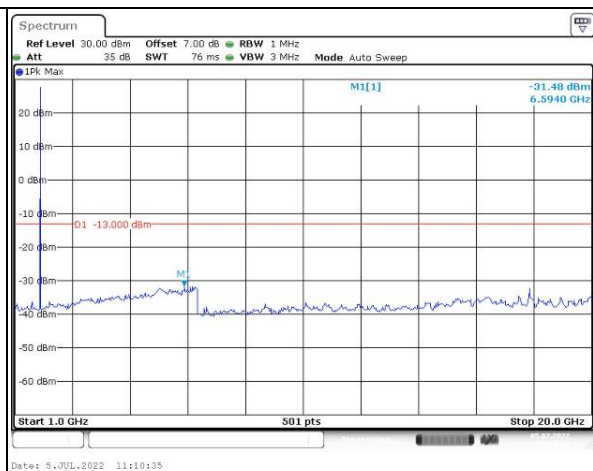
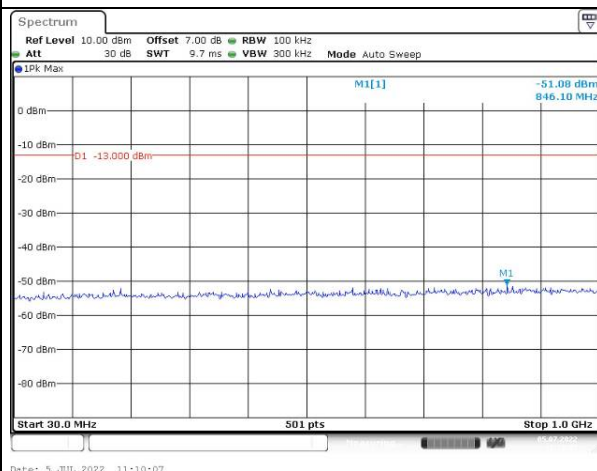


Spurious Emissions at Antenna Terminal

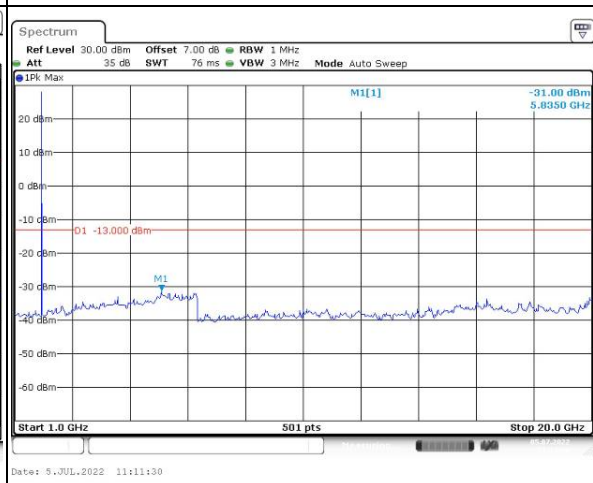
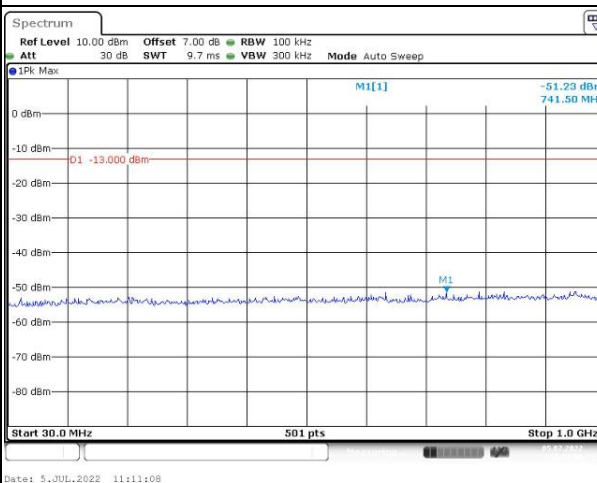
Channel

1.4MHz Bandwidth QPSK

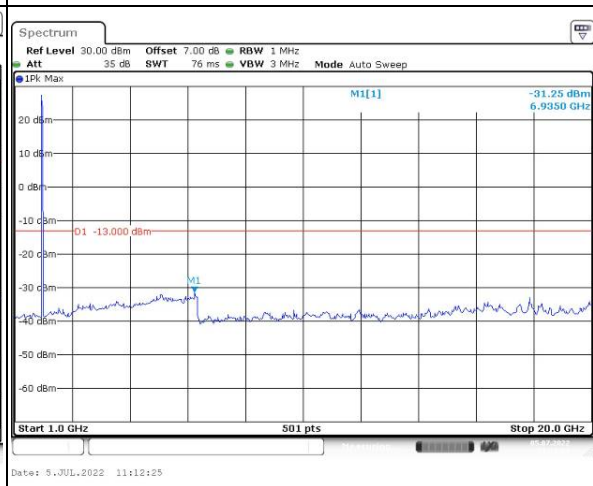
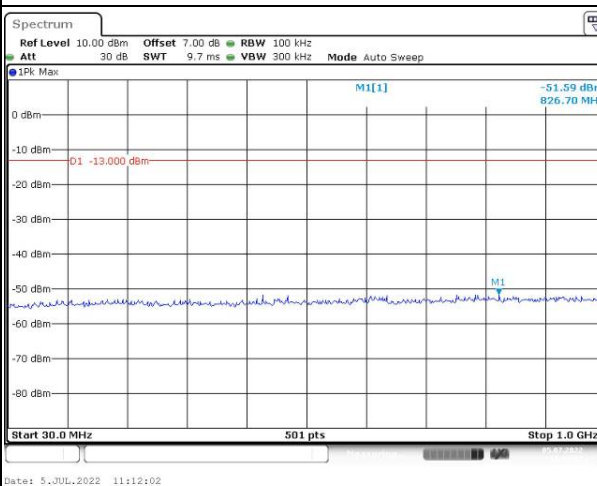
Lowest



Middle



Highest

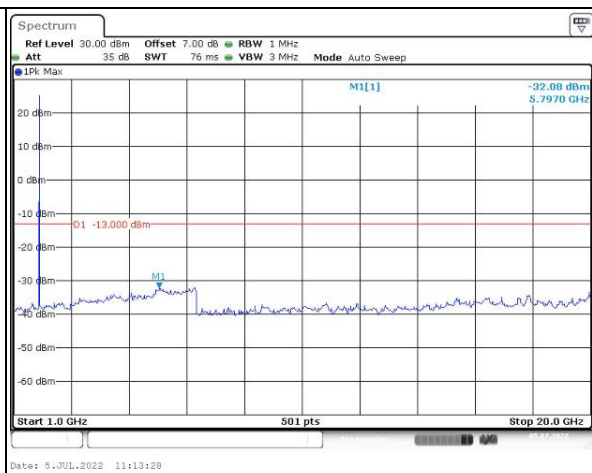
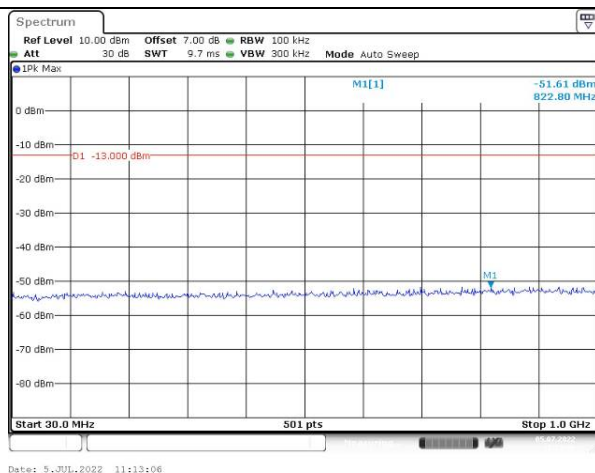


Spurious Emissions at Antenna Terminal

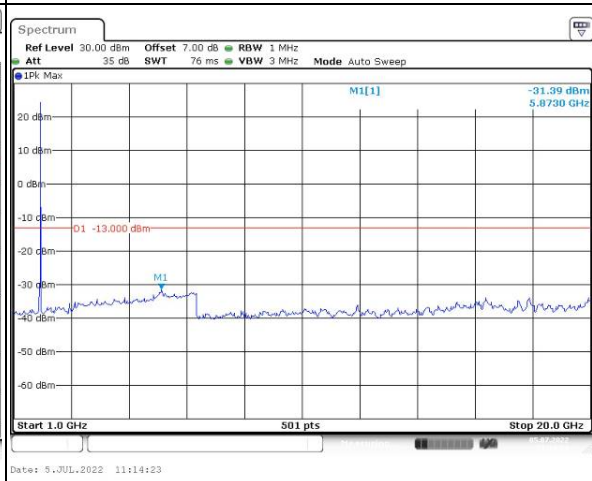
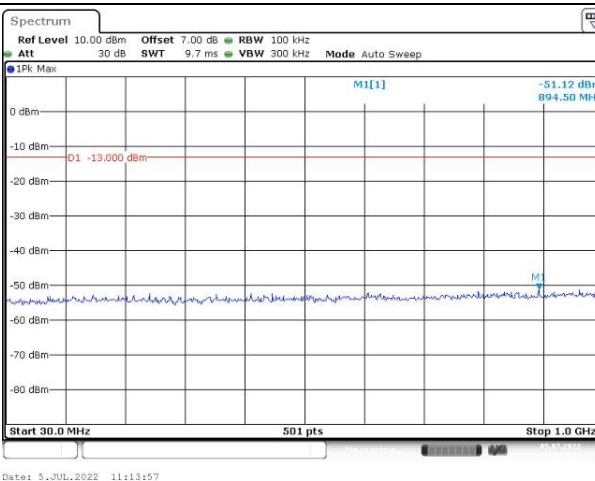
Channel

3MHz Bandwidth QPSK

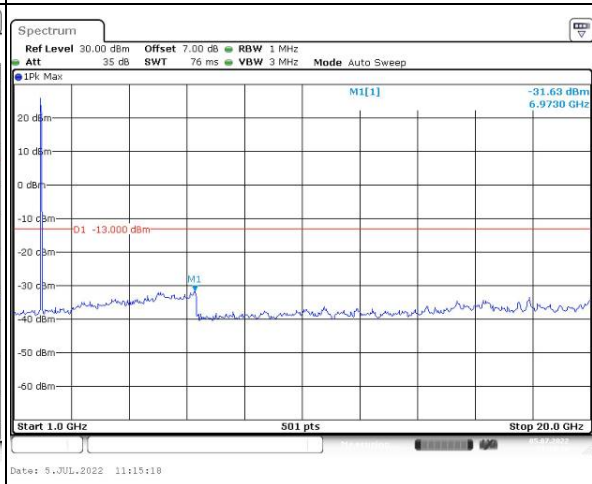
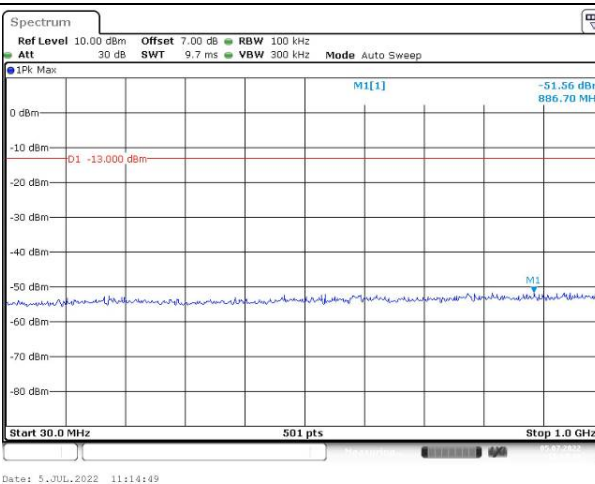
Lowest



Middle



Highest

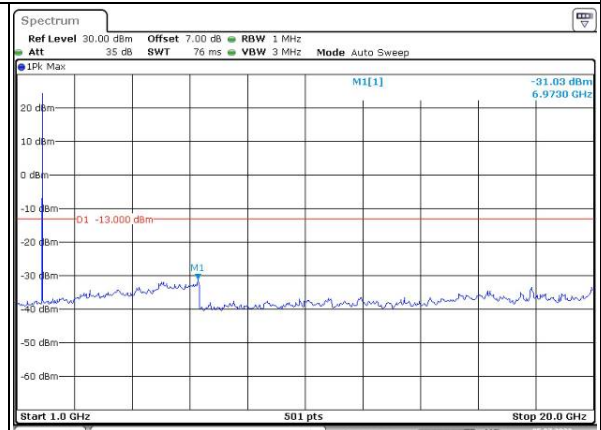
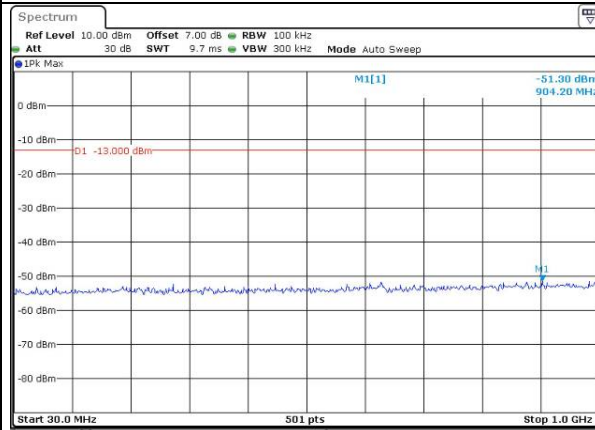


Spurious Emissions at Antenna Terminal

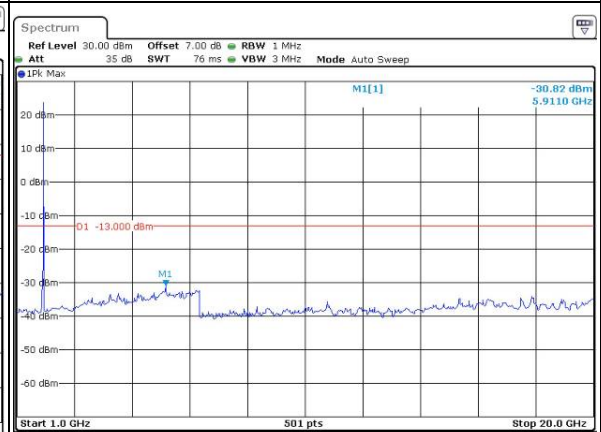
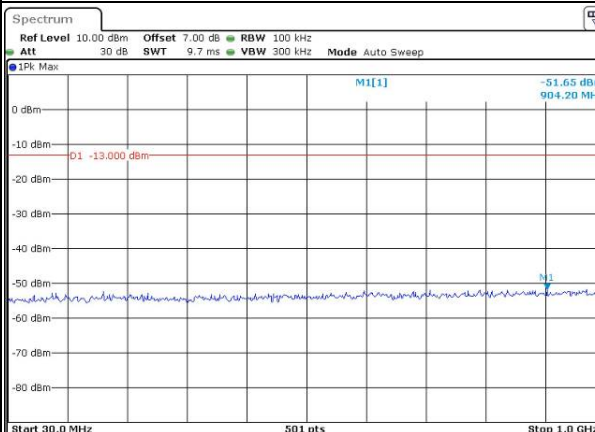
Channel

5MHz Bandwidth QPSK

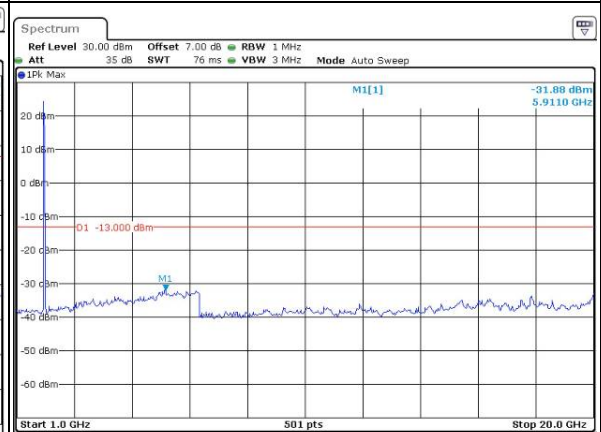
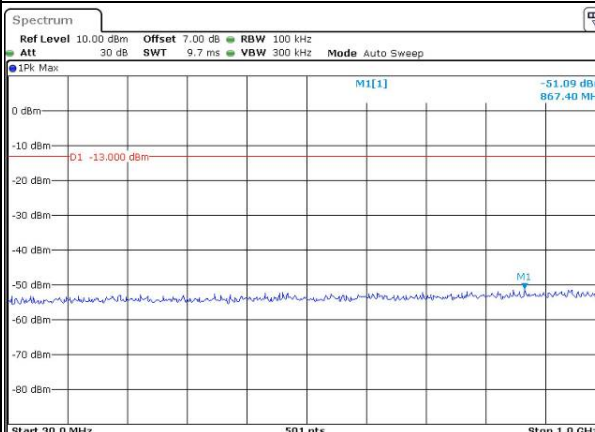
Lowest



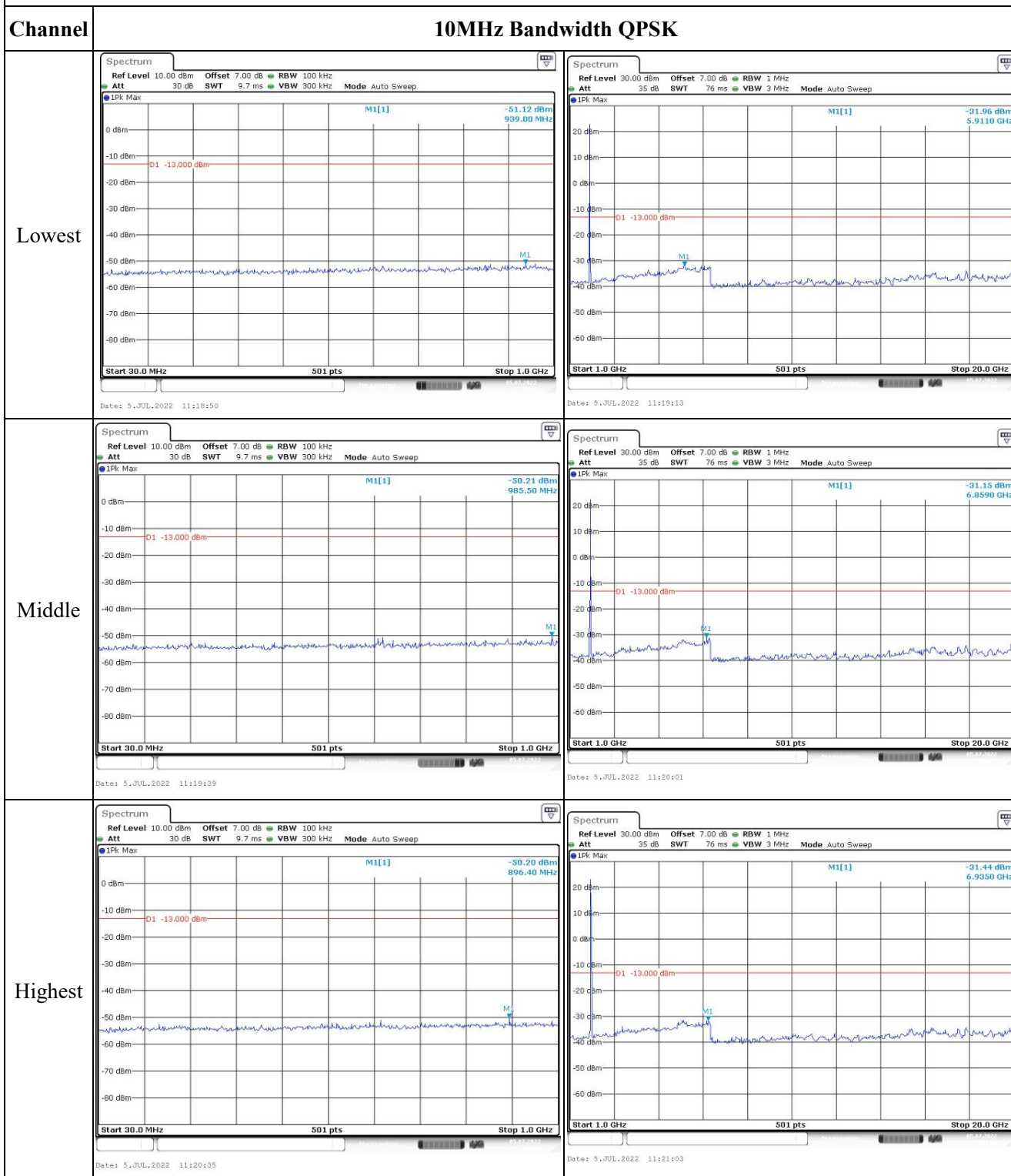
Middle



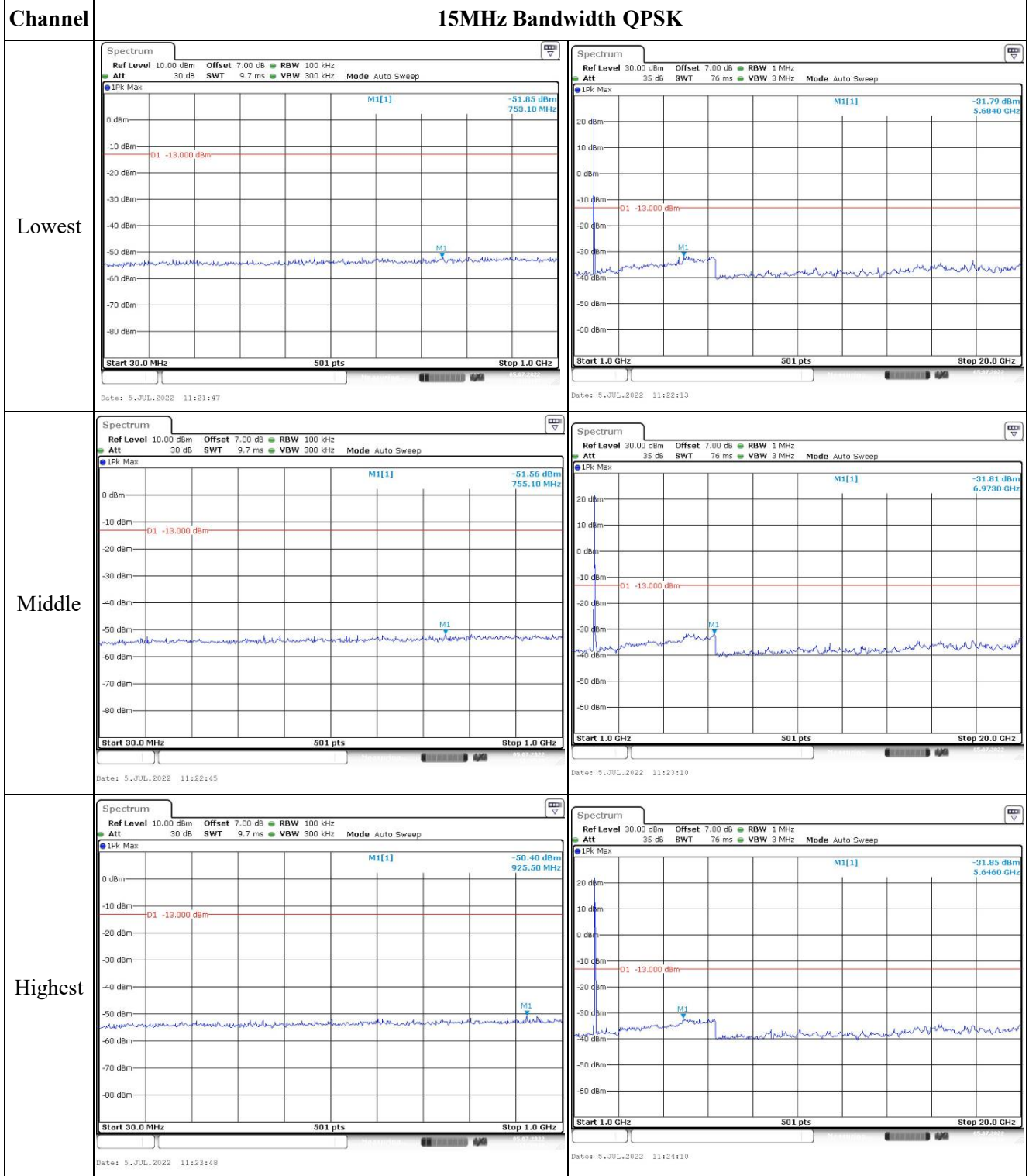
Highest



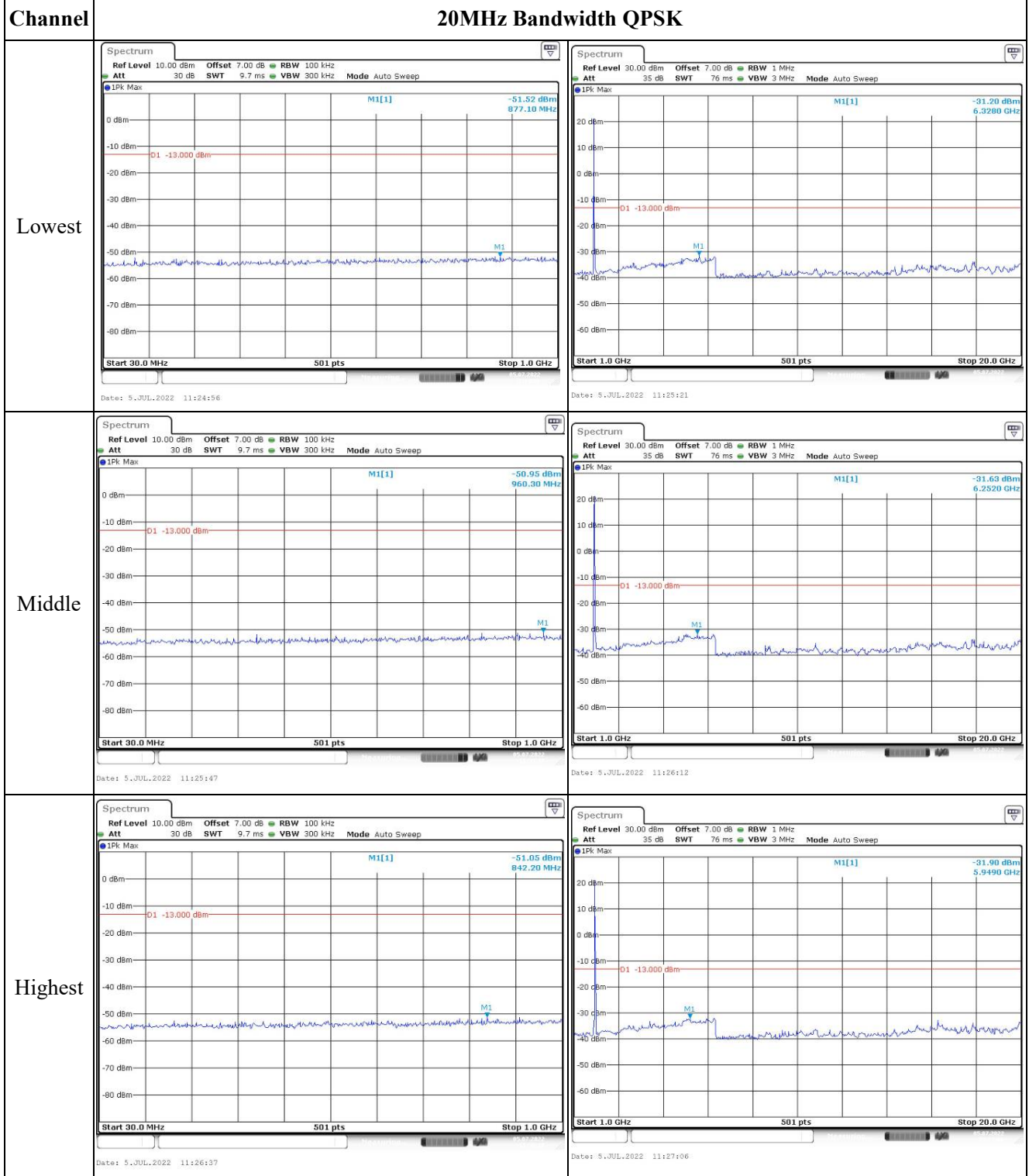
Spurious Emissions at Antenna Terminal



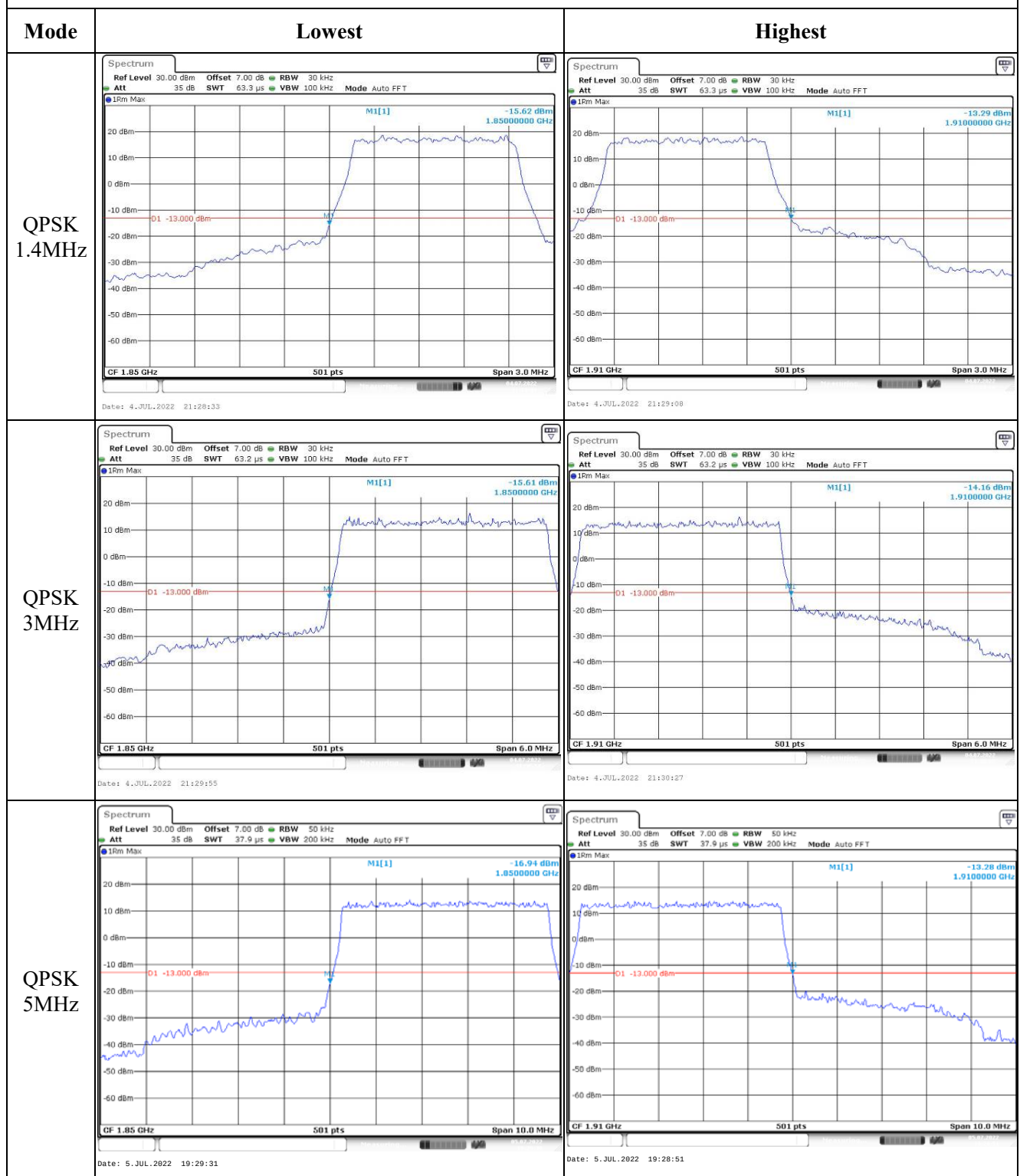
Spurious Emissions at Antenna Terminal



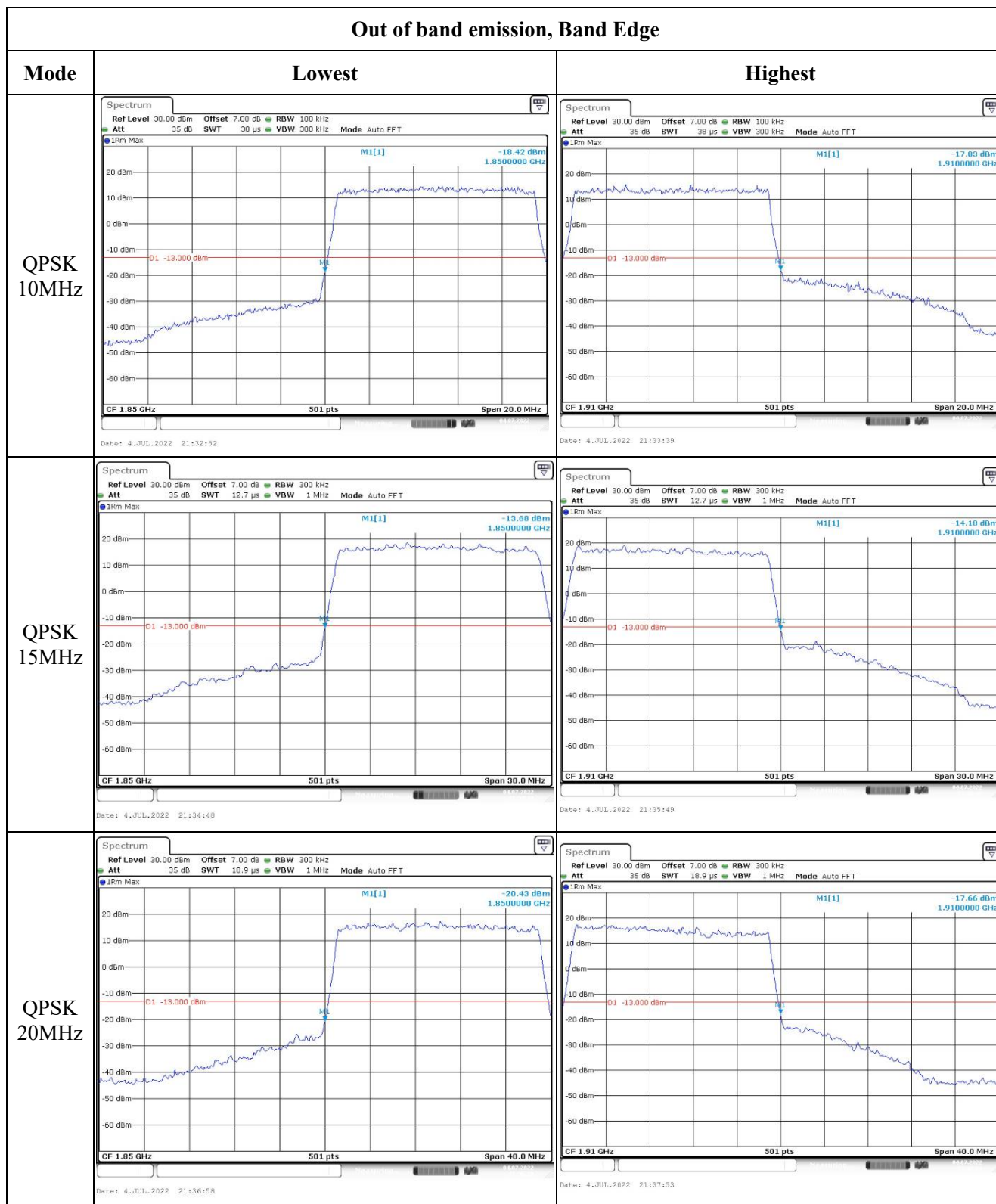
Spurious Emissions at Antenna Terminal



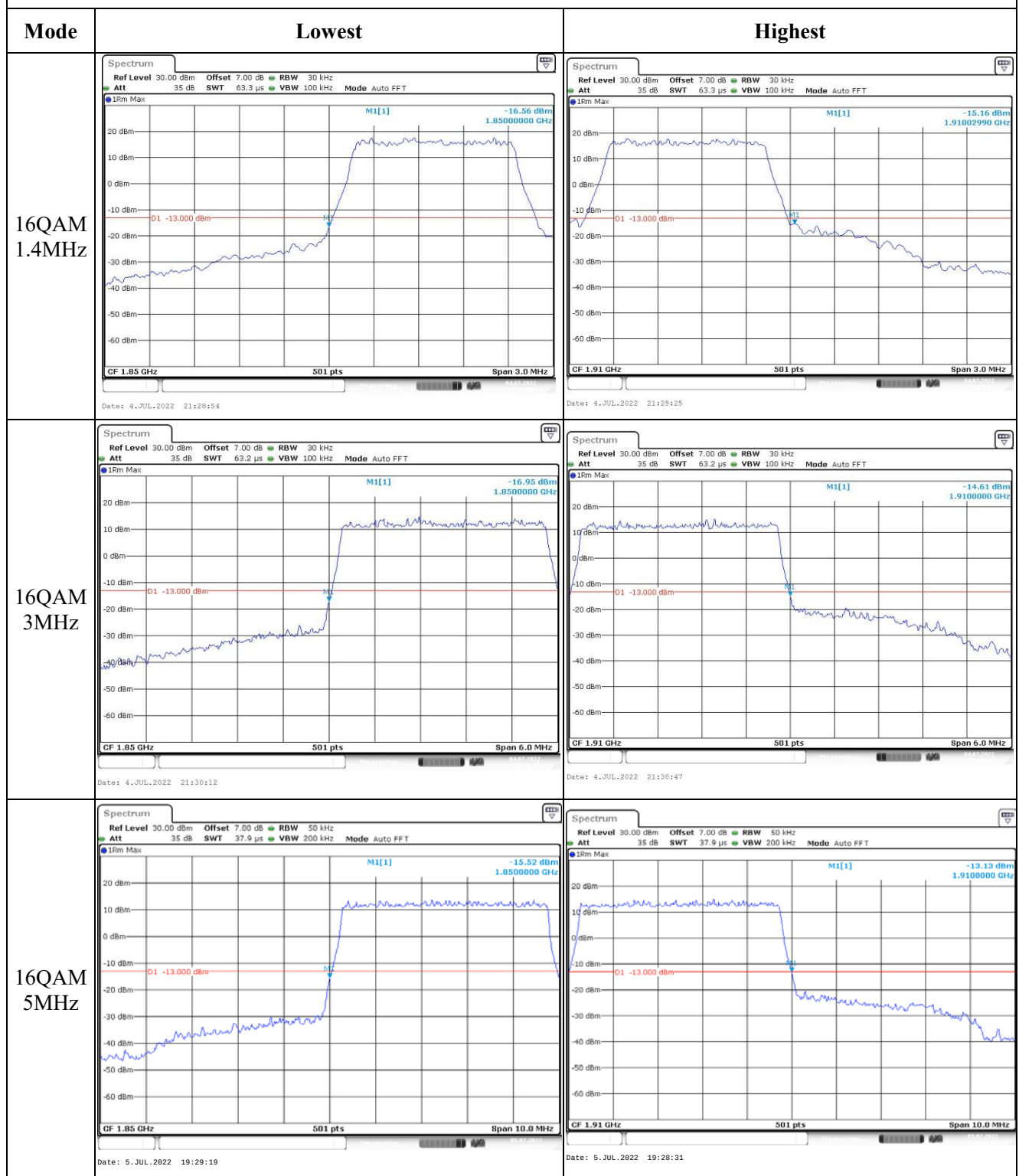
Out of band emission, Band Edge



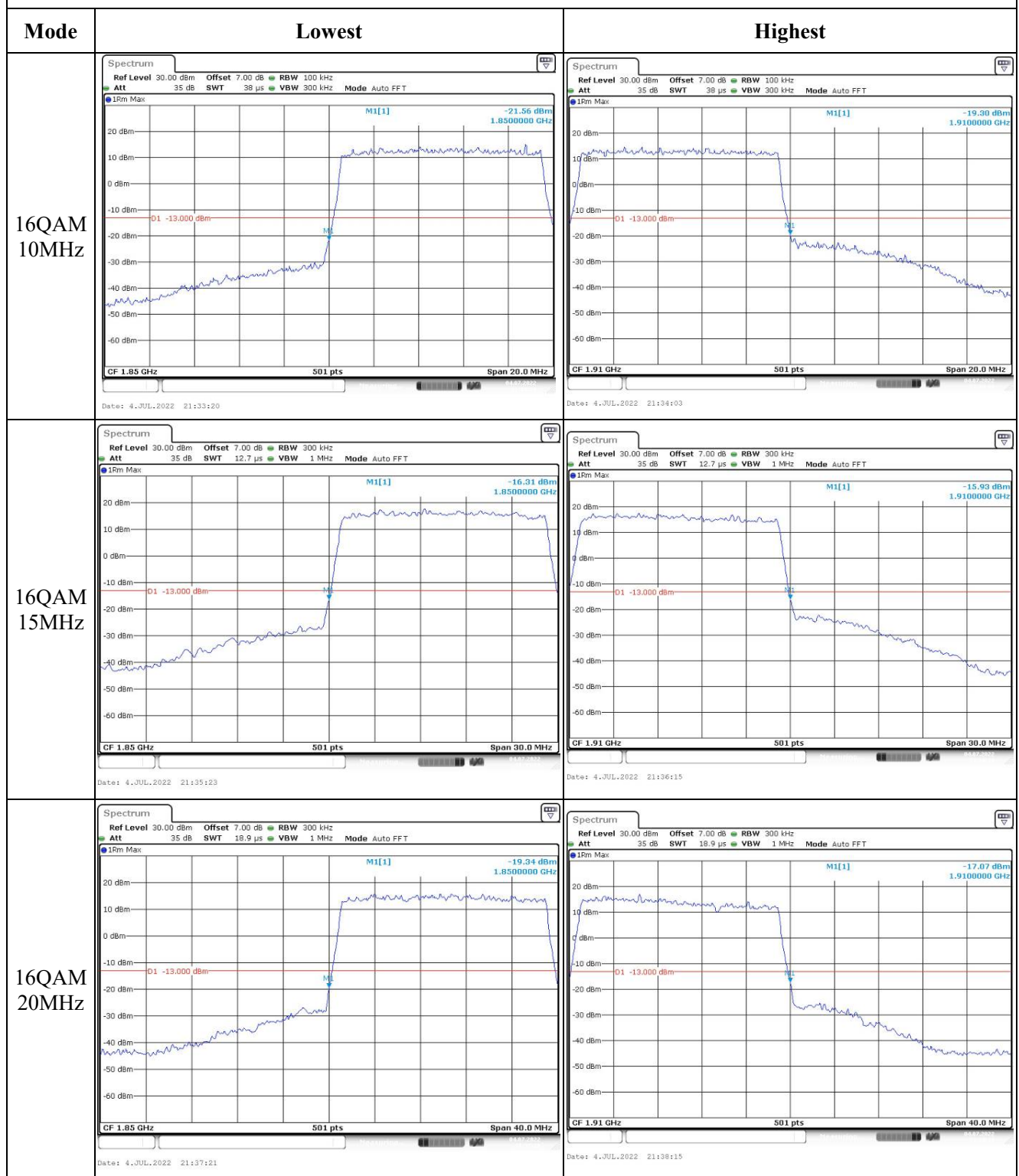
Out of band emission, Band Edge



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:	CR22050078-RF-S1	Test Date:	2022/7/4~2022/7/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ted Min	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5~25.8	Relative Humidity: (%)	51~57	ATM Pressure: (kPa)	100.1~100.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2021-10-10	2022-10-09
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-21	2022-07-20
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
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108042	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100002	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 4▲:

Antenna Gain (dBi):	-0.47	Path Loss L _C (dB):	0
Operation Voltage(V _{DC}):			
Lowest:	3.47	Normal:	3.85
		Highest:	4.24

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	21.96	21.98	22.08	21.69	30
	RB1#3	22.05	22.1	22.09		
	RB1#5	22.06	22.11	22.16		
	RB3#0	21.96	21.98	21.97		
	RB3#3	21.89	21.94	21.99		
	RB6#0	21.73	21.84	21.85		
1.4MHz 16QAM	RB1#0	21.69	21.74	21.8	21.56	30
	RB1#3	21.96	21.98	22.01		
	RB1#5	22.02	22.01	22.03		
	RB3#0	21.91	21.88	21.94		
	RB3#3	21.98	21.98	21.83		
	RB6#0	21.65	21.6	21.63		
3MHz QPSK	RB1#0	21.89	21.96	21.93	21.59	30
	RB1#8	21.94	22.06	21.94		
	RB1#14	22.02	22.02	21.99		
	RB6#0	21.86	21.84	21.83		
	RB6#9	21.91	21.93	21.98		
	RB15#0	21.56	21.62	21.55		
3MHz 16QAM	RB1#0	21.61	21.58	21.64	21.45	30
	RB1#8	21.6	21.65	21.75		
	RB1#14	21.89	21.92	21.9		
	RB6#0	21.46	21.44	21.51		
	RB6#9	21.47	21.44	21.53		
	RB15#0	21.14	21.17	21.19		
5MHz QPSK	RB1#0	22.06	22.1	22.13	21.78	30
	RB1#13	22.12	22.12	22.25		
	RB1#24	22.07	22.09	22.21		
	RB15#0	21.91	21.93	21.96		
	RB15#10	21.96	21.94	21.99		
	RB25#0	21.69	21.78	21.73		
5MHz 16QAM	RB1#0	21.64	21.72	21.78	21.41	30
	RB1#13	21.78	21.84	21.74		
	RB1#24	21.81	21.88	21.72		
	RB15#0	21.52	21.63	21.53		
	RB15#10	21.47	21.61	21.5		
	RB25#0	21.19	21.34	21.33		
10MHz QPSK	RB1#0	21.87	21.9	21.89	21.63	30
	RB1#25	22.01	21.99	21.97		

	RB1#49	22.01	22.01	22.1		
	RB25#0	21.88	21.91	21.94		
	RB25#25	21.93	21.96	21.95		
	RB50#0	21.53	21.59	21.66		
10MHz 16QAM	RB1#0	21.63	21.61	21.52	21.36	30
	RB1#25	21.78	21.83	21.81		
	RB1#49	21.72	21.82	21.68		
	RB25#0	21.56	21.53	21.53		
	RB25#25	21.7	21.64	21.54		
	RB50#0	21.28	21.26	21.24		
15MHz QPSK	RB1#0	22.02	21.93	21.98	21.72	30
	RB1#38	22.11	21.98	22.04		
	RB1#74	22.19	22	22.02		
	RB36#0	21.95	21.94	21.88		
	RB36#39	22.01	21.91	21.96		
	RB75#0	21.76	21.71	21.66		
15MHz 16QAM	RB1#0	21.58	21.6	21.64	21.39	30
	RB1#38	21.64	21.61	21.68		
	RB1#74	21.83	21.86	21.78		
	RB36#0	21.61	21.51	21.64		
	RB36#39	21.73	21.64	21.8		
	RB75#0	21.25	21.24	21.33		
20MHz QPSK	RB1#0	21.98	22.01	22.03	21.78	30
	RB1#50	22.01	21.97	22.01		
	RB1#99	22.19	22.25	21.23		
	RB50#0	21.86	21.86	21.88		
	RB50#50	21.91	21.84	21.93		
	RB100#0	21.75	21.63	21.65		
20MHz 16QAM	RB1#0	21.76	21.67	21.63	21.52	30
	RB1#50	21.99	21.89	21.83		
	RB1#99	21.97	21.86	21.79		
	RB50#0	21.76	21.66	21.77		
	RB50#50	21.84	21.7	21.74		
	RB100#0	21.51	21.31	21.29		
Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBi)						

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	3.21	3.32	3.27	13
	RB100#0	5.03	5.11	5.15	13
20MHz 16QAM	RB1#0	4.23	4.29	4.25	13
	RB100#0	6.12	6.16	6.27	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	1.096	1.102	1.302	1.302	1.32
1.4MHz 16QAM	1.102	1.102	1.096	1.308	1.332	1.302
3MHz QPSK	2.683	2.695	2.695	2.952	2.928	2.94
3MHz 16QAM	2.683	2.695	2.683	2.94	2.952	2.952
5MHz QPSK	4.491	4.511	4.511	5.02	5.04	5.04
5MHz 16QAM	4.511	4.511	4.511	5.04	5	5.04
10MHz QPSK	8.942	8.942	8.942	9.76	9.84	9.72
10MHz 16QAM	8.942	8.942	8.942	9.72	9.68	9.72
15MHz QPSK	13.413	13.473	13.413	14.82	14.82	14.76
15MHz 16QAM	13.413	13.473	13.413	14.76	14.76	14.64
20MHz QPSK	17.964	17.884	17.884	19.6	19.28	19.2
20MHz 16QAM	17.884	17.964	17.884	19.28	19.36	19.28
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.

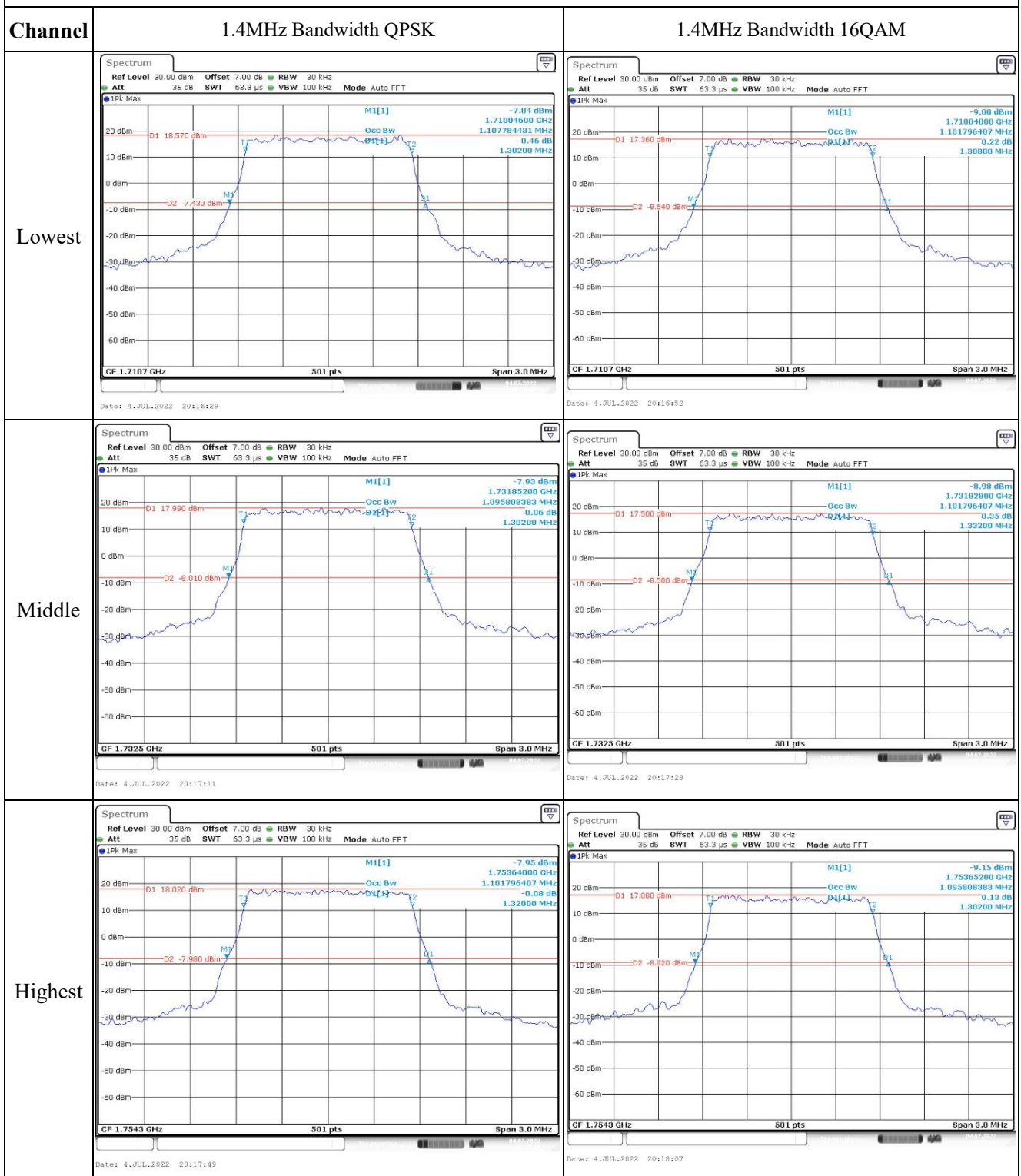
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

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	1710.310	1710.00	1754.797	1755
	-20	3.85	1710.252	1710.00	1754.775	1755
	-10	3.85	1710.260	1710.00	1754.765	1755
	0	3.85	1710.280	1710.00	1754.705	1755
	10	3.85	1710.378	1710.00	1754.752	1755
	20	3.85	1710.279	1710.00	1754.765	1755
	30	3.85	1710.272	1710.00	1754.867	1755
	40	3.85	1710.411	1710.00	1754.760	1755
	50	3.85	1710.368	1710.00	1754.868	1755
Frequency Stability vs. Voltage	20	3.47	1710.336	1710.00	1754.784	1755
	20	4.24	1710.244	1710.00	1754.837	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	1710.329	1710.00	1754.699	1755
	-20	3.85	1710.281	1710.00	1754.757	1755
	-10	3.85	1710.321	1710.00	1754.822	1755
	0	3.85	1710.249	1710.00	1754.845	1755
	10	3.85	1710.308	1710.00	1754.829	1755
	20	3.85	1710.269	1710.00	1754.763	1755
	30	3.85	1710.178	1710.00	1754.705	1755
	40	3.85	1710.212	1710.00	1754.822	1755
	50	3.85	1710.257	1710.00	1754.771	1755
Frequency Stability vs. Voltage	20	3.47	1710.213	1710.00	1754.849	1755
	20	4.24	1710.358	1710.00	1754.853	1755
					Result:	Pass

Test Plots:

Occupied Bandwidth



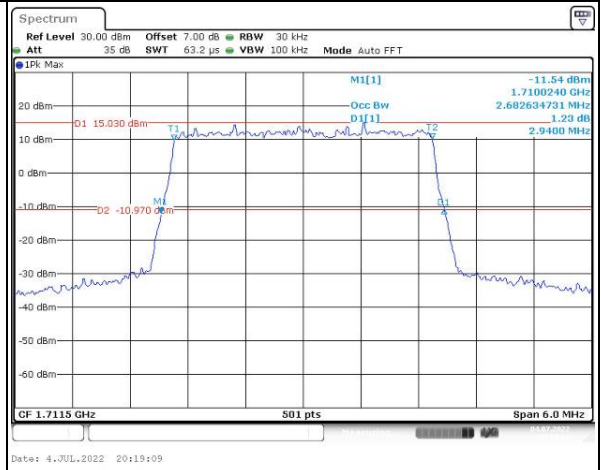
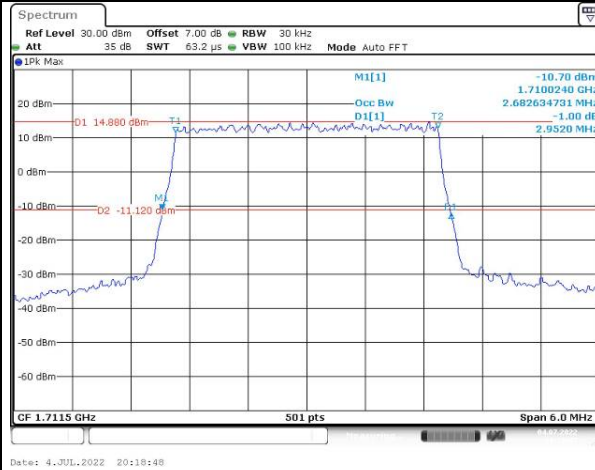
Occupied Bandwidth

Channel

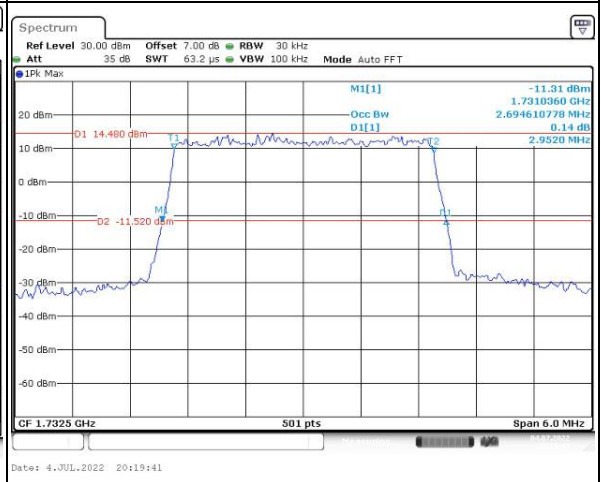
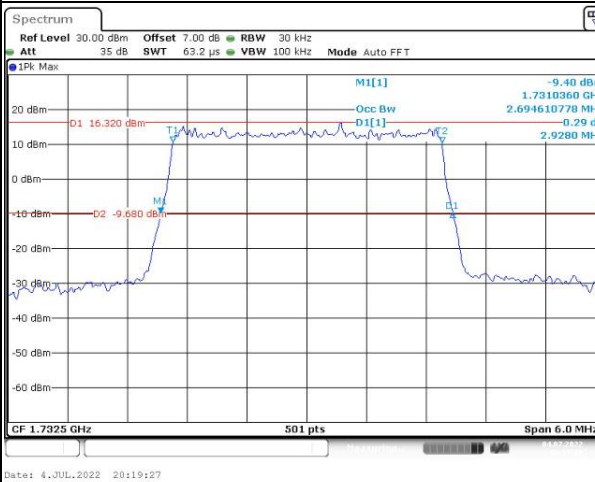
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

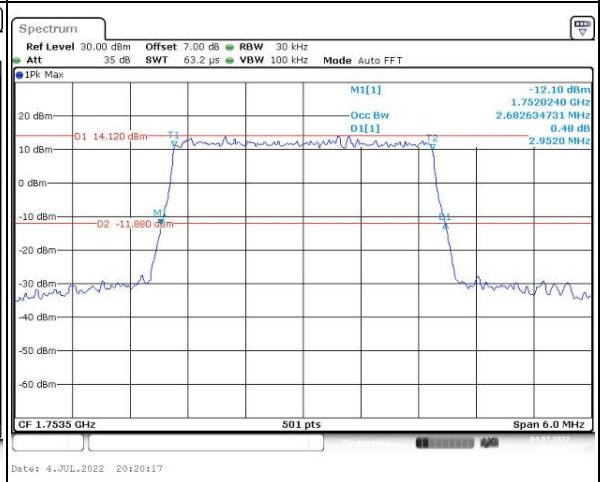
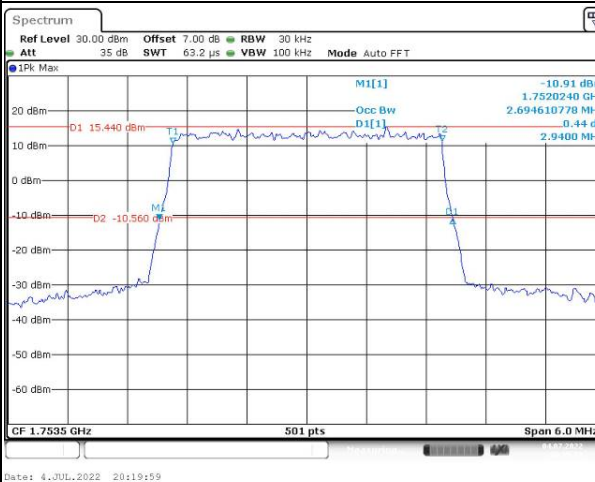
Lowest



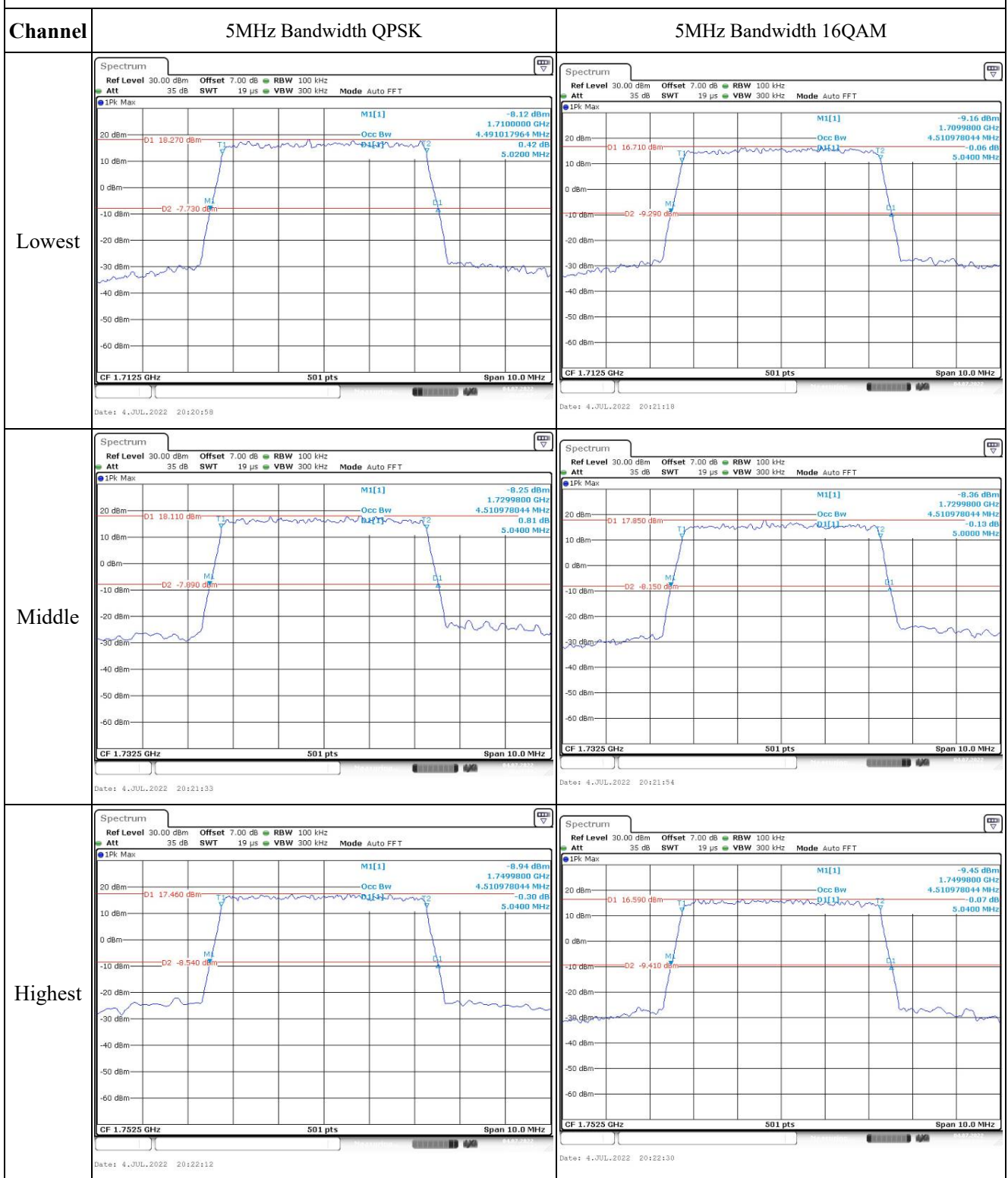
Middle



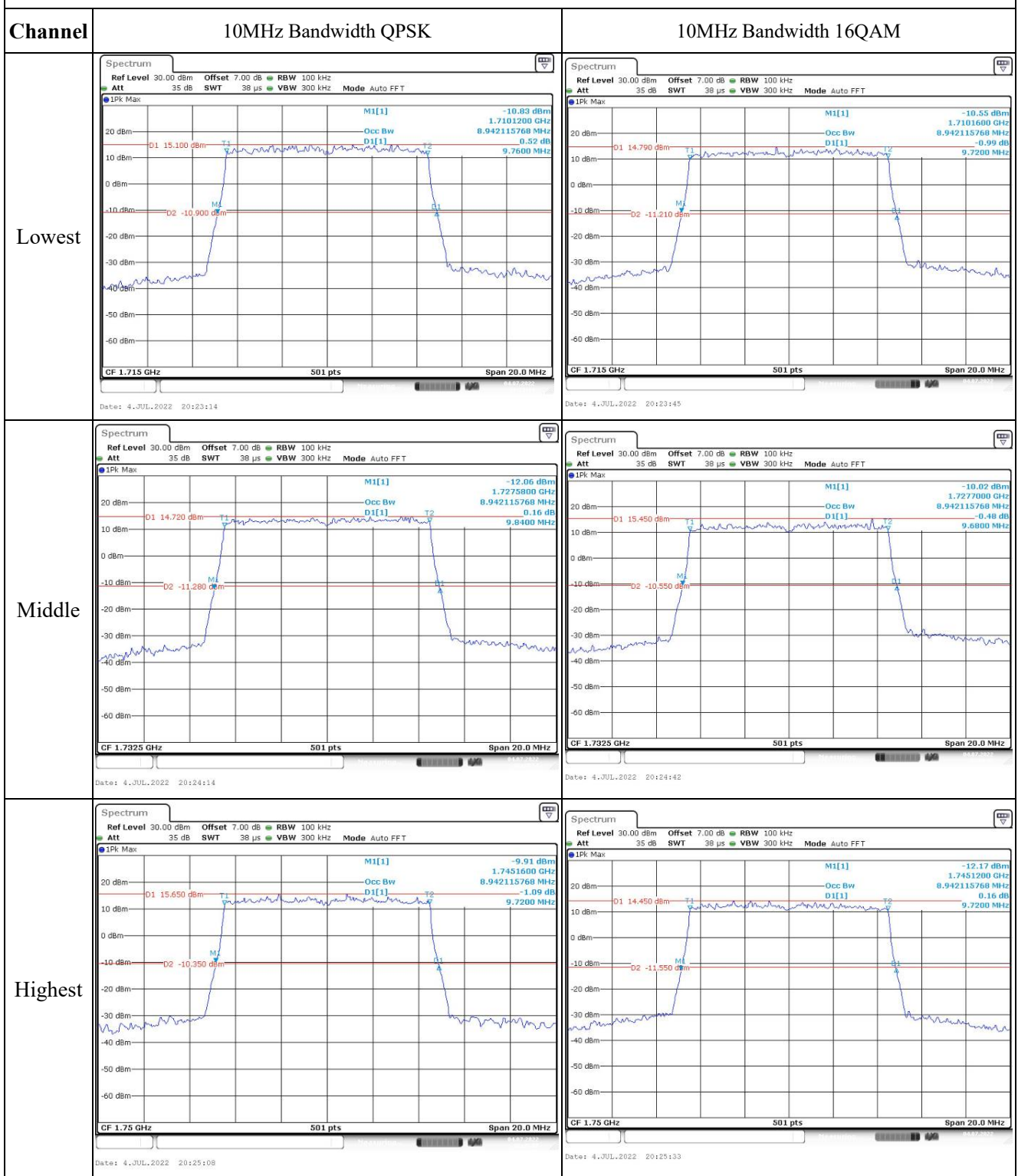
Highest



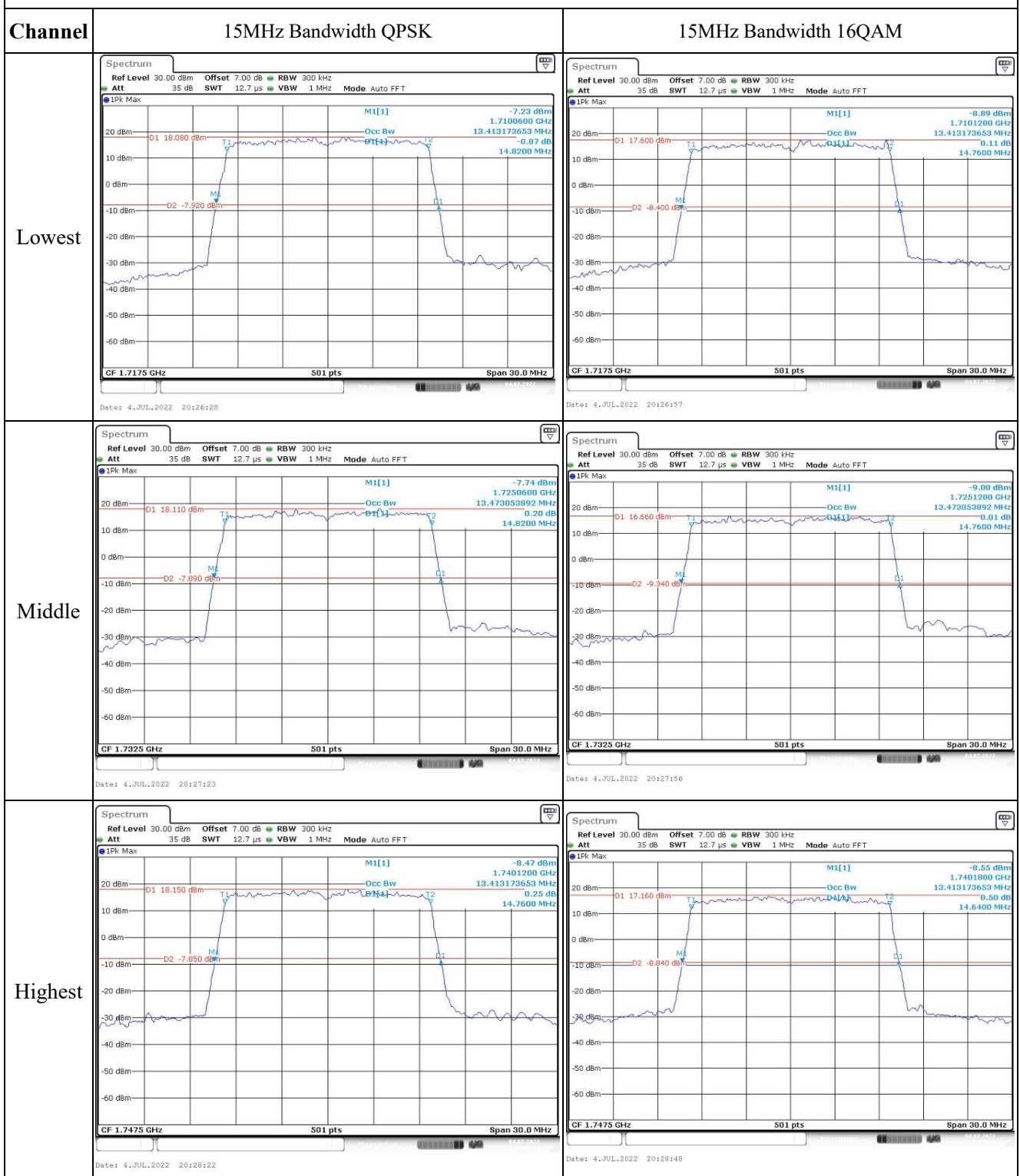
Occupied Bandwidth



Occupied Bandwidth



Occupied Bandwidth

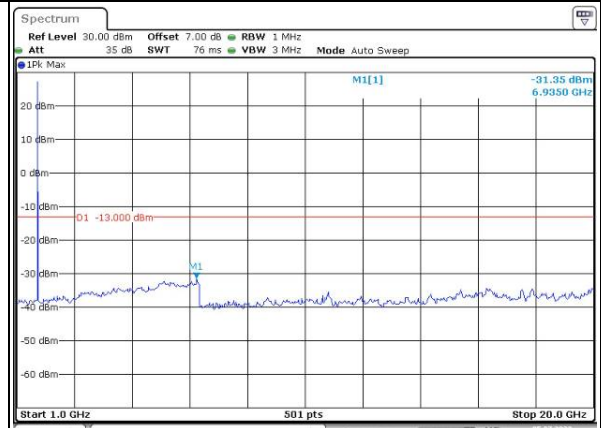
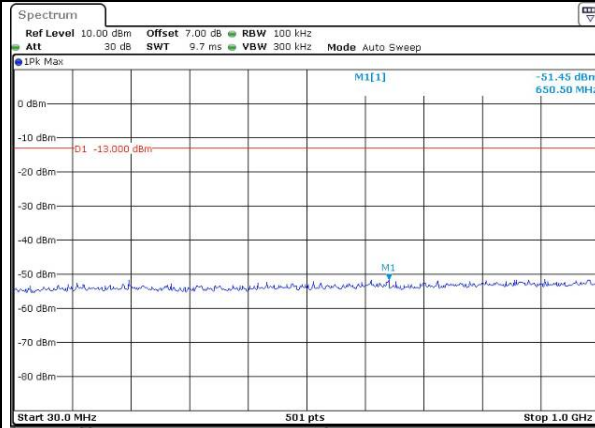


Spurious Emissions at Antenna Terminal

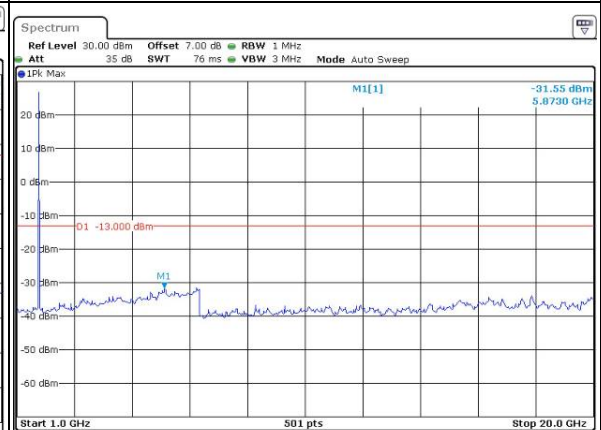
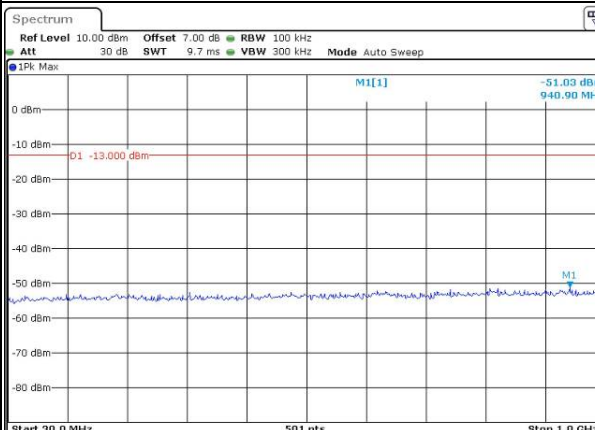
Channel

1.4MHz Bandwidth QPSK

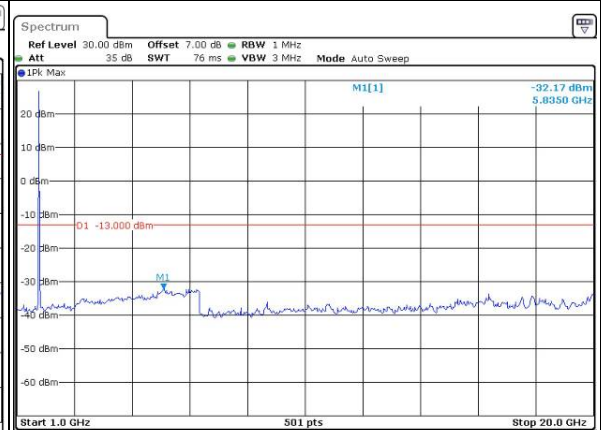
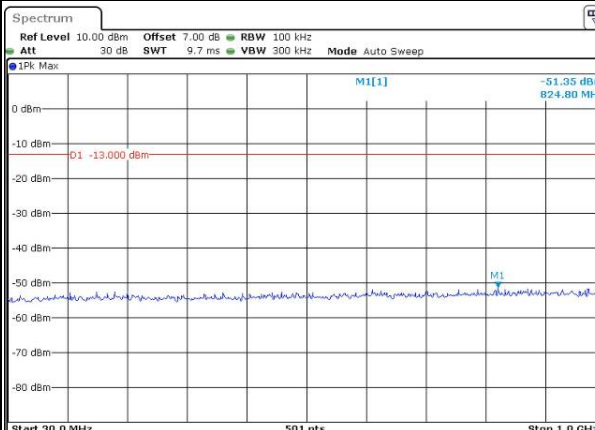
Lowest



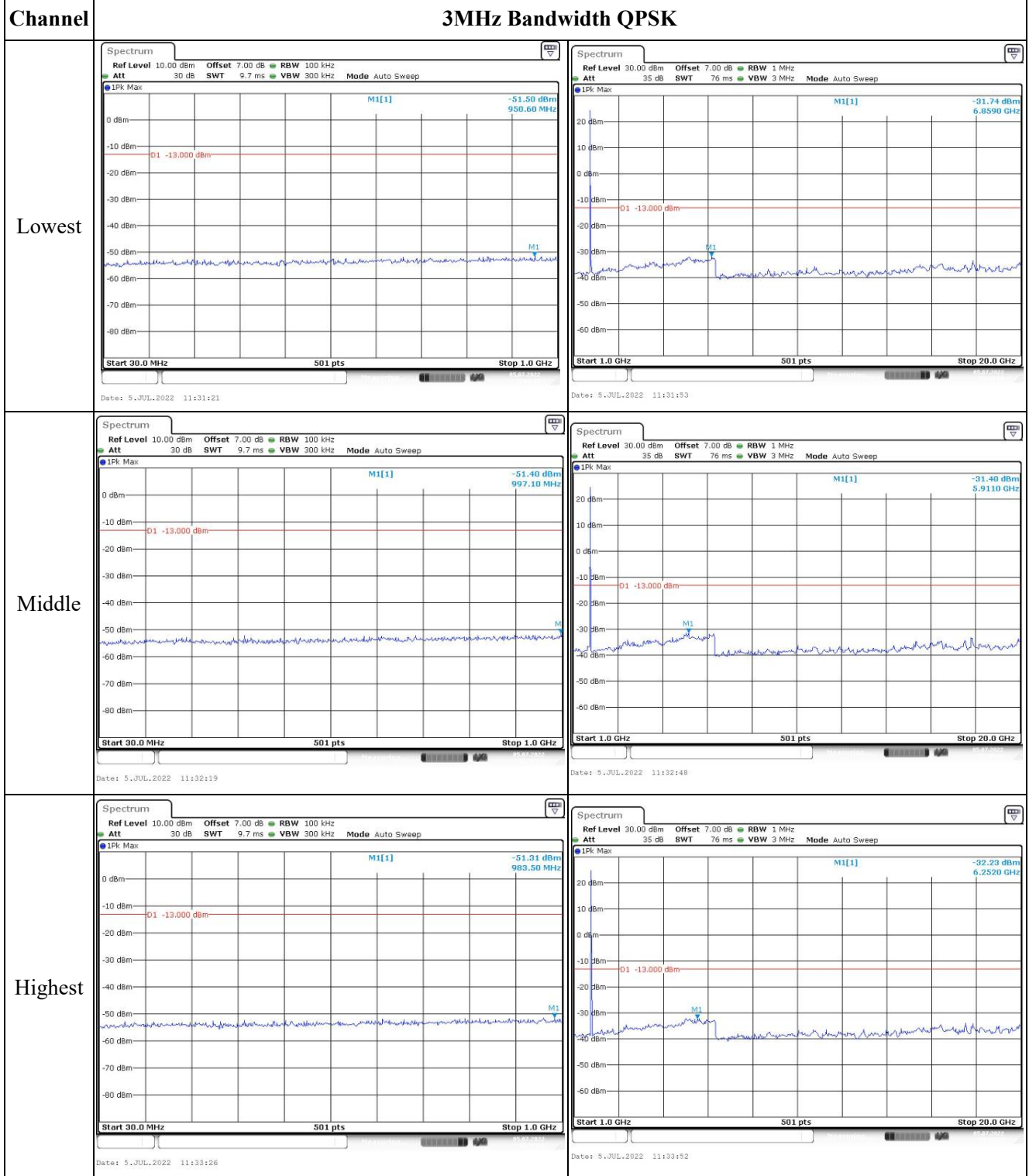
Middle



Highest



Spurious Emissions at Antenna Terminal

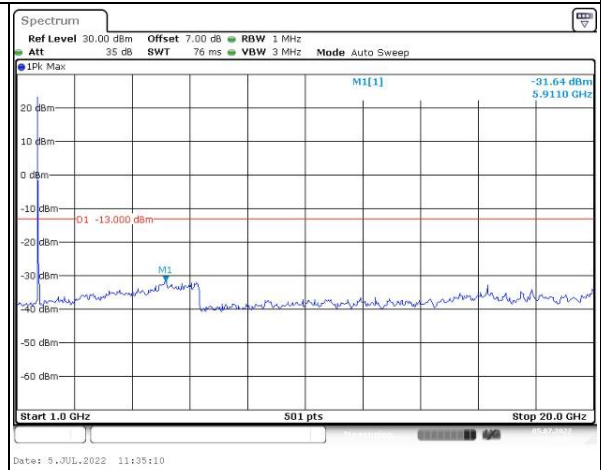
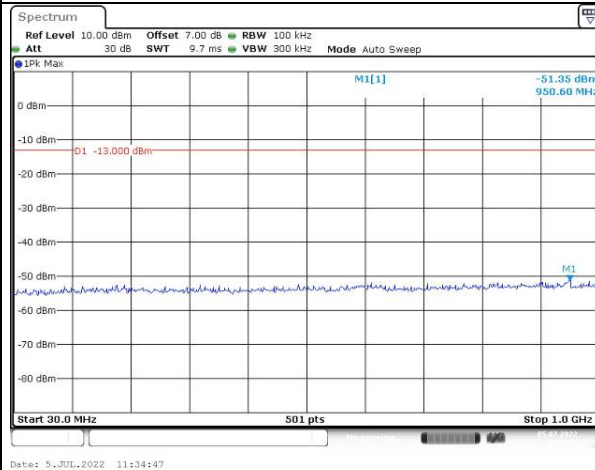


Spurious Emissions at Antenna Terminal

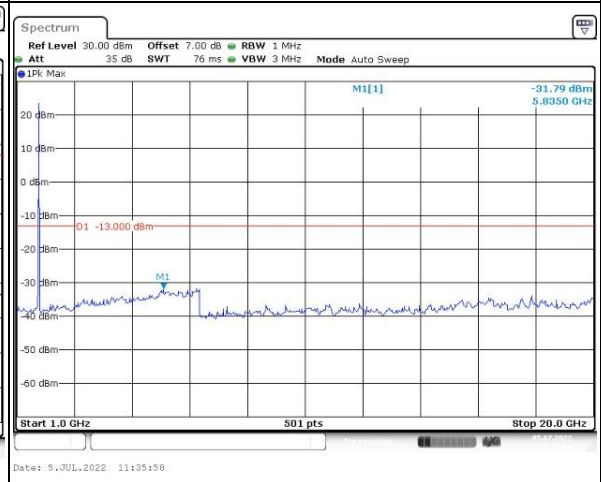
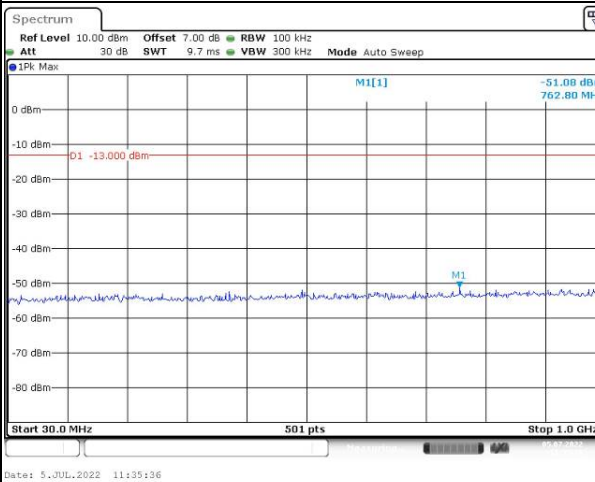
Channel

5MHz Bandwidth QPSK

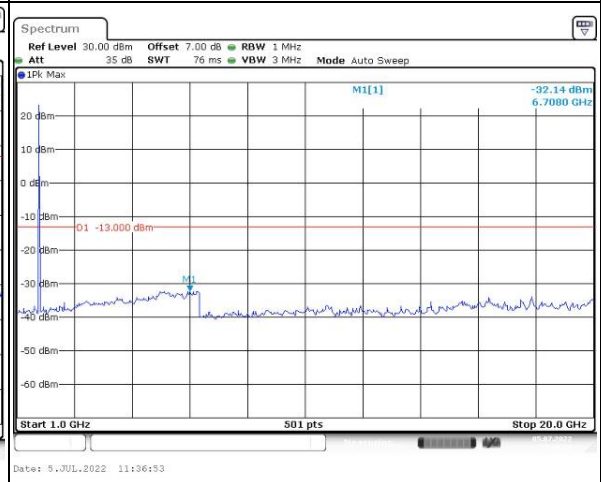
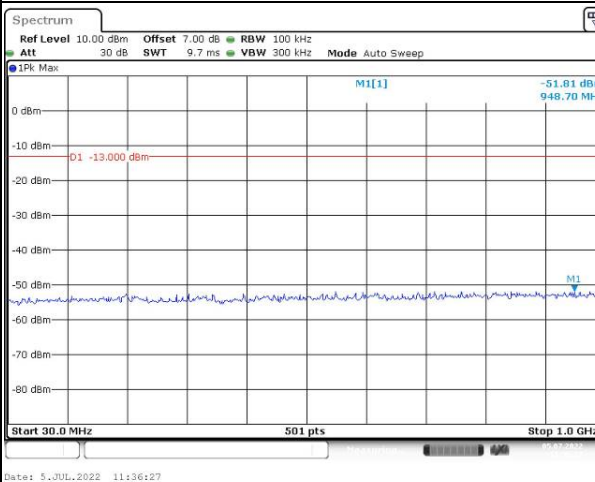
Lowest



Middle



Highest

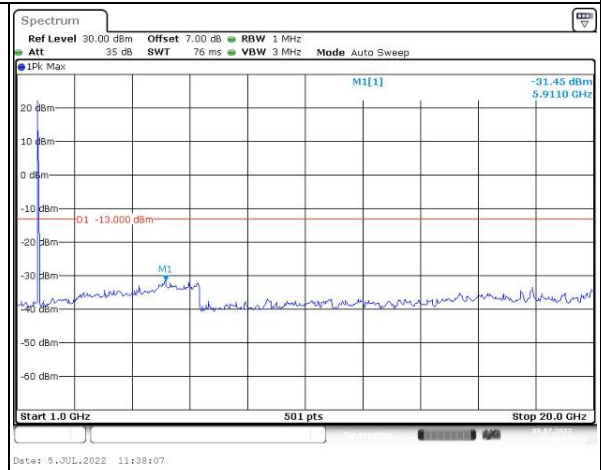
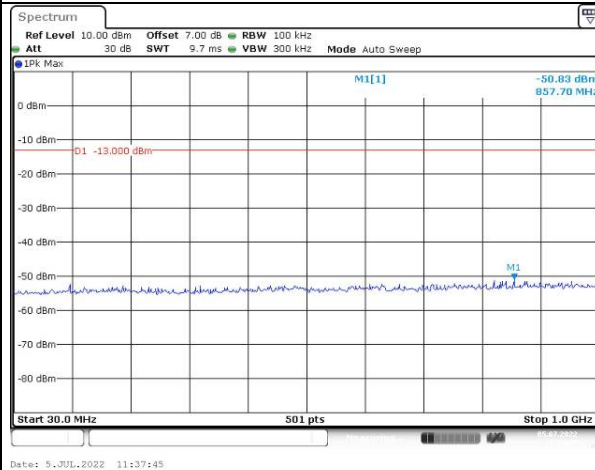


Spurious Emissions at Antenna Terminal

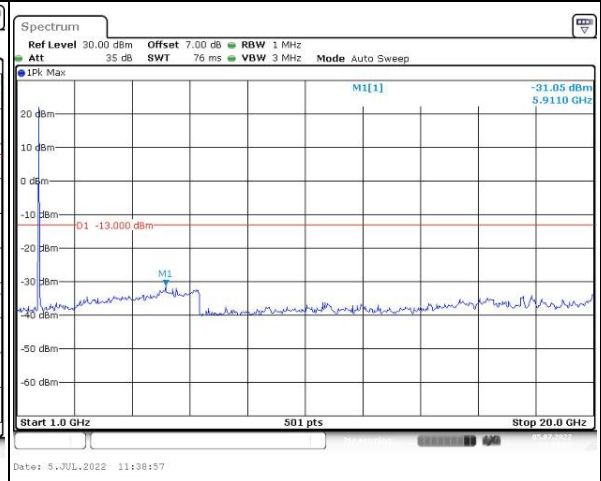
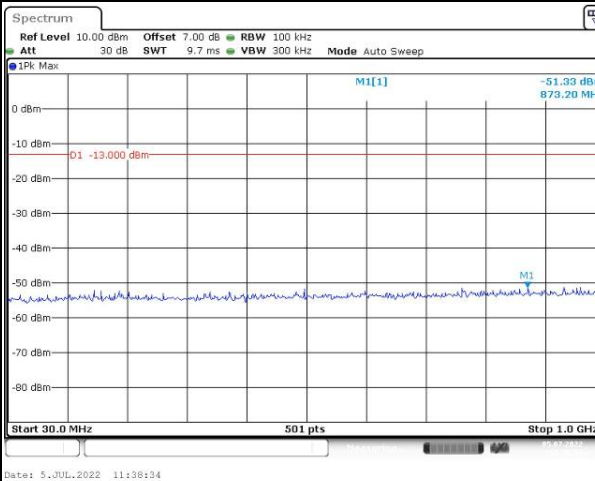
Channel

10MHz Bandwidth QPSK

Lowest



Middle



Highest

