4. FCC Section 2.1049 – Occupied Bandwidth/Edge of Band Emissions

4.1 Occupied Bandwidth

In 47CFR 2.1049 the FCC requires:

> "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 following conditions as applicable."

This required measurement is the 99% Occupied Bandwidth, also called the designated signal bandwidth and needs to be within the parameters of the products specified emissions designator. During these measurements it is customary to evaluate the Edge of Band emissions at block/band edges.

The transmitted signal occupied bandwidth was measured using a Keysight MXA Signal Analyzer. All emissions were within the parameters as required.

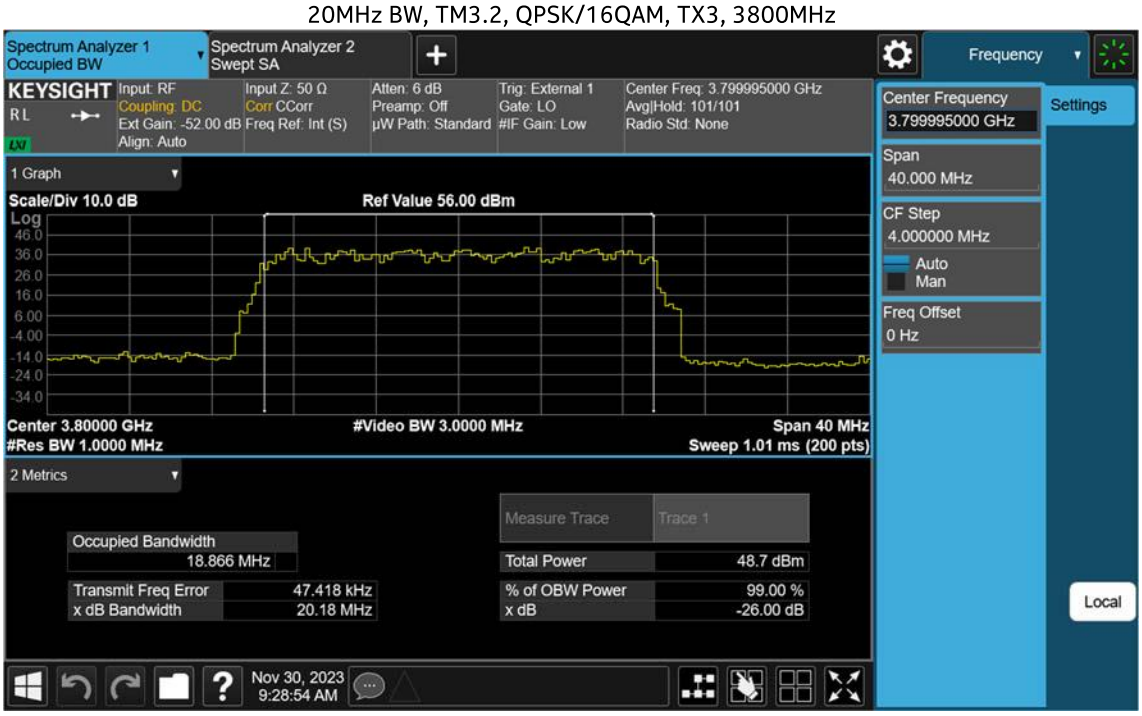
# of Carrier	Signal BW MHz	Modulation	TX Port	Channel Frequency MHz	99% Occupied BW MHz
1	20	64QAM	3	3710	18.396
1	20	QPSK/16QAM	3	3800	**18.866**
1	20	256QAM	3	3970	18.470
1	30	64QAM	5	3715	27.685
1	30	QPSK/16QAM	5	3800	**28.010**
1	30	256QAM	4	3965	27.824
1	40	64QAM	5	3720	37.253
1	40	QPSK/16QAM	5	3800	37.610
1	40	64QAM	5	3960	**37.944**
1	50	64QAM	5	3725	47.184
1	50	QPSK/16QAM	5	3800	47.290
1	50	256QAM	5	3955	**47.392**
1	60	64QAM	5	3730	57.801
1	60	64QAM	5	3800	**58.074**
1	60	256QAM	5	3950	57.592
1	70	64QAM	5	3735	67.185
1	70	QPSK/16QAM	5	3800	**67.573**
1	70	256QAM	5	3945	67.035
1	80	64QAM	5	3740	77.109
1	80	QPSK/16QAM	5	3800	**77.725**
1	80	256QAM	5	3940	77.170
1	90	64QAM	5	3745	86.965
1	90	QPSK/16QAM	5	3800	**87.493**
1	90	256QAM	5	3935	86.800
1	100	64QAM	5	3750	96.780
1	100	QPSK/16QAM	5	3800	97.001
1	100	256QAM	5	3930	**97.258**
2	20+20	QPSK/16QAM	5	3710+3730	**38.556**
2	20+20	QPSK/16QAM	5	3710+3890	18.368+18.227
2	20+20	QPSK/16QAM	5	3790+3810	38.139
2	20+20	256QAM	5	3790+3970	18.166+18.110

2	20+20	256QAM	1	3950+3970	37.836
2	100+100	QPSK/16QAM	5	3750+3850	**196.24**
2	100+100	256QAM	5	3830+3930	195.87

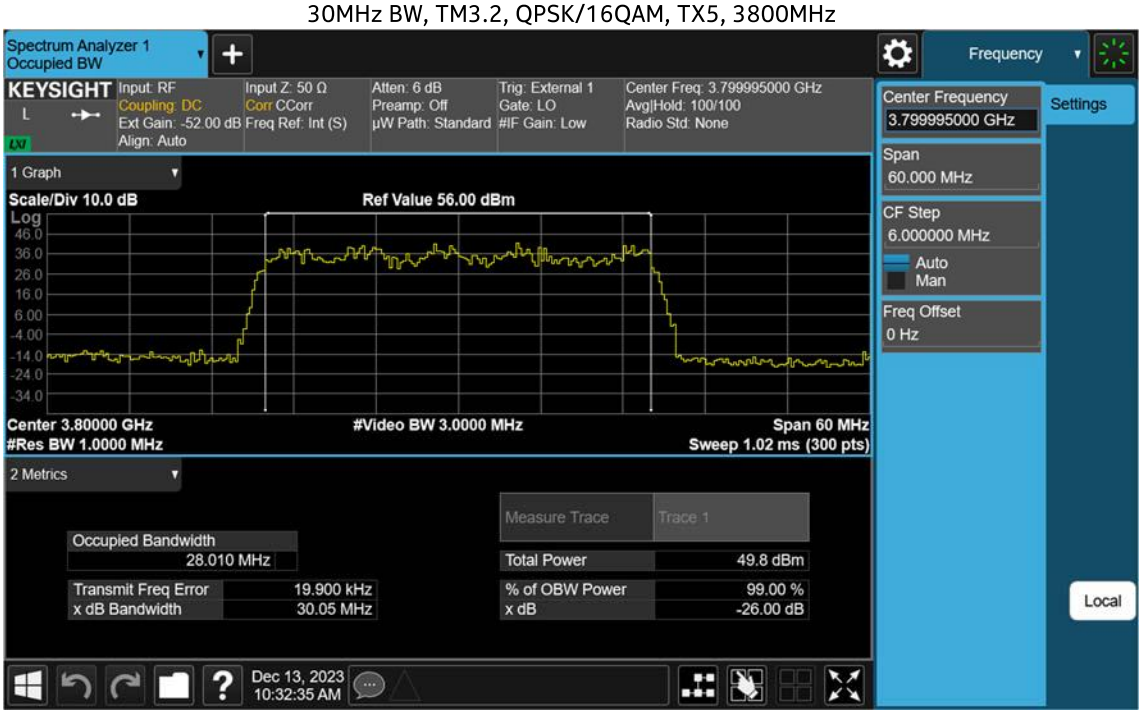
4.2 99% Occupied Bandwidth Plots

NOTE: Only the plot with the maximum bandwidth measured is used in this report. The full suite of raw data resides at the MH, New Jersey location.

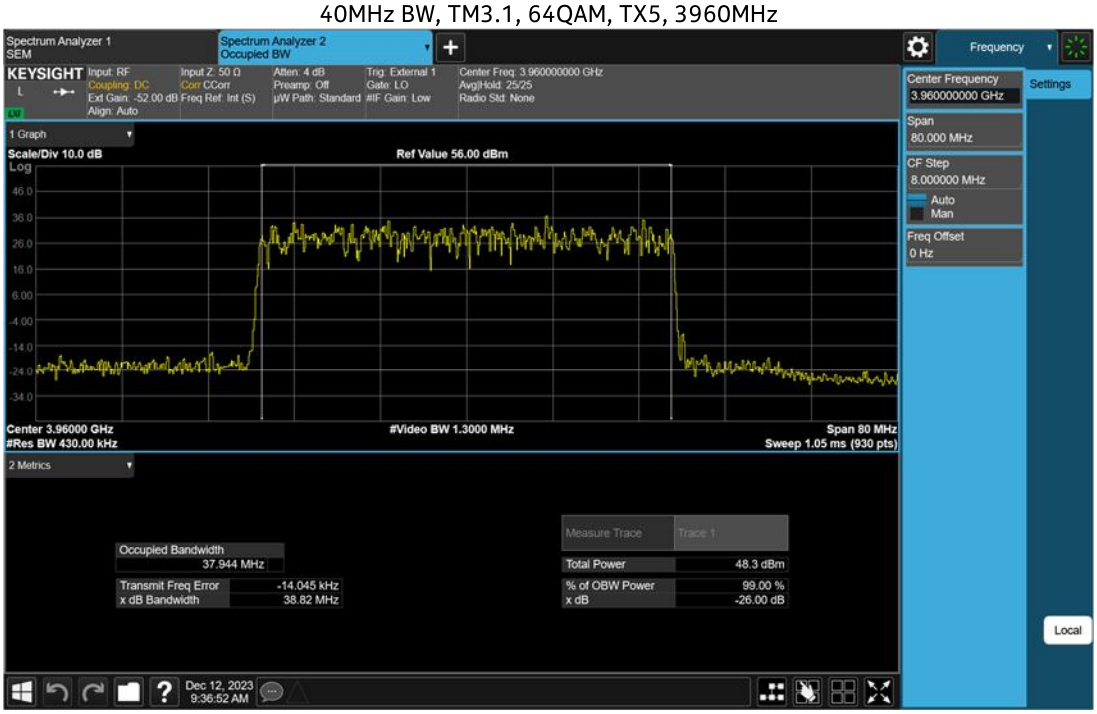
20MHz BW, TM3.2, QPSK/16QAM, TX3, 3800MHz



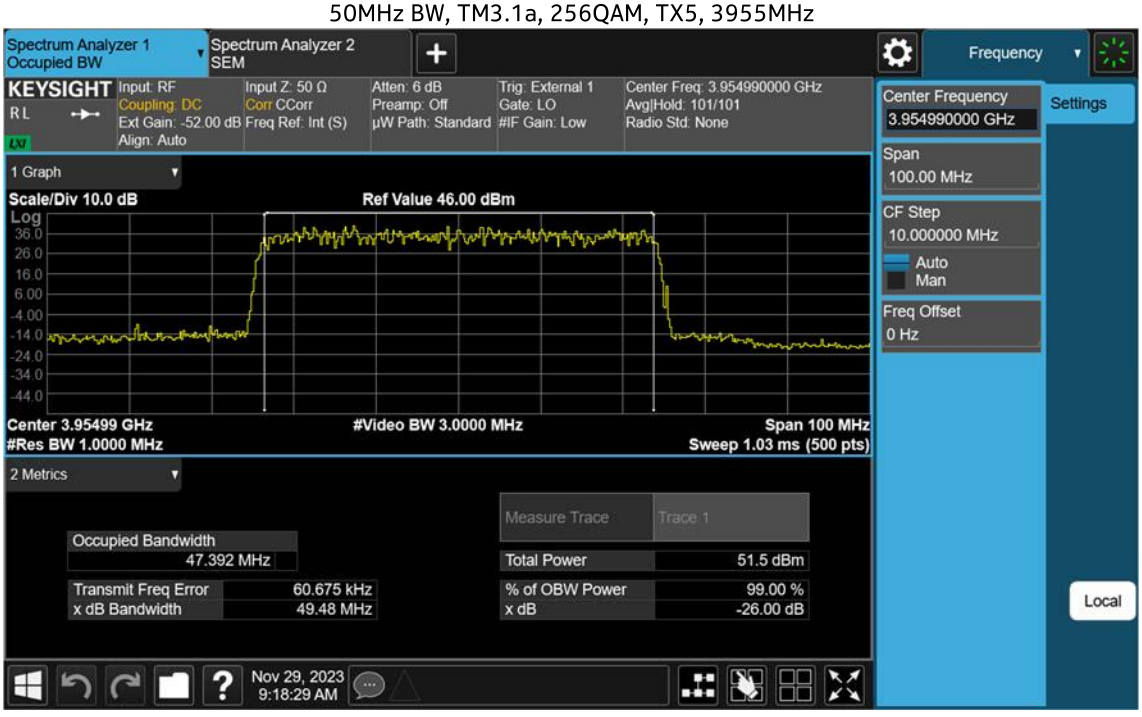
30MHz BW, TM3.2, QPSK/16QAM, TX5, 3800MHz



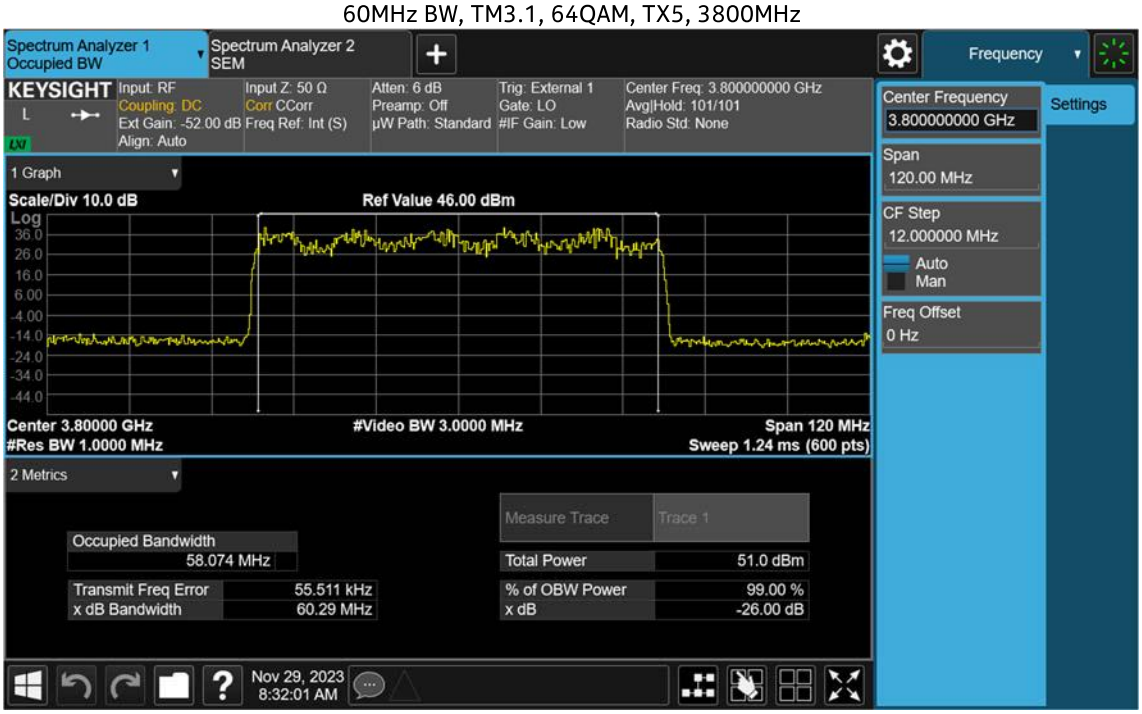
40MHz BW, TM3.1, 64QAM, TX5, 3960MHz



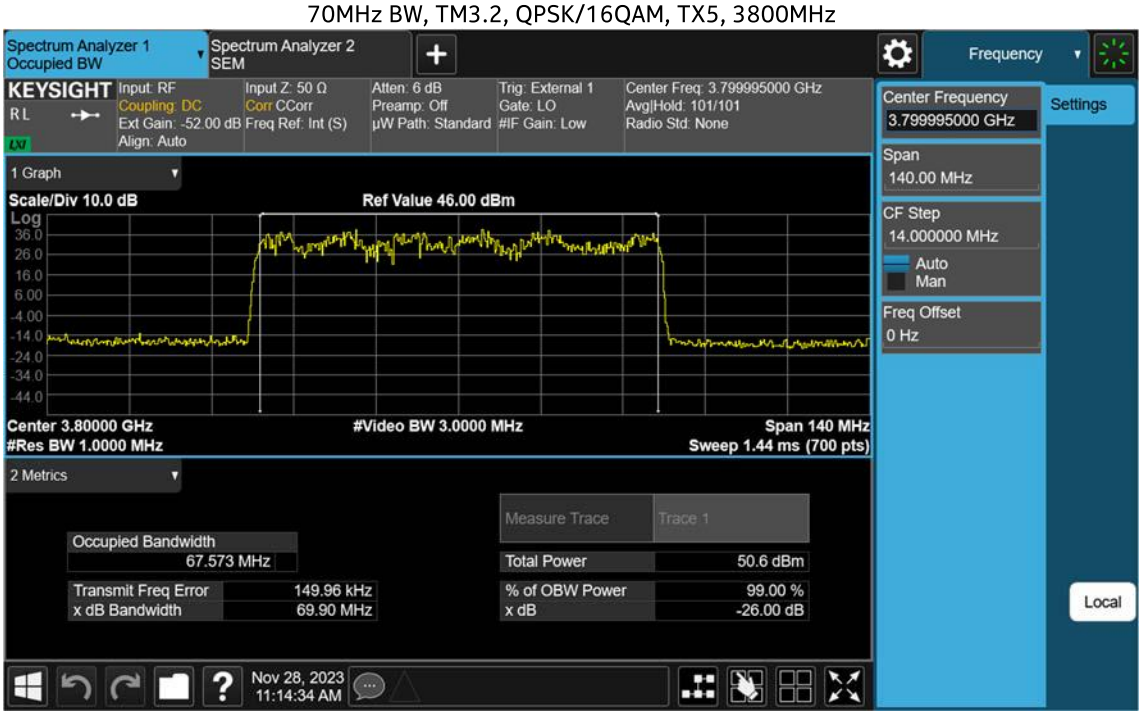
50MHz BW, TM3.1a, 256QAM, TX5, 3955MHz



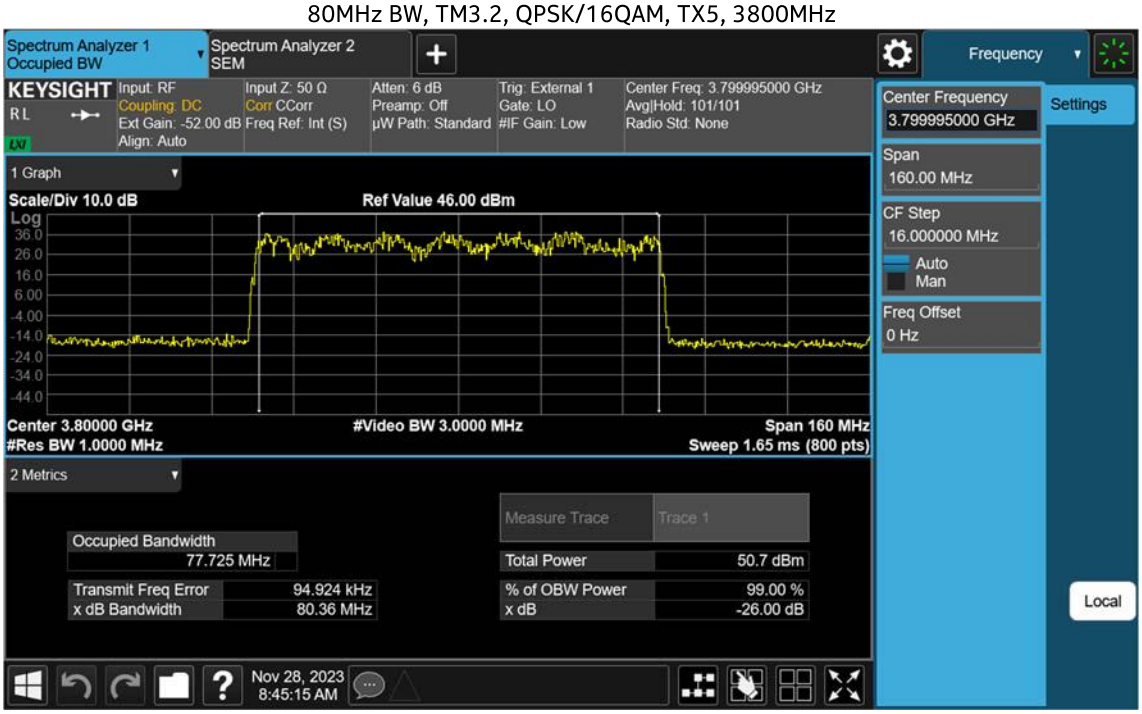
60MHz BW, TM3.1, 64QAM, TX5, 3800MHz



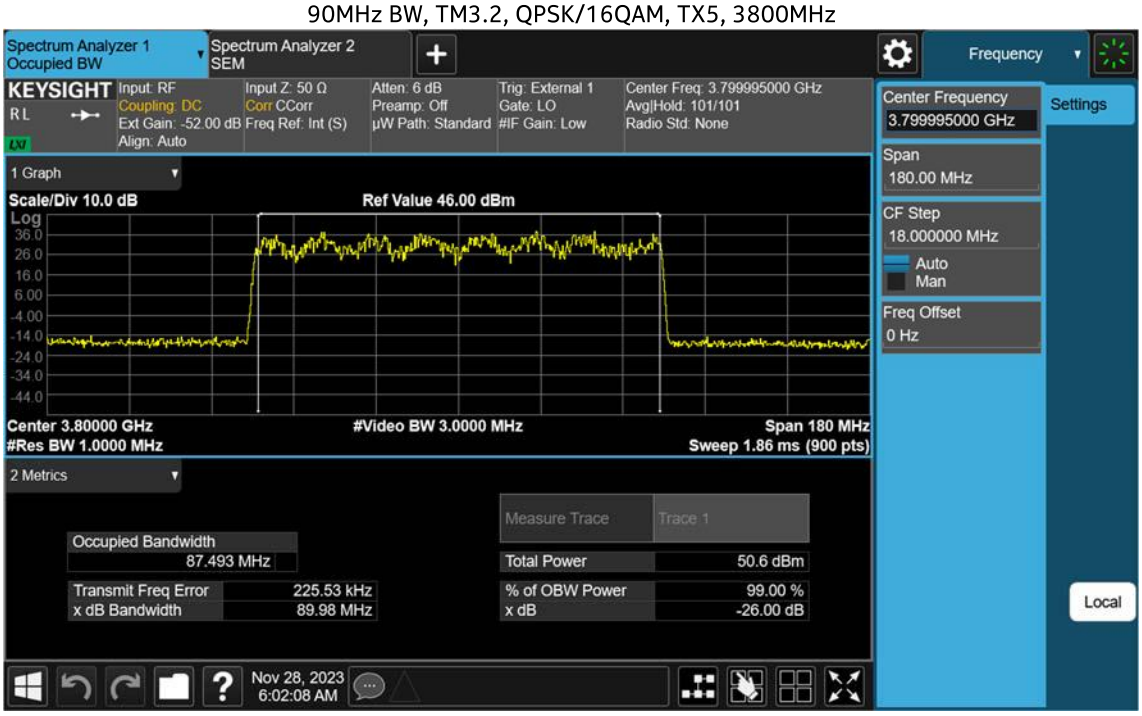
70MHz BW, TM3.2, QPSK/16QAM, TX5, 3800MHz



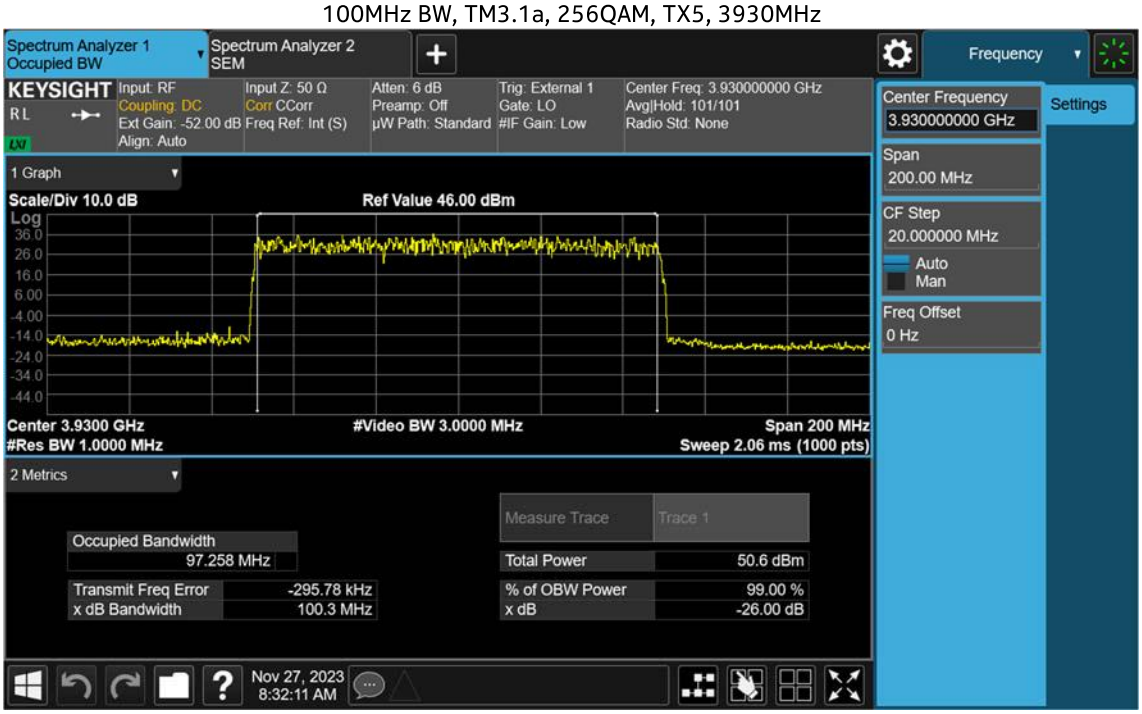
80MHz BW, TM3.2, QPSK/16QAM, TX5, 3800MHz



90MHz BW, TM3.2, QPSK/16QAM, TX5, 3800MHz

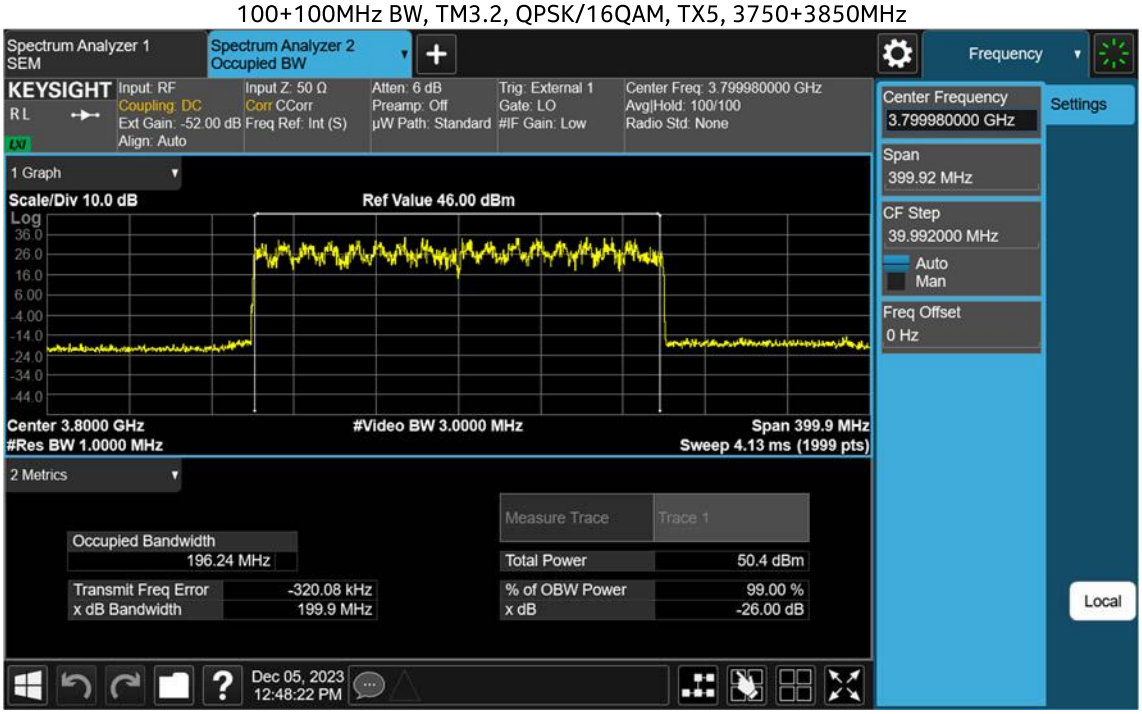


100MHz BW, TM3.1a, 256QAM, TX5, 3930MHz



20+20MHz BW, TM3.2, QPSK/16QAM, TX5, 3710+3730MHz

100+100MHz BW, TM3.2, QPSK/16QAM, TX5, 3750+3850MHz



4.3 Edge of band Emissions

The Edge of Band emissions of the EUT at the external antenna connector (EAC) were measured using a Keysight MXA Signal Analyzer. Before measuring the Edge of Band emissions, the RF power level was confirmed with the Keysight MXA Signal Analyzer. The RF output from the EAC port to signal analyzer was reduced (to an amplitude usable by the signal analyzer) by using a calibrated attenuator and RF Switch. The path attenuation was offset on the display and the signal for the carrier was adjusted to the corrected RF power level for the resolution bandwidth used for the transmit signal. All mask values were adjusted based upon the designated signal bandwidth and measurement bandwidths. In accordance with KDB 662911 D01 Multiple Transmitter Output, the limit of -13 dBm has been adjusted to -22 dBm to reflect 10 log(n) where n=8 for the 8x8 MIMO operation.

4.3.1 Edge of Band Emissions – Plots

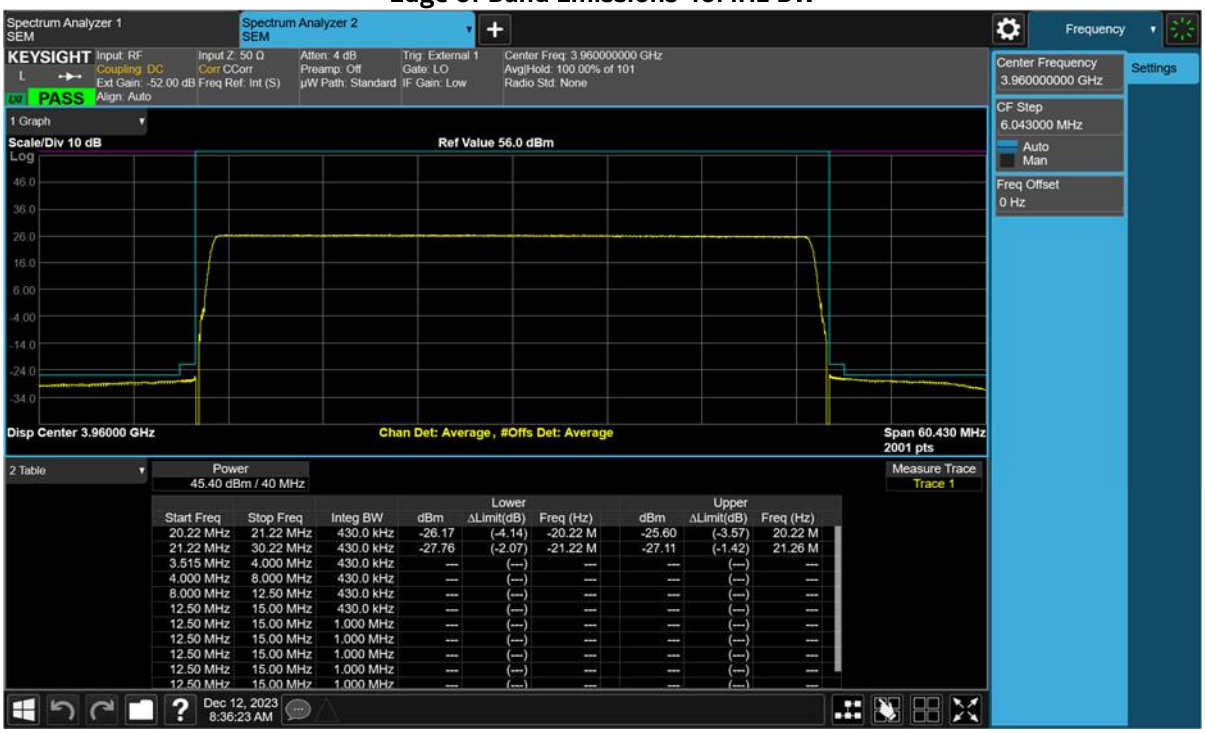
All of the measurements met the requirements of Part 27.53 when measured per Part 2.1049.

NOTE: The full suite of raw data resides at the MH, New Jersey location.

Edge of Band Emissions 20MHz BW

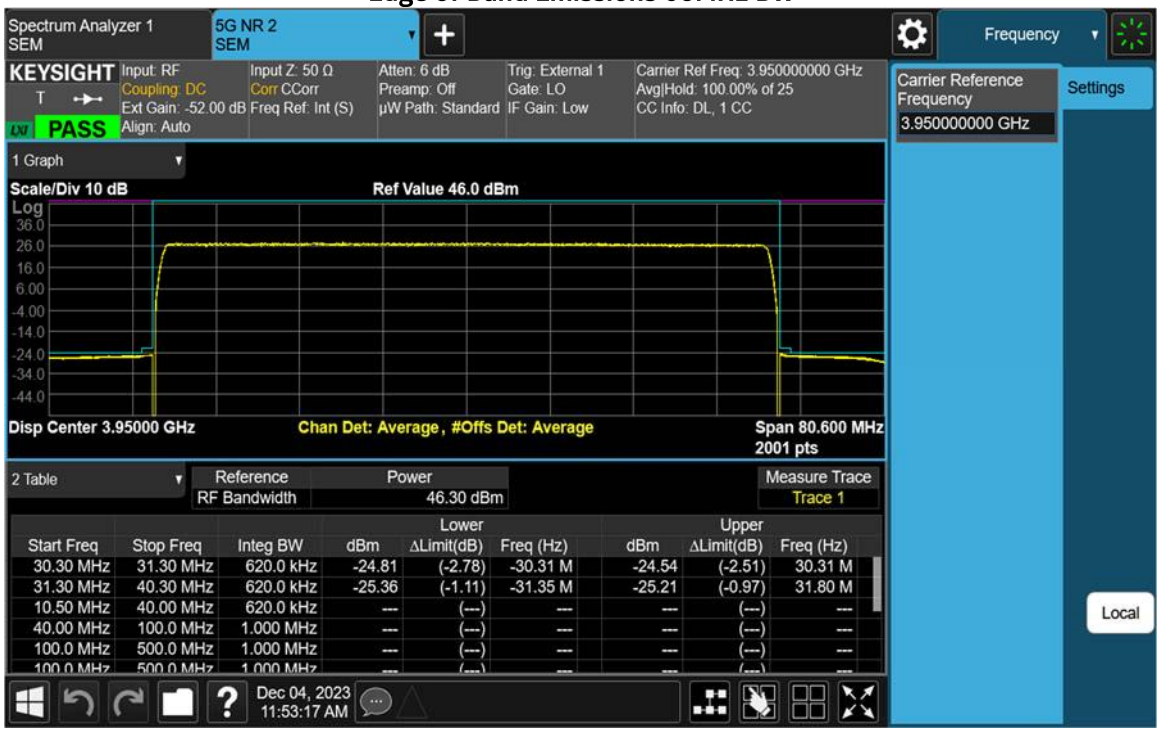
Edge of Band Emissions 30MHz BW

Edge of Band Emissions 40MHz BW

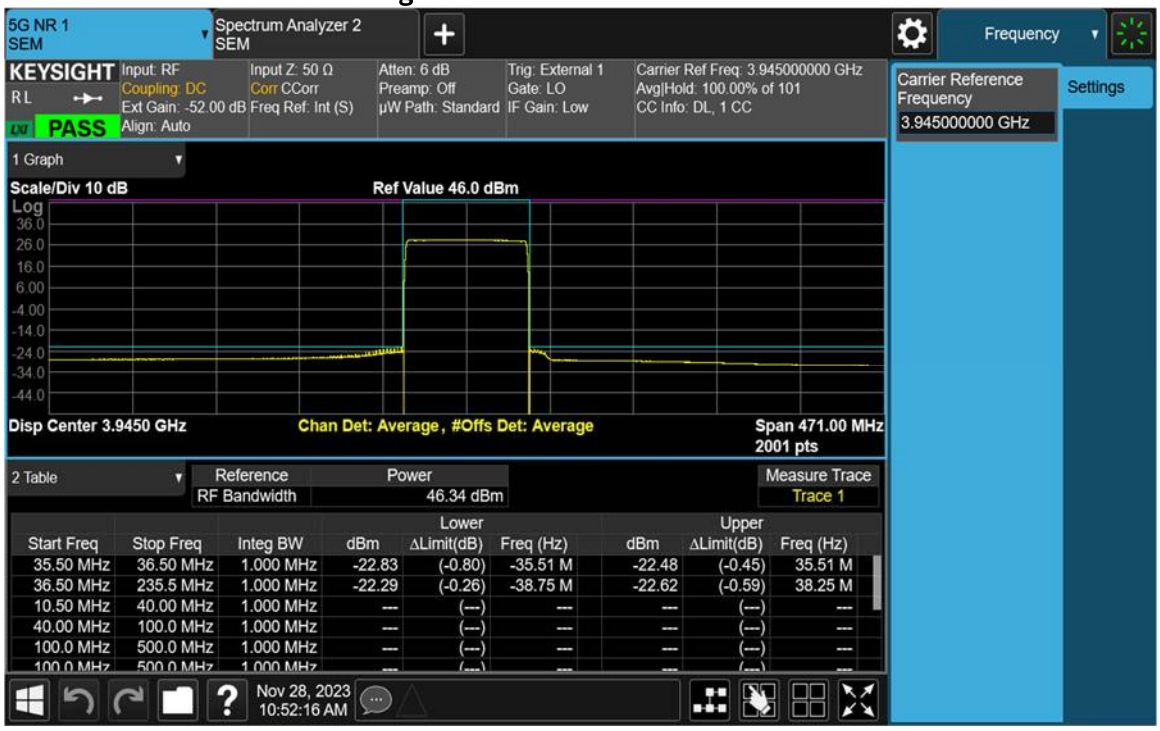


Edge of Band Emissions 50MHz BW

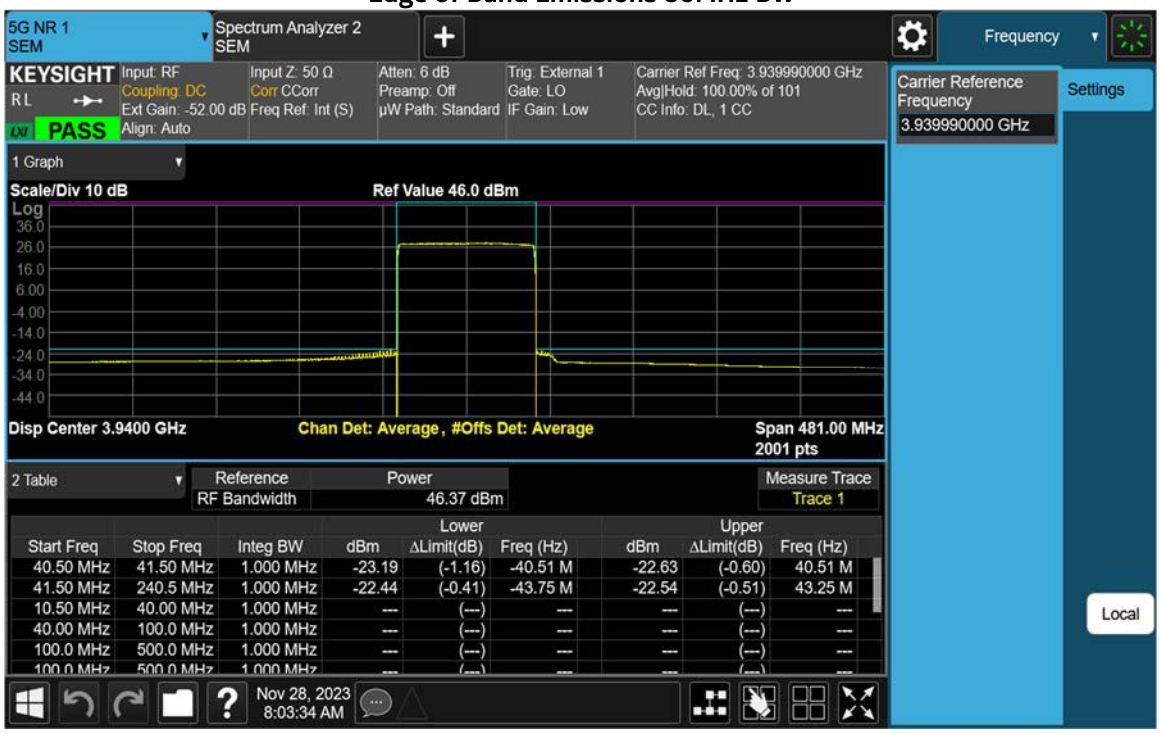
Edge of Band Emissions 60MHz BW



Edge of Band Emissions 70MHz BW

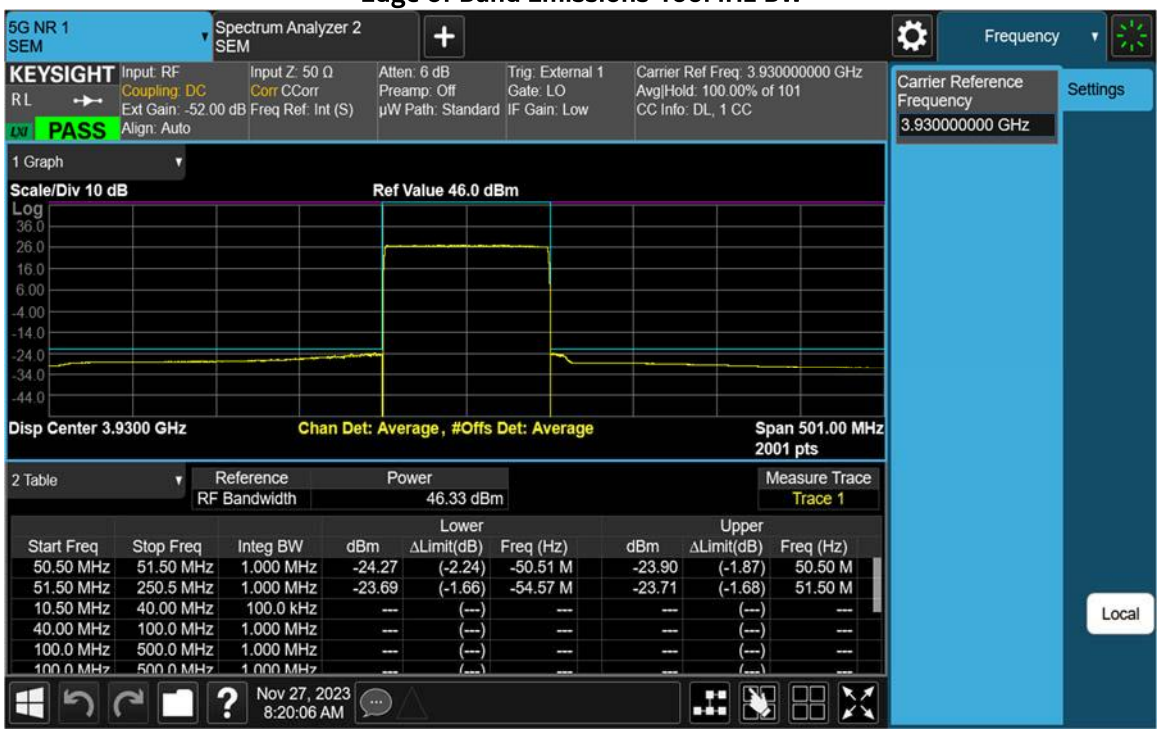


Edge of Band Emissions 80MHz BW



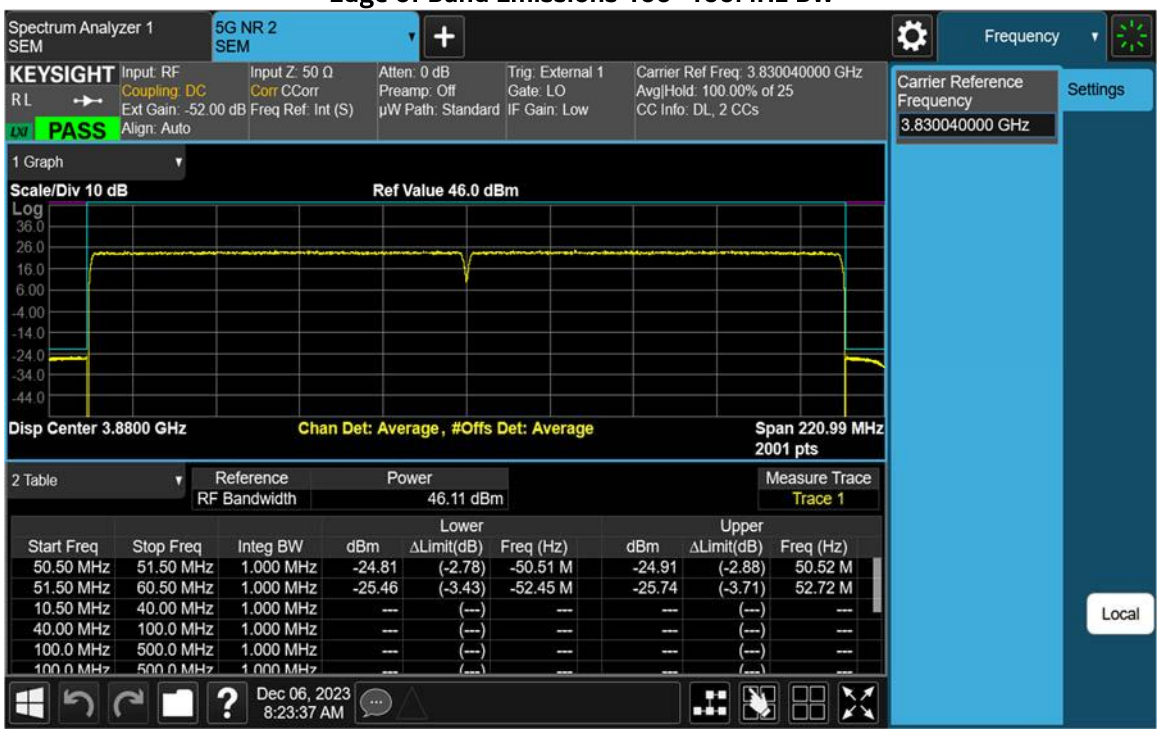
Edge of Band Emissions 90MHz BW

Edge of Band Emissions 100MHz BW



Edge of Band Emissions 20+20MHz BW

Edge of Band Emissions 100+100MHz BW



5. FCC Section 2.1051 - Spurious Emissions at Transmit Antenna Port

5.1 Measurement of Spurious Emissions at Transmit Antenna Port

Spurious Emissions at the transmit-antenna terminals were investigated over the frequency range of 10 MHz to beyond the 10th harmonic of the specific transmit band. Carrier Bandwidth is exempt. For this band of operation, the measurements were performed up to 40 GHz. Measurements were made using a Keysight MXA Signal Analyzer. The RF output from the transmitter was reduced (to an amplitude usable by the receivers) using calibrated attenuators. The RF power level was continuously monitored via a Keysight MXA Signal Analyzer.

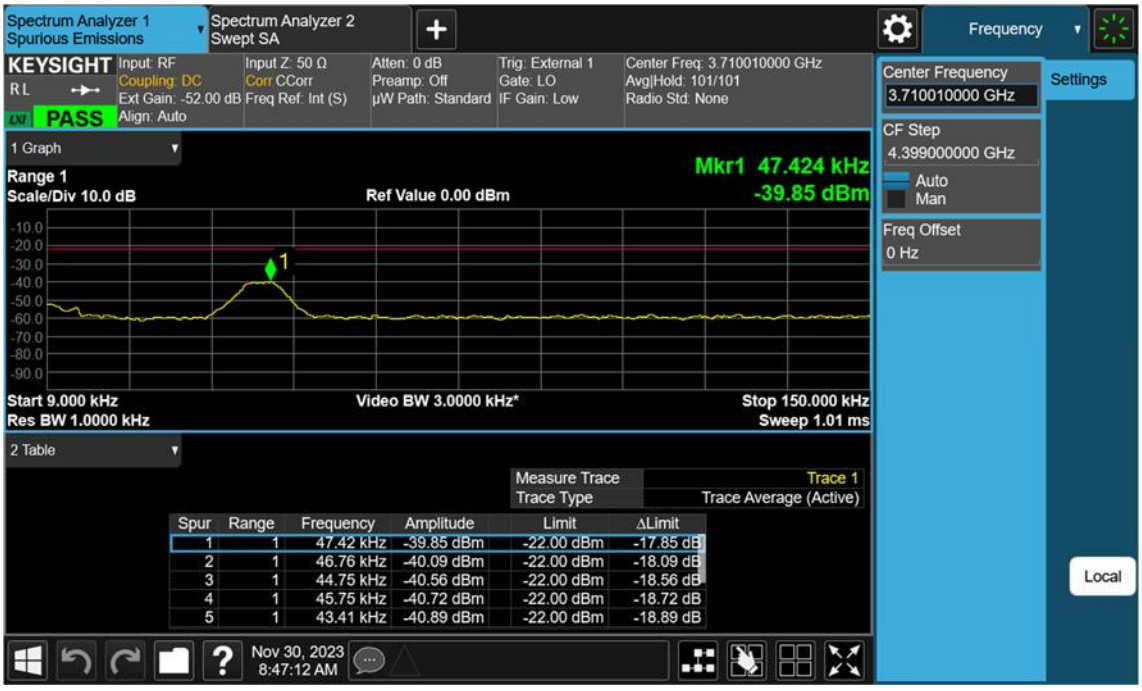
The required emission limitation is specified as appropriate in 27.53. The measured spurious emission levels were plotted for the frequency range as specified in 2.1057. For 8 ports where 10log (8) = 9dBm, the limit is 22dBm/MHz. Data below documents performance up to 40 GHz.

5.1.1 Spurious Emissions at Tx Port – Plots

NOTES: Only Emissions plots with margin less than 20dBm for each frequency range are included in this report. The full suite of raw data resides at the MH, New Jersey location. The conducted spurious emissions in the frequency range of 150k -30GHz, 30MHz – 1GHz, and 10-20GHz have more than 20dB margins.

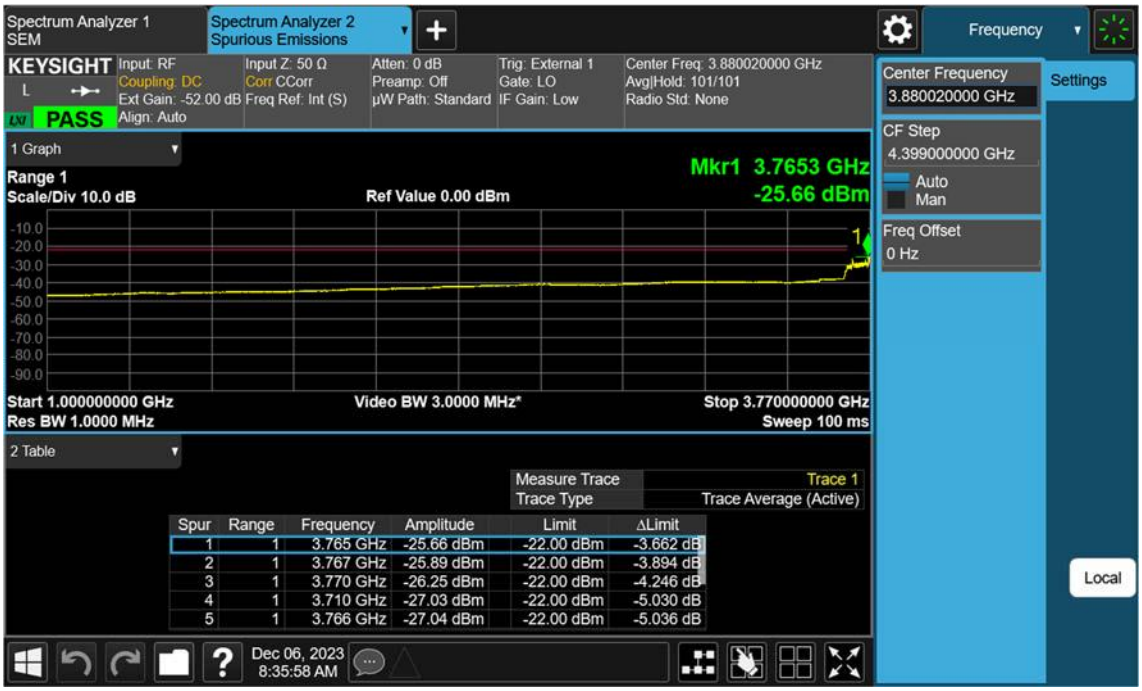
9kHz – 150kHz

# of Carriers	Signal BW MHz	Test Model	Modulation	TX Port	Channel Frequency MHz
1	20	3.1	64QAM	3	3710



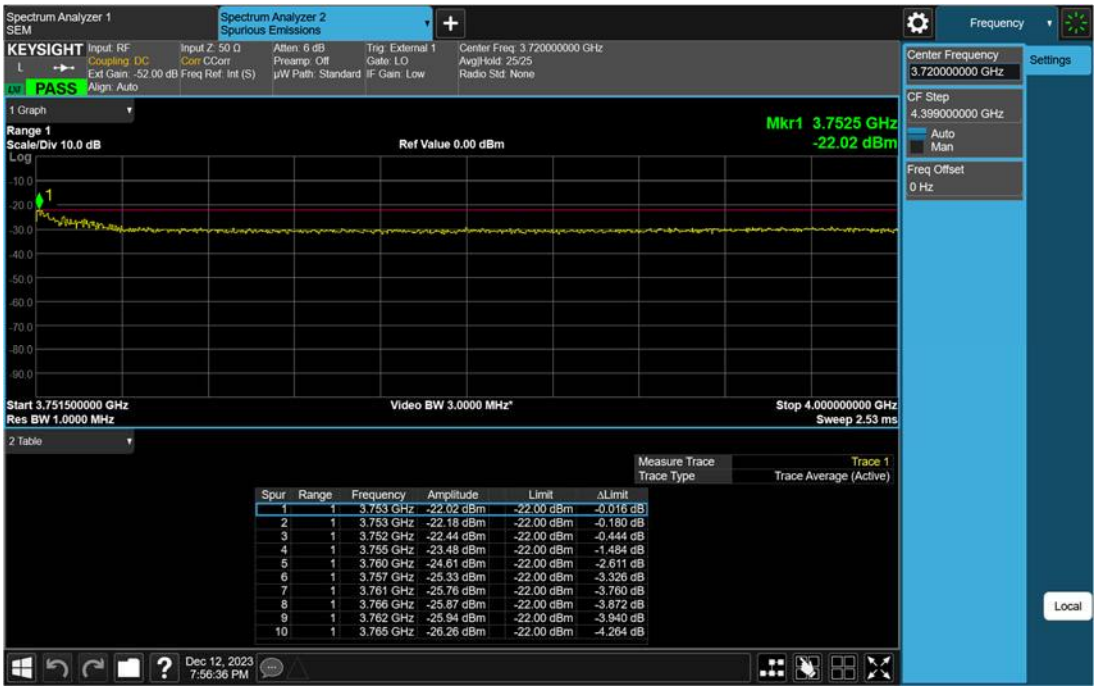
1GHz – 3.77GHz

# of Carriers	Signal BW MHz	Test Model	Modulation	TX Port	Channel Frequency MHz
2	100+100	3.1a	256QAM	5	3830+3930



3.75GHz – 4GHz

# of Carriers	Signal BW MHz	Test Model	Modulation	TX Port	Channel Frequency MHz
2	20+20	3.2	QPSK/16QAM	5	3710+3730

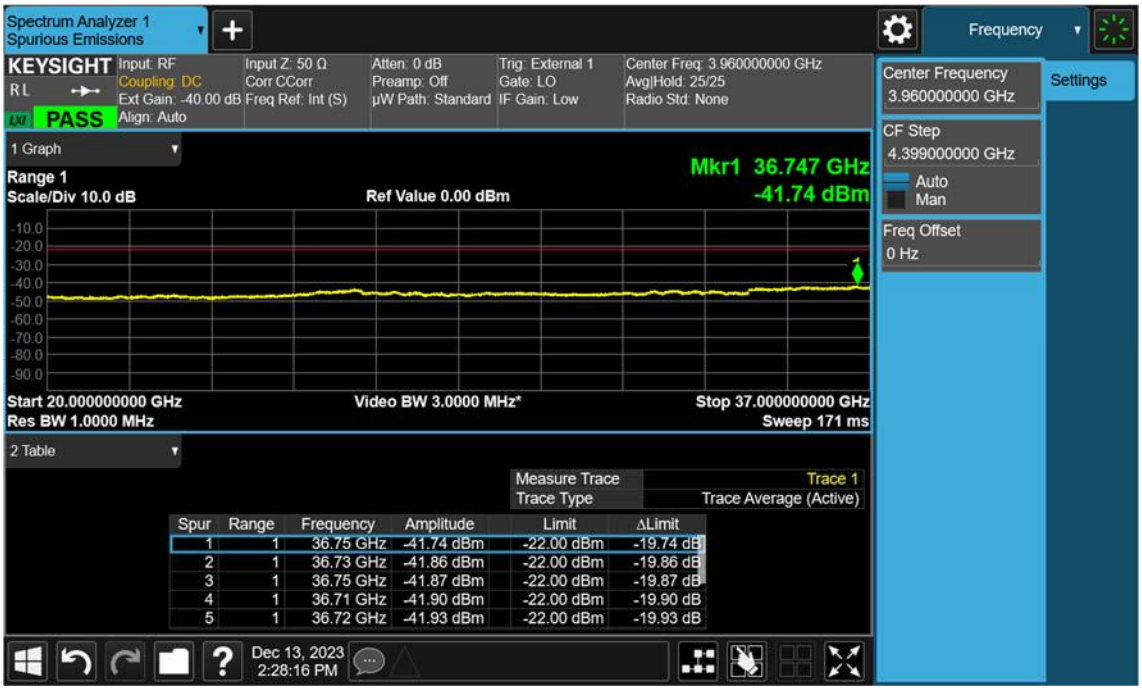


4GHz – 10GHz

# of Carriers	Signal BW MHz	Test Model	Modulation	TX Port	Channel Frequency MHz
2	20+20	3.2	QPSK/16QAM	5	3790+3810

20GHz – 37GHz

# of Carriers	Signal BW MHz	Test Model	Modulation	TX Port	Channel Frequency MHz
2	20+20	3.2	QPSK/16QAM	5	3950+3970



Photographs

Radio Test Setup

Test Equipment

Radio Test Equipment

Asset ID	Manufacturer	Type	Description	Model	Serial	Calibration Date	Calibration Due
E1338	KeySight Technologies	MXA Signal Analyzer	20 Hz-44 GHz (Analysis Bandwidth 125 MHz)	N9020B	MY57430927	2023-05-06	2025-05-06
E896	Agilent Technologies	Network Analyzer	10 MHz - 40 GHz	N5230C	MY49000897	2023-02-08	2025-02-08
1609	Traceable	Data Logger	Barometric Humidity Temp Data Logger	6453,98767-15	221743404	2022-08-25	2024-08-25
E1155	Weinschel	Attenuator	10dB 25Watt 0.05GHz - 26GHz	74-10-12	1068	CNR-V	CNR-V
E1587	Reactel, Inc.	Filter, High Pass	6 - 24 GHz	11HS-6G/24G-K11	20-02	CNR-V	CNR-V
Customer Provide Equipment							
	Agilent	Attenuator	Attenuator Interconnect Kit, Type-N	11716A	MY42140029	CNR-V	CNR-V
	Weinschel	Attenuator	20dB/50W DC-8.5GHz	24-20-34	CG3785	CNR-V	CNR-V
	Weinschel	Attenuator	20dB/50W DC-8.5GHz	24-20-34	CG3744	CNR-V	CNR-V
	Weinschel	Attenuator	20dB 50W DC – 8.5GHz	24-20-34	CG3752	CNR-V	CNR-V
	Weinschel	Attenuator	20dB 50W DC – 8.5GHz	24-20-34	CG3766	CNR-V	CNR-V
	Weinschel	Attenuator	20dB 50W DC – 8.5GHz	24-20-12	CE5787	CNR-V	CNR-V
	Weinschel	Attenuator	20dB/50W DC-8.5GHz	24-20-34-LIM	CG3892	CNR-V	CNR-V
	Weinschel	Attenuator	20dB/50W DC-8.5GHz	24-20-34	CD9980	CNR-V	CNR-V
	Weinschel	Attenuator	20dB/50W DC-8.5GHz	24-20-34	CD9981	CNR-V	CNR-V
	Creo wave Filters, OY	Filter	Filter, Notch	CW-BSF-3300-3700-E9-M2	2142001	CNR-V	CNR-V

CNR-V: Calibration Not Required; Must be Verified.
Test Dates: 11/20/2023 - 12/13/2023.

6. FCC Section 2.1053 - Field strength of spurious radiation

6.1 Section 2.1053 Field Strength of Spurious Emissions

Field strength measurements of radiated spurious emissions were made in an FCC registered 3m Semi-Anechoic Chamber which is maintained by Nokia Bell Labs in Murray Hill, New Jersey. A complete description and full measurement data for the site is on file with the Commission (Site Registration Number: 515091).

The spectrum from 30 MHz to beyond the tenth harmonic of the carrier, 40 GHz, was searched for spurious radiation. Measurements were made using both horizontally and vertically polarized broadband antennas. Per FCC regulations, the comparison of out of band spurious emissions directly to the limit is appropriately made using the substitution method. However, when the emissions are more than 20 dB below the specification limit, the use of field strength measurements for compliance determination is acceptable and those emissions are considered not reportable (Section 2.1053 and the FCC Interpretive database for 2.1053). For this case the evaluation of acceptable radiated field strength is as follows.

6.2 Field Strength of Spurious Emissions - Limits

Sections 2.1053 and 27.53 contain the requirements for the levels of spurious radiation as a function of the level of the unmodulated carrier. The reference level for the unmodulated carrier is calculated as the field produced by an ideal dipole excited by the transmitter output power according to the following relation taken from Reference Data for Radio Engineers, page 676, 4th edition, IT&T Corp.

$$E = [(30*P)^{1/2}]/R$$

$$20 \log (E*10^{6}) - (43 + 10 \log P) = 82.23 \text{ dB}\mu\text{V/meter}$$

Where:
E = Field Intensity in Volts/meter P = Transmitted Power in Watts
R = Measurement distance in meters = 3 m

The Part 27 Limit is 82.23 dBµV/m at 3m and 91.77 dBuV/m at 1m
The Part 27 non-report level is 62.23 dBµV/m at 3m.

The calculated emission levels were found by:

Measured level (dBµV) + Cable Loss(dB)+Antenna Factor(dB) = Field Strength (dBµV/m)

RESULTS:

For compliance with 47CFR Parts 2 and 27, the field strength of any spurious radiation, measured at 3m, is required to be less than 82.23 dBµV/meter (82.23 @ 3m). Emissions equal to or less than 62.23 dBµV/meter at 3m are not reportable and may be verified using field strength measurements and broadband antennas. Over the out of band spectrum investigated from 30 MHz to beyond the tenth harmonic of the carrier (up to 40 GHz), no reportable spurious emissions were detected.

7. FCC Section 2.1055 - Measurement of Frequency Stability

Frequency Stability testing was completed on the AKWQ Unit with Center Frequency 3800MHz. Testing was performed from 12/12/2023 through 12/14/2023 on the radio, which was located in the T-14 Thermal chamber of the Global Product Compliance Laboratory (GPCL) test facility located in Building 4, Room 4-280, Murray Hill, NJ, by Joe Bordonaro from GPCL.

The temperatures to which the UUT were subjected ranged from a high temperature of +50°C system ambient to a low temperature of -30°C system ambient with measurements recorded at 10°C increments.

Transmit frequency error measures the deviation between the actual transmit frequency and the assigned frequency. The transmit frequency error in this case was measured by capturing the transmitted signal using a receiving antenna and then cabling it to an MXA signal analyzer. The system level frequency stability testing resulted in compliance with established design criteria.

Frequency Block Tested: ***ASMR24 Extension (CF = 3799.99.000MHz)***

1. (a) Set the power supply to nominal Voltage. (b) Record the frequency at ~20°C. (c)Raise EUT operating temperature to 50°C. (d) Record the frequency difference. (e) Repeat step (d) at each 10°C step down to -30°C. Result will be 10 readings and take temperature readings to establish thermal stability at each point.

Baseline Measurement at +20°C

Transmit Frequency Deviation at +20°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	2.1833
0.5	-3.0845
1.0	3.1875
1.5	-2.6596
2.0	1.1059
2.5	2.6944
3.0	-1.5839
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +50°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	2.0479
0.5	4.9914
1.0	2.1498
1.5	-2.8900
2.0	-1.2090
2.5	1.0574
3.0	-1.6410
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +40°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	3.6015
0.5	2.1332
1.0	1.1655

1.5	-1.5503
2.0	1.7476
2.5	1.1400
3.0	-1.4516
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +30°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	2.1709
0.5	3.5479
1.0	-242.8mHz
1.5	1.1038
2.0	3.3238
2.5	-1.0167
3.0	-1.3021
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	Transmit Carrier Deviation (Hz)
0	-1.1001
0.5	-1.7681
1.0	808.59mHz
1.5	-1.4904
2.0	1.5214
2.5	-3.1066
3.0	-1.0686
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +10°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-1.9018
0.5	3.2417
1.0	443.33mHz
1.5	3.7569

2.0	-1.4741
2.5	-1.7198
3.0	1.3160
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at 0°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-1.1125
0.5	-2.8016
1.0	-2.2448
1.5	2.1046
2.0	-4.0492
2.5	1.1984
3.0	-1.0414
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at -10°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	1.4390
0.5	649.36mHz
1.0	-2.6777
1.5	-2.3393
2.0	-1.2571
2.5	1.9572
3.0	2.0344
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at -20°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-1.9001
0.5	1.4221
1.0	1.0747
1.5	-1.9459
2.0	2.6956

2.5	-1.3131
3.0	-2.0688
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at -30°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-611.9mHz
0.5	-1.72129
1.0	1.1391
1.5	-2.3423
2.0	1.2862
2.5	2.5667
3.0	1.7607
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Upon return to +20°C.

2. At ambient, vary voltage to +15% and -15% of nominal VAC and record frequency difference. Result will be 12 readings for each voltage (nominal, ~+ 3%, ~+6%, ~+%9, ~+12%, +15%, and nominal, ~-3%, ~-6%, ~-9%, ~-12%, -15%).

Transmit Frequency Deviation at +20°C at 100% of Nominal Voltage, -48VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	1.4116
0.5	1.1316
1.0	-1.7302
1.5	1.6012
2.0	-1.2681
2.5	-363.81mHz
3.0	1.4483
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 103% of Nominal Voltage, -49.44VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	3.1426
0.5	-943.6mHz
1.0	2.8582
1.5	1.5007
2.0	2.0405
2.5	-1.1687
3.0	2.2507
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 106% of Nominal Voltage, -50.88VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-2.0211
0.5	-3.7839
1.0	2.9661
1.5	1.5126
2.0	-1.5646
2.5	1.0669
3.0	1.7145

SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 109% of Nominal Voltage, -52.32VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	2.0251
0.5	5.3126
1.0	3.3090
1.5	1.1157
2.0	-1.1538
2.5	- 2.6668
3.0	1.2311
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 112% of Nominal Voltage, -53.76VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	731.59mHz
0.5	3.8276
1.0	1.1562
1.5	2.2895
2.0	-1.1890
2.5	1.3056
3.0	3.3744
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 115% of Nominal Voltage, -55.20VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-1.2595
0.5	1.8879
1.0	-1.1303
1.5	-1.7556
2.0	-1.4126
2.5	885.84mHz
3.0	-1.1911
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at 100% of Nominal Voltage, -48.0VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	2.1553
0.5	-1.4921
1.0	-1.0091
1.5	3.4964
2.0	-2.8366
2.5	2.8100
3.0	1.9694
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at -3% of Nominal Voltage, -46.56VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-1.7021
0.5	1.8993
1.0	1.5187
1.5	-3.3971
2.0	2.0944
2.5	1.4746
3.0	-2.1544
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at -6% of Nominal Voltage, -45.12VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	-2.2075
0.5	-1.5428
1.0	2.2920
1.5	-1.8419
2.0	2.0196
2.5	1.4896
3.0	2.9533
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at -9% of Nominal Voltage, -43.68VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	1.0152
0.5	2.2640
1.0	-5.4792
1.5	1.6829
2.0	-1.3945
2.5	2.2285
3.0	-1.8034
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at -12% of Nominal Voltage, -42.24VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	1.7085
0.5	-1.9778
1.0	-495.7mHz
1.5	-2.1123
2.0	1.9505
2.5	-3.6023
3.0	1.0717
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

Transmit Frequency Deviation at +20°C at -15% of Nominal Voltage, -40.80VDC	
Time (minutes)	**Transmit Carrier Deviation (Hz)**
0	1.8644
0.5	2.3558
1.0	-1.0783
1.5	-1.4791
2.0	3.7788
2.5	2.5722
3.0	-1.4219
SPECIFICATION	3799.99 MHz (±0.05ppm) ±0.05ppm = ± 190 Hz
RESULT	Pass

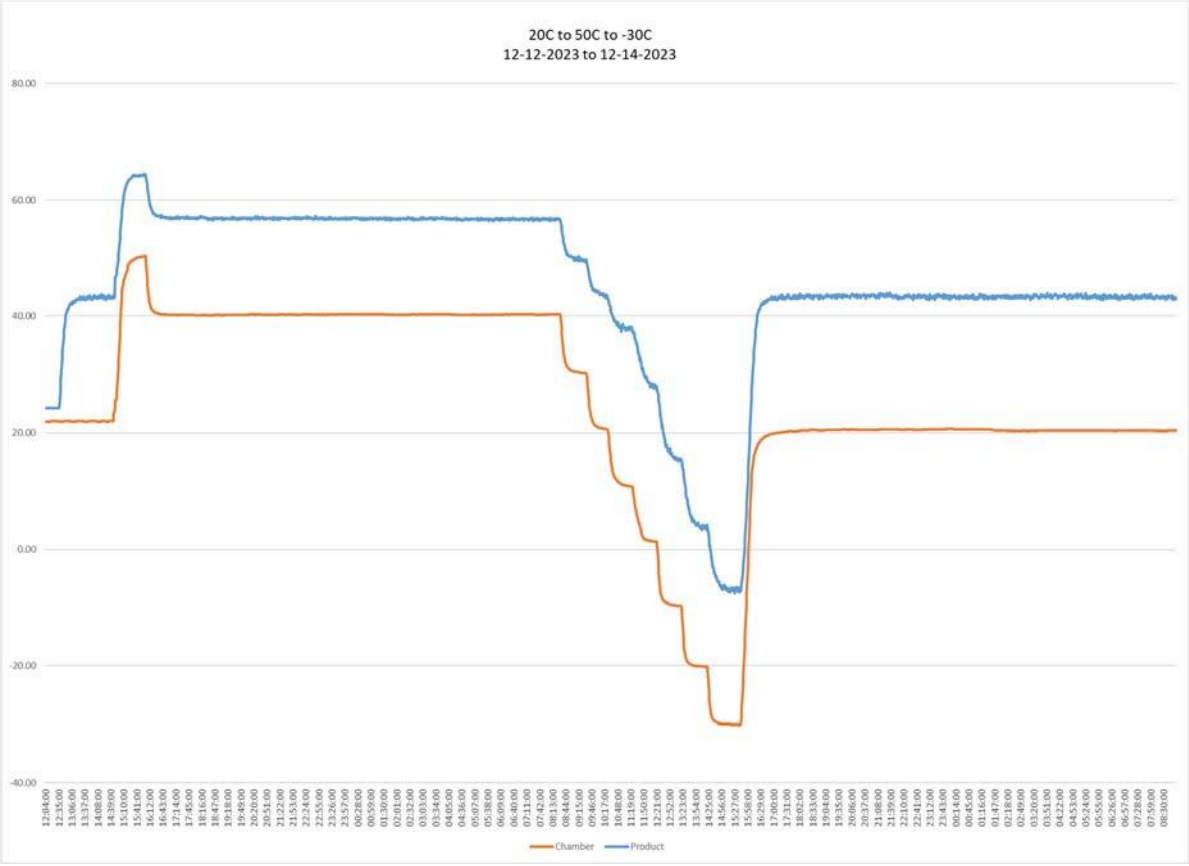
Photographs

Serial Number

AKQW in Thermal Chamber

Frequency Stability Test Setup

Chamber Temperature Profile



Frequency Stability Test Equipment

Asset ID	Manufacturer	Type	Description	Model	Serial	Calibration Date	Calibration Due
TH536-T14	Envirotronics	Controller	Controller	SPPCM	SP001513	2023-03-23	2025-03-23
TH-T14	Thermotron	Thermal Chamber	Thermal Chamber	N/A	28431	N/R	N/R
TH090	Yokogawa	Data Logger	10 Channel Paperless Recorder	GP10	S5V108472	2023-07-25	2025-07-25
TH073	Fluke	DMM	Digital Multimeter	87V	25910080	2022-02-24	2024-02-24
MY59050106	KeySight Technologies	EMI Receiver	MXA EMI Receiver	N9020B	MY59050106	2022-10-22	2024-10-22
TH069	Extech	Data Logger	Barometric Pressure/Humidity/Temperature	SD700	Q690305	2023-07-24	2025-07-24

Test Dates: 12/12/2023 – 12/14/2023

8. NVLAP Certificate of Accreditation

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ilac-MRA

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 100275-0

Nokia, Global Product Compliance Lab
Murray Hill, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2023-09-07 through 2024-09-30
Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program