

TEST REPORT

FCC Test for MT6407-77A
Class II Permissive Change

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2111-FC092

DATE OF ISSUE
December 10, 2021

Tested by
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MT6407-77A

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Additional Model

-

Applicant**SAMSUNG Electronics Co., Ltd.**

129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

EUT Type

MMU(MT6407)

Model Name

MT6407-77A

FCC ID

A3LMT6407-77A

Date of Test

November 16, 2021~ November 30, 2021

FCC Rule Parts:

CFR 47 Part 2, Part 27

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	December 10, 2021	Initial Release

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr

CONTENTS

1. GENERAL INFORMATION	5
1.1. APPLICANT INFORMATION	5
1.2. PRODUCT INFORMATION	5
1.3. TEST INFORMATION	5
2. FACILITIES AND ACCREDITATIONS	6
2.1. FACILITIES	6
2.2. EQUIPMENT	6
3. TEST SPECIFICATIONS	7
3.1. STANDARDS	7
3.2. ADDITIONAL DESCRIPTIONS ABOUT TEST	8
3.3. MAXIMUM MEASUREMENT UNCERTAINTY	10
3.4. STANDARDS ENVIRONMENTAL TEST CONDITIONS	10
3.5. TEST DIAGRAMS	11
4. TEST EQUIPMENTS	13
5. TEST RESULT	14
5.1. RF OUTPUT POWER and PSD	14
5.2. PAPR	63
5.3. OCCUPIED BANDWIDTH	87
5.4. OUT-OF-BAND UNWANTED EMISSIONS	112
5.5. SPURIOUS UNWANTED EMISSIONS	116
5.6. RADIATED EMISSIONS	123
5.7. FREQUENCY STABILITY	126
6. Annex B_EUT AND TEST SETUP PHOTO	130

1. GENERAL INFORMATION

1.1. APPLICANT INFORMATION

Company Name	Samsung Electronics Co., Ltd.
Company Address	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

1.2. PRODUCT INFORMATION

EUT Type	MMU(MT6407)					
EUT Serial Number	S616C00004					
Power Supply	-48 VDC					
Output Power	Band	Carrier	Bandwidth	Power		
	3.7 GHz Service	1	60 MHz	3.125 W/path, Total: 200 W		
Frequency Range	3.7 GHz Service : 3 700 MHz ~ 3 980 MHz					
Emission Designator	Mode	Bandwidth	Emission Designator			
			QPSK (G7D)	Conducted (W)	16/64/256 QAM (W7D)	Conducted (W)
	3.7 GHz Service	60 MHz	58M2G7D	222.69	58M4W7D	214.85
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM					
Antenna Specification	Antenna type: integrated antenna Peak Gain: 25.5 dBi					

1.3. TEST INFORMATION

FCC Rule Parts	CFR 47 Part 2, Part 27
Measurement standards	ANSI C63.26-2015, KDB 662911 D01 v02r01, KDB 971168 D01 v03r01
Place of Test	HCT CO., LTD. 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

2. FACILITIES AND ACCREDITATIONS

2.1. FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.

The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated April 02, 2018 (Registration Number: KR0032).

2.2. EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

3. TEST SPECIFICATIONS

3.1. STANDARDS

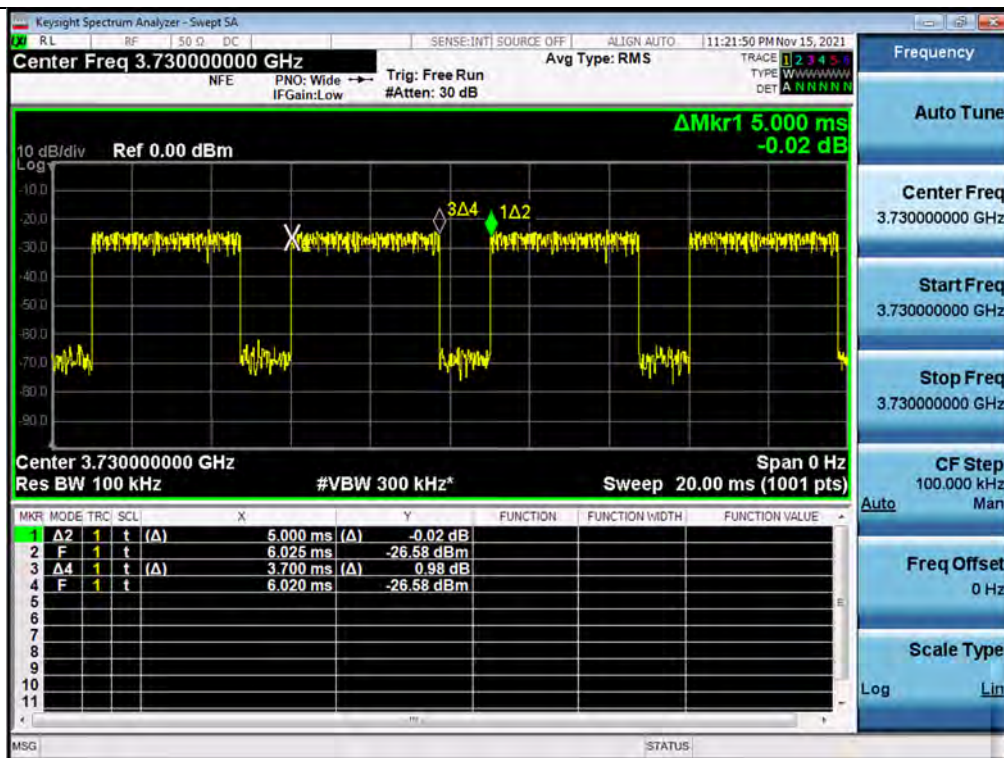
The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 2, Part 27

Description	Reference	Results
RF Output Power and PSD	§ 2.1046, § 27.50(j)(2)	Compliant
PAPR	§ 27.50(j)(4)	Compliant
Occupied Bandwidth	§ 2.1049	Compliant
Out-of-band Unwanted Emissions	§ 2.1051, § 27.53(l)(1)	Compliant
Spurious Unwanted Emissions		Compliant
Radiated Emissions	§ 2.1053, § 27.53(l)(1)	Compliant
Frequency Stability	§ 2.1055, § 27.54	Compliant

3.2. ADDITIONAL DESCRIPTIONS ABOUT TEST

- The EUT was operated in a manner representative of the typical usage of the equipment.
- During all testing, system components were manipulated within the confines of typical usage to maximize each emission.
- All NR modulation types (QPSK, 16QAM, 64QAM, 256QAM) have been tested.
- All mode of operation, supporting bandwidth and frequencies were investigated. The test plots shown in the following sections represent the worst case emissions.
- The measurement has performed for NR Carrier in the mode of full resource Block size as worst case to transmitt maximum output power condition.
- Unwanted conducted emissions were performed on one port with a maximum output power level.
- The dummy loads were connected to the RF output ports for radiated spurious emission testing.
- Because of the EUT using TDD technology, it cannot be configured to transmit continuously and measurement instrument cannot be configured to measure only during active transmissions. So, we performed the measurement using duty cycle method.

Measurement Result of MT6407-77A Transmit On/Off Timing



- The EUT duty cycle is calculated according to ANSI C63.26 - 5.2.4.3.4.

$$\text{Duty Cycle} = \text{On-time} / \text{Transmitter period} = 3.7 \text{ ms} / 5.0 \text{ ms} = 0.74$$

$$\text{Duty Correction} = 10 \log (1/\text{duty cycle}) = 10 \log (1/0.74) = 1.307 \text{ dB}$$

- The tests results in plots are already including the actual value of loss for the attenuator and cable combination. Please check correction factors below table.

Correction factor table			
Frequency (MHz)	Factor (dB)	Frequency (MHz)	Factor (dB)
400	31.367	11 000	24.242
600	28.363	12 000	24.727
800	26.729	13 000	25.093
1 000	25.923	14 000	25.221
1 200	25.056	15 000	25.283
1 400	24.547	16 000	25.831
1 600	23.915	17 000	25.821
1 800	23.769	18 000	26.265
2 000	23.453	19 000	26.668
2 200	23.434	20 000	26.192
2 400	23.292	21 000	26.781
2 600	23.023	22 000	26.361
2 800	22.924	23 000	27.064
3 000	22.616	24 000	27.165
3 100	22.748	25 000	27.702
3 200	22.649	26 000	30.424
3 300	22.720	27 000	33.815
3 400	22.940	28 000	28.577
3 500	22.823	29 000	28.482
3 600	23.876	30 000	29.155
3 700	23.667	31 000	28.269
3 800	23.880	32 000	29.178
3 900	23.685	33 000	28.781
4 000	23.579	34 000	28.249
5 000	23.730	35 000	28.587
6 000	23.820	36 000	28.351
7 000	24.580	37 000	28.195
8 000	24.009	38 000	28.830
9 000	24.358	39 000	28.662
10 000	24.352	40 000	29.415

3.3. MAXIMUM MEASUREMENT UNCERTAINTY

Description	Condition	Uncertainty
Radiated Disturbance	9 kHz ~ 30 MHz	± 3.40 dB
	30 MHz ~ 1 GHz	± 4.80 dB
	1 GHz ~ 18 GHz	± 5.70 dB
	18 GHz ~ 40 GHz	± 5.05 dB

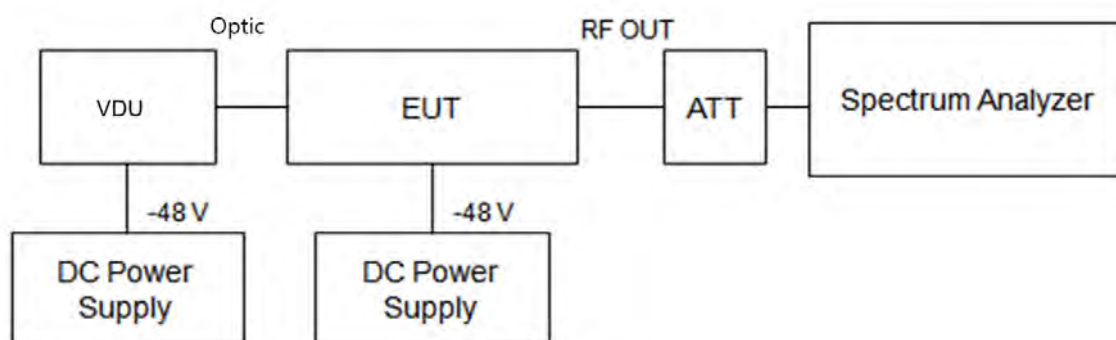
Coverage factor $k=2$, Confidence levels of 95 %

3.4. STANDARDS ENVIRONMENTAL TEST CONDITIONS

Temperature :	+15 °C to +35 °C
Relative humidity:	30 % to 60 %
Air pressure	860 mbar to 1 060 mbar

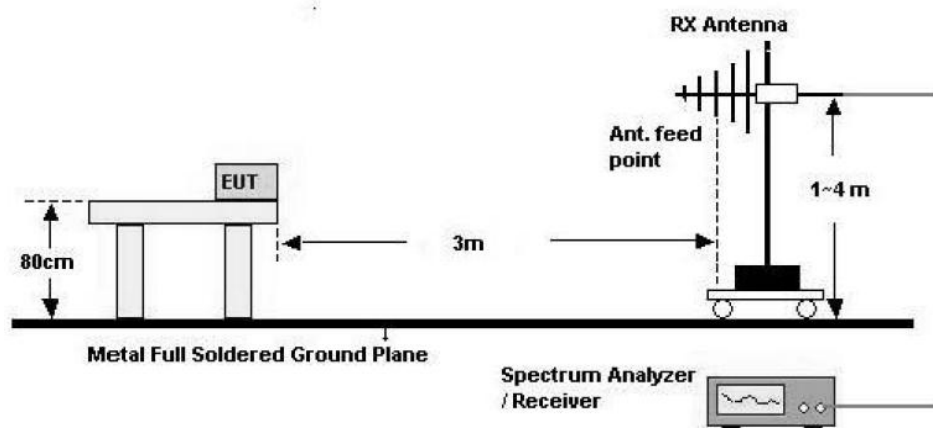
3.5. TEST DIAGRAMS

Conducted Test

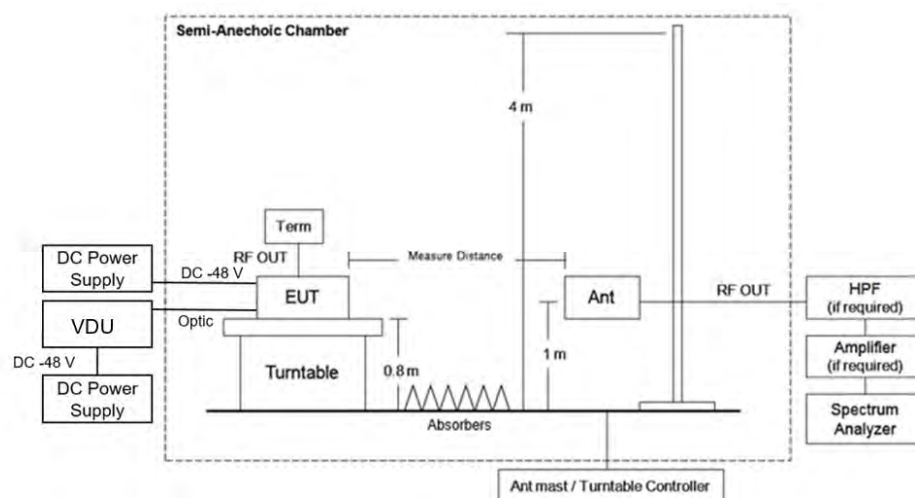


Radiated Test

30 MHz ~ 1 GHz

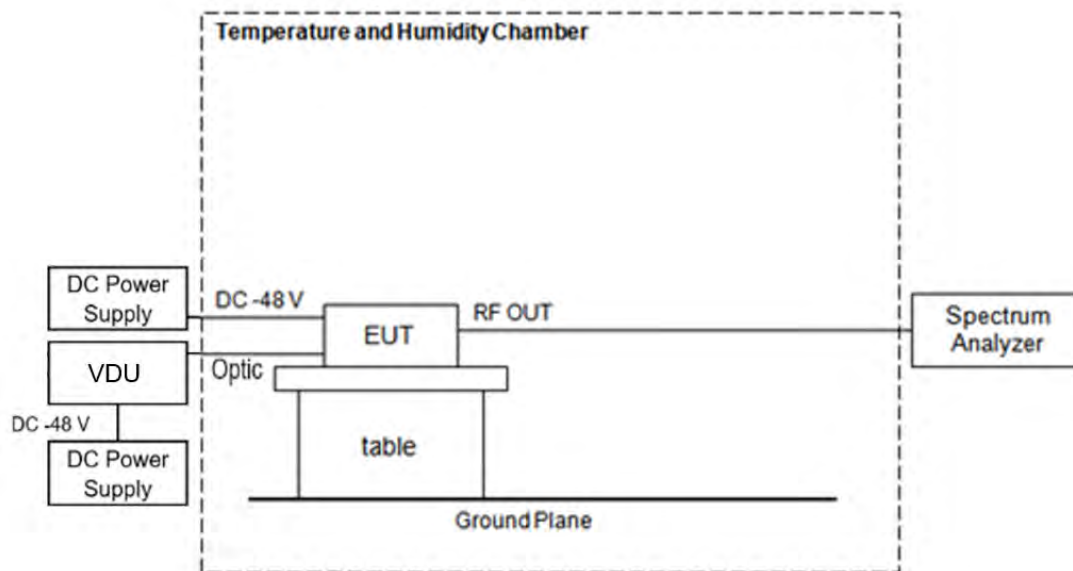


Above 1 GHz



※ EUT position is adopted by placement of floor-standing refer to section 5.5.2.3.2 of ANSI C63.26-2015

Frequency Stability



Note: All modulations(QPSK, 16QAM, 64QAM, 256QAM) were investigated and the worst case configuration channel results are reported.

4. TEST EQUIPMENTS

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
PXA Signal Analyzer	N9030B	Keysight	MY55480110	2022-03-23	Annual
Spectrum Analyzer	N9020A	Agilent	MY51110063	2022-04-22	Annual
RF Switch System	TMX0132C	TNM system	TM20010001	N/A	N/A
*30 dB Attenuator	5930_SMA-50-010	HUBER SUHNER	1	2022-10-05	Annual
20 dB Attenuator	FAS-23-20	MCLI	103756	2022-01-18	Annual
DC Power Supply	6674A	H.P.	3637A01843	2022-06-30	Annual
DC Power Supply	6674A	Agilent	MY41003340	2022-06-21	Annual
Temperature and Humidity Chamber	NY-THR18750	NANGYEUL CO., LTD.	NY-200912201A	2022-01-14	Annual
Amp & Filter Bank Switch Controller	FBSM-01B	TNM system	TM20090002	N/A	N/A
Controller(Antenna mast & Turn Table)	CO3000	Innco systems	CO3000/1251/48920320/P	N/A	N/A
Antenna Position Tower	MA4640/800-XP-ET	Innco systems	N/A	N/A	N/A
Turn Table	DS2000-S	Innco systems	N/A	N/A	N/A
Turn Table	Turn Table	Ets	N/A	N/A	N/A
Loop Antenna	FMZB 1513	Schwarzbeck	1513-333	2022-03-19	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	01039	2022-08-02	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02296	2022-06-28	Biennial
Horn Antenna(15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170342	2022-10-13	Biennial
PXA Signal Analyzer	N9030B	KEYSIGHT	MY55480110	2022-03-23	Annual
HPF(3 ~ 18 GHz) + LNA(0.1 ~ 18 GHz)	FBSR-04C	TNM system	N/A	2022-09-16	Annual
Low Noise Amplifier	LLAU1183540Q	LTC Microwave	100	2022-09-16	Annual
High Pass Filter	WHNX6.0/26.5G-6SS	Wainwright Instruments	1	2022-03-11	Annual
Power Amplifier	CBL18265035	CERNEX	22966	2021-12-04	Annual
Power Amplifier	CBL26405040	CERNEX	25956	2022-03-23	Annual

* This equipment has been used to each port, but we only listed one equipment for simplicity.

Note:

- Equipment listed above that calibrated during the testing period was set for test after the calibration.
- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

5. TEST RESULT

5.1. RF OUTPUT POWER and PSD

Test Requirements:

§ 2.1046 Measurements required: RF power output.

- (a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in § 2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.
- (b) For single sideband, independent sideband, and single channel, controlled carrier radiotelephone transmitters the procedure specified in paragraph (a) of this section shall be employed and, in addition, the transmitter shall be modulated during the test as specified and applicable in § 2.1046 (b) (1-5). In all tests, the input level of the modulating signal shall be such as to develop rated peak envelope power or carrier power, as appropriate, for the transmitter.
- (c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

§ 27.50 Power limits and duty cycle.

- (j) The following power requirements apply to stations transmitting in the 3700-3980 MHz band:
 - (1) The power of each fixed or base station transmitting in the 3700-3980 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to an equivalent isotropically radiated power (EIRP) of 3280 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.
 - (2) The power of each fixed or base station transmitting in the 3700-3980 MHz band and situated in any geographic location other than that described in paragraph (j)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.
 - (4) Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (j)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test Procedures:

The measurement is performed in accordance with Section 5.2.4.4.2 of ANSI C63.26.

When the fundamental condition for average power measurements cannot be realized (i.e., the EUT cannot be configured to transmit at full-power on a continuous basis (i.e., duty cycle < 98%) and the instrumentation cannot be configured to measure

only during active full-power transmissions), then the following procedure can be used if the EUT duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$). See 5.2.4.3.4 for guidance on measurement of duty cycle.

- a) Set span to $2 \times$ to $3 \times$ the OBW.
- b) Set RBW = 1% to 5% of the OBW.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
- e) Sweep time:
 - 1) Set = auto-couple, or
 - 2) Set $\geq [10 \times (\text{number of points in sweep}) \times (\text{transmission period})]$ for single sweep (automation-compatible) measurement. Transmission period is the on and off time of the transmitter.
- f) Detector = power averaging (rms).
- g) Set sweep trigger to “free run.”
- h) Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band or channel power measurement function with band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- j) Add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission. For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is a constant 25%.

The measurement is performed in accordance with Section 5.2.4.5 of ANSI C63.26.

Some regulatory requirements specify the limits in terms of maximum or average PSD, (i.e., the output power or unwanted emissions power limits are defined within a specified reference bandwidth).

When average PSD limits are specified, the same fundamental measurement condition applies as previously discussed (i.e., averaging is to be performed only over durations of active transmissions at maximum output power level).

Thus, when performing this measurement, the EUT must either be configured to transmit continuously at full power while the compliance measurement is performed, or else the measurement instrumentation must be configured to acquire data only over durations when the EUT is actively transmitting at full power. In circumstances where neither of these conditions can be realized, then alternative procedures are provided for both constant duty cycle and non-constant duty cycle transmissions. The PSD is measured following the same procedures described in 5.2.4.4 for measuring the total average power, but with the RBW set to the reference bandwidth specified by the applicable regulatory requirement, and by using the marker function to identify the maximum PSD instead of summing the power across the OBW.

If the fundamental measurement condition cannot be realized, then one of the alternative procedures in 5.2.4.4.2 or 5.2.4.4.3 should be selected, based on whether the transmitter duty cycle is constant (variations $\leq \pm 2\%$) or non-constant (variations $> \pm 2\%$), respectively.

Note:

1. The results of the RF output power and PSD test shown above the frequency measured values are very small and similar trend for each port, so we are attached only the worst case plot.
2. Sample Calculation:
$$34.82 \text{ dBm (Measured Value)} + 1.307 \text{ dB (Duty Cycle Factor)} = 36.12 \text{ dBm (Final Conducted Output Power)}$$
$$16.89 \text{ dBm / MHz (Measured Value)} + 1.307 \text{ dB (Duty Cycle Factor)} = 18.20 \text{ dBm / MHz (Final PSD)}$$

Test Results:
Tabular Data of RF output power
3.7 GHz Service 5G NR 60 MHz 1 Carrier

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
1	QPSK	Low	3730.00	34.20	35.51	3.55
		Middle	3840.00	34.18	35.49	3.54
		High	3950.00	33.15	34.46	2.79
	16QAM	Low	3730.00	33.99	35.30	3.39
		Middle	3840.00	33.08	34.39	2.75
		High	3950.00	33.38	34.69	2.94
	64QAM	Low	3730.00	34.02	35.32	3.41
		Middle	3840.00	33.81	35.11	3.25
		High	3950.00	33.19	34.49	2.81
	256QAM	Low	3730.00	33.74	35.05	3.20
		Middle	3840.00	33.10	34.41	2.76
		High	3950.00	33.50	34.81	3.02
2	QPSK	Low	3730.00	34.28	35.58	3.62
		Middle	3840.00	33.66	34.97	3.14
		High	3950.00	33.33	34.64	2.91
	16QAM	Low	3730.00	33.93	35.24	3.34
		Middle	3840.00	33.69	35.00	3.16
		High	3950.00	33.32	34.62	2.90
	64QAM	Low	3730.00	33.97	35.28	3.37
		Middle	3840.00	33.55	34.86	3.06
		High	3950.00	33.13	34.44	2.78
	256QAM	Low	3730.00	34.06	35.37	3.44
		Middle	3840.00	34.07	35.37	3.45
		High	3950.00	33.48	34.79	3.01

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
3	QPSK	Low	3730.00	34.09	35.40	3.47
		Middle	3840.00	33.51	34.82	3.04
		High	3950.00	33.08	34.39	2.75
	16QAM	Low	3730.00	34.16	35.47	3.52
		Middle	3840.00	33.25	34.56	2.85
		High	3950.00	33.31	34.61	2.89
	64QAM	Low	3730.00	33.85	35.16	3.28
		Middle	3840.00	33.98	35.29	3.38
		High	3950.00	33.17	34.47	2.80
	256QAM	Low	3730.00	34.12	35.43	3.49
		Middle	3840.00	34.00	35.30	3.39
		High	3950.00	33.28	34.59	2.88
4	QPSK	Low	3730.00	34.31	35.61	3.64
		Middle	3840.00	33.27	34.58	2.87
		High	3950.00	33.17	34.47	2.80
	16QAM	Low	3730.00	33.83	35.14	3.27
		Middle	3840.00	33.60	34.91	3.10
		High	3950.00	33.25	34.56	2.86
	64QAM	Low	3730.00	33.83	35.14	3.27
		Middle	3840.00	33.35	34.66	2.92
		High	3950.00	33.08	34.39	2.75
	256QAM	Low	3730.00	33.30	34.61	2.89
		Middle	3840.00	33.15	34.46	2.79
		High	3950.00	33.17	34.48	2.80
5	QPSK	Low	3730.00	33.70	35.01	3.17
		Middle	3840.00	34.16	35.47	3.52
		High	3950.00	32.81	34.12	2.58
	16QAM	Low	3730.00	33.43	34.74	2.98
		Middle	3840.00	33.07	34.37	2.74
		High	3950.00	33.08	34.39	2.75
	64QAM	Low	3730.00	33.47	34.78	3.00
		Middle	3840.00	32.91	34.22	2.64
		High	3950.00	32.91	34.22	2.64
	256QAM	Low	3730.00	33.30	34.61	2.89
		Middle	3840.00	33.35	34.66	2.92
		High	3950.00	32.85	34.15	2.60

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
6	QPSK	Low	3730.00	34.17	35.48	3.53
		Middle	3840.00	33.89	35.20	3.31
		High	3950.00	33.01	34.32	2.70
	16QAM	Low	3730.00	34.10	35.40	3.47
		Middle	3840.00	34.23	35.53	3.58
		High	3950.00	33.43	34.74	2.98
	64QAM	Low	3730.00	34.25	35.56	3.60
		Middle	3840.00	33.81	35.12	3.25
		High	3950.00	33.20	34.50	2.82
	256QAM	Low	3730.00	34.09	35.39	3.46
		Middle	3840.00	34.36	35.67	3.69
		High	3950.00	33.40	34.71	2.96
7	QPSK	Low	3730.00	33.36	34.67	2.93
		Middle	3840.00	33.56	34.87	3.07
		High	3950.00	32.48	33.78	2.39
	16QAM	Low	3730.00	32.80	34.11	2.58
		Middle	3840.00	33.83	35.14	3.27
		High	3950.00	33.25	34.55	2.85
	64QAM	Low	3730.00	32.90	34.20	2.63
		Middle	3840.00	34.29	35.60	3.63
		High	3950.00	32.46	33.77	2.38
	256QAM	Low	3730.00	32.91	34.22	2.64
		Middle	3840.00	33.57	34.87	3.07
		High	3950.00	33.28	34.59	2.88
8	QPSK	Low	3730.00	34.31	35.61	3.64
		Middle	3840.00	33.93	35.23	3.34
		High	3950.00	32.89	34.19	2.63
	16QAM	Low	3730.00	33.58	34.89	3.08
		Middle	3840.00	33.69	35.00	3.16
		High	3950.00	33.32	34.63	2.91
	64QAM	Low	3730.00	33.66	34.96	3.14
		Middle	3840.00	32.98	34.29	2.68
		High	3950.00	32.69	34.00	2.51
	256QAM	Low	3730.00	33.60	34.91	3.10
		Middle	3840.00	33.67	34.98	3.15
		High	3950.00	32.68	33.99	2.50

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
9	QPSK	Low	3730.00	33.74	35.04	3.20
		Middle	3840.00	34.16	35.47	3.53
		High	3950.00	32.64	33.95	2.48
	16QAM	Low	3730.00	33.10	34.41	2.76
		Middle	3840.00	33.49	34.80	3.02
		High	3950.00	32.83	34.13	2.59
	64QAM	Low	3730.00	33.25	34.56	2.86
		Middle	3840.00	33.21	34.52	2.83
		High	3950.00	32.63	33.94	2.48
	256QAM	Low	3730.00	33.32	34.62	2.90
		Middle	3840.00	32.78	34.09	2.57
		High	3950.00	33.41	34.72	2.96
10	QPSK	Low	3730.00	34.39	35.70	3.71
		Middle	3840.00	33.73	35.04	3.19
		High	3950.00	33.10	34.41	2.76
	16QAM	Low	3730.00	33.85	35.16	3.28
		Middle	3840.00	33.78	35.09	3.23
		High	3950.00	33.51	34.81	3.03
	64QAM	Low	3730.00	34.32	35.63	3.66
		Middle	3840.00	33.67	34.98	3.15
		High	3950.00	33.34	34.64	2.91
	256QAM	Low	3730.00	33.96	35.26	3.36
		Middle	3840.00	34.24	35.55	3.59
		High	3950.00	33.40	34.71	2.96
11	QPSK	Low	3730.00	34.35	35.66	3.68
		Middle	3840.00	33.98	35.29	3.38
		High	3950.00	33.36	34.67	2.93
	16QAM	Low	3730.00	34.06	35.37	3.44
		Middle	3840.00	34.59	35.90	3.89
		High	3950.00	33.46	34.76	2.99
	64QAM	Low	3730.00	33.72	35.03	3.18
		Middle	3840.00	34.17	35.48	3.53
		High	3950.00	33.37	34.68	2.94
	256QAM	Low	3730.00	33.90	35.21	3.32
		Middle	3840.00	34.24	35.55	3.59
		High	3950.00	33.35	34.66	2.92

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
12	QPSK	Low	3730.00	33.90	35.21	3.32
		Middle	3840.00	33.34	34.64	2.91
		High	3950.00	33.01	34.31	2.70
	16QAM	Low	3730.00	33.60	34.91	3.10
		Middle	3840.00	33.47	34.78	3.01
		High	3950.00	32.69	34.00	2.51
	64QAM	Low	3730.00	33.74	35.04	3.20
		Middle	3840.00	33.43	34.74	2.98
		High	3950.00	32.98	34.29	2.69
	256QAM	Low	3730.00	33.65	34.96	3.13
		Middle	3840.00	33.38	34.69	2.95
		High	3950.00	32.94	34.24	2.66
13	QPSK	Low	3730.00	34.34	35.64	3.67
		Middle	3840.00	33.83	35.14	3.26
		High	3950.00	33.56	34.86	3.06
	16QAM	Low	3730.00	33.88	35.19	3.31
		Middle	3840.00	33.58	34.88	3.08
		High	3950.00	33.77	35.08	3.22
	64QAM	Low	3730.00	33.73	35.04	3.19
		Middle	3840.00	34.05	35.36	3.44
		High	3950.00	33.72	35.03	3.18
	256QAM	Low	3730.00	34.15	35.46	3.52
		Middle	3840.00	33.73	35.04	3.19
		High	3950.00	33.41	34.72	2.96
14	QPSK	Low	3730.00	33.68	34.98	3.15
		Middle	3840.00	32.97	34.27	2.68
		High	3950.00	33.59	34.90	3.09
	16QAM	Low	3730.00	33.58	34.89	3.08
		Middle	3840.00	33.75	35.06	3.20
		High	3950.00	32.83	34.14	2.60
	64QAM	Low	3730.00	33.79	35.10	3.23
		Middle	3840.00	33.18	34.48	2.81
		High	3950.00	33.45	34.76	2.99
	256QAM	Low	3730.00	34.02	35.32	3.41
		Middle	3840.00	34.46	35.77	3.77
		High	3950.00	33.29	34.60	2.88

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
15	QPSK	Low	3730.00	34.30	35.61	3.64
		Middle	3840.00	33.53	34.84	3.05
		High	3950.00	33.42	34.72	2.97
	16QAM	Low	3730.00	34.27	35.57	3.61
		Middle	3840.00	34.59	35.90	3.89
		High	3950.00	33.03	34.34	2.71
	64QAM	Low	3730.00	34.05	35.35	3.43
		Middle	3840.00	32.86	34.16	2.61
		High	3950.00	33.25	34.56	2.86
	256QAM	Low	3730.00	34.00	35.30	3.39
		Middle	3840.00	33.94	35.25	3.35
		High	3950.00	33.17	34.48	2.81
16	QPSK	Low	3730.00	34.28	35.58	3.62
		Middle	3840.00	34.27	35.57	3.61
		High	3950.00	33.15	34.46	2.79
	16QAM	Low	3730.00	33.85	35.16	3.28
		Middle	3840.00	33.34	34.64	2.91
		High	3950.00	33.40	34.71	2.96
	64QAM	Low	3730.00	33.81	35.12	3.25
		Middle	3840.00	34.07	35.38	3.45
		High	3950.00	33.30	34.61	2.89
	256QAM	Low	3730.00	33.91	35.22	3.32
		Middle	3840.00	34.13	35.44	3.50
		High	3950.00	33.26	34.57	2.86
17	QPSK	Low	3730.00	34.39	35.70	3.72
		Middle	3840.00	34.19	35.49	3.54
		High	3950.00	33.75	35.06	3.21
	16QAM	Low	3730.00	34.06	35.36	3.44
		Middle	3840.00	33.56	34.87	3.07
		High	3950.00	33.64	34.95	3.12
	64QAM	Low	3730.00	33.75	35.05	3.20
		Middle	3840.00	33.05	34.35	2.72
		High	3950.00	33.78	35.08	3.22
	256QAM	Low	3730.00	33.48	34.79	3.01
		Middle	3840.00	33.82	35.13	3.26
		High	3950.00	33.88	35.18	3.30

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
18	QPSK	Low	3730.00	34.60	35.91	3.90
		Middle	3840.00	34.35	35.66	3.68
		High	3950.00	33.18	34.49	2.81
	16QAM	Low	3730.00	34.02	35.33	3.41
		Middle	3840.00	33.52	34.83	3.04
		High	3950.00	33.38	34.69	2.94
	64QAM	Low	3730.00	34.26	35.57	3.60
		Middle	3840.00	34.68	35.98	3.97
		High	3950.00	33.29	34.59	2.88
	256QAM	Low	3730.00	34.49	35.80	3.80
		Middle	3840.00	33.80	35.10	3.24
		High	3950.00	32.75	34.05	2.54
19	QPSK	Low	3730.00	34.30	35.61	3.64
		Middle	3840.00	33.30	34.60	2.89
		High	3950.00	33.30	34.61	2.89
	16QAM	Low	3730.00	33.95	35.26	3.36
		Middle	3840.00	33.73	35.04	3.19
		High	3950.00	33.87	35.17	3.29
	64QAM	Low	3730.00	33.90	35.20	3.32
		Middle	3840.00	33.27	34.57	2.87
		High	3950.00	33.73	35.03	3.19
	256QAM	Low	3730.00	34.23	35.54	3.58
		Middle	3840.00	33.14	34.45	2.78
		High	3950.00	33.45	34.76	2.99
20	QPSK	Low	3730.00	34.57	35.88	3.87
		Middle	3840.00	34.28	35.59	3.62
		High	3950.00	33.40	34.70	2.95
	16QAM	Low	3730.00	33.98	35.29	3.38
		Middle	3840.00	33.24	34.55	2.85
		High	3950.00	33.53	34.84	3.04
	64QAM	Low	3730.00	34.33	35.64	3.66
		Middle	3840.00	34.43	35.73	3.75
		High	3950.00	33.50	34.80	3.02
	256QAM	Low	3730.00	34.18	35.48	3.53
		Middle	3840.00	33.93	35.23	3.34
		High	3950.00	33.34	34.65	2.92

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
21	QPSK	Low	3730.00	34.16	35.46	3.52
		Middle	3840.00	33.33	34.63	2.91
		High	3950.00	33.80	35.11	3.24
	16QAM	Low	3730.00	34.03	35.33	3.42
		Middle	3840.00	33.59	34.90	3.09
		High	3950.00	33.59	34.90	3.09
	64QAM	Low	3730.00	34.09	35.40	3.47
		Middle	3840.00	33.37	34.68	2.94
		High	3950.00	33.86	35.17	3.29
	256QAM	Low	3730.00	34.29	35.59	3.62
		Middle	3840.00	34.26	35.57	3.61
		High	3950.00	33.48	34.79	3.01
22	QPSK	Low	3730.00	34.73	36.04	4.02
		Middle	3840.00	33.41	34.72	2.96
		High	3950.00	33.30	34.61	2.89
	16QAM	Low	3730.00	34.10	35.41	3.47
		Middle	3840.00	34.36	35.67	3.69
		High	3950.00	33.62	34.93	3.11
	64QAM	Low	3730.00	33.92	35.23	3.34
		Middle	3840.00	34.47	35.77	3.78
		High	3950.00	33.49	34.80	3.02
	256QAM	Low	3730.00	34.24	35.54	3.58
		Middle	3840.00	33.82	35.13	3.26
		High	3950.00	33.50	34.80	3.02
23	QPSK	Low	3730.00	34.28	35.59	3.62
		Middle	3840.00	33.69	35.00	3.16
		High	3950.00	33.47	34.78	3.00
	16QAM	Low	3730.00	33.77	35.07	3.22
		Middle	3840.00	34.12	35.42	3.49
		High	3950.00	34.01	35.32	3.40
	64QAM	Low	3730.00	33.90	35.21	3.32
		Middle	3840.00	33.81	35.11	3.25
		High	3950.00	33.38	34.69	2.95
	256QAM	Low	3730.00	33.88	35.18	3.30
		Middle	3840.00	33.74	35.05	3.20
		High	3950.00	33.74	35.05	3.20

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
24	QPSK	Low	3730.00	34.63	35.94	3.92
		Middle	3840.00	34.11	35.42	3.48
		High	3950.00	33.38	34.69	2.95
	16QAM	Low	3730.00	34.12	35.43	3.49
		Middle	3840.00	34.06	35.37	3.44
		High	3950.00	33.28	34.59	2.88
	64QAM	Low	3730.00	33.92	35.23	3.33
		Middle	3840.00	33.91	35.21	3.32
		High	3950.00	33.46	34.77	3.00
	256QAM	Low	3730.00	34.13	35.43	3.49
		Middle	3840.00	34.55	35.86	3.85
		High	3950.00	33.37	34.68	2.93
25	QPSK	Low	3730.00	34.53	35.84	3.84
		Middle	3840.00	33.68	34.99	3.15
		High	3950.00	33.52	34.83	3.04
	16QAM	Low	3730.00	34.15	35.46	3.51
		Middle	3840.00	34.36	35.66	3.68
		High	3950.00	33.38	34.69	2.94
	64QAM	Low	3730.00	33.92	35.23	3.33
		Middle	3840.00	33.87	35.18	3.29
		High	3950.00	33.36	34.67	2.93
	256QAM	Low	3730.00	34.15	35.45	3.51
		Middle	3840.00	34.53	35.84	3.84
		High	3950.00	33.41	34.72	2.96
26	QPSK	Low	3730.00	34.31	35.62	3.65
		Middle	3840.00	33.97	35.28	3.37
		High	3950.00	33.29	34.60	2.88
	16QAM	Low	3730.00	33.79	35.10	3.23
		Middle	3840.00	33.42	34.73	2.97
		High	3950.00	33.18	34.48	2.81
	64QAM	Low	3730.00	33.95	35.26	3.36
		Middle	3840.00	33.93	35.23	3.34
		High	3950.00	33.03	34.33	2.71
	256QAM	Low	3730.00	34.29	35.60	3.63
		Middle	3840.00	33.43	34.74	2.98
		High	3950.00	33.16	34.46	2.80

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
27	QPSK	Low	3730.00	34.51	35.82	3.82
		Middle	3840.00	34.15	35.46	3.52
		High	3950.00	33.59	34.90	3.09
	16QAM	Low	3730.00	34.02	35.33	3.41
		Middle	3840.00	33.88	35.19	3.30
		High	3950.00	33.54	34.85	3.05
	64QAM	Low	3730.00	34.22	35.52	3.57
		Middle	3840.00	34.36	35.67	3.69
		High	3950.00	33.68	34.99	3.16
	256QAM	Low	3730.00	34.42	35.73	3.74
		Middle	3840.00	33.52	34.82	3.04
		High	3950.00	33.65	34.96	3.13
28	QPSK	Low	3730.00	34.39	35.70	3.71
		Middle	3840.00	33.73	35.04	3.19
		High	3950.00	34.31	35.62	3.65
	16QAM	Low	3730.00	34.70	36.01	3.99
		Middle	3840.00	33.99	35.30	3.39
		High	3950.00	34.20	35.50	3.55
	64QAM	Low	3730.00	34.19	35.50	3.54
		Middle	3840.00	33.88	35.19	3.30
		High	3950.00	34.09	35.40	3.47
	256QAM	Low	3730.00	34.10	35.40	3.47
		Middle	3840.00	33.37	34.67	2.93
		High	3950.00	34.01	35.32	3.40
29	QPSK	Low	3730.00	34.53	35.83	3.83
		Middle	3840.00	34.41	35.72	3.73
		High	3950.00	33.28	34.59	2.87
	16QAM	Low	3730.00	33.76	35.07	3.21
		Middle	3840.00	33.14	34.45	2.79
		High	3950.00	33.38	34.69	2.94
	64QAM	Low	3730.00	33.92	35.22	3.33
		Middle	3840.00	33.90	35.21	3.32
		High	3950.00	33.58	34.89	3.08
	256QAM	Low	3730.00	33.98	35.29	3.38
		Middle	3840.00	33.36	34.67	2.93
		High	3950.00	33.39	34.69	2.95

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
30	QPSK	Low	3730.00	34.01	35.32	3.41
		Middle	3840.00	32.86	34.17	2.61
		High	3950.00	33.66	34.96	3.14
	16QAM	Low	3730.00	34.77	36.08	4.05
		Middle	3840.00	33.20	34.51	2.83
		High	3950.00	33.86	35.17	3.29
	64QAM	Low	3730.00	34.66	35.97	3.95
		Middle	3840.00	33.40	34.71	2.96
		High	3950.00	33.51	34.82	3.03
	256QAM	Low	3730.00	34.62	35.93	3.92
		Middle	3840.00	32.94	34.25	2.66
		High	3950.00	33.84	35.15	3.27
31	QPSK	Low	3730.00	34.74	36.04	4.02
		Middle	3840.00	33.28	34.59	2.88
		High	3950.00	33.78	35.09	3.23
	16QAM	Low	3730.00	33.72	35.03	3.18
		Middle	3840.00	33.00	34.31	2.70
		High	3950.00	33.92	35.22	3.33
	64QAM	Low	3730.00	34.45	35.76	3.76
		Middle	3840.00	33.71	35.02	3.18
		High	3950.00	33.70	35.00	3.16
	256QAM	Low	3730.00	34.34	35.65	3.67
		Middle	3840.00	34.23	35.53	3.58
		High	3950.00	33.22	34.53	2.84
32	QPSK	Low	3730.00	34.24	35.55	3.59
		Middle	3840.00	33.93	35.24	3.34
		High	3950.00	33.38	34.69	2.95
	16QAM	Low	3730.00	34.18	35.49	3.54
		Middle	3840.00	33.53	34.83	3.04
		High	3950.00	33.97	35.27	3.37
	64QAM	Low	3730.00	34.33	35.64	3.66
		Middle	3840.00	34.34	35.64	3.67
		High	3950.00	33.57	34.88	3.07
	256QAM	Low	3730.00	34.33	35.64	3.66
		Middle	3840.00	33.33	34.64	2.91
		High	3950.00	33.47	34.78	3.01

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
33	QPSK	Low	3730.00	34.08	35.38	3.45
		Middle	3840.00	34.07	35.38	3.45
		High	3950.00	34.33	35.64	3.66
	16QAM	Low	3730.00	34.08	35.39	3.46
		Middle	3840.00	33.98	35.29	3.38
		High	3950.00	33.22	34.53	2.84
	64QAM	Low	3730.00	34.22	35.53	3.58
		Middle	3840.00	34.07	35.38	3.45
		High	3950.00	34.55	35.86	3.85
	256QAM	Low	3730.00	34.31	35.62	3.65
		Middle	3840.00	33.97	35.28	3.37
		High	3950.00	33.55	34.86	3.06
34	QPSK	Low	3730.00	34.05	35.35	3.43
		Middle	3840.00	33.97	35.28	3.37
		High	3950.00	33.55	34.86	3.06
	16QAM	Low	3730.00	33.92	35.23	3.33
		Middle	3840.00	33.99	35.30	3.39
		High	3950.00	32.96	34.27	2.67
	64QAM	Low	3730.00	34.36	35.66	3.68
		Middle	3840.00	34.05	35.35	3.43
		High	3950.00	33.71	35.02	3.18
	256QAM	Low	3730.00	34.29	35.59	3.63
		Middle	3840.00	34.02	35.33	3.41
		High	3950.00	34.48	35.79	3.79
35	QPSK	Low	3730.00	33.85	35.16	3.28
		Middle	3840.00	33.79	35.10	3.24
		High	3950.00	33.93	35.24	3.34
	16QAM	Low	3730.00	33.80	35.10	3.24
		Middle	3840.00	34.32	35.63	3.66
		High	3950.00	33.08	34.38	2.74
	64QAM	Low	3730.00	34.02	35.33	3.41
		Middle	3840.00	33.88	35.18	3.30
		High	3950.00	34.26	35.57	3.60
	256QAM	Low	3730.00	34.12	35.42	3.49
		Middle	3840.00	33.87	35.18	3.30
		High	3950.00	34.26	35.57	3.60

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
36	QPSK	Low	3730.00	33.85	35.15	3.28
		Middle	3840.00	34.22	35.52	3.57
		High	3950.00	34.28	35.58	3.62
	16QAM	Low	3730.00	33.90	35.21	3.32
		Middle	3840.00	33.98	35.29	3.38
		High	3950.00	34.17	35.48	3.53
	64QAM	Low	3730.00	34.01	35.32	3.40
		Middle	3840.00	34.33	35.63	3.66
		High	3950.00	33.84	35.15	3.27
	256QAM	Low	3730.00	34.10	35.41	3.47
		Middle	3840.00	33.96	35.27	3.37
		High	3950.00	33.78	35.09	3.23
37	QPSK	Low	3730.00	33.98	35.28	3.38
		Middle	3840.00	33.93	35.24	3.34
		High	3950.00	34.56	35.87	3.86
	16QAM	Low	3730.00	34.12	35.42	3.49
		Middle	3840.00	34.29	35.59	3.63
		High	3950.00	34.02	35.32	3.41
	64QAM	Low	3730.00	33.98	35.28	3.38
		Middle	3840.00	33.62	34.93	3.11
		High	3950.00	34.27	35.58	3.61
	256QAM	Low	3730.00	34.02	35.33	3.41
		Middle	3840.00	33.87	35.18	3.30
		High	3950.00	33.87	35.18	3.30
38	QPSK	Low	3730.00	33.87	35.17	3.29
		Middle	3840.00	34.16	35.46	3.52
		High	3950.00	34.28	35.58	3.62
	16QAM	Low	3730.00	34.29	35.60	3.63
		Middle	3840.00	34.28	35.59	3.62
		High	3950.00	34.26	35.57	3.60
	64QAM	Low	3730.00	34.09	35.40	3.47
		Middle	3840.00	34.18	35.49	3.54
		High	3950.00	33.65	34.96	3.13
	256QAM	Low	3730.00	34.14	35.45	3.51
		Middle	3840.00	34.09	35.40	3.47
		High	3950.00	33.85	35.16	3.28

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
39	QPSK	Low	3730.00	33.91	35.22	3.33
		Middle	3840.00	34.26	35.57	3.61
		High	3950.00	34.03	35.34	3.42
	16QAM	Low	3730.00	34.08	35.39	3.46
		Middle	3840.00	34.64	35.94	3.93
		High	3950.00	33.36	34.67	2.93
	64QAM	Low	3730.00	33.97	35.28	3.37
		Middle	3840.00	34.06	35.36	3.44
		High	3950.00	34.51	35.81	3.82
	256QAM	Low	3730.00	34.04	35.35	3.43
		Middle	3840.00	34.10	35.41	3.48
		High	3950.00	34.03	35.33	3.41
40	QPSK	Low	3730.00	34.08	35.39	3.46
		Middle	3840.00	34.10	35.40	3.47
		High	3950.00	34.05	35.36	3.44
	16QAM	Low	3730.00	34.06	35.37	3.44
		Middle	3840.00	34.42	35.73	3.74
		High	3950.00	34.27	35.58	3.61
	64QAM	Low	3730.00	33.91	35.22	3.33
		Middle	3840.00	33.95	35.26	3.36
		High	3950.00	33.64	34.94	3.12
	256QAM	Low	3730.00	34.13	35.44	3.50
		Middle	3840.00	34.14	35.44	3.50
		High	3950.00	34.45	35.76	3.76
41	QPSK	Low	3730.00	33.73	35.04	3.19
		Middle	3840.00	33.82	35.13	3.26
		High	3950.00	32.62	33.93	2.47
	16QAM	Low	3730.00	33.96	35.27	3.37
		Middle	3840.00	34.03	35.33	3.42
		High	3950.00	33.93	35.24	3.34
	64QAM	Low	3730.00	33.80	35.11	3.24
		Middle	3840.00	34.15	35.46	3.51
		High	3950.00	33.78	35.09	3.23
	256QAM	Low	3730.00	33.80	35.11	3.24
		Middle	3840.00	33.74	35.05	3.20
		High	3950.00	33.95	35.26	3.36

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
42	QPSK	Low	3730.00	34.47	35.78	3.79
		Middle	3840.00	33.82	35.13	3.26
		High	3950.00	34.59	35.90	3.89
	16QAM	Low	3730.00	34.21	35.52	3.57
		Middle	3840.00	33.69	35.00	3.16
		High	3950.00	33.89	35.19	3.31
	64QAM	Low	3730.00	34.42	35.73	3.74
		Middle	3840.00	33.75	35.06	3.20
		High	3950.00	33.72	35.03	3.19
	256QAM	Low	3730.00	34.29	35.60	3.63
		Middle	3840.00	33.73	35.04	3.19
		High	3950.00	34.65	35.95	3.94
43	QPSK	Low	3730.00	33.99	35.30	3.39
		Middle	3840.00	33.88	35.19	3.30
		High	3950.00	33.15	34.46	2.79
	16QAM	Low	3730.00	33.95	35.26	3.35
		Middle	3840.00	34.09	35.40	3.46
		High	3950.00	33.90	35.20	3.31
	64QAM	Low	3730.00	33.88	35.19	3.30
		Middle	3840.00	33.89	35.20	3.31
		High	3950.00	33.07	34.38	2.74
	256QAM	Low	3730.00	33.97	35.28	3.37
		Middle	3840.00	33.81	35.12	3.25
		High	3950.00	33.71	35.01	3.17
44	QPSK	Low	3730.00	34.08	35.39	3.46
		Middle	3840.00	33.99	35.30	3.39
		High	3950.00	33.77	35.08	3.22
	16QAM	Low	3730.00	34.10	35.40	3.47
		Middle	3840.00	33.97	35.28	3.37
		High	3950.00	33.92	35.23	3.33
	64QAM	Low	3730.00	34.27	35.58	3.61
		Middle	3840.00	34.09	35.40	3.47
		High	3950.00	34.57	35.88	3.87
	256QAM	Low	3730.00	34.19	35.50	3.55
		Middle	3840.00	33.92	35.23	3.33
		High	3950.00	33.72	35.02	3.18

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
45	QPSK	Low	3730.00	34.82	36.12	4.10
		Middle	3840.00	33.79	35.09	3.23
		High	3950.00	33.66	34.96	3.14
	16QAM	Low	3730.00	34.41	35.72	3.73
		Middle	3840.00	34.12	35.43	3.49
		High	3950.00	34.09	35.40	3.47
	64QAM	Low	3730.00	34.63	35.94	3.92
		Middle	3840.00	33.85	35.16	3.28
		High	3950.00	34.69	35.99	3.98
	256QAM	Low	3730.00	34.44	35.75	3.76
		Middle	3840.00	34.10	35.41	3.48
		High	3950.00	34.25	35.56	3.60
46	QPSK	Low	3730.00	34.25	35.56	3.60
		Middle	3840.00	34.00	35.31	3.39
		High	3950.00	34.24	35.55	3.59
	16QAM	Low	3730.00	34.12	35.43	3.49
		Middle	3840.00	34.14	35.45	3.51
		High	3950.00	33.54	34.84	3.05
	64QAM	Low	3730.00	33.85	35.16	3.28
		Middle	3840.00	33.94	35.25	3.35
		High	3950.00	33.96	35.27	3.36
	256QAM	Low	3730.00	33.87	35.18	3.29
		Middle	3840.00	34.35	35.66	3.68
		High	3950.00	33.99	35.29	3.38
47	QPSK	Low	3730.00	34.10	35.40	3.47
		Middle	3840.00	34.46	35.77	3.78
		High	3950.00	33.95	35.26	3.35
	16QAM	Low	3730.00	33.97	35.27	3.37
		Middle	3840.00	34.26	35.56	3.60
		High	3950.00	34.45	35.76	3.77
	64QAM	Low	3730.00	33.99	35.30	3.39
		Middle	3840.00	34.33	35.64	3.66
		High	3950.00	33.27	34.58	2.87
	256QAM	Low	3730.00	33.79	35.10	3.23
		Middle	3840.00	34.42	35.72	3.74
		High	3950.00	33.44	34.75	2.99

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
48	QPSK	Low	3730.00	33.94	35.25	3.35
		Middle	3840.00	34.14	35.45	3.51
		High	3950.00	32.55	33.86	2.43
	16QAM	Low	3730.00	33.98	35.28	3.38
		Middle	3840.00	34.18	35.49	3.54
		High	3950.00	34.35	35.65	3.68
	64QAM	Low	3730.00	33.93	35.24	3.34
		Middle	3840.00	34.09	35.40	3.47
		High	3950.00	33.77	35.08	3.22
	256QAM	Low	3730.00	33.97	35.28	3.37
		Middle	3840.00	34.26	35.57	3.60
		High	3950.00	33.99	35.30	3.39
49	QPSK	Low	3730.00	33.64	34.95	3.12
		Middle	3840.00	33.76	35.07	3.22
		High	3950.00	34.33	35.64	3.66
	16QAM	Low	3730.00	33.77	35.08	3.22
		Middle	3840.00	34.05	35.36	3.44
		High	3950.00	34.33	35.64	3.66
	64QAM	Low	3730.00	33.55	34.86	3.06
		Middle	3840.00	33.91	35.21	3.32
		High	3950.00	34.55	35.86	3.86
	256QAM	Low	3730.00	33.69	34.99	3.16
		Middle	3840.00	33.63	34.94	3.12
		High	3950.00	33.67	34.98	3.15
50	QPSK	Low	3730.00	33.73	35.04	3.19
		Middle	3840.00	34.13	35.44	3.50
		High	3950.00	34.18	35.49	3.54
	16QAM	Low	3730.00	33.82	35.12	3.25
		Middle	3840.00	33.92	35.23	3.33
		High	3950.00	33.84	35.14	3.27
	64QAM	Low	3730.00	33.71	35.02	3.17
		Middle	3840.00	34.05	35.36	3.43
		High	3950.00	33.78	35.08	3.22
	256QAM	Low	3730.00	33.92	35.23	3.34
		Middle	3840.00	33.86	35.17	3.29
		High	3950.00	34.48	35.78	3.79

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
51	QPSK	Low	3730.00	33.73	35.04	3.19
		Middle	3840.00	33.97	35.27	3.37
		High	3950.00	33.78	35.09	3.23
	16QAM	Low	3730.00	33.48	34.79	3.01
		Middle	3840.00	33.86	35.17	3.29
		High	3950.00	33.80	35.10	3.24
	64QAM	Low	3730.00	33.55	34.85	3.06
		Middle	3840.00	33.94	35.25	3.35
		High	3950.00	33.26	34.57	2.86
	256QAM	Low	3730.00	33.56	34.87	3.07
		Middle	3840.00	33.97	35.28	3.37
		High	3950.00	33.34	34.65	2.92
52	QPSK	Low	3730.00	33.38	34.69	2.95
		Middle	3840.00	33.99	35.30	3.39
		High	3950.00	33.12	34.43	2.77
	16QAM	Low	3730.00	33.55	34.85	3.06
		Middle	3840.00	33.71	35.02	3.18
		High	3950.00	34.02	35.33	3.41
	64QAM	Low	3730.00	33.60	34.90	3.09
		Middle	3840.00	33.99	35.30	3.39
		High	3950.00	33.18	34.49	2.81
	256QAM	Low	3730.00	33.62	34.93	3.11
		Middle	3840.00	33.70	35.01	3.17
		High	3950.00	33.46	34.77	3.00
53	QPSK	Low	3730.00	33.45	34.76	2.99
		Middle	3840.00	34.31	35.62	3.65
		High	3950.00	33.43	34.74	2.98
	16QAM	Low	3730.00	33.46	34.77	3.00
		Middle	3840.00	34.13	35.44	3.50
		High	3950.00	32.63	33.93	2.47
	64QAM	Low	3730.00	33.46	34.77	3.00
		Middle	3840.00	34.09	35.40	3.47
		High	3950.00	33.39	34.69	2.95
	256QAM	Low	3730.00	33.24	34.55	2.85
		Middle	3840.00	34.35	35.66	3.68
		High	3950.00	33.63	34.94	3.12

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
54	QPSK	Low	3730.00	33.78	35.08	3.22
		Middle	3840.00	34.19	35.50	3.55
		High	3950.00	34.38	35.69	3.71
	16QAM	Low	3730.00	33.84	35.14	3.27
		Middle	3840.00	34.22	35.52	3.57
		High	3950.00	33.95	35.26	3.36
	64QAM	Low	3730.00	33.77	35.08	3.22
		Middle	3840.00	34.24	35.55	3.59
		High	3950.00	33.68	34.99	3.15
	256QAM	Low	3730.00	33.69	35.00	3.16
		Middle	3840.00	34.32	35.63	3.65
		High	3950.00	32.60	33.91	2.46
55	QPSK	Low	3730.00	33.13	34.44	2.78
		Middle	3840.00	33.90	35.21	3.32
		High	3950.00	32.71	34.01	2.52
	16QAM	Low	3730.00	33.06	34.36	2.73
		Middle	3840.00	33.70	35.01	3.17
		High	3950.00	32.45	33.76	2.37
	64QAM	Low	3730.00	33.03	34.33	2.71
		Middle	3840.00	34.13	35.44	3.50
		High	3950.00	33.88	35.19	3.30
	256QAM	Low	3730.00	33.09	34.40	2.75
		Middle	3840.00	33.87	35.18	3.29
		High	3950.00	32.46	33.76	2.38
56	QPSK	Low	3730.00	33.82	35.13	3.26
		Middle	3840.00	33.92	35.22	3.33
		High	3950.00	34.03	35.34	3.42
	16QAM	Low	3730.00	33.62	34.93	3.11
		Middle	3840.00	33.84	35.15	3.27
		High	3950.00	34.20	35.50	3.55
	64QAM	Low	3730.00	33.66	34.96	3.14
		Middle	3840.00	34.00	35.31	3.39
		High	3950.00	33.64	34.94	3.12
	256QAM	Low	3730.00	33.69	35.00	3.16
		Middle	3840.00	33.84	35.14	3.27
		High	3950.00	34.58	35.89	3.88

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
57	QPSK	Low	3730.00	34.33	35.64	3.66
		Middle	3840.00	34.06	35.36	3.44
		High	3950.00	34.23	35.54	3.58
	16QAM	Low	3730.00	34.06	35.36	3.44
		Middle	3840.00	34.07	35.38	3.45
		High	3950.00	33.84	35.15	3.27
	64QAM	Low	3730.00	33.88	35.19	3.30
		Middle	3840.00	34.28	35.59	3.62
		High	3950.00	33.97	35.27	3.37
	256QAM	Low	3730.00	34.10	35.41	3.47
		Middle	3840.00	34.08	35.39	3.46
		High	3950.00	33.36	34.67	2.93
58	QPSK	Low	3730.00	34.01	35.32	3.40
		Middle	3840.00	34.37	35.67	3.69
		High	3950.00	33.55	34.86	3.06
	16QAM	Low	3730.00	34.19	35.50	3.55
		Middle	3840.00	34.15	35.45	3.51
		High	3950.00	33.88	35.19	3.30
	64QAM	Low	3730.00	33.96	35.27	3.37
		Middle	3840.00	34.04	35.35	3.43
		High	3950.00	33.82	35.13	3.26
	256QAM	Low	3730.00	33.90	35.21	3.32
		Middle	3840.00	34.25	35.56	3.60
		High	3950.00	33.29	34.60	2.88
59	QPSK	Low	3730.00	34.00	35.31	3.40
		Middle	3840.00	34.21	35.51	3.56
		High	3950.00	33.80	35.10	3.24
	16QAM	Low	3730.00	34.14	35.45	3.50
		Middle	3840.00	34.09	35.40	3.47
		High	3950.00	34.25	35.56	3.60
	64QAM	Low	3730.00	33.90	35.21	3.32
		Middle	3840.00	34.08	35.38	3.46
		High	3950.00	33.42	34.73	2.97
	256QAM	Low	3730.00	33.80	35.11	3.24
		Middle	3840.00	34.07	35.38	3.45
		High	3950.00	33.55	34.86	3.06

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
60	QPSK	Low	3730.00	34.10	35.40	3.47
		Middle	3840.00	34.19	35.49	3.54
		High	3950.00	33.82	35.12	3.25
	16QAM	Low	3730.00	34.14	35.45	3.51
		Middle	3840.00	34.25	35.56	3.60
		High	3950.00	33.21	34.52	2.83
	64QAM	Low	3730.00	34.04	35.34	3.42
		Middle	3840.00	34.06	35.37	3.44
		High	3950.00	33.28	34.59	2.88
	256QAM	Low	3730.00	34.03	35.34	3.42
		Middle	3840.00	34.25	35.55	3.59
		High	3950.00	33.65	34.96	3.13
61	QPSK	Low	3730.00	33.74	35.05	3.20
		Middle	3840.00	34.12	35.43	3.49
		High	3950.00	33.70	35.01	3.17
	16QAM	Low	3730.00	33.52	34.83	3.04
		Middle	3840.00	33.62	34.93	3.11
		High	3950.00	33.06	34.37	2.74
	64QAM	Low	3730.00	33.73	35.04	3.19
		Middle	3840.00	34.18	35.49	3.54
		High	3950.00	33.24	34.55	2.85
	256QAM	Low	3730.00	33.70	35.00	3.16
		Middle	3840.00	34.00	35.30	3.39
		High	3950.00	33.70	35.01	3.17
62	QPSK	Low	3730.00	34.05	35.36	3.44
		Middle	3840.00	34.14	35.45	3.51
		High	3950.00	33.71	35.02	3.18
	16QAM	Low	3730.00	34.03	35.34	3.42
		Middle	3840.00	33.92	35.23	3.34
		High	3950.00	34.04	35.35	3.43
	64QAM	Low	3730.00	34.10	35.41	3.47
		Middle	3840.00	34.06	35.36	3.44
		High	3950.00	34.12	35.42	3.49
	256QAM	Low	3730.00	33.85	35.16	3.28
		Middle	3840.00	34.15	35.46	3.52
		High	3950.00	34.67	35.98	3.96

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm)	Caculated Value (dBm)	Calculated (W)
63	QPSK	Low	3730.00	33.95	35.26	3.36
		Middle	3840.00	34.18	35.49	3.54
		High	3950.00	33.85	35.16	3.28
	16QAM	Low	3730.00	33.74	35.05	3.20
		Middle	3840.00	34.00	35.31	3.39
		High	3950.00	34.42	35.73	3.74
	64QAM	Low	3730.00	33.88	35.19	3.30
		Middle	3840.00	34.05	35.36	3.44
		High	3950.00	33.05	34.36	2.73
	256QAM	Low	3730.00	33.76	35.07	3.22
		Middle	3840.00	34.07	35.37	3.45
		High	3950.00	33.35	34.66	2.92
64	QPSK	Low	3730.00	33.78	35.09	3.23
		Middle	3840.00	34.04	35.35	3.43
		High	3950.00	33.67	34.98	3.15
	16QAM	Low	3730.00	33.90	35.20	3.31
		Middle	3840.00	34.30	35.60	3.63
		High	3950.00	34.57	35.88	3.87
	64QAM	Low	3730.00	33.94	35.24	3.35
		Middle	3840.00	34.22	35.53	3.57
		High	3950.00	32.89	34.20	2.63
	256QAM	Low	3730.00	33.82	35.13	3.26
		Middle	3840.00	34.43	35.74	3.75
		High	3950.00	33.31	34.62	2.90

Sum Data of Port 1 ~ Port 64

Frequency (MHz)	Output Power(Conducted)			
	QPSK	16QAM	64QAM	256QAM
	W			
3730.00	222.69	213.51	214.07	214.85
3840.00	213.67	211.91	212.85	212.82
3950.00	197.75	200.57	197.10	198.03

Plot Data of RF Output Power

Antenna 45 / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / QPSK / Low



Tabular Data of PSD

3.7 GHz Service 5G NR 60 MHz 1 Carrier

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
1	QPSK	Low	3747.64	16.59	17.89	25.50	43.39	21.85	1640
		Middle	3816.36	17.04	18.34	25.50	43.84	24.24	
		High	3953.72	16.05	17.36	25.50	42.86	19.31	
	16QAM	Low	3748.72	16.80	18.11	25.50	43.61	22.94	
		Middle	3824.88	16.87	18.17	25.50	43.67	23.30	
		High	3968.00	15.99	17.30	25.50	42.80	19.05	
	64QAM	Low	3740.44	16.97	18.28	25.50	43.78	23.87	
		Middle	3812.16	17.12	18.43	25.50	43.93	24.70	
		High	3943.76	15.00	16.30	25.50	41.80	15.15	
	256QAM	Low	3730.96	16.76	18.07	25.50	43.57	22.74	
		Middle	3819.60	16.27	17.58	25.50	43.08	20.31	
		High	3969.68	15.32	16.63	25.50	42.13	16.34	
2	QPSK	Low	3755.20	16.83	18.14	25.50	43.64	23.11	1640
		Middle	3813.96	16.74	18.04	25.50	43.54	22.61	
		High	3938.72	16.19	17.50	25.50	43.00	19.96	
	16QAM	Low	3726.16	16.99	18.30	25.50	43.80	23.98	
		Middle	3823.92	16.41	17.72	25.50	43.22	20.98	
		High	3960.44	16.53	17.84	25.50	43.34	21.59	
	64QAM	Low	3752.32	17.35	18.66	25.50	44.16	26.05	
		Middle	3815.88	16.88	18.18	25.50	43.68	23.35	
		High	3953.12	15.53	16.84	25.50	42.34	17.14	
	256QAM	Low	3756.88	16.84	18.14	25.50	43.64	23.14	
		Middle	3820.80	16.53	17.84	25.50	43.34	21.57	
		High	3948.68	15.60	16.91	25.50	42.41	17.42	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
3	QPSK	Low	3748.72	17.26	18.57	25.50	44.07	25.51	1640
		Middle	3815.04	15.81	17.12	25.50	42.62	18.26	
		High	3966.20	16.18	17.49	25.50	42.99	19.89	
	16QAM	Low	3750.52	17.01	18.32	25.50	43.82	24.10	
		Middle	3814.68	16.17	17.48	25.50	42.98	19.87	
		High	3947.84	16.63	17.94	25.50	43.44	22.08	
	64QAM	Low	3754.60	17.33	18.64	25.50	44.14	25.93	
		Middle	3819.12	16.88	18.19	25.50	43.69	23.37	
		High	3955.40	15.32	16.63	25.50	42.13	16.32	
	256QAM	Low	3755.20	17.28	18.59	25.50	44.09	25.64	
		Middle	3813.24	17.12	18.42	25.50	43.92	24.68	
		High	3929.60	15.31	16.61	25.50	42.11	16.27	
4	QPSK	Low	3739.48	16.55	17.86	25.50	43.36	21.68	1640
		Middle	3811.56	16.23	17.54	25.50	43.04	20.12	
		High	3952.16	15.86	17.17	25.50	42.67	18.47	
	16QAM	Low	3739.24	16.35	17.66	25.50	43.16	20.71	
		Middle	3836.40	17.01	18.31	25.50	43.81	24.07	
		High	3936.08	16.60	17.91	25.50	43.41	21.93	
	64QAM	Low	3741.04	16.92	18.23	25.50	43.73	23.59	
		Middle	3819.00	16.67	17.98	25.50	43.48	22.28	
		High	3958.04	15.05	16.36	25.50	41.86	15.35	
	256QAM	Low	3755.80	16.20	17.51	25.50	43.01	19.98	
		Middle	3845.04	16.16	17.47	25.50	42.97	19.81	
		High	3924.80	15.41	16.72	25.50	42.22	16.68	
5	QPSK	Low	3738.64	16.31	17.62	25.50	43.12	20.51	1640
		Middle	3818.64	16.71	18.02	25.50	43.52	22.48	
		High	3949.52	16.15	17.45	25.50	42.95	19.74	
	16QAM	Low	3748.00	16.01	17.32	25.50	42.82	19.13	
		Middle	3813.36	16.93	18.23	25.50	43.73	23.62	
		High	3957.92	16.17	17.47	25.50	42.97	19.84	
	64QAM	Low	3751.72	16.46	17.77	25.50	43.27	21.24	
		Middle	3818.16	17.27	18.58	25.50	44.08	25.58	
		High	3954.08	14.90	16.21	25.50	41.71	14.82	
	256QAM	Low	3752.44	16.41	17.72	25.50	43.22	20.97	
		Middle	3813.72	16.81	18.12	25.50	43.62	23.01	
		High	3946.40	14.79	16.10	25.50	41.60	14.44	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
6	QPSK	Low	3755.80	16.92	18.22	25.50	43.72	23.57	1640
		Middle	3819.60	17.06	18.37	25.50	43.87	24.37	
		High	3936.20	16.40	17.71	25.50	43.21	20.92	
	16QAM	Low	3748.72	17.11	18.42	25.50	43.92	24.64	
		Middle	3815.64	17.00	18.30	25.50	43.80	24.01	
		High	3957.32	16.82	18.13	25.50	43.63	23.06	
	64QAM	Low	3733.12	17.25	18.56	25.50	44.06	25.48	
		Middle	3815.40	17.15	18.45	25.50	43.95	24.86	
		High	3944.72	15.62	16.93	25.50	42.43	17.50	
	256QAM	Low	3751.72	16.89	18.20	25.50	43.70	23.42	
		Middle	3817.56	16.83	18.14	25.50	43.64	23.10	
		High	3942.44	15.52	16.83	25.50	42.33	17.09	
7	QPSK	Low	3729.16	16.01	17.32	25.50	42.82	19.13	1640
		Middle	3820.80	15.81	17.11	25.50	42.61	18.26	
		High	3943.40	15.28	16.58	25.50	42.08	16.16	
	16QAM	Low	3737.32	16.00	17.31	25.50	42.81	19.10	
		Middle	3813.24	15.83	17.14	25.50	42.64	18.34	
		High	3946.40	15.47	16.78	25.50	42.28	16.89	
	64QAM	Low	3734.08	16.25	17.56	25.50	43.06	20.22	
		Middle	3820.20	16.33	17.64	25.50	43.14	20.59	
		High	3943.04	14.30	15.61	25.50	41.11	12.91	
	256QAM	Low	3758.20	15.99	17.30	25.50	42.80	19.06	
		Middle	3822.72	15.15	16.45	25.50	41.95	15.69	
		High	3946.64	14.15	15.46	25.50	40.96	12.48	
8	QPSK	Low	3756.16	16.28	17.59	25.50	43.09	20.36	1640
		Middle	3815.64	16.45	17.76	25.50	43.26	21.17	
		High	3956.96	15.75	17.05	25.50	42.55	18.00	
	16QAM	Low	3750.52	16.74	18.05	25.50	43.55	22.65	
		Middle	3814.44	15.57	16.88	25.50	42.38	17.31	
		High	3947.84	16.30	17.60	25.50	43.10	20.44	
	64QAM	Low	3756.04	16.83	18.14	25.50	43.64	23.12	
		Middle	3817.92	16.84	18.15	25.50	43.65	23.15	
		High	3959.48	15.07	16.38	25.50	41.88	15.42	
	256QAM	Low	3754.60	16.89	18.20	25.50	43.70	23.44	
		Middle	3821.76	16.01	17.32	25.50	42.82	19.12	
		High	3952.52	15.03	16.34	25.50	41.84	15.26	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
9	QPSK	Low	3745.24	16.35	17.66	25.50	43.16	20.68	1640
		Middle	3839.40	15.95	17.26	25.50	42.76	18.89	
		High	3946.40	15.82	17.13	25.50	42.63	18.31	
	16QAM	Low	3748.72	16.52	17.83	25.50	43.33	21.51	
		Middle	3812.64	16.22	17.52	25.50	43.02	20.07	
		High	3946.28	16.25	17.55	25.50	43.05	20.20	
	64QAM	Low	3749.56	16.08	17.39	25.50	42.89	19.44	
		Middle	3811.80	16.36	17.67	25.50	43.17	20.73	
		High	3953.36	14.45	15.76	25.50	41.26	13.36	
	256QAM	Low	3732.64	16.31	17.61	25.50	43.11	20.48	
		Middle	3814.44	16.17	17.48	25.50	42.98	19.87	
		High	3948.56	14.97	16.27	25.50	41.77	15.04	
10	QPSK	Low	3727.00	16.81	18.11	25.50	43.61	22.98	1640
		Middle	3815.76	16.64	17.94	25.50	43.44	22.10	
		High	3940.52	16.32	17.63	25.50	43.13	20.54	
	16QAM	Low	3739.12	16.93	18.24	25.50	43.74	23.67	
		Middle	3814.44	16.42	17.73	25.50	43.23	21.01	
		High	3946.64	16.61	17.92	25.50	43.42	21.97	
	64QAM	Low	3734.08	17.27	18.58	25.50	44.08	25.56	
		Middle	3815.28	17.42	18.73	25.50	44.23	26.48	
		High	3942.08	14.73	16.04	25.50	41.54	14.24	
	256QAM	Low	3757.96	16.93	18.24	25.50	43.74	23.67	
		Middle	3811.68	16.58	17.89	25.50	43.39	21.81	
		High	3942.80	15.58	16.89	25.50	42.39	17.35	
11	QPSK	Low	3756.40	17.10	18.41	25.50	43.91	24.59	1640
		Middle	3820.32	17.04	18.35	25.50	43.85	24.26	
		High	3933.92	16.07	17.37	25.50	42.87	19.38	
	16QAM	Low	3737.92	17.24	18.55	25.50	44.05	25.41	
		Middle	3846.48	15.95	17.26	25.50	42.76	18.87	
		High	3935.96	16.60	17.90	25.50	43.40	21.89	
	64QAM	Low	3755.80	17.20	18.51	25.50	44.01	25.18	
		Middle	3820.68	17.64	18.95	25.50	44.45	27.85	
		High	3925.64	15.46	16.77	25.50	42.27	16.87	
	256QAM	Low	3756.52	16.75	18.06	25.50	43.56	22.67	
		Middle	3812.16	16.83	18.14	25.50	43.64	23.10	
		High	3953.12	15.37	16.68	25.50	42.18	16.52	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
12	QPSK	Low	3751.96	16.67	17.97	25.50	43.47	22.26	1640
		Middle	3818.76	16.44	17.75	25.50	43.25	21.14	
		High	3942.80	15.30	16.61	25.50	42.11	16.26	
	16QAM	Low	3739.12	16.50	17.81	25.50	43.31	21.43	
		Middle	3813.48	15.95	17.26	25.50	42.76	18.86	
		High	3946.16	16.05	17.36	25.50	42.86	19.32	
	64QAM	Low	3752.56	16.82	18.12	25.50	43.62	23.04	
		Middle	3817.32	16.75	18.06	25.50	43.56	22.69	
		High	3954.56	14.80	16.11	25.50	41.61	14.49	
	256QAM	Low	3740.32	16.65	17.96	25.50	43.46	22.19	
		Middle	3812.88	15.77	17.08	25.50	42.58	18.12	
		High	3943.88	15.11	16.42	25.50	41.92	15.56	
13	QPSK	Low	3754.48	17.18	18.48	25.50	43.98	25.02	1640
		Middle	3815.40	16.17	17.48	25.50	42.98	19.85	
		High	3955.04	16.46	17.76	25.50	43.26	21.21	
	16QAM	Low	3737.80	16.62	17.93	25.50	43.43	22.02	
		Middle	3825.60	16.85	18.15	25.50	43.65	23.20	
		High	3935.84	16.69	18.00	25.50	43.50	22.40	
	64QAM	Low	3752.08	17.26	18.56	25.50	44.06	25.50	
		Middle	3829.44	17.02	18.33	25.50	43.83	24.13	
		High	3970.88	15.63	16.94	25.50	42.44	17.53	
	256QAM	Low	3755.08	17.65	18.95	25.50	44.45	27.89	
		Middle	3815.40	16.99	18.29	25.50	43.79	23.95	
		High	3937.40	15.29	16.60	25.50	42.10	16.22	
14	QPSK	Low	3776.92	16.25	17.56	25.50	43.06	20.22	1640
		Middle	3791.04	16.28	17.58	25.50	43.08	20.34	
		High	3997.16	16.28	17.58	25.50	43.08	20.34	
	16QAM	Low	3788.44	16.36	17.67	25.50	43.17	20.74	
		Middle	3784.56	16.53	17.84	25.50	43.34	21.57	
		High	4009.16	15.44	16.74	25.50	42.24	16.76	
	64QAM	Low	3773.92	17.01	18.32	25.50	43.82	24.08	
		Middle	3796.56	16.09	17.40	25.50	42.90	19.49	
		High	3985.52	15.09	16.40	25.50	41.90	15.48	
	256QAM	Low	3788.08	16.44	17.75	25.50	43.25	21.14	
		Middle	3814.08	15.25	16.56	25.50	42.06	16.07	
		High	4000.88	15.43	16.74	25.50	42.24	16.75	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
15	QPSK	Low	3752.08	16.94	18.25	25.50	43.75	23.70	1640
		Middle	3823.08	16.80	18.11	25.50	43.61	22.94	
		High	3929.48	16.38	17.68	25.50	43.18	20.82	
	16QAM	Low	3748.84	17.05	18.36	25.50	43.86	24.34	
		Middle	3825.36	16.89	18.20	25.50	43.70	23.43	
		High	3945.44	16.82	18.13	25.50	43.63	23.08	
	64QAM	Low	3752.08	17.32	18.62	25.50	44.12	25.85	
		Middle	3812.28	17.13	18.44	25.50	43.94	24.76	
		High	3942.08	15.54	16.84	25.50	42.34	17.16	
	256QAM	Low	3742.96	16.96	18.27	25.50	43.77	23.80	
		Middle	3824.40	16.15	17.46	25.50	42.96	19.78	
		High	3944.60	15.51	16.81	25.50	42.31	17.04	
16	QPSK	Low	3754.12	17.02	18.33	25.50	43.83	24.14	1640
		Middle	3818.76	16.96	18.26	25.50	43.76	23.79	
		High	3949.76	16.34	17.65	25.50	43.15	20.64	
	16QAM	Low	3750.40	17.05	18.35	25.50	43.85	24.29	
		Middle	3815.28	17.25	18.56	25.50	44.06	25.48	
		High	3958.76	16.37	17.68	25.50	43.18	20.80	
	64QAM	Low	3756.40	17.01	18.32	25.50	43.82	24.07	
		Middle	3814.68	17.67	18.98	25.50	44.48	28.04	
		High	3967.88	15.39	16.70	25.50	42.20	16.60	
	256QAM	Low	3752.44	17.13	18.44	25.50	43.94	24.75	
		Middle	3822.48	16.04	17.34	25.50	42.84	19.25	
		High	3955.64	15.33	16.64	25.50	42.14	16.37	
17	QPSK	Low	3754.96	16.98	18.29	25.50	43.79	23.93	1640
		Middle	3824.52	16.63	17.93	25.50	43.43	22.05	
		High	3954.08	16.71	18.02	25.50	43.52	22.48	
	16QAM	Low	3750.52	17.21	18.51	25.50	44.01	25.20	
		Middle	3814.08	16.60	17.91	25.50	43.41	21.91	
		High	3968.36	17.02	18.33	25.50	43.83	24.15	
	64QAM	Low	3756.04	17.57	18.88	25.50	44.38	27.40	
		Middle	3817.20	17.27	18.58	25.50	44.08	25.56	
		High	3965.72	15.74	17.05	25.50	42.55	17.97	
	256QAM	Low	3755.56	17.42	18.73	25.50	44.23	26.49	
		Middle	3813.00	15.91	17.22	25.50	42.72	18.70	
		High	3945.32	15.77	17.08	25.50	42.58	18.09	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
18	QPSK	Low	3750.76	17.21	18.52	25.50	44.02	25.24	1640
		Middle	3813.12	16.42	17.72	25.50	43.22	21.01	
		High	3924.92	15.97	17.28	25.50	42.78	18.97	
	16QAM	Low	3751.84	17.29	18.60	25.50	44.10	25.69	
		Middle	3813.12	17.08	18.38	25.50	43.88	24.46	
		High	3971.48	16.39	17.70	25.50	43.20	20.88	
	64QAM	Low	3754.84	17.38	18.69	25.50	44.19	26.21	
		Middle	3812.16	16.75	18.06	25.50	43.56	22.68	
		High	3942.56	15.11	16.42	25.50	41.92	15.57	
	256QAM	Low	3740.20	17.19	18.49	25.50	43.99	25.09	
		Middle	3821.16	16.18	17.49	25.50	42.99	19.90	
		High	3944.00	14.95	16.26	25.50	41.76	14.99	
19	QPSK	Low	3747.76	16.67	17.98	25.50	43.48	22.29	1640
		Middle	3819.36	16.46	17.76	25.50	43.26	21.20	
		High	3947.00	16.46	17.76	25.50	43.26	21.21	
	16QAM	Low	3738.76	16.97	18.28	25.50	43.78	23.85	
		Middle	3824.52	16.74	18.05	25.50	43.55	22.65	
		High	3959.96	16.69	17.99	25.50	43.49	22.36	
	64QAM	Low	3721.24	16.98	18.29	25.50	43.79	23.92	
		Middle	3814.68	16.58	17.89	25.50	43.39	21.84	
		High	3947.24	15.40	16.71	25.50	42.21	16.63	
	256QAM	Low	3748.72	17.07	18.38	25.50	43.88	24.41	
		Middle	3818.04	16.25	17.55	25.50	43.05	20.20	
		High	3939.80	15.79	17.10	25.50	42.60	18.19	
20	QPSK	Low	3739.72	17.30	18.61	25.50	44.11	25.78	1640
		Middle	3821.16	16.02	17.33	25.50	42.83	19.19	
		High	3954.68	16.48	17.79	25.50	43.29	21.33	
	16QAM	Low	3738.04	16.88	18.19	25.50	43.69	23.36	
		Middle	3812.52	16.50	17.81	25.50	43.31	21.41	
		High	3945.20	16.63	17.93	25.50	43.43	22.05	
	64QAM	Low	3747.40	17.19	18.50	25.50	44.00	25.11	
		Middle	3813.12	16.88	18.18	25.50	43.68	23.36	
		High	3947.48	15.40	16.71	25.50	42.21	16.62	
	256QAM	Low	3737.68	16.90	18.21	25.50	43.71	23.48	
		Middle	3815.52	17.15	18.46	25.50	43.96	24.90	
		High	3963.56	15.37	16.67	25.50	42.17	16.49	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
21	QPSK	Low	3755.80	16.89	18.20	25.50	43.70	23.43	1640
		Middle	3814.44	17.60	18.91	25.50	44.41	27.57	
		High	3942.20	16.63	17.93	25.50	43.43	22.04	
	16QAM	Low	3748.24	16.87	18.18	25.50	43.68	23.34	
		Middle	3835.56	16.79	18.10	25.50	43.60	22.91	
		High	3944.84	17.08	18.39	25.50	43.89	24.47	
	64QAM	Low	3740.80	16.97	18.28	25.50	43.78	23.87	
		Middle	3820.44	15.96	17.27	25.50	42.77	18.93	
		High	3924.92	15.19	16.50	25.50	42.00	15.84	
	256QAM	Low	3732.64	16.91	18.22	25.50	43.72	23.55	
		Middle	3812.40	15.93	17.24	25.50	42.74	18.78	
		High	3922.40	15.53	16.84	25.50	42.34	17.14	
22	QPSK	Low	3749.08	17.04	18.35	25.50	43.85	24.26	1640
		Middle	3815.40	16.73	18.04	25.50	43.54	22.59	
		High	3963.56	16.66	17.97	25.50	43.47	22.23	
	16QAM	Low	3748.60	16.65	17.96	25.50	43.46	22.17	
		Middle	3815.28	16.84	18.15	25.50	43.65	23.17	
		High	3960.08	16.65	17.96	25.50	43.46	22.17	
	64QAM	Low	3755.32	17.38	18.68	25.50	44.18	26.20	
		Middle	3812.16	16.94	18.25	25.50	43.75	23.72	
		High	3942.56	15.48	16.78	25.50	42.28	16.92	
	256QAM	Low	3756.04	16.81	18.11	25.50	43.61	22.98	
		Middle	3818.28	15.95	17.26	25.50	42.76	18.89	
		High	3951.56	15.57	16.87	25.50	42.37	17.28	
23	QPSK	Low	3755.80	16.77	18.08	25.50	43.58	22.79	1640
		Middle	3814.20	16.34	17.65	25.50	43.15	20.63	
		High	3944.00	16.32	17.63	25.50	43.13	20.57	
	16QAM	Low	3749.08	16.81	18.12	25.50	43.62	23.01	
		Middle	3813.00	16.25	17.55	25.50	43.05	20.20	
		High	3934.16	16.53	17.84	25.50	43.34	21.58	
	64QAM	Low	3743.68	16.63	17.94	25.50	43.44	22.08	
		Middle	3814.08	16.89	18.19	25.50	43.69	23.41	
		High	3938.72	15.60	16.91	25.50	42.41	17.43	
	256QAM	Low	3756.64	17.01	18.32	25.50	43.82	24.10	
		Middle	3816.12	16.50	17.81	25.50	43.31	21.42	
		High	3958.88	15.64	16.95	25.50	42.45	17.57	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
24	QPSK	Low	3752.44	16.73	18.04	25.50	43.54	22.57	1640
		Middle	3813.72	16.98	18.29	25.50	43.79	23.94	
		High	3955.16	16.05	17.36	25.50	42.86	19.30	
	16QAM	Low	3737.92	16.94	18.25	25.50	43.75	23.73	
		Middle	3834.96	16.68	17.98	25.50	43.48	22.30	
		High	3947.00	16.67	17.98	25.50	43.48	22.28	
	64QAM	Low	3752.08	16.93	18.23	25.50	43.73	23.63	
		Middle	3817.20	17.48	18.78	25.50	44.28	26.82	
		High	3950.60	15.62	16.92	25.50	42.42	17.47	
	256QAM	Low	3747.40	17.47	18.78	25.50	44.28	26.79	
		Middle	3817.80	17.02	18.33	25.50	43.83	24.15	
		High	3953.24	15.15	16.45	25.50	41.95	15.68	
25	QPSK	Low	3751.84	17.14	18.45	25.50	43.95	24.82	1640
		Middle	3818.40	17.05	18.36	25.50	43.86	24.31	
		High	3951.68	16.55	17.85	25.50	43.35	21.65	
	16QAM	Low	3736.48	17.05	18.36	25.50	43.86	24.33	
		Middle	3812.88	16.68	17.99	25.50	43.49	22.32	
		High	3959.12	17.01	18.31	25.50	43.81	24.07	
	64QAM	Low	3744.64	17.29	18.60	25.50	44.10	25.71	
		Middle	3814.20	17.46	18.77	25.50	44.27	26.71	
		High	3953.48	15.63	16.94	25.50	42.44	17.52	
	256QAM	Low	3751.36	16.88	18.19	25.50	43.69	23.40	
		Middle	3813.36	16.94	18.24	25.50	43.74	23.68	
		High	3950.24	15.68	16.99	25.50	42.49	17.74	
26	QPSK	Low	3754.60	17.04	18.34	25.50	43.84	24.23	1640
		Middle	3825.72	15.95	17.26	25.50	42.76	18.89	
		High	3950.48	16.11	17.42	25.50	42.92	19.57	
	16QAM	Low	3738.28	16.81	18.12	25.50	43.62	23.02	
		Middle	3815.52	16.97	18.28	25.50	43.78	23.89	
		High	3935.60	16.32	17.63	25.50	43.13	20.57	
	64QAM	Low	3721.00	16.82	18.13	25.50	43.63	23.05	
		Middle	3814.08	16.54	17.84	25.50	43.34	21.60	
		High	3947.36	15.09	16.40	25.50	41.90	15.48	
	256QAM	Low	3741.28	17.09	18.40	25.50	43.90	24.55	
		Middle	3815.76	17.49	18.80	25.50	44.30	26.88	
		High	3953.60	15.21	16.51	25.50	42.01	15.90	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
27	QPSK	Low	3758.08	16.66	17.96	25.50	43.46	22.20	1640
		Middle	3816.60	16.76	18.07	25.50	43.57	22.76	
		High	3960.92	16.53	17.84	25.50	43.34	21.56	
	16QAM	Low	3751.60	16.68	17.99	25.50	43.49	22.32	
		Middle	3815.76	17.23	18.54	25.50	44.04	25.35	
		High	3956.84	16.69	18.00	25.50	43.50	22.39	
	64QAM	Low	3740.92	17.40	18.71	25.50	44.21	26.38	
		Middle	3813.48	16.96	18.26	25.50	43.76	23.79	
		High	3952.76	15.54	16.85	25.50	42.35	17.17	
	256QAM	Low	3756.28	17.47	18.78	25.50	44.28	26.77	
		Middle	3814.08	16.61	17.92	25.50	43.42	21.98	
		High	3947.36	15.66	16.97	25.50	42.47	17.66	
28	QPSK	Low	3742.96	17.61	18.92	25.50	44.42	27.64	1640
		Middle	3818.28	17.20	18.51	25.50	44.01	25.17	
		High	3937.76	17.31	18.62	25.50	44.12	25.82	
	16QAM	Low	3749.56	17.73	19.03	25.50	44.53	28.41	
		Middle	3824.64	16.54	17.85	25.50	43.35	21.62	
		High	3948.80	17.65	18.96	25.50	44.46	27.94	
	64QAM	Low	3756.04	18.33	19.64	25.50	45.14	32.64	
		Middle	3811.80	17.37	18.68	25.50	44.18	26.18	
		High	3959.36	16.33	17.64	25.50	43.14	20.60	
	256QAM	Low	3747.04	18.07	19.38	25.50	44.88	30.74	
		Middle	3813.60	17.31	18.61	25.50	44.11	25.78	
		High	3949.16	16.17	17.47	25.50	42.97	19.83	
29	QPSK	Low	3750.64	17.05	18.36	25.50	43.86	24.30	1640
		Middle	3812.40	17.13	18.44	25.50	43.94	24.77	
		High	3946.88	16.39	17.69	25.50	43.19	20.86	
	16QAM	Low	3751.96	16.30	17.61	25.50	43.11	20.47	
		Middle	3812.40	15.72	17.03	25.50	42.53	17.90	
		High	3948.92	16.61	17.91	25.50	43.41	21.94	
	64QAM	Low	3755.92	17.33	18.64	25.50	44.14	25.92	
		Middle	3818.16	16.43	17.73	25.50	43.23	21.05	
		High	3951.44	15.60	16.91	25.50	42.41	17.41	
	256QAM	Low	3757.48	16.74	18.05	25.50	43.55	22.66	
		Middle	3814.56	15.48	16.79	25.50	42.29	16.93	
		High	3971.72	15.22	16.52	25.50	42.02	15.94	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
30	QPSK	Low	3745.60	17.57	18.87	25.50	44.37	27.38	1640
		Middle	3812.28	16.64	17.95	25.50	43.45	22.13	
		High	3962.00	16.39	17.69	25.50	43.19	20.87	
	16QAM	Low	3749.68	16.91	18.22	25.50	43.72	23.55	
		Middle	3814.68	16.16	17.47	25.50	42.97	19.79	
		High	3968.60	16.89	18.20	25.50	43.70	23.45	
	64QAM	Low	3755.68	17.79	19.10	25.50	44.60	28.81	
		Middle	3813.00	16.00	17.31	25.50	42.81	19.08	
		High	3953.00	15.39	16.69	25.50	42.19	16.57	
	256QAM	Low	3755.44	17.87	19.17	25.50	44.67	29.34	
		Middle	3813.36	16.62	17.92	25.50	43.42	22.00	
		High	3958.40	15.72	17.02	25.50	42.52	17.88	
31	QPSK	Low	3739.00	17.01	18.32	25.50	43.82	24.09	1640
		Middle	3813.00	16.28	17.58	25.50	43.08	20.34	
		High	3934.88	16.16	17.47	25.50	42.97	19.80	
	16QAM	Low	3751.24	17.18	18.49	25.50	43.99	25.07	
		Middle	3815.28	16.97	18.28	25.50	43.78	23.86	
		High	3947.60	17.14	18.45	25.50	43.95	24.82	
	64QAM	Low	3758.20	17.64	18.95	25.50	44.45	27.87	
		Middle	3820.68	16.57	17.87	25.50	43.37	21.74	
		High	3961.76	15.61	16.92	25.50	42.42	17.46	
	256QAM	Low	3757.48	17.50	18.81	25.50	44.31	26.99	
		Middle	3816.00	16.93	18.24	25.50	43.74	23.67	
		High	3954.68	15.68	16.99	25.50	42.49	17.75	
32	QPSK	Low	3753.04	17.38	18.69	25.50	44.19	26.24	1640
		Middle	3825.00	17.20	18.51	25.50	44.01	25.18	
		High	3945.92	16.34	17.65	25.50	43.15	20.66	
	16QAM	Low	3739.60	16.86	18.16	25.50	43.66	23.24	
		Middle	3813.00	17.18	18.49	25.50	43.99	25.08	
		High	3948.56	16.87	18.17	25.50	43.67	23.30	
	64QAM	Low	3748.48	17.49	18.80	25.50	44.30	26.93	
		Middle	3819.48	17.25	18.56	25.50	44.06	25.46	
		High	3942.56	15.41	16.72	25.50	42.22	16.67	
	256QAM	Low	3748.36	17.31	18.62	25.50	44.12	25.82	
		Middle	3820.44	15.47	16.78	25.50	42.28	16.89	
		High	3955.04	15.81	17.12	25.50	42.62	18.26	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
33	QPSK	Low	3730.72	16.52	17.83	25.50	43.33	21.51	1640
		Middle	3818.28	16.78	18.09	25.50	43.59	22.86	
		High	3937.76	17.28	18.59	25.50	44.09	25.65	
	16QAM	Low	3748.84	17.24	18.55	25.50	44.05	25.38	
		Middle	3825.12	16.64	17.95	25.50	43.45	22.12	
		High	3934.88	17.76	19.07	25.50	44.57	28.65	
	64QAM	Low	3748.36	17.40	18.70	25.50	44.20	26.32	
		Middle	3861.84	16.92	18.23	25.50	43.73	23.59	
		High	3933.32	16.74	18.05	25.50	43.55	22.66	
	256QAM	Low	3754.84	17.49	18.80	25.50	44.30	26.90	
		Middle	3822.24	16.45	17.76	25.50	43.26	21.18	
		High	3924.32	16.30	17.60	25.50	43.10	20.44	
34	QPSK	Low	3754.96	16.87	18.18	25.50	43.68	23.35	1640
		Middle	3832.68	16.47	17.78	25.50	43.28	21.29	
		High	3924.32	16.81	18.12	25.50	43.62	23.01	
	16QAM	Low	3750.76	16.95	18.26	25.50	43.76	23.78	
		Middle	3848.88	16.50	17.81	25.50	43.31	21.41	
		High	3933.80	17.08	18.39	25.50	43.89	24.49	
	64QAM	Low	3755.80	17.33	18.64	25.50	44.14	25.96	
		Middle	3863.76	16.56	17.87	25.50	43.37	21.72	
		High	3934.88	15.99	17.30	25.50	42.80	19.06	
	256QAM	Low	3756.40	17.35	18.65	25.50	44.15	26.03	
		Middle	3839.28	16.27	17.57	25.50	43.07	20.29	
		High	3933.68	16.12	17.42	25.50	42.92	19.61	
35	QPSK	Low	3748.24	16.27	17.58	25.50	43.08	20.31	1640
		Middle	3839.64	16.61	17.91	25.50	43.41	21.95	
		High	3928.16	16.90	18.21	25.50	43.71	23.48	
	16QAM	Low	3739.48	16.96	18.26	25.50	43.76	23.79	
		Middle	3825.60	16.90	18.21	25.50	43.71	23.49	
		High	3935.36	16.37	17.68	25.50	43.18	20.78	
	64QAM	Low	3749.80	17.28	18.59	25.50	44.09	25.65	
		Middle	3812.40	16.60	17.91	25.50	43.41	21.93	
		High	3923.60	15.84	17.15	25.50	42.65	18.39	
	256QAM	Low	3746.44	16.81	18.12	25.50	43.62	23.03	
		Middle	3827.52	16.22	17.53	25.50	43.03	20.08	
		High	3933.32	16.44	17.74	25.50	43.24	21.10	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
36	QPSK	Low	3740.80	16.44	17.75	25.50	43.25	21.11	1640
		Middle	3838.56	16.50	17.81	25.50	43.31	21.41	
		High	3924.56	16.58	17.89	25.50	43.39	21.84	
	16QAM	Low	3738.52	16.94	18.24	25.50	43.74	23.68	
		Middle	3825.48	16.58	17.88	25.50	43.38	21.79	
		High	3925.16	16.60	17.91	25.50	43.41	21.92	
	64QAM	Low	3755.32	17.16	18.47	25.50	43.97	24.94	
		Middle	3861.48	16.77	18.08	25.50	43.58	22.81	
		High	3922.04	15.65	16.96	25.50	42.46	17.61	
	256QAM	Low	3754.48	17.20	18.51	25.50	44.01	25.17	
		Middle	3823.56	16.56	17.87	25.50	43.37	21.70	
		High	3922.04	15.47	16.78	25.50	42.28	16.90	
37	QPSK	Low	3754.72	16.82	18.13	25.50	43.63	23.08	1640
		Middle	3852.96	16.46	17.77	25.50	43.27	21.22	
		High	3931.64	17.24	18.55	25.50	44.05	25.39	
	16QAM	Low	3750.88	16.97	18.27	25.50	43.77	23.84	
		Middle	3825.60	16.76	18.07	25.50	43.57	22.75	
		High	3936.20	17.78	19.09	25.50	44.59	28.77	
	64QAM	Low	3746.92	16.96	18.27	25.50	43.77	23.81	
		Middle	3849.48	16.65	17.95	25.50	43.45	22.14	
		High	3942.08	15.73	17.03	25.50	42.53	17.92	
	256QAM	Low	3730.96	16.82	18.13	25.50	43.63	23.05	
		Middle	3838.56	16.35	17.66	25.50	43.16	20.70	
		High	3928.40	16.77	18.08	25.50	43.58	22.81	
38	QPSK	Low	3746.20	16.78	18.09	25.50	43.59	22.86	1640
		Middle	3859.44	16.63	17.93	25.50	43.43	22.05	
		High	3925.64	16.89	18.20	25.50	43.70	23.46	
	16QAM	Low	3747.76	16.92	18.22	25.50	43.72	23.58	
		Middle	3837.84	16.71	18.02	25.50	43.52	22.49	
		High	3924.44	16.43	17.74	25.50	43.24	21.09	
	64QAM	Low	3752.20	17.29	18.60	25.50	44.10	25.69	
		Middle	3837.60	16.92	18.23	25.50	43.73	23.58	
		High	3923.36	15.77	17.08	25.50	42.58	18.12	
	256QAM	Low	3740.56	17.06	18.36	25.50	43.86	24.34	
		Middle	3847.08	16.37	17.68	25.50	43.18	20.78	
		High	3943.76	16.70	18.01	25.50	43.51	22.43	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
39	QPSK	Low	3754.96	16.74	18.05	25.50	43.55	22.65	1640
		Middle	3838.32	16.33	17.64	25.50	43.14	20.59	
		High	3930.20	17.31	18.62	25.50	44.12	25.82	
	16QAM	Low	3738.04	16.77	18.08	25.50	43.58	22.79	
		Middle	3836.40	17.10	18.41	25.50	43.91	24.60	
		High	3936.68	16.88	18.18	25.50	43.68	23.35	
	64QAM	Low	3756.04	17.11	18.42	25.50	43.92	24.67	
		Middle	3831.84	16.90	18.20	25.50	43.70	23.46	
		High	3924.32	15.81	17.12	25.50	42.62	18.28	
	256QAM	Low	3734.08	17.07	18.38	25.50	43.88	24.44	
		Middle	3833.88	16.22	17.53	25.50	43.03	20.09	
		High	3934.52	16.35	17.66	25.50	43.16	20.71	
40	QPSK	Low	3756.52	16.38	17.69	25.50	43.19	20.85	1640
		Middle	3844.92	16.40	17.71	25.50	43.21	20.94	
		High	3939.92	16.92	18.23	25.50	43.73	23.61	
	16QAM	Low	3748.36	17.17	18.48	25.50	43.98	25.01	
		Middle	3826.32	17.06	18.37	25.50	43.87	24.35	
		High	3924.80	17.36	18.67	25.50	44.17	26.10	
	64QAM	Low	3755.56	17.61	18.92	25.50	44.42	27.66	
		Middle	3857.28	16.20	17.51	25.50	43.01	19.98	
		High	3931.52	16.27	17.58	25.50	43.08	20.32	
	256QAM	Low	3757.84	16.69	18.00	25.50	43.50	22.39	
		Middle	3852.00	16.60	17.91	25.50	43.41	21.93	
		High	3949.40	15.77	17.08	25.50	42.58	18.11	
41	QPSK	Low	3757.12	16.29	17.60	25.50	43.10	20.42	1640
		Middle	3814.20	16.57	17.87	25.50	43.37	21.75	
		High	3929.48	17.17	18.47	25.50	43.97	24.97	
	16QAM	Low	3750.40	17.18	18.49	25.50	43.99	25.04	
		Middle	3835.20	16.69	18.00	25.50	43.50	22.37	
		High	3935.96	17.53	18.84	25.50	44.34	27.17	
	64QAM	Low	3732.76	16.74	18.05	25.50	43.55	22.64	
		Middle	3836.16	16.72	18.03	25.50	43.53	22.54	
		High	3930.32	15.85	17.16	25.50	42.66	18.45	
	256QAM	Low	3748.00	16.54	17.84	25.50	43.34	21.60	
		Middle	3824.76	16.46	17.77	25.50	43.27	21.24	
		High	3927.08	15.52	16.83	25.50	42.33	17.10	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
42	QPSK	Low	3754.96	17.19	18.50	25.50	44.00	25.09	1640
		Middle	3850.08	16.09	17.39	25.50	42.89	19.47	
		High	3931.52	16.50	17.81	25.50	43.31	21.44	
	16QAM	Low	3749.44	17.10	18.41	25.50	43.91	24.62	
		Middle	3825.84	16.20	17.51	25.50	43.01	19.99	
		High	3934.16	18.09	19.39	25.50	44.89	30.86	
	64QAM	Low	3755.56	17.23	18.54	25.50	44.04	25.34	
		Middle	3821.64	16.58	17.88	25.50	43.38	21.79	
		High	3929.84	16.68	17.98	25.50	43.48	22.31	
	256QAM	Low	3754.60	17.18	18.48	25.50	43.98	25.02	
		Middle	3820.68	16.29	17.60	25.50	43.10	20.42	
		High	3943.76	16.21	17.51	25.50	43.01	20.02	
43	QPSK	Low	3740.44	16.84	18.15	25.50	43.65	23.15	1640
		Middle	3856.08	16.51	17.82	25.50	43.32	21.46	
		High	3934.64	16.49	17.80	25.50	43.30	21.37	
	16QAM	Low	3750.52	16.80	18.10	25.50	43.60	22.93	
		Middle	3826.20	16.32	17.63	25.50	43.13	20.54	
		High	3923.36	17.26	18.56	25.50	44.06	25.49	
	64QAM	Low	3755.08	17.08	18.39	25.50	43.89	24.50	
		Middle	3835.92	16.62	17.92	25.50	43.42	21.99	
		High	3931.04	15.91	17.22	25.50	42.72	18.71	
	256QAM	Low	3753.52	16.75	18.06	25.50	43.56	22.68	
		Middle	3822.96	16.16	17.47	25.50	42.97	19.80	
		High	3953.36	15.91	17.22	25.50	42.72	18.70	
44	QPSK	Low	3751.72	16.86	18.17	25.50	43.67	23.28	1640
		Middle	3834.36	16.54	17.84	25.50	43.34	21.60	
		High	3936.80	16.63	17.94	25.50	43.44	22.09	
	16QAM	Low	3739.12	17.17	18.47	25.50	43.97	24.97	
		Middle	3823.56	16.72	18.02	25.50	43.52	22.52	
		High	3925.88	18.07	19.38	25.50	44.88	30.74	
	64QAM	Low	3752.20	17.47	18.78	25.50	44.28	26.80	
		Middle	3821.64	16.95	18.25	25.50	43.75	23.73	
		High	3924.92	17.05	18.35	25.50	43.85	24.29	
	256QAM	Low	3745.96	17.24	18.55	25.50	44.05	25.39	
		Middle	3821.40	16.32	17.63	25.50	43.13	20.55	
		High	3959.48	16.00	17.31	25.50	42.81	19.09	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
45	QPSK	Low	3755.44	17.22	18.53	25.50	44.03	25.28	1640
		Middle	3850.44	16.35	17.65	25.50	43.15	20.67	
		High	3923.24	17.96	19.27	25.50	44.77	30.01	
	16QAM	Low	3737.44	17.10	18.40	25.50	43.90	24.56	
		Middle	3827.28	16.76	18.07	25.50	43.57	22.74	
		High	3936.08	18.50	19.81	25.50	45.31	33.95	
	64QAM	Low	3729.52	17.28	18.58	25.50	44.08	25.61	
		Middle	3837.24	16.86	18.16	25.50	43.66	23.25	
		High	3927.08	15.90	17.21	25.50	42.71	18.66	
	256QAM	Low	3732.64	17.10	18.41	25.50	43.91	24.61	
		Middle	3831.00	16.38	17.69	25.50	43.19	20.86	
		High	3928.04	16.61	17.91	25.50	43.41	21.95	
46	QPSK	Low	3755.32	16.76	18.07	25.50	43.57	22.74	1640
		Middle	3844.08	16.68	17.99	25.50	43.49	22.33	
		High	3924.08	16.82	18.13	25.50	43.63	23.06	
	16QAM	Low	3740.20	16.98	18.29	25.50	43.79	23.95	
		Middle	3860.64	16.80	18.11	25.50	43.61	22.95	
		High	3945.92	15.99	17.29	25.50	42.79	19.03	
	64QAM	Low	3754.48	17.10	18.41	25.50	43.91	24.59	
		Middle	3815.64	16.89	18.20	25.50	43.70	23.44	
		High	3933.44	16.34	17.65	25.50	43.15	20.63	
	256QAM	Low	3748.48	16.99	18.30	25.50	43.80	23.97	
		Middle	3860.88	16.65	17.96	25.50	43.46	22.16	
		High	3925.04	16.25	17.55	25.50	43.05	20.20	
47	QPSK	Low	3742.96	16.74	18.05	25.50	43.55	22.65	1640
		Middle	3860.88	17.21	18.51	25.50	44.01	25.20	
		High	3960.20	16.35	17.66	25.50	43.16	20.69	
	16QAM	Low	3739.48	16.86	18.17	25.50	43.67	23.26	
		Middle	3846.24	16.93	18.24	25.50	43.74	23.64	
		High	3933.08	17.18	18.49	25.50	43.99	25.06	
	64QAM	Low	3756.76	16.90	18.21	25.50	43.71	23.50	
		Middle	3865.32	16.89	18.20	25.50	43.70	23.44	
		High	3930.92	16.44	17.74	25.50	43.24	21.10	
	256QAM	Low	3757.96	17.23	18.54	25.50	44.04	25.33	
		Middle	3827.40	16.54	17.85	25.50	43.35	21.62	
		High	3947.12	16.56	17.87	25.50	43.37	21.73	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
48	QPSK	Low	3732.16	16.73	18.04	25.50	43.54	22.60	1640
		Middle	3820.32	16.50	17.81	25.50	43.31	21.43	
		High	3924.68	17.77	19.08	25.50	44.58	28.70	
	16QAM	Low	3747.64	16.81	18.12	25.50	43.62	23.01	
		Middle	3849.96	16.80	18.11	25.50	43.61	22.96	
		High	3968.84	16.63	17.94	25.50	43.44	22.08	
	64QAM	Low	3757.48	17.05	18.36	25.50	43.86	24.31	
		Middle	3818.52	16.74	18.05	25.50	43.55	22.64	
		High	3944.84	15.11	16.42	25.50	41.92	15.55	
	256QAM	Low	3744.52	17.08	18.39	25.50	43.89	24.50	
		Middle	3832.08	16.34	17.65	25.50	43.15	20.66	
		High	3929.00	16.09	17.40	25.50	42.90	19.49	
49	QPSK	Low	3732.52	16.04	17.35	25.50	42.85	19.27	1640
		Middle	3814.20	16.32	17.63	25.50	43.13	20.56	
		High	3963.20	15.39	16.70	25.50	42.20	16.59	
	16QAM	Low	3749.68	16.61	17.92	25.50	43.42	21.97	
		Middle	3859.80	16.49	17.80	25.50	43.30	21.38	
		High	3935.60	17.32	18.63	25.50	44.13	25.89	
	64QAM	Low	3743.80	16.55	17.86	25.50	43.36	21.69	
		Middle	3840.60	16.47	17.78	25.50	43.28	21.26	
		High	3930.80	15.78	17.09	25.50	42.59	18.14	
	256QAM	Low	3744.16	16.98	18.29	25.50	43.79	23.93	
		Middle	3840.72	16.33	17.64	25.50	43.14	20.59	
		High	3929.24	16.38	17.69	25.50	43.19	20.85	
50	QPSK	Low	3741.04	16.78	18.09	25.50	43.59	22.85	1640
		Middle	3830.52	16.39	17.70	25.50	43.20	20.89	
		High	3930.92	16.98	18.29	25.50	43.79	23.91	
	16QAM	Low	3736.48	16.98	18.29	25.50	43.79	23.91	
		Middle	3827.04	16.74	18.05	25.50	43.55	22.63	
		High	3924.20	16.37	17.68	25.50	43.18	20.78	
	64QAM	Low	3752.32	16.86	18.17	25.50	43.67	23.25	
		Middle	3863.04	17.01	18.32	25.50	43.82	24.11	
		High	3944.00	16.16	17.46	25.50	42.96	19.79	
	256QAM	Low	3757.36	16.58	17.88	25.50	43.38	21.80	
		Middle	3843.96	16.20	17.50	25.50	43.00	19.97	
		High	3928.52	15.77	17.07	25.50	42.57	18.09	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
51	QPSK	Low	3755.56	16.40	17.71	25.50	43.21	20.92	1640
		Middle	3831.84	16.51	17.82	25.50	43.32	21.49	
		High	3936.44	16.69	17.99	25.50	43.49	22.36	
	16QAM	Low	3748.00	16.67	17.98	25.50	43.48	22.27	
		Middle	3812.88	16.36	17.67	25.50	43.17	20.73	
		High	3933.32	15.88	17.19	25.50	42.69	18.57	
	64QAM	Low	3752.08	16.72	18.02	25.50	43.52	22.51	
		Middle	3832.80	16.93	18.24	25.50	43.74	23.64	
		High	3923.24	15.44	16.75	25.50	42.25	16.77	
	256QAM	Low	3756.64	16.42	17.72	25.50	43.22	21.01	
		Middle	3862.20	16.25	17.55	25.50	43.05	20.20	
		High	3959.36	16.13	17.44	25.50	42.94	19.67	
52	QPSK	Low	3755.80	16.49	17.80	25.50	43.30	21.38	1640
		Middle	3817.80	16.32	17.63	25.50	43.13	20.56	
		High	3942.56	15.78	17.09	25.50	42.59	18.15	
	16QAM	Low	3726.04	16.34	17.64	25.50	43.14	20.63	
		Middle	3823.92	16.57	17.88	25.50	43.38	21.77	
		High	3925.76	17.45	18.75	25.50	44.25	26.63	
	64QAM	Low	3753.76	16.67	17.97	25.50	43.47	22.26	
		Middle	3839.16	16.66	17.97	25.50	43.47	22.24	
		High	3931.64	15.87	17.18	25.50	42.68	18.53	
	256QAM	Low	3755.56	16.59	17.90	25.50	43.40	21.86	
		Middle	3814.08	16.63	17.94	25.50	43.44	22.06	
		High	3925.64	15.35	16.65	25.50	42.15	16.42	
53	QPSK	Low	3745.48	15.74	17.04	25.50	42.54	17.97	1640
		Middle	3838.92	16.75	18.06	25.50	43.56	22.70	
		High	3945.44	15.82	17.13	25.50	42.63	18.33	
	16QAM	Low	3748.72	16.54	17.85	25.50	43.35	21.63	
		Middle	3824.40	16.69	18.00	25.50	43.50	22.38	
		High	3924.20	16.95	18.26	25.50	43.76	23.75	
	64QAM	Low	3756.52	16.45	17.75	25.50	43.25	21.16	
		Middle	3836.88	16.75	18.06	25.50	43.56	22.71	
		High	3924.68	16.01	17.32	25.50	42.82	19.15	
	256QAM	Low	3740.80	16.01	17.32	25.50	42.82	19.15	
		Middle	3815.52	16.64	17.95	25.50	43.45	22.11	
		High	3928.64	15.40	16.71	25.50	42.21	16.62	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
54	QPSK	Low	3744.16	16.33	17.64	25.50	43.14	20.60	1640
		Middle	3816.84	16.81	18.11	25.50	43.61	22.98	
		High	3924.92	16.54	17.85	25.50	43.35	21.62	
	16QAM	Low	3737.44	17.19	18.50	25.50	44.00	25.11	
		Middle	3814.32	16.85	18.16	25.50	43.66	23.24	
		High	3936.68	17.96	19.27	25.50	44.77	30.01	
	64QAM	Low	3741.04	17.09	18.40	25.50	43.90	24.54	
		Middle	3864.24	16.77	18.08	25.50	43.58	22.82	
		High	3925.04	17.03	18.34	25.50	43.84	24.21	
	256QAM	Low	3754.00	16.63	17.93	25.50	43.43	22.05	
		Middle	3841.32	16.43	17.73	25.50	43.23	21.05	
		High	3944.24	15.65	16.96	25.50	42.46	17.62	
55	QPSK	Low	3745.00	15.51	16.82	25.50	42.32	17.05	1640
		Middle	3815.40	16.23	17.54	25.50	43.04	20.14	
		High	3937.64	16.45	17.76	25.50	43.26	21.19	
	16QAM	Low	3750.76	16.20	17.50	25.50	43.00	19.97	
		Middle	3838.08	16.44	17.74	25.50	43.24	21.10	
		High	3935.84	15.96	17.27	25.50	42.77	18.92	
	64QAM	Low	3757.24	16.38	17.69	25.50	43.19	20.82	
		Middle	3835.56	16.37	17.68	25.50	43.18	20.78	
		High	3947.36	14.93	16.23	25.50	41.73	14.91	
	256QAM	Low	3755.68	15.75	17.05	25.50	42.55	18.01	
		Middle	3819.24	16.07	17.37	25.50	42.87	19.38	
		High	3976.04	13.73	15.04	25.50	40.54	11.32	
56	QPSK	Low	3732.40	16.70	18.01	25.50	43.51	22.44	1640
		Middle	3844.08	16.48	17.79	25.50	43.29	21.34	
		High	3970.04	15.53	16.84	25.50	42.34	17.12	
	16QAM	Low	3748.00	17.17	18.48	25.50	43.98	24.98	
		Middle	3858.60	16.28	17.59	25.50	43.09	20.38	
		High	3925.64	16.63	17.94	25.50	43.44	22.07	
	64QAM	Low	3746.68	16.76	18.06	25.50	43.56	22.72	
		Middle	3833.16	16.81	18.12	25.50	43.62	22.99	
		High	3937.40	16.37	17.68	25.50	43.18	20.78	
	256QAM	Low	3756.76	16.67	17.98	25.50	43.48	22.28	
		Middle	3833.16	16.33	17.64	25.50	43.14	20.58	
		High	3925.40	15.21	16.52	25.50	42.02	15.90	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
57	QPSK	Low	3755.68	16.84	18.14	25.50	43.64	23.15	1640
		Middle	3862.80	16.71	18.02	25.50	43.52	22.48	
		High	3926.12	17.60	18.91	25.50	44.41	27.60	
	16QAM	Low	3749.68	16.94	18.25	25.50	43.75	23.69	
		Middle	3847.08	16.56	17.86	25.50	43.36	21.70	
		High	3925.52	18.06	19.37	25.50	44.87	30.67	
	64QAM	Low	3744.16	16.82	18.13	25.50	43.63	23.07	
		Middle	3829.56	16.62	17.93	25.50	43.43	22.03	
		High	3931.04	16.13	17.44	25.50	42.94	19.69	
	256QAM	Low	3754.00	17.00	18.31	25.50	43.81	24.05	
		Middle	3822.00	16.58	17.89	25.50	43.39	21.83	
		High	3937.16	16.92	18.23	25.50	43.73	23.62	
58	QPSK	Low	3755.92	16.85	18.16	25.50	43.66	23.22	1640
		Middle	3814.20	16.78	18.09	25.50	43.59	22.84	
		High	3930.80	16.74	18.04	25.50	43.54	22.62	
	16QAM	Low	3740.32	17.28	18.58	25.50	44.08	25.61	
		Middle	3826.68	16.88	18.19	25.50	43.69	23.40	
		High	3936.44	17.46	18.77	25.50	44.27	26.73	
	64QAM	Low	3754.36	17.33	18.64	25.50	44.14	25.91	
		Middle	3815.16	16.90	18.21	25.50	43.71	23.47	
		High	3936.32	16.44	17.75	25.50	43.25	21.13	
	256QAM	Low	3752.08	16.82	18.13	25.50	43.63	23.08	
		Middle	3846.24	16.97	18.28	25.50	43.78	23.86	
		High	3942.80	15.83	17.13	25.50	42.63	18.34	
59	QPSK	Low	3746.92	16.89	18.20	25.50	43.70	23.44	1640
		Middle	3858.24	16.42	17.73	25.50	43.23	21.05	
		High	3923.48	16.57	17.88	25.50	43.38	21.78	
	16QAM	Low	3740.08	16.73	18.04	25.50	43.54	22.57	
		Middle	3814.80	16.70	18.01	25.50	43.51	22.44	
		High	3933.44	16.45	17.76	25.50	43.26	21.18	
	64QAM	Low	3754.96	17.02	18.33	25.50	43.83	24.16	
		Middle	3862.08	16.83	18.14	25.50	43.64	23.13	
		High	3925.64	16.59	17.89	25.50	43.39	21.85	
	256QAM	Low	3754.12	16.73	18.04	25.50	43.54	22.57	
		Middle	3849.00	16.84	18.14	25.50	43.64	23.14	
		High	3930.68	16.73	18.04	25.50	43.54	22.59	

Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
60	QPSK	Low	3748.60	16.68	17.99	25.50	43.49	22.32	1640
		Middle	3816.72	16.58	17.89	25.50	43.39	21.84	
		High	3947.60	17.28	18.59	25.50	44.09	25.63	
	16QAM	Low	3749.80	17.43	18.74	25.50	44.24	26.53	
		Middle	3813.24	16.64	17.95	25.50	43.45	22.14	
		High	3935.60	16.96	18.27	25.50	43.77	23.80	
	64QAM	Low	3755.80	17.40	18.71	25.50	44.21	26.34	
		Middle	3830.64	16.83	18.14	25.50	43.64	23.12	
		High	3928.04	16.26	17.57	25.50	43.07	20.28	
	256QAM	Low	3749.68	17.31	18.62	25.50	44.12	25.80	
		Middle	3849.72	16.33	17.64	25.50	43.14	20.60	
		High	3930.56	14.89	16.19	25.50	41.69	14.77	
61	QPSK	Low	3752.68	16.50	17.81	25.50	43.31	21.44	1640
		Middle	3832.32	16.78	18.09	25.50	43.59	22.86	
		High	3932.72	15.61	16.92	25.50	42.42	17.45	
	16QAM	Low	3748.36	16.61	17.92	25.50	43.42	21.97	
		Middle	3824.52	16.32	17.63	25.50	43.13	20.56	
		High	3936.56	17.95	19.26	25.50	44.76	29.89	
	64QAM	Low	3756.04	16.70	18.01	25.50	43.51	22.43	
		Middle	3849.36	16.63	17.94	25.50	43.44	22.08	
		High	3930.92	15.27	16.57	25.50	42.07	16.12	
	256QAM	Low	3746.32	16.47	17.78	25.50	43.28	21.26	
		Middle	3840.36	16.18	17.49	25.50	42.99	19.89	
		High	3942.44	15.69	16.99	25.50	42.49	17.75	
62	QPSK	Low	3751.12	16.58	17.89	25.50	43.39	21.82	1640
		Middle	3849.72	16.94	18.25	25.50	43.75	23.73	
		High	3927.56	17.00	18.31	25.50	43.81	24.03	
	16QAM	Low	3750.88	17.10	18.40	25.50	43.90	24.57	
		Middle	3835.80	16.78	18.08	25.50	43.58	22.82	
		High	3936.44	17.47	18.78	25.50	44.28	26.80	
	64QAM	Low	3732.76	16.65	17.95	25.50	43.45	22.15	
		Middle	3823.68	17.03	18.34	25.50	43.84	24.22	
		High	3930.56	16.14	17.45	25.50	42.95	19.72	
	256QAM	Low	3734.44	17.01	18.32	25.50	43.82	24.11	
		Middle	3855.48	16.42	17.73	25.50	43.23	21.03	
		High	3930.44	15.75	17.05	25.50	42.55	18.00	

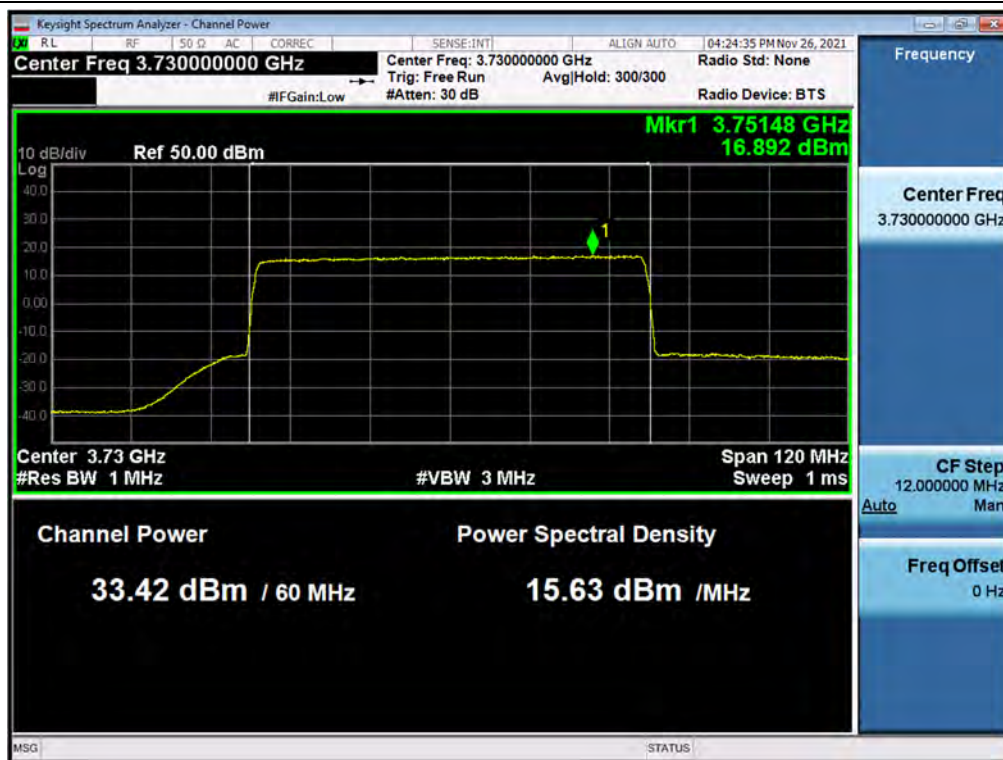
Ant.	Mod	Ch	Frequency (MHz)	Measured Value (dBm/MHz)	Calculated Value (dBm/MHz)	Ant. Gain (dBi)	E.I.R.P. (dBm/MHz)	Calculated (W/MHz)	Limit (W/MHz)
63	QPSK	Low	3752.08	16.79	18.10	25.50	43.60	22.90	1640
		Middle	3860.64	16.43	17.74	25.50	43.24	21.08	
		High	3928.04	16.54	17.85	25.50	43.35	21.62	
	16QAM	Low	3727.00	16.78	18.09	25.50	43.59	22.84	
		Middle	3825.48	16.80	18.11	25.50	43.61	22.95	
		High	3926.00	16.92	18.23	25.50	43.73	23.58	
	64QAM	Low	3747.16	17.38	18.69	25.50	44.19	26.25	
		Middle	3844.20	16.85	18.15	25.50	43.65	23.19	
		High	3971.00	15.10	16.41	25.50	41.91	15.52	
	256QAM	Low	3745.96	17.04	18.35	25.50	43.85	24.25	
		Middle	3837.00	16.73	18.04	25.50	43.54	22.59	
		High	3929.60	16.15	17.45	25.50	42.95	19.75	
64	QPSK	Low	3746.80	16.50	17.81	25.50	43.31	21.42	1640
		Middle	3835.68	16.72	18.03	25.50	43.53	22.54	
		High	3930.32	17.13	18.44	25.50	43.94	24.78	
	16QAM	Low	3747.40	16.73	18.04	25.50	43.54	22.58	
		Middle	3813.72	16.62	17.93	25.50	43.43	22.02	
		High	3925.16	17.54	18.85	25.50	44.35	27.20	
	64QAM	Low	3756.40	16.82	18.13	25.50	43.63	23.07	
		Middle	3842.16	16.74	18.05	25.50	43.55	22.65	
		High	3929.72	16.21	17.52	25.50	43.02	20.03	
	256QAM	Low	3755.20	16.93	18.24	25.50	43.74	23.67	
		Middle	3864.48	16.39	17.70	25.50	43.20	20.87	
		High	3953.48	14.84	16.14	25.50	41.64	14.60	

Sum Data of Port 1 ~ Port 64

Frequency (MHz)	PSD				Limit
	QPSK	16QAM	64QAM	256QAM	
	W/MHz				
3755.20	1453.61	1496.44	1572.27	1519.44	1640
3864.48	1401.85	1415.13	1480.47	1347.79	
3953.48	1378.26	1505.69	1142.35	1139.54	

Plot Data of PSD

Antenna 45 / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / QPSK / Low



5.2. PAPR

Test Requirements:

§ 27.50 Power limits and duty cycle.

- (j) The following power requirements apply to stations transmitting in the 3700-3980 MHz band:
 - (4) Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (j)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test Procedures:

The measurement is performed in accordance with Section 5.2.3.4 of ANSI C63.26.

The following guidelines are offered for performing a CCDF measurement..

- a) Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.
- b) Set the number of counts to a value that stabilizes the measured CCDF curve.
- c) Set the measurement interval as follows:
 - 1) For continuous transmissions, set to the greater of $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ or 1 ms.
 - 2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.
 - 3) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
- d) Record the maximum PAPR level associated with a probability of 0.1%.
- e) The peak power level is calculated from the sum of the PAPR value from step d) to the measured average power.

Note: The results of the PAPR test shown above the frequency measured values are very small and similar trend for each port, so we are attached only the worst case plot.

Tabular data of PAPR

3.7 GHz Service 5G NR 60 MHz 1 Carrier

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
1	QPSK	Low	3730.00	9.04
		Middle	3840.00	8.84
		High	3950.00	8.76
	16QAM	Low	3730.00	8.68
		Middle	3840.00	8.92
		High	3950.00	8.76
	64QAM	Low	3730.00	8.72
		Middle	3840.00	8.83
		High	3950.00	8.99
	256QAM	Low	3730.00	8.87
		Middle	3840.00	8.78
		High	3950.00	8.86
2	QPSK	Low	3730.00	8.80
		Middle	3840.00	8.84
		High	3950.00	9.09
	16QAM	Low	3730.00	8.73
		Middle	3840.00	8.39
		High	3950.00	8.61
	64QAM	Low	3730.00	9.50
		Middle	3840.00	8.85
		High	3950.00	8.66
	256QAM	Low	3730.00	8.84
		Middle	3840.00	8.82
		High	3950.00	8.95

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
3	QPSK	Low	3730.00	8.91
		Middle	3840.00	8.97
		High	3950.00	8.98
	16QAM	Low	3730.00	8.55
		Middle	3840.00	8.71
		High	3950.00	8.75
	64QAM	Low	3730.00	8.86
		Middle	3840.00	8.72
		High	3950.00	9.01
	256QAM	Low	3730.00	8.77
		Middle	3840.00	8.79
		High	3950.00	8.93
4	QPSK	Low	3730.00	8.78
		Middle	3840.00	8.66
		High	3950.00	8.81
	16QAM	Low	3730.00	8.57
		Middle	3840.00	8.76
		High	3950.00	8.72
	64QAM	Low	3730.00	8.91
		Middle	3840.00	9.02
		High	3950.00	8.97
	256QAM	Low	3730.00	8.90
		Middle	3840.00	8.77
		High	3950.00	8.91
5	QPSK	Low	3730.00	8.82
		Middle	3840.00	8.77
		High	3950.00	8.67
	16QAM	Low	3730.00	8.79
		Middle	3840.00	8.65
		High	3950.00	8.82
	64QAM	Low	3730.00	9.01
		Middle	3840.00	8.85
		High	3950.00	8.72
	256QAM	Low	3730.00	8.65
		Middle	3840.00	8.89
		High	3950.00	8.80

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
6	QPSK	Low	3730.00	8.86
		Middle	3840.00	9.07
		High	3950.00	8.85
	16QAM	Low	3730.00	8.95
		Middle	3840.00	8.82
		High	3950.00	8.69
	64QAM	Low	3730.00	8.68
		Middle	3840.00	9.06
		High	3950.00	8.87
	256QAM	Low	3730.00	8.73
		Middle	3840.00	8.56
		High	3950.00	8.88
7	QPSK	Low	3730.00	8.88
		Middle	3840.00	8.93
		High	3950.00	8.74
	16QAM	Low	3730.00	8.71
		Middle	3840.00	9.09
		High	3950.00	8.77
	64QAM	Low	3730.00	8.55
		Middle	3840.00	8.77
		High	3950.00	9.16
	256QAM	Low	3730.00	8.30
		Middle	3840.00	8.98
		High	3950.00	8.71
8	QPSK	Low	3730.00	8.87
		Middle	3840.00	8.69
		High	3950.00	8.78
	16QAM	Low	3730.00	9.06
		Middle	3840.00	8.68
		High	3950.00	8.66
	64QAM	Low	3730.00	8.86
		Middle	3840.00	8.88
		High	3950.00	8.93
	256QAM	Low	3730.00	8.92
		Middle	3840.00	8.88
		High	3950.00	9.01

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
9	QPSK	Low	3730.00	8.88
		Middle	3840.00	8.82
		High	3950.00	8.71
	16QAM	Low	3730.00	8.80
		Middle	3840.00	8.86
		High	3950.00	8.73
	64QAM	Low	3730.00	8.78
		Middle	3840.00	8.95
		High	3950.00	8.85
	256QAM	Low	3730.00	8.36
		Middle	3840.00	8.63
		High	3950.00	8.72
10	QPSK	Low	3730.00	8.79
		Middle	3840.00	8.77
		High	3950.00	8.91
	16QAM	Low	3730.00	8.85
		Middle	3840.00	8.88
		High	3950.00	8.63
	64QAM	Low	3730.00	8.91
		Middle	3840.00	8.87
		High	3950.00	8.92
	256QAM	Low	3730.00	8.87
		Middle	3840.00	8.90
		High	3950.00	8.89
11	QPSK	Low	3730.00	8.82
		Middle	3840.00	8.63
		High	3950.00	8.78
	16QAM	Low	3730.00	8.73
		Middle	3840.00	8.66
		High	3950.00	8.72
	64QAM	Low	3730.00	8.87
		Middle	3840.00	8.76
		High	3950.00	8.88
	256QAM	Low	3730.00	8.69
		Middle	3840.00	8.77
		High	3950.00	8.96

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
12	QPSK	Low	3730.00	9.02
		Middle	3840.00	9.15
		High	3950.00	8.81
	16QAM	Low	3730.00	8.64
		Middle	3840.00	8.81
		High	3950.00	8.65
	64QAM	Low	3730.00	8.89
		Middle	3840.00	8.77
		High	3950.00	9.06
	256QAM	Low	3730.00	8.90
		Middle	3840.00	8.81
		High	3950.00	9.39
13	QPSK	Low	3730.00	8.88
		Middle	3840.00	8.81
		High	3950.00	8.82
	16QAM	Low	3730.00	8.85
		Middle	3840.00	8.53
		High	3950.00	8.69
	64QAM	Low	3730.00	8.84
		Middle	3840.00	8.66
		High	3950.00	8.89
	256QAM	Low	3730.00	8.77
		Middle	3840.00	8.87
		High	3950.00	9.01
14	QPSK	Low	3730.00	8.83
		Middle	3840.00	8.23
		High	3950.00	8.62
	16QAM	Low	3730.00	8.41
		Middle	3840.00	8.61
		High	3950.00	8.28
	64QAM	Low	3730.00	8.87
		Middle	3840.00	8.66
		High	3950.00	8.65
	256QAM	Low	3730.00	8.82
		Middle	3840.00	8.59
		High	3950.00	8.99

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
15	QPSK	Low	3730.00	8.81
		Middle	3840.00	8.73
		High	3950.00	8.85
	16QAM	Low	3730.00	8.86
		Middle	3840.00	8.44
		High	3950.00	8.83
	64QAM	Low	3730.00	8.84
		Middle	3840.00	8.68
		High	3950.00	8.76
	256QAM	Low	3730.00	8.84
		Middle	3840.00	8.90
		High	3950.00	8.90
16	QPSK	Low	3730.00	8.66
		Middle	3840.00	8.86
		High	3950.00	8.91
	16QAM	Low	3730.00	8.67
		Middle	3840.00	8.73
		High	3950.00	8.78
	64QAM	Low	3730.00	8.81
		Middle	3840.00	8.72
		High	3950.00	8.71
	256QAM	Low	3730.00	8.59
		Middle	3840.00	8.78
		High	3950.00	8.87
17	QPSK	Low	3730.00	8.93
		Middle	3840.00	8.93
		High	3950.00	8.89
	16QAM	Low	3730.00	8.99
		Middle	3840.00	8.69
		High	3950.00	8.94
	64QAM	Low	3730.00	8.68
		Middle	3840.00	8.77
		High	3950.00	8.75
	256QAM	Low	3730.00	8.78
		Middle	3840.00	8.70
		High	3950.00	8.85

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
18	QPSK	Low	3730.00	9.60
		Middle	3840.00	8.69
		High	3950.00	9.07
	16QAM	Low	3730.00	8.77
		Middle	3840.00	8.67
		High	3950.00	8.64
	64QAM	Low	3730.00	8.76
		Middle	3840.00	8.76
		High	3950.00	8.93
	256QAM	Low	3730.00	8.31
		Middle	3840.00	8.96
		High	3950.00	9.01
19	QPSK	Low	3730.00	8.84
		Middle	3840.00	8.72
		High	3950.00	8.81
	16QAM	Low	3730.00	8.81
		Middle	3840.00	9.06
		High	3950.00	8.75
	64QAM	Low	3730.00	8.77
		Middle	3840.00	8.74
		High	3950.00	8.91
	256QAM	Low	3730.00	8.69
		Middle	3840.00	8.73
		High	3950.00	8.94
20	QPSK	Low	3730.00	8.96
		Middle	3840.00	8.72
		High	3950.00	8.84
	16QAM	Low	3730.00	8.81
		Middle	3840.00	8.85
		High	3950.00	8.85
	64QAM	Low	3730.00	8.71
		Middle	3840.00	8.85
		High	3950.00	8.69
	256QAM	Low	3730.00	8.89
		Middle	3840.00	8.92
		High	3950.00	8.82

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
21	QPSK	Low	3730.00	9.02
		Middle	3840.00	8.98
		High	3950.00	8.87
	16QAM	Low	3730.00	8.93
		Middle	3840.00	8.83
		High	3950.00	8.82
	64QAM	Low	3730.00	8.84
		Middle	3840.00	8.96
		High	3950.00	8.79
	256QAM	Low	3730.00	8.84
		Middle	3840.00	8.82
		High	3950.00	8.88
22	QPSK	Low	3730.00	8.79
		Middle	3840.00	8.74
		High	3950.00	8.71
	16QAM	Low	3730.00	8.93
		Middle	3840.00	8.80
		High	3950.00	8.53
	64QAM	Low	3730.00	8.72
		Middle	3840.00	8.94
		High	3950.00	8.86
	256QAM	Low	3730.00	8.87
		Middle	3840.00	8.78
		High	3950.00	9.15
23	QPSK	Low	3730.00	8.78
		Middle	3840.00	8.80
		High	3950.00	9.43
	16QAM	Low	3730.00	8.90
		Middle	3840.00	8.79
		High	3950.00	9.00
	64QAM	Low	3730.00	8.88
		Middle	3840.00	8.76
		High	3950.00	8.85
	256QAM	Low	3730.00	8.58
		Middle	3840.00	8.73
		High	3950.00	8.64

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
24	QPSK	Low	3730.00	8.62
		Middle	3840.00	8.68
		High	3950.00	8.79
	16QAM	Low	3730.00	8.78
		Middle	3840.00	8.67
		High	3950.00	8.69
	64QAM	Low	3730.00	8.82
		Middle	3840.00	8.89
		High	3950.00	8.81
	256QAM	Low	3730.00	8.86
		Middle	3840.00	8.57
		High	3950.00	8.95
25	QPSK	Low	3730.00	8.78
		Middle	3840.00	8.85
		High	3950.00	8.85
	16QAM	Low	3730.00	8.79
		Middle	3840.00	8.99
		High	3950.00	8.74
	64QAM	Low	3730.00	8.84
		Middle	3840.00	8.91
		High	3950.00	9.05
	256QAM	Low	3730.00	8.71
		Middle	3840.00	8.67
		High	3950.00	8.94
26	QPSK	Low	3730.00	8.82
		Middle	3840.00	8.77
		High	3950.00	9.00
	16QAM	Low	3730.00	8.85
		Middle	3840.00	8.58
		High	3950.00	8.89
	64QAM	Low	3730.00	8.77
		Middle	3840.00	8.77
		High	3950.00	8.60
	256QAM	Low	3730.00	8.79
		Middle	3840.00	8.73
		High	3950.00	9.16

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
27	QPSK	Low	3730.00	8.86
		Middle	3840.00	8.99
		High	3950.00	8.75
	16QAM	Low	3730.00	8.90
		Middle	3840.00	8.63
		High	3950.00	8.75
	64QAM	Low	3730.00	8.81
		Middle	3840.00	8.79
		High	3950.00	8.91
	256QAM	Low	3730.00	8.74
		Middle	3840.00	8.76
		High	3950.00	8.81
28	QPSK	Low	3730.00	8.87
		Middle	3840.00	8.73
		High	3950.00	8.88
	16QAM	Low	3730.00	8.85
		Middle	3840.00	8.61
		High	3950.00	8.61
	64QAM	Low	3730.00	8.90
		Middle	3840.00	8.68
		High	3950.00	8.90
	256QAM	Low	3730.00	8.83
		Middle	3840.00	8.83
		High	3950.00	8.83
29	QPSK	Low	3730.00	8.72
		Middle	3840.00	8.83
		High	3950.00	8.80
	16QAM	Low	3730.00	8.78
		Middle	3840.00	8.67
		High	3950.00	8.68
	64QAM	Low	3730.00	8.71
		Middle	3840.00	8.82
		High	3950.00	9.01
	256QAM	Low	3730.00	8.71
		Middle	3840.00	8.85
		High	3950.00	9.19

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
30	QPSK	Low	3730.00	8.82
		Middle	3840.00	8.76
		High	3950.00	8.98
	16QAM	Low	3730.00	8.62
		Middle	3840.00	8.87
		High	3950.00	8.82
	64QAM	Low	3730.00	8.69
		Middle	3840.00	8.96
		High	3950.00	9.02
	256QAM	Low	3730.00	8.84
		Middle	3840.00	8.66
		High	3950.00	8.73
31	QPSK	Low	3730.00	8.83
		Middle	3840.00	9.00
		High	3950.00	9.12
	16QAM	Low	3730.00	8.69
		Middle	3840.00	8.66
		High	3950.00	8.87
	64QAM	Low	3730.00	8.70
		Middle	3840.00	8.83
		High	3950.00	9.19
	256QAM	Low	3730.00	8.69
		Middle	3840.00	8.72
		High	3950.00	8.82
32	QPSK	Low	3730.00	8.73
		Middle	3840.00	8.74
		High	3950.00	9.02
	16QAM	Low	3730.00	8.79
		Middle	3840.00	8.91
		High	3950.00	8.92
	64QAM	Low	3730.00	8.88
		Middle	3840.00	8.54
		High	3950.00	8.74
	256QAM	Low	3730.00	8.92
		Middle	3840.00	8.75
		High	3950.00	8.95

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
33	QPSK	Low	3730.00	8.27
		Middle	3840.00	8.71
		High	3950.00	8.59
	16QAM	Low	3730.00	8.45
		Middle	3840.00	8.93
		High	3950.00	8.54
	64QAM	Low	3730.00	8.28
		Middle	3840.00	8.47
		High	3950.00	8.95
	256QAM	Low	3730.00	8.38
		Middle	3840.00	8.62
		High	3950.00	8.67
34	QPSK	Low	3730.00	8.47
		Middle	3840.00	8.84
		High	3950.00	8.94
	16QAM	Low	3730.00	8.52
		Middle	3840.00	9.22
		High	3950.00	8.89
	64QAM	Low	3730.00	8.54
		Middle	3840.00	9.01
		High	3950.00	9.00
	256QAM	Low	3730.00	8.45
		Middle	3840.00	8.82
		High	3950.00	8.73
35	QPSK	Low	3730.00	8.40
		Middle	3840.00	8.82
		High	3950.00	8.56
	16QAM	Low	3730.00	8.51
		Middle	3840.00	8.53
		High	3950.00	8.79
	64QAM	Low	3730.00	8.76
		Middle	3840.00	8.88
		High	3950.00	8.97
	256QAM	Low	3730.00	9.23
		Middle	3840.00	8.87
		High	3950.00	8.70

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
36	QPSK	Low	3730.00	8.60
		Middle	3840.00	8.61
		High	3950.00	9.03
	16QAM	Low	3730.00	8.52
		Middle	3840.00	9.09
		High	3950.00	8.51
	64QAM	Low	3730.00	8.55
		Middle	3840.00	8.93
		High	3950.00	8.65
	256QAM	Low	3730.00	8.57
		Middle	3840.00	8.94
		High	3950.00	8.79
37	QPSK	Low	3730.00	8.59
		Middle	3840.00	8.92
		High	3950.00	8.59
	16QAM	Low	3730.00	8.71
		Middle	3840.00	8.70
		High	3950.00	9.31
	64QAM	Low	3730.00	8.59
		Middle	3840.00	8.56
		High	3950.00	8.66
	256QAM	Low	3730.00	8.77
		Middle	3840.00	8.86
		High	3950.00	8.80
38	QPSK	Low	3730.00	8.86
		Middle	3840.00	9.26
		High	3950.00	9.08
	16QAM	Low	3730.00	8.82
		Middle	3840.00	8.87
		High	3950.00	9.19
	64QAM	Low	3730.00	8.93
		Middle	3840.00	8.90
		High	3950.00	8.80
	256QAM	Low	3730.00	8.72
		Middle	3840.00	9.09
		High	3950.00	8.89

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
39	QPSK	Low	3730.00	8.56
		Middle	3840.00	9.10
		High	3950.00	8.76
	16QAM	Low	3730.00	8.63
		Middle	3840.00	8.84
		High	3950.00	8.86
	64QAM	Low	3730.00	9.07
		Middle	3840.00	9.12
		High	3950.00	8.56
	256QAM	Low	3730.00	8.82
		Middle	3840.00	9.27
		High	3950.00	9.01
40	QPSK	Low	3730.00	8.76
		Middle	3840.00	9.20
		High	3950.00	8.96
	16QAM	Low	3730.00	9.03
		Middle	3840.00	8.93
		High	3950.00	8.84
	64QAM	Low	3730.00	9.00
		Middle	3840.00	8.70
		High	3950.00	8.71
	256QAM	Low	3730.00	8.64
		Middle	3840.00	9.06
		High	3950.00	8.69
41	QPSK	Low	3730.00	8.83
		Middle	3840.00	9.01
		High	3950.00	8.74
	16QAM	Low	3730.00	9.22
		Middle	3840.00	8.68
		High	3950.00	8.81
	64QAM	Low	3730.00	8.77
		Middle	3840.00	8.49
		High	3950.00	8.55
	256QAM	Low	3730.00	9.08
		Middle	3840.00	8.92
		High	3950.00	8.72

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
42	QPSK	Low	3730.00	8.55
		Middle	3840.00	8.74
		High	3950.00	8.91
	16QAM	Low	3730.00	8.84
		Middle	3840.00	8.99
		High	3950.00	8.69
	64QAM	Low	3730.00	8.61
		Middle	3840.00	8.67
		High	3950.00	8.82
	256QAM	Low	3730.00	8.62
		Middle	3840.00	8.70
		High	3950.00	8.73
43	QPSK	Low	3730.00	8.76
		Middle	3840.00	9.04
		High	3950.00	8.42
	16QAM	Low	3730.00	8.98
		Middle	3840.00	9.38
		High	3950.00	8.70
	64QAM	Low	3730.00	9.06
		Middle	3840.00	9.08
		High	3950.00	8.69
	256QAM	Low	3730.00	9.08
		Middle	3840.00	8.55
		High	3950.00	8.56
44	QPSK	Low	3730.00	8.71
		Middle	3840.00	9.21
		High	3950.00	8.74
	16QAM	Low	3730.00	8.98
		Middle	3840.00	8.86
		High	3950.00	8.55
	64QAM	Low	3730.00	8.87
		Middle	3840.00	8.70
		High	3950.00	8.74
	256QAM	Low	3730.00	8.70
		Middle	3840.00	9.16
		High	3950.00	8.68

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
45	QPSK	Low	3730.00	8.58
		Middle	3840.00	8.68
		High	3950.00	8.83
	16QAM	Low	3730.00	8.80
		Middle	3840.00	8.73
		High	3950.00	8.87
	64QAM	Low	3730.00	8.64
		Middle	3840.00	8.98
		High	3950.00	9.04
	256QAM	Low	3730.00	8.60
		Middle	3840.00	8.93
		High	3950.00	8.64
46	QPSK	Low	3730.00	9.04
		Middle	3840.00	8.91
		High	3950.00	9.00
	16QAM	Low	3730.00	8.71
		Middle	3840.00	8.79
		High	3950.00	8.94
	64QAM	Low	3730.00	8.96
		Middle	3840.00	8.95
		High	3950.00	9.09
	256QAM	Low	3730.00	8.85
		Middle	3840.00	8.65
		High	3950.00	8.73
47	QPSK	Low	3730.00	8.91
		Middle	3840.00	8.77
		High	3950.00	8.88
	16QAM	Low	3730.00	8.87
		Middle	3840.00	9.08
		High	3950.00	8.84
	64QAM	Low	3730.00	8.83
		Middle	3840.00	8.94
		High	3950.00	8.59
	256QAM	Low	3730.00	8.92
		Middle	3840.00	9.24
		High	3950.00	8.91

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
48	QPSK	Low	3730.00	9.19
		Middle	3840.00	8.73
		High	3950.00	8.91
	16QAM	Low	3730.00	8.86
		Middle	3840.00	9.08
		High	3950.00	8.70
	64QAM	Low	3730.00	8.97
		Middle	3840.00	8.86
		High	3950.00	8.75
	256QAM	Low	3730.00	8.91
		Middle	3840.00	8.76
		High	3950.00	8.87
49	QPSK	Low	3730.00	8.62
		Middle	3840.00	8.70
		High	3950.00	8.50
	16QAM	Low	3730.00	9.01
		Middle	3840.00	8.68
		High	3950.00	8.39
	64QAM	Low	3730.00	8.93
		Middle	3840.00	8.76
		High	3950.00	8.51
	256QAM	Low	3730.00	8.88
		Middle	3840.00	8.92
		High	3950.00	8.93
50	QPSK	Low	3730.00	8.98
		Middle	3840.00	9.24
		High	3950.00	8.70
	16QAM	Low	3730.00	8.90
		Middle	3840.00	8.62
		High	3950.00	8.83
	64QAM	Low	3730.00	8.65
		Middle	3840.00	8.64
		High	3950.00	8.81
	256QAM	Low	3730.00	8.96
		Middle	3840.00	9.02
		High	3950.00	8.89

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
51	QPSK	Low	3730.00	9.07
		Middle	3840.00	9.16
		High	3950.00	8.82
	16QAM	Low	3730.00	8.88
		Middle	3840.00	8.90
		High	3950.00	8.87
	64QAM	Low	3730.00	8.96
		Middle	3840.00	9.07
		High	3950.00	8.80
	256QAM	Low	3730.00	8.72
		Middle	3840.00	8.95
		High	3950.00	8.98
52	QPSK	Low	3730.00	8.58
		Middle	3840.00	9.24
		High	3950.00	8.71
	16QAM	Low	3730.00	9.04
		Middle	3840.00	9.14
		High	3950.00	8.65
	64QAM	Low	3730.00	8.68
		Middle	3840.00	8.86
		High	3950.00	8.64
	256QAM	Low	3730.00	8.65
		Middle	3840.00	8.35
		High	3950.00	8.60
53	QPSK	Low	3730.00	8.76
		Middle	3840.00	8.85
		High	3950.00	8.50
	16QAM	Low	3730.00	8.96
		Middle	3840.00	8.96
		High	3950.00	8.58
	64QAM	Low	3730.00	8.99
		Middle	3840.00	8.64
		High	3950.00	8.54
	256QAM	Low	3730.00	8.58
		Middle	3840.00	8.93
		High	3950.00	8.77

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
54	QPSK	Low	3730.00	8.86
		Middle	3840.00	8.95
		High	3950.00	8.84
	16QAM	Low	3730.00	8.78
		Middle	3840.00	9.01
		High	3950.00	9.04
	64QAM	Low	3730.00	9.06
		Middle	3840.00	8.55
		High	3950.00	8.69
	256QAM	Low	3730.00	9.17
		Middle	3840.00	8.63
		High	3950.00	8.61
55	QPSK	Low	3730.00	8.66
		Middle	3840.00	9.18
		High	3950.00	8.43
	16QAM	Low	3730.00	8.77
		Middle	3840.00	8.88
		High	3950.00	8.52
	64QAM	Low	3730.00	8.92
		Middle	3840.00	8.92
		High	3950.00	8.62
	256QAM	Low	3730.00	8.80
		Middle	3840.00	9.03
		High	3950.00	8.37
56	QPSK	Low	3730.00	8.51
		Middle	3840.00	8.75
		High	3950.00	8.64
	16QAM	Low	3730.00	8.86
		Middle	3840.00	8.84
		High	3950.00	8.83
	64QAM	Low	3730.00	8.67
		Middle	3840.00	8.76
		High	3950.00	8.90
	256QAM	Low	3730.00	9.07
		Middle	3840.00	8.68
		High	3950.00	8.78

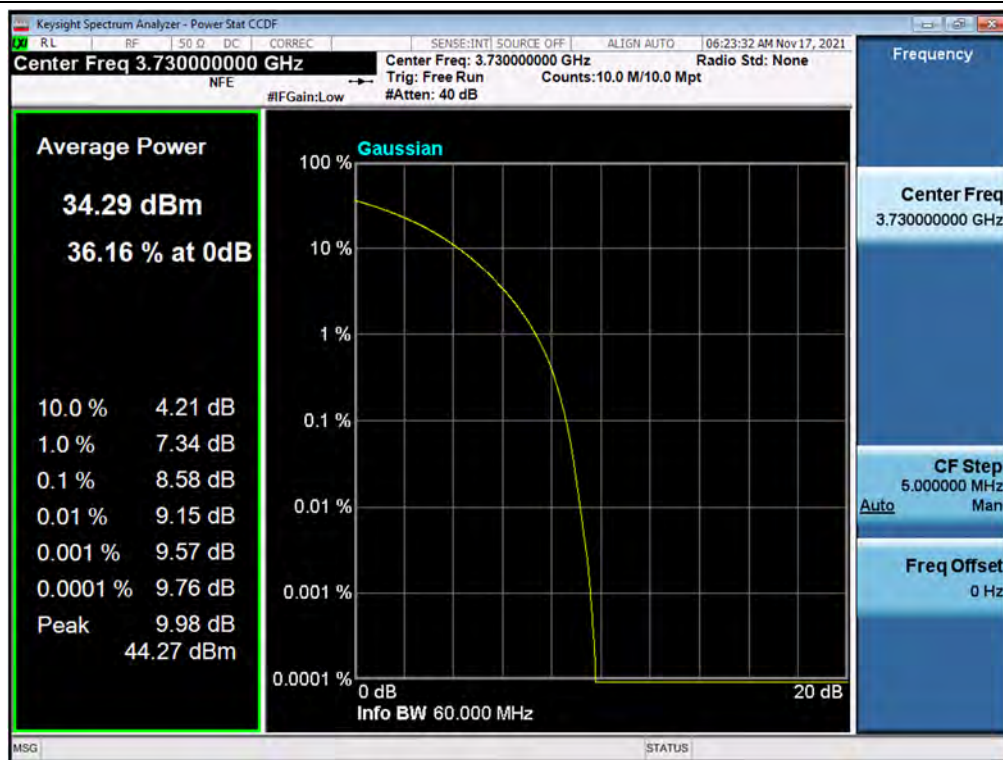
Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
57	QPSK	Low	3730.00	8.79
		Middle	3840.00	8.79
		High	3950.00	8.82
	16QAM	Low	3730.00	9.01
		Middle	3840.00	9.03
		High	3950.00	8.69
	64QAM	Low	3730.00	9.06
		Middle	3840.00	9.10
		High	3950.00	8.79
	256QAM	Low	3730.00	8.84
		Middle	3840.00	8.61
		High	3950.00	8.54
58	QPSK	Low	3730.00	9.02
		Middle	3840.00	8.79
		High	3950.00	8.80
	16QAM	Low	3730.00	9.06
		Middle	3840.00	8.64
		High	3950.00	8.63
	64QAM	Low	3730.00	8.68
		Middle	3840.00	9.10
		High	3950.00	9.06
	256QAM	Low	3730.00	8.80
		Middle	3840.00	8.72
		High	3950.00	9.11
59	QPSK	Low	3730.00	8.76
		Middle	3840.00	9.13
		High	3950.00	8.80
	16QAM	Low	3730.00	9.03
		Middle	3840.00	9.03
		High	3950.00	8.97
	64QAM	Low	3730.00	9.21
		Middle	3840.00	8.87
		High	3950.00	8.85
	256QAM	Low	3730.00	8.81
		Middle	3840.00	8.55
		High	3950.00	9.17

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
60	QPSK	Low	3730.00	8.61
		Middle	3840.00	8.67
		High	3950.00	8.93
	16QAM	Low	3730.00	8.88
		Middle	3840.00	8.86
		High	3950.00	8.54
	64QAM	Low	3730.00	9.21
		Middle	3840.00	9.00
		High	3950.00	8.58
	256QAM	Low	3730.00	8.57
		Middle	3840.00	8.81
		High	3950.00	8.88
61	QPSK	Low	3730.00	8.84
		Middle	3840.00	8.79
		High	3950.00	9.00
	16QAM	Low	3730.00	8.87
		Middle	3840.00	8.92
		High	3950.00	8.41
	64QAM	Low	3730.00	8.76
		Middle	3840.00	9.11
		High	3950.00	8.56
	256QAM	Low	3730.00	9.09
		Middle	3840.00	8.92
		High	3950.00	8.84
62	QPSK	Low	3730.00	9.01
		Middle	3840.00	8.85
		High	3950.00	8.62
	16QAM	Low	3730.00	8.76
		Middle	3840.00	9.03
		High	3950.00	8.81
	64QAM	Low	3730.00	8.74
		Middle	3840.00	9.02
		High	3950.00	8.90
	256QAM	Low	3730.00	9.29
		Middle	3840.00	8.58
		High	3950.00	9.05

Ant.	Modulation	Channel	Frequency (MHz)	0.1 % PAPR (dB)
63	QPSK	Low	3730.00	8.67
		Middle	3840.00	8.76
		High	3950.00	8.64
	16QAM	Low	3730.00	8.61
		Middle	3840.00	8.67
		High	3950.00	8.74
	64QAM	Low	3730.00	8.84
		Middle	3840.00	8.83
		High	3950.00	9.07
	256QAM	Low	3730.00	8.85
		Middle	3840.00	8.80
		High	3950.00	8.94
64	QPSK	Low	3730.00	9.11
		Middle	3840.00	8.94
		High	3950.00	8.50
	16QAM	Low	3730.00	8.70
		Middle	3840.00	9.09
		High	3950.00	8.67
	64QAM	Low	3730.00	8.68
		Middle	3840.00	8.61
		High	3950.00	8.98
	256QAM	Low	3730.00	8.86
		Middle	3840.00	8.54
		High	3950.00	8.67

Plot Data of PAPR

Antenna 45 / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / QPSK / Low



5.3. OCCUPIED BANDWIDTH

Test Requirements:

§ 2.1049 Measurements required: Occupied bandwidth.

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the specified conditions of § 2.1049 (a) through (i) as applicable.

Test Procedures:

The measurement is performed in accordance with Section 5.4.3 and 5.4.4 of ANSI C63.26.

5.4.3 Occupied bandwidth—Relative measurement procedure

The OBW is measured as the width of the spectral envelope of the modulated signal, at an amplitude level reduced from a reference value by a specified ratio (or in decibels, a specified number of dB down from the reference value). The typical ratio for transmitters is –26 dB, corresponding to the 26 dB BW; however, other ratios can be specified. In this subclause, the ratio is designated by “–X dB.”

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.
- b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.
- d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target “–X dB” requirement, i.e., if the requirement calls for measuring the –26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.
- e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.
- f) Determine the reference value by either of the following:
 - 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the Highest level of the displayed trace (this is the reference value).
 - 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
- g) Determine the “–X dB amplitude” as equal to (Reference Value – X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.
- h) If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).
- i) Place two markers, one at the lowest and the other at the Highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB amplitude” determined in step f). If a marker is below this “–X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers. The spectral envelope can cross the “–X dB amplitude” at multiple points. The lowest or Highest frequency

shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the “-X dB amplitude.”

- j) The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

5.4.4 Occupied bandwidth—Power bandwidth (99%) measurement procedure

The OBW is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring (99%) power bandwidth:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).
- b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.
- d) Set the detection mode to peak, and the trace mode to max-hold.
- e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.
- f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

Note: The results of the Occupied Bandwidth test shown above the frequency measured values are very small and similar trend for each port, so we are attached only the worst case plot.

Test Results:
Tabular Data of Occupied Bandwidth
3.7 GHz Service 5G NR 60 MHz 1 Carrier

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
1	QPSK	Low	3730.00	58.001
		Middle	3840.00	57.917
		High	3950.00	57.948
	16QAM	Low	3730.00	58.055
		Middle	3840.00	58.054
		High	3950.00	58.034
	64QAM	Low	3730.00	57.899
		Middle	3840.00	58.047
		High	3950.00	58.010
	256QAM	Low	3730.00	57.792
		Middle	3840.00	58.015
		High	3950.00	57.858
2	QPSK	Low	3730.00	57.981
		Middle	3840.00	58.043
		High	3950.00	57.820
	16QAM	Low	3730.00	57.962
		Middle	3840.00	58.100
		High	3950.00	58.108
	64QAM	Low	3730.00	57.830
		Middle	3840.00	57.913
		High	3950.00	57.914
	256QAM	Low	3730.00	57.863
		Middle	3840.00	58.040
		High	3950.00	57.950

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
3	QPSK	Low	3730.00	57.902
		Middle	3840.00	58.047
		High	3950.00	57.972
	16QAM	Low	3730.00	57.999
		Middle	3840.00	58.071
		High	3950.00	58.085
	64QAM	Low	3730.00	57.893
		Middle	3840.00	58.013
		High	3950.00	57.892
	256QAM	Low	3730.00	57.860
		Middle	3840.00	57.999
		High	3950.00	57.986
4	QPSK	Low	3730.00	57.890
		Middle	3840.00	57.927
		High	3950.00	57.950
	16QAM	Low	3730.00	58.038
		Middle	3840.00	58.114
		High	3950.00	58.095
	64QAM	Low	3730.00	57.810
		Middle	3840.00	57.859
		High	3950.00	57.972
	256QAM	Low	3730.00	57.928
		Middle	3840.00	57.985
		High	3950.00	57.885
5	QPSK	Low	3730.00	57.943
		Middle	3840.00	57.941
		High	3950.00	57.911
	16QAM	Low	3730.00	58.114
		Middle	3840.00	58.097
		High	3950.00	58.061
	64QAM	Low	3730.00	57.863
		Middle	3840.00	57.906
		High	3950.00	57.937
	256QAM	Low	3730.00	57.926
		Middle	3840.00	58.005
		High	3950.00	58.014

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
6	QPSK	Low	3730.00	57.925
		Middle	3840.00	57.963
		High	3950.00	57.919
	16QAM	Low	3730.00	58.051
		Middle	3840.00	58.175
		High	3950.00	58.008
	64QAM	Low	3730.00	57.801
		Middle	3840.00	57.909
		High	3950.00	57.931
	256QAM	Low	3730.00	57.843
		Middle	3840.00	57.963
		High	3950.00	57.982
7	QPSK	Low	3730.00	57.900
		Middle	3840.00	58.017
		High	3950.00	57.935
	16QAM	Low	3730.00	58.037
		Middle	3840.00	58.124
		High	3950.00	58.073
	64QAM	Low	3730.00	57.919
		Middle	3840.00	58.062
		High	3950.00	57.914
	256QAM	Low	3730.00	57.861
		Middle	3840.00	57.910
		High	3950.00	57.861
8	QPSK	Low	3730.00	57.926
		Middle	3840.00	57.955
		High	3950.00	57.877
	16QAM	Low	3730.00	57.923
		Middle	3840.00	58.112
		High	3950.00	58.158
	64QAM	Low	3730.00	57.903
		Middle	3840.00	57.948
		High	3950.00	57.916
	256QAM	Low	3730.00	57.969
		Middle	3840.00	57.986
		High	3950.00	57.996

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
9	QPSK	Low	3730.00	57.911
		Middle	3840.00	57.995
		High	3950.00	57.941
	16QAM	Low	3730.00	58.012
		Middle	3840.00	58.090
		High	3950.00	58.158
	64QAM	Low	3730.00	57.810
		Middle	3840.00	58.005
		High	3950.00	57.995
	256QAM	Low	3730.00	57.794
		Middle	3840.00	58.011
		High	3950.00	57.916
10	QPSK	Low	3730.00	57.983
		Middle	3840.00	58.057
		High	3950.00	57.823
	16QAM	Low	3730.00	57.964
		Middle	3840.00	58.138
		High	3950.00	58.095
	64QAM	Low	3730.00	57.859
		Middle	3840.00	58.017
		High	3950.00	57.943
	256QAM	Low	3730.00	57.908
		Middle	3840.00	57.921
		High	3950.00	57.890
11	QPSK	Low	3730.00	57.920
		Middle	3840.00	58.017
		High	3950.00	57.951
	16QAM	Low	3730.00	57.953
		Middle	3840.00	58.165
		High	3950.00	58.000
	64QAM	Low	3730.00	57.845
		Middle	3840.00	58.040
		High	3950.00	57.908
	256QAM	Low	3730.00	57.783
		Middle	3840.00	57.954
		High	3950.00	57.926

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
12	QPSK	Low	3730.00	57.907
		Middle	3840.00	57.916
		High	3950.00	57.975
	16QAM	Low	3730.00	58.034
		Middle	3840.00	58.110
		High	3950.00	58.015
	64QAM	Low	3730.00	57.842
		Middle	3840.00	57.988
		High	3950.00	57.948
	256QAM	Low	3730.00	57.908
		Middle	3840.00	57.948
		High	3950.00	57.967
13	QPSK	Low	3730.00	57.847
		Middle	3840.00	57.939
		High	3950.00	57.852
	16QAM	Low	3730.00	58.023
		Middle	3840.00	58.009
		High	3950.00	58.109
	64QAM	Low	3730.00	57.799
		Middle	3840.00	57.930
		High	3950.00	57.903
	256QAM	Low	3730.00	57.939
		Middle	3840.00	57.977
		High	3950.00	57.966
14	QPSK	Low	3730.00	57.908
		Middle	3840.00	58.006
		High	3950.00	57.874
	16QAM	Low	3730.00	58.028
		Middle	3840.00	58.047
		High	3950.00	58.057
	64QAM	Low	3730.00	57.888
		Middle	3840.00	57.992
		High	3950.00	57.882
	256QAM	Low	3730.00	57.978
		Middle	3840.00	58.014
		High	3950.00	57.879

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
15	QPSK	Low	3730.00	57.941
		Middle	3840.00	57.951
		High	3950.00	57.968
	16QAM	Low	3730.00	58.106
		Middle	3840.00	57.994
		High	3950.00	58.071
	64QAM	Low	3730.00	57.921
		Middle	3840.00	57.955
		High	3950.00	57.910
	256QAM	Low	3730.00	57.920
		Middle	3840.00	57.902
		High	3950.00	57.909
16	QPSK	Low	3730.00	57.961
		Middle	3840.00	58.036
		High	3950.00	58.059
	16QAM	Low	3730.00	57.980
		Middle	3840.00	57.993
		High	3950.00	58.150
	64QAM	Low	3730.00	57.791
		Middle	3840.00	57.953
		High	3950.00	57.920
	256QAM	Low	3730.00	57.920
		Middle	3840.00	58.051
		High	3950.00	57.992
17	QPSK	Low	3730.00	57.930
		Middle	3840.00	57.982
		High	3950.00	57.915
	16QAM	Low	3730.00	57.933
		Middle	3840.00	58.012
		High	3950.00	58.051
	64QAM	Low	3730.00	57.916
		Middle	3840.00	57.967
		High	3950.00	57.910
	256QAM	Low	3730.00	57.791
		Middle	3840.00	58.039
		High	3950.00	57.991

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
18	QPSK	Low	3730.00	57.971
		Middle	3840.00	58.045
		High	3950.00	57.855
	16QAM	Low	3730.00	58.107
		Middle	3840.00	57.976
		High	3950.00	58.072
	64QAM	Low	3730.00	57.852
		Middle	3840.00	57.940
		High	3950.00	57.854
	256QAM	Low	3730.00	57.833
		Middle	3840.00	58.013
		High	3950.00	57.947
19	QPSK	Low	3730.00	57.893
		Middle	3840.00	57.985
		High	3950.00	57.913
	16QAM	Low	3730.00	58.082
		Middle	3840.00	58.108
		High	3950.00	58.048
	64QAM	Low	3730.00	57.855
		Middle	3840.00	57.943
		High	3950.00	57.941
	256QAM	Low	3730.00	57.792
		Middle	3840.00	57.926
		High	3950.00	57.962
20	QPSK	Low	3730.00	57.969
		Middle	3840.00	57.997
		High	3950.00	57.907
	16QAM	Low	3730.00	58.074
		Middle	3840.00	58.173
		High	3950.00	58.061
	64QAM	Low	3730.00	57.831
		Middle	3840.00	58.027
		High	3950.00	57.998
	256QAM	Low	3730.00	57.803
		Middle	3840.00	58.071
		High	3950.00	57.882

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
21	QPSK	Low	3730.00	57.938
		Middle	3840.00	58.025
		High	3950.00	57.966
	16QAM	Low	3730.00	58.139
		Middle	3840.00	58.174
		High	3950.00	58.112
	64QAM	Low	3730.00	57.834
		Middle	3840.00	58.093
		High	3950.00	57.944
	256QAM	Low	3730.00	57.902
		Middle	3840.00	57.925
		High	3950.00	58.020
22	QPSK	Low	3730.00	58.018
		Middle	3840.00	57.960
		High	3950.00	57.887
	16QAM	Low	3730.00	58.043
		Middle	3840.00	58.192
		High	3950.00	58.164
	64QAM	Low	3730.00	57.939
		Middle	3840.00	57.961
		High	3950.00	57.872
	256QAM	Low	3730.00	57.933
		Middle	3840.00	58.028
		High	3950.00	57.897
23	QPSK	Low	3730.00	57.810
		Middle	3840.00	57.939
		High	3950.00	57.874
	16QAM	Low	3730.00	58.093
		Middle	3840.00	58.083
		High	3950.00	58.039
	64QAM	Low	3730.00	57.898
		Middle	3840.00	58.041
		High	3950.00	57.944
	256QAM	Low	3730.00	57.933
		Middle	3840.00	58.003
		High	3950.00	57.854

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
24	QPSK	Low	3730.00	57.839
		Middle	3840.00	57.854
		High	3950.00	57.832
	16QAM	Low	3730.00	57.964
		Middle	3840.00	58.035
		High	3950.00	58.025
	64QAM	Low	3730.00	57.862
		Middle	3840.00	57.953
		High	3950.00	57.904
	256QAM	Low	3730.00	57.791
		Middle	3840.00	57.966
		High	3950.00	57.827
25	QPSK	Low	3730.00	57.868
		Middle	3840.00	57.995
		High	3950.00	57.891
	16QAM	Low	3730.00	57.991
		Middle	3840.00	58.111
		High	3950.00	58.037
	64QAM	Low	3730.00	57.840
		Middle	3840.00	58.043
		High	3950.00	57.819
	256QAM	Low	3730.00	57.820
		Middle	3840.00	58.038
		High	3950.00	57.861
26	QPSK	Low	3730.00	57.874
		Middle	3840.00	57.939
		High	3950.00	57.858
	16QAM	Low	3730.00	58.181
		Middle	3840.00	58.081
		High	3950.00	58.136
	64QAM	Low	3730.00	57.904
		Middle	3840.00	57.917
		High	3950.00	57.828
	256QAM	Low	3730.00	57.793
		Middle	3840.00	57.909
		High	3950.00	57.965

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
27	QPSK	Low	3730.00	57.937
		Middle	3840.00	57.978
		High	3950.00	57.831
	16QAM	Low	3730.00	58.025
		Middle	3840.00	58.187
		High	3950.00	58.058
	64QAM	Low	3730.00	57.855
		Middle	3840.00	57.888
		High	3950.00	57.897
	256QAM	Low	3730.00	57.775
		Middle	3840.00	58.011
		High	3950.00	57.813
28	QPSK	Low	3730.00	57.984
		Middle	3840.00	58.036
		High	3950.00	57.882
	16QAM	Low	3730.00	58.034
		Middle	3840.00	58.004
		High	3950.00	57.994
	64QAM	Low	3730.00	57.879
		Middle	3840.00	58.021
		High	3950.00	57.826
	256QAM	Low	3730.00	57.765
		Middle	3840.00	57.930
		High	3950.00	58.006
29	QPSK	Low	3730.00	57.817
		Middle	3840.00	57.991
		High	3950.00	58.033
	16QAM	Low	3730.00	58.032
		Middle	3840.00	58.086
		High	3950.00	58.090
	64QAM	Low	3730.00	57.918
		Middle	3840.00	57.987
		High	3950.00	57.961
	256QAM	Low	3730.00	57.879
		Middle	3840.00	57.952
		High	3950.00	58.029

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
30	QPSK	Low	3730.00	57.982
		Middle	3840.00	58.005
		High	3950.00	57.965
	16QAM	Low	3730.00	58.117
		Middle	3840.00	58.144
		High	3950.00	58.035
	64QAM	Low	3730.00	57.871
		Middle	3840.00	58.032
		High	3950.00	57.961
	256QAM	Low	3730.00	57.872
		Middle	3840.00	57.968
		High	3950.00	57.967
31	QPSK	Low	3730.00	57.859
		Middle	3840.00	57.998
		High	3950.00	58.028
	16QAM	Low	3730.00	58.120
		Middle	3840.00	58.204
		High	3950.00	58.065
	64QAM	Low	3730.00	57.786
		Middle	3840.00	57.992
		High	3950.00	57.996
	256QAM	Low	3730.00	57.855
		Middle	3840.00	58.030
		High	3950.00	57.929
32	QPSK	Low	3730.00	57.962
		Middle	3840.00	57.881
		High	3950.00	57.897
	16QAM	Low	3730.00	58.032
		Middle	3840.00	58.203
		High	3950.00	58.089
	64QAM	Low	3730.00	57.785
		Middle	3840.00	58.009
		High	3950.00	57.988
	256QAM	Low	3730.00	57.871
		Middle	3840.00	57.941
		High	3950.00	57.860

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
33	QPSK	Low	3730.00	58.077
		Middle	3840.00	58.078
		High	3950.00	58.039
	16QAM	Low	3730.00	58.110
		Middle	3840.00	58.190
		High	3950.00	58.129
	64QAM	Low	3730.00	57.955
		Middle	3840.00	58.041
		High	3950.00	57.952
	256QAM	Low	3730.00	57.991
		Middle	3840.00	58.088
		High	3950.00	58.003
34	QPSK	Low	3730.00	57.904
		Middle	3840.00	58.145
		High	3950.00	58.003
	16QAM	Low	3730.00	58.027
		Middle	3840.00	58.256
		High	3950.00	58.152
	64QAM	Low	3730.00	57.939
		Middle	3840.00	58.032
		High	3950.00	58.103
	256QAM	Low	3730.00	57.921
		Middle	3840.00	57.977
		High	3950.00	58.051
35	QPSK	Low	3730.00	57.892
		Middle	3840.00	58.117
		High	3950.00	57.929
	16QAM	Low	3730.00	58.085
		Middle	3840.00	58.235
		High	3950.00	58.148
	64QAM	Low	3730.00	57.924
		Middle	3840.00	58.048
		High	3950.00	57.959
	256QAM	Low	3730.00	57.900
		Middle	3840.00	58.159
		High	3950.00	58.012

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	QPSK	Low	3730.00	57.881
		Middle	3840.00	58.011
		High	3950.00	58.085
	16QAM	Low	3730.00	58.164
		Middle	3840.00	58.169
		High	3950.00	58.088
	64QAM	Low	3730.00	57.918
		Middle	3840.00	58.124
		High	3950.00	57.975
	256QAM	Low	3730.00	57.980
		Middle	3840.00	58.094
		High	3950.00	58.061
37	QPSK	Low	3730.00	57.952
		Middle	3840.00	58.105
		High	3950.00	57.988
	16QAM	Low	3730.00	58.138
		Middle	3840.00	58.268
		High	3950.00	58.017
	64QAM	Low	3730.00	57.767
		Middle	3840.00	58.028
		High	3950.00	57.977
	256QAM	Low	3730.00	57.816
		Middle	3840.00	58.116
		High	3950.00	57.991
38	QPSK	Low	3730.00	57.993
		Middle	3840.00	58.100
		High	3950.00	58.013
	16QAM	Low	3730.00	58.096
		Middle	3840.00	58.111
		High	3950.00	58.140
	64QAM	Low	3730.00	57.905
		Middle	3840.00	58.155
		High	3950.00	58.033
	256QAM	Low	3730.00	57.999
		Middle	3840.00	58.041
		High	3950.00	58.159

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
39	QPSK	Low	3730.00	57.906
		Middle	3840.00	58.111
		High	3950.00	57.962
	16QAM	Low	3730.00	58.026
		Middle	3840.00	58.134
		High	3950.00	58.162
	64QAM	Low	3730.00	57.911
		Middle	3840.00	58.036
		High	3950.00	57.987
	256QAM	Low	3730.00	57.909
		Middle	3840.00	58.111
		High	3950.00	58.002
40	QPSK	Low	3730.00	58.007
		Middle	3840.00	58.136
		High	3950.00	58.028
	16QAM	Low	3730.00	58.163
		Middle	3840.00	58.236
		High	3950.00	58.132
	64QAM	Low	3730.00	57.994
		Middle	3840.00	58.096
		High	3950.00	57.994
	256QAM	Low	3730.00	57.837
		Middle	3840.00	58.052
		High	3950.00	58.105
41	QPSK	Low	3730.00	57.928
		Middle	3840.00	58.130
		High	3950.00	57.964
	16QAM	Low	3730.00	58.169
		Middle	3840.00	58.104
		High	3950.00	58.154
	64QAM	Low	3730.00	57.840
		Middle	3840.00	58.084
		High	3950.00	58.108
	256QAM	Low	3730.00	57.959
		Middle	3840.00	58.096
		High	3950.00	57.959

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
42	QPSK	Low	3730.00	57.964
		Middle	3840.00	58.047
		High	3950.00	57.970
	16QAM	Low	3730.00	58.215
		Middle	3840.00	58.381
		High	3950.00	58.211
	64QAM	Low	3730.00	58.021
		Middle	3840.00	58.193
		High	3950.00	57.935
	256QAM	Low	3730.00	57.935
		Middle	3840.00	58.024
		High	3950.00	58.035
43	QPSK	Low	3730.00	57.967
		Middle	3840.00	58.138
		High	3950.00	58.015
	16QAM	Low	3730.00	58.153
		Middle	3840.00	58.129
		High	3950.00	58.040
	64QAM	Low	3730.00	57.985
		Middle	3840.00	58.112
		High	3950.00	58.031
	256QAM	Low	3730.00	57.838
		Middle	3840.00	58.125
		High	3950.00	58.074
44	QPSK	Low	3730.00	57.953
		Middle	3840.00	58.093
		High	3950.00	57.937
	16QAM	Low	3730.00	58.062
		Middle	3840.00	58.142
		High	3950.00	58.076
	64QAM	Low	3730.00	57.791
		Middle	3840.00	58.040
		High	3950.00	58.003
	256QAM	Low	3730.00	57.991
		Middle	3840.00	57.932
		High	3950.00	58.016

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
45	QPSK	Low	3730.00	58.009
		Middle	3840.00	58.017
		High	3950.00	57.937
	16QAM	Low	3730.00	58.130
		Middle	3840.00	58.165
		High	3950.00	58.140
	64QAM	Low	3730.00	57.959
		Middle	3840.00	58.103
		High	3950.00	57.894
	256QAM	Low	3730.00	58.019
		Middle	3840.00	58.063
		High	3950.00	57.930
46	QPSK	Low	3730.00	57.922
		Middle	3840.00	58.097
		High	3950.00	57.989
	16QAM	Low	3730.00	58.152
		Middle	3840.00	58.195
		High	3950.00	58.121
	64QAM	Low	3730.00	57.924
		Middle	3840.00	58.093
		High	3950.00	58.043
	256QAM	Low	3730.00	57.865
		Middle	3840.00	58.103
		High	3950.00	57.921
47	QPSK	Low	3730.00	57.825
		Middle	3840.00	58.182
		High	3950.00	58.064
	16QAM	Low	3730.00	58.063
		Middle	3840.00	58.166
		High	3950.00	58.298
	64QAM	Low	3730.00	57.911
		Middle	3840.00	58.138
		High	3950.00	58.109
	256QAM	Low	3730.00	57.956
		Middle	3840.00	58.100
		High	3950.00	58.107

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
48	QPSK	Low	3730.00	57.986
		Middle	3840.00	58.020
		High	3950.00	57.981
	16QAM	Low	3730.00	58.266
		Middle	3840.00	58.136
		High	3950.00	58.048
	64QAM	Low	3730.00	58.044
		Middle	3840.00	58.054
		High	3950.00	58.011
	256QAM	Low	3730.00	57.866
		Middle	3840.00	57.982
		High	3950.00	57.950
49	QPSK	Low	3730.00	57.895
		Middle	3840.00	58.086
		High	3950.00	58.003
	16QAM	Low	3730.00	58.102
		Middle	3840.00	58.295
		High	3950.00	58.147
	64QAM	Low	3730.00	57.944
		Middle	3840.00	58.078
		High	3950.00	57.988
	256QAM	Low	3730.00	58.043
		Middle	3840.00	58.142
		High	3950.00	57.993
50	QPSK	Low	3730.00	57.968
		Middle	3840.00	58.104
		High	3950.00	58.052
	16QAM	Low	3730.00	58.115
		Middle	3840.00	58.123
		High	3950.00	58.210
	64QAM	Low	3730.00	57.899
		Middle	3840.00	58.035
		High	3950.00	57.968
	256QAM	Low	3730.00	58.058
		Middle	3840.00	58.151
		High	3950.00	57.950

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
51	QPSK	Low	3730.00	58.007
		Middle	3840.00	58.132
		High	3950.00	57.899
	16QAM	Low	3730.00	58.134
		Middle	3840.00	58.273
		High	3950.00	58.298
	64QAM	Low	3730.00	57.890
		Middle	3840.00	58.084
		High	3950.00	58.006
	256QAM	Low	3730.00	57.860
		Middle	3840.00	58.011
		High	3950.00	57.990
52	QPSK	Low	3730.00	57.974
		Middle	3840.00	58.021
		High	3950.00	58.031
	16QAM	Low	3730.00	58.113
		Middle	3840.00	58.187
		High	3950.00	58.109
	64QAM	Low	3730.00	58.001
		Middle	3840.00	58.099
		High	3950.00	58.009
	256QAM	Low	3730.00	57.946
		Middle	3840.00	58.074
		High	3950.00	58.071
53	QPSK	Low	3730.00	57.949
		Middle	3840.00	58.091
		High	3950.00	58.055
	16QAM	Low	3730.00	58.190
		Middle	3840.00	58.281
		High	3950.00	58.012
	64QAM	Low	3730.00	58.044
		Middle	3840.00	57.992
		High	3950.00	58.149
	256QAM	Low	3730.00	57.936
		Middle	3840.00	58.049
		High	3950.00	57.913

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
54	QPSK	Low	3730.00	57.917
		Middle	3840.00	58.012
		High	3950.00	58.047
	16QAM	Low	3730.00	58.107
		Middle	3840.00	58.150
		High	3950.00	58.104
	64QAM	Low	3730.00	58.035
		Middle	3840.00	58.096
		High	3950.00	58.031
	256QAM	Low	3730.00	57.949
		Middle	3840.00	58.022
		High	3950.00	57.936
55	QPSK	Low	3730.00	57.919
		Middle	3840.00	58.107
		High	3950.00	58.002
	16QAM	Low	3730.00	58.128
		Middle	3840.00	58.152
		High	3950.00	58.169
	64QAM	Low	3730.00	57.982
		Middle	3840.00	58.049
		High	3950.00	58.009
	256QAM	Low	3730.00	58.032
		Middle	3840.00	58.131
		High	3950.00	57.926
56	QPSK	Low	3730.00	57.933
		Middle	3840.00	58.108
		High	3950.00	57.962
	16QAM	Low	3730.00	58.206
		Middle	3840.00	58.157
		High	3950.00	58.239
	64QAM	Low	3730.00	57.913
		Middle	3840.00	58.080
		High	3950.00	58.062
	256QAM	Low	3730.00	57.949
		Middle	3840.00	58.138
		High	3950.00	57.982

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
57	QPSK	Low	3730.00	57.891
		Middle	3840.00	58.005
		High	3950.00	58.018
	16QAM	Low	3730.00	58.095
		Middle	3840.00	58.230
		High	3950.00	58.093
	64QAM	Low	3730.00	57.995
		Middle	3840.00	58.004
		High	3950.00	58.024
	256QAM	Low	3730.00	57.880
		Middle	3840.00	58.066
		High	3950.00	58.083
58	QPSK	Low	3730.00	57.885
		Middle	3840.00	58.064
		High	3950.00	57.948
	16QAM	Low	3730.00	58.098
		Middle	3840.00	58.083
		High	3950.00	58.143
	64QAM	Low	3730.00	57.923
		Middle	3840.00	57.981
		High	3950.00	57.979
	256QAM	Low	3730.00	57.897
		Middle	3840.00	58.052
		High	3950.00	58.043
59	QPSK	Low	3730.00	57.912
		Middle	3840.00	58.138
		High	3950.00	57.980
	16QAM	Low	3730.00	58.090
		Middle	3840.00	58.303
		High	3950.00	58.256
	64QAM	Low	3730.00	57.952
		Middle	3840.00	58.082
		High	3950.00	58.048
	256QAM	Low	3730.00	57.983
		Middle	3840.00	58.096
		High	3950.00	58.045

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
60	QPSK	Low	3730.00	57.946
		Middle	3840.00	58.019
		High	3950.00	58.011
	16QAM	Low	3730.00	58.172
		Middle	3840.00	58.180
		High	3950.00	58.121
	64QAM	Low	3730.00	57.807
		Middle	3840.00	58.027
		High	3950.00	58.122
	256QAM	Low	3730.00	57.974
		Middle	3840.00	58.038
		High	3950.00	58.034
61	QPSK	Low	3730.00	57.958
		Middle	3840.00	58.076
		High	3950.00	58.092
	16QAM	Low	3730.00	58.086
		Middle	3840.00	58.114
		High	3950.00	58.207
	64QAM	Low	3730.00	57.998
		Middle	3840.00	58.027
		High	3950.00	58.007
	256QAM	Low	3730.00	57.870
		Middle	3840.00	58.146
		High	3950.00	57.925
62	QPSK	Low	3730.00	57.987
		Middle	3840.00	58.052
		High	3950.00	57.981
	16QAM	Low	3730.00	58.078
		Middle	3840.00	58.174
		High	3950.00	58.097
	64QAM	Low	3730.00	57.887
		Middle	3840.00	58.018
		High	3950.00	58.023
	256QAM	Low	3730.00	57.975
		Middle	3840.00	58.015
		High	3950.00	58.024

Ant	Mod	Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
63	QPSK	Low	3730.00	57.899
		Middle	3840.00	58.099
		High	3950.00	58.092
	16QAM	Low	3730.00	58.041
		Middle	3840.00	58.216
		High	3950.00	58.168
	64QAM	Low	3730.00	57.972
		Middle	3840.00	58.061
		High	3950.00	58.018
	256QAM	Low	3730.00	57.977
		Middle	3840.00	58.076
		High	3950.00	58.100
64	QPSK	Low	3730.00	57.943
		Middle	3840.00	58.043
		High	3950.00	58.132
	16QAM	Low	3730.00	58.022
		Middle	3840.00	58.199
		High	3950.00	58.156
	64QAM	Low	3730.00	58.011
		Middle	3840.00	58.108
		High	3950.00	58.046
	256QAM	Low	3730.00	57.985
		Middle	3840.00	58.045
		High	3950.00	58.006

Plot Data of Occupied bandwidth

Antenna 45 / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / QPSK / Low



5.4. OUT-OF-BAND UNWANTED EMISSIONS

Test Requirements:

§ 2.1051 Measurements required: Spurious emissions at antenna terminals.

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

§ 27.53 Emission limits.

(l) 3.7 GHz Service. The following emission limits apply to station transmitting in the 3700-3980 MHz band:

- (1) For base station 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. Compliance with this paragraph (l)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Procedures:

The measurement is performed in accordance with Section 5.7.3 of ANSI C63.26.

5.7.3 Out-of-band unwanted emissions measurements

- a) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
- b) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band. In some cases, it may be possible to set the center frequency and span so as to encompass the fundamental emission and the unwanted out-of-band (band-edge) emissions on either side of the authorized block, band, or channel. This can be accomplished with a single (slow) sweep, if adequate overload protection and sufficient dynamic range can be maintained.
- c) Set the number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- d) Sweep time should be auto for peak detection. For rms detection the sweep time should be set as follows:
 - 1) If the device can be configured to transmit continuously (duty cycle $\geq 98\%$), set the (sweep time) $> (\text{number of points in sweep}) \times (\text{symbol period})$ (e.g., by a factor of $10 \times \text{symbol period} \times \text{number of points}$). Increasing the sweep time (i.e., slowing the sweep speed) will allow for averaging over multiple symbols
 - 2) If the device cannot be configured to transmit continuously (duty cycle $< 98\%$) and a freerunning sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time $> (\text{number of points in sweep}) \times (\text{transmitter period})$ (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by $[10 \log (1/\text{duty cycle})]$. This assumes that the transmission period and duty cycle

is relatively constant (duty cycle variation $\leq \pm 2\%$).

- 3) If the device cannot be configured to transmit continuously (duty cycle $< 98\%$) and a freerunning sweep must be used, set the sweep time so that the averaging is performed over multiple on/off cycles by setting the sweep time $> (\text{number of points in sweep}) \times (\text{transmitter period})$ (i.e., the transmit on-time + the off-time). The spectrum analyzer readings shall subsequently be corrected by $[10 \log (1/\text{duty cycle})]$. This assumes that the transmission period and duty cycle is relatively constant (duty cycle variation $\leq \pm 2\%$).
 - 4) If the device cannot be configured to transmit continuously and a free-running sweep must be used, and if the transmissions exhibit a non-constant duty cycle (duty cycle variations $> \pm 2\%$), set the sweep time so that the averaging is performed over the on-period by setting the sweep time $> (\text{symbol period}) \times (\text{number of points})$, while also maintaining the sweep time $< (\text{transmitter on-time})$. The trace mode shall be set to max hold, since not every display point will be averaged only over just the on-time. Thus, multiple sweeps (e.g., 100) in maximum hold are necessary to ensure that the maximum power is measured.
- e) The test report shall include the plots of the measuring instrument display and the measured data.
- f) See Annex I for example emission mask plots.

Note:

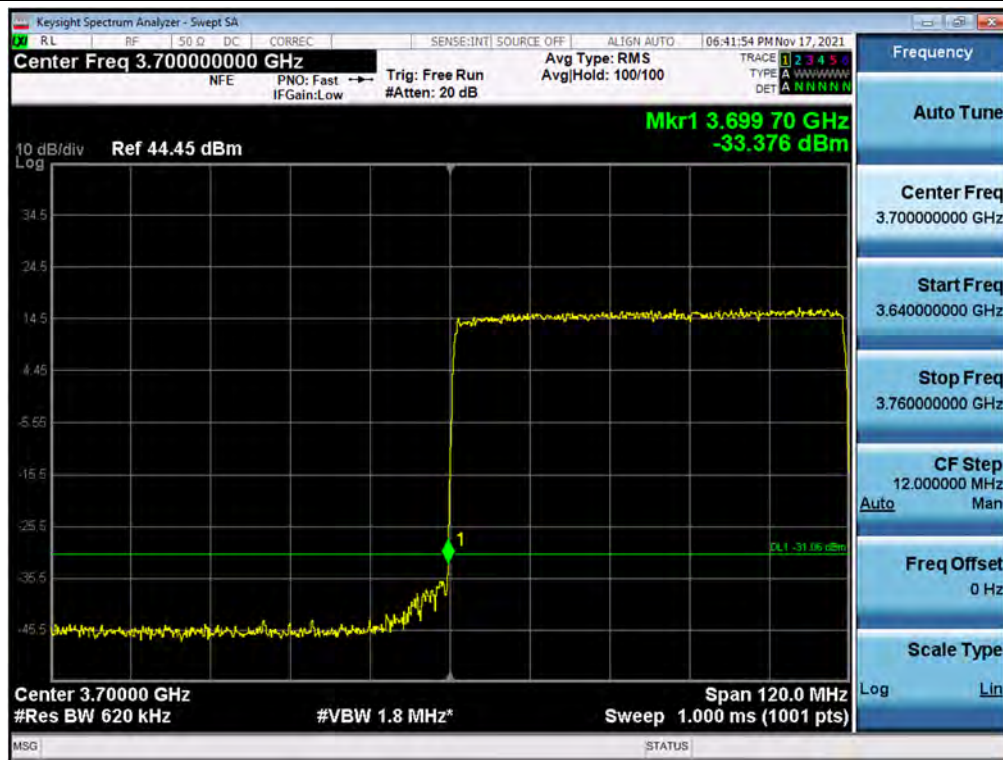
1. For high channel band edge, RBW narrower than reference bandwidth is used. So following correction factor is applied.
 - $10 \log [(\text{reference bandwidth})/(\text{resolution bandwidth})]$
: High channel band edge applied 62 kHz RBW, $10 \log (620 \text{ kHz} / 62 \text{ kHz}) = 10 \text{ dB}$
2. Due to MIMO operations, a correction has been added to the limit according to KDB 662911 D01 v02r01.
 - 64Tx MIMO correction: $10 \log(N_{\text{ANT}}) = 10 \log(64) = 18.06 \text{ dB}$ // $-13 \text{ dBm} - 18.06 \text{ dB} = -31.06 \text{ dBm}$
3. Sample Calculation:
 - $-33.376 \text{ dBm (Measured Value)} + 1.307 \text{ dB (Duty Cycle Factor)} = -32.068 \text{ dBm (Final Band Edge)}$
 - $-49.699 \text{ dBm (Measured Value)} + 10 \text{ dB (RBW Correction)} + 1.307 \text{ dB (Duty Cycle Factor)} = -38.392 \text{ dBm (Final Band Edge)}$
4. The results of the Out-of-band Unwanted Emissions test shown above the frequency measured values are very small and similar trend for each port, so we are attached only the worst case plot.

Test Results:**Tabular Data of Out-of-band Unwanted Emissions****3.7 GHz Service 5G NR 60 MHz 1 Carrier**

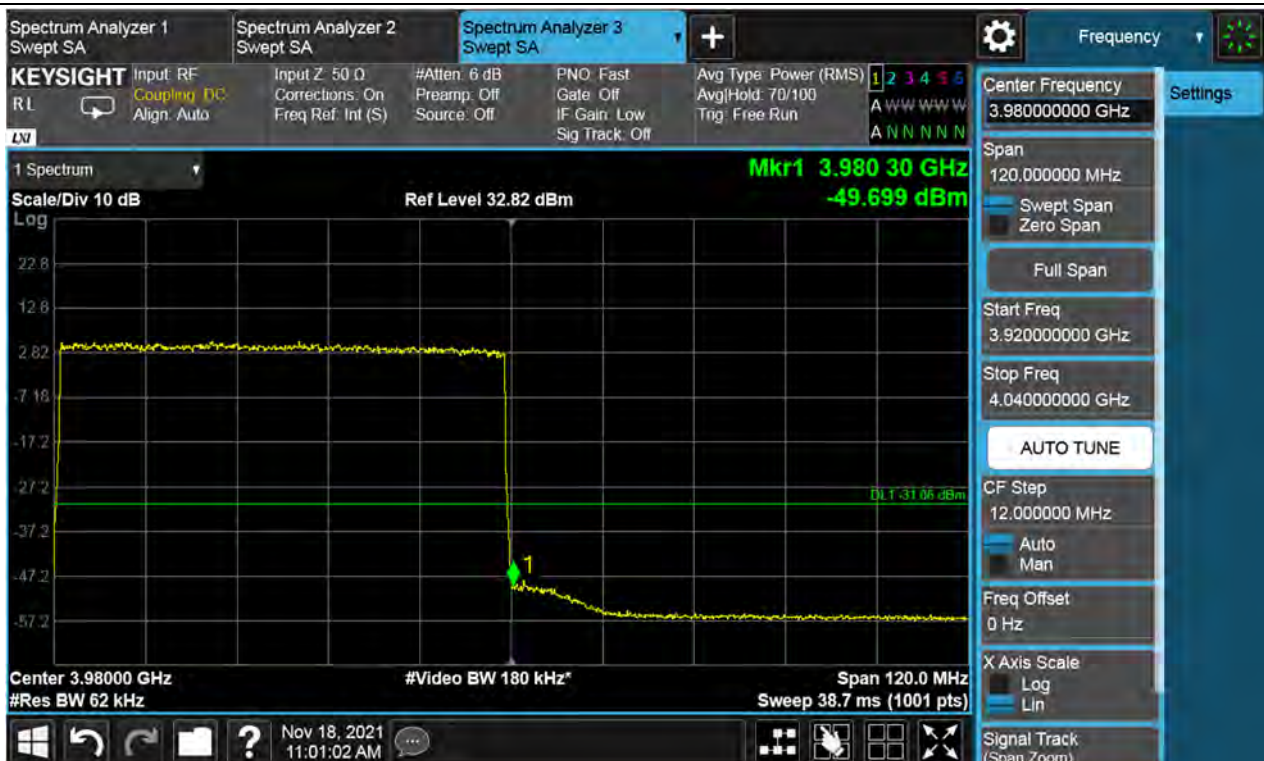
Ant.	Mod.	Channel	Frequency (MHz)	Measured Value (dBm)	Calculated Value (dBm)
28	QPSK	Low	3699.70	-33.376	-32.068
39	256QAM	High	3980.30	-39.699	-38.392

Plot Data of Out-of-band Unwanted Emissions

Antenna 28 / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / QPSK / Low



Antenna 39 / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 256QAM / High



5.5. SPURIOUS UNWANTED EMISSIONS

Test Requirements:

§ 2.1051 Measurements required: Spurious emissions at antenna terminals.

The radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in § 2.1049 as appropriate. The magnitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be specified.

§ 27.53 Emission limits.

(l) 3.7 GHz Service. The following emission limits apply to station transmitting in the 3700-3980 MHz band:

- (1) For base station 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. Compliance with this paragraph (l)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Procedures:

The measurement is performed in accordance with Section 5.7.4 of ANSI C63.26.

5.7.4 Spurious unwanted emission measurements

- a) Set the spectrum analyzer start frequency to the lowest frequency generated by the EUT, without going below 9 kHz, and the stop frequency to the lower frequency covered by the measurements previously performed in 5.7.3. As an alternative, the stop frequency can be set to the value specified in 5.1.1, depending on the EUT operating range, if the resulting plot can clearly demonstrate compliance for all frequencies not addressed by the out-of-band emissions measurements performed as per 5.7.3.
- b) When using an average power (rms) detector, ensure that the number of points in the sweep $\geq 2 \times (\text{span} / \text{RBW})$. This may require that the measurement range defined by the start and stop frequencies be subdivided, depending on the spectrum analyzer capabilities. This requirement does not apply to peak-detected power measurements. When average power is specified by the applicable regulation, a peak-detector can be utilized for preliminary measurements to accommodate wider frequency spans. Any emissions found in the preliminary measurement to exceed the applicable limit(s) shall be further examined using a power averaging (rms) detector with the minimum number of measurement points as defined above.
- c) The sweep time should be set to auto-couple for performing peak-detector measurements. For measurements that use a power averaging (rms) detector, the sweep time shall be set as described for out-of-band emissions measurements in item d) of 5.7.3.
- d) Identify and measure the Highest spurious emission levels in each frequency range. It is not necessary to re-measure the

out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.

- e) Repeat step b) through step d) for the upper spurious emission frequency range if not already captured by a wide span measurement performed as per the alternative provided in step a). The upper frequency for this measurement is defined in 5.1.1 as a function of the EUT operating range.
- f) Compare the results with the corresponding limit in the applicable regulation.
- g) The test report shall include the data plots of the measuring instrument display and the measured data.

Note:

- 1. In 9 kHz to 30 MHz band, RBW narrower than reference bandwidth is used. So following correction factor is applied.
 - $10 \log [(reference\ bandwidth)/(resolution\ bandwidth)]$
: 9 kHz to 150 kHz applied 1 kHz RBW, $10 \log (1\ MHz / 1\ kHz) = 30\ dB$
: 150 kHz to 30 MHz applied 10 kHz RBW, $10 \log (1\ MHz / 10\ kHz) = 20\ dB$
- 2. Due to MIMO operations, a correction has been added to the limit according to KDB 662911 D01 v02r01.
 - 64Tx MIMO correction: $10 \log(N_{ANT}) = 10 \log(64) = 18.06\ dB$ // $-13\ dBm/MHz - 18.06\ dB = -31.06\ dBm/MHz$
- 3. Sample Calculation:
$$-64.144\ dBm\ (Measured\ Value) + 30\ dB\ (Narrower\ RBW\ Correction) + 1.307\ dB\ (Duty\ Cycle\ Factor)$$
$$= -32.836\ dBm\ (Final\ Spurious\ Unwanted\ Emission)$$
- 4. The results of the Spurious Unwanted Emissions shown above the frequency measured values are very small and similar trend for each port, so we are attached only the worst case plot.

Test Results:

Tabular Data of Spurious Unwanted Emissions

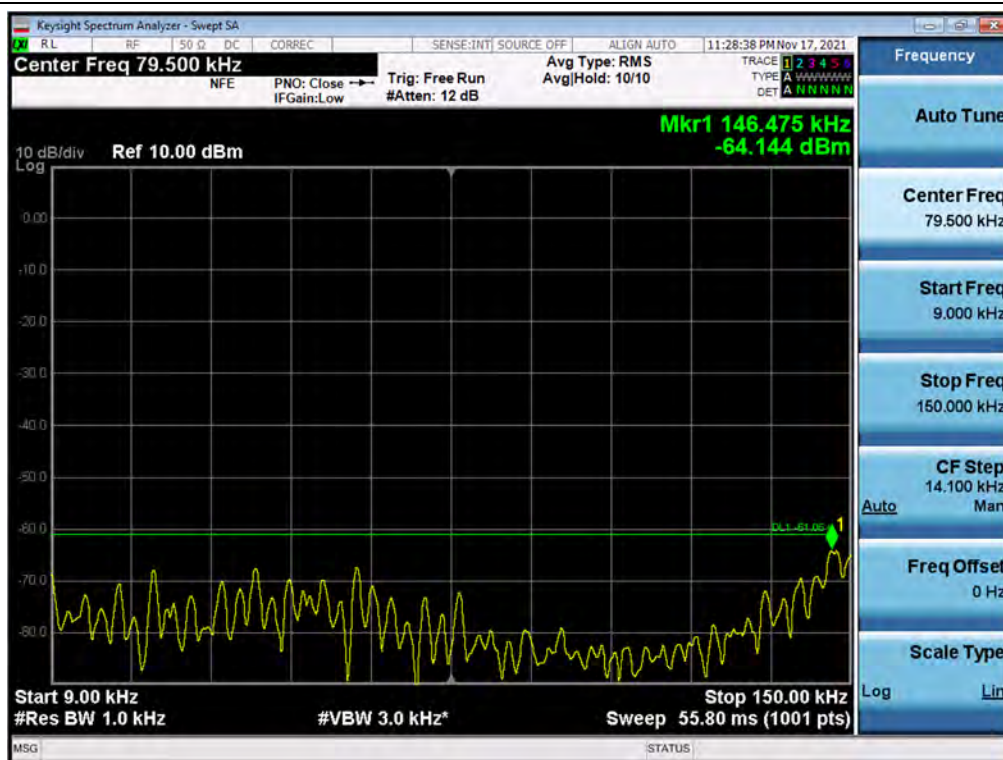
3.7 GHz Service 5G NR 60 MHz 1 Carrier

Test Result for Output Port 45

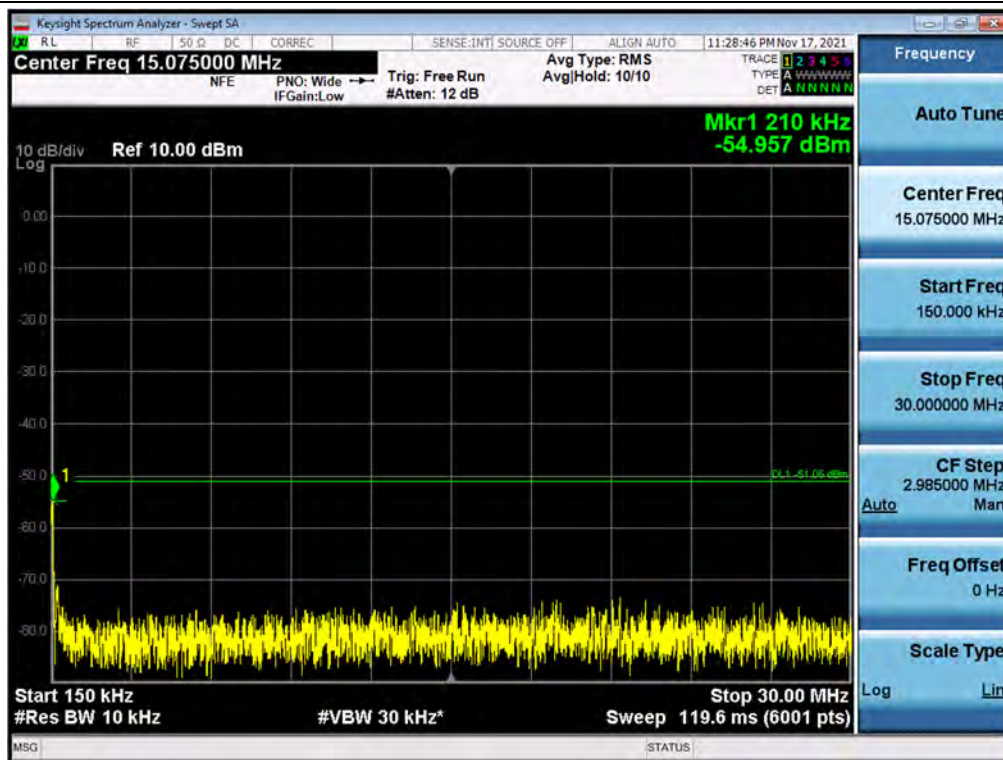
Mod.	Channel	Measured Level (dBm)							
		9 kHz ~ 150 kHz	150 kHz ~ 30 MHz	30 MHz ~ Low Edge ~ 100 MHz	Low Edge ~ 100 MHz ~ Low Edge	High Edge ~ High Edge + 100 MHz	High Edge + 100 MHz ~ 10 GHz	10 GHz ~ 26.5 GHz	26.5 GHz ~ 40 GHz
64QAM	Middle	-32.836	-33.649	-41.793	-37.528	-34.226	-39.259	-41.582	-38.736

Plot Data of Spurious Unwanted Emissions

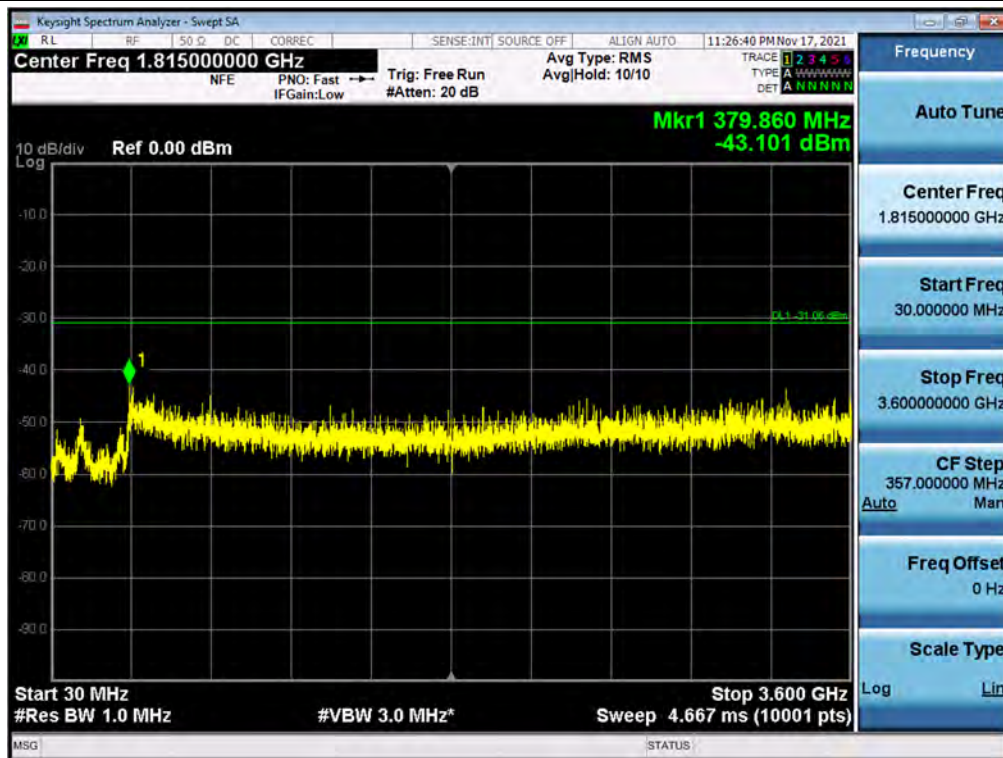
Antenna 0 / 9 kHz ~ 150 kHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



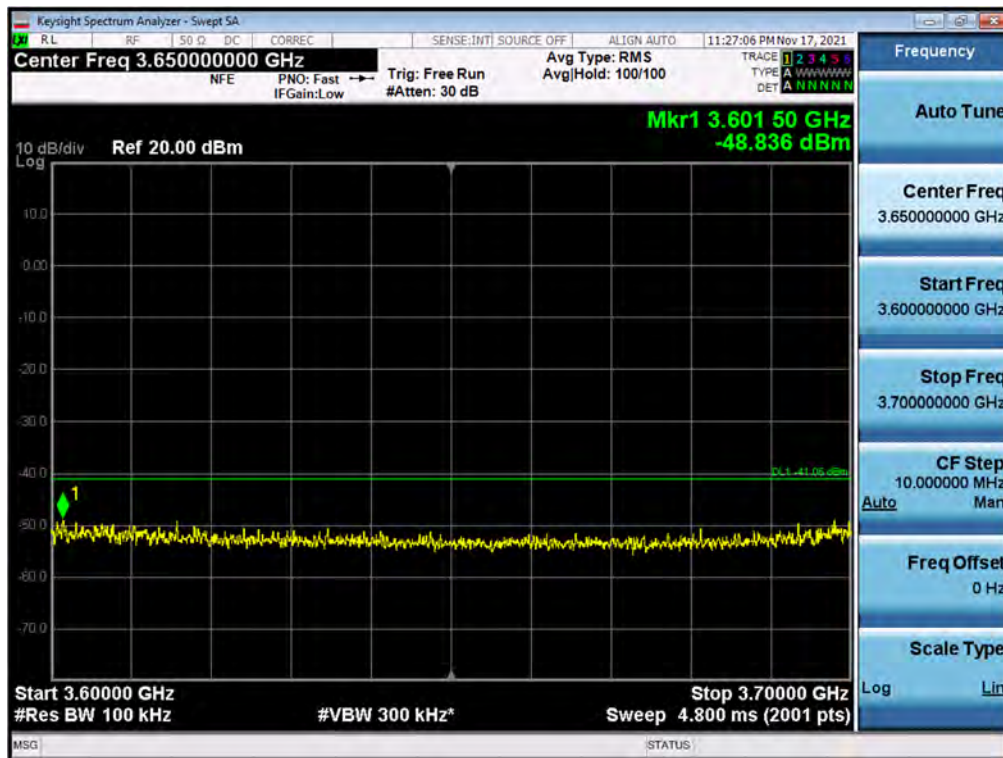
Antenna 1 / 150 kHz ~ 30 MHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



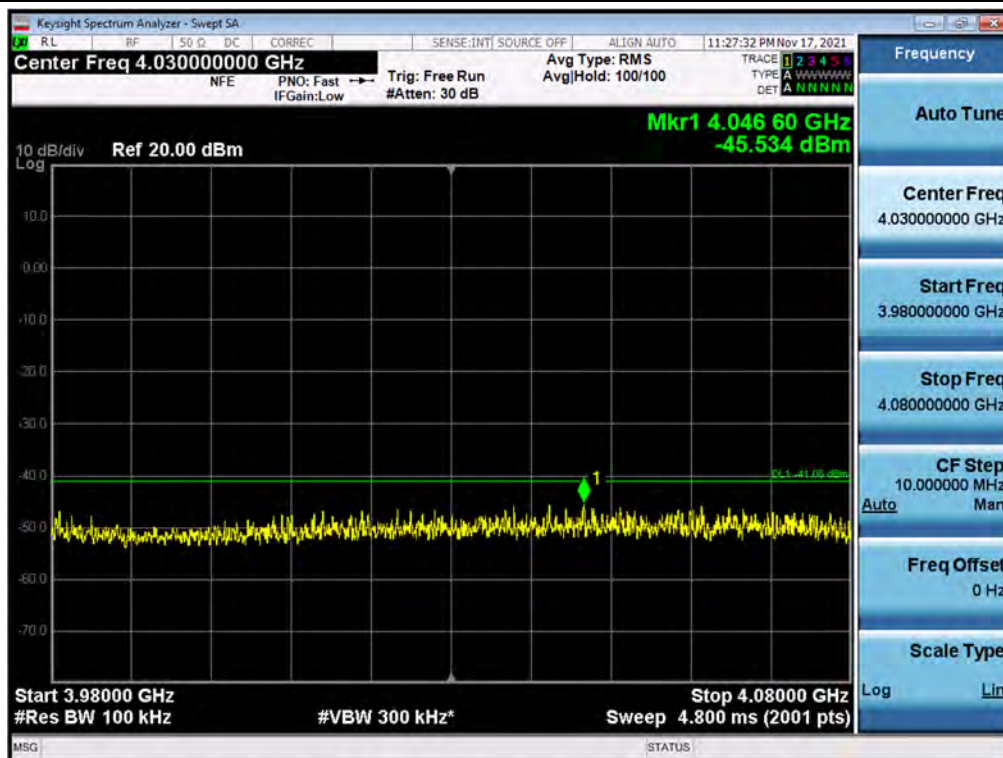
Antenna 1 / 30 MHz ~ Low Edge - 100 MHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



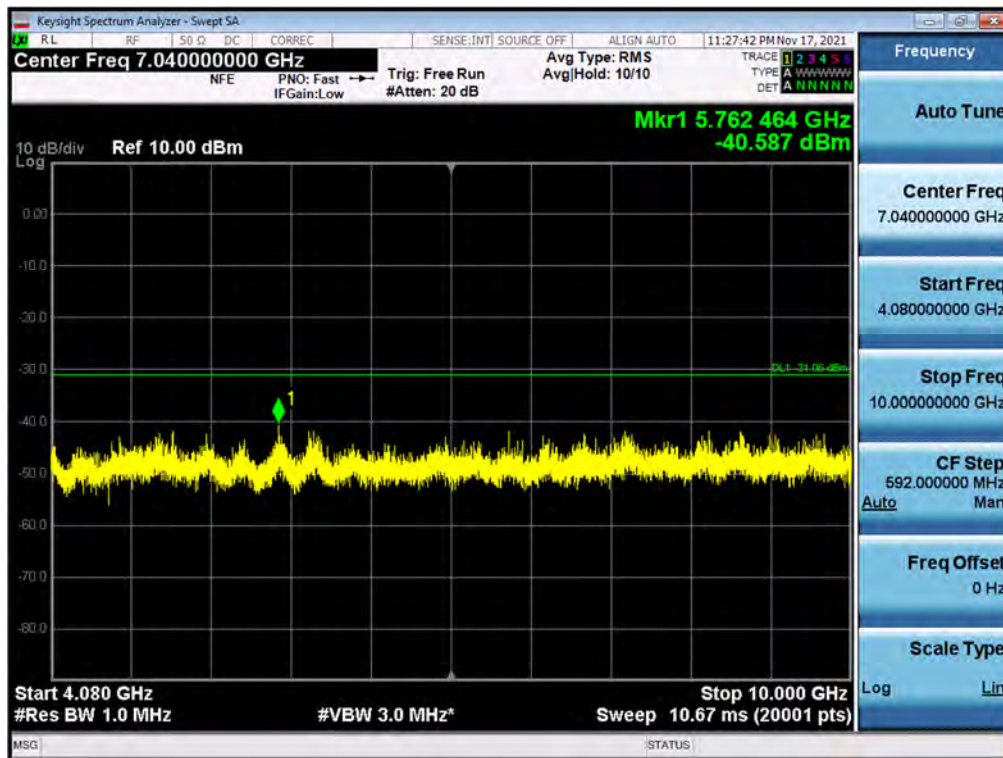
Antenna 1 / Low Edge - 100 MHz ~ Low Edge / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



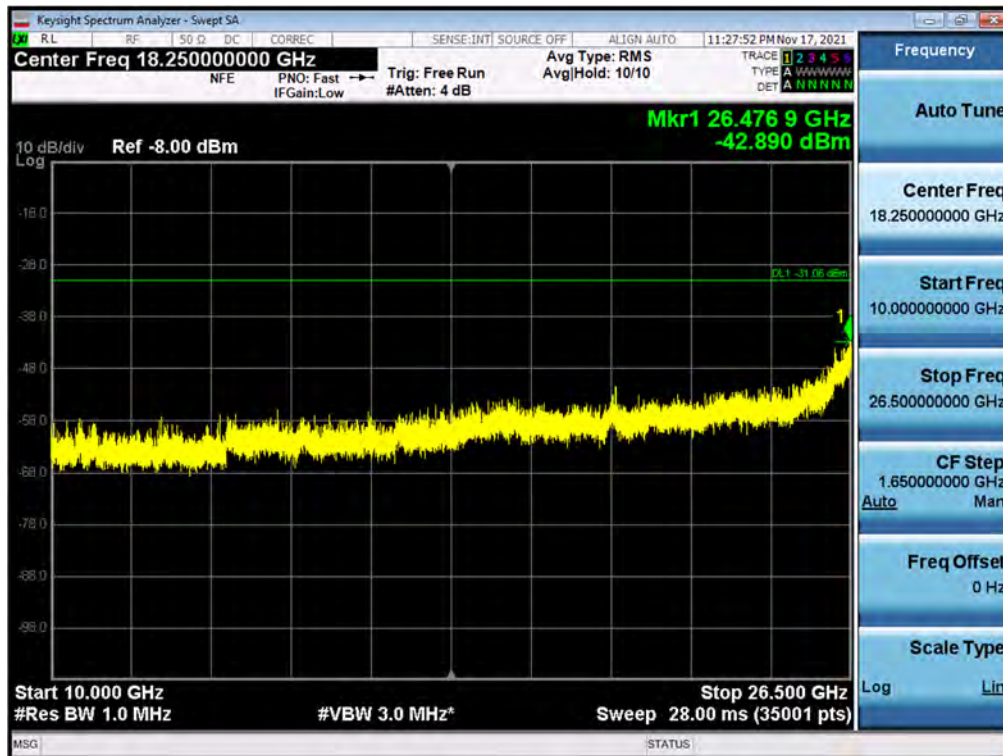
Antenna 1 / High Edge ~ High Edge + 100 MHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



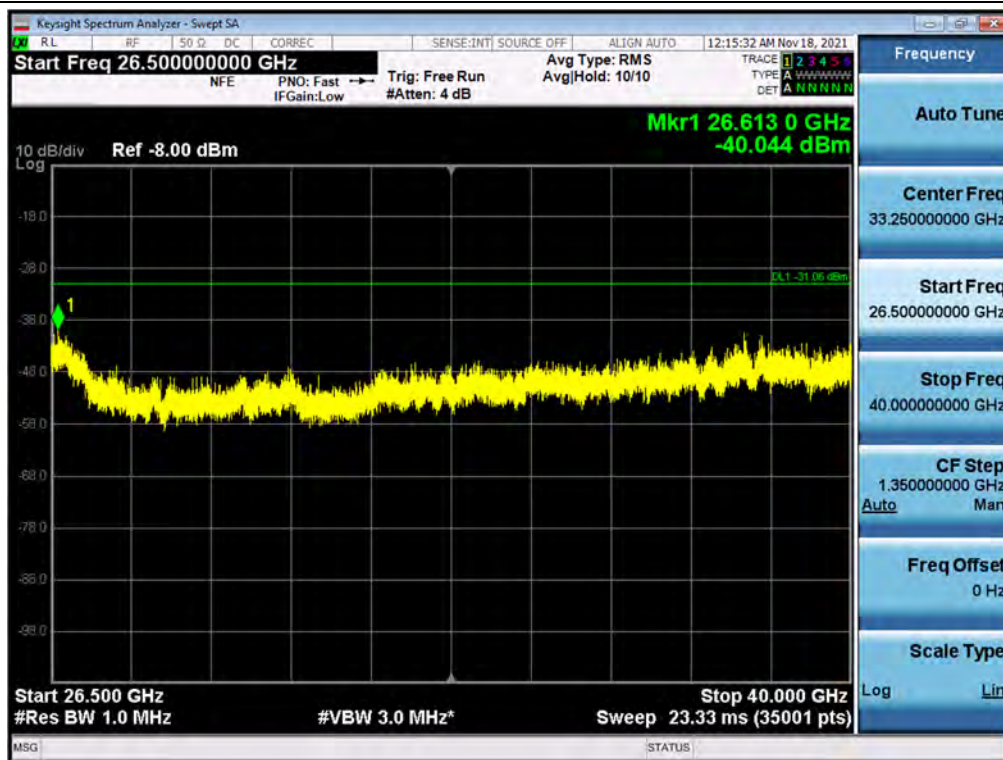
Antenna 1 / High Edge + 100 MHz ~ 10 GHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



Antenna 0 / 10 GHz ~ 26.5 GHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



Antenna 1 / 26.5 GHz ~ 40 GHz / 3.7 GHz Service 5G NR 60 MHz 1 Carrier / 64QAM / Middle



5.6. RADIATED EMISSIONS

Test Requirements:

§ 2.1053 Measurements required: Field strength of spurious radiation.

- (a) Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of § 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from halfwave dipole antennas.
- (b) The measurements specified in paragraph (a) of this section shall be made for the following equipment:
- (1) Those in which the spurious emissions are required to be 60 dB or more below the mean power of the transmitter.
 - (2) All equipment operating on frequencies higher than 25 MHz.
 - (3) All equipment where the antenna is an integral part of, and attached directly to the transmitter.
 - (4) Other types of equipment as required, when deemed necessary by the Commission.

§ 27.53 Emission limits.

- (l) 3.7 GHz Service. The following emission limits apply to station transmitting in the 3700-3980 MHz band:
- (1) For base station 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. Compliance with this paragraph (l)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test Procedures:

The measurement is performed in accordance with Section 5.5.3.2 of ANSI C63.26.

- a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.
- b) Each emission under consideration shall be evaluated:
 - 1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
 - 2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
 - 3) Return the turntable to the azimuth where the highest emission amplitude level was observed.
 - 4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
 - 5) Record the measured emission amplitude level and frequency using the appropriate RBW.
- c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
- d) ~ j) Omitted
- k) Provide the complete measurement results as a part of the test report.

Note:

1. We have done horizontal and vertical polarization in detecting antenna.
2. The amplitude of the spurious domain emission attenuated by more than 20 dB over the permissible value was not recorded according to ANSI C63.26, clause 5.1.1., c).
3. The results of the Radiated Emissions test shown above are measured at maximum power, and data values are attached only in the worst case.
4. Measure distance = 3 m

Test Results:

3.7 GHz Service 5G NR 60 MHz 1 Carrier

Freq.(MHz)	Measured Level	Ant. Factor	A.G.+C.L.+H.P.F.	Pol.	Measured Power	Result
	[dBuV]	[dB/m]	[dB]		[dBm]	[dBm/m]

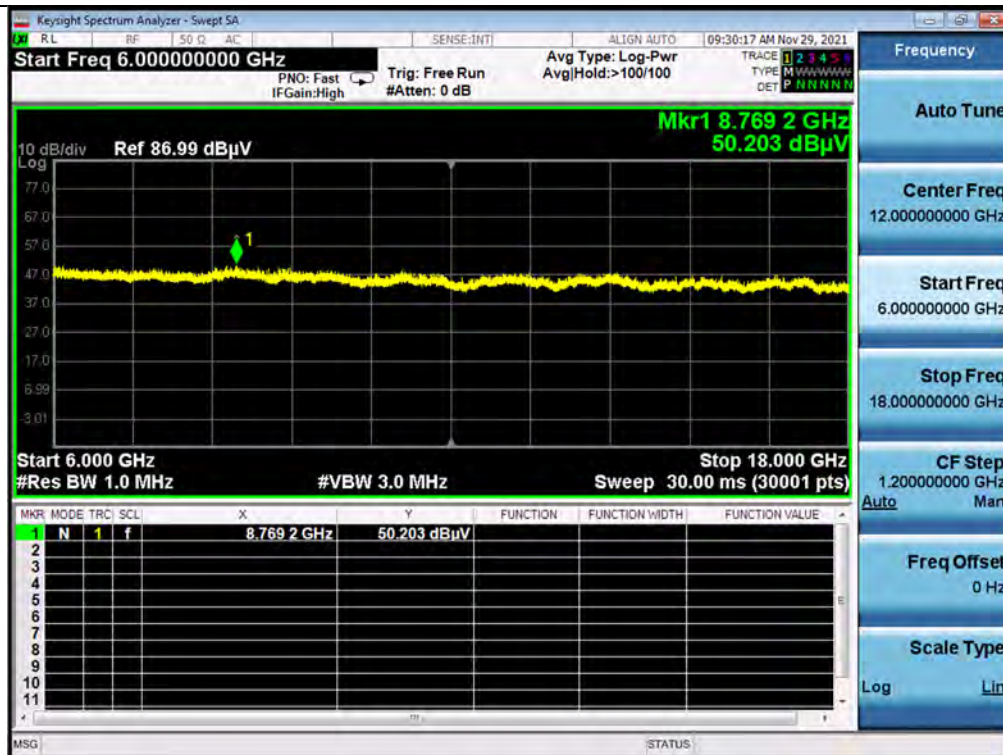
No Peak Found

* C.L.: Cable Loss / A.G.: Amp Gain / H.P.F.: High Pass Filter

*Result: (Measured Level – 95.2) + Ant. Factor – (A.G.+C.L.+H.P.F.)

Plot data of Radiated Emissions

3.7 GHz Service 5G NR 60 MHz 1 Carrier



Note: Only the worst case plots for Radiated Spurious Emissions.

5.7. FREQUENCY STABILITY

Test Requirements:

§ 2.1055 Measurements required: Frequency stability.

(a) The frequency stability shall be measured with variation of ambient temperature as follows:

- (1) From -30° to $+50^{\circ}$ centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

§ 27.54 Frequency stability.

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Test Procedures:

The measurement is performed in accordance with Section 5.6.3, 5.6.4 and 5.6.5 of ANSI C63.26.

5.6.3 Procedure for frequency stability testing

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at $+20^{\circ}\text{C}$ and rated supply voltage.

The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is tested:

- a) At 10°C intervals of temperatures between -30°C and $+50^{\circ}\text{C}$ at the manufacturer's rated supply voltage, and
- b) At $+20^{\circ}\text{C}$ temperature and $\pm 15\%$ supply voltage variations. If a product is specified to operate over a range of input voltage then the -15% variation is applied to the lowermost voltage and the $+15\%$ is applied to the uppermost voltage.

During the test all necessary settings, adjustments and control of the EUT have to be performed without disturbing the test environment, i.e., without opening the environmental chamber. The frequency stabilities can be maintained to a lesser temperature range provided that the transmitter is automatically inhibited from operating outside the lesser temperature range. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer. An external supply voltage can be used and set at the internal battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy).

Full details on the choice of values shall be included in the test report.

5.6.4 Frequency stability over variations in temperature

- a) Supply the EUT with a nominal 60 Hz ac voltage, dc voltage, or install a new or fully charged battery in the EUT.
- b) If possible a dummy load should be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, the EUT should be placed in the center of the chamber with the antenna adjusted to the shortest length

possible.

- c) Turn on the EUT, and tune it to the center frequency of the operating band.
- d) Couple the transmitter output to the measuring instrument through a suitable attenuator and coaxial cable. If connection to the EUT output is not possible, make the measurement by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away).
NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory authority is the recommended measuring instrument.
- e) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument, but is strong enough to allow measurement of the operating or fundamental frequency of the EUT). Adjust the detector bandwidth and span settings to achieve a resolution capable of accurate frequency measurements over the applicable frequency stability limits.
- f) Turn the EUT off, and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.
- g) Set the temperature control on the chamber to the Highest temperature specified in the regulatory requirements for the type of device, and allow the oscillator heater and the chamber temperature to stabilize. Unless otherwise instructed by the regulatory authority, this temperature should be 50 °C.
- h) While maintaining a constant temperature inside the environmental chamber, turn on the EUT and allow sufficient time for the EUT temperature to stabilize.
- i) Measure the frequency.
- j) Switch off the EUT, but do not switch off the oscillator heater.
- k) Lower the chamber temperature to the next level that is required by the standard and allow the temperature inside the chamber to stabilize. Unless otherwise instructed by the regulators, this temperature step should be 10 °C.
- l) Repeat step h) through step k) down to the lowest specified temperature. Unless otherwise instructed by the regulators, this temperature should be –30 °C. When the frequency stability limit is stated as being sufficient such that the fundamental emissions stay within the authorized bands of operation, a reference point shall be established at the applicable unwanted emissions limit using a RBW equal to the RBW required by the unwanted emissions specification of the applicable regulatory standard. These reference points measured using the lowest and Highest channel of operation shall be identified as f_L and f_H respectively. The worst-case frequency offset determined in the above methods shall be added or subtracted from the values of f_L and f_H and the resulting frequencies must remain within the band.
- m) Omitted

5.6.5 Frequency stability when varying supply voltage

- a) Couple the transmitter output to the measuring instrument through a suitable attenuator and coaxial cable. If connection to the EUT output is not possible make the measurement by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away)
- b) Supply the EUT with nominal ac or dc voltage. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and

at each extreme also shall be shown.

- c) Turn on the EUT, and couple its output to a frequency counter or other frequency-measuring instrument.
- d) Tune the EUT to the center frequency of the operating band. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument, but is strong enough to allow measurement of the operating or fundamental frequency of the EUT). Adjust the detector bandwidth and span settings to achieve a resolution capable of accurate frequency measurements over the applicable frequency stability limits.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory authority is the recommended measuring instrument.

- e) Measure the frequency.
- f) Unless otherwise specified, vary primary supply voltage from 85% to 115% of the nominal value for other than hand carried battery equipment.
- g) For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
- h) Repeat the frequency measurement.

NOTE—For band-edge compliance, it can be required to make these measurements at the low and High channel of the operating band.

Note: The results of the frequency stability test shown above the frequency deviation measured values are very small and similar trend for each port, so we are attached only the worst case data.

Test Results:
Reference: - 48 Vdc at 20°C Freq. = 3,869,797,000 Hz

Voltage	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(°C)	(Hz)	Error (Hz)	(Hz)	
100%	+20(Ref)	3869 797 007	6.695	0.000	0.00000
	-30	3869 797 016	15.829	9.134	0.00236
	-20	3869 797 011	10.564	3.869	0.00100
	-10	3869 797 014	13.585	6.891	0.00178
	0	3869 797 007	7.164	0.469	0.00012
	+10	3869 797 012	11.544	4.849	0.00125
	+30	3869 797 014	13.987	7.292	0.00188
	+40	3869 797 012	12.108	5.414	0.00140
115%	+50	3869 797 008	8.326	1.632	0.00042
85%	+20	3869 797 009	9.450	2.756	0.00071

6. Annex B_EUT AND TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2111-FC092-P