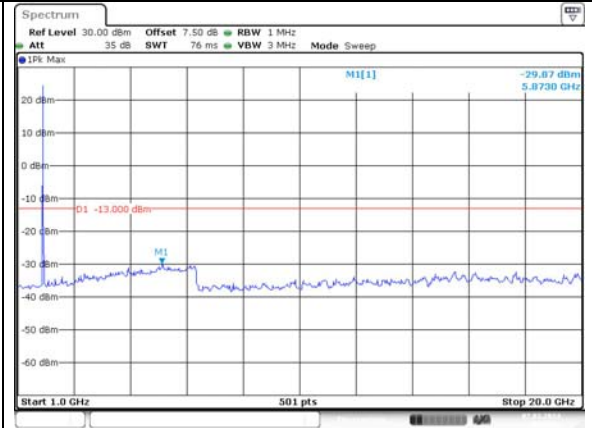
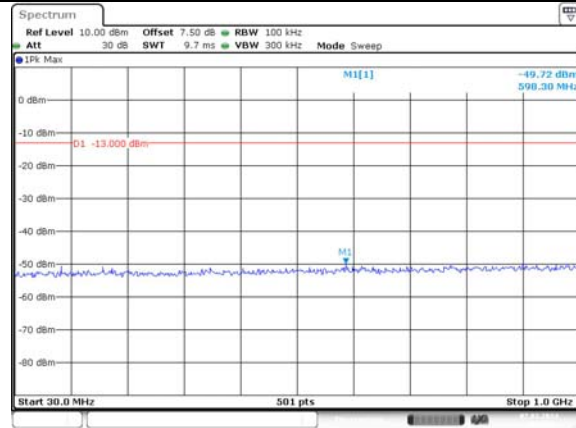


Spurious Emissions at Antenna Terminal

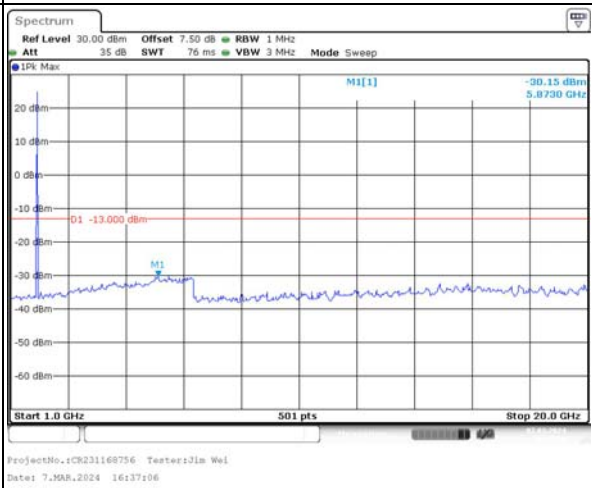
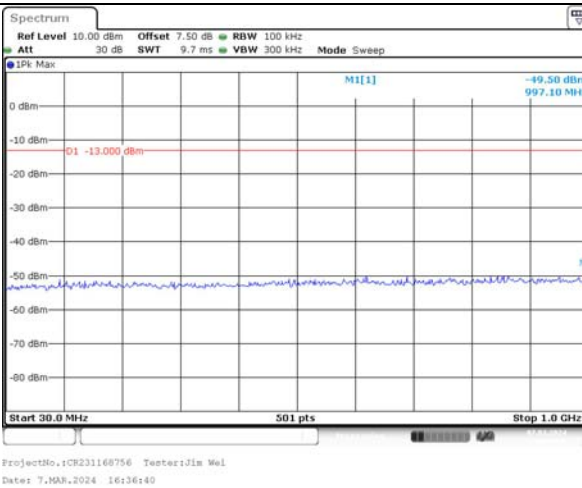
Channel

15MHz Bandwidth QPSK

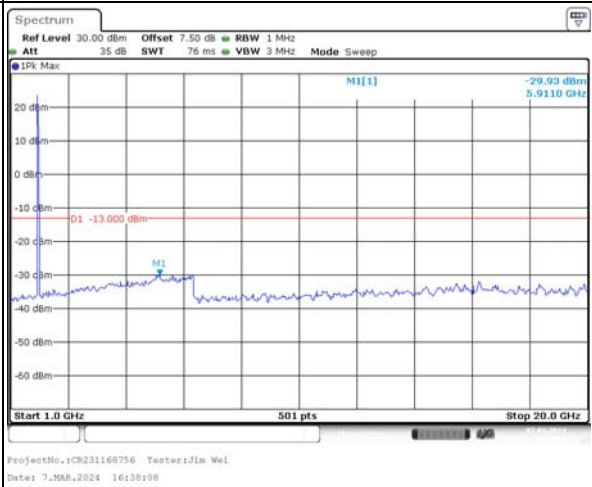
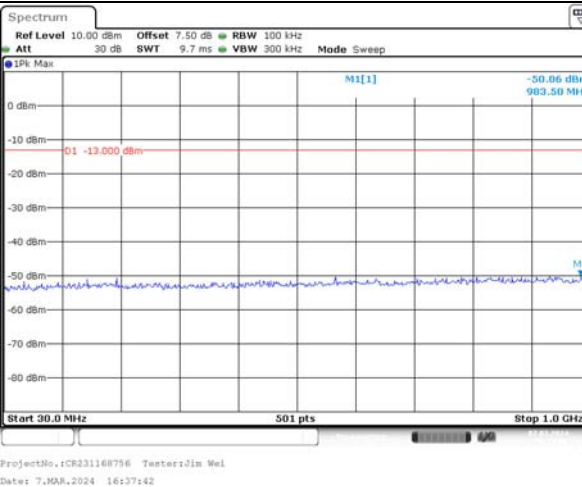
Lowest



Middle



Highest

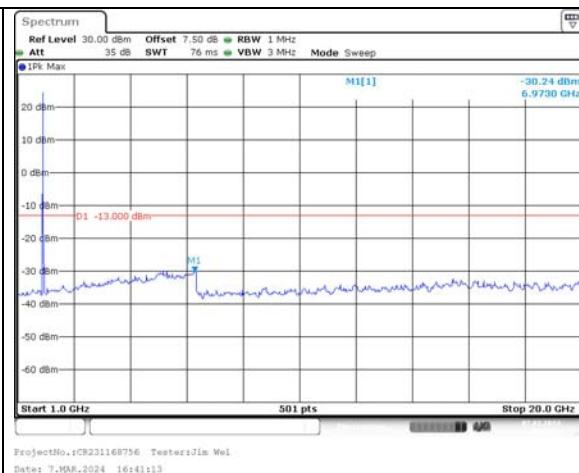
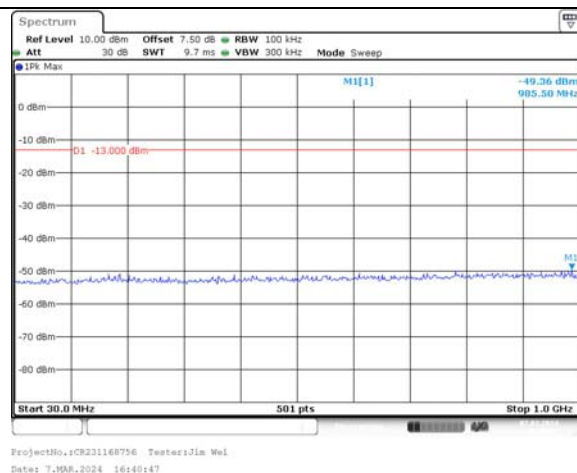


Spurious Emissions at Antenna Terminal

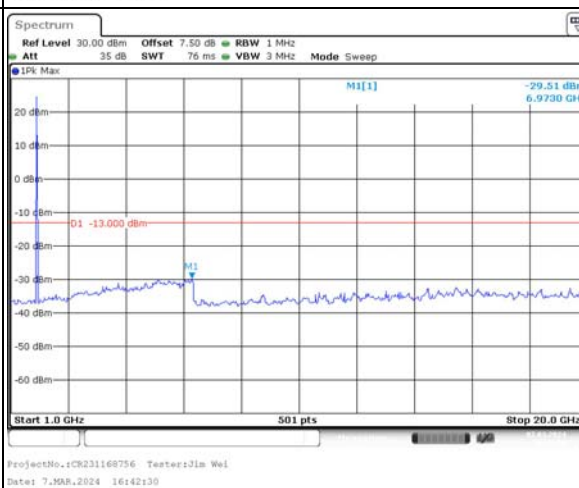
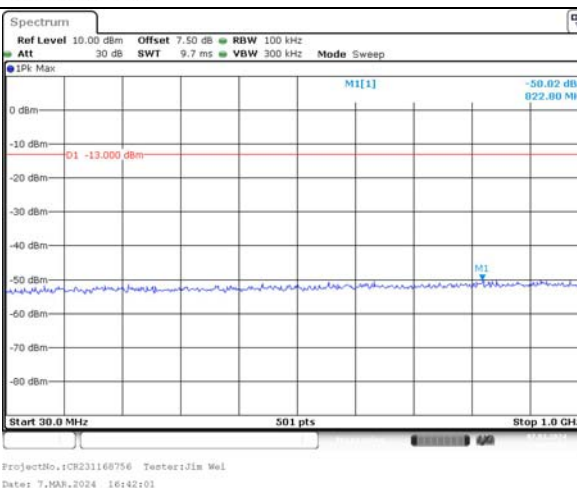
Channel

20MHz Bandwidth QPSK

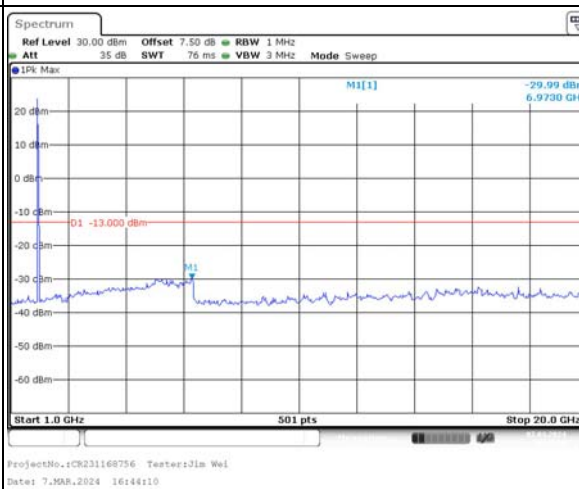
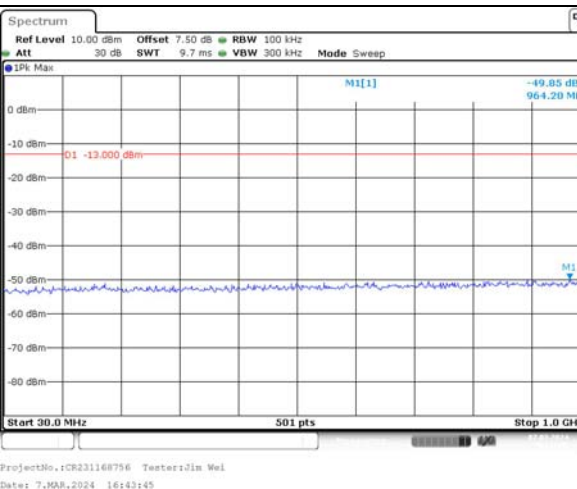
Lowest



Middle

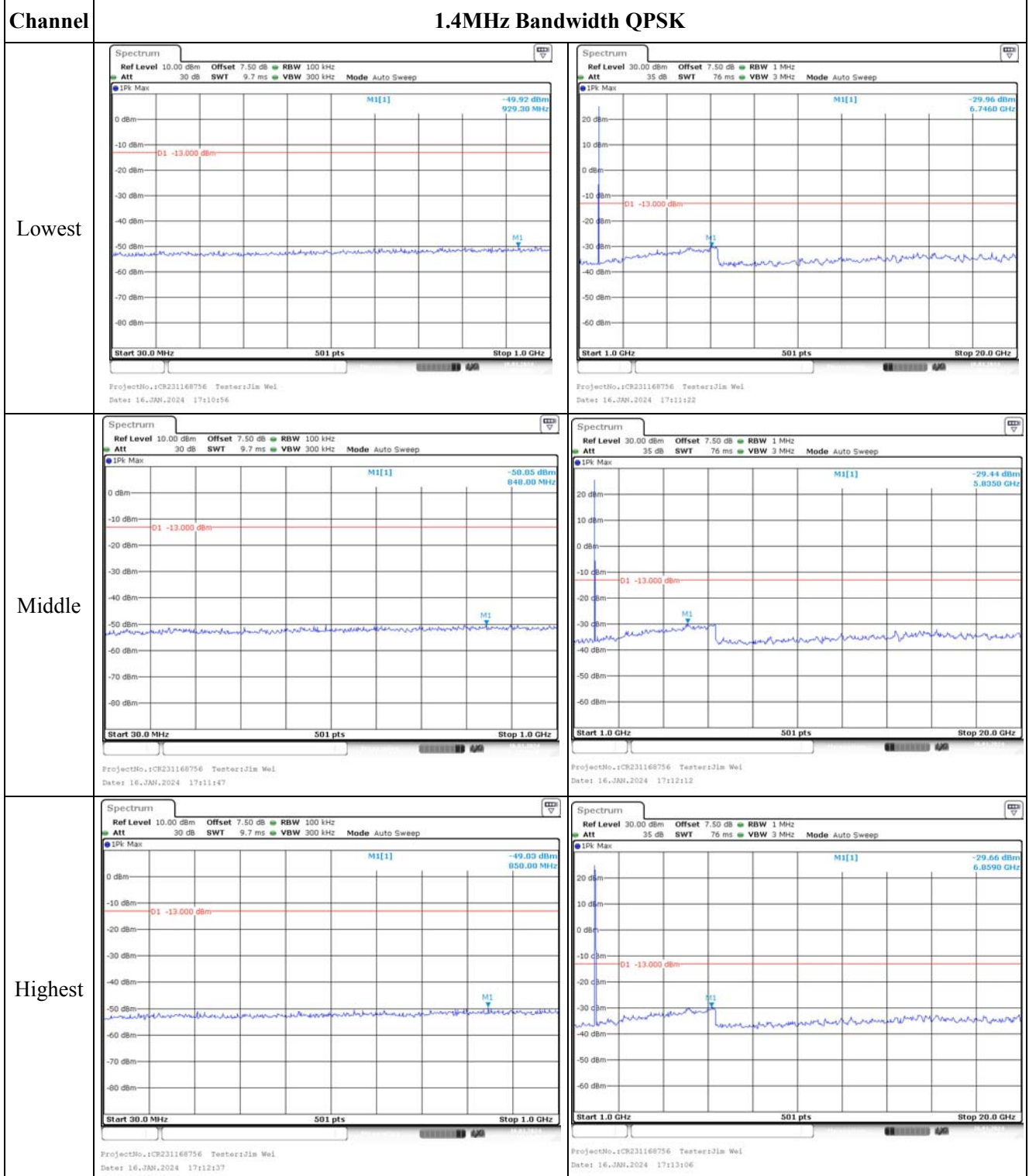


Highest



Full RB:

Spurious Emissions at Antenna Terminal

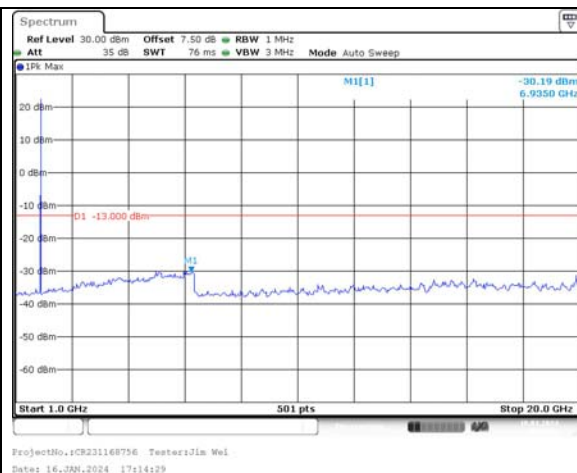
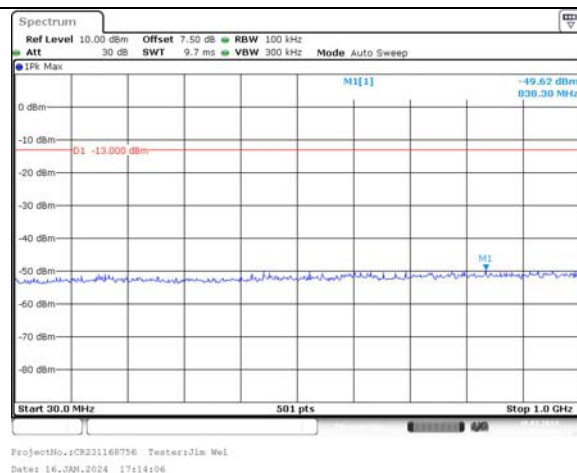


Spurious Emissions at Antenna Terminal

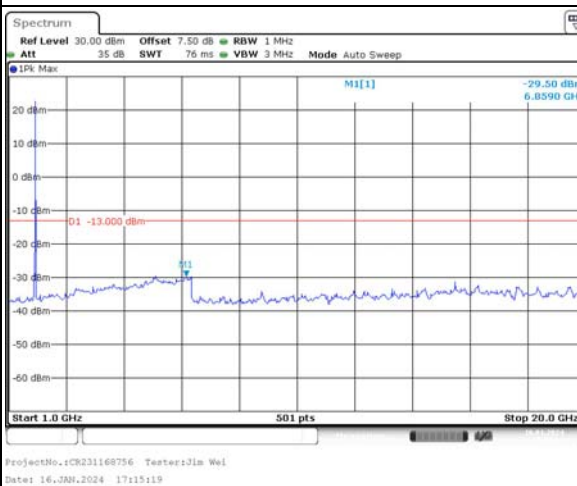
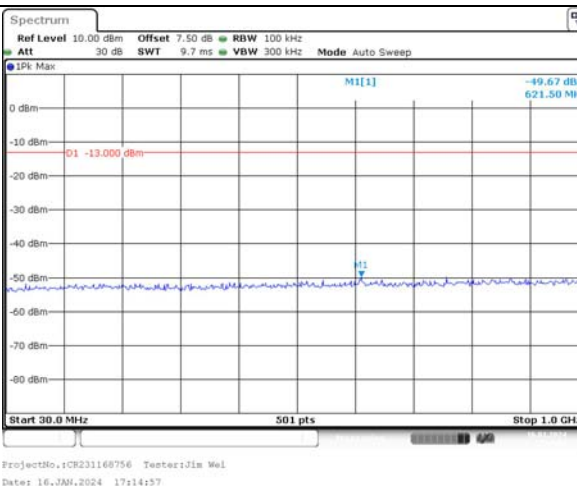
Channel

3MHz Bandwidth QPSK

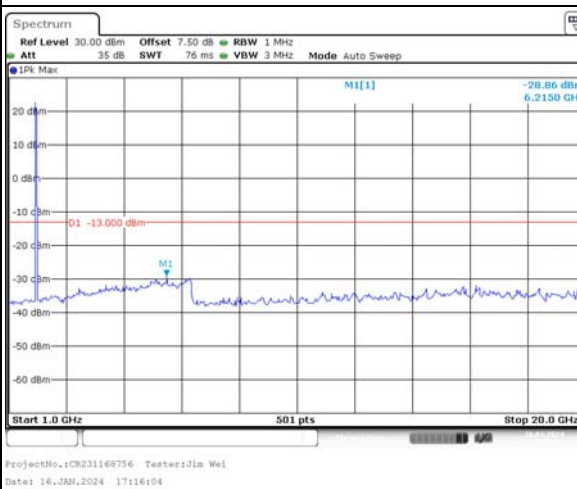
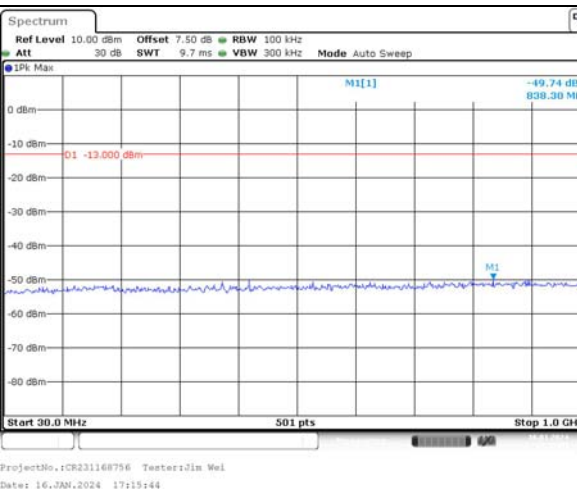
Lowest



Middle



Highest

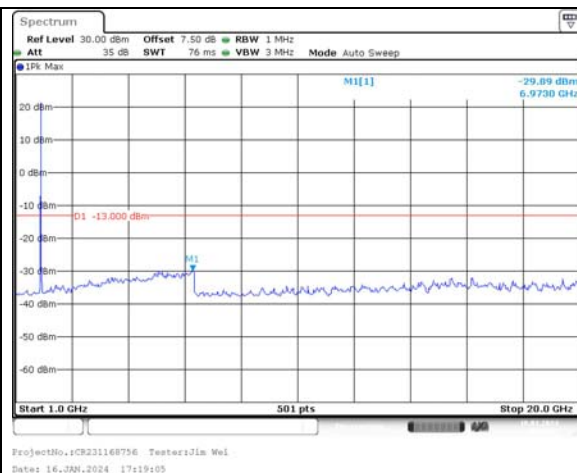
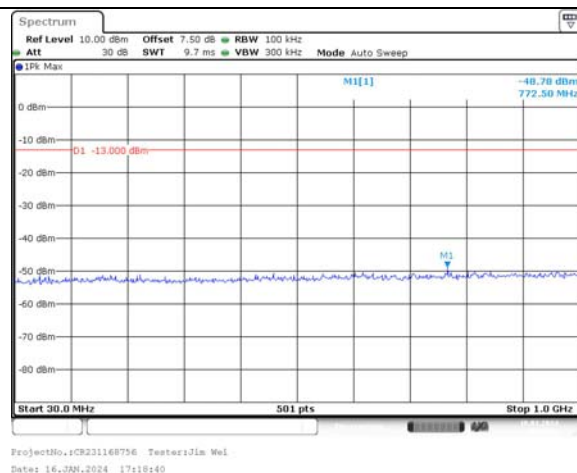


Spurious Emissions at Antenna Terminal

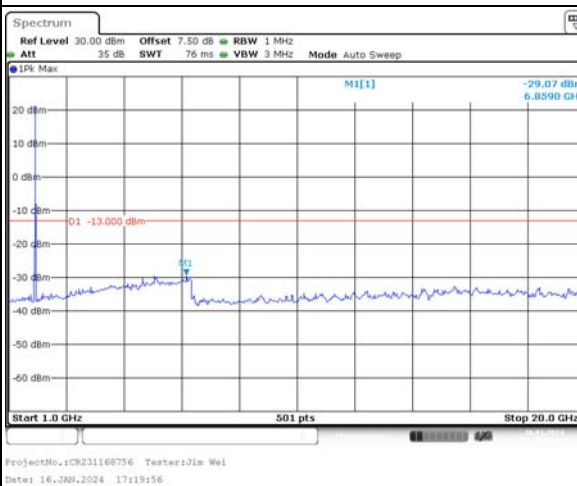
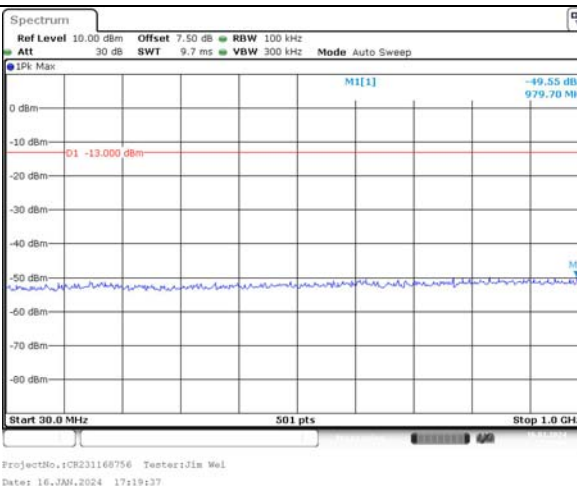
Channel

5MHz Bandwidth QPSK

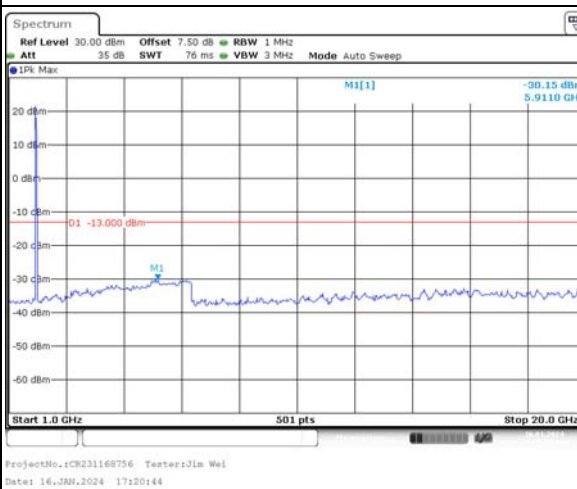
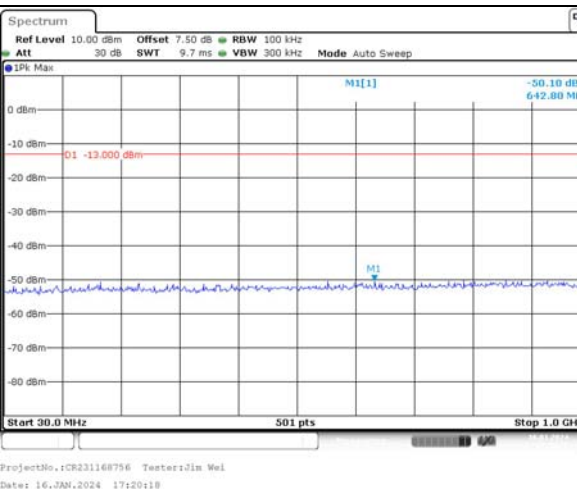
Lowest



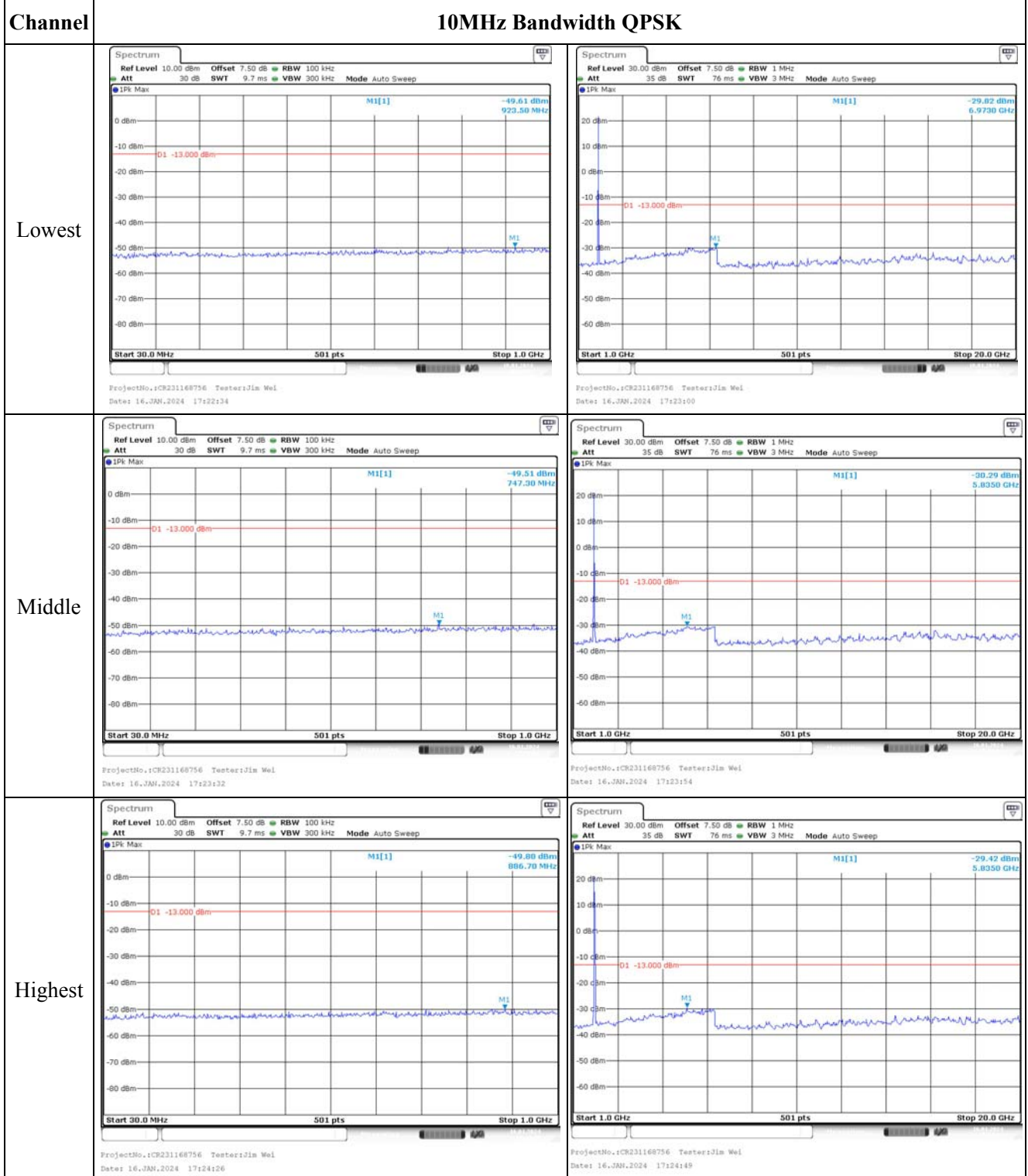
Middle



Highest



Spurious Emissions at Antenna Terminal

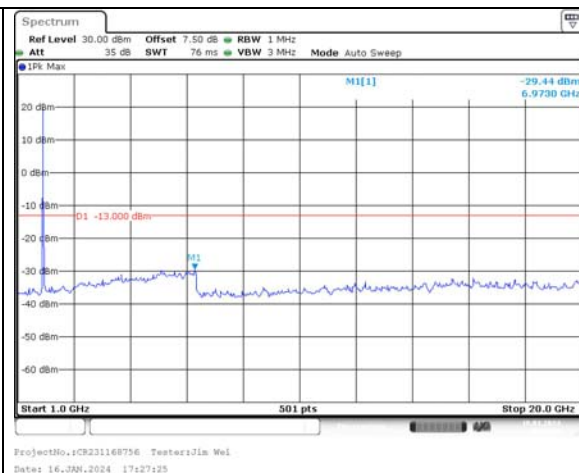
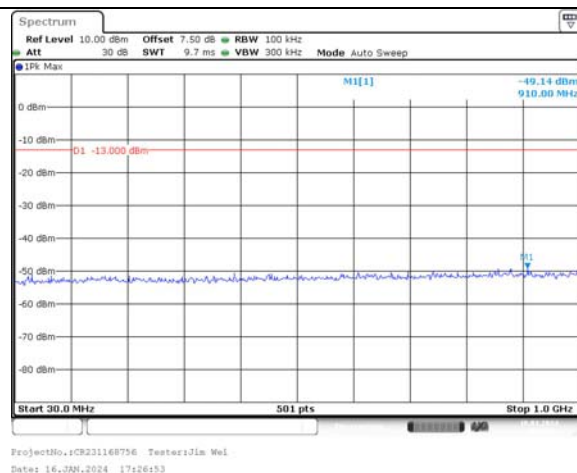


Spurious Emissions at Antenna Terminal

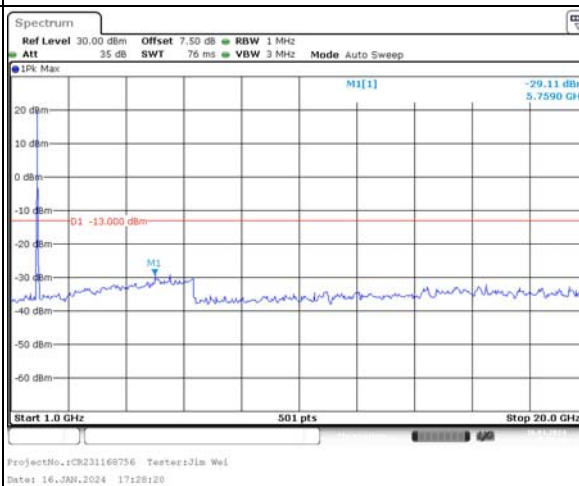
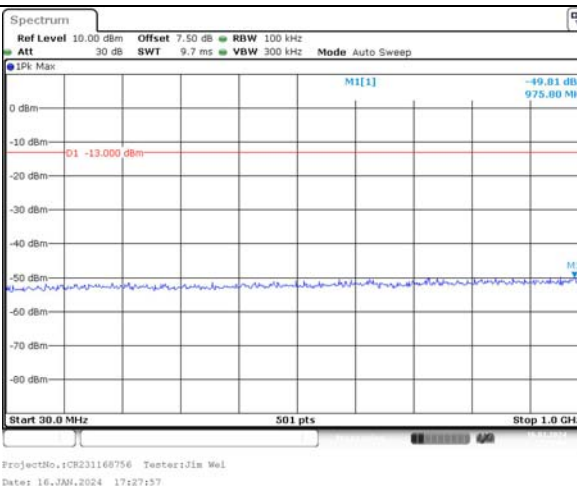
Channel

15MHz Bandwidth QPSK

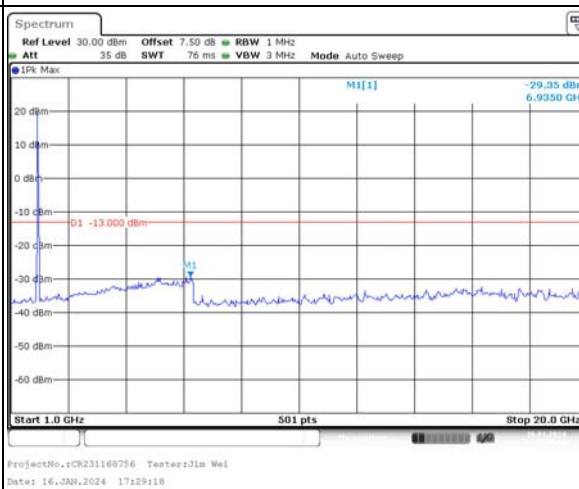
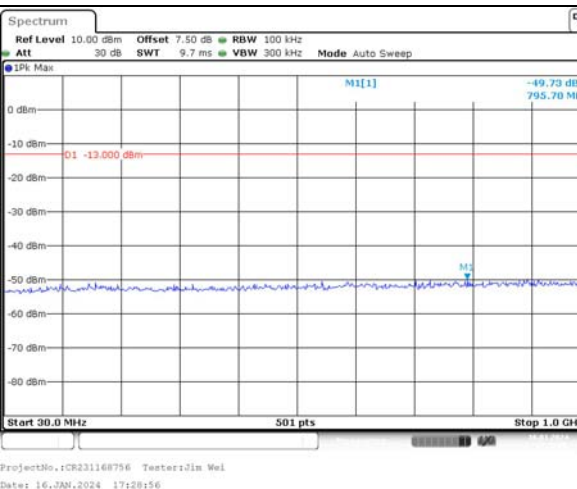
Lowest



Middle



Highest

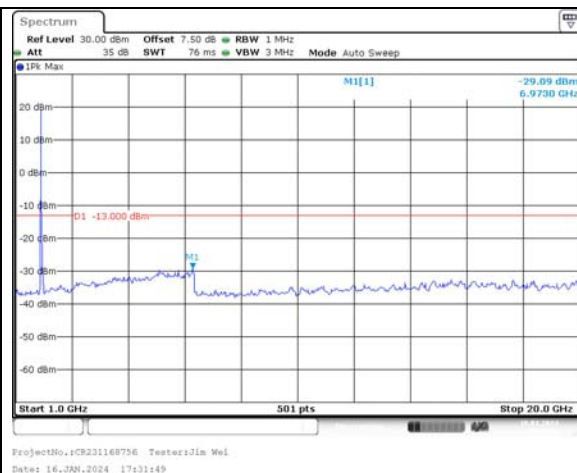
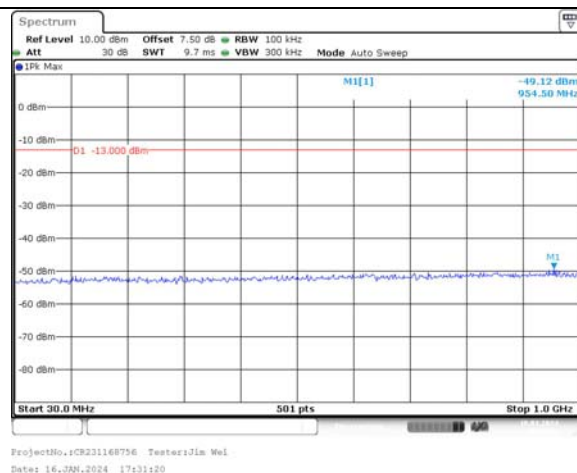


Spurious Emissions at Antenna Terminal

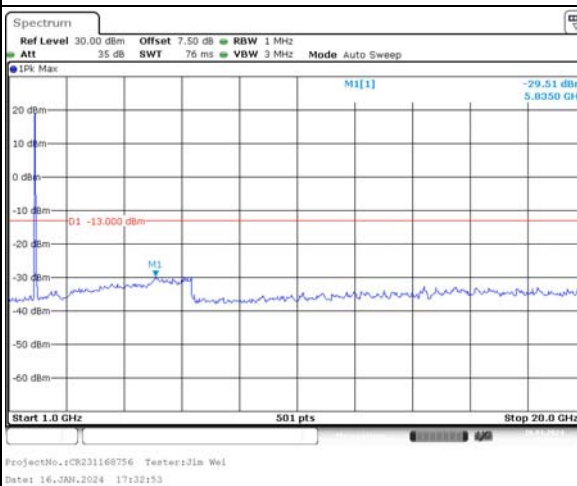
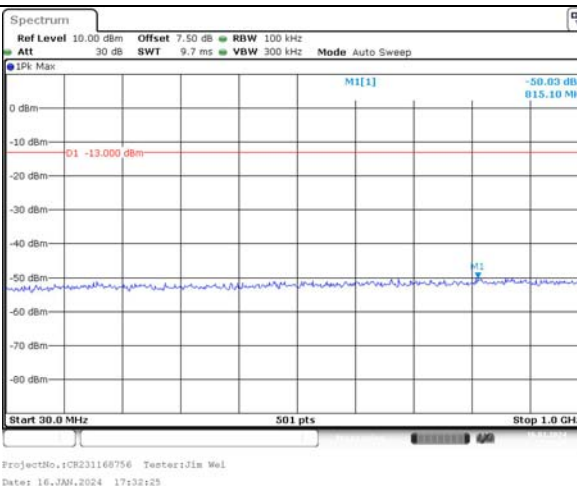
Channel

20MHz Bandwidth QPSK

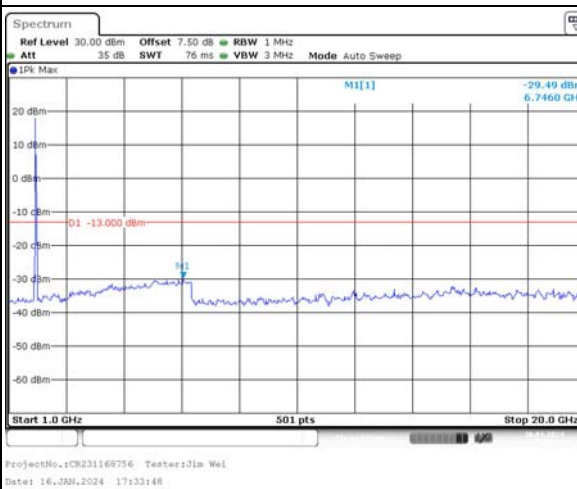
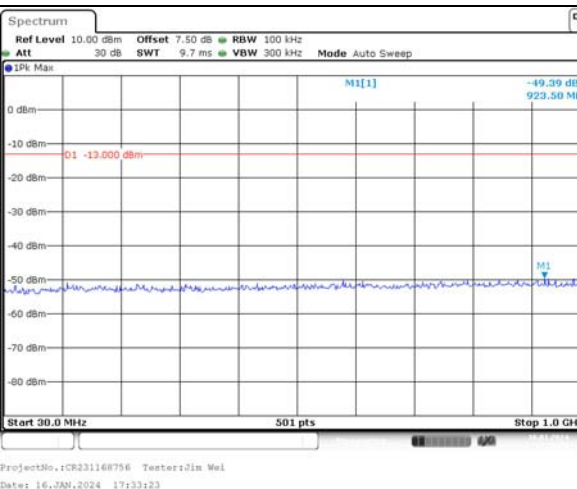
Lowest



Middle

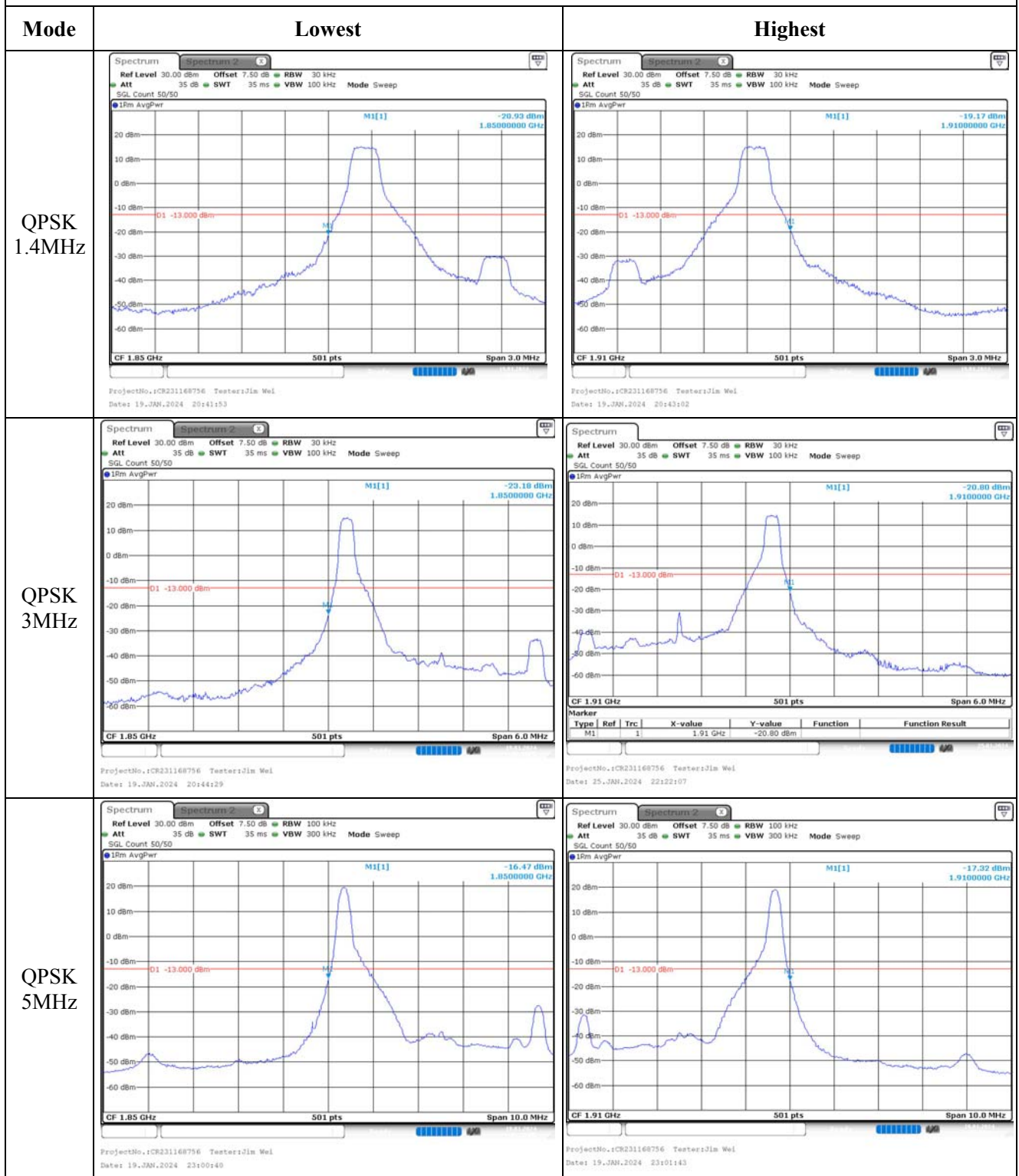


Highest

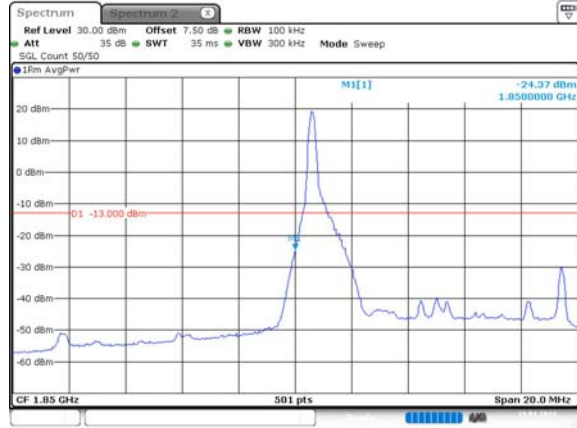
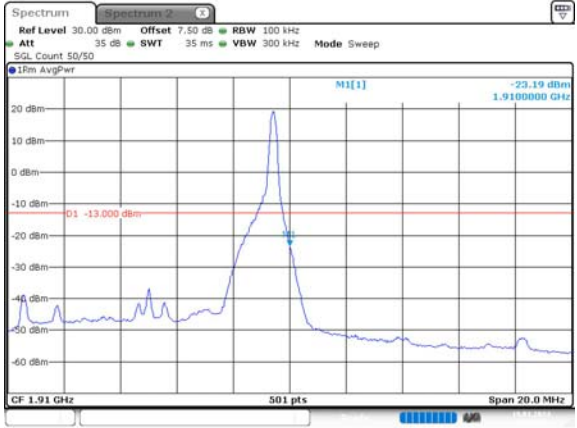
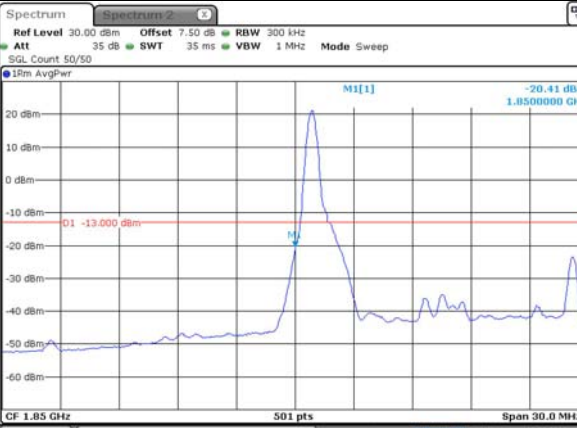
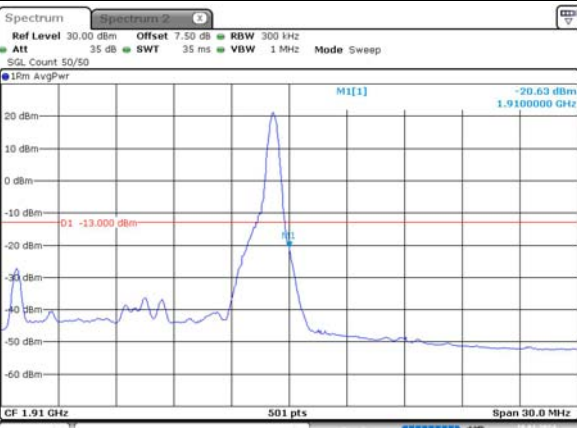
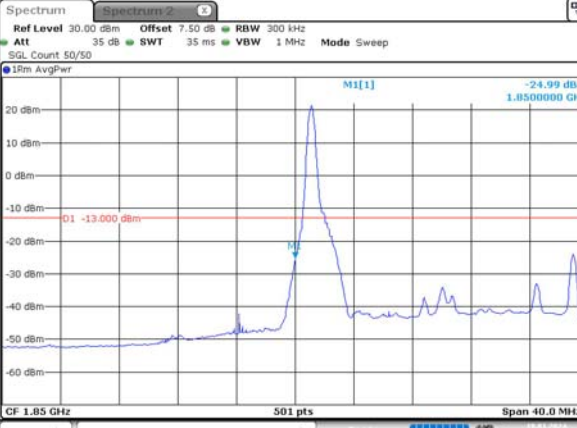
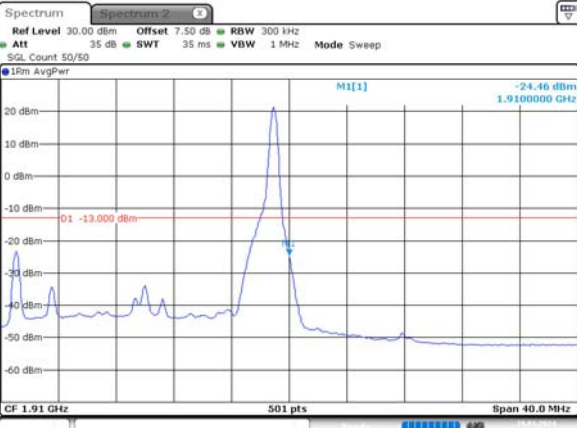


1RB:

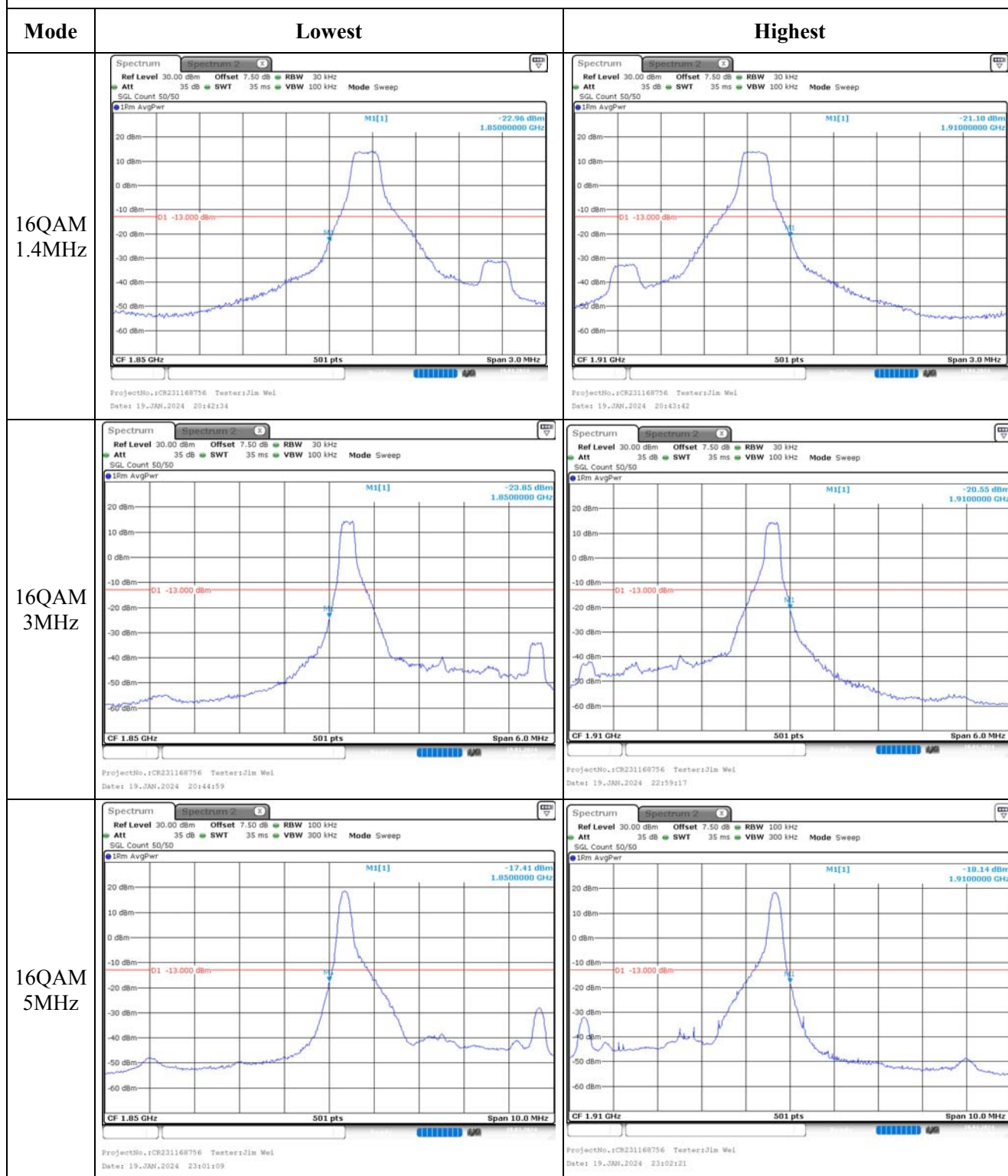
Out of band emission, Band Edge



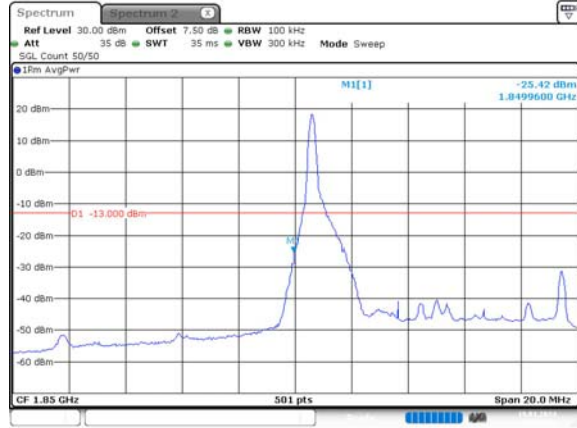
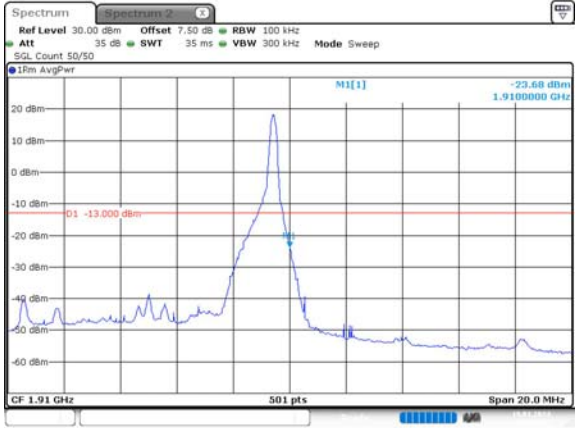
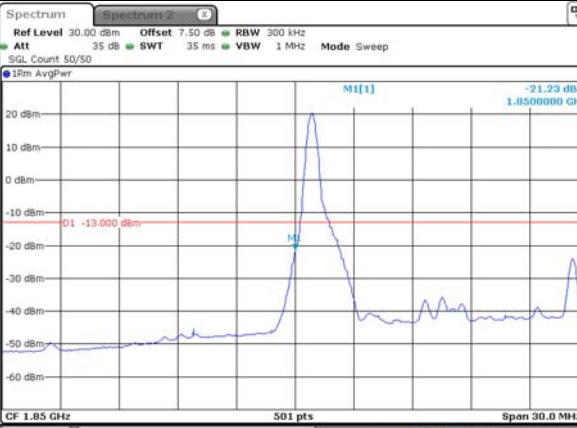
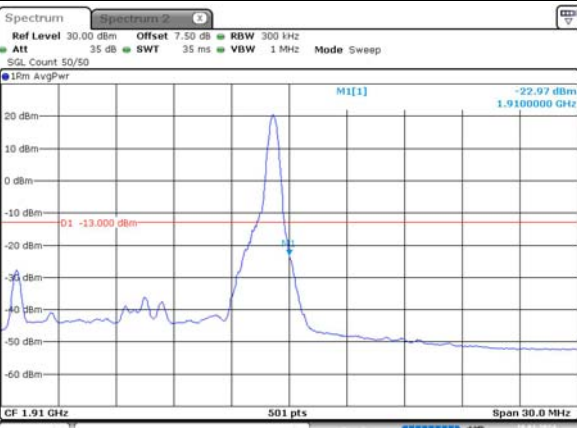
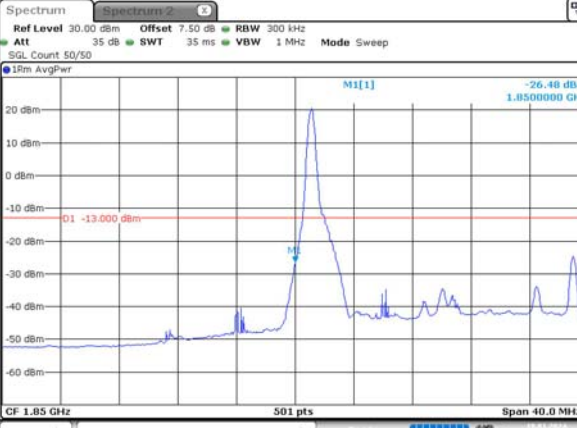
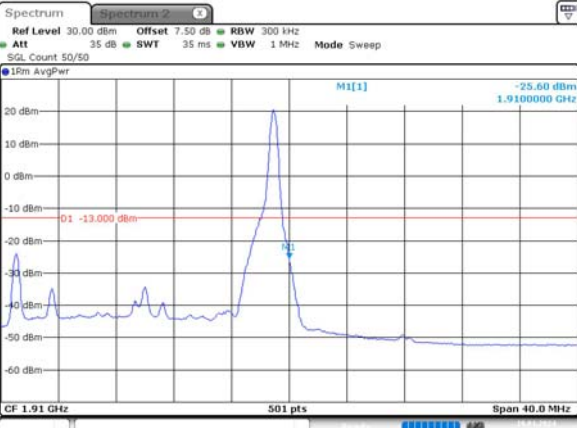
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:03:09	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:04:12
QPSK 15MHz	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:08:10	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:09:49
QPSK 20MHz	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:11:01	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:11:57

Out of band emission, Band Edge

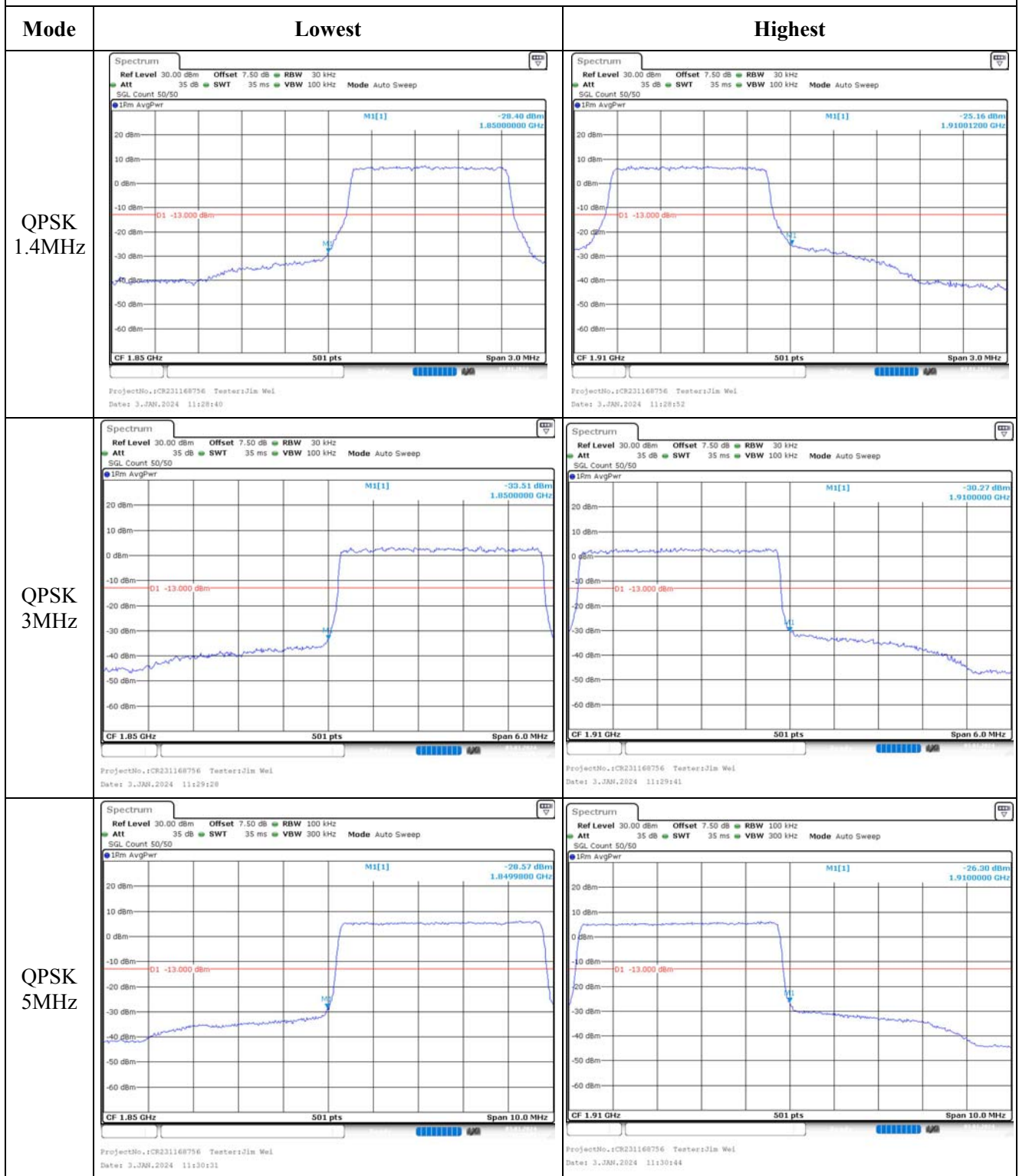


Out of band emission, Band Edge

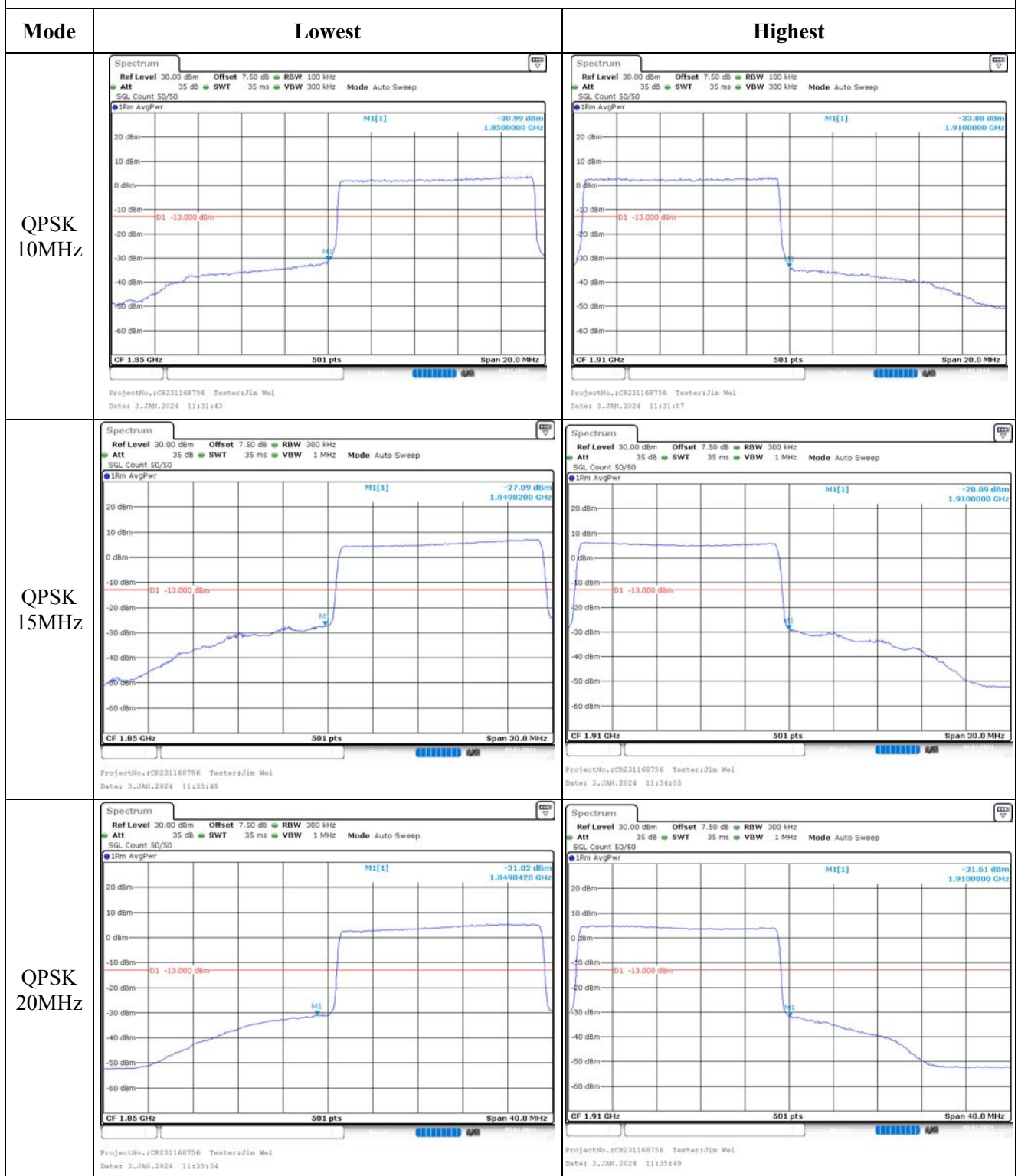
Mode	Lowest	Highest
16QAM 10MHz	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:03:40	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:04:38
16QAM 15MHz	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:09:04	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:10:19
16QAM 20MHz	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:11:27	 ProjectNo.:CR231168756 TestersJlm Wei Date: 19-JAN-2024 23:12:36

Full RB:

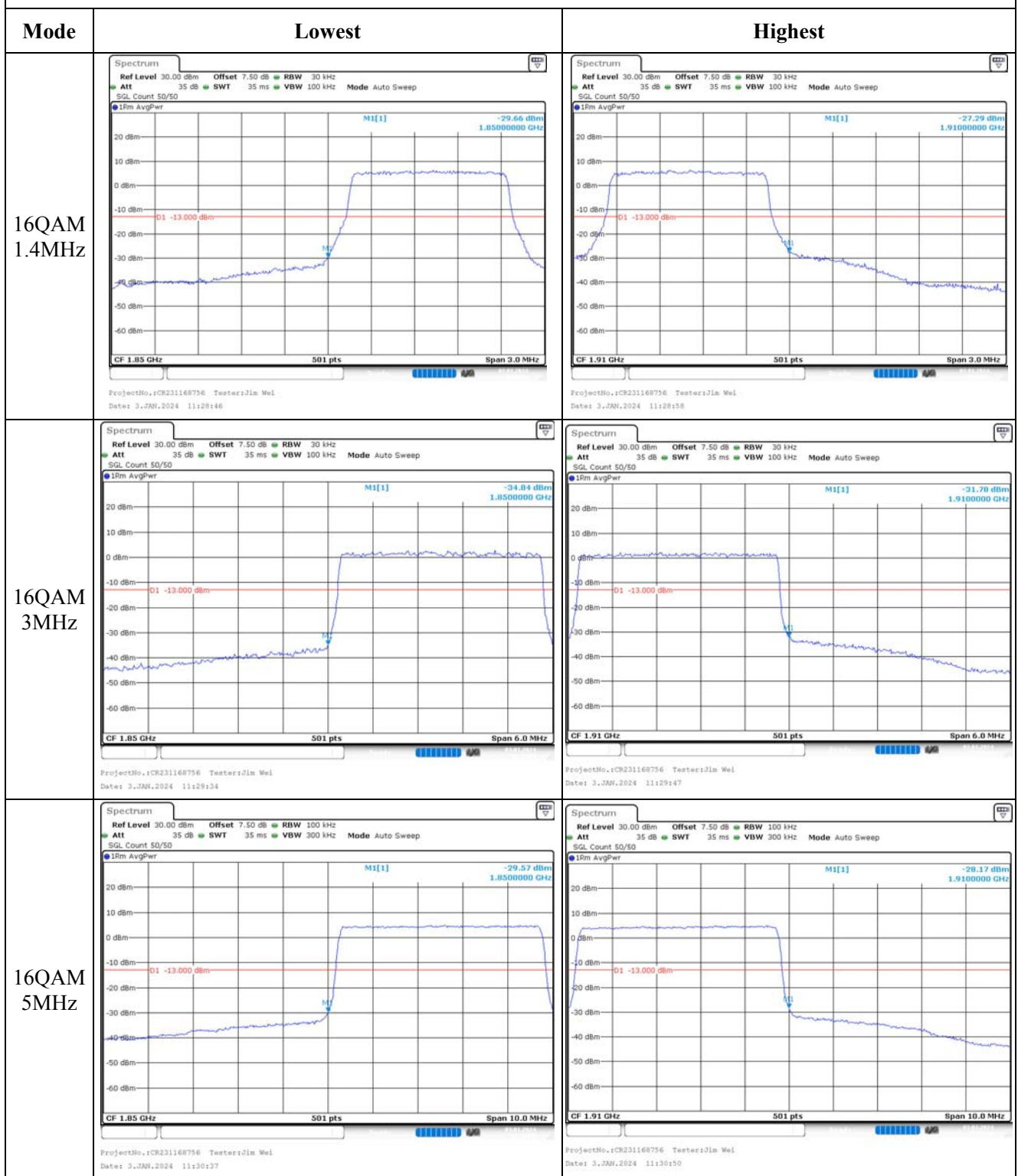
Out of band emission, Band Edge



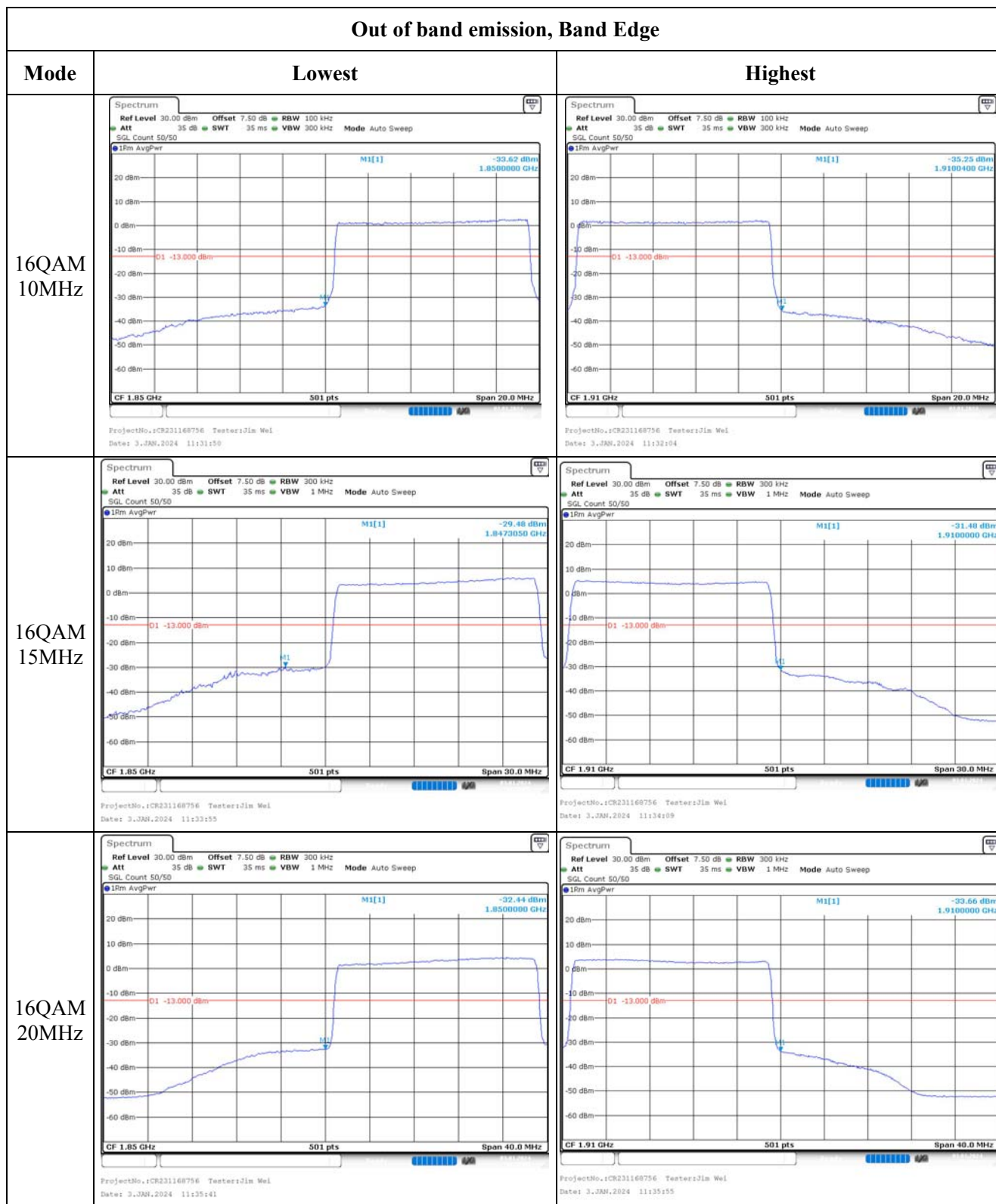
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	2DYK-1	Test Date:	2024/1/2-2024/3/7
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jim Wei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.5~26.5	Relative Humidity: (%)	40~55	ATM Pressure: (kPa)	101.1-101.9
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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	2023/3/31	2024/3/30
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	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/29	2024/9/28
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).*

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

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		
1.4MHz QPSK	RB1#0	22.42	22.37	22.34	24.42	30
	RB1#3	22.58	22.56	22.51		
	RB1#5	22.39	22.37	22.33		
	RB3#0	22.53	22.49	22.47		
	RB3#3	22.53	22.50	22.42		
	RB6#0	21.51	21.45	21.43		
1.4MHz 16QAM	RB1#0	21.59	21.35	21.37	23.59	30
	RB1#3	21.75	21.59	21.51		
	RB1#5	21.59	21.43	21.37		
	RB3#0	21.55	21.60	21.64		
	RB3#3	21.56	21.60	21.65		
	RB6#0	20.57	20.40	20.45		
3MHz QPSK	RB1#0	22.45	22.40	22.39	24.3	30
	RB1#8	22.46	22.42	22.40		
	RB1#14	22.43	22.38	22.41		
	RB6#0	21.40	21.40	21.39		
	RB6#9	21.45	21.43	21.35		
	RB15#0	21.52	21.48	21.42		
3MHz 16QAM	RB1#0	21.50	22.04	21.58	23.88	30
	RB1#8	21.52	22.03	21.55		
	RB1#14	21.49	21.99	21.56		
	RB6#0	20.41	20.48	20.39		
	RB6#9	20.41	20.46	20.43		
	RB15#0	20.61	20.55	20.41		
5MHz QPSK	RB1#0	22.41	22.39	22.32	24.4	30
	RB1#13	22.56	22.52	22.45		
	RB1#24	22.43	22.35	22.33		
	RB15#0	21.50	21.53	21.48		
	RB15#10	21.52	21.50	21.41		
	RB25#0	21.51	21.48	21.39		
5MHz 16QAM	RB1#0	21.32	21.75	21.40	23.71	30
	RB1#13	21.43	21.87	21.55		
	RB1#24	21.27	21.68	21.37		
	RB15#0	20.59	20.47	20.54		
	RB15#10	20.62	20.49	20.47		
	RB25#0	20.61	20.53	20.47		
10MHz QPSK	RB1#0	22.46	22.47	22.46	24.48	30
	RB1#25	22.62	22.64	22.59		
	RB1#49	22.51	22.44	22.42		

	RB25#0	21.52	21.62	21.52		
	RB25#25	21.52	21.53	21.45		
	RB50#0	21.58	21.58	21.53		
10MHz 16QAM	RB1#0	22.18	21.67	21.45	24.1	30
	RB1#25	22.26	21.83	21.65		
	RB1#49	22.12	21.62	21.45		
	RB25#0	20.69	20.67	20.63		
	RB25#25	20.61	20.58	20.56		
	RB50#0	20.71	20.62	20.58		
15MHz QPSK	RB1#0	22.39	22.43	22.41	24.32	30
	RB1#38	22.42	22.48	22.46		
	RB1#74	22.39	22.40	22.32		
	RB36#0	21.48	21.57	21.55		
	RB36#39	21.56	21.54	21.52		
	RB75#0	21.45	21.54	21.50		
15MHz 16QAM	RB1#0	22.10	21.60	21.86	23.94	30
	RB1#38	22.06	21.66	21.90		
	RB1#74	22.05	21.60	21.79		
	RB36#0	20.56	20.58	20.54		
	RB36#39	20.47	20.57	20.48		
	RB75#0	20.53	20.57	20.51		
20MHz QPSK	RB1#0	22.20	22.27	22.14	24.52	30
	RB1#50	22.68	22.49	22.56		
	RB1#99	22.21	22.24	22.15		
	RB50#0	21.43	21.42	21.54		
	RB50#50	21.49	21.32	21.39		
	RB100#0	21.48	21.30	21.50		
20MHz 16QAM	RB1#0	21.60	21.39	21.77	23.95	30
	RB1#50	21.95	21.81	22.11		
	RB1#99	21.59	21.46	21.77		
	RB50#0	20.47	20.59	20.54		
	RB50#50	20.56	20.53	20.43		
	RB100#0	20.50	20.58	20.49		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(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	5.45	5.48	5.48	13
	RB100#0	5.48	5.42	5.42	13
20MHz 16QAM	RB1#0	6.09	6.17	6.41	13
	RB100#0	6.43	6.35	6.26	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
1.4MHz QPSK	1.108	1.102	1.090	1.338	1.290	1.302
1.4MHz 16QAM	1.096	1.096	1.102	1.380	1.284	1.320
3MHz QPSK	2.683	2.695	2.683	2.868	2.880	2.880
3MHz 16QAM	2.683	2.683	2.683	2.880	2.868	2.880
5MHz QPSK	4.511	4.511	4.491	4.960	4.980	4.920
5MHz 16QAM	4.491	4.511	4.511	4.920	4.960	4.960
10MHz QPSK	8.942	8.942	8.942	9.840	9.760	9.640
10MHz 16QAM	8.942	8.942	8.981	9.640	10.040	9.640
15MHz QPSK	13.473	13.533	13.413	14.700	15.360	14.580
15MHz 16QAM	13.473	13.533	13.533	14.640	14.820	14.640
20MHz QPSK	17.884	17.884	18.044	19.280	19.200	19.520
20MHz 16QAM	17.964	17.964	17.884	19.280	19.280	19.280

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

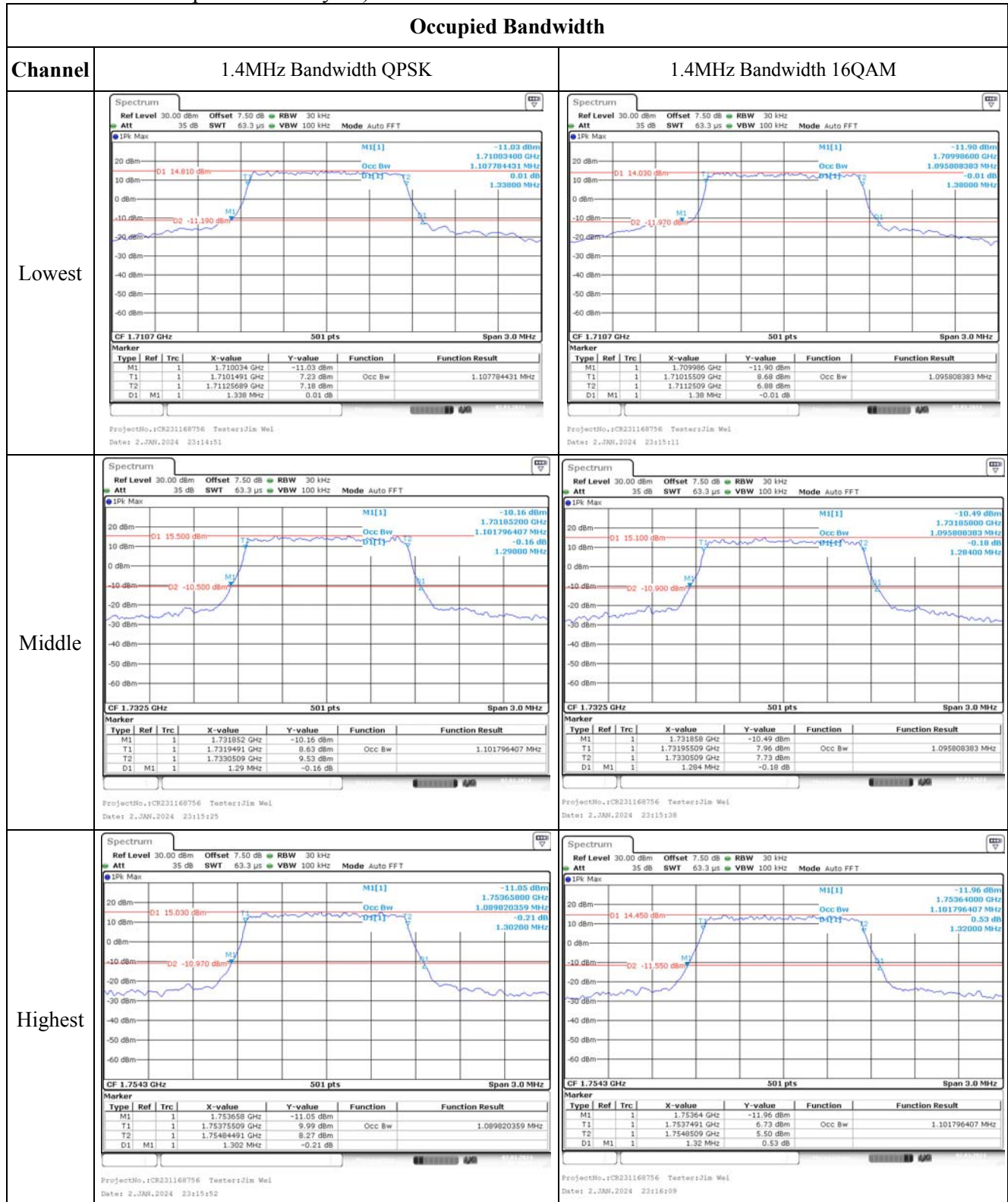
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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Frequency Stability

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	3.8	1711.055	1710.00	1753.936	1755
	-20	3.8	1711.031	1710.00	1753.927	1755
	-10	3.8	1711.046	1710.00	1753.930	1755
	0	3.8	1711.031	1710.00	1753.930	1755
	10	3.8	1711.043	1710.00	1753.930	1755
	20	3.8	1711.058	1710.00	1753.942	1755
	30	3.8	1711.070	1710.00	1753.960	1755
	40	3.8	1711.073	1710.00	1753.954	1755
	50	3.8	1711.067	1710.00	1753.960	1755
Frequency Stability vs. Voltage	20	3.23	1711.067	1710.00	1753.963	1755
	20	4.18	1711.064	1710.00	1753.945	1755
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	3.8	1711.031	1710.00	1753.936	1755
	-20	3.8	1711.037	1710.00	1753.939	1755
	-10	3.8	1711.046	1710.00	1753.924	1755
	0	3.8	1711.046	1710.00	1753.918	1755
	10	3.8	1711.037	1710.00	1753.930	1755
	20	3.8	1711.058	1710.00	1753.942	1755
	30	3.8	1711.067	1710.00	1753.945	1755
	40	3.8	1711.085	1710.00	1753.951	1755
	50	3.8	1711.064	1710.00	1753.960	1755
Frequency Stability vs. Voltage	20	3.23	1711.064	1710.00	1753.945	1755
	20	4.18	1711.082	1710.00	1753.969	1755
					Result:	Pass

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



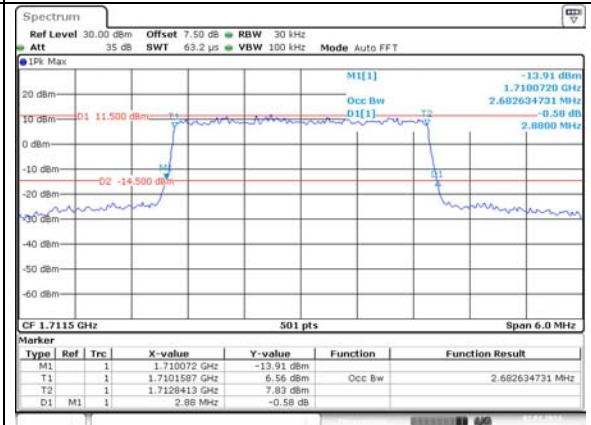
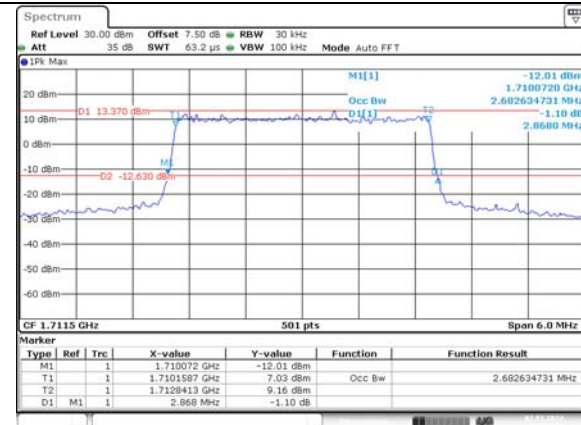
Occupied Bandwidth

Channel

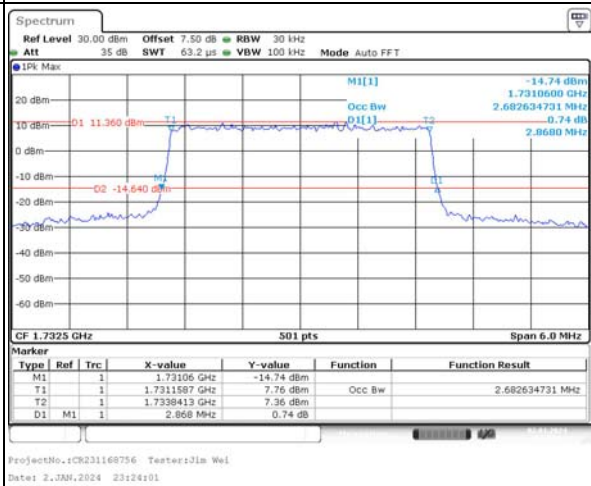
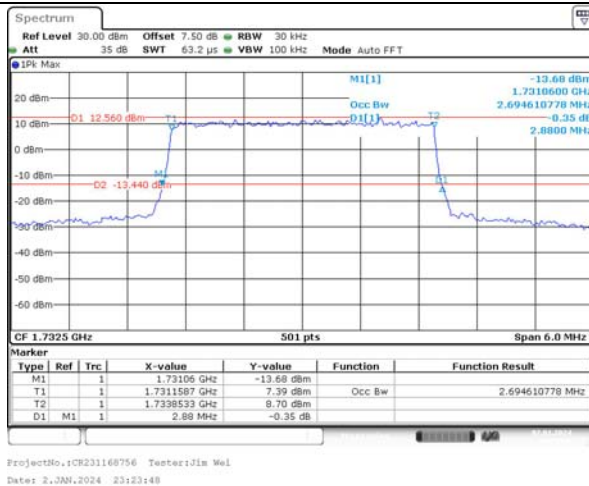
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

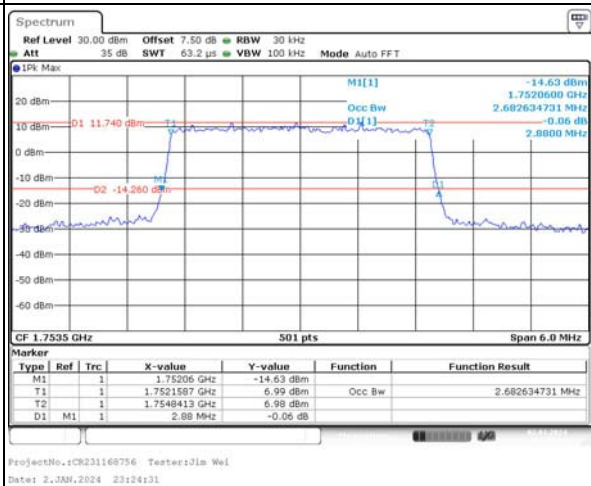
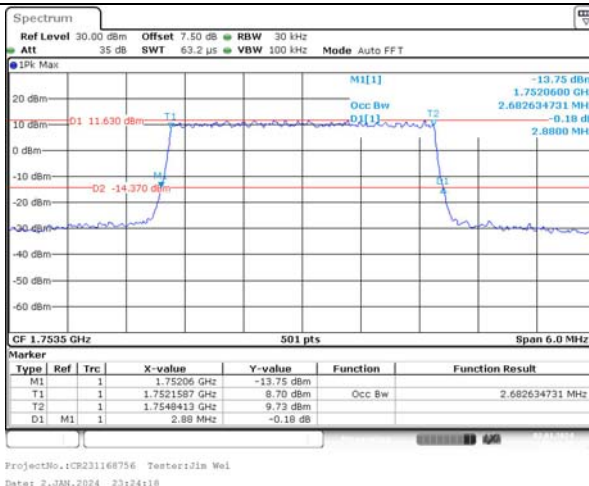
Lowest



Middle



Highest



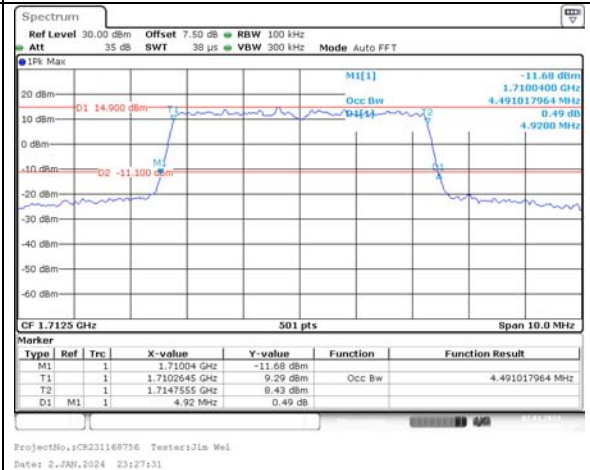
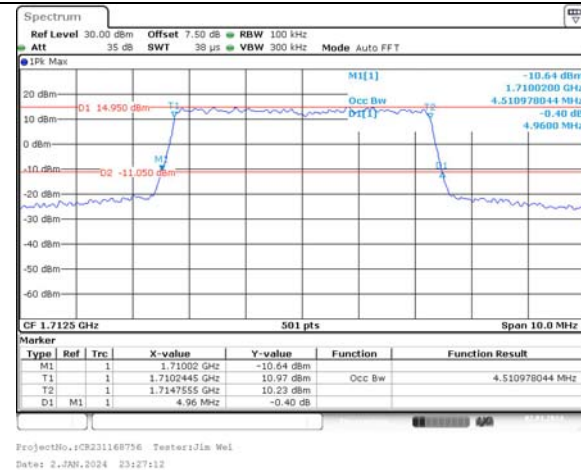
Occupied Bandwidth

Channel

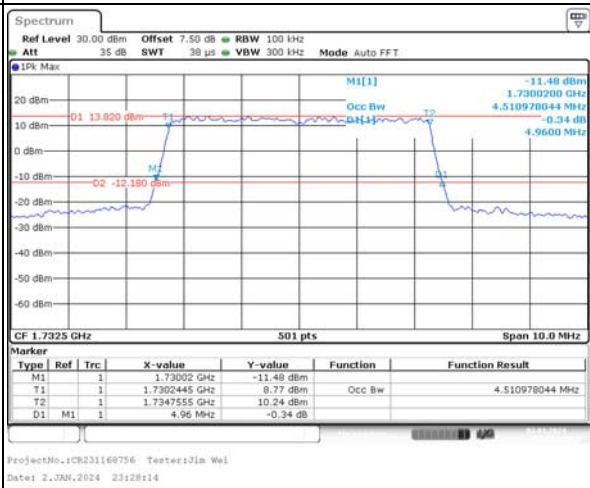
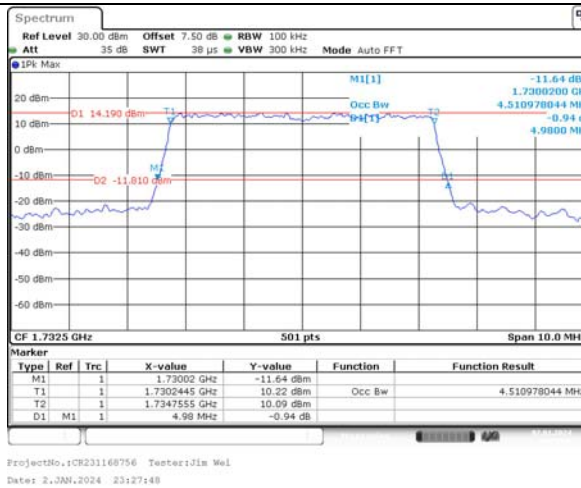
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

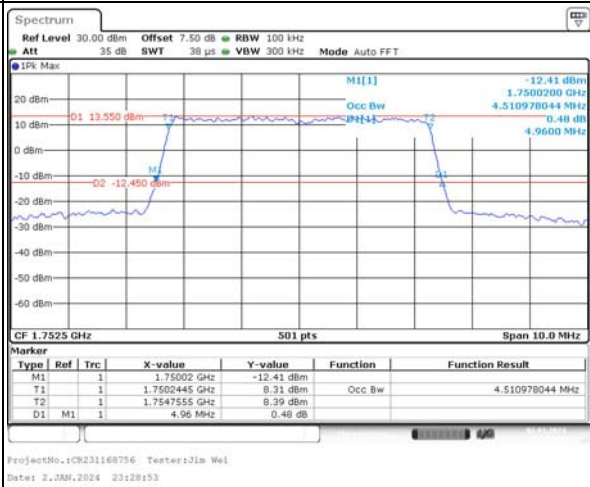
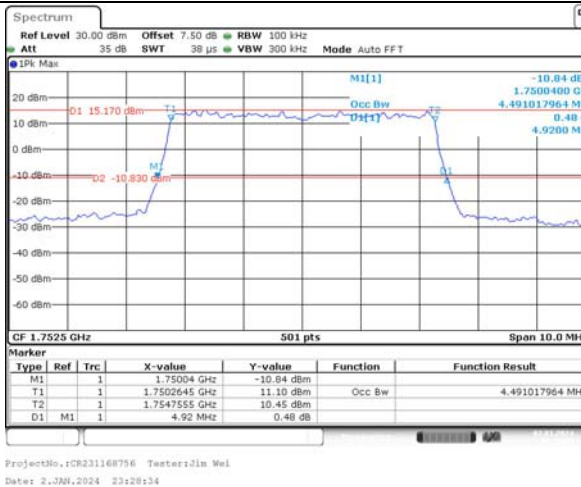
Lowest



Middle



Highest



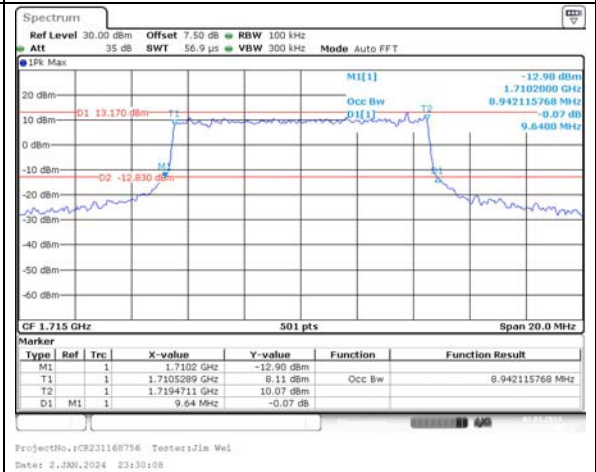
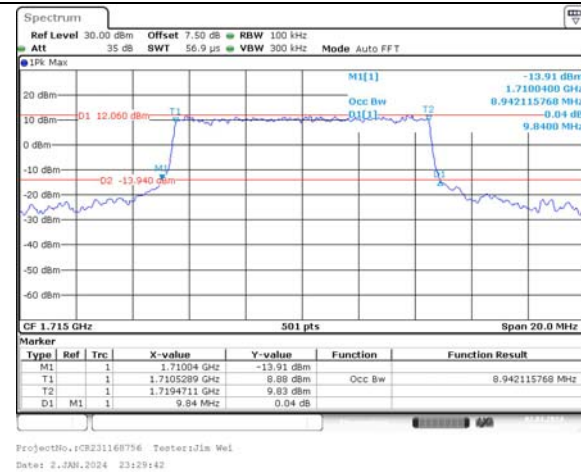
Occupied Bandwidth

Channel

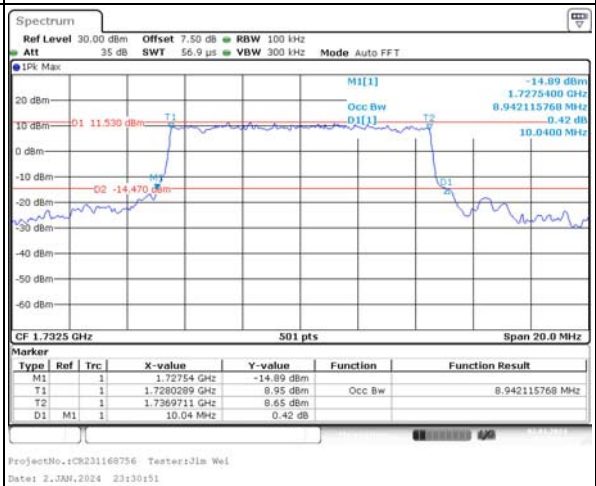
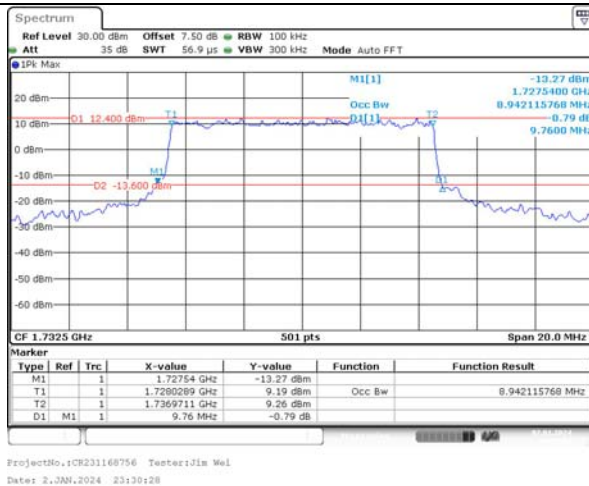
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

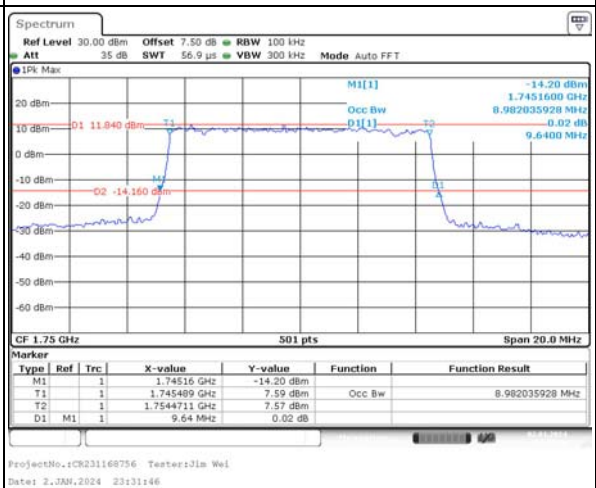
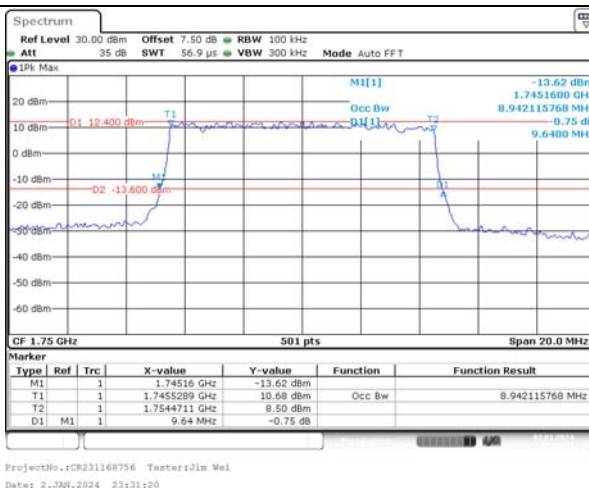
Lowest



Middle



Highest



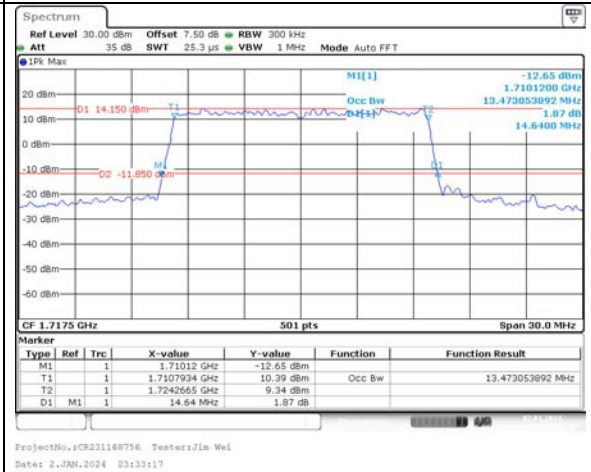
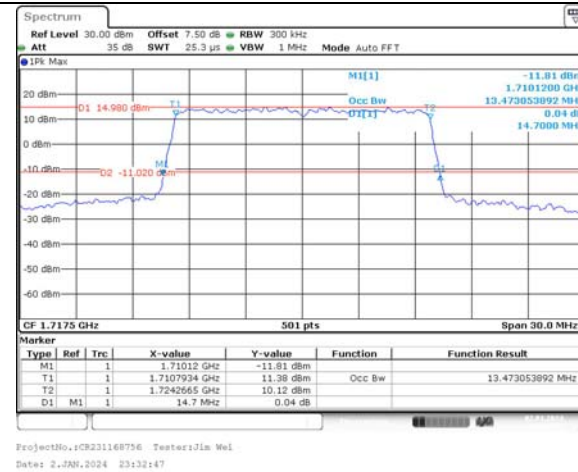
Occupied Bandwidth

Channel

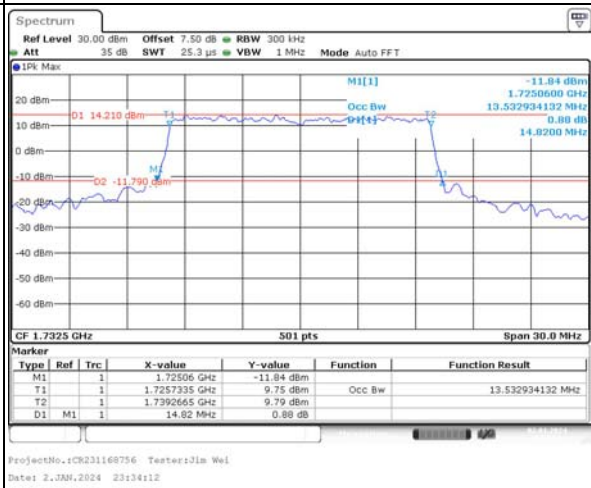
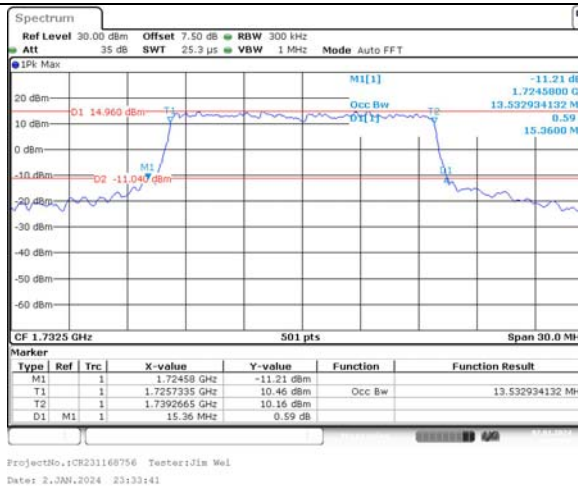
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

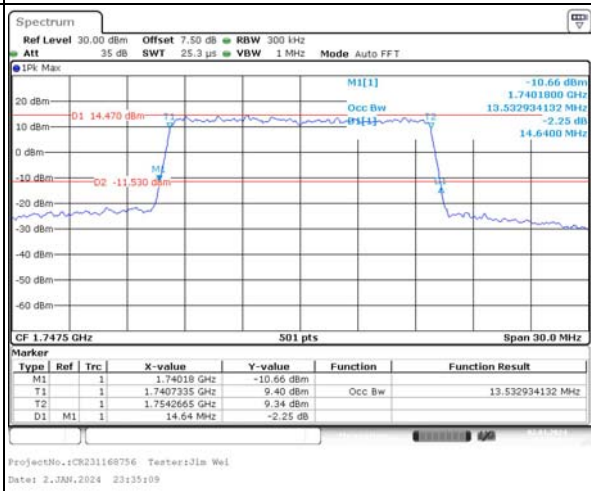
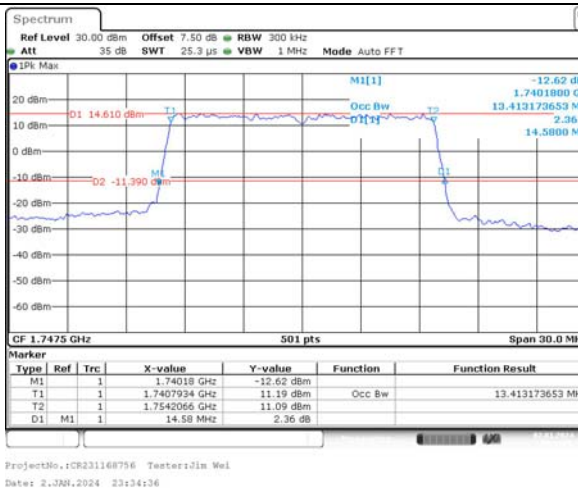
Lowest



Middle



Highest



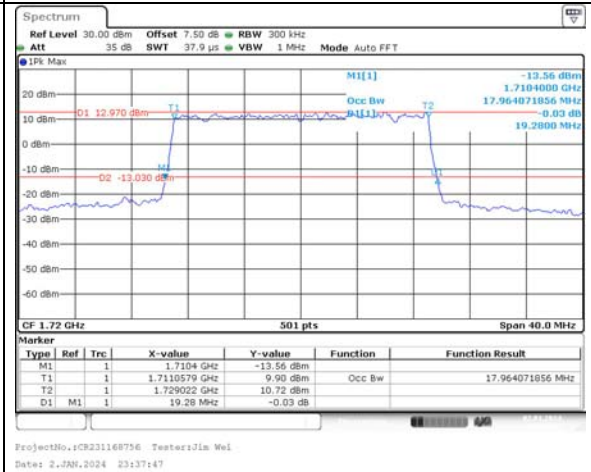
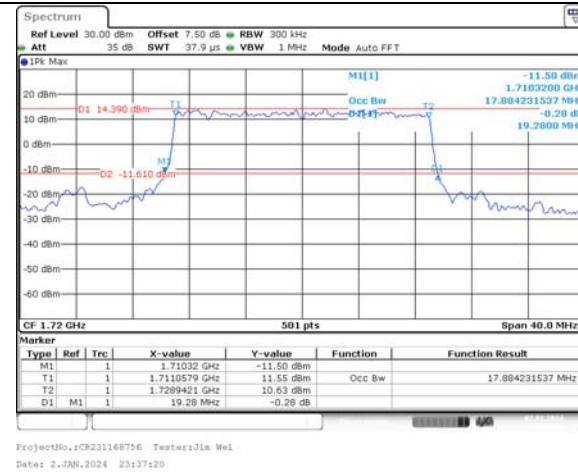
Occupied Bandwidth

Channel

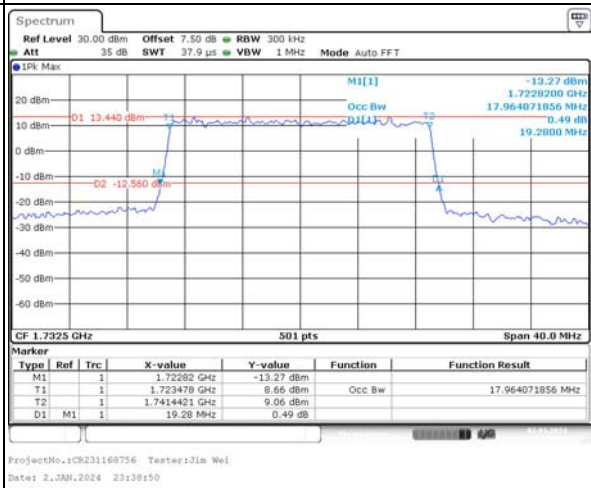
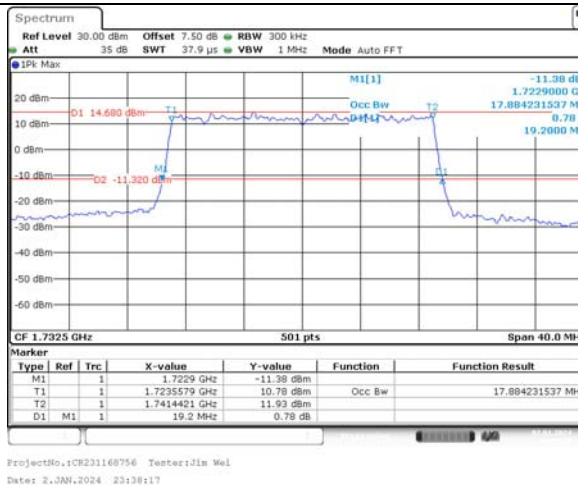
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

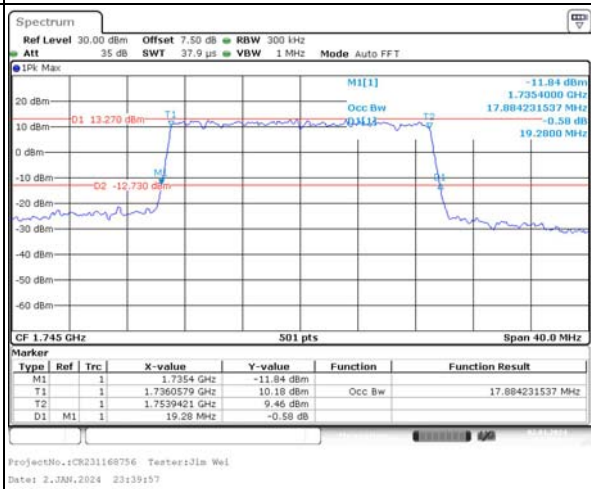
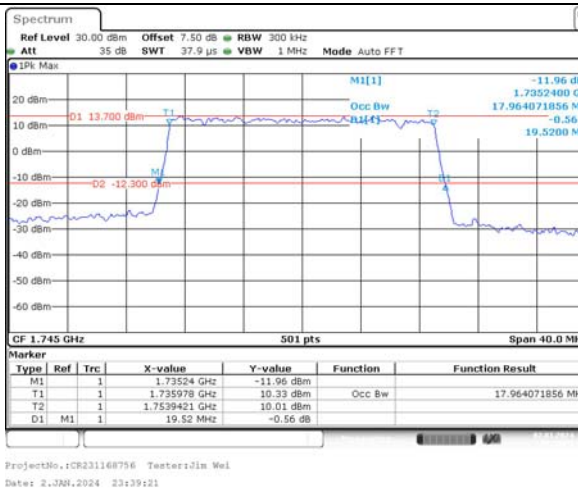
Lowest



Middle

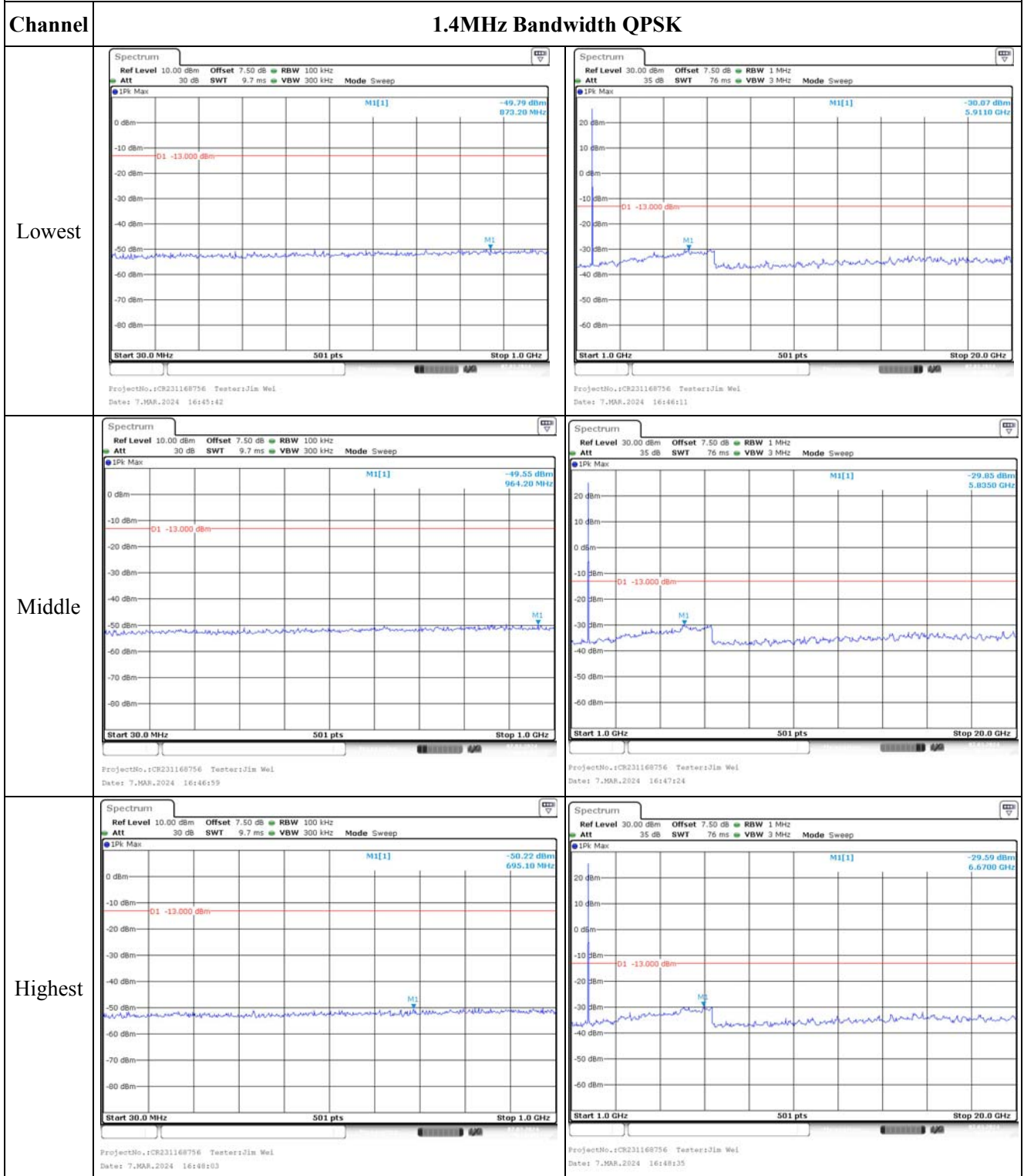


Highest



RB1#0:

Spurious Emissions at Antenna Terminal

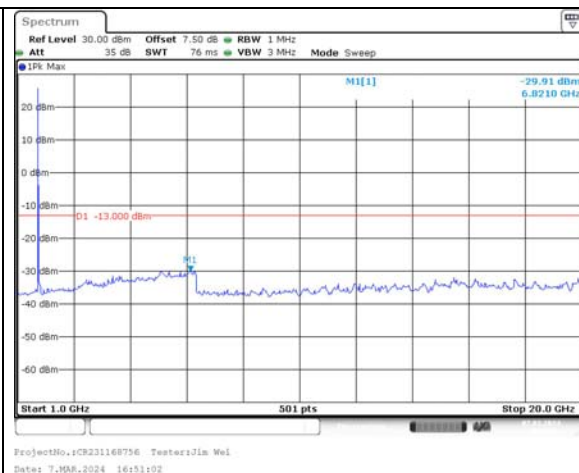
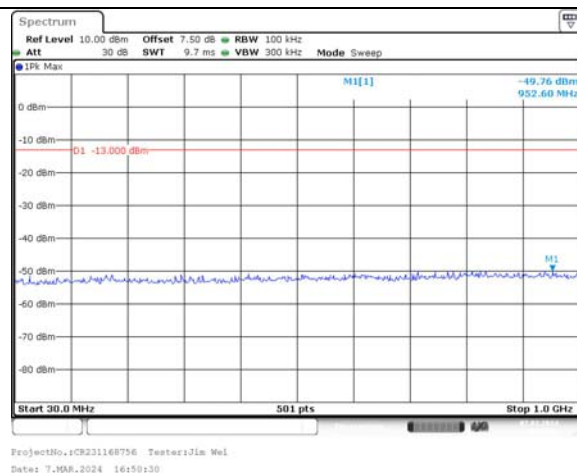


Spurious Emissions at Antenna Terminal

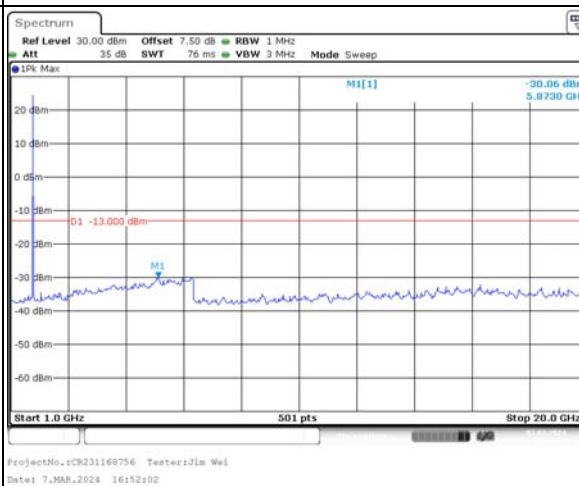
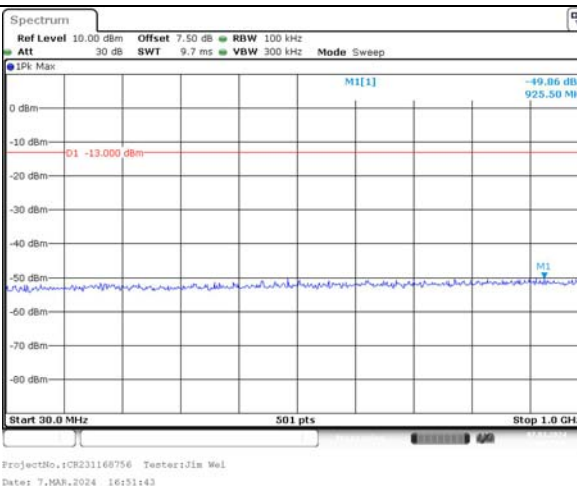
Channel

3MHz Bandwidth QPSK

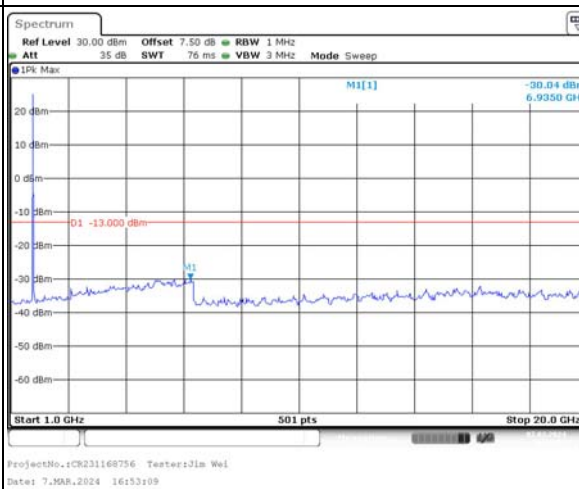
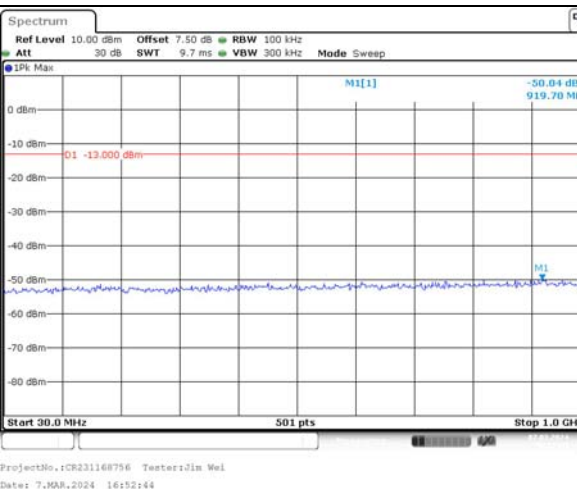
Lowest



Middle



Highest

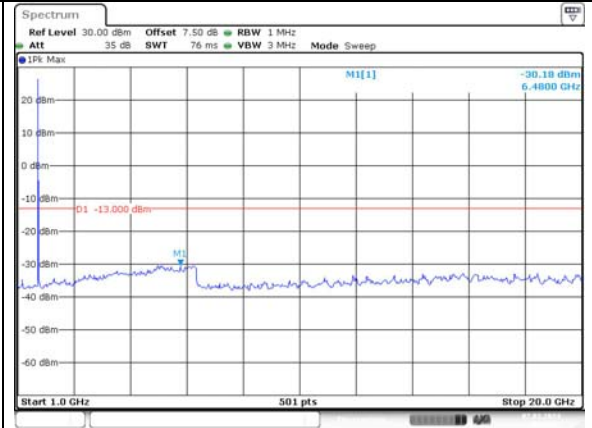
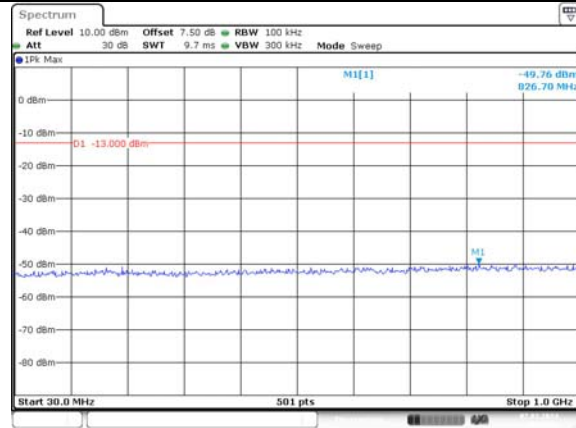


Spurious Emissions at Antenna Terminal

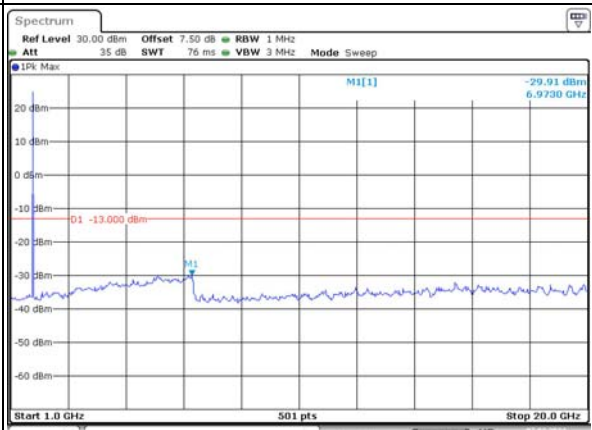
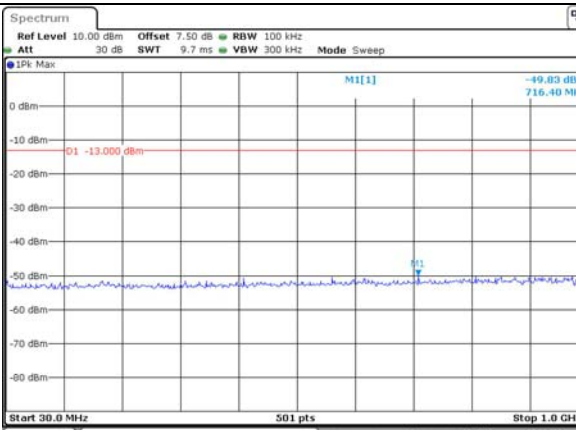
Channel

5MHz Bandwidth QPSK

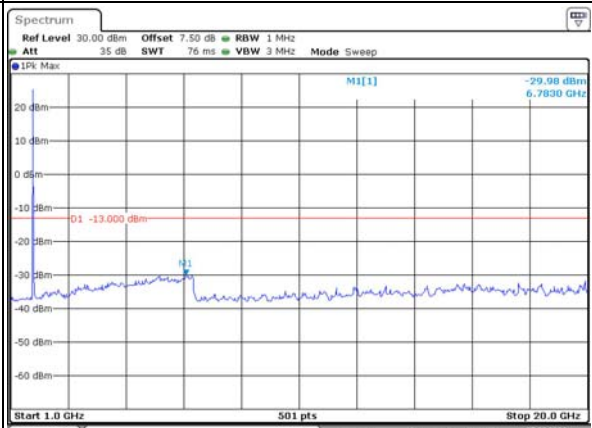
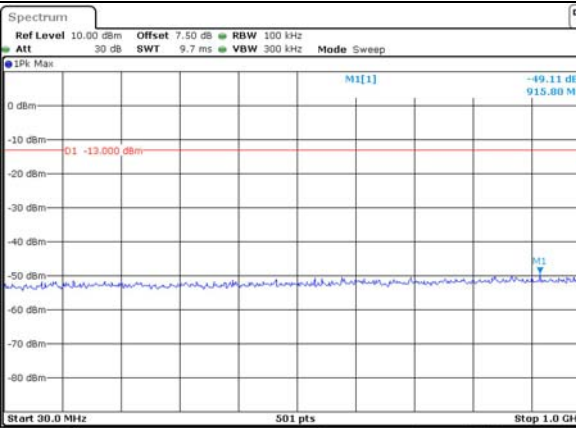
Lowest



Middle



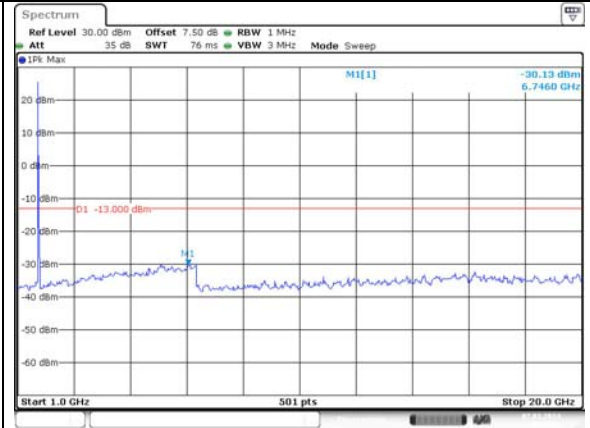
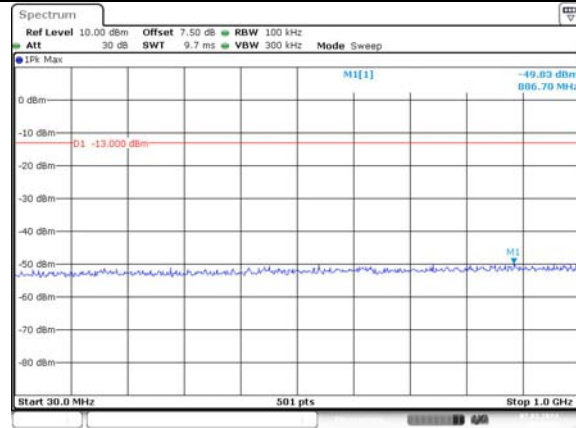
Highest



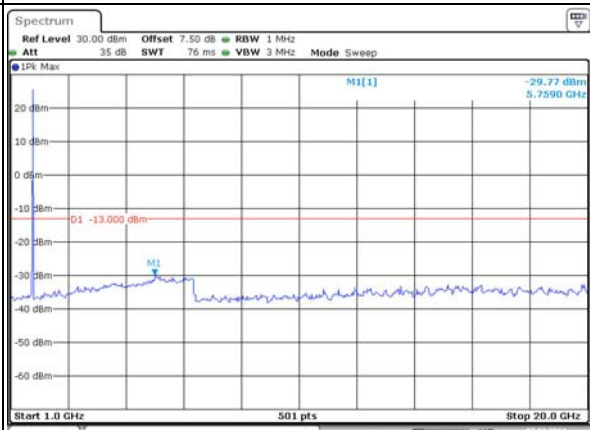
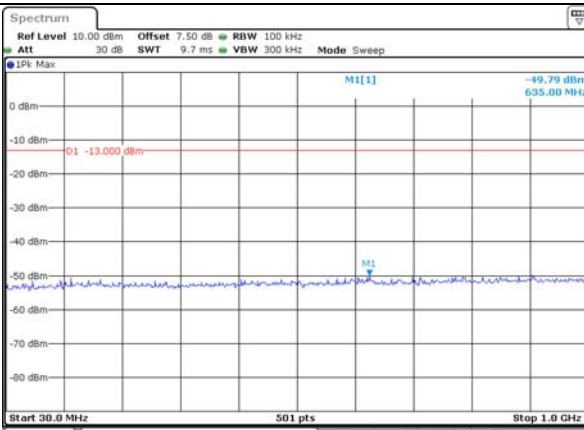
Channel

10MHz Bandwidth QPSK

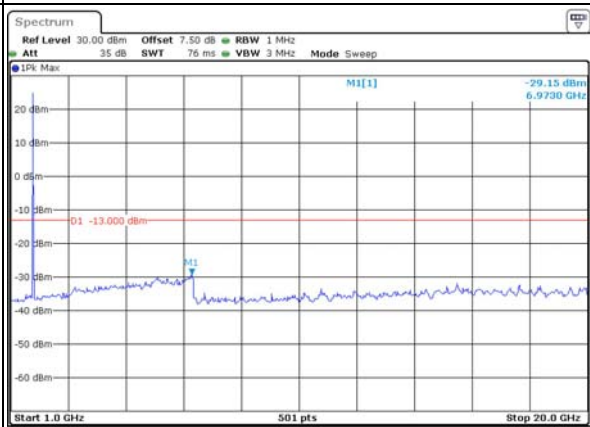
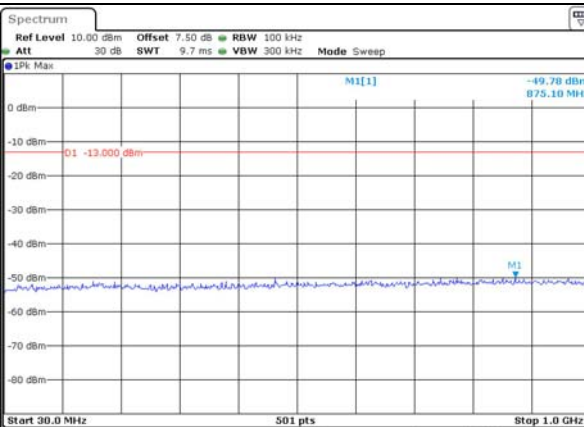
Lowest



Middle



Highest

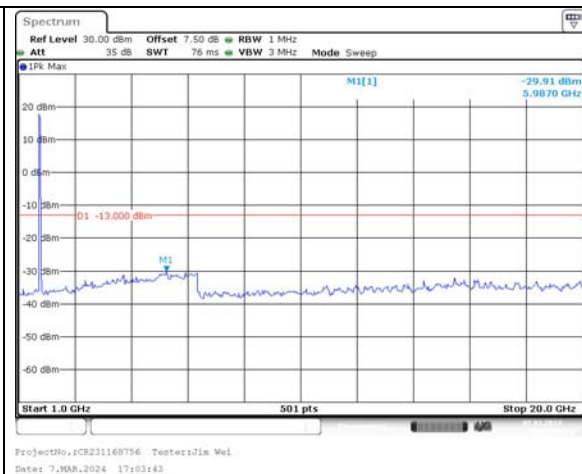
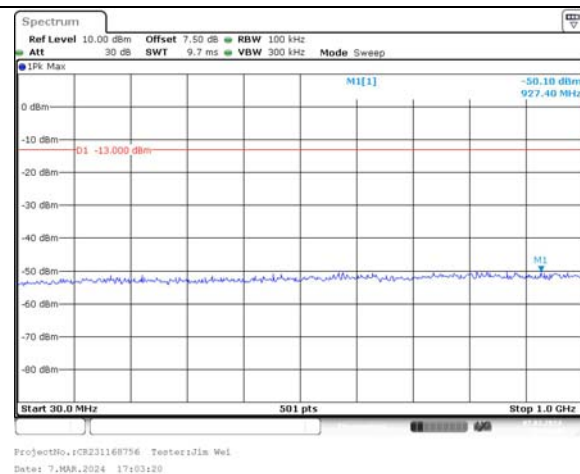


Spurious Emissions at Antenna Terminal

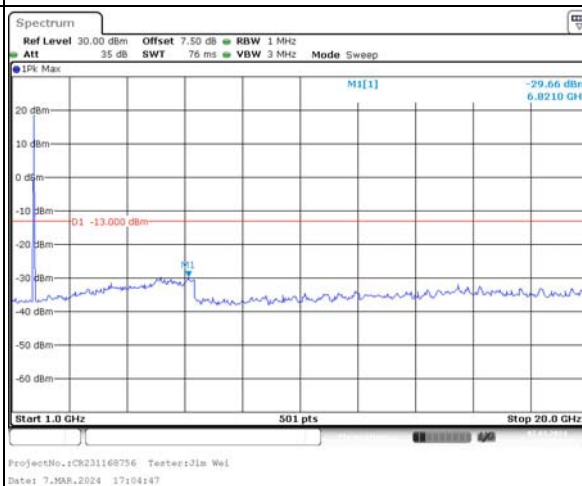
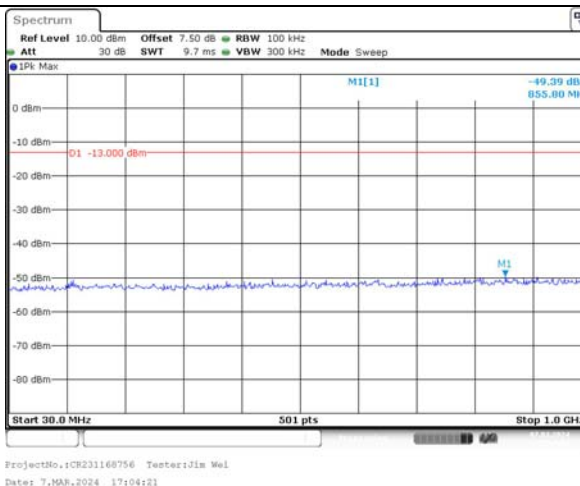
Channel

15MHz Bandwidth QPSK

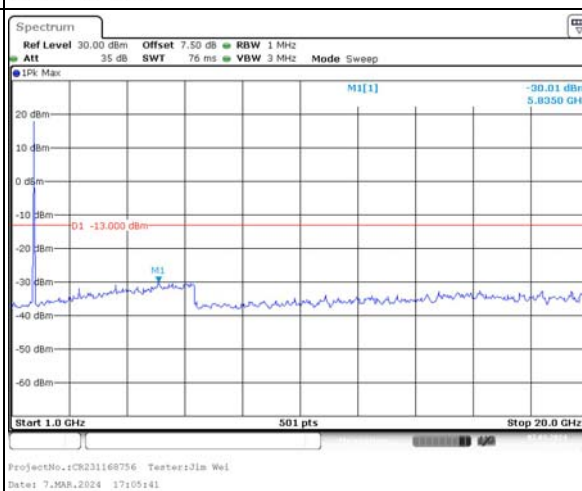
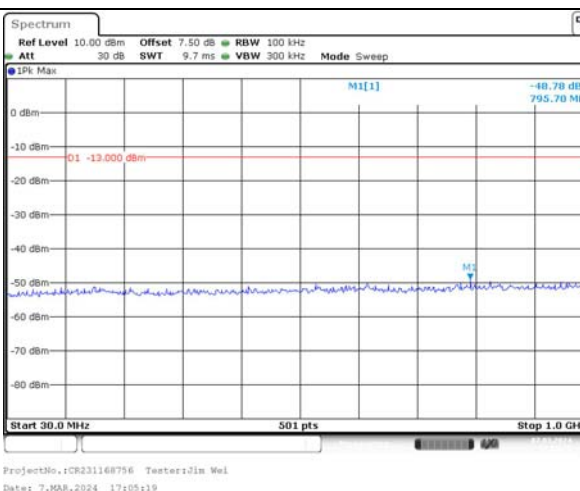
Lowest



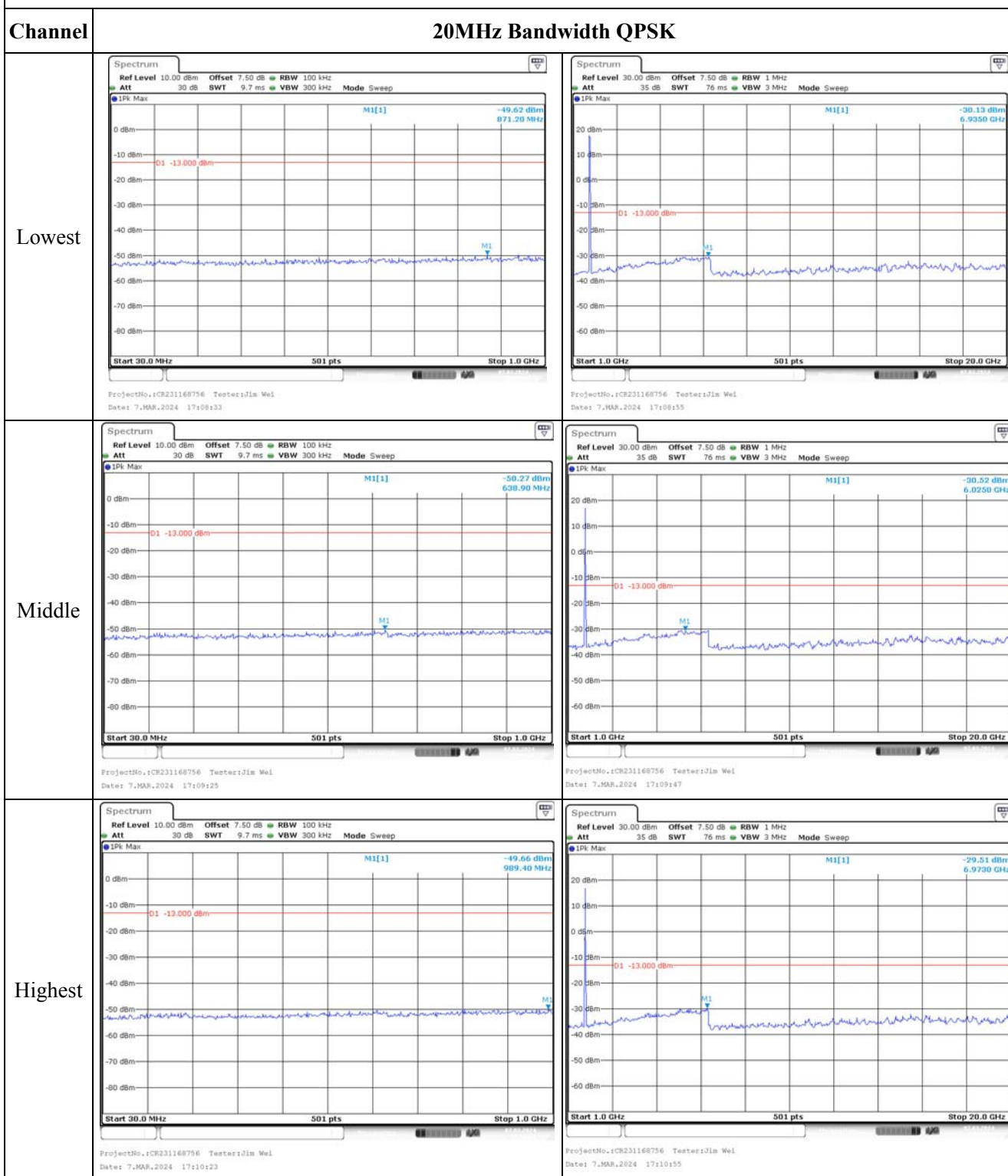
Middle



Highest



Spurious Emissions at Antenna Terminal



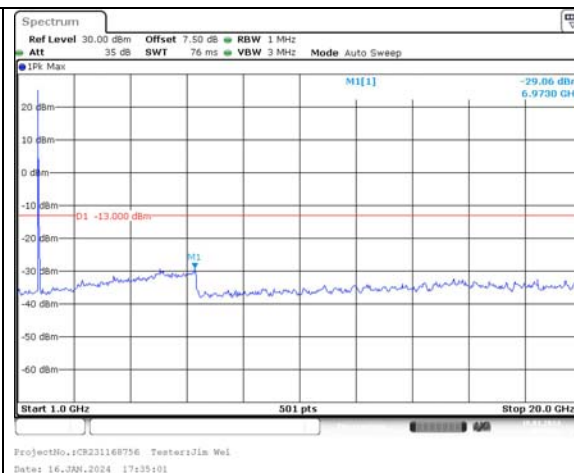
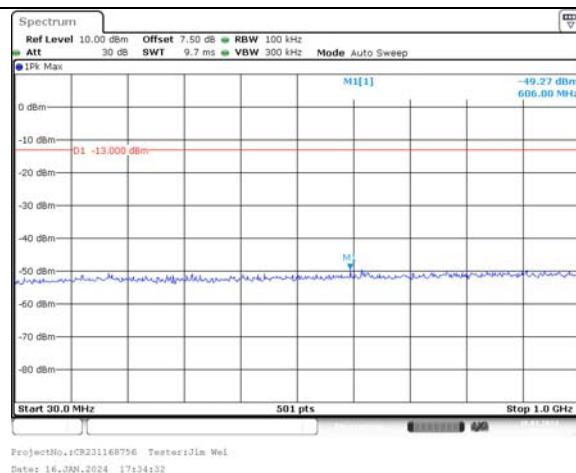
Full RB:

Spurious Emissions at Antenna Terminal

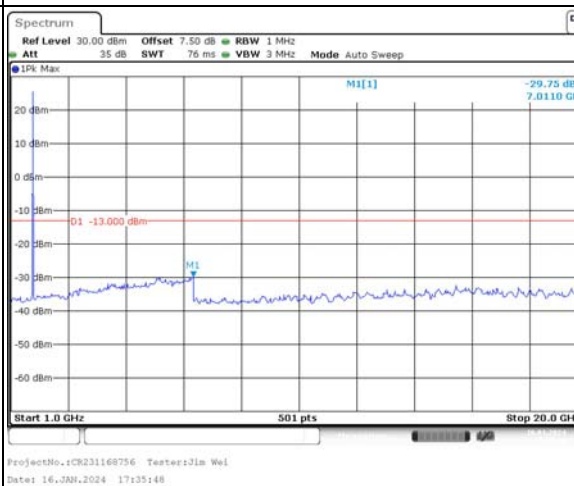
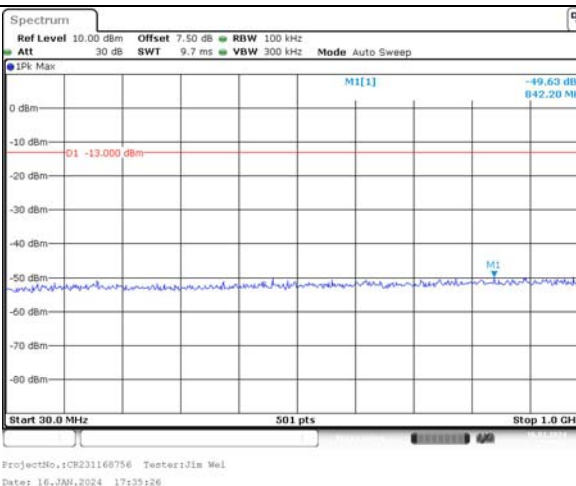
Channel

1.4MHz Bandwidth QPSK

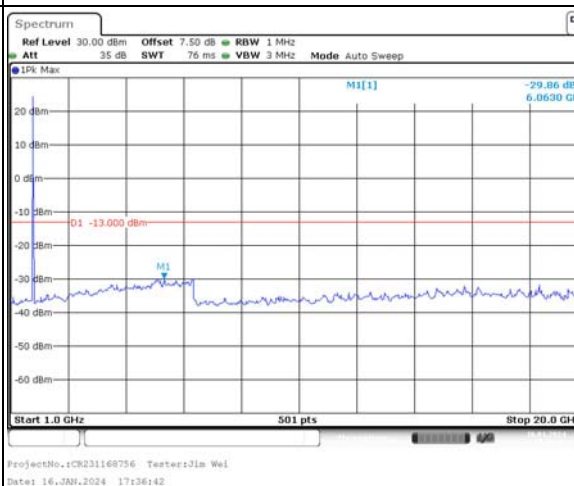
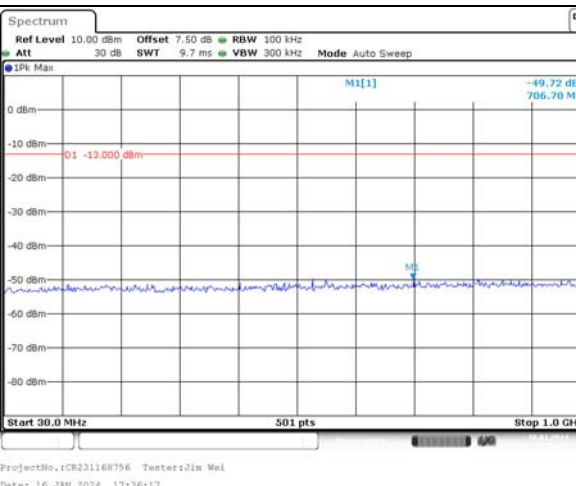
Lowest



Middle



Highest

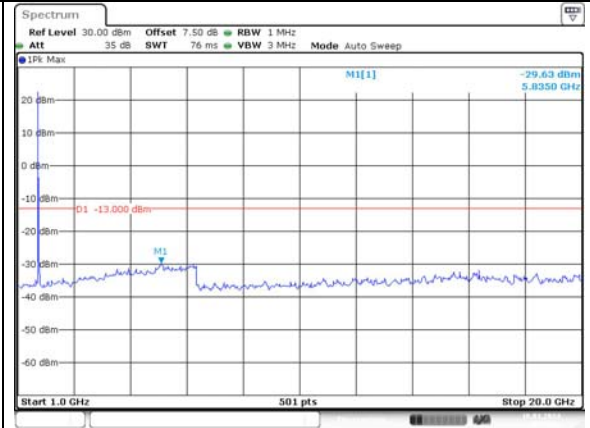
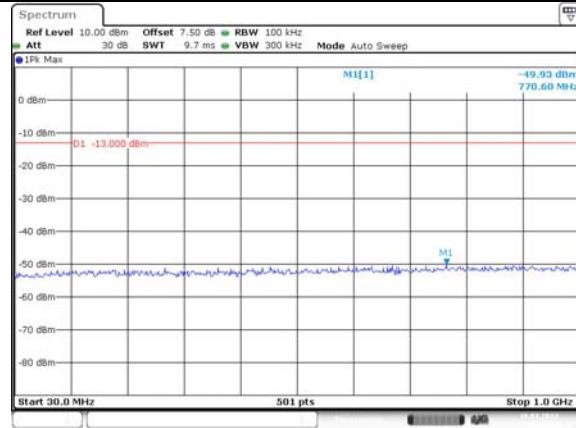


Spurious Emissions at Antenna Terminal

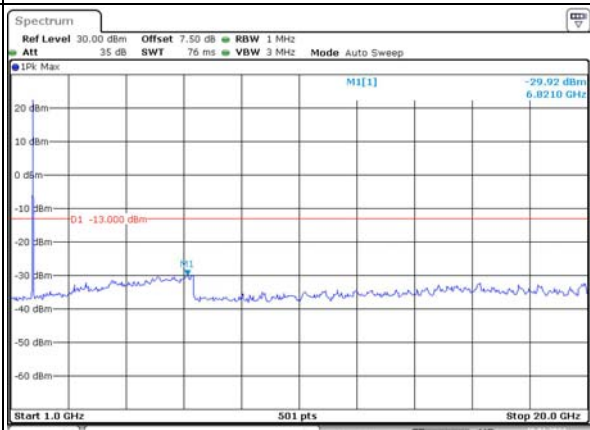
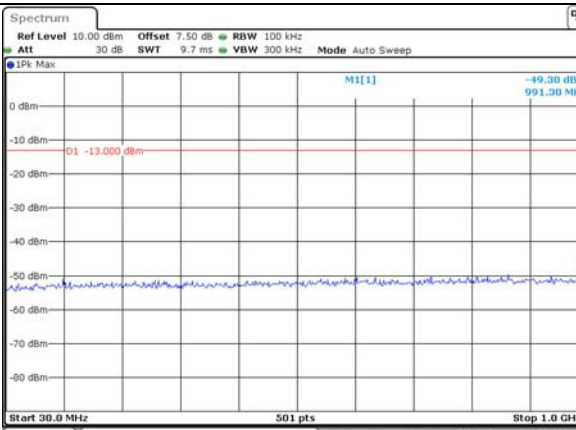
Channel

3MHz Bandwidth QPSK

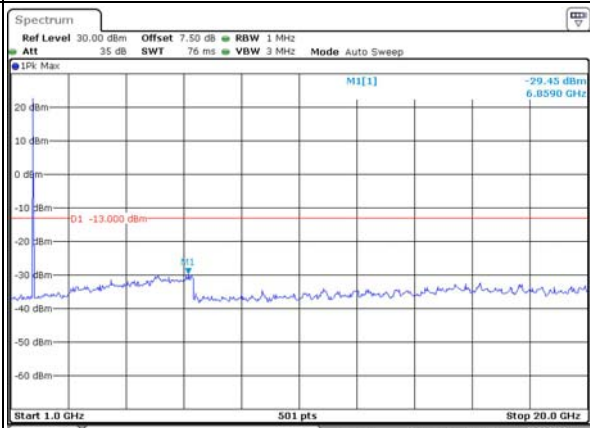
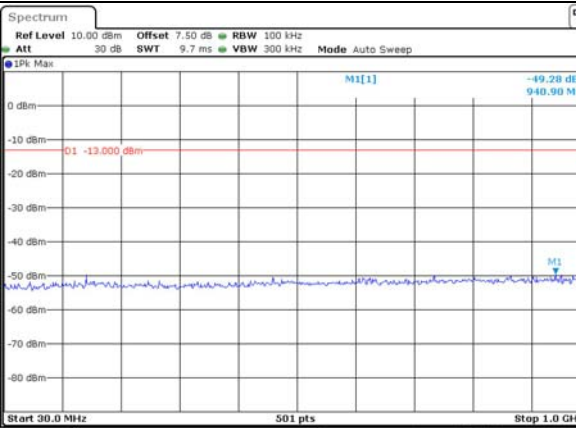
Lowest



Middle



Highest

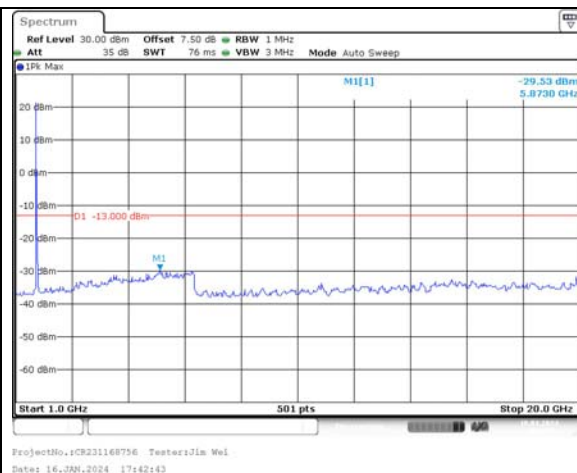
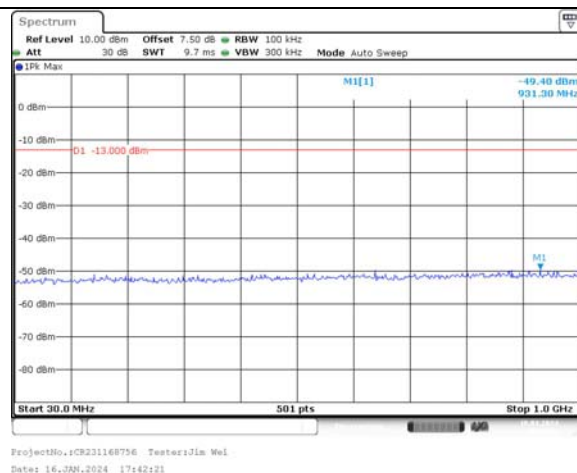


Spurious Emissions at Antenna Terminal

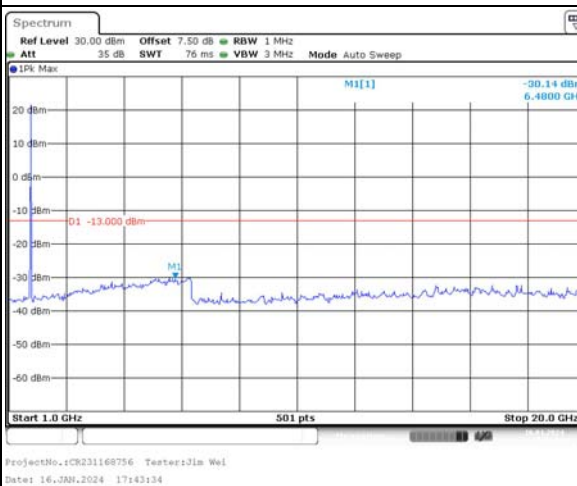
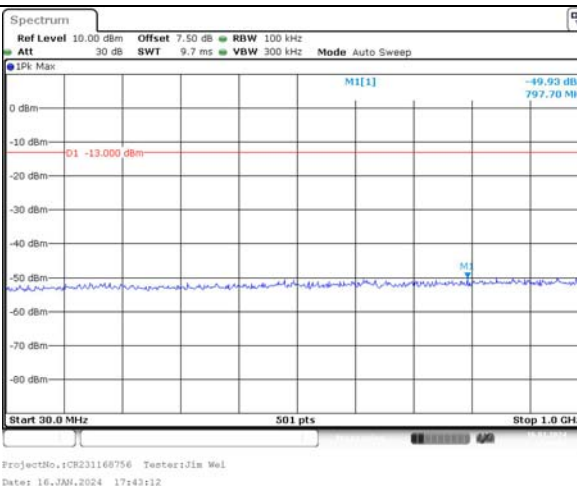
Channel

5MHz Bandwidth QPSK

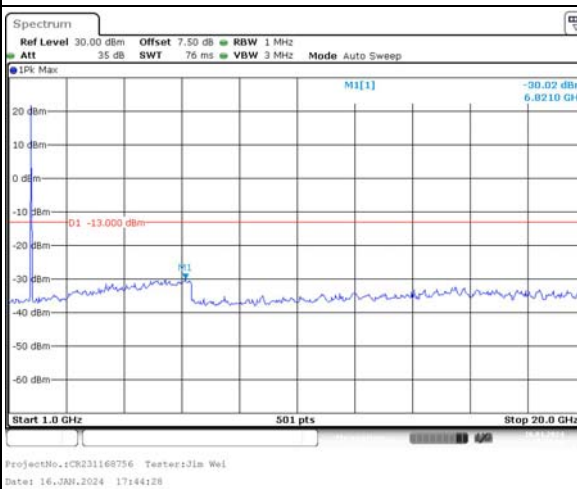
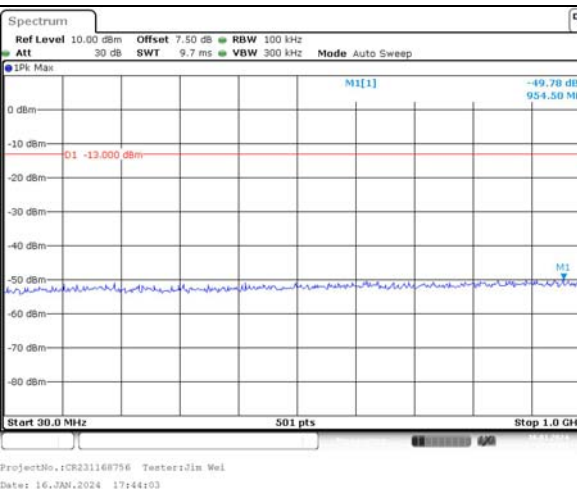
Lowest



Middle



Highest

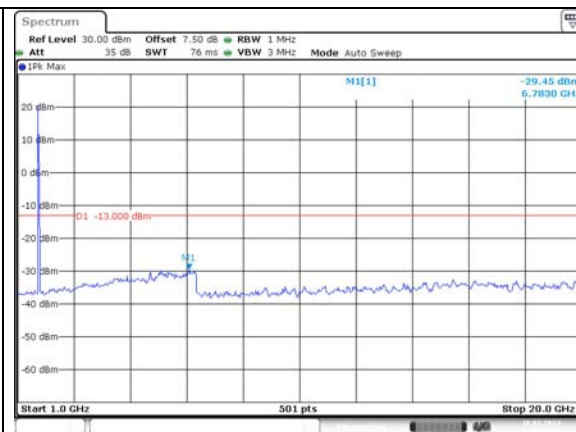
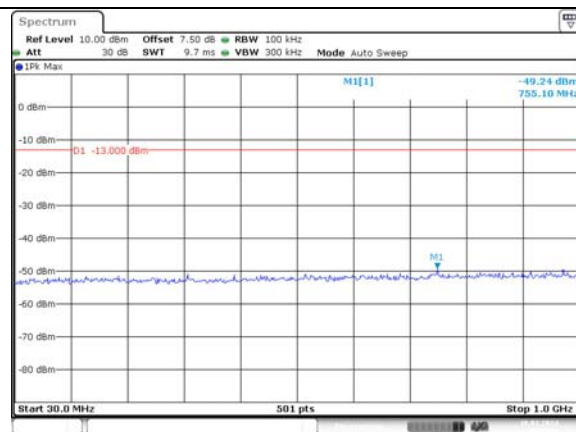


Spurious Emissions at Antenna Terminal

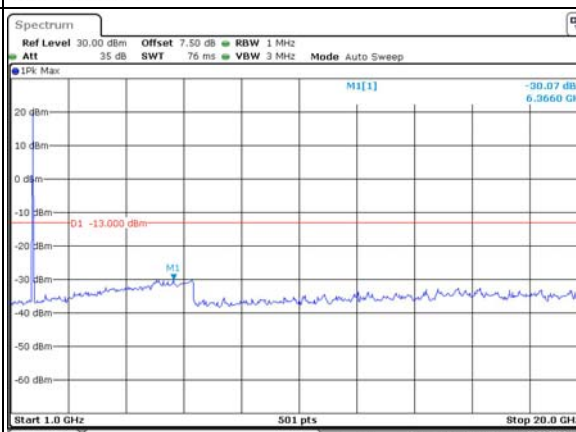
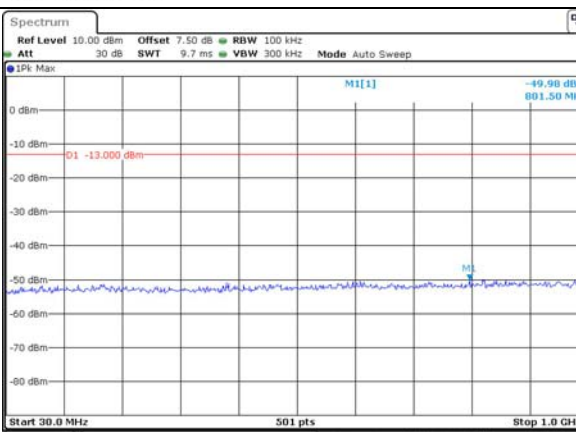
Channel

10MHz Bandwidth QPSK

Lowest



Middle



Highest

