



CERTIFICATION TEST REPORT

Report Number. : 4790430333-E10V2

Applicant : SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
GYEONGGI-DO, 16677, KOREA

Model : SM-T638U

FCC ID : A3LSMT638U

EUT Description : WCDMA/LTE 5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax
and NFC

Test Standard(s) : FCC CFR47 PART 27 SUBPART O,Q

Date Of Issue:

2022-08-22

Prepared by:

UL Korea, Ltd.

26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory

218 Maeyeong-ro, Yeongtong-gu,

Suwon-si, Gyeonggi-do, 16675, Korea

TEL: (031) 337-9902

FAX: (031) 213-5433



Revision History

| <u>Rev.</u> | <u>Issue Date</u> | <u>Revisions</u> | <u>Revised By</u> |
|-------------|-------------------|-----------------------------------|-------------------|
| V1 | 2022-08-11 | Initial issue | Yeonhee Lim |
| V2 | 2022-08-22 | Updated to address TCB's question | Yeonhee Lim |

TABLE OF CONTENTS

| | |
|---|-----------|
| 1. ATTESTATION OF TEST RESULTS | 4 |
| 2. TEST METHODOLOGY | 5 |
| 3. FACILITIES AND ACCREDITATION | 5 |
| 4. CALIBRATION AND UNCERTAINTY | 6 |
| 4.1. <i>MEASURING INSTRUMENT CALIBRATION.....</i> | 6 |
| 4.2. <i>SAMPLE CALCULATION.....</i> | 6 |
| 4.3. <i>MEASUREMENT UNCERTAINTY</i> | 6 |
| 4.4. <i>DECISION RULE</i> | 6 |
| 5. EQUIPMENT UNDER TEST | 7 |
| 5.1. <i>DESCRIPTION OF EUT.....</i> | 7 |
| 5.2. <i>MAXIMUM OUTPUT POWER.....</i> | 7 |
| 5.3. <i>DESCRIPTION OF AVAILABLE ANTENNAS</i> | 20 |
| 5.4. <i>WORST-CASE ORIENTATION.....</i> | 21 |
| 5.5. <i>DESCRIPTION OF TEST SETUP.....</i> | 23 |
| 6. TEST AND MEASUREMENT EQUIPMENT | 25 |
| 7. SUMMARY TABLE..... | 26 |
| 8. LIMITS AND CONDUCTED RESULTS | 27 |
| 8.1. <i>PEAK TO AVERAGE RATIO.....</i> | 27 |
| 8.1.1. <i>CONDUCTED PEAK TO AVERAGE RESULT</i> | 28 |
| 9. LIMITS AND CONDUCTED RESULTS | 32 |
| 9.1. <i>OCCUPIED BANDWIDTH.....</i> | 32 |
| 9.1.1. <i>OCCUPIED BANDWIDTH RESULTS</i> | 34 |
| 9.2. <i>BAND EDGE EMISSIONS</i> | 38 |
| 9.2.1. <i>BAND EDGE RESULT.....</i> | 39 |
| 9.3. <i>OUT OF BAND EMISSIONS.....</i> | 51 |
| 9.3.1. <i>OUT OF BAND EMISSIONS RESULT.....</i> | 52 |
| 9.4. <i>FREQUENCY STABILITY.....</i> | 54 |
| 9.4.1. <i>FREQUENCY STABILITY RESULTS</i> | 55 |
| 9.5. <i>RADIATED POWER (EIRP).....</i> | 56 |
| 9.5.1. <i>EIRP Results</i> | 57 |
| 9.6. <i>FIELD STRENGTH OF SPURIOUS RADIATION.....</i> | 61 |
| 9.6.1. <i>SPURIOUS RADIATION PLOTS</i> | 62 |

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION: WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax and NFC.
MODEL NUMBER: SM-T638U
SERIAL NUMBER: 65235ee448357ece,65236e908d357ece (CONDUCTED); R32T6000LHL, R32T600141V, (RADIATED);
DATE TESTED: 2022-07-18 - 2022-08-11;

| APPLICABLE STANDARDS | |
|----------------------|--------------|
| STANDARD | TEST RESULTS |
| FCC PART 27 O,Q | Pass |

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

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

Approved & Released For
UL Korea, Ltd. By:



Seokhwan Hong
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:



Yeonhee Lim
Suwon Lab Engineer
UL Korea, Ltd.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 27.
3. ANSI TIA-603-E, 2016
4. ANSI C63.26, 2015
5. KDB 971168 D01 Power Meas License Digital Systems v03r01

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

| 218 Maeyeong-ro | |
|-------------------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> | Chamber 1(3m semi-anechoic chamber) |
| <input type="checkbox"/> | Chamber 2(3m semi-anechoic chamber) |
| <input type="checkbox"/> | Chamber 3(3m semi-anechoic chamber) |
| <input checked="" type="checkbox"/> | Chamber 4(3m Full-anechoic chamber) |
| <input type="checkbox"/> | Chamber 5(3m Full-anechoic chamber) |

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\text{EIRP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)} + \text{Substitution Antenna Factor (dBi)}$$

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | UNCERTAINTY |
|--|-------------|
| Conducted Disturbance, 0.15 to 30 MHz | 3.02 dB |
| Radiated Disturbance, 30 MHz to 1 GHz | 4.05 dB |
| Radiated Disturbance, 1 GHz to 18 GHz | 5.78 dB |
| Radiated Disturbance, 18 GHz to 40 GHz | 5.58 dB |

Uncertainty figures are valid to a confidence level of 95%.

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedure 2, Clause 4.4.3 in IEC Guide 115:2021.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax and NFC.
 This test report addresses the WWAN operational mode.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average radiated EIRP output powers as follows:

NR Band n77(PC3)

| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | MPR | Tune-up Limit |
|----------|------------|----------|---------------|-----------|-----------------------------|------------|----------|-------------|----------|-------------|-------|---------------|
| | | | | | Measured Pwr (dBm) | | | | | | | |
| | | | | | 633332 | 633332 | 650000 | 656000 | 662000 | | | |
| 100 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | | 23.29 | | 23.36 | 23.49 | 23.16 | 0.0 | 25.3 |
| | | | 1 | 137 | | 23.09 | | 24.02 | 23.42 | 23.00 | 0.0 | 25.3 |
| | | | 1 | 271 | | 22.94 | | 23.92 | 23.26 | 23.10 | 0.0 | 25.3 |
| | | | 135 | 0 | | 23.22 | | 23.73 | 23.45 | 23.27 | 0.5 | 24.8 |
| | | | 135 | 69 | | 23.26 | | 24.01 | 23.42 | 23.09 | 0.0 | 25.3 |
| | | | 135 | 138 | | 23.14 | | 23.96 | 23.47 | 23.13 | 0.5 | 24.8 |
| | | 270 | 0 | | 23.23 | | 23.80 | 23.50 | 23.07 | 0.5 | 24.8 | |
| | | QPSK | 1 | 1 | | 23.18 | | 23.38 | 23.59 | 23.27 | 0.0 | 25.3 |
| | | | 1 | 137 | | 23.21 | | 24.05 | 23.51 | 23.17 | 0.0 | 25.3 |
| | | | 1 | 271 | | 22.87 | | 23.94 | 23.41 | 23.10 | 0.0 | 25.3 |
| | | | 135 | 0 | | 23.28 | | 23.77 | 23.20 | 23.15 | 1.0 | 24.3 |
| | | | 135 | 69 | | 23.29 | | 23.96 | 23.36 | 23.04 | 0.0 | 25.3 |
| | | | 135 | 138 | | 23.18 | | 23.85 | 23.31 | 22.93 | 1.0 | 24.3 |
| | | 270 | 0 | | 23.25 | | 23.68 | 23.27 | 22.90 | 1.0 | 24.3 | |
| | | 16QAM | 1 | 1 | | 23.28 | | 23.15 | 23.24 | 22.92 | 1.0 | 24.3 |
| | | | 1 | 137 | | 23.70 | | 23.90 | 23.13 | 22.92 | 1.0 | 24.3 |
| | | | 1 | 271 | | 23.77 | | 23.84 | 23.43 | 23.16 | 1.0 | 24.3 |
| | | 64QAM | 1 | 1 | | 22.39 | | 22.13 | 22.07 | 22.00 | 2.5 | 22.8 |
| 1 | 1 | | | 20.11 | | 19.75 | 19.74 | 19.45 | 4.5 | 20.8 | | |
| CP-OFDM | QPSK | 1 | 1 | | 23.11 | | 22.98 | 22.96 | 22.59 | 1.5 | 23.8 | |
| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
| | | | | | 632668 | 633332 | 634000 | 649334 | 656000 | 662666 | | |
| | | | | | 3490.02 MHz | 3499.98MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | | |
| 80 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 23.13 | 23.08 | 23.26 | 23.35 | 23.33 | 23.14 | 0.0 | 25.3 |
| | | | 1 | 109 | 23.26 | 23.24 | 23.29 | 23.75 | 23.23 | 22.87 | 0.0 | 25.3 |
| | | | 1 | 215 | 23.13 | 22.89 | 22.86 | 23.65 | 23.18 | 23.03 | 0.0 | 25.3 |
| | | | 108 | 0 | 23.26 | 23.31 | 23.40 | 23.60 | 23.36 | 23.06 | 0.5 | 24.8 |
| | | | 108 | 55 | 23.34 | 23.32 | 23.36 | 23.69 | 23.36 | 23.04 | 0.0 | 25.3 |
| | | | 108 | 109 | 23.27 | 23.24 | 23.18 | 23.77 | 23.32 | 22.95 | 0.5 | 24.8 |
| | | 216 | 0 | 23.25 | 23.27 | 23.28 | 23.67 | 23.30 | 23.05 | 0.5 | 24.8 | |
| | | QPSK | 1 | 1 | 23.22 | 23.22 | 23.30 | 23.49 | 23.45 | 23.24 | 0.0 | 25.3 |
| | | | 1 | 109 | 23.30 | 23.26 | 23.34 | 23.86 | 23.44 | 22.98 | 0.0 | 25.3 |
| | | | 1 | 215 | 23.19 | 22.94 | 22.88 | 23.83 | 23.21 | 23.12 | 0.0 | 25.3 |
| | | | 108 | 0 | 23.26 | 23.32 | 23.37 | 23.43 | 23.18 | 22.86 | 1.0 | 24.3 |
| | | | 108 | 55 | 23.35 | 23.32 | 23.34 | 23.74 | 23.35 | 23.06 | 0.0 | 25.3 |
| | | | 108 | 109 | 23.31 | 23.22 | 23.20 | 23.61 | 23.13 | 22.80 | 1.0 | 24.3 |
| | | 216 | 0 | 23.28 | 23.29 | 23.30 | 23.45 | 23.10 | 22.87 | 1.0 | 24.3 | |
| | | 16QAM | 1 | 1 | 23.22 | 23.19 | 23.30 | 23.24 | 23.34 | 23.06 | 1.0 | 24.3 |
| | | 64QAM | 1 | 1 | 22.11 | 22.13 | 22.32 | 21.96 | 21.85 | 21.78 | 2.5 | 22.8 |
| | | 256QAM | 1 | 1 | 19.82 | 19.84 | 19.91 | 19.43 | 19.57 | 19.38 | 4.5 | 20.8 |
| | | CP-OFDM | QPSK | 1 | 1 | 23.06 | 23.06 | 23.27 | 22.78 | 22.87 | 22.76 | 1.5 |

| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
|----------|------------|----------|---------------|-----------|--------------------|------------|-------------|-------------|----------|-------------|------|---------------|
| | | | | | 632000 | 633332 | 634666 | 648668 | 656000 | 663332 | | |
| | | | | | 3480 MHz | 3499.98MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | | |
| 60 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 23.24 | 23.35 | 23.52 | 23.42 | 22.72 | 22.41 | 0.0 | 25.3 |
| | | | 1 | 81 | 23.48 | 23.52 | 23.46 | 23.63 | 23.23 | 22.84 | 0.0 | 25.3 |
| | | | 1 | 160 | 23.37 | 23.14 | 22.95 | 23.78 | 22.67 | 22.52 | 0.0 | 25.3 |
| | | | 81 | 0 | 23.39 | 23.54 | 23.57 | 23.67 | 23.17 | 22.82 | 0.5 | 24.8 |
| | | | 81 | 41 | 23.45 | 23.49 | 23.44 | 23.73 | 23.24 | 22.87 | 0.0 | 25.3 |
| | | | 81 | 81 | 23.49 | 23.43 | 23.18 | 23.84 | 23.17 | 22.79 | 0.5 | 24.8 |
| | | 162 | 0 | 23.39 | 23.51 | 23.39 | 23.71 | 23.11 | 22.74 | 0.5 | 24.8 | |
| | | QPSK | 1 | 1 | 23.26 | 23.42 | 23.53 | 23.52 | 22.83 | 22.53 | 0.0 | 25.3 |
| | | | 1 | 81 | 23.55 | 23.56 | 23.54 | 23.77 | 23.34 | 22.91 | 0.0 | 25.3 |
| | | | 1 | 160 | 23.46 | 23.16 | 23.02 | 23.88 | 22.74 | 22.63 | 0.0 | 25.3 |
| | | | 81 | 0 | 23.35 | 23.54 | 23.55 | 23.48 | 22.95 | 22.55 | 1.0 | 24.3 |
| | | | 81 | 41 | 23.48 | 23.54 | 23.47 | 23.77 | 23.24 | 22.90 | 0.0 | 25.3 |
| | | | 81 | 81 | 23.50 | 23.46 | 23.18 | 23.66 | 23.00 | 22.66 | 1.0 | 24.3 |
| | | 162 | 0 | 23.46 | 23.50 | 23.42 | 23.55 | 22.95 | 22.55 | 1.0 | 24.3 | |
| 16QAM | 1 | 1 | 23.23 | 23.43 | 23.50 | 23.28 | 22.58 | 22.33 | 1.0 | 24.3 | | |
| 64QAM | 1 | 1 | 22.31 | 22.45 | 22.53 | 22.07 | 21.38 | 20.99 | 2.5 | 22.8 | | |
| 256QAM | 1 | 1 | 20.00 | 20.07 | 20.22 | 19.62 | 18.91 | 18.66 | 4.5 | 20.8 | | |
| CP-OFDM | QPSK | 1 | 1 | 23.23 | 23.38 | 23.44 | 22.94 | 22.24 | 21.90 | 1.5 | 23.8 | |
| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
| | | | | | 631334 | 633332 | 635332 | 648000 | 656000 | 664000 | | |
| | | | | | 3470.01 MHz | 3499.98MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | |
| 40 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 23.42 | 23.74 | 22.96 | 23.83 | 23.75 | 23.24 | 0.0 | 25.3 |
| | | | 1 | 53 | 23.45 | 23.59 | 23.03 | 23.88 | 23.54 | 23.22 | 0.0 | 25.3 |
| | | | 1 | 104 | 23.78 | 23.61 | 22.45 | 24.05 | 23.55 | 23.48 | 0.0 | 25.3 |
| | | | 50 | 0 | 23.52 | 23.77 | 22.95 | 23.59 | 23.44 | 23.05 | 0.5 | 24.8 |
| | | | 50 | 28 | 23.56 | 23.68 | 23.15 | 23.95 | 23.65 | 23.29 | 0.0 | 25.3 |
| | | | 50 | 56 | 23.69 | 23.60 | 22.58 | 23.82 | 23.47 | 23.16 | 0.5 | 24.8 |
| | | 100 | 0 | 23.60 | 23.71 | 22.88 | 23.64 | 23.40 | 23.09 | 0.5 | 24.8 | |
| | | QPSK | 1 | 1 | 23.53 | 23.79 | 23.06 | 23.91 | 23.92 | 23.32 | 0.0 | 25.3 |
| | | | 1 | 53 | 23.49 | 23.65 | 23.09 | 23.96 | 23.64 | 23.29 | 0.0 | 25.3 |
| | | | 1 | 104 | 23.83 | 23.65 | 22.49 | 24.15 | 23.62 | 23.51 | 0.0 | 25.3 |
| | | | 50 | 0 | 23.34 | 23.50 | 22.46 | 23.11 | 23.01 | 22.60 | 1.0 | 24.3 |
| | | | 50 | 28 | 23.56 | 23.67 | 23.14 | 23.95 | 23.69 | 23.27 | 0.0 | 25.3 |
| | | | 50 | 56 | 23.50 | 23.38 | 22.10 | 23.31 | 22.99 | 22.64 | 1.0 | 24.3 |
| | | 100 | 0 | 23.40 | 23.49 | 22.36 | 23.17 | 22.98 | 22.60 | 1.0 | 24.3 | |
| 16QAM | 1 | 1 | 23.23 | 23.47 | 22.26 | 23.16 | 23.12 | 22.54 | 1.0 | 24.3 | | |
| 64QAM | 1 | 1 | 22.05 | 22.27 | 20.97 | 21.88 | 21.86 | 21.35 | 2.5 | 22.8 | | |
| 256QAM | 1 | 1 | 19.70 | 19.92 | 18.66 | 19.54 | 19.42 | 18.89 | 4.5 | 20.8 | | |
| CP-OFDM | QPSK | 1 | 1 | 22.90 | 23.17 | 21.89 | 22.91 | 22.77 | 22.13 | 1.5 | 23.8 | |

| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
|----------|------------|----------|---------------|-----------|--------------------|------------|-------------|-------------|----------|-------------|------|---------------|
| | | | | | 631000 | 633332 | 635668 | 647668 | 656000 | 664332 | | |
| | | | | | 3465 MHz | 3499.98MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | | |
| 30 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 23.44 | 23.72 | 23.51 | 23.75 | 23.70 | 23.30 | 0.0 | 25.3 |
| | | | 1 | 39 | 23.42 | 23.57 | 23.22 | 23.80 | 23.64 | 23.30 | 0.0 | 25.3 |
| | | | 1 | 76 | 23.64 | 23.56 | 23.18 | 24.02 | 23.67 | 23.41 | 0.0 | 25.3 |
| | | | 36 | 0 | 23.48 | 23.70 | 23.25 | 23.61 | 23.49 | 23.09 | 0.5 | 24.8 |
| | | | 36 | 21 | 23.53 | 23.68 | 23.31 | 23.88 | 23.69 | 23.31 | 0.0 | 25.3 |
| | | | 36 | 42 | 23.62 | 23.56 | 23.06 | 23.85 | 23.49 | 23.18 | 0.5 | 24.8 |
| | | QPSK | 75 | 0 | 23.54 | 23.70 | 23.18 | 23.67 | 23.49 | 23.11 | 0.5 | 24.8 |
| | | | 1 | 1 | 23.54 | 23.80 | 23.55 | 23.86 | 23.71 | 23.40 | 0.0 | 25.3 |
| | | | 1 | 39 | 23.51 | 23.62 | 23.28 | 23.84 | 23.71 | 23.35 | 0.0 | 25.3 |
| | | | 1 | 76 | 23.71 | 23.61 | 23.25 | 24.12 | 23.79 | 23.46 | 0.0 | 25.3 |
| | | | 36 | 0 | 23.31 | 23.53 | 22.77 | 23.13 | 23.01 | 22.58 | 1.0 | 24.3 |
| | | | 36 | 21 | 23.49 | 23.66 | 23.30 | 23.88 | 23.70 | 23.32 | 0.0 | 25.3 |
| | | CP-OFDM | 36 | 42 | 23.43 | 23.38 | 22.60 | 23.35 | 23.00 | 22.71 | 1.0 | 24.3 |
| | | | 75 | 0 | 23.36 | 23.53 | 22.66 | 23.19 | 22.98 | 22.63 | 1.0 | 24.3 |
| 16QAM | 1 | 1 | 23.28 | 23.51 | 22.76 | 23.05 | 23.05 | 22.62 | 1.0 | 24.3 | | |
| 64QAM | 1 | 1 | 21.95 | 22.24 | 21.52 | 21.71 | 21.66 | 21.26 | 2.5 | 22.8 | | |
| 256QAM | 1 | 1 | 19.57 | 19.96 | 19.24 | 19.35 | 19.30 | 18.94 | 4.5 | 20.8 | | |
| CP-OFDM | QPSK | 1 | 1 | 22.88 | 23.11 | 22.41 | 22.78 | 22.57 | 22.23 | 1.5 | 23.8 | |
| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
| | | | | | 630668 | 633332 | 636000 | 647334 | 656000 | 664666 | | |
| | | | | | 3460.02 MHz | 3499.98MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | |
| 20 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 23.33 | 23.62 | 23.30 | 23.48 | 23.45 | 23.15 | 0.0 | 25.3 |
| | | | 1 | 26 | 23.30 | 23.47 | 23.12 | 23.51 | 23.45 | 23.16 | 0.0 | 25.3 |
| | | | 1 | 49 | 23.40 | 23.41 | 23.03 | 23.72 | 23.51 | 23.28 | 0.0 | 25.3 |
| | | | 25 | 0 | 23.29 | 23.57 | 23.00 | 23.29 | 23.34 | 22.97 | 0.5 | 24.8 |
| | | | 25 | 13 | 23.33 | 23.56 | 23.17 | 23.53 | 23.55 | 23.21 | 0.0 | 25.3 |
| | | | 25 | 26 | 23.44 | 23.57 | 22.90 | 23.38 | 23.36 | 23.07 | 0.5 | 24.8 |
| | | QPSK | 50 | 0 | 23.34 | 23.54 | 22.95 | 23.33 | 23.35 | 23.04 | 0.5 | 24.8 |
| | | | 1 | 1 | 23.37 | 23.64 | 23.34 | 23.58 | 23.58 | 23.21 | 0.0 | 25.3 |
| | | | 1 | 26 | 23.34 | 23.54 | 23.16 | 23.51 | 23.54 | 23.23 | 0.0 | 25.3 |
| | | | 1 | 49 | 23.48 | 23.45 | 23.10 | 23.77 | 23.61 | 23.35 | 0.0 | 25.3 |
| | | | 25 | 0 | 23.12 | 23.33 | 22.49 | 22.83 | 22.85 | 22.52 | 1.0 | 24.3 |
| | | | 25 | 13 | 23.35 | 23.52 | 23.15 | 23.56 | 23.55 | 23.14 | 0.0 | 25.3 |
| | | CP-OFDM | 25 | 26 | 23.20 | 23.33 | 22.39 | 22.91 | 22.85 | 22.54 | 1.0 | 24.3 |
| | | | 50 | 0 | 23.15 | 23.33 | 22.47 | 22.86 | 22.85 | 22.51 | 1.0 | 24.3 |
| 16QAM | 1 | 1 | 23.08 | 23.37 | 22.54 | 22.75 | 22.83 | 22.45 | 1.0 | 24.3 | | |
| 64QAM | 1 | 1 | 21.83 | 22.11 | 21.20 | 21.47 | 21.54 | 21.18 | 2.5 | 22.8 | | |
| 256QAM | 1 | 1 | 19.53 | 19.70 | 18.91 | 19.09 | 19.21 | 18.91 | 4.5 | 20.8 | | |
| CP-OFDM | QPSK | 1 | 1 | 22.72 | 22.98 | 22.14 | 22.47 | 22.43 | 22.09 | 1.5 | 23.8 | |

NR Band n77(PC2)

| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | | MPR | Tune-up Limit |
|----------|------------|----------|---------------|-----------|-----------------------------|------------|----------|-------------|----------|-------|---------------|-------------|---------------|
| | | | | | Measured Pwr (dBm) | | | | | | | | |
| | | | | | 633332 | 650000 | 656000 | 662000 | | | | | |
| 100 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 3499.98MHz | 26.17 | 25.94 | 26.03 | 25.78 | 0.0 | 27.5 | | |
| | | | 1 | 137 | 26.35 | 26.32 | 25.86 | 25.60 | 0.0 | 27.5 | | | |
| | | | 1 | 271 | 25.83 | 26.39 | 25.80 | 25.86 | 0.0 | 27.5 | | | |
| | | | 135 | 0 | 25.71 | 25.69 | 25.76 | 25.14 | 0.5 | 27.0 | | | |
| | | | 135 | 69 | 26.21 | 26.42 | 25.57 | 25.59 | 0.0 | 27.5 | | | |
| | | | 135 | 138 | 25.50 | 26.01 | 25.95 | 25.08 | 0.5 | 27.0 | | | |
| | | 270 | 0 | 25.57 | 25.82 | 25.19 | 25.10 | 0.5 | 27.0 | | | | |
| | | QPSK | 1 | 1 | 26.33 | 26.16 | 26.12 | 25.88 | 0.0 | 27.5 | | | |
| | | | 1 | 137 | 26.45 | 26.53 | 25.91 | 25.75 | 0.0 | 27.5 | | | |
| | | | 1 | 271 | 26.21 | 26.46 | 25.95 | 25.78 | 0.0 | 27.5 | | | |
| | | | 135 | 0 | 25.20 | 26.05 | 25.03 | 24.66 | 1.0 | 26.5 | | | |
| | | | 135 | 69 | 26.26 | 26.46 | 25.92 | 25.63 | 0.0 | 27.5 | | | |
| | | | 135 | 138 | 25.02 | 25.29 | 24.69 | 24.79 | 1.0 | 26.5 | | | |
| | | 270 | 0 | 25.04 | 25.14 | 25.10 | 24.48 | 1.0 | 26.5 | | | | |
| | | 16QAM | 1 | 1 | 25.41 | 24.97 | 25.20 | 24.80 | 1.0 | 26.5 | | | |
| | | | 1 | 137 | 25.02 | 25.02 | 24.87 | 24.17 | 1.0 | 26.5 | | | |
| | | | 1 | 271 | 24.82 | 25.09 | 24.88 | 24.65 | 1.0 | 26.5 | | | |
| | | 64QAM | 1 | 1 | 23.61 | 23.75 | 23.50 | 23.29 | 2.5 | 25.0 | | | |
| 256QAM | 1 | 1 | 21.61 | 21.05 | 21.10 | 20.81 | 4.5 | 23.0 | | | | | |
| CP-OFDM | QPSK | 1 | 1 | 24.81 | 24.40 | 24.42 | 24.12 | 1.5 | 26.0 | | | | |
| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | MPR | Tune-up Limit | | |
| | | | | | 632668 | 633332 | 634000 | 649334 | 656000 | | | 662666 | |
| | | | | | 3490.02 MHz | 3499.98MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | | | 3939.99 MHz | |
| 80 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 26.18 | 26.19 | 26.07 | 26.13 | 26.09 | 25.58 | 0.0 | 27.5 | |
| | | | 1 | 109 | 26.24 | 26.20 | 25.99 | 26.47 | 25.91 | 25.36 | 0.0 | 27.5 | |
| | | | 1 | 215 | 26.13 | 25.79 | 25.51 | 26.29 | 25.75 | 25.59 | 0.0 | 27.5 | |
| | | | 108 | 0 | 25.66 | 25.72 | 25.62 | 25.68 | 25.27 | 24.81 | 0.5 | 27.0 | |
| | | | 108 | 55 | 26.40 | 26.17 | 25.96 | 26.77 | 25.85 | 25.28 | 0.0 | 27.5 | |
| | | | 108 | 109 | 25.56 | 25.53 | 25.25 | 25.83 | 25.27 | 24.80 | 0.5 | 27.0 | |
| | | 216 | 0 | 25.71 | 25.60 | 25.59 | 25.81 | 25.22 | 24.83 | 0.5 | 27.0 | | |
| | | QPSK | 1 | 1 | 26.19 | 26.20 | 22.45 | 26.30 | 26.19 | 25.76 | 0.0 | 27.5 | |
| | | | 1 | 109 | 26.26 | 26.35 | 26.26 | 26.67 | 26.05 | 25.75 | 0.0 | 27.5 | |
| | | | 1 | 215 | 26.09 | 26.05 | 25.75 | 26.49 | 25.87 | 25.77 | 0.0 | 27.5 | |
| | | | 108 | 0 | 25.16 | 25.17 | 25.56 | 25.08 | 24.89 | 24.30 | 1.0 | 26.5 | |
| | | | 108 | 55 | 26.11 | 26.58 | 26.36 | 25.59 | 25.94 | 25.39 | 0.0 | 27.5 | |
| | | | 108 | 109 | 25.05 | 25.20 | 25.14 | 25.29 | 24.74 | 24.23 | 1.0 | 26.5 | |
| | | 216 | 0 | 25.16 | 25.37 | 25.00 | 25.23 | 24.75 | 24.22 | 1.0 | 26.5 | | |
| | | 16QAM | 1 | 1 | 25.27 | 25.29 | 25.41 | 25.27 | 24.89 | 24.62 | 1.0 | 26.5 | |
| | | 64QAM | 1 | 1 | 23.78 | 23.71 | 23.94 | 23.75 | 23.49 | 23.16 | 2.5 | 25.0 | |
| | | 256QAM | 1 | 1 | 21.44 | 21.21 | 21.46 | 21.22 | 21.27 | 20.59 | 4.5 | 23.0 | |
| | | CP-OFDM | QPSK | 1 | 1 | 24.61 | 24.91 | 24.70 | 24.54 | 24.71 | 24.00 | 1.5 | 26.0 |

| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
|----------|------------|----------|---------------|-----------|--------------------|------------|-------------|-------------|----------|-------------|------|---------------|
| | | | | | 632000 | 633332 | 634666 | 648668 | 656000 | 663332 | | |
| | | | | | 3480 MHz | 3499.98MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | | |
| 60 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 26.44 | 26.37 | 26.43 | 26.37 | 26.13 | 25.34 | 0.0 | 27.5 |
| | | | 1 | 81 | 26.61 | 26.53 | 26.37 | 26.51 | 26.66 | 25.43 | 0.0 | 27.5 |
| | | | 1 | 160 | 26.36 | 26.03 | 25.95 | 26.50 | 26.23 | 25.93 | 0.0 | 27.5 |
| | | | 81 | 0 | 25.80 | 25.82 | 25.92 | 25.75 | 25.56 | 25.00 | 0.5 | 27.0 |
| | | | 81 | 41 | 26.45 | 26.32 | 26.34 | 26.44 | 25.86 | 25.57 | 0.0 | 27.5 |
| | | | 81 | 81 | 25.74 | 25.82 | 25.46 | 25.92 | 25.40 | 25.13 | 0.5 | 27.0 |
| | | 162 | 0 | 25.77 | 25.82 | 25.73 | 26.12 | 25.79 | 25.05 | 0.5 | 27.0 | |
| | | QPSK | 1 | 1 | 26.68 | 26.25 | 26.55 | 26.88 | 26.71 | 25.62 | 0.0 | 27.5 |
| | | | 1 | 81 | 26.57 | 26.20 | 26.50 | 26.75 | 25.91 | 25.68 | 0.0 | 27.5 |
| | | | 1 | 160 | 26.66 | 26.05 | 26.16 | 26.65 | 26.12 | 25.66 | 0.0 | 27.5 |
| | | | 81 | 0 | 25.32 | 25.34 | 25.41 | 25.22 | 25.20 | 24.42 | 1.0 | 26.5 |
| | | | 81 | 41 | 26.68 | 26.44 | 26.25 | 26.61 | 25.86 | 25.57 | 0.0 | 27.5 |
| | | | 81 | 81 | 25.37 | 25.38 | 25.05 | 25.72 | 24.92 | 24.60 | 1.0 | 26.5 |
| | | 162 | 0 | 25.34 | 25.46 | 25.37 | 25.25 | 24.83 | 24.58 | 1.0 | 26.5 | |
| 16QAM | 1 | 1 | 25.22 | 25.72 | 25.58 | 25.34 | 25.20 | 24.63 | 1.0 | 26.5 | | |
| 64QAM | 1 | 1 | 24.21 | 23.97 | 24.04 | 24.09 | 23.45 | 23.14 | 2.5 | 25.0 | | |
| 256QAM | 1 | 1 | 21.43 | 21.44 | 21.76 | 21.22 | 21.21 | 20.85 | 4.5 | 23.0 | | |
| CP-OFDM | QPSK | 1 | 1 | 24.73 | 24.94 | 24.91 | 24.60 | 24.23 | 23.94 | 1.5 | 26.0 | |
| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
| | | | | | 631334 | 633332 | 635332 | 648000 | 656000 | 664000 | | |
| | | | | | 3470.01 MHz | 3499.98MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | |
| 40 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 25.73 | 26.01 | 25.34 | 25.80 | 25.72 | 25.20 | 0.0 | 27.5 |
| | | | 1 | 53 | 25.90 | 26.00 | 25.11 | 25.99 | 25.82 | 25.43 | 0.0 | 27.5 |
| | | | 1 | 104 | 26.08 | 25.92 | 25.18 | 25.88 | 25.91 | 25.47 | 0.0 | 27.5 |
| | | | 50 | 0 | 25.26 | 25.63 | 24.74 | 25.12 | 25.14 | 24.72 | 0.5 | 27.0 |
| | | | 50 | 28 | 25.78 | 25.98 | 25.19 | 25.76 | 25.80 | 25.34 | 0.0 | 27.5 |
| | | | 50 | 56 | 25.48 | 25.32 | 24.56 | 25.25 | 25.30 | 24.87 | 0.5 | 27.0 |
| | | 100 | 0 | 25.23 | 25.51 | 24.73 | 25.18 | 25.36 | 24.73 | 0.5 | 27.0 | |
| | | QPSK | 1 | 1 | 25.92 | 26.03 | 25.42 | 25.96 | 25.85 | 25.24 | 0.0 | 27.5 |
| | | | 1 | 53 | 25.76 | 25.98 | 25.05 | 25.88 | 25.98 | 25.28 | 0.0 | 27.5 |
| | | | 1 | 104 | 25.84 | 25.91 | 25.16 | 25.89 | 25.84 | 25.30 | 0.0 | 27.5 |
| | | | 50 | 0 | 24.82 | 25.01 | 24.24 | 24.70 | 24.65 | 24.32 | 1.0 | 26.5 |
| | | | 50 | 28 | 25.77 | 25.97 | 25.12 | 25.72 | 25.73 | 25.32 | 0.0 | 27.5 |
| | | | 50 | 56 | 24.85 | 24.91 | 24.10 | 24.81 | 24.84 | 24.23 | 1.0 | 26.5 |
| | | 100 | 0 | 24.74 | 25.01 | 24.18 | 24.77 | 24.76 | 24.27 | 1.0 | 26.5 | |
| 16QAM | 1 | 1 | 25.00 | 25.17 | 24.43 | 24.63 | 24.88 | 24.34 | 1.0 | 26.5 | | |
| 64QAM | 1 | 1 | 23.23 | 23.72 | 22.93 | 23.35 | 23.45 | 23.04 | 2.5 | 25.0 | | |
| 256QAM | 1 | 1 | 21.05 | 21.33 | 20.78 | 21.21 | 21.17 | 20.61 | 4.5 | 23.0 | | |
| CP-OFDM | QPSK | 1 | 1 | 24.19 | 24.52 | 23.89 | 24.31 | 24.31 | 23.92 | 1.5 | 26.0 | |

| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
|----------|------------|----------|---------------|-----------|--------------------|------------|-------------|-------------|----------|-------------|------|---------------|
| | | | | | 631000 | 633332 | 635668 | 647668 | 656000 | 664332 | | |
| | | | | | 3465 MHz | 3499.98MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | | |
| 30 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 26.72 | 26.84 | 26.06 | 25.76 | 25.65 | 25.30 | 0.0 | 27.5 |
| | | | 1 | 39 | 26.72 | 26.72 | 25.89 | 25.90 | 25.62 | 25.21 | 0.0 | 27.5 |
| | | | 1 | 76 | 26.87 | 26.51 | 25.51 | 26.02 | 25.65 | 25.27 | 0.0 | 27.5 |
| | | | 36 | 0 | 26.22 | 26.29 | 25.89 | 25.08 | 24.95 | 24.82 | 0.5 | 27.0 |
| | | | 36 | 21 | 26.76 | 26.69 | 25.36 | 25.86 | 25.45 | 25.30 | 0.0 | 27.5 |
| | | | 36 | 42 | 26.35 | 26.18 | 25.44 | 25.37 | 25.05 | 24.77 | 0.5 | 27.0 |
| | | | 75 | 0 | 26.33 | 26.26 | 25.48 | 25.32 | 25.03 | 24.75 | 0.5 | 27.0 |
| | | QPSK | 1 | 1 | 26.78 | 26.63 | 26.02 | 25.88 | 25.85 | 25.36 | 0.0 | 27.5 |
| | | | 1 | 39 | 26.77 | 26.62 | 25.76 | 26.14 | 25.68 | 25.33 | 0.0 | 27.5 |
| | | | 1 | 76 | 26.83 | 26.57 | 25.85 | 26.10 | 25.74 | 25.40 | 0.0 | 27.5 |
| | | | 36 | 0 | 25.77 | 25.82 | 25.04 | 24.80 | 24.45 | 24.31 | 1.0 | 26.5 |
| | | | 36 | 21 | 26.81 | 26.73 | 25.91 | 25.91 | 25.67 | 25.30 | 0.0 | 27.5 |
| | | | 36 | 42 | 25.91 | 25.67 | 24.89 | 24.84 | 24.65 | 24.37 | 1.0 | 26.5 |
| | | | 75 | 0 | 25.77 | 25.78 | 25.00 | 24.72 | 24.40 | 24.36 | 1.0 | 26.5 |
| 16QAM | 1 | 1 | 25.68 | 25.69 | 25.07 | 24.52 | 25.01 | 24.37 | 1.0 | 26.5 | | |
| 64QAM | 1 | 1 | 23.88 | 24.33 | 23.66 | 23.27 | 23.24 | 22.97 | 2.5 | 25.0 | | |
| 256QAM | 1 | 1 | 22.23 | 22.37 | 21.64 | 20.97 | 20.59 | 20.65 | 4.5 | 23.0 | | |
| CP-OFDM | QPSK | 1 | 1 | 25.26 | 25.02 | 24.72 | 24.10 | 24.06 | 24.04 | 1.5 | 26.0 | |
| BW (MHz) | Modulation | Mode | RB Allocation | RB offset | Measured Pwr (dBm) | | | | | | MPR | Tune-up Limit |
| | | | | | 630668 | 633332 | 636000 | 647334 | 656000 | 664666 | | |
| | | | | | 3460.02 MHz | 3499.98MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | |
| 20 MHz | DFT-s-OFDM | π/2 BPSK | 1 | 1 | 26.79 | 26.85 | 26.00 | 26.37 | 26.15 | 25.80 | 0.0 | 27.5 |
| | | | 1 | 26 | 26.76 | 26.72 | 25.90 | 26.30 | 26.11 | 25.90 | 0.0 | 27.5 |
| | | | 1 | 49 | 26.85 | 26.59 | 25.84 | 26.53 | 26.15 | 25.93 | 0.0 | 27.5 |
| | | | 25 | 0 | 26.25 | 26.28 | 25.41 | 25.86 | 25.73 | 25.32 | 0.5 | 27.0 |
| | | | 25 | 13 | 26.81 | 26.29 | 25.97 | 26.32 | 26.23 | 25.89 | 0.0 | 27.5 |
| | | | 25 | 26 | 26.32 | 26.79 | 25.52 | 26.00 | 25.82 | 25.47 | 0.5 | 27.0 |
| | | | 50 | 0 | 26.22 | 26.23 | 25.50 | 25.94 | 25.75 | 25.44 | 0.5 | 27.0 |
| | | QPSK | 1 | 1 | 26.70 | 26.88 | 26.03 | 26.33 | 26.26 | 26.02 | 0.0 | 27.5 |
| | | | 1 | 26 | 26.73 | 26.71 | 25.92 | 26.40 | 26.15 | 26.03 | 0.0 | 27.5 |
| | | | 1 | 49 | 26.84 | 26.69 | 25.86 | 26.54 | 26.20 | 26.13 | 0.0 | 27.5 |
| | | | 25 | 0 | 25.77 | 25.82 | 25.01 | 25.38 | 25.23 | 25.00 | 1.0 | 26.5 |
| | | | 25 | 13 | 26.74 | 26.76 | 25.98 | 26.37 | 26.22 | 25.97 | 0.0 | 27.5 |
| | | | 25 | 26 | 25.82 | 25.80 | 25.02 | 25.45 | 25.32 | 25.07 | 1.0 | 26.5 |
| | | | 50 | 0 | 25.76 | 25.78 | 24.99 | 25.46 | 25.22 | 25.05 | 1.0 | 26.5 |
| 16QAM | 1 | 1 | 25.93 | 26.03 | 25.03 | 25.21 | 25.18 | 25.07 | 1.0 | 26.5 | | |
| 64QAM | 1 | 1 | 24.35 | 24.59 | 23.20 | 23.99 | 23.37 | 22.80 | 2.5 | 25.0 | | |
| 256QAM | 1 | 1 | 22.21 | 22.36 | 21.48 | 21.82 | 21.45 | 20.77 | 4.5 | 23.0 | | |
| CP-OFDM | QPSK | 1 | 1 | 25.32 | 25.51 | 24.54 | 24.94 | 24.71 | 23.88 | 1.5 | 26.0 | |

NR Band n77(PC3)(SRS1)

| BW (MHz) | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | | MPR | Tune-up Limit |
|----------|---------------|-----------|-----------------------------|-------------|-------------|----------|-------------|--------|-----|--|---------------|
| | | | SRS1 PC3 | | | | | | | | |
| | | | Measured Pwr (dBm) | | | | | | | | |
| 100 MHz | 1 | 1 | 633332 | 3499.98MHz | 650000 | 656000 | 662000 | 0.0 | 0.0 | Tune-up Limit | |
| | | | 3750 MHz | 3840 MHz | 3930 MHz | | | | | | |
| 80 MHz | 1 | 1 | 632668 | 3499.98MHz | 634000 | 649334 | 656000 | 662666 | 0.0 | 3450~3550 MHz : 21 3700~3980 MHz : 20 | |
| | | | 3490.02 MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | | | | |
| 60 MHz | 1 | 1 | 632000 | 3499.98MHz | 634666 | 648668 | 656000 | 663332 | 0.0 | | |
| | | | 3480 MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | | | | |
| 40 MHz | 1 | 1 | 631334 | 3499.98MHz | 635332 | 648000 | 656000 | 664000 | 0.0 | | |
| | | | 3470.01 MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | | | |
| 30 MHz | 1 | 1 | 631000 | 3499.98MHz | 635668 | 647668 | 656000 | 664332 | 0.0 | | |
| | | | 3465 MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | | | | |
| 20 MHz | 1 | 1 | 630668 | 3499.98MHz | 636000 | 647334 | 656000 | 664666 | 0.0 | | |
| | | | 3460.02 MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | | | |
| | | | 21.28 | 21.32 | 20.03 | 18.21 | 17.76 | | | | |
| | | | 21.50 | 21.40 | 20.19 | 18.29 | 17.79 | | | | |
| | | | 21.73 | 21.44 | 20.47 | 18.52 | 19.60 | | | | |
| | | | 21.67 | 21.27 | 20.41 | 18.38 | 19.63 | | | | |
| | | | 21.66 | 21.32 | 20.77 | 18.44 | 19.60 | | | | |

NR Band n77(PC3)(SRS2)

| BW (MHz) | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | | MPR | Tune-up Limit |
|----------|---------------|-----------|-----------------------------|-------------|-------------|----------|-------------|--------|-----|--|---------------|
| | | | SRS2 PC3 | | | | | | | | |
| | | | Measured Pwr (dBm) | | | | | | | | |
| 100 MHz | 1 | 1 | 633332 | 3499.98MHz | 650000 | 656000 | 662000 | 0.0 | 0.0 | Tune-up Limit | |
| | | | 3750 MHz | 3840 MHz | 3930 MHz | | | | | | |
| 80 MHz | 1 | 1 | 632668 | 3499.98MHz | 634000 | 649334 | 656000 | 662666 | 0.0 | 3450~3550 MHz : 19.5 3700~3980 MHz : 18 | |
| | | | 3490.02 MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | | | | |
| 60 MHz | 1 | 1 | 632000 | 3499.98MHz | 634666 | 648668 | 656000 | 663332 | 0.0 | | |
| | | | 3480 MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | | | | |
| 40 MHz | 1 | 1 | 631334 | 3499.98MHz | 635332 | 648000 | 656000 | 664000 | 0.0 | | |
| | | | 3470.01 MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | | | |
| 30 MHz | 1 | 1 | 631000 | 3499.98MHz | 635668 | 647668 | 656000 | 664332 | 0.0 | | |
| | | | 3465 MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | | | | |
| 20 MHz | 1 | 1 | 630668 | 3499.98MHz | 636000 | 647334 | 656000 | 664666 | 0.0 | | |
| | | | 3460.02 MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | | | |
| | | | 19.76 | 19.87 | 18.46 | 17.45 | 16.65 | | | | |
| | | | 19.82 | 19.77 | 18.46 | 17.56 | 16.63 | | | | |
| | | | 19.66 | 19.78 | 18.54 | 17.65 | 16.65 | | | | |
| | | | 20.04 | 20.04 | 18.73 | 17.72 | 18.32 | | | | |
| | | | 20.13 | 19.75 | 18.96 | 17.83 | 18.24 | | | | |
| | | | 20.04 | 19.94 | 18.77 | 17.76 | 18.25 | | | | |

NR Band n77(PC3)(SRS3)

| BW (MHz) | RB Allocation | RB offset | Maximum Average Power (dBm) SRS3 PC3 | | | | | | | MPR | Tune-up Limit |
|----------|---------------|-----------|---|------------|-------------|-------------|----------|-------------|-----|--|---------------|
| | | | Measured Pwr (dBm) | | | | | | | | |
| 100 MHz | 1 | 1 | 633332 | | | 650000 | 656000 | 662000 | 0.0 | Tune-up Limit | |
| | | | 3499.98MHz | | | 3750 MHz | 3840 MHz | 3930 MHz | | | |
| 80 MHz | 1 | 1 | 632668 | 633332 | 634000 | 649334 | 656000 | 662666 | 0.0 | 3450~3550 MHz : 21 3700~3980 MHz : 20 | |
| | | | 3490.02 MHz | 3499.98MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | | | |
| 60 MHz | 1 | 1 | 21.56 | 21.55 | 21.51 | 19.89 | 18.57 | 18.11 | 0.0 | | |
| | | | 632000 | 633332 | 634666 | 648668 | 656000 | 663332 | | | |
| 40 MHz | 1 | 1 | 3480 MHz | 3499.98MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | 0.0 | | |
| | | | 21.58 | 21.54 | 21.43 | 20.05 | 18.51 | 16.31 | | | |
| 30 MHz | 1 | 1 | 631334 | 633332 | 635332 | 648000 | 656000 | 664000 | 0.0 | | |
| | | | 3470.01 MHz | 3499.98MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | | |
| 20 MHz | 1 | 1 | 21.76 | 21.69 | 21.50 | 20.57 | 19.19 | 19.93 | 0.0 | | |
| | | | 631000 | 633332 | 635668 | 647668 | 656000 | 664332 | | | |
| | | | 3465 MHz | 3499.98MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | 0.0 | | |
| | | | 21.82 | 21.58 | 21.56 | 20.66 | 18.90 | 19.90 | | | |
| | | | 630668 | 633332 | 636000 | 647334 | 656000 | 664666 | 0.0 | | |
| | | | 3460.02 MHz | 3499.98MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | | |
| | | | 21.83 | 21.71 | 21.48 | 20.55 | 19.21 | 19.84 | 0.0 | | |

NR Band n77(PC2)(SRS1)

| BW (MHz) | RB Allocation | RB offset | Maximum Average Power (dBm) SRS1 PC2 | | | | | | | MPR | Tune-up Limit |
|----------|---------------|-----------|---|------------|-------------|-------------|----------|-------------|-----|--|---------------|
| | | | Measured Pwr (dBm) | | | | | | | | |
| 100 MHz | 1 | 1 | 633332 | | | 650000 | 656000 | 662000 | 0.0 | Tune-up Limit | |
| | | | 3499.98MHz | | | 3750 MHz | 3840 MHz | 3930 MHz | | | |
| 80 MHz | 1 | 1 | 21.60 | | | 19.73 | 18.12 | 18.05 | 0.0 | 3450~3550 MHz : 22 3700~3980 MHz : 20 | |
| | | | 632668 | 633332 | 634000 | 649334 | 656000 | 662666 | | | |
| 60 MHz | 1 | 1 | 3490.02 MHz | 3499.98MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | 0.0 | | |
| | | | 21.93 | 22.10 | 21.64 | 19.98 | 18.20 | 17.82 | | | |
| 40 MHz | 1 | 1 | 632000 | 633332 | 634666 | 648668 | 656000 | 663332 | 0.0 | | |
| | | | 3480 MHz | 3499.98MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | | | |
| 30 MHz | 1 | 1 | 22.22 | 21.92 | 21.58 | 20.17 | 18.17 | 17.89 | 0.0 | | |
| | | | 631334 | 633332 | 635332 | 648000 | 656000 | 664000 | | | |
| 20 MHz | 1 | 1 | 3470.01 MHz | 3499.98MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | 0.0 | | |
| | | | 22.30 | 21.96 | 21.43 | 20.37 | 18.60 | 19.69 | | | |
| | | | 631000 | 633332 | 635668 | 647668 | 656000 | 664332 | 0.0 | | |
| | | | 3465 MHz | 3499.98MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | | | |
| | | | 22.44 | 21.95 | 21.35 | 20.45 | 18.30 | 19.61 | 0.0 | | |
| | | | 630668 | 633332 | 636000 | 647334 | 656000 | 664666 | | | |
| | | | 3460.02 MHz | 3499.98MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | 0.0 | | |
| | | | 22.71 | 22.04 | 21.41 | 20.75 | 18.39 | 19.60 | | | |

NR Band n77(PC2)(SRS2)

| BW (MHz) | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | | MPR | Tune-up Limit |
|----------|---------------|-----------|-----------------------------|------------|-------------|-------------|----------|-------------|-----|---------------|---------------|
| | | | SRS2 PC2 | | | | | | | | |
| | | | Measured Pwr (dBm) | | | | | | | | |
| 100 MHz | 1 | 1 | 633332 | 3499.98MHz | 650000 | 656000 | 662000 | 0.0 | MPR | Tune-up Limit | |
| | | | 21.61 | | 3750 MHz | 3840 MHz | 3930 MHz | | | | |
| 80 MHz | 1 | 1 | 632668 | 633332 | 634000 | 649334 | 656000 | 662666 | 0.0 | MPR | |
| | | | 3490.02 MHz | 3499.98MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | | | |
| 60 MHz | 1 | 1 | 21.63 | 21.54 | 21.42 | 18.69 | 17.77 | 16.86 | 0.0 | MPR | |
| | | | 632000 | 633332 | 634666 | 648668 | 656000 | 663332 | | | |
| 40 MHz | 1 | 1 | 3480 MHz | 3499.98MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | 0.0 | MPR | |
| | | | 21.57 | 21.40 | 21.14 | 18.58 | 17.50 | 16.42 | | | |
| 30 MHz | 1 | 1 | 631334 | 633332 | 635332 | 648000 | 656000 | 664000 | 0.0 | MPR | |
| | | | 3470.01 MHz | 3499.98MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | | |
| 20 MHz | 1 | 1 | 21.61 | 21.35 | 20.91 | 18.77 | 17.78 | 18.46 | 0.0 | MPR | |
| | | | 631000 | 633332 | 635668 | 647668 | 656000 | 664332 | | | |
| | | | 3465 MHz | 3499.98MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | 0.0 | MPR | |
| | | | 21.81 | 20.96 | 21.28 | 18.73 | 17.61 | 18.13 | | | |
| | | | 630668 | 633332 | 636000 | 647334 | 656000 | 664666 | 0.0 | MPR | |
| | | | 3460.02 MHz | 3499.98MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | | |
| | | | 21.38 | 21.32 | 20.62 | 19.10 | 17.78 | 18.35 | 0.0 | | |

NR Band n77(PC2)(SRS3)

| BW (MHz) | RB Allocation | RB offset | Maximum Average Power (dBm) | | | | | | | MPR | Tune-up Limit |
|----------|---------------|-----------|-----------------------------|------------|-------------|-------------|----------|-------------|-----|---------------|---------------|
| | | | SRS3 PC2 | | | | | | | | |
| | | | Measured Pwr (dBm) | | | | | | | | |
| 100 MHz | 1 | 1 | 633332 | 3499.98MHz | 650000 | 656000 | 662000 | 0.0 | MPR | Tune-up Limit | |
| | | | 21.99 | | 3750 MHz | 3840 MHz | 3930 MHz | | | | |
| 80 MHz | 1 | 1 | 632668 | 633332 | 634000 | 649334 | 656000 | 662666 | 0.0 | MPR | |
| | | | 3490.02 MHz | 3499.98MHz | 3510 MHz | 3740.01 MHz | 3840 MHz | 3939.99 MHz | | | |
| 60 MHz | 1 | 1 | 22.19 | 21.68 | 21.69 | 19.99 | 18.37 | 18.06 | 0.0 | MPR | |
| | | | 632000 | 633332 | 634666 | 648668 | 656000 | 663332 | | | |
| 40 MHz | 1 | 1 | 3480 MHz | 3499.98MHz | 3519.99 MHz | 3730.02 MHz | 3840 MHz | 3949.98 MHz | 0.0 | MPR | |
| | | | 21.95 | 21.80 | 21.72 | 20.22 | 18.58 | 18.33 | | | |
| 30 MHz | 1 | 1 | 631334 | 633332 | 635332 | 648000 | 656000 | 664000 | 0.0 | MPR | |
| | | | 3470.01 MHz | 3499.98MHz | 3529.98 MHz | 3720.02 MHz | 3840 MHz | 3960 MHz | | | |
| 20 MHz | 1 | 1 | 22.21 | 21.98 | 21.73 | 20.63 | 18.86 | 19.84 | 0.0 | MPR | |
| | | | 631000 | 633332 | 635668 | 647668 | 656000 | 664332 | | | |
| | | | 3465 MHz | 3499.98MHz | 3535.02 MHz | 3715.02 MHz | 3840 MHz | 3964.98 MHz | 0.0 | MPR | |
| | | | 22.17 | 22.03 | 21.69 | 20.64 | 18.80 | 19.78 | | | |
| | | | 630668 | 633332 | 636000 | 647334 | 656000 | 664666 | 0.0 | MPR | |
| | | | 3460.02 MHz | 3499.98MHz | 3540 MHz | 3710.01 MHz | 3840 MHz | 3969.99 MHz | | | |
| | | | 22.30 | 21.87 | 21.58 | 20.61 | 18.83 | 20.51 | 0.0 | | |

NR Band n77(PC2)(3450 - 3550 MHz)

| FCC Part 27 | | | | | | | | |
|------------------|-----------------------|-----------------|--------------|--------------|---------------|----------|--------------|---------------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Modulation | Mode | Conducted | | Radiated | |
| | | | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3499.98 | 100 | DFT-s OFDM | $\pi/2$ BPSK | 26.35 | 431.52 | | |
| | | | | QPSK | 26.45 | 441.57 | 28.51 | 709.58 |
| | | | | 16QAM | 25.41 | 347.54 | 26.46 | 442.59 |
| | | | | 64QAM | 23.61 | 229.61 | | |
| | | | | 256QAM | 21.61 | 144.88 | | |
| | CP-OFDM | QPSK | 24.81 | 302.69 | | | | |
| | 3490.02 - 3510.0 | 80 | DFT-s OFDM | $\pi/2$ BPSK | 26.40 | 436.52 | | |
| | | | | QPSK | 26.58 | 454.99 | 28.68 | 737.90 |
| | | | | 16QAM | 25.41 | 347.54 | 26.59 | 456.04 |
| | | | | 64QAM | 23.94 | 247.74 | | |
| | | | | 256QAM | 21.46 | 139.96 | | |
| | CP-OFDM | QPSK | 24.91 | 309.74 | | | | |
| | 3480 - 3519.99 | 60 | DFT-s OFDM | $\pi/2$ BPSK | 26.61 | 458.14 | | |
| | | | | QPSK | 26.68 | 465.59 | 28.98 | 790.68 |
| | | | | 16QAM | 25.38 | 345.14 | 27.77 | 598.41 |
| | | | | 64QAM | 25.46 | 351.56 | | |
| | | | | 256QAM | 25.72 | 373.25 | | |
| | CP-OFDM | QPSK | 25.72 | 373.25 | | | | |
| | 3470.01 - 3529.98 | 40 | DFT-s OFDM | $\pi/2$ BPSK | 26.08 | 405.51 | | |
| | | | | QPSK | 26.03 | 400.87 | 28.57 | 719.45 |
| | | | | 16QAM | 25.17 | 328.85 | 26.43 | 439.54 |
| | | | | 64QAM | 23.72 | 235.50 | | |
| | | | | 256QAM | 21.33 | 135.83 | | |
| | CP-OFDM | QPSK | 24.52 | 283.14 | | | | |
| | 3465.0 - 3535.02 | 30 | DFT-s OFDM | $\pi/2$ BPSK | 26.87 | 486.41 | | |
| | | | | QPSK | 26.83 | 481.95 | 28.54 | 714.50 |
| | | | | 16QAM | 25.69 | 370.68 | 28.96 | 787.05 |
| | | | | 64QAM | 24.33 | 271.02 | | |
| | | | | 256QAM | 22.37 | 172.58 | | |
| | CP-OFDM | QPSK | 25.26 | 335.74 | | | | |
| 3460.02 - 3540.0 | 20 | DFT-s OFDM | $\pi/2$ BPSK | 26.85 | 484.17 | | | |
| | | | QPSK | 26.88 | 487.53 | 28.50 | 707.95 | |
| | | | 16QAM | 26.03 | 400.87 | 27.63 | 579.43 | |
| | | | 64QAM | 24.59 | 287.74 | | | |
| | | | 256QAM | 22.36 | 172.19 | | | |
| CP-OFDM | QPSK | 25.51 | 355.63 | | | | | |

NR Band n77(PC2)(3450 - 3550 MHz, SRS1)

| FCC Part 27 | | | | | | |
|-------------|-----------------------|-----------------|-----------|----------|-----------|----------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Conducted | | Radiated | |
| | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3499.98 | 100 | 21.60 | 144.54 | | |
| | 3490.02 - 3510.0 | 80 | 22.10 | 162.18 | | |
| | 3480 - 3519.99 | 60 | 22.22 | 166.72 | | |
| | 3470.01 - 3529.98 | 40 | 22.30 | 169.82 | | |
| | 3465.0 - 3535.02 | 30 | 22.44 | 175.39 | | |
| | 3460.02 - 3540.0 | 20 | 22.71 | 186.64 | 22.41 | 174.18 |

NR Band n77(PC2)(3450 - 3550 MHz, SRS2)

| FCC Part 27 | | | | | | |
|-------------|-----------------------|-----------------|-----------|----------|-----------|----------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Conducted | | Radiated | |
| | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3499.98 | 100 | 21.61 | 144.88 | | |
| | 3490.02 - 3510.0 | 80 | 21.63 | 145.55 | | |
| | 3480 - 3519.99 | 60 | 21.57 | 143.55 | | |
| | 3470.01 - 3529.98 | 40 | 21.61 | 144.88 | | |
| | 3465.0 - 3535.02 | 30 | 21.81 | 151.71 | 14.67 | 29.31 |
| | 3460.02 - 3540.0 | 20 | 21.38 | 137.40 | | |

NR Band n77(PC2)(3450 - 3550 MHz, SRS3)

| FCC Part 27 | | | | | | |
|-------------|-----------------------|-----------------|-----------|----------|-----------|----------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Conducted | | Radiated | |
| | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3499.98 | 100 | 21.99 | 158.12 | | |
| | 3490.02 - 3510.0 | 80 | 22.19 | 165.58 | | |
| | 3480 - 3519.99 | 60 | 21.95 | 156.68 | | |
| | 3470.01 - 3529.98 | 40 | 22.21 | 166.34 | | |
| | 3465.0 - 3535.02 | 30 | 22.17 | 164.82 | | |
| | 3460.02 - 3540.0 | 20 | 22.30 | 169.82 | 22.25 | 167.88 |

NR Band n77(PC2)(3700 - 3980 MHz)

| FCC Part 27 | | | | | | | | |
|-------------------|-----------------------|-----------------|--------------|--------------|--------------|---------------|--------------|---------------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Modulation | Mode | Conducted | | Radiated | |
| | | | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3750.0 - 3930.0 | 100 | DFT-s OFDM | $\pi/2$ BPSK | 26.42 | 438.53 | | |
| | | | | QPSK | 26.53 | 449.78 | 28.14 | 651.63 |
| | | | | 16QAM | 25.20 | 331.13 | 27.23 | 528.45 |
| | | | | 64QAM | 23.75 | 237.14 | | |
| | | | | 256QAM | 21.10 | 128.82 | | |
| | CP-OFDM | QPSK | 24.42 | 276.69 | | | | |
| | 3740.01 - 3939.99 | 80 | DFT-s OFDM | $\pi/2$ BPSK | 26.77 | 475.34 | | |
| | | | | QPSK | 26.67 | 464.52 | 28.50 | 707.95 |
| | | | | 16QAM | 25.27 | 336.51 | 28.13 | 650.13 |
| | | | | 64QAM | 23.75 | 237.14 | | |
| | | | | 256QAM | 21.27 | 133.97 | | |
| | CP-OFDM | QPSK | 24.71 | 295.80 | | | | |
| | 3730.02 - 3949.98 | 60 | DFT-s OFDM | $\pi/2$ BPSK | 26.66 | 463.45 | | |
| | | | | QPSK | 26.88 | 487.53 | 28.88 | 772.68 |
| | | | | 16QAM | 25.72 | 373.25 | 27.94 | 622.30 |
| | | | | 64QAM | 25.25 | 334.97 | | |
| | | | | 256QAM | 25.34 | 341.98 | | |
| | CP-OFDM | QPSK | 25.34 | 341.98 | | | | |
| | 3720.02 - 3960.0 | 40 | DFT-s OFDM | $\pi/2$ BPSK | 25.99 | 397.19 | | |
| | | | | QPSK | 25.98 | 396.28 | 28.44 | 698.23 |
| | | | | 16QAM | 24.88 | 307.61 | 27.56 | 570.16 |
| | | | | 64QAM | 23.45 | 221.31 | | |
| | | | | 256QAM | 21.21 | 132.13 | | |
| | CP-OFDM | QPSK | 24.31 | 269.77 | | | | |
| | 3715.02 - 3964.98 | 30 | DFT-s OFDM | $\pi/2$ BPSK | 26.02 | 399.94 | | |
| | | | | QPSK | 26.14 | 411.15 | 28.49 | 706.32 |
| | | | | 16QAM | 25.01 | 316.96 | 27.81 | 603.95 |
| | | | | 64QAM | 23.27 | 212.32 | | |
| | | | | 256QAM | 20.97 | 125.03 | | |
| | CP-OFDM | QPSK | 24.10 | 257.04 | | | | |
| 3710.01 - 3969.99 | 20 | DFT-s OFDM | $\pi/2$ BPSK | 26.53 | 449.78 | | | |
| | | | QPSK | 26.54 | 450.82 | 27.24 | 529.66 | |
| | | | 16QAM | 25.21 | 331.89 | 26.64 | 461.32 | |
| | | | 64QAM | 23.99 | 250.61 | | | |
| | | | 256QAM | 21.82 | 152.05 | | | |
| CP-OFDM | QPSK | 24.94 | 311.89 | | | | | |

NR Band n77(PC2)(3700 - 3980 MHz, SRS1)

| FCC Part 27 | | | | | | |
|-------------|-----------------------|-----------------|-----------|----------|-----------|----------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Conducted | | Radiated | |
| | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3750.0 - 3930.0 | 100 | 19.73 | 93.97 | | |
| | 3740.01 - 3939.99 | 80 | 19.98 | 99.54 | | |
| | 3730.02 - 3950.0 | 60 | 20.17 | 103.99 | | |
| | 3720.02 - 3960.0 | 40 | 20.37 | 108.89 | | |
| | 3715.02 - 3964.98 | 30 | 20.45 | 110.92 | | |
| | 3710.01 - 3969.99 | 20 | 20.75 | 118.85 | 20.34 | 108.14 |

NR Band n77(PC2)(3700 - 3980 MHz, SRS2)

| FCC Part 27 | | | | | | |
|-------------|-----------------------|-----------------|-----------|----------|-----------|----------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Conducted | | Radiated | |
| | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3750.0 - 3930.0 | 100 | 19.08 | 80.91 | | |
| | 3740.01 - 3939.99 | 80 | 18.69 | 73.96 | | |
| | 3730.02 - 3950.0 | 60 | 18.58 | 72.11 | | |
| | 3720.02 - 3960.0 | 40 | 18.77 | 75.34 | | |
| | 3715.02 - 3964.98 | 30 | 18.73 | 74.64 | | |
| | 3710.01 - 3969.99 | 20 | 19.10 | 81.28 | 13.98 | 25.00 |

NR Band n77(PC2)(3700 - 3980 MHz, SRS3)

| FCC Part 27 | | | | | | |
|-------------|-----------------------|-----------------|-----------|----------|-----------|----------|
| Band | Frequency Range [MHz] | BandWidth [MHz] | Conducted | | Radiated | |
| | | | Avg [dBm] | Avg [mW] | Avg [dBm] | Avg [mW] |
| n77 | 3750.0 - 3930.0 | 100 | 19.97 | 99.31 | | |
| | 3740.01 - 3939.99 | 80 | 19.99 | 99.77 | | |
| | 3730.02 - 3950.0 | 60 | 20.22 | 105.20 | | |
| | 3720.02 - 3960.0 | 40 | 20.63 | 115.61 | | |
| | 3715.02 - 3964.98 | 30 | 20.64 | 115.88 | 20.16 | 103.75 |
| | 3710.01 - 3969.99 | 20 | 20.61 | 115.08 | | |

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a internal antenna for the supported bands with a maximum peak gain as follow:

| Frequency (MHz) | Peak Gain (dBi) |
|---|-----------------|
| NR Band 77(PC2)(Lower) 3450 - 3550 MHz | 1.70 |
| NR Band 77(PC2)(Lower, SRS1) 3450 - 3550 MHz | 0.10 |
| NR Band 77(PC2)(Lower, SRS2) 3450 - 3550 MHz | -10.30 |
| NR Band 77(PC2)(Lower, SRS3) 3450 - 3550 MHz | 1.70 |
| NR Band 77(PC2)(Upper) 3700 - 3980 MHz | 1.30 |
| NR Band 77(PC2)(Upper, SRS1) 3700 - 3980 MHz | 2.30 |
| NR Band 77(PC2)(Upper, SRS2) 3700 - 3980 MHz | -10.30 |
| NR Band 77(PC2)(Upper, SRS3) 3700 - 3980 MHz | 1.40 |

5.4. WORST-CASE ORIENTATION

Following modes should be considered as worst-case scenario for all other measurements.

For all 5G NR Bands, the worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on $\pi/2$ BPSK, QPSK, 16QAM, 64QAM and 256QAM modulations. It was found that QPSK and 16QAM results were worst case.

SA modes was tested and worst case is reported.

All testing was performed using QPSK and 16QAM modulations to represent the worst case. However, the out of band emissions and spurious radiation were only performed on bandwidth and RB offset(with RB size 1) with the highest conducted power in QPSK

This device supports SRS (sounding reference signal) 1, 2, 3 mode for NR TDD bands. For each SRS 1, 2 and 3, Conducted power and radiated measurement were performed through FTM mode provide by the customer.

NR Band 77(PC3)

NR Band 77(PC3, Frequency range : 3450-3550 MHz, 3700-3980 MHz) is covered by NR Band 77(PC2, Frequency range : 3450-3550 MHz, 3700-3980 MHz) due to same frequency range, same channel bandwidth and maximum tune-up limit is higher than NR Band 77(PC3).

| Highest power setting for each bands | | | | |
|--------------------------------------|-----------------|-----------------|---------|-----------|
| NR Band | Frequency (MHz) | Bandwidth (MHz) | RB size | RB offset |
| 77(PC2) (3450-3550 MHz) | 3480.00 | 60 | 1 | 1 |
| | 3499.98 | | 1 | 1 |
| | 3519.99 | | 1 | 1 |
| 77(PC2) (3700-3980 MHz) | 3715.02 | 30 | 1 | 39 |
| | 3840.00 | | 1 | 1 |
| | 3964.98 | | 1 | 76 |

For LTE anchor, the band with highest output power was chosen among the possible combinations with NR Bands.

| NR Band | LTE Band |
|-------------------------|------------------------------|
| 77(PC2) (3450-3550 MHz) | 2, <u>5</u> , 12, 13, 14, 66 |
| 77(PC2) (3700-3980 MHz) | 2, <u>5</u> , 12, 13, 14, 66 |

The fundamental and radiated spurious emission were investigated in three orthogonal orientations X, Y and Z, it was determined that below orientation was worst-case orientation for each band.

| Band | EIRP | | | RSE | | |
|--|------|---|---|-----|---|---|
| | X | Y | Z | X | Y | Z |
| NR n77(PC2) (3450 - 3550 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (SRS1) (3450 - 3550 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (SRS2) (3450 - 3550 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (SRS3) (3450 - 3550 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (3700 - 3980 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (SRS1) (3700 - 3980 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (SRS2) (3700 - 3980 MHz) | O | - | - | O | - | - |
| NR n77(PC2) (SRS3) (3700 - 3980 MHz) | - | O | - | - | O | - |

Note : For EIRP testing, the EUT didn't attached with travel adapter. But radiated spurious testing, the EUT attached with travel adapter for the worst case condition. The EUT is continuously communicated with the call box during the tests.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| Support Equipment List | | | | |
|------------------------|-------------|-------------|----------------|--------|
| Description | Manufacture | Model | Serial Number | FCC ID |
| Charger | SAMSUNG | EP-TA200 | R37N6K421B2SE3 | N/A |
| Data Cable | SAMSUNG | EP-DT725BWE | GH39-02020A | N/A |
| Charger | SAMSUNG | EP-TA800 | R37N3MAH988DK3 | N/A |
| Data Cable | SAMSUNG | EP-DN980 | GH39-02115A | N/A |
| Earphone | SAMSUNG | GH59-15055A | EHS64AVFWE | N/A |

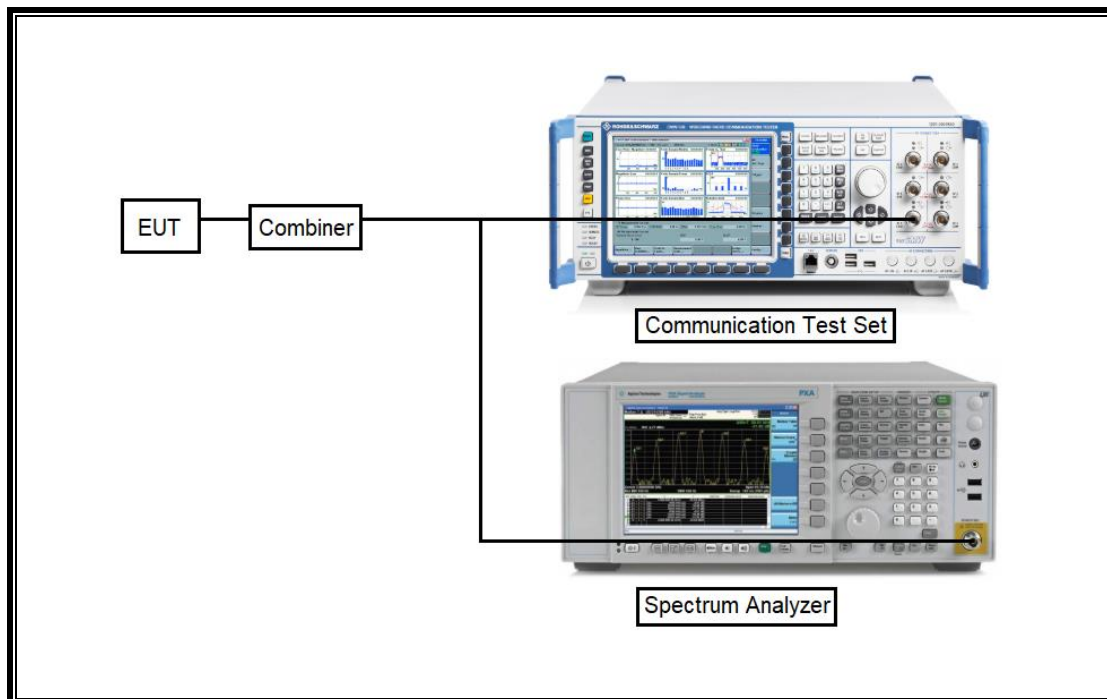
I/O CABLE

| I/O Cable List | | | | | | |
|----------------|----------|----------------------|----------------|------------|------------------|---------|
| Cable No. | Port | # of identical ports | Connector Type | Cable Type | Cable Length (m) | Remarks |
| 1 | DC Power | 1 | A to C Type | Shielded | 1.0 m | N/A |
| 2 | DC Power | 1 | C to C Type | Shielded | 1.0 m | N/A |
| 3 | Audio | 2 | Mini-Jack | Unshielded | 0.7 m | N/A |

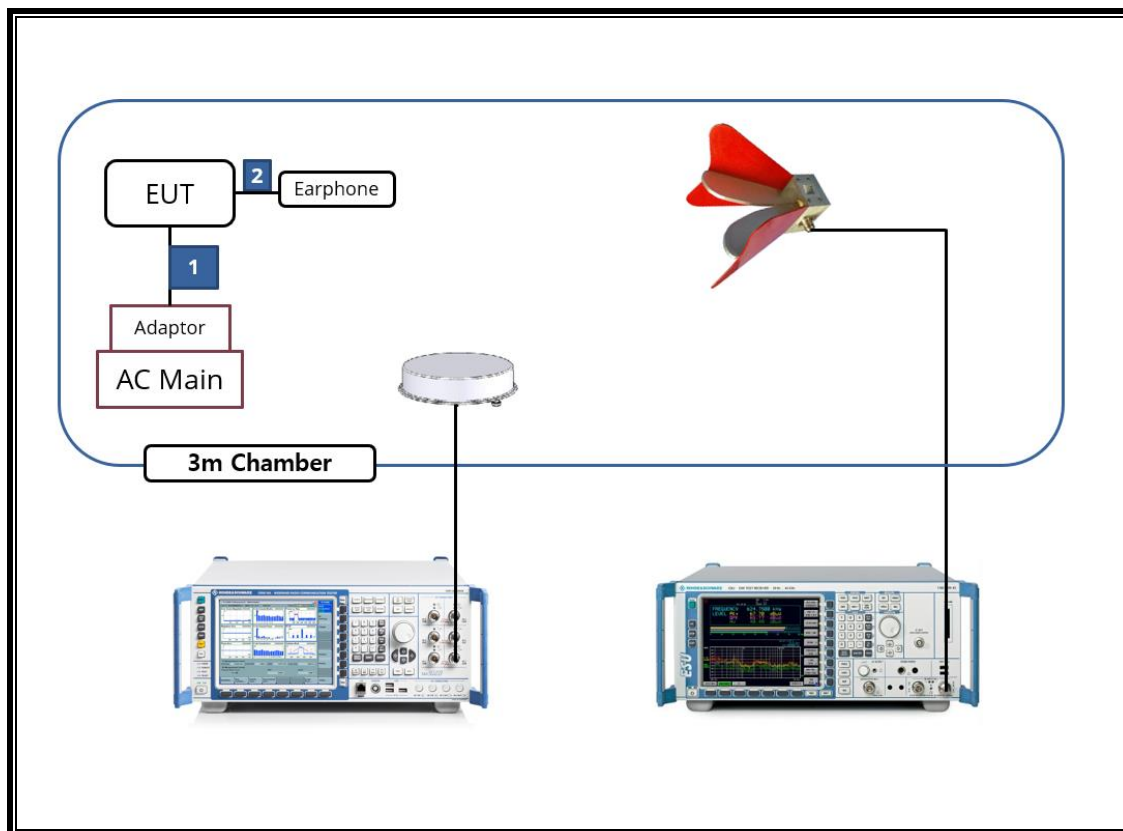
TEST SETUP

The EUT is continuously communicated with the call box during the tests.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| Test Equipment List | | | | |
|--|---------------|------------------------|-------------|------------|
| Description | Manufacturer | Model | S/N | Cal Due |
| Antenna, Tuned Dipole 400~1000 MHz | ETS | 3121D DB4 | 00164753 | 2023-02-08 |
| Directional Antenna | Cobham | FPA3-0.8-6.0R/1329 | 110367-0003 | N/A |
| Directional Antenna | Cobham | FPA3-0.8-6.0R/1329 | 80108-0004 | N/A |
| Antenna, Horn, 40 GHz | ETS | 3116C | 00168645 | 2023-10-13 |
| Preamplifier | ETS | 3116C-PA | 00168841 | 2023-08-04 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 750 | 2022-08-19 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 845 | 2022-08-13 |
| Antenna, Bilog, 30MHz-1GHz | SCHWARZBECK | VULB9163 | 749 | 2022-08-13 |
| Antenna, Horn, 18 GHz | ETS | 3115 | 00161451 | 2022-08-15 |
| Antenna, Horn, 18 GHz | ETS | 3117 | 00168717 | 2022-08-15 |
| Communications Test Set | R&S | CMW500 | 169796 | 2023-01-07 |
| DC Power Supply | Agilent / HP | E3640A | MY54226395 | 2023-08-02 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 341282 | 2023-08-02 |
| Preamplifier, 1000 MHz | Sonoma | 310N | 351741 | 2023-08-02 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 1876511 | 2023-08-02 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 2029168 | 2023-08-01 |
| Preamplifier, 18 GHz | Miteq | AFS42-00101800-25-S-42 | 1896138 | 2023-08-01 |
| Spectrum Analyzer, 44 GHz | Agilent / HP | N9030A | MY54170614 | 2023-08-03 |
| Spectrum Analyzer, 44 GHz | Agilent / HP | N9030A | MY54490312 | 2023-08-01 |
| EMI Test Receive, 40 GHz | R&S | ESU40 | 100439 | 2023-08-02 |
| EMI Test Receive, 40 GHz | R&S | ESU40 | 100457 | 2023-07-29 |
| High Pass Filter 1.2GHz | Micro-Tronics | HPM50108-02 | G005 | 2023-08-01 |
| High Pass Filter 1.2GHz | Micro-Tronics | HPM50108-02 | G006 | 2023-08-01 |
| High Pass Filter 2.8GHz | Micro-Tronics | HPM50111-02 | 010 | 2023-08-01 |
| High Pass Filter 2.8GHz | Micro-Tronics | HPM50111-02 | 011 | 2023-08-01 |
| High Pass Filter 4GHz | Micro-Tronics | HPM50118-02 | G001 | 2023-08-02 |
| High Pass Filter 4GHz | Micro-Tronics | HPM50118-02 | G002 | 2023-08-01 |
| Attenuator | PASTERNAK | PE7087-10 | A009 | 2023-08-03 |
| Attenuator | PASTERNAK | PE7087-10 | A001 | 2023-08-03 |
| Attenuator | PASTERNAK | PE7087-10 | A008 | 2023-08-03 |
| Attenuator | PASTERNAK | PE7004-10 | 2 | 2023-08-01 |
| Attenuator | PASTERNAK | PE7395-10 | A011 | 2023-08-03 |
| Antenna, Loop, 9kHz-30MHz | R&S | HFH2-Z2 | 100418 | 2023-10-06 |
| Temperature Chamber | ESPEC | SH-642 | 93001109 | 2023-08-01 |
| Power Splitter | MINI-CIRCUITS | WA1534 | UL003 | 2023-01-11 |
| Power Splitter | MINI-CIRCUITS | WA1534 | UL004 | 2023-01-11 |
| UXM5G Wireless Test Platform | KEYSIGHT | E7515B | MY58120110 | 2023-01-07 |
| UL Software | | | | |
| Description | Manufacturer | Model | Version | |
| Antenna port test software | UL | CLT | Ver 3.4 | |
| Radiated software | UL | UL EMC | Ver 9.5 | |
| Antenna port test software (5G NR FR1) | UL | UL iM | Ver 1.06 | |

7. SUMMARY TABLE

| FCC Part Section | Test Description | Test Limit | Test Condition | Test Result |
|----------------------------|---|------------|----------------|-------------|
| 2.1049 | Occupied Band width (99%) | N/A | Conducted | Pass |
| 27.53(l)(2) 27.53(n)(2) | Band Edge / Conducted Spurious Emission | -13dBm | | Pass |
| 2.1046 | Conducted output power | N/A | | Pass |
| 27.54 | Frequency Stability | 2.5PPM | | Pass |
| 27.50(j)(3) 27.50(k)(3) | Equivalent Isotropic Radiated Power | 30dBm | Radiated | Pass |
| 27.53(l)(2) 27.53(n)(2) | Radiated Spurious Emission | -13dBm | | Pass |

8. LIMITS AND CONDUCTED RESULTS

8.1. PEAK TO AVERAGE RATIO

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to a E7515B Test Set and configured to operate at maximum power. The PAR were measured on the Spectrum Analyzer.

Test Spec

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

NOTE

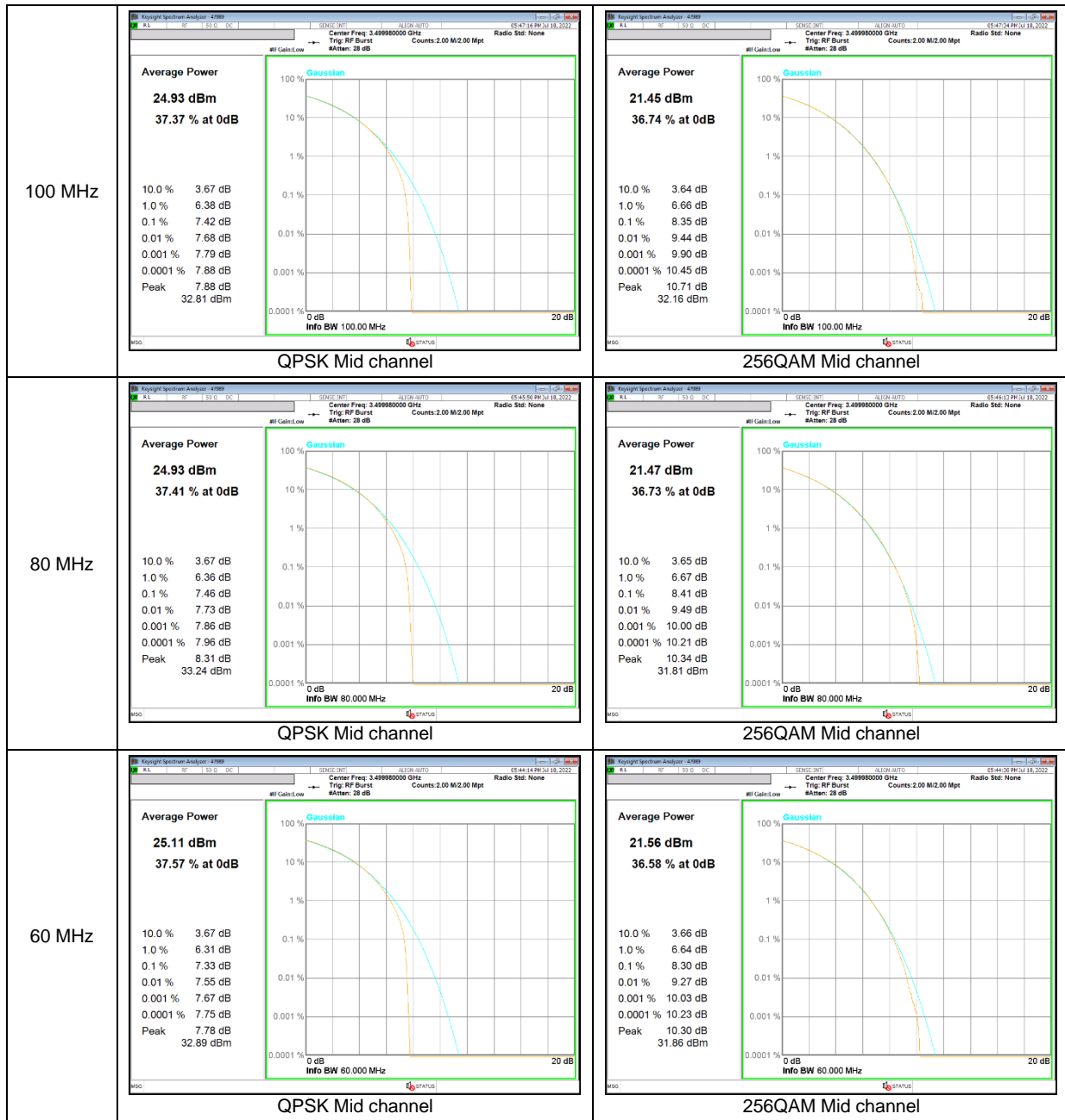
5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations ($\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

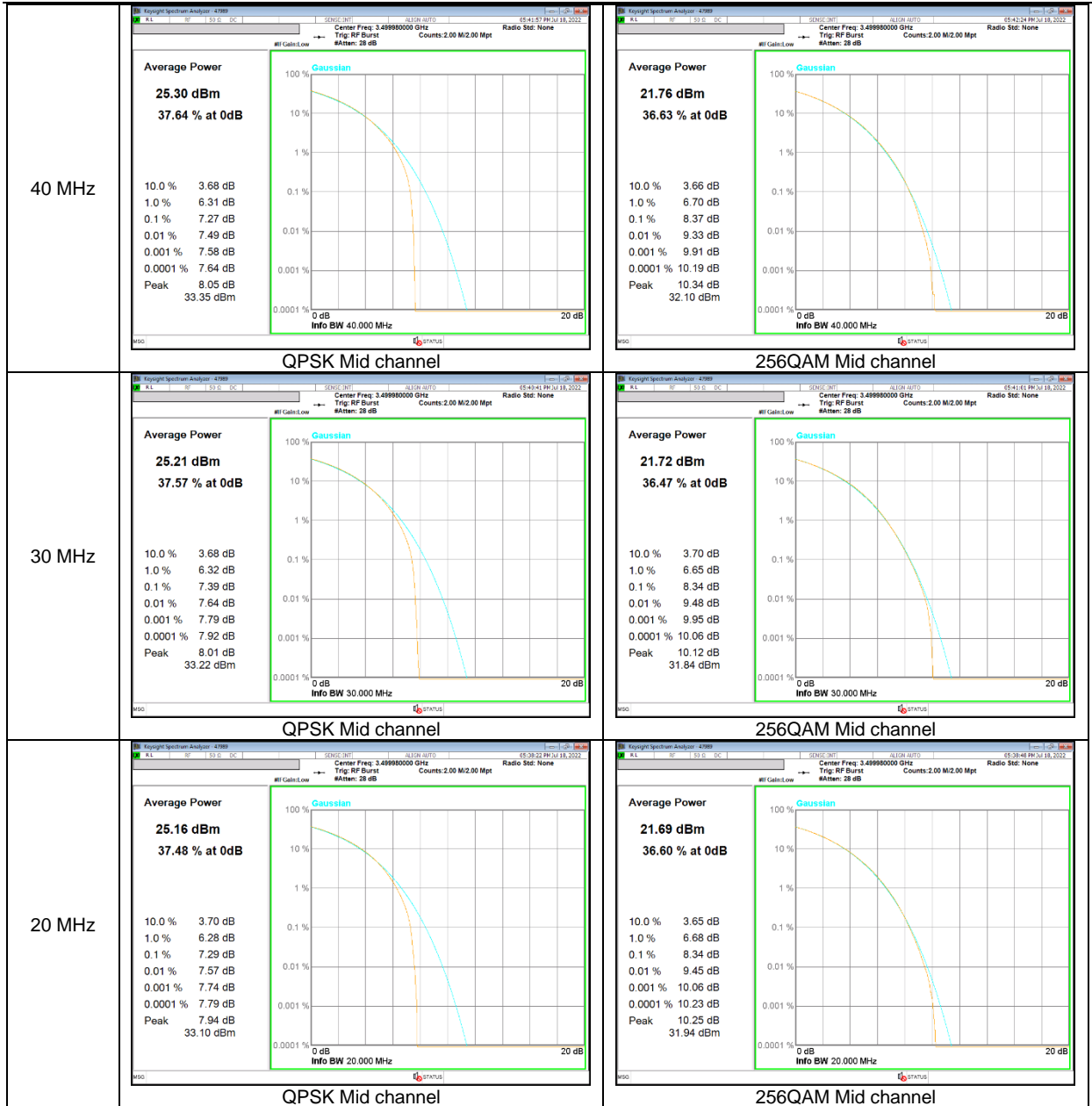
RESULTS

See the following pages.

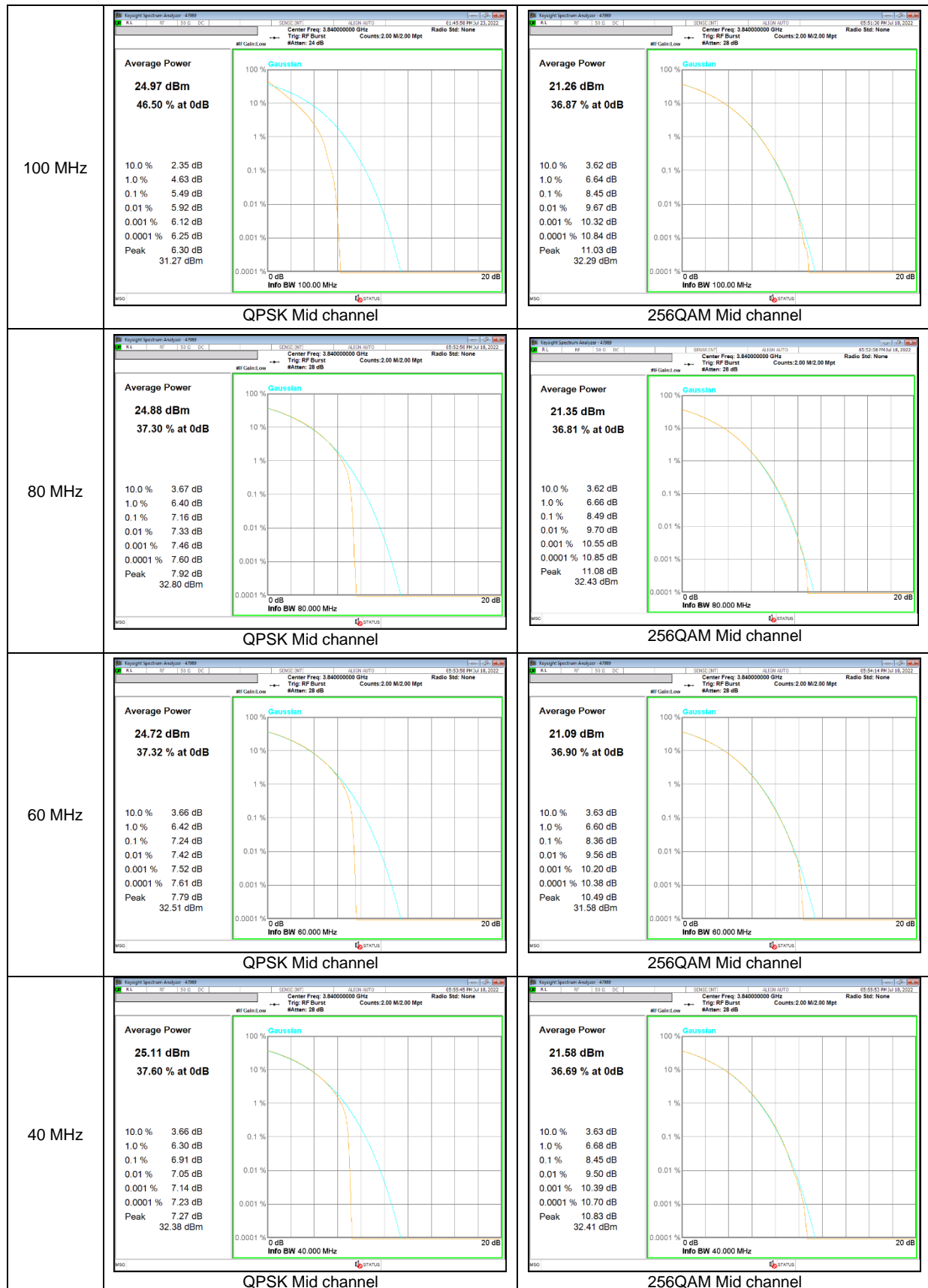
8.1.1. CONDUCTED PEAK TO AVERAGE RESULT

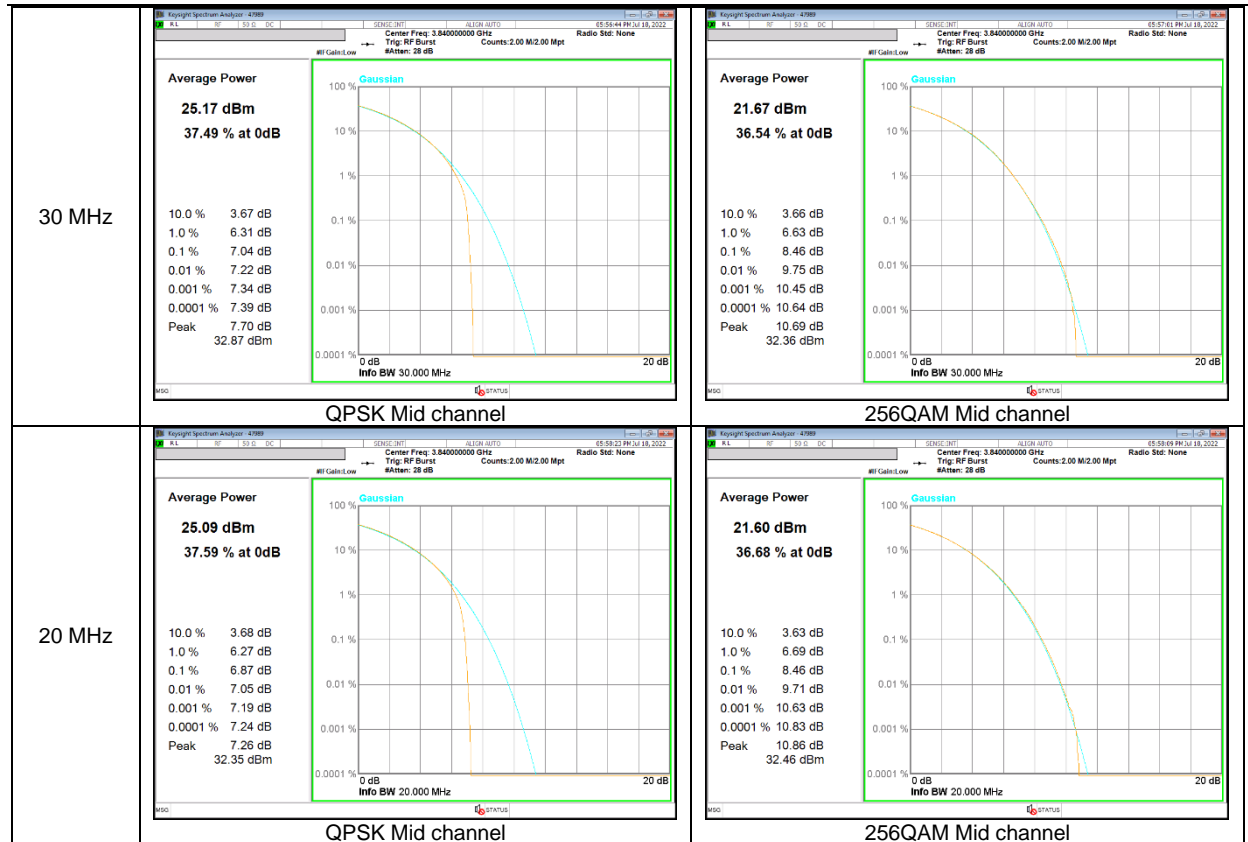
NR Band n77(PC2) CP-OFDM (3450 - 3550 MHz)





NR Band n77(PC2) CP-OFDM (3700 - 3980 MHz)





9. LIMITS AND CONDUCTED RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at middle channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v03r01)

RESULTS

See the following pages.

- NR Band n77(PC2) CP-OFDM (3450 - 3550 MHz)

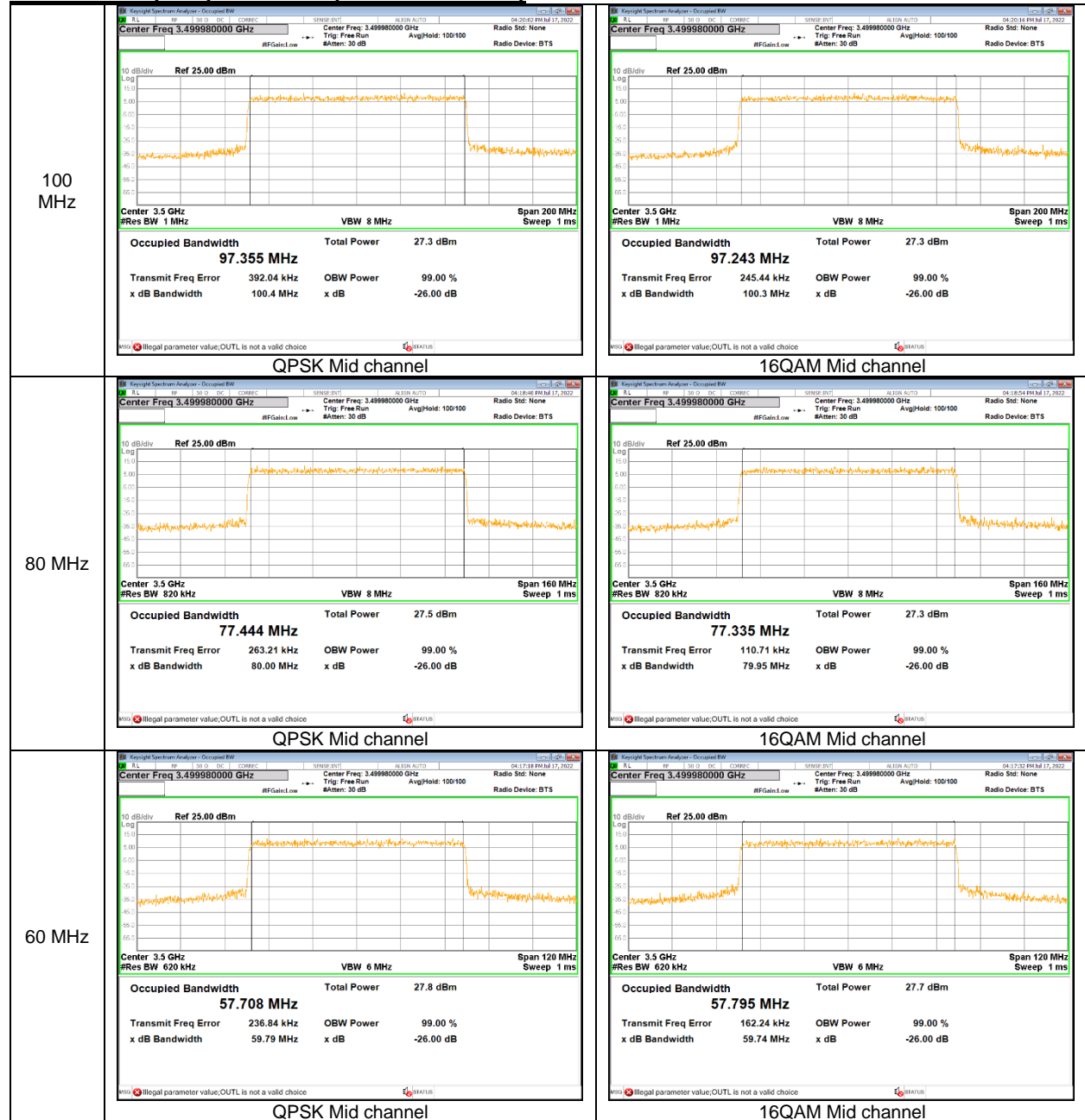
| Band | BW | Modulation | f [MHz] | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|------|------------|---------|--------------|----------------|
| NR n77(PC2) | 100M | QPSK | 3500.0 | 97.355 | 100.4 |
| | | 16QAM | | 97.243 | 100.3 |
| | 80M | QPSK | | 77.444 | 80.00 |
| | | 16QAM | | 77.335 | 79.95 |
| | 60M | QPSK | | 57.708 | 59.79 |
| | | 16QAM | | 57.795 | 59.74 |
| | 40M | QPSK | | 39.790 | 39.02 |
| | | 16QAM | | 37.708 | 39.02 |
| | 30M | QPSK | | 27.880 | 29.25 |
| | | 16QAM | | 27.855 | 28.80 |
| | 20M | QPSK | | 18.256 | 19.37 |
| | | 16QAM | | 18.219 | 19.44 |

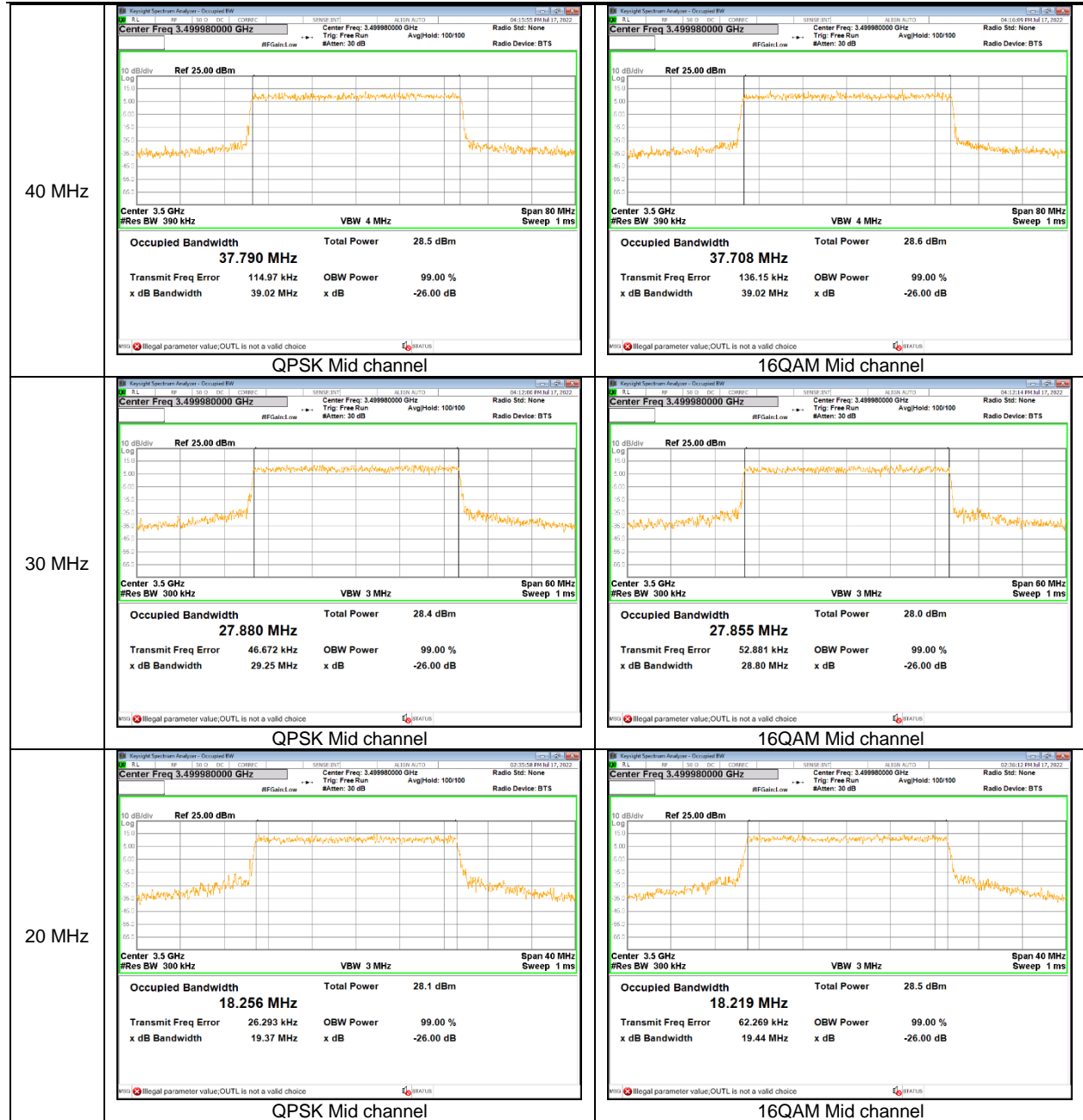
- NR Band n77(PC2) CP-OFDM (3700 - 3980 MHz)

| Band | BW | Modulation | f [MHz] | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|------|------------|---------|--------------|----------------|
| NR n77(PC2) | 100M | QPSK | 3840.0 | 97.265 | 100.4 |
| | | 16QAM | | 97.556 | 100.6 |
| | 80M | QPSK | | 77.452 | 79.85 |
| | | 16QAM | | 77.470 | 79.95 |
| | 60M | QPSK | | 57.824 | 59.70 |
| | | 16QAM | | 57.719 | 59.73 |
| | 40M | QPSK | | 37.868 | 39.32 |
| | | 16QAM | | 37.822 | 39.07 |
| | 30M | QPSK | | 27.767 | 28.77 |
| | | 16QAM | | 27.854 | 28.98 |
| | 20M | QPSK | | 18.230 | 19.37 |
| | | 16QAM | | 18.172 | 19.21 |

9.1.1. OCCUPIED BANDWIDTH RESULTS

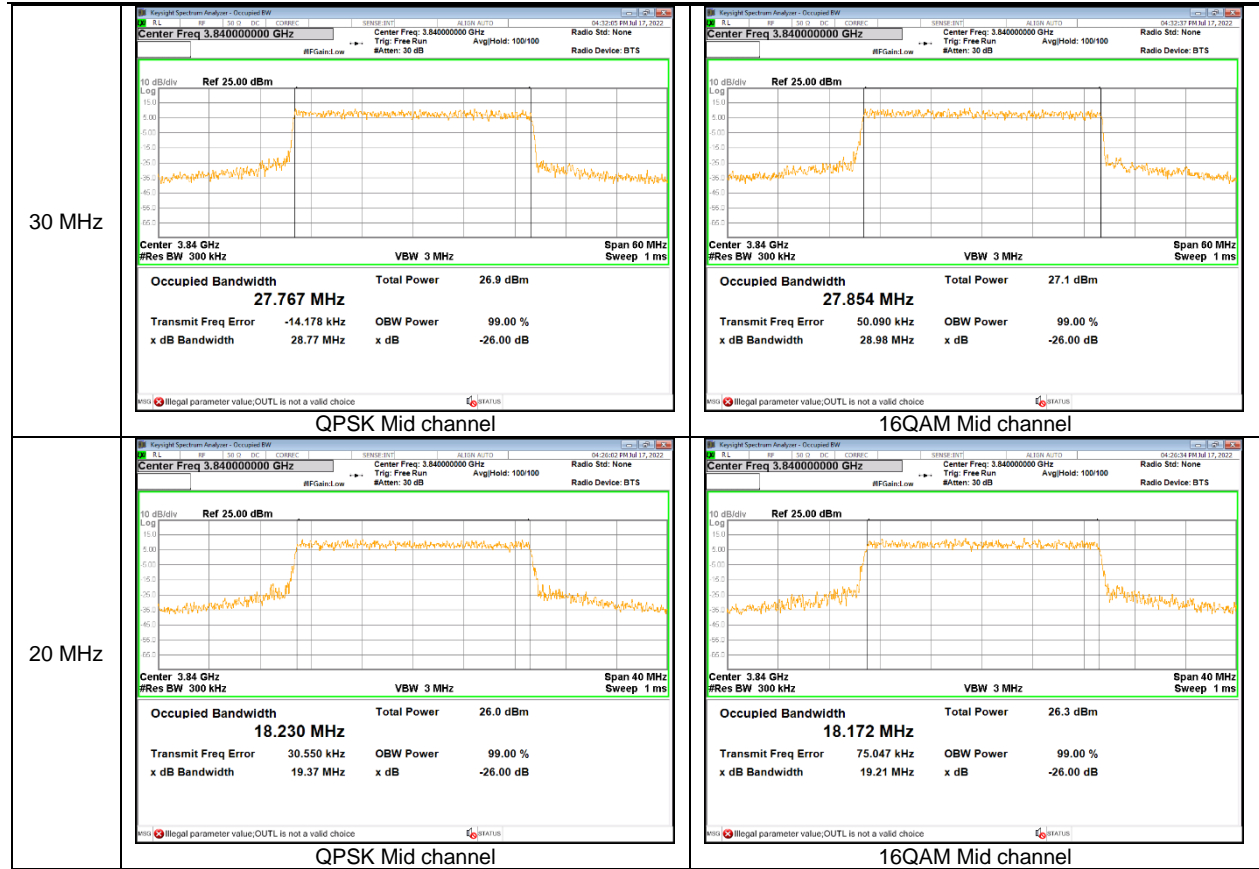
NR Band n77(PC2) CP-OFDM (3450 - 3550 MHz)





NR Band n77(PC2) CP-OFDM (3700 - 3980 MHz)





9.2. BAND EDGE EMISSIONS

RULE PART

FCC: §27. 53

LIMITS

(l)(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

(n)(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01

The transmitter output was connected to a E7515B Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

- a) Set the RBW = 1 - 1.5 % of OBW(Typically limited to a minimum RBW of 1% of the OBW)
- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = Auto;
- e) Detector = RMS;
- f) Ensure that the number of measurement points $\geq 2 \times$ Span/RBW;

NOTE1

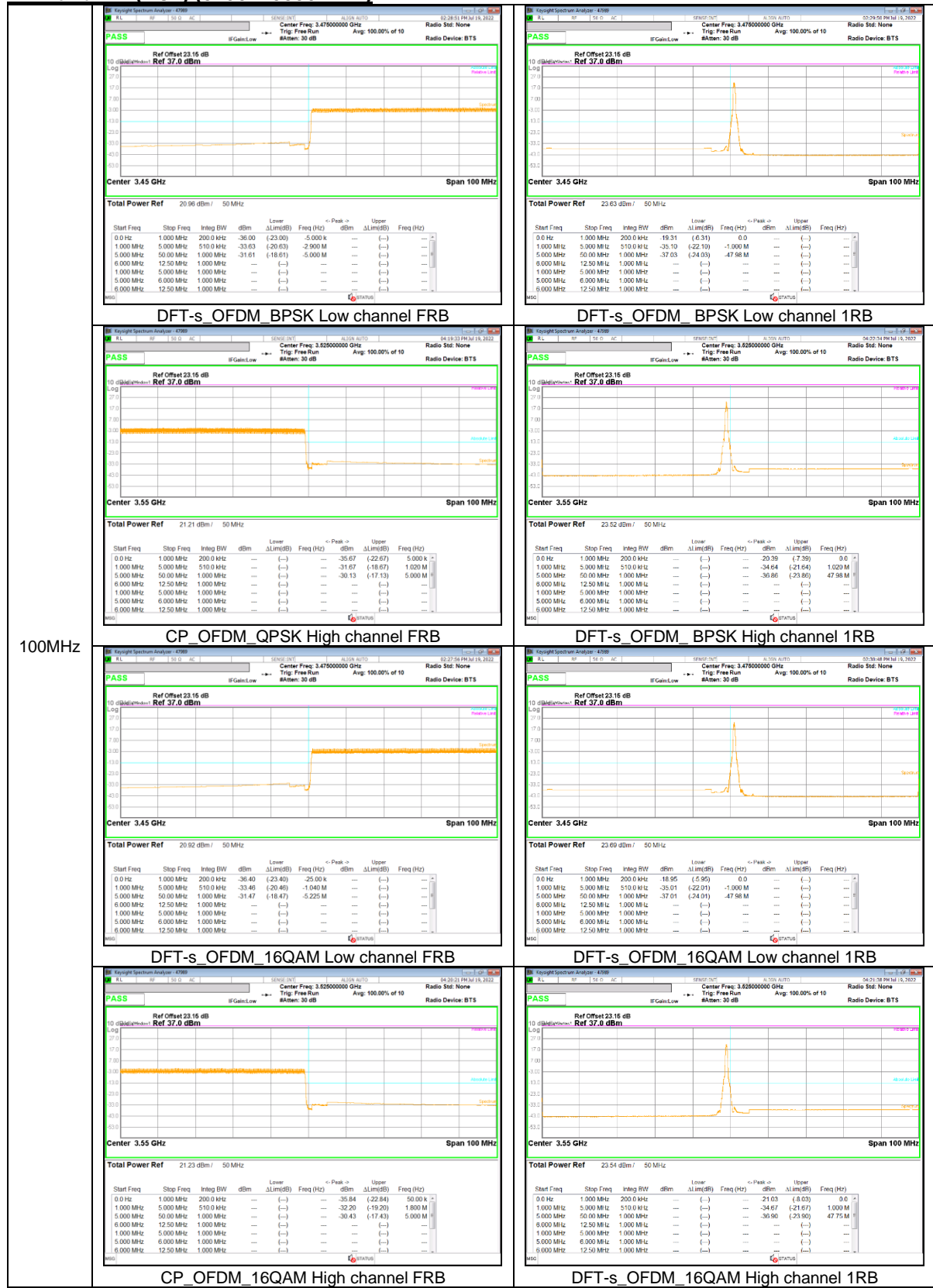
5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations ($\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

RESULTS

See the following pages.

9.2.1. BAND EDGE RESULT

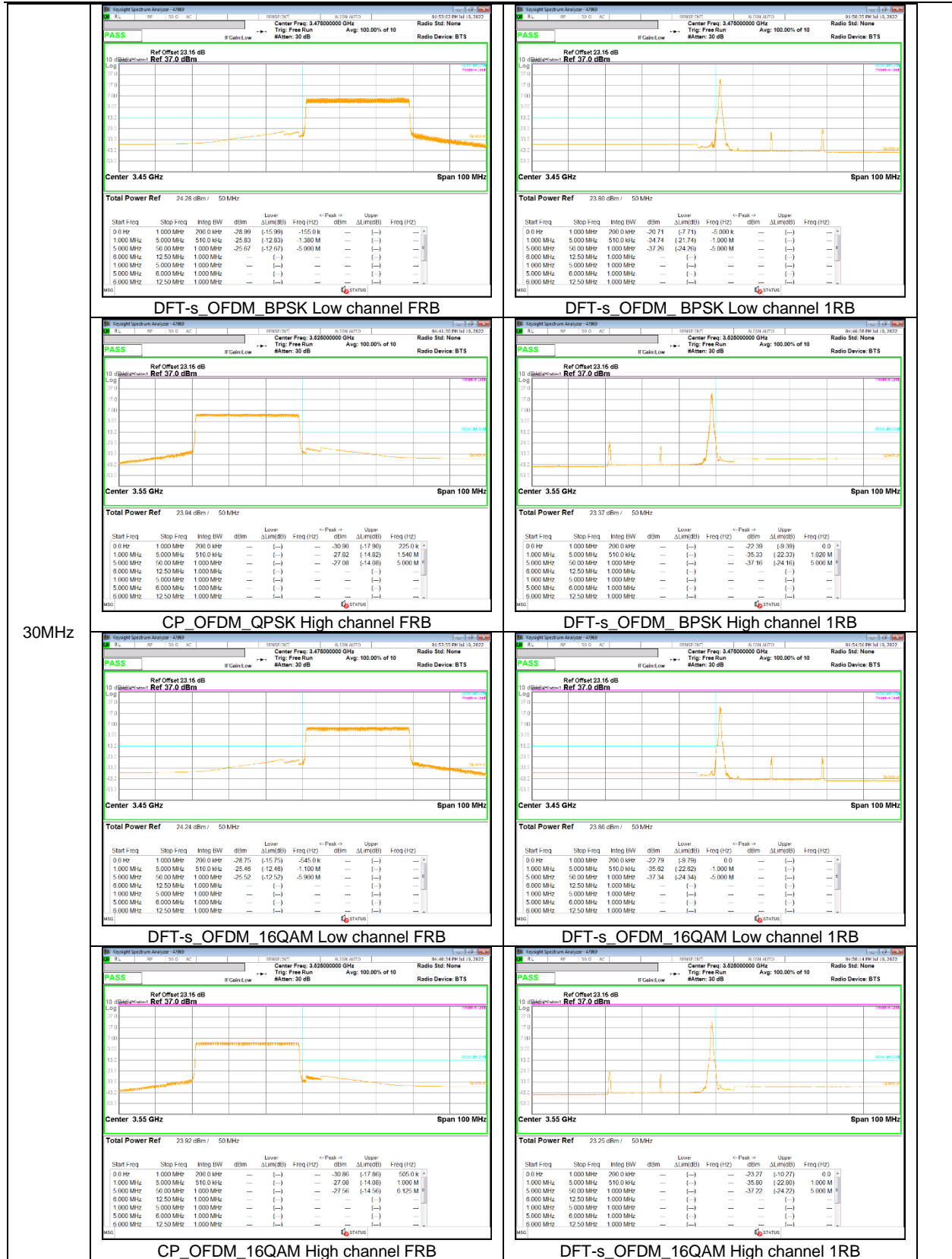
NR Band n77(PC2) (3450 – 3550 MHz)

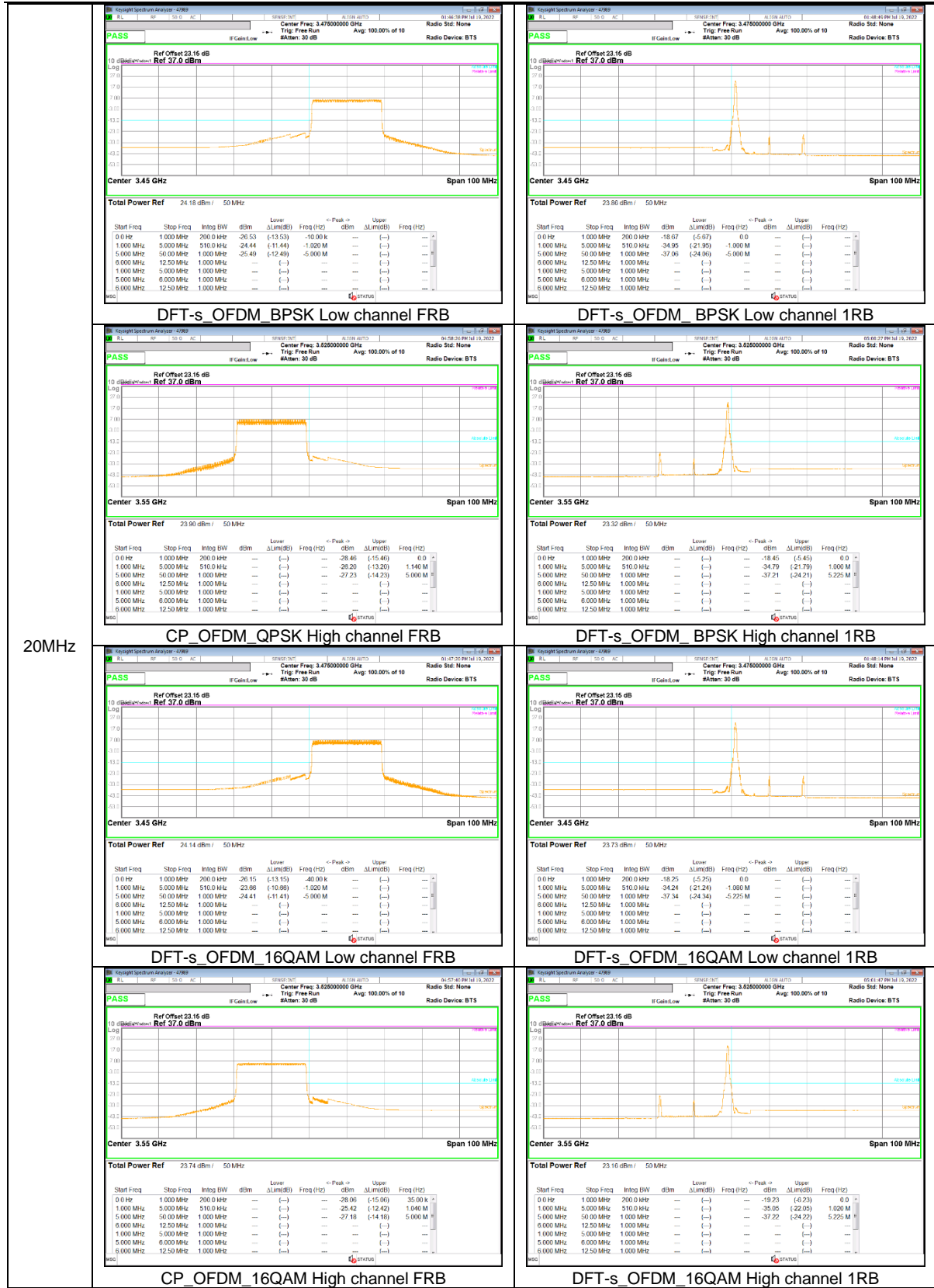












20MHz