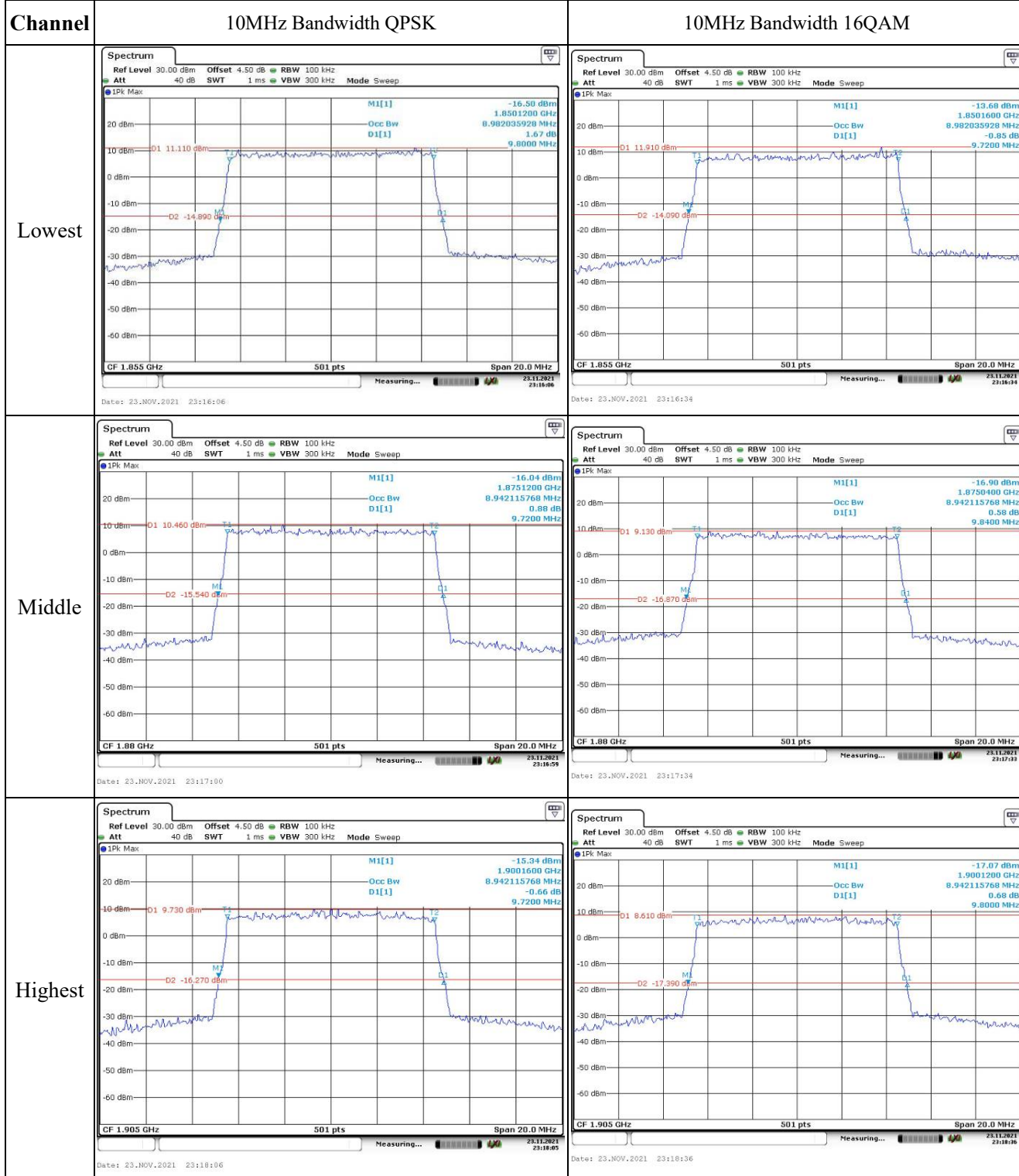


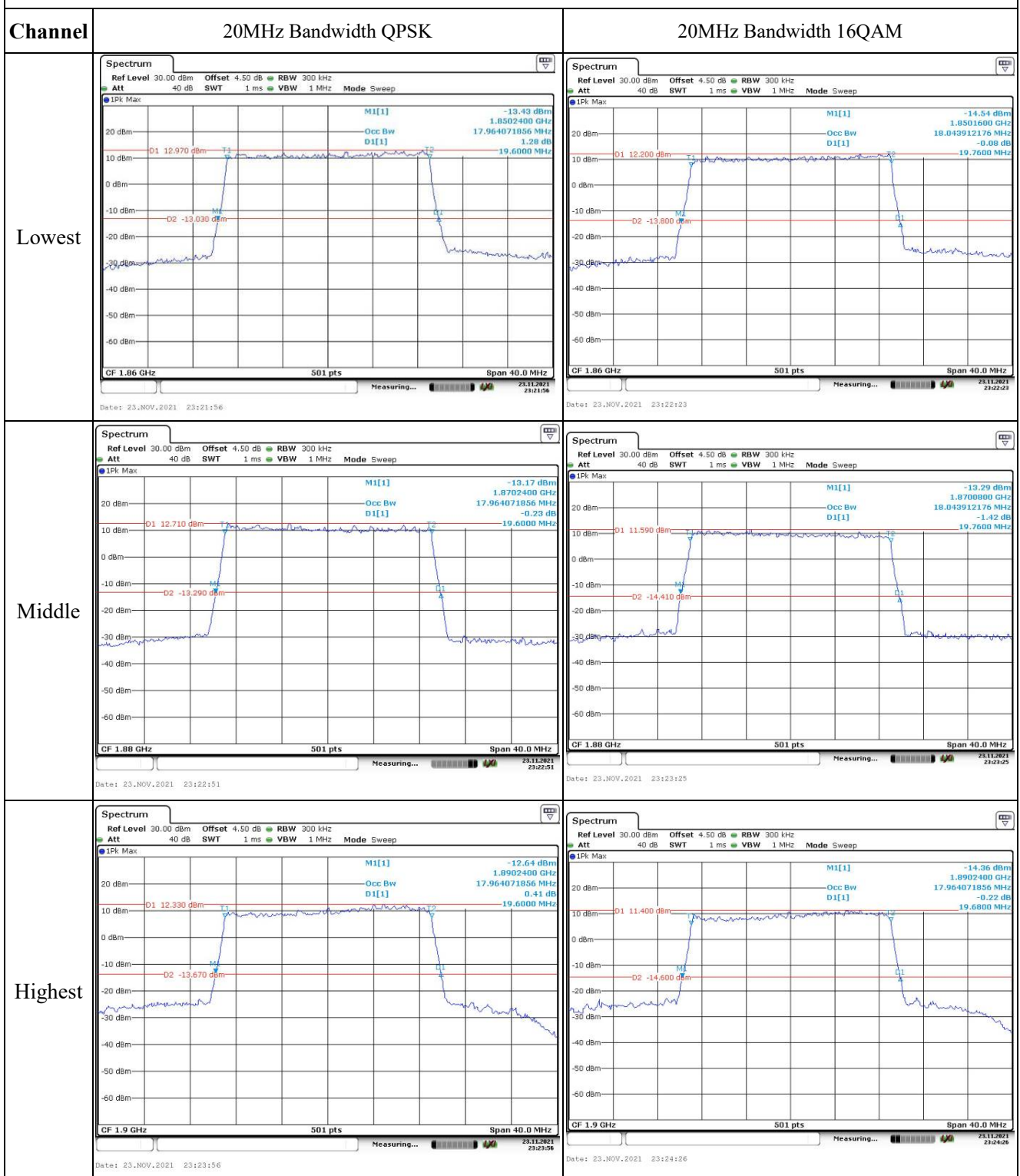
Occupied Bandwidth



Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 300 kHz Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max M1[1] -12.19 dBm 1.8499400 GHz Occ BW 13.532934132 MHz D1[1] -0.00 dB 15.1200 MHz D1 14.300 dBm D2 -11.700 dBm CF 1.8575 GHz 501 pts Span 30.0 MHz Measuring... 23.11.2021 23:19:04 Date: 23.NOV.2021 23:19:05	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 300 kHz Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max M1[1] -12.97 dBm 1.8500000 GHz Occ BW 13.532934132 MHz D1[1] 0.01 dB 15.0600 MHz D1 13.120 dBm D2 -12.860 dBm CF 1.8575 GHz 501 pts Span 30.0 MHz Measuring... 23.11.2021 23:19:31 Date: 23.NOV.2021 23:19:32
Middle	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 300 kHz Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max M1[1] -13.04 dBm 1.8725000 GHz Occ BW 13.473053892 MHz D1[1] 0.70 dB 15.0000 MHz D1 13.300 dBm D2 -12.700 dBm CF 1.88 GHz 501 pts Span 30.0 MHz Measuring... 23.11.2021 23:19:59 Date: 23.NOV.2021 23:20:00	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 300 kHz Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max M1[1] -12.42 dBm 1.8724400 GHz Occ BW 13.532934132 MHz D1[1] -0.69 dB 15.0600 MHz D1 12.840 dBm D2 -13.160 dBm CF 1.88 GHz 501 pts Span 30.0 MHz Measuring... 23.11.2021 23:20:32 Date: 23.NOV.2021 23:20:33
Highest	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 300 kHz Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max M1[1] -14.14 dBm 1.8950000 GHz Occ BW 13.473053892 MHz D1[1] 1.24 dB 15.0000 MHz D1 12.570 dBm D2 -13.430 dBm CF 1.9025 GHz 501 pts Span 30.0 MHz Measuring... 23.11.2021 23:21:00 Date: 23.NOV.2021 23:21:01	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 300 kHz Att 40 dB SWT 1 ms VBW 1 MHz Mode Sweep 1Pk Max M1[1] -13.46 dBm 1.8951200 GHz Occ BW 13.473053892 MHz D1[1] -0.56 dB 14.9400 MHz D1 12.220 dBm D2 -13.780 dBm CF 1.9025 GHz 501 pts Span 30.0 MHz Measuring... 23.11.2021 23:21:24 Date: 23.NOV.2021 23:21:24

Occupied Bandwidth

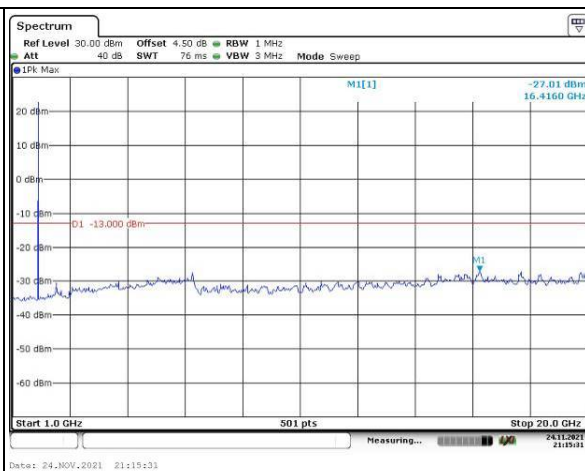
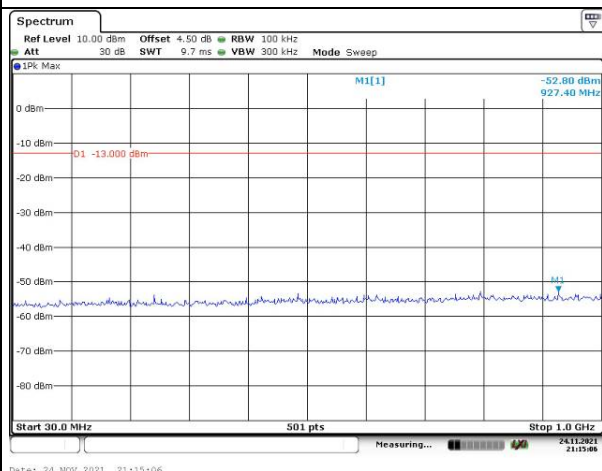


Spurious Emissions at Antenna Terminal

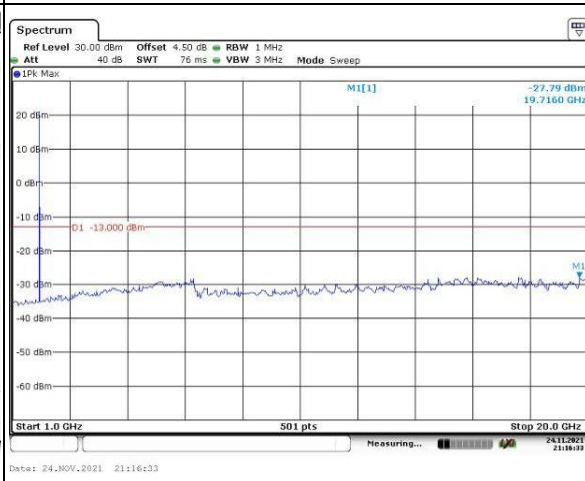
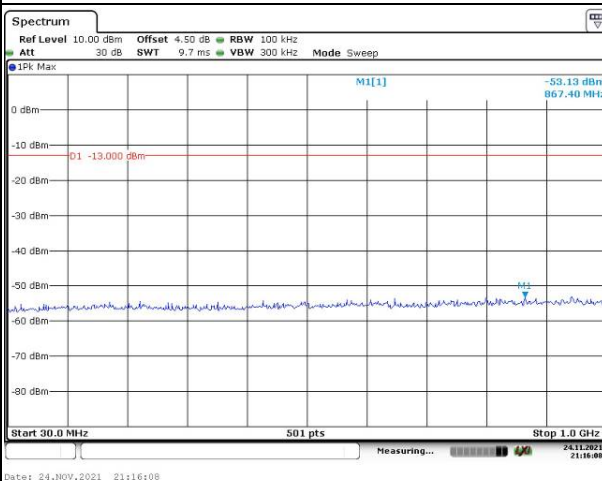
Channel

1.4MHz Bandwidth QPSK

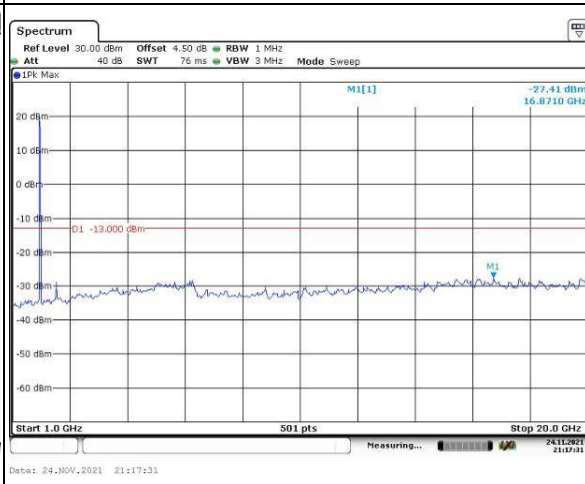
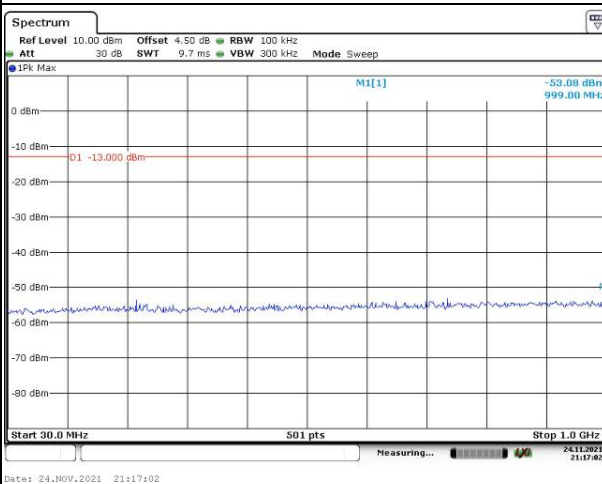
Lowest



Middle



Highest

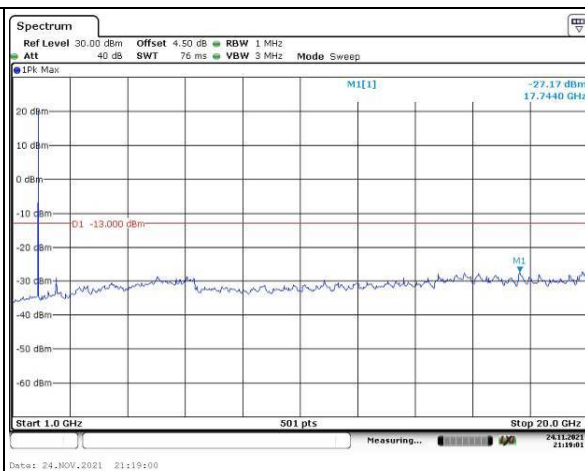
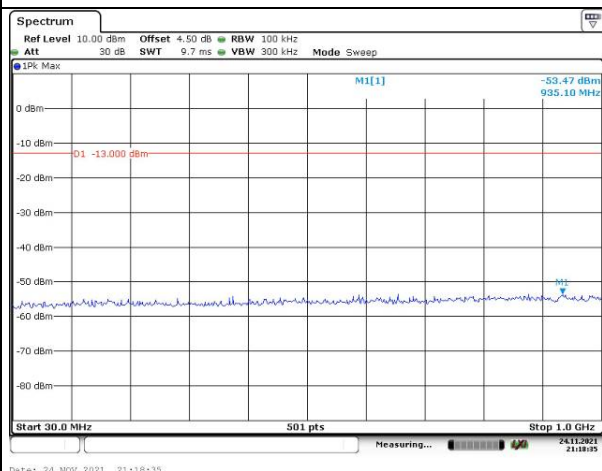


Spurious Emissions at Antenna Terminal

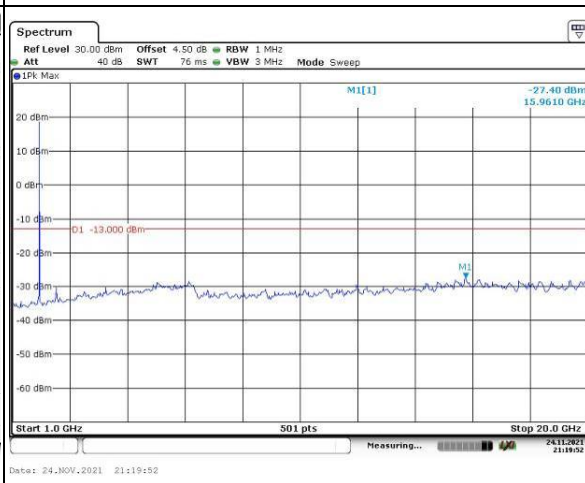
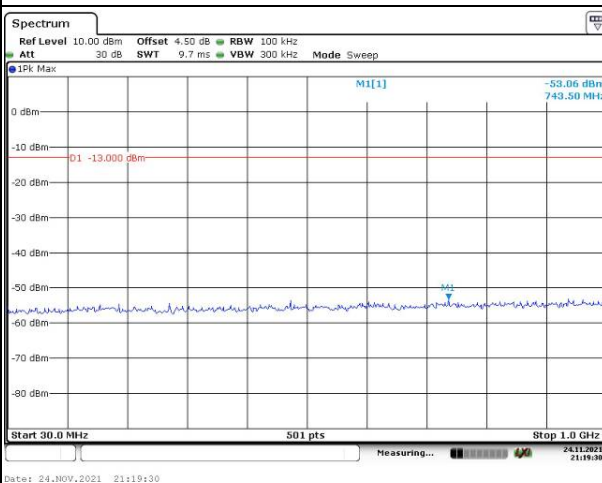
Channel

3MHz Bandwidth QPSK

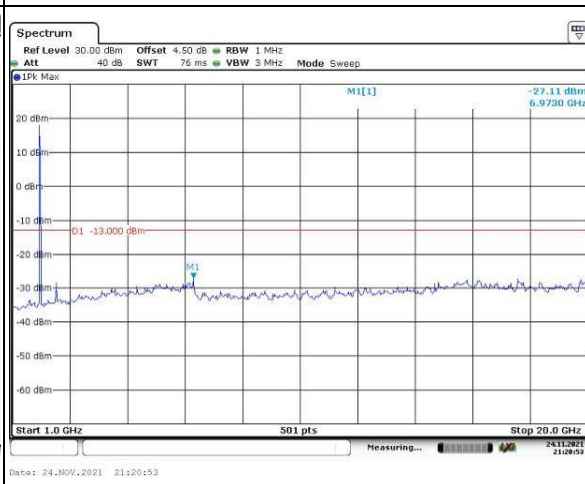
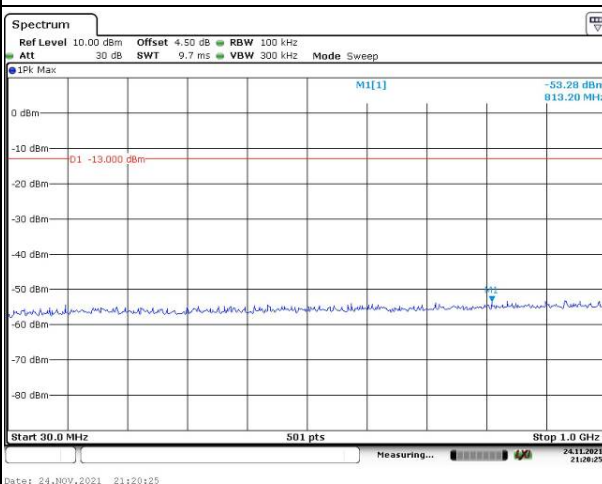
Lowest



Middle



Highest

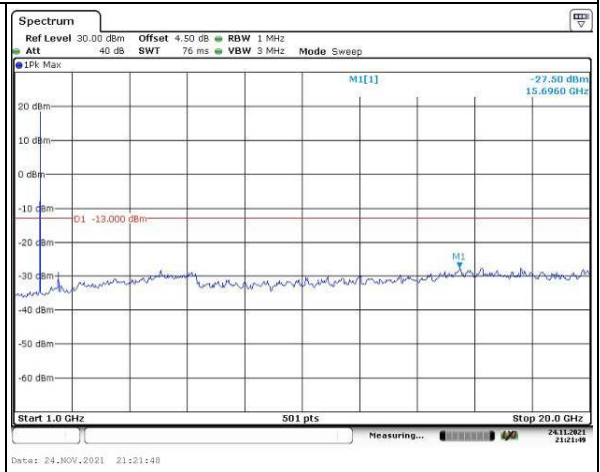
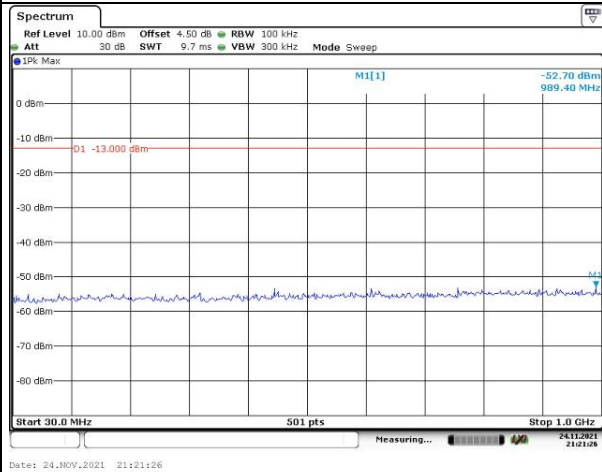


Spurious Emissions at Antenna Terminal

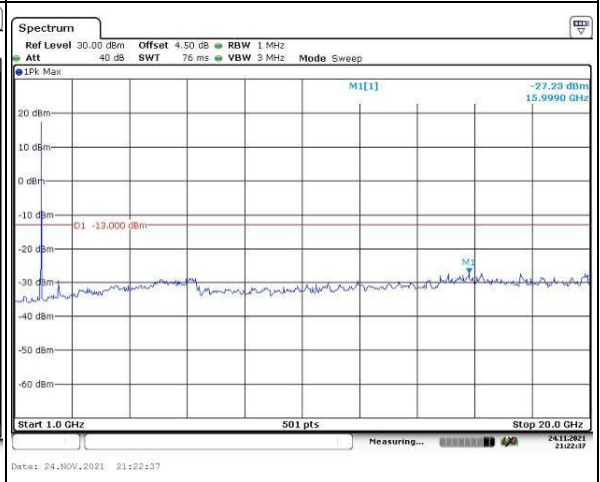
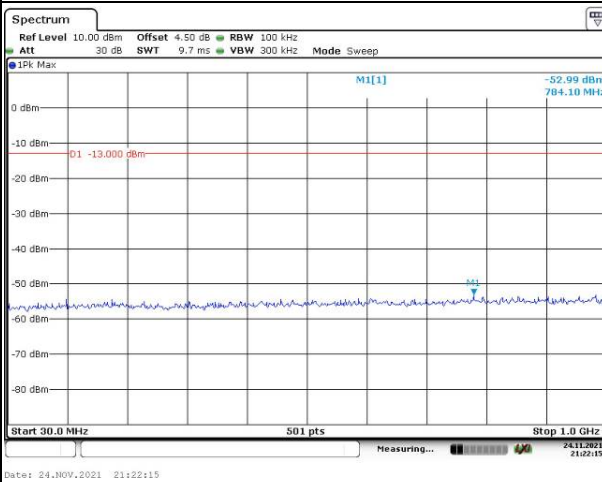
Channel

5MHz Bandwidth QPSK

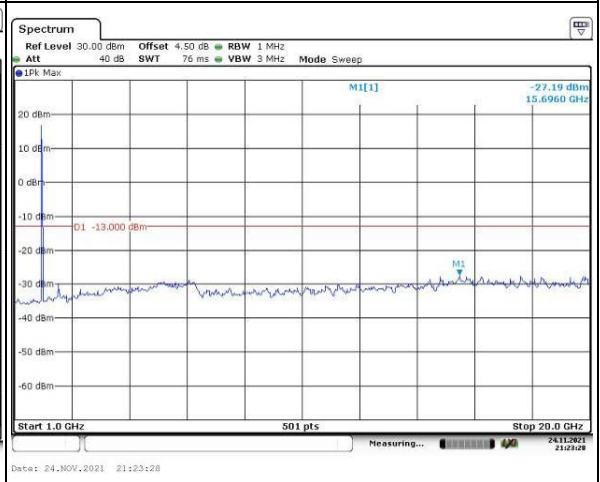
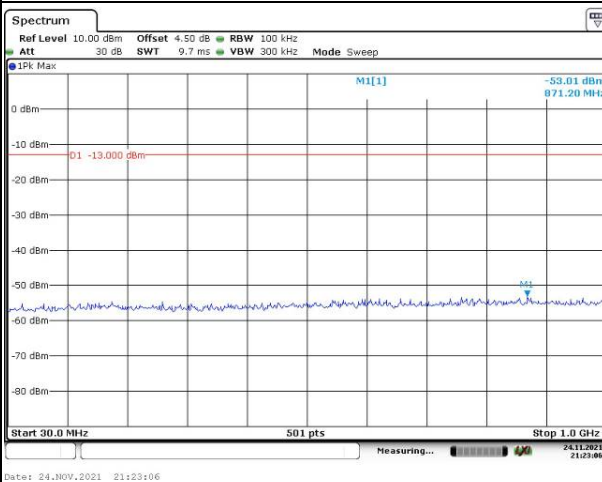
Lowest



Middle



Highest

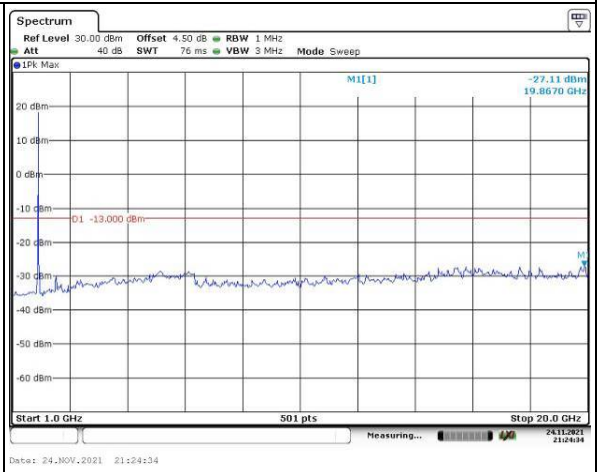
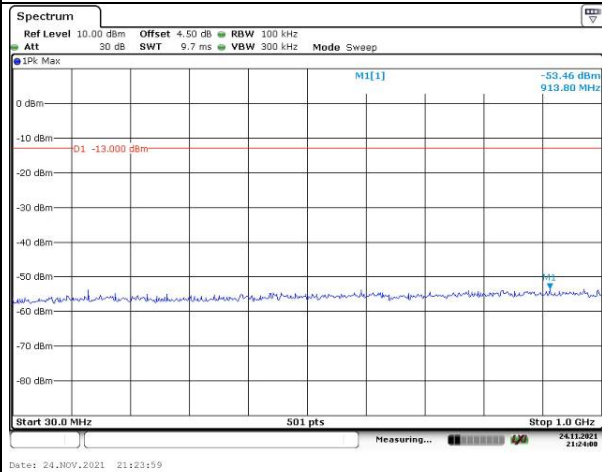


Spurious Emissions at Antenna Terminal

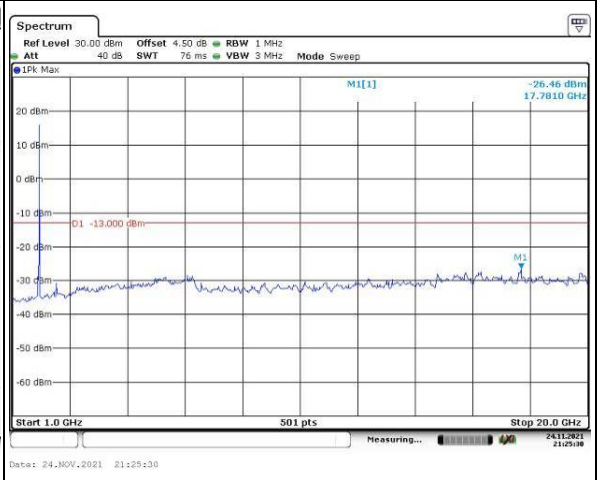
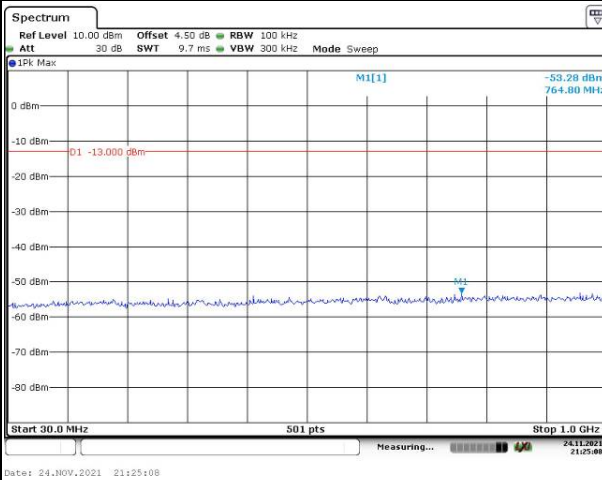
Channel

10MHz Bandwidth QPSK

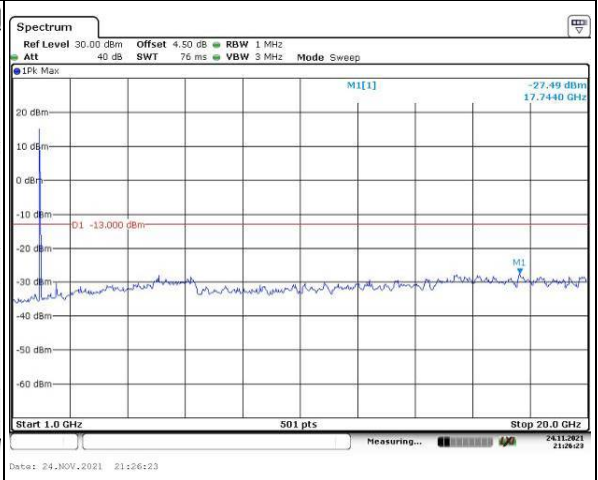
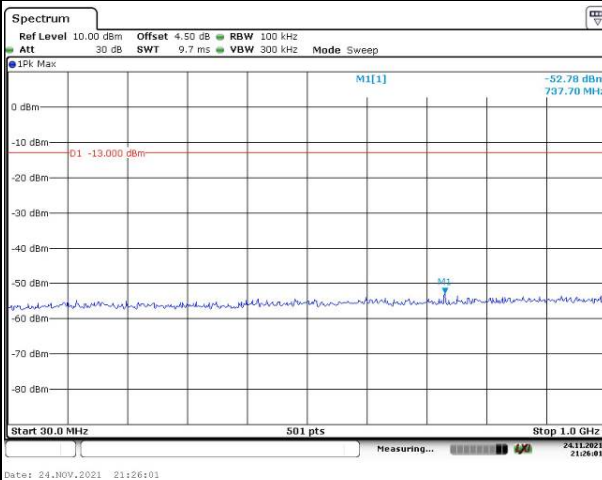
Lowest



Middle



Highest

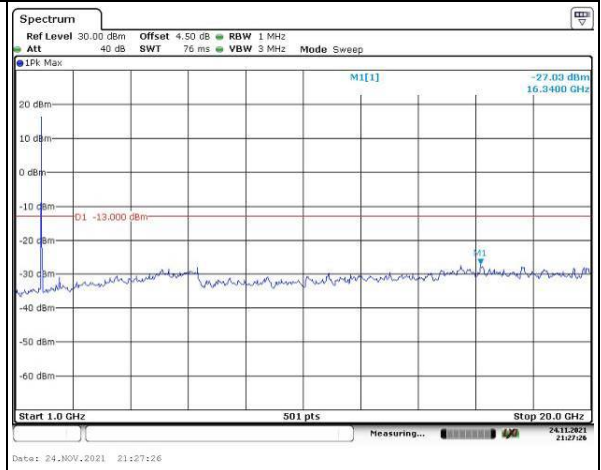
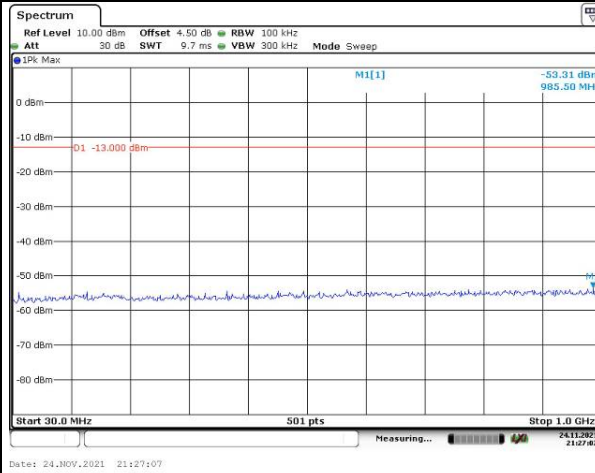


Spurious Emissions at Antenna Terminal

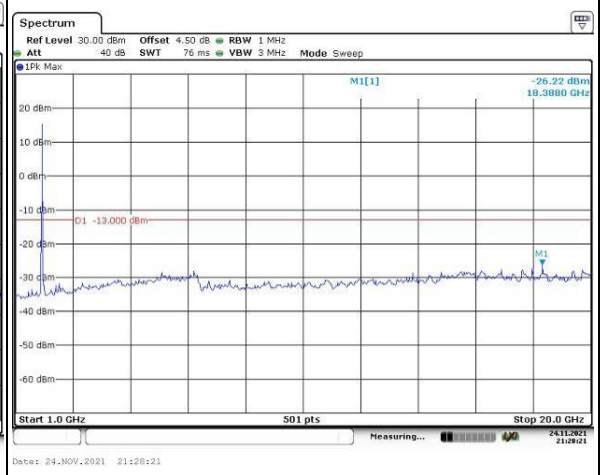
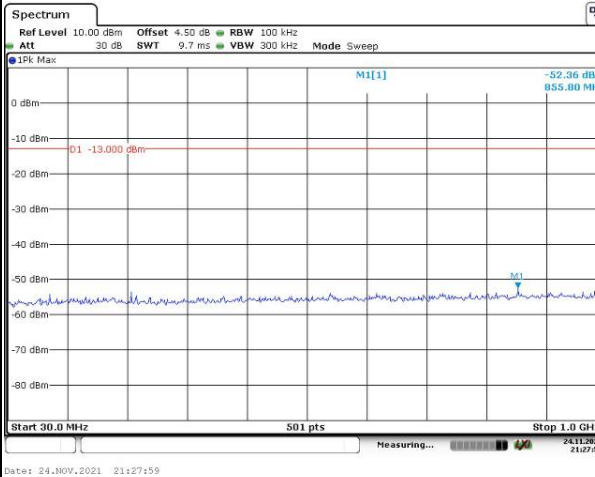
Channel

15MHz Bandwidth QPSK

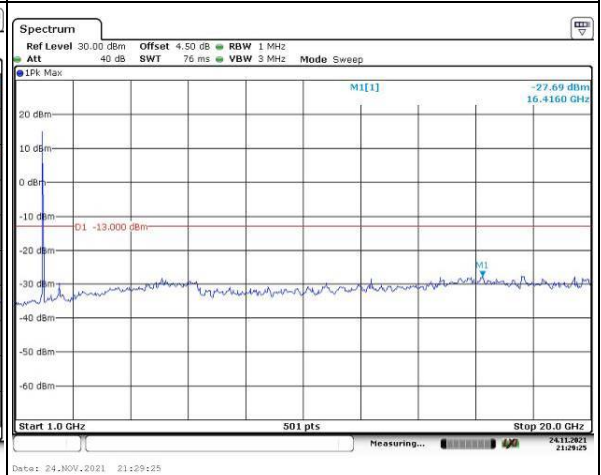
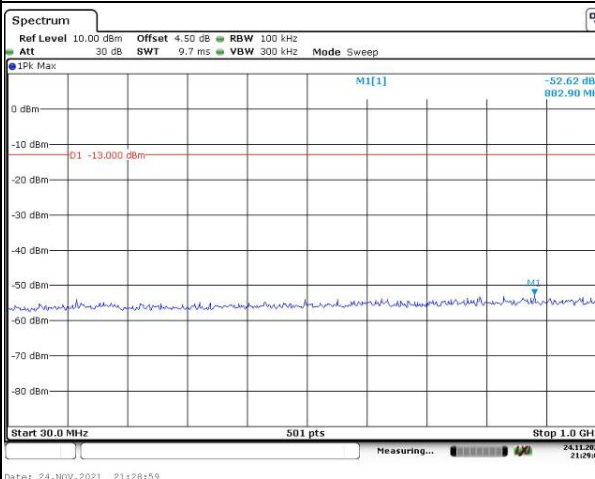
Lowest



Middle



Highest

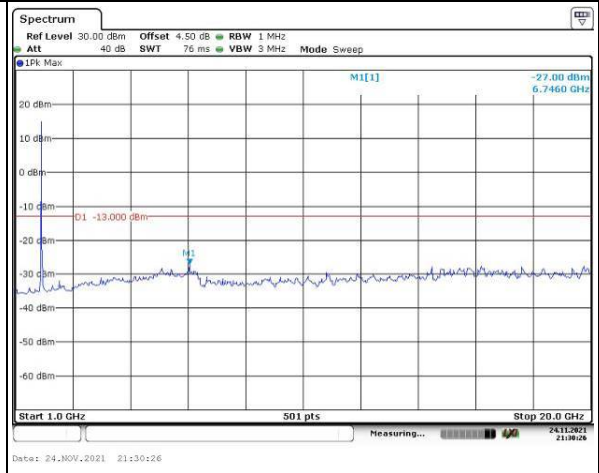
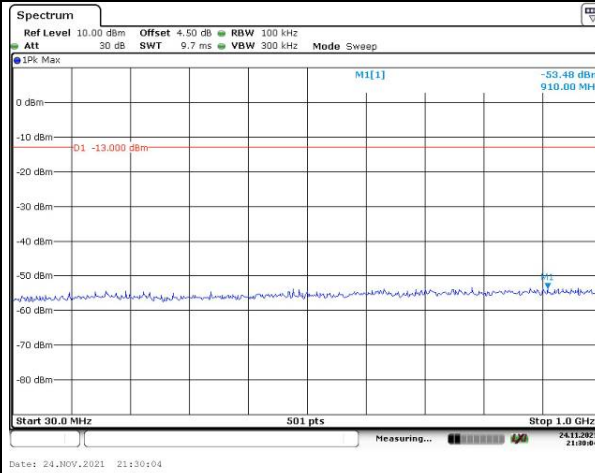


Spurious Emissions at Antenna Terminal

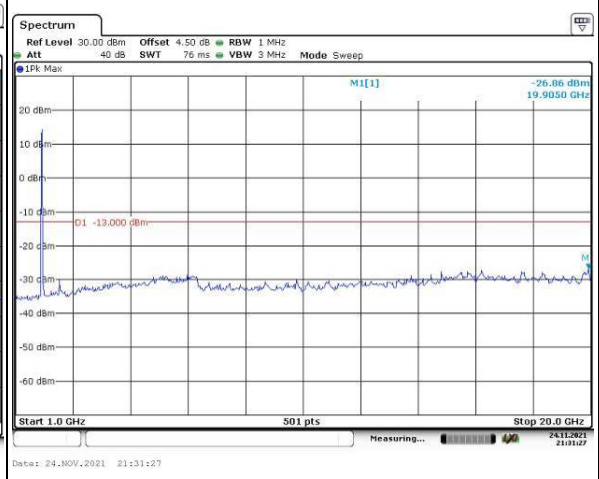
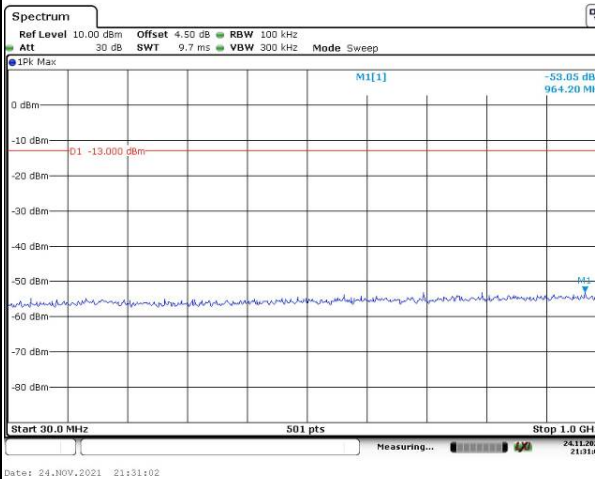
Channel

20MHz Bandwidth QPSK

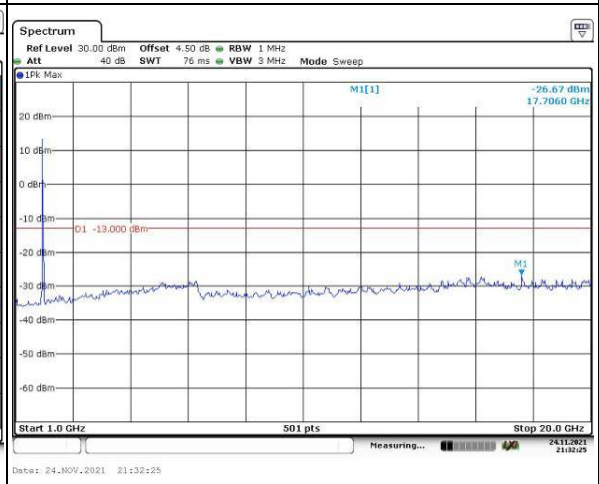
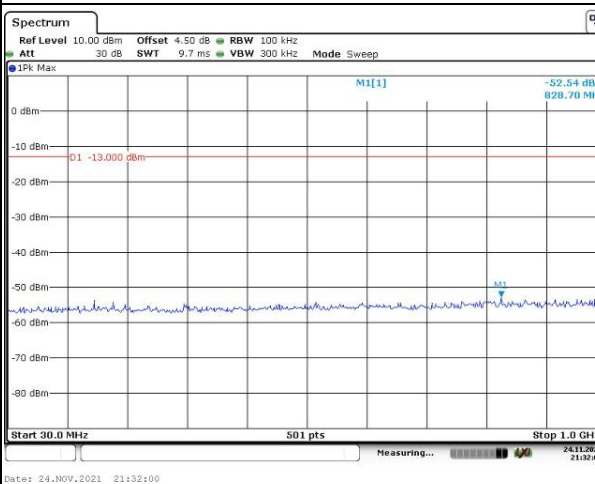
Lowest



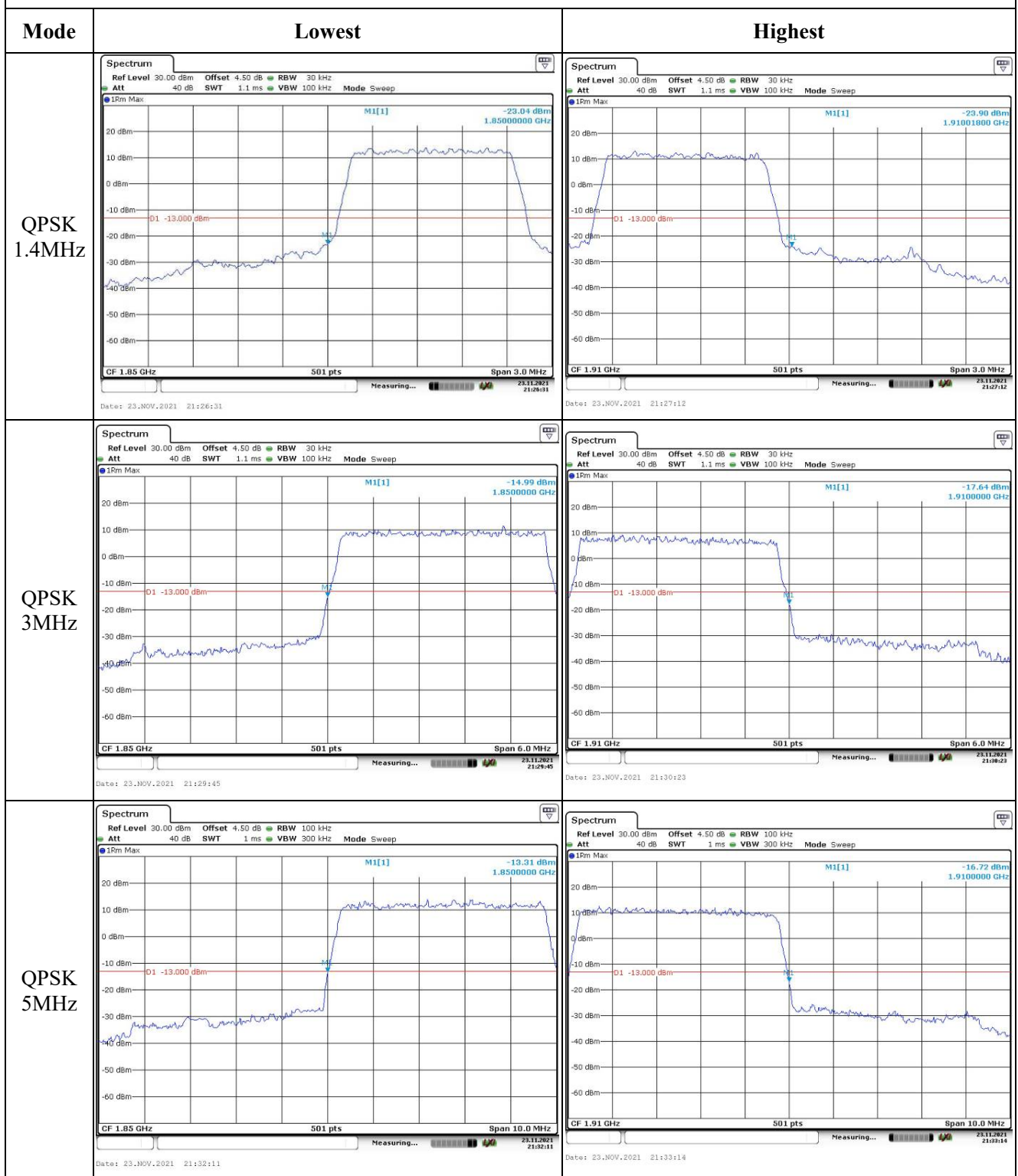
Middle



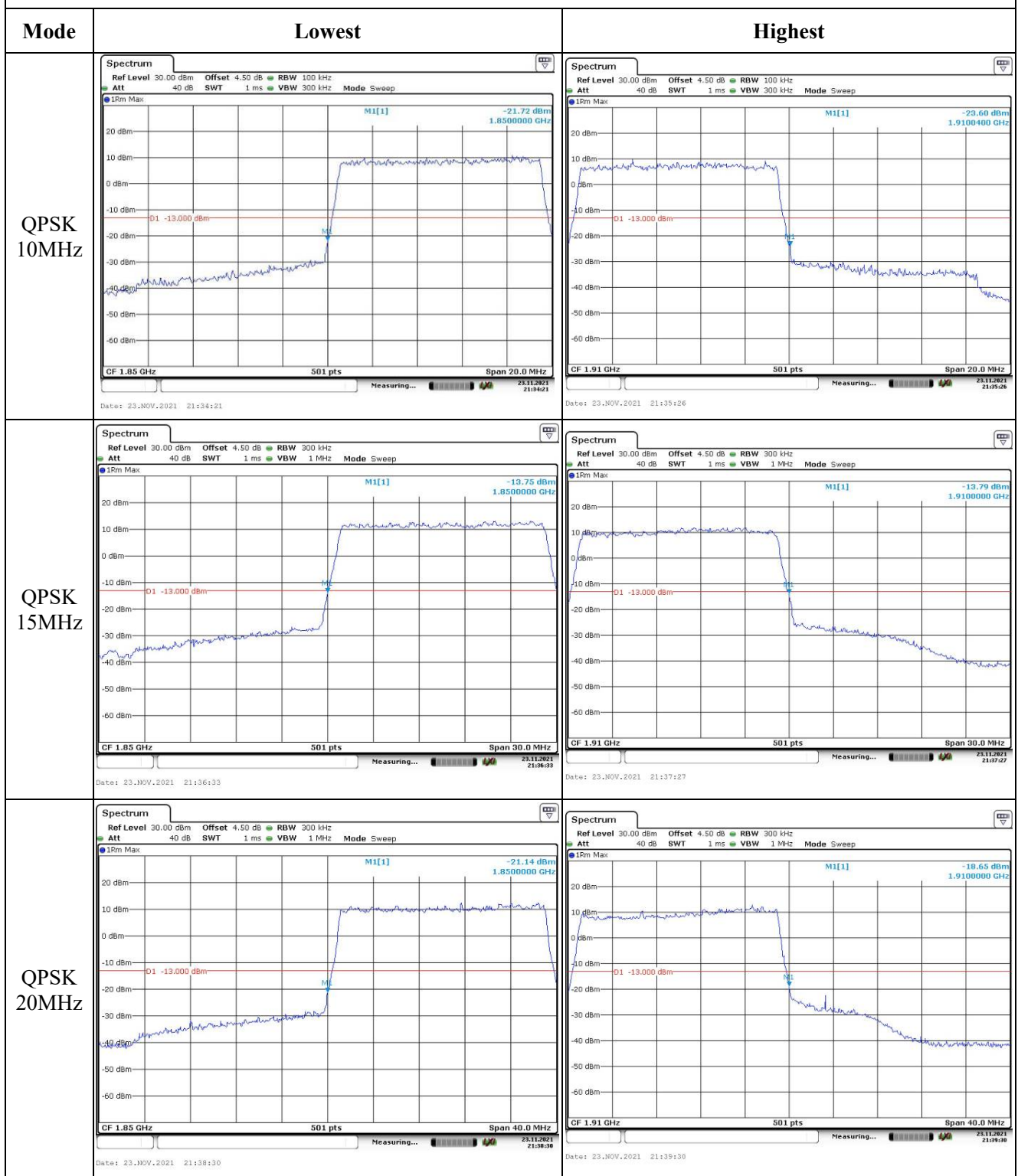
Highest



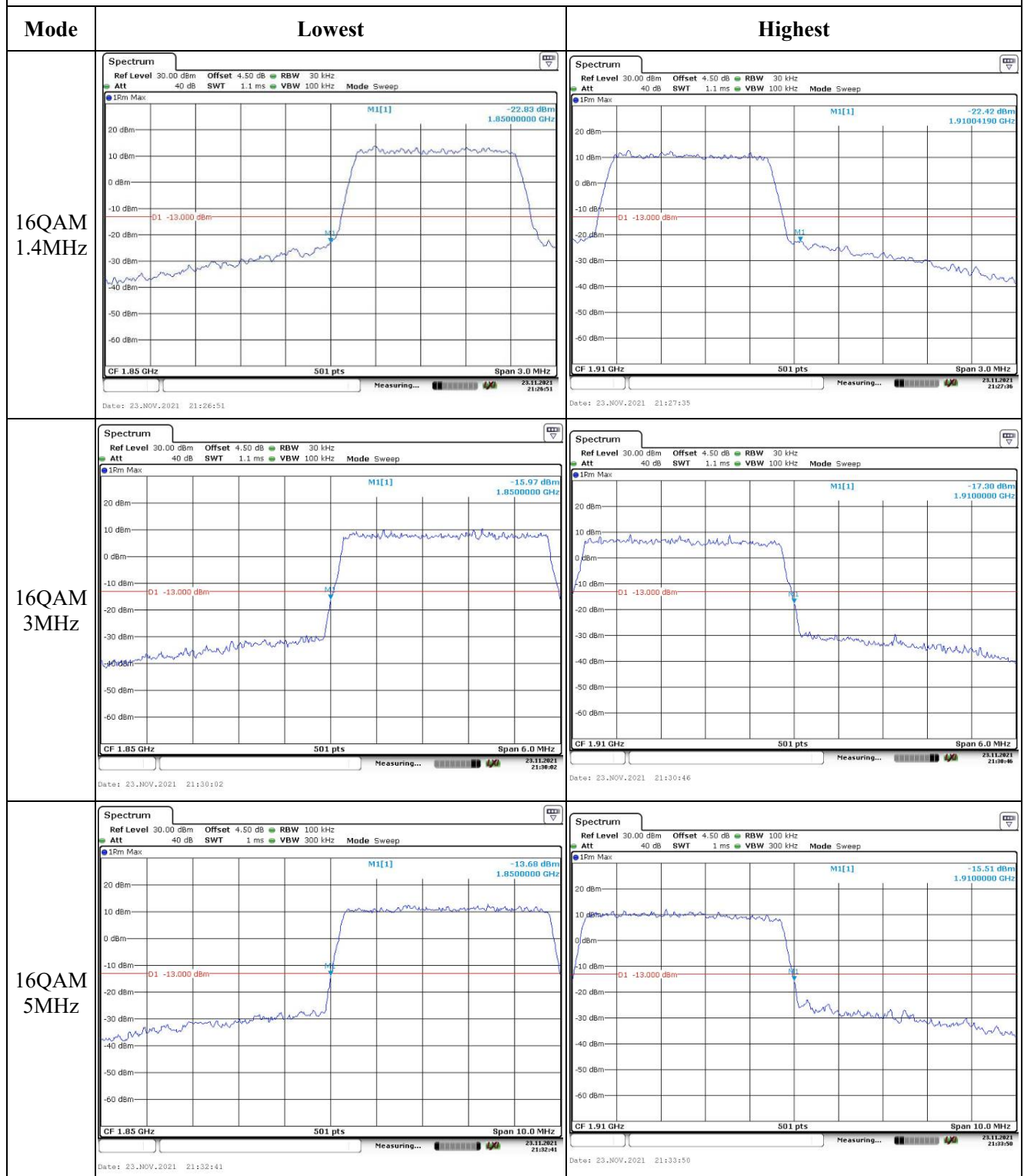
Out of band emission, Band Edge



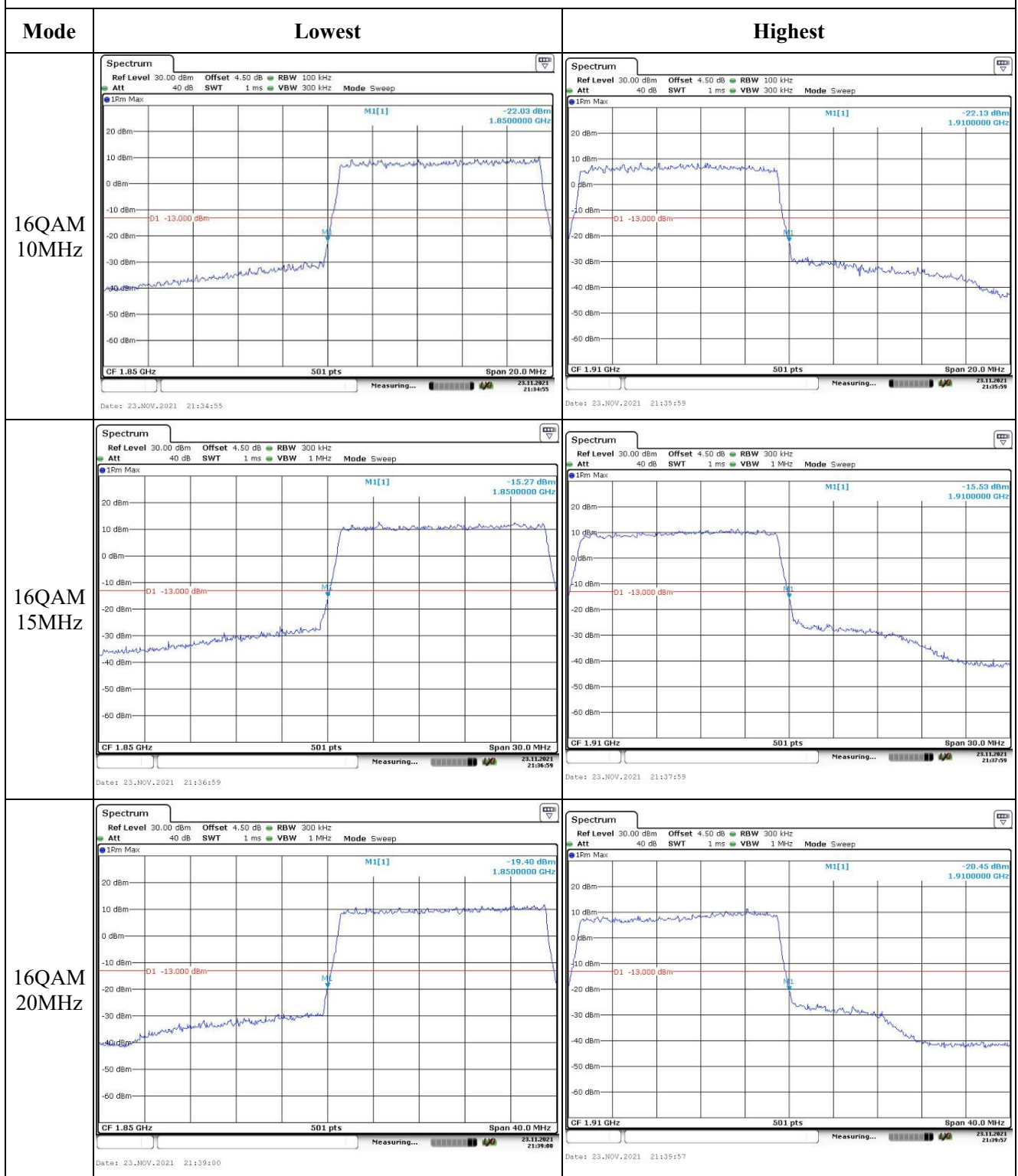
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



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

Serial Number:	CR21110014-RF-S1	Test Date:	2021/11/23~2021/11/24
Test Site:	RF	Test Mode:	Transmitting
Tester:	LE Qiao	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	21.2~22.1	Relative Humidity: (%)	36~41	ATM Pressure: (kPa)	101.7
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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&HUMI 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
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D09	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).

EUT Information@ LTE Band 4▲:

Antenna Gain (dBi):	1	Cable Loss (dB):	0
Operation Voltage(V _{DC}):			
Lowest:	3.5	Normal:	3.7
		Highest:	4.2

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	21.40	21.13	21.19	22.45	30
	RB1#3	21.41	21.19	21.19		
	RB1#5	21.36	21.13	21.14		
	RB3#0	21.45	21.28	21.16		
	RB3#3	21.45	21.27	21.10		
	RB6#0	20.32	20.26	20.06		
1.4MHz 16QAM	RB1#0	21.07	20.01	21.09	22.13	30
	RB1#3	21.13	20.11	21.05		
	RB1#5	21.10	20.10	21.07		
	RB3#0	20.53	20.35	20.27		
	RB3#3	20.54	20.27	20.26		
	RB6#0	19.73	19.57	19.17		
3MHz QPSK	RB1#0	21.30	21.14	21.32	22.32	30
	RB1#8	21.31	21.11	21.28		
	RB1#14	21.24	21.06	21.30		
	RB6#0	20.39	20.29	20.09		
	RB6#9	20.33	20.28	20.06		
	RB15#0	20.34	20.12	20.11		
3MHz 16QAM	RB1#0	20.84	20.98	20.24	21.98	30
	RB1#8	20.78	20.93	20.20		
	RB1#14	20.70	20.87	20.20		
	RB6#0	19.42	19.46	19.55		
	RB6#9	19.38	19.45	19.46		
	RB15#0	19.52	19.35	19.30		
5MHz QPSK	RB1#0	21.39	21.27	20.95	22.39	30
	RB1#13	21.31	21.29	21.01		
	RB1#24	21.28	21.25	20.94		
	RB15#0	20.31	20.11	20.12		
	RB15#10	20.35	20.18	20.08		
	RB25#0	20.21	20.08	20.07		
5MHz 16QAM	RB1#0	19.62	20.43	19.70	21.44	30
	RB1#13	19.56	20.41	19.68		
	RB1#24	19.57	20.44	19.71		
	RB15#0	19.56	19.26	19.22		
	RB15#10	19.53	19.25	19.22		
	RB25#0	19.57	19.40	19.09		
10MHz QPSK	RB1#0	21.30	21.23	21.25	22.3	30

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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	5.19	3.86	3.71	13
	RB100#0	5.19	4.35	4.99	13
20MHz 16QAM	RB1#0	5.97	5.19	4.20	13
	RB100#0	6.14	5.36	5.77	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	1.254	1.248	1.260
1.4MHz 16QAM	1.108	1.102	1.102	1.266	1.254	1.260
3MHz QPSK	2.707	2.695	2.695	3.000	2.988	3.024
3MHz 16QAM	2.695	2.683	2.683	3.012	3.012	3.036
5MHz QPSK	4.531	4.511	4.511	5.000	5.000	5.000
5MHz 16QAM	4.511	4.531	4.551	4.980	5.020	5.020
10MHz QPSK	8.981	8.942	8.981	9.760	9.760	9.800
10MHz 16QAM	8.981	8.981	8.942	9.720	9.840	9.800
15MHz QPSK	13.533	13.533	13.533	15.060	15.000	15.060
15MHz 16QAM	13.533	13.533	13.593	15.060	15.060	15.180
20MHz QPSK	18.044	17.964	17.964	19.760	19.600	19.760
20MHz 16QAM	17.964	18.044	18.044	19.760	19.840	20.000

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

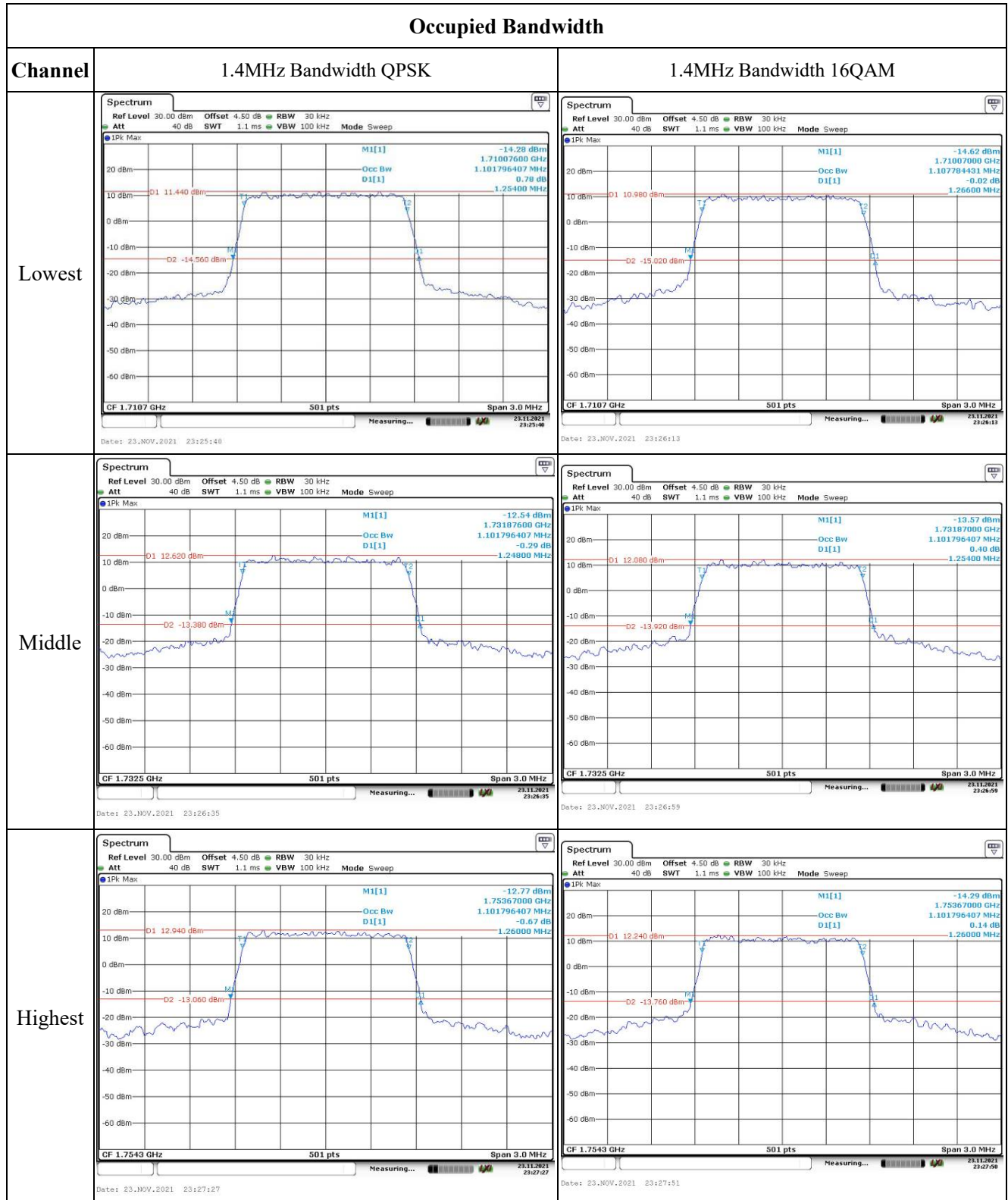
FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal					
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.				

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.

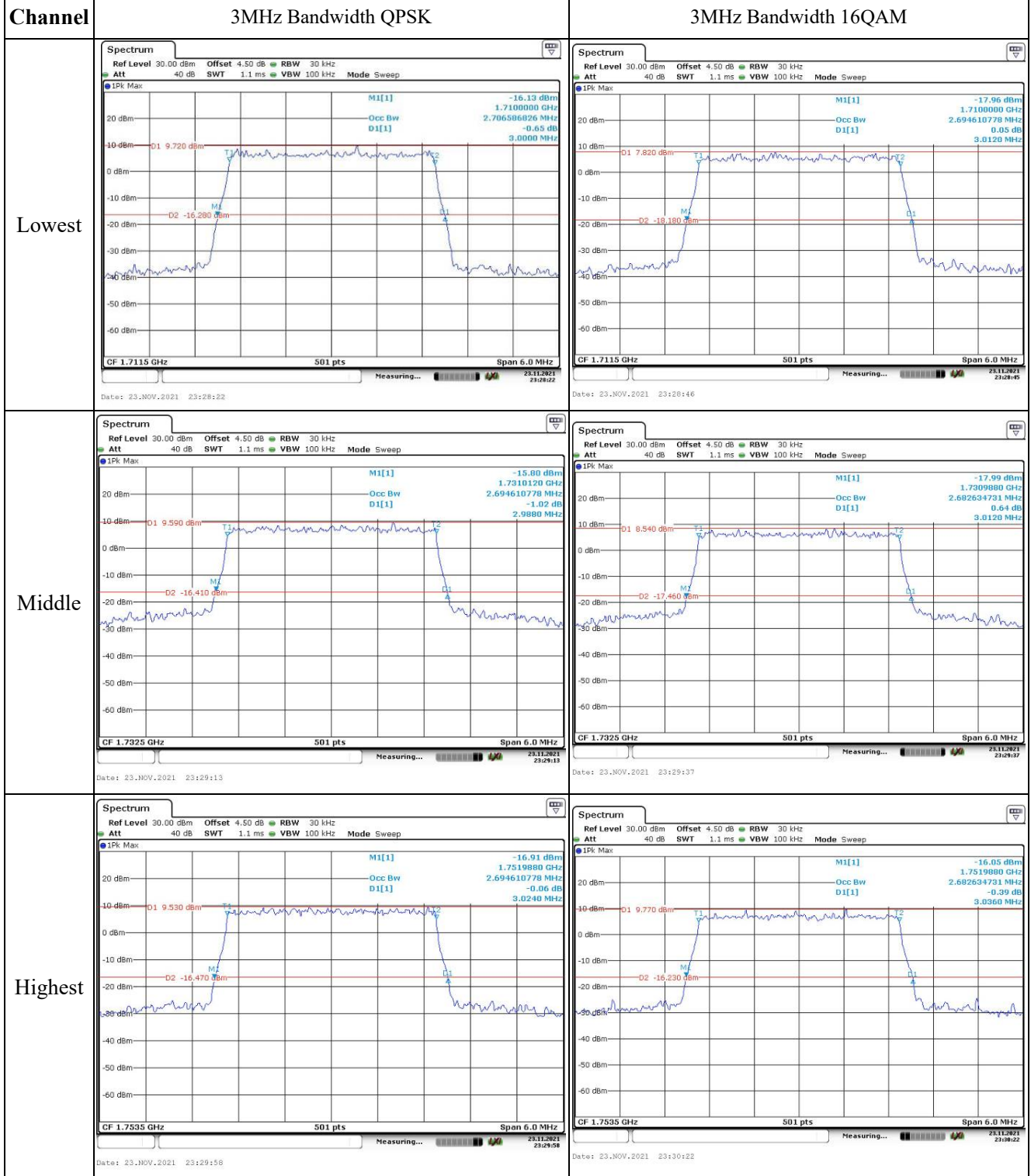
FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	1710.528	1710.00	1754.473	1755
	-20	3.7	1710.527	1710.00	1754.472	1755
	-10	3.7	1710.526	1710.00	1754.474	1755
	0	3.7	1710.526	1710.00	1754.474	1755
	10	3.7	1710.522	1710.00	1754.473	1755
	20	3.7	1710.529	1710.00	1754.471	1755
	30	3.7	1710.532	1710.00	1754.476	1755
	40	3.7	1710.533	1710.00	1754.478	1755
	50	3.7	1710.534	1710.00	1754.475	1755
Frequency Stability vs. Voltage	20	3.5	1710.522	1710.00	1754.474	1755
	20	4.2	1710.523	1710.00	1754.471	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	3.7	1710.526	1710.00	1754.511	1755
	-20	3.7	1710.522	1710.00	1754.513	1755
	-10	3.7	1710.525	1710.00	1754.515	1755
	0	3.7	1710.528	1710.00	1754.517	1755
	10	3.7	1710.524	1710.00	1754.518	1755
	20	3.7	1710.529	1710.00	1754.511	1755
	30	3.7	1710.526	1710.00	1754.519	1755
	40	3.7	1710.525	1710.00	1754.510	1755
	50	3.7	1710.525	1710.00	1754.516	1755
Frequency Stability vs. Voltage	20	3.5	1710.525	1710.00	1754.516	1755
	20	4.2	1710.529	1710.00	1754.518	1755
					Result:	Pass

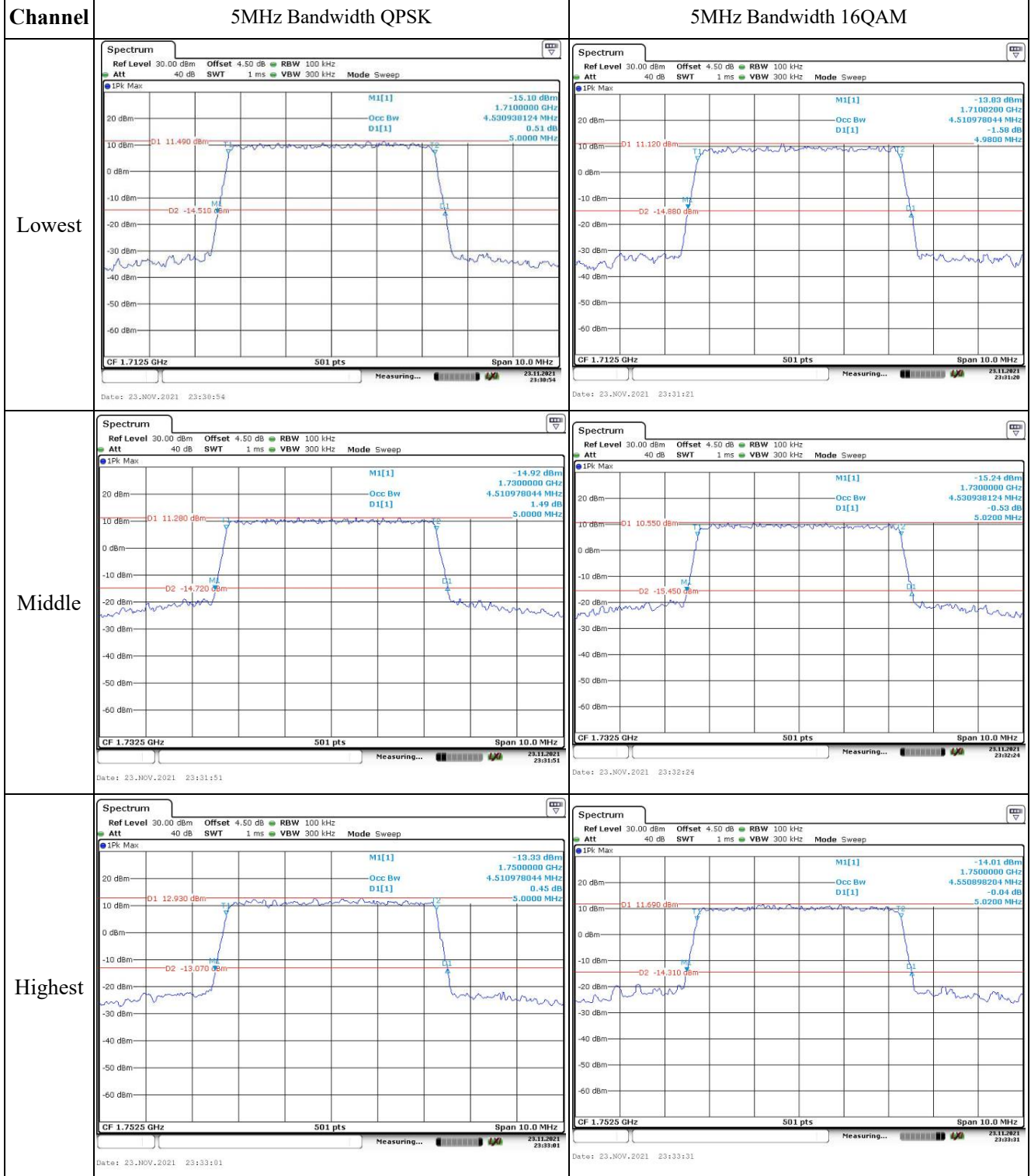
Test Plots:



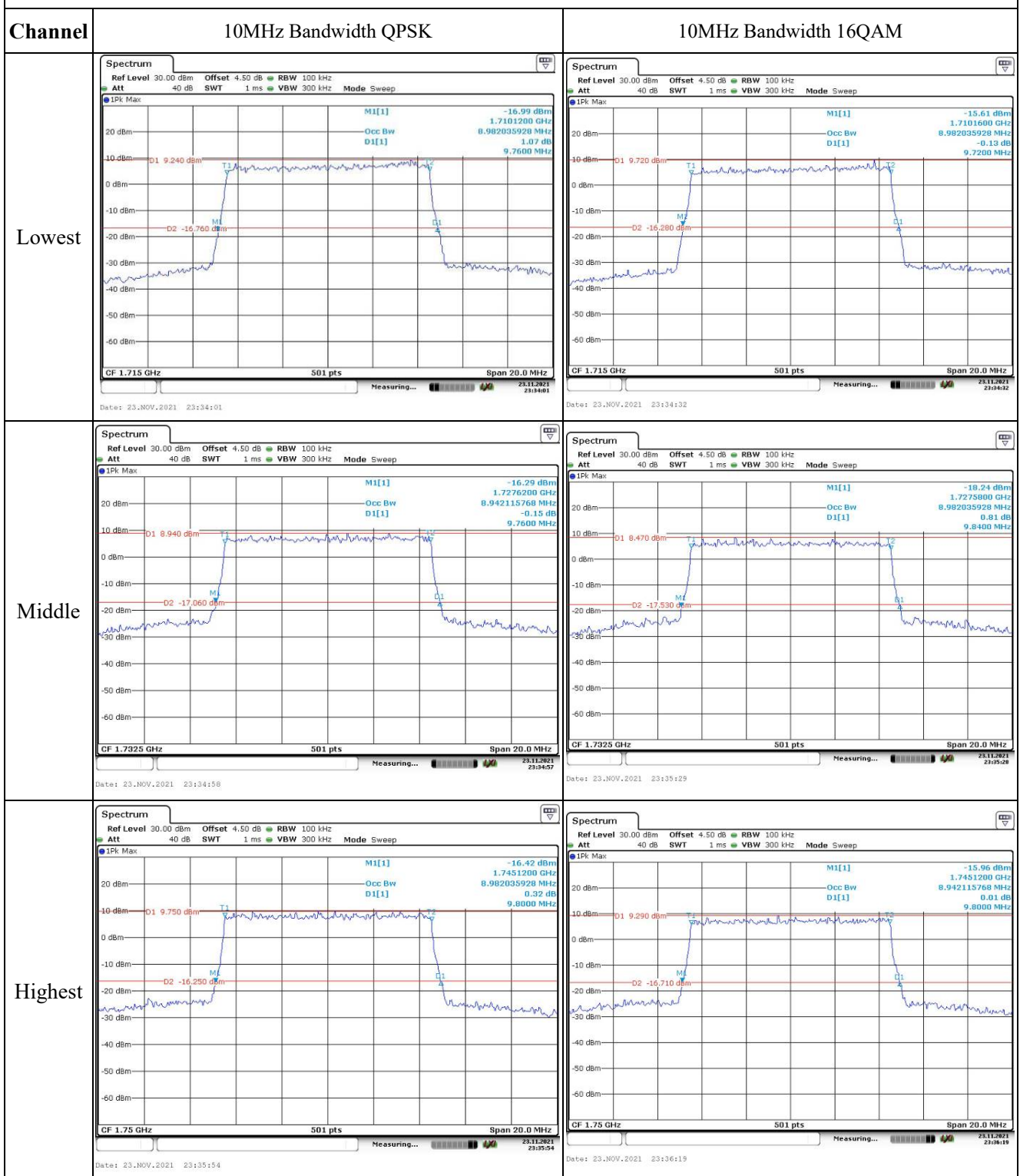
Occupied Bandwidth



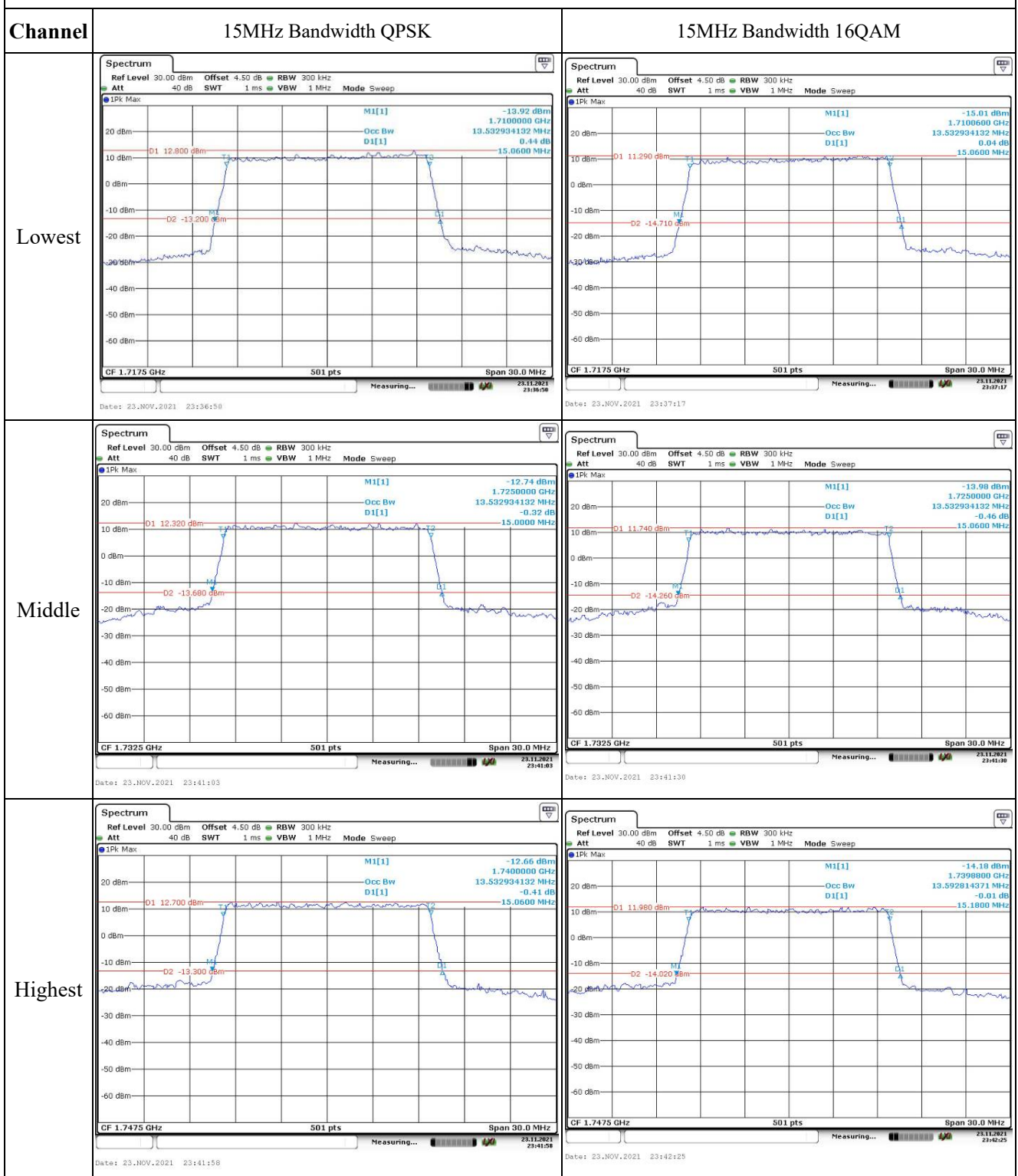
Occupied Bandwidth



Occupied Bandwidth



Occupied Bandwidth



Occupied Bandwidth

