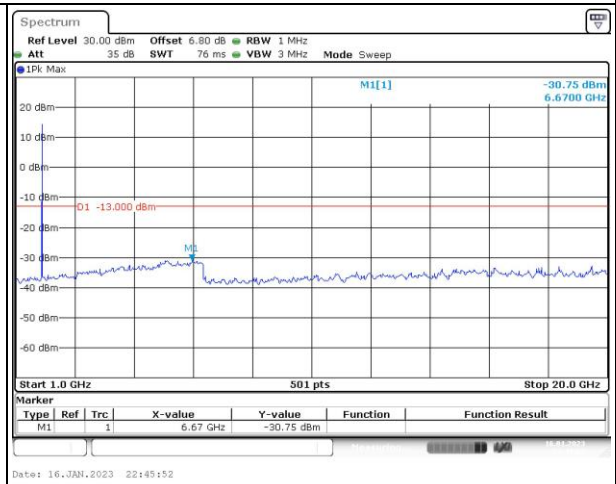
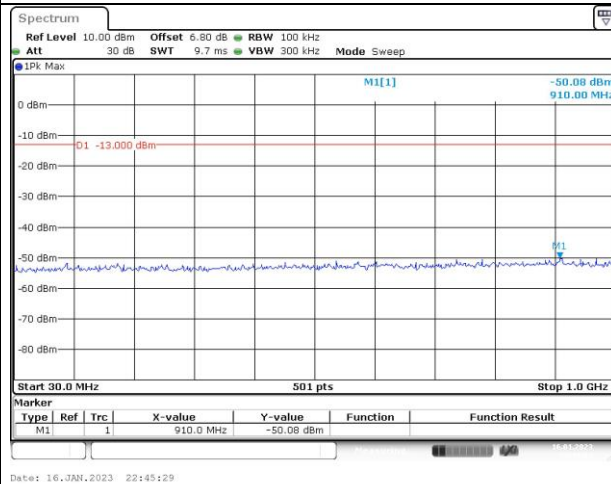


Spurious Emissions at Antenna Terminal

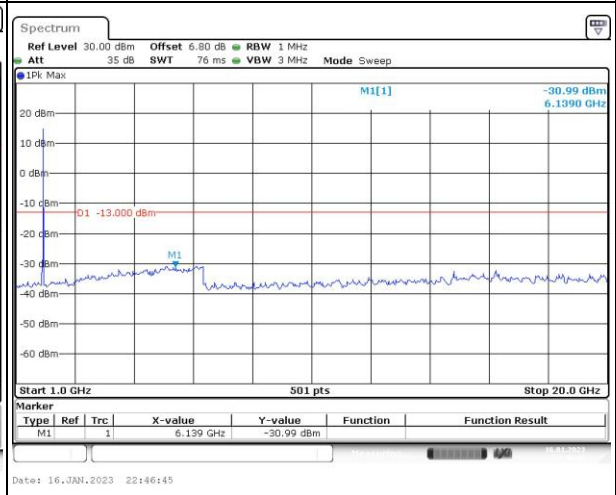
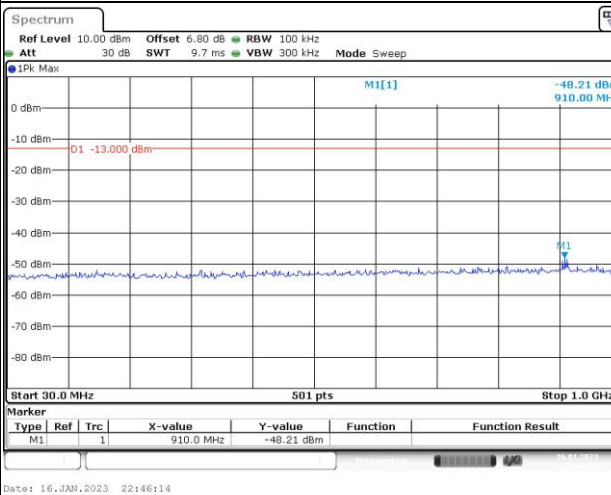
Channel

10MHz Bandwidth QPSK

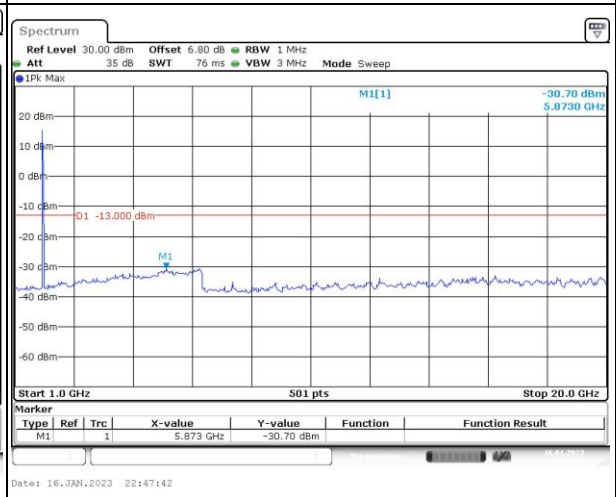
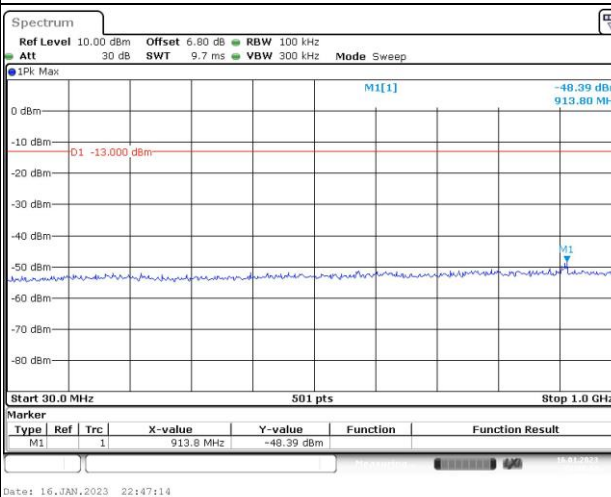
Lowest



Middle



Highest



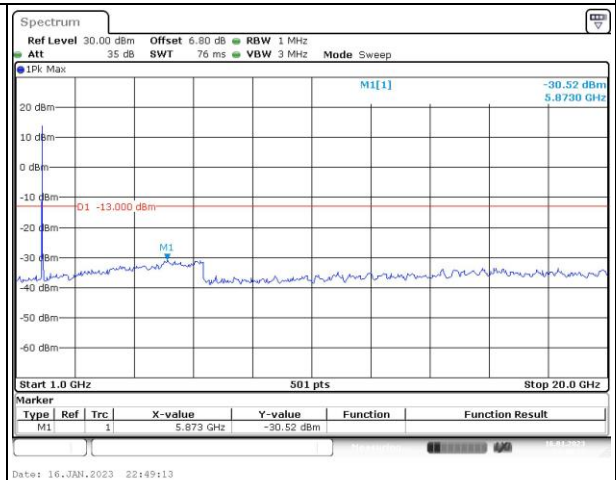
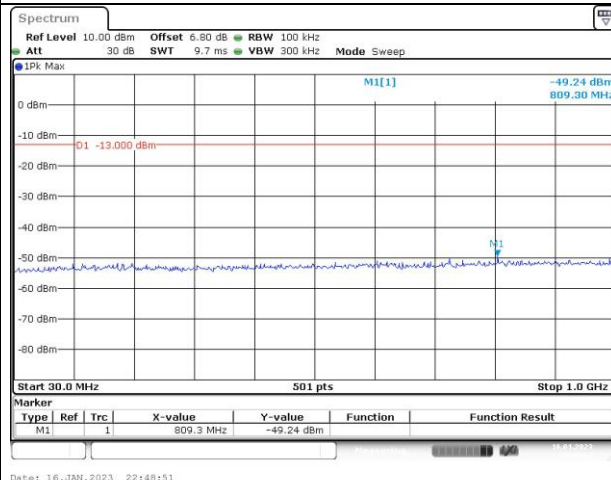
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Spurious Emissions at Antenna Terminal

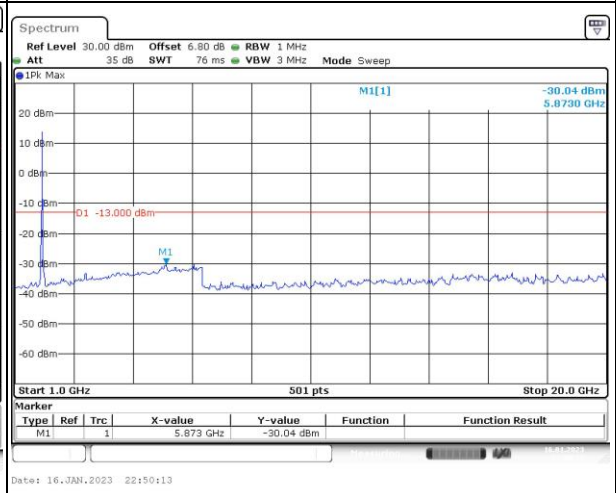
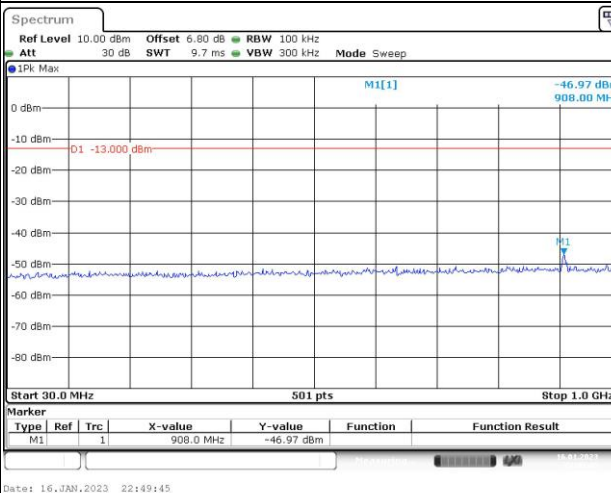
Channel

15MHz Bandwidth QPSK

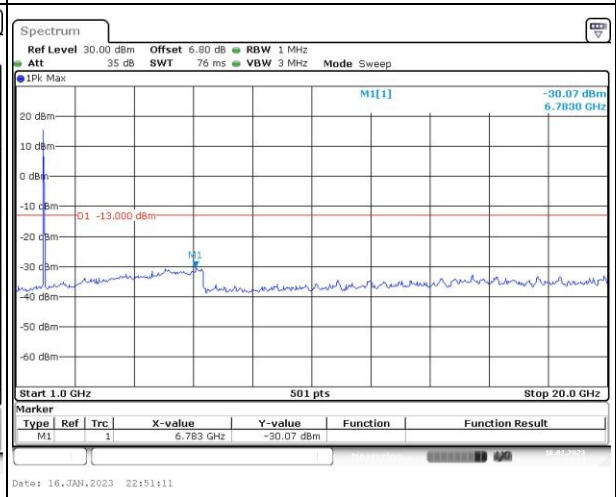
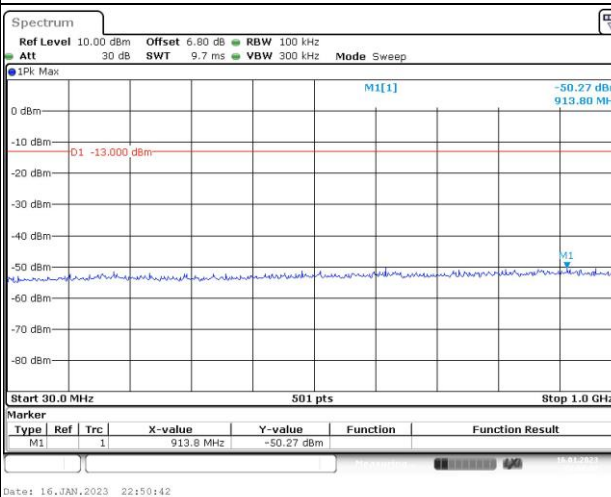
Lowest



Middle



Highest



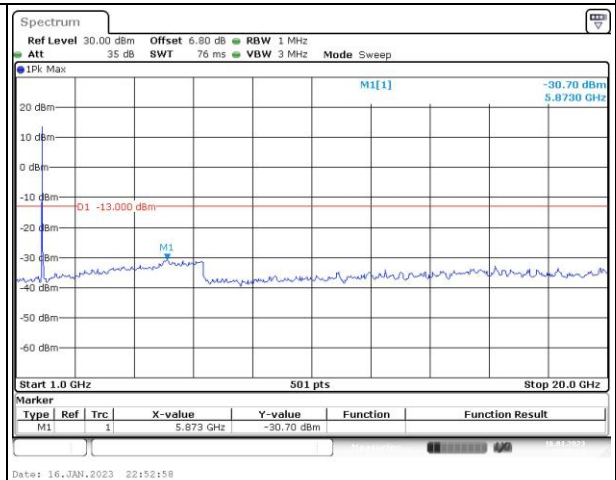
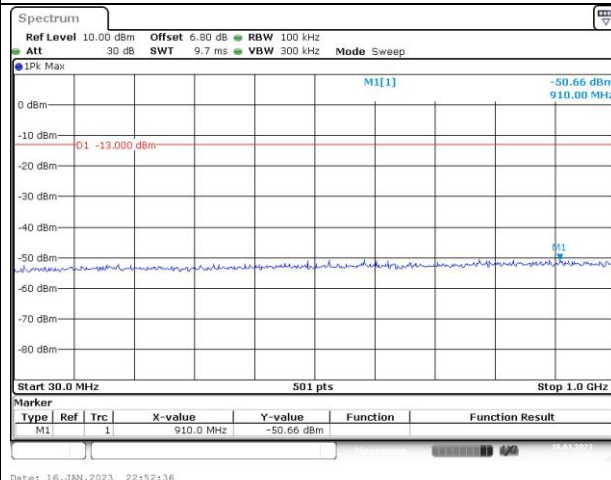
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Spurious Emissions at Antenna Terminal

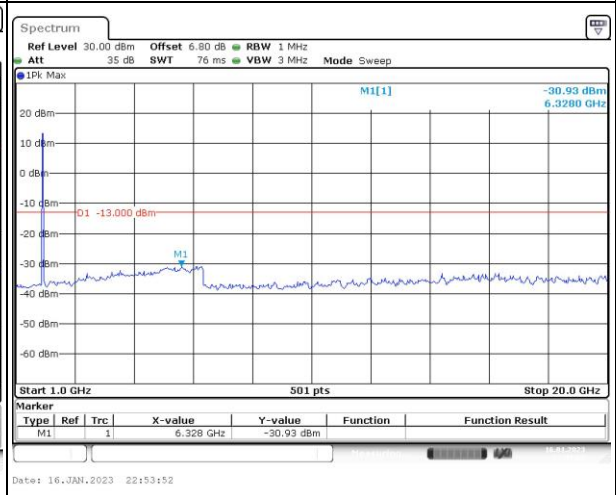
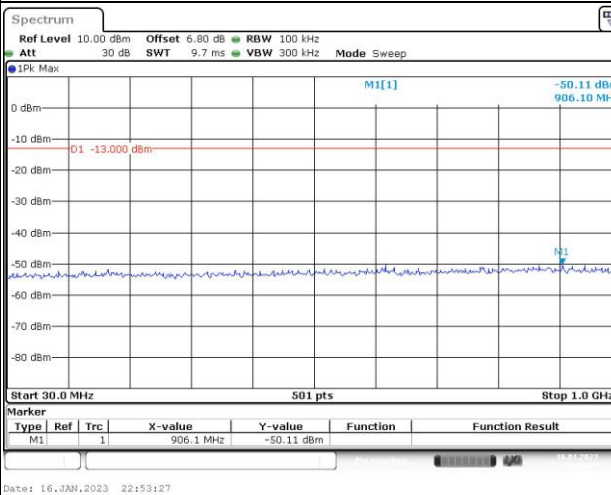
Channel

20MHz Bandwidth QPSK

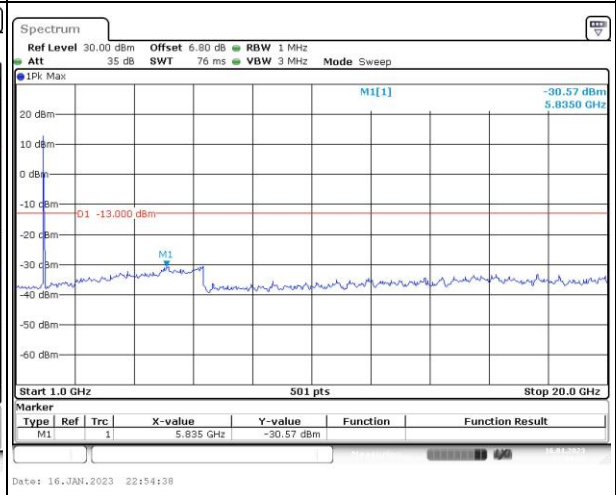
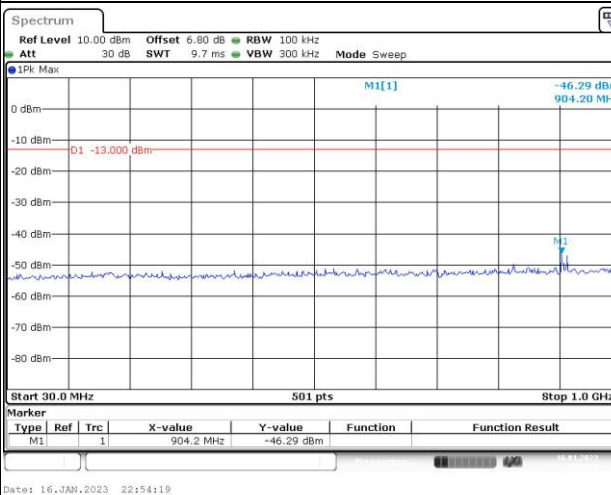
Lowest



Middle

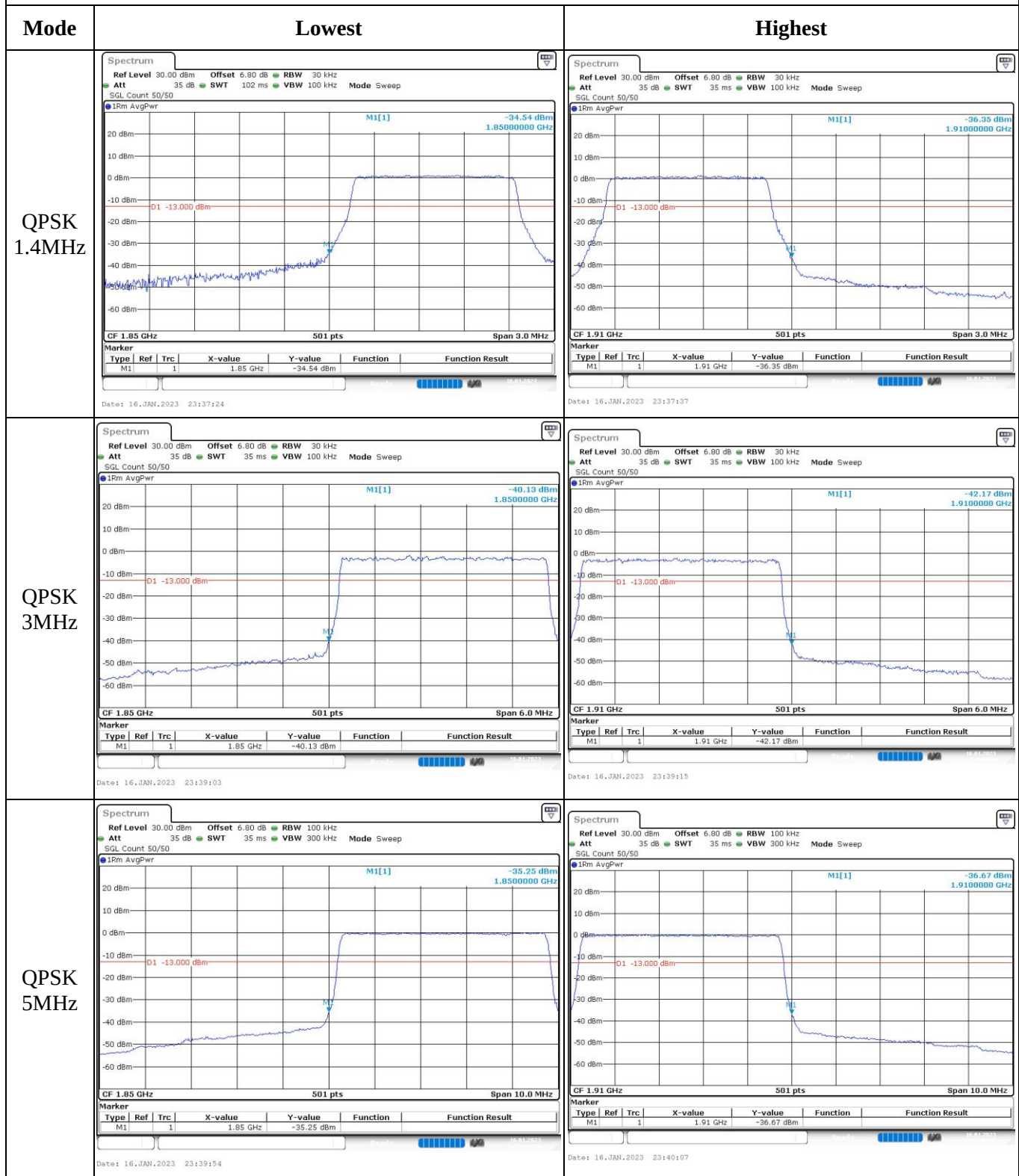


Highest



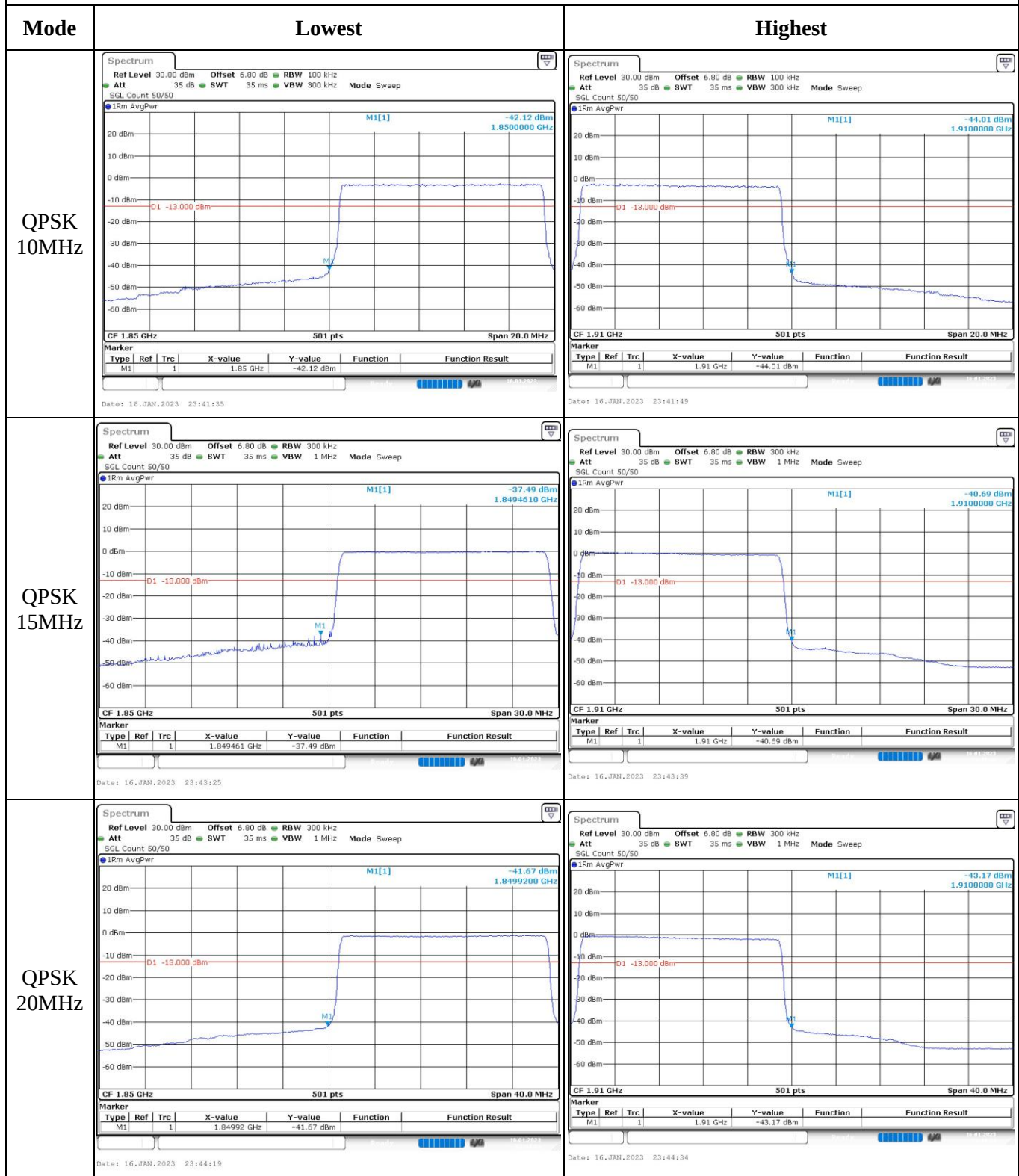
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Out of band emission, Band Edge



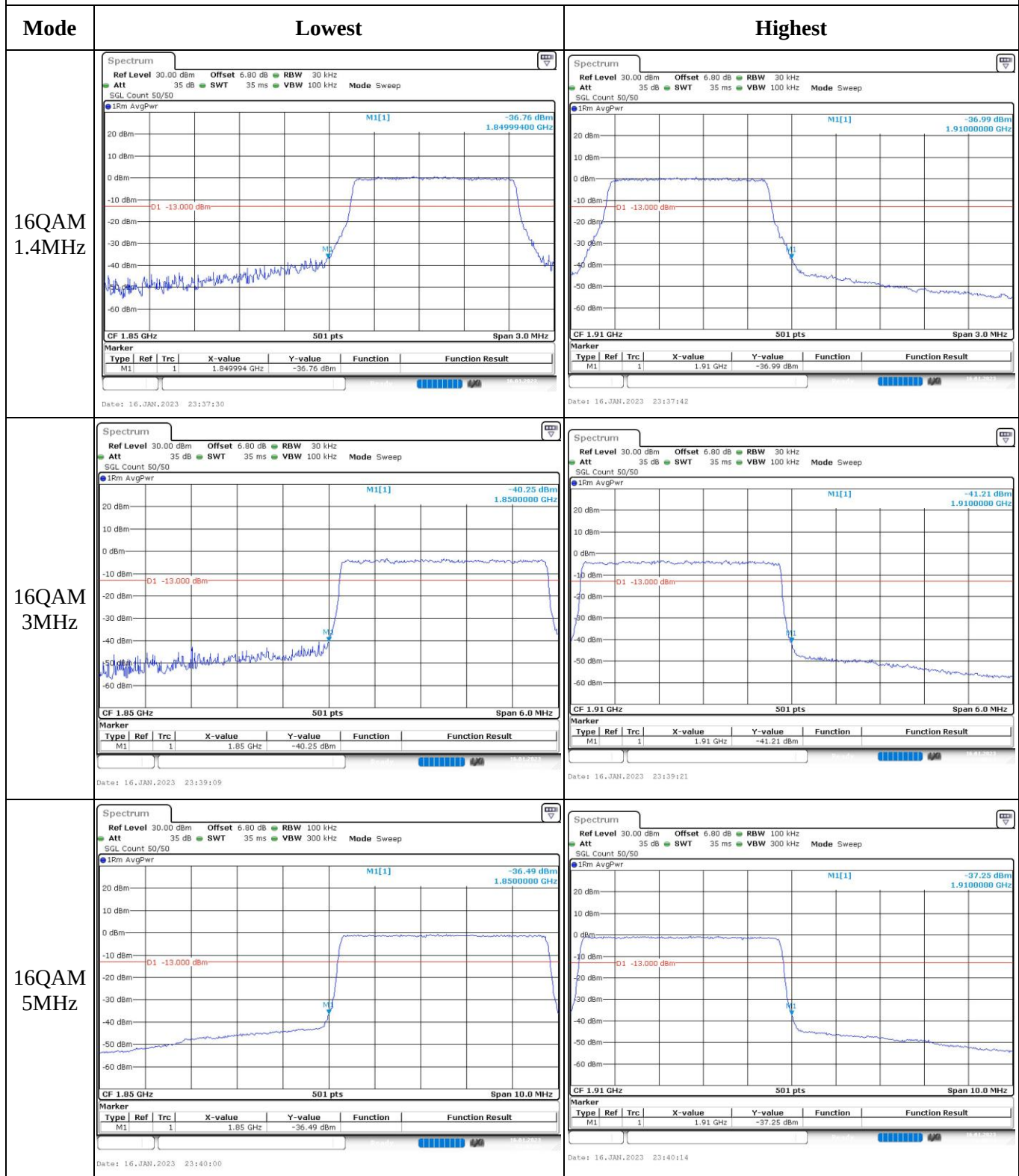
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Out of band emission, Band Edge



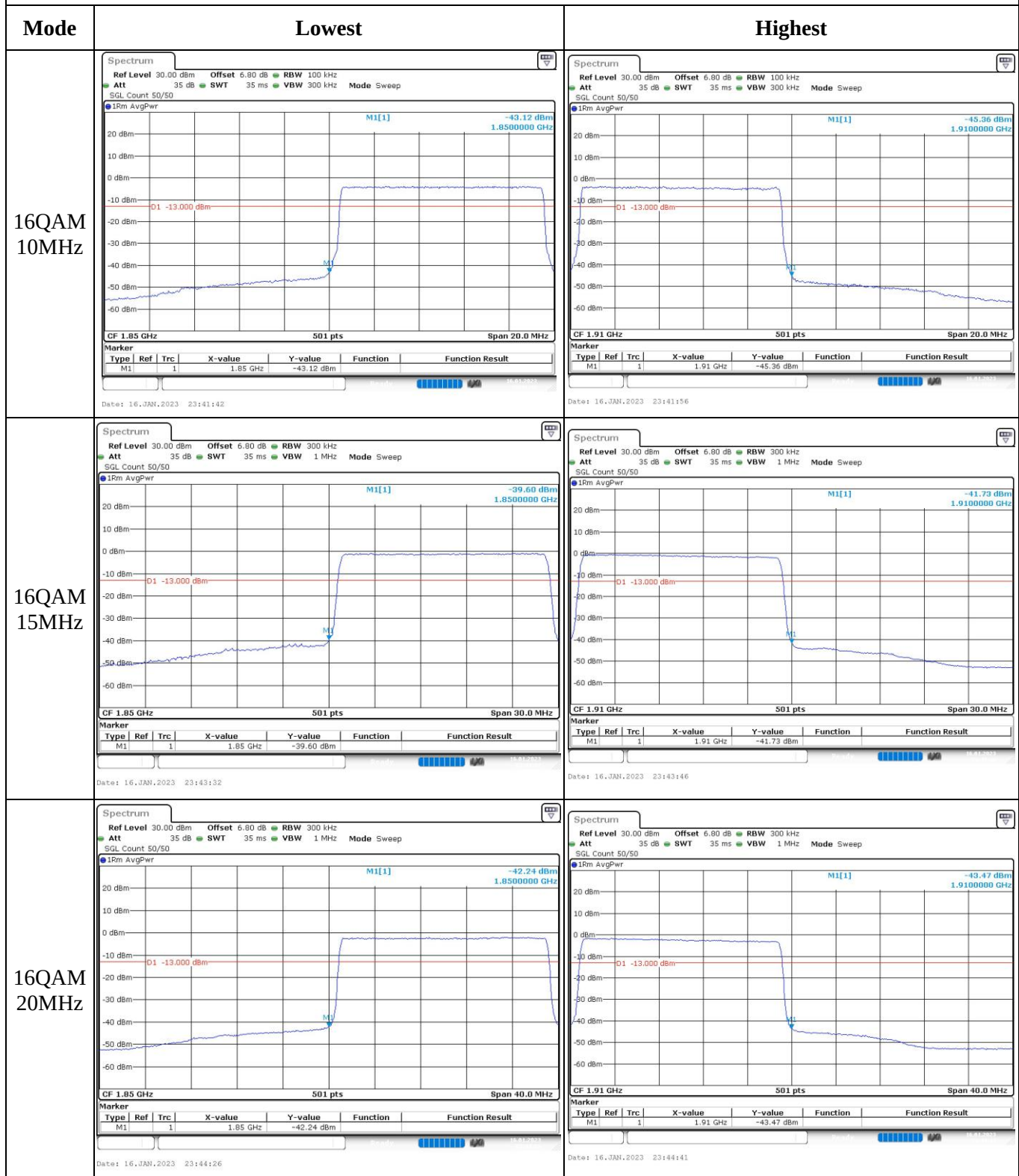
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Out of band emission, Band Edge



Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Out of band emission, Band Edge



Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	1WP8	Test Date:	2023/1/7~2023/1/17
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rinka Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	21.4~23.7	Relative Humidity: (%)	45~55	ATM Pressure: (kPa)	101.4~101.6
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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	2022/7/15	2023/7/14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100002	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	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/4/6	2023/4/5
UNI-T	Multimeter	UT39A+	C210582554	2022/9/30	2023/9/29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
Weinschel	Power Splitter	1515	RA928	Each time	N/A
zhuoxiang	Coaxial Cable	SMA-178	211006	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)
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:**FCC §2.1046; § 27.50(d)(4)****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	17.52	17.29	17.33	15.89	30
	RB1#3	17.61	17.5	17.47		
	RB1#5	17.53	17.33	17.33		
	RB3#0	17.63	17.47	17.48		
	RB3#3	17.69	17.48	17.43		
	RB6#0	16.62	16.38	16.39		
1.4MHz 16QAM	RB1#0	16.64	16.36	16.41	14.96	30
	RB1#3	16.68	16.57	16.55		
	RB1#5	16.62	16.42	16.37		
	RB3#0	16.64	16.6	16.66		
	RB3#3	16.76	16.59	16.71		
	RB6#0	15.6	15.38	15.47		
3MHz QPSK	RB1#0	17.59	17.44	17.45	15.79	30
	RB1#8	17.49	17.47	17.4		
	RB1#14	17.53	17.45	17.44		
	RB6#0	16.51	16.39	16.35		
	RB6#9	16.5	16.39	16.41		
	RB15#0	16.58	16.46	16.46		
3MHz 16QAM	RB1#0	17.24	16.65	16.53	15.44	30
	RB1#8	17.18	16.59	16.47		
	RB1#14	17.22	16.6	16.48		
	RB6#0	15.64	15.42	15.39		
	RB6#9	15.62	15.49	15.37		
	RB15#0	15.65	15.45	15.58		
5MHz QPSK	RB1#0	17.52	17.35	17.45	15.8	30
	RB1#13	17.6	17.47	17.53		
	RB1#24	17.49	17.42	17.48		
	RB15#0	16.58	16.48	16.48		
	RB15#10	16.64	16.46	16.48		
	RB25#0	16.59	16.45	16.49		
5MHz 16QAM	RB1#0	16.65	16.34	16.74	15.04	30
	RB1#13	16.72	16.4	16.84		
	RB1#24	16.64	16.3	16.72		
	RB15#0	15.63	15.57	15.48		
	RB15#10	15.66	15.55	15.51		
	RB25#0	15.62	15.56	15.49		
10MHz QPSK	RB1#0	17.61	17.5	17.42	15.88	30

	RB1#25	17.68	17.58	17.48		
	RB1#49	17.56	17.45	17.45		
	RB25#0	16.6	16.53	16.57		
	RB25#25	16.63	16.49	16.53		
	RB50#0	16.67	16.53	16.63		
10MHz 16QAM	RB1#0	16.77	16.52	17.11	15.4	30
	RB1#25	16.8	16.63	17.2		
	RB1#49	16.72	16.5	17.14		
	RB25#0	15.67	15.69	15.67		
	RB25#25	15.7	15.62	15.62		
	RB50#0	15.69	15.6	15.64		
15MHz QPSK	RB1#0	17.47	17.42	17.38	15.69	30
	RB1#38	17.47	17.47	17.49		
	RB1#74	17.39	17.42	17.38		
	RB36#0	16.59	16.46	16.55		
	RB36#39	16.58	16.49	16.5		
	RB75#0	16.57	16.43	16.53		
15MHz 16QAM	RB1#0	17.16	16.59	16.83	15.38	30
	RB1#38	17.18	16.67	16.94		
	RB1#74	17.09	16.57	16.88		
	RB36#0	15.58	15.52	15.52		
	RB36#39	15.56	15.5	15.53		
	RB75#0	15.58	15.47	15.52		
20MHz QPSK	RB1#0	17.38	17.24	17.21	15.91	30
	RB1#50	17.71	17.54	17.6		
	RB1#99	17.29	17.22	17.26		
	RB50#0	16.59	16.52	16.67		
	RB50#50	16.66	16.49	16.47		
	RB100#0	16.62	16.49	16.61		
20MHz 16QAM	RB1#0	16.63	16.91	16.56	15.42	30
	RB1#50	16.95	17.22	16.95		
	RB1#99	16.6	16.88	16.61		
	RB50#0	15.6	15.52	15.67		
	RB50#50	15.67	15.5	15.51		
	RB100#0	15.63	15.52	15.63		

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	5.01	5.22	5.16	13
	RB100#0	4.32	4.2	4.46	13
20MHz 16QAM	RB1#0	6.03	6.78	7.19	13
	RB100#0	5.88	5.88	5.97	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	1.11	1.1	1.1	1.3	1.28	1.3
1.4MHz 16QAM	1.1	1.1	1.1	1.28	1.3	1.32
3MHz QPSK	2.7	2.68	2.68	2.89	2.9	2.88
3MHz 16QAM	2.68	2.68	2.68	2.88	2.92	2.88
5MHz QPSK	4.51	4.49	4.53	4.96	4.92	4.98
5MHz 16QAM	4.53	4.51	4.49	4.94	4.98	4.94
10MHz QPSK	8.98	8.94	8.94	9.68	9.6	9.68
10MHz 16QAM	8.98	8.94	8.94	9.56	9.6	9.68
15MHz QPSK	13.53	13.41	13.53	14.76	14.64	14.94
15MHz 16QAM	13.53	13.41	13.53	14.64	14.64	14.76
20MHz QPSK	17.96	17.88	17.96	19.52	19.2	19.36
20MHz 16QAM	17.88	17.96	18.04	19.44	19.2	19.52
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.

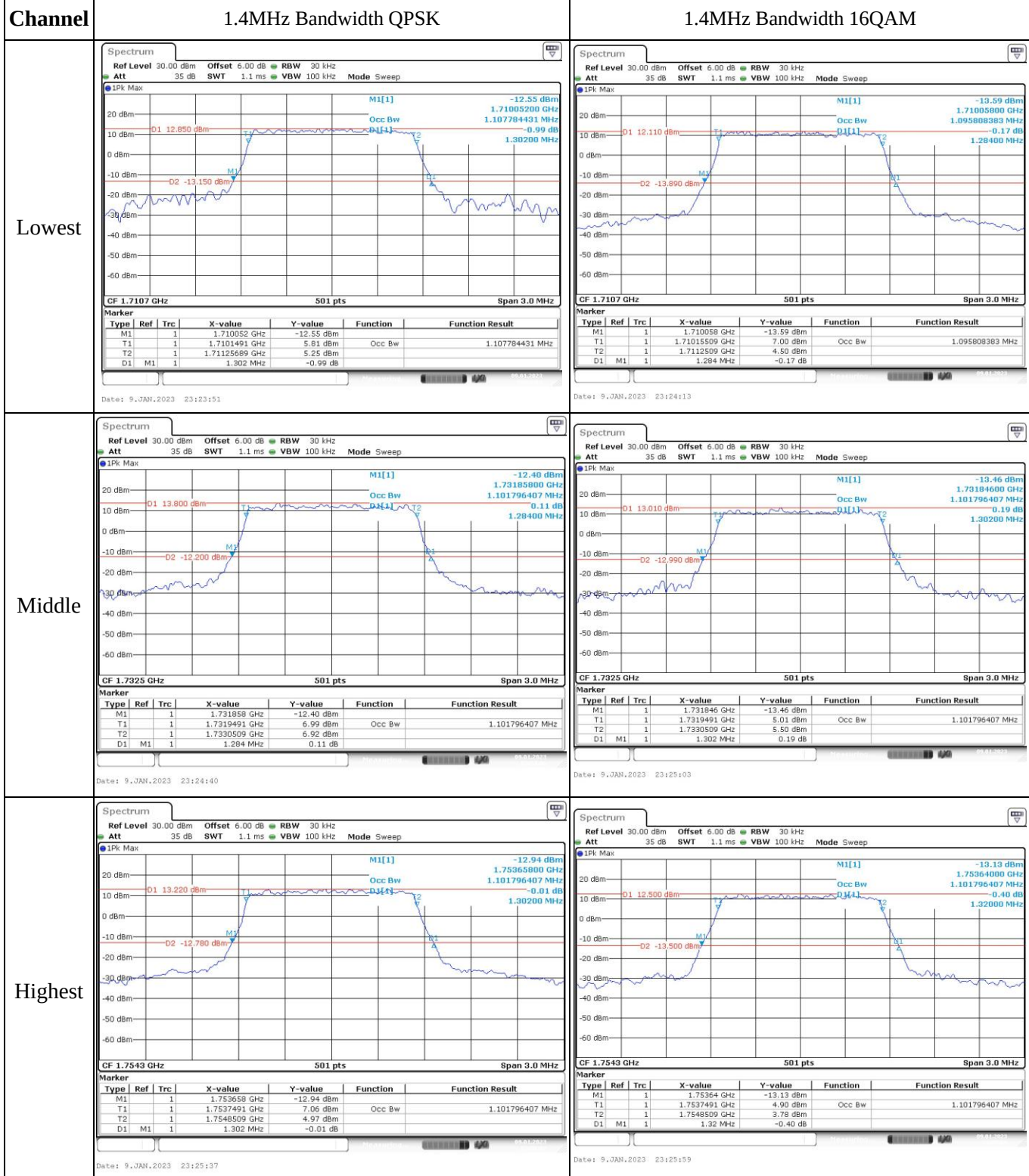
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1710.4571	1710.00	1754.6038	1755
	-20	3.85	1710.4569	1710.00	1754.6033	1755
	-10	3.85	1710.4565	1710.00	1754.6030	1755
	0	3.85	1710.4564	1710.00	1754.6027	1755
	10	3.85	1710.4559	1710.00	1754.6024	1755
	20	3.85	1710.4558	1710.00	1754.6022	1755
	30	3.85	1710.4558	1710.00	1754.6022	1755
	40	3.85	1710.4556	1710.00	1754.6017	1755
	50	3.85	1710.4555	1710.00	1754.6016	1755
Frequency Stability vs. Voltage	20	3.4	1710.4560	1710.00	1754.6024	1755
	20	4.4	1710.4553	1710.00	1754.6021	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	3.85	1710.4550	1710.00	1754.6037	1755
	-20	3.85	1710.4549	1710.00	1754.6035	1755
	-10	3.85	1710.4549	1710.00	1754.6033	1755
	0	3.85	1710.4545	1710.00	1754.6030	1755
	10	3.85	1710.4540	1710.00	1754.6026	1755
	20	3.85	1710.4538	1710.00	1754.6022	1755
	30	3.85	1710.4535	1710.00	1754.6018	1755
	40	3.85	1710.4532	1710.00	1754.6016	1755
	50	3.85	1710.4531	1710.00	1754.6015	1755
Frequency Stability vs. Voltage	20	3.4	1710.4541	1710.00	1754.6025	1755
	20	4.4	1710.4535	1710.00	1754.6021	1755
					Result:	Pass

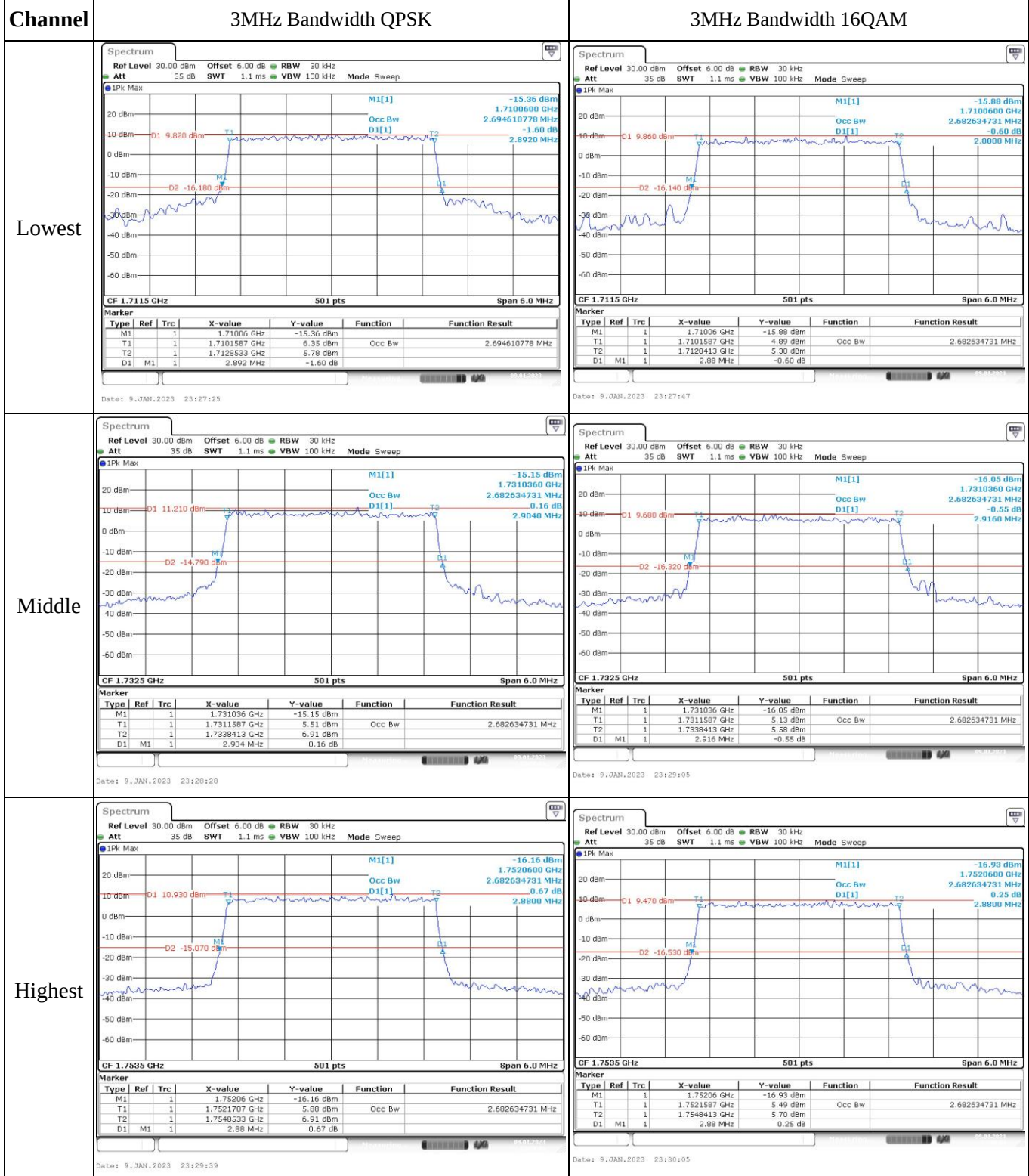
Test Plots:

Occupied Bandwidth



Note: The 6.0 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Occupied Bandwidth



Note: The 6.0 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

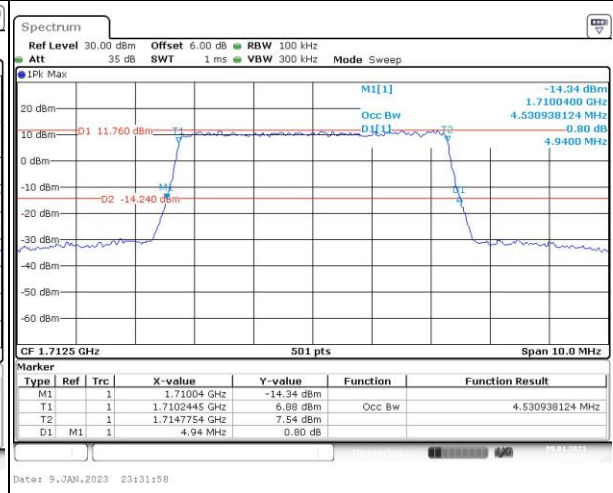
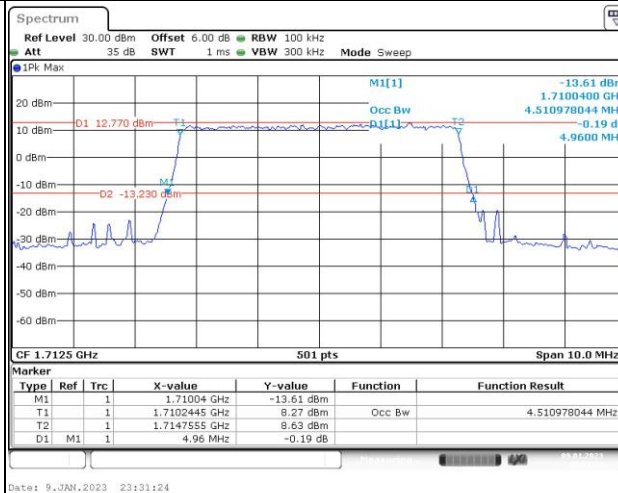
Occupied Bandwidth

Channel

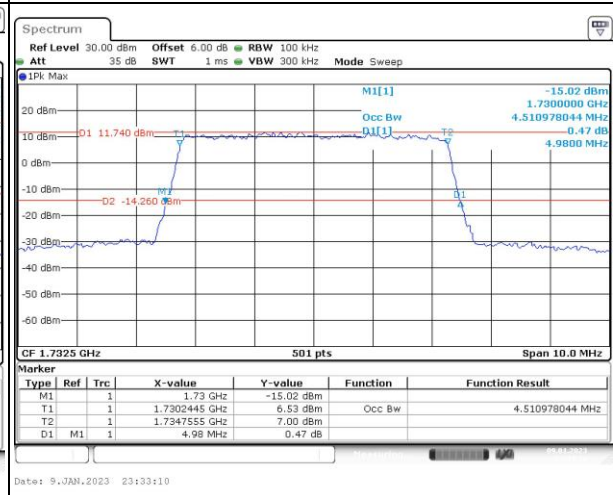
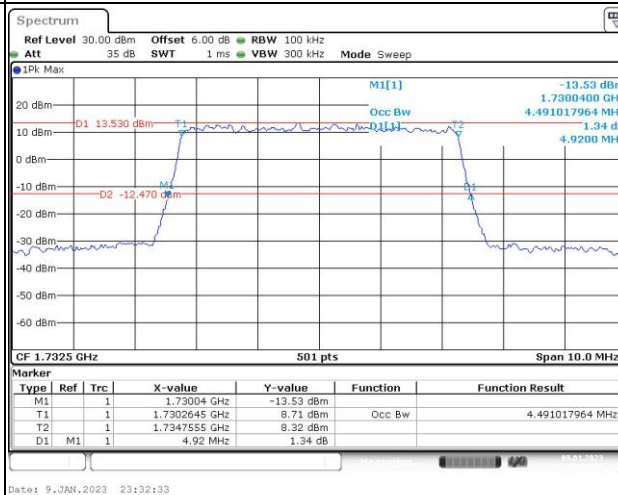
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

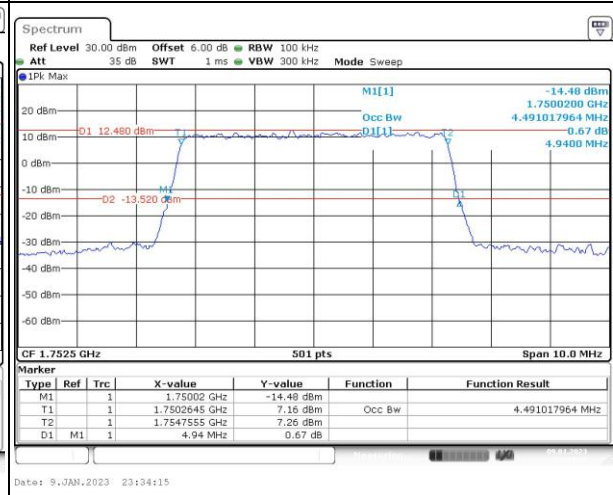
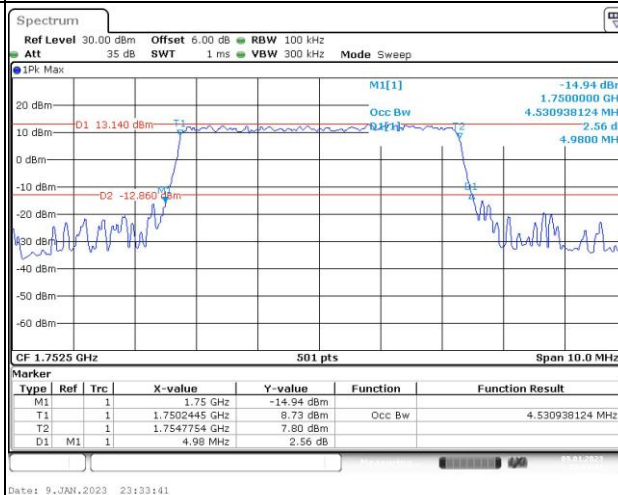
Lowest



Middle



Highest



Note: The 6.0 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

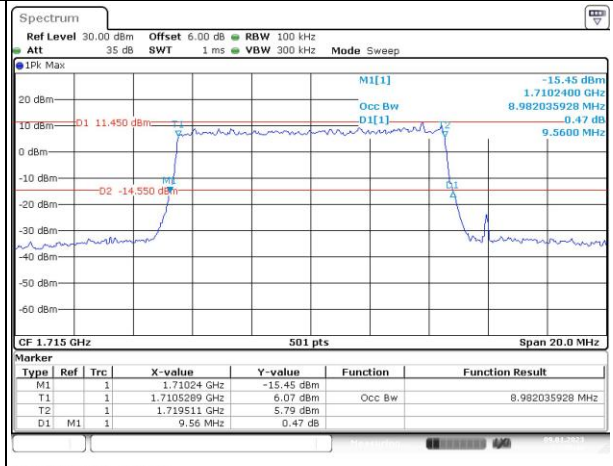
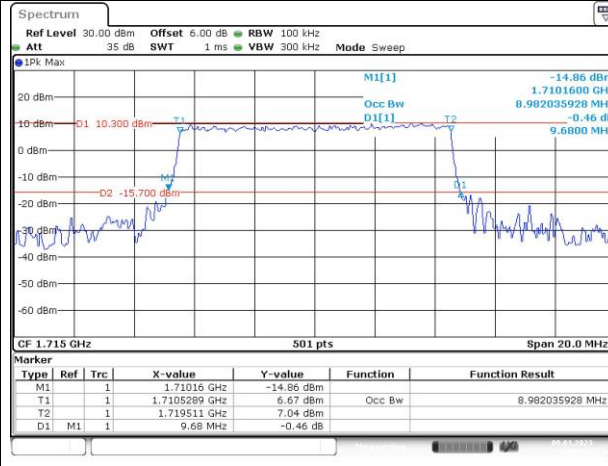
Occupied Bandwidth

Channel

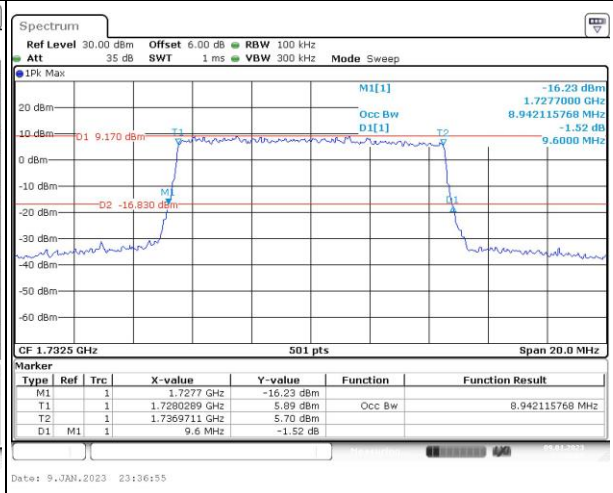
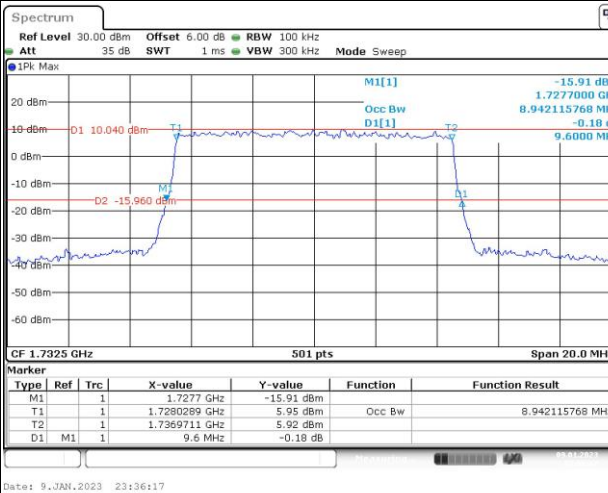
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

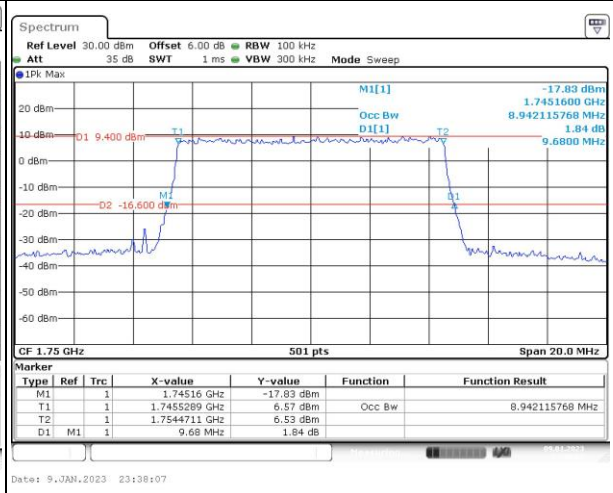
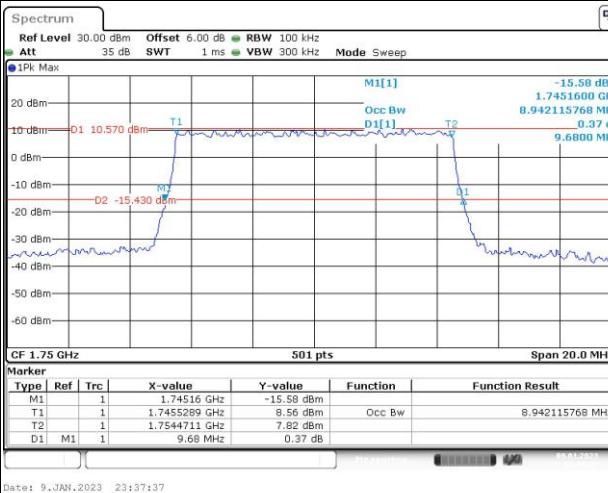
Lowest



Middle



Highest



Note: The 6.0 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

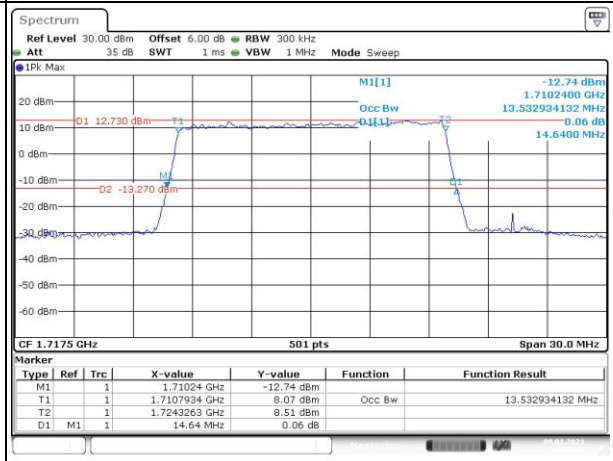
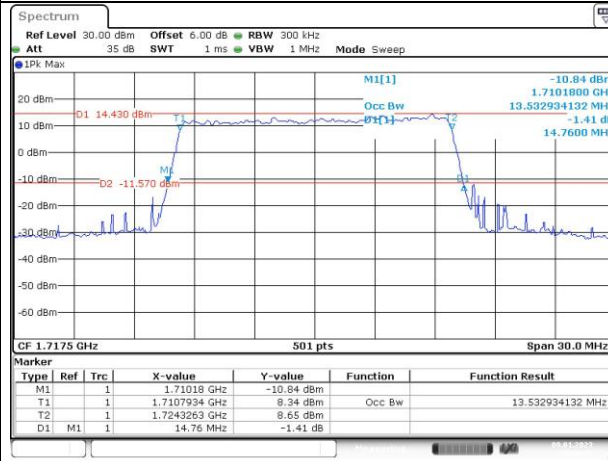
Occupied Bandwidth

Channel

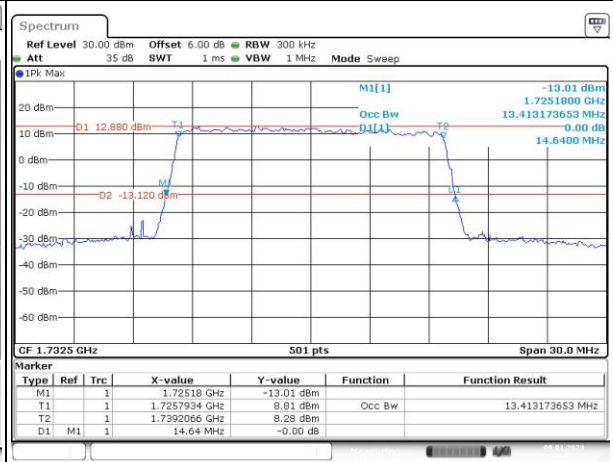
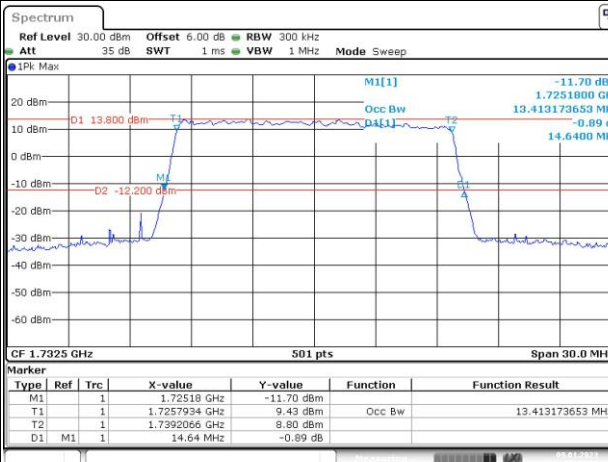
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

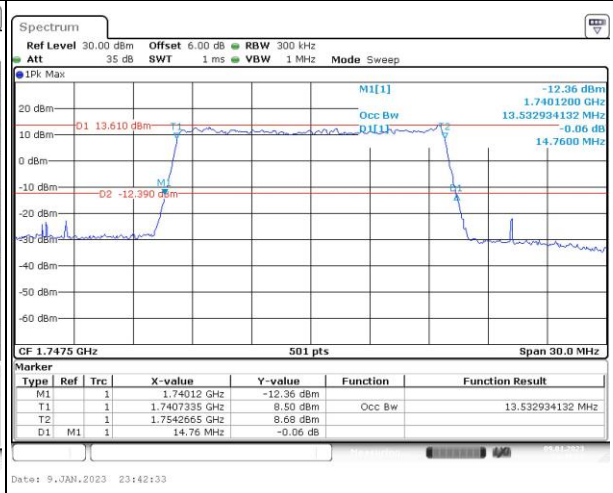
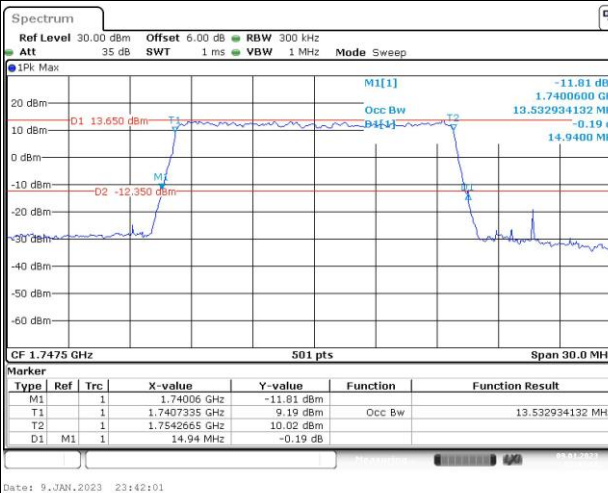
Lowest



Middle



Highest



Note: The 6.0 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

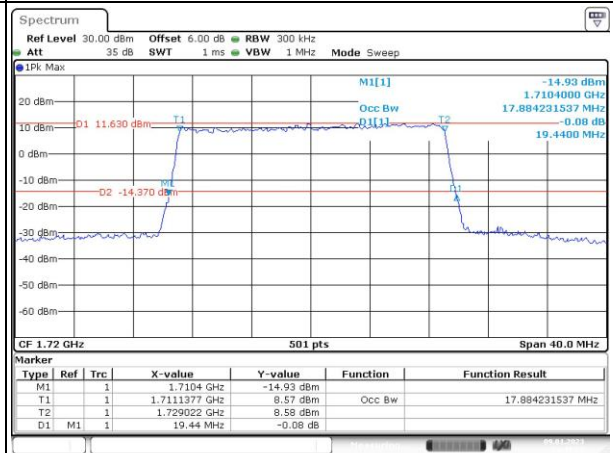
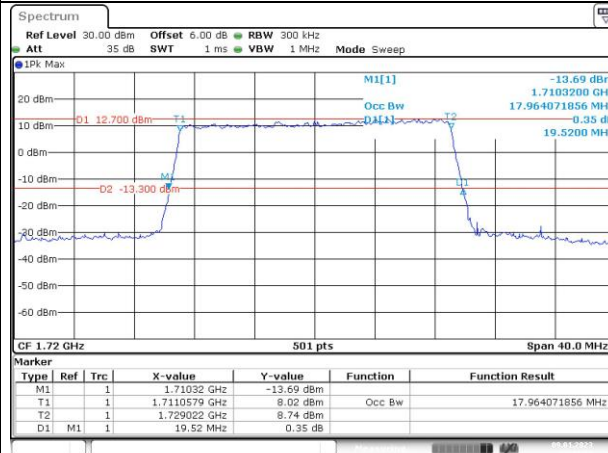
Occupied Bandwidth

Channel

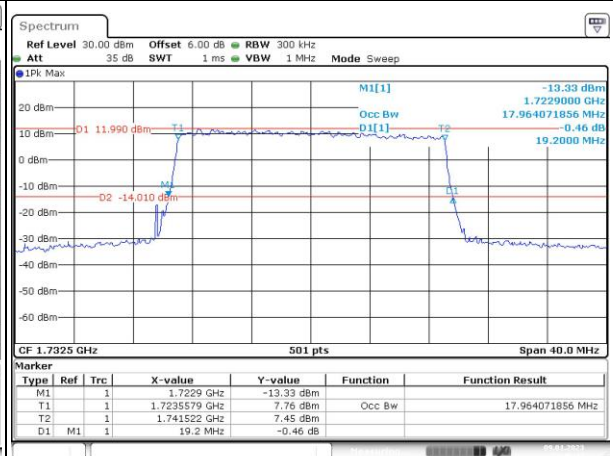
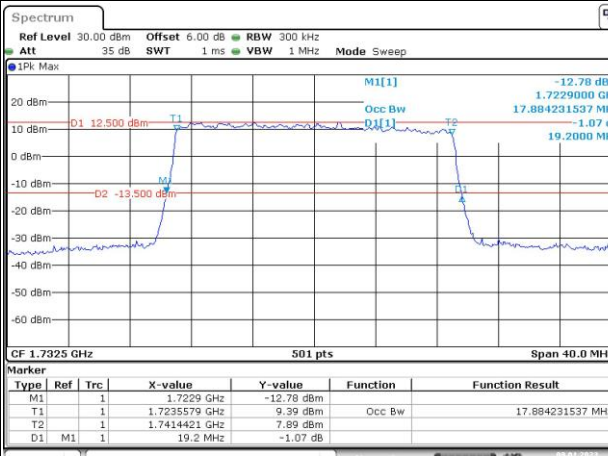
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

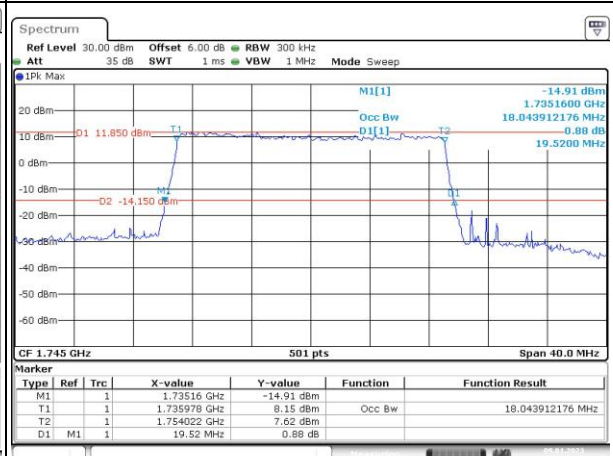
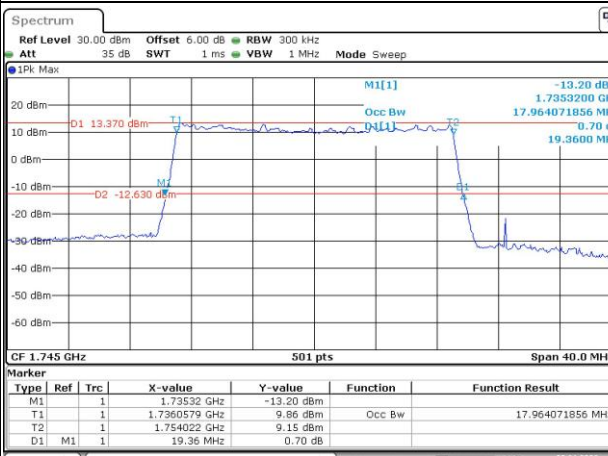
Lowest



Middle



Highest



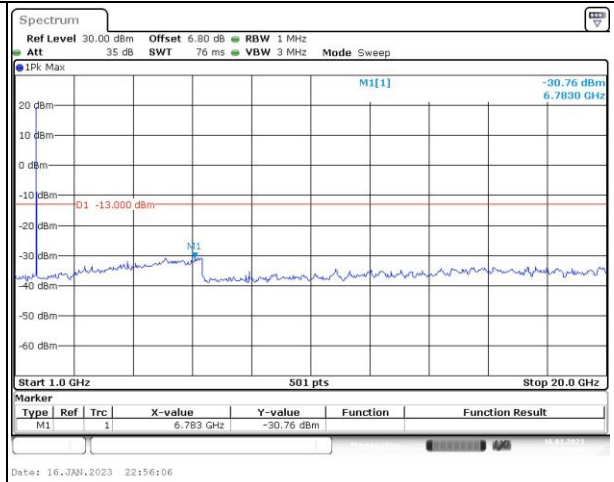
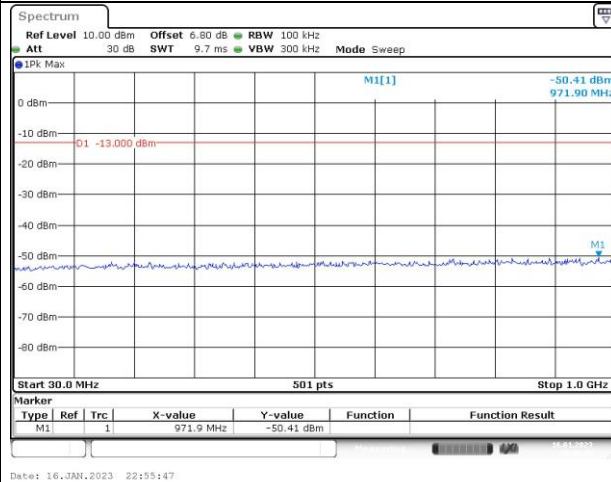
Note: The 6.0 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Spurious Emissions at Antenna Terminal

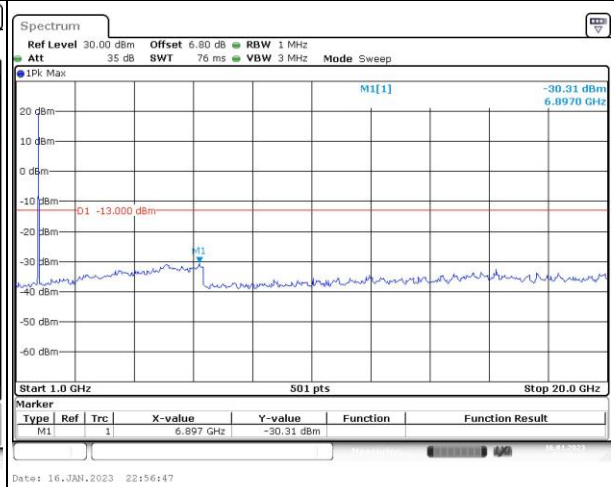
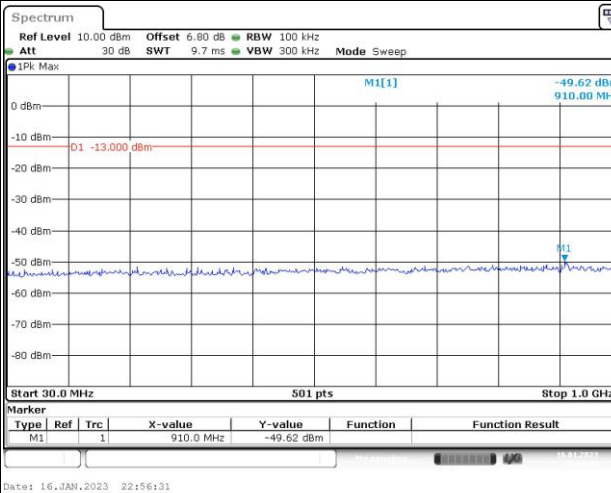
Channel

1.4MHz Bandwidth QPSK

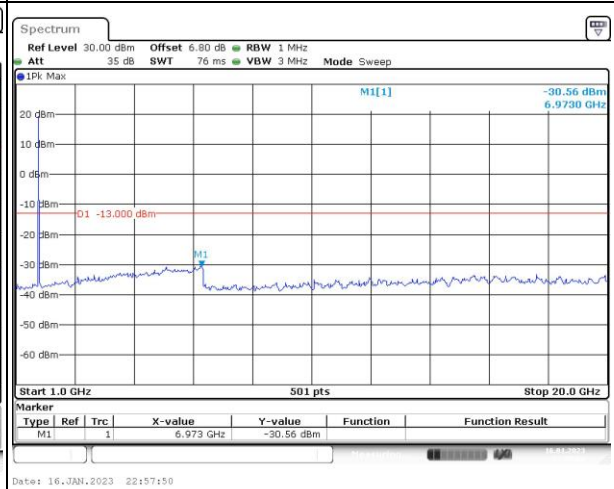
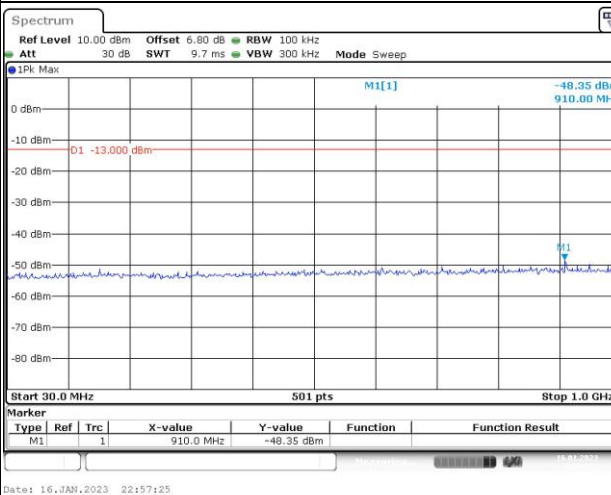
Lowest



Middle



Highest



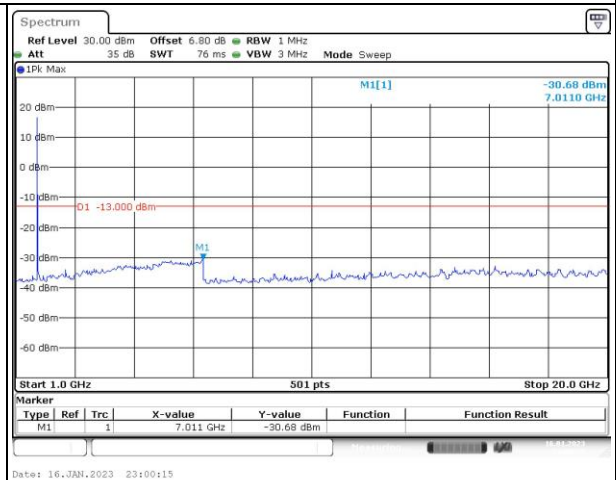
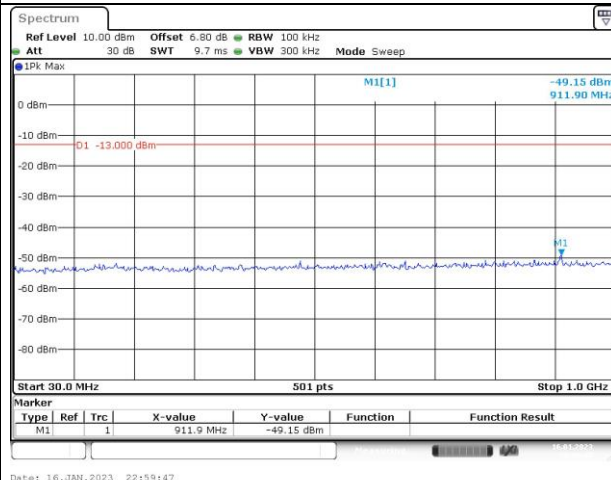
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Spurious Emissions at Antenna Terminal

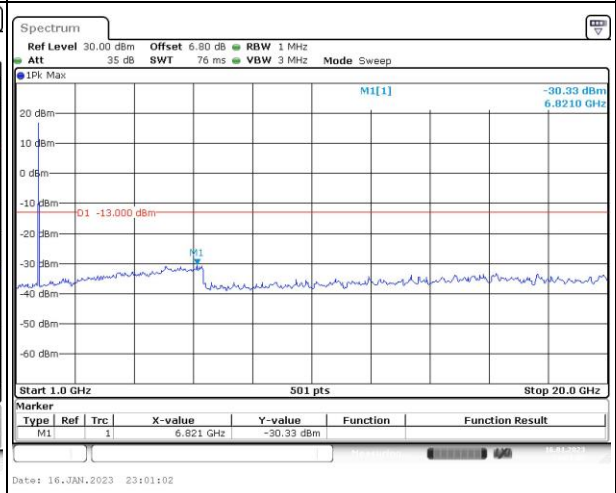
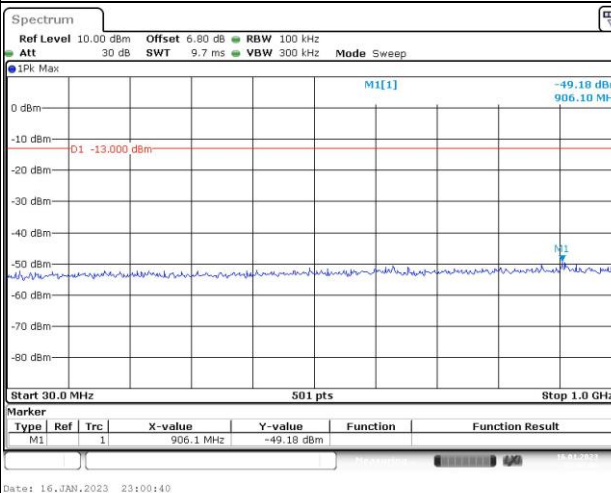
Channel

3MHz Bandwidth QPSK

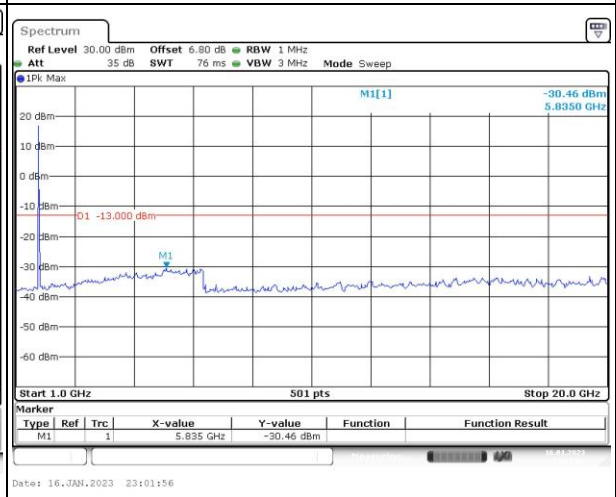
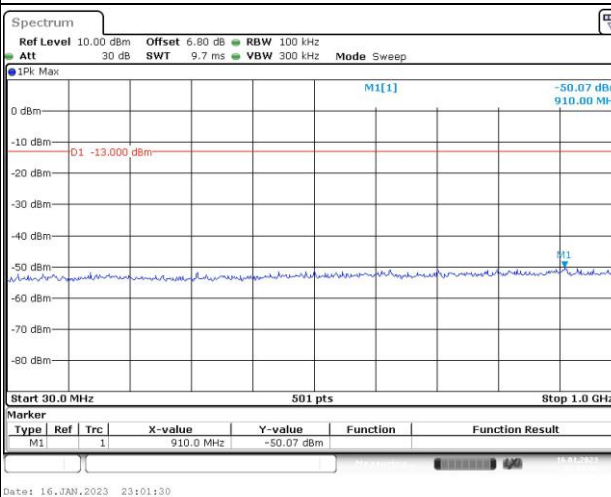
Lowest



Middle



Highest



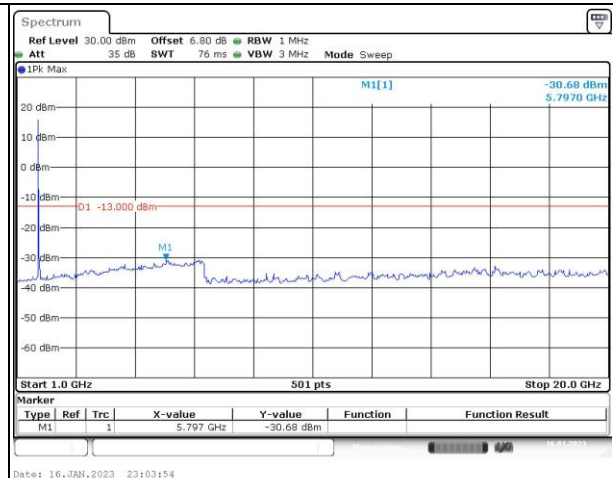
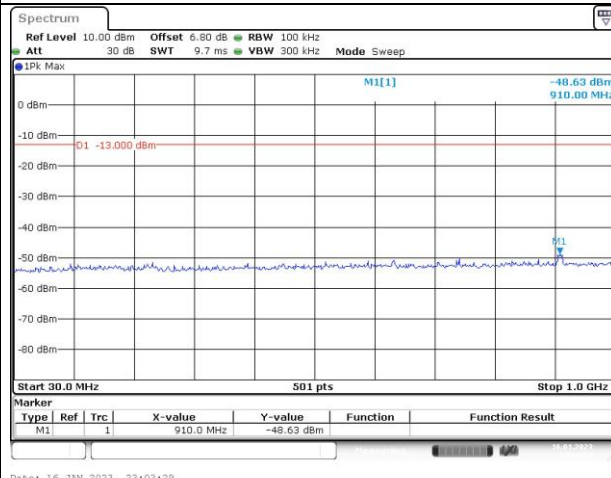
Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer

Spurious Emissions at Antenna Terminal

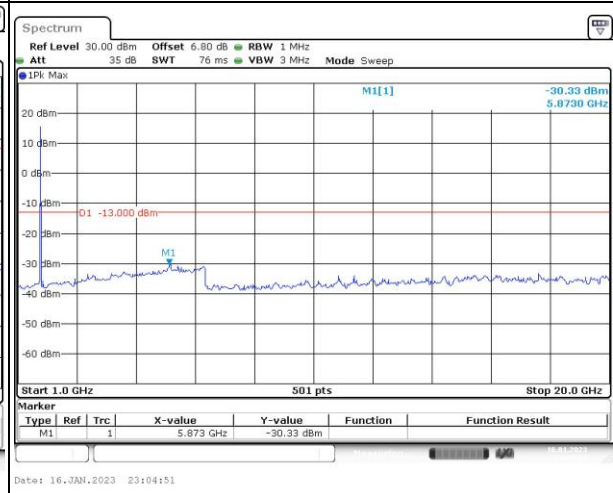
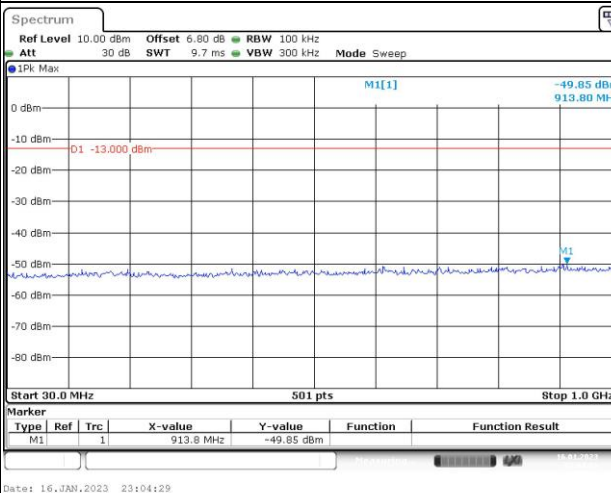
Channel

5MHz Bandwidth QPSK

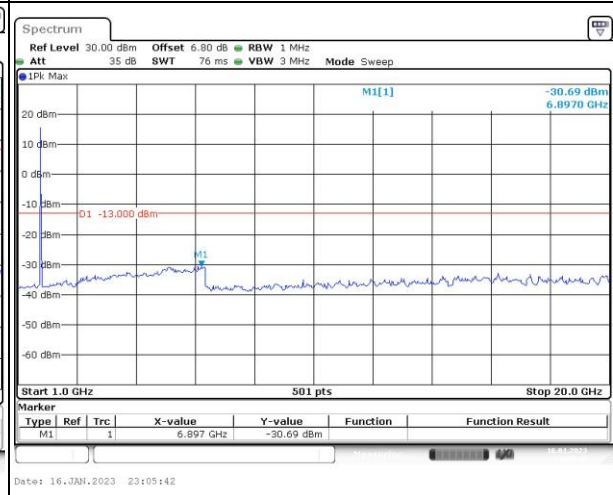
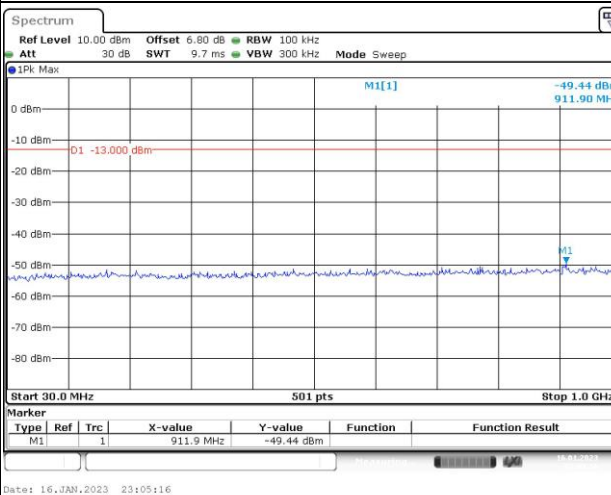
Lowest



Middle



Highest



Note: The 6.8 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer