

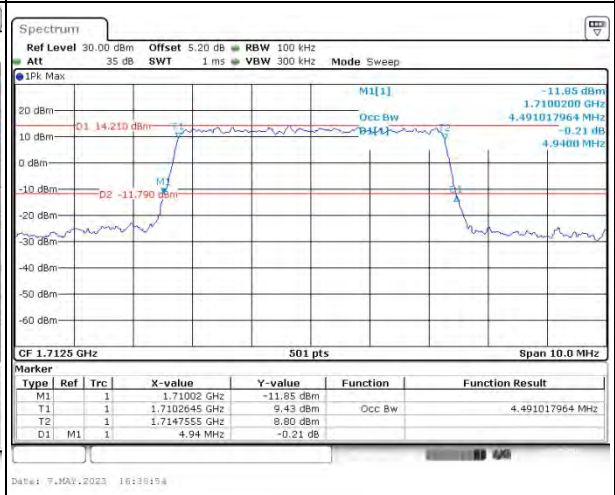
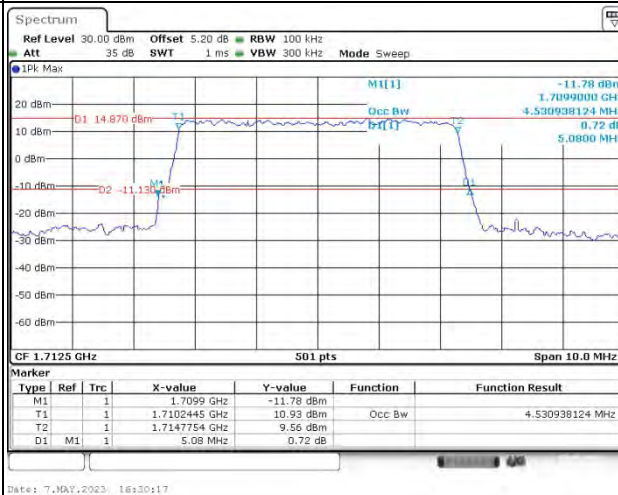
Occupied Bandwidth

Channel

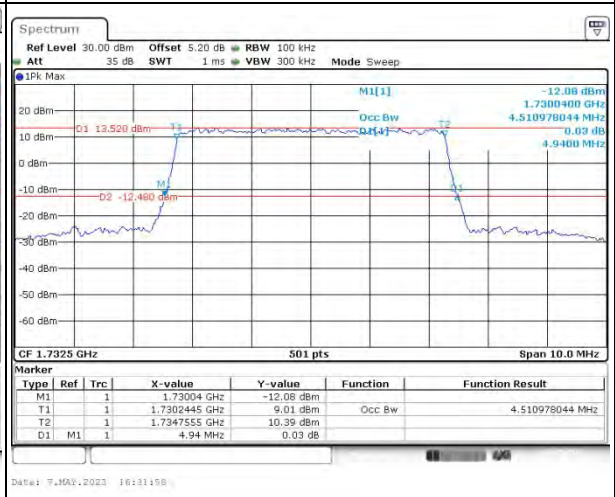
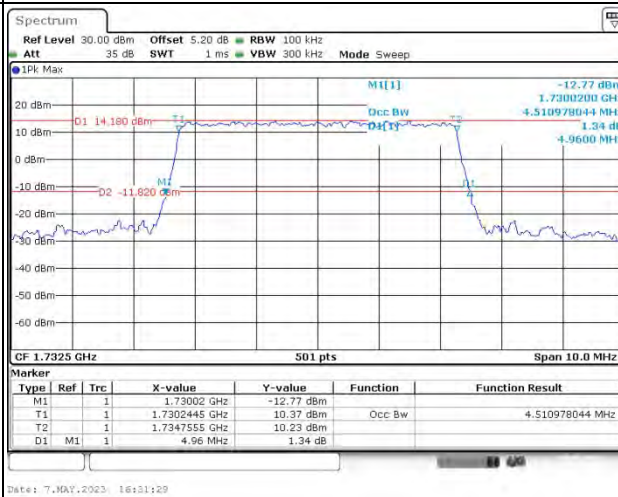
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

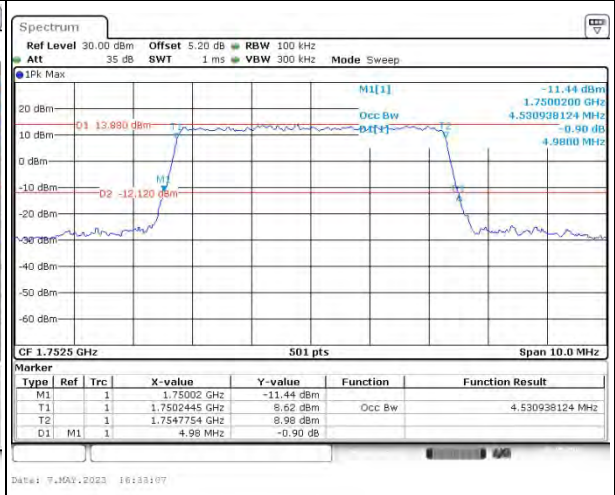
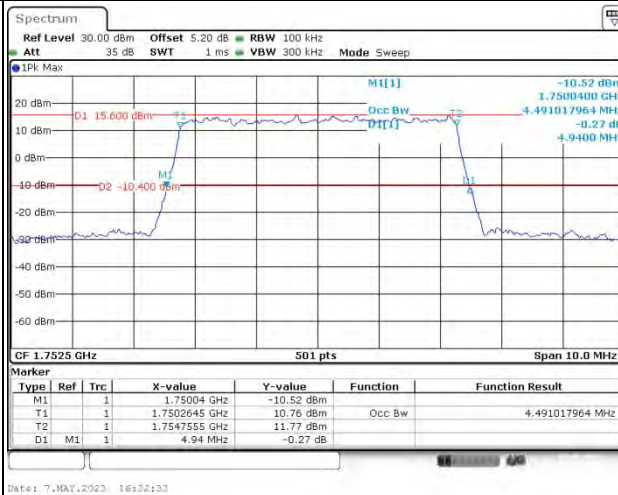
Lowest



Middle



Highest



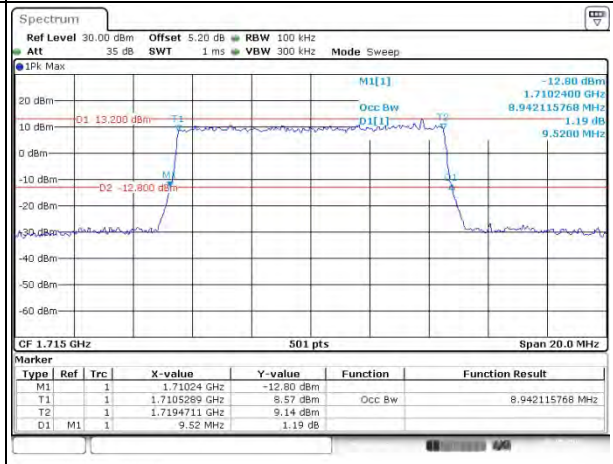
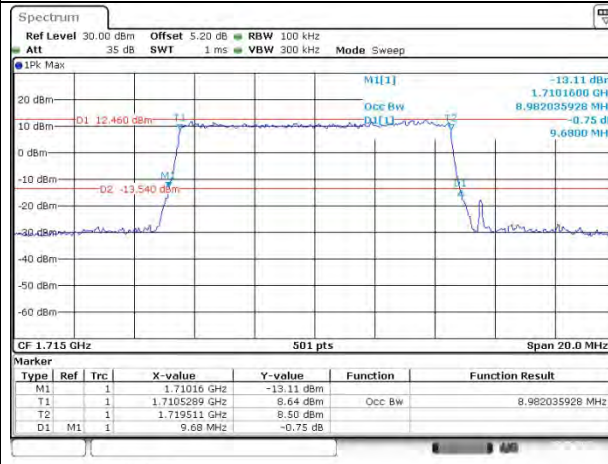
Occupied Bandwidth

Channel

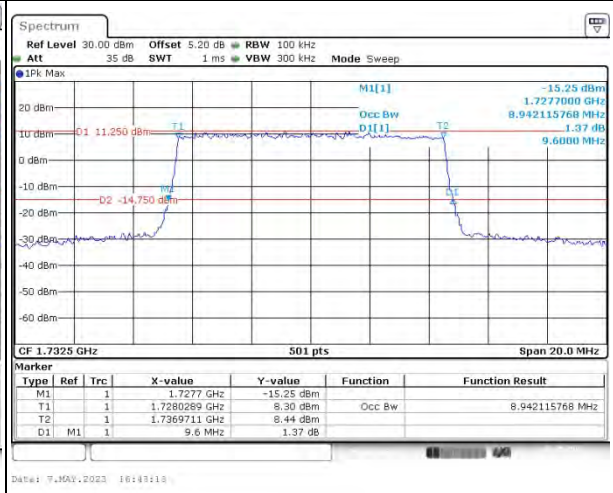
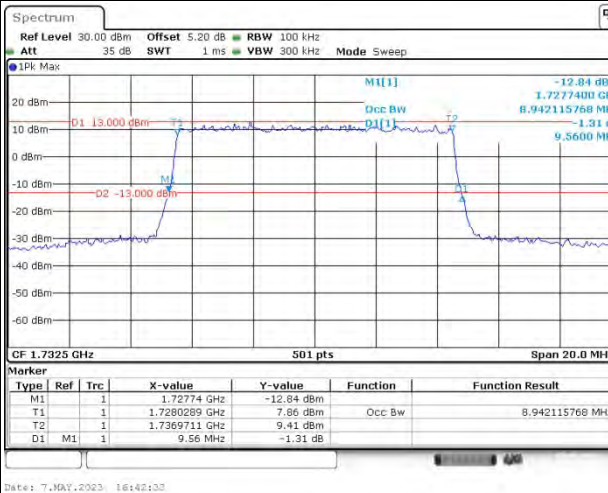
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

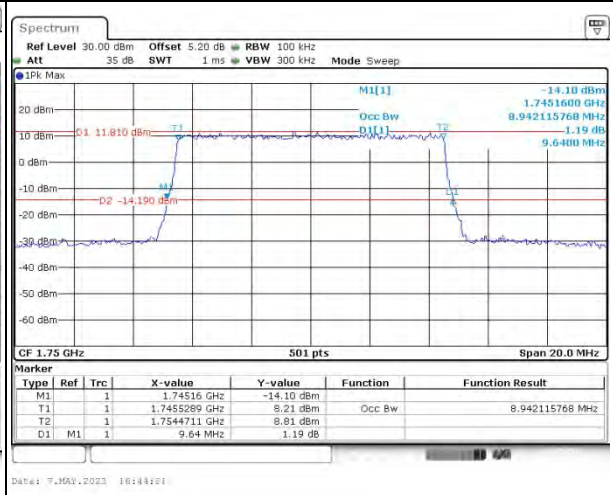
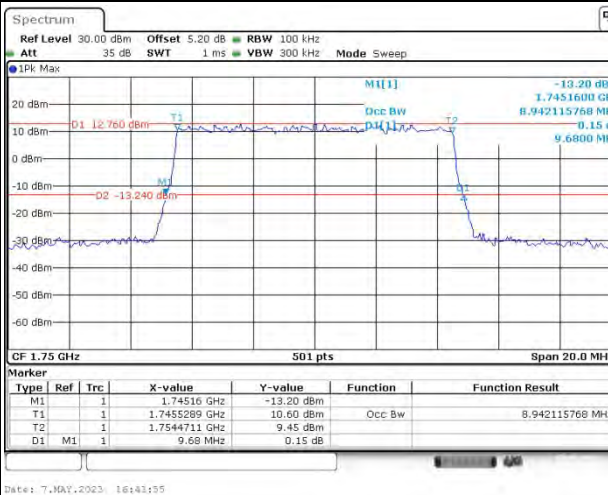
Lowest



Middle



Highest



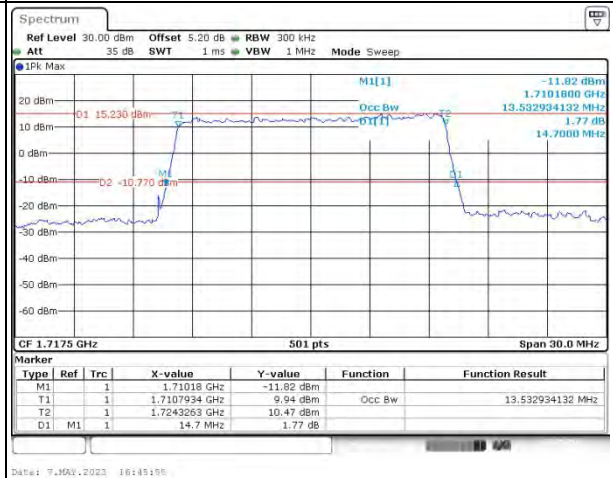
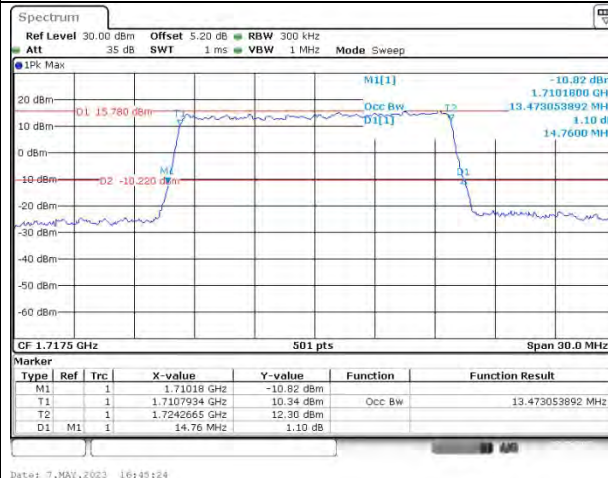
Occupied Bandwidth

Channel

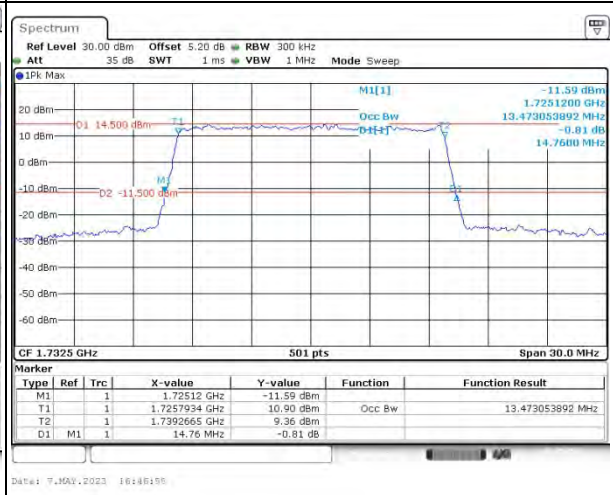
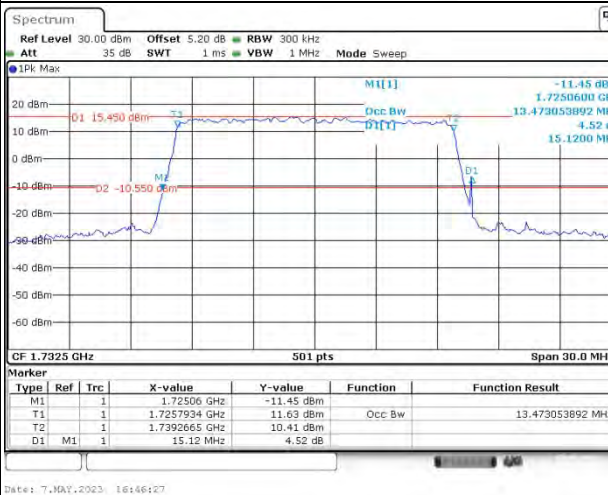
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

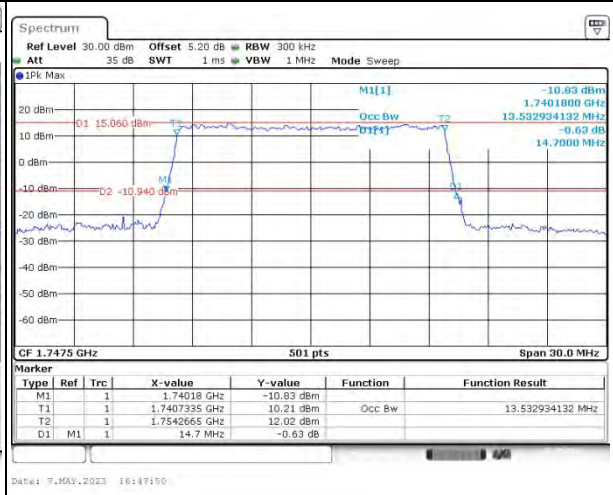
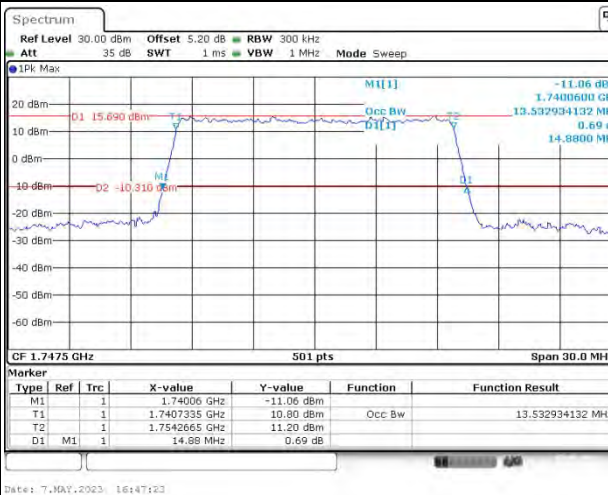
Lowest



Middle



Highest



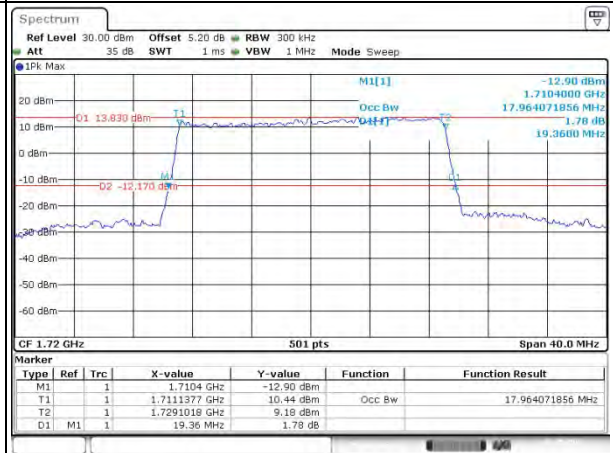
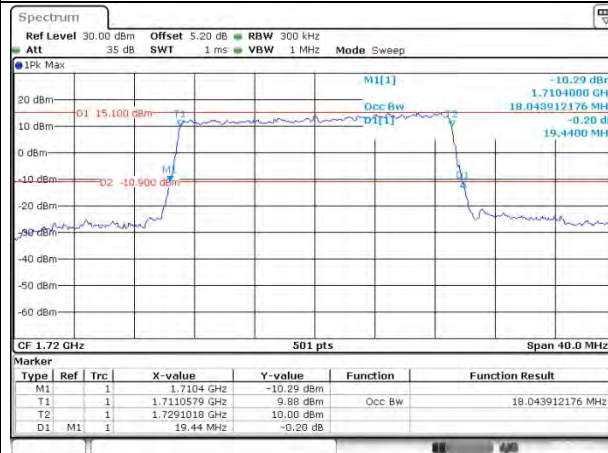
Occupied Bandwidth

Channel

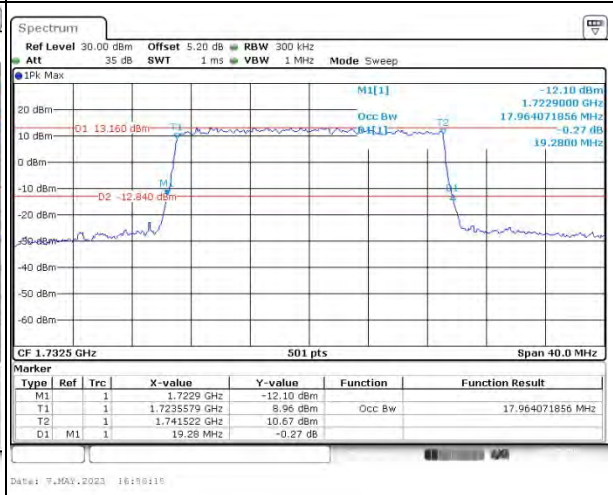
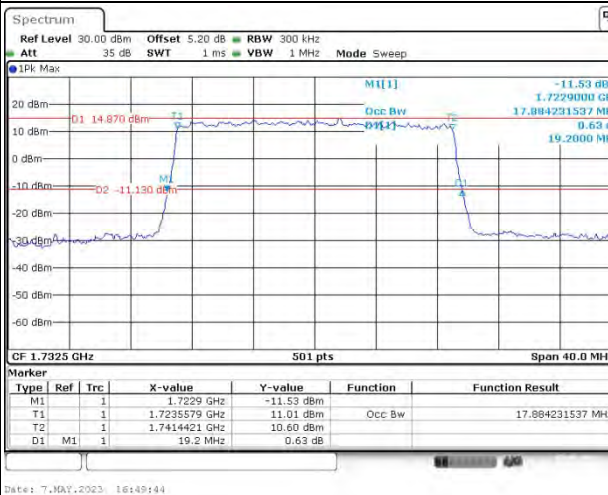
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

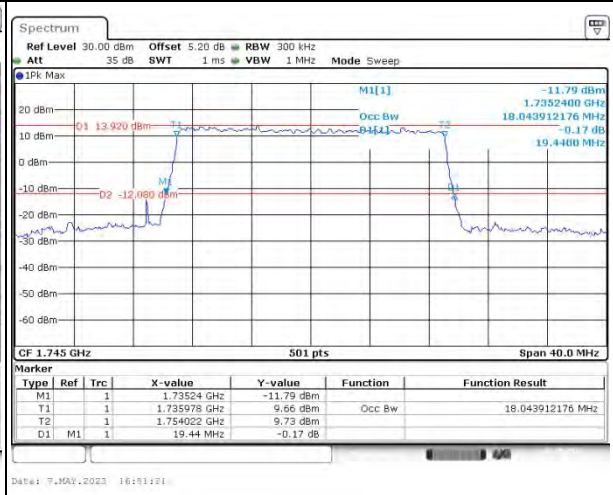
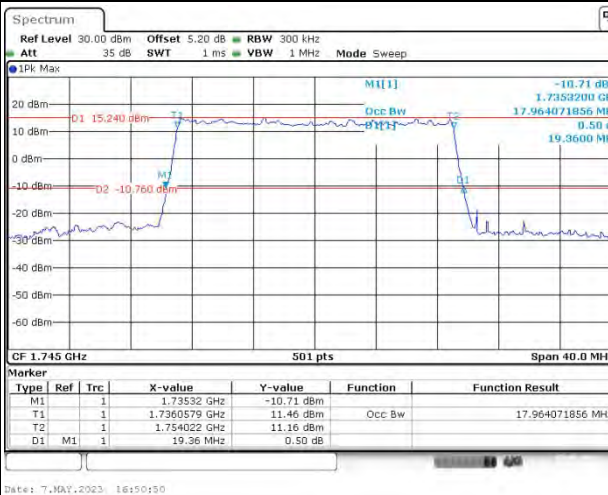
Lowest



Middle



Highest

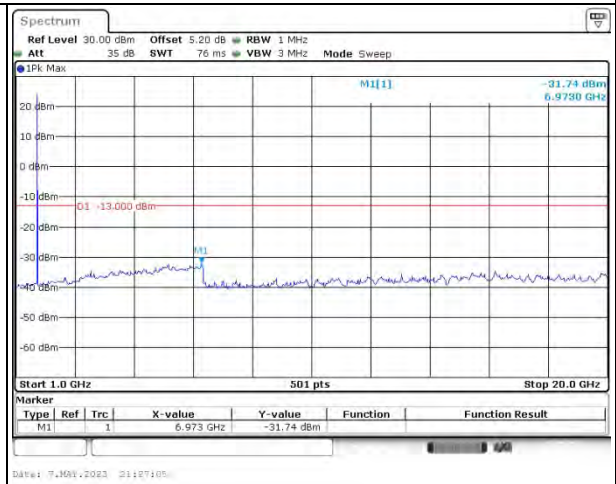
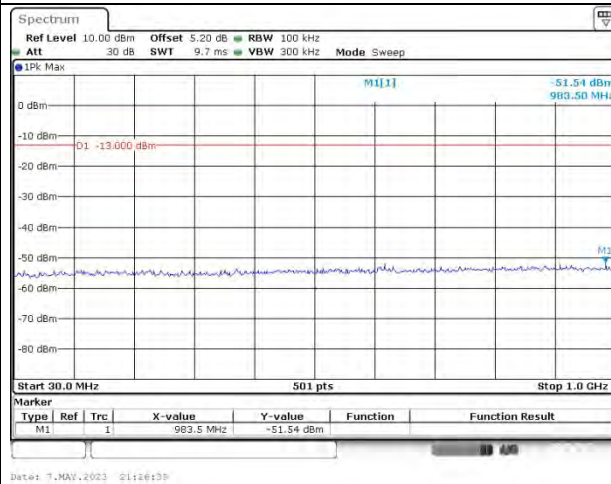


Spurious Emissions at Antenna Terminal

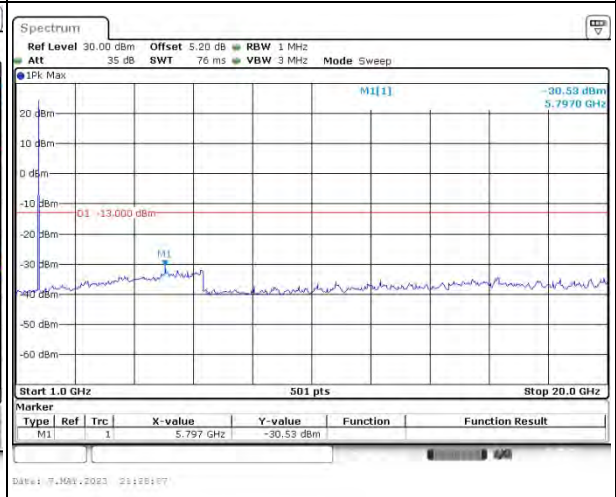
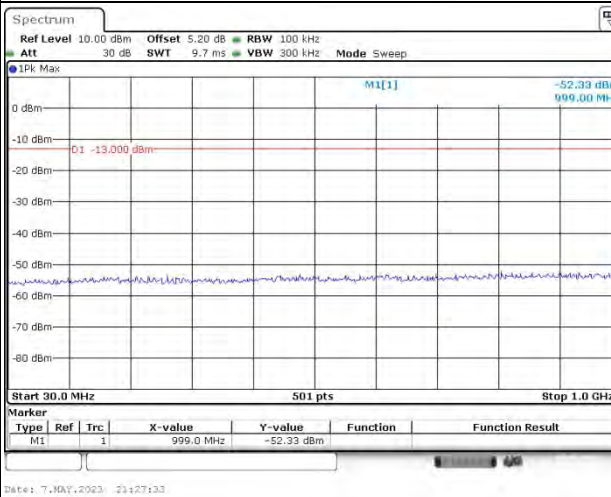
Channel

1.4MHz Bandwidth QPSK

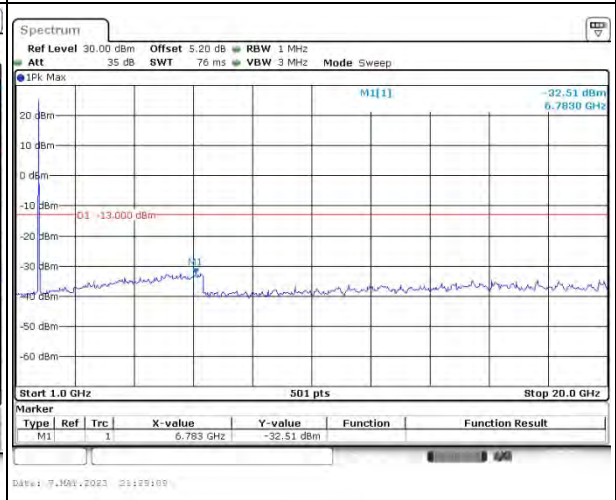
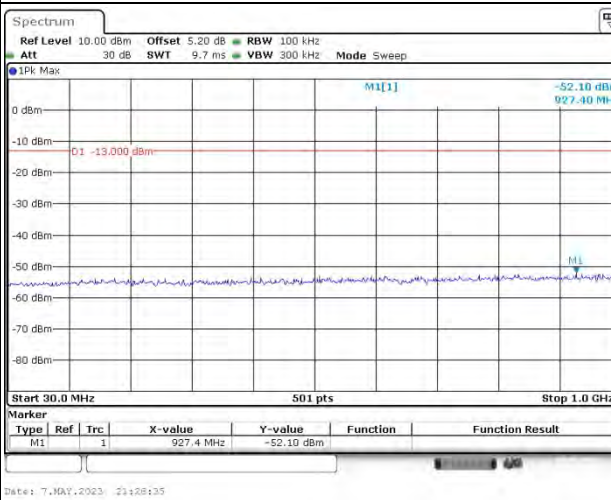
Lowest



Middle



Highest

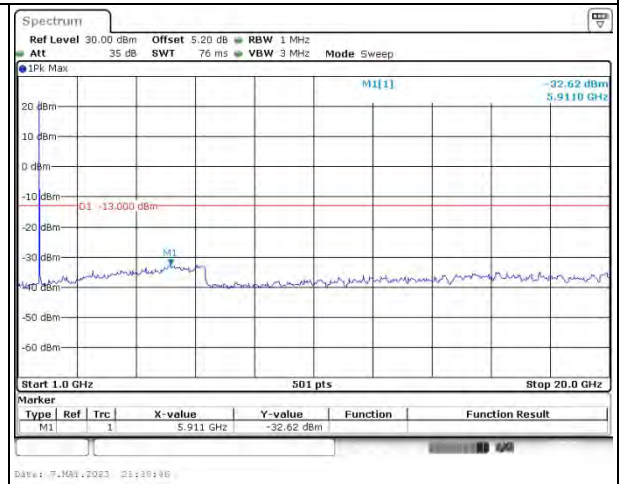
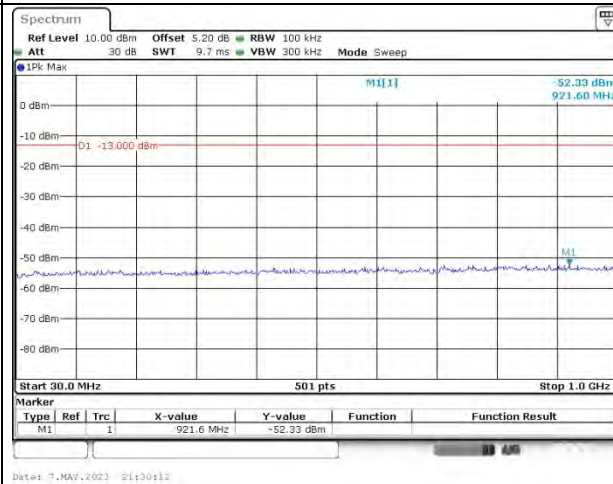


Spurious Emissions at Antenna Terminal

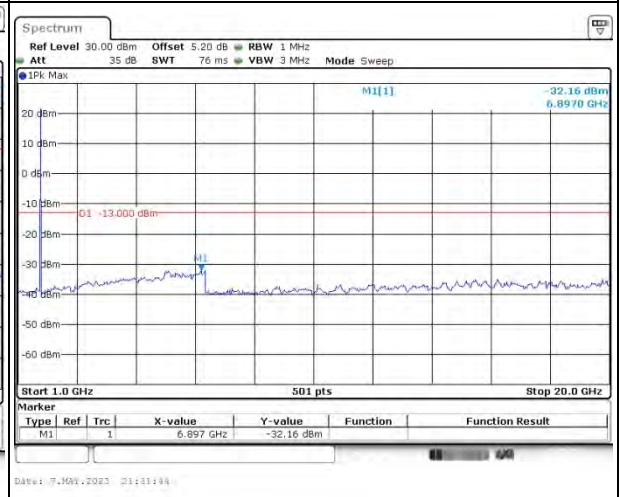
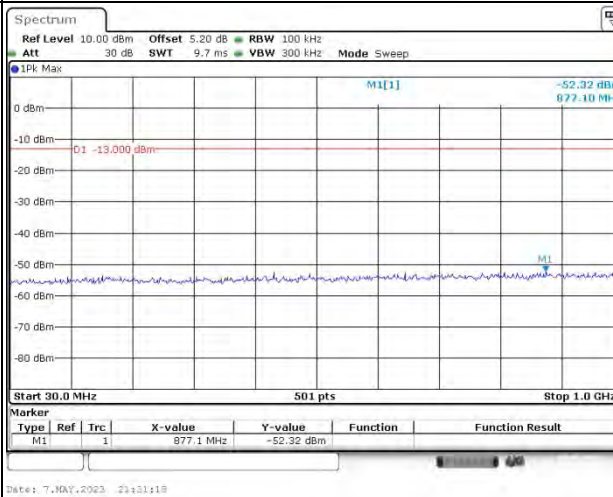
Channel

3MHz Bandwidth QPSK

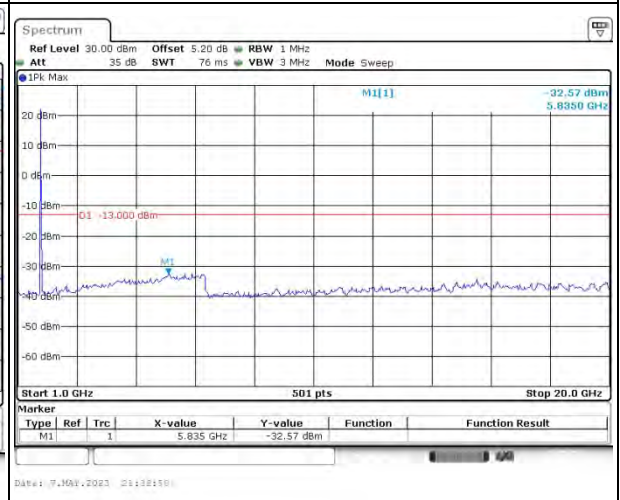
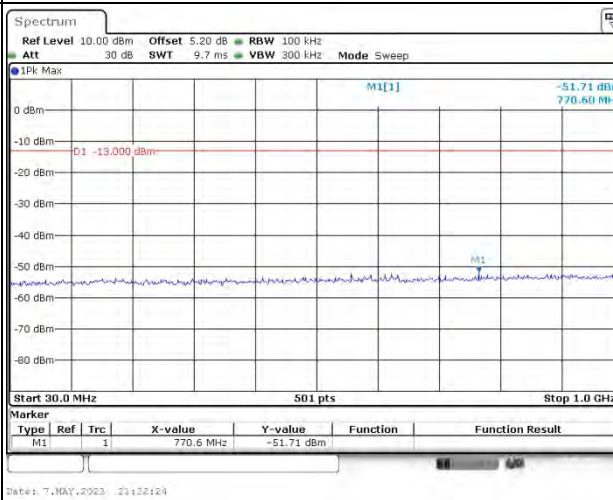
Lowest



Middle



Highest

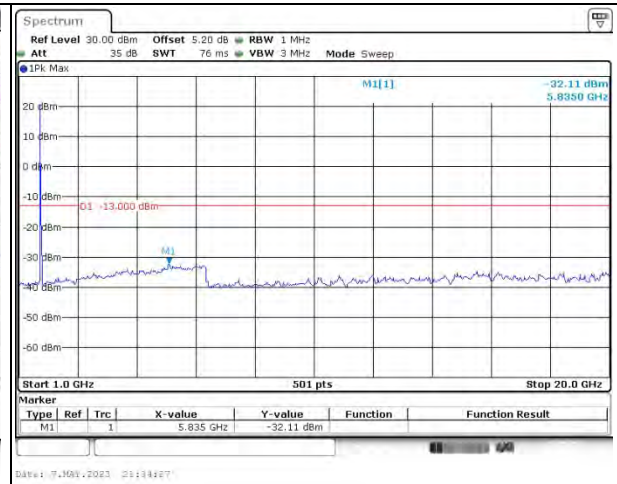
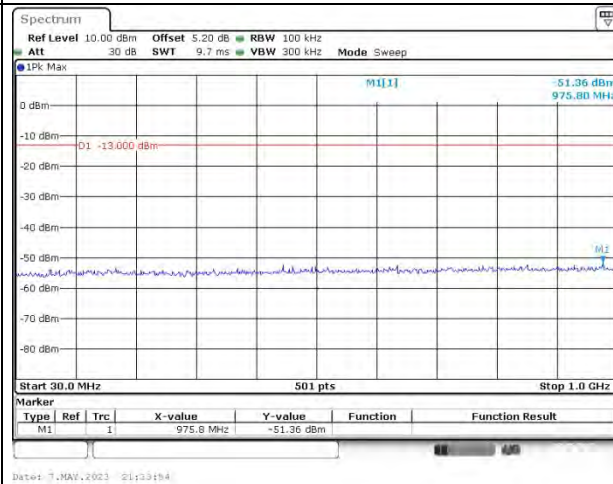


Spurious Emissions at Antenna Terminal

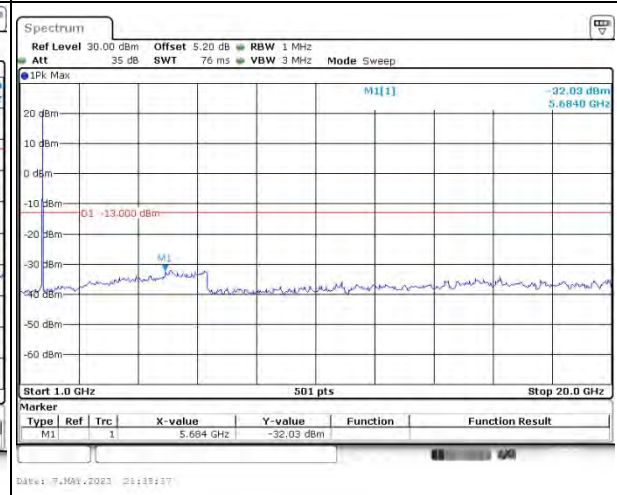
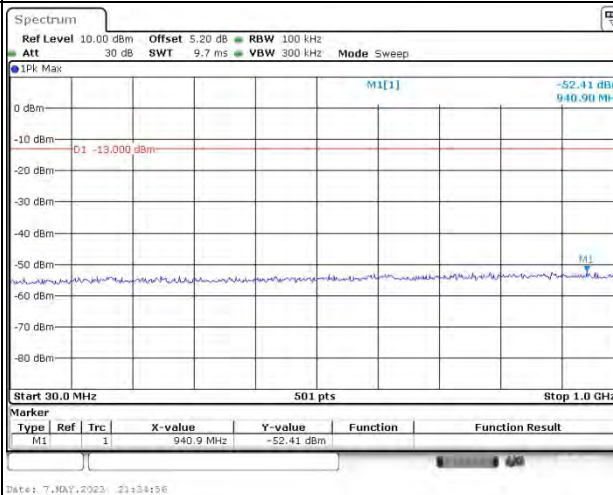
Channel

5MHz Bandwidth QPSK

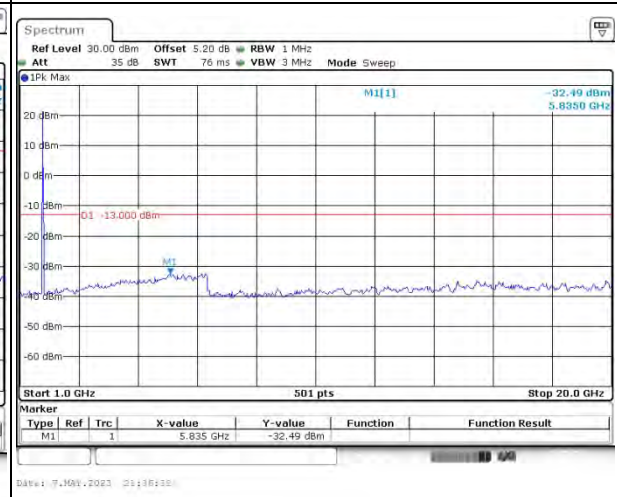
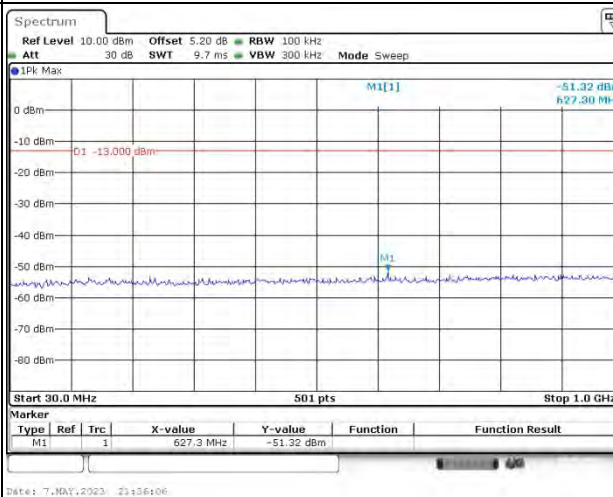
Lowest



Middle



Highest

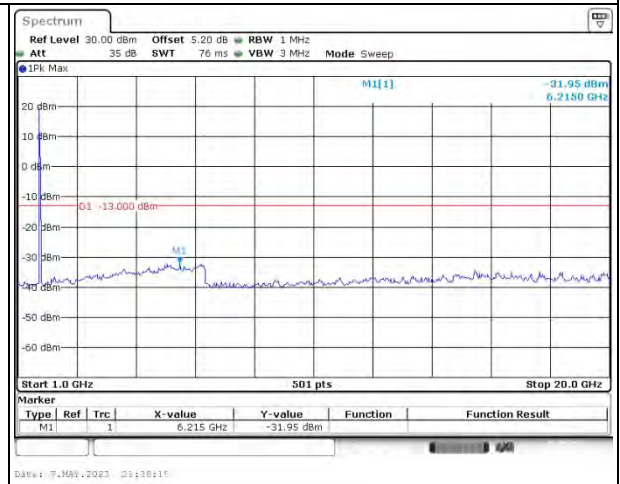
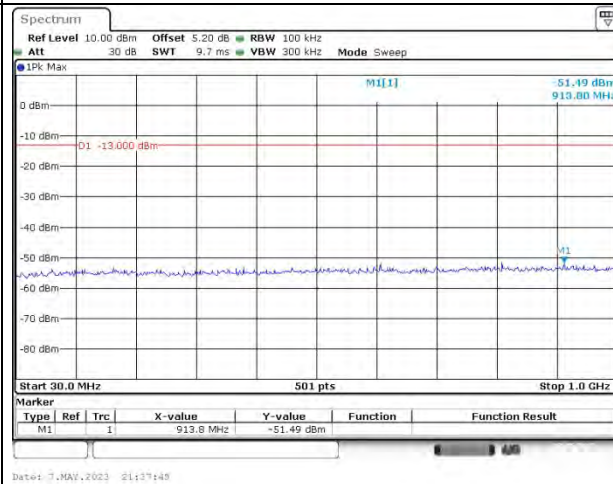


Spurious Emissions at Antenna Terminal

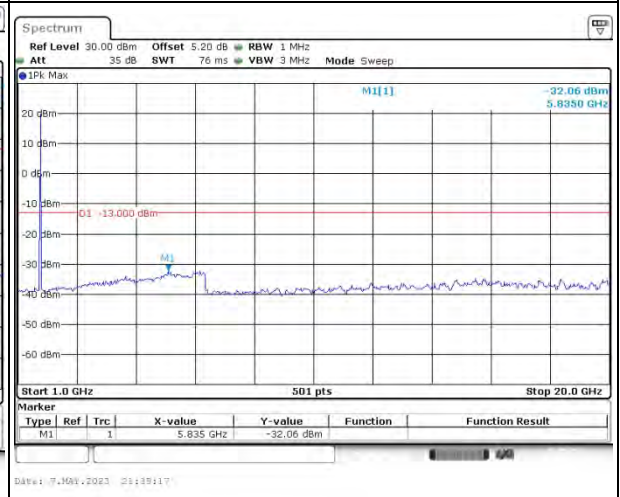
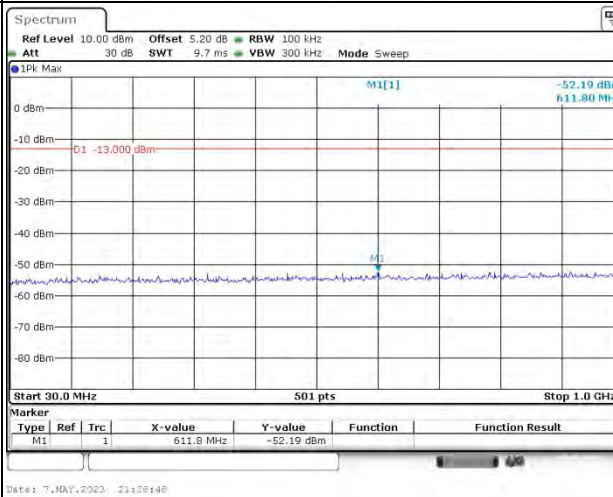
Channel

10MHz Bandwidth QPSK

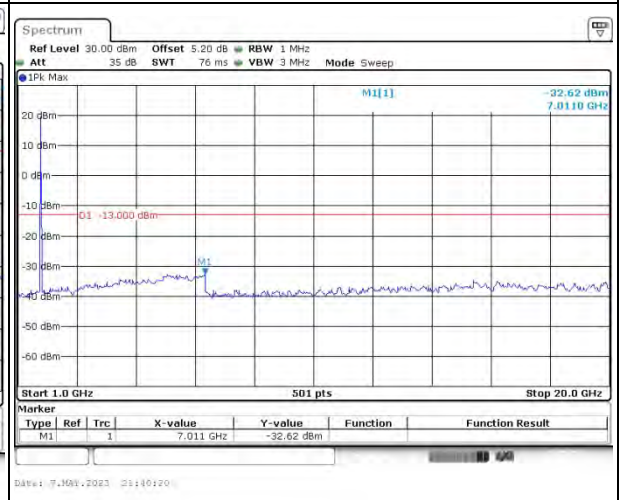
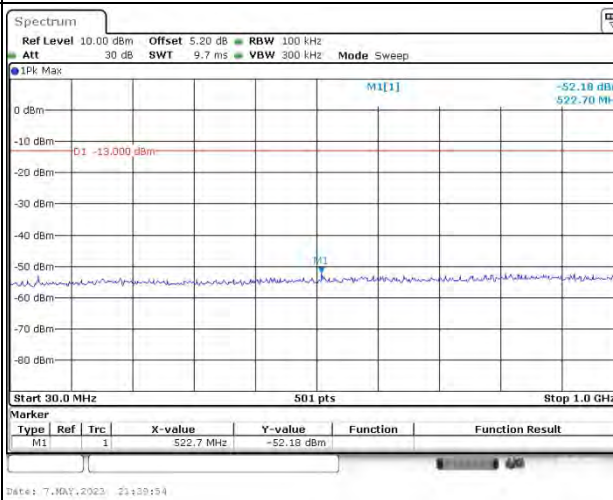
Lowest



Middle



Highest

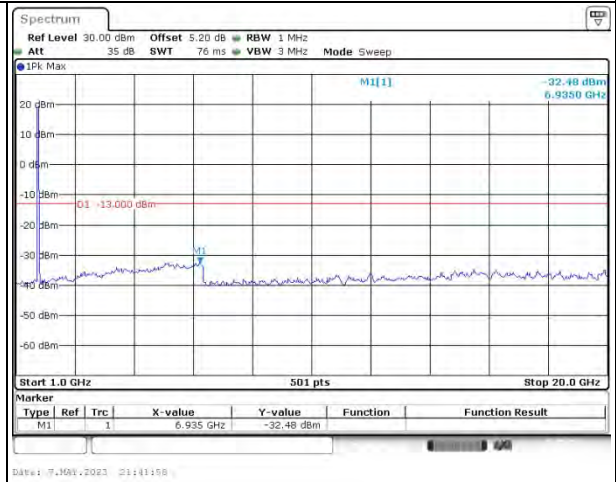
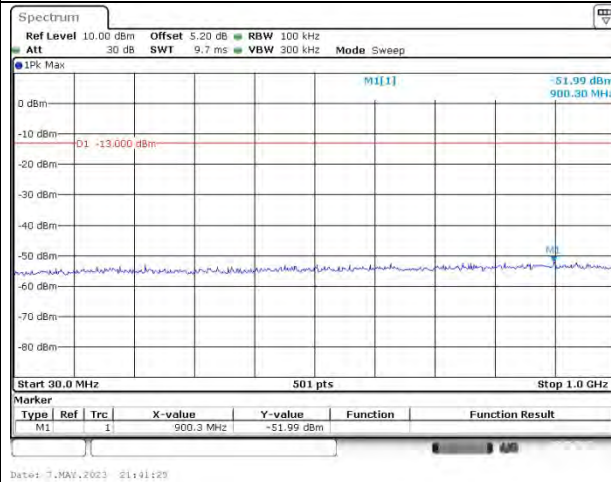


Spurious Emissions at Antenna Terminal

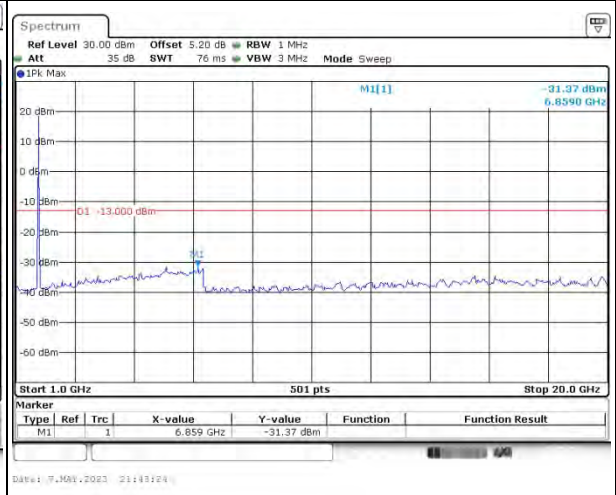
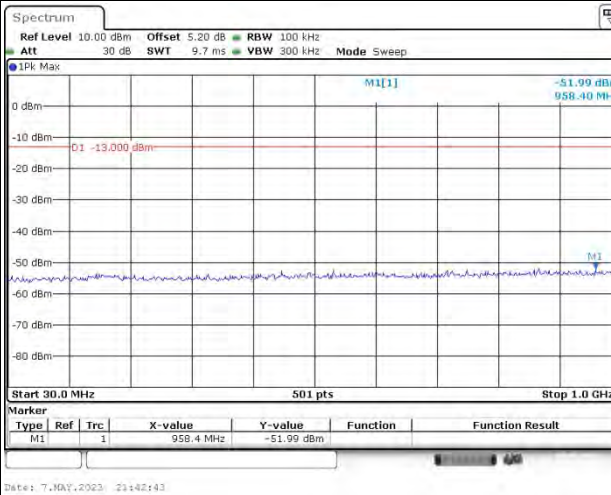
Channel

15MHz Bandwidth QPSK

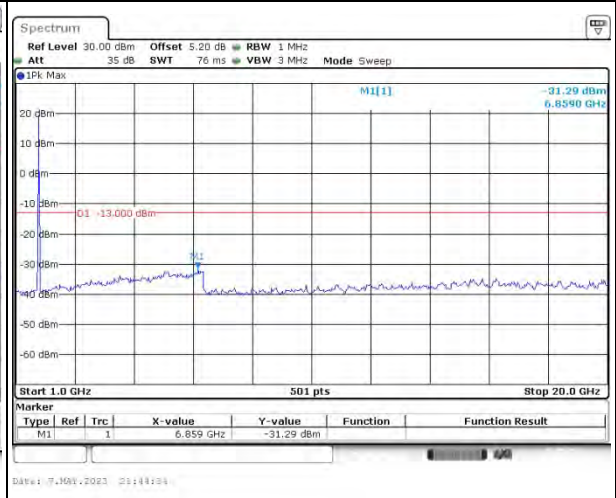
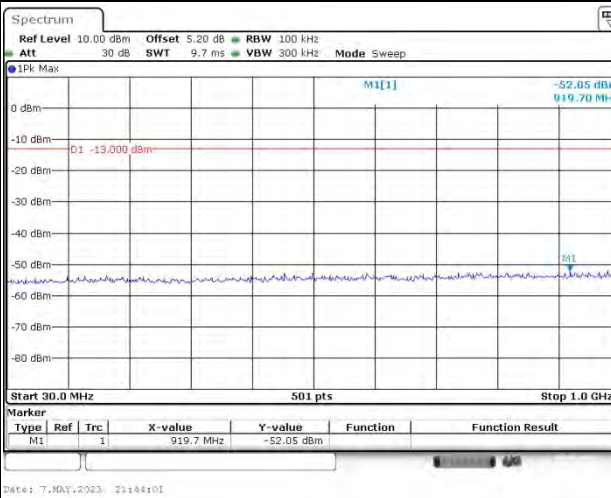
Lowest



Middle



Highest

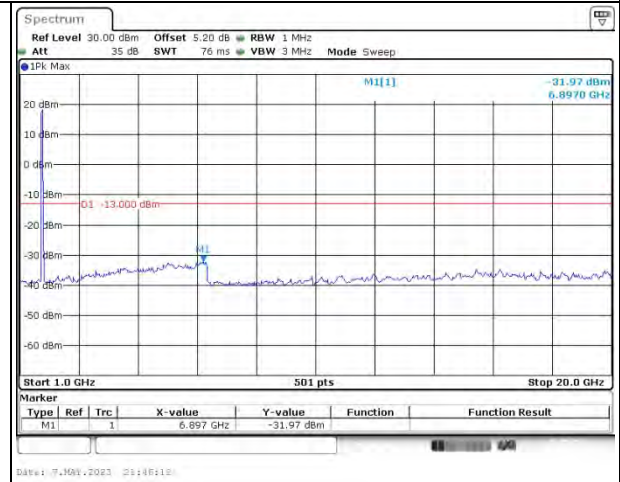
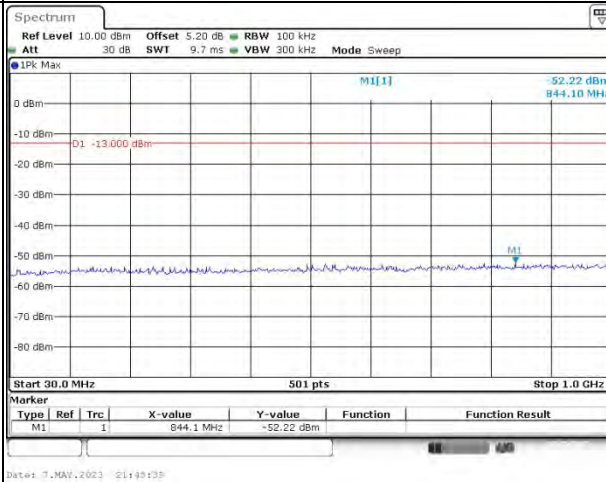


Spurious Emissions at Antenna Terminal

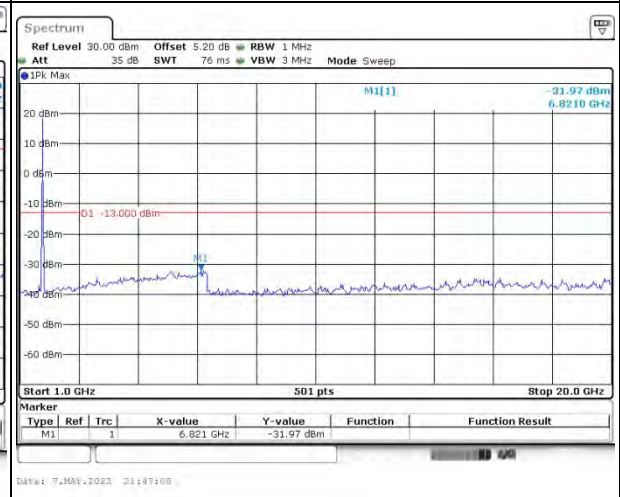
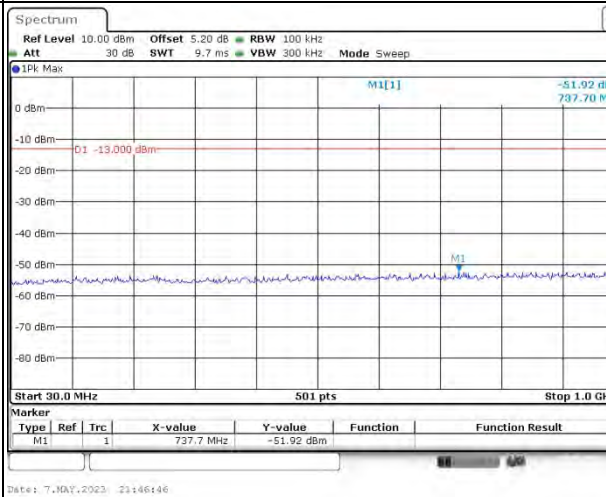
Channel

20MHz Bandwidth QPSK

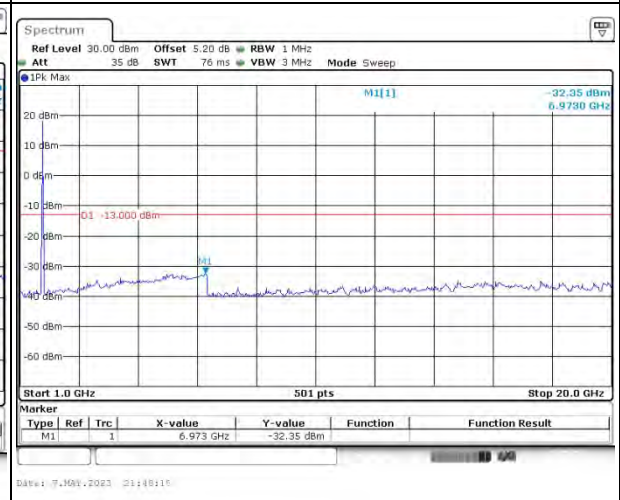
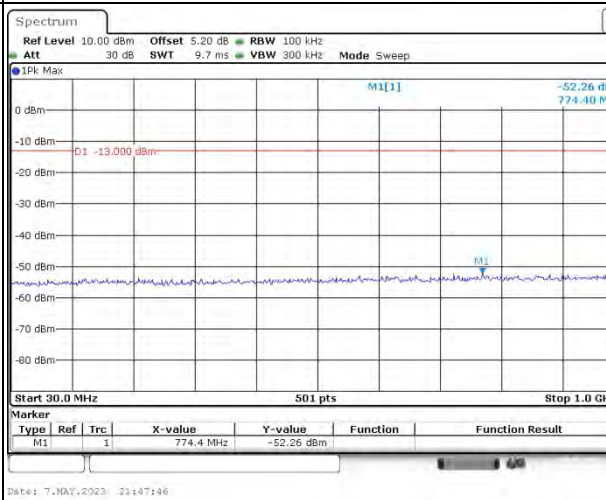
Lowest



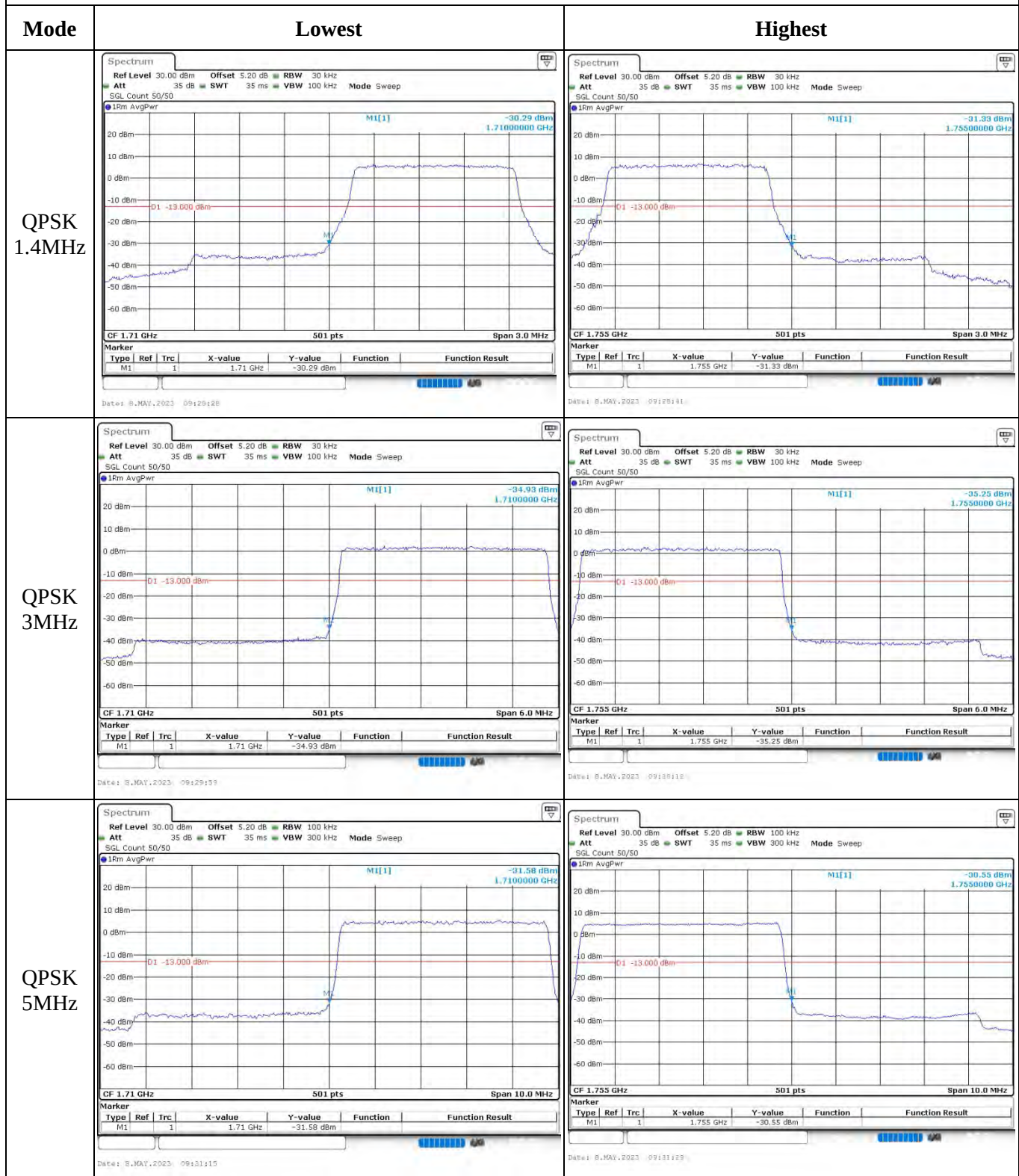
Middle



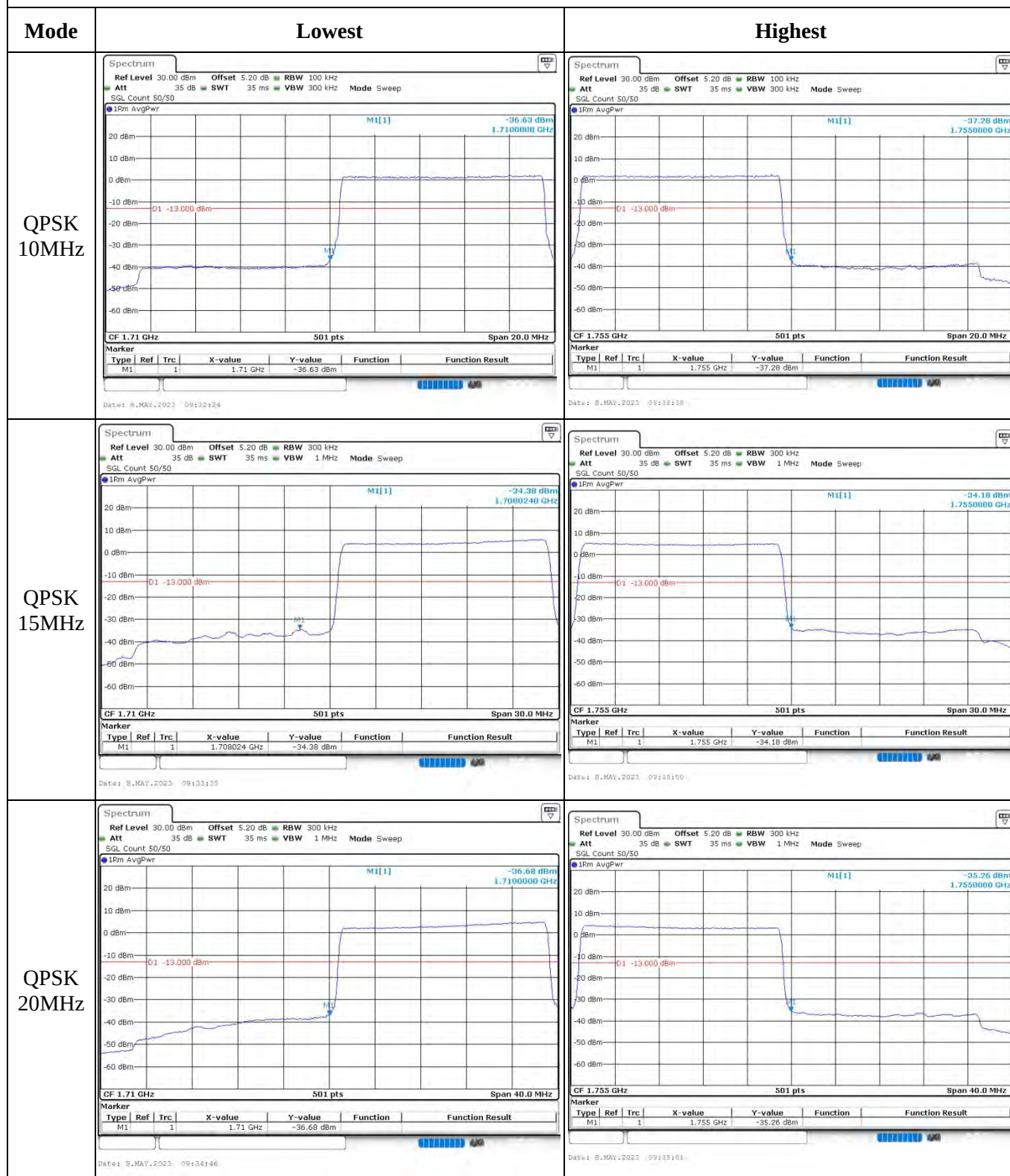
Highest



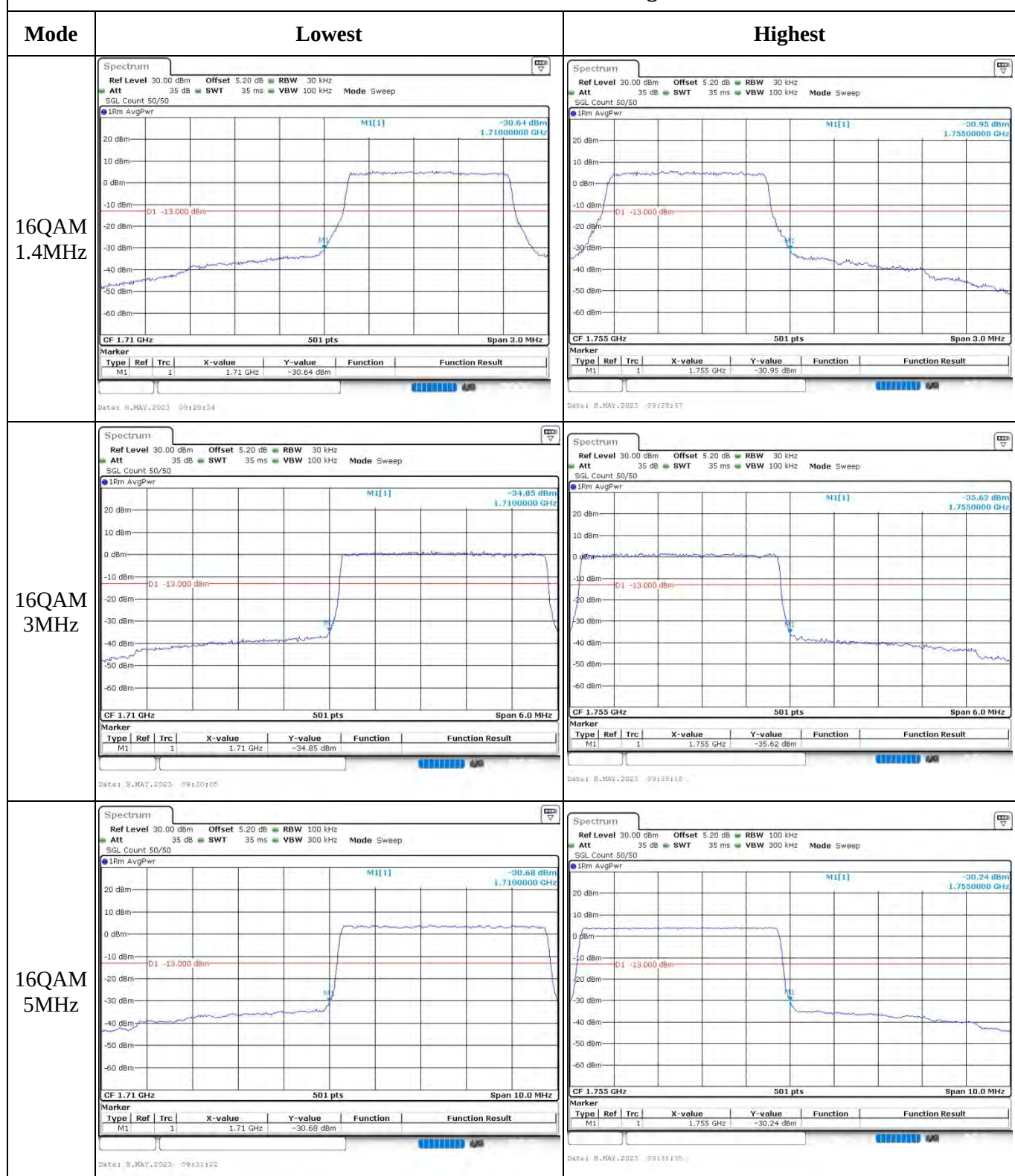
Out of band emission, Band Edge



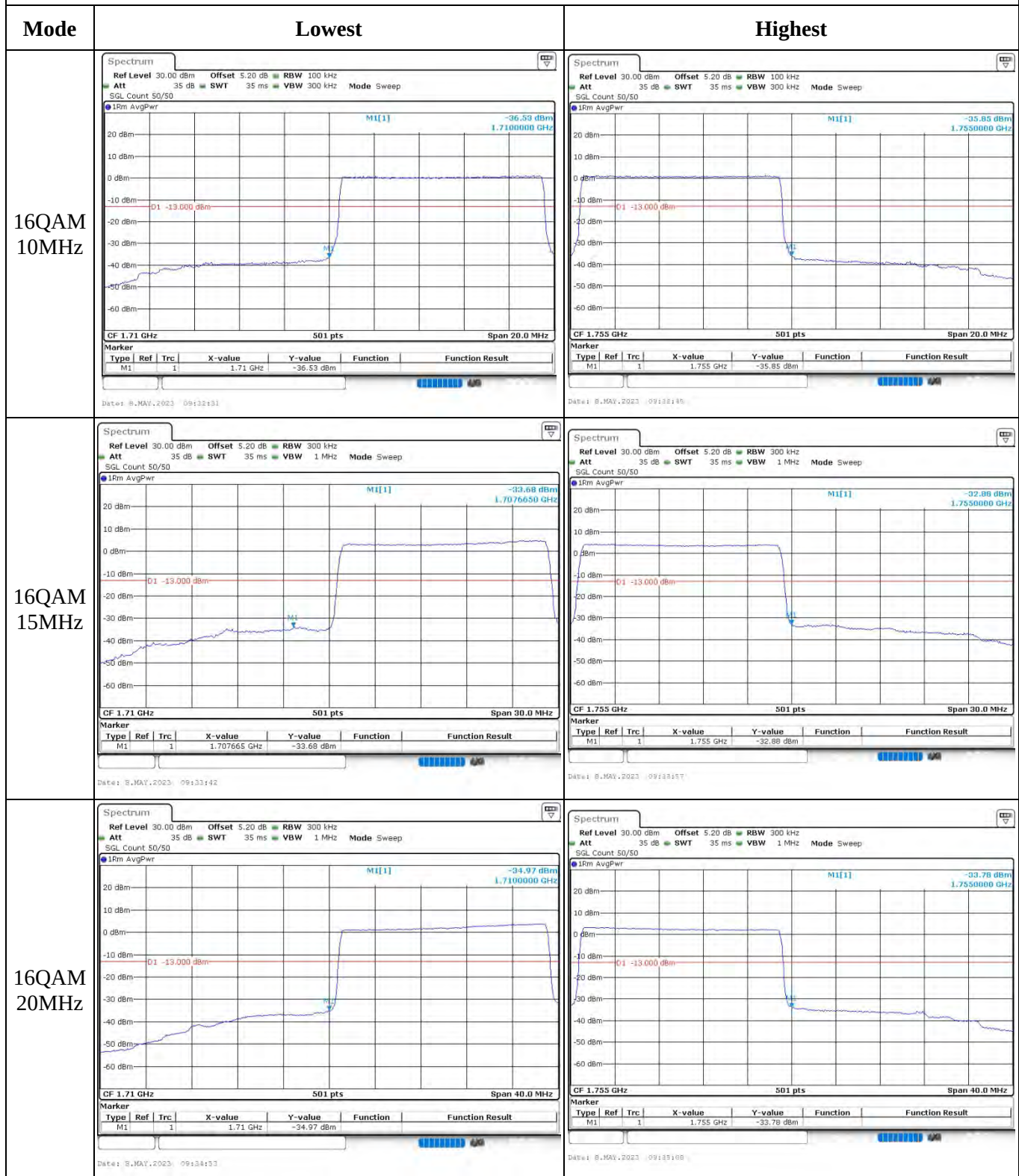
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	250W-1	Test Date:	2023/5/6~2023/5/17
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.2~26.1	Relative Humidity: (%)	39~58	ATM Pressure: (kPa)	100.5~102.3
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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	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	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	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

* 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).

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	20.64	20.82	21.04	18.11	38.45
	RB1#3	20.8	20.97	21.24		
	RB1#5	20.7	20.82	21.05		
	RB3#0	20.65	20.92	21.12		
	RB3#3	20.69	20.87	21.07		
	RB6#0	19.76	19.97	20.17		
1.4MHz 16QAM	RB1#0	19.66	20.01	20.08	17.08	38.45
	RB1#3	19.86	20.18	20.19		
	RB1#5	19.71	19.94	20.12		
	RB3#0	19.88	19.86	20.21		
	RB3#3	19.89	19.91	20.16		
	RB6#0	18.78	18.96	19.04		
3MHz QPSK	RB1#0	20.69	20.87	21.11	17.99	38.45
	RB1#8	20.74	20.87	21.09		
	RB1#14	20.8	20.88	21.12		
	RB6#0	19.71	19.91	20.11		
	RB6#9	19.8	19.89	20.11		
	RB15#0	19.73	19.91	20.14		
3MHz 16QAM	RB1#0	20.24	20.07	20.15	17.11	38.45
	RB1#8	20.22	20.04	20.13		
	RB1#14	20.24	20.03	20.11		
	RB6#0	18.72	18.9	19.03		
	RB6#9	18.77	18.94	19.04		
	RB15#0	18.76	18.84	19.12		
5MHz QPSK	RB1#0	20.53	20.77	20.88	17.92	38.45
	RB1#13	20.73	20.88	21.05		
	RB1#24	20.66	20.78	20.96		
	RB15#0	19.67	19.8	20.1		
	RB15#10	19.7	19.95	20.07		
	RB25#0	19.63	19.9	20.05		
5MHz 16QAM	RB1#0	19.42	20.05	19.94	17.05	38.45
	RB1#13	19.63	20.18	20.18		
	RB1#24	19.55	20.11	20.04		
	RB15#0	18.64	18.77	19.09		
	RB15#10	18.61	18.9	19.09		
	RB25#0	18.65	18.88	19.07		
10MHz QPSK	RB1#0	20.61	20.83	20.82	17.97	38.45
	RB1#25	20.9	20.93	21.1		
	RB1#49	20.84	20.95	21.05		

10MHz 16QAM	RB25#0	19.79	19.87	20.04	17.47	38.45
	RB25#25	19.7	20.06	20.05		
	RB50#0	19.74	19.98	20.06		
	RB1#0	19.74	19.77	20.39		
	RB1#25	19.98	20.02	20.6		
	RB1#49	19.98	19.93	20.54		
	RB25#0	18.78	18.95	19.02		
	RB25#25	18.67	19.15	19.04		
	RB50#0	18.7	18.98	19		

Note:

ERP= Conducted Power(dBm) - L_c(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15**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	4.49	3.39	5.01	13
	RB50#0	4.46	4.96	4.99	13
10MHz 16QAM	RB1#0	5.45	4.2	5.83	13
	RB50#0	5.42	5.88	5.83	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	1.102	1.108	1.308	1.314	1.35
1.4MHz 16QAM	1.102	1.09	1.102	1.326	1.29	1.374
3MHz QPSK	2.671	2.695	2.683	2.88	2.88	2.892
3MHz 16QAM	2.671	2.683	2.683	2.88	2.88	2.868
5MHz QPSK	4.511	4.511	4.511	5.94	5.78	4.94
5MHz 16QAM	4.511	4.511	4.511	4.96	4.96	4.96
10MHz QPSK	8.942	8.942	8.942	9.68	9.6	10.56
10MHz 16QAM	8.942	8.982	8.982	9.64	9.72	9.6

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 Modulation:	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	3.85	-6.12	-0.007	2.5
	-20	3.85	-6.97	-0.008	2.5
	-10	3.85	-5.5	-0.007	2.5
	0	3.85	6.06	0.007	2.5
	10	3.85	9.8	0.012	2.5
	20	3.85	5.03	0.006	2.5
	30	3.85	-6.62	-0.008	2.5
	40	3.85	-8.73	-0.010	2.5
	50	3.85	-7.05	-0.008	2.5
Frequency Stability vs. Voltage	20	3.5	8.99	0.011	2.5
	20	4.4	-7.17	-0.009	2.5
Result:				Pass	

Test Modulation:	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	3.85	-8.84	-0.011	2.5
	-20	3.85	8.1	0.010	2.5
	-10	3.85	-8.59	-0.010	2.5
	0	3.85	9.33	0.011	2.5
	10	3.85	-6.94	-0.008	2.5
	20	3.85	7.54	0.009	2.5
	30	3.85	6.43	0.008	2.5
	40	3.85	-6.17	-0.007	2.5
	50	3.85	-6.44	-0.008	2.5
Frequency Stability vs. Voltage	20	3.5	6.34	0.008	2.5
	20	4.4	-6.89	-0.008	2.5
Result:				Pass	

Test Plots(Note: The 5.2dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

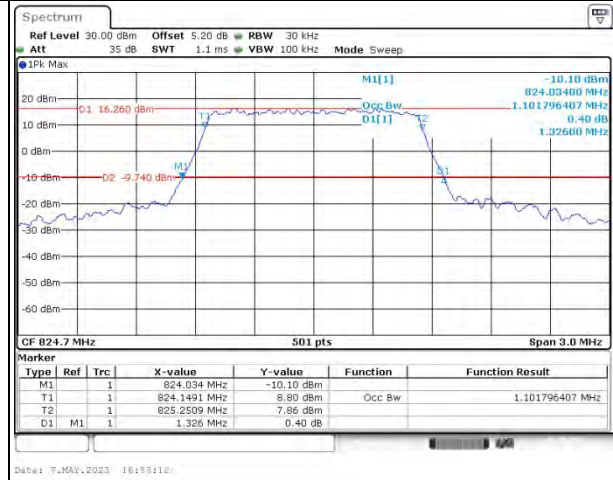
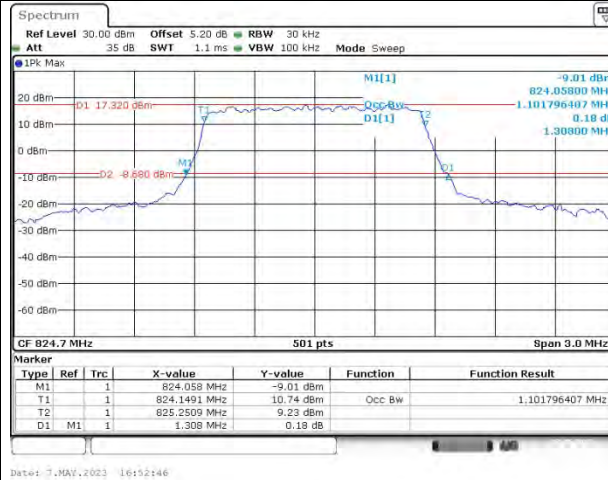
Occupied Bandwidth

Channel

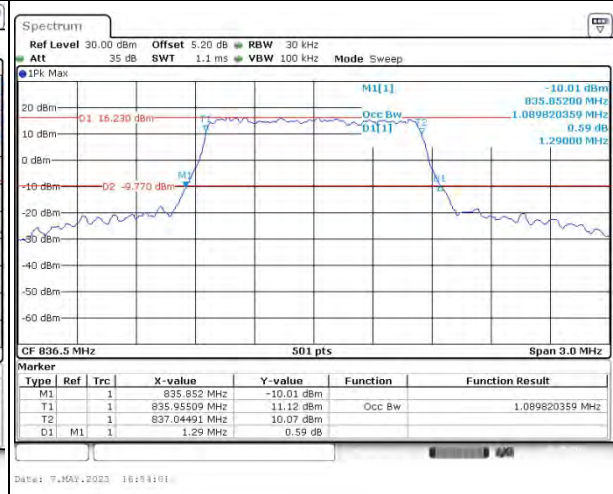
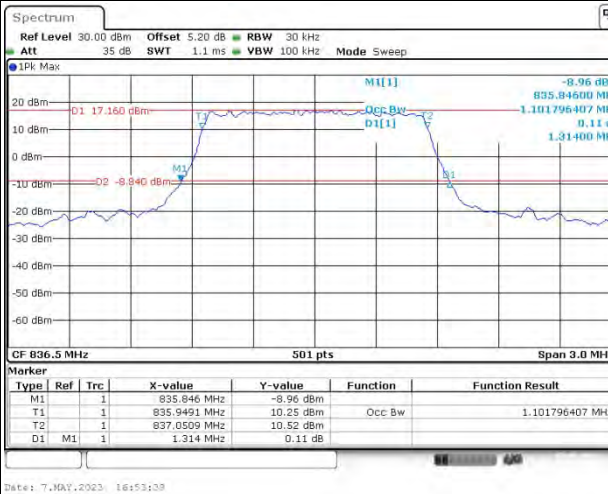
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

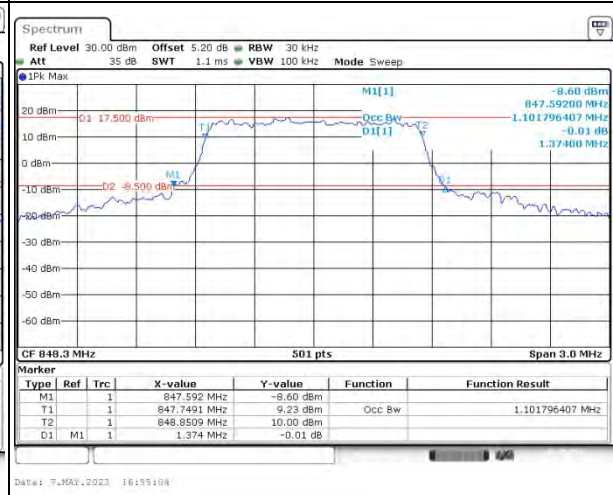
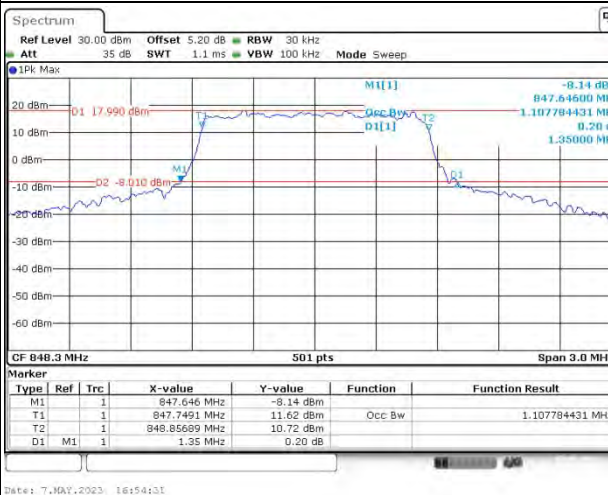
Lowest



Middle



Highest



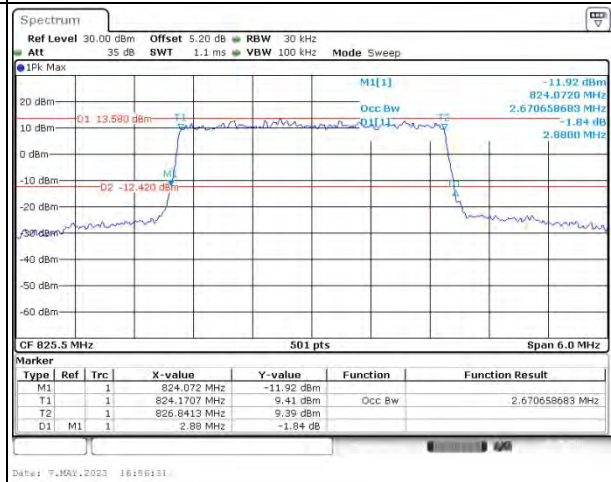
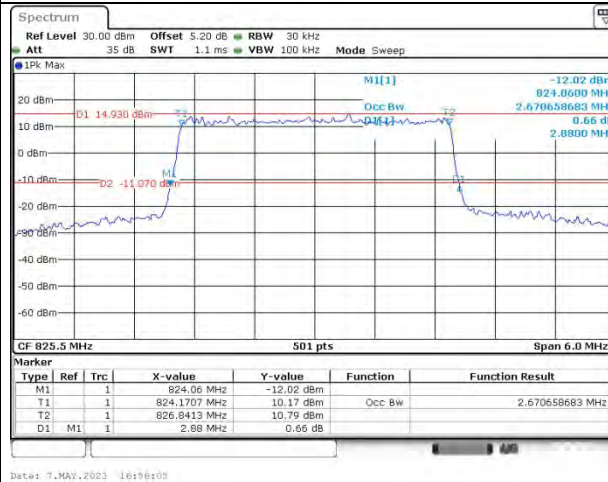
Occupied Bandwidth

Channel

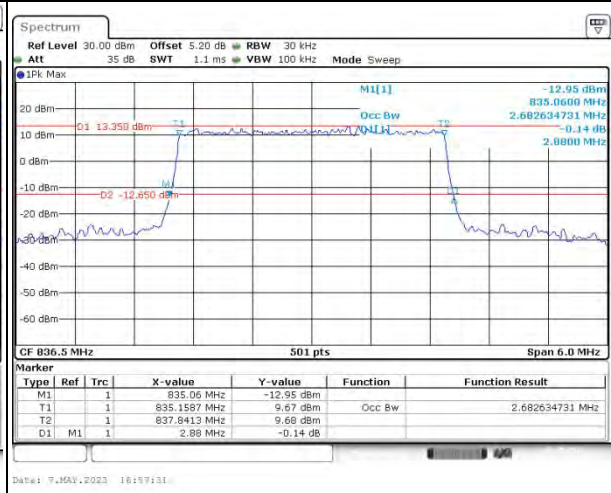
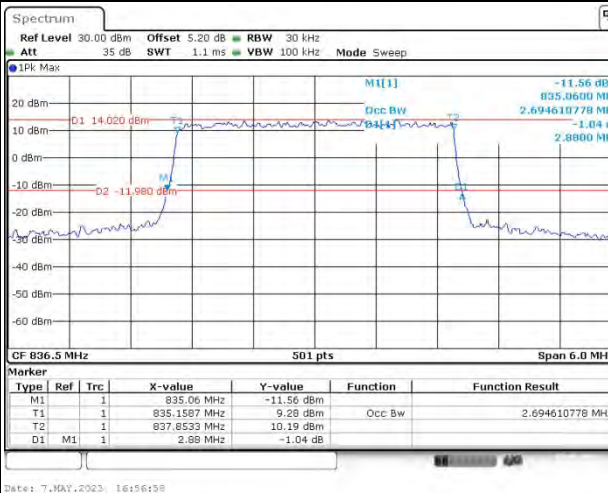
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

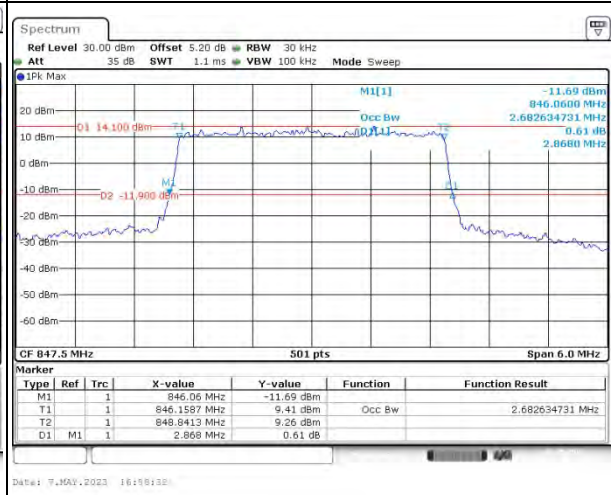
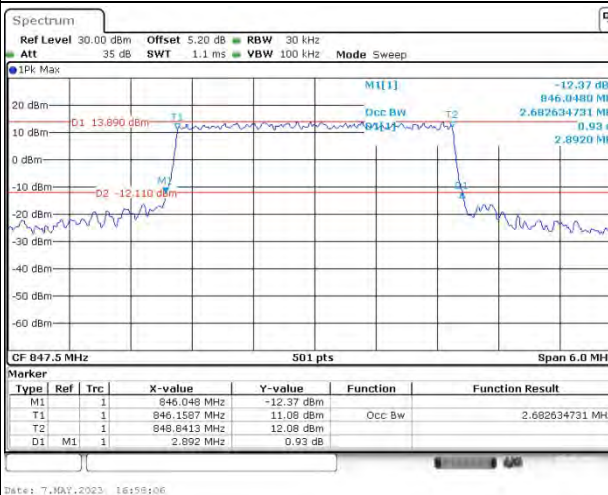
Lowest



Middle



Highest



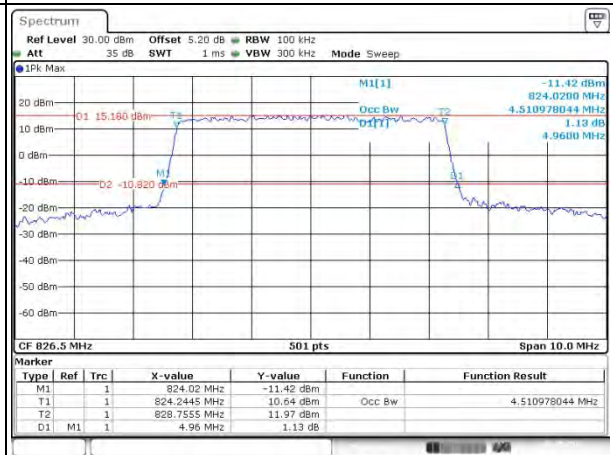
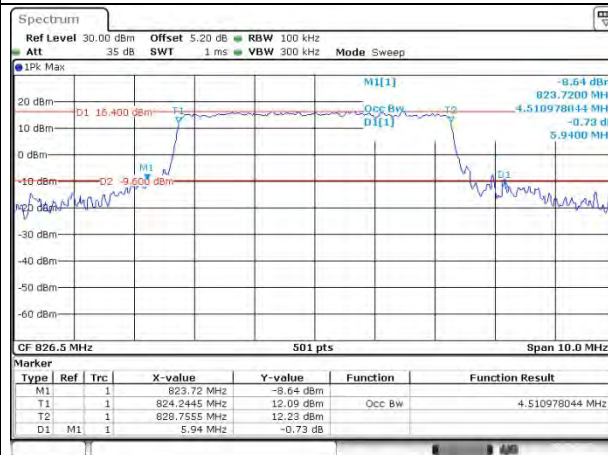
Occupied Bandwidth

Channel

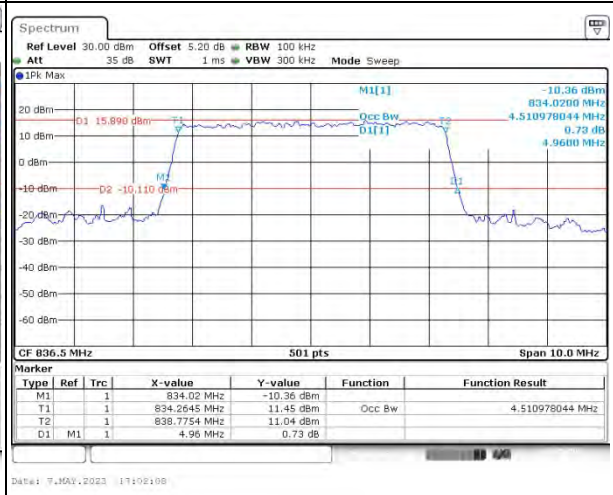
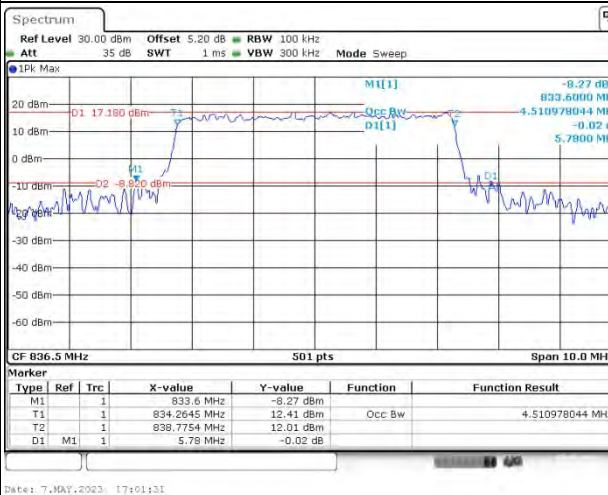
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

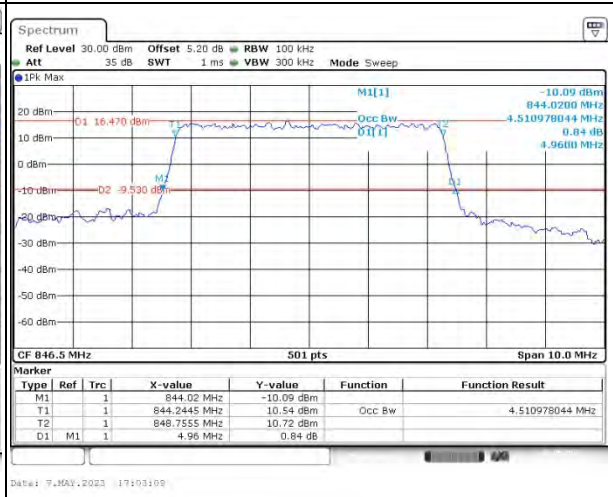
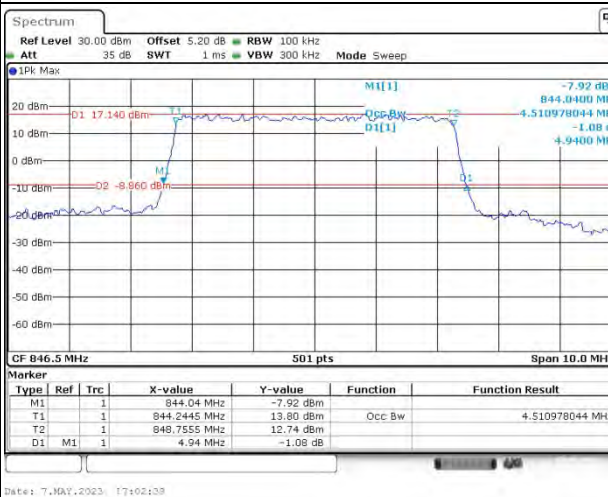
Lowest



Middle



Highest



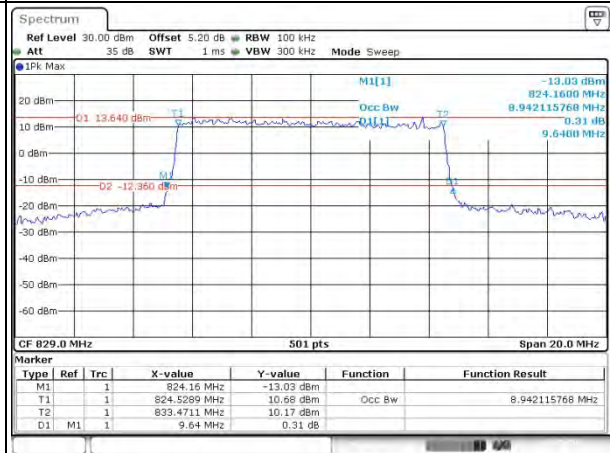
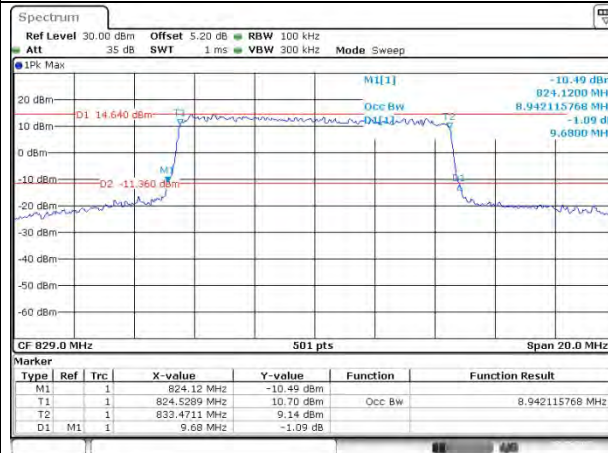
Occupied Bandwidth

Channel

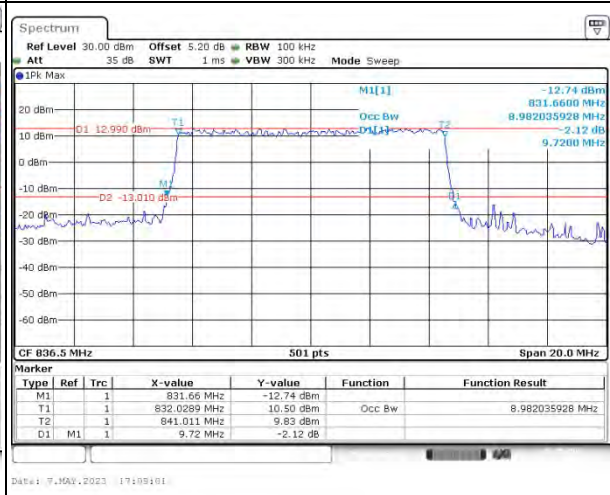
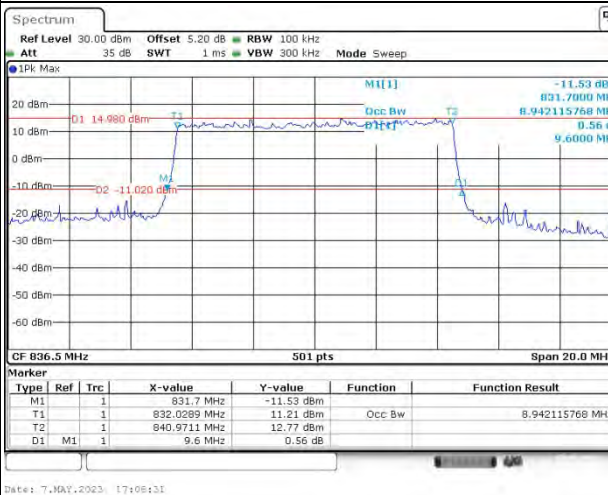
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

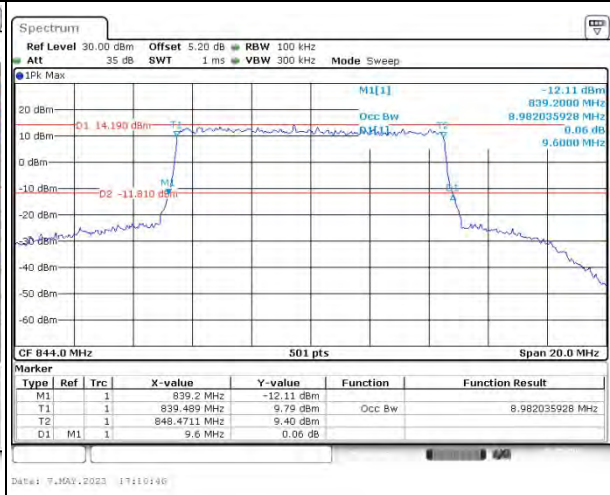
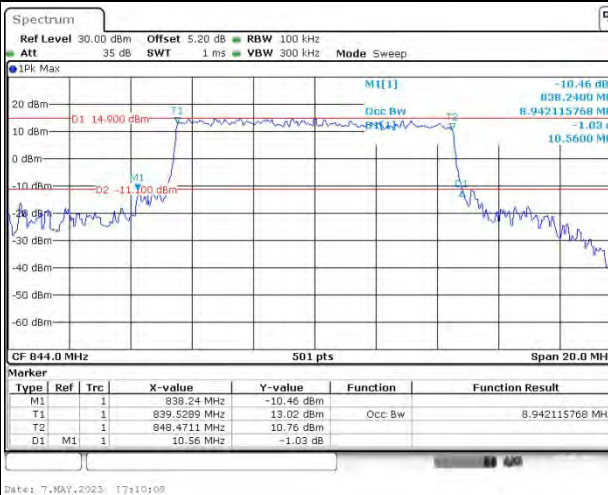
Lowest



Middle



Highest

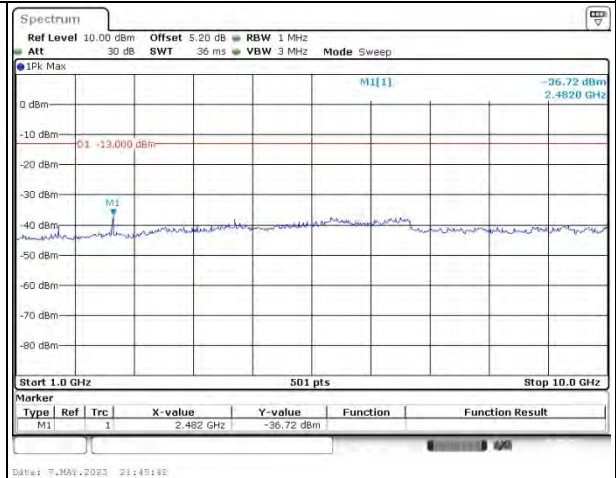
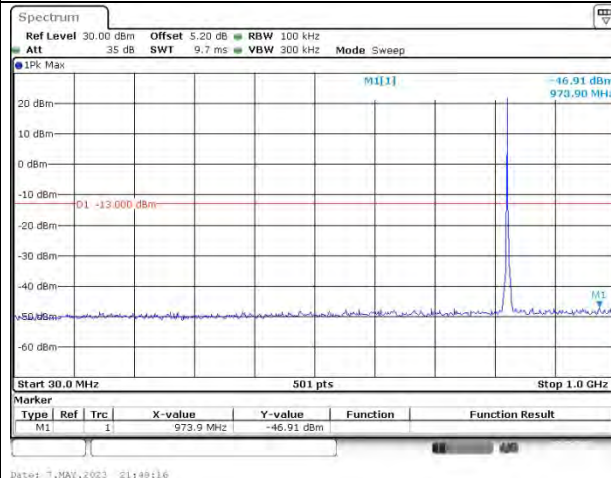


Spurious Emissions at Antenna Terminal

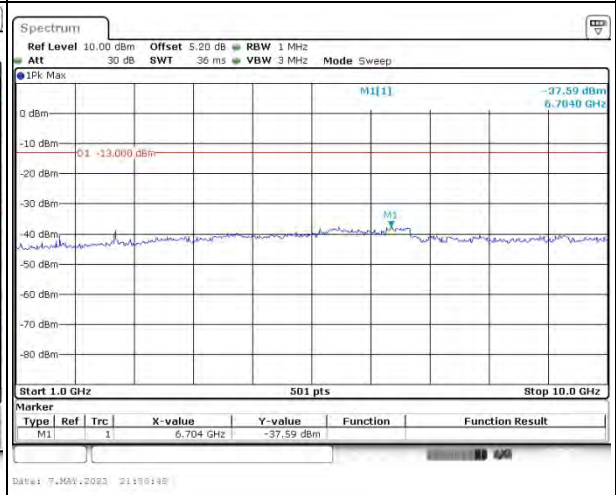
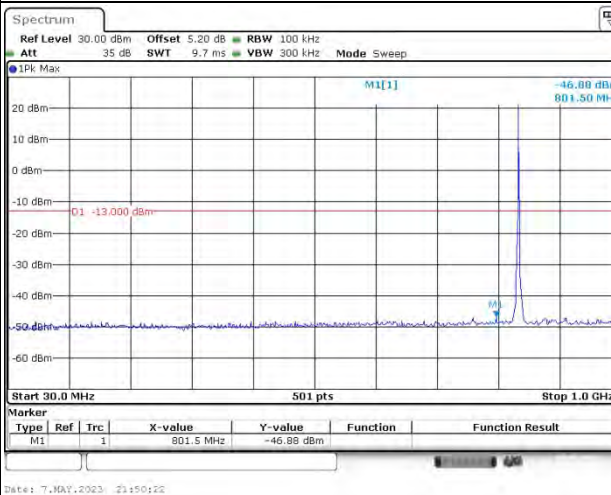
Channel

1.4MHz Bandwidth QPSK

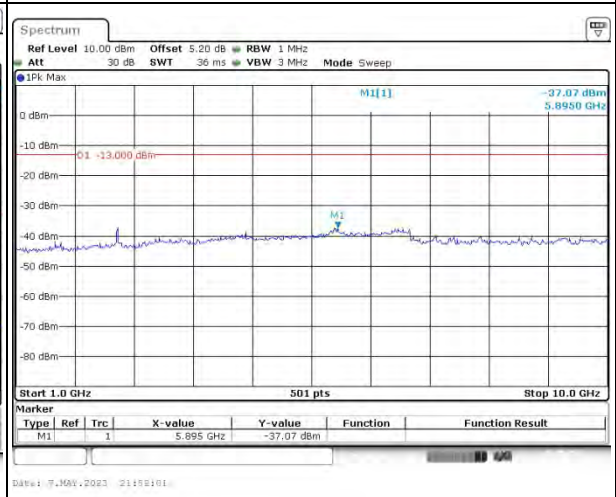
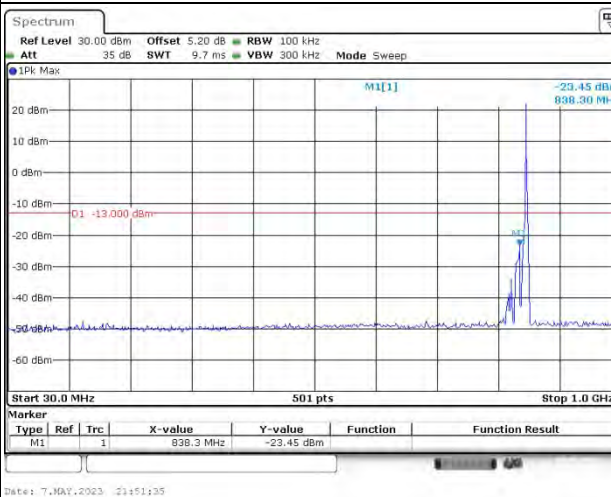
Lowest



Middle



Highest

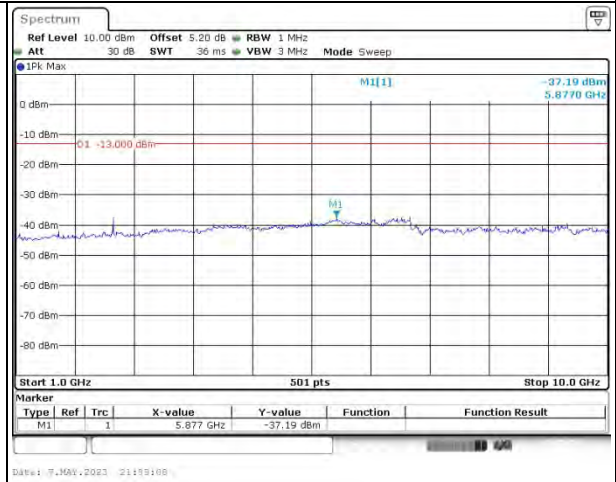
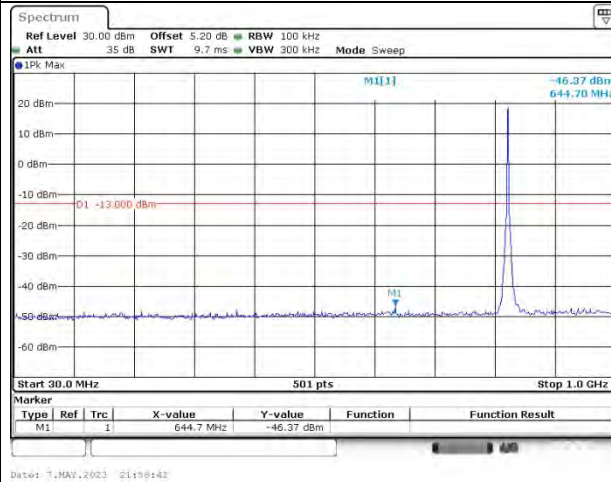


Spurious Emissions at Antenna Terminal

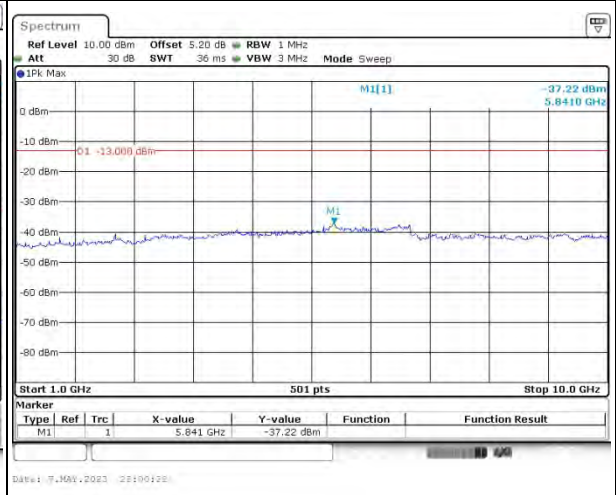
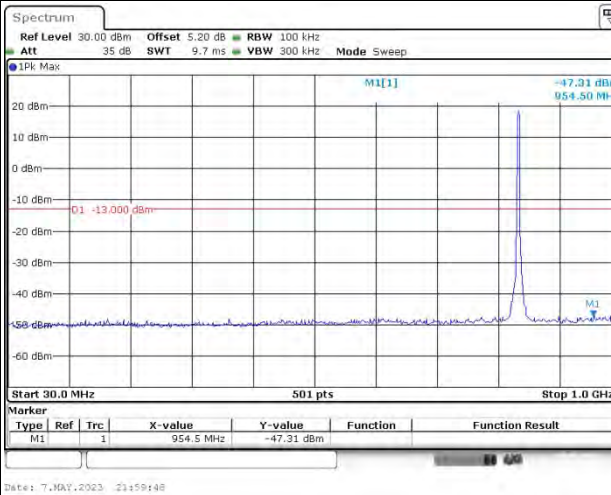
Channel

3MHz Bandwidth QPSK

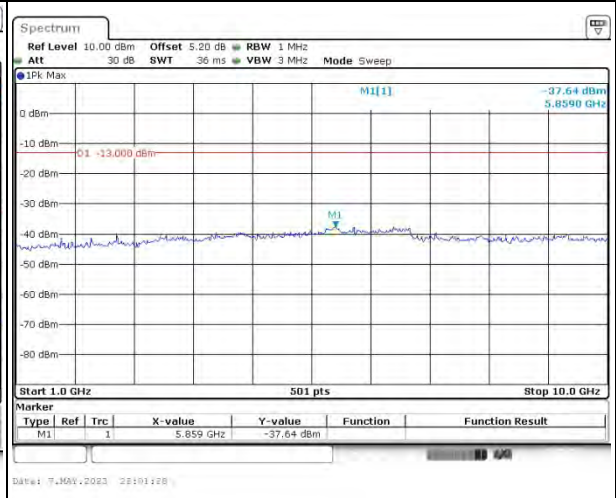
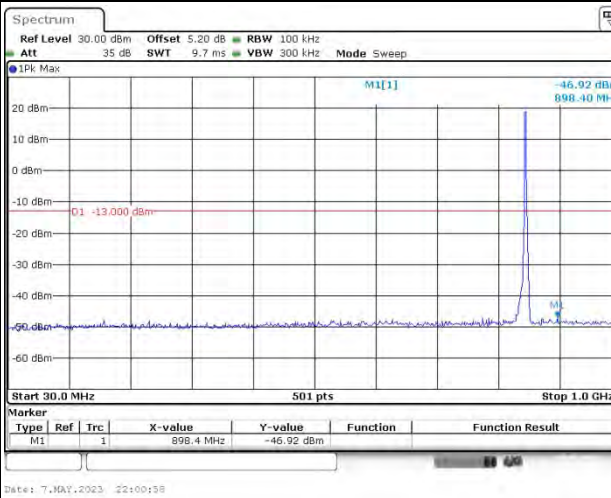
Lowest



Middle



Highest

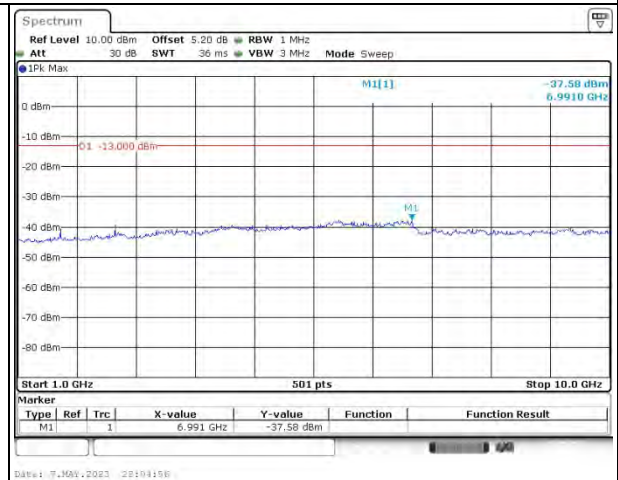
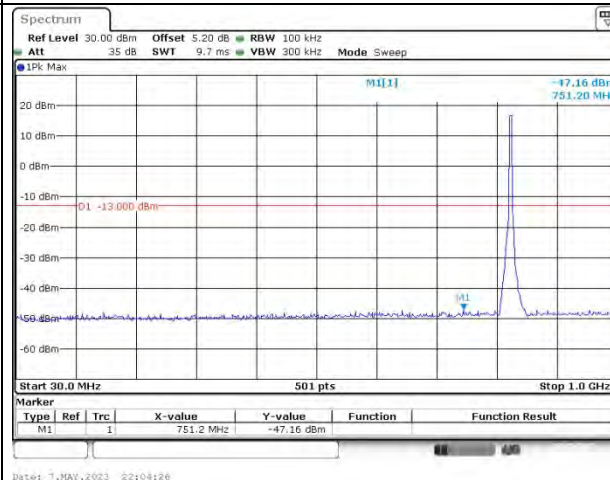


Spurious Emissions at Antenna Terminal

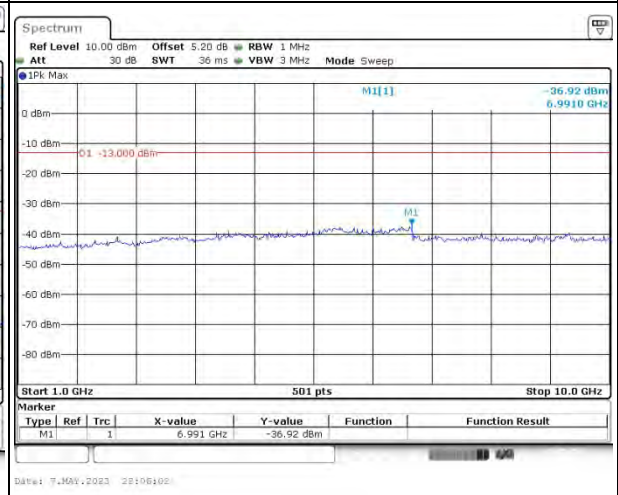
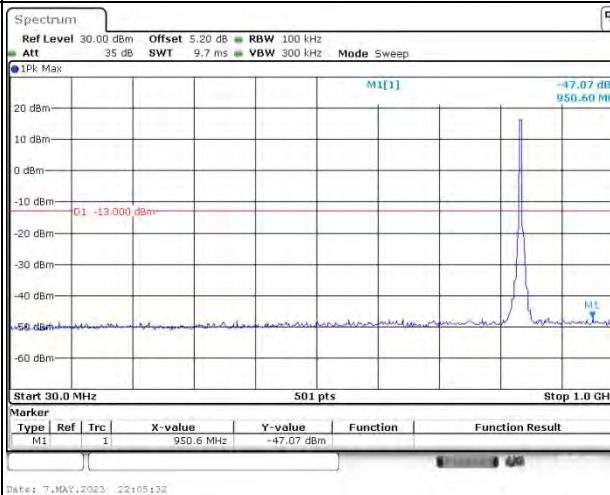
Channel

5MHz Bandwidth QPSK

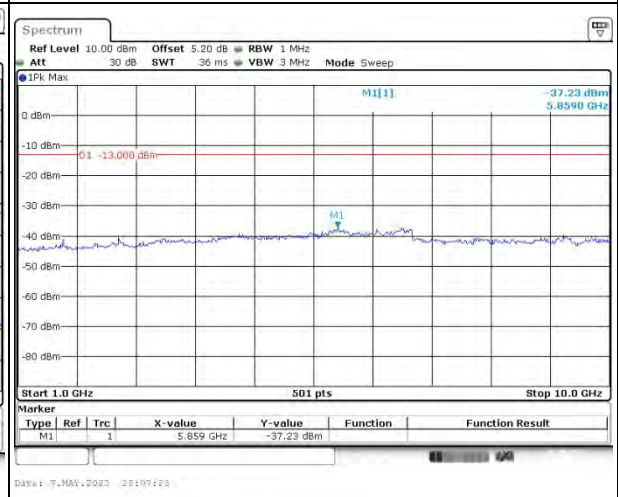
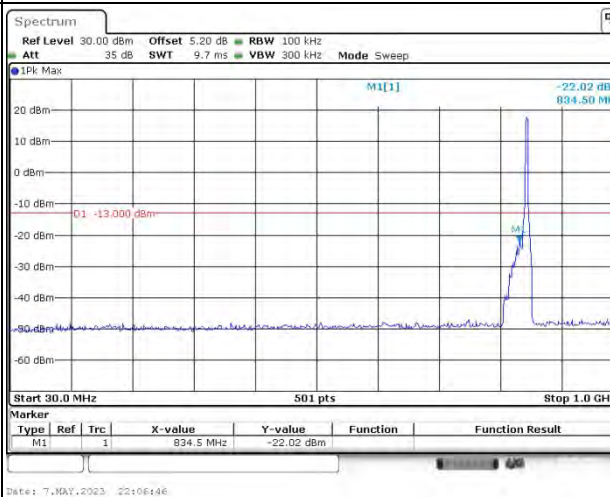
Lowest



Middle



Highest

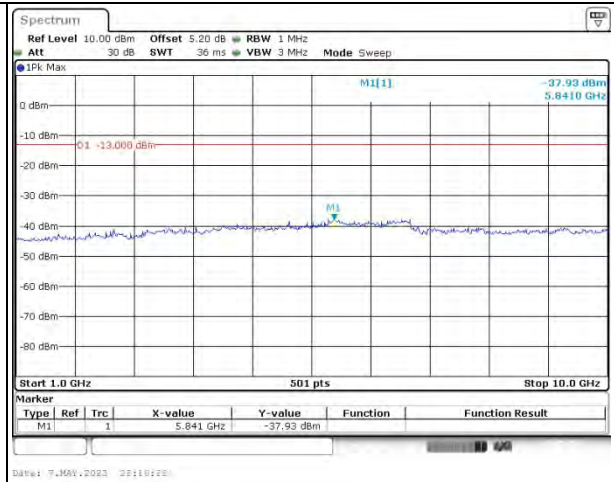
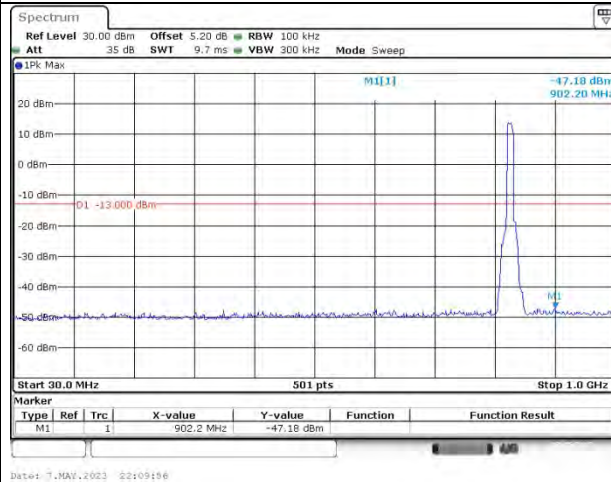


Spurious Emissions at Antenna Terminal

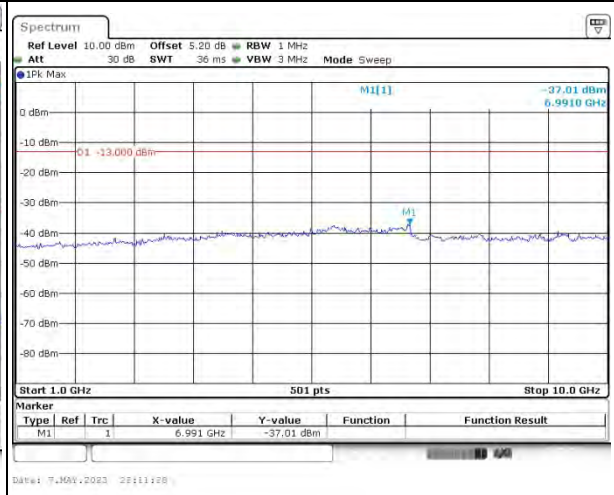
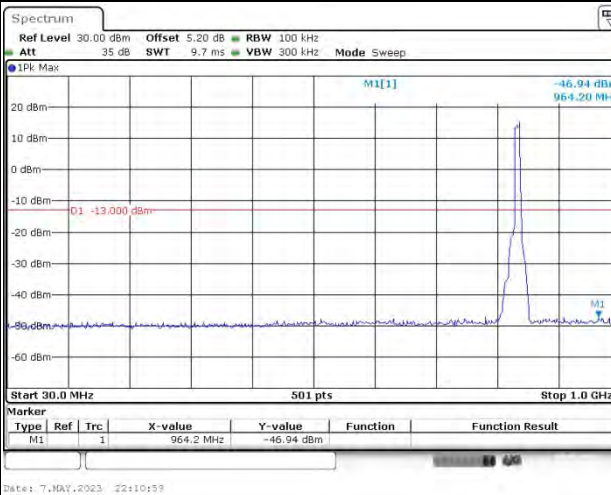
Channel

10MHz Bandwidth QPSK

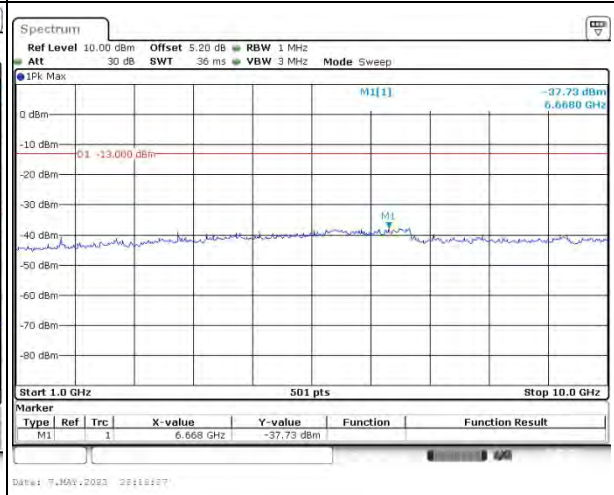
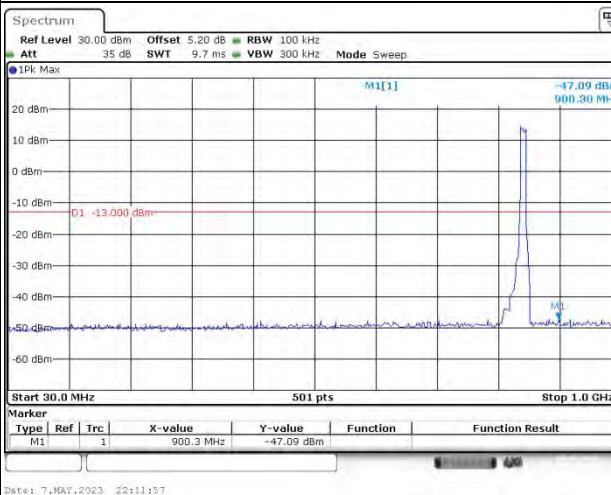
Lowest



Middle



Highest

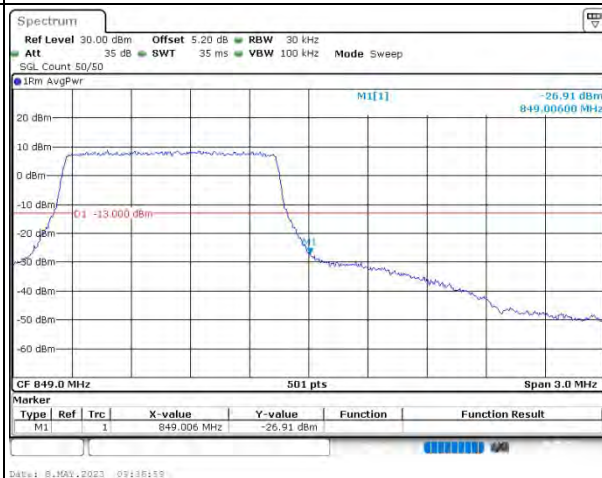
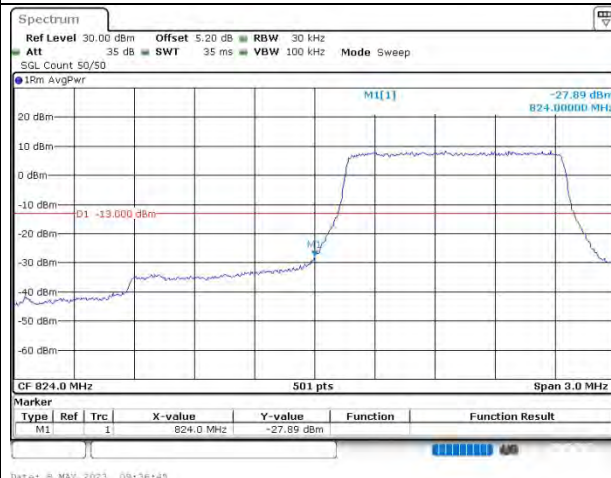


Mode

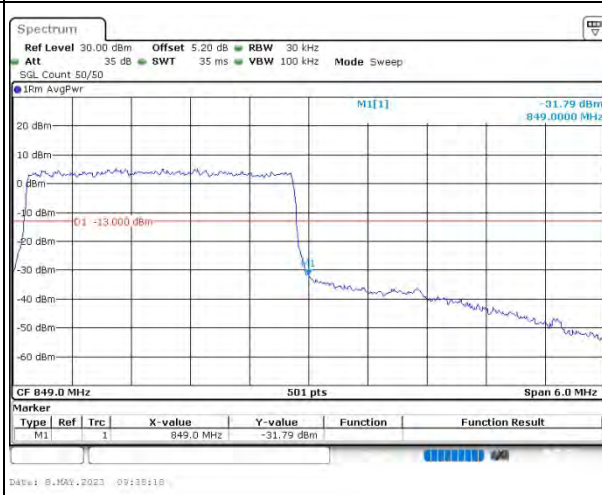
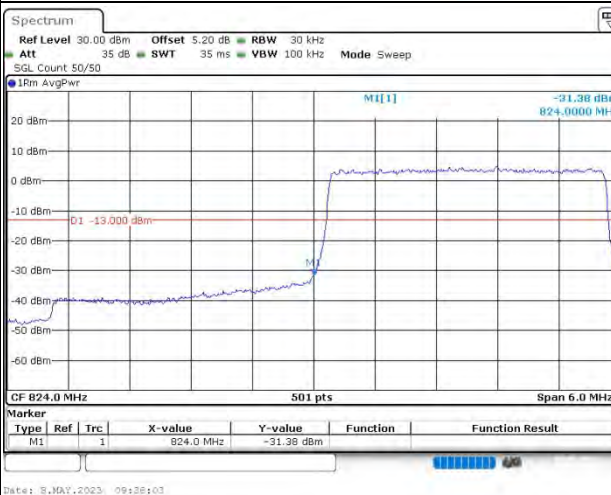
Lowest

Highest

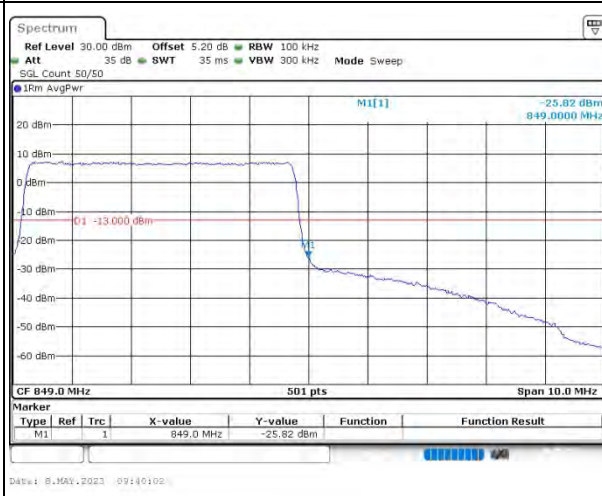
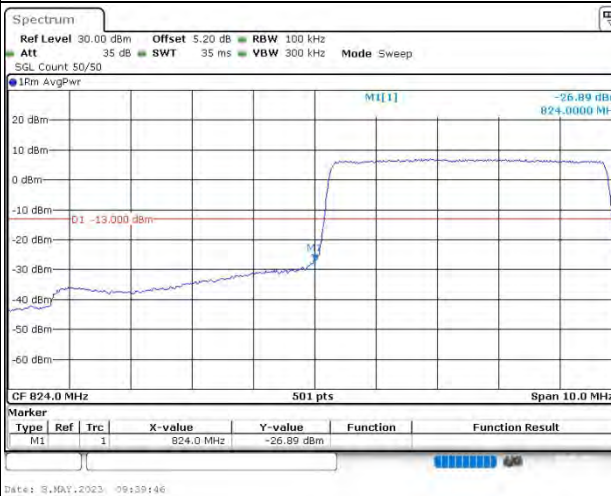
QPSK
1.4MHz



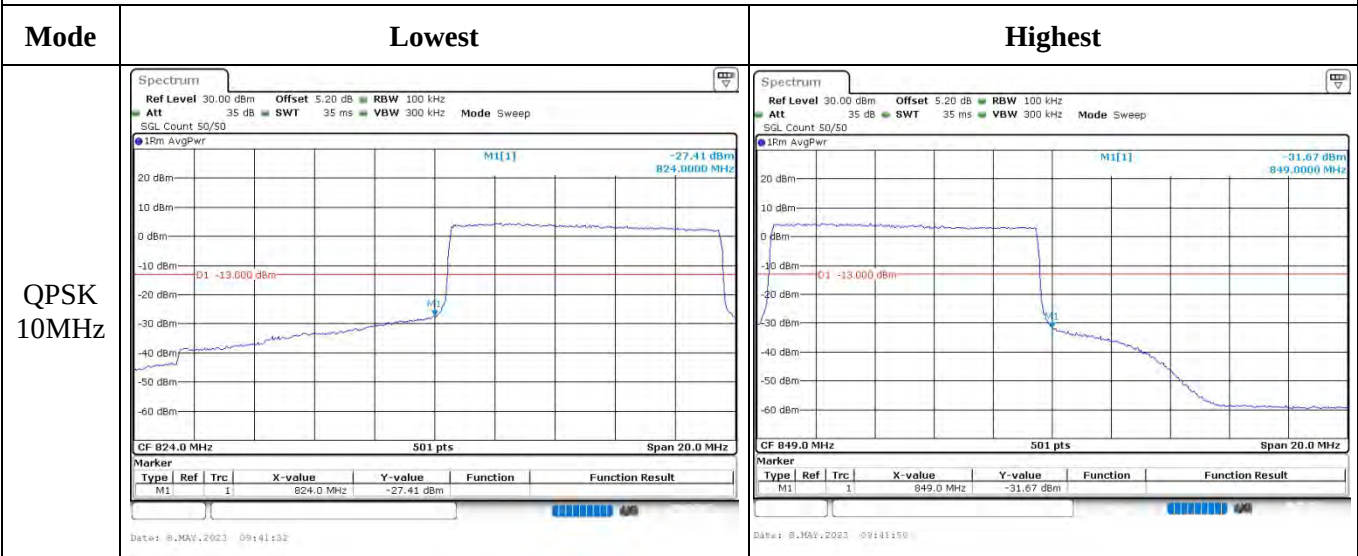
QPSK
3MHz



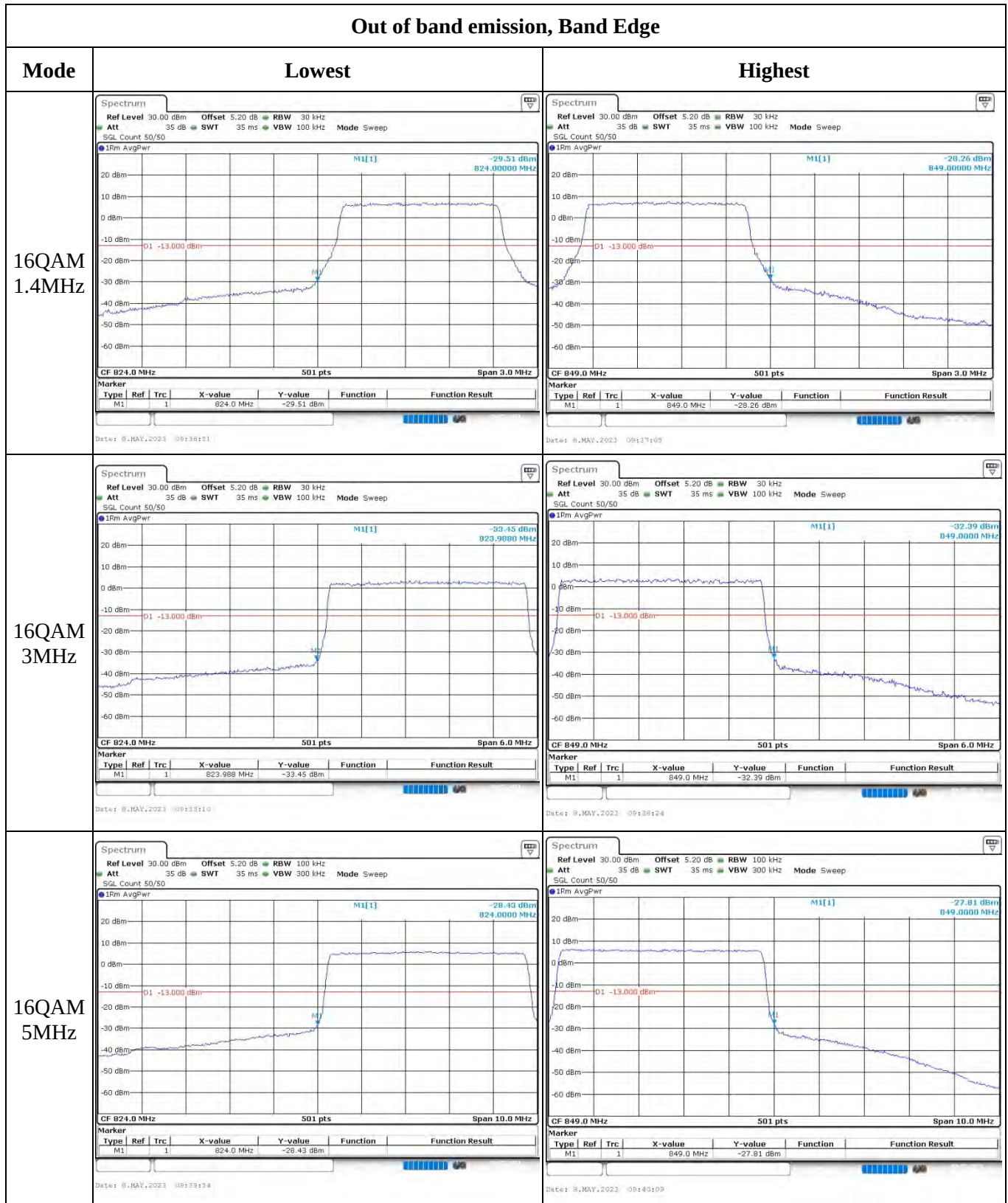
QPSK
5MHz



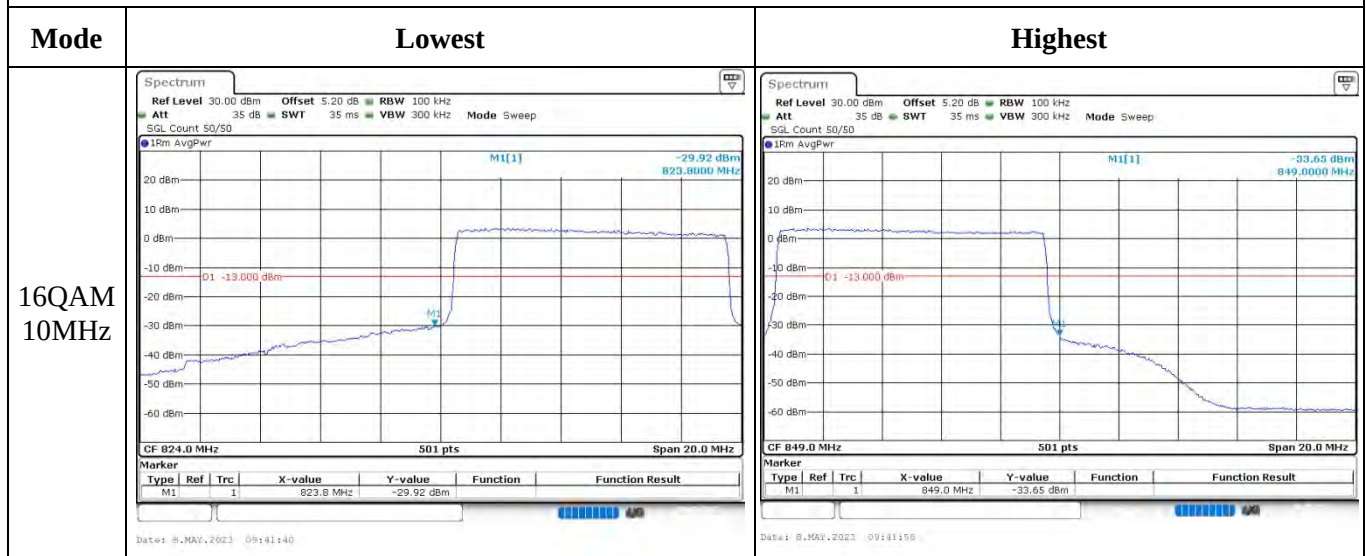
Out of band emission, Band Edge



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:	250W-1	Test Date:	2023/5/6~2023/5/17
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.2~26.1	Relative Humidity: (%)	39~58	ATM Pressure: (kPa)	100.5~102.3
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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	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	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	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

* 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).

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	22.41	22.33	21.19	24.63	33
	RB1#13	22.54	22.21	21.36		
	RB1#24	22.52	21.85	21.3		
	RB15#0	21.55	21.19	20.37		
	RB15#10	21.61	21.19	20.37		
	RB25#0	21.58	21.15	20.32		
5MHz 16QAM	RB1#0	21.58	21.12	20.14	23.85	33
	RB1#13	21.76	21.25	20.22		
	RB1#24	21.64	21.02	20.19		
	RB15#0	20.5	20.36	19.41		
	RB15#10	20.44	20.24	19.38		
	RB25#0	20.52	20.42	19.36		
10MHz QPSK	RB1#0	22.5	22.44	21.92	24.79	33
	RB1#25	22.7	22.44	21.5		
	RB1#49	22.55	22.25	21.35		
	RB25#0	21.6	21.55	20.53		
	RB25#25	21.73	21.45	20.39		
	RB50#0	21.68	21.53	20.42		
10MHz 16QAM	RB1#0	21.99	21.59	20.31	24.35	33
	RB1#25	22.26	21.59	20.48		
	RB1#49	22.11	21.14	20.33		
	RB25#0	20.64	20.51	19.59		
	RB25#25	20.72	20.39	19.56		
	RB50#0	20.67	20.51	19.44		
15MHz QPSK	RB1#0	22.37	22.3	21.87	24.61	33
	RB1#38	22.52	22.33	21.93		
	RB1#74	22.4	22.12	21.73		
	RB36#0	21.56	21.56	21.13		
	RB36#39	21.61	21.46	20.93		
	RB75#0	21.66	21.52	21.09		
15MHz 16QAM	RB1#0	21.5	21.7	21.4	23.83	33
	RB1#38	21.74	21.69	21.41		
	RB1#74	21.59	21.54	21.31		
	RB36#0	20.57	20.49	20.06		
	RB36#39	20.66	20.35	19.91		
	RB75#0	20.59	20.42	20.02		
20MHz QPSK	RB1#0	22.29	22.23	21.81	24.85	33
	RB1#50	22.76	22.56	22.1		
	RB1#99	22.3	22.04	21.11		

20MHz 16QAM	RB50#0	21.55	21.55	21.02	24.17	33
	RB50#50	21.74	21.4	20.75		
	RB100#0	21.63	21.49	20.94		
	RB1#0	21.59	21.38	21.11		
	RB1#50	22.08	21.71	21.57		
	RB1#99	21.62	21.23	20.71		
20MHz 16QAM	RB50#0	20.49	20.56	20.04	24.17	33
	RB50#50	20.69	20.42	19.76		
	RB100#0	20.57	20.5	19.93		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gt(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	3.74	3.8	3.68	13
	RB100#0	4.87	4.78	4.64	13
20MHz 16QAM	RB1#0	4.61	4.64	4.58	13
	RB100#0	5.83	5.74	5.51	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	4.511	4.491	4.531	4.96	4.94	4.92
5MHz 16QAM	4.531	4.511	4.511	4.96	4.96	4.94
10MHz QPSK	8.982	8.942	8.942	10.16	9.6	9.6
10MHz 16QAM	8.982	8.942	8.982	9.64	9.72	9.64
15MHz QPSK	13.533	13.473	13.533	14.82	14.76	14.82
15MHz 16QAM	13.533	13.533	13.533	14.76	14.76	14.76
20MHz QPSK	17.884	18.044	17.884	19.92	19.52	19.28
20MHz 16QAM	17.964	17.964	17.964	20	19.44	19.36

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

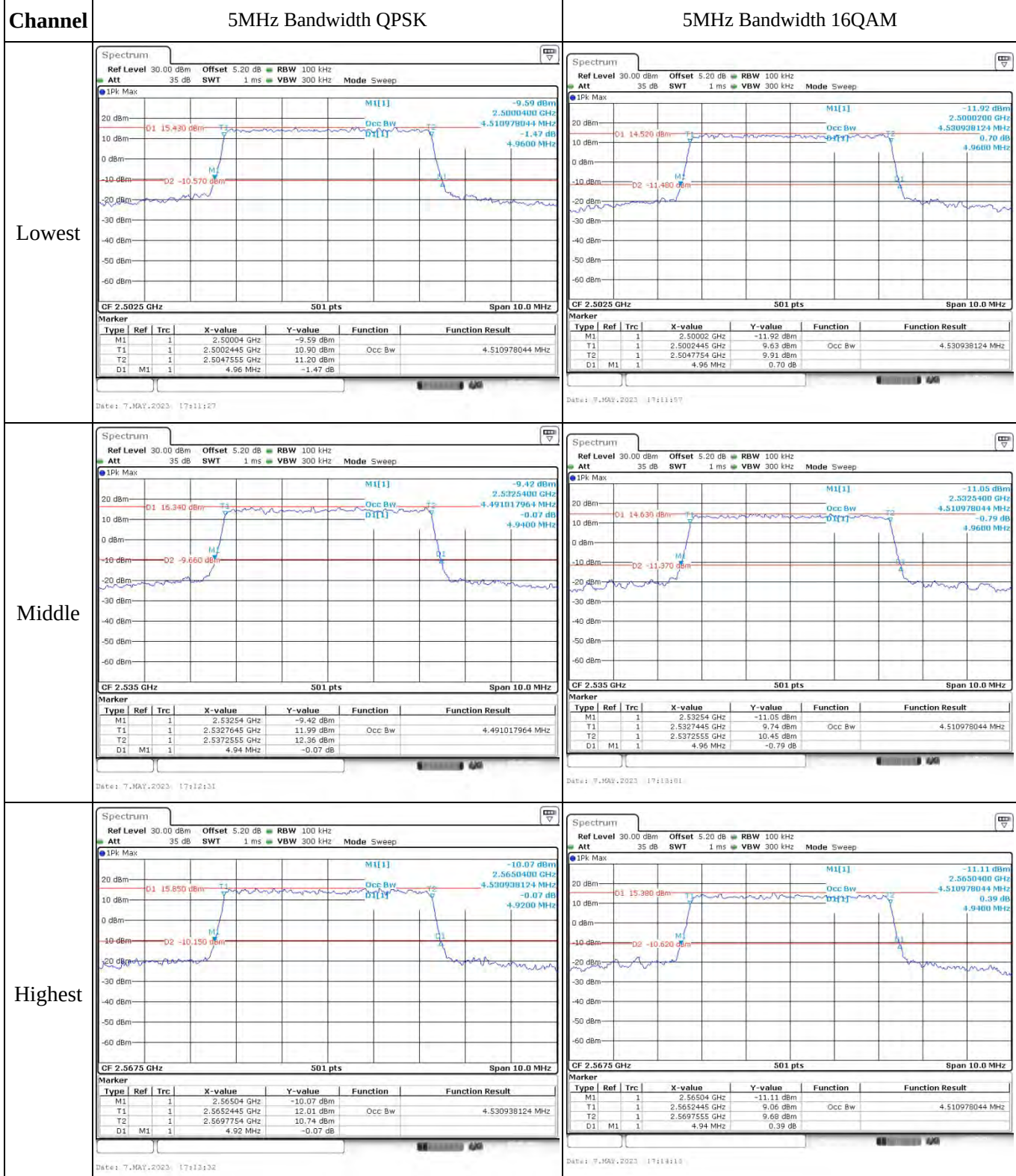
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge
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Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2501.114	2500.00	2568.995	2570
	-20	3.85	2501.095	2500.00	2568.947	2570
	-10	3.85	2501.109	2500.00	2568.907	2570
	0	3.85	2501.071	2500.00	2568.929	2570
	10	3.85	2501.106	2500.00	2568.918	2570
	20	3.85	2501.138	2500.00	2568.942	2570
	30	3.85	2501.078	2500.00	2568.905	2570
	40	3.85	2501.097	2500.00	2568.931	2570
	50	3.85	2501.157	2500.00	2568.907	2570
Frequency Stability vs. Voltage	20	3.5	2501.068	2500.00	2568.966	2570
	20	4.4	2501.140	2500.00	2568.900	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	2501.041	2500.00	2569.028	2570
	-20	3.85	2501.060	2500.00	2569.004	2570
	-10	3.85	2501.088	2500.00	2569.062	2570
	0	3.85	2501.098	2500.00	2569.087	2570
	10	3.85	2501.054	2500.00	2569.028	2570
	20	3.85	2501.058	2500.00	2569.022	2570
	30	3.85	2501.058	2500.00	2569.074	2570
	40	3.85	2501.071	2500.00	2569.037	2570
	50	3.85	2501.017	2500.00	2569.098	2570
Frequency Stability vs. Voltage	20	3.5	2501.012	2500.00	2569.039	2570
	20	4.4	2501.006	2500.00	2569.015	2570
					Result:	Pass

Test Plots(Note: The 5.2dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



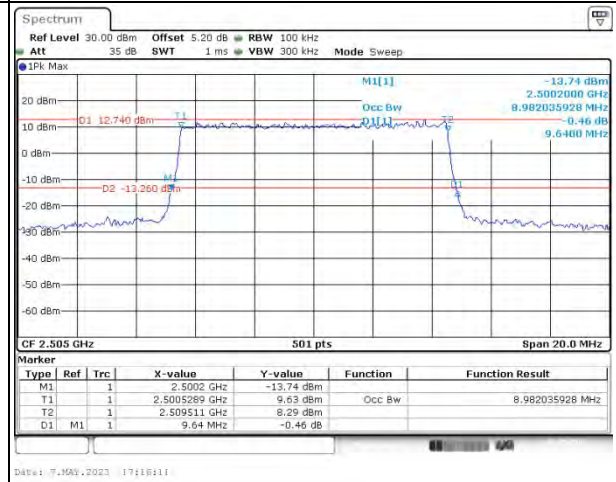
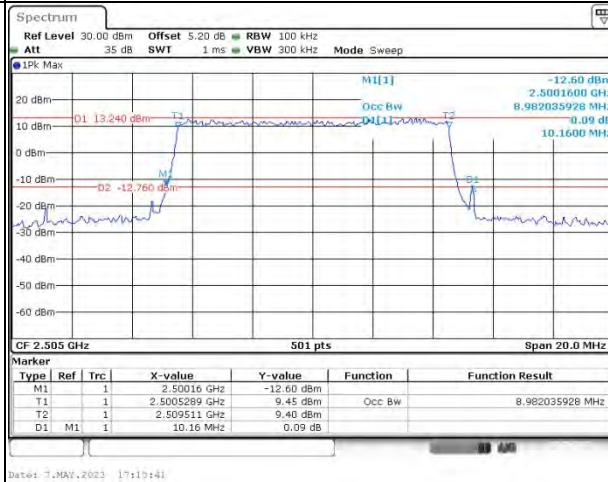
Occupied Bandwidth

Channel

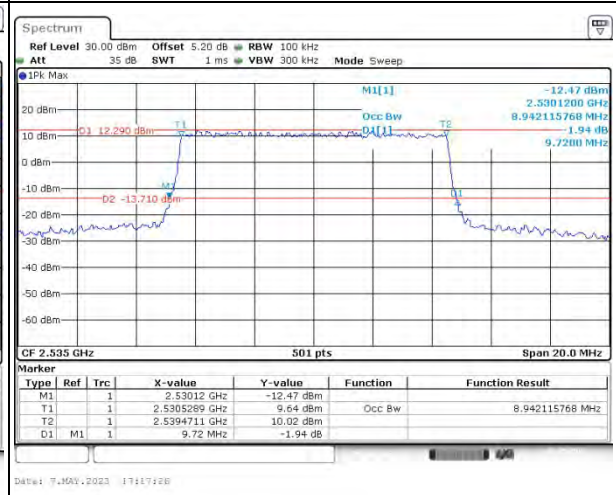
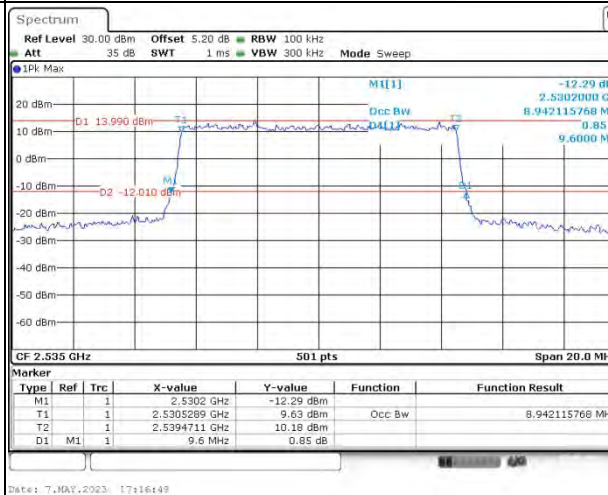
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

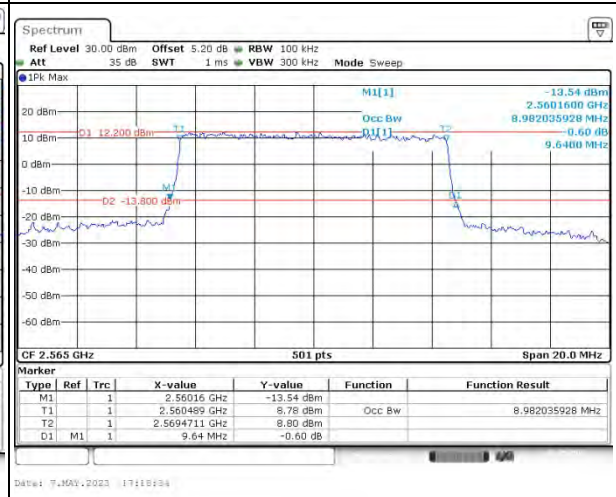
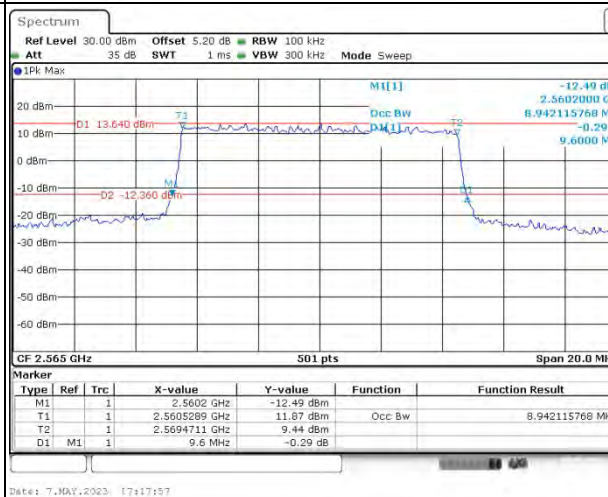
Lowest



Middle



Highest



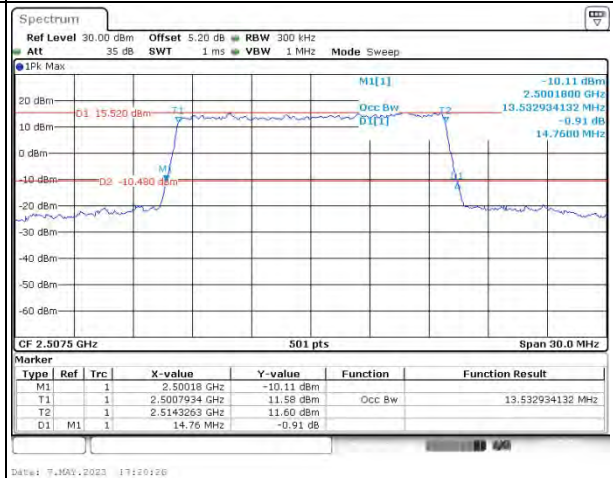
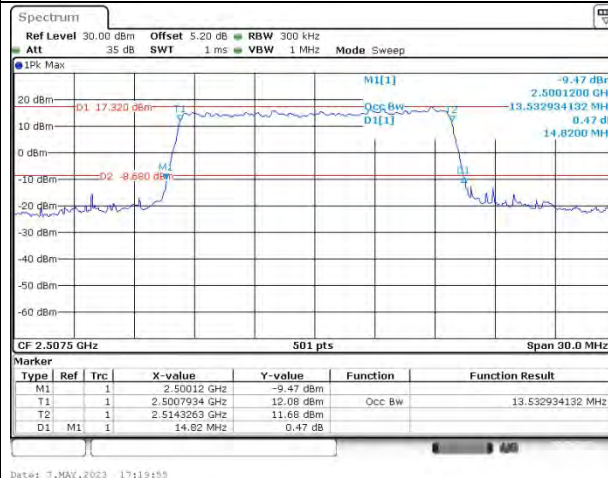
Occupied Bandwidth

Channel

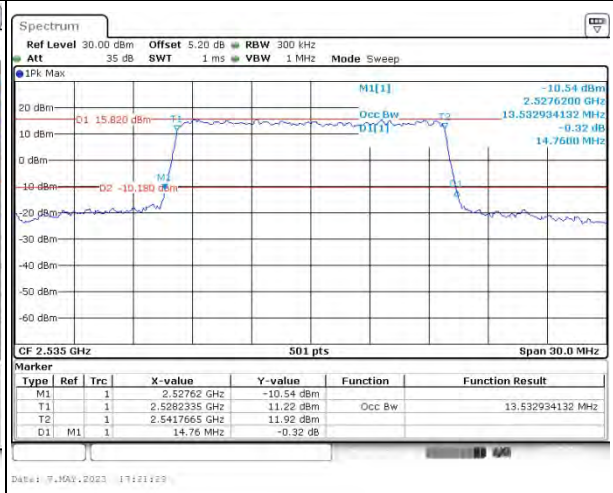
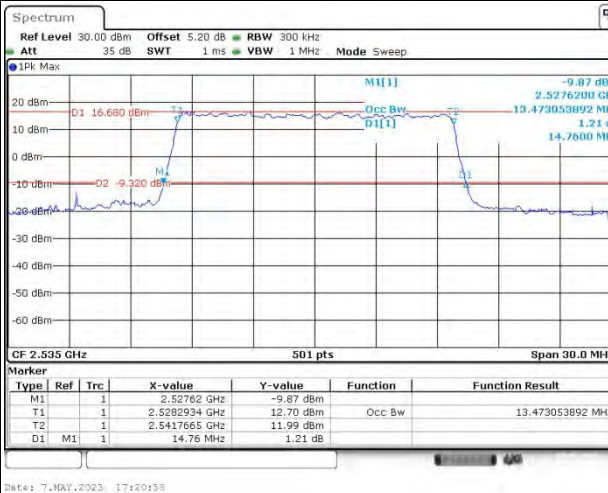
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

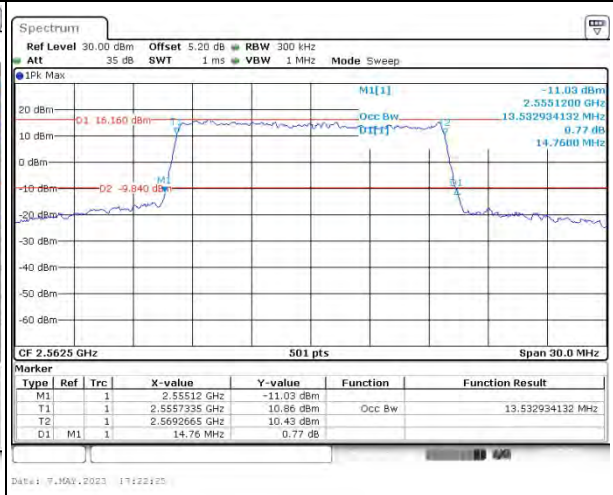
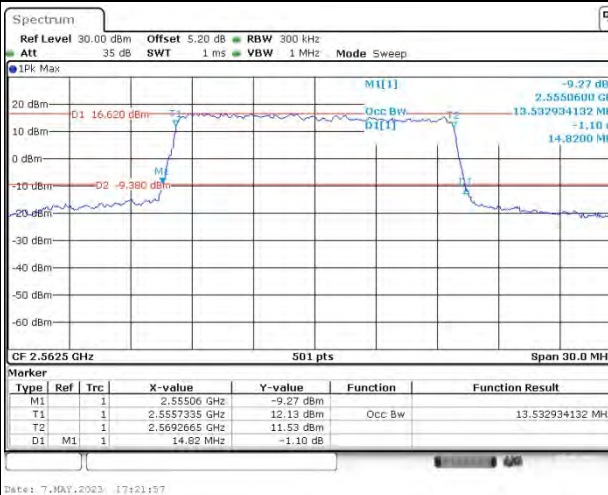
Lowest



Middle



Highest



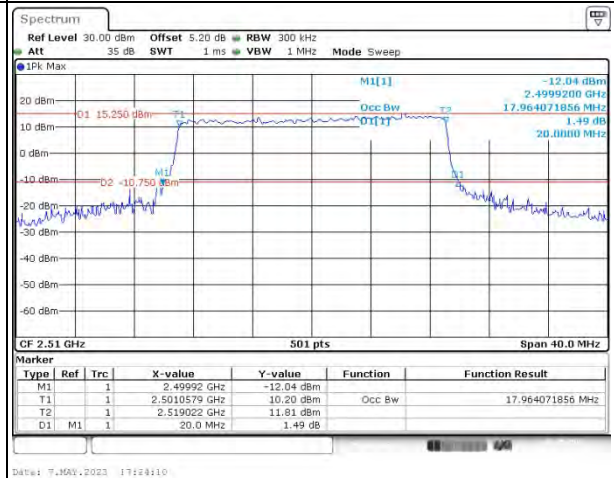
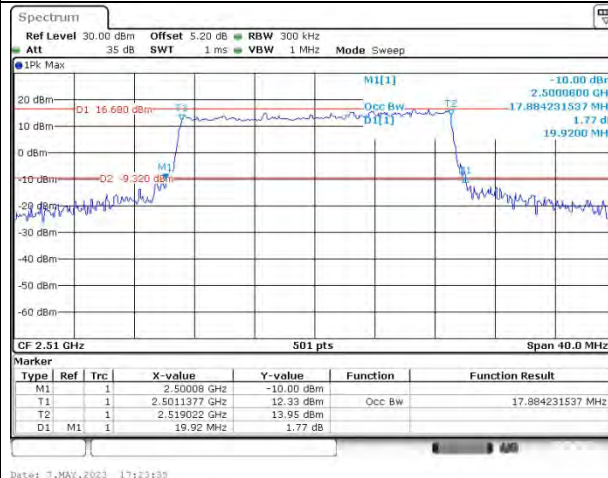
Occupied Bandwidth

Channel

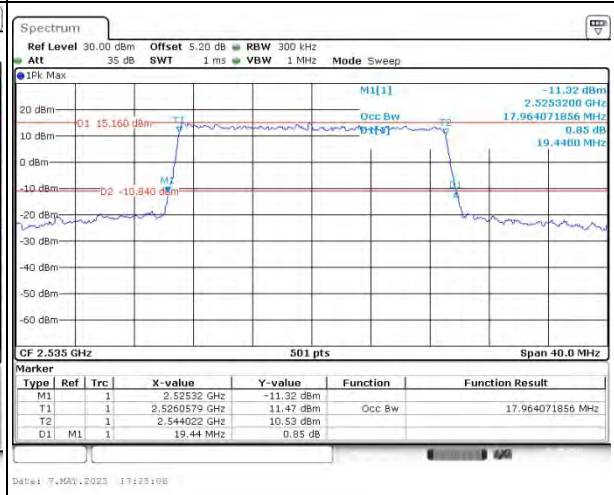
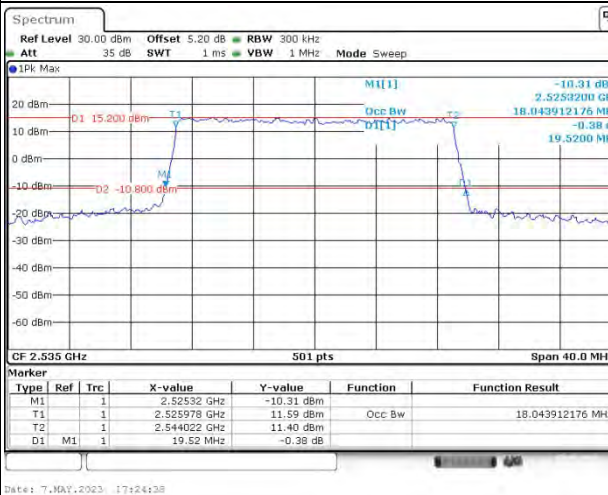
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

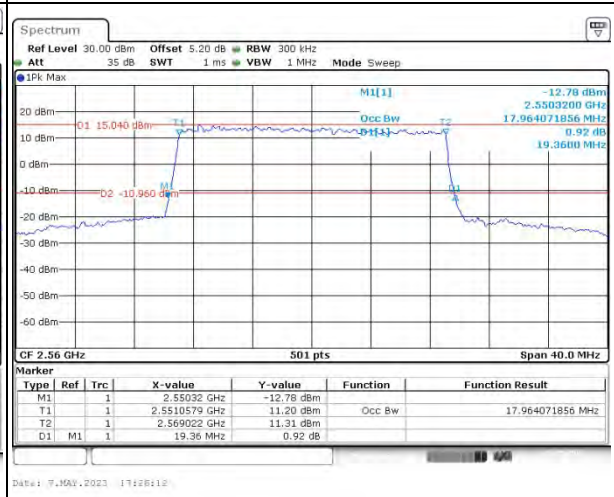
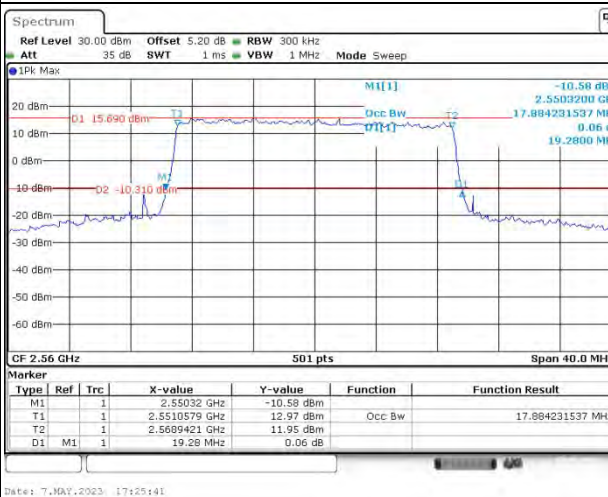
Lowest



Middle



Highest

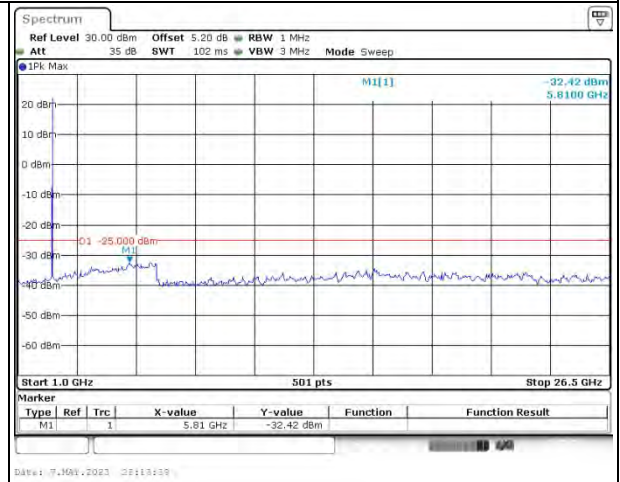
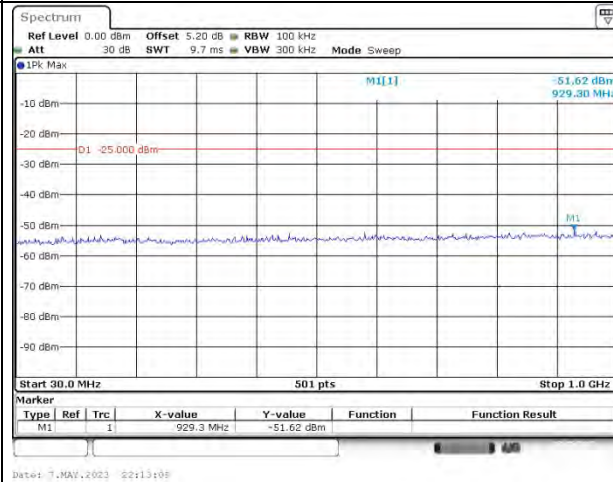


Spurious Emissions at Antenna Terminal

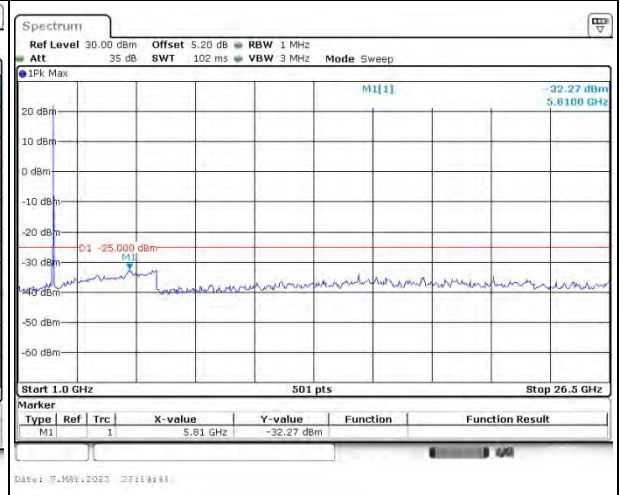
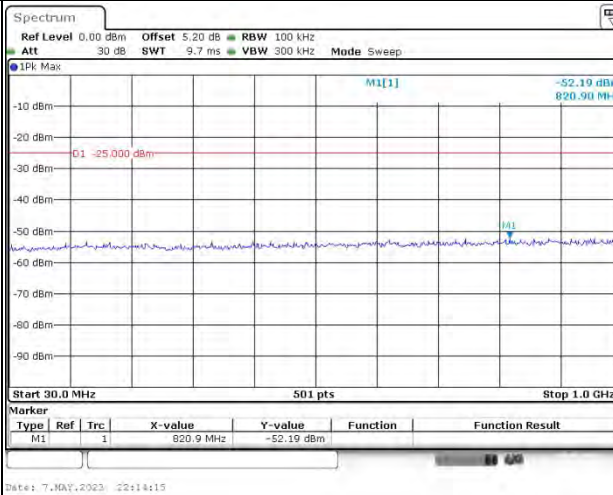
Channel

5MHz Bandwidth QPSK

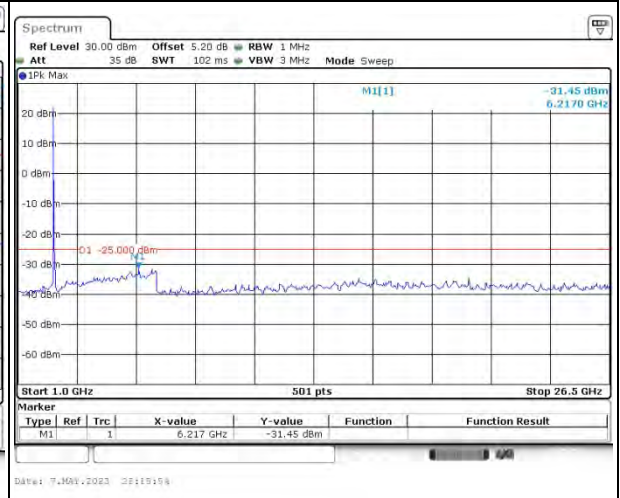
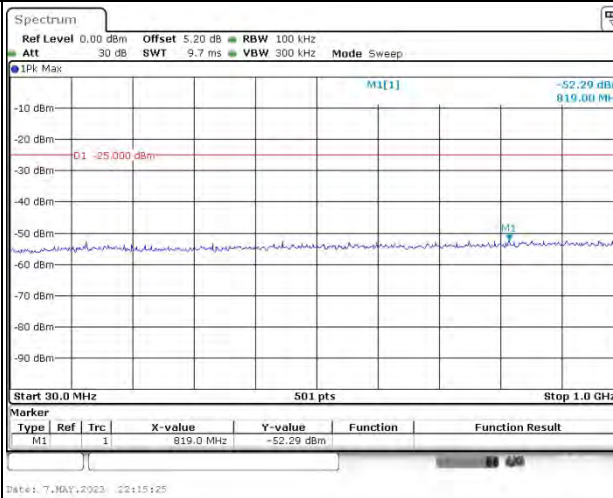
Lowest



Middle



Highest

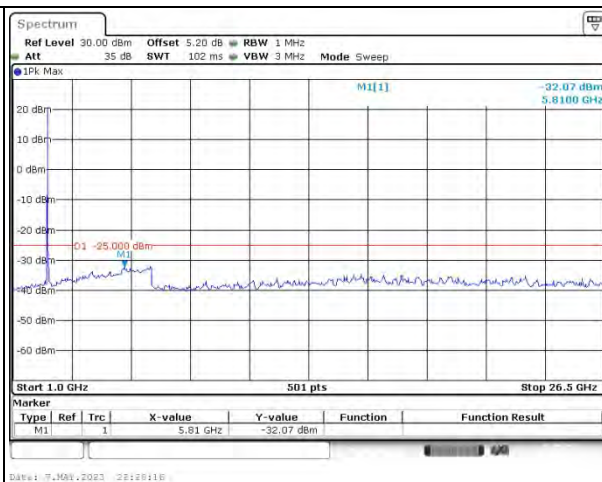
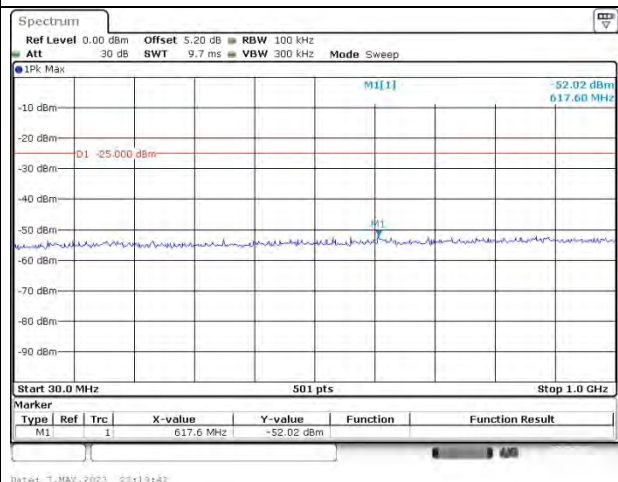


Spurious Emissions at Antenna Terminal

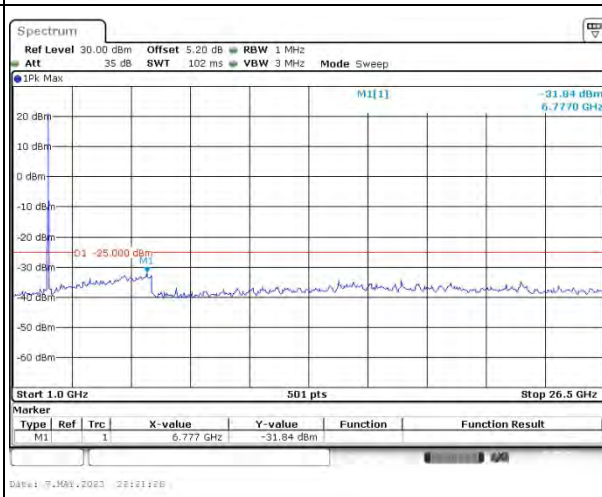
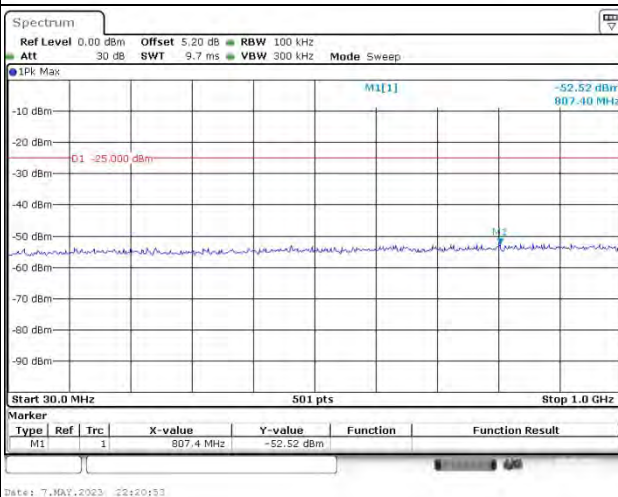
Channel

10MHz Bandwidth QPSK

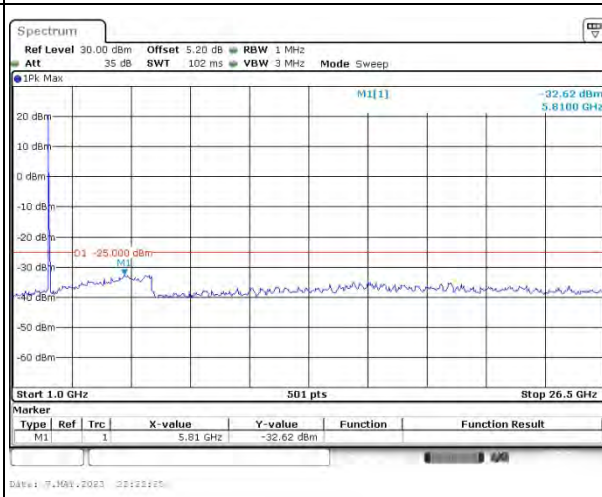
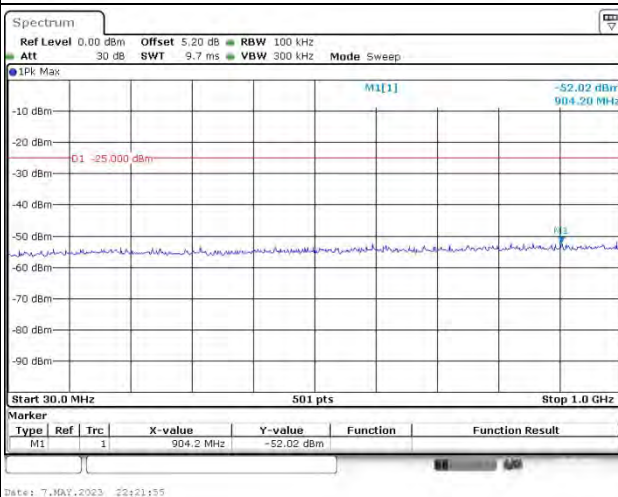
Lowest



Middle



Highest

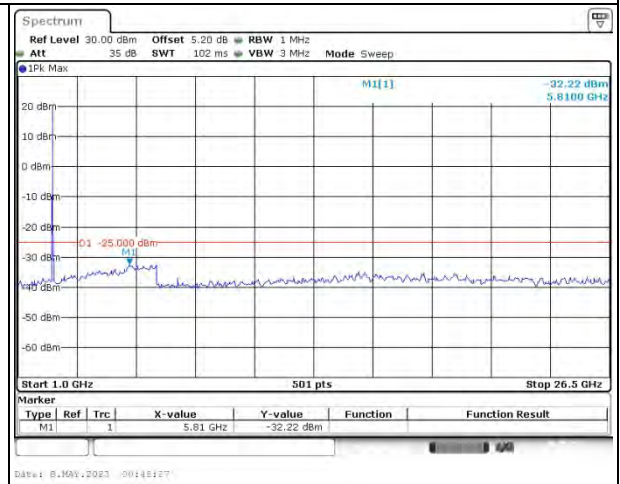
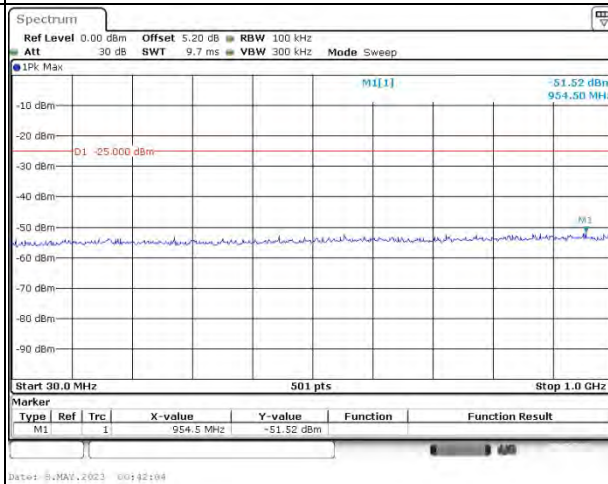


Spurious Emissions at Antenna Terminal

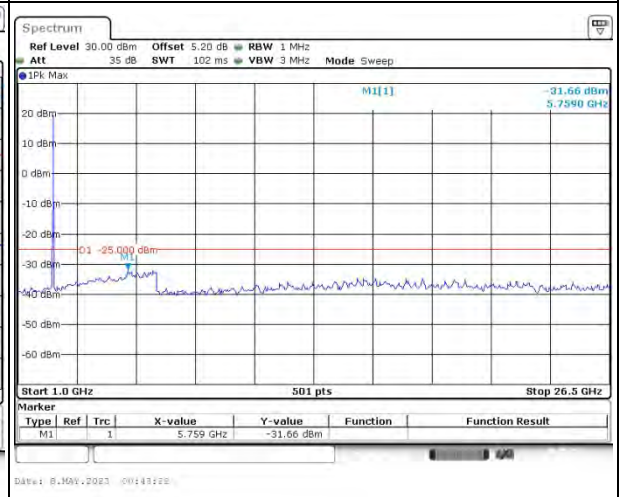
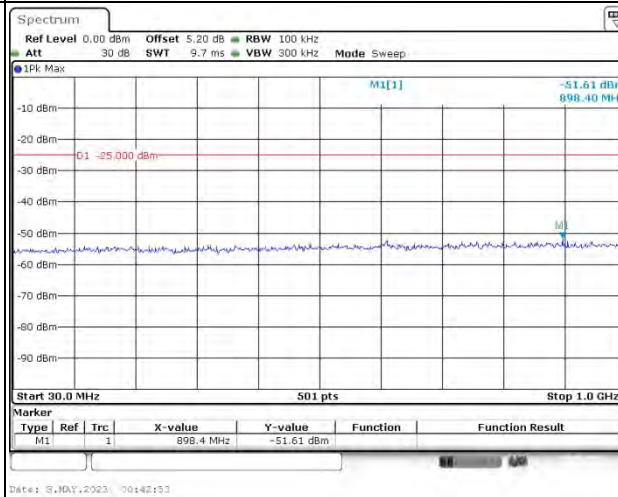
Channel

15MHz Bandwidth QPSK

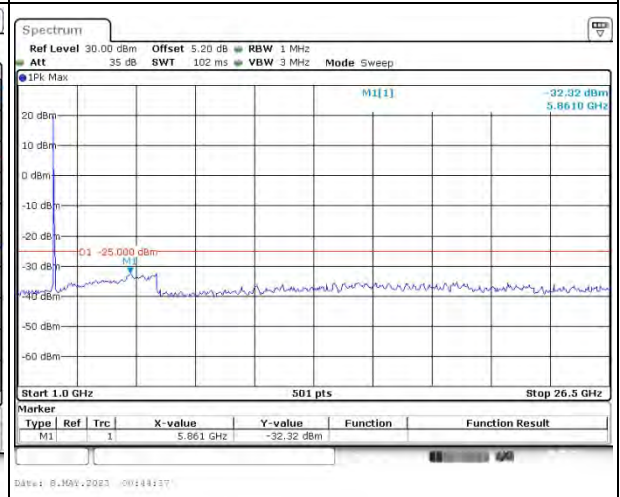
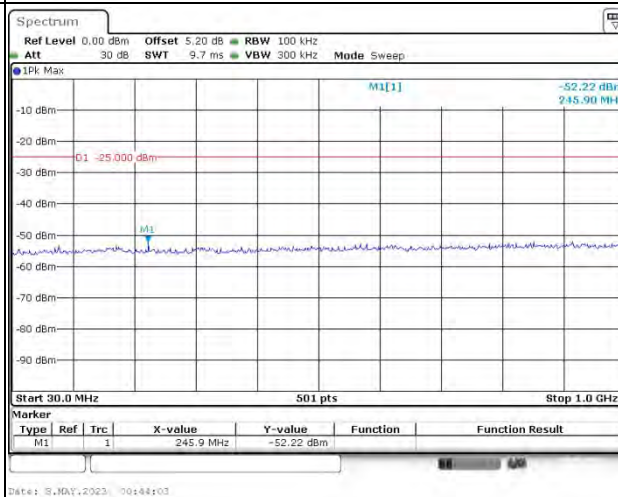
Lowest



Middle



Highest

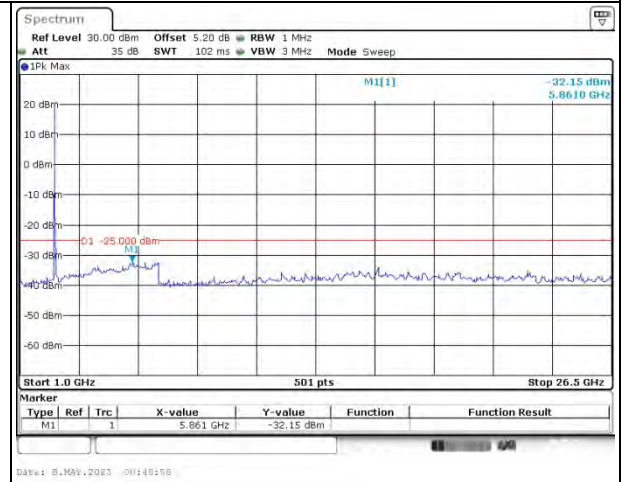
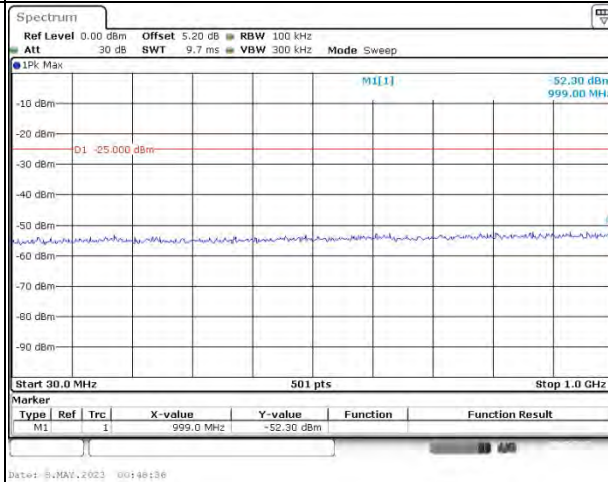


Spurious Emissions at Antenna Terminal

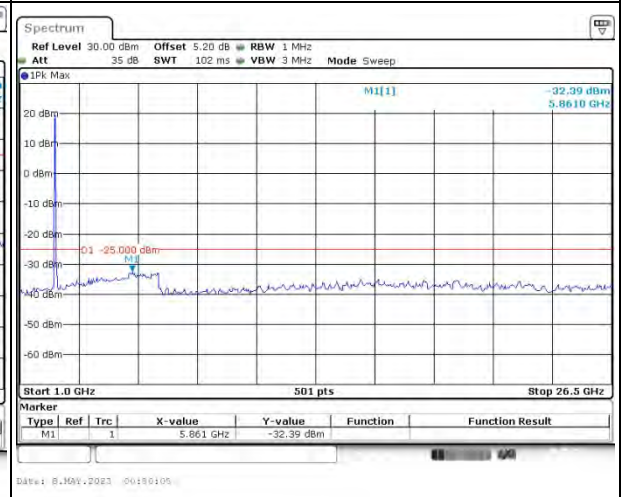
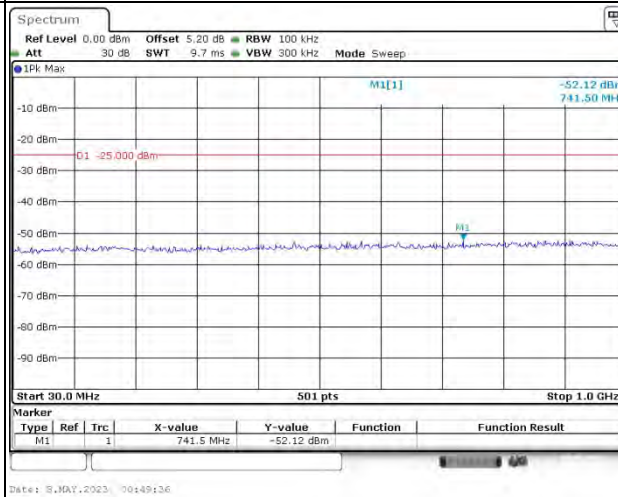
Channel

20MHz Bandwidth QPSK

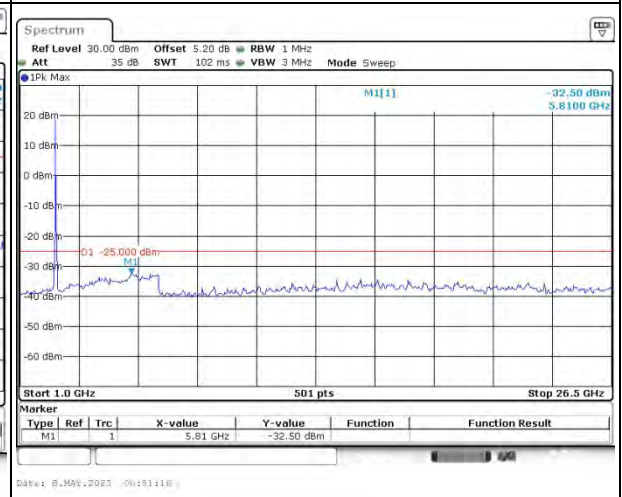
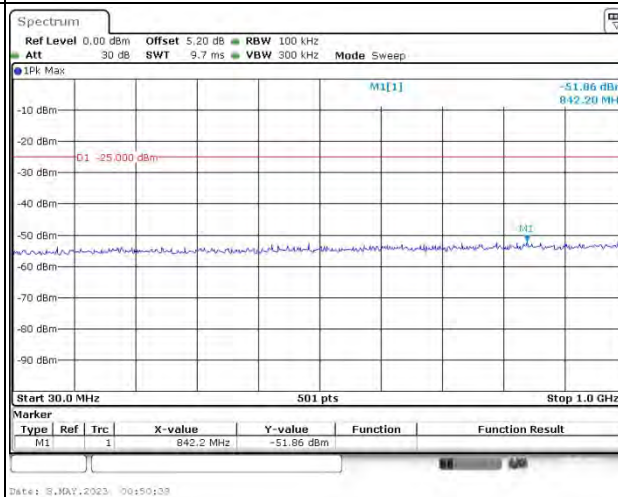
Lowest



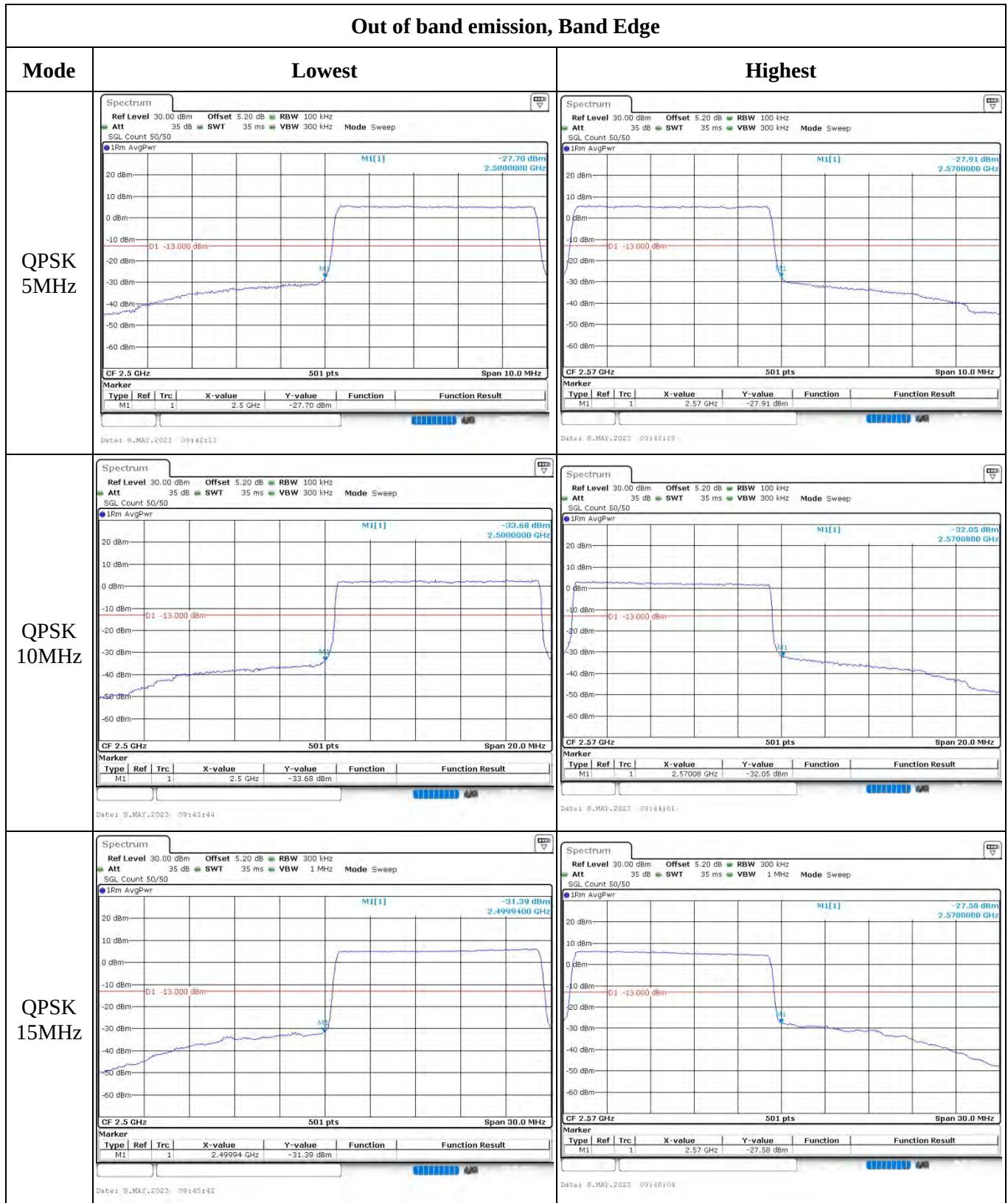
Middle



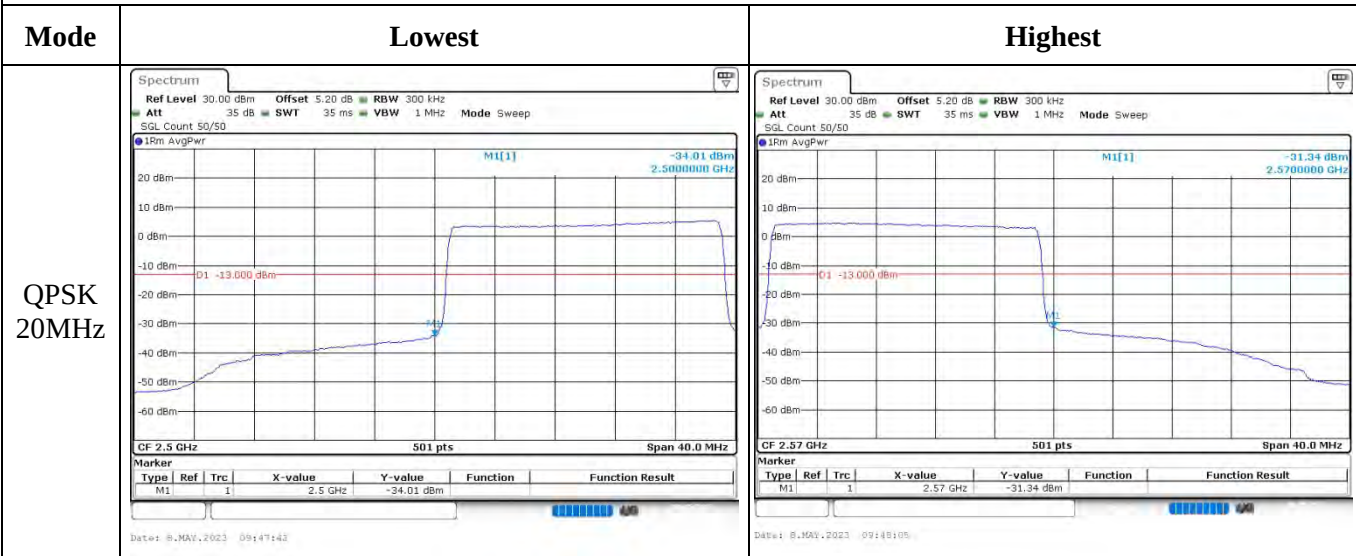
Highest



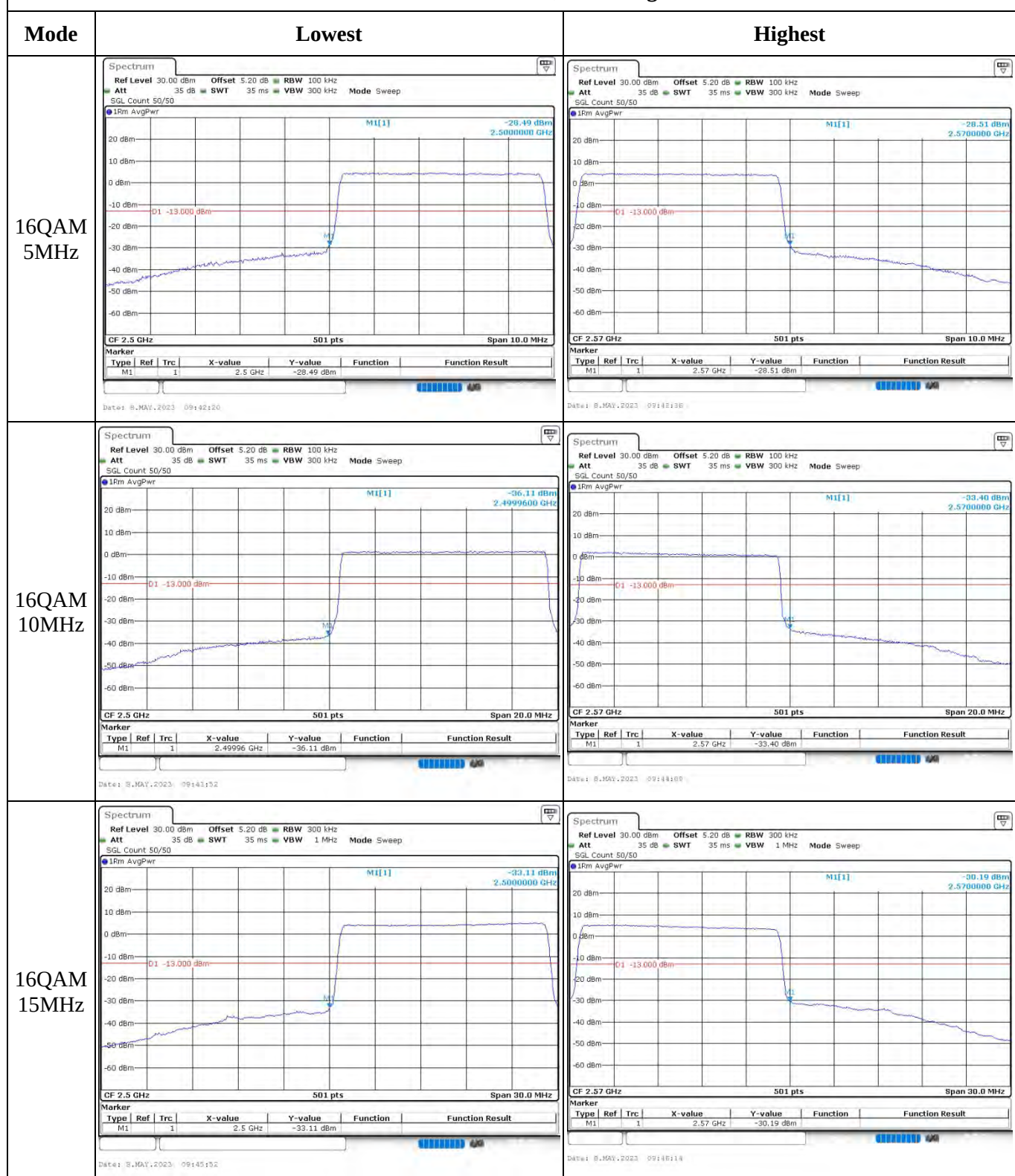
Out of band emission, Band Edge



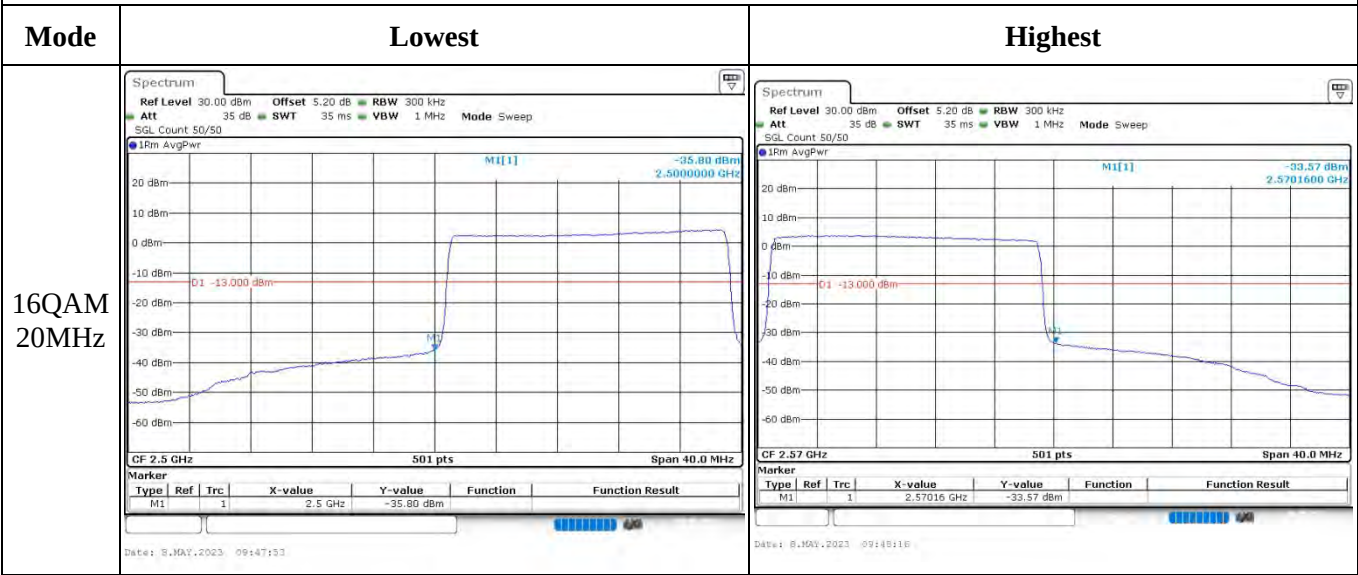
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.10 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	250W-1	Test Date:	2023/5/6~2023/5/17
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.2~26.1	Relative Humidity: (%)	39~58	ATM Pressure: (kPa)	100.5~102.3
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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	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	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	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

** 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).*

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	20.21	20.17	20.1	15.33	34.77
	RB1#3	20.33	20.34	20.38		
	RB1#5	20.18	20.15	20.11		
	RB3#0	20.35	20.24	20.19		
	RB3#3	20.25	20.26	20.21		
	RB6#0	19.26	19.26	19.2		
1.4MHz 16QAM	RB1#0	19.16	19.29	19.11	14.42	34.77
	RB1#3	19.43	19.47	19.18		
	RB1#5	19.23	19.31	19.09		
	RB3#0	19.43	19.19	19.32		
	RB3#3	19.46	19.2	19.25		
	RB6#0	18.33	18.31	18.19		
3MHz QPSK	RB1#0	20.27	20.24	20.11	15.22	34.77
	RB1#8	20.22	20.21	20.18		
	RB1#14	20.22	20.16	20.18		
	RB6#0	19.29	19.21	19.12		
	RB6#9	19.26	19.17	19.18		
	RB15#0	19.29	19.2	19.15		
3MHz 16QAM	RB1#0	19.79	19.36	19.14	14.79	34.77
	RB1#8	19.79	19.34	19.18		
	RB1#14	19.84	19.32	19.11		
	RB6#0	18.36	18.26	18.1		
	RB6#9	18.33	18.27	18.13		
	RB15#0	18.42	18.18	18.25		
5MHz QPSK	RB1#0	20.11	20.12	20.01	15.26	34.77
	RB1#13	20.31	20.23	20.17		
	RB1#24	20.22	20.11	20.06		
	RB15#0	19.34	19.09	19.18		
	RB15#10	19.33	19	19.32		
	RB25#0	19.33	19.07	19.24		
5MHz 16QAM	RB1#0	19.03	19.36	19.1	14.41	34.77
	RB1#13	19.19	19.46	19.24		
	RB1#24	19.13	19.43	19.08		
	RB15#0	18.39	18.1	18.31		
	RB15#10	18.45	18.1	18.42		
	RB25#0	18.41	18.13	18.32		
10MHz QPSK	RB1#0	20.12	20.14	20.14	15.37	34.77
	RB1#25	20.42	20.29	20.32		
	RB1#49	20.19	20.14	20.24		

10MHz 16QAM	RB25#0	19.27	18.94	19.51	14.89	34.77
	RB25#25	19.45	18.99	19.28		
	RB50#0	19.37	19.01	19.46		
	RB1#0	19.74	19.29	19.12		
	RB1#25	19.94	19.38	19.32		
	RB1#49	19.7	19.36	19.19		
10MHz 16QAM	RB25#0	18.35	18.05	18.62	14.89	34.77
	RB25#25	18.5	18.04	18.45		
	RB50#0	18.4	18.06	18.49		

Note:

ERP= Conducted Power(dBm) - L_c(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15**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	4.41	4.87	4.43	13
	RB50#0	5.16	4.9	5.22	13
10MHz 16QAM	RB1#0	5.33	5.59	5.36	13
	RB50#0	6.09	5.97	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	1.096	1.102	1.108	1.296	1.308	1.302
1.4MHz 16QAM	1.102	1.09	1.096	1.32	1.284	1.302
3MHz QPSK	2.683	2.683	2.683	2.868	2.868	2.88
3MHz 16QAM	2.683	2.683	2.671	2.904	2.88	2.88
5MHz QPSK	4.551	4.511	4.531	5.22	5.66	5.2
5MHz 16QAM	4.551	4.511	4.571	5.16	5.12	5.28
10MHz QPSK	8.982	8.942	8.982	9.88	9.76	9.92
10MHz 16QAM	8.982	8.942	8.982	9.76	9.72	10

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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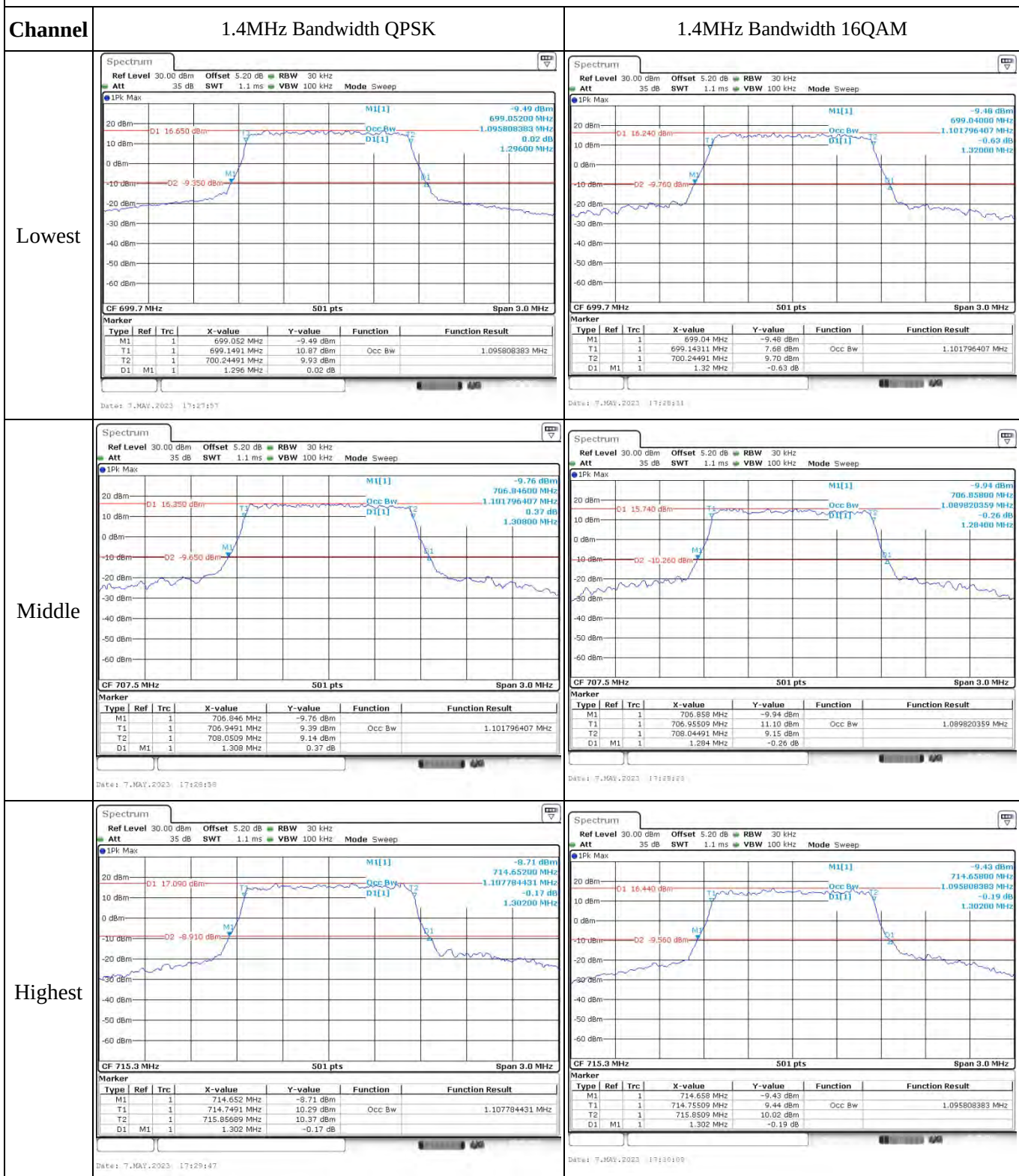
FCC §2.1055, §27.54: Frequency Stability

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	3.85	699.600	699.00	715.503	716.00
	-20	3.85	699.593	699.00	715.484	716.00
	-10	3.85	699.539	699.00	715.513	716.00
	0	3.85	699.563	699.00	715.499	716.00
	10	3.85	699.567	699.00	715.494	716.00
	20	3.85	699.529	699.00	715.471	716.00
	30	3.85	699.598	699.00	715.474	716.00
	40	3.85	699.566	699.00	715.472	716.00
	50	3.85	699.506	699.00	715.494	716.00
Frequency Stability vs. Voltage	20	3.5	699.578	699.00	715.460	716.00
	20	4.4	699.559	699.00	715.451	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	3.85	699.552	699.00	715.458	716.00
	-20	3.85	699.589	699.00	715.494	716.00
	-10	3.85	699.537	699.00	715.435	716.00
	0	3.85	699.503	699.00	715.482	716.00
	10	3.85	699.536	699.00	715.439	716.00
	20	3.85	699.529	699.00	715.471	716.00
	30	3.85	699.511	699.00	715.468	716.00
	40	3.85	699.560	699.00	715.468	716.00
	50	3.85	699.577	699.00	715.434	716.00
Frequency Stability vs. Voltage	20	3.5	699.554	699.00	715.500	716.00
	20	4.4	699.529	699.00	715.458	716.00
					Result:	Pass

Test Plots(Note: The 5.2 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



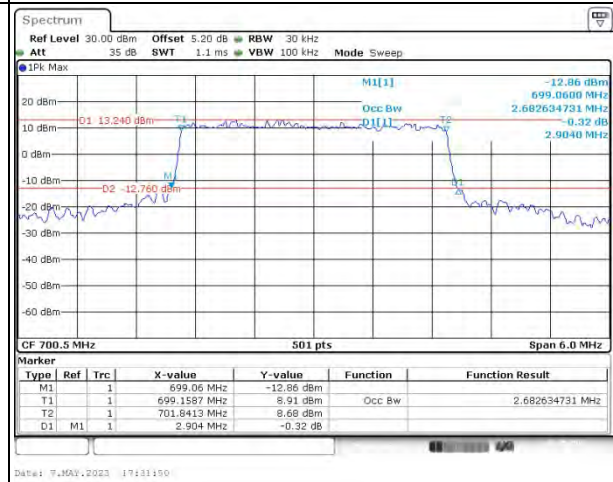
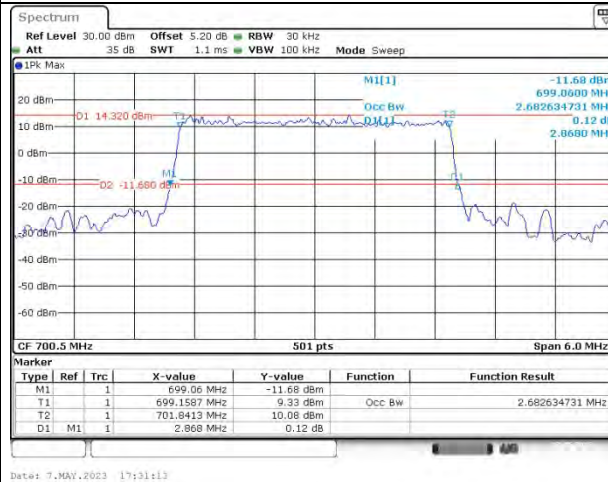
Occupied Bandwidth

Channel

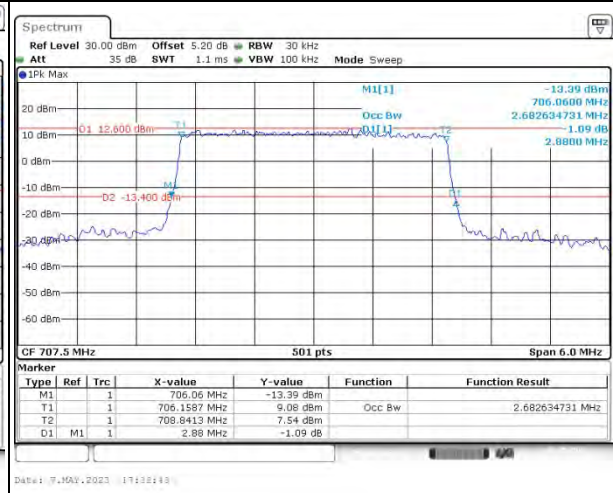
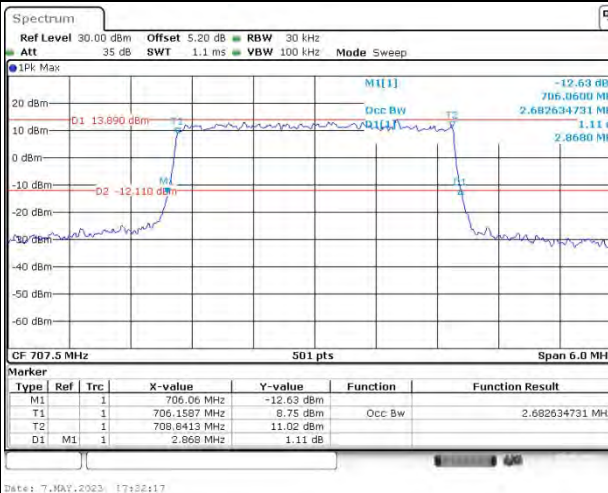
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

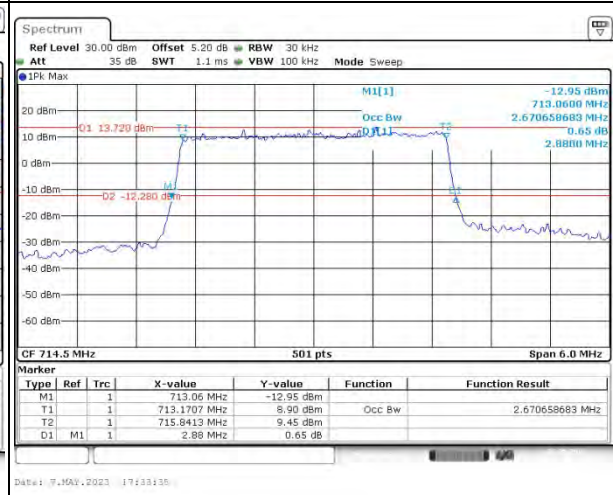
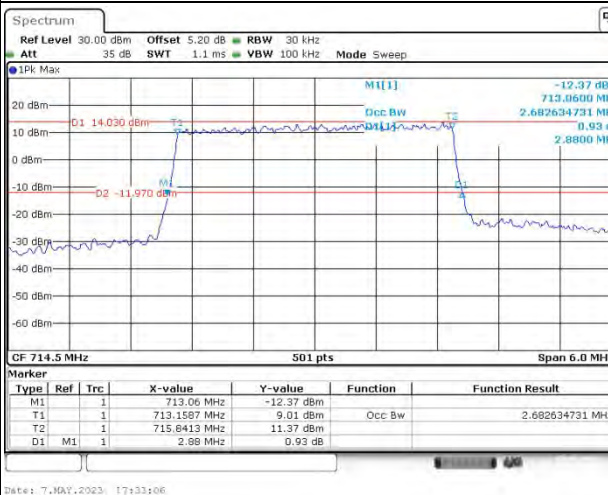
Lowest



Middle



Highest



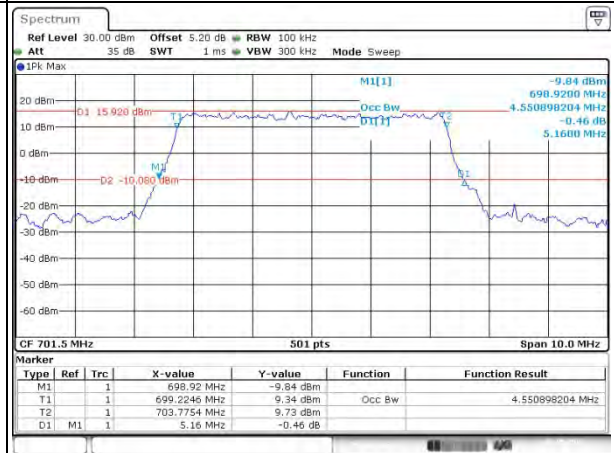
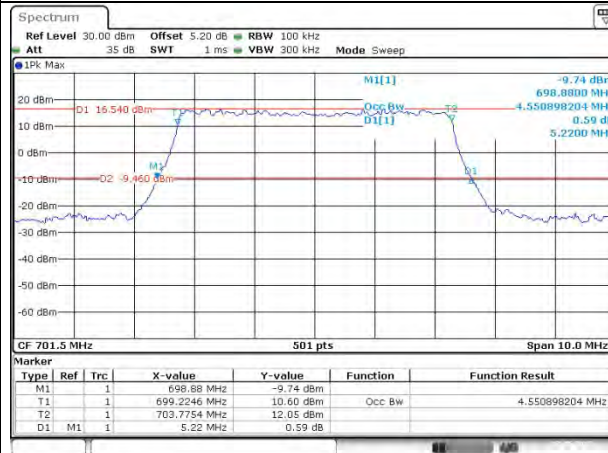
Occupied Bandwidth

Channel

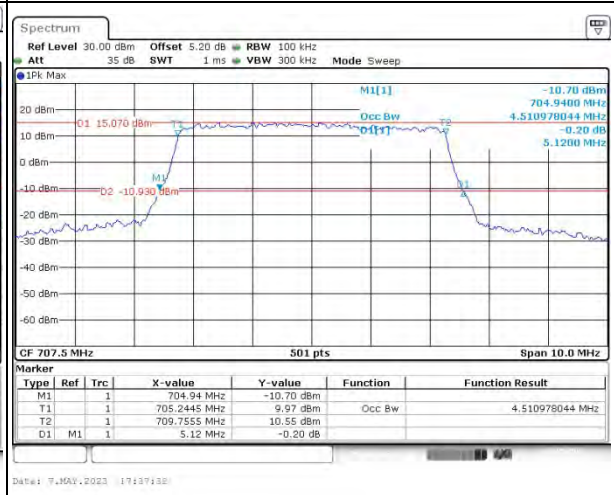
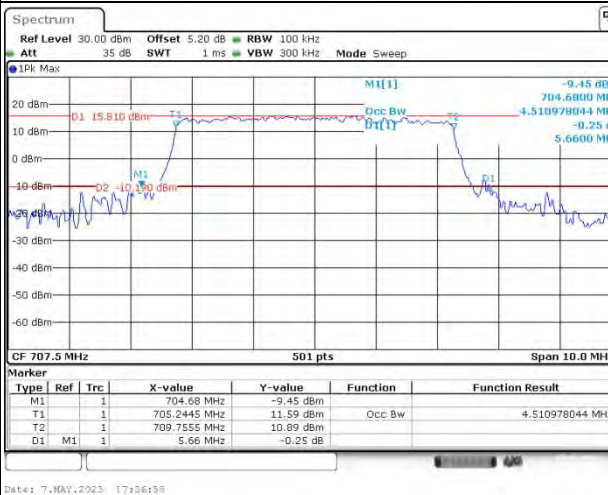
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

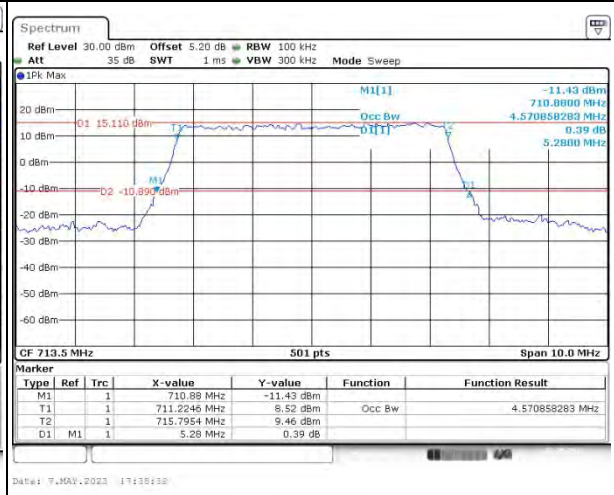
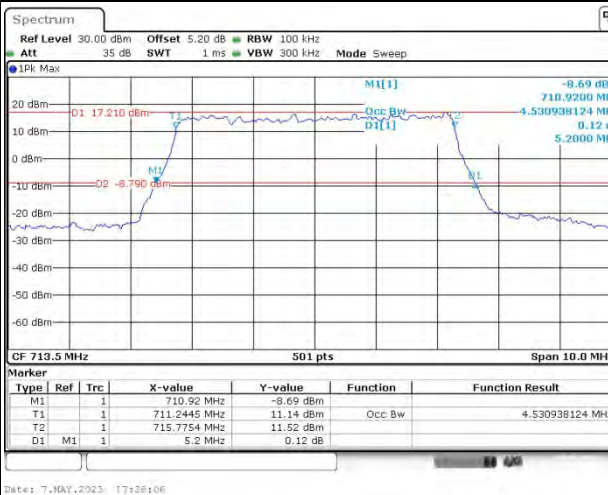
Lowest



Middle



Highest



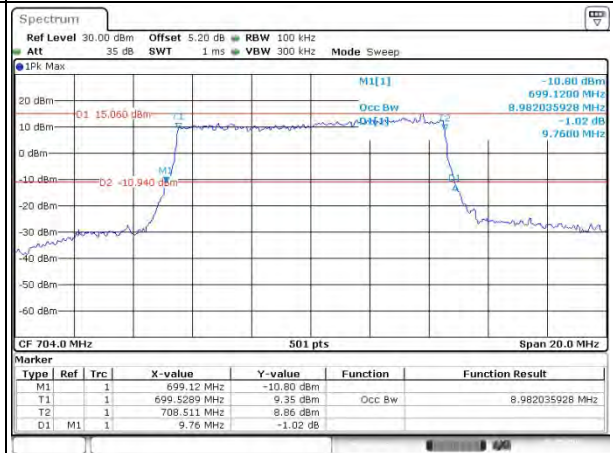
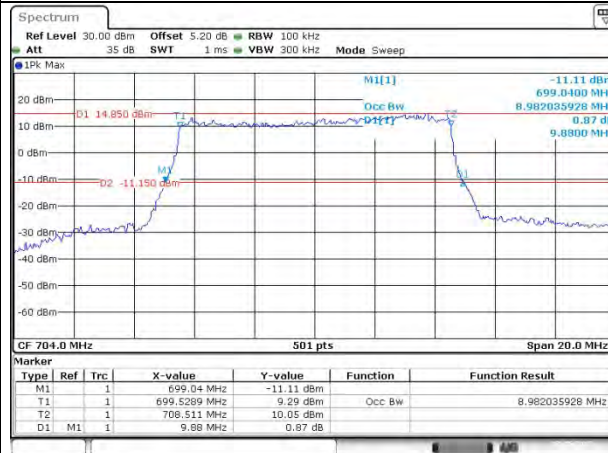
Occupied Bandwidth

Channel

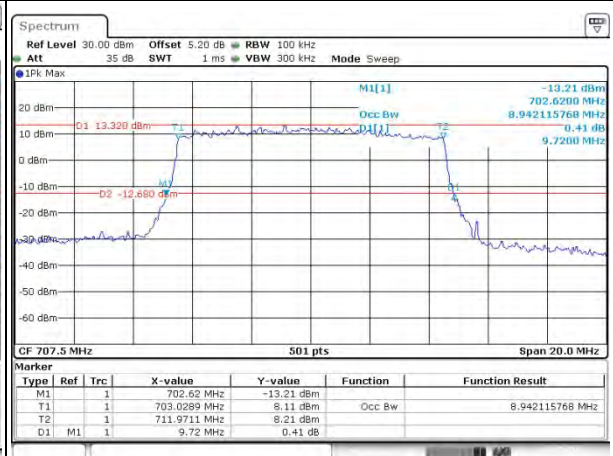
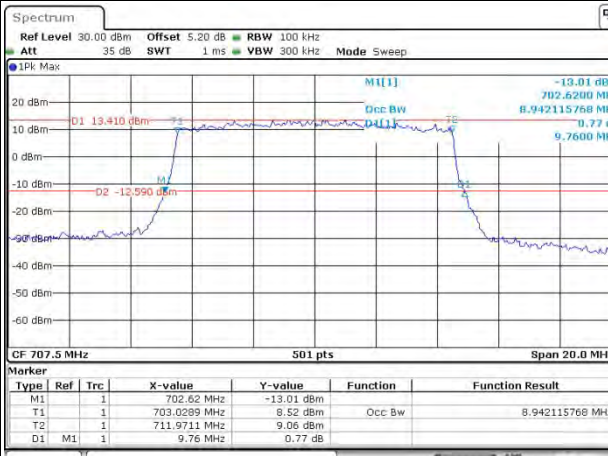
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

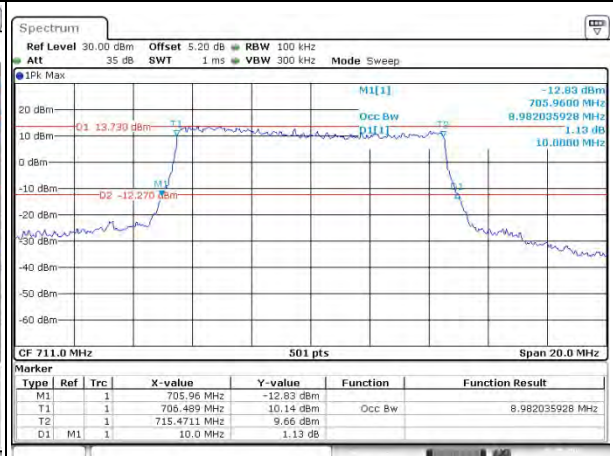
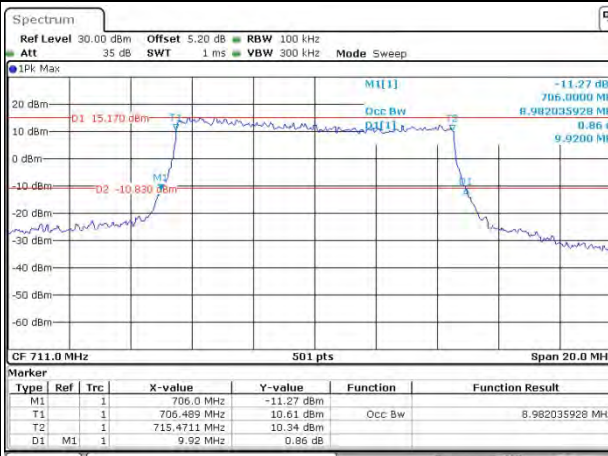
Lowest



Middle



Highest

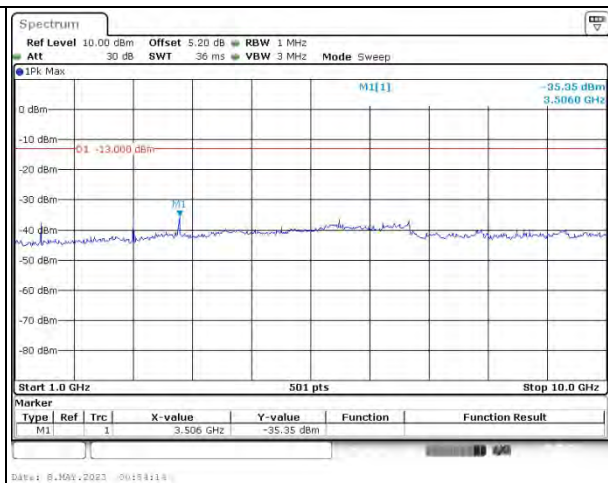
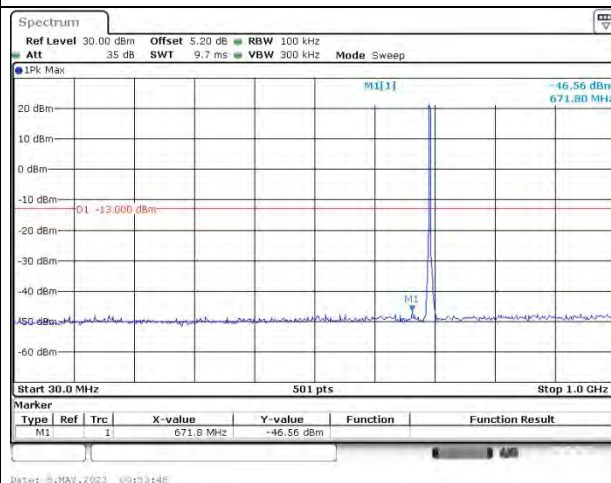


Spurious Emissions at Antenna Terminal

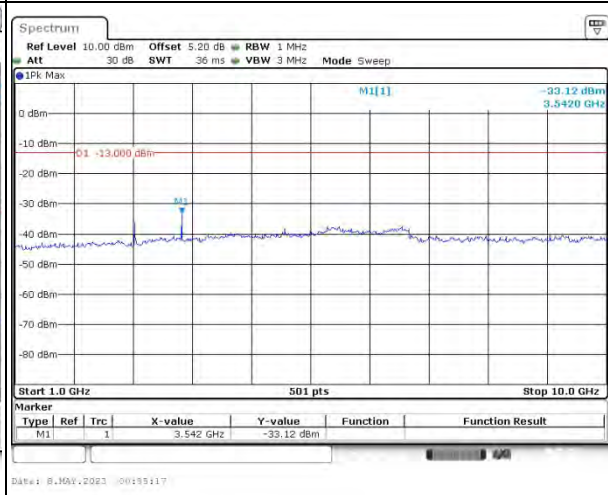
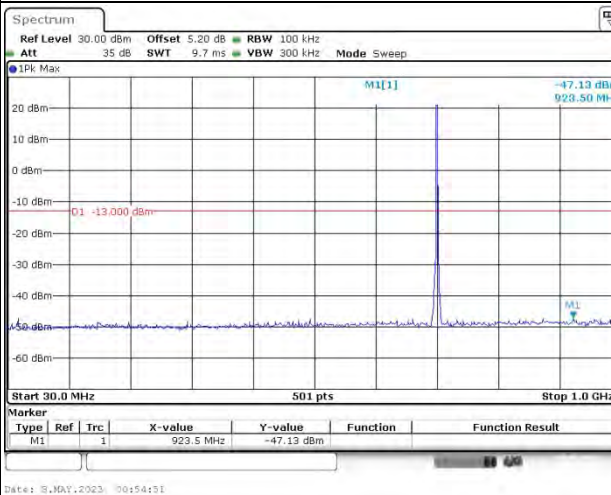
Channel

1.4MHz Bandwidth QPSK

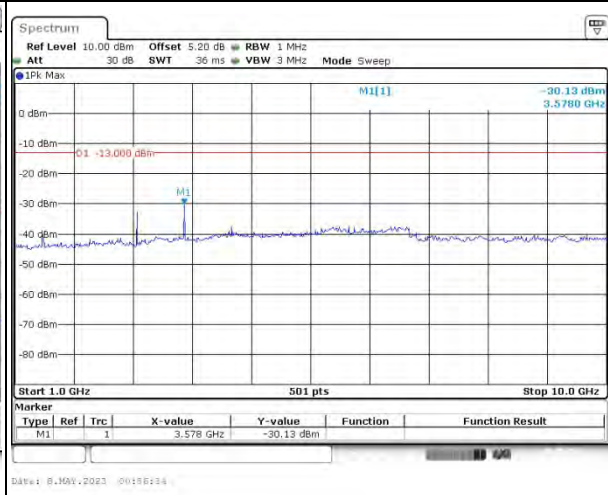
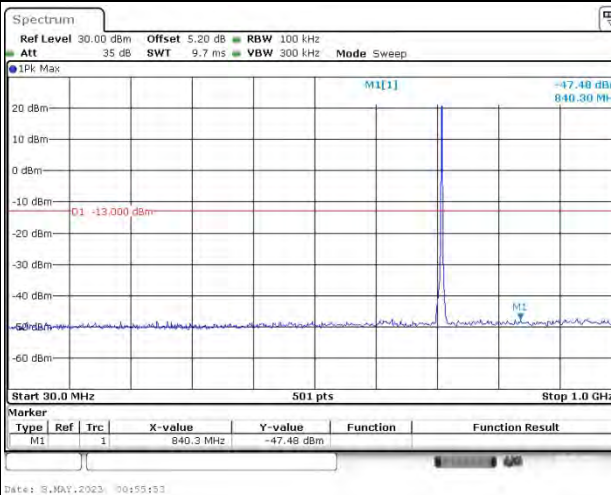
Lowest



Middle



Highest

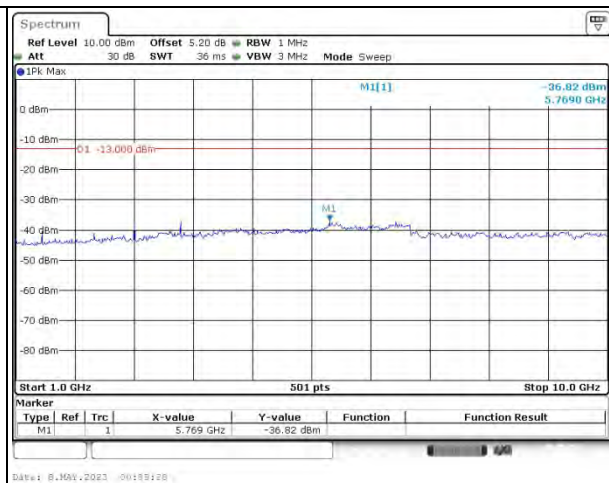
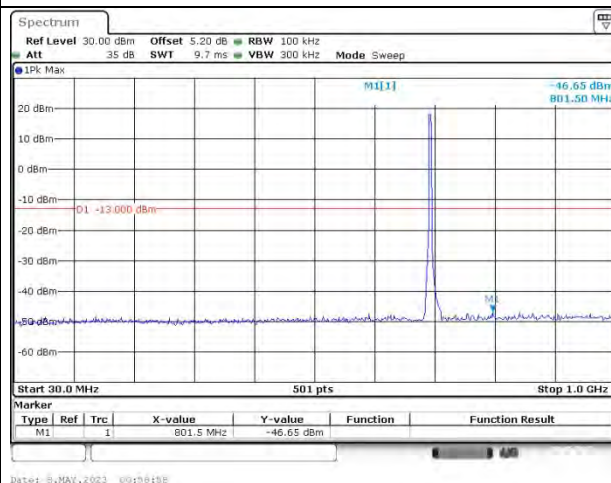


Spurious Emissions at Antenna Terminal

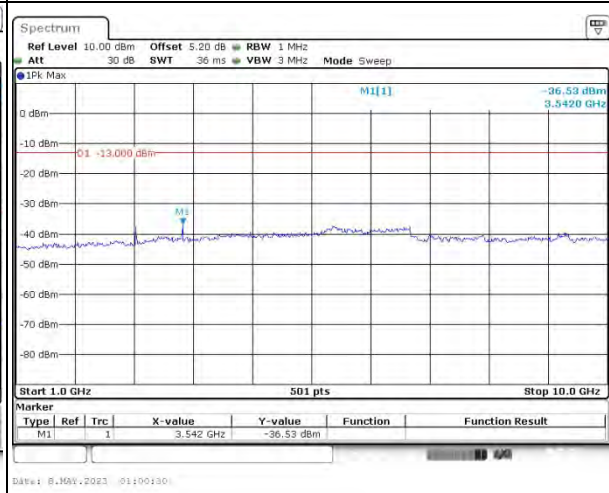
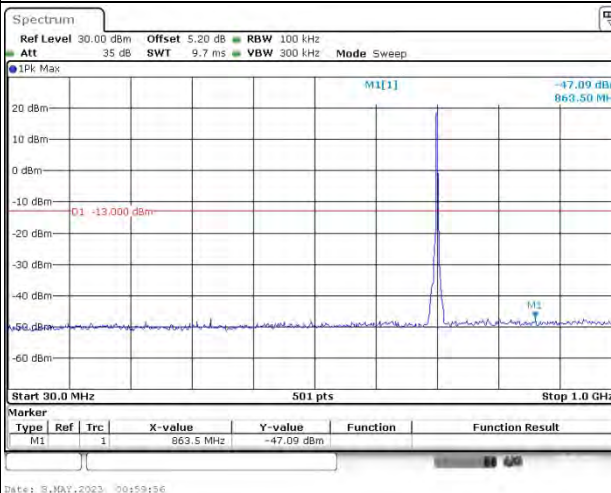
Channel

3MHz Bandwidth QPSK

Lowest



Middle



Highest

