

FCC Test Report (Part 96 – NR B48)

Report No.: RFBEDV-WTW-P26060360

FCC ID: VUIPS2400-48

Test Model: PS2400-4832

Series Model: PS2400-4816

Received Date: 2026/6/15

Test Date: 2026/7/1 ~ 2026/8/11

Issued Date: 2026/9/3

Applicant: PEGATRON CORPORATION

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FCC Registration / 788550 / TW0003

Designation Number: 281270 / TW0032



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Release Control Record

Issue No.	Description	Date Issued
RFBEDV-WTW-P26060360	Original Release	2026/9/3

1 Certificate of Conformity

Product: 5G Integrated Small Cell

Brand: PEGATRON

Test Model: PS2400-4832

Series Model: PS2400-4816

Sample Status: Engineering Sample

Applicant: PEGATRON CORPORATION

Test Date: 2026/7/1 ~ 2026/8/11

Standards: 47 CFR FCC Part 96
47 CFR FCC Part 2

Measurement procedure: ANSI/TIA/EIA-603-E 2016
ANSI C63.26-2015
KDB 971168 D01 Power Meas License Digital Systems v03r01
KDB 940660 D01 Part 96 CBRS Eqpt v03r01
KDB 662911 D01 Multiple Transmitter Output v02r01

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** 2026/9/3
Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** 2026/9/3
Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 96			
FCC Clause	Test Item	Result	Remarks
2.1046 96.41(b)	Maximum EIRP	Pass	Meet the requirement of limit.
2.1047 96.41(a)	Modulation Characteristics	Pass	Meet the requirement of limit.
2.1046 96.41(b)	Maximum Power Spectral Density	Pass	Meet the requirement of limit.
96.41(g)	Peak to Average Ration	Pass	Meet the requirement of limit.
2.1049	Bandwidth	Pass	Meet the requirement of limit.
2.1055	Frequency Stability	Pass	Meet the requirement of limit.
2.1051 96.41(e)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 96.41(e)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -0.31dB at 144.46MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Effective Radiated Power and Equivalent Isotropically Radiated Power	-	1.371 dB
Peak to Average Ratio	-	0.920 dB
Bandwidth	-	960 Hz
Frequency Stability	-	0.176 ppm
Conducted Spurious Emissions	-	2.12 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.00 dB
	30MHz ~ 1000MHz	2.93 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	1.76 dB
	18GHz ~ 40GHz	1.77 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	5G Integrated Small Cell	
Brand	PEGATRON	
Test Model	PS2400-4832	
Series Model	PS2400-4816	
Sample Status	Engineering Sample	
Power Supply Rating	Refer to Note	
Modulation Type	QPSK, 64QAM, 256QAM	
Operating Frequency	NR Band 48 (Channel Bandwidth 10MHz)	3555.00MHz ~ 3694.98MHz
	NR Band 48 (Channel Bandwidth 20MHz)	3560.01MHz ~ 3690.00MHz
	NR Band 48 (Channel Bandwidth 40MHz)	3570.00MHz ~ 3679.98MHz
EUT Category	Category B	

Note:

1. All models are listed as below.

Product Name	Model Name	Difference
5G Integrated Small Cell	PS2400-4832	32G (16G*2 DIMM slot)
	PS2400-4816	16G (16G*1 DIMM slot)

2. The EUT uses following accessories.

Pole Mount / Wall Mount (accessory)	Brand	PEGATRON
	Model	CyberNet_Case_Adjusted
	Part no	13BM-04N0A01
	Brand	PEGATRON
	Model	CyberNet_Wall_Bracket
	Part no	13BM-04N0B01
	Brand	PEGATRON
	Model	CyberNet_Pole_Bracket
	Part no	13BM-04N0901
Power Supply (Optional)	Brand	MOSO POWER SUPPLY TECHNOLOGY CO., LTD
	Model	T30-T4170R480-200B0
	Power Rating	Input: 100-240V ~50/60Hz 2.8A max Output: 200.16W 48.0V =4.17A
AC Power Cord (Optional)	Brand	SHEN ZHEN RISING STAR ELECTRONICS CO., LTD
	Model	SD479-T4
	Signal line	1.8 meter, non-shielded cable
10G SFP+ LR 10km Transceiver (Optional)	Brand	JPC
	Model	TNP58260BGIB10-A
Fiber Optical Cable (Optional)	Brand	JPC
	Model	PK3OPU00WW40-1
	Signal line	10 meter, non-shielded cable

RJ45 Cable (Optional)	Brand	TUNG-LI
	Model	6U423-063
	Category	CAT6
	In/Outdoor	Indoor
	Signal line	1.5 meter, non-shielded cable

3. The EUT supports the following configuration.

5GNR	FCC 5G FR1	
	1CC_SCS_30kHz	2CC_SCS_30kHz
Bandwidth (MHz)	10/20/40	10+20 / 20+20 / 20+40 / 40+40

4. The following antennas were provided to the EUT.

Ant. No.	1			
Antenna Type	Sector			
Connector Type	N-Type			
Brand	PEGATRON			
Model	WA-P-S6G3-05-003			
Frequency (MHz)	Antenna gain (dBi)			
	Ant 1 Gain (dBi)	Ant 2 Gain (dBi)	Ant 3 Gain (dBi)	Ant 4 Gain (dBi)
3500	13.2	13.4	13.2	13.8
3600	13.1	13.7	13.2	13.5
3700	13.8	13.9	13.9	13.8

Ant. No.	2			
Antenna Type	Array			
Connector Type	N-Type			
Brand	PULSE			
Model	BTEA0020133G8S6A01			
Frequency (MHz)	Antenna gain (dBi)			
	Ant 1 Gain (dBi)	Ant 2 Gain (dBi)	Ant 3 Gain (dBi)	Ant 4 Gain (dBi)
3300	12.22	12.96	12.17	12.95
3550	12.3	13.31	12.34	13.33
3750	12.07	13.01	12.01	13.03

Ant. No.	3			
Antenna Type	Sector			
Connector Type	N-Type			
Brand	WHAYU			
Model	2F04X6B			
Frequency (MHz)	Antenna gain (dBi)			
	Ant 1 Gain (dBi)	Ant 2 Gain (dBi)	Ant 3 Gain (dBi)	Ant 4 Gain (dBi)
3300~3800	13.5	13.5	13.5	13.5

Note:

- a. According to the regulation KDB 662911, choose highest gain antenna for evaluation. Therefore, the maximum directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + 10^{G3/10} + 10^{G4/10})/4] = 13.85 \text{ dBi}$. (For Ant. No.1)

- b. This device operates with Multiple Antennas Using Multiple-input, Multiple-output (MIMO) Technology for uncorrelated Transmission.
- c. 2CC antenna configuration: Ant.0+1+2+3, to achieve full 2CC bandwidth. Due to the product RF characteristics, each antenna port in 2CC will transmit the same separate carrier.
- d. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
5. Device does not support inter-band carrier aggregation.

6. EUT Overview

Mode A

NR Band 48			
Bandwidth	Max. EIRP Power (Per 10M Power)		
	QPSK	64QAM	256QAM
Channel Bandwidth 10MHz	37844.258mW (45.78dBm/10MHz)	36475.395mW (45.62dBm/10MHz)	34833.732mW (45.42dBm/10MHz)
Channel Bandwidth 20MHz	42169.650mW (46.25dBm/10MHz)	40831.939mW (46.11dBm/10MHz)	38994.199mW (45.91dBm/10MHz)
Channel Bandwidth 40MHz	38282.474mW (45.83dBm/10MHz)	36643.757mW (45.64dBm/10MHz)	34994.517mW (45.44dBm/10MHz)
Bandwidth	Max. EIRP Power (Full power)		
	QPSK	64QAM	256QAM
Channel Bandwidth 10MHz	37844.258mW (45.78dBm/Channel Bandwidth)	36475.395mW (45.62dBm/Channel Bandwidth)	34833.732mW (45.42dBm/Channel Bandwidth)
Channel Bandwidth 20MHz	77624.712mW (48.90dBm/Channel Bandwidth)	74301.914mW (48.71dBm/Channel Bandwidth)	70957.777mW (48.51dBm/Channel Bandwidth)
Channel Bandwidth 40MHz	145881.426mW (51.64dBm/Channel Bandwidth)	138995.263mW (51.43dBm/Channel Bandwidth)	133967.669mW (51.27dBm/Channel Bandwidth)

NR Band 48			
Bandwidth	Emission Designator		
	QPSK	64QAM	256QAM
Channel Bandwidth 10MHz	8M57G7D	8M57D7W	8M58D7W
Channel Bandwidth 20MHz	18M2G7D	18M2D7W	18M2D7W
Channel Bandwidth 40MHz	37M8G7D	37M8D7W	37M8D7W

Mode B

NR Band 48			
Bandwidth	Max. EIRP Power (Per 10M Power)		
	QPSK	64QAM	256QAM
Channel Bandwidth 10+20MHz	41399.967mW (46.17dBm/10MHz)	39902.490mW (46.01dBm/10MHz)	38636.698mW (45.87dBm/10MHz)
Channel Bandwidth 20+20MHz	41686.938mW (46.20dBm/10MHz)	40364.539mW (46.06dBm/10MHz)	39084.090mW (45.92dBm/10MHz)
Channel Bandwidth 20+40MHz	42364.297mW (46.27dBm/10MHz)	41114.972mW (46.14dBm/10MHz)	39810.717mW (46.00dBm/10MHz)
Channel Bandwidth 40+40MHz	43351.088mW (46.37dBm/10MHz)	41879.357mW (46.22dBm/10MHz)	40644.333mW (46.09dBm/10MHz)
Bandwidth	Max. EIRP Power (Full power)		
	QPSK	64QAM	256QAM
Channel Bandwidth 10+20MHz	59429.216mW (47.74dBm/Channel Bandwidth)	57411.646mW (47.59dBm/Channel Bandwidth)	55462.571mW (47.44dBm/Channel Bandwidth)
Channel Bandwidth 20+20MHz	73790.423mW (48.68dBm/Channel Bandwidth)	71121.351mW (48.52dBm/Channel Bandwidth)	68548.823mW (48.36dBm/Channel Bandwidth)
Channel Bandwidth 20+40MHz	120503.594mW (50.81dBm/Channel Bandwidth)	116949.939mW (50.68dBm/Channel Bandwidth)	112979.591mW (50.53dBm/Channel Bandwidth)
Channel Bandwidth 40+40MHz	160324.539mW (52.05dBm/Channel Bandwidth)	153815.464mW (51.87dBm/Channel Bandwidth)	149279.441mW (51.74dBm/Channel Bandwidth)

NR Band 48			
Bandwidth	Emission Designator		
	QPSK	64QAM	256QAM
Channel Bandwidth 10+20MHz	26M8G7D	26M8D7W	26M8D7W
Channel Bandwidth 20+20MHz	36M4G7D	36M4D7W	36M4D7W
Channel Bandwidth 20+40MHz	56M0G7D	56M0D7W	56M0D7W
Channel Bandwidth 40+40MHz	75M6G7D	75M7D7W	75M7D7W

3.2 Test Mode Applicability and Tested Channel Detail

The EUT is designed to be positioned on the Wall Mount only.

Pre-Scan:	1. EUT can be used in the following ways: X-axis/Y-axis/Z-axis. Pre-scan in these ways and find the worst case as a representative test condition. 2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available channel, modulations, data rate and RB.
Worst Case:	X-axis/ Y-axis/ Z-axis Worst Condition: Y-axis

Test results are presented in the report as below.

Test Mode	Test Condition	
A	EUT with antenna 1	1CC mode
B		2CC mode

Following channel(s) was (were) selected for the final test as listed below:

Mode A

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Maximum Output Power	637000 (3555.00MHz)	10MHz	QPSK / 64QAM / 256QAM	Full RB
	641666 (3624.99MHz)			
	646332 (3694.98MHz)			
	637334 (3560.01MHz)	20MHz	QPSK / 64QAM / 256QAM	Full RB
	641666 (3624.99MHz)			
	646000 (3690.00MHz)			
Maximum Power Spectral Density	638000 (3570.00MHz)	40MHz	QPSK / 64QAM / 256QAM	Full RB
	641666 (3624.99MHz)			
	645332 (3679.98MHz)			
	637000 (3555.00MHz)	10MHz	QPSK / 64QAM / 256QAM	Full RB
	641666 (3624.99MHz)			
	646332 (3694.98MHz)			
Modulation Characteristics	637334 (3560.01MHz)	20MHz	QPSK / 64QAM / 256QAM	Full RB
	641666 (3624.99MHz)			
	646000 (3690.00MHz)			
Frequency Stability	638000 (3570.00MHz)	40MHz	QPSK / 64QAM / 256QAM	Full RB
	641666 (3624.99MHz)			
	645332 (3679.98MHz)			
	637000 (3555.00MHz)	10MHz	QPSK	Full RB
	641666 (3624.99MHz)			
	646332 (3694.98MHz)			
	637334 (3560.01MHz)	20MHz	QPSK	Full RB
	641666 (3624.99MHz)			
	646000 (3690.00MHz)			
	638000 (3570.00MHz)	40MHz	QPSK	Full RB
	641666 (3624.99MHz)			
	645332 (3679.98MHz)			

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Emission Bandwidth	637000 (3555.00MHz) 641666 (3624.99MHz) 646332 (3694.98MHz)	10MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) 641666 (3624.99MHz) 646000 (3690.00MHz)	20MHz	QPSK / 64QAM / 256QAM	Full RB
	638000 (3570.00MHz) 641666 (3624.99MHz) 645332 (3679.98MHz)	40MHz	QPSK / 64QAM / 256QAM	Full RB
	637000 (3555.00MHz) 641666 (3624.99MHz) 646332 (3694.98MHz)	10MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) 641666 (3624.99MHz) 646000 (3690.00MHz)	20MHz	QPSK / 64QAM / 256QAM	Full RB
	638000 (3570.00MHz) 641666 (3624.99MHz) 645332 (3679.98MHz)	40MHz	QPSK / 64QAM / 256QAM	Full RB
Conducted Emission	637000 (3555.00MHz) 641666 (3624.99MHz) 646332 (3694.98MHz)	10MHz	QPSK	Full RB
	637334 (3560.01MHz) 641666 (3624.99MHz) 646000 (3690.00MHz)	20MHz	QPSK	Full RB
	638000 (3570.00MHz) 641666 (3624.99MHz) 645332 (3679.98MHz)	40MHz	QPSK	Full RB
	637000 (3555.00MHz) 641666 (3624.99MHz) 646332 (3694.98MHz)	10MHz	QPSK	Full RB
	637334 (3560.01MHz) 641666 (3624.99MHz) 646000 (3690.00MHz)	20MHz	QPSK	Full RB
	638000 (3570.00MHz) 641666 (3624.99MHz) 645332 (3679.98MHz)	40MHz	QPSK	Full RB
Radiated Emission Below 1 GHz	638000 (3570.00MHz)	40MHz	QPSK	Full RB
Radiated Emission Above 1 GHz	637000 (3555.00MHz) 641666 (3624.99MHz) 646332 (3694.98MHz)	10MHz	QPSK	Full RB
	637334 (3560.01MHz) 641666 (3624.99MHz) 646000 (3690.00MHz)	20MHz	QPSK	Full RB
	638000 (3570.00MHz) 641666 (3624.99MHz) 645332 (3679.98MHz)	40MHz	QPSK	Full RB
	637000 (3555.00MHz) 641666 (3624.99MHz) 646332 (3694.98MHz)	10MHz	QPSK	Full RB
	637334 (3560.01MHz) 641666 (3624.99MHz) 646000 (3690.00MHz)	20MHz	QPSK	Full RB
	638000 (3570.00MHz) 641666 (3624.99MHz) 645332 (3679.98MHz)	40MHz	QPSK	Full RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Maximum Output Power	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
Maximum Power Spectral Density	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
Frequency Stability	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK	Full RB
Emission Bandwidth	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
Peak to Average Ratio	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK / 64QAM / 256QAM	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK / 64QAM / 256QAM	Full RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Emission	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK	Full RB
Radiated Emission Below 1 GHz	638000 (3570.00MHz) + 641334 (3620.01MHz)	40MHz+40MHz	QPSK	Full RB
Radiated Emission Above 1 GHz	637000 (3555.00MHz) + 638668 (3580.02MHz) 640668 (3610.02MHz) + 642336 (3635.04MHz) 644332 (3664.98MHz) + 646000 (3690.00MHz)	10MHz+20MHz	QPSK	Full RB
	637334 (3560.01MHz) + 639334 (3590.01MHz) 640668 (3610.02MHz) + 642668 (3640.02MHz) 644000 (3660.00MHz) + 646000 (3690.00MHz)	20MHz+20MHz	QPSK	Full RB
	637334 (3560.01MHz) + 640000 (3600.00MHz) 640000 (3600.00MHz) + 642666 (3639.99MHz) 642666 (3639.99MHz) + 645334 (3680.01MHz)	20MHz+40MHz	QPSK	Full RB
	638000 (3570.00MHz) + 641334 (3620.01MHz) 640000 (3600.00MHz) + 643334 (3650.01MHz) 642000 (3630.00MHz) + 645334 (3680.01MHz)	40MHz+40MHz	QPSK	Full RB

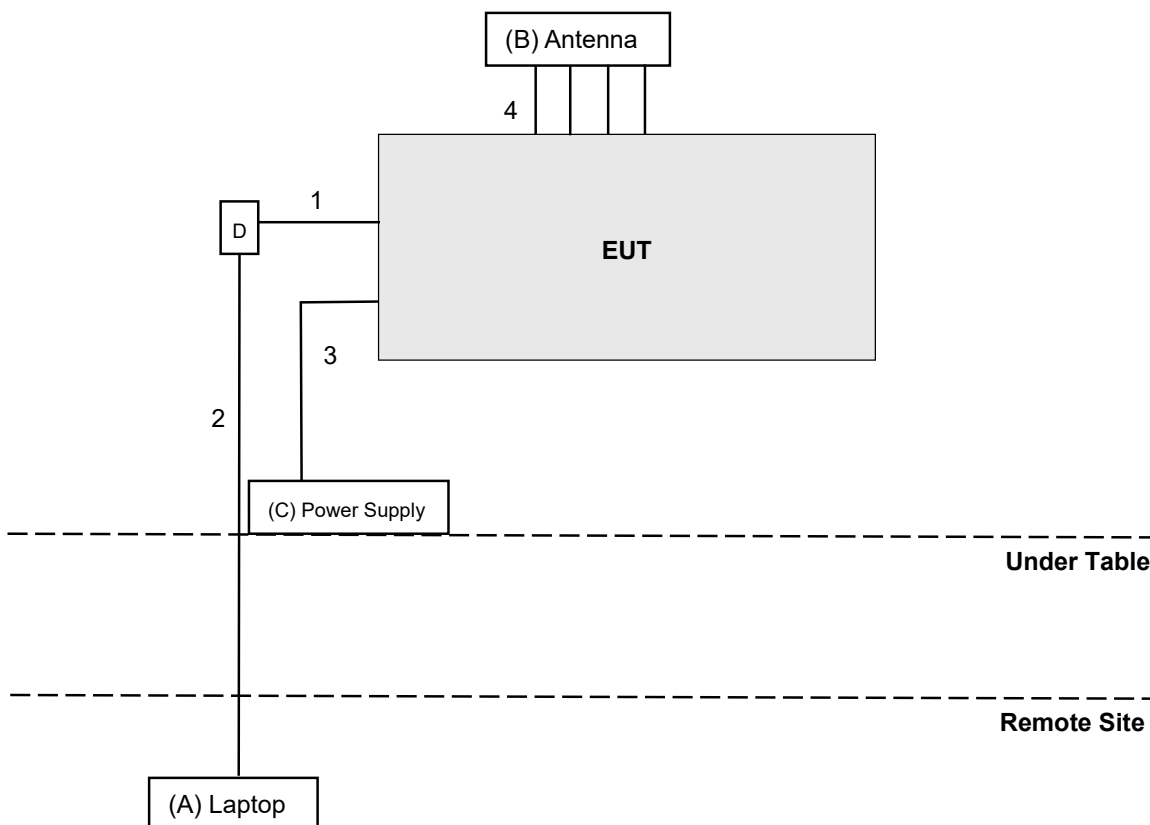
3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Dell	LATITUDE	NA	NA	Supplied by applicant
B	Antenna	NA	NA	NA	NA	Supplied by applicant
C	Power Supply	MOSO	T30-T4170R480-200B0	NA	NA	Supplied by applicant
D	RJ45 connector	NA	NA	NA	NA	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	1.5	No	0	Supplied by applicant
2	RJ-45 Cable	1	10	No	0	Provided by Lab
3	DC Cable	1	1.8	No	0	Supplied by applicant
4	Coaxial Cable	4	0.3	No	0	Supplied by applicant

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standard:

FCC 47 CFR Part 96

FCC 47 CFR Part 2

ANSI/TIA/EIA-603-E-2016

ANSI C63.26-2015

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 940660 D01 Part 96 CBRS Eqpt v03r01

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

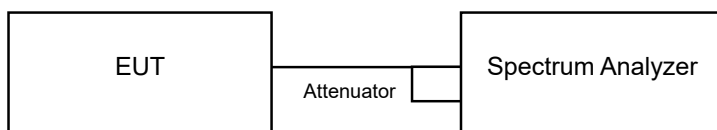
4.1 Maximum Output Power Measurement

4.1.1 Limits of Maximum Output Power Measurement

Device		Maximum EIRP (dBm/10 MHz)
☐	End User Device	23
☐	Category A CBSD	30
☒	Category B CBSD	47

4.1.2 Test Setup

Conducted Power Measurement:



4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2026/5/21	2027/5/20
PXA Signal Analyzer Keysight	N9030B	MY57140953	2025/7/31 2026/8/3	2026/7/30 2027/8/2
RF cable JYEBAO	JB200	Cable-OVEN-02	NA	NA
Fixed Attenuator Woken	00800A1K10H-03	20200331_006	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Test date: 2026/7/1 ~ 2026/7/23, 2026/8/11

4.1.4 Test Procedures

Conducted Power Measurement:

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology and link to spectrum analyzer measurements. Set the EUT to transmit under low, middle and high channel and record the power level shown on spectrum analyzer. Power measurements use detector average (rms).

Measurement method refers to ANSI C63.26 section 5.2.4.4.

- 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. Set Sweep time = auto-couple.
- f. Detector = power averaging (rms).
- g. Set sweep trigger to "free run."
- h. Trace average at least 100 traces in power averaging (rms) mode.
- i. Use the Band/Channel Power function to determine the integrated power per 10 MHz bandwidth and full bandwidth, according to the 47 CFR FCC Part 96 standard.
- j. If Duty cycle < 98%, Add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

$$\text{ERP} = P_{\text{Meas}} + G_T - 2.15$$

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

4.1.5 Deviation from Test Standard

No deviation.

4.1.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.1.7 Test Results

Input Power:	-48 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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Mode A

Conducted Output Power and EIRP Power (dBm/10MHz)

Bandwidth	Frequency (MHz)	Modulation	Chain				Total	EIRP (dBm/10MHz)	Verdict
			0	1	2	3			
10M	3555	QPSK	26.14	25.81	25.76	25.92	31.93	45.78	PASS
		64QAM	26.04	25.69	25.51	25.73	31.77	45.62	PASS
		256QAM	25.82	25.42	25.33	25.60	31.57	45.42	PASS
	3624.99	QPSK	25.95	25.86	25.43	25.80	31.79	45.64	PASS
		64QAM	25.76	25.74	25.21	25.53	31.59	45.44	PASS
		256QAM	25.47	25.61	24.93	25.41	31.38	45.23	PASS
	3694.98	QPSK	25.81	25.67	25.79	25.73	31.77	45.62	PASS
		64QAM	25.55	25.43	25.53	25.63	31.56	45.41	PASS
		256QAM	25.39	25.26	25.27	25.43	31.36	45.21	PASS
20M	3560.01	QPSK	26.55	26.05	26.46	26.44	32.40	46.25	PASS
		64QAM	26.38	25.93	26.36	26.28	32.26	46.11	PASS
		256QAM	26.18	25.76	26.17	26.02	32.06	45.91	PASS
	3624.99	QPSK	26.14	26.27	25.85	26.36	32.18	46.03	PASS
		64QAM	25.95	26.06	25.63	26.15	31.97	45.82	PASS
		256QAM	25.79	25.77	25.49	25.87	31.75	45.60	PASS
	3690	QPSK	25.95	26.12	26.16	26.32	32.16	46.01	PASS
		64QAM	25.83	26.00	25.98	26.08	31.99	45.84	PASS
		256QAM	25.73	25.74	25.72	25.86	31.78	45.63	PASS
40M	3570	QPSK	25.98	25.72	26.10	26.02	31.98	45.83	PASS
		64QAM	25.72	25.50	25.98	25.88	31.79	45.64	PASS
		256QAM	25.59	25.29	25.69	25.71	31.59	45.44	PASS
	3624.99	QPSK	25.69	26.00	25.72	25.96	31.87	45.72	PASS
		64QAM	25.58	25.84	25.48	25.86	31.71	45.56	PASS
		256QAM	25.32	25.54	25.26	25.64	31.46	45.31	PASS
	3679.98	QPSK	25.77	26.05	26.01	25.87	31.95	45.80	PASS
		64QAM	25.49	25.79	25.79	25.63	31.70	45.55	PASS
		256QAM	25.38	25.63	25.57	25.42	31.52	45.37	PASS

Note:

1. The antenna gain is 13.85 dBi.
2. EIRP (dBm/10MHz) = Total Conducted Output Power (dBm/10MHz) + Directional Gain

Full Conducted Output Power and Full EIRP Power (dBm/Channel Bandwidth)

Bandwidth	Frequency (MHz)	Modulation	Chain				Total	EIRP (dBm/Channel Bandwidth)	Verdict
			0	1	2	3			
10M	3555	QPSK	26.14	25.81	25.76	25.92	31.93	45.78	PASS
		64QAM	26.04	25.69	25.51	25.73	31.77	45.62	PASS
		256QAM	25.82	25.42	25.33	25.60	31.57	45.42	PASS
	3624.99	QPSK	25.95	25.86	25.43	25.80	31.79	45.64	PASS
		64QAM	25.76	25.74	25.21	25.53	31.59	45.44	PASS
		256QAM	25.47	25.61	24.93	25.41	31.38	45.23	PASS
	3694.98	QPSK	25.81	25.67	25.79	25.73	31.77	45.62	PASS
		64QAM	25.55	25.43	25.53	25.63	31.56	45.41	PASS
		256QAM	25.39	25.26	25.27	25.43	31.36	45.21	PASS
20M	3560.01	QPSK	29.28	28.69	29.03	29.09	35.05	48.90	PASS
		64QAM	29.18	28.45	28.87	28.82	34.86	48.71	PASS
		256QAM	29.00	28.29	28.64	28.60	34.66	48.51	PASS
	3624.99	QPSK	28.78	28.89	28.47	29.01	34.81	48.66	PASS
		64QAM	28.56	28.72	28.31	28.77	34.61	48.46	PASS
		256QAM	28.26	28.43	28.19	28.57	34.39	48.24	PASS
	3690	QPSK	28.60	28.75	28.76	28.92	34.78	48.63	PASS
		64QAM	28.47	28.48	28.64	28.77	34.61	48.46	PASS
		256QAM	28.19	28.19	28.48	28.66	34.41	48.26	PASS
40M	3570	QPSK	31.75	31.55	31.87	31.89	37.79	51.64	PASS
		64QAM	31.63	31.31	31.60	31.68	37.58	51.43	PASS
		256QAM	31.43	31.11	31.45	31.55	37.41	51.26	PASS
	3624.99	QPSK	31.62	31.81	31.63	31.89	37.76	51.61	PASS
		64QAM	31.50	31.52	31.43	31.70	37.56	51.41	PASS
		256QAM	31.40	31.42	31.22	31.54	37.42	51.27	PASS
	3679.98	QPSK	31.65	31.89	31.79	31.71	37.78	51.63	PASS
		64QAM	31.39	31.59	31.61	31.60	37.57	51.42	PASS
		256QAM	31.20	31.48	31.38	31.34	37.37	51.22	PASS

Note:

1. The antenna gain is 13.85 dBi.

2. EIRP (dBm/Channel Bandwidth) = Total Conducted Output Power (dBm/Channel Bandwidth) + Directional Gain

Mode B

Conducted Output Power and EIRP Power (dBm/10MHz)

Bandwidth	Frequency	Modulation	Carrier	Chain				Total	EIRP (dBm/ 10MHz)	Verdict
				0	1	2	3			
10M+20M	3555+3580.02	QPSK	CC0	22.34	22.09	22.10	22.02	28.16	45.95	PASS
			CC1	24.13	23.72	23.65	23.82	29.85		
		64QAM	CC0	22.24	21.97	21.92	21.86	28.02	45.81	PASS
			CC1	23.97	23.60	23.55	23.63	29.71		
	3610.02+3635.04	256QAM	CC0	22.10	21.80	21.76	21.71	27.87	45.64	PASS
			CC1	23.79	23.44	23.39	23.44	29.54		
		QPSK	CC0	22.26	22.40	22.48	22.75	28.50	45.95	PASS
			CC1	23.64	23.59	23.49	23.66	29.62		
		64QAM	CC0	22.07	22.27	22.35	22.64	28.36	45.82	PASS
			CC1	23.51	23.49	23.35	23.50	29.48		
		256QAM	CC0	21.90	22.15	22.23	22.46	28.21	45.67	PASS
			CC1	23.37	23.39	23.22	23.31	29.34		
	3664.98+3690	QPSK	CC0	23.25	23.40	23.09	23.23	29.26	46.17	PASS
			CC1	23.31	23.44	23.34	23.23	29.35		
		64QAM	CC0	23.06	23.27	22.99	23.08	29.12	46.01	PASS
			CC1	23.13	23.24	23.16	23.11	29.18		
		256QAM	CC0	22.95	23.13	22.87	22.90	28.98	45.87	PASS
			CC1	23.01	23.10	23.00	22.91	29.03		
20M+20M	3560.01+3590.01	QPSK	CC0	23.18	22.82	23.18	23.03	29.08	46.20	PASS
			CC1	23.65	23.37	23.46	23.80	29.59		
		64QAM	CC0	23.08	22.72	23.01	22.92	28.96	46.06	PASS
			CC1	23.48	23.23	23.27	23.63	29.43		
	3610.02+3640.02	256QAM	CC0	22.97	22.59	22.90	22.81	28.84	45.92	PASS
			CC1	23.31	23.07	23.15	23.46	29.27		
		QPSK	CC0	22.71	22.80	23.22	23.07	28.98	45.98	PASS
			CC1	23.25	23.35	23.05	23.33	29.27		
		64QAM	CC0	22.61	22.60	23.09	22.91	28.83	45.82	PASS
			CC1	23.07	23.17	22.85	23.18	29.09		
		256QAM	CC0	22.44	22.49	22.91	22.79	28.68	45.67	PASS
			CC1	22.92	23.02	22.67	23.04	28.94		
	3660+3690	QPSK	CC0	23.20	23.68	23.30	23.86	29.54	46.06	PASS
			CC1	22.69	22.81	22.80	22.93	28.83		
		64QAM	CC0	23.00	23.48	23.17	23.68	29.36	45.90	PASS
			CC1	22.53	22.71	22.64	22.81	28.69		
		256QAM	CC0	22.86	23.28	23.03	23.55	29.21	45.75	PASS
			CC1	22.36	22.60	22.46	22.70	28.55		

Bandwidth	Frequency	Modulation	Carrier	Chain				Total	EIRP (dBm/ 10MHz)	Verdict
				0	1	2	3			
20M+40M	3560.01+3600	QPSK	CC0	23.25	22.89	23.65	23.23	29.28	46.27	PASS
			CC1	23.17	23.30	23.78	23.75	29.53		
		64QAM	CC0	23.05	22.74	23.49	23.03	29.11	46.10	PASS
			CC1	22.97	23.14	23.67	23.55	29.36		
		256QAM	CC0	22.89	22.59	23.36	22.88	28.96	45.96	PASS
			CC1	22.87	23.00	23.53	23.39	29.23		
	3600+3639.99	QPSK	CC0	23.05	23.11	23.21	23.59	29.27	46.22	PASS
			CC1	23.29	23.51	23.43	23.45	29.44		
		64QAM	CC0	22.87	22.97	23.03	23.49	29.12	46.07	PASS
			CC1	23.16	23.31	23.32	23.30	29.29		
		256QAM	CC0	22.71	22.78	22.91	23.39	28.98	45.93	PASS
			CC1	23.05	23.21	23.20	23.10	29.16		
	3639.99+3680.01	QPSK	CC0	23.49	23.93	23.48	23.62	29.65	46.26	PASS
			CC1	22.85	23.14	23.24	23.23	29.14		
		64QAM	CC0	23.39	23.80	23.32	23.52	29.53	46.14	PASS
			CC1	22.74	23.02	23.11	23.10	29.02		
		256QAM	CC0	23.20	23.66	23.16	23.39	29.38	46.00	PASS
			CC1	22.64	22.86	22.95	23.00	28.89		
40M+40M	3570+3620.01	QPSK	CC0	23.41	22.84	23.28	23.33	29.24	46.11	PASS
			CC1	22.85	23.41	23.33	23.30	29.25		
		64QAM	CC0	23.30	22.66	23.11	23.22	29.10	45.95	PASS
			CC1	22.71	23.21	23.19	23.11	29.08		
		256QAM	CC0	23.18	22.56	22.94	23.02	28.95	45.80	PASS
			CC1	22.60	23.07	23.03	22.92	28.93		
	3600+3650.01	QPSK	CC0	23.08	23.32	23.24	23.58	29.33	46.37	PASS
			CC1	23.49	23.77	23.65	23.73	29.68		
		64QAM	CC0	22.92	23.16	23.08	23.41	29.17	46.22	PASS
			CC1	23.33	23.66	23.52	23.59	29.55		
		256QAM	CC0	22.81	23.00	22.94	23.31	29.04	46.09	PASS
			CC1	23.18	23.51	23.42	23.44	29.41		
	3630+3680.01	QPSK	CC0	23.48	23.81	23.31	23.42	29.53	46.21	PASS
			CC1	22.99	23.18	23.16	23.24	29.16		
		64QAM	CC0	23.35	23.64	23.16	23.32	29.39	46.05	PASS
			CC1	22.81	23.00	22.98	23.07	28.99		
		256QAM	CC0	23.19	23.51	22.98	23.13	29.23	45.89	PASS
			CC1	22.61	22.84	22.80	22.91	28.81		

Note:

1. The antenna gain is 13.85 dBi.

2. EIRP (dBm/10MHz) = Total Conducted Output Power (dBm/10MHz) + Directional Gain

Full Conducted Output Power and Full EIRP Power (dBm/Channel Bandwidth)

Bandwidth	Frequency	Modulation	Carrier	Chain				Total	EIRP (dBm/ Channel Bandwidth)	Verdict
				0	1	2	3			
10M+20M	3555+3580.02	QPSK	CC0	22.34	22.09	22.10	22.02	28.16	47.74	PASS
			CC1	26.82	26.41	26.27	26.54	32.54		
		64QAM	CC0	22.24	21.97	21.92	21.86	28.02	47.59	PASS
			CC1	26.67	26.22	26.11	26.44	32.39		
		256QAM	CC0	22.10	21.80	21.76	21.71	27.87	47.44	PASS
			CC1	26.52	26.06	25.99	26.30	32.24		
	3610.02+3635.04	QPSK	CC0	22.26	22.40	22.48	22.75	28.50	47.54	PASS
			CC1	26.03	26.15	26.06	26.19	32.13		
		64QAM	CC0	22.07	22.27	22.35	22.64	28.36	47.40	PASS
			CC1	25.91	26.05	25.86	26.05	31.99		
		256QAM	CC0	21.90	22.15	22.23	22.46	28.21	47.21	PASS
			CC1	25.66	25.81	25.68	25.88	31.78		
	3664.98+3690	QPSK	CC0	23.25	23.40	23.09	23.23	29.26	47.65	PASS
			CC1	25.90	25.99	25.87	25.80	31.91		
		64QAM	CC0	23.06	23.27	22.99	23.08	29.12	47.52	PASS
			CC1	25.77	25.89	25.72	25.68	31.79		
		256QAM	CC0	22.95	23.13	22.87	22.90	28.98	47.36	PASS
			CC1	25.59	25.75	25.54	25.54	31.63		
20M+20M	3560.01+3590.01	QPSK	CC0	25.52	25.07	25.35	25.38	31.35	48.66	PASS
			CC1	26.27	25.96	26.02	26.49	32.21		
		64QAM	CC0	25.37	24.93	25.17	25.28	31.21	48.51	PASS
			CC1	26.14	25.77	25.86	26.29	32.04		
		256QAM	CC0	25.19	24.75	25.02	25.11	31.04	48.35	PASS
			CC1	26.04	25.58	25.70	26.15	31.89		
	3610.02+3640.02	QPSK	CC0	25.38	25.49	25.65	25.69	31.57	48.62	PASS
			CC1	25.87	25.92	25.90	25.94	31.93		
		64QAM	CC0	25.27	25.33	25.55	25.59	31.46	48.48	PASS
			CC1	25.69	25.74	25.77	25.80	31.77		
		256QAM	CC0	25.15	25.23	25.43	25.40	31.32	48.34	PASS
			CC1	25.52	25.59	25.60	25.69	31.62		
	3660+3690	QPSK	CC0	25.89	26.31	26.01	26.47	32.20	48.68	PASS
			CC1	25.22	25.40	25.40	25.49	31.40		
		64QAM	CC0	25.74	26.14	25.86	26.29	32.03	48.52	PASS
			CC1	25.09	25.25	25.24	25.31	31.24		
		256QAM	CC0	25.59	25.96	25.71	26.12	31.87	48.36	PASS
			CC1	24.99	25.07	25.08	25.15	31.09		

Bandwidth	Frequency	Modulation	Carrier	Chain				Total	EIRP (dBm/ Channel Bandwidth)	Verdict
				0	1	2	3			
20M+40M	3560.01+3600	QPSK	CC0	25.52	25.04	25.83	25.45	31.49	50.81	PASS
			CC1	29.80	29.07	29.58	29.49	35.51		
		64QAM	CC0	25.39	24.94	25.69	25.33	31.37	50.68	PASS
			CC1	29.68	28.97	29.39	29.38	35.38		
		256QAM	CC0	25.26	24.76	25.55	25.22	31.23	50.53	PASS
			CC1	29.50	28.79	29.26	29.22	35.22		
	3600+3639.99	QPSK	CC0	25.75	25.71	25.77	26.19	31.88	50.70	PASS
			CC1	29.04	29.20	29.16	29.27	35.19		
		64QAM	CC0	25.60	25.56	25.62	26.00	31.72	50.56	PASS
			CC1	28.87	29.08	29.00	29.16	35.05		
		256QAM	CC0	25.48	25.40	25.43	25.87	31.57	50.41	PASS
			CC1	28.70	28.98	28.86	29.00	34.91		
	3639.99+3680.01	QPSK	CC0	26.13	26.52	26.07	26.22	32.26	50.68	PASS
			CC1	28.76	28.93	29.02	29.07	34.97		
		64QAM	CC0	26.00	26.33	25.92	26.07	32.10	50.53	PASS
			CC1	28.64	28.73	28.87	28.96	34.82		
		256QAM	CC0	25.89	26.19	25.78	25.93	31.97	50.40	PASS
			CC1	28.50	28.59	28.75	28.83	34.69		
40M+40M	3570+3620.01	QPSK	CC0	29.36	28.78	29.15	29.29	35.17	52.05	PASS
			CC1	28.91	29.27	29.24	29.31	35.21		
		64QAM	CC0	29.17	28.60	29.00	29.09	34.99	51.87	PASS
			CC1	28.72	29.11	29.08	29.13	35.03		
		256QAM	CC0	29.04	28.42	28.84	28.97	34.84	51.74	PASS
			CC1	28.59	28.99	28.98	29.00	34.91		
	3600+3650.01	QPSK	CC0	28.90	29.02	28.95	29.23	35.05	52.01	PASS
			CC1	29.09	29.33	29.22	29.27	35.25		
		64QAM	CC0	28.70	28.84	28.81	29.08	34.88	51.85	PASS
			CC1	28.94	29.14	29.06	29.15	35.09		
		256QAM	CC0	28.56	28.74	28.61	28.96	34.74	51.71	PASS
			CC1	28.83	29.02	28.93	28.96	34.96		
	3630+3680.01	QPSK	CC0	29.23	29.46	29.05	29.17	35.25	51.99	PASS
			CC1	28.97	28.93	29.04	29.02	35.01		
		64QAM	CC0	29.03	29.36	28.92	29.00	35.10	51.84	PASS
			CC1	28.85	28.73	28.90	28.89	34.86		
		256QAM	CC0	28.88	29.18	28.76	28.82	34.93	51.70	PASS
			CC1	28.71	28.61	28.79	28.76	34.74		

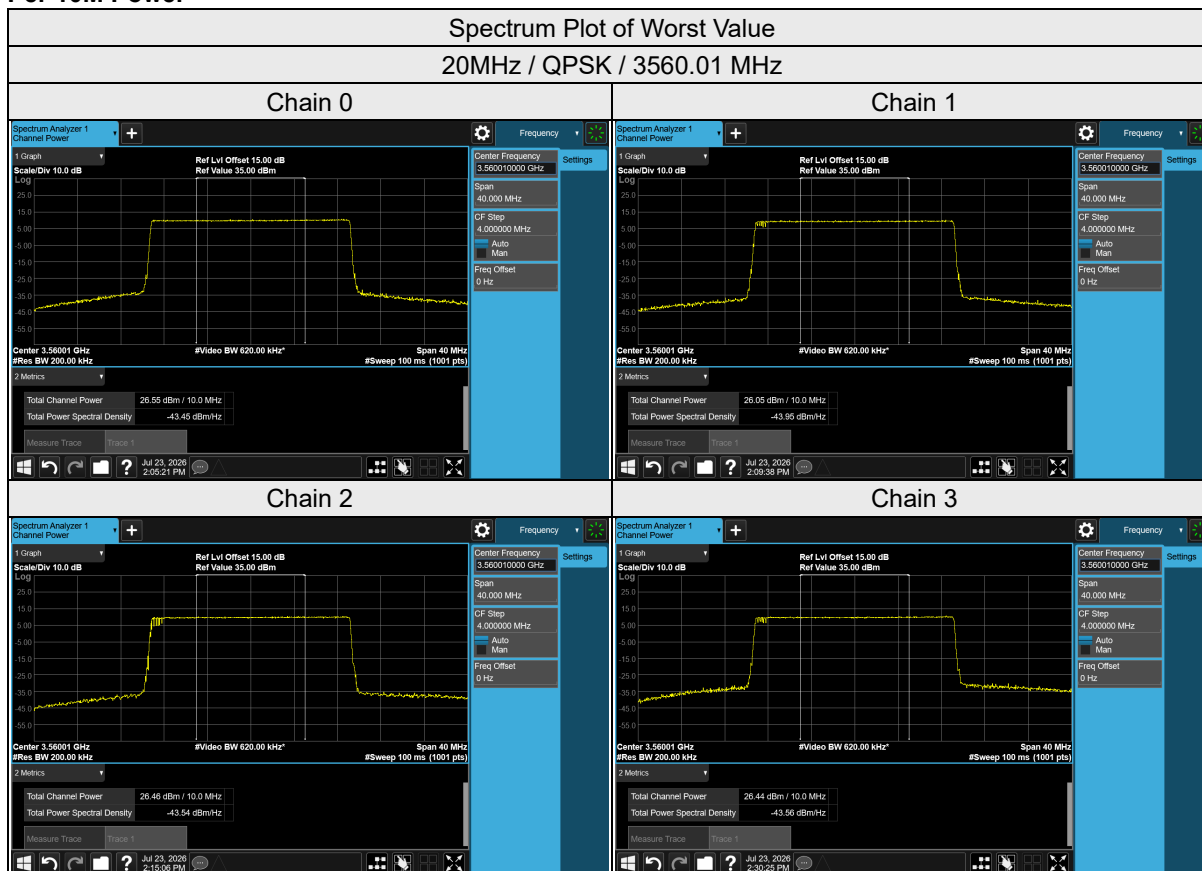
Note:

1. The antenna gain is 13.85 dBi.

2. EIRP (dBm/Channel Bandwidth) = Total Conducted Output Power (dBm/Channel Bandwidth) + Directional Gain

Mode A

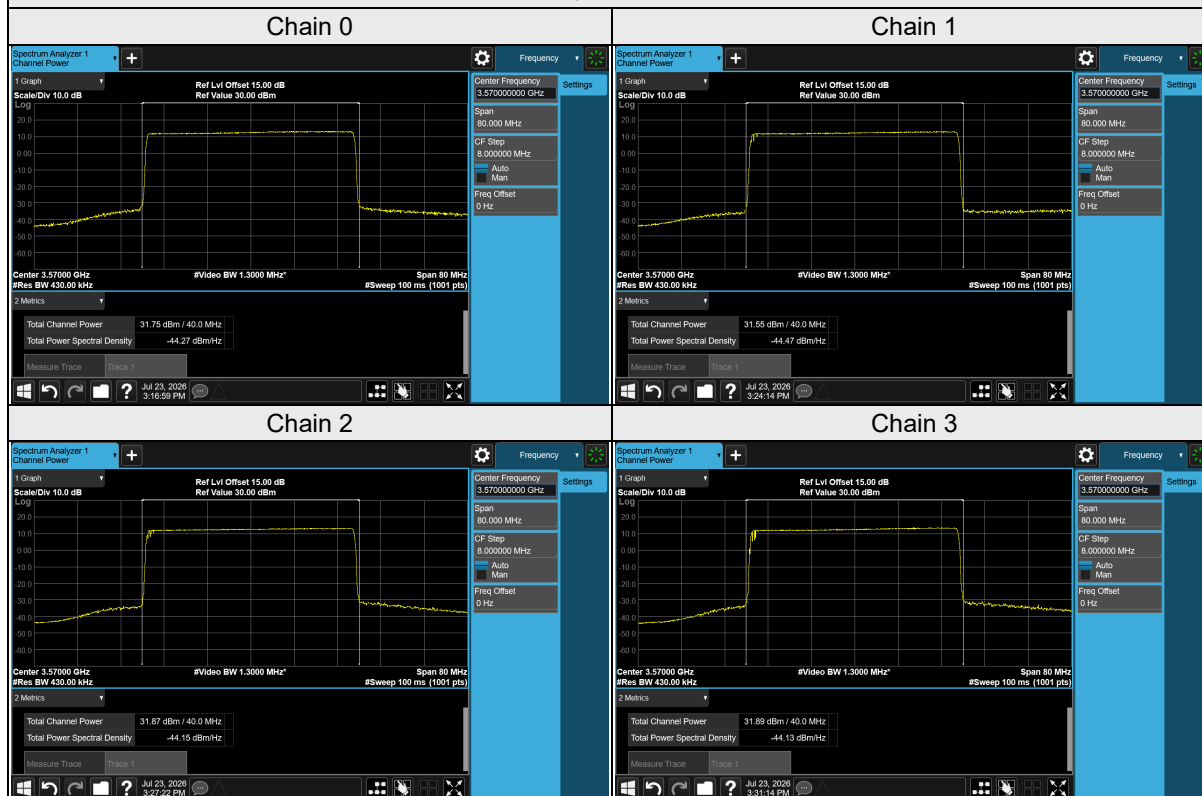
Per 10M Power



Full power

Spectrum Plot of Worst Value

40MHz / QPSK / 3570 MHz



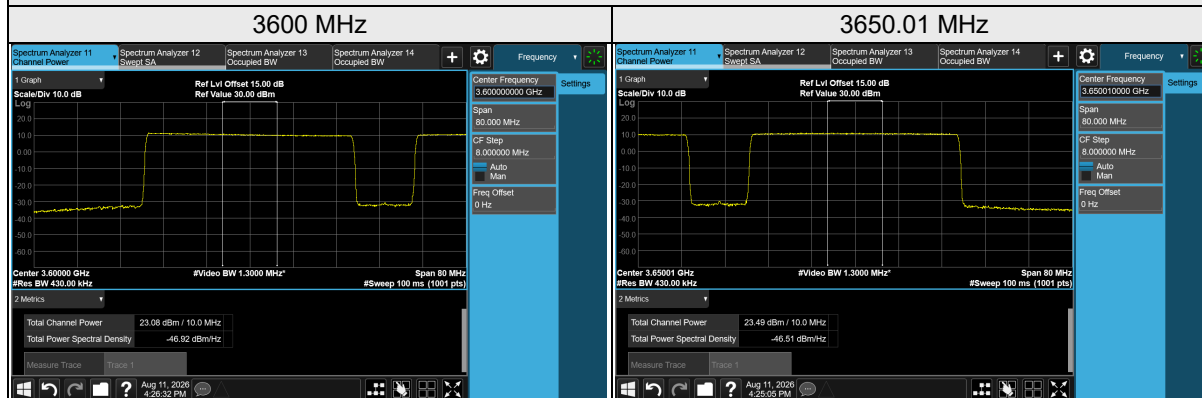
Mode B

Per 10M Power

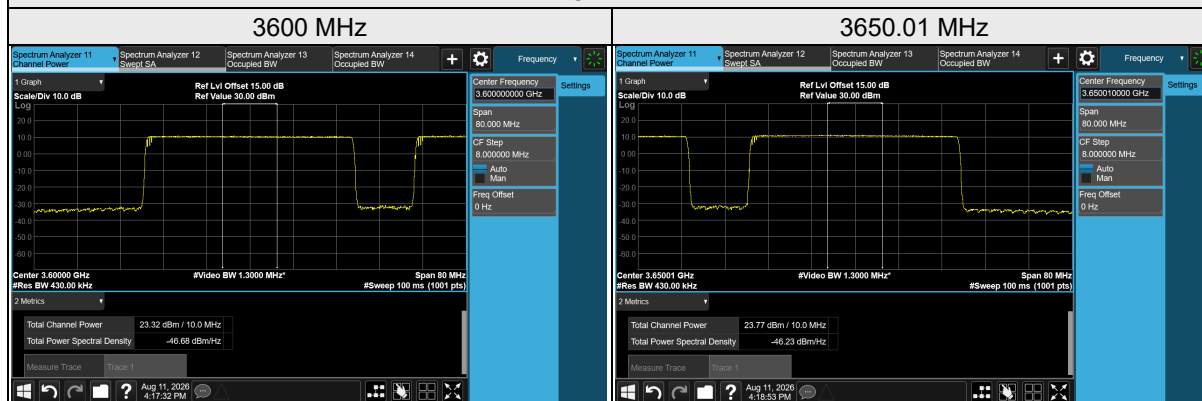
Spectrum Plot of Worst Value

40MHz+40MHz / QPSK

Chain 0



Chain 1



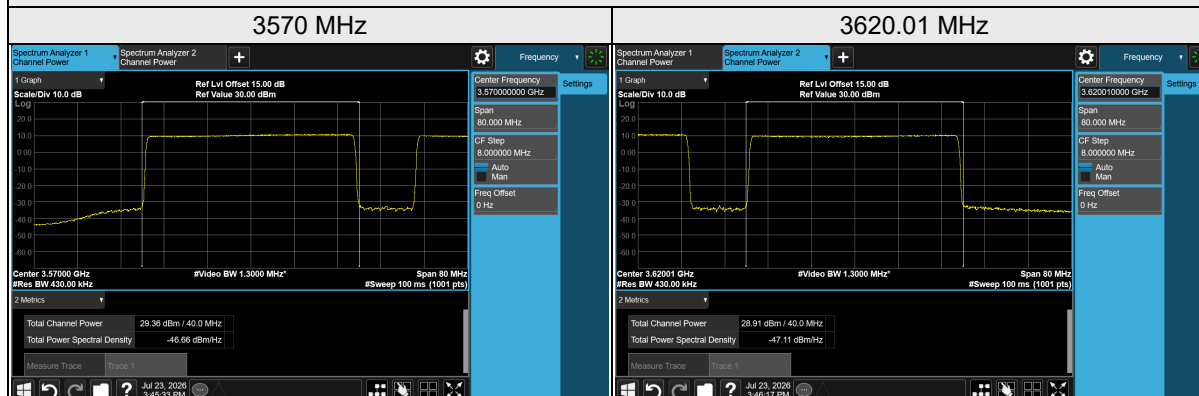


Full power

Spectrum Plot of Worst Value

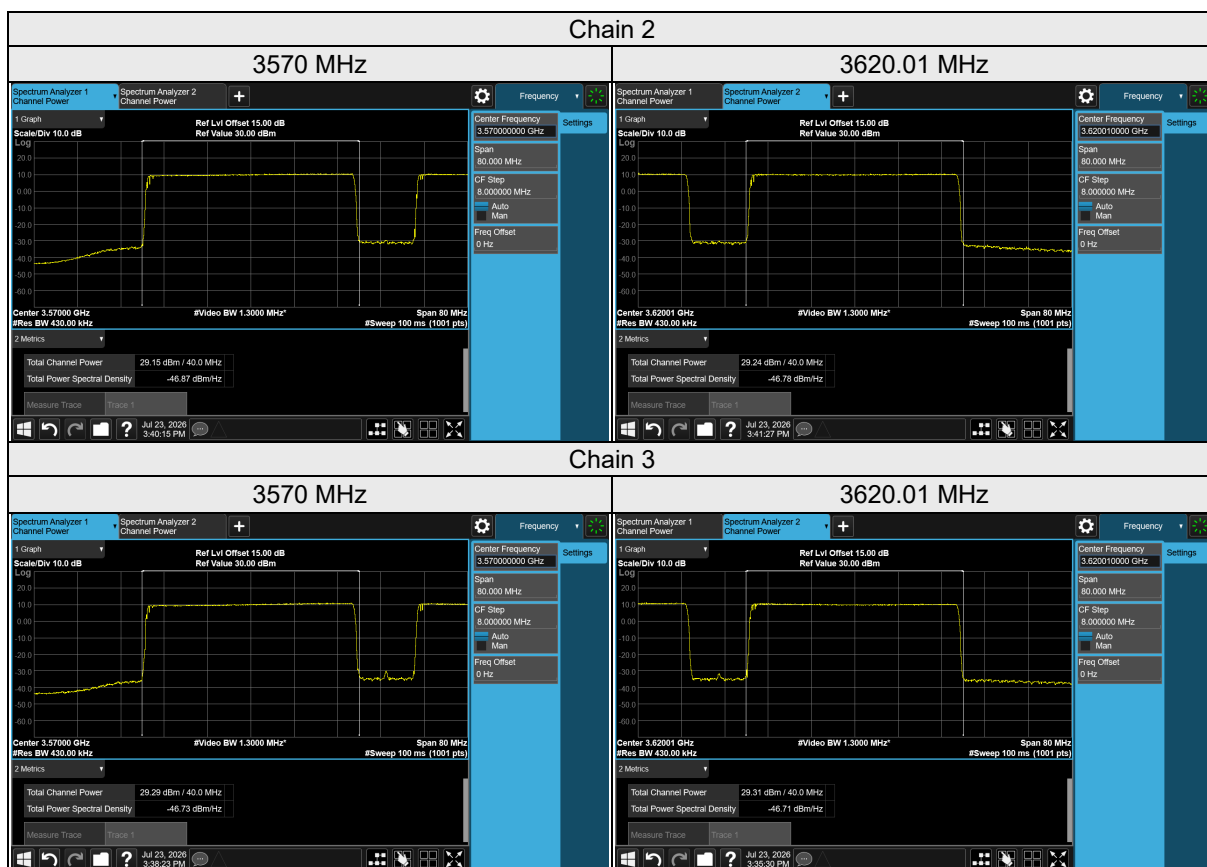
40MHz+40MHz / QPSK

Chain 0



Chain 1



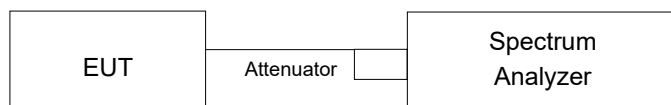


4.2 Maximum Power Spectral Density Measurement

4.2.1 Limits of Maximum Power Spectral Density Measurement

Device		Maximum PSD (dBm/MHz)
☐	End User Device	n/a
☐	Category A CBSD	20
☒	Category B CBSD	37

4.2.2 Test Setup



4.2.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.2.4 Test Procedure

- Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- Set instrument center frequency to OBW center frequency.
- Set span to $2 \times$ to $3 \times$ the OBW.
- Set the RBW to the specified reference bandwidth (often 1 MHz).
- Set VBW $\geq 3 \times$ RBW.
- Detector = RMS (power averaging).
- Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
- Sweep time = auto couple.
- Employ trace averaging (RMS) mode over a minimum of 100 traces.
- Use the peak marker function to determine the maximum amplitude level within the reference bandwidth (PSD).

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.2.7 Test Results

Input Power:	-48 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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Mode A

Power Spectral Density (dBm/MHz)

Bandwidth	Frequency (MHz)	Modulation	Chain				Total	EIRP (dBm/MHz)	Verdict
			0	1	2	3			
10M	3555	QPSK	17.31	17.00	16.84	16.99	23.06	36.91	PASS
		64QAM	17.08	16.88	16.70	16.79	22.89	36.74	PASS
		256QAM	16.83	16.58	16.44	16.52	22.62	36.47	PASS
	3624.99	QPSK	16.90	16.86	16.42	16.85	22.78	36.63	PASS
		64QAM	16.75	16.58	16.23	16.69	22.59	36.44	PASS
		256QAM	16.54	16.42	16.13	16.58	22.44	36.29	PASS
	3694.98	QPSK	16.89	16.84	16.91	16.83	22.89	36.74	PASS
		64QAM	16.74	16.64	16.74	16.66	22.72	36.57	PASS
		256QAM	16.59	16.46	16.58	16.39	22.53	36.38	PASS
20M	3560.01	QPSK	17.09	16.49	16.92	16.94	22.89	36.74	PASS
		64QAM	16.86	16.21	16.71	16.76	22.66	36.51	PASS
		256QAM	16.61	15.94	16.49	16.51	22.42	36.27	PASS
	3624.99	QPSK	16.68	16.72	16.25	16.80	22.64	36.49	PASS
		64QAM	16.40	16.54	16.04	16.60	22.42	36.27	PASS
		256QAM	16.11	16.39	15.87	16.31	22.20	36.05	PASS
	3690	QPSK	16.45	16.62	16.51	16.74	22.60	36.45	PASS
		64QAM	16.18	16.48	16.22	16.63	22.40	36.25	PASS
		256QAM	15.89	16.26	15.97	16.53	22.19	36.04	PASS
40M	3570	QPSK	16.86	16.69	16.98	17.13	22.94	36.79	PASS
		64QAM	16.67	16.49	16.83	16.92	22.75	36.60	PASS
		256QAM	16.50	16.22	16.54	16.75	22.53	36.38	PASS
	3624.99	QPSK	16.59	16.63	16.46	16.66	22.61	36.46	PASS
		64QAM	16.43	16.52	16.25	16.47	22.44	36.29	PASS
		256QAM	16.15	16.27	16.15	16.25	22.23	36.08	PASS
	3679.98	QPSK	16.64	16.91	16.70	16.77	22.78	36.63	PASS
		64QAM	16.38	16.81	16.43	16.63	22.59	36.44	PASS
		256QAM	16.22	16.54	16.15	16.37	22.34	36.19	PASS

Note:

1. The antenna gain is 13.85 dBi.
2. EIRP Power Spectral Density (dBm/MHz) = Total Power Spectral Density (dBm/MHz) + Directional Gain

Mode B

Power Spectral Density (dBm/MHz)

Bandwidth	Frequency	Modulation	Carrier	Chain				Total	EIRP (dBm/ MHz)	Verdict
				0	1	2	3			
10M+20M	3555+3580.02	QPSK	CC0	13.83	13.64	13.78	13.50	19.71	36.93	PASS
			CC1	14.62	14.30	14.17	14.39	20.39		
		64QAM	CC0	13.68	13.51	13.69	13.36	19.58	36.83	PASS
			CC1	14.51	14.24	14.14	14.29	20.32		
		256QAM	CC0	13.55	13.41	13.65	13.31	19.50	36.75	PASS
			CC1	14.47	14.11	14.11	14.23	20.25		
	3610.02+3635.04	QPSK	CC0	13.32	13.47	13.60	13.98	19.62	36.70	PASS
			CC1	13.99	14.02	13.93	14.19	20.05		
		64QAM	CC0	13.20	13.44	13.57	13.91	19.56	36.63	PASS
			CC1	13.95	13.92	13.85	14.08	19.97		
		256QAM	CC0	13.15	13.40	13.52	13.85	19.51	36.57	PASS
			CC1	13.89	13.86	13.75	14.05	19.91		
	3664.98+3690	QPSK	CC0	14.33	14.55	14.18	14.33	20.37	36.92	PASS
			CC1	13.67	13.85	13.72	13.58	19.73		
		64QAM	CC0	14.21	14.52	14.09	14.25	20.29	36.83	PASS
			CC1	13.55	13.75	13.59	13.53	19.63		
		256QAM	CC0	14.12	14.48	14.06	14.18	20.23	36.77	PASS
			CC1	13.48	13.66	13.56	13.42	19.55		
20M+20M	3560.01+3590.01	QPSK	CC0	13.83	13.34	13.71	13.67	19.66	36.73	PASS
			CC1	14.20	13.75	13.89	14.30	20.06		
		64QAM	CC0	13.72	13.24	13.59	13.56	19.55	36.62	PASS
			CC1	14.06	13.66	13.76	14.23	19.95		
		256QAM	CC0	13.69	13.21	13.45	13.45	19.47	36.53	PASS
			CC1	13.97	13.54	13.71	14.12	19.86		
	3610.02+3640.02	QPSK	CC0	13.28	13.29	13.50	13.69	19.46	36.51	PASS
			CC1	13.76	13.77	13.82	13.89	19.83		
		64QAM	CC0	13.16	13.16	13.44	13.59	19.36	36.41	PASS
			CC1	13.70	13.63	13.75	13.75	19.73		
		256QAM	CC0	13.13	13.08	13.40	13.51	19.30	36.33	PASS
			CC1	13.56	13.51	13.67	13.66	19.62		
	3660+3690	QPSK	CC0	13.80	14.23	13.77	14.35	20.07	36.53	PASS
			CC1	13.04	13.22	13.22	13.35	19.23		
		64QAM	CC0	13.71	14.08	13.63	14.27	19.95	36.44	PASS
			CC1	12.99	13.18	13.18	13.26	19.17		
		256QAM	CC0	13.63	14.00	13.60	14.12	19.86	36.35	PASS
			CC1	12.85	13.08	13.10	13.23	19.09		

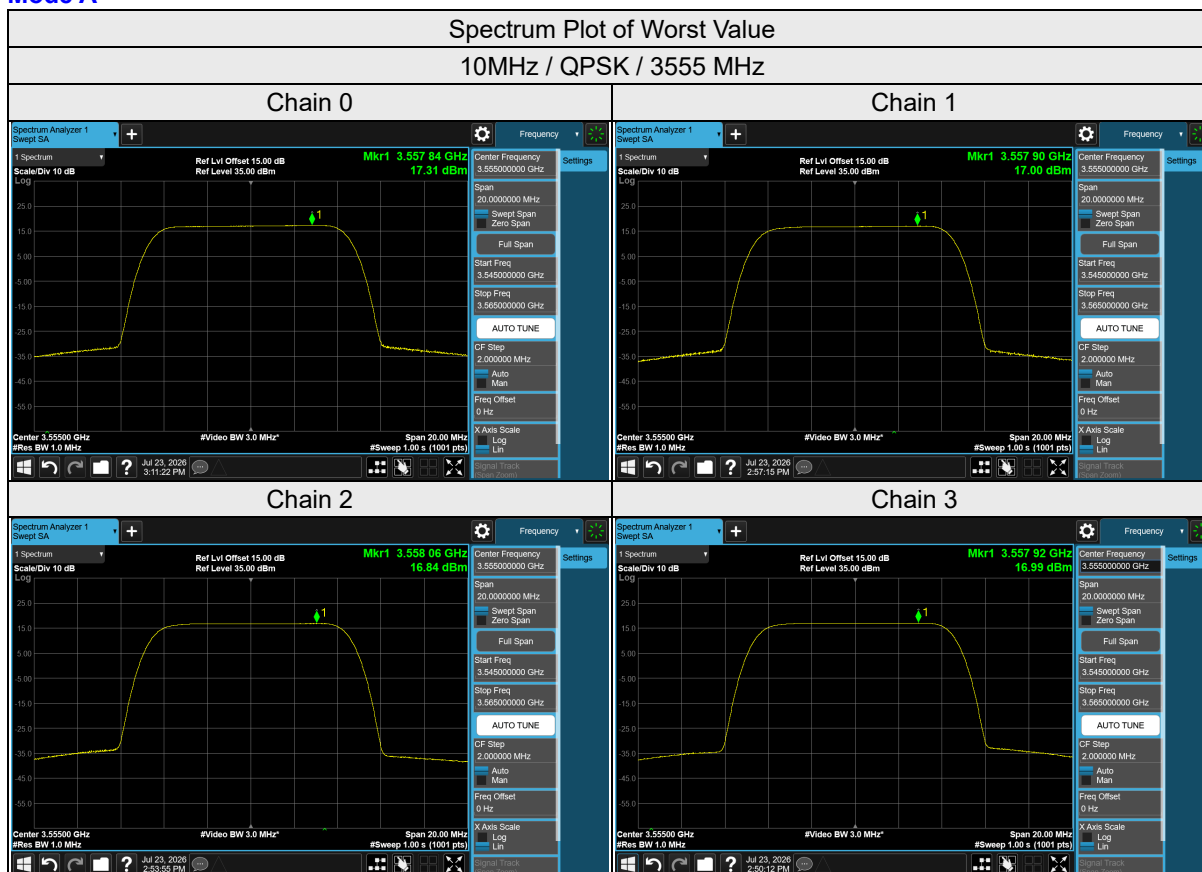
Bandwidth	Frequency	Modulation	Carrier	Chain				Total	EIRP (dBm/ MHz)	Verdict
				0	1	2	3			
20M+40M	3560.01+3600	QPSK	CC0	13.91	13.39	14.22	13.82	19.87	36.88	PASS
			CC1	14.23	13.68	14.25	14.37	20.16		
		64QAM	CC0	13.84	13.29	14.17	13.77	19.80	36.80	PASS
			CC1	14.19	13.59	14.10	14.32	20.08		
		256QAM	CC0	13.80	13.24	14.04	13.64	19.71	36.71	PASS
			CC1	14.05	13.54	14.03	14.19	19.98		
	3600+3639.99	QPSK	CC0	13.84	13.59	13.99	14.17	19.92	36.79	PASS
			CC1	13.83	13.95	13.65	14.20	19.93		
		64QAM	CC0	13.80	13.54	13.95	14.02	19.85	36.71	PASS
			CC1	13.76	13.90	13.56	14.10	19.86		
		256QAM	CC0	13.74	13.39	13.90	13.90	19.76	36.64	PASS
			CC1	13.73	13.84	13.50	14.00	19.79		
	3639.99+3680.01	QPSK	CC0	14.02	14.35	13.98	14.19	20.16	36.92	PASS
			CC1	13.78	13.97	13.88	14.11	19.96		
		64QAM	CC0	13.91	14.27	13.90	14.05	20.06	36.82	PASS
			CC1	13.68	13.86	13.79	14.02	19.86		
		256QAM	CC0	13.78	14.22	13.77	13.91	19.94	36.72	PASS
			CC1	13.60	13.72	13.76	13.94	19.78		
40M+40M	3570+3620.01	QPSK	CC0	14.36	14.07	14.03	14.47	20.26	36.98	PASS
			CC1	13.82	13.86	13.98	14.16	19.98		
		64QAM	CC0	14.30	13.95	13.89	14.39	20.16	36.88	PASS
			CC1	13.73	13.82	13.89	14.01	19.88		
		256QAM	CC0	14.15	13.91	13.84	14.26	20.06	36.79	PASS
			CC1	13.63	13.68	13.83	13.92	19.79		
	3600+3650.01	QPSK	CC0	14.14	13.69	13.67	14.14	19.94	36.81	PASS
			CC1	13.74	14.04	13.94	14.00	19.95		
		64QAM	CC0	14.03	13.65	13.60	14.11	19.87	36.75	PASS
			CC1	13.66	14.01	13.91	13.96	19.91		
		256QAM	CC0	13.95	13.59	13.57	14.05	19.82	36.68	PASS
			CC1	13.57	13.98	13.81	13.83	19.82		
	3630+3680.01	QPSK	CC0	14.25	14.26	13.93	14.10	20.16	36.94	PASS
			CC1	13.94	13.92	13.92	14.10	19.99		
		64QAM	CC0	14.21	14.16	13.80	14.05	20.08	36.84	PASS
			CC1	13.87	13.79	13.79	13.96	19.87		
		256QAM	CC0	14.17	14.12	13.69	13.93	20.00	36.75	PASS
			CC1	13.80	13.67	13.67	13.87	19.77		

Note:

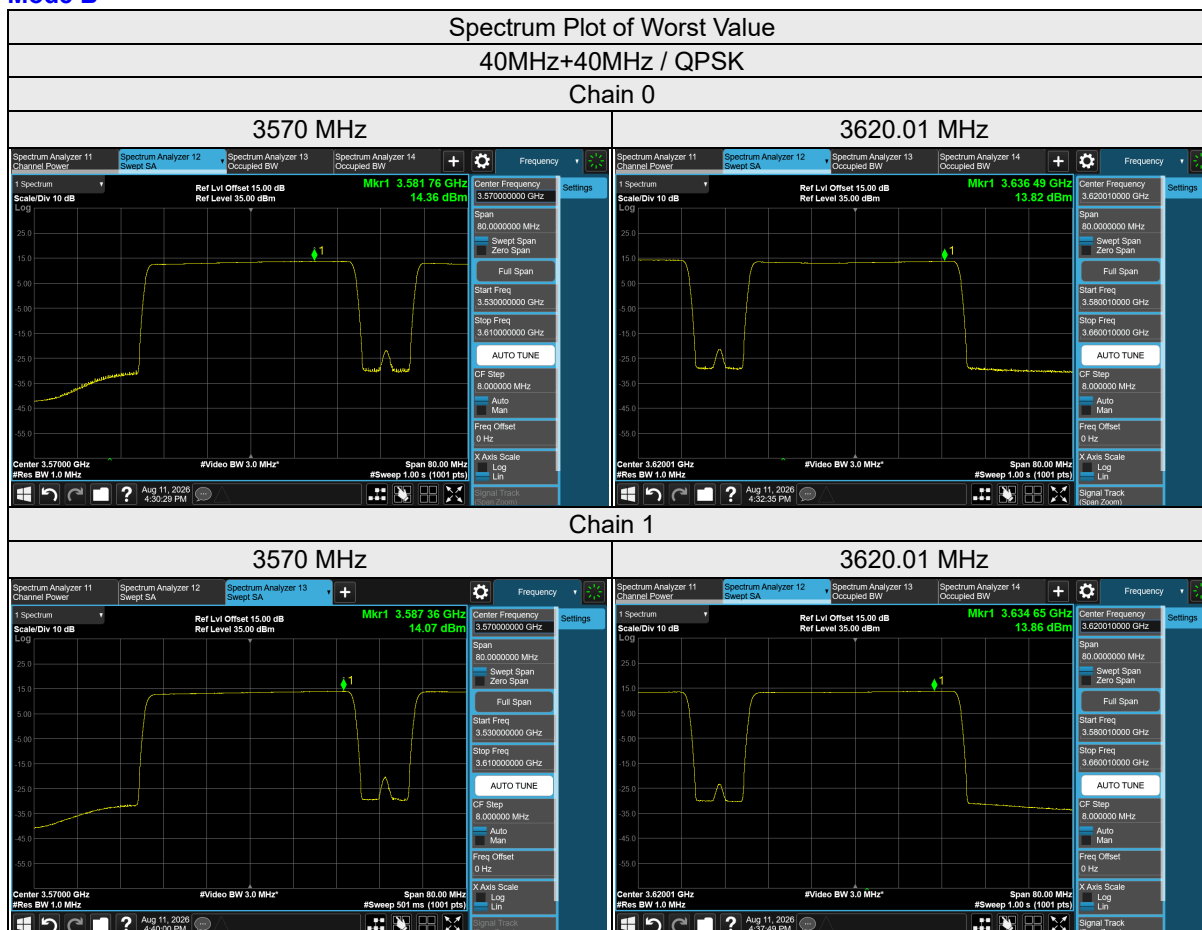
1. The antenna gain is 13.85 dBi.

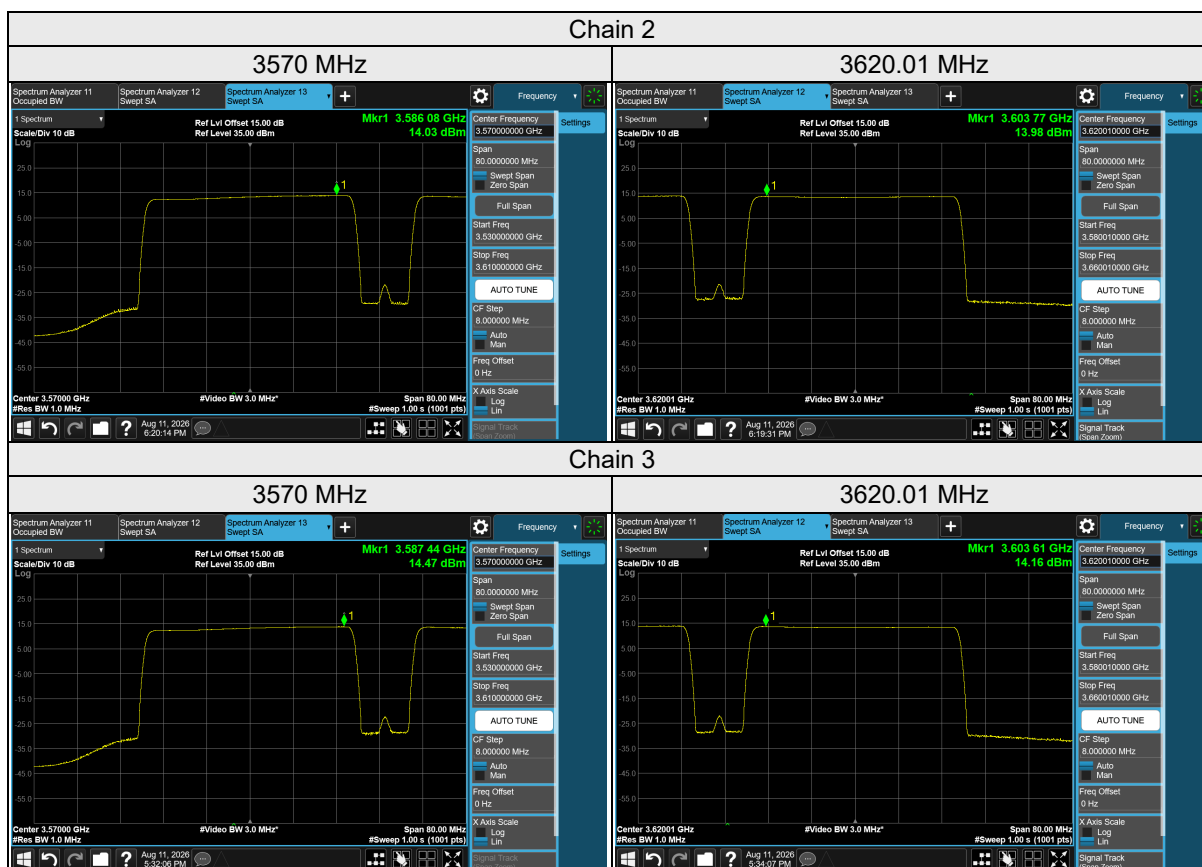
2. EIRP Power Spectral Density (dBm/MHz) = Total Power Spectral Density (dBm/MHz) + Directional Gain

Mode A



Mode B



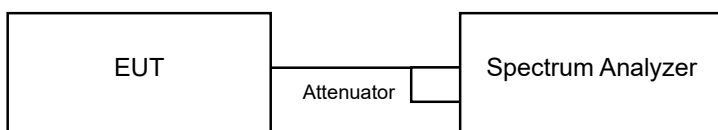


4.3 Modulation Characteristics Measurement

4.3.1 Limits of Modulation Characteristics

N/A

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.3.4 Deviation from Test Standard

No deviation.

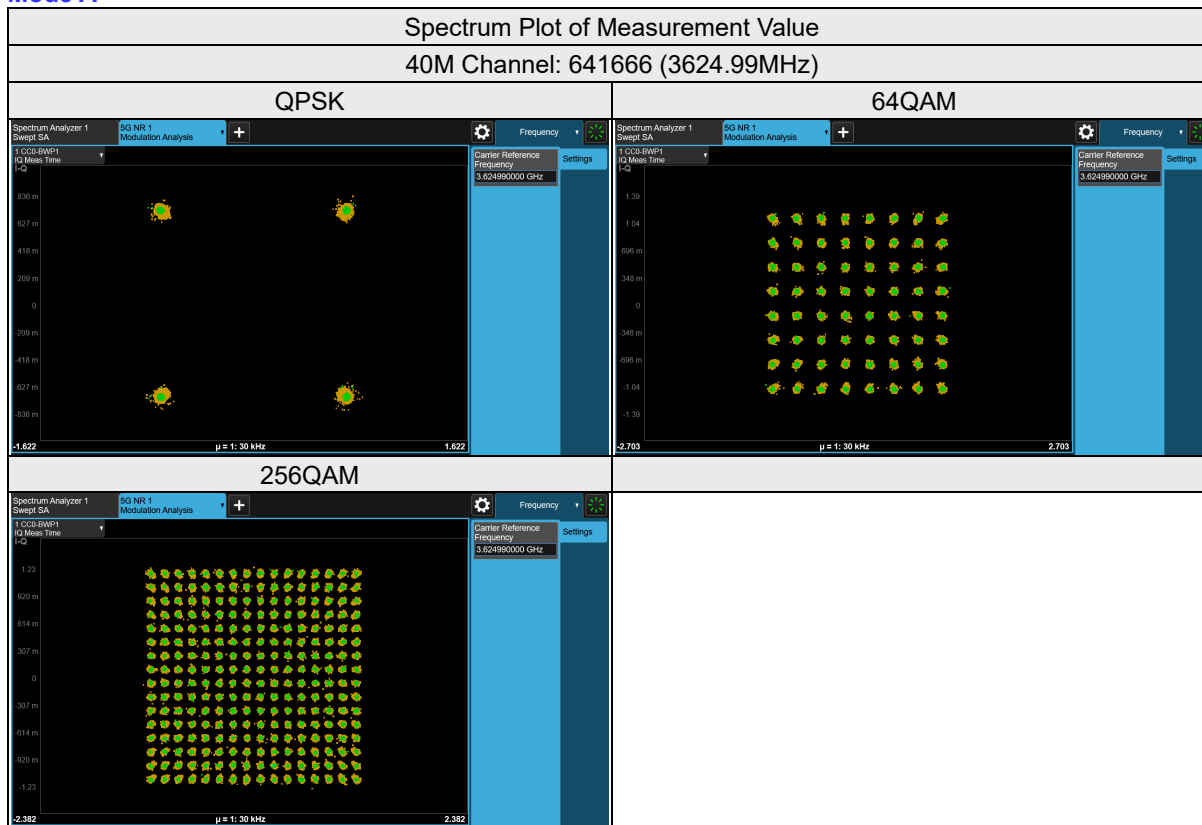
4.3.5 EUT Operating Conditions

Connect the EUT to Spectrum Analyze via the antenna connector, the frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.3.6 Test Results

Input Power:	-48 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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Mode A

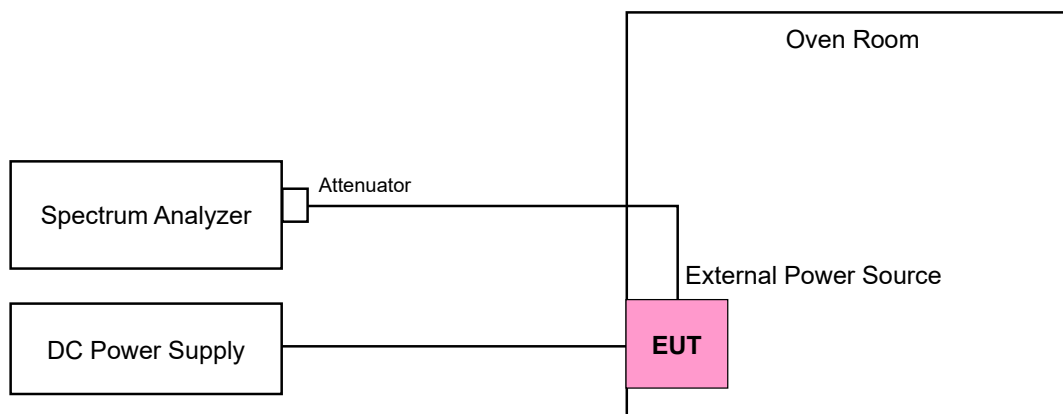


4.4 Frequency Stability Measurement

4.4.1 Limits of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency band.

4.4.2 Test Setup



4.4.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
PXA Signal Analyzer Keysight	N9030B	MY57140953	2025/7/31	2026/7/30
STANDARD TEMPERATURE & HUMIDITY CHAMBER TERCHY	MHU-225AU	920842	2026/7/2	2027/7/1
Three-phase coupling / decoupling network TESEQ	CDN 3063	4006	2026/3/6	2027/3/5
DC Power Supply Topward	6306A	727263	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Test date: 2026/7/21

4.4.4 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ± 0.5 °C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

Note: The frequency error was recorded frequency error from the Spectrum Analyzer.

4.4.5 Test Results

Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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Mode A

Chain 0

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3554.999996	-0.001125	3694.980000	0.000000
50.4	3555.000002	0.000563	3694.979996	-0.001083
45.6	3554.999998	-0.000563	3694.980003	0.000812

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3555.000001	0.000281	3694.980001	0.000271
-30	3554.999999	-0.000281	3694.979999	-0.000271
-20	3555.000001	0.000281	3694.980002	0.000541
-10	3555.000002	0.000563	3694.979996	-0.001083
0	3555.000003	0.000844	3694.980002	0.000541
10	3554.999998	-0.000563	3694.980003	0.000812
20	3554.999999	-0.000281	3694.980004	0.001083
30	3555.000001	0.000281	3694.980004	0.001083
40	3554.999998	-0.000563	3694.979996	-0.001083
50	3554.999998	-0.000563	3694.980003	0.000812
55	3554.999998	-0.000563	3694.979997	-0.000812

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009996	-0.001124	3690.000004	0.001084
50.4	3560.009998	-0.000562	3690.000002	0.000542
45.6	3560.009998	-0.000562	3689.999997	-0.000813

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.010003	0.000843	3689.999999	-0.000271
-30	3560.010003	0.000843	3690.000001	0.000271
-20	3560.009998	-0.000562	3690.000004	0.001084
-10	3560.009998	-0.000562	3689.999997	-0.000813
0	3560.010002	0.000562	3690.000002	0.000542
10	3560.009998	-0.000562	3690.000002	0.000542
20	3560.010003	0.000843	3689.999999	-0.000271
30	3560.010001	0.000281	3690.000003	0.000813
40	3560.009996	-0.001124	3689.999998	-0.000542
50	3560.010004	0.001124	3690.000004	0.001084
55	3560.009998	-0.000562	3690.000004	0.001084

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3570.000004	0.001120	3679.979996	-0.001087
50.4	3569.999996	-0.001120	3679.980003	0.000815
45.6	3569.999996	-0.001120	3679.979998	-0.000543

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3570.000004	0.001120	3679.980004	0.001087
-30	3569.999999	-0.000280	3679.980001	0.000272
-20	3569.999996	-0.001120	3679.980003	0.000815
-10	3570.000003	0.000840	3679.980001	0.000272
0	3569.999999	-0.000280	3679.979999	-0.000272
10	3569.999996	-0.001120	3679.980004	0.001087
20	3570.000003	0.000840	3679.979996	-0.001087
30	3569.999998	-0.000560	3679.979997	-0.000815
40	3570.000004	0.001120	3679.979996	-0.001087
50	3569.999997	-0.000840	3679.979999	-0.000272
55	3570.000003	0.000840	3679.979996	-0.001087

Chain 1

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3554.999998	-0.000563	3694.980004	0.001083
50.4	3555.000004	0.001125	3694.979997	-0.000812
45.6	3554.999998	-0.000563	3694.980003	0.000812

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3554.999999	-0.000281	3694.979999	-0.000271
-30	3555.000002	0.000563	3694.979997	-0.000812
-20	3555.000001	0.000281	3694.980001	0.000271
-10	3554.999999	-0.000281	3694.979999	-0.000271
0	3554.999998	-0.000563	3694.980004	0.001083
10	3554.999996	-0.001125	3694.979998	-0.000541
20	3554.999999	-0.000281	3694.980002	0.000541
30	3555.000004	0.001125	3694.980002	0.000541
40	3555.000003	0.000844	3694.980001	0.000271
50	3555.000001	0.000281	3694.979999	-0.000271
55	3554.999999	-0.000281	3694.980001	0.000271

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009996	-0.001124	3690.000004	0.001084
50.4	3560.009998	-0.000562	3690.000003	0.000813
45.6	3560.009996	-0.001124	3690.000001	0.000271

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.010001	0.000281	3689.999996	-0.001084
-30	3560.009998	-0.000562	3689.999997	-0.000813
-20	3560.009999	-0.000281	3690.000003	0.000813
-10	3560.010004	0.001124	3689.999996	-0.001084
0	3560.010003	0.000843	3690.000003	0.000813
10	3560.010001	0.000281	3689.999999	-0.000271
20	3560.010003	0.000843	3690.000001	0.000271
30	3560.009999	-0.000281	3689.999998	-0.000542
40	3560.010004	0.001124	3689.999999	-0.000271
50	3560.009998	-0.000562	3689.999996	-0.001084
55	3560.010004	0.001124	3690.000003	0.000813

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3569.999997	-0.000840	3679.979996	-0.001087
50.4	3569.999998	-0.000560	3679.979999	-0.000272
45.6	3569.999998	-0.000560	3679.980004	0.001087

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3569.999997	-0.000840	3679.979997	-0.000815
-30	3569.999998	-0.000560	3679.980002	0.000543
-20	3569.999996	-0.001120	3679.980001	0.000272
-10	3569.999996	-0.001120	3679.980001	0.000272
0	3569.999998	-0.000560	3679.979998	-0.000543
10	3570.000002	0.000560	3679.980001	0.000272
20	3570.000002	0.000560	3679.979996	-0.001087
30	3569.999999	-0.000280	3679.979996	-0.001087
40	3570.000004	0.001120	3679.979999	-0.000272
50	3569.999997	-0.000840	3679.979999	-0.000272
55	3570.000003	0.000840	3679.980002	0.000543

Chain 2

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3555.000004	0.001125	3694.980001	0.000271
50.4	3554.999998	-0.000563	3694.979998	-0.000541
45.6	3555.000002	0.000563	3694.979999	-0.000271

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3555.000003	0.000844	3694.979997	-0.000812
-30	3555.000003	0.000844	3694.980001	0.000271
-20	3554.999997	-0.000844	3694.980002	0.000541
-10	3555.000002	0.000563	3694.980001	0.000271
0	3555.000002	0.000563	3694.980002	0.000541
10	3555.000002	0.000563	3694.979996	-0.001083
20	3554.999998	-0.000563	3694.979997	-0.000812
30	3555.000004	0.001125	3694.980001	0.000271
40	3554.999998	-0.000563	3694.980004	0.001083
50	3554.999999	-0.000281	3694.980003	0.000812
55	3554.999998	-0.000563	3694.980003	0.000812

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009996	-0.001124	3689.999998	-0.000542
50.4	3560.010001	0.000281	3689.999996	-0.001084
45.6	3560.010003	0.000843	3689.999998	-0.000542

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.010004	0.001124	3689.999999	-0.000271
-30	3560.010002	0.000562	3689.999999	-0.000271
-20	3560.010003	0.000843	3690.000001	0.000271
-10	3560.010003	0.000843	3689.999999	-0.000271
0	3560.009998	-0.000562	3690.000003	0.000813
10	3560.009998	-0.000562	3689.999999	-0.000271
20	3560.010004	0.001124	3689.999999	-0.000271
30	3560.010004	0.001124	3690.000004	0.001084
40	3560.010003	0.000843	3690.000003	0.000813
50	3560.010001	0.000281	3689.999996	-0.001084
55	3560.009998	-0.000562	3690.000002	0.000542

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3570.000003	0.000840	3679.980001	0.000272
50.4	3569.999997	-0.000840	3679.980002	0.000543
45.6	3569.999999	-0.000280	3679.980003	0.000815

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3570.000001	0.000280	3679.980003	0.000815
-30	3570.000002	0.000560	3679.979999	-0.000272
-20	3569.999998	-0.000560	3679.980004	0.001087
-10	3569.999996	-0.001120	3679.980001	0.000272
0	3569.999996	-0.001120	3679.979997	-0.000815
10	3570.000004	0.001120	3679.979997	-0.000815
20	3569.999997	-0.000840	3679.979996	-0.001087
30	3569.999999	-0.000280	3679.980001	0.000272
40	3569.999997	-0.000840	3679.979996	-0.001087
50	3569.999996	-0.001120	3679.979998	-0.000543
55	3570.000001	0.000280	3679.979998	-0.000543

Chain 3

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3554.999999	-0.000281	3694.980004	0.001083
50.4	3555.000001	0.000281	3694.979999	-0.000271
45.6	3554.999997	-0.000844	3694.980003	0.000812

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3554.999999	-0.000281	3694.979999	-0.000271
-30	3554.999996	-0.001125	3694.980004	0.001083
-20	3554.999998	-0.000563	3694.980001	0.000271
-10	3554.999998	-0.000563	3694.979997	-0.000812
0	3554.999996	-0.001125	3694.979996	-0.001083
10	3555.000001	0.000281	3694.979997	-0.000812
20	3555.000004	0.001125	3694.979999	-0.000271
30	3554.999998	-0.000563	3694.980003	0.000812
40	3555.000004	0.001125	3694.980002	0.000541
50	3554.999998	-0.000563	3694.979996	-0.001083
55	3555.000003	0.000844	3694.979998	-0.000541

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009999	-0.000281	3689.999998	-0.000542
50.4	3560.010002	0.000562	3690.000001	0.000271
45.6	3560.010004	0.001124	3690.000003	0.000813

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.009996	-0.001124	3689.999996	-0.001084
-30	3560.010002	0.000562	3689.999999	-0.000271
-20	3560.010002	0.000562	3689.999997	-0.000813
-10	3560.009997	-0.000843	3689.999999	-0.000271
0	3560.009996	-0.001124	3690.000004	0.001084
10	3560.010002	0.000562	3689.999998	-0.000542
20	3560.009998	-0.000562	3690.000004	0.001084
30	3560.010004	0.001124	3689.999999	-0.000271
40	3560.010001	0.000281	3689.999999	-0.000271
50	3560.009999	-0.000281	3690.000001	0.000271
55	3560.009996	-0.001124	3690.000003	0.000813

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3569.999999	-0.000280	3679.980003	0.000815
50.4	3570.000003	0.000840	3679.980001	0.000272
45.6	3569.999999	-0.000280	3679.979999	-0.000272

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3569.999999	-0.000280	3679.979997	-0.000815
-30	3570.000001	0.000280	3679.980004	0.001087
-20	3570.000003	0.000840	3679.980003	0.000815
-10	3569.999996	-0.001120	3679.979997	-0.000815
0	3570.000001	0.000280	3679.980002	0.000543
10	3569.999998	-0.000560	3679.980002	0.000543
20	3569.999996	-0.001120	3679.980002	0.000543
30	3570.000001	0.000280	3679.980001	0.000272
40	3570.000003	0.000840	3679.980001	0.000272
50	3569.999996	-0.001120	3679.979996	-0.001087
55	3569.999996	-0.001120	3679.980001	0.000272

Mode B

Chain 0

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3554.999996	-0.001125	3689.999996	-0.001084
50.4	3554.999999	-0.000281	3690.000002	0.000542
45.6	3555.000004	0.001125	3690.000001	0.000271

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3554.999997	-0.000844	3690.000002	0.000542
-30	3555.000001	0.000281	3690.000003	0.000813
-20	3555.000003	0.000844	3689.999998	-0.000542
-10	3554.999996	-0.001125	3689.999998	-0.000542
0	3554.999996	-0.001125	3690.000001	0.000271
10	3554.999998	-0.000563	3689.999996	-0.001084
20	3554.999997	-0.000844	3689.999997	-0.000813
30	3554.999997	-0.000844	3690.000004	0.001084
40	3554.999998	-0.000563	3689.999997	-0.000813
50	3555.000003	0.000844	3689.999999	-0.000271
55	3554.999998	-0.000563	3689.999999	-0.000271

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.010001	0.000281	3689.999997	-0.000812
50.4	3560.010001	0.000281	3689.999996	-0.001083
45.6	3560.009996	-0.001124	3690.000002	0.000541

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.010004	0.001124	3690.000003	0.000812
-30	3560.010001	0.000281	3689.999998	-0.000541
-20	3560.010004	0.001124	3689.999996	-0.001083
-10	3560.009999	-0.000281	3689.999996	-0.001083
0	3560.009998	-0.000562	3689.999998	-0.000541
10	3560.009997	-0.000843	3690.000004	0.001083
20	3560.009996	-0.001124	3689.999999	-0.000271
30	3560.009999	-0.000281	3689.999996	-0.001083
40	3560.009998	-0.000562	3689.999998	-0.000541
50	3560.009996	-0.001124	3689.999996	-0.001083
55	3560.010003	0.000843	3690.000002	0.000541

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009996	-0.001125	3680.010003	0.000833
50.4	3560.009996	-0.001125	3680.010002	0.000556
45.6	3560.010003	0.000844	3680.010002	0.000556

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.010002	0.000563	3680.010004	0.001111
-30	3560.009999	-0.000281	3680.010001	0.000278
-20	3560.010004	0.001125	3680.010003	0.000833
-10	3560.010004	0.001125	3680.010003	0.000833
0	3560.009997	-0.000844	3680.009996	-0.001111
10	3560.009998	-0.000563	3680.009999	-0.000278
20	3560.010004	0.001125	3680.010003	0.000833
30	3560.009999	-0.000281	3680.010002	0.000556
40	3560.009997	-0.000844	3680.010004	0.001111
50	3560.010003	0.000844	3680.009998	-0.000556
55	3560.009996	-0.001125	3680.010003	0.000833

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3570.000003	0.000843	3680.009997	-0.000838
50.4	3569.999997	-0.000843	3680.009999	-0.000279
45.6	3569.999998	-0.000562	3680.009998	-0.000559

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3569.999998	0.000563	3680.010004	0.001111
-30	3570.000004	0.001124	3680.009997	-0.000838
-20	3569.999997	-0.000843	3680.010002	0.000559
-10	3570.000002	0.000562	3680.009998	-0.000559
0	3569.999998	-0.000562	3680.010003	0.000838
10	3569.999999	-0.000281	3680.009996	-0.001117
20	3569.999999	-0.000281	3680.009996	-0.001117
30	3569.999997	-0.000843	3680.009997	-0.000838
40	3569.999998	-0.000562	3680.010003	0.000838
50	3569.999997	-0.000843	3680.009996	-0.001117
55	3569.999999	-0.000281	3680.010001	0.000278

Chain 1

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3554.999999	-0.000281	3689.999997	-0.000813
50.4	3555.000004	0.001125	3690.000001	0.000271
45.6	3554.999997	-0.000844	3689.999996	-0.001084

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3555.000003	0.000844	3690.000001	0.000271
-30	3554.999997	-0.000844	3689.999999	-0.000271
-20	3555.000001	0.000281	3690.000003	0.000813
-10	3554.999996	-0.001125	3690.000003	0.000813
0	3554.999999	-0.000281	3690.000004	0.001084
10	3555.000003	0.000844	3690.000002	0.000542
20	3555.000001	0.000281	3690.000001	0.000271
30	3555.000004	0.001125	3690.000001	0.000271
40	3555.000002	0.000563	3689.999999	-0.000271
50	3554.999997	-0.000844	3690.000004	0.001084
55	3555.000004	0.001125	3690.000004	0.001084

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009998	-0.000562	3690.000002	0.000541
50.4	3560.009999	-0.000281	3690.000001	0.000271
45.6	3560.009996	-0.001124	3690.000004	0.001083

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.009999	-0.000281	3690.000001	0.000271
-30	3560.010002	0.000562	3689.999998	-0.000541
-20	3560.010003	0.000843	3689.999996	-0.001083
-10	3560.009996	-0.001124	3690.000001	0.000271
0	3560.010003	0.000843	3689.999997	-0.000812
10	3560.009999	-0.000281	3690.000001	0.000271
20	3560.009997	-0.000843	3690.000001	0.000271
30	3560.010003	0.000843	3689.999998	-0.000541
40	3560.010002	0.000562	3689.999999	-0.000271
50	3560.009999	-0.000281	3689.999998	-0.000541
55	3560.010001	0.000281	3690.000004	0.001083

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.010004	0.001125	3680.010002	0.000556
50.4	3560.010001	0.000281	3680.009999	-0.000278
45.6	3560.009997	-0.000844	3680.010004	0.001111

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.009999	-0.000281	3680.009996	-0.001111
-30	3560.010004	0.001125	3680.009996	-0.001111
-20	3560.010002	0.000563	3680.010003	0.000833
-10	3560.010003	0.000844	3680.009997	-0.000833
0	3560.010001	0.000281	3680.010002	0.000556
10	3560.010001	0.000281	3680.009999	-0.000278
20	3560.009997	-0.000844	3680.010003	0.000833
30	3560.009998	-0.000563	3680.010003	0.000833
40	3560.009998	-0.000563	3680.009999	-0.000278
50	3560.009996	-0.001125	3680.010001	0.000278
55	3560.010002	0.000563	3680.010003	0.000833

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3570.000003	0.000843	3680.010002	0.000559
50.4	3570.000003	0.000843	3680.010002	0.000559
45.6	3569.999998	-0.000562	3680.010003	0.000838

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3570.000001	-0.000281	3680.009999	-0.001111
-30	3570.000004	0.001124	3680.009996	-0.001117
-20	3569.999999	-0.000281	3680.010004	0.001117
-10	3569.999999	-0.000281	3680.009996	-0.001117
0	3569.999999	-0.000281	3680.009997	-0.000838
10	3569.999997	-0.000843	3680.009998	-0.000559
20	3569.999997	-0.000843	3680.009996	-0.001117
30	3569.999997	-0.000843	3680.010002	0.000559
40	3570.000004	0.001124	3680.009999	-0.000279
50	3569.999997	-0.000843	3680.010004	0.001117
55	3570.000003	0.000843	3680.010004	0.001111

Chain 2

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3555.000001	0.000281	3689.999998	-0.000542
50.4	3555.000001	0.000281	3689.999998	-0.000542
45.6	3555.000001	0.000281	3689.999999	-0.000271

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3555.000002	0.000563	3689.999997	-0.000813
-30	3554.999996	-0.001125	3690.000004	0.001084
-20	3555.000002	0.000563	3690.000004	0.001084
-10	3554.999998	-0.000563	3689.999998	-0.000542
0	3554.999996	-0.001125	3689.999999	-0.000271
10	3554.999998	-0.000563	3690.000001	0.000271
20	3554.999998	-0.000563	3690.000001	0.000271
30	3554.999998	-0.000563	3690.000002	0.000542
40	3555.000004	0.001125	3690.000002	0.000542
50	3555.000002	0.000563	3689.999998	-0.000542
55	3554.999998	-0.000563	3689.999999	-0.000271

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009997	-0.000843	3690.000003	0.000812
50.4	3560.009997	-0.000843	3690.000003	0.000812
45.6	3560.009997	-0.000843	3690.000004	0.001083

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.010002	0.000562	3689.999997	-0.000812
-30	3560.009996	-0.001124	3690.000002	0.000541
-20	3560.009996	-0.001124	3690.000001	0.000271
-10	3560.010004	0.001124	3689.999997	-0.000812
0	3560.009997	-0.000843	3689.999996	-0.001083
10	3560.010003	0.000843	3689.999997	-0.000812
20	3560.010002	0.000562	3690.000003	0.000812
30	3560.009999	-0.000281	3690.000002	0.000541
40	3560.009998	-0.000562	3690.000002	0.000541
50	3560.009997	-0.000843	3690.000003	0.000812
55	3560.009997	-0.000843	3690.000003	0.000812

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.009996	-0.001125	3680.010003	0.000833
50.4	3560.010001	0.000281	3680.010003	0.000833
45.6	3560.009996	-0.001125	3680.009996	-0.001111

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.009996	-0.001125	3680.010001	0.000278
-30	3560.009998	-0.000563	3680.010004	0.001111
-20	3560.010003	0.000844	3680.010003	0.000833
-10	3560.009998	-0.000563	3680.010002	0.000556
0	3560.009999	-0.000281	3680.010003	0.000833
10	3560.009996	-0.001125	3680.010003	0.000833
20	3560.009997	-0.000844	3680.010003	0.000833
30	3560.010001	0.000281	3680.010002	0.000556
40	3560.009997	-0.000844	3680.010004	0.001111
50	3560.009999	-0.000281	3680.010002	0.000556
55	3560.009997	-0.000844	3680.010001	0.000278

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3569.999999	-0.000281	3680.009996	-0.001117
50.4	3569.999999	-0.000281	3680.010004	0.001117
45.6	3570.000004	0.001124	3680.009998	-0.000559

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3569.999997	-0.001125	3680.009999	-0.000279
-30	3570.000004	0.001124	3680.009999	-0.000279
-20	3569.999997	-0.000843	3680.010003	0.000838
-10	3570.000001	0.000281	3680.010001	0.000279
0	3569.999996	-0.001124	3680.009999	-0.000279
10	3570.000002	0.000562	3680.010001	0.000279
20	3570.000003	0.000843	3680.010004	0.001117
30	3569.999996	-0.001124	3680.009999	-0.000279
40	3569.999999	-0.000281	3680.010001	0.000279
50	3570.000001	0.000281	3680.010001	0.000279
55	3569.999998	-0.000562	3680.010001	0.000278

Chain 3

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3555.000004	0.001125	3690.000003	0.000813
50.4	3554.999997	-0.000844	3690.000001	0.000271
45.6	3555.000003	0.000844	3690.000004	0.001084

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 10MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3554.999996	-0.001125	3690.000002	0.000542
-30	3555.000001	0.000281	3689.999998	-0.000542
-20	3554.999999	-0.000281	3690.000003	0.000813
-10	3555.000003	0.000844	3690.000004	0.001084
0	3555.000003	0.000844	3690.000003	0.000813
10	3554.999998	-0.000563	3689.999997	-0.000813
20	3555.000003	0.000844	3690.000003	0.000813
30	3555.000003	0.000844	3690.000002	0.000542
40	3554.999999	-0.000281	3690.000004	0.001084
50	3554.999999	-0.000281	3689.999996	-0.001084
55	3554.999997	-0.000844	3690.000004	0.001084

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.010001	0.000281	3690.000003	0.000812
50.4	3560.009999	-0.000281	3690.000004	0.001083
45.6	3560.009996	-0.001124	3690.000003	0.000812

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+20MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.009996	-0.001124	3690.000002	0.000541
-30	3560.010004	0.001124	3690.000004	0.001083
-20	3560.010004	0.001124	3689.999999	-0.000271
-10	3560.010001	0.000281	3690.000001	0.000271
0	3560.009996	-0.001124	3689.999996	-0.001083
10	3560.009997	-0.000843	3689.999996	-0.001083
20	3560.009996	-0.001124	3689.999996	-0.001083
30	3560.009997	-0.000843	3690.000002	0.000541
40	3560.009996	-0.001124	3690.000004	0.001083
50	3560.010002	0.000562	3690.000001	0.000271
55	3560.010002	0.000562	3690.000003	0.000812

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3560.010003	0.000844	3680.010000	0.000000
50.4	3560.010003	0.000844	3680.010003	0.000833
45.6	3560.010004	0.001125	3680.010002	0.000556

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 48, Channel Bandwidth: 20MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3560.009997	-0.000844	3680.009996	-0.001111
-30	3560.009996	-0.001125	3680.010003	0.000833
-20	3560.010001	0.000281	3680.009999	-0.000278
-10	3560.009999	-0.000281	3680.010004	0.001111
0	3560.009997	-0.000844	3680.010004	0.001111
10	3560.009999	-0.000281	3680.010004	0.001111
20	3560.009999	-0.000281	3680.010004	0.001111
30	3560.009996	-0.001125	3680.009997	-0.000833
40	3560.009997	-0.000844	3680.009999	-0.000278
50	3560.009998	-0.000563	3680.010002	0.000556
55	3560.010001	0.000281	3680.010002	0.000556

Frequency Error vs. Voltage

Voltage (Vdc)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
48	3569.999998	-0.000562	3680.010001	0.000279
50.4	3569.999999	-0.000281	3680.009996	-0.001117
45.6	3570.000004	0.001124	3680.009996	-0.001117

Note: The applicant defined the normal working voltage is from 45.6Vdc to 50.4Vdc.

Frequency Error vs. Temperature

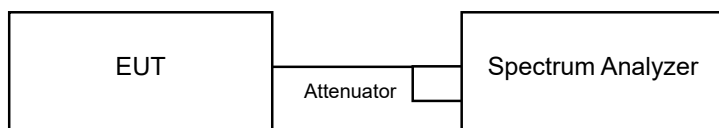
Temp. (°C)	NR Band 48, Channel Bandwidth: 40MHz+40MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-40	3569.999996	-0.000844	3680.010004	-0.001111
-30	3570.000004	0.001124	3680.010003	0.000838
-20	3570.000004	0.001124	3680.010003	0.000838
-10	3569.999999	-0.000281	3680.009996	-0.001117
0	3570.000004	0.001124	3680.010001	0.000279
10	3569.999996	-0.001124	3680.010001	0.000279
20	3570.000002	0.000562	3680.009999	-0.000279
30	3569.999999	-0.000281	3680.009998	-0.000559
40	3569.999998	-0.000562	3680.009999	-0.000279
50	3569.999998	-0.000562	3680.009997	-0.000838
55	3570.000004	0.001124	3680.010001	0.000278

4.5 Emission Bandwidth Measurement

4.5.1 Limits of Emission Bandwidth Measurement

According to FCC 47 CFR part 2.1049, 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% of the total mean power radiated by a given emission.

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.5.4 Test Procedure

For the 26 dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

- 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.
- 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 following reference values: 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).
- 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. 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.
- i. 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).

For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

- 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.
- 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).

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.5.7 Test Result

Input Power:	-48 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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Mode A

Occupied Bandwidth

NR Band 48, Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637000	3555.00	8.568	8.562	8.572	8.558	8.564	8.572
641666	3624.99	8.567	8.566	8.573	8.561	8.569	8.572
646332	3694.98	8.565	8.568	8.570	8.563	8.566	8.570
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637000	3555.00	8.561	8.569	8.574	8.565	8.574	8.578
641666	3624.99	8.562	8.572	8.574	8.556	8.574	8.573
646332	3694.98	8.564	8.568	8.571	8.559	8.574	8.575

NR Band 48, Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637334	3560.01	18.200	18.207	18.198	18.180	18.198	18.192
641666	3624.99	18.191	18.198	18.202	18.171	18.194	18.190
646000	3690.00	18.194	18.202	18.203	18.176	18.188	18.192
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637334	3560.01	18.168	18.185	18.197	18.184	18.193	18.198
641666	3624.99	18.178	18.205	18.192	18.179	18.196	18.193
646000	3690.00	18.173	18.184	18.189	18.174	18.195	18.196

NR Band 48, Channel Bandwidth 40MHz							
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
638000	3570.00	37.792	37.794	37.792	37.761	37.801	37.802
641666	3624.99	37.826	37.829	37.827	37.788	37.812	37.810
645332	3679.98	37.824	37.831	37.817	37.784	37.803	37.796
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
638000	3570.00	37.755	37.773	37.788	37.761	37.784	37.797
641666	3624.99	37.796	37.817	37.824	37.803	37.828	37.826
645332	3679.98	37.778	37.792	37.789	37.763	37.796	37.804



26dB Bandwidth

NR Band 48, Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	26dB Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637000	3555.00	9.09	9.10	9.06	9.09	9.12	9.06
641666	3624.99	9.10	9.12	9.06	9.10	9.12	9.06
646332	3694.98	9.12	9.10	9.14	9.06	9.06	9.06
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637000	3555.00	9.12	9.08	9.13	9.10	9.12	9.10
641666	3624.99	9.15	9.11	9.13	9.12	9.11	9.09
646332	3694.98	9.12	9.11	9.10	9.09	9.09	9.08

NR Band 48, Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	26dB Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637334	3560.01	18.91	18.90	18.88	18.89	18.90	18.89
641666	3624.99	18.91	18.91	18.91	18.90	18.90	18.89
646000	3690.00	18.89	18.90	18.90	18.88	18.89	18.89
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637334	3560.01	18.92	18.90	18.89	18.90	18.90	18.90
641666	3624.99	18.91	18.89	18.92	18.89	18.90	18.90
646000	3690.00	18.90	18.89	18.89	18.89	18.88	18.87

NR Band 48, Channel Bandwidth 40MHz							
Channel	Frequency (MHz)	26dB Bandwidth (MHz)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
638000	3570.00	39.17	39.18	39.17	39.17	39.17	39.18
641666	3624.99	39.19	39.18	39.18	39.18	39.18	39.21
645332	3679.98	39.19	39.17	39.18	39.18	39.18	39.18
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
638000	3570.00	39.17	39.18	39.18	39.17	39.17	39.18
641666	3624.99	39.17	39.20	39.18	39.19	39.19	39.19
645332	3679.98	39.16	39.18	39.18	39.17	39.18	39.18



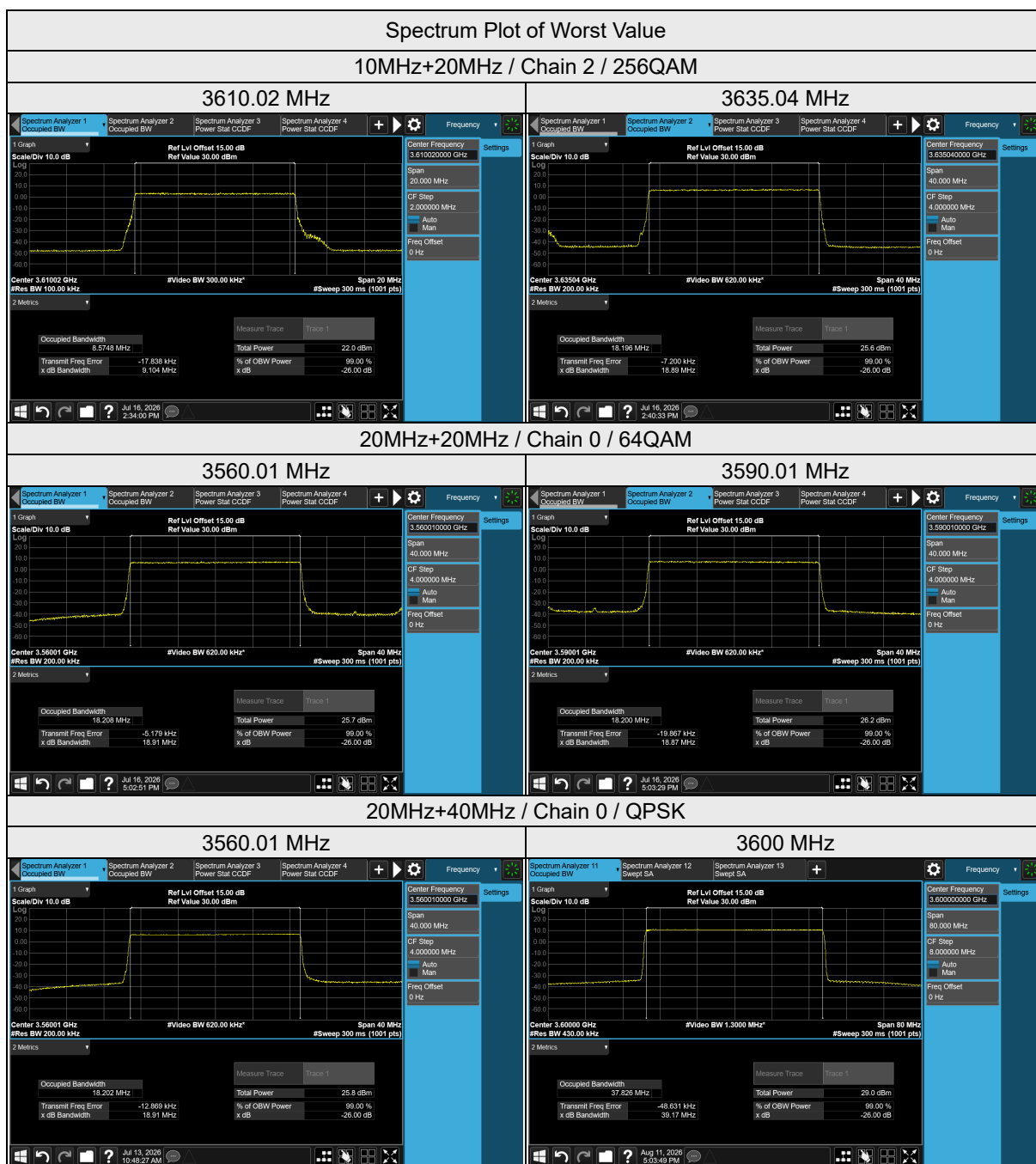
Mode B
Occupied Bandwidth

Bandwidth	Frequency (MHz)	Modulation	Chain	99% Occupied Bandwidth (MHz)		
				CC0	CC1	Total
10M+20M	3555+3580.02	QPSK	0	8.568	18.185	26.753
			1	8.561	18.169	26.730
			2	8.559	18.175	26.734
			3	8.561	18.173	26.734
		64QAM	0	8.566	18.188	26.754
			1	8.566	18.191	26.757
			2	8.564	18.198	26.762
			3	8.565	18.195	26.760
		256QAM	0	8.574	18.183	26.757
			1	8.570	18.188	26.758
			2	8.572	18.190	26.762
			3	8.568	18.186	26.754
	3610.02+3635.04	QPSK	0	8.567	18.192	26.759
			1	8.563	18.175	26.738
			2	8.561	18.176	26.737
			3	8.560	18.179	26.739
		64QAM	0	8.566	18.202	26.768
			1	8.564	18.197	26.761
			2	8.572	18.196	26.768
			3	8.565	18.195	26.760
		256QAM	0	8.570	18.196	26.766
			1	8.566	18.189	26.755
			2	8.575	18.196	26.771
			3	8.570	18.193	26.763
	3664.98+3690	QPSK	0	8.564	18.198	26.762
			1	8.563	18.172	26.735
			2	8.558	18.178	26.736
			3	8.562	18.188	26.750
		64QAM	0	8.564	18.202	26.766
			1	8.568	18.196	26.764
			2	8.563	18.197	26.760
			3	8.565	18.200	26.765
		256QAM	0	8.568	18.193	26.761
			1	8.568	18.187	26.755
			2	8.569	18.194	26.763
			3	8.569	18.191	26.760

Bandwidth	Frequency (MHz)	Modulation	Chain	99% Occupied Bandwidth (MHz)		
				CC0	CC1	Total
20M+20M	3560.01+3590.01	QPSK	0	18.202	18.187	36.389
			1	18.179	18.175	36.354
			2	18.173	18.173	36.346
			3	18.183	18.172	36.355
		64QAM	0	18.208	18.200	36.408
			1	18.200	18.191	36.391
			2	18.192	18.193	36.385
			3	18.200	18.189	36.389
		256QAM	0	18.211	18.189	36.400
			1	18.199	18.189	36.388
			2	18.193	18.185	36.378
			3	18.208	18.187	36.395
	3610.02+3640.02	QPSK	0	18.195	18.192	36.387
			1	18.180	18.171	36.351
			2	18.175	18.174	36.349
			3	18.175	18.177	36.352
		64QAM	0	18.204	18.201	36.405
			1	18.204	18.201	36.405
			2	18.202	18.199	36.401
			3	18.201	18.200	36.401
		256QAM	0	18.207	18.187	36.394
			1	18.201	18.192	36.393
			2	18.199	18.197	36.396
			3	18.202	18.193	36.395
	3660+3690	QPSK	0	18.189	18.190	36.379
			1	18.176	18.179	36.355
			2	18.172	18.172	36.344
			3	18.173	18.180	36.353
		64QAM	0	18.193	18.195	36.388
			1	18.199	18.191	36.390
			2	18.190	18.189	36.379
			3	18.190	18.198	36.388
		256QAM	0	18.192	18.195	36.387
			1	18.192	18.198	36.390
			2	18.191	18.197	36.388
			3	18.190	18.190	36.380

Bandwidth	Frequency (MHz)	Modulation	Chain	99% Occupied Bandwidth (MHz)		
				CC0	CC1	Total
20M+40M	3560.01+3600	QPSK	0	18.202	37.826	56.028
			1	18.182	37.779	55.961
			2	18.180	37.774	55.954
			3	18.184	37.763	55.947
		64QAM	0	18.200	37.808	56.008
			1	18.201	37.812	56.013
			2	18.198	37.810	56.008
			3	18.203	37.793	55.996
		256QAM	0	18.205	37.809	56.014
			1	18.201	37.796	55.997
			2	18.198	37.802	56.000
			3	18.203	37.794	55.997
	3600+3639.99	QPSK	0	18.193	37.793	55.986
			1	18.176	37.761	55.937
			2	18.182	37.761	55.943
			3	18.177	37.762	55.939
		64QAM	0	18.200	37.792	55.992
			1	18.199	37.788	55.987
			2	18.203	37.800	56.003
			3	18.204	37.799	56.003
		256QAM	0	18.196	37.784	55.980
			1	18.195	37.781	55.976
			2	18.193	37.796	55.989
			3	18.195	37.798	55.993
	3639.99+3680.01	QPSK	0	18.188	37.827	56.015
			1	18.176	37.794	55.970
			2	18.180	37.770	55.950
			3	18.180	37.781	55.961
		64QAM	0	18.191	37.813	56.004
			1	18.193	37.804	55.997
			2	18.193	37.798	55.991
			3	18.193	37.802	55.995
		256QAM	0	18.193	37.813	56.006
			1	18.191	37.795	55.986
			2	18.197	37.799	55.996
			3	18.197	37.798	55.995

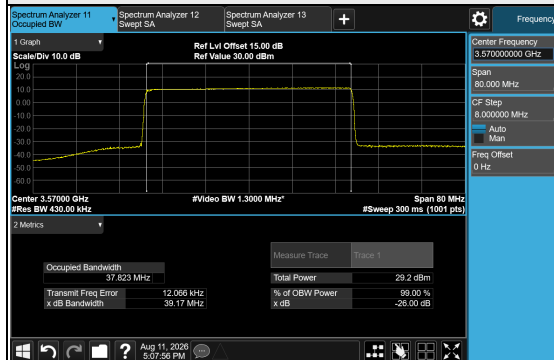
Bandwidth	Frequency (MHz)	Modulation	Chain	99% Occupied Bandwidth (MHz)		
				CC0	CC1	Total
40M+40M	3570+3620.01	QPSK	0	37.800	37.840	75.640
			1	37.782	37.793	75.575
			2	37.768	37.793	75.561
			3	37.776	37.807	75.583
		64QAM	0	37.810	37.840	75.650
			1	37.817	37.820	75.637
			2	37.812	37.824	75.636
			3	37.820	37.827	75.647
		256QAM	0	37.805	37.843	75.648
			1	37.817	37.808	75.625
			2	37.804	37.816	75.620
			3	37.823	37.837	75.660
	3600+3650.01	QPSK	0	37.826	37.778	75.604
			1	37.781	37.743	75.524
			2	37.783	37.754	75.537
			3	37.768	37.746	75.514
		64QAM	0	37.824	37.775	75.599
			1	37.820	37.785	75.605
			2	37.811	37.796	75.607
			3	37.800	37.790	75.590
		256QAM	0	37.828	37.778	75.606
			1	37.821	37.797	75.618
			2	37.809	37.792	75.601
			3	37.802	37.781	75.583
	3630+3680.01	QPSK	0	37.815	37.824	75.639
			1	37.761	37.785	75.546
			2	37.784	37.770	75.554
			3	37.800	37.781	75.581
		64QAM	0	37.817	37.823	75.640
			1	37.816	37.814	75.630
			2	37.822	37.805	75.627
			3	37.829	37.813	75.642
		256QAM	0	37.812	37.832	75.644
			1	37.815	37.817	75.632
			2	37.826	37.810	75.636
			3	37.829	37.815	75.644



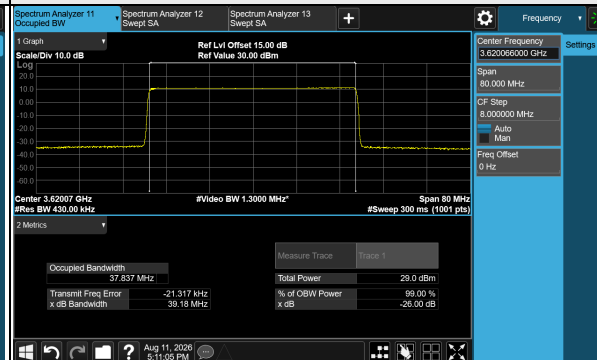
Spectrum Plot of Worst Value

40MHz+40MHz / Chain 3 / 256QAM

3570 MHz



3620.01 MHz



26dB Bandwidth

Bandwidth	Frequency (MHz)	Modulation	Chain	26dB Bandwidth (MHz)		
				CC0	CC1	Total
10M+20M	3555+3580.02	QPSK	0	9.107	18.91	28.017
			1	9.110	18.88	27.990
			2	9.118	18.88	27.998
			3	9.072	18.94	28.012
		64QAM	0	9.078	18.89	27.968
			1	9.055	18.91	27.965
			2	9.064	18.88	27.944
			3	9.073	18.87	27.943
		256QAM	0	9.098	18.91	28.008
			1	9.136	18.89	28.026
			2	9.133	18.91	28.043
			3	9.141	18.91	28.051
	3610.02+3635.04	QPSK	0	9.074	18.90	27.974
			1	9.092	18.88	27.972
			2	9.184	18.88	28.064
			3	9.065	18.91	27.975
		64QAM	0	9.048	18.90	27.948
			1	9.052	18.90	27.952
			2	9.073	18.86	27.933
			3	9.049	18.90	27.949
		256QAM	0	9.080	18.88	27.960
			1	9.095	18.89	27.985
			2	9.104	18.89	27.994
			3	9.113	18.91	28.023
	3664.98+3690	QPSK	0	9.081	18.93	28.011
			1	9.095	18.88	27.975
			2	9.075	18.90	27.975
			3	9.080	18.87	27.950
		64QAM	0	9.067	18.91	27.977
			1	9.081	18.91	27.991
			2	9.087	18.91	27.997
			3	9.071	18.92	27.991
		256QAM	0	9.091	18.90	27.991
			1	9.103	18.88	27.983
			2	9.060	18.91	27.970
			3	9.126	18.89	28.016

Bandwidth	Frequency (MHz)	Modulation	Chain	26dB Bandwidth (MHz)		
				CC0	CC1	Total
20M+20M	3560.01+3590.01	QPSK	0	18.90	18.93	37.83
			1	18.87	18.91	37.78
			2	18.89	18.88	37.77
			3	18.91	18.89	37.8
		64QAM	0	18.91	18.87	37.78
			1	18.90	18.87	37.77
			2	18.87	18.89	37.76
			3	18.89	18.89	37.78
		256QAM	0	18.90	18.87	37.77
			1	18.92	18.87	37.79
			2	18.94	18.87	37.81
			3	18.90	18.87	37.77
	3610.02+3640.02	QPSK	0	18.90	18.90	37.8
			1	18.92	18.92	37.84
			2	18.90	18.87	37.77
			3	18.89	18.88	37.77
		64QAM	0	18.89	18.94	37.83
			1	18.90	18.93	37.83
			2	18.91	18.89	37.8
			3	18.88	18.90	37.78
		256QAM	0	18.90	18.90	37.8
			1	18.88	18.90	37.78
			2	18.90	18.90	37.8
			3	18.87	18.96	37.83
	3660+3690	QPSK	0	18.93	18.91	37.84
			1	18.89	18.88	37.77
			2	18.91	18.88	37.79
			3	18.90	18.92	37.82
		64QAM	0	18.86	18.89	37.75
			1	18.91	18.84	37.75
			2	18.87	18.89	37.76
			3	18.88	18.88	37.76
		256QAM	0	18.86	18.89	37.75
			1	18.90	18.88	37.78
			2	18.88	18.86	37.74
			3	18.89	18.90	37.79

Bandwidth	Frequency (MHz)	Modulation	Chain	26dB Bandwidth (MHz)		
				CC0	CC1	Total
20M+40M	3560.01+3600	QPSK	0	18.91	39.17	58.08
			1	18.89	39.18	58.07
			2	18.92	39.17	58.09
			3	18.92	39.18	58.10
		64QAM	0	18.92	39.16	58.08
			1	18.88	39.16	58.04
			2	18.89	39.17	58.06
			3	18.89	39.16	58.05
		256QAM	0	18.90	39.16	58.06
			1	18.92	39.15	58.07
			2	18.89	39.16	58.05
			3	18.93	39.17	58.10
	3600+3639.99	QPSK	0	18.90	39.18	58.08
			1	18.89	39.16	58.05
			2	18.94	39.18	58.12
			3	18.89	39.15	58.04
		64QAM	0	18.90	39.17	58.07
			1	18.91	39.18	58.09
			2	18.88	39.16	58.04
			3	18.92	39.17	58.09
		256QAM	0	18.90	39.17	58.07
			1	18.92	39.16	58.08
			2	18.92	39.16	58.08
			3	18.92	39.17	58.09
	3639.99+3680.01	QPSK	0	18.89	39.17	58.06
			1	18.89	39.16	58.05
			2	18.89	39.17	58.06
			3	18.90	39.17	58.07
		64QAM	0	18.90	39.17	58.07
			1	18.89	39.16	58.05
			2	18.89	39.17	58.06
			3	18.89	39.16	58.05
		256QAM	0	18.90	39.16	58.06
			1	18.88	39.16	58.04
			2	18.90	39.16	58.06
			3	18.89	39.16	58.05

Bandwidth	Frequency (MHz)	Modulation	Chain	26dB Bandwidth (MHz)		
				CC0	CC1	Total
40M+40M	3570+3620.01	QPSK	0	39.17	39.18	78.35
			1	39.18	39.18	78.36
			2	39.17	39.18	78.35
			3	39.17	39.19	78.36
		64QAM	0	39.16	39.18	78.34
			1	39.15	39.17	78.32
			2	39.16	39.16	78.32
			3	39.17	39.17	78.34
		256QAM	0	39.17	39.19	78.36
			1	39.19	39.17	78.36
			2	39.17	39.17	78.34
			3	39.17	39.18	78.35
	3600+3650.01	QPSK	0	39.16	39.17	78.33
			1	39.18	39.17	78.35
			2	39.16	39.17	78.33
			3	39.16	39.18	78.34
		64QAM	0	39.15	39.16	78.31
			1	39.18	39.17	78.35
			2	39.16	39.17	78.33
			3	39.15	39.17	78.32
		256QAM	0	39.17	39.18	78.35
			1	39.20	39.17	78.37
			2	39.17	39.16	78.33
			3	39.17	39.16	78.33
	3630+3680.01	QPSK	0	39.18	39.17	78.35
			1	39.16	39.17	78.33
			2	39.17	39.16	78.33
			3	39.17	39.15	78.32
		64QAM	0	39.17	39.16	78.33
			1	39.16	39.17	78.33
			2	39.16	39.17	78.33
			3	39.16	39.17	78.33
		256QAM	0	39.17	39.19	78.36
			1	39.17	39.16	78.33
			2	39.17	39.16	78.33
			3	39.18	39.16	78.34

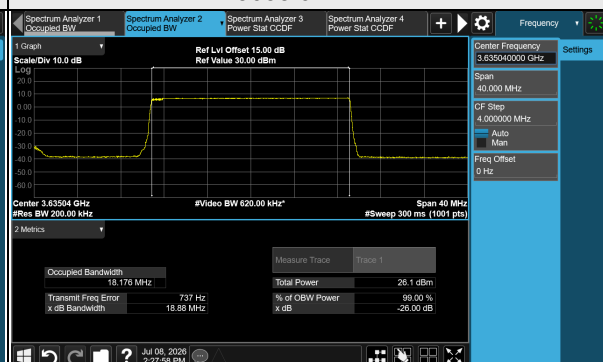
Spectrum Plot of Worst Value

10MHz+20MHz / Chain 2 / QPSK

3610.02 MHz

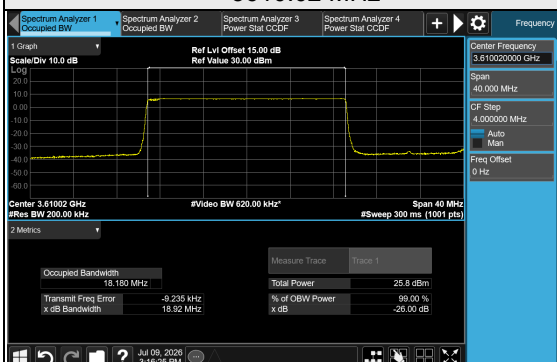


3635.04 MHz

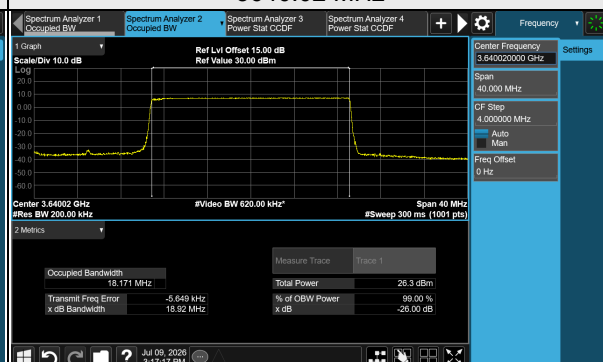


20MHz+20MHz / Chain 1 / QPSK

3610.02 MHz

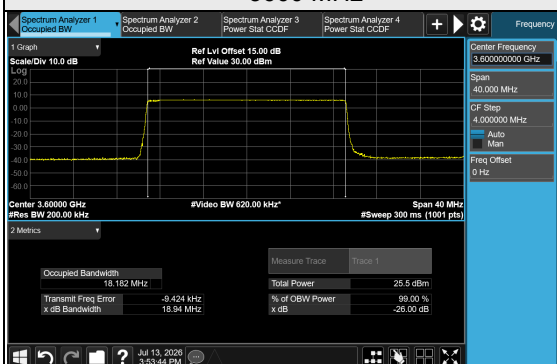


3640.02 MHz

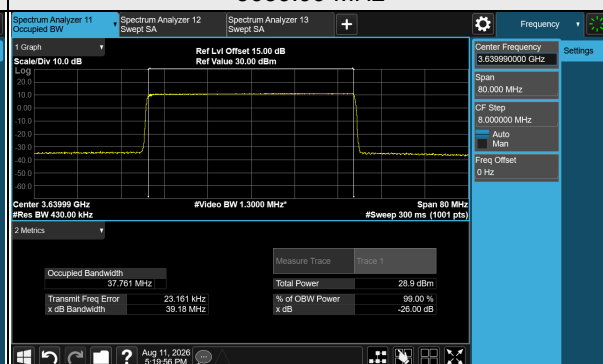


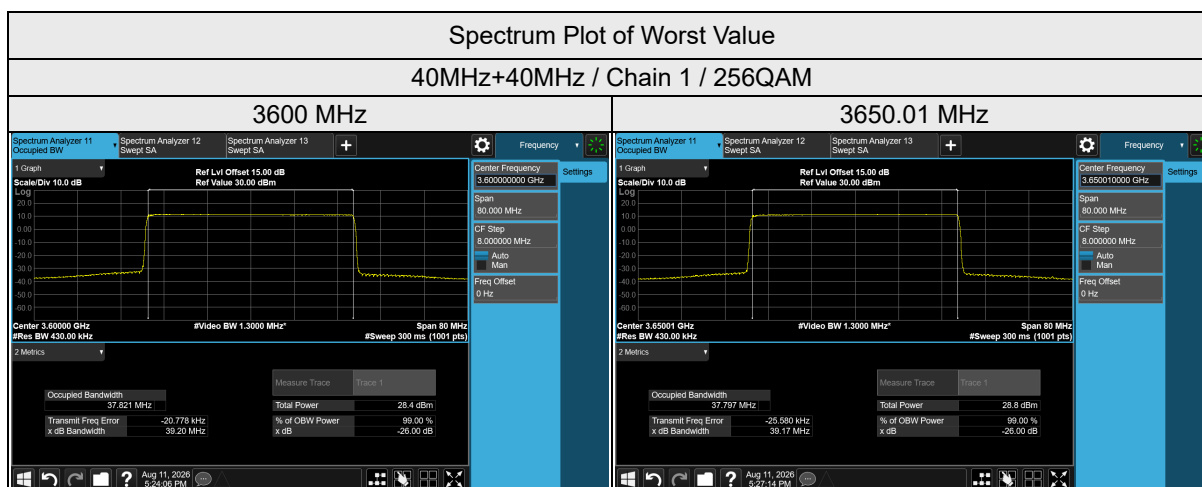
20MHz+40MHz / Chain 2 / QPSK

3600 MHz



3639.99 MHz



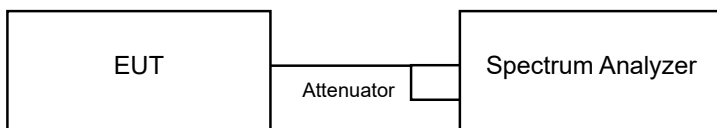


4.6 Peak to Average Ratio Measurement

4.6.1 Limits of Peak to Average Ratio Measurement

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.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.6.4 Test Procedures

- Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Record the maximum PAPR level associated with a probability of 0.1%.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.6.7 Test Results

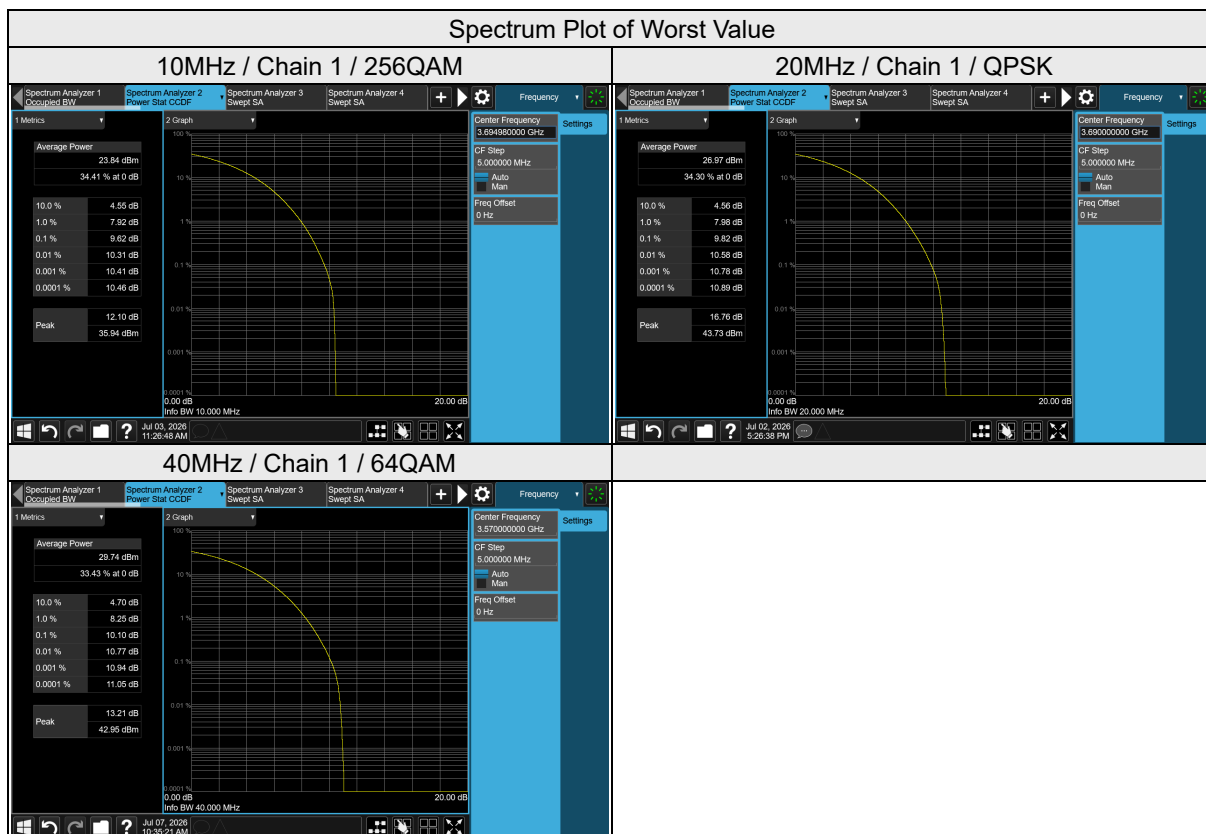
Input Power:	-48 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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Mode A

NR Band 48, Channel Bandwidth 10MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637000	3555.00	9.53	9.20	9.49	9.58	9.35	9.31
641666	3624.99	9.48	9.19	9.15	9.23	9.32	9.52
646332	3694.98	9.59	9.34	9.52	9.53	9.37	9.62
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637000	3555.00	9.56	9.35	9.26	9.34	9.58	9.37
641666	3624.99	9.30	9.16	9.07	9.17	9.61	9.39
646332	3694.98	9.14	9.32	9.43	9.60	9.36	9.41

NR Band 48, Channel Bandwidth 20MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637334	3560.01	9.26	9.53	8.84	9.24	9.21	9.64
641666	3624.99	9.68	9.40	9.60	9.18	9.06	9.05
646000	3690.00	9.19	9.02	9.13	9.82	9.75	9.57
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
637334	3560.01	9.45	9.59	9.75	8.88	9.43	9.25
641666	3624.99	9.12	9.15	9.13	9.41	9.63	9.55
646000	3690.00	9.52	9.26	9.10	9.23	9.21	9.43

NR Band 48, Channel Bandwidth 40MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)					
		Chain 0			Chain 1		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
638000	3570.00	9.80	9.94	9.78	9.47	10.10	9.25
641666	3624.99	9.15	9.35	9.60	9.28	9.59	9.39
645332	3679.98	9.56	9.31	9.00	9.62	9.32	8.88
Channel	Frequency (MHz)	Chain 2			Chain 3		
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
		QPSK	64QAM	256QAM	QPSK	64QAM	256QAM
638000	3570.00	8.97	9.26	9.28	8.88	9.43	9.25
641666	3624.99	9.03	10.07	9.32	9.41	9.63	9.55
645332	3679.98	9.10	9.42	9.40	9.23	9.21	9.43



Mode B

Bandwidth	Frequency (MHz)	Modulation	Chain	Peak to Average Ratio (dB)	
				CC0	CC1
10M+20M	3555+3580.02	QPSK	0	9.14	9.13
			1	9.30	8.88
			2	9.63	9.62
			3	9.20	9.03
		64QAM	0	9.40	9.14
			1	9.75	9.06
			2	9.07	9.28
			3	9.72	9.41
		256QAM	0	9.10	9.26
			1	9.39	9.33
			2	10.02	9.44
			3	9.81	9.20
	3610.02+3635.04	QPSK	0	9.31	9.29
			1	9.69	9.28
			2	9.24	9.47
			3	9.59	9.52
		64QAM	0	9.48	8.98
			1	9.95	9.26
			2	9.18	9.40
			3	9.25	8.87
		256QAM	0	9.44	9.62
			1	9.58	9.46
			2	9.34	9.58
			3	9.26	9.68
	3664.98+3690	QPSK	0	9.44	9.73
			1	9.74	9.43
			2	9.37	9.44
			3	9.57	9.20
		64QAM	0	9.39	8.85
			1	9.58	9.37
			2	8.95	9.47
			3	9.50	9.12
		256QAM	0	9.26	9.26
			1	9.52	9.82
			2	8.96	9.22
			3	9.46	9.12

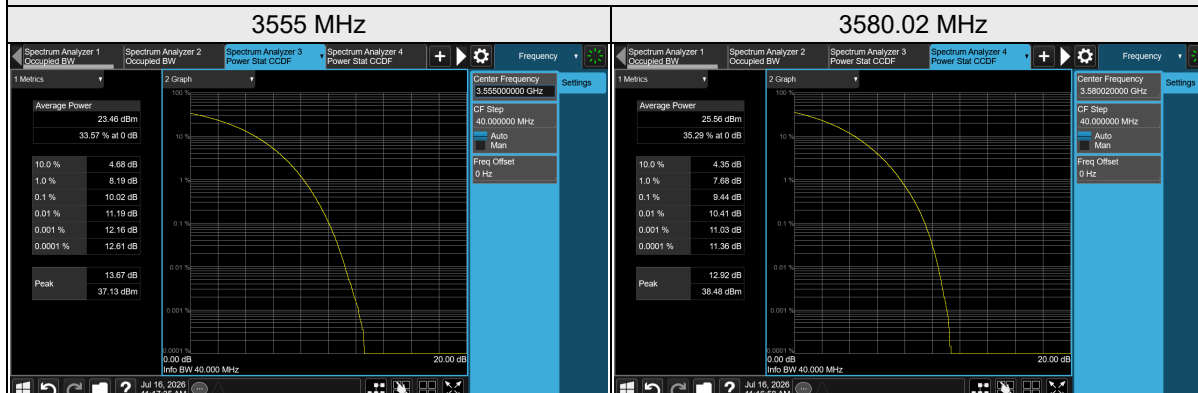
Bandwidth	Frequency (MHz)	Modulation	Chain	Peak to Average Ratio (dB)	
				CC0	CC1
20M+20M	3560.01+3590.01	QPSK	0	9.27	9.04
			1	9.08	9.24
			2	9.30	9.17
			3	9.29	9.56
		64QAM	0	8.95	9.19
			1	9.79	9.68
			2	9.57	9.96
			3	9.12	9.41
		256QAM	0	9.37	9.48
			1	8.65	8.94
			2	9.68	9.36
			3	9.23	9.60
	3610.02+3640.02	QPSK	0	9.84	9.65
			1	9.67	9.94
			2	9.22	9.54
			3	9.15	9.27
		64QAM	0	9.65	9.29
			1	9.14	9.12
			2	9.16	9.24
			3	9.00	9.71
		256QAM	0	9.12	9.35
			1	9.62	9.38
			2	9.43	8.94
			3	9.86	9.36
	3660+3690	QPSK	0	9.32	9.24
			1	9.22	9.39
			2	9.57	9.45
			3	9.17	9.85
		64QAM	0	9.07	9.90
			1	9.32	9.61
			2	9.55	9.09
			3	9.07	9.35
		256QAM	0	9.69	9.13
			1	9.51	8.94
			2	9.14	9.42
			3	9.44	9.38

Bandwidth	Frequency (MHz)	Modulation	Chain	Peak to Average Ratio (dB)	
				CC0	CC1
20M+40M	3560.01+3600	QPSK	0	9.46	9.28
			1	9.36	9.68
			2	9.13	8.93
			3	9.44	9.04
		64QAM	0	9.23	8.55
			1	9.73	9.48
			2	9.15	9.65
			3	8.99	9.33
		256QAM	0	9.19	9.84
			1	9.81	9.43
			2	9.56	9.57
			3	9.52	9.44
	3600+3639.99	QPSK	0	9.32	9.28
			1	9.22	9.22
			2	9.63	9.78
			3	9.55	9.38
		64QAM	0	9.22	9.17
			1	9.46	9.36
			2	9.82	9.30
			3	9.58	9.05
		256QAM	0	9.58	9.59
			1	9.53	9.43
			2	9.17	9.42
			3	9.30	9.59
	3639.99+3680.01	QPSK	0	9.26	9.52
			1	9.20	9.90
			2	9.21	9.50
			3	9.43	9.63
		64QAM	0	9.90	9.42
			1	9.48	9.50
			2	9.16	9.13
			3	9.52	9.10
		256QAM	0	9.68	9.07
			1	8.73	8.88
			2	9.14	9.51
			3	9.35	9.62

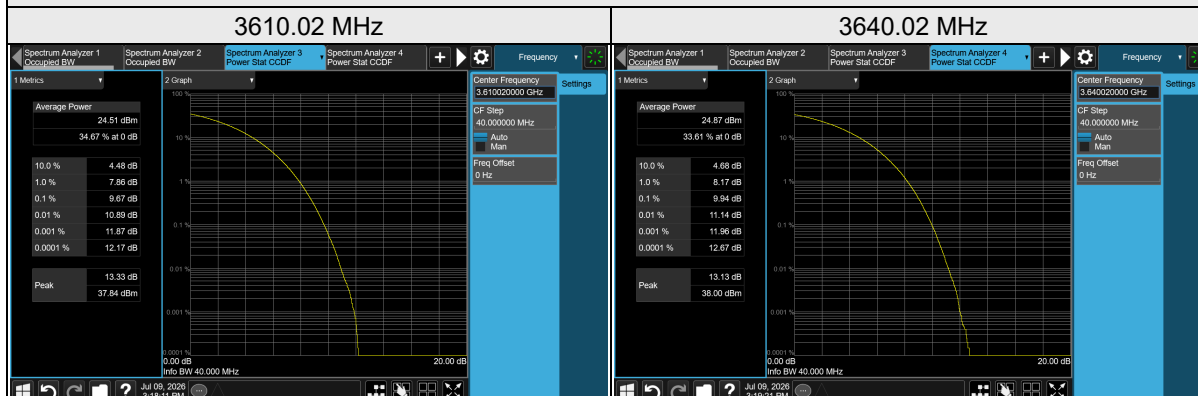
Bandwidth	Frequency (MHz)	Modulation	Chain	Peak to Average Ratio (dB)	
				CC0	CC1
40M+40M	3570+3620.01	QPSK	0	8.88	9.71
			1	9.82	9.12
			2	9.58	9.67
			3	9.07	9.55
		64QAM	0	9.26	8.89
			1	9.38	9.06
			2	9.22	9.52
			3	9.56	9.45
		256QAM	0	9.67	9.47
			1	9.68	9.24
			2	9.41	9.71
			3	8.98	9.34
	3600+3650.01	QPSK	0	9.51	8.86
			1	9.08	10.09
			2	9.41	9.05
			3	9.67	9.56
		64QAM	0	9.18	9.28
			1	9.96	9.43
			2	9.80	8.71
			3	9.37	9.39
		256QAM	0	9.58	9.39
			1	9.56	9.12
			2	9.53	9.39
			3	9.39	9.25
	3630+3680.01	QPSK	0	9.57	9.30
			1	9.24	9.21
			2	9.09	9.25
			3	9.67	9.27
		64QAM	0	8.92	10.52
			1	9.24	9.68
			2	9.78	9.43
			3	9.65	9.01
		256QAM	0	9.46	9.24
			1	9.42	9.36
			2	9.42	9.35
			3	9.37	9.48

Spectrum Plot of Worst Value

10MHz+20MHz / Chain 2 / 256QAM

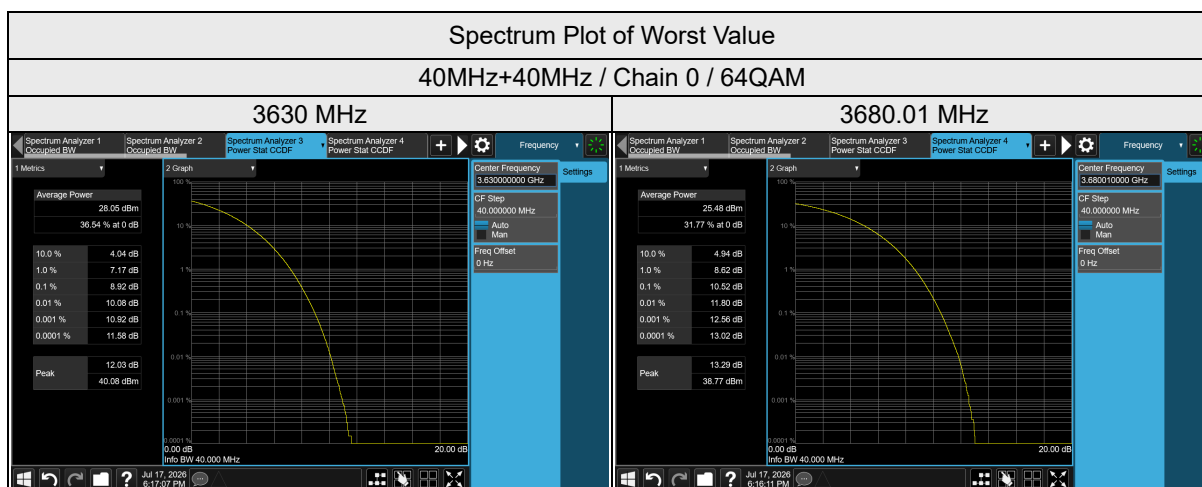


20MHz+20MHz / Chain 1 / QPSK



20MHz+40MHz / Chain 2 / QPSK



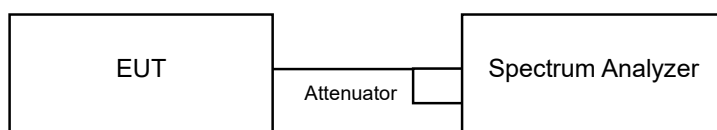


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

Power of any emissions outside the Fundamental	Limit
Within 0-10MHz above the Assigned Channel	-13 dBm/MHz
Within 0-10MHz below the Assigned Channel	
Greater than 10MHz above the Assigned Channel	-25 dBm/MHz
Greater than 10MHz below the Assigned Channel	
Power of any emission below 3530MHz	-40 dBm/MHz
Power of any emission above 3720MHz	

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.3 to get information of above instrument.

4.7.4 Test Procedure

- a. Measurement refer to ANSI C63.26 section 5.7.
- b. All measurements were done at 3 channels: low, middle and high operational frequency range.
- c. Measuring frequency range is from 9 kHz up to the tenth harmonic of the high test fundamental frequency or to 40 GHz, whichever is lower. 20 dB attenuation pad is connected with spectrum.
- d. The fundamental frequency above 1 GHz, the spectrum set RBW = 1 MHz, VBW = 3 MHz, Detector = Average.
- e. The fundamental frequency below 1 GHz, the spectrum set RBW $\geq$ 100 kHz, VBW $\geq$ 3 x RBW, Detector = Average.
- f. Measuring frequency band edge, narrow RBW (no less than 1% of the OBW) is used for conducted emission measurement.
- g. For the emissions measurement method, certain channel BW modes demonstrate compliance by integrating with the smaller RBW allowed by the rule.
For example: Where Reference RBW = 1 MHz and a smaller RBW = 100 kHz is used, worst-case integrated BW power = [Max Measured Value (dBm) with RBW = 100 kHz] + $10 \cdot \log(1000/100)$. To compensate for this integration before comparison to the value, the adjusted reference level offset was increase by 10 dB accordingly.
- h. The device has MIMO function, so the limit of conducted spurious emissions need to be measurement add $10\log(\text{Numbers}_{\text{ANT}})$ according to FCC KDB 662911 D01 guidance. Therefore, the $10\log(\text{Numbers}_{\text{ANT}})$ value is added to the spectrum Ref. level offset during testing. For example, the band edge and conducted spurious emission plots for the MIMO (4TX) WWAN bands show that a reference level offset of 21.02 dB is used (15 dB includes attenuation and cable loss + $10 \cdot \log(4)$ to account for MIMO WWAN bands reference level = 15 + 6.02 = 21.02 dB).
- i. Record the maximum power value test plot.

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

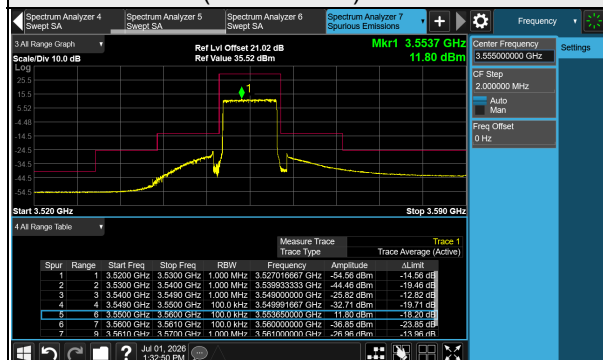
4.7.7 Test Results

Input Power:	-48 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang
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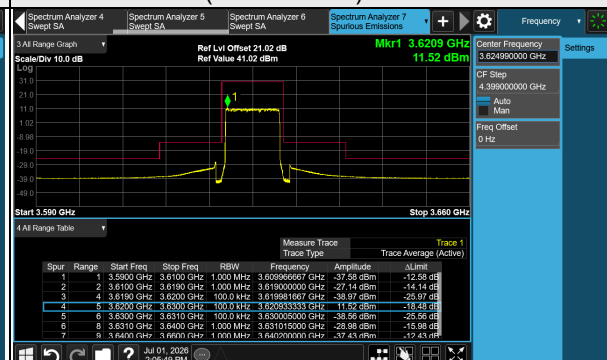
Mode A Chain 0

NR Band 48, Channel Bandwidth 10MHz

Channel 637000 (3555.00MHz)



Channel 641666 (3624.99MHz)



Channel 646332 (3694.98MHz)

