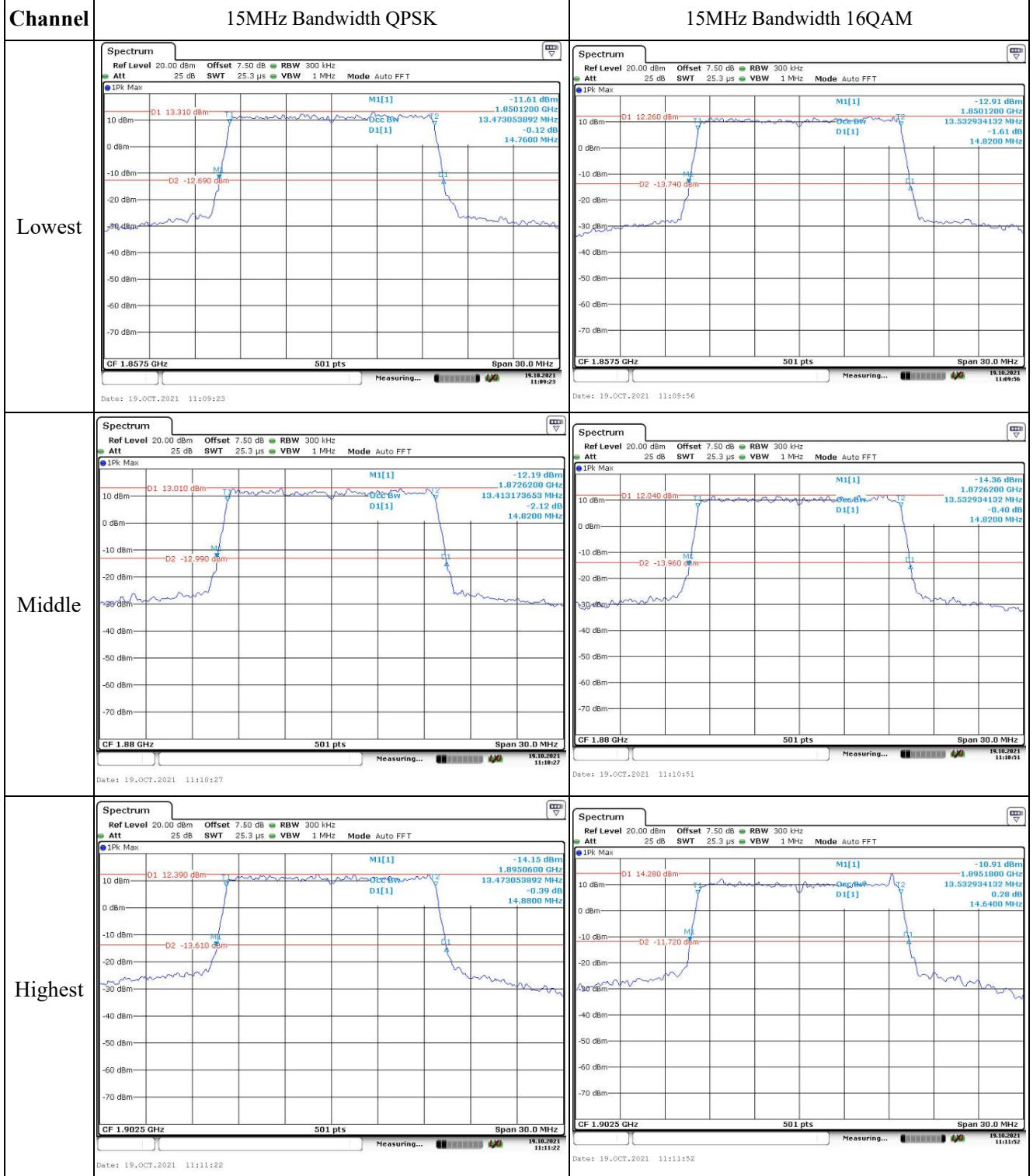
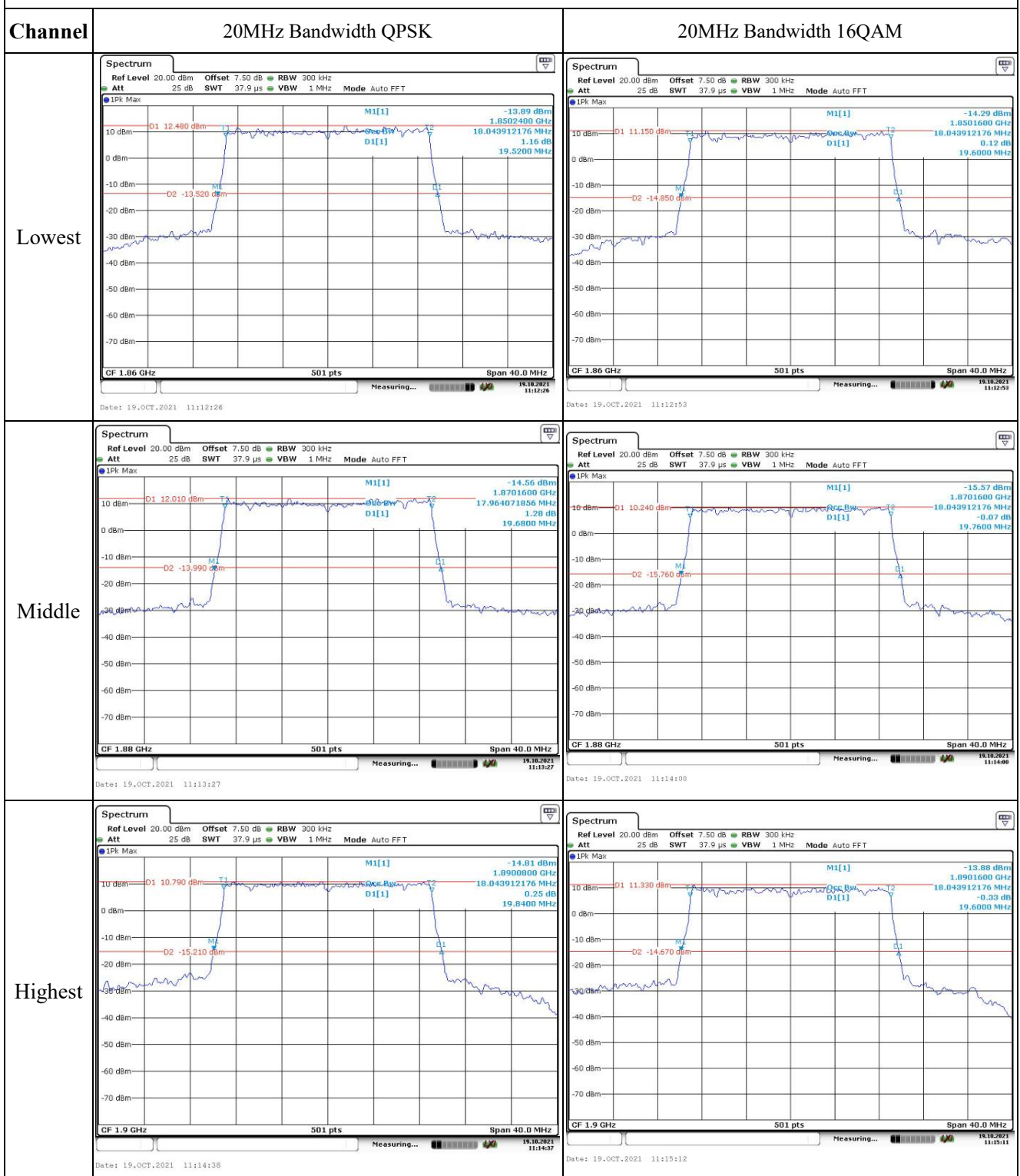


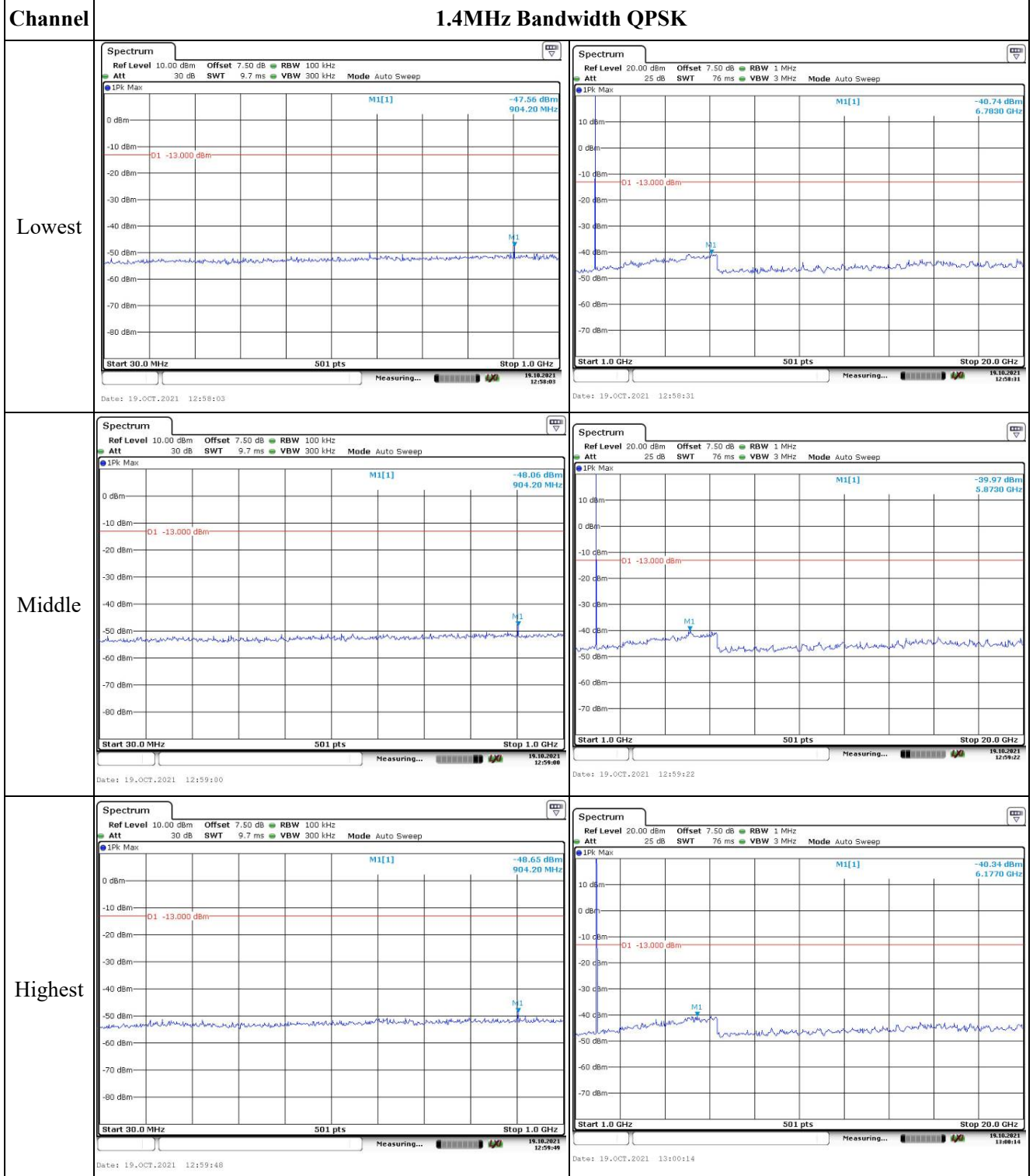
Occupied Bandwidth



Occupied Bandwidth



Spurious Emissions at Antenna Terminal

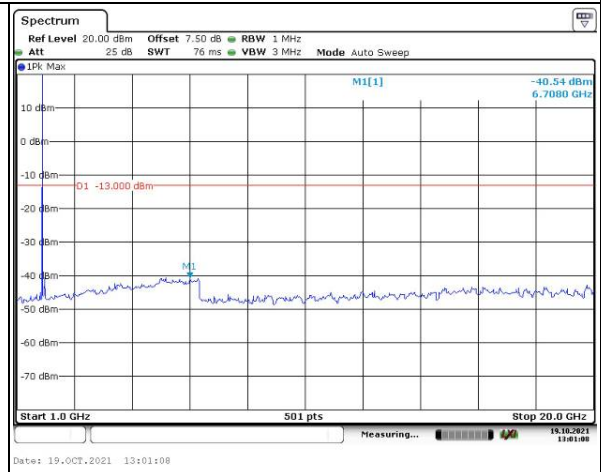
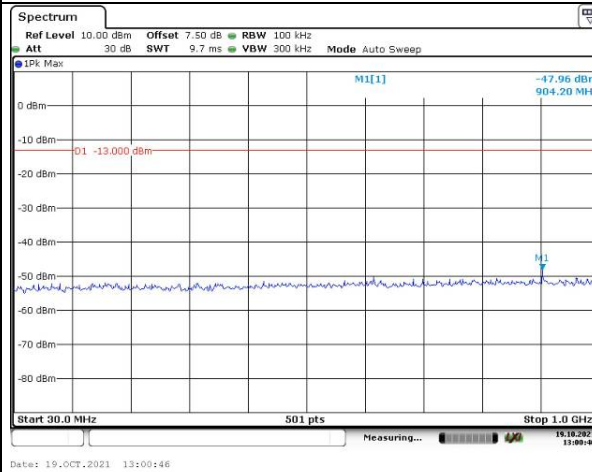


Spurious Emissions at Antenna Terminal

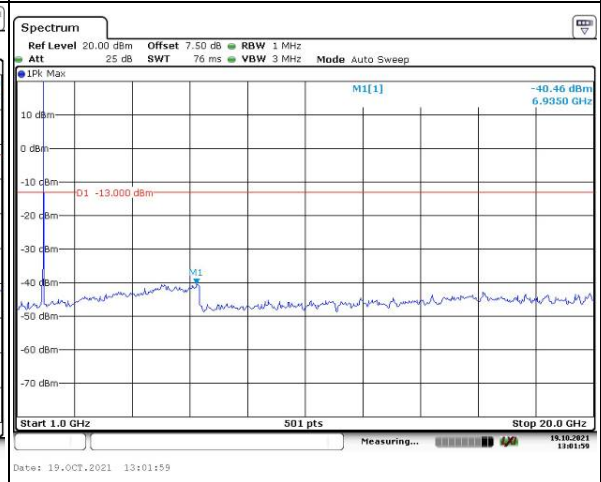
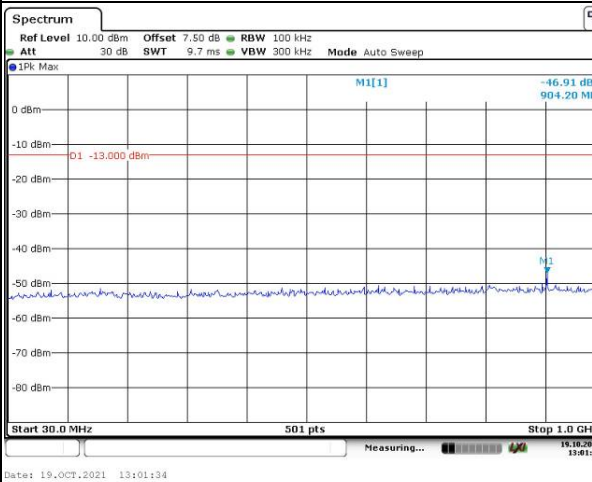
Channel

3MHz Bandwidth QPSK

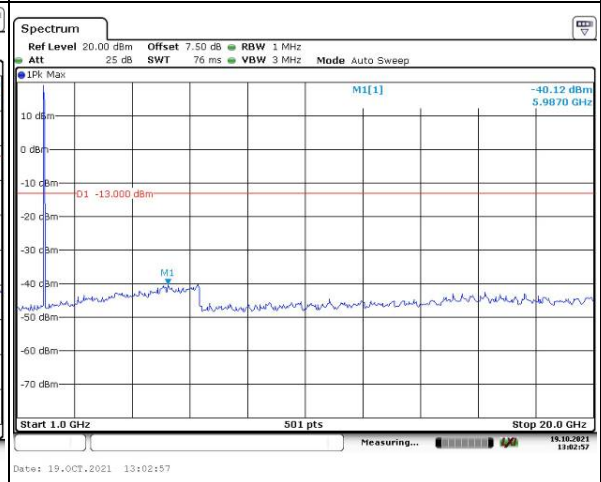
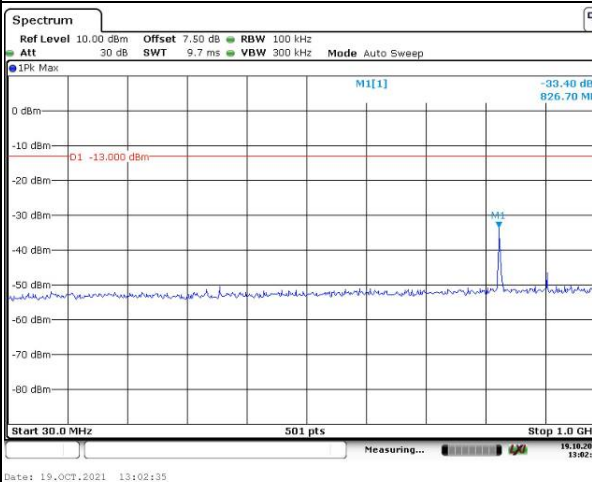
Lowest



Middle



Highest

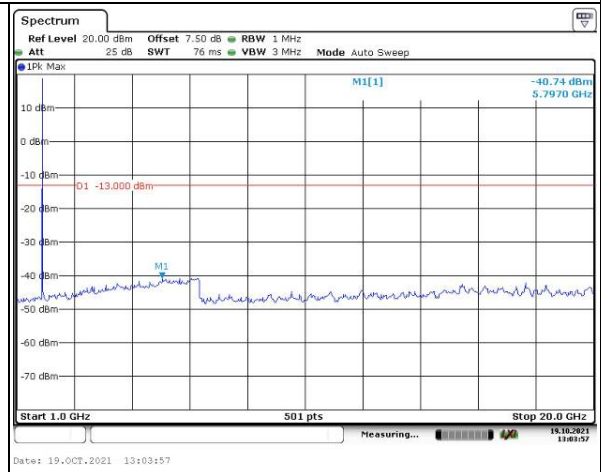
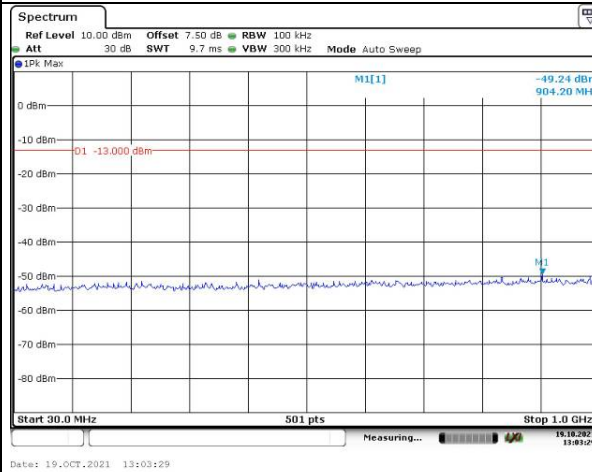


Spurious Emissions at Antenna Terminal

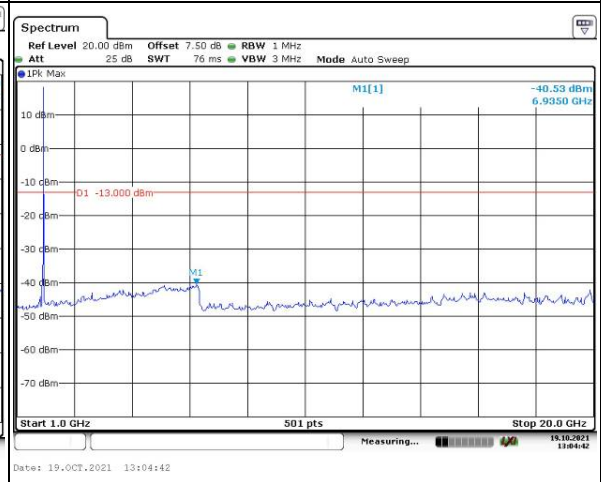
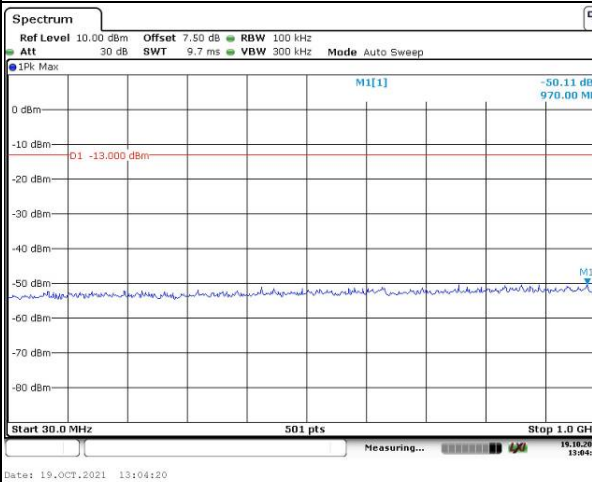
Channel

5MHz Bandwidth QPSK

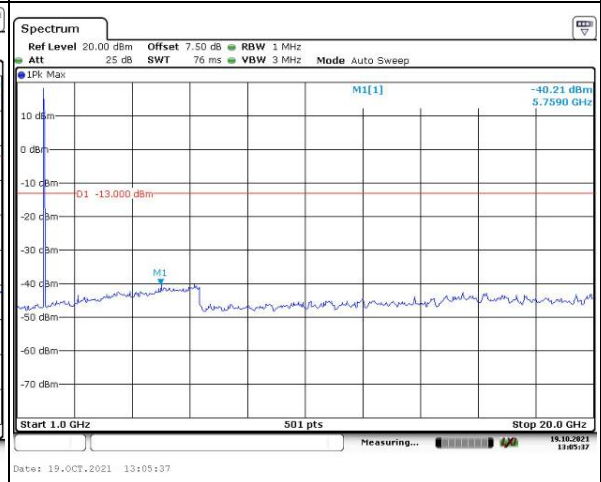
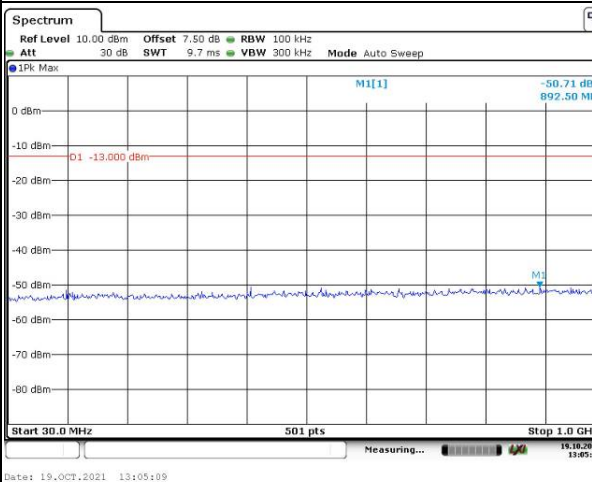
Lowest



Middle



Highest

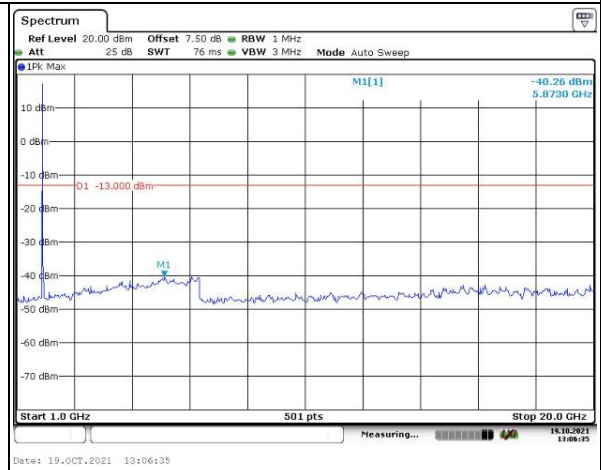
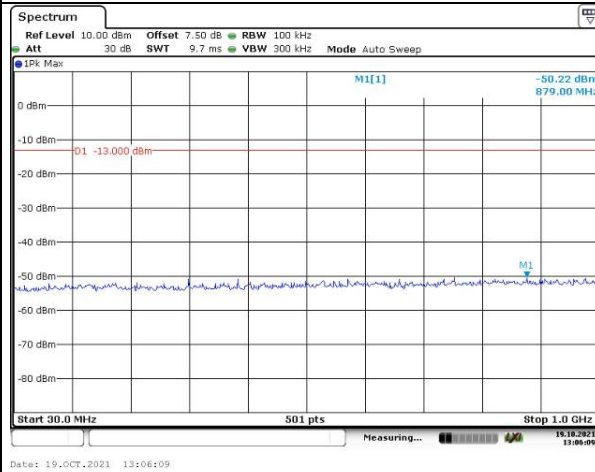


Spurious Emissions at Antenna Terminal

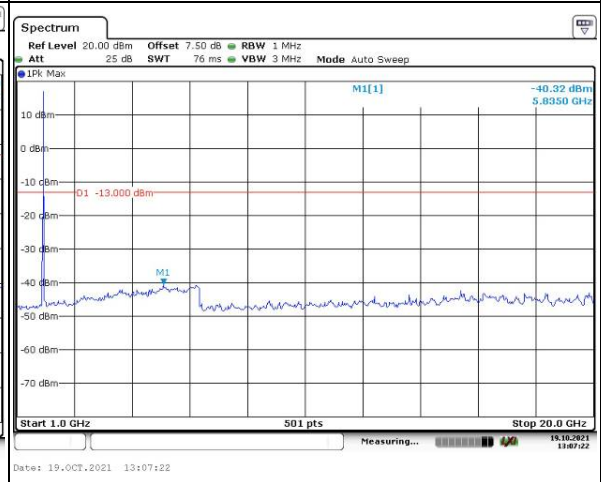
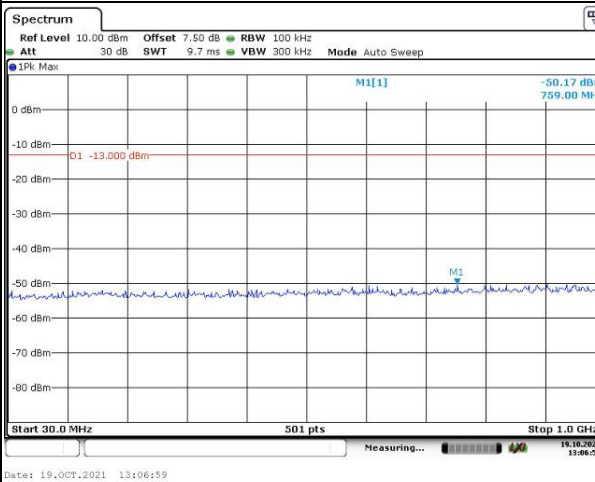
Channel

10MHz Bandwidth QPSK

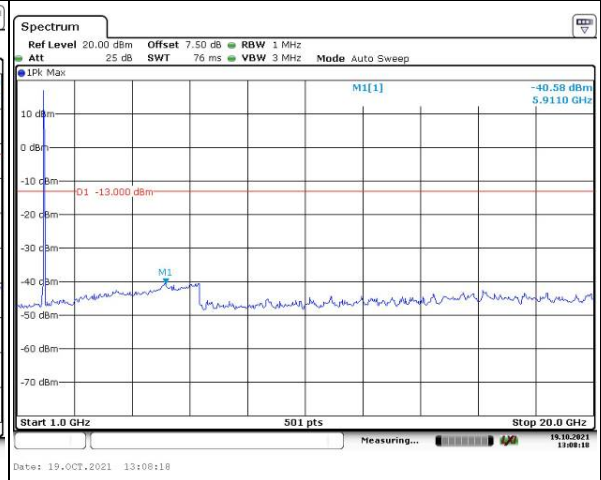
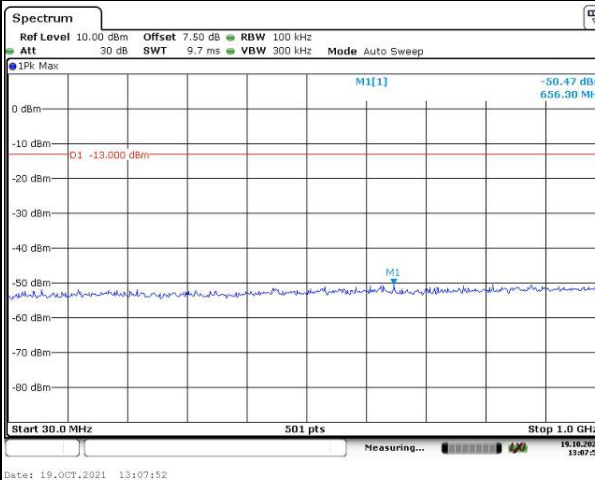
Lowest



Middle



Highest

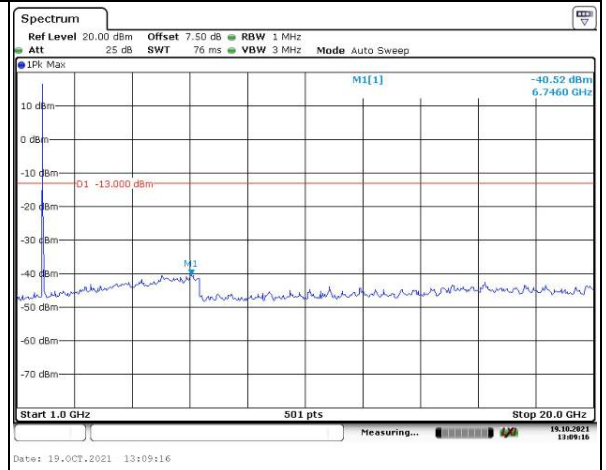
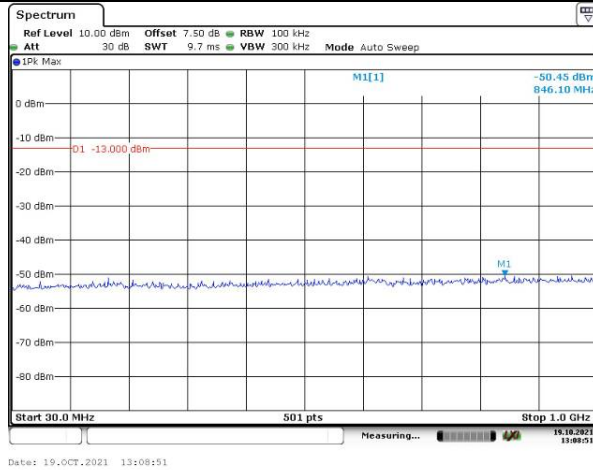


Spurious Emissions at Antenna Terminal

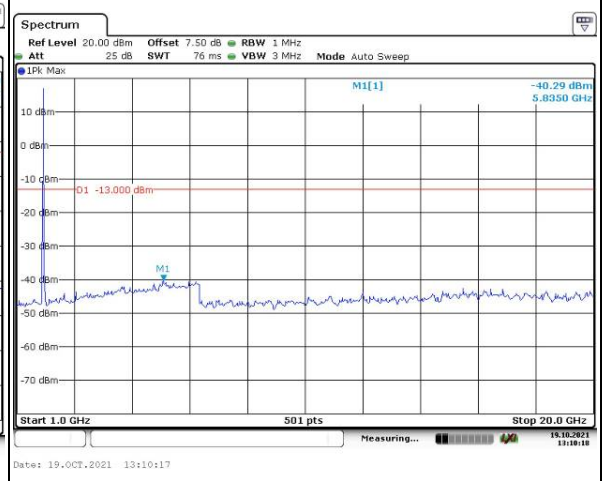
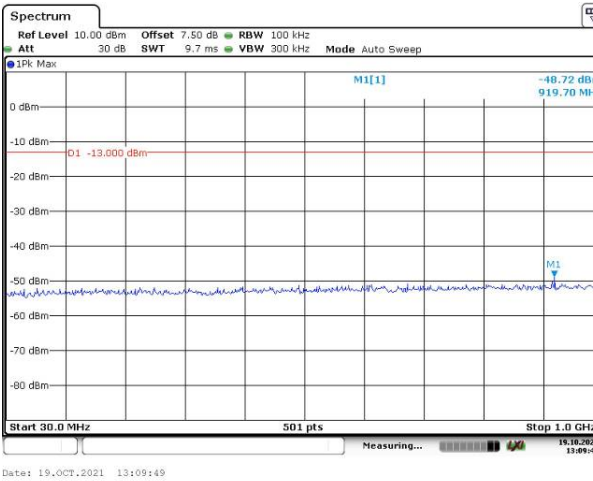
Channel

15MHz Bandwidth QPSK

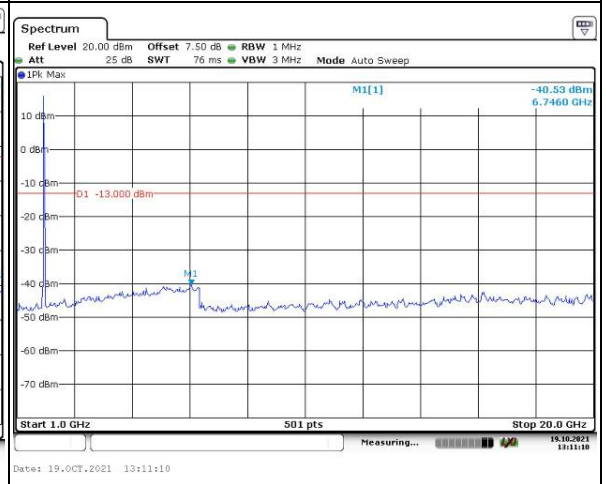
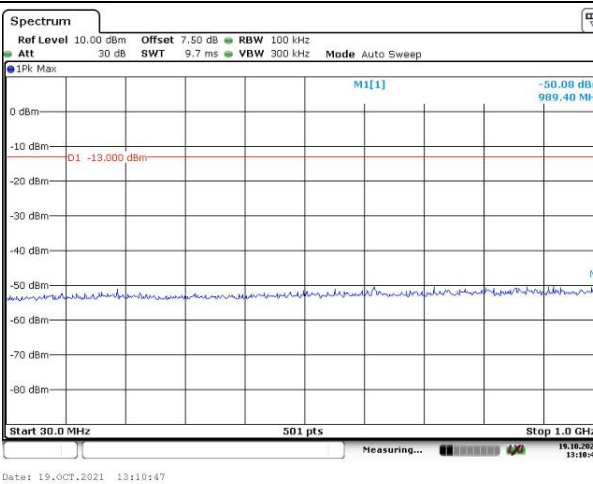
Lowest



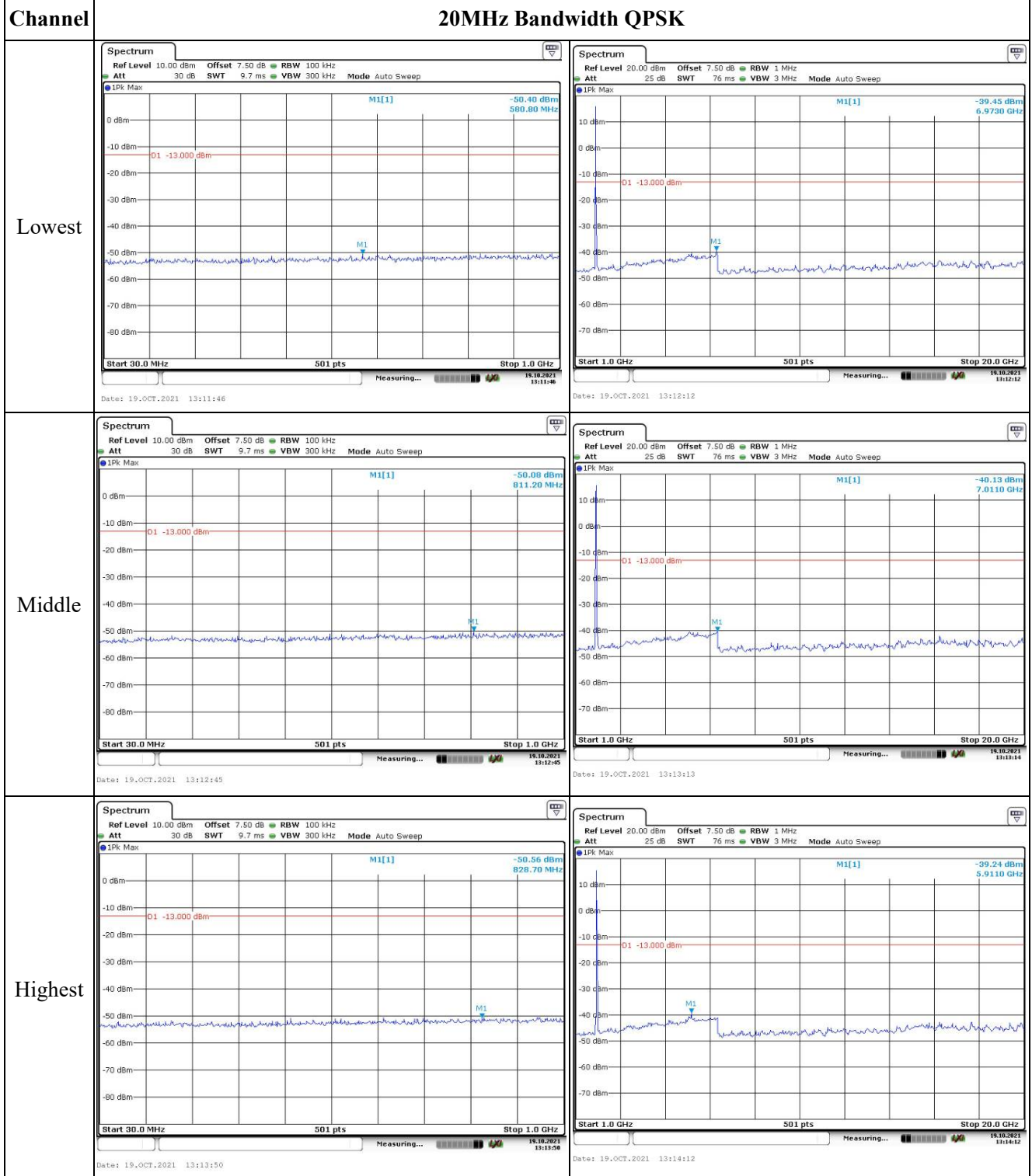
Middle



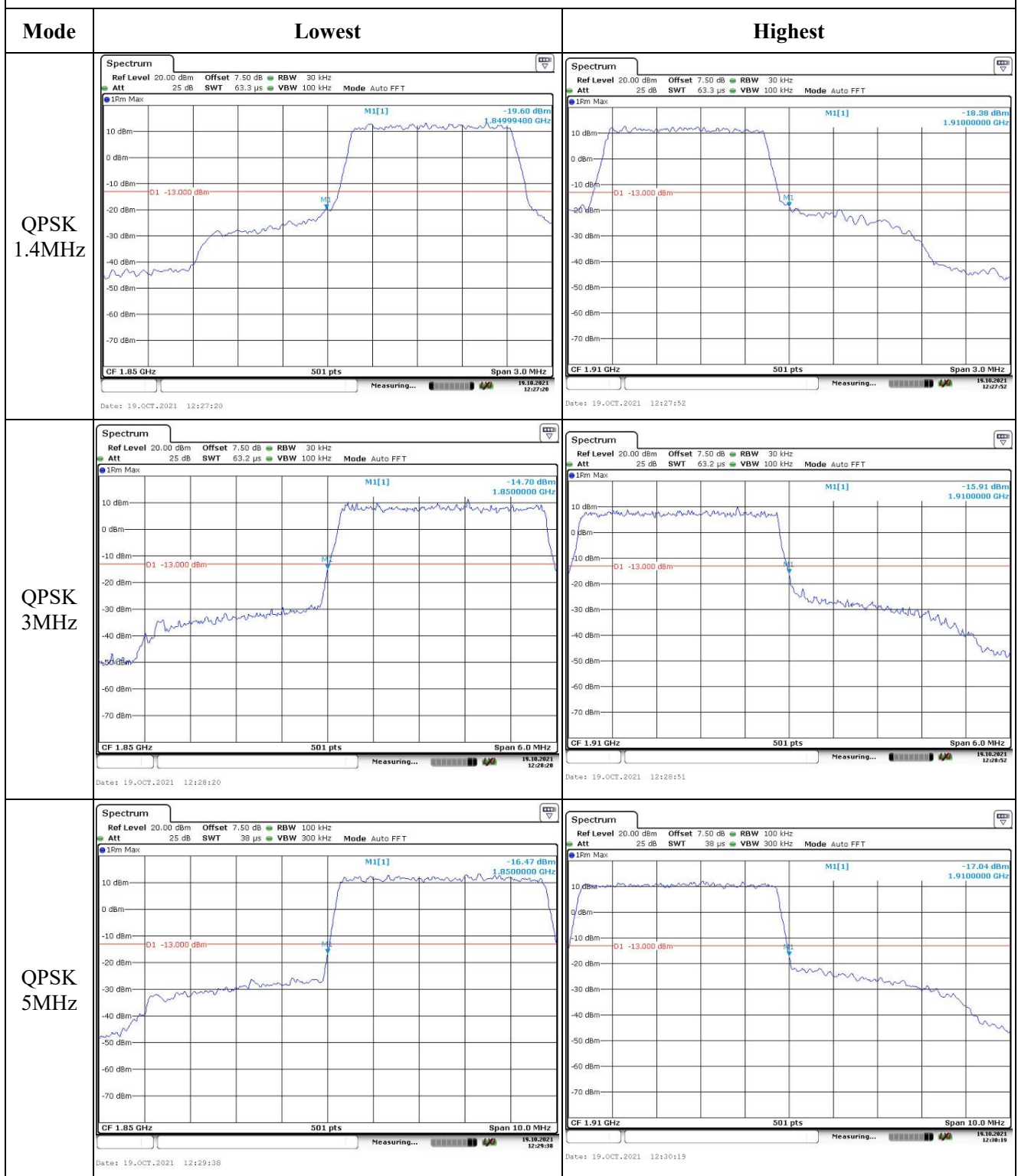
Highest



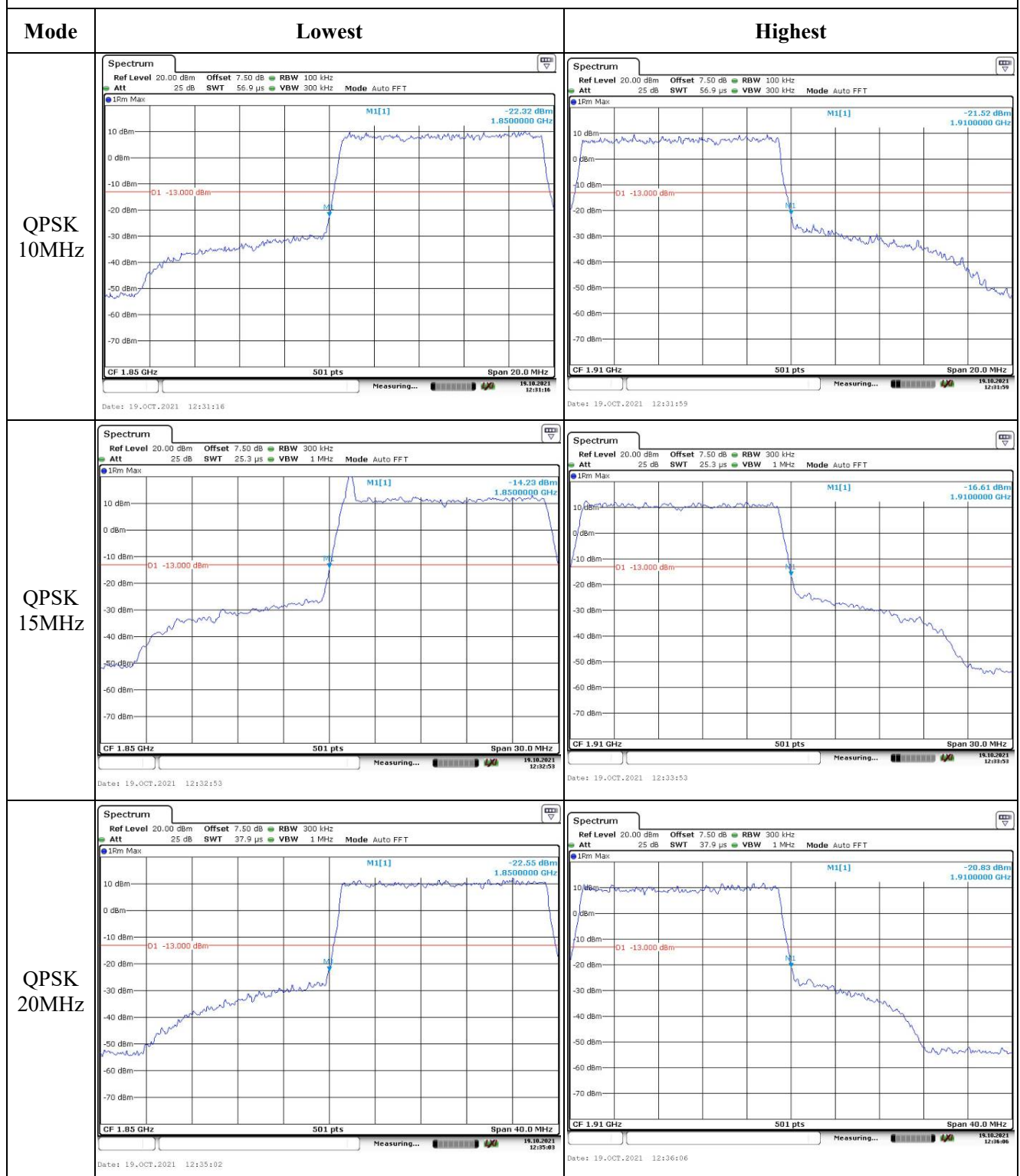
Spurious Emissions at Antenna Terminal



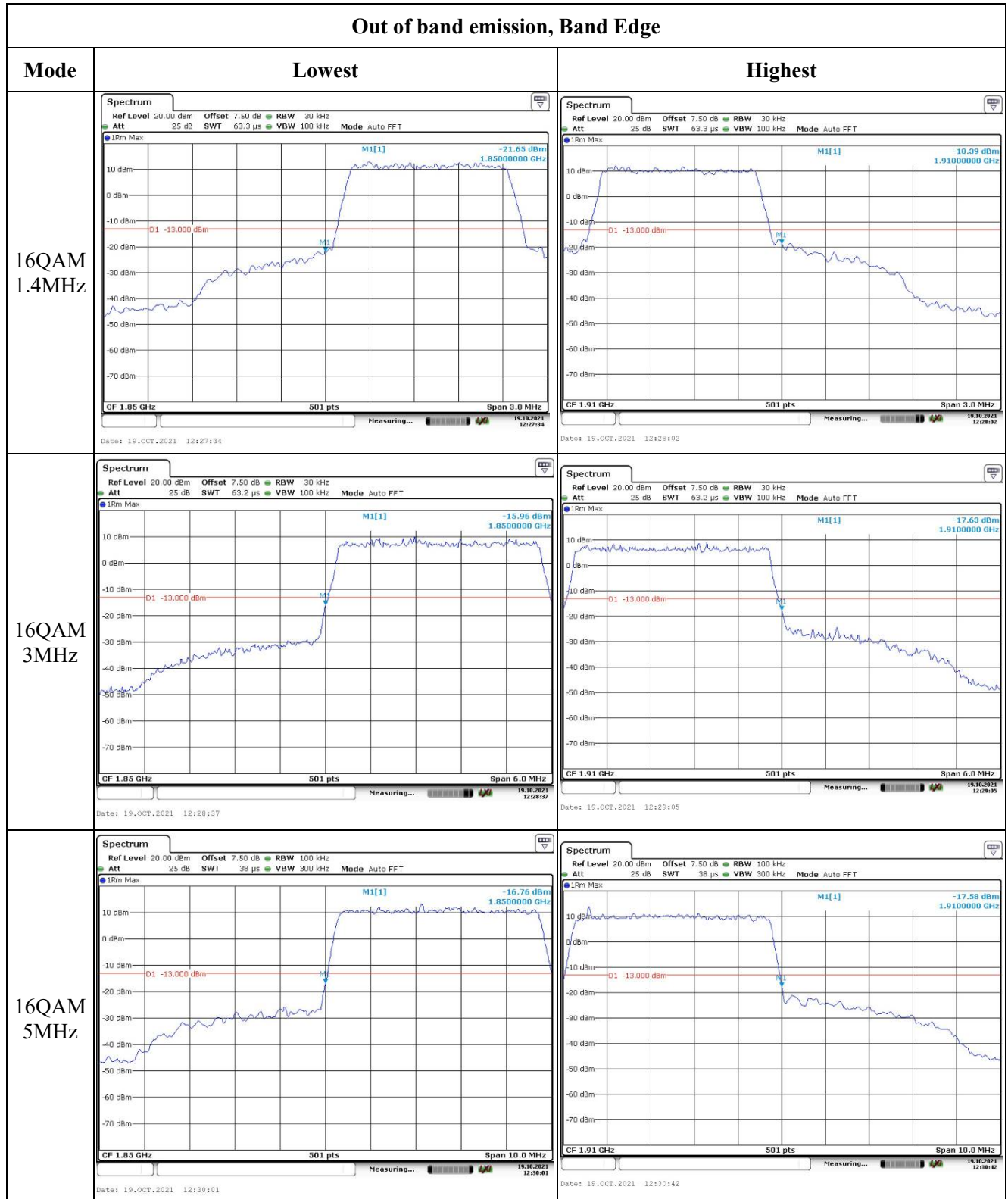
Out of band emission, Band Edge



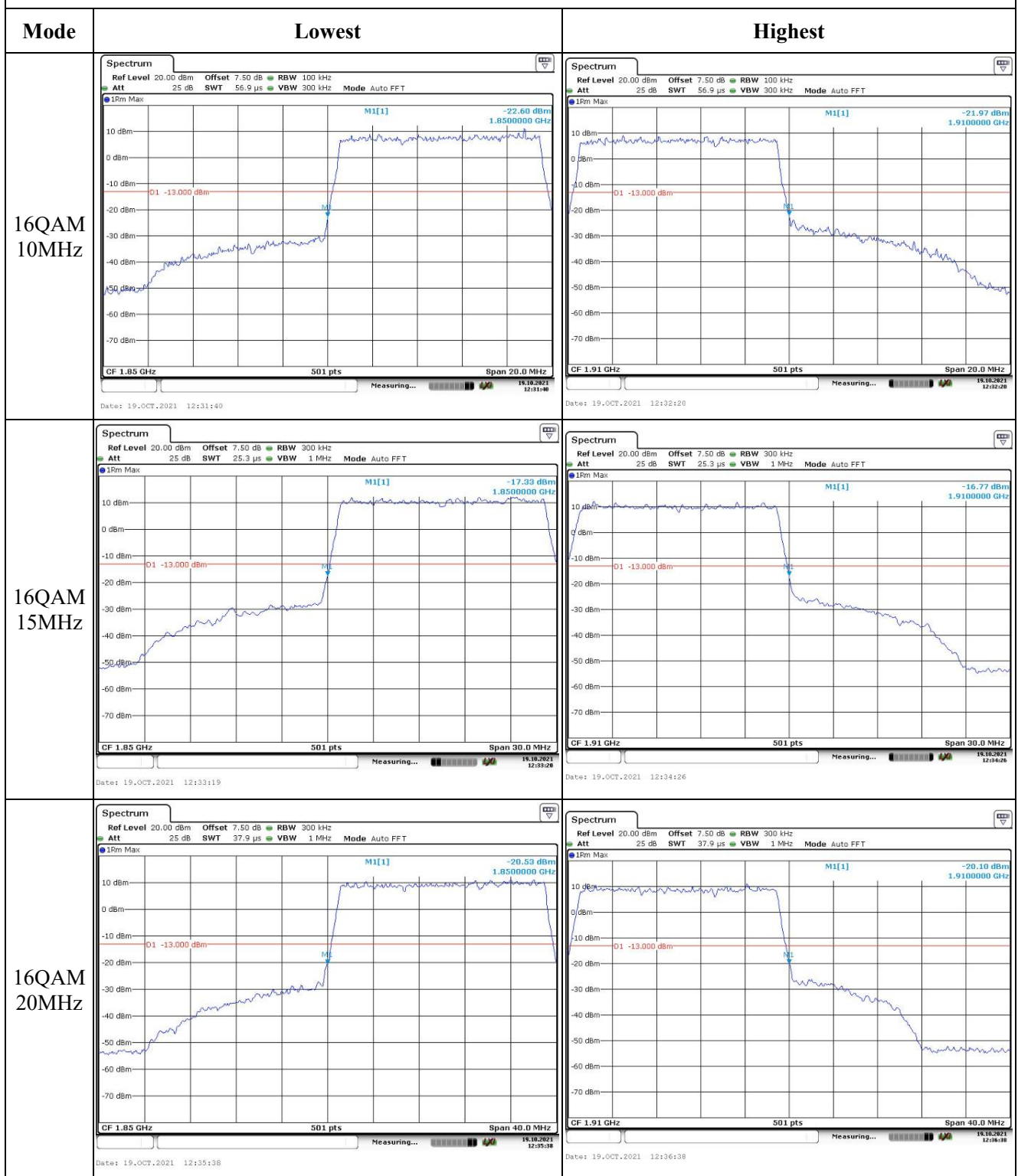
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.6 Antenna Port Test Data and Results for LTE Band 4:

Serial Number:	CR21090082-RF-S2	Test Date:	2021/10/19~2021/11/5
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1~27.8	Relative Humidity: (%)	52~62	ATM Pressure: (kPa)	100.8~102.1
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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	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021/7/22	2022/7/21
BACL	TEMP&HUM I Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	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):	-0.39	Cable Loss (dB):	0.4
Operation Voltage(V _{DC}):			
Lowest:	3.6	Normal:	3.85
		Highest:	4.35

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	22.73	22.83	22.93	22.15	30
	RB1#3	22.76	22.81	22.94		
	RB1#5	22.79	22.79	22.92		
	RB3#0	22.79	22.82	22.84		
	RB3#3	22.86	22.85	22.88		
	RB6#0	21.85	21.85	21.84		
1.4MHz 16QAM	RB1#0	22.36	22.61	21.93	21.82	30
	RB1#3	22.39	22.58	21.94		
	RB1#5	22.39	22.54	22		
	RB3#0	21.88	21.72	21.76		
	RB3#3	21.88	21.77	21.85		
	RB6#0	21.05	20.94	21.22		
3MHz QPSK	RB1#0	22.71	22.87	22.94	22.18	30
	RB1#8	22.72	22.88	22.97		
	RB1#14	22.69	22.84	22.96		
	RB6#0	21.79	21.89	21.86		
	RB6#9	21.8	21.81	21.83		
	RB15#0	21.8	21.79	21.83		
3MHz 16QAM	RB1#0	22.18	22.62	21.94	21.83	30
	RB1#8	22.19	22.54	21.9		
	RB1#14	22.13	22.57	21.94		
	RB6#0	20.75	21	21.17		
	RB6#9	20.83	21	21.17		
	RB15#0	20.92	20.86	20.95		
5MHz QPSK	RB1#0	22.74	22.93	22.63	22.15	30

	RB1#13	22.71	22.94	22.64		
	RB1#24	22.75	22.92	22.71		
	RB15#0	21.81	21.86	21.78		
	RB15#10	21.88	21.8	21.87		
	RB25#0	21.78	21.81	21.91		
5MHz 16QAM	RB1#0	21.06	22.02	21.4	21.23	30
	RB1#13	21.09	21.94	21.45		
	RB1#24	21.1	21.98	21.5		
	RB15#0	20.97	20.77	20.93		
	RB15#10	20.99	20.75	20.9		
	RB25#0	20.99	20.87	20.88		
10MHz QPSK	RB1#0	22.68	22.84	22.98	22.26	30
	RB1#25	22.69	22.85	23.05		
	RB1#49	22.77	22.82	23.02		
	RB25#0	21.82	21.91	21.85		
	RB25#25	21.73	21.91	21.91		
	RB50#0	21.72	21.88	21.9		
10MHz 16QAM	RB1#0	21.99	21.97	21.32	21.2	30
	RB1#25	21.95	21.93	21.46		
	RB1#49	21.95	21.92	21.4		
	RB25#0	20.9	21.04	20.99		
	RB25#25	20.84	21.01	20.99		
	RB50#0	20.91	20.99	20.96		
15MHz QPSK	RB1#0	22.67	22.82	22.95	22.22	30
	RB1#38	22.75	22.85	22.96		
	RB1#74	22.76	22.84	23.01		
	RB36#0	21.76	21.8	21.83		
	RB36#39	21.82	21.91	21.84		
	RB75#0	21.86	21.87	21.77		
15MHz 16QAM	RB1#0	21.97	21.94	22.09	21.46	30
	RB1#38	21.96	21.94	22.13		
	RB1#74	22	21.94	22.25		
	RB36#0	20.97	21.01	20.95		
	RB36#39	20.9	20.99	20.95		
	RB75#0	20.94	20.97	20.94		
20MHz QPSK	RB1#0	22.89	22.8	22.94	22.25	30
	RB1#50	22.92	22.83	22.91		
	RB1#99	23.04	22.87	23.01		
	RB50#0	21.78	21.87	21.87		
	RB50#50	21.84	21.8	21.98		
	RB100#0	21.79	21.8	21.83		
20MHz 16QAM	RB1#0	21.76	22.26	22.37	21.68	30
	RB1#50	21.78	22.25	22.4		
	RB1#99	21.79	22.25	22.47		
	RB50#0	20.94	21.04	20.84		
	RB50#50	21.02	20.98	20.98		

	RB100#0	20.88	20.88	20.9		
					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	3.88	4.81	3.97	13
	RB100#0	4.72	5.13	4.81	13
20MHz 16QAM	RB1#0	4.96	5.83	4.67	13
	RB100#0	5.65	5.94	5.71	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	1.09	1.102	1.254	1.23	1.26
1.4MHz 16QAM	1.108	1.084	1.102	1.272	1.218	1.248
3MHz QPSK	2.695	2.695	2.695	3	3	3.012
3MHz 16QAM	2.695	2.683	2.683	3.012	3	2.952
5MHz QPSK	4.531	4.511	4.511	5	5.02	5
5MHz 16QAM	4.511	4.551	4.531	4.98	5.02	4.9
10MHz QPSK	8.942	8.942	8.942	9.84	9.8	9.359
10MHz 16QAM	8.942	8.981	8.981	9.72	9.8	9.84
15MHz QPSK	13.533	13.473	13.473	14.76	14.76	14.82
15MHz 16QAM	13.473	13.533	13.533	14.46	14.76	14.82
20MHz QPSK	17.964	17.964	17.964	19.6	19.52	19.84
20MHz 16QAM	18.044	18.044	18.044	19.68	19.84	19.6

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

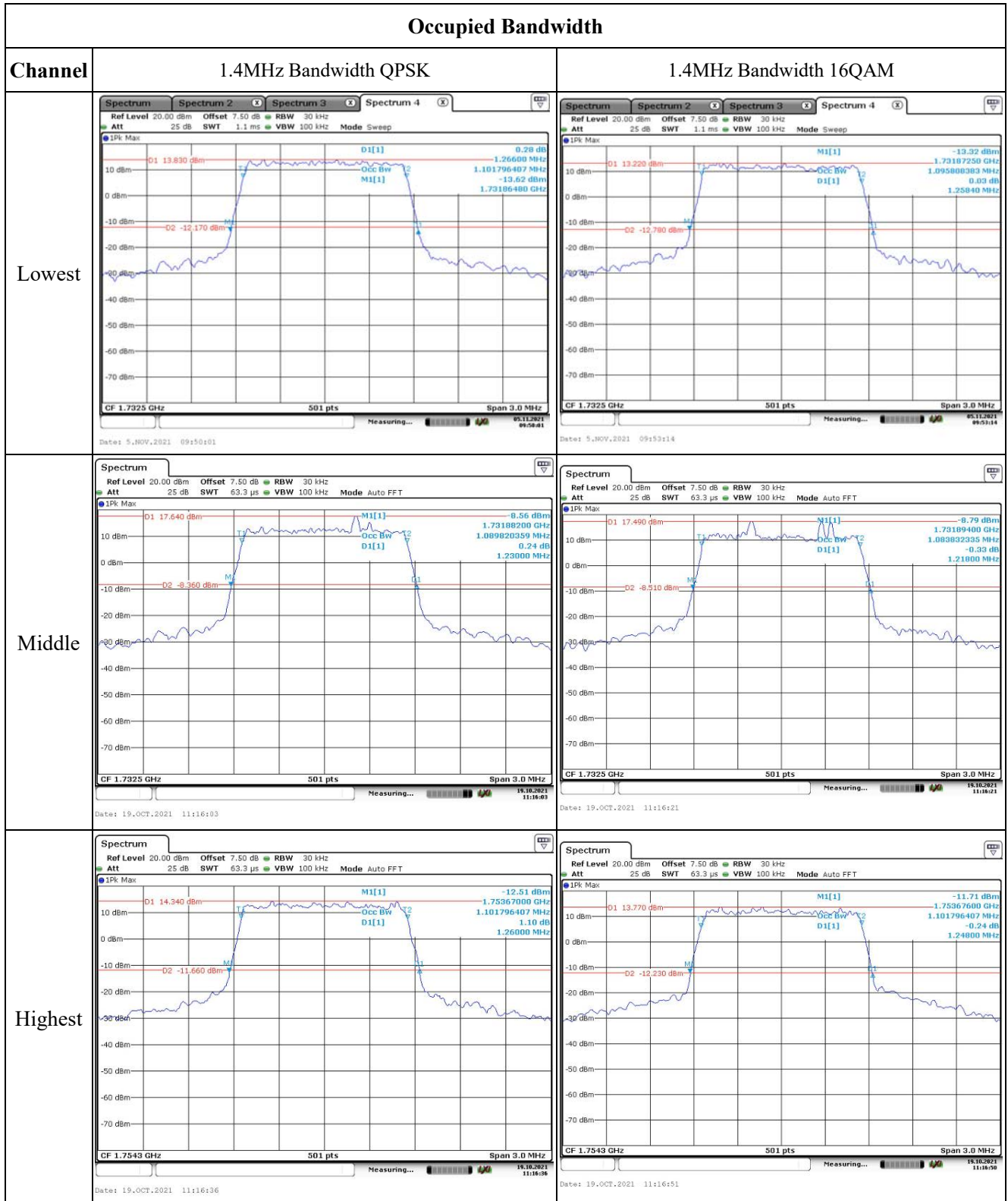
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability

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	3.85	1710.5291	1710.00	1754.4714	1755
	-20	3.85	1710.5284	1710.00	1754.4718	1755
	-10	3.85	1710.5285	1710.00	1754.4715	1755
	0	3.85	1710.5287	1710.00	1754.4716	1755
	10	3.85	1710.5286	1710.00	1754.4712	1755
	20	3.85	1710.5289	1710.00	1754.4711	1755
	30	3.85	1710.5287	1710.00	1754.4717	1755
	40	3.85	1710.5284	1710.00	1754.4719	1755
	50	3.85	1710.5287	1710.00	1754.4714	1755
Frequency Stability vs. Voltage	20	3.6	1710.5286	1710.00	1754.4712	1755
	20	4.4	1710.5281	1710.00	1754.4714	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	1710.5287	1710.00	1754.5121	1755
	-20	3.85	1710.5284	1710.00	1754.5121	1755
	-10	3.85	1710.5287	1710.00	1754.5117	1755
	0	3.85	1710.5282	1710.00	1754.5115	1755
	10	3.85	1710.5289	1710.00	1754.5113	1755
	20	3.85	1710.5289	1710.00	1754.511	1755
	30	3.85	1710.5287	1710.00	1754.5118	1755
	40	3.85	1710.5282	1710.00	1754.5119	1755
	50	3.85	1710.5287	1710.00	1754.5112	1755
Frequency Stability vs. Voltage	20	3.6	1710.5285	1710.00	1754.5114	1755
	20	4.4	1710.5289	1710.00	1754.5113	1755
Result:					Pass	

Test Plots:



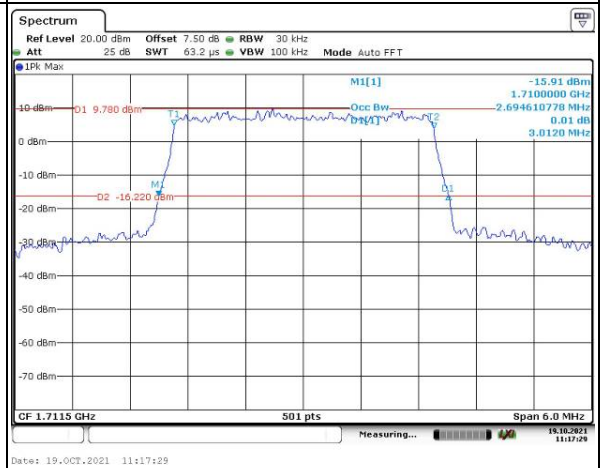
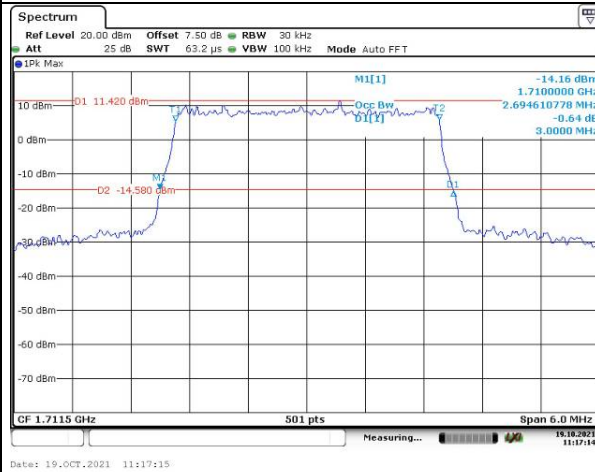
Occupied Bandwidth

Channel

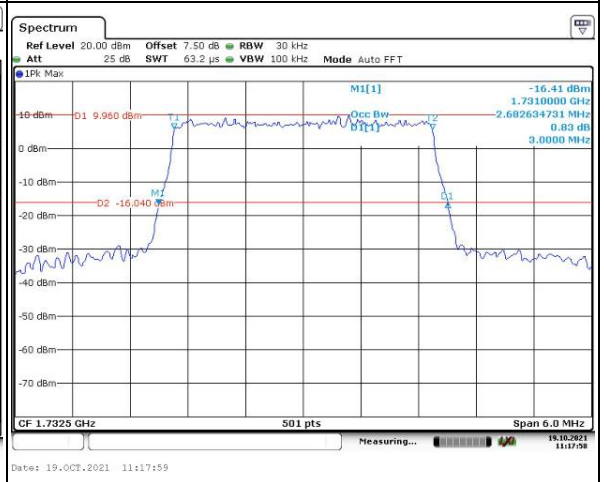
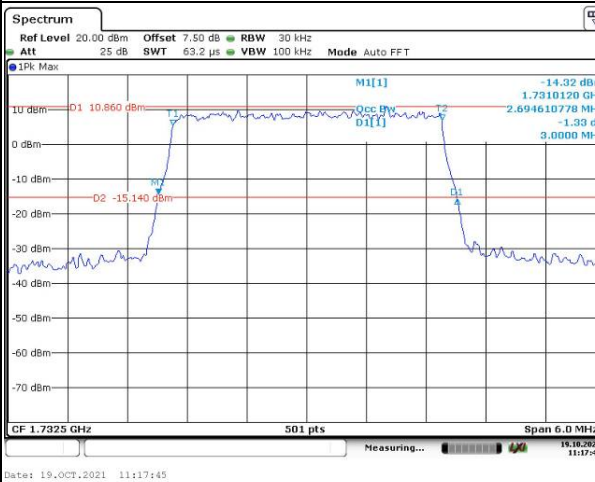
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

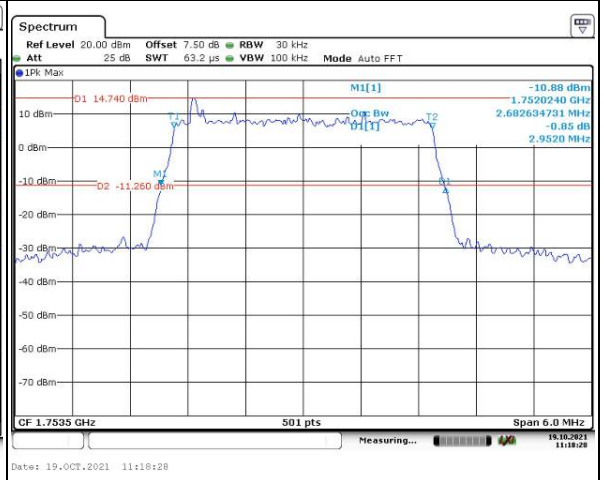
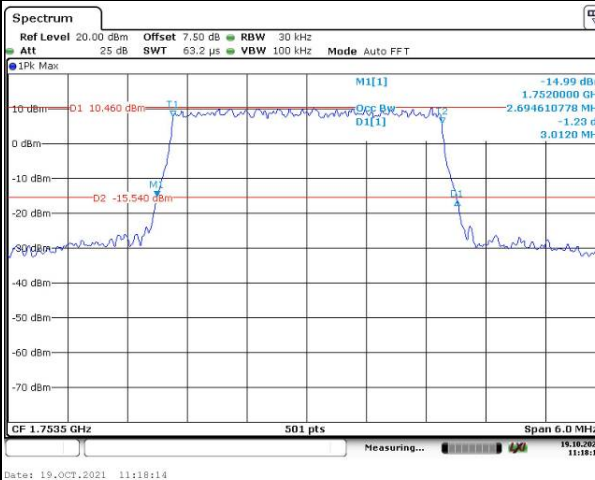
Lowest



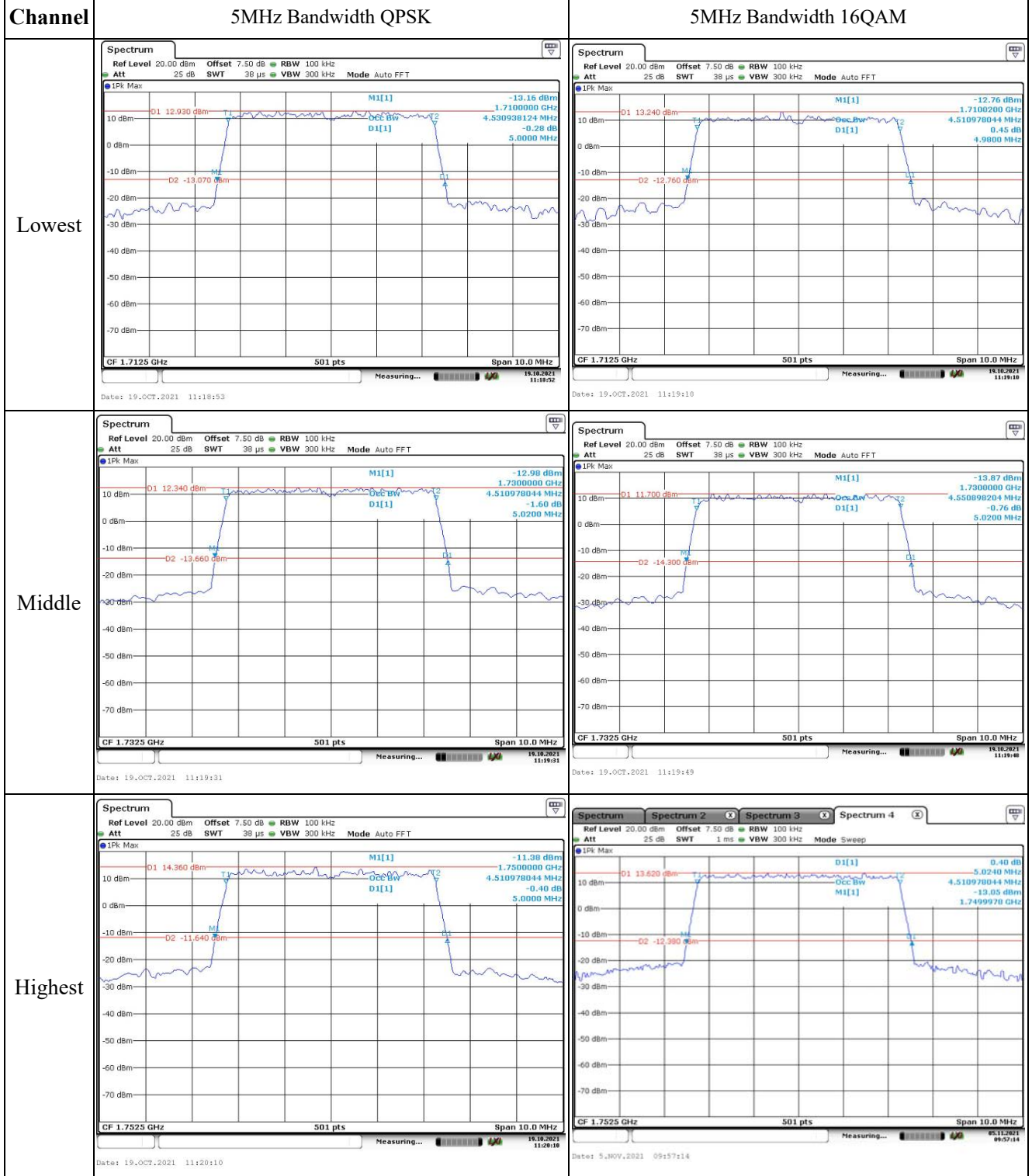
Middle



Highest



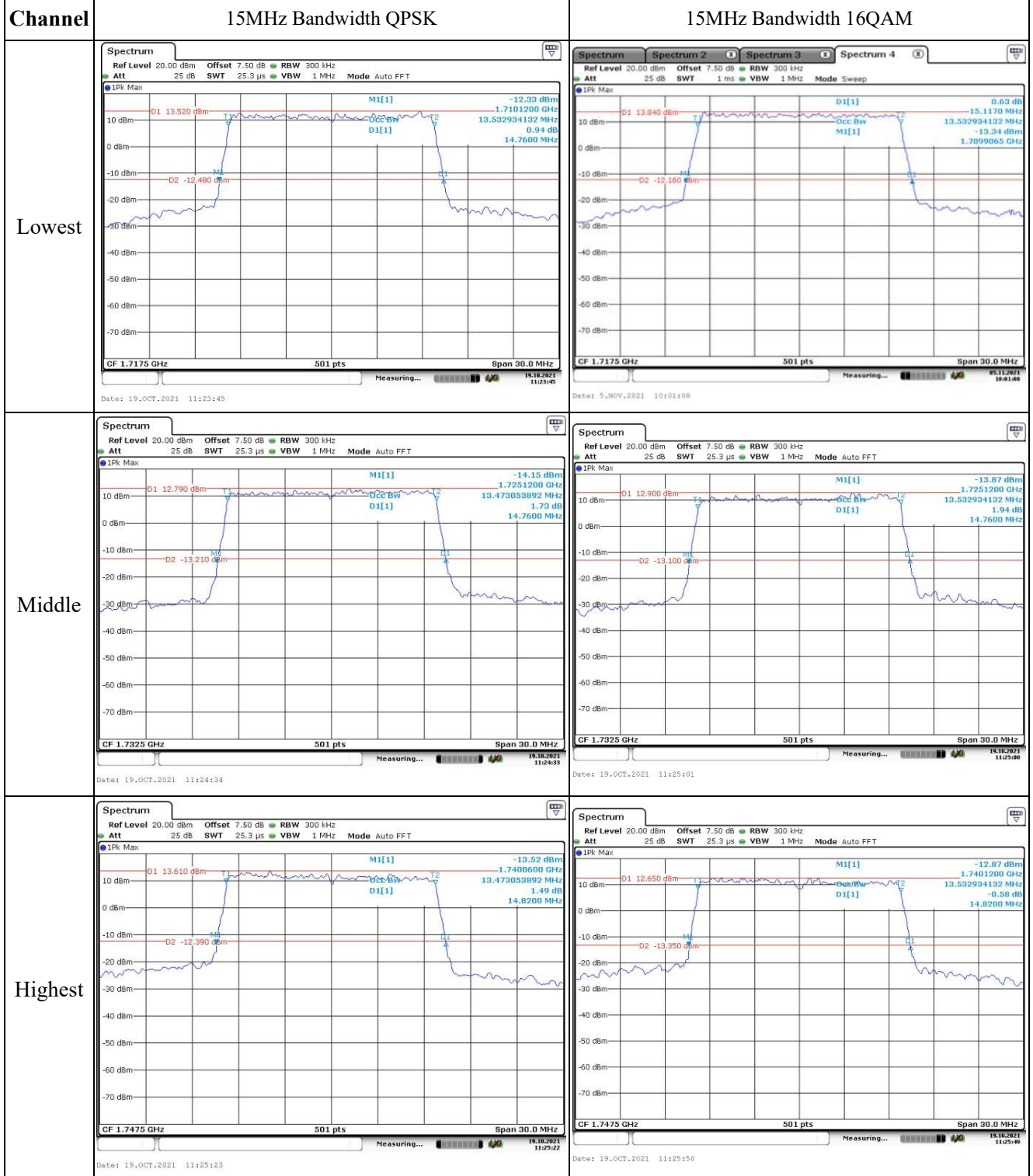
Occupied Bandwidth



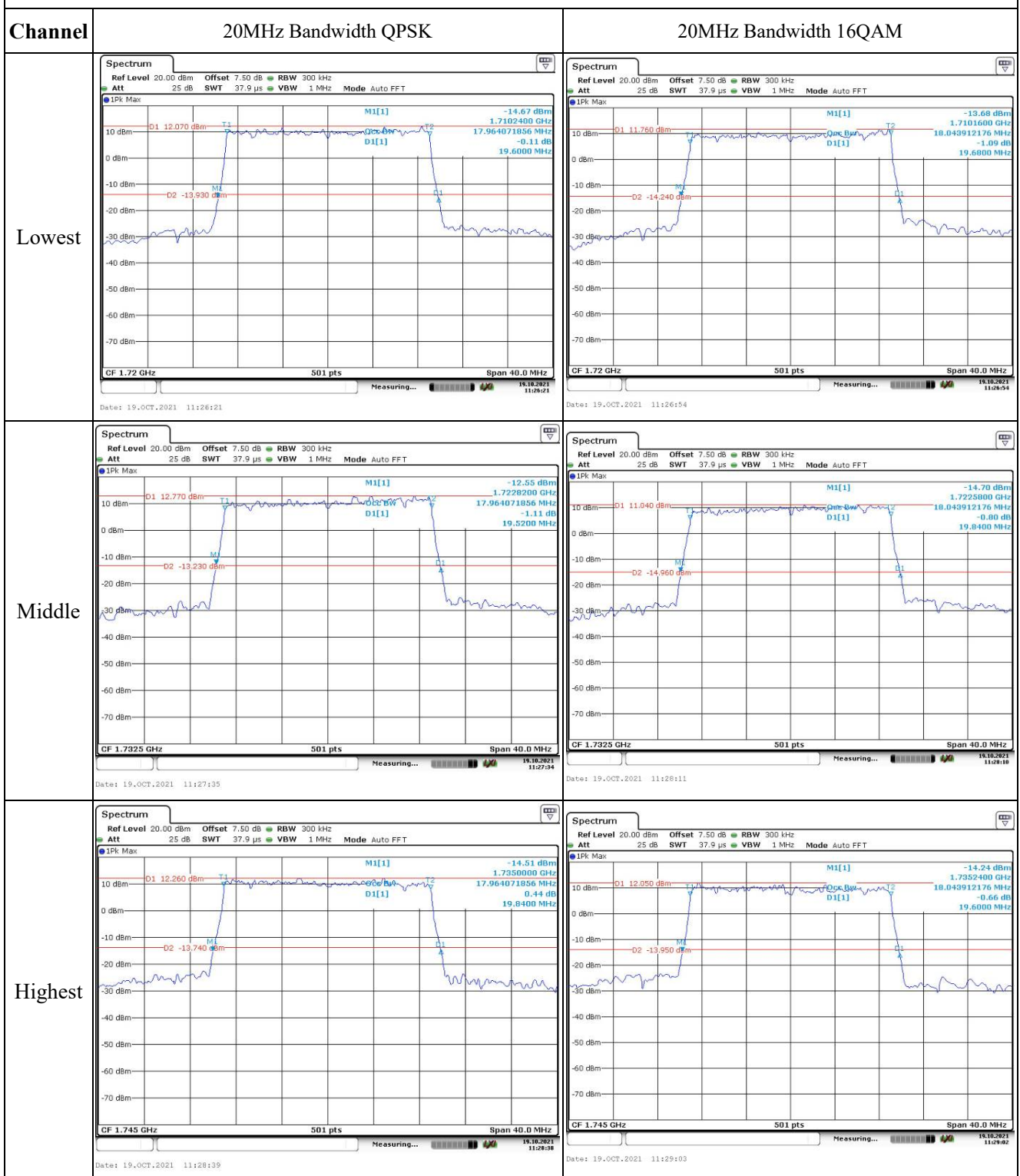
Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Occupied Bandwidth



Occupied Bandwidth

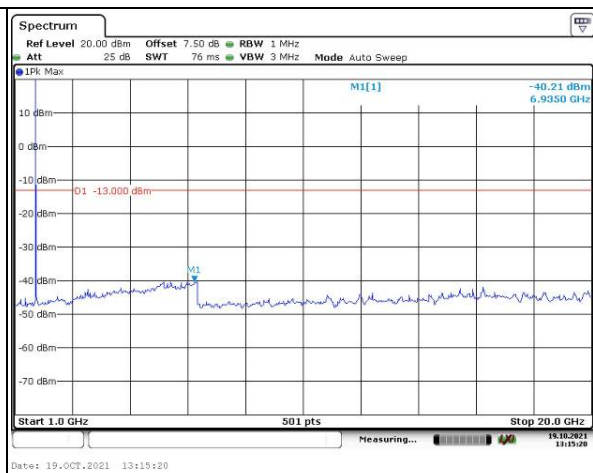
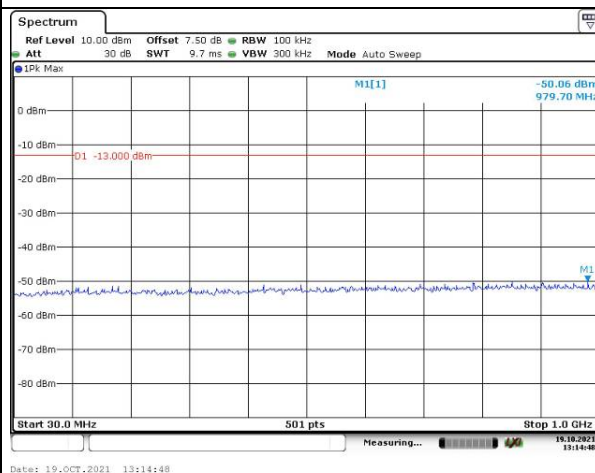


Spurious Emissions at Antenna Terminal

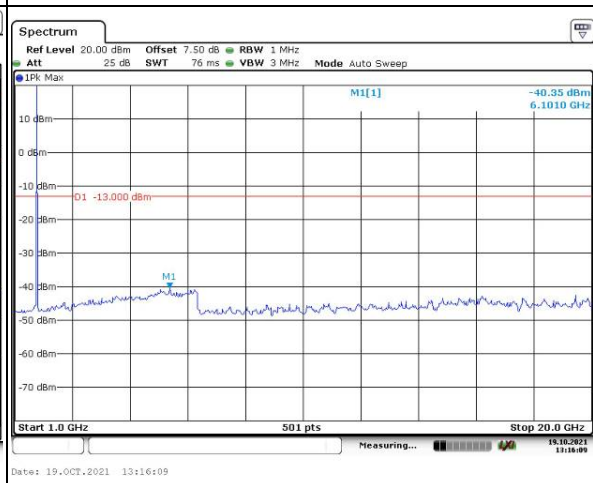
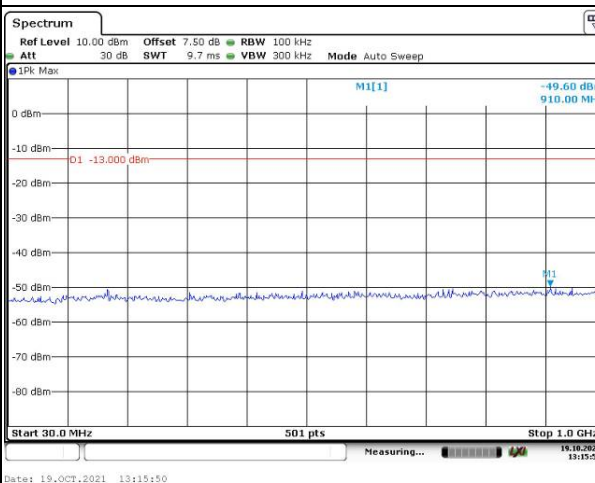
Channel

1.4MHz Bandwidth QPSK

Lowest



Middle



Highest

