

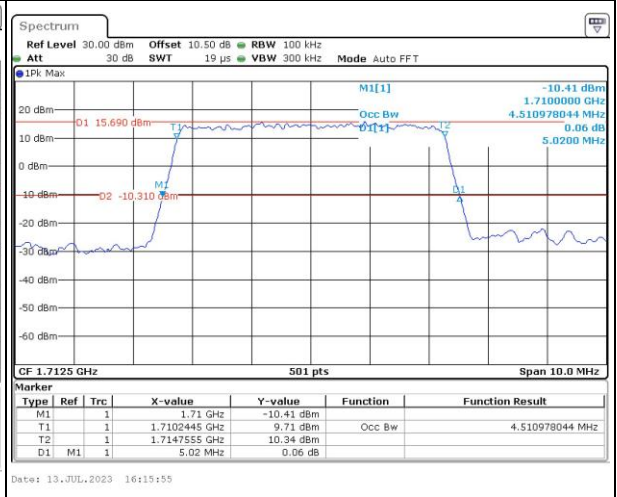
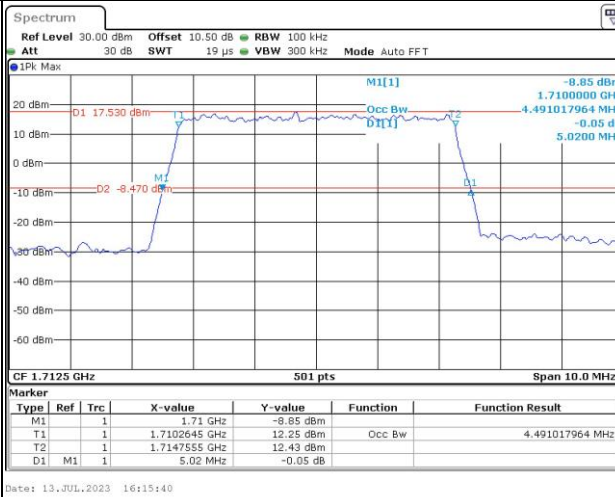
Occupied Bandwidth

Channel

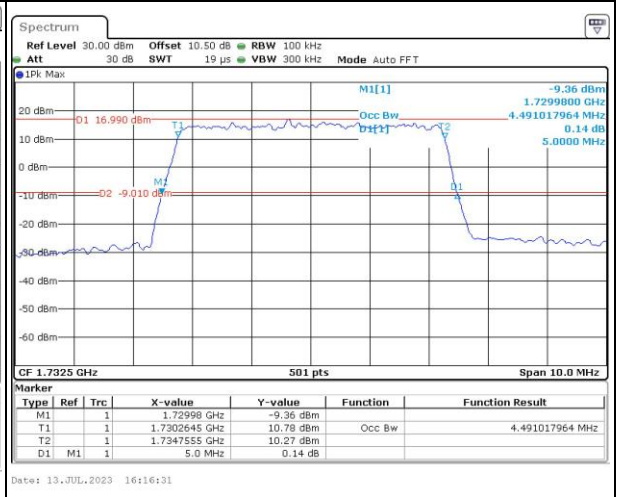
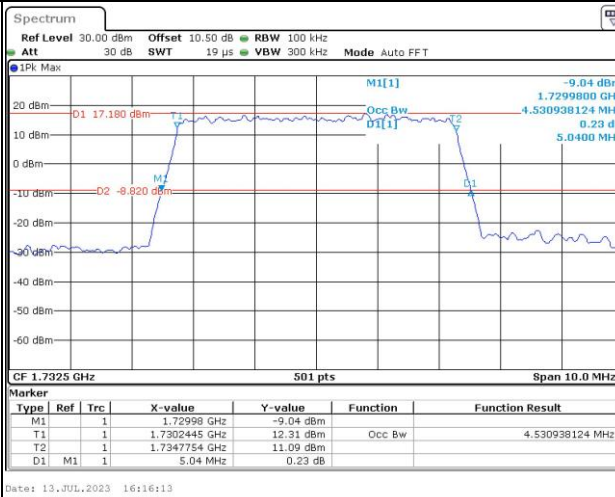
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

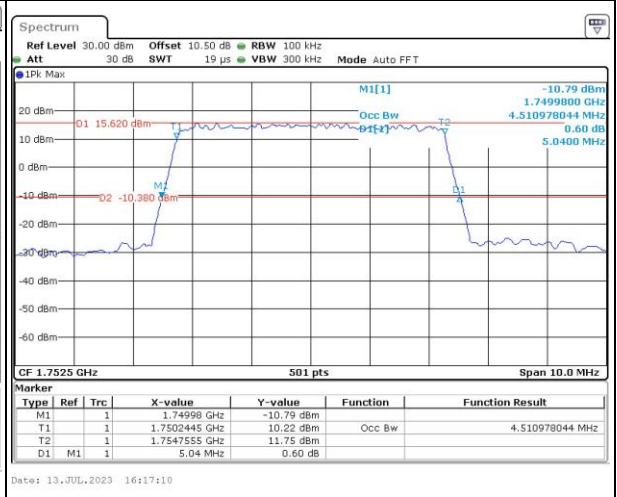
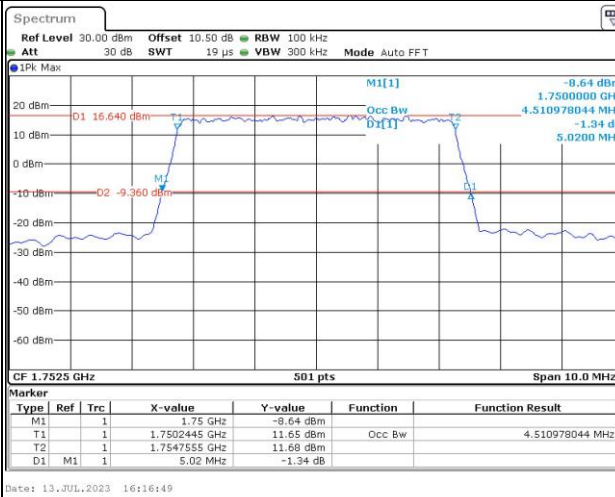
Lowest



Middle



Highest



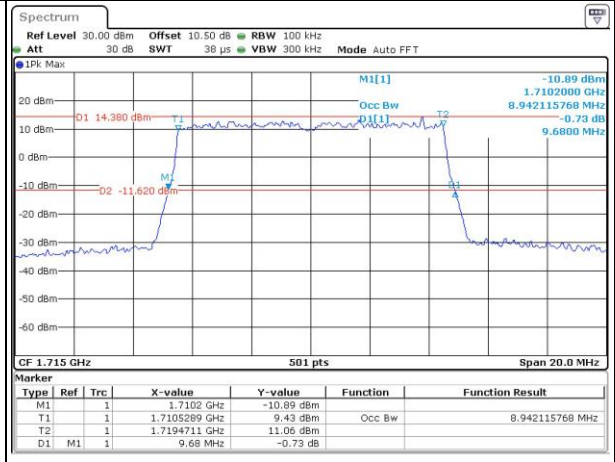
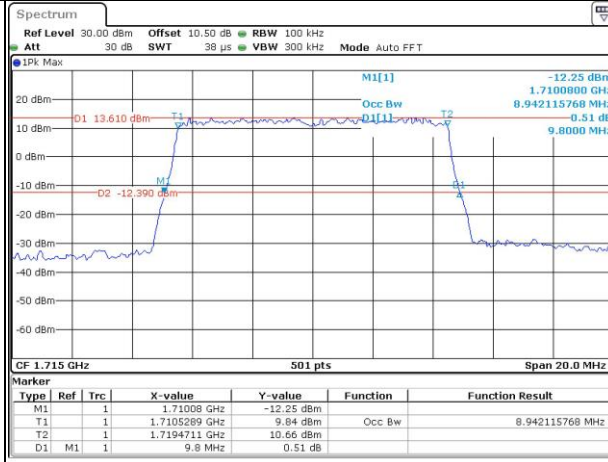
Occupied Bandwidth

Channel

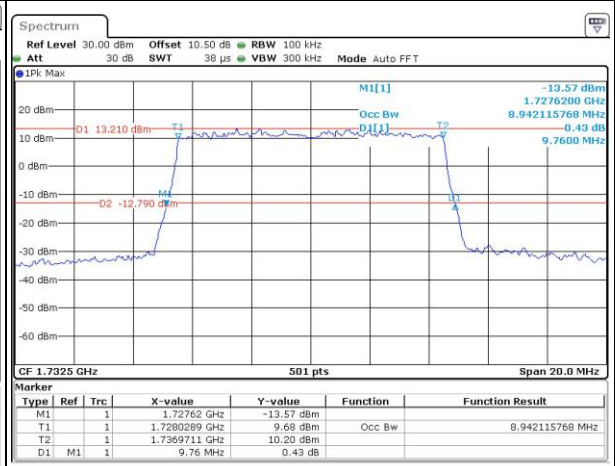
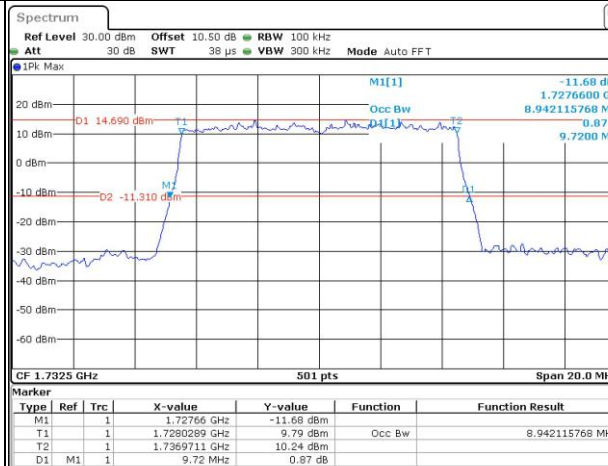
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

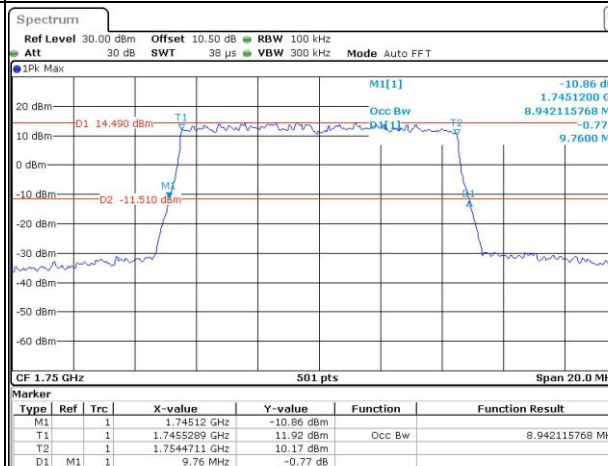
Lowest



Middle



Highest



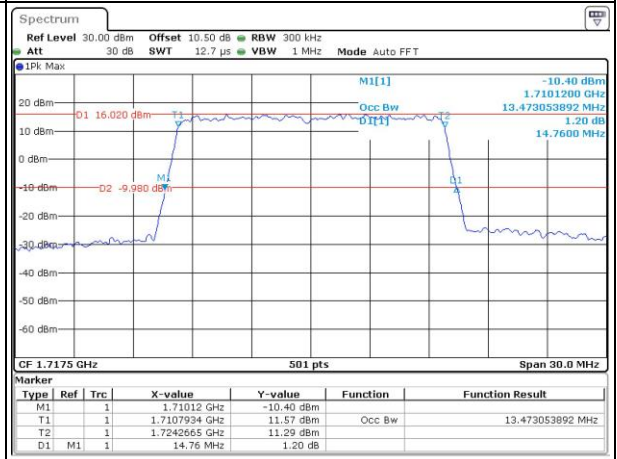
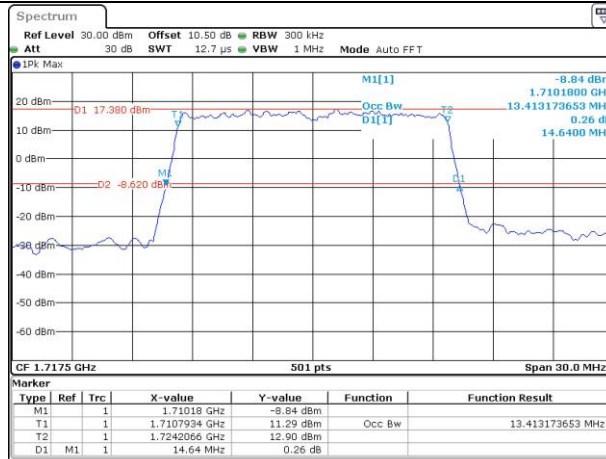
Occupied Bandwidth

Channel

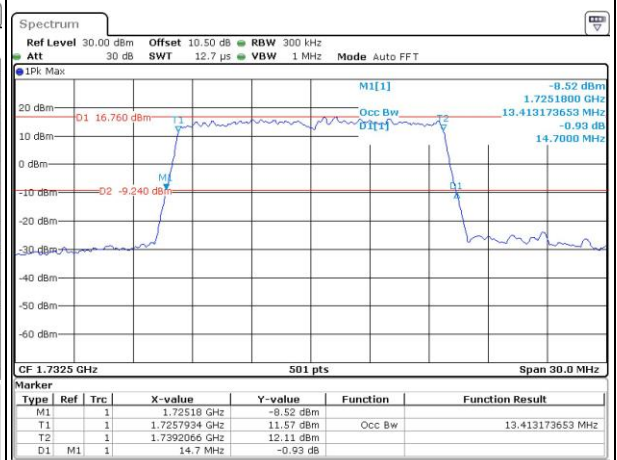
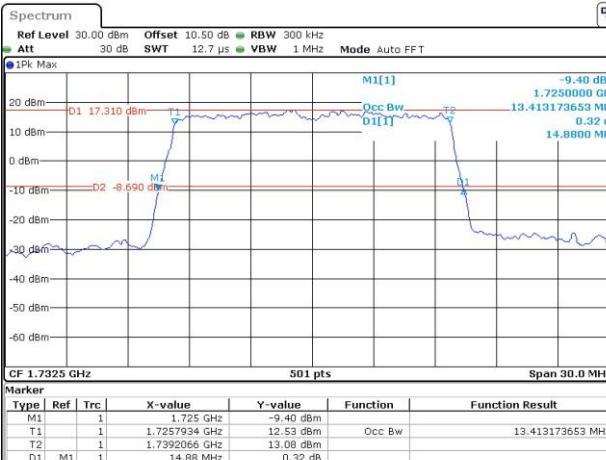
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

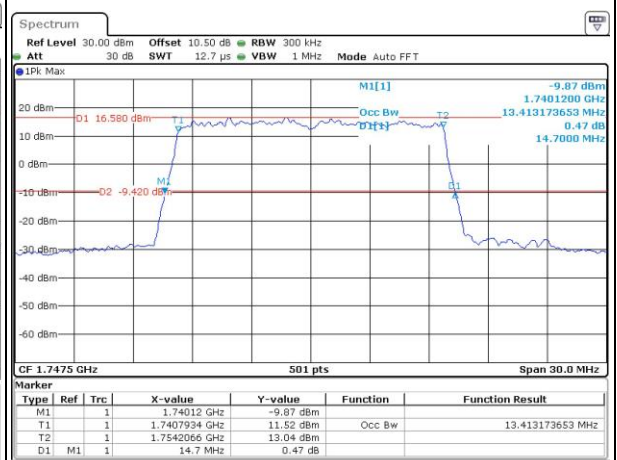
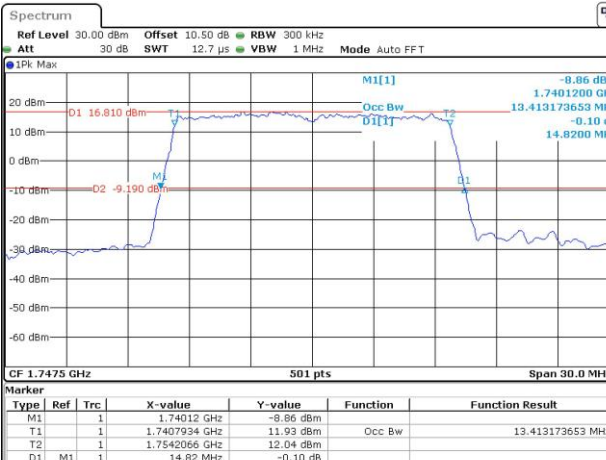
Lowest



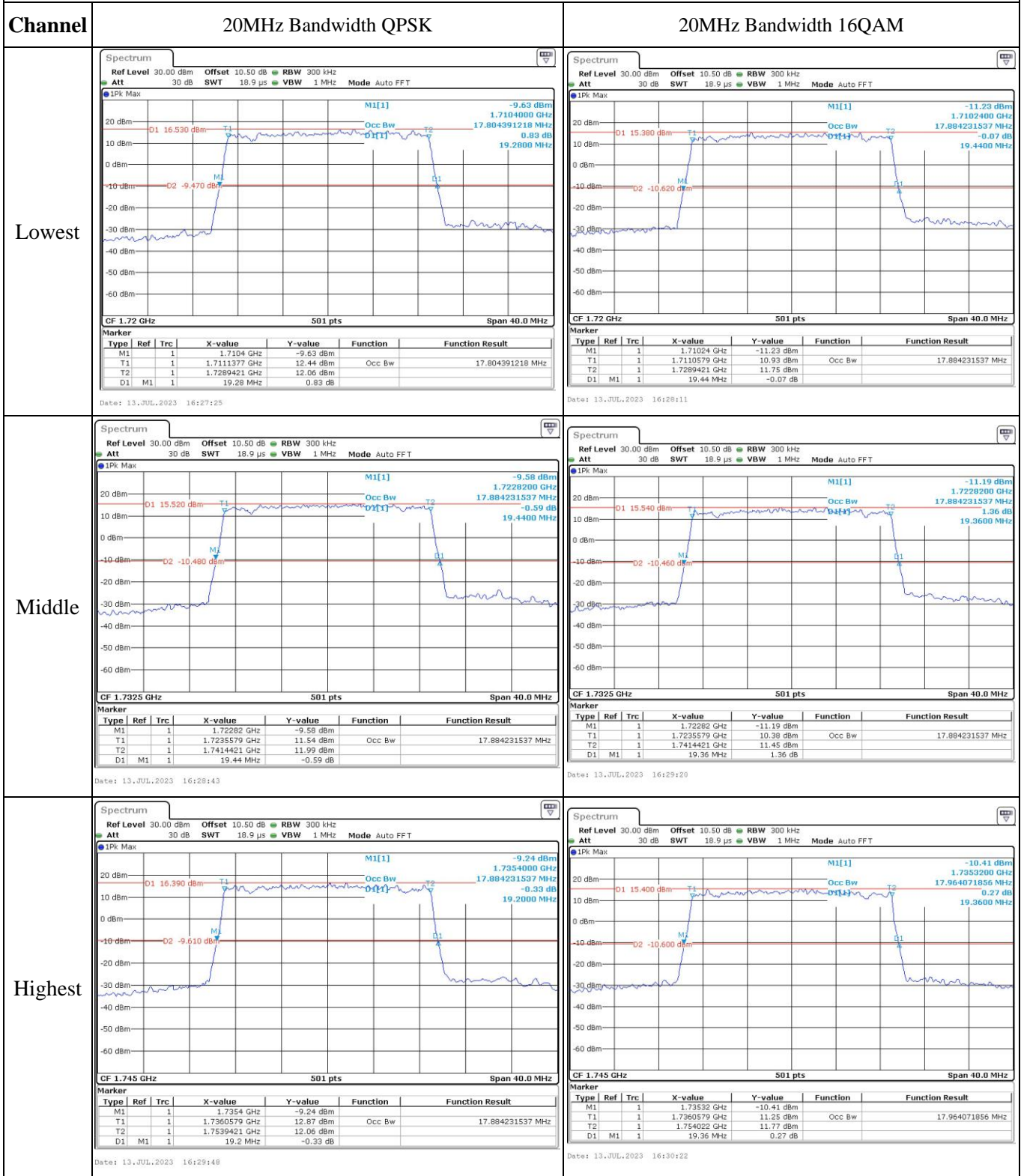
Middle



Highest



Occupied Bandwidth

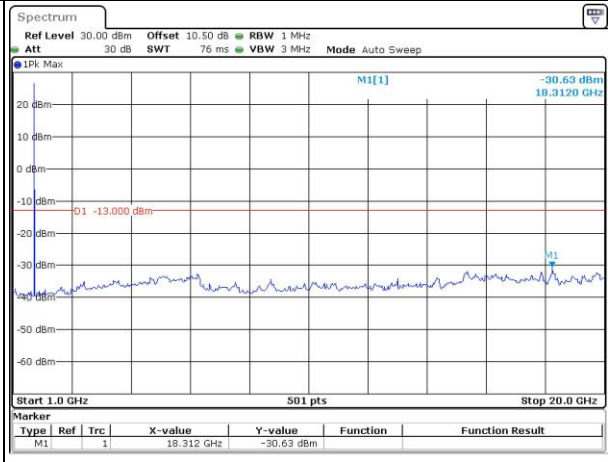
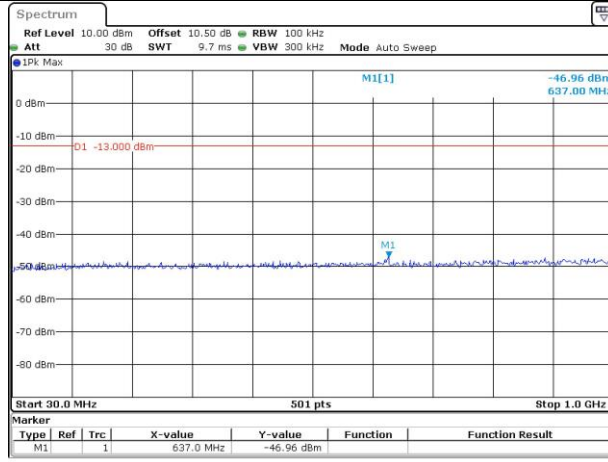


Spurious Emissions at Antenna Terminal

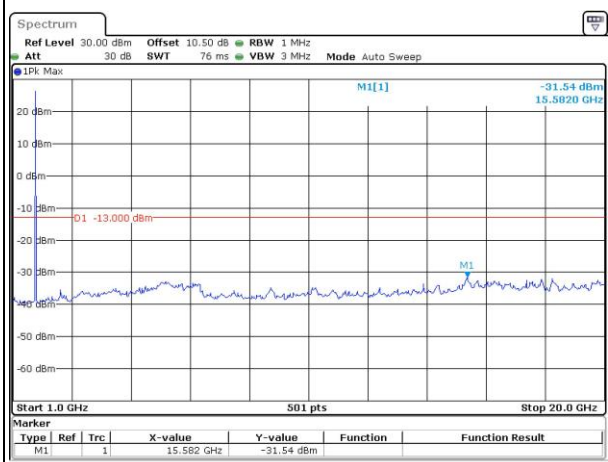
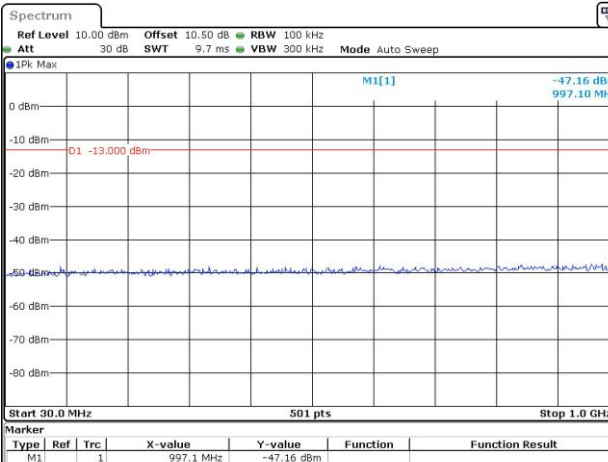
Channel

1.4MHz Bandwidth QPSK

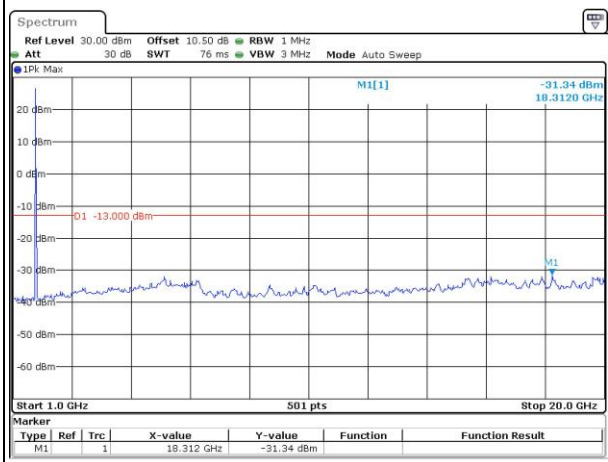
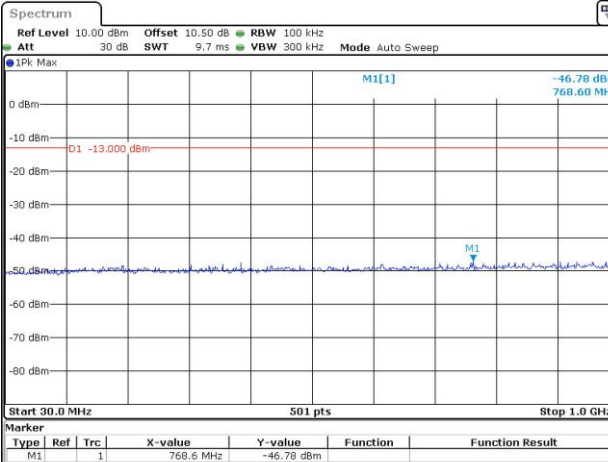
Lowest



Middle



Highest

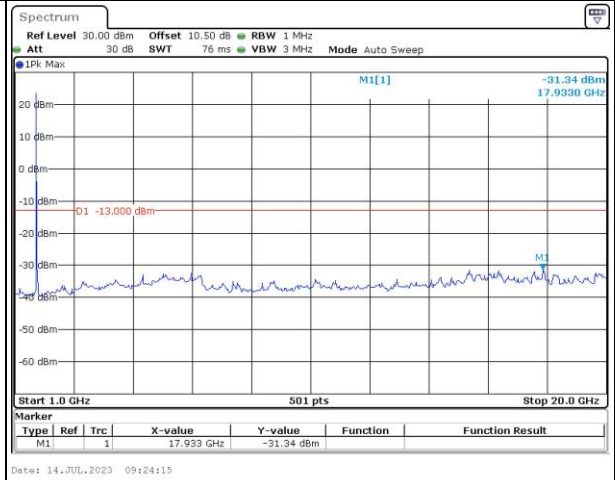
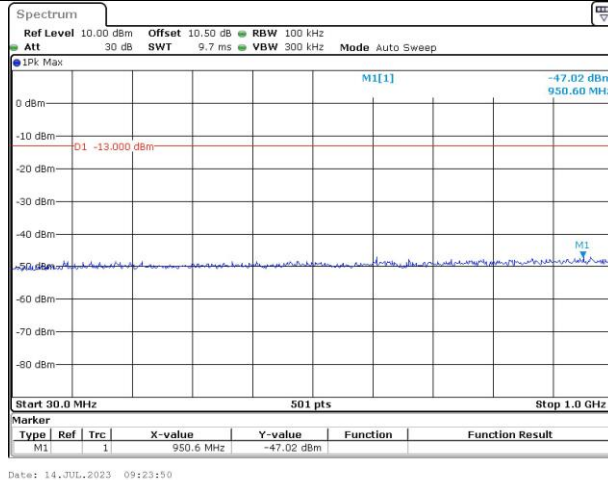


Spurious Emissions at Antenna Terminal

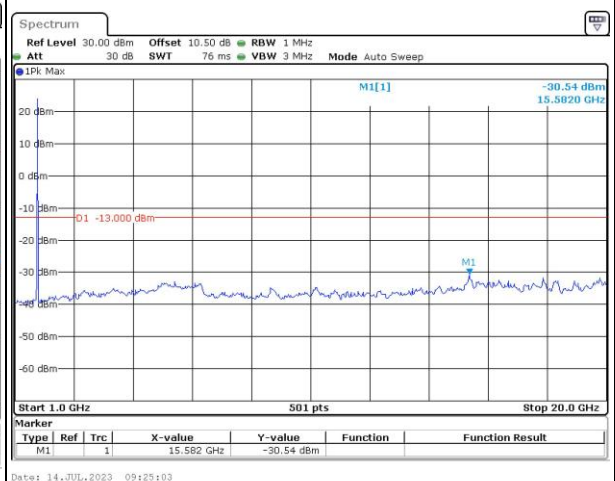
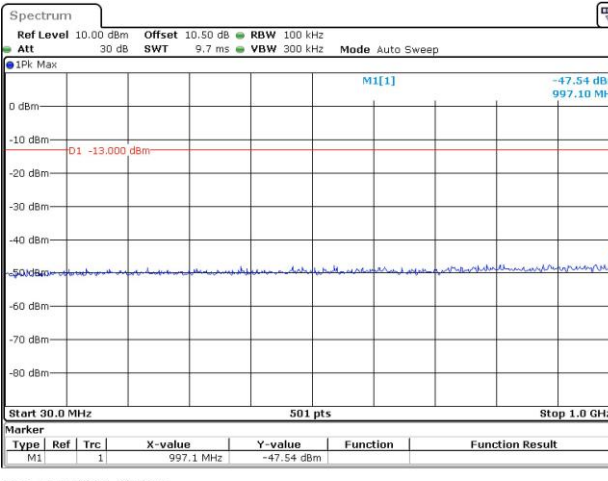
Channel

3MHz Bandwidth QPSK

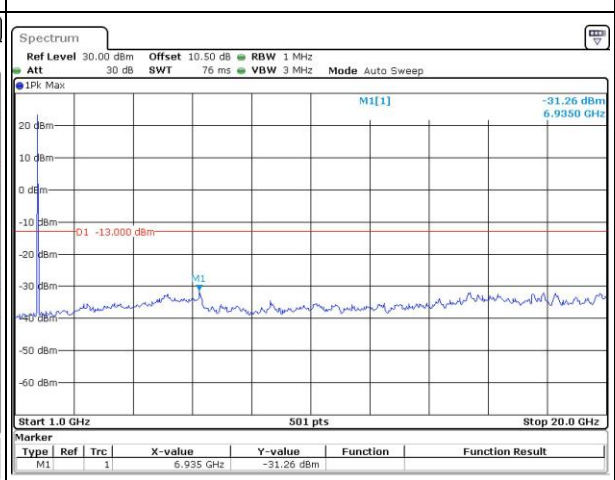
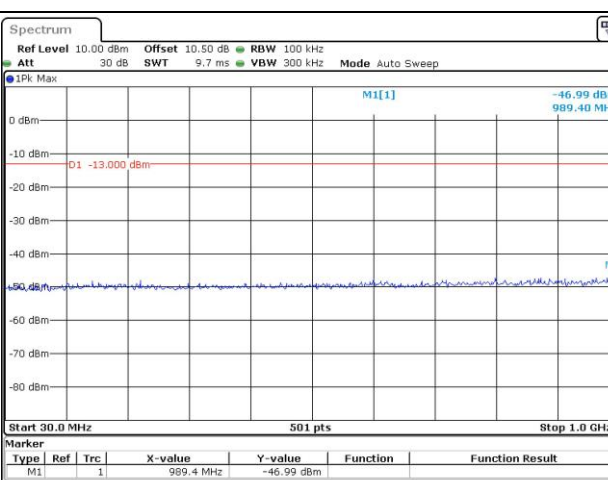
Lowest



Middle



Highest

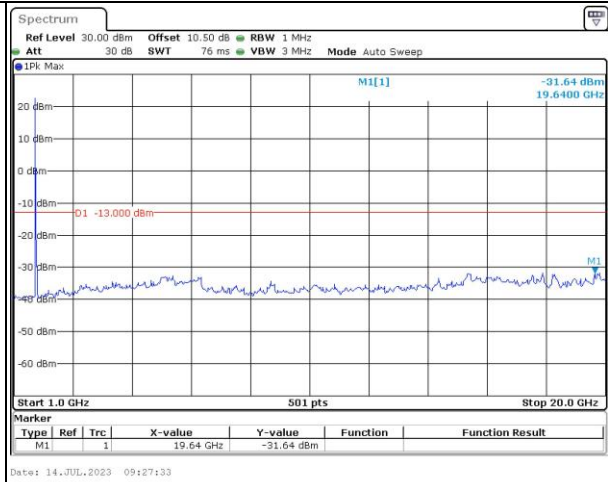
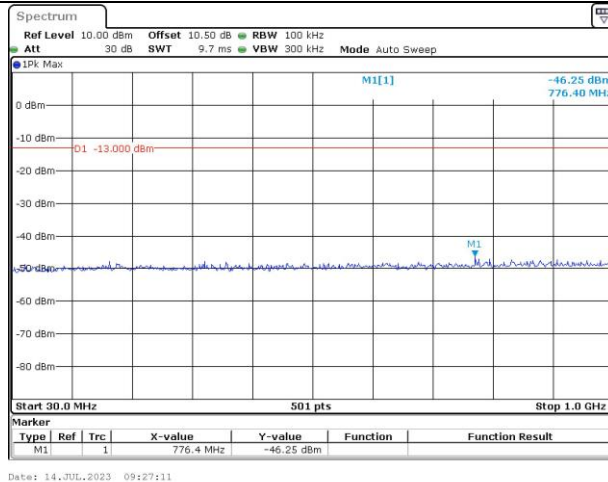


Spurious Emissions at Antenna Terminal

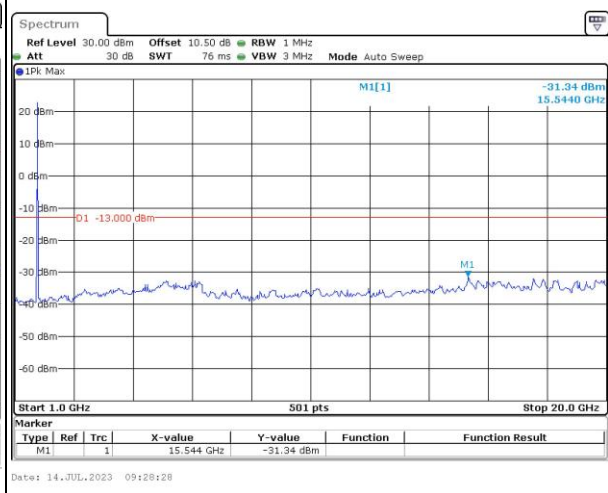
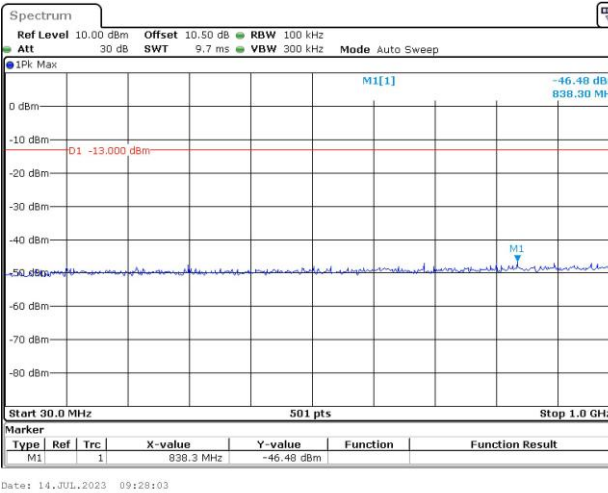
Channel

5MHz Bandwidth QPSK

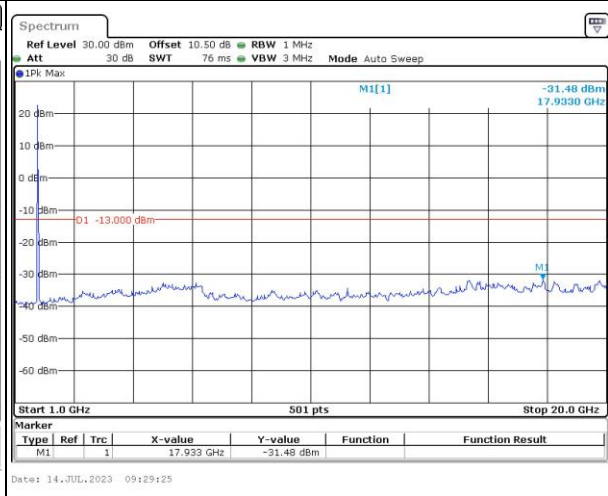
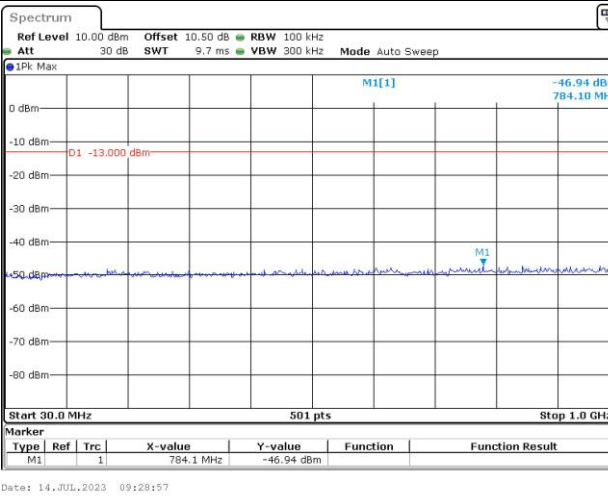
Lowest



Middle



Highest

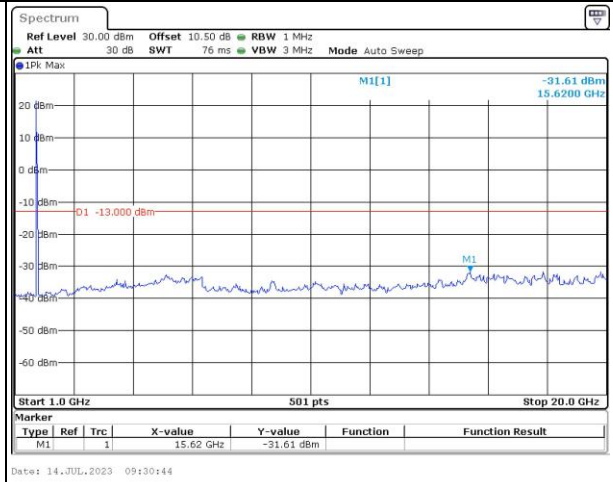
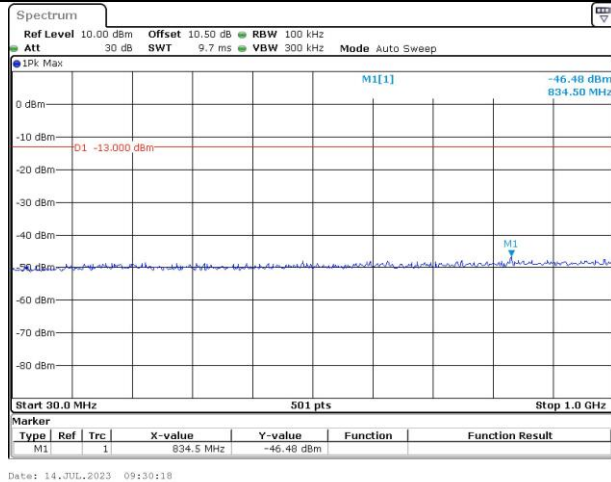


Spurious Emissions at Antenna Terminal

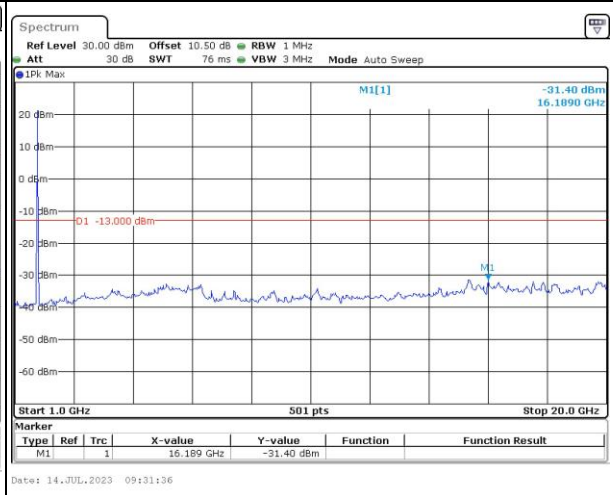
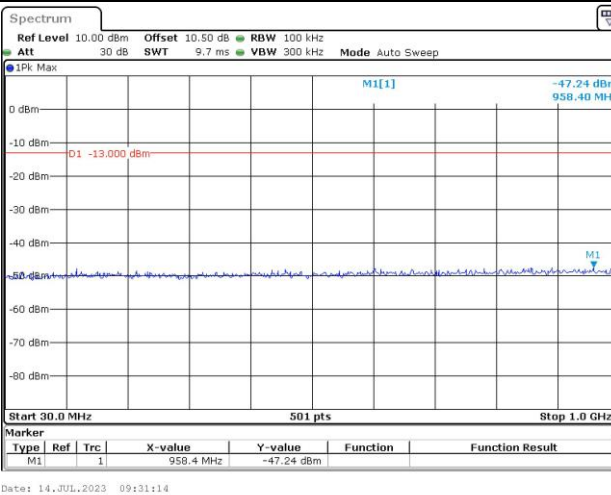
Channel

10MHz Bandwidth QPSK

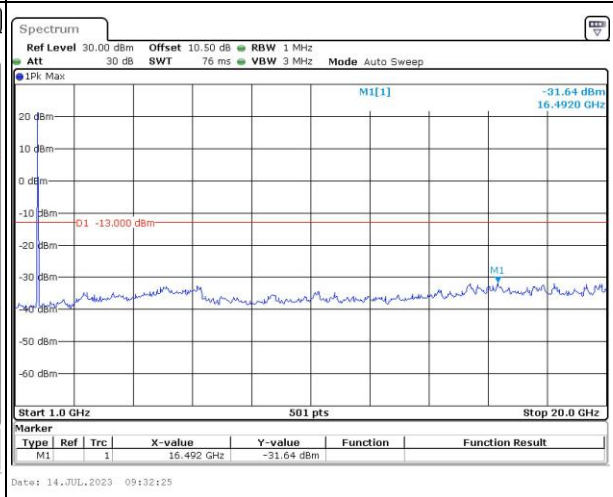
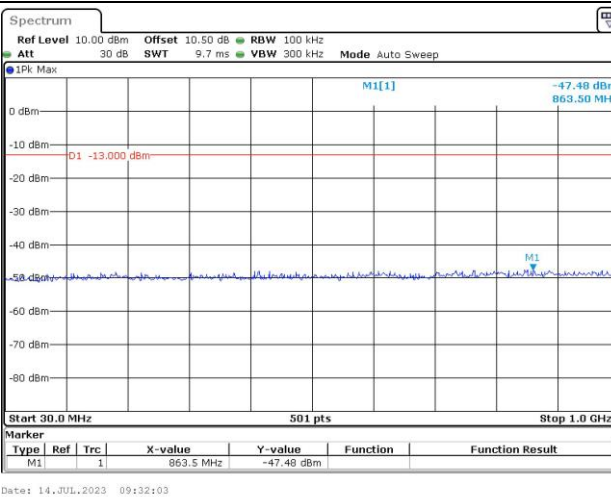
Lowest



Middle



Highest

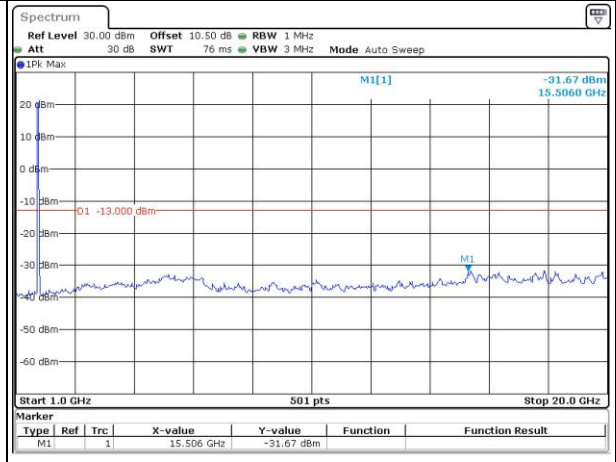
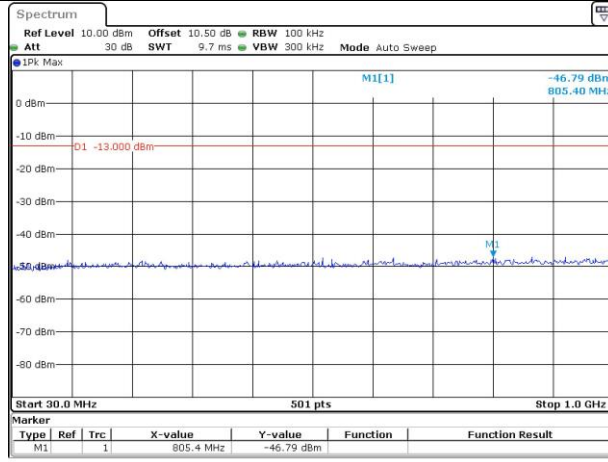


Spurious Emissions at Antenna Terminal

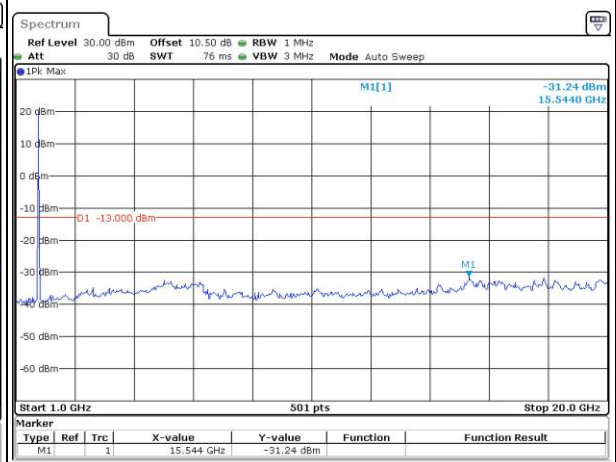
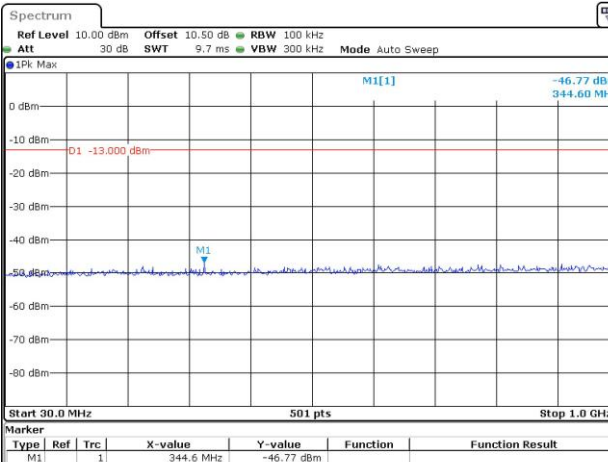
Channel

15MHz Bandwidth QPSK

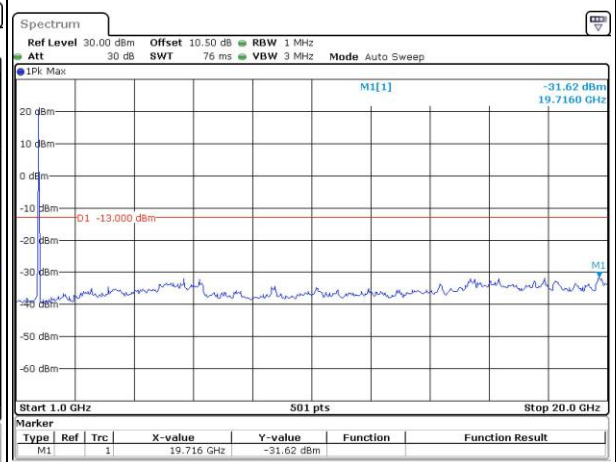
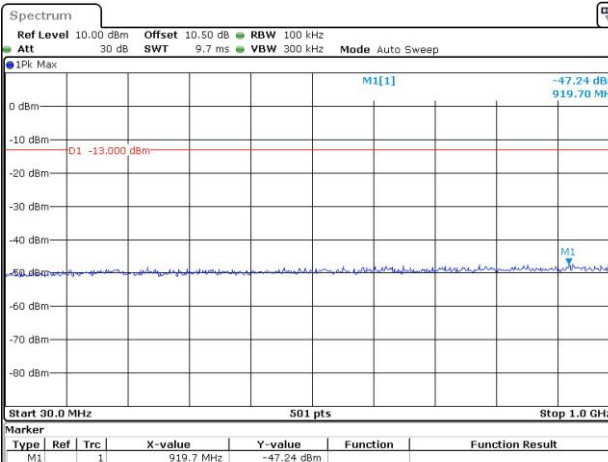
Lowest



Middle



Highest

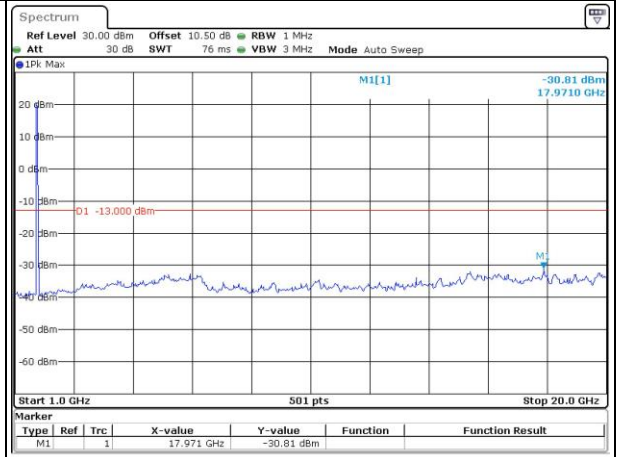
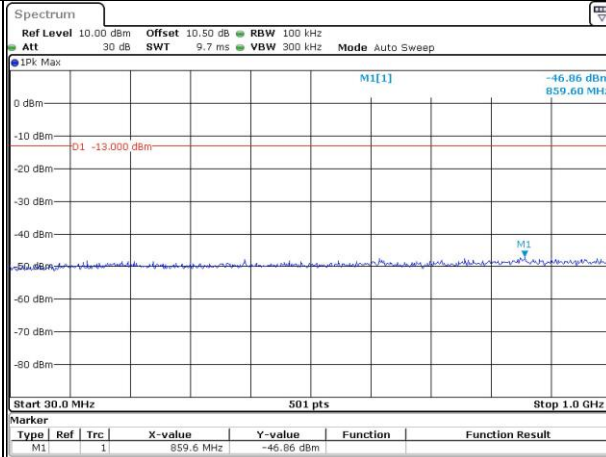


Spurious Emissions at Antenna Terminal

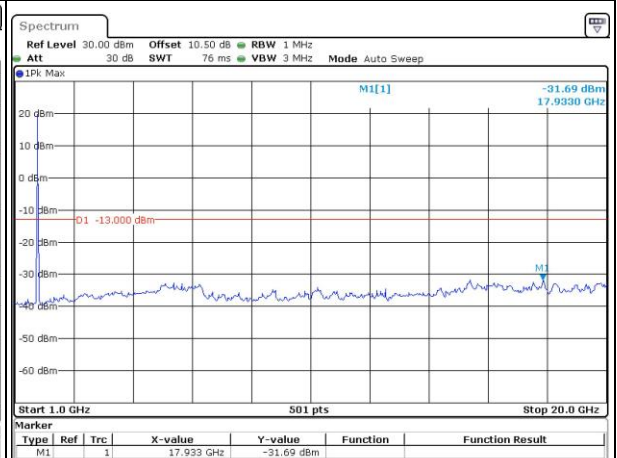
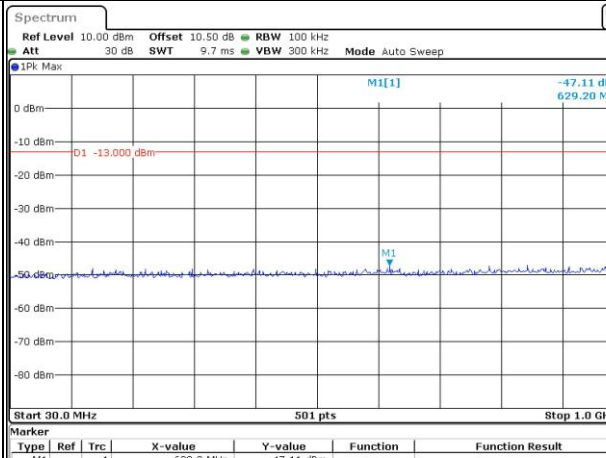
Channel

20MHz Bandwidth QPSK

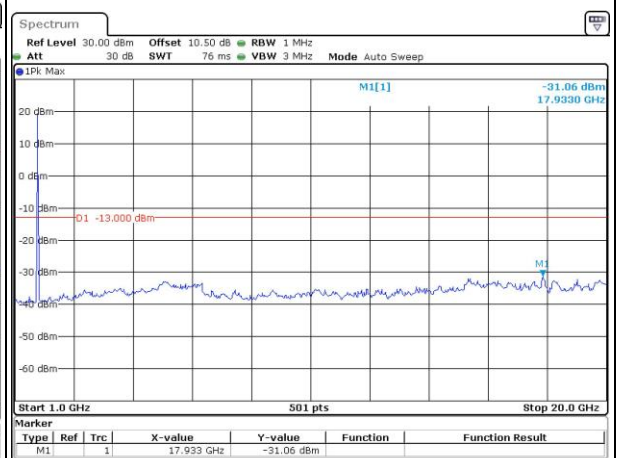
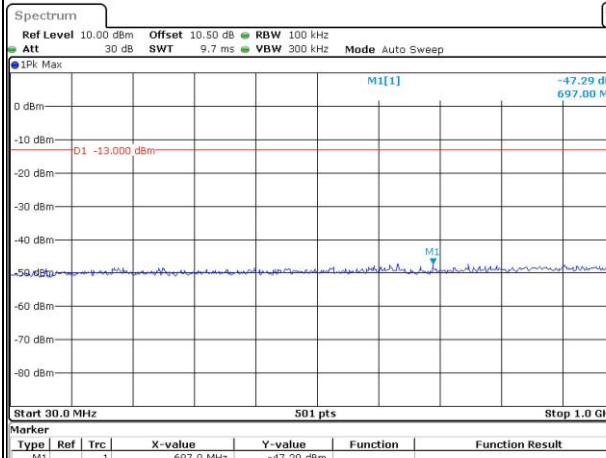
Lowest



Middle



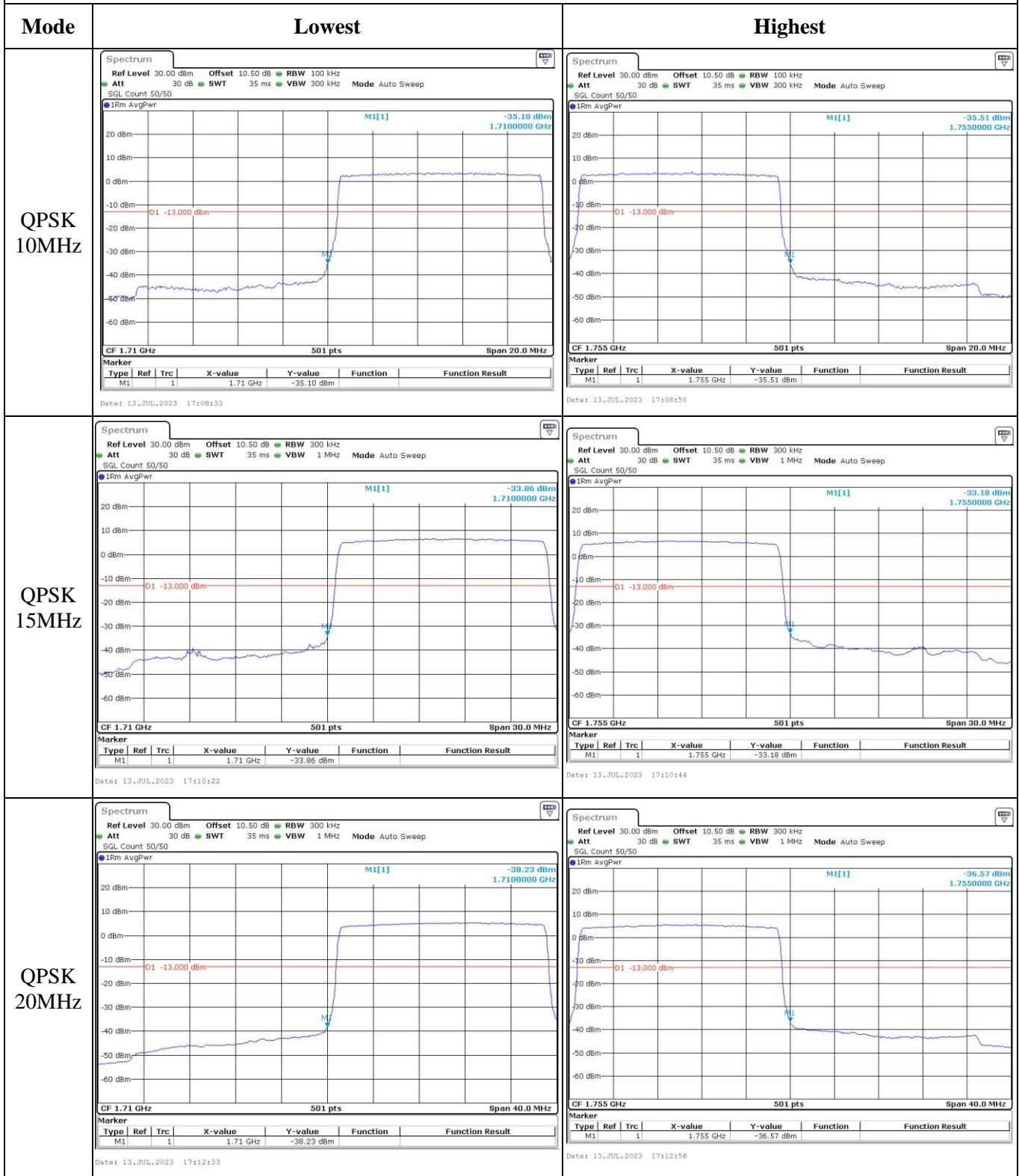
Highest



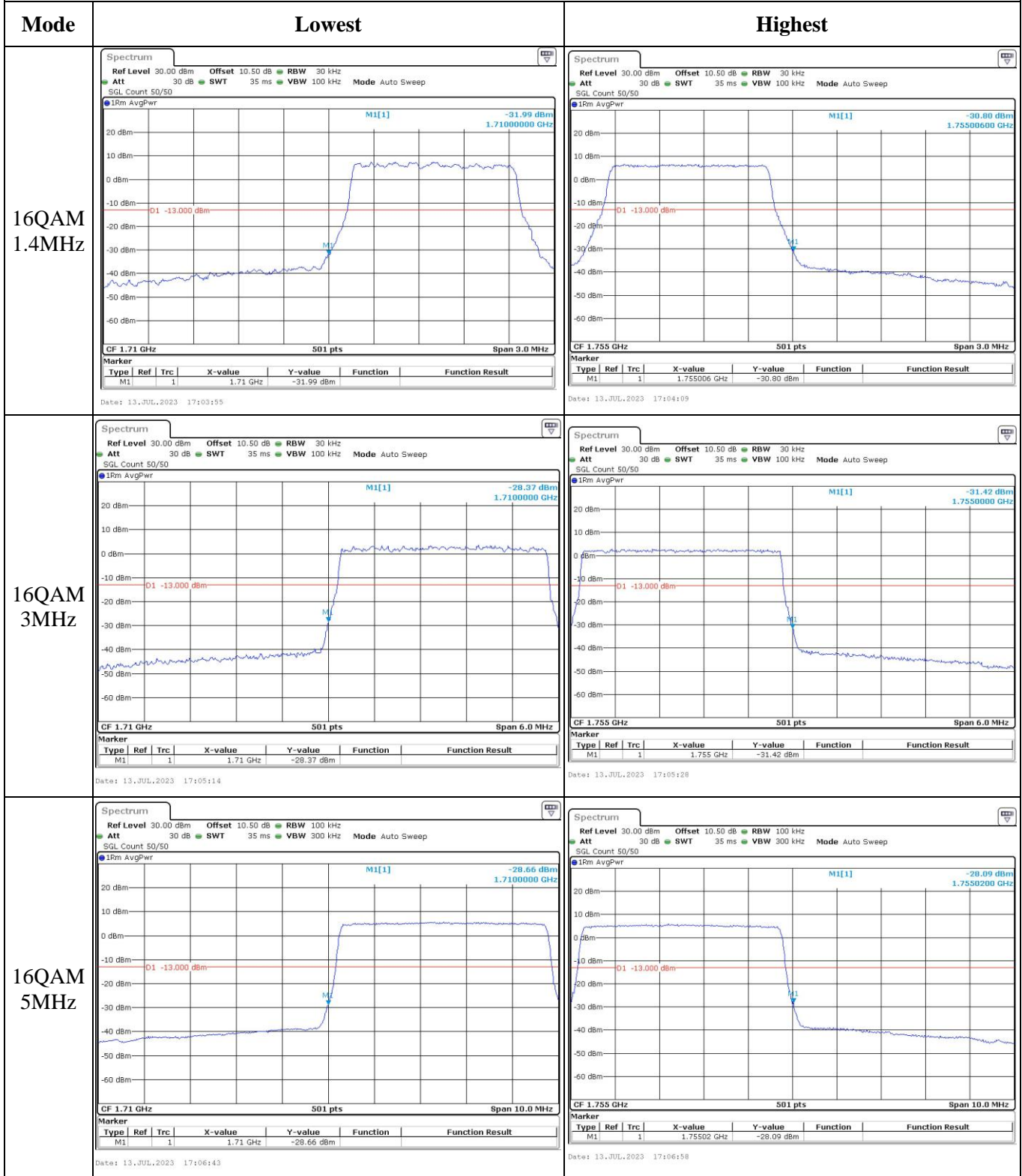
Out of band emission, Band Edge

Mode	Lowest	Highest																												
QPSK 1.4MHz	<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td></td> <td>1</td> <td>1.71 GHz</td> <td>-29.49 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 13.JUL.2023 17:03:48</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	1.71 GHz	-29.49 dBm			<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td></td> <td>1</td> <td>1.755 GHz</td> <td>-29.38 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 13.JUL.2023 17:04:02</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	1.755 GHz	-29.38 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	1.71 GHz	-29.49 dBm																										
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	1.755 GHz	-29.38 dBm																										
QPSK 3MHz	<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td></td> <td>1</td> <td>1.71 GHz</td> <td>-30.50 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 13.JUL.2023 17:05:07</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	1.71 GHz	-30.50 dBm			<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td></td> <td>1</td> <td>1.755 GHz</td> <td>-29.54 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 13.JUL.2023 17:05:22</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	1.755 GHz	-29.54 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	1.71 GHz	-30.50 dBm																										
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	1.755 GHz	-29.54 dBm																										
QPSK 5MHz	<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td></td> <td>1</td> <td>1.71 GHz</td> <td>-27.08 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 13.JUL.2023 17:06:36</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	1.71 GHz	-27.08 dBm			<table border="1"> <thead> <tr> <th>Type</th> <th>Ref</th> <th>Trc</th> <th>X-value</th> <th>Y-value</th> <th>Function</th> <th>Function Result</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td></td> <td>1</td> <td>1.755 GHz</td> <td>-27.04 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 13.JUL.2023 17:06:51</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1		1	1.755 GHz	-27.04 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	1.71 GHz	-27.08 dBm																										
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1		1	1.755 GHz	-27.04 dBm																										

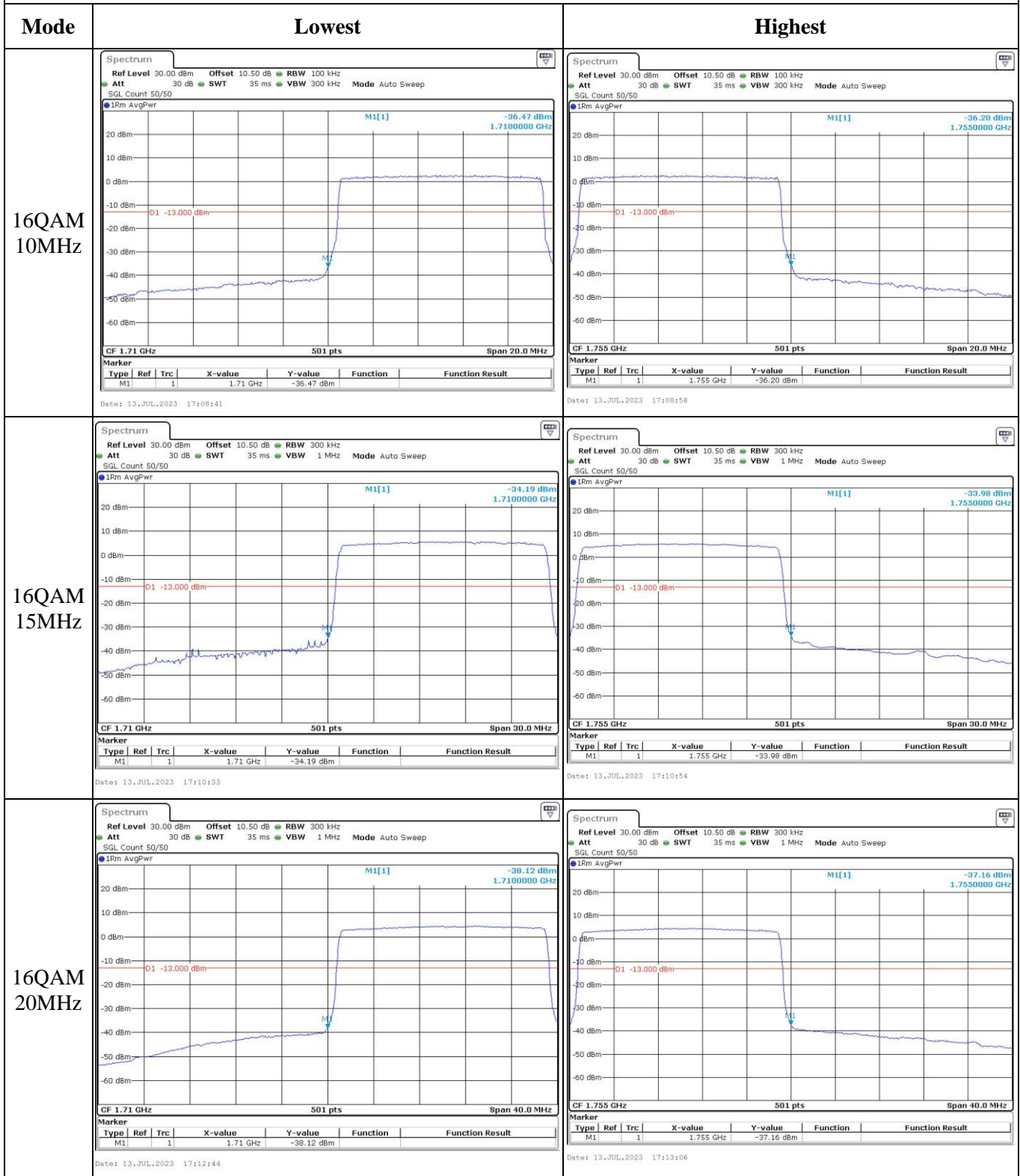
Out of band emission, Band Edge



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:	27YJ-1	Test Date:	2023/7/13~2023/7/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.8~26.5	Relative Humidity: (%)	48~53	ATM Pressure: (kPa)	100.2~101
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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	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
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).

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	22.56	22.57	22.88	22.52	38.45
	RB1#3	22.72	22.6	22.97		
	RB1#5	22.54	22.54	22.9		
	RB3#0	22.57	22.52	22.83		
	RB3#3	22.73	22.58	22.86		
	RB6#0	21.83	21.71	21.75		
1.4MHz 16QAM	RB1#0	21.89	21.56	22.05	21.87	38.45
	RB1#3	22.11	21.65	21.98		
	RB1#5	22.32	21.61	21.87		
	RB3#0	22.07	21.76	21.47		
	RB3#3	21.98	21.75	21.86		
	RB6#0	20.83	20.69	20.61		
3MHz QPSK	RB1#0	22.69	22.52	22.82	22.37	38.45
	RB1#8	22.63	22.51	22.53		
	RB1#14	22.61	22.62	22.65		
	RB6#0	21.75	21.65	21.79		
	RB6#9	21.59	21.57	21.74		
	RB15#0	21.74	21.78	21.72		
3MHz 16QAM	RB1#0	21.64	22.05	22.43	21.98	38.45
	RB1#8	21.46	22	22.18		
	RB1#14	21.83	22.03	22.27		
	RB6#0	20.62	20.72	21.13		
	RB6#9	20.48	20.67	20.96		
	RB15#0	20.9	20.69	20.99		
5MHz QPSK	RB1#0	22.69	22.4	22.36	22.24	38.45
	RB1#13	22.64	22.4	22.53		
	RB1#24	22.32	22.61	22.34		
	RB15#0	21.62	21.7	21.77		
	RB15#10	21.8	21.83	21.69		
	RB25#0	21.75	21.66	21.81		
5MHz 16QAM	RB1#0	21.35	21.13	22.2	21.78	38.45
	RB1#13	21.37	21.34	22.23		
	RB1#24	21.52	21.08	22.02		
	RB15#0	20.63	20.68	20.72		
	RB15#10	20.76	20.67	20.76		
	RB25#0	20.71	20.65	20.69		
10MHz QPSK	RB1#0	22.72	22.42	22.66	22.57	38.45
	RB1#25	23.02	22.71	22.63		
	RB1#49	22.43	22.64	22.58		

	RB25#0	21.81	21.74	21.81		
	RB25#25	21.77	21.78	21.84		
	RB50#0	21.79	21.74	21.77		
10MHz 16QAM	RB1#0	21.66	22.02	22.2	21.9	38.45
	RB1#25	21.75	22.12	22.35		
	RB1#49	21.46	22.06	21.44		
	RB25#0	20.92	20.85	20.92		
	RB25#25	20.95	20.86	20.97		
	RB50#0	20.77	20.6	20.73		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(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	5.25	4.99	5.8	13
	RB50#0	4.99	5.13	5.04	13
10MHz 16QAM	RB1#0	5.39	5.62	6.29	13
	RB50#0	5.88	6.12	5.94	13
Result:					Pass

FCC §2.1049, §2.905: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	1.108	1.102	1.096	1.314	1.29	1.314
1.4MHz 16QAM	1.096	1.102	1.102	1.29	1.296	1.314
3MHz QPSK	2.683	2.695	2.695	2.952	2.928	2.94
3MHz 16QAM	2.683	2.695	2.683	2.952	2.952	2.94
5MHz QPSK	4.491	4.511	4.491	5.02	5.04	5.02
5MHz 16QAM	4.511	4.491	4.531	5.04	4.98	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	9.72	9.64

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

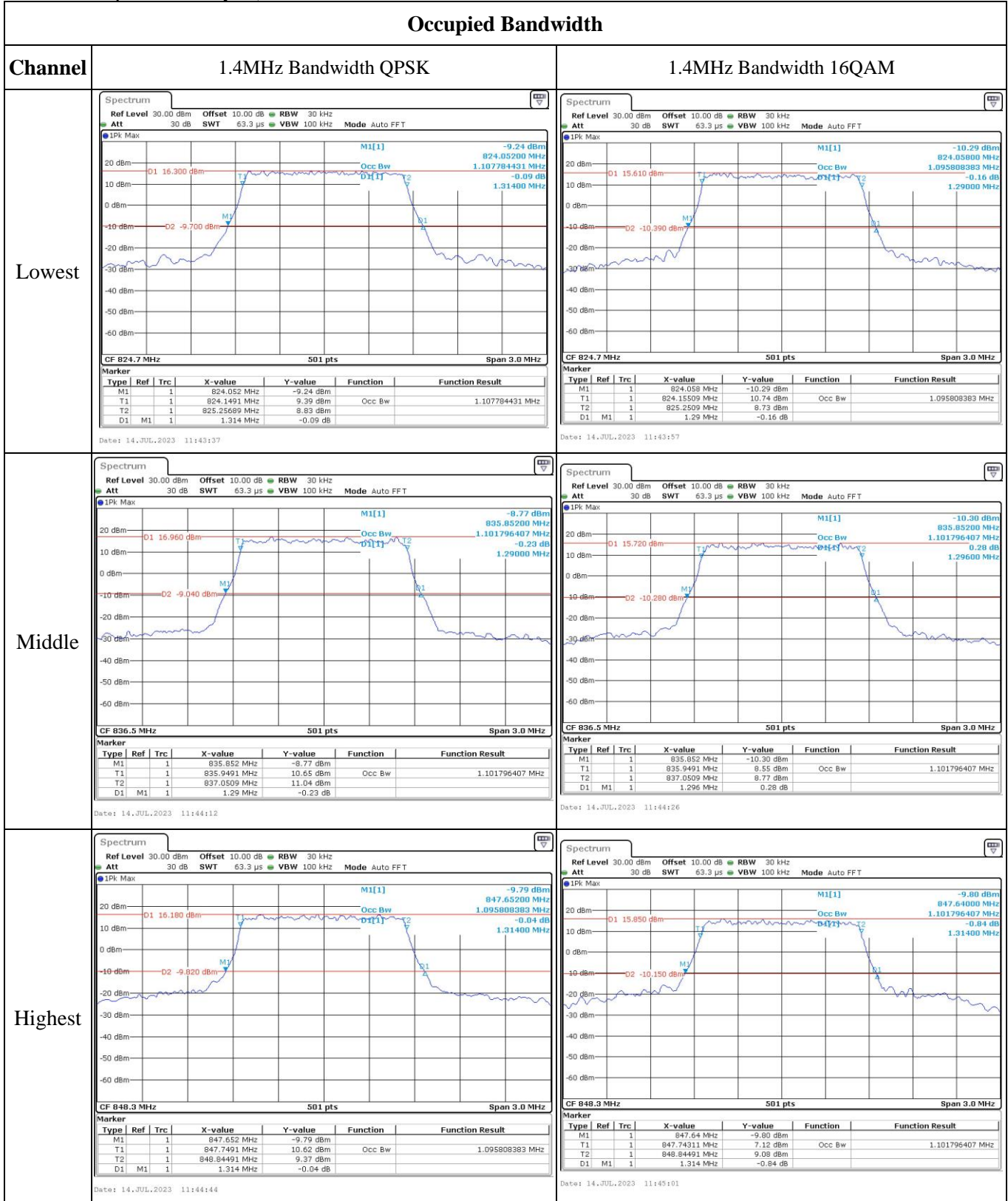
FCC §2.1051, §2.917(a):Spurious Emissions at Antenna Terminal**Result:** Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**FCC §2.1051, §2.917(a):Out of band emission, Band Edge****Result:** Pass, Please refer to the test plots of Out of band emission, Band Edge.

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	3.8	13	0.016	2.5
	-20	3.8	10	0.012	2.5
	-10	3.8	8	0.010	2.5
	0	3.8	6	0.007	2.5
	10	3.8	12	0.014	2.5
	20	3.8	2	0.002	2.5
	30	3.8	8	0.010	2.5
	40	3.8	6	0.007	2.5
Frequency Stability vs. Voltage	20	3.5	11	0.013	2.5
	20	4.4	13	0.016	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	3.8	8	0.010	2.5
	-20	3.8	6	0.007	2.5
	-10	3.8	7	0.008	2.5
	0	3.8	11	0.013	2.5
	10	3.8	2	0.002	2.5
	20	3.8	6	0.007	2.5
	30	3.8	9	0.011	2.5
	40	3.8	3	0.004	2.5
Frequency Stability vs. Voltage	20	3.5	2	0.002	2.5
	20	4.4	7	0.008	2.5
				Result:	Pass

Test Plots(Note: The 10 dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):



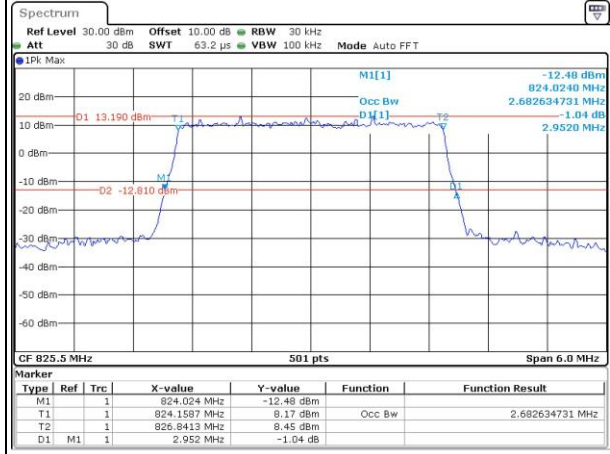
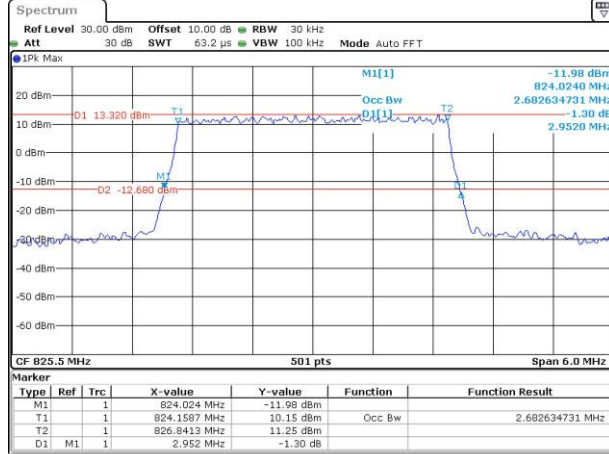
Occupied Bandwidth

Channel

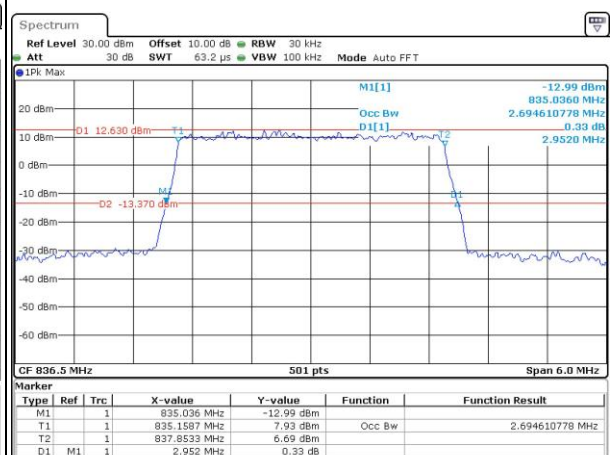
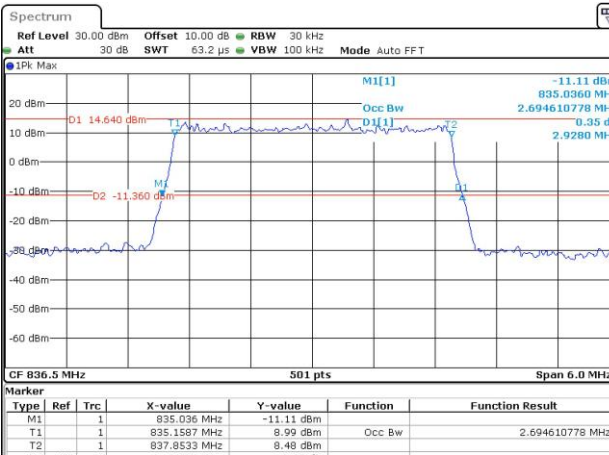
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

Lowest



Middle



Highest

