

Test Data:**FCC §2.1046; § 22.913 (a), § 90.542****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)						Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel For 90S	Highest Channel For 90S	Cross Channel	Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H		
1.4MHz QPSK	RB1#0	24.09	24.01	24.04	24.11	24.09	24.04	18.99	38.45
	RB1#3	24.28	24.14	24.19	23.98	23.96	24.54		
	RB1#5	24.05	23.97	24.02	23.91	24.13	24.43		
	RB3#0	24.19	24.07	24.09	23.9	24.37	23.94		
	RB3#3	24.2	24.07	24.1	23.88	24.36	23.96		
	RB6#0	23.14	23.07	23.16	23.75	24.06	24.21		
1.4MHz 16QAM	RB1#0	23.08	22.98	23.2	23.59	23.82	24.04	18.49	38.45
	RB1#3	23.23	23.14	23.38	23.45	23.98	23.57		
	RB1#5	23.14	22.96	23.17	23.41	23.44	23.92		
	RB3#0	23.27	23.2	23.07	23.39	23.65	23.91		
	RB3#3	23.23	23.22	23.1	23.28	23.44	23.84		
	RB6#0	22.14	22.06	22.16	23.19	23.72	23.66		
3MHz QPSK	RB1#0	24.17	24.1	24.07	24.17	24.1	24.07	18.77	38.45
	RB1#8	24.18	24.05	24.1	24.01	24.32	24.02		
	RB1#14	24.15	24.04	24.11	23.88	23.93	23.96		
	RB6#0	23.08	23.06	23.08	23.73	24.15	23.87		
	RB6#9	23.12	23.05	23.1	23.58	23.57	23.9		
	RB15#0	23.14	23.11	23.13	23.47	23.64	23.85		
3MHz 16QAM	RB1#0	23.18	23.53	23.24	23.39	23.68	23.98	18.43	38.45
	RB1#8	23.2	23.54	23.25	23.21	23.68	23.32		
	RB1#14	23.17	23.53	23.25	23.17	23.41	23.4		
	RB6#0	22.04	22.07	22.09	23.41	23.46	23.8		
	RB6#9	22.09	22.14	22.1	23.26	23.25	23.26		
	RB15#0	22.2	22.16	22.08	23.25	23.32	23.51		
5MHz QPSK	RB1#0	24.15	24	23.94	24.15	24	23.94	18.93	38.45
	RB1#13	24.24	24.17	24.13	24	24.08	24.48		
	RB1#24	24.19	24.01	24.01	23.93	24.04	24.42		
	RB15#0	23.16	23.09	23.18	23.74	24.11	24.28		
	RB15#10	23.19	23.09	23.11	23.7	23.8	23.98		
	RB25#0	23.21	23.07	23.11	23.52	23.52	23.7		
5MHz 16QAM	RB1#0	23.44	23.03	22.85	23.5	23.86	23.92	18.45	38.45
	RB1#13	23.51	23.16	23.04	23.49	24	23.88		
	RB1#24	23.43	23.05	22.91	23.35	23.56	23.61		
	RB15#0	22.16	22.09	22.2	23.25	23.36	23.29		
	RB15#10	22.2	22.13	22.16	23.1	23.31	23.44		
	RB25#0	22.21	22.11	22.2	23.34	23.31	23.93		
10MHz QPSK	RB1#0	24.13	/	24.01	24.13	24.05	24.01	18.89	38.45
	RB1#25	24.32	/	24.21	24.01	24.26	24.44		

	RB1#49	24.18	/	24.07	23.9	24.27	24.31		
	RB25#0	23.23	/	23.18	23.74	24.06	24.24		
	RB25#25	23.2	/	23.1	23.55	23.94	23.56		
	RB50#0	23.19	/	23.12	23.39	23.6	23.77		
10MHz 16QAM	RB1#0	23.07	/	23.13	23.27	23.45	23.3	18.14	38.45
	RB1#25	23.3	/	23.35	23.11	23.61	23.69		
	RB1#49	23.17	/	23.26	23	23.42	23.34		
	RB25#0	22.26	/	22.18	22.86	23.3	23.35		
	RB25#25	22.24	/	22.09	22.76	22.72	23.26		
15MHz QPSK	RB1#0	24.09	/	23.95	24.09	23.99	23.96	18.92	38.45
	RB1#38	24.19	/	24.05	23.98	24.26	24.33		
	RB1#74	24.14	/	24.01	23.96	24.47	24.38		
	RB36#0	23.17	/	23.14	23.79	24.23	24.01		
	RB36#39	23.24	/	23.08	23.73	24.02	23.74		
15MHz 16QAM	RB75#0	23.21	/	23.14	23.73	24.09	24.12	18.57	38.45
	RB1#0	23.46	/	23.05	23.73	24.07	24.1		
	RB1#38	23.59	/	23.21	23.69	24.12	23.96		
	RB1#74	23.41	/	23.18	23.6	23.98	24.07		
	RB36#0	22.17	/	22.12	23.51	23.87	23.69		
	RB36#39	22.17	/	22.07	23.43	23.77	23.91		
	RB75#0	22.18	/	22.13	23.42	23.83	23.51		

Note:

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

Result :	Pass
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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	5.22	4.52	4.52	13
	RB75#0	5.1	4.72	4.93	13
15MHz 16QAM	RB1#0	6.14	5.3	5.42	13
	RB75#0	6.09	5.74	5.94	13
Result:					Pass

FCC §2.1049, §2.905, §90.209:Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)					
	Lowest For 90S	Highest For 90S	Cross	Lowest For 22H	Middle For 22H	Highest For 22H
1.4MHz QPSK	1.096	1.094	1.094	1.098	1.096	1.102
1.4MHz 16QAM	1.096	1.094	1.098	1.094	1.09	1.09
3MHz QPSK	2.683	2.683	2.683	2.683	2.683	2.683
3MHz 16QAM	2.683	2.674	2.683	2.683	2.683	2.683
5MHz QPSK	4.511	4.515	4.515	4.501	4.511	4.511
5MHz 16QAM	4.471	4.515	4.501	4.515	4.511	4.511
10MHz QPSK	8.942	/	8.973	8.944	8.942	8.982
10MHz 16QAM	8.942	/	8.944	8.944	8.942	8.942
15MHz QPSK	13.413	/	13.502	13.473	13.459	13.473
15MHz 16QAM	13.533	/	13.502	13.473	13.502	13.473
Operation Mode	26 dB Occupied Bandwidth (MHz)					
	Lowest For 90S	Highest For 90S	Cross	Lowest For 22H	Middle For 22H	Highest For 22H
1.4MHz QPSK	1.296	1.307	1.301	1.32	1.308	1.284
1.4MHz 16QAM	1.326	1.307	1.324	1.294	1.284	1.302
3MHz QPSK	2.868	2.886	2.874	2.877	2.868	3.036
3MHz 16QAM	2.892	2.888	2.892	2.895	2.88	2.868
5MHz QPSK	5	4.965	4.961	4.977	4.98	4.92
5MHz 16QAM	4.9	4.936	4.932	4.948	4.96	4.96
10MHz QPSK	9.6	/	9.693	9.626	9.6	9.68
10MHz 16QAM	9.6	/	9.606	9.626	9.64	9.56
15MHz QPSK	14.58	/	14.891	14.7	14.905	14.58
15MHz 16QAM	14.64	/	14.761	14.64	14.731	14.58
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §22.917(a), §90.543: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), §90.543: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, §22.355, §90.213: Frequency Stability

Test Modulation:	15 MHz QPSK		Test Channel:	821.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.78	-5.94	-0.007	2.5
	-20	3.78	-7.37	-0.009	2.5
	-10	3.78	6.94	0.008	2.5
	0	3.78	7.29	0.009	2.5
	10	3.78	7.08	0.009	2.5
	20	3.78	-9.71	-0.012	2.5
	30	3.78	-7.47	-0.009	2.5
	40	3.78	-5.65	-0.007	2.5
	50	3.78	-8.68	-0.010	2.5
Frequency Stability vs. Voltage	20	3.6	-6.62	-0.008	2.5
	20	4.4	6.05	0.007	2.5
				Result:	Pass

FCC §2.1055, §22.355, §90.213: Frequency Stability

Test Modulation:	15 MHz 16QAM		Test Channel:	821.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.78	-6.11	-0.007	2.5
	-20	3.78	6.14	0.007	2.5
	-10	3.78	5.96	0.007	2.5
	0	3.78	8.01	0.010	2.5
	10	3.78	-7.1	-0.009	2.5
	20	3.78	-7.27	-0.009	2.5
	30	3.78	7.1	0.009	2.5
	40	3.78	-8.68	-0.010	2.5
	50	3.78	-5.49	-0.007	2.5
Frequency Stability vs. Voltage	20	3.6	-7.79	-0.009	2.5
	20	4.4	6.16	0.007	2.5
				Result:	Pass

FCC §2.1055, §22.355, §90.213: Frequency Stability

Test Modulation:	15 MHz QPSK		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.78	-5.94	-0.007	2.5
	-20	3.78	-7.37	-0.009	2.5
	-10	3.78	6.94	0.008	2.5
	0	3.78	7.29	0.009	2.5
	10	3.78	7.08	0.009	2.5
	20	3.78	-9.71	-0.012	2.5
	30	3.78	-7.47	-0.009	2.5
	40	3.78	-5.65	-0.007	2.5
	50	3.78	-8.68	-0.010	2.5
Frequency Stability vs. Voltage	20	3.6	-6.62	-0.008	2.5
	20	4.4	6.05	0.007	2.5
				Result:	Pass

FCC §2.1055, §22.355, §90.213: 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	3.78	-6.11	-0.007	2.5
	-20	3.78	6.14	0.007	2.5
	-10	3.78	5.96	0.007	2.5
	0	3.78	8.01	0.010	2.5
	10	3.78	-7.1	-0.009	2.5
	20	3.78	-7.27	-0.009	2.5
	30	3.78	7.1	0.009	2.5
	40	3.78	-8.68	-0.010	2.5
	50	3.78	-5.49	-0.007	2.5
Frequency Stability vs. Voltage	20	3.6	-7.79	-0.009	2.5
	20	4.4	6.16	0.007	2.5
				Result:	Pass

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

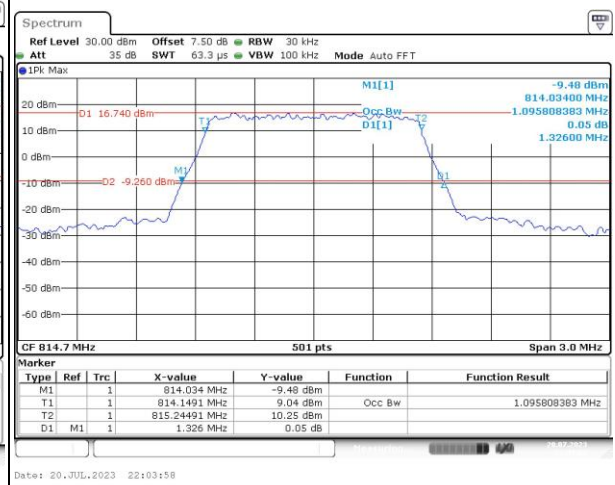
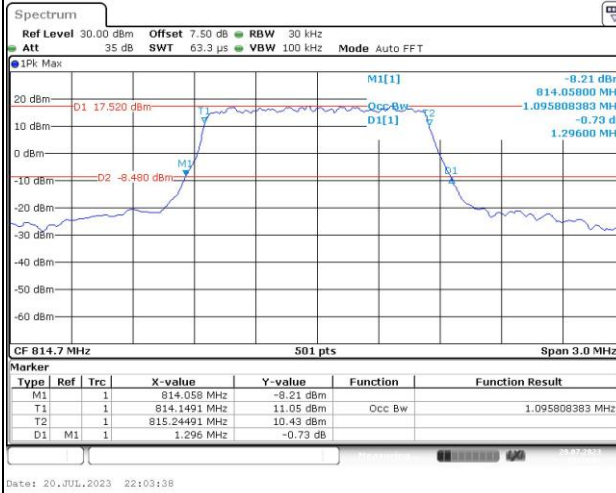
Occupied Bandwidth

Channel

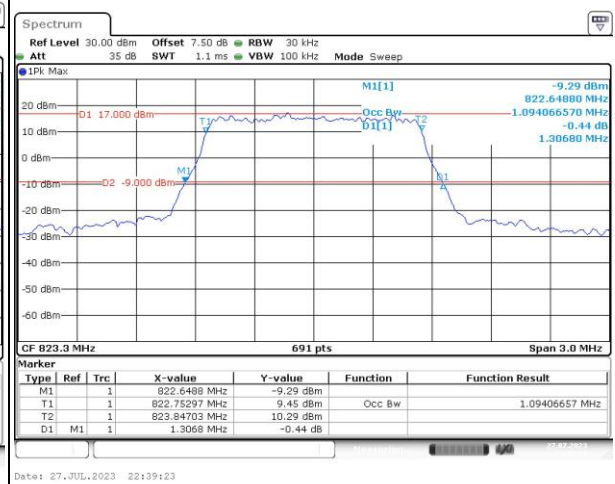
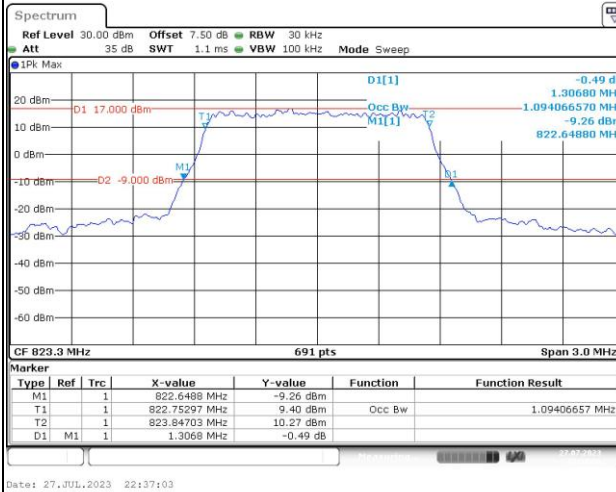
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

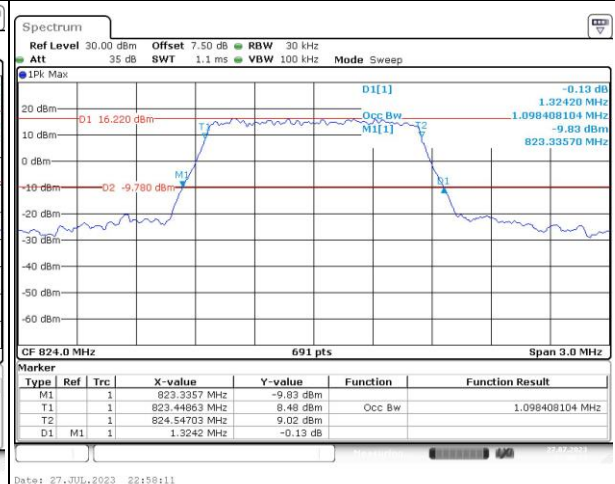
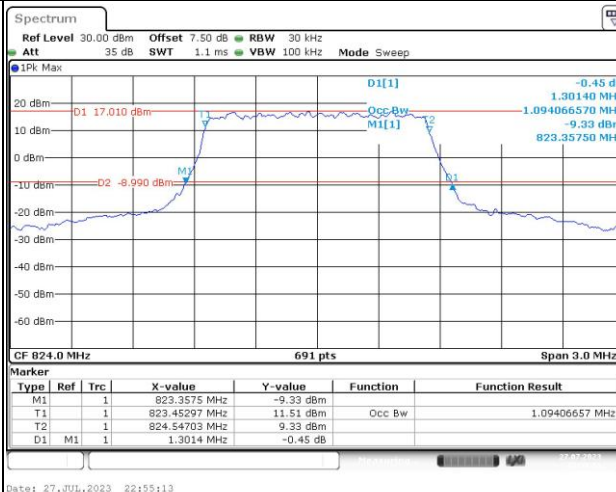
Lowest
For 90S



Highest
For 90S



Cross
Channel

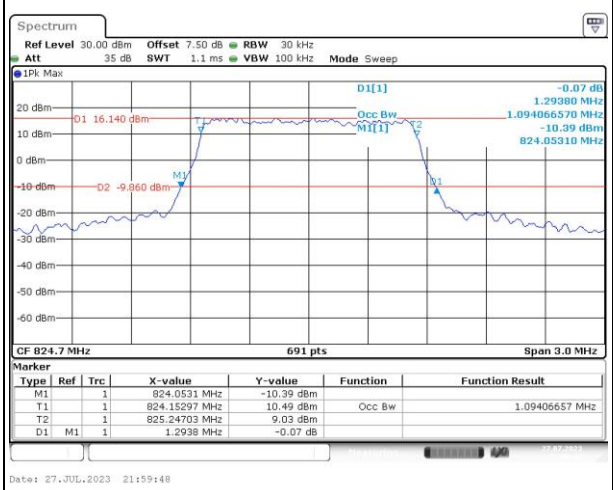
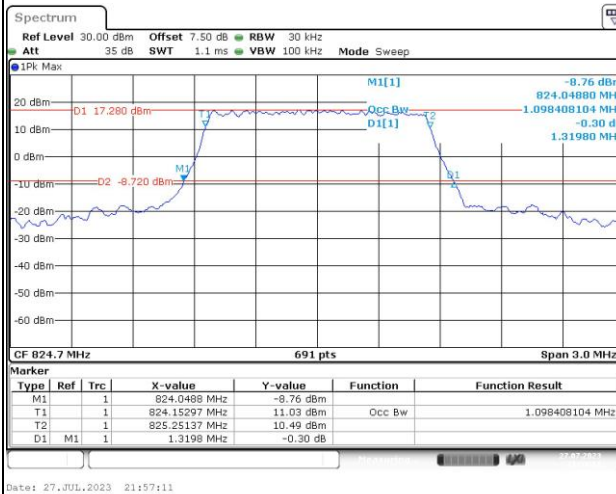
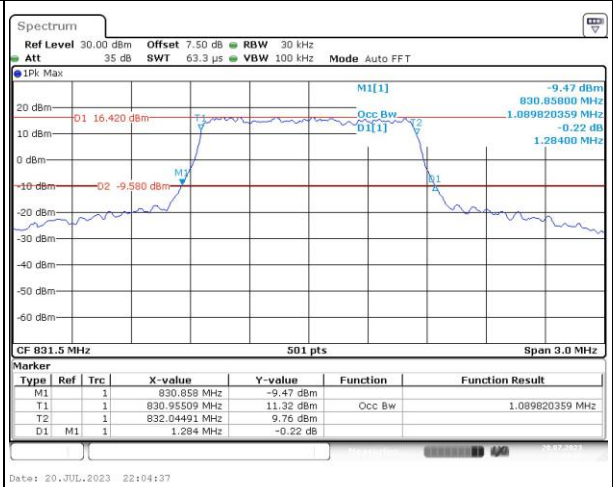
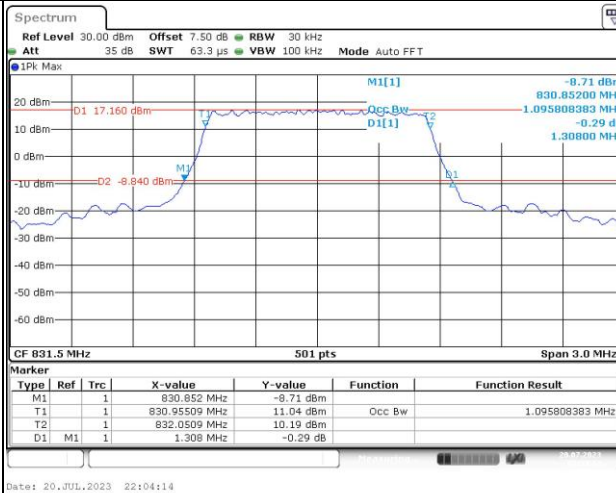
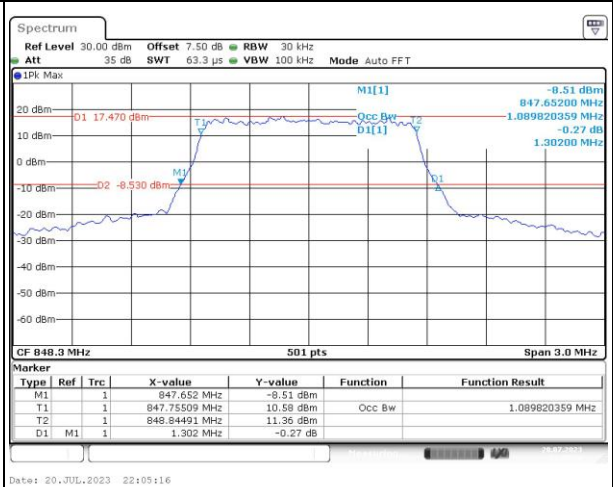
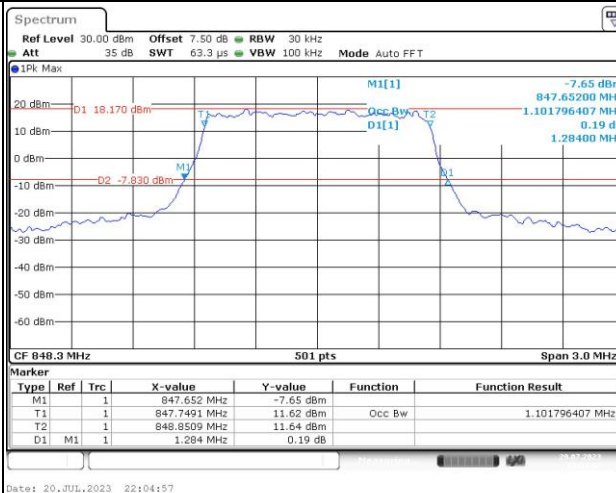


Occupied Bandwidth

Channel

1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

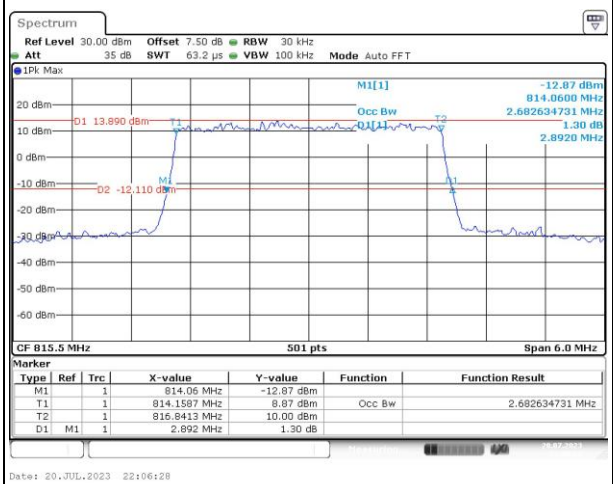
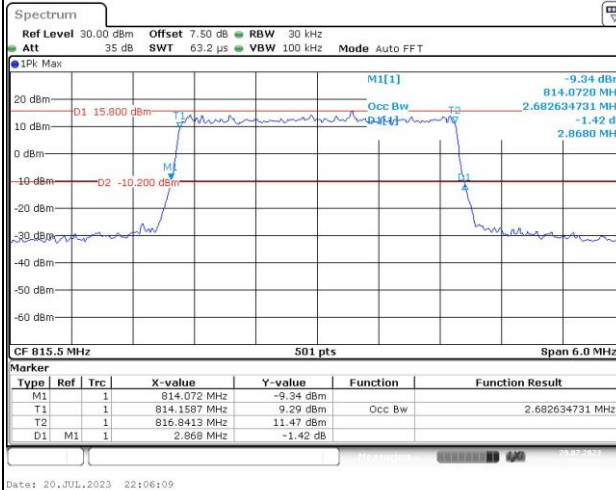
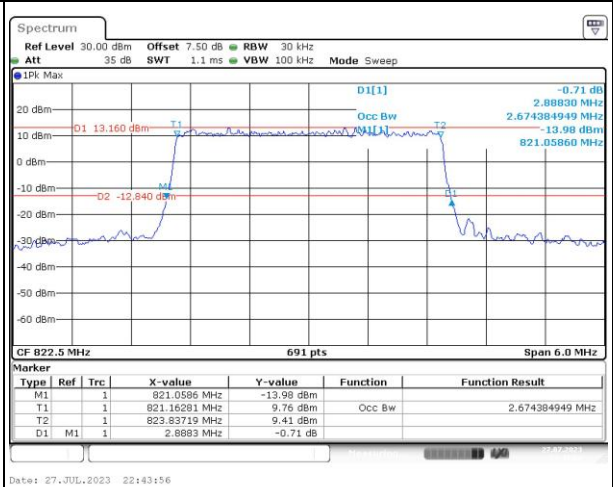
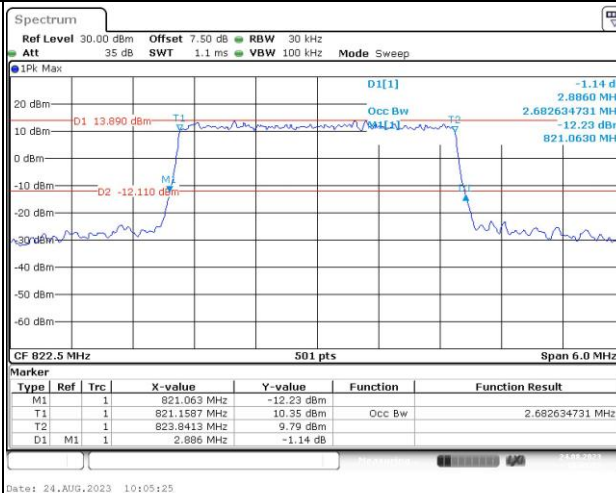
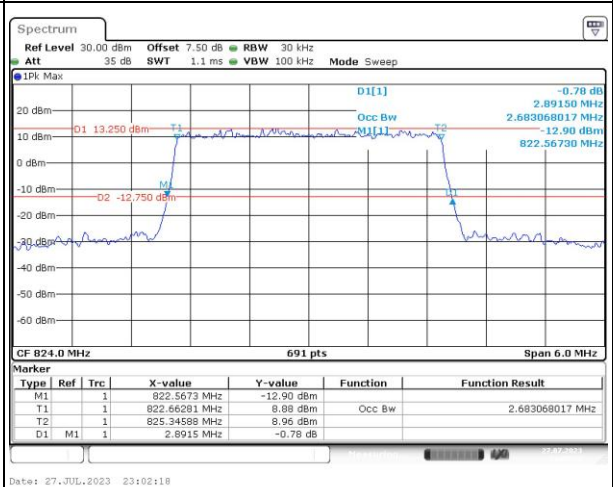
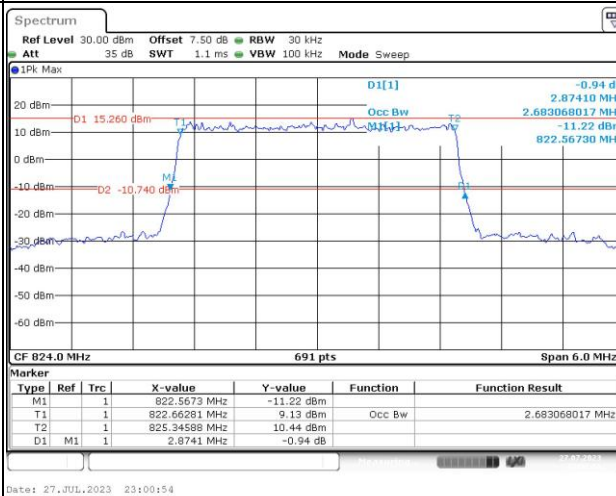
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

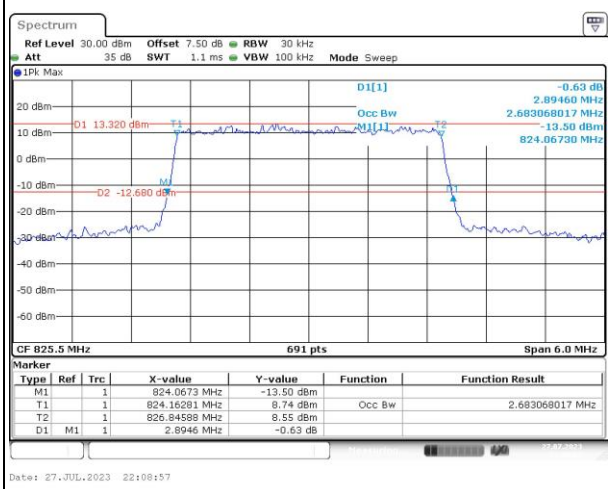
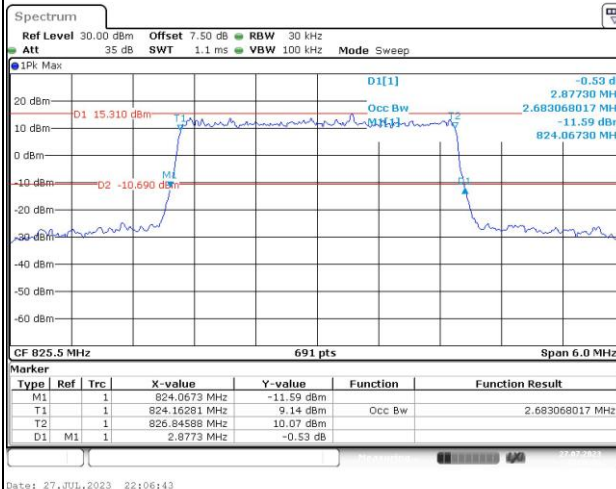
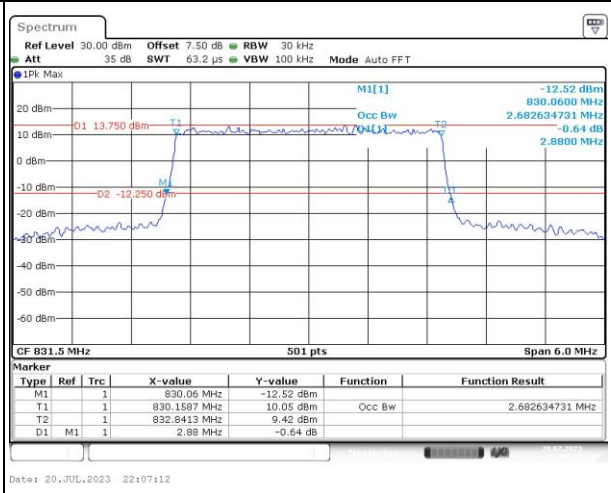
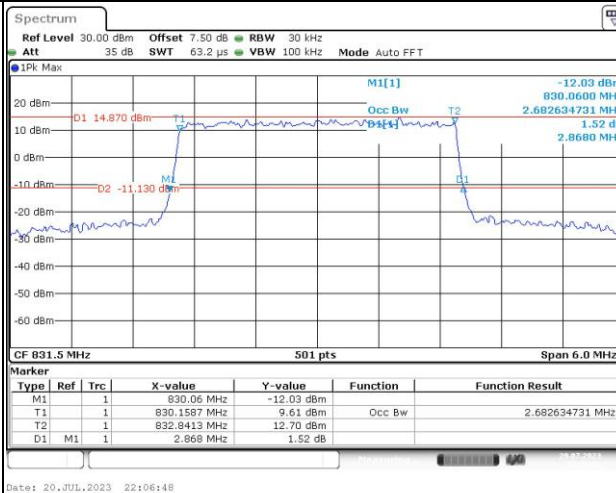
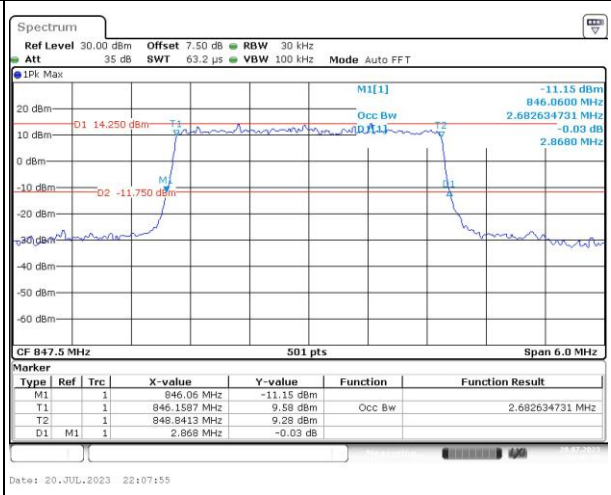
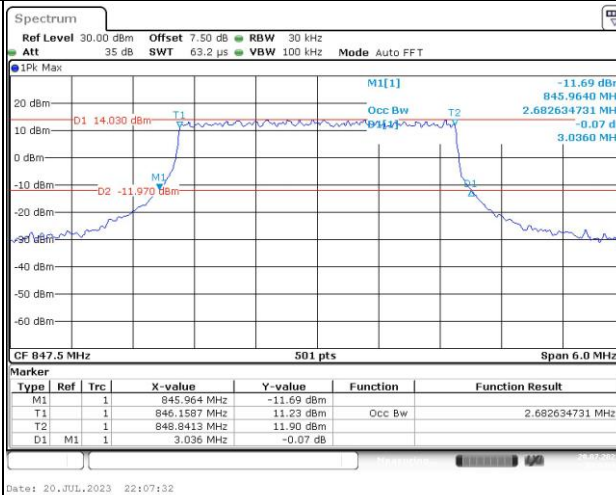
Lowest
For 90SHighest
For 90SCross
Channel

Occupied Bandwidth

Channel

3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

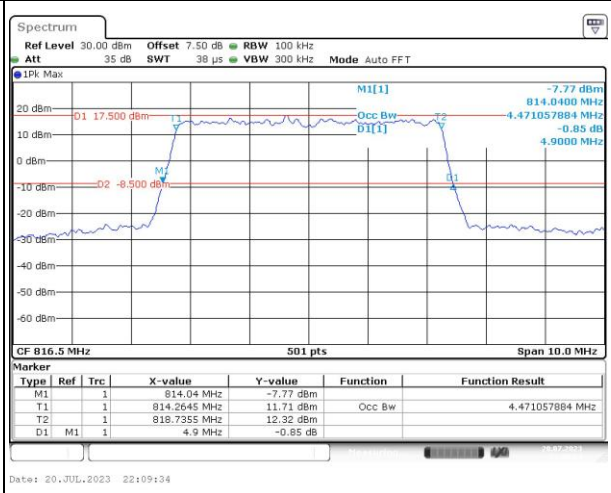
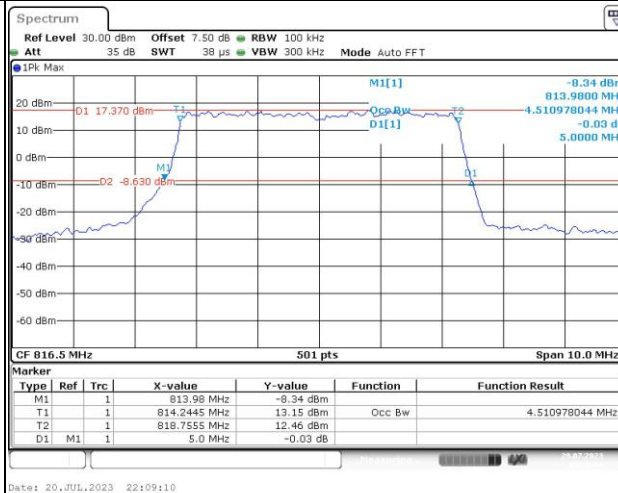
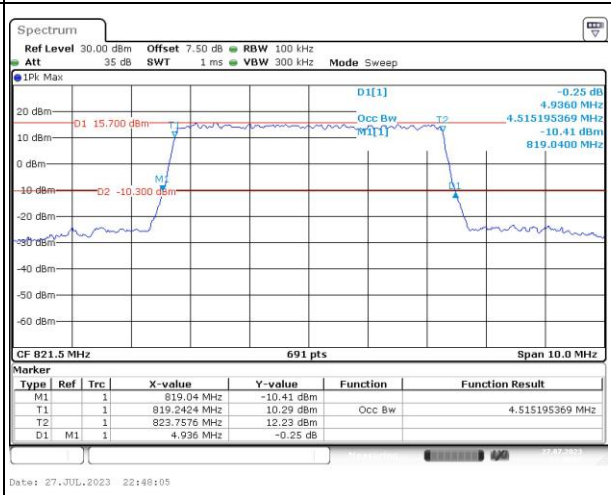
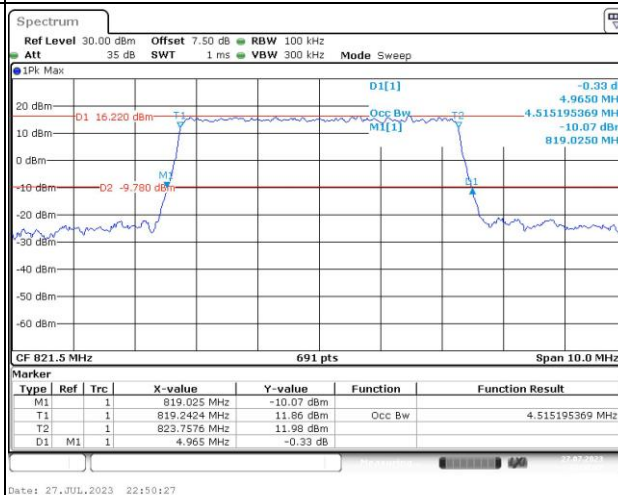
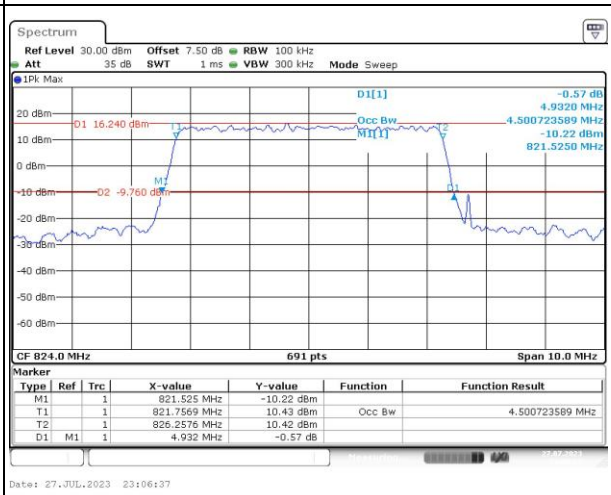
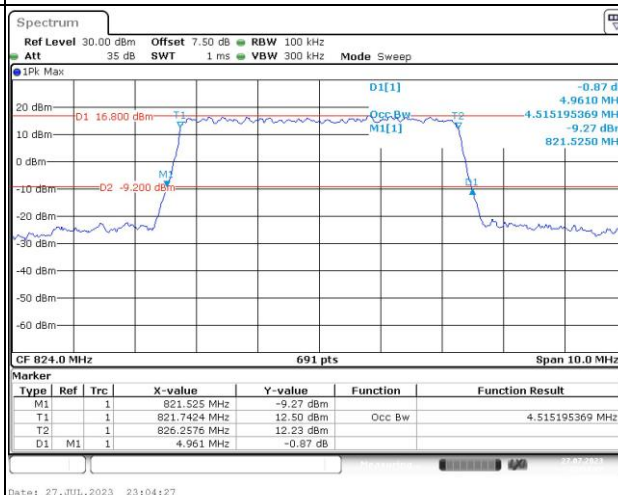
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

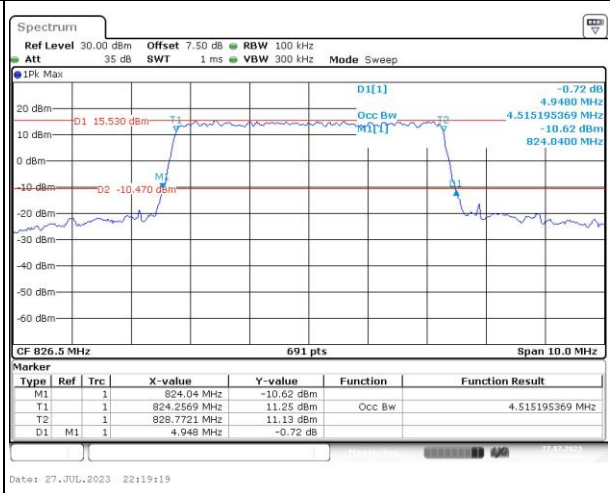
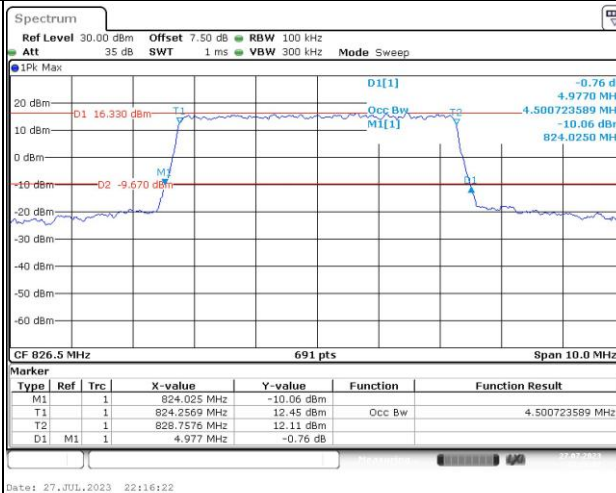
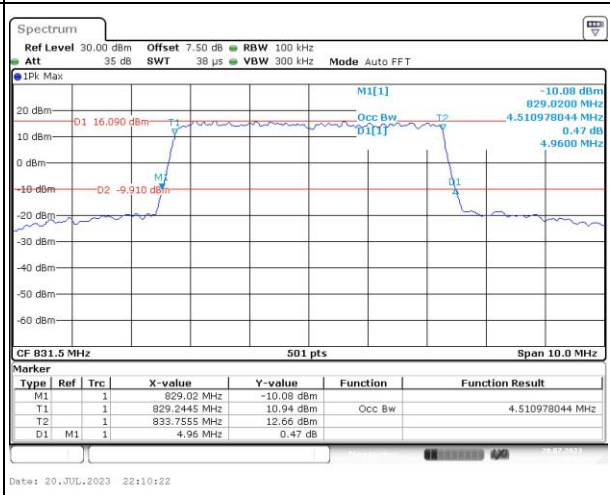
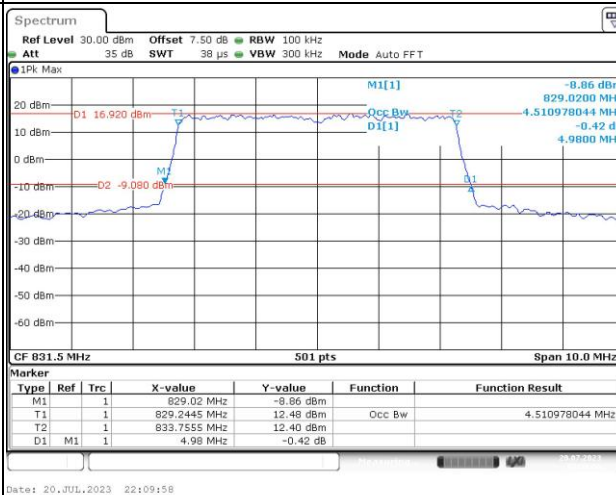
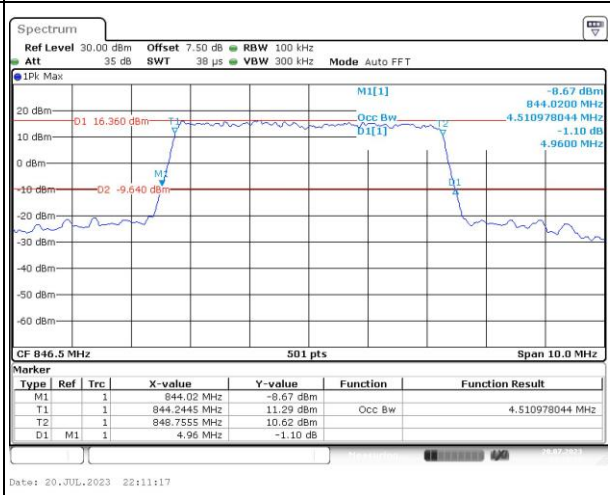
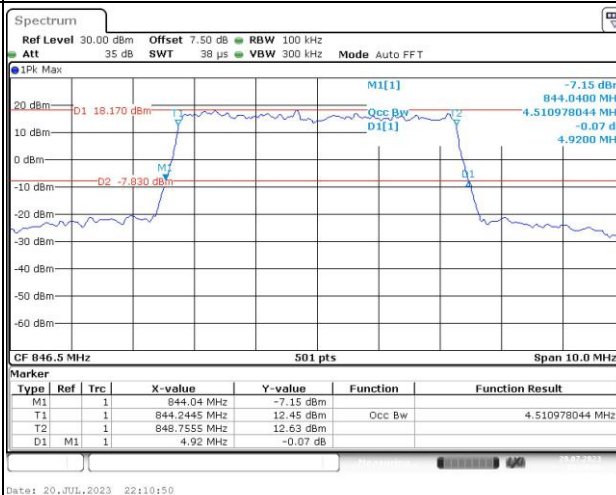
Lowest
For 90SHighest
For 90SCross
Channel

Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

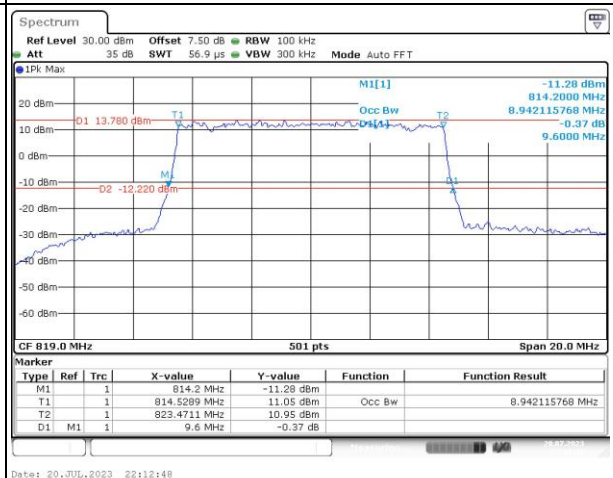
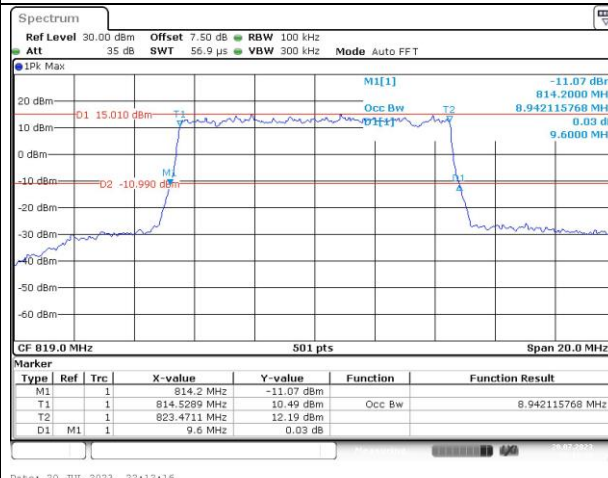
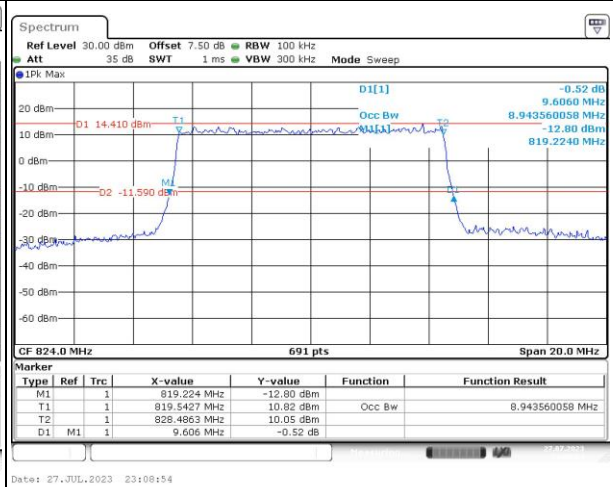
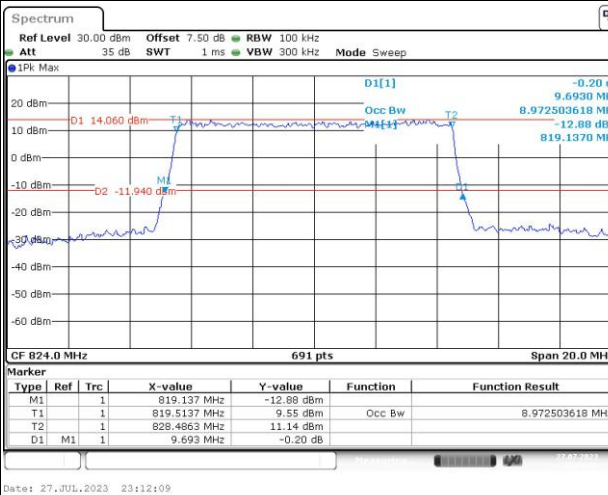
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

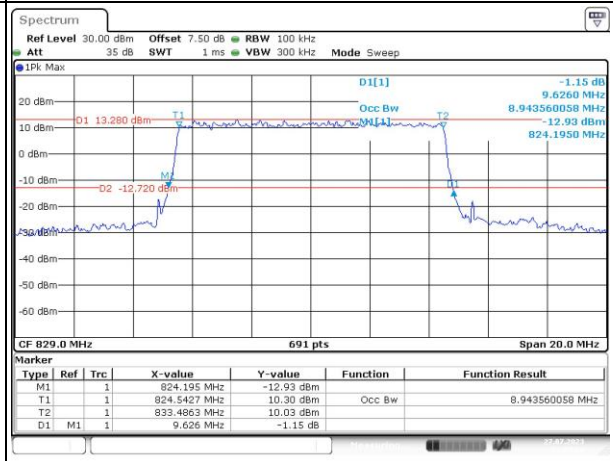
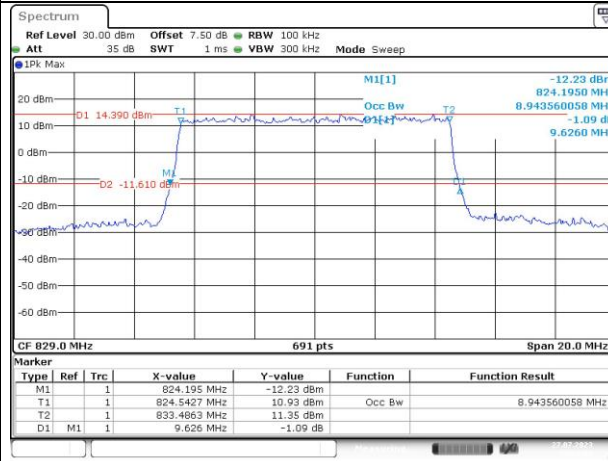
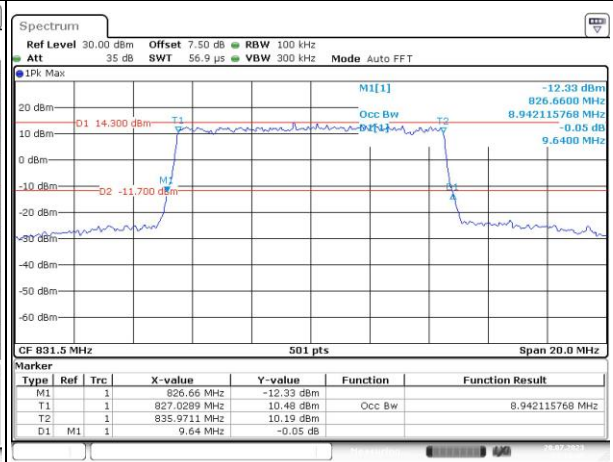
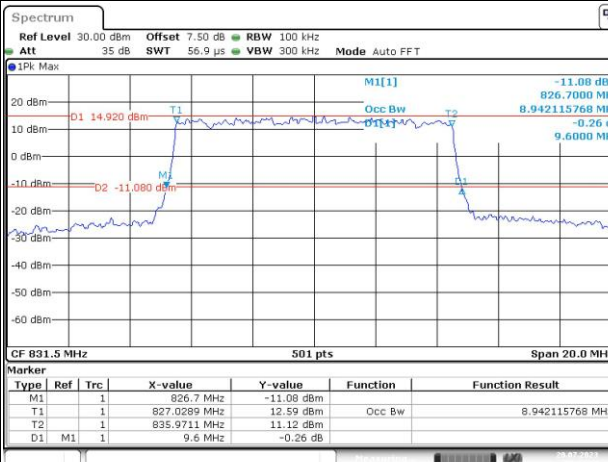
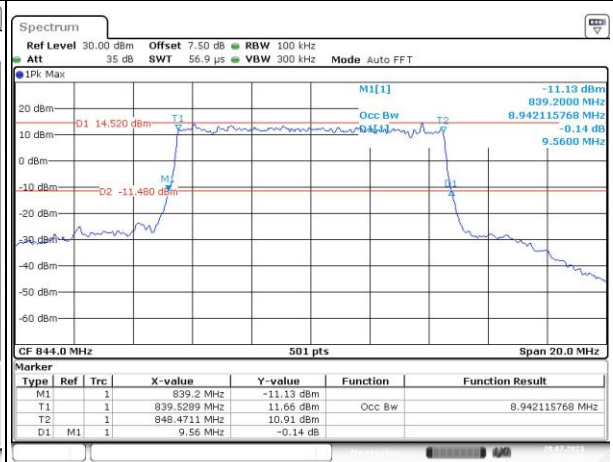
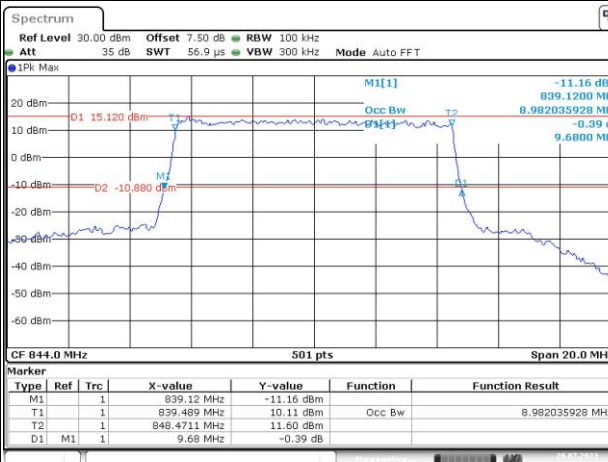
Lowest
For 90SCross
Channel

Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

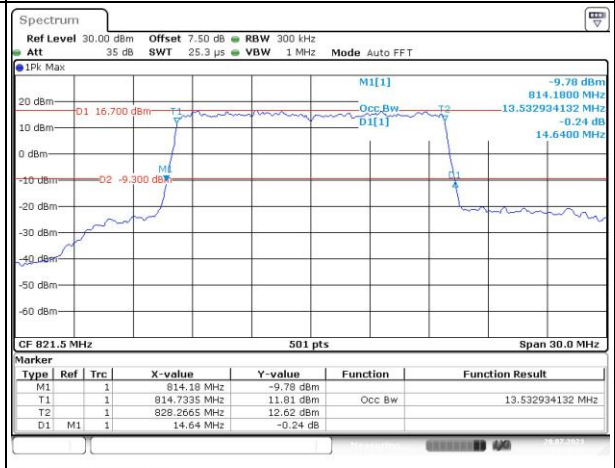
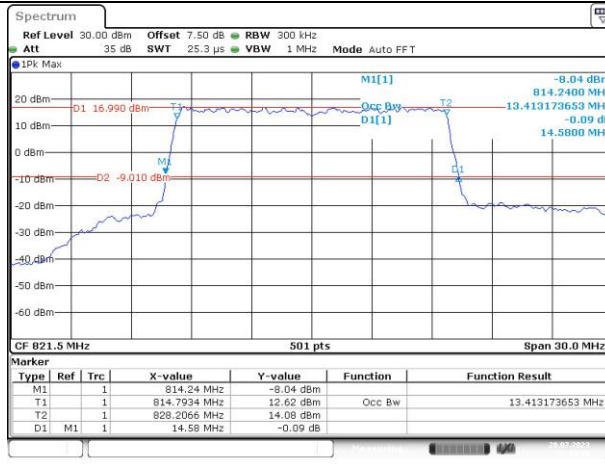
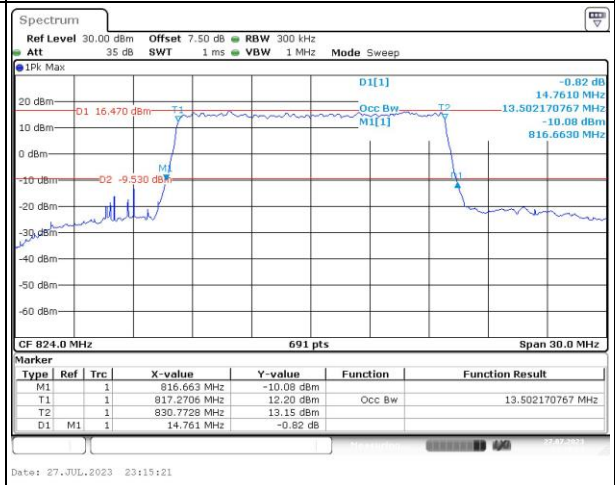
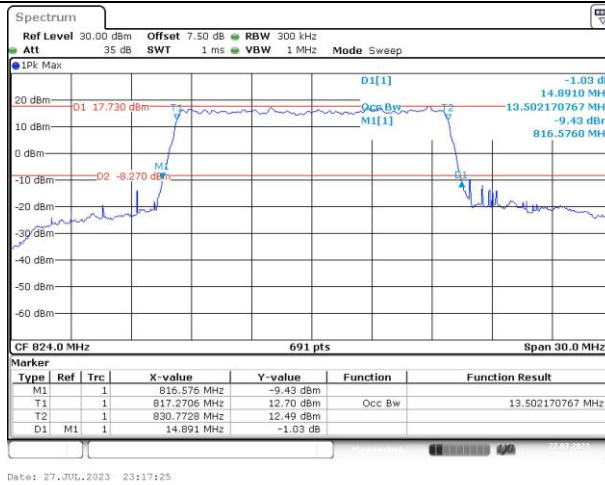
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

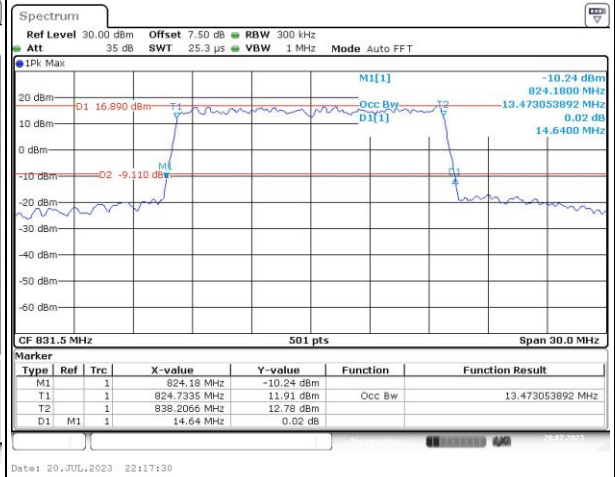
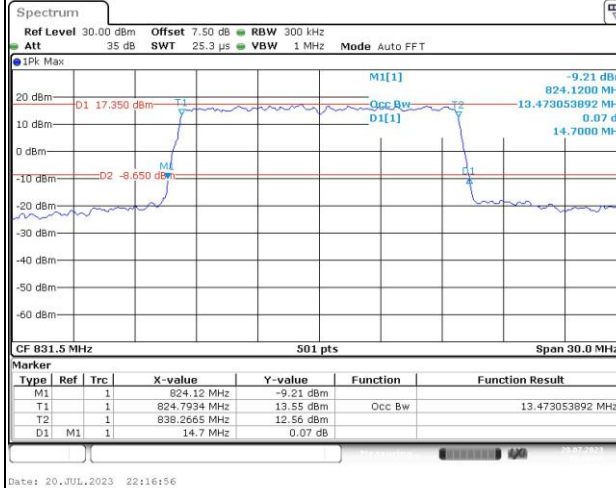
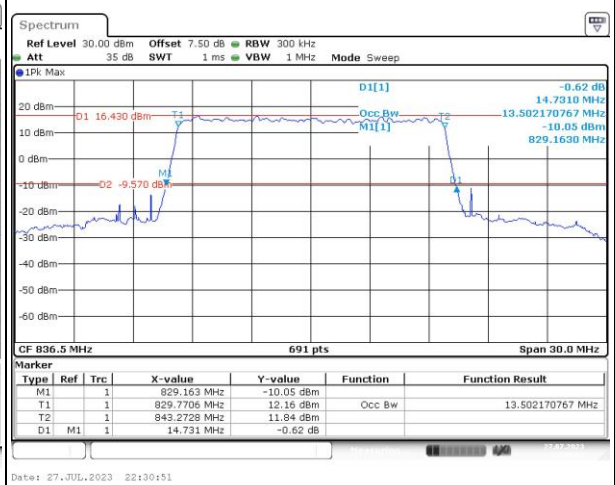
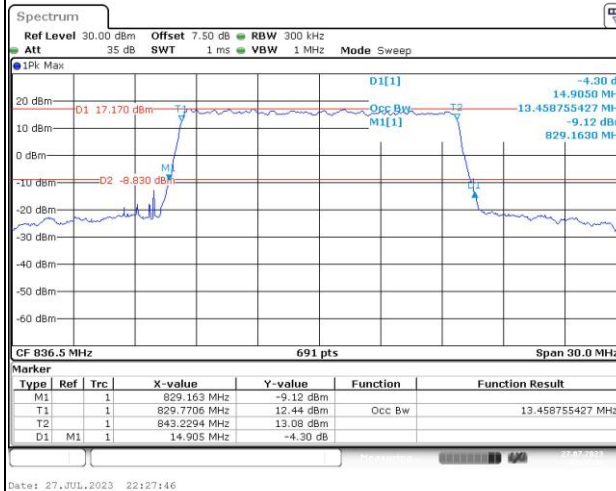
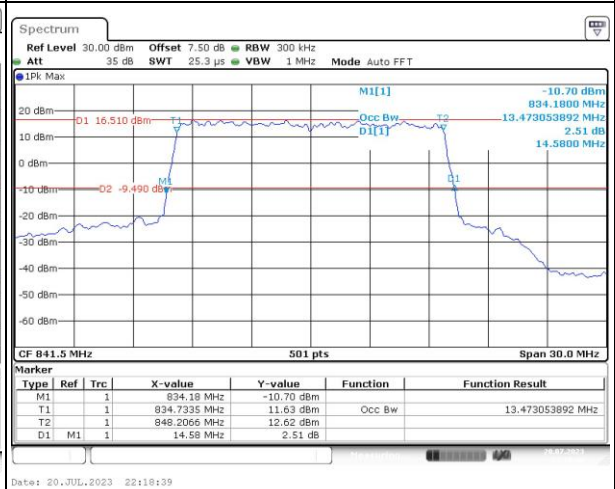
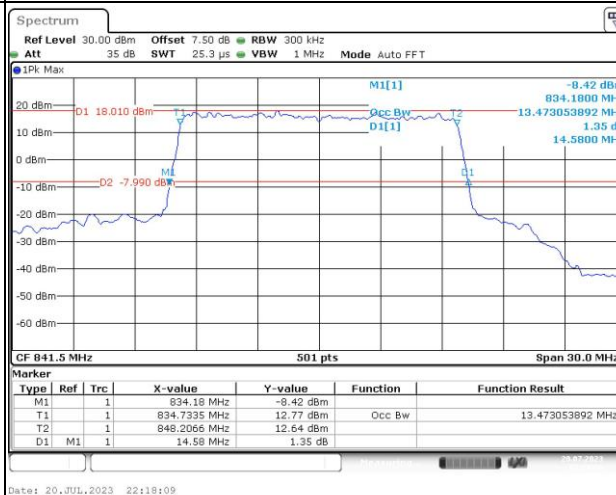
Lowest
For 90SCross
Channel

Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

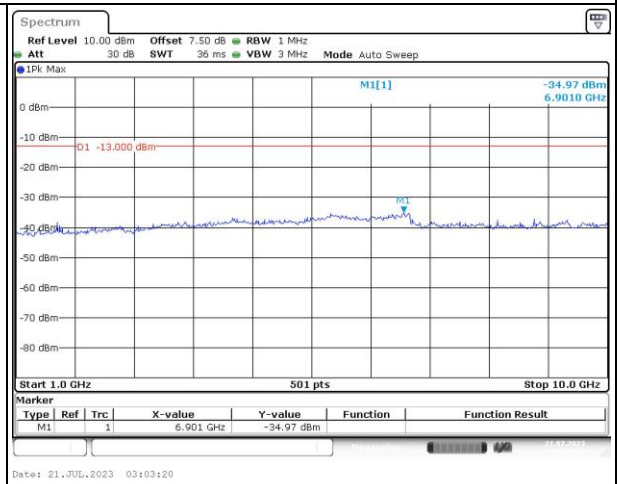
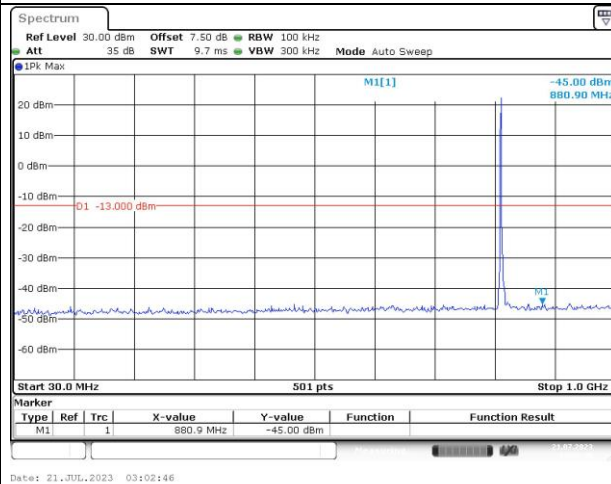
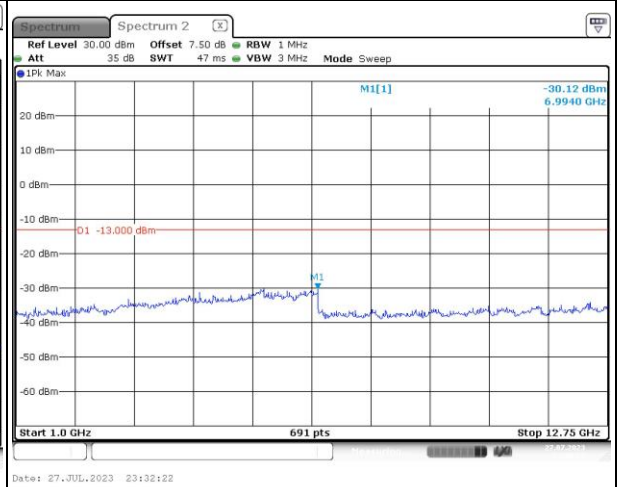
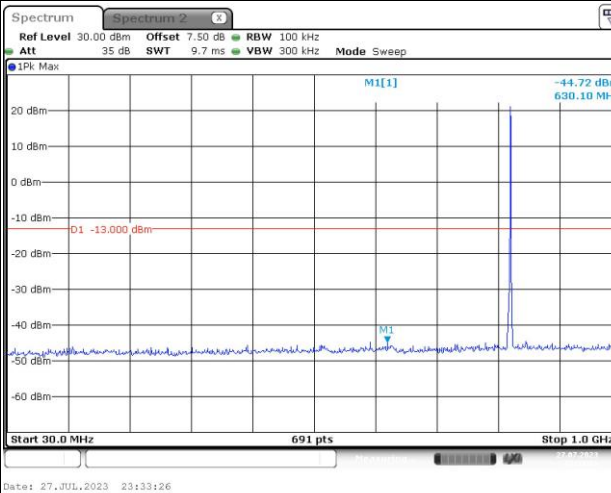
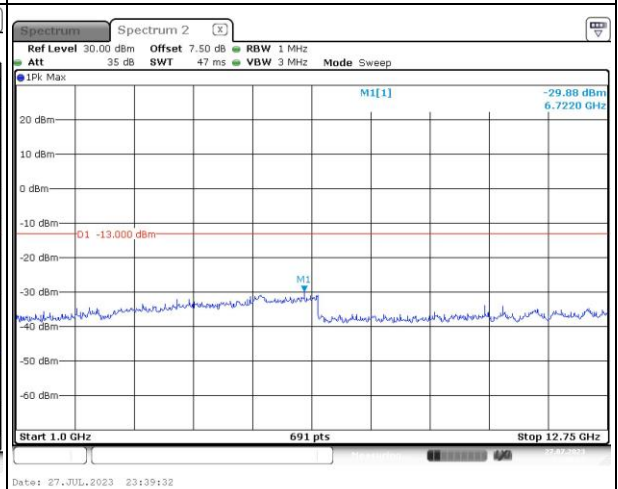
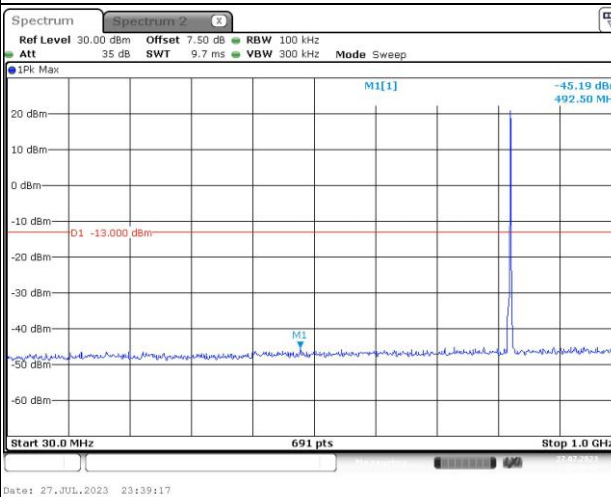
15MHz Bandwidth 16QAM

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

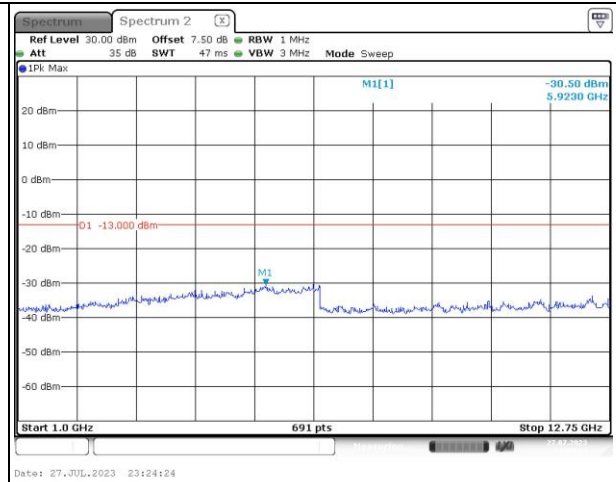
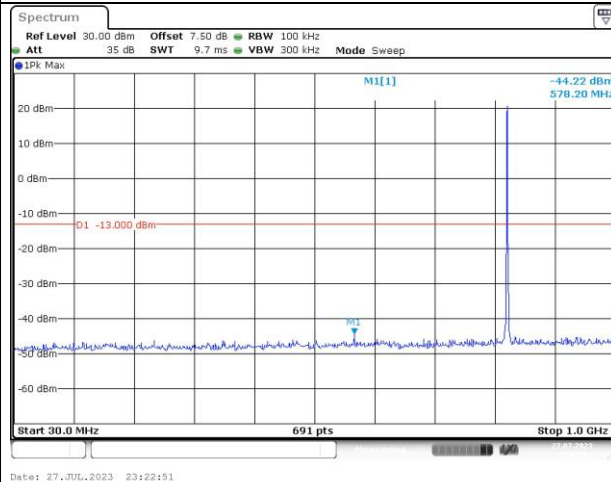
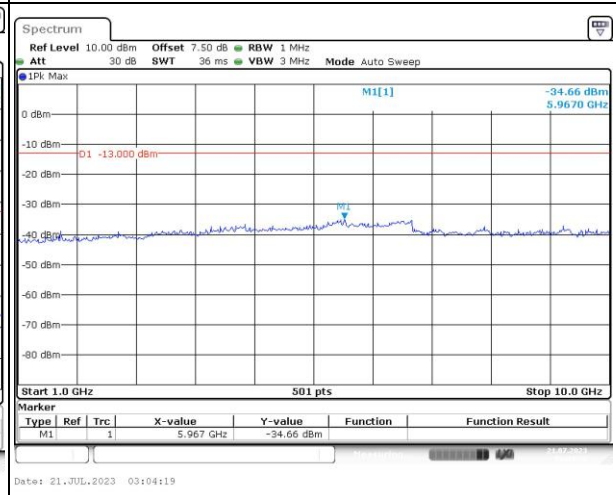
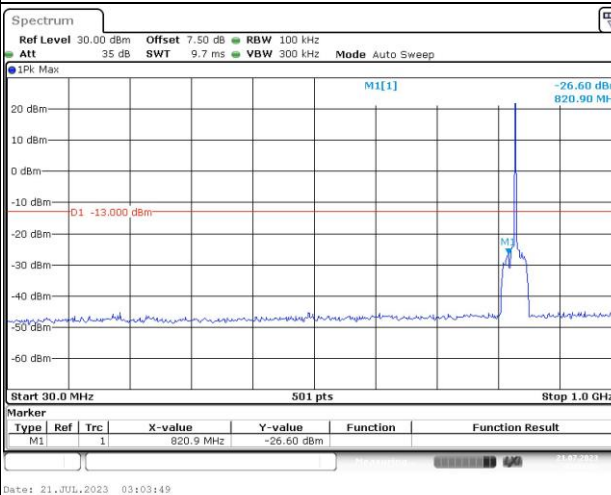
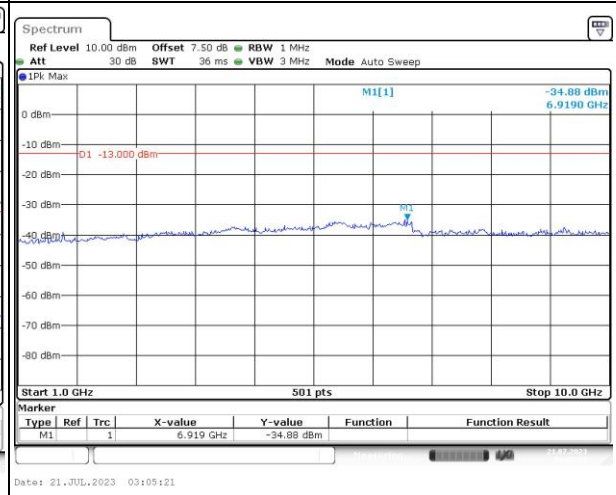
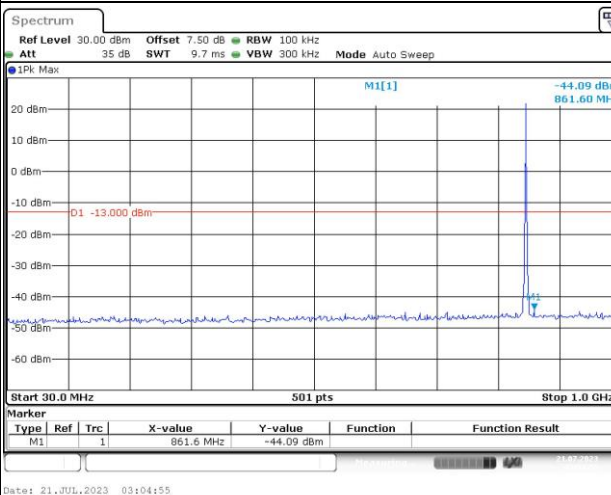
1.4MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

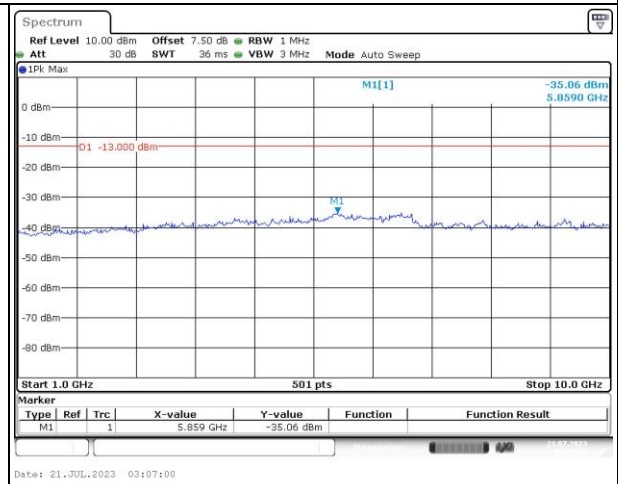
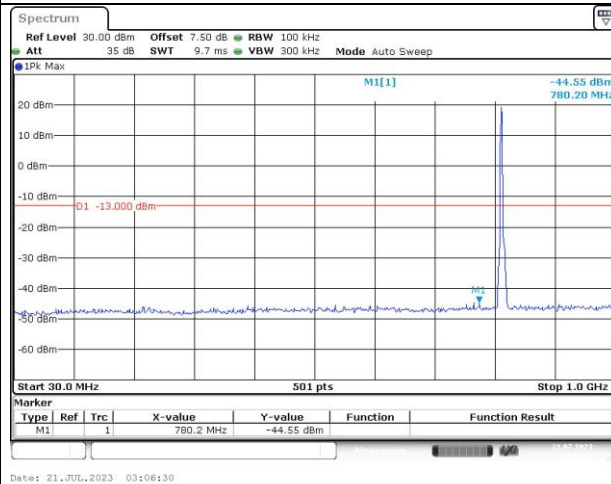
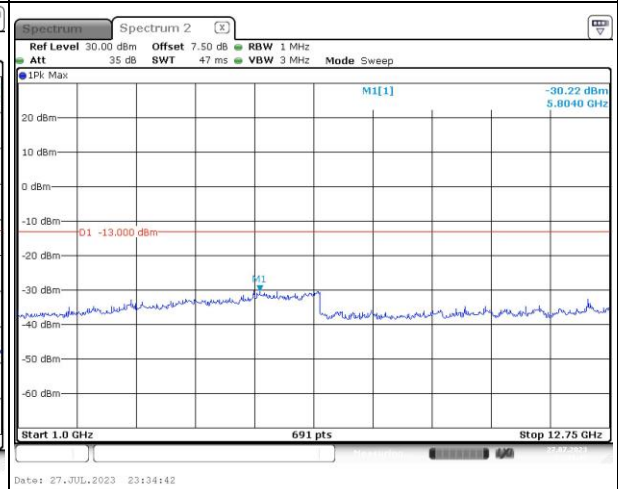
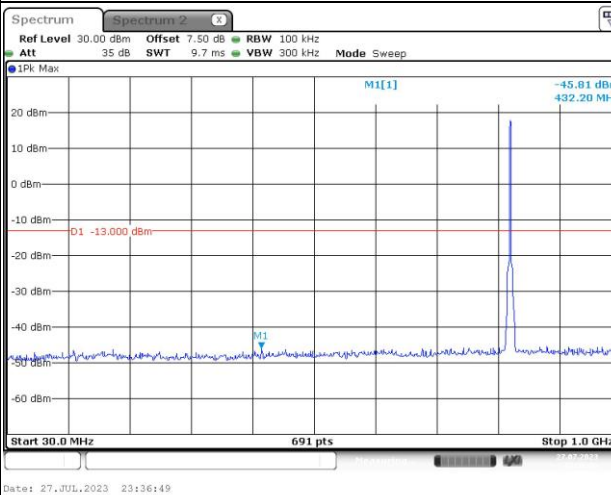
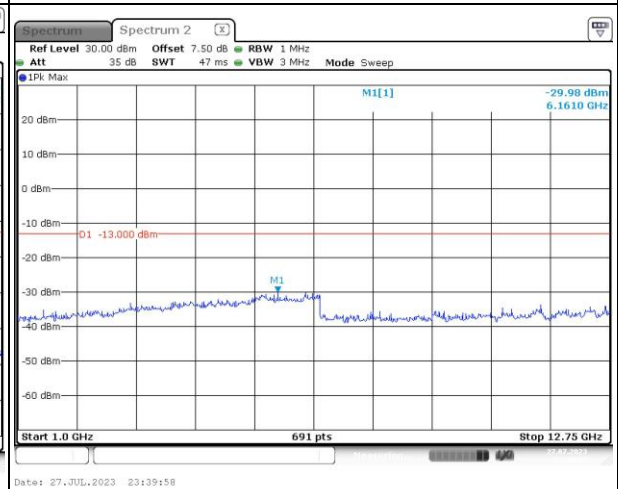
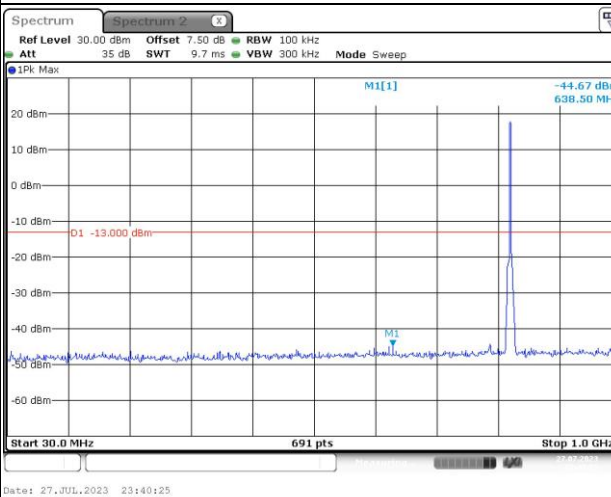
1.4MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

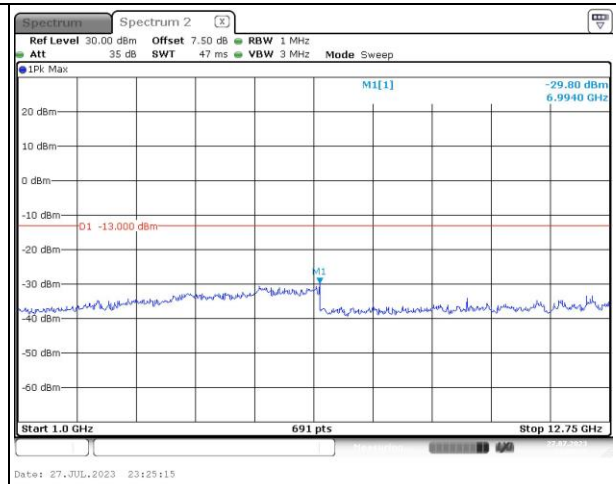
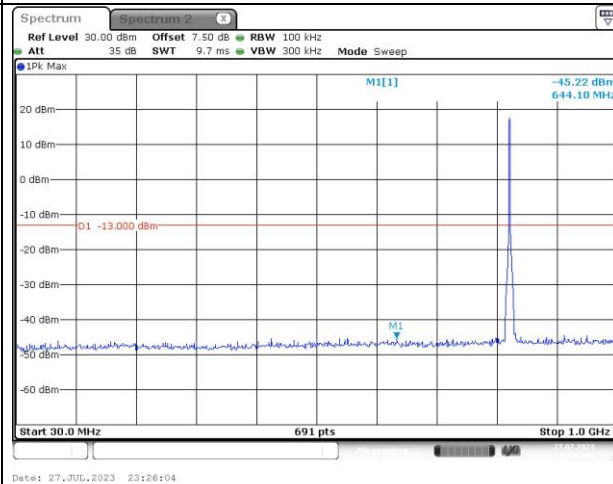
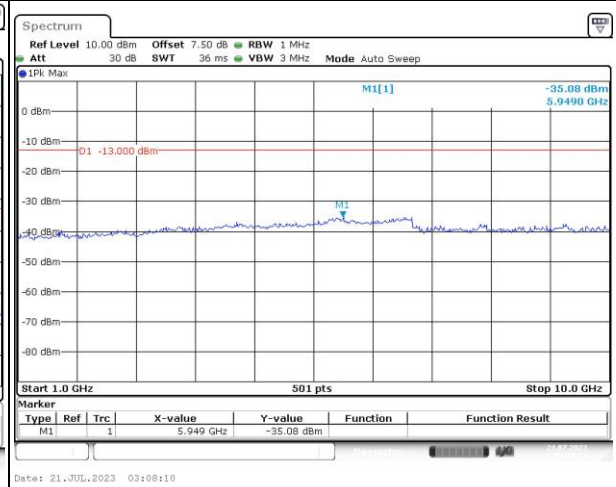
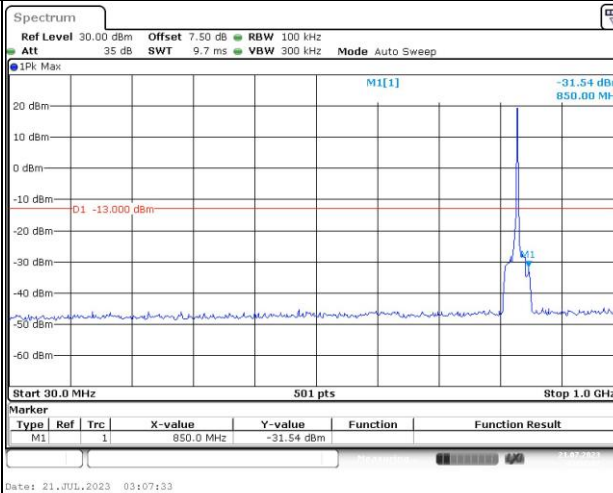
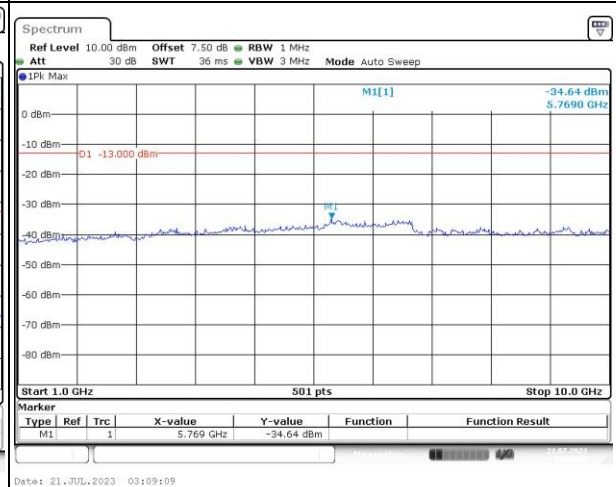
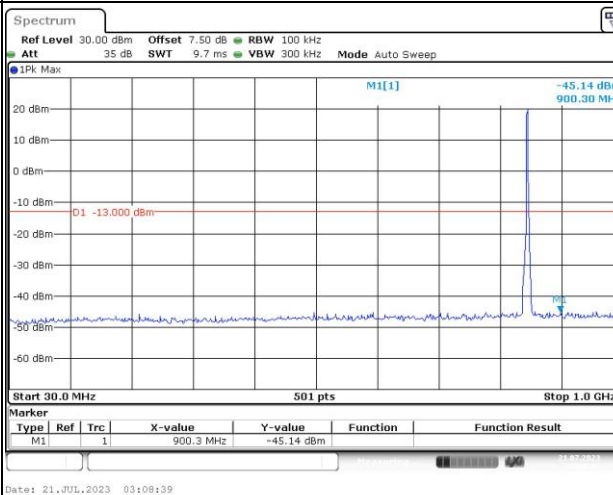
3MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

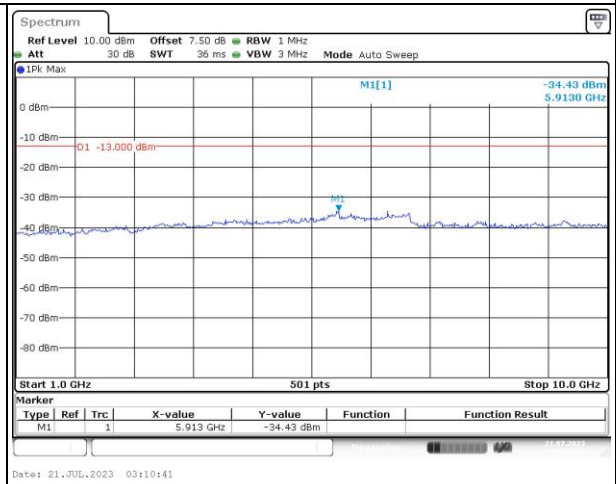
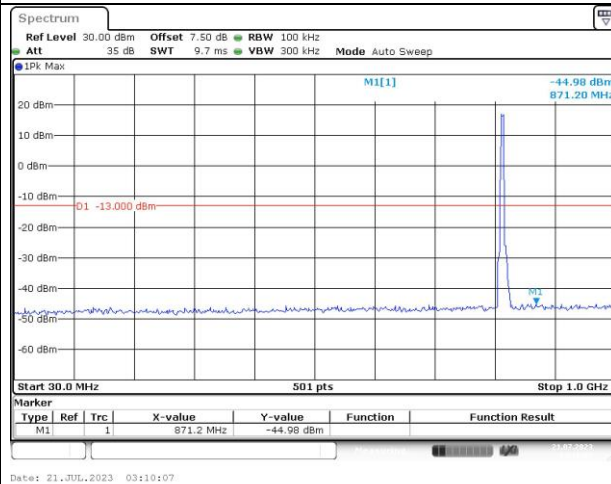
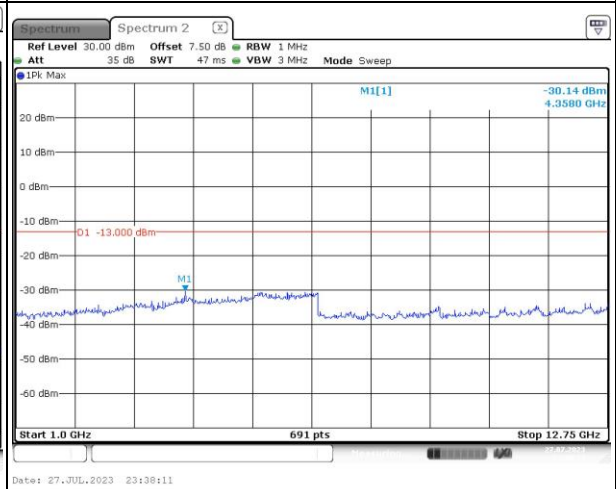
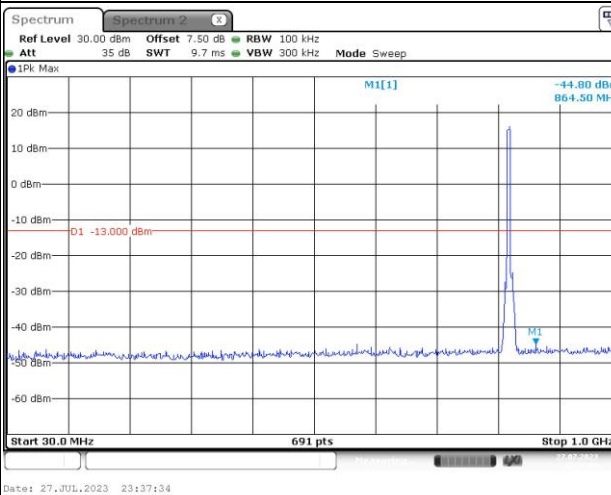
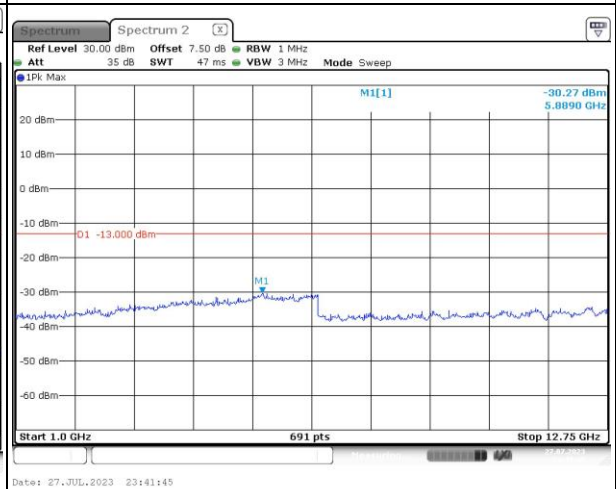
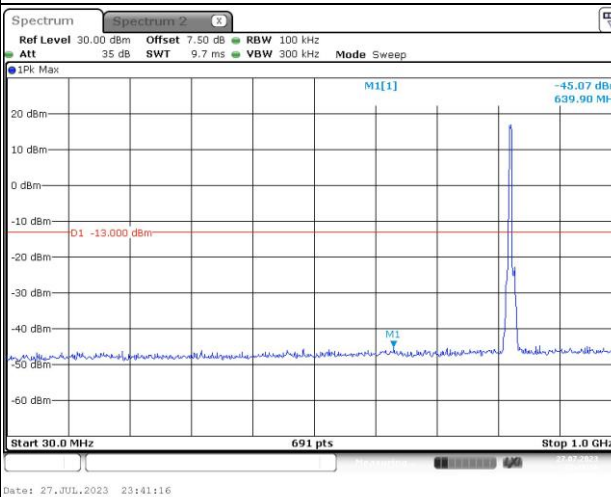
3MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

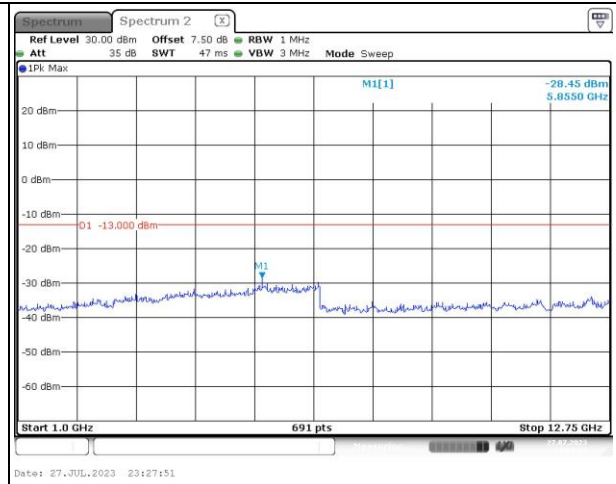
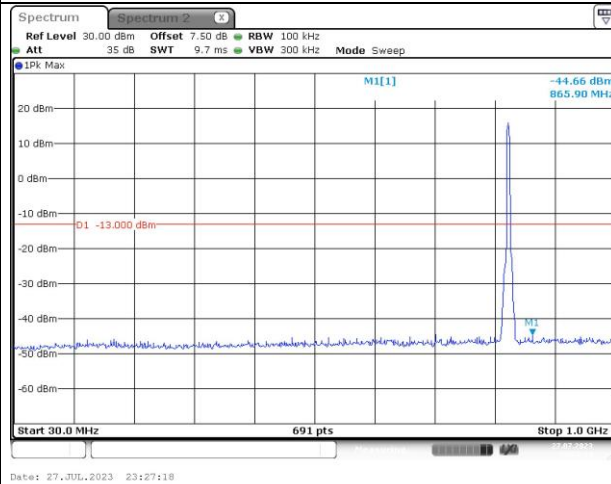
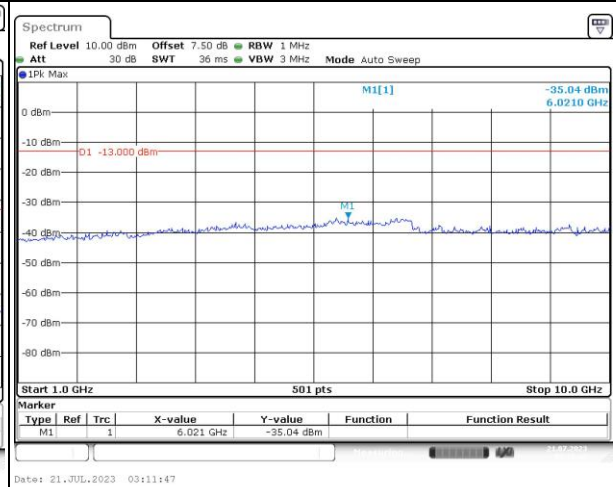
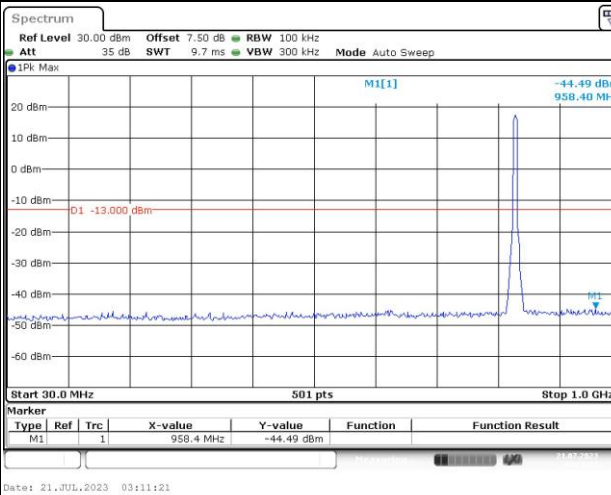
5MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H