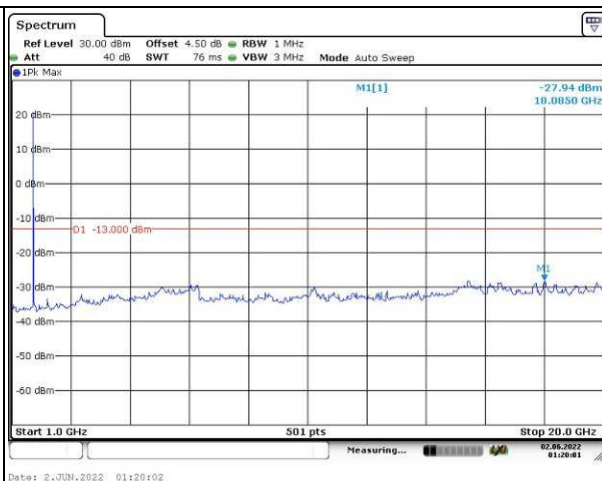
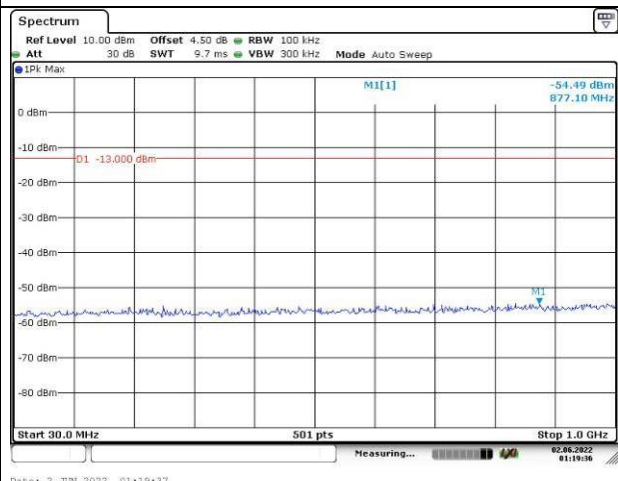


Spurious Emissions at Antenna Terminal

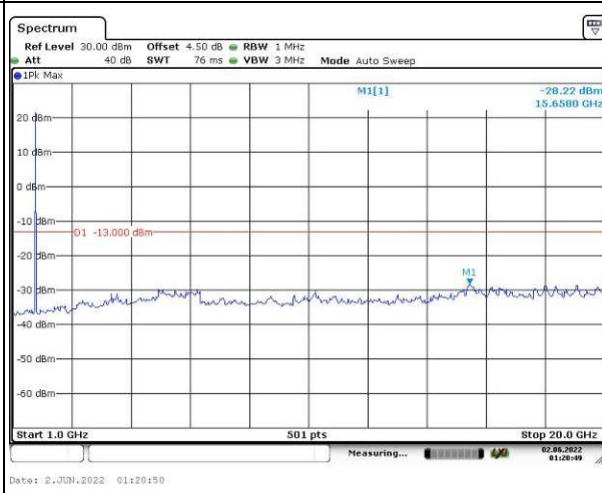
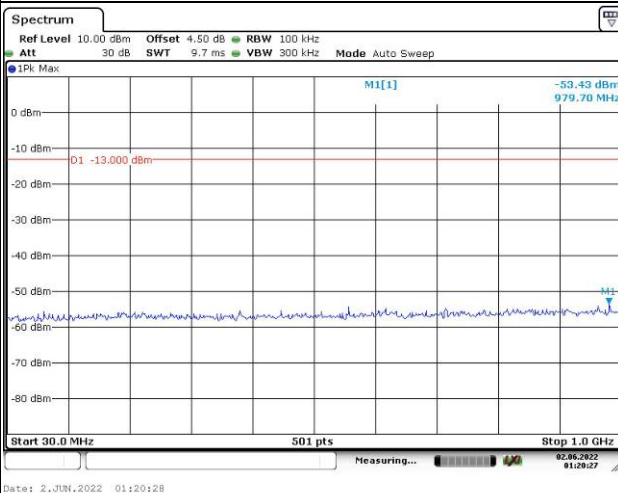
Channel

3MHz Bandwidth QPSK

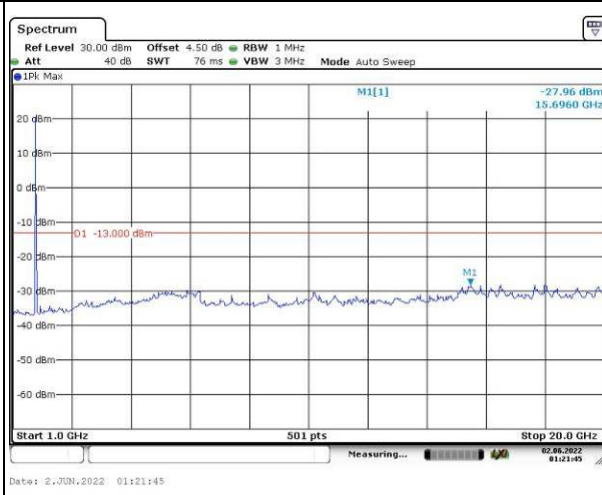
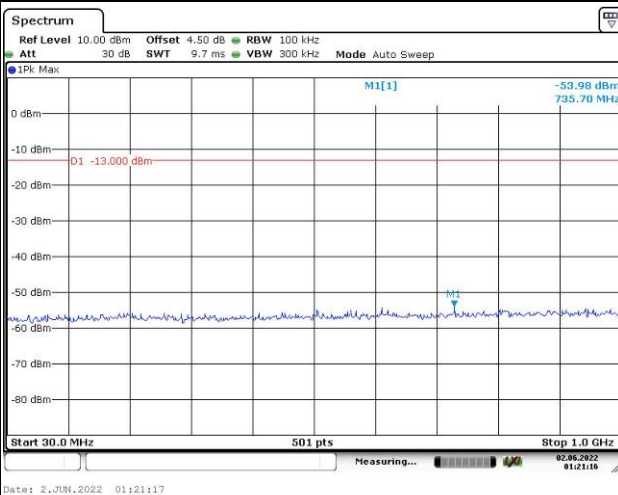
Lowest



Middle



Highest

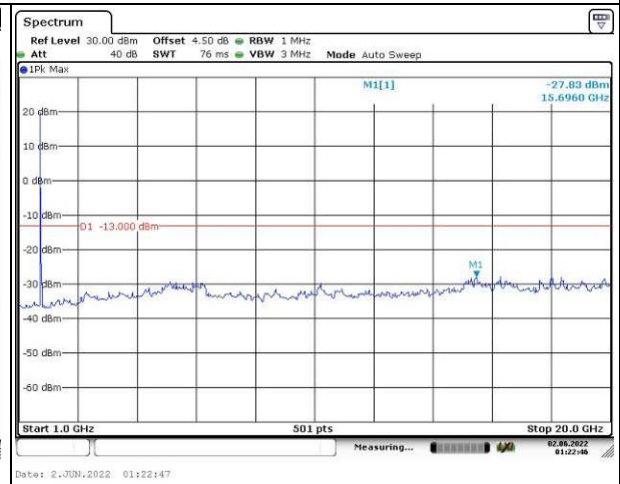
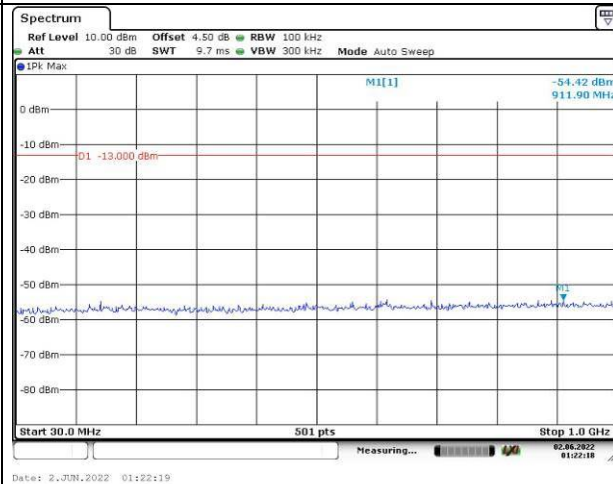


Spurious Emissions at Antenna Terminal

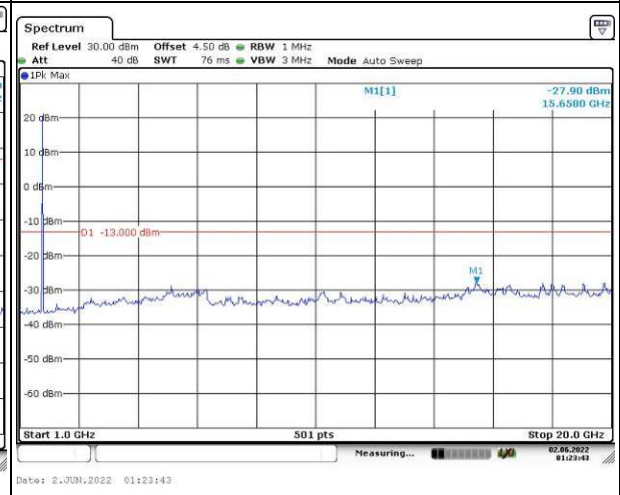
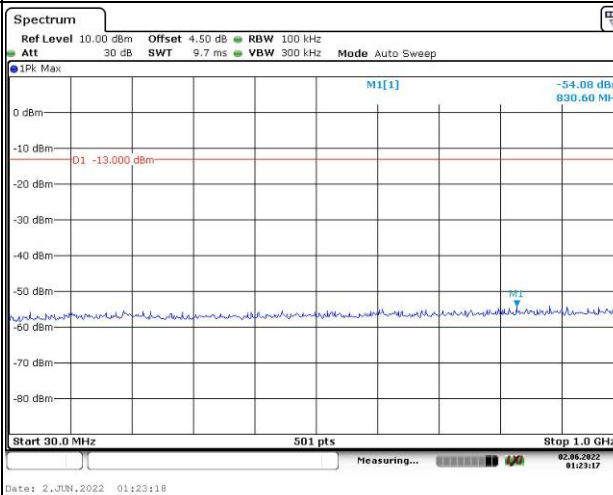
Channel

5MHz Bandwidth QPSK

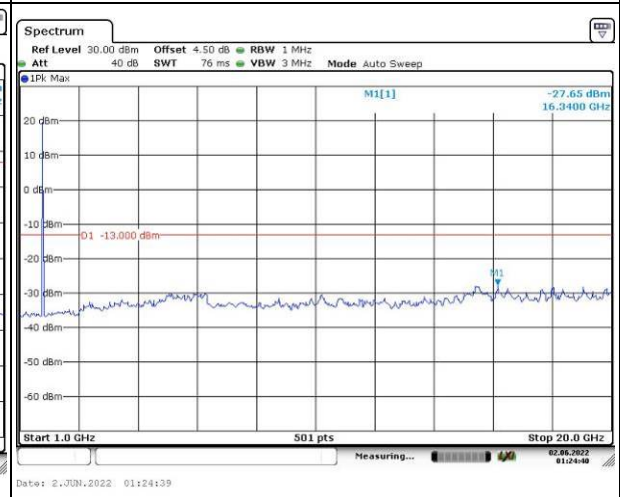
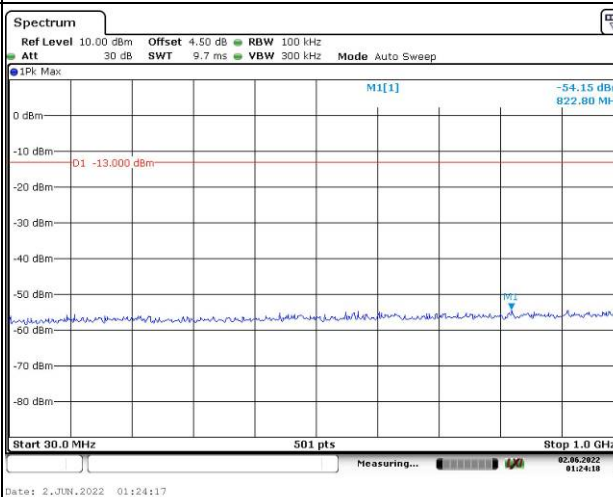
Lowest



Middle



Highest

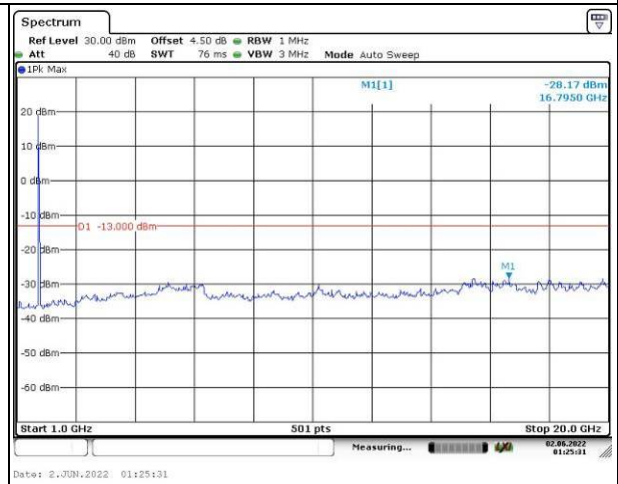
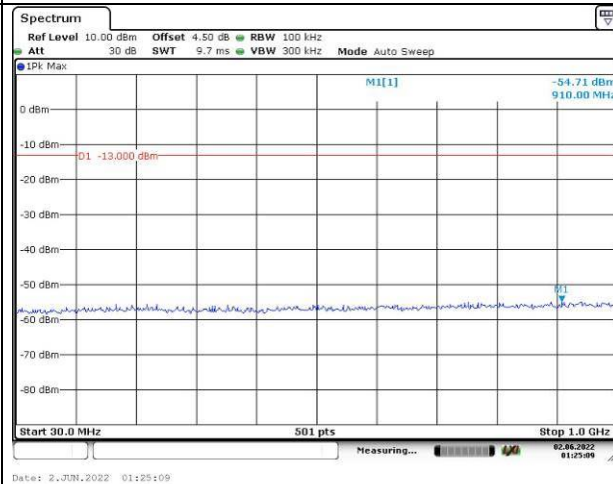


Spurious Emissions at Antenna Terminal

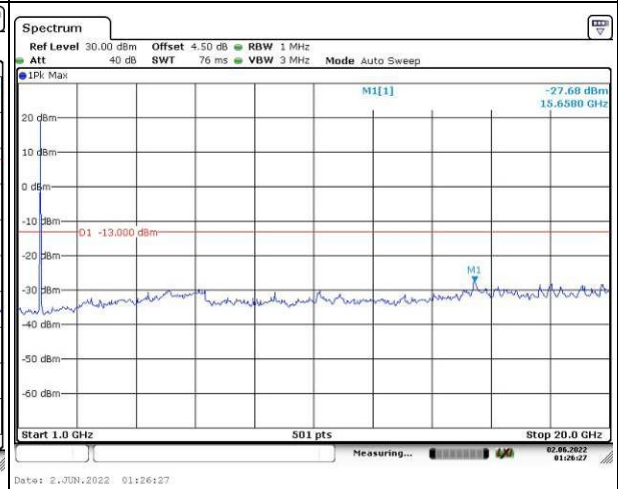
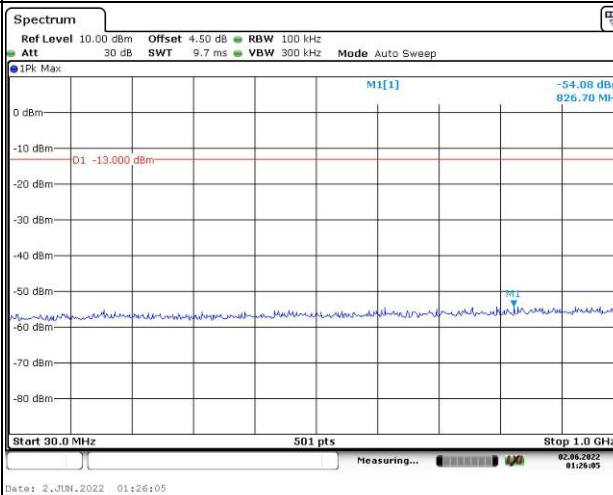
Channel

10MHz Bandwidth QPSK

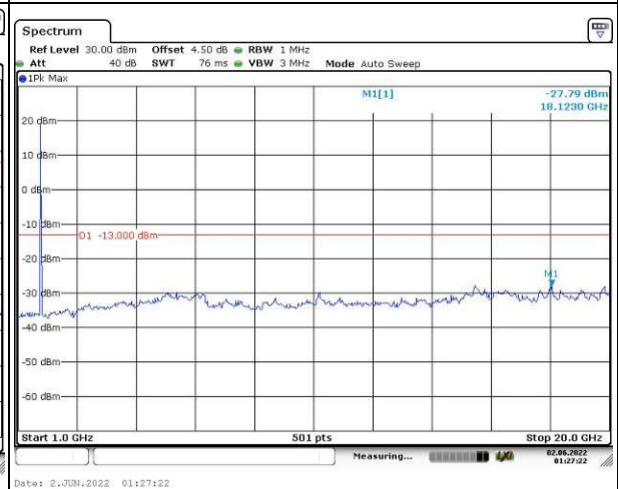
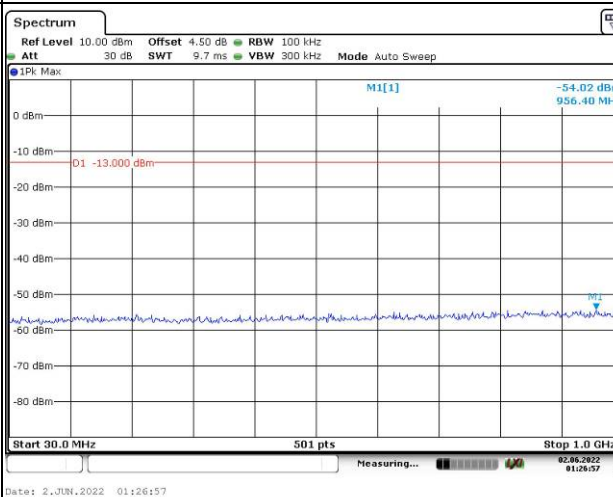
Lowest



Middle



Highest

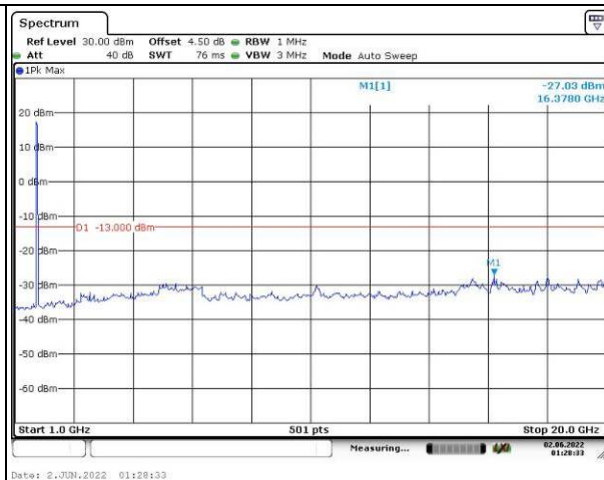
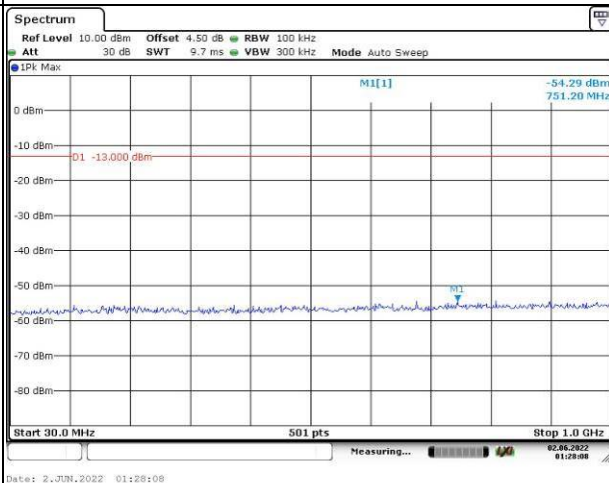


Spurious Emissions at Antenna Terminal

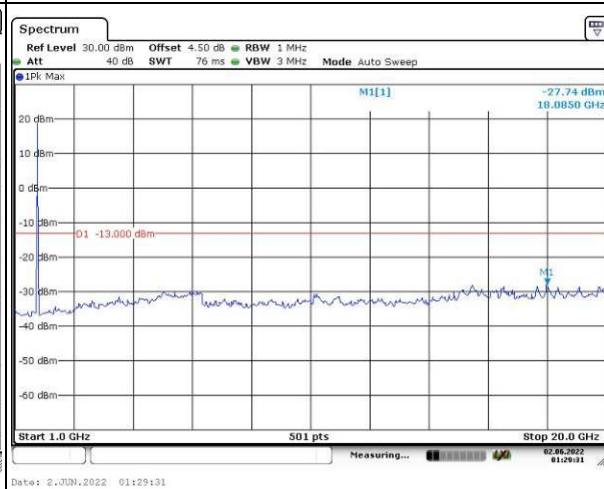
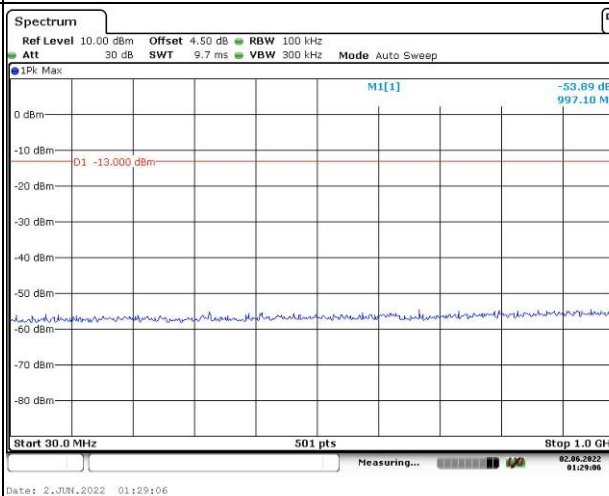
Channel

15MHz Bandwidth QPSK

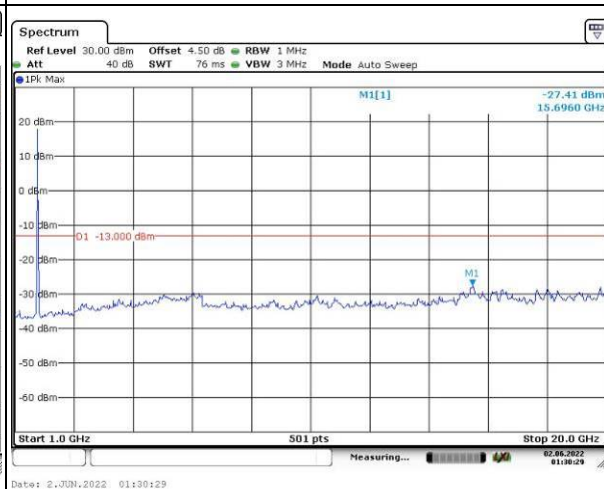
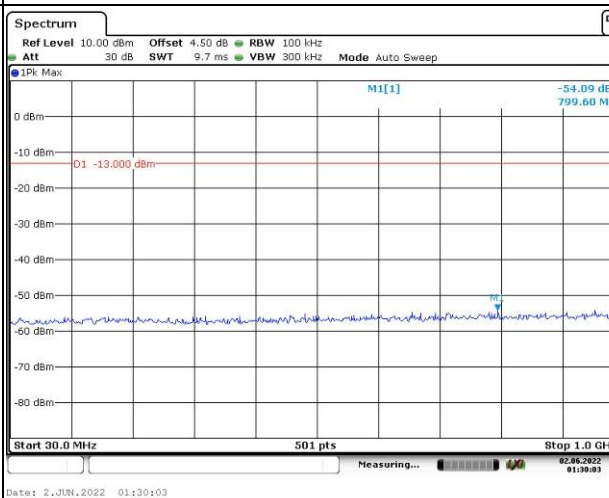
Lowest



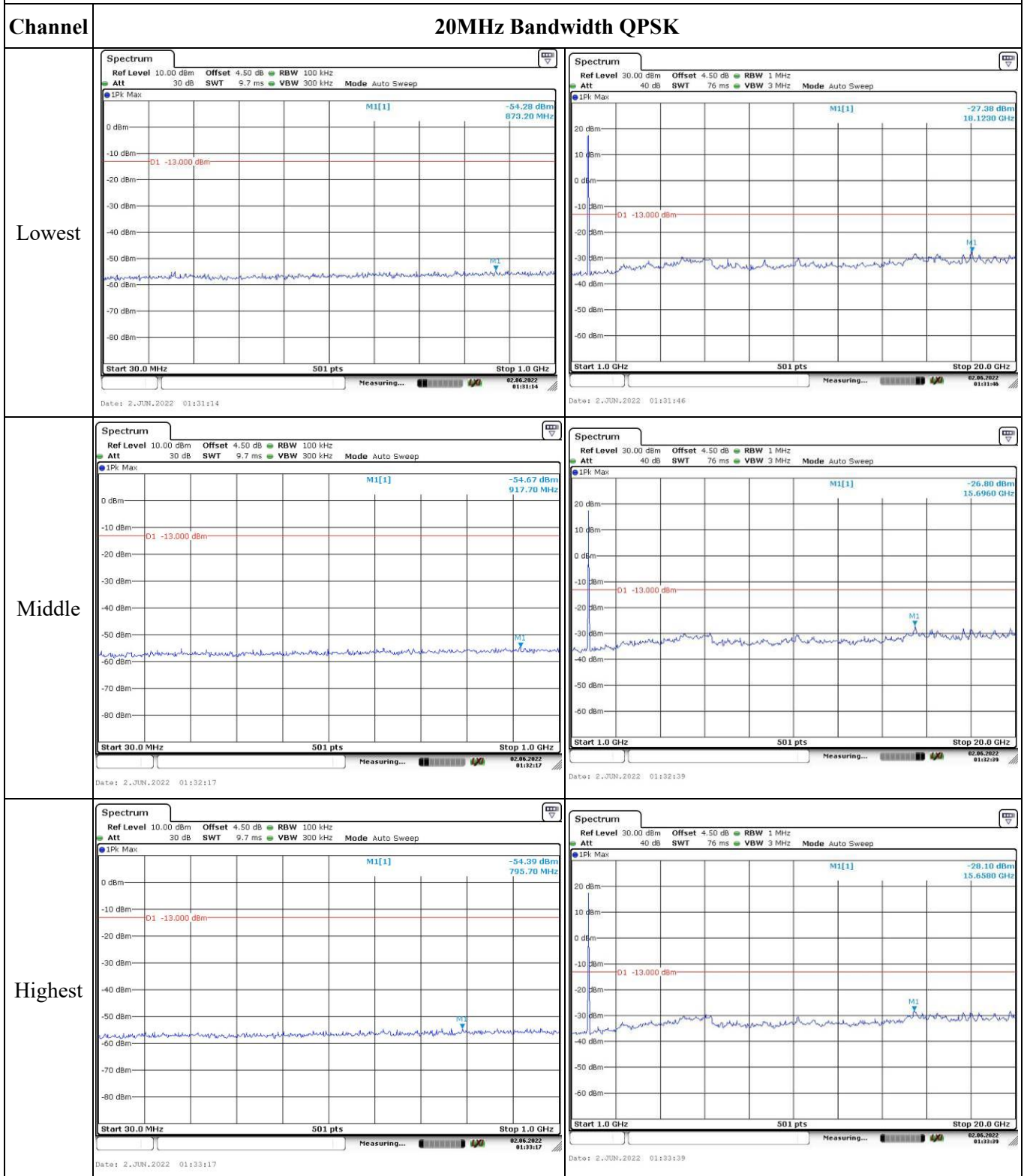
Middle



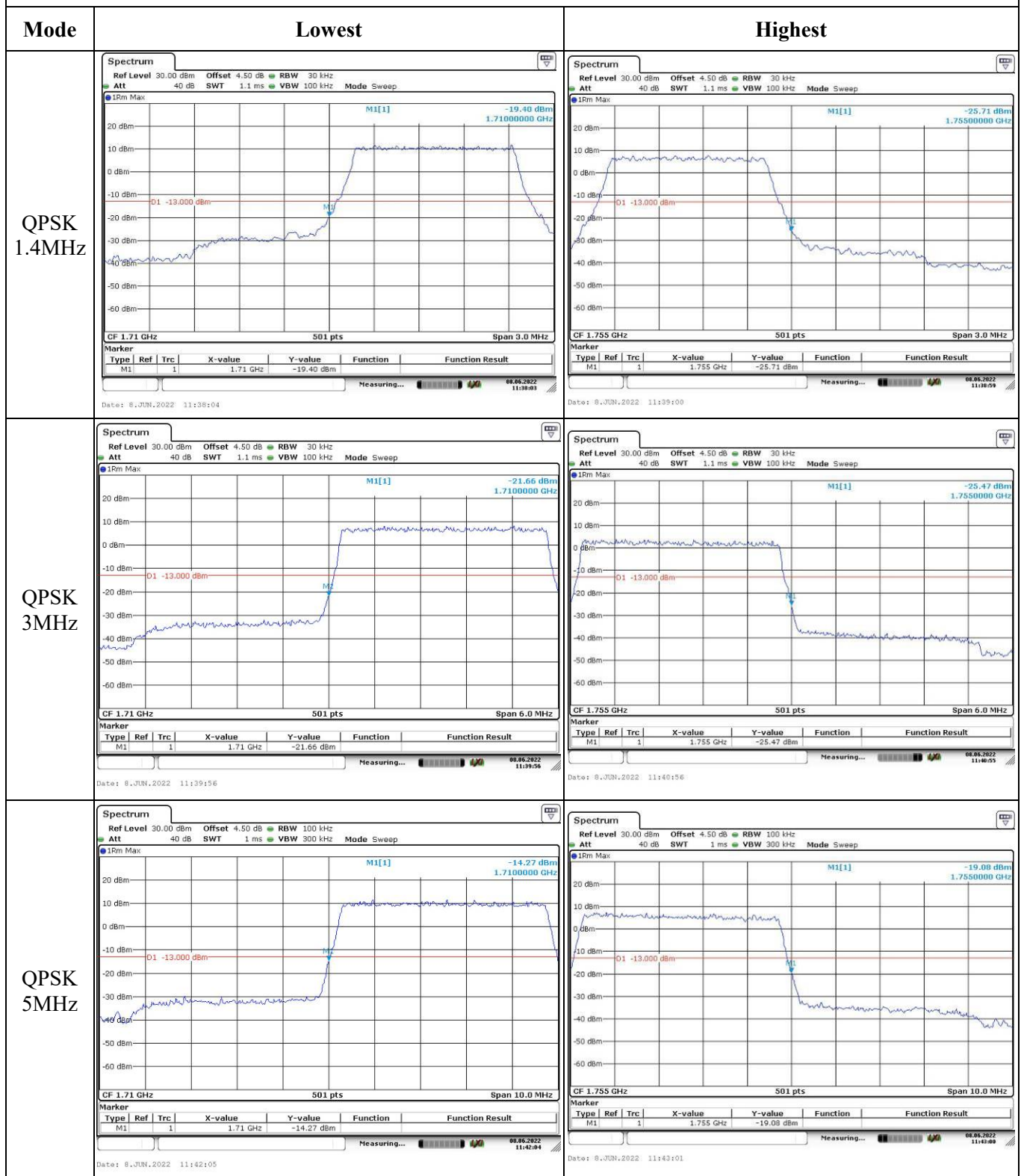
Highest



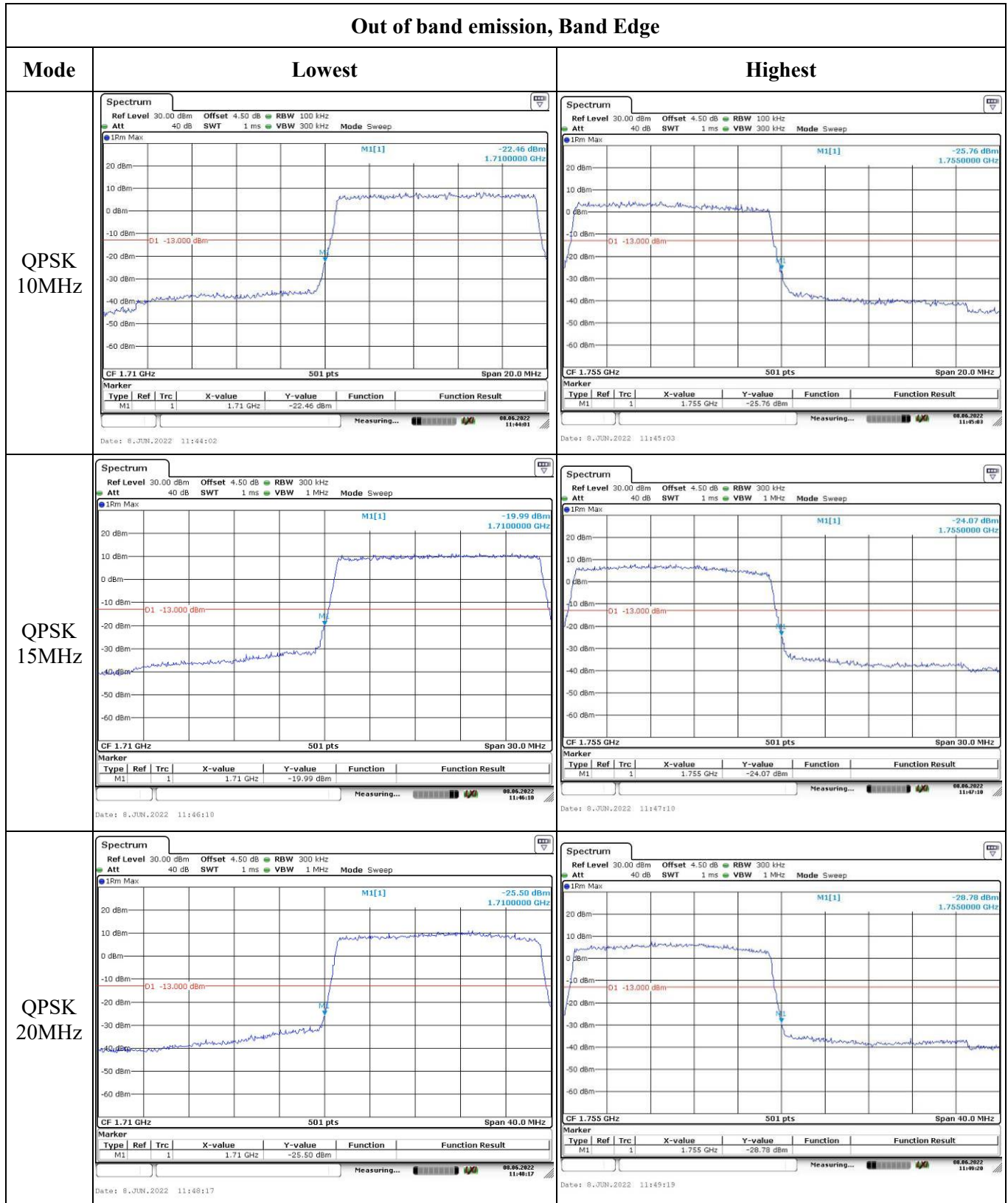
Spurious Emissions at Antenna Terminal



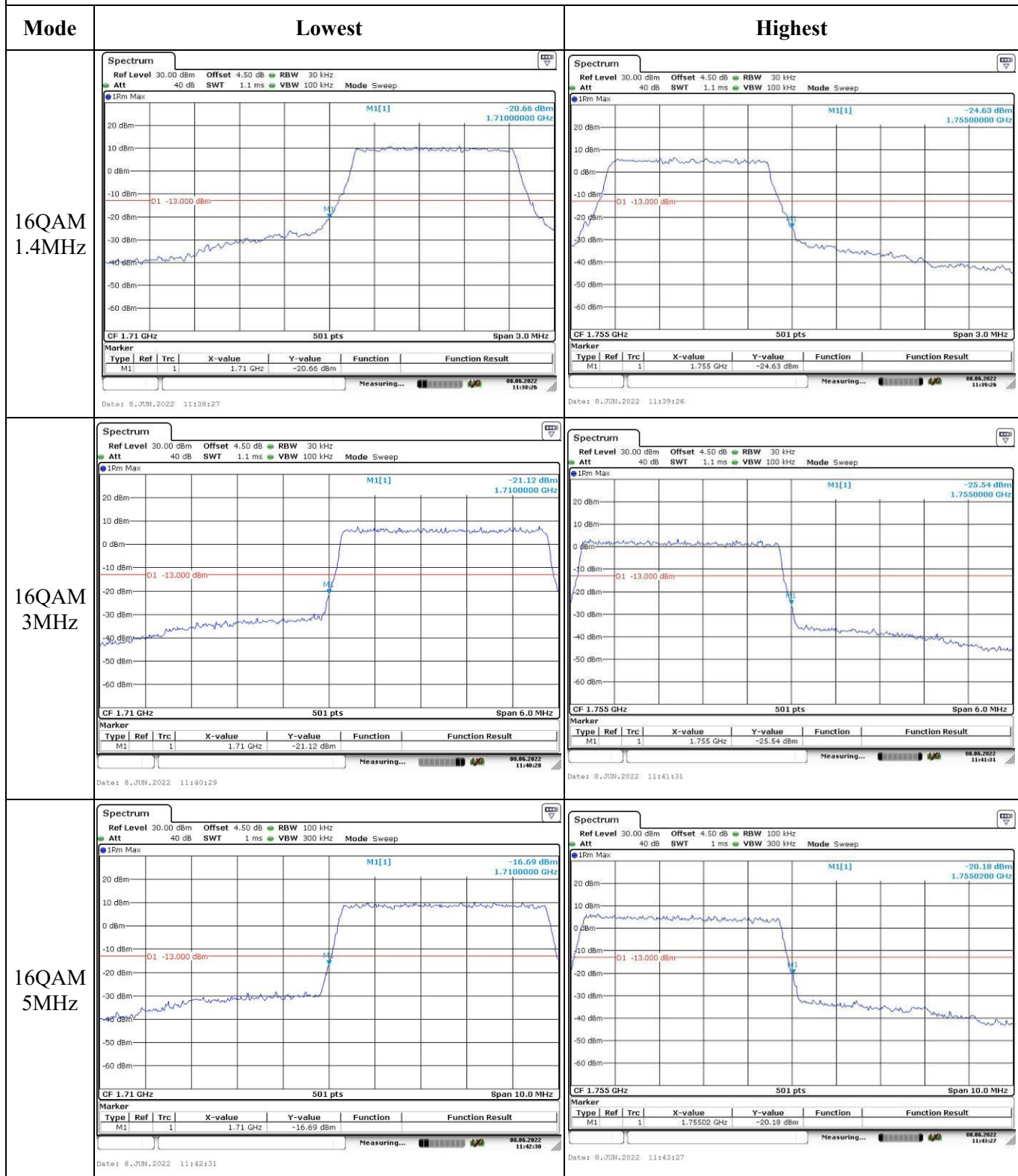
Out of band emission, Band Edge



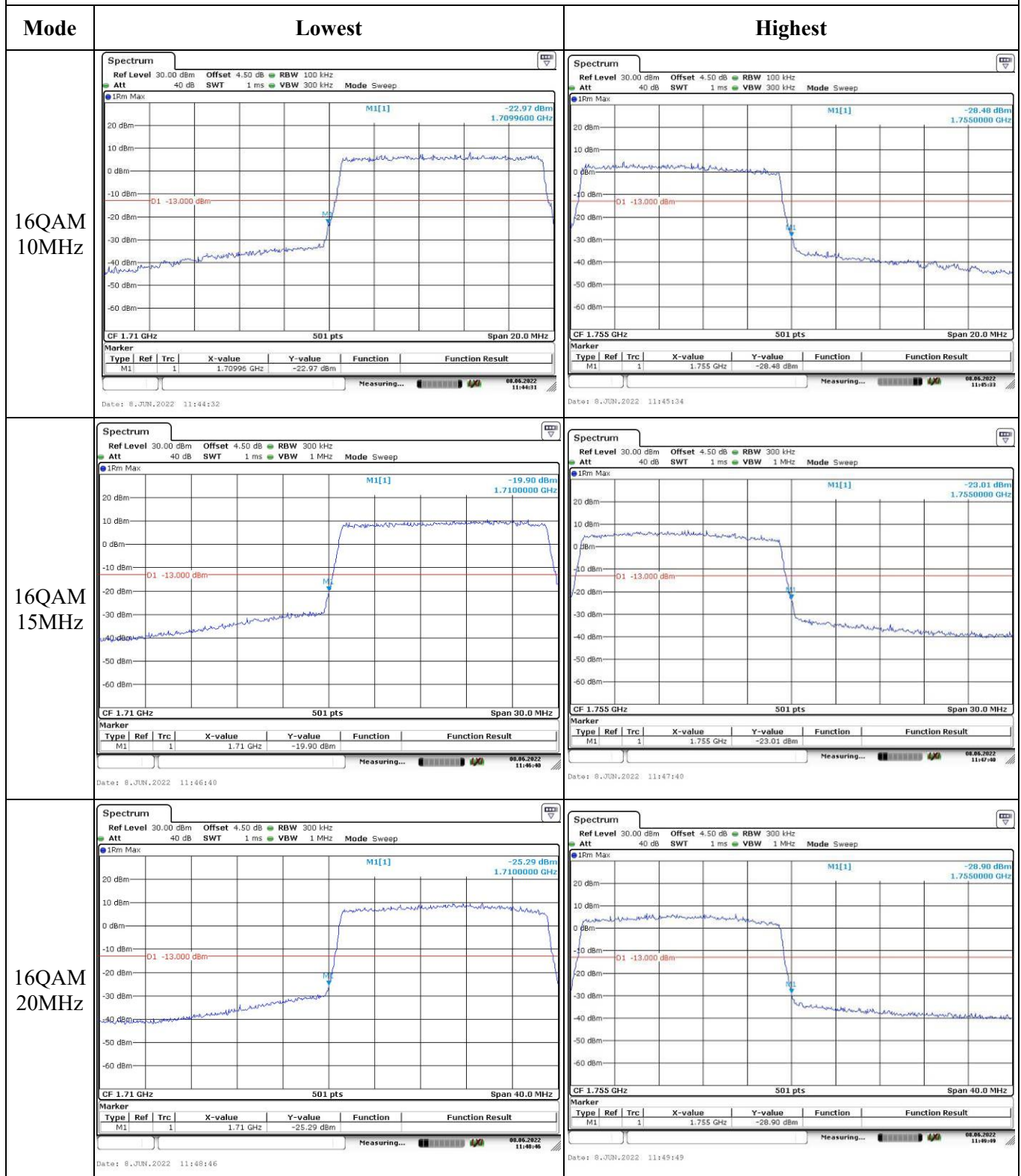
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.6 Antenna Port Test Data and Results for LTE Band 5:

Serial Number:	CR22050037-RF-S1	Test Date:	2022-06-02~2022-06-08
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rinka Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.9~26	Relative Humidity: (%)	67	ATM Pressure: (kPa)	100.0~100.1
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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	211002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-07-22	2022-07-21
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	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 5▲:

Antenna Gain (dBi):	0.88	Antenna Gain (dBd):	-1.27	Cable Loss (dB):	0
Operation Voltage(V _{DC}):					
Lowest:	10.8	Normal:	13.8	Highest:	36

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:**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 Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	23.1	22.87	23.03	21.92	38.45
	RB1#3	23.17	22.98	23.19		
	RB1#5	23.03	22.91	23.16		
	RB3#0	23	22.95	22.99		
	RB3#3	22.9	22.96	22.93		
	RB6#0	22	22.03	22		
1.4MHz 16QAM	RB1#0	22.31	21.96	21.91	21.06	38.45
	RB1#3	22.15	22.03	22.33		
	RB1#5	22.03	21.85	22.03		
	RB3#0	21.94	21.85	22.09		
	RB3#3	21.99	22.03	21.98		
	RB6#0	20.94	20.94	20.98		
3MHz QPSK	RB1#0	23.07	23.06	23.03	21.83	38.45
	RB1#8	22.94	22.99	23.1		
	RB1#14	22.99	23	23.03		
	RB6#0	22	22.12	22		
	RB6#9	21.9	22.02	22.04		
	RB15#0	21.95	22.13	22.04		
3MHz 16QAM	RB1#0	22.03	22.15	22.04	20.88	38.45
	RB1#8	21.7	21.87	21.97		
	RB1#14	21.88	21.89	22.11		
	RB6#0	20.97	20.97	21.02		
	RB6#9	20.85	20.93	20.99		
	RB15#0	20.86	21.14	21.02		
5MHz QPSK	RB1#0	23.03	22.89	22.81	21.77	38.45
	RB1#13	22.91	22.94	23.04		
	RB1#24	22.92	22.94	22.99		
	RB15#0	21.91	22.1	22.06		
	RB15#10	21.96	22.01	22.03		
	RB25#0	22.04	22.16	22.06		
5MHz 16QAM	RB1#0	22.07	22.15	22.02	20.93	38.45
	RB1#13	21.96	21.84	22.2		
	RB1#24	21.98	21.86	22.06		
	RB15#0	20.92	21.08	20.97		

	RB15#10	20.92	20.99	21.02		
	RB25#0	20.98	21.07	21		
10MHz QPSK	RB1#0	22.98	22.92	23.11	21.98	38.45
	RB1#25	23.25	23.16	23.05		
	RB1#49	23.12	22.92	23.12		
	RB25#0	22.05	22.18	22.12		
	RB25#25	22.12	22.17	22.12		
	RB50#0	22.04	22.19	22.14		
10MHz 16QAM	RB1#0	21.91	22.02	22.27	21	38.45
	RB1#25	22.12	22.04	22.24		
	RB1#49	21.89	21.88	22.18		
	RB25#0	20.96	21.15	21.05		
	RB25#25	21.06	21.1	21.05		
	RB50#0	21.06	21.11	21.05		

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(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	4.29	4.7	4.55	13
	RB50#0	5.04	5.01	4.75	13
10MHz 16QAM	RB1#0	5.36	5.83	5.54	13
	RB50#0	6	6.06	5.8	13
				Result:	Pass

FCC §2.1049, §22.905: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	1.108	1.102	1.32	1.308	1.308
1.4MHz 16QAM	1.102	1.102	1.096	1.314	1.314	1.308
3MHz QPSK	2.683	2.683	2.695	2.964	2.964	2.964
3MHz 16QAM	2.695	2.683	2.683	2.964	2.976	2.952
5MHz QPSK	4.511	4.511	4.511	5.02	5.02	5.04
5MHz 16QAM	4.511	4.531	4.511	5.02	5.02	4.96
10MHz QPSK	8.942	8.942	8.942	9.8	9.72	9.8
10MHz 16QAM	8.942	8.942	8.942	9.76	9.64	9.76

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.
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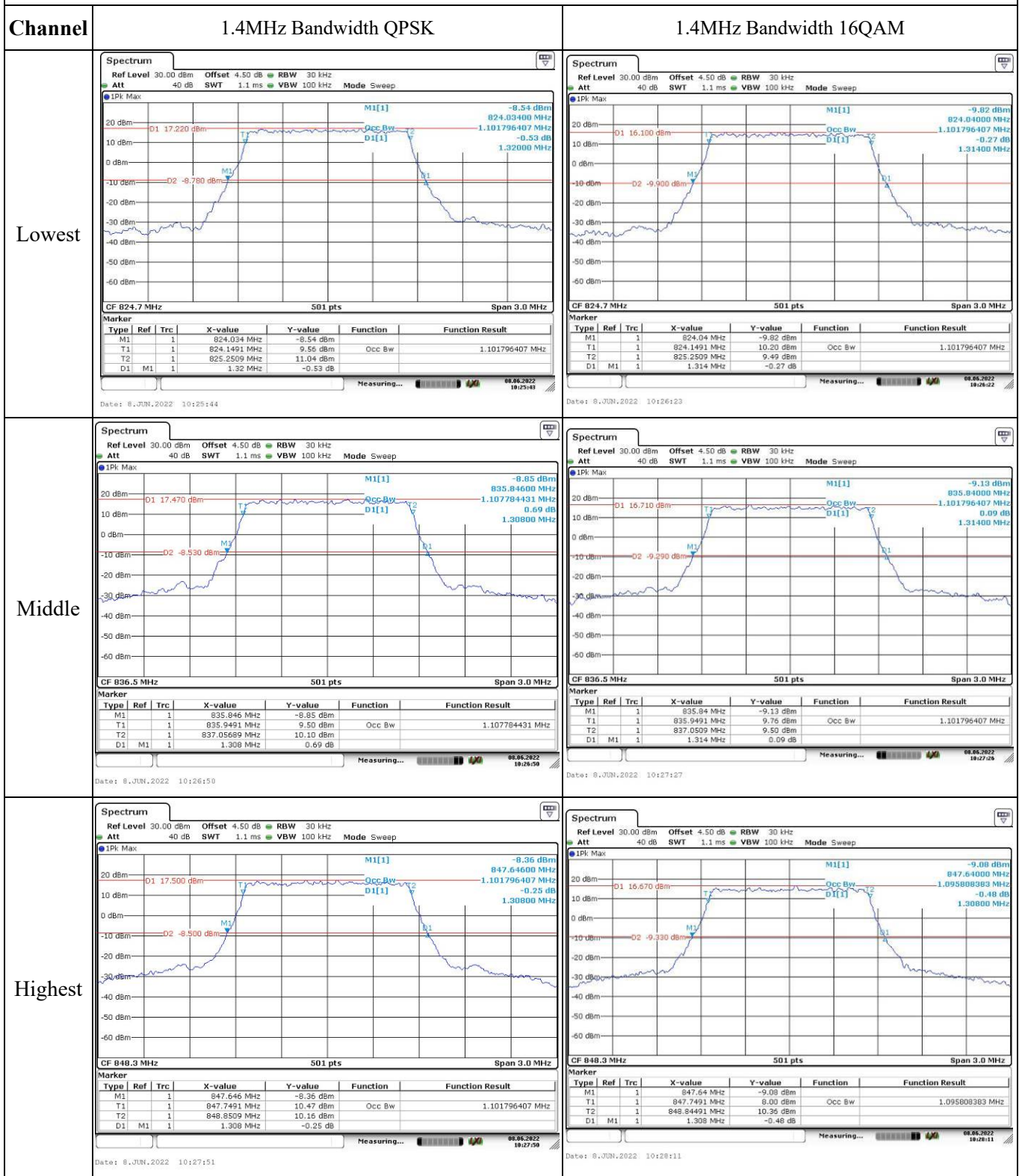
FCC §2.1055, §22.355: Frequency Stability

Test Mode:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	13.8	-1.62	-0.002	2.5
	-20	13.8	7.02	0.008	2.5
	-10	13.8	-6.3	-0.008	2.5
	0	13.8	-8.93	-0.011	2.5
	10	13.8	7.63	0.009	2.5
	20	13.8	-9.58	-0.011	2.5
	30	13.8	-5.21	-0.006	2.5
	40	13.8	-6.78	-0.008	2.5
	50	13.8	6.84	0.008	2.5
Frequency Stability vs. Voltage	20	10.8	8.11	0.010	2.5
	20	36	9.44	0.011	2.5
				Result:	Pass

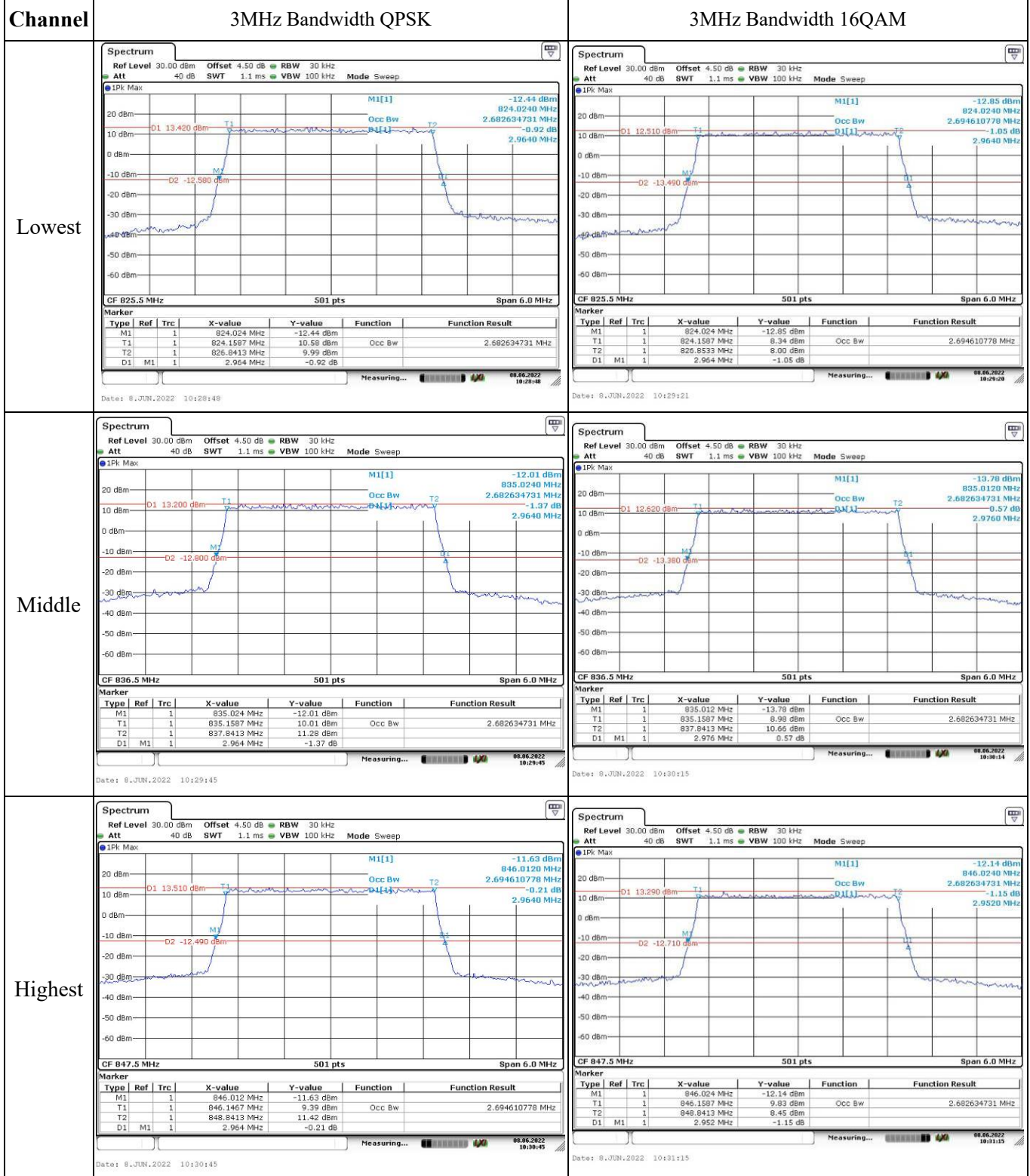
Test Mode:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	13.8	-0.66	-0.001	2.5
	-20	13.8	-7.06	-0.008	2.5
	-10	13.8	5.99	0.007	2.5
	0	13.8	-8.82	-0.011	2.5
	10	13.8	-5.98	-0.007	2.5
	20	13.8	6.14	0.007	2.5
	30	13.8	-9.55	-0.011	2.5
	40	13.8	-9.18	-0.011	2.5
	50	13.8	-9.99	-0.012	2.5
Frequency Stability vs. Voltage	20	10.8	-8.36	-0.010	2.5
	20	36	-5.42	-0.006	2.5
				Result:	Pass

Test Plots:

Occupied Bandwidth



Occupied Bandwidth



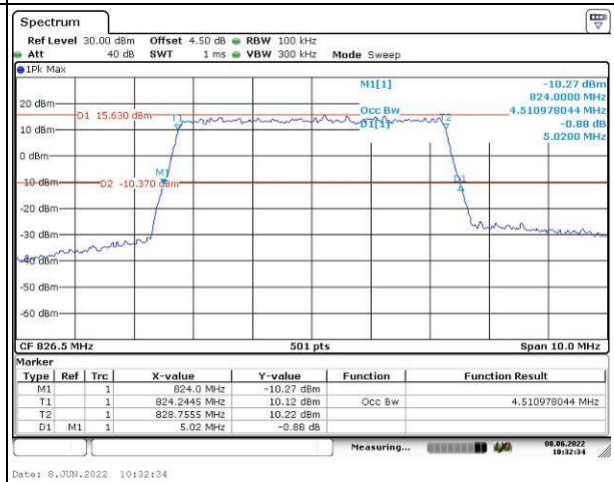
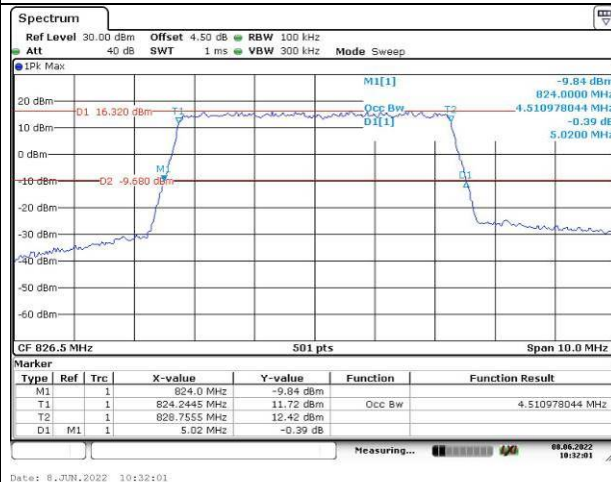
Occupied Bandwidth

Channel

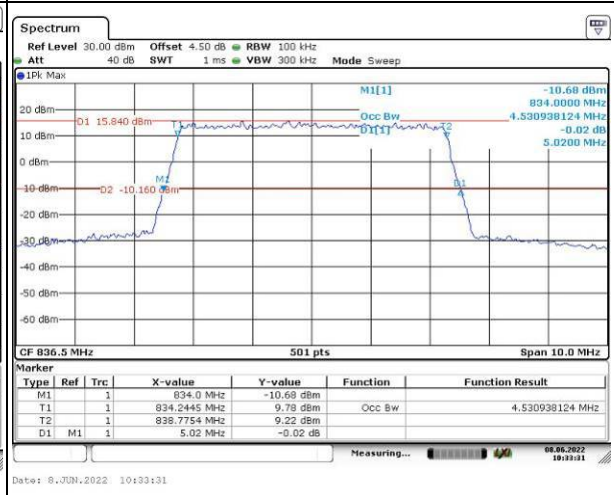
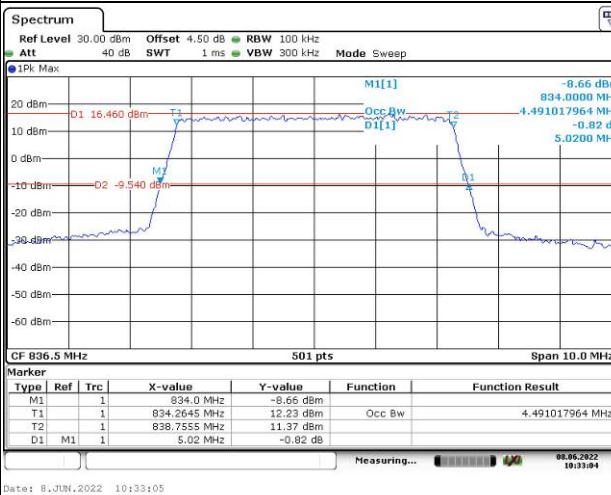
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

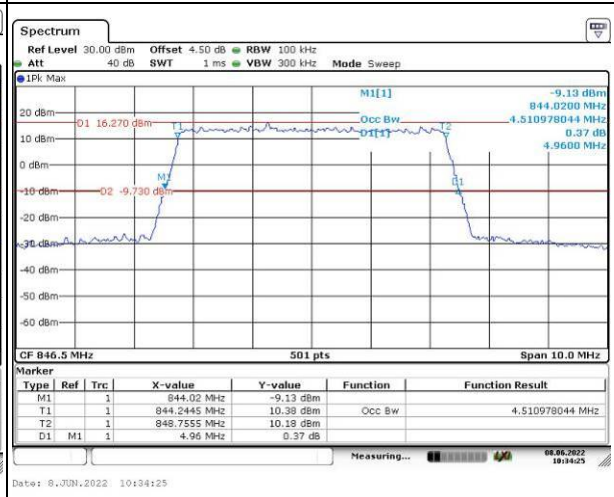
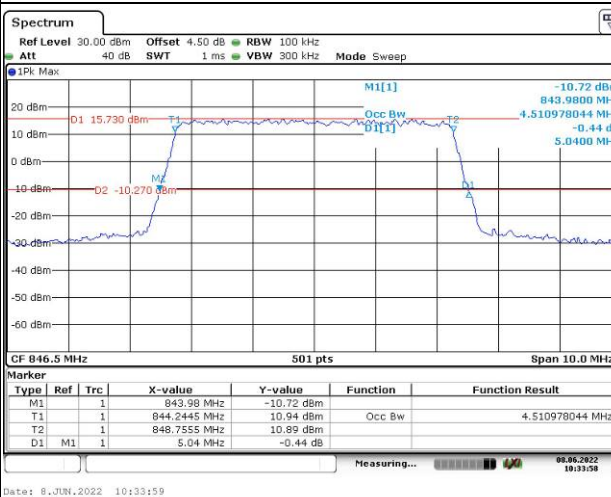
Lowest



Middle



Highest



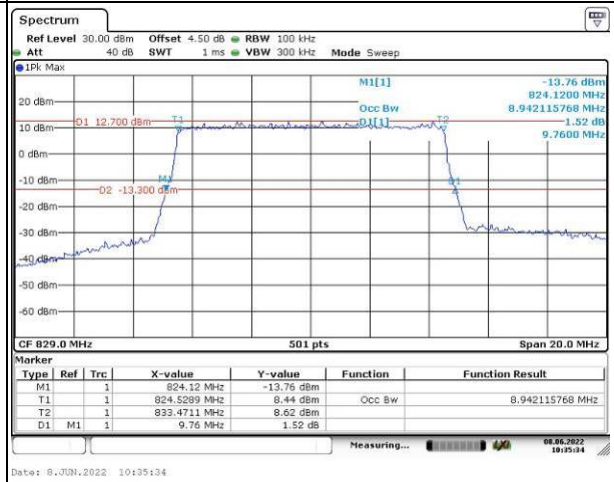
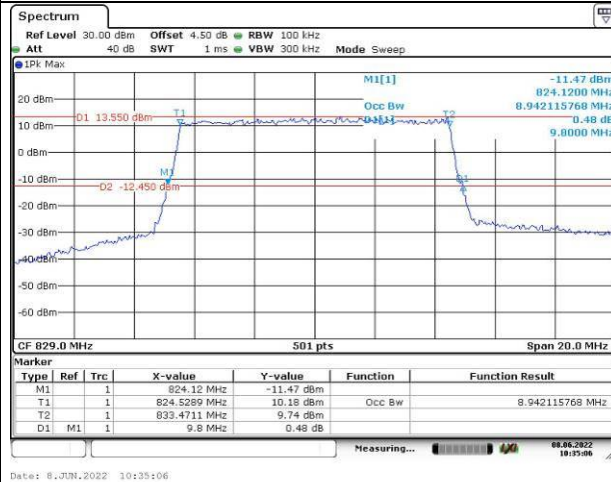
Occupied Bandwidth

Channel

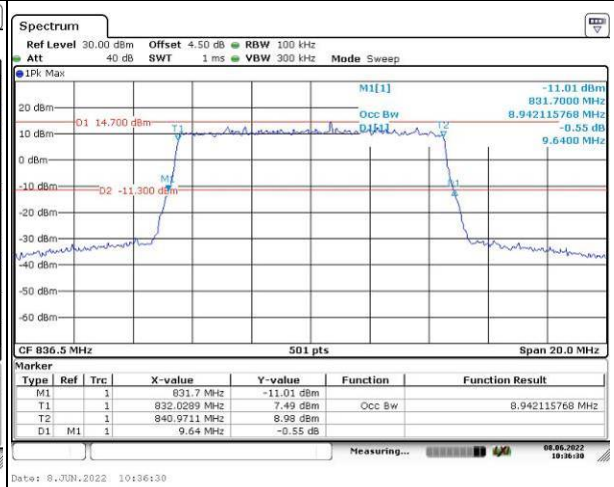
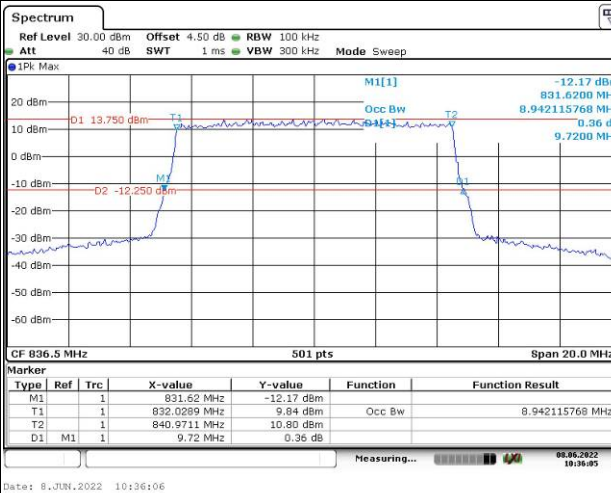
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

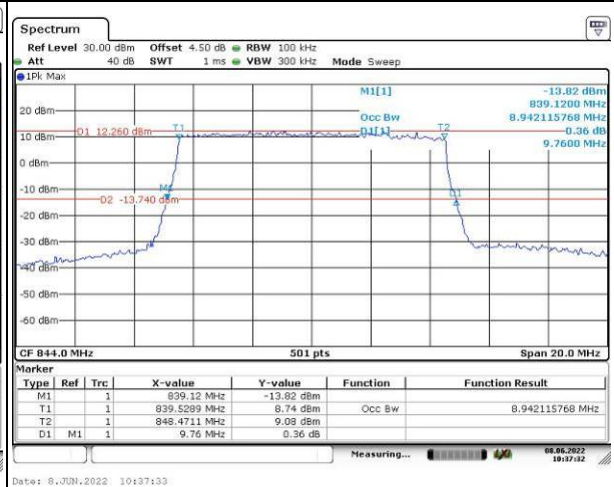
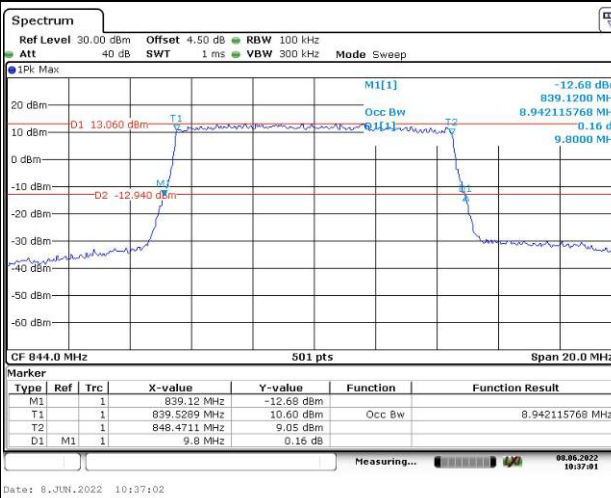
Lowest



Middle



Highest

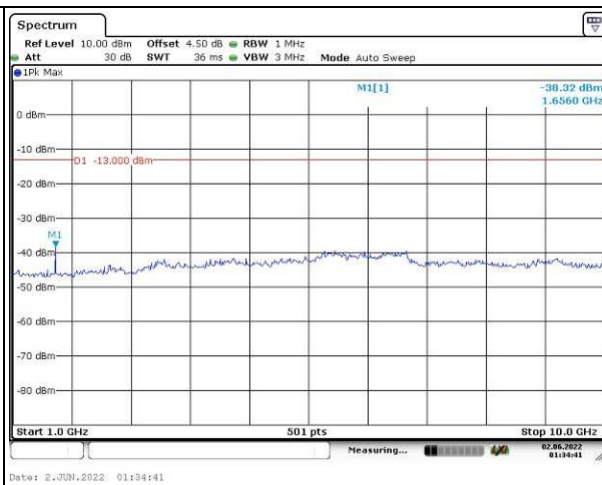
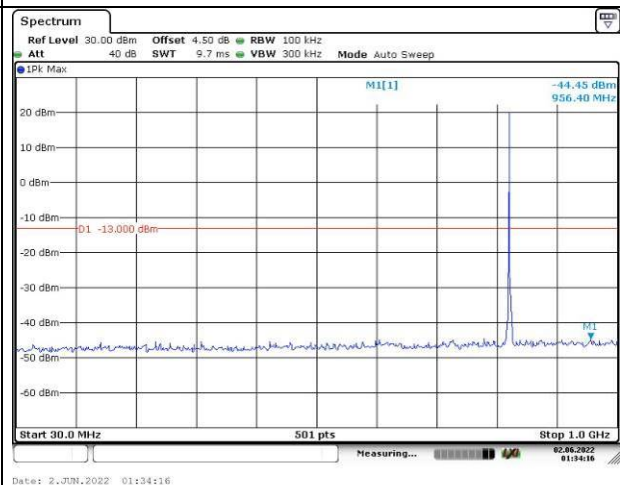


Spurious Emissions at Antenna Terminal

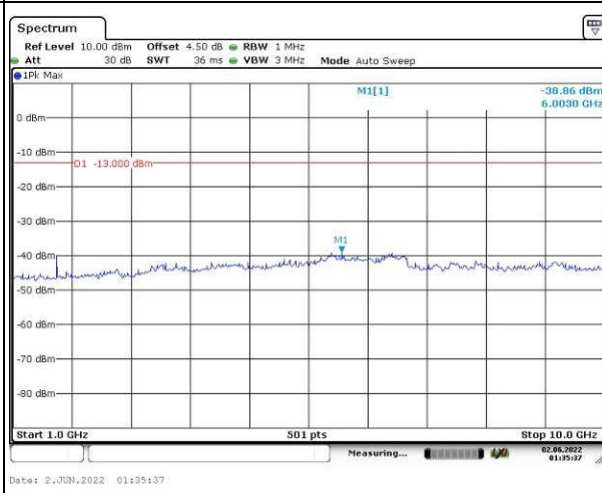
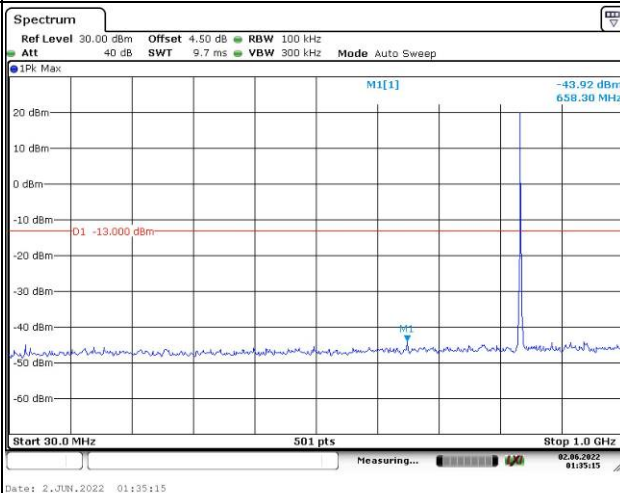
Channel

1.4MHz Bandwidth QPSK

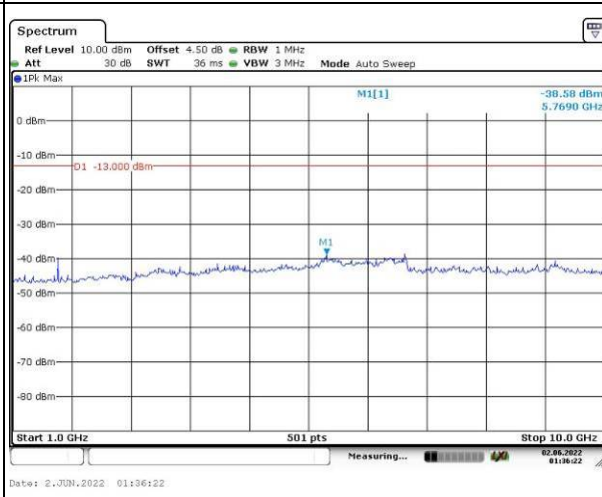
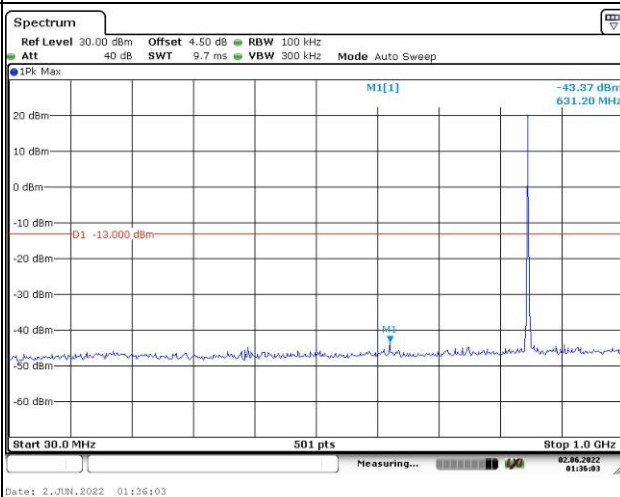
Lowest



Middle



Highest

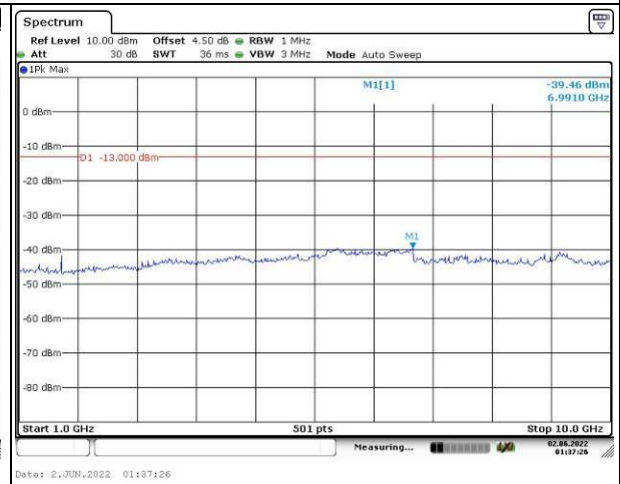
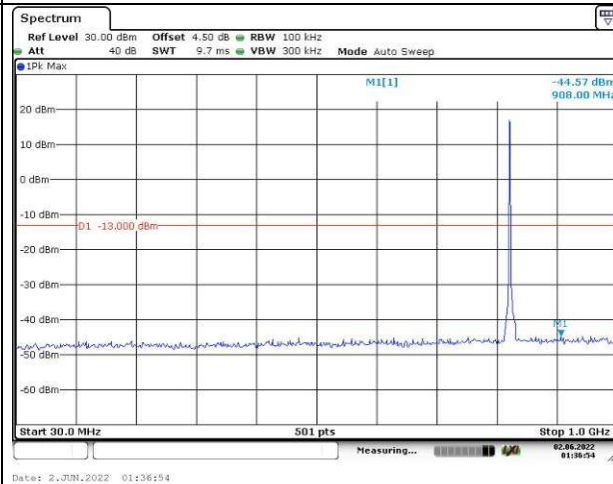


Spurious Emissions at Antenna Terminal

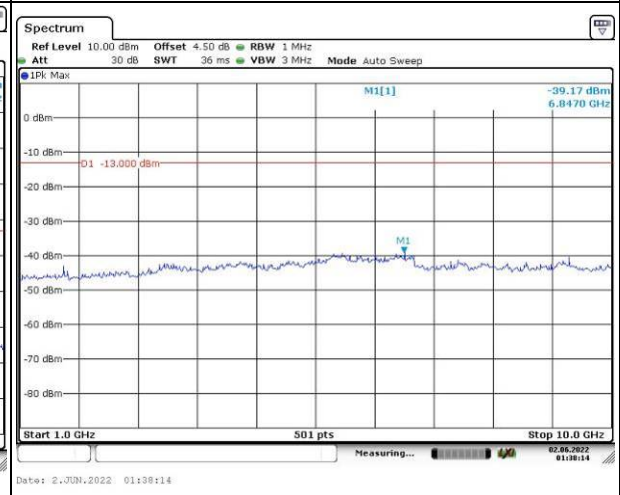
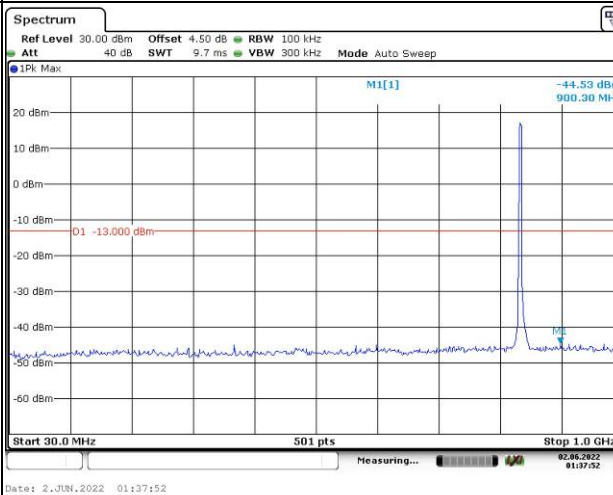
Channel

3MHz Bandwidth QPSK

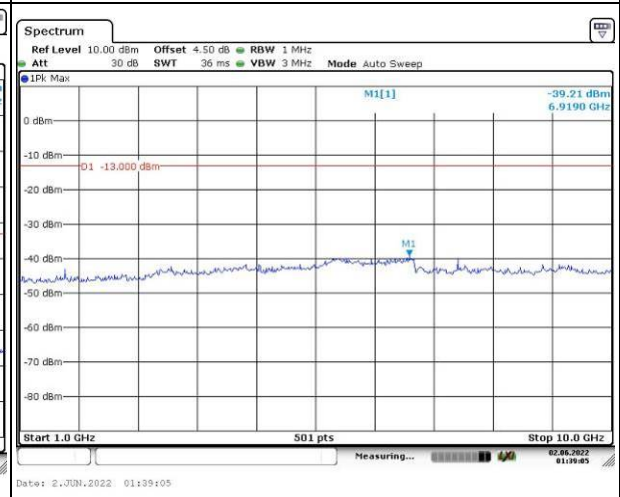
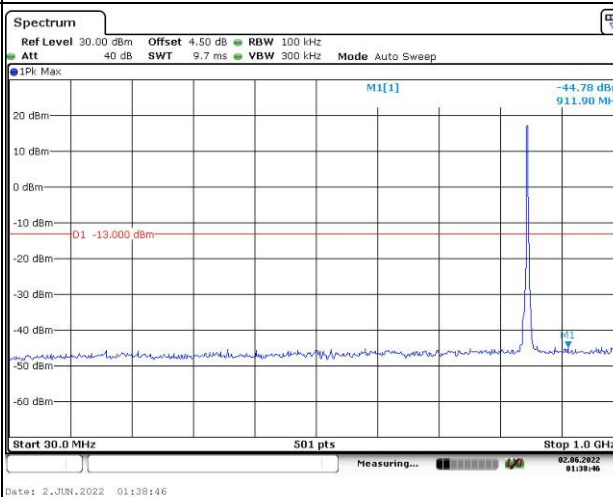
Lowest



Middle



Highest

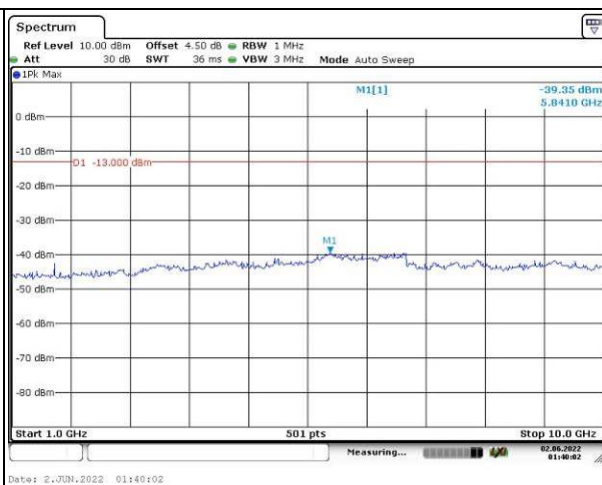
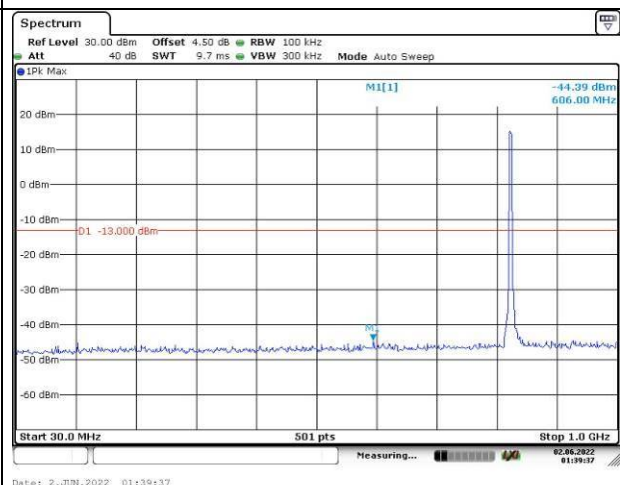


Spurious Emissions at Antenna Terminal

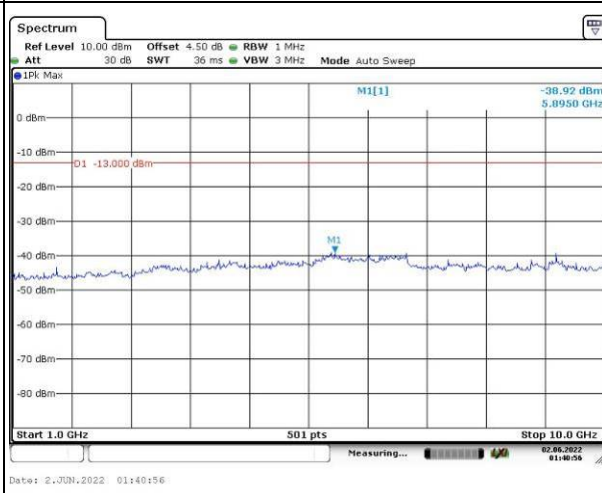
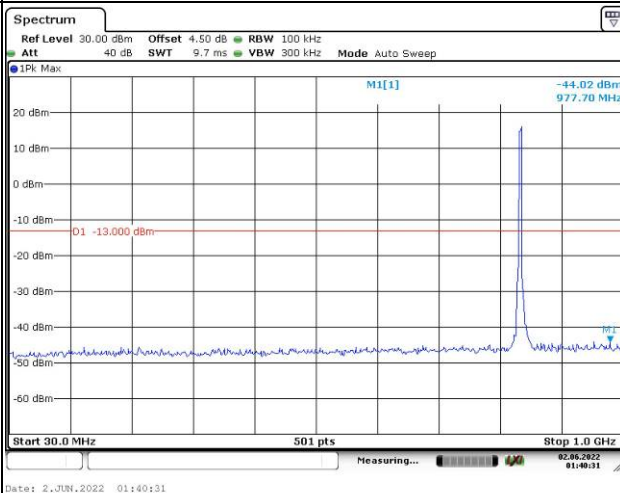
Channel

5MHz Bandwidth QPSK

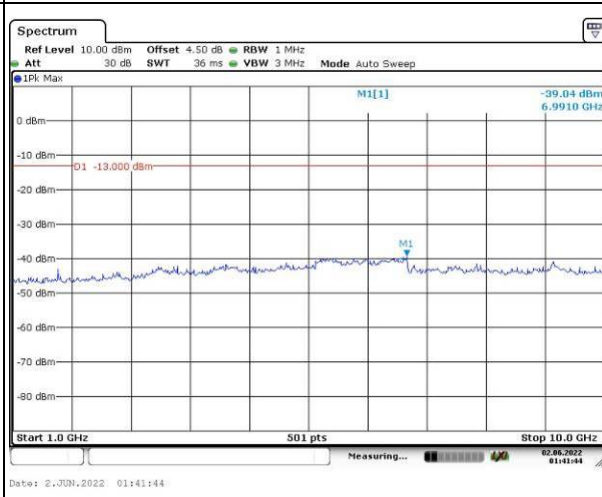
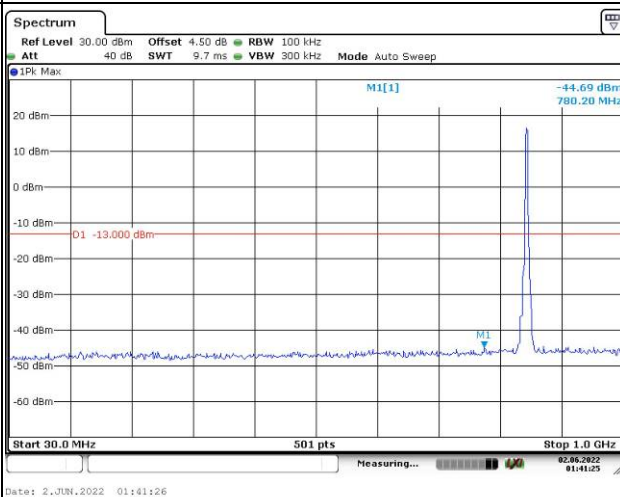
Lowest



Middle



Highest

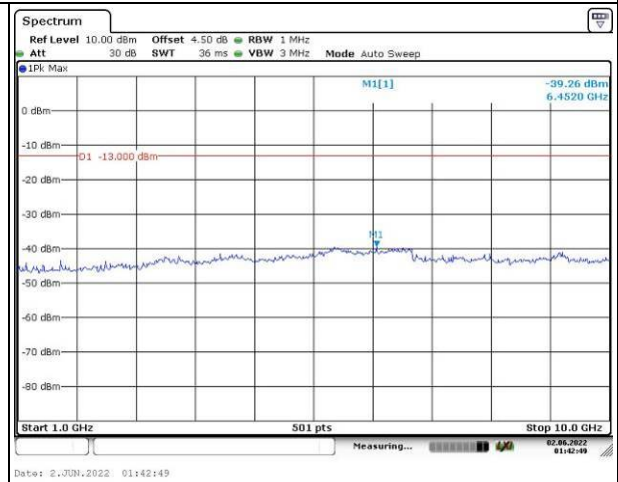
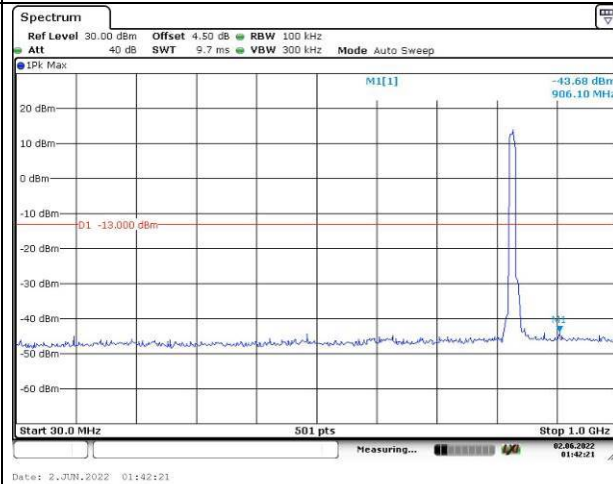


Spurious Emissions at Antenna Terminal

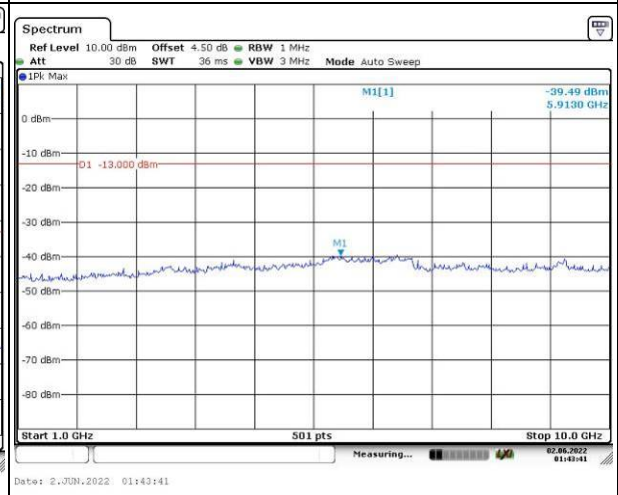
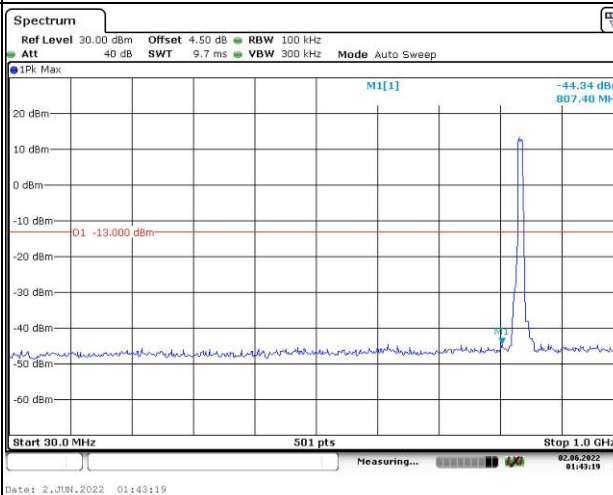
Channel

10MHz Bandwidth QPSK

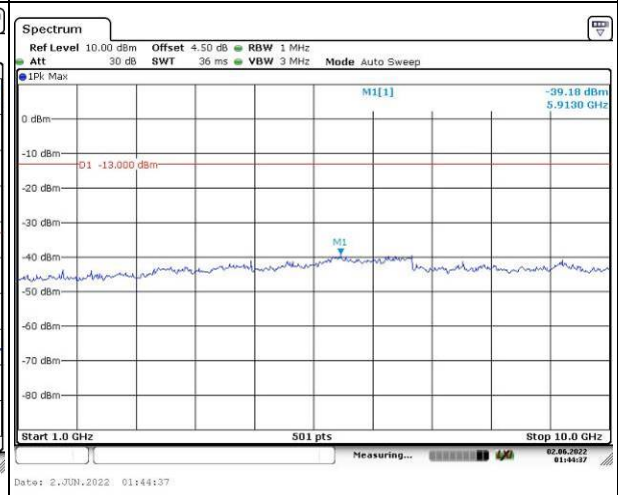
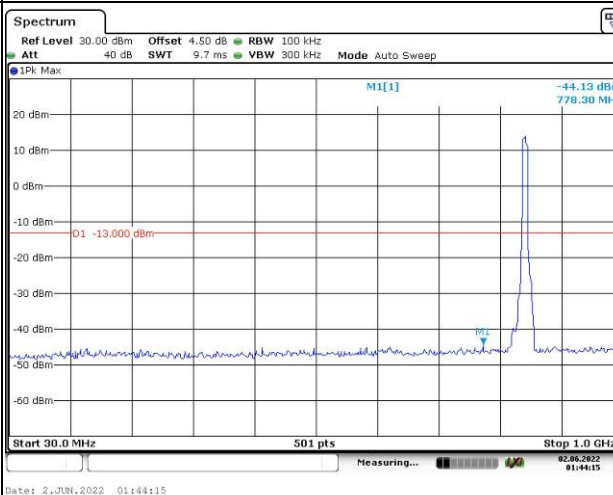
Lowest



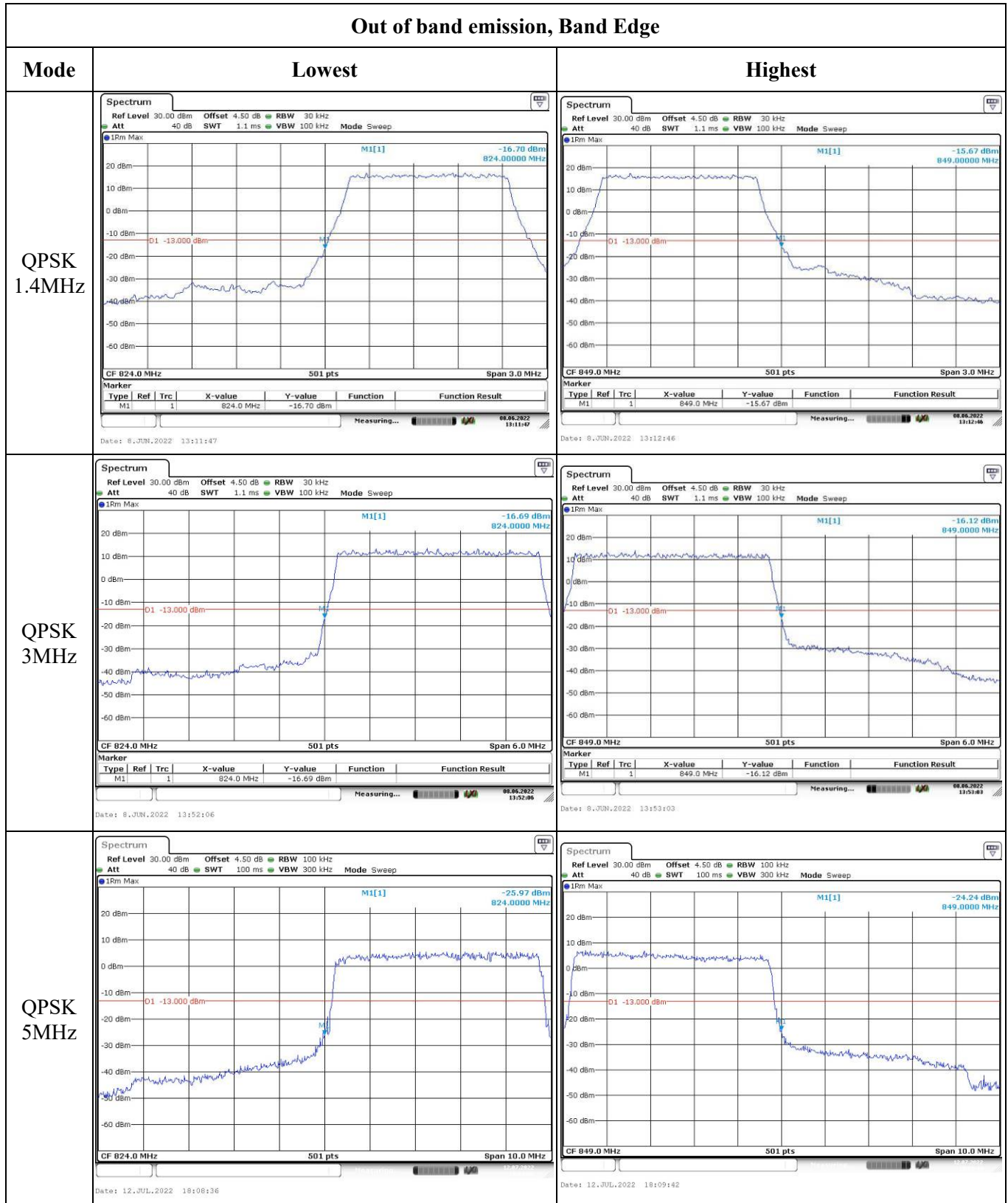
Middle



Highest



Out of band emission, Band Edge



Out of band emission, Band Edge

