

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	23.33	23.02	23.19	25.03	30
	RB1#3	23.39	23.16	23.14		
	RB1#5	23.5	23.05	23.1		
	RB3#0	23.34	23.28	23.03		
	RB3#3	23.53	23.3	22.98		
	RB6#0	22.44	22.29	21.98		
1.4MHz 16QAM	RB1#0	23.21	22.06	23.21	24.73	30
	RB1#3	23.23	22.08	23.14		
	RB1#5	23.2	22.11	23.16		
	RB3#0	22.41	22.53	22.28		
	RB3#3	22.38	22.44	22.31		
	RB6#0	21.63	21.59	21.3		
3MHz QPSK	RB1#0	23.33	23.1	22.91	24.89	30
	RB1#8	23.32	23.12	22.9		
	RB1#14	23.39	23.11	22.93		
	RB6#0	22.45	22.2	21.99		
	RB6#9	22.34	22.13	22.03		
	RB15#0	22.44	22.22	22.06		
3MHz 16QAM	RB1#0	23.22	22.08	22.07	24.77	30
	RB1#8	23.27	22.04	22.09		
	RB1#14	23.13	22.09	22.07		
	RB6#0	21.62	21.7	21.16		
	RB6#9	21.5	21.76	21.15		
	RB15#0	21.62	21.52	21.18		
5MHz QPSK	RB1#0	23.44	23.22	23.08	24.94	30
	RB1#13	23.4	23.2	23.01		
	RB1#24	23.41	23.15	23.01		
	RB15#0	22.42	22.21	22.1		
	RB15#10	22.39	22.21	22.01		
	RB25#0	22.32	22.14	21.97		
5MHz 16QAM	RB1#0	22.66	21.98	21.33	24.17	30
	RB1#13	22.56	21.99	21.35		
	RB1#24	22.67	22.05	21.37		
	RB15#0	21.45	21.48	21.25		
	RB15#10	21.43	21.47	21.21		
	RB25#0	21.59	21.41	21.25		

10MHz QPSK	RB1#0	23.42	23.2	22.99	24.92	30
	RB1#25	23.41	23.16	22.95		
	RB1#49	23.41	23.22	22.91		
	RB25#0	22.25	22.21	22		
	RB25#25	22.32	22.32	22.01		
	RB50#0	22.31	22.13	22.1		
10MHz 16QAM	RB1#0	22.45	21.72	22.5	24	30
	RB1#25	22.39	21.68	22.36		
	RB1#49	22.48	21.63	22.38		
	RB25#0	21.63	21.57	21.22		
	RB25#25	21.65	21.54	21.26		
	RB50#0	21.64	21.47	21.4		
15MHz QPSK	RB1#0	23.47	23.09	22.96	24.97	30
	RB1#38	23.37	23.14	22.96		
	RB1#74	23.41	23.11	22.96		
	RB36#0	22.21	22.32	22.02		
	RB36#39	22.21	22.2	22.07		
	RB75#0	22.33	22.25	22.04		
15MHz 16QAM	RB1#0	22.54	22.73	22.49	24.23	30
	RB1#38	22.52	22.64	22.42		
	RB1#74	22.52	22.6	22.36		
	RB36#0	21.57	21.47	21.37		
	RB36#39	21.59	21.35	21.38		
	RB75#0	21.6	21.46	21.35		
20MHz QPSK	RB1#0	23.44	23.22	23.45	24.95	30
	RB1#50	23.44	23.15	23.37		
	RB1#99	23.38	23.21	23.33		
	RB50#0	22.33	22.3	22.14		
	RB50#50	22.28	22.24	21.99		
	RB100#0	22.31	22.19	22.03		
20MHz 16QAM	RB1#0	22.54	23.15	21.96	24.71	30
	RB1#50	22.43	23.21	21.95		
	RB1#99	22.35	23.08	21.89		
	RB50#0	21.41	21.41	21.32		
	RB50#50	21.54	21.44	21.29		
	RB100#0	21.48	21.5	21.26		

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	5.83	5.83	5.88	13
	RB100#0	4.35	4.32	4.38	13
20MHz 16QAM	RB1#0	7.13	6.35	6.96	13
	RB100#0	5.91	5.88	5.94	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	1.096	1.102	1.096	1.248	1.260	1.254
1.4MHz 16QAM	1.090	1.096	1.102	1.254	1.260	1.254
3MHz QPSK	2.695	2.695	2.695	3.012	3.012	2.916
3MHz 16QAM	2.683	2.683	2.695	3.012	3.024	2.940
5MHz QPSK	4.511	4.491	4.511	5.020	4.880	5.000
5MHz 16QAM	4.511	4.511	4.511	5.020	5.020	4.980
10MHz QPSK	8.942	8.942	8.942	9.760	9.360	9.760
10MHz 16QAM	8.982	8.942	8.942	9.840	9.800	9.760
15MHz QPSK	13.473	13.473	13.473	14.640	14.820	14.820
15MHz 16QAM	13.533	13.473	13.473	14.880	14.820	14.760
20MHz QPSK	17.884	18.044	17.884	18.960	19.760	18.800
20MHz 16QAM	17.884	17.964	17.964	19.360	19.680	18.960
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	3.87	1711.056	1710.00	1753.984	1755
	-20	3.87	1711.053	1710.00	1753.937	1755
	-10	3.87	1711.073	1710.00	1753.965	1755
	0	3.87	1711.007	1710.00	1753.966	1755
	10	3.87	1711.019	1710.00	1753.955	1755
	20	3.87	1711.058	1710.00	1753.942	1755
	30	3.87	1711.007	1710.00	1753.936	1755
	40	3.87	1711.089	1710.00	1753.940	1755
	50	3.87	1711.011	1710.00	1753.906	1755
Frequency Stability vs. Voltage	20	3.3	1711.069	1710.00	1753.932	1755
	20	4.45	1711.089	1710.00	1753.982	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	1711.020	1710.00	1754.017	1755
	-20	3.87	1711.001	1710.00	1754.025	1755
	-10	3.87	1711.050	1710.00	1754.084	1755
	0	3.87	1711.035	1710.00	1754.025	1755
	10	3.87	1711.070	1710.00	1754.059	1755
	20	3.87	1711.058	1710.00	1754.022	1755
	30	3.87	1711.034	1710.00	1754.076	1755
	40	3.87	1711.030	1710.00	1754.034	1755
	50	3.87	1711.048	1710.00	1754.085	1755
Frequency Stability vs. Voltage	20	3.3	1711.065	1710.00	1754.068	1755
	20	4.45	1711.098	1710.00	1754.022	1755
					Result:	Pass

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

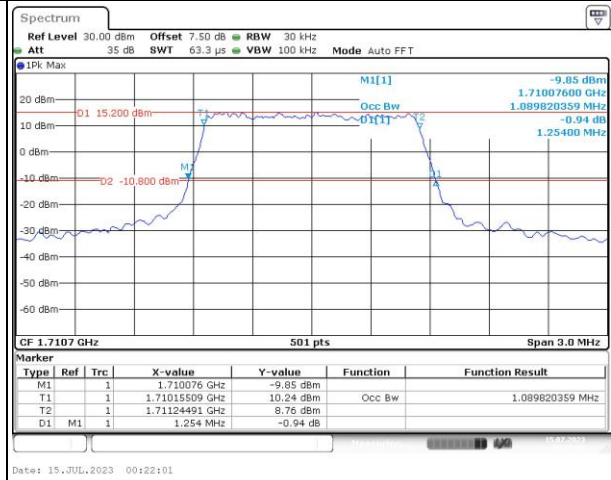
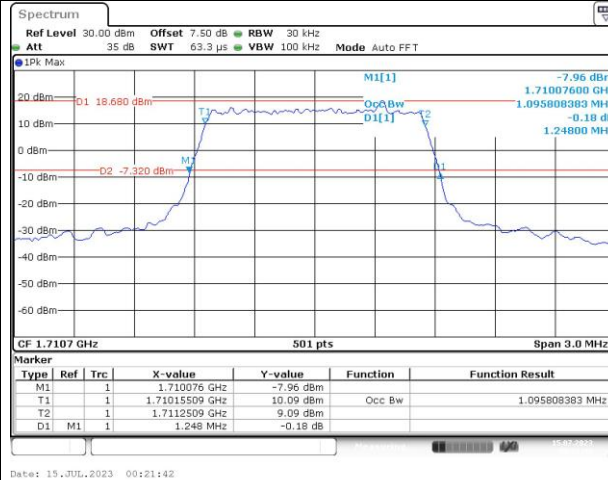
Occupied Bandwidth

Channel

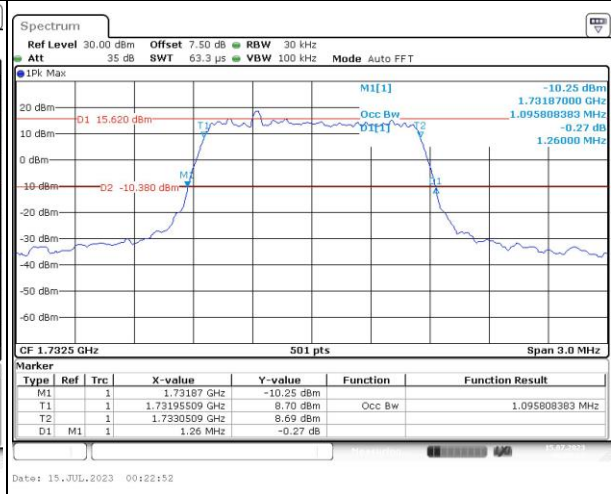
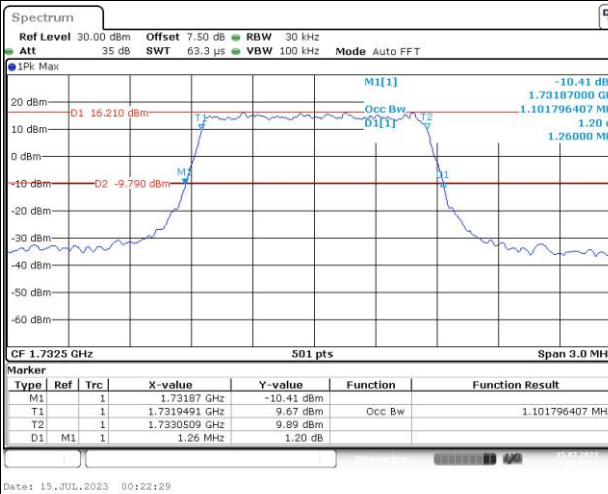
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

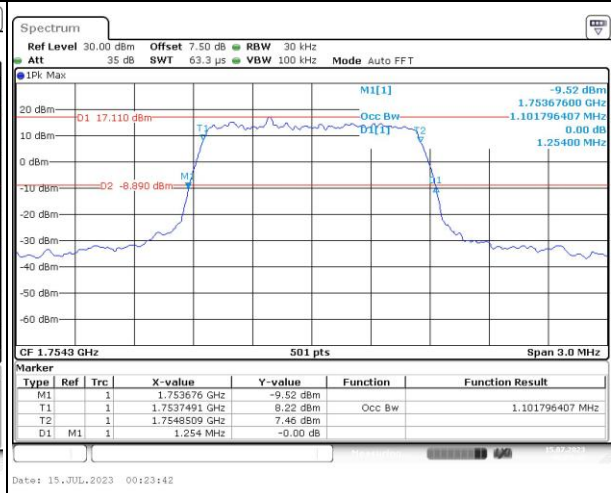
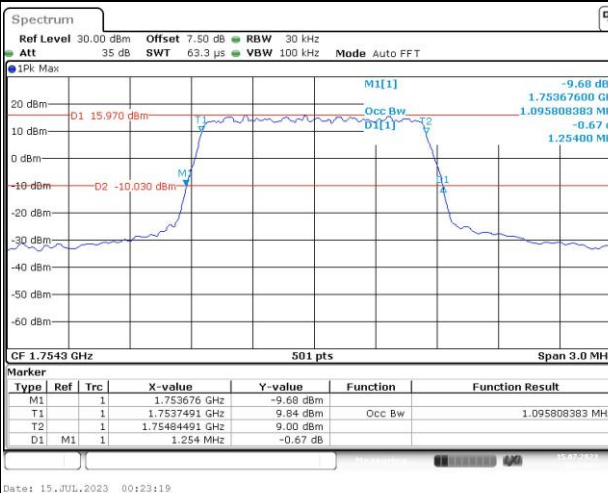
Lowest



Middle



Highest



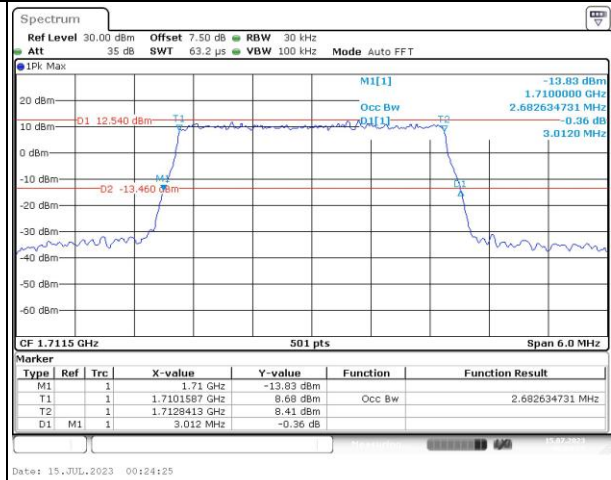
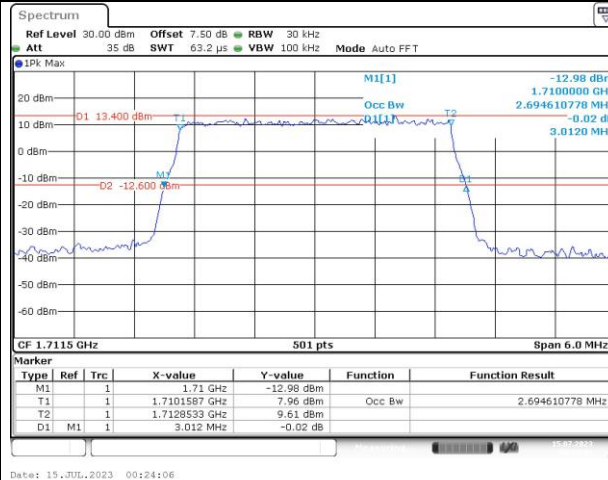
Occupied Bandwidth

Channel

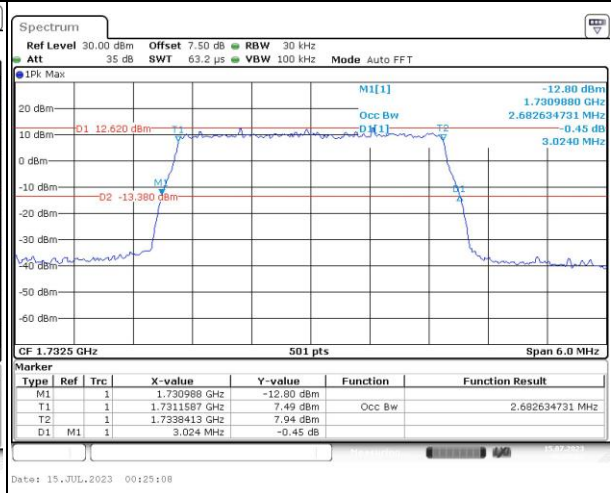
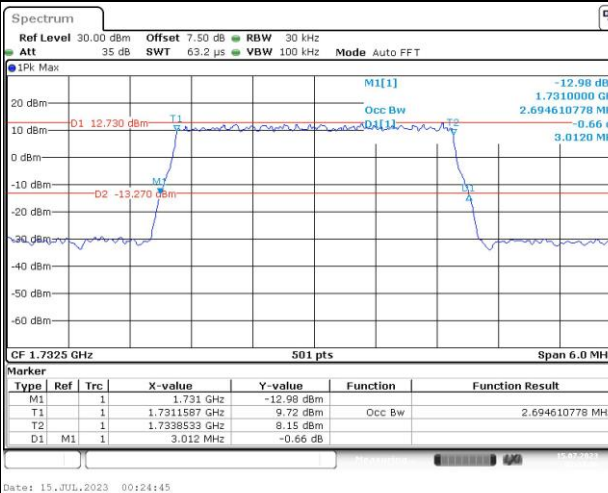
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

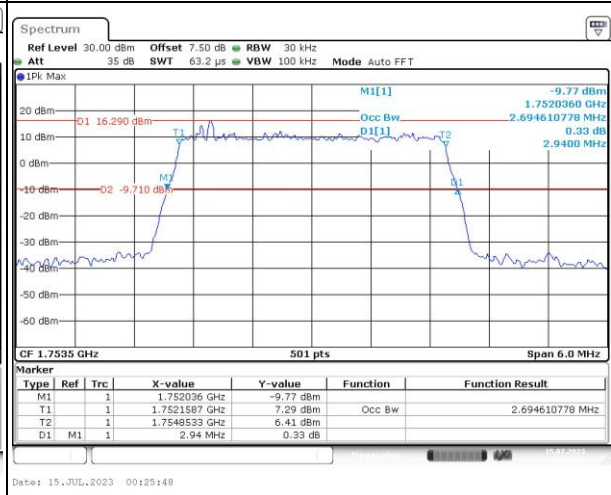
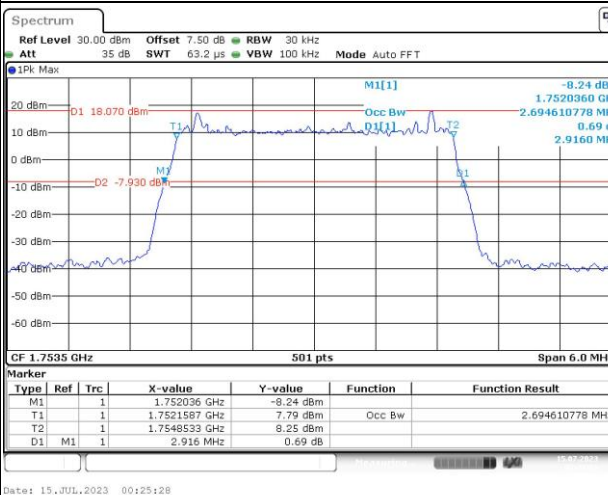
Lowest



Middle



Highest



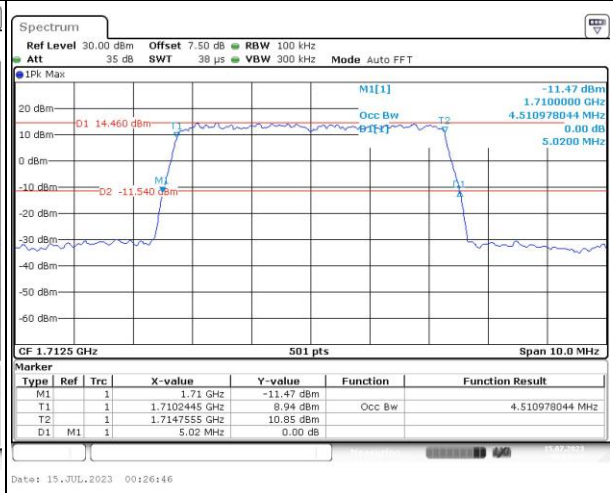
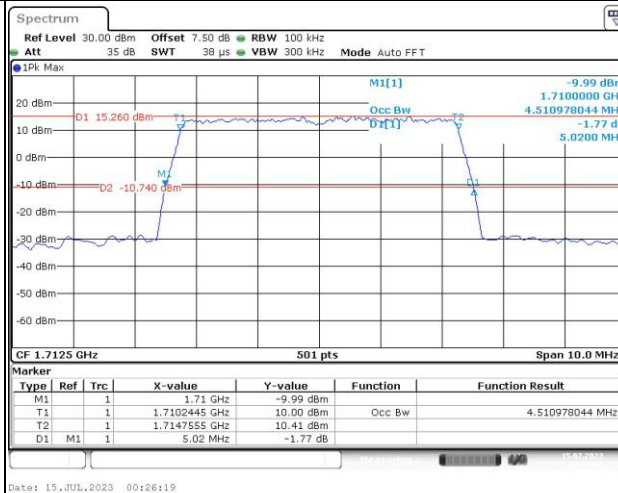
Occupied Bandwidth

Channel

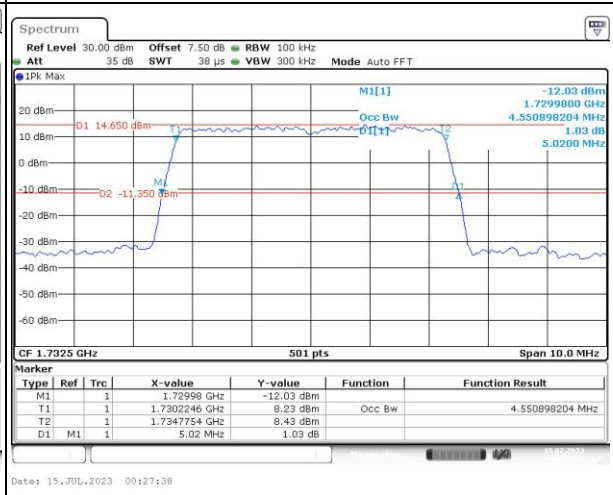
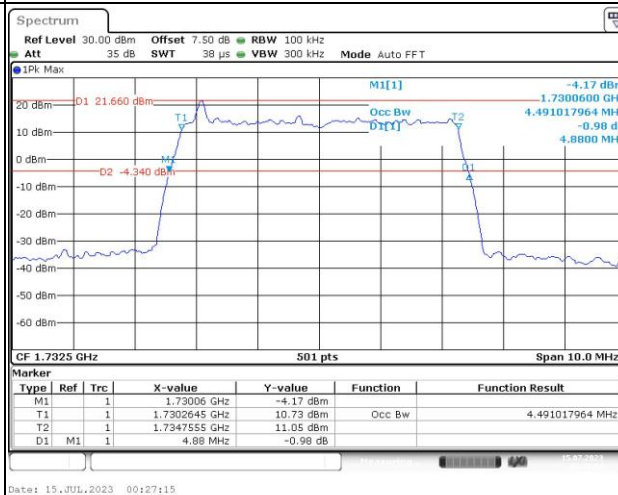
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

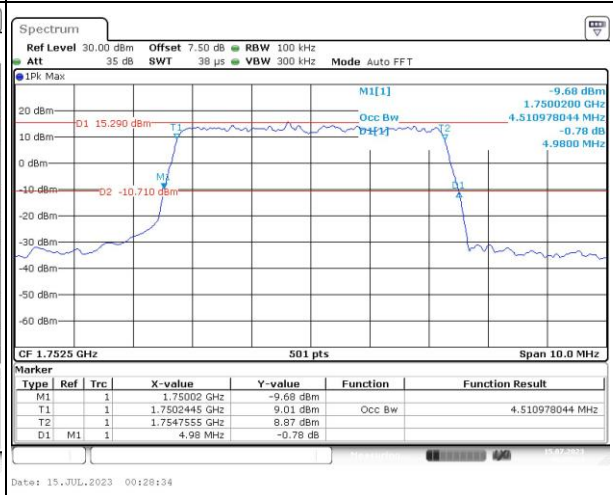
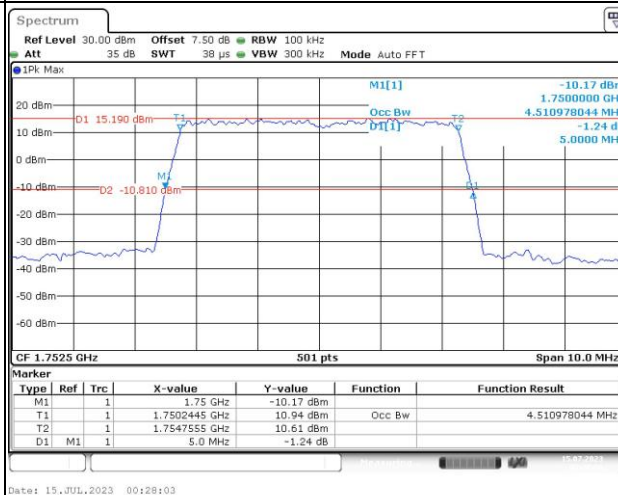
Lowest



Middle



Highest



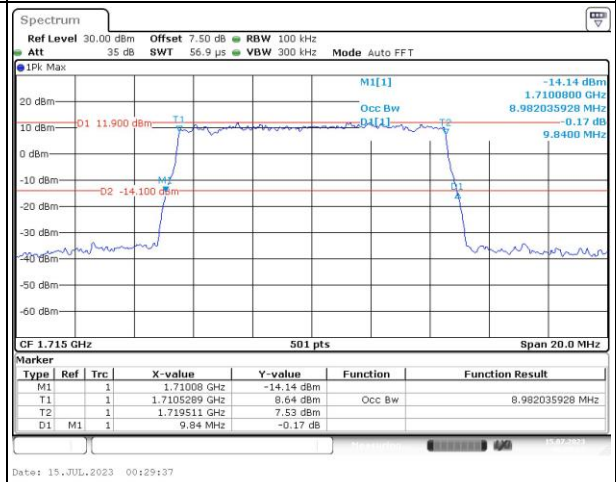
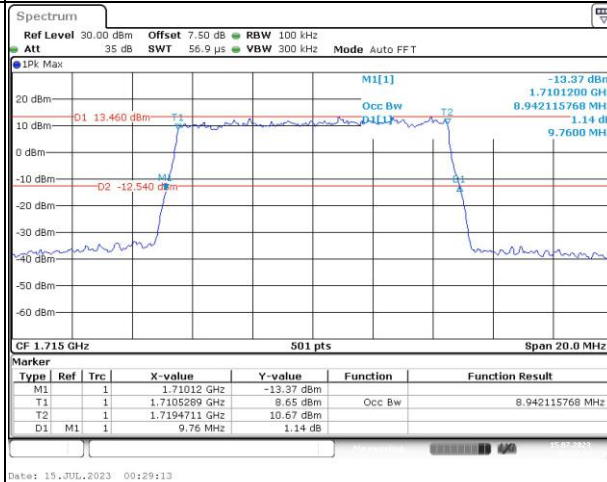
Occupied Bandwidth

Channel

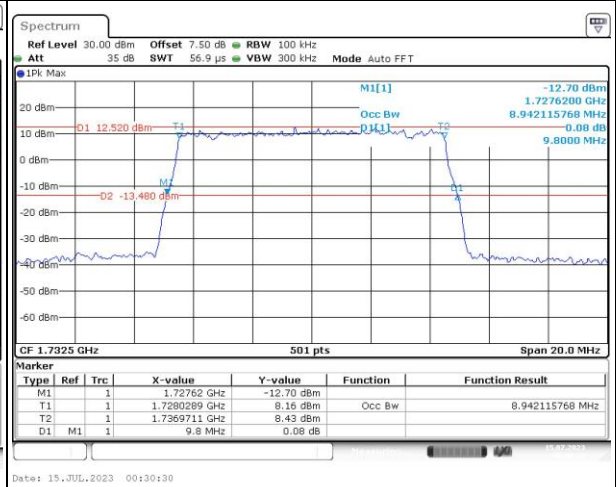
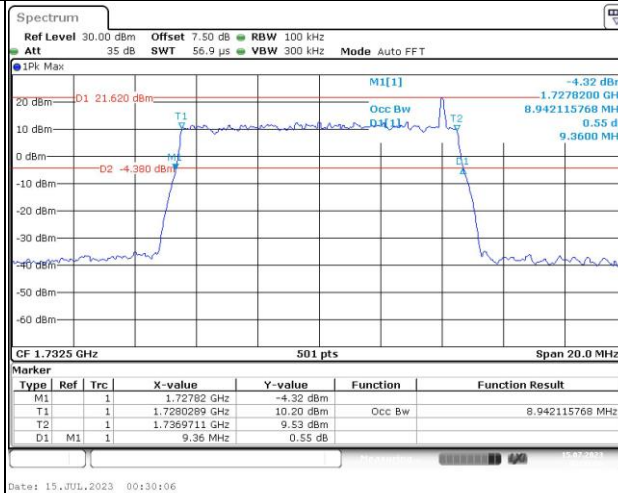
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

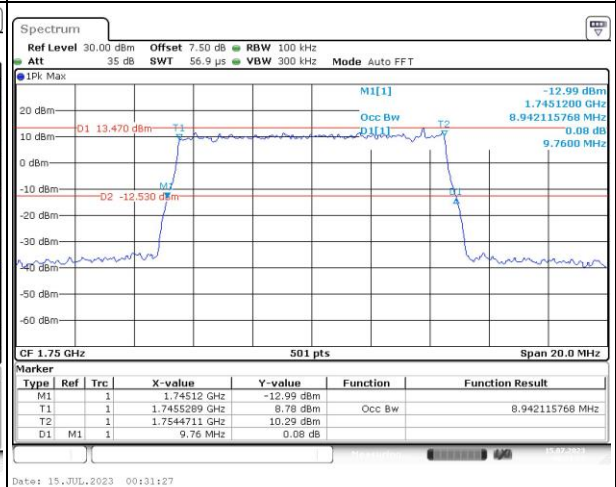
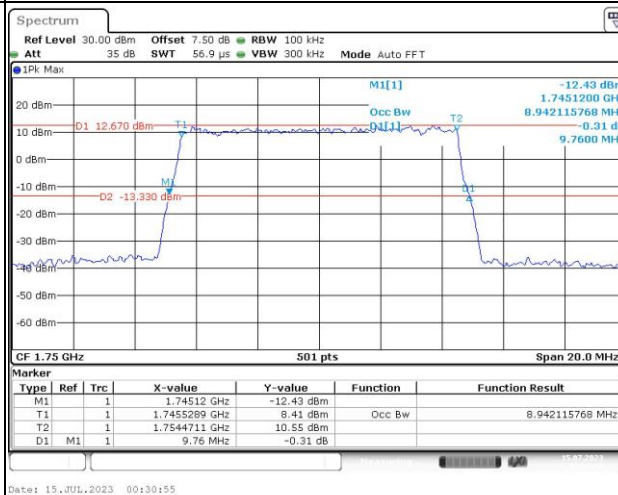
Lowest



Middle



Highest



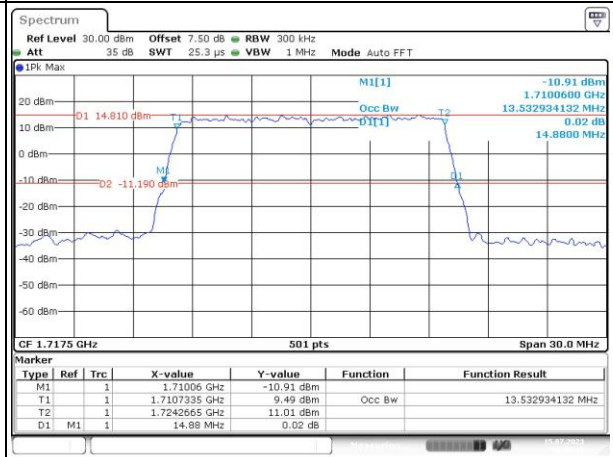
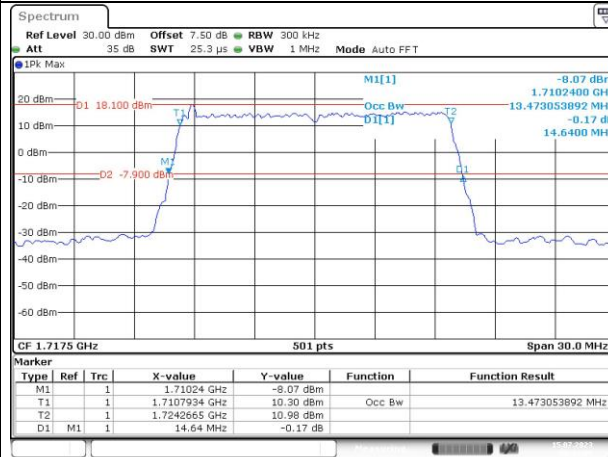
Occupied Bandwidth

Channel

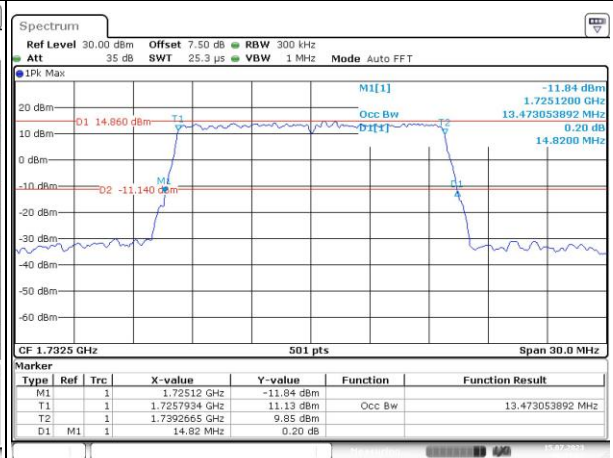
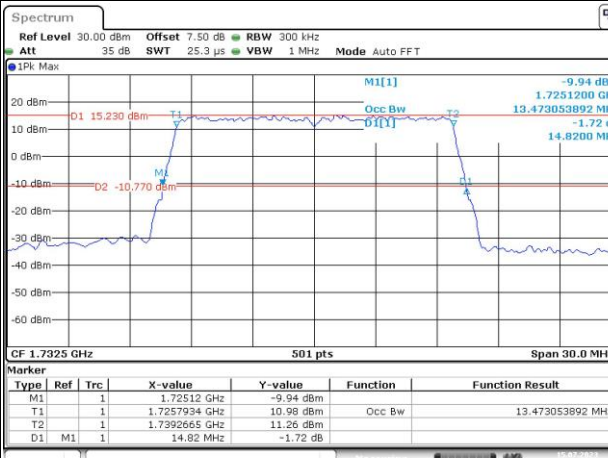
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

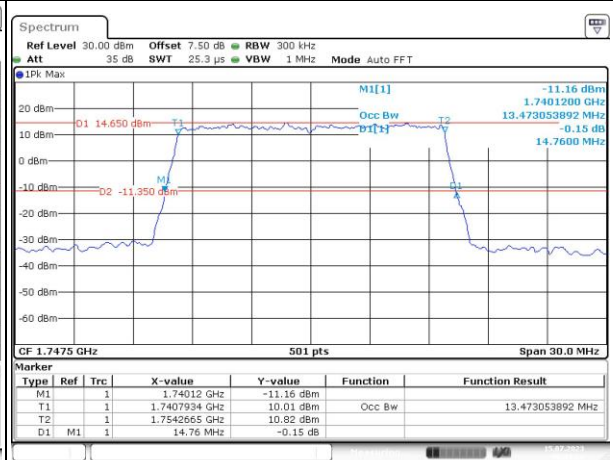
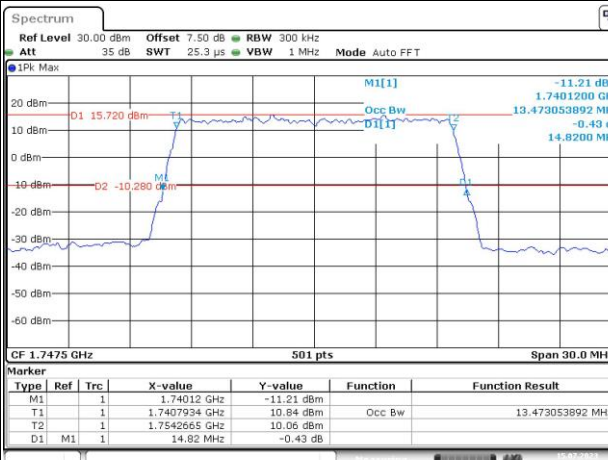
Lowest



Middle



Highest



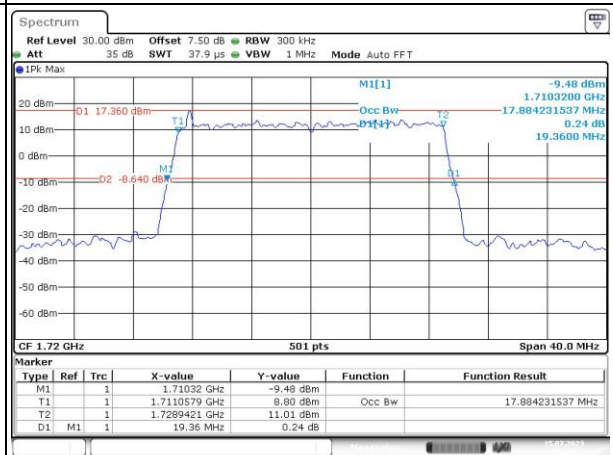
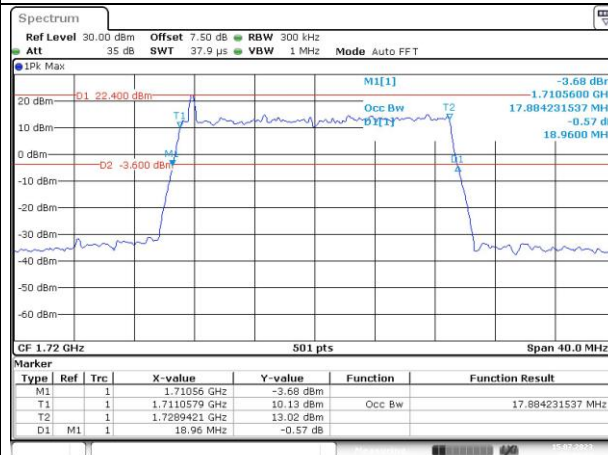
Occupied Bandwidth

Channel

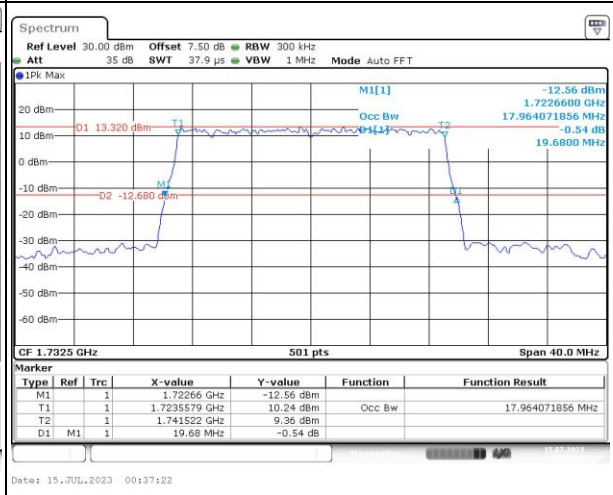
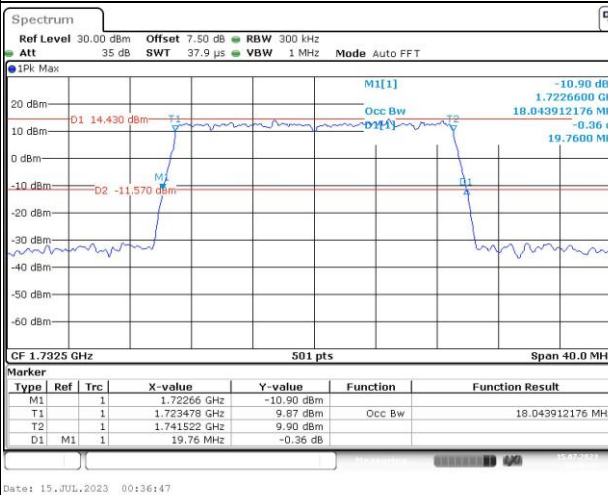
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

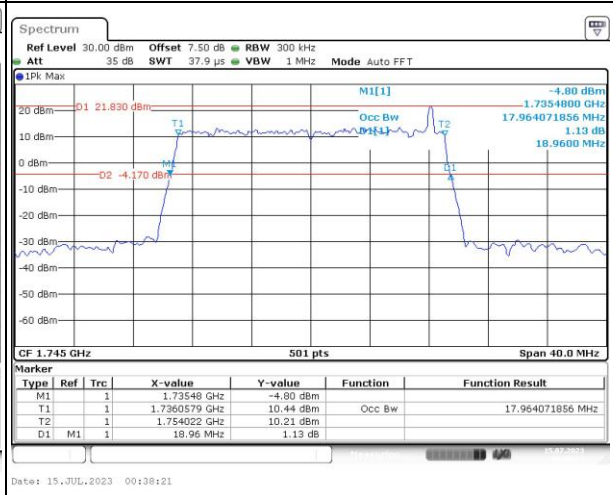
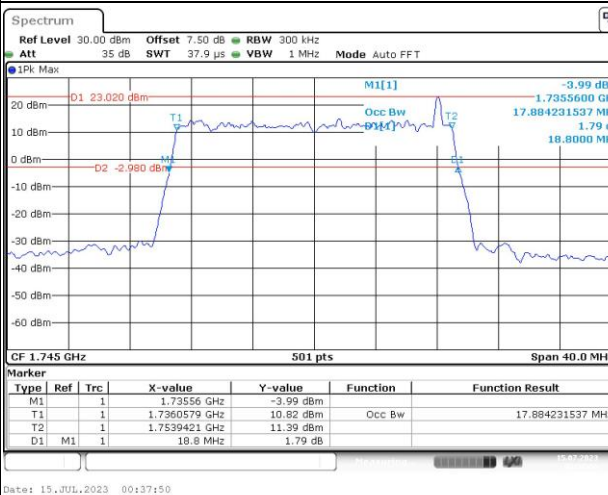
Lowest



Middle



Highest

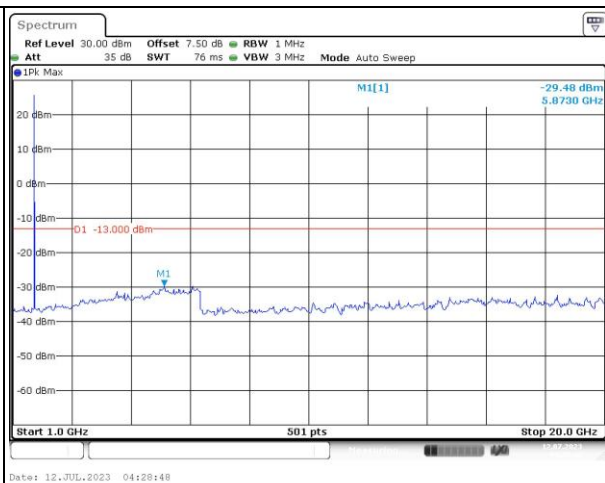
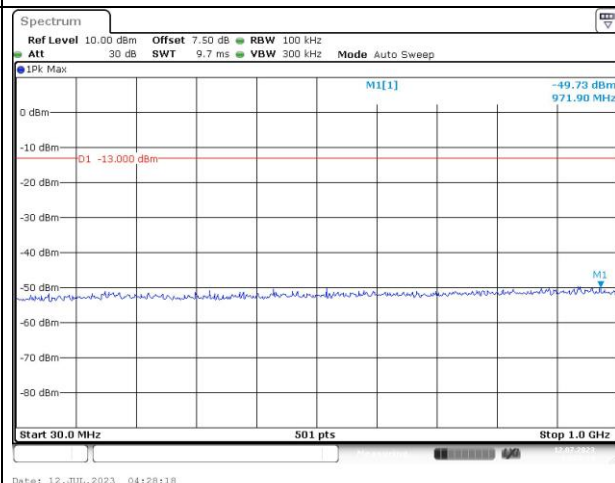


Spurious Emissions at Antenna Terminal

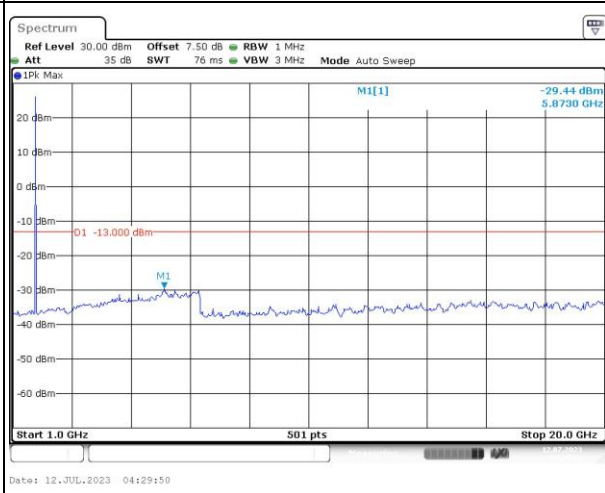
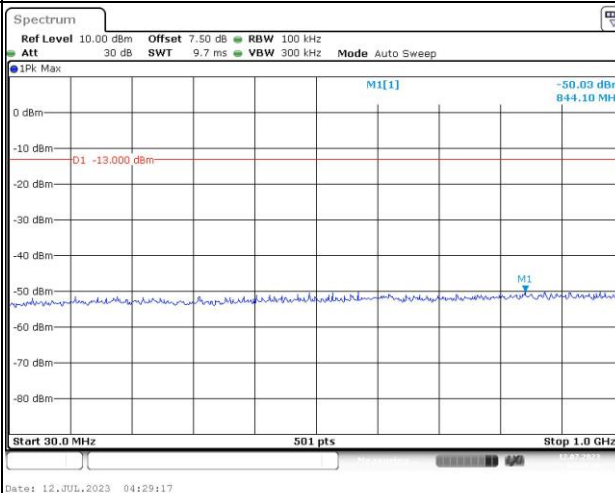
Channel

1.4MHz Bandwidth QPSK

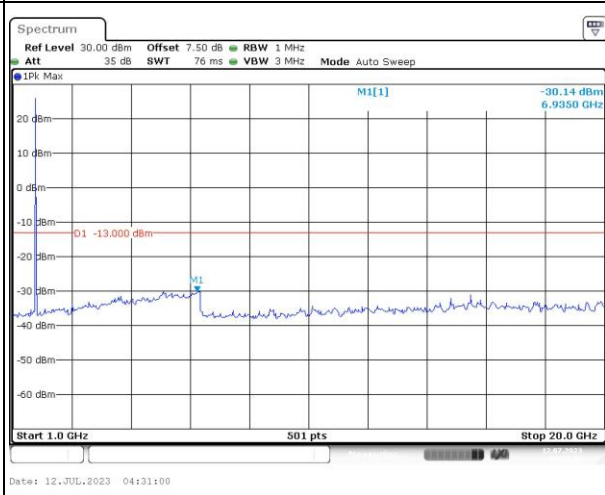
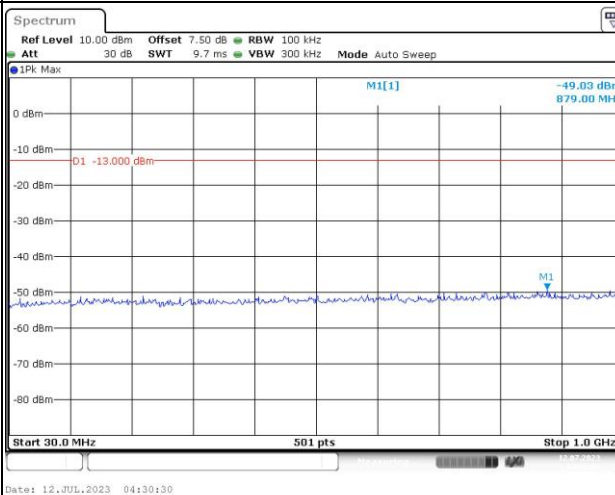
Lowest



Middle



Highest

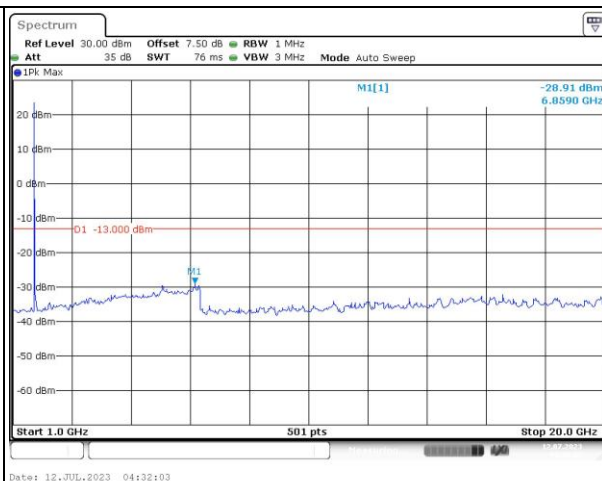
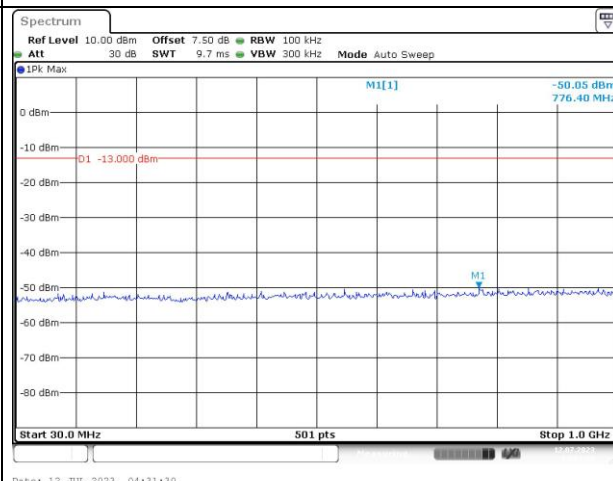


Spurious Emissions at Antenna Terminal

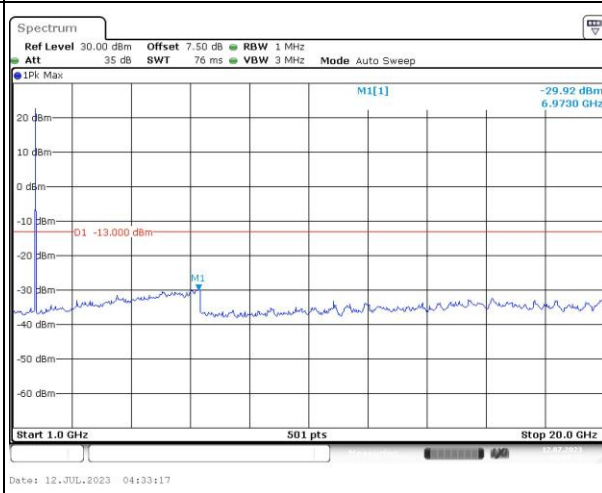
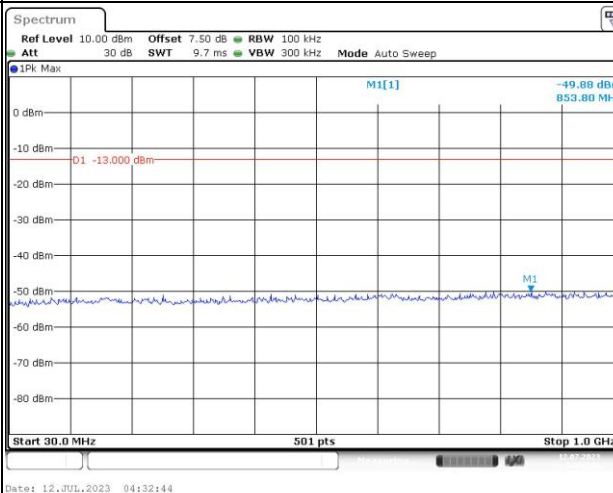
Channel

3MHz Bandwidth QPSK

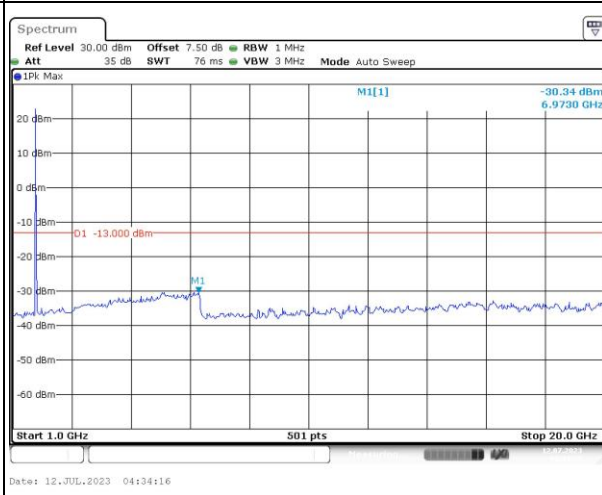
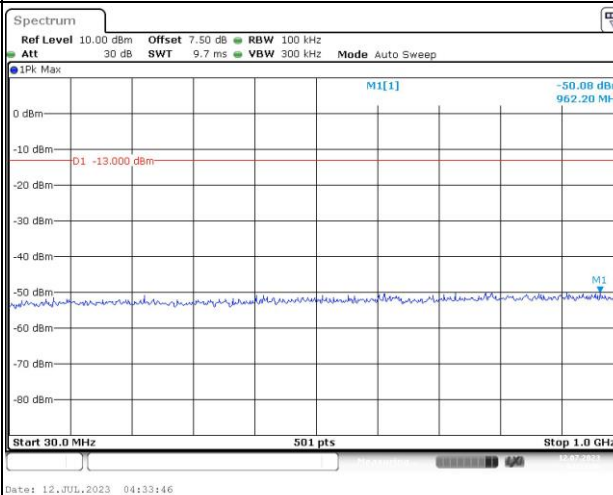
Lowest



Middle



Highest

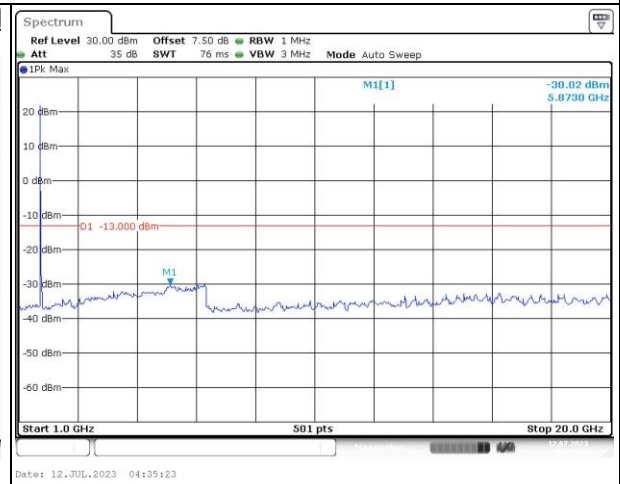
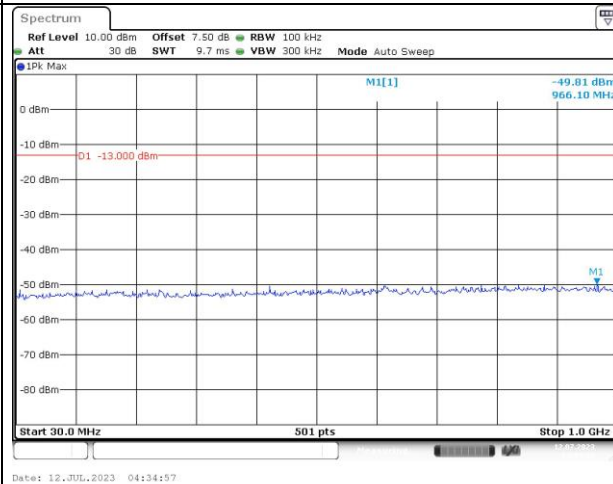


Spurious Emissions at Antenna Terminal

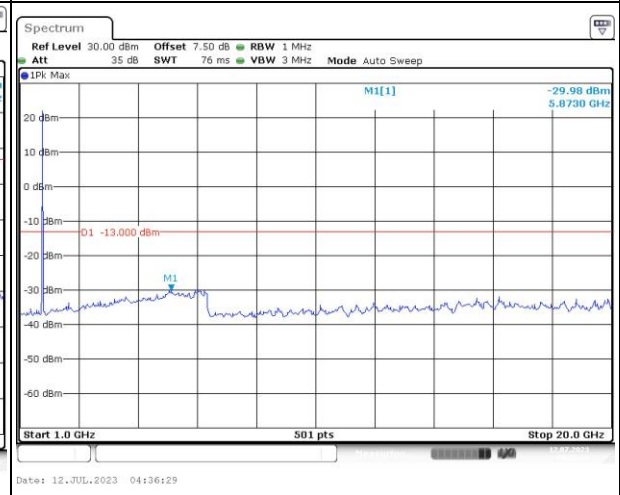
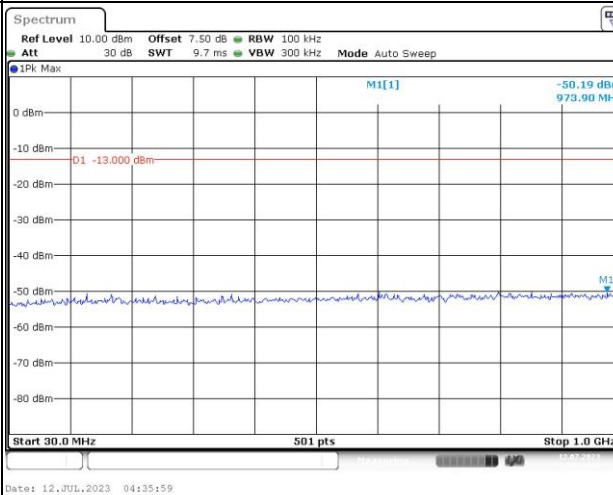
Channel

5MHz Bandwidth QPSK

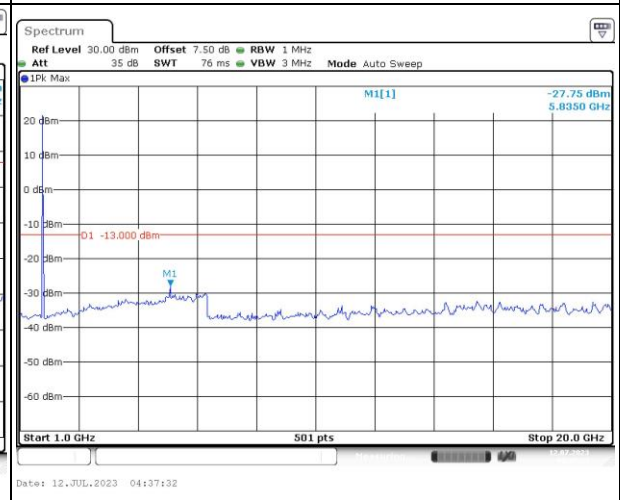
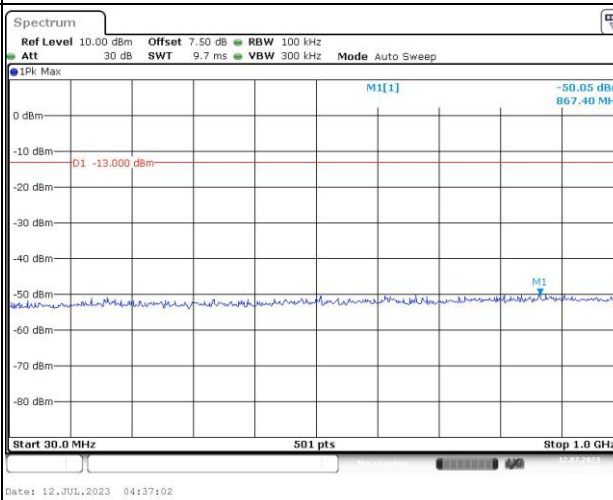
Lowest



Middle



Highest

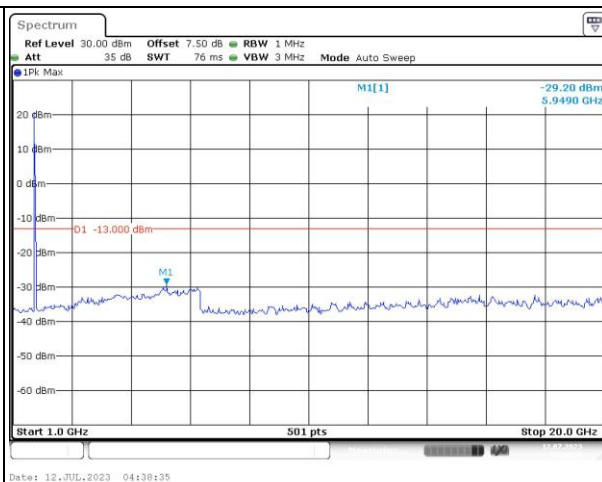
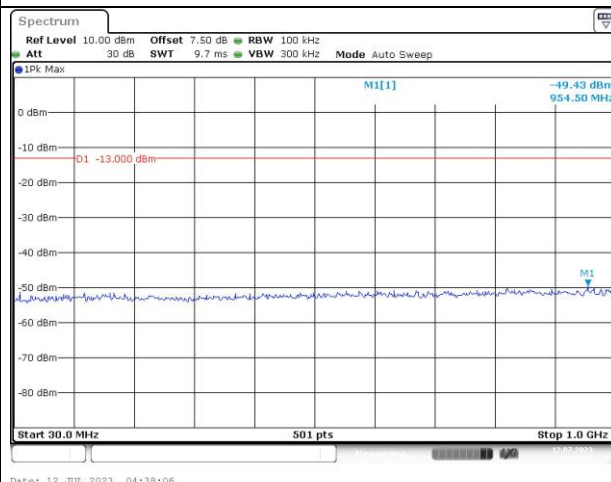


Spurious Emissions at Antenna Terminal

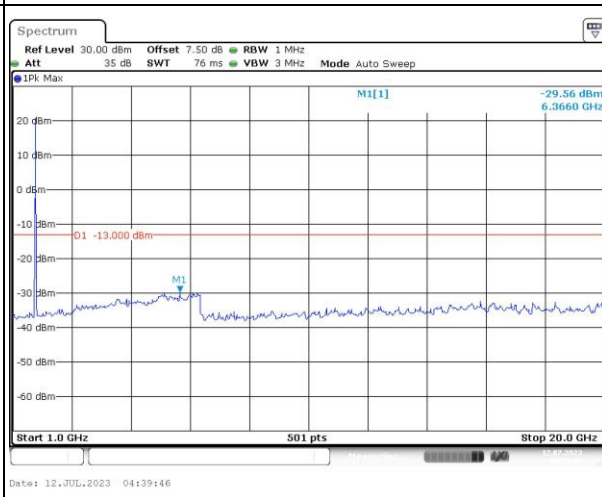
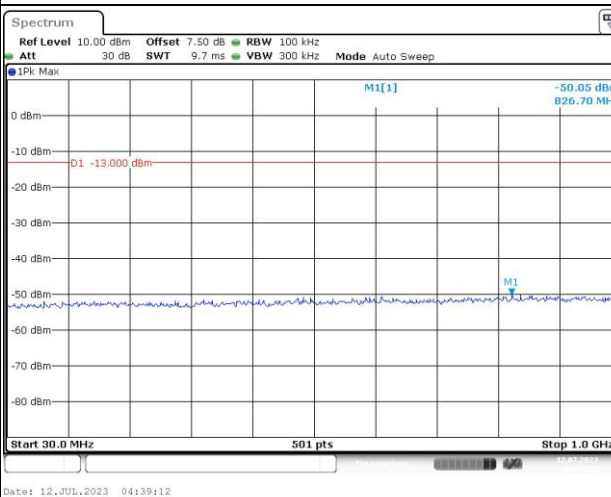
Channel

10MHz Bandwidth QPSK

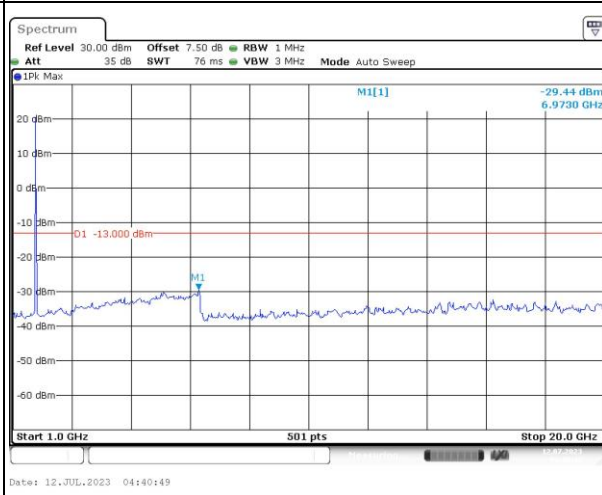
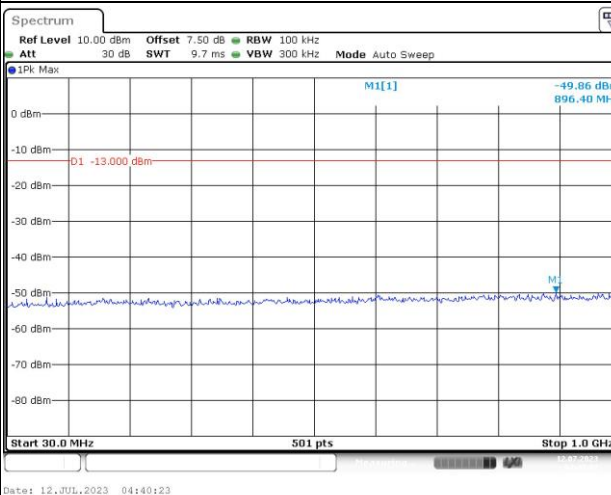
Lowest



Middle



Highest

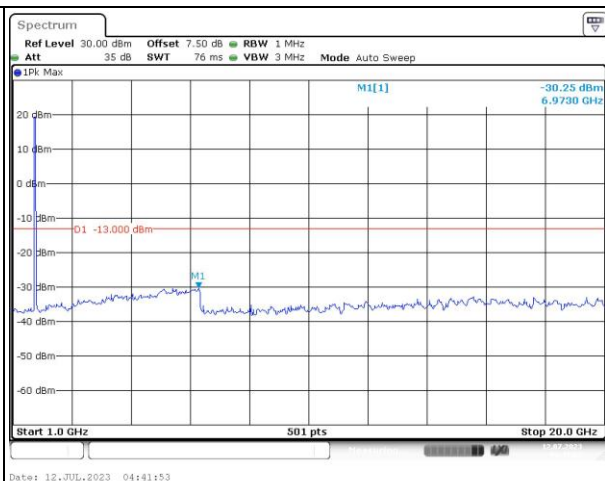
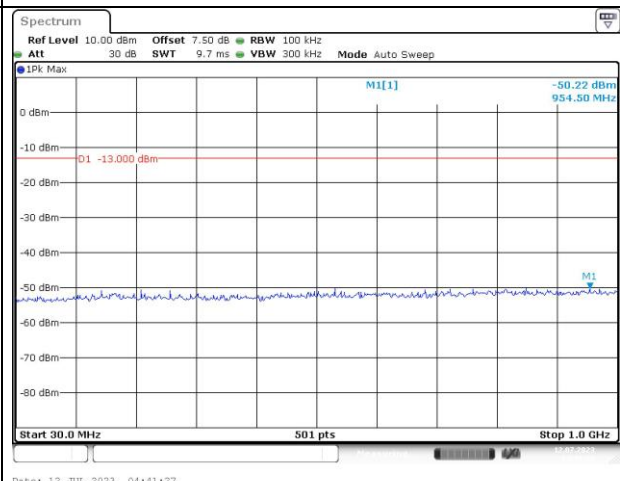


Spurious Emissions at Antenna Terminal

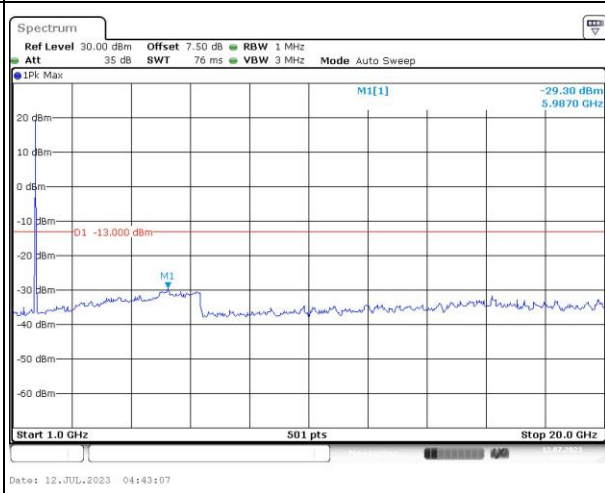
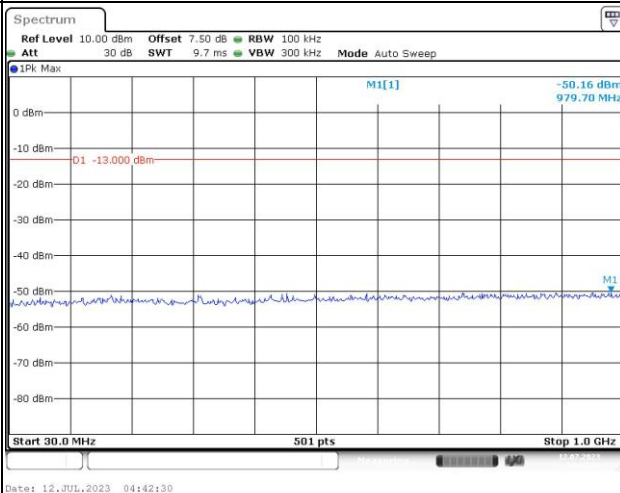
Channel

15MHz Bandwidth QPSK

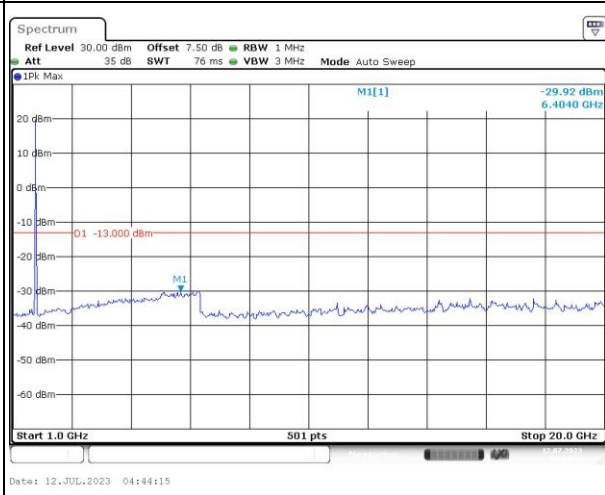
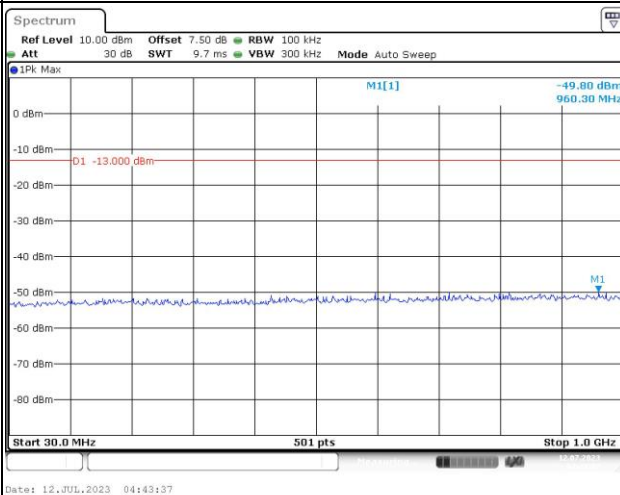
Lowest



Middle



Highest

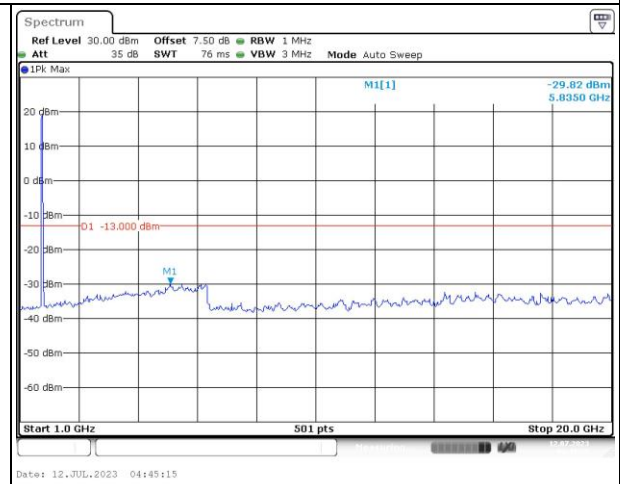
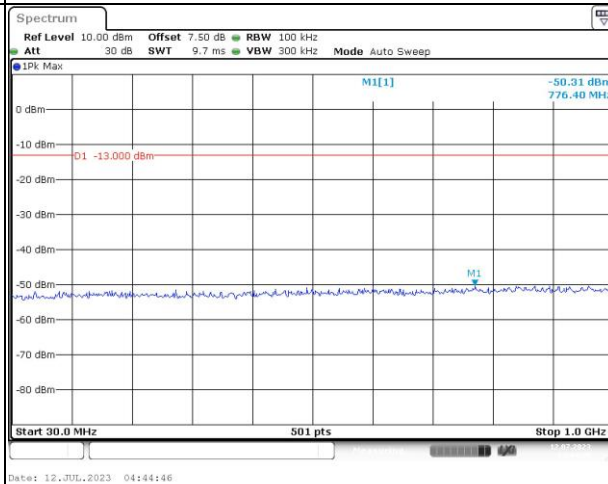


Spurious Emissions at Antenna Terminal

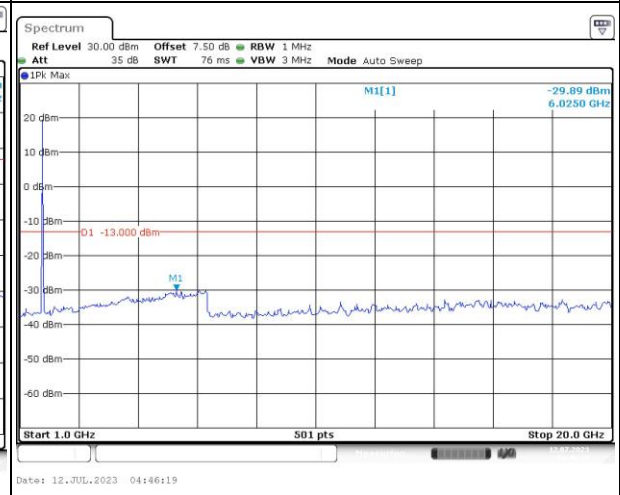
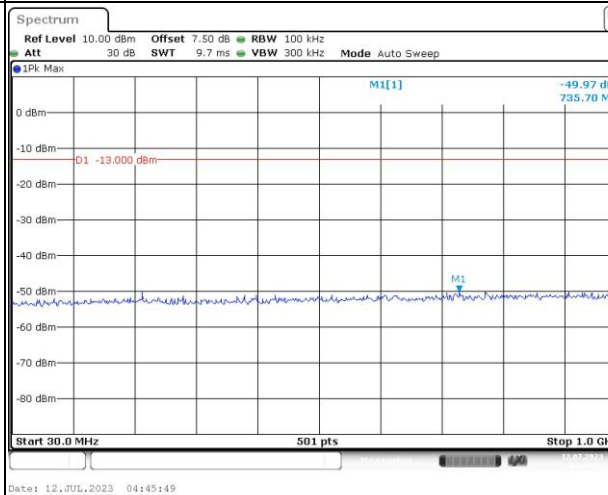
Channel

20MHz Bandwidth QPSK

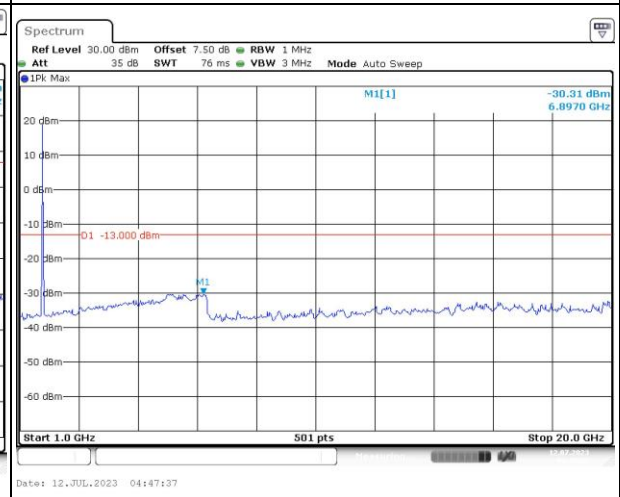
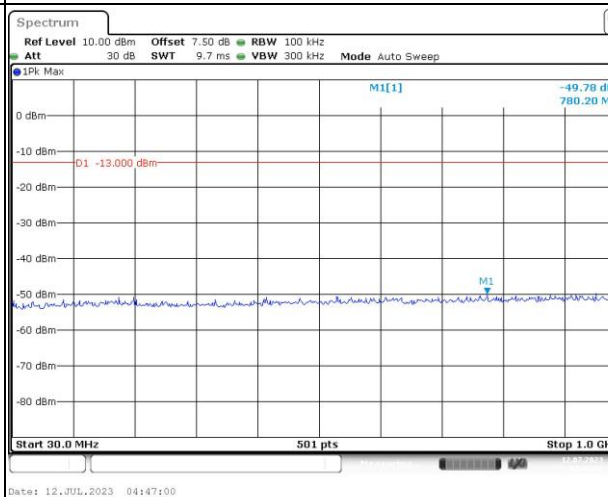
Lowest



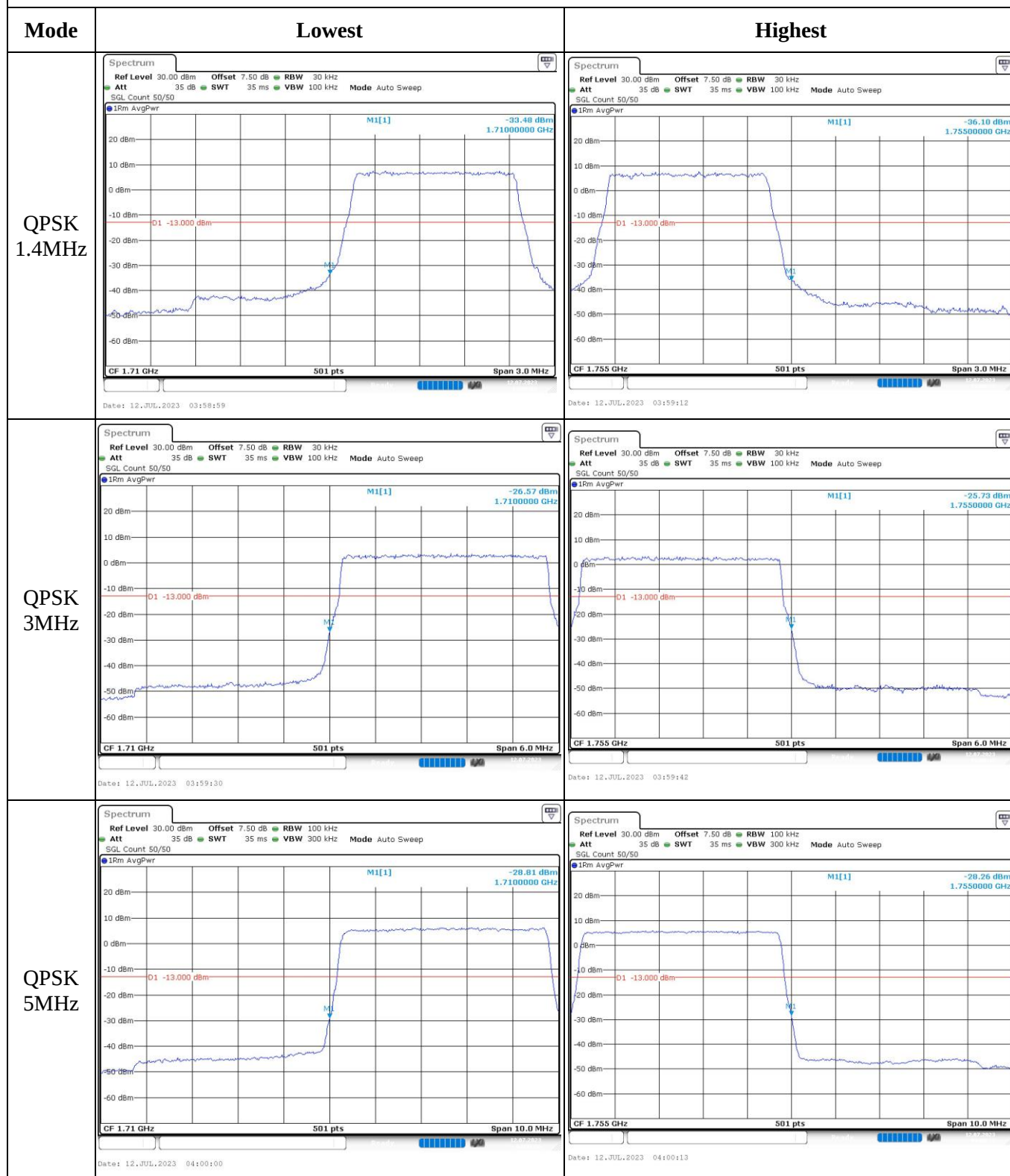
Middle



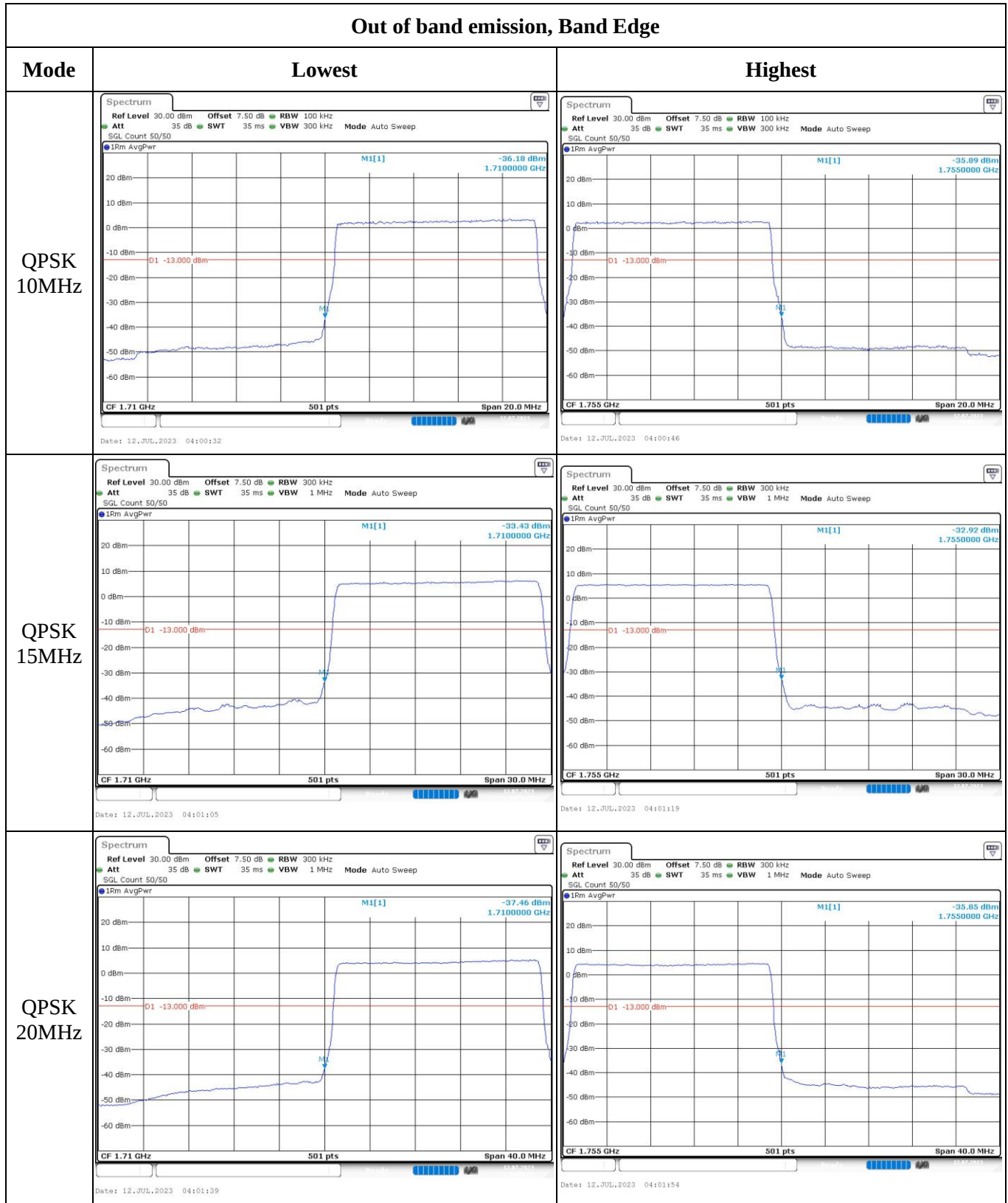
Highest



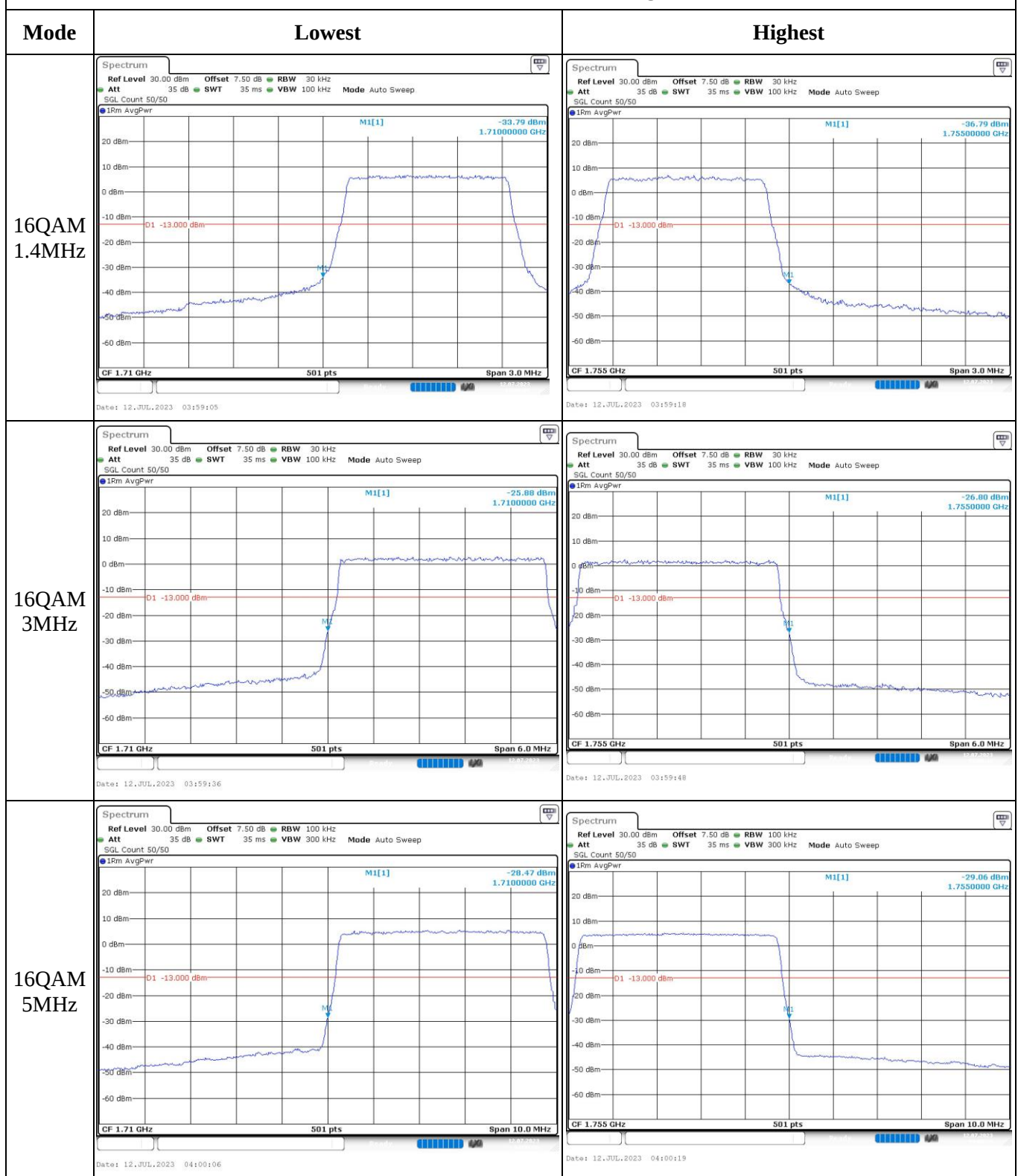
Out of band emission, Band Edge



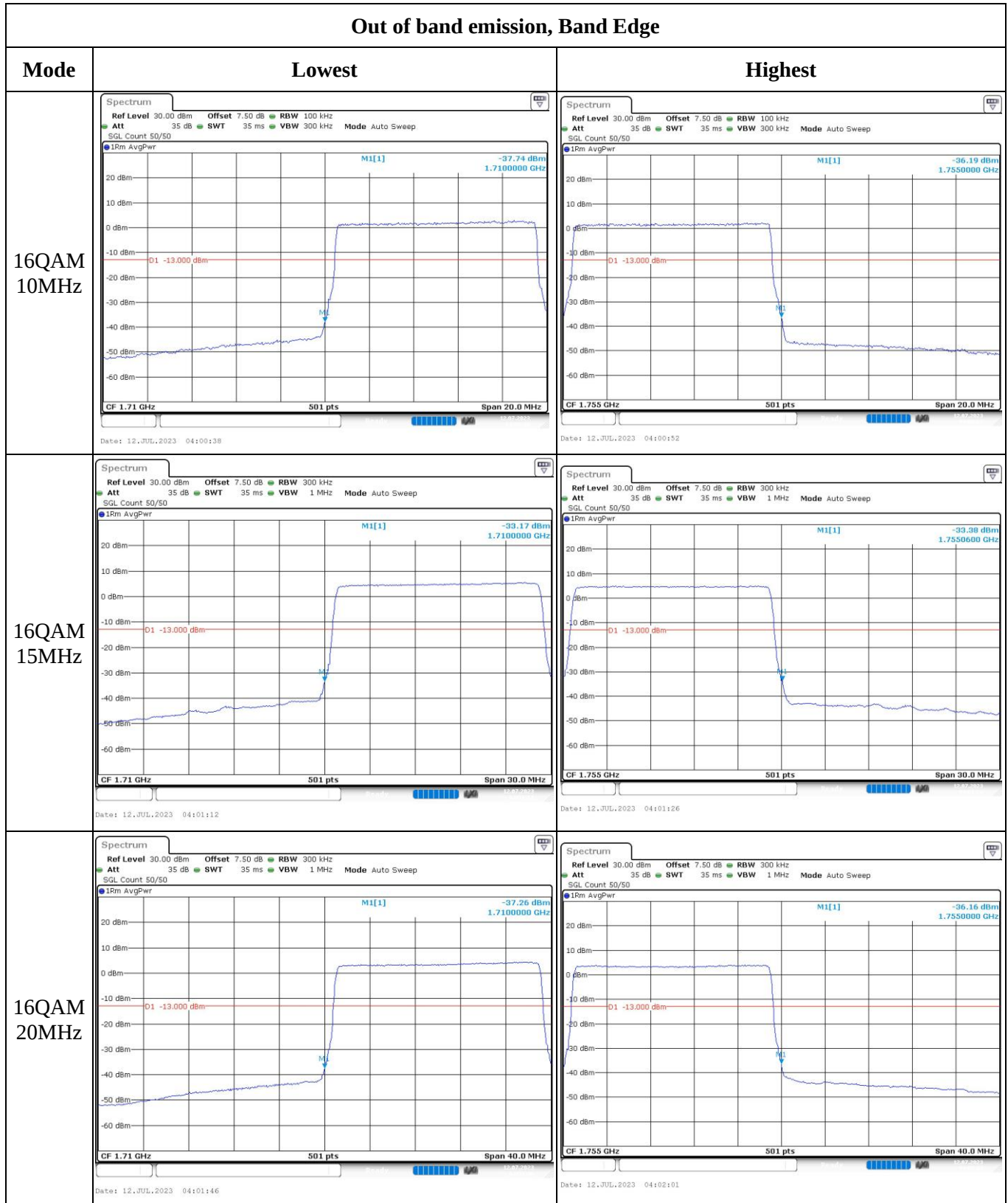
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	27W6-1	Test Date:	2023/07/12~2023/07/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.4~26.8	Relative Humidity: (%)	49~52	ATM Pressure: (kPa)	99.3~100.3
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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	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	149218	2022/07/15	2023/07/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/03/31	2024/03/30
UNI-T	Multimeter	UT39A+	C210582554	2022/09/29	2023/09/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
R&S	Spectrum Analyzer	FSV40	101474	2023/07/15	2024/07/14
R&S	Wideband Radio Communication Tester	CMW500	149218	2023/07/15	2024/07/14

** 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	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:**FCC §2.1046; § 22.913 (a)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	23.90	23.75	23.77	20.34	38.45
	RB1#3	23.95	23.87	23.87		
	RB1#5	23.87	23.85	23.86		
	RB3#0	24.06	23.92	23.94		
	RB3#3	24.09	23.97	23.97		
	RB6#0	23.01	22.85	22.87		
1.4MHz 16QAM	RB1#0	23.54	22.93	22.39	19.86	38.45
	RB1#3	23.54	23.05	22.46		
	RB1#5	23.61	23.06	22.48		
	RB3#0	23.12	23.06	22.66		
	RB3#3	23.15	23.06	23.06		
	RB6#0	22.22	22.26	22.15		
3MHz QPSK	RB1#0	23.86	23.84	23.7	20.13	38.45
	RB1#8	23.83	23.82	23.73		
	RB1#14	23.88	23.85	23.73		
	RB6#0	23	22.86	22.73		
	RB6#9	23.02	22.86	22.79		
	RB15#0	23.02	22.91	22.83		
3MHz 16QAM	RB1#0	23.68	22.38	23.2	19.99	38.45
	RB1#8	23.74	22.38	23.15		
	RB1#14	23.67	22.39	23.14		
	RB6#0	22.2	21.98	22.08		
	RB6#9	22.11	22.13	21.91		
	RB15#0	22.08	21.99	21.96		
5MHz QPSK	RB1#0	24.06	23.89	23.88	20.31	38.45
	RB1#13	23.89	23.83	23.8		
	RB1#24	24.01	23.9	23.75		
	RB15#0	22.92	22.83	22.87		
	RB15#10	22.95	22.81	22.82		
	RB25#0	22.9	22.92	22.86		
5MHz 16QAM	RB1#0	23.15	22.96	22.08	19.4	38.45
	RB1#13	23.09	22.68	22.01		
	RB1#24	23.05	22.66	22.13		
	RB15#0	21.9	22.03	21.96		
	RB15#10	21.95	22.03	22.01		
	RB25#0	22	21.99	22.06		

10MHz QPSK	RB1#0	24	23.87	23.74	20.25	38.45
	RB1#25	23.92	23.82	23.74		
	RB1#49	23.97	23.92	23.77		
	RB25#0	22.91	22.82	22.8		
	RB25#25	22.8	22.85	22.79		
	RB50#0	22.79	22.84	22.92		
10MHz 16QAM	RB1#0	23.1	22.76	23.11	19.53	38.45
	RB1#25	23.05	22.78	23.25		
	RB1#49	23.14	22.7	23.28		
	RB25#0	22.07	22.16	21.93		
	RB25#25	22.17	22.2	22.05		
	RB50#0	22.11	22.03	21.91		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15**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	
10MHz QPSK	RB1#0	4.43	4.87	4.49	13
	RB50#0	4.9	4.90	4.87	13
10MHz 16QAM	RB1#0	5.19	6.00	5.51	13
	RB50#0	5.86	5.74	5.86	13
				Result:	Pass

FCC §2.1049, §22.905: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	1.096	1.254	1.254	1.254
1.4MHz 16QAM	1.090	1.102	1.102	1.242	1.254	1.266
3MHz QPSK	2.695	2.683	2.695	2.988	2.904	2.916
3MHz 16QAM	2.683	2.683	2.683	3.000	2.892	2.940
5MHz QPSK	4.511	4.511	4.531	5.000	4.920	5.000
5MHz 16QAM	4.511	4.531	4.491	5.020	5.020	4.880
10MHz QPSK	8.942	8.942	8.942	9.760	9.800	9.800
10MHz 16QAM	8.942	8.942	8.942	9.800	9.840	9.400

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

FCC §2.1051, §22.917(a):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, §22.917(a):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, §22.355: Frequency Stability

Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.87	10.81	0.013	2.5
	-20	3.87	-9.97	-0.012	2.5
	-10	3.87	-6.13	-0.007	2.5
	0	3.87	6.17	0.007	2.5
	10	3.87	7.92	0.009	2.5
	20	3.87	6.46	0.008	2.5
	30	3.87	-6.52	-0.008	2.5
	40	3.87	7.18	0.009	2.5
	50	3.87	-9.7	-0.012	2.5
Frequency Stability vs. Voltage	20	3.3	-8.17	-0.010	2.5
	20	4.45	-7.05	-0.008	2.5
				Result:	Pass

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.87	25.03	0.030	2.5
	-20	3.87	-6.68	-0.008	2.5
	-10	3.87	9.77	0.012	2.5
	0	3.87	-7.62	-0.009	2.5
	10	3.87	-9.91	-0.012	2.5
	20	3.87	-9.82	-0.012	2.5
	30	3.87	-6.68	-0.008	2.5
	40	3.87	-8.86	-0.011	2.5
	50	3.87	5.67	0.007	2.5
Frequency Stability vs. Voltage	20	3.3	6.05	0.007	2.5
	20	4.45	7.52	0.009	2.5
				Result:	Pass