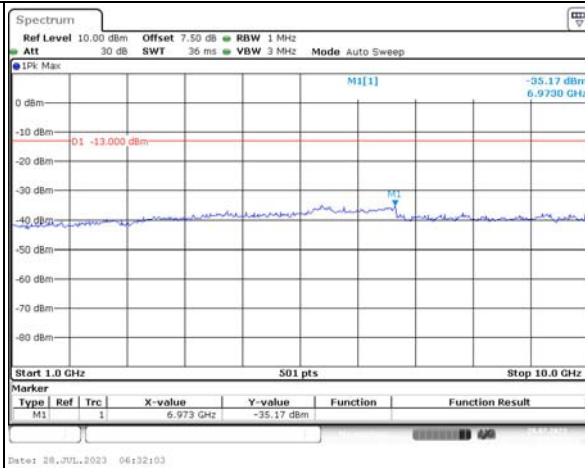
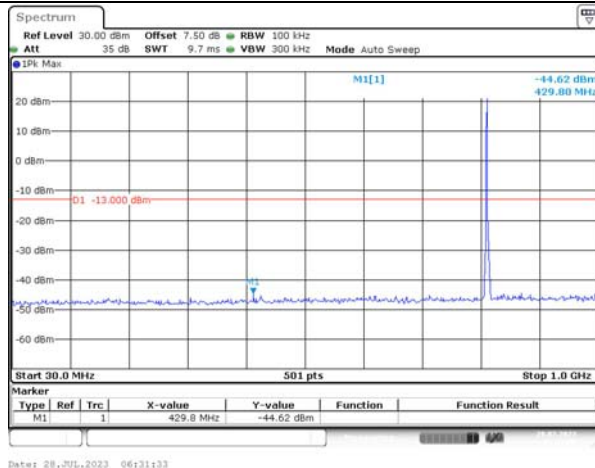
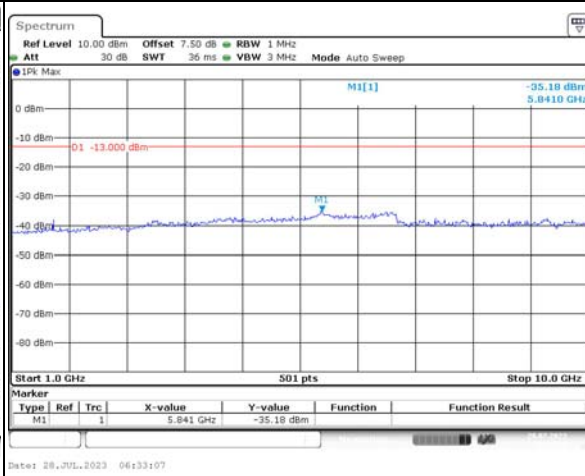
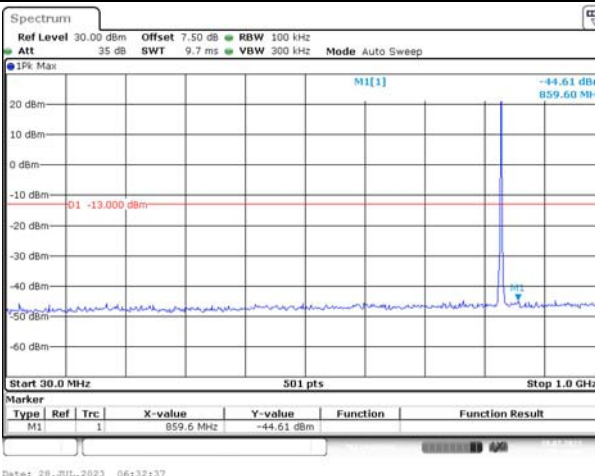
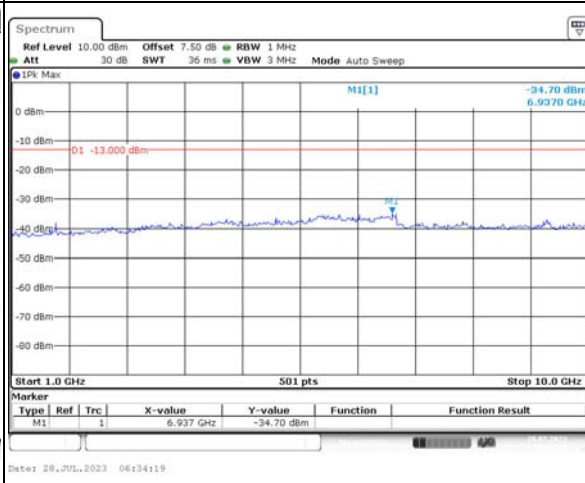
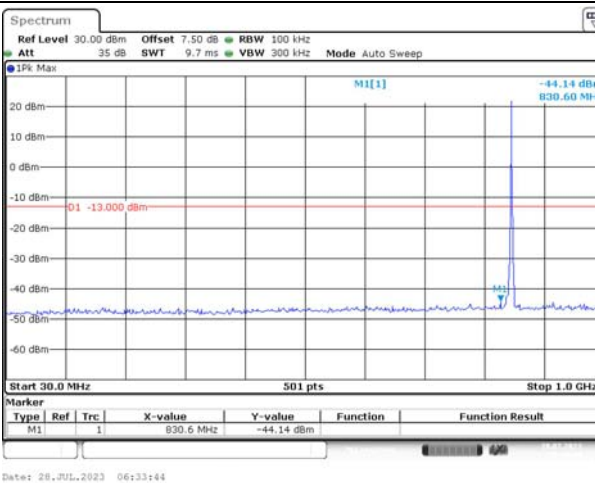


Spurious Emissions at Antenna Terminal

Channel

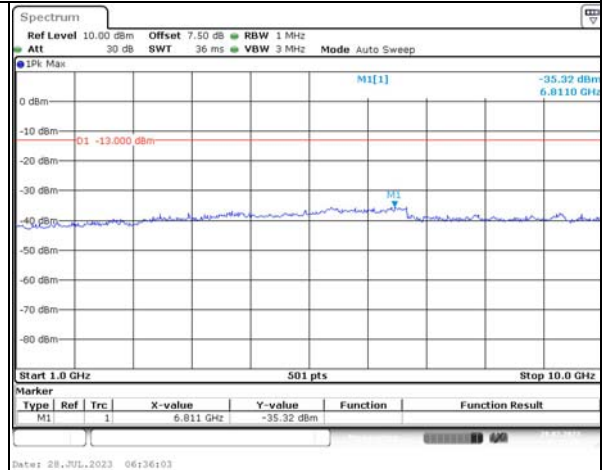
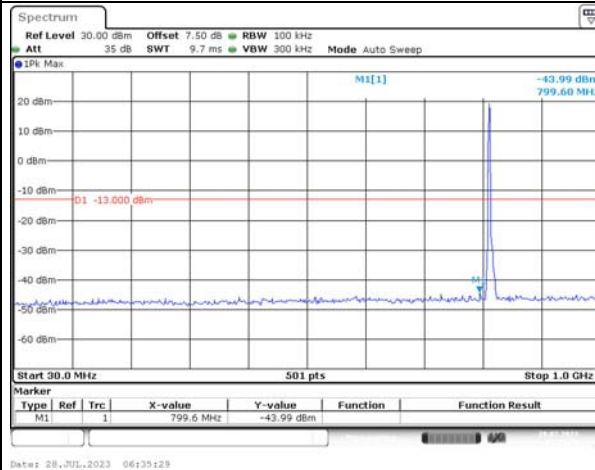
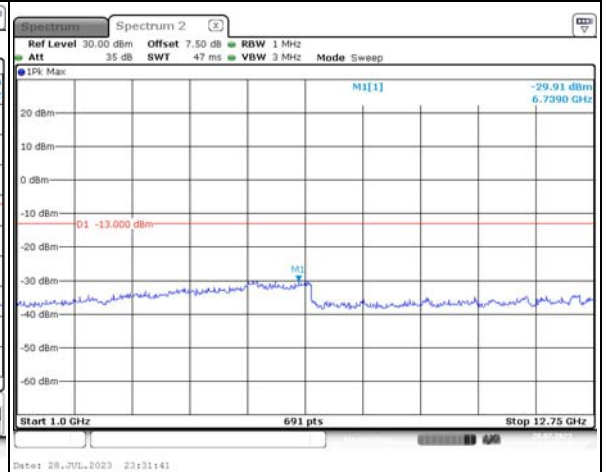
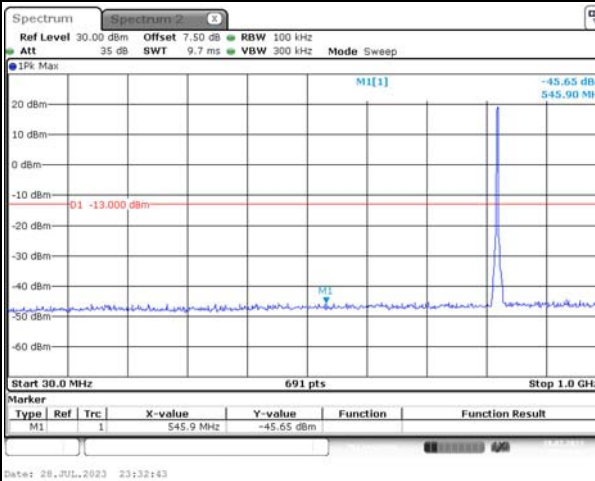
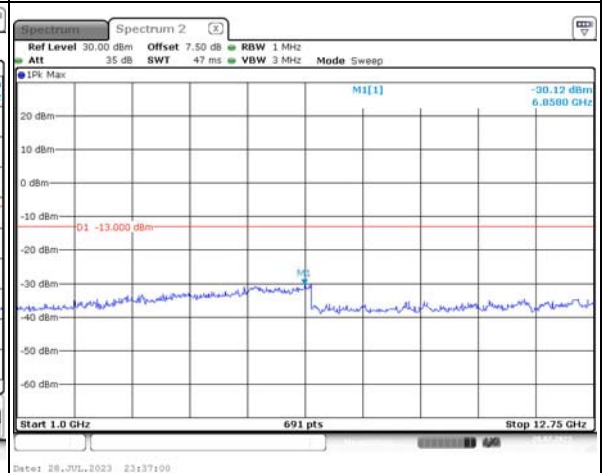
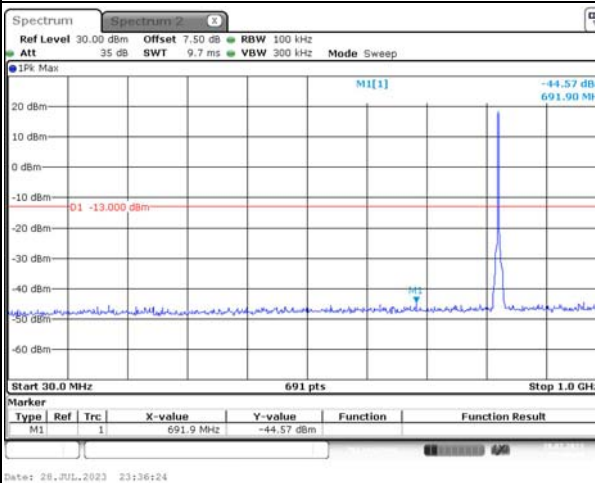
1.4MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

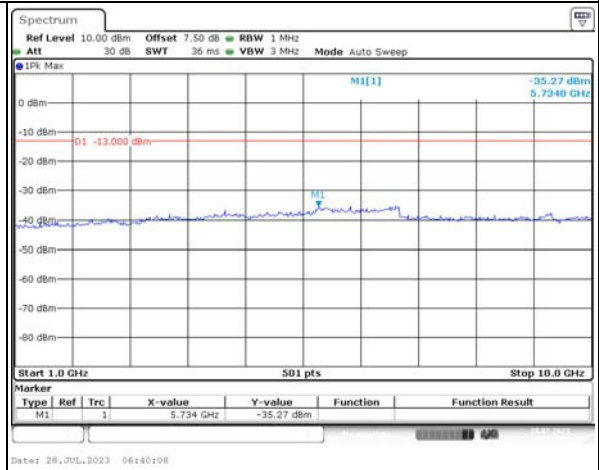
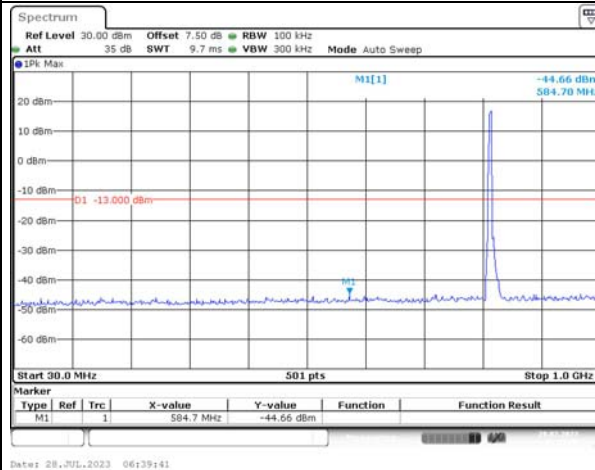
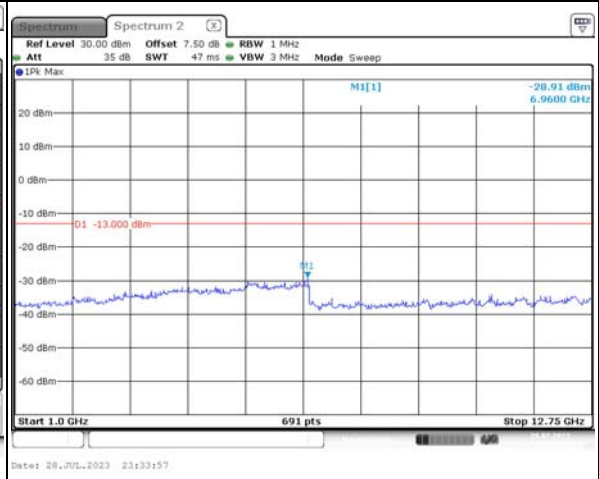
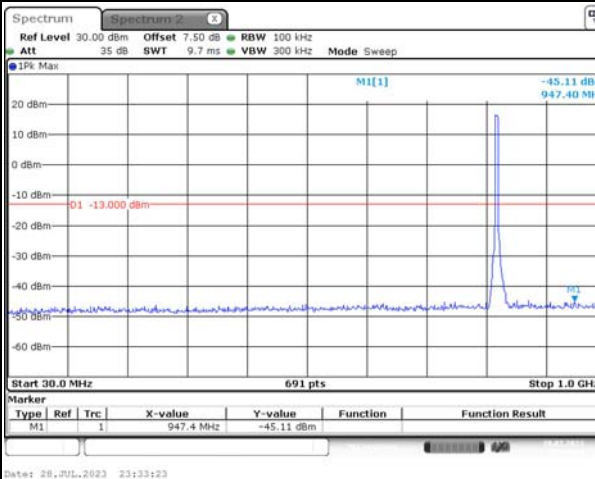
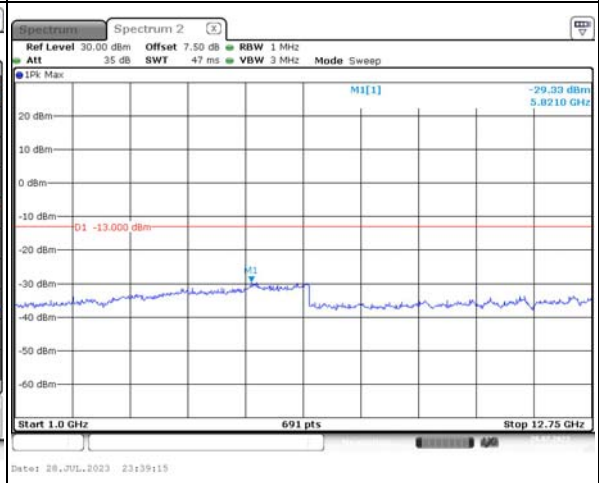
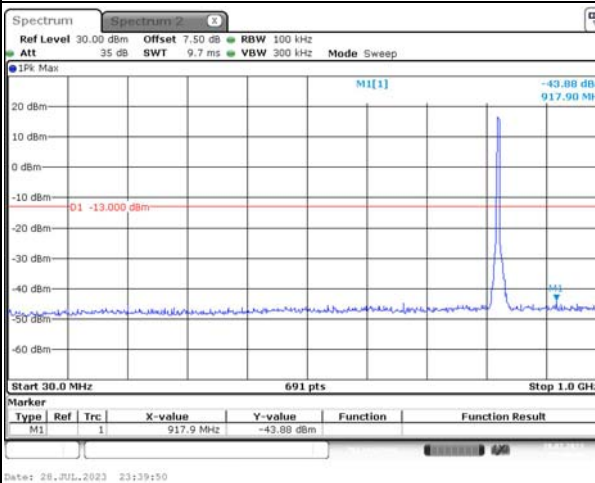
3MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

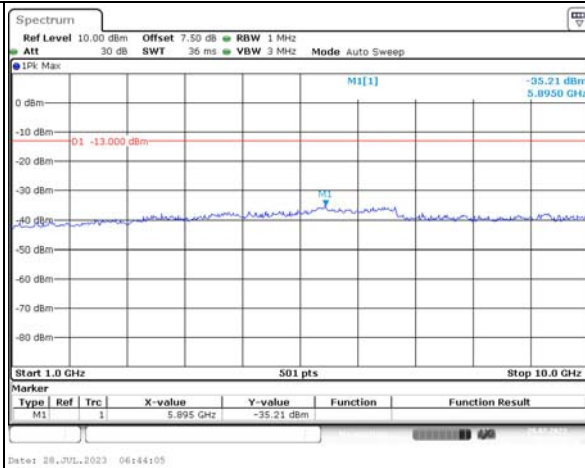
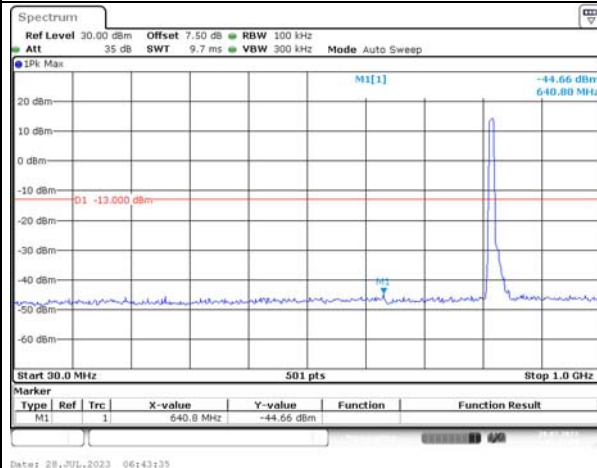
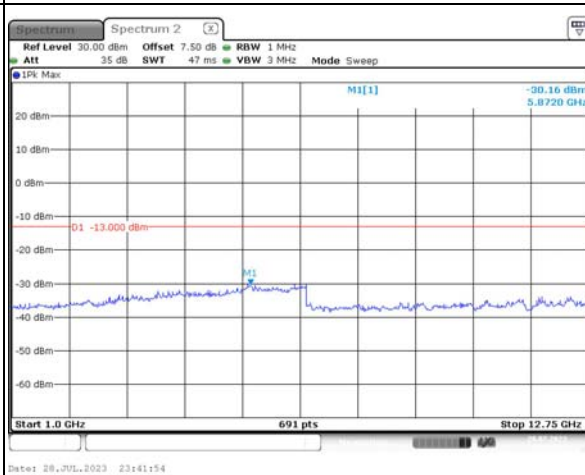
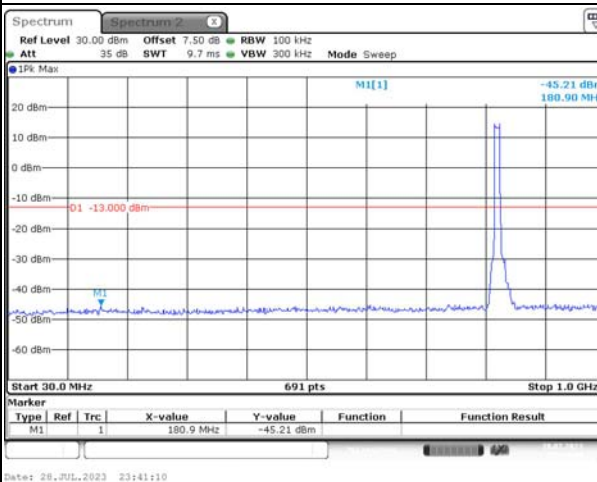
5MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

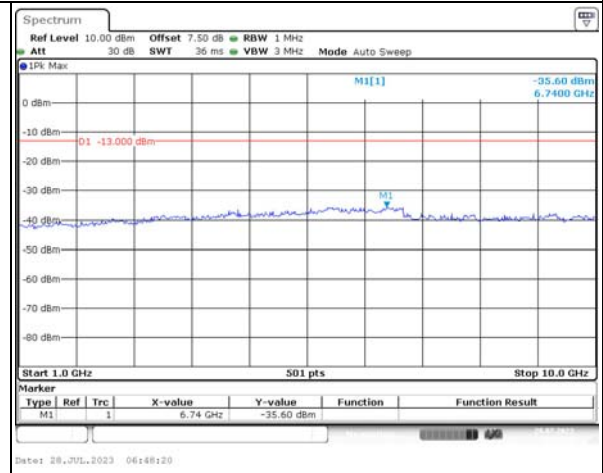
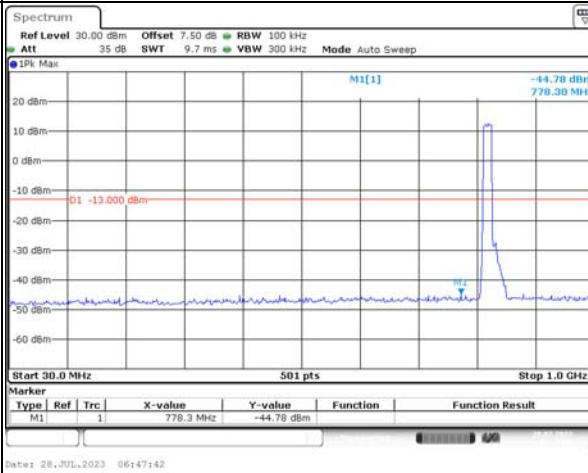
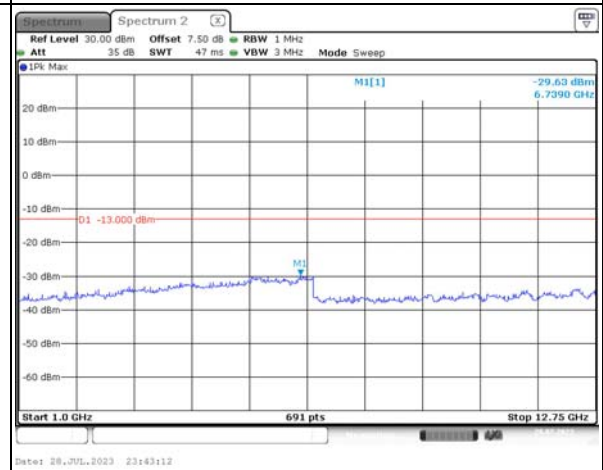
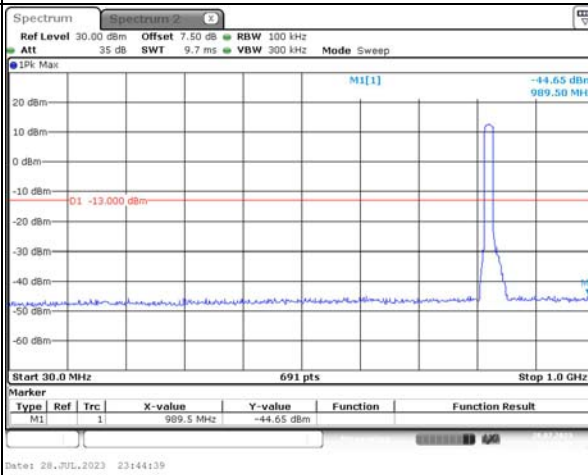
10MHz Bandwidth QPSK

Lowest
For 90SCross
Channel

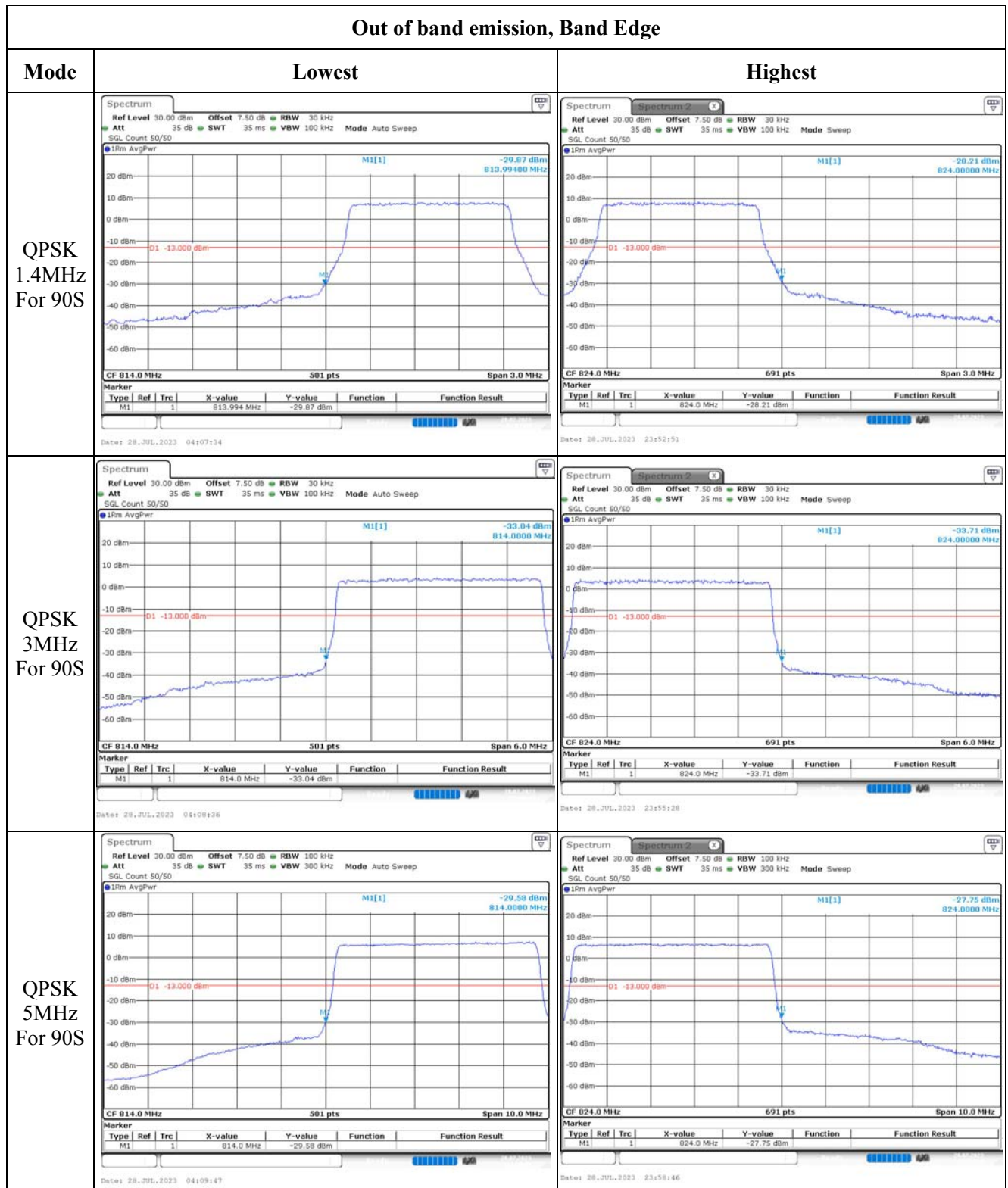
Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

Lowest
For 90SCross
Channel

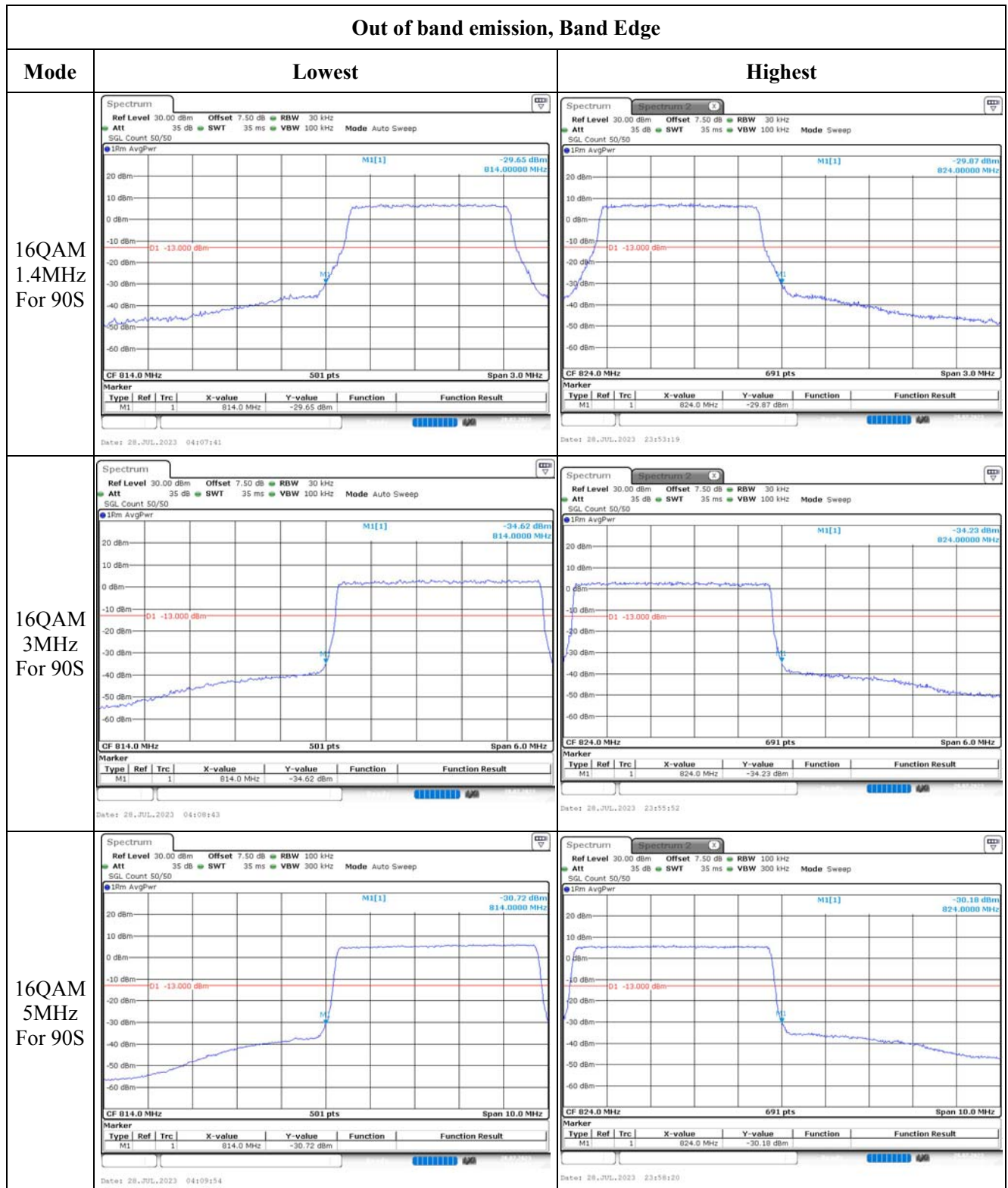
Out of band emission, Band Edge



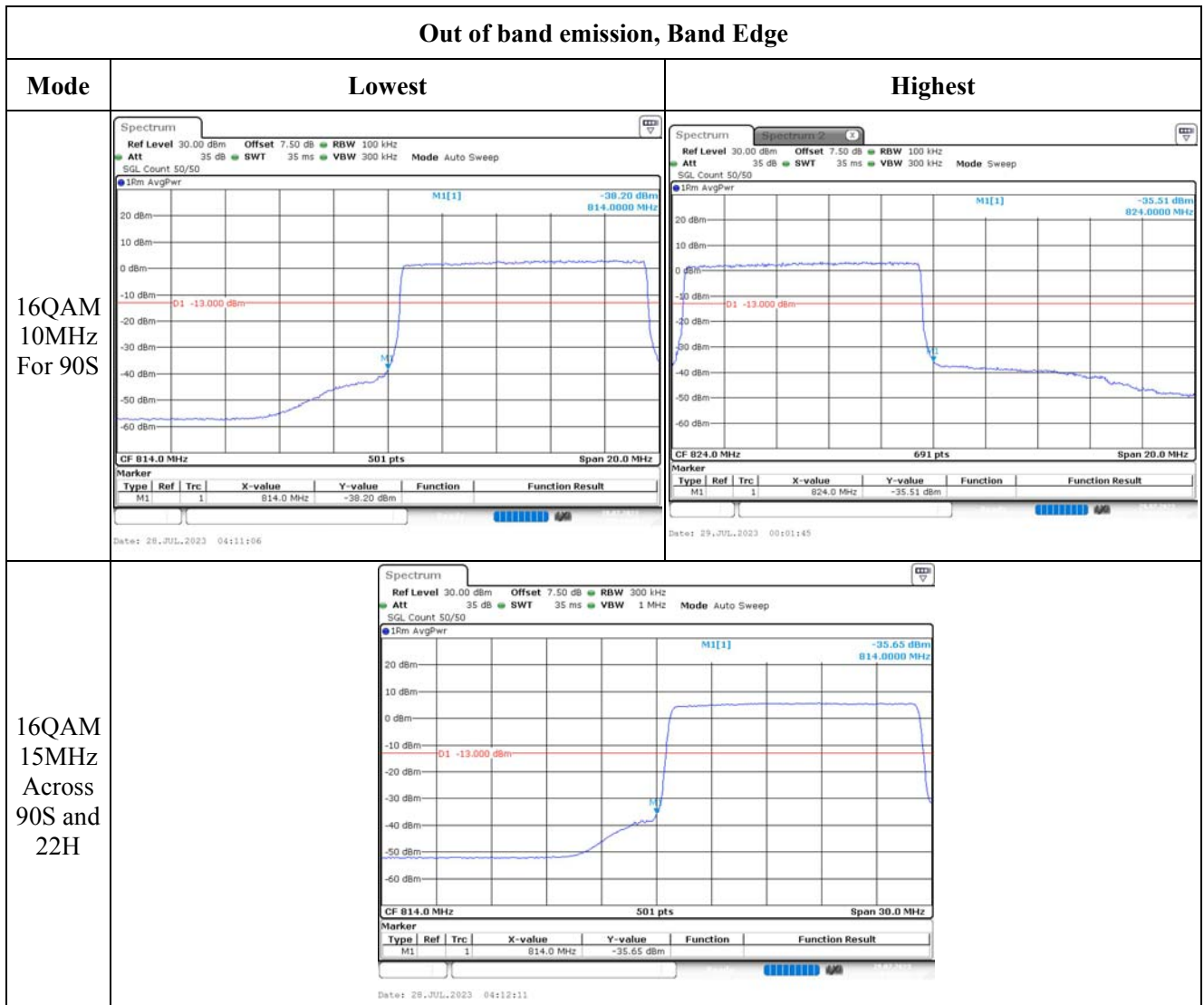
Out of band emission, Band Edge

Out of band emission, Band Edge																														
Mode	Lowest	Highest																												
QPSK 10MHz For 90S	Spectrum Ref Level 30.00 dBm Offset 7.50 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep SQL Count 50/50 1Rm AvgPer M1[1] -36.21 dBm 814.0000 MHz -13.000 dBm CF 814.0 MHz 501 pts Span 20.0 MHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>814.0 MHz</td><td>-36.21 dBm</td><td></td><td></td></tr></table> Date: 28.JUL.2023 04:10:59	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	814.0 MHz	-36.21 dBm			Spectrum Ref Level 30.00 dBm Offset 7.50 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SQL Count 50/50 1Rm AvgPer M1[1] -35.04 dBm 824.0000 MHz -13.000 dBm CF 824.0 MHz 691 pts Span 20.0 MHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>824.0 MHz</td><td>-35.04 dBm</td><td></td><td></td></tr></table> Date: 29.JUL.2023 00:01:21	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	824.0 MHz	-35.04 dBm		
	Type	Ref	Trc	X-value	Y-value	Function	Function Result																							
M1		1	814.0 MHz	-36.21 dBm																										
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	824.0 MHz	-35.04 dBm																										
QPSK 15MHz Across 90S and 22H	Spectrum Ref Level 30.00 dBm Offset 7.50 dB RBW 300 kHz Att 35 dB SWT 35 ms VBW 1 MHz Mode Auto Sweep SQL Count 50/50 1Rm AvgPer M1[1] -34.96 dBm 814.0000 MHz -13.000 dBm CF 814.0 MHz 501 pts Span 30.0 MHz <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td></td><td>1</td><td>814.0 MHz</td><td>-34.96 dBm</td><td></td><td></td></tr></table> Date: 28.JUL.2023 04:12:04	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	814.0 MHz	-34.96 dBm																	
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	814.0 MHz	-34.96 dBm																										

Out of band emission, Band Edge



Out of band emission, Band Edge



4.12.3 Test Data for Part 22H:**FCC§2.1046; § 22.913 (a): RF Output Power**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H		
1.4MHz QPSK	RB1#0	23.64	23.24	23.18	21.84	38.45
	RB1#3	23.33	23.44	23.36		
	RB1#5	23.06	23.23	23.15		
	RB3#0	23.37	23.41	23.42		
	RB3#3	23.18	23.39	23.27		
	RB6#0	23.06	22.32	22.28		
1.4MHz 16QAM	RB1#0	22.55	22.27	22.23	20.97	38.45
	RB1#3	22.77	22.48	22.42		
	RB1#5	22.18	22.29	22.21		
	RB3#0	22.39	22.47	22.49		
	RB3#3	22.33	22.51	22.49		
	RB6#0	22.31	21.31	21.33		
3MHz QPSK	RB1#0	23.64	23.3	23.28	21.89	38.45
	RB1#8	23.69	23.32	23.26		
	RB1#14	23.46	23.28	23.23		
	RB6#0	23.21	22.25	22.2		
	RB6#9	23.1	22.24	22.25		
	RB15#0	23.11	22.34	22.31		
3MHz 16QAM	RB1#0	22.96	22.35	22.89	21.16	38.45
	RB1#8	22.96	22.35	22.79		
	RB1#14	22.93	22.3	22.79		
	RB6#0	22.84	21.27	21.34		
	RB6#9	22.33	21.29	21.34		
	RB15#0	22.08	21.43	21.42		
5MHz QPSK	RB1#0	23.43	23.23	23.21	21.79	38.45
	RB1#13	23.15	23.32	23.29		
	RB1#24	23.59	23.23	23.17		
	RB15#0	23.25	22.32	22.33		
	RB15#10	23.17	22.33	22.3		
	RB25#0	23.01	22.3	22.32		
5MHz 16QAM	RB1#0	22.73	22.34	22.15	20.93	38.45
	RB1#13	22.6	22.4	22.17		
	RB1#24	22.51	22.31	22.13		
	RB15#0	22.55	21.42	21.44		
	RB15#10	22.54	21.4	21.38		
	RB25#0	22.4	21.41	21.42		
10MHz QPSK	RB1#0	23.56	23.34	23.28	21.76	38.45
	RB1#25	23.16	23.42	23.48		
	RB1#49	23.18	23.36	23.32		
	RB25#0	23.3	22.39	22.41		

	RB25#25	22.68	22.42	22.35		
	RB50#0	23	22.43	22.38		
10MHz 16QAM	RB1#0	22.49	22.32	22.83	21.24	38.45
	RB1#25	22.29	22.53	23.04		
	RB1#49	22.7	22.37	22.89		
	RB25#0	22.17	21.54	21.51		
	RB25#25	22.35	21.58	21.47		
	RB50#0	21.92	21.53	21.46		
15MHz QPSK	RB1#0	23.69	23.25	23.22	21.89	38.45
	RB1#38	23.13	23.38	23.33		
	RB1#74	23.4	23.31	23.26		
	RB36#0	23.36	22.37	22.41		
	RB36#39	23.16	22.45	22.36		
	RB75#0	23.07	22.39	22.34		
15MHz 16QAM	RB1#0	22.67	22.39	22.68	21.18	38.45
	RB1#38	22.98	22.53	22.7		
	RB1#74	22.55	22.48	22.61		
	RB36#0	22.46	21.42	21.39		
	RB36#39	22.58	21.48	21.4		
	RB75#0	22.51	21.46	21.41		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15

Result:

Pass

Peak-to-average Ratio (PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H	
15MHz QPSK	RB1#0	5.39	5.28	5.28	13
	RB75#0	5.04	5.25	5.22	13
15MHz 16QAM	RB1#0	6.35	6	6.14	13
	RB75#0	6.03	6.14	6.14	13
				Result:	Pass

FCC §2.1049, §22.905: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H	Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H
1.4MHz QPSK	1.102	1.102	1.096	1.299	1.29	1.29
1.4MHz 16QAM	1.096	1.096	1.096	1.299	1.296	1.32
3MHz QPSK	2.683	2.683	2.683	2.874	2.868	2.88
3MHz 16QAM	2.683	2.683	2.683	2.886	2.892	2.88
5MHz QPSK	4.511	4.511	4.511	4.97	4.96	4.96
5MHz 16QAM	4.531	4.491	4.511	4.97	4.92	4.96
10MHz QPSK	8.942	8.942	8.982	9.701	9.6	9.64
10MHz 16QAM	8.982	8.942	8.982	9.701	9.68	9.64
15MHz QPSK	13.413	13.473	13.413	14.58	14.915	14.58
15MHz 16QAM	13.533	13.413	13.473	14.64	14.58	14.64

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

FCC §2.1051, §22.917(a): 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, §22.917(a): Out of band emission, Band Edge

Result:	Pass. Please refer to the test plots of Out of band emission, Band Edge.
----------------	---

FCC §2.1055, §22.355: Frequency Stability

Test Modulation:	15 MHz QPSK		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{bc})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-5.28	-0.006	2.5
	-20	3.8	6.09	0.007	2.5
	-10	3.8	-7.02	-0.008	2.5
	0	3.8	7.35	0.009	2.5
	10	3.8	8.23	0.010	2.5
	20	3.8	-9.14	-0.011	2.5
	30	3.8	9.53	0.011	2.5
	40	3.8	-6.52	-0.008	2.5
	50	3.8	-7.83	-0.009	2.5
Frequency Stability vs. Voltage	20	3.65	7.38	0.009	2.5
	20	4.35	7.02	0.008	2.5
Result:				Pass	

FCC §2.1055, §22.355: Frequency Stability					
Test Modulation:	15 MHz 16QAM		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-6.19	-0.007	2.5
	-20	3.8	-6.9	-0.008	2.5
	-10	3.8	-8.41	-0.010	2.5
	0	3.8	-8.47	-0.010	2.5
	10	3.8	6.4	0.008	2.5
	20	3.8	-6.95	-0.008	2.5
	30	3.8	6.53	0.008	2.5
	40	3.8	9.18	0.011	2.5
	50	3.8	7.47	0.009	2.5
Frequency Stability vs. Voltage	20	3.65	8.88	0.011	2.5
	20	4.35	-7.46	-0.009	2.5
				Result:	Pass

4.12.4 Test Plots for Part 22H:

(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth

Lowest For 22H

1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

Middle For 22H

Highest For 22H

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			824.0473 MHz	-8.65 dBm		
T1	1			824.1491 MHz	11.36 dBm	Occ Bw	1.101796407 MHz
T2	1			825.2509 MHz	11.67 dBm		
D1	M1	1		1.2994 MHz	-0.75 dB		

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			824.0473 MHz	-8.78 dBm		
T1	1			824.15509 MHz	10.77 dBm	Occ Bw	1.095808383 MHz
T2	1			825.2509 MHz	10.29 dBm		
D1	M1	1		1.2994 MHz	-0.01 dB		

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			830.852 MHz	-8.69 dBm		
T1	1			830.9491 MHz	10.92 dBm	Occ Bw	1.101796407 MHz
T2	1			832.0509 MHz	11.39 dBm		
D1	M1	1		1.29 MHz	-0.13 dB		

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			830.852 MHz	-8.82 dBm		
T1	1			830.95509 MHz	10.09 dBm	Occ Bw	1.095808383 MHz
T2	1			832.0509 MHz	9.44 dBm		
D1	M1	1		1.296 MHz	-0.49 dB		

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			847.658 MHz	-8.67 dBm		
T1	1			847.7491 MHz	10.83 dBm	Occ Bw	1.095808383 MHz
T2	1			848.84491 MHz	9.88 dBm		
D1	M1	1		1.29 MHz	0.19 dB		

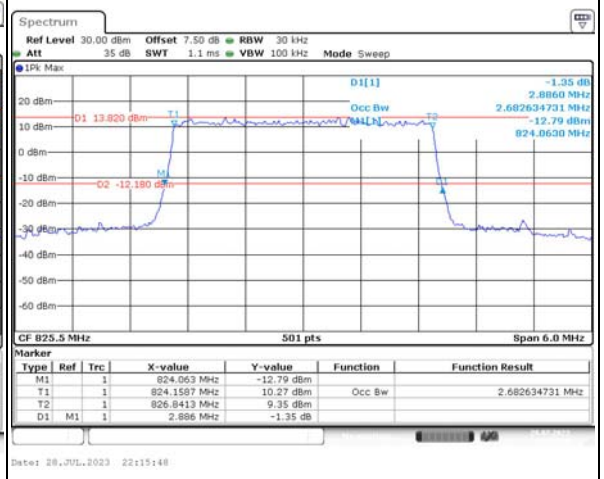
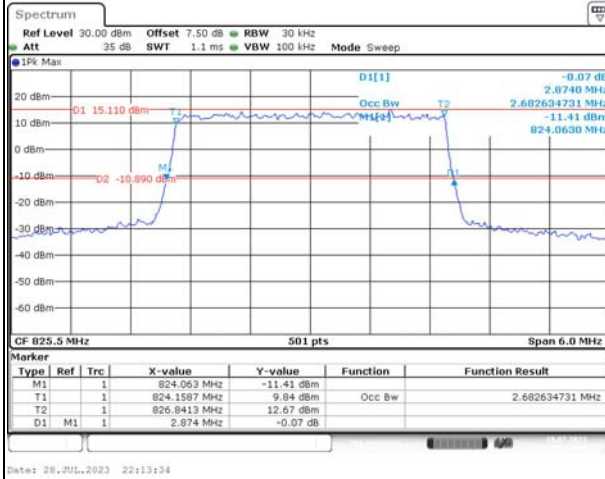
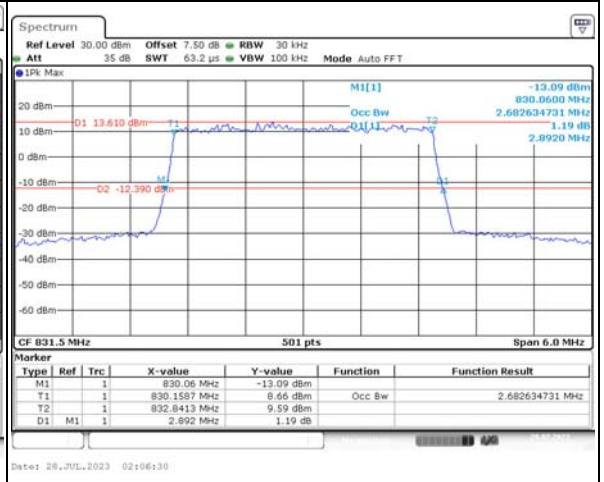
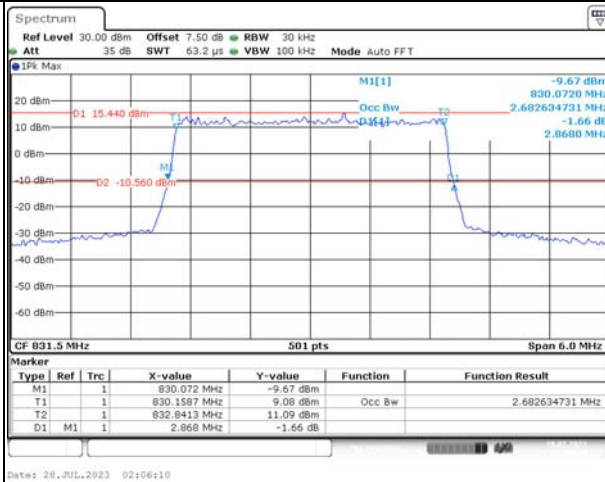
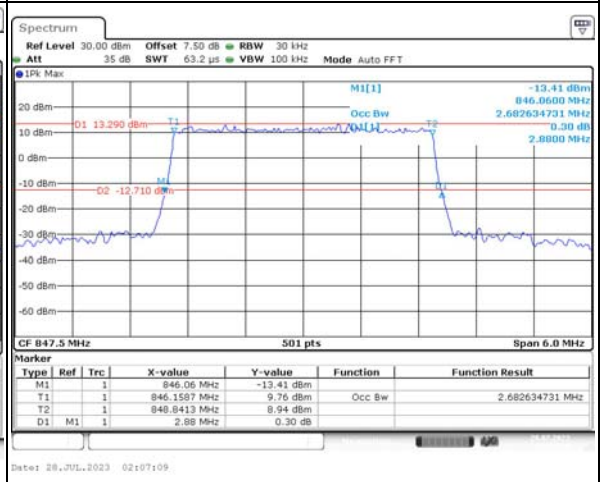
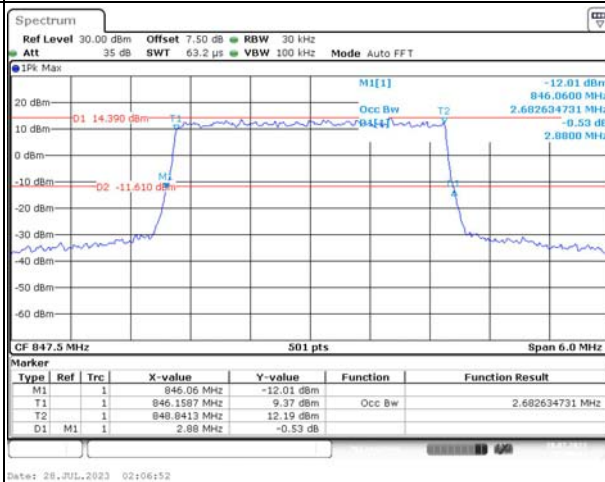
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1	1			847.64 MHz	-9.19 dBm		
T1	1			847.7491 MHz	9.98 dBm	Occ Bw	1.095808383 MHz
T2	1			848.84491 MHz	9.69 dBm		
D1	M1	1		1.32 MHz	-0.82 dB		

Occupied Bandwidth

Channel

3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

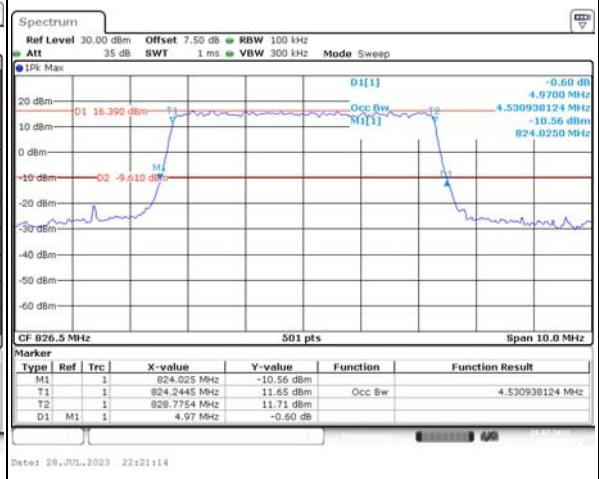
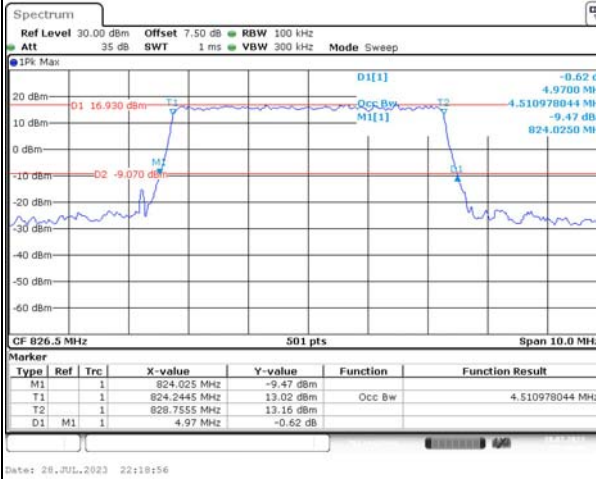
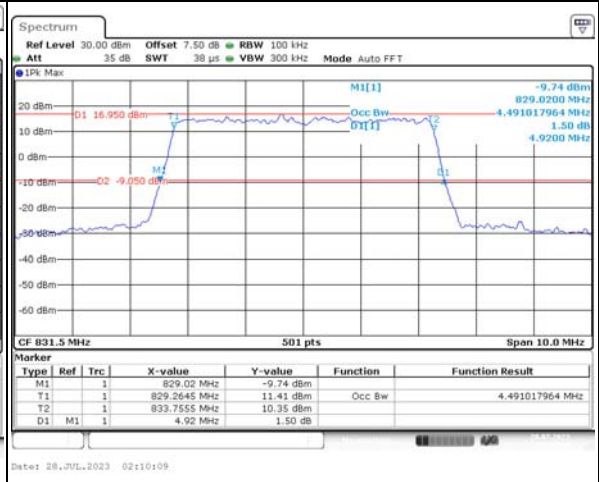
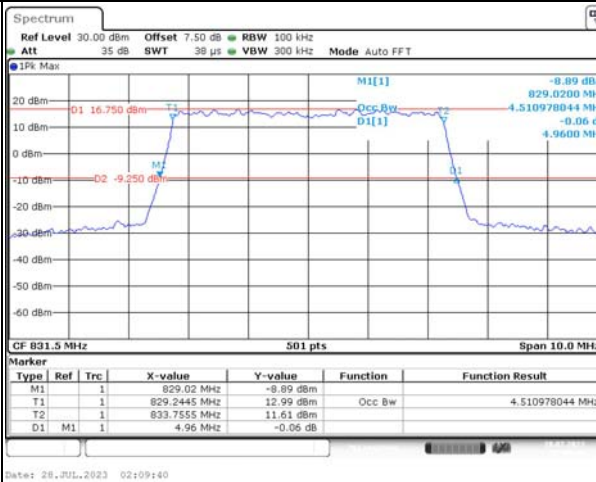
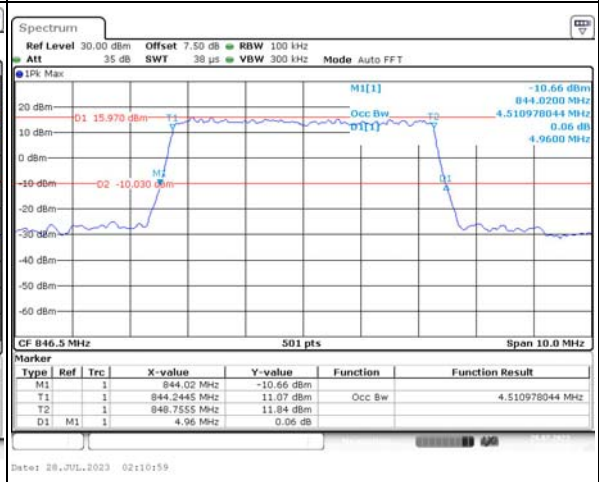
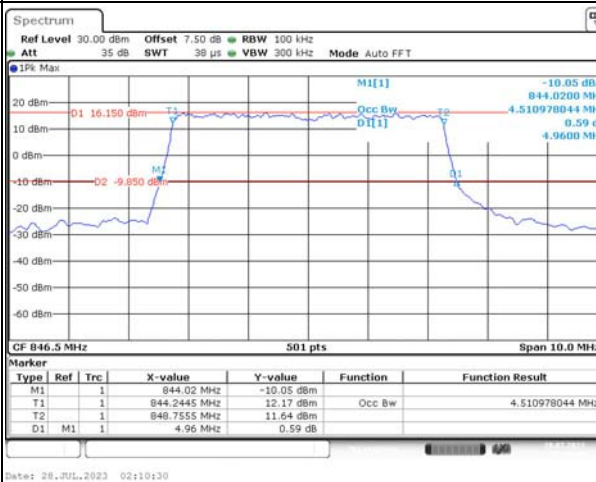
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

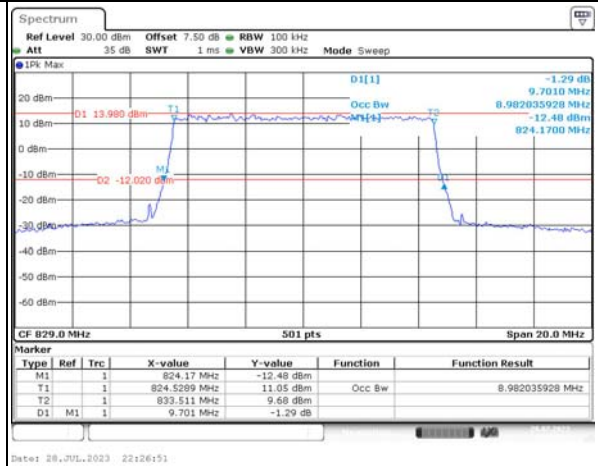
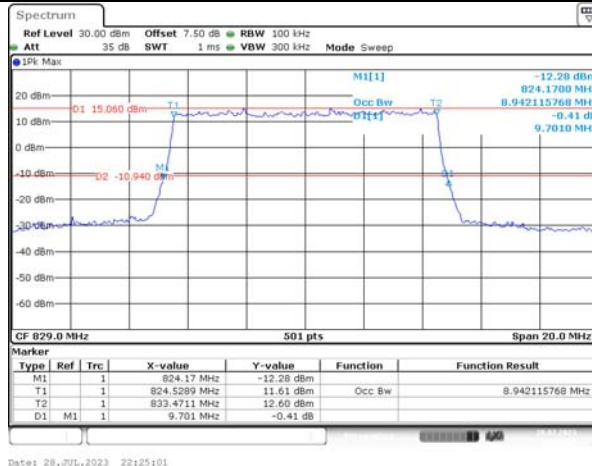
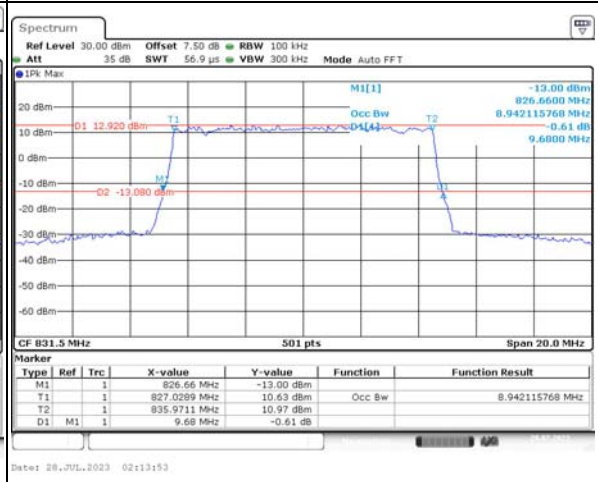
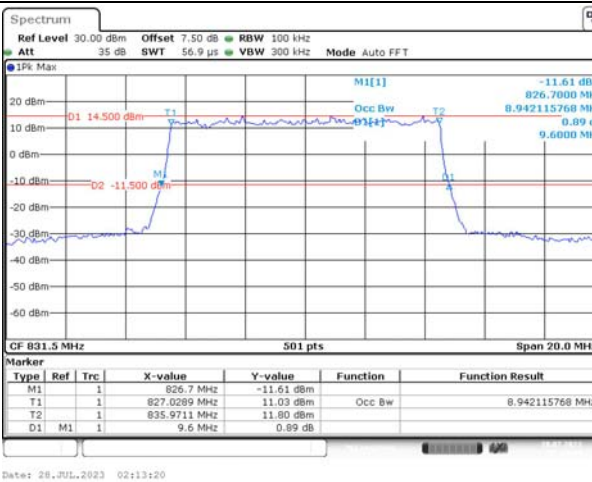
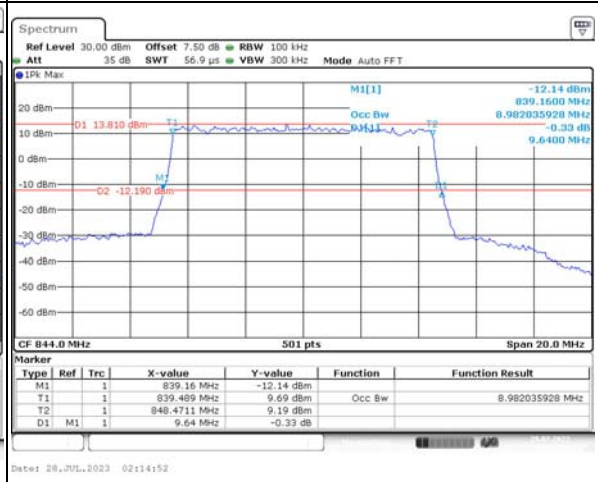
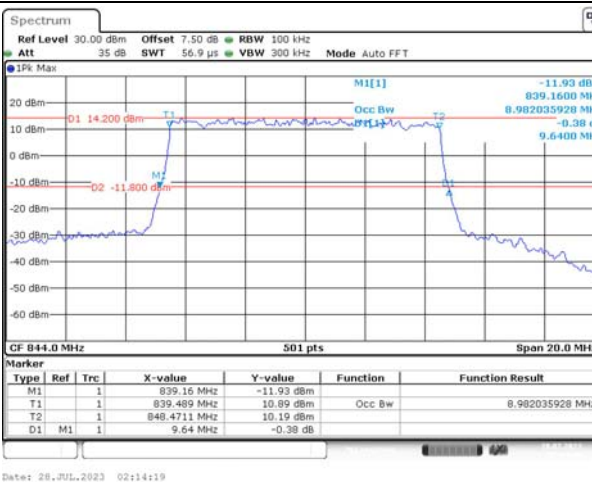
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

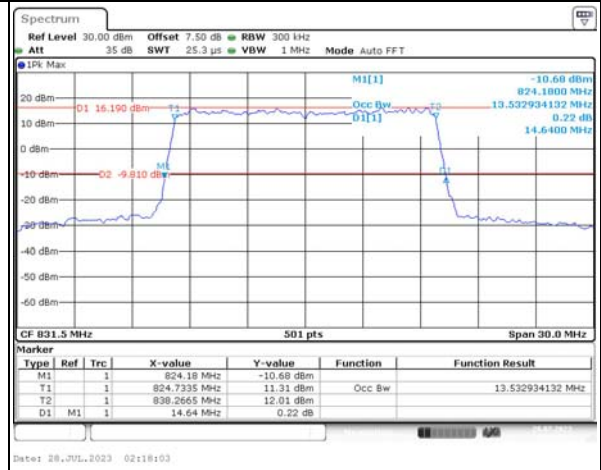
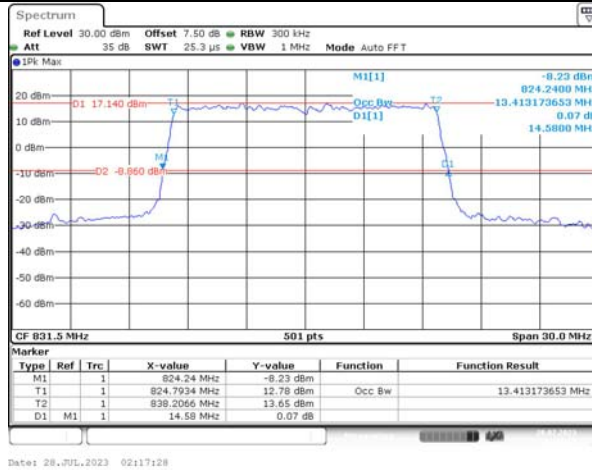
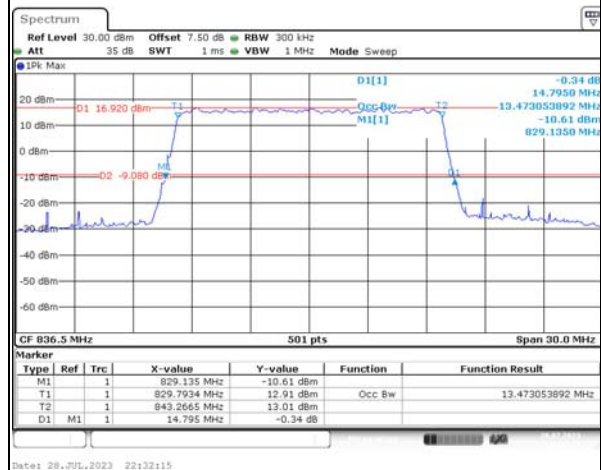
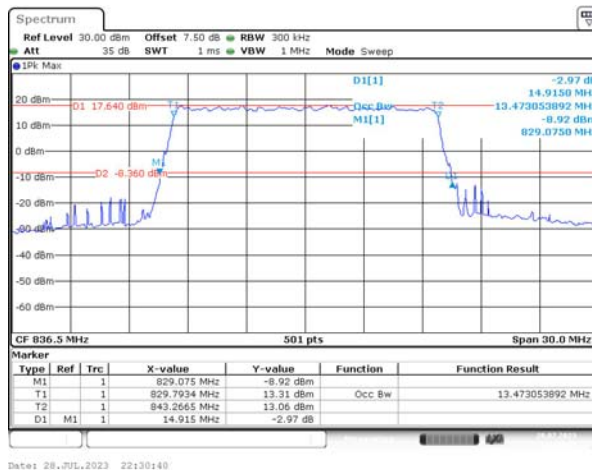
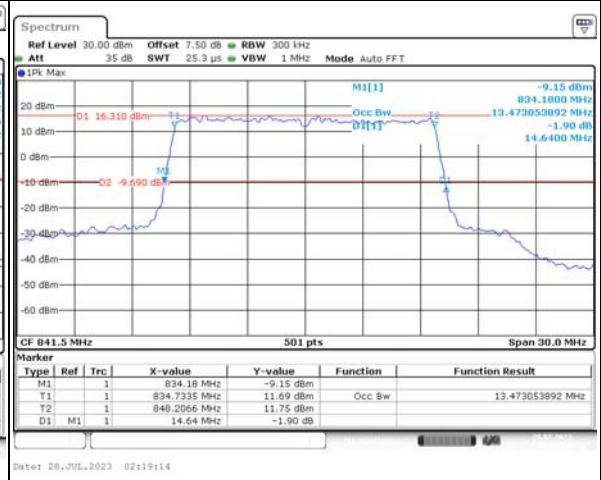
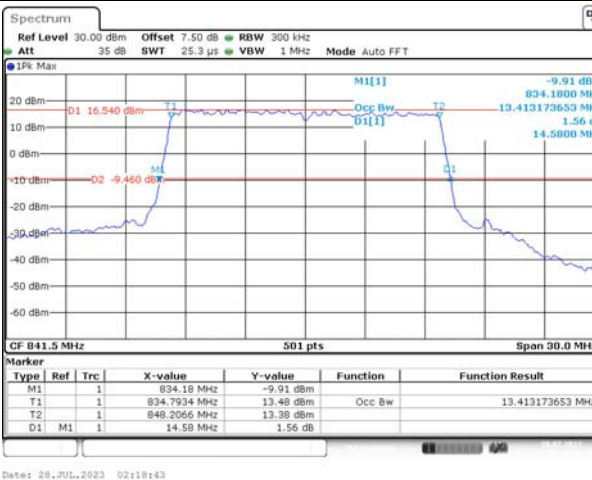
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

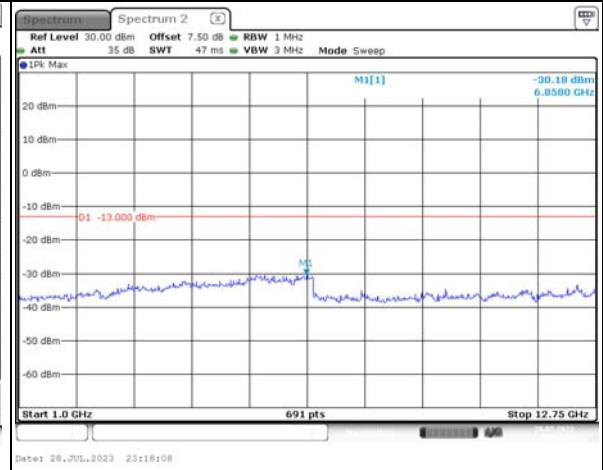
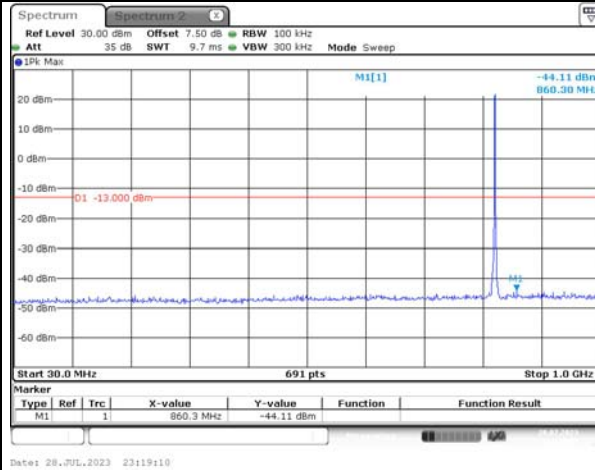
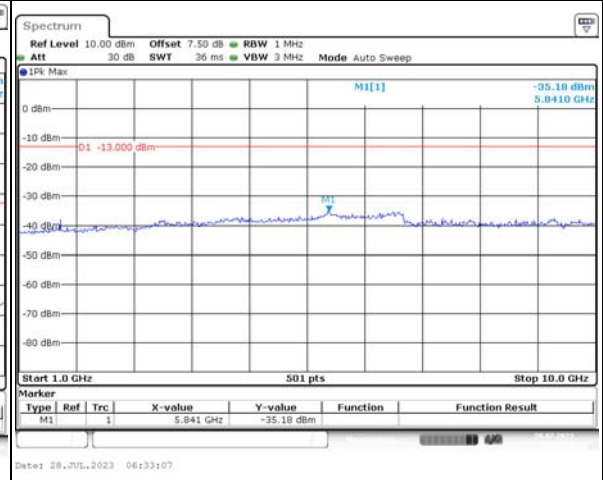
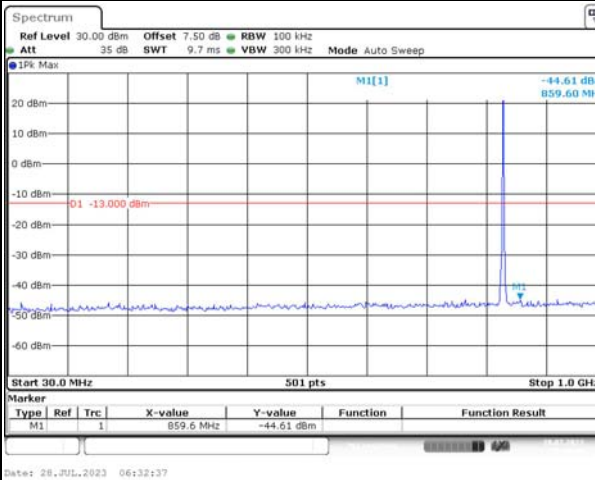
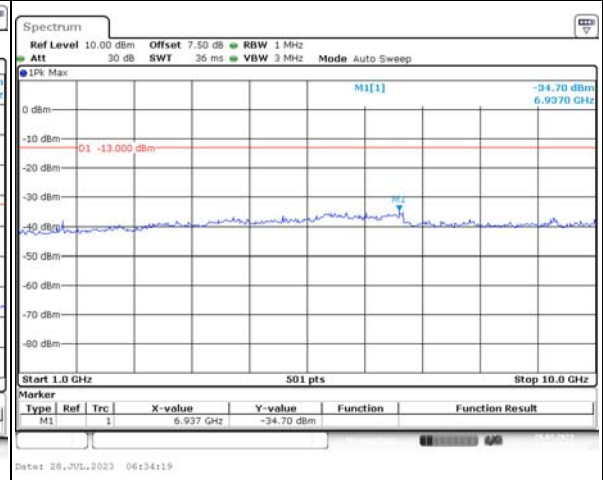
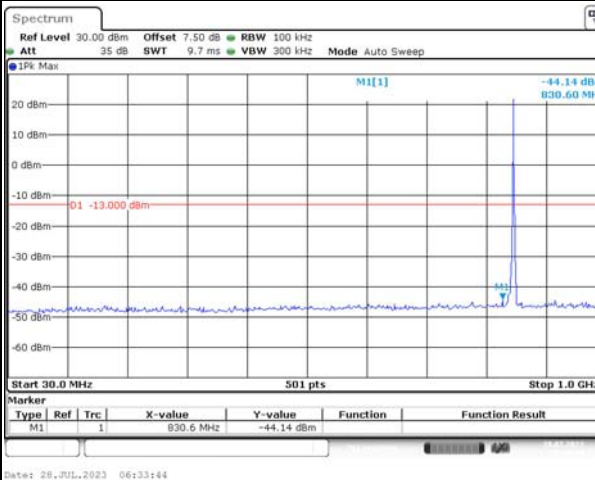
15MHz Bandwidth 16QAM

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

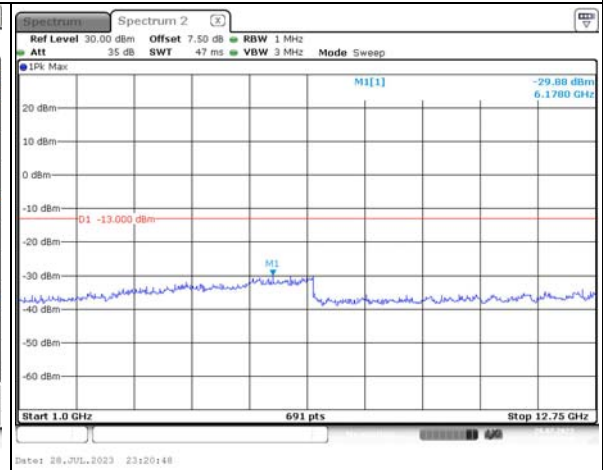
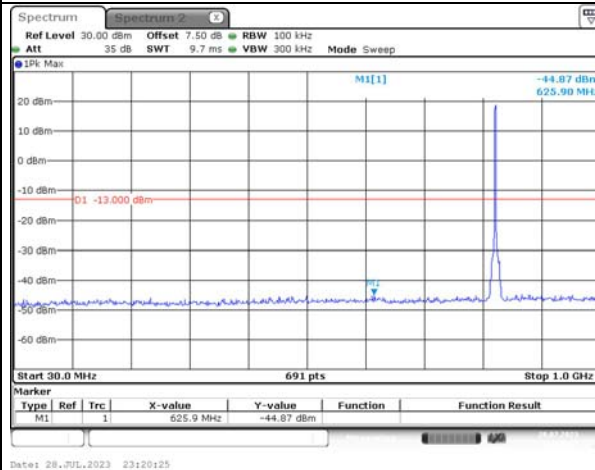
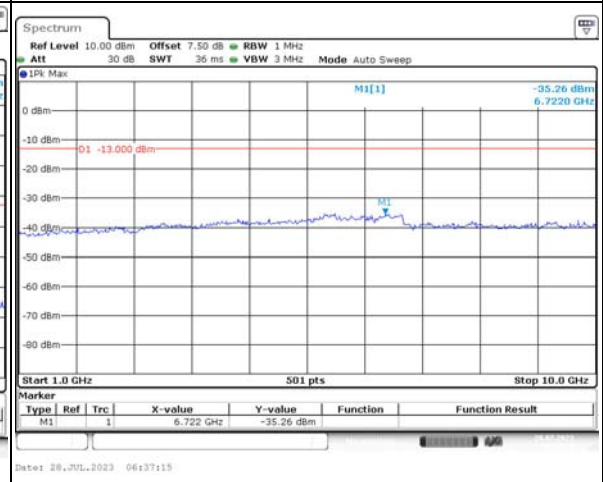
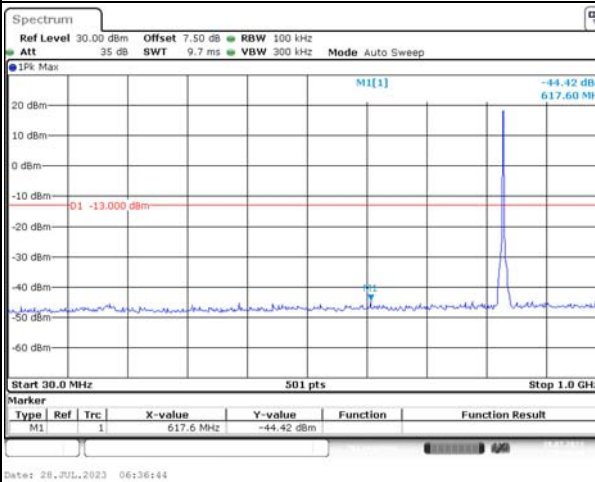
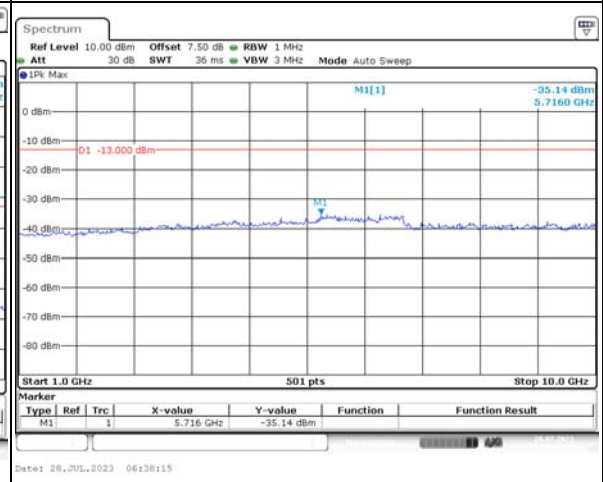
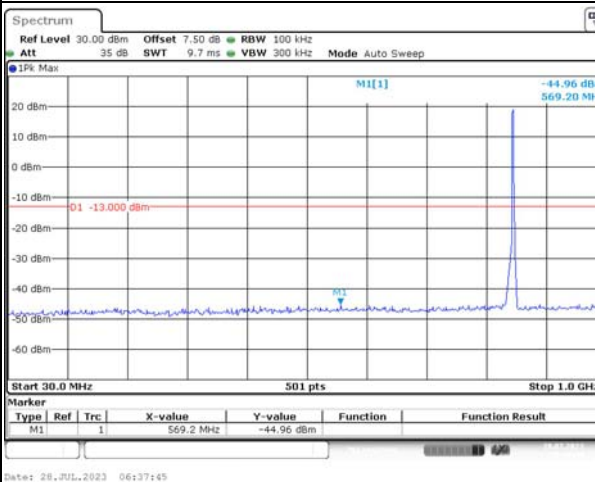
1.4MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

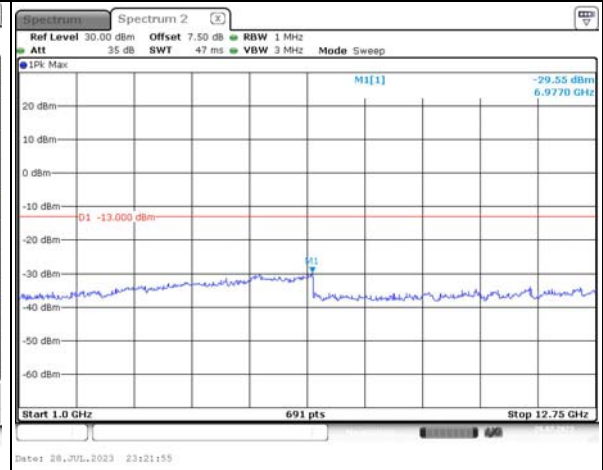
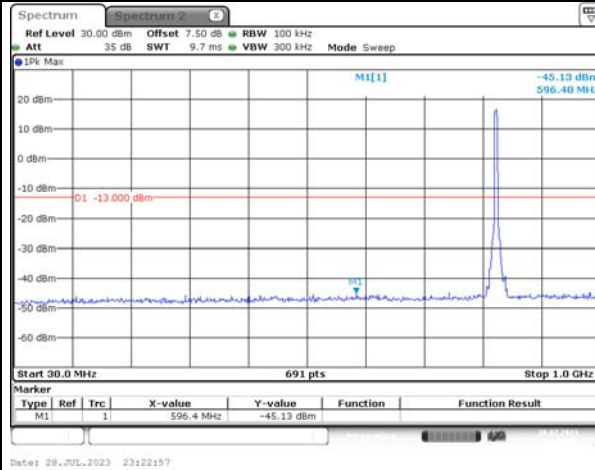
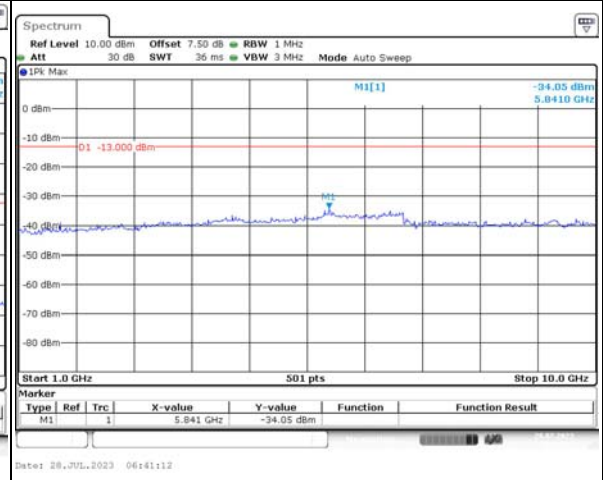
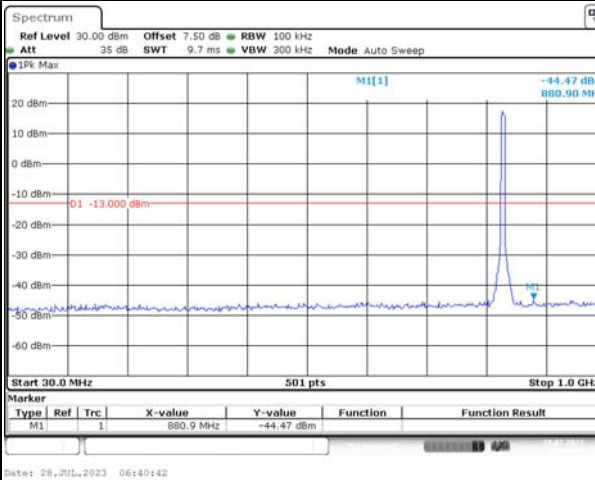
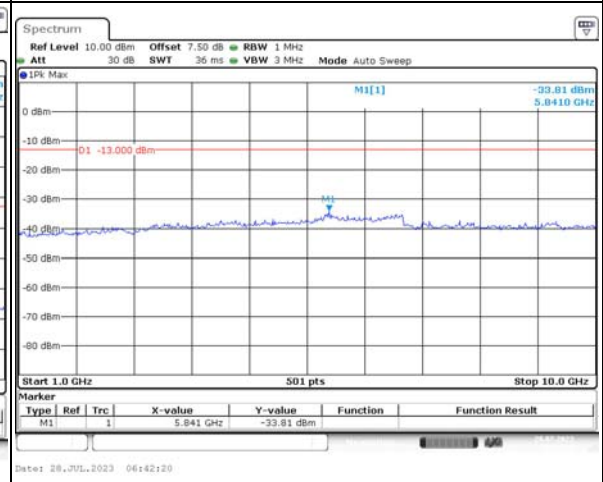
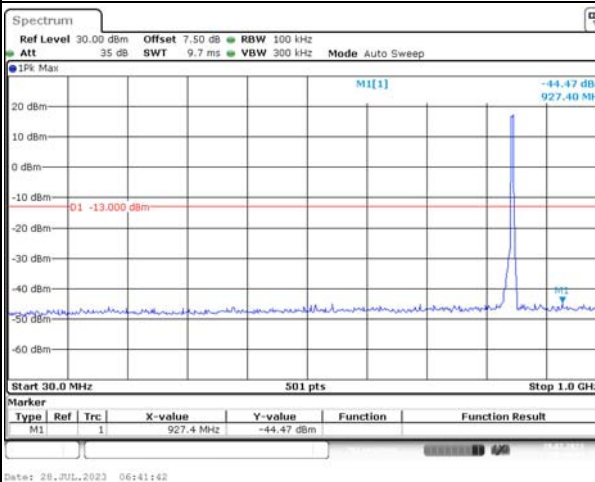
3MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

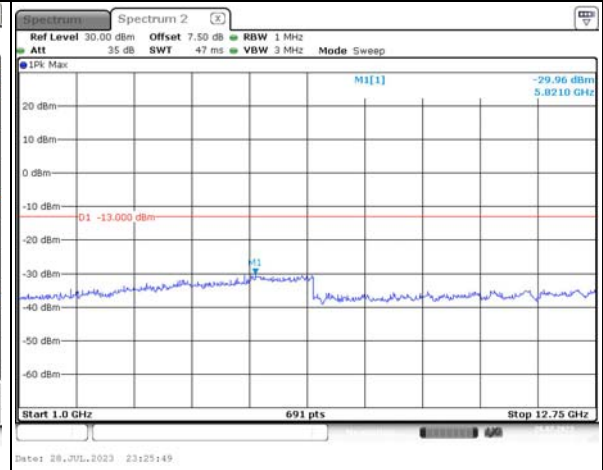
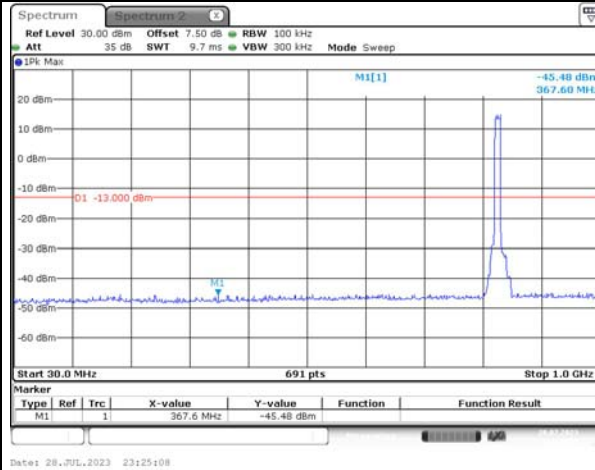
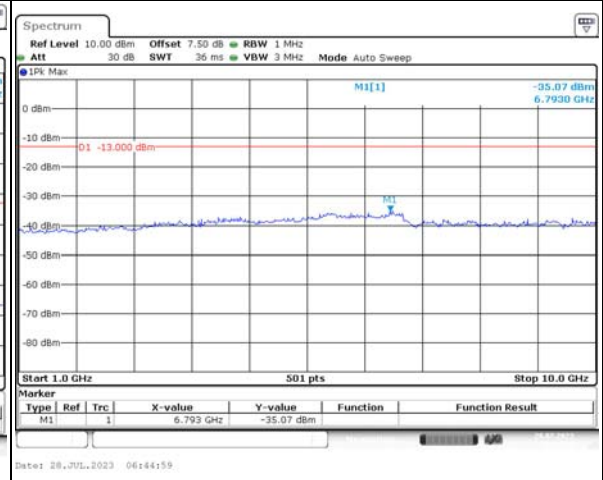
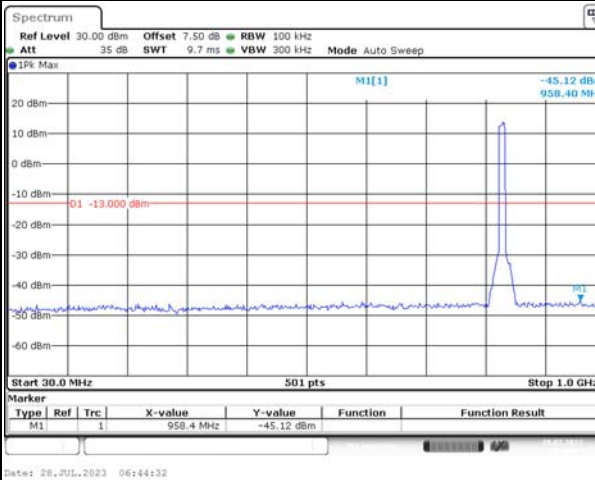
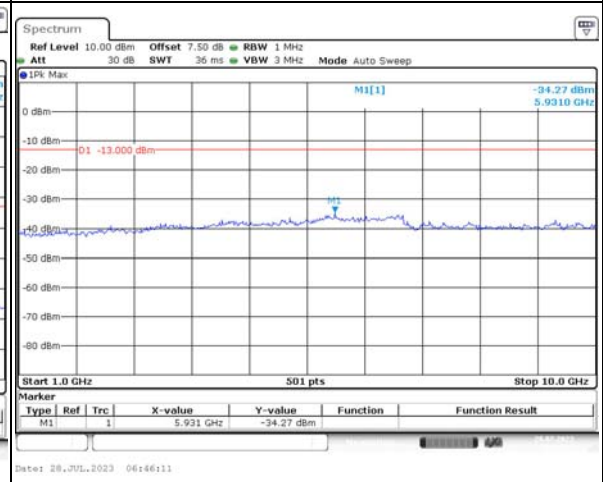
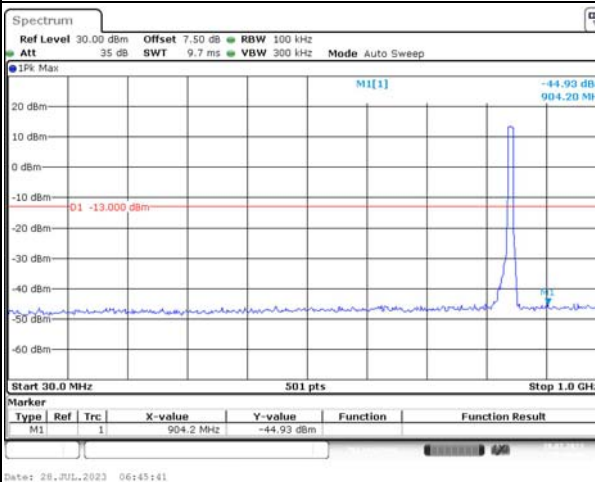
5MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

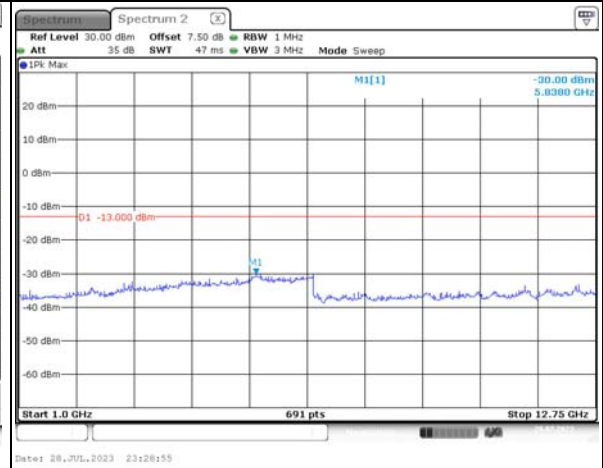
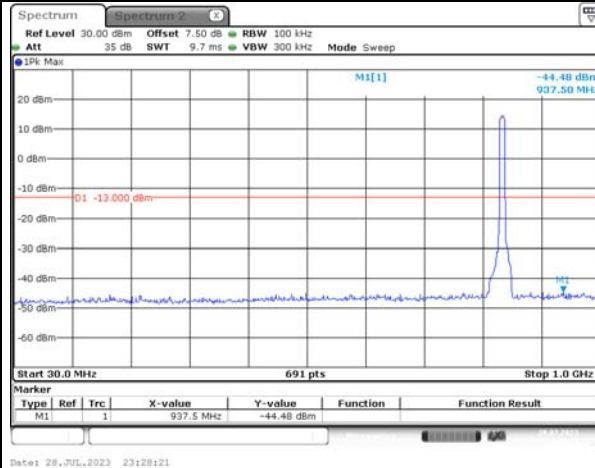
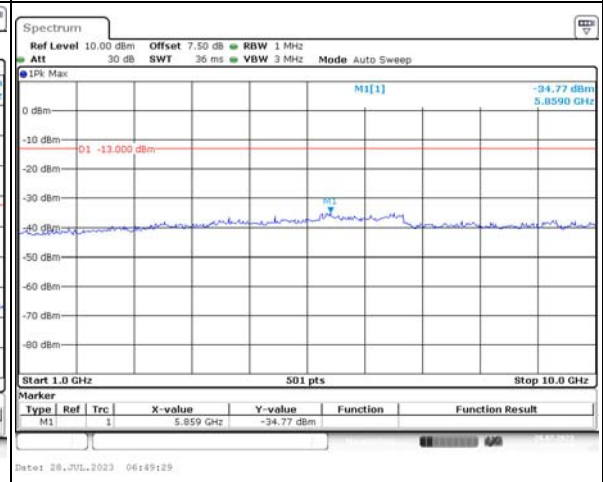
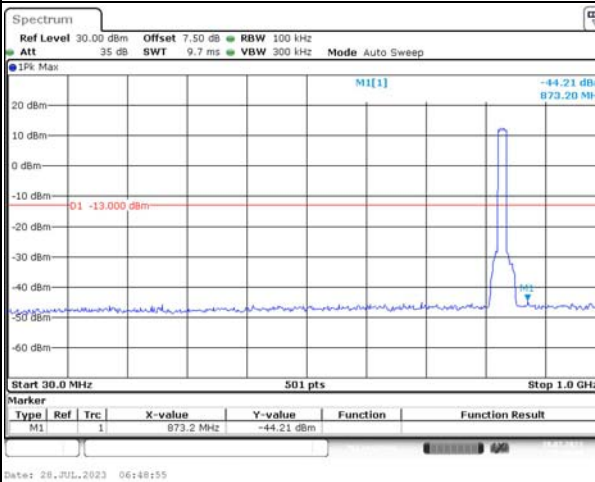
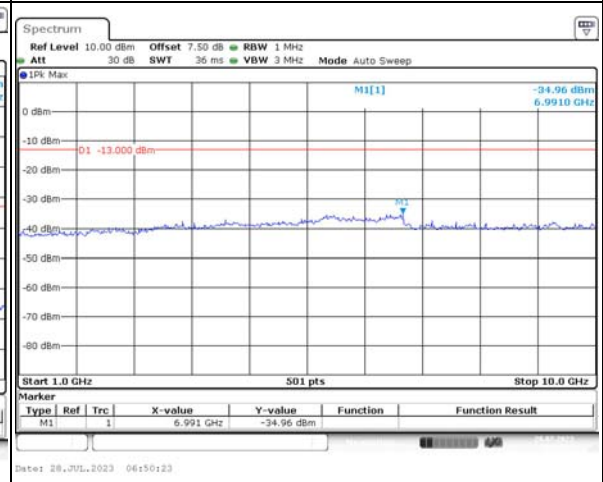
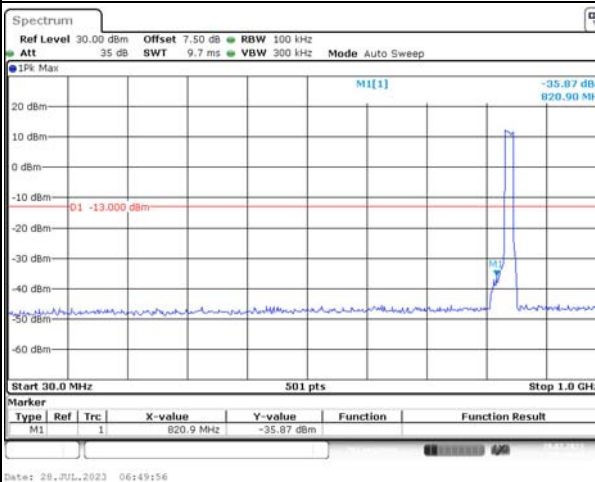
10MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

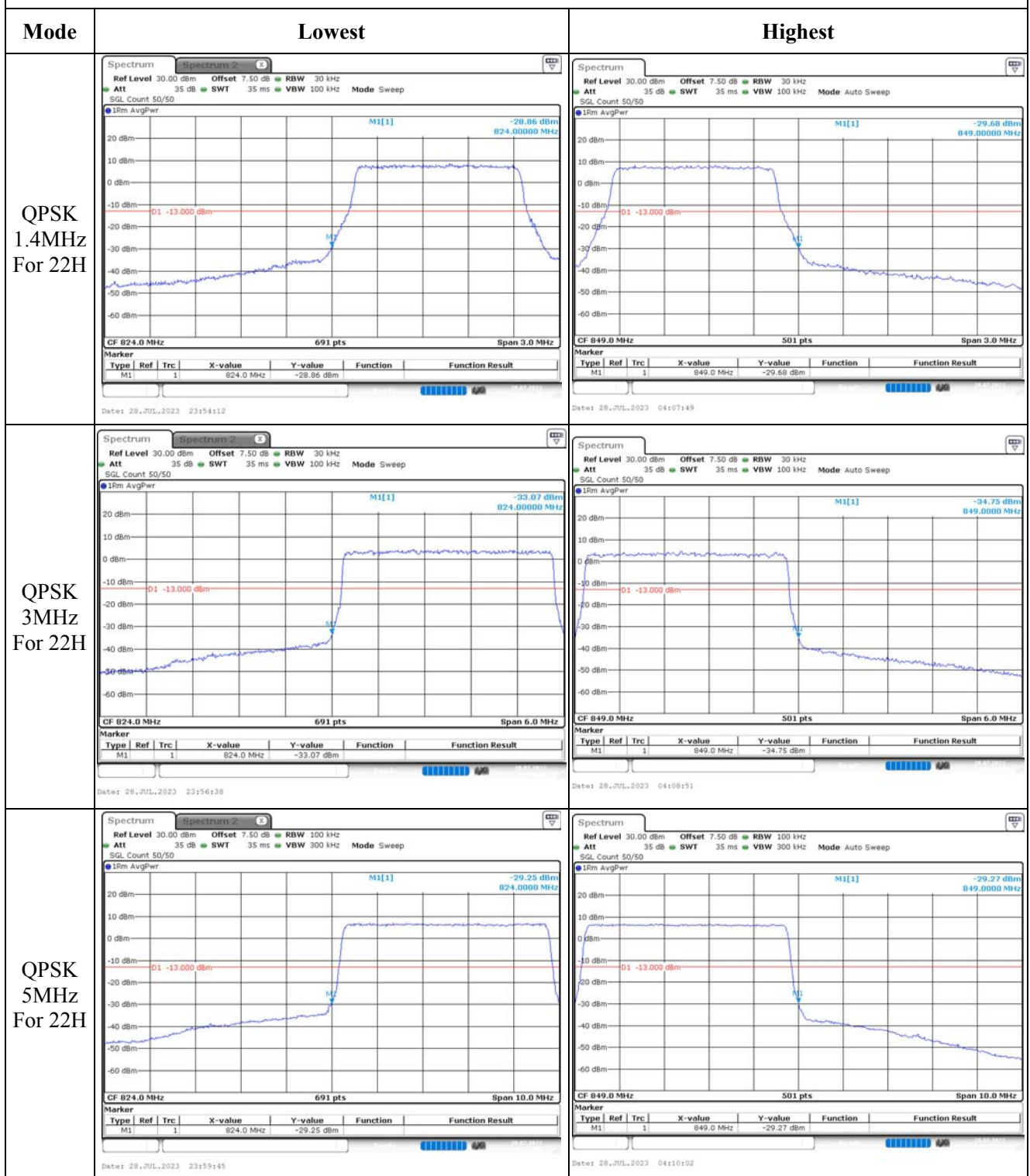
Spurious Emissions at Antenna Terminal

Channel

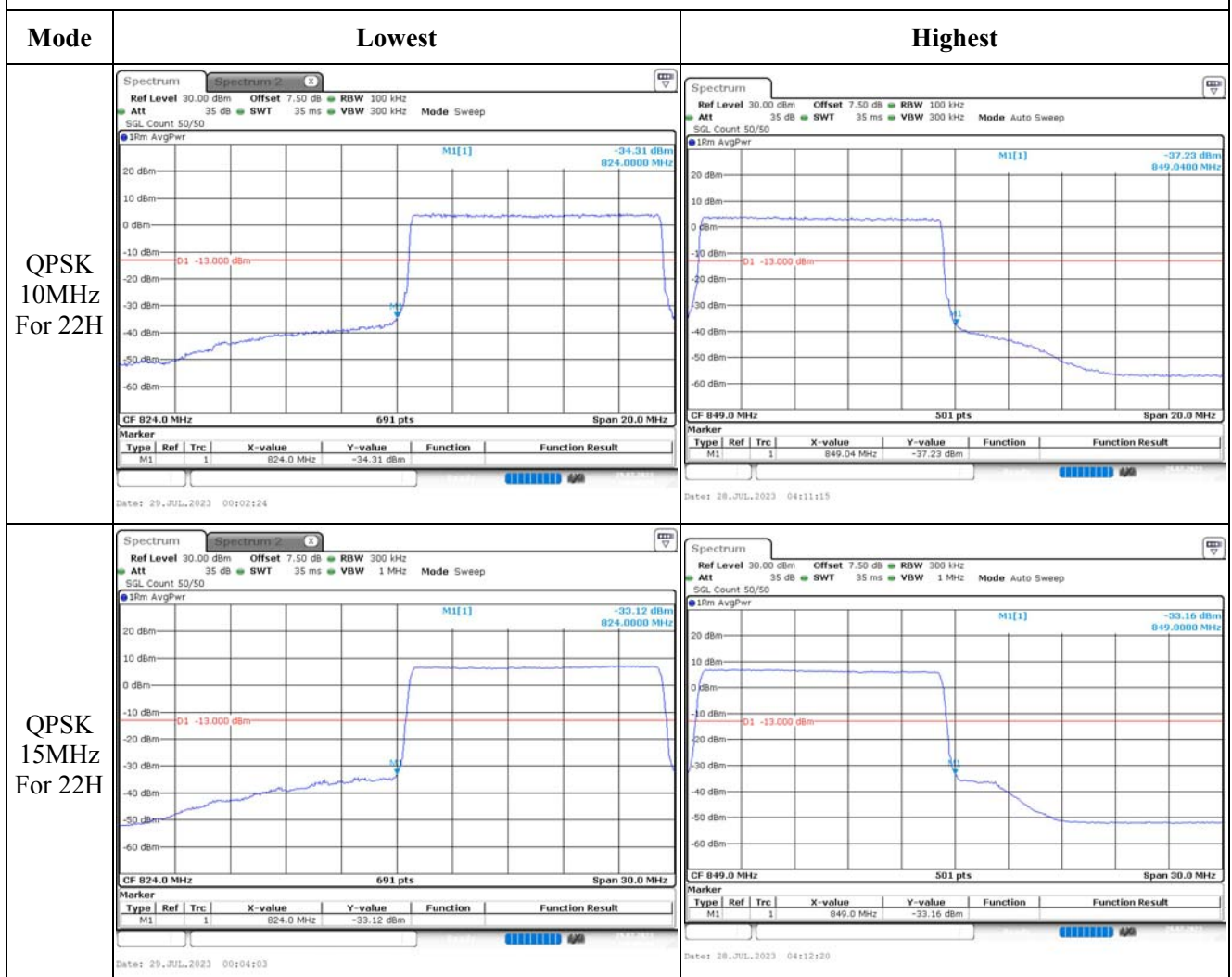
15MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

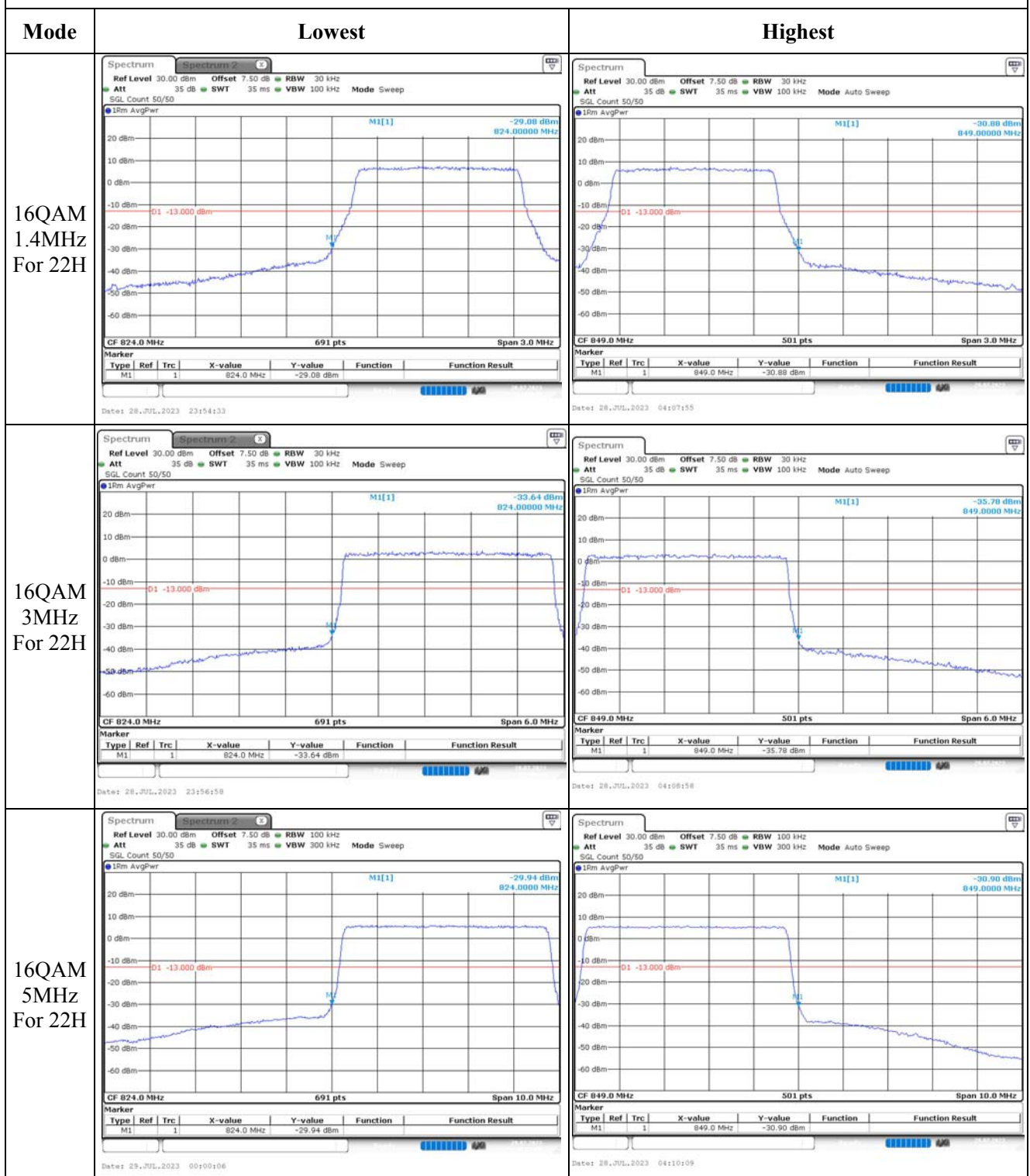
Out of band emission, Band Edge



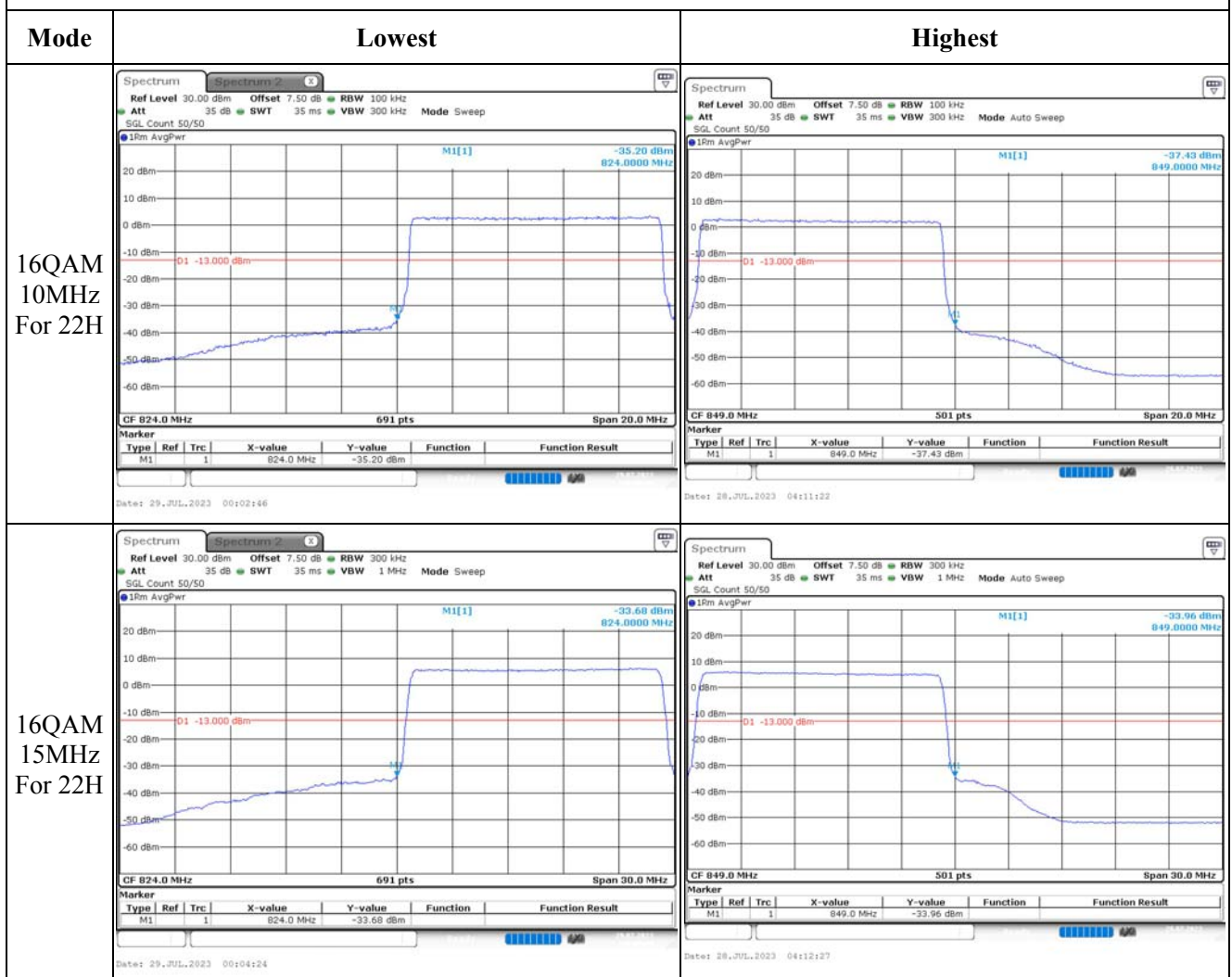
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.13 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	28LK-1	Test Date:	2023/7/28~2023/8/25
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.2~26.8	Relative Humidity: (%)	42~55	ATM Pressure: (kPa)	99.7~100.3
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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	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
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	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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	24.3	24.11	23.33	24.35	33
	RB1#13	24.41	24.15	23.43		
	RB1#24	24.37	24.09	23.32		
	RB15#0	24.34	24.15	23.33		
	RB15#10	24.4	24.09	23.35		
	RB25#0	24.32	24.11	23.32		
5MHz 16QAM	RB1#0	24.36	24.36	23.26	24.42	33
	RB1#13	24.48	24.37	23.36		
	RB1#24	24.42	24.31	23.26		
	RB15#0	24.4	24.16	23.26		
	RB15#10	24.46	24.15	23.26		
	RB25#0	24.43	24.08	23.28		
10MHz QPSK	RB1#0	24.38	24.22	23.48	24.61	33
	RB1#25	24.67	24.41	23.77		
	RB1#49	24.49	24.13	23.52		
	RB25#0	24.38	24.19	23.42		
	RB25#25	24.52	24.17	23.42		
	RB50#0	24.39	24.04	23.39		
10MHz 16QAM	RB1#0	24.55	24.13	23.45	24.85	33
	RB1#25	24.91	24.35	23.67		
	RB1#49	24.7	24.04	23.42		
	RB25#0	24.4	24.23	23.4		
	RB25#25	24.53	24.21	23.39		
	RB50#0	24.44	24.2	23.35		
15MHz QPSK	RB1#0	24.29	24.07	23.35	24.5	33
	RB1#38	24.48	24.19	23.46		
	RB1#74	24.45	24.02	23.38		
	RB36#0	24.43	24.23	23.57		
	RB36#39	24.56	24.25	23.61		
	RB75#0	24.52	24.22	23.6		
15MHz 16QAM	RB1#0	24.5	24.29	23.22	24.63	33
	RB1#38	24.69	24.4	23.29		
	RB1#74	24.65	24.16	23.23		
	RB36#0	24.45	24.17	23.39		
	RB36#39	24.56	24.1	23.41		
	RB75#0	24.48	24.15	23.49		
20MHz QPSK	RB1#0	24.1	23.94	23.3	24.65	33
	RB1#50	24.71	24.33	23.74		
	RB1#99	24.28	23.82	23.29		

20MHz 16QAM	RB50#0	24.3	24.11	23.37	24.73	33
	RB50#50	24.5	24.1	23.36		
	RB100#0	24.4	24.1	23.39		
	RB1#0	24.2	23.95	23.44		
	RB1#50	24.79	24.35	23.84		
	RB1#99	24.32	23.8	23.4		
	RB50#0	24.3	24.15	23.35		
	RB50#50	24.55	24.17	23.32		
	RB100#0	24.41	24.15	23.36		

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	9.07	9.1	7.86	13
	RB100#0	8.29	8.23	7.74	13
20MHz 16QAM	RB1#0	10.17	10.2	8.84	13
	RB100#0	10	9.94	9.42	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	4.511	5.1	5.1	5.04
5MHz 16QAM	4.511	4.511	4.511	5.12	5	5.4
10MHz QPSK	8.942	8.942	8.942	9.92	9.6	9.68
10MHz 16QAM	8.942	8.942	8.942	9.56	9.64	9.56
15MHz QPSK	13.473	13.473	13.533	14.52	14.64	14.7
15MHz 16QAM	13.473	13.533	13.533	15.42	14.64	16.2
20MHz QPSK	17.884	17.884	17.964	19.28	19.52	19.12
20MHz 16QAM	17.964	17.884	17.964	19.2	19.52	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

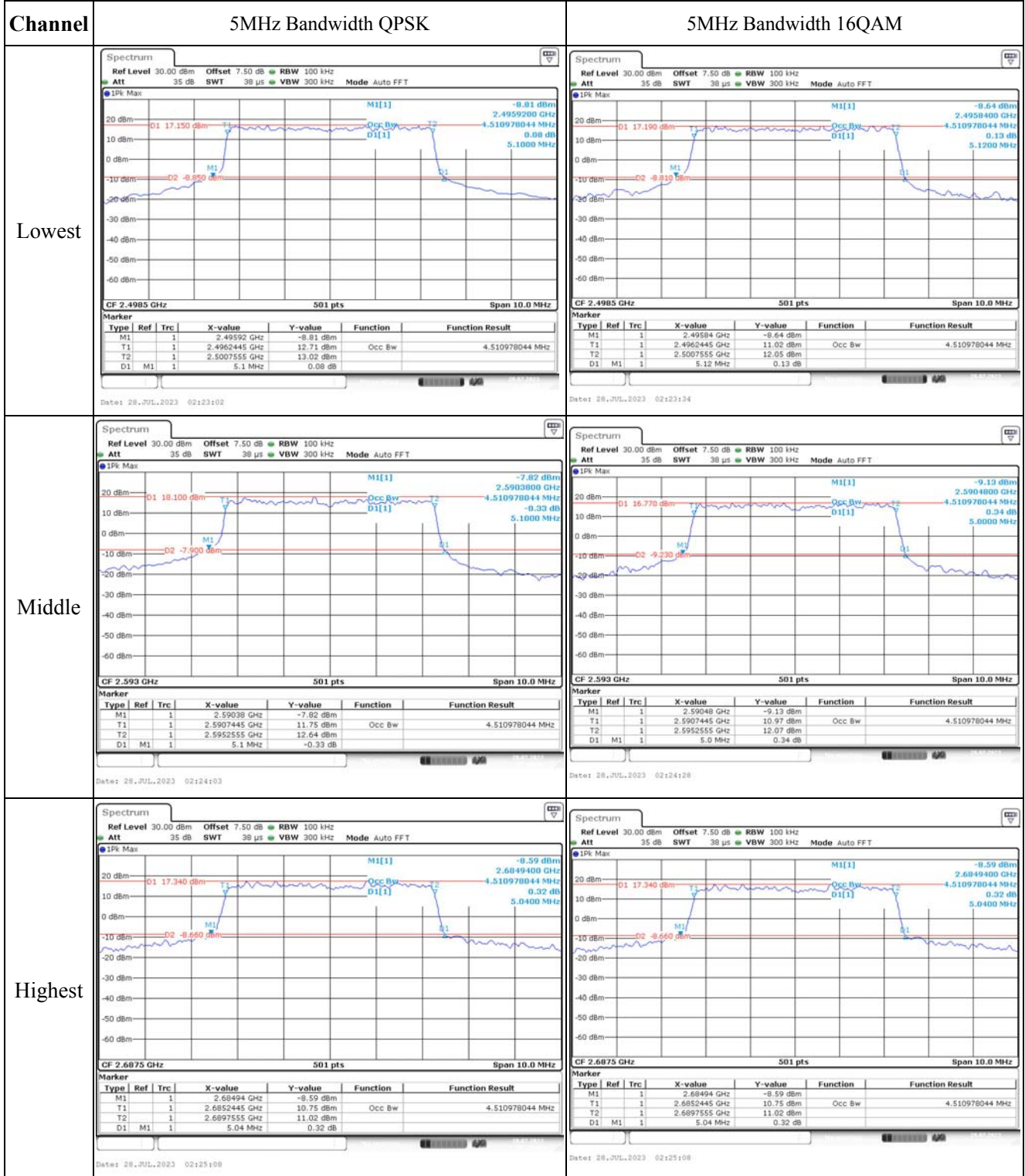
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	2497.028	2496.00	2688.942	2690
	-20	3.8	2497.026	2496.00	2688.922	2690
	-10	3.8	2497.021	2496.00	2688.962	2690
	0	3.8	2497.042	2496.00	2688.954	2690
	10	3.8	2497.026	2496.00	2688.954	2690
	20	3.8	2497.058	2496.00	2688.942	2690
	30	3.8	2497.068	2496.00	2688.985	2690
	40	3.8	2497.004	2496.00	2688.959	2690
	50	3.8	2497.028	2496.00	2688.930	2690
Frequency Stability vs. Voltage	20	3.65	2497.079	2496.00	2688.948	2690
	20	4.35	2497.054	2496.00	2688.913	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	3.8	2497.010	2496.00	2688.956	2690
	-20	3.8	2497.028	2496.00	2688.936	2690
	-10	3.8	2497.002	2496.00	2688.960	2690
	0	3.8	2497.055	2496.00	2688.989	2690
	10	3.8	2497.039	2496.00	2688.908	2690
	20	3.8	2497.058	2496.00	2688.942	2690
	30	3.8	2497.083	2496.00	2688.918	2690
	40	3.8	2497.059	2496.00	2688.936	2690
	50	3.8	2497.024	2496.00	2688.977	2690
Frequency Stability vs. Voltage	20	3.65	2497.086	2496.00	2688.982	2690
	20	4.35	2497.063	2496.00	2689.000	2690
					Result:	Pass

Test Plots (Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



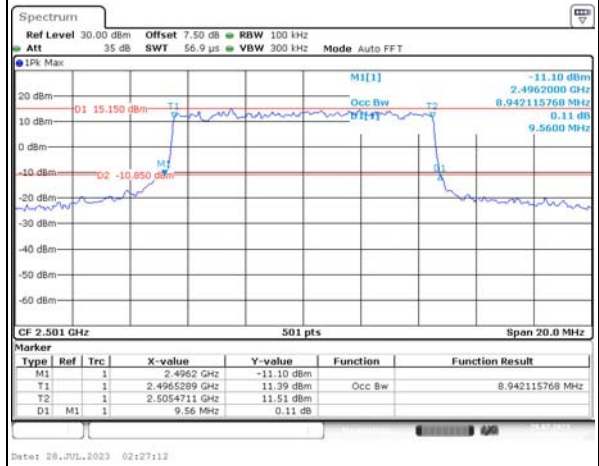
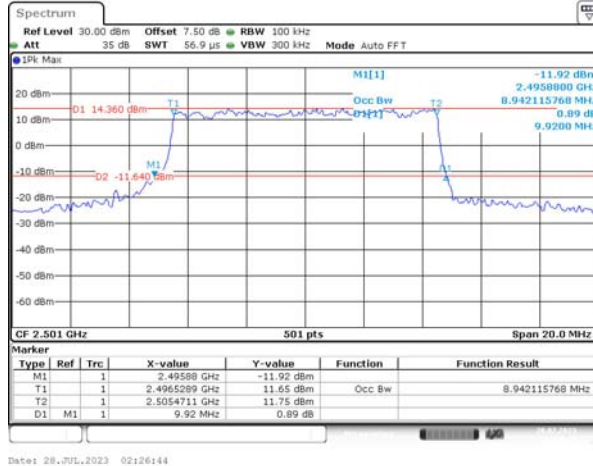
Occupied Bandwidth

Channel

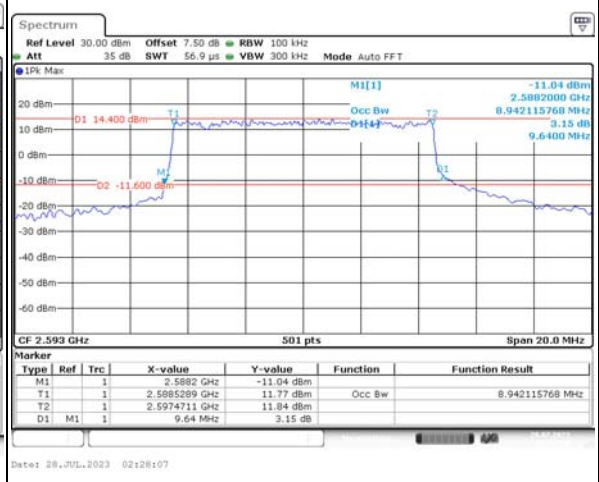
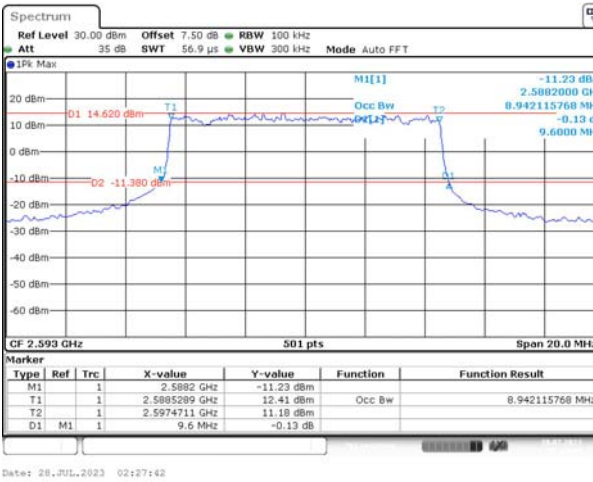
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

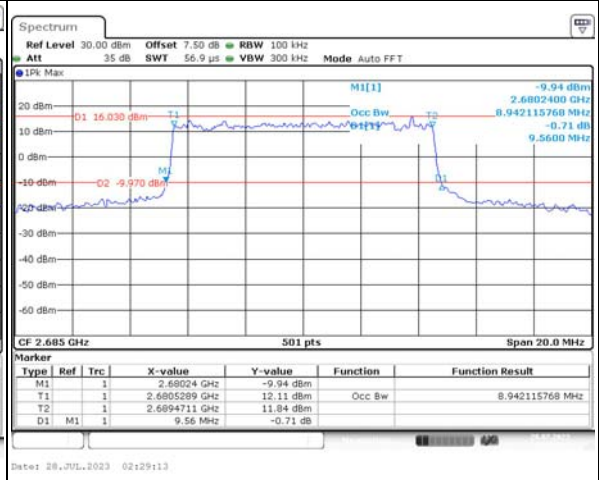
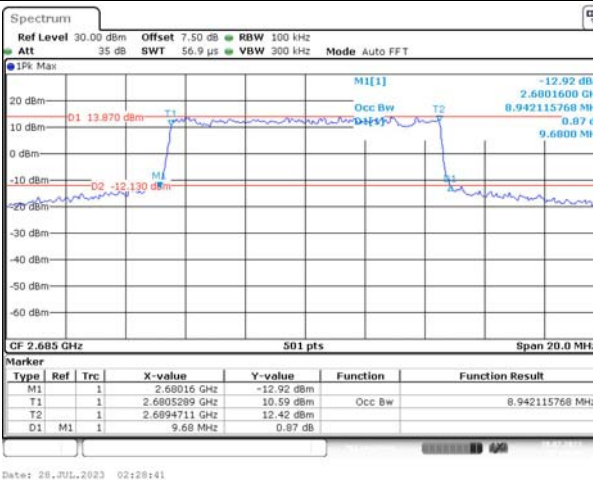
Lowest



Middle



Highest



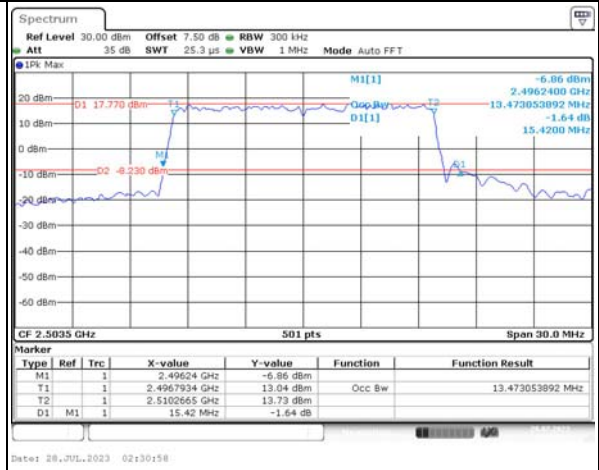
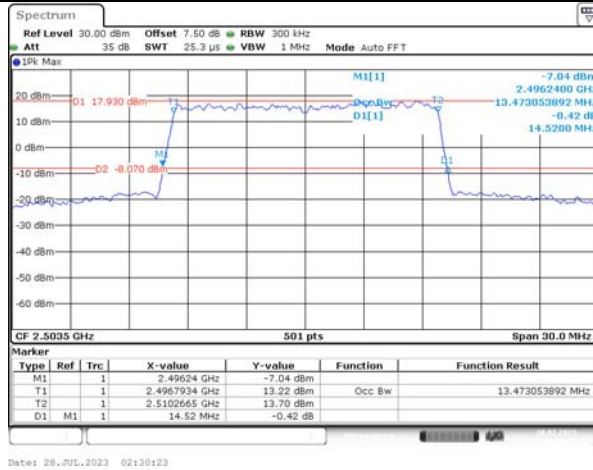
Occupied Bandwidth

Channel

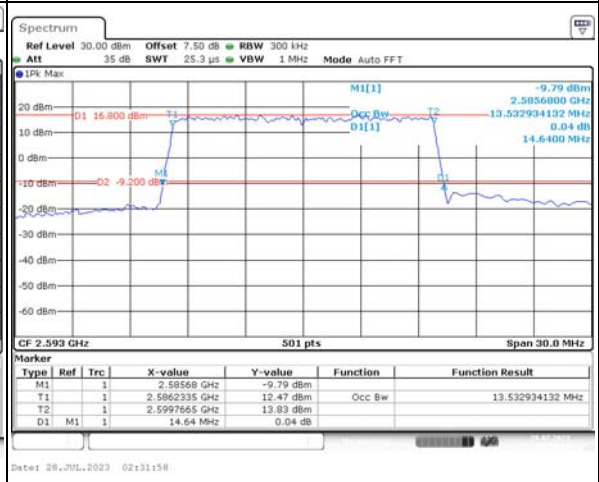
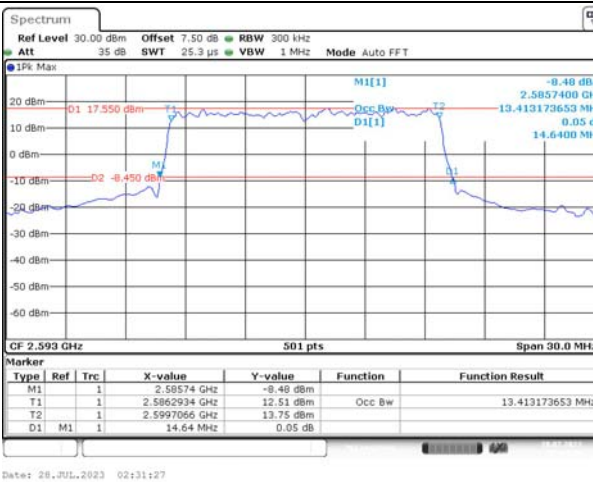
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

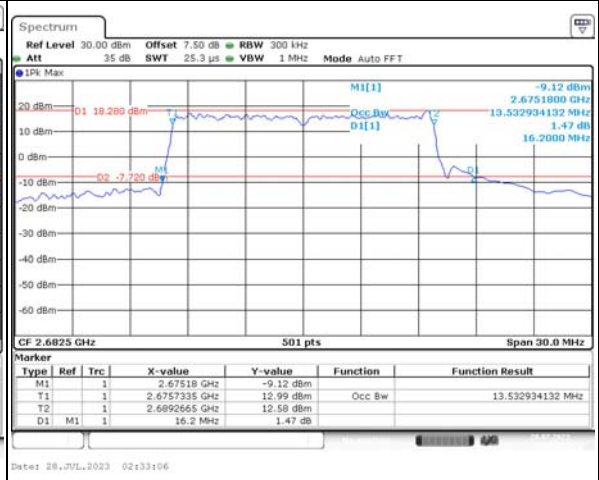
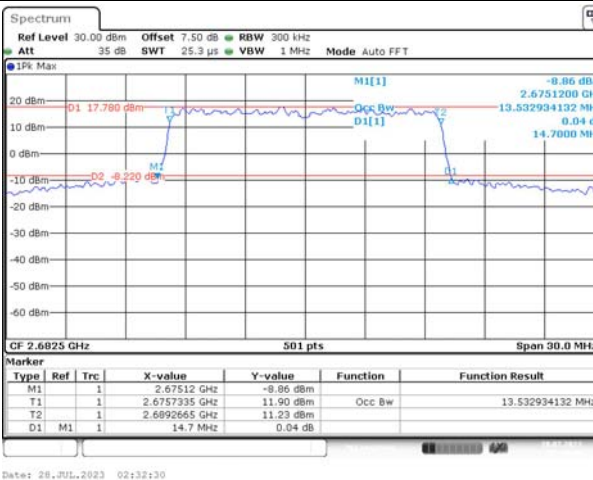
Lowest



Middle



Highest



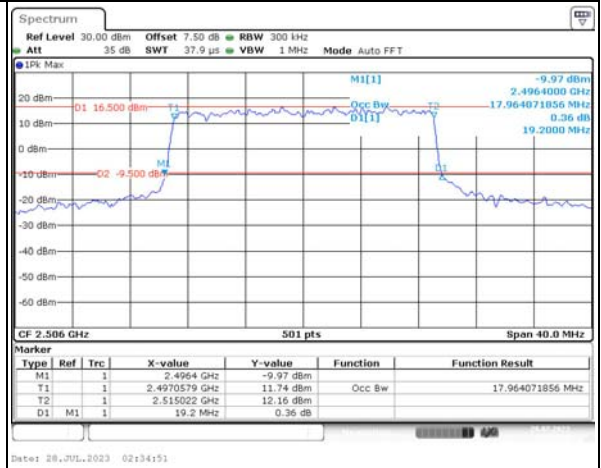
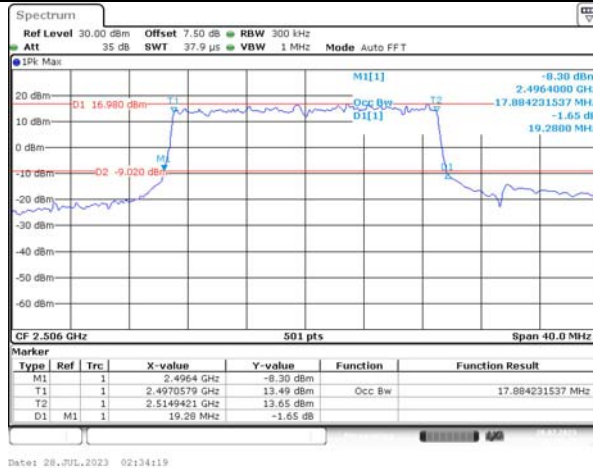
Occupied Bandwidth

Channel

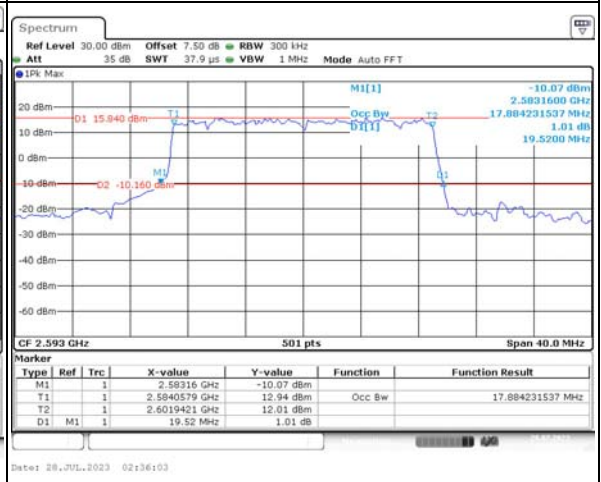
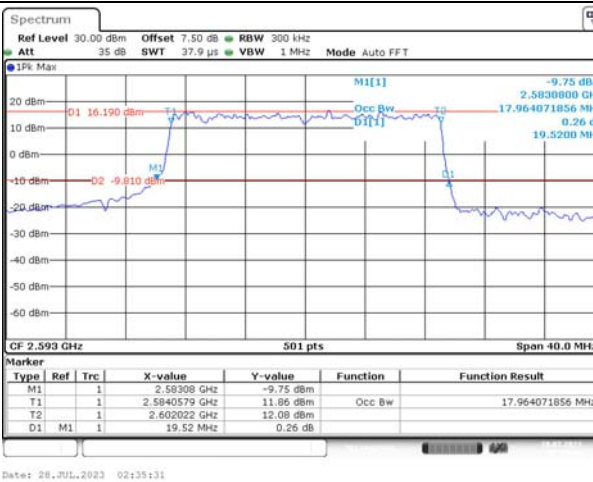
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

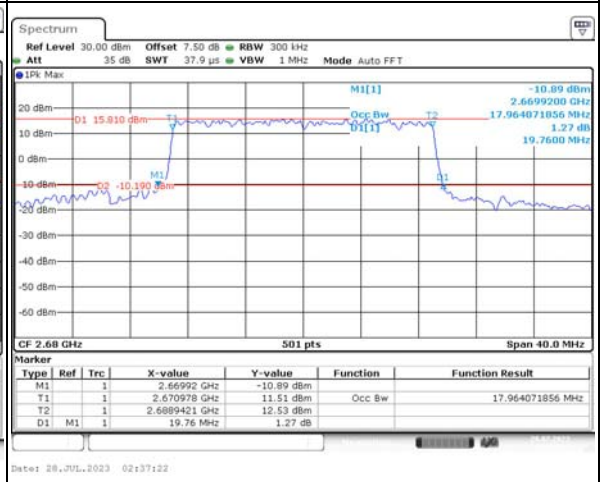
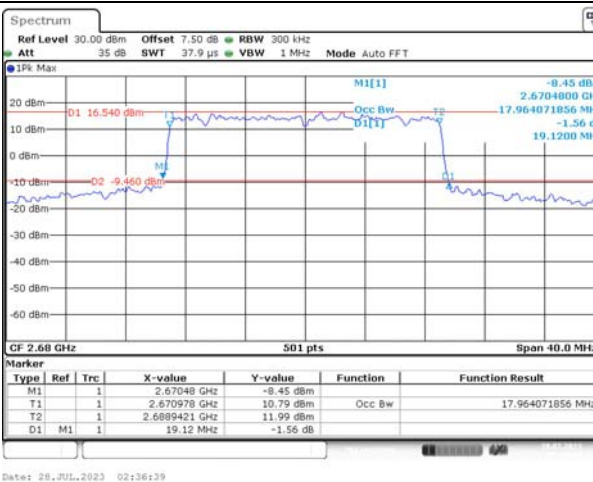
Lowest



Middle



Highest

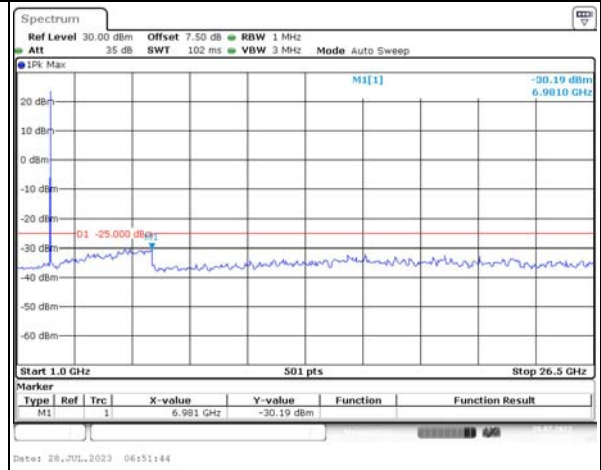
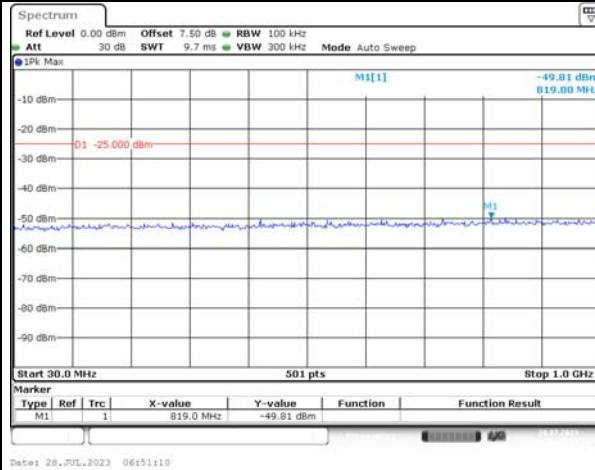


Spurious Emissions at Antenna Terminal

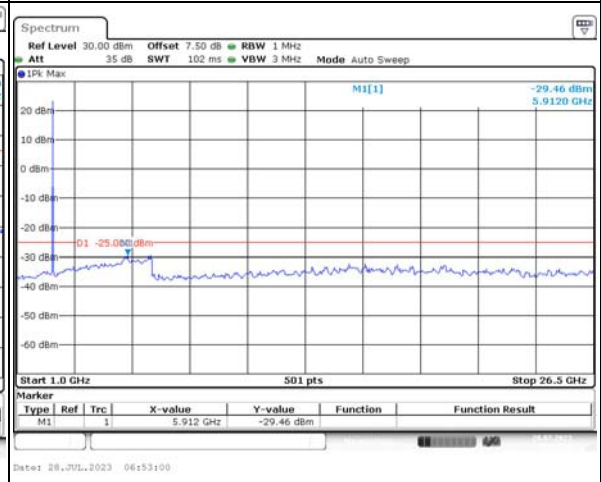
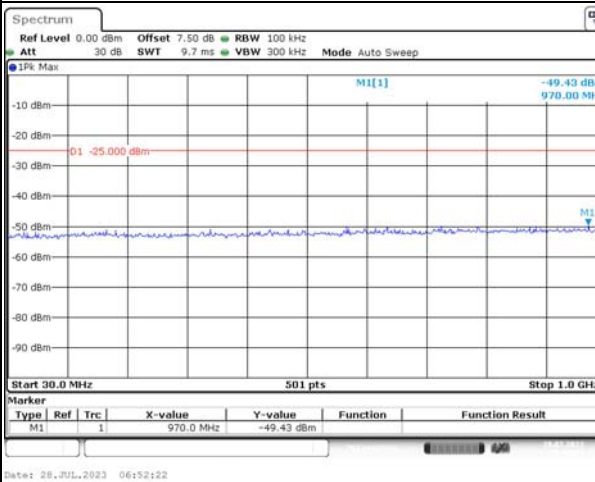
Channel

5MHz Bandwidth QPSK

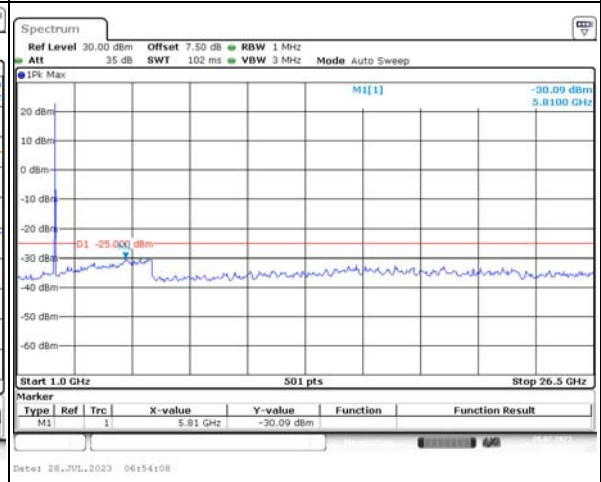
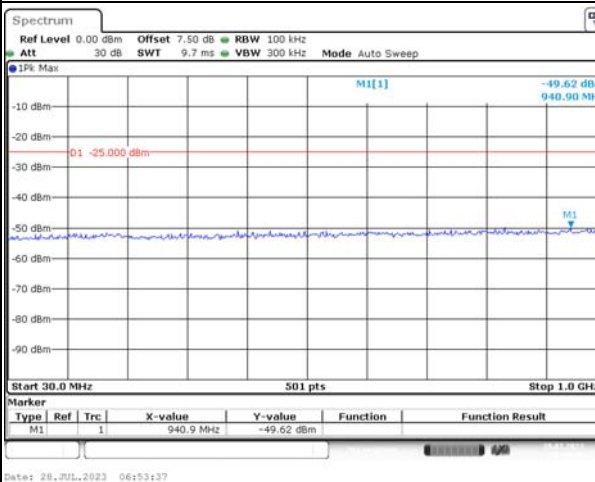
Lowest



Middle



Highest

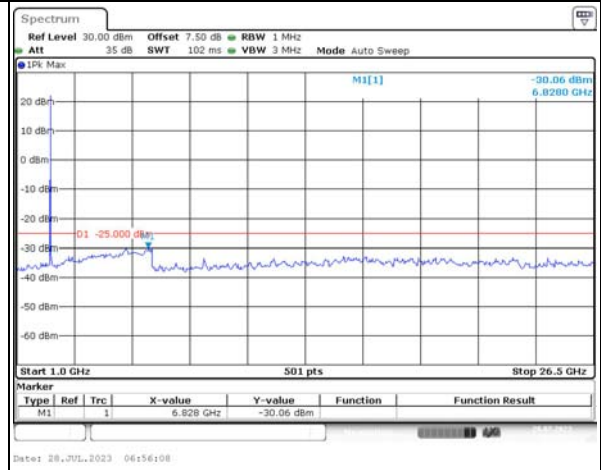
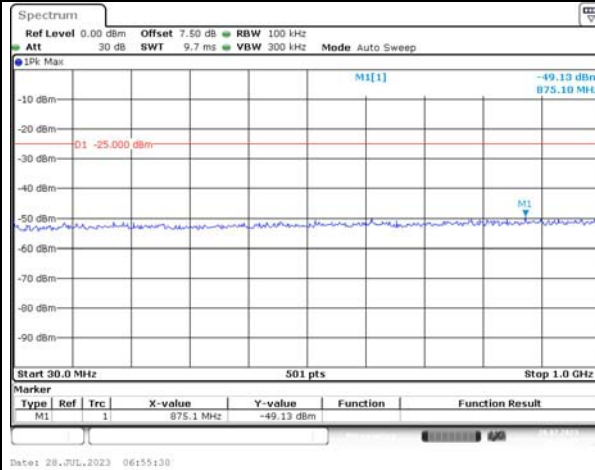


Spurious Emissions at Antenna Terminal

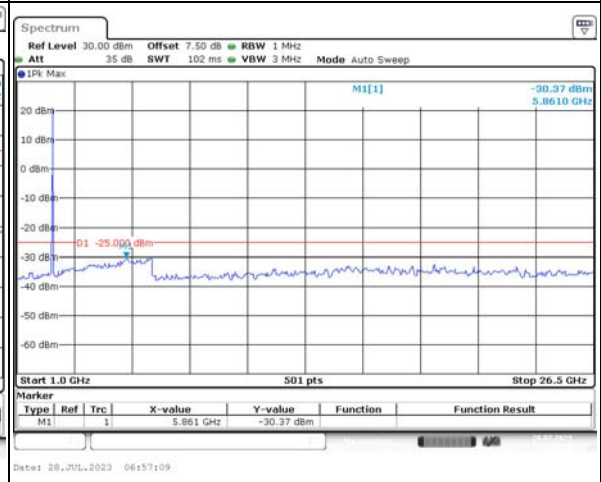
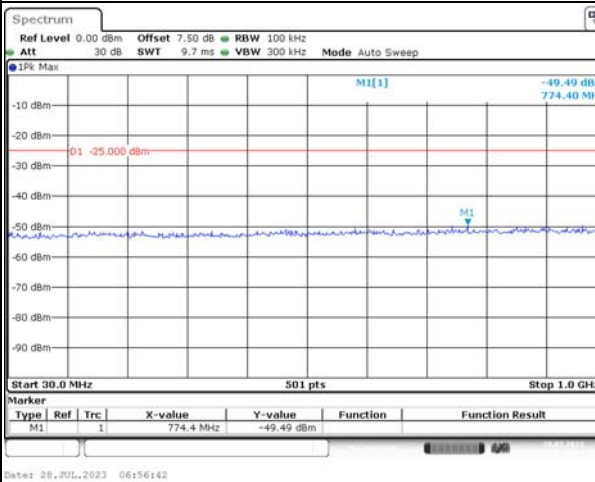
Channel

10MHz Bandwidth QPSK

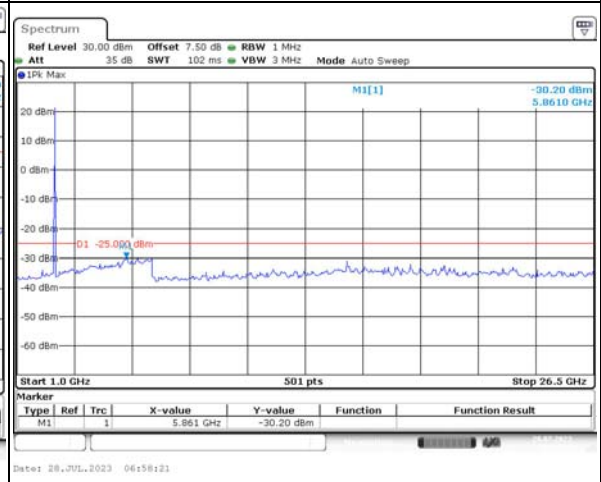
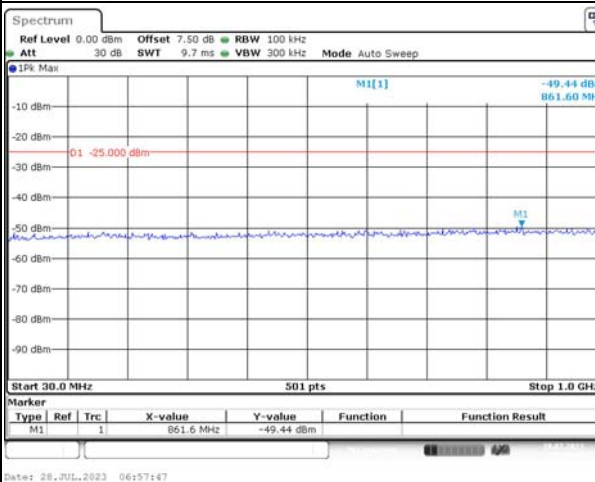
Lowest



Middle



Highest

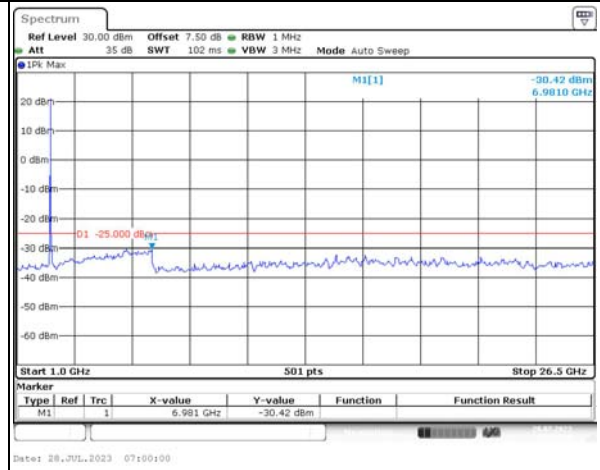
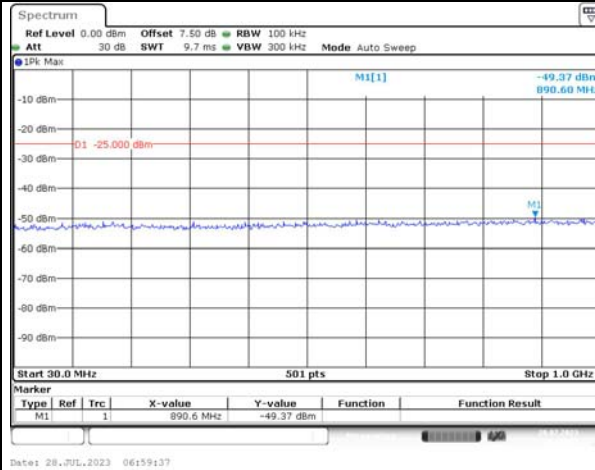


Spurious Emissions at Antenna Terminal

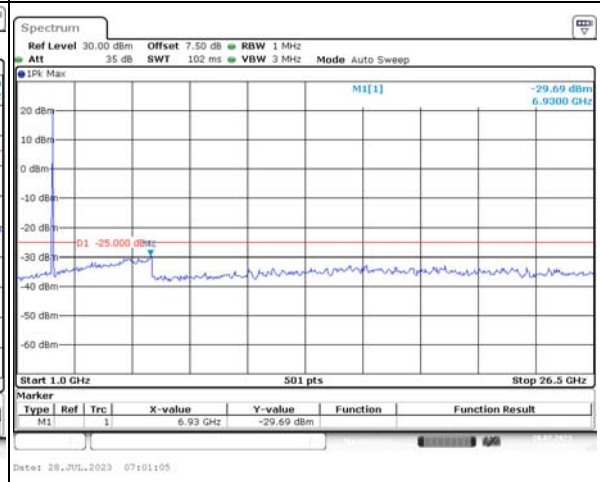
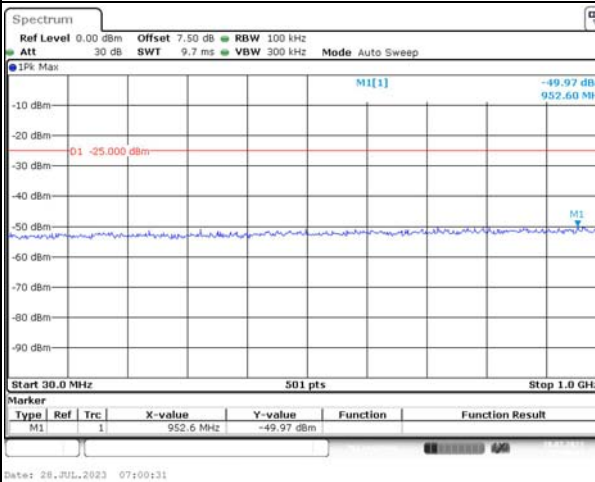
Channel

15MHz Bandwidth QPSK

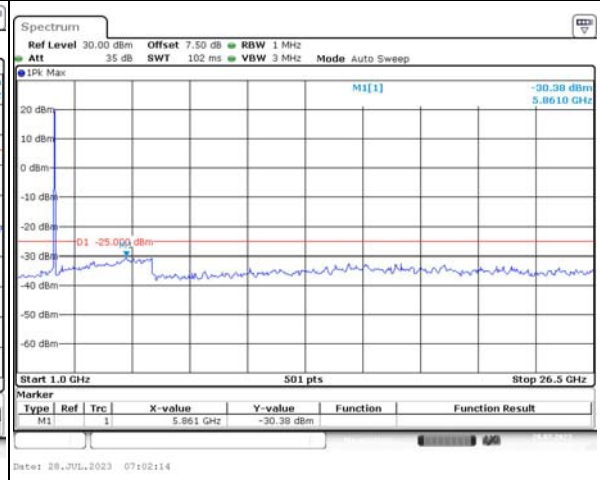
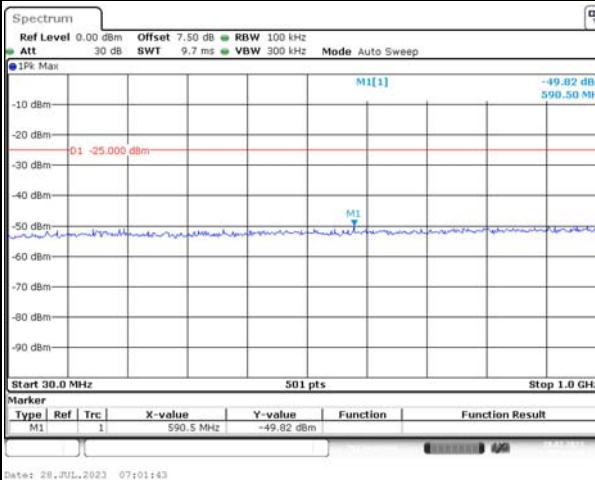
Lowest



Middle



Highest

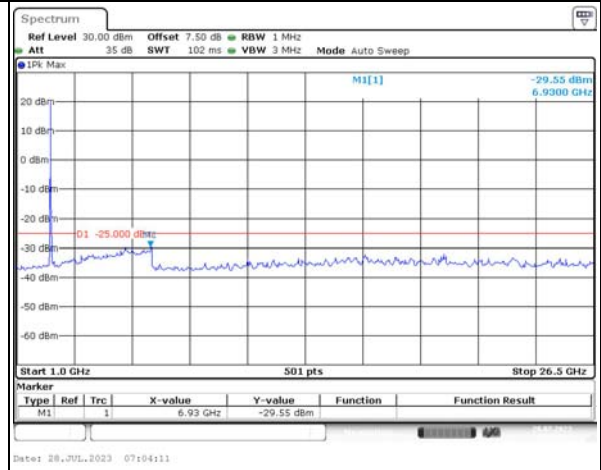
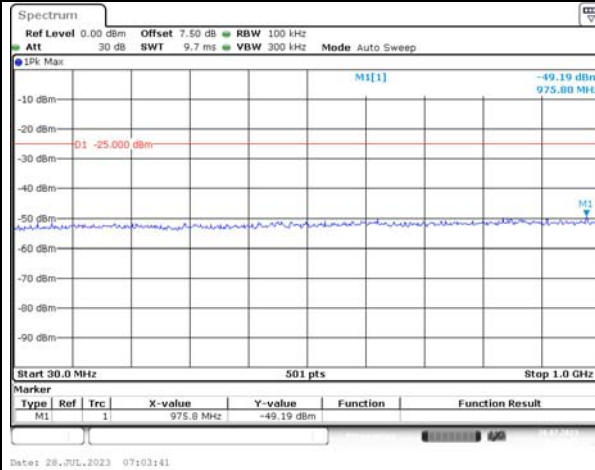


Spurious Emissions at Antenna Terminal

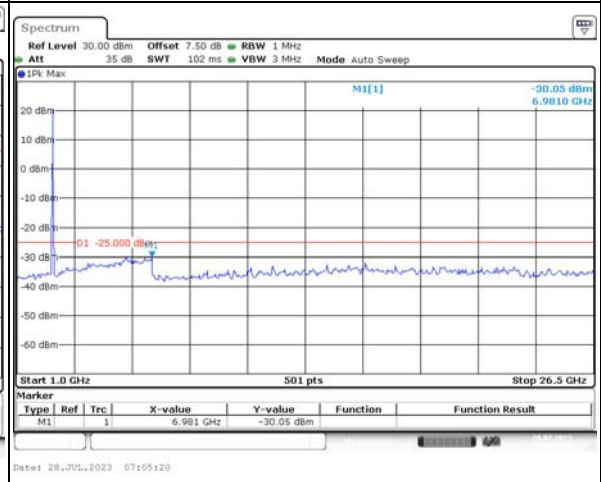
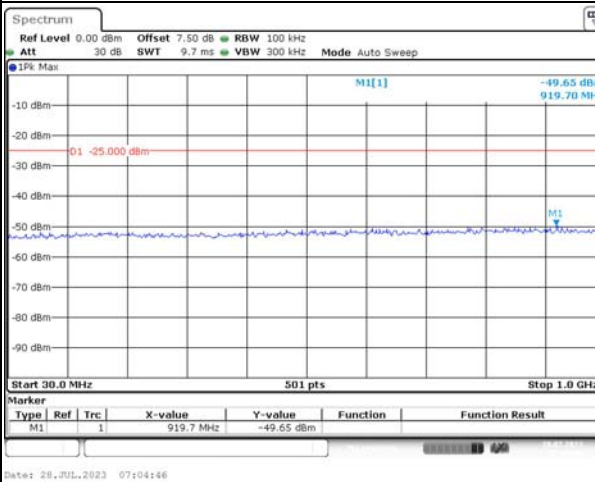
Channel

20MHz Bandwidth QPSK

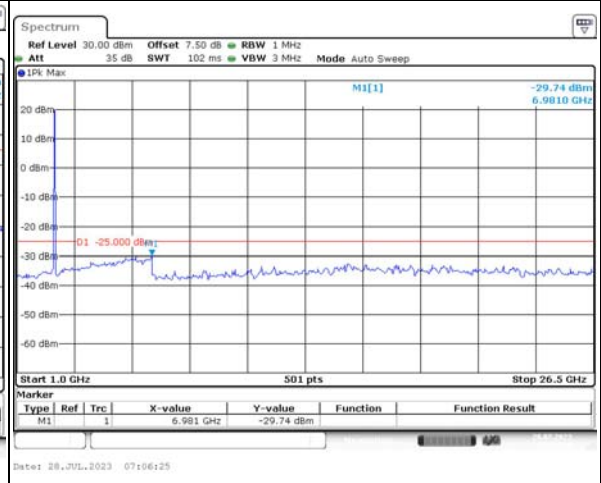
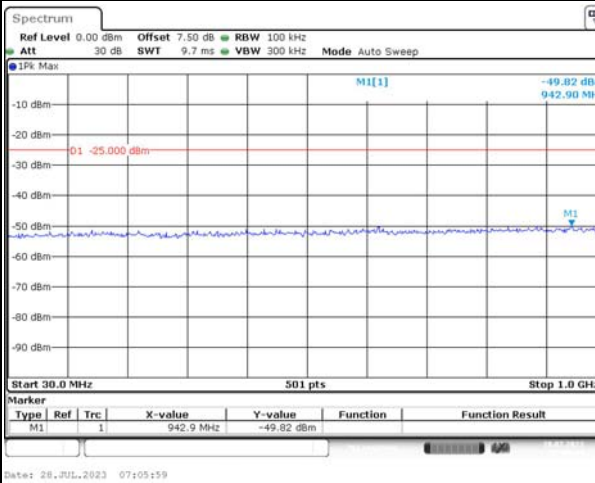
Lowest



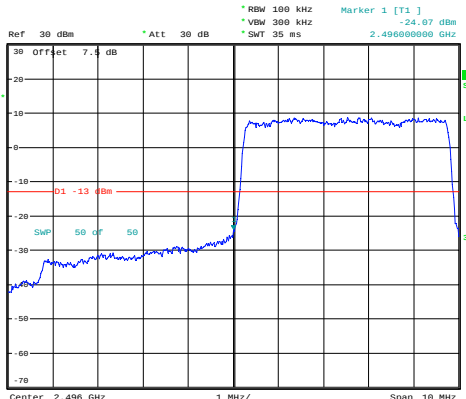
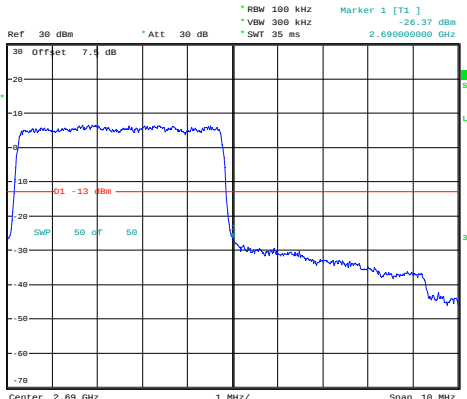
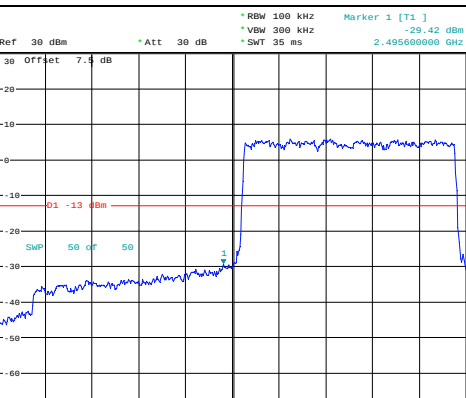
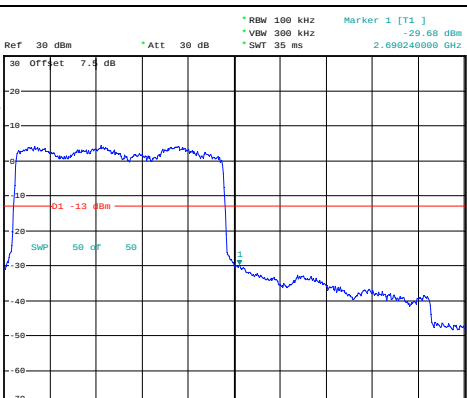
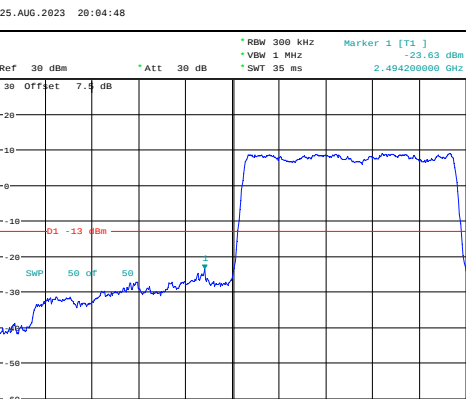
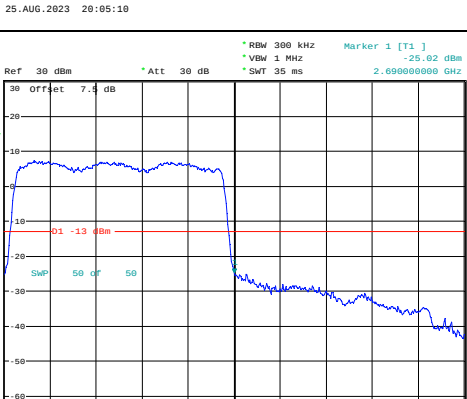
Middle



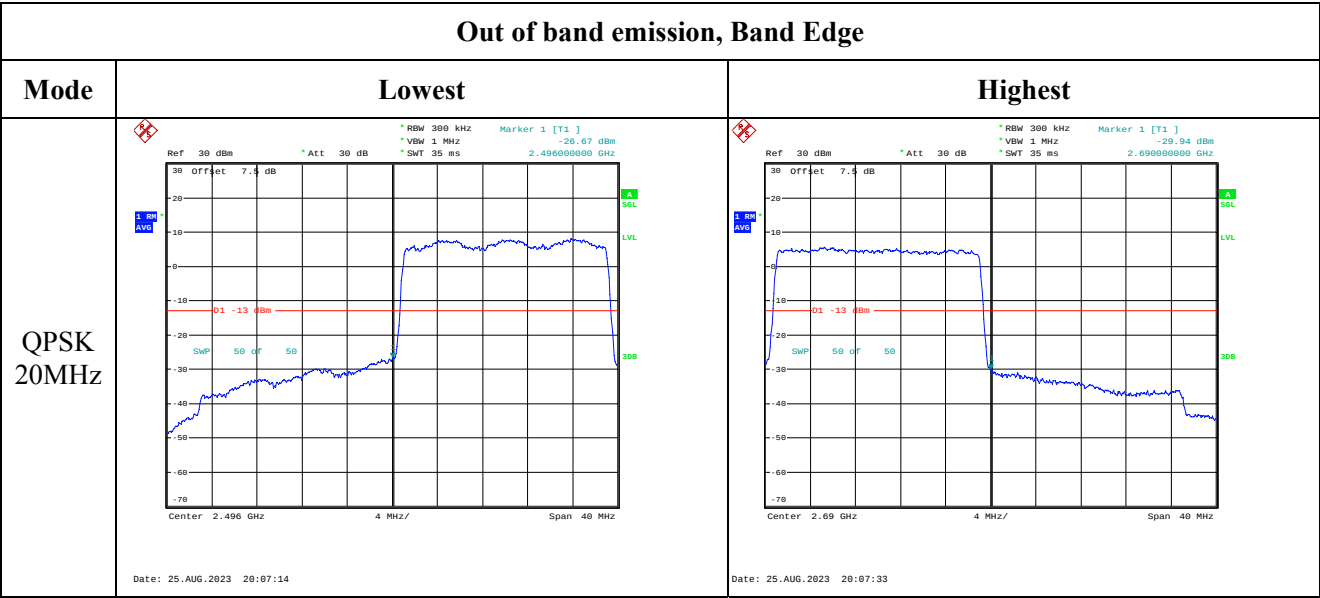
Highest



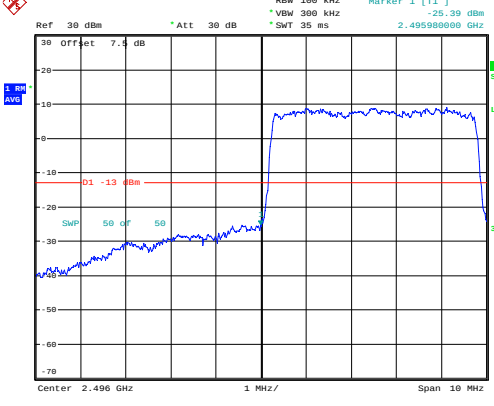
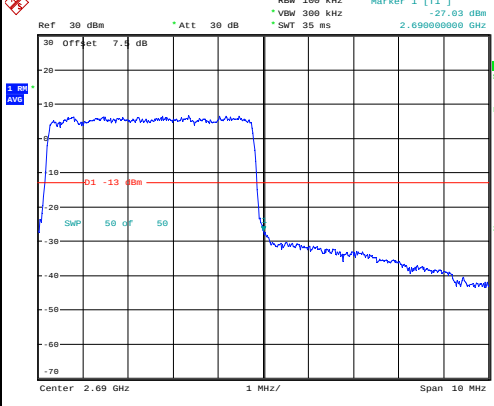
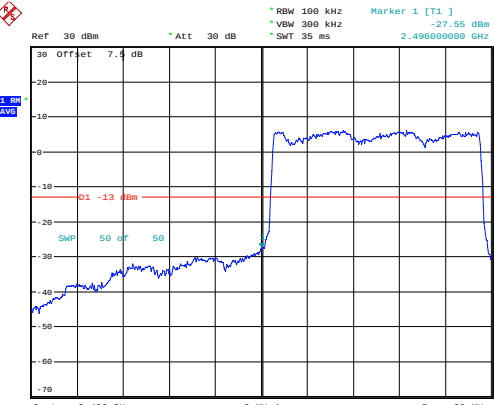
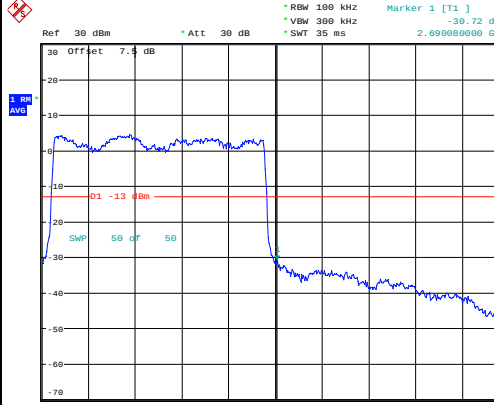
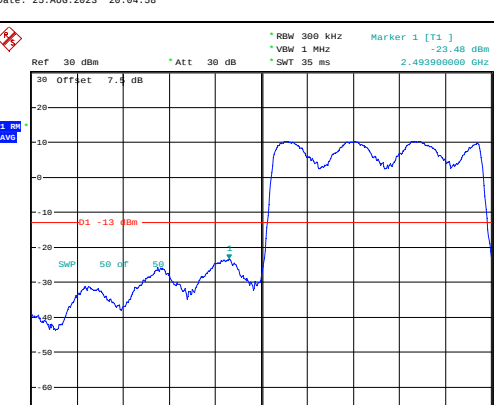
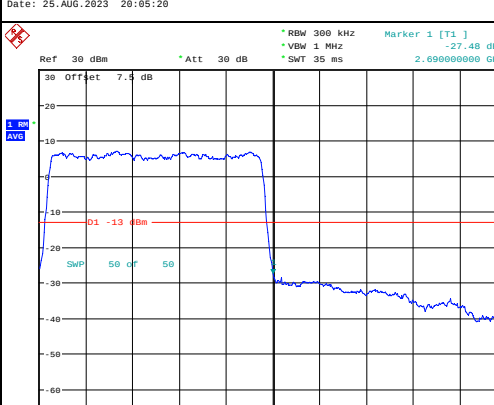
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	 Ref 30 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -24.07 dBm VBW 300 kHz SWT 35 ms 2.496000000 GHz 30 Offset 7.5 dB D1 -13 dBm SWP 50 OF 50 Center 2.496 GHz 1 MHz/ Span 10 MHz Date: 25.AUG.2023 20:03:35	 Ref 30 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -26.37 dBm VBW 300 kHz SWT 35 ms 2.690000000 GHz 30 Offset 7.5 dB D1 -13 dBm SWP 50 OF 50 Center 2.69 GHz 1 MHz/ Span 10 MHz Date: 25.AUG.2023 20:03:55
QPSK 10MHz	 Ref 30 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -29.42 dBm VBW 300 kHz SWT 35 ms 2.495000000 GHz 30 Offset 7.5 dB D1 -13 dBm SWP 50 OF 50 Center 2.496 GHz 2 MHz/ Span 20 MHz Date: 25.AUG.2023 20:04:48	 Ref 30 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -29.68 dBm VBW 300 kHz SWT 35 ms 2.690000000 GHz 30 Offset 7.5 dB D1 -13 dBm SWP 50 OF 50 Center 2.69 GHz 2 MHz/ Span 20 MHz Date: 25.AUG.2023 20:05:10
QPSK 15MHz	 Ref 30 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -23.63 dBm VBW 1 MHz SWT 35 ms 2.494200000 GHz 30 Offset 7.5 dB D1 -13 dBm SWP 50 OF 50 Center 2.496 GHz 3 MHz/ Span 30 MHz Date: 25.AUG.2023 20:06:03	 Ref 30 dBm Att 30 dB RBW 300 kHz Marker 1 [T1] -25.82 dBm VBW 1 MHz SWT 35 ms 2.690000000 GHz 30 Offset 7.5 dB D1 -13 dBm SWP 50 OF 50 Center 2.69 GHz 3 MHz/ Span 30 MHz Date: 25.AUG.2023 20:06:22

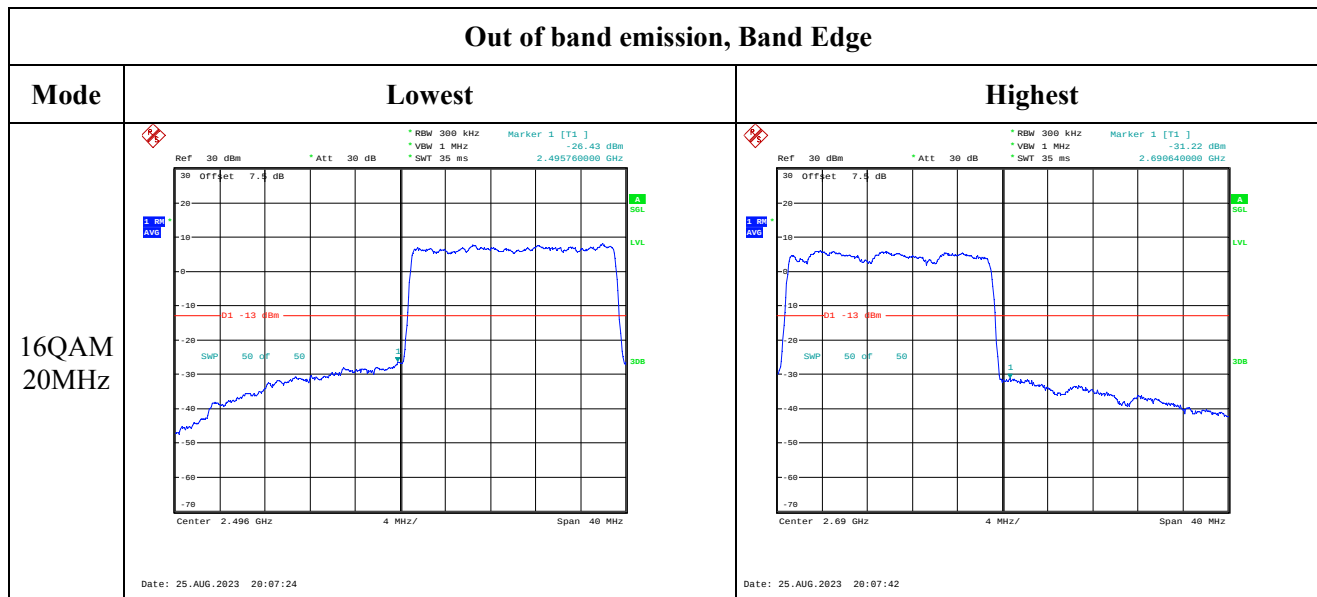
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	 Ref: 30 dBm *Att: 30 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 35 ms Marker 1 [T1] -25.39 dBm 2.495900000 GHz 30 Offset 7.4 dB 10 20 30 40 50 60 70 10 20 30 40 50 60 70 Center 2.496 GHz 1 MHz/ Span 10 MHz Date: 25.AUG.2023 20:03:45	 Ref: 30 dBm *Att: 30 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 35 ms Marker 1 [T1] -27.03 dBm 2.690000000 GHz 30 Offset 7.4 dB 10 20 30 40 50 60 70 10 20 30 40 50 60 70 Center 2.69 GHz 1 MHz/ Span 10 MHz Date: 25.AUG.2023 20:04:04
16QAM 10MHz	 Ref: 30 dBm *Att: 30 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 35 ms Marker 1 [T1] -27.55 dBm 2.495900000 GHz 30 Offset 7.4 dB 10 20 30 40 50 60 70 10 20 30 40 50 60 70 Center 2.496 GHz 2 MHz/ Span 20 MHz Date: 25.AUG.2023 20:04:58	 Ref: 30 dBm *Att: 30 dB *RBW: 100 kHz *VBW: 300 kHz *SWT: 35 ms Marker 1 [T1] -30.72 dBm 2.690000000 GHz 30 Offset 7.4 dB 10 20 30 40 50 60 70 10 20 30 40 50 60 70 Center 2.69 GHz 2 MHz/ Span 20 MHz Date: 25.AUG.2023 20:05:20
16QAM 15MHz	 Ref: 30 dBm *Att: 30 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 35 ms Marker 1 [T1] -23.48 dBm 2.495900000 GHz 30 Offset 7.4 dB 10 20 30 40 50 60 70 10 20 30 40 50 60 70 Center 2.496 GHz 3 MHz/ Span 30 MHz Date: 25.AUG.2023 20:06:12	 Ref: 30 dBm *Att: 30 dB *RBW: 300 kHz *VBW: 1 MHz *SWT: 35 ms Marker 1 [T1] -27.48 dBm 2.690000000 GHz 30 Offset 7.4 dB 10 20 30 40 50 60 70 10 20 30 40 50 60 70 Center 2.69 GHz 3 MHz/ Span 30 MHz Date: 25.AUG.2023 20:06:31

Out of band emission, Band Edge



4.14 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	28LK-1	Test Date:	2023/7/28~2023/8/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.2~26.8	Relative Humidity: (%)	42~55	ATM Pressure: (kPa)	99.7~100.3
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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	2023/3/31	2024/3/30
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	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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	22.23	22.31	22.29	20.76	30
	RB1#3	22.45	22.48	22.56		
	RB1#5	22.27	22.34	22.36		
	RB3#0	22.42	22.43	22.46		
	RB3#3	22.41	22.44	22.47		
	RB6#0	21.39	21.37	21.45		
1.4MHz 16QAM	RB1#0	21.36	21.34	21.49	19.87	30
	RB1#3	21.49	21.51	21.67		
	RB1#5	21.43	21.34	21.49		
	RB3#0	21.57	21.67	21.43		
	RB3#3	21.54	21.66	21.42		
	RB6#0	20.35	20.47	20.54		
3MHz QPSK	RB1#0	22.29	22.33	22.4	20.61	30
	RB1#8	22.31	22.36	22.4		
	RB1#14	22.29	22.33	22.41		
	RB6#0	21.33	21.31	21.31		
	RB6#9	21.34	21.34	21.35		
	RB15#0	21.37	21.38	21.4		
3MHz 16QAM	RB1#0	22.02	21.51	21.41	20.23	30
	RB1#8	22.03	21.54	21.4		
	RB1#14	21.95	21.54	21.38		
	RB6#0	20.38	20.39	20.39		
	RB6#9	20.43	20.42	20.34		
	RB15#0	20.48	20.44	20.5		
5MHz QPSK	RB1#0	22.29	22.29	22.31	20.67	30
	RB1#13	22.41	22.45	22.47		
	RB1#24	22.32	22.32	22.32		
	RB15#0	21.41	21.43	21.47		
	RB15#10	21.42	21.42	21.48		
	RB25#0	21.41	21.42	21.46		
5MHz 16QAM	RB1#0	21.23	21.63	21.39	19.99	30
	RB1#13	21.32	21.79	21.53		
	RB1#24	21.26	21.64	21.41		
	RB15#0	20.46	20.47	20.57		
	RB15#10	20.51	20.47	20.56		
	RB25#0	20.55	20.5	20.55		
10MHz QPSK	RB1#0	22.26	22.31	22.38	20.7	30
	RB1#25	22.44	22.5	22.5		
	RB1#49	22.44	22.37	22.43		

	RB25#0	21.42	21.47	21.46		
	RB25#25	21.51	21.5	21.5		
	RB50#0	21.46	21.49	21.52		
10MHz 16QAM	RB1#0	21.37	22.01	21.52	20.4	30
	RB1#25	21.53	22.2	21.69		
	RB1#49	21.45	22.05	21.56		
	RB25#0	20.53	20.61	20.61		
	RB25#25	20.65	20.63	20.6		
	RB50#0	20.52	20.6	20.61		
15MHz QPSK	RB1#0	22.23	22.28	22.32	20.61	30
	RB1#38	22.37	22.38	22.41		
	RB1#74	22.33	22.34	22.41		
	RB36#0	21.41	21.46	21.44		
	RB36#39	21.58	21.48	21.52		
	RB75#0	21.5	21.44	21.46		
15MHz 16QAM	RB1#0	21.77	21.96	21.49	20.25	30
	RB1#38	21.93	22.05	21.61		
	RB1#74	21.94	22.01	21.55		
	RB36#0	20.38	20.46	20.48		
	RB36#39	20.51	20.56	20.58		
	RB75#0	20.47	20.54	20.56		
20MHz QPSK	RB1#0	22.02	22.23	22.1	20.8	30
	RB1#50	22.5	22.6	22.51		
	RB1#99	22.23	22.32	22.15		
	RB50#0	21.34	21.45	21.44		
	RB50#50	21.66	21.49	21.46		
	RB100#0	21.5	21.48	21.47		
20MHz 16QAM	RB1#0	21.48	21.45	21.73	20.33	30
	RB1#50	21.94	21.8	22.13		
	RB1#99	21.65	21.56	21.79		
	RB50#0	20.39	20.56	20.53		
	RB50#50	20.65	20.54	20.55		
	RB100#0	20.56	20.54	20.55		
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	5.42	5.54	5.71	13
	RB100#0	4.52	4.32	4.41	13
20MHz 16QAM	RB1#0	5.97	6.26	6.78	13
	RB100#0	6.14	5.97	6.06	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	1.108	1.102	1.096	1.332	1.314	1.308
1.4MHz 16QAM	1.102	1.102	1.096	1.296	1.32	1.284
3MHz QPSK	2.683	2.695	2.683	2.868	2.88	2.88
3MHz 16QAM	2.683	2.683	2.683	2.988	2.88	2.88
5MHz QPSK	4.511	4.511	4.551	5.24	5.2	5.24
5MHz 16QAM	4.551	4.551	4.511	5.26	5.24	5.16
10MHz QPSK	9.022	8.942	8.982	9.96	9.88	9.96
10MHz 16QAM	8.982	8.942	8.982	9.8	9.88	9.88
15MHz QPSK	13.473	13.533	13.473	14.82	14.82	14.82
15MHz 16QAM	13.473	13.473	13.533	14.76	14.76	14.88
20MHz QPSK	18.124	17.884	17.964	20.08	19.6	19.6
20MHz 16QAM	17.964	18.044	17.964	19.68	19.6	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.

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:	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	3.8	1710.985	1710.00	1779.093	1780
	-20	3.8	1710.943	1710.00	1779.018	1780
	-10	3.8	1710.913	1710.00	1779.035	1780
	0	3.8	1711.000	1710.00	1779.034	1780
	10	3.8	1710.926	1710.00	1779.038	1780
	20	3.8	1710.978	1710.00	1779.022	1780
	30	3.8	1710.951	1710.00	1779.003	1780
	40	3.8	1710.904	1710.00	1779.100	1780
	50	3.8	1710.973	1710.00	1779.080	1780
Frequency Stability vs. Voltage	20	3.65	1710.965	1710.00	1779.085	1780
	20	4.35	1710.957	1710.00	1779.049	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	3.8	1711.069	1710.00	1778.984	1780
	-20	3.8	1711.010	1710.00	1778.943	1780
	-10	3.8	1711.097	1710.00	1778.987	1780
	0	3.8	1711.059	1710.00	1778.940	1780
	10	3.8	1711.084	1710.00	1778.945	1780
	20	3.8	1711.058	1710.00	1778.942	1780
	30	3.8	1711.092	1710.00	1778.971	1780
	40	3.8	1711.026	1710.00	1778.947	1780
	50	3.8	1711.012	1710.00	1778.913	1780
Frequency Stability vs. Voltage	20	3.65	1711.072	1710.00	1778.947	1780
	20	4.35	1711.072	1710.00	1778.968	1780
Result:					Pass	