

Test Plots(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

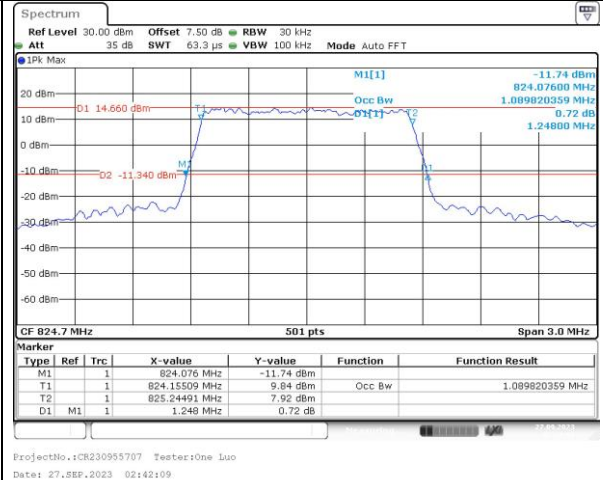
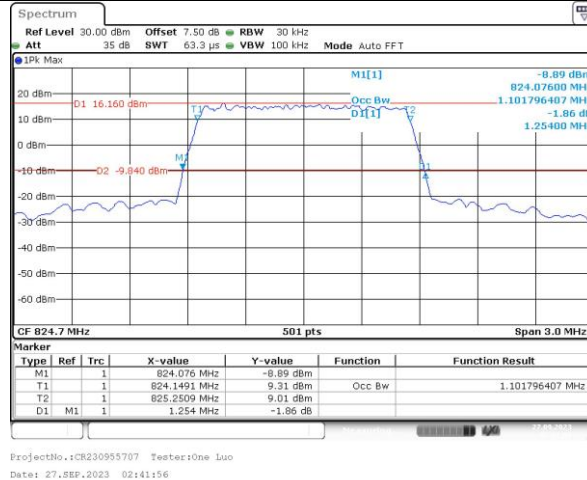
Occupied Bandwidth

Channel

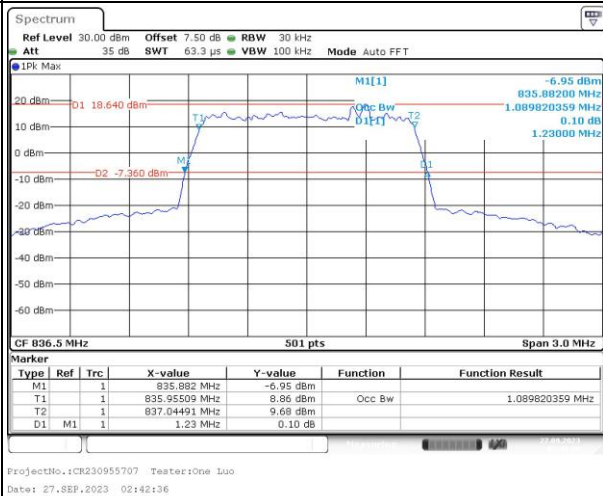
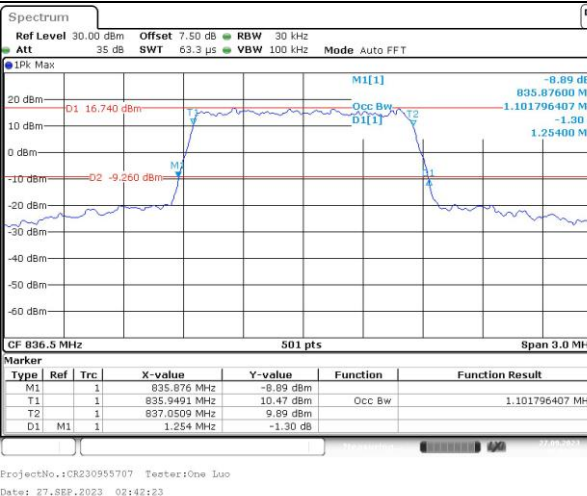
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

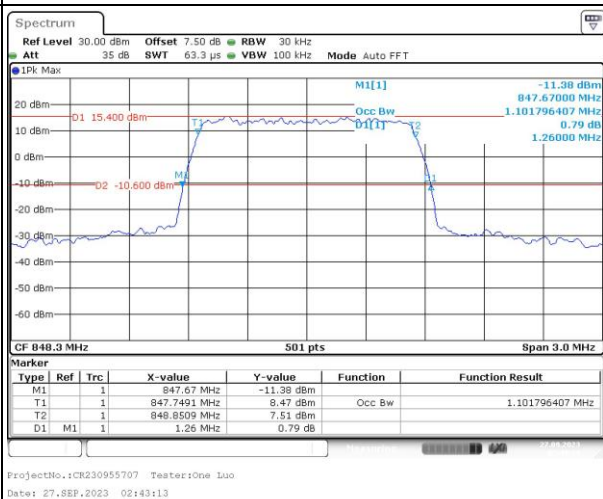
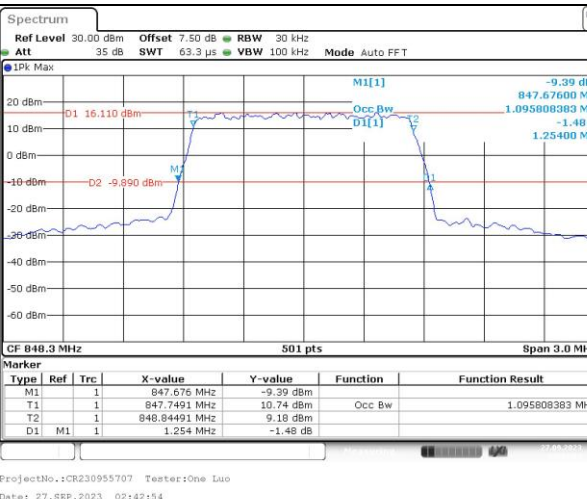
Lowest



Middle



Highest



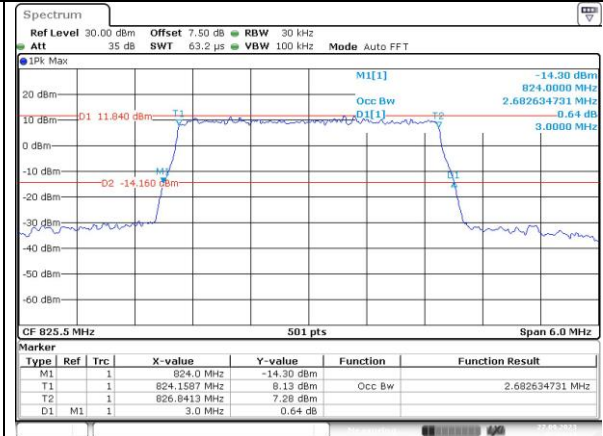
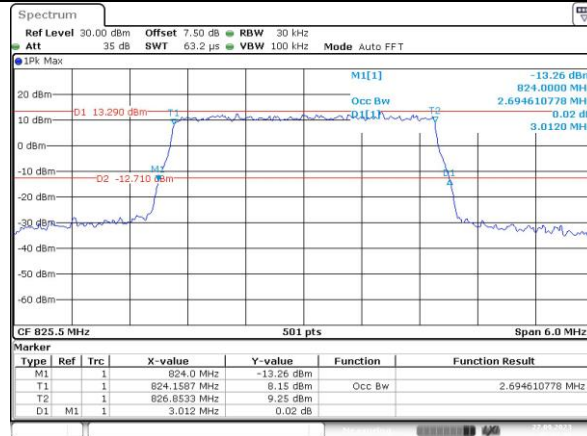
Occupied Bandwidth

Channel

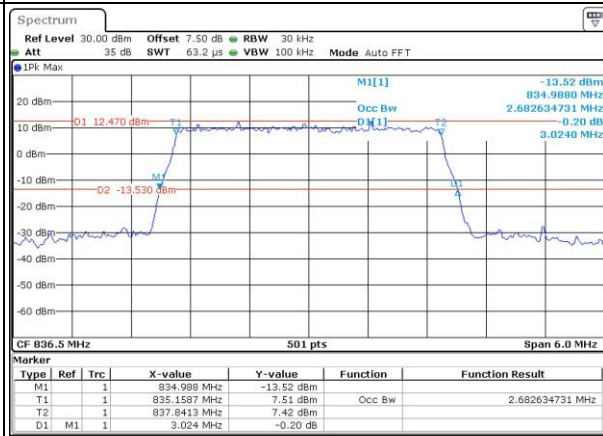
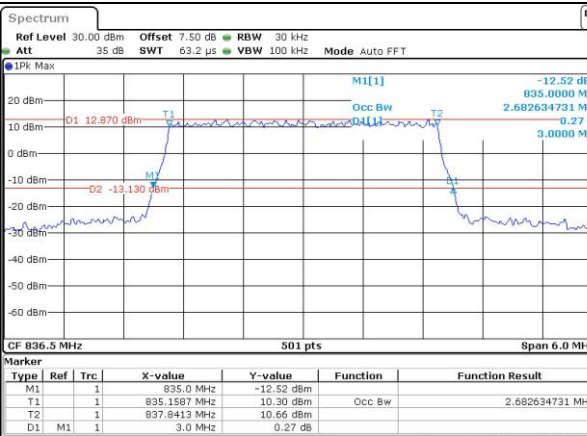
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

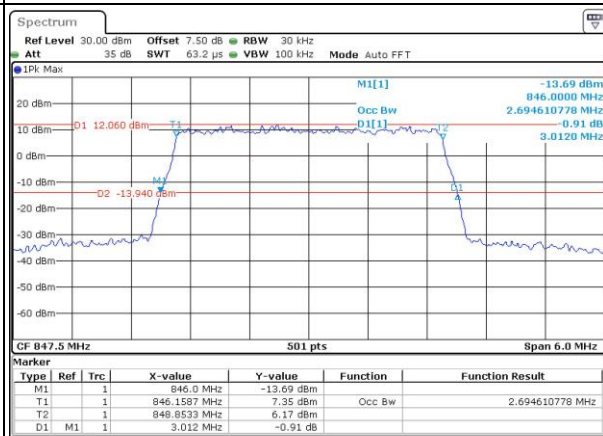
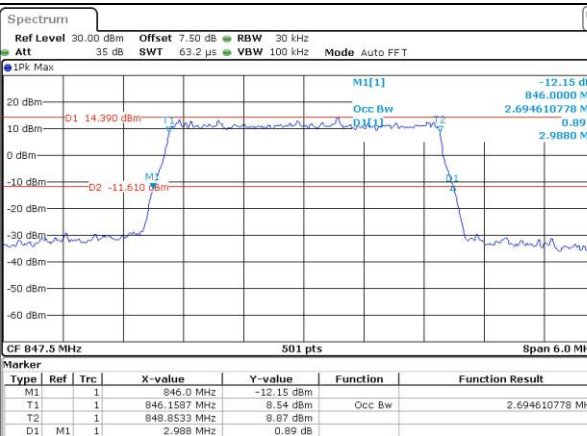
Lowest



Middle



Highest



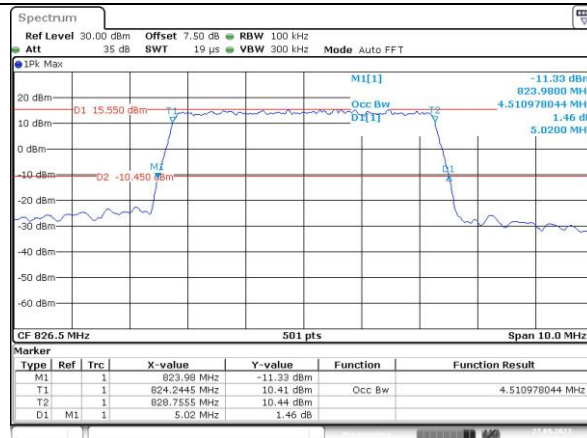
Occupied Bandwidth

Channel

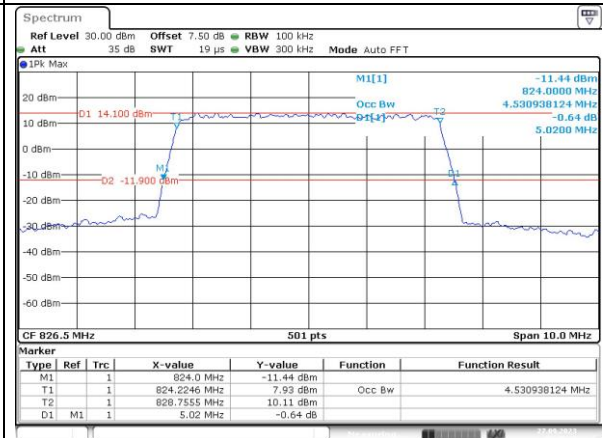
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

Lowest

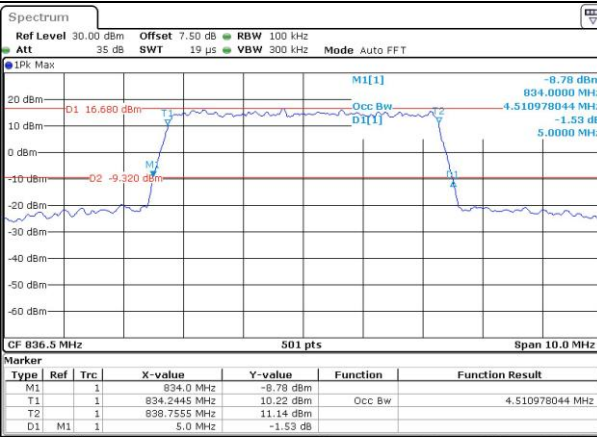


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Date: 27.SEP.2023 02:45:02

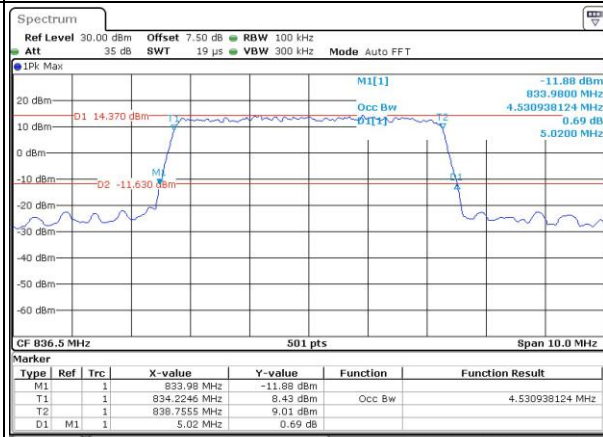


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Middle

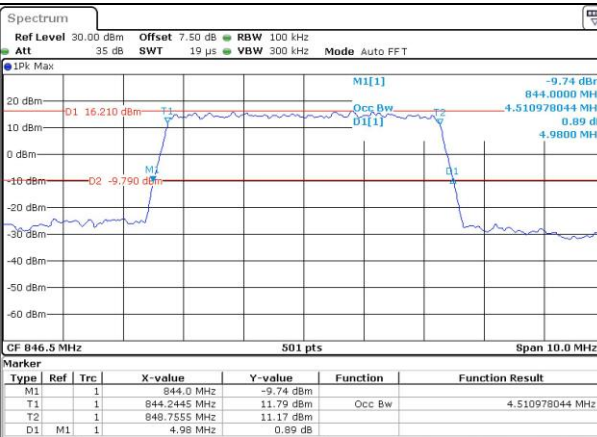


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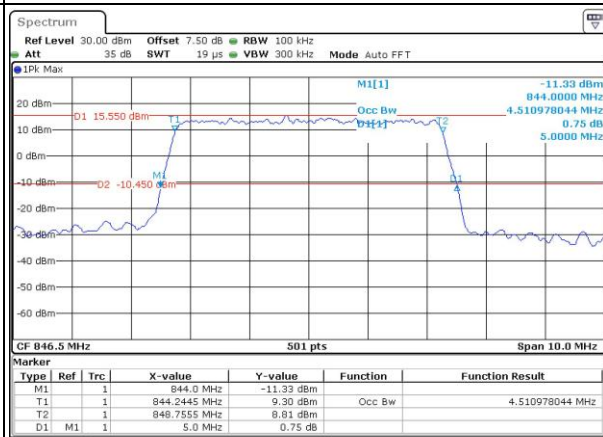


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:45:53

Highest



ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:46:11



ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:46:27

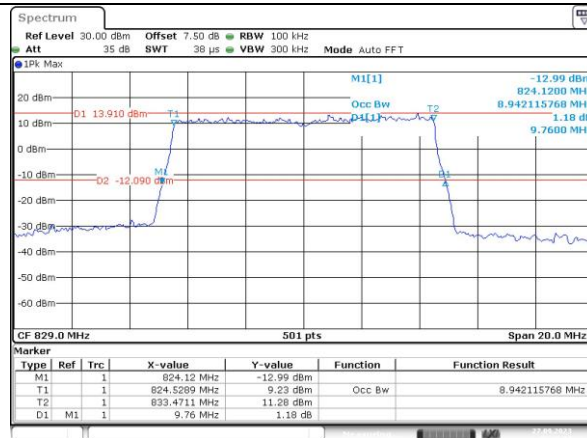
Occupied Bandwidth

Channel

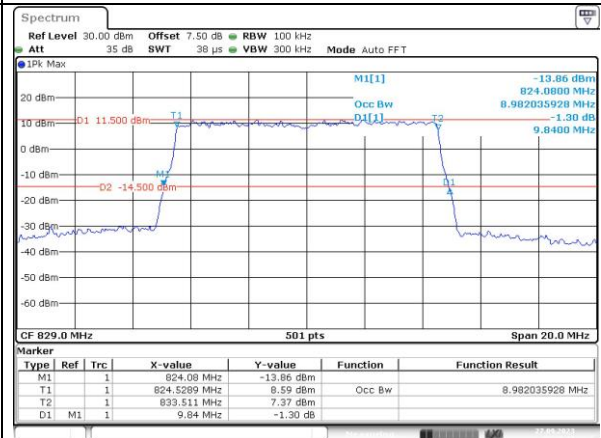
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Lowest

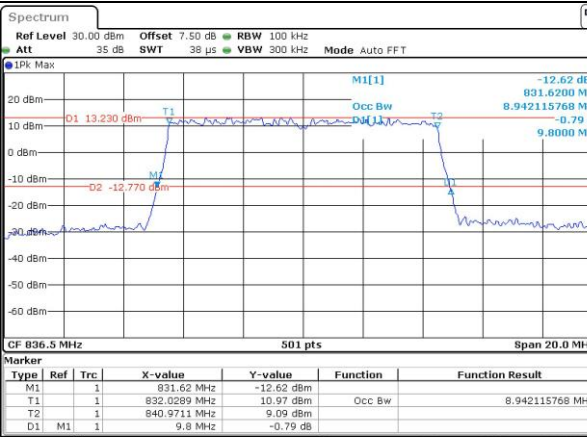


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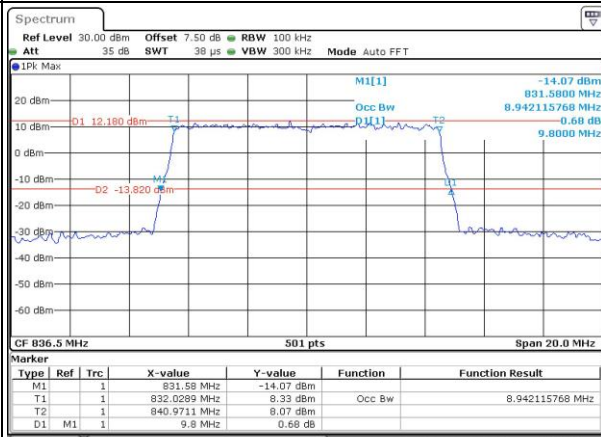


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:47:17

Middle

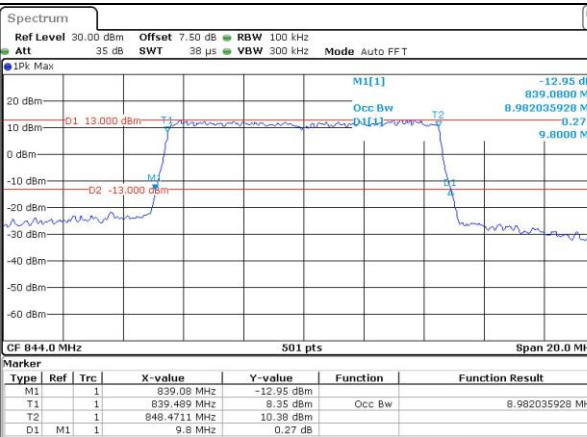


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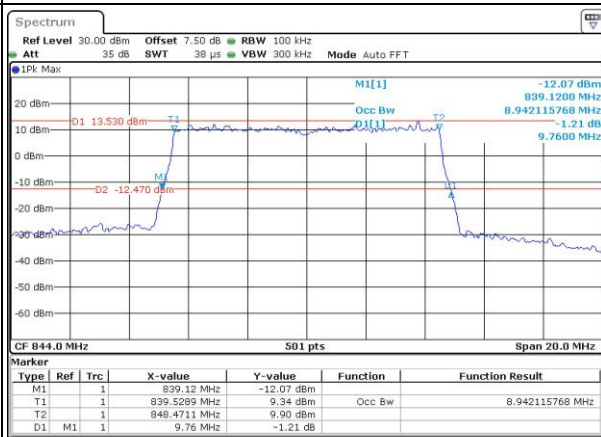


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:48:01

Highest



ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:48:25



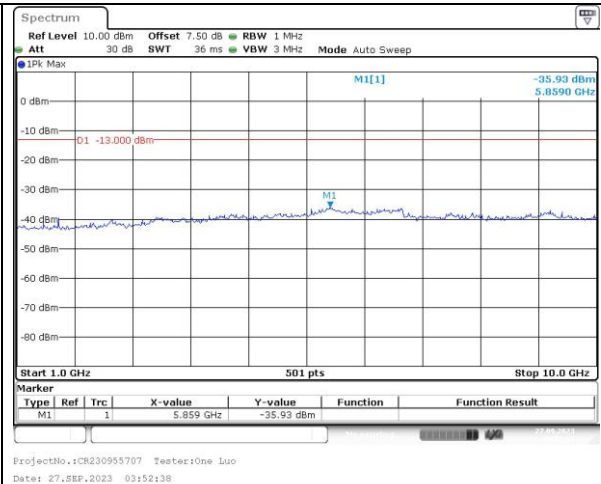
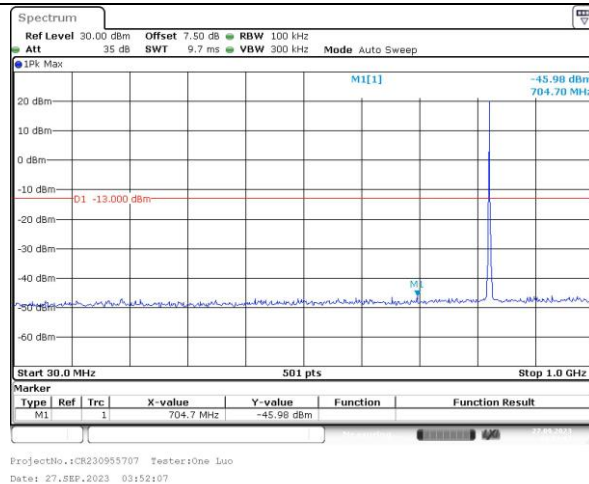
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Date: 27.SEP.2023 02:48:54

Spurious Emissions at Antenna Terminal

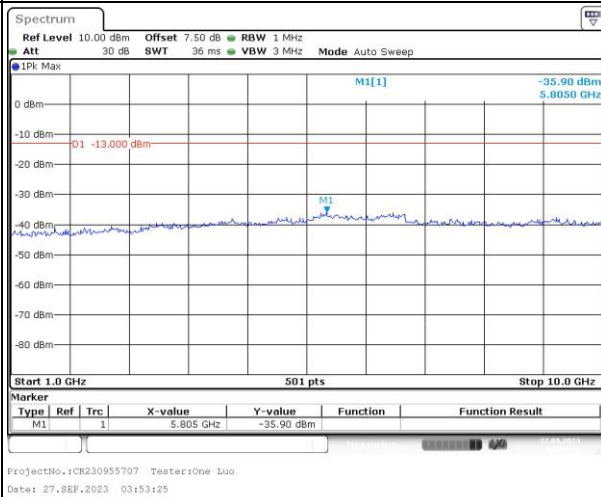
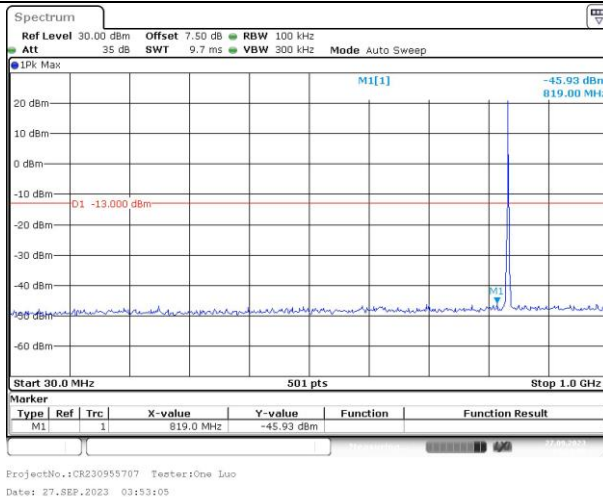
Channel

1.4MHz Bandwidth QPSK

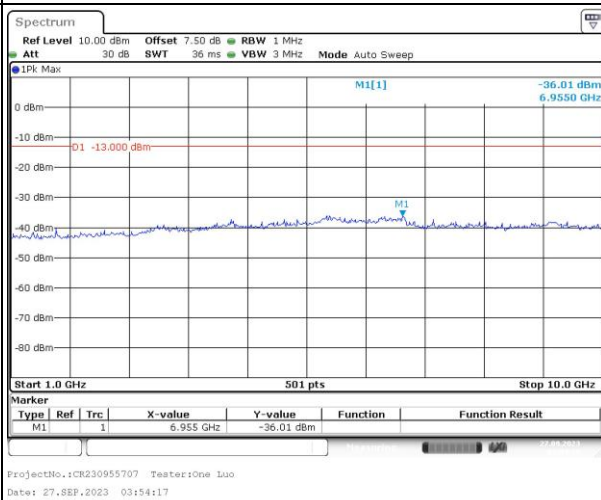
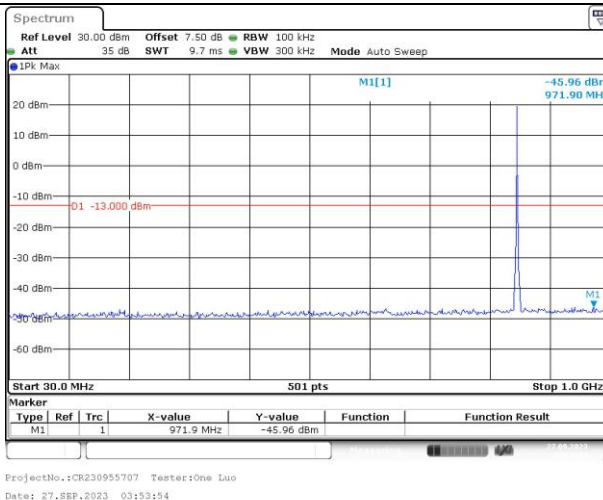
Lowest



Middle



Highest

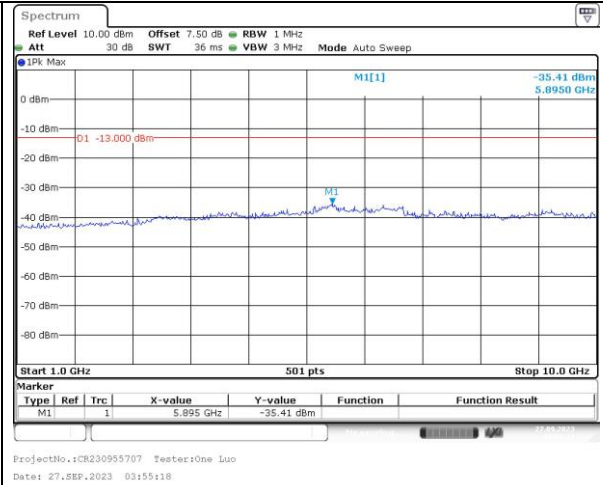
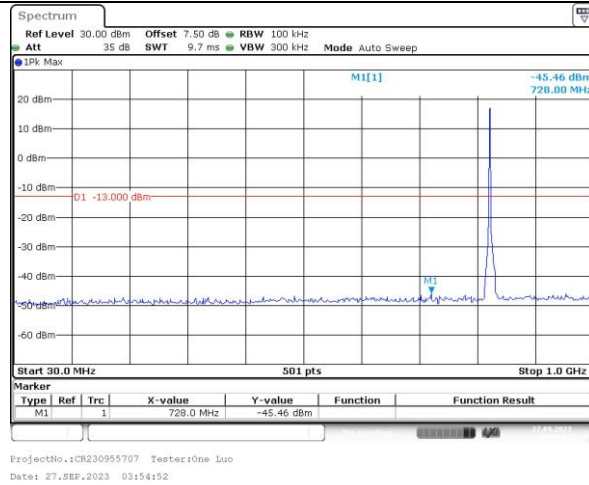


Spurious Emissions at Antenna Terminal

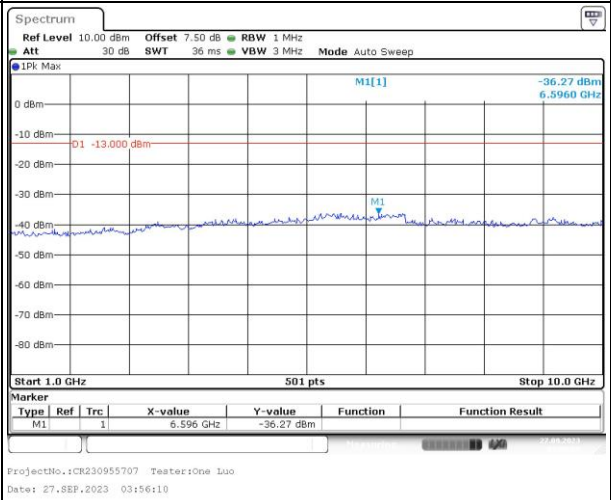
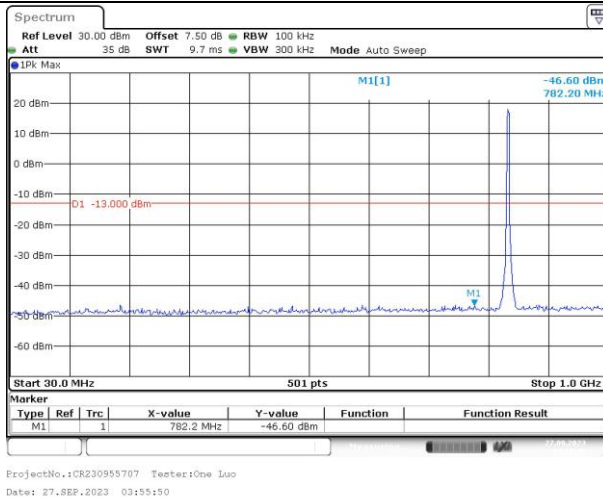
Channel

3MHz Bandwidth QPSK

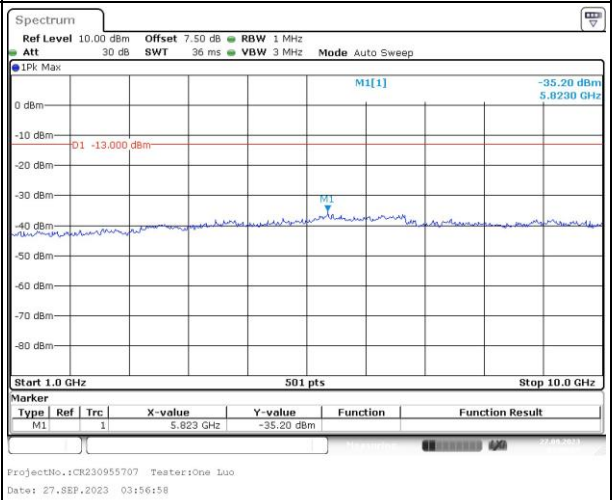
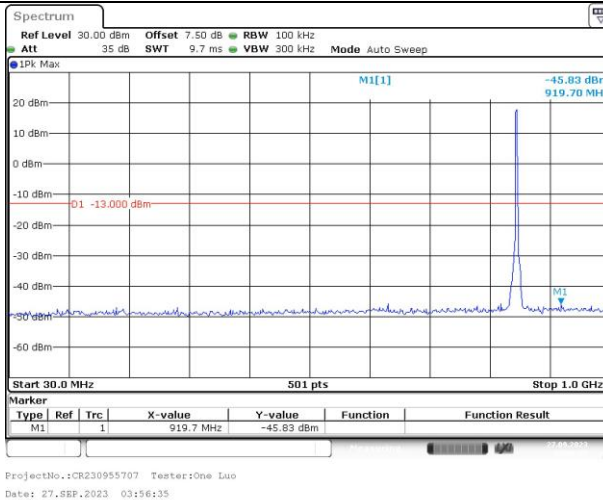
Lowest



Middle



Highest

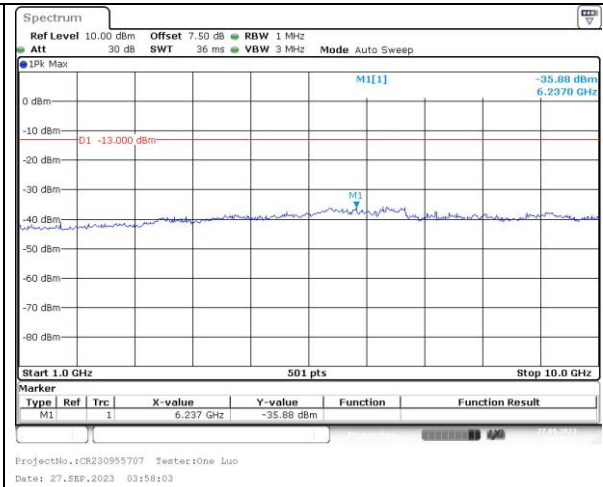
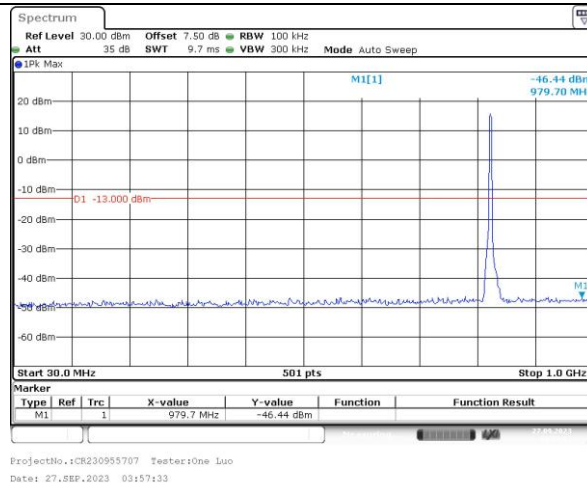


Spurious Emissions at Antenna Terminal

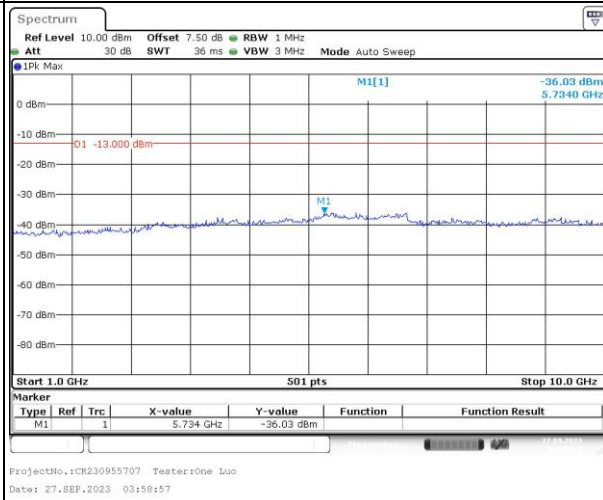
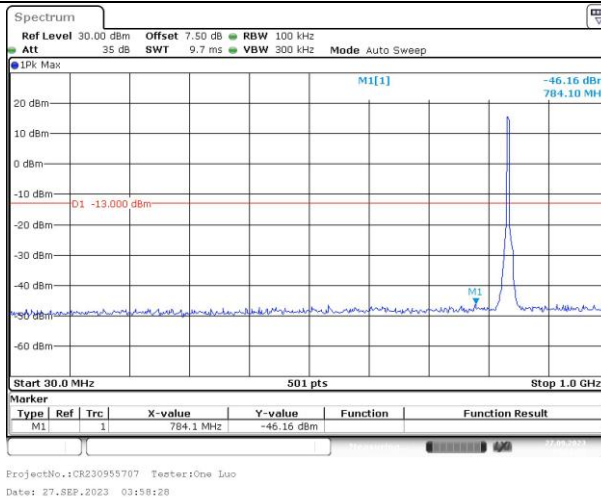
Channel

5MHz Bandwidth QPSK

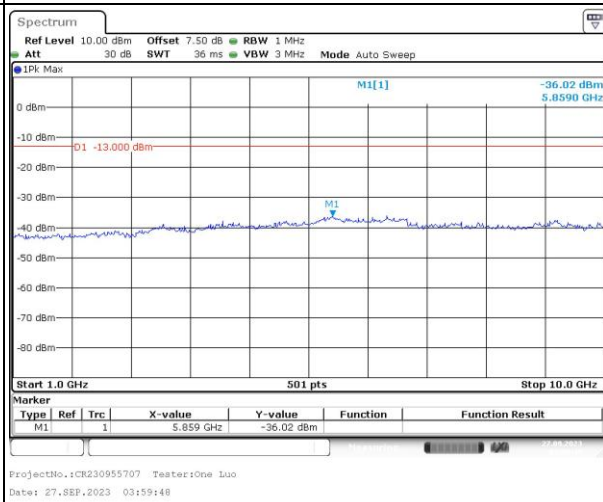
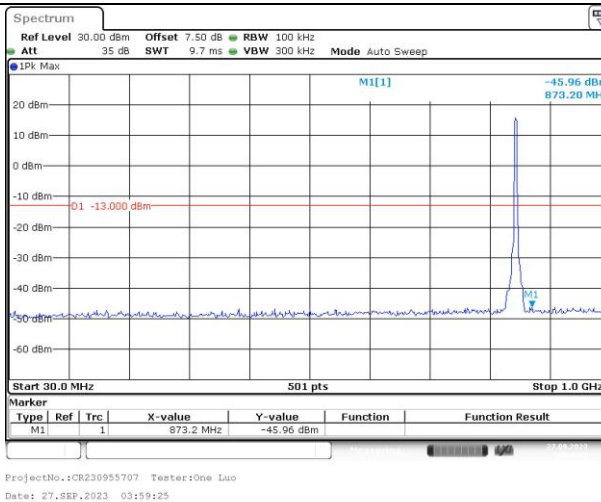
Lowest



Middle



Highest

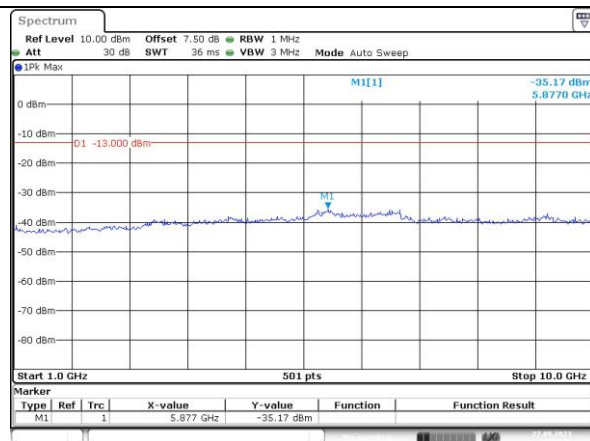
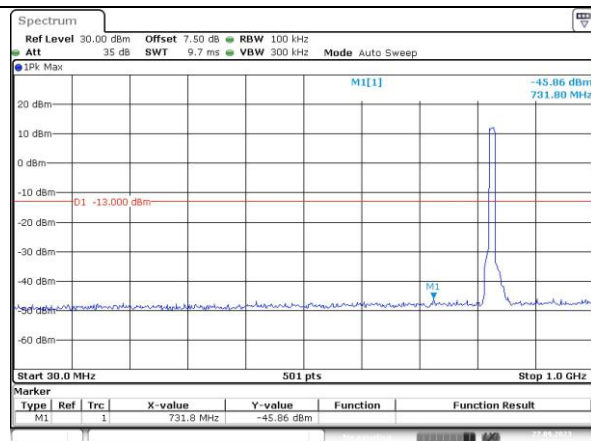


Spurious Emissions at Antenna Terminal

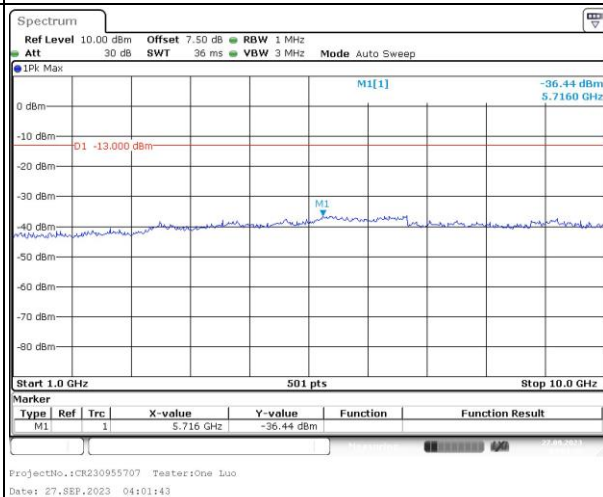
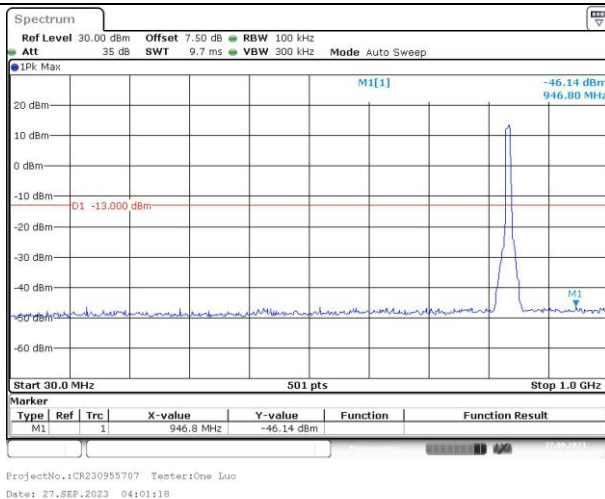
Channel

10MHz Bandwidth QPSK

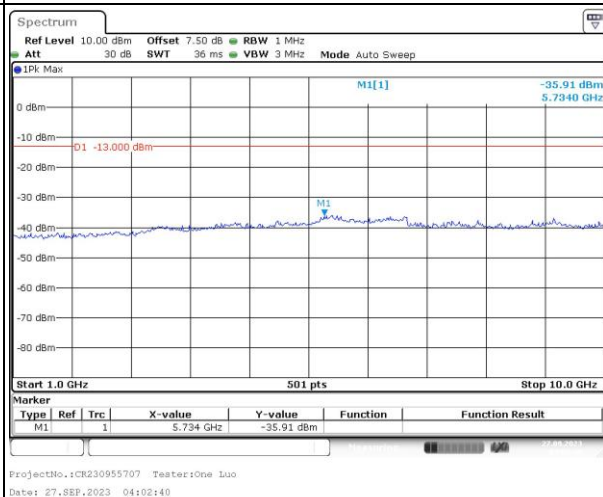
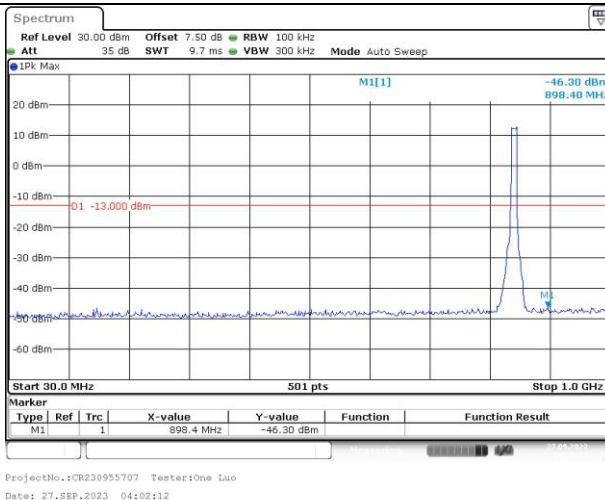
Lowest



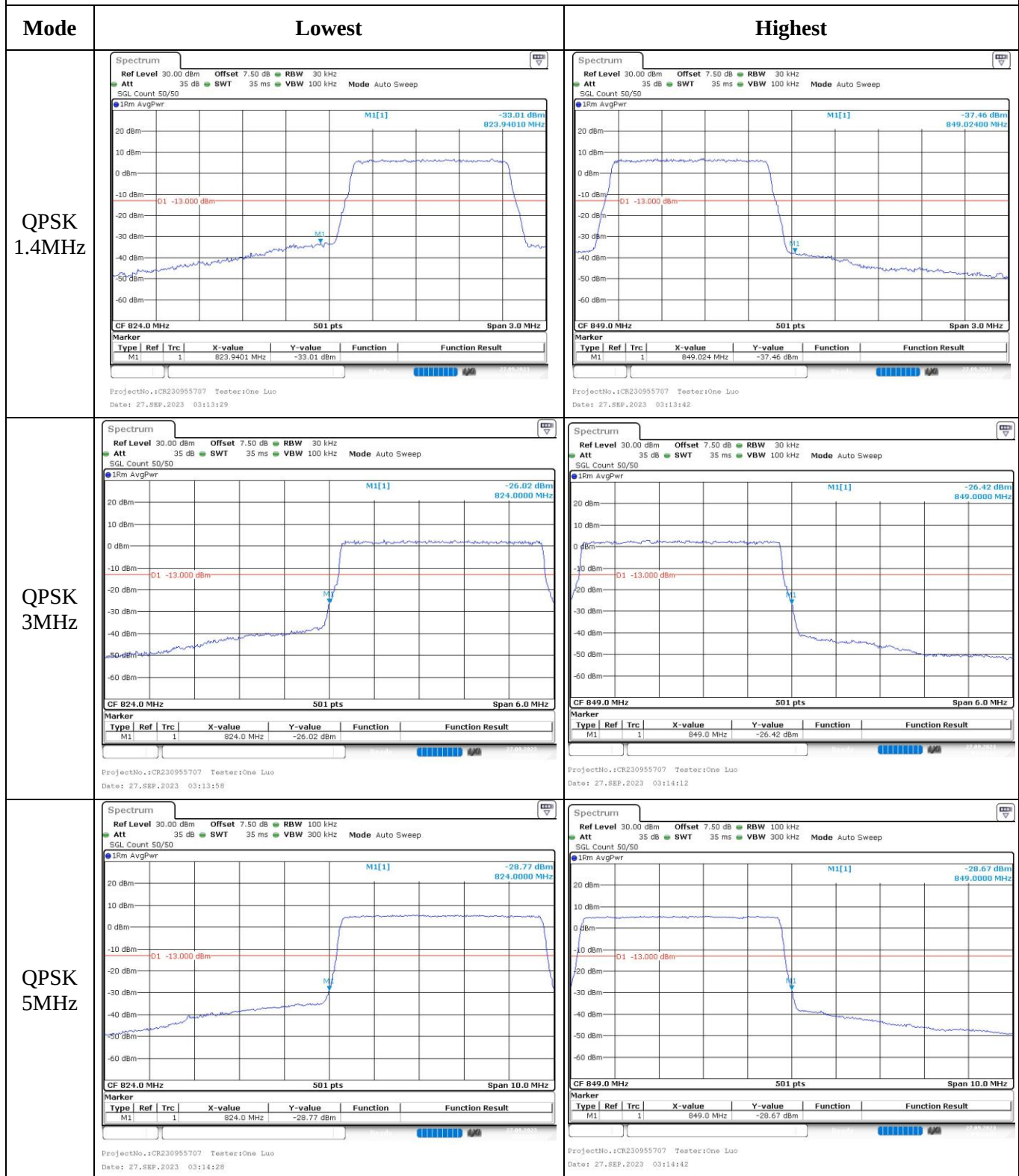
Middle



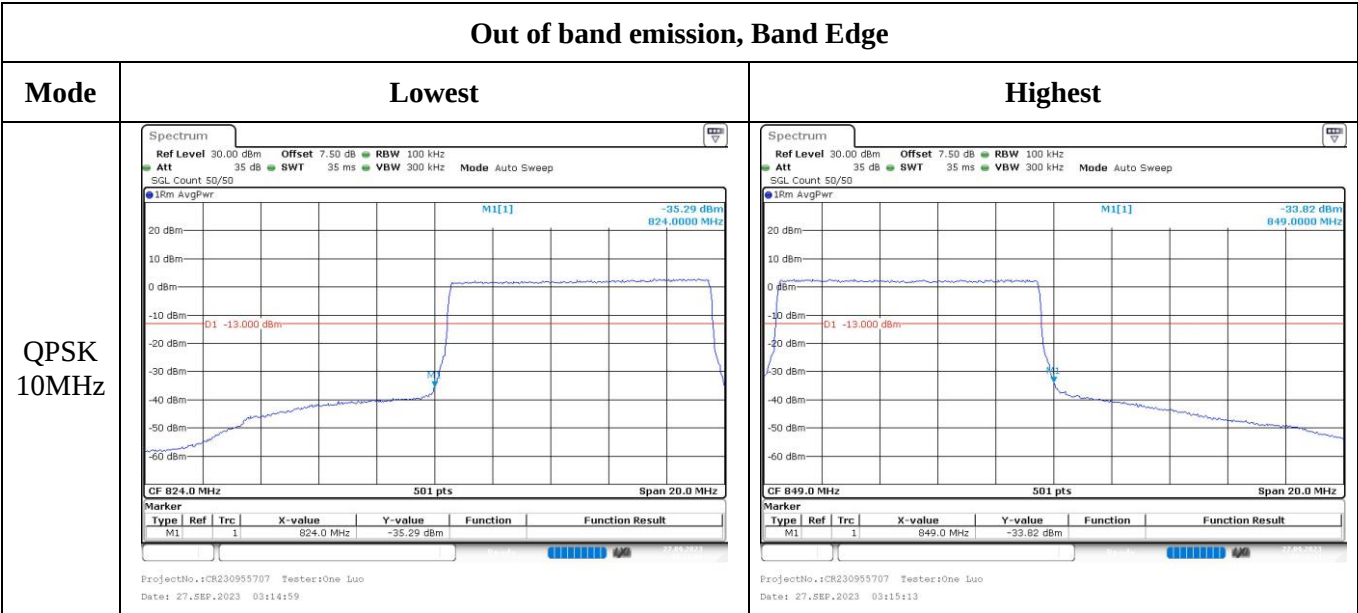
Highest



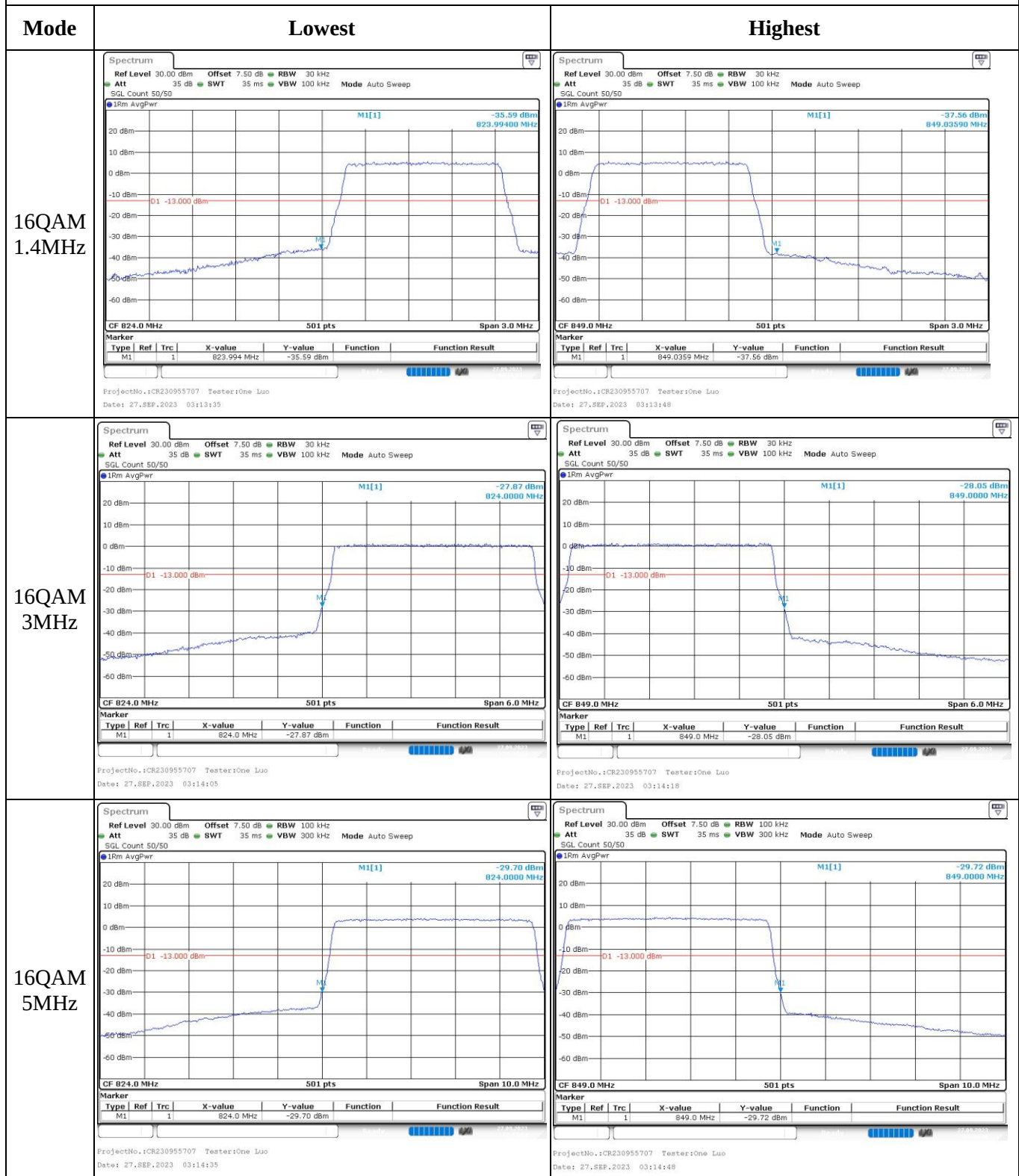
Out of band emission, Band Edge



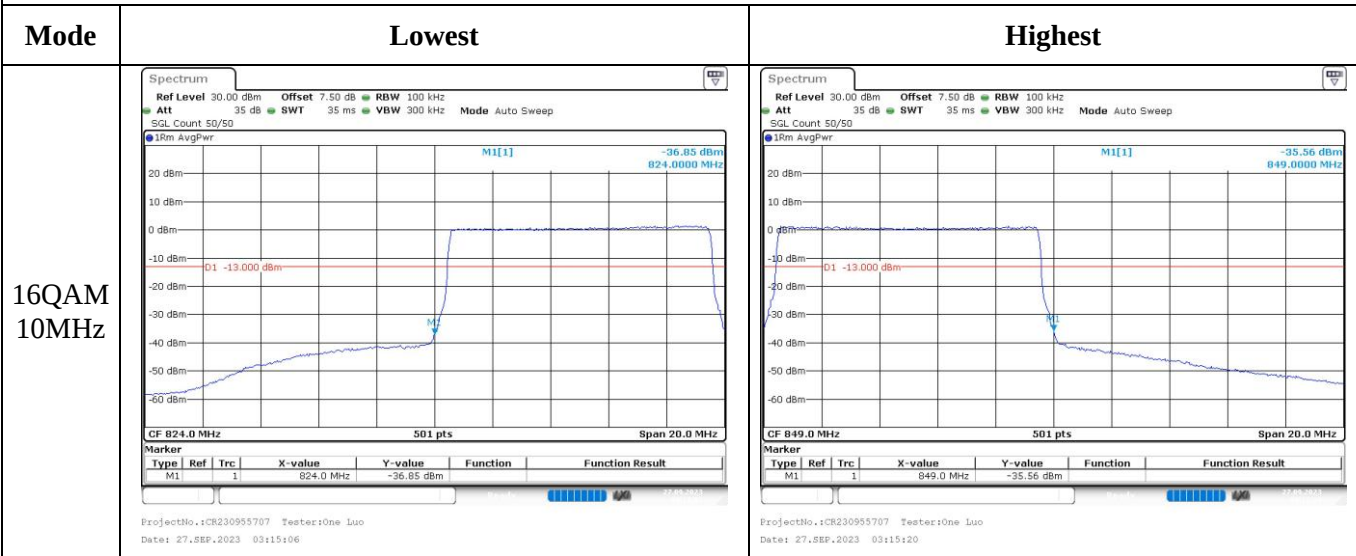
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.9 Antenna Port Test Data and Results for LTE Band 7

Serial Number:	2BKJ-2	Test Date:	2023/9/27~2023/10/7
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.8~27.2	Relative Humidity: (%)	42~52	ATM Pressure: (kPa)	100.2~100.7
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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	2023/7/15	2024/7/14
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
R&S	Wideband Radio Communication Tester	CMW500	149218	2023/7/15	2024/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

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:

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	19.61	20.23	20.5	22.89	33
	RB1#13	19.62	20.08	20.41		
	RB1#24	19.6	20.19	20.49		
	RB15#0	19.05	19.72	19.9		
	RB15#10	19.04	19.7	19.99		
	RB25#0	19.09	19.67	19.82		
5MHz 16QAM	RB1#0	18.55	18.78	18.54	21.17	33
	RB1#13	18.68	18.67	18.61		
	RB1#24	18.65	18.72	18.58		
	RB15#0	17.5	18.31	18.62		
	RB15#10	17.54	18.31	18.62		
	RB25#0	17.7	18.08	18.61		
10MHz QPSK	RB1#0	19.65	20.18	20.33	22.78	33
	RB1#25	19.76	20.13	20.27		
	RB1#49	19.83	20.26	20.39		
	RB25#0	19.11	19.71	19.94		
	RB25#25	19.15	19.65	19.82		
	RB50#0	19.1	19.67	19.98		
10MHz 16QAM	RB1#0	18.61	18.58	19.57	22.25	33
	RB1#25	18.74	18.66	19.79		
	RB1#49	18.79	18.71	19.86		
	RB25#0	17.82	18.37	18.58		
	RB25#25	17.79	18.4	18.53		
	RB50#0	17.72	18.26	18.57		
15MHz QPSK	RB1#0	19.63	20.1	20.3	22.75	33
	RB1#38	19.79	20.15	20.31		
	RB1#74	20.11	20.31	20.36		
	RB36#0	19.15	19.74	19.94		
	RB36#39	19.35	19.68	19.98		
	RB75#0	19.16	19.71	20.06		
15MHz 16QAM	RB1#0	18.8	19.55	19.75	22.3	33
	RB1#38	18.97	19.68	19.88		
	RB1#74	19.28	19.76	19.91		
	RB36#0	17.86	18.22	18.6		
	RB36#39	18.08	18.39	18.65		
	RB75#0	17.8	18.31	18.56		
20MHz QPSK	RB1#0	19.82	20.08	20.38	22.91	33
	RB1#50	19.92	20.16	20.42		
	RB1#99	20.32	20.38	20.52		

	RB50#0	19.09	19.78	19.92		
	RB50#50	19.5	19.83	19.94		
	RB100#0	19.25	19.78	20.03		
20MHz 16QAM	RB1#0	19	19.74	19.3	22.27	33
	RB1#50	18.98	19.84	19.37		
	RB1#99	19.35	19.88	19.48		
	RB50#0	17.74	18.27	18.6		
	RB50#50	18.1	18.41	18.64		
	RB100#0	17.85	18.25	18.58		

Note: EIRP=Conducted Power(dBm) - Lc(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	5.62	4.75	5.13	13
	RB100#0	5.25	5.1	4.9	13
20MHz 16QAM	RB1#0	6.2	5.97	6.09	13
	RB100#0	6.35	6.26	6.14	13
				Result:	Pass

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	4.511	4.531	5	5	5
5MHz 16QAM	4.551	4.511	4.511	5.04	4.78	4.98
10MHz QPSK	8.942	8.942	8.942	9.8	9.8	9.8
10MHz 16QAM	8.982	8.942	8.942	9.84	9.88	9.76
15MHz QPSK	13.473	13.533	13.533	14.88	15.06	15.06
15MHz 16QAM	13.473	13.533	13.533	14.4	15.06	14.94
20MHz QPSK	17.964	18.044	18.044	19.52	19.76	19.44
20MHz 16QAM	17.964	17.964	17.964	19.6	19.76	19.68

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

Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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Out of band emission, Band Edge

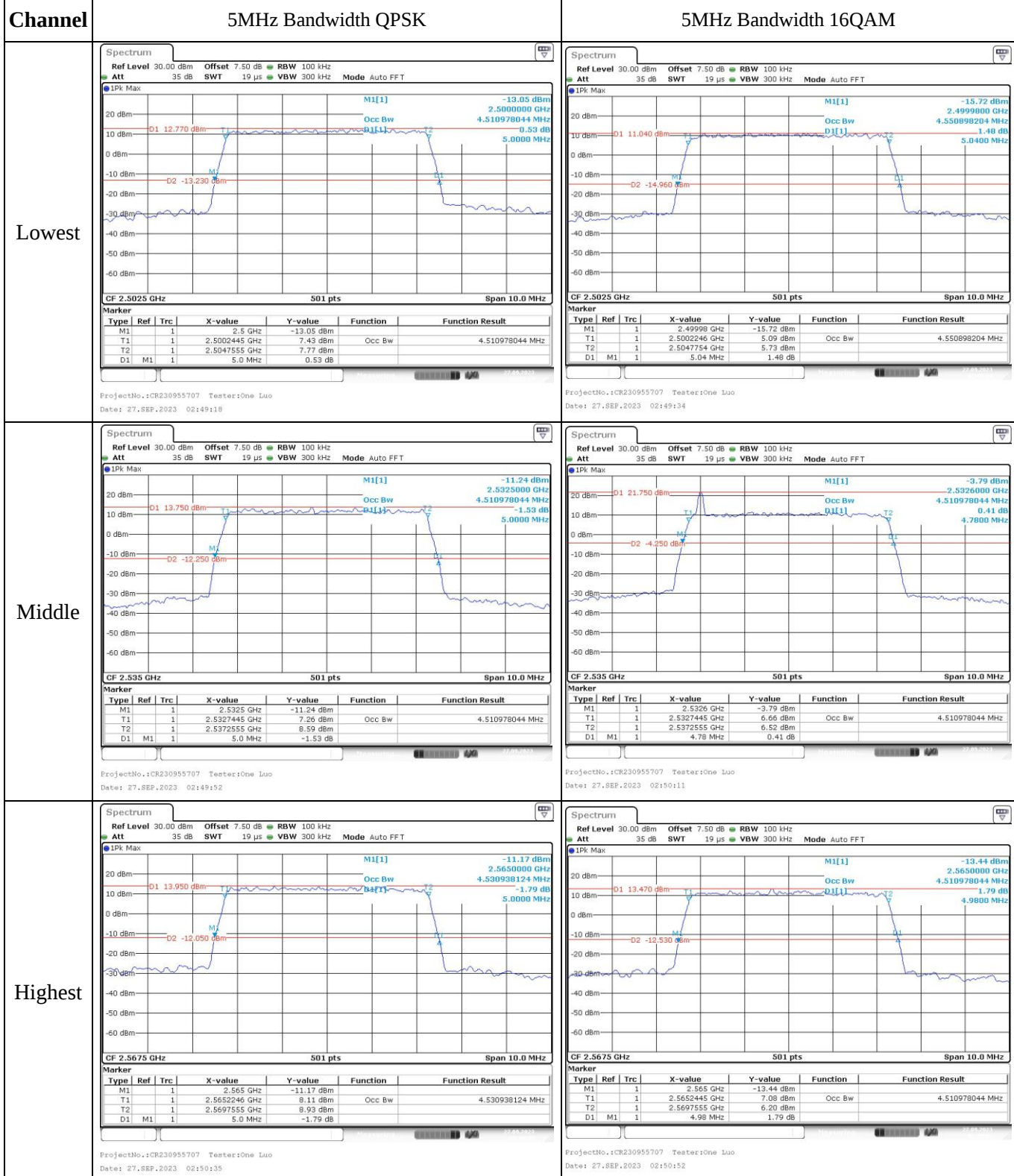
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2501.061	2500.00	2569.089	2570
	-20	3.85	2501.089	2500.00	2569.002	2570
	-10	3.85	2501.024	2500.00	2569.064	2570
	0	3.85	2501.017	2500.00	2569.016	2570
	10	3.85	2501.002	2500.00	2569.045	2570
	20	3.85	2501.058	2500.00	2569.022	2570
	30	3.85	2501.054	2500.00	2569.029	2570
	40	3.85	2501.098	2500.00	2569.066	2570
	50	3.85	2501.045	2500.00	2569.059	2570
Frequency Stability vs. Voltage	20	3.6	2501.049	2500.00	2569.056	2570
	20	4.4	2501.062	2500.00	2569.083	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	2501.074	2500.00	2569.026	2570
	-20	3.85	2501.009	2500.00	2569.037	2570
	-10	3.85	2501.081	2500.00	2569.096	2570
	0	3.85	2501.018	2500.00	2569.045	2570
	10	3.85	2501.002	2500.00	2569.059	2570
	20	3.85	2501.058	2500.00	2569.022	2570
	30	3.85	2501.091	2500.00	2569.007	2570
	40	3.85	2501.022	2500.00	2569.001	2570
	50	3.85	2501.081	2500.00	2569.062	2570
Frequency Stability vs. Voltage	20	3.6	2501.060	2500.00	2569.064	2570
	20	4.4	2501.048	2500.00	2569.016	2570
					Result:	Pass

Test Plots(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



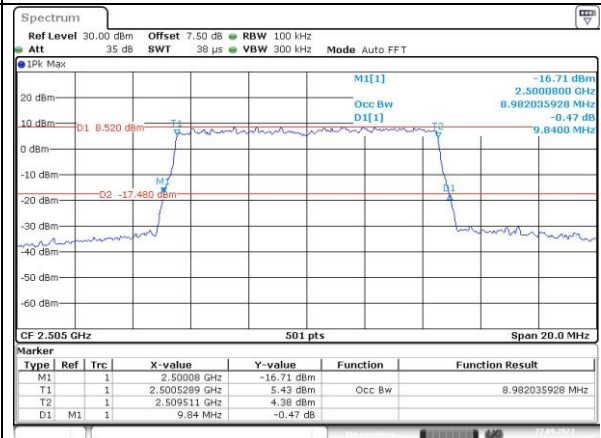
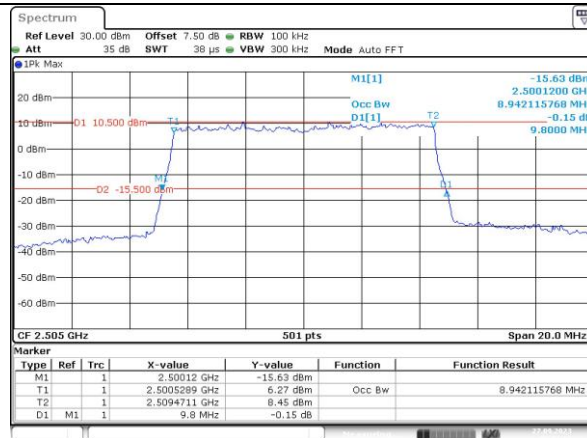
Occupied Bandwidth

Channel

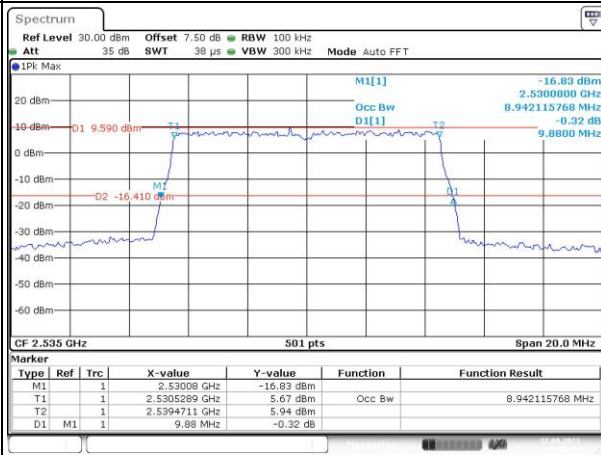
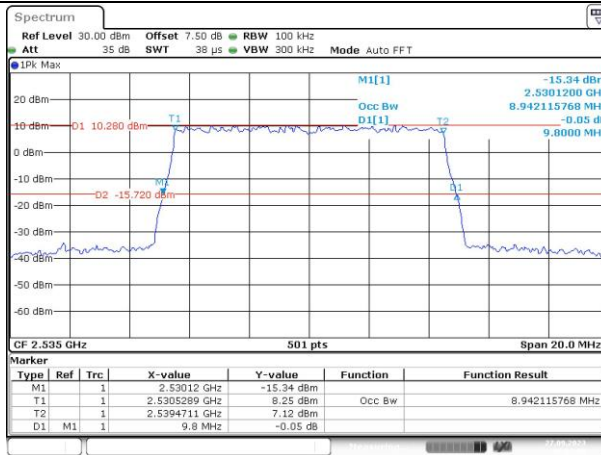
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

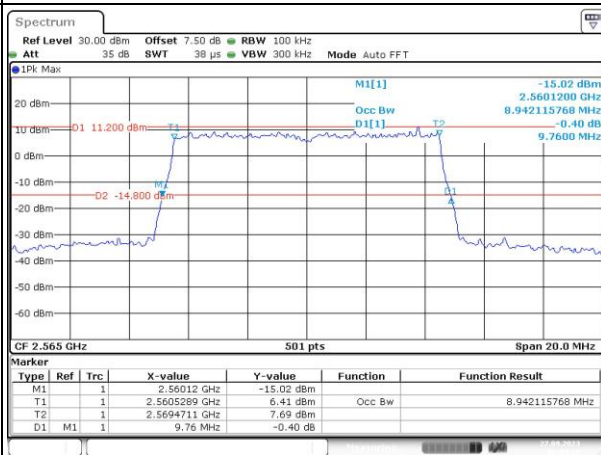
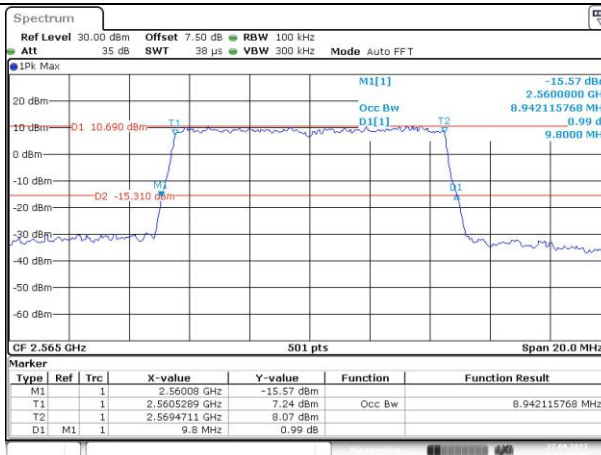
Lowest



Middle



Highest



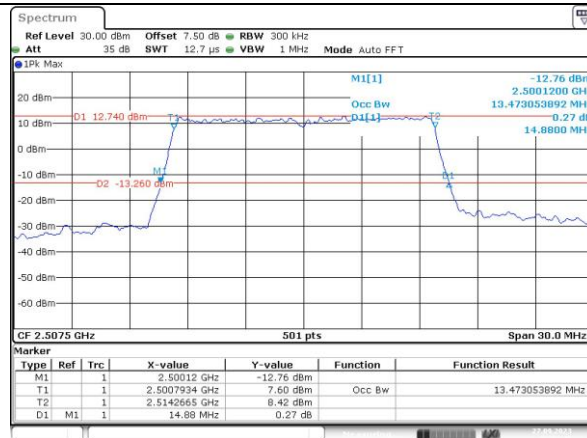
Occupied Bandwidth

Channel

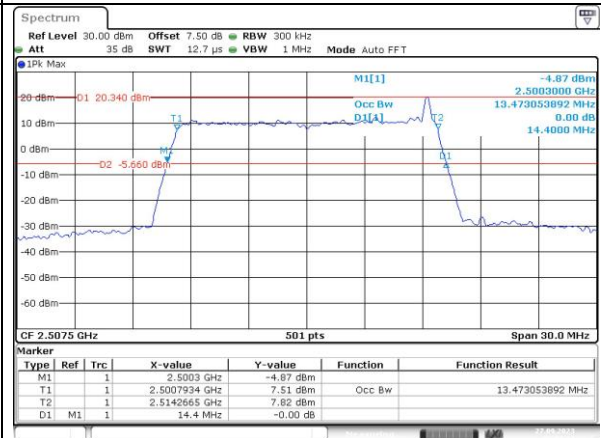
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

Lowest

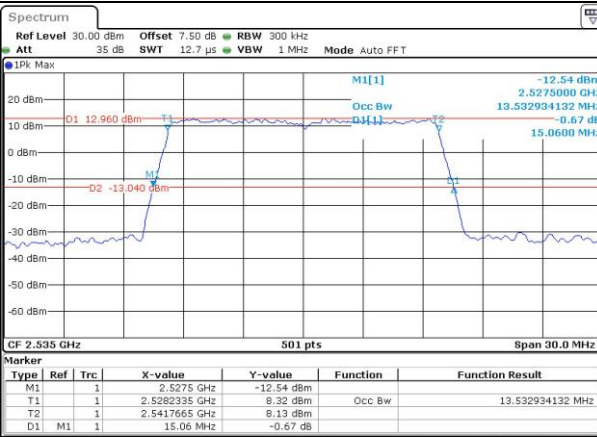


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:53:44

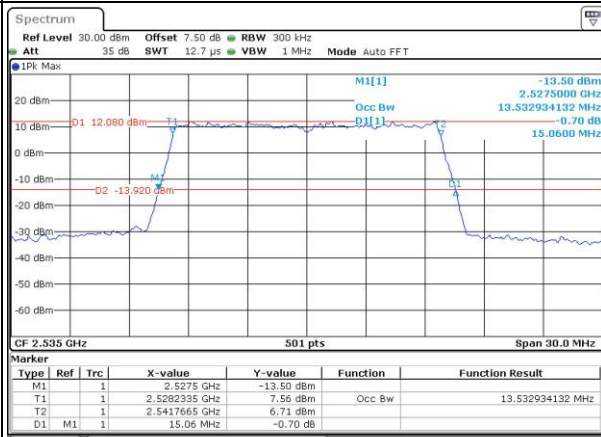


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:54:11

Middle

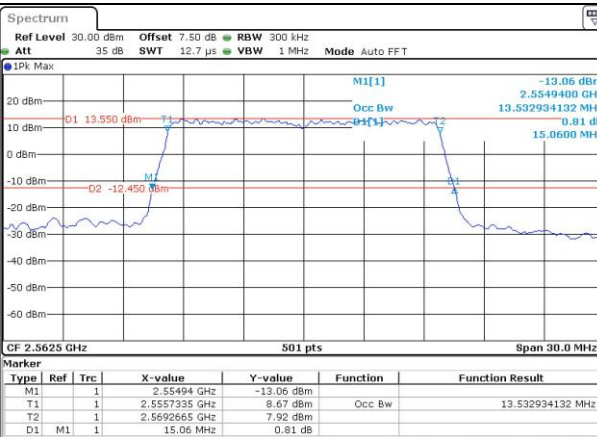


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:54:33

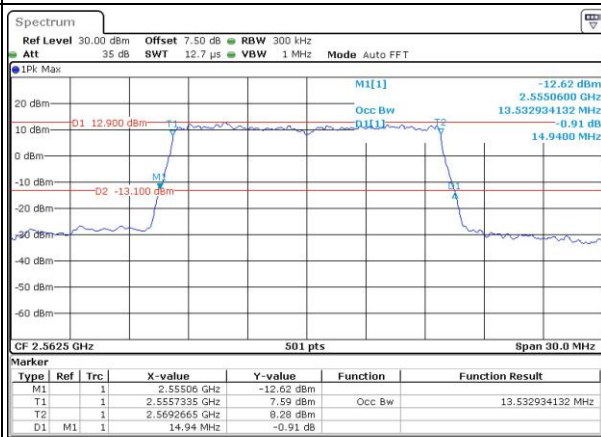


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:55:00

Highest



ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:55:30



ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:55:54

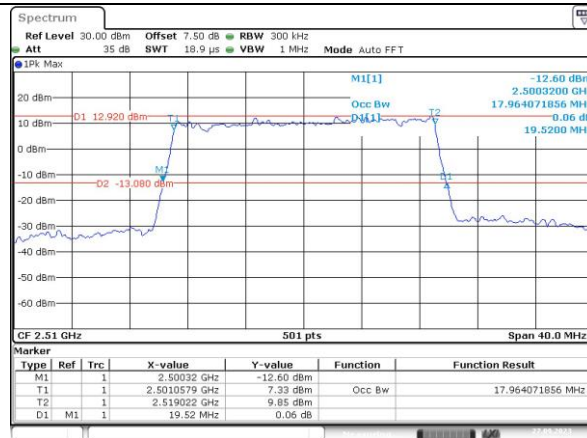
Occupied Bandwidth

Channel

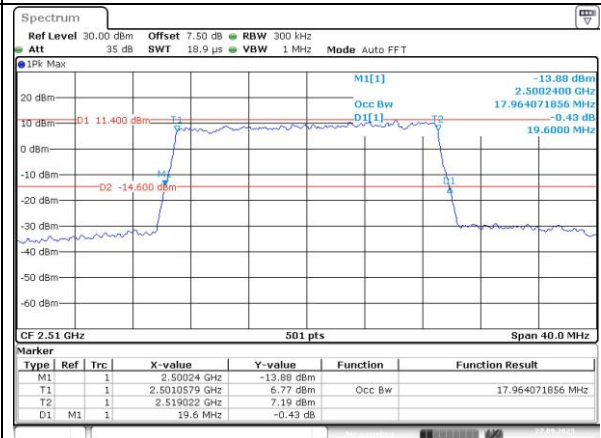
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

Lowest

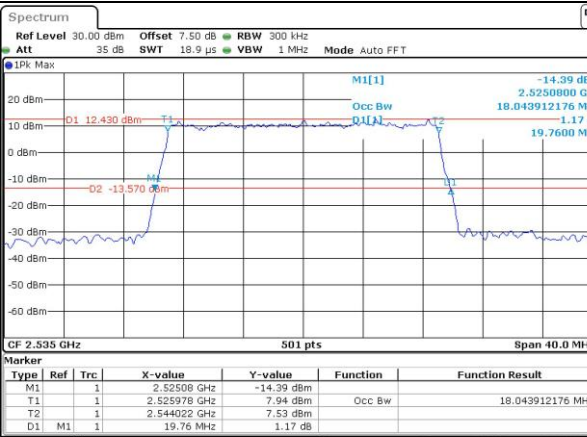


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:15:126

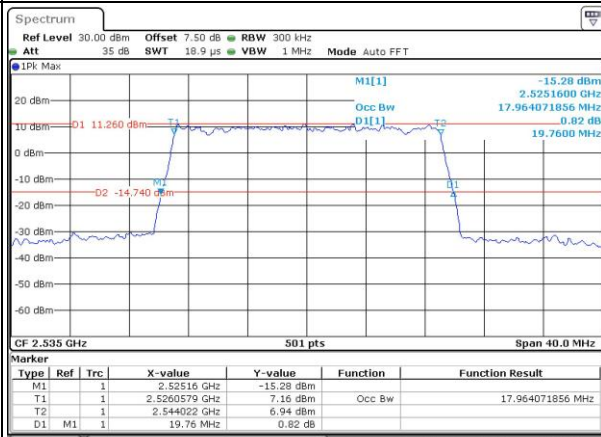


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:15:101

Middle

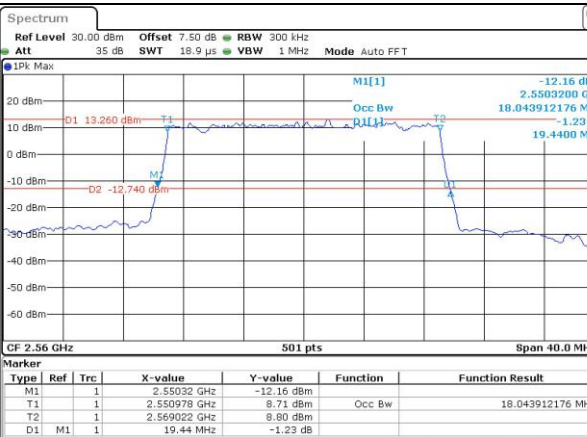


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:15:122

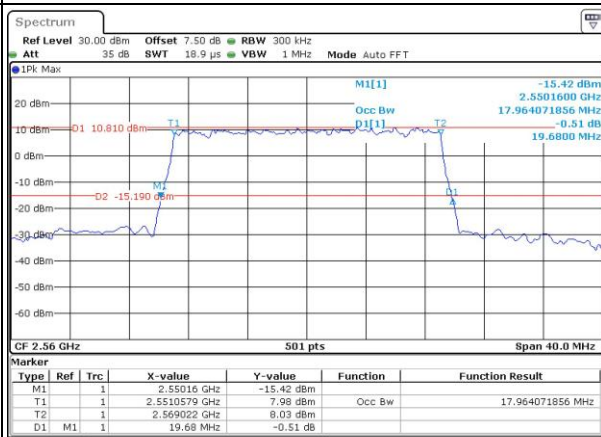


ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:15:149

Highest



ProjectNo.:CR230955707 Tester:One Luo
Date: 27.SEP.2023 02:15:117



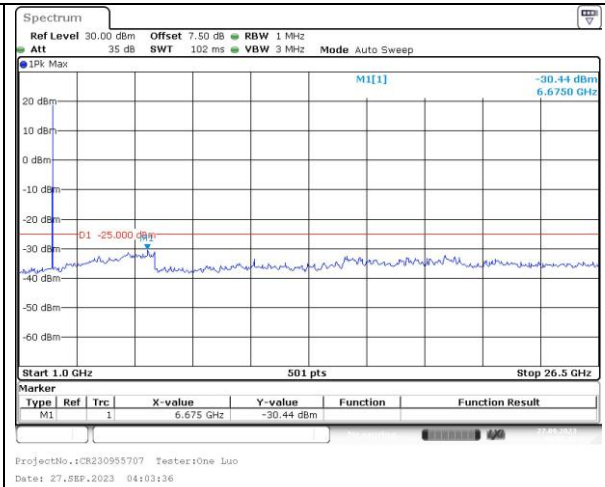
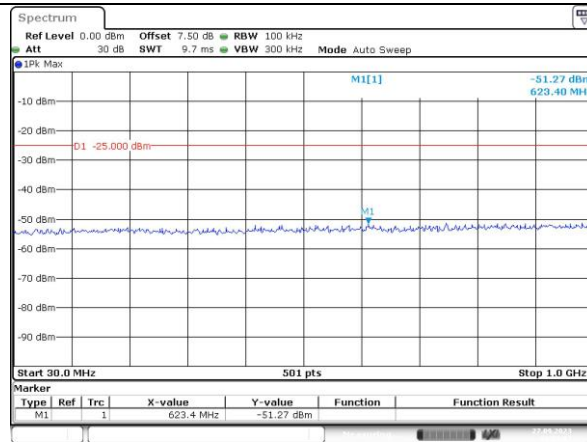
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Date: 27.SEP.2023 02:15:135

Spurious Emissions at Antenna Terminal

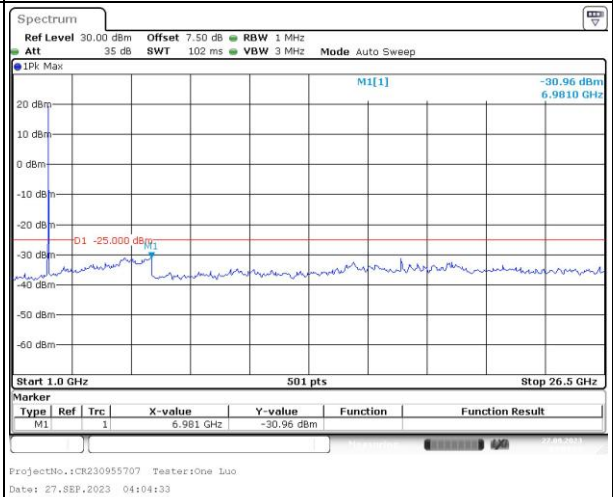
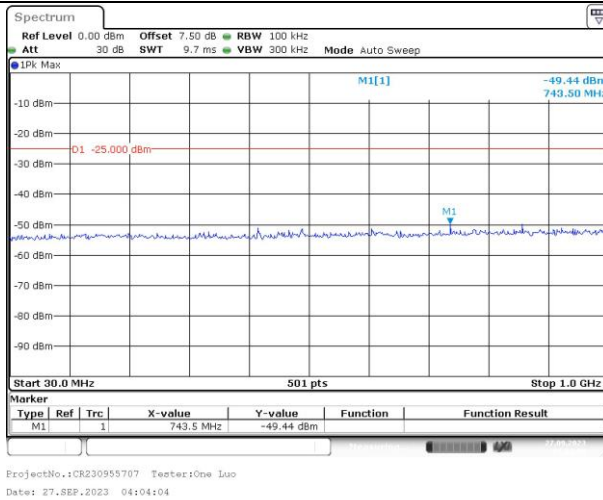
Channel

5MHz Bandwidth QPSK

Lowest



Middle



Highest

