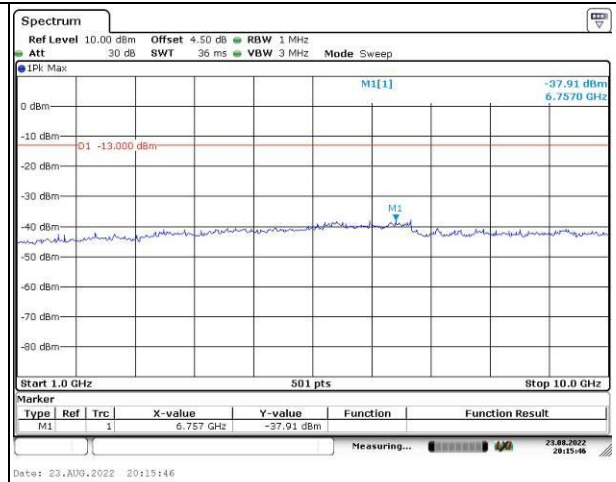
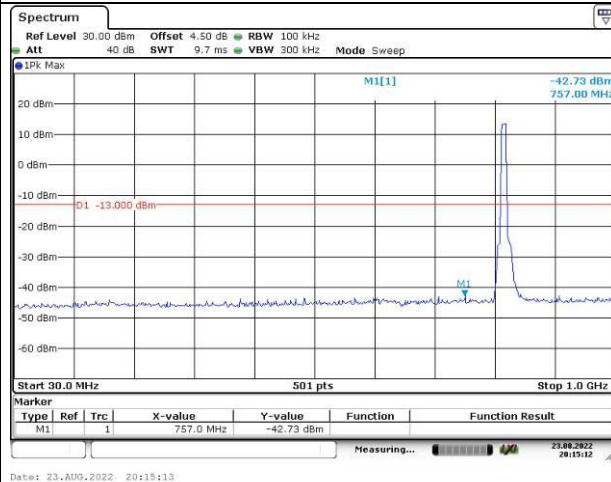


Spurious Emissions at Antenna Terminal

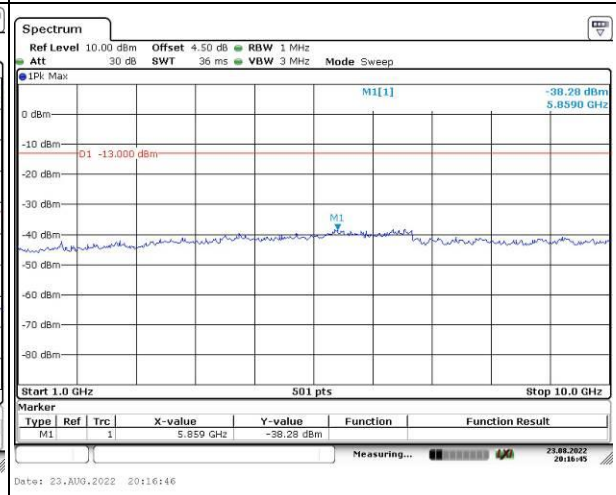
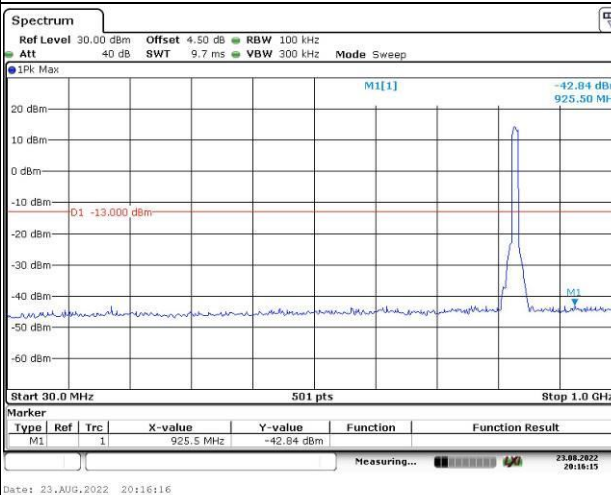
Channel

10MHz Bandwidth QPSK

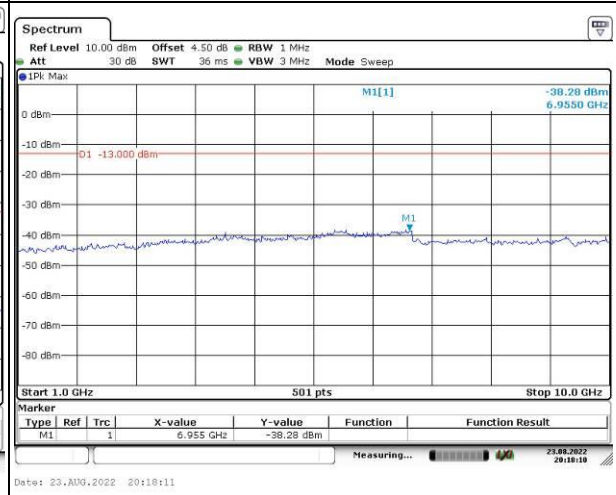
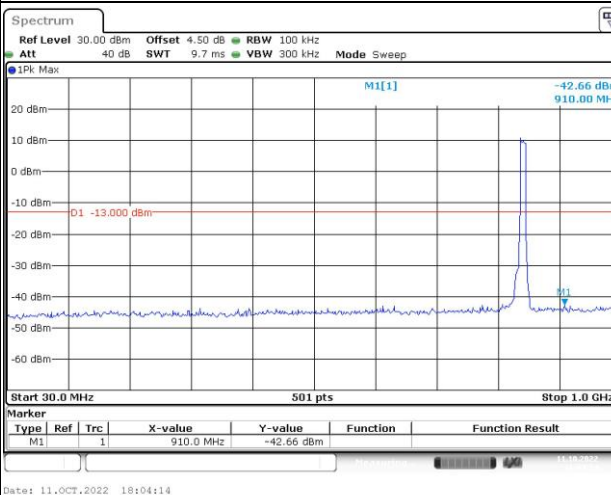
Lowest



Middle



Highest

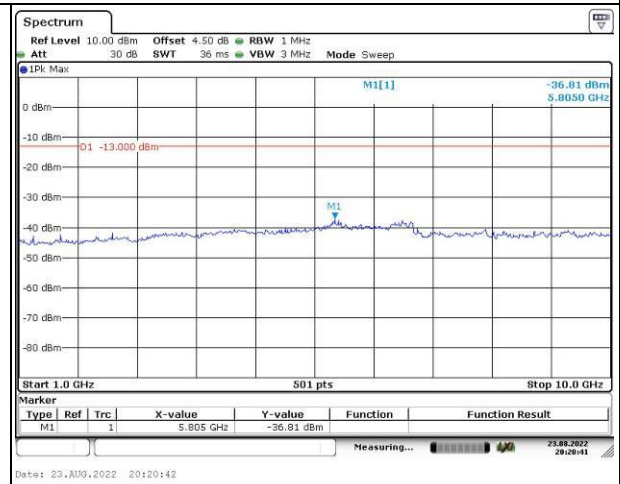
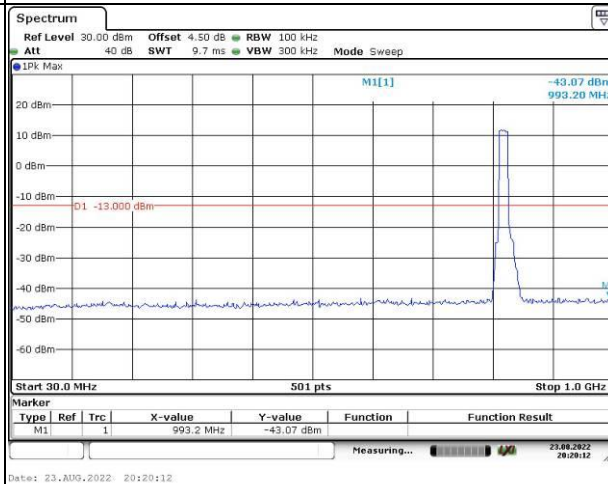


Spurious Emissions at Antenna Terminal

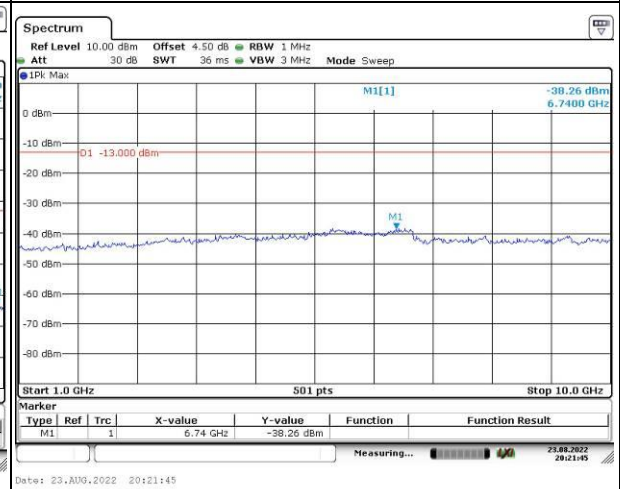
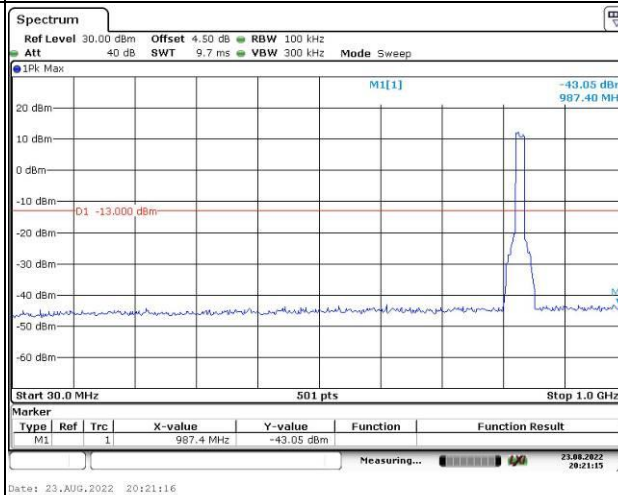
Channel

15MHz Bandwidth QPSK

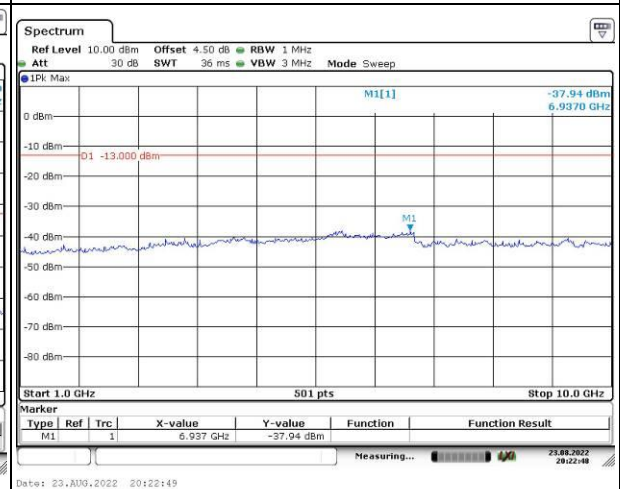
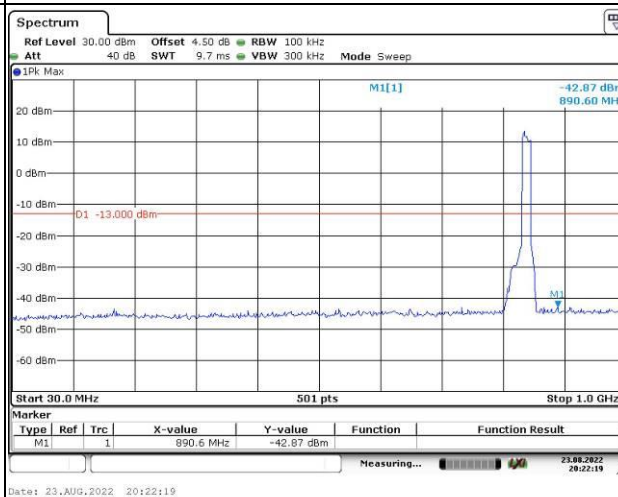
Lowest



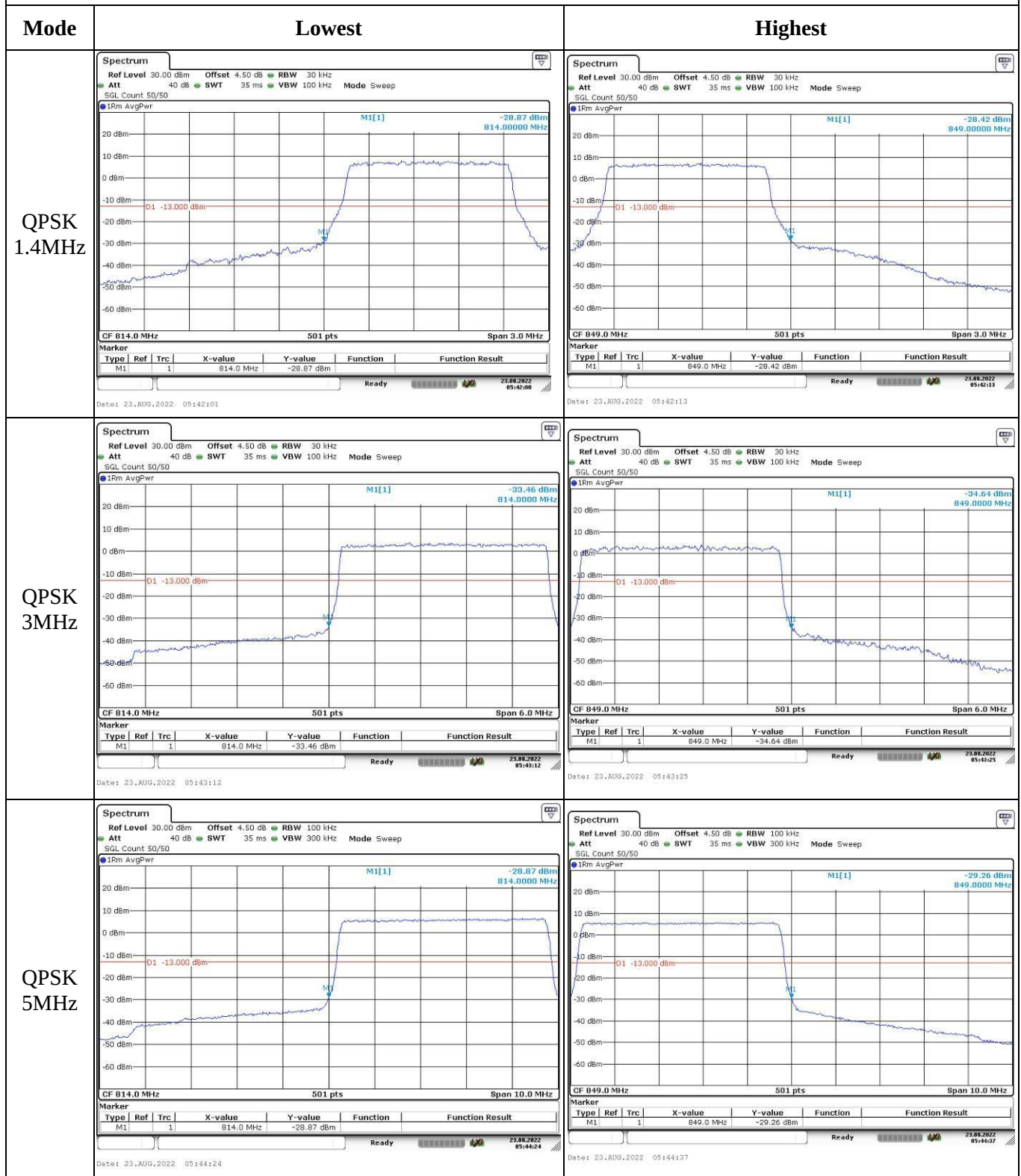
Middle



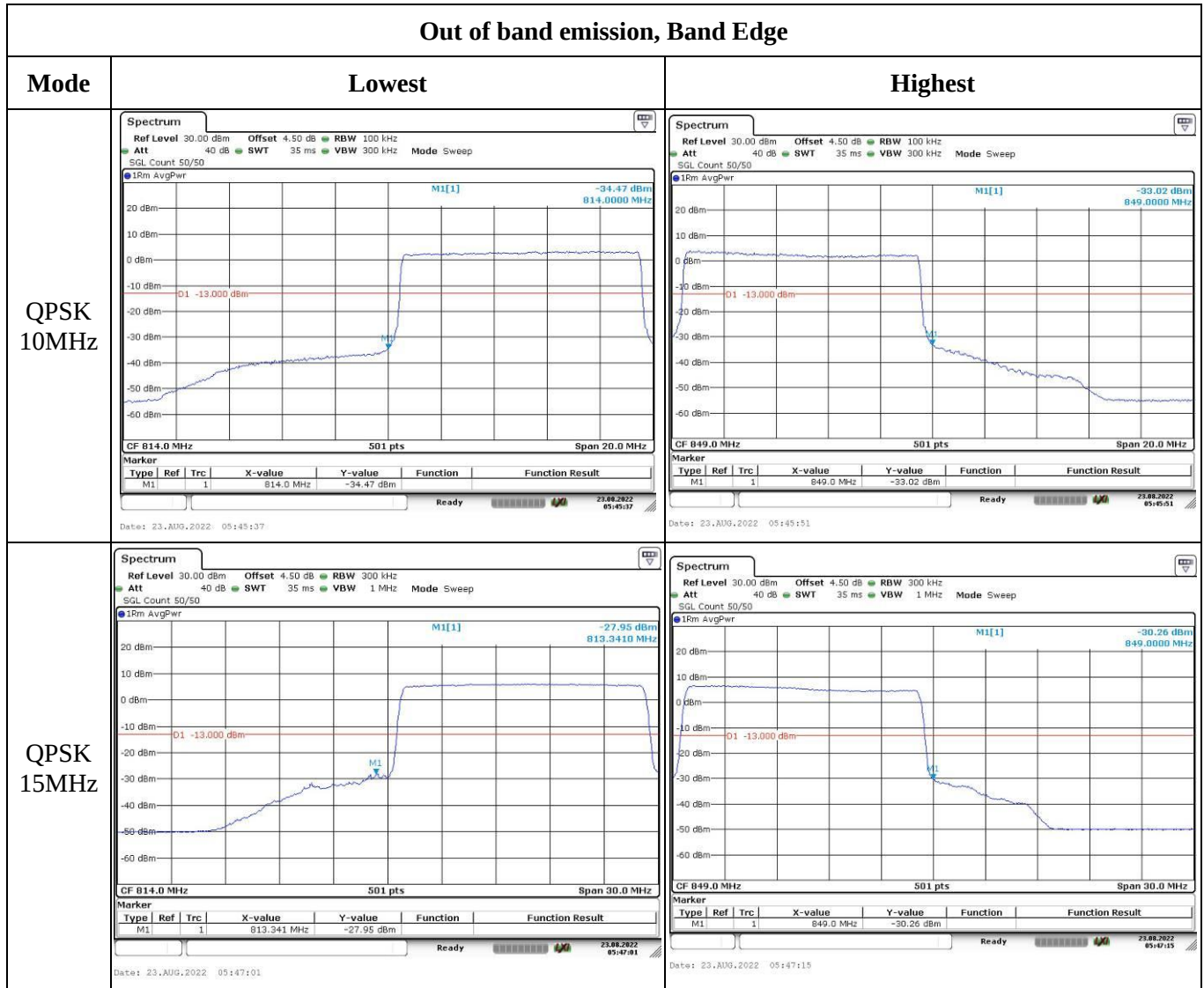
Highest



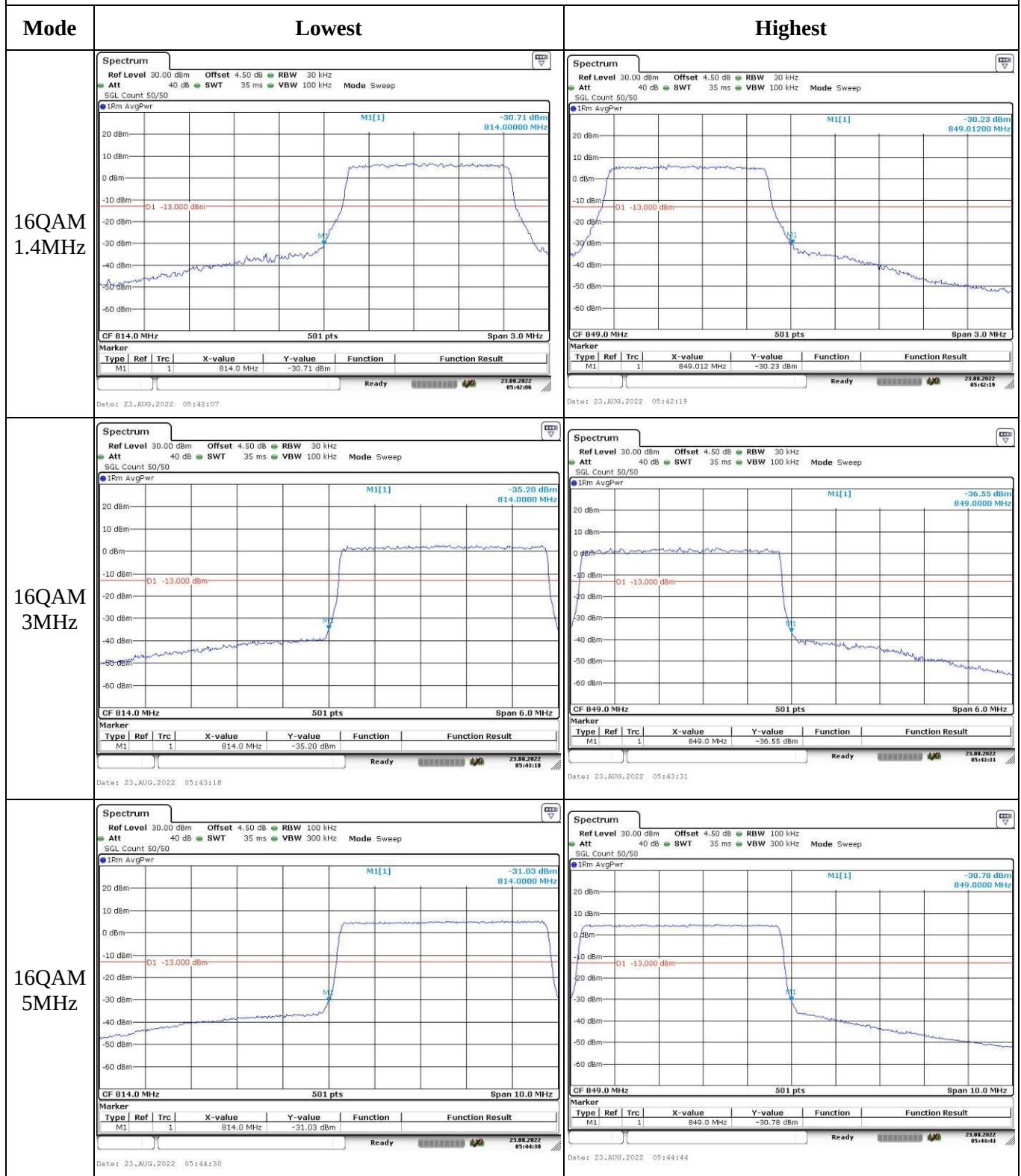
Out of band emission, Band Edge



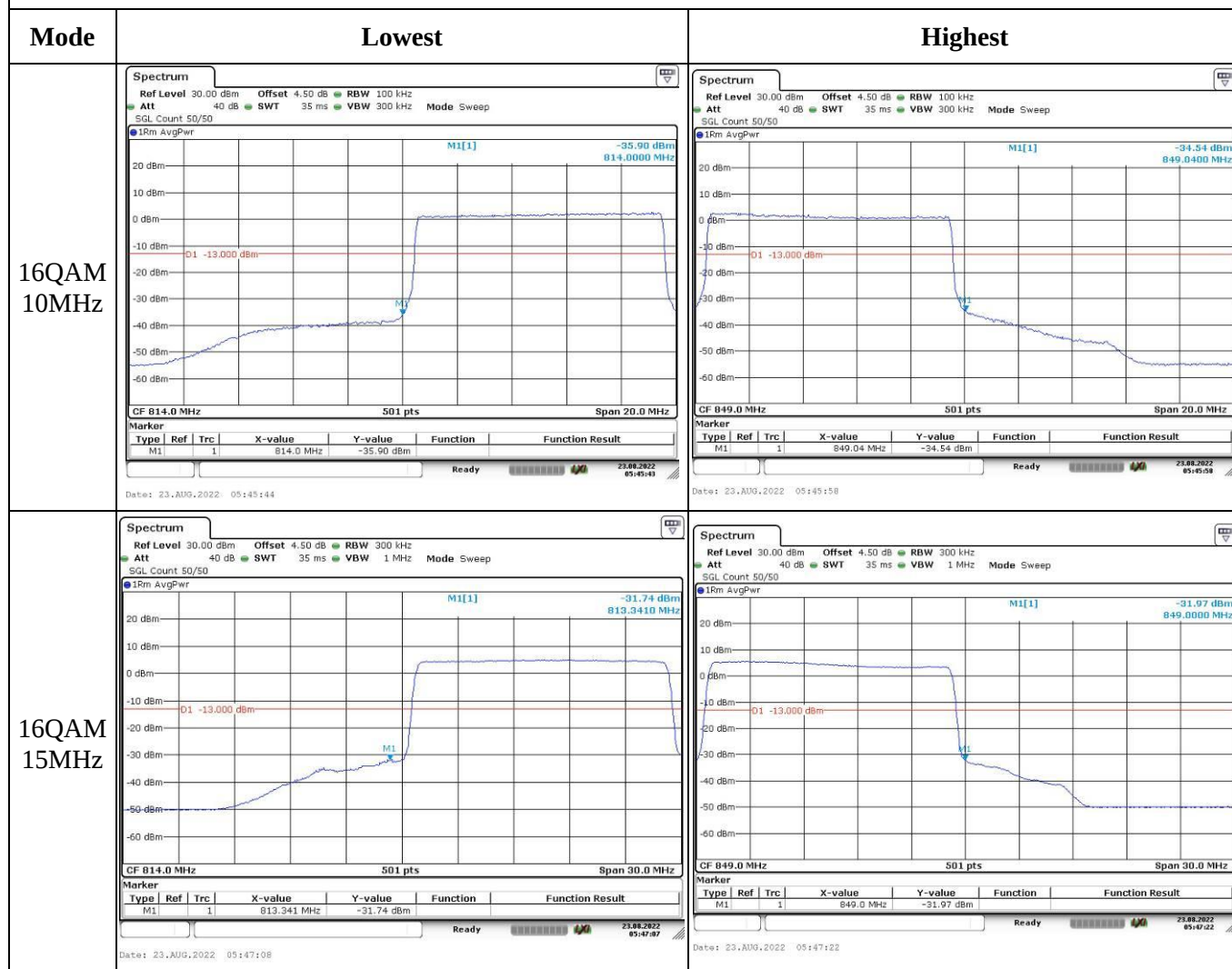
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.13 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	CR22070052-RF-S1, CR22070052-RF-S2	Test Date:	2022-08-23~2022-08-25
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~25.8	Relative Humidity: (%)	51~59	ATM Pressure: (kPa)	100.2~100.8
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100003	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
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).

EUT Information@LTE Band 38▲:

Antenna Gain (dBi):	2.98	Path Loss L_c (dB):	0.5
Operation Voltage(V_{DC}):			
Lowest:	3.5	Normal:	3.85
		Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2572.5	2595	2617.5
10MHz	2575	2595	2615
15MHz	2577.5	2595	2612.5
20MHz	2580	2595	2610

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	21.75	21.35	20.91	24.34	33
	RB1#13	21.86	21.46	21		
	RB1#24	21.7	21.24	20.83		
	RB15#0	20.79	20.35	19.92		
	RB15#10	20.74	20.35	19.91		
	RB25#0	20.79	20.35	19.91		
5MHz 16QAM	RB1#0	20.82	20.38	20.08	23.34	33
	RB1#13	20.86	20.49	20.21		
	RB1#24	20.74	20.3	20.07		
	RB15#0	19.71	19.36	18.96		
	RB15#10	19.7	19.35	18.93		
	RB25#0	19.78	19.41	18.87		
10MHz QPSK	RB1#0	21.93	21.46	21.06	24.55	33
	RB1#25	22.07	21.7	21.3		
	RB1#49	21.72	21.29	21		
	RB25#0	20.86	20.46	20.03		
	RB25#25	20.77	20.37	19.98		
	RB50#0	20.79	20.41	19.99		
10MHz 16QAM	RB1#0	20.95	20.68	20.01	23.71	33
	RB1#25	21.23	20.89	20.22		
	RB1#49	20.81	20.5	19.86		
	RB25#0	19.85	19.42	19.07		
	RB25#25	19.79	19.37	19.02		
	RB50#0	19.83	19.4	19.01		
15MHz QPSK	RB1#0	21.66	21.43	21.1	24.22	33
	RB1#38	21.74	21.44	21.07		
	RB1#74	21.44	21.28	20.8		
	RB36#0	20.78	20.45	20.08		
	RB36#39	20.66	20.33	19.98		
	RB75#0	20.72	20.38	20.03		
15MHz 16QAM	RB1#0	20.93	20.39	20.3	23.45	33
	RB1#38	20.97	20.4	20.28		
	RB1#74	20.81	20.22	19.92		
	RB36#0	19.75	19.38	19.1		
	RB36#39	19.62	19.27	19		
	RB75#0	19.66	19.36	19.03		
20MHz QPSK	RB1#0	21.61	21.27	20.94	24.46	33
	RB1#50	21.98	21.61	21.27		

	RB1#99	21.32	20.9	20.63		
	RB50#0	20.75	20.43	20.07		
	RB50#50	20.56	20.3	20		
	RB100#0	20.68	20.37	20.06		
20MHz 16QAM	RB1#0	20.85	20.35	19.93	23.72	33
	RB1#50	21.24	20.7	20.25		
	RB1#99	20.52	19.98	19.61		
	RB50#0	19.8	19.44	19.11		
	RB50#50	19.56	19.29	19.02		
	RB100#0	19.67	19.38	19.02		

Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(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	9.01	9.28	9.25	13
	RB100#0	9.16	9.16	9.07	13
20MHz 16QAM	RB1#0	9.94	10.12	10.09	13
	RB100#0	9.94	10.03	9.88	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	4.491	4.511	4.511	4.96	5.04	5
5MHz 16QAM	4.491	4.491	4.491	5.08	5.12	4.98
10MHz QPSK	8.942	8.942	8.942	9.68	9.72	9.88
10MHz 16QAM	8.942	8.942	8.942	9.6	9.52	10
15MHz QPSK	13.533	13.473	13.473	15.6	15.48	15.48
15MHz 16QAM	13.533	13.593	13.593	15.72	16.26	16.56
20MHz QPSK	18.044	17.964	17.964	19.76	19.84	20.64
20MHz 16QAM	17.884	17.964	17.964	19.92	21.12	19.68

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

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

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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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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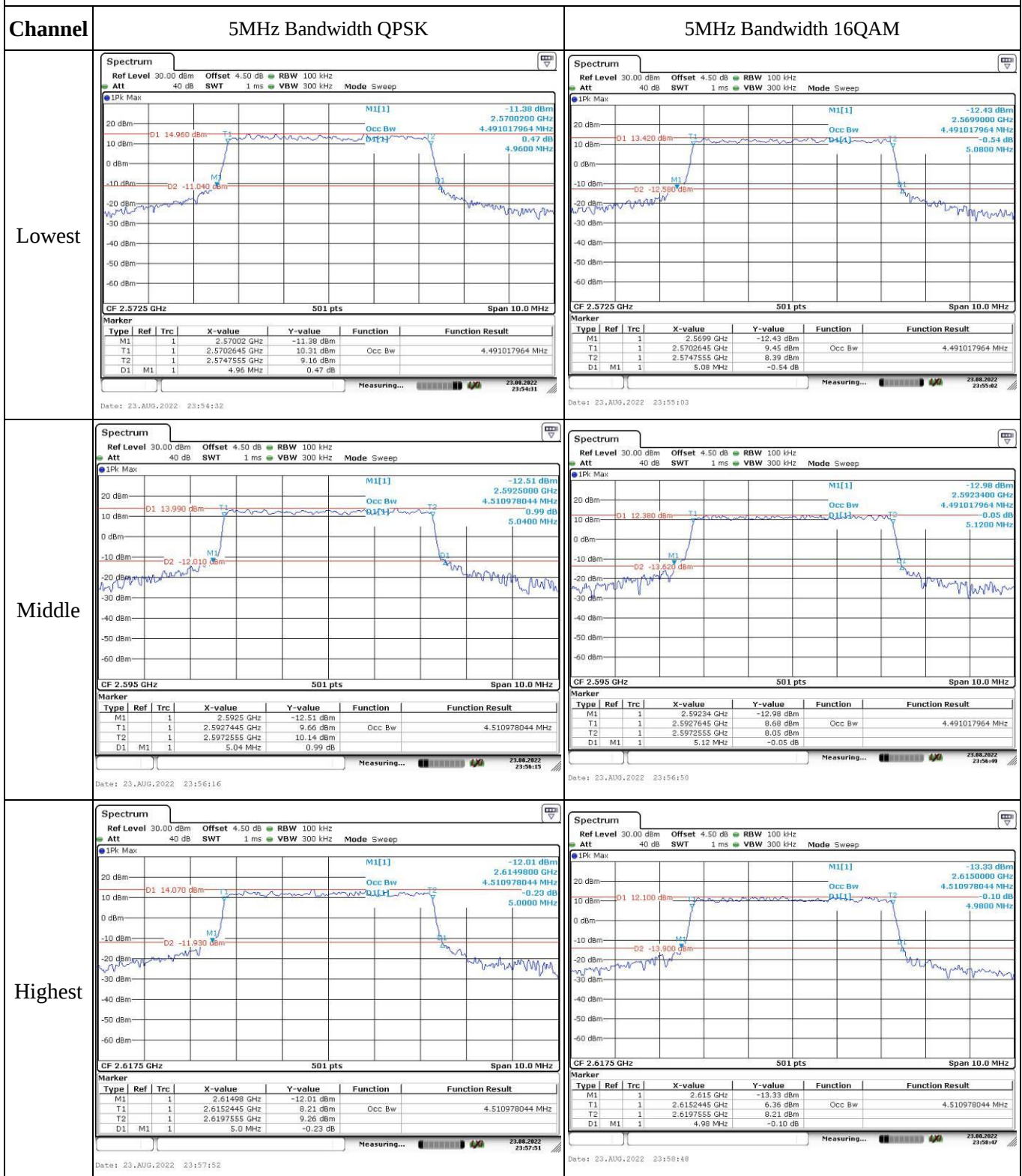
FCC §2.1055, §27.54: Frequency Stability

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	3.85	2570.904	2570.00	2619.023	2620
	-20	3.85	2570.934	2570.00	2619.092	2620
	-10	3.85	2570.942	2570.00	2619.098	2620
	0	3.85	2570.965	2570.00	2619.014	2620
	10	3.85	2570.998	2570.00	2619.024	2620
	20	3.85	2570.978	2570.00	2619.022	2620
	30	3.85	2570.944	2570.00	2619.046	2620
	40	3.85	2570.972	2570.00	2619.046	2620
	50	3.85	2570.906	2570.00	2619.061	2620
Frequency Stability vs. Voltage	20	3.5	2570.957	2570.00	2619.084	2620
	20	4.4	2570.900	2570.00	2619.009	2620
					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	3.85	2571.033	2570.00	2619.018	2620
	-20	3.85	2571.017	2570.00	2619.082	2620
	-10	3.85	2571.011	2570.00	2619.040	2620
	0	3.85	2571.031	2570.00	2619.046	2620
	10	3.85	2571.088	2570.00	2619.026	2620
	20	3.85	2571.058	2570.00	2619.022	2620
	30	3.85	2571.061	2570.00	2619.092	2620
	40	3.85	2571.008	2570.00	2619.074	2620
	50	3.85	2571.044	2570.00	2619.067	2620
Frequency Stability vs. Voltage	20	3.5	2571.100	2570.00	2619.018	2620
	20	4.4	2571.067	2570.00	2619.014	2620
					Result:	Pass

Test Plots:

Occupied Bandwidth



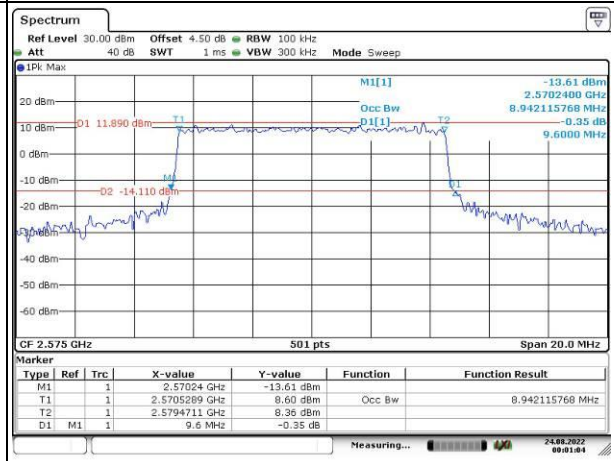
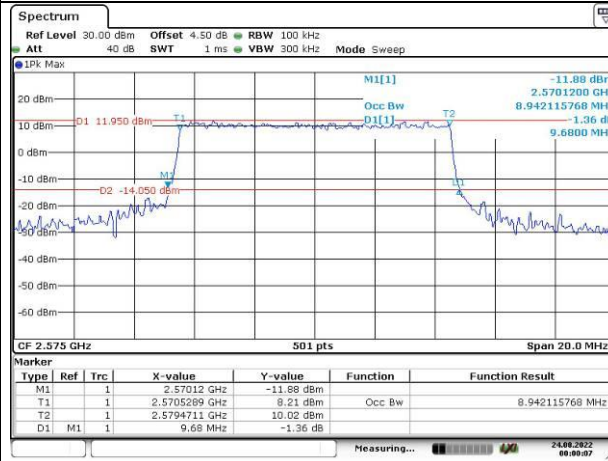
Occupied Bandwidth

Channel

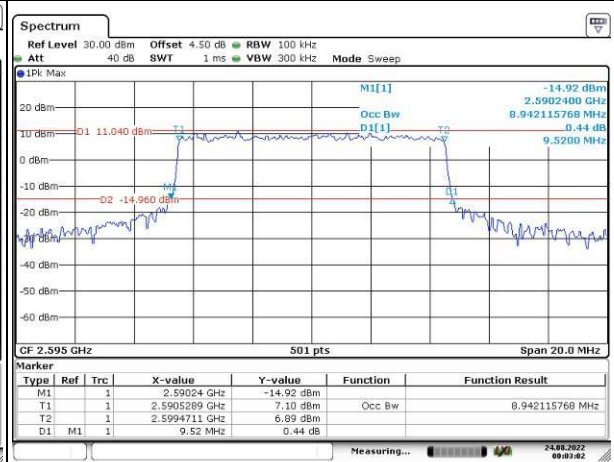
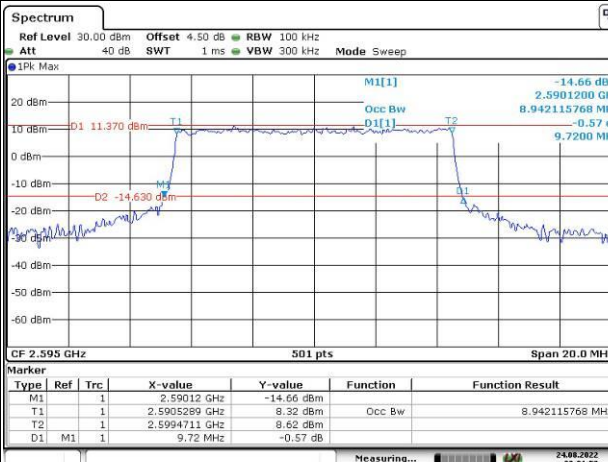
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

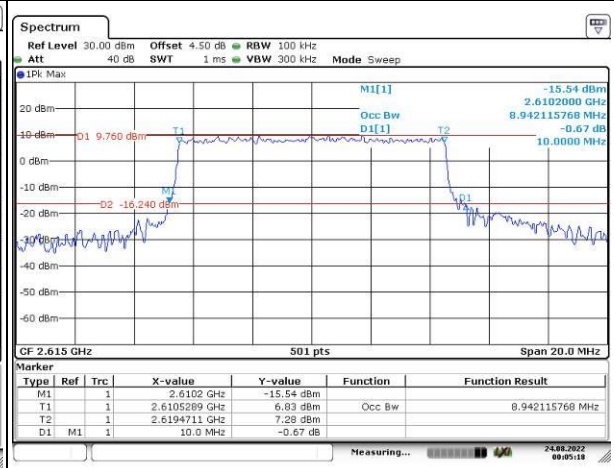
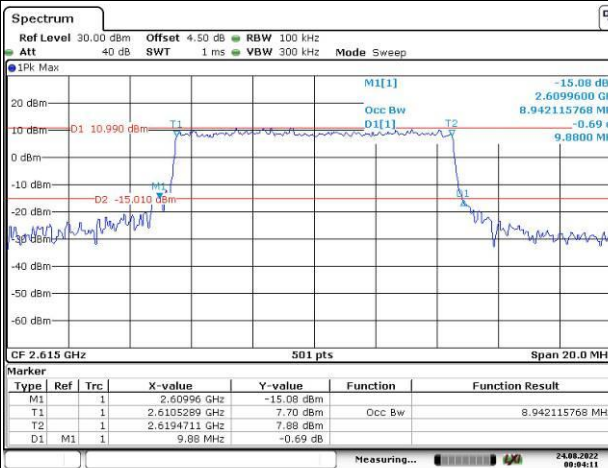
Lowest



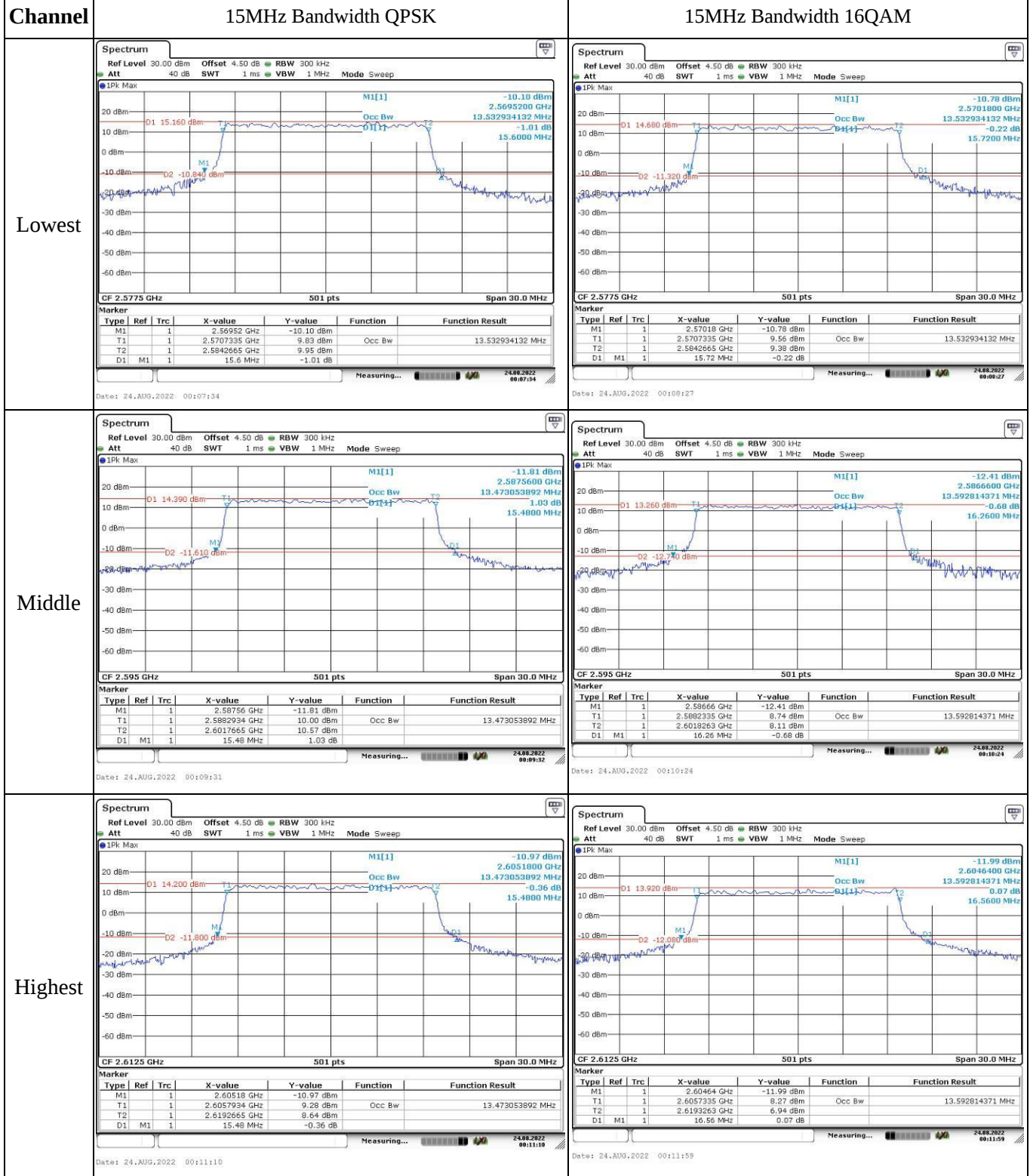
Middle



Highest



Occupied Bandwidth



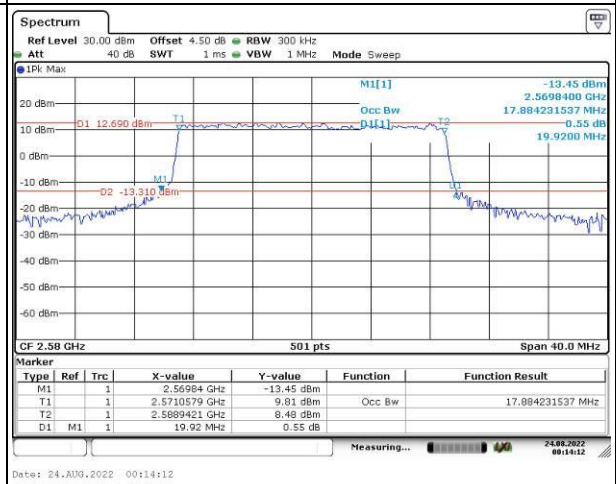
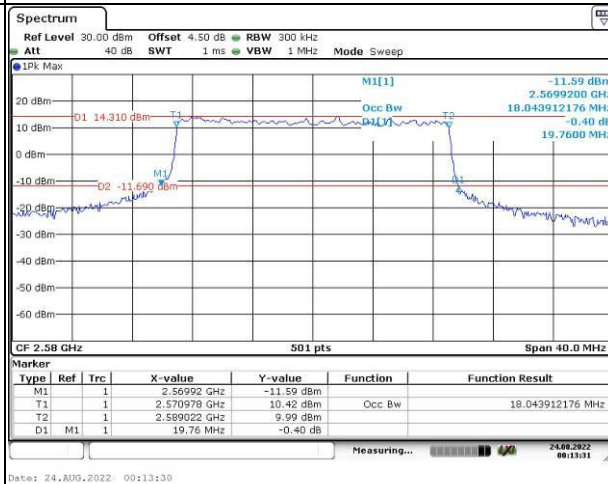
Occupied Bandwidth

Channel

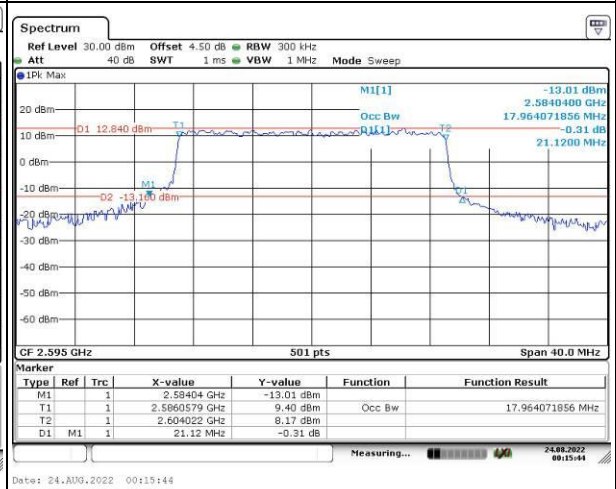
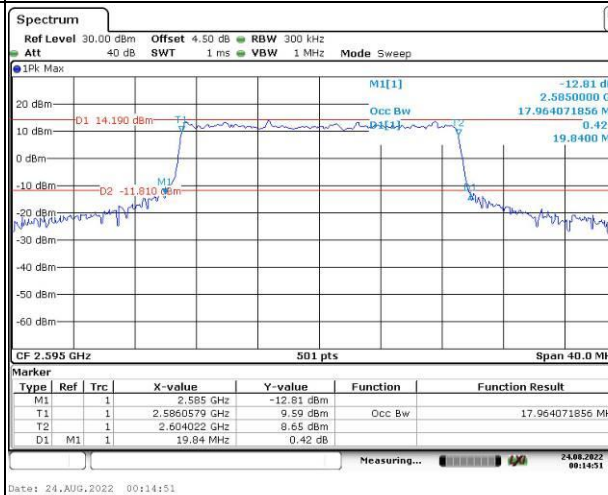
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

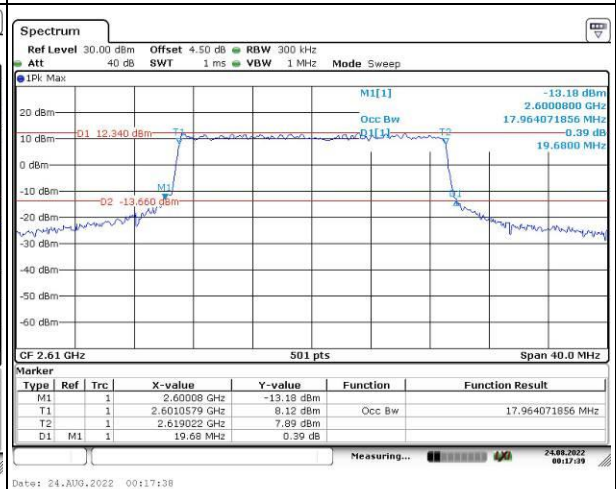
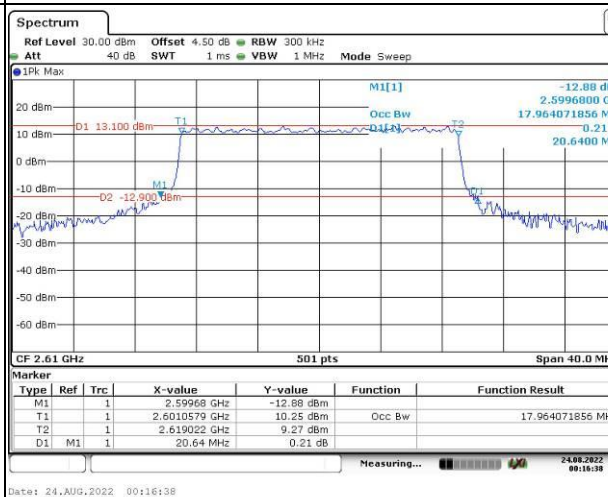
Lowest



Middle



Highest

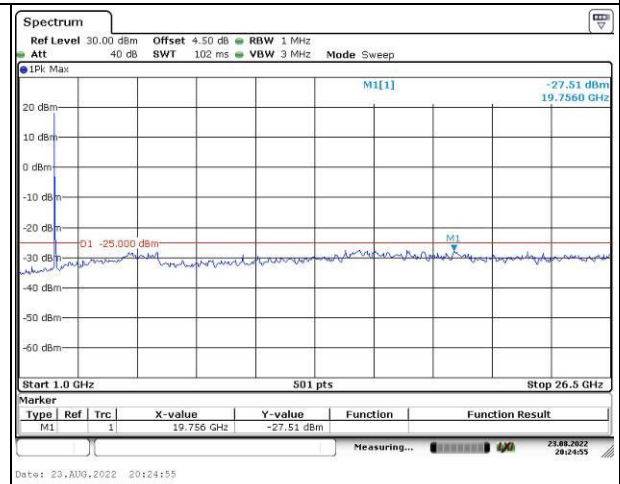
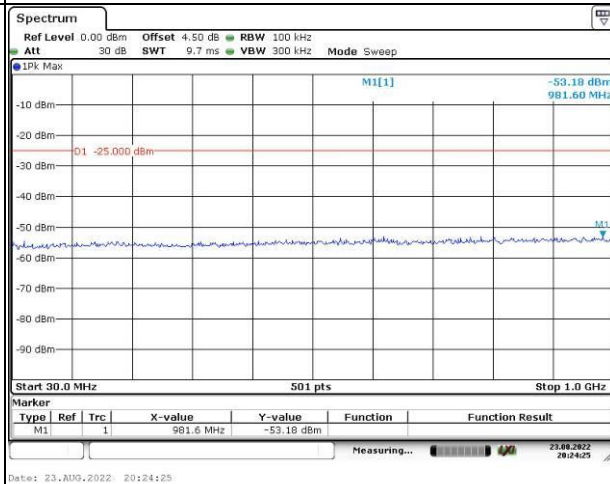


Spurious Emissions at Antenna Terminal

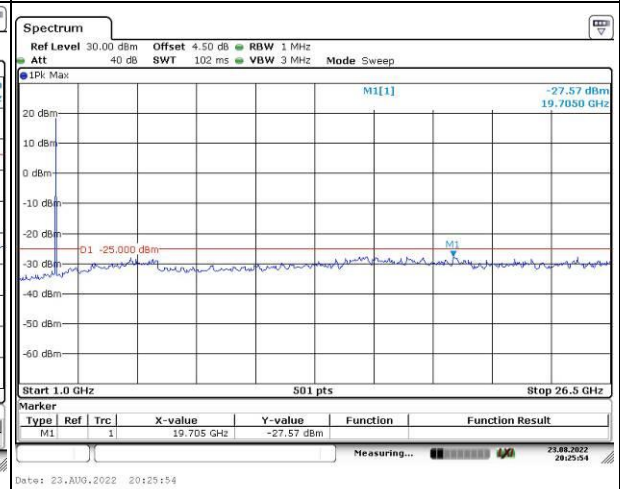
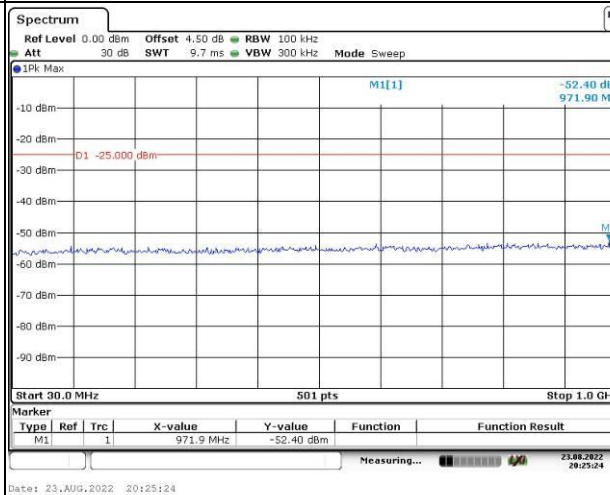
Channel

5MHz Bandwidth QPSK

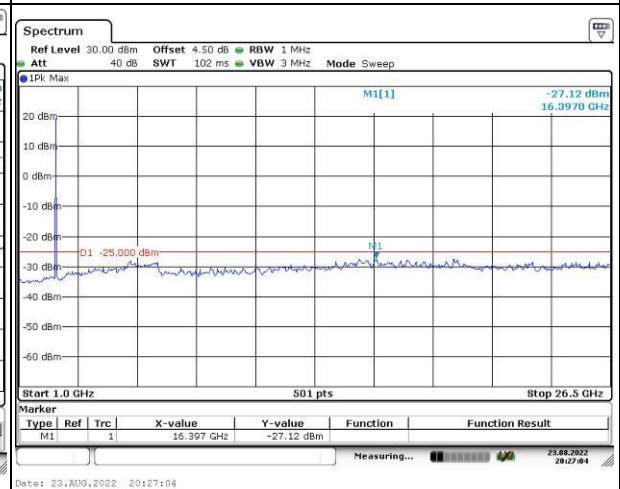
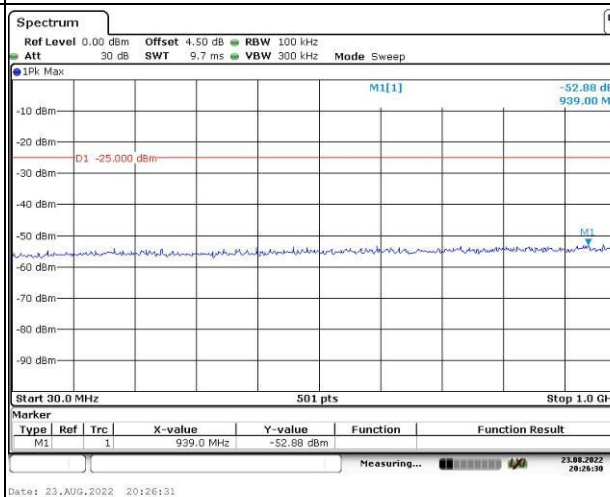
Lowest



Middle



Highest

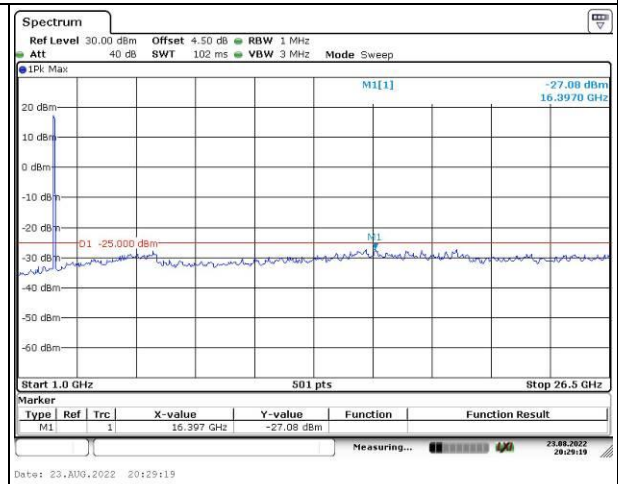
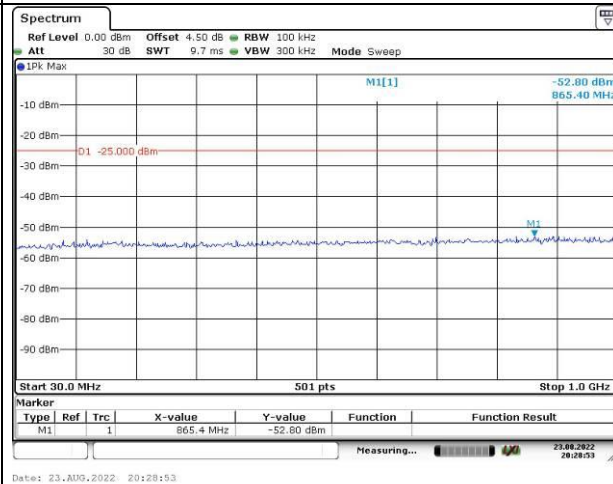


Spurious Emissions at Antenna Terminal

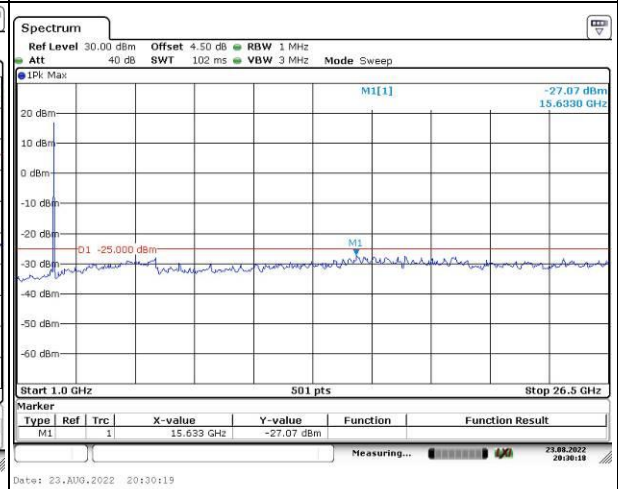
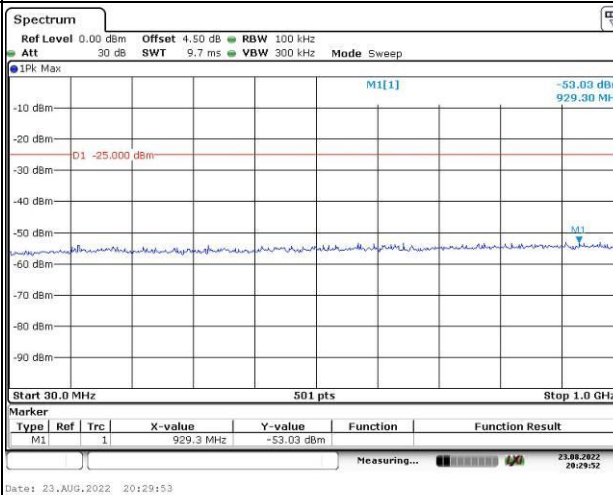
Channel

10MHz Bandwidth QPSK

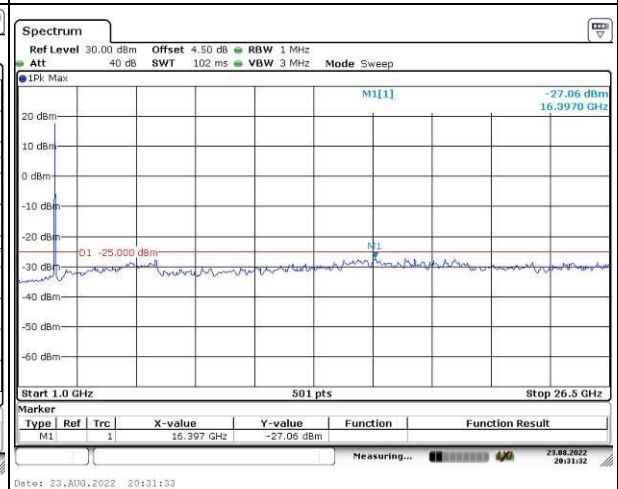
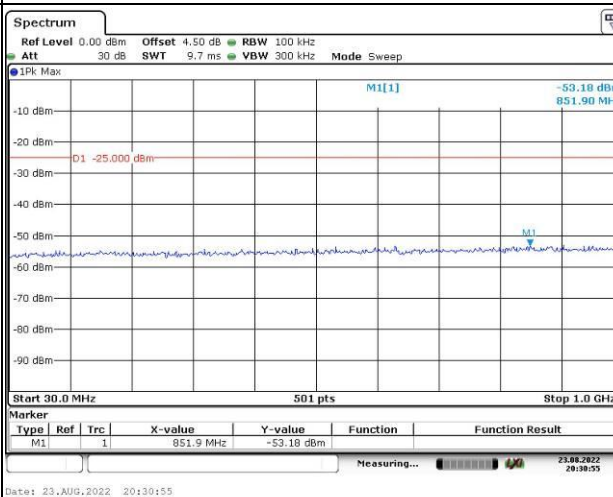
Lowest



Middle



Highest

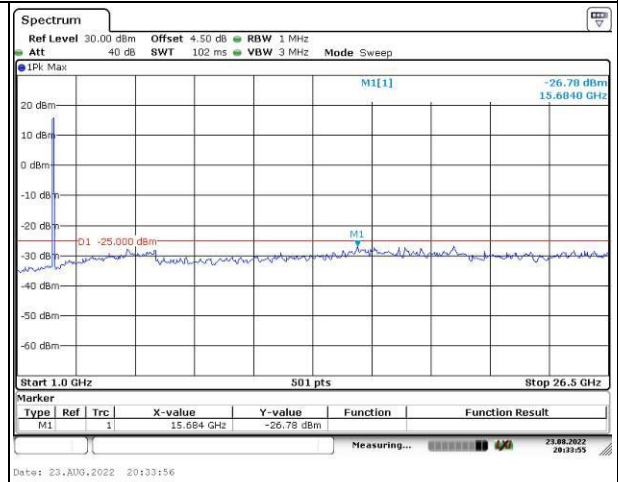
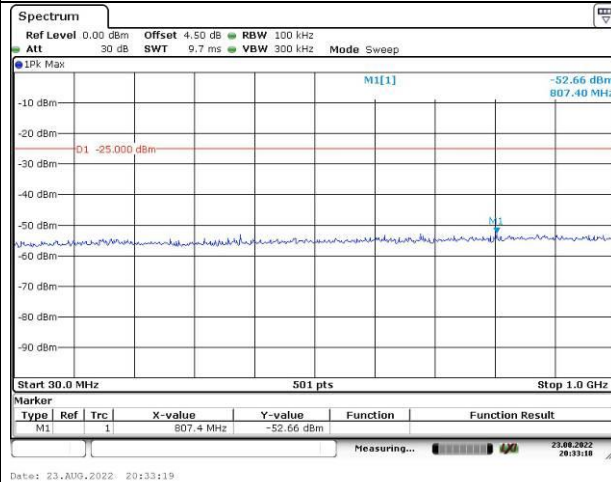


Spurious Emissions at Antenna Terminal

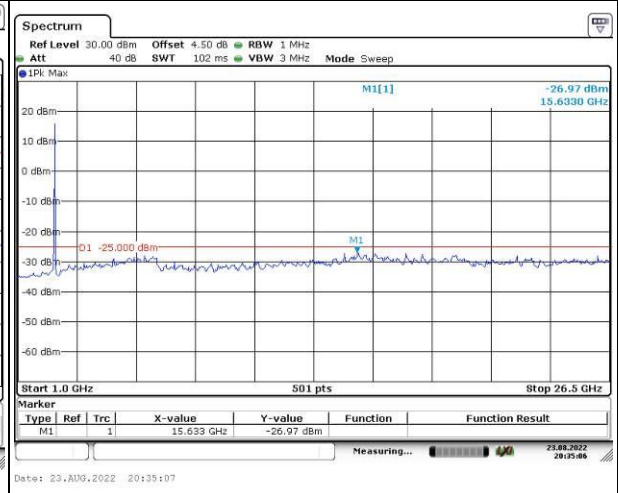
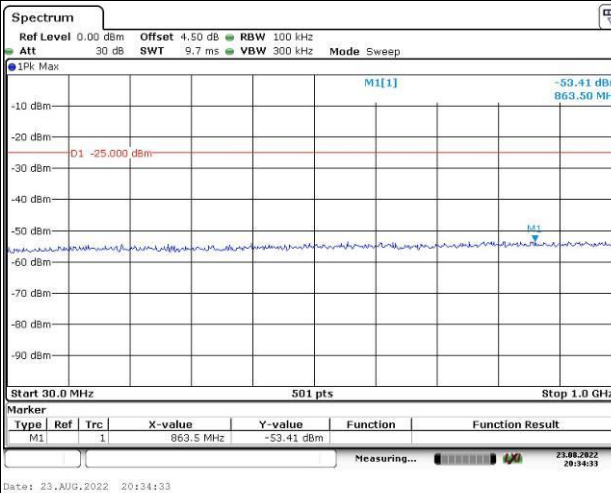
Channel

15MHz Bandwidth QPSK

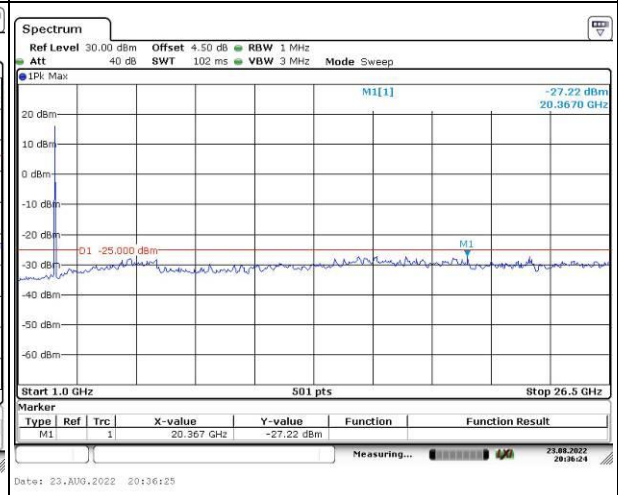
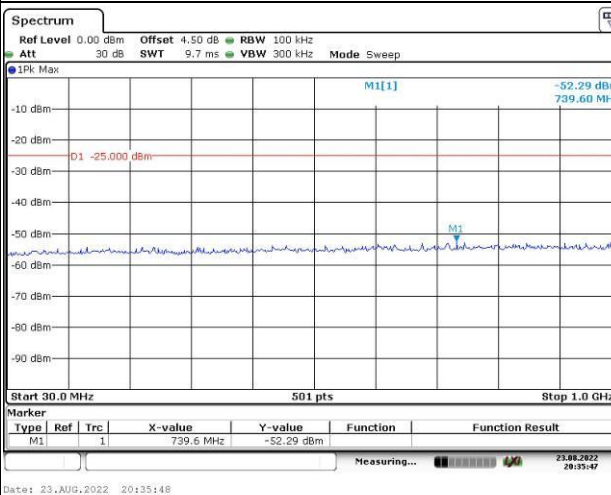
Lowest



Middle



Highest

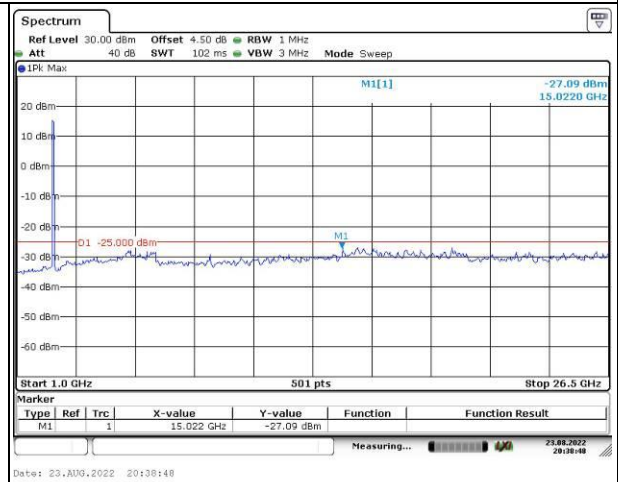
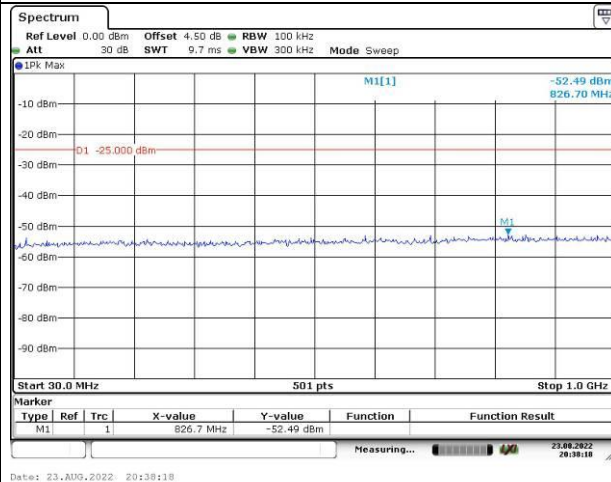


Spurious Emissions at Antenna Terminal

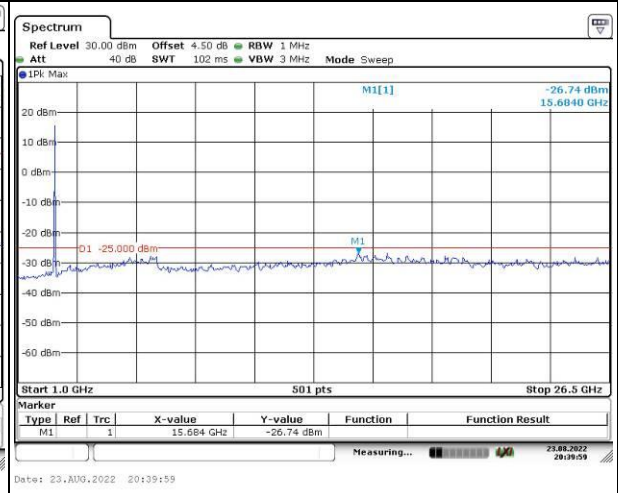
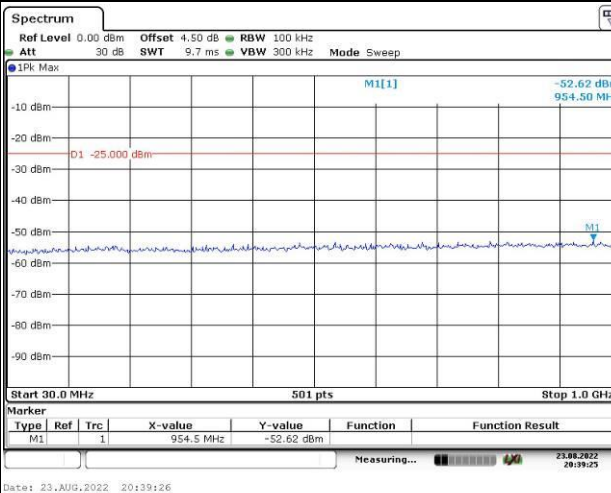
Channel

20MHz Bandwidth QPSK

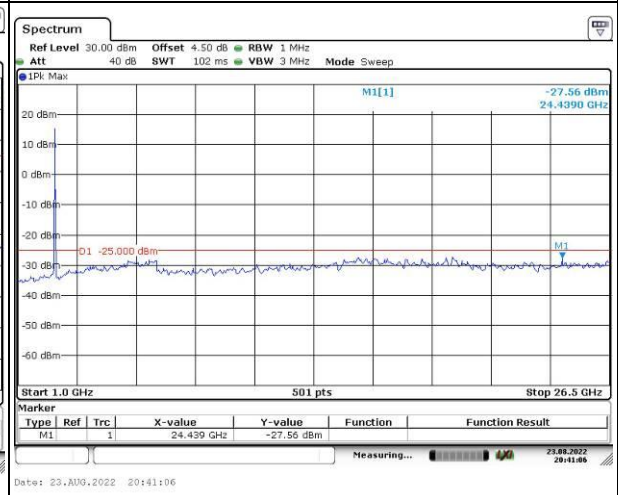
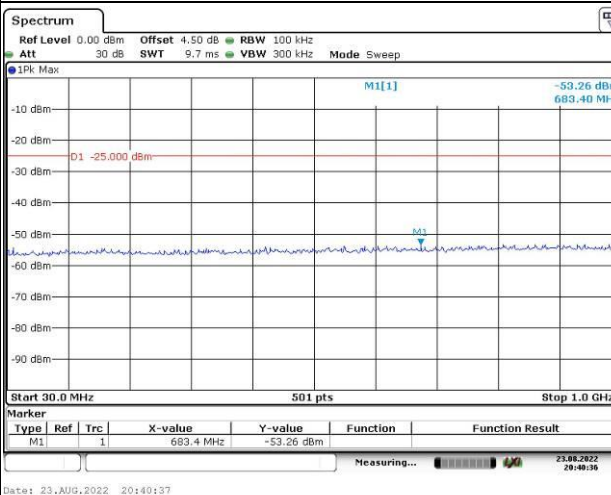
Lowest



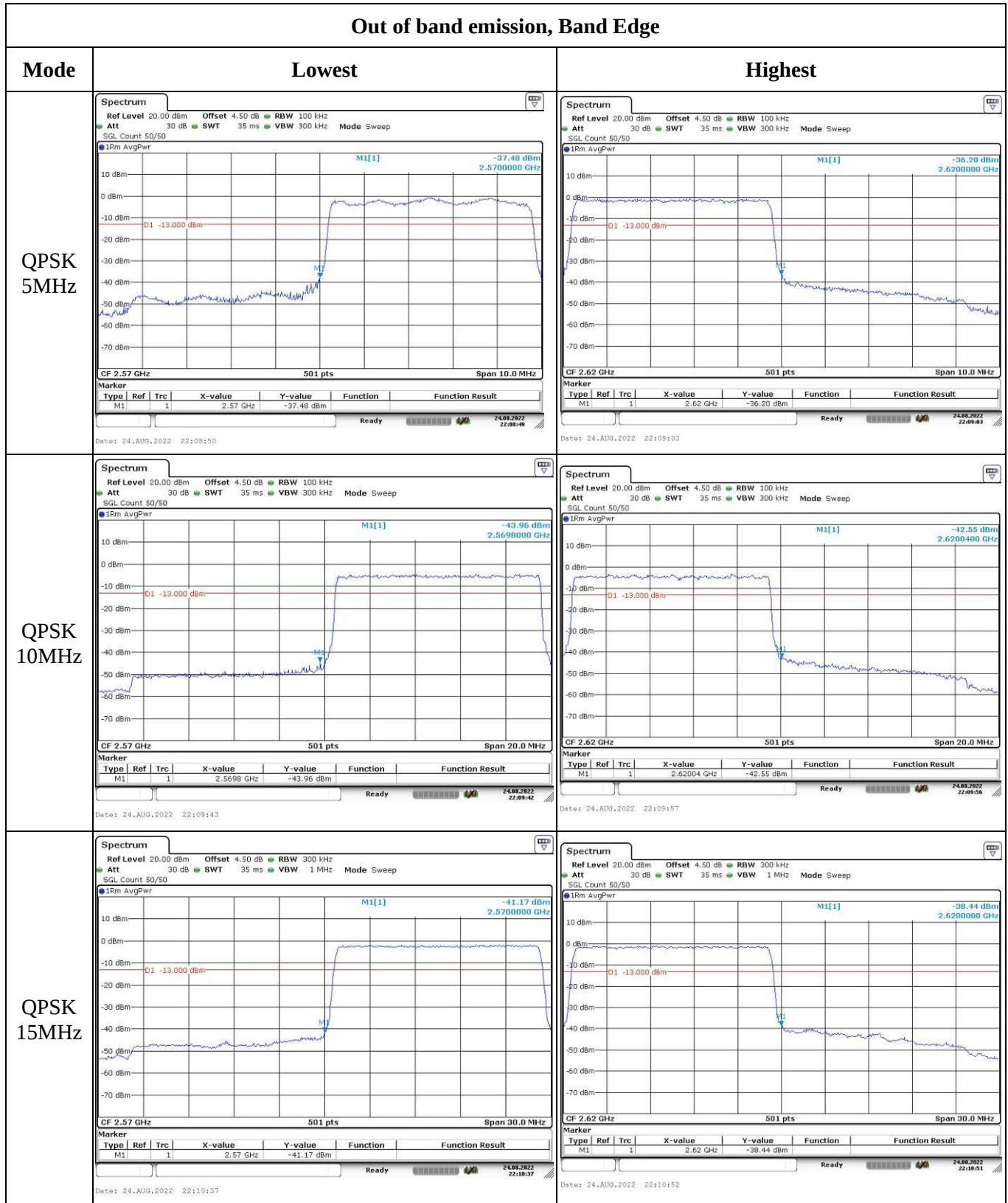
Middle



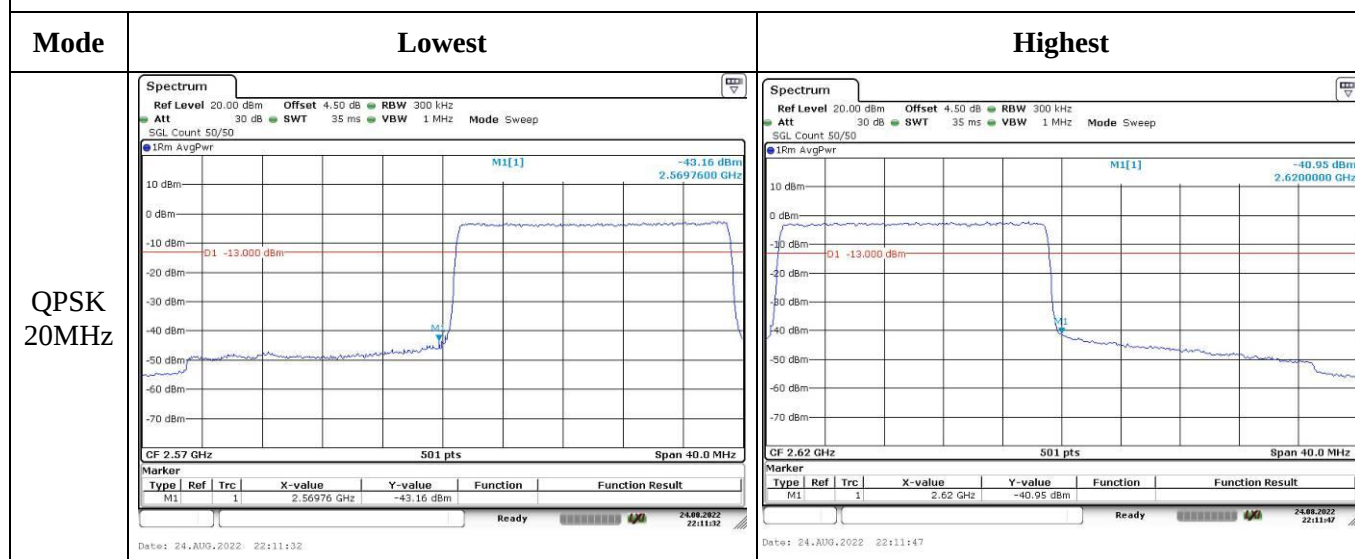
Highest



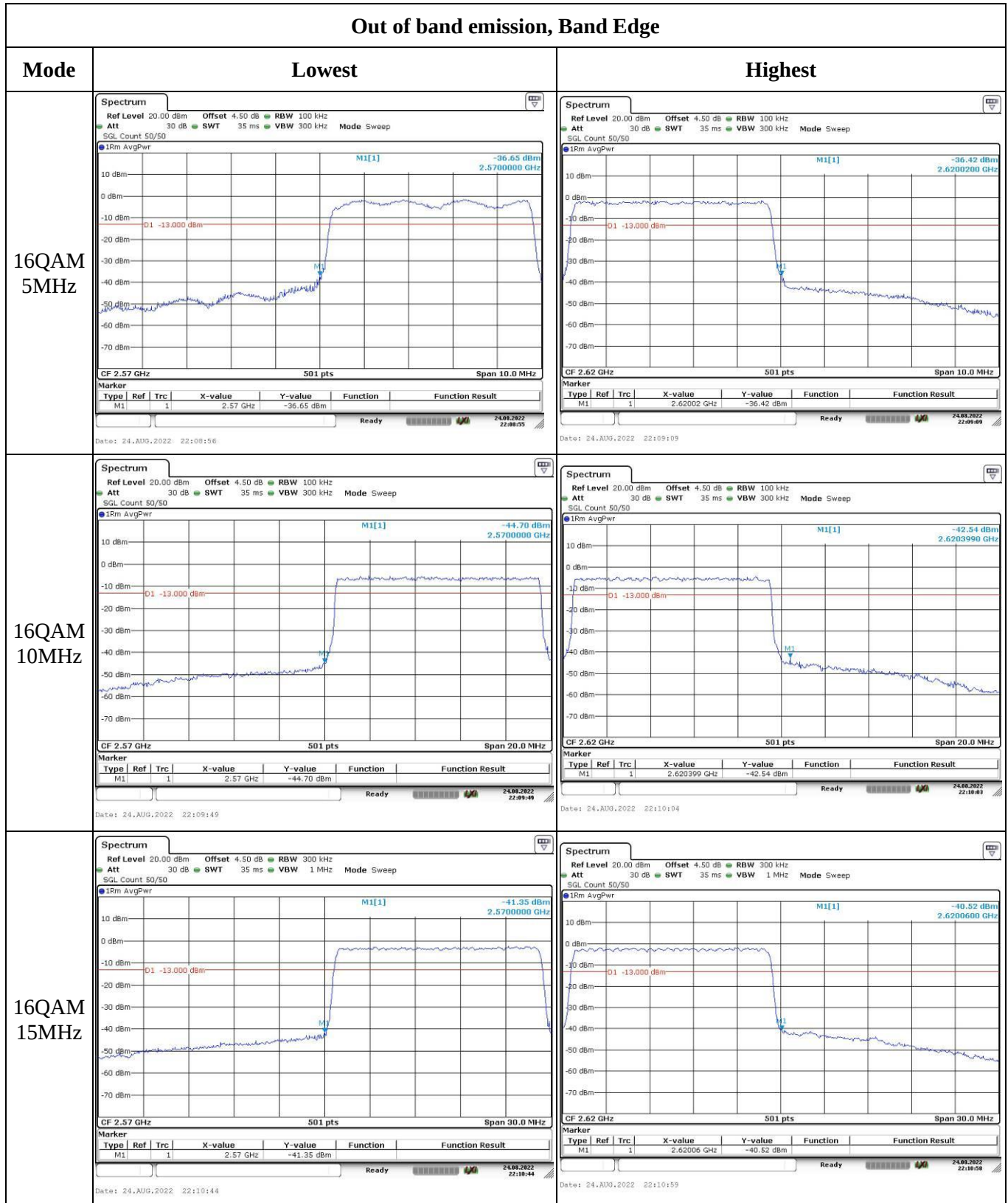
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge

