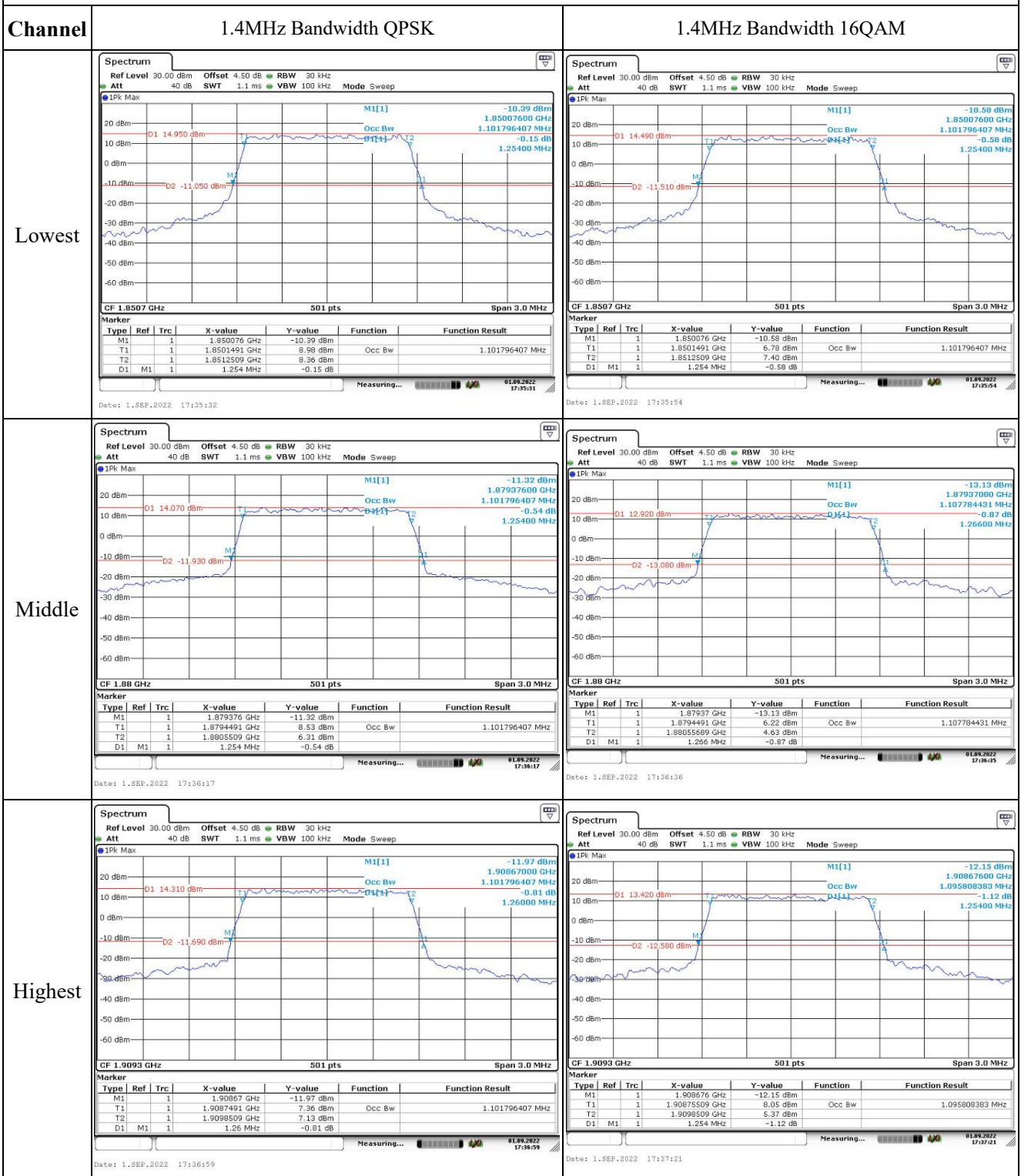


Test Plots:

Occupied Bandwidth



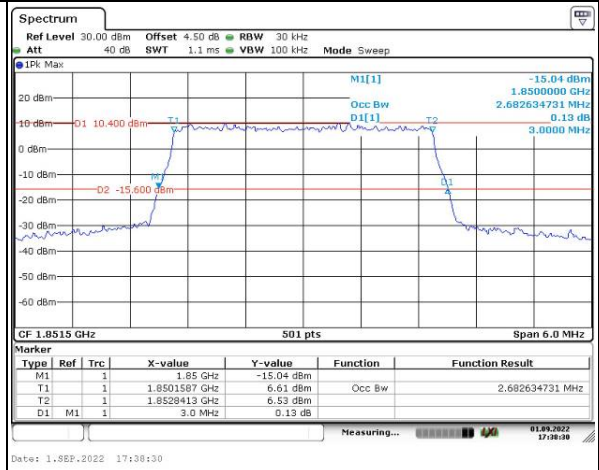
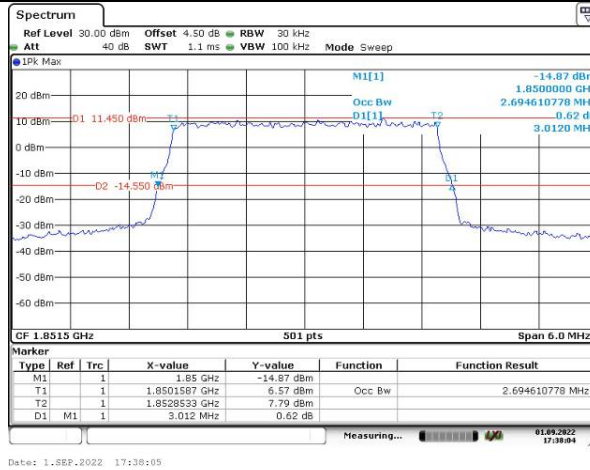
Occupied Bandwidth

Channel

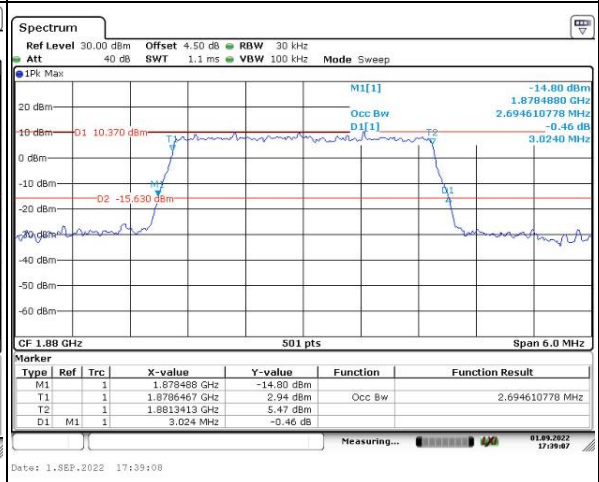
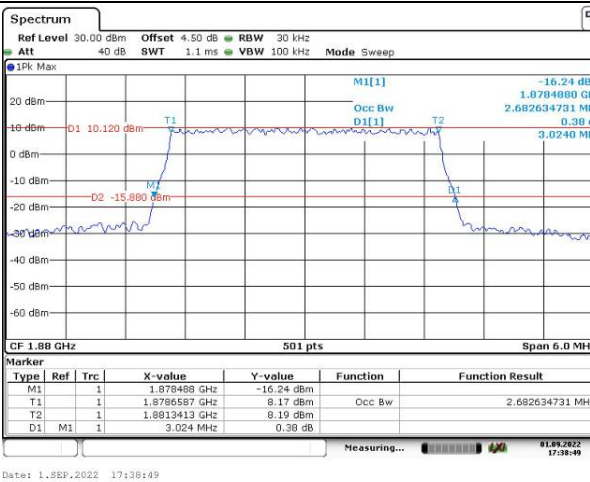
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

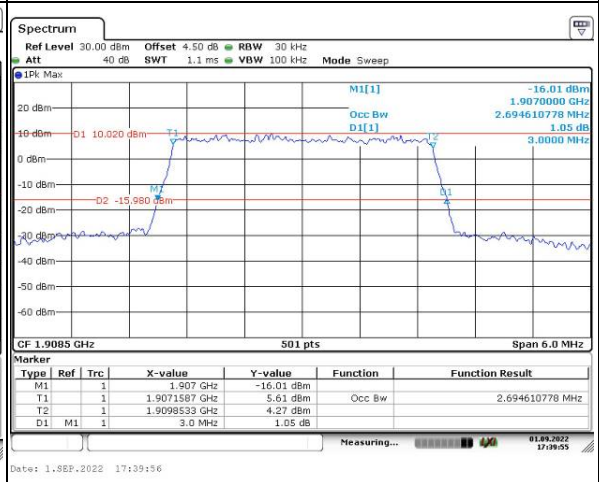
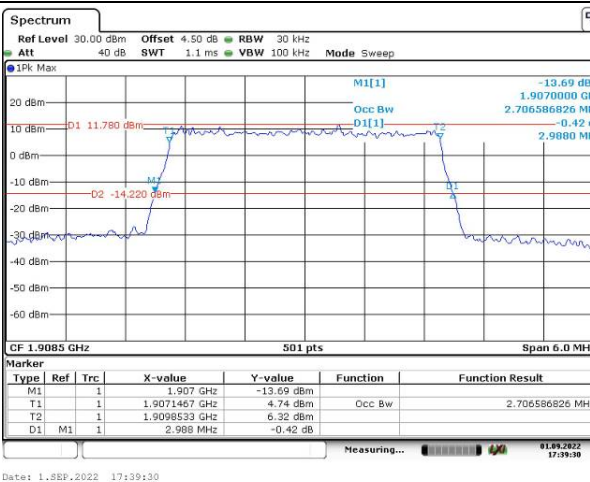
Lowest



Middle



Highest



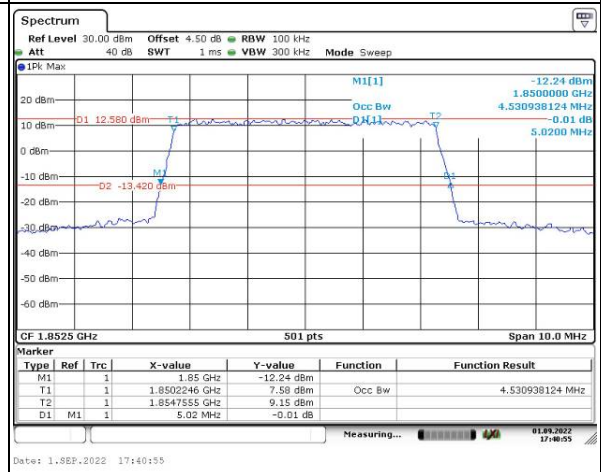
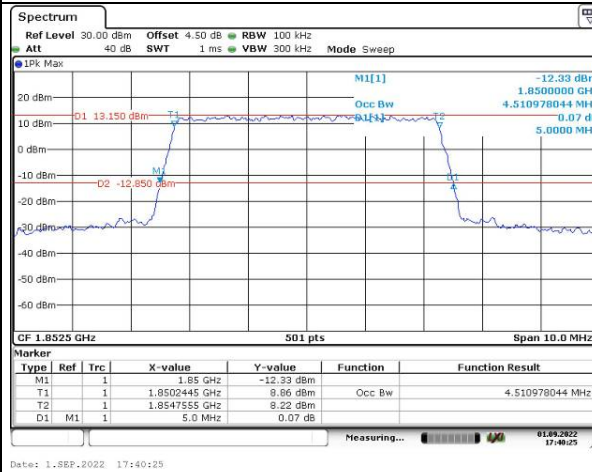
Occupied Bandwidth

Channel

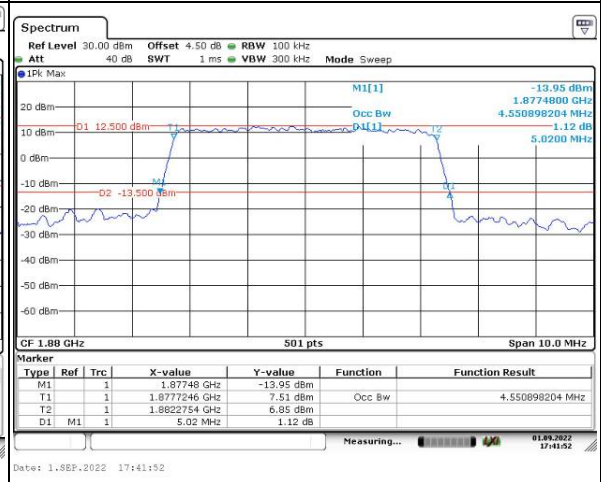
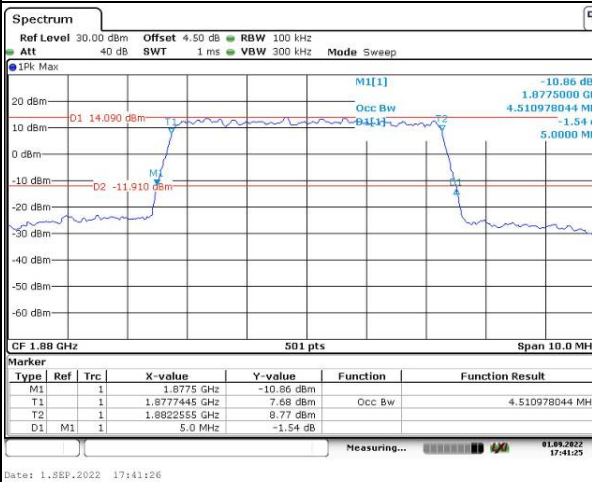
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

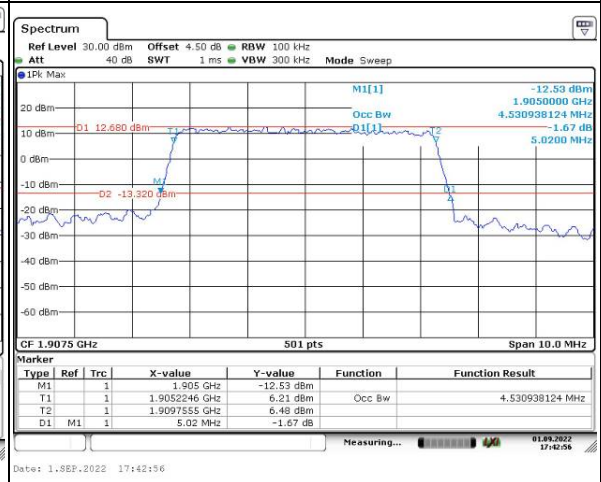
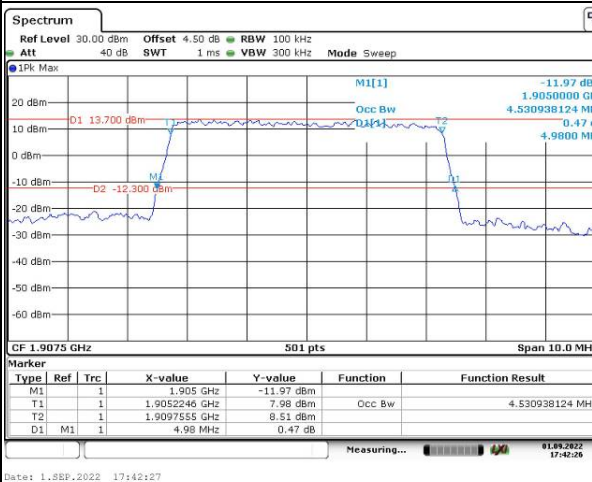
Lowest



Middle



Highest



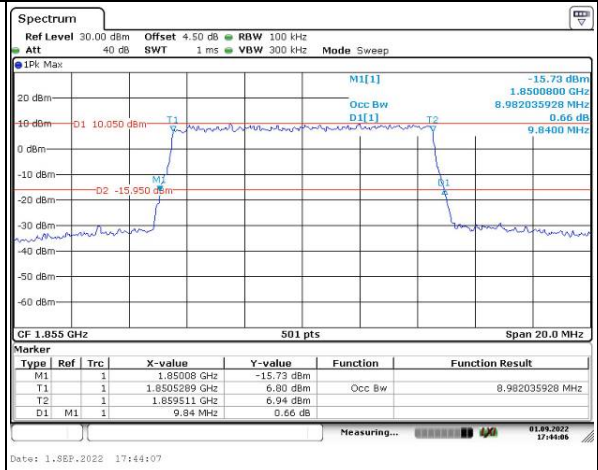
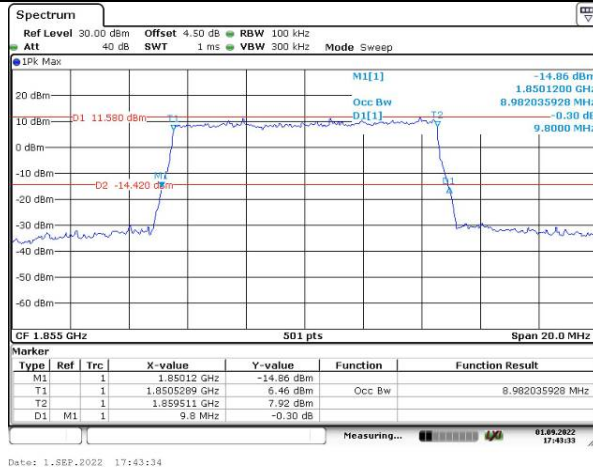
Occupied Bandwidth

Channel

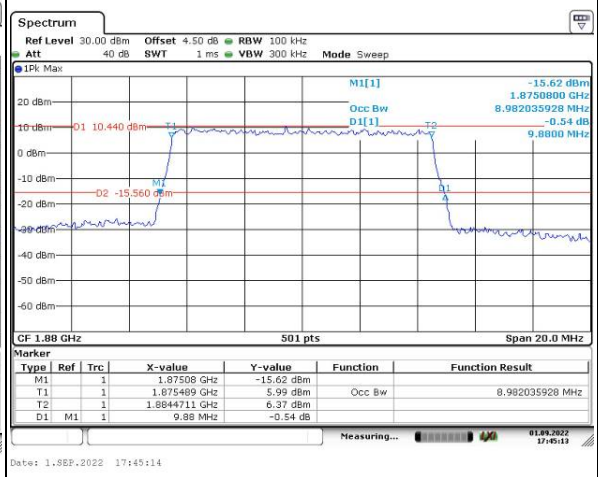
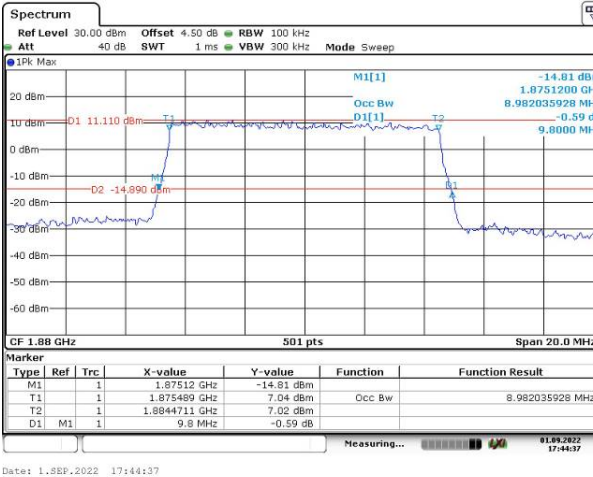
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

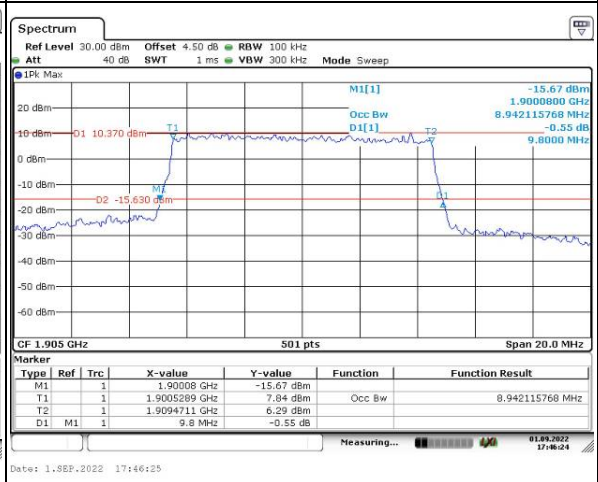
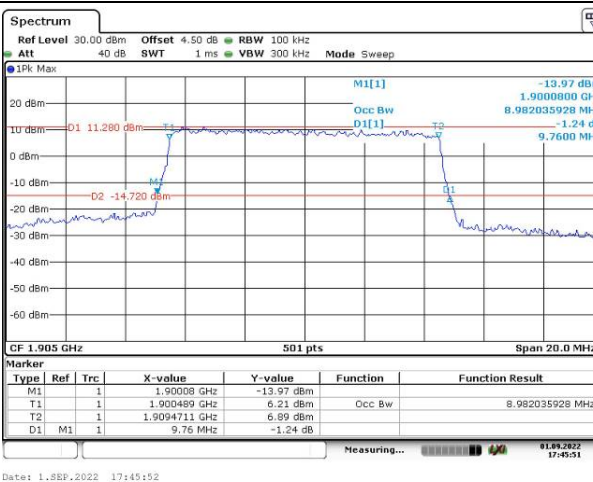
Lowest



Middle



Highest



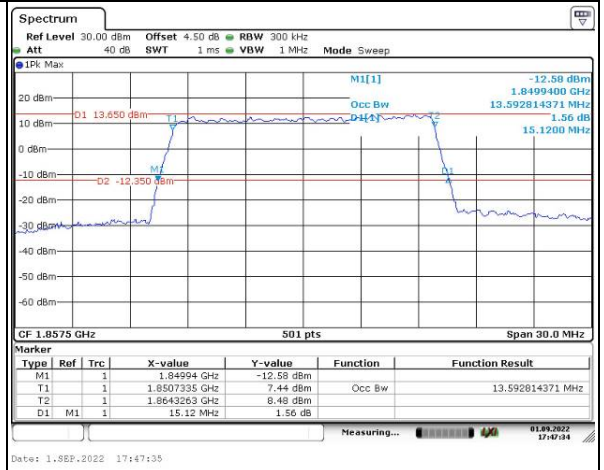
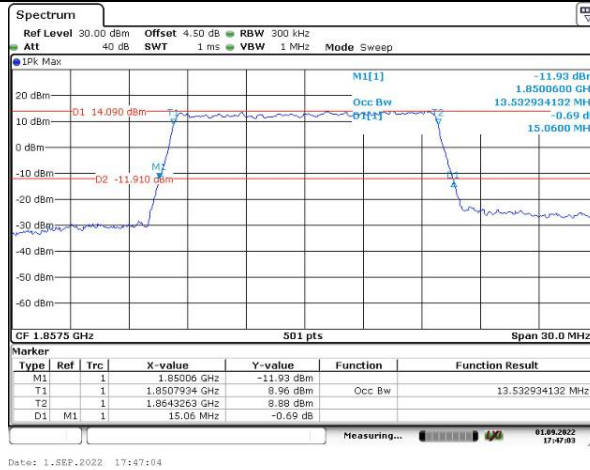
Occupied Bandwidth

Channel

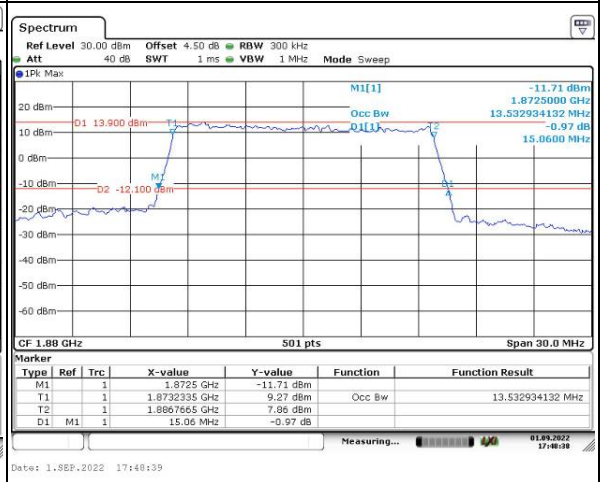
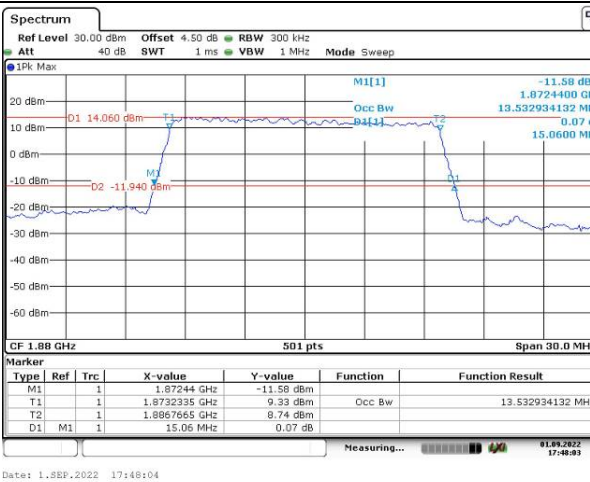
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

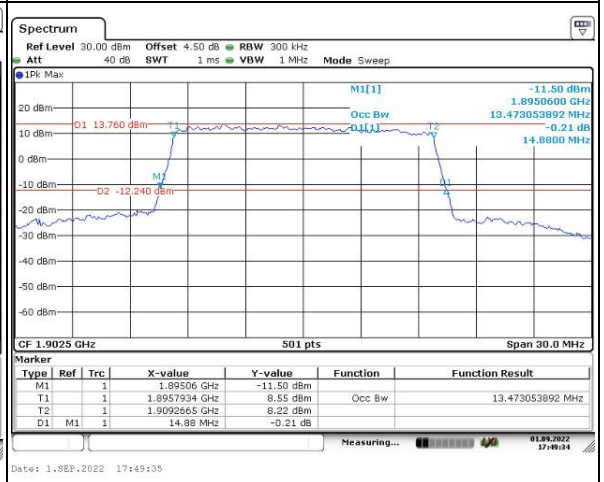
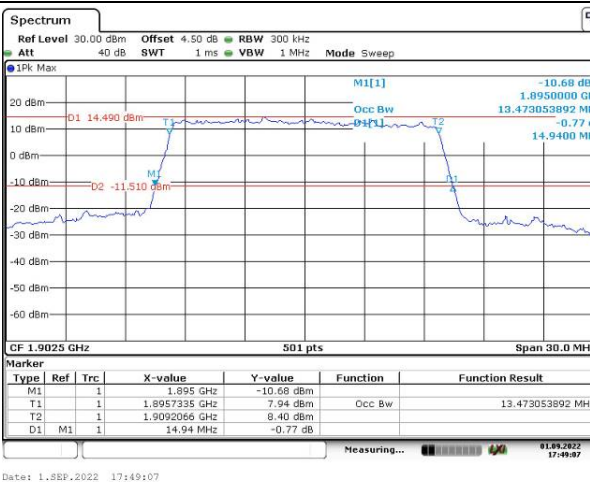
Lowest



Middle



Highest



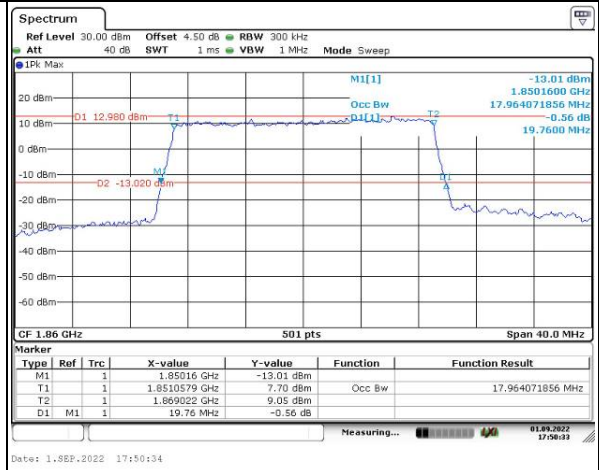
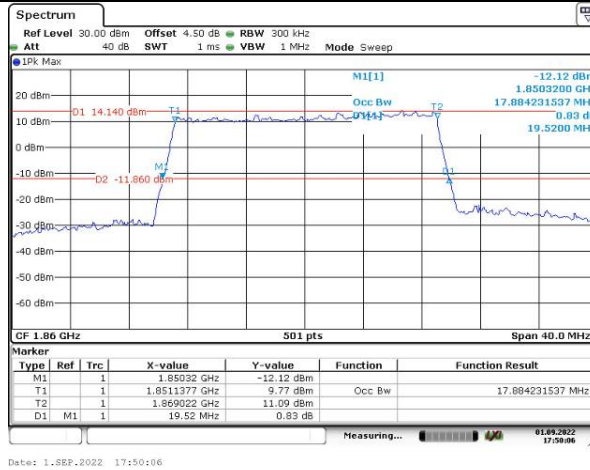
Occupied Bandwidth

Channel

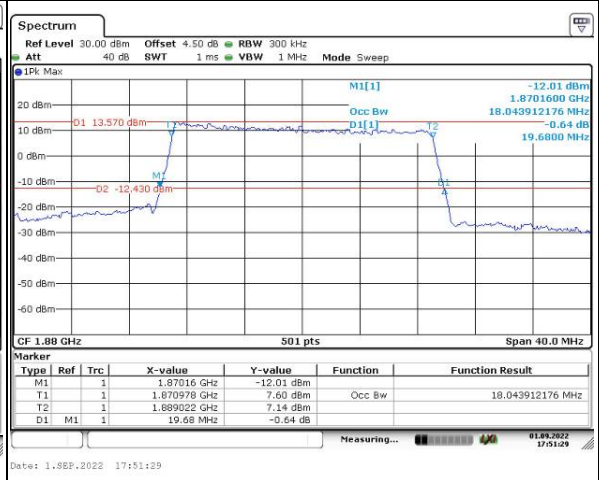
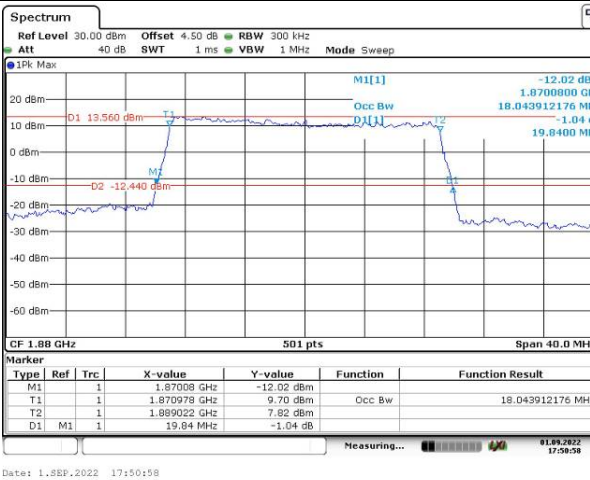
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

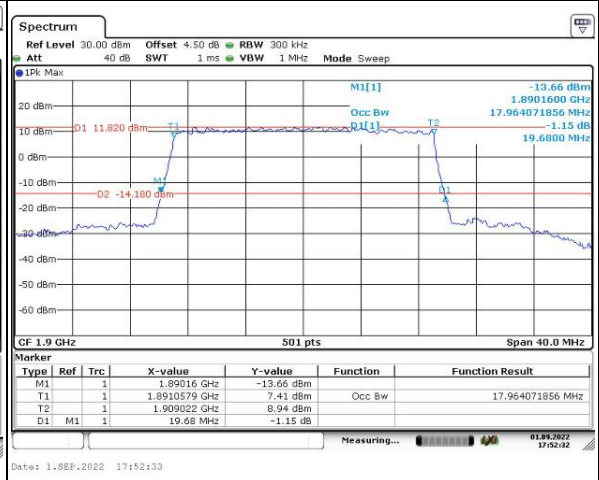
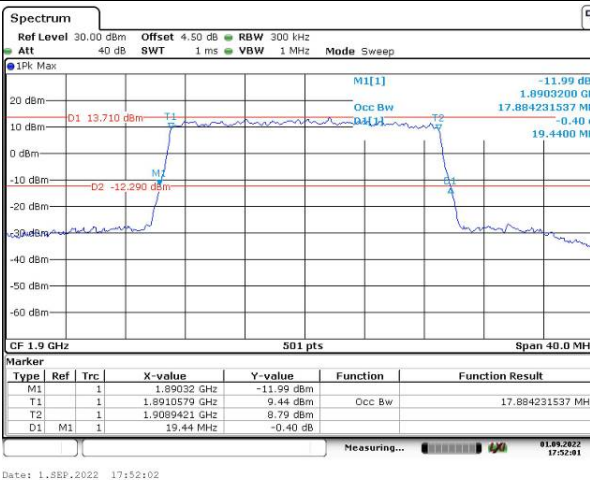
Lowest



Middle



Highest

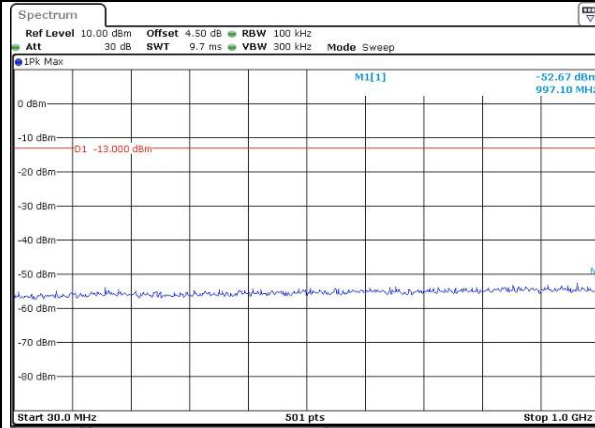


Spurious Emissions at Antenna Terminal

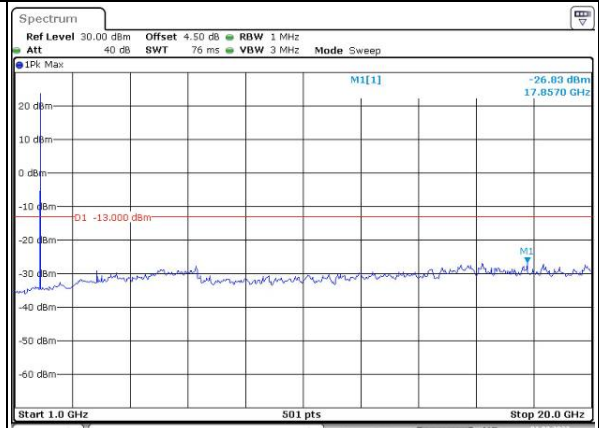
Channel

1.4MHz Bandwidth QPSK

Lowest

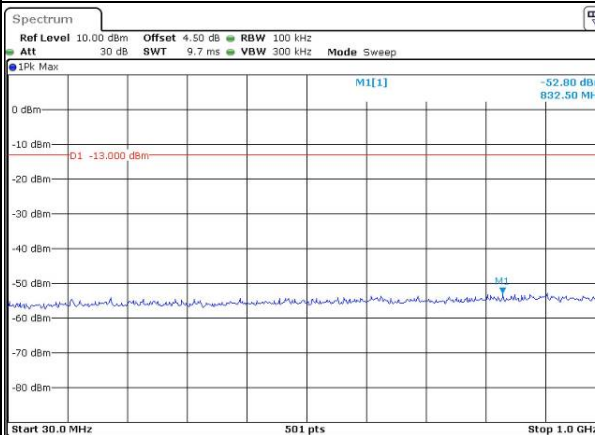


Date: 1.SEP.2022 01:36:33

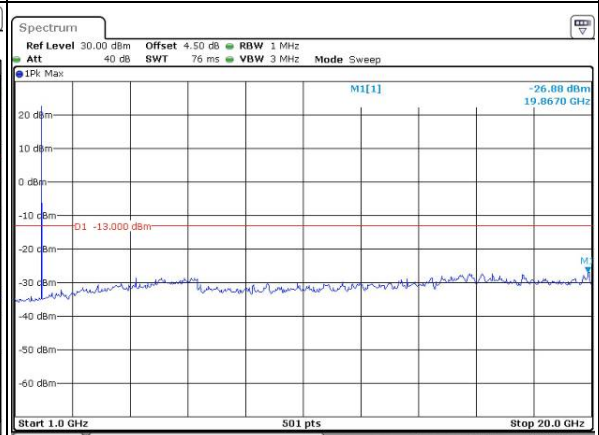


Date: 1.SEP.2022 01:37:07

Middle

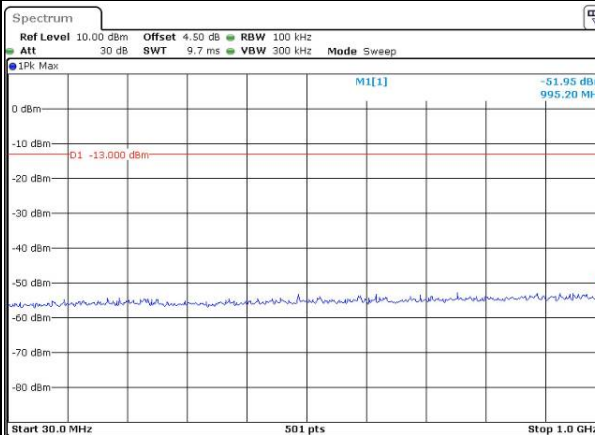


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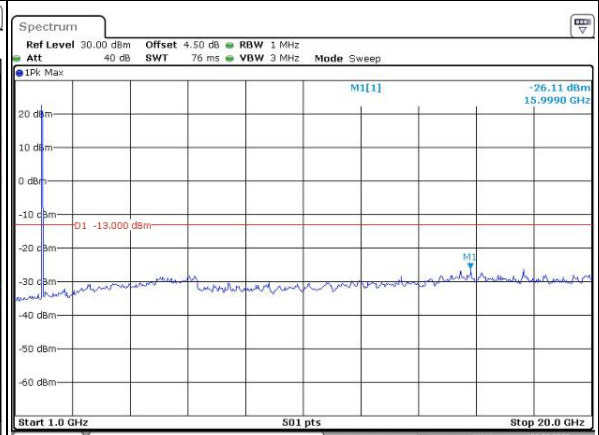


Date: 1.SEP.2022 01:38:05

Highest



Date: 1.SEP.2022 01:38:41



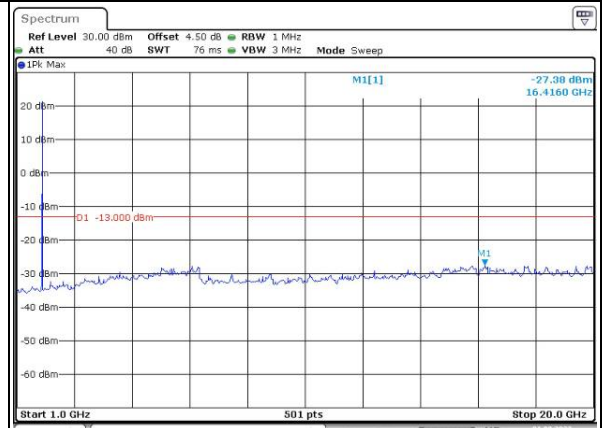
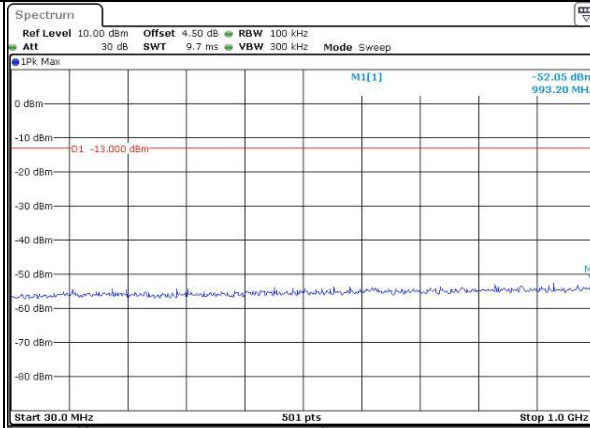
Date: 1.SEP.2022 01:39:14

Spurious Emissions at Antenna Terminal

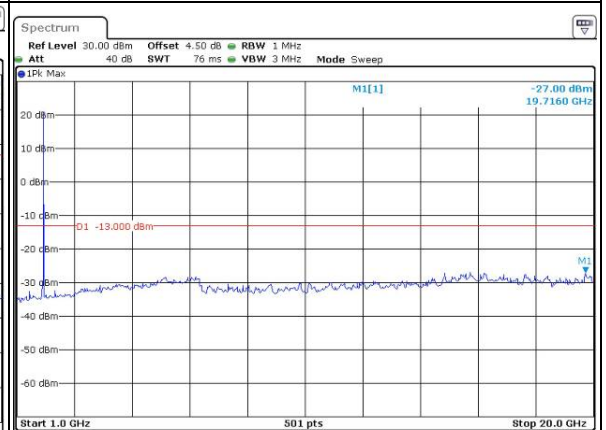
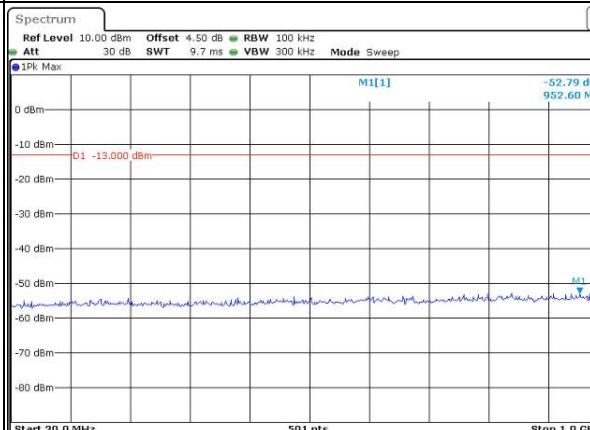
Channel

3MHz Bandwidth QPSK

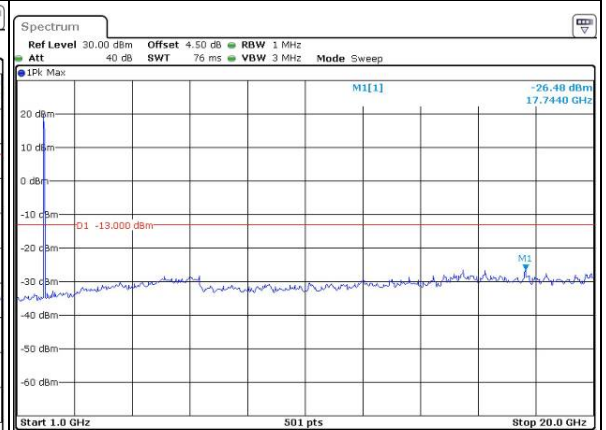
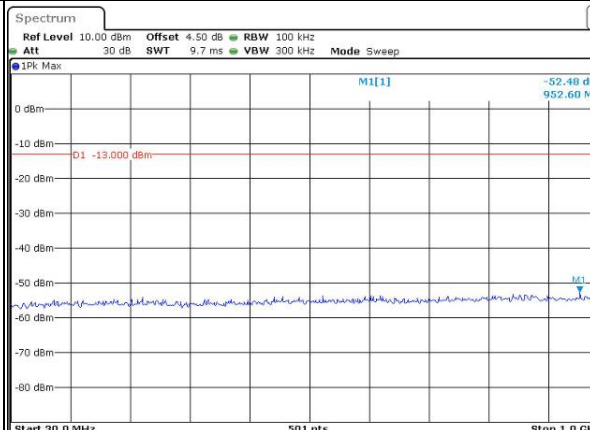
Lowest



Middle



Highest

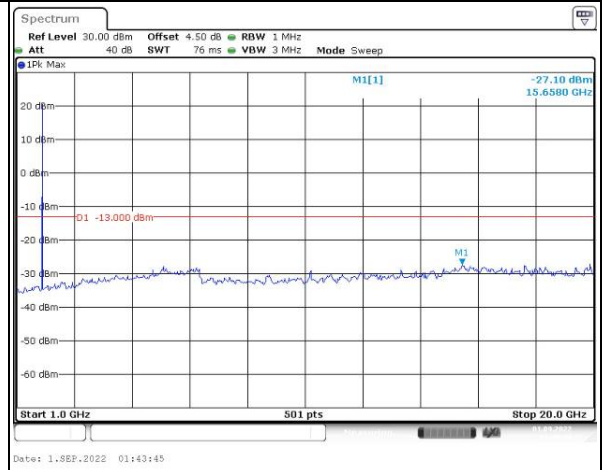
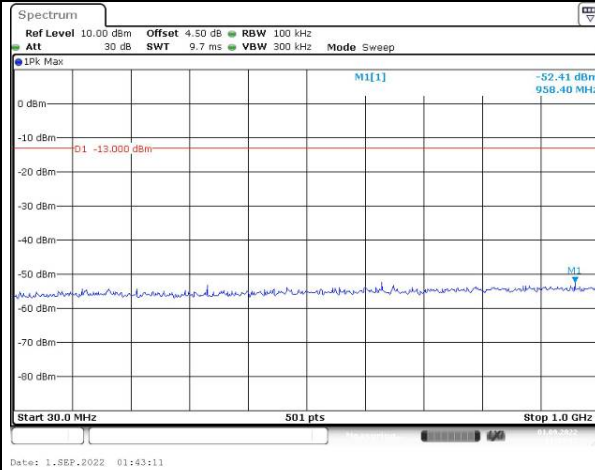


Spurious Emissions at Antenna Terminal

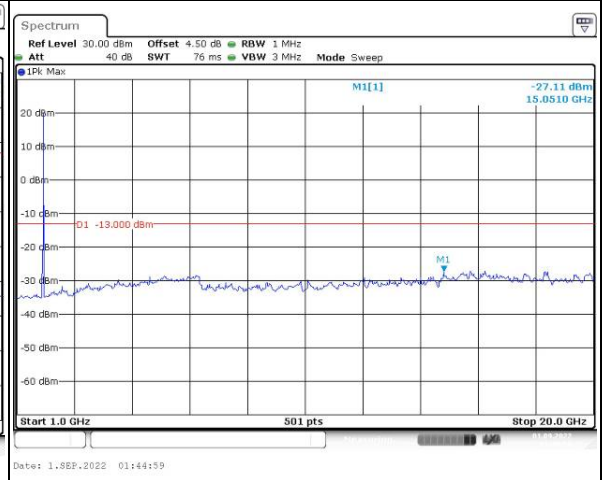
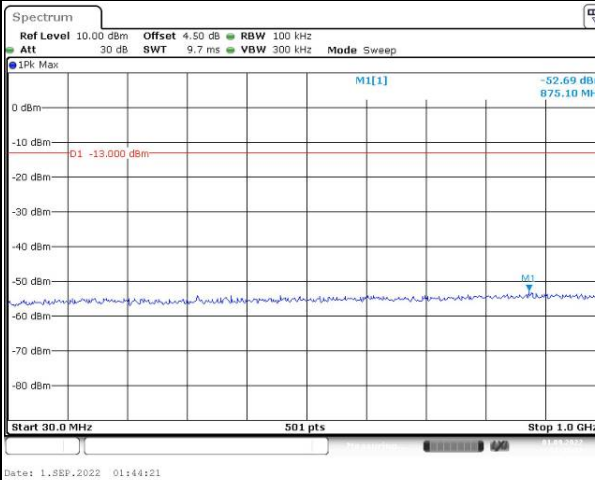
Channel

5MHz Bandwidth QPSK

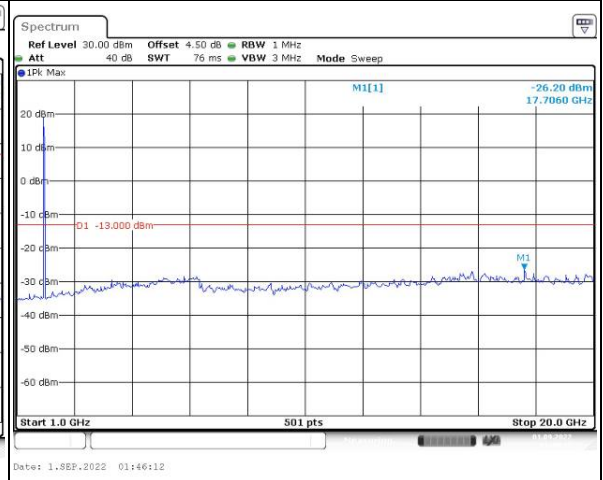
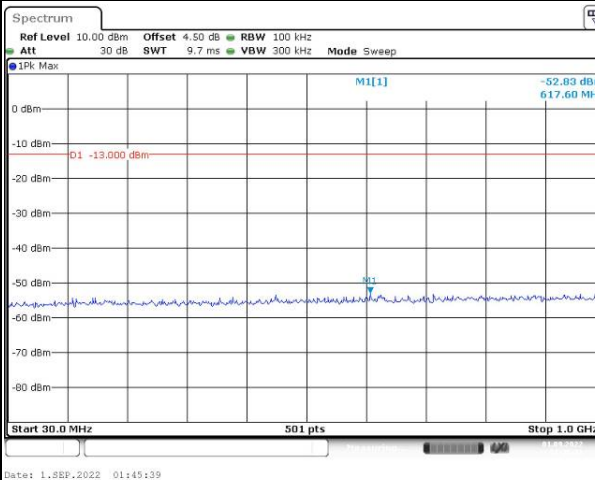
Lowest



Middle



Highest

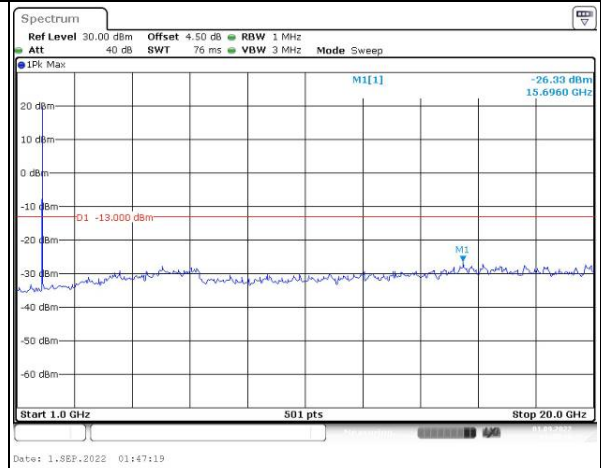
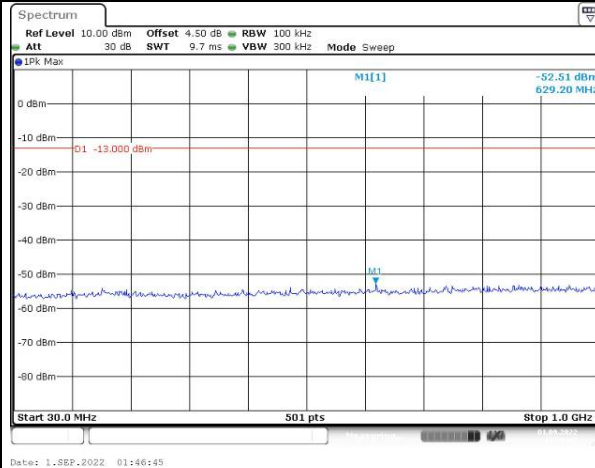


Spurious Emissions at Antenna Terminal

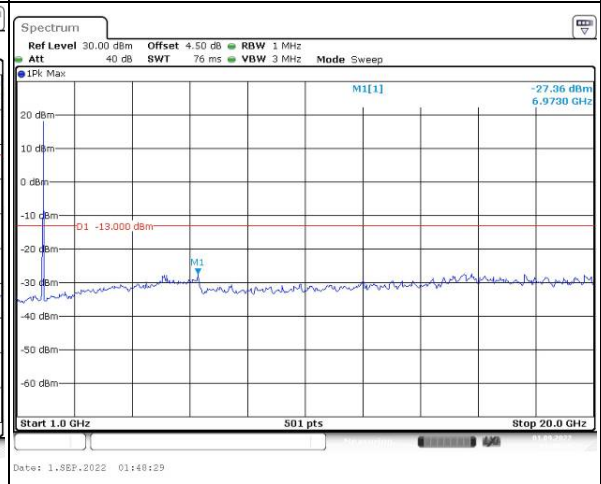
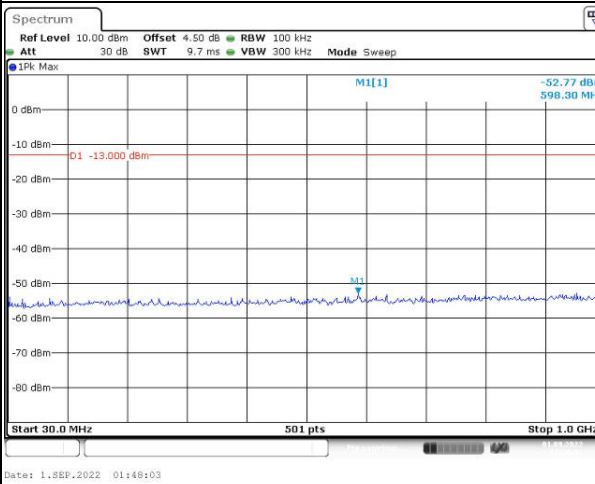
Channel

10MHz Bandwidth QPSK

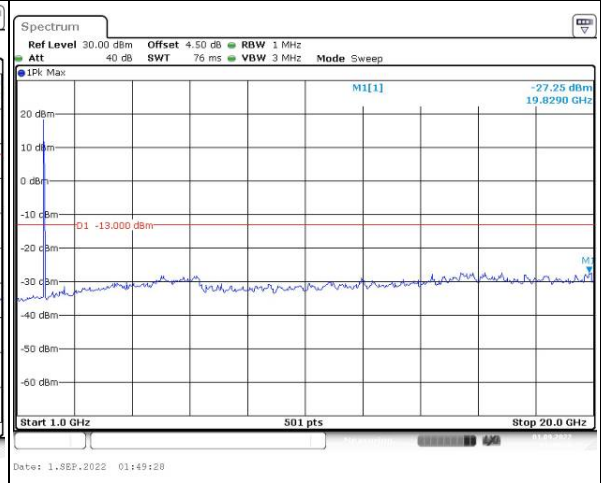
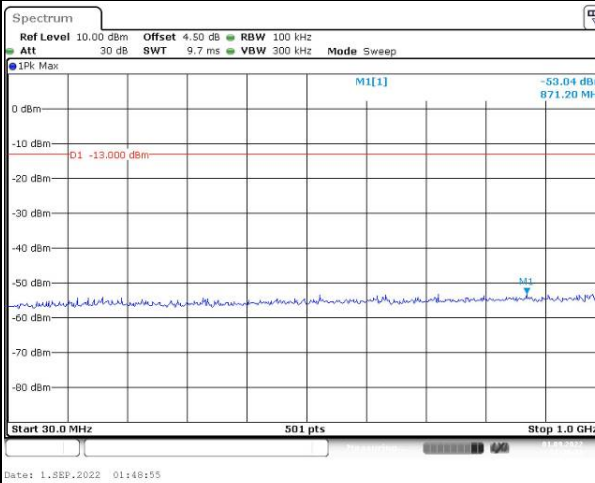
Lowest



Middle



Highest

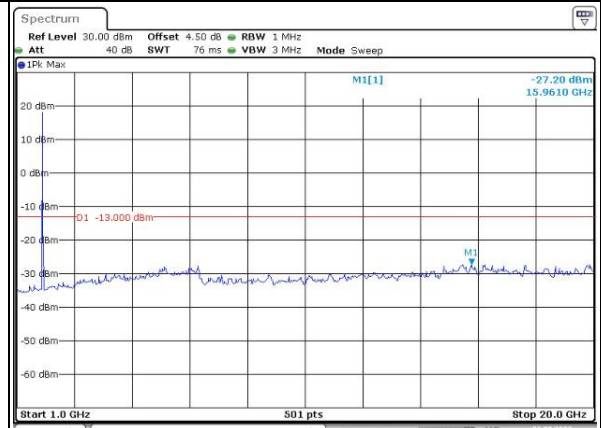
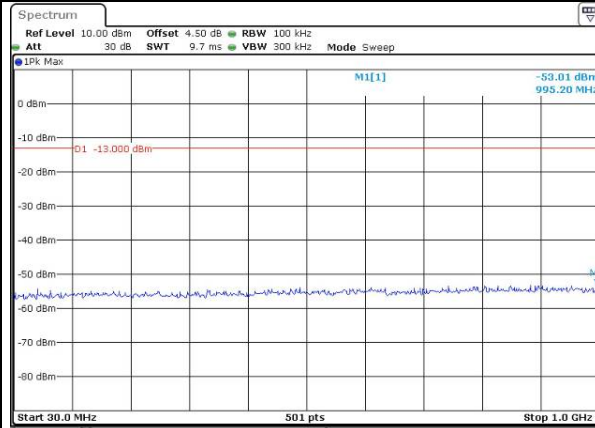


Spurious Emissions at Antenna Terminal

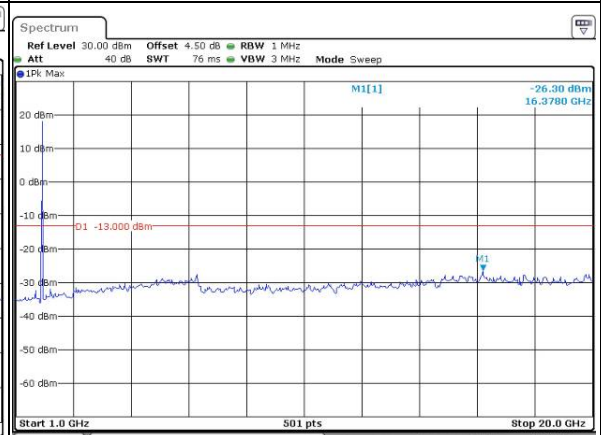
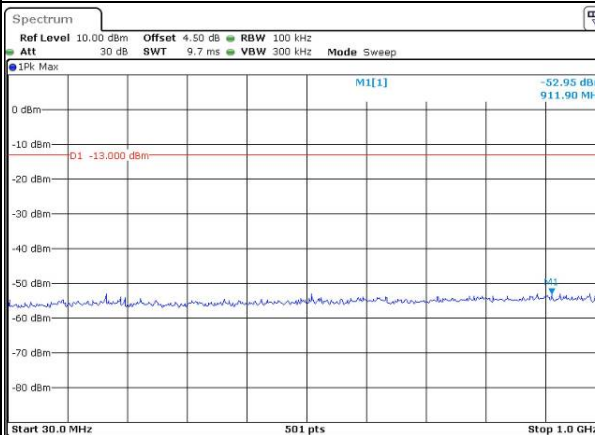
Channel

15MHz Bandwidth QPSK

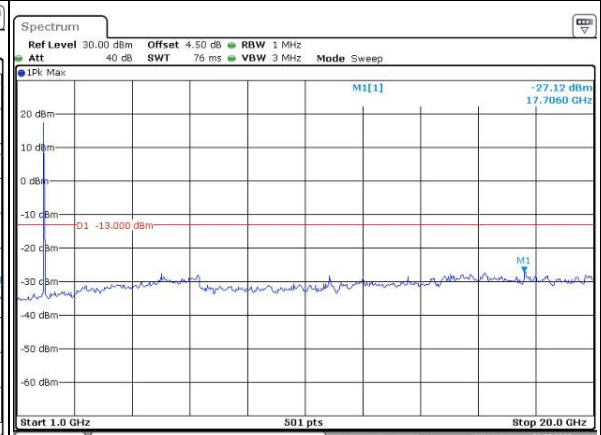
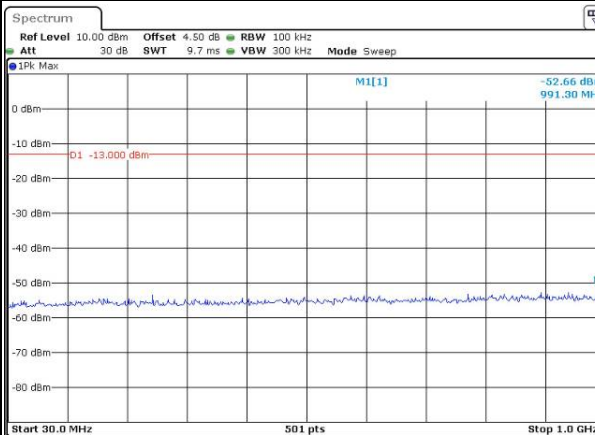
Lowest



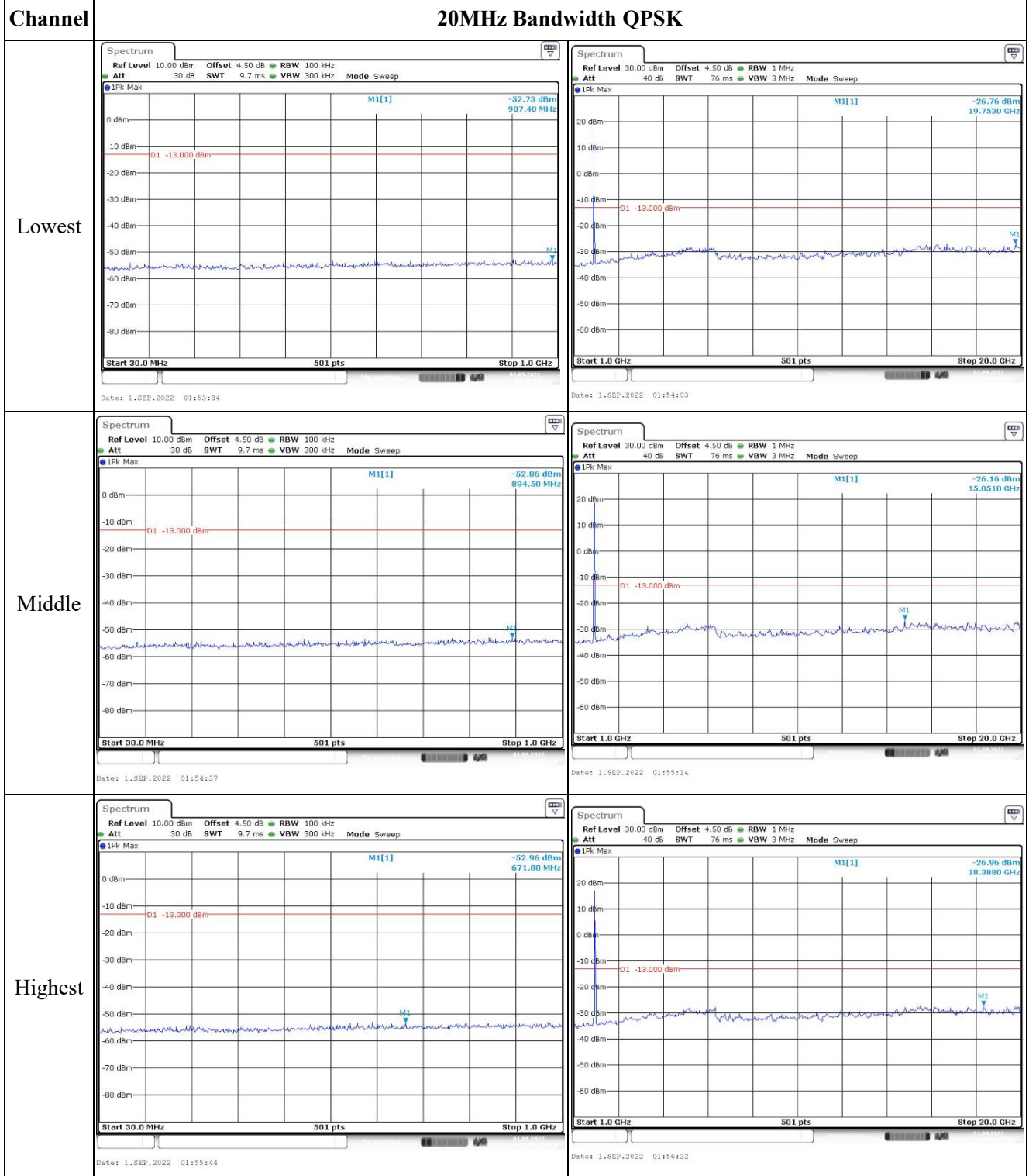
Middle



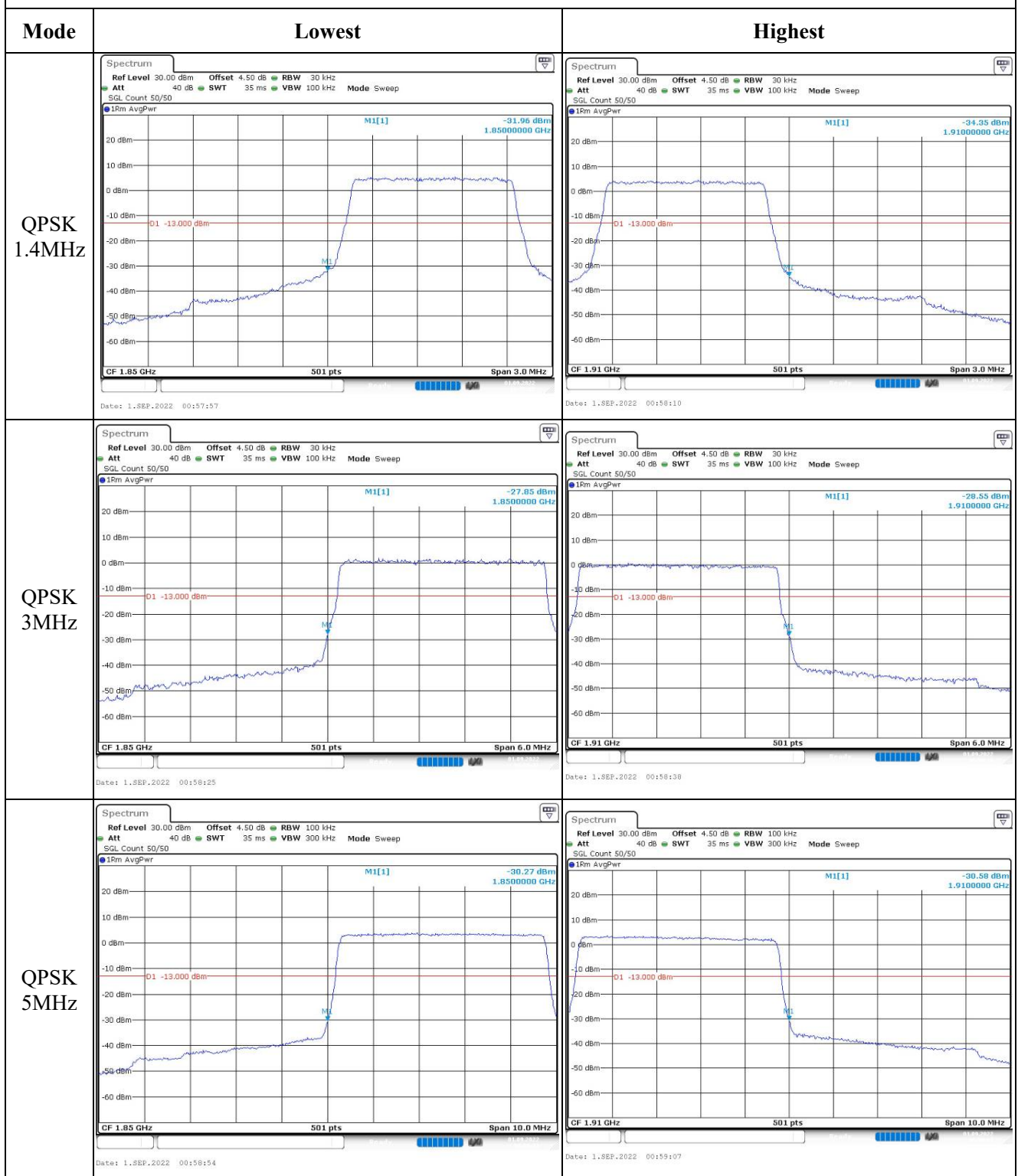
Highest



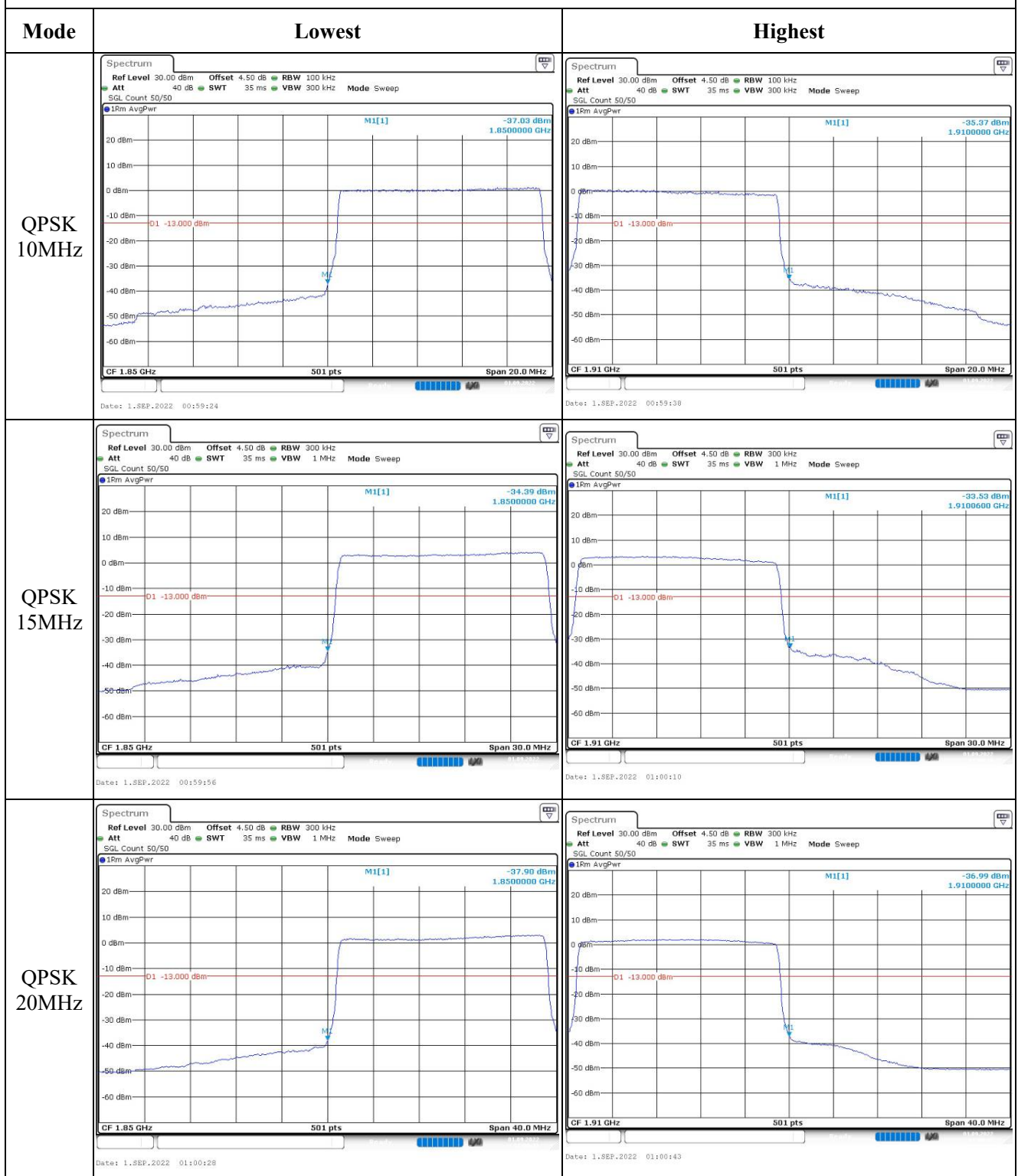
Spurious Emissions at Antenna Terminal



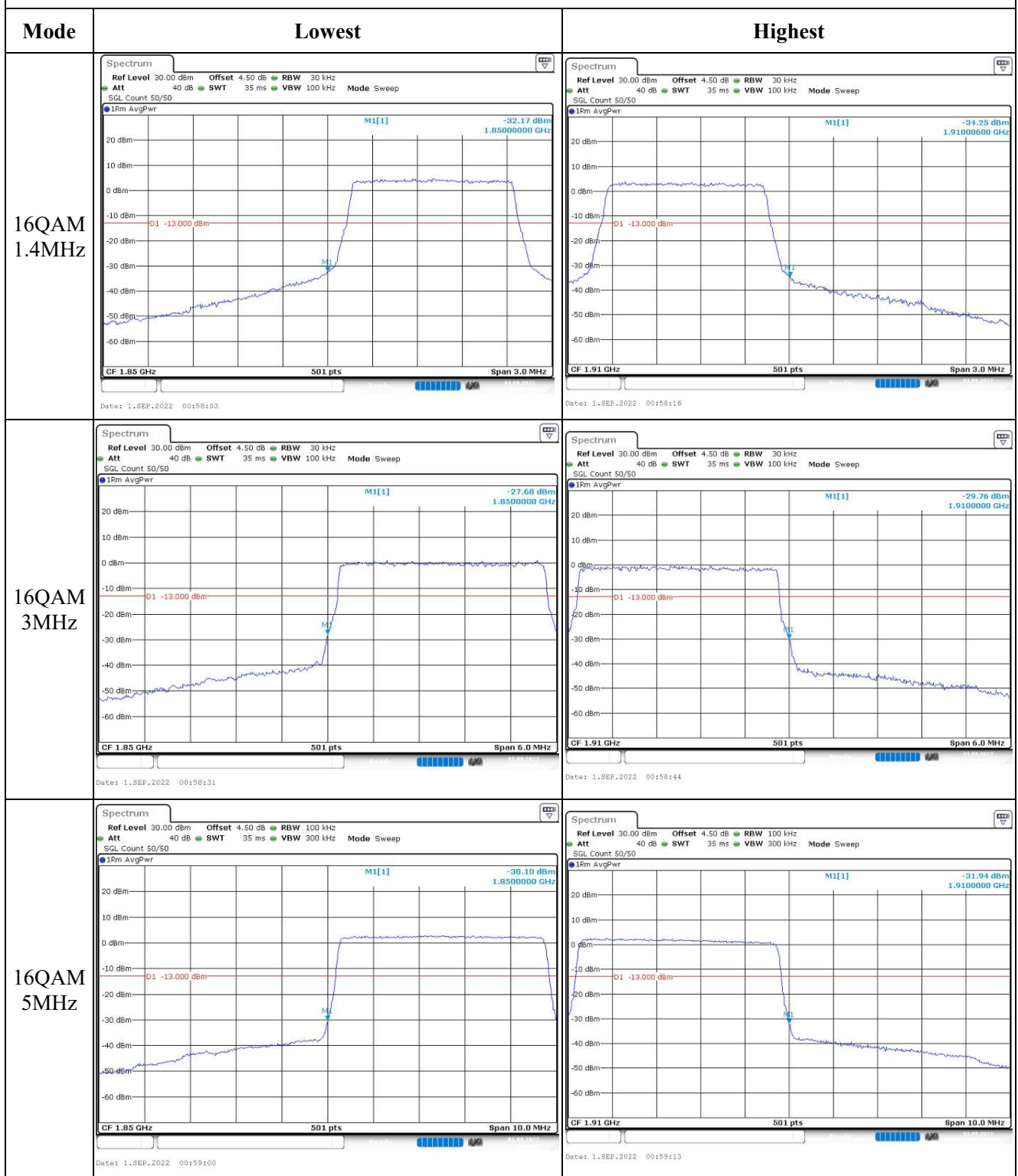
Out of band emission, Band Edge



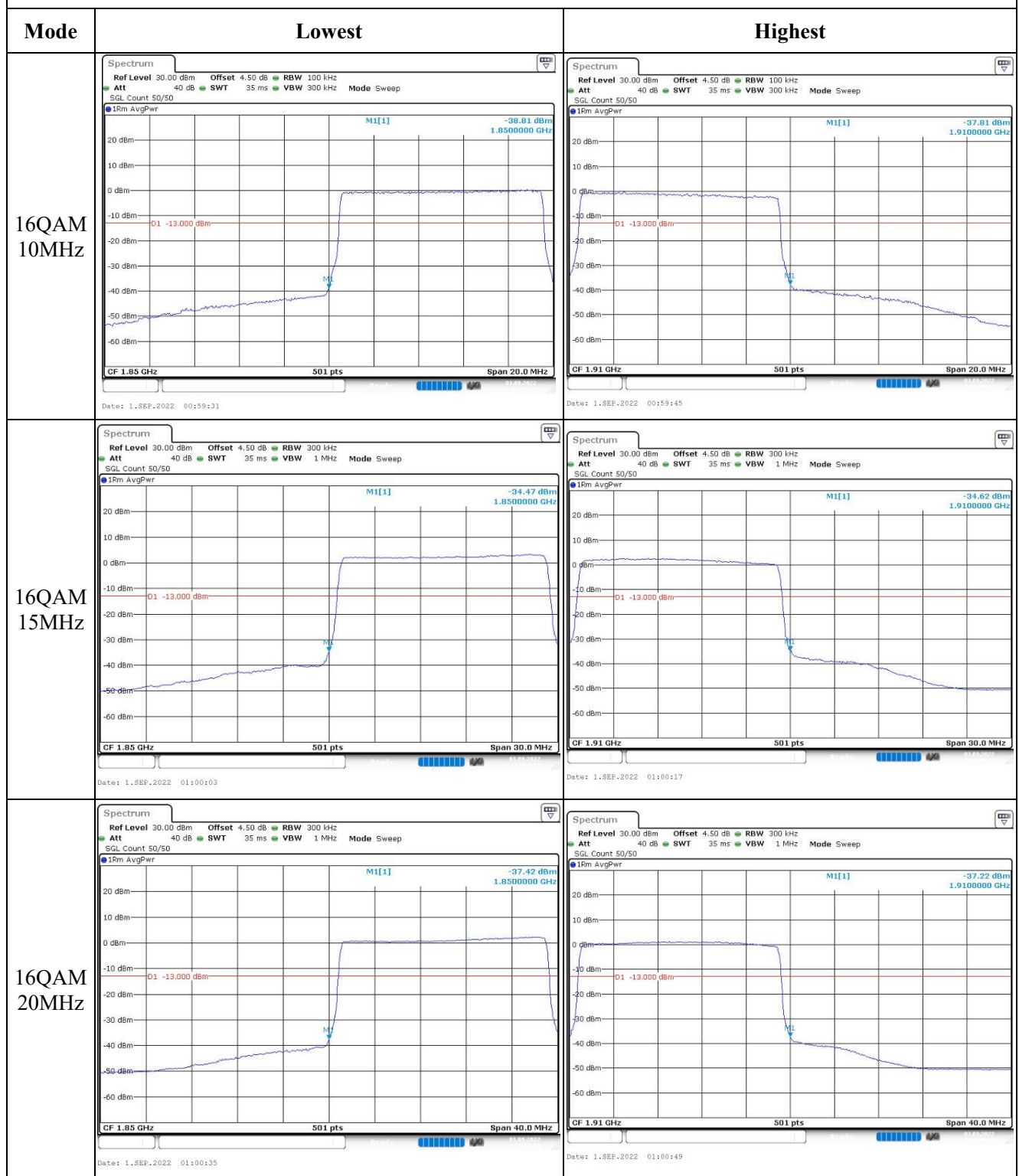
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	CR22080045-RF-S1	Test Date:	2022-08-31~2022-09-02
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.2~25.9	Relative Humidity: (%)	53~61	ATM Pressure: (kPa)	100.1~100.6
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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
Unknown	Coaxial tee connector	Unknown	2204004	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
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
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	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):	0.58	Path Loss L _C (dB):	0.3
Operation Voltage(V _{DC}):			
Lowest:	3.5	Normal:	3.8
		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	22.59	22.33	22.75	23.05	30
	RB1#3	22.6	22.39	22.77		
	RB1#5	22.7	22.44	22.71		
	RB3#0	22.77	22.62	22.74		
	RB3#3	22.68	22.67	22.71		
	RB6#0	21.71	21.55	21.49		
1.4MHz 16QAM	RB1#0	22.38	21.24	22.56	22.84	30
	RB1#3	22.34	21.28	22.55		
	RB1#5	22.35	21.33	22.53		
	RB3#0	21.54	21.69	21.79		
	RB3#3	21.55	21.64	21.77		
	RB6#0	20.8	20.86	20.77		
3MHz QPSK	RB1#0	22.62	22.35	22.54	22.94	30
	RB1#8	22.66	22.47	22.53		
	RB1#14	22.65	22.46	22.46		
	RB6#0	21.72	21.55	21.67		
	RB6#9	21.62	21.58	21.6		
	RB15#0	21.61	21.51	21.59		
3MHz 16QAM	RB1#0	22.36	21.27	21.77	22.67	30
	RB1#8	22.33	21.2	21.78		
	RB1#14	22.39	21.32	21.74		
	RB6#0	20.78	21.33	20.65		
	RB6#9	20.76	20.84	20.62		
	RB15#0	20.75	20.69	20.67		
5MHz QPSK	RB1#0	22.65	22.43	22.66	22.96	30
	RB1#13	22.68	22.43	22.68		
	RB1#24	22.68	22.55	22.57		
	RB15#0	21.58	21.56	21.58		
	RB15#10	21.68	21.59	21.58		
	RB25#0	21.59	21.53	21.54		
5MHz 16QAM	RB1#0	21.81	21.16	20.88	22.13	30
	RB1#13	21.83	21.2	20.87		
	RB1#24	21.85	21.28	20.86		
	RB15#0	20.62	21.03	20.72		
	RB15#10	20.61	20.69	20.7		
	RB25#0	20.67	20.52	20.78		
10MHz QPSK	RB1#0	22.73	22.47	22.56	23.01	30
	RB1#25	22.7	22.5	22.65		

	RB1#49	22.63	22.63	22.63		
	RB25#0	21.68	21.52	21.5		
	RB25#25	21.6	21.54	21.56		
	RB50#0	21.64	21.56	21.64		
10MHz 16QAM	RB1#0	21.81	21.03	21.82	22.28	30
	RB1#25	21.79	20.95	22		
	RB1#49	21.78	21.1	21.95		
	RB25#0	20.76	21.04	20.68		
	RB25#25	20.82	20.71	20.66		
	RB50#0	20.77	20.62	20.66		
15MHz QPSK	RB1#0	22.65	22.38	22.58	22.94	30
	RB1#38	22.62	22.42	22.59		
	RB1#74	22.64	22.52	22.66		
	RB36#0	21.56	21.47	21.62		
	RB36#39	21.58	21.57	21.6		
	RB75#0	21.55	21.51	21.54		
15MHz 16QAM	RB1#0	21.83	21.87	21.85	22.22	30
	RB1#38	21.73	21.82	21.91		
	RB1#74	21.72	21.94	21.93		
	RB36#0	20.73	20.51	20.76		
	RB36#39	20.81	20.65	20.75		
	RB75#0	20.69	20.63	20.68		
20MHz QPSK	RB1#0	22.73	22.49	22.59	23.1	30
	RB1#50	22.64	22.54	22.68		
	RB1#99	22.61	22.64	22.82		
	RB50#0	21.53	21.48	21.48		
	RB50#50	21.49	21.55	21.65		
	RB100#0	21.5	21.48	21.52		
20MHz 16QAM	RB1#0	21.65	22.29	21.12	22.69	30
	RB1#50	21.64	22.33	21.1		
	RB1#99	21.58	22.41	21.22		
	RB50#0	20.61	20.54	20.68		
	RB50#50	20.58	20.62	20.67		
	RB100#0	20.59	20.67	20.6		

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	4.26	5.33	4.12	13
	RB100#0	5.01	5.57	4.81	13
20MHz 16QAM	RB1#0	5.16	6.81	5.65	13
	RB100#0	5.88	6.46	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	1.26	1.254	1.26
1.4MHz 16QAM	1.09	1.102	1.108	1.248	1.26	1.266
3MHz QPSK	2.695	2.695	2.695	3.012	3.012	3
3MHz 16QAM	2.695	2.695	2.695	3	3.024	3.024
5MHz QPSK	4.511	4.491	4.531	5.02	4.96	5
5MHz 16QAM	4.531	4.551	4.511	5.02	5.04	4.98
10MHz QPSK	8.942	8.982	8.982	9.76	9.8	9.76
10MHz 16QAM	8.982	8.942	8.942	9.88	9.8	9.76
15MHz QPSK	13.473	13.533	13.533	15	15.06	15.12
15MHz 16QAM	13.533	13.533	13.593	15.12	15.06	15.06
20MHz QPSK	17.964	17.964	17.964	19.68	19.84	19.6
20MHz 16QAM	18.044	17.964	17.964	19.84	19.76	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.
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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	3.8	1711.114	1710.00	1754.064	1755
	-20	3.8	1711.079	1710.00	1754.037	1755
	-10	3.8	1711.072	1710.00	1754.082	1755
	0	3.8	1711.094	1710.00	1754.012	1755
	10	3.8	1711.126	1710.00	1754.085	1755
	20	3.8	1711.058	1710.00	1754.022	1755
	30	3.8	1711.074	1710.00	1754.065	1755
	40	3.8	1711.125	1710.00	1754.020	1755
	50	3.8	1711.059	1710.00	1754.095	1755
Frequency Stability vs. Voltage	20	3.5	1711.080	1710.00	1754.055	1755
	20	4.35	1711.047	1710.00	1754.013	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	3.8	1710.970	1710.00	1754.073	1755
	-20	3.8	1710.957	1710.00	1754.058	1755
	-10	3.8	1710.948	1710.00	1754.091	1755
	0	3.8	1710.960	1710.00	1754.017	1755
	10	3.8	1710.988	1710.00	1754.073	1755
	20	3.8	1710.978	1710.00	1754.022	1755
	30	3.8	1710.970	1710.00	1754.047	1755
	40	3.8	1710.908	1710.00	1754.093	1755
	50	3.8	1710.958	1710.00	1754.084	1755
Frequency Stability vs. Voltage	20	3.5	1710.923	1710.00	1754.033	1755
	20	4.35	1710.932	1710.00	1754.099	1755
Result:					Pass	

Test Plots:

Occupied Bandwidth

