mart Plaza, Suite 1800,
Chicago, IL 60654, United States
Standard : FCC 47 CFR Part 2 (2.1093)

The product was received on Nov. 01, 2021 and testing was started from Nov. 10, 2021 and completed on Nov. 24, 2021. 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



Sporton International Inc. EMC & Wireless Communications Laboratory
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Table of Contents

1. Statement of Compliance 4
2. Guidance Applied..... 5
3. Equipment Under Test (EUT) Information 5
3.1 General Information 5
3.2 General LTE SAR Test and Reporting Considerations 6
3.3 General 5G NR SAR Test and Reporting Considerations 8
4. Proximity Sensor Triggering Test..... 9
5. Smart Transmit feature for RF Exposure compliance..... 16
6. RF Exposure Limits..... 17
6.1 Uncontrolled Environment..... 17
6.2 Controlled Environment..... 17
6.3 RF Exposure limit for above 6GHz..... 18
7. Specific Absorption Rate (SAR)..... 19
7.1 Introduction 19
7.2 SAR Definition..... 19
8. System Description and Setup 20
8.1 Test Site Location..... 20
8.2 E-Field Probe 21
8.3 Data Acquisition Electronics (DAE) 21
8.4 Phantom..... 22
8.5 Device Holder..... 23
9. Measurement Procedures 24
9.1 Spatial Peak SAR Evaluation 24
9.2 Power Reference Measurement..... 25
9.3 Area Scan 25
9.4 Zoom Scan..... 26
9.5 Volume Scan Procedures..... 26
9.6 Power Drift Monitoring..... 26
10. Test Equipment List..... 27
11. System Verification 29
11.1 Tissue Verification 29
11.2 System Performance Check Results 30
11.3 PD System Performance Check Results..... 31
12. LTE Output Power (Unit: dBm) 32
13. 5G NR Output Power (Unit: dBm) 80
14. WiFi/Bluetooth Output Power (Unit: dBm) 104
15. Exclusions Applied 121
16. SAR Test Results 122
16.1 Body SAR 125
16.3 6GHz PD Test Result 130
16.4 Repeated SAR Measurement 131
16.5 n77 Power Class 2 and Power Class 3 Linearity..... 132
17. Simultaneous Transmission Analysis 133
17.1 5G NR + LTE + WLAN + BT Sim-Tx analysis..... 134
17.2 Body Exposure Conditions 135
18. Uncertainty Assessment 137
19. References..... 137
Appendix A. Plots of SAR System Performance Check
Appendix B. Plots of PD System Performance Check
Appendix C. Plots of High SAR Measurement
Appendix D. Plots of High PD Measurement
Appendix E. DASYS Calibration Certificate
Appendix F. Test Setup Photos



History of this test report

| Report No. | Version | Description | Issued Date |
|------------|---------|-------------------------|---------------|
| FA1O2008 | 01 | Initial issue of report | Dec. 06, 2021 |
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1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Motorola Mobility, LLC, Wearable Cellular Device, XT2209-1, are as follows.

| Equipment Class | Frequency Band | Highest SAR Summary | | Highest Simultaneous Transmission 1g SAR (W/kg) |
|------------------|----------------|---------------------|-----------------------|--|
| | | Body | 1g SAR (W/kg) | |
| Licensed | LTE Band 2 | | 1.37 | 1.58 |
| | LTE Band 4 | | 0.12 | |
| | LTE Band 5 | | 1.14 | |
| | LTE Band 13 | | 1.29 | |
| | LTE Band 48 | | 1.24 | |
| | LTE Band 66 | | 1.19 | |
| | FR1 n2 | | 1.11 | |
| | FR1 n5 | | 1.15 | |
| | FR1 n66 | | 1.24 | |
| | FR1 n77 | | 1.39 | |
| DTS | 2.4GHz WLAN | | 0.52 | 1.58 |
| NII | 5GHz WLAN | | 0.76 | 1.58 |
| 6XD | 6GHz WLAN | | 0.18 | 1.58 |
| DSS | Bluetooth | | 0.09 | 1.51 |
| Date of Testing: | | | 2021/11/10~2021/11/24 | |

| Equipment Class | Frequency Band | | Reported SAR | APD | Reported PD |
|------------------|----------------|-----------|-------------------------|-----------------------------|-----------------------------|
| | | | Body 1g SAR (W/kg) | Body (W/m ²) | Body (W/m ²) |
| 6XD | WLAN | 6GHz WLAN | 0.18 | 1.55 | 3.59 |
| Date of Testing: | | | 2021/11/10 ~ 2021/11/24 | | |

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 for Partial-Body 1g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

Reviewed by: Jason Wang
Report Producer: Paula Chen



2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- 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 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

| Product Feature & Specification | |
|---|--|
| Equipment Name | Wearable Cellular Device |
| Brand Name | Motorola |
| Model Name | XT2209-1 |
| FCC ID | IHDT56AA6 |
| Wireless Technology and Frequency Range | LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n260 : 37 GHz~40 GHz 5G NR n261 : 27.5 GHz~28.35 GHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz WLAN 5.2 GHz Band: 5150 MHz ~ 5250 MHz WLAN 5.3 GHz Band: 5250 MHz ~ 5350 MHz WLAN 5.6 GHz Band: 5470 MHz ~ 5725 MHz WLAN 5.8 GHz Band: 5725 MHz ~ 5850 MHz WLAN 6E: 5925 MHz ~ 6425 MHz, 6425 MHz ~ 6525 MHz, 6525 MHz ~ 6875 MHz, 6875 MHz ~ 7125 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz |
| Mode | LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM WLAN: 802.11a/b/g/n/ac/ax HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE |
| HW Version | EVT1 |
| EUT Stage | Identical Prototype |
| Remark: | 1. A non-standard setup was used for SAR testing and the device implements the power management and sensor detection for SAR compliance at different exposure condition based on guidance from the FCC. The Qualcomm smart transmit will also manage to ensure the power level not exceeding the associated power table. Details about the power management decision and sensor detection are provided in the operational description. |



3.2 General LTE SAR Test and Reporting Considerations

| Summarized necessary items addressed in KDB 941225 D05 v02r05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|------------|---|--------|--------|--------|----------|--|----------|---------|---------|-------|--------|--------|--------|------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|--------|-----|-----|-----|------|------|------|-----|---------|-----|--|--|--|--|--|-----|
| FCC ID | IHDT56AA6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment Name | WEARABLE Cellular Device | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating Frequency Range of each LTE transmission band | LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channel Bandwidth | LTE Band 2: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5: 1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| uplink modulations used | QPSK / 16QAM / 64QAM / 256QAM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LTE Voice / Data requirements | Data only | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LTE MPR permanently built-in by design | <p>Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table> | Modulation | Channel bandwidth / Transmission bandwidth (N _{RB}) | | | | | | MPR (dB) | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 | 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 | 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 | 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 | 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 | 256 QAM | ≥ 1 | | | | | | ≤ 5 |
| Modulation | Channel bandwidth / Transmission bandwidth (N _{RB}) | | | | | | MPR (dB) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 256 QAM | ≥ 1 | | | | | | ≤ 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power reduction applied to satisfy SAR compliance | Yes, Proximity Sensor. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LTE Carrier Aggregation Combinations | Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 12. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LTE Carrier Aggregation Additional Information | This device supports maximum of 6 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| 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 | | 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 | 20407 | 824.7 | 20415 | 825.5 | 20425 | 826.5 | 20450 | 829 | 20450 | 829 | 20450 | 829 | |
| M | 20525 | 836.5 | 20525 | 836.5 | 20525 | 836.5 | 20525 | 836.5 | 20525 | 836.5 | 20525 | 836.5 | |
| H | 20643 | 848.3 | 20635 | 847.5 | 20625 | 846.5 | 20600 | 844 | 20600 | 844 | 20600 | 844 | |
| LTE Band 13 | | | | | | | | | | | | | |
| | Bandwidth 5 MHz | | | | Bandwidth 10 MHz | | | | Bandwidth 15 MHz | | | | Bandwidth 20 MHz |
| | Channel # | | Freq.(MHz) | | Channel # | | Freq.(MHz) | | Channel # | | Freq.(MHz) | | Channel # |
| L | 23205 | | 779.5 | | 23230 | | 782 | | 23230 | | 782 | | 23230 |
| M | 23230 | | 782 | | | | | | | | | | |
| H | 23255 | | 784.5 | | | | | | | | | | |
| LTE Band 48 | | | | | | | | | | | | | |
| | Bandwidth 5 MHz | | Bandwidth 10 MHz | | Bandwidth 15 MHz | | Bandwidth 20 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 | 55265 | 3552.5 | 55290 | 3555 | 55315 | 3557.5 | 55340 | 3560 | 55340 | 3560 | 55340 | 3560 | |
| L | 55810 | 3607 | 55815 | 3607.5 | 55820 | 3608 | 55830 | 3609 | 55830 | 3609 | 55830 | 3609 | |
| M | 56170 | 3643 | 56165 | 3642.5 | 56160 | 3642 | 56150 | 3641 | 56150 | 3641 | 56150 | 3641 | |
| H | 56715 | 3697.5 | 56690 | 3695 | 56665 | 3692.5 | 56640 | 3690 | 56640 | 3690 | 56640 | 3690 | |
| 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 | |



3.3 General 5G NR SAR Test and Reporting Considerations

| 5G NR Information | | | | | | | | | | | | | | | | | | | | | | |
|---|---|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|------------------|-------------|
| FCC ID | IHDT56AA6 | | | | | | | | | | | | | | | | | | | | | |
| Equipment Name | Wearable Cellular Device | | | | | | | | | | | | | | | | | | | | | |
| Operating Frequency Range of each 5G NR transmission band | 5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz | | | | | | | | | | | | | | | | | | | | | |
| Channel Bandwidth | 5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz 5G NR n77: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 70MHz, 90MHz, 100MHz | | | | | | | | | | | | | | | | | | | | | |
| SCS | FDD: SCS15KHz, TDD: SCS30KHz | | | | | | | | | | | | | | | | | | | | | |
| uplink modulations used | DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM QPSK / 16QAM / 64QAM / 256QAM | | | | | | | | | | | | | | | | | | | | | |
| A-MPR (Additional MPR) disabled for SAR Testing? | Yes | | | | | | | | | | | | | | | | | | | | | |
| LTE Anchor Bands for n2 | LTE B5/13/66 | | | | | | | | | | | | | | | | | | | | | |
| LTE Anchor Bands for n5 | LTE B2/48/66 | | | | | | | | | | | | | | | | | | | | | |
| LTE Anchor Bands for n66 | LTE B2/5/13 | | | | | | | | | | | | | | | | | | | | | |
| LTE Anchor Bands for n77 | LTE B2/5/13/66 | | | | | | | | | | | | | | | | | | | | | |
| 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 66 | | | | | | | | | | | | | | | | | | | | | | |
| | Bandwidth 5MHz | | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | | | | | | | | | | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | | | | | | | | | | |
| L | 342500 | 1712.5 | 343000 | 1715 | 343500 | 1717.5 | 344000 | 1720 | 345000 | 1725 | 346000 | 1730 | | | | | | | | | | |
| M | 349000 | 1745 | 349000 | 1745 | 349000 | 1745 | 349000 | 1745 | 349000 | 1745 | 349000 | 1745 | | | | | | | | | | |
| H | 355500 | 1777.5 | 355000 | 1775 | 354500 | 1772.5 | 354000 | 1770 | 353000 | 1765 | 352000 | 1760 | | | | | | | | | | |
| NR Band 77 (3700-3980) | | | | | | | | | | | | | | | | | | | | | | |
| | Bandwidth 10MHz | | Bandwidth 15MHz | | Bandwidth 20MHz | | Bandwidth 30MHz | | Bandwidth 40MHz | | Bandwidth 50MHz | | Bandwidth 60MHz | | Bandwidth 70MHz | | Bandwidth 80MHz | | Bandwidth 90MHz | | Bandwidth 100MHz | |
| | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) | Ch. # | Freq. (MHz) |
| L | 647000 | 3705 | 647168 | 3707.52 | 647334 | 3710.01 | 647668 | 664334 | 648000 | 3720 | 648334 | 3725.01 | 648668 | 3730.02 | 649000 | 3735 | 649334 | 3740.01 | 649668 | 3745.02 | 650000 | 3750 |
| M | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 | 656000 | 3840 |
| H | 665000 | 3975 | 664832 | 3972.48 | 664668 | 3970.02 | 3715.02 | 3965.01 | 664000 | 3960 | 663668 | 3955.02 | 663334 | 3950.01 | 663000 | 3945 | 662668 | 3940.02 | 662334 | 3935.01 | 662000 | 3930 |

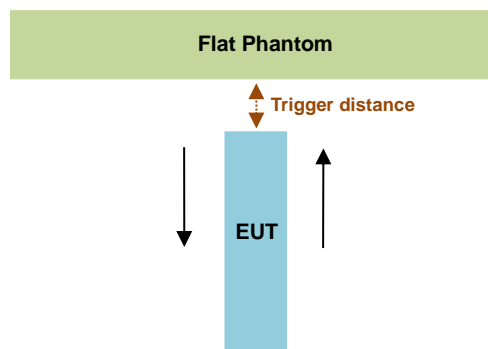
4. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>

For the device is fully integrated, touch sensing capacitive sensor. It uses a charge transfer capacitive acquisition method that is capable of near range proximity detection. In this device offers a state of the art capacitive sensing engine with an embedded sampling capacitor and voltage regulator allowing the overall solution cost to be reduced and improving system immunity in noisy environments.

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated as following, and the shortest triggering distances were reported and used for SAR assessment.

In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering distance than that for 1900MHz, and the tissue-equivalent medium for 1900MHz was used for formal proximity sensor triggering testing.



Proximity sensor power reduction

FrontPod

| Exposure Position / wireless mode | Front Surface ⁽¹⁾ |
|-----------------------------------|------------------------------|
| LTE Band 2_Ant 1 | 7.5dB |
| LTE Band 4_Ant 1 | 7.5dB |
| LTE Band 48_Ant 1 | 6.5dB |
| LTE Band 66_Ant 1 | 7.5dB |
| FR1 n2_Ant 1 | 8.5dB |
| FR1 n66_Ant 1 | 6.5dB |
| FR1 n77_Ant 1 | 8.5dB |
| FR1 n77_HPUE_Ant 1 | 8.5dB |
| FR1 n77_Ant 2 | 6.0dB |
| FR1 n77_HPUE_Ant 2 | 6.0dB |
| FR1 n77_Ant 3 | 7.0dB |
| FR1 n77_HPUE_Ant 3 | 7.0dB |

RearPod

| Exposure Position / wireless mode | Long Edge ⁽¹⁾ |
|-----------------------------------|--------------------------|
| LTE Band 2_Ant 0 | 0.0dB |
| LTE Band 4_Ant 0 | 0.0dB |
| LTE Band 5_Ant 0 | 1.2dB |
| LTE Band 13_Ant 0 | 0.0dB |
| LTE Band 48_Ant 0 | 0.5dB |
| FR1 n2_Ant 0 | 0.0dB |
| FR1 n5_Ant 0 | 0.0dB |
| FR1 n77_Ant 0 | 3.5dB |
| FR1 n77_HPUE_Ant 0 | 3.5dB |

Remark:

- ⁽¹⁾: Reduced maximum limit applied by activation of proximity sensor.
- Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, and compliant results are shown as below
- For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:

RearPod Antenna 0

- Long Edge: [14 mm](#)

FrontPod Antenna 1

- Front Surface: [14 mm](#)

FrontPod Antenna 2

- Front Surface: [14 mm](#)

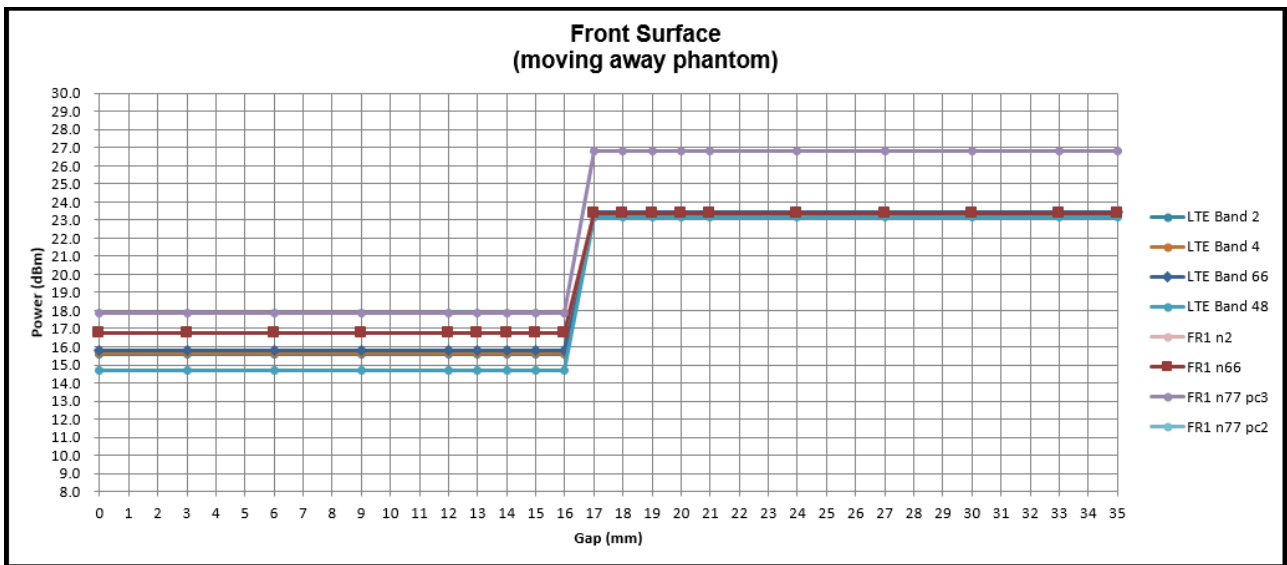
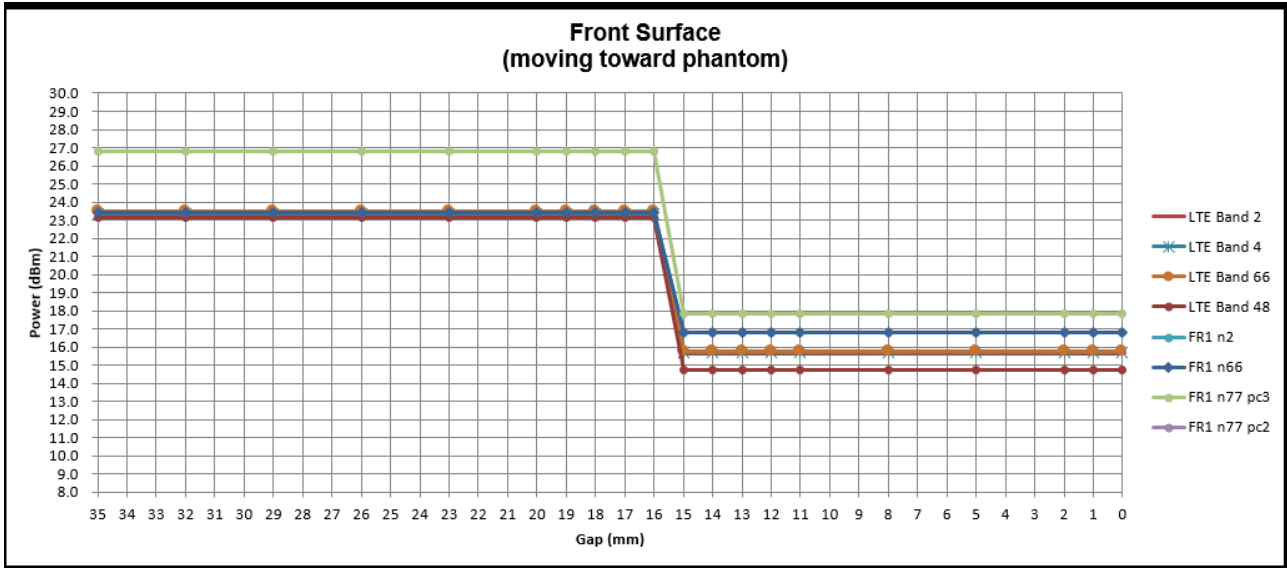
FrontPod Antenna 3

- Front Surface: [14 mm](#)

Power Measurement during Sensor Trigger distance testing

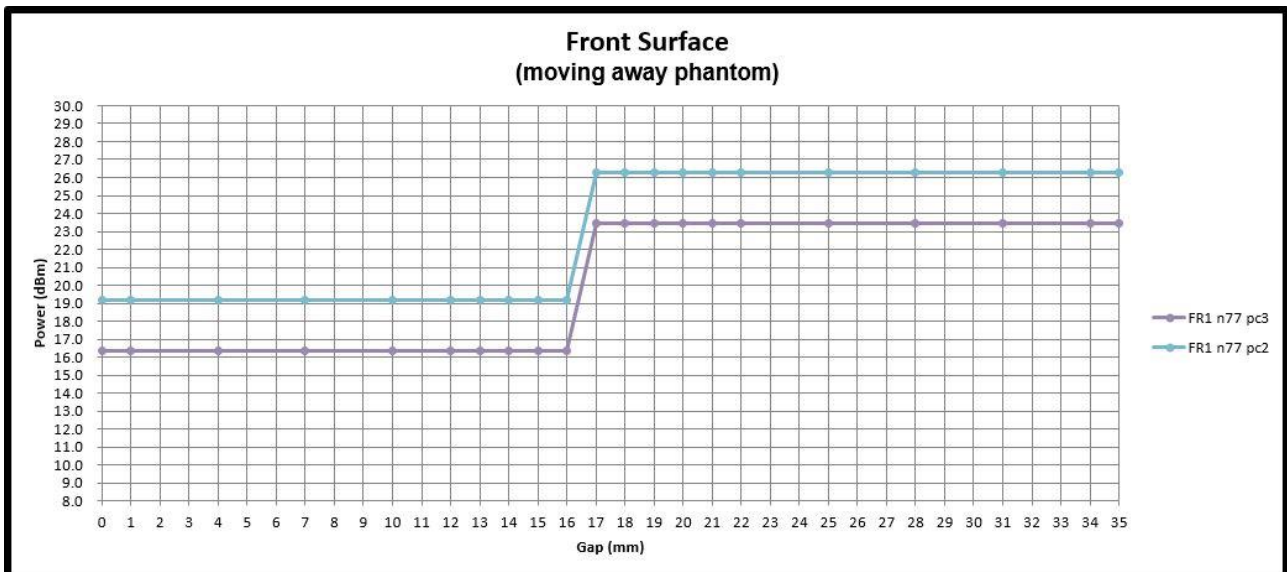
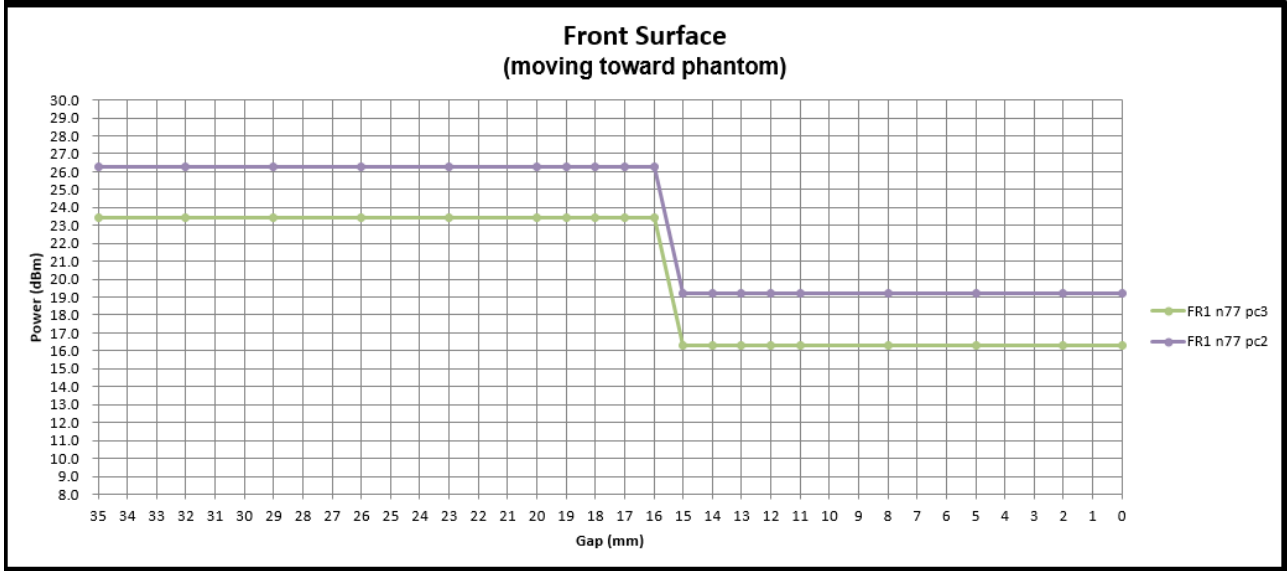
FrontPod

| | | |
|--|---------------|-------------|
| WWAN Antenna 1 | | |
| Proximity Sensor Trigger Distance (mm) | | |
| Exposure Position | Front Surface | |
| | moving toward | moving away |
| Minimum | 15 | 16 |



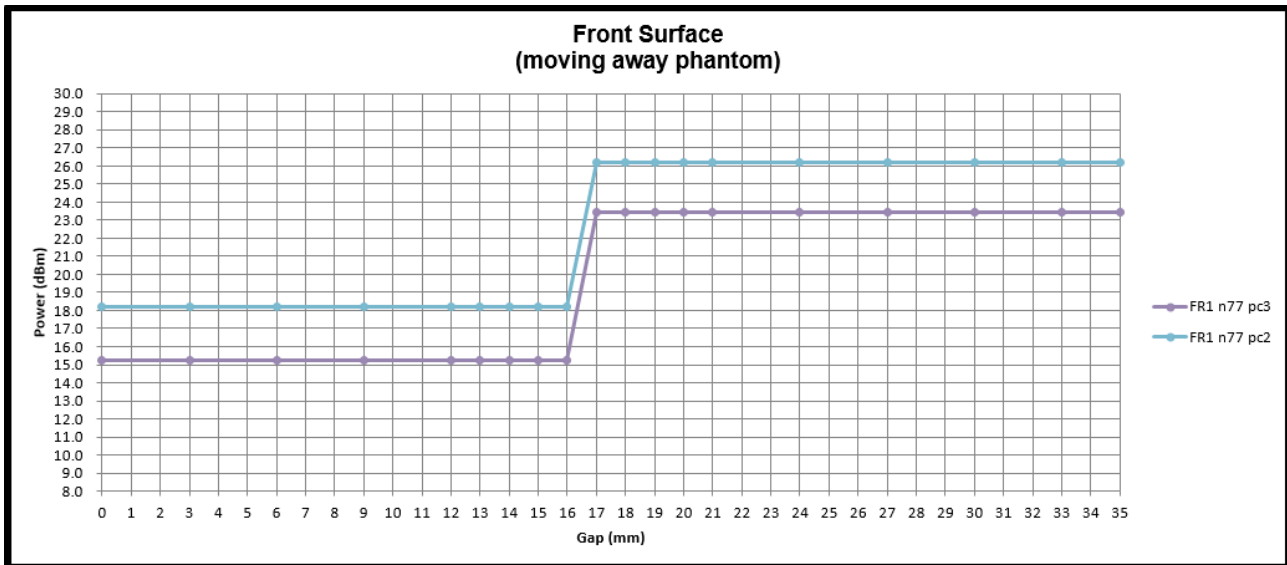
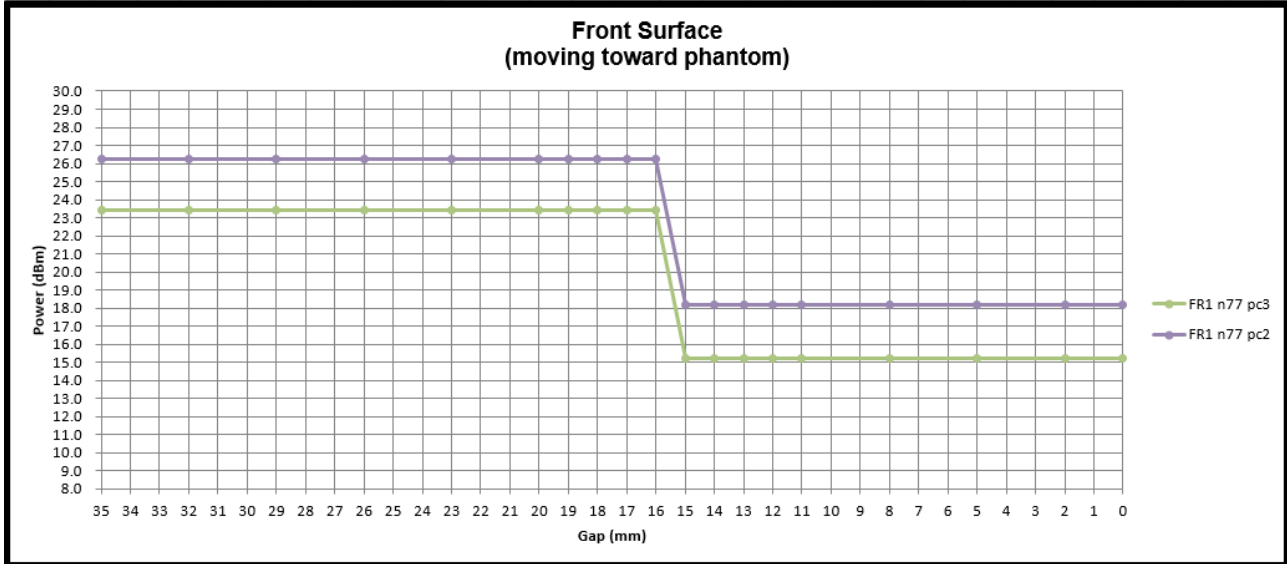
FrontPod

| | | |
|--|---------------|-------------|
| WWAN Antenna 2 | | |
| Proximity Sensor Trigger Distance (mm) | | |
| Exposure Position | Front Surface | |
| | moving toward | moving away |
| Minimum | 15 | 16 |



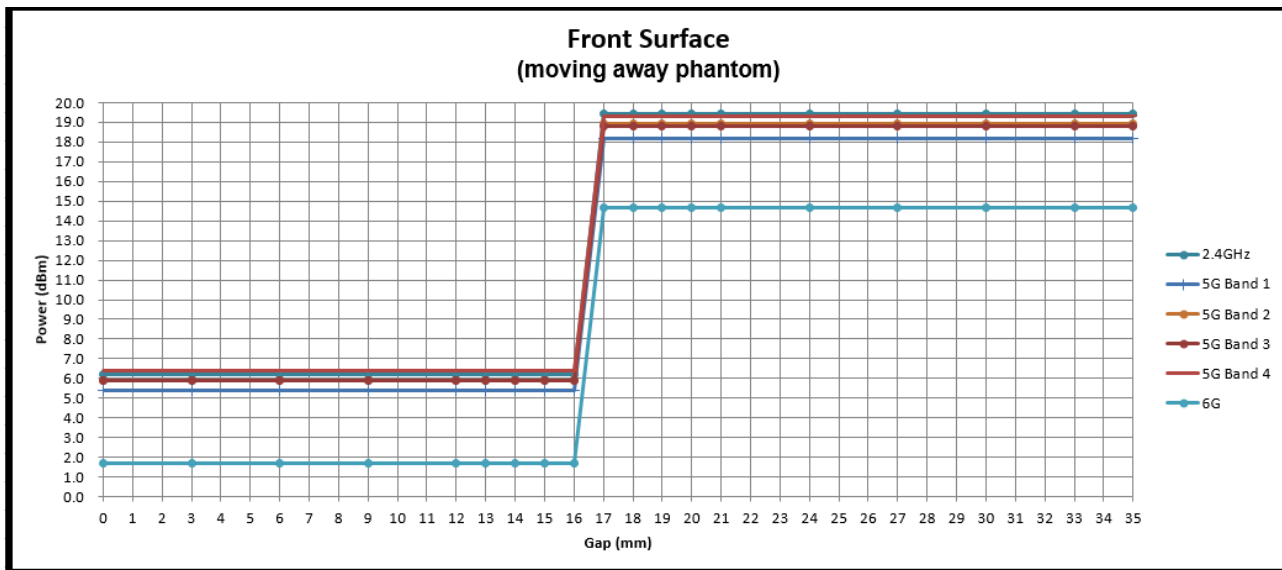
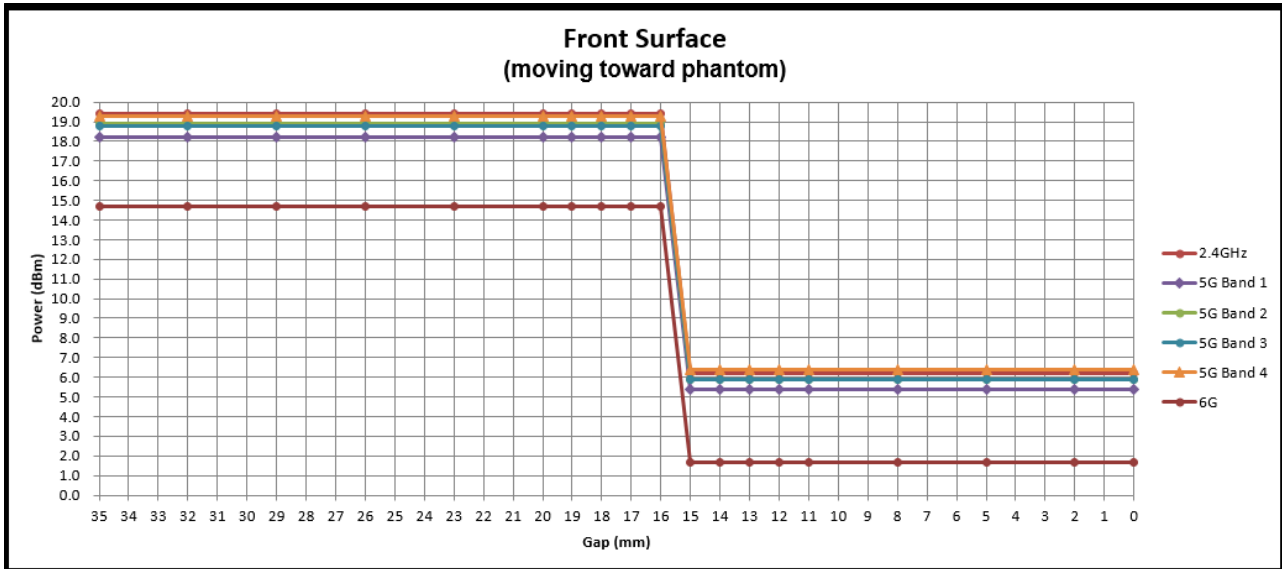
FrontPod

| | | |
|--|---------------|-------------|
| WWAN Antenna 3 | | |
| Proximity Sensor Trigger Distance (mm) | | |
| Exposure Position | Front Surface | |
| | moving toward | moving away |
| Minimum | 15 | 16 |



FrontPod

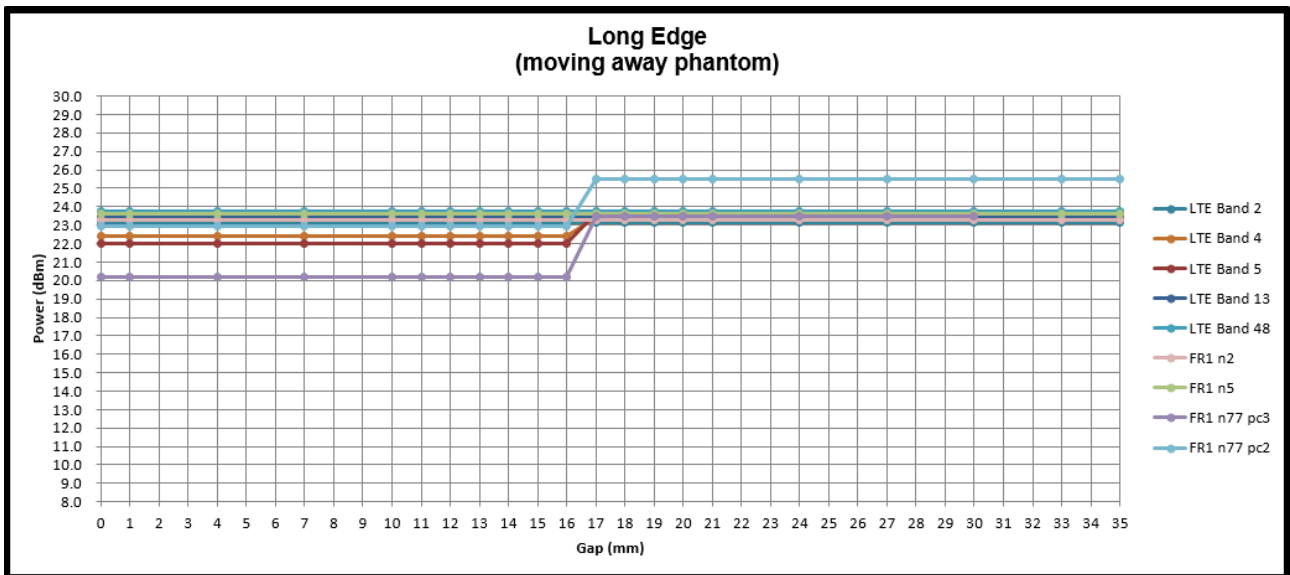
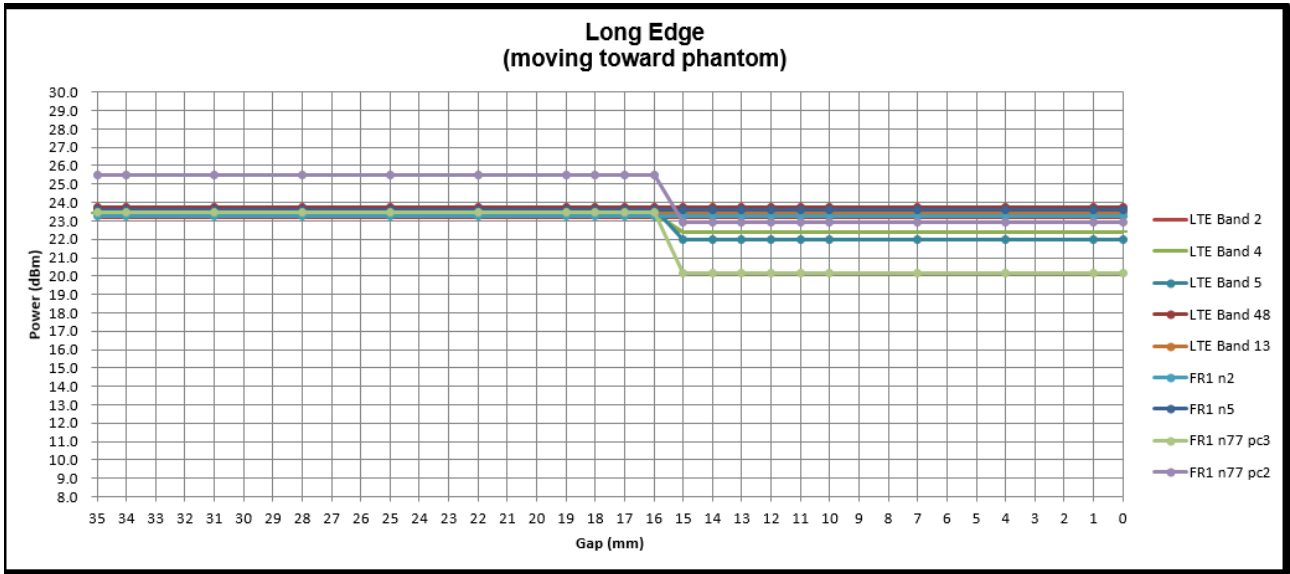
| | | |
|--|---------------|-------------|
| WLAN Antenna 4 | | |
| Proximity Sensor Trigger Distance (mm) | | |
| Exposure Position | Front Surface | |
| | moving toward | moving away |
| Minimum | 15 | 16 |





RearPod

| | | |
|--|---------------|-------------|
| WWAN Antenna 0 | | |
| Proximity Sensor Trigger Distance (mm) | | |
| Exposure Position | Long Edge | |
| | moving toward | moving away |
| Minimum | 15 | 16 |



5. 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 | Duty Cycle (%) | Body Sensor not detected | Body Sensor detected (Frontpod not detected, RearPod detected) | Body Sensor detected (Frontpod detected, RearPod not detected) | | Body Sensor detected (Frontpod detected, RearPod detected) | | Pmax |
|-------------|-------------|----------------|--------------------------|--|--|----------------------------|--|----------------------------|------|
| | | | (DSI2) | (DSI3) | (DSI4) | | (DSI5) | | |
| | | | | | WIFI OFF | WIFI On_Back Off level(dB) | WIFI OFF | WIFI On_Back Off level(dB) | |
| LTE Band 2 | Ant 0 | 100% | 31 | 31 | 31 | - | 31 | - | 23 |
| LTE Band 4 | Ant 0 | 100% | 37 | 37 | 37 | - | 37 | - | 23 |
| LTE Band 5 | Ant 0 | 100% | 30 | 21.8 | 30 | - | 21.8 | - | 23 |
| LTE Band 13 | Ant 0 | 100% | 29 | 25 | 29 | - | 25 | - | 23 |
| LTE Band 48 | Ant 0 | 63.3% | 31 | 20.5 | 31 | - | 20.5 | - | 21 |
| FR1 n2 | Ant 0 | 100% | 31 | 25 | 31 | - | 25 | - | 23 |
| FR1 n5 | Ant 0 | 100% | 32 | 25 | 32 | - | 25 | - | 23 |
| FR1 N77 PC3 | Ant 0 | 100% | 31 | 19.5 | 31 | - | 19.5 | - | 23 |
| FR1 N77 PC2 | Ant 0 | 50% | 31 | 19.5 | 31 | - | 19.5 | - | 23 |
| LTE Band 2 | Ant 1 | 100% | 28 | 28 | 15.5 | 13 | 15.5 | 13 | 23 |
| LTE Band 66 | Ant 1 | 100% | 30 | 30 | 15.5 | 13 | 15.5 | 13 | 23 |
| LTE Band 48 | Ant 1 | 100% | 28 | 30 | 14.5 | 13 | 14.5 | 13 | 21 |
| FR1 n2 | Ant 1 | 100% | 28 | 28 | 14.5 | 13 | 14.5 | 13 | 23 |
| FR1 n66 | Ant 1 | 100% | 32 | 32 | 16.5 | 13 | 16.5 | 13 | 23 |
| FR1 N77 PC3 | Ant 1 | 100% | 26 | 26 | 14.5 | 13 | 14.5 | 13 | 23 |
| FR1 N77 PC2 | Ant 1 | 50% | 26 | 26 | 14.5 | 13 | 14.5 | 13 | 23 |
| FR1 N77 PC3 | Ant 2 (SRS) | 100% | 26 | 26 | 17 | 13 | 17 | 13 | 23 |
| FR1 N77 PC2 | Ant 2 (SRS) | 50% | 26 | 26 | 17 | 13 | 17 | 13 | 23 |
| FR1 N77 PC3 | Ant 3 (SRS) | 100% | 28 | 28 | 16 | 13 | 16 | 13 | 23 |
| FR1 N77 PC2 | Ant 3 (SRS) | 50% | 28 | 28 | 16 | 13 | 16 | 13 | 23 |

1. Pmax is used for RF tune up procedure. The maximum allowed output power is equal to Pmax + TXAGX uncertainty.
2. All Plimit / Pmax 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).
3. The Plimit values, corresponding to SAR_design_target.
4. Maximum target power, P_{max}, is configured in NV settings in EUT to limit maximum transmitting power. This power is converted into peak power in NV settings for TDD schemes. The EUT maximum allowed output power is equal to P_{max} + 1.0dB TXAGC uncertainty.
5. Ant 2 and Ant 3 are used as SRS dedicated antennas, i.e., the antenna(s) are used for receive and Sound Reference Signal transmission (SRS) only (not traffic transmission).



6. RF Exposure Limits

6.1 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.

6.2 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.



6.3 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm² per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposures | | | | |
| 0.3-3.0 | 614 | 1.63 | *(100) | 6 |
| 3.0-30 | 1842/f | 4.89/f | *(900/f ²) | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | f/300 | 6 |
| 1500-100,000 | | | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34-30 | 824/f | 2.19/f | *(180/f ²) | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | f/1500 | 30 |
| 1500-100,000 | | | 1.0 | 30 |

7. Specific Absorption Rate (SAR)

7.1 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.

7.2 SAR Definition

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

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

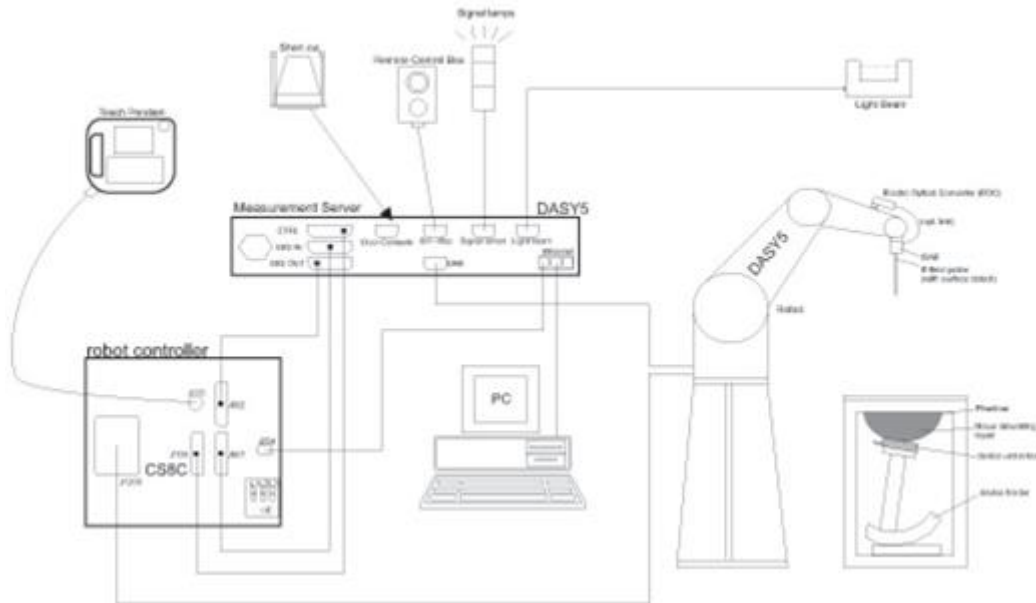
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

The DASYS 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.

8.1 Test Site Location


The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No.TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. In system validation list test site number, if the test site number is include in the Wensan Laboratory, that's mean the test data are subcontracted to Sporton International Inc. Wensan Laboratory.

| Test Site | EMC & Wireless Communications Laboratory | | Wensan Laboratory | | |
|--------------------|---|----------|--|----------|----------|
| Test Site Location | TW1190 No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan | | TW3786 No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan | | |
| Test Site No. | SAR01-HY | SAR03-HY | SAR08-HY | SAR09-HY | SAR15-HY |
| | SAR04-HY | SAR05-HY | SAR11-HY | SAR12-HY | |
| | SAR06-HY | SAR10-HY | SAR13-HY | SAR14-HY | |


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

<EX3DV4 Probe>

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

8.3 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.

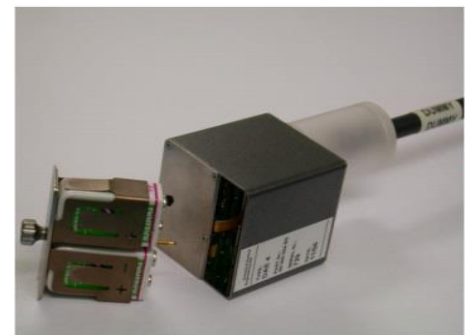


Fig 5.1 Photo of DAE

8.4 Phantom

<SAM Twin Phantom>

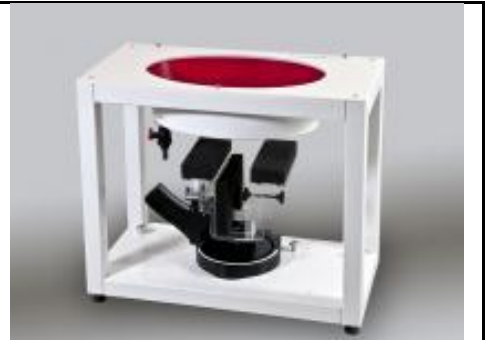
| | |
|--------------------------|--|
| Shell Thickness | 2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm |
| Filling Volume | Approx. 25 liters |
| Dimensions | Length: 1000 mm; Width: 500 mm; Height: adjustable feet |
| Measurement Areas | Left Hand, Right Hand, Flat Phantom |



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 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.

8.5 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



9. 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 F 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

9.1 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

9.2 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.

9.3 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 dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from 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 | $\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location | 30° ± 1° | 20° ± 1° |
| Maximum area scan spatial resolution: $\Delta x_{Area}, \Delta y_{Area}$ | ≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm | 3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm |
| | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. | |

9.4 Zoom Scan

Zoom scans are used to 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 whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 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 2 – 3 GHz: ≤ 5 mm* | 3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm* | |
| Maximum zoom scan spatial resolution, normal to phantom surface | uniform grid: $\Delta z_{Zoom}(n)$ | ≤ 5 mm | 3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm | |
| | graded grid | $\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface | ≤ 4 mm | 3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm |
| | | $\Delta z_{Zoom}(n>1)$: between subsequent points | $\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ | |
| Minimum zoom scan volume | x, y, z | ≥ 30 mm | 3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm | |
| Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. | | | | |

9.5 Volume Scan Procedures

The volume scan is used to 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.

9.6 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.



10. 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. 05, 2022 |
| SPEAG | 835MHz System Validation Kit ⁽²⁾ | D835V2 | 4d167 | Nov. 25, 2019 | Nov. 23, 2021 |
| SPEAG | 1750MHz System Validation Kit ⁽²⁾ | D1750V2 | 1112 | Mar. 07, 2019 | Mar. 04, 2022 |
| SPEAG | 1900MHz System Validation Kit | D1900V2 | 5d041 | Aug. 19, 2021 | Aug. 18, 2022 |
| SPEAG | 1900MHz System Validation Kit ⁽²⁾ | D1900V2 | 5d185 | Mar. 07, 2019 | Mar. 04, 2022 |
| SPEAG | 2450MHz System Validation Kit | D2450V2 | 736 | Aug. 17, 2021 | Aug. 17, 2022 |
| SPEAG | 3500MHz System Validation Kit ⁽²⁾ | D3500V2 | 1014 | Jan. 29, 2019 | Jan. 26, 2022 |
| SPEAG | 3700MHz System Validation Kit ⁽²⁾ | D3700V2 | 1006 | Mar. 05, 2019 | Mar. 02, 2022 |
| SPEAG | 3900MHz System Validation Kit ⁽²⁾ | D3900V2 | 1017 | Apr. 29, 2019 | Apr. 26, 2022 |
| SPEAG | 5GHz System Validation Kit | D5GHzV2 | 1006 | Sep. 15, 2021 | Sep. 14, 2022 |
| SPEAG | 6500MHz System Validation Kit | D6.5GHzV2 | 1003 | Sep. 24, 2021 | Sep. 23, 2022 |
| SPEAG | EUmmWV Probe Tip Protection | EUmmWV4 | 9461 | Oct. 22, 2021 | Oct. 21, 2022 |
| SPEAG | Data Acquisition Electronics | DAE4 | 778 | May. 21, 2021 | May. 20, 2022 |
| SPEAG | Data Acquisition Electronics | DAE4 | 853 | Jul. 14, 2021 | Jul. 13, 2022 |
| SPEAG | Data Acquisition Electronics | DAE4 | 854 | Aug. 19, 2021 | Aug. 18, 2022 |
| SPEAG | Data Acquisition Electronics | DAE4 | 1311 | Aug. 20, 2021 | Aug. 19, 2022 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 3642 | Apr. 26, 2021 | Apr. 25, 2022 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 7306 | Jul. 26, 2021 | Jul. 25, 2022 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 7590 | Mar. 25, 2021 | Mar. 24, 2022 |
| SPEAG | Dosimetric E-Field Probe | EX3DV4 | 3578 | Jun. 23, 2021 | Jun. 22, 2022 |
| Testo | Hygro meter | 608-H1 | 45196600 | Oct. 22, 2021 | Oct. 21, 2022 |
| Testo | Hygro meter | 608-H1 | 45207528 | Oct. 22, 2021 | Oct. 21, 2022 |
| RCPTWN | Thermometer | HTC-1 | TM685-1 | Oct. 28, 2021 | Oct. 27, 2022 |
| RCPTWN | Thermometer | HTC-1 | TM560-2 | Oct. 28, 2021 | Oct. 27, 2022 |
| Anritsu | Radio Communication Analyzer | MT8821C | 6201074414 | Jul. 21, 2021 | Jul. 20, 2022 |
| Keysight | Wireless Communication Test Set | E5515C | MY50266977 | May. 12, 2021 | May. 11, 2022 |
| R&S | BT Base Station | CBT | 100815 | Feb. 19, 2021 | Feb. 18, 2022 |
| SPEAG | Device Holder | N/A | N/A | N/A | N/A |
| Anritsu | Signal Generator | MG3692A | 212506 | Jul. 20, 2021 | Jul. 19, 2022 |
| Keysight | ENA Network Analyzer | E5071C | MY46104758 | Sep. 07, 2021 | Sep. 06, 2022 |
| SPEAG | Dielectric Probe Kit | DAK-3.5 | 1126 | Sep. 24, 2021 | Sep. 23, 2022 |
| LINE SEIKI | Digital Thermometer | DTM3000-spezial | 3252 | Jul. 15, 2021 | Jul. 14, 2022 |
| Anritsu | Power Meter | ML2495A | 1419002 | Aug. 18, 2021 | Aug. 17, 2022 |
| Anritsu | Power Sensor | MA2411B | 1911176 | Aug. 18, 2021 | Aug. 17, 2022 |
| Anritsu | Power Meter | ML2495A | 1804003 | Oct. 09, 2021 | Oct. 08, 2022 |
| Anritsu | Power Sensor | MA2411B | 1726150 | Oct. 09, 2021 | Oct. 08, 2022 |
| Anritsu | Spectrum Analyzer | MS2830A | 6201396378 | Jul. 16, 2021 | Jul. 15, 2022 |
| Anritsu | Spectrum Analyzer | N9010A | MY53470118 | Jan. 15, 2021 | Jan. 14, 2022 |
| Mini-Circuits | Power Amplifier | ZVE-8G+ | 6418 | Oct. 12, 2021 | Oct. 11, 2022 |
| Mini-Circuits | Power Amplifier | ZVE-8G+ | 479102029 | Sep. 06, 2021 | Sep. 05, 2022 |
| ATM | Dual Directional Coupler | C122H-10 | P610410z-02 | Note 1 | |
| Warison | Directional Coupler | WCOU-10-50S-10 | WR889BMC4B1 | 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.



11. System Verification

11.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°C to 25°C, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.

The liquid tissue depth was at least 15cm in the phantom for all SAR testing

<Tissue Dielectric Parameter Check Results>

| Frequency (MHz) | Liquid Temp. (°C) | Conductivity (σ) | Permittivity (ε _r) | Conductivity Target (σ) | Permittivity Target (ε _r) | Delta (σ) (%) | Delta (ε _r) (%) | Limit (%) | Date |
|-----------------|-------------------|------------------|--------------------------------|-------------------------|---------------------------------------|---------------|-----------------------------|-----------|------------|
| 750 | 22.5 | 0.890 | 43.009 | 0.89 | 41.90 | 0.00 | 2.65 | ±5 | 2021/11/19 |
| 835 | 22.5 | 0.924 | 42.713 | 0.90 | 41.50 | 2.67 | 2.92 | ±5 | 2021/11/19 |
| 835 | 22.5 | 0.926 | 42.880 | 0.90 | 41.50 | 2.89 | 3.33 | ±5 | 2021/11/20 |
| 1750 | 22.5 | 1.369 | 40.523 | 1.37 | 40.10 | -0.07 | 1.05 | ±5 | 2021/11/19 |
| 1750 | 22.5 | 1.389 | 40.296 | 1.37 | 40.10 | 1.39 | 0.49 | ±5 | 2021/11/20 |
| 1900 | 22.5 | 1.439 | 40.330 | 1.40 | 40.00 | 2.79 | 0.82 | ±5 | 2021/11/19 |
| 1900 | 22.5 | 1.405 | 40.193 | 1.40 | 40.00 | 0.36 | 0.48 | ±5 | 2021/11/20 |
| 2450 | 22.5 | 1.845 | 39.760 | 1.80 | 39.20 | 2.50 | 1.43 | ±5 | 2021/11/23 |
| 3500 | 22.5 | 2.914 | 37.958 | 2.91 | 37.90 | 0.14 | 0.15 | ±5 | 2021/11/21 |
| 3500 | 22.5 | 2.903 | 37.858 | 2.91 | 37.90 | -0.24 | -0.11 | ±5 | 2021/11/24 |
| 3700 | 22.5 | 3.119 | 37.728 | 3.12 | 37.70 | -0.03 | 0.07 | ±5 | 2021/11/21 |
| 3700 | 22.5 | 3.105 | 37.648 | 3.12 | 37.70 | -0.48 | -0.14 | ±5 | 2021/11/24 |
| 3900 | 22.5 | 3.324 | 37.497 | 3.33 | 37.51 | -0.18 | -0.03 | ±5 | 2021/11/21 |
| 5250 | 22.5 | 4.601 | 35.923 | 4.71 | 35.95 | -2.31 | -0.08 | ±5 | 2021/11/22 |
| 5600 | 22.5 | 4.934 | 35.463 | 5.07 | 35.50 | -2.68 | -0.10 | ±5 | 2021/11/22 |
| 5750 | 22.5 | 5.095 | 35.231 | 5.22 | 35.35 | -2.39 | -0.34 | ±5 | 2021/11/22 |
| 6500 | 22.5 | 6.070 | 35.300 | 6.07 | 34.50 | 0.00 | 2.32 | ±5 | 2021/11/23 |

11.2 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.

| Test Site | 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 (%) |
|-----------|------------|-----------------|------------------|-------------------|-----------------|-------------|------------------------|------------------------|--------------------------|---------------|
| SAR10 | 2021/11/19 | 750 | 50 | D750V3-1107 | EX3DV4 - SN3578 | DAE4 Sn854 | 0.426 | 8.32 | 8.52 | 2.40 |
| SAR05 | 2021/11/19 | 835 | 50 | D835V2-4d167 | EX3DV4 - SN7590 | DAE4 Sn853 | 0.442 | 9.55 | 8.84 | -7.43 |
| SAR04 | 2021/11/20 | 835 | 50 | D835V2-4d167 | EX3DV4 - SN7306 | DAE4 Sn1311 | 0.465 | 9.55 | 9.3 | -2.62 |
| SAR05 | 2021/11/19 | 1750 | 50 | D1750V2-1112 | EX3DV4 - SN7590 | DAE4 Sn853 | 1.860 | 36.70 | 37.2 | 1.36 |
| SAR04 | 2021/11/20 | 1750 | 50 | D1750V2-1112 | EX3DV4 - SN7306 | DAE4 Sn1311 | 1.820 | 36.70 | 36.4 | -0.82 |
| SAR05 | 2021/11/19 | 1900 | 50 | D1900V2-5d185 | EX3DV4 - SN7590 | DAE4 Sn853 | 2.030 | 39.40 | 40.6 | 3.05 |
| SAR04 | 2021/11/20 | 1900 | 50 | D1900V2-5d041 | EX3DV4 - SN7306 | DAE4 Sn1311 | 1.880 | 40.60 | 37.6 | -7.39 |
| SAR10 | 2021/11/23 | 2450 | 50 | D2450V2-736 | EX3DV4 - SN3578 | DAE4 Sn1311 | 2.780 | 54.20 | 55.6 | 2.58 |
| SAR10 | 2021/11/21 | 3500 | 100 | D3500V2-1014 | EX3DV4 - SN3578 | DAE4 Sn1311 | 6.310 | 67.90 | 63.1 | -7.07 |
| SAR10 | 2021/11/24 | 3500 | 100 | D3500V2-1014 | EX3DV4 - SN3578 | DAE4 Sn1311 | 6.390 | 67.90 | 63.9 | -5.89 |
| SAR10 | 2021/11/21 | 3700 | 100 | D3700V2-1006 | EX3DV4 - SN3578 | DAE4 Sn1311 | 6.540 | 67.30 | 65.4 | -2.82 |
| SAR10 | 2021/11/24 | 3700 | 100 | D3700V2-1006 | EX3DV4 - SN3578 | DAE4 Sn1311 | 6.610 | 67.30 | 66.1 | -1.78 |
| SAR10 | 2021/11/21 | 3900 | 50 | D3900V2-1017-3900 | EX3DV4 - SN3578 | DAE4 Sn1311 | 3.550 | 69.50 | 71 | 2.16 |
| SAR10 | 2021/11/22 | 5250 | 50 | D5GHzV2-1006-5250 | EX3DV4 - SN3578 | DAE4 Sn1311 | 3.660 | 80.70 | 73.2 | -9.29 |
| SAR10 | 2021/11/22 | 5600 | 50 | D5GHzV2-1006-5600 | EX3DV4 - SN3578 | DAE4 Sn1311 | 3.790 | 83.30 | 75.8 | -9.00 |
| SAR10 | 2021/11/22 | 5750 | 50 | D5GHzV2-1006-5750 | EX3DV4 - SN3578 | DAE4 Sn1311 | 3.680 | 80.40 | 73.6 | -8.46 |
| SAR08 | 2021/11/23 | 6500 | 100 | D6.5GHzV2-1003 | EX3DV4 - SN3642 | DAE4 Sn853 | 27.300 | 299.00 | 273 | -8.70 |

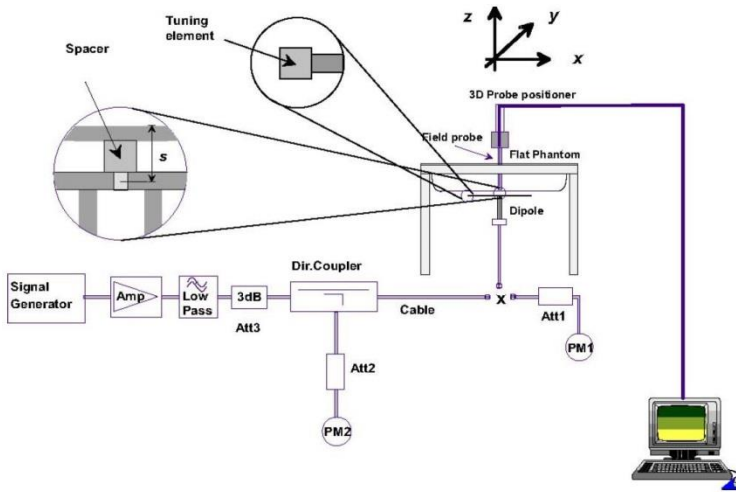


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo

11.3 PD System Performance Check Results

The system was verified to be within ± 0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user’s manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG’s mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check. The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

| Test Location | Frequency (GHz) | 5G Verification Source | Probe S/N | DAE S/N | Distance (mm) | Measured 4 cm ² (W/m ²) | Targeted 4 cm ² (W/m ²) | Deviation (dB) | Date |
|---------------|-----------------|------------------------|-----------|---------|---------------|--|--|----------------|------------|
| SAR05 | 10G | 10GHz_1020 | 9461 | 778 | 10 | 44 | 42.2 | 0.18 | 2021/11/10 |

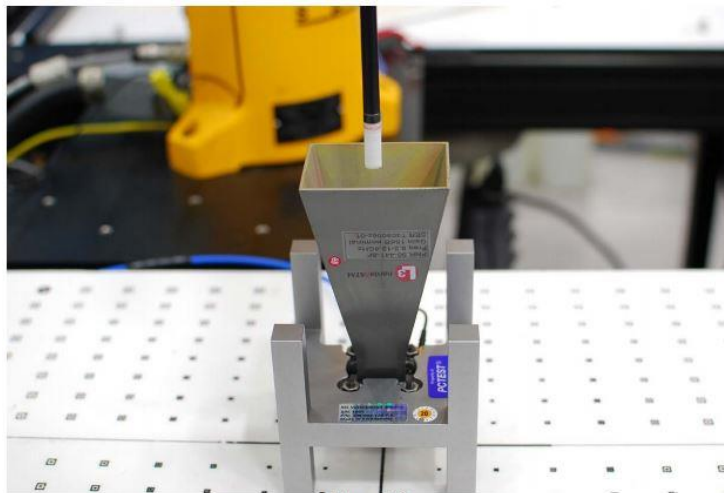


Figure 4-3
System Verification Setup Photo

System Performance Check Setup

12. LTE Output Power (Unit: dBm)

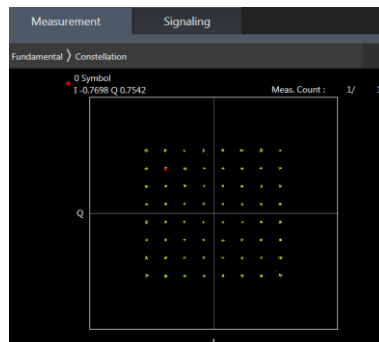
<LTE Conducted Power>

General Note:

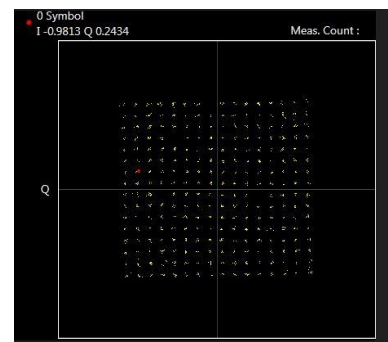
1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B5 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 4 SAR test was covered by Band 66; 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 \leq 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 16QAM, 64QAM, 256QAM should be verified by checking the signal constellation with a call box to avoid incorrect maximum power levels due to MPR and other requirements associated with signal modulation, and the following figure is taken from the "Fundamental Measurement >> Modulation Analysis >> constellation" mode of the device connect to the MT8821C base station, therefore, the device 64QAM and 16QAM signal modulation are correct.



16QAM



64QAM



256QAM



<LTE Band 2_Ant0_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 18700 | 18900 | 19100 | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | QPSK | 1 | 0 | 23.14 | 23.17 | 23.16 | 24 |
| 20 | QPSK | 1 | 49 | 23.07 | 23.13 | 23.06 | |
| 20 | QPSK | 1 | 99 | 23.04 | 23.10 | 22.99 | |
| 20 | QPSK | 50 | 0 | 22.12 | 22.19 | 22.14 | 23 |
| 20 | QPSK | 50 | 24 | 22.16 | 22.29 | 22.24 | |
| 20 | QPSK | 50 | 50 | 22.23 | 22.30 | 22.19 | |
| 20 | QPSK | 100 | 0 | 22.27 | 22.33 | 22.25 | 23 |
| 20 | 16QAM | 1 | 0 | 22.18 | 22.23 | 22.15 | |
| 20 | 16QAM | 1 | 49 | 22.17 | 22.21 | 22.18 | |
| 20 | 16QAM | 1 | 99 | 22.04 | 22.13 | 22.09 | 22 |
| 20 | 16QAM | 50 | 0 | 21.12 | 21.18 | 21.09 | |
| 20 | 16QAM | 50 | 24 | 21.17 | 21.26 | 21.19 | |
| 20 | 16QAM | 50 | 50 | 21.17 | 21.23 | 21.22 | 22 |
| 20 | 16QAM | 100 | 0 | 21.23 | 21.35 | 21.34 | |
| 20 | 64QAM | 1 | 0 | 21.28 | 21.33 | 21.22 | |
| 20 | 64QAM | 1 | 49 | 21.16 | 21.27 | 21.16 | 22 |
| 20 | 64QAM | 1 | 99 | 21.11 | 21.18 | 21.14 | |
| 20 | 64QAM | 50 | 0 | 20.08 | 20.18 | 20.10 | |
| 20 | 64QAM | 50 | 24 | 20.15 | 20.25 | 20.23 | 21 |
| 20 | 64QAM | 50 | 50 | 20.11 | 20.24 | 20.16 | |
| 20 | 64QAM | 100 | 0 | 20.27 | 20.31 | 20.26 | |
| 20 | 256QAM | 1 | 0 | 17.86 | 17.97 | 17.91 | 19 |
| 20 | 256QAM | 1 | 49 | 17.97 | 18.01 | 17.96 | |
| 20 | 256QAM | 1 | 99 | 17.95 | 18.01 | 17.97 | |
| 20 | 256QAM | 50 | 0 | 18.07 | 18.10 | 18.05 | 19 |
| 20 | 256QAM | 50 | 24 | 18.16 | 18.22 | 18.16 | |
| 20 | 256QAM | 50 | 50 | 18.22 | 18.28 | 18.23 | |
| 20 | 256QAM | 100 | 0 | 18.26 | 18.31 | 18.26 | |
| Channel | | | | 18675 | 18900 | 19125 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | |
| 15 | QPSK | 1 | 0 | 23.13 | 23.15 | 23.08 | 24 |
| 15 | QPSK | 1 | 37 | 22.98 | 23.11 | 23.02 | |
| 15 | QPSK | 1 | 74 | 22.98 | 23.01 | 22.94 | |
| 15 | QPSK | 36 | 0 | 22.04 | 22.09 | 22.13 | 23 |
| 15 | QPSK | 36 | 20 | 22.15 | 22.25 | 22.14 | |
| 15 | QPSK | 36 | 39 | 22.22 | 22.27 | 22.13 | |
| 15 | QPSK | 75 | 0 | 22.26 | 22.30 | 22.20 | 23 |
| 15 | 16QAM | 1 | 0 | 22.17 | 22.19 | 22.14 | |
| 15 | 16QAM | 1 | 37 | 22.08 | 22.11 | 22.09 | |
| 15 | 16QAM | 1 | 74 | 22.01 | 22.03 | 22.07 | 22 |
| 15 | 16QAM | 36 | 0 | 21.08 | 21.08 | 20.99 | |
| 15 | 16QAM | 36 | 20 | 21.16 | 21.18 | 21.12 | |
| 15 | 16QAM | 36 | 39 | 21.09 | 21.17 | 21.20 | 22 |
| 15 | 16QAM | 75 | 0 | 21.14 | 21.26 | 21.25 | |
| 15 | 64QAM | 1 | 0 | 21.25 | 21.25 | 21.13 | |
| 15 | 64QAM | 1 | 37 | 21.06 | 21.20 | 21.10 | 22 |
| 15 | 64QAM | 1 | 74 | 21.07 | 21.17 | 21.08 | |
| 15 | 64QAM | 36 | 0 | 20.05 | 20.10 | 20.03 | |
| 15 | 64QAM | 36 | 20 | 20.06 | 20.24 | 20.21 | 21 |
| 15 | 64QAM | 36 | 39 | 20.05 | 20.14 | 20.15 | |
| 15 | 64QAM | 75 | 0 | 20.17 | 20.25 | 20.16 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 15 | 256QAM | 1 | 0 | 17.80 | 17.94 | 17.89 | 19 |
| 15 | 256QAM | 1 | 37 | 17.89 | 17.95 | 17.90 | |
| 15 | 256QAM | 1 | 74 | 17.87 | 18.01 | 17.95 | |
| 15 | 256QAM | 36 | 0 | 18.04 | 18.07 | 17.99 | 19 |
| 15 | 256QAM | 36 | 20 | 18.06 | 18.22 | 18.08 | |
| 15 | 256QAM | 36 | 39 | 18.21 | 18.18 | 18.20 | |
| 15 | 256QAM | 75 | 0 | 18.17 | 18.23 | 18.21 | |
| Channel | | | | 18650 | 18900 | 19150 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | |
| 10 | QPSK | 1 | 0 | 23.05 | 23.16 | 23.15 | 24 |
| 10 | QPSK | 1 | 25 | 23.04 | 23.03 | 22.99 | |
| 10 | QPSK | 1 | 49 | 22.98 | 23.10 | 22.95 | |
| 10 | QPSK | 25 | 0 | 22.10 | 22.11 | 22.05 | 23 |
| 10 | QPSK | 25 | 12 | 22.15 | 22.20 | 22.22 | |
| 10 | QPSK | 25 | 25 | 22.15 | 22.23 | 22.18 | |
| 10 | QPSK | 50 | 0 | 22.21 | 22.26 | 22.15 | |
| 10 | 16QAM | 1 | 0 | 22.10 | 22.15 | 22.12 | 23 |
| 10 | 16QAM | 1 | 25 | 22.10 | 22.14 | 22.17 | |
| 10 | 16QAM | 1 | 49 | 21.97 | 22.11 | 22.08 | |
| 10 | 16QAM | 25 | 0 | 21.04 | 21.14 | 21.09 | 22 |
| 10 | 16QAM | 25 | 12 | 21.12 | 21.22 | 21.09 | |
| 10 | 16QAM | 25 | 25 | 21.11 | 21.16 | 21.21 | |
| 10 | 16QAM | 50 | 0 | 21.13 | 21.29 | 21.30 | |
| 10 | 64QAM | 1 | 0 | 21.24 | 21.30 | 21.21 | 22 |
| 10 | 64QAM | 1 | 25 | 21.11 | 21.25 | 21.09 | |
| 10 | 64QAM | 1 | 49 | 21.02 | 21.09 | 21.07 | |
| 10 | 64QAM | 25 | 0 | 20.08 | 20.15 | 20.10 | 21 |
| 10 | 64QAM | 25 | 12 | 20.13 | 20.23 | 20.23 | |
| 10 | 64QAM | 25 | 25 | 20.04 | 20.18 | 20.15 | |
| 10 | 64QAM | 50 | 0 | 20.21 | 20.30 | 20.26 | |
| 10 | 256QAM | 1 | 0 | 17.81 | 17.94 | 17.90 | 19 |
| 10 | 256QAM | 1 | 25 | 17.91 | 18.00 | 17.94 | |
| 10 | 256QAM | 1 | 49 | 17.91 | 17.91 | 17.95 | |
| 10 | 256QAM | 25 | 0 | 17.99 | 18.09 | 17.96 | 19 |
| 10 | 256QAM | 25 | 12 | 18.16 | 18.12 | 18.10 | |
| 10 | 256QAM | 25 | 25 | 18.17 | 18.24 | 18.18 | |
| 10 | 256QAM | 50 | 0 | 18.21 | 18.21 | 18.19 | |
| Channel | | | | 18625 | 18900 | 19175 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | QPSK | 1 | 0 | 23.07 | 23.10 | 23.08 | 24 |
| 5 | QPSK | 1 | 12 | 22.99 | 23.08 | 23.05 | |
| 5 | QPSK | 1 | 24 | 22.99 | 23.08 | 22.99 | |
| 5 | QPSK | 12 | 0 | 22.11 | 22.17 | 22.13 | 23 |
| 5 | QPSK | 12 | 7 | 22.09 | 22.28 | 22.16 | |
| 5 | QPSK | 12 | 13 | 22.17 | 22.24 | 22.18 | |
| 5 | QPSK | 25 | 0 | 22.19 | 22.28 | 22.15 | |
| 5 | 16QAM | 1 | 0 | 22.15 | 22.16 | 22.06 | 23 |
| 5 | 16QAM | 1 | 12 | 22.08 | 22.20 | 22.08 | |
| 5 | 16QAM | 1 | 24 | 21.97 | 22.13 | 22.02 | |
| 5 | 16QAM | 12 | 0 | 21.04 | 21.17 | 21.00 | 22 |
| 5 | 16QAM | 12 | 7 | 21.10 | 21.20 | 21.17 | |
| 5 | 16QAM | 12 | 13 | 21.07 | 21.18 | 21.21 | |
| 5 | 16QAM | 25 | 0 | 21.13 | 21.33 | 21.26 | |
| 5 | 64QAM | 1 | 0 | 21.23 | 21.29 | 21.20 | 22 |
| 5 | 64QAM | 1 | 12 | 21.08 | 21.23 | 21.14 | |
| 5 | 64QAM | 1 | 24 | 21.06 | 21.12 | 21.09 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 5 | 64QAM | 12 | 0 | 20.06 | 20.09 | 20.05 | 21 |
| 5 | 64QAM | 12 | 7 | 20.06 | 20.16 | 20.22 | |
| 5 | 64QAM | 12 | 13 | 20.08 | 20.23 | 20.11 | |
| 5 | 64QAM | 25 | 0 | 20.23 | 20.29 | 20.25 | |
| 5 | 256QAM | 1 | 0 | 17.84 | 17.96 | 17.87 | 19 |
| 5 | 256QAM | 1 | 12 | 17.97 | 17.93 | 17.92 | |
| 5 | 256QAM | 1 | 24 | 17.91 | 17.93 | 17.87 | |
| 5 | 256QAM | 12 | 0 | 17.99 | 18.09 | 18.05 | 19 |
| 5 | 256QAM | 12 | 7 | 18.16 | 18.12 | 18.10 | |
| 5 | 256QAM | 12 | 13 | 18.15 | 18.19 | 18.18 | |
| 5 | 256QAM | 25 | 0 | 18.16 | 18.24 | 18.23 | |
| Channel | | | | 18615 | 18900 | 19185 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1908.5 | |
| 3 | QPSK | 1 | 0 | 23.13 | 23.12 | 23.08 | 24 |
| 3 | QPSK | 1 | 8 | 23.00 | 23.03 | 22.98 | |
| 3 | QPSK | 1 | 14 | 22.99 | 23.07 | 22.98 | |
| 3 | QPSK | 8 | 0 | 22.05 | 22.19 | 22.09 | 23 |
| 3 | QPSK | 8 | 4 | 22.13 | 22.25 | 22.18 | |
| 3 | QPSK | 8 | 7 | 22.14 | 22.23 | 22.17 | |
| 3 | QPSK | 15 | 0 | 22.18 | 22.26 | 22.17 | |
| 3 | 16QAM | 1 | 0 | 22.18 | 22.18 | 22.15 | 23 |
| 3 | 16QAM | 1 | 8 | 22.13 | 22.21 | 22.08 | |
| 3 | 16QAM | 1 | 14 | 22.00 | 22.12 | 22.04 | |
| 3 | 16QAM | 8 | 0 | 21.04 | 21.14 | 21.03 | 22 |
| 3 | 16QAM | 8 | 4 | 21.14 | 21.21 | 21.17 | |
| 3 | 16QAM | 8 | 7 | 21.08 | 21.21 | 21.16 | |
| 3 | 16QAM | 15 | 0 | 21.19 | 21.35 | 21.24 | |
| 3 | 64QAM | 1 | 0 | 21.28 | 21.31 | 21.21 | 22 |
| 3 | 64QAM | 1 | 8 | 21.14 | 21.20 | 21.13 | |
| 3 | 64QAM | 1 | 14 | 21.06 | 21.11 | 21.07 | |
| 3 | 64QAM | 8 | 0 | 20.02 | 20.14 | 20.01 | 21 |
| 3 | 64QAM | 8 | 4 | 20.07 | 20.24 | 20.22 | |
| 3 | 64QAM | 8 | 7 | 20.02 | 20.15 | 20.11 | |
| 3 | 64QAM | 15 | 0 | 20.18 | 20.26 | 20.16 | |
| 3 | 256QAM | 1 | 0 | 17.85 | 17.93 | 17.88 | 19 |
| 3 | 256QAM | 1 | 8 | 17.95 | 17.95 | 17.95 | |
| 3 | 256QAM | 1 | 14 | 17.91 | 17.97 | 17.91 | |
| 3 | 256QAM | 8 | 0 | 17.97 | 18.02 | 18.02 | 19 |
| 3 | 256QAM | 8 | 4 | 18.12 | 18.17 | 18.08 | |
| 3 | 256QAM | 8 | 7 | 18.12 | 18.21 | 18.16 | |
| 3 | 256QAM | 15 | 0 | 18.20 | 18.28 | 18.26 | |
| Channel | | | | 18607 | 18900 | 19193 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1909.3 | |
| 1.4 | QPSK | 1 | 0 | 23.08 | 23.07 | 23.08 | 24 |
| 1.4 | QPSK | 1 | 3 | 22.99 | 23.08 | 23.00 | |
| 1.4 | QPSK | 1 | 5 | 23.03 | 23.07 | 22.96 | |
| 1.4 | QPSK | 3 | 0 | 23.05 | 23.16 | 23.12 | |
| 1.4 | QPSK | 3 | 1 | 23.07 | 23.04 | 23.06 | |
| 1.4 | QPSK | 3 | 3 | 23.02 | 23.05 | 22.96 | |
| 1.4 | QPSK | 6 | 0 | 22.06 | 22.14 | 22.07 | 23 |
| 1.4 | 16QAM | 1 | 0 | 22.08 | 22.18 | 22.10 | 23 |
| 1.4 | 16QAM | 1 | 3 | 22.11 | 22.12 | 22.18 | |
| 1.4 | 16QAM | 1 | 5 | 22.00 | 22.09 | 22.01 | |
| 1.4 | 16QAM | 3 | 0 | 22.15 | 22.17 | 22.07 | |
| 1.4 | 16QAM | 3 | 1 | 22.07 | 22.12 | 22.10 | |
| 1.4 | 16QAM | 3 | 3 | 21.98 | 22.03 | 22.04 | |



| | | | | | | | |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | 16QAM | 6 | 0 | 21.06 | 21.16 | 21.09 | 22 |
| 1.4 | 64QAM | 1 | 0 | 21.22 | 21.33 | 21.16 | 22 |
| 1.4 | 64QAM | 1 | 3 | 21.08 | 21.23 | 21.07 | |
| 1.4 | 64QAM | 1 | 5 | 21.02 | 21.14 | 21.09 | |
| 1.4 | 64QAM | 3 | 0 | 21.27 | 21.29 | 21.16 | |
| 1.4 | 64QAM | 3 | 1 | 21.16 | 21.22 | 21.09 | |
| 1.4 | 64QAM | 3 | 3 | 21.05 | 21.18 | 21.08 | |
| 1.4 | 64QAM | 6 | 0 | 20.08 | 20.10 | 20.02 | 21 |
| 1.4 | 256QAM | 1 | 0 | 17.83 | 17.91 | 17.88 | 19 |
| 1.4 | 256QAM | 1 | 3 | 17.90 | 17.95 | 17.86 | |
| 1.4 | 256QAM | 1 | 5 | 17.90 | 17.92 | 17.89 | |
| 1.4 | 256QAM | 3 | 0 | 17.78 | 17.88 | 17.88 | |
| 1.4 | 256QAM | 3 | 1 | 17.88 | 17.95 | 17.91 | |
| 1.4 | 256QAM | 3 | 3 | 17.85 | 17.91 | 17.89 | |
| 1.4 | 256QAM | 6 | 0 | 18.05 | 18.06 | 18.00 | 19 |

<LTE Band 2_Ant1_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 18700 | 18900 | 19100 | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | QPSK | 1 | 0 | 23.34 | 23.29 | 23.28 | 24 |
| 20 | QPSK | 1 | 49 | 23.24 | 23.26 | 23.24 | |
| 20 | QPSK | 1 | 99 | 23.27 | 23.27 | 23.22 | |
| 20 | QPSK | 50 | 0 | 22.21 | 22.26 | 22.19 | 23 |
| 20 | QPSK | 50 | 24 | 22.31 | 22.35 | 22.34 | |
| 20 | QPSK | 50 | 50 | 22.47 | 22.43 | 22.42 | |
| 20 | QPSK | 100 | 0 | 22.38 | 22.37 | 22.26 | 23 |
| 20 | 16QAM | 1 | 0 | 22.67 | 22.64 | 22.59 | |
| 20 | 16QAM | 1 | 49 | 22.61 | 22.57 | 22.53 | |
| 20 | 16QAM | 1 | 99 | 22.40 | 22.44 | 22.42 | 22 |
| 20 | 16QAM | 50 | 0 | 21.32 | 21.32 | 21.26 | |
| 20 | 16QAM | 50 | 24 | 21.39 | 21.39 | 21.37 | |
| 20 | 16QAM | 50 | 50 | 21.45 | 21.40 | 21.37 | 22 |
| 20 | 16QAM | 100 | 0 | 21.43 | 21.39 | 21.36 | |
| 20 | 64QAM | 1 | 0 | 21.50 | 21.46 | 21.39 | |
| 20 | 64QAM | 1 | 49 | 21.58 | 21.56 | 21.45 | |
| 20 | 64QAM | 1 | 99 | 21.57 | 21.55 | 21.50 | |
| 20 | 64QAM | 50 | 0 | 20.13 | 20.16 | 20.08 | 21 |
| 20 | 64QAM | 50 | 24 | 20.34 | 20.37 | 20.36 | |
| 20 | 64QAM | 50 | 50 | 20.36 | 20.34 | 20.24 | |
| 20 | 64QAM | 100 | 0 | 20.38 | 20.38 | 20.35 | |
| 20 | 256QAM | 1 | 0 | 18.06 | 18.29 | 18.12 | 19 |
| 20 | 256QAM | 1 | 49 | 18.00 | 18.20 | 18.01 | |
| 20 | 256QAM | 1 | 99 | 17.91 | 18.26 | 18.12 | |
| 20 | 256QAM | 50 | 0 | 18.03 | 18.04 | 18.08 | 19 |
| 20 | 256QAM | 50 | 24 | 17.92 | 18.01 | 17.94 | |
| 20 | 256QAM | 50 | 50 | 17.90 | 17.93 | 18.05 | |
| 20 | 256QAM | 100 | 0 | 17.85 | 18.01 | 17.96 | |
| Channel | | | | 18675 | 18900 | 19125 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | |
| 15 | QPSK | 1 | 0 | 23.25 | 23.27 | 23.25 | 24 |
| 15 | QPSK | 1 | 37 | 23.18 | 23.23 | 23.17 | |
| 15 | QPSK | 1 | 74 | 23.26 | 23.21 | 23.12 | |
| 15 | QPSK | 36 | 0 | 22.19 | 22.23 | 22.19 | 23 |
| 15 | QPSK | 36 | 20 | 22.27 | 22.29 | 22.28 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|-------|--------|----|
| 15 | QPSK | 36 | 39 | 22.43 | 22.41 | 22.38 | |
| 15 | QPSK | 75 | 0 | 22.32 | 22.31 | 22.22 | |
| 15 | 16QAM | 1 | 0 | 22.59 | 22.59 | 22.53 | |
| 15 | 16QAM | 1 | 37 | 22.52 | 22.57 | 22.44 | 23 |
| 15 | 16QAM | 1 | 74 | 22.40 | 22.35 | 22.41 | |
| 15 | 16QAM | 36 | 0 | 21.26 | 21.29 | 21.19 | |
| 15 | 16QAM | 36 | 20 | 21.31 | 21.33 | 21.28 | 22 |
| 15 | 16QAM | 36 | 39 | 21.42 | 21.40 | 21.35 | |
| 15 | 16QAM | 75 | 0 | 21.41 | 21.37 | 21.31 | |
| 15 | 64QAM | 1 | 0 | 21.41 | 21.42 | 21.38 | 22 |
| 15 | 64QAM | 1 | 37 | 21.54 | 21.47 | 21.38 | |
| 15 | 64QAM | 1 | 74 | 21.52 | 21.45 | 21.46 | |
| 15 | 64QAM | 36 | 0 | 20.05 | 20.08 | 20.07 | 21 |
| 15 | 64QAM | 36 | 20 | 20.34 | 20.30 | 20.27 | |
| 15 | 64QAM | 36 | 39 | 20.36 | 20.29 | 20.20 | |
| 15 | 64QAM | 75 | 0 | 20.28 | 20.28 | 20.27 | 19 |
| 15 | 256QAM | 1 | 0 | 17.98 | 18.21 | 18.09 | |
| 15 | 256QAM | 1 | 37 | 17.92 | 18.18 | 17.97 | |
| 15 | 256QAM | 1 | 74 | 17.86 | 18.20 | 18.04 | 19 |
| 15 | 256QAM | 36 | 0 | 17.99 | 17.98 | 18.02 | |
| 15 | 256QAM | 36 | 20 | 17.84 | 18.00 | 17.84 | |
| 15 | 256QAM | 36 | 39 | 17.88 | 17.90 | 18.00 | |
| 15 | 256QAM | 75 | 0 | 17.82 | 17.95 | 17.86 | |
| Channel | | | | 18650 | 18900 | 19150 | |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | |
| 10 | QPSK | 1 | 0 | 23.26 | 23.26 | 23.28 | 24 |
| 10 | QPSK | 1 | 25 | 23.17 | 23.22 | 23.21 | |
| 10 | QPSK | 1 | 49 | 23.21 | 23.18 | 23.14 | |
| 10 | QPSK | 25 | 0 | 22.13 | 22.22 | 22.13 | 23 |
| 10 | QPSK | 25 | 12 | 22.25 | 22.34 | 22.26 | |
| 10 | QPSK | 25 | 25 | 22.46 | 22.40 | 22.36 | |
| 10 | QPSK | 50 | 0 | 22.33 | 22.29 | 22.19 | 23 |
| 10 | 16QAM | 1 | 0 | 22.58 | 22.60 | 22.50 | |
| 10 | 16QAM | 1 | 25 | 22.51 | 22.51 | 22.48 | |
| 10 | 16QAM | 1 | 49 | 22.32 | 22.41 | 22.38 | 22 |
| 10 | 16QAM | 25 | 0 | 21.29 | 21.27 | 21.22 | |
| 10 | 16QAM | 25 | 12 | 21.34 | 21.29 | 21.35 | |
| 10 | 16QAM | 25 | 25 | 21.37 | 21.38 | 21.36 | 22 |
| 10 | 16QAM | 50 | 0 | 21.42 | 21.32 | 21.31 | |
| 10 | 64QAM | 1 | 0 | 21.41 | 21.44 | 21.33 | |
| 10 | 64QAM | 1 | 25 | 21.57 | 21.50 | 21.35 | 22 |
| 10 | 64QAM | 1 | 49 | 21.49 | 21.45 | 21.47 | |
| 10 | 64QAM | 25 | 0 | 20.13 | 20.07 | 20.07 | |
| 10 | 64QAM | 25 | 12 | 20.25 | 20.34 | 20.26 | 21 |
| 10 | 64QAM | 25 | 25 | 20.29 | 20.27 | 20.20 | |
| 10 | 64QAM | 50 | 0 | 20.29 | 20.29 | 20.33 | |
| 10 | 256QAM | 1 | 0 | 18.05 | 18.26 | 18.08 | 19 |
| 10 | 256QAM | 1 | 25 | 17.93 | 18.14 | 17.99 | |
| 10 | 256QAM | 1 | 49 | 17.81 | 18.16 | 18.06 | |
| 10 | 256QAM | 25 | 0 | 18.02 | 17.99 | 18.07 | 19 |
| 10 | 256QAM | 25 | 12 | 17.83 | 17.95 | 17.90 | |
| 10 | 256QAM | 25 | 25 | 17.89 | 17.91 | 18.04 | |
| 10 | 256QAM | 50 | 0 | 17.84 | 17.91 | 17.89 | |
| Channel | | | | 18625 | 18900 | 19175 | |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | QPSK | 1 | 0 | 23.33 | 23.23 | 23.26 | 24 |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|----|----|--------|-------|--------|----|---------------------|
| 5 | QPSK | 1 | 12 | 23.19 | 23.23 | 23.19 | | |
| 5 | QPSK | 1 | 24 | 23.18 | 23.17 | 23.21 | | |
| 5 | QPSK | 12 | 0 | 22.11 | 22.20 | 22.14 | | |
| 5 | QPSK | 12 | 7 | 22.21 | 22.26 | 22.32 | | |
| 5 | QPSK | 12 | 13 | 22.37 | 22.40 | 22.38 | | |
| 5 | QPSK | 25 | 0 | 22.29 | 22.31 | 22.17 | 23 | |
| 5 | 16QAM | 1 | 0 | 22.64 | 22.58 | 22.57 | | |
| 5 | 16QAM | 1 | 12 | 22.58 | 22.56 | 22.50 | | |
| 5 | 16QAM | 1 | 24 | 22.37 | 22.43 | 22.39 | | |
| 5 | 16QAM | 12 | 0 | 21.25 | 21.27 | 21.22 | | |
| 5 | 16QAM | 12 | 7 | 21.34 | 21.35 | 21.35 | 22 | |
| 5 | 16QAM | 12 | 13 | 21.40 | 21.37 | 21.37 | | |
| 5 | 16QAM | 25 | 0 | 21.35 | 21.34 | 21.32 | | |
| 5 | 64QAM | 1 | 0 | 21.49 | 21.39 | 21.39 | | |
| 5 | 64QAM | 1 | 12 | 21.52 | 21.48 | 21.45 | | |
| 5 | 64QAM | 1 | 24 | 21.57 | 21.55 | 21.46 | 22 | |
| 5 | 64QAM | 12 | 0 | 20.05 | 20.16 | 20.03 | | |
| 5 | 64QAM | 12 | 7 | 20.32 | 20.32 | 20.32 | | |
| 5 | 64QAM | 12 | 13 | 20.30 | 20.31 | 20.23 | | |
| 5 | 64QAM | 25 | 0 | 20.28 | 20.35 | 20.25 | | |
| 5 | 256QAM | 1 | 0 | 18.04 | 18.22 | 18.02 | 19 | |
| 5 | 256QAM | 1 | 12 | 17.92 | 18.10 | 17.96 | | |
| 5 | 256QAM | 1 | 24 | 17.87 | 18.20 | 18.07 | | |
| 5 | 256QAM | 12 | 0 | 18.03 | 18.01 | 18.02 | | |
| 5 | 256QAM | 12 | 7 | 17.83 | 18.01 | 17.84 | | |
| 5 | 256QAM | 12 | 13 | 17.83 | 17.83 | 17.95 | 19 | |
| 5 | 256QAM | 25 | 0 | 17.80 | 17.99 | 17.88 | | |
| Channel | | | | 18615 | 18900 | 19185 | | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1908.5 | | |
| 3 | QPSK | 1 | 0 | 23.32 | 23.27 | 23.24 | | 24 |
| 3 | QPSK | 1 | 8 | 23.16 | 23.17 | 23.23 | | |
| 3 | QPSK | 1 | 14 | 23.17 | 23.24 | 23.13 | | |
| 3 | QPSK | 8 | 0 | 22.14 | 22.25 | 22.12 | 23 | |
| 3 | QPSK | 8 | 4 | 22.26 | 22.34 | 22.30 | | |
| 3 | QPSK | 8 | 7 | 22.45 | 22.33 | 22.34 | | |
| 3 | QPSK | 15 | 0 | 22.33 | 22.33 | 22.23 | | |
| 3 | 16QAM | 1 | 0 | 22.64 | 22.57 | 22.50 | | |
| 3 | 16QAM | 1 | 8 | 22.57 | 22.56 | 22.50 | 23 | |
| 3 | 16QAM | 1 | 14 | 22.35 | 22.37 | 22.42 | | |
| 3 | 16QAM | 8 | 0 | 21.30 | 21.32 | 21.23 | | |
| 3 | 16QAM | 8 | 4 | 21.38 | 21.35 | 21.30 | 22 | |
| 3 | 16QAM | 8 | 7 | 21.42 | 21.31 | 21.28 | | |
| 3 | 16QAM | 15 | 0 | 21.42 | 21.39 | 21.30 | | |
| 3 | 64QAM | 1 | 0 | 21.42 | 21.42 | 21.31 | | |
| 3 | 64QAM | 1 | 8 | 21.55 | 21.46 | 21.42 | | |
| 3 | 64QAM | 1 | 14 | 21.48 | 21.47 | 21.42 | 22 | |
| 3 | 64QAM | 8 | 0 | 20.04 | 20.13 | 20.08 | | |
| 3 | 64QAM | 8 | 4 | 20.28 | 20.34 | 20.30 | | |
| 3 | 64QAM | 8 | 7 | 20.31 | 20.31 | 20.14 | | |
| 3 | 64QAM | 15 | 0 | 20.31 | 20.38 | 20.28 | | |
| 3 | 256QAM | 1 | 0 | 17.97 | 18.19 | 18.02 | 19 | |
| 3 | 256QAM | 1 | 8 | 17.91 | 18.10 | 17.95 | | |
| 3 | 256QAM | 1 | 14 | 17.82 | 18.25 | 18.04 | | |
| 3 | 256QAM | 8 | 0 | 17.93 | 17.97 | 17.99 | | |
| 3 | 256QAM | 8 | 4 | 17.91 | 18.00 | 17.92 | | |
| 3 | 256QAM | 8 | 7 | 17.85 | 17.84 | 17.97 | 19 | |



| 3 | 256QAM | 15 | 0 | 17.84 | 18.00 | 17.92 | |
|-----------------|--------|----|---|--------|-------|--------|---------------------|
| Channel | | | | 18607 | 18900 | 19193 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1909.3 | |
| 1.4 | QPSK | 1 | 0 | 23.26 | 23.26 | 23.25 | 24 |
| 1.4 | QPSK | 1 | 3 | 23.19 | 23.23 | 23.16 | |
| 1.4 | QPSK | 1 | 5 | 23.21 | 23.19 | 23.19 | |
| 1.4 | QPSK | 3 | 0 | 23.24 | 23.19 | 23.22 | |
| 1.4 | QPSK | 3 | 1 | 23.14 | 23.20 | 23.19 | |
| 1.4 | QPSK | 3 | 3 | 23.27 | 23.21 | 23.19 | |
| 1.4 | QPSK | 6 | 0 | 22.13 | 22.23 | 22.16 | 23 |
| 1.4 | 16QAM | 1 | 0 | 22.63 | 22.58 | 22.54 | 23 |
| 1.4 | 16QAM | 1 | 3 | 22.53 | 22.50 | 22.51 | |
| 1.4 | 16QAM | 1 | 5 | 22.40 | 22.44 | 22.37 | |
| 1.4 | 16QAM | 3 | 0 | 22.58 | 22.54 | 22.58 | |
| 1.4 | 16QAM | 3 | 1 | 22.58 | 22.53 | 22.46 | |
| 1.4 | 16QAM | 3 | 3 | 22.37 | 22.40 | 22.41 | |
| 1.4 | 16QAM | 6 | 0 | 21.32 | 21.22 | 21.24 | 22 |
| 1.4 | 64QAM | 1 | 0 | 21.46 | 21.42 | 21.32 | 22 |
| 1.4 | 64QAM | 1 | 3 | 21.57 | 21.48 | 21.44 | |
| 1.4 | 64QAM | 1 | 5 | 21.49 | 21.50 | 21.49 | |
| 1.4 | 64QAM | 3 | 0 | 21.44 | 21.39 | 21.29 | |
| 1.4 | 64QAM | 3 | 1 | 21.52 | 21.46 | 21.42 | |
| 1.4 | 64QAM | 3 | 3 | 21.47 | 21.54 | 21.46 | |
| 1.4 | 64QAM | 6 | 0 | 20.11 | 20.12 | 20.08 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.02 | 18.23 | 18.03 | 19 |
| 1.4 | 256QAM | 1 | 3 | 17.93 | 18.17 | 17.96 | |
| 1.4 | 256QAM | 1 | 5 | 17.87 | 18.24 | 18.08 | |
| 1.4 | 256QAM | 3 | 0 | 17.98 | 17.96 | 18.07 | |
| 1.4 | 256QAM | 3 | 1 | 17.87 | 18.01 | 17.85 | |
| 1.4 | 256QAM | 3 | 3 | 17.85 | 17.92 | 17.96 | |
| 1.4 | 256QAM | 6 | 0 | 17.77 | 18.00 | 17.89 | 19 |

<LTE Band 2_Ant1_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 18700 | 18900 | 19100 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | QPSK | 1 | 0 | 15.48 | 15.56 | 15.60 | 16.5 |
| 20 | QPSK | 1 | 49 | 15.37 | 15.42 | 15.51 | |
| 20 | QPSK | 1 | 99 | 15.35 | 15.44 | 15.48 | |
| 20 | QPSK | 50 | 0 | 15.42 | 15.43 | 15.52 | 16.5 |
| 20 | QPSK | 50 | 24 | 15.35 | 15.32 | 15.43 | |
| 20 | QPSK | 50 | 50 | 15.25 | 15.24 | 15.36 | |
| 20 | QPSK | 100 | 0 | 15.38 | 15.32 | 15.46 | 16.5 |
| 20 | 16QAM | 1 | 0 | 15.36 | 15.36 | 15.44 | |
| 20 | 16QAM | 1 | 49 | 15.25 | 15.21 | 15.31 | |
| 20 | 16QAM | 1 | 99 | 15.15 | 15.21 | 15.28 | 16.5 |
| 20 | 16QAM | 50 | 0 | 15.36 | 15.29 | 15.40 | |
| 20 | 16QAM | 50 | 24 | 15.20 | 15.15 | 15.29 | |
| 20 | 16QAM | 50 | 50 | 15.08 | 15.07 | 15.21 | 16.5 |
| 20 | 16QAM | 100 | 0 | 15.21 | 15.23 | 15.31 | |
| 20 | 64QAM | 1 | 0 | 15.23 | 15.31 | 15.36 | |
| 20 | 64QAM | 1 | 49 | 15.19 | 15.20 | 15.24 | 16.5 |
| 20 | 64QAM | 1 | 99 | 15.16 | 15.09 | 15.21 | |
| 20 | 64QAM | 50 | 0 | 15.23 | 15.20 | 15.30 | |
| 20 | 64QAM | 50 | 24 | 15.16 | 15.15 | 15.22 | 16.5 |



| | | | | | | | | |
|-----------------|--------|-----|----|--------|-------|--------|---------------------|---------------------|
| 20 | 64QAM | 50 | 50 | 15.06 | 15.14 | 15.18 | | |
| 20 | 64QAM | 100 | 0 | 15.16 | 15.16 | 15.24 | | |
| 20 | 256QAM | 1 | 0 | 15.18 | 15.12 | 15.26 | | |
| 20 | 256QAM | 1 | 49 | 15.14 | 15.15 | 15.20 | 16.5 | |
| 20 | 256QAM | 1 | 99 | 15.03 | 15.06 | 15.16 | | |
| 20 | 256QAM | 50 | 0 | 15.06 | 15.10 | 15.20 | | |
| 20 | 256QAM | 50 | 24 | 15.01 | 15.00 | 15.10 | 16.5 | |
| 20 | 256QAM | 50 | 50 | 15.00 | 15.00 | 15.03 | | |
| 20 | 256QAM | 100 | 0 | 15.00 | 15.03 | 15.11 | | |
| Channel | | | | 18675 | 18900 | 19125 | Tune-up limit (dBm) | |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | | |
| 15 | QPSK | 1 | 0 | 15.45 | 15.43 | 15.51 | 16.5 | |
| 15 | QPSK | 1 | 37 | 15.33 | 15.39 | 15.47 | | |
| 15 | QPSK | 1 | 74 | 15.24 | 15.38 | 15.45 | | |
| 15 | QPSK | 36 | 0 | 15.35 | 15.33 | 15.45 | 16.5 | |
| 15 | QPSK | 36 | 20 | 15.30 | 15.21 | 15.32 | | |
| 15 | QPSK | 36 | 39 | 15.15 | 15.15 | 15.29 | | |
| 15 | QPSK | 75 | 0 | 15.31 | 15.23 | 15.38 | 16.5 | |
| 15 | 16QAM | 1 | 0 | 15.29 | 15.29 | 15.32 | | |
| 15 | 16QAM | 1 | 37 | 15.15 | 15.18 | 15.28 | | |
| 15 | 16QAM | 1 | 74 | 15.12 | 15.18 | 15.17 | 16.5 | |
| 15 | 16QAM | 36 | 0 | 15.33 | 15.22 | 15.37 | | |
| 15 | 16QAM | 36 | 20 | 15.15 | 15.02 | 15.20 | | |
| 15 | 16QAM | 36 | 39 | 15.05 | 14.94 | 15.12 | 16.5 | |
| 15 | 16QAM | 75 | 0 | 15.09 | 15.16 | 15.28 | | |
| 15 | 64QAM | 1 | 0 | 15.10 | 15.28 | 15.28 | | |
| 15 | 64QAM | 1 | 37 | 15.07 | 15.15 | 15.17 | 16.5 | |
| 15 | 64QAM | 1 | 74 | 15.05 | 15.01 | 15.17 | | |
| 15 | 64QAM | 36 | 0 | 15.12 | 15.07 | 15.25 | | |
| 15 | 64QAM | 36 | 20 | 15.07 | 15.07 | 15.11 | 16.5 | |
| 15 | 64QAM | 36 | 39 | 14.93 | 15.10 | 15.08 | | |
| 15 | 64QAM | 75 | 0 | 15.13 | 15.09 | 15.17 | | |
| 15 | 256QAM | 1 | 0 | 15.07 | 15.01 | 15.23 | 16.5 | |
| 15 | 256QAM | 1 | 37 | 15.06 | 15.08 | 15.11 | | |
| 15 | 256QAM | 1 | 74 | 14.98 | 14.95 | 15.03 | | |
| 15 | 256QAM | 36 | 0 | 15.03 | 14.99 | 15.07 | 16.5 | |
| 15 | 256QAM | 36 | 20 | 14.88 | 14.92 | 14.97 | | |
| 15 | 256QAM | 36 | 39 | 14.88 | 14.96 | 14.90 | | |
| 15 | 256QAM | 75 | 0 | 14.94 | 14.97 | 15.07 | 16.5 | |
| Channel | | | | 18650 | 18900 | 19150 | | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | | |
| 10 | QPSK | 1 | 0 | 15.32 | 15.39 | 15.47 | 16.5 | |
| 10 | QPSK | 1 | 25 | 15.28 | 15.36 | 15.42 | | |
| 10 | QPSK | 1 | 49 | 15.15 | 15.29 | 15.39 | | |
| 10 | QPSK | 25 | 0 | 15.27 | 15.23 | 15.40 | 16.5 | |
| 10 | QPSK | 25 | 12 | 15.26 | 15.17 | 15.20 | | |
| 10 | QPSK | 25 | 25 | 15.09 | 15.10 | 15.20 | | |
| 10 | QPSK | 50 | 0 | 15.27 | 15.18 | 15.26 | 16.5 | |
| 10 | 16QAM | 1 | 0 | 15.21 | 15.20 | 15.19 | | |
| 10 | 16QAM | 1 | 25 | 15.11 | 15.12 | 15.23 | | |
| 10 | 16QAM | 1 | 49 | 15.09 | 15.07 | 15.09 | 16.5 | |
| 10 | 16QAM | 25 | 0 | 15.20 | 15.10 | 15.32 | | |
| 10 | 16QAM | 25 | 12 | 15.06 | 14.99 | 15.16 | | |
| 10 | 16QAM | 25 | 25 | 14.95 | 14.87 | 15.01 | 16.5 | |
| 10 | 16QAM | 50 | 0 | 15.03 | 15.04 | 15.22 | | |
| 10 | 64QAM | 1 | 0 | 14.97 | 15.15 | 15.15 | | 16.5 |



| | | | | | | | |
|-----------------|--------|----|----|--------|-------|--------|---------------------|
| 10 | 64QAM | 1 | 25 | 14.96 | 15.07 | 15.08 | |
| 10 | 64QAM | 1 | 49 | 14.97 | 14.88 | 15.13 | |
| 10 | 64QAM | 25 | 0 | 15.00 | 14.97 | 15.19 | |
| 10 | 64QAM | 25 | 12 | 15.02 | 15.02 | 14.98 | 16.5 |
| 10 | 64QAM | 25 | 25 | 14.83 | 15.06 | 14.96 | |
| 10 | 64QAM | 50 | 0 | 15.06 | 15.00 | 15.08 | |
| 10 | 256QAM | 1 | 0 | 14.99 | 14.95 | 15.17 | 16.5 |
| 10 | 256QAM | 1 | 25 | 14.94 | 14.96 | 15.00 | |
| 10 | 256QAM | 1 | 49 | 14.93 | 14.86 | 14.90 | |
| 10 | 256QAM | 25 | 0 | 14.95 | 14.88 | 15.03 | 16.5 |
| 10 | 256QAM | 25 | 12 | 14.75 | 14.89 | 14.90 | |
| 10 | 256QAM | 25 | 25 | 14.80 | 14.89 | 14.78 | |
| 10 | 256QAM | 50 | 0 | 14.82 | 14.91 | 14.96 | |
| Channel | | | | 18625 | 18900 | 19175 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | QPSK | 1 | 0 | 15.20 | 15.28 | 15.36 | 16.5 |
| 5 | QPSK | 1 | 12 | 15.20 | 15.32 | 15.32 | |
| 5 | QPSK | 1 | 24 | 15.04 | 15.24 | 15.31 | |
| 5 | QPSK | 12 | 0 | 15.14 | 15.10 | 15.30 | 16.5 |
| 5 | QPSK | 12 | 7 | 15.18 | 15.08 | 15.12 | |
| 5 | QPSK | 12 | 13 | 15.05 | 15.02 | 15.17 | |
| 5 | QPSK | 25 | 0 | 15.20 | 15.15 | 15.21 | |
| 5 | 16QAM | 1 | 0 | 15.08 | 15.13 | 15.10 | 16.5 |
| 5 | 16QAM | 1 | 12 | 14.98 | 15.08 | 15.18 | |
| 5 | 16QAM | 1 | 24 | 14.97 | 15.02 | 15.02 | |
| 5 | 16QAM | 12 | 0 | 15.11 | 15.03 | 15.23 | 16.5 |
| 5 | 16QAM | 12 | 7 | 15.03 | 14.88 | 15.09 | |
| 5 | 16QAM | 12 | 13 | 14.85 | 14.75 | 14.93 | |
| 5 | 16QAM | 25 | 0 | 15.00 | 14.96 | 15.11 | |
| 5 | 64QAM | 1 | 0 | 14.93 | 15.06 | 15.11 | 16.5 |
| 5 | 64QAM | 1 | 12 | 14.93 | 14.95 | 15.05 | |
| 5 | 64QAM | 1 | 24 | 14.91 | 14.82 | 15.05 | |
| 5 | 64QAM | 12 | 0 | 14.87 | 14.91 | 15.16 | 16.5 |
| 5 | 64QAM | 12 | 7 | 14.99 | 14.97 | 14.91 | |
| 5 | 64QAM | 12 | 13 | 14.79 | 14.94 | 14.85 | |
| 5 | 64QAM | 25 | 0 | 14.93 | 14.93 | 14.96 | |
| 5 | 256QAM | 1 | 0 | 14.92 | 14.83 | 15.06 | 16.5 |
| 5 | 256QAM | 1 | 12 | 14.86 | 14.92 | 14.92 | |
| 5 | 256QAM | 1 | 24 | 14.85 | 14.76 | 14.85 | |
| 5 | 256QAM | 12 | 0 | 14.85 | 14.79 | 14.93 | 16.5 |
| 5 | 256QAM | 12 | 7 | 14.67 | 14.84 | 14.86 | |
| 5 | 256QAM | 12 | 13 | 14.77 | 14.83 | 14.68 | |
| 5 | 256QAM | 25 | 0 | 14.79 | 14.79 | 14.91 | |
| Channel | | | | 18615 | 18900 | 19185 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1851.5 | 1880 | 1908.5 | |
| 3 | QPSK | 1 | 0 | 15.16 | 15.19 | 15.31 | 16.5 |
| 3 | QPSK | 1 | 8 | 15.11 | 15.29 | 15.21 | |
| 3 | QPSK | 1 | 14 | 14.99 | 15.17 | 15.24 | |
| 3 | QPSK | 8 | 0 | 15.07 | 15.03 | 15.22 | 16.5 |
| 3 | QPSK | 8 | 4 | 15.10 | 15.01 | 15.01 | |
| 3 | QPSK | 8 | 7 | 14.92 | 14.90 | 15.08 | |
| 3 | QPSK | 15 | 0 | 15.10 | 15.12 | 15.13 | |
| 3 | 16QAM | 1 | 0 | 14.96 | 15.05 | 15.04 | 16.5 |
| 3 | 16QAM | 1 | 8 | 14.95 | 14.97 | 15.05 | |
| 3 | 16QAM | 1 | 14 | 14.87 | 14.94 | 14.89 | |
| 3 | 16QAM | 8 | 0 | 15.01 | 15.00 | 15.20 | 16.5 |



| | | | | | | | |
|-----------------|--------|----|----|--------|-------|--------|------|
| 3 | 16QAM | 8 | 4 | 14.98 | 14.78 | 14.98 | |
| 3 | 16QAM | 8 | 7 | 14.78 | 14.66 | 14.89 | |
| 3 | 16QAM | 15 | 0 | 14.88 | 14.83 | 15.07 | |
| 3 | 64QAM | 1 | 0 | 14.85 | 14.99 | 15.00 | 16.5 |
| 3 | 64QAM | 1 | 8 | 14.89 | 14.83 | 14.99 | |
| 3 | 64QAM | 1 | 14 | 14.85 | 14.76 | 14.97 | |
| 3 | 64QAM | 8 | 0 | 14.84 | 14.80 | 15.05 | 16.5 |
| 3 | 64QAM | 8 | 4 | 14.90 | 14.93 | 14.87 | |
| 3 | 64QAM | 8 | 7 | 14.69 | 14.91 | 14.78 | |
| 3 | 64QAM | 15 | 0 | 14.89 | 14.84 | 14.92 | 16.5 |
| 3 | 256QAM | 1 | 0 | 14.85 | 14.74 | 14.99 | |
| 3 | 256QAM | 1 | 8 | 14.82 | 14.80 | 14.80 | |
| 3 | 256QAM | 1 | 14 | 14.73 | 14.65 | 14.74 | 16.5 |
| 3 | 256QAM | 8 | 0 | 14.75 | 14.72 | 14.85 | |
| 3 | 256QAM | 8 | 4 | 14.55 | 14.81 | 14.81 | |
| 3 | 256QAM | 8 | 7 | 14.73 | 14.75 | 14.61 | 16.5 |
| 3 | 256QAM | 15 | 0 | 14.74 | 14.71 | 14.88 | |
| Channel | | | | 18607 | 18900 | 19193 | |
| Frequency (MHz) | | | | 1850.7 | 1880 | 1909.3 | |
| 1.4 | QPSK | 1 | 0 | 15.05 | 15.07 | 15.26 | 16.5 |
| 1.4 | QPSK | 1 | 3 | 14.99 | 15.17 | 15.11 | |
| 1.4 | QPSK | 1 | 5 | 14.88 | 15.04 | 15.16 | |
| 1.4 | QPSK | 3 | 0 | 14.98 | 14.99 | 15.18 | |
| 1.4 | QPSK | 3 | 1 | 15.01 | 14.95 | 14.90 | |
| 1.4 | QPSK | 3 | 3 | 14.89 | 14.77 | 14.95 | |
| 1.4 | QPSK | 6 | 0 | 15.07 | 15.08 | 15.01 | 16.5 |
| 1.4 | 16QAM | 1 | 0 | 14.86 | 14.95 | 14.94 | 16.5 |
| 1.4 | 16QAM | 1 | 3 | 14.88 | 14.85 | 15.02 | |
| 1.4 | 16QAM | 1 | 5 | 14.80 | 14.87 | 14.83 | |
| 1.4 | 16QAM | 3 | 0 | 14.94 | 14.96 | 15.10 | |
| 1.4 | 16QAM | 3 | 1 | 14.89 | 14.72 | 14.95 | |
| 1.4 | 16QAM | 3 | 3 | 14.66 | 14.60 | 14.82 | |
| 1.4 | 16QAM | 6 | 0 | 14.78 | 14.76 | 14.94 | 16.5 |
| 1.4 | 64QAM | 1 | 0 | 14.80 | 14.96 | 14.89 | 16.5 |
| 1.4 | 64QAM | 1 | 3 | 14.78 | 14.78 | 14.90 | |
| 1.4 | 64QAM | 1 | 5 | 14.80 | 14.69 | 14.91 | |
| 1.4 | 64QAM | 3 | 0 | 14.77 | 14.67 | 14.96 | |
| 1.4 | 64QAM | 3 | 1 | 14.77 | 14.83 | 14.79 | |
| 1.4 | 64QAM | 3 | 3 | 14.62 | 14.81 | 14.72 | |
| 1.4 | 64QAM | 6 | 0 | 14.78 | 14.80 | 14.83 | 16.5 |
| 1.4 | 256QAM | 1 | 0 | 14.82 | 14.68 | 14.90 | 16.5 |
| 1.4 | 256QAM | 1 | 3 | 14.71 | 14.69 | 14.70 | |
| 1.4 | 256QAM | 1 | 5 | 14.62 | 14.58 | 14.68 | |
| 1.4 | 256QAM | 3 | 0 | 14.65 | 14.67 | 14.79 | |
| 1.4 | 256QAM | 3 | 1 | 14.45 | 14.68 | 14.71 | |
| 1.4 | 256QAM | 3 | 3 | 14.66 | 14.65 | 14.54 | |
| 1.4 | 256QAM | 6 | 0 | 14.69 | 14.60 | 14.80 | 16.5 |



<LTE Band 4_Ant0_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 20050 | 20175 | 20300 | |
| Frequency (MHz) | | | | 1720 | 1732.5 | 1745 | |
| 20 | QPSK | 1 | 0 | 23.19 | 23.41 | 23.10 | 24 |
| 20 | QPSK | 1 | 49 | 23.11 | 23.17 | 23.00 | |
| 20 | QPSK | 1 | 99 | 23.03 | 23.09 | 22.95 | |
| 20 | QPSK | 50 | 0 | 21.95 | 22.24 | 21.87 | 23 |
| 20 | QPSK | 50 | 24 | 21.90 | 22.20 | 21.88 | |
| 20 | QPSK | 50 | 50 | 21.84 | 22.16 | 21.77 | |
| 20 | QPSK | 100 | 0 | 21.92 | 22.23 | 21.86 | 23 |
| 20 | 16QAM | 1 | 0 | 21.88 | 22.20 | 21.82 | |
| 20 | 16QAM | 1 | 49 | 21.91 | 22.22 | 21.88 | |
| 20 | 16QAM | 1 | 99 | 21.79 | 22.03 | 21.71 | 22 |
| 20 | 16QAM | 50 | 0 | 21.02 | 21.32 | 20.99 | |
| 20 | 16QAM | 50 | 24 | 20.97 | 21.28 | 20.92 | |
| 20 | 16QAM | 50 | 50 | 21.03 | 21.25 | 20.94 | 22 |
| 20 | 16QAM | 100 | 0 | 20.99 | 21.21 | 20.87 | |
| 20 | 64QAM | 1 | 0 | 21.10 | 21.33 | 21.03 | |
| 20 | 64QAM | 1 | 49 | 21.03 | 21.27 | 20.93 | 22 |
| 20 | 64QAM | 1 | 99 | 20.95 | 21.21 | 20.88 | |
| 20 | 64QAM | 50 | 0 | 20.02 | 20.29 | 19.98 | |
| 20 | 64QAM | 50 | 24 | 19.86 | 20.18 | 19.82 | 21 |
| 20 | 64QAM | 50 | 50 | 19.94 | 20.21 | 19.85 | |
| 20 | 64QAM | 100 | 0 | 19.88 | 20.15 | 19.84 | |
| 20 | 256QAM | 1 | 0 | 17.85 | 18.12 | 17.74 | 19 |
| 20 | 256QAM | 1 | 49 | 17.76 | 18.07 | 17.71 | |
| 20 | 256QAM | 1 | 99 | 17.78 | 18.10 | 17.78 | |
| 20 | 256QAM | 50 | 0 | 18.00 | 18.27 | 17.90 | 19 |
| 20 | 256QAM | 50 | 24 | 17.96 | 18.26 | 17.89 | |
| 20 | 256QAM | 50 | 50 | 18.02 | 18.24 | 17.91 | |
| 20 | 256QAM | 100 | 0 | 17.98 | 18.25 | 17.91 | |
| Channel | | | | 20025 | 20175 | 20325 | |
| Frequency (MHz) | | | | 1717.5 | 1732.5 | 1747.5 | |
| 15 | QPSK | 1 | 0 | 23.15 | 23.28 | 23.04 | 24 |
| 15 | QPSK | 1 | 37 | 22.98 | 23.08 | 22.92 | |
| 15 | QPSK | 1 | 74 | 22.99 | 22.96 | 22.84 | |
| 15 | QPSK | 36 | 0 | 21.89 | 22.20 | 21.78 | 23 |
| 15 | QPSK | 36 | 20 | 21.77 | 22.16 | 21.75 | |
| 15 | QPSK | 36 | 39 | 21.75 | 22.09 | 21.73 | |
| 15 | QPSK | 75 | 0 | 21.86 | 22.14 | 21.73 | 23 |
| 15 | 16QAM | 1 | 0 | 21.77 | 22.14 | 21.77 | |
| 15 | 16QAM | 1 | 37 | 21.84 | 22.18 | 21.81 | |
| 15 | 16QAM | 1 | 74 | 21.73 | 21.99 | 21.63 | 22 |
| 15 | 16QAM | 36 | 0 | 20.97 | 21.23 | 20.87 | |
| 15 | 16QAM | 36 | 20 | 20.92 | 21.18 | 20.85 | |
| 15 | 16QAM | 36 | 39 | 20.94 | 21.21 | 20.90 | 22 |
| 15 | 16QAM | 75 | 0 | 20.86 | 21.08 | 20.81 | |
| 15 | 64QAM | 1 | 0 | 21.04 | 21.28 | 21.00 | |
| 15 | 64QAM | 1 | 37 | 20.92 | 21.24 | 20.89 | 22 |
| 15 | 64QAM | 1 | 74 | 20.82 | 21.11 | 20.77 | |
| 15 | 64QAM | 36 | 0 | 19.89 | 20.19 | 19.85 | |
| 15 | 64QAM | 36 | 20 | 19.81 | 20.11 | 19.79 | 21 |
| 15 | 64QAM | 36 | 39 | 19.87 | 20.10 | 19.81 | |
| 15 | 64QAM | 75 | 0 | 19.76 | 20.09 | 19.77 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 15 | 256QAM | 1 | 0 | 17.81 | 18.05 | 17.61 | 19 |
| 15 | 256QAM | 1 | 37 | 17.70 | 18.02 | 17.62 | |
| 15 | 256QAM | 1 | 74 | 17.72 | 18.00 | 17.68 | |
| 15 | 256QAM | 36 | 0 | 17.88 | 18.24 | 17.86 | 19 |
| 15 | 256QAM | 36 | 20 | 17.85 | 18.18 | 17.79 | |
| 15 | 256QAM | 36 | 39 | 17.97 | 18.13 | 17.87 | |
| 15 | 256QAM | 75 | 0 | 17.90 | 18.19 | 17.86 | |
| Channel | | | | 20000 | 20175 | 20350 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1715 | 1732.5 | 1750 | |
| 10 | QPSK | 1 | 0 | 23.02 | 23.20 | 22.94 | 24 |
| 10 | QPSK | 1 | 25 | 22.87 | 23.02 | 22.86 | |
| 10 | QPSK | 1 | 49 | 22.90 | 22.89 | 22.81 | |
| 10 | QPSK | 25 | 0 | 21.80 | 22.14 | 21.65 | 23 |
| 10 | QPSK | 25 | 12 | 21.74 | 22.03 | 21.70 | |
| 10 | QPSK | 25 | 25 | 21.63 | 22.02 | 21.62 | |
| 10 | QPSK | 50 | 0 | 21.82 | 22.03 | 21.60 | |
| 10 | 16QAM | 1 | 0 | 21.66 | 22.07 | 21.65 | 23 |
| 10 | 16QAM | 1 | 25 | 21.78 | 22.15 | 21.69 | |
| 10 | 16QAM | 1 | 49 | 21.64 | 21.91 | 21.59 | |
| 10 | 16QAM | 25 | 0 | 20.93 | 21.14 | 20.81 | 22 |
| 10 | 16QAM | 25 | 12 | 20.86 | 21.13 | 20.80 | |
| 10 | 16QAM | 25 | 25 | 20.82 | 21.09 | 20.82 | |
| 10 | 16QAM | 50 | 0 | 20.78 | 21.01 | 20.73 | |
| 10 | 64QAM | 1 | 0 | 20.98 | 21.20 | 20.96 | 22 |
| 10 | 64QAM | 1 | 25 | 20.82 | 21.11 | 20.86 | |
| 10 | 64QAM | 1 | 49 | 20.76 | 21.07 | 20.67 | |
| 10 | 64QAM | 25 | 0 | 19.82 | 20.12 | 19.72 | 21 |
| 10 | 64QAM | 25 | 12 | 19.75 | 19.99 | 19.68 | |
| 10 | 64QAM | 25 | 25 | 19.74 | 20.03 | 19.75 | |
| 10 | 64QAM | 50 | 0 | 19.65 | 19.98 | 19.70 | |
| 10 | 256QAM | 1 | 0 | 17.78 | 17.98 | 17.53 | 19 |
| 10 | 256QAM | 1 | 25 | 17.65 | 17.92 | 17.55 | |
| 10 | 256QAM | 1 | 49 | 17.63 | 17.95 | 17.61 | |
| 10 | 256QAM | 25 | 0 | 17.76 | 18.20 | 17.74 | 19 |
| 10 | 256QAM | 25 | 12 | 17.77 | 18.05 | 17.73 | |
| 10 | 256QAM | 25 | 25 | 17.93 | 18.05 | 17.80 | |
| 10 | 256QAM | 50 | 0 | 17.77 | 18.10 | 17.83 | |
| Channel | | | | 19975 | 20175 | 20375 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1712.5 | 1732.5 | 1752.5 | |
| 5 | QPSK | 1 | 0 | 22.89 | 23.17 | 22.90 | 24 |
| 5 | QPSK | 1 | 12 | 22.81 | 22.95 | 22.81 | |
| 5 | QPSK | 1 | 24 | 22.79 | 22.81 | 22.78 | |
| 5 | QPSK | 12 | 0 | 21.77 | 22.08 | 21.60 | 23 |
| 5 | QPSK | 12 | 7 | 21.67 | 21.91 | 21.58 | |
| 5 | QPSK | 12 | 13 | 21.57 | 21.91 | 21.57 | |
| 5 | QPSK | 25 | 0 | 21.79 | 21.98 | 21.47 | |
| 5 | 16QAM | 1 | 0 | 21.55 | 21.99 | 21.57 | 23 |
| 5 | 16QAM | 1 | 12 | 21.74 | 22.09 | 21.60 | |
| 5 | 16QAM | 1 | 24 | 21.53 | 21.80 | 21.48 | |
| 5 | 16QAM | 12 | 0 | 20.85 | 21.06 | 20.74 | 22 |
| 5 | 16QAM | 12 | 7 | 20.73 | 21.01 | 20.74 | |
| 5 | 16QAM | 12 | 13 | 20.74 | 20.96 | 20.75 | |
| 5 | 16QAM | 25 | 0 | 20.67 | 20.94 | 20.62 | |
| 5 | 64QAM | 1 | 0 | 20.86 | 21.17 | 20.83 | 22 |
| 5 | 64QAM | 1 | 12 | 20.74 | 21.07 | 20.80 | |
| 5 | 64QAM | 1 | 24 | 20.64 | 20.98 | 20.57 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 5 | 64QAM | 12 | 0 | 19.73 | 20.08 | 19.59 | 21 |
| 5 | 64QAM | 12 | 7 | 19.70 | 19.96 | 19.64 | |
| 5 | 64QAM | 12 | 13 | 19.65 | 19.98 | 19.63 | |
| 5 | 64QAM | 25 | 0 | 19.54 | 19.91 | 19.58 | |
| 5 | 256QAM | 1 | 0 | 17.67 | 17.92 | 17.44 | 19 |
| 5 | 256QAM | 1 | 12 | 17.54 | 17.88 | 17.45 | |
| 5 | 256QAM | 1 | 24 | 17.56 | 17.83 | 17.56 | |
| 5 | 256QAM | 12 | 0 | 17.67 | 18.08 | 17.69 | 19 |
| 5 | 256QAM | 12 | 7 | 17.66 | 18.00 | 17.70 | |
| 5 | 256QAM | 12 | 13 | 17.81 | 18.02 | 17.67 | |
| 5 | 256QAM | 25 | 0 | 17.67 | 17.97 | 17.71 | |
| Channel | | | | 19965 | 20175 | 20385 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1711.5 | 1732.5 | 1753.5 | |
| 3 | QPSK | 1 | 0 | 22.82 | 23.08 | 22.81 | 24 |
| 3 | QPSK | 1 | 8 | 22.75 | 22.92 | 22.78 | |
| 3 | QPSK | 1 | 14 | 22.74 | 22.76 | 22.72 | |
| 3 | QPSK | 8 | 0 | 21.64 | 21.96 | 21.50 | 23 |
| 3 | QPSK | 8 | 4 | 21.56 | 21.84 | 21.53 | |
| 3 | QPSK | 8 | 7 | 21.48 | 21.84 | 21.45 | |
| 3 | QPSK | 15 | 0 | 21.70 | 21.95 | 21.43 | |
| 3 | 16QAM | 1 | 0 | 21.46 | 21.92 | 21.50 | 23 |
| 3 | 16QAM | 1 | 8 | 21.68 | 22.00 | 21.48 | |
| 3 | 16QAM | 1 | 14 | 21.45 | 21.67 | 21.45 | |
| 3 | 16QAM | 8 | 0 | 20.74 | 21.02 | 20.70 | 22 |
| 3 | 16QAM | 8 | 4 | 20.70 | 20.95 | 20.67 | |
| 3 | 16QAM | 8 | 7 | 20.69 | 20.88 | 20.62 | |
| 3 | 16QAM | 15 | 0 | 20.64 | 20.84 | 20.57 | |
| 3 | 64QAM | 1 | 0 | 20.77 | 21.14 | 20.80 | 22 |
| 3 | 64QAM | 1 | 8 | 20.70 | 21.02 | 20.75 | |
| 3 | 64QAM | 1 | 14 | 20.57 | 20.88 | 20.53 | |
| 3 | 64QAM | 8 | 0 | 19.62 | 19.99 | 19.53 | 21 |
| 3 | 64QAM | 8 | 4 | 19.64 | 19.91 | 19.55 | |
| 3 | 64QAM | 8 | 7 | 19.59 | 19.85 | 19.53 | |
| 3 | 64QAM | 15 | 0 | 19.41 | 19.85 | 19.55 | |
| 3 | 256QAM | 1 | 0 | 17.58 | 17.79 | 17.32 | 19 |
| 3 | 256QAM | 1 | 8 | 17.50 | 17.83 | 17.41 | |
| 3 | 256QAM | 1 | 14 | 17.50 | 17.77 | 17.47 | |
| 3 | 256QAM | 8 | 0 | 17.63 | 18.03 | 17.64 | 19 |
| 3 | 256QAM | 8 | 4 | 17.55 | 17.96 | 17.63 | |
| 3 | 256QAM | 8 | 7 | 17.74 | 17.89 | 17.62 | |
| 3 | 256QAM | 15 | 0 | 17.61 | 17.93 | 17.67 | |
| Channel | | | | 19957 | 20175 | 20393 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1710.7 | 1732.5 | 1754.3 | |
| 1.4 | QPSK | 1 | 0 | 22.97 | 23.01 | 23.03 | 24 |
| 1.4 | QPSK | 1 | 3 | 22.88 | 22.96 | 22.96 | |
| 1.4 | QPSK | 1 | 5 | 22.92 | 22.96 | 22.93 | |
| 1.4 | QPSK | 3 | 0 | 22.98 | 23.10 | 23.06 | |
| 1.4 | QPSK | 3 | 1 | 22.98 | 23.00 | 22.96 | |
| 1.4 | QPSK | 3 | 3 | 22.96 | 22.93 | 22.84 | |
| 1.4 | QPSK | 6 | 0 | 21.93 | 22.05 | 21.97 | 23 |
| 1.4 | 16QAM | 1 | 0 | 21.95 | 22.13 | 22.05 | 23 |
| 1.4 | 16QAM | 1 | 3 | 22.06 | 21.99 | 22.12 | |
| 1.4 | 16QAM | 1 | 5 | 21.89 | 22.00 | 21.96 | |
| 1.4 | 16QAM | 3 | 0 | 22.10 | 22.09 | 22.02 | |
| 1.4 | 16QAM | 3 | 1 | 21.99 | 22.03 | 22.04 | |
| 1.4 | 16QAM | 3 | 3 | 21.94 | 21.92 | 21.92 | |



| | | | | | | | |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | 16QAM | 6 | 0 | 20.97 | 21.12 | 21.03 | 22 |
| 1.4 | 64QAM | 1 | 0 | 21.16 | 21.21 | 21.12 | 22 |
| 1.4 | 64QAM | 1 | 3 | 20.95 | 21.11 | 20.95 | |
| 1.4 | 64QAM | 1 | 5 | 20.89 | 21.01 | 20.98 | |
| 1.4 | 64QAM | 3 | 0 | 21.24 | 21.16 | 21.13 | |
| 1.4 | 64QAM | 3 | 1 | 21.07 | 21.14 | 21.00 | |
| 1.4 | 64QAM | 3 | 3 | 20.98 | 21.05 | 20.96 | |
| 1.4 | 64QAM | 6 | 0 | 20.00 | 20.00 | 19.91 | 21 |
| 1.4 | 256QAM | 1 | 0 | 17.77 | 17.85 | 17.82 | 19 |
| 1.4 | 256QAM | 1 | 3 | 17.78 | 17.84 | 17.81 | |
| 1.4 | 256QAM | 1 | 5 | 17.82 | 17.89 | 17.83 | |
| 1.4 | 256QAM | 3 | 0 | 17.65 | 17.83 | 17.83 | |
| 1.4 | 256QAM | 3 | 1 | 17.85 | 17.83 | 17.82 | |
| 1.4 | 256QAM | 3 | 3 | 17.76 | 17.81 | 17.80 | |
| 1.4 | 256QAM | 6 | 0 | 17.96 | 18.01 | 17.97 | 19 |

<LTE Band 4_Ant1_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 20050 | 20175 | 20300 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1720 | 1732.5 | 1745 | |
| 20 | QPSK | 1 | 0 | 23.34 | 23.29 | 23.27 | 24 |
| 20 | QPSK | 1 | 49 | 23.29 | 23.33 | 23.24 | |
| 20 | QPSK | 1 | 99 | 23.30 | 23.28 | 23.17 | |
| 20 | QPSK | 50 | 0 | 22.34 | 22.34 | 22.31 | 23 |
| 20 | QPSK | 50 | 24 | 22.38 | 22.35 | 22.31 | |
| 20 | QPSK | 50 | 50 | 22.26 | 22.27 | 22.18 | |
| 20 | QPSK | 100 | 0 | 22.37 | 22.32 | 22.28 | 23 |
| 20 | 16QAM | 1 | 0 | 22.70 | 22.70 | 22.63 | |
| 20 | 16QAM | 1 | 49 | 22.60 | 22.60 | 22.54 | |
| 20 | 16QAM | 1 | 99 | 22.55 | 22.51 | 22.48 | 22 |
| 20 | 16QAM | 50 | 0 | 21.31 | 21.35 | 21.32 | |
| 20 | 16QAM | 50 | 24 | 21.39 | 21.37 | 21.30 | |
| 20 | 16QAM | 50 | 50 | 21.36 | 21.32 | 21.26 | 22 |
| 20 | 16QAM | 100 | 0 | 21.37 | 21.35 | 21.31 | |
| 20 | 64QAM | 1 | 0 | 21.69 | 21.64 | 21.62 | |
| 20 | 64QAM | 1 | 49 | 21.53 | 21.53 | 21.47 | |
| 20 | 64QAM | 1 | 99 | 21.41 | 21.38 | 21.26 | |
| 20 | 64QAM | 50 | 0 | 20.44 | 20.40 | 20.29 | 21 |
| 20 | 64QAM | 50 | 24 | 20.34 | 20.36 | 20.25 | |
| 20 | 64QAM | 50 | 50 | 20.36 | 20.32 | 20.23 | |
| 20 | 64QAM | 100 | 0 | 20.36 | 20.35 | 20.26 | 19 |
| 20 | 256QAM | 1 | 0 | 18.13 | 18.28 | 18.27 | |
| 20 | 256QAM | 1 | 49 | 18.03 | 18.24 | 18.18 | |
| 20 | 256QAM | 1 | 99 | 18.10 | 18.12 | 18.15 | 19 |
| 20 | 256QAM | 50 | 0 | 18.02 | 18.04 | 18.04 | |
| 20 | 256QAM | 50 | 24 | 17.83 | 17.93 | 17.95 | |
| 20 | 256QAM | 50 | 50 | 18.01 | 17.89 | 17.86 | 19 |
| 20 | 256QAM | 100 | 0 | 18.00 | 17.97 | 17.91 | |
| Channel | | | | 20025 | 20175 | 20325 | |
| Frequency (MHz) | | | | 1717.5 | 1732.5 | 1747.5 | |
| 15 | QPSK | 1 | 0 | 23.28 | 23.26 | 23.19 | 24 |
| 15 | QPSK | 1 | 37 | 23.20 | 23.32 | 23.22 | |
| 15 | QPSK | 1 | 74 | 23.25 | 23.22 | 23.08 | |
| 15 | QPSK | 36 | 0 | 22.28 | 22.32 | 22.29 | 23 |
| 15 | QPSK | 36 | 20 | 22.28 | 22.31 | 22.28 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|----|---------------------|
| 15 | QPSK | 36 | 39 | 22.25 | 22.22 | 22.10 | | |
| 15 | QPSK | 75 | 0 | 22.35 | 22.23 | 22.25 | | |
| 15 | 16QAM | 1 | 0 | 22.60 | 22.62 | 22.59 | | |
| 15 | 16QAM | 1 | 37 | 22.53 | 22.57 | 22.44 | 23 | |
| 15 | 16QAM | 1 | 74 | 22.47 | 22.48 | 22.38 | | |
| 15 | 16QAM | 36 | 0 | 21.24 | 21.35 | 21.25 | | |
| 15 | 16QAM | 36 | 20 | 21.37 | 21.27 | 21.23 | 22 | |
| 15 | 16QAM | 36 | 39 | 21.35 | 21.24 | 21.19 | | |
| 15 | 16QAM | 75 | 0 | 21.29 | 21.31 | 21.23 | | |
| 15 | 64QAM | 1 | 0 | 21.60 | 21.63 | 21.52 | 22 | |
| 15 | 64QAM | 1 | 37 | 21.43 | 21.49 | 21.42 | | |
| 15 | 64QAM | 1 | 74 | 21.32 | 21.31 | 21.17 | | |
| 15 | 64QAM | 36 | 0 | 20.42 | 20.34 | 20.20 | 21 | |
| 15 | 64QAM | 36 | 20 | 20.31 | 20.28 | 20.15 | | |
| 15 | 64QAM | 36 | 39 | 20.30 | 20.31 | 20.15 | | |
| 15 | 64QAM | 75 | 0 | 20.35 | 20.34 | 20.25 | 19 | |
| 15 | 256QAM | 1 | 0 | 18.04 | 18.26 | 18.23 | | |
| 15 | 256QAM | 1 | 37 | 17.98 | 18.23 | 18.10 | | |
| 15 | 256QAM | 1 | 74 | 18.09 | 18.07 | 18.13 | 19 | |
| 15 | 256QAM | 36 | 0 | 17.95 | 17.97 | 18.04 | | |
| 15 | 256QAM | 36 | 20 | 17.76 | 17.92 | 17.92 | | |
| 15 | 256QAM | 36 | 39 | 17.95 | 17.86 | 17.80 | | |
| 15 | 256QAM | 75 | 0 | 17.91 | 17.87 | 17.86 | | |
| Channel | | | | 20000 | 20175 | 20350 | | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1715 | 1732.5 | 1750 | | |
| 10 | QPSK | 1 | 0 | 23.31 | 23.25 | 23.24 | 24 | |
| 10 | QPSK | 1 | 25 | 23.27 | 23.28 | 23.23 | | |
| 10 | QPSK | 1 | 49 | 23.28 | 23.22 | 23.10 | | |
| 10 | QPSK | 25 | 0 | 22.30 | 22.31 | 22.22 | 23 | |
| 10 | QPSK | 25 | 12 | 22.26 | 22.26 | 22.27 | | |
| 10 | QPSK | 25 | 25 | 22.24 | 22.19 | 22.14 | | |
| 10 | QPSK | 50 | 0 | 22.37 | 22.27 | 22.23 | 23 | |
| 10 | 16QAM | 1 | 0 | 22.70 | 22.65 | 22.54 | | |
| 10 | 16QAM | 1 | 25 | 22.52 | 22.50 | 22.45 | | |
| 10 | 16QAM | 1 | 49 | 22.52 | 22.45 | 22.47 | 22 | |
| 10 | 16QAM | 25 | 0 | 21.23 | 21.29 | 21.25 | | |
| 10 | 16QAM | 25 | 12 | 21.39 | 21.33 | 21.28 | | |
| 10 | 16QAM | 25 | 25 | 21.33 | 21.32 | 21.19 | 22 | |
| 10 | 16QAM | 50 | 0 | 21.28 | 21.31 | 21.29 | | |
| 10 | 64QAM | 1 | 0 | 21.64 | 21.58 | 21.52 | | |
| 10 | 64QAM | 1 | 25 | 21.49 | 21.52 | 21.40 | 22 | |
| 10 | 64QAM | 1 | 49 | 21.31 | 21.34 | 21.20 | | |
| 10 | 64QAM | 25 | 0 | 20.43 | 20.31 | 20.19 | | |
| 10 | 64QAM | 25 | 12 | 20.31 | 20.26 | 20.21 | 21 | |
| 10 | 64QAM | 25 | 25 | 20.33 | 20.23 | 20.21 | | |
| 10 | 64QAM | 50 | 0 | 20.27 | 20.31 | 20.17 | | |
| 10 | 256QAM | 1 | 0 | 18.08 | 18.24 | 18.18 | 19 | |
| 10 | 256QAM | 1 | 25 | 18.02 | 18.16 | 18.11 | | |
| 10 | 256QAM | 1 | 49 | 18.02 | 18.11 | 18.14 | | |
| 10 | 256QAM | 25 | 0 | 18.02 | 17.95 | 17.98 | 19 | |
| 10 | 256QAM | 25 | 12 | 17.78 | 17.87 | 17.92 | | |
| 10 | 256QAM | 25 | 25 | 17.97 | 17.80 | 17.79 | | |
| 10 | 256QAM | 50 | 0 | 17.97 | 17.95 | 17.87 | | |
| Channel | | | | 19975 | 20175 | 20375 | | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1712.5 | 1732.5 | 1752.5 | | |
| 5 | QPSK | 1 | 0 | 23.33 | 23.26 | 23.27 | 24 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 5 | QPSK | 1 | 12 | 23.21 | 23.25 | 23.17 | |
| 5 | QPSK | 1 | 24 | 23.26 | 23.25 | 23.09 | |
| 5 | QPSK | 12 | 0 | 22.34 | 22.33 | 22.29 | |
| 5 | QPSK | 12 | 7 | 22.34 | 22.31 | 22.24 | |
| 5 | QPSK | 12 | 13 | 22.24 | 22.19 | 22.11 | |
| 5 | QPSK | 25 | 0 | 22.31 | 22.22 | 22.18 | 23 |
| 5 | 16QAM | 1 | 0 | 22.67 | 22.64 | 22.58 | |
| 5 | 16QAM | 1 | 12 | 22.56 | 22.59 | 22.46 | |
| 5 | 16QAM | 1 | 24 | 22.53 | 22.46 | 22.44 | |
| 5 | 16QAM | 12 | 0 | 21.25 | 21.27 | 21.30 | 23 |
| 5 | 16QAM | 12 | 7 | 21.30 | 21.37 | 21.25 | |
| 5 | 16QAM | 12 | 13 | 21.29 | 21.24 | 21.21 | |
| 5 | 16QAM | 25 | 0 | 21.37 | 21.35 | 21.22 | |
| 5 | 16QAM | 12 | 0 | 21.25 | 21.27 | 21.30 | 22 |
| 5 | 16QAM | 12 | 7 | 21.30 | 21.37 | 21.25 | |
| 5 | 16QAM | 12 | 13 | 21.29 | 21.24 | 21.21 | |
| 5 | 16QAM | 25 | 0 | 21.37 | 21.35 | 21.22 | |
| 5 | 64QAM | 1 | 0 | 21.60 | 21.62 | 21.62 | 22 |
| 5 | 64QAM | 1 | 12 | 21.48 | 21.43 | 21.47 | |
| 5 | 64QAM | 1 | 24 | 21.38 | 21.33 | 21.26 | |
| 5 | 64QAM | 12 | 0 | 20.37 | 20.39 | 20.24 | |
| 5 | 64QAM | 12 | 7 | 20.29 | 20.33 | 20.18 | 21 |
| 5 | 64QAM | 12 | 13 | 20.31 | 20.28 | 20.16 | |
| 5 | 64QAM | 25 | 0 | 20.27 | 20.29 | 20.25 | |
| 5 | 64QAM | 12 | 0 | 20.37 | 20.39 | 20.24 | |
| 5 | 256QAM | 1 | 0 | 18.05 | 18.27 | 18.22 | 19 |
| 5 | 256QAM | 1 | 12 | 17.97 | 18.18 | 18.13 | |
| 5 | 256QAM | 1 | 24 | 18.07 | 18.07 | 18.05 | |
| 5 | 256QAM | 12 | 0 | 17.94 | 18.00 | 17.99 | |
| 5 | 256QAM | 12 | 7 | 17.76 | 17.88 | 17.85 | 19 |
| 5 | 256QAM | 12 | 13 | 17.92 | 17.88 | 17.78 | |
| 5 | 256QAM | 25 | 0 | 17.97 | 17.97 | 17.90 | |
| 5 | 256QAM | 12 | 0 | 17.94 | 18.00 | 17.99 | |
| Channel | | | | 19965 | 20175 | 20385 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1711.5 | 1732.5 | 1753.5 | |
| 3 | QPSK | 1 | 0 | 23.26 | 23.19 | 23.27 | 24 |
| 3 | QPSK | 1 | 8 | 23.29 | 23.26 | 23.22 | |
| 3 | QPSK | 1 | 14 | 23.23 | 23.23 | 23.13 | |
| 3 | QPSK | 8 | 0 | 22.32 | 22.33 | 22.22 | 23 |
| 3 | QPSK | 8 | 4 | 22.29 | 22.33 | 22.26 | |
| 3 | QPSK | 8 | 7 | 22.18 | 22.17 | 22.13 | |
| 3 | QPSK | 15 | 0 | 22.34 | 22.29 | 22.18 | |
| 3 | 16QAM | 1 | 0 | 22.70 | 22.66 | 22.58 | 23 |
| 3 | 16QAM | 1 | 8 | 22.59 | 22.52 | 22.50 | |
| 3 | 16QAM | 1 | 14 | 22.52 | 22.50 | 22.46 | |
| 3 | 16QAM | 8 | 0 | 21.24 | 21.32 | 21.22 | 22 |
| 3 | 16QAM | 8 | 4 | 21.30 | 21.32 | 21.28 | |
| 3 | 16QAM | 8 | 7 | 21.29 | 21.30 | 21.24 | |
| 3 | 16QAM | 15 | 0 | 21.29 | 21.33 | 21.24 | |
| 3 | 64QAM | 1 | 0 | 21.65 | 21.63 | 21.53 | |
| 3 | 64QAM | 1 | 8 | 21.52 | 21.47 | 21.42 | 22 |
| 3 | 64QAM | 1 | 14 | 21.35 | 21.35 | 21.16 | |
| 3 | 64QAM | 8 | 0 | 20.39 | 20.40 | 20.27 | |
| 3 | 64QAM | 8 | 4 | 20.32 | 20.34 | 20.21 | 21 |
| 3 | 64QAM | 8 | 7 | 20.31 | 20.29 | 20.21 | |
| 3 | 64QAM | 15 | 0 | 20.31 | 20.34 | 20.22 | |
| 3 | 256QAM | 1 | 0 | 18.13 | 18.27 | 18.19 | |
| 3 | 256QAM | 1 | 8 | 17.98 | 18.24 | 18.10 | 19 |
| 3 | 256QAM | 1 | 14 | 18.08 | 18.11 | 18.06 | |
| 3 | 256QAM | 8 | 0 | 17.98 | 18.00 | 18.01 | |
| 3 | 256QAM | 8 | 4 | 17.79 | 17.84 | 17.93 | 19 |
| 3 | 256QAM | 8 | 7 | 17.96 | 17.84 | 17.81 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| 3 | 256QAM | 15 | 0 | 17.99 | 17.90 | 17.83 | |
|-----------------|--------|----|---|--------|--------|--------|---------------------|
| Channel | | | | 19957 | 20175 | 20393 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1710.7 | 1732.5 | 1754.3 | |
| 1.4 | QPSK | 1 | 0 | 23.25 | 23.23 | 23.26 | 24 |
| 1.4 | QPSK | 1 | 3 | 23.28 | 23.23 | 23.14 | |
| 1.4 | QPSK | 1 | 5 | 23.24 | 23.26 | 23.10 | |
| 1.4 | QPSK | 3 | 0 | 23.30 | 23.28 | 23.23 | |
| 1.4 | QPSK | 3 | 1 | 23.25 | 23.33 | 23.14 | |
| 1.4 | QPSK | 3 | 3 | 23.27 | 23.18 | 23.08 | |
| 1.4 | QPSK | 6 | 0 | 22.29 | 22.24 | 22.24 | 23 |
| 1.4 | 16QAM | 1 | 0 | 22.69 | 22.70 | 22.55 | 23 |
| 1.4 | 16QAM | 1 | 3 | 22.60 | 22.55 | 22.49 | |
| 1.4 | 16QAM | 1 | 5 | 22.49 | 22.50 | 22.41 | |
| 1.4 | 16QAM | 3 | 0 | 22.65 | 22.65 | 22.62 | |
| 1.4 | 16QAM | 3 | 1 | 22.50 | 22.52 | 22.48 | |
| 1.4 | 16QAM | 3 | 3 | 22.50 | 22.48 | 22.45 | |
| 1.4 | 16QAM | 6 | 0 | 21.26 | 21.25 | 21.23 | 22 |
| 1.4 | 64QAM | 1 | 0 | 21.62 | 21.55 | 21.54 | 22 |
| 1.4 | 64QAM | 1 | 3 | 21.47 | 21.51 | 21.41 | |
| 1.4 | 64QAM | 1 | 5 | 21.38 | 21.29 | 21.23 | |
| 1.4 | 64QAM | 3 | 0 | 21.63 | 21.55 | 21.56 | |
| 1.4 | 64QAM | 3 | 1 | 21.48 | 21.44 | 21.41 | |
| 1.4 | 64QAM | 3 | 3 | 21.38 | 21.34 | 21.18 | |
| 1.4 | 64QAM | 6 | 0 | 20.38 | 20.33 | 20.21 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.03 | 18.20 | 18.21 | 19 |
| 1.4 | 256QAM | 1 | 3 | 17.96 | 18.17 | 18.18 | |
| 1.4 | 256QAM | 1 | 5 | 18.10 | 18.09 | 18.05 | |
| 1.4 | 256QAM | 3 | 0 | 18.00 | 18.00 | 18.04 | |
| 1.4 | 256QAM | 3 | 1 | 17.74 | 17.90 | 17.87 | |
| 1.4 | 256QAM | 3 | 3 | 18.00 | 17.85 | 17.86 | |
| 1.4 | 256QAM | 6 | 0 | 18.00 | 17.97 | 17.90 | 19 |



<LTE Band 5_Ant0_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 20450 | 20525 | 20600 | |
| Frequency (MHz) | | | | 829 | 836.5 | 844 | |
| 10 | QPSK | 1 | 0 | 23.50 | 23.49 | 23.67 | 24 |
| 10 | QPSK | 1 | 25 | 23.60 | 23.62 | 23.63 | |
| 10 | QPSK | 1 | 49 | 23.65 | 23.64 | 23.65 | |
| 10 | QPSK | 25 | 0 | 22.55 | 22.62 | 22.79 | 23 |
| 10 | QPSK | 25 | 12 | 22.62 | 22.67 | 22.78 | |
| 10 | QPSK | 25 | 25 | 22.69 | 22.75 | 22.87 | |
| 10 | QPSK | 50 | 0 | 22.59 | 22.64 | 22.77 | 23 |
| 10 | 16QAM | 1 | 0 | 22.84 | 22.85 | 22.96 | |
| 10 | 16QAM | 1 | 25 | 22.98 | 23.00 | 22.97 | |
| 10 | 16QAM | 1 | 49 | 22.96 | 22.97 | 22.95 | 22 |
| 10 | 16QAM | 25 | 0 | 21.62 | 21.61 | 21.78 | |
| 10 | 16QAM | 25 | 12 | 21.68 | 21.70 | 21.88 | |
| 10 | 16QAM | 25 | 25 | 21.75 | 21.75 | 21.92 | 22 |
| 10 | 16QAM | 50 | 0 | 21.62 | 21.64 | 21.76 | |
| 10 | 64QAM | 1 | 0 | 21.68 | 21.76 | 21.86 | |
| 10 | 64QAM | 1 | 25 | 21.95 | 21.97 | 21.96 | 22 |
| 10 | 64QAM | 1 | 49 | 21.88 | 21.96 | 21.95 | |
| 10 | 64QAM | 25 | 0 | 20.71 | 20.72 | 20.81 | |
| 10 | 64QAM | 25 | 12 | 20.72 | 20.75 | 20.93 | 21 |
| 10 | 64QAM | 25 | 25 | 20.86 | 20.85 | 20.95 | |
| 10 | 64QAM | 50 | 0 | 20.71 | 20.75 | 20.84 | |
| 10 | 256QAM | 1 | 0 | 18.82 | 18.80 | 18.96 | 19 |
| 10 | 256QAM | 1 | 25 | 18.63 | 18.65 | 18.77 | |
| 10 | 256QAM | 1 | 49 | 18.82 | 18.76 | 18.86 | |
| 10 | 256QAM | 25 | 0 | 18.76 | 18.72 | 18.77 | 19 |
| 10 | 256QAM | 25 | 12 | 18.67 | 18.72 | 18.66 | |
| 10 | 256QAM | 25 | 25 | 18.62 | 18.53 | 18.60 | |
| 10 | 256QAM | 50 | 0 | 18.59 | 18.66 | 18.74 | |
| Channel | | | | 20425 | 20525 | 20625 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 826.5 | 836.5 | 846.5 | |
| 5 | QPSK | 1 | 0 | 23.47 | 23.42 | 23.66 | 24 |
| 5 | QPSK | 1 | 12 | 23.50 | 23.57 | 23.57 | |
| 5 | QPSK | 1 | 24 | 23.63 | 23.55 | 23.63 | |
| 5 | QPSK | 12 | 0 | 22.52 | 22.59 | 22.79 | 23 |
| 5 | QPSK | 12 | 7 | 22.61 | 22.60 | 22.74 | |
| 5 | QPSK | 12 | 13 | 22.63 | 22.71 | 22.79 | |
| 5 | QPSK | 25 | 0 | 22.54 | 22.58 | 22.73 | 23 |
| 5 | 16QAM | 1 | 0 | 22.75 | 22.81 | 22.92 | |
| 5 | 16QAM | 1 | 12 | 22.88 | 22.91 | 22.95 | |
| 5 | 16QAM | 1 | 24 | 22.92 | 22.89 | 22.87 | 22 |
| 5 | 16QAM | 12 | 0 | 21.52 | 21.54 | 21.77 | |
| 5 | 16QAM | 12 | 7 | 21.60 | 21.62 | 21.79 | |
| 5 | 16QAM | 12 | 13 | 21.70 | 21.73 | 21.92 | 22 |
| 5 | 16QAM | 25 | 0 | 21.60 | 21.54 | 21.76 | |
| 5 | 64QAM | 1 | 0 | 21.61 | 21.69 | 21.78 | |
| 5 | 64QAM | 1 | 12 | 21.92 | 21.91 | 21.96 | 22 |
| 5 | 64QAM | 1 | 24 | 21.83 | 21.94 | 21.95 | |
| 5 | 64QAM | 12 | 0 | 20.64 | 20.70 | 20.71 | |
| 5 | 64QAM | 12 | 7 | 20.70 | 20.71 | 20.92 | 21 |
| 5 | 64QAM | 12 | 13 | 20.78 | 20.84 | 20.91 | |
| 5 | 64QAM | 25 | 0 | 20.70 | 20.65 | 20.74 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|-------|-------|-------|---------------------|
| 5 | 256QAM | 1 | 0 | 18.80 | 18.73 | 18.86 | 19 |
| 5 | 256QAM | 1 | 12 | 18.61 | 18.59 | 18.71 | |
| 5 | 256QAM | 1 | 24 | 18.76 | 18.76 | 18.77 | |
| 5 | 256QAM | 12 | 0 | 18.67 | 18.70 | 18.74 | 19 |
| 5 | 256QAM | 12 | 7 | 18.67 | 18.72 | 18.64 | |
| 5 | 256QAM | 12 | 13 | 18.53 | 18.44 | 18.55 | |
| 5 | 256QAM | 25 | 0 | 18.53 | 18.64 | 18.71 | |
| Channel | | | | 20415 | 20525 | 20635 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 825.5 | 836.5 | 847.5 | |
| 3 | QPSK | 1 | 0 | 23.44 | 23.40 | 23.61 | 24 |
| 3 | QPSK | 1 | 8 | 23.51 | 23.61 | 23.62 | |
| 3 | QPSK | 1 | 14 | 23.58 | 23.59 | 23.58 | |
| 3 | QPSK | 8 | 0 | 22.49 | 22.57 | 22.69 | 23 |
| 3 | QPSK | 8 | 4 | 22.53 | 22.61 | 22.72 | |
| 3 | QPSK | 8 | 7 | 22.67 | 22.70 | 22.83 | |
| 3 | QPSK | 15 | 0 | 22.56 | 22.57 | 22.72 | |
| 3 | 16QAM | 1 | 0 | 22.80 | 22.85 | 22.92 | 23 |
| 3 | 16QAM | 1 | 8 | 22.95 | 22.96 | 22.88 | |
| 3 | 16QAM | 1 | 14 | 22.92 | 22.95 | 22.92 | |
| 3 | 16QAM | 8 | 0 | 21.56 | 21.55 | 21.74 | 22 |
| 3 | 16QAM | 8 | 4 | 21.62 | 21.67 | 21.88 | |
| 3 | 16QAM | 8 | 7 | 21.75 | 21.72 | 21.86 | |
| 3 | 16QAM | 15 | 0 | 21.62 | 21.56 | 21.72 | |
| 3 | 64QAM | 1 | 0 | 21.66 | 21.69 | 21.84 | 22 |
| 3 | 64QAM | 1 | 8 | 21.95 | 21.95 | 21.89 | |
| 3 | 64QAM | 1 | 14 | 21.85 | 21.86 | 21.87 | |
| 3 | 64QAM | 8 | 0 | 20.62 | 20.62 | 20.77 | 21 |
| 3 | 64QAM | 8 | 4 | 20.67 | 20.67 | 20.88 | |
| 3 | 64QAM | 8 | 7 | 20.80 | 20.76 | 20.92 | |
| 3 | 64QAM | 15 | 0 | 20.68 | 20.75 | 20.74 | |
| 3 | 256QAM | 1 | 0 | 18.74 | 18.76 | 18.95 | 19 |
| 3 | 256QAM | 1 | 8 | 18.58 | 18.61 | 18.68 | |
| 3 | 256QAM | 1 | 14 | 18.73 | 18.68 | 18.85 | |
| 3 | 256QAM | 8 | 0 | 18.71 | 18.66 | 18.76 | 19 |
| 3 | 256QAM | 8 | 4 | 18.67 | 18.70 | 18.60 | |
| 3 | 256QAM | 8 | 7 | 18.59 | 18.53 | 18.54 | |
| 3 | 256QAM | 15 | 0 | 18.54 | 18.59 | 18.65 | |
| Channel | | | | 20407 | 20525 | 20643 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 824.7 | 836.5 | 848.3 | |
| 1.4 | QPSK | 1 | 0 | 23.46 | 23.39 | 23.67 | 24 |
| 1.4 | QPSK | 1 | 3 | 23.57 | 23.61 | 23.61 | |
| 1.4 | QPSK | 1 | 5 | 23.60 | 23.63 | 23.59 | |
| 1.4 | QPSK | 3 | 0 | 23.41 | 23.42 | 23.57 | |
| 1.4 | QPSK | 3 | 1 | 23.58 | 23.55 | 23.56 | |
| 1.4 | QPSK | 3 | 3 | 23.64 | 23.54 | 23.64 | |
| 1.4 | QPSK | 6 | 0 | 22.48 | 22.52 | 22.72 | 23 |
| 1.4 | 16QAM | 1 | 0 | 22.74 | 22.82 | 22.95 | 23 |
| 1.4 | 16QAM | 1 | 3 | 22.97 | 22.96 | 22.93 | |
| 1.4 | 16QAM | 1 | 5 | 22.87 | 22.96 | 22.94 | |
| 1.4 | 16QAM | 3 | 0 | 22.77 | 22.83 | 22.93 | |
| 1.4 | 16QAM | 3 | 1 | 22.92 | 22.96 | 22.88 | |
| 1.4 | 16QAM | 3 | 3 | 22.86 | 22.89 | 22.90 | |
| 1.4 | 16QAM | 6 | 0 | 21.62 | 21.54 | 21.70 | 22 |
| 1.4 | 64QAM | 1 | 0 | 21.63 | 21.67 | 21.78 | 22 |
| 1.4 | 64QAM | 1 | 3 | 21.93 | 21.91 | 21.96 | |
| 1.4 | 64QAM | 1 | 5 | 21.84 | 21.89 | 21.92 | |



| | | | | | | | |
|-----|--------|---|---|-------|-------|-------|----|
| 1.4 | 64QAM | 3 | 0 | 21.64 | 21.72 | 21.85 | |
| 1.4 | 64QAM | 3 | 1 | 21.94 | 21.93 | 21.95 | |
| 1.4 | 64QAM | 3 | 3 | 21.79 | 21.96 | 21.85 | |
| 1.4 | 64QAM | 6 | 0 | 20.71 | 20.65 | 20.77 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.78 | 18.79 | 18.92 | 19 |
| 1.4 | 256QAM | 1 | 3 | 18.62 | 18.55 | 18.70 | |
| 1.4 | 256QAM | 1 | 5 | 18.75 | 18.70 | 18.85 | |
| 1.4 | 256QAM | 3 | 0 | 18.69 | 18.72 | 18.77 | |
| 1.4 | 256QAM | 3 | 1 | 18.66 | 18.72 | 18.63 | |
| 1.4 | 256QAM | 3 | 3 | 18.55 | 18.51 | 18.55 | |
| 1.4 | 256QAM | 6 | 0 | 18.50 | 18.59 | 18.70 | 19 |

<LTE Band 5_Ant0_DSI 3/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 20450 | 20525 | 20600 | |
| Frequency (MHz) | | | | 829 | 836.5 | 844 | |
| 10 | QPSK | 1 | 0 | 21.94 | 22.01 | 21.96 | 22.8 |
| 10 | QPSK | 1 | 25 | 21.79 | 21.88 | 21.84 | |
| 10 | QPSK | 1 | 49 | 21.72 | 21.76 | 21.75 | |
| 10 | QPSK | 25 | 0 | 21.89 | 22.00 | 21.90 | 22.8 |
| 10 | QPSK | 25 | 12 | 21.81 | 21.86 | 21.81 | |
| 10 | QPSK | 25 | 25 | 21.69 | 21.75 | 21.68 | |
| 10 | QPSK | 50 | 0 | 21.62 | 21.70 | 21.64 | 22.8 |
| 10 | 16QAM | 1 | 0 | 21.51 | 21.53 | 21.51 | |
| 10 | 16QAM | 1 | 25 | 21.36 | 21.39 | 21.28 | |
| 10 | 16QAM | 1 | 49 | 21.24 | 21.35 | 21.32 | 22 |
| 10 | 16QAM | 25 | 0 | 21.25 | 21.28 | 21.25 | |
| 10 | 16QAM | 25 | 12 | 21.13 | 21.12 | 21.03 | |
| 10 | 16QAM | 25 | 25 | 21.04 | 21.15 | 21.03 | 22 |
| 10 | 16QAM | 50 | 0 | 21.28 | 21.31 | 21.28 | |
| 10 | 64QAM | 1 | 0 | 21.09 | 21.11 | 20.98 | |
| 10 | 64QAM | 1 | 25 | 20.97 | 21.05 | 21.03 | 21 |
| 10 | 64QAM | 1 | 49 | 20.96 | 21.07 | 21.04 | |
| 10 | 64QAM | 25 | 0 | 20.00 | 20.04 | 20.01 | |
| 10 | 64QAM | 25 | 12 | 19.78 | 19.79 | 19.72 | 19 |
| 10 | 64QAM | 25 | 25 | 19.71 | 19.74 | 19.68 | |
| 10 | 64QAM | 50 | 0 | 19.61 | 19.70 | 19.62 | |
| 10 | 256QAM | 1 | 0 | 18.18 | 18.18 | 18.12 | 19 |
| 10 | 256QAM | 1 | 25 | 17.88 | 17.95 | 17.92 | |
| 10 | 256QAM | 1 | 49 | 17.85 | 17.90 | 17.78 | |
| 10 | 256QAM | 25 | 0 | 17.80 | 17.90 | 17.76 | 19 |
| 10 | 256QAM | 25 | 12 | 17.89 | 17.98 | 17.89 | |
| 10 | 256QAM | 25 | 25 | 17.84 | 17.88 | 17.87 | |
| 10 | 256QAM | 50 | 0 | 17.76 | 17.89 | 17.75 | 22.8 |
| Channel | | | | 20425 | 20525 | 20625 | |
| Frequency (MHz) | | | | 826.5 | 836.5 | 846.5 | |
| 5 | QPSK | 1 | 0 | 21.75 | 21.79 | 21.69 | 22.8 |
| 5 | QPSK | 1 | 12 | 21.52 | 21.64 | 21.66 | |
| 5 | QPSK | 1 | 24 | 21.48 | 21.54 | 21.51 | |
| 5 | QPSK | 12 | 0 | 21.68 | 21.79 | 21.63 | 22.8 |
| 5 | QPSK | 12 | 7 | 21.55 | 21.66 | 21.61 | |
| 5 | QPSK | 12 | 13 | 21.43 | 21.55 | 21.44 | |
| 5 | QPSK | 25 | 0 | 21.36 | 21.43 | 21.36 | 22.8 |
| 5 | 16QAM | 1 | 0 | 21.30 | 21.34 | 21.29 | |
| 5 | 16QAM | 1 | 12 | 21.16 | 21.17 | 21.09 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|-------|-------|-------|---------------------|
| 5 | 16QAM | 1 | 24 | 21.02 | 21.07 | 21.05 | |
| 5 | 16QAM | 12 | 0 | 21.04 | 21.10 | 20.97 | 22 |
| 5 | 16QAM | 12 | 7 | 20.95 | 20.86 | 20.85 | |
| 5 | 16QAM | 12 | 13 | 20.83 | 20.96 | 20.85 | |
| 5 | 16QAM | 25 | 0 | 21.07 | 21.04 | 21.02 | |
| 5 | 64QAM | 1 | 0 | 20.87 | 20.90 | 20.72 | 22 |
| 5 | 64QAM | 1 | 12 | 20.72 | 20.79 | 20.78 | |
| 5 | 64QAM | 1 | 24 | 20.71 | 20.79 | 20.79 | |
| 5 | 64QAM | 12 | 0 | 19.75 | 19.84 | 19.79 | 21 |
| 5 | 64QAM | 12 | 7 | 19.57 | 19.61 | 19.49 | |
| 5 | 64QAM | 12 | 13 | 19.43 | 19.50 | 19.48 | |
| 5 | 64QAM | 25 | 0 | 19.39 | 19.42 | 19.40 | |
| 5 | 256QAM | 1 | 0 | 17.95 | 17.98 | 17.85 | 19 |
| 5 | 256QAM | 1 | 12 | 17.61 | 17.67 | 17.68 | |
| 5 | 256QAM | 1 | 24 | 17.61 | 17.71 | 17.52 | |
| 5 | 256QAM | 12 | 0 | 17.62 | 17.71 | 17.54 | 19 |
| 5 | 256QAM | 12 | 7 | 17.69 | 17.71 | 17.64 | |
| 5 | 256QAM | 12 | 13 | 17.58 | 17.69 | 17.68 | |
| 5 | 256QAM | 25 | 0 | 17.50 | 17.70 | 17.51 | |
| Channel | | | | 20415 | 20525 | 20635 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 825.5 | 836.5 | 847.5 | |
| 3 | QPSK | 1 | 0 | 21.49 | 21.52 | 21.47 | 22.8 |
| 3 | QPSK | 1 | 8 | 21.28 | 21.38 | 21.45 | |
| 3 | QPSK | 1 | 14 | 21.25 | 21.29 | 21.26 | |
| 3 | QPSK | 8 | 0 | 21.41 | 21.59 | 21.43 | 22.8 |
| 3 | QPSK | 8 | 4 | 21.32 | 21.46 | 21.38 | |
| 3 | QPSK | 8 | 7 | 21.24 | 21.28 | 21.21 | |
| 3 | QPSK | 15 | 0 | 21.17 | 21.18 | 21.08 | |
| 3 | 16QAM | 1 | 0 | 21.08 | 21.15 | 21.10 | 22.8 |
| 3 | 16QAM | 1 | 8 | 20.90 | 20.90 | 20.82 | |
| 3 | 16QAM | 1 | 14 | 20.84 | 20.80 | 20.81 | |
| 3 | 16QAM | 8 | 0 | 20.80 | 20.91 | 20.71 | 22 |
| 3 | 16QAM | 8 | 4 | 20.68 | 20.64 | 20.62 | |
| 3 | 16QAM | 8 | 7 | 20.62 | 20.73 | 20.62 | |
| 3 | 16QAM | 15 | 0 | 20.85 | 20.86 | 20.82 | |
| 3 | 64QAM | 1 | 0 | 20.59 | 20.70 | 20.49 | 22 |
| 3 | 64QAM | 1 | 8 | 20.52 | 20.59 | 20.57 | |
| 3 | 64QAM | 1 | 14 | 20.51 | 20.53 | 20.53 | |
| 3 | 64QAM | 8 | 0 | 19.47 | 19.62 | 19.59 | 21 |
| 3 | 64QAM | 8 | 4 | 19.29 | 19.40 | 19.27 | |
| 3 | 64QAM | 8 | 7 | 19.19 | 19.30 | 19.26 | |
| 3 | 64QAM | 15 | 0 | 19.12 | 19.17 | 19.19 | |
| 3 | 256QAM | 1 | 0 | 17.69 | 17.73 | 17.67 | 19 |
| 3 | 256QAM | 1 | 8 | 17.41 | 17.49 | 17.46 | |
| 3 | 256QAM | 1 | 14 | 17.36 | 17.50 | 17.29 | |
| 3 | 256QAM | 8 | 0 | 17.44 | 17.48 | 17.29 | 19 |
| 3 | 256QAM | 8 | 4 | 17.48 | 17.43 | 17.37 | |
| 3 | 256QAM | 8 | 7 | 17.37 | 17.43 | 17.44 | |
| 3 | 256QAM | 15 | 0 | 17.31 | 17.52 | 17.26 | |
| Channel | | | | 20407 | 20525 | 20643 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 824.7 | 836.5 | 848.3 | |
| 1.4 | QPSK | 1 | 0 | 21.47 | 21.47 | 21.44 | 22.8 |
| 1.4 | QPSK | 1 | 3 | 21.22 | 21.33 | 21.46 | |
| 1.4 | QPSK | 1 | 5 | 21.22 | 21.22 | 21.24 | |
| 1.4 | QPSK | 3 | 0 | 21.33 | 21.61 | 21.40 | |
| 1.4 | QPSK | 3 | 1 | 21.28 | 21.44 | 21.30 | |



| | | | | | | | |
|-----|--------|---|---|-------|-------|-------|------|
| 1.4 | QPSK | 3 | 3 | 21.23 | 21.27 | 21.15 | |
| 1.4 | QPSK | 6 | 0 | 21.12 | 21.17 | 21.02 | 22.8 |
| 1.4 | 16QAM | 1 | 0 | 21.20 | 21.33 | 21.26 | 22.8 |
| 1.4 | 16QAM | 1 | 3 | 21.09 | 21.12 | 21.00 | |
| 1.4 | 16QAM | 1 | 5 | 20.96 | 21.02 | 20.93 | |
| 1.4 | 16QAM | 3 | 0 | 20.94 | 21.07 | 20.93 | |
| 1.4 | 16QAM | 3 | 1 | 20.83 | 20.81 | 20.82 | |
| 1.4 | 16QAM | 3 | 3 | 20.82 | 20.90 | 20.84 | |
| 1.4 | 16QAM | 6 | 0 | 20.85 | 20.82 | 20.80 | 22 |
| 1.4 | 64QAM | 1 | 0 | 20.56 | 20.71 | 20.51 | 22 |
| 1.4 | 64QAM | 1 | 3 | 20.47 | 20.58 | 20.56 | |
| 1.4 | 64QAM | 1 | 5 | 20.52 | 20.54 | 20.55 | |
| 1.4 | 64QAM | 3 | 0 | 20.44 | 20.46 | 20.44 | |
| 1.4 | 64QAM | 3 | 1 | 20.32 | 20.41 | 20.30 | |
| 1.4 | 64QAM | 3 | 3 | 20.31 | 20.39 | 20.28 | |
| 1.4 | 64QAM | 6 | 0 | 19.08 | 19.10 | 19.13 | 21 |
| 1.4 | 256QAM | 1 | 0 | 17.71 | 17.72 | 17.66 | 19 |
| 1.4 | 256QAM | 1 | 3 | 17.34 | 17.43 | 17.45 | |
| 1.4 | 256QAM | 1 | 5 | 17.38 | 17.52 | 17.22 | |
| 1.4 | 256QAM | 3 | 0 | 17.38 | 17.43 | 17.24 | |
| 1.4 | 256QAM | 3 | 1 | 17.49 | 17.40 | 17.32 | |
| 1.4 | 256QAM | 3 | 3 | 17.34 | 17.42 | 17.43 | |
| 1.4 | 256QAM | 6 | 0 | 17.30 | 17.52 | 17.25 | 19 |

<LTE Band 13_Ant0_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 23230 | | | |
| Frequency (MHz) | | | | 782 | | | |
| 10 | QPSK | 1 | 0 | | 23.46 | | 24 |
| 10 | QPSK | 1 | 25 | | 23.45 | | |
| 10 | QPSK | 1 | 49 | | 23.43 | | |
| 10 | QPSK | 25 | 0 | | 22.45 | | 23 |
| 10 | QPSK | 25 | 12 | | 22.48 | | |
| 10 | QPSK | 25 | 25 | | 22.52 | | |
| 10 | QPSK | 50 | 0 | | 22.58 | | 23 |
| 10 | 16QAM | 1 | 0 | | 22.83 | | |
| 10 | 16QAM | 1 | 25 | | 22.92 | | |
| 10 | 16QAM | 1 | 49 | | 22.88 | | 22 |
| 10 | 16QAM | 25 | 0 | | 21.44 | | |
| 10 | 16QAM | 25 | 12 | | 21.48 | | |
| 10 | 16QAM | 25 | 25 | | 21.56 | | 22 |
| 10 | 16QAM | 50 | 0 | | 21.56 | | |
| 10 | 64QAM | 1 | 0 | | 21.75 | | |
| 10 | 64QAM | 1 | 25 | | 21.89 | | 22 |
| 10 | 64QAM | 1 | 49 | | 21.80 | | |
| 10 | 64QAM | 25 | 0 | | 20.47 | | |
| 10 | 64QAM | 25 | 12 | | 20.53 | | 21 |
| 10 | 64QAM | 25 | 25 | | 20.56 | | |
| 10 | 64QAM | 50 | 0 | | 20.61 | | |
| 10 | 256QAM | 1 | 0 | | 18.52 | | 19 |
| 10 | 256QAM | 1 | 25 | | 18.44 | | |
| 10 | 256QAM | 1 | 49 | | 18.36 | | |
| 10 | 256QAM | 25 | 0 | | 18.42 | | 19 |
| 10 | 256QAM | 25 | 12 | | 18.24 | | |
| 10 | 256QAM | 25 | 25 | | 18.22 | | |



| 10 | 256QAM | 50 | 0 | | 18.37 | | |
|-----------------|--------|----|----|-------|-------|-------|---------------------|
| Channel | | | | 23205 | 23230 | 23255 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 779.5 | 782 | 784.5 | |
| 5 | QPSK | 1 | 0 | 23.37 | 23.45 | 23.39 | 24 |
| 5 | QPSK | 1 | 12 | 23.43 | 23.41 | 23.38 | |
| 5 | QPSK | 1 | 24 | 23.36 | 23.34 | 23.37 | |
| 5 | QPSK | 12 | 0 | 22.39 | 22.35 | 22.44 | 23 |
| 5 | QPSK | 12 | 7 | 22.41 | 22.45 | 22.46 | |
| 5 | QPSK | 12 | 13 | 22.50 | 22.45 | 22.51 | |
| 5 | QPSK | 25 | 0 | 22.55 | 22.48 | 22.57 | 23 |
| 5 | 16QAM | 1 | 0 | 22.77 | 22.77 | 22.76 | |
| 5 | 16QAM | 1 | 12 | 22.89 | 22.86 | 22.89 | |
| 5 | 16QAM | 1 | 24 | 22.79 | 22.88 | 22.85 | 22 |
| 5 | 16QAM | 12 | 0 | 21.37 | 21.37 | 21.39 | |
| 5 | 16QAM | 12 | 7 | 21.48 | 21.47 | 21.41 | |
| 5 | 16QAM | 12 | 13 | 21.51 | 21.52 | 21.56 | 22 |
| 5 | 16QAM | 25 | 0 | 21.55 | 21.53 | 21.47 | |
| 5 | 64QAM | 1 | 0 | 21.73 | 21.75 | 21.68 | |
| 5 | 64QAM | 1 | 12 | 21.82 | 21.89 | 21.89 | 22 |
| 5 | 64QAM | 1 | 24 | 21.75 | 21.72 | 21.79 | |
| 5 | 64QAM | 12 | 0 | 20.46 | 20.45 | 20.40 | |
| 5 | 64QAM | 12 | 7 | 20.48 | 20.51 | 20.44 | 21 |
| 5 | 64QAM | 12 | 13 | 20.47 | 20.52 | 20.47 | |
| 5 | 64QAM | 25 | 0 | 20.51 | 20.56 | 20.51 | |
| 5 | 256QAM | 1 | 0 | 18.43 | 18.51 | 18.48 | 19 |
| 5 | 256QAM | 1 | 12 | 18.44 | 18.42 | 18.36 | |
| 5 | 256QAM | 1 | 24 | 18.29 | 18.28 | 18.34 | |
| 5 | 256QAM | 12 | 0 | 18.36 | 18.38 | 18.39 | 19 |
| 5 | 256QAM | 12 | 7 | 18.23 | 18.21 | 18.20 | |
| 5 | 256QAM | 12 | 13 | 18.21 | 18.20 | 18.22 | |
| 5 | 256QAM | 25 | 0 | 18.37 | 18.34 | 18.34 | |

<LTE Band 66_Ant1_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 132072 | 132322 | 132572 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | |
| 20 | QPSK | 1 | 0 | 23.46 | 23.39 | 23.37 | 24 |
| 20 | QPSK | 1 | 49 | 23.45 | 23.35 | 23.35 | |
| 20 | QPSK | 1 | 99 | 23.32 | 23.32 | 23.29 | |
| 20 | QPSK | 50 | 0 | 22.44 | 22.40 | 22.35 | 23 |
| 20 | QPSK | 50 | 24 | 22.45 | 22.40 | 22.36 | |
| 20 | QPSK | 50 | 50 | 22.47 | 22.44 | 22.38 | |
| 20 | QPSK | 100 | 0 | 22.40 | 22.39 | 22.32 | 23 |
| 20 | 16QAM | 1 | 0 | 22.67 | 22.64 | 22.57 | |
| 20 | 16QAM | 1 | 49 | 22.82 | 22.84 | 22.80 | |
| 20 | 16QAM | 1 | 99 | 22.66 | 22.65 | 22.64 | 22 |
| 20 | 16QAM | 50 | 0 | 21.41 | 21.41 | 21.38 | |
| 20 | 16QAM | 50 | 24 | 21.40 | 21.44 | 21.38 | |
| 20 | 16QAM | 50 | 50 | 21.49 | 21.47 | 21.47 | 22 |
| 20 | 16QAM | 100 | 0 | 21.43 | 21.40 | 21.33 | |
| 20 | 64QAM | 1 | 0 | 21.67 | 21.67 | 21.61 | |
| 20 | 64QAM | 1 | 49 | 21.69 | 21.63 | 21.65 | 22 |
| 20 | 64QAM | 1 | 99 | 21.67 | 21.64 | 21.63 | |
| 20 | 64QAM | 50 | 0 | 20.43 | 20.43 | 20.44 | |
| 20 | 64QAM | 50 | 24 | 20.39 | 20.42 | 20.41 | 21 |



| | | | | | | | | |
|-----------------|--------|-----|----|--------|--------|--------|---------------------|---------------------|
| 20 | 64QAM | 50 | 50 | 20.48 | 20.42 | 20.40 | | |
| 20 | 64QAM | 100 | 0 | 20.42 | 20.41 | 20.34 | | |
| 20 | 256QAM | 1 | 0 | 18.17 | 18.18 | 18.11 | | |
| 20 | 256QAM | 1 | 49 | 18.14 | 18.03 | 17.93 | 19 | |
| 20 | 256QAM | 1 | 99 | 18.06 | 18.00 | 17.97 | | |
| 20 | 256QAM | 50 | 0 | 18.07 | 18.02 | 18.10 | | |
| 20 | 256QAM | 50 | 24 | 18.05 | 17.87 | 18.00 | 19 | |
| 20 | 256QAM | 50 | 50 | 18.06 | 17.87 | 17.92 | | |
| 20 | 256QAM | 100 | 0 | 17.93 | 17.99 | 18.05 | | |
| Channel | | | | 132047 | 132322 | 132597 | Tune-up limit (dBm) | |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | | |
| 15 | QPSK | 1 | 0 | 23.44 | 23.30 | 23.34 | 24 | |
| 15 | QPSK | 1 | 37 | 23.41 | 23.40 | 23.34 | | |
| 15 | QPSK | 1 | 74 | 23.22 | 23.31 | 23.19 | | |
| 15 | QPSK | 36 | 0 | 22.44 | 22.35 | 22.35 | 23 | |
| 15 | QPSK | 36 | 20 | 22.40 | 22.35 | 22.30 | | |
| 15 | QPSK | 36 | 39 | 22.37 | 22.42 | 22.31 | | |
| 15 | QPSK | 75 | 0 | 22.36 | 22.36 | 22.31 | 23 | |
| 15 | 16QAM | 1 | 0 | 22.59 | 22.59 | 22.51 | | |
| 15 | 16QAM | 1 | 37 | 22.76 | 22.80 | 22.75 | | |
| 15 | 16QAM | 1 | 74 | 22.66 | 22.62 | 22.58 | 22 | |
| 15 | 16QAM | 36 | 0 | 21.37 | 21.34 | 21.36 | | |
| 15 | 16QAM | 36 | 20 | 21.30 | 21.38 | 21.28 | | |
| 15 | 16QAM | 36 | 39 | 21.47 | 21.43 | 21.39 | 22 | |
| 15 | 16QAM | 75 | 0 | 21.37 | 21.35 | 21.25 | | |
| 15 | 64QAM | 1 | 0 | 21.65 | 21.57 | 21.58 | | |
| 15 | 64QAM | 1 | 37 | 21.60 | 21.55 | 21.56 | 22 | |
| 15 | 64QAM | 1 | 74 | 21.67 | 21.57 | 21.60 | | |
| 15 | 64QAM | 36 | 0 | 20.40 | 20.43 | 20.41 | | |
| 15 | 64QAM | 36 | 20 | 20.36 | 20.36 | 20.36 | 21 | |
| 15 | 64QAM | 36 | 39 | 20.43 | 20.36 | 20.37 | | |
| 15 | 64QAM | 75 | 0 | 20.39 | 20.36 | 20.30 | | |
| 15 | 256QAM | 1 | 0 | 18.16 | 18.12 | 18.02 | 19 | |
| 15 | 256QAM | 1 | 37 | 18.07 | 17.97 | 17.90 | | |
| 15 | 256QAM | 1 | 74 | 18.03 | 17.96 | 17.87 | | |
| 15 | 256QAM | 36 | 0 | 18.04 | 17.96 | 18.09 | 19 | |
| 15 | 256QAM | 36 | 20 | 18.04 | 17.83 | 18.00 | | |
| 15 | 256QAM | 36 | 39 | 18.00 | 17.85 | 17.87 | | |
| 15 | 256QAM | 75 | 0 | 17.92 | 17.90 | 17.99 | 19 | |
| Channel | | | | 132022 | 132322 | 132622 | | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | | |
| 10 | QPSK | 1 | 0 | 23.44 | 23.33 | 23.35 | 24 | |
| 10 | QPSK | 1 | 25 | 23.37 | 23.32 | 23.32 | | |
| 10 | QPSK | 1 | 49 | 23.32 | 23.23 | 23.27 | | |
| 10 | QPSK | 25 | 0 | 22.41 | 22.38 | 22.30 | 23 | |
| 10 | QPSK | 25 | 12 | 22.40 | 22.33 | 22.28 | | |
| 10 | QPSK | 25 | 25 | 22.34 | 22.42 | 22.31 | | |
| 10 | QPSK | 50 | 0 | 22.36 | 22.34 | 22.32 | 23 | |
| 10 | 16QAM | 1 | 0 | 22.62 | 22.60 | 22.52 | | |
| 10 | 16QAM | 1 | 25 | 22.76 | 22.84 | 22.73 | | |
| 10 | 16QAM | 1 | 49 | 22.62 | 22.59 | 22.63 | 23 | |
| 10 | 16QAM | 25 | 0 | 21.39 | 21.31 | 21.31 | | |
| 10 | 16QAM | 25 | 12 | 21.37 | 21.40 | 21.38 | | |
| 10 | 16QAM | 25 | 25 | 21.40 | 21.46 | 21.38 | 22 | |
| 10 | 16QAM | 50 | 0 | 21.43 | 21.32 | 21.23 | | |
| 10 | 64QAM | 1 | 0 | 21.61 | 21.61 | 21.53 | | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 10 | 64QAM | 1 | 25 | 21.59 | 21.60 | 21.56 | |
| 10 | 64QAM | 1 | 49 | 21.59 | 21.58 | 21.57 | |
| 10 | 64QAM | 25 | 0 | 20.36 | 20.41 | 20.37 | |
| 10 | 64QAM | 25 | 12 | 20.37 | 20.35 | 20.32 | 21 |
| 10 | 64QAM | 25 | 25 | 20.44 | 20.39 | 20.36 | |
| 10 | 64QAM | 50 | 0 | 20.37 | 20.32 | 20.34 | |
| 10 | 256QAM | 1 | 0 | 18.12 | 18.10 | 18.05 | 19 |
| 10 | 256QAM | 1 | 25 | 18.09 | 18.01 | 17.88 | |
| 10 | 256QAM | 1 | 49 | 18.06 | 17.95 | 17.88 | |
| 10 | 256QAM | 25 | 0 | 17.99 | 17.92 | 18.05 | 19 |
| 10 | 256QAM | 25 | 12 | 18.04 | 17.87 | 18.00 | |
| 10 | 256QAM | 25 | 25 | 17.99 | 17.85 | 17.87 | |
| 10 | 256QAM | 50 | 0 | 17.88 | 17.94 | 18.05 | |
| Channel | | | | 131997 | 132322 | 132647 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | |
| 5 | QPSK | 1 | 0 | 23.44 | 23.27 | 23.31 | 24 |
| 5 | QPSK | 1 | 12 | 23.41 | 23.38 | 23.25 | |
| 5 | QPSK | 1 | 24 | 23.26 | 23.23 | 23.28 | |
| 5 | QPSK | 12 | 0 | 22.39 | 22.32 | 22.30 | 23 |
| 5 | QPSK | 12 | 7 | 22.45 | 22.36 | 22.30 | |
| 5 | QPSK | 12 | 13 | 22.44 | 22.37 | 22.35 | |
| 5 | QPSK | 25 | 0 | 22.31 | 22.29 | 22.29 | 23 |
| 5 | 16QAM | 1 | 0 | 22.58 | 22.59 | 22.55 | |
| 5 | 16QAM | 1 | 12 | 22.73 | 22.83 | 22.71 | |
| 5 | 16QAM | 1 | 24 | 22.61 | 22.63 | 22.61 | 22 |
| 5 | 16QAM | 12 | 0 | 21.34 | 21.39 | 21.36 | |
| 5 | 16QAM | 12 | 7 | 21.38 | 21.35 | 21.32 | |
| 5 | 16QAM | 12 | 13 | 21.48 | 21.44 | 21.42 | |
| 5 | 16QAM | 25 | 0 | 21.39 | 21.34 | 21.31 | |
| 5 | 64QAM | 1 | 0 | 21.58 | 21.63 | 21.56 | 22 |
| 5 | 64QAM | 1 | 12 | 21.62 | 21.63 | 21.56 | |
| 5 | 64QAM | 1 | 24 | 21.61 | 21.62 | 21.53 | |
| 5 | 64QAM | 12 | 0 | 20.33 | 20.43 | 20.43 | 21 |
| 5 | 64QAM | 12 | 7 | 20.35 | 20.36 | 20.34 | |
| 5 | 64QAM | 12 | 13 | 20.44 | 20.35 | 20.39 | |
| 5 | 64QAM | 25 | 0 | 20.37 | 20.37 | 20.27 | |
| 5 | 256QAM | 1 | 0 | 18.16 | 18.12 | 18.01 | 19 |
| 5 | 256QAM | 1 | 12 | 18.09 | 17.95 | 17.85 | |
| 5 | 256QAM | 1 | 24 | 18.00 | 17.95 | 17.92 | |
| 5 | 256QAM | 12 | 0 | 17.97 | 18.02 | 18.04 | 19 |
| 5 | 256QAM | 12 | 7 | 17.99 | 17.83 | 18.00 | |
| 5 | 256QAM | 12 | 13 | 18.04 | 17.79 | 17.88 | |
| 5 | 256QAM | 25 | 0 | 17.92 | 17.89 | 18.04 | |
| Channel | | | | 131987 | 132322 | 132657 | |
| Frequency (MHz) | | | | 1711.5 | 1745 | 1778.5 | |
| 3 | QPSK | 1 | 0 | 23.41 | 23.28 | 23.29 | 24 |
| 3 | QPSK | 1 | 8 | 23.42 | 23.32 | 23.28 | |
| 3 | QPSK | 1 | 14 | 23.24 | 23.30 | 23.27 | |
| 3 | QPSK | 8 | 0 | 22.44 | 22.36 | 22.31 | 23 |
| 3 | QPSK | 8 | 4 | 22.37 | 22.39 | 22.35 | |
| 3 | QPSK | 8 | 7 | 22.43 | 22.43 | 22.31 | |
| 3 | QPSK | 15 | 0 | 22.31 | 22.36 | 22.30 | |
| 3 | 16QAM | 1 | 0 | 22.63 | 22.62 | 22.56 | 23 |
| 3 | 16QAM | 1 | 8 | 22.77 | 22.83 | 22.78 | |
| 3 | 16QAM | 1 | 14 | 22.66 | 22.61 | 22.59 | |
| 3 | 16QAM | 8 | 0 | 21.40 | 21.39 | 21.28 | 22 |



| | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 3 | 16QAM | 8 | 4 | 21.31 | 21.44 | 21.35 | |
| 3 | 16QAM | 8 | 7 | 21.46 | 21.40 | 21.42 | |
| 3 | 16QAM | 15 | 0 | 21.43 | 21.33 | 21.32 | |
| 3 | 64QAM | 1 | 0 | 21.67 | 21.64 | 21.61 | 22 |
| 3 | 64QAM | 1 | 8 | 21.60 | 21.55 | 21.63 | |
| 3 | 64QAM | 1 | 14 | 21.63 | 21.59 | 21.55 | |
| 3 | 64QAM | 8 | 0 | 20.40 | 20.38 | 20.40 | 21 |
| 3 | 64QAM | 8 | 4 | 20.31 | 20.40 | 20.31 | |
| 3 | 64QAM | 8 | 7 | 20.38 | 20.40 | 20.37 | |
| 3 | 64QAM | 15 | 0 | 20.35 | 20.35 | 20.33 | |
| 3 | 256QAM | 1 | 0 | 18.08 | 18.09 | 18.01 | 19 |
| 3 | 256QAM | 1 | 8 | 18.08 | 17.93 | 17.86 | |
| 3 | 256QAM | 1 | 14 | 18.00 | 17.92 | 17.97 | |
| 3 | 256QAM | 8 | 0 | 18.05 | 17.97 | 18.00 | 19 |
| 3 | 256QAM | 8 | 4 | 17.95 | 17.87 | 17.98 | |
| 3 | 256QAM | 8 | 7 | 18.06 | 17.84 | 17.88 | |
| 3 | 256QAM | 15 | 0 | 17.85 | 17.91 | 18.05 | |
| Channel | | | | 131979 | 132322 | 132665 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1710.7 | 1745 | 1779.3 | |
| 1.4 | QPSK | 1 | 0 | 23.39 | 23.35 | 23.34 | 24 |
| 1.4 | QPSK | 1 | 3 | 23.43 | 23.34 | 23.35 | |
| 1.4 | QPSK | 1 | 5 | 23.31 | 23.27 | 23.28 | |
| 1.4 | QPSK | 3 | 0 | 23.38 | 23.32 | 23.36 | |
| 1.4 | QPSK | 3 | 1 | 23.45 | 23.34 | 23.29 | |
| 1.4 | QPSK | 3 | 3 | 23.32 | 23.30 | 23.29 | |
| 1.4 | QPSK | 6 | 0 | 22.41 | 22.34 | 22.30 | 23 |
| 1.4 | 16QAM | 1 | 0 | 22.62 | 22.56 | 22.48 | 23 |
| 1.4 | 16QAM | 1 | 3 | 22.72 | 22.80 | 22.73 | |
| 1.4 | 16QAM | 1 | 5 | 22.63 | 22.55 | 22.55 | |
| 1.4 | 16QAM | 3 | 0 | 22.59 | 22.59 | 22.56 | |
| 1.4 | 16QAM | 3 | 1 | 22.76 | 22.75 | 22.77 | |
| 1.4 | 16QAM | 3 | 3 | 22.60 | 22.63 | 22.61 | |
| 1.4 | 16QAM | 6 | 0 | 21.36 | 21.32 | 21.36 | 22 |
| 1.4 | 64QAM | 1 | 0 | 21.65 | 21.66 | 21.60 | 22 |
| 1.4 | 64QAM | 1 | 3 | 21.65 | 21.61 | 21.64 | |
| 1.4 | 64QAM | 1 | 5 | 21.59 | 21.61 | 21.61 | |
| 1.4 | 64QAM | 3 | 0 | 21.59 | 21.65 | 21.54 | |
| 1.4 | 64QAM | 3 | 1 | 21.60 | 21.61 | 21.61 | |
| 1.4 | 64QAM | 3 | 3 | 21.59 | 21.62 | 21.60 | |
| 1.4 | 64QAM | 6 | 0 | 20.39 | 20.36 | 20.38 | 21 |
| 1.4 | 256QAM | 1 | 0 | 18.17 | 18.13 | 18.06 | 19 |
| 1.4 | 256QAM | 1 | 3 | 18.06 | 17.99 | 17.89 | |
| 1.4 | 256QAM | 1 | 5 | 18.00 | 17.90 | 17.96 | |
| 1.4 | 256QAM | 3 | 0 | 18.03 | 17.93 | 18.06 | |
| 1.4 | 256QAM | 3 | 1 | 18.04 | 17.79 | 17.95 | |
| 1.4 | 256QAM | 3 | 3 | 18.04 | 17.78 | 17.84 | |
| 1.4 | 256QAM | 6 | 0 | 17.91 | 17.92 | 18.00 | 19 |



<LTE Band 66_Ant1_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 132072 | 132322 | 132572 | 16.5 |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | |
| 20 | QPSK | 1 | 0 | 15.61 | 15.78 | 15.65 | 16.5 |
| 20 | QPSK | 1 | 49 | 15.41 | 15.42 | 15.47 | |
| 20 | QPSK | 1 | 99 | 15.33 | 15.46 | 15.51 | |
| 20 | QPSK | 50 | 0 | 15.51 | 15.52 | 15.40 | 16.5 |
| 20 | QPSK | 50 | 24 | 15.41 | 15.41 | 15.30 | |
| 20 | QPSK | 50 | 50 | 15.24 | 15.33 | 15.23 | |
| 20 | QPSK | 100 | 0 | 15.38 | 15.45 | 15.29 | 16.5 |
| 20 | 16QAM | 1 | 0 | 15.32 | 15.46 | 15.31 | |
| 20 | 16QAM | 1 | 49 | 15.23 | 15.33 | 15.22 | |
| 20 | 16QAM | 1 | 99 | 15.13 | 15.29 | 15.23 | 16.5 |
| 20 | 16QAM | 50 | 0 | 15.26 | 15.33 | 15.31 | |
| 20 | 16QAM | 50 | 24 | 15.18 | 15.27 | 15.22 | |
| 20 | 16QAM | 50 | 50 | 15.11 | 15.15 | 15.07 | 16.5 |
| 20 | 16QAM | 100 | 0 | 15.20 | 15.26 | 15.28 | |
| 20 | 64QAM | 1 | 0 | 15.27 | 15.37 | 15.28 | |
| 20 | 64QAM | 1 | 49 | 15.18 | 15.21 | 15.28 | 16.5 |
| 20 | 64QAM | 1 | 99 | 15.10 | 15.17 | 15.06 | |
| 20 | 64QAM | 50 | 0 | 15.20 | 15.32 | 15.20 | |
| 20 | 64QAM | 50 | 24 | 15.21 | 15.18 | 15.10 | 16.5 |
| 20 | 64QAM | 50 | 50 | 15.07 | 15.19 | 15.16 | |
| 20 | 64QAM | 100 | 0 | 15.18 | 15.26 | 15.20 | |
| 20 | 256QAM | 1 | 0 | 15.10 | 15.23 | 15.20 | 16.5 |
| 20 | 256QAM | 1 | 49 | 15.21 | 15.17 | 15.20 | |
| 20 | 256QAM | 1 | 99 | 15.11 | 15.13 | 15.06 | |
| 20 | 256QAM | 50 | 0 | 15.11 | 15.19 | 15.11 | 16.5 |
| 20 | 256QAM | 50 | 24 | 15.02 | 15.09 | 15.01 | |
| 20 | 256QAM | 50 | 50 | 15.08 | 15.11 | 15.04 | |
| 20 | 256QAM | 100 | 0 | 15.02 | 15.14 | 15.03 | 16.5 |
| Channel | | | | 15.49 | 15.56 | 15.59 | |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | |
| 15 | QPSK | 1 | 0 | 15.48 | 15.58 | 15.53 | 16.5 |
| 15 | QPSK | 1 | 37 | 15.27 | 15.21 | 15.34 | |
| 15 | QPSK | 1 | 74 | 15.24 | 15.39 | 15.27 | |
| 15 | QPSK | 36 | 0 | 15.33 | 15.43 | 15.28 | 16.5 |
| 15 | QPSK | 36 | 20 | 15.20 | 15.25 | 15.14 | |
| 15 | QPSK | 36 | 39 | 15.10 | 15.14 | 15.01 | |
| 15 | QPSK | 75 | 0 | 15.24 | 15.34 | 15.18 | 16.5 |
| 15 | 16QAM | 1 | 0 | 15.19 | 15.32 | 15.15 | |
| 15 | 16QAM | 1 | 37 | 15.04 | 15.26 | 15.03 | |
| 15 | 16QAM | 1 | 74 | 14.94 | 15.09 | 15.06 | 16.5 |
| 15 | 16QAM | 36 | 0 | 15.03 | 15.11 | 15.15 | |
| 15 | 16QAM | 36 | 20 | 15.05 | 15.04 | 15.07 | |
| 15 | 16QAM | 36 | 39 | 15.03 | 15.00 | 14.91 | 16.5 |
| 15 | 16QAM | 75 | 0 | 15.05 | 15.06 | 15.11 | |
| 15 | 64QAM | 1 | 0 | 15.14 | 15.21 | 15.11 | |
| 15 | 64QAM | 1 | 37 | 15.06 | 15.08 | 15.11 | 16.5 |
| 15 | 64QAM | 1 | 74 | 14.94 | 15.10 | 14.97 | |
| 15 | 64QAM | 36 | 0 | 15.08 | 15.14 | 15.04 | |
| 15 | 64QAM | 36 | 20 | 15.03 | 15.03 | 14.91 | 16.5 |
| 15 | 64QAM | 36 | 39 | 14.89 | 15.03 | 14.98 | |
| 15 | 64QAM | 75 | 0 | 15.03 | 15.04 | 15.08 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

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|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 15 | 256QAM | 1 | 0 | 14.86 | 15.13 | 15.06 | 16.5 |
| 15 | 256QAM | 1 | 37 | 15.04 | 15.04 | 15.01 | |
| 15 | 256QAM | 1 | 74 | 14.88 | 14.88 | 14.95 | |
| 15 | 256QAM | 36 | 0 | 14.96 | 15.07 | 14.98 | 16.5 |
| 15 | 256QAM | 36 | 20 | 14.85 | 15.02 | 14.92 | |
| 15 | 256QAM | 36 | 39 | 14.89 | 14.96 | 14.90 | |
| 15 | 256QAM | 75 | 0 | 14.80 | 14.95 | 14.95 | |
| Channel | | | | 132022 | 132322 | 132622 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | |
| 10 | QPSK | 1 | 0 | 15.45 | 15.53 | 15.50 | 16.5 |
| 10 | QPSK | 1 | 25 | 15.16 | 15.12 | 15.27 | |
| 10 | QPSK | 1 | 49 | 15.20 | 15.31 | 15.23 | |
| 10 | QPSK | 25 | 0 | 15.22 | 15.34 | 15.17 | 16.5 |
| 10 | QPSK | 25 | 12 | 15.11 | 15.12 | 15.07 | |
| 10 | QPSK | 25 | 25 | 14.98 | 15.02 | 14.95 | |
| 10 | QPSK | 50 | 0 | 15.13 | 15.30 | 15.15 | |
| 10 | 16QAM | 1 | 0 | 15.06 | 15.25 | 15.04 | 16.5 |
| 10 | 16QAM | 1 | 25 | 14.98 | 15.22 | 14.90 | |
| 10 | 16QAM | 1 | 49 | 14.88 | 14.97 | 14.94 | |
| 10 | 16QAM | 25 | 0 | 14.93 | 15.02 | 15.04 | 16.5 |
| 10 | 16QAM | 25 | 12 | 14.92 | 14.99 | 15.02 | |
| 10 | 16QAM | 25 | 25 | 14.94 | 14.90 | 14.86 | |
| 10 | 16QAM | 50 | 0 | 14.97 | 15.03 | 15.08 | |
| 10 | 64QAM | 1 | 0 | 15.08 | 15.08 | 15.00 | 16.5 |
| 10 | 64QAM | 1 | 25 | 14.93 | 14.97 | 15.05 | |
| 10 | 64QAM | 1 | 49 | 14.85 | 15.07 | 14.91 | |
| 10 | 64QAM | 25 | 0 | 14.99 | 15.01 | 14.96 | 16.5 |
| 10 | 64QAM | 25 | 12 | 14.96 | 14.94 | 14.80 | |
| 10 | 64QAM | 25 | 25 | 14.80 | 14.91 | 14.85 | |
| 10 | 64QAM | 50 | 0 | 14.96 | 14.92 | 15.05 | |
| 10 | 256QAM | 1 | 0 | 14.75 | 15.01 | 15.00 | 16.5 |
| 10 | 256QAM | 1 | 25 | 15.01 | 14.93 | 14.94 | |
| 10 | 256QAM | 1 | 49 | 14.81 | 14.84 | 14.86 | |
| 10 | 256QAM | 25 | 0 | 14.91 | 15.02 | 14.85 | 16.5 |
| 10 | 256QAM | 25 | 12 | 14.80 | 14.95 | 14.82 | |
| 10 | 256QAM | 25 | 25 | 14.76 | 14.91 | 14.84 | |
| 10 | 256QAM | 50 | 0 | 14.72 | 14.92 | 14.89 | |
| Channel | | | | 131997 | 132322 | 132647 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | |
| 5 | QPSK | 1 | 0 | 15.32 | 15.47 | 15.47 | 16.5 |
| 5 | QPSK | 1 | 12 | 15.08 | 15.05 | 15.16 | |
| 5 | QPSK | 1 | 24 | 15.10 | 15.21 | 15.10 | |
| 5 | QPSK | 12 | 0 | 15.10 | 15.26 | 15.11 | 16.5 |
| 5 | QPSK | 12 | 7 | 15.03 | 14.99 | 15.03 | |
| 5 | QPSK | 12 | 13 | 14.94 | 14.97 | 14.90 | |
| 5 | QPSK | 25 | 0 | 15.09 | 15.17 | 15.07 | |
| 5 | 16QAM | 1 | 0 | 14.97 | 15.21 | 15.01 | 16.5 |
| 5 | 16QAM | 1 | 12 | 14.90 | 15.16 | 14.78 | |
| 5 | 16QAM | 1 | 24 | 14.85 | 14.93 | 14.86 | |
| 5 | 16QAM | 12 | 0 | 14.83 | 14.91 | 14.94 | 16.5 |
| 5 | 16QAM | 12 | 7 | 14.79 | 14.95 | 14.93 | |
| 5 | 16QAM | 12 | 13 | 14.89 | 14.85 | 14.80 | |
| 5 | 16QAM | 25 | 0 | 14.90 | 14.93 | 14.99 | |
| 5 | 64QAM | 1 | 0 | 15.00 | 15.01 | 14.97 | 16.5 |
| 5 | 64QAM | 1 | 12 | 14.89 | 14.88 | 15.01 | |
| 5 | 64QAM | 1 | 24 | 14.74 | 14.98 | 14.87 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

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|-----------------|--------|----|----|--------|--------|--------|---------------------|
| 5 | 64QAM | 12 | 0 | 14.93 | 14.96 | 14.91 | 16.5 |
| 5 | 64QAM | 12 | 7 | 14.91 | 14.83 | 14.77 | |
| 5 | 64QAM | 12 | 13 | 14.74 | 14.82 | 14.81 | |
| 5 | 64QAM | 25 | 0 | 14.90 | 14.85 | 15.02 | |
| 5 | 256QAM | 1 | 0 | 14.68 | 14.97 | 14.91 | 16.5 |
| 5 | 256QAM | 1 | 12 | 14.94 | 14.83 | 14.91 | |
| 5 | 256QAM | 1 | 24 | 14.71 | 14.80 | 14.83 | |
| 5 | 256QAM | 12 | 0 | 14.80 | 14.93 | 14.80 | 16.5 |
| 5 | 256QAM | 12 | 7 | 14.68 | 14.87 | 14.72 | |
| 5 | 256QAM | 12 | 13 | 14.71 | 14.82 | 14.74 | |
| 5 | 256QAM | 25 | 0 | 14.60 | 14.79 | 14.76 | |
| Channel | | | | 131987 | 132322 | 132657 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1711.5 | 1745 | 1778.5 | |
| 3 | QPSK | 1 | 0 | 15.25 | 15.40 | 15.36 | 16.5 |
| 3 | QPSK | 1 | 8 | 15.02 | 14.99 | 15.03 | |
| 3 | QPSK | 1 | 14 | 15.05 | 15.14 | 15.07 | |
| 3 | QPSK | 8 | 0 | 15.04 | 15.13 | 15.04 | 16.5 |
| 3 | QPSK | 8 | 4 | 14.99 | 14.86 | 14.98 | |
| 3 | QPSK | 8 | 7 | 14.84 | 14.85 | 14.86 | |
| 3 | QPSK | 15 | 0 | 14.97 | 15.12 | 15.00 | |
| 3 | 16QAM | 1 | 0 | 14.85 | 15.15 | 14.91 | 16.5 |
| 3 | 16QAM | 1 | 8 | 14.77 | 15.12 | 14.65 | |
| 3 | 16QAM | 1 | 14 | 14.82 | 14.81 | 14.78 | |
| 3 | 16QAM | 8 | 0 | 14.76 | 14.83 | 14.90 | 16.5 |
| 3 | 16QAM | 8 | 4 | 14.74 | 14.85 | 14.89 | |
| 3 | 16QAM | 8 | 7 | 14.79 | 14.73 | 14.71 | |
| 3 | 16QAM | 15 | 0 | 14.81 | 14.85 | 14.88 | |
| 3 | 64QAM | 1 | 0 | 14.88 | 14.95 | 14.88 | 16.5 |
| 3 | 64QAM | 1 | 8 | 14.84 | 14.77 | 14.92 | |
| 3 | 64QAM | 1 | 14 | 14.71 | 14.95 | 14.81 | |
| 3 | 64QAM | 8 | 0 | 14.89 | 14.92 | 14.87 | 16.5 |
| 3 | 64QAM | 8 | 4 | 14.80 | 14.73 | 14.74 | |
| 3 | 64QAM | 8 | 7 | 14.62 | 14.76 | 14.78 | |
| 3 | 64QAM | 15 | 0 | 14.80 | 14.72 | 14.89 | |
| 3 | 256QAM | 1 | 0 | 14.59 | 14.88 | 14.81 | 16.5 |
| 3 | 256QAM | 1 | 8 | 14.83 | 14.77 | 14.88 | |
| 3 | 256QAM | 1 | 14 | 14.61 | 14.69 | 14.77 | |
| 3 | 256QAM | 8 | 0 | 14.74 | 14.89 | 14.72 | 16.5 |
| 3 | 256QAM | 8 | 4 | 14.65 | 14.80 | 14.64 | |
| 3 | 256QAM | 8 | 7 | 14.59 | 14.76 | 14.66 | |
| 3 | 256QAM | 15 | 0 | 14.55 | 14.67 | 14.69 | |
| Channel | | | | 131979 | 132322 | 132665 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1710.7 | 1745 | 1779.3 | |
| 1.4 | QPSK | 1 | 0 | 15.20 | 15.31 | 15.29 | 16.5 |
| 1.4 | QPSK | 1 | 3 | 14.96 | 14.86 | 14.98 | |
| 1.4 | QPSK | 1 | 5 | 15.00 | 15.09 | 14.97 | |
| 1.4 | QPSK | 3 | 0 | 14.99 | 15.05 | 14.96 | |
| 1.4 | QPSK | 3 | 1 | 14.87 | 14.76 | 14.91 | |
| 1.4 | QPSK | 3 | 3 | 14.73 | 14.73 | 14.79 | |
| 1.4 | QPSK | 6 | 0 | 14.89 | 15.00 | 14.88 | 16.5 |
| 1.4 | 16QAM | 1 | 0 | 14.78 | 15.10 | 14.83 | 16.5 |
| 1.4 | 16QAM | 1 | 3 | 14.68 | 15.05 | 14.55 | |
| 1.4 | 16QAM | 1 | 5 | 14.72 | 14.70 | 14.65 | |
| 1.4 | 16QAM | 3 | 0 | 14.71 | 14.77 | 14.84 | |
| 1.4 | 16QAM | 3 | 1 | 14.71 | 14.82 | 14.80 | |
| 1.4 | 16QAM | 3 | 3 | 14.74 | 14.62 | 14.68 | |



| | | | | | | | |
|-----|--------|---|---|-------|-------|-------|------|
| 1.4 | 16QAM | 6 | 0 | 14.70 | 14.77 | 14.77 | 16.5 |
| 1.4 | 64QAM | 1 | 0 | 14.77 | 14.83 | 14.84 | 16.5 |
| 1.4 | 64QAM | 1 | 3 | 14.76 | 14.68 | 14.86 | |
| 1.4 | 64QAM | 1 | 5 | 14.61 | 14.86 | 14.68 | |
| 1.4 | 64QAM | 3 | 0 | 14.80 | 14.89 | 14.80 | |
| 1.4 | 64QAM | 3 | 1 | 14.71 | 14.63 | 14.61 | |
| 1.4 | 64QAM | 3 | 3 | 14.50 | 14.65 | 14.74 | |
| 1.4 | 64QAM | 6 | 0 | 14.72 | 14.59 | 14.80 | 16.5 |
| 1.4 | 256QAM | 1 | 0 | 14.52 | 14.83 | 14.72 | 16.5 |
| 1.4 | 256QAM | 1 | 3 | 14.75 | 14.73 | 14.78 | |
| 1.4 | 256QAM | 1 | 5 | 14.52 | 14.59 | 14.70 | |
| 1.4 | 256QAM | 3 | 0 | 14.68 | 14.83 | 14.68 | |
| 1.4 | 256QAM | 3 | 1 | 14.59 | 14.68 | 14.56 | |
| 1.4 | 256QAM | 3 | 3 | 14.54 | 14.73 | 14.57 | |
| 1.4 | 256QAM | 6 | 0 | 14.51 | 14.61 | 14.63 | 16.5 |

<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.

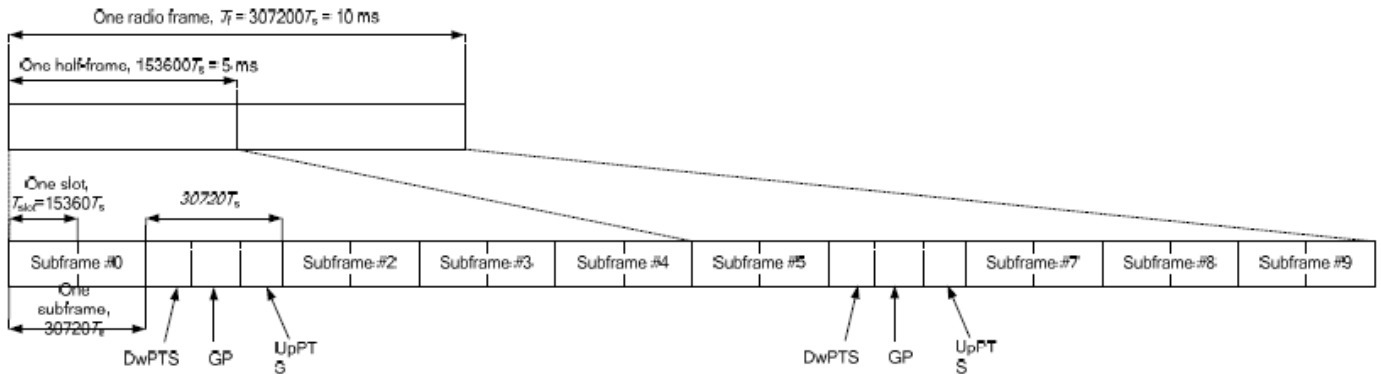


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

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

| 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 subframes, 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.



<LTE Band 48_Ant0_DSI 2>

| 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) |
|-----------------|------------|---------|-----------|-----------------------|------------------------------|-------------------------------|------------------------|---------------------|
| Channel | | | | 55340 | 55830 | 56150 | 56640 | 24 |
| Frequency (MHz) | | | | 3560 | 3609 | 3641 | 3690 | |
| 20 | QPSK | 1 | 0 | 23.75 | 23.77 | 23.76 | 23.72 | 24 |
| 20 | QPSK | 1 | 49 | 23.60 | 23.70 | 23.63 | 23.60 | |
| 20 | QPSK | 1 | 99 | 23.47 | 23.57 | 23.47 | 23.45 | |
| 20 | QPSK | 50 | 0 | 22.67 | 22.70 | 22.61 | 22.64 | 23 |
| 20 | QPSK | 50 | 24 | 22.72 | 22.76 | 22.75 | 22.72 | |
| 20 | QPSK | 50 | 50 | 22.67 | 22.78 | 22.66 | 22.68 | |
| 20 | QPSK | 100 | 0 | 22.64 | 22.74 | 22.65 | 22.64 | 23 |
| 20 | 16QAM | 1 | 0 | 22.77 | 22.87 | 22.85 | 22.78 | |
| 20 | 16QAM | 1 | 49 | 22.94 | 22.96 | 22.88 | 22.89 | |
| 20 | 16QAM | 1 | 99 | 22.62 | 22.69 | 22.67 | 22.58 | 22 |
| 20 | 16QAM | 50 | 0 | 21.68 | 21.70 | 21.60 | 21.66 | |
| 20 | 16QAM | 50 | 24 | 21.69 | 21.76 | 21.75 | 21.72 | |
| 20 | 16QAM | 50 | 50 | 21.73 | 21.75 | 21.71 | 21.68 | 22 |
| 20 | 16QAM | 100 | 0 | 21.62 | 21.73 | 21.65 | 21.61 | |
| 20 | 64QAM | 1 | 0 | 21.61 | 21.63 | 21.52 | 21.52 | |
| 20 | 64QAM | 1 | 49 | 21.51 | 21.60 | 21.56 | 21.50 | 22 |
| 20 | 64QAM | 1 | 99 | 21.47 | 21.49 | 21.47 | 21.45 | |
| 20 | 64QAM | 50 | 0 | 20.59 | 20.68 | 20.67 | 20.60 | |
| 20 | 64QAM | 50 | 24 | 20.69 | 20.74 | 20.70 | 20.67 | 21 |
| 20 | 64QAM | 50 | 50 | 20.64 | 20.73 | 20.62 | 20.64 | |
| 20 | 64QAM | 100 | 0 | 20.63 | 20.72 | 20.64 | 20.65 | |
| 20 | 256QAM | 1 | 0 | 18.17 | 18.11 | 17.97 | 18.00 | 19 |
| 20 | 256QAM | 1 | 49 | 18.17 | 18.03 | 17.92 | 17.90 | |
| 20 | 256QAM | 1 | 99 | 18.15 | 18.02 | 17.93 | 17.96 | |
| 20 | 256QAM | 50 | 0 | 17.95 | 18.06 | 18.06 | 18.05 | 19 |
| 20 | 256QAM | 50 | 24 | 17.87 | 18.02 | 18.05 | 18.05 | |
| 20 | 256QAM | 50 | 50 | 17.87 | 18.01 | 18.06 | 17.98 | |
| 20 | 256QAM | 100 | 0 | 17.87 | 17.97 | 18.04 | 18.05 | 19 |
| Channel | | | | 55315 | 55820 | 56160 | 56665 | |
| Frequency (MHz) | | | | 3557.5 | 3608 | 3642 | 3692.5 | |
| 15 | QPSK | 1 | 0 | 23.75 | 23.72 | 23.71 | 23.71 | 24 |
| 15 | QPSK | 1 | 37 | 23.51 | 23.65 | 23.63 | 23.50 | |
| 15 | QPSK | 1 | 74 | 23.44 | 23.47 | 23.42 | 23.37 | |
| 15 | QPSK | 36 | 0 | 22.58 | 22.62 | 22.55 | 22.62 | 23 |
| 15 | QPSK | 36 | 20 | 22.68 | 22.74 | 22.66 | 22.72 | |
| 15 | QPSK | 36 | 39 | 22.59 | 22.68 | 22.60 | 22.64 | |
| 15 | QPSK | 75 | 0 | 22.60 | 22.74 | 22.58 | 22.57 | 23 |
| 15 | 16QAM | 1 | 0 | 22.72 | 22.77 | 22.77 | 22.77 | |
| 15 | 16QAM | 1 | 37 | 22.93 | 22.86 | 22.81 | 22.87 | |
| 15 | 16QAM | 1 | 74 | 22.61 | 22.61 | 22.58 | 22.56 | 22 |
| 15 | 16QAM | 36 | 0 | 21.66 | 21.61 | 21.58 | 21.58 | |
| 15 | 16QAM | 36 | 20 | 21.63 | 21.72 | 21.72 | 21.68 | |
| 15 | 16QAM | 36 | 39 | 21.70 | 21.73 | 21.68 | 21.68 | 22 |
| 15 | 16QAM | 75 | 0 | 21.52 | 21.68 | 21.64 | 21.60 | |
| 15 | 64QAM | 1 | 0 | 21.57 | 21.54 | 21.47 | 21.46 | |
| 15 | 64QAM | 1 | 37 | 21.45 | 21.56 | 21.55 | 21.44 | 22 |
| 15 | 64QAM | 1 | 74 | 21.46 | 21.44 | 21.42 | 21.37 | |
| 15 | 64QAM | 36 | 0 | 20.52 | 20.67 | 20.61 | 20.50 | |
| 15 | 64QAM | 36 | 20 | 20.60 | 20.64 | 20.64 | 20.61 | 21 |
| 15 | 64QAM | 36 | 39 | 20.62 | 20.71 | 20.59 | 20.59 | |
| 15 | 64QAM | 75 | 0 | 20.59 | 20.67 | 20.58 | 20.63 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|--------|---------------------|
| 15 | 256QAM | 1 | 0 | 18.10 | 18.07 | 17.87 | 18.00 | 19 |
| 15 | 256QAM | 1 | 37 | 18.12 | 18.00 | 17.88 | 17.80 | |
| 15 | 256QAM | 1 | 74 | 18.15 | 17.92 | 17.87 | 17.88 | |
| 15 | 256QAM | 36 | 0 | 17.85 | 17.99 | 18.03 | 18.00 | 19 |
| 15 | 256QAM | 36 | 20 | 17.83 | 17.93 | 17.97 | 17.97 | |
| 15 | 256QAM | 36 | 39 | 17.80 | 17.94 | 17.98 | 17.93 | |
| 15 | 256QAM | 75 | 0 | 17.86 | 17.97 | 18.03 | 18.04 | |
| Channel | | | | 55290 | 55815 | 56165 | 56690 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3555 | 3607.5 | 3642.5 | 3695 | |
| 10 | QPSK | 1 | 0 | 23.73 | 23.73 | 23.69 | 23.62 | 24 |
| 10 | QPSK | 1 | 25 | 23.59 | 23.64 | 23.61 | 23.50 | |
| 10 | QPSK | 1 | 49 | 23.45 | 23.57 | 23.37 | 23.38 | |
| 10 | QPSK | 25 | 0 | 22.61 | 22.60 | 22.61 | 22.61 | 23 |
| 10 | QPSK | 25 | 12 | 22.67 | 22.67 | 22.67 | 22.65 | |
| 10 | QPSK | 25 | 25 | 22.58 | 22.75 | 22.58 | 22.58 | |
| 10 | QPSK | 50 | 0 | 22.54 | 22.65 | 22.59 | 22.58 | |
| 10 | 16QAM | 1 | 0 | 22.71 | 22.84 | 22.84 | 22.68 | 23 |
| 10 | 16QAM | 1 | 25 | 22.94 | 22.96 | 22.86 | 22.87 | |
| 10 | 16QAM | 1 | 49 | 22.59 | 22.64 | 22.62 | 22.53 | |
| 10 | 16QAM | 25 | 0 | 21.66 | 21.65 | 21.57 | 21.61 | 22 |
| 10 | 16QAM | 25 | 12 | 21.59 | 21.72 | 21.75 | 21.70 | |
| 10 | 16QAM | 25 | 25 | 21.70 | 21.66 | 21.71 | 21.64 | |
| 10 | 16QAM | 50 | 0 | 21.59 | 21.67 | 21.55 | 21.61 | |
| 10 | 64QAM | 1 | 0 | 21.51 | 21.63 | 21.43 | 21.51 | 22 |
| 10 | 64QAM | 1 | 25 | 21.44 | 21.59 | 21.53 | 21.44 | |
| 10 | 64QAM | 1 | 49 | 21.40 | 21.39 | 21.44 | 21.38 | |
| 10 | 64QAM | 25 | 0 | 20.51 | 20.67 | 20.66 | 20.53 | 21 |
| 10 | 64QAM | 25 | 12 | 20.69 | 20.69 | 20.63 | 20.65 | |
| 10 | 64QAM | 25 | 25 | 20.63 | 20.68 | 20.60 | 20.55 | |
| 10 | 64QAM | 50 | 0 | 20.53 | 20.68 | 20.60 | 20.63 | |
| 10 | 256QAM | 1 | 0 | 18.07 | 18.03 | 17.92 | 17.94 | 19 |
| 10 | 256QAM | 1 | 25 | 18.12 | 18.02 | 17.91 | 17.87 | |
| 10 | 256QAM | 1 | 49 | 18.06 | 18.00 | 17.88 | 17.87 | |
| 10 | 256QAM | 25 | 0 | 17.85 | 18.02 | 18.02 | 18.04 | 19 |
| 10 | 256QAM | 25 | 12 | 17.80 | 18.02 | 18.03 | 17.99 | |
| 10 | 256QAM | 25 | 25 | 17.85 | 18.00 | 18.05 | 17.94 | |
| 10 | 256QAM | 50 | 0 | 17.84 | 17.91 | 18.02 | 17.96 | |
| Channel | | | | 55265 | 55810 | 56170 | 56715 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3552.5 | 3607 | 3643 | 3697.5 | |
| 5 | QPSK | 1 | 0 | 23.65 | 23.76 | 23.68 | 23.72 | 24 |
| 5 | QPSK | 1 | 12 | 23.52 | 23.67 | 23.58 | 23.51 | |
| 5 | QPSK | 1 | 24 | 23.46 | 23.57 | 23.41 | 23.43 | |
| 5 | QPSK | 12 | 0 | 22.60 | 22.65 | 22.54 | 22.54 | 23 |
| 5 | QPSK | 12 | 7 | 22.72 | 22.73 | 22.75 | 22.68 | |
| 5 | QPSK | 12 | 13 | 22.57 | 22.68 | 22.57 | 22.66 | |
| 5 | QPSK | 25 | 0 | 22.62 | 22.64 | 22.55 | 22.60 | |
| 5 | 16QAM | 1 | 0 | 22.77 | 22.80 | 22.79 | 22.77 | 23 |
| 5 | 16QAM | 1 | 12 | 22.89 | 22.96 | 22.79 | 22.81 | |
| 5 | 16QAM | 1 | 24 | 22.52 | 22.59 | 22.65 | 22.53 | |
| 5 | 16QAM | 12 | 0 | 21.68 | 21.68 | 21.52 | 21.61 | 22 |
| 5 | 16QAM | 12 | 7 | 21.59 | 21.71 | 21.72 | 21.62 | |
| 5 | 16QAM | 12 | 13 | 21.71 | 21.75 | 21.70 | 21.64 | |
| 5 | 16QAM | 25 | 0 | 21.62 | 21.69 | 21.58 | 21.52 | |
| 5 | 64QAM | 1 | 0 | 21.51 | 21.55 | 21.49 | 21.51 | 22 |
| 5 | 64QAM | 1 | 12 | 21.45 | 21.52 | 21.56 | 21.50 | |
| 5 | 64QAM | 1 | 24 | 21.41 | 21.46 | 21.37 | 21.43 | |



| | | | | | | | | |
|---|--------|----|----|-------|-------|-------|-------|----|
| 5 | 64QAM | 12 | 0 | 20.52 | 20.61 | 20.61 | 20.54 | 21 |
| 5 | 64QAM | 12 | 7 | 20.66 | 20.72 | 20.65 | 20.66 | |
| 5 | 64QAM | 12 | 13 | 20.63 | 20.65 | 20.56 | 20.59 | |
| 5 | 64QAM | 25 | 0 | 20.53 | 20.69 | 20.62 | 20.64 | 19 |
| 5 | 256QAM | 1 | 0 | 18.12 | 18.01 | 17.93 | 17.95 | |
| 5 | 256QAM | 1 | 12 | 18.17 | 17.93 | 17.82 | 17.84 | |
| 5 | 256QAM | 1 | 24 | 18.15 | 18.02 | 17.92 | 17.92 | 19 |
| 5 | 256QAM | 12 | 0 | 17.94 | 18.03 | 18.06 | 18.01 | |
| 5 | 256QAM | 12 | 7 | 17.78 | 17.92 | 17.99 | 17.99 | |
| 5 | 256QAM | 12 | 13 | 17.77 | 18.01 | 18.05 | 17.97 | |
| 5 | 256QAM | 25 | 0 | 17.86 | 17.89 | 18.03 | 17.95 | |

<LTE Band 48_Ant0_DSI 3/5>

| 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) |
|-----------------|------------|---------|-----------|-----------------------|------------------------------|-------------------------------|------------------------|---------------------|
| Channel | | | | 55340 | 55830 | 56150 | 56640 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3560 | 3609 | 3641 | 3690 | |
| 20 | QPSK | 1 | 0 | 23.05 | 23.24 | 23.14 | 23.22 | 23.5 |
| 20 | QPSK | 1 | 49 | 22.87 | 23.22 | 23.20 | 23.13 | |
| 20 | QPSK | 1 | 99 | 22.82 | 22.90 | 22.77 | 22.80 | |
| 20 | QPSK | 50 | 0 | 22.00 | 22.13 | 21.89 | 22.16 | 22.5 |
| 20 | QPSK | 50 | 24 | 22.14 | 22.22 | 22.23 | 22.09 | |
| 20 | QPSK | 50 | 50 | 22.09 | 22.31 | 22.21 | 22.17 | |
| 20 | QPSK | 100 | 0 | 21.94 | 22.19 | 22.10 | 22.00 | 22.5 |
| 20 | 16QAM | 1 | 0 | 22.22 | 22.35 | 22.20 | 22.13 | |
| 20 | 16QAM | 1 | 49 | 22.36 | 22.40 | 22.24 | 22.32 | |
| 20 | 16QAM | 1 | 99 | 22.15 | 21.97 | 22.22 | 22.11 | 21.5 |
| 20 | 16QAM | 50 | 0 | 20.95 | 20.99 | 20.97 | 21.17 | |
| 20 | 16QAM | 50 | 24 | 21.17 | 21.10 | 21.26 | 21.01 | |
| 20 | 16QAM | 50 | 50 | 21.07 | 21.18 | 21.13 | 21.09 | 21.5 |
| 20 | 16QAM | 100 | 0 | 20.95 | 21.26 | 20.94 | 21.18 | |
| 20 | 64QAM | 1 | 0 | 21.11 | 20.93 | 21.04 | 20.93 | |
| 20 | 64QAM | 1 | 49 | 20.93 | 21.00 | 20.83 | 20.81 | 21.5 |
| 20 | 64QAM | 1 | 99 | 20.92 | 21.02 | 20.97 | 20.84 | |
| 20 | 64QAM | 50 | 0 | 20.06 | 20.11 | 20.06 | 20.10 | |
| 20 | 64QAM | 50 | 24 | 20.15 | 20.06 | 20.19 | 20.16 | 20.5 |
| 20 | 64QAM | 50 | 50 | 20.00 | 20.01 | 20.03 | 20.04 | |
| 20 | 64QAM | 100 | 0 | 20.18 | 20.26 | 20.09 | 20.02 | |
| 20 | 256QAM | 1 | 0 | 17.47 | 17.64 | 17.50 | 17.39 | 18.5 |
| 20 | 256QAM | 1 | 49 | 17.46 | 17.48 | 17.49 | 17.36 | |
| 20 | 256QAM | 1 | 99 | 17.71 | 17.57 | 17.47 | 17.34 | |
| 20 | 256QAM | 50 | 0 | 17.36 | 17.55 | 17.38 | 17.48 | 18.5 |
| 20 | 256QAM | 50 | 24 | 17.36 | 17.45 | 17.42 | 17.54 | |
| 20 | 256QAM | 50 | 50 | 17.14 | 17.46 | 17.63 | 17.47 | |
| 20 | 256QAM | 100 | 0 | 17.28 | 17.47 | 17.48 | 17.38 | |
| Channel | | | | 55315 | 55820 | 56160 | 56665 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3557.5 | 3608 | 3642 | 3692.5 | |
| 15 | QPSK | 1 | 0 | 23.14 | 23.22 | 23.12 | 23.09 | 23.5 |
| 15 | QPSK | 1 | 37 | 23.01 | 23.05 | 23.15 | 22.89 | |
| 15 | QPSK | 1 | 74 | 22.83 | 23.00 | 22.72 | 22.64 | |
| 15 | QPSK | 36 | 0 | 21.93 | 21.93 | 22.04 | 21.97 | 22.5 |
| 15 | QPSK | 36 | 20 | 22.24 | 22.09 | 22.22 | 22.00 | |
| 15 | QPSK | 36 | 39 | 22.12 | 22.05 | 22.11 | 22.06 | |
| 15 | QPSK | 75 | 0 | 21.99 | 22.06 | 21.86 | 22.08 | 22.5 |
| 15 | 16QAM | 1 | 0 | 22.28 | 22.27 | 22.30 | 22.16 | |
| 15 | 16QAM | 1 | 37 | 22.23 | 22.31 | 22.22 | 22.16 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|----|----|--------|--------|--------|--------|---------------------|
| 15 | 16QAM | 1 | 74 | 21.94 | 21.96 | 22.10 | 22.04 | 21.5 |
| 15 | 16QAM | 36 | 0 | 21.00 | 21.10 | 21.03 | 20.87 | |
| 15 | 16QAM | 36 | 20 | 20.91 | 21.11 | 21.06 | 21.14 | |
| 15 | 16QAM | 36 | 39 | 21.27 | 21.20 | 21.22 | 21.02 | |
| 15 | 16QAM | 75 | 0 | 20.82 | 21.25 | 20.92 | 21.17 | |
| 15 | 64QAM | 1 | 0 | 21.01 | 21.03 | 20.76 | 21.03 | 21.5 |
| 15 | 64QAM | 1 | 37 | 20.99 | 21.04 | 20.83 | 20.97 | |
| 15 | 64QAM | 1 | 74 | 20.79 | 20.93 | 20.74 | 20.74 | |
| 15 | 64QAM | 36 | 0 | 20.09 | 20.10 | 19.91 | 19.90 | 20.5 |
| 15 | 64QAM | 36 | 20 | 20.06 | 20.03 | 20.20 | 19.95 | |
| 15 | 64QAM | 36 | 39 | 20.11 | 20.18 | 20.00 | 19.91 | |
| 15 | 64QAM | 75 | 0 | 19.87 | 20.06 | 19.95 | 20.10 | |
| 15 | 256QAM | 1 | 0 | 17.47 | 17.52 | 17.34 | 17.36 | 18.5 |
| 15 | 256QAM | 1 | 37 | 17.69 | 17.30 | 17.39 | 17.17 | |
| 15 | 256QAM | 1 | 74 | 17.48 | 17.29 | 17.14 | 17.43 | |
| 15 | 256QAM | 36 | 0 | 17.42 | 17.42 | 17.50 | 17.29 | 18.5 |
| 15 | 256QAM | 36 | 20 | 17.15 | 17.20 | 17.32 | 17.42 | |
| 15 | 256QAM | 36 | 39 | 17.21 | 17.27 | 17.49 | 17.44 | |
| 15 | 256QAM | 75 | 0 | 17.24 | 17.29 | 17.44 | 17.41 | |
| Channel | | | | 55290 | 55815 | 56165 | 56690 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3555 | 3607.5 | 3642.5 | 3695 | |
| 10 | QPSK | 1 | 0 | 23.12 | 23.09 | 23.22 | 23.14 | 23.5 |
| 10 | QPSK | 1 | 25 | 23.06 | 22.99 | 23.02 | 22.87 | |
| 10 | QPSK | 1 | 49 | 22.80 | 22.86 | 22.72 | 22.95 | |
| 10 | QPSK | 25 | 0 | 22.02 | 22.10 | 21.91 | 21.89 | 22.5 |
| 10 | QPSK | 25 | 12 | 22.12 | 22.17 | 22.15 | 22.20 | |
| 10 | QPSK | 25 | 25 | 22.14 | 22.30 | 21.85 | 22.02 | |
| 10 | QPSK | 50 | 0 | 22.08 | 22.02 | 21.93 | 21.98 | |
| 10 | 16QAM | 1 | 0 | 22.07 | 22.24 | 22.41 | 22.09 | 22.5 |
| 10 | 16QAM | 1 | 25 | 22.35 | 22.48 | 22.15 | 22.42 | |
| 10 | 16QAM | 1 | 49 | 21.89 | 22.01 | 22.07 | 21.80 | |
| 10 | 16QAM | 25 | 0 | 21.01 | 20.97 | 20.86 | 21.14 | 21.5 |
| 10 | 16QAM | 25 | 12 | 21.06 | 21.20 | 21.28 | 20.97 | |
| 10 | 16QAM | 25 | 25 | 21.00 | 20.94 | 21.03 | 20.92 | |
| 10 | 16QAM | 50 | 0 | 21.16 | 21.20 | 20.87 | 20.95 | |
| 10 | 64QAM | 1 | 0 | 20.92 | 20.91 | 20.75 | 20.90 | |
| 10 | 64QAM | 1 | 25 | 20.74 | 20.91 | 21.10 | 20.71 | 21.5 |
| 10 | 64QAM | 1 | 49 | 20.85 | 20.91 | 20.93 | 20.95 | |
| 10 | 64QAM | 25 | 0 | 20.07 | 20.07 | 19.99 | 20.03 | |
| 10 | 64QAM | 25 | 12 | 20.01 | 20.22 | 19.99 | 20.16 | 20.5 |
| 10 | 64QAM | 25 | 25 | 20.18 | 20.19 | 19.89 | 19.94 | |
| 10 | 64QAM | 50 | 0 | 20.05 | 20.03 | 20.14 | 19.90 | |
| 10 | 256QAM | 1 | 0 | 17.42 | 17.56 | 17.22 | 17.41 | |
| 10 | 256QAM | 1 | 25 | 17.62 | 17.48 | 17.27 | 17.14 | 18.5 |
| 10 | 256QAM | 1 | 49 | 17.36 | 17.45 | 17.27 | 17.17 | |
| 10 | 256QAM | 25 | 0 | 17.34 | 17.36 | 17.43 | 17.32 | |
| 10 | 256QAM | 25 | 12 | 17.28 | 17.33 | 17.32 | 17.54 | 18.5 |
| 10 | 256QAM | 25 | 25 | 17.26 | 17.37 | 17.47 | 17.45 | |
| 10 | 256QAM | 50 | 0 | 17.16 | 17.42 | 17.46 | 17.45 | |
| Channel | | | | 55265 | 55810 | 56170 | 56715 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3552.5 | 3607 | 3643 | 3697.5 | |
| 5 | QPSK | 1 | 0 | 23.04 | 23.20 | 22.98 | 23.05 | 23.5 |
| 5 | QPSK | 1 | 12 | 22.97 | 23.19 | 22.87 | 22.99 | |
| 5 | QPSK | 1 | 24 | 22.74 | 22.98 | 22.97 | 22.78 | |
| 5 | QPSK | 12 | 0 | 21.90 | 22.12 | 22.04 | 22.10 | 22.5 |
| 5 | QPSK | 12 | 7 | 22.16 | 22.00 | 22.03 | 22.09 | |



| | | | | | | | | |
|---|--------|----|----|-------|-------|-------|-------|------|
| 5 | QPSK | 12 | 13 | 22.10 | 22.06 | 22.01 | 22.09 | |
| 5 | QPSK | 25 | 0 | 21.95 | 22.13 | 22.00 | 22.11 | |
| 5 | 16QAM | 1 | 0 | 22.31 | 22.26 | 22.11 | 22.15 | 22.5 |
| 5 | 16QAM | 1 | 12 | 22.43 | 22.46 | 22.36 | 22.34 | |
| 5 | 16QAM | 1 | 24 | 21.79 | 21.99 | 21.98 | 21.87 | |
| 5 | 16QAM | 12 | 0 | 21.20 | 21.20 | 20.95 | 21.15 | 21.5 |
| 5 | 16QAM | 12 | 7 | 20.99 | 21.09 | 21.23 | 21.11 | |
| 5 | 16QAM | 12 | 13 | 21.12 | 21.10 | 21.27 | 21.17 | |
| 5 | 16QAM | 25 | 0 | 21.03 | 21.26 | 20.85 | 20.86 | |
| 5 | 64QAM | 1 | 0 | 21.02 | 21.05 | 21.03 | 20.84 | 21.5 |
| 5 | 64QAM | 1 | 12 | 20.94 | 20.79 | 20.96 | 20.95 | |
| 5 | 64QAM | 1 | 24 | 20.95 | 20.73 | 20.83 | 20.87 | |
| 5 | 64QAM | 12 | 0 | 19.84 | 20.03 | 19.98 | 19.90 | 20.5 |
| 5 | 64QAM | 12 | 7 | 19.98 | 20.26 | 20.05 | 20.09 | |
| 5 | 64QAM | 12 | 13 | 20.10 | 20.02 | 19.87 | 19.98 | |
| 5 | 64QAM | 25 | 0 | 19.90 | 20.20 | 19.95 | 19.91 | |
| 5 | 256QAM | 1 | 0 | 17.44 | 17.48 | 17.47 | 17.37 | 18.5 |
| 5 | 256QAM | 1 | 12 | 17.45 | 17.44 | 17.29 | 17.21 | |
| 5 | 256QAM | 1 | 24 | 17.63 | 17.50 | 17.31 | 17.21 | |
| 5 | 256QAM | 12 | 0 | 17.33 | 17.41 | 17.61 | 17.37 | 18.5 |
| 5 | 256QAM | 12 | 7 | 17.10 | 17.43 | 17.26 | 17.26 | |
| 5 | 256QAM | 12 | 13 | 17.29 | 17.39 | 17.57 | 17.54 | |
| 5 | 256QAM | 25 | 0 | 17.41 | 17.34 | 17.45 | 17.37 | |

<LTE Band 48_Ant1_DSI 2>

| 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) |
|-----------------|------------|---------|-----------|-----------------------|------------------------------|-------------------------------|------------------------|---------------------|
| Channel | | | | 55340 | 55830 | 56150 | 56640 | |
| Frequency (MHz) | | | | 3560 | 3609 | 3641 | 3690 | |
| 20 | QPSK | 1 | 0 | 22.23 | 22.47 | 22.60 | 22.75 | 24 |
| 20 | QPSK | 1 | 49 | 22.20 | 22.35 | 22.50 | 22.68 | |
| 20 | QPSK | 1 | 99 | 22.18 | 22.36 | 22.47 | 22.67 | |
| 20 | QPSK | 50 | 0 | 21.14 | 21.33 | 21.54 | 21.56 | 23 |
| 20 | QPSK | 50 | 24 | 21.12 | 21.32 | 21.47 | 21.55 | |
| 20 | QPSK | 50 | 50 | 21.02 | 21.20 | 21.47 | 21.57 | |
| 20 | QPSK | 100 | 0 | 21.11 | 21.33 | 21.56 | 21.69 | |
| 20 | 16QAM | 1 | 0 | 21.37 | 21.61 | 21.79 | 21.97 | 23 |
| 20 | 16QAM | 1 | 49 | 21.42 | 21.61 | 21.76 | 21.93 | |
| 20 | 16QAM | 1 | 99 | 21.30 | 21.57 | 21.73 | 21.86 | |
| 20 | 16QAM | 50 | 0 | 20.09 | 20.40 | 20.50 | 20.68 | 22 |
| 20 | 16QAM | 50 | 24 | 20.01 | 20.27 | 20.49 | 20.59 | |
| 20 | 16QAM | 50 | 50 | 19.98 | 20.26 | 20.38 | 20.56 | |
| 20 | 16QAM | 100 | 0 | 20.08 | 20.35 | 20.53 | 20.64 | |
| 20 | 64QAM | 1 | 0 | 20.47 | 20.65 | 20.87 | 21.03 | 22 |
| 20 | 64QAM | 1 | 49 | 20.43 | 20.69 | 20.80 | 20.99 | |
| 20 | 64QAM | 1 | 99 | 20.37 | 20.56 | 20.81 | 20.91 | |
| 20 | 64QAM | 50 | 0 | 19.20 | 19.38 | 19.57 | 19.75 | 21 |
| 20 | 64QAM | 50 | 24 | 19.15 | 19.30 | 19.52 | 19.68 | |
| 20 | 64QAM | 50 | 50 | 19.13 | 19.28 | 19.49 | 19.63 | |
| 20 | 64QAM | 100 | 0 | 19.12 | 19.38 | 19.53 | 19.72 | |
| 20 | 256QAM | 1 | 0 | 17.34 | 17.50 | 17.73 | 17.86 | 19 |
| 20 | 256QAM | 1 | 49 | 17.26 | 17.55 | 17.74 | 17.85 | |
| 20 | 256QAM | 1 | 99 | 17.28 | 17.45 | 17.66 | 17.83 | |
| 20 | 256QAM | 50 | 0 | 17.20 | 17.40 | 17.64 | 17.74 | 19 |
| 20 | 256QAM | 50 | 24 | 17.09 | 17.30 | 17.49 | 17.68 | |
| 20 | 256QAM | 50 | 50 | 17.06 | 17.30 | 17.49 | 17.62 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|-----|----|--------|--------|--------|--------|---------------------|
| 20 | 256QAM | 100 | 0 | 17.15 | 17.39 | 17.58 | 17.70 | |
| Channel | | | | 55315 | 55820 | 56160 | 56665 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3557.5 | 3608 | 3642 | 3692.5 | |
| 15 | QPSK | 1 | 0 | 21.98 | 22.47 | 22.35 | 22.59 | 24 |
| 15 | QPSK | 1 | 37 | 22.17 | 22.34 | 22.20 | 22.65 | |
| 15 | QPSK | 1 | 74 | 22.18 | 22.23 | 22.21 | 22.45 | |
| 15 | QPSK | 36 | 0 | 21.10 | 21.24 | 21.25 | 21.69 | 23 |
| 15 | QPSK | 36 | 20 | 20.92 | 21.15 | 21.27 | 21.50 | |
| 15 | QPSK | 36 | 39 | 20.85 | 21.11 | 21.24 | 21.34 | |
| 15 | QPSK | 75 | 0 | 20.94 | 21.29 | 21.34 | 21.47 | |
| 15 | 16QAM | 1 | 0 | 21.14 | 21.40 | 21.75 | 21.95 | 23 |
| 15 | 16QAM | 1 | 37 | 21.39 | 21.36 | 21.65 | 21.89 | |
| 15 | 16QAM | 1 | 74 | 21.01 | 21.52 | 21.65 | 21.69 | |
| 15 | 16QAM | 36 | 0 | 20.01 | 20.12 | 20.28 | 20.48 | 22 |
| 15 | 16QAM | 36 | 20 | 19.84 | 20.24 | 20.46 | 20.47 | |
| 15 | 16QAM | 36 | 39 | 19.93 | 20.19 | 20.13 | 20.52 | |
| 15 | 16QAM | 75 | 0 | 19.95 | 20.12 | 20.30 | 20.53 | |
| 15 | 64QAM | 1 | 0 | 20.32 | 20.57 | 20.82 | 20.88 | 22 |
| 15 | 64QAM | 1 | 37 | 20.41 | 20.41 | 20.78 | 20.81 | |
| 15 | 64QAM | 1 | 74 | 20.37 | 20.55 | 20.75 | 20.86 | |
| 15 | 64QAM | 36 | 0 | 19.18 | 19.22 | 19.31 | 19.48 | 21 |
| 15 | 64QAM | 36 | 20 | 19.02 | 19.13 | 19.38 | 19.43 | |
| 15 | 64QAM | 36 | 39 | 19.09 | 19.19 | 19.42 | 19.42 | |
| 15 | 64QAM | 75 | 0 | 19.12 | 19.12 | 19.40 | 19.54 | |
| 15 | 256QAM | 1 | 0 | 17.33 | 17.37 | 17.70 | 17.68 | 19 |
| 15 | 256QAM | 1 | 37 | 17.00 | 17.34 | 17.48 | 17.55 | |
| 15 | 256QAM | 1 | 74 | 17.01 | 17.32 | 17.48 | 17.71 | |
| 15 | 256QAM | 36 | 0 | 16.93 | 17.21 | 17.61 | 17.70 | 19 |
| 15 | 256QAM | 36 | 20 | 16.97 | 17.08 | 17.43 | 17.49 | |
| 15 | 256QAM | 36 | 39 | 16.92 | 17.18 | 17.34 | 17.51 | |
| 15 | 256QAM | 75 | 0 | 16.98 | 17.39 | 17.40 | 17.50 | |
| Channel | | | | 55290 | 55815 | 56165 | 56690 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3555 | 3607.5 | 3642.5 | 3695 | |
| 10 | QPSK | 1 | 0 | 21.95 | 22.45 | 22.35 | 22.66 | 24 |
| 10 | QPSK | 1 | 25 | 21.92 | 22.31 | 22.20 | 22.57 | |
| 10 | QPSK | 1 | 49 | 22.03 | 22.13 | 22.46 | 22.43 | |
| 10 | QPSK | 25 | 0 | 21.11 | 21.23 | 21.40 | 21.47 | 23 |
| 10 | QPSK | 25 | 12 | 20.90 | 21.28 | 21.17 | 21.56 | |
| 10 | QPSK | 25 | 25 | 20.77 | 20.99 | 21.23 | 21.46 | |
| 10 | QPSK | 50 | 0 | 21.09 | 21.22 | 21.27 | 21.60 | |
| 10 | 16QAM | 1 | 0 | 21.07 | 21.37 | 21.57 | 21.77 | 23 |
| 10 | 16QAM | 1 | 25 | 21.23 | 21.57 | 21.64 | 21.73 | |
| 10 | 16QAM | 1 | 49 | 21.07 | 21.53 | 21.51 | 21.56 | |
| 10 | 16QAM | 25 | 0 | 19.98 | 20.37 | 20.22 | 20.66 | 22 |
| 10 | 16QAM | 25 | 12 | 19.93 | 20.12 | 20.43 | 20.45 | |
| 10 | 16QAM | 25 | 25 | 19.92 | 20.20 | 20.11 | 20.56 | |
| 10 | 16QAM | 50 | 0 | 19.86 | 20.12 | 20.48 | 20.62 | |
| 10 | 64QAM | 1 | 0 | 20.42 | 20.37 | 20.68 | 20.92 | 22 |
| 10 | 64QAM | 1 | 25 | 20.42 | 20.40 | 20.50 | 20.85 | |
| 10 | 64QAM | 1 | 49 | 20.09 | 20.29 | 20.51 | 20.66 | |
| 10 | 64QAM | 25 | 0 | 19.19 | 19.31 | 19.27 | 19.63 | 21 |
| 10 | 64QAM | 25 | 12 | 18.93 | 19.15 | 19.25 | 19.48 | |
| 10 | 64QAM | 25 | 25 | 18.95 | 19.26 | 19.47 | 19.53 | |
| 10 | 64QAM | 50 | 0 | 19.10 | 19.28 | 19.36 | 19.62 | |
| 10 | 256QAM | 1 | 0 | 17.14 | 17.23 | 17.49 | 17.60 | 19 |
| 10 | 256QAM | 1 | 25 | 17.19 | 17.43 | 17.63 | 17.63 | |



| | | | | | | | | |
|-----------------|--------|----|----|--------|-------|-------|--------|---------------------|
| 10 | 256QAM | 1 | 49 | 17.11 | 17.22 | 17.49 | 17.81 | 19 |
| 10 | 256QAM | 25 | 0 | 17.05 | 17.18 | 17.38 | 17.74 | |
| 10 | 256QAM | 25 | 12 | 17.05 | 17.27 | 17.43 | 17.57 | |
| 10 | 256QAM | 25 | 25 | 17.01 | 17.28 | 17.48 | 17.56 | |
| 10 | 256QAM | 50 | 0 | 16.91 | 17.29 | 17.32 | 17.65 | |
| Channel | | | | 55265 | 55810 | 56170 | 56715 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3552.5 | 3607 | 3643 | 3697.5 | |
| 5 | QPSK | 1 | 0 | 22.06 | 22.27 | 22.43 | 22.48 | 24 |
| 5 | QPSK | 1 | 12 | 22.08 | 22.14 | 22.49 | 22.50 | |
| 5 | QPSK | 1 | 24 | 21.91 | 22.13 | 22.24 | 22.59 | |
| 5 | QPSK | 12 | 0 | 20.93 | 21.31 | 21.25 | 21.40 | 23 |
| 5 | QPSK | 12 | 7 | 20.88 | 21.07 | 21.27 | 21.58 | |
| 5 | QPSK | 12 | 13 | 20.92 | 21.04 | 21.22 | 21.41 | |
| 5 | QPSK | 25 | 0 | 21.10 | 21.16 | 21.49 | 21.52 | 23 |
| 5 | 16QAM | 1 | 0 | 21.10 | 21.42 | 21.60 | 21.75 | |
| 5 | 16QAM | 1 | 12 | 21.41 | 21.43 | 21.76 | 21.78 | |
| 5 | 16QAM | 1 | 24 | 21.23 | 21.55 | 21.66 | 21.60 | 22 |
| 5 | 16QAM | 12 | 0 | 19.79 | 20.19 | 20.38 | 20.50 | |
| 5 | 16QAM | 12 | 7 | 19.91 | 19.97 | 20.45 | 20.54 | |
| 5 | 16QAM | 12 | 13 | 19.92 | 20.16 | 20.13 | 20.38 | 22 |
| 5 | 16QAM | 25 | 0 | 19.93 | 20.32 | 20.53 | 20.60 | |
| 5 | 64QAM | 1 | 0 | 20.45 | 20.36 | 20.71 | 20.98 | |
| 5 | 64QAM | 1 | 12 | 20.15 | 20.50 | 20.78 | 20.83 | 22 |
| 5 | 64QAM | 1 | 24 | 20.33 | 20.28 | 20.57 | 20.75 | |
| 5 | 64QAM | 12 | 0 | 18.96 | 19.18 | 19.57 | 19.48 | |
| 5 | 64QAM | 12 | 7 | 19.11 | 19.28 | 19.39 | 19.67 | 21 |
| 5 | 64QAM | 12 | 13 | 18.94 | 19.18 | 19.43 | 19.61 | |
| 5 | 64QAM | 25 | 0 | 18.88 | 19.27 | 19.31 | 19.65 | |
| 5 | 256QAM | 1 | 0 | 17.25 | 17.40 | 17.56 | 17.70 | 19 |
| 5 | 256QAM | 1 | 12 | 17.23 | 17.30 | 17.56 | 17.84 | |
| 5 | 256QAM | 1 | 24 | 17.22 | 17.23 | 17.58 | 17.74 | |
| 5 | 256QAM | 12 | 0 | 17.10 | 17.11 | 17.51 | 17.72 | 19 |
| 5 | 256QAM | 12 | 7 | 17.07 | 17.09 | 17.25 | 17.52 | |
| 5 | 256QAM | 12 | 13 | 16.80 | 17.09 | 17.33 | 17.35 | |
| 5 | 256QAM | 25 | 0 | 17.02 | 17.34 | 17.49 | 17.40 | |

<LTE Band 48_Ant1_DSI 4/5>

| 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) |
|-----------------|------------|---------|-----------|-----------------------|------------------------------|-------------------------------|------------------------|---------------------|
| Channel | | | | 55340 | 55830 | 56150 | 56640 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3560 | 3609 | 3641 | 3690 | |
| 20 | QPSK | 1 | 0 | 17.11 | 17.24 | 17.00 | 16.89 | 17.5 |
| 20 | QPSK | 1 | 49 | 17.20 | 17.05 | 17.05 | 17.13 | |
| 20 | QPSK | 1 | 99 | 17.14 | 17.10 | 17.17 | 17.05 | |
| 20 | QPSK | 50 | 0 | 17.15 | 17.16 | 17.13 | 17.09 | 17.5 |
| 20 | QPSK | 50 | 24 | 17.11 | 17.07 | 17.11 | 17.05 | |
| 20 | QPSK | 50 | 50 | 17.03 | 17.06 | 17.10 | 17.06 | |
| 20 | QPSK | 100 | 0 | 17.07 | 17.14 | 17.12 | 17.03 | 17.5 |
| 20 | 16QAM | 1 | 0 | 17.18 | 17.15 | 17.13 | 17.03 | |
| 20 | 16QAM | 1 | 49 | 17.01 | 17.01 | 17.06 | 17.17 | |
| 20 | 16QAM | 1 | 99 | 17.06 | 17.01 | 17.01 | 17.11 | 17.5 |
| 20 | 16QAM | 50 | 0 | 17.03 | 17.16 | 17.02 | 17.17 | |
| 20 | 16QAM | 50 | 24 | 17.11 | 17.00 | 17.11 | 17.09 | |
| 20 | 16QAM | 50 | 50 | 17.08 | 17.17 | 17.10 | 17.01 | 17.5 |
| 20 | 16QAM | 100 | 0 | 17.13 | 17.20 | 17.10 | 17.07 | |
| 20 | 64QAM | 1 | 0 | 17.02 | 17.08 | 17.11 | 17.11 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|-----|----|--------|--------|--------|--------|---------------------|
| 20 | 64QAM | 1 | 49 | 17.06 | 17.00 | 17.05 | 17.05 | |
| 20 | 64QAM | 1 | 99 | 17.00 | 17.01 | 17.18 | 17.06 | |
| 20 | 64QAM | 50 | 0 | 17.19 | 17.13 | 17.12 | 17.00 | |
| 20 | 64QAM | 50 | 24 | 17.00 | 17.08 | 17.02 | 17.01 | |
| 20 | 64QAM | 50 | 50 | 17.13 | 17.07 | 17.07 | 17.11 | |
| 20 | 64QAM | 100 | 0 | 17.10 | 17.13 | 17.20 | 17.00 | 17.5 |
| 20 | 256QAM | 1 | 0 | 17.19 | 17.07 | 17.13 | 17.15 | |
| 20 | 256QAM | 1 | 49 | 17.16 | 17.11 | 17.04 | 17.05 | |
| 20 | 256QAM | 1 | 99 | 17.10 | 17.19 | 17.16 | 17.19 | 17.5 |
| 20 | 256QAM | 50 | 0 | 17.14 | 17.17 | 17.19 | 17.09 | |
| 20 | 256QAM | 50 | 24 | 17.05 | 17.15 | 17.19 | 17.12 | |
| 20 | 256QAM | 50 | 50 | 17.15 | 17.15 | 17.06 | 17.16 | |
| 20 | 256QAM | 100 | 0 | 17.14 | 17.00 | 17.09 | 17.08 | |
| Channel | | | | 55315 | 55820 | 56160 | 56665 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3557.5 | 3608 | 3642 | 3692.5 | |
| 15 | QPSK | 1 | 0 | 17.12 | 17.06 | 17.11 | 17.16 | 17.5 |
| 15 | QPSK | 1 | 37 | 17.17 | 17.19 | 17.03 | 17.02 | |
| 15 | QPSK | 1 | 74 | 17.17 | 17.19 | 17.11 | 17.02 | |
| 15 | QPSK | 36 | 0 | 17.01 | 17.16 | 17.15 | 17.09 | 17.5 |
| 15 | QPSK | 36 | 20 | 17.03 | 17.18 | 17.11 | 17.05 | |
| 15 | QPSK | 36 | 39 | 17.06 | 17.07 | 17.03 | 17.03 | |
| 15 | QPSK | 75 | 0 | 17.03 | 17.03 | 17.04 | 17.08 | |
| 15 | 16QAM | 1 | 0 | 17.02 | 17.19 | 17.03 | 17.12 | |
| 15 | 16QAM | 1 | 37 | 17.03 | 17.01 | 17.20 | 17.19 | 17.5 |
| 15 | 16QAM | 1 | 74 | 17.04 | 17.00 | 17.15 | 17.18 | |
| 15 | 16QAM | 36 | 0 | 17.14 | 17.20 | 17.05 | 17.15 | |
| 15 | 16QAM | 36 | 20 | 17.13 | 17.18 | 17.11 | 17.11 | 17.5 |
| 15 | 16QAM | 36 | 39 | 17.11 | 17.03 | 17.06 | 17.10 | |
| 15 | 16QAM | 75 | 0 | 17.01 | 17.14 | 17.13 | 17.01 | |
| 15 | 64QAM | 1 | 0 | 17.12 | 17.17 | 17.00 | 17.13 | |
| 15 | 64QAM | 1 | 37 | 17.17 | 17.02 | 17.00 | 17.02 | |
| 15 | 64QAM | 1 | 74 | 17.17 | 17.09 | 17.11 | 17.00 | 17.5 |
| 15 | 64QAM | 36 | 0 | 17.13 | 17.00 | 17.08 | 17.09 | |
| 15 | 64QAM | 36 | 20 | 17.16 | 17.08 | 17.10 | 17.16 | |
| 15 | 64QAM | 36 | 39 | 17.12 | 17.02 | 17.04 | 17.04 | |
| 15 | 64QAM | 75 | 0 | 17.08 | 17.05 | 17.03 | 17.09 | |
| 15 | 256QAM | 1 | 0 | 17.13 | 17.08 | 17.16 | 17.05 | 17.5 |
| 15 | 256QAM | 1 | 37 | 17.11 | 17.07 | 17.00 | 17.05 | |
| 15 | 256QAM | 1 | 74 | 17.13 | 17.01 | 17.08 | 17.02 | |
| 15 | 256QAM | 36 | 0 | 17.01 | 17.13 | 17.14 | 17.19 | 17.5 |
| 15 | 256QAM | 36 | 20 | 17.17 | 17.03 | 17.10 | 17.12 | |
| 15 | 256QAM | 36 | 39 | 17.20 | 17.01 | 17.06 | 17.12 | |
| 15 | 256QAM | 75 | 0 | 17.04 | 17.10 | 17.10 | 17.02 | |
| Channel | | | | 55290 | 55815 | 56165 | 56690 | |
| Frequency (MHz) | | | | 3555 | 3607.5 | 3642.5 | 3695 | |
| 10 | QPSK | 1 | 0 | 17.15 | 17.18 | 17.16 | 17.03 | 17.5 |
| 10 | QPSK | 1 | 25 | 17.16 | 17.00 | 17.15 | 17.06 | |
| 10 | QPSK | 1 | 49 | 17.19 | 17.06 | 17.17 | 17.13 | |
| 10 | QPSK | 25 | 0 | 17.10 | 17.10 | 17.04 | 17.01 | 17.5 |
| 10 | QPSK | 25 | 12 | 17.00 | 17.12 | 17.05 | 17.09 | |
| 10 | QPSK | 25 | 25 | 17.03 | 17.19 | 17.01 | 17.06 | |
| 10 | QPSK | 50 | 0 | 17.06 | 17.02 | 17.20 | 17.12 | |
| 10 | 16QAM | 1 | 0 | 17.19 | 17.19 | 17.06 | 17.00 | |
| 10 | 16QAM | 1 | 25 | 17.08 | 17.20 | 17.18 | 17.00 | 17.5 |
| 10 | 16QAM | 1 | 49 | 17.04 | 17.15 | 17.16 | 17.04 | |
| 10 | 16QAM | 25 | 0 | 17.06 | 17.19 | 17.01 | 17.20 | |



FCC SAR TEST REPORT

Report No. : FA1O2008

| | | | | | | | | |
|-----------------|--------|----|----|--------|-------|-------|--------|------|
| 10 | 16QAM | 25 | 12 | 17.13 | 17.15 | 17.10 | 17.04 | |
| 10 | 16QAM | 25 | 25 | 17.19 | 17.18 | 17.00 | 17.16 | |
| 10 | 16QAM | 50 | 0 | 17.18 | 17.04 | 17.00 | 17.09 | |
| 10 | 64QAM | 1 | 0 | 17.12 | 17.20 | 17.20 | 17.06 | 17.5 |
| 10 | 64QAM | 1 | 25 | 17.04 | 17.10 | 17.15 | 17.14 | |
| 10 | 64QAM | 1 | 49 | 17.10 | 17.04 | 17.16 | 17.12 | |
| 10 | 64QAM | 25 | 0 | 17.12 | 17.03 | 17.18 | 17.16 | 17.5 |
| 10 | 64QAM | 25 | 12 | 17.10 | 17.11 | 17.20 | 17.10 | |
| 10 | 64QAM | 25 | 25 | 17.16 | 17.06 | 17.15 | 17.18 | |
| 10 | 64QAM | 50 | 0 | 17.08 | 17.11 | 17.03 | 17.18 | 17.5 |
| 10 | 256QAM | 1 | 0 | 17.19 | 17.12 | 17.09 | 17.12 | |
| 10 | 256QAM | 1 | 25 | 17.15 | 17.08 | 17.16 | 17.12 | |
| 10 | 256QAM | 1 | 49 | 17.13 | 17.15 | 17.14 | 17.00 | 17.5 |
| 10 | 256QAM | 25 | 0 | 17.15 | 17.03 | 17.03 | 17.19 | |
| 10 | 256QAM | 25 | 12 | 17.07 | 17.05 | 17.13 | 17.12 | |
| 10 | 256QAM | 25 | 25 | 17.14 | 17.04 | 17.11 | 17.18 | 17.5 |
| 10 | 256QAM | 50 | 0 | 17.04 | 17.16 | 17.08 | 17.08 | |
| Channel | | | | 55265 | 55810 | 56170 | 56715 | |
| Frequency (MHz) | | | | 3552.5 | 3607 | 3643 | 3697.5 | |
| 5 | QPSK | 1 | 0 | 17.05 | 17.06 | 17.20 | 17.19 | 17.5 |
| 5 | QPSK | 1 | 12 | 17.02 | 17.00 | 17.09 | 17.05 | |
| 5 | QPSK | 1 | 24 | 17.07 | 17.02 | 17.19 | 17.06 | |
| 5 | QPSK | 12 | 0 | 17.00 | 17.18 | 17.05 | 17.03 | 17.5 |
| 5 | QPSK | 12 | 7 | 17.01 | 17.01 | 17.01 | 17.05 | |
| 5 | QPSK | 12 | 13 | 17.00 | 17.09 | 17.08 | 17.16 | |
| 5 | QPSK | 25 | 0 | 17.15 | 17.17 | 17.01 | 17.10 | 17.5 |
| 5 | 16QAM | 1 | 0 | 17.11 | 17.13 | 17.07 | 17.04 | |
| 5 | 16QAM | 1 | 12 | 17.02 | 17.17 | 17.08 | 17.17 | |
| 5 | 16QAM | 1 | 24 | 17.18 | 17.15 | 17.12 | 17.06 | 17.5 |
| 5 | 16QAM | 12 | 0 | 17.07 | 17.11 | 17.13 | 17.04 | |
| 5 | 16QAM | 12 | 7 | 17.16 | 17.05 | 17.20 | 17.18 | |
| 5 | 16QAM | 12 | 13 | 17.06 | 17.11 | 17.20 | 17.08 | 17.5 |
| 5 | 16QAM | 25 | 0 | 17.04 | 17.01 | 17.18 | 17.15 | |
| 5 | 64QAM | 1 | 0 | 17.19 | 17.20 | 17.20 | 17.16 | |
| 5 | 64QAM | 1 | 12 | 17.19 | 17.07 | 17.09 | 17.05 | 17.5 |
| 5 | 64QAM | 1 | 24 | 17.05 | 17.04 | 17.09 | 17.01 | |
| 5 | 64QAM | 12 | 0 | 17.07 | 17.02 | 17.17 | 17.04 | |
| 5 | 64QAM | 12 | 7 | 17.05 | 17.06 | 17.16 | 17.03 | 17.5 |
| 5 | 64QAM | 12 | 13 | 17.02 | 17.09 | 17.15 | 17.16 | |
| 5 | 64QAM | 25 | 0 | 17.09 | 17.04 | 17.17 | 17.08 | |
| 5 | 256QAM | 1 | 0 | 17.16 | 17.18 | 17.07 | 17.02 | 17.5 |
| 5 | 256QAM | 1 | 12 | 17.10 | 17.14 | 17.15 | 17.13 | |
| 5 | 256QAM | 1 | 24 | 17.03 | 17.08 | 17.17 | 17.16 | |
| 5 | 256QAM | 12 | 0 | 17.13 | 17.17 | 17.03 | 17.11 | 17.5 |
| 5 | 256QAM | 12 | 7 | 17.20 | 17.00 | 17.05 | 17.07 | |
| 5 | 256QAM | 12 | 13 | 17.15 | 17.19 | 17.05 | 17.00 | |
| 5 | 256QAM | 25 | 0 | 17.09 | 17.10 | 17.00 | 17.09 | |



<LTE Carrier Aggregation combinations>

General Note:

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.
3. All permutations exist. No restrictions on Pcell & Scell combinations. Only LTE Band 29A is limited to Scell.

| FCC DL 2CA | | | FCC DL 3CA | | | FCC DL 4CA | | | FCC DL 5CA | | | FCC DL 6CA | | |
|------------|-------------|---------------------------------|------------|-------------|---------------------------------|------------|-----------------|---------------------------------|------------|--------------------|---------------------------------|------------|-------------|---------------------------------|
| NO. | Combination | Covered by measurement superset | NO. | Combination | Covered by measurement superset | NO. | Combination | Covered by measurement superset | NO. | Combination | Covered by measurement superset | NO. | Combination | Covered by measurement superset |
| 1 | 2A-2A | 24 | 23 | 2A-2A-4A | 69 | 68 | 2A-2A-4A-4A | | 123 | 2A-2A-5A-66B | | 156 | 2A-48E-66A | |
| 2 | 2A-4A | 24 | 24 | 2A-2A-5A | 72 | 69 | 2A-2A-4A-5A | | 124 | 2A-2A-5A-66C | | | | |
| 3 | 2A-5A | 32 | 25 | 2A-2A-13A | 127 | 70 | 2A-2A-5B | | 125 | 2A-2A-5A-66A-66A | | | | |
| 4 | 2A-13A | 26 | 26 | 2A-2A-66A | 76 | 71 | 2A-2A-5A-66A | 125 | 126 | 2A-2A-13A-66A-66A | | | | |
| 5 | 2A-48A | 37 | 27 | 2A-4A-4A | 77 | 72 | 2A-2A-13A-66A | 126 | 127 | 2A-5B-66B | | | | |
| 6 | 2A-66A | 27 | 28 | 2A-4A-5A | 70 | 73 | 2A-2A-66B | 123 | 128 | 2A-5B-66C | | | | |
| 7 | 4A-4A | 28 | 29 | 2A-4A-13A | | 74 | 2A-2A-66C | 124 | 129 | 2A-5B-66A-66A | | | | |
| 8 | 4A-5A | 29 | 30 | 2A-5B | 71 | 75 | 2A-2A-66A-66A | 125 | 130 | 2A-5A-48D | | | | |
| 9 | 4A-13A | 30 | 31 | 2A-5A-48A | 81 | 76 | 2A-4A-4A-5A | | 131 | 2A-5A-48C-66A | | | | |
| 10 | 4A-48A | 44 | 32 | 2A-5A-66A | 72 | 77 | 2A-4A-5B | | 132 | 2A-13A-48D | | | | |
| 11 | 5B | 31 | 33 | 2A-13A-48A | 134 | 78 | 2A-5B-66A | 129 | 133 | 2A-13A-48A-48C | | | | |
| 12 | 5A-5A | 46 | 34 | 2A-13A-66A | 89 | 79 | 2A-5A-48C | 130 | 134 | 2A-13A-48C-66A | | | | |
| 13 | 5A-48A | 48 | 35 | 2A-48C | 138 | 80 | 2A-5A-48A-66A | 131 | 135 | 2A-13A-48A-48A-66A | | | | |
| 14 | 5A-66A | 51 | 36 | 2A-48A-48A | 93 | 81 | 2A-5A-66B | 123 | 136 | 2A-13A-66A-66B | | | | |
| 15 | 13A-48A | 53 | 37 | 2A-48A-66A | 80 | 82 | 2A-5A-66C | 124 | 137 | 2A-48C-48C | 156 | | | |
| 16 | 13A-66A | 112 | 38 | 2A-66B | 74 | 83 | 2A-5A-66A-66A | 125 | 138 | 2A-48E | 156 | | | |
| 17 | 48C | 107 | 39 | 2A-66C | 75 | 84 | 2A-13A-48A-48A | 135 | 139 | 2A-48A-48D | 156 | | | |
| 18 | 48A-48A | 60 | 40 | 66A-66A | 95 | 85 | 2A-13A-48A-66A | 135 | 140 | 2A-48D-66A | 156 | | | |
| 19 | 48A-66A | 65 | 41 | 4A-4A-5A | 77 | 86 | 2A-13A-66B | 136 | 141 | 2A-48A-48C-66A | 156 | | | |
| 20 | 66B | 49 | 42 | 4A-4A-13A | 96 | 87 | 2A-13A-66C | | 142 | 4A-48E | | | | |
| 21 | 66C | 56 | 43 | 4A-5B | 78 | 88 | 2A-13A-66A-66A | 136 | 143 | 5A-48D-66A | | | | |
| 22 | 66A | 41 | 44 | 4A-48C | 96 | 89 | 2A-48D | 140 | 144 | 13A-48C-48C | | | | |
| | | | 45 | 5A-5A-66A | 102 | 90 | 2A-48A-48C | 141 | 145 | 13A-48E | | | | |
| | | | 46 | 5A-48C | 79 | 91 | 2A-48C-66A | 140 | 146 | 13A-48A-48D | | | | |
| | | | 47 | 5A-48A-66A | 80 | 92 | 2A-48A-48A-66A | 141 | 147 | 13A-48D-66A | | | | |
| | | | 48 | 5A-66B | 81 | 93 | 2A-66A-66B | 136 | 148 | 13A-48A-48C-66A | | | | |
| | | | 49 | 5A-66C | 82 | 94 | 2A-66A-66A-66A | 136 | 149 | 48C-48D | | | | |
| | | | 50 | 5A-66A-66A | 83 | 95 | 4A-4A-5B | | 150 | 48A-48E | | | | |
| | | | 51 | 13A-48C | 107 | 96 | 4A-48D | 142 | 151 | 48C-48C-66A | 156 | | | |
| | | | 52 | 13A-48A-48A | 106 | 97 | 5B-66B | 127 | 152 | 48E-66A | 156 | | | |
| | | | 53 | 13A-48A-66A | 85 | 98 | 5B-66C | 128 | 153 | 48A-48D-66A | 156 | | | |
| | | | 54 | 13A-66B | 86 | 99 | 5B-66A-66A | 129 | 154 | 48A-48C-66B | | | | |
| | | | 55 | 13A-66C | 87 | 100 | 5A-5A-66B | 127 | 155 | 48A-48C-66C | | | | |
| | | | 56 | 13A-66A-66A | 88 | 101 | 5A-5A-66C | 128 | | | | | | |
| | | | 57 | 48D | 103 | 102 | 5A-5A-66A-66A | 127 | | | | | | |
| | | | 58 | 48A-48C | 106 | 103 | 5A-48D | 143 | | | | | | |
| | | | 59 | 48A-48A-48A | 113 | 104 | 5A-48C-66A | 143 | | | | | | |
| | | | 60 | 48C-66A | 91 | 105 | 13A-48D | 147 | | | | | | |
| | | | 61 | 48A-48A-66A | 92 | 106 | 13A-48A-48C | 146 | | | | | | |
| | | | 62 | 48A-66B | 109 | 107 | 13A-48C-66A | 147 | | | | | | |
| | | | 63 | 48A-66C | 110 | 108 | 13A-48A-48A-66A | 148 | | | | | | |
| | | | 64 | 48A-66A-66A | 122 | 109 | 13A-48A-66B | | | | | | | |
| | | | 65 | 66A-66B | 93 | 110 | 13A-48A-66C | | | | | | | |
| | | | 66 | 66A-66C | | 111 | 13A-66A-66B | 136 | | | | | | |
| | | | 67 | 66A-66A-66A | 94 | 112 | 48C-48C | 149 | | | | | | |



| | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|-----|-----------------|-----|--|--|--|--|--|--|--|--|--|
| | | | | | | 113 | 48E | 150 | | | | | | | | | |
| | | | | | | 114 | 48A-48D | 149 | | | | | | | | | |
| | | | | | | 115 | 48D-66A | 152 | | | | | | | | | |
| | | | | | | 116 | 48A-48C-66A | 155 | | | | | | | | | |
| | | | | | | 117 | 48C-66B | 154 | | | | | | | | | |
| | | | | | | 118 | 48C-66C | 155 | | | | | | | | | |
| | | | | | | 119 | 48C-66A-66A | 154 | | | | | | | | | |
| | | | | | | 120 | 48A-48A-66B | 154 | | | | | | | | | |
| | | | | | | 121 | 48A-48A-66C | 155 | | | | | | | | | |
| | | | | | | 122 | 48A-48A-66A-66A | 155 | | | | | | | | | |

<Power verification when LTE Carrier Aggregation Active>

General Note:

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

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

<Three Carrier power verification>

| Configure | PCC | | | | | | | | SCC1 | | | | SCC2 | | | | Power | |
|---------------------------|----------|----------|----------------|------------|------|--------|--------------|----------|----------|----------------|------------|----------|----------|----------------|------------|------------------------|-----------------------|--|
| | LTE Band | BW (MHz) | UL Freq. (MHz) | UL Channel | Mod. | UL# RB | UL RB Offset | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | With CA Tx.Power (dBm) | W/O CA Tx.Power (dBm) | |
| Inter-Band | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 4 | 20 | 2132.5 | 2175 | 13 | 10 | 751 | 5230 | 23.01 | 23.17 | |
| Intra-Band Non-Contiguous | 66 | 20 | 1720 | 132072 | QPSK | 1 | 0 | 66 | 20 | 2190 | 67236 | 66 | 20 | 2170.2 | 67038 | 23.46 | 23.46 | |



<Four Carrier power verification>

| Configure | PCC | | | | | | | SCC1 | | | | SCC2 | | | | SCC3 | | | | Power | |
|------------|----------|----------|----------------|------------|------|--------|--------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|------------------------|-----------------------|
| | LTE Band | BW (MHz) | UL Freq. (MHz) | UL Channel | Mod. | UL# RB | UL RB Offset | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | With CA Tx.Power (dBm) | W/O CA Tx.Power (dBm) |
| Inter-Band | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 4 | 20 | 2132.5 | 2175 | 4 | 20 | 2145 | 2300 | 23.09 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 4 | 20 | 2132.5 | 2175 | 5 | 10 | 881.5 | 2525 | 23.01 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 5 | 10 | 881.5 | 2525 | 5 | 10 | 889 | 2600 | 23.14 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 4 | 20 | 2132.5 | 2175 | 4 | 20 | 2145 | 2300 | 5 | 10 | 881.5 | 2525 | 22.98 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 4 | 20 | 2132.5 | 2175 | 5 | 10 | 881.5 | 2525 | 5 | 10 | 889 | 2600 | 23.13 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 13 | 10 | 751 | 5230 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.16 | 23.17 |
| | 4 | 20 | 1720 | 20050 | QPSK | 1 | 0 | 4 | 20 | 2145 | 2300 | 5 | 10 | 881.5 | 2525 | 5 | 10 | 889 | 2600 | 23.27 | 23.34 |
| | 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.28 | 23.46 |
| 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.32 | 23.46 | |

<Five Carrier power verification>

| Configure | PCC | | | | | | | SCC1 | | | | SCC2 | | | | SCC3 | | | | SCC4 | | Power | | | |
|---------------------------|----------|----------|----------------|------------|------|--------|--------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|------------------------|-----------------------|
| | LTE Band | BW (MHz) | UL Freq. (MHz) | UL Channel | Mod. | UL# RB | UL RB Offset | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | With CA Tx.Power (dBm) | W/O CA Tx.Power (dBm) |
| Inter-Band | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 5 | 10 | 881.5 | 2525 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.12 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 5 | 10 | 881.5 | 2525 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.03 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 5 | 10 | 881.5 | 2525 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2190 | 67236 | 23.15 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 2 | 20 | 1960 | 900 | 13 | 10 | 751 | 5230 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2190 | 67236 | 23.14 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 5 | 10 | 881.5 | 2525 | 5 | 10 | 889 | 2600 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.04 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 5 | 10 | 881.5 | 2525 | 5 | 10 | 889 | 2600 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2174.8 | 67084 | 23.10 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 5 | 10 | 881.5 | 2525 | 5 | 10 | 889 | 2600 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2190 | 67236 | 23.13 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 5 | 10 | 881.5 | 2525 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 55952 | 48 | 20 | 3601.4 | 55754 | 22.99 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 5 | 10 | 881.5 | 2525 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 55952 | 66 | 20 | 2155 | 66886 | 23.09 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 13 | 10 | 751 | 5230 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 55952 | 48 | 20 | 3601.4 | 55754 | 22.99 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 13 | 10 | 751 | 5230 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3560 | 55340 | 48 | 20 | 3579.8 | 55538 | 23.09 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 13 | 10 | 751 | 5230 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 55952 | 66 | 20 | 2155 | 66886 | 23.04 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 13 | 10 | 751 | 5230 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3560 | 55340 | 66 | 20 | 2155 | 66886 | 23.11 | 23.17 |
| | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 13 | 10 | 751 | 5230 | 66 | 20 | 2155 | 66886 | 66 | 20 | 2190 | 67236 | 66 | 20 | 2170.2 | 67038 | 23.15 | 23.17 |
| | 4 | 20 | 1720 | 20050 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 56130.2 | 48 | 20 | 3601.4 | 55932.2 | 48 | 20 | 3581.6 | 55734.2 | 23.16 | 23.34 |
| | 5 | 10 | 844 | 20600 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 56130.2 | 48 | 20 | 3601.4 | 55932.2 | 66 | 20 | 2155 | 66886 | 23.59 | 23.67 |
| | 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 56130.2 | 48 | 20 | 3690 | 56640 | 48 | 20 | 3670.2 | 56442 | 23.41 | 23.46 |
| | 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 55952 | 48 | 20 | 3601.4 | 55754 | 48 | 20 | 3581.6 | 55556 | 23.34 | 23.46 |
| | 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 56130.2 | 48 | 20 | 3601.4 | 55932.2 | 48 | 20 | 3581.6 | 55734.2 | 23.38 | 23.46 |
| 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 56130.2 | 48 | 20 | 3601.4 | 55932.2 | 66 | 20 | 2155 | 66886 | 23.42 | 23.46 | |
| 13 | 10 | 782 | 23230 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3560 | 55340 | 48 | 20 | 3579.8 | 55538 | 66 | 20 | 2155 | 66886 | 23.40 | 23.46 | |
| Intra-Band Non-Contiguous | 48 | 20 | 3609 | 55830 | QPSK | 1 | 0 | 48 | 20 | 3690 | 56640 | 48 | 20 | 3670.2 | 56442 | 48 | 20 | 3650.4 | 56244 | 48 | 20 | 3630.6 | 56046 | 23.67 | 23.77 |
| | 48 | 20 | 3609 | 55830 | QPSK | 1 | 0 | 48 | 20 | 3690 | 56640 | 48 | 20 | 3670.2 | 56442 | 48 | 20 | 3650.4 | 56244 | 48 | 20 | 3630.6 | 56046 | 23.61 | 23.77 |

<Six Carrier power verification>

| Configure | PCC | | | | | | | SCC1 | | | | SCC2 | | | | SCC3 | | | | SCC4 | | | | SCC5 | | Power | | | |
|------------|----------|----------|----------------|------------|------|--------|--------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|----------|----------|----------------|------------|------------------------|-----------------------|
| | LTE Band | BW (MHz) | UL Freq. (MHz) | UL Channel | Mod. | UL# RB | UL RB Offset | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | LTE Band | BW (MHz) | DL Freq. (MHz) | DL Channel | With CA Tx.Power (dBm) | W/O CA Tx.Power (dBm) |
| Inter-Band | 2 | 20 | 1880 | 18900 | QPSK | 1 | 0 | 48 | 20 | 3641 | 56150 | 48 | 20 | 3621.2 | 55952 | 48 | 20 | 3601.4 | 3423.2 | 48 | 20 | 3581.6 | 3225.2 | 66 | 20 | 2155 | 66886 | 23.10 | 23.17 |

<LTE Uplink carrier aggregation>

| 2CC Uplink Carrier Aggregation | |
|--------------------------------|-------------|
| Number | Combination |
| 1 | 5B |
| 2 | 66B |
| 3 | 66C |
| 4 | 48C |

<Intra-band>**General Note:**

- i. The device supports intra-band uplink carrier aggregation for LTE B66/B41/B48 with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- v. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.



<Default power>

| CA_5B_Ant 0 | | | | | | | | | | |
|-------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 10MHz+10MHz (50RB+50RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 20450 | 20549 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 23.62 | 24 |
| 20575 | 20476 | QPSK | 1 | 0 | 1 | 49 | 2 | 0 | 23.64 | 24 |
| 20600 | 20501 | QPSK | 1 | 0 | 1 | 49 | 2 | 0 | 23.61 | 24 |

| CA_66B_Ant 1 | | | | | | | | | | |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 15MHz+5MHz (75RB+25RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 132047 | 132140 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 23.54 | 24 |
| 132322 | 132229 | QPSK | 1 | 0 | 1 | 24 | 2 | 0 | 23.48 | 24 |
| 132597 | 132504 | QPSK | 1 | 0 | 1 | 24 | 2 | 0 | 23.52 | 24 |

| CA_66C_Ant 1 | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 132072 | 132270 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 23.58 | 24 |
| 132322 | 132124 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.54 | 24 |
| 132572 | 132374 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.55 | 24 |

| CA_48C_Ant 0 | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 55340 | 55538 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 23.58 | 24 |
| 55830 | 55632 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.54 | 24 |
| 56150 | 55952 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.56 | 24 |
| 56640 | 56442 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.55 | 24 |

| CA_48C_Ant 1 | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 55340 | 55538 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 23.54 | 24 |
| 55830 | 55632 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.52 | 24 |
| 56150 | 55952 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.48 | 24 |
| 56640 | 56442 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 23.5 | 24 |

<Reduced Power>

| CA_5B_Ant 0 | | | | | | | | | | |
|-------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 10MHz+10MHz (50RB+50RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 20450 | 20549 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 21.57 | 22.8 |
| 20575 | 20476 | QPSK | 1 | 0 | 1 | 49 | 2 | 0 | 21.54 | 22.8 |
| 20600 | 20501 | QPSK | 1 | 0 | 1 | 49 | 2 | 0 | 21.5 | 22.8 |

| CA_66B | | | | | | | | | | |
|------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 15MHz+5MHz (75RB+25RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 132047 | 132140 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 15.76 | 16.5 |
| 132322 | 132229 | QPSK | 1 | 0 | 1 | 24 | 2 | 0 | 15.71 | 16.5 |
| 132597 | 132504 | QPSK | 1 | 0 | 1 | 24 | 2 | 0 | 15.68 | 16.5 |

| CA_66C_Ant 1 | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 132072 | 132270 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 15.76 | 16.5 |
| 132322 | 132124 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 15.72 | 16.5 |
| 132572 | 132374 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 15.74 | 16.5 |

| CA_48C_Ant 1 | | | | | | | | | | |
|---------------------------------------|-------------|------------|---------|-----------|---------|-----------|---------------|-----------------------|----------------------|---------------------|
| Combination 20MHz+20MHz (100RB+100RB) | | | | | | | | | | |
| PCC Channel | SCC Channel | Modulation | PCC | | SCC | | Total RB Size | Target MPR Level (dB) | Measured Power (dBm) | Tune up Power (dBm) |
| | | | RB Size | RB offset | RB Size | RB offset | | | | |
| 55340 | 55538 | QPSK | 1 | 0 | 0 | 0 | 1 | 0 | 16.68 | 17.5 |
| 55830 | 55632 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 16.65 | 17.5 |
| 56150 | 55952 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 16.64 | 17.5 |
| 56640 | 56442 | QPSK | 1 | 0 | 1 | 99 | 2 | 0 | 16.62 | 17.5 |



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

General Note:

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below
 - a. For DFT-OFDM output power measurement, full measurement was done for Pi/2 BPSK and QPSK and for the largest supported bandwidth, repeat test for 16QAM/64QAM/256QAM under 1RB 1Offset configuration. For smaller bandwidth, measure conducted power for Pi/2 BPSK and 1RB 1Offset configuration.
 - b. According to the tune-up, CP-OFDM output power is not ½ dB higher than DFT-OFDM mode, and the reported SAR of DFT-OFDM mode reported SAR is ≤ 1.45 W/kg, SAR test and thus conducted power for CP-OFDM mode is not required.
 - c. To start SAR test for the largest channel bandwidth 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. Also do SAR test for 50% RB allocation for Pi/2 BPSK SAR testing using 1RB Pi/2 BPSK allocation procedure
 - d. For Pi/2 BPSK with 100% RB allocation, SAR test 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.
 - e. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is 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.
 - f. Smaller bandwidth output power for each RB allocation configuration for this device 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, 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. And only for TDD power class2 was performed using Factory Test Mode software to establish the connection and perform SAR with 50% 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 | $\leq 3.5^1$ | $\leq 1.2^1$ | $\leq 0.2^1$ |
| | | $\leq 0.5^2$ | $\leq 0.5^2$ | 0 ² |
| | QPSK | ≤ 1 | | 0 |
| | 16 QAM | ≤ 2 | | ≤ 1 |
| | 64 QAM | | ≤ 2.5 | |
| CP-OFDM | 256 QAM | | ≤ 4.5 | |
| | 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 | |



<n2_Ant0_DSI 2>

| 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 | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.24 | 23.26 | 23.10 | |
| 20 | PI/2 BPSK | 1 | 53 | 23.11 | 23.17 | 22.98 | 24.0 |
| 20 | PI/2 BPSK | 1 | 104 | 23.06 | 23.17 | 22.96 | |
| 20 | PI/2 BPSK | 50 | 0 | 22.82 | 22.90 | 22.68 | |
| 20 | PI/2 BPSK | 50 | 28 | 23.10 | 23.14 | 22.88 | 24.0 |
| 20 | PI/2 BPSK | 50 | 56 | 22.79 | 22.83 | 22.62 | 23.5 |
| 20 | PI/2 BPSK | 100 | 0 | 22.85 | 22.87 | 22.69 | |
| 20 | QPSK | 1 | 1 | 23.09 | 23.11 | 22.90 | |
| 20 | QPSK | 1 | 53 | 23.03 | 23.14 | 22.90 | 24.0 |
| 20 | QPSK | 1 | 104 | 22.97 | 23.09 | 22.86 | |
| 20 | QPSK | 50 | 0 | 22.29 | 22.40 | 22.15 | |
| 20 | QPSK | 50 | 28 | 23.04 | 23.15 | 22.93 | 24.0 |
| 20 | QPSK | 50 | 56 | 22.26 | 22.35 | 22.15 | 23.0 |
| 20 | QPSK | 100 | 0 | 22.34 | 22.39 | 22.22 | |
| 20 | 16QAM | 1 | 1 | 22.65 | 22.74 | 22.50 | |
| 20 | 64QAM | 1 | 1 | 21.27 | 21.33 | 21.17 | 21.5 |
| 20 | 256QAM | 1 | 1 | 18.67 | 18.77 | 18.60 | 19.5 |
| Channel | | | | 371500 | 376000 | 380500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 23.17 | 23.19 | 22.94 | |
| Channel | | | | 371000 | 376000 | 381000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.13 | 23.23 | 22.90 | |
| Channel | | | | 370500 | 376000 | 381500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.18 | 23.20 | 22.87 | |



<n2_Ant1_DSI 2>

| 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 | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.13 | 23.15 | 22.95 | 24.0 |
| 20 | PI/2 BPSK | 1 | 53 | 23.04 | 23.07 | 22.84 | |
| 20 | PI/2 BPSK | 1 | 104 | 23.01 | 23.05 | 22.80 | |
| 20 | PI/2 BPSK | 50 | 0 | 22.72 | 22.72 | 22.55 | 23.5 |
| 20 | PI/2 BPSK | 50 | 28 | 22.97 | 23.05 | 22.83 | 24.0 |
| 20 | PI/2 BPSK | 50 | 56 | 22.68 | 22.71 | 22.45 | 23.5 |
| 20 | PI/2 BPSK | 100 | 0 | 22.79 | 22.78 | 22.56 | |
| 20 | QPSK | 1 | 1 | 23.11 | 23.12 | 22.88 | 24.0 |
| 20 | QPSK | 1 | 53 | 23.05 | 23.12 | 22.91 | |
| 20 | QPSK | 1 | 104 | 22.98 | 23.03 | 22.82 | |
| 20 | QPSK | 50 | 0 | 22.16 | 22.21 | 21.96 | 23.0 |
| 20 | QPSK | 50 | 28 | 23.00 | 23.07 | 22.89 | 24.0 |
| 20 | QPSK | 50 | 56 | 22.24 | 22.24 | 22.07 | 23.0 |
| 20 | QPSK | 100 | 0 | 22.25 | 22.30 | 22.08 | |
| 20 | 16QAM | 1 | 1 | 22.41 | 22.48 | 22.29 | 23.0 |
| 20 | 64QAM | 1 | 1 | 20.99 | 21.06 | 20.80 | 21.5 |
| 20 | 256QAM | 1 | 1 | 18.85 | 18.86 | 18.62 | 19.5 |
| Channel | | | | 371500 | 376000 | 380500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 23.07 | 23.04 | 22.68 | 24.0 |
| Channel | | | | 371000 | 376000 | 381000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.05 | 23.02 | 22.74 | 24.0 |
| Channel | | | | 370500 | 376000 | 381500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.06 | 23.11 | 22.76 | 24.0 |



<n2_Ant1_DSI 4/5>

| 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 | |
| Frequency (MHz) | | | | 1860 | 1880 | 1900 | |
| 20 | PI/2 BPSK | 1 | 1 | 14.59 | 14.72 | 14.64 | 15.5 |
| 20 | PI/2 BPSK | 1 | 53 | 14.57 | 14.68 | 14.60 | |
| 20 | PI/2 BPSK | 1 | 104 | 14.54 | 14.62 | 14.58 | |
| 20 | PI/2 BPSK | 50 | 0 | 14.57 | 14.67 | 14.60 | 15.5 |
| 20 | PI/2 BPSK | 50 | 28 | 14.62 | 14.69 | 14.60 | 15.5 |
| 20 | PI/2 BPSK | 50 | 56 | 14.52 | 14.56 | 14.49 | 15.5 |
| 20 | PI/2 BPSK | 100 | 0 | 14.51 | 14.55 | 14.53 | |
| 20 | QPSK | 1 | 1 | 14.48 | 14.46 | 14.45 | 15.5 |
| 20 | QPSK | 1 | 53 | 14.39 | 14.42 | 14.37 | |
| 20 | QPSK | 1 | 104 | 14.39 | 14.38 | 14.39 | |
| 20 | QPSK | 50 | 0 | 14.43 | 14.44 | 14.45 | 15.5 |
| 20 | QPSK | 50 | 28 | 14.25 | 14.31 | 14.31 | 15.5 |
| 20 | QPSK | 50 | 56 | 14.23 | 14.26 | 14.25 | 15.5 |
| 20 | QPSK | 100 | 0 | 14.30 | 14.33 | 14.27 | |
| 20 | 16QAM | 1 | 1 | 14.18 | 14.20 | 14.18 | 15.5 |
| 20 | 64QAM | 1 | 1 | 14.19 | 14.13 | 14.16 | 15.5 |
| 20 | 256QAM | 1 | 1 | 14.01 | 14.11 | 14.04 | 15.5 |
| Channel | | | | 371500 | 376000 | 380500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1857.5 | 1880 | 1902.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 14.36 | 14.42 | 14.31 | 15.5 |
| Channel | | | | 371000 | 376000 | 381000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1855 | 1880 | 1905 | |
| 10 | PI/2 BPSK | 1 | 1 | 14.33 | 14.40 | 14.26 | 15.5 |
| Channel | | | | 370500 | 376000 | 381500 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 1852.5 | 1880 | 1907.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 14.31 | 14.34 | 14.28 | 15.5 |



<n5_Ant0_DSI 2>

| 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 | 23.51 | 23.52 | 23.60 | 24.0 |
| 20 | PI/2 BPSK | 1 | 53 | 23.45 | 23.50 | 23.49 | |
| 20 | PI/2 BPSK | 1 | 104 | 23.40 | 23.47 | 23.49 | |
| 20 | PI/2 BPSK | 50 | 0 | 23.09 | 23.14 | 23.12 | 23.5 |
| 20 | PI/2 BPSK | 50 | 28 | 23.57 | 23.59 | 23.61 | 24.0 |
| 20 | PI/2 BPSK | 50 | 56 | 23.19 | 23.22 | 23.23 | 23.5 |
| 20 | PI/2 BPSK | 100 | 0 | 23.12 | 23.18 | 23.18 | |
| 20 | QPSK | 1 | 1 | 23.39 | 23.47 | 23.48 | 24.0 |
| 20 | QPSK | 1 | 53 | 23.54 | 23.56 | 23.56 | |
| 20 | QPSK | 1 | 104 | 23.40 | 23.50 | 23.57 | |
| 20 | QPSK | 50 | 0 | 22.50 | 22.60 | 22.58 | 23.0 |
| 20 | QPSK | 50 | 28 | 23.51 | 23.57 | 23.59 | 24.0 |
| 20 | QPSK | 50 | 56 | 22.66 | 22.67 | 22.71 | 23.0 |
| 20 | QPSK | 100 | 0 | 22.65 | 22.67 | 22.67 | |
| 20 | 16QAM | 1 | 1 | 22.33 | 22.36 | 22.39 | 23.0 |
| 20 | 64QAM | 1 | 1 | 21.22 | 21.23 | 21.26 | 21.5 |
| 20 | 256QAM | 1 | 1 | 19.10 | 19.17 | 19.20 | 19.5 |
| Channel | | | | 166300 | 167300 | 168300 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 831.5 | 836.5 | 841.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 23.45 | 23.51 | 23.51 | 24.0 |
| Channel | | | | 165800 | 167300 | 168800 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 829 | 836.5 | 844 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.41 | 23.51 | 23.52 | 24.0 |
| Channel | | | | 165300 | 167300 | 169300 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 826.5 | 836.5 | 846.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 23.45 | 23.52 | 23.57 | 24.0 |



<n66_Ant1_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 345000 | 349000 | 353000 | 24.0 |
| Frequency (MHz) | | | | 1725 | 1745 | 1765 | |
| 30 | PI/2 BPSK | 1 | 1 | 23.39 | 23.26 | 23.34 | |
| 30 | PI/2 BPSK | 1 | 80 | 23.27 | 23.24 | 23.23 | 23.5 |
| 30 | PI/2 BPSK | 1 | 158 | 23.31 | 23.29 | 23.27 | |
| 30 | PI/2 BPSK | 80 | 0 | 23.26 | 23.27 | 23.25 | |
| 30 | PI/2 BPSK | 80 | 40 | 23.37 | 23.36 | 23.35 | 24.0 |
| 30 | PI/2 BPSK | 80 | 80 | 23.37 | 23.36 | 23.34 | |
| 30 | PI/2 BPSK | 160 | 0 | 23.36 | 23.35 | 23.37 | |
| 30 | QPSK | 1 | 1 | 23.30 | 23.29 | 23.37 | 24.0 |
| 30 | QPSK | 1 | 80 | 23.29 | 23.22 | 23.21 | |
| 30 | QPSK | 1 | 158 | 23.24 | 23.19 | 23.25 | |
| 30 | QPSK | 80 | 0 | 22.40 | 22.39 | 22.44 | 23.0 |
| 30 | QPSK | 80 | 40 | 23.34 | 23.27 | 23.34 | |
| 30 | QPSK | 80 | 80 | 22.48 | 22.37 | 22.36 | |
| 30 | QPSK | 160 | 0 | 22.51 | 22.42 | 22.50 | 23.0 |
| 30 | 16QAM | 1 | 1 | 22.64 | 22.60 | 22.63 | |
| 30 | 64QAM | 1 | 1 | 20.88 | 20.77 | 20.83 | |
| 30 | 256QAM | 1 | 1 | 18.95 | 18.94 | 18.97 | 19.5 |
| Channel | | | | 344000 | 349000 | 354000 | 24.0 |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.35 | 23.26 | 23.24 | 24.0 |
| Channel | | | | 343500 | 349000 | 354500 | |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | 24.0 |
| 15 | PI/2 BPSK | 1 | 1 | 23.34 | 23.16 | 23.27 | |
| Channel | | | | 343000 | 349000 | 355000 | 24.0 |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | |
| 10 | PI/2 BPSK | 1 | 1 | 23.32 | 23.21 | 23.33 | 24.0 |
| Channel | | | | 342500 | 349000 | 355500 | |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | 24.0 |
| 5 | PI/2 BPSK | 1 | 1 | 23.28 | 23.19 | 23.27 | |



<n66_Ant1_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 345000 | 349000 | 353000 | 17.5 |
| Frequency (MHz) | | | | 1725 | 1745 | 1765 | |
| 30 | PI/2 BPSK | 1 | 1 | 16.70 | 16.78 | 16.73 | |
| 30 | PI/2 BPSK | 1 | 80 | 16.70 | 16.69 | 16.70 | 17.5 |
| 30 | PI/2 BPSK | 1 | 158 | 16.59 | 16.61 | 16.63 | |
| 30 | PI/2 BPSK | 80 | 0 | 16.60 | 16.70 | 16.64 | 17.5 |
| 30 | PI/2 BPSK | 80 | 40 | 16.61 | 16.71 | 16.59 | 17.5 |
| 30 | PI/2 BPSK | 80 | 80 | 16.45 | 16.53 | 16.50 | 17.5 |
| 30 | PI/2 BPSK | 160 | 0 | 16.68 | 16.65 | 16.67 | |
| 30 | QPSK | 1 | 1 | 16.41 | 16.54 | 16.47 | 17.5 |
| 30 | QPSK | 1 | 80 | 16.56 | 16.51 | 16.53 | |
| 30 | QPSK | 1 | 158 | 16.38 | 16.42 | 16.45 | |
| 30 | QPSK | 80 | 0 | 16.53 | 16.52 | 16.55 | 17.5 |
| 30 | QPSK | 80 | 40 | 16.35 | 16.44 | 16.38 | 17.5 |
| 30 | QPSK | 80 | 80 | 16.28 | 16.31 | 16.28 | 17.5 |
| 30 | QPSK | 160 | 0 | 16.47 | 16.44 | 16.44 | |
| 30 | 16QAM | 1 | 1 | 16.26 | 16.29 | 16.30 | 17.5 |
| 30 | 64QAM | 1 | 1 | 16.27 | 16.27 | 16.26 | 17.5 |
| 30 | 256QAM | 1 | 1 | 16.16 | 16.18 | 16.15 | 17.5 |
| Channel | | | | 344000 | 349000 | 354000 | 17.5 |
| Frequency (MHz) | | | | 1720 | 1745 | 1770 | |
| 20 | PI/2 BPSK | 1 | 1 | 16.40 | 16.41 | 16.28 | 17.5 |
| Channel | | | | 343500 | 349000 | 354500 | 17.5 |
| Frequency (MHz) | | | | 1717.5 | 1745 | 1772.5 | |
| 15 | PI/2 BPSK | 1 | 1 | 16.24 | 16.32 | 16.21 | 17.5 |
| Channel | | | | 343000 | 349000 | 355000 | 17.5 |
| Frequency (MHz) | | | | 1715 | 1745 | 1775 | |
| 10 | PI/2 BPSK | 1 | 1 | 16.16 | 16.30 | 16.11 | 17.5 |
| Channel | | | | 342500 | 349000 | 355500 | 17.5 |
| Frequency (MHz) | | | | 1712.5 | 1745 | 1777.5 | |
| 5 | PI/2 BPSK | 1 | 1 | 16.14 | 16.23 | 16.10 | 17.5 |



<n77_Ant0_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 23.28 | 23.49 | 23.30 | 24.0 |
| 100 | PI/2 BPSK | 1 | 137 | 23.21 | 22.97 | 23.09 | |
| 100 | PI/2 BPSK | 1 | 271 | 23.08 | 23.09 | 23.10 | |
| 100 | PI/2 BPSK | 135 | 0 | 22.26 | 22.54 | 22.40 | 23.5 |
| 100 | PI/2 BPSK | 135 | 69 | 23.12 | 22.90 | 23.22 | 24.0 |
| 100 | PI/2 BPSK | 135 | 138 | 22.51 | 22.20 | 22.38 | 23.5 |
| 100 | PI/2 BPSK | 270 | 0 | 22.44 | 22.53 | 22.25 | |
| 100 | QPSK | 1 | 1 | 22.91 | 23.15 | 23.25 | 24.0 |
| 100 | QPSK | 1 | 137 | 23.22 | 23.12 | 23.06 | |
| 100 | QPSK | 1 | 271 | 23.20 | 23.09 | 22.93 | |
| 100 | QPSK | 135 | 0 | 22.36 | 22.60 | 22.57 | 23.0 |
| 100 | QPSK | 135 | 69 | 23.16 | 23.04 | 22.91 | 24.0 |
| 100 | QPSK | 135 | 138 | 22.45 | 22.49 | 22.40 | 23.0 |
| 100 | QPSK | 270 | 0 | 22.48 | 22.20 | 22.28 | |
| 100 | 16QAM | 1 | 1 | 22.56 | 22.58 | 22.32 | 23.0 |
| 100 | 64QAM | 1 | 1 | 20.54 | 20.47 | 20.44 | 21.5 |
| 100 | 256QAM | 1 | 1 | 20.33 | 20.24 | 20.35 | 21.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 23.28 | 23.31 | 23.39 | 24.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 23.20 | 23.33 | 23.31 | 24.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 23.21 | 23.21 | 23.24 | 24.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 23.08 | 23.11 | 23.14 | 24.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.18 | 23.19 | 23.17 | 24.0 |



<n77_HPUE_Ant0_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 25.51 | 25.43 | 25.28 | 27.0 |
| 100 | PI/2 BPSK | 1 | 137 | 25.06 | 25.32 | 25.31 | |
| 100 | PI/2 BPSK | 1 | 271 | 25.16 | 25.33 | 25.40 | |
| 100 | PI/2 BPSK | 135 | 0 | 24.43 | 24.34 | 24.59 | 27.0 |
| 100 | PI/2 BPSK | 135 | 69 | 25.21 | 25.28 | 25.22 | 27.0 |
| 100 | PI/2 BPSK | 135 | 138 | 24.56 | 24.83 | 24.71 | 27.0 |
| 100 | PI/2 BPSK | 270 | 0 | 24.88 | 24.56 | 24.68 | |
| 100 | QPSK | 1 | 1 | 25.40 | 25.11 | 25.00 | 27.0 |
| 100 | QPSK | 1 | 137 | 25.34 | 25.13 | 25.14 | |
| 100 | QPSK | 1 | 271 | 25.16 | 25.27 | 25.04 | |
| 100 | QPSK | 135 | 0 | 24.38 | 24.17 | 24.13 | 27.0 |
| 100 | QPSK | 135 | 69 | 25.22 | 25.04 | 25.27 | 27.0 |
| 100 | QPSK | 135 | 138 | 24.26 | 24.53 | 24.21 | 27.0 |
| 100 | QPSK | 270 | 0 | 24.56 | 24.36 | 24.50 | |
| 100 | 16QAM | 1 | 1 | 24.49 | 24.53 | 24.38 | 27.0 |
| 100 | 64QAM | 1 | 1 | 23.34 | 23.06 | 23.01 | 27.0 |
| 100 | 256QAM | 1 | 1 | 23.36 | 23.00 | 23.36 | 27.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 25.28 | 25.31 | 25.39 | 27.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 25.20 | 25.33 | 25.36 | 27.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 25.27 | 25.34 | 25.41 | 27.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 25.27 | 25.33 | 25.40 | 27.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 25.21 | 25.34 | 25.39 | 27.0 |



<n77_Ant0_DSI 3/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 20.09 | 20.19 | 20.14 | |
| 100 | PI/2 BPSK | 1 | 137 | 19.61 | 19.47 | 19.68 | 20.5 |
| 100 | PI/2 BPSK | 1 | 271 | 19.81 | 19.77 | 19.73 | |
| 100 | PI/2 BPSK | 135 | 0 | 19.72 | 19.99 | 19.95 | |
| 100 | PI/2 BPSK | 135 | 69 | 19.89 | 19.42 | 19.89 | 20.5 |
| 100 | PI/2 BPSK | 135 | 138 | 19.93 | 19.43 | 19.76 | 20.5 |
| 100 | PI/2 BPSK | 270 | 0 | 19.43 | 19.93 | 19.62 | |
| 100 | QPSK | 1 | 1 | 19.91 | 19.81 | 19.57 | |
| 100 | QPSK | 1 | 137 | 19.57 | 19.85 | 20.02 | 20.5 |
| 100 | QPSK | 1 | 271 | 19.64 | 19.73 | 19.77 | |
| 100 | QPSK | 135 | 0 | 19.67 | 19.93 | 19.84 | |
| 100 | QPSK | 135 | 69 | 19.81 | 19.63 | 19.76 | 20.5 |
| 100 | QPSK | 135 | 138 | 19.72 | 19.91 | 19.58 | 19.5 |
| 100 | QPSK | 270 | 0 | 19.62 | 19.67 | 19.50 | |
| 100 | 16QAM | 1 | 1 | 19.77 | 19.53 | 19.81 | |
| 100 | 64QAM | 1 | 1 | 19.65 | 19.75 | 19.84 | 20.5 |
| 100 | 256QAM | 1 | 1 | 19.79 | 19.95 | 19.60 | 20.5 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 20.00 | 19.60 | 19.68 | |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 19.48 | 19.66 | 19.61 | |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 19.71 | 19.12 | 19.62 | |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 19.59 | 19.58 | 19.20 | |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 19.15 | 19.50 | 19.72 | |



<n77_HPUE_Ant0_DSI 3/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 22.84 | 22.91 | 22.92 | 23.5 |
| 100 | PI/2 BPSK | 1 | 137 | 22.42 | 22.34 | 22.72 | |
| 100 | PI/2 BPSK | 1 | 271 | 22.67 | 22.43 | 22.45 | |
| 100 | PI/2 BPSK | 135 | 0 | 22.33 | 22.82 | 22.76 | 23.5 |
| 100 | PI/2 BPSK | 135 | 69 | 22.47 | 22.51 | 22.34 | 23.5 |
| 100 | PI/2 BPSK | 135 | 138 | 22.49 | 22.44 | 22.40 | 23.5 |
| 100 | PI/2 BPSK | 270 | 0 | 22.49 | 22.42 | 22.65 | |
| 100 | QPSK | 1 | 1 | 22.54 | 22.48 | 22.43 | 23.5 |
| 100 | QPSK | 1 | 137 | 22.41 | 22.50 | 22.32 | |
| 100 | QPSK | 1 | 271 | 22.78 | 22.72 | 22.24 | |
| 100 | QPSK | 135 | 0 | 22.81 | 22.44 | 22.27 | 23.5 |
| 100 | QPSK | 135 | 69 | 22.44 | 22.55 | 22.63 | 23.5 |
| 100 | QPSK | 135 | 138 | 22.40 | 22.44 | 22.79 | 23.5 |
| 100 | QPSK | 270 | 0 | 22.38 | 22.83 | 22.34 | |
| 100 | 16QAM | 1 | 1 | 22.36 | 22.31 | 22.37 | 23.5 |
| 100 | 64QAM | 1 | 1 | 22.49 | 22.29 | 22.54 | 23.5 |
| 100 | 256QAM | 1 | 1 | 22.63 | 22.43 | 22.60 | 23.5 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 22.27 | 22.07 | 22.10 | 23.5 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 22.27 | 21.97 | 22.14 | 23.5 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 22.49 | 21.95 | 22.42 | 23.5 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 22.46 | 22.44 | 22.15 | 23.5 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 21.95 | 22.25 | 22.31 | 23.5 |



<n77_Ant1_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 23.94 | 23.81 | 23.74 | 24.0 |
| 100 | PI/2 BPSK | 1 | 137 | 23.28 | 22.88 | 23.18 | |
| 100 | PI/2 BPSK | 1 | 271 | 23.06 | 23.11 | 23.16 | |
| 100 | PI/2 BPSK | 135 | 0 | 22.16 | 22.56 | 22.37 | 23.5 |
| 100 | PI/2 BPSK | 135 | 69 | 23.09 | 22.97 | 23.32 | 24.0 |
| 100 | PI/2 BPSK | 135 | 138 | 22.56 | 22.27 | 22.39 | 23.5 |
| 100 | PI/2 BPSK | 270 | 0 | 22.35 | 22.47 | 22.21 | |
| 100 | QPSK | 1 | 1 | 22.82 | 23.22 | 23.29 | 24.0 |
| 100 | QPSK | 1 | 137 | 23.14 | 23.18 | 23.00 | |
| 100 | QPSK | 1 | 271 | 23.27 | 23.19 | 23.00 | |
| 100 | QPSK | 135 | 0 | 22.27 | 22.54 | 22.54 | 23.0 |
| 100 | QPSK | 135 | 69 | 23.25 | 23.01 | 23.00 | 24.0 |
| 100 | QPSK | 135 | 138 | 22.39 | 22.59 | 22.40 | 23.0 |
| 100 | QPSK | 270 | 0 | 22.54 | 22.29 | 22.35 | |
| 100 | 16QAM | 1 | 1 | 22.50 | 22.64 | 22.27 | 23.0 |
| 100 | 64QAM | 1 | 1 | 20.62 | 20.53 | 20.43 | 21.5 |
| 100 | 256QAM | 1 | 1 | 20.40 | 20.17 | 20.31 | 21.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 23.66 | 23.64 | 23.51 | 24.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 23.54 | 23.24 | 23.26 | 24.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 23.64 | 23.54 | 23.52 | 24.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 23.58 | 23.24 | 23.52 | 24.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.61 | 23.52 | 23.42 | 24.0 |



<n77_HPUE_Ant1_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 26.80 | 26.77 | 26.54 | 27.0 |
| 100 | PI/2 BPSK | 1 | 137 | 26.04 | 26.27 | 26.33 | |
| 100 | PI/2 BPSK | 1 | 271 | 26.10 | 26.24 | 26.44 | |
| 100 | PI/2 BPSK | 135 | 0 | 25.41 | 25.41 | 25.54 | 26.5 |
| 100 | PI/2 BPSK | 135 | 69 | 26.27 | 26.26 | 26.30 | 27.0 |
| 100 | PI/2 BPSK | 135 | 138 | 25.64 | 25.89 | 25.73 | 26.5 |
| 100 | PI/2 BPSK | 270 | 0 | 25.88 | 25.52 | 25.62 | |
| 100 | QPSK | 1 | 1 | 26.41 | 26.07 | 26.02 | 27.0 |
| 100 | QPSK | 1 | 137 | 26.32 | 26.10 | 26.15 | |
| 100 | QPSK | 1 | 271 | 26.23 | 26.21 | 25.96 | |
| 100 | QPSK | 135 | 0 | 25.40 | 25.08 | 25.21 | 26.0 |
| 100 | QPSK | 135 | 69 | 26.22 | 26.04 | 26.24 | 27.0 |
| 100 | QPSK | 135 | 138 | 25.17 | 25.55 | 25.11 | 26.0 |
| 100 | QPSK | 270 | 0 | 25.63 | 25.40 | 25.50 | |
| 100 | 16QAM | 1 | 1 | 25.49 | 25.48 | 25.33 | 26.0 |
| 100 | 64QAM | 1 | 1 | 24.39 | 23.96 | 24.06 | 24.5 |
| 100 | 256QAM | 1 | 1 | 24.41 | 24.09 | 24.46 | 24.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 26.73 | 26.71 | 26.44 | 27.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 26.74 | 26.76 | 26.48 | 27.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 26.70 | 26.75 | 26.48 | 27.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 26.71 | 26.73 | 26.52 | 27.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 26.73 | 26.67 | 26.54 | 27.0 |



<n77_Ant1_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 15.04 | 15.14 | 15.09 | 15.5 |
| 100 | PI/2 BPSK | 1 | 137 | 14.99 | 15.10 | 15.02 | |
| 100 | PI/2 BPSK | 1 | 271 | 14.93 | 15.08 | 15.01 | |
| 100 | PI/2 BPSK | 135 | 0 | 14.83 | 15.02 | 14.90 | 15.5 |
| 100 | PI/2 BPSK | 135 | 69 | 15.01 | 15.12 | 15.05 | 15.5 |
| 100 | PI/2 BPSK | 135 | 138 | 14.94 | 15.07 | 14.97 | 15.5 |
| 100 | PI/2 BPSK | 270 | 0 | 14.89 | 15.01 | 14.96 | |
| 100 | QPSK | 1 | 1 | 14.82 | 15.02 | 14.96 | 15.5 |
| 100 | QPSK | 1 | 137 | 14.93 | 15.10 | 15.02 | |
| 100 | QPSK | 1 | 271 | 14.94 | 15.09 | 14.94 | |
| 100 | QPSK | 135 | 0 | 13.96 | 14.12 | 13.99 | 14.5 |
| 100 | QPSK | 135 | 69 | 14.98 | 15.08 | 15.03 | 15.5 |
| 100 | QPSK | 135 | 138 | 14.02 | 14.15 | 14.02 | 14.5 |
| 100 | QPSK | 270 | 0 | 13.91 | 14.08 | 13.98 | |
| 100 | 16QAM | 1 | 1 | 14.91 | 15.10 | 15.02 | 15.5 |
| 100 | 64QAM | 1 | 1 | 14.91 | 15.11 | 15.02 | 15.5 |
| 100 | 256QAM | 1 | 1 | 14.99 | 15.12 | 15.01 | 15.5 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 15.00 | 15.13 | 14.99 | 15.5 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 15.01 | 15.11 | 15.07 | 15.5 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 14.94 | 15.07 | 15.03 | 15.5 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 15.00 | 15.06 | 15.02 | 15.5 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 14.96 | 15.11 | 15.02 | 15.5 |



<n77_HPUE_Ant1_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 17.81 | 17.84 | 17.69 | 18.5 |
| 100 | PI/2 BPSK | 1 | 137 | 17.70 | 17.82 | 17.62 | |
| 100 | PI/2 BPSK | 1 | 271 | 17.76 | 17.81 | 17.63 | |
| 100 | PI/2 BPSK | 135 | 0 | 17.78 | 17.83 | 17.64 | 18.5 |
| 100 | PI/2 BPSK | 135 | 69 | 17.69 | 17.80 | 17.65 | 18.5 |
| 100 | PI/2 BPSK | 135 | 138 | 17.75 | 17.78 | 17.62 | 18.5 |
| 100 | PI/2 BPSK | 270 | 0 | 17.63 | 17.75 | 17.58 | |
| 100 | QPSK | 1 | 1 | 17.74 | 17.81 | 17.57 | 18.5 |
| 100 | QPSK | 1 | 137 | 17.69 | 17.76 | 17.58 | |
| 100 | QPSK | 1 | 271 | 17.76 | 17.82 | 17.65 | |
| 100 | QPSK | 135 | 0 | 16.85 | 16.88 | 16.71 | 17.5 |
| 100 | QPSK | 135 | 69 | 17.69 | 17.72 | 17.47 | 18.5 |
| 100 | QPSK | 135 | 138 | 16.68 | 16.75 | 16.53 | 17.5 |
| 100 | QPSK | 270 | 0 | 16.73 | 16.85 | 16.62 | |
| 100 | 16QAM | 1 | 1 | 17.68 | 17.73 | 17.56 | 18.5 |
| 100 | 64QAM | 1 | 1 | 17.68 | 17.75 | 17.60 | 18.5 |
| 100 | 256QAM | 1 | 1 | 17.78 | 17.82 | 17.62 | 18.5 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 17.77 | 17.82 | 17.69 | 18.5 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 17.76 | 17.74 | 17.68 | 18.5 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 17.75 | 17.76 | 17.62 | 18.5 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 17.78 | 17.75 | 17.63 | 18.5 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 17.78 | 17.82 | 17.67 | 18.5 |



<n77_Ant2_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|--------------------------|-----------------------------|---------------------------|------------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 23.41 | 23.44 | 22.83 | 24.0 |
| 100 | PI/2 BPSK | 1 | 137 | 23.30 | 23.41 | 22.79 | |
| 100 | PI/2 BPSK | 1 | 271 | 23.34 | 23.37 | 22.68 | |
| 100 | PI/2 BPSK | 135 | 0 | 22.88 | 22.97 | 22.34 | 23.5 |
| 100 | PI/2 BPSK | 135 | 69 | 23.30 | 23.35 | 22.72 | 24.0 |
| 100 | PI/2 BPSK | 135 | 138 | 22.70 | 22.82 | 22.21 | 23.5 |
| 100 | PI/2 BPSK | 270 | 0 | 22.85 | 22.92 | 22.29 | |
| 100 | QPSK | 1 | 1 | 23.33 | 23.37 | 22.74 | 24.0 |
| 100 | QPSK | 1 | 137 | 23.30 | 23.40 | 22.73 | |
| 100 | QPSK | 1 | 271 | 23.31 | 23.36 | 22.72 | |
| 100 | QPSK | 135 | 0 | 22.30 | 22.42 | 21.77 | 23.0 |
| 100 | QPSK | 135 | 69 | 23.32 | 23.37 | 22.67 | 24.0 |
| 100 | QPSK | 135 | 138 | 22.30 | 22.43 | 21.80 | 23.0 |
| 100 | QPSK | 270 | 0 | 22.33 | 22.38 | 21.72 | |
| 100 | 16QAM | 1 | 1 | 22.36 | 22.42 | 21.73 | 23.0 |
| 100 | 64QAM | 1 | 1 | 20.80 | 20.92 | 20.21 | 21.5 |
| 100 | 256QAM | 1 | 1 | 20.41 | 20.47 | 19.86 | 21.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 23.32 | 23.40 | 22.81 | 24.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 23.36 | 23.34 | 22.80 | 24.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 23.41 | 23.36 | 22.79 | 24.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 23.32 | 23.44 | 22.82 | 24.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.36 | 23.36 | 22.76 | 24.0 |



<n77_HPUE_Ant2_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 26.58 | 26.29 | 25.99 | 27.0 |
| 100 | PI/2 BPSK | 1 | 137 | 26.51 | 26.24 | 25.90 | |
| 100 | PI/2 BPSK | 1 | 271 | 26.39 | 26.19 | 25.84 | |
| 100 | PI/2 BPSK | 135 | 0 | 25.98 | 25.75 | 25.42 | 26.5 |
| 100 | PI/2 BPSK | 135 | 69 | 26.47 | 26.23 | 25.87 | 27.0 |
| 100 | PI/2 BPSK | 135 | 138 | 25.99 | 25.73 | 25.43 | 26.5 |
| 100 | PI/2 BPSK | 270 | 0 | 25.99 | 25.70 | 25.36 | |
| 100 | QPSK | 1 | 1 | 26.42 | 26.23 | 25.84 | 27.0 |
| 100 | QPSK | 1 | 137 | 26.42 | 26.19 | 25.82 | |
| 100 | QPSK | 1 | 271 | 26.45 | 26.25 | 25.87 | |
| 100 | QPSK | 135 | 0 | 25.57 | 25.28 | 24.90 | 26.0 |
| 100 | QPSK | 135 | 69 | 26.47 | 26.21 | 25.84 | 27.0 |
| 100 | QPSK | 135 | 138 | 25.50 | 25.23 | 24.88 | 26.0 |
| 100 | QPSK | 270 | 0 | 25.48 | 25.19 | 24.88 | |
| 100 | 16QAM | 1 | 1 | 25.49 | 25.23 | 24.87 | 26.0 |
| 100 | 64QAM | 1 | 1 | 23.93 | 23.72 | 23.41 | 24.5 |
| 100 | 256QAM | 1 | 1 | 23.47 | 23.24 | 22.90 | 24.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 26.52 | 26.28 | 25.96 | 27.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 26.57 | 26.22 | 25.93 | 27.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 26.55 | 26.26 | 25.97 | 27.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 26.54 | 26.29 | 25.92 | 27.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 26.52 | 26.20 | 25.95 | 27.0 |



<n77_Ant2_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 17.27 | 17.32 | 17.41 | 18.0 |
| 100 | PI/2 BPSK | 1 | 137 | 17.17 | 17.28 | 17.27 | |
| 100 | PI/2 BPSK | 1 | 271 | 17.18 | 17.24 | 17.27 | |
| 100 | PI/2 BPSK | 135 | 0 | 17.16 | 17.31 | 17.40 | 18.0 |
| 100 | PI/2 BPSK | 135 | 69 | 17.08 | 17.23 | 17.25 | 18.0 |
| 100 | PI/2 BPSK | 135 | 138 | 17.05 | 17.19 | 17.23 | 18.0 |
| 100 | PI/2 BPSK | 270 | 0 | 17.07 | 17.22 | 17.23 | |
| 100 | QPSK | 1 | 1 | 17.16 | 17.24 | 17.27 | 18.0 |
| 100 | QPSK | 1 | 137 | 17.20 | 17.28 | 17.27 | |
| 100 | QPSK | 1 | 271 | 17.26 | 17.31 | 17.34 | |
| 100 | QPSK | 135 | 0 | 16.13 | 16.24 | 16.23 | 17.0 |
| 100 | QPSK | 135 | 69 | 17.18 | 17.31 | 17.33 | 18.0 |
| 100 | QPSK | 135 | 138 | 16.24 | 16.32 | 16.36 | 17.0 |
| 100 | QPSK | 270 | 0 | 16.14 | 16.28 | 16.35 | |
| 100 | 16QAM | 1 | 1 | 17.22 | 17.31 | 17.40 | 18.0 |
| 100 | 64QAM | 1 | 1 | 17.11 | 17.22 | 17.28 | 18.0 |
| 100 | 256QAM | 1 | 1 | 17.22 | 17.27 | 17.35 | 18.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 17.23 | 17.26 | 17.31 | 18.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 17.20 | 17.28 | 17.36 | 18.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 17.25 | 17.30 | 17.38 | 18.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 17.19 | 17.31 | 17.35 | 18.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 17.25 | 17.32 | 17.33 | 18.0 |



<n77_HPUE_Ant2_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 20.28 | 20.20 | 20.24 | 21.0 |
| 100 | PI/2 BPSK | 1 | 137 | 20.19 | 20.17 | 20.21 | |
| 100 | PI/2 BPSK | 1 | 271 | 20.27 | 20.19 | 20.22 | |
| 100 | PI/2 BPSK | 135 | 0 | 20.18 | 20.15 | 20.10 | 21.0 |
| 100 | PI/2 BPSK | 135 | 69 | 20.16 | 20.09 | 20.11 | 21.0 |
| 100 | PI/2 BPSK | 135 | 138 | 20.26 | 20.18 | 20.13 | 21.0 |
| 100 | PI/2 BPSK | 270 | 0 | 20.16 | 20.14 | 20.08 | |
| 100 | QPSK | 1 | 1 | 20.25 | 20.18 | 20.13 | 21.0 |
| 100 | QPSK | 1 | 137 | 20.19 | 20.15 | 20.18 | |
| 100 | QPSK | 1 | 271 | 20.17 | 20.13 | 20.07 | |
| 100 | QPSK | 135 | 0 | 19.25 | 19.22 | 19.19 | 20.0 |
| 100 | QPSK | 135 | 69 | 20.22 | 20.18 | 20.19 | 21.0 |
| 100 | QPSK | 135 | 138 | 19.19 | 19.21 | 19.15 | 20.0 |
| 100 | QPSK | 270 | 0 | 19.24 | 19.24 | 19.28 | |
| 100 | 16QAM | 1 | 1 | 20.26 | 20.18 | 20.20 | 21.0 |
| 100 | 64QAM | 1 | 1 | 20.10 | 20.12 | 20.11 | 21.0 |
| 100 | 256QAM | 1 | 1 | 20.13 | 20.08 | 20.05 | 21.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 20.23 | 20.18 | 20.19 | 21.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 20.19 | 20.14 | 20.20 | 21.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 20.21 | 20.17 | 20.24 | 21.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 20.20 | 20.15 | 20.22 | 21.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 20.19 | 20.17 | 20.16 | 21.0 |



<n77_Ant3_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 23.71 | 23.41 | 22.95 | 24.0 |
| 100 | PI/2 BPSK | 1 | 137 | 23.61 | 23.38 | 22.83 | |
| 100 | PI/2 BPSK | 1 | 271 | 23.59 | 23.32 | 22.79 | |
| 100 | PI/2 BPSK | 135 | 0 | 23.05 | 22.82 | 22.26 | 23.5 |
| 100 | PI/2 BPSK | 135 | 69 | 23.60 | 23.34 | 22.85 | 24.0 |
| 100 | PI/2 BPSK | 135 | 138 | 22.98 | 22.78 | 22.25 | 23.5 |
| 100 | PI/2 BPSK | 270 | 0 | 23.07 | 22.83 | 22.27 | |
| 100 | QPSK | 1 | 1 | 23.62 | 23.36 | 22.84 | 24.0 |
| 100 | QPSK | 1 | 137 | 23.64 | 23.34 | 22.80 | |
| 100 | QPSK | 1 | 271 | 23.64 | 23.40 | 22.92 | |
| 100 | QPSK | 135 | 0 | 22.64 | 22.38 | 21.88 | 23.0 |
| 100 | QPSK | 135 | 69 | 23.61 | 23.35 | 22.84 | 24.0 |
| 100 | QPSK | 135 | 138 | 22.61 | 22.34 | 21.88 | 23.0 |
| 100 | QPSK | 270 | 0 | 22.72 | 22.42 | 21.95 | |
| 100 | 16QAM | 1 | 1 | 22.60 | 22.37 | 21.83 | 23.0 |
| 100 | 64QAM | 1 | 1 | 21.13 | 20.84 | 20.33 | 21.5 |
| 100 | 256QAM | 1 | 1 | 20.68 | 20.38 | 19.89 | 21.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 23.69 | 23.40 | 22.88 | 24.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 23.70 | 23.38 | 22.86 | 24.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 23.69 | 23.33 | 22.89 | 24.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 23.63 | 23.34 | 22.92 | 24.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 23.70 | 23.34 | 22.95 | 24.0 |



<n77_HPUE_Ant3_DSI 2>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 26.80 | 26.23 | 25.91 | 27.0 |
| 100 | PI/2 BPSK | 1 | 137 | 26.69 | 26.14 | 25.74 | |
| 100 | PI/2 BPSK | 1 | 271 | 26.74 | 26.22 | 25.84 | |
| 100 | PI/2 BPSK | 135 | 0 | 26.28 | 25.74 | 25.41 | 26.5 |
| 100 | PI/2 BPSK | 135 | 69 | 26.71 | 26.15 | 25.75 | 27.0 |
| 100 | PI/2 BPSK | 135 | 138 | 26.28 | 25.72 | 25.34 | 26.5 |
| 100 | PI/2 BPSK | 270 | 0 | 26.31 | 25.81 | 25.42 | |
| 100 | QPSK | 1 | 1 | 26.71 | 26.14 | 25.74 | 27.0 |
| 100 | QPSK | 1 | 137 | 26.61 | 26.12 | 25.72 | |
| 100 | QPSK | 1 | 271 | 26.75 | 26.21 | 25.89 | |
| 100 | QPSK | 135 | 0 | 25.75 | 25.24 | 24.83 | 26.0 |
| 100 | QPSK | 135 | 69 | 26.68 | 26.18 | 25.76 | 27.0 |
| 100 | QPSK | 135 | 138 | 25.80 | 25.24 | 24.91 | 26.0 |
| 100 | QPSK | 270 | 0 | 25.66 | 25.18 | 24.86 | |
| 100 | 16QAM | 1 | 1 | 25.77 | 25.25 | 24.88 | 26.0 |
| 100 | 64QAM | 1 | 1 | 24.24 | 23.76 | 23.34 | 24.5 |
| 100 | 256QAM | 1 | 1 | 23.78 | 23.21 | 22.84 | 24.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 26.80 | 26.19 | 25.90 | 27.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 26.70 | 26.13 | 25.85 | 27.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 26.70 | 26.17 | 25.83 | 27.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 26.71 | 26.14 | 25.84 | 27.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 26.76 | 26.17 | 25.84 | 27.0 |



<n77_Ant3_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 16.21 | 16.24 | 16.22 | 17.0 |
| 100 | PI/2 BPSK | 1 | 137 | 16.13 | 16.18 | 16.11 | |
| 100 | PI/2 BPSK | 1 | 271 | 16.17 | 16.22 | 16.11 | |
| 100 | PI/2 BPSK | 135 | 0 | 16.12 | 16.15 | 16.09 | 17.0 |
| 100 | PI/2 BPSK | 135 | 69 | 16.16 | 16.21 | 16.12 | 17.0 |
| 100 | PI/2 BPSK | 135 | 138 | 16.13 | 16.18 | 16.13 | 17.0 |
| 100 | PI/2 BPSK | 270 | 0 | 16.19 | 16.22 | 16.17 | |
| 100 | QPSK | 1 | 1 | 16.09 | 16.14 | 16.03 | 17.0 |
| 100 | QPSK | 1 | 137 | 16.06 | 16.18 | 16.14 | |
| 100 | QPSK | 1 | 271 | 16.10 | 16.16 | 16.06 | |
| 100 | QPSK | 135 | 0 | 15.14 | 15.23 | 15.17 | 16.0 |
| 100 | QPSK | 135 | 69 | 16.12 | 16.21 | 16.09 | 17.0 |
| 100 | QPSK | 135 | 138 | 15.22 | 15.27 | 15.21 | 16.0 |
| 100 | QPSK | 270 | 0 | 15.11 | 15.21 | 15.16 | |
| 100 | 16QAM | 1 | 1 | 16.08 | 16.20 | 16.13 | 17.0 |
| 100 | 64QAM | 1 | 1 | 16.13 | 16.18 | 16.12 | 17.0 |
| 100 | 256QAM | 1 | 1 | 16.07 | 16.15 | 16.13 | 17.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 16.18 | 16.24 | 16.19 | 17.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 16.18 | 16.20 | 16.13 | 17.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 16.20 | 16.24 | 16.17 | 17.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 16.19 | 16.17 | 16.22 | 17.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 16.11 | 16.18 | 16.22 | 17.0 |



<n77_HPUE_Ant3_DSI 4/5>

| BW [MHz] | Modulation | RB Size | RB Offset | Power Low Ch. / Freq. | Power Middle Ch. / Freq. | Power High Ch. / Freq. | Tune-up limit (dBm) |
|-----------------|------------|---------|-----------|-----------------------|--------------------------|------------------------|---------------------|
| Channel | | | | 650000 | 656000 | 662000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3750 | 3840 | 3930 | |
| 100 | PI/2 BPSK | 1 | 1 | 19.19 | 19.20 | 19.11 | 20.0 |
| 100 | PI/2 BPSK | 1 | 137 | 19.04 | 19.15 | 19.03 | |
| 100 | PI/2 BPSK | 1 | 271 | 19.10 | 19.18 | 19.03 | |
| 100 | PI/2 BPSK | 135 | 0 | 19.02 | 19.08 | 18.95 | 20.0 |
| 100 | PI/2 BPSK | 135 | 69 | 19.05 | 19.09 | 18.97 | 20.0 |
| 100 | PI/2 BPSK | 135 | 138 | 19.10 | 19.16 | 18.99 | 20.0 |
| 100 | PI/2 BPSK | 270 | 0 | 18.98 | 19.08 | 18.92 | |
| 100 | QPSK | 1 | 1 | 19.12 | 19.14 | 18.99 | 20.0 |
| 100 | QPSK | 1 | 137 | 19.13 | 19.16 | 19.07 | |
| 100 | QPSK | 1 | 271 | 19.07 | 19.14 | 19.03 | |
| 100 | QPSK | 135 | 0 | 18.12 | 18.23 | 18.09 | 19.0 |
| 100 | QPSK | 135 | 69 | 19.11 | 19.15 | 18.96 | 20.0 |
| 100 | QPSK | 135 | 138 | 18.14 | 18.21 | 18.12 | 19.0 |
| 100 | QPSK | 270 | 0 | 18.22 | 18.25 | 18.10 | |
| 100 | 16QAM | 1 | 1 | 18.98 | 19.08 | 18.96 | 20.0 |
| 100 | 64QAM | 1 | 1 | 19.06 | 19.12 | 19.02 | 20.0 |
| 100 | 256QAM | 1 | 1 | 18.97 | 19.06 | 18.92 | 20.0 |
| Channel | | | | 649334 | 656000 | 662666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3740.01 | 3840 | 3939.99 | |
| 80 | PI/2 BPSK | 1 | 1 | 19.10 | 19.13 | 19.10 | 20.0 |
| Channel | | | | 648668 | 656000 | 663332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3730.02 | 3840 | 3949.98 | |
| 60 | PI/2 BPSK | 1 | 1 | 19.17 | 19.18 | 19.08 | 20.0 |
| Channel | | | | 648000 | 656000 | 664000 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3720 | 3840 | 3960 | |
| 40 | PI/2 BPSK | 1 | 1 | 19.11 | 19.15 | 19.06 | 20.0 |
| Channel | | | | 647668 | 656000 | 664332 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3715.02 | 3840 | 3964.98 | |
| 30 | PI/2 BPSK | 1 | 1 | 19.09 | 19.17 | 19.06 | 20.0 |
| Channel | | | | 647334 | 656000 | 664666 | Tune-up limit (dBm) |
| Frequency (MHz) | | | | 3710.01 | 3840 | 3969.99 | |
| 20 | PI/2 BPSK | 1 | 1 | 19.13 | 19.15 | 19.06 | 20.0 |



14. WiFi/Bluetooth Output Power (Unit: dBm)

General Note:

1. The device only support MIMO operation
2. Per KDB 248227 D01v02r02, for WLAN SAR was perform single antenna and do the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is $< 1.6\text{W/kg}$ and SAR peak to location ratio ≤ 0.04 , no additional SAR measurements for MIMO.
3. According to Tune-up document, the TxBF output power is less than non-TxBF mode, according to KDB 248227 for OFDM mode the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, therefore, TxBF SAR is not necessary.
4. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, additional output power measurements were not necessary.
5. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode configurations with multiple test positions.
6. For 2.4 GHz 802.11b DSSS, either the initial test position procedure for multiple exposure test positions or the DSSS procedure for fixed exposure position is applied; these are mutually exclusive. For 2.4 GHz and 5 GHz OFDM configurations, the initial test configuration is applied to measure SAR using either the initial test position procedure for multiple exposure test position configurations or the initial test configuration procedures for fixed exposure test conditions. Based on the reported SAR of the measured configurations and maximum output power of the transmission mode configurations that are not included in the initial test configuration, the subsequent test configuration and initial test position procedures are applied to determine if SAR measurements are required for the remaining OFDM transmission configurations. In general, the number of test channels that require SAR measurement is minimized based on maximum output power measured for the test sample(s).
7. For OFDM transmission configurations in the 2.4 GHz and 5 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
8. DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures.18 The initial test position procedure is described in the following:
 - a. When the reported SAR of the initial test position is $\leq 0.4\text{ W/kg}$, further SAR measurement is not required for the other test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band.
 - b. When the reported SAR of the test position is $> 0.4\text{ W/kg}$, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is $\leq 0.8\text{ W/kg}$ or all required test position are tested.
 - c. For all positions/configurations, when the reported SAR is $> 0.8\text{ W/kg}$, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is $\leq 1.2\text{ W/kg}$ or all required channels are tested.
9. Per 201904 TCBC workshops, General principles of FCC KDB Publication 248227 D01 can be applied to determine the SAR Initial Test Configurations and test reduction for 802.11ax SAR testing. For the table below the 802.11ax maximum power is SU (non-OFDMA), and the SU maximum power also higher than RU (OFDMA)
10. In applying the test guidance, the IEEE 802.11 mode with the maximum output power (out of all modes) should be considered for testing
11. For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands
12. When SAR testing for 802.11ax is required
 - a. If the maximum output power is highest for OFDMA scenarios, choose the tone size with the maximum number of tones and the highest maximum output power
 - b. Otherwise, consider the fully allocated channel for SAR testing
 - c. When SAR testing is required on RU sizes less than the fully allocated channel, use the RU number closest to the middle of the channel, choosing the higher RU number when two RUs are equidistant to the middle of the channel



<Power Table 1/2>

| 2.4GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | |
|---------------------|---------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | |
| 802.11b 1Mbps | 1 | 2412 | 18.90 | 19.50 | 99.50 | 19.30 | 19.50 | 99.50 | not required | 22.50 | not required | | |
| | 6 | 2437 | 18.80 | 19.50 | | 19.40 | 19.50 | | | 22.50 | | | |
| | 11 | 2462 | 18.50 | 19.50 | | 18.80 | 19.50 | | | 22.50 | | | |
| 802.11g 6Mbps | 1 | 2412 | not required | 19.50 | not required | not required | 19.50 | not required | | 22.50 | | | |
| | 6 | 2437 | | 19.50 | | | 19.50 | | | 22.50 | | | |
| | 11 | 2462 | | 18.50 | | | 18.50 | | | 21.50 | | | |
| 802.11n-HT20 MCS0 | 1 | 2412 | | 19.50 | | | 19.50 | | | 19.50 | | 19.50 | 22.50 |
| | 6 | 2437 | | 19.50 | | | 19.50 | | | 19.50 | | 19.50 | 22.50 |
| | 11 | 2462 | | 17.00 | | | 17.00 | | | 20.00 | | | |
| 802.11n-HT40 MCS0 | 3 | 2422 | | 18.50 | | | 18.50 | | | 18.50 | | 18.50 | 21.50 |
| | 6 | 2437 | | 18.50 | | | 18.50 | | | 18.50 | | 18.50 | 21.50 |
| | 9 | 2452 | | 15.50 | | | 15.50 | | | 18.50 | | | |
| 802.11ac-VHT20 MCS0 | 1 | 2412 | | 19.00 | | | 19.00 | | 19.00 | 19.00 | 22.00 | | |
| | 6 | 2437 | | 19.00 | | | 19.00 | | 19.00 | 19.00 | 22.00 | | |
| | 11 | 2462 | | 16.50 | | | 16.50 | | 19.50 | | | | |
| 802.11ac-VHT40 MCS0 | 3 | 2422 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| | 6 | 2437 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| | 9 | 2452 | 15.50 | 15.50 | 18.50 | | | | | | | | |
| 802.11ax-HE20 MCS0 | 1 | 2412 | 19.50 | 19.50 | 19.50 | 19.50 | 22.50 | | | | | | |
| | 6 | 2437 | 19.50 | 19.50 | 19.50 | 19.50 | 22.50 | | | | | | |
| | 11 | 2462 | 17.00 | 17.00 | 20.00 | | | | | | | | |
| 802.11ax-HE40 MCS0 | 3 | 2422 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| | 6 | 2437 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| | 9 | 2452 | 15.50 | 15.50 | 18.50 | | | | | | | | |

| 5.2GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | |
|---------------------|---------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | |
| 802.11a 6Mbps | 36 | 5180 | 17.80 | 18.50 | 99.20 | 18.10 | 18.50 | 99.20 | not required | 21.50 | not required | | |
| | 40 | 5200 | 17.70 | 18.50 | | 17.90 | 18.50 | | | 21.50 | | | |
| | 44 | 5220 | 17.80 | 18.50 | | 18.00 | 18.50 | | | 21.50 | | | |
| | 48 | 5240 | 17.80 | 18.50 | | 17.90 | 18.50 | | | 21.50 | | | |
| 802.11n-HT20 MCS0 | 36 | 5180 | not required | 18.50 | not required | not required | 18.50 | not required | | 21.50 | | | |
| | 40 | 5200 | | 18.50 | | | 18.50 | | | 21.50 | | | |
| | 44 | 5220 | | 18.50 | | | 18.50 | | | 21.50 | | | |
| 802.11n-HT40 MCS0 | 38 | 5190 | | 17.00 | | | 17.00 | | | 17.00 | | 17.00 | 20.00 |
| | 46 | 5230 | | 18.00 | | | 18.00 | | | 18.00 | | 18.00 | 21.00 |
| 802.11ac-VHT20 MCS0 | 36 | 5180 | | 18.50 | | | 18.50 | | | 18.50 | | 18.50 | 21.50 |
| | 40 | 5200 | | 18.50 | | | 18.50 | | | 18.50 | | 18.50 | 21.50 |
| | 44 | 5220 | | 18.50 | | | 18.50 | | | 18.50 | | 18.50 | 21.50 |
| 802.11ac-VHT40 MCS0 | 48 | 5240 | | 18.50 | | | 18.50 | | 18.50 | 18.50 | 21.50 | | |
| | 38 | 5190 | | 17.00 | | | 17.00 | | 17.00 | 17.00 | 20.00 | | |
| | 46 | 5230 | | 18.00 | | | 18.00 | | 18.00 | 18.00 | 21.00 | | |
| 802.11ac-VHT80 MCS0 | 42 | 5210 | | 17.00 | | | 17.00 | | 17.00 | 17.00 | 20.00 | | |
| 802.11ax-HE20 MCS0 | 36 | 5180 | 17.50 | 17.50 | 17.50 | 17.50 | 20.50 | | | | | | |
| | 40 | 5200 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| | 44 | 5220 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| | 48 | 5240 | 18.50 | 18.50 | 18.50 | 18.50 | 21.50 | | | | | | |
| 802.11ax-HE40 MCS0 | 38 | 5190 | 17.00 | 17.00 | 17.00 | 17.00 | 20.00 | | | | | | |
| | 46 | 5230 | 18.00 | 18.00 | 18.00 | 18.00 | 21.00 | | | | | | |
| 802.11ax-HE80 MCS0 | 42 | 5210 | 17.00 | 17.00 | 17.00 | 17.00 | 20.00 | | | | | | |



| 5.3GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|---------------------|-------------|----------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|
| 5.3GHz WLAN | Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % |
| | 5.3GHz WLAN | 802.11a 6Mbps | 52 | 5260 | 18.30 | 19.00 | 99.20 | 18.10 | 19.00 | 99.20 | not required | 22.00 |
| 56 | | | 5280 | 18.40 | 19.00 | 17.70 | | 19.00 | 22.00 | | | |
| 60 | | | 5300 | 18.50 | 19.00 | 17.80 | | 19.00 | 22.00 | | | |
| 64 | | | 5320 | 18.40 | 19.00 | 18.20 | | 19.00 | 22.00 | | | |
| 802.11n-HT20 MCS0 | | 52 | 5260 | not required | 19.00 | not required | not required | 19.00 | not required | 22.00 | | |
| | | 56 | 5280 | | 19.00 | | | 22.00 | | | | |
| | | 60 | 5300 | | 19.00 | | | 22.00 | | | | |
| | | 64 | 5320 | | 19.00 | | | 22.00 | | | | |
| 802.11n-HT40 MCS0 | | 54 | 5270 | | 18.00 | | | 21.00 | | | | |
| | | 62 | 5310 | | 16.00 | | | 19.00 | | | | |
| 802.11ac-VHT20 MCS0 | | 52 | 5260 | | 19.00 | | | 22.00 | | | | |
| | | 56 | 5280 | | 19.00 | | | 22.00 | | | | |
| | | 60 | 5300 | | 19.00 | | | 22.00 | | | | |
| | | 64 | 5320 | | 19.00 | | | 22.00 | | | | |
| 802.11ac-VHT40 MCS0 | | 54 | 5270 | | 18.00 | | | 21.00 | | | | |
| | | 62 | 5310 | | 16.00 | | | 19.00 | | | | |
| 802.11ac-VHT80 MCS0 | | 58 | 5290 | | 16.00 | | | 19.00 | | | | |
| | | 802.11ac-VHT160 MCS0 | 50 | | 5250 | | | 15.50 | | 18.50 | | |
| 802.11ax-HE20 MCS0 | | 52 | 5260 | | 19.00 | | | 22.00 | | | | |
| | | 56 | 5280 | | 19.00 | | | 22.00 | | | | |
| | 60 | 5300 | 19.00 | | 22.00 | | | | | | | |
| | 64 | 5320 | 19.00 | | 22.00 | | | | | | | |
| 802.11ax-HE40 MCS0 | 54 | 5270 | 18.00 | | 21.00 | | | | | | | |
| | 62 | 5310 | 16.00 | | 19.00 | | | | | | | |
| 802.11ax-HE80 MCS0 | 58 | 5290 | 16.00 | 19.00 | | | | | | | | |
| 802.11ax-HE160 MCS0 | 50 | 5250 | 15.50 | 18.50 | | | | | | | | |



| 5.5GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|---------------------|---------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | |
| 802.11a 6Mbps | 100 | 5500 | 18.90 | 19.00 | 99.20 | 18.10 | 19.00 | 99.20 | not required | 22.00 | not required | |
| | 116 | 5580 | 18.80 | 19.00 | | 17.80 | 19.00 | | | 22.00 | | |
| | 124 | 5620 | 18.70 | 19.00 | | 17.70 | 19.00 | | | 22.00 | | |
| | 132 | 5660 | 18.70 | 19.00 | | 17.70 | 19.00 | | | 22.00 | | |
| | 144 | 5720 | 18.70 | 19.00 | | 17.70 | 19.00 | | | 22.00 | | |
| 802.11n-HT20 MCS0 | 100 | 5500 | not required | 19.00 | not required | not required | 19.00 | not required | not required | 22.00 | not required | |
| | 116 | 5580 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 124 | 5620 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 132 | 5660 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 144 | 5720 | | 19.00 | | | 19.00 | | | 22.00 | | |
| 802.11n-HT40 MCS0 | 102 | 5510 | not required | 17.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 110 | 5550 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 126 | 5630 | | 18.50 | | | 18.50 | | | 21.50 | | |
| | 134 | 5670 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 142 | 5710 | | 18.50 | | | 18.50 | | | 21.50 | | |
| 802.11ac-VHT20 MCS0 | 100 | 5500 | not required | 19.00 | not required | not required | 19.00 | not required | not required | 22.00 | not required | |
| | 116 | 5580 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 124 | 5620 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 132 | 5660 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 144 | 5720 | | 19.00 | | | 19.00 | | | 22.00 | | |
| 802.11ac-VHT40 MCS0 | 102 | 5510 | not required | 17.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 110 | 5550 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 126 | 5630 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 134 | 5670 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 142 | 5710 | | 18.50 | | | 18.50 | | | 21.50 | | |
| 802.11ac-VHT80 MCS0 | 106 | 5530 | not required | 17.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 122 | 5610 | | 17.00 | | | 17.00 | | | 20.00 | | |
| | 138 | 5690 | | 17.00 | | | 17.00 | | | 20.00 | | |
| | 114 | 5570 | | 16.00 | | | 16.00 | | | 19.00 | | |
| 802.11ax-HE20 MCS0 | 100 | 5500 | not required | 19.00 | not required | not required | 19.00 | not required | not required | 22.00 | not required | |
| | 116 | 5580 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 124 | 5620 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 132 | 5660 | | 19.00 | | | 19.00 | | | 22.00 | | |
| | 144 | 5720 | | 19.00 | | | 19.00 | | | 22.00 | | |
| 802.11ax-HE40 MCS0 | 102 | 5510 | not required | 17.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 110 | 5550 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 126 | 5630 | | 18.50 | | | 18.50 | | | 21.50 | | |
| | 134 | 5670 | | 18.00 | | | 18.00 | | | 21.00 | | |
| | 142 | 5710 | | 18.50 | | | 18.50 | | | 21.50 | | |
| 802.11ax-HE80 MCS0 | 106 | 5530 | not required | 17.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 122 | 5610 | | 17.00 | | | 17.00 | | | 20.00 | | |
| | 138 | 5690 | | 17.00 | | | 17.00 | | | 20.00 | | |
| 802.11ax-HE160 MCS0 | 114 | 5570 | not required | 16.00 | not required | not required | 16.00 | not required | not required | 19.00 | not required | |



| 5.8GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | |
|-------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--------------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | |
| 5.8GHz WLAN | 802.11a 6Mbps | 149 | 5745 | 18.90 | 19.50 | 18.00 | 19.50 | 99.20 | 18.00 | 19.50 | 99.20 | 22.50 | |
| | | 157 | 5785 | 18.70 | 19.50 | | | | | | | 22.50 | |
| | | 165 | 5825 | 19.00 | 19.50 | | | | | | | 22.50 | |
| | 802.11n-HT20 MCS0 | 149 | 5745 | not required | 19.50 | not required | not required | 19.50 | not required | not required | not required | not required | 22.50 |
| | | 157 | 5785 | | 19.50 | | | 22.50 | | | | | |
| | | 165 | 5825 | | 19.50 | | | 22.50 | | | | | |
| | 802.11n-HT40 MCS0 | 151 | 5755 | | 19.00 | | | 22.00 | | | | | |
| | | 159 | 5795 | | 18.00 | | | 21.00 | | | | | |
| | 802.11ac-VHT20 MCS0 | 149 | 5745 | | 19.50 | | | 22.50 | | | | | |
| | | 157 | 5785 | | 19.50 | | | 22.50 | | | | | |
| | 802.11ac-VHT40 MCS0 | 151 | 5755 | | 19.00 | | | 22.00 | | | | | |
| | | 159 | 5795 | | 18.00 | | | 21.00 | | | | | |
| | 802.11ac-VHT80 MCS0 | 155 | 5775 | | 17.50 | | | 20.50 | | | | | |
| | | 149 | 5745 | | 19.50 | | | 22.50 | | | | | |
| | 802.11ax-HE20 MCS0 | 157 | 5785 | | 19.50 | | | 22.50 | | | | | |
| | | 165 | 5825 | | 19.50 | | | 22.50 | | | | | |
| | 802.11ax-HE40 MCS0 | 151 | 5755 | | 19.00 | | | 22.00 | | | | | |
| | | 159 | 5795 | | 18.00 | | | 21.00 | | | | | |
| | 802.11ax-HE80 MCS0 | 155 | 5775 | | 17.50 | | | 20.50 | | | | | |

| WiFi 6E | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | |
|---------------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|-------|-------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | | |
| WiFi 6E | 802.11a 6Mbps | 1 | 5955 | not required | 6.00 | not required | not required | 6.00 | not required | not required | not required | 9.00 | | | |
| | | 57 | 6235 | | 6.50 | | | 9.00 | | | | | | | |
| | | 113 | 6515 | | 4.00 | | | 7.00 | | | | | | | |
| | | 173 | 6815 | | 4.50 | | | 7.50 | | | | | | | |
| | | 233 | 7115 | | 5.00 | | | 8.00 | | | | | | | |
| | 802.11ax-HE20 MCS0 | 1 | 5955 | | 6.00 | | | 9.00 | | | | | | | |
| | | 57 | 6235 | | 6.50 | | | 7.00 | | | | | | | |
| | | 113 | 6515 | | 4.00 | | | 7.00 | | | | | | | |
| | | 173 | 6815 | | 4.50 | | | 7.50 | | | | | | | |
| | 802.11ax-HE40 MCS0 | 233 | 7115 | | -4.00 | | | -1.50 | | | | | | | |
| | | 3 | 5965 | | 9.00 | | | 12.00 | | | | | | | |
| | | 59 | 6245 | | 6.50 | | | 8.00 | | | | | | | |
| | | 107 | 6485 | | 4.00 | | | 7.00 | | | | | | | |
| | 802.11ax-HE80 MCS0 | 171 | 6805 | | 7.50 | | | 10.50 | | | | | | | |
| | | 227 | 7085 | | 7.50 | | | 10.50 | | | | | | | |
| | | 7 | 5985 | | 12.00 | | | 15.00 | | | | | | | |
| | | 71 | 6305 | | 12.00 | | | 15.00 | | | | | | | |
| | 802.11ax-HE160 MCS0 | 119 | 6545 | | 10.50 | | | 13.50 | | | | | | | |
| | | 167 | 6785 | | 10.50 | | | 13.50 | | | | | | | |
| | | 215 | 7025 | | 11.00 | | | 14.00 | | | | | | | |
| 802.11ax-HE160 MCS0 | 15 | 6025 | 14.37 | 14.50 | 99.10 | 13.07 | 13.50 | 99.10 | 16.78 | 17.00 | 99.10 | 16.78 | | | |
| | 47 | 6185 | 14.77 | 15.00 | | | | | | | | 16.78 | | | |
| | 111 | 6505 | 12.97 | 13.00 | | | | | | | | 11.97 | 12.00 | 15.17 | 15.50 |
| | 175 | 6825 | 13.27 | 13.50 | | | | | | | | 11.67 | 12.00 | 15.55 | 16.00 |
| | 207 | 6985 | 13.57 | 14.00 | | | | | | | | 11.97 | 12.50 | 15.85 | 16.50 |



<2.4GHz Bluetooth>

| Ant 4 | | | | | |
|---------------|---------|-----------------|---------------------|--------------|--------------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | | |
| | | | 1Mbps | 2Mbps | 3Mbps |
| BR / EDR | CH 00 | 2402 | 16.28 | not required | not required |
| | CH 39 | 2441 | 16.32 | | |
| | CH 78 | 2480 | 15.82 | | |
| Tune-up Limit | | | 17.5 | 15 | 15 |

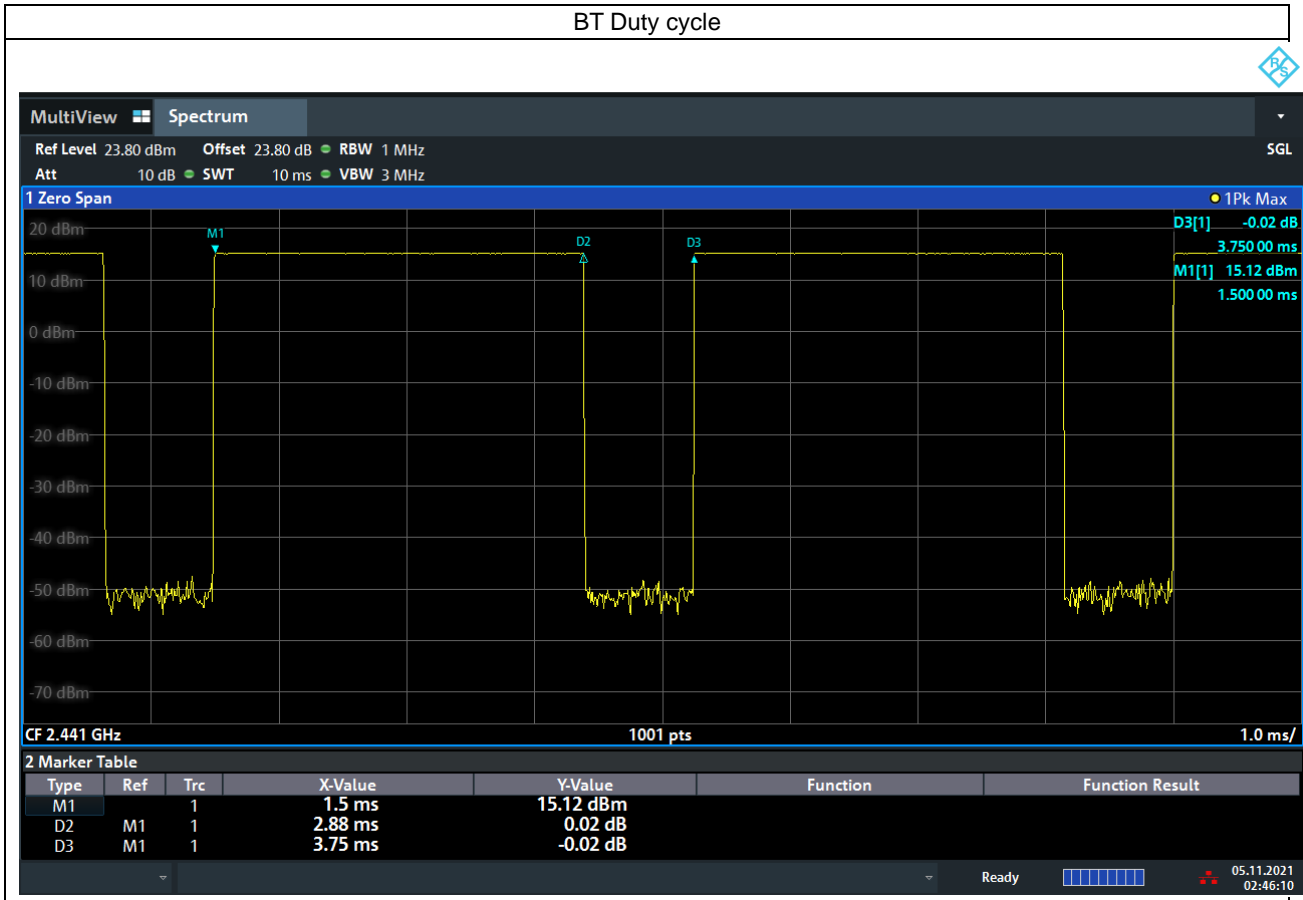
| Mode | Channel | Frequency (MHz) | Average power (dBm) | |
|---------------|---------|-----------------|---------------------|--------------|
| | | | 1Mbps | 2Mbps |
| LE | CH 00 | 2402 | not required | not required |
| | CH 19 | 2440 | | |
| | CH 39 | 2480 | | |
| Tune-up Limit | | | 10.5 | 10.5 |

| Ant 5 | | | | | |
|---------------|---------|-----------------|---------------------|--------------|--------------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | | |
| | | | 1Mbps | 2Mbps | 3Mbps |
| BR / EDR | CH 00 | 2402 | 15.62 | not required | not required |
| | CH 39 | 2441 | 15.52 | | |
| | CH 78 | 2480 | 15.49 | | |
| Tune-up Limit | | | 16.5 | 14 | 14 |

| Mode | Channel | Frequency (MHz) | Average power (dBm) | |
|---------------|---------|-----------------|---------------------|--------------|
| | | | 1Mbps | 2Mbps |
| LE | CH 00 | 2402 | not required | not required |
| | CH 19 | 2440 | | |
| | CH 39 | 2480 | | |
| Tune-up Limit | | | 10 | 10 |

General Note:

- For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.83% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.





<Power Table 3/4>

| 2.4GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|---------------------|-------------|---------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|
| 2.4GHz WLAN | Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % |
| | 2.4GHz WLAN | 802.11b 1Mbps | 1 | 2412 | not required | 19.50 | not required | not required | 19.50 | not required | not required | 22.50 |
| 6 | | | 2437 | 19.50 | | 19.50 | | | 22.50 | | | |
| 11 | | | 2462 | 19.50 | | 19.50 | | | 22.50 | | | |
| 802.11g 6Mbps | | 1 | 2412 | 19.50 | | 19.50 | | | 22.50 | | | |
| | | 6 | 2437 | 19.50 | | 19.50 | | | 22.50 | | | |
| | | 11 | 2462 | 18.50 | | 18.50 | | | 21.50 | | | |
| 802.11n-HT20 MCS0 | | 1 | 2412 | 19.50 | | 19.50 | | | 22.50 | | | |
| | | 6 | 2437 | 19.50 | | 19.50 | | | 22.50 | | | |
| | | 11 | 2462 | 17.00 | | 17.00 | | | 21.50 | | | |
| 802.11n-HT40 MCS0 | | 3 | 2422 | 18.50 | | 18.50 | | | 21.50 | | | |
| | | 6 | 2437 | 18.50 | | 18.50 | | | 21.50 | | | |
| | | 9 | 2452 | 15.50 | | 15.50 | | | 21.50 | | | |
| 802.11ac-VHT20 MCS0 | | 1 | 2412 | 19.00 | | 19.00 | | | 22.50 | | | |
| | | 6 | 2437 | 19.00 | | 19.00 | | | 22.50 | | | |
| | | 11 | 2462 | 16.50 | | 16.50 | | | 21.50 | | | |
| 802.11ac-VHT40 MCS0 | | 3 | 2422 | 18.50 | | 18.50 | | | 21.50 | | | |
| | | 6 | 2437 | 18.50 | | 18.50 | | | 21.50 | | | |
| | | 9 | 2452 | 15.50 | | 15.50 | | | 21.50 | | | |
| 802.11ax-HE20 MCS0 | 1 | 2412 | 19.50 | 19.50 | 22.50 | | | | | | | |
| | 6 | 2437 | 19.50 | 19.50 | 22.50 | | | | | | | |
| | 11 | 2462 | 17.00 | 17.00 | 21.50 | | | | | | | |
| 802.11ax-HE40 MCS0 | 3 | 2422 | 18.50 | 18.50 | 21.50 | | | | | | | |
| | 6 | 2437 | 18.50 | 18.50 | 21.50 | | | | | | | |
| | 9 | 2452 | 15.50 | 15.50 | 21.50 | | | | | | | |



| 5.2GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | | |
|--------------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|-------|-------|-------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | | | |
| 5.2GHz WLAN | 802.11a 6Mbps | 36 | 5180 | not required | not required | not required | not required | not required | not required | not required | not required | 15.50 | 18.50 | 20.50 | | |
| | | 40 | 5200 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 44 | 5220 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 48 | 5240 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | 802.11n-HT20 MCS0 | 36 | 5180 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 40 | 5200 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 44 | 5220 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 48 | 5240 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | 802.11n-HT40 MCS0 | 38 | 5190 | | | | | | | | | 15.50 | 17.00 | 20.00 | | |
| | | 46 | 5230 | | | | | | | | | 15.50 | 18.00 | 20.00 | | |
| | 802.11ac-VHT20 MCS0 | 36 | 5180 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 40 | 5200 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 44 | 5220 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | 802.11ac-VHT40 MCS0 | 38 | 5190 | | | | | | | | | 15.50 | 17.00 | 20.00 | | |
| | | 46 | 5230 | | | | | | | | | 15.50 | 18.00 | 20.00 | | |
| | 802.11ac-VHT80 MCS0 | 42 | 5210 | | | | | | | | | 15.40 | 15.50 | 99.70 | 17.00 | 20.00 |
| | 802.11ax-HE20 MCS0 | 36 | 5180 | | | | | | | | | 15.50 | 17.50 | 20.00 | | |
| | | 40 | 5200 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 44 | 5220 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| | | 48 | 5240 | | | | | | | | | 15.50 | 18.50 | 20.50 | | |
| 802.11ax-HE40 MCS0 | 38 | 5190 | 15.50 | 17.00 | 20.00 | | | | | | | | | | | |
| | 46 | 5230 | 15.50 | 18.00 | 20.00 | | | | | | | | | | | |
| 802.11ax-HE80 MCS0 | 42 | 5210 | 15.50 | 17.00 | 20.00 | | | | | | | | | | | |

| 5.3GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | | |
|---------------------|----------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|-------|-------|-------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | | | |
| 5.3GHz WLAN | 802.11a 6Mbps | 52 | 5260 | not required | not required | not required | not required | not required | not required | not required | not required | 16.00 | 19.00 | 21.00 | | |
| | | 56 | 5280 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 60 | 5300 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 64 | 5320 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | 802.11n-HT20 MCS0 | 52 | 5260 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 56 | 5280 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 60 | 5300 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 64 | 5320 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | 802.11n-HT40 MCS0 | 54 | 5270 | | | | | | | | | 16.00 | 18.00 | 20.50 | | |
| | | 62 | 5310 | | | | | | | | | 16.00 | 16.00 | 19.50 | | |
| | 802.11ac-VHT20 MCS0 | 52 | 5260 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 56 | 5280 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 60 | 5300 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 64 | 5320 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | 802.11ac-VHT40 MCS0 | 54 | 5270 | | | | | | | | | 16.00 | 18.00 | 20.50 | | |
| | | 62 | 5310 | | | | | | | | | 16.00 | 16.00 | 19.50 | | |
| | 802.11ac-VHT80 MCS0 | 58 | 5290 | | | | | | | | | 15.60 | 16.00 | 99.70 | 16.00 | 19.50 |
| | 802.11ac-VHT160 MCS0 | 50 | 5250 | | | | | | | | | 15.50 | 15.50 | 16.00 | 16.00 | 18.50 |
| | 802.11ax-HE20 MCS0 | 52 | 5260 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| | | 56 | 5280 | | | | | | | | | 16.00 | 19.00 | 21.00 | | |
| 60 | | 5300 | 16.00 | 19.00 | 21.00 | | | | | | | | | | | |
| 64 | | 5320 | 16.00 | 19.00 | 21.00 | | | | | | | | | | | |
| 802.11ax-HE40 MCS0 | 54 | 5270 | 16.00 | 18.00 | 20.50 | | | | | | | | | | | |
| | 62 | 5310 | 16.00 | 16.00 | 19.50 | | | | | | | | | | | |
| 802.11ax-HE80 MCS0 | 58 | 5290 | 16.00 | 16.00 | 19.50 | | | | | | | | | | | |
| 802.11ax-HE160 MCS0 | 50 | 5250 | 15.50 | 15.50 | 18.50 | | | | | | | | | | | |



| 5.5GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|----------------------|---------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | |
| 802.11a 6Mbps | 100 | 5500 | not required | 16.00 | not required | not required | 19.00 | not required | not required | 21.00 | not required | |
| | 116 | 5580 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 124 | 5620 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 132 | 5660 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 144 | 5720 | | 16.00 | | | 19.00 | | | 21.00 | | |
| 802.11n-HT20 MCS0 | 100 | 5500 | not required | 16.00 | not required | not required | 19.00 | not required | not required | 21.00 | not required | |
| | 116 | 5580 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 124 | 5620 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 132 | 5660 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 144 | 5720 | | 16.00 | | | 19.00 | | | 21.00 | | |
| 802.11n-HT40 MCS0 | 102 | 5510 | not required | 16.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 110 | 5550 | | 16.00 | | | 18.00 | | | 20.50 | | |
| | 126 | 5630 | | 16.00 | | | 18.50 | | | 20.50 | | |
| | 134 | 5670 | | 16.00 | | | 18.00 | | | 20.50 | | |
| 802.11ac-VHT20 MCS0 | 100 | 5500 | not required | 16.00 | not required | not required | 19.00 | not required | not required | 21.00 | not required | |
| | 116 | 5580 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 124 | 5620 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 132 | 5660 | | 16.00 | | | 19.00 | | | 21.00 | | |
| 802.11ac-VHT40 MCS0 | 102 | 5510 | not required | 16.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 110 | 5550 | | 16.00 | | | 18.00 | | | 20.50 | | |
| | 126 | 5630 | | 16.00 | | | 18.00 | | | 20.50 | | |
| | 134 | 5670 | | 16.00 | | | 18.00 | | | 20.50 | | |
| 802.11ac-VHT80 MCS0 | 106 | 5530 | not required | 16.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 122 | 5610 | | 16.00 | | | 17.00 | | | 20.00 | | |
| | 138 | 5690 | | 16.00 | | | 17.00 | | | 20.00 | | |
| 802.11ac-VHT160 MCS0 | 114 | 5570 | 15.70 | 16.00 | 99.70 | 16.00 | | | 19.50 | | | |
| 802.11ax-HE20 MCS0 | 100 | 5500 | not required | 16.00 | not required | not required | 19.00 | not required | not required | 21.00 | not required | |
| | 116 | 5580 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 124 | 5620 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 132 | 5660 | | 16.00 | | | 19.00 | | | 21.00 | | |
| | 144 | 5720 | | 16.00 | | | 19.00 | | | 21.00 | | |
| 802.11ax-HE40 MCS0 | 102 | 5510 | not required | 16.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 110 | 5550 | | 16.00 | | | 18.00 | | | 20.50 | | |
| | 126 | 5630 | | 16.00 | | | 18.50 | | | 20.50 | | |
| | 134 | 5670 | | 16.00 | | | 18.50 | | | 20.50 | | |
| 802.11ax-HE80 MCS0 | 106 | 5530 | not required | 16.00 | not required | not required | 17.00 | not required | not required | 20.00 | not required | |
| | 122 | 5610 | | 16.00 | | | 17.00 | | | 20.00 | | |
| | 138 | 5690 | | 16.00 | | | 17.00 | | | 20.00 | | |
| 802.11ax-HE160 MCS0 | 114 | 5570 | not required | 16.00 | | 16.00 | | | 19.50 | | | |



| 5.8GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | | | | | | | | | | | |
|-------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|-------|-------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | | | | | | | | | | | | |
| 5.8GHz WLAN | 802.11a 6Mbps | 149 | 5745 | not required | not required | not required | not required | not required | not required | not required | not required | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | | 157 | 5785 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | | 165 | 5825 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | 802.11n-HT20 MCS0 | 149 | 5745 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | | 157 | 5785 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | | 165 | 5825 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | 802.11n-HT40 MCS0 | 151 | 5755 | | | | | | | | | 16.50 | 19.00 | 21.00 | | | | | | | | | | | |
| | | 159 | 5795 | | | | | | | | | 16.50 | 18.00 | 20.50 | | | | | | | | | | | |
| | 802.11ac-VHT20 MCS0 | 149 | 5745 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | | 157 | 5785 | | | | | | | | | 16.50 | 19.50 | 21.50 | | | | | | | | | | | |
| | 802.11ac-VHT40 MCS0 | 151 | 5755 | | | | | | | | | 16.50 | 19.00 | 21.00 | | | | | | | | | | | |
| | | 159 | 5795 | | | | | | | | | 16.50 | 18.00 | 20.50 | | | | | | | | | | | |
| | 802.11ac-VHT80 MCS0 | 155 | 5775 | | | | | | | | | 16.40 | 16.50 | 99.70 | 17.50 | 17.50 | 20.50 | | | | | | | | |
| | 802.11ax-HE20 MCS0 | 149 | 5745 | | | | | | | | | not required | not required | not required | not required | not required | not required | not required | not required | not required | 16.50 | 19.50 | 21.50 | | |
| | | 157 | 5785 | | | | | | | | | | | | | | | | | | 16.50 | 19.50 | 21.50 | | |
| | | 165 | 5825 | | | | | | | | | | | | | | | | | | 16.50 | 19.50 | 21.50 | | |
| | 802.11ax-HE40 MCS0 | 151 | 5755 | | | | | | | | | | | | | | | | | | 16.50 | 19.00 | 21.00 | | |
| | | 159 | 5795 | | | | | | | | | | | | | | | | | | 16.50 | 18.00 | 20.50 | | |
| | 802.11ax-HE80 MCS0 | 155 | 5775 | | | | | | | | | | | | | | | | | | 16.50 | 16.50 | 17.50 | 17.50 | 20.50 |

| WiFi 6E | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | |
|---------------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|-------|-------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | |
| WiFi 6E | 802.11a 6Mbps | 1 | 5955 | not required | not required | not required | not required | not required | not required | not required | not required | 6.00 | 6.00 | 9.00 |
| | | 57 | 6235 | | | | | | | | | 6.50 | 6.00 | 9.00 |
| | | 113 | 6515 | | | | | | | | | 4.00 | 4.00 | 7.00 |
| | | 173 | 6815 | | | | | | | | | 4.50 | 4.50 | 7.50 |
| | | 233 | 7115 | | | | | | | | | 5.00 | 5.00 | 8.00 |
| | 802.11ax-HE20 MCS0 | 1 | 5955 | | | | | | | | | 6.00 | 6.00 | 9.00 |
| | | 57 | 6235 | | | | | | | | | 6.50 | 4.00 | 7.00 |
| | | 113 | 6515 | | | | | | | | | 4.00 | 4.00 | 7.00 |
| | | 173 | 6815 | | | | | | | | | 4.50 | 4.50 | 7.50 |
| | 802.11ax-HE40 MCS0 | 233 | 7115 | | | | | | | | | -4.00 | -5.50 | -1.50 |
| | | 3 | 5965 | | | | | | | | | 9.00 | 9.00 | 12.00 |
| | | 59 | 6245 | | | | | | | | | 6.50 | 4.00 | 8.00 |
| | 802.11ax-HE80 MCS0 | 107 | 6485 | | | | | | | | | 4.00 | 4.00 | 7.00 |
| | | 171 | 6805 | | | | | | | | | 7.50 | 7.50 | 10.50 |
| | | 227 | 7085 | | | | | | | | | 7.50 | 7.50 | 10.50 |
| | | 7 | 5985 | | | | | | | | | 12.00 | 12.00 | 15.00 |
| | 802.11ax-HE160 MCS0 | 71 | 6305 | | | | | | | | | 12.00 | 12.00 | 15.00 |
| | | 119 | 6545 | | | | | | | | | 10.50 | 10.50 | 13.50 |
| | | 167 | 6785 | | | | | | | | | 10.50 | 10.50 | 13.50 |
| | | 215 | 7025 | | | | | | | | | 11.00 | 11.00 | 14.00 |
| 802.11ax-HE160 MCS0 | 15 | 6025 | 14.50 | 13.50 | 17.00 | | | | | | | | | |
| | 47 | 6185 | 15.00 | 12.50 | 17.00 | | | | | | | | | |
| | 111 | 6505 | 13.00 | 12.00 | 15.50 | | | | | | | | | |
| | 175 | 6825 | 13.50 | 12.00 | 16.00 | | | | | | | | | |
| | 207 | 6985 | 14.00 | 12.50 | 16.50 | | | | | | | | | |



<2.4GHz Bluetooth>

| Ant 4 | | | | | |
|---------------|---------|-----------------|---------------------|--------------|--------------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | | |
| | | | 1Mbps | 2Mbps | 3Mbps |
| BR / EDR | CH 00 | 2402 | not required | not required | not required |
| | CH 39 | 2441 | | | |
| | CH 78 | 2480 | | | |
| Tune-up Limit | | | 17.5 | 15 | 15 |

| Mode | Channel | Frequency (MHz) | Average power (dBm) | |
|---------------|---------|-----------------|---------------------|--------------|
| | | | 1Mbps | 2Mbps |
| LE | CH 00 | 2402 | not required | not required |
| | CH 19 | 2440 | | |
| | CH 39 | 2480 | | |
| Tune-up Limit | | | 10.5 | 10.5 |

| Ant 5 | | | | | |
|---------------|---------|-----------------|---------------------|--------------|--------------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | | |
| | | | 1Mbps | 2Mbps | 3Mbps |
| BR / EDR | CH 00 | 2402 | not required | not required | not required |
| | CH 39 | 2441 | | | |
| | CH 78 | 2480 | | | |
| Tune-up Limit | | | 16.5 | 14 | 14 |

| Mode | Channel | Frequency (MHz) | Average power (dBm) | |
|---------------|---------|-----------------|---------------------|--------------|
| | | | 1Mbps | 2Mbps |
| LE | CH 00 | 2402 | not required | not required |
| | CH 19 | 2440 | | |
| | CH 39 | 2480 | | |
| Tune-up Limit | | | 10 | 10 |

General Note:

- For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.83% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.



<Power Table 5>

| 2.4GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|-------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | |
| 2.4GHz WLAN | 802.11b 1Mbps | 1 | 2412 | 6.20 | 6.50 | 99.50 | not required | not required | 19.50 | 20.00 | not required | |
| | | 6 | 2437 | 6.10 | 6.50 | | | | 19.50 | 20.00 | | |
| | | 11 | 2462 | 6.10 | 6.50 | | | | 19.50 | 20.00 | | |
| | 802.11g 6Mbps | 1 | 2412 | not required | 6.50 | not required | not required | not required | 19.50 | 20.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 19.50 | 20.00 | | |
| | | 11 | 2462 | | 6.50 | | | | 18.50 | 19.00 | | |
| | 802.11n-HT20 MCS0 | 1 | 2412 | not required | 6.50 | not required | not required | not required | 19.50 | 20.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 19.50 | 20.00 | | |
| | | 11 | 2462 | | 6.50 | | | | 18.50 | 19.00 | | |
| | 802.11n-HT40 MCS0 | 3 | 2422 | not required | 6.50 | not required | not required | not required | 18.50 | 19.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 18.50 | 19.00 | | |
| | | 9 | 2452 | | 6.50 | | | | 18.50 | 19.00 | | |
| | 802.11ac-VHT20 MCS0 | 1 | 2412 | not required | 6.50 | not required | not required | not required | 19.50 | 20.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 19.50 | 20.00 | | |
| | | 11 | 2462 | | 6.50 | | | | 18.50 | 19.00 | | |
| | 802.11ac-VHT40 MCS0 | 3 | 2422 | not required | 6.50 | not required | not required | not required | 18.50 | 19.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 18.50 | 19.00 | | |
| | | 9 | 2452 | | 6.50 | | | | 18.50 | 19.00 | | |
| | 802.11ax-HE20 MCS0 | 1 | 2412 | not required | 6.50 | not required | not required | not required | 19.50 | 20.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 19.50 | 20.00 | | |
| | | 11 | 2462 | | 6.50 | | | | 18.50 | 20.00 | | |
| | 802.11ax-HE40 MCS0 | 3 | 2422 | not required | 6.50 | not required | not required | not required | 18.50 | 19.00 | not required | |
| | | 6 | 2437 | | 6.50 | | | | 18.50 | 19.00 | | |
| | | 9 | 2452 | | 6.50 | | | | 18.50 | 19.00 | | |

| 5.2GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | | | | |
|-------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | | | | | |
| 5.2GHz WLAN | 802.11a 6Mbps | 36 | 5180 | not required | 5.50 | not required | not required | not required | not required | not required | 19.00 | | | | | | | |
| | | 40 | 5200 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 44 | 5220 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 48 | 5240 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | 802.11n-HT20 MCS0 | 36 | 5180 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 40 | 5200 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 44 | 5220 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 48 | 5240 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | 802.11n-HT40 MCS0 | 38 | 5190 | | 5.50 | | | | | | 17.50 | | | | | | | |
| | | 46 | 5230 | | 5.50 | | | | | | 18.50 | | | | | | | |
| | | 48 | 5240 | | 5.50 | | | | | | 17.50 | | | | | | | |
| | 802.11ac-VHT20 MCS0 | 36 | 5180 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 40 | 5200 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | | 44 | 5220 | | 5.50 | | | | | | 19.00 | | | | | | | |
| | 802.11ac-VHT40 MCS0 | 38 | 5190 | | 5.50 | | | | | | 17.50 | | | | | | | |
| | | 46 | 5230 | | 5.50 | | | | | | 18.50 | | | | | | | |
| | | 48 | 5240 | | 5.50 | | | | | | 17.50 | | | | | | | |
| | 802.11ac-VHT80 MCS0 | 42 | 5210 | | 5.40 | | | | | | 5.50 | 99.70 | 17.00 | 17.50 | | | | |
| | 802.11ax-HE20 MCS0 | 36 | 5180 | | not required | | | | | | 5.50 | not required | not required | not required | not required | not required | not required | 18.00 |
| | | 40 | 5200 | | | | | | | | 5.50 | | | | | | | 19.00 |
| | | 44 | 5220 | | | | | | | | 5.50 | | | | | | | 19.00 |
| | | 48 | 5240 | | | | | | | | 5.50 | | | | | | | 19.00 |
| | 802.11ax-HE40 MCS0 | 38 | 5190 | | 5.50 | | | | | | 17.50 | | | | | | | |
| | | 46 | 5230 | | 5.50 | | | | | | 18.50 | | | | | | | |
| | | 48 | 5240 | | 5.50 | | | | | | 17.50 | | | | | | | |
| | 802.11ax-HE80 MCS0 | 42 | 5210 | | 5.50 | | | | | | 5.50 | 17.00 | 17.50 | | | | | |



| 5.3GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | |
|----------------------|-------------|---------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--------------|-------|-------|
| 5.3GHz WLAN | Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | |
| | 5.3GHz WLAN | 802.11a 6Mbps | 52 | 5260 | not required | 6.00 | not required | not required | 19.00 | not required | not required | 19.50 | not required | | |
| 56 | | | 5280 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| 60 | | | 5300 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| 64 | | | 5320 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| 802.11n-HT20 MCS0 | | 52 | 5260 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 56 | 5280 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 60 | 5300 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 64 | 5320 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| 802.11n-HT40 MCS0 | | 54 | 5270 | 6.00 | | 18.00 | | | 18.50 | | | | | | |
| | | 62 | 5310 | 6.00 | | 16.00 | | | 16.50 | | | | | | |
| 802.11ac-VHT20 MCS0 | | 52 | 5260 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 56 | 5280 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 60 | 5300 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 64 | 5320 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| 802.11ac-VHT40 MCS0 | | 54 | 5270 | 6.00 | | 18.00 | | | 18.50 | | | | | | |
| | | 62 | 5310 | 6.00 | | 16.00 | | | 16.50 | | | | | | |
| 802.11ac-VHT80 MCS0 | | 58 | 5290 | 6.00 | | 16.00 | | | 16.50 | | | | | | |
| 802.11ac-VHT160 MCS0 | | 50 | 5250 | 5.7 | | 6.00 | | | 99.7 | | | 15.00 | | 16.00 | 16.00 |
| 802.11ax-HE20 MCS0 | | 52 | 5260 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | | 56 | 5280 | 6.00 | | 19.00 | | | 19.50 | | | | | | |
| | 60 | 5300 | 6.00 | 19.00 | 19.50 | | | | | | | | | | |
| | 64 | 5320 | 6.00 | 19.00 | 19.50 | | | | | | | | | | |
| 802.11ax-HE40 MCS0 | 54 | 5270 | 6.00 | 18.00 | 18.50 | | | | | | | | | | |
| | 62 | 5310 | 6.00 | 16.00 | 16.50 | | | | | | | | | | |
| 802.11ax-HE80 MCS0 | 58 | 5290 | 6.00 | 16.00 | 16.50 | | | | | | | | | | |
| 802.11ax-HE160 MCS0 | 50 | 5250 | 6.00 | 15.00 | 16.00 | | | | | | | | | | |



| 5.5GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|----------------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | |
| 5.5GHz WLAN | 802.11a 6Mbps | 100 | 5500 | not required | 6.00 | not required | not required | 19.00 | not required | not required | 19.50 | |
| | | 116 | 5580 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 124 | 5620 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 132 | 5660 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 144 | 5720 | | 6.00 | | | 19.00 | | | 19.50 | |
| | 802.11n-HT20 MCS0 | 100 | 5500 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 116 | 5580 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 124 | 5620 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 132 | 5660 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 144 | 5720 | | 6.00 | | | 19.00 | | | 19.50 | |
| | 802.11n-HT40 MCS0 | 102 | 5510 | | 6.00 | | | 17.00 | | | 17.50 | |
| | | 110 | 5550 | | 6.00 | | | 18.00 | | | 18.50 | |
| | | 126 | 5630 | | 6.00 | | | 18.50 | | | 19.00 | |
| | | 134 | 5670 | | 6.00 | | | 18.00 | | | 18.50 | |
| | | 142 | 5710 | | 6.00 | | | 18.50 | | | 19.00 | |
| | 802.11ac-VHT20 MCS0 | 100 | 5500 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 116 | 5580 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 124 | 5620 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 132 | 5660 | | 6.00 | | | 19.00 | | | 19.50 | |
| | | 144 | 5720 | | 6.00 | | | 19.00 | | | 19.50 | |
| 802.11ac-VHT40 MCS0 | 102 | 5510 | 6.00 | 17.00 | 17.50 | | | | | | | |
| | 110 | 5550 | 6.00 | 18.00 | 18.50 | | | | | | | |
| | 126 | 5630 | 6.00 | 18.00 | 18.50 | | | | | | | |
| | 134 | 5670 | 6.00 | 18.00 | 18.50 | | | | | | | |
| 802.11ac-VHT80 MCS0 | 106 | 5530 | 6.00 | 17.00 | 17.50 | | | | | | | |
| | 122 | 5610 | 6.00 | 17.00 | 17.50 | | | | | | | |
| | 138 | 5690 | 6.00 | 17.00 | 17.50 | | | | | | | |
| 802.11ac-VHT160 MCS0 | 114 | 5570 | 5.90 | 6.00 | 99.70 | 16.00 | 16.50 | | | | | |
| 802.11ax-HE20 MCS0 | 100 | 5500 | 6.00 | 19.00 | 19.50 | | | | | | | |
| | 116 | 5580 | 6.00 | 19.00 | 19.50 | | | | | | | |
| | 124 | 5620 | 6.00 | 19.00 | 19.50 | | | | | | | |
| | 132 | 5660 | 6.00 | 19.00 | 19.50 | | | | | | | |
| | 144 | 5720 | 6.00 | 19.00 | 19.50 | | | | | | | |
| 802.11ax-HE40 MCS0 | 102 | 5510 | 6.00 | 17.00 | 17.50 | | | | | | | |
| | 110 | 5550 | 6.00 | 18.00 | 18.50 | | | | | | | |
| | 126 | 5630 | 6.00 | 18.50 | 19.00 | | | | | | | |
| | 134 | 5670 | 6.00 | 18.50 | 19.00 | | | | | | | |
| | 142 | 5710 | 6.00 | 18.50 | 19.00 | | | | | | | |
| 802.11ax-HE80 MCS0 | 106 | 5530 | 6.00 | 17.00 | 17.50 | | | | | | | |
| | 122 | 5610 | 6.00 | 17.00 | 17.50 | | | | | | | |
| | 138 | 5690 | 6.00 | 17.00 | 17.50 | | | | | | | |
| 802.11ax-HE160 MCS0 | 114 | 5570 | 6.00 | 16.00 | 16.50 | | | | | | | |



| 5.8GHz WLAN | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | | | | | |
|--------------------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--------------|-------|--------------|--------------|-------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | | | | | |
| 5.8GHz WLAN | 802.11a 6Mbps | 149 | 5745 | not required | 6.50 | not required | not required | 19.50 | not required | not required | 20.00 | | | | | |
| | | 157 | 5785 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | | 165 | 5825 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | 802.11n-HT20 MCS0 | 149 | 5745 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | | 157 | 5785 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | 802.11n-HT40 MCS0 | 151 | 5755 | | 6.50 | | | 19.00 | | | 19.50 | | | | | |
| | | 159 | 5795 | | 6.50 | | | 18.00 | | | 18.50 | | | | | |
| | 802.11ac-VHT20 MCS0 | 149 | 5745 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | | 157 | 5785 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | | 165 | 5825 | | 6.50 | | | 19.50 | | | 20.00 | | | | | |
| | 802.11ac-VHT40 MCS0 | 151 | 5755 | | 6.50 | | | 19.00 | | | 19.50 | | | | | |
| | | 159 | 5795 | | 6.50 | | | 18.00 | | | 18.50 | | | | | |
| | 802.11ac-VHT80 MCS0 | 155 | 5775 | | 6.40 | | | 6.50 | | | 99.70 | 17.50 | 18.00 | | | |
| | 802.11ax-HE20 MCS0 | 149 | 5745 | | not required | | | 6.50 | | | not required | not required | 19.50 | not required | not required | 20.00 |
| | | 157 | 5785 | | | | | 6.50 | | | | | 19.50 | | | 20.00 |
| | | 165 | 5825 | | | | | 6.50 | | | | | 19.50 | | | 20.00 |
| 802.11ax-HE40 MCS0 | 151 | 5755 | 6.50 | 19.00 | | 19.50 | | | | | | | | | | |
| | 159 | 5795 | 6.50 | 18.00 | | 18.50 | | | | | | | | | | |
| 802.11ax-HE80 MCS0 | 155 | 5775 | 6.50 | 17.50 | | 18.00 | | | | | | | | | | |

| WiFi 6E | | | | Ant 4 | | | Ant 5 | | | Ant 4+5 | | |
|---------|---------------------|-----------------|---------------------|---------------|--------------|---------------------|---------------|--------------|---------------------|---------------|--------------|--|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | Average power (dBm) | Tune-Up Limit | Duty Cycle % | |
| WiFi 6E | 802.11a 6Mbps | 1 | 5955 | not required | -7.00 | not required | not required | 6.00 | not required | not required | 6.50 | |
| | | 57 | 6235 | | -6.50 | | | 6.00 | | | 7.00 | |
| | | 113 | 6515 | | -9.00 | | | 4.00 | | | 4.50 | |
| | | 173 | 6815 | | -8.50 | | | 4.50 | | | 5.00 | |
| | | 233 | 7115 | | -8.00 | | | 5.00 | | | 5.50 | |
| | 802.11ax-HE20 MCS0 | 1 | 5955 | | -7.00 | | | 6.00 | | | 6.50 | |
| | | 57 | 6235 | | -6.50 | | | 4.00 | | | 7.00 | |
| | | 113 | 6515 | | -9.00 | | | 4.00 | | | 4.50 | |
| | | 173 | 6815 | | -8.50 | | | 4.50 | | | 8.00 | |
| | | 233 | 7115 | | -8.00 | | | -5.50 | | | 5.50 | |
| | 802.11ax-HE40 MCS0 | 3 | 5965 | | -4.00 | | | 9.00 | | | 9.50 | |
| | | 59 | 6245 | | -4.00 | | | 4.00 | | | 9.50 | |
| | | 107 | 6485 | | -6.00 | | | 4.00 | | | 7.50 | |
| | | 171 | 6805 | | -8.50 | | | 7.50 | | | 8.00 | |
| | 802.11ax-HE80 MCS0 | 227 | 7085 | | -5.50 | | | 7.50 | | | 8.00 | |
| | | 7 | 5985 | | -1.00 | | | 12.00 | | | 12.50 | |
| | | 71 | 6305 | | -5.50 | | | 12.00 | | | 8.00 | |
| | | 119 | 6545 | | -3.00 | | | 10.50 | | | 10.50 | |
| | | 167 | 6785 | | -2.50 | | | 10.50 | | | 11.00 | |
| | 802.11ax-HE160 MCS0 | 215 | 7025 | | -2.00 | | | 11.00 | | | 11.50 | |
| 15 | | 6025 | 1.37 | 1.50 | 14.00 | | | | | | | |
| 47 | | 6185 | 1.67 | 2.00 | 13.00 | | | | | | | |
| 111 | | 6505 | -0.03 | 0.00 | 12.50 | | | | | | | |
| 175 | | 6825 | 0.37 | 0.50 | 12.50 | | | | | | | |
| 207 | 6985 | 0.97 | 1.00 | 15.00 | | | | | | | | |



<2.4GHz Bluetooth>

| Ant 4 | | | | | |
|---------------|---------|-----------------|---------------------|--------------|--------------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | | |
| | | | 1Mbps | 2Mbps | 3Mbps |
| BR / EDR | CH 00 | 2402 | 9.72 | not required | not required |
| | CH 39 | 2441 | 9.57 | | |
| | CH 78 | 2480 | 8.57 | | |
| Tune-up Limit | | | 10 | 7.5 | 7.5 |

| Mode | Channel | Frequency (MHz) | Average power (dBm) | |
|---------------|---------|-----------------|---------------------|--------------|
| | | | 1Mbps | 2Mbps |
| LE | CH 00 | 2402 | not required | not required |
| | CH 19 | 2440 | | |
| | CH 39 | 2480 | | |
| Tune-up Limit | | | 3 | 3 |

| Ant 5 | | | | | |
|---------------|---------|-----------------|---------------------|--------------|--------------|
| Mode | Channel | Frequency (MHz) | Average power (dBm) | | |
| | | | 1Mbps | 2Mbps | 3Mbps |
| BR / EDR | CH 00 | 2402 | not required | not required | not required |
| | CH 39 | 2441 | | | |
| | CH 78 | 2480 | | | |
| Tune-up Limit | | | 9 | 6.5 | 6.5 |

| Mode | Channel | Frequency (MHz) | Average power (dBm) | |
|---------------|---------|-----------------|---------------------|--------------|
| | | | 1Mbps | 2Mbps |
| LE | CH 00 | 2402 | not required | not required |
| | CH 19 | 2440 | | |
| | CH 39 | 2480 | | |
| Tune-up Limit | | | 2.5 | 2.5 |

General Note:

- For 2.4GHz Bluetooth SAR testing was selected 1Mbps due to its highest average power and duty cycle is 76.83% considered in SAR testing, and the duty cycle would be scaled to theoretical 83.3% in reported SAR calculation.



15. Exclusions Applied

Note:

- When the P-sensor on the Frontpod is triggered and WiFi is ON, the WWAN transmitter on Ant 1 is low, SAR test exclusion can be applied per KDB 447498 D01v06.
- Per KDB 447498 D01v06, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion. When the test exclusion threshold <= 3, SAR testing is not required.
- Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
 - $[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] \cdot [\sqrt{f(GHz)}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
 - f(GHz) is the RF channel transmit frequency in GHz
 - Power and distance are rounded to the nearest mW and mm before calculation
 - The result is rounded to one decimal place for comparison

| Band | Exposure Position | Distance (mm) | Tune-up limit (dBm) | Exclusion thresholds | Limit thresholds | SAR Required |
|---------------|-------------------|---------------|---------------------|----------------------|------------------|--------------|
| LTE B2 Ant 1 | Front Surface | < 5 | 3.5 | 0.083 | 3 | No |
| LTE B48 Ant 1 | | | 4.5 | 0.145 | 3 | No |
| LTE B66 Ant 1 | | | 3.5 | 0.080 | 3 | No |
| FR1 n2 Ant 1 | | | 2.5 | 0.066 | 3 | No |
| FR1 n66 Ant 1 | | | 4.5 | 0.100 | 3 | No |
| FR1 n77 Ant 1 | | | 5.5 | 0.095 | 3 | No |
| FR1 n77 Ant 2 | | | 8.0 | 0.168 | 3 | No |
| FR1 n77 Ant 3 | | | 7.0 | 0.134 | 3 | No |



16. 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 WLAN/Bluetooth: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
 - e. 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 ≥ 0.8 W/kg.
4. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing was performed with EUT transmitting full power at the sensor trigger distance per KDB 616217.
5. Antenna 1, 2, 3,4, x, y are located in the Frontpod, and Antenna 0, 5, z, z1 are located in the Rearpod

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 $\frac{1}{2}$ 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 $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B5 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 4 SAR test was covered by Band 66; 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 \leq 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. Referencing the procedure in KDB 941225, the test procedures are outlined as below:
 - a. To start SAR test for the largest channel bandwidth 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. Also do SAR test for 50% RB allocation for PI/2 BPSK SAR testing using 1RB PI/2 BPSK allocation procedure
 - b. For PI/2 BPSK with 100% RB allocation, SAR test 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.
 - c. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not $\frac{1}{2}$ 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.
 - d. Smaller bandwidth output power for each RB allocation configuration for this device is not $\frac{1}{2}$ 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
 - e. For 5G FR1 n5/n77, the maximum channel bandwidth does not support three non-overlapping channels in the frequency band, the middle channel of the group of overlapping channels were selected for testing.
 - f. 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 duty factor, except for TDD power class 2 that 50% transmission duty factor is set

WLAN Note:

1. Per KDB 248227 D01v02r02, for 2.4GHz 802.11g/n SAR testing is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
2. Per KDB 248227 D01v02r02, WLAN5.2GHz SAR testing is not required when the WLAN5.3GHz band highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for WLAN5.2GHz band.
3. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
4. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
5. Per KDB 248227 D01v02r02, the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6 W/kg and SAR peak to location ratio ≤ 0.04 , no additional SAR measurements for MIMO.
6. Per KDB 248227 D01v02r02, for WLAN SAR was perform single antenna and do the simultaneous SAR provisions in KDB publication 447498 should be applied to determine simultaneous transmission SAR test exclusion for WiFi MIMO. If the sum of 1g single transmission chain SAR measurements is < 1.6 W/kg and SAR peak to location ratio ≤ 0.04 , no additional SAR measurements for MIMO.
7. During SAR testing the WLAN transmission was verified using a spectrum analyzer.



WLAN PD Note:

1. The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
2. Batteries are fully charged at the beginning of the measurements. The DUT was connected to a wall charger for some measurements due to the test duration. It was confirmed that the charger plugged into this DUT did not impact the near-field PD test results.
3. Absorbed power density (APD) using a 4cm² averaging area is reported based on SAR measurements.
4. Power density was calculated by repeated E-field measurements on two measurement planes separated by λ/4.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools.
6. Per FCC guidance and equipment manufacturer guidance, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of 2.68 dB (85.4%) was used to determine the psPD measurement scaling factor.
7. The measurement procedure consists of measuring the PD_{inc} at two different distances: 2 mm (compliance distance) and λ/5. The grid extents should be large enough to fully capture the transmitted energy. The grid step should be fine enough to demonstrate that the integrated Power Density iPD_n fulfill the criterion described below. Since iPD ratio between the two distances is ≥ -1dB, the grid step (0.0625) was sufficient for determining compliance at d=2mm.

$$10 \cdot \log_{10} \frac{iPD_n(2mm)}{iPD_n(\lambda/5)} \geq -1$$

SAR Test Position:

| Transmit Antenna | Physical device | SAR Test positions |
|------------------|-----------------|-----------------------------|
| WWAN Ant. 0 | RearPod | Long Edge, Inner Surface |
| WWAN Ant. 1 | FrontPod | Front Surface, Back Surface |
| WWAN Ant. 2 | FrontPod | Front Surface, Back Surface |
| WWAN Ant. 3 | FrontPod | Front Surface, Back Surface |
| WiFi /BT Ant. 4 | FrontPod | Long Edge, Inner Surface |
| WiFi /BT Ant. 5 | RearPod | Front Surface, Back Surface |

Remark: The Test positions are confirmed by FCC in the KDB inquiry, and the positioning details are available in the setup photo



16.1 Body SAR

<FDD LTE SAR>

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Power State | Ant. Location | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|--------------------|----------|------------|---------|-----------|---------------|----------|-------------|---------------|--------|-------------|---------------------|---------------------|------------------------|---------------------------|------------------|------------------------|------------------------|
| | LTE Band 2_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 18900 | 1880 | 23.17 | 24.00 | 1.211 | 1.000 | -0.17 | 0.142 | 0.172 |
| | LTE Band 2_Ant 0 | 20M | QPSK | 50 | 50 | Long Edge | 0mm | DSI 2 | Rearpod | 18900 | 1880 | 22.30 | 23.00 | 1.175 | 1.000 | 0.18 | 0.117 | 0.137 |
| | LTE Band 2_Ant 0 | 20M | QPSK | 1 | 0 | Inner Surface | 0mm | DSI 2 | Rearpod | 18900 | 1880 | 23.17 | 24.00 | 1.211 | 1.000 | -0.1 | 0.047 | 0.057 |
| | LTE Band 2_Ant 0 | 20M | QPSK | 50 | 50 | Inner Surface | 0mm | DSI 2 | Rearpod | 18900 | 1880 | 22.30 | 23.00 | 1.175 | 1.000 | -0.09 | 0.040 | 0.047 |
| 01 | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 19100 | 1900 | 15.60 | 16.50 | 1.230 | 1.000 | 0.1 | 1.110 | 1.366 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 18700 | 1860 | 15.48 | 16.50 | 1.265 | 1.000 | 0.07 | 1.060 | 1.341 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 18900 | 1880 | 15.56 | 16.50 | 1.242 | 1.000 | 0.03 | 0.996 | 1.237 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 19100 | 1900 | 15.52 | 16.50 | 1.253 | 1.000 | 0.07 | 1.020 | 1.278 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 18700 | 1860 | 15.42 | 16.50 | 1.282 | 1.000 | 0.09 | 0.958 | 1.228 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 18900 | 1880 | 15.43 | 16.50 | 1.279 | 1.000 | -0.06 | 0.941 | 1.204 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 100 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 19100 | 1900 | 15.46 | 16.50 | 1.271 | 1.000 | -0.11 | 0.900 | 1.144 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 18700 | 1860 | 23.34 | 24.00 | 1.164 | 1.000 | 0.01 | 0.239 | 0.278 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 50 | 50 | Back Surface | 0mm | DSI 2 | Frontpod | 18700 | 1860 | 22.47 | 23.00 | 1.130 | 1.000 | 0.07 | 0.201 | 0.227 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 14mm | DSI 2 | Frontpod | 18700 | 1860 | 23.34 | 24.00 | 1.164 | 1.000 | 0.12 | 0.365 | 0.425 |
| | LTE Band 2_Ant 1 | 20M | QPSK | 50 | 50 | Front Surface | 14mm | DSI 2 | Frontpod | 18700 | 1860 | 22.47 | 23.00 | 1.130 | 1.000 | 0.17 | 0.308 | 0.348 |
| 02 | LTE Band 4_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 20175 | 1732.5 | 23.41 | 24.00 | 1.146 | 1.000 | -0.11 | 0.108 | 0.124 |
| | LTE Band 4_Ant 0 | 20M | QPSK | 50 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 20175 | 1732.5 | 22.24 | 23.00 | 1.191 | 1.000 | 0.06 | 0.086 | 0.102 |
| | LTE Band 4_Ant 0 | 20M | QPSK | 1 | 0 | Inner Surface | 0mm | DSI 2 | Rearpod | 20175 | 1732.5 | 23.41 | 24.00 | 1.146 | 1.000 | 0.15 | 0.003 | 0.003 |
| | LTE Band 4_Ant 0 | 20M | QPSK | 50 | 0 | Inner Surface | 0mm | DSI 2 | Rearpod | 20175 | 1732.5 | 22.24 | 23.00 | 1.191 | 1.000 | -0.12 | 0.001 | 0.001 |
| 03 | LTE Band 5_Ant 0 | 10M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 20525 | 836.5 | 22.01 | 22.80 | 1.199 | 1.000 | -0.07 | 0.954 | 1.144 |
| | LTE Band 5_Ant 0 | 10M | QPSK | 25 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 20525 | 836.5 | 22.00 | 22.80 | 1.202 | 1.000 | 0.03 | 0.912 | 1.096 |
| | LTE Band 5_Ant 0 | 10M | QPSK | 50 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 20525 | 836.5 | 21.70 | 22.80 | 1.288 | 1.000 | 0.11 | 0.808 | 1.041 |
| 17 | LTE Band 5_Ant 0 | 10M | QPSK | 1 | 0 | Inner Surface | 0mm | DSI 2 | Rearpod | 20525 | 836.5 | 23.49 | 24.00 | 1.125 | 1.000 | -0.03 | 0.256 | 0.288 |
| | LTE Band 5_Ant 0 | 10M | QPSK | 25 | 25 | Inner Surface | 0mm | DSI 2 | Rearpod | 20525 | 836.5 | 22.75 | 23.00 | 1.059 | 1.000 | -0.18 | 0.189 | 0.200 |
| | LTE Band 5_Ant 0 | 10M | QPSK | 1 | 0 | Long Edge | 14mm | DSI 2 | Rearpod | 20525 | 836.5 | 23.49 | 24.00 | 1.125 | 1.000 | 0.12 | 0.132 | 0.148 |
| | LTE Band 5_Ant 0 | 10M | QPSK | 25 | 25 | Long Edge | 14mm | DSI 2 | Rearpod | 20525 | 836.5 | 22.75 | 23.00 | 1.059 | 1.000 | 0.05 | 0.124 | 0.131 |
| | LTE Band 5B_Ant 0 | 10M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 20450 | 829 | 21.57 | 22.80 | 1.327 | 1.000 | 0.12 | 0.862 | 1.144 |
| 04 | LTE Band 13_Ant 0 | 10M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 23230 | 782 | 23.46 | 24.00 | 1.132 | 1.000 | 0.09 | 1.140 | 1.291 |
| | LTE Band 13_Ant 0 | 10M | QPSK | 25 | 25 | Long Edge | 0mm | DSI 2 | Rearpod | 23230 | 782 | 22.52 | 23.00 | 1.117 | 1.000 | -0.01 | 0.950 | 1.061 |
| | LTE Band 13_Ant 0 | 10M | QPSK | 50 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 23230 | 782 | 22.58 | 23.00 | 1.102 | 1.000 | -0.01 | 0.961 | 1.059 |
| | LTE Band 13_Ant 0 | 10M | QPSK | 1 | 0 | Inner Surface | 0mm | DSI 2 | Rearpod | 23230 | 782 | 23.46 | 24.00 | 1.132 | 1.000 | -0.04 | 0.502 | 0.568 |
| | LTE Band 13_Ant 0 | 10M | QPSK | 25 | 25 | Inner Surface | 0mm | DSI 2 | Rearpod | 23230 | 782 | 22.52 | 23.00 | 1.117 | 1.000 | -0.19 | 0.424 | 0.474 |
| 05 | LTE Band 66_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132322 | 1745 | 15.78 | 16.50 | 1.180 | 1.000 | 0.05 | 1.010 | 1.192 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132072 | 1720 | 15.61 | 16.50 | 1.227 | 1.000 | 0.07 | 0.966 | 1.186 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132572 | 1770 | 15.65 | 16.50 | 1.216 | 1.000 | -0.12 | 0.979 | 1.191 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132322 | 1745 | 15.52 | 16.50 | 1.253 | 1.000 | -0.11 | 0.941 | 1.179 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132072 | 1720 | 15.51 | 16.50 | 1.256 | 1.000 | 0.13 | 0.925 | 1.162 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132572 | 1770 | 15.40 | 16.50 | 1.288 | 1.000 | -0.04 | 0.914 | 1.177 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 100 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132322 | 1745 | 15.45 | 16.50 | 1.274 | 1.000 | 0.05 | 0.900 | 1.146 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 1 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 132072 | 1720 | 23.46 | 24.00 | 1.132 | 1.000 | -0.11 | 0.163 | 0.185 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 50 | 50 | Back Surface | 0mm | DSI 2 | Frontpod | 132072 | 1720 | 22.47 | 23.00 | 1.130 | 1.000 | -0.12 | 0.137 | 0.155 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 14mm | DSI 2 | Frontpod | 132072 | 1720 | 23.46 | 24.00 | 1.132 | 1.000 | 0.04 | 0.038 | 0.043 |
| | LTE Band 66_Ant 1 | 20M | QPSK | 50 | 50 | Front Surface | 14mm | DSI 2 | Frontpod | 132072 | 1720 | 22.47 | 23.00 | 1.130 | 1.000 | 0.01 | 0.031 | 0.035 |
| | LTE Band 66B_Ant 1 | 15M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132047 | 1717.5 | 15.76 | 16.50 | 1.186 | 1.000 | 0.11 | 0.932 | 1.105 |
| | LTE Band 66C_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 132072 | 1720 | 15.76 | 16.50 | 1.186 | 1.000 | 0.01 | 0.940 | 1.115 |



<TDD LTE SAR>

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Power State | Ant. Location | 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) |
|----------|--------------------|----------|------------|---------|-----------|---------------|----------|-------------|---------------|-------|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| 06 | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55830 | 3609 | 23.24 | 23.50 | 1.062 | 62.9 | 1.006 | -0.04 | 1.160 | 1.239 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55340 | 3560 | 23.05 | 23.50 | 1.109 | 62.9 | 1.006 | 0.08 | 1.010 | 1.127 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 56150 | 3641 | 23.14 | 23.50 | 1.086 | 62.9 | 1.006 | -0.18 | 1.120 | 1.224 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 56640 | 3690 | 23.22 | 23.50 | 1.067 | 62.9 | 1.006 | -0.15 | 1.110 | 1.191 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 50 | 50 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55830 | 3609 | 22.31 | 22.50 | 1.045 | 62.9 | 1.006 | -0.02 | 0.989 | 1.039 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 50 | 50 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55340 | 3560 | 22.09 | 22.50 | 1.099 | 62.9 | 1.006 | -0.03 | 0.884 | 0.977 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 50 | 50 | Long Edge | 0mm | DSI 3/5 | Rearpod | 56150 | 3641 | 22.21 | 22.50 | 1.069 | 62.9 | 1.006 | 0.12 | 0.891 | 0.958 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 50 | 50 | Long Edge | 0mm | DSI 3/5 | Rearpod | 56640 | 3690 | 22.17 | 22.50 | 1.079 | 62.9 | 1.006 | 0.07 | 0.962 | 1.044 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 100 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55830 | 3609 | 22.19 | 22.50 | 1.074 | 62.9 | 1.006 | -0.09 | 0.832 | 0.899 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 14mm | DSI 2 | Rearpod | 55830 | 3609 | 23.77 | 24.00 | 1.054 | 62.9 | 1.006 | 0.11 | 0.233 | 0.247 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 14mm | DSI 2 | Rearpod | 55830 | 3609 | 23.77 | 24.00 | 1.054 | 62.9 | 1.006 | -0.15 | 0.211 | 0.224 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Inner Surface | 0mm | DSI 2 | Rearpod | 55830 | 3609 | 23.77 | 24.00 | 1.054 | 62.9 | 1.006 | 0.09 | 0.125 | 0.133 |
| | LTE Band 48_Ant 0 | 20M | QPSK | 50 | 50 | Inner Surface | 0mm | DSI 2 | Rearpod | 55830 | 3609 | 22.78 | 23.00 | 1.052 | 62.9 | 1.006 | 0.12 | 0.103 | 0.109 |
| | LTE Band 48C_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 55340 | 3560 | 23.58 | 24.00 | 1.102 | 62.9 | 1.006 | 0.07 | 1.100 | 1.219 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 55830 | 3609 | 17.24 | 17.50 | 1.062 | 62.9 | 1.006 | 0.1 | 1.120 | 1.196 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 55340 | 3560 | 17.11 | 17.50 | 1.094 | 62.9 | 1.006 | 0.08 | 0.998 | 1.098 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 56150 | 3641 | 17.00 | 17.50 | 1.122 | 62.9 | 1.006 | -0.18 | 1.040 | 1.174 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 56640 | 3690 | 16.89 | 17.50 | 1.151 | 62.9 | 1.006 | -0.15 | 0.881 | 1.020 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 55830 | 3609 | 17.16 | 17.50 | 1.081 | 62.9 | 1.006 | -0.02 | 0.939 | 1.022 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 55340 | 3560 | 17.15 | 17.50 | 1.084 | 62.9 | 1.006 | 0.01 | 0.812 | 0.885 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 56150 | 3641 | 17.13 | 17.50 | 1.089 | 62.9 | 1.006 | -0.03 | 0.824 | 0.903 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 56640 | 3690 | 17.09 | 17.50 | 1.099 | 62.9 | 1.006 | 0.12 | 0.784 | 0.867 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 100 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 55830 | 3609 | 17.14 | 17.50 | 1.086 | 62.9 | 1.006 | 0.15 | 0.831 | 0.908 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 56640 | 3690 | 22.75 | 24.00 | 1.334 | 62.9 | 1.006 | 0.01 | 0.490 | 0.657 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 55340 | 3560 | 22.23 | 24.00 | 1.503 | 62.9 | 1.006 | -0.03 | 0.452 | 0.683 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 56150 | 3641 | 22.60 | 24.00 | 1.380 | 62.9 | 1.006 | 0.11 | 0.441 | 0.612 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 55830 | 3609 | 22.47 | 24.00 | 1.422 | 62.9 | 1.006 | 0.12 | 0.466 | 0.667 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 50 | Back Surface | 0mm | DSI 2 | Frontpod | 56640 | 3690 | 21.57 | 23.00 | 1.390 | 62.9 | 1.006 | 0.14 | 0.382 | 0.534 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 50 | Back Surface | 0mm | DSI 2 | Frontpod | 55340 | 3560 | 21.02 | 23.00 | 1.578 | 62.9 | 1.006 | 0.09 | 0.341 | 0.541 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 50 | Back Surface | 0mm | DSI 2 | Frontpod | 56150 | 3641 | 21.47 | 23.00 | 1.422 | 62.9 | 1.006 | -0.03 | 0.332 | 0.475 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 50 | Back Surface | 0mm | DSI 2 | Frontpod | 55830 | 3609 | 21.20 | 23.00 | 1.514 | 62.9 | 1.006 | 0.17 | 0.370 | 0.563 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 100 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 56640 | 3690 | 21.69 | 23.00 | 1.352 | 62.9 | 1.006 | 0.09 | 0.342 | 0.465 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 14mm | DSI 2 | Frontpod | 56640 | 3690 | 22.75 | 24.00 | 1.334 | 62.9 | 1.006 | 0.04 | 0.365 | 0.490 |
| | LTE Band 48_Ant 1 | 20M | QPSK | 50 | 50 | Front Surface | 14mm | DSI 2 | Frontpod | 56640 | 3690 | 21.57 | 23.00 | 1.390 | 62.9 | 1.006 | 0.04 | 0.263 | 0.368 |
| | LTE Band 48C_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 55340 | 3560 | 16.68 | 17.50 | 1.208 | 62.9 | 1.006 | 0.01 | 1.000 | 1.215 |



<5G NR SAR>

| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Power State | Ant. Location | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|---------------|----------|------------|---------|-----------|---------------|----------|-------------|---------------|--------|-------------|---------------------|---------------------|------------------------|---------------------------|------------------|------------------------|------------------------|
| | FR1 n2_Ant 0 | 20M | BPSK | 1 | 1 | Long Edge | 0mm | DSI 2 | Rearpod | 376000 | 1880 | 23.26 | 24.00 | 1.186 | 1.000 | -0.12 | 0.236 | 0.280 |
| | FR1 n2_Ant 0 | 20M | BPSK | 50 | 28 | Long Edge | 0mm | DSI 2 | Rearpod | 376000 | 1880 | 23.14 | 24.00 | 1.219 | 1.000 | 0.03 | 0.222 | 0.271 |
| | FR1 n2_Ant 0 | 20M | BPSK | 1 | 1 | Inner Surface | 0mm | DSI 2 | Rearpod | 376000 | 1880 | 23.26 | 24.00 | 1.186 | 1.000 | 0.19 | 0.061 | 0.072 |
| | FR1 n2_Ant 0 | 20M | BPSK | 50 | 28 | Inner Surface | 0mm | DSI 2 | Rearpod | 376000 | 1880 | 23.14 | 24.00 | 1.219 | 1.000 | 0.13 | 0.059 | 0.072 |
| 07 | FR1 n2_Ant 1 | 20M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 376000 | 1880 | 14.72 | 15.50 | 1.197 | 1.000 | 0.1 | 0.927 | 1.109 |
| | FR1 n2_Ant 1 | 20M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 372000 | 1860 | 14.59 | 15.50 | 1.233 | 1.000 | 0.03 | 0.891 | 1.099 |
| | FR1 n2_Ant 1 | 20M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 380000 | 1900 | 14.64 | 15.50 | 1.219 | 1.000 | -0.04 | 0.884 | 1.078 |
| | FR1 n2_Ant 1 | 20M | BPSK | 50 | 28 | Front Surface | 0mm | DSI 4/5 | Frontpod | 376000 | 1880 | 14.69 | 15.50 | 1.205 | 1.000 | 0.11 | 0.841 | 1.013 |
| | FR1 n2_Ant 1 | 20M | BPSK | 50 | 28 | Front Surface | 0mm | DSI 4/5 | Frontpod | 372000 | 1860 | 14.62 | 15.50 | 1.225 | 1.000 | -0.09 | 0.833 | 1.020 |
| | FR1 n2_Ant 1 | 20M | BPSK | 50 | 28 | Front Surface | 0mm | DSI 4/5 | Frontpod | 380000 | 1900 | 14.60 | 15.50 | 1.230 | 1.000 | 0.12 | 0.830 | 1.021 |
| | FR1 n2_Ant 1 | 20M | BPSK | 100 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 376000 | 1880 | 14.55 | 15.50 | 1.245 | 1.000 | 0.14 | 0.796 | 0.991 |
| | FR1 n2_Ant 1 | 20M | BPSK | 1 | 1 | Back Surface | 0mm | DSI 2 | Frontpod | 376000 | 1880 | 23.15 | 24.00 | 1.216 | 1.000 | -0.15 | 0.528 | 0.642 |
| | FR1 n2_Ant 1 | 20M | BPSK | 50 | 28 | Back Surface | 0mm | DSI 2 | Frontpod | 376000 | 1880 | 23.05 | 24.00 | 1.245 | 1.000 | 0.02 | 0.510 | 0.635 |
| | FR1 n2_Ant 1 | 20M | BPSK | 1 | 1 | Front Surface | 14mm | DSI 2 | Frontpod | 376000 | 1880 | 23.15 | 24.00 | 1.216 | 1.000 | -0.08 | 0.399 | 0.485 |
| | FR1 n2_Ant 1 | 20M | BPSK | 50 | 28 | Front Surface | 14mm | DSI 2 | Frontpod | 376000 | 1880 | 23.05 | 24.00 | 1.245 | 1.000 | -0.14 | 0.382 | 0.475 |
| 08 | FR1 n5_Ant 0 | 20M | BPSK | 1 | 1 | Long Edge | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.52 | 24.00 | 1.117 | 1.000 | -0.11 | 1.030 | 1.150 |
| | FR1 n5_Ant 0 | 20M | BPSK | 50 | 28 | Long Edge | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.59 | 24.00 | 1.099 | 1.000 | 0.09 | 0.957 | 1.052 |
| | FR1 n5_Ant 0 | 20M | BPSK | 100 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.18 | 23.50 | 1.076 | 1.000 | 0.04 | 0.900 | 0.969 |
| | FR1 n5_Ant 0 | 20M | BPSK | 1 | 1 | Inner Surface | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.52 | 24.00 | 1.117 | 1.000 | -0.02 | 0.222 | 0.248 |
| | FR1 n5_Ant 0 | 20M | BPSK | 50 | 28 | Inner Surface | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.59 | 24.00 | 1.099 | 1.000 | -0.04 | 0.236 | 0.259 |
| 09 | FR1 n66_Ant 1 | 30M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 349000 | 1745 | 16.78 | 17.50 | 1.180 | 1.000 | 0.08 | 1.050 | 1.239 |
| | FR1 n66_Ant 1 | 30M | BPSK | 80 | 40 | Front Surface | 0mm | DSI 4/5 | Frontpod | 349000 | 1745 | 16.71 | 17.50 | 1.199 | 1.000 | 0.09 | 1.000 | 1.199 |
| | FR1 n66_Ant 1 | 30M | BPSK | 160 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 349000 | 1745 | 16.65 | 17.50 | 1.216 | 1.000 | -0.12 | 0.961 | 1.169 |
| | FR1 n66_Ant 1 | 30M | BPSK | 1 | 1 | Back Surface | 0mm | DSI 2 | Frontpod | 349000 | 1745 | 23.26 | 24.00 | 1.186 | 1.000 | 0.16 | 0.170 | 0.202 |
| | FR1 n66_Ant 1 | 30M | BPSK | 80 | 40 | Back Surface | 0mm | DSI 2 | Frontpod | 349000 | 1745 | 23.36 | 24.00 | 1.159 | 1.000 | -0.14 | 0.166 | 0.192 |
| | FR1 n66_Ant 1 | 30M | BPSK | 1 | 1 | Front Surface | 14mm | DSI 2 | Frontpod | 349000 | 1745 | 23.26 | 24.00 | 1.186 | 1.000 | -0.16 | 0.202 | 0.240 |
| | FR1 n66_Ant 1 | 30M | BPSK | 80 | 40 | Front Surface | 14mm | DSI 2 | Frontpod | 349000 | 1745 | 23.36 | 24.00 | 1.159 | 1.000 | -0.03 | 0.194 | 0.225 |



| Plot No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Power State | Ant. Location | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Reported 1g SAR (W/kg) |
|----------|--------------------|----------|------------|---------|-----------|---------------|----------|-------------|---------------|--------|-------------|---------------------|---------------------|------------------------|---------------------------|------------------|------------------------|------------------------|
| | FR1 n77_Ant 0 | 100M | BPSK | 1 | 1 | Long Edge | 0mm | DSI 3/5 | Rearpod | 656000 | 3840 | 20.19 | 20.50 | 1.074 | 1.000 | -0.1 | 1.140 | 1.224 |
| | FR1 n77_Ant 0 | 100M | BPSK | 135 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 656000 | 3840 | 19.99 | 20.50 | 1.125 | 1.000 | 0.09 | 0.926 | 1.041 |
| | FR1 n77_Ant 0 | 100M | BPSK | 270 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 656000 | 3840 | 19.93 | 20.50 | 1.140 | 1.000 | 0.12 | 0.909 | 1.036 |
| | FR1 n77_Ant 0 | 100M | BPSK | 1 | 1 | Inner Surface | 0mm | DSI 2 | Rearpod | 656000 | 3840 | 23.49 | 24.00 | 1.125 | 1.000 | 0.06 | 0.153 | 0.172 |
| | FR1 n77_Ant 0 | 100M | BPSK | 135 | 69 | Inner Surface | 0mm | DSI 2 | Rearpod | 656000 | 3840 | 22.90 | 24.00 | 1.288 | 1.000 | 0.14 | 0.131 | 0.169 |
| | FR1 n77_HPUE_Ant 0 | 100M | BPSK | 1 | 1 | Long Edge | 0mm | DSI 3/5 | Rearpod | 656000 | 3840 | 22.91 | 23.50 | 1.146 | 1.000 | 0.04 | 1.011 | 1.158 |
| | FR1 n77_Ant 0 | 100M | BPSK | 1 | 1 | Long Edge | 14mm | DSI 2 | Rearpod | 656000 | 3840 | 23.49 | 24.00 | 1.125 | 1.000 | -0.18 | 0.216 | 0.243 |
| | FR1 n77_Ant 0 | 100M | BPSK | 135 | 69 | Long Edge | 14mm | DSI 2 | Rearpod | 656000 | 3840 | 22.90 | 24.00 | 1.288 | 1.000 | -0.08 | 0.193 | 0.249 |
| | FR1 n77_Ant 1 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 15.14 | 15.50 | 1.086 | 1.000 | 0.02 | 1.140 | 1.239 |
| | FR1 n77_Ant 1 | 100M | BPSK | 135 | 69 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 15.12 | 15.50 | 1.091 | 1.000 | 0.07 | 1.020 | 1.113 |
| | FR1 n77_Ant 1 | 100M | BPSK | 270 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 15.01 | 15.50 | 1.119 | 1.000 | -0.06 | 0.992 | 1.110 |
| | FR1 n77_Ant 1 | 100M | BPSK | 1 | 1 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 23.81 | 24.00 | 1.045 | 1.000 | -0.02 | 0.690 | 0.721 |
| | FR1 n77_Ant 1 | 100M | BPSK | 135 | 69 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 22.97 | 24.00 | 1.268 | 1.000 | 0.1 | 0.548 | 0.695 |
| | FR1 n77_Ant 1 | 100M | BPSK | 270 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 22.47 | 23.50 | 1.268 | 1.000 | -0.13 | 0.561 | 0.711 |
| | FR1 n77_HPUE_Ant 1 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 17.84 | 18.50 | 1.164 | 1.000 | 0.11 | 1.020 | 1.187 |
| | FR1 n77_Ant 1 | 100M | BPSK | 1 | 1 | Front Surface | 14mm | DSI 2 | Frontpod | 656000 | 3840 | 23.81 | 24.00 | 1.045 | 1.000 | -0.05 | 0.578 | 0.604 |
| | FR1 n77_Ant 1 | 100M | BPSK | 135 | 69 | Front Surface | 14mm | DSI 2 | Frontpod | 656000 | 3840 | 22.97 | 24.00 | 1.268 | 1.000 | -0.12 | 0.480 | 0.608 |
| 10 | FR1 n77_Ant 2 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 17.32 | 18.00 | 1.169 | 1.000 | -0.11 | 1.190 | 1.392 |
| | FR1 n77_Ant 2 | 100M | BPSK | 135 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 17.31 | 18.00 | 1.172 | 1.000 | 0.04 | 1.010 | 1.184 |
| | FR1 n77_Ant 2 | 100M | BPSK | 270 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 17.22 | 18.00 | 1.197 | 1.000 | 0.11 | 0.996 | 1.192 |
| | FR1 n77_Ant 2 | 100M | BPSK | 1 | 1 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 23.44 | 24.00 | 1.138 | 1.000 | -0.02 | 0.632 | 0.719 |
| | FR1 n77_Ant 2 | 100M | BPSK | 135 | 69 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 23.35 | 24.00 | 1.161 | 1.000 | -0.06 | 0.615 | 0.714 |
| | FR1 n77_Ant 2 | 100M | BPSK | 270 | 0 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 22.92 | 23.50 | 1.143 | 1.000 | 0.02 | 0.611 | 0.698 |
| | FR1 n77_HPUE_Ant 2 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 20.20 | 21.00 | 1.202 | 1.000 | 0.11 | 1.080 | 1.298 |
| | FR1 n77_Ant 2 | 100M | BPSK | 1 | 1 | Front Surface | 14mm | DSI 2 | Frontpod | 656000 | 3840 | 23.44 | 24.00 | 1.138 | 1.000 | -0.01 | 0.502 | 0.571 |
| | FR1 n77_Ant 2 | 100M | BPSK | 135 | 69 | Front Surface | 14mm | DSI 2 | Frontpod | 656000 | 3840 | 23.35 | 24.00 | 1.161 | 1.000 | -0.06 | 0.466 | 0.541 |
| | FR1 n77_Ant 3 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 16.24 | 17.00 | 1.191 | 1.000 | -0.09 | 1.050 | 1.251 |
| | FR1 n77_Ant 3 | 100M | BPSK | 135 | 69 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 16.21 | 17.00 | 1.199 | 1.000 | 0.09 | 0.969 | 1.162 |
| | FR1 n77_Ant 3 | 100M | BPSK | 270 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 16.22 | 17.00 | 1.197 | 1.000 | -0.03 | 0.954 | 1.142 |
| | FR1 n77_Ant 3 | 100M | BPSK | 1 | 1 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 23.41 | 24.00 | 1.146 | 1.000 | 0.11 | 0.499 | 0.572 |
| | FR1 n77_Ant 3 | 100M | BPSK | 135 | 69 | Back Surface | 0mm | DSI 2 | Frontpod | 656000 | 3840 | 23.34 | 24.00 | 1.164 | 1.000 | -0.14 | 0.481 | 0.560 |
| | FR1 n77_HPUE_Ant 3 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 19.20 | 20.00 | 1.202 | 1.000 | 0.11 | 1.020 | 1.226 |
| | FR1 n77_Ant 3 | 100M | BPSK | 1 | 1 | Front Surface | 14mm | DSI 2 | Frontpod | 656000 | 3840 | 23.41 | 24.00 | 1.146 | 1.000 | 0.15 | 0.632 | 0.724 |
| | FR1 n77_Ant 3 | 100M | BPSK | 135 | 69 | Front Surface | 14mm | DSI 2 | Frontpod | 656000 | 3840 | 23.34 | 24.00 | 1.164 | 1.000 | 0.07 | 0.611 | 0.711 |



<WLAN SAR>

| Plot No. | Band | Mode | Test Position | Gap (mm) | Antenna | Power Table | Ant. Location | 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) |
|----------|------------|----------------------|---------------|----------|---------|-------------|---------------|-----|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| | WLAN2.4GHz | 802.11b 1Mbps | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 6 | 2437 | 19.40 | 19.50 | 1.023 | 99.5 | 1.005 | 0.01 | 0.102 | 0.105 |
| | WLAN2.4GHz | 802.11b 1Mbps | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 6 | 2437 | 19.40 | 19.50 | 1.023 | 99.5 | 1.005 | -0.19 | 0.218 | 0.224 |
| 11 | WLAN2.4GHz | 802.11b 1Mbps | Back Surface | 0mm | Ant 4 | 1/2/3/4/5 | Frontpod | 1 | 2412 | 18.90 | 19.50 | 1.148 | 99.5 | 1.005 | 0.04 | 0.448 | 0.517 |
| | WLAN2.4GHz | 802.11b 1Mbps | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 1 | 2412 | 18.90 | 19.50 | 1.148 | 99.5 | 1.005 | 0.07 | 0.158 | 0.182 |
| | WLAN2.4GHz | 802.11b 1Mbps | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 1 | 2412 | 6.20 | 6.50 | 1.072 | 99.5 | 1.005 | 0.05 | 0.125 | 0.135 |
| | WLAN5GHz | 802.11a 6Mbps | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 64 | 5320 | 18.20 | 19.00 | 1.202 | 99.2 | 1.008 | 0.09 | 0.188 | 0.228 |
| | WLAN5GHz | 802.11a 6Mbps | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 64 | 5320 | 18.20 | 19.00 | 1.202 | 99.2 | 1.008 | -0.12 | 0.394 | 0.477 |
| | WLAN5GHz | 802.11a 6Mbps | Back Surface | 0mm | Ant 4 | 1/2 | Frontpod | 60 | 5300 | 18.50 | 19.00 | 1.122 | 99.2 | 1.008 | 0.01 | 0.610 | 0.690 |
| 12 | WLAN5GHz | 802.11a 6Mbps | Front Surface | 14mm | Ant 4 | 1/2 | Frontpod | 60 | 5300 | 18.50 | 19.00 | 1.122 | 99.2 | 1.008 | -0.06 | 0.659 | 0.745 |
| | WLAN5GHz | 802.11a 6Mbps | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 100 | 5500 | 18.10 | 19.00 | 1.230 | 99.2 | 1.008 | -0.09 | 0.148 | 0.184 |
| | WLAN5GHz | 802.11a 6Mbps | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 100 | 5500 | 18.10 | 19.00 | 1.230 | 99.2 | 1.008 | -0.01 | 0.410 | 0.508 |
| 13 | WLAN5GHz | 802.11a 6Mbps | Back Surface | 0mm | Ant 4 | 1/2 | Frontpod | 100 | 5500 | 18.90 | 19.00 | 1.023 | 99.2 | 1.008 | 0.03 | 0.545 | 0.562 |
| | WLAN5GHz | 802.11a 6Mbps | Front Surface | 14mm | Ant 4 | 1/2 | Frontpod | 100 | 5500 | 18.90 | 19.00 | 1.023 | 99.2 | 1.008 | -0.12 | 0.369 | 0.381 |
| | WLAN5GHz | 802.11a 6Mbps | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 165 | 5825 | 18.00 | 19.50 | 1.413 | 99.2 | 1.008 | 0.01 | 0.145 | 0.206 |
| 18 | WLAN5GHz | 802.11a 6Mbps | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 165 | 5825 | 18.00 | 19.50 | 1.413 | 99.2 | 1.008 | -0.07 | 0.449 | 0.639 |
| | WLAN5GHz | 802.11a 6Mbps | Back Surface | 0mm | Ant 4 | 1/2 | Frontpod | 165 | 5825 | 19.00 | 19.50 | 1.122 | 99.2 | 1.008 | -0.06 | 0.621 | 0.702 |
| 14 | WLAN5GHz | 802.11a 6Mbps | Front Surface | 14mm | Ant 4 | 1/2 | Frontpod | 165 | 5825 | 19.00 | 19.50 | 1.122 | 99.2 | 1.008 | -0.03 | 0.670 | 0.758 |
| | WLAN5GHz | 802.11ac-VHT80 MCS0 | Back Surface | 0mm | Ant 4 | 3/4 | Frontpod | 58 | 5290 | 15.60 | 16.00 | 1.096 | 99.7 | 1.003 | 0.07 | 0.304 | 0.334 |
| | WLAN5GHz | 802.11ac-VHT80 MCS0 | Front Surface | 14mm | Ant 4 | 3/4 | Frontpod | 58 | 5290 | 15.60 | 16.00 | 1.096 | 99.7 | 1.003 | -0.06 | 0.377 | 0.415 |
| | WLAN5GHz | 802.11ac-VHT160 MCS0 | Back Surface | 0mm | Ant 4 | 3/4 | Frontpod | 114 | 5570 | 15.70 | 16.00 | 1.072 | 99.7 | 1.003 | -0.11 | 0.344 | 0.370 |
| | WLAN5GHz | 802.11ac-VHT160 MCS0 | Front Surface | 14mm | Ant 4 | 3/4 | Frontpod | 114 | 5570 | 15.70 | 16.00 | 1.072 | 99.7 | 1.003 | 0.13 | 0.389 | 0.418 |
| | WLAN5GHz | 802.11ac-VHT80 MCS0 | Back Surface | 0mm | Ant 4 | 3/4 | Frontpod | 155 | 5775 | 16.40 | 16.50 | 1.023 | 99.7 | 1.003 | -0.13 | 0.262 | 0.269 |
| | WLAN5GHz | 802.11ac-VHT80 MCS0 | Front Surface | 14mm | Ant 4 | 3/4 | Frontpod | 155 | 5775 | 16.40 | 16.50 | 1.023 | 99.7 | 1.003 | 0.14 | 0.289 | 0.297 |
| | WLAN5GHz | 802.11ac-VHT160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 50 | 5250 | 5.70 | 6.00 | 1.072 | 99.7 | 1.003 | -0.12 | 0.379 | 0.407 |
| | WLAN5GHz | 802.11ac-VHT160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 114 | 5570 | 5.90 | 6.00 | 1.023 | 99.7 | 1.003 | 0.07 | 0.321 | 0.329 |
| | WLAN5GHz | 802.11ac-VHT80 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 155 | 5775 | 6.40 | 6.50 | 1.023 | 99.7 | 1.003 | -0.01 | 0.232 | 0.238 |

<Bluetooth SAR>

| Plot No. | Band | Mode | Test Position | Gap (mm) | Antenna | Power Table | Ant. Location | 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) |
|----------|-----------|-------|---------------|----------|---------|-------------|---------------|-----|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|
| | Bluetooth | 1Mbps | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 00 | 2402 | 15.62 | 16.50 | 1.223 | 76.83 | 1.084 | -0.03 | 0.001 | 0.001 |
| | Bluetooth | 1Mbps | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 00 | 2402 | 15.62 | 16.50 | 1.223 | 76.83 | 1.084 | 0.03 | 0.015 | 0.020 |
| 15 | Bluetooth | 1Mbps | Back Surface | 0mm | Ant 4 | 1/2/3/4/5 | Frontpod | 39 | 2441 | 16.32 | 17.50 | 1.311 | 76.83 | 1.084 | 0.08 | 0.064 | 0.091 |
| | Bluetooth | 1Mbps | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 39 | 2441 | 16.32 | 17.50 | 1.311 | 76.83 | 1.084 | 0.12 | 0.001 | 0.001 |
| | Bluetooth | 1Mbps | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 00 | 2402 | 9.72 | 10.00 | 1.067 | 76.8 | 1.085 | 0.11 | 0.067 | 0.078 |



16.2 6GHz WLAN SAR Test Result

| Plot No. | Band | Mode | Test Position | Gap (mm) | Antenna | Power Table | Ant. Location | 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) | APD |
|----------|----------|---------------------|---------------|----------|---------|-------------|---------------|-----|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|------------------------|-------|
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 15 | 6025 | 13.07 | 13.50 | 1.104 | 99.1 | 1.009 | 0.03 | 0.038 | 0.042 | 0.301 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 47 | 6185 | 12.47 | 12.50 | 1.007 | 99.1 | 1.009 | 0.15 | 0.021 | 0.021 | 0.200 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 111 | 6505 | 11.97 | 12.00 | 1.007 | 99.1 | 1.009 | 0.07 | 0.029 | 0.029 | 0.251 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 175 | 6825 | 11.67 | 12.00 | 1.079 | 99.1 | 1.009 | -0.12 | 0.044 | 0.048 | 0.451 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 207 | 6985 | 11.97 | 12.50 | 1.130 | 99.1 | 1.009 | 0.09 | 0.052 | 0.059 | 0.627 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 15 | 6025 | 13.07 | 13.50 | 1.104 | 99.1 | 1.009 | 0.01 | 0.097 | 0.108 | 0.777 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 47 | 6185 | 12.47 | 12.50 | 1.007 | 99.1 | 1.009 | -0.19 | 0.080 | 0.081 | 1.050 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 111 | 6505 | 11.97 | 12.00 | 1.007 | 99.1 | 1.009 | 0.16 | 0.085 | 0.086 | 0.852 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 175 | 6825 | 11.67 | 12.00 | 1.079 | 99.1 | 1.009 | -0.19 | 0.096 | 0.105 | 1.000 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Inner Surface | 0mm | Ant 5 | 1/2/3/4/5 | Rearpod | 207 | 6985 | 11.97 | 12.50 | 1.130 | 99.1 | 1.009 | 0.05 | 0.079 | 0.090 | 0.702 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Back Surface | 0mm | Ant 4 | 1/2/3/4 | Frontpod | 47 | 6185 | 14.77 | 15.00 | 1.054 | 99.1 | 1.009 | -0.05 | 0.062 | 0.066 | 0.727 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Back Surface | 0mm | Ant 4 | 1/2/3/4 | Frontpod | 15 | 6025 | 14.37 | 14.50 | 1.030 | 99.1 | 1.009 | -0.04 | 0.054 | 0.056 | 0.652 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Back Surface | 0mm | Ant 4 | 1/2/3/4 | Frontpod | 111 | 6505 | 12.97 | 13.00 | 1.007 | 99.1 | 1.009 | -0.06 | 0.045 | 0.046 | 0.601 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Back Surface | 0mm | Ant 4 | 1/2/3/4 | Frontpod | 175 | 6825 | 13.27 | 13.50 | 1.054 | 99.1 | 1.009 | -0.14 | 0.063 | 0.067 | 0.802 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Back Surface | 0mm | Ant 4 | 1/2/3/4 | Frontpod | 207 | 6985 | 13.57 | 14.00 | 1.104 | 99.1 | 1.009 | 0.05 | 0.036 | 0.040 | 0.526 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 47 | 6185 | 14.77 | 15.00 | 1.054 | 99.1 | 1.009 | 0.08 | 0.154 | 0.164 | 1.300 |
| 16 | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 15 | 6025 | 14.37 | 14.50 | 1.030 | 99.1 | 1.009 | 0.13 | 0.177 | 0.184 | 1.550 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 111 | 6505 | 12.97 | 13.00 | 1.007 | 99.1 | 1.009 | -0.13 | 0.083 | 0.084 | 0.952 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 175 | 6825 | 13.27 | 13.50 | 1.054 | 99.1 | 1.009 | 0.05 | 0.074 | 0.079 | 0.802 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | 1/2/3/4 | Frontpod | 207 | 6985 | 13.57 | 14.00 | 1.104 | 99.1 | 1.009 | 0.13 | 0.134 | 0.149 | 1.230 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 47 | 6185 | 1.67 | 2.00 | 1.079 | 99.1 | 1.009 | 0.11 | 0.059 | 0.064 | 0.526 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 15 | 6025 | 1.37 | 2.00 | 1.156 | 99.1 | 1.009 | 0.12 | 0.071 | 0.083 | 1.053 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 111 | 6505 | -0.03 | 2.00 | 1.596 | 99.1 | 1.009 | -0.03 | 0.041 | 0.066 | 0.301 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 175 | 6825 | 0.37 | 2.00 | 1.455 | 99.1 | 1.009 | 0.07 | 0.100 | 0.147 | 1.380 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 0mm | Ant 4 | 5 | Frontpod | 207 | 6985 | 0.97 | 2.00 | 1.268 | 99.1 | 1.009 | -0.04 | 0.076 | 0.097 | 1.130 |

16.3 6GHz PD Test Result

| Band | Mode | Test Position | Gap (mm) | Antenna | Ant. Location | Ch. | Freq. (MHz) | Average Power (dBm) | Grip Step (A) | iPDn | iPD ratio (≥ -1) | Normal psPD (W/m ²) | Total psPD (W/m ²) |
|----------|---------------------|---------------|----------|---------|---------------|-----|-------------|---------------------|---------------|------|------------------|---------------------------------|--------------------------------|
| WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 15 | 6025 | 13.07 | 0.0625 | 1.73 | -0.96407648 | 0.265 | 0.291 |
| WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 10mm | Ant 5 | Rearpod | 15 | 6025 | 13.07 | 0.25 | 2.16 | | 0.364 | 0.374 |
| WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 207 | 6985 | 11.97 | 0.0625 | 1.28 | -0.77481461 | 0.181 | 0.191 |
| WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 8.59mm | Ant 5 | Rearpod | 207 | 6985 | 11.97 | 0.25 | 1.53 | | 0.363 | 0.375 |

| Plot No. | Band | Mode | Test Position | Gap (mm) | Antenna | Ant. Location | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Duty Cycle % | Grip Step (A) | Scaling Factor for measurement uncertainty | Power Drift (dB) | Normal psPD (W/m ²) | Scaled Normal psPD (W/m ²) | Total psPD (W/m ²) | Scaled Total psPD (W/m ²) |
|----------|----------|---------------------|---------------|----------|---------|---------------|-----|-------------|---------------------|---------------------|--------------|---------------|--|------------------|---------------------------------|--|--------------------------------|---------------------------------------|
| 01 | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | Frontpod | 15 | 6025 | 14.37 | 14.50 | 99.10 | 0.0625 | 1.5535 | -0.18 | 1.95 | 3.15 | 2.22 | 3.59 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | Frontpod | 47 | 6185 | 14.77 | 15.00 | 99.10 | 0.0625 | 1.5535 | -0.04 | 1.72 | 2.84 | 2.06 | 3.40 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | Frontpod | 111 | 6505 | 12.97 | 13.00 | 99.10 | 0.0625 | 1.5535 | -0.15 | 0.575 | 0.91 | 0.642 | 1.01 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | Frontpod | 175 | 6825 | 13.27 | 13.50 | 99.10 | 0.0625 | 1.5535 | 0.12 | 0.787 | 1.30 | 0.829 | 1.37 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Front Surface | 14mm | Ant 4 | Frontpod | 207 | 6985 | 13.57 | 14.00 | 99.10 | 0.0625 | 1.5535 | -0.03 | 0.933 | 1.61 | 0.994 | 1.72 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 15 | 6025 | 13.07 | 13.50 | 99.10 | 0.0625 | 1.5535 | -0.13 | 0.265 | 0.46 | 0.291 | 0.50 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 47 | 6185 | 12.47 | 12.50 | 99.10 | 0.0625 | 1.5535 | -0.13 | 0.31 | 0.49 | 0.338 | 0.53 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 111 | 6505 | 11.77 | 12.00 | 99.10 | 0.0625 | 1.5535 | 0.17 | 0.259 | 0.43 | 0.285 | 0.47 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 175 | 6825 | 11.67 | 12.00 | 99.10 | 0.0625 | 1.5535 | 0.19 | 0.309 | 0.52 | 0.33 | 0.56 |
| | WLAN6GHz | 802.11ax-HE160 MCS0 | Long Edge | 2mm | Ant 5 | Rearpod | 207 | 6985 | 11.97 | 12.50 | 99.10 | 0.0625 | 1.5535 | 0.13 | 0.181 | 0.32 | 0.191 | 0.34 |



16.4 Repeated SAR Measurement

| No. | Band | BW (MHz) | Modulation | RB Size | RB offset | Test Position | Gap (mm) | Power State | Ant. Location | Ch. | Freq. (MHz) | Average Power (dBm) | Tune-Up Limit (dBm) | Tune-up Scaling Factor | Duty Cycle % | Duty Cycle Scaling Factor | Power Drift (dB) | Measured 1g SAR (W/kg) | Ratio | Reported 1g SAR (W/kg) |
|-----|-------------------|----------|------------|---------|-----------|---------------|----------|-------------|---------------|--------|-------------|---------------------|---------------------|------------------------|--------------|---------------------------|------------------|------------------------|-------|------------------------|
| 1st | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 19100 | 1900 | 15.60 | 16.50 | 1.230 | | 1.000 | 0.1 | 1.110 | - | 1.366 |
| 2nd | LTE Band 2_Ant 1 | 20M | QPSK | 1 | 0 | Front Surface | 0mm | DSI 4/5 | Frontpod | 19100 | 1900 | 15.60 | 16.50 | 1.230 | | 1.000 | 0.04 | 1.070 | 1.037 | 1.316 |
| 1st | LTE Band 13_Ant 0 | 10M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 23230 | 782 | 23.46 | 24.00 | 1.132 | | 1.000 | 0.09 | 1.140 | - | 1.291 |
| 2nd | LTE Band 13_Ant 0 | 10M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 2 | Rearpod | 23230 | 782 | 23.46 | 24.00 | 1.132 | | 1.000 | -0.08 | 1.110 | 1.027 | 1.257 |
| 1st | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55830 | 3609 | 23.24 | 23.50 | 1.062 | 62.9 | 1.006 | -0.04 | 1.160 | - | 1.239 |
| 2nd | LTE Band 48_Ant 0 | 20M | QPSK | 1 | 0 | Long Edge | 0mm | DSI 3/5 | Rearpod | 55830 | 3609 | 23.24 | 23.50 | 1.062 | 62.9 | 1.006 | -0.14 | 1.110 | 1.045 | 1.186 |
| 1st | FR1 n5_Ant 0 | 20M | BPSK | 1 | 1 | Long Edge | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.52 | 24.00 | 1.117 | | 1.000 | -0.11 | 1.030 | - | 1.150 |
| 2nd | FR1 n5_Ant 0 | 20M | BPSK | 1 | 1 | Long Edge | 0mm | DSI 2 | Rearpod | 167300 | 836.5 | 23.52 | 24.00 | 1.117 | | 1.000 | 0.12 | 1.000 | 1.030 | 1.117 |
| 1st | FR1 n66_Ant 1 | 30M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 349000 | 1745 | 16.78 | 17.50 | 1.180 | | 1.000 | 0.08 | 1.050 | - | 1.239 |
| 2nd | FR1 n66_Ant 1 | 30M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 349000 | 1745 | 16.70 | 17.50 | 1.202 | | 1.000 | 0.13 | 1.020 | 1.029 | 1.226 |
| 1st | FR1 n77_Ant 2 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 17.32 | 18.00 | 1.169 | | 1.000 | -0.11 | 1.190 | - | 1.392 |
| 2nd | FR1 n77_Ant 2 | 100M | BPSK | 1 | 1 | Front Surface | 0mm | DSI 4/5 | Frontpod | 656000 | 3840 | 17.32 | 18.00 | 1.169 | | 1.000 | 0.17 | 1.150 | 1.034 | 1.345 |

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is $\geq 0.8W/kg$.
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.



16.5 n77 Power Class 2 and Power Class 3 Linearity

This device support Power Class 2 and Power Class 3 operations for FR1 n77. The highest available duty cycle for Power Class 2 operation is 50% 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.

Use PC3 power level and SAR to estimated PC2 SAR linearly, and check if the deviation from the measured PC2 SAR is <10%.

| | FR1 n77_Ant 0 (Power Class 3) | FR1 n77_Ant 0 (Power Class 2) |
|-------------------------------------|----------------------------------|----------------------------------|
| Maximum Tune up Power (dBm) | 20.5 | 23.5 |
| Reported 1g SAR (W/kg) | 1.224 | 1.158 |
| Duty Cycle | 100.00% | 50.00% |
| Frame Averaged (mW) | 112.20 | 111.94 |
| Linearity SAR(W/kg) | 1.22 | |
| % deviation from expected linearity | | -5.17% |

| | FR1 n77_Ant 1 (Power Class 3) | FR1 n77_Ant 1 (Power Class 2) |
|-------------------------------------|----------------------------------|----------------------------------|
| Maximum Tune up Power (dBm) | 15.5 | 18.5 |
| Reported 1g SAR (W/kg) | 1.239 | 1.187 |
| Duty Cycle | 100.00% | 50.00% |
| Frame Averaged (mW) | 35.48 | 35.40 |
| Linearity SAR(W/kg) | 1.24 | |
| % deviation from expected linearity | | -3.97% |

| | FR1 n77_Ant 2 (Power Class 3) | FR1 n77_Ant 2 (Power Class 2) |
|-------------------------------------|----------------------------------|----------------------------------|
| Maximum Tune up Power (dBm) | 18 | 21 |
| Reported 1g SAR (W/kg) | 1.392 | 1.298 |
| Duty Cycle | 100.00% | 50.00% |
| Frame Averaged (mW) | 63.10 | 62.95 |
| Linearity SAR(W/kg) | 1.39 | |
| % deviation from expected linearity | | -6.53% |

| | FR1 n77_Ant 3 (Power Class 3) | FR1 n77_Ant 3 (Power Class 2) |
|-------------------------------------|----------------------------------|----------------------------------|
| Maximum Tune up Power (dBm) | 17 | 20 |
| Reported 1g SAR (W/kg) | 1.251 | 1.226 |
| Duty Cycle | 100.00% | 50.00% |
| Frame Averaged (mW) | 50.12 | 50.00 |
| Linearity SAR(W/kg) | 1.25 | |
| % deviation from expected linearity | | -1.77% |

17. Simultaneous Transmission Analysis

| NO. | Simultaneous Transmission Configurations | Exposure Positions |
|-----|--|--------------------|
| | | Body |
| 1. | WiFi 5G/6G MIMO + Bluetooth (Ant 4) + WWAN | Yes |
| 2. | WiFi 5G/6G MIMO + Bluetooth (Ant 5) + WWAN | Yes |
| 3. | WiFi 2.4G MIMO + WWAN | Yes |
| 4. | WiFi 2.4G MIMO + WiFi 5G/6G MIMO + WWAN | Yes |

General Note:

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Considering the physical separation of 18.5 cm between Frontpod and Rearpod, the antennas on the Frontpod are deemed to have no RF exposure contribution on the Rearpod, and the opposite holds true. Therefore, the simultaneous transmission analysis is performed on the Frontpod and on the Rearpod separately.
6. The 2nd generation of Smart Transmit (GEN2) operates based on pre-defined sub6 antenna groups (AG) was implemented on this device
 - Sub6 antenna groups (Group 0 and 1) can operate independently if each antenna (i) from AG (0) and each antenna (k) from AG (1) meet current KDB SPLSR requirements.
 - In this case, the antenna 0 as antenna group 0, the antenna 1/2/3 as antenna group 1, due to the antenna 0 and Antenna 1/2/3 are in physically separated devices, and each antenna group has its own SAR evaluation planes, unlike conventional devices where the sub-6 antennas are collocated in the same physical device and share the same SAR evaluation plane, therefore SPLSR analysis for the antenna group 0 and antenna group 1 is not required.
3. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - i) Scalar SAR summation < 1.6W/kg.
 - ii) $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, 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 $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
4. For Antenna 1/2/3 on the Frontpod, when the proximity sensor is triggered and when WiFi is ON, the TX power is low and exempt from standalone SAR test. According to KDB 447498, estimated SAR values are calculated for simultaneous transmission analysis
 - i) $(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})} / x] \text{ W/kg}$ for test separation distances $\leq 50 \text{ mm}$; where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.
 - ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
 - iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.

| Frontpod p-sensor detected (DSI 4, DSI 5) | | | |
|---|--------------------|-------------------|-------------------------|
| Band | Tune-up limit(dBm) | Exposure Position | Estimated 1g SAR (W/kg) |
| LTE B2 Ant 1 | 3.5 | Front Surface | 0.083 |
| LTE B48 Ant 1 | 4.5 | | 0.145 |
| LTE B66 Ant 1 | 3.5 | | 0.080 |
| FR1 n2 Ant 1 | 2.5 | | 0.066 |
| FR1 n66 Ant 1 | 4.5 | | 0.100 |
| FR1 n77 Ant 1 | 5.5 | | 0.189 |
| FR1 n77 Ant 2 | 8.0 | | 0.336 |
| FR1 n77 Ant 3 | 7.0 | | 0.267 |



17.1 5G NR + LTE + WLAN + BT Sim-Tx analysis

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

Since WLAN and BT do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN and BT 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 ≤ 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 mmW NR or SAR exposure for sub6 NR), and B ≤ 1.0.

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

x% * A + (100-x)% * B + C ≤ 1.0 (1)

x% * A + (100-x)% * B ≤ x% * max(A, B) + (100-x)% * max(A, B) ≤ max(A, B)

x% * A + (100-x)% * B + C ≤ max(A, B) + C ≤ 1.0 (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 + BT can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN + BT < 1

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

Else, if A + C > 1.0 and/or B + C > 1.0, then the followings need to hold true for compliance:

- i. A and C are decoupled based on the SPLSR criteria , and
ii. (100-x)% * B + C ≤ 1.0, and
iii. x% * A + (100-x)% * B ≤ 1.0

Note iii. is covered in Part 2 report; i. and ii. should be addressed in Part 2 report.

Smart Transmit EFS version 16 (or higher) with backoff in WWAN/FR2 when WLAN/BT is ON:

Smart Transmit EFS version 16 (or higher) provides the option to backoff WWAN radio when WLAN/BT ON. This WWAN/FR2 backoff can be configured per tech/band/antenna (or mmW module)/DSI of WWAN radios. The analysis performed above in this section is still applicable after applying the backoff to WWAN radio exposures, i.e., A, and B should be replaced as shown below:

normalized exposure of WWAN primary radio: A → replaced with “A * 10^(-WWAN backoff in dB for A when WLAN/BT ON)/10”.

normalized exposure of 5G NR secondary radio: B → replaced with “B * 10^(-WWAN backoff in dB for B when WLAN/BT ON)/10”.



17.2 Body Exposure Conditions

<DBS>

<FronPod>

| WWAN Band | Exposure Position | 1 | 3 | 5 | 1+3+5 Summed 1g SAR (W/kg) |
|----------------------|----------------------|------------------|----------------------|-------------------------|----------------------------------|
| | | WWAN | 2.4GHz WLAN Ant 4 | 5GHz/6GHz WLAN Ant 4 | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| LTE Band 2 Ant 1 | Front Surface at 0mm | 0.083 | 0.135 | 0.407 | 0.625 |
| | Back Surface at 0mm | 0.278 | 0.517 | 0.334 | 1.129 |
| LTE Band 48 Ant 1 | Front Surface at 0mm | 0.145 | 0.135 | 0.407 | 0.687 |
| | Back Surface at 0mm | 0.683 | 0.517 | 0.334 | 1.534 |
| LTE Band 66 Ant 1 | Front Surface at 0mm | 0.080 | 0.135 | 0.407 | 0.622 |
| | Back Surface at 0mm | 0.185 | 0.517 | 0.334 | 1.036 |
| FR1 n2 Ant 1 | Front Surface at 0mm | 0.066 | 0.135 | 0.407 | 0.608 |
| | Back Surface at 0mm | 0.642 | 0.517 | 0.334 | 1.493 |
| FR1 n66 Ant 1 | Front Surface at 0mm | 0.100 | 0.135 | 0.407 | 0.642 |
| | Back Surface at 0mm | 0.202 | 0.517 | 0.334 | 1.053 |
| FR1 n77 Ant 1 | Front Surface at 0mm | 0.189 | 0.135 | 0.407 | 0.731 |
| | Back Surface at 0mm | 0.721 | 0.517 | 0.334 | 1.572 |
| FR1 n77 Ant 2 | Front Surface at 0mm | 0.336 | 0.135 | 0.407 | 0.878 |
| | Back Surface at 0mm | 0.719 | 0.517 | 0.334 | 1.053 |
| FR1 n77 Ant 3 | Front Surface at 0mm | 0.267 | 0.135 | 0.407 | 0.809 |
| | Back Surface at 0mm | 0.572 | 0.517 | 0.334 | 0.906 |

<RearPod>

| WWAN Band | Exposure Position | 1 | 2 | 4 | 1+2+4 Summed 1g SAR (W/kg) |
|----------------------|----------------------|------------------|----------------------|-------------------------|----------------------------------|
| | | WWAN | 2.4GHz WLAN Ant 5 | 5GHz/6GHz WLAN Ant 5 | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | |
| LTE Band 2 Ant 0 | Long Edge at 0mm | 0.172 | 0.105 | 0.184 | 0.461 |
| | Inner Surface at 0mm | 0.057 | 0.224 | 0.639 | 0.920 |
| LTE Band 4 Ant 0 | Long Edge at 0mm | 0.124 | 0.105 | 0.184 | 0.413 |
| | Inner Surface at 0mm | 0.003 | 0.224 | 0.639 | 0.866 |
| LTE Band 5 Ant 0 | Long Edge at 0mm | 1.144 | 0.105 | 0.184 | 1.433 |
| | Inner Surface at 0mm | 0.288 | 0.224 | 0.639 | 1.151 |
| LTE Band 13 Ant 0 | Long Edge at 0mm | 1.291 | 0.105 | 0.184 | 1.580 |
| | Inner Surface at 0mm | 0.568 | 0.224 | 0.639 | 1.431 |
| LTE Band 48 Ant 0 | Long Edge at 0mm | 1.239 | 0.105 | 0.184 | 1.528 |
| | Inner Surface at 0mm | 0.133 | 0.224 | 0.639 | 0.996 |
| FR1 n2 Ant 0 | Long Edge at 0mm | 0.280 | 0.105 | 0.184 | 0.569 |
| | Inner Surface at 0mm | 0.072 | 0.224 | 0.639 | 0.935 |
| FR1 n5 Ant 0 | Long Edge at 0mm | 1.150 | 0.105 | 0.184 | 1.439 |
| | Inner Surface at 0mm | 0.259 | 0.224 | 0.639 | 1.122 |
| FR1 n77 Ant 0 | Long Edge at 0mm | 1.224 | 0.105 | 0.184 | 1.513 |
| | Inner Surface at 0mm | 0.172 | 0.224 | 0.639 | 1.035 |



**<Non-DBS>
<FrontPod>**

| WWAN Band | Exposure Position | 1 | 3 | 5 | 7 | 1+3 Summed 1g SAR (W/kg) | 1+5+7 Summed 1g SAR (W/kg) |
|----------------------|----------------------|------------------|----------------------|----------------------------|--------------------|--------------------------------|----------------------------------|
| | | WWAN | 2.4GHz WLAN Ant 4 | 5GHz/6GHz WLAN Ant 4 | Bluetooth Ant 4 | | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | | |
| LTE Band 2 Ant 1 | Front Surface at 0mm | 0.083 | 0.135 | 0.407 | 0.078 | 0.218 | 0.568 |
| | Back Surface at 0mm | 0.278 | 0.517 | 0.702 | 0.091 | 0.795 | 1.071 |
| LTE Band 48 Ant 1 | Front Surface at 0mm | 0.145 | 0.135 | 0.407 | 0.078 | 0.280 | 0.630 |
| | Back Surface at 0mm | 0.683 | 0.517 | 0.702 | 0.091 | 1.200 | 1.476 |
| LTE Band 66 Ant 1 | Front Surface at 0mm | 0.080 | 0.135 | 0.407 | 0.078 | 0.215 | 0.565 |
| | Back Surface at 0mm | 0.185 | 0.517 | 0.702 | 0.091 | 0.702 | 0.978 |
| FR1 n2 Ant 1 | Front Surface at 0mm | 0.066 | 0.135 | 0.407 | 0.078 | 0.201 | 0.551 |
| | Back Surface at 0mm | 0.642 | 0.517 | 0.702 | 0.091 | 1.159 | 1.435 |
| FR1 n66 Ant 1 | Front Surface at 0mm | 0.100 | 0.135 | 0.407 | 0.078 | 0.235 | 0.585 |
| | Back Surface at 0mm | 0.202 | 0.517 | 0.702 | 0.091 | 0.719 | 0.995 |
| FR1 n77 Ant 1 | Front Surface at 0mm | 0.189 | 0.135 | 0.407 | 0.078 | 0.324 | 0.674 |
| | Back Surface at 0mm | 0.721 | 0.517 | 0.702 | 0.091 | 1.238 | 1.514 |
| FR1 n77 Ant 2 | Front Surface at 0mm | 0.336 | 0.135 | 0.407 | 0.078 | 0.471 | 0.821 |
| | Back Surface at 0mm | 0.719 | 0.517 | 0.702 | 0.091 | 1.236 | 1.512 |
| FR1 n77 Ant 3 | Front Surface at 0mm | 0.267 | 0.135 | 0.407 | 0.078 | 0.402 | 0.752 |
| | Back Surface at 0mm | 0.572 | 0.517 | 0.702 | 0.091 | 1.089 | 1.365 |

<RearPod>

| WWAN Band | Exposure Position | 1 | 2 | 4 | 6 | 1+2 Summed 1g SAR (W/kg) | 1+4+6 Summed 1g SAR (W/kg) |
|----------------------|----------------------|------------------|----------------------|----------------------------|--------------------|--------------------------------|----------------------------------|
| | | WWAN | 2.4GHz WLAN Ant 5 | 5GHz/6GHz WLAN Ant 5 | Bluetooth Ant 5 | | |
| | | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | 1g SAR (W/kg) | | |
| LTE Band 2 Ant 0 | Long Edge at 0mm | 0.172 | 0.105 | 0.184 | 0.001 | 0.277 | 0.357 |
| | Inner Surface at 0mm | 0.057 | 0.224 | 0.639 | 0.020 | 0.281 | 0.716 |
| LTE Band 4 Ant 0 | Long Edge at 0mm | 0.124 | 0.105 | 0.184 | 0.001 | 0.229 | 0.309 |
| | Inner Surface at 0mm | 0.003 | 0.224 | 0.639 | 0.020 | 0.227 | 0.662 |
| LTE Band 5 Ant 0 | Long Edge at 0mm | 1.144 | 0.105 | 0.184 | 0.001 | 1.249 | 1.329 |
| | Inner Surface at 0mm | 0.288 | 0.224 | 0.639 | 0.020 | 0.512 | 0.947 |
| LTE Band 13 Ant 0 | Long Edge at 0mm | 1.291 | 0.105 | 0.184 | 0.001 | 1.396 | 1.476 |
| | Inner Surface at 0mm | 0.568 | 0.224 | 0.639 | 0.020 | 0.792 | 1.227 |
| LTE Band 48 Ant 0 | Long Edge at 0mm | 1.239 | 0.105 | 0.184 | 0.001 | 1.344 | 1.424 |
| | Inner Surface at 0mm | 0.133 | 0.224 | 0.639 | 0.020 | 0.357 | 0.792 |
| FR1 n2 Ant 0 | Long Edge at 0mm | 0.280 | 0.105 | 0.184 | 0.001 | 0.385 | 0.465 |
| | Inner Surface at 0mm | 0.072 | 0.224 | 0.639 | 0.020 | 0.296 | 0.731 |
| FR1 n5 Ant 0 | Long Edge at 0mm | 1.150 | 0.105 | 0.184 | 0.001 | 1.255 | 1.335 |
| | Inner Surface at 0mm | 0.259 | 0.224 | 0.639 | 0.020 | 0.483 | 0.918 |
| FR1 n77 Ant 0 | Long Edge at 0mm | 1.224 | 0.105 | 0.184 | 0.001 | 1.329 | 1.409 |
| | Inner Surface at 0mm | 0.172 | 0.224 | 0.639 | 0.020 | 0.396 | 0.831 |

Test Engineer : Jay Jian and Jimmy Lu



18. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, 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.

19. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
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- [5] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.
- [6] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [7] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [8] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", 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.