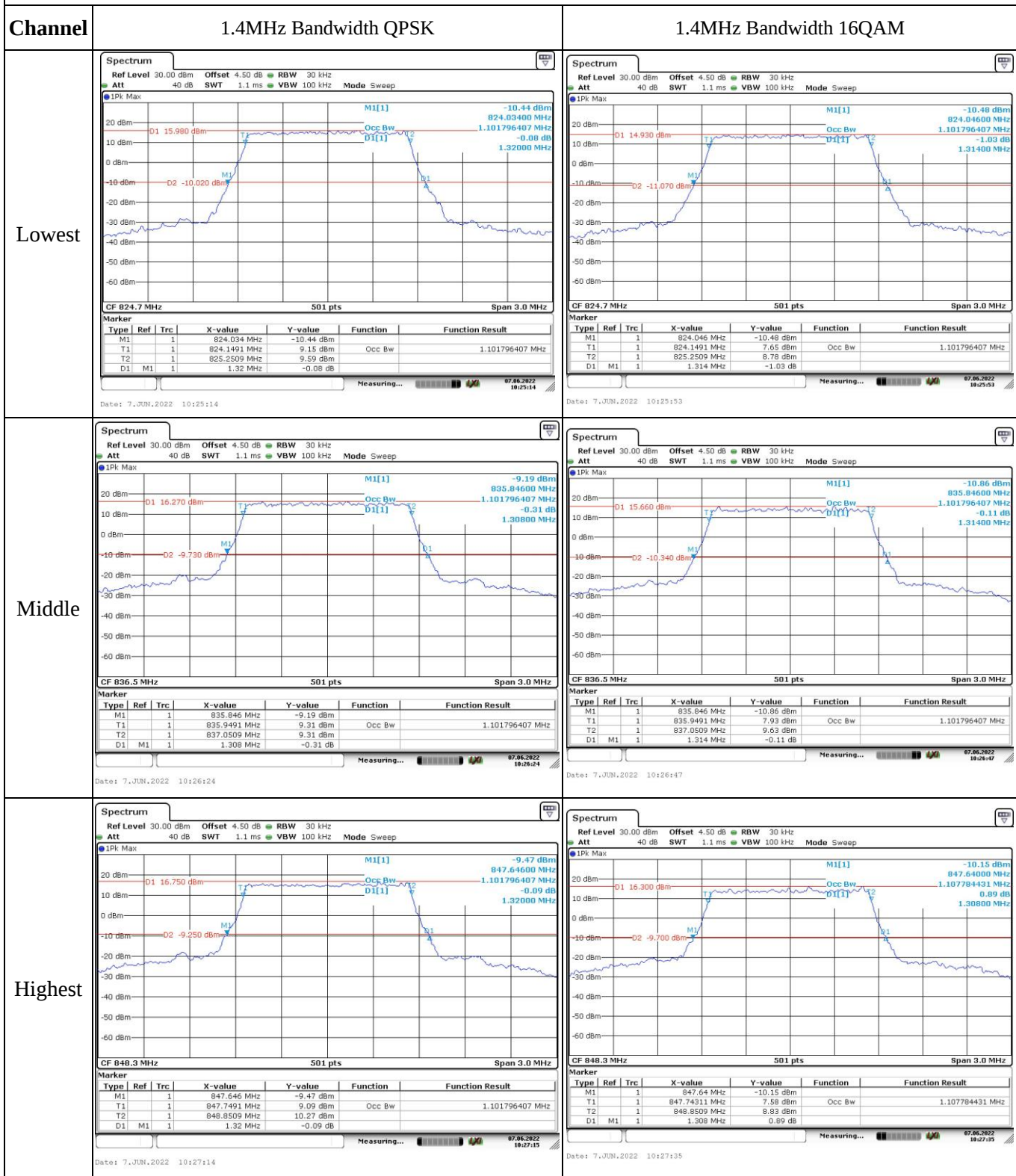
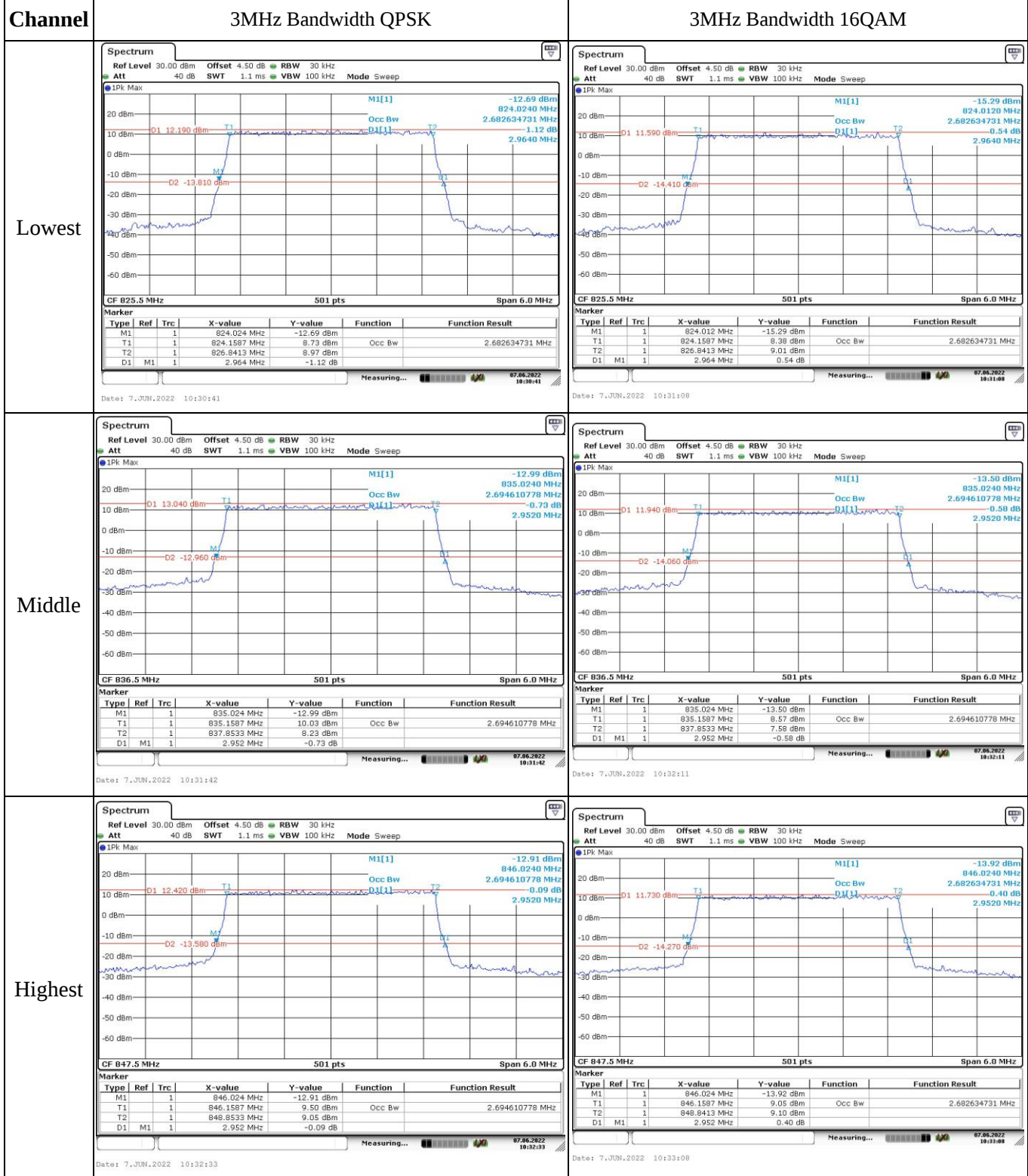


Test Plots:

Occupied Bandwidth



Occupied Bandwidth



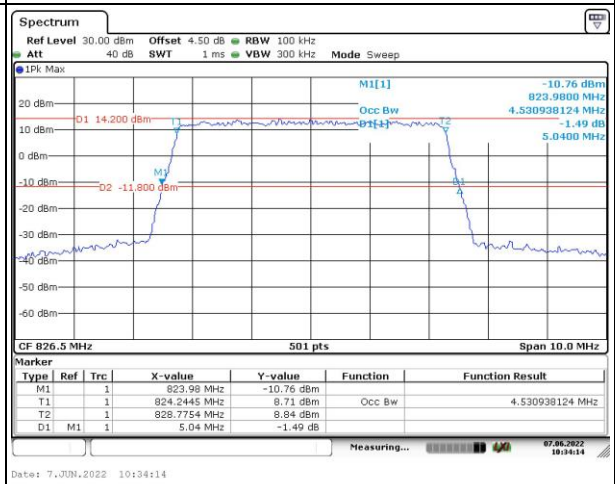
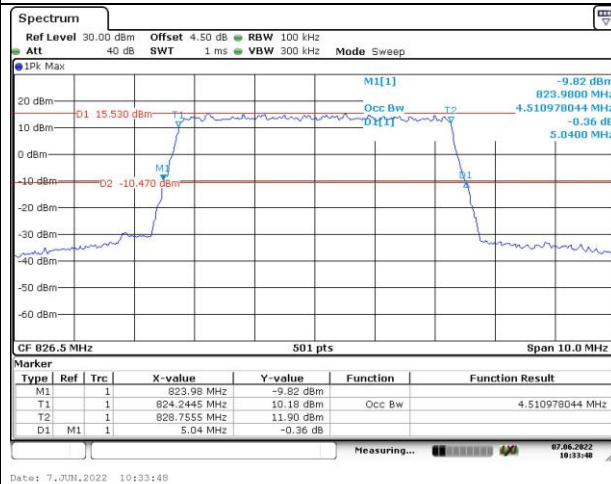
Occupied Bandwidth

Channel

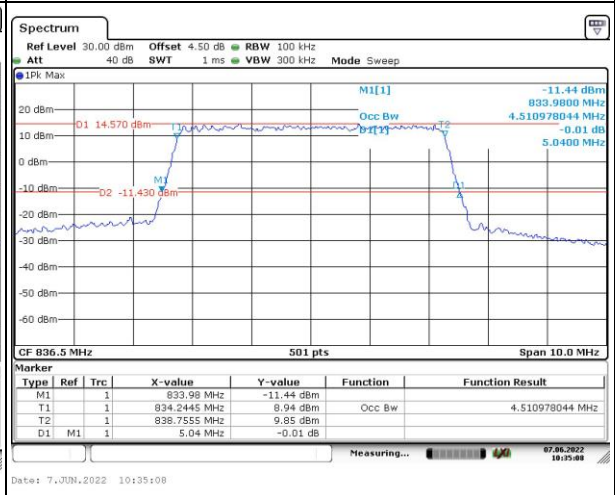
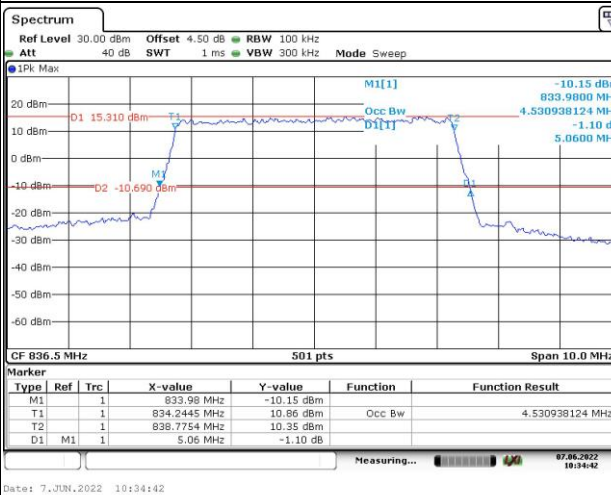
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

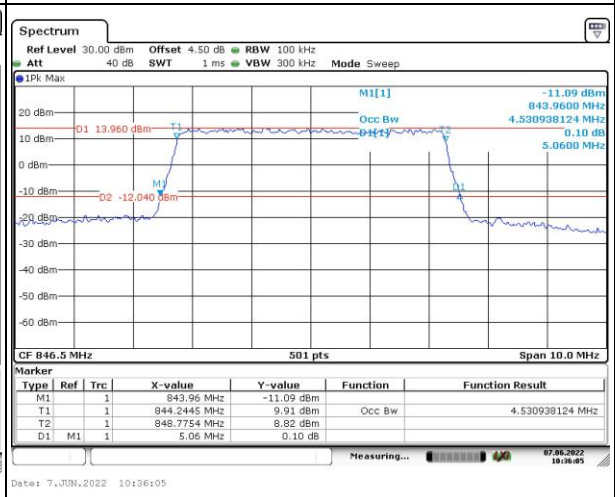
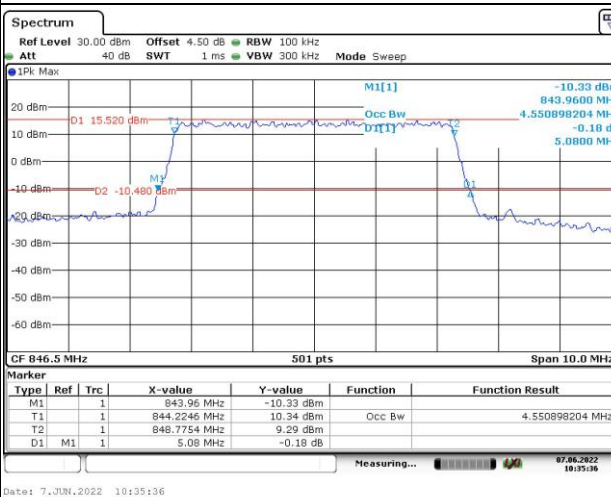
Lowest



Middle



Highest



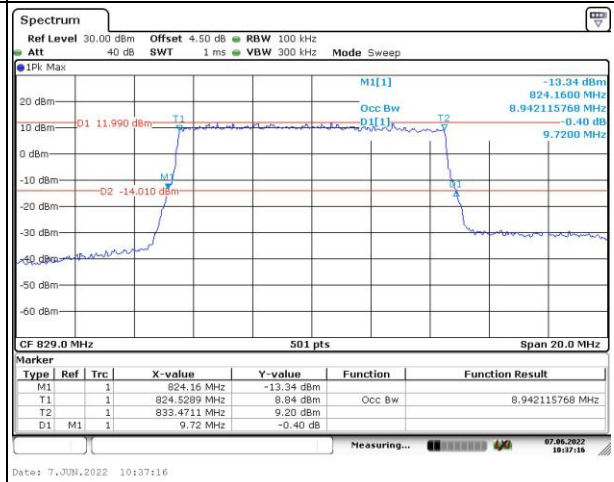
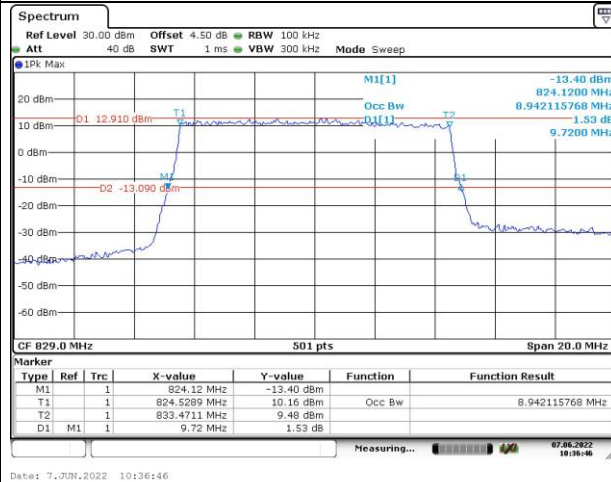
Occupied Bandwidth

Channel

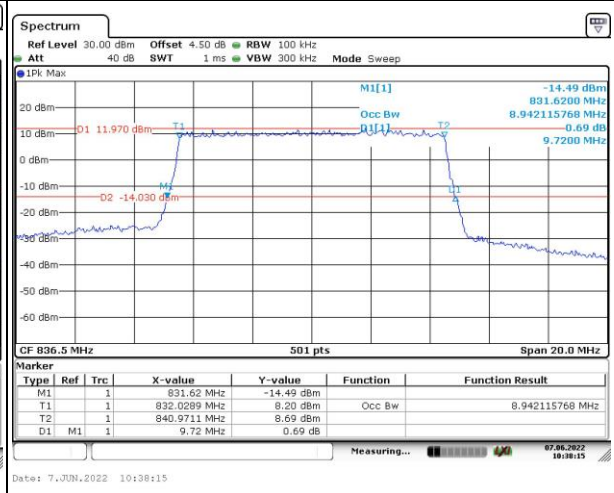
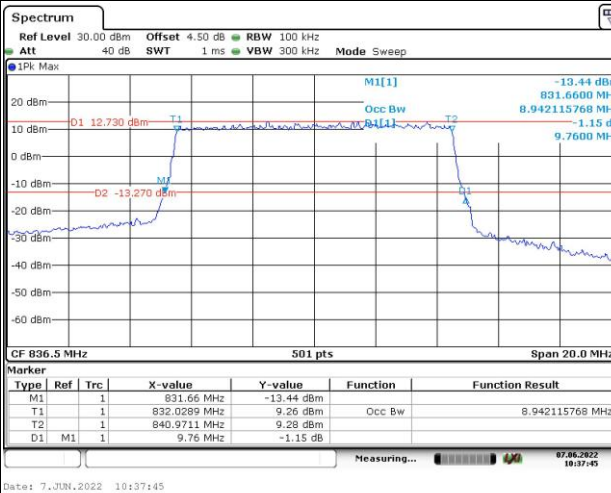
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

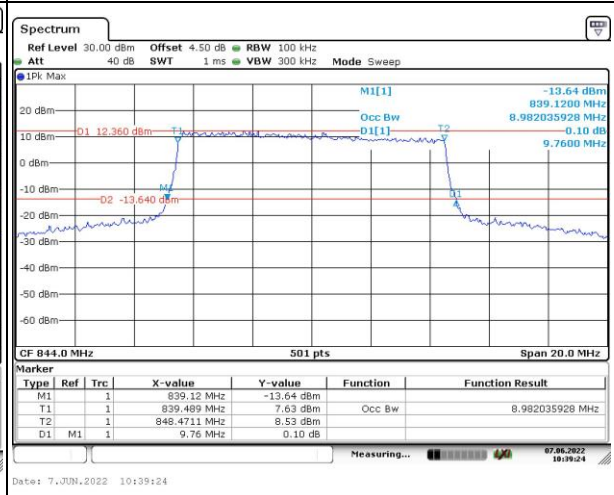
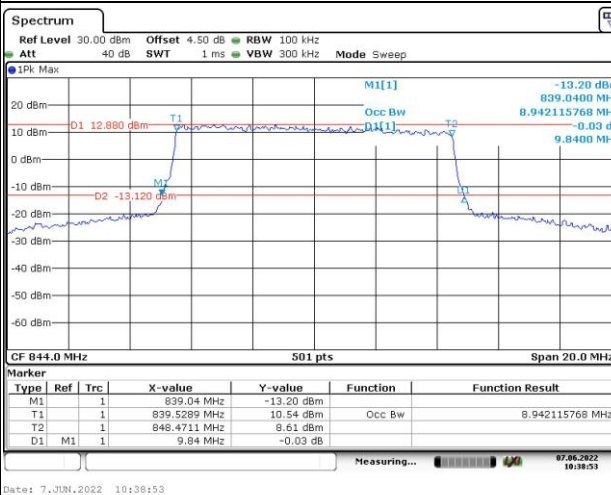
Lowest



Middle



Highest

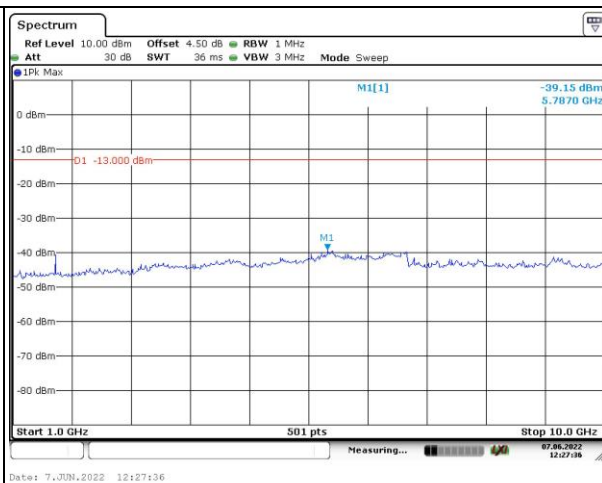
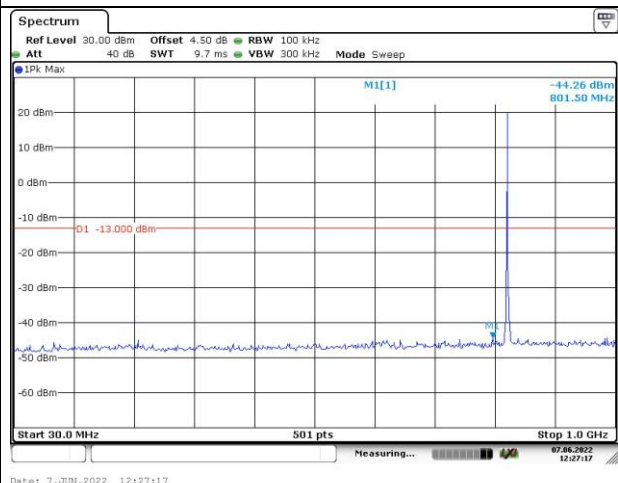


Spurious Emissions at Antenna Terminal

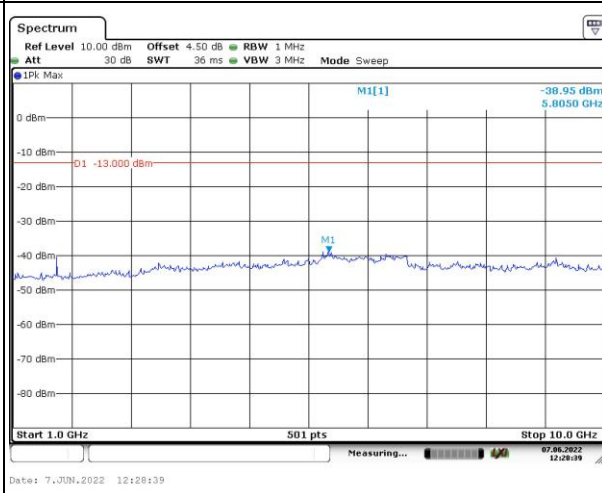
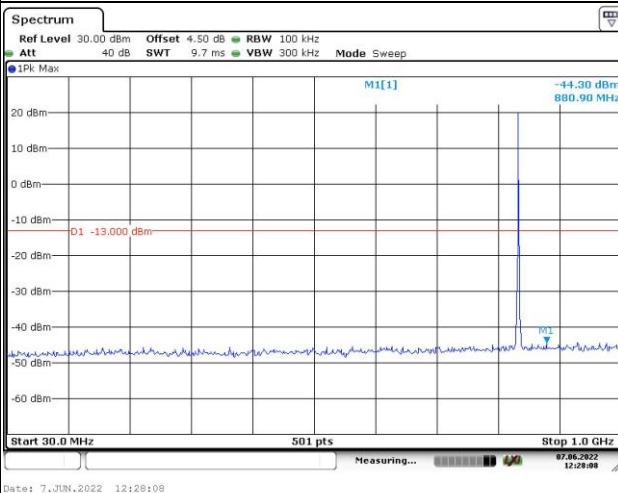
Channel

1.4MHz Bandwidth QPSK

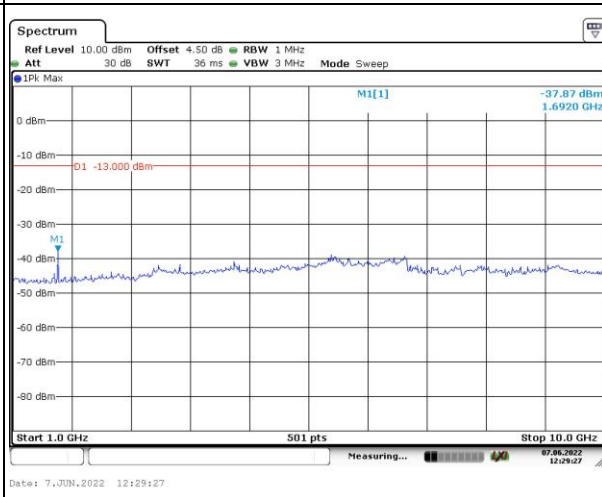
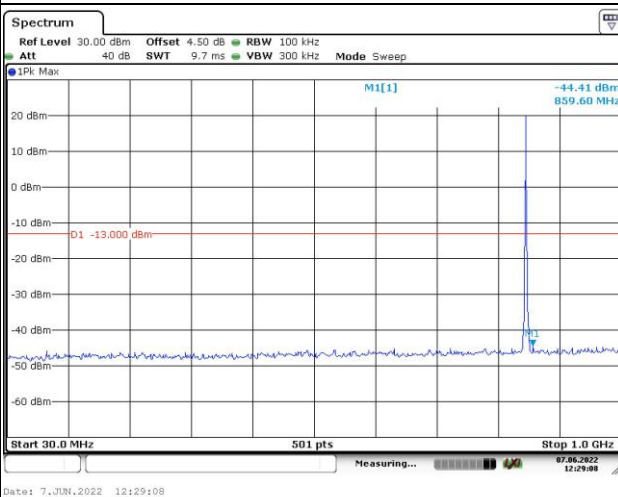
Lowest



Middle



Highest

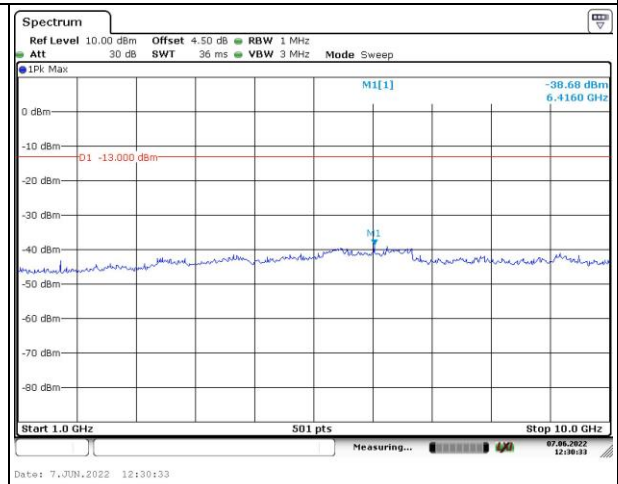
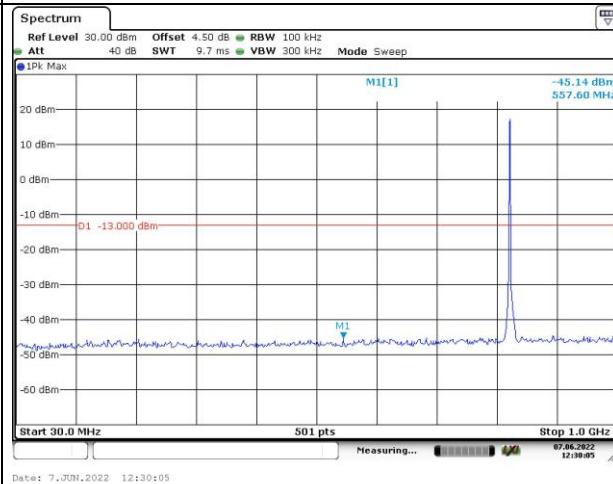


Spurious Emissions at Antenna Terminal

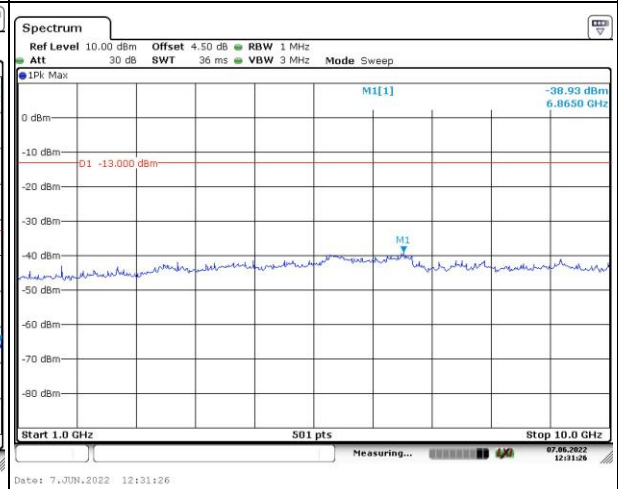
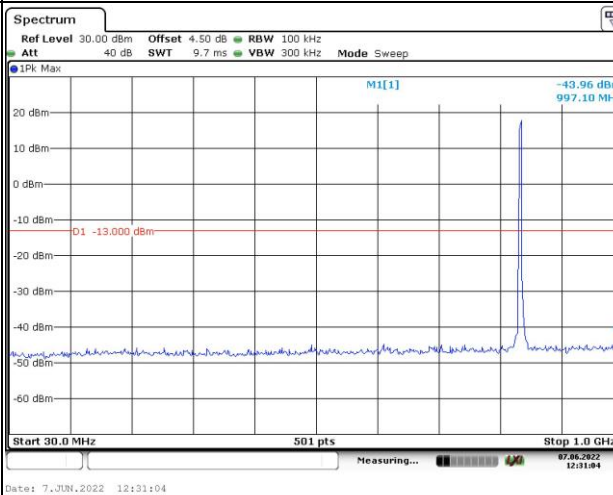
Channel

3MHz Bandwidth QPSK

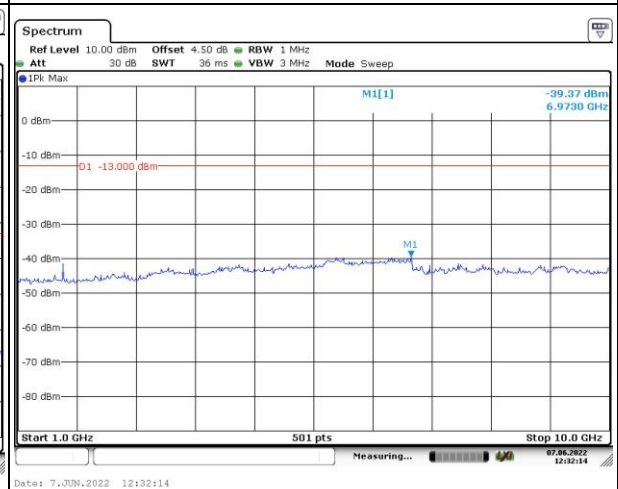
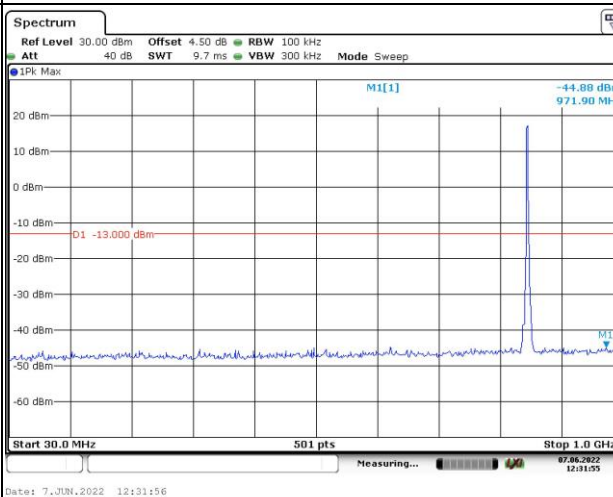
Lowest



Middle



Highest

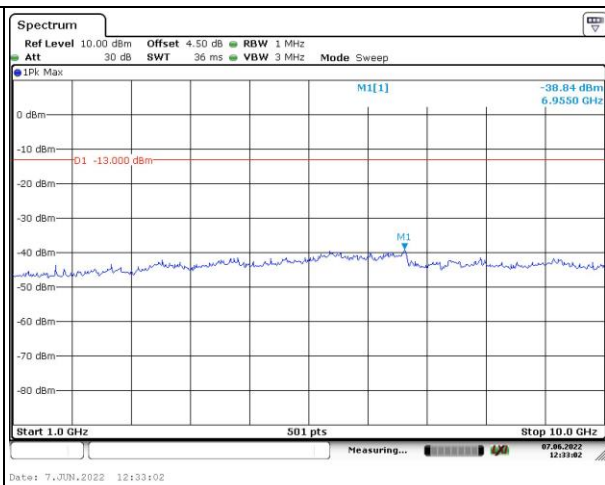
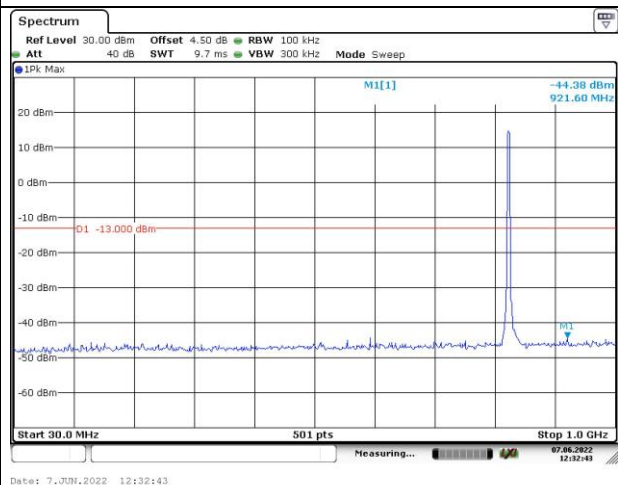


Spurious Emissions at Antenna Terminal

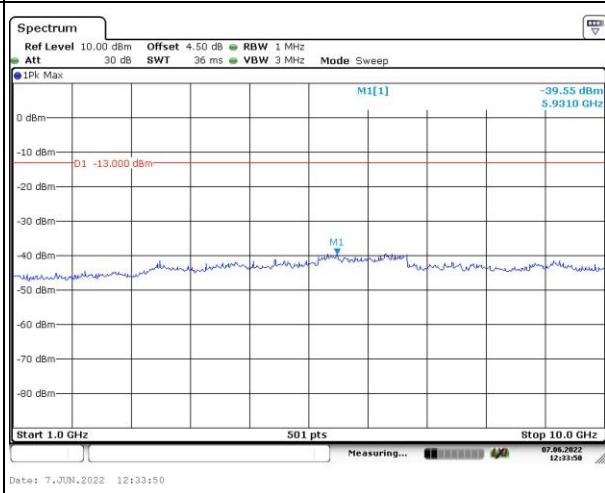
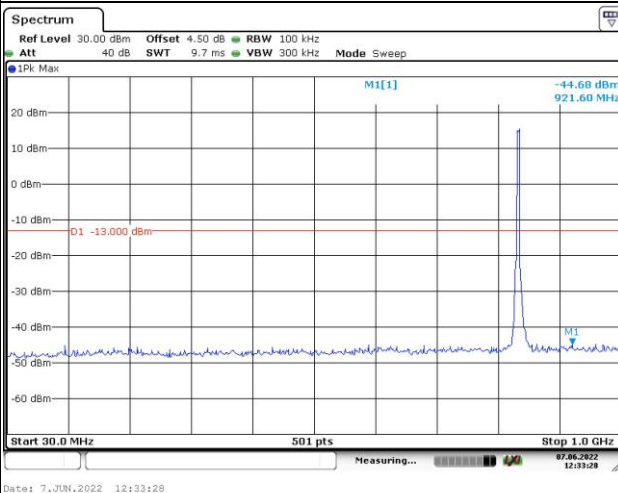
Channel

5MHz Bandwidth QPSK

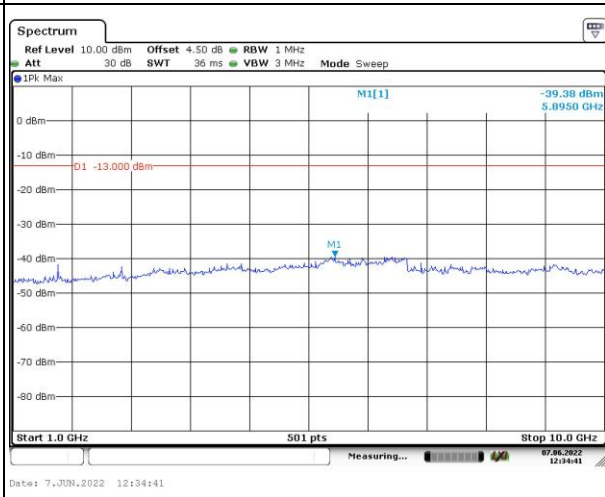
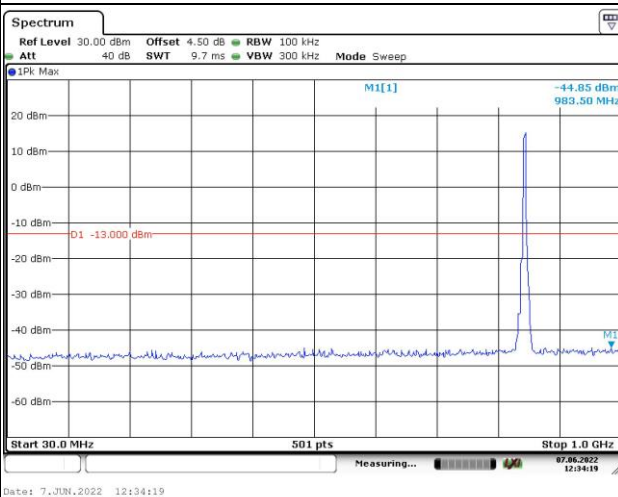
Lowest



Middle



Highest

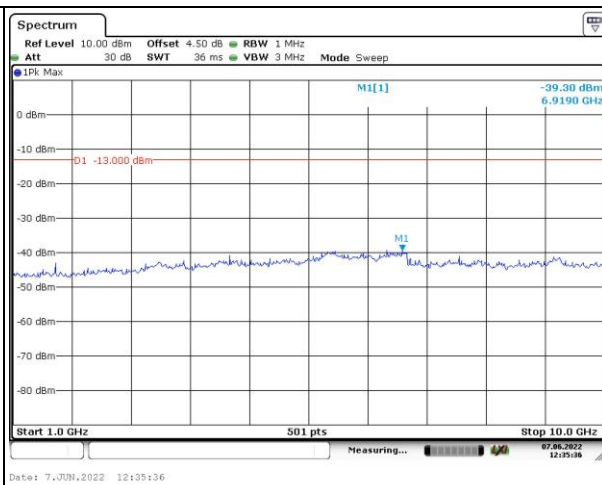
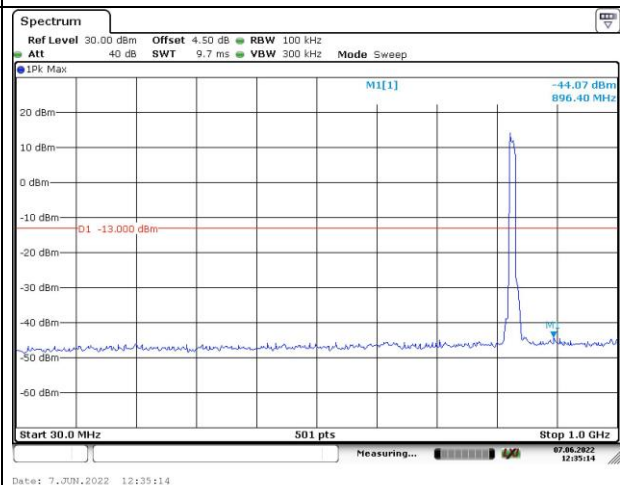


Spurious Emissions at Antenna Terminal

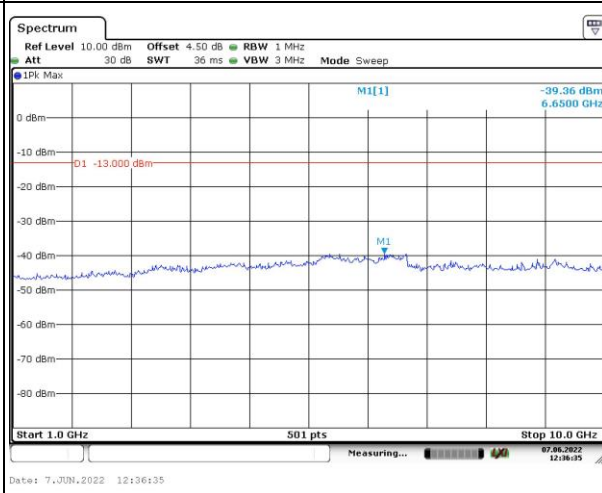
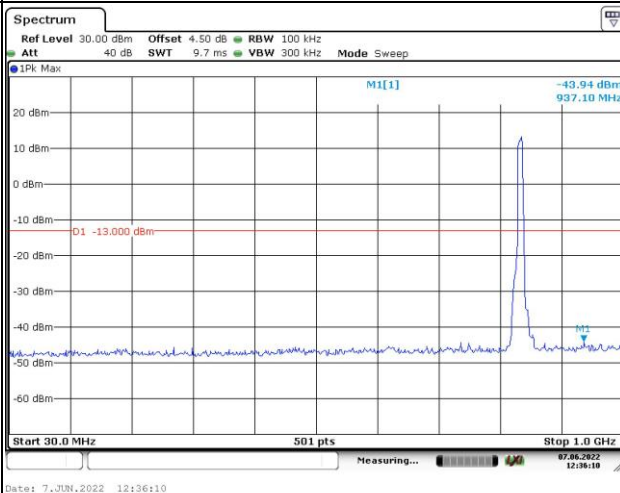
Channel

10MHz Bandwidth QPSK

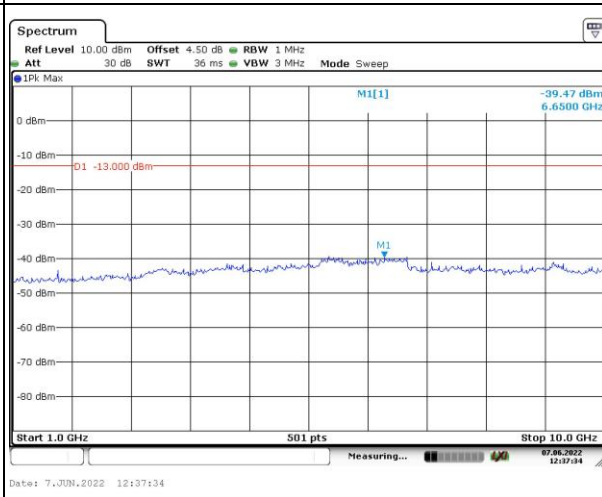
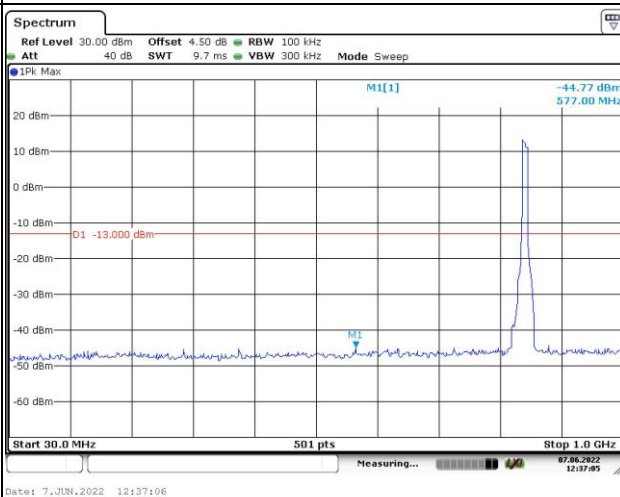
Lowest



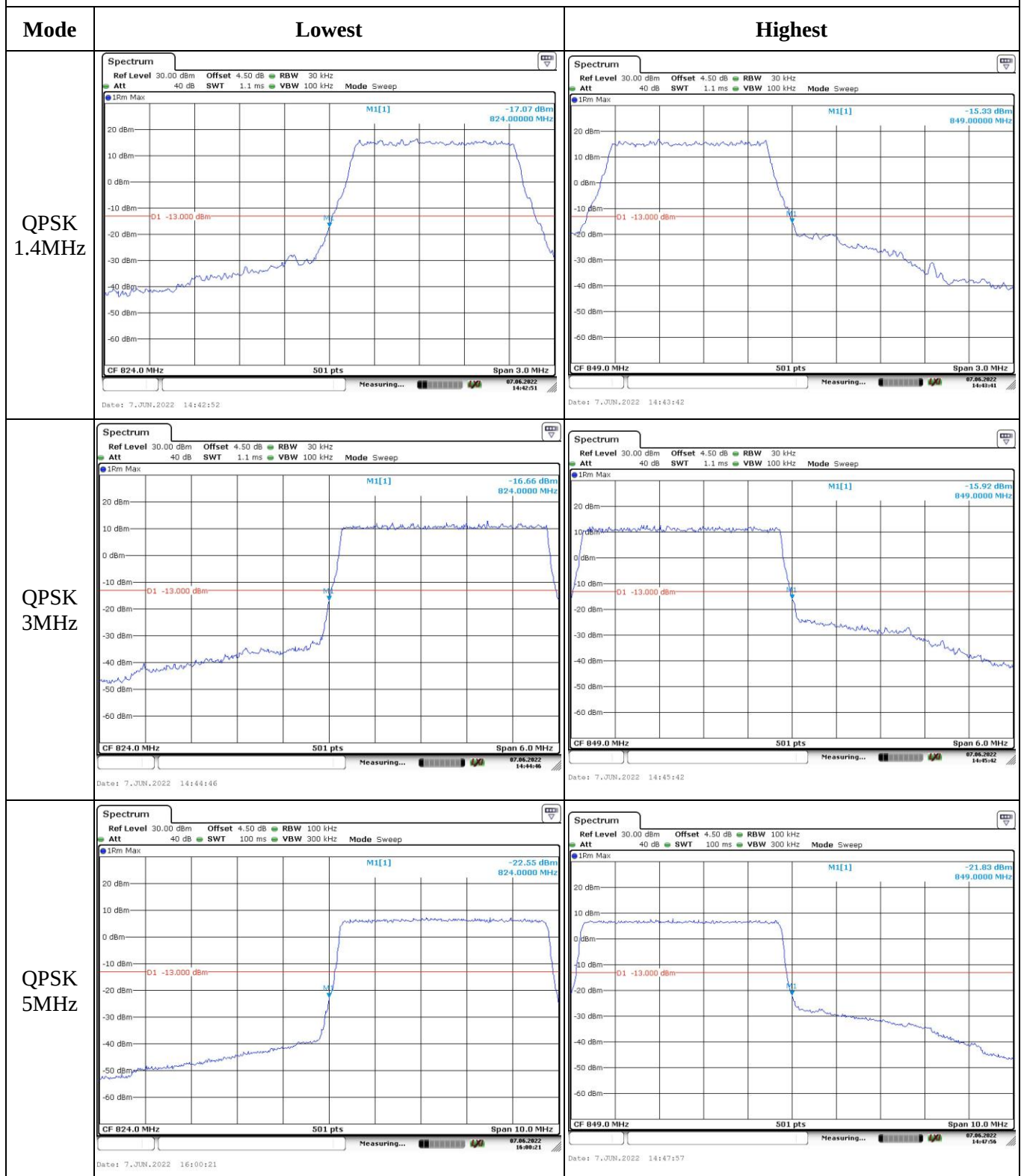
Middle



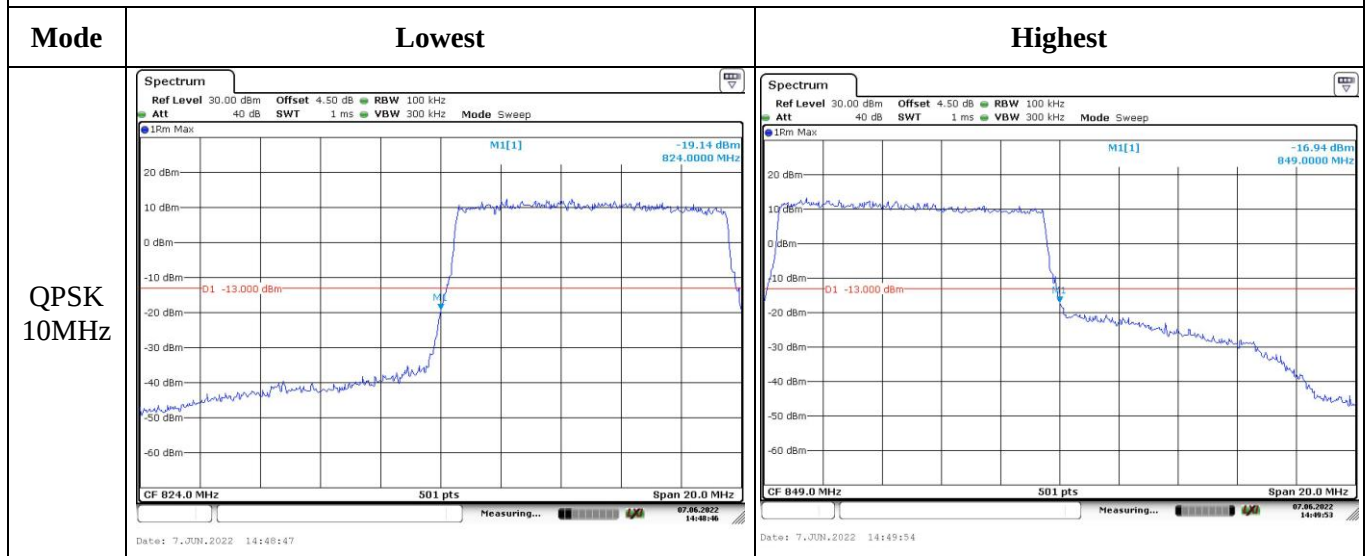
Highest



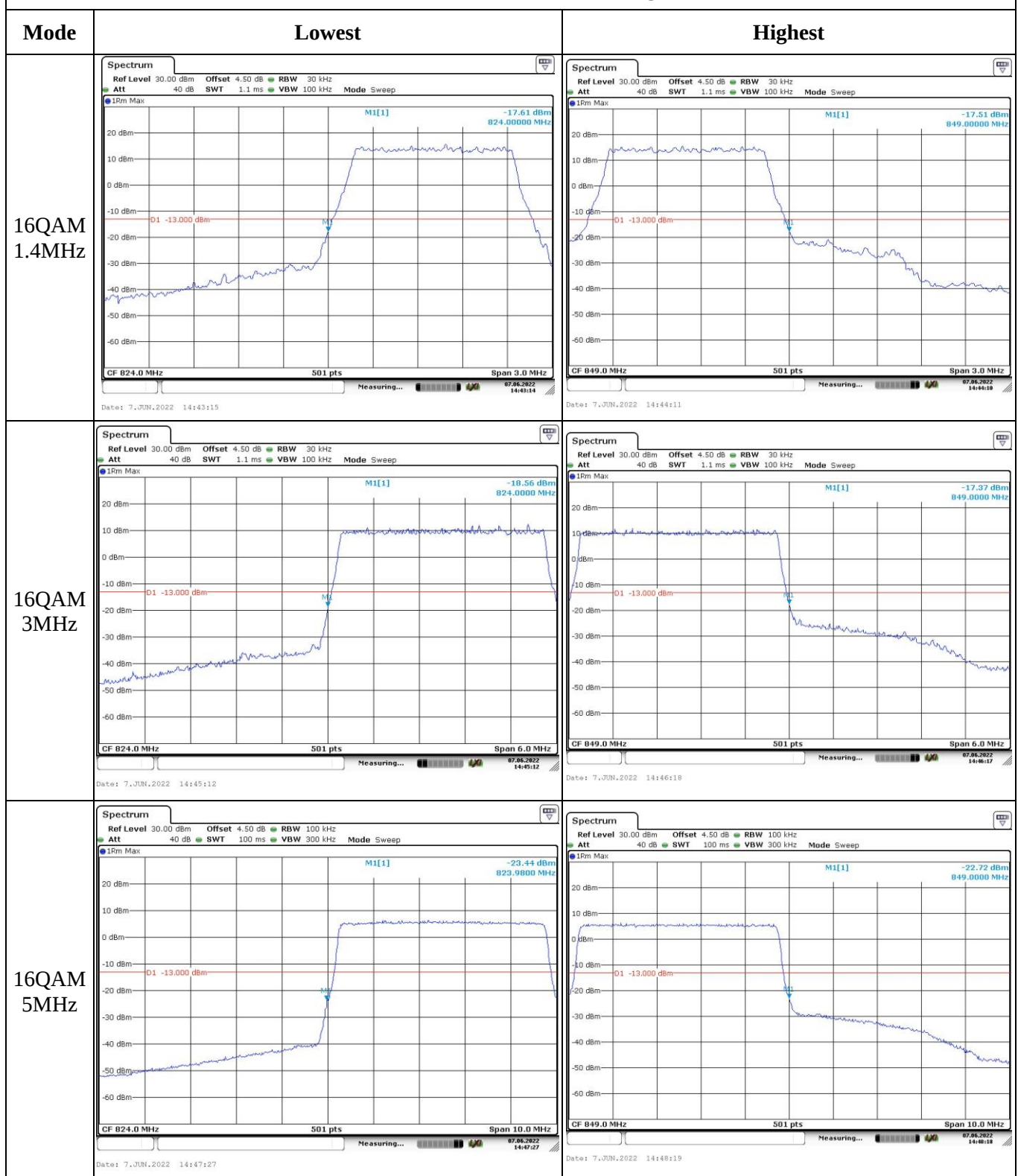
Out of band emission, Band Edge



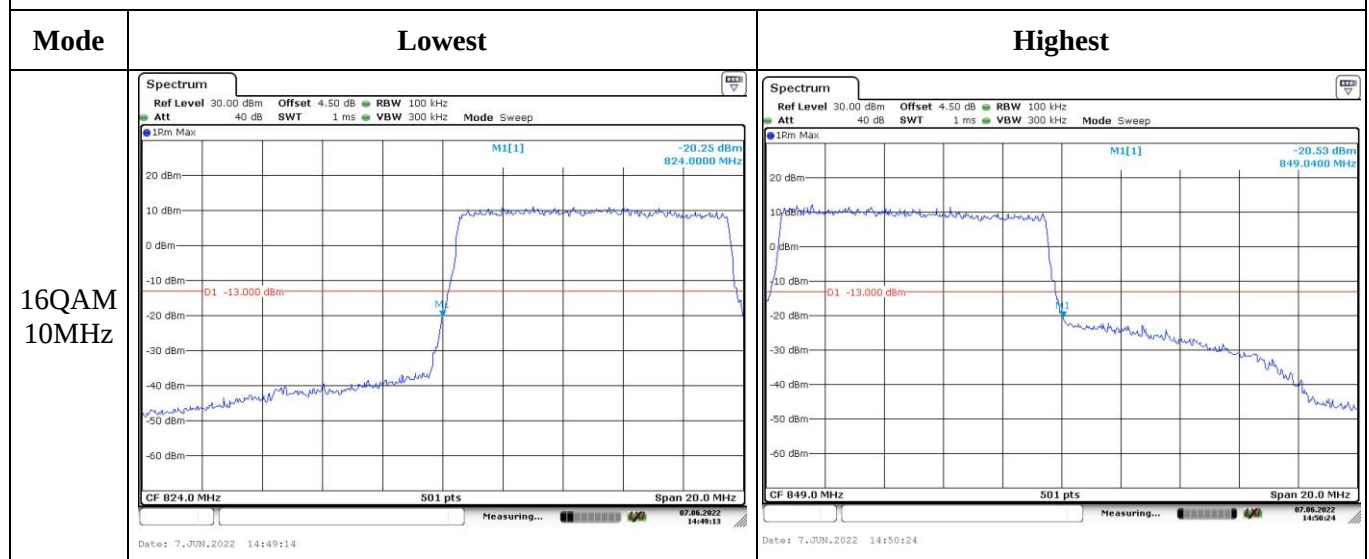
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 12:

Serial Number:	CR22050038-RF-S1	Test Date:	2022-06-07
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ada Yan	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.8	Relative Humidity: (%)	60	ATM Pressure: (kPa)	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	2021-07-22	2022-07-21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Unknown	RF Cable	Unknown	RF Cable 004	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
R&S	Wideband Radio	CMW500	144976	2021-07-22	2022-07-21
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
Unknown	Coaxial tee connector	Unknown	2204006	Each time	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).

EUT Information@ LTE Band 12▲:

Antenna Gain G_T (dBi):	-2.01	Antenna Gain G_T (dBd):	-4.16	Path Loss L_C (dB):	0
Operation Voltage(V_{DC}):					
Lowest:	3.4	Normal:	3.7	Highest:	4.2

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	711

Test Data:**FCC §2.1046; § 27.50(c) (10)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	23.35	23.28	23.49	19.5	34.77
	RB1#3	23.56	23.51	23.66		
	RB1#5	23.43	23.37	23.53		
	RB3#0	23.35	23.38	23.46		
	RB3#3	23.35	23.39	23.49		
	RB6#0	22.41	22.47	22.46		
1.4MHz 16QAM	RB1#0	22.27	22.32	22.55	18.44	34.77
	RB1#3	22.4	22.42	22.6		
	RB1#5	22.33	22.34	22.58		
	RB3#0	22.38	22.3	22.48		
	RB3#3	22.28	22.33	22.45		
	RB6#0	21.3	21.35	21.3		
3MHz QPSK	RB1#0	23.35	23.43	23.45	19.38	34.77
	RB1#8	23.42	23.4	23.41		
	RB1#14	23.31	23.29	23.54		
	RB6#0	22.42	22.46	22.56		
	RB6#9	22.38	22.5	22.46		
	RB15#0	22.4	22.45	22.47		
3MHz 16QAM	RB1#0	22.26	22.36	22.54	18.44	34.77
	RB1#8	22.25	22.21	22.33		
	RB1#14	22.11	22.43	22.6		
	RB6#0	21.31	21.29	21.48		
	RB6#9	21.35	21.28	21.45		
	RB15#0	21.37	21.39	21.41		
5MHz QPSK	RB1#0	23.28	23.37	23.25	19.34	34.77
	RB1#13	23.27	23.4	23.5		
	RB1#24	23.4	23.2	23.4		
	RB15#0	22.45	22.43	22.44		
	RB15#10	22.35	22.32	22.38		
	RB25#0	22.35	22.41	22.38		
5MHz 16QAM	RB1#0	22.43	22.39	22.48	18.48	34.77
	RB1#13	22.3	22.39	22.64		
	RB1#24	22.47	22.4	22.6		
	RB15#0	21.34	21.36	21.41		
	RB15#10	21.22	21.26	21.42		
	RB25#0	21.31	21.35	21.33		
10MHz QPSK	RB1#0	23.38	23.36	23.48	19.4	34.77
	RB1#25	23.56	23.51	23.56		
	RB1#49	23.46	23.26	23.47		

	RB25#0	22.33	22.43	22.42		
	RB25#25	22.41	22.34	22.41		
	RB50#0	22.41	22.41	22.39		
10MHz 16QAM	RB1#0	22.17	22.3	22.48	18.37	34.77
	RB1#25	22.53	22.4	22.45		
	RB1#49	22.18	22.14	22.38		
	RB25#0	21.27	21.34	21.3		
	RB25#25	21.41	21.23	21.36		
	RB50#0	21.33	21.35	21.32		
Note: ERP=Conducted Power(dBm) - L _C (dB) + G _T (dBd)						
					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	
10MHz QPSK	RB1#0	4.43	4.58	4.55	13
	RB50#0	4.87	4.96	5.1	13
10MHz 16QAM	RB1#0	5.51	5.62	5.71	13
	RB50#0	5.94	5.94	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	1.102	1.102	1.102	1.308	1.314	1.32
1.4MHz 16QAM	1.096	1.102	1.102	1.314	1.32	1.32
3MHz QPSK	2.695	2.683	2.695	2.952	2.964	2.964
3MHz 16QAM	2.707	2.683	2.695	2.952	2.964	2.94
5MHz QPSK	4.531	4.531	4.511	5.04	5.02	5.02
5MHz 16QAM	4.531	4.511	4.511	5	5	5.04
10MHz QPSK	8.942	8.942	8.981	9.64	9.68	9.76
10MHz 16QAM	8.901	8.981	8.942	9.76	9.76	9.72

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:	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	3.7	699.533	699.00	715.477	716.00
	-20	3.7	699.534	699.00	715.473	716.00
	-10	3.7	699.531	699.00	715.476	716.00
	0	3.7	699.535	699.00	715.474	716.00
	10	3.7	699.529	699.00	715.472	716.00
	20	3.7	699.529	699.00	715.471	716.00
	30	3.7	699.525	699.00	715.466	716.00
	40	3.7	699.524	699.00	715.469	716.00
	50	3.7	699.521	699.00	715.467	716.00
Frequency Stability vs. Voltage	20	3.4	699.526	699.00	715.471	716.00
	20	4.2	699.529	699.00	715.469	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	3.7	699.572	699.00	715.474	716.00
	-20	3.7	699.571	699.00	715.476	716.00
	-10	3.7	699.575	699.00	715.474	716.00
	0	3.7	699.570	699.00	715.472	716.00
	10	3.7	699.572	699.00	715.475	716.00
	20	3.7	699.569	699.00	715.471	716.00
	30	3.7	699.565	699.00	715.469	716.00
	40	3.7	699.569	699.00	715.470	716.00
	50	3.7	699.562	699.00	715.466	716.00
Frequency Stability vs. Voltage	20	3.4	699.565	699.00	715.468	716.00
	20	4.2	699.568	699.00	715.471	716.00
					Result:	Pass

Test Plots:

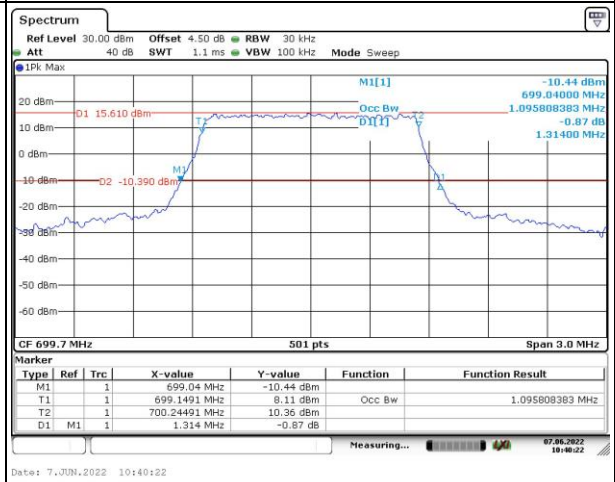
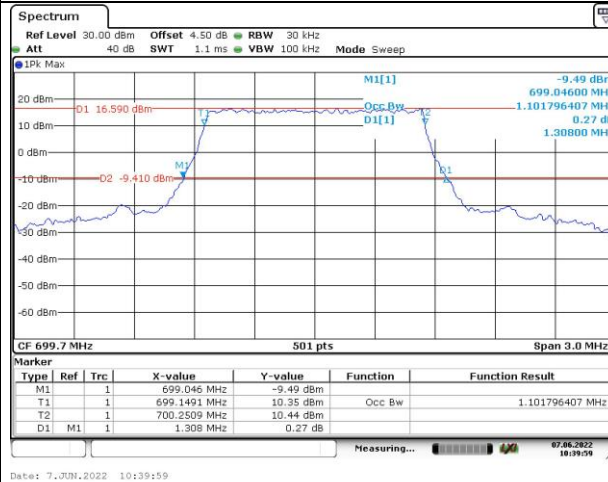
Occupied Bandwidth

Channel

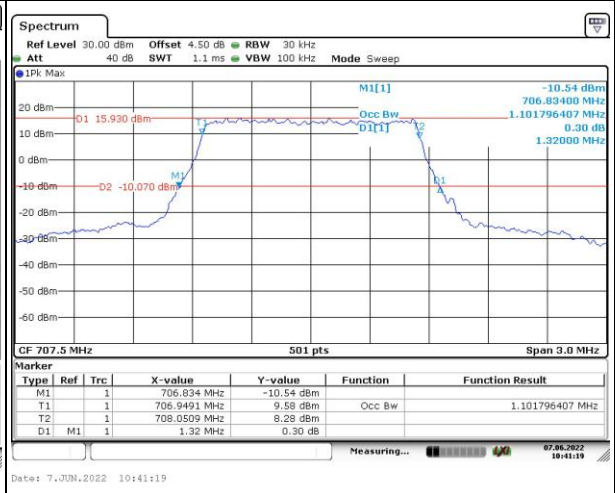
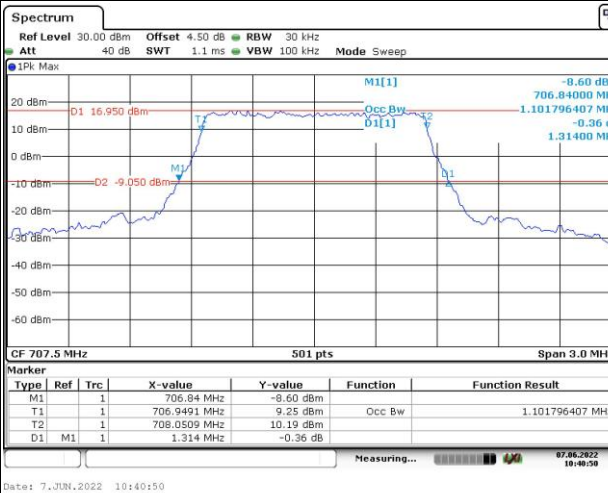
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

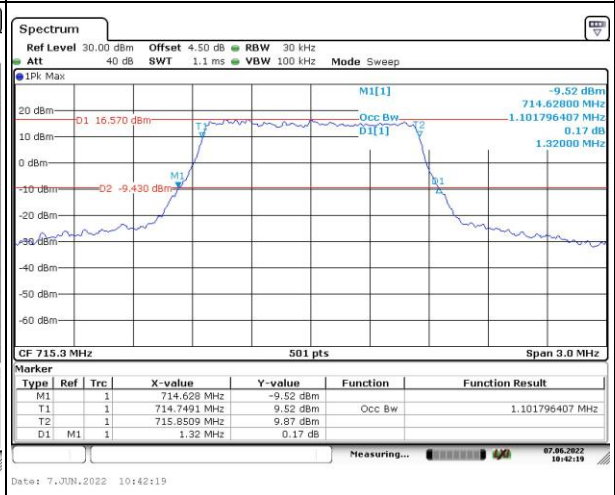
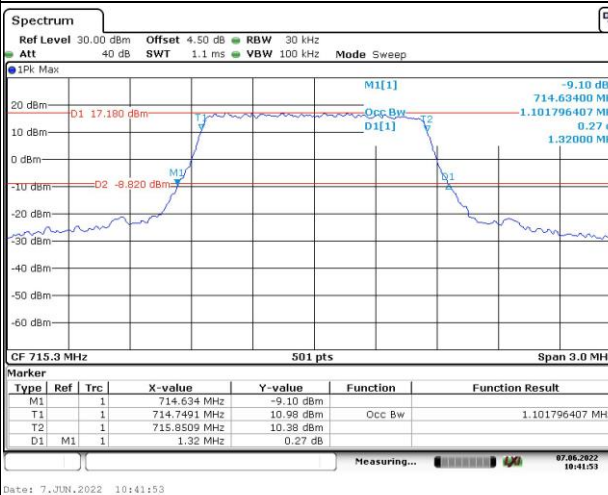
Lowest



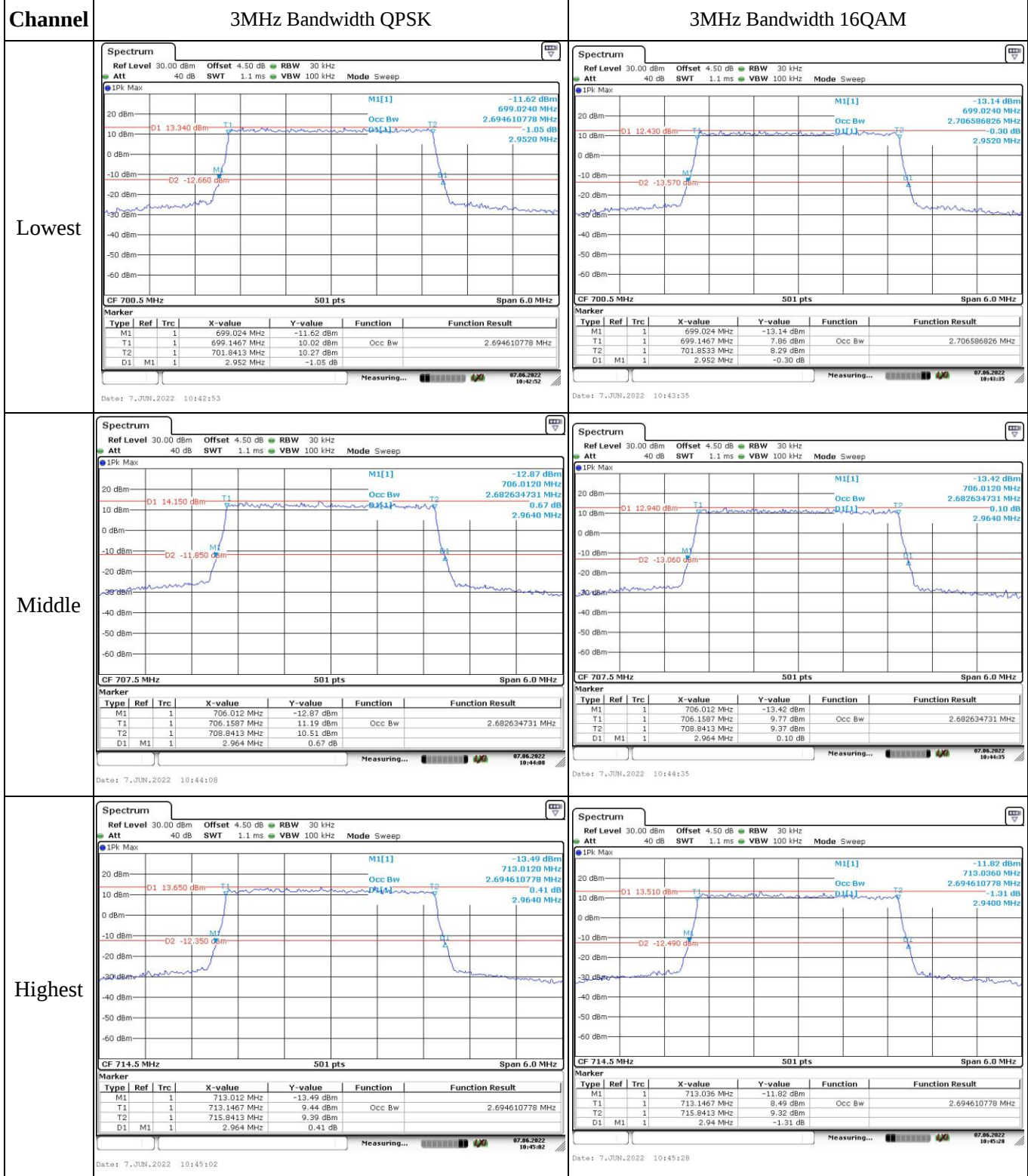
Middle



Highest



Occupied Bandwidth



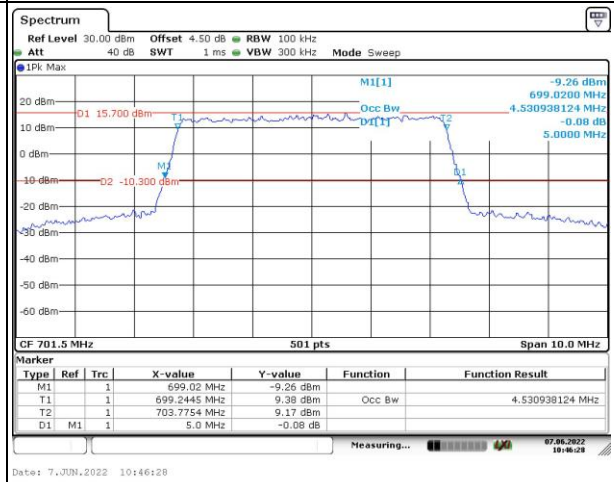
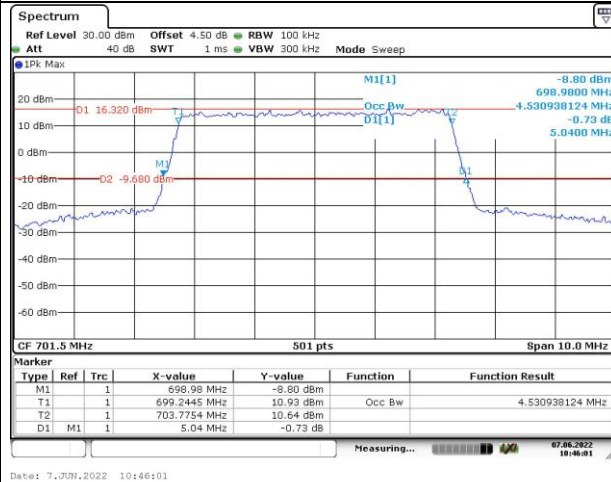
Occupied Bandwidth

Channel

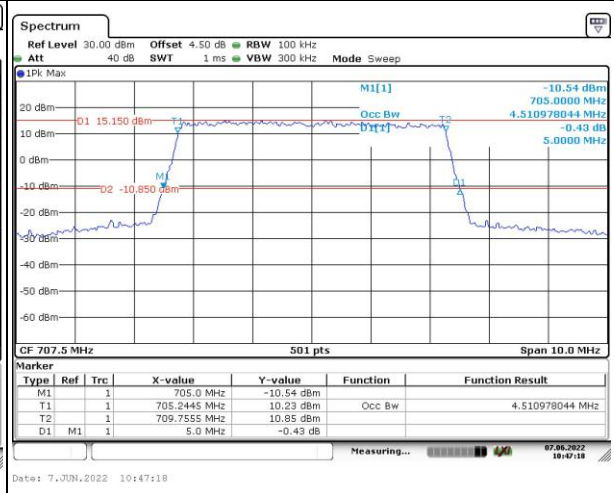
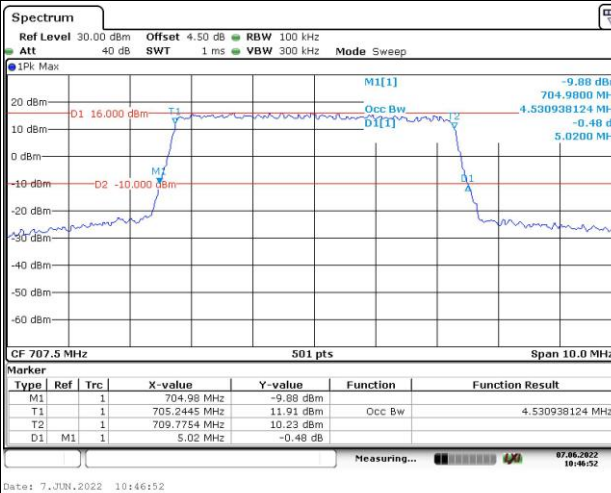
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

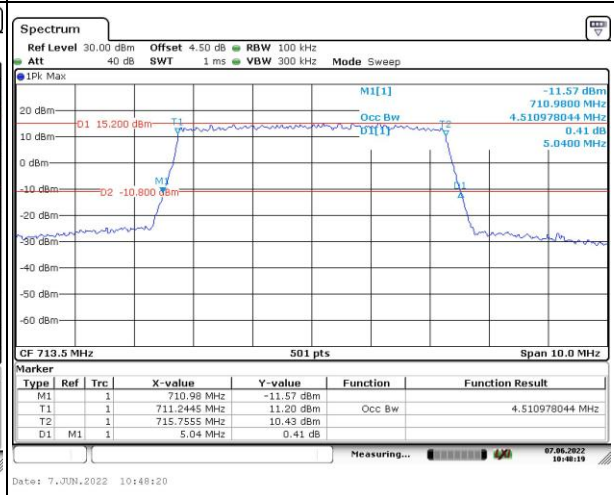
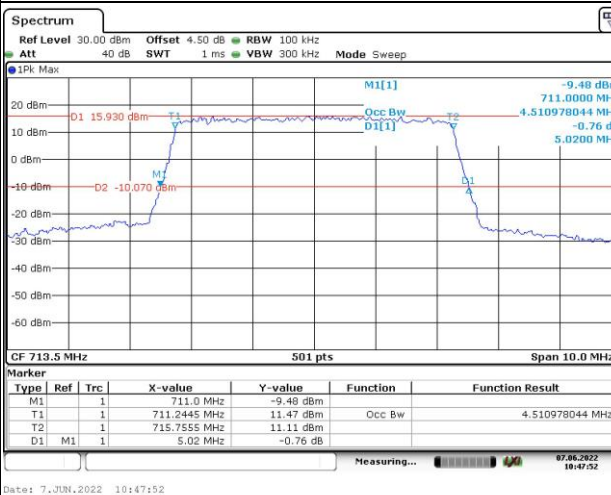
Lowest



Middle



Highest



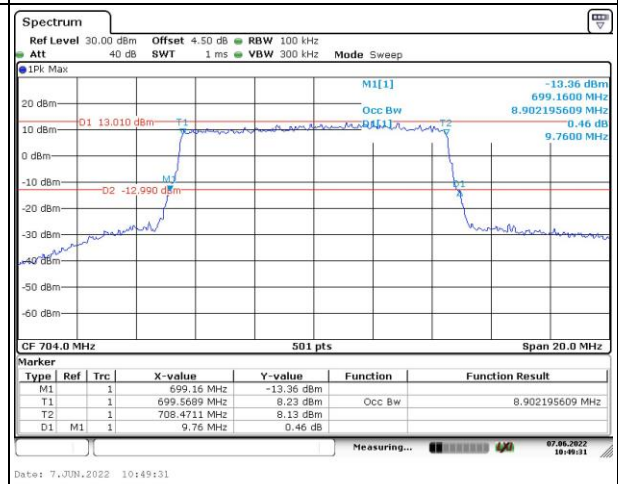
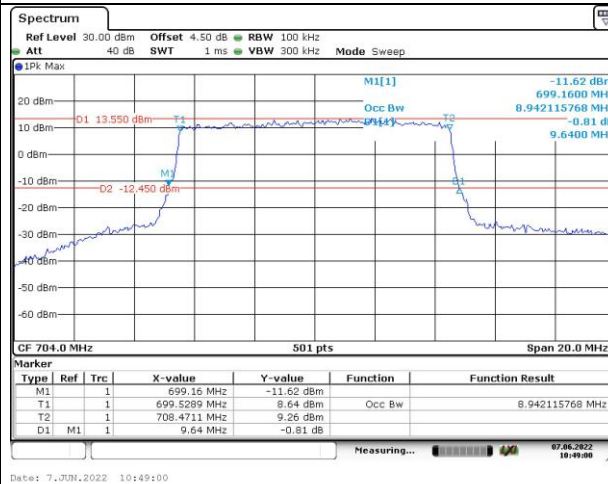
Occupied Bandwidth

Channel

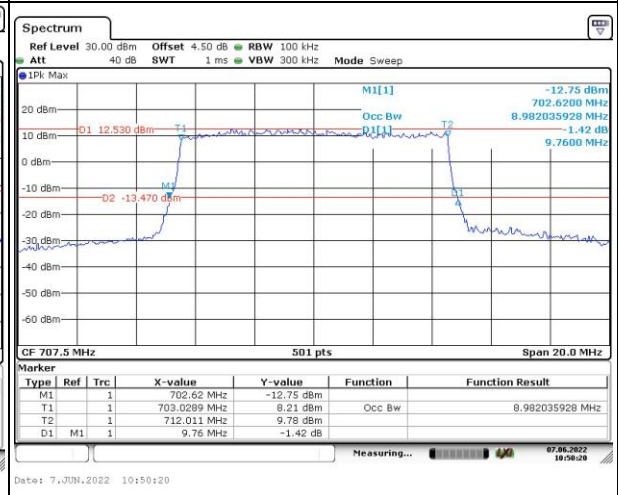
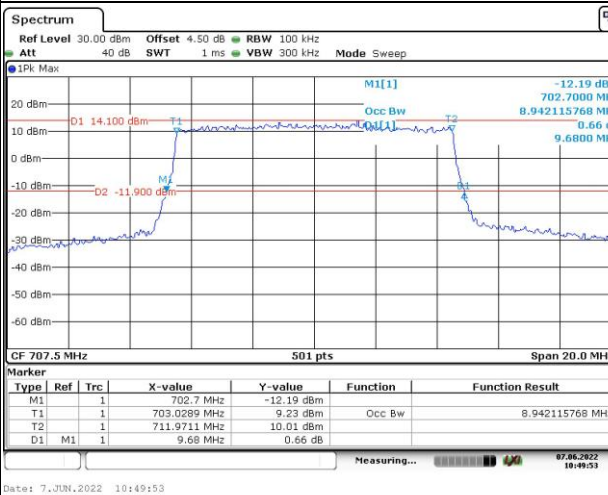
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

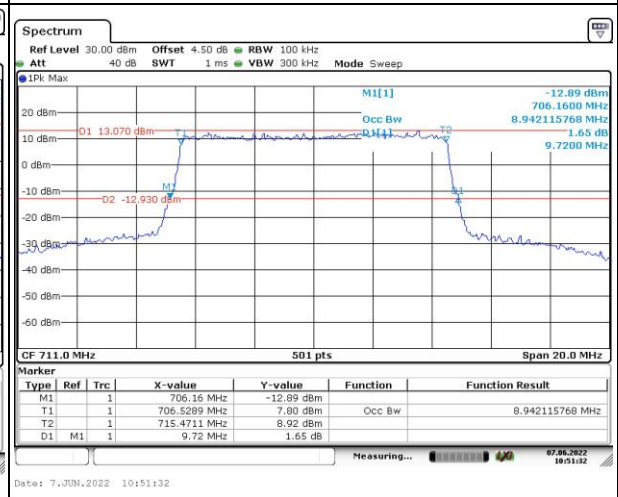
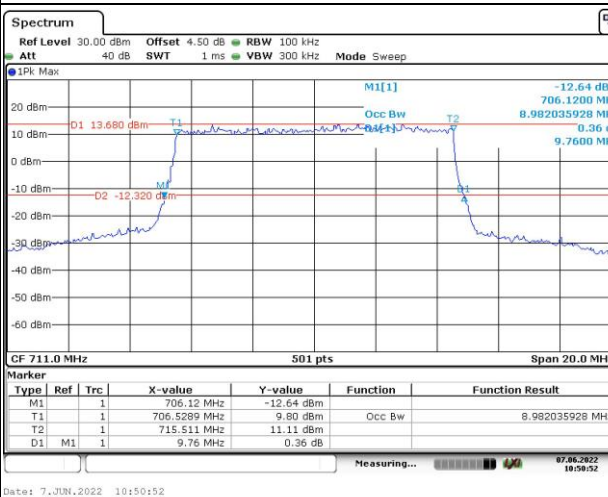
Lowest



Middle



Highest

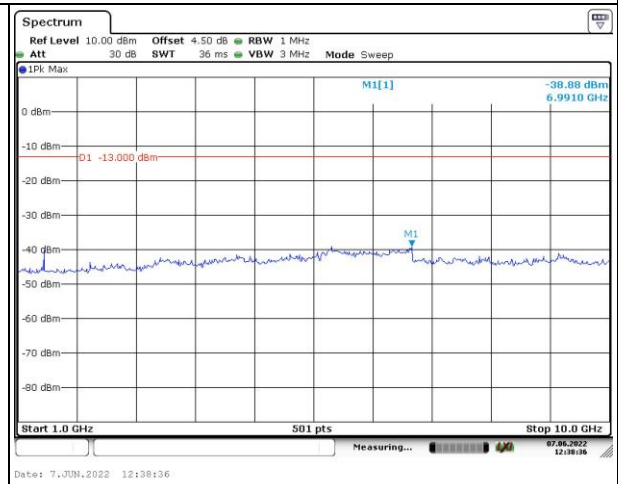
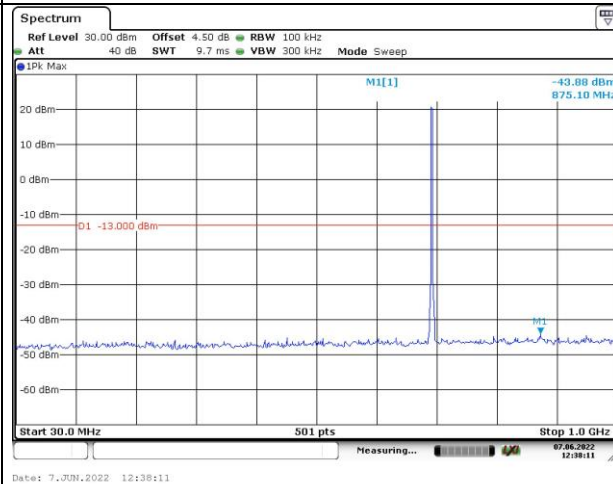


Spurious Emissions at Antenna Terminal

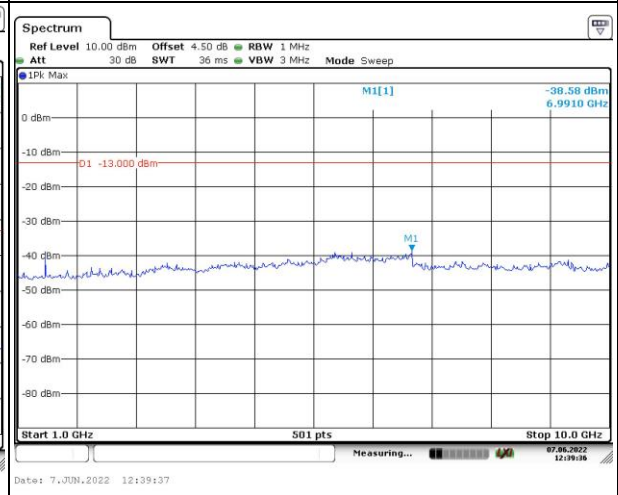
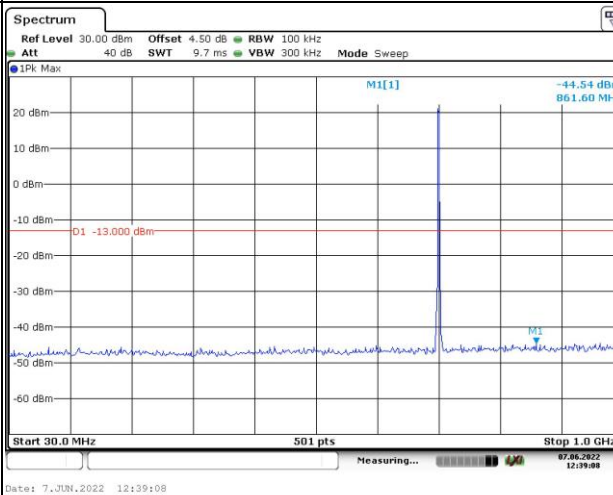
Channel

1.4MHz Bandwidth QPSK

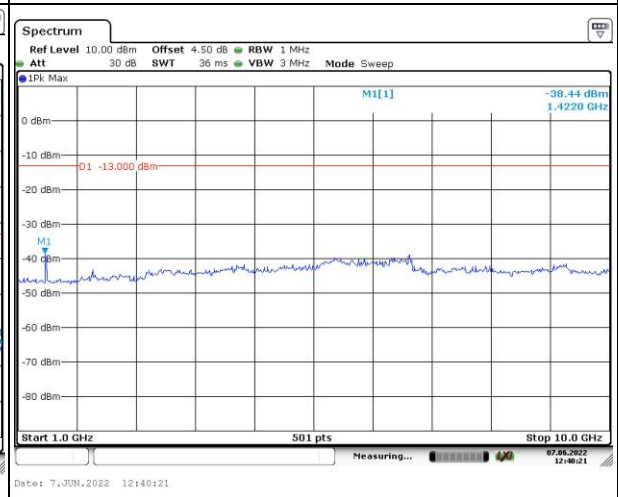
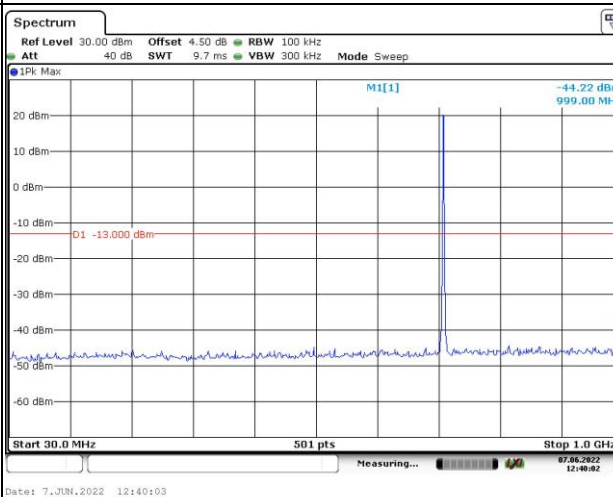
Lowest



Middle



Highest

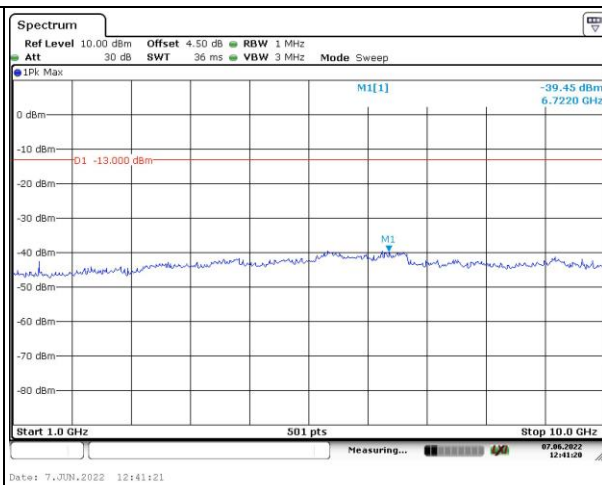
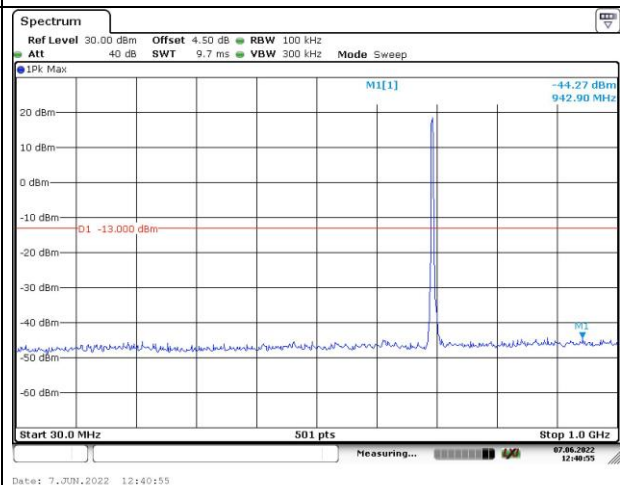


Spurious Emissions at Antenna Terminal

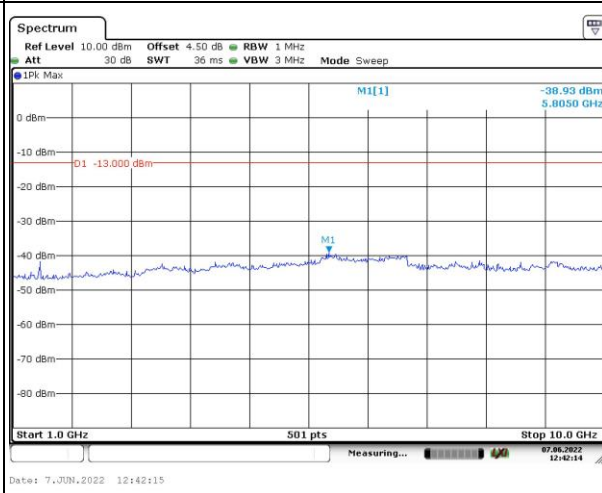
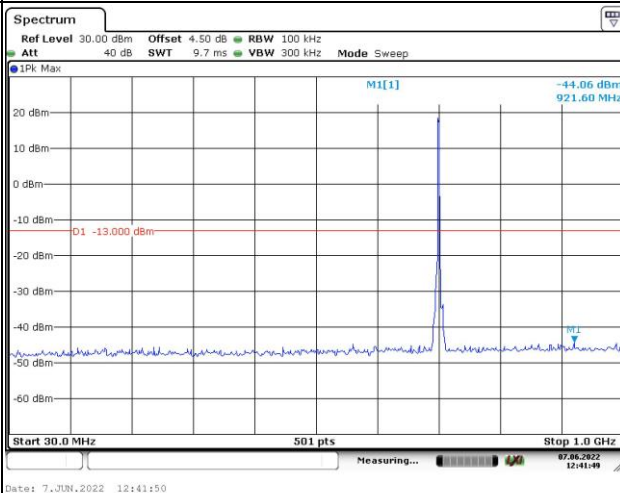
Channel

3MHz Bandwidth QPSK

Lowest



Middle



Highest

