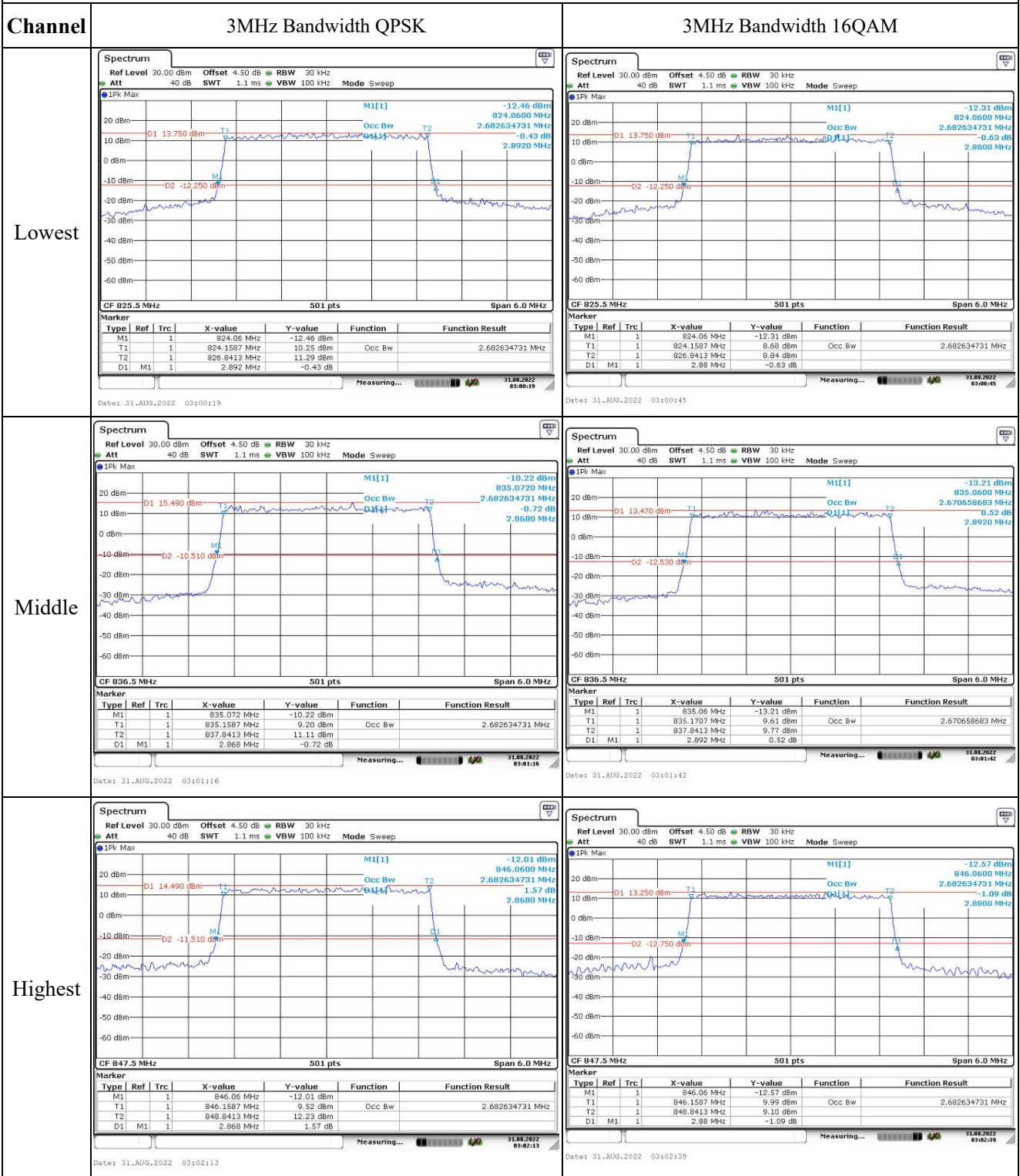


Occupied Bandwidth



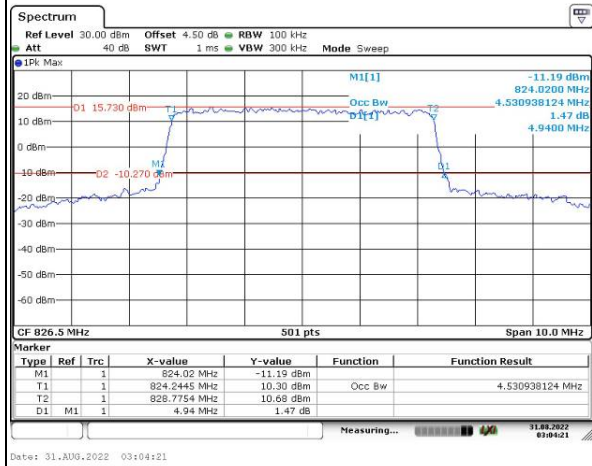
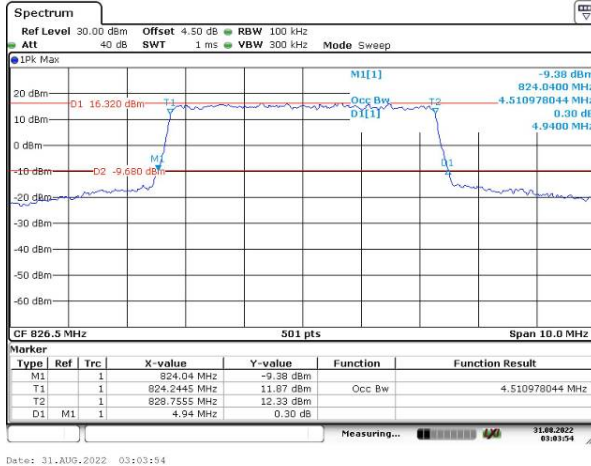
Occupied Bandwidth

Channel

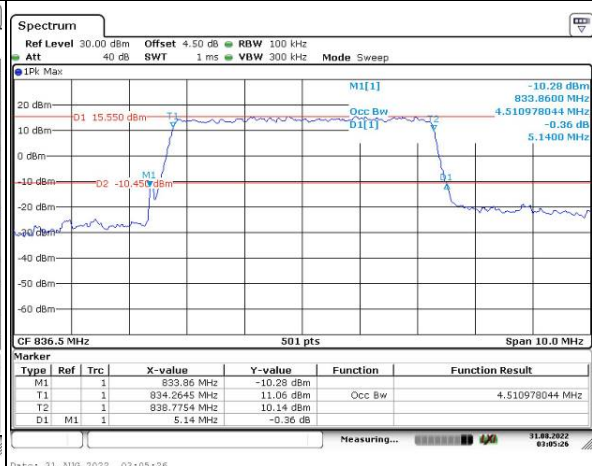
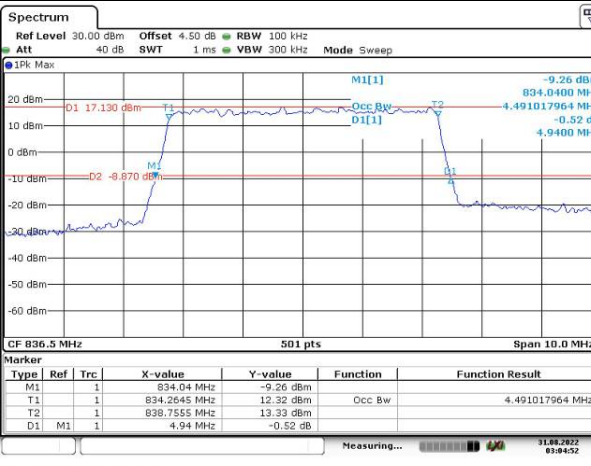
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

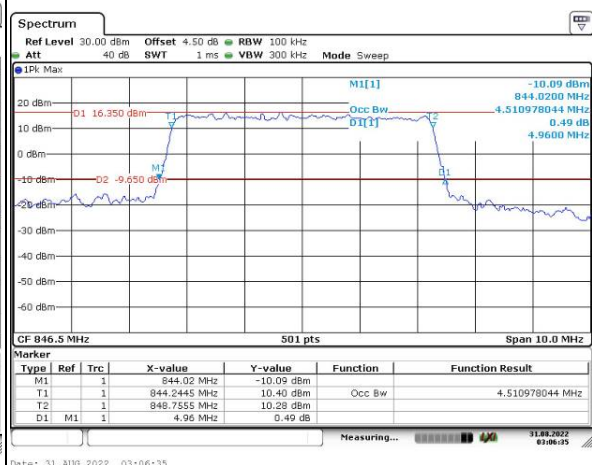
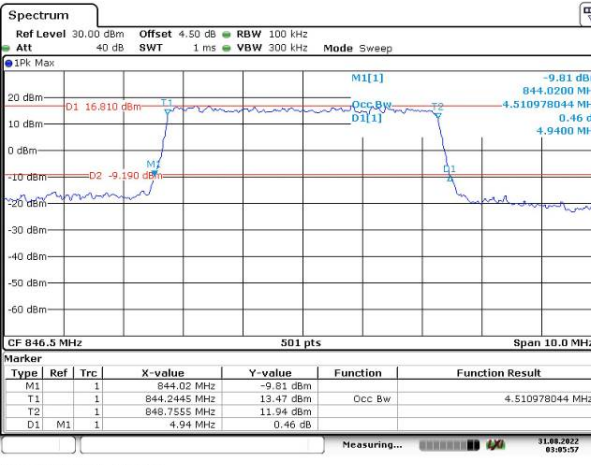
Lowest



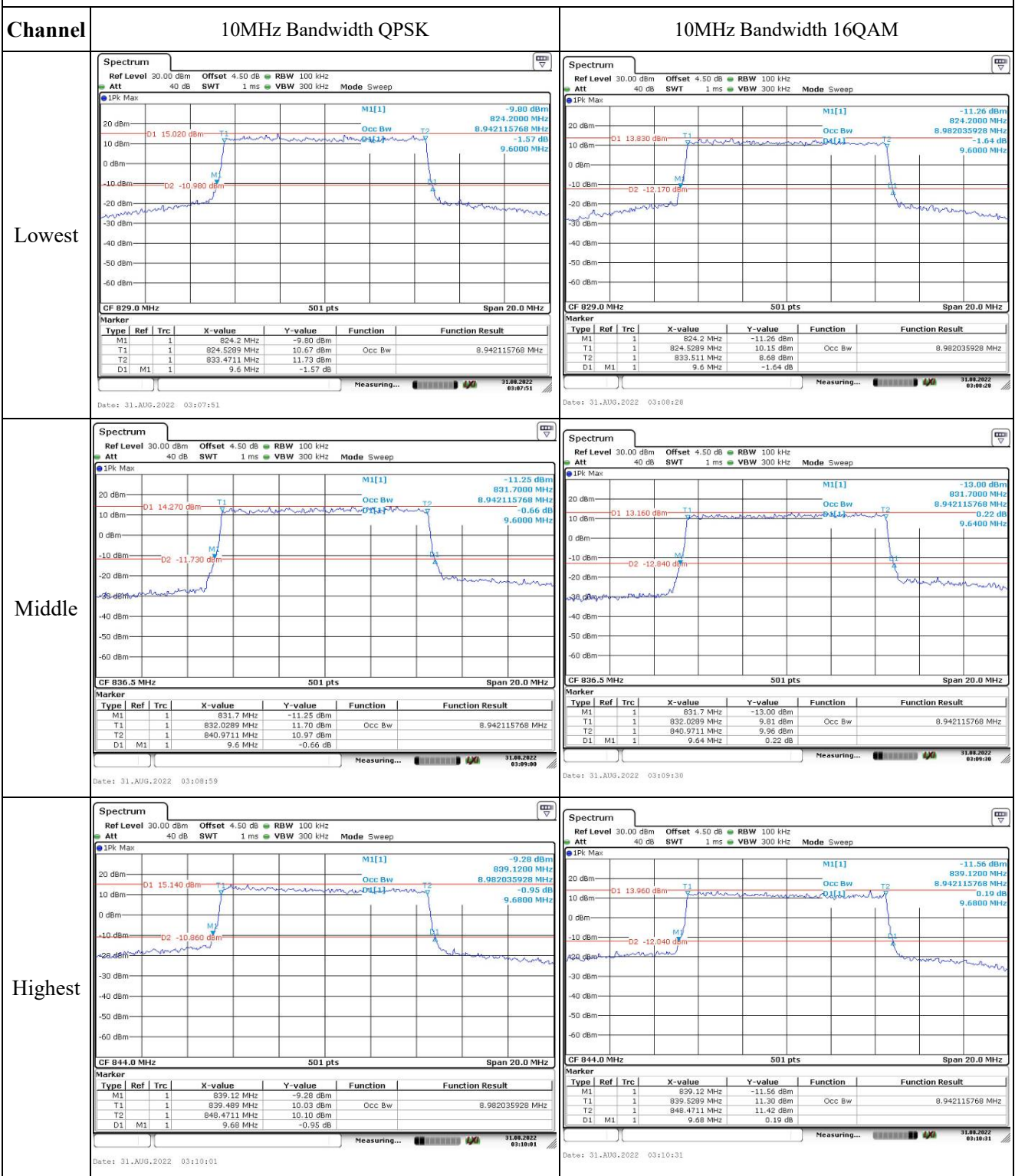
Middle



Highest



Occupied Bandwidth

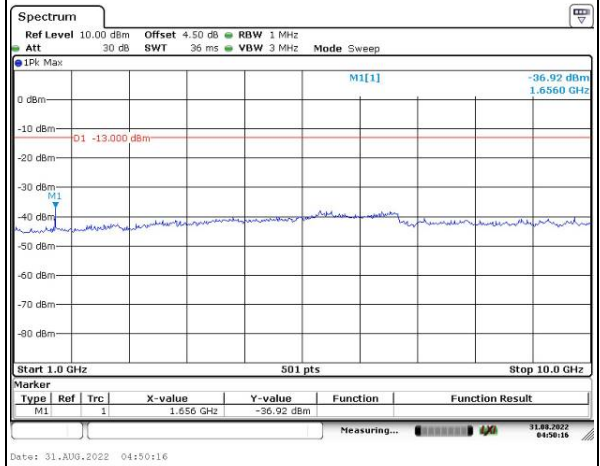
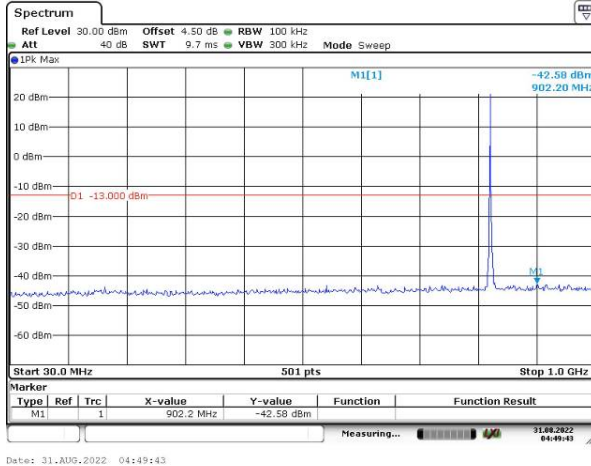


Spurious Emissions at Antenna Terminal

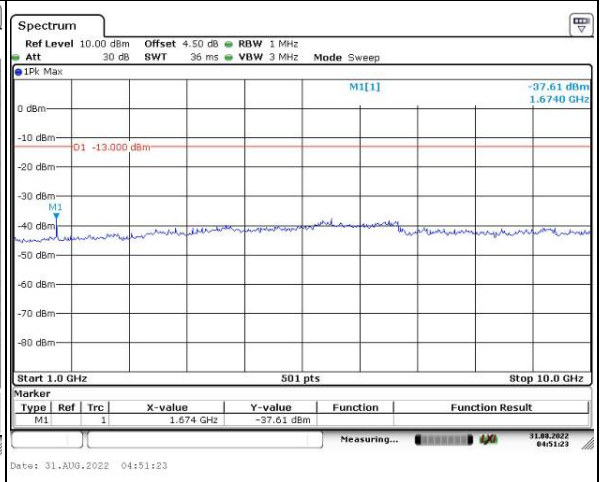
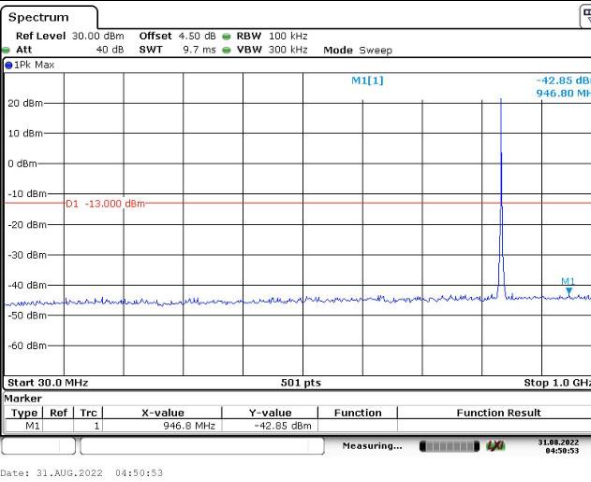
Channel

1.4MHz Bandwidth QPSK

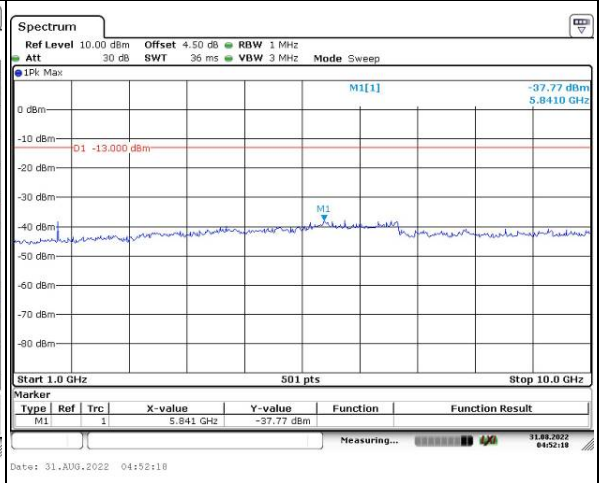
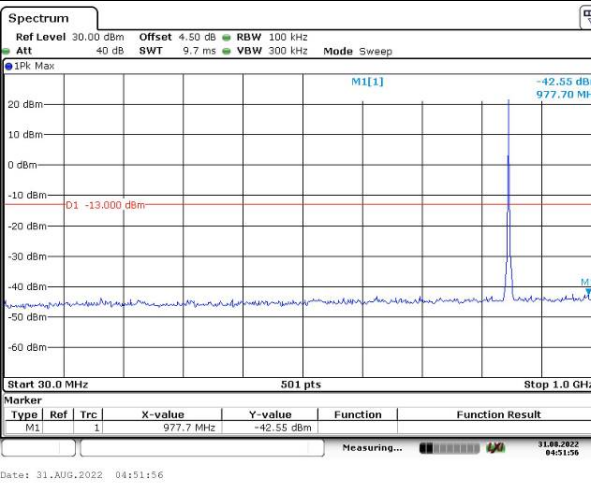
Lowest



Middle



Highest

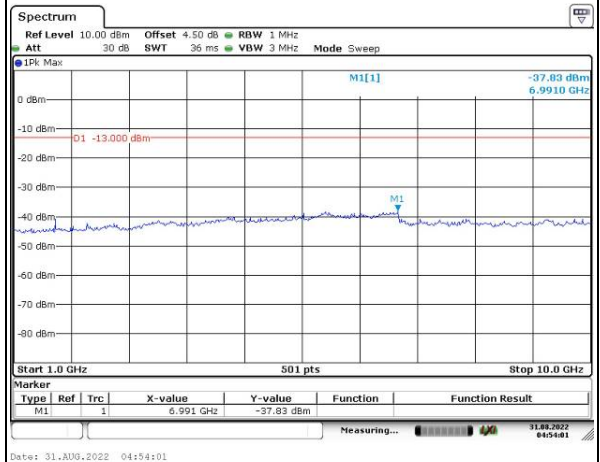
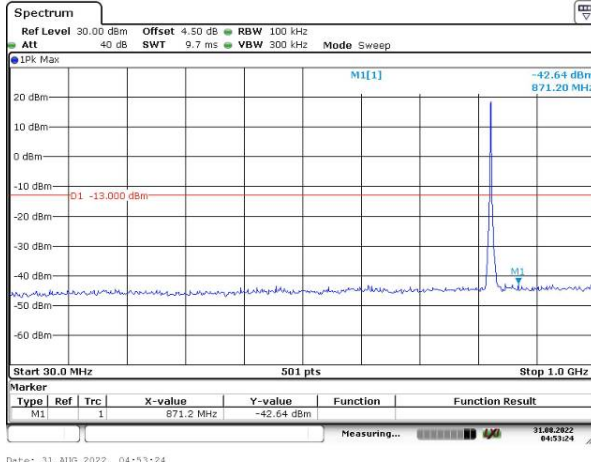


Spurious Emissions at Antenna Terminal

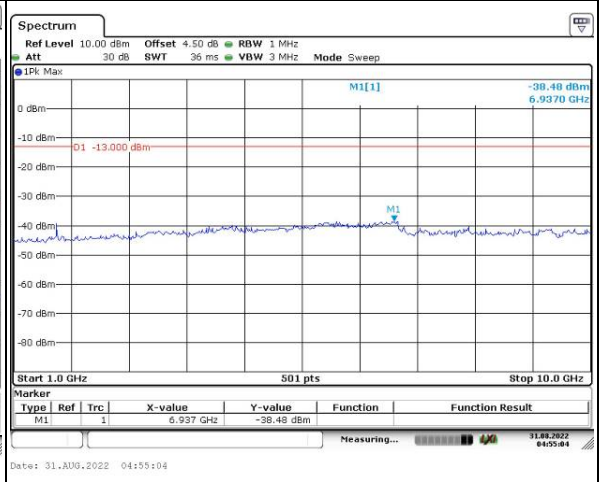
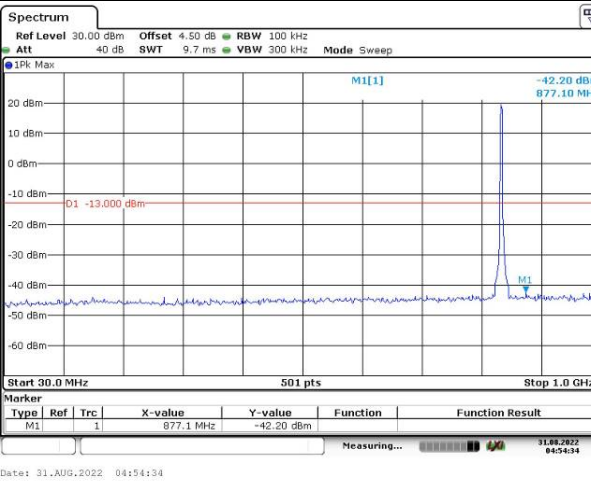
Channel

3MHz Bandwidth QPSK

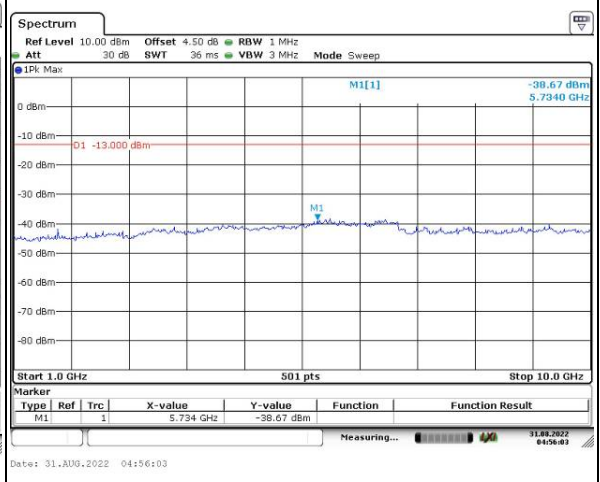
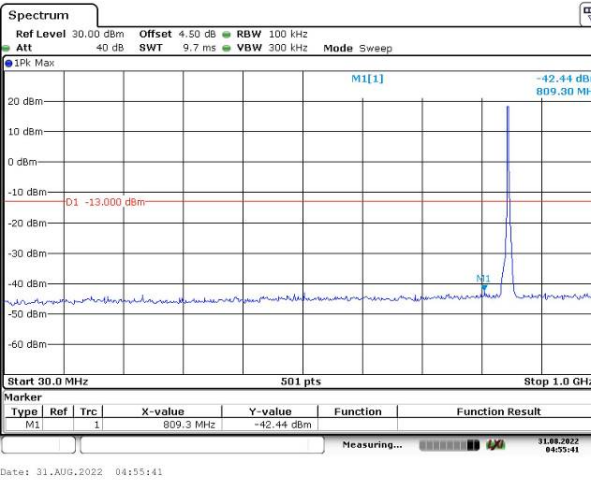
Lowest



Middle



Highest

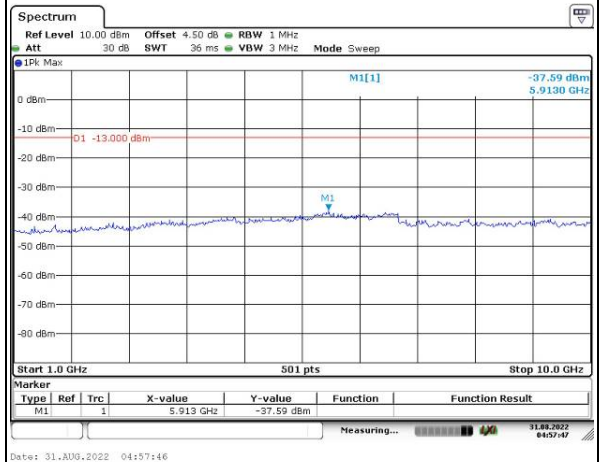
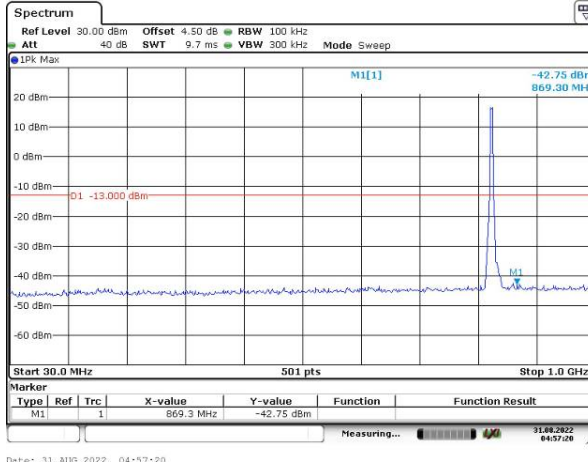


Spurious Emissions at Antenna Terminal

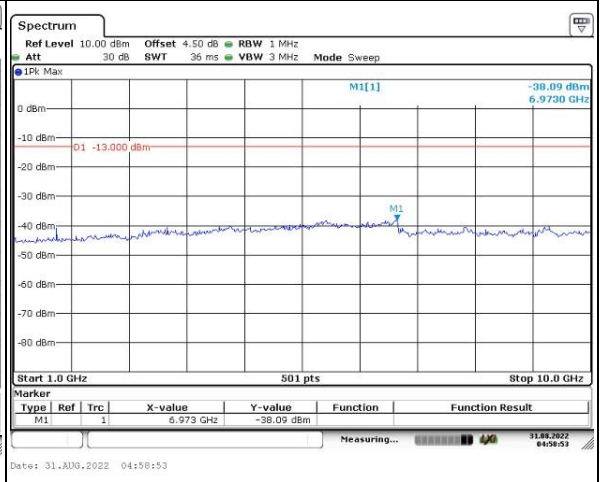
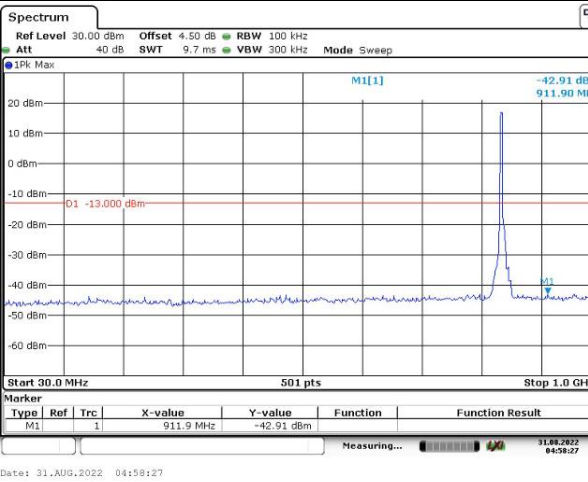
Channel

5MHz Bandwidth QPSK

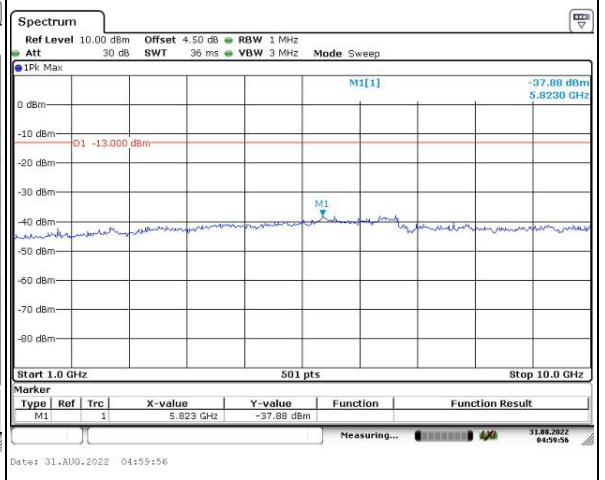
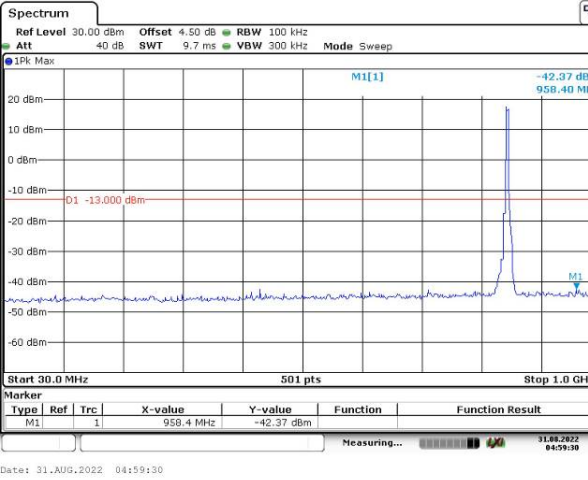
Lowest



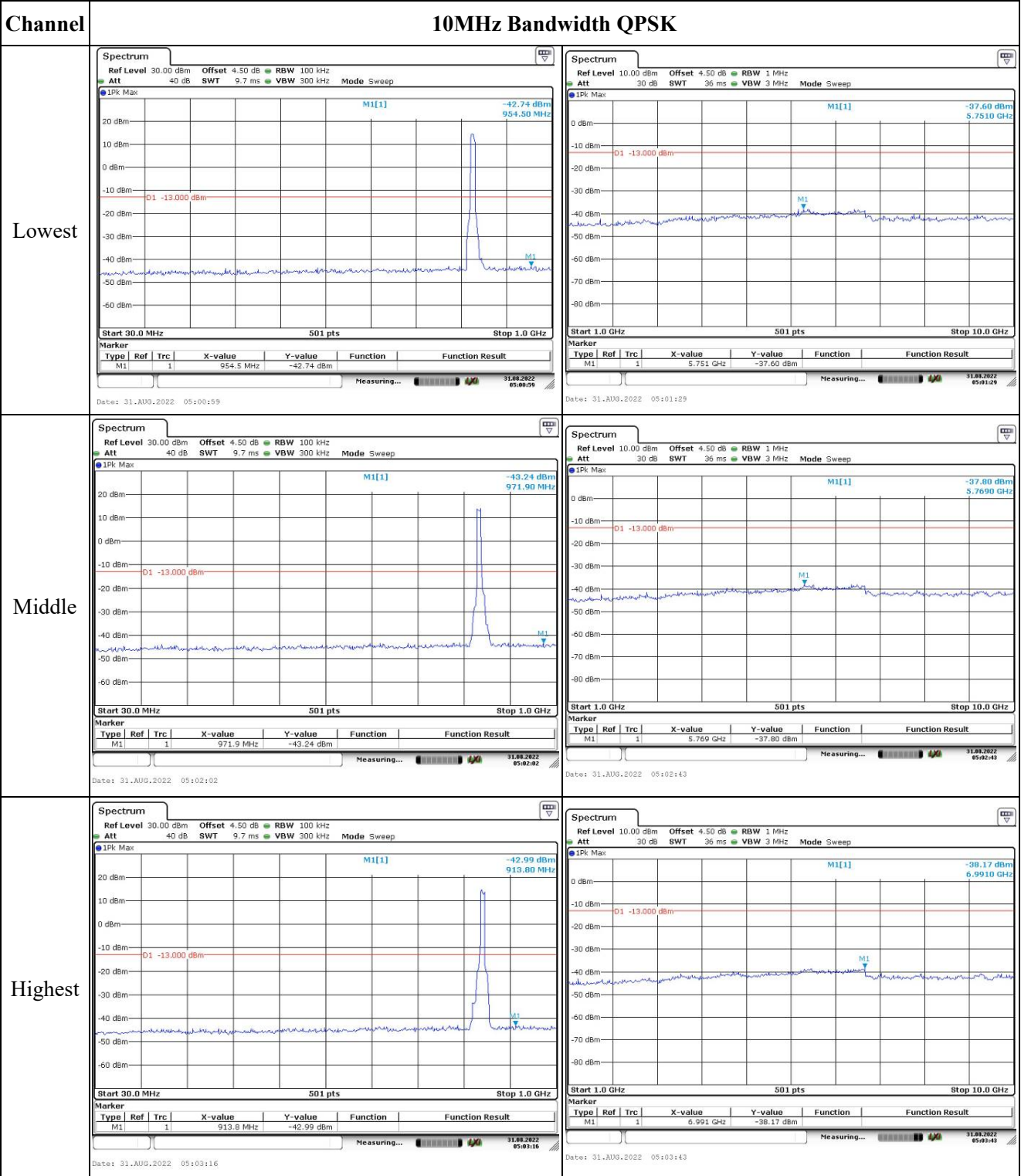
Middle



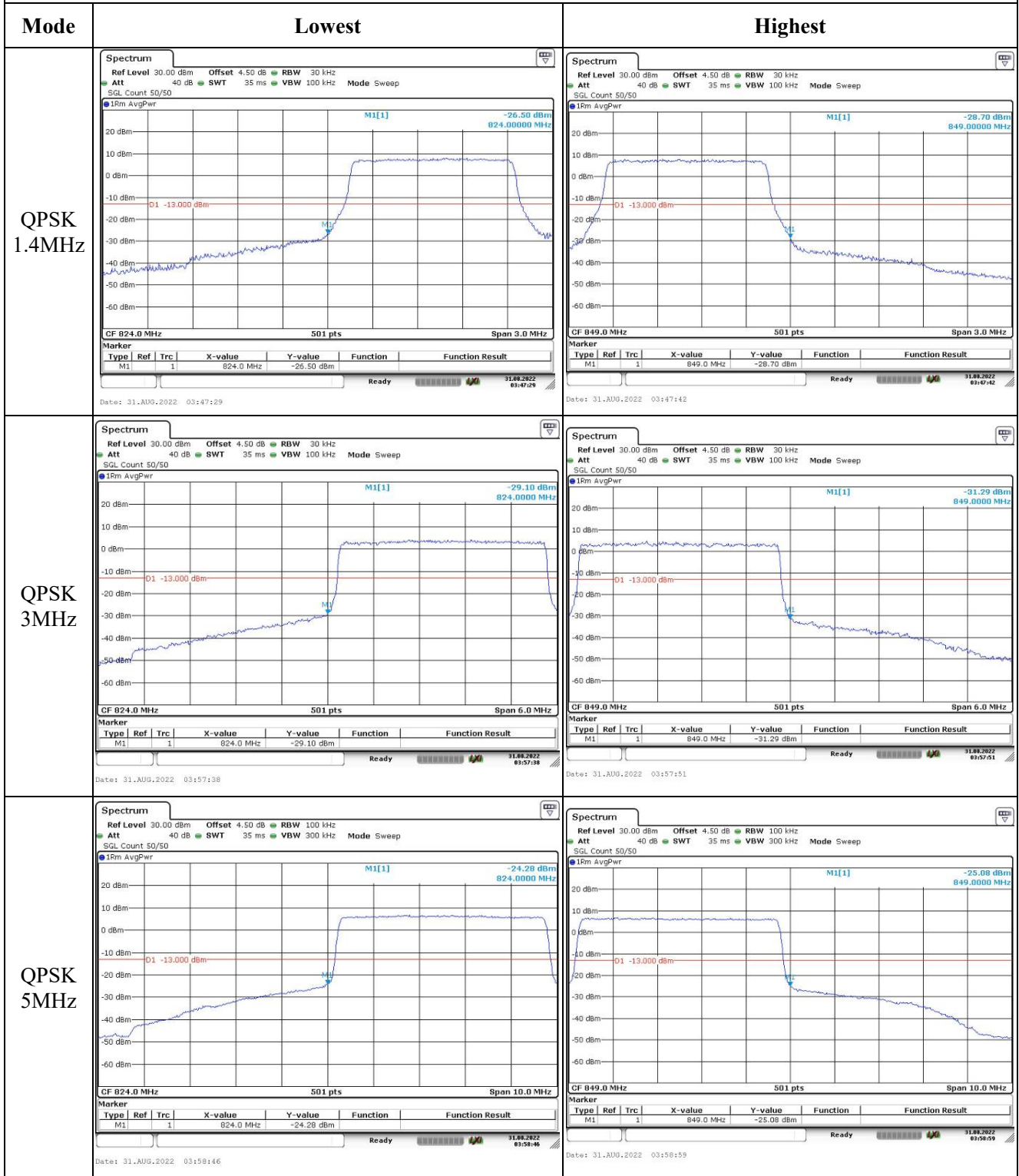
Highest



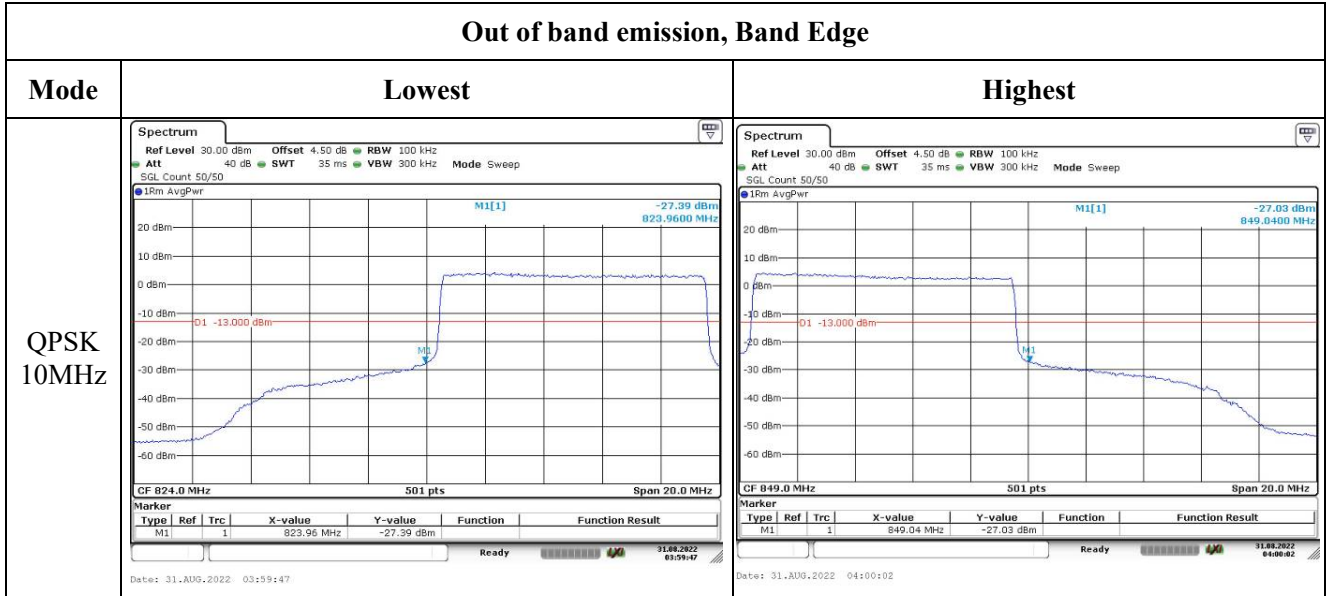
Spurious Emissions at Antenna Terminal



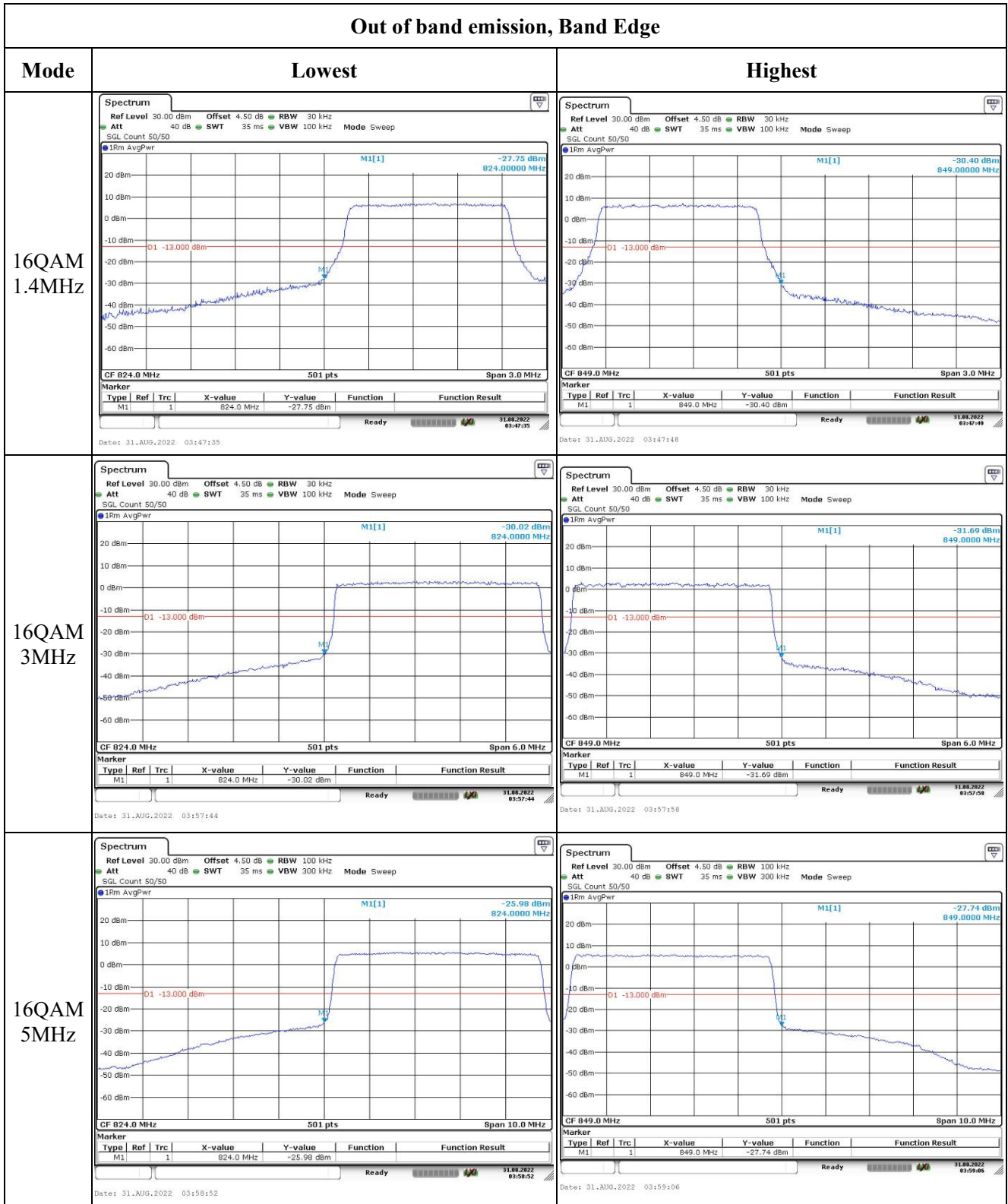
Out of band emission, Band Edge



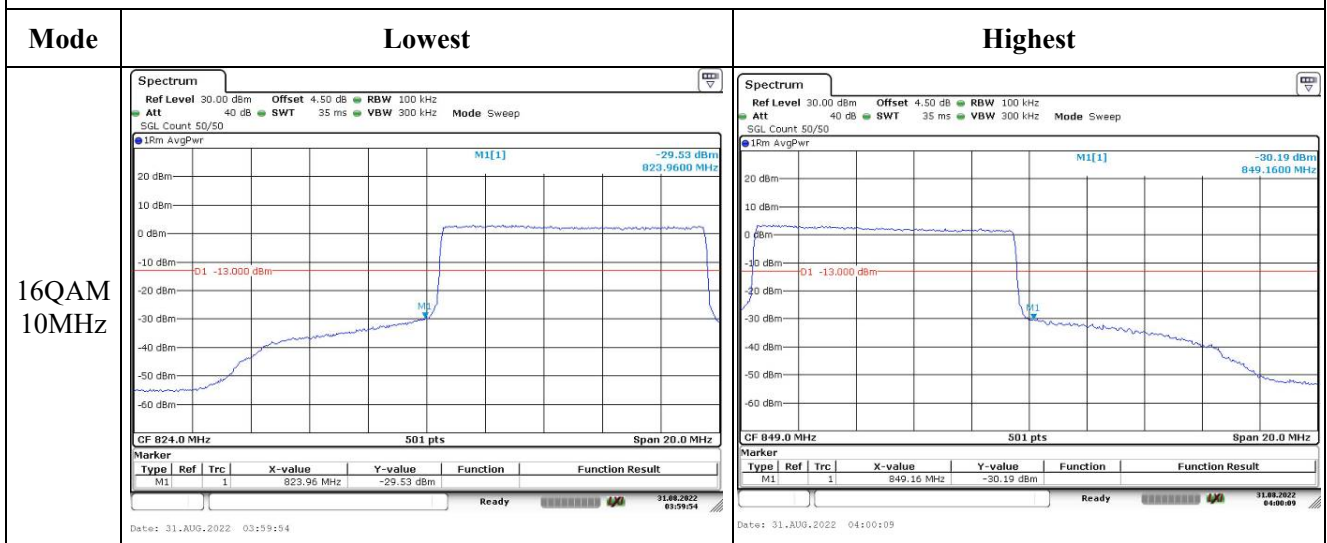
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.9 Antenna Port Test Data and Results for LTE Band 7

Serial Number:	CR22090005-RF-S1	Test Date:	2022-08-30~2022-08-31
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chan	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1~25.8	Relative Humidity: (%)	52~60	ATM Pressure: (kPa)	100.1~100.8
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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	SJ0100004	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204006	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	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 7▲:

Antenna Gain (dBi):	1.5	Cable Loss (dB):	0.5
Operation Voltage(V _{DC}):			
Lowest:	3.3	Normal:	3.85
		Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

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	22.44	22.33	22.36	23.58	33
	RB1#13	22.58	22.48	22.48		
	RB1#24	22.46	22.4	22.4		
	RB15#0	21.51	21.47	21.42		
	RB15#10	21.54	21.44	21.43		
	RB25#0	21.47	21.43	21.42		
5MHz 16QAM	RB1#0	21.49	21.24	21.59	22.74	33
	RB1#13	21.61	21.36	21.74		
	RB1#24	21.52	21.23	21.64		
	RB15#0	20.52	20.49	20.38		
	RB15#10	20.58	20.49	20.41		
	RB25#0	20.6	20.5	20.42		
10MHz QPSK	RB1#0	22.49	22.48	22.42	23.69	33
	RB1#25	22.69	22.65	22.59		
	RB1#49	22.5	22.5	22.45		
	RB25#0	21.51	21.48	21.51		
	RB25#25	21.58	21.54	21.5		
	RB50#0	21.57	21.55	21.49		
10MHz 16QAM	RB1#0	21.58	21.4	21.94	23.09	33
	RB1#25	21.83	21.58	22.09		
	RB1#49	21.56	21.45	22		
	RB25#0	20.58	20.61	20.52		
	RB25#25	20.66	20.6	20.54		
	RB50#0	20.61	20.49	20.51		
15MHz QPSK	RB1#0	22.43	22.41	22.31	23.51	33
	RB1#38	22.51	22.46	22.43		
	RB1#74	22.43	22.39	22.38		
	RB36#0	21.55	21.54	21.54		
	RB36#39	21.57	21.55	21.51		
	RB75#0	21.55	21.55	21.49		
15MHz 16QAM	RB1#0	21.53	21.7	21.91	22.93	33
	RB1#38	21.62	21.76	21.93		
	RB1#74	21.6	21.76	21.91		
	RB36#0	20.53	20.49	20.53		
	RB36#39	20.55	20.45	20.48		
	RB75#0	20.59	20.51	20.48		
20MHz QPSK	RB1#0	22.27	22.24	22.18	23.62	33
	RB1#50	22.6	22.61	22.62		

	RB1#99	22.28	22.25	22.24		
	RB50#0	21.44	21.43	21.5		
	RB50#50	21.46	21.47	21.4		
	RB100#0	21.46	21.48	21.45		
20MHz 16QAM	RB1#0	21.5	21.44	21.71	23.08	33
	RB1#50	21.88	21.76	22.08		
	RB1#99	21.61	21.43	21.76		
	RB50#0	20.43	20.49	20.56		
	RB50#50	20.46	20.43	20.37		
	RB100#0	20.51	20.45	20.48		

Note: EIRP=Conducted Power(dBm) - L_c(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	4.75	4.35	4.58	13
	RB100#0	4.84	4.75	4.99	13
20MHz 16QAM	RB1#0	5.62	5.83	5.33	13
	RB100#0	5.74	5.8	5.91	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	4.531	4.511	4.491	4.94	4.96	4.94
5MHz 16QAM	4.491	4.531	4.511	4.96	4.94	4.96
10MHz QPSK	8.942	8.942	8.942	9.8	9.6	9.68
10MHz 16QAM	8.982	8.942	8.942	9.64	9.68	9.6
15MHz QPSK	13.473	13.473	13.533	14.76	14.82	14.76
15MHz 16QAM	13.473	13.533	13.533	14.7	14.76	14.7
20MHz QPSK	17.884	17.964	17.964	19.28	19.44	19.28
20MHz 16QAM	17.964	17.964	17.964	19.36	20.88	19.28

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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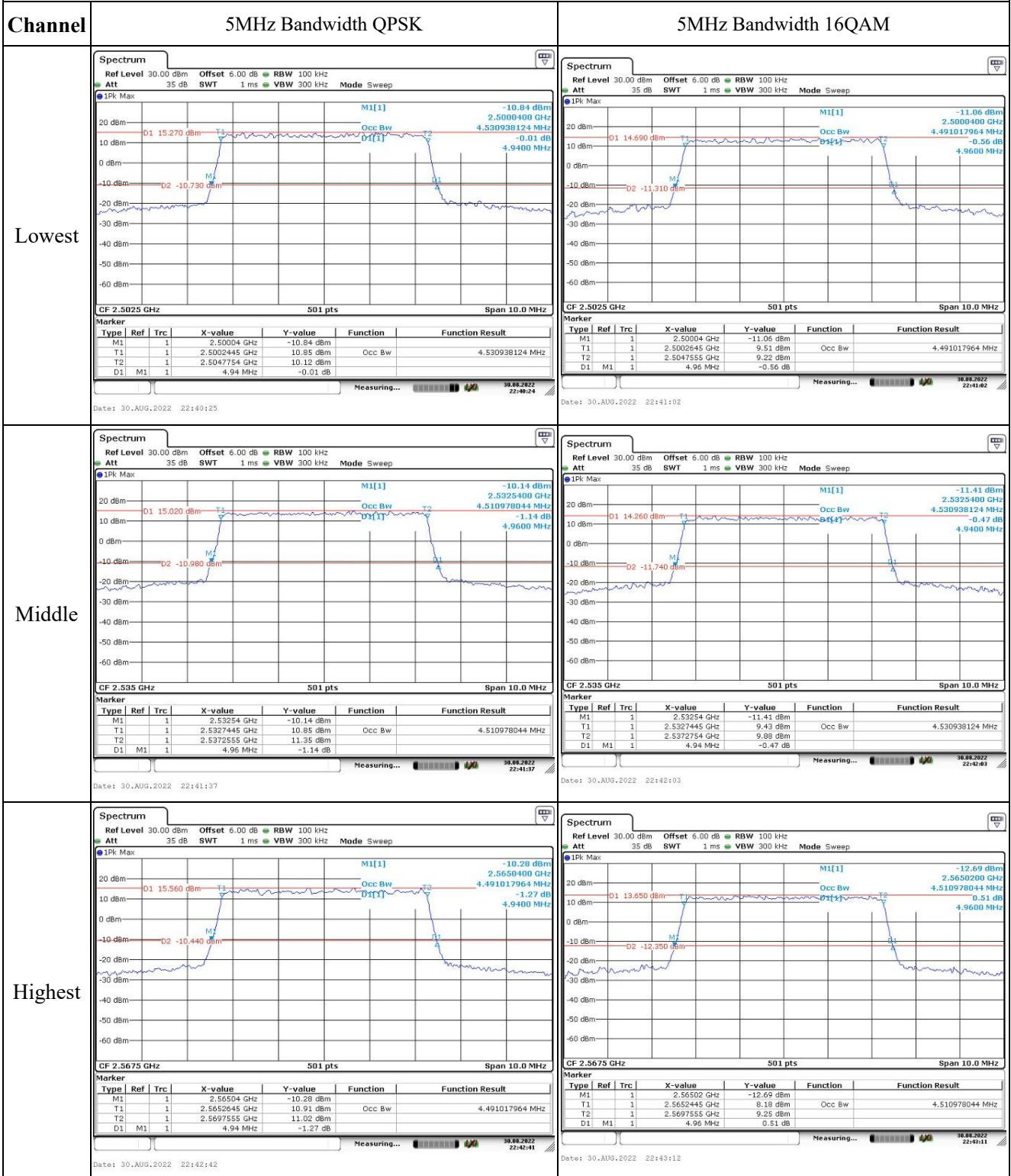
FCC §2.1055, §27.54: Frequency Stability

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	2500.810	2500.00	2569.052	2570
	-20	3.85	2500.875	2500.00	2569.030	2570
	-10	3.85	2500.892	2500.00	2569.010	2570
	0	3.85	2500.817	2500.00	2569.015	2570
	10	3.85	2500.825	2500.00	2569.005	2570
	20	3.85	2500.838	2500.00	2568.022	2570
	30	3.85	2500.800	2500.00	2569.003	2570
	40	3.85	2500.899	2500.00	2569.025	2570
Frequency Stability vs. Voltage	20	3.3	2500.849	2500.00	2569.052	2570
	20	4.4	2500.815	2500.00	2569.017	2570
					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	2500.817	2500.00	2569.021	2570
	-20	3.85	2500.826	2500.00	2569.002	2570
	-10	3.85	2500.867	2500.00	2569.058	2570
	0	3.85	2500.802	2500.00	2569.014	2570
	10	3.85	2500.836	2500.00	2569.016	2570
	20	3.85	2500.858	2500.00	2568.022	2570
	30	3.85	2500.855	2500.00	2569.012	2570
	40	3.85	2500.864	2500.00	2569.016	2570
Frequency Stability vs. Voltage	20	3.3	2500.869	2500.00	2569.045	2570
	20	4.4	2500.864	2500.00	2569.022	2570
					Result:	Pass

Test Plots:

Occupied Bandwidth



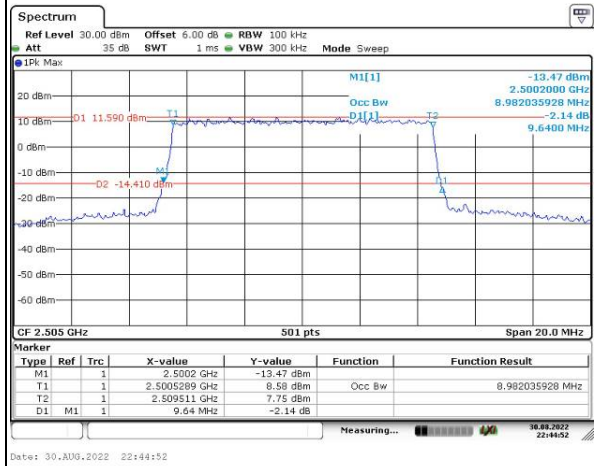
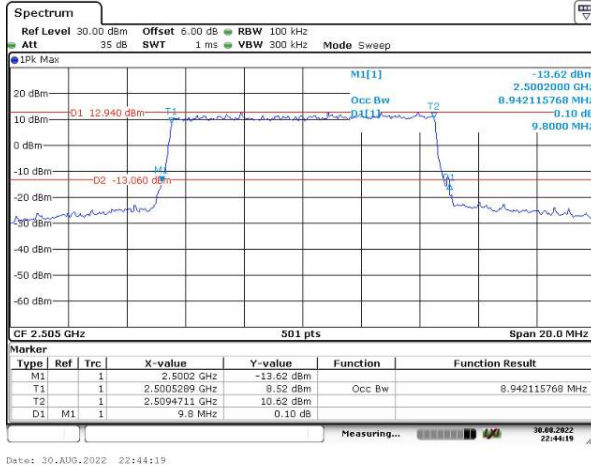
Occupied Bandwidth

Channel

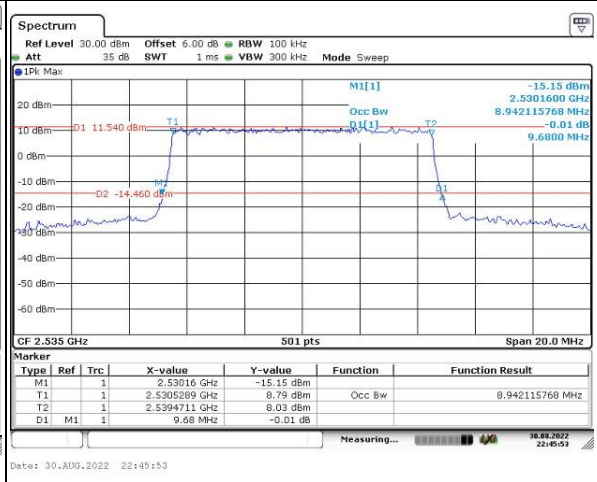
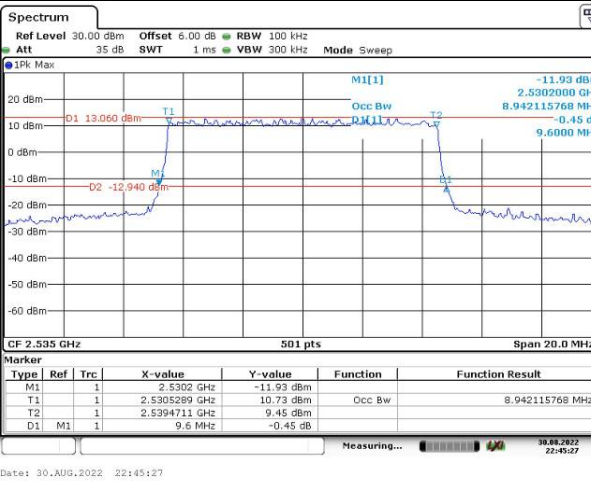
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

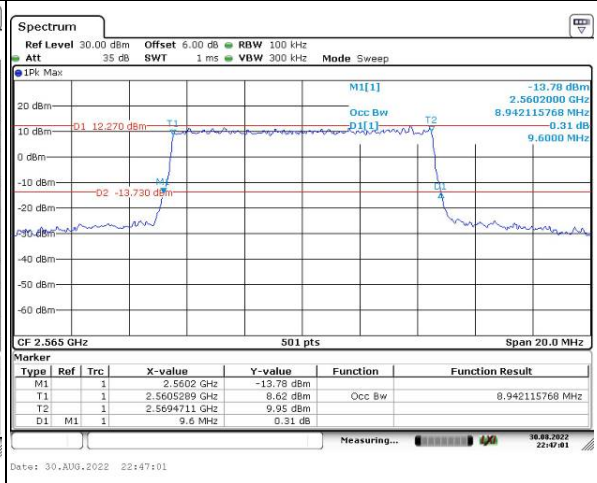
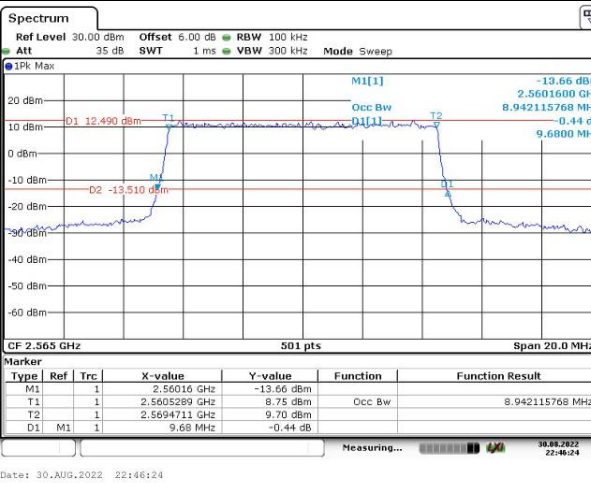
Lowest



Middle



Highest



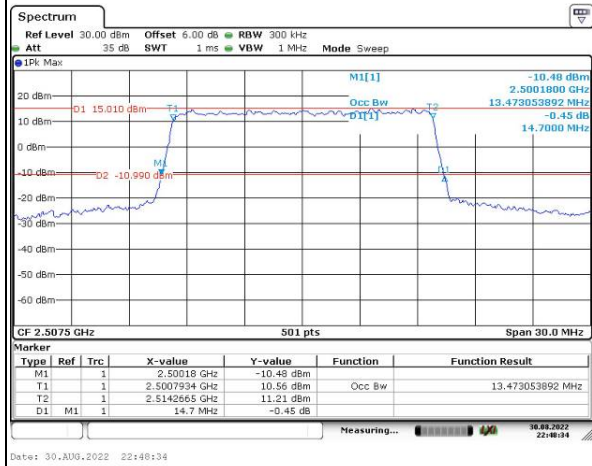
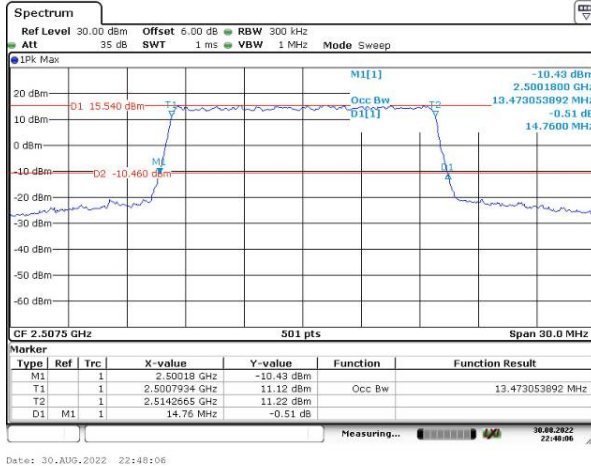
Occupied Bandwidth

Channel

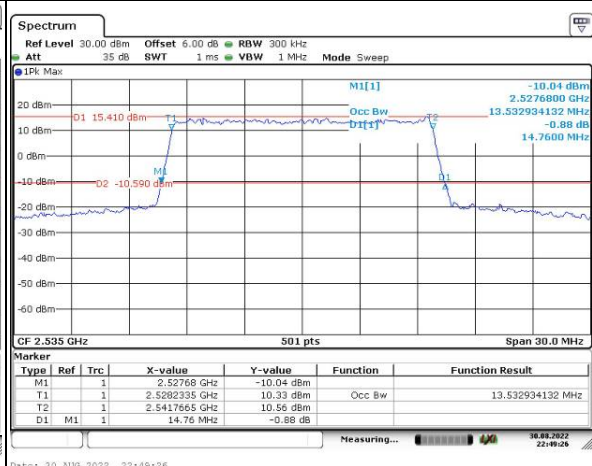
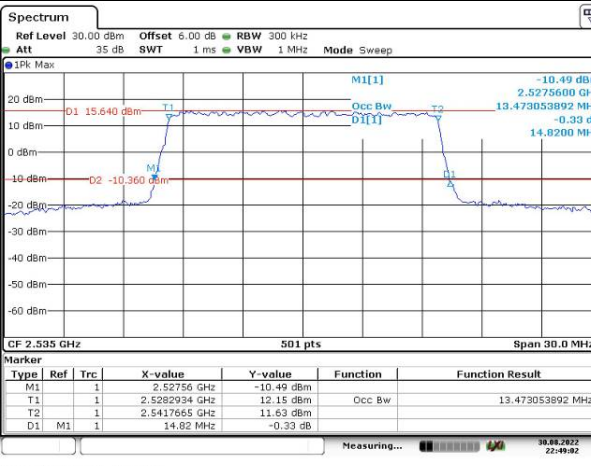
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

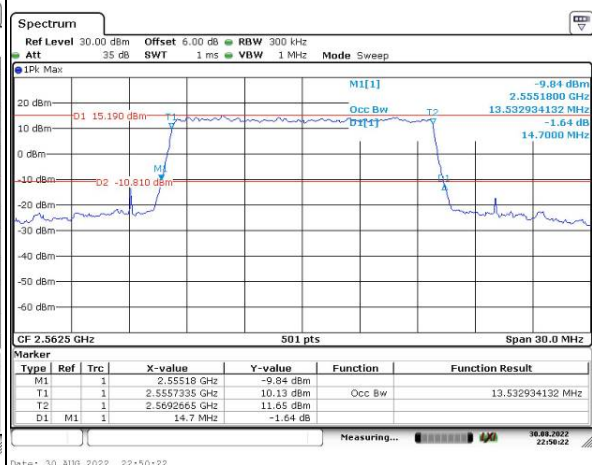
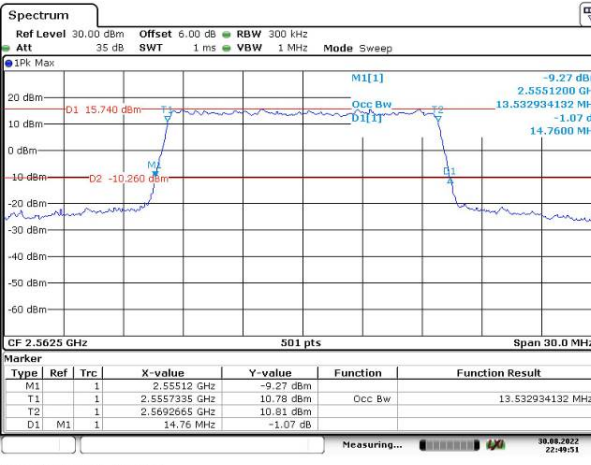
Lowest



Middle



Highest



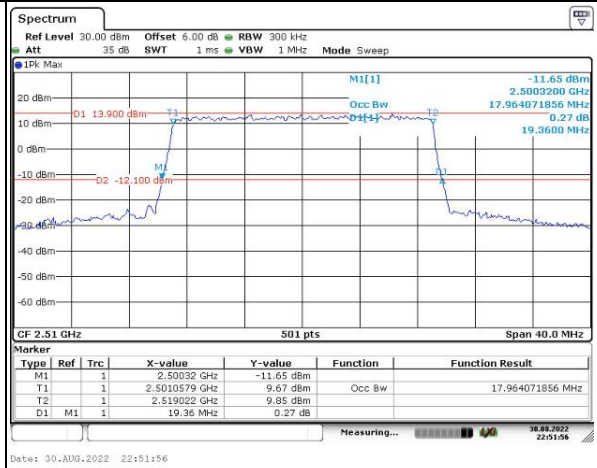
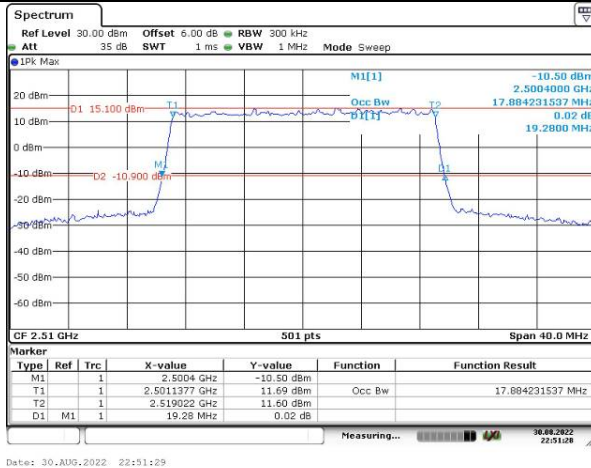
Occupied Bandwidth

Channel

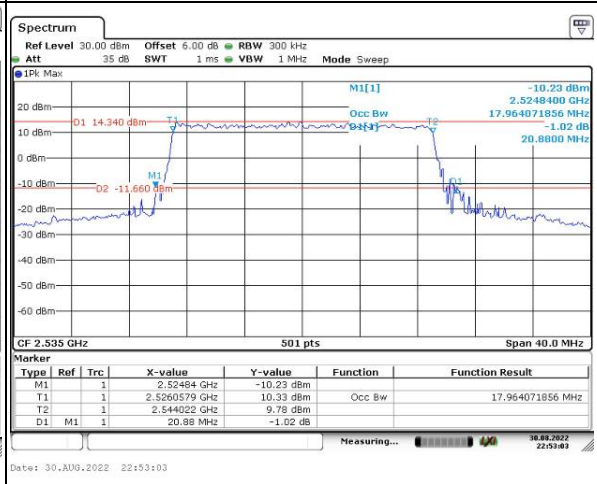
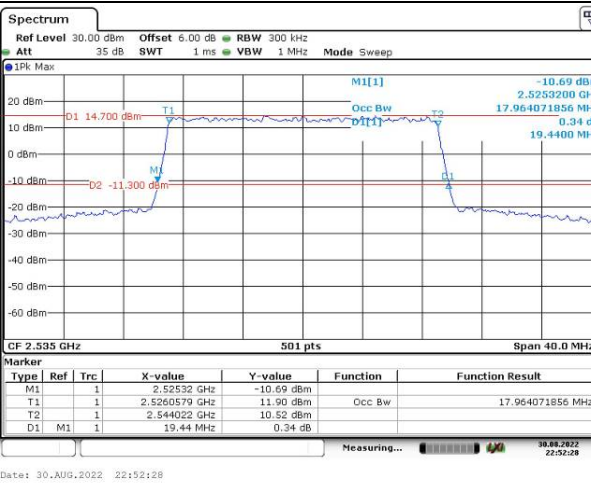
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

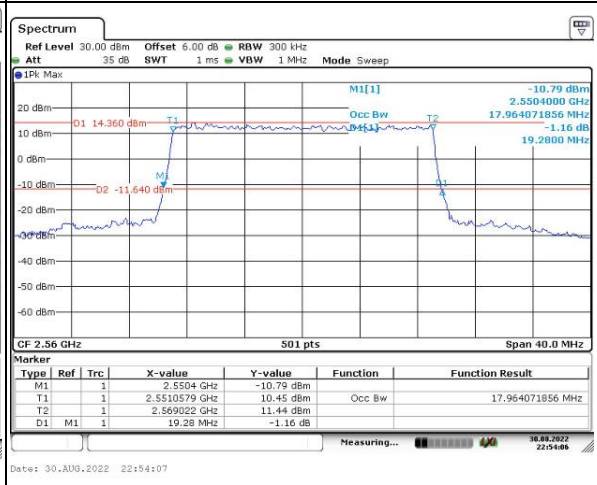
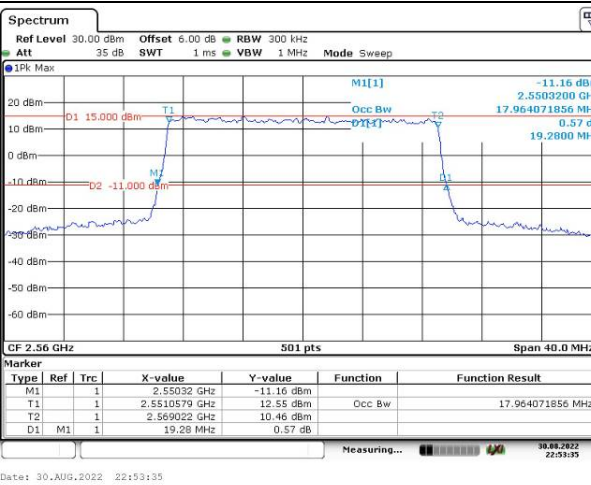
Lowest



Middle



Highest

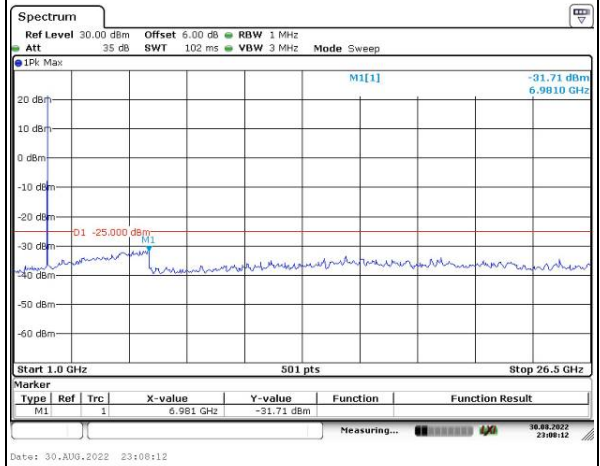
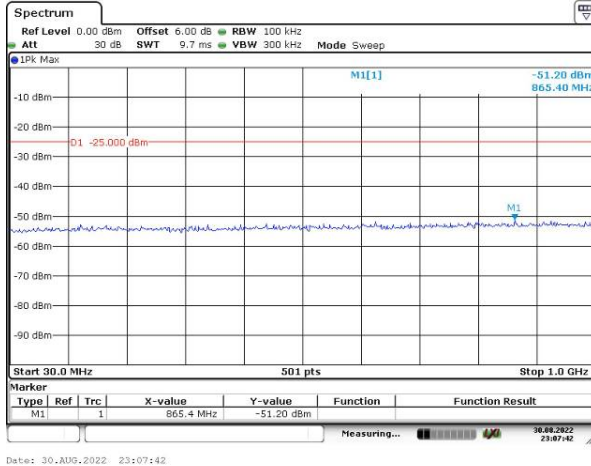


Spurious Emissions at Antenna Terminal

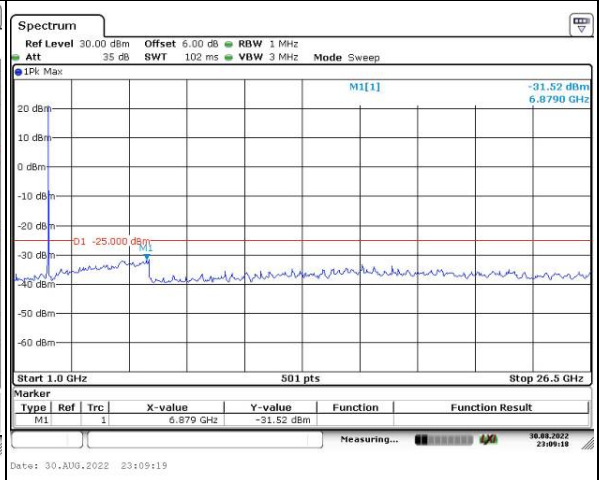
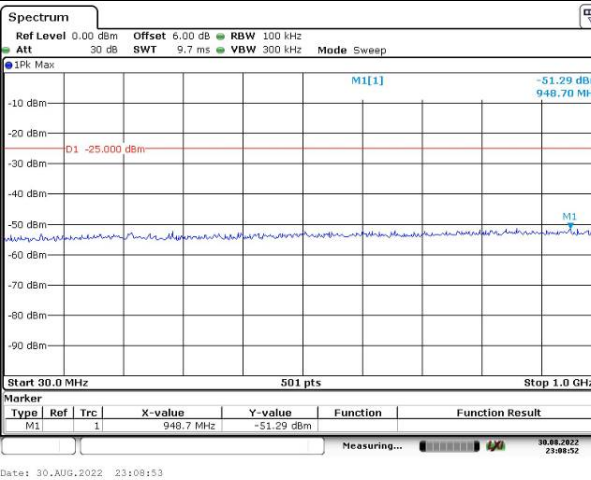
Channel

5MHz Bandwidth QPSK

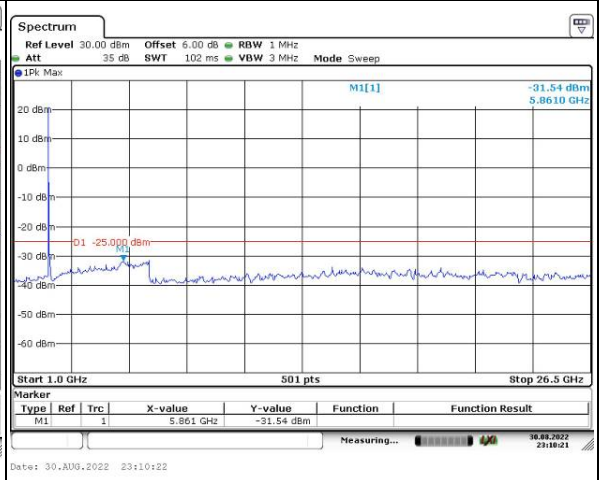
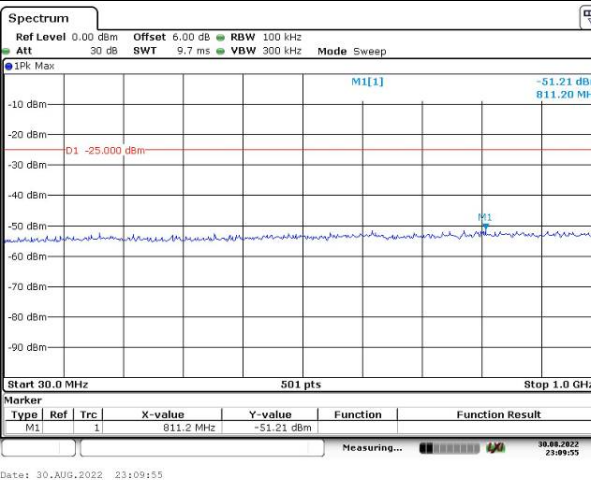
Lowest



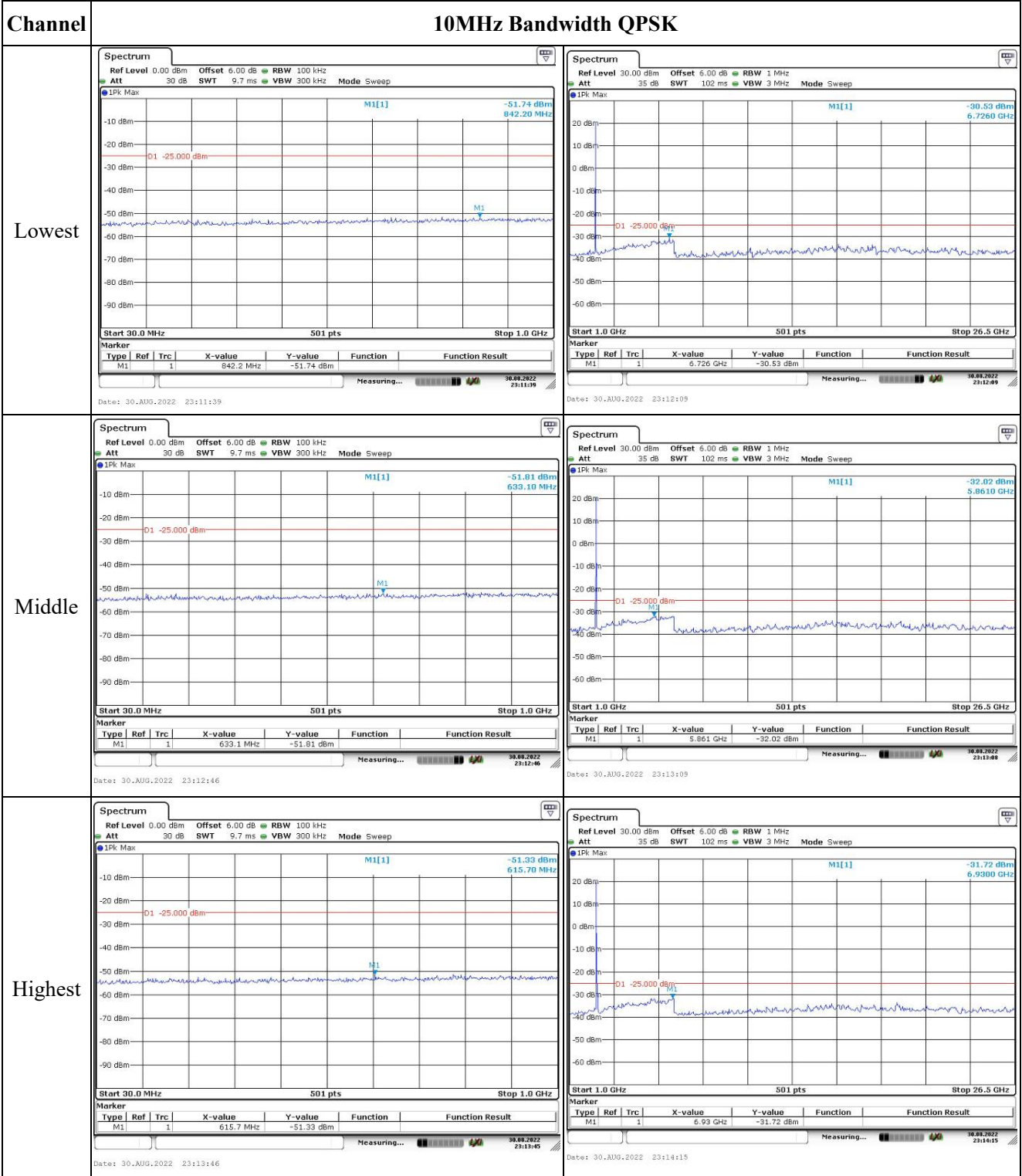
Middle



Highest



Spurious Emissions at Antenna Terminal

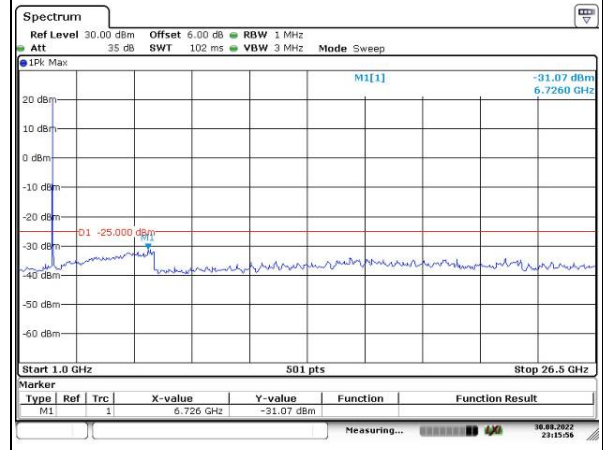
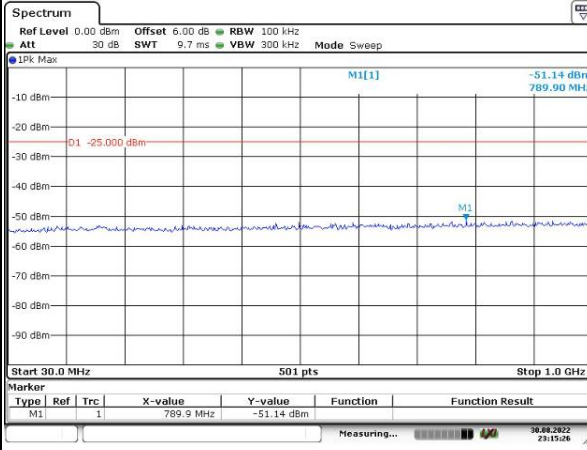


Spurious Emissions at Antenna Terminal

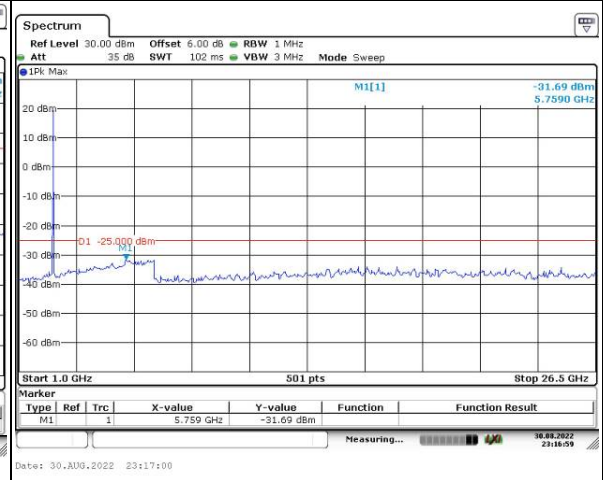
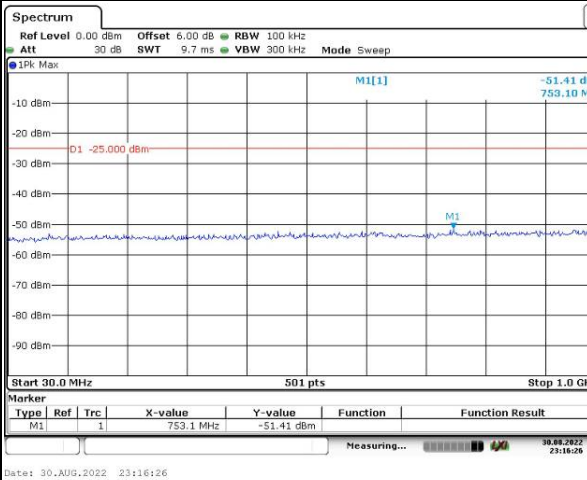
Channel

15MHz Bandwidth QPSK

Lowest



Middle



Highest

