

Peak-to-average Ratio(PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	5.13	5.19	5.68	13
	RB50#0	5.33	5.16	5.04	13
10MHz 16QAM	RB1#0	6.14	5.94	6.64	13
	RB50#0	6.26	6.14	6	13
Result:					Pass

FCC §2.1049, §27.53:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.551	4.491	4.511	5.28	5.36	5.18
5MHz 16QAM	4.571	4.531	4.511	5.6	5.26	5.14
10MHz QPSK	8.942	8.902	8.902	9.76	9.68	9.68
10MHz 16QAM	8.942	8.902	8.902	9.84	9.84	9.68
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

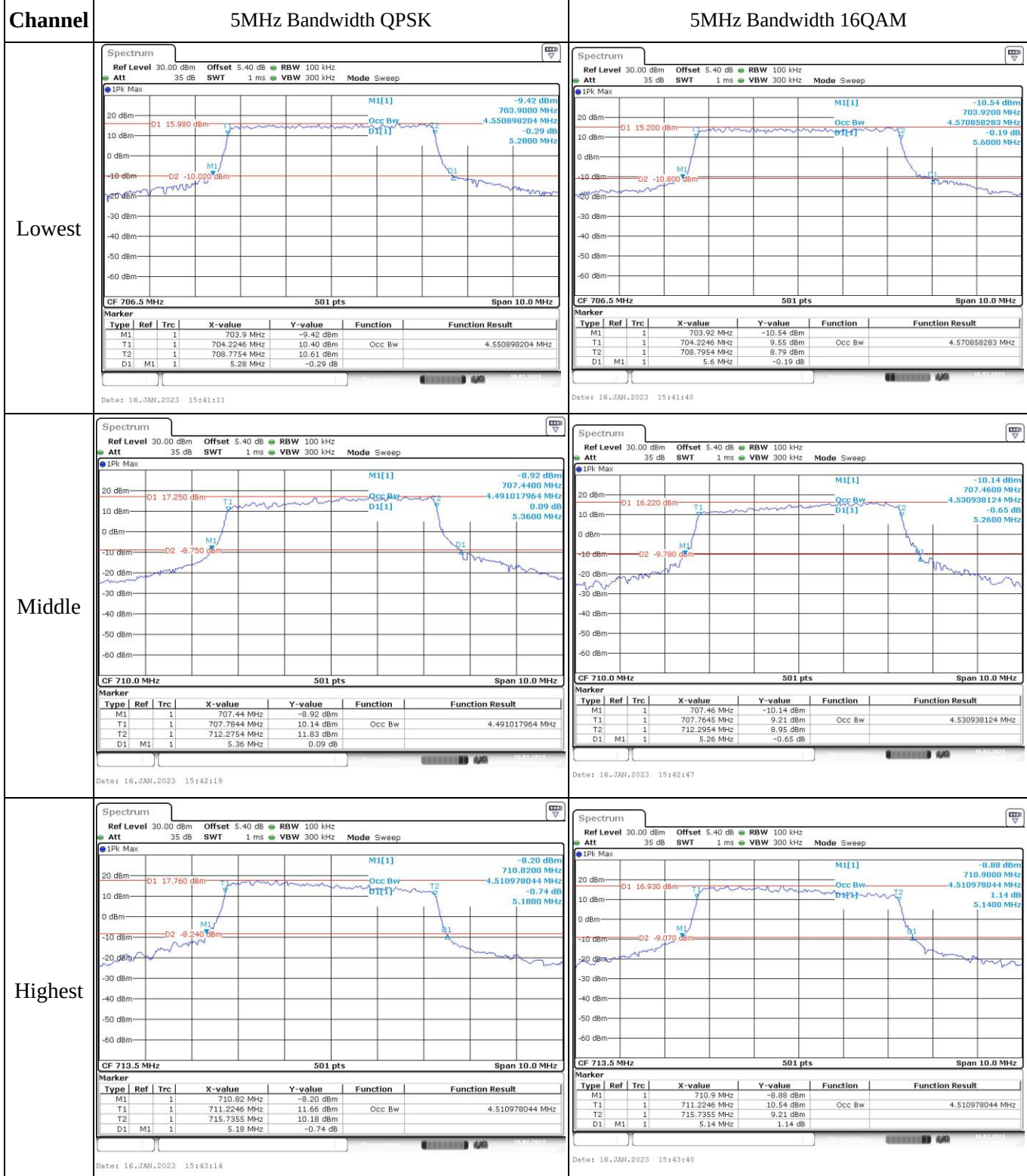
FCC §2.1055, §27.54: Frequency Stability

Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	704.552	704.00	715.440	716.00
	-20	7.4	704.512	704.00	715.478	716.00
	-10	7.4	704.519	704.00	715.419	716.00
	0	7.4	704.552	704.00	715.468	716.00
	10	7.4	704.500	704.00	715.436	716.00
	20	7.4	704.569	704.00	715.471	716.00
	30	7.4	704.534	704.00	715.439	716.00
	40	7.4	704.503	704.00	715.498	716.00
	50	7.4	704.555	704.00	715.424	716.00
Frequency Stability vs. Voltage	20	6.95	704.528	704.00	715.428	716.00
	20	8.4	704.571	704.00	715.421	716.00
					Result:	Pass

Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	704.583	704.00	715.403	716.00
	-20	7.4	704.532	704.00	715.462	716.00
	-10	7.4	704.531	704.00	715.425	716.00
	0	7.4	704.545	704.00	715.456	716.00
	10	7.4	704.549	704.00	715.480	716.00
	20	7.4	704.569	704.00	715.471	716.00
	30	7.4	704.597	704.00	715.473	716.00
	40	7.4	704.505	704.00	715.403	716.00
	50	7.4	704.540	704.00	715.420	716.00
Frequency Stability vs. Voltage	20	6.95	704.564	704.00	715.487	716.00
	20	8.4	704.577	704.00	715.495	716.00
					Result:	Pass

Test Plots(Note: The 5.4dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



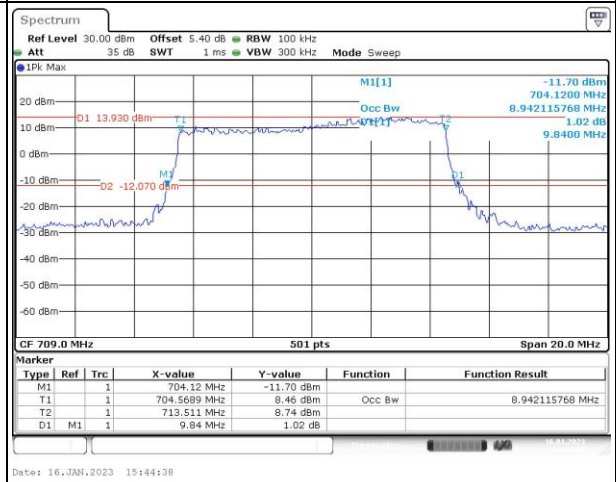
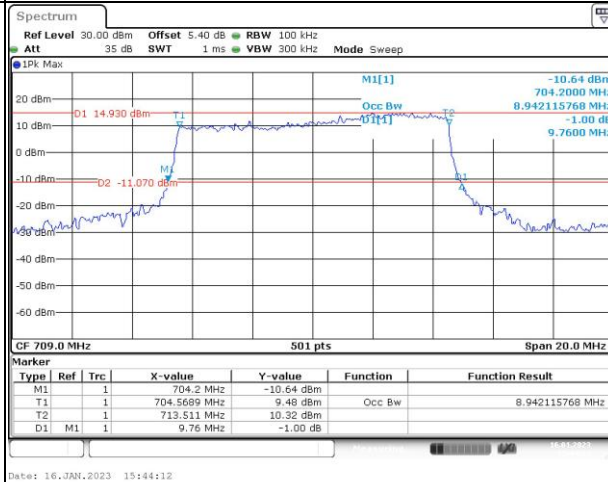
Occupied Bandwidth

Channel

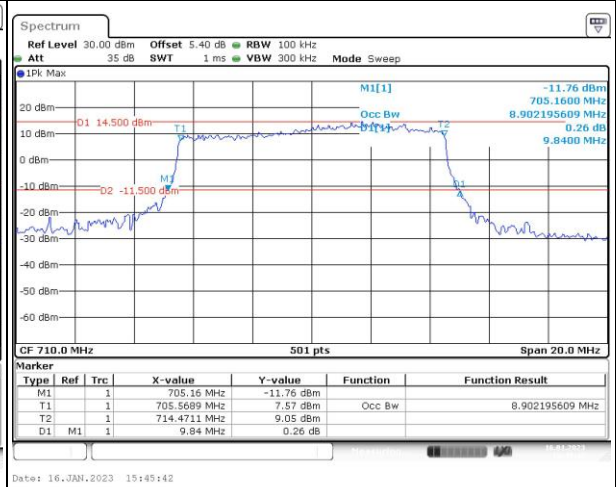
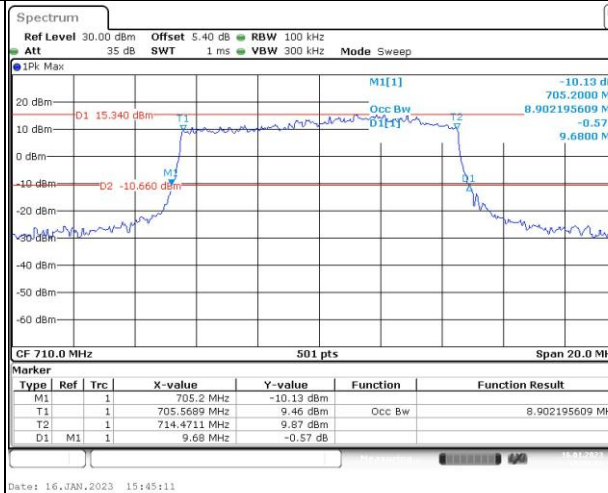
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

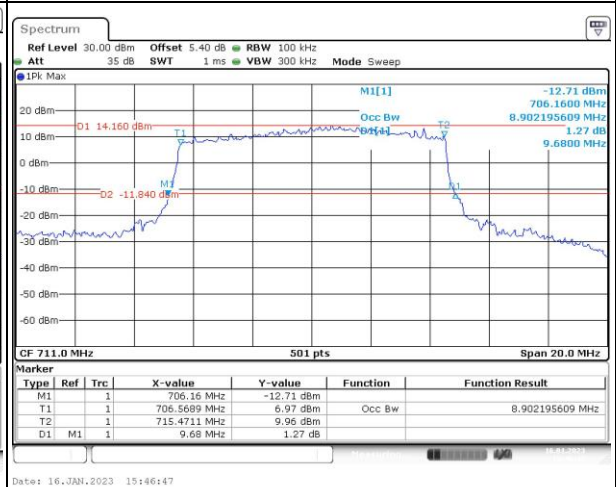
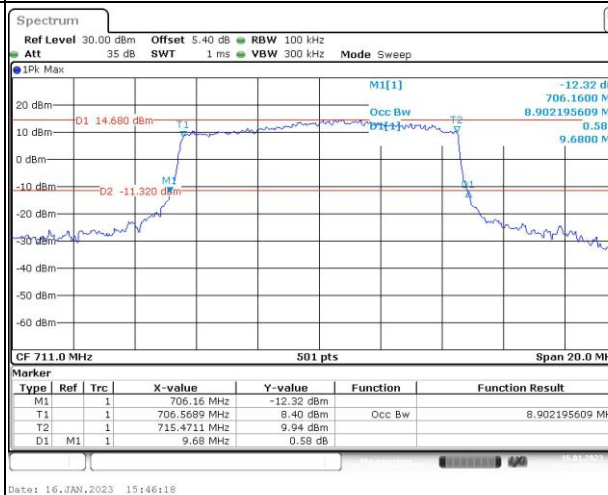
Lowest



Middle



Highest

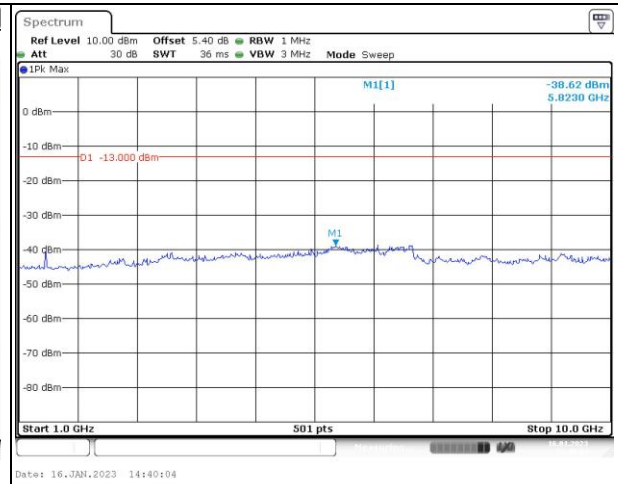
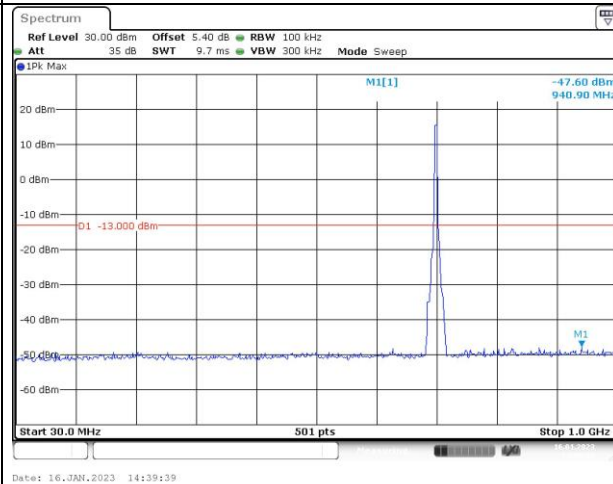


Spurious Emissions at Antenna Terminal

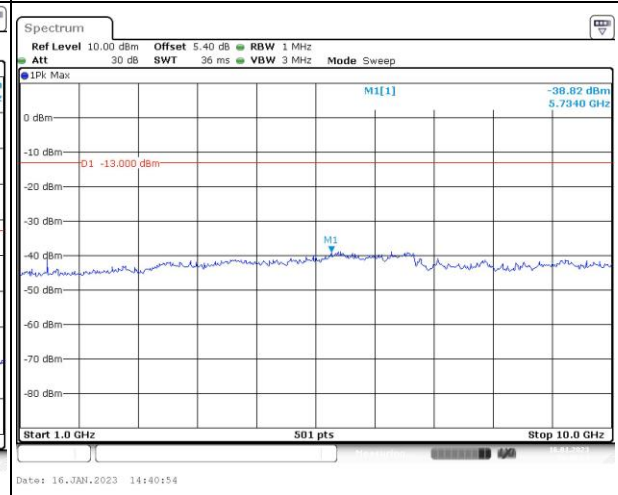
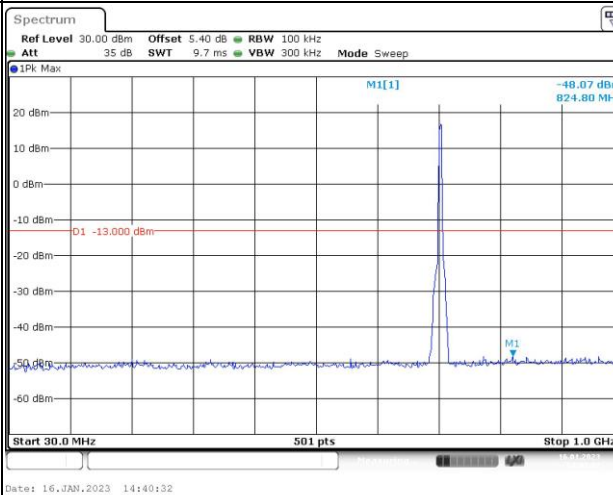
Channel

5MHz Bandwidth QPSK

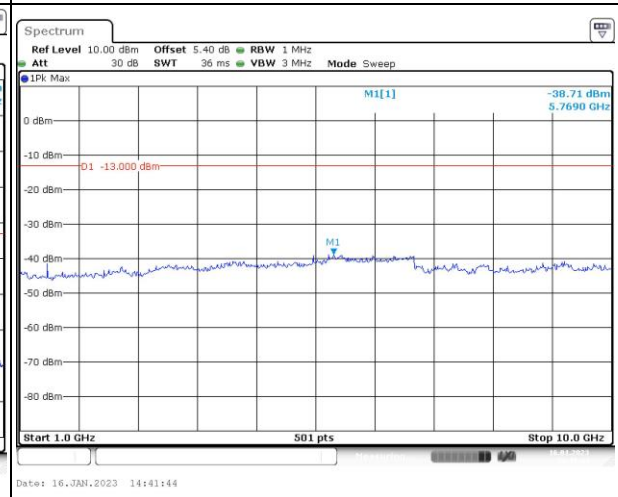
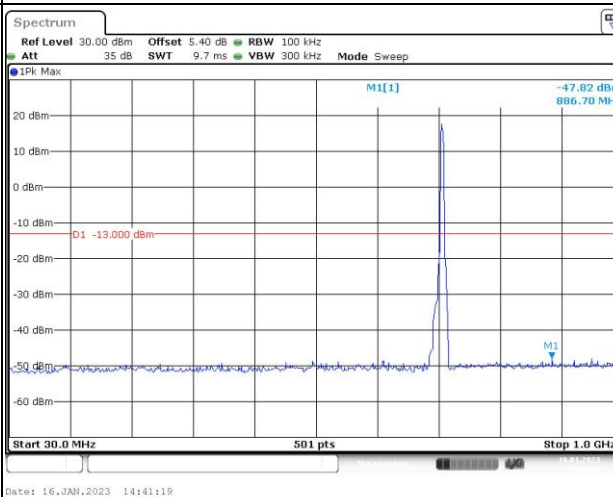
Lowest



Middle



Highest

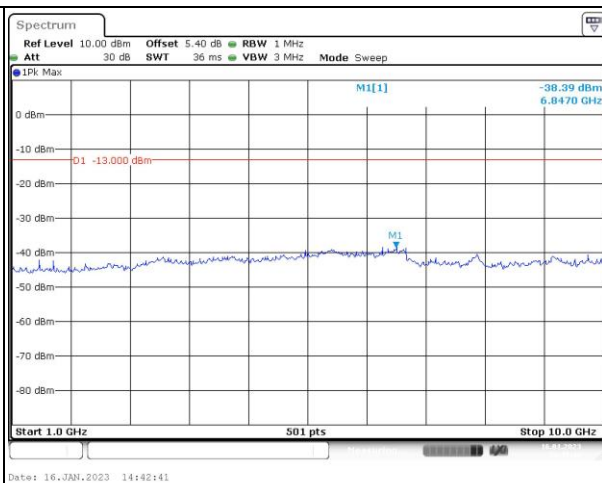
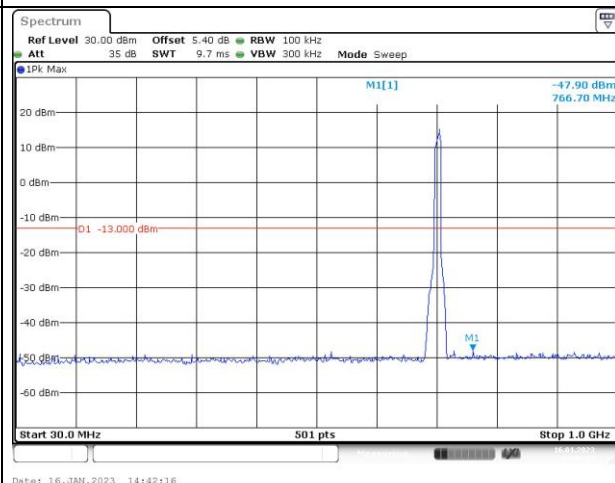


Spurious Emissions at Antenna Terminal

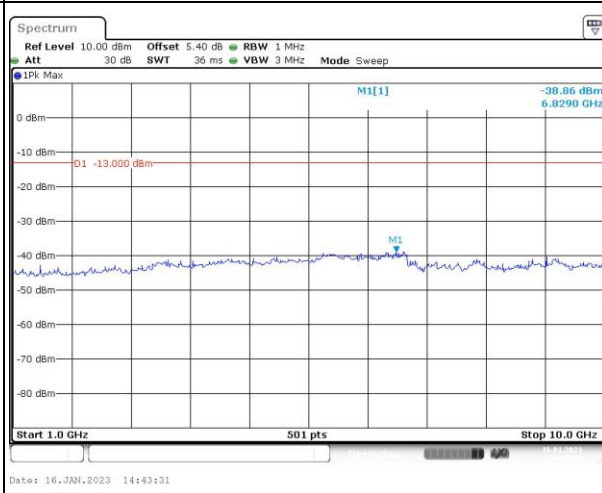
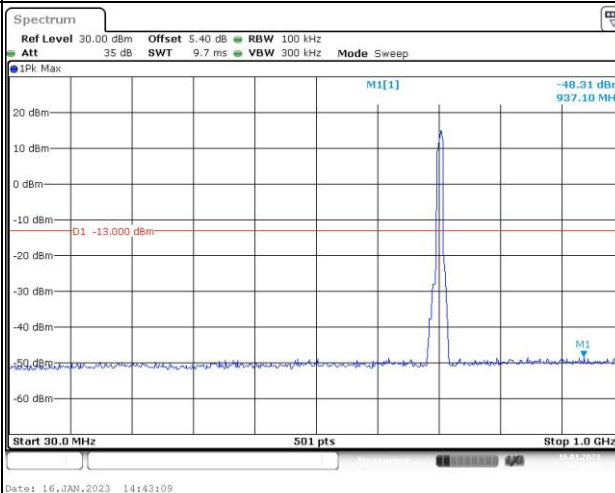
Channel

10MHz Bandwidth QPSK

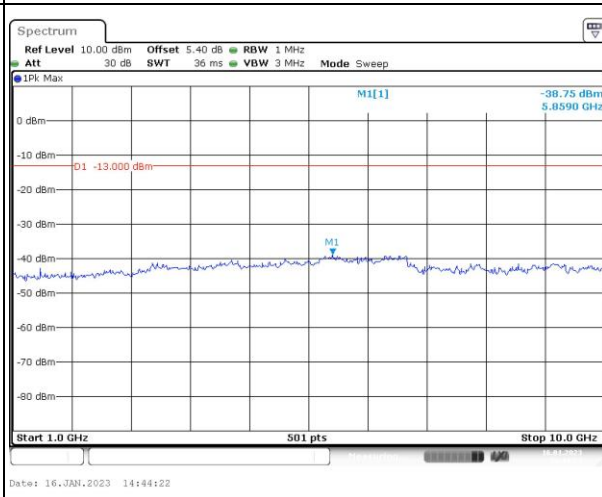
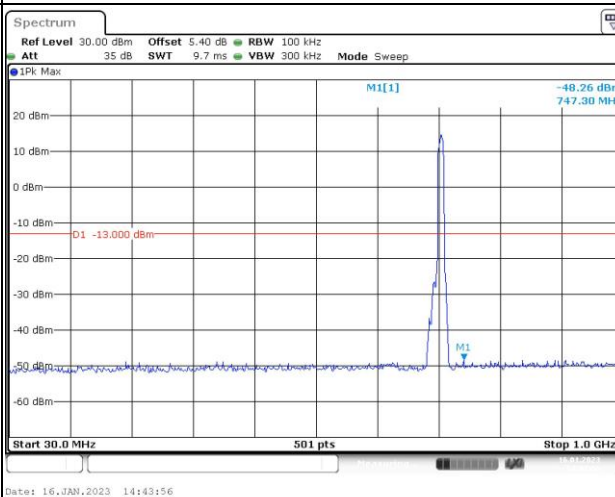
Lowest



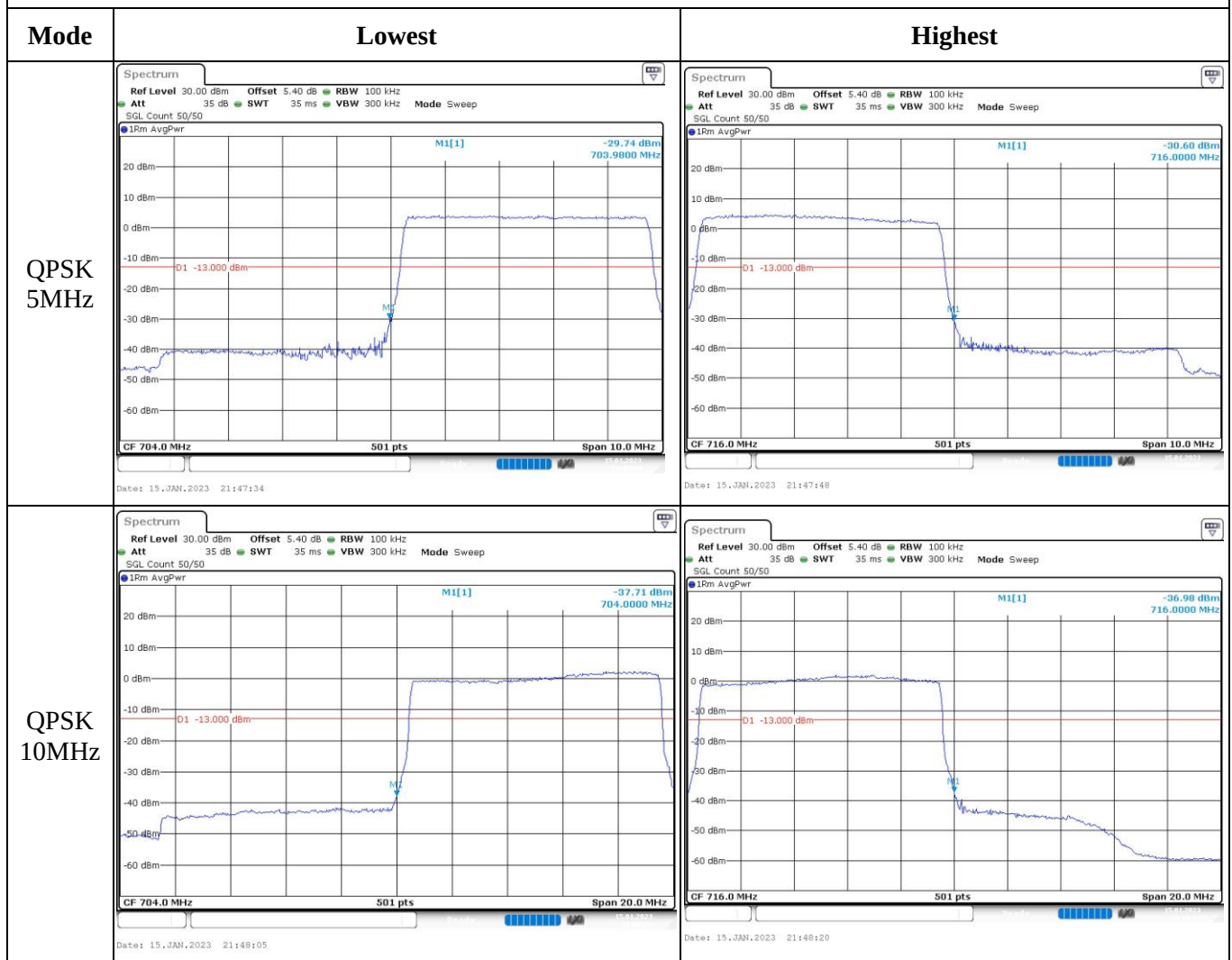
Middle



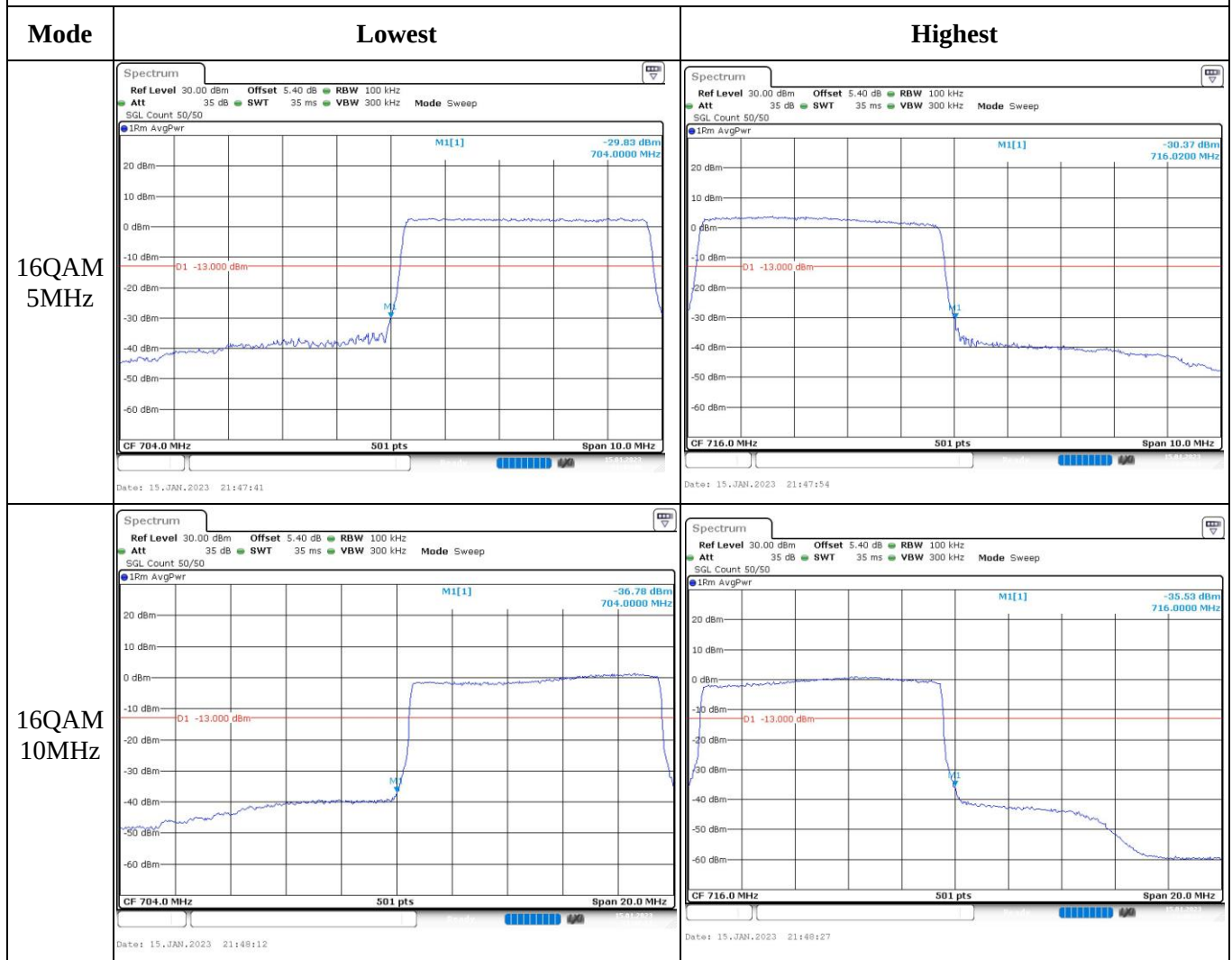
Highest



Out of band emission, Band Edge



Out of band emission, Band Edge



4.12 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	1XBG-2	Test Date:	2023/1/13~2023/4/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	18.3~24.6	Relative Humidity: (%)	42~58	ATM Pressure: (kPa)	100.6~102.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
R&S	Spectrum Analyzer	FSU26	200256	2022/7/15	2023/7/14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-04-06	2023-04-05
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2498.5	2593	2687.5
10MHz	2501	2593	2685
15MHz	2503.5	2593	2682.5
20MHz	2506	2593	2680

Test Data:**FCC §2.1046; § 27.50(h)(2)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.14	22.19	22.22	26.01	33
	RB1#13	22.09	22.28	22.61		
	RB1#24	22.14	22.35	22.16		
	RB15#0	20.92	21.48	21.61		
	RB15#10	21	21.47	21.59		
	RB25#0	20.92	21.44	21.57		
5MHz 16QAM	RB1#0	21.35	21.17	22.13	25.53	33
	RB1#13	21.27	21.12	21.68		
	RB1#24	21.48	21.3	21.58		
	RB15#0	20.31	20.71	20.89		
	RB15#10	20.2	20.69	20.88		
	RB25#0	20.37	20.44	20.88		
10MHz QPSK	RB1#0	22.19	22.54	22.31	26.1	33
	RB1#25	22.23	22.54	22.61		
	RB1#49	22.19	22.6	22.7		
	RB25#0	21.15	21.55	21.75		
	RB25#25	21.23	21.63	21.78		
	RB50#0	21.17	21.52	21.67		
10MHz 16QAM	RB1#0	21.7	22.07	21.78	25.49	33
	RB1#25	21.35	22.09	21.8		
	RB1#49	21.36	22.03	21.8		
	RB25#0	20.39	20.78	20.93		
	RB25#25	20.33	20.8	20.94		
	RB50#0	20.42	20.69	20.92		
15MHz QPSK	RB1#0	22.09	22.16	22.4	25.95	33
	RB1#38	22.1	22.31	22.55		
	RB1#74	22.21	22.26	22.45		
	RB36#0	21.16	21.58	21.78		
	RB36#39	21.26	21.59	21.81		
	RB75#0	21.14	21.57	21.79		
15MHz 16QAM	RB1#0	21.61	21.85	21.88	25.28	33
	RB1#38	21.37	21.73	21.82		
	RB1#74	21.8	21.75	21.84		
	RB36#0	20.36	20.63	20.85		
	RB36#39	20.46	20.64	20.88		
	RB75#0	20.36	20.72	20.97		
20MHz QPSK	RB1#0	22.03	22.5	22.55	26.21	33

	RB1#50	22.08	22.53	22.55		
	RB1#99	22.11	22.57	22.81		
	RB50#0	21.06	21.35	21.6		
	RB50#50	21.15	21.52	21.7		
	RB100#0	21.06	21.35	21.54		
20MHz 16QAM	RB1#0	20.77	22.02	21.99	25.5	33
	RB1#50	20.89	22.08	22.1		
	RB1#99	20.87	22.08	21.96		
	RB50#0	20.22	20.63	20.92		
	RB50#50	20.31	20.67	20.94		
	RB100#0	20.12	20.61	20.78		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + G _T (dBi)						
					Result:	Pass

Peak-to-average Ratio(PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	8.99	8.52	8.26	13
	RB100#0	8.2	8.03	7.97	13
20MHz 16QAM	RB1#0	9.48	9.3	8.87	13
	RB100#0	9.74	9.48	9.1	13
Result:					Pass

FCC §2.1049, §27.53:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.511	4.511	4.531	5.14	4.96	5.4
5MHz 16QAM	4.511	4.511	4.531	5.2	5.08	5.4
10MHz QPSK	8.982	8.942	8.982	9.88	9.84	9.84
10MHz 16QAM	8.942	8.942	8.942	9.8	10.12	9.88
15MHz QPSK	13.473	13.533	13.593	15.12	15.96	16.74
15MHz 16QAM	13.593	13.533	13.533	15.84	15.3	15.54
20MHz QPSK	17.964	17.964	18.044	19.84	20.32	19.76
20MHz 16QAM	17.964	17.964	17.884	20.4	20.08	19.6
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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FCC §2.1051, §27.53:Out of band emission, Band Edge

Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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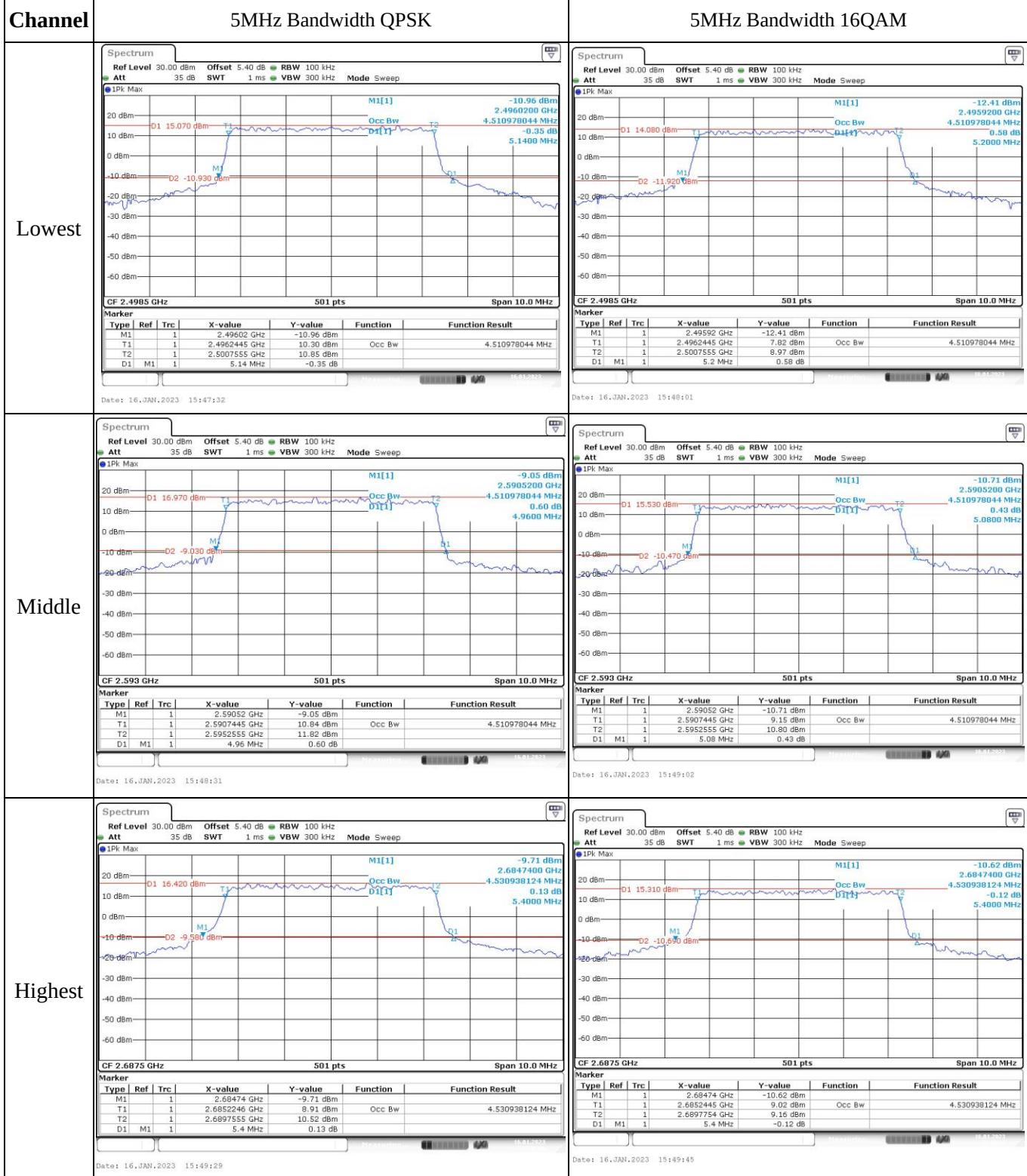
FCC §2.1055, §27.54: Frequency Stability

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	2497.098	2496.00	2689.057	2690
	-20	7.4	2497.087	2496.00	2689.077	2690
	-10	7.4	2497.053	2496.00	2689.016	2690
	0	7.4	2497.039	2496.00	2689.077	2690
	10	7.4	2497.005	2496.00	2689.006	2690
	20	7.4	2497.059	2496.00	2689.022	2690
	30	7.4	2497.005	2496.00	2689.009	2690
	40	7.4	2497.067	2496.00	2689.077	2690
Frequency Stability vs. Voltage	50	7.4	2497.071	2496.00	2689.098	2690
	20	6.95	2497.072	2496.00	2689.038	2690
	20	8.4	2497.036	2496.00	2689.052	2690
Result:					Pass	

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	2497.049	2496.00	2688.983	2690
	-20	7.4	2497.000	2496.00	2688.957	2690
	-10	7.4	2497.001	2496.00	2688.909	2690
	0	7.4	2497.003	2496.00	2688.921	2690
	10	7.4	2497.037	2496.00	2688.960	2690
	20	7.4	2497.037	2496.00	2688.942	2690
	30	7.4	2497.031	2496.00	2688.980	2690
	40	7.4	2497.030	2496.00	2688.980	2690
Frequency Stability vs. Voltage	50	7.4	2497.027	2496.00	2688.989	2690
	20	6.95	2497.042	2496.00	2688.901	2690
	20	8.4	2497.085	2496.00	2688.930	2690
Result:					Pass	

Test Plots(Note: The 5.4dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



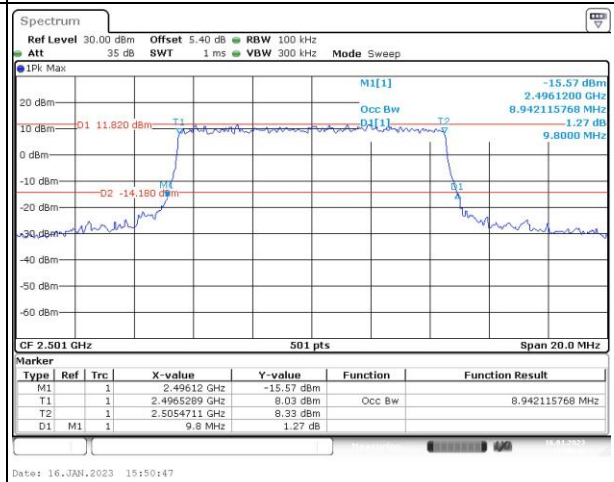
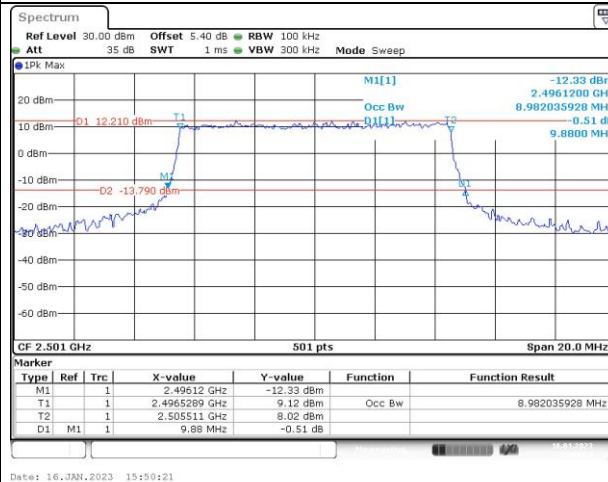
Occupied Bandwidth

Channel

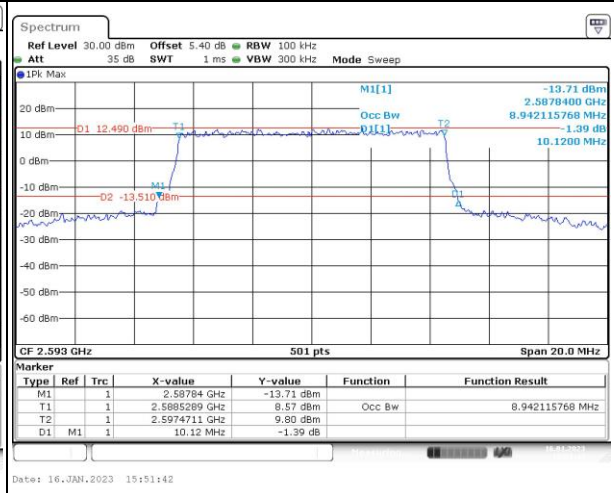
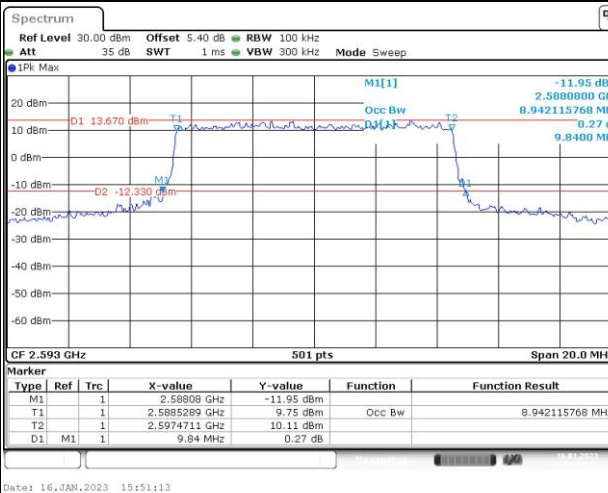
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

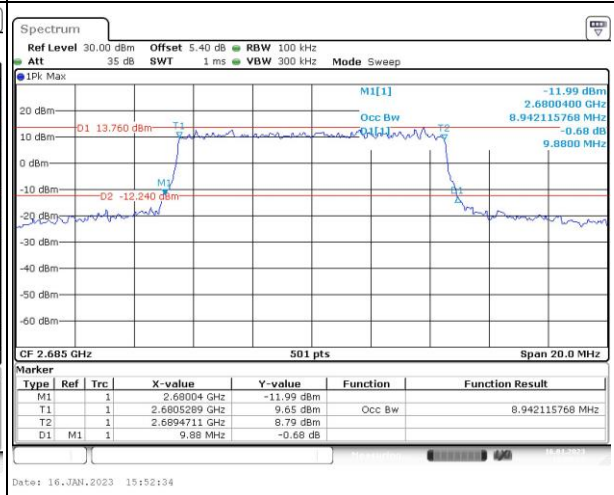
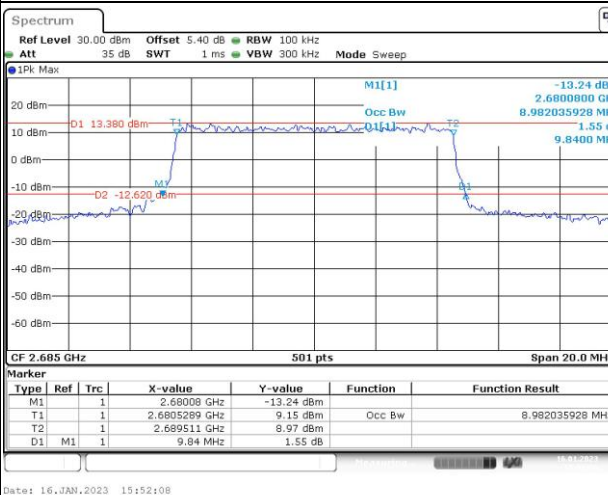
Lowest



Middle



Highest



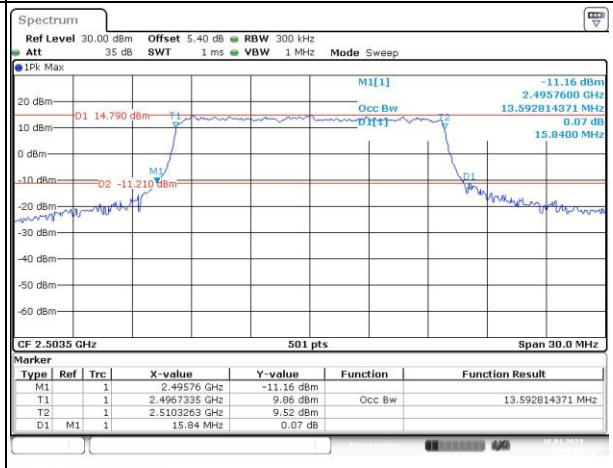
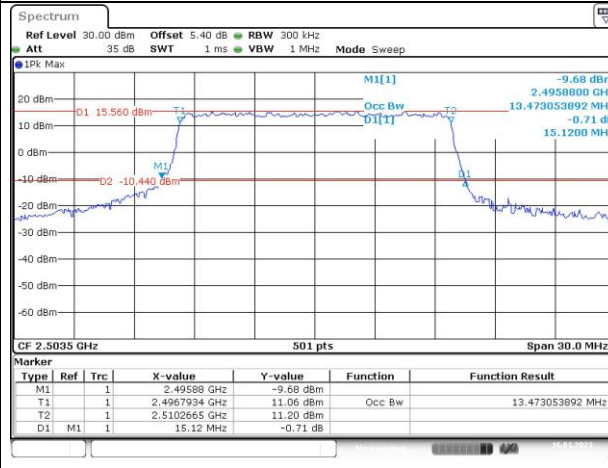
Occupied Bandwidth

Channel

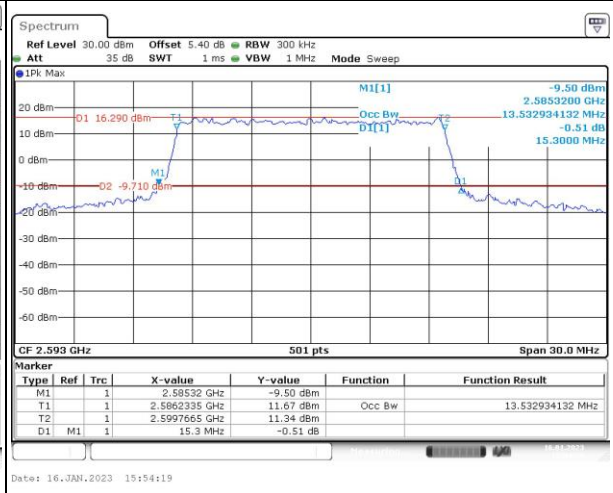
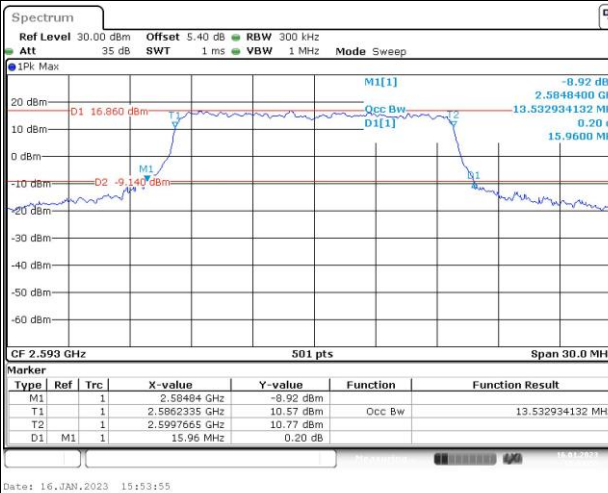
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

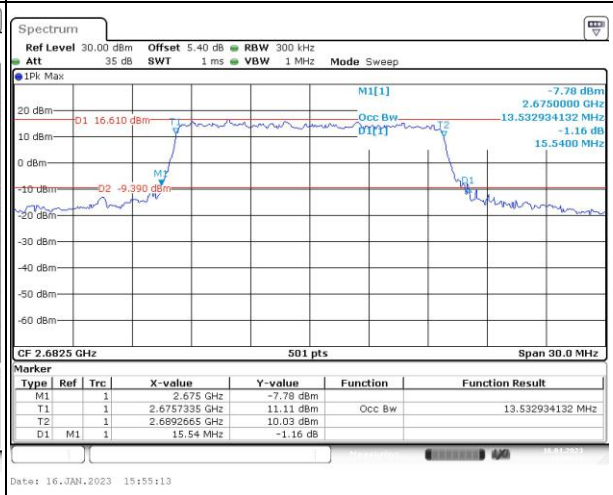
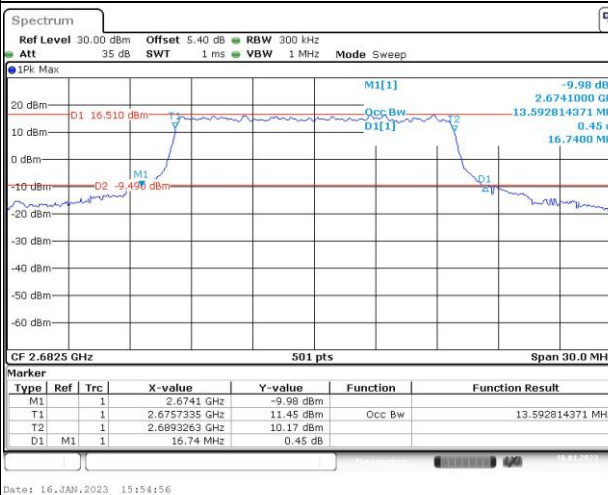
Lowest



Middle



Highest



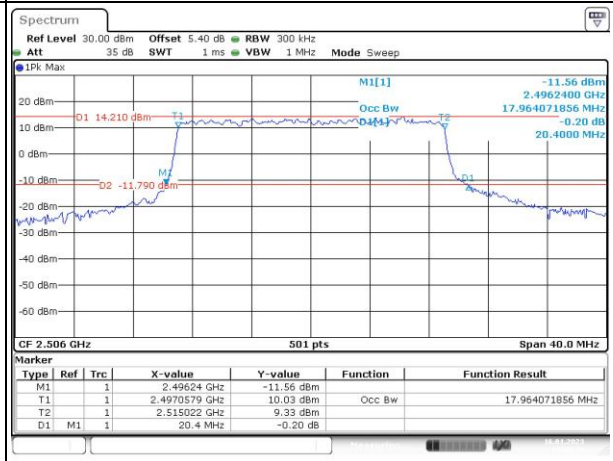
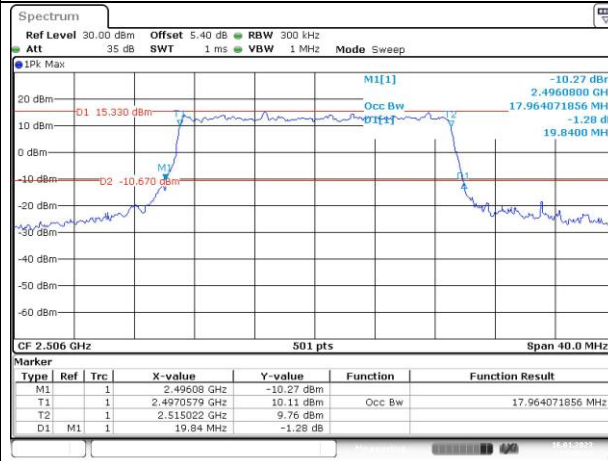
Occupied Bandwidth

Channel

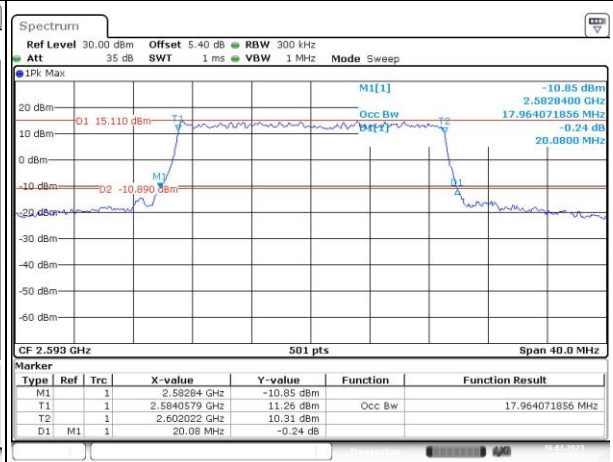
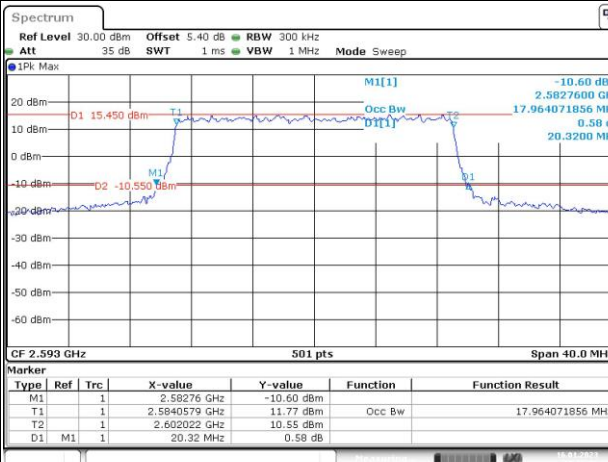
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

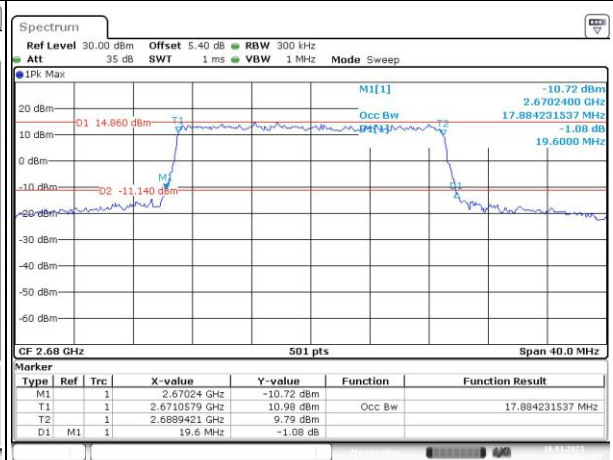
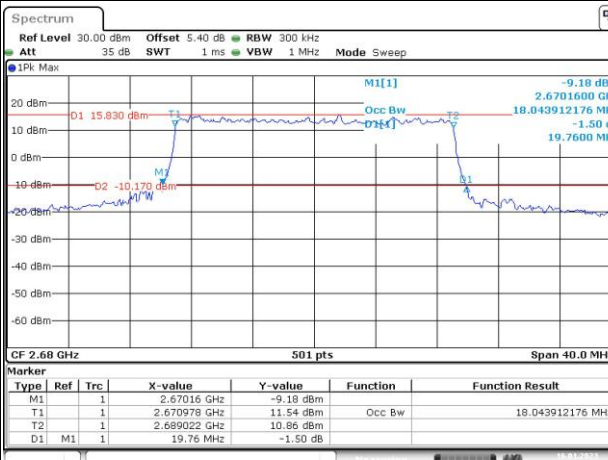
Lowest



Middle



Highest

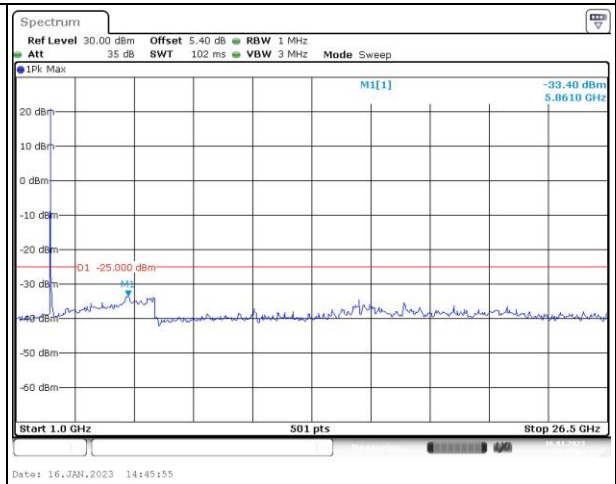
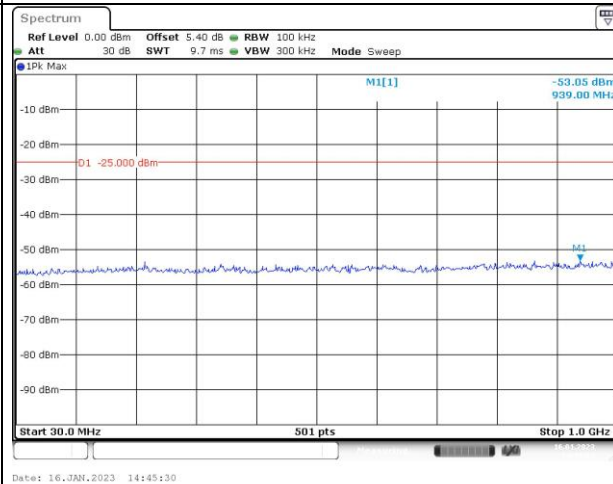


Spurious Emissions at Antenna Terminal

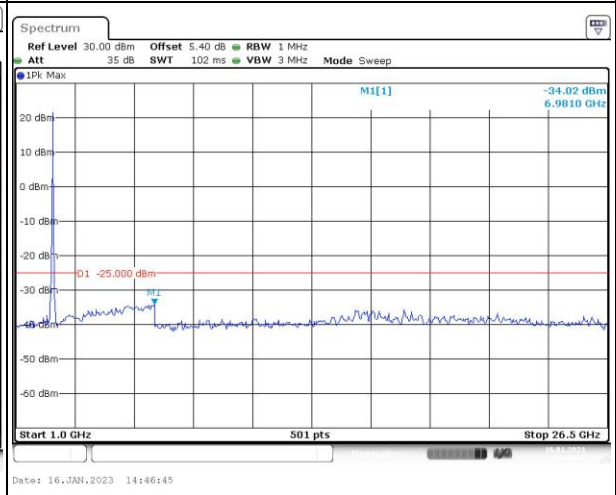
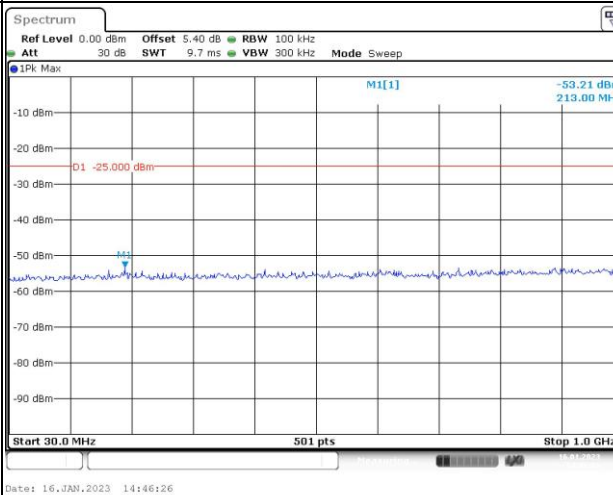
Channel

5MHz Bandwidth QPSK

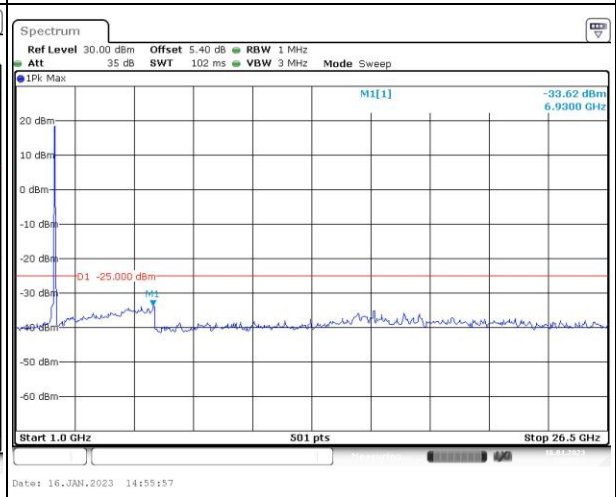
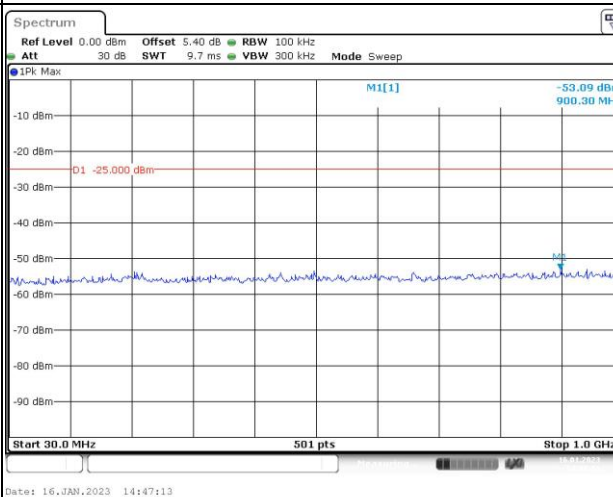
Lowest



Middle



Highest

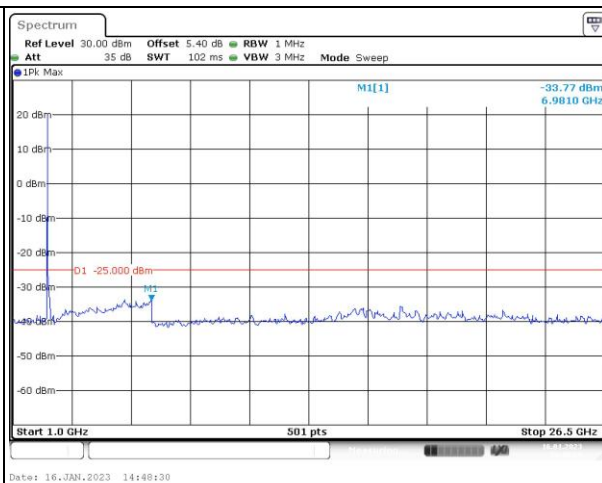
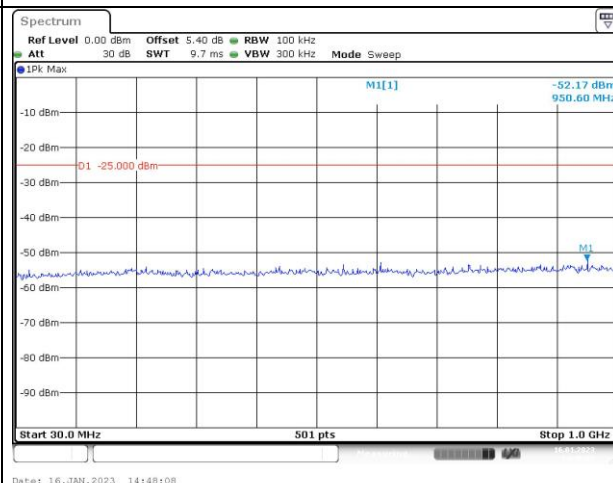


Spurious Emissions at Antenna Terminal

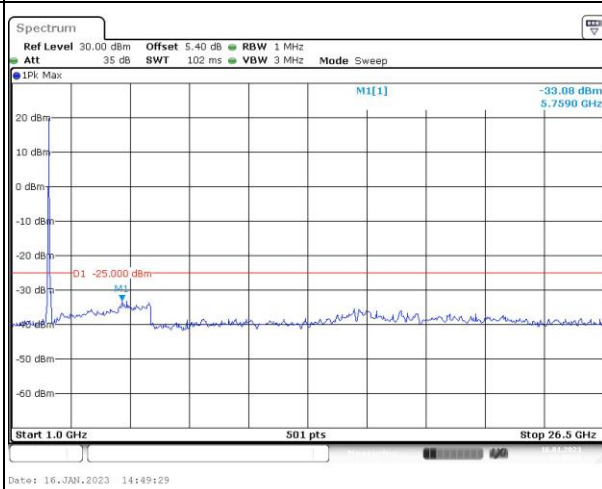
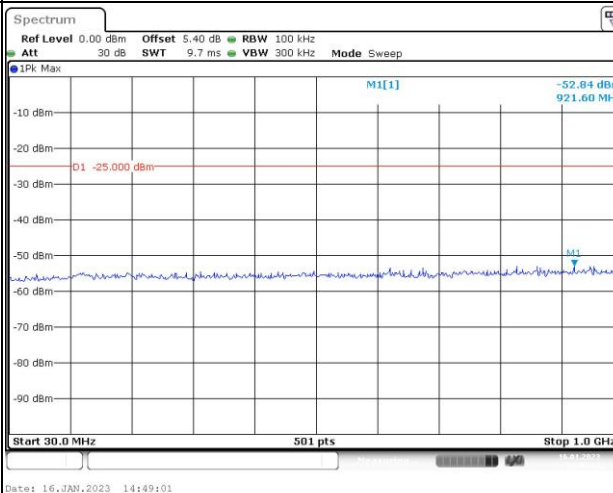
Channel

10MHz Bandwidth QPSK

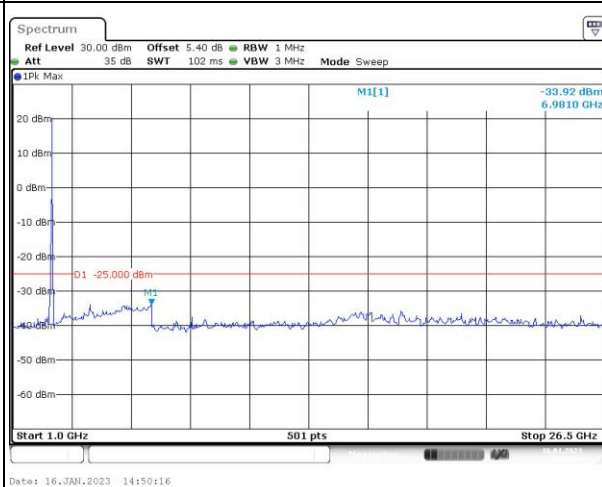
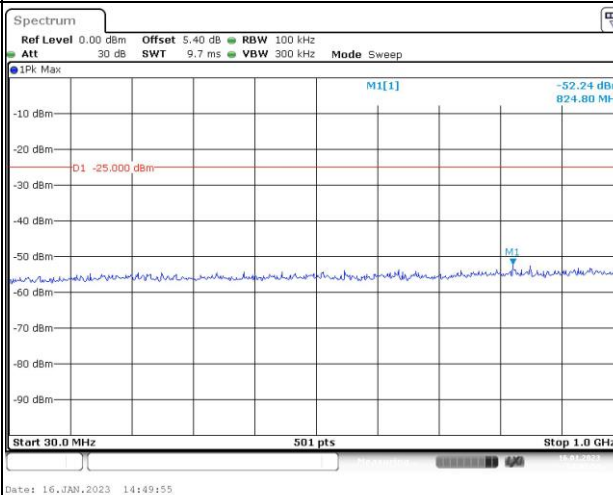
Lowest



Middle



Highest

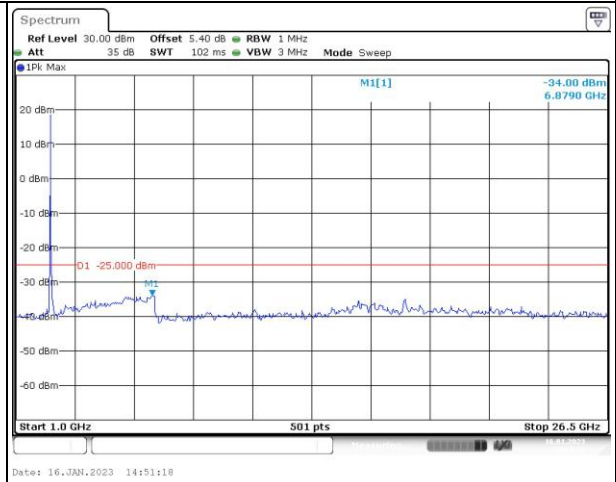
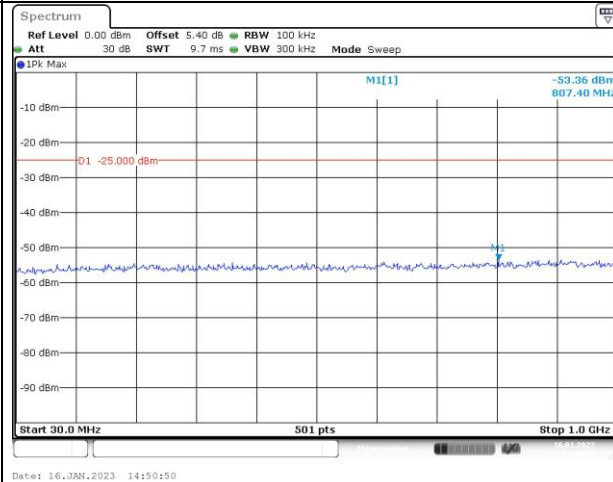


Spurious Emissions at Antenna Terminal

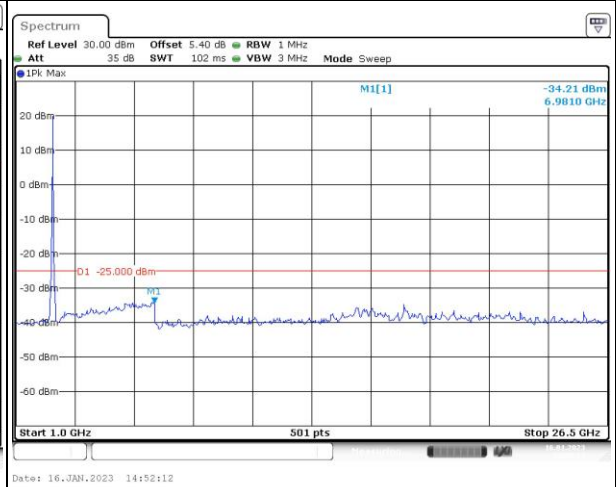
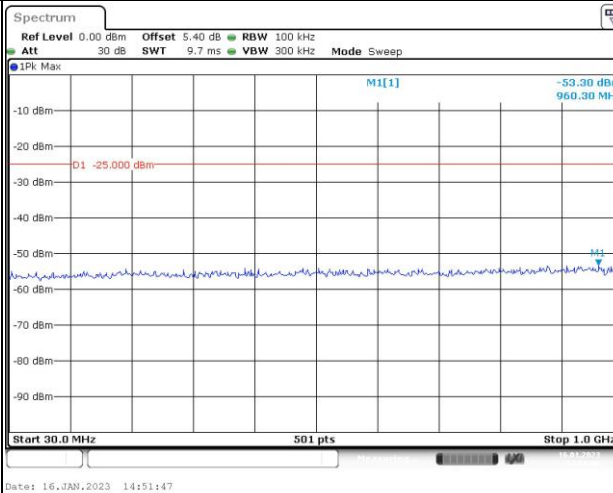
Channel

15MHz Bandwidth QPSK

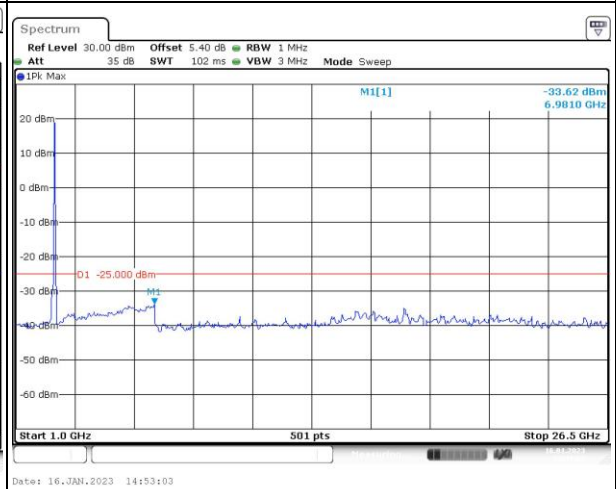
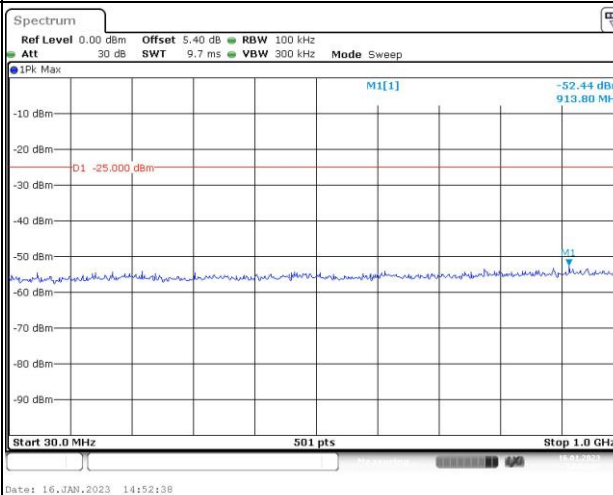
Lowest



Middle



Highest

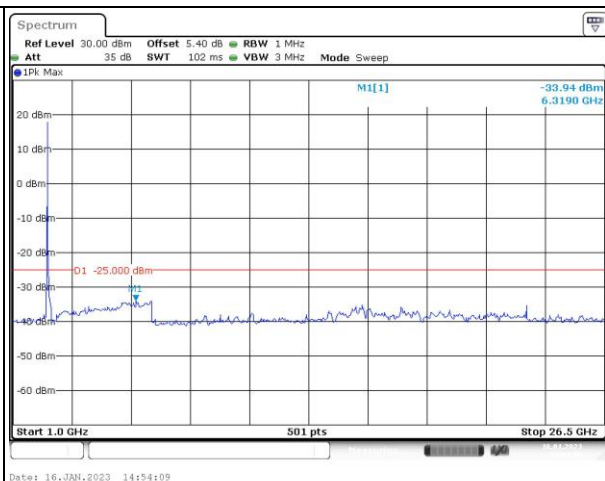
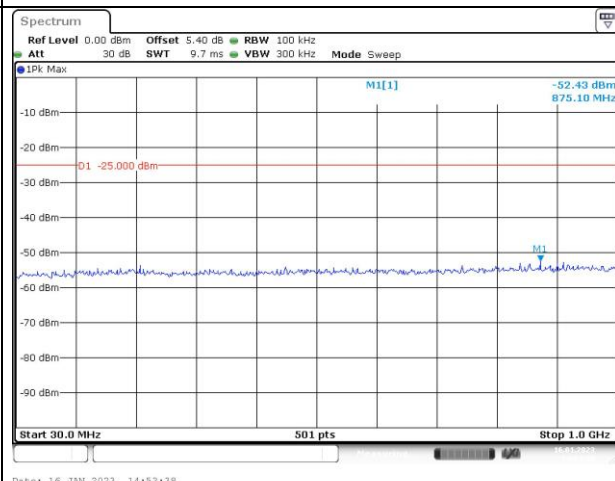


Spurious Emissions at Antenna Terminal

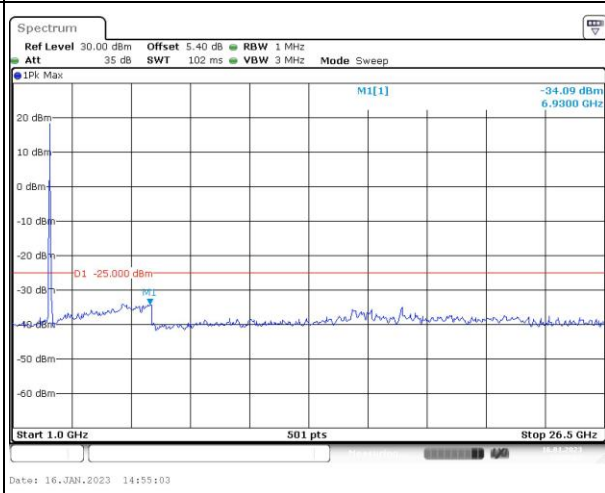
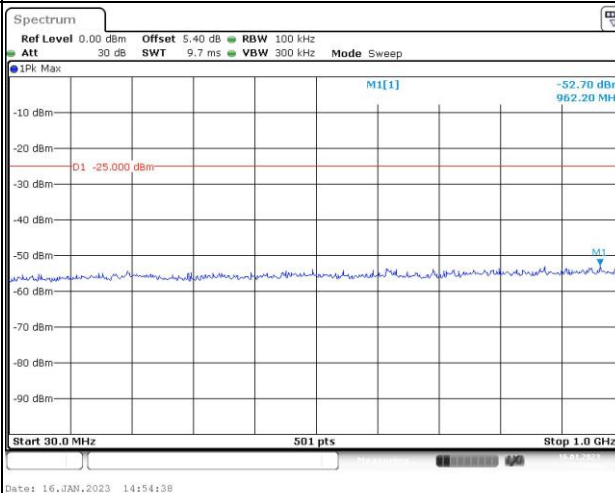
Channel

20MHz Bandwidth QPSK

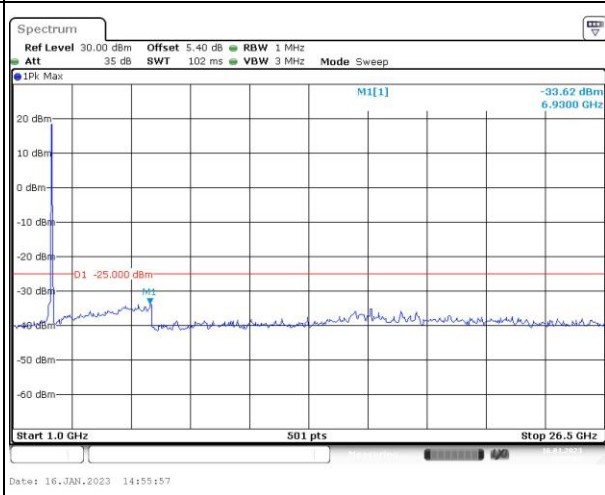
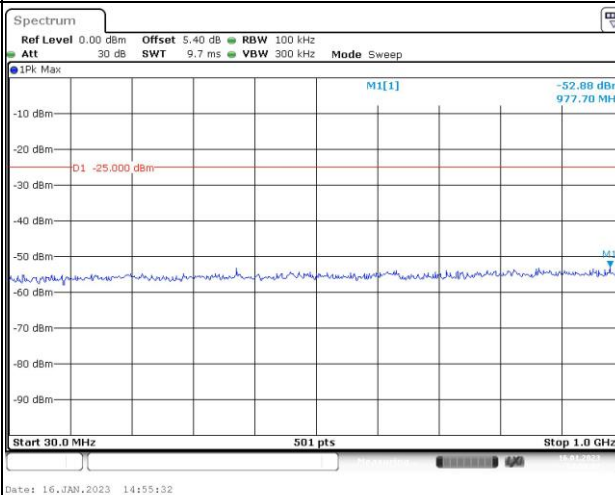
Lowest



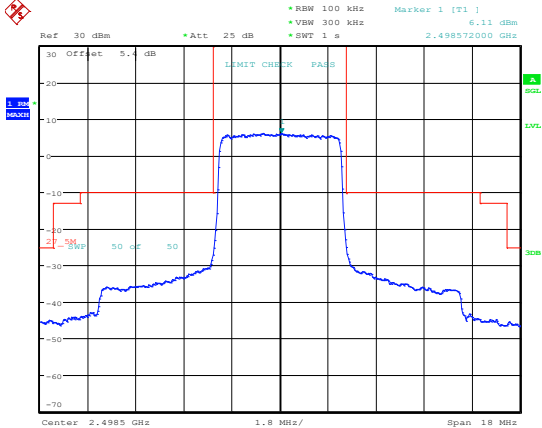
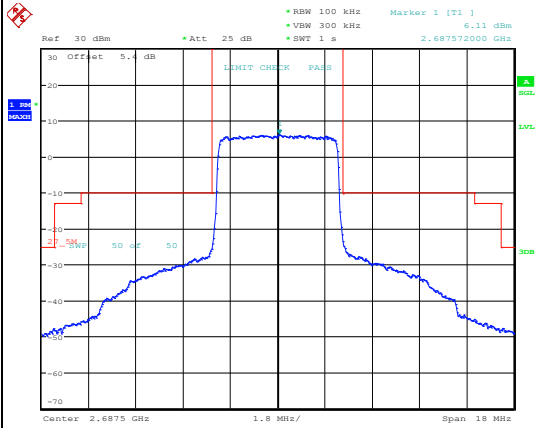
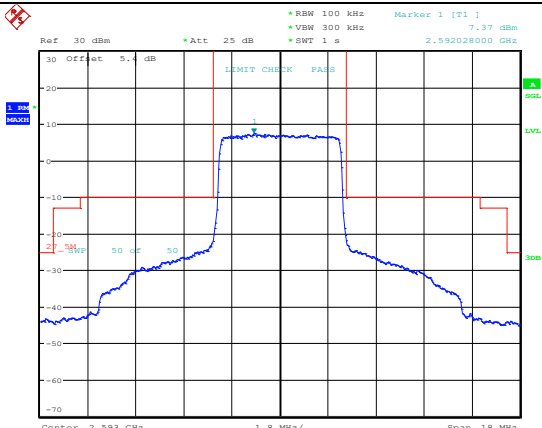
Middle



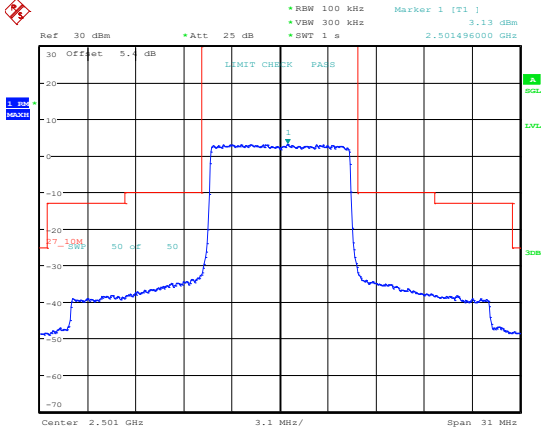
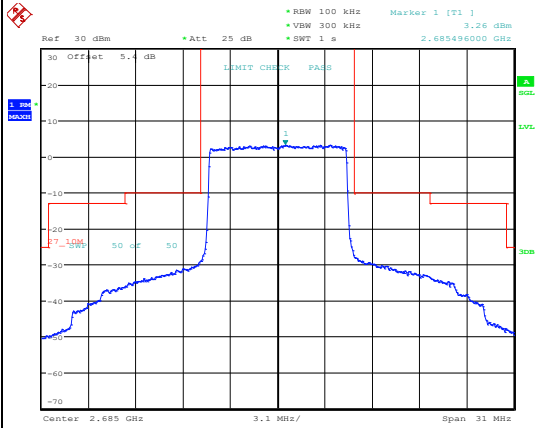
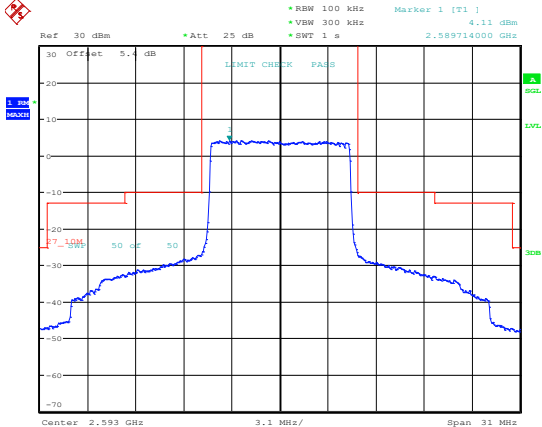
Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 1 s Marker 1 [T1] 6.11 dBm 2.498572000 GHz Center: 2.4985 GHz 1.8 MHz/ Span: 18 MHz Date: 21.APR.2023 15:57:00	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 1 s Marker 1 [T1] 6.11 dBm 2.687572000 GHz Center: 2.6875 GHz 1.8 MHz/ Span: 18 MHz Date: 21.APR.2023 16:05:44
	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 1 s Marker 1 [T1] 7.37 dBm 2.592028000 GHz Center: 2.593 GHz 1.8 MHz/ Span: 18 MHz Date: 21.APR.2023 16:03:09	

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 1 s Marker 1 [T1] 3.13 dBm 2.501496000 GHz Center: 2.501 GHz 3.1 MHz/ Span: 31 MHz Date: 21.APR.2023 16:13:19	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 1 s Marker 1 [T1] 3.26 dBm 2.685496000 GHz Center: 2.685 GHz 3.1 MHz/ Span: 31 MHz Date: 21.APR.2023 16:22:10
	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 1 s Marker 1 [T1] 4.11 dBm 2.589714000 GHz Center: 2.593 GHz 3.1 MHz/ Span: 31 MHz Date: 21.APR.2023 16:16:00	

Mode

Highest

The screenshot shows a Spectrum Analyzer interface. At the top, there are several status indicators: a red 'ERR' icon, a green 'ATT' icon, and a green 'SWT' icon. The main display area shows a blue trace of a signal. The signal is centered at 2.5035 GHz with a span of 46 MHz. The signal has a flat top at approximately -10 dBm and a steep rise and fall. A red line labeled 'LIMIT CHECK' is drawn across the top of the signal, indicating a failure. The signal is labeled '27.15M' and '50 dB'.

~ RBW 300 KHz Marker 1 [T1]
 ~ VBW 1 MHz 6.22 dBm
 ~ SWT 1 s 2.499912000 GHz

Ref 30 dBm Att 25 dB

30 Offset 5.1 dB

27.15M 50 dB 50

LIMIT CHECK PASS

Center 2.5035 GHz 4.6 MHz/ Span 46 MHz

Date: 21.APR.2023 16:29:35

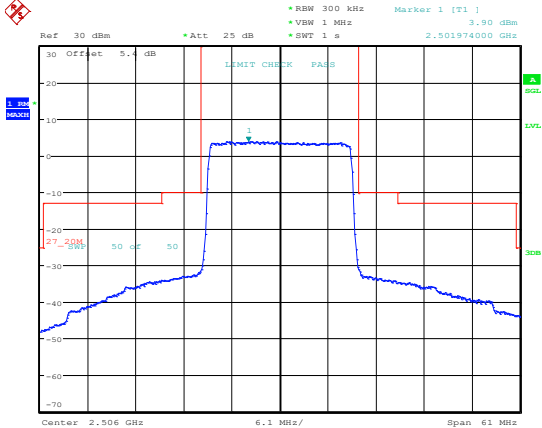
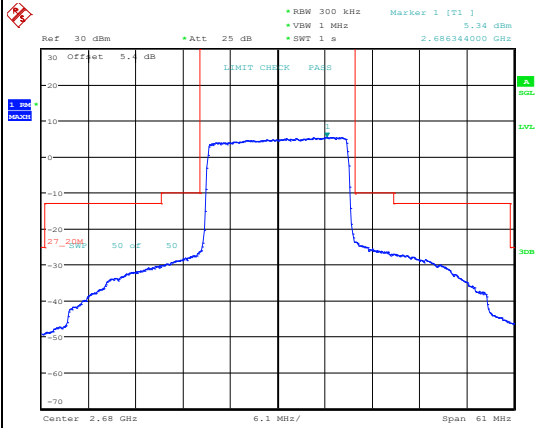
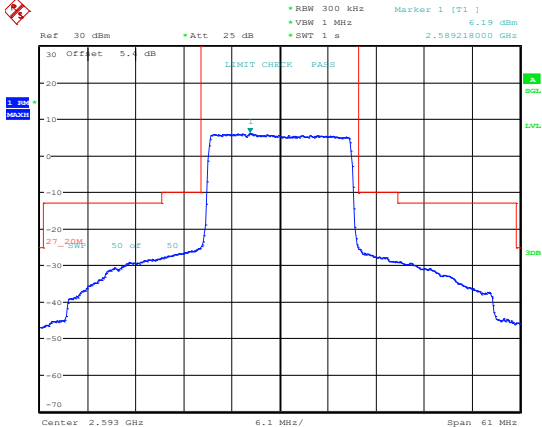
[illegible]

Date: 21.APR.2023 16:38:17

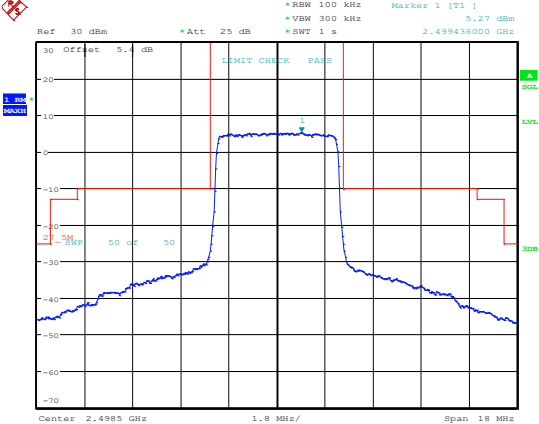
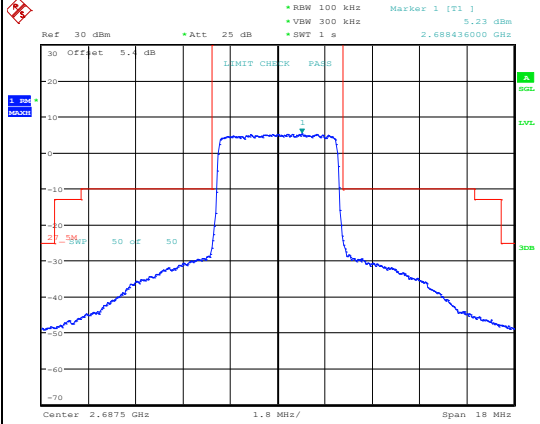
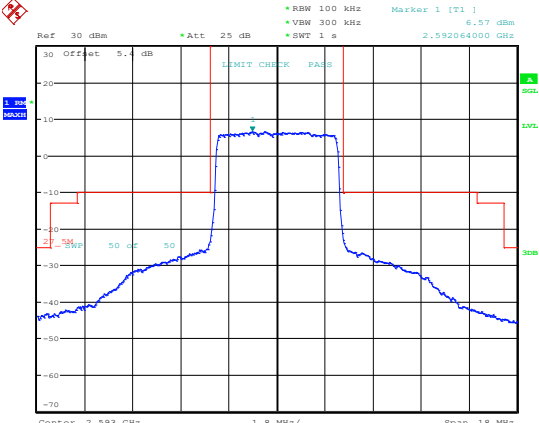
The screenshot shows a Spectrum Analyzer interface. At the top, a red square icon with a white 'X' is in the upper left corner. The top status bar displays the following parameters: BW 300 kHz, Marker 1 [T1], Ref 30 dBm, Att 25 dB, VSW 1 Mhz, 7.43 dBm, and SWT 1 s, 2.587756000 GHz. The main display area shows a blue trace of the signal spectrum. A red trace, likely the limit, is also visible. A red vertical line at the center of the signal is labeled 'LIMIT CHECK FAILS'. A blue arrow points to the peak of the signal, which is labeled '27.00 dBm' and '50.00'. The x-axis is labeled 'Center 2.593 GHz' and '4.6 MHz/'. The y-axis is labeled 'Span 46 MHz'. The bottom status bar shows 'Center 2.593 GHz', '4.6 MHz/', and 'Span 46 MHz'.

Date: 21.APR.2023 16:32:10

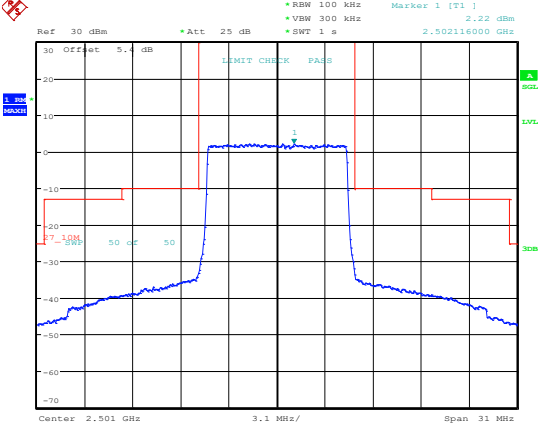
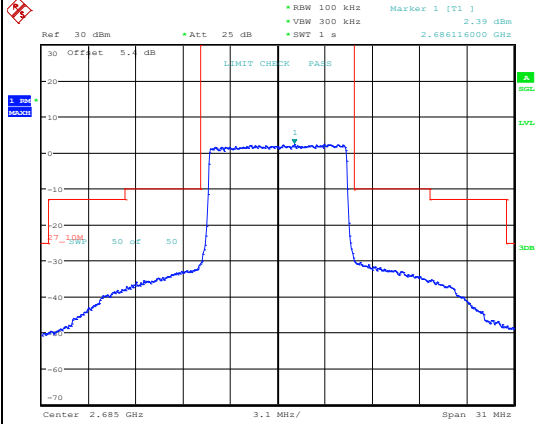
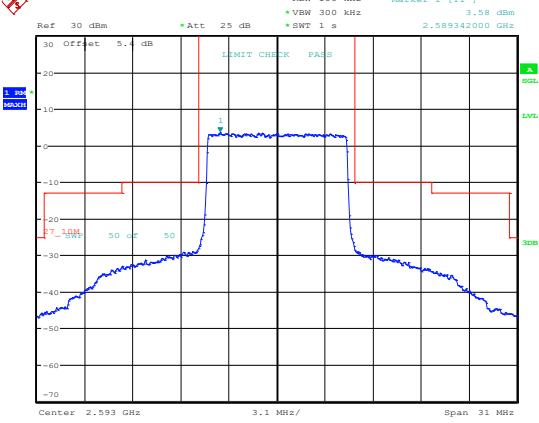
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 20MHz	 Ref: 30 dBm *Att: 25 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 1 s Marker 1 [T1] 5.34 dBm 2.501974000 GHz 30 Offset 5.4 dB LEMIT CHECK PASS 27_20M Center: 2.506 GHz 6.1 MHz/ Span: 61 MHz Date: 21.APR.2023 16:41:47	 Ref: 30 dBm *Att: 25 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 1 s Marker 1 [T1] 5.34 dBm 2.686344000 GHz 30 Offset 5.4 dB LEMIT CHECK PASS 27_20M Center: 2.68 GHz 6.1 MHz/ Span: 61 MHz Date: 21.APR.2023 16:50:18
	 Ref: 30 dBm *Att: 25 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 1 s Marker 1 [T1] 6.19 dBm 2.589318000 GHz 30 Offset 5.4 dB LEMIT CHECK PASS 27_20M Center: 2.593 GHz 6.1 MHz/ Span: 61 MHz Date: 21.APR.2023 16:48:05	

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 1 s Marker 1 [T1] 5.27 dBm 2.498436000 GHz Center: 2.4985 GHz 1.8 MHz/ Span: 18 MHz Date: 21.APR.2023 15:59:12	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 1 s Marker 1 [T1] 5.23 dBm 2.688436000 GHz Center: 2.6875 GHz 1.8 MHz/ Span: 18 MHz Date: 21.APR.2023 16:07:48
	Middle	
	 Ref: 30 dBm *Att: 25 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 1 s Marker 1 [T1] 6.57 dBm 2.592064000 GHz Center: 2.593 GHz 1.8 MHz/ Span: 18 MHz Date: 21.APR.2023 16:01:37	

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VBW 300 kHz *SWT 1 s Marker 1 [T1] 2.502116000 GHz Center: 2.501 GHz 3.1 MHz/ Span: 31 MHz Date: 21.APR.2023 16:11:55	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VBW 300 kHz *SWT 1 s Marker 1 [T1] 2.686116000 GHz Center: 2.685 GHz 3.1 MHz/ Span: 31 MHz Date: 21.APR.2023 16:20:20
	Middle	
	 Ref: 30 dBm *Att: 25 dB *RBW 100 kHz *VBW 300 kHz *SWT 1 s Marker 1 [T1] 2.593420000 GHz Center: 2.593 GHz 3.1 MHz/ Span: 31 MHz Date: 21.APR.2023 16:17:21	

Mode

Highest

~ RBW 300 KHz Marker 1 [F1] 5.44 dBm
 ~ VBW 1 MHz 2.498900000 GHz
 ~ SWT 1 s

Ref 30 dBm Att 25 dB

30 Offset 5.0 dB

20

10

0

-10

-20

-30

-40

-50

-60

-70

LEMIT CHECK PASS

27.10M 50 dB 50

Center 2.5035 GHz 4.6 MHz/ Span 46 MHz

Date: 21.APR.2023 16:28:08

Ref 30 dBm • Att 25 dB • BW 300 kHz Marker 1 (T2) 1 5.40 dBm
 • VVM 1 MHz • SWT 1 s 2.687560000 GHz

30 Offset 5.4 dB LIMIT CHECK PASS

1.000000 1 2.6825 GHz

27.000000 50 02 50 30m

Center 2.6825 GHz 4.6 MHz/ Span 46 MHz

Date: 21.APR.2023 16:36:36

*SRW 300 KHz Marker 1 [71.7] 6.70 dBm
 *VRW 1 MHz
 *SWT 1 s 2.588952000 GHz
 Ref 30 dBm Att 25 dB
 30 Offset 5.4 dB
 LIMIT CHECK PASS
 27.1 dBm 30.45 50.45
 Center 2.593 GHz 4.6 MHz/ Span 46 MHz
 -70 -60 -50 -40 -30 -20 -10 0 10 20 30
 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

Date: 21.APR.2023 16:33:43

Mode

Highest

[illegible]

Date: 21.APR.2023 16:43:20

Ref 30 dBm • Att 25 dB • BW 300 kHz Marker 1 (T2) 4.57 dBm
 • VBW 1 MHz • SWT 1 s 2.685612000 GHz

30 Offset 5.4 dB LIMIT CHECK PASS

1.000 Vm 1.000 Vm

27.000 dBm 50 Hz 50 Hz 30m

Center 2.68 GHz 6.1 MHz/ Span 61 MHz

Date: 21.APR.2023 16:51:40

Ref 30 dBm Att 25 dB SWT 1 s 2.589096000 GHz

Marker 1 [T1] 5.21 dBm

100 MHz

30 dB

Center 2.593 GHz 6.1 MHz/ Span 61 MHz

Date: 21.APR.2023 16:46:28

4.13 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	1XBG-2	Test Date:	2023/1/13~2023/1/18
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	18.3~24.6	Relative Humidity: (%)	42~58	ATM Pressure: (kPa)	100.6~102.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-04-06	2023-04-05
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

Test Data:**FCC §2.1046; § 27.50(d)(4)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.01	21.95	22.23	23.63	30
	RB1#3	22.05	22.03	22.19		
	RB1#5	22.02	21.99	22.16		
	RB3#0	22.18	21.91	22.15		
	RB3#3	22.15	21.91	22.14		
	RB6#0	21.11	20.93	21.17		
1.4MHz 16QAM	RB1#0	20.96	21.77	21.32	23.23	30
	RB1#3	20.93	21.83	21.35		
	RB1#5	21.01	21.81	21.35		
	RB3#0	21.24	21.1	21.37		
	RB3#3	21.26	21.13	21.43		
	RB6#0	20.39	20.1	20.42		
3MHz QPSK	RB1#0	22.05	21.67	22.02	23.45	30
	RB1#8	22.04	21.79	21.87		
	RB1#14	21.98	21.76	22.04		
	RB6#0	21.12	20.88	21.19		
	RB6#9	21.2	20.93	21.12		
	RB15#0	21.18	20.86	21.24		
3MHz 16QAM	RB1#0	21.85	21.03	21.64	23.25	30
	RB1#8	21.82	20.91	21.55		
	RB1#14	21.8	20.92	21.53		
	RB6#0	20.34	20.25	20.23		
	RB6#9	20.3	20.26	20.24		
	RB15#0	20.26	20.13	20.38		
5MHz QPSK	RB1#0	22.1	21.19	22.07	23.59	30
	RB1#13	22.16	21.68	22.17		
	RB1#24	22.19	21.46	22.02		
	RB15#0	21.01	20.92	21.24		
	RB15#10	21.06	20.87	21.16		
	RB25#0	21.12	20.95	21.16		
5MHz 16QAM	RB1#0	21.26	20.7	20.33	22.76	30
	RB1#13	21.33	20.68	20.38		
	RB1#24	21.36	20.71	20.38		
	RB15#0	20.19	20.14	20.37		
	RB15#10	20.21	20.11	20.38		
	RB25#0	20.27	20	20.41		
10MHz QPSK	RB1#0	22.11	21.39	21.99	23.53	30

	RB1#25	22.08	21.64	22		
	RB1#49	22.13	21.96	22.04		
	RB25#0	21.1	20.89	21.12		
	RB25#25	21.08	20.93	21.08		
	RB50#0	21.11	20.9	21.17		
10MHz 16QAM	RB1#0	21.28	20.53	21.44	22.85	30
	RB1#25	21.3	20.57	21.45		
	RB1#49	21.39	20.58	21.45		
	RB25#0	20.36	20.16	20.26		
	RB25#25	20.38	20.14	20.36		
	RB50#0	20.37	20.05	20.31		
15MHz QPSK	RB1#0	22.12	21.67	21.95	23.57	30
	RB1#38	22.12	21.54	21.99		
	RB1#74	22.17	21.96	22.04		
	RB36#0	21.2	20.86	21.05		
	RB36#39	21.1	20.9	21.16		
	RB75#0	21.15	20.88	21.11		
15MHz 16QAM	RB1#0	21.25	21.38	21.38	22.84	30
	RB1#38	21.29	21.34	21.41		
	RB1#74	21.33	21.37	21.44		
	RB36#0	20.37	20.06	20.33		
	RB36#39	20.36	20.1	20.39		
	RB75#0	20.37	20.06	20.37		
20MHz QPSK	RB1#0	22.17	22.02	22.05	23.61	30
	RB1#50	22.21	21.4	22.1		
	RB1#99	22.2	21.92	22.15		
	RB50#0	21.13	20.86	20.98		
	RB50#50	21.12	20.94	21.1		
	RB100#0	21.12	20.9	21.14		
20MHz 16QAM	RB1#0	21.18	21.78	21.15	23.18	30
	RB1#50	21.16	21.64	21.3		
	RB1#99	21.14	21.6	21.4		
	RB50#0	20.35	20.06	20.23		
	RB50#50	20.32	20.04	20.33		
	RB100#0	20.3	20.1	20.22		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)

Result:

Pass

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	3.57	4.72	3.01	13
	RB100#0	3.8	4.03	3.94	13

20MHz 16QAM	RB1#0	4.67	5.39	3.91	13
	RB100#0	5.57	5.45	5.68	13
Result:				Pass	

FCC §2.1049, §27.53:Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.114	1.102	1.102	1.35	1.284	1.32
1.4MHz 16QAM	1.102	1.114	1.102	1.29	1.296	1.296
3MHz QPSK	2.707	2.695	2.707	3.024	3.024	3.024
3MHz 16QAM	2.695	2.695	2.695	3.06	3.06	3
5MHz QPSK	4.531	4.531	4.531	5.28	5.36	5.3
5MHz 16QAM	4.571	4.551	4.531	5.36	5.36	5.26
10MHz QPSK	8.942	8.982	8.982	9.8	10	9.8
10MHz 16QAM	8.982	8.942	8.942	9.96	10.04	9.96
15MHz QPSK	13.473	13.593	13.473	15.6	16.26	14.7
15MHz 16QAM	13.533	13.593	13.533	15.3	15.06	15.06
20MHz QPSK	17.964	18.124	17.964	19.76	20.4	19.76
20MHz 16QAM	17.964	18.044	18.044	20	20.32	19.76

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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FCC §2.1051, §27.53:Out of band emission, Band Edge

Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	1711.066	1710.00	1778.923	1780
	-20	7.4	1711.097	1710.00	1778.986	1780
	-10	7.4	1711.060	1710.00	1778.961	1780
	0	7.4	1711.088	1710.00	1778.928	1780
	10	7.4	1711.073	1710.00	1778.911	1780
	20	7.4	1711.058	1710.00	1778.942	1780
	30	7.4	1711.053	1710.00	1778.921	1780
	40	7.4	1711.044	1710.00	1778.970	1780
	50	7.4	1711.090	1710.00	1778.915	1780
Frequency Stability vs. Voltage	20	6.95	1711.097	1710.00	1778.963	1780
	20	8.4	1711.041	1710.00	1778.986	1780
Result:					Pass	

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	1710.994	1710.00	1779.094	1780
	-20	7.4	1710.924	1710.00	1779.037	1780
	-10	7.4	1710.953	1710.00	1779.088	1780
	0	7.4	1710.910	1710.00	1779.079	1780
	10	7.4	1710.979	1710.00	1779.026	1780
	20	7.4	1710.978	1710.00	1779.022	1780
	30	7.4	1710.911	1710.00	1779.006	1780
	40	7.4	1710.990	1710.00	1779.082	1780
	50	7.4	1710.972	1710.00	1779.023	1780
Frequency Stability vs. Voltage	20	6.95	1710.940	1710.00	1779.028	1780
	20	8.4	1710.920	1710.00	1779.078	1780
Result:					Pass	

Test Plots(Note: The 5.4dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

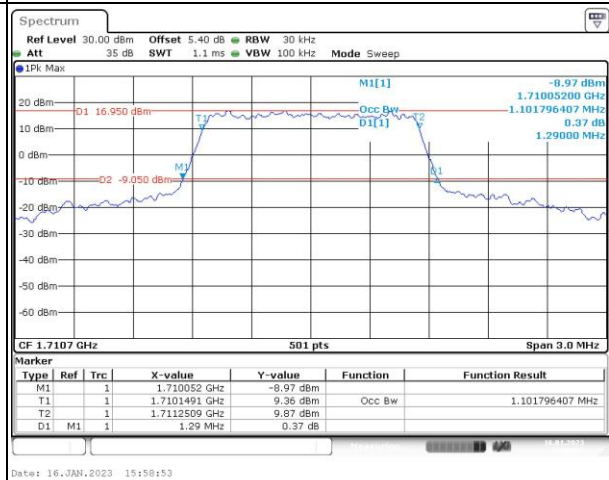
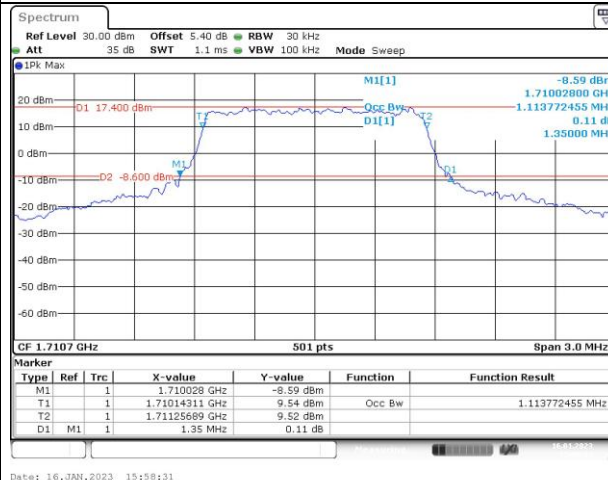
Occupied Bandwidth

Channel

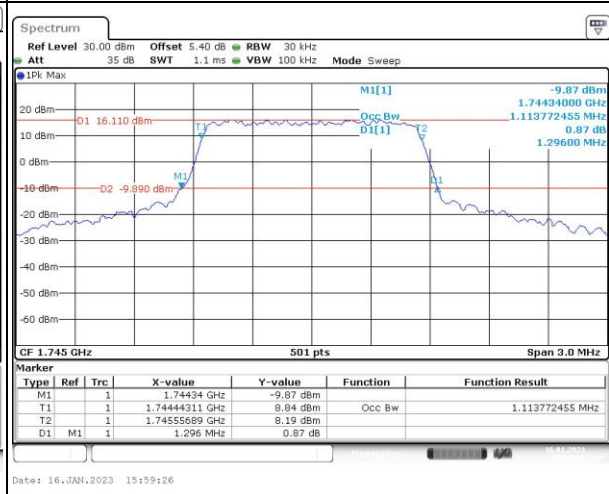
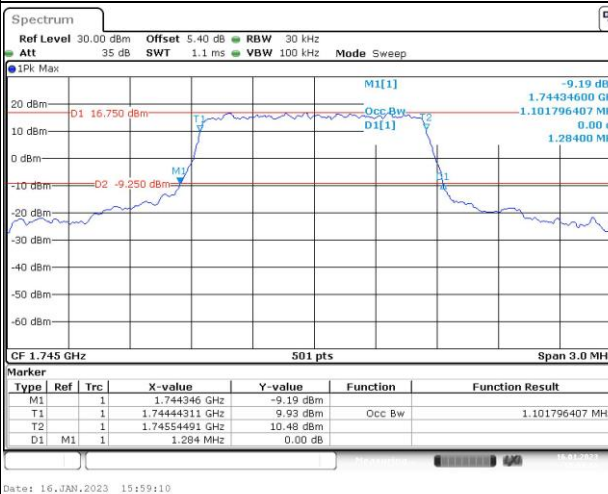
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

Lowest



Middle



Highest

