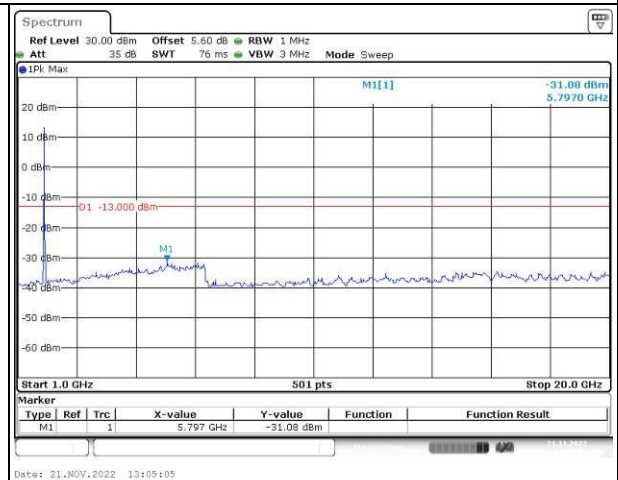
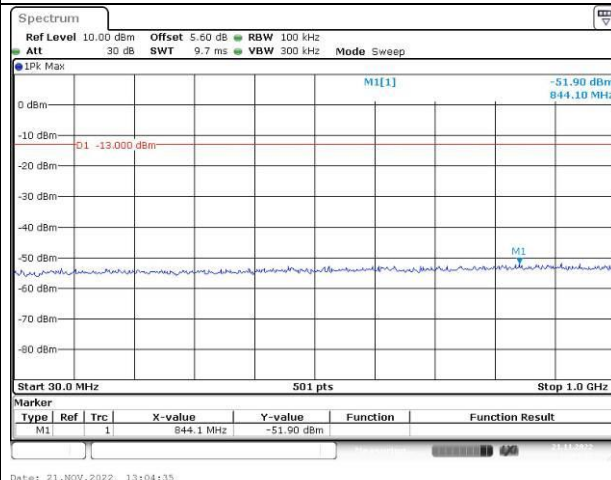


Spurious Emissions at Antenna Terminal

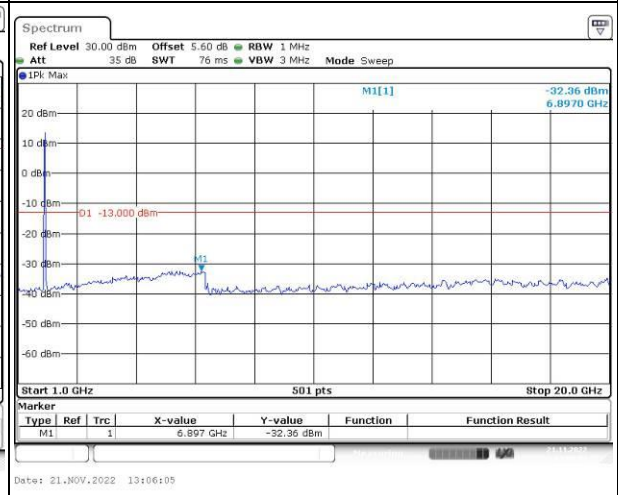
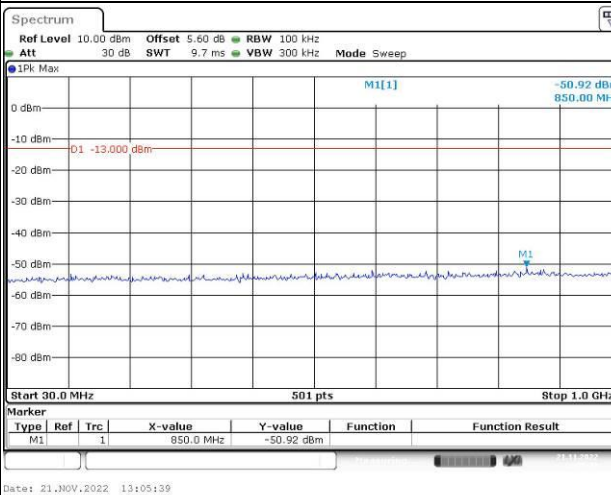
Channel

20MHz Bandwidth QPSK

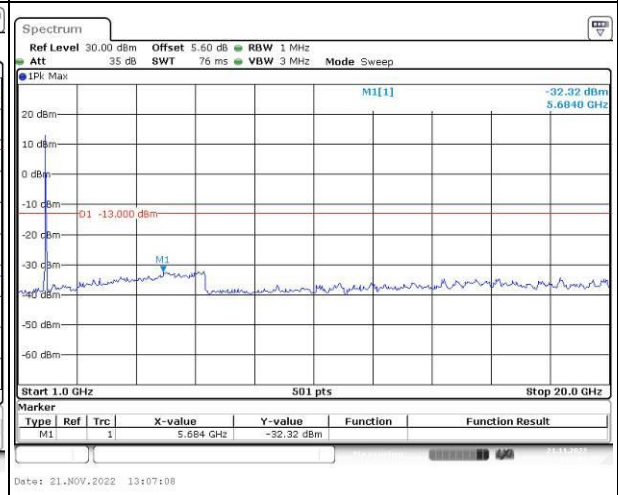
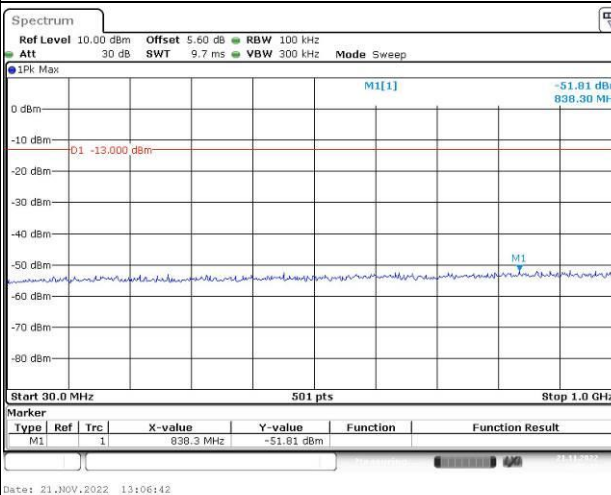
Lowest



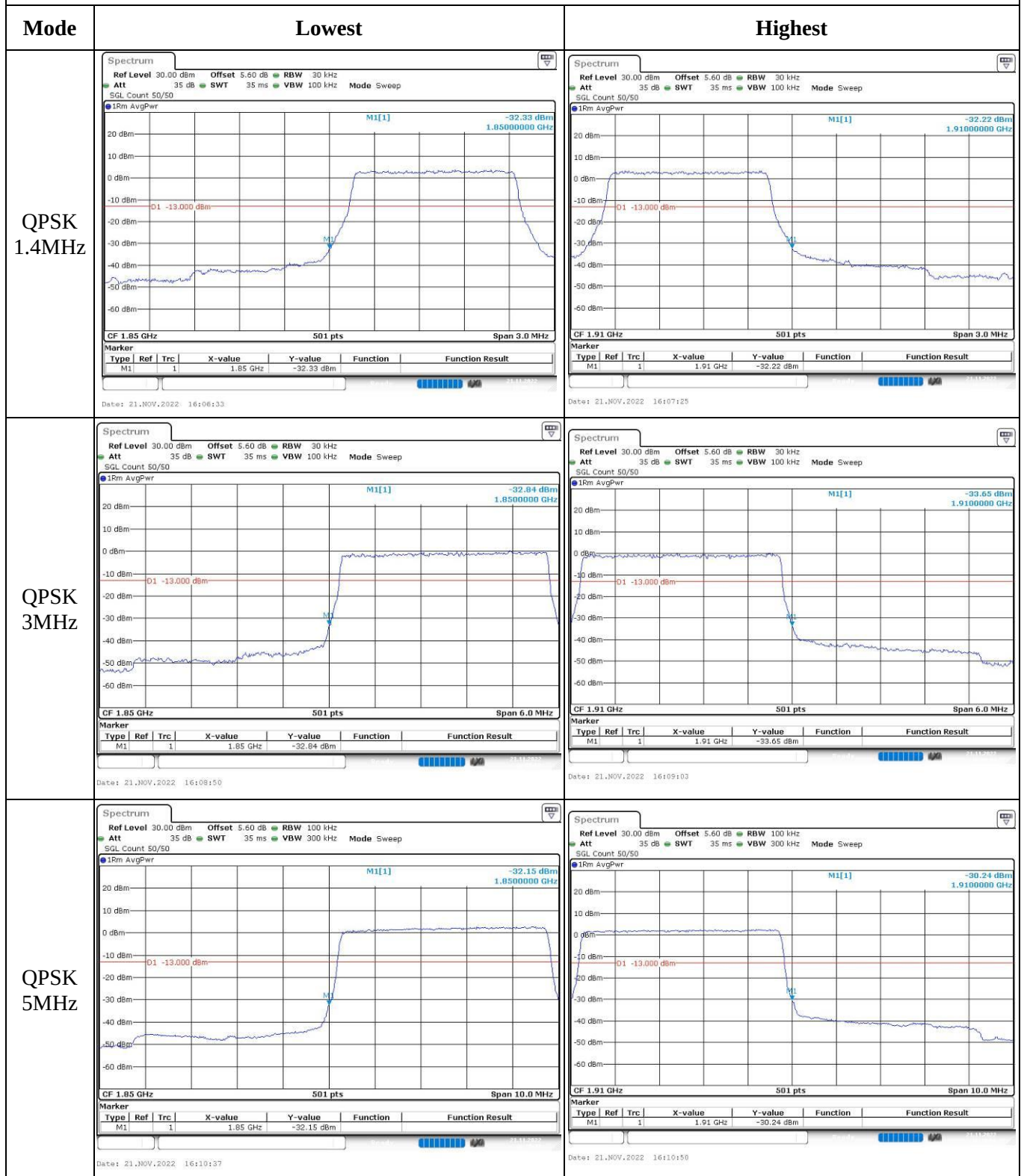
Middle



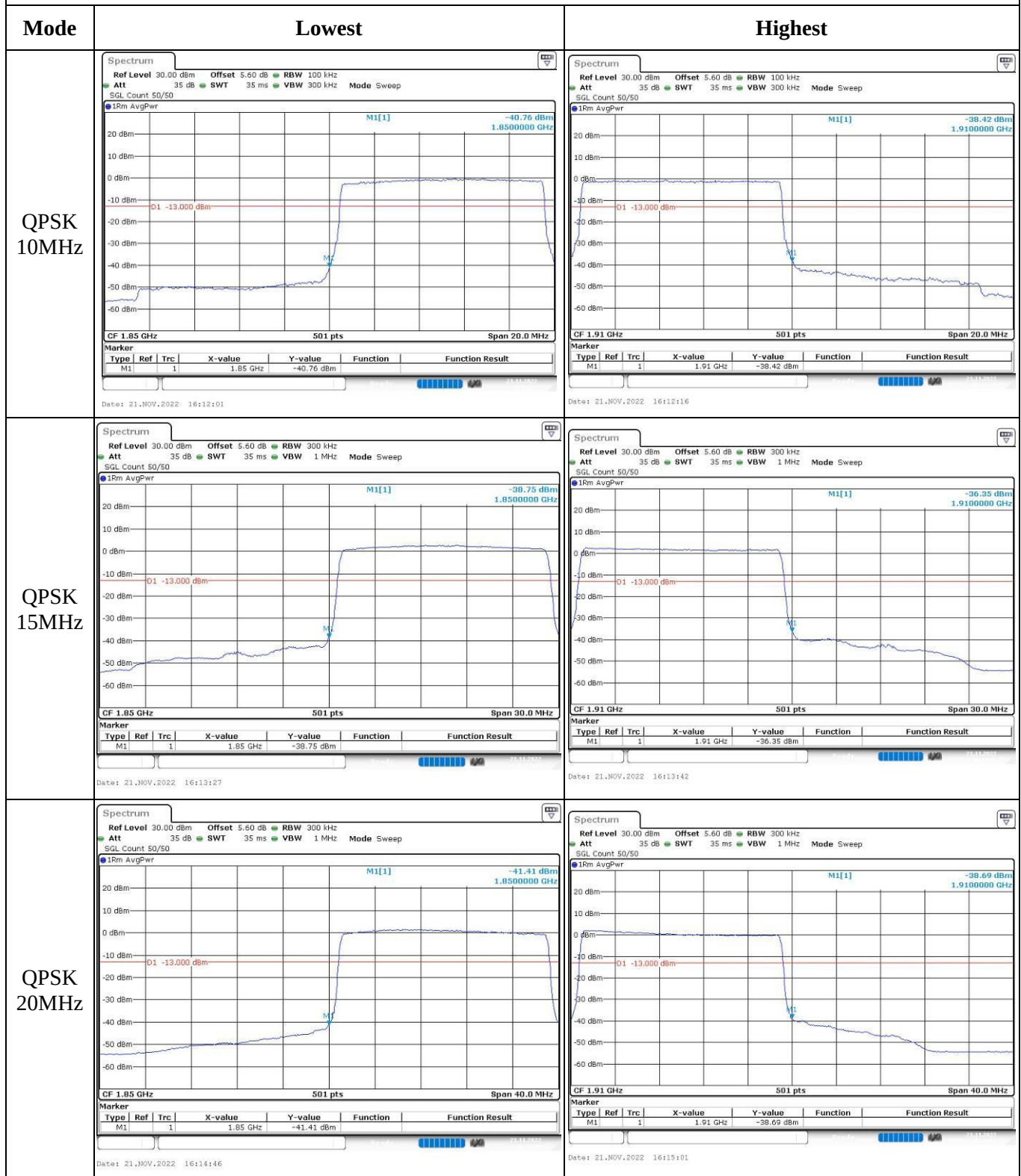
Highest



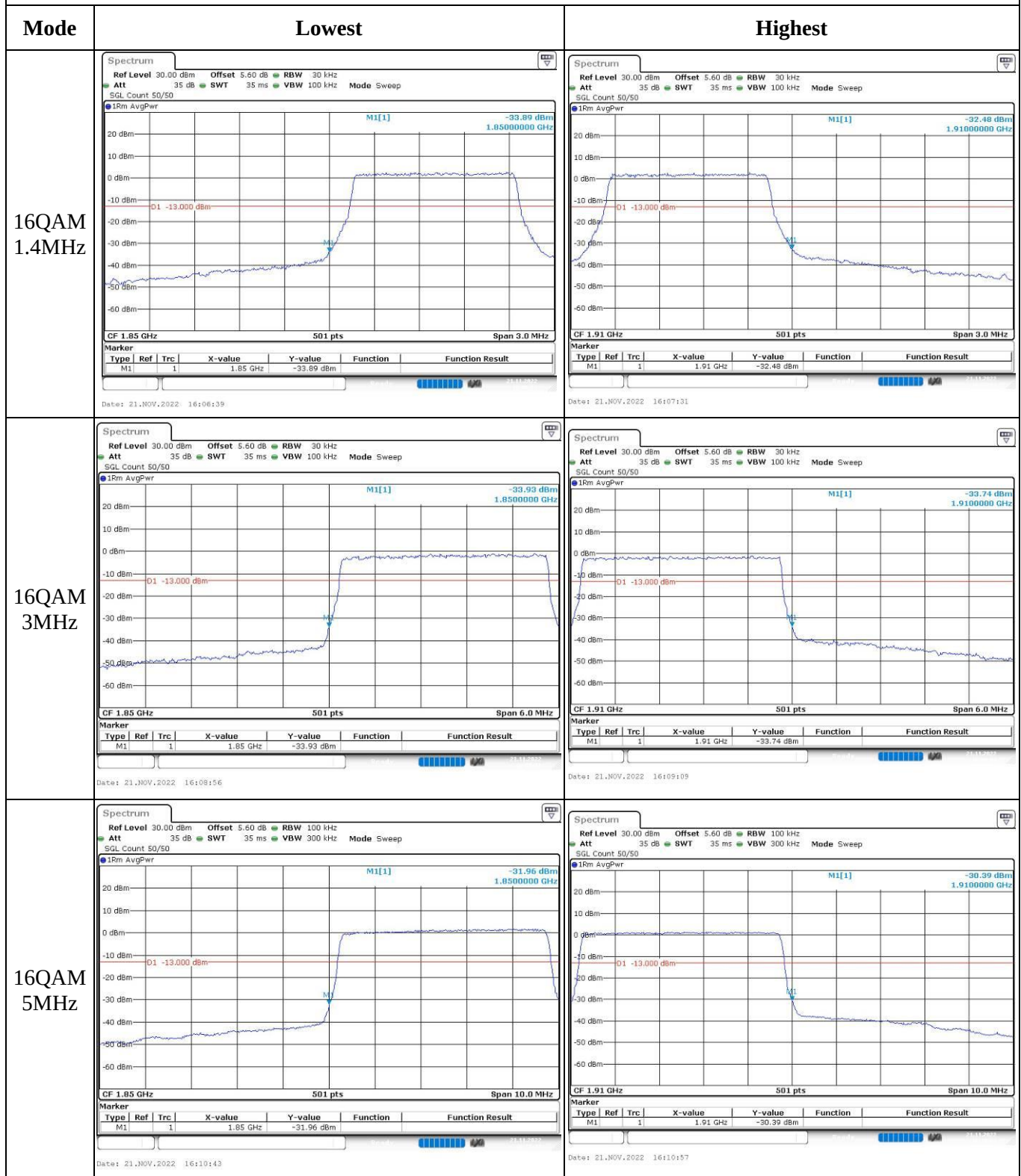
Out of band emission, Band Edge



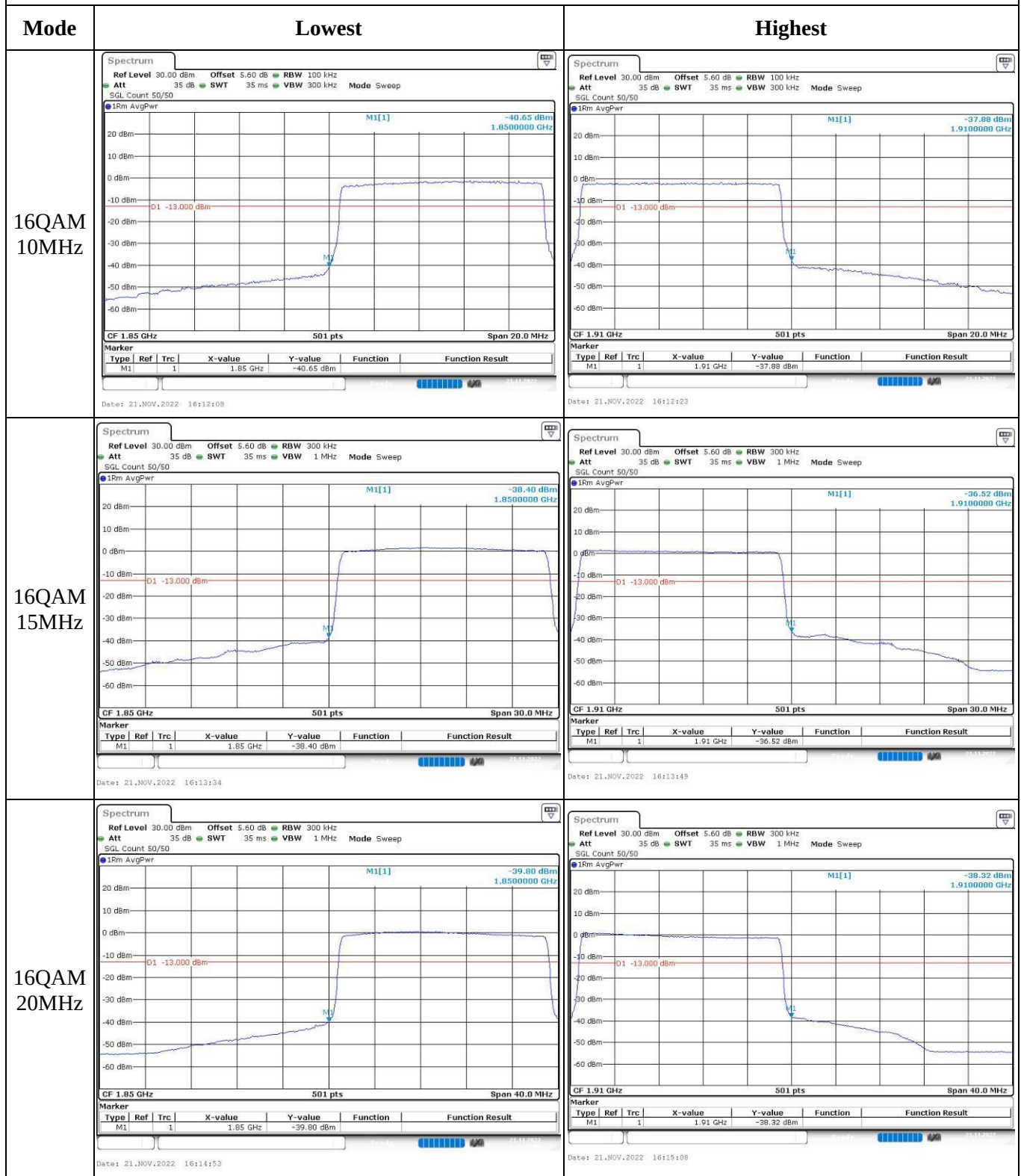
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	10GW	Test Date:	2022/11/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.8	Relative Humidity: (%)	66	ATM Pressure: (kPa)	101.2
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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	211002	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	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	2022/9/29	2023/9/28
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:**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	22.45	22.28	22.19	22.48	30
	RB1#3	22.48	22.21	22.26		
	RB1#5	22.38	22.21	22.19		
	RB3#0	22.47	22.32	22.19		
	RB3#3	22.43	22.19	22.26		
	RB6#0	21.46	21.18	21.21		
1.4MHz 16QAM	RB1#0	21.48	21.3	21.15	21.58	30
	RB1#3	21.58	21.24	21.29		
	RB1#5	21.43	21.18	21.22		
	RB3#0	21.42	21.44	21.34		
	RB3#3	21.41	21.36	21.29		
	RB6#0	20.46	20.18	20.05		
3MHz QPSK	RB1#0	22.48	22.29	22.27	22.48	30
	RB1#8	22.47	22.24	22.21		
	RB1#14	22.33	22.27	22.21		
	RB6#0	21.48	21.3	21.3		
	RB6#9	21.46	21.24	21.21		
	RB15#0	21.47	21.24	21.31		
3MHz 16QAM	RB1#0	22.03	21.38	21.31	22.03	30
	RB1#8	21.95	21.32	21.25		
	RB1#14	21.91	21.33	21.25		
	RB6#0	20.55	20.3	20.21		
	RB6#9	20.47	20.26	20.12		
	RB15#0	20.49	20.17	20.37		
5MHz QPSK	RB1#0	22.6	22.43	22.43	22.6	30
	RB1#13	22.5	22.3	22.3		
	RB1#24	22.4	22.34	22.27		
	RB15#0	21.46	21.33	21.31		
	RB15#10	21.47	21.22	21.31		
	RB25#0	21.49	21.27	21.3		
5MHz 16QAM	RB1#0	21.52	21.71	21.44	21.71	30
	RB1#13	21.4	21.59	21.37		
	RB1#24	21.34	21.62	21.29		
	RB15#0	20.55	20.29	20.29		
	RB15#10	20.46	20.23	20.33		
	RB25#0	20.48	20.22	20.3		
10MHz QPSK	RB1#0	22.7	22.59	22.49	22.84	30
	RB1#25	22.33	22.16	22.15		
	RB1#49	22.84	22.71	22.64		

	RB25#0	21.42	21.29	21.29		
	RB25#25	21.56	21.45	21.35		
	RB50#0	21.46	21.27	21.33		
10MHz 16QAM	RB1#0	21.77	21.57	22.08	22.16	30
	RB1#25	21.39	21.26	21.78		
	RB1#49	21.89	21.73	22.16		
	RB25#0	20.46	20.36	20.31		
	RB25#25	20.56	20.52	20.4		
	RB50#0	20.43	20.31	20.33		
15MHz QPSK	RB1#0	22.31	22.13	22.07	22.31	30
	RB1#38	22.2	22.06	22.03		
	RB1#74	22.1	22.15	22.03		
	RB36#0	21.35	21.14	21.07		
	RB36#39	21.23	21.13	21.16		
	RB75#0	21.22	21.08	21.1		
15MHz 16QAM	RB1#0	21.31	21.54	21.63	21.63	30
	RB1#38	21.18	21.48	21.6		
	RB1#74	21.17	21.59	21.53		
	RB36#0	20.32	20.13	20.03		
	RB36#39	20.25	20.11	20.15		
	RB75#0	20.25	20.07	20.12		
20MHz QPSK	RB1#0	22.06	21.97	21.87	22.2	30
	RB1#50	22.2	22.12	22.14		
	RB1#99	22.07	22.16	22.01		
	RB50#0	21.25	21.13	21.02		
	RB50#50	21.12	21.04	21		
	RB100#0	21.13	21.06	21.07		
20MHz 16QAM	RB1#0	21.61	21.25	20.97	21.76	30
	RB1#50	21.76	21.43	21.3		
	RB1#99	21.62	21.41	21.02		
	RB50#0	20.21	20.17	19.99		
	RB50#50	20.15	20.02	19.99		
	RB100#0	20.14	20.05	20.02		

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	5.51	5.77	5.77	13
	RB100#0	4.03	4.29	4.17	13
20MHz 16QAM	RB1#0	6.23	6.75	6.23	13
	RB100#0	5.65	5.8	5.74	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	1.108	1.102	1.108	1.32	1.302	1.32
1.4MHz 16QAM	1.096	1.102	1.096	1.296	1.32	1.296
3MHz QPSK	2.695	2.683	2.695	2.94	2.964	2.952
3MHz 16QAM	2.695	2.683	2.695	2.94	2.964	2.976
5MHz QPSK	4.511	4.511	4.531	5	5	5.02
5MHz 16QAM	4.531	4.511	4.511	5.06	5.02	5.02
10MHz QPSK	8.942	8.942	8.942	9.88	9.76	9.72
10MHz 16QAM	8.942	8.942	8.942	9.72	9.76	9.72
15MHz QPSK	13.473	13.533	13.473	14.94	15	14.82
15MHz 16QAM	13.533	13.533	13.473	14.82	14.88	14.82
20MHz QPSK	17.884	17.964	17.884	19.6	19.52	19.44
20MHz 16QAM	17.964	17.964	17.964	19.52	19.52	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.
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FCC §2.1051, §27.53:Out of band emission, Band Edge

Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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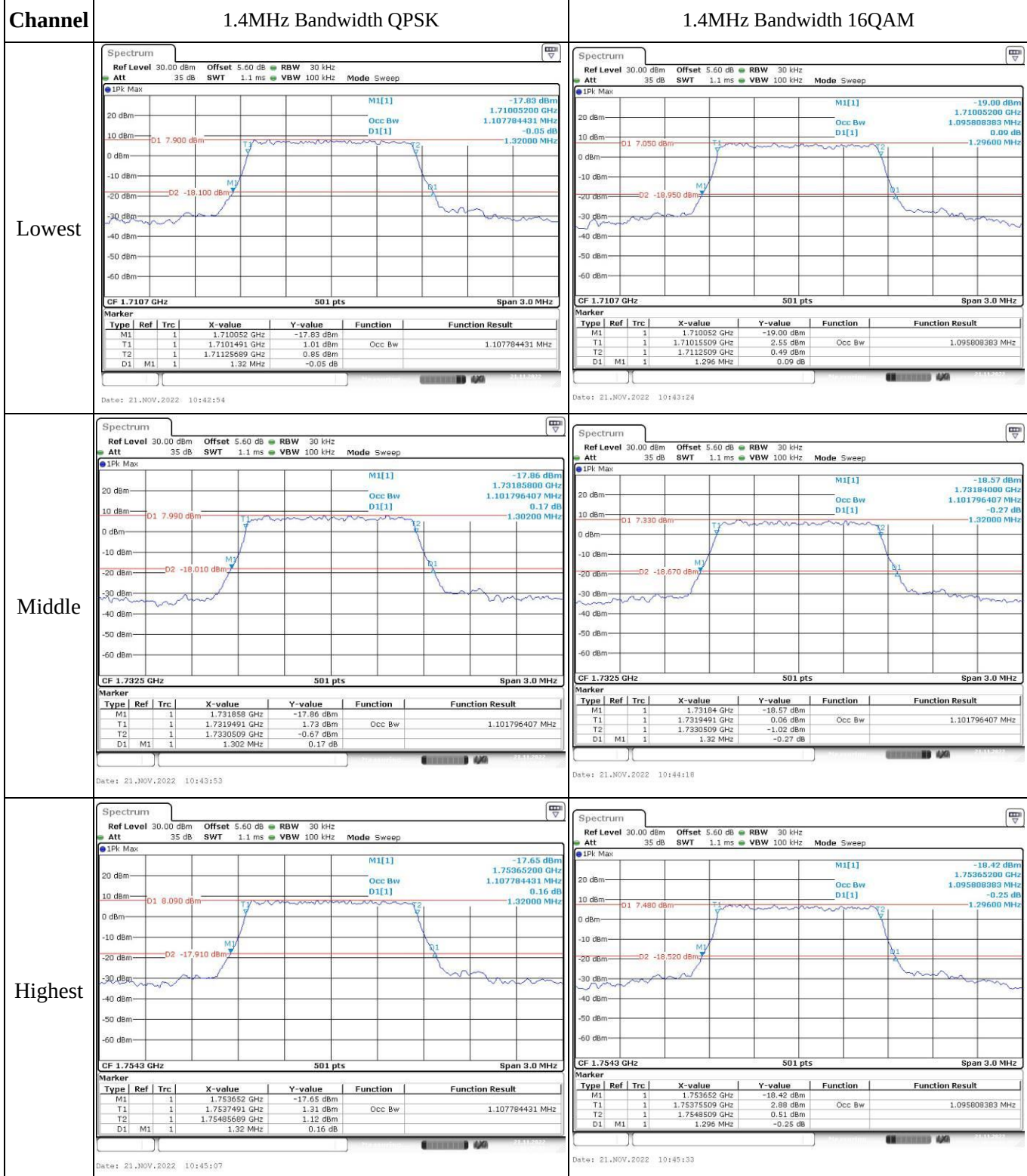
FCC §2.1055, §27.54: Frequency Stability

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	1710.416	1710.00	1754.636	1755
	-20	3.87	1710.467	1710.00	1754.636	1755
	-10	3.87	1710.459	1710.00	1754.698	1755
	0	3.87	1710.464	1710.00	1754.623	1755
	10	3.87	1710.491	1710.00	1754.627	1755
	20	3.87	1710.458	1710.00	1754.622	1755
	30	3.87	1710.435	1710.00	1754.694	1755
	40	3.87	1710.484	1710.00	1754.623	1755
	50	3.87	1710.478	1710.00	1754.690	1755
Frequency Stability vs. Voltage	20	3.3	1710.494	1710.00	1754.689	1755
	20	4.45	1710.452	1710.00	1754.607	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	3.87	1710.460	1710.00	1754.616	1755
	-20	3.87	1710.440	1710.00	1754.648	1755
	-10	3.87	1710.486	1710.00	1754.648	1755
	0	3.87	1710.431	1710.00	1754.609	1755
	10	3.87	1710.470	1710.00	1754.666	1755
	20	3.87	1710.458	1710.00	1754.622	1755
	30	3.87	1710.464	1710.00	1754.604	1755
	40	3.87	1710.497	1710.00	1754.602	1755
	50	3.87	1710.419	1710.00	1754.658	1755
Frequency Stability vs. Voltage	20	3.3	1710.426	1710.00	1754.661	1755
	20	4.45	1710.438	1710.00	1754.637	1755
					Result:	Pass

Test Plots(Note: The 5.6dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



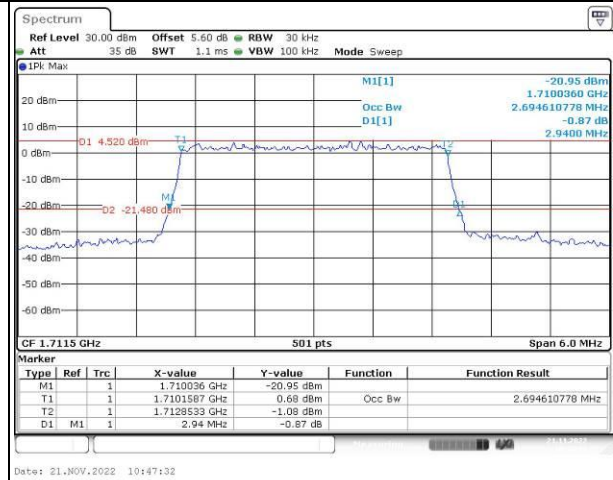
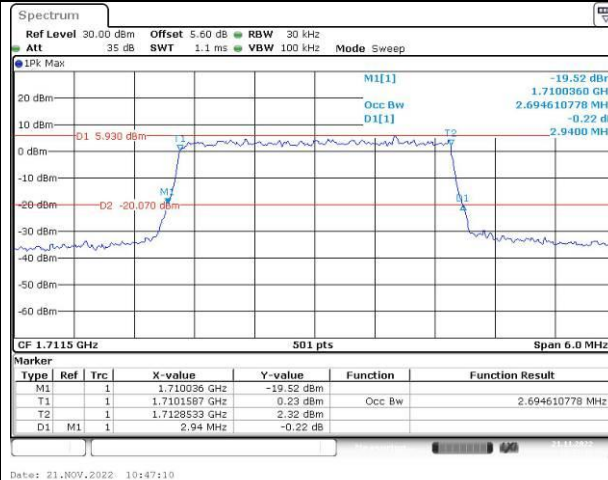
Occupied Bandwidth

Channel

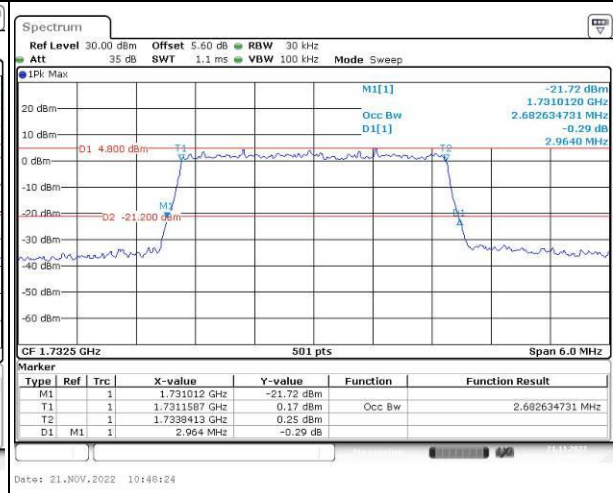
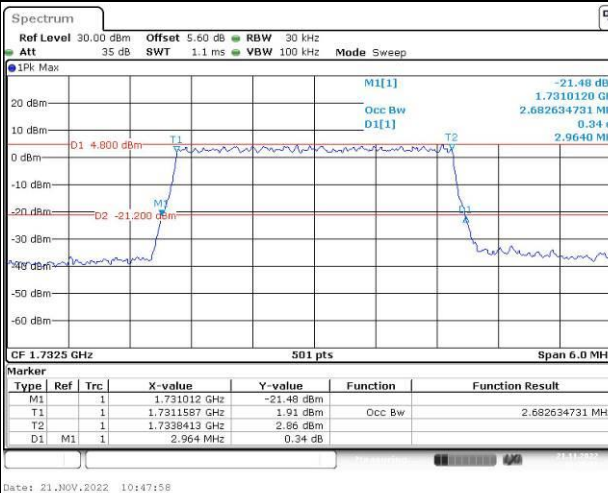
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

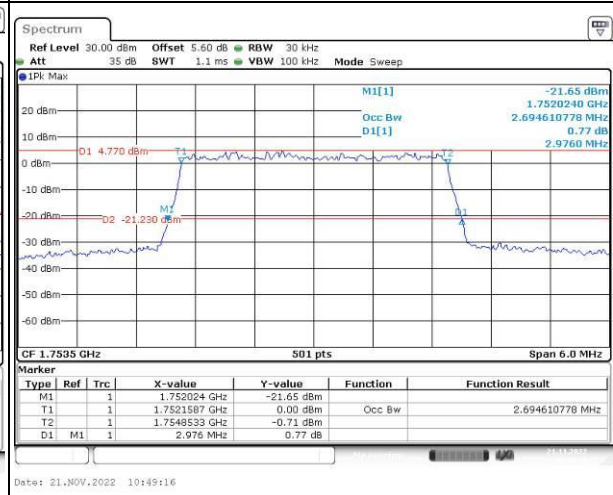
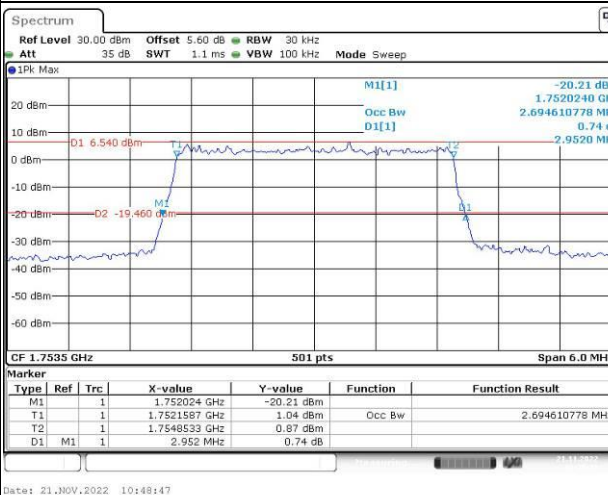
Lowest



Middle



Highest



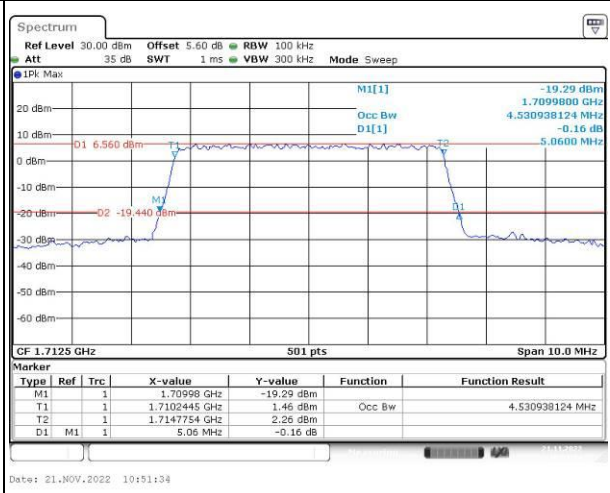
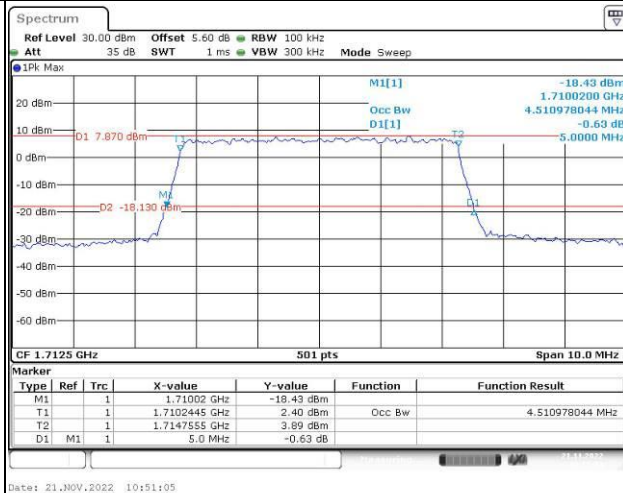
Occupied Bandwidth

Channel

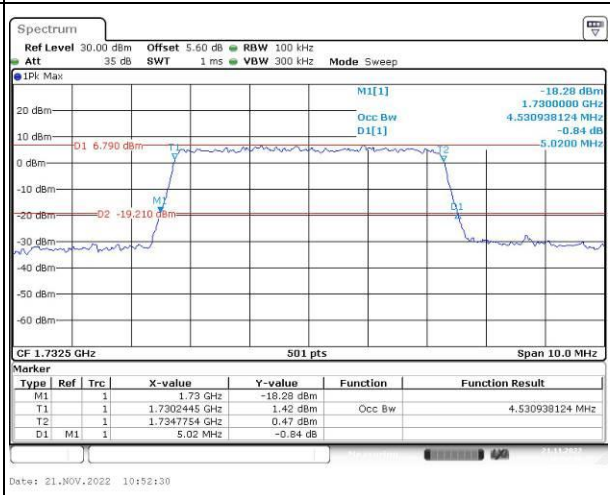
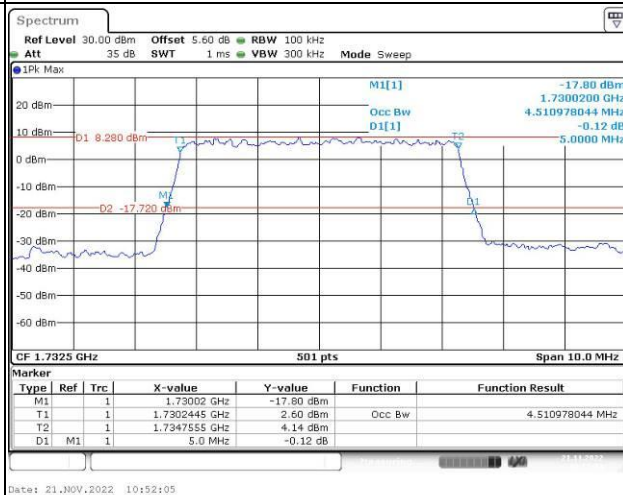
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

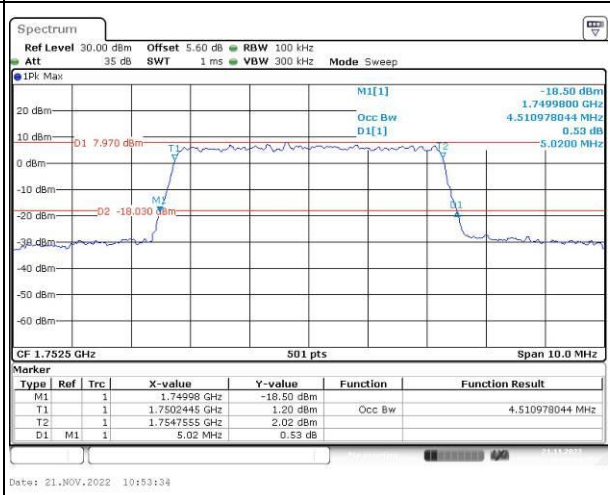
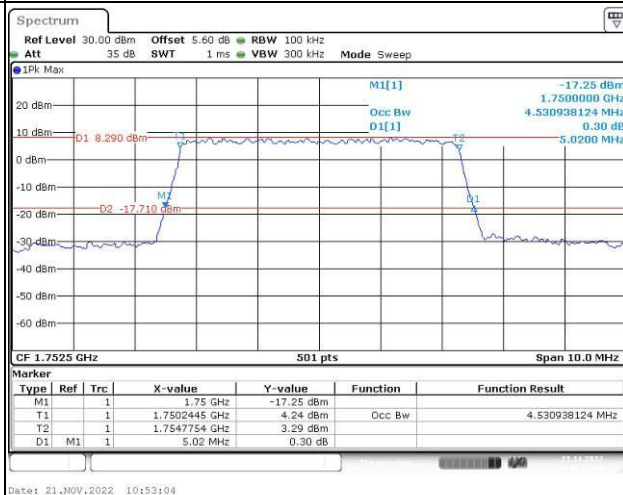
Lowest



Middle



Highest



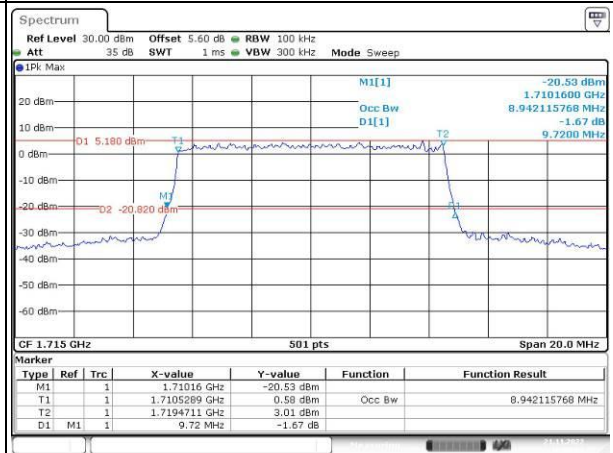
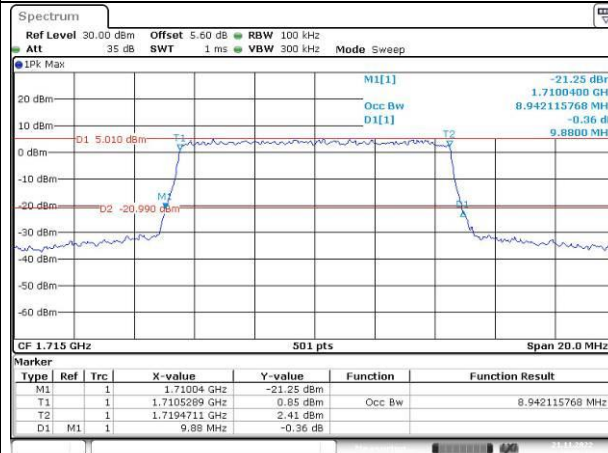
Occupied Bandwidth

Channel

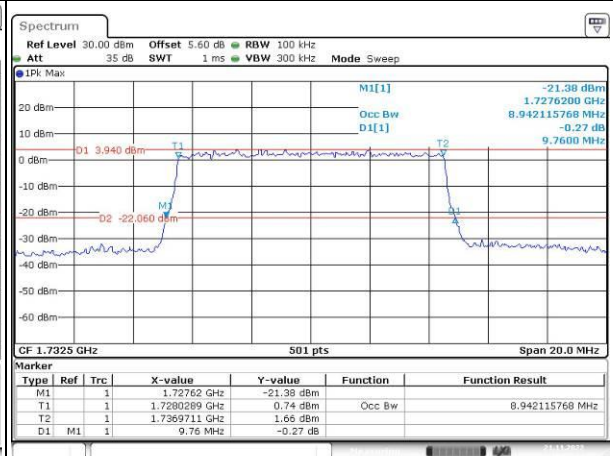
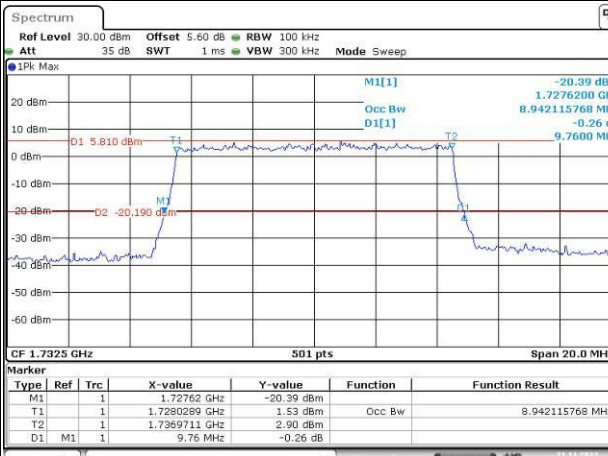
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

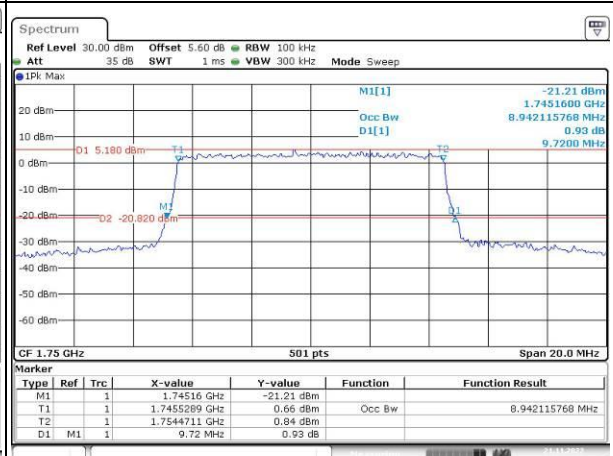
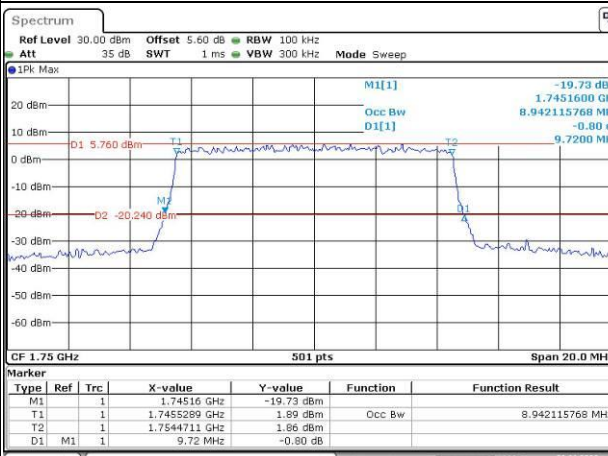
Lowest



Middle



Highest



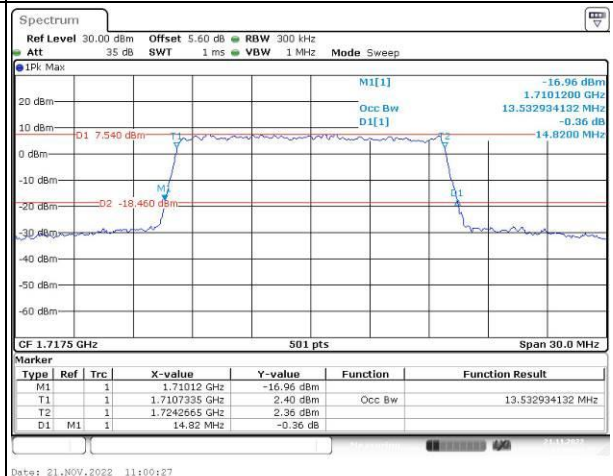
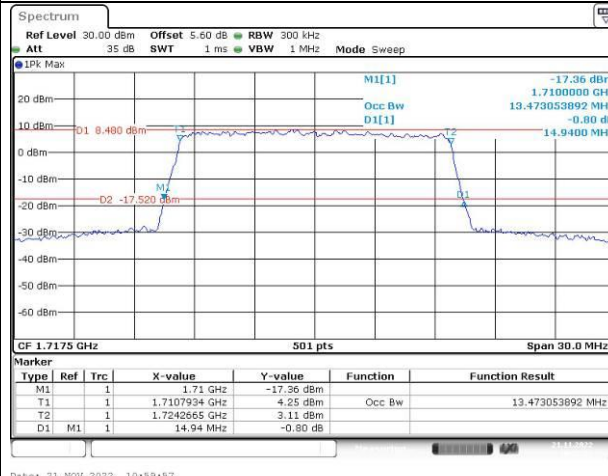
Occupied Bandwidth

Channel

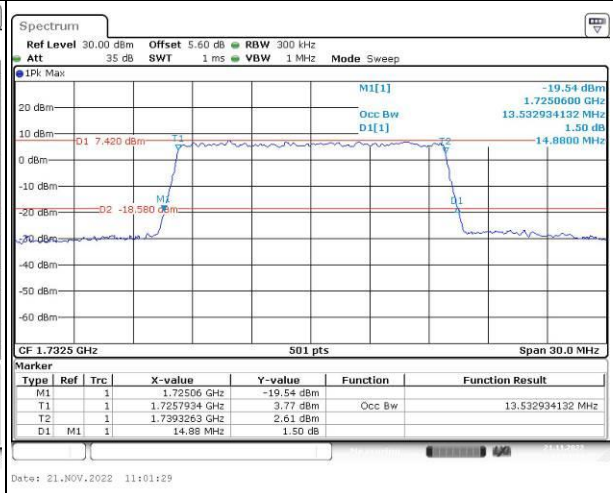
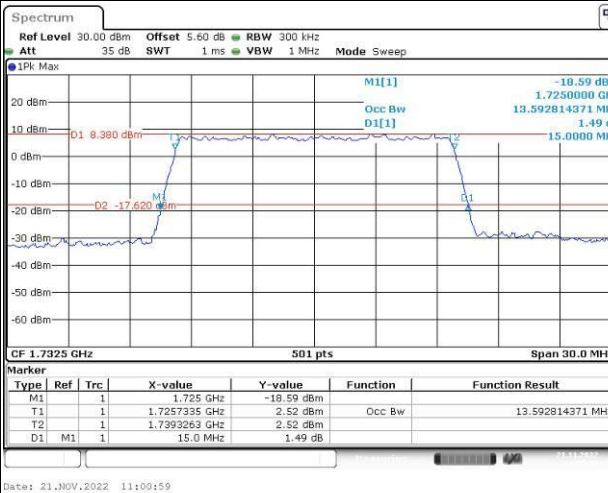
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

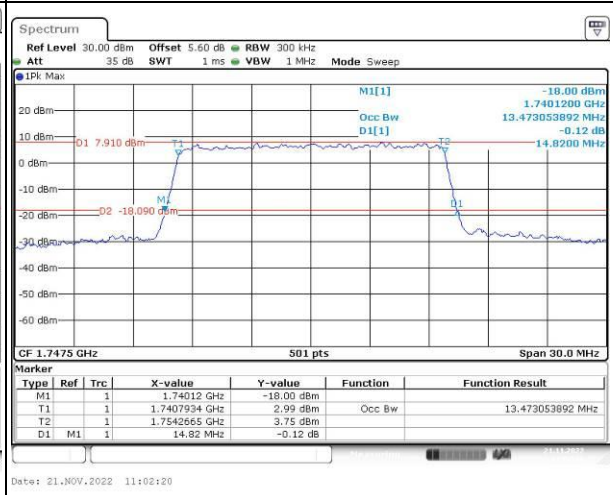
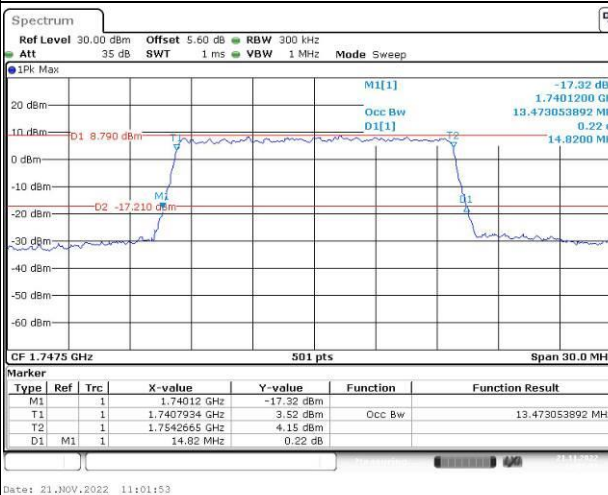
Lowest



Middle



Highest



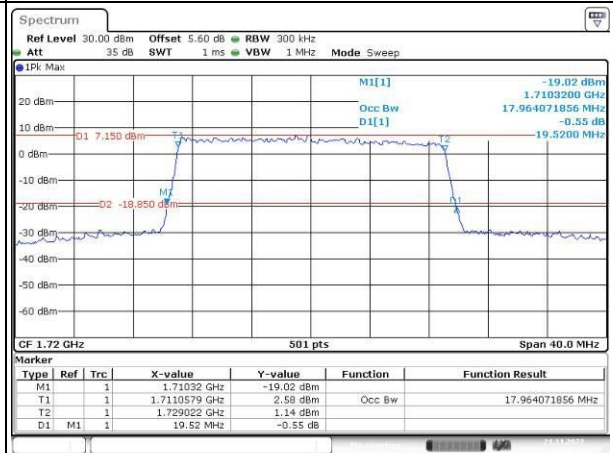
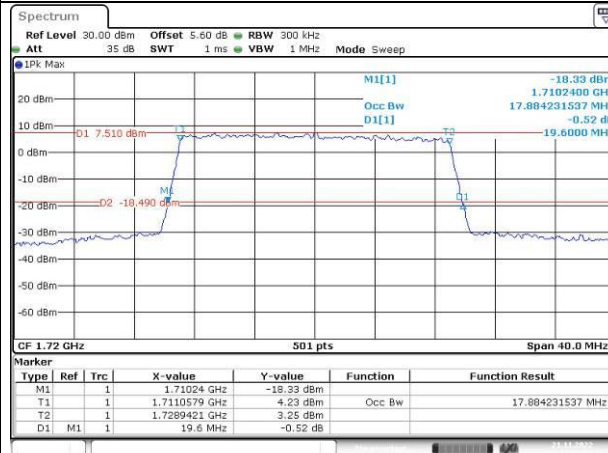
Occupied Bandwidth

Channel

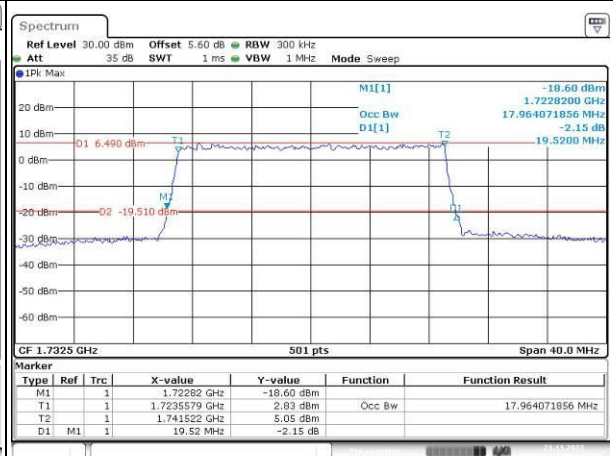
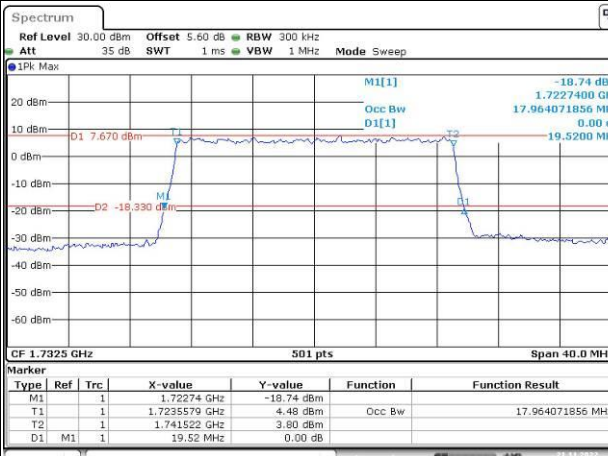
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

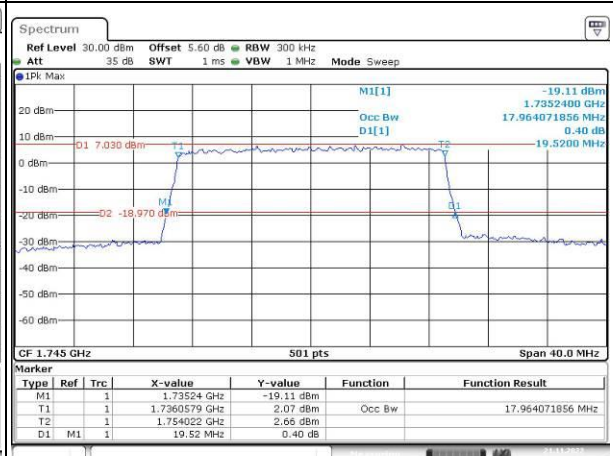
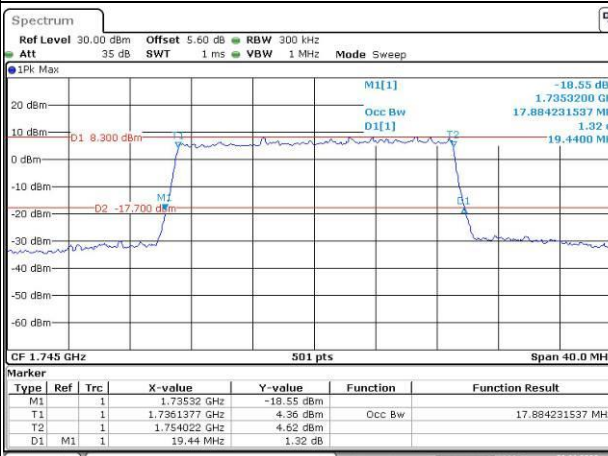
Lowest



Middle



Highest

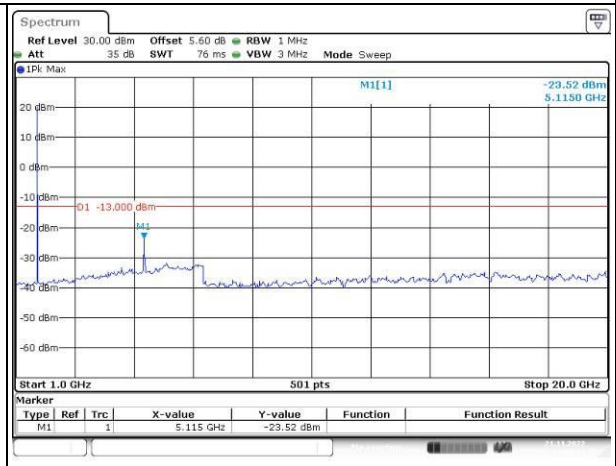
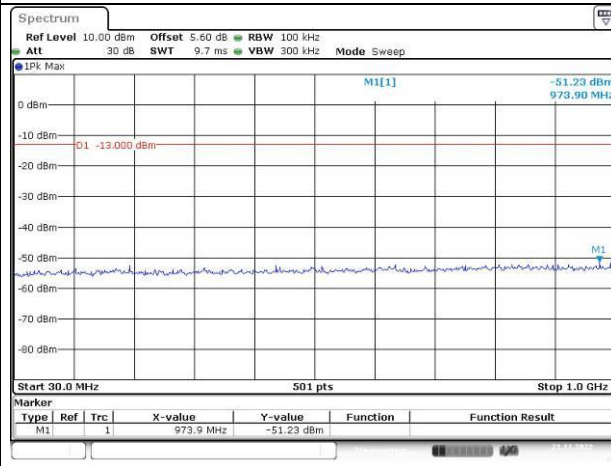


Spurious Emissions at Antenna Terminal

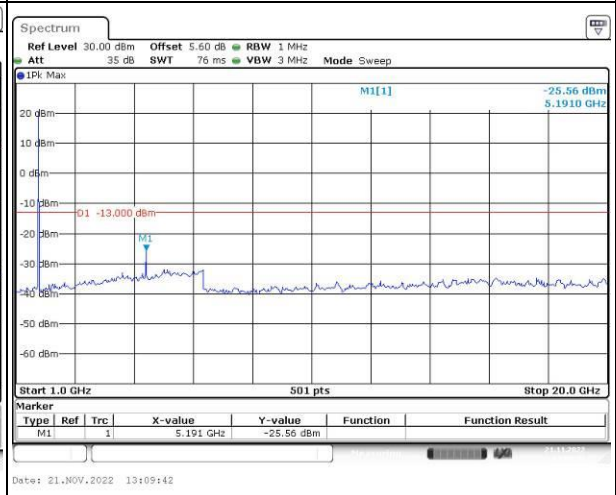
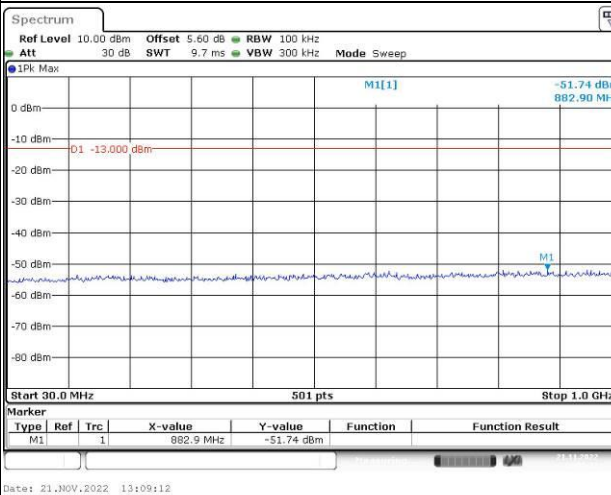
Channel

1.4MHz Bandwidth QPSK

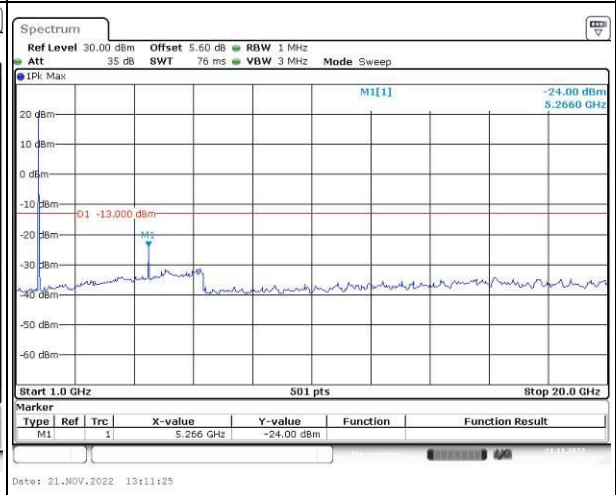
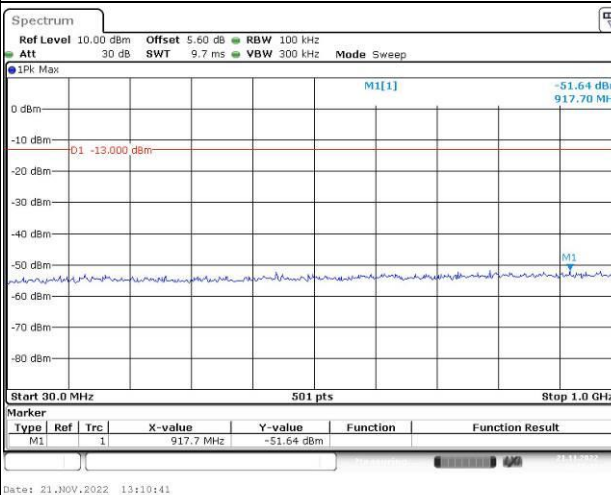
Lowest



Middle



Highest

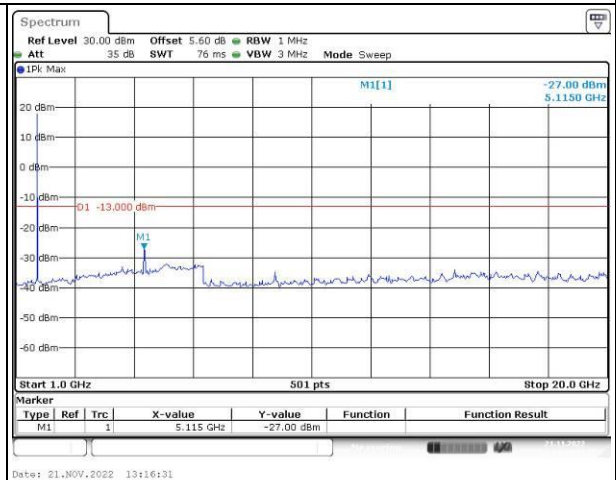
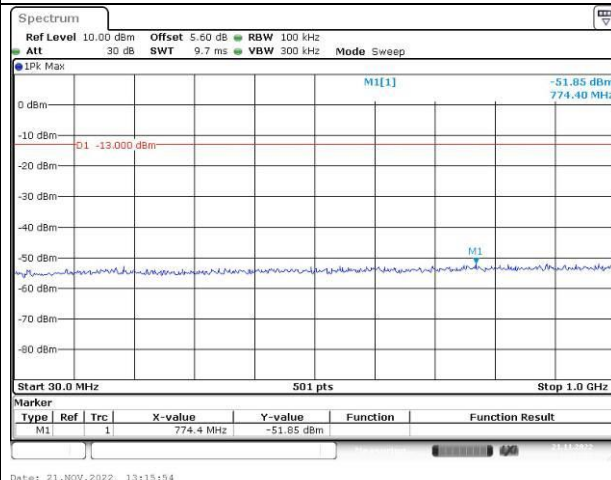


Spurious Emissions at Antenna Terminal

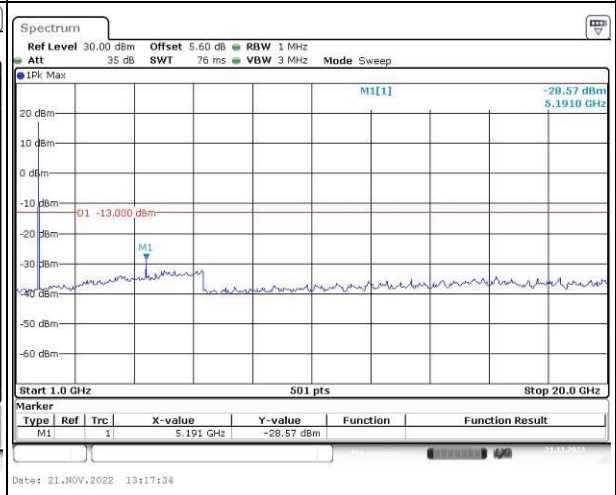
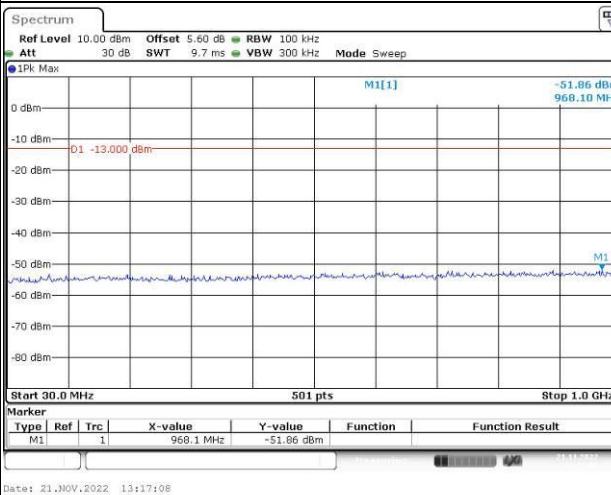
Channel

3MHz Bandwidth QPSK

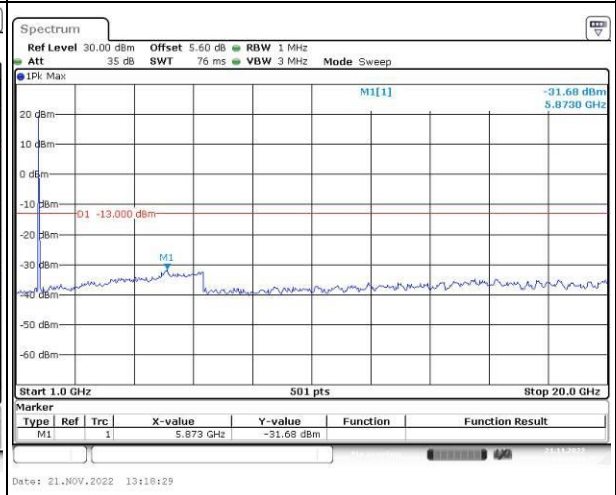
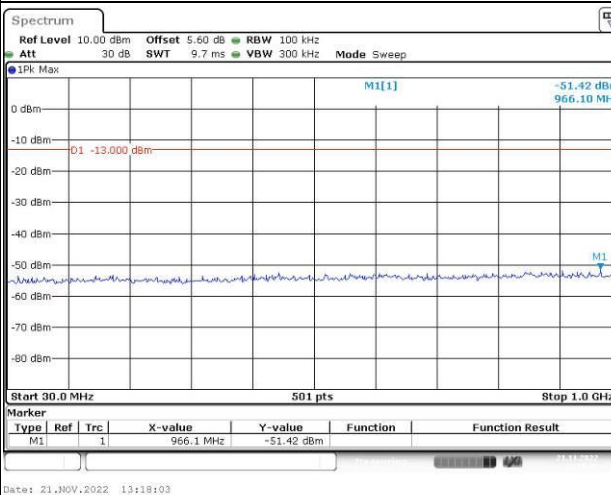
Lowest



Middle



Highest

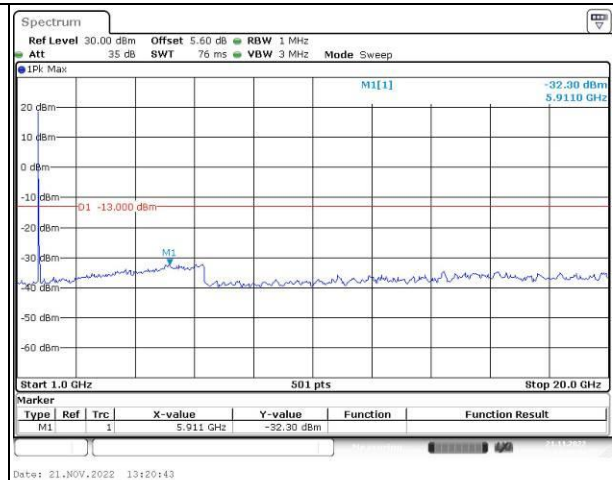
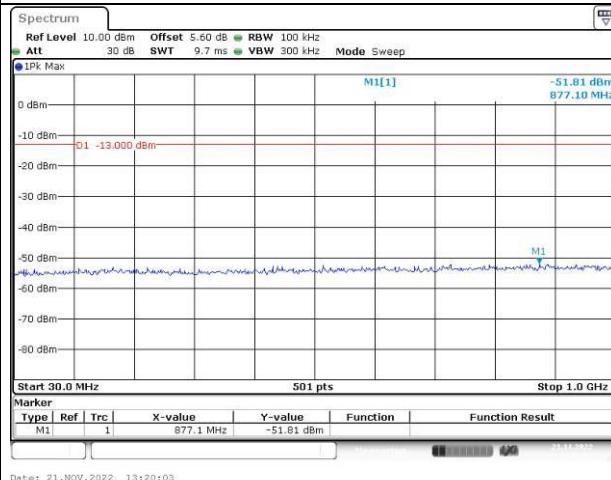


Spurious Emissions at Antenna Terminal

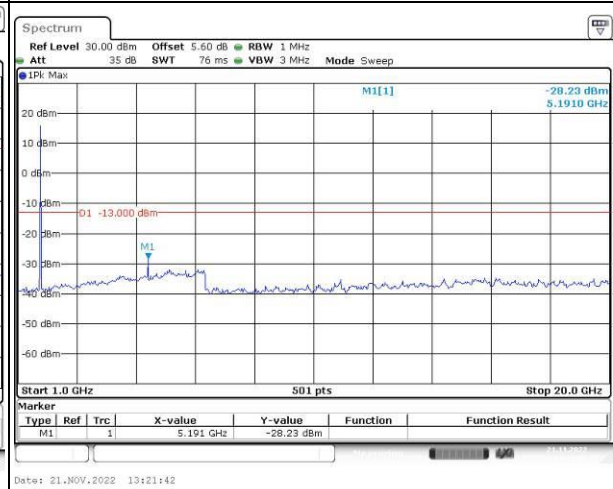
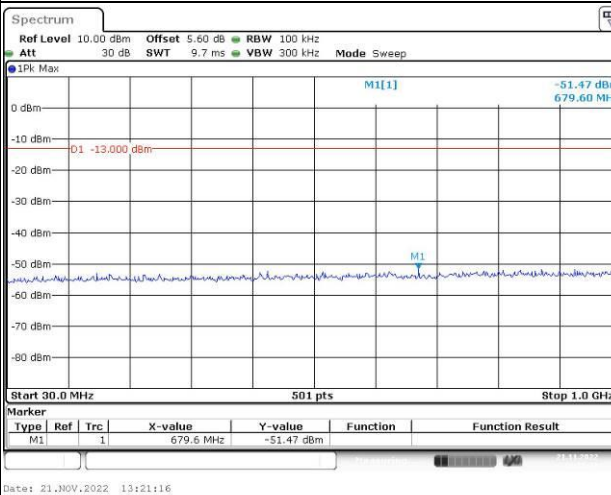
Channel

5MHz Bandwidth QPSK

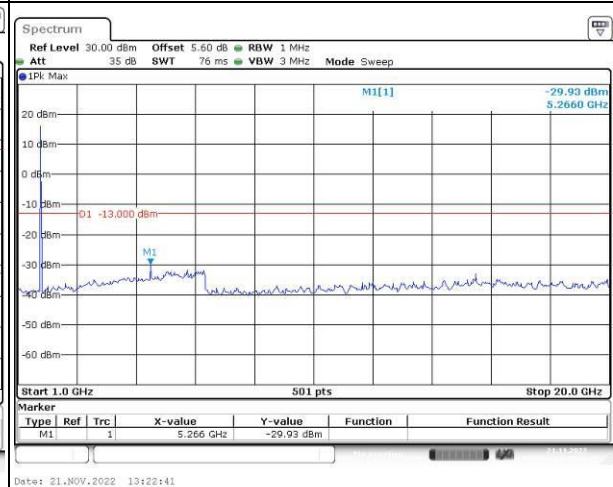
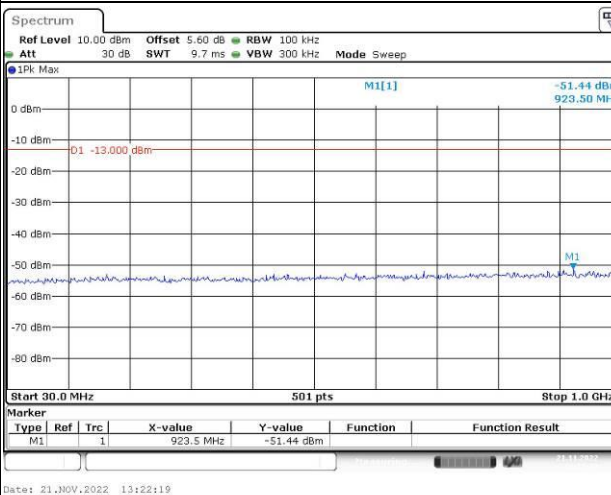
Lowest



Middle



Highest

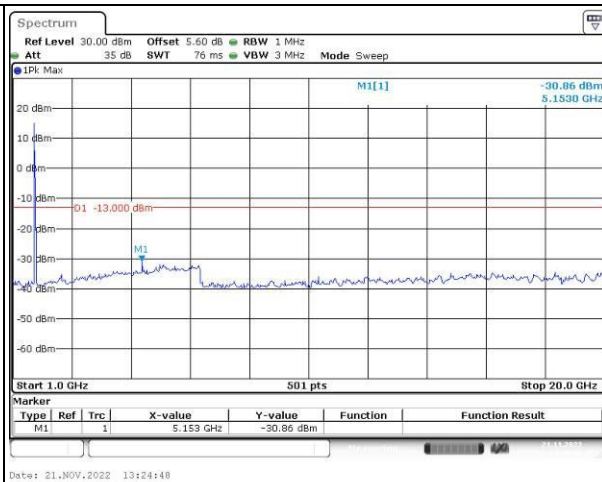
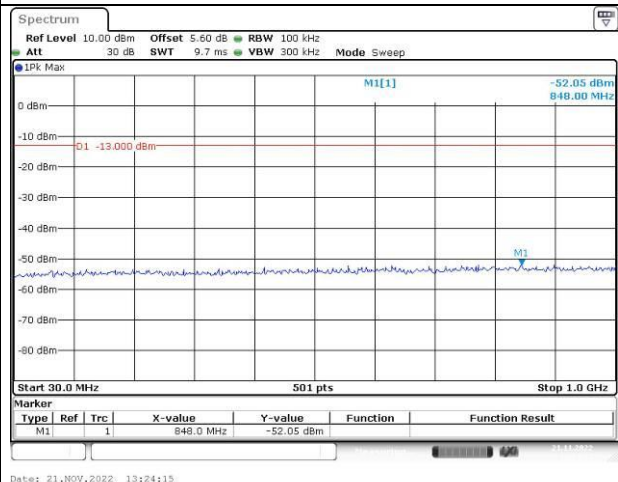


Spurious Emissions at Antenna Terminal

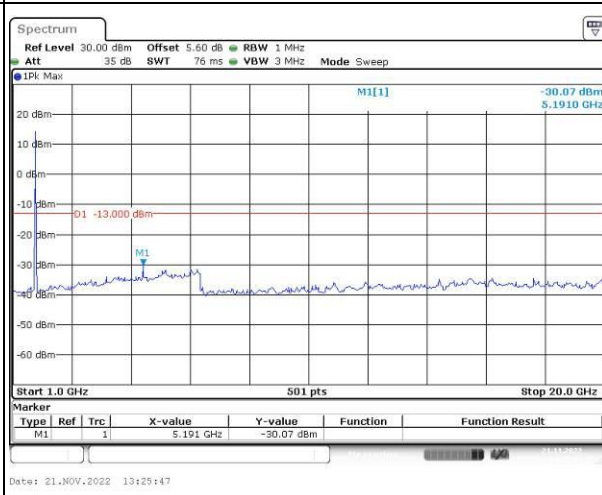
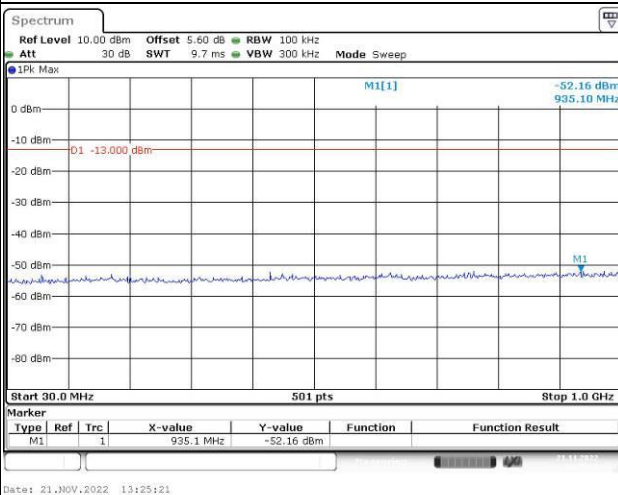
Channel

10MHz Bandwidth QPSK

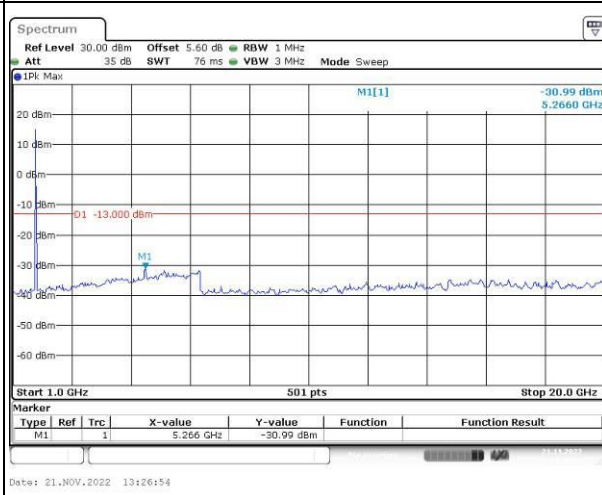
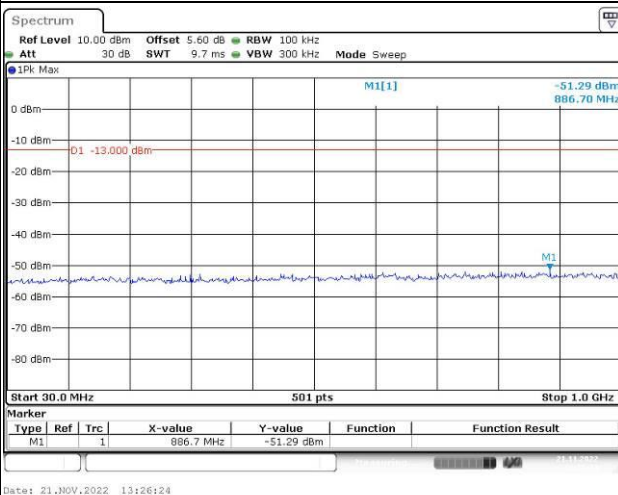
Lowest



Middle



Highest

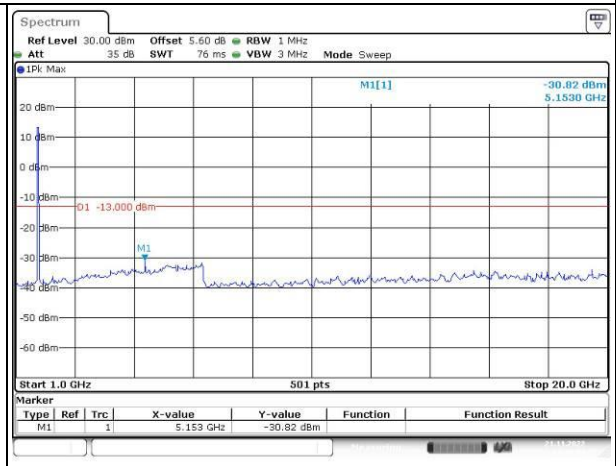
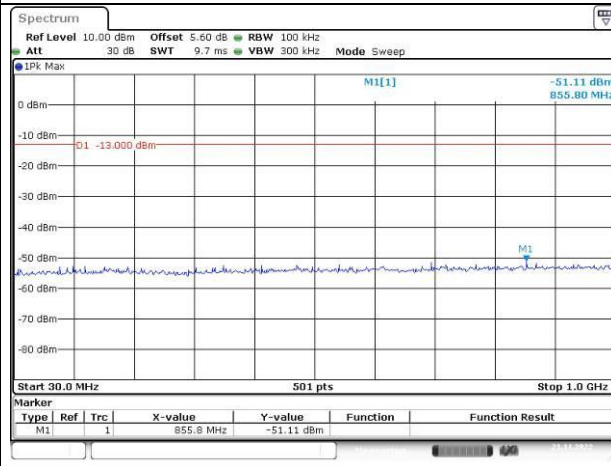


Spurious Emissions at Antenna Terminal

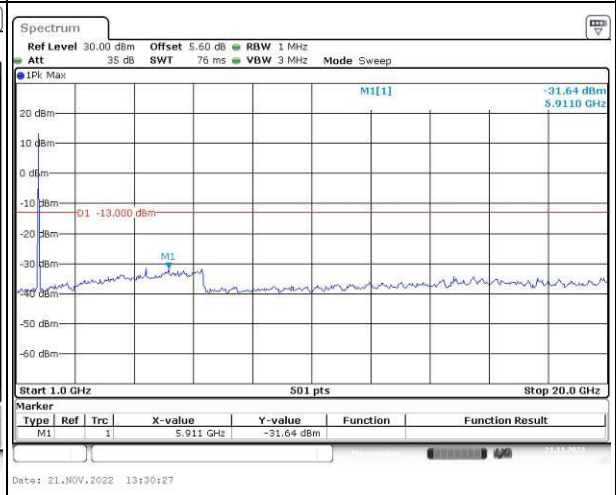
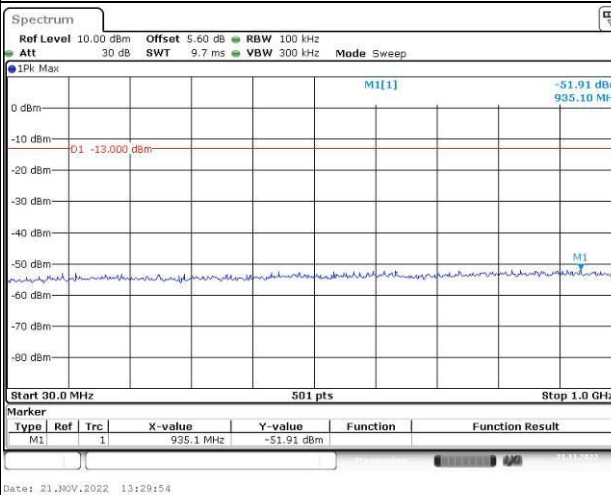
Channel

15MHz Bandwidth QPSK

Lowest



Middle



Highest

