

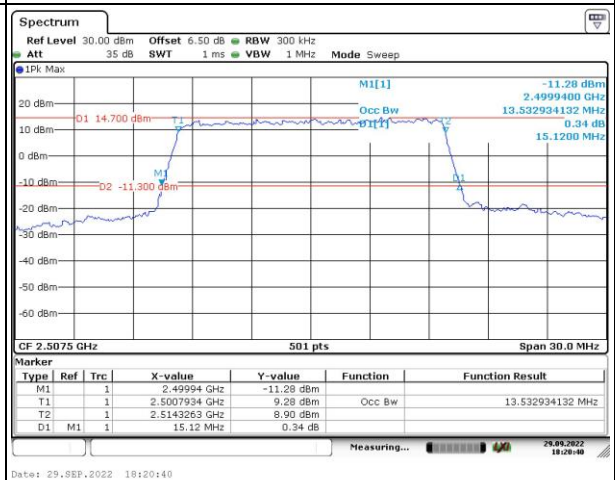
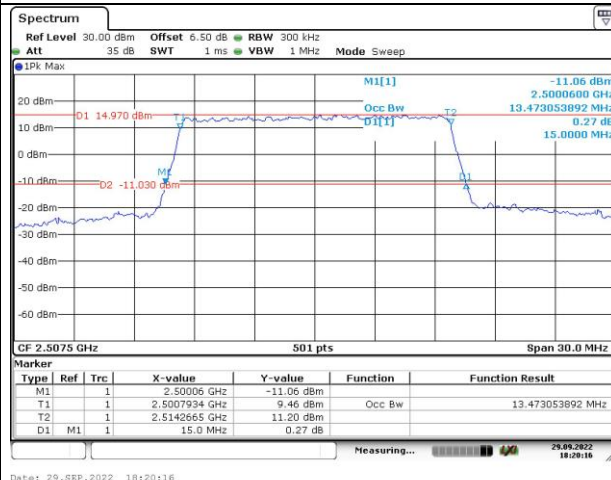
Occupied Bandwidth

Channel

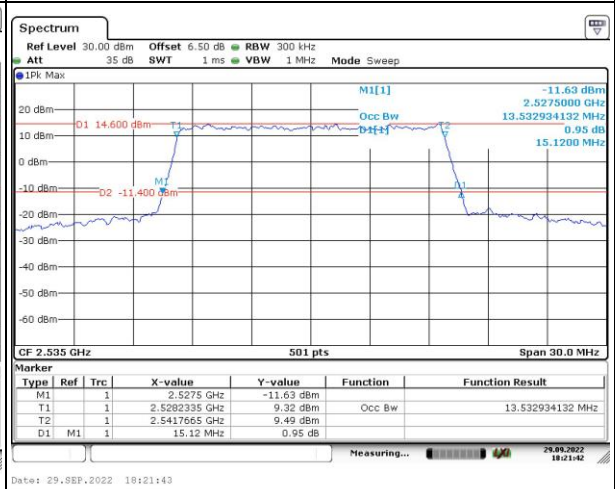
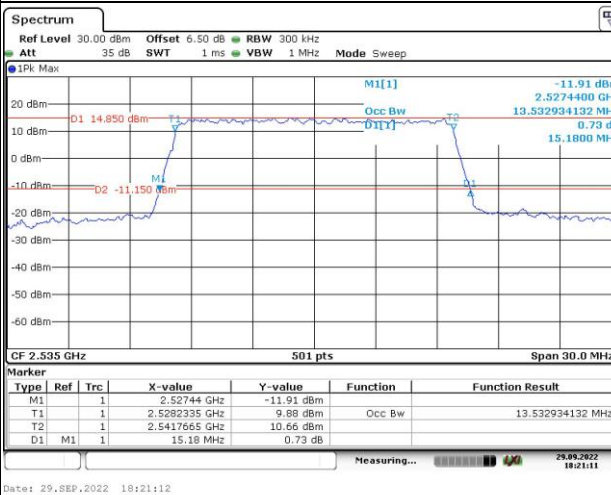
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

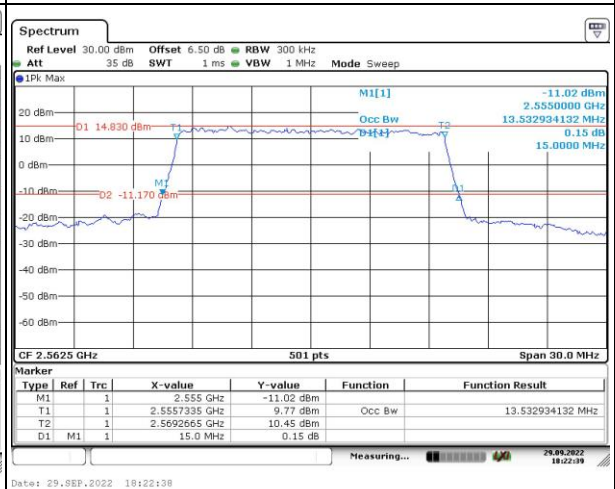
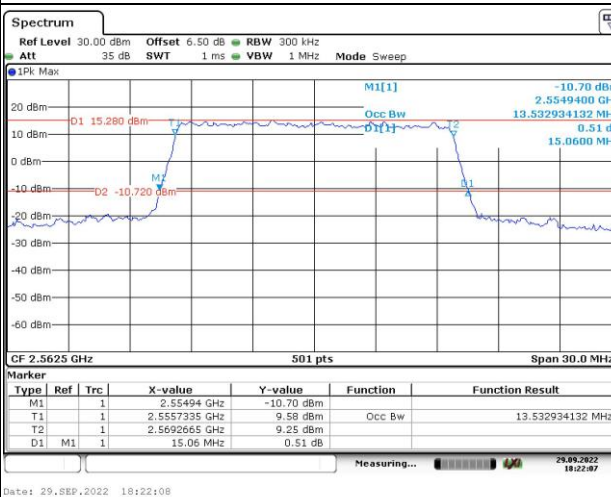
Lowest



Middle



Highest



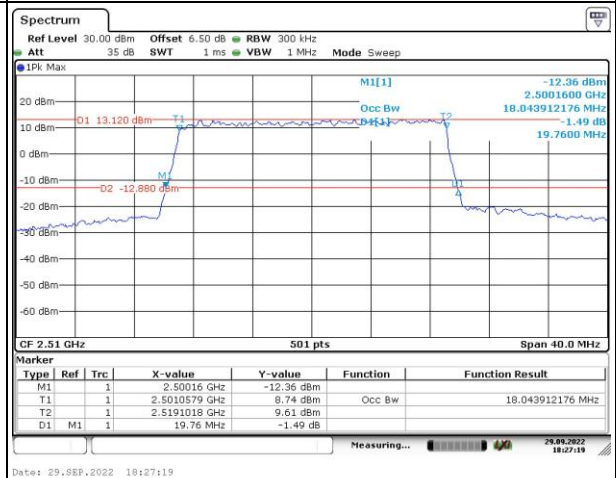
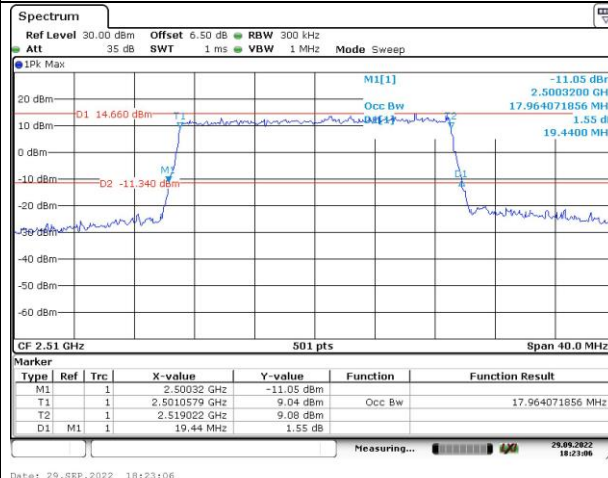
Occupied Bandwidth

Channel

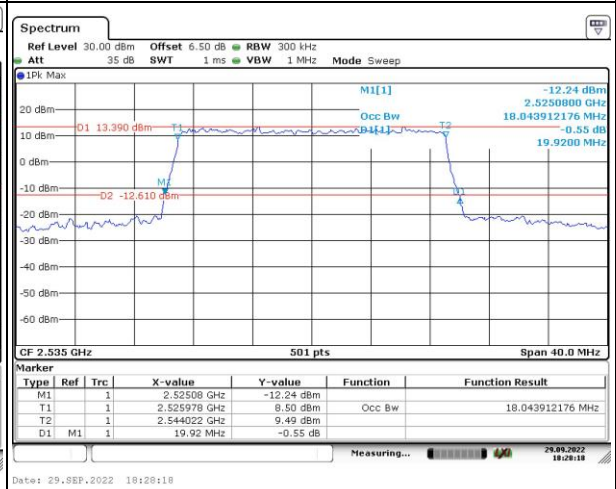
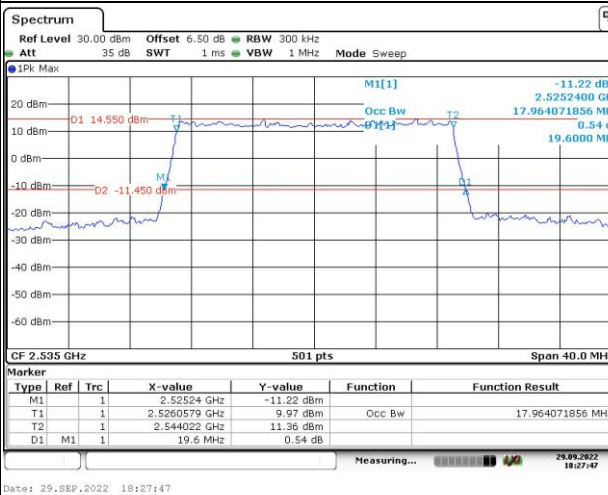
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

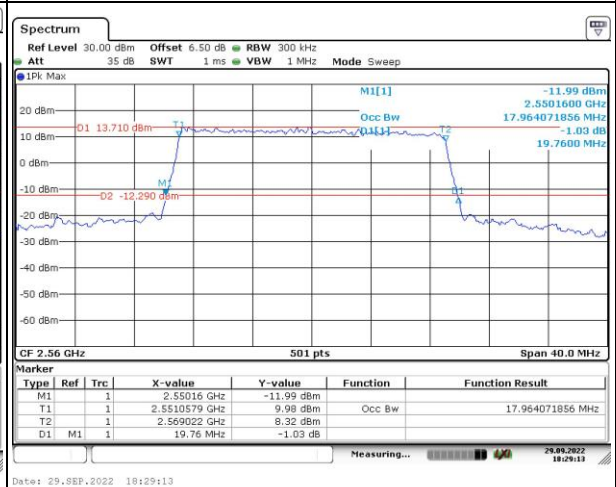
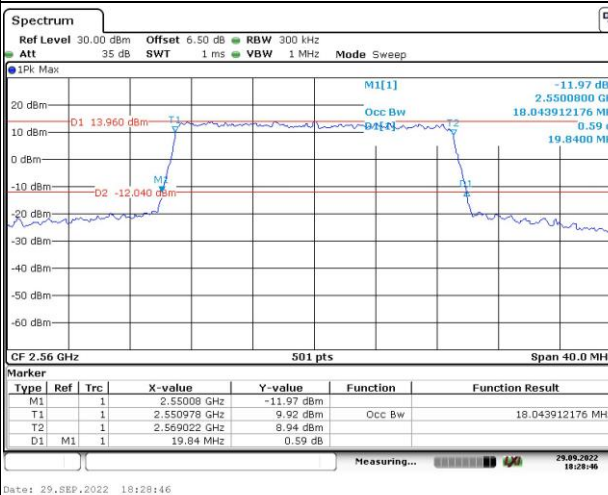
Lowest



Middle



Highest

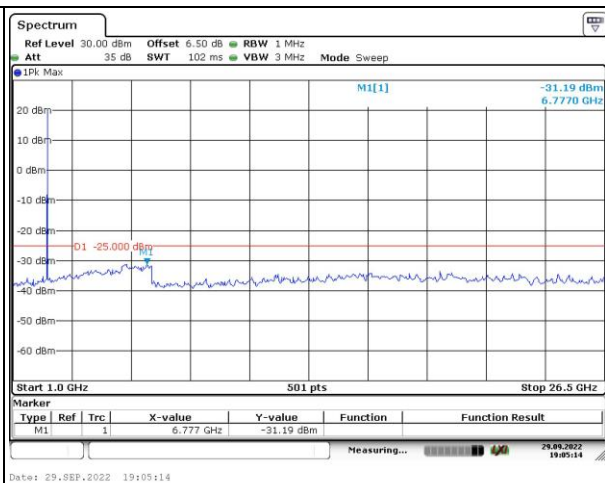
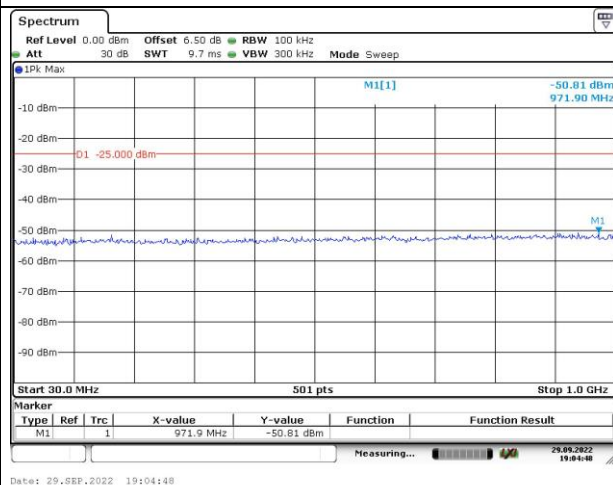


Spurious Emissions at Antenna Terminal

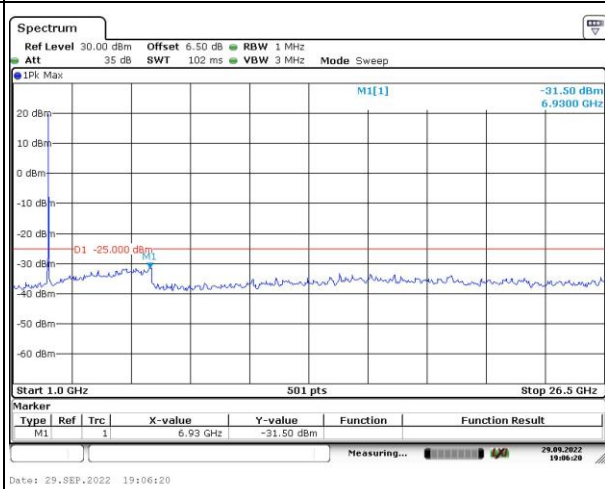
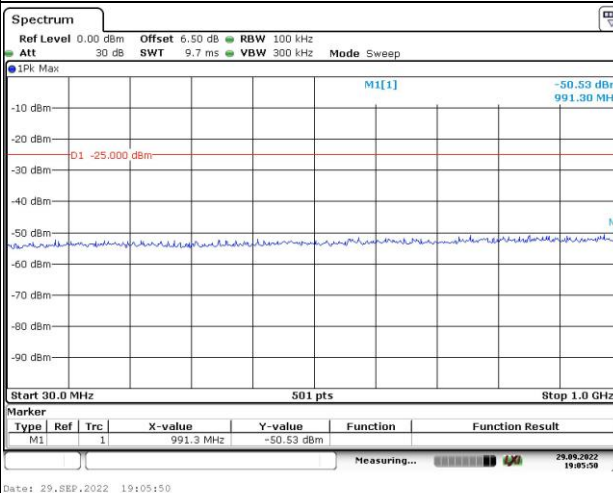
Channel

5MHz Bandwidth QPSK

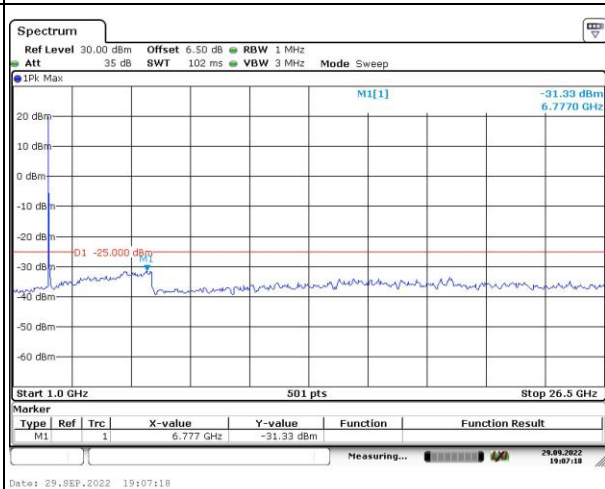
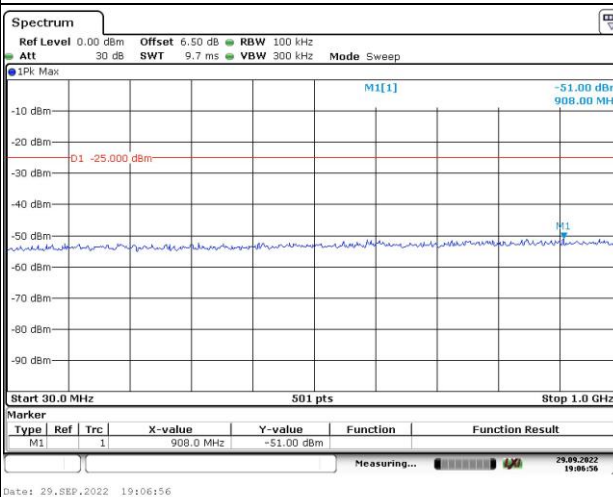
Lowest



Middle



Highest

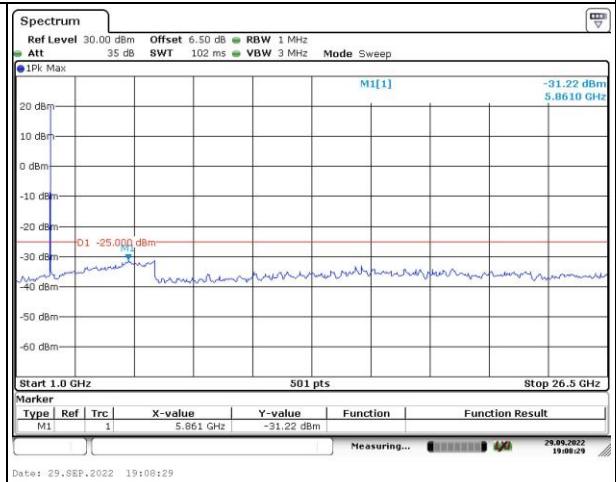
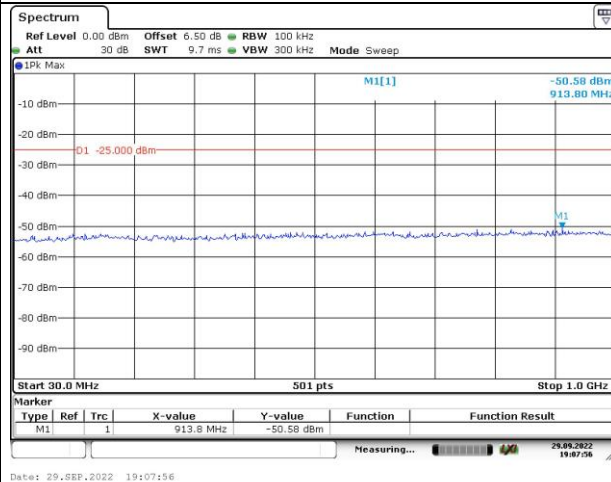


Spurious Emissions at Antenna Terminal

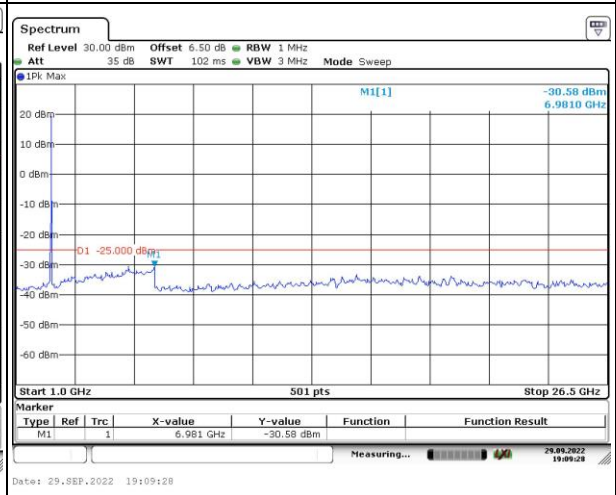
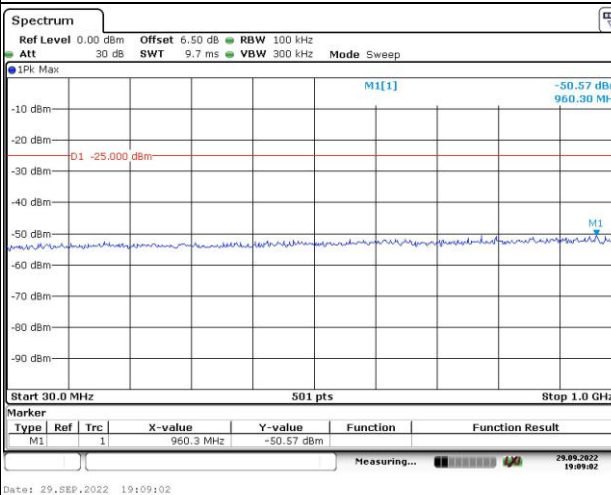
Channel

10MHz Bandwidth QPSK

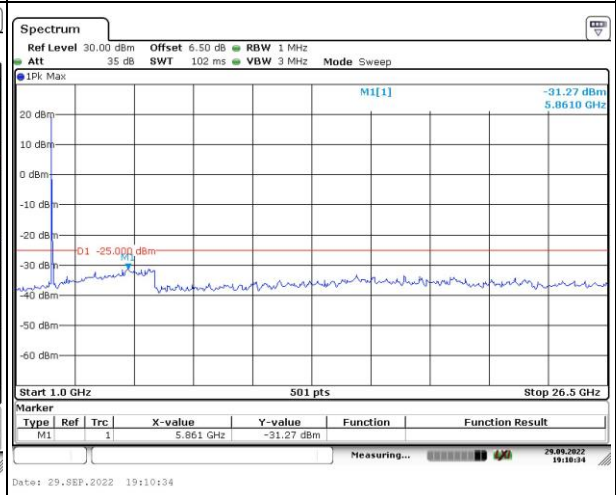
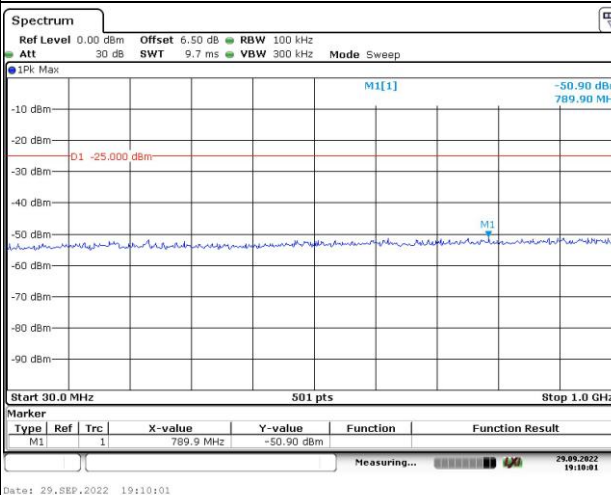
Lowest



Middle



Highest

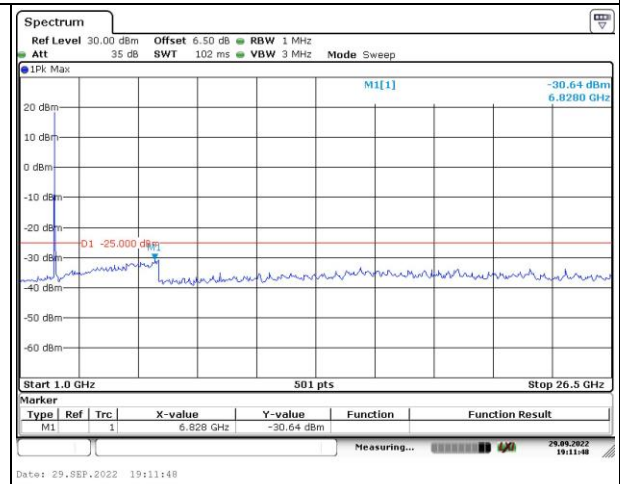
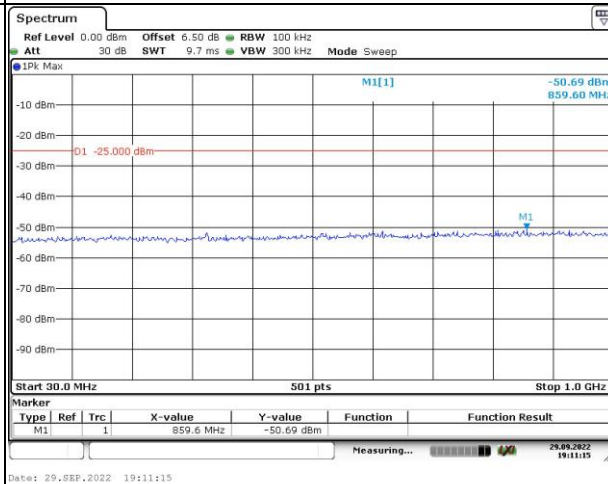


Spurious Emissions at Antenna Terminal

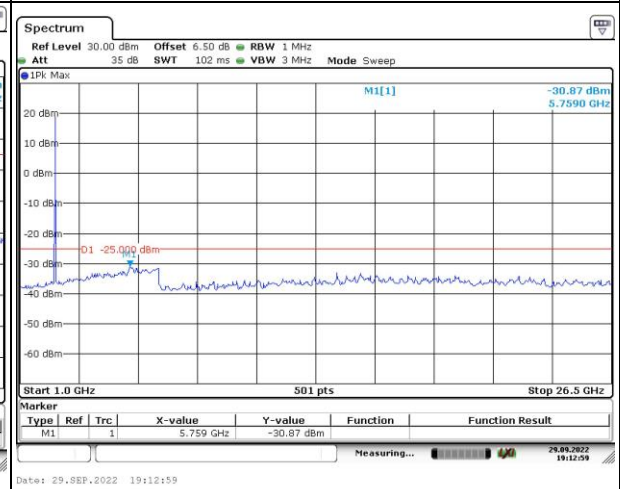
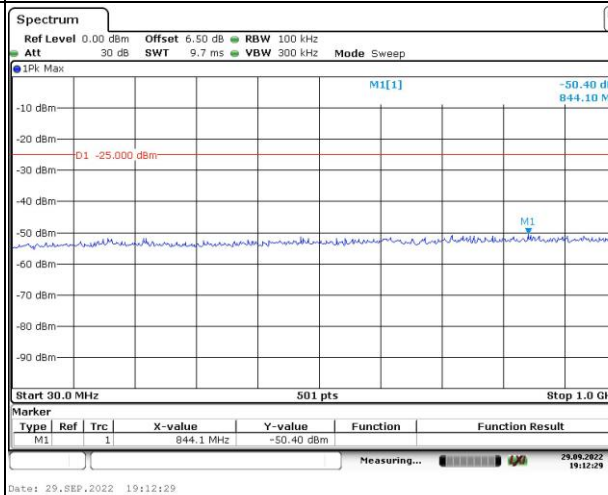
Channel

15MHz Bandwidth QPSK

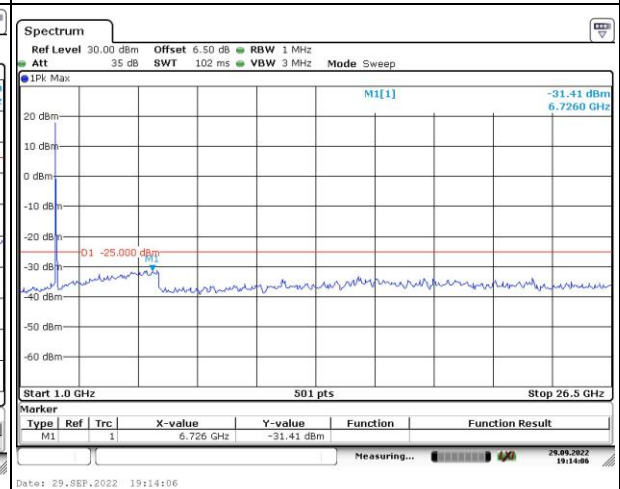
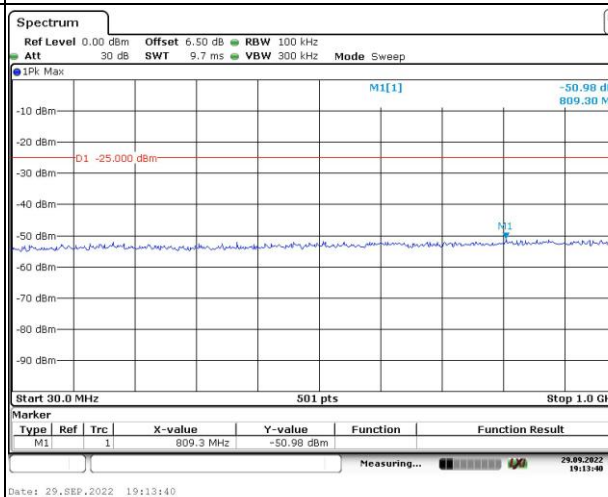
Lowest



Middle



Highest

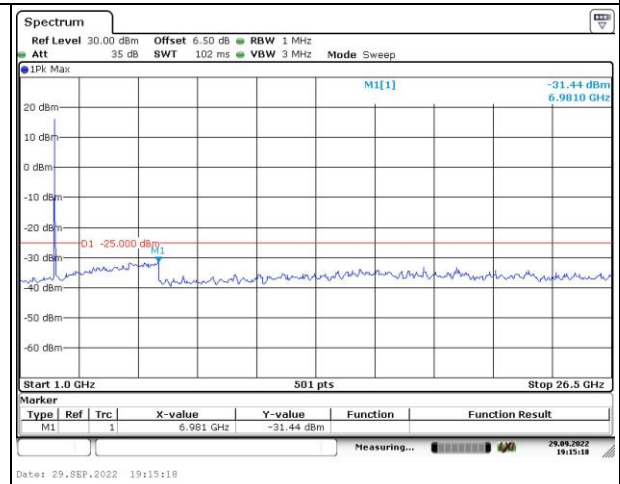
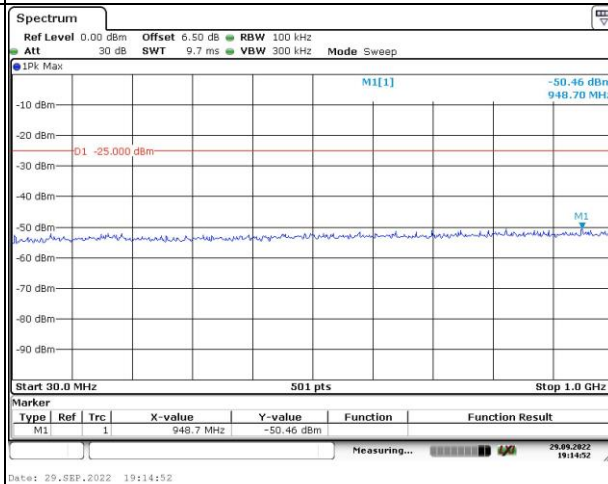


Spurious Emissions at Antenna Terminal

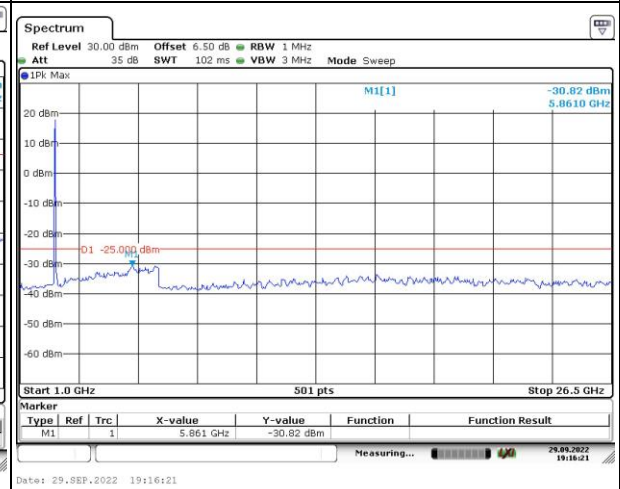
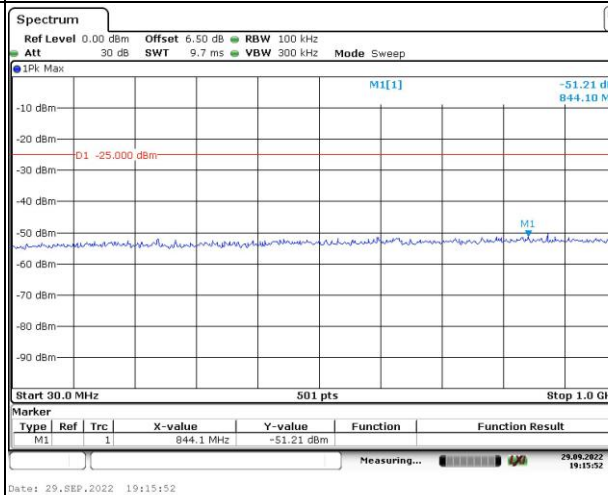
Channel

20MHz Bandwidth QPSK

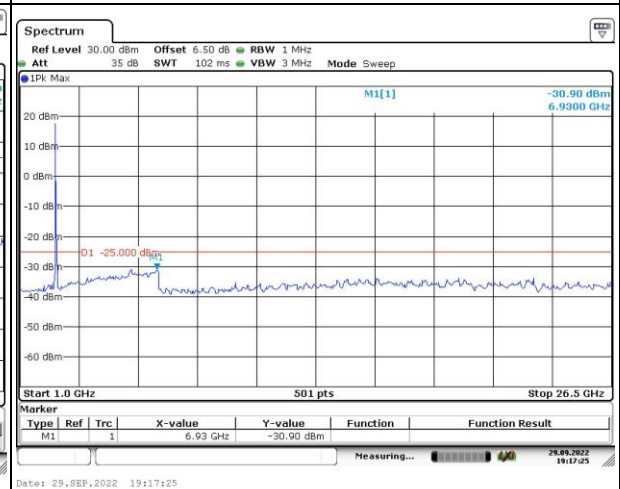
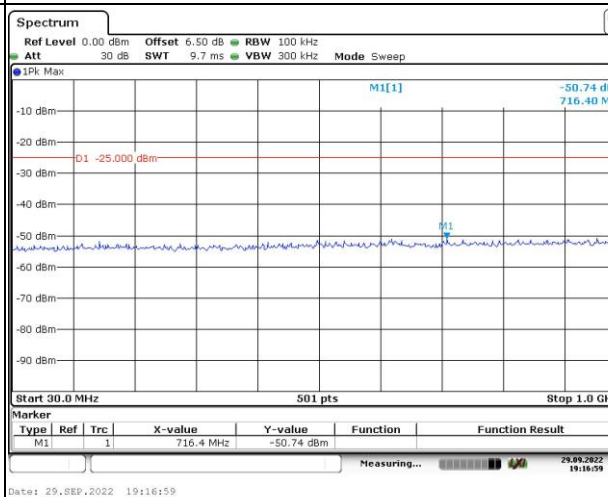
Lowest



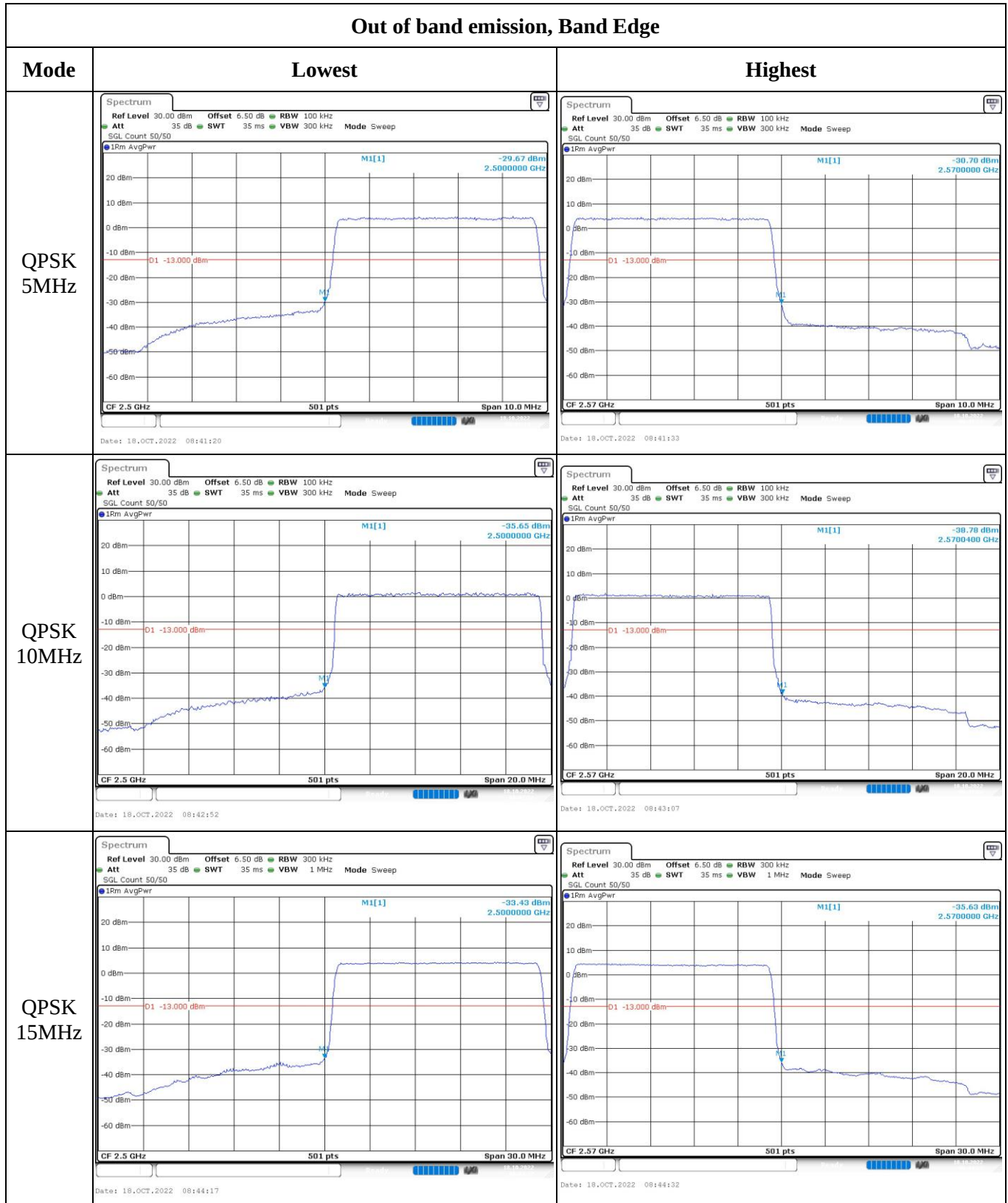
Middle



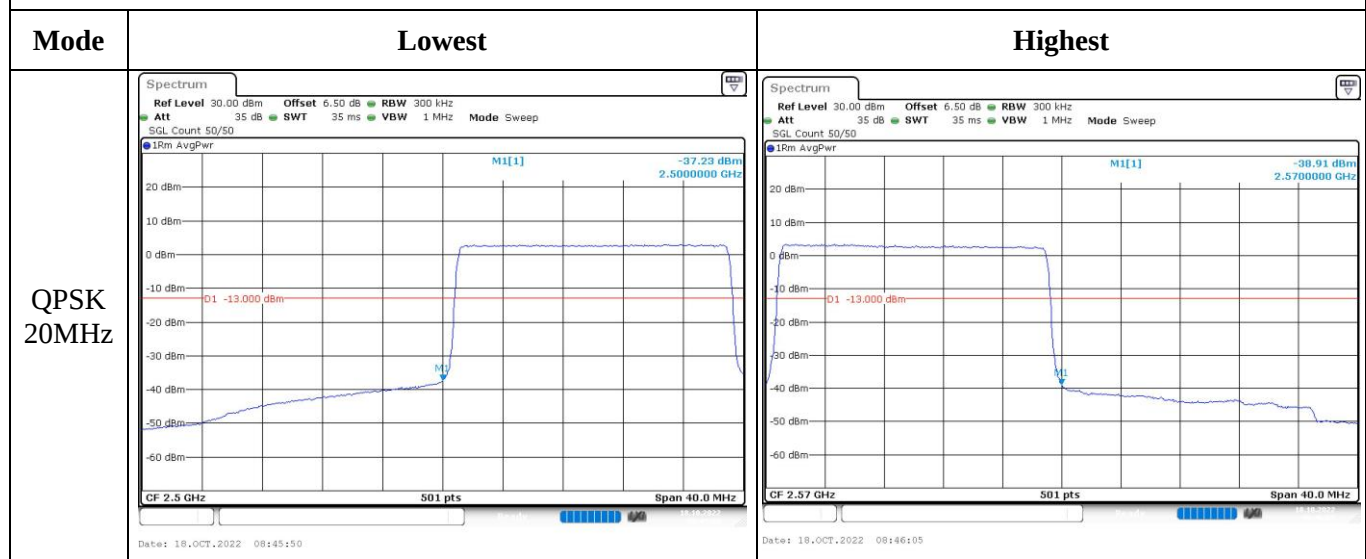
Highest



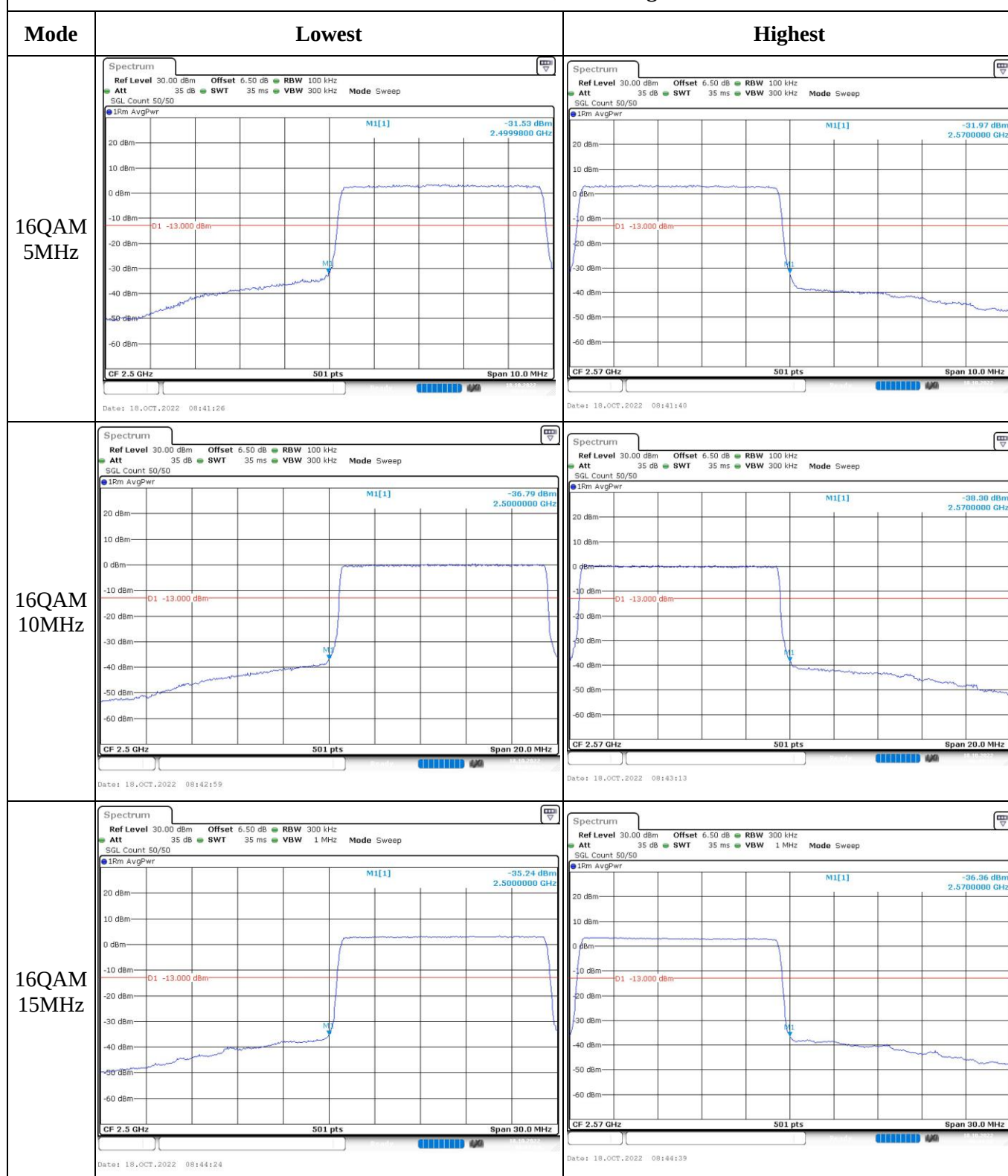
Out of band emission, Band Edge



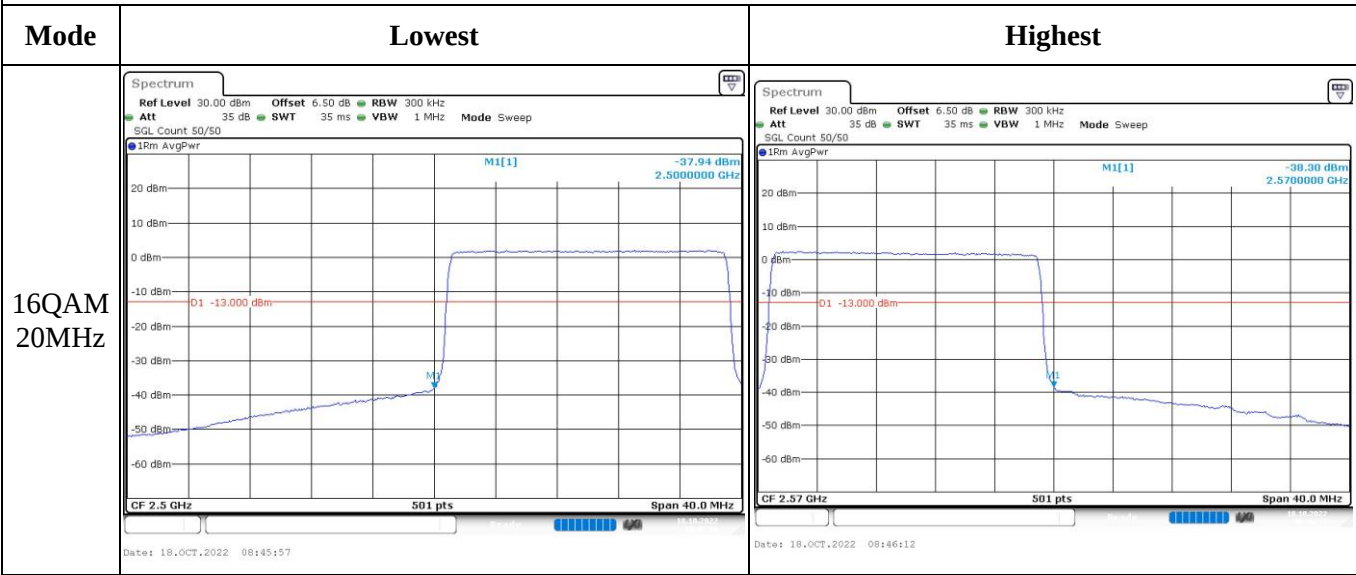
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.10 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	CR22090019-RF-S1	Test Date:	2022-9-20-2022- 10-18
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rinka Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.9	Relative Humidity: (%)	48.6	ATM Pressure: (kPa)	100.2
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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	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
UNI-T	Multimeter	UT39A+	C210582554	2022-09-23	2023-09-23
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).

EUT Information@ LTE Band 66▲:

Antenna Gain G_T (dBi):	0.52	Path Loss L_C (dB):	0.3
Operation Voltage(V_{DC}):			
Lowest:	3.6	Normal:	3.85
		Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

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	21.9	22.2	21.98	22.44	30
	RB1#3	21.93	22.22	22.04		
	RB1#5	21.98	22.22	22.05		
	RB3#0	21.95	22.04	22		
	RB3#3	21.92	22.01	21.98		
	RB6#0	21.03	20.93	20.95		
1.4MHz 16QAM	RB1#0	21.65	20.94	21.8	22.07	30
	RB1#3	21.78	20.97	21.85		
	RB1#5	21.76	21.02	21.81		
	RB3#0	20.91	21	21.14		
	RB3#3	20.92	21	21.21		
	RB6#0	20.19	20.28	20.26		
3MHz QPSK	RB1#0	20.93	22.19	21.88	22.52	30
	RB1#8	20.93	22.24	21.96		
	RB1#14	21.02	22.3	21.93		
	RB6#0	19.58	20.91	20.87		
	RB6#9	19.64	20.99	20.94		
	RB15#0	19.64	20.9	21		
3MHz 16QAM	RB1#0	19.76	20.91	21.42	21.69	30
	RB1#8	19.74	20.93	21.45		
	RB1#14	19.81	20.95	21.47		
	RB6#0	20.1	20.25	19.99		
	RB6#9	20.13	20.26	19.98		
	RB15#0	20.04	20.07	20.24		
5MHz QPSK	RB1#0	20.72	22	21.85	22.34	30
	RB1#13	20.67	21.96	21.93		
	RB1#24	20.72	22.12	21.93		
	RB15#0	21.12	20.86	20.89		
	RB15#10	21.17	20.94	20.93		
	RB25#0	21.1	20.86	20.87		
5MHz 16QAM	RB1#0	21.16	21.03	20.62	21.38	30
	RB1#13	21.16	21.06	20.65		
	RB1#24	21.13	21.07	20.75		
	RB15#0	20.13	19.86	20.09		
	RB15#10	20.07	19.86	20.05		
	RB25#0	20.15	19.97	19.97		
10MHz QPSK	RB1#0	21.98	22.04	21.74	22.26	30
	RB1#25	21.97	21.98	21.78		
	RB1#49	21.97	21.98	21.86		

	RB25#0	20.92	20.88	20.87		
	RB25#25	20.97	20.98	20.98		
	RB50#0	20.87	20.96	20.88		
10MHz 16QAM	RB1#0	21.03	20.4	21.15	21.48	30
	RB1#25	20.98	20.48	21.23		
	RB1#49	20.93	20.47	21.26		
	RB25#0	20.17	20.05	20.08		
	RB25#25	20.13	20.11	20.09		
	RB50#0	20.13	20.06	20.06		
15MHz QPSK	RB1#0	22.02	22.06	21.77	22.29	30
	RB1#38	22	21.95	21.83		
	RB1#74	22.07	22.02	21.89		
	RB36#0	21.05	20.88	20.89		
	RB36#39	21.01	20.93	20.96		
	RB75#0	21.03	20.97	20.99		
15MHz 16QAM	RB1#0	21.9	21.42	21.26	22.12	30
	RB1#38	21.85	21.31	21.33		
	RB1#74	21.84	21.36	21.31		
	RB36#0	20.13	20.08	20.04		
	RB36#39	19.96	20.06	20.02		
	RB75#0	20.04	20.02	20.15		
20MHz QPSK	RB1#0	22.02	22	21.95	22.29	30
	RB1#50	21.95	22	21.88		
	RB1#99	22.07	21.96	22.03		
	RB50#0	20.87	20.9	20.92		
	RB50#50	20.85	20.99	20.81		
	RB100#0	20.86	20.8	20.8		
20MHz 16QAM	RB1#0	20.96	21.82	20.98	22.04	30
	RB1#50	20.96	21.76	21.03		
	RB1#99	21.05	21.79	21.19		
	RB50#0	20.02	20.01	20.08		
	RB50#50	20	20.04	20.12		
	RB100#0	20	20.04	20.01		

Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(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	5.25	3.86	5.3	13
	RB100#0	5.36	4.61	5.25	13
20MHz 16QAM	RB1#0	6	4.99	6.46	13
	RB100#0	6.32	5.51	6.14	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	1.102	1.102	1.102	1.26	1.266	1.26
1.4MHz 16QAM	1.096	1.102	1.108	1.26	1.266	1.272
3MHz QPSK	2.695	2.695	2.695	3.012	3.024	3
3MHz 16QAM	2.695	2.695	2.695	3.012	3.024	3.012
5MHz QPSK	4.511	4.511	4.531	5.02	5.00	5.00
5MHz 16QAM	4.551	4.551	4.511	5.02	5.04	4.98
10MHz QPSK	8.982	8.942	8.942	9.76	9.80	9.80
10MHz 16QAM	8.982	8.982	8.942	9.76	9.88	9.76
15MHz QPSK	13.473	13.533	13.533	15.00	15.00	15.12
15MHz 16QAM	13.533	13.533	13.533	15.06	15.12	15.00
20MHz QPSK	18.044	18.044	17.964	19.52	19.92	19.60
20MHz 16QAM	17.964	17.964	18.044	19.84	19.68	19.68
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.

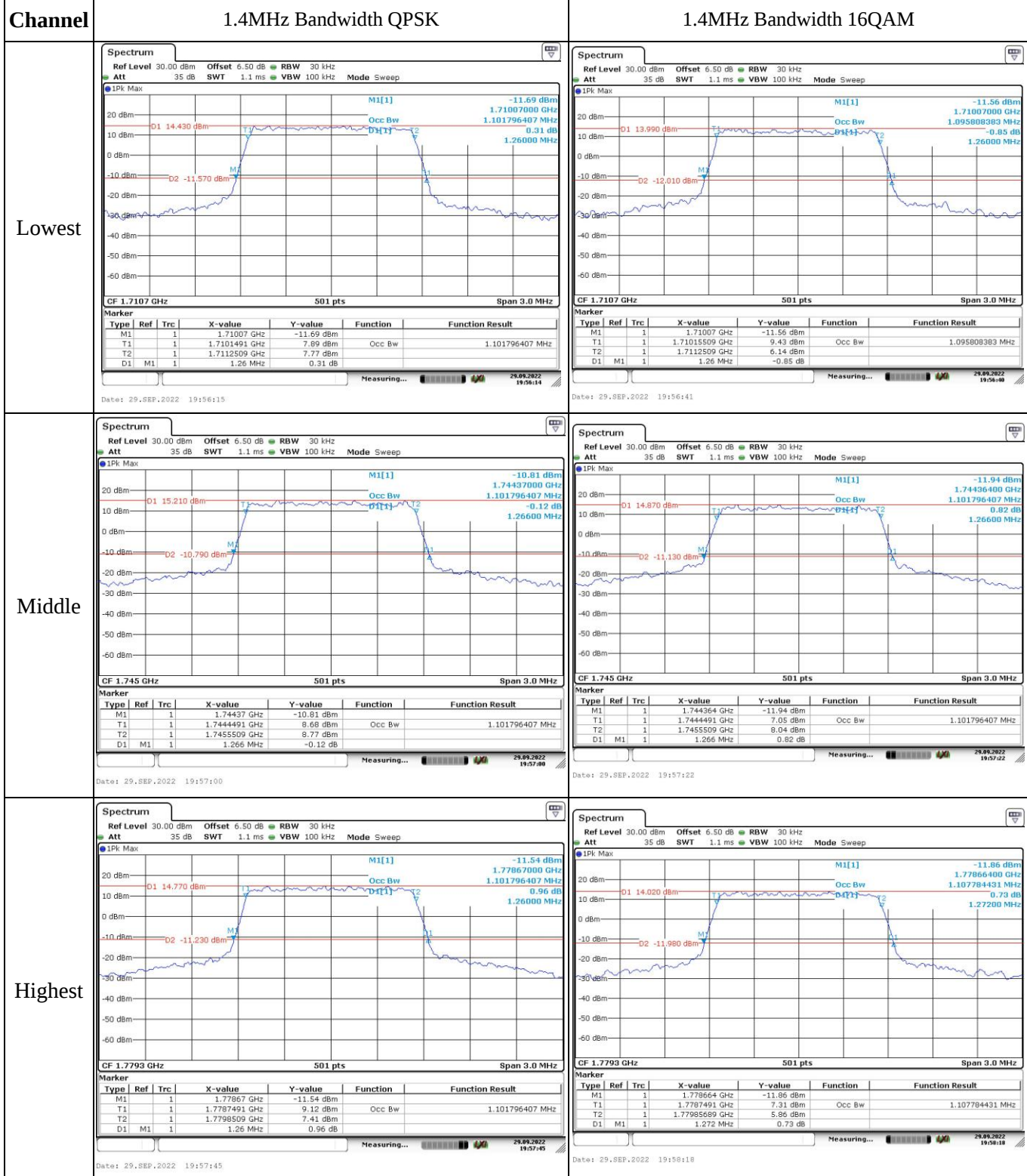
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

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	1710.4474	1710.00	1779.6179	1780
	-20	3.85	1710.4414	1710.00	1779.6176	1780
	-10	3.85	1710.4388	1710.00	1779.6161	1780
	0	3.85	1710.4323	1710.00	1779.6151	1780
	10	3.85	1710.4165	1710.00	1779.6092	1780
	20	3.85	1710.4058	1710.00	1779.6022	1780
	30	3.85	1710.4993	1710.00	1779.6945	1780
	40	3.85	1710.4979	1710.00	1779.6865	1780
	50	3.85	1710.4974	1710.00	1779.6783	1780
Frequency Stability vs. Voltage	20	3.6	1710.4808	1710.00	1779.6751	1780
	20	4.4	1710.4643	1710.00	1779.6745	1780
					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	1710.4664	1710.00	1779.6440	1780
	-20	3.85	1710.4495	1710.00	1779.6289	1780
	-10	3.85	1710.4412	1710.00	1779.6270	1780
	0	3.85	1710.4303	1710.00	1779.6180	1780
	10	3.85	1710.4124	1710.00	1779.6122	1780
	20	3.85	1710.4058	1710.00	1779.6102	1780
	30	3.85	1710.4946	1710.00	1779.6045	1780
	40	3.85	1710.4820	1710.00	1779.6917	1780
	50	3.85	1710.4674	1710.00	1779.6799	1780
Frequency Stability vs. Voltage	20	3.6	1710.4612	1710.00	1779.6726	1780
	20	4.4	1710.4566	1710.00	1779.6657	1780
					Result:	Pass

Test Plots(Note:6.5dB is the Insertion loss of the RF cable, coaxial tee connector and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



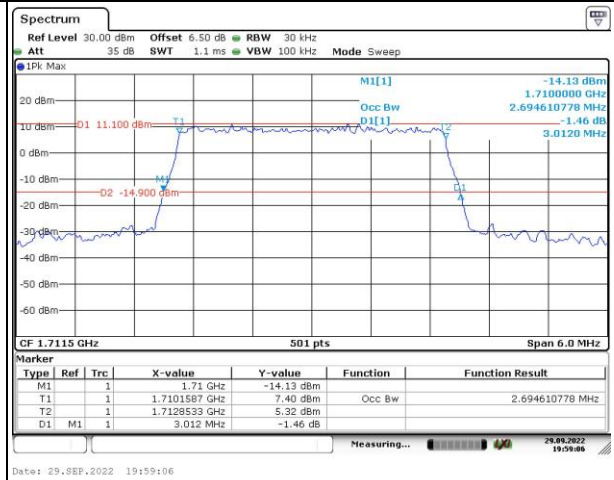
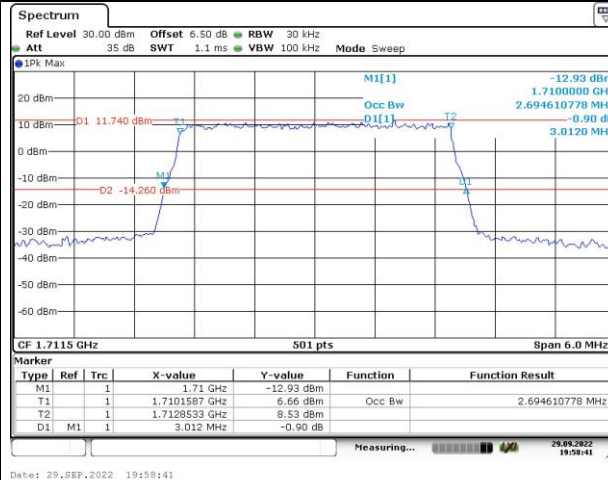
Occupied Bandwidth

Channel

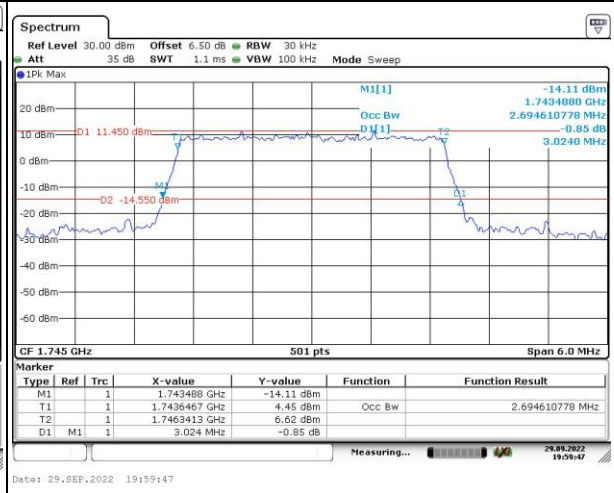
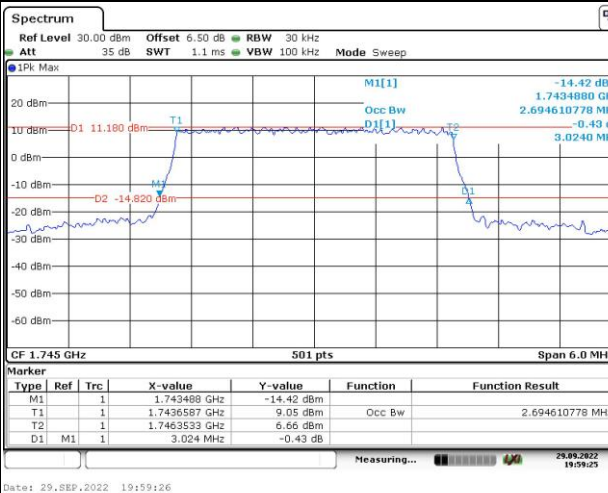
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

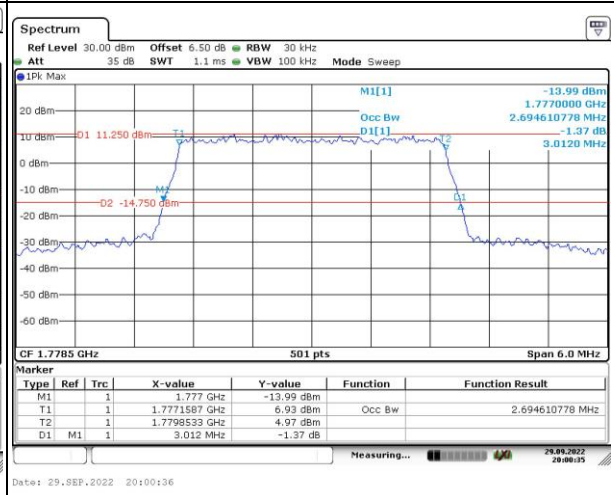
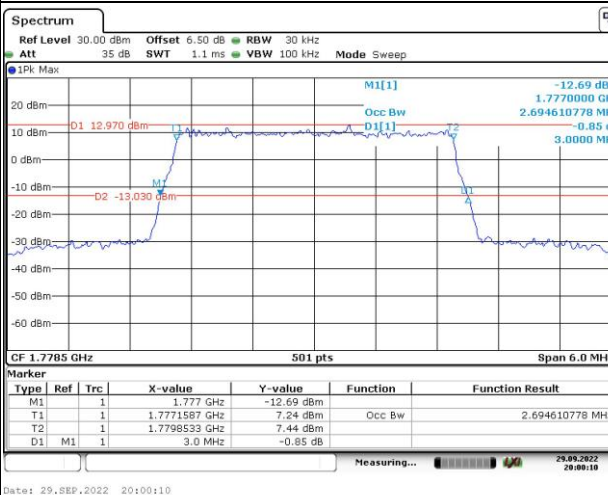
Lowest



Middle



Highest



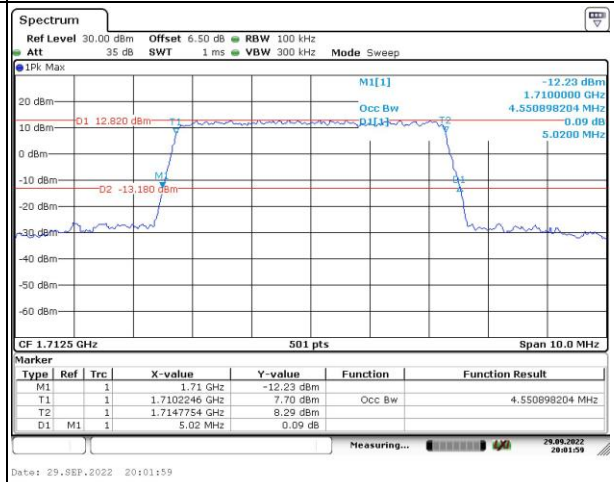
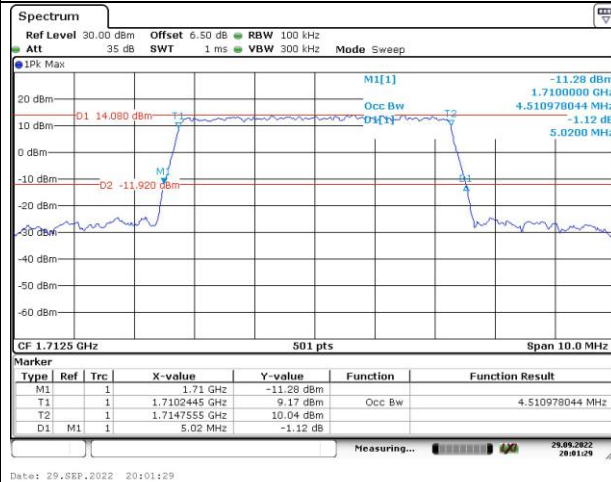
Occupied Bandwidth

Channel

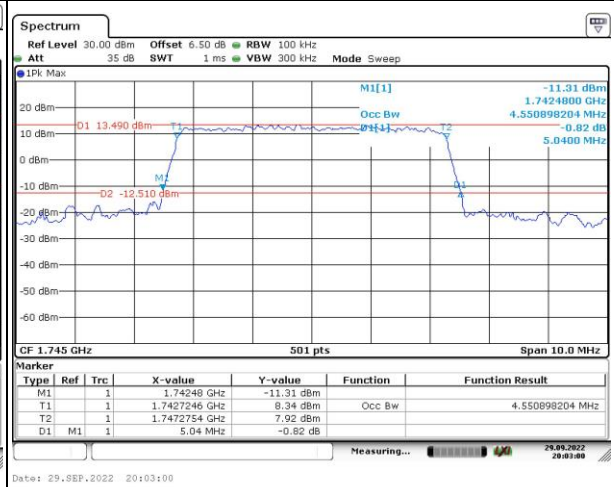
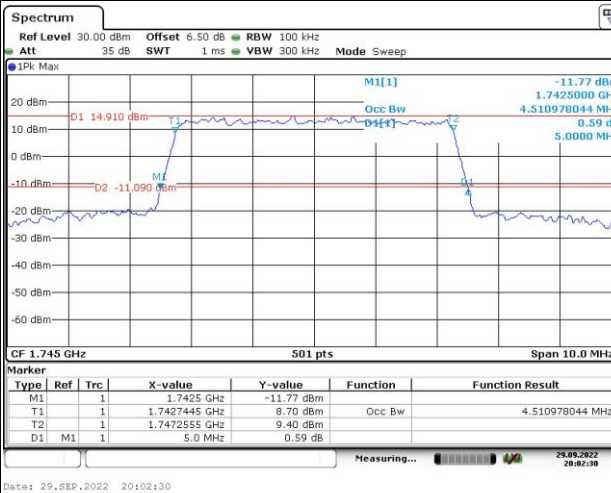
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

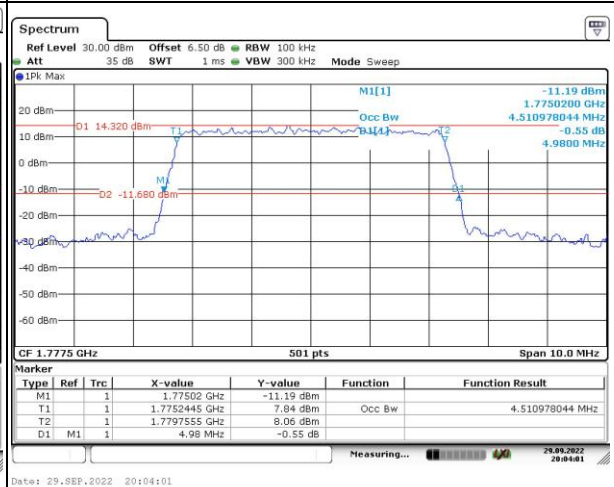
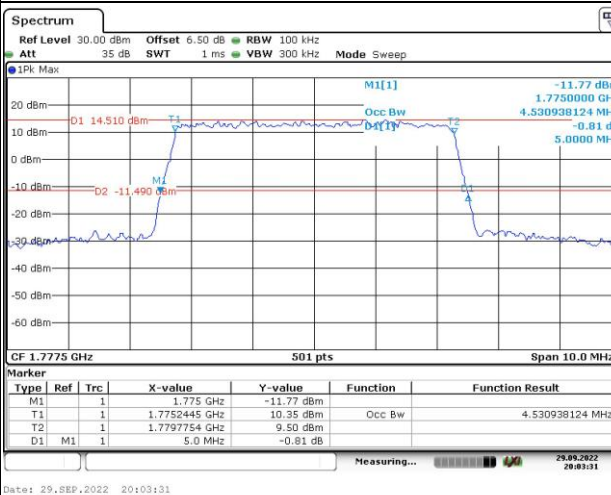
Lowest



Middle



Highest



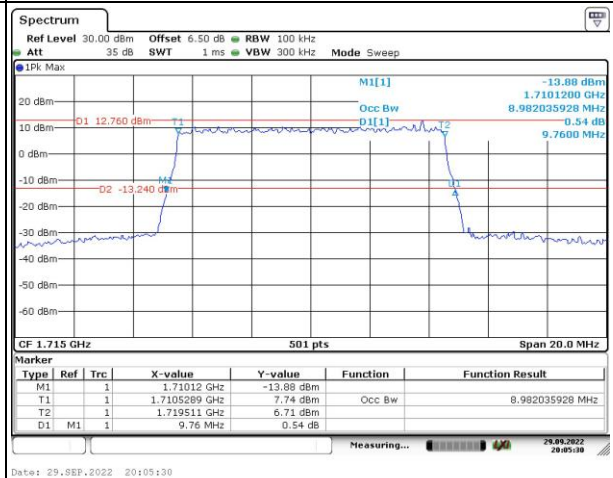
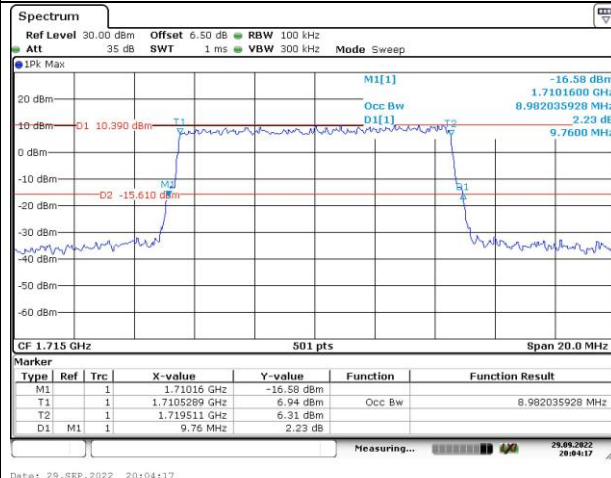
Occupied Bandwidth

Channel

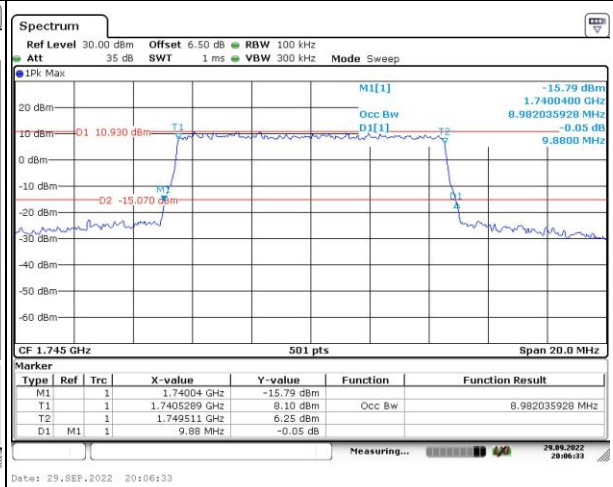
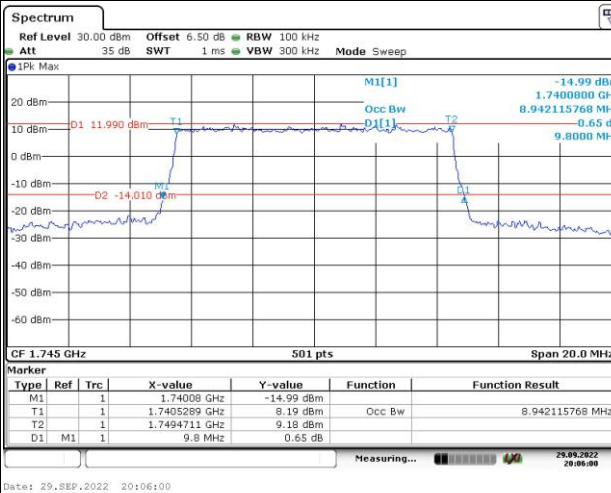
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

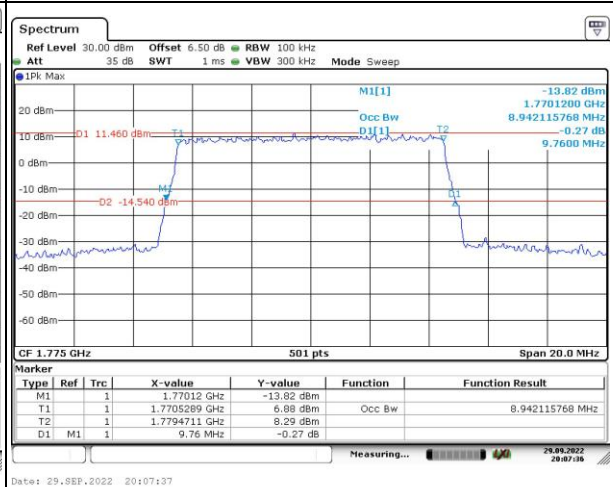
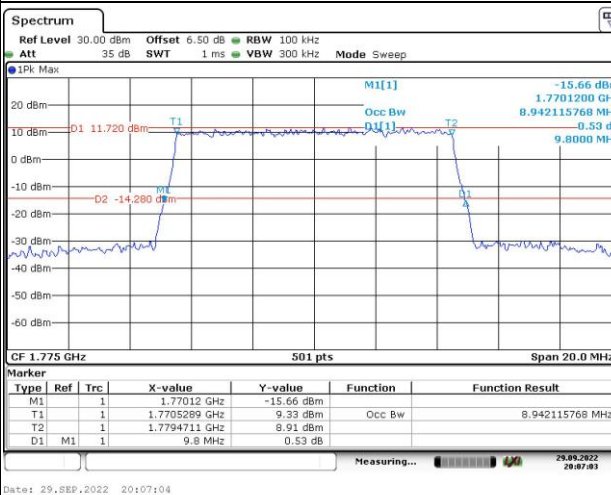
Lowest



Middle



Highest



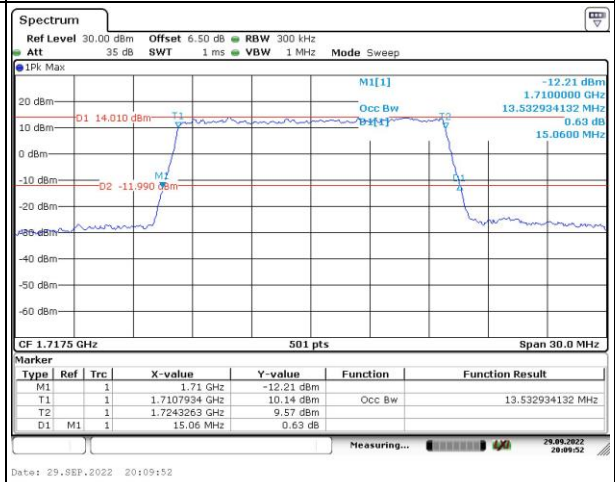
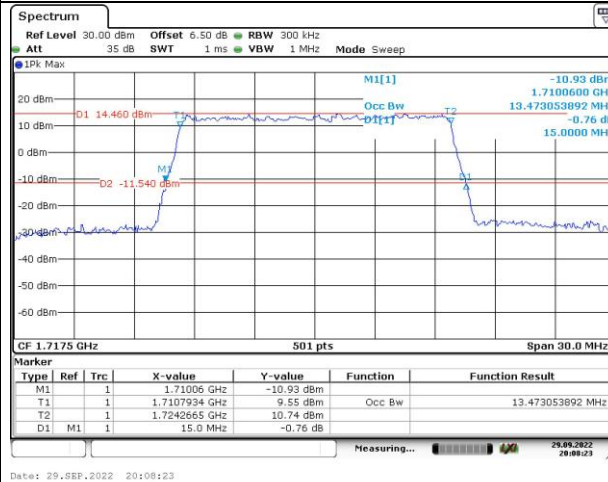
Occupied Bandwidth

Channel

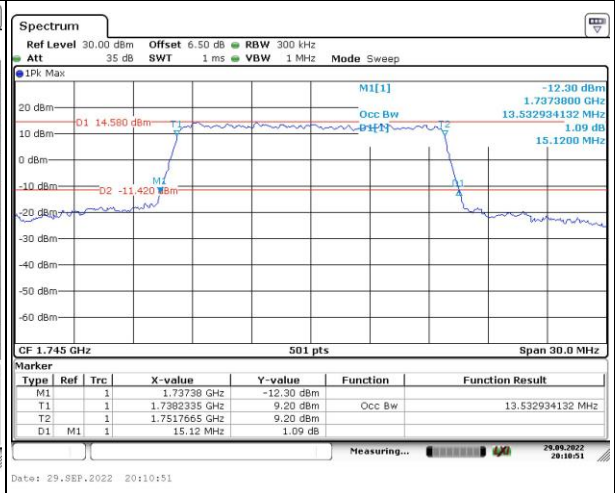
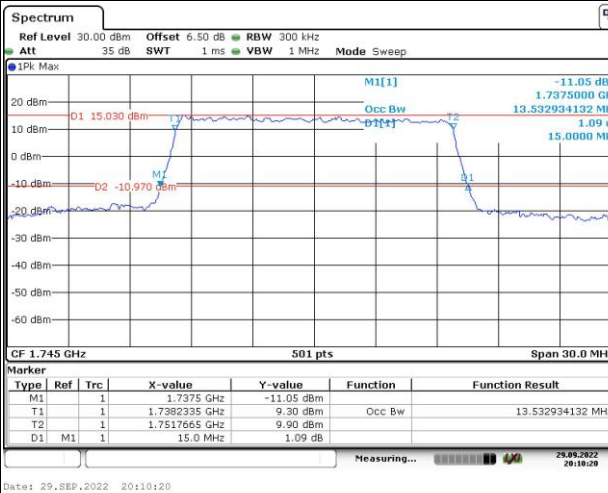
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

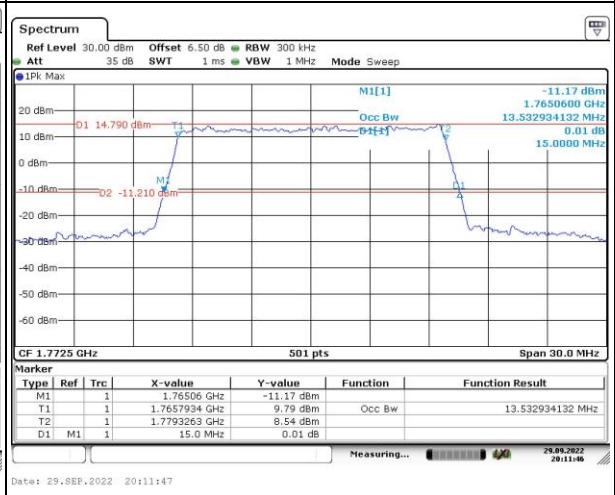
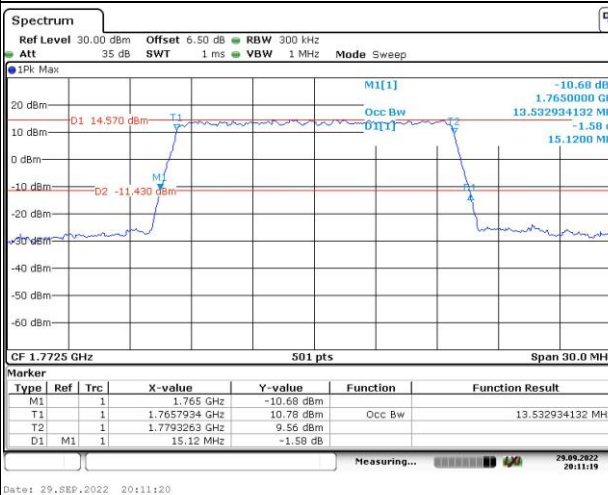
Lowest



Middle



Highest



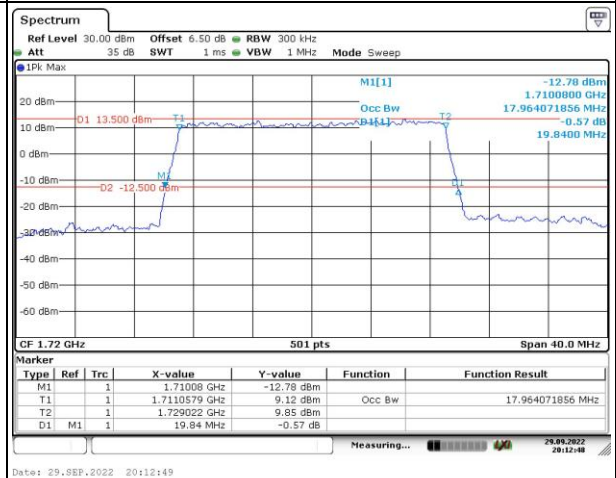
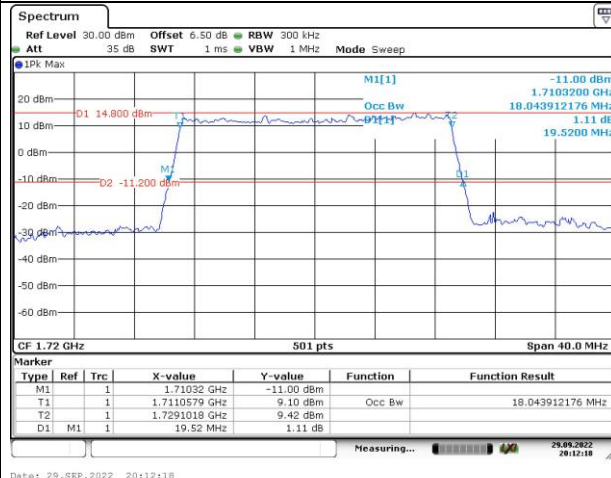
Occupied Bandwidth

Channel

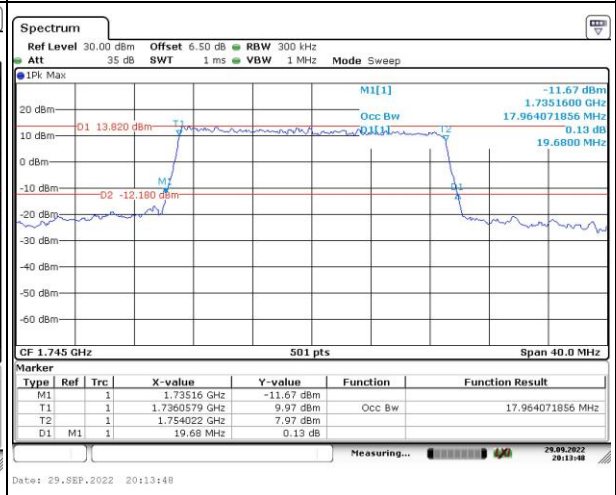
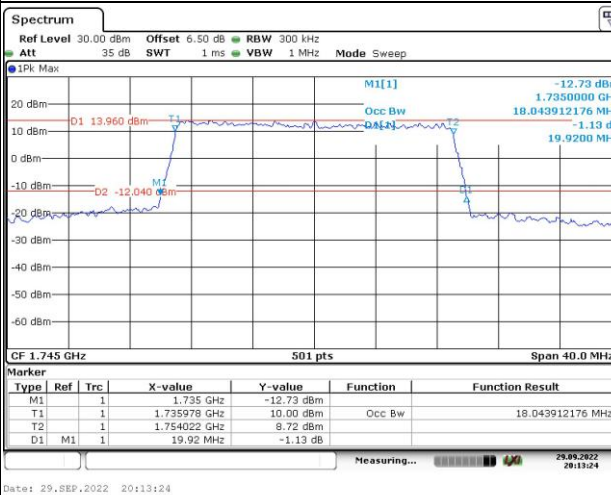
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

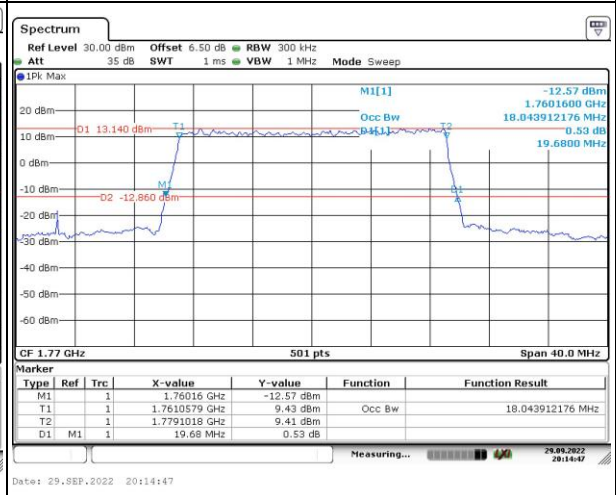
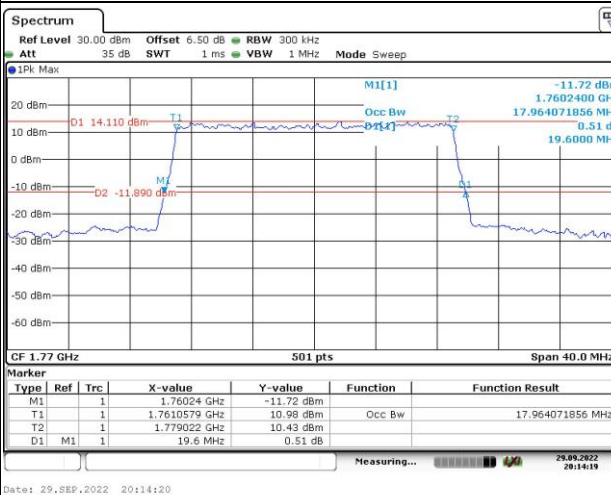
Lowest



Middle



Highest

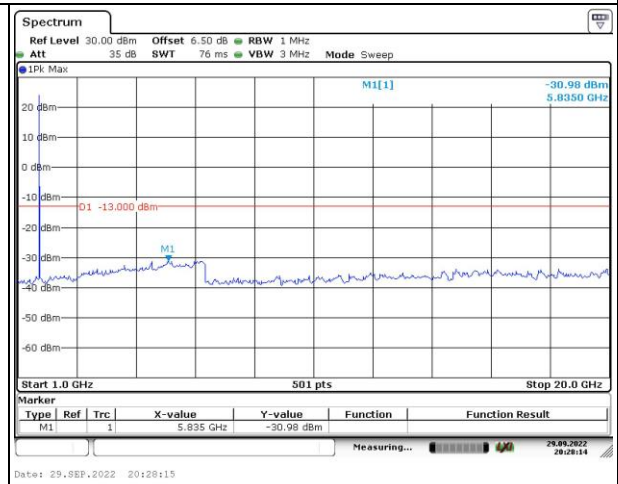
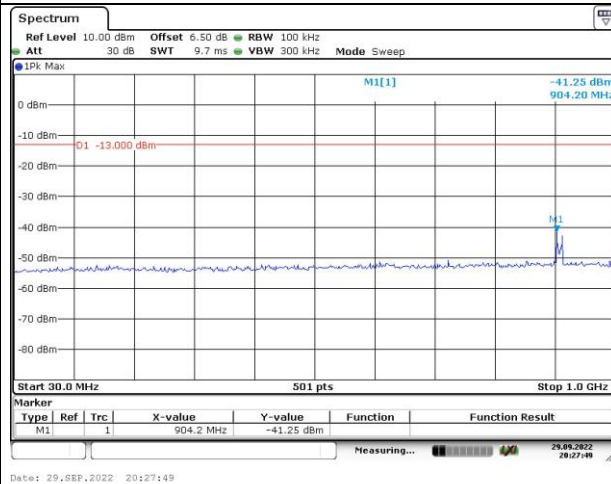


Spurious Emissions at Antenna Terminal

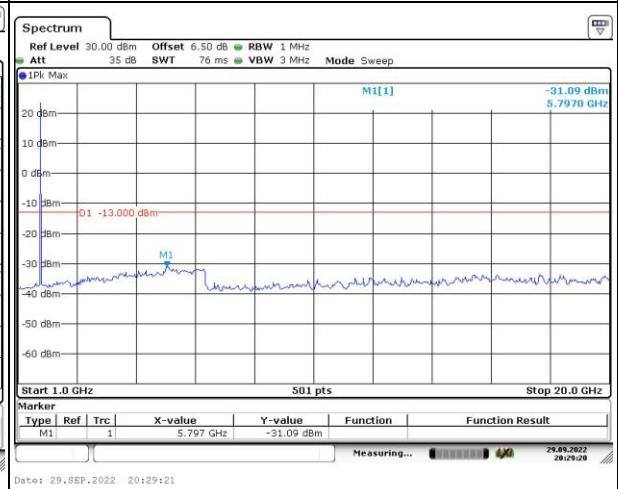
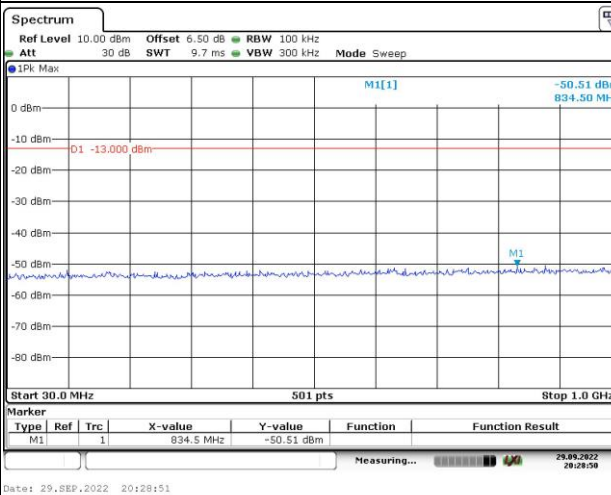
Channel

1.4MHz Bandwidth QPSK

Lowest



Middle



Highest

