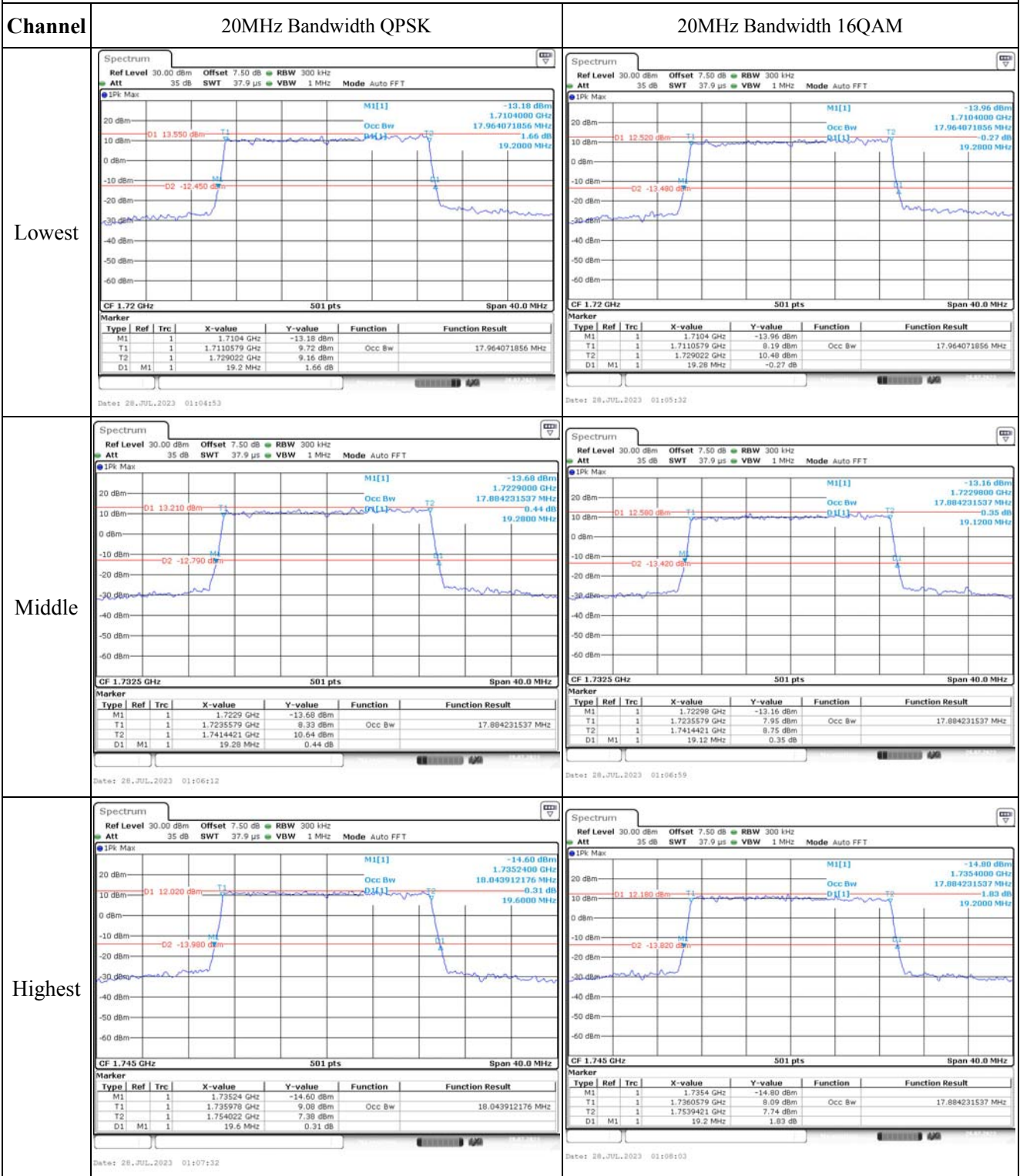


### Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM																																																																						
Lowest	<p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <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>1</td> <td></td> <td>1.71024 GHz</td> <td>-12.74 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>1.7107934 GHz</td> <td>8.55 dBm</td> <td>Occ Bw</td> <td>13.473053892 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>1.7242665 GHz</td> <td>8.97 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>14.58 MHz</td> <td>-0.05 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28_JUL_2023 01:00:19</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.71024 GHz	-12.74 dBm			T1	1		1.7107934 GHz	8.55 dBm	Occ Bw	13.473053892 MHz	T2	1		1.7242665 GHz	8.97 dBm			D1	M1	1	14.58 MHz	-0.05 dB			<p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <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>1</td> <td></td> <td>1.71018 GHz</td> <td>-13.74 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>1.7107934 GHz</td> <td>8.86 dBm</td> <td>Occ Bw</td> <td>13.473053892 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>1.7242665 GHz</td> <td>9.41 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>14.64 MHz</td> <td>1.26 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28_JUL_2023 01:01:05</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.71018 GHz	-13.74 dBm			T1	1		1.7107934 GHz	8.86 dBm	Occ Bw	13.473053892 MHz	T2	1		1.7242665 GHz	9.41 dBm			D1	M1	1	14.64 MHz	1.26 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
M1	1		1.71024 GHz	-12.74 dBm																																																																				
T1	1		1.7107934 GHz	8.55 dBm	Occ Bw	13.473053892 MHz																																																																		
T2	1		1.7242665 GHz	8.97 dBm																																																																				
D1	M1	1	14.58 MHz	-0.05 dB																																																																				
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
M1	1		1.71018 GHz	-13.74 dBm																																																																				
T1	1		1.7107934 GHz	8.86 dBm	Occ Bw	13.473053892 MHz																																																																		
T2	1		1.7242665 GHz	9.41 dBm																																																																				
D1	M1	1	14.64 MHz	1.26 dB																																																																				
Middle	<p>CF 1.7325 GHz 501 pts Span 30.0 MHz</p> <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>1</td> <td></td> <td>1.72518 GHz</td> <td>-12.41 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>1.7257934 GHz</td> <td>9.22 dBm</td> <td>Occ Bw</td> <td>13.473053892 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>1.7392665 GHz</td> <td>9.49 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>14.64 MHz</td> <td>-1.23 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28_JUL_2023 01:01:41</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.72518 GHz	-12.41 dBm			T1	1		1.7257934 GHz	9.22 dBm	Occ Bw	13.473053892 MHz	T2	1		1.7392665 GHz	9.49 dBm			D1	M1	1	14.64 MHz	-1.23 dB			<p>CF 1.7325 GHz 501 pts Span 30.0 MHz</p> <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>1</td> <td></td> <td>1.72524 GHz</td> <td>-10.84 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>1.7257935 GHz</td> <td>8.06 dBm</td> <td>Occ Bw</td> <td>13.532934132 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>1.7392665 GHz</td> <td>8.18 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>14.58 MHz</td> <td>-2.12 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28_JUL_2023 01:02:20</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.72524 GHz	-10.84 dBm			T1	1		1.7257935 GHz	8.06 dBm	Occ Bw	13.532934132 MHz	T2	1		1.7392665 GHz	8.18 dBm			D1	M1	1	14.58 MHz	-2.12 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
M1	1		1.72518 GHz	-12.41 dBm																																																																				
T1	1		1.7257934 GHz	9.22 dBm	Occ Bw	13.473053892 MHz																																																																		
T2	1		1.7392665 GHz	9.49 dBm																																																																				
D1	M1	1	14.64 MHz	-1.23 dB																																																																				
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
M1	1		1.72524 GHz	-10.84 dBm																																																																				
T1	1		1.7257935 GHz	8.06 dBm	Occ Bw	13.532934132 MHz																																																																		
T2	1		1.7392665 GHz	8.18 dBm																																																																				
D1	M1	1	14.58 MHz	-2.12 dB																																																																				
Highest	<p>CF 1.7475 GHz 501 pts Span 30.0 MHz</p> <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>1</td> <td></td> <td>1.74012 GHz</td> <td>-12.18 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>1.7407335 GHz</td> <td>9.13 dBm</td> <td>Occ Bw</td> <td>13.532934132 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>1.7542665 GHz</td> <td>8.66 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>14.7 MHz</td> <td>-0.39 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28_JUL_2023 01:03:00</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.74012 GHz	-12.18 dBm			T1	1		1.7407335 GHz	9.13 dBm	Occ Bw	13.532934132 MHz	T2	1		1.7542665 GHz	8.66 dBm			D1	M1	1	14.7 MHz	-0.39 dB			<p>CF 1.7475 GHz 501 pts Span 30.0 MHz</p> <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>1</td> <td></td> <td>1.74019 GHz</td> <td>-12.43 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td>1.7407335 GHz</td> <td>8.80 dBm</td> <td>Occ Bw</td> <td>13.532934132 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td>1.7542665 GHz</td> <td>9.10 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td>14.58 MHz</td> <td>0.77 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28_JUL_2023 01:03:43</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.74019 GHz	-12.43 dBm			T1	1		1.7407335 GHz	8.80 dBm	Occ Bw	13.532934132 MHz	T2	1		1.7542665 GHz	9.10 dBm			D1	M1	1	14.58 MHz	0.77 dB		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
M1	1		1.74012 GHz	-12.18 dBm																																																																				
T1	1		1.7407335 GHz	9.13 dBm	Occ Bw	13.532934132 MHz																																																																		
T2	1		1.7542665 GHz	8.66 dBm																																																																				
D1	M1	1	14.7 MHz	-0.39 dB																																																																				
Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																		
M1	1		1.74019 GHz	-12.43 dBm																																																																				
T1	1		1.7407335 GHz	8.80 dBm	Occ Bw	13.532934132 MHz																																																																		
T2	1		1.7542665 GHz	9.10 dBm																																																																				
D1	M1	1	14.58 MHz	0.77 dB																																																																				

### Occupied Bandwidth

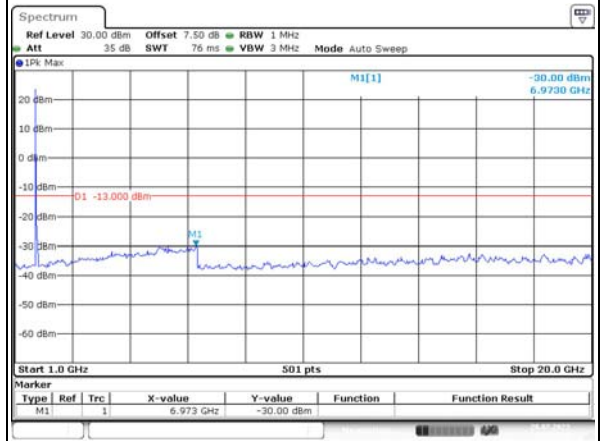
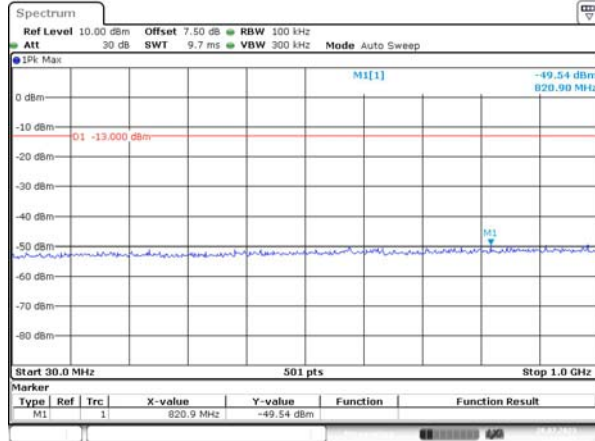


### Spurious Emissions at Antenna Terminal

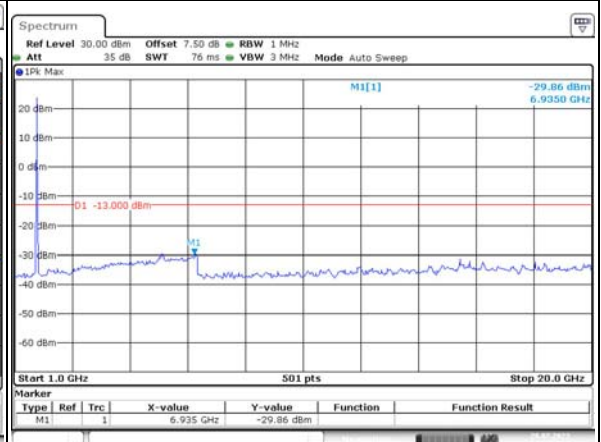
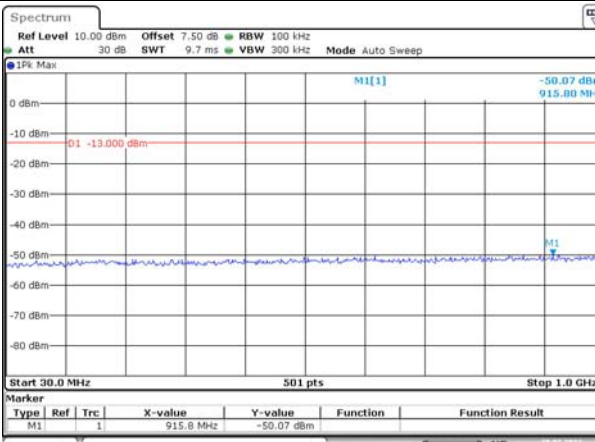
Channel

1.4MHz Bandwidth QPSK

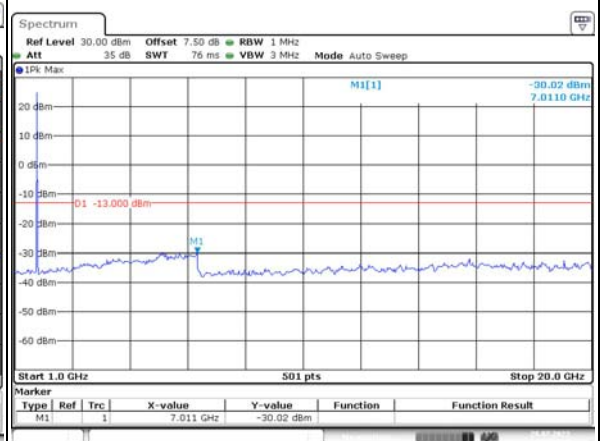
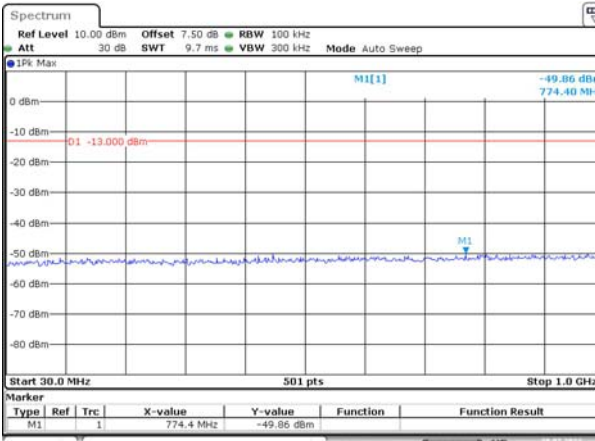
Lowest



Middle



Highest

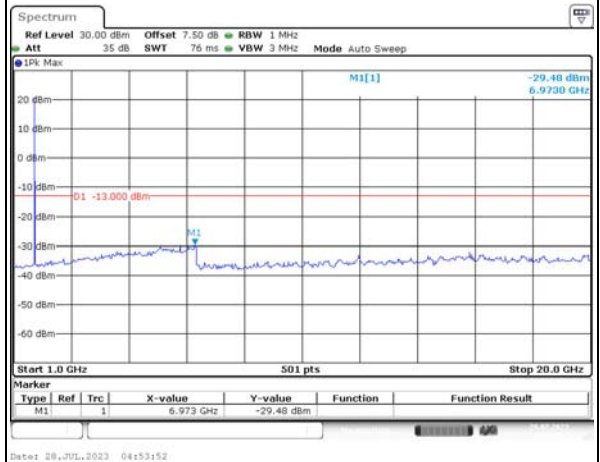
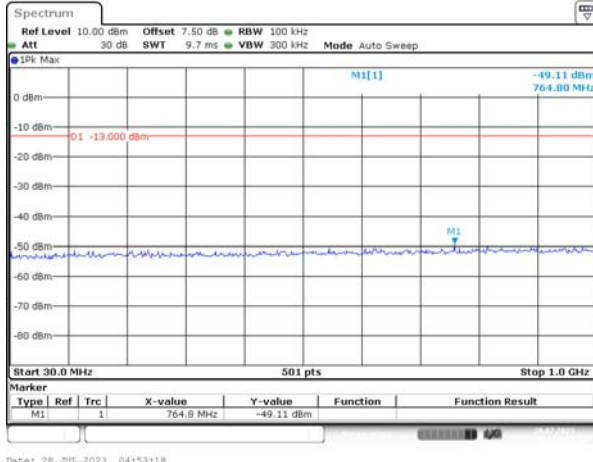


### Spurious Emissions at Antenna Terminal

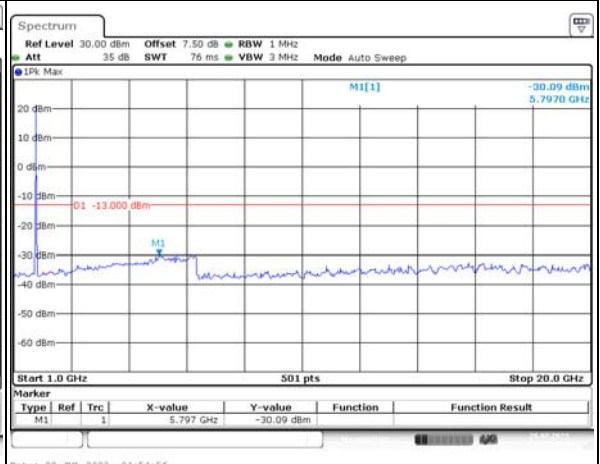
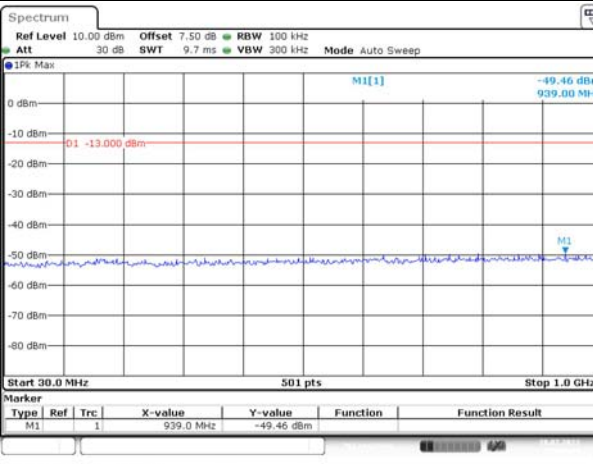
Channel

3MHz Bandwidth QPSK

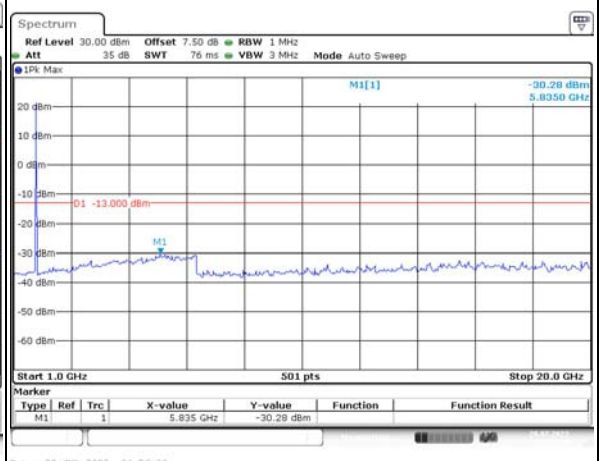
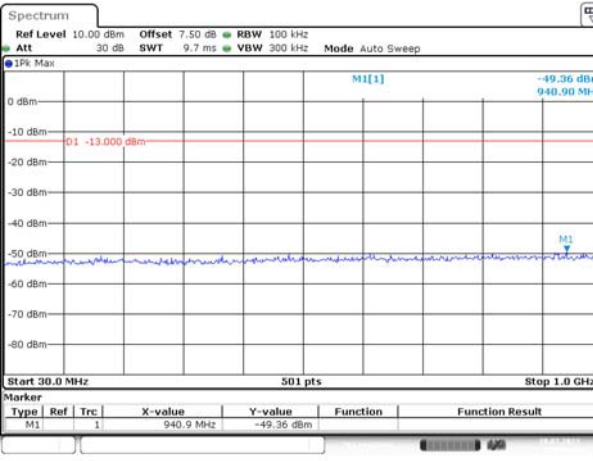
Lowest



Middle



Highest

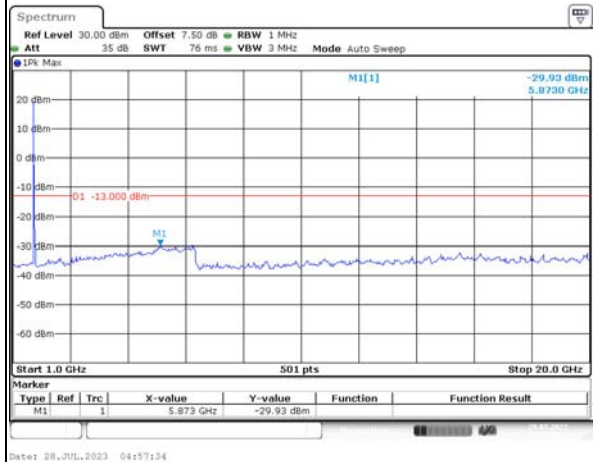
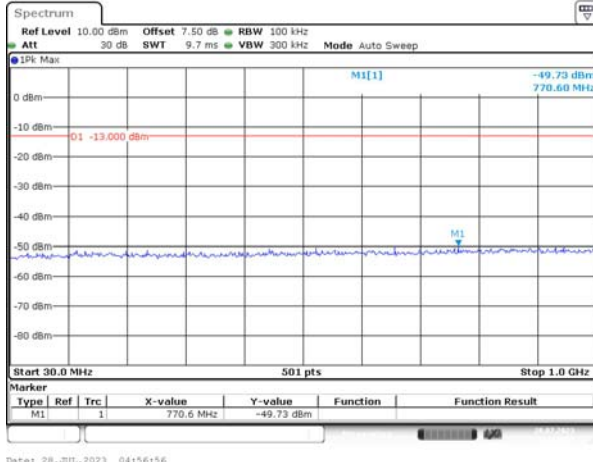


Spurious Emissions at Antenna Terminal

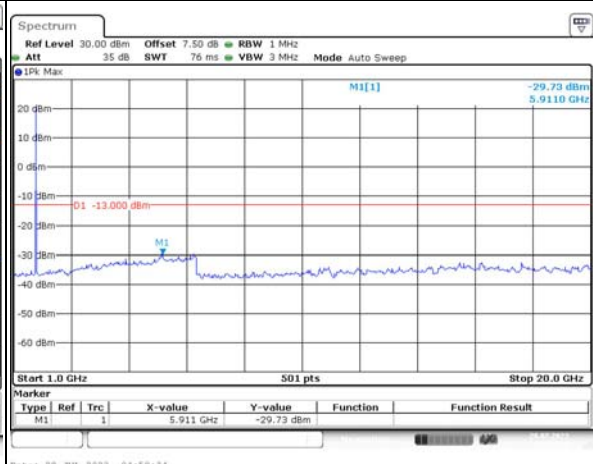
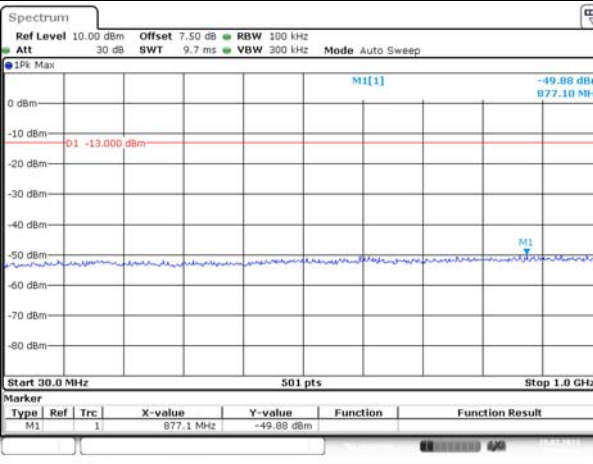
Channel

5MHz Bandwidth QPSK

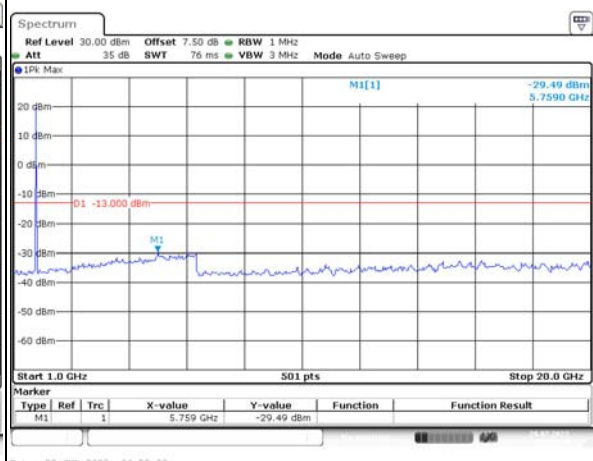
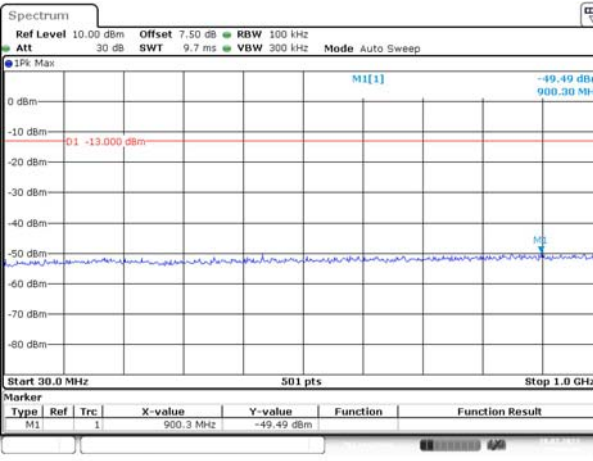
Lowest



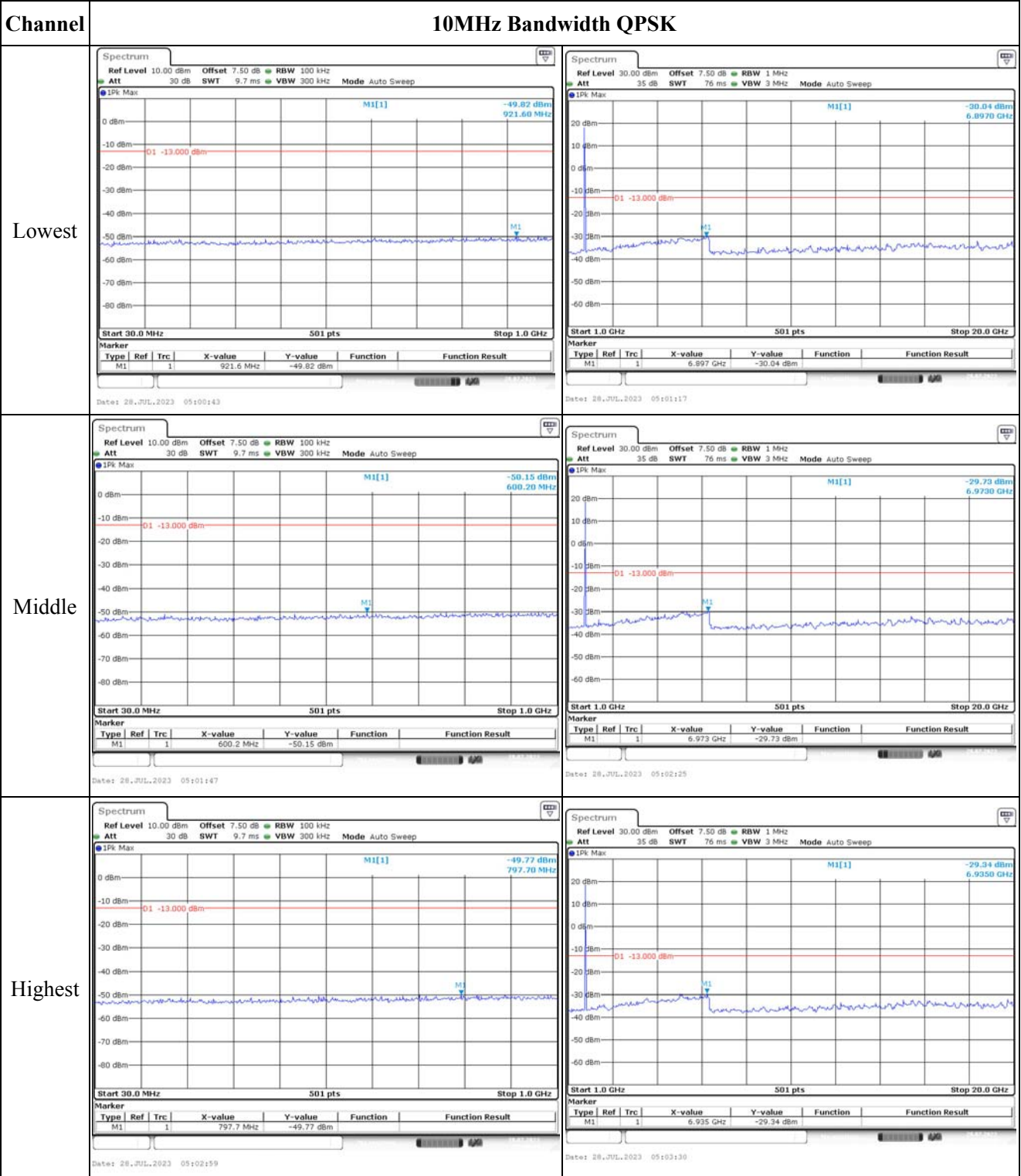
Middle



Highest



### Spurious Emissions at Antenna Terminal

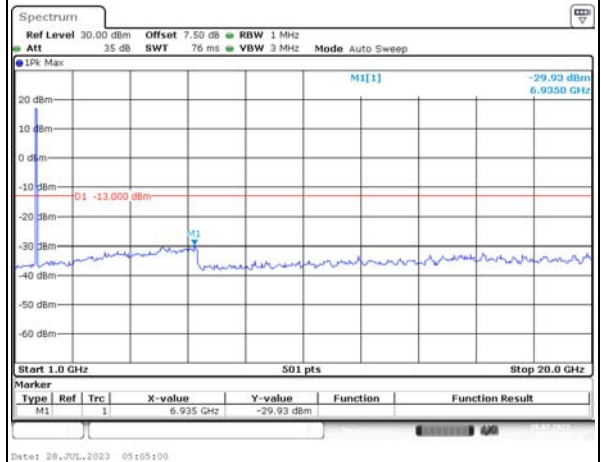
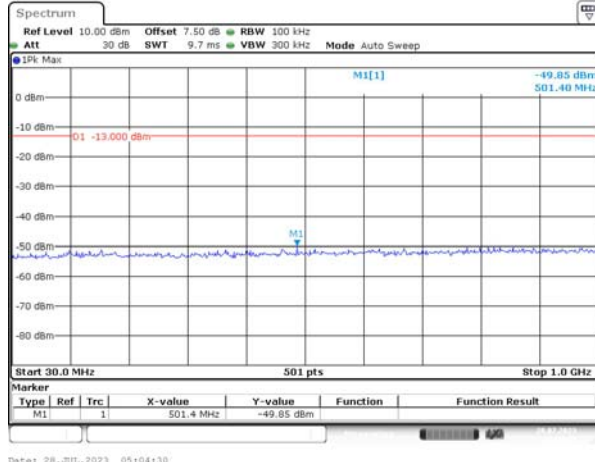


Spurious Emissions at Antenna Terminal

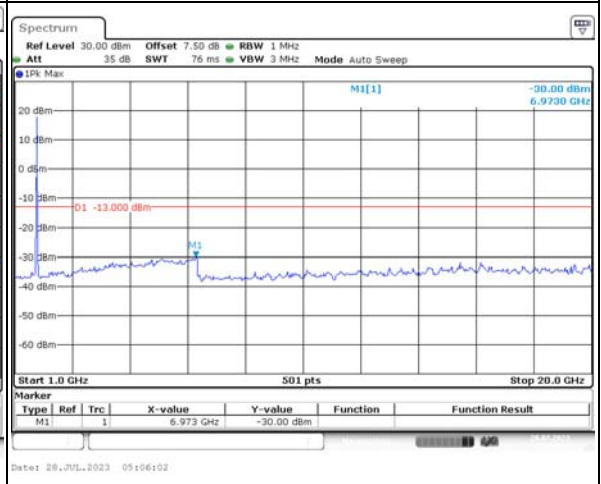
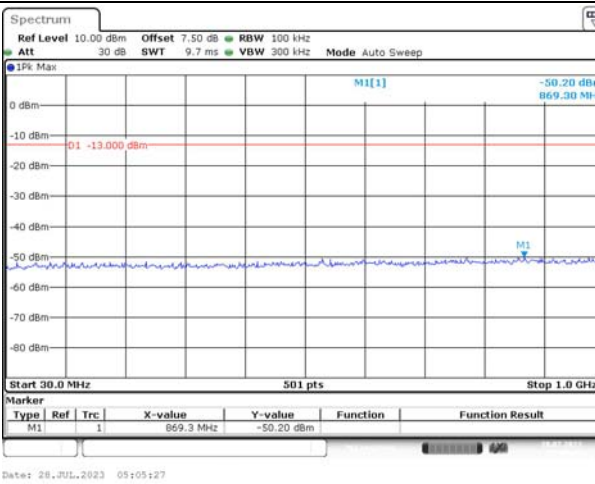
Channel

15MHz Bandwidth QPSK

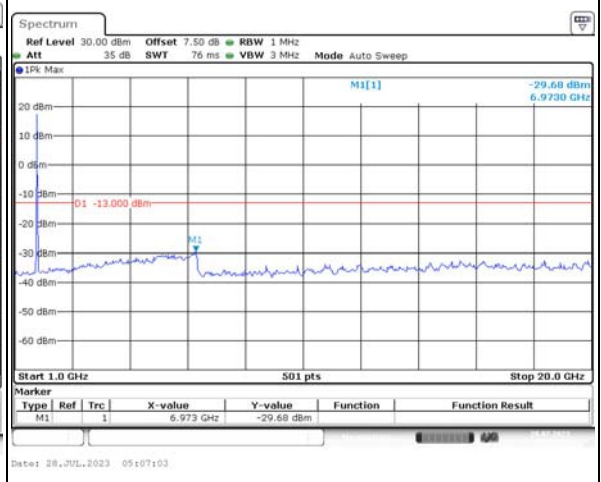
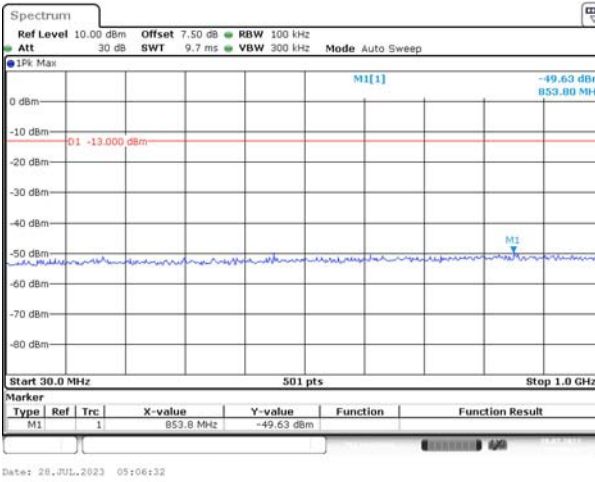
Lowest



Middle



Highest

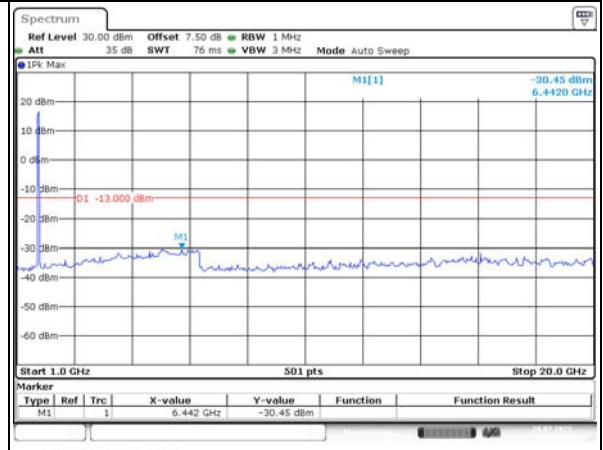
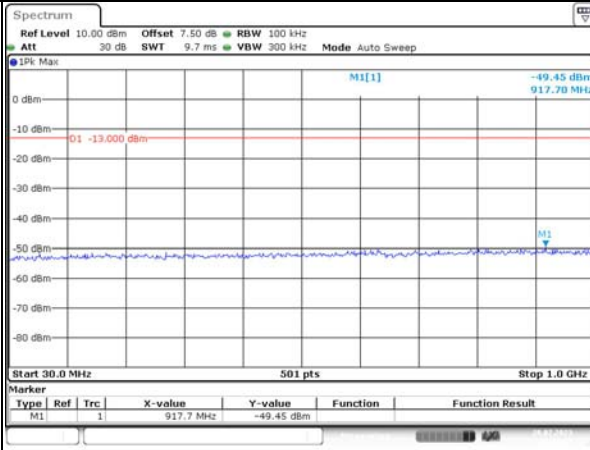


Spurious Emissions at Antenna Terminal

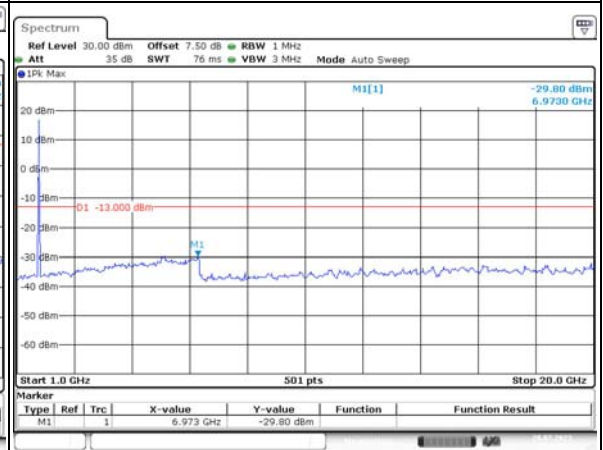
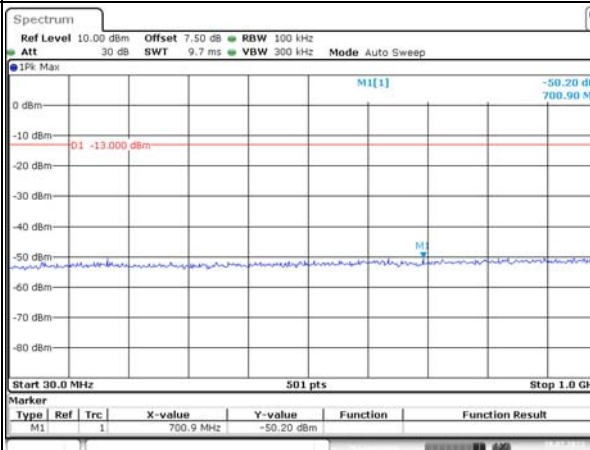
Channel

20MHz Bandwidth QPSK

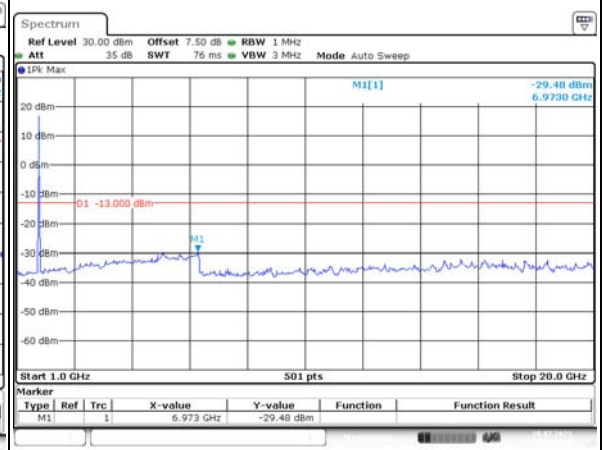
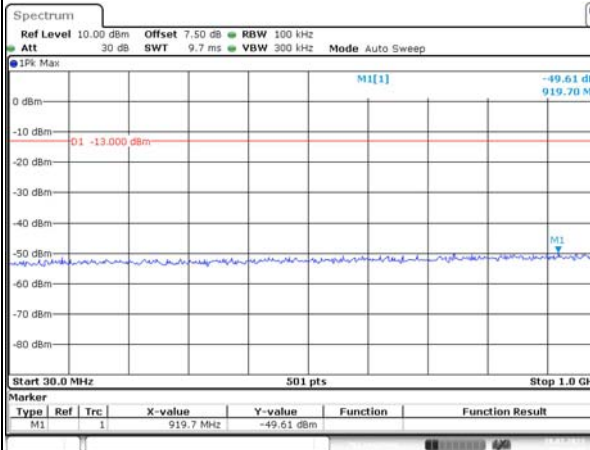
Lowest



Middle

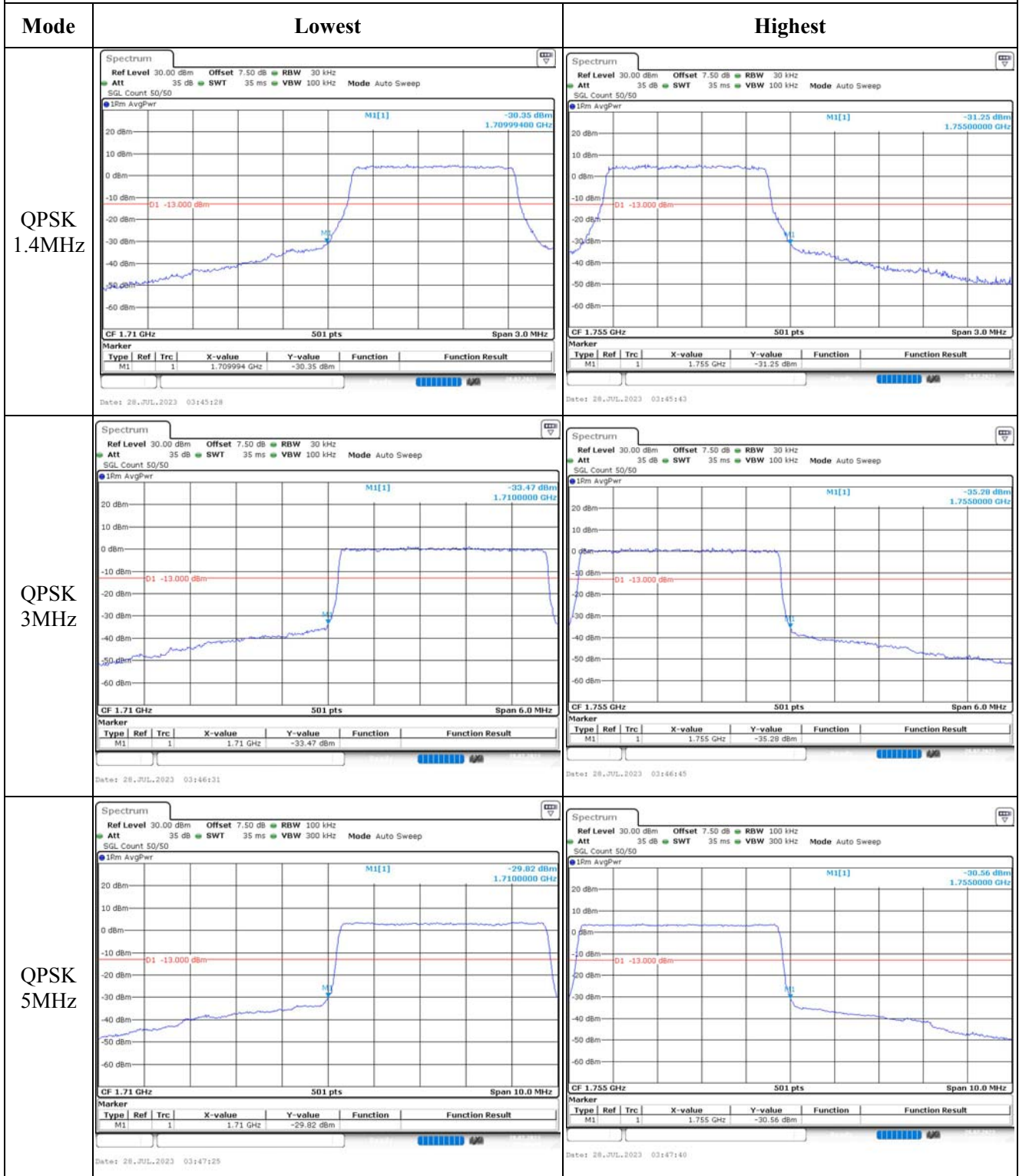


Highest

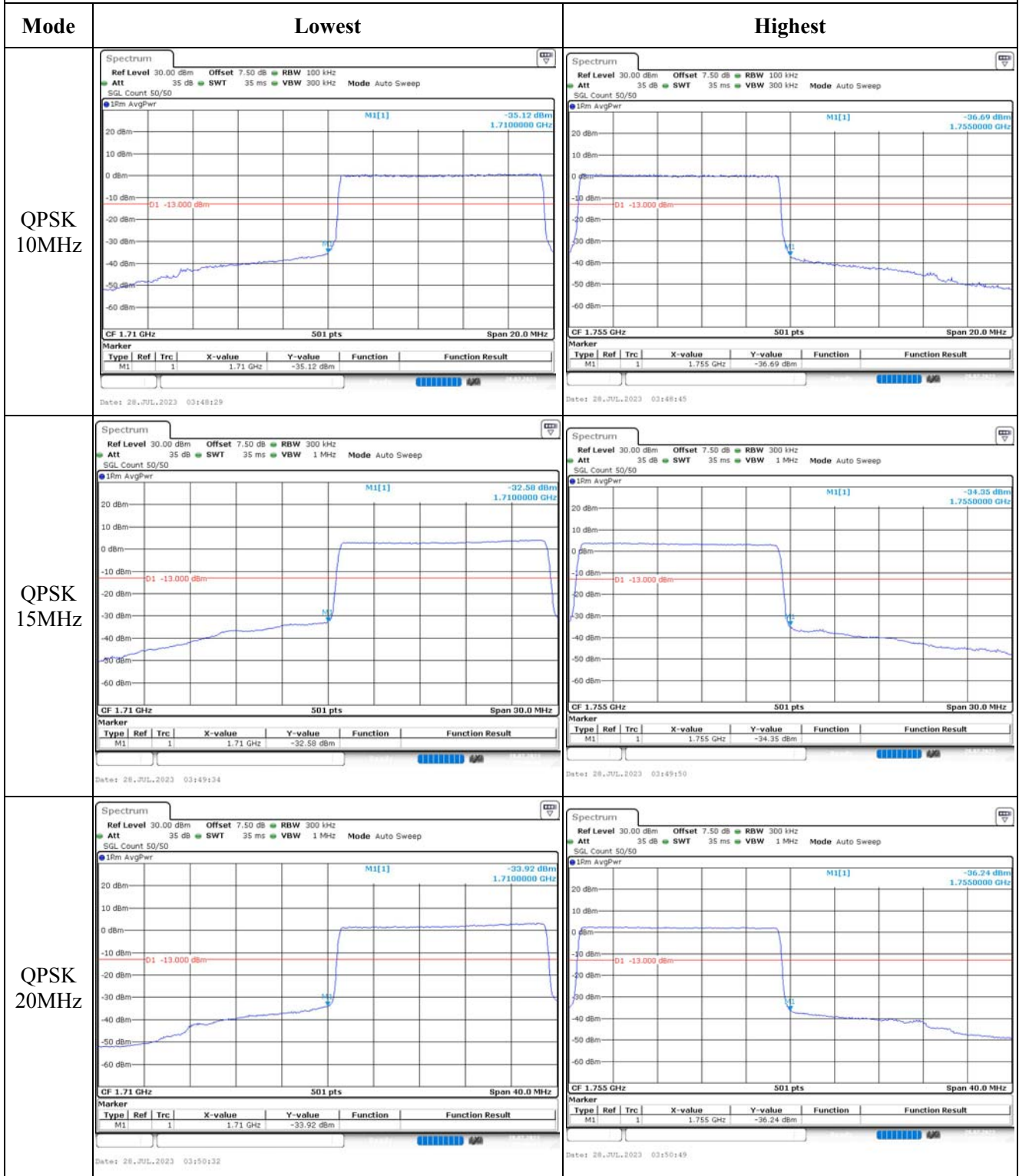




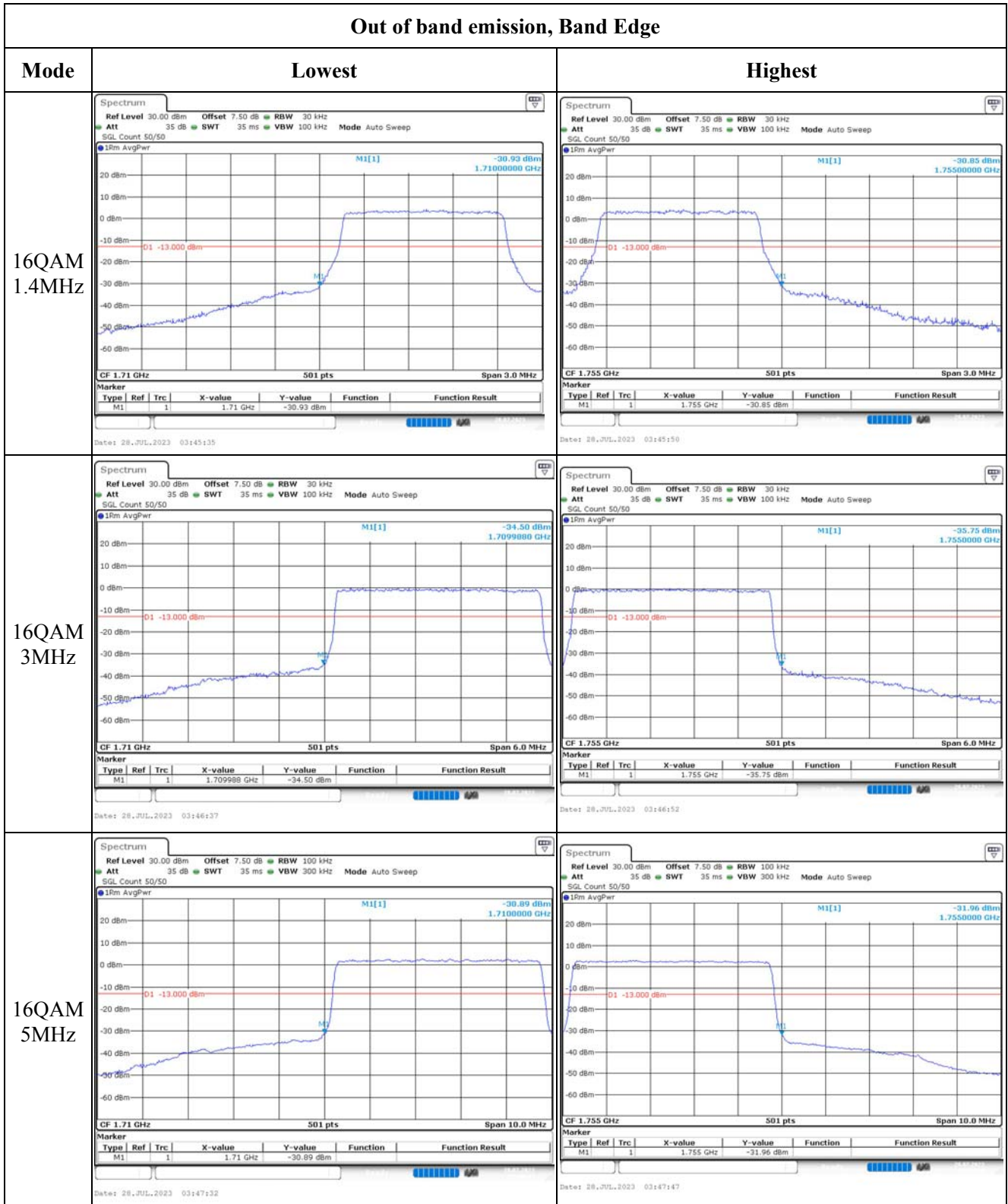
Out of band emission, Band Edge



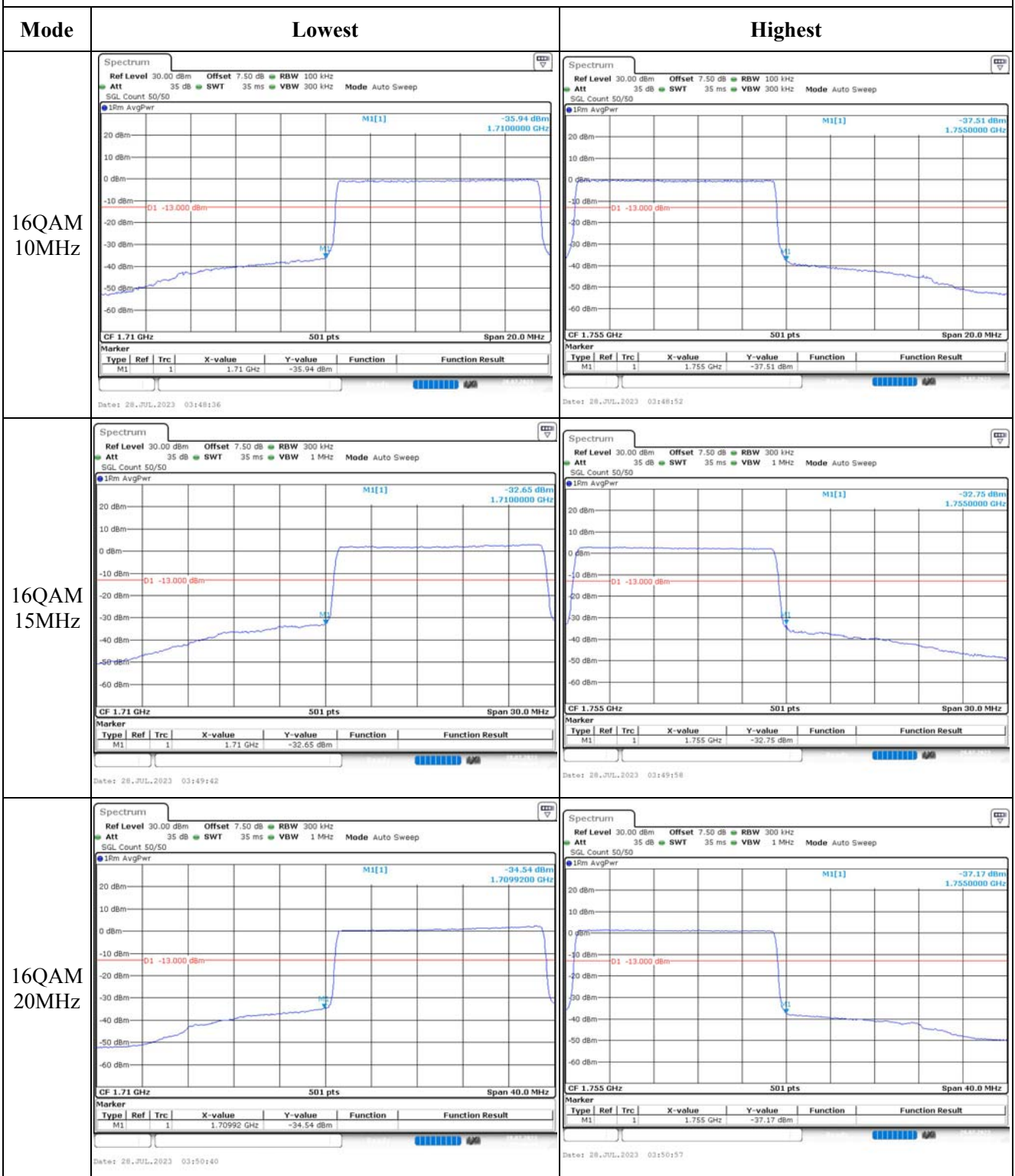
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



**4.8 Antenna Port Test Data and Results for LTE Band 5**

Serial Number:	28LK-1	Test Date:	2023/7/28~2023/8/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.2~26.8	Relative Humidity: (%)	42~55	ATM Pressure: (kPa)	99.7~100.3
----------------------	-----------	---------------------------	-------	------------------------	------------

**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	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
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
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	23.14	23.13	23.09	21.52	38.45
	RB1#3	23.32	23.3	23.26		
	RB1#5	23.18	23.1	23.13		
	RB3#0	23.22	23.2	23.2		
	RB3#3	23.21	23.23	23.25		
	RB6#0	22.24	22.21	22.18		
1.4MHz 16QAM	RB1#0	22.3	22.11	22.09	20.66	38.45
	RB1#3	22.46	22.42	22.29		
	RB1#5	22.31	22.19	22.11		
	RB3#0	22.19	22.3	22.36		
	RB3#3	22.16	22.29	22.36		
	RB6#0	21.25	21.18	21.25		
3MHz QPSK	RB1#0	23.22	23.21	23.17	21.48	38.45
	RB1#8	23.28	23.18	23.16		
	RB1#14	23.25	23.19	23.16		
	RB6#0	22.2	22.13	22.15		
	RB6#9	22.24	22.17	22.16		
	RB15#0	22.25	22.2	22.23		
3MHz 16QAM	RB1#0	22.38	22.29	22.78	20.98	38.45
	RB1#8	22.43	22.21	22.74		
	RB1#14	22.42	22.19	22.74		
	RB6#0	21.2	21.17	21.29		
	RB6#9	21.29	21.18	21.26		
	RB15#0	21.17	21.33	21.32		
5MHz QPSK	RB1#0	23.11	23.11	23.12	21.5	38.45
	RB1#13	23.3	23.22	23.22		
	RB1#24	23.13	23.12	23.1		
	RB15#0	22.27	22.22	22.26		
	RB15#10	22.27	22.22	22.18		
	RB25#0	22.25	22.22	22.17		
5MHz 16QAM	RB1#0	22.2	22.06	22.41	20.71	38.45
	RB1#13	22.37	22.22	22.51		
	RB1#24	22.25	22.01	22.38		
	RB15#0	21.28	21.25	21.23		
	RB15#10	21.31	21.3	21.23		
	RB25#0	21.27	21.32	21.23		
10MHz QPSK	RB1#0	23.2	23.21	23.14	21.61	38.45
	RB1#25	23.41	23.39	23.36		

	RB1#49	23.29	23.25	23.25		
	RB25#0	22.33	22.28	22.31		
	RB25#25	22.33	22.26	22.27		
	RB50#0	22.38	22.27	22.27		
10MHz 16QAM	RB1#0	22.35	22.28	22.73	21.16	38.45
	RB1#25	22.58	22.43	22.96		
	RB1#49	22.43	22.24	22.78		
	RB25#0	21.34	21.39	21.43		
	RB25#25	21.43	21.44	21.34		
	RB50#0	21.35	21.33	21.34		

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	5.16	5.19	5.1	13
	RB50#0	5.39	5.25	5.36	13
10MHz 16QAM	RB1#0	6.12	5.8	6	13
	RB50#0	6.29	6.17	6.2	13
<b>Result:</b>					<b>Pass</b>

**FCC §2.1049, §22.905: 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	1.096	1.102	1.096	1.308	1.29	1.296
1.4MHz 16QAM	1.09	1.096	1.096	1.284	1.29	1.314
3MHz QPSK	2.683	2.683	2.683	2.892	2.868	2.868
3MHz 16QAM	2.683	2.683	2.683	2.868	2.892	2.88
5MHz QPSK	4.511	4.491	4.511	4.96	4.92	4.96
5MHz 16QAM	4.511	4.511	4.471	4.96	4.96	4.9
10MHz QPSK	8.942	8.942	8.942	9.68	9.64	9.6
10MHz 16QAM	8.942	8.942	8.942	9.64	9.56	9.64

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

**FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal****Result:** Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**FCC §2.1051, §22.917(a):Out of band emission, Band Edge****Result:** Pass, Please refer to the test plots of Out of band emission, Band Edge.

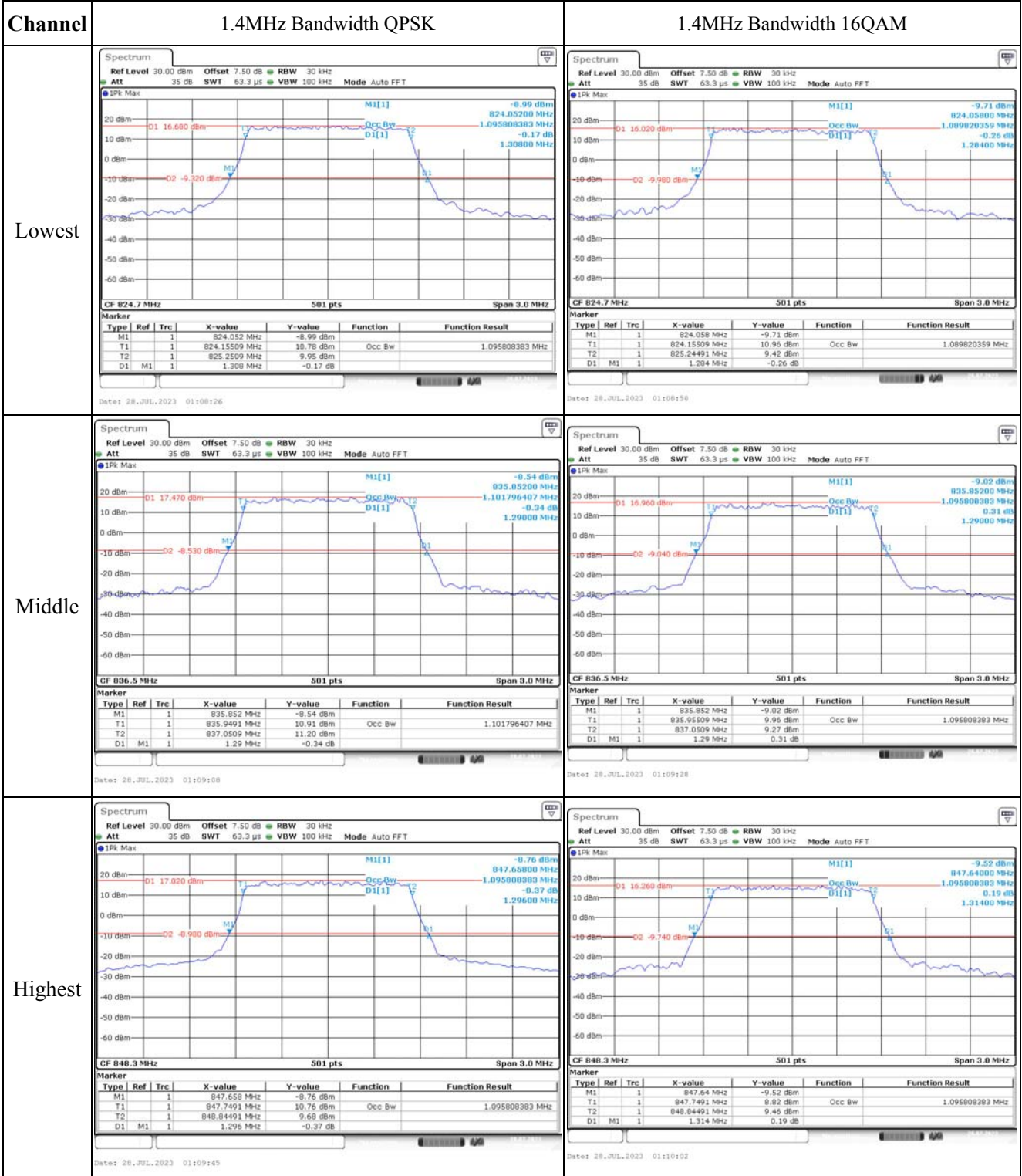
<b>FCC §2.1055, §22.355: Frequency Stability</b>					
Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-5.42	-0.006	2.5
	-20	3.8	-6.97	-0.008	2.5
	-10	3.8	-5.5	-0.007	2.5
	0	3.8	6.06	0.007	2.5
	10	3.8	9.8	0.012	2.5
	20	3.8	5.03	0.006	2.5
	30	3.8	-6.62	-0.008	2.5
	40	3.8	-8.73	-0.010	2.5
	50	3.8	-7.05	-0.008	2.5
Frequency Stability vs. Voltage	20	3.65	8.99	0.011	2.5
	20	4.35	-7.17	-0.009	2.5
				<b>Result:</b>	<b>Pass</b>

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-4.95	-0.006	2.5
	-20	3.8	-5.29	-0.006	2.5
	-10	3.8	5.14	0.006	2.5
	0	3.8	-5.62	-0.007	2.5
	10	3.8	6.25	0.007	2.5
	20	3.8	-4.51	-0.005	2.5
	30	3.8	-4.11	-0.005	2.5
	40	3.8	7.65	0.009	2.5
	50	3.8	2.87	0.003	2.5
Frequency Stability vs. Voltage	20	3.65	8.44	0.010	2.5
	20	4.35	5.77	0.007	2.5
				<b>Result:</b>	<b>Pass</b>



**Test Plots** (Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

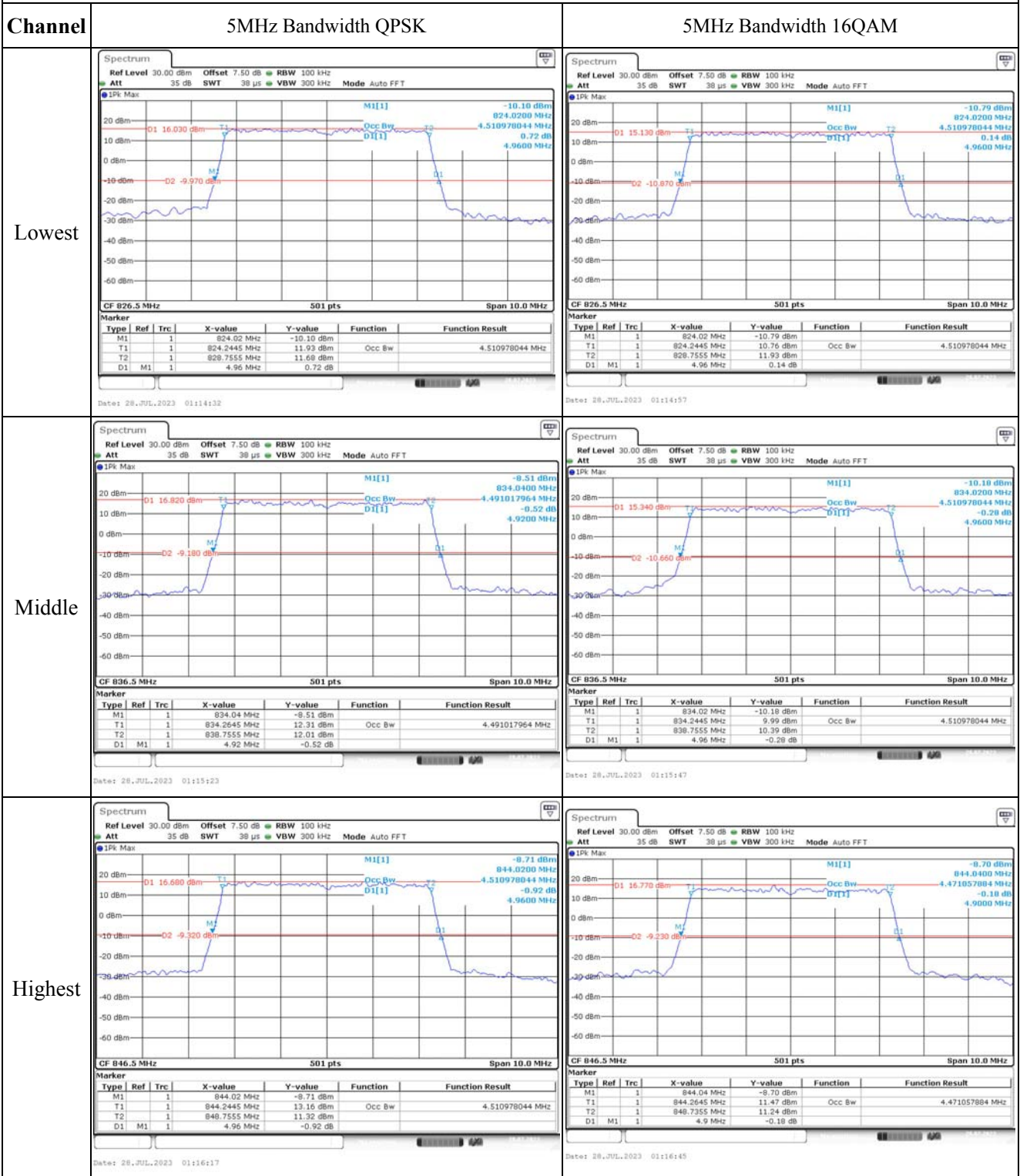
**Occupied Bandwidth**



### Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM																																																																																
Lowest	<table border="1"> <thead> <tr> <th>Marker</th> <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>1</td> <td></td> <td></td> <td>824.048 MHz</td> <td>-13.01 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>824.1587 MHz</td> <td>10.39 dBm</td> <td>Occ Bw</td> <td>2.682634731 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>826.8413 MHz</td> <td>11.43 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>2.892 MHz</td> <td>0.48 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28.JUL.2023 01:10:56</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			824.048 MHz	-13.01 dBm			T1	1			824.1587 MHz	10.39 dBm	Occ Bw	2.682634731 MHz	T2	1			826.8413 MHz	11.43 dBm			D1	M1	1		2.892 MHz	0.48 dB			<table border="1"> <thead> <tr> <th>Marker</th> <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>1</td> <td></td> <td></td> <td>824.06 MHz</td> <td>-11.99 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>824.1587 MHz</td> <td>8.85 dBm</td> <td>Occ Bw</td> <td>2.682634731 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>826.8413 MHz</td> <td>8.77 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>2.868 MHz</td> <td>0.20 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28.JUL.2023 01:11:32</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			824.06 MHz	-11.99 dBm			T1	1			824.1587 MHz	8.85 dBm	Occ Bw	2.682634731 MHz	T2	1			826.8413 MHz	8.77 dBm			D1	M1	1		2.868 MHz	0.20 dB		
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																											
M1	1			824.048 MHz	-13.01 dBm																																																																													
T1	1			824.1587 MHz	10.39 dBm	Occ Bw	2.682634731 MHz																																																																											
T2	1			826.8413 MHz	11.43 dBm																																																																													
D1	M1	1		2.892 MHz	0.48 dB																																																																													
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																											
M1	1			824.06 MHz	-11.99 dBm																																																																													
T1	1			824.1587 MHz	8.85 dBm	Occ Bw	2.682634731 MHz																																																																											
T2	1			826.8413 MHz	8.77 dBm																																																																													
D1	M1	1		2.868 MHz	0.20 dB																																																																													
Middle	<table border="1"> <thead> <tr> <th>Marker</th> <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>1</td> <td></td> <td></td> <td>835.072 MHz</td> <td>-9.97 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>835.1587 MHz</td> <td>9.02 dBm</td> <td>Occ Bw</td> <td>2.682634731 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>837.8413 MHz</td> <td>10.76 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>2.868 MHz</td> <td>-1.49 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28.JUL.2023 01:11:57</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			835.072 MHz	-9.97 dBm			T1	1			835.1587 MHz	9.02 dBm	Occ Bw	2.682634731 MHz	T2	1			837.8413 MHz	10.76 dBm			D1	M1	1		2.868 MHz	-1.49 dB			<table border="1"> <thead> <tr> <th>Marker</th> <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>1</td> <td></td> <td></td> <td>835.06 MHz</td> <td>-13.20 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>835.1587 MHz</td> <td>8.60 dBm</td> <td>Occ Bw</td> <td>2.682634731 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>837.8413 MHz</td> <td>9.33 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>2.892 MHz</td> <td>0.96 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28.JUL.2023 01:12:17</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			835.06 MHz	-13.20 dBm			T1	1			835.1587 MHz	8.60 dBm	Occ Bw	2.682634731 MHz	T2	1			837.8413 MHz	9.33 dBm			D1	M1	1		2.892 MHz	0.96 dB		
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																											
M1	1			835.072 MHz	-9.97 dBm																																																																													
T1	1			835.1587 MHz	9.02 dBm	Occ Bw	2.682634731 MHz																																																																											
T2	1			837.8413 MHz	10.76 dBm																																																																													
D1	M1	1		2.868 MHz	-1.49 dB																																																																													
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																											
M1	1			835.06 MHz	-13.20 dBm																																																																													
T1	1			835.1587 MHz	8.60 dBm	Occ Bw	2.682634731 MHz																																																																											
T2	1			837.8413 MHz	9.33 dBm																																																																													
D1	M1	1		2.892 MHz	0.96 dB																																																																													
Highest	<table border="1"> <thead> <tr> <th>Marker</th> <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>1</td> <td></td> <td></td> <td>846.06 MHz</td> <td>-12.05 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>846.1587 MHz</td> <td>9.27 dBm</td> <td>Occ Bw</td> <td>2.682634731 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>848.8413 MHz</td> <td>11.97 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>2.868 MHz</td> <td>1.03 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28.JUL.2023 01:12:39</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			846.06 MHz	-12.05 dBm			T1	1			846.1587 MHz	9.27 dBm	Occ Bw	2.682634731 MHz	T2	1			848.8413 MHz	11.97 dBm			D1	M1	1		2.868 MHz	1.03 dB			<table border="1"> <thead> <tr> <th>Marker</th> <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>1</td> <td></td> <td></td> <td>846.06 MHz</td> <td>-13.45 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>846.1587 MHz</td> <td>9.65 dBm</td> <td>Occ Bw</td> <td>2.682634731 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>848.8413 MHz</td> <td>8.72 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>2.88 MHz</td> <td>-0.23 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 28.JUL.2023 01:12:55</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			846.06 MHz	-13.45 dBm			T1	1			846.1587 MHz	9.65 dBm	Occ Bw	2.682634731 MHz	T2	1			848.8413 MHz	8.72 dBm			D1	M1	1		2.88 MHz	-0.23 dB		
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																											
M1	1			846.06 MHz	-12.05 dBm																																																																													
T1	1			846.1587 MHz	9.27 dBm	Occ Bw	2.682634731 MHz																																																																											
T2	1			848.8413 MHz	11.97 dBm																																																																													
D1	M1	1		2.868 MHz	1.03 dB																																																																													
Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result																																																																											
M1	1			846.06 MHz	-13.45 dBm																																																																													
T1	1			846.1587 MHz	9.65 dBm	Occ Bw	2.682634731 MHz																																																																											
T2	1			848.8413 MHz	8.72 dBm																																																																													
D1	M1	1		2.88 MHz	-0.23 dB																																																																													

Occupied Bandwidth



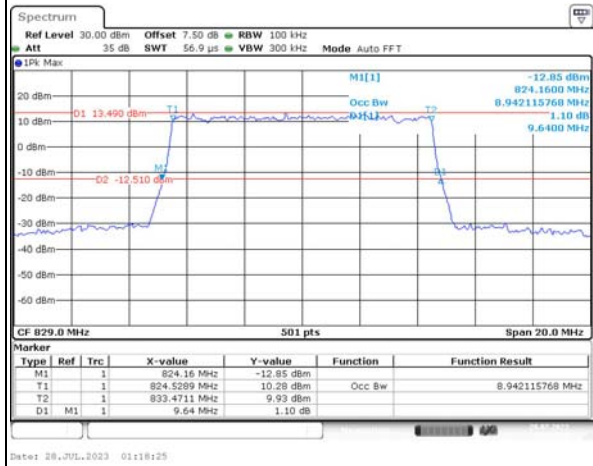
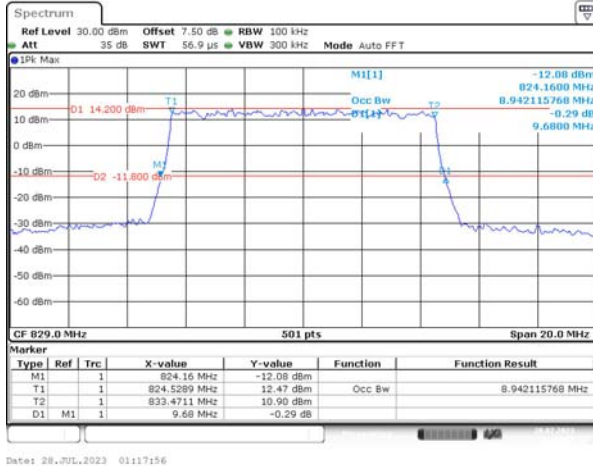
### Occupied Bandwidth

Channel

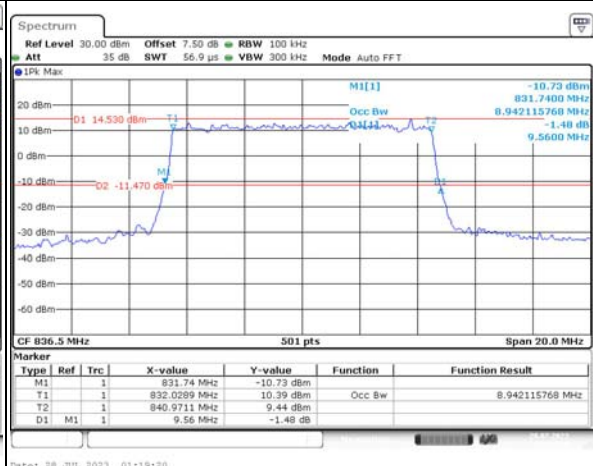
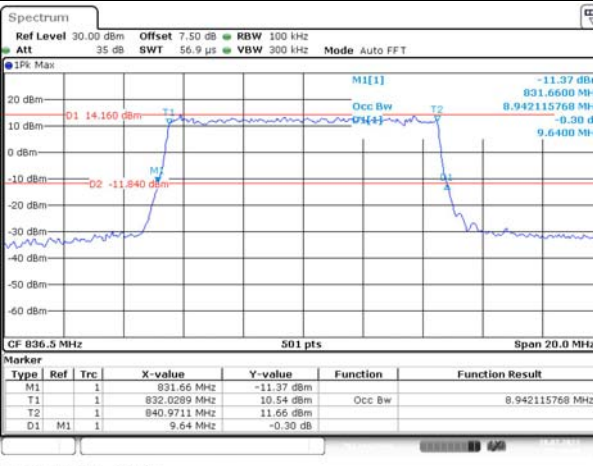
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

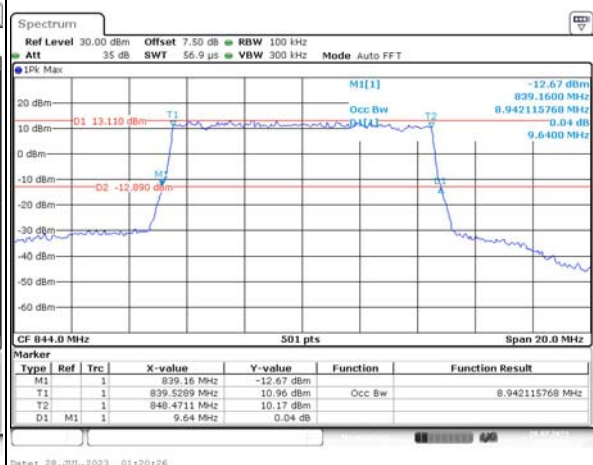
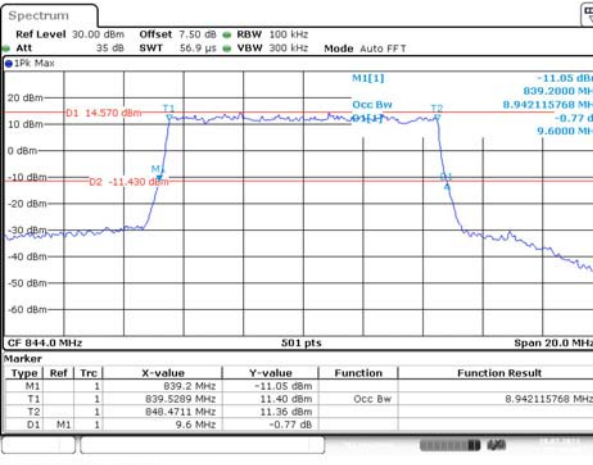
Lowest



Middle



Highest

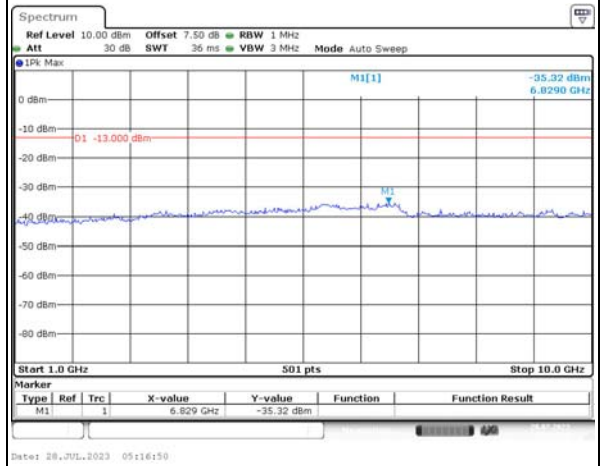
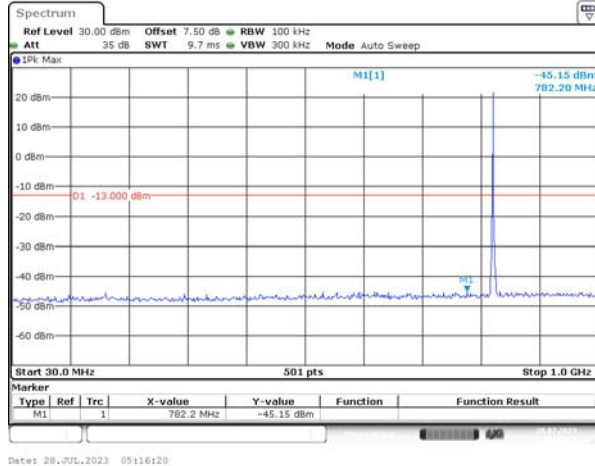


### Spurious Emissions at Antenna Terminal

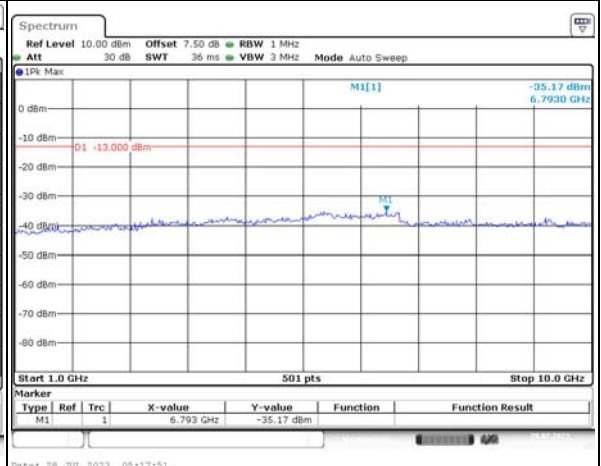
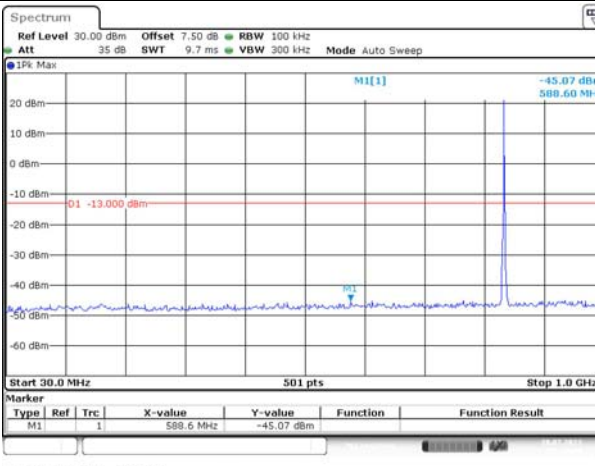
Channel

1.4MHz Bandwidth QPSK

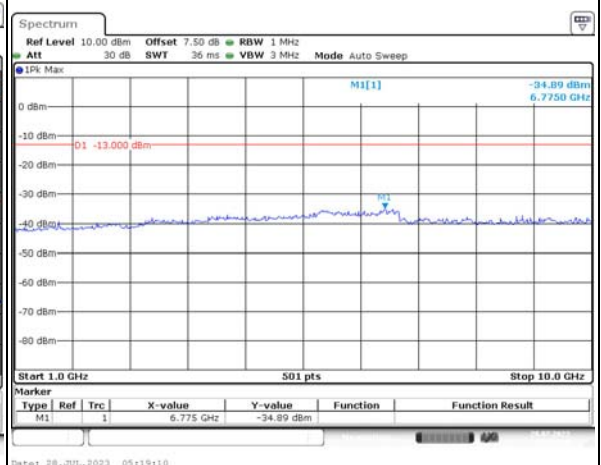
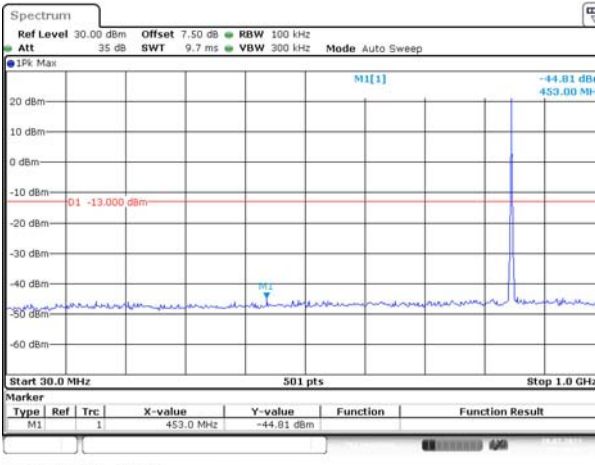
Lowest



Middle



Highest

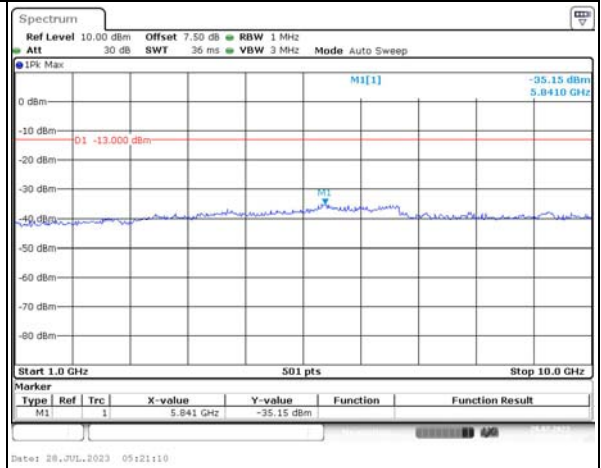
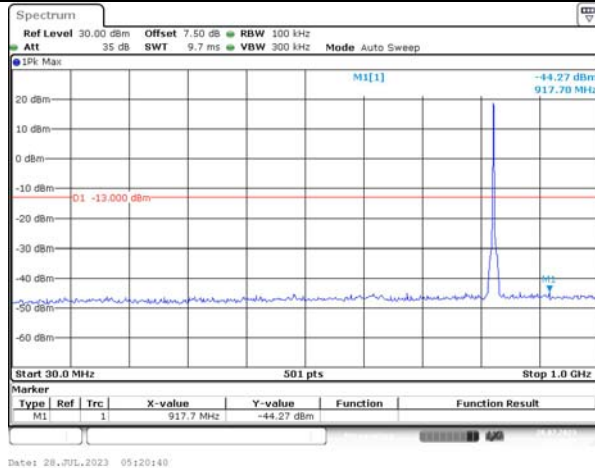


### Spurious Emissions at Antenna Terminal

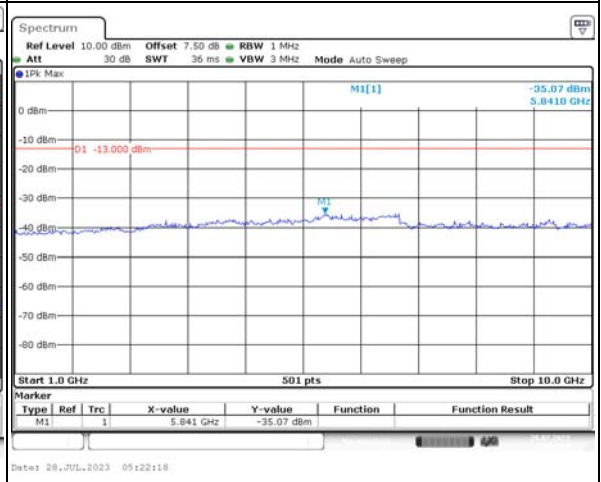
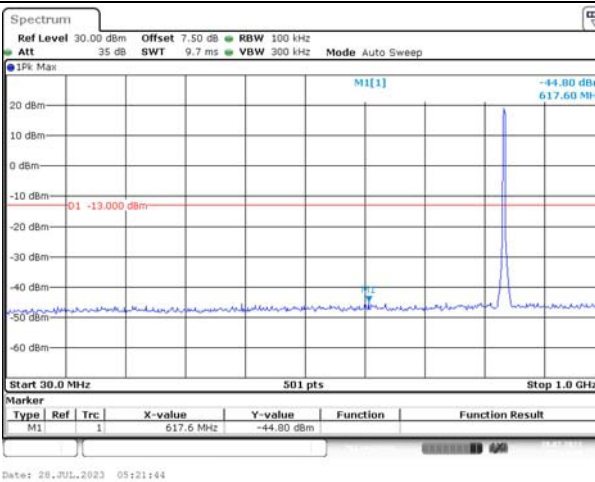
Channel

3MHz Bandwidth QPSK

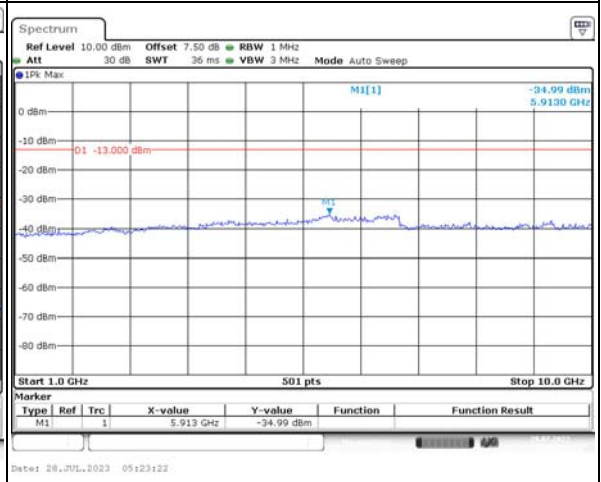
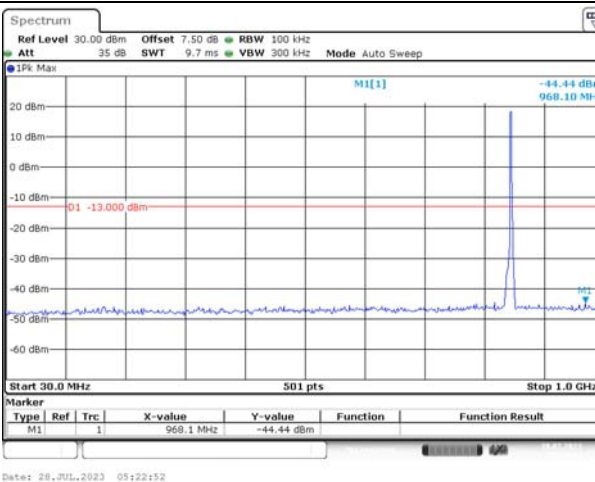
Lowest



Middle



Highest

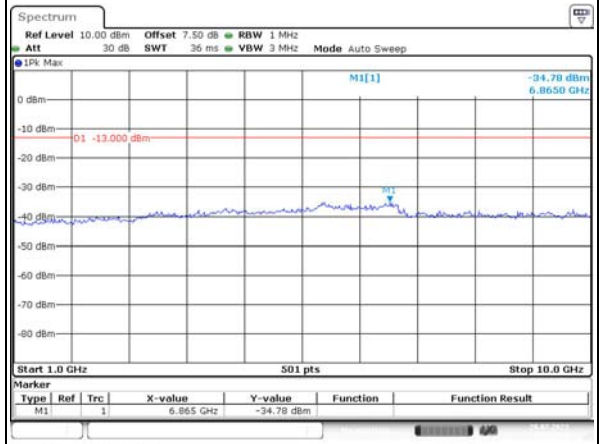
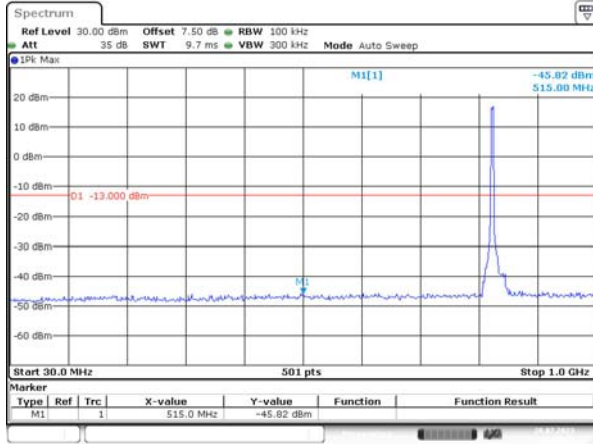


Spurious Emissions at Antenna Terminal

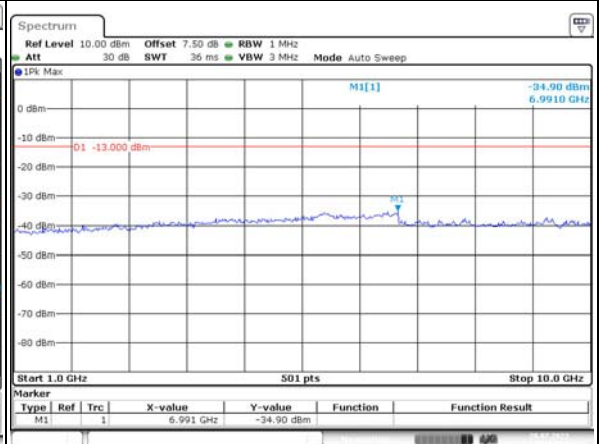
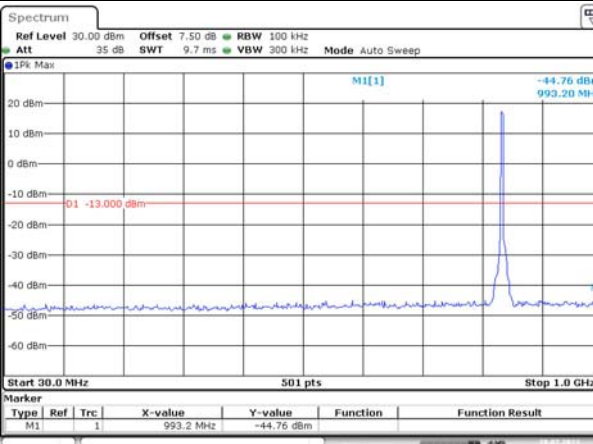
Channel

5MHz Bandwidth QPSK

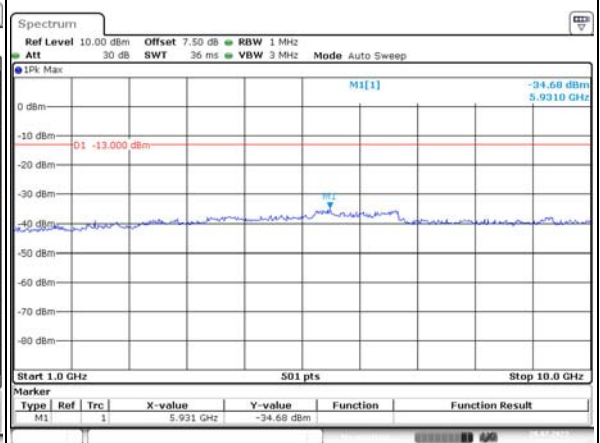
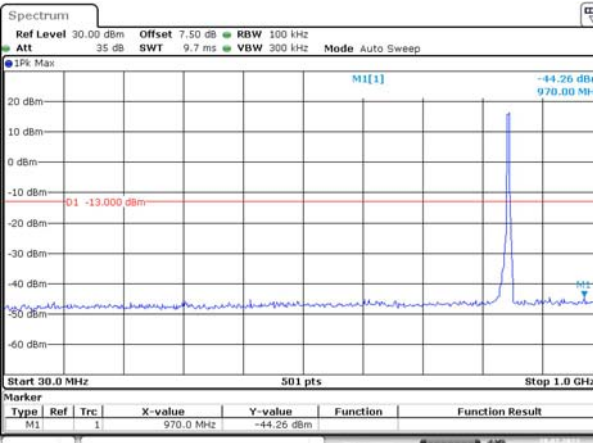
Lowest



Middle



Highest

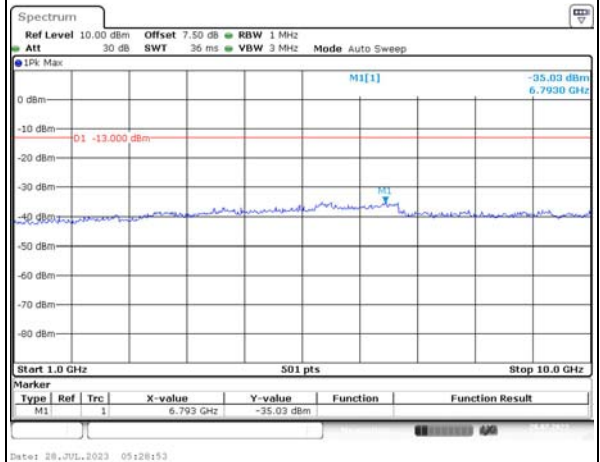
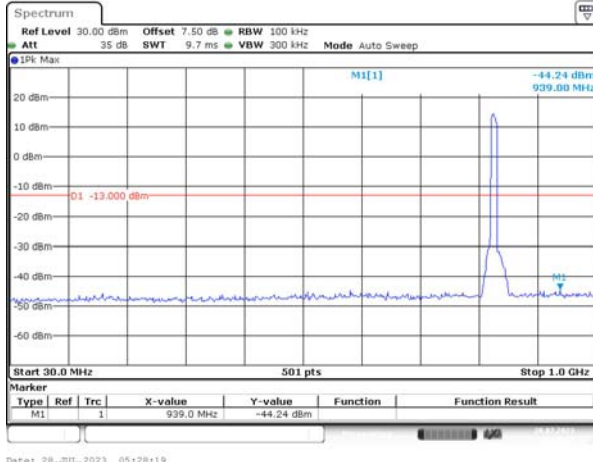


Spurious Emissions at Antenna Terminal

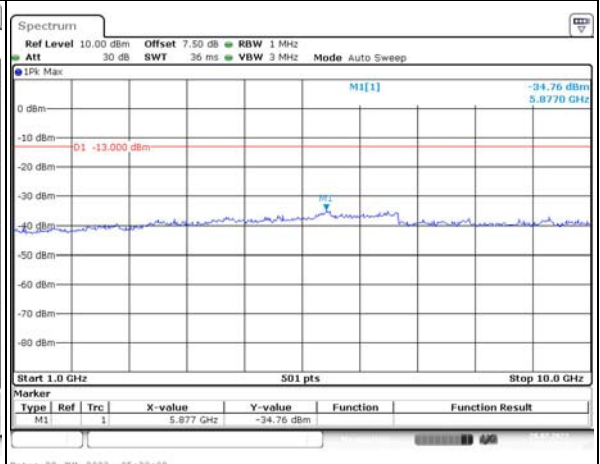
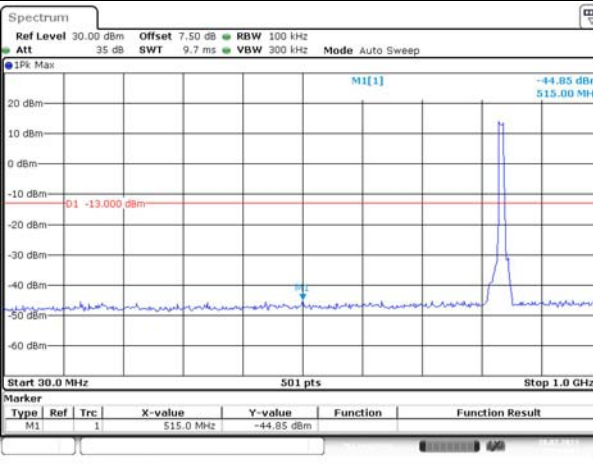
Channel

10MHz Bandwidth QPSK

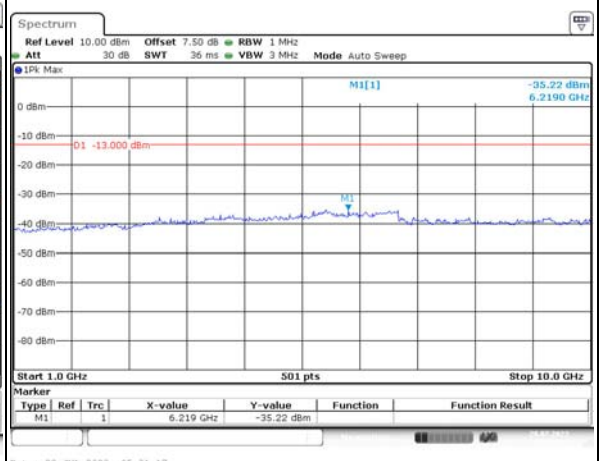
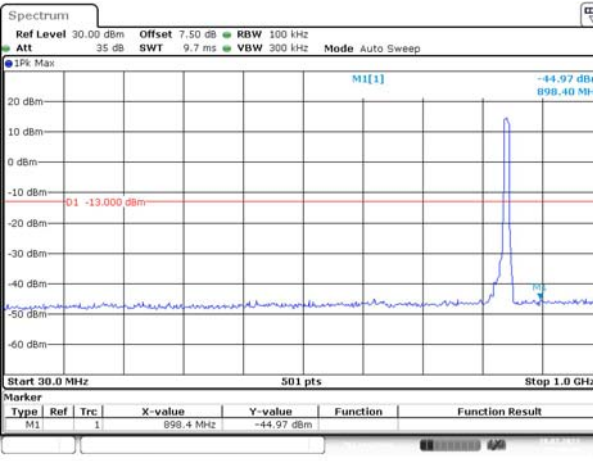
Lowest



Middle

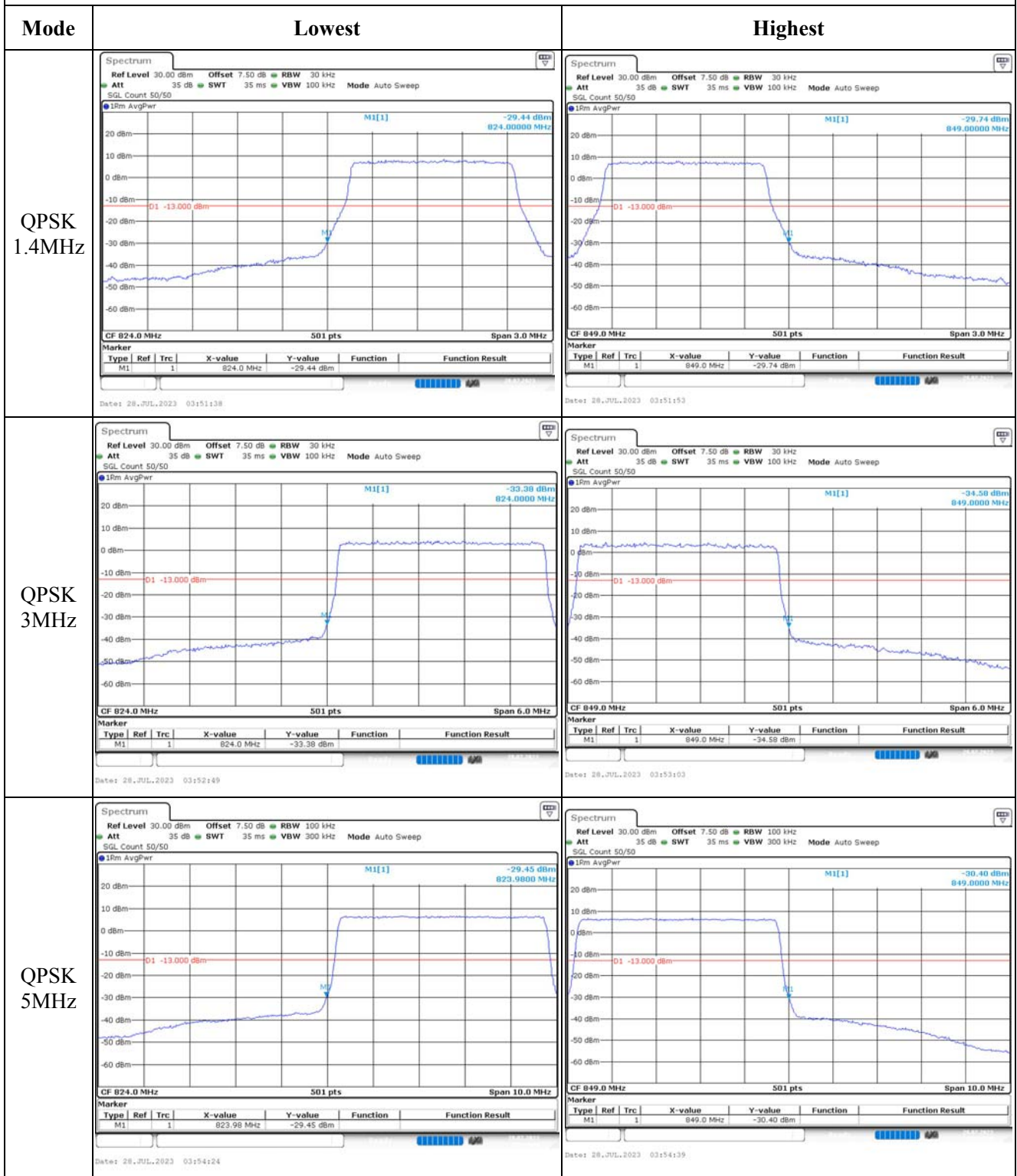


Highest

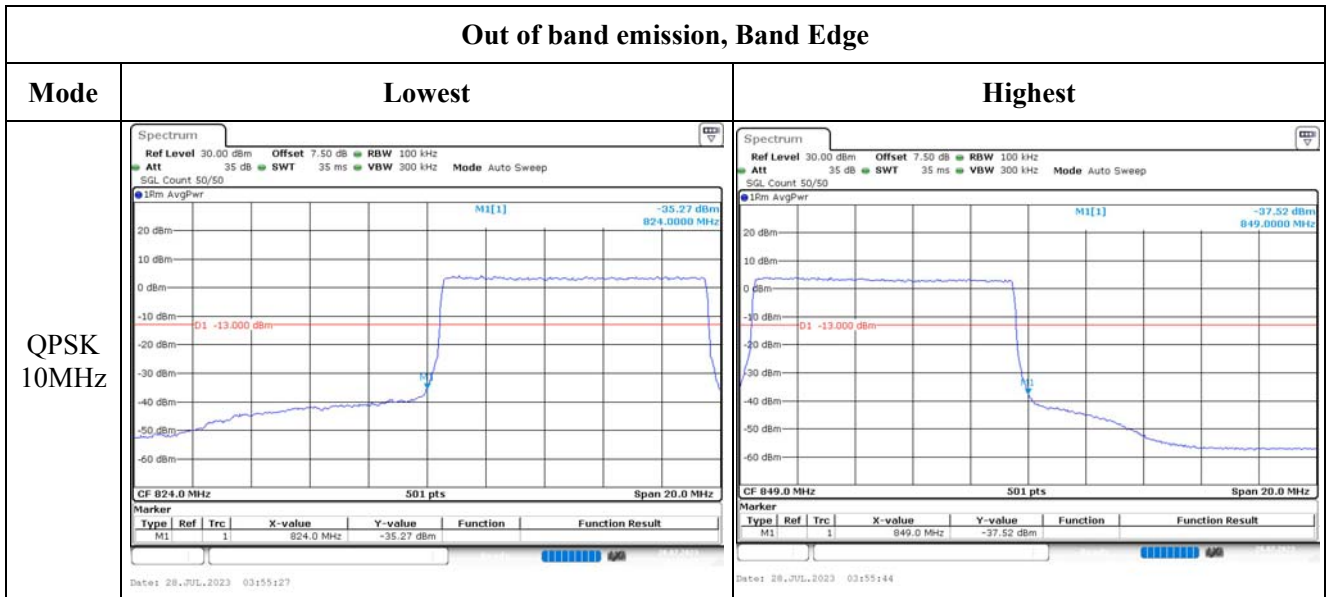




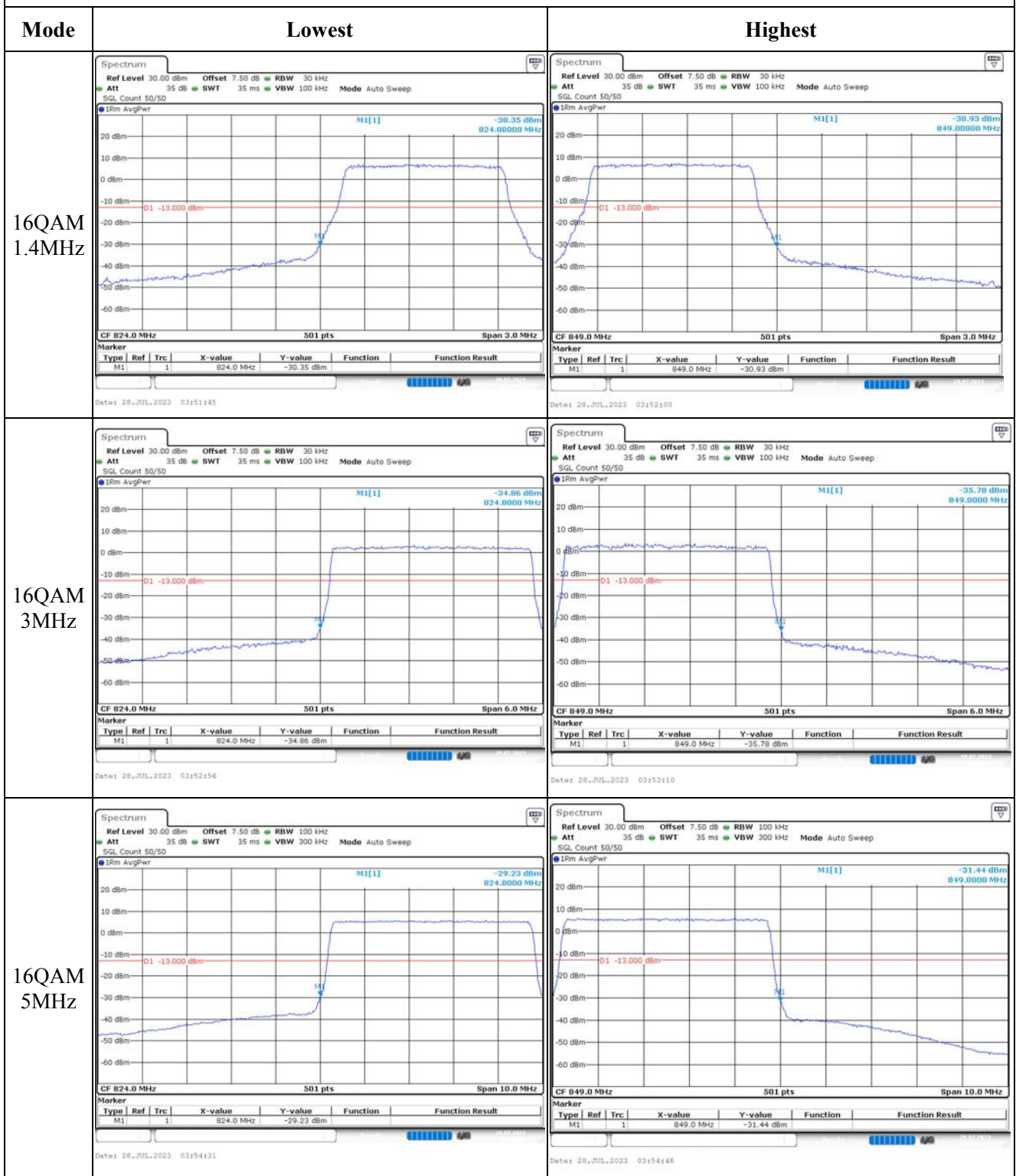
Out of band emission, Band Edge



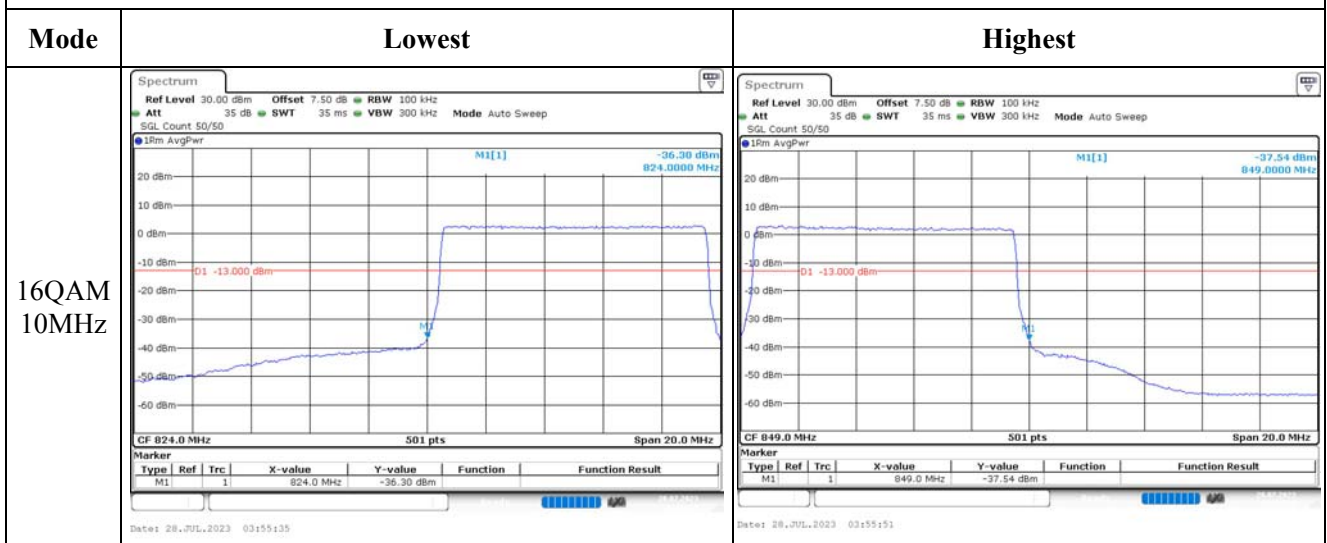
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



**4.9 Antenna Port Test Data and Results for LTE Band 12**

Serial Number:	28LK-1	Test Date:	2023/7/28~2023/8/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.2~26.8	Relative Humidity: (%)	42~55	ATM Pressure: (kPa)	99.7~100.3
----------------------	-----------	------------------------------	-------	------------------------	------------

**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	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
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
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	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	711

**Test Data:****FCC§2.1046;§ 27.50(c) (10)****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	22.55	22.46	22.49	22.21	34.77
	RB1#3	22.73	22.69	22.65		
	RB1#5	22.51	22.46	22.46		
	RB3#0	22.65	22.58	22.57		
	RB3#3	22.63	22.63	22.55		
	RB6#0	21.58	21.54	21.52		
1.4MHz 16QAM	RB1#0	21.62	21.49	21.46	21.24	34.77
	RB1#3	21.74	21.71	21.66		
	RB1#5	21.64	21.54	21.48		
	RB3#0	21.62	21.62	21.76		
	RB3#3	21.61	21.68	21.75		
	RB6#0	20.64	20.53	20.54		
3MHz QPSK	RB1#0	22.62	22.54	22.53	22.1	34.77
	RB1#8	22.62	22.54	22.5		
	RB1#14	22.57	22.55	22.48		
	RB6#0	21.56	21.52	21.47		
	RB6#9	21.56	21.48	21.53		
	RB15#0	21.57	21.57	21.52		
3MHz 16QAM	RB1#0	21.74	21.54	22.11	21.62	34.77
	RB1#8	21.72	21.53	22.1		
	RB1#14	21.71	21.55	22.14		
	RB6#0	20.52	20.44	20.57		
	RB6#9	20.58	20.48	20.57		
	RB15#0	20.54	20.61	20.59		
5MHz QPSK	RB1#0	22.56	22.44	22.43	22.1	34.77
	RB1#13	22.62	22.58	22.54		
	RB1#24	22.56	22.52	22.44		
	RB15#0	21.56	21.57	21.56		
	RB15#10	21.68	21.53	21.57		
	RB25#0	21.59	21.54	21.52		
5MHz 16QAM	RB1#0	21.44	21.77	21.49	21.33	34.77
	RB1#13	21.54	21.85	21.61		
	RB1#24	21.41	21.79	21.53		
	RB15#0	20.63	20.59	20.58		
	RB15#10	20.7	20.51	20.6		
	RB25#0	20.64	20.56	20.57		
10MHz QPSK	RB1#0	22.59	22.5	22.47	22.2	34.77
	RB1#25	22.72	22.7	22.67		
	RB1#49	22.63	22.55	22.53		

	RB25#0	21.46	21.45	21.66		
	RB25#25	21.6	21.53	21.58		
	RB50#0	21.59	21.54	21.61		
10MHz 16QAM	RB1#0	21.65	21.46	22.06	21.75	34.77
	RB1#25	21.87	21.7	22.27		
	RB1#49	21.73	21.61	22.17		
	RB25#0	20.46	20.58	20.73		
	RB25#25	20.66	20.67	20.68		
	RB50#0	20.59	20.59	20.68		

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	5.48	5.25	5.36	13
	RB50#0	5.36	5.28	5.39	13
10MHz 16QAM	RB1#0	6.49	5.86	6.23	13
	RB50#0	6.29	6.23	6.23	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	1.102	1.096	1.314	1.284	1.296
1.4MHz 16QAM	1.09	1.09	1.096	1.284	1.29	1.32
3MHz QPSK	2.695	2.683	2.683	2.88	2.892	2.88
3MHz 16QAM	2.683	2.683	2.683	2.88	2.868	2.892
5MHz QPSK	4.531	4.511	4.551	5.26	5.18	5.22
5MHz 16QAM	4.551	4.551	4.511	5.24	5.22	5.16
10MHz QPSK	8.942	8.982	8.942	9.92	9.96	9.84
10MHz 16QAM	8.942	8.942	8.982	9.88	9.8	9.84

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

**FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal**

<b>Result:</b>	<b>Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.</b>
----------------	--

**FCC §2.1051, §27.53:Out of band emission, Band Edge**

<b>Result:</b>	<b>Pass, Please refer to the test plots of Out of band emission, Band Edge.</b>
----------------	---

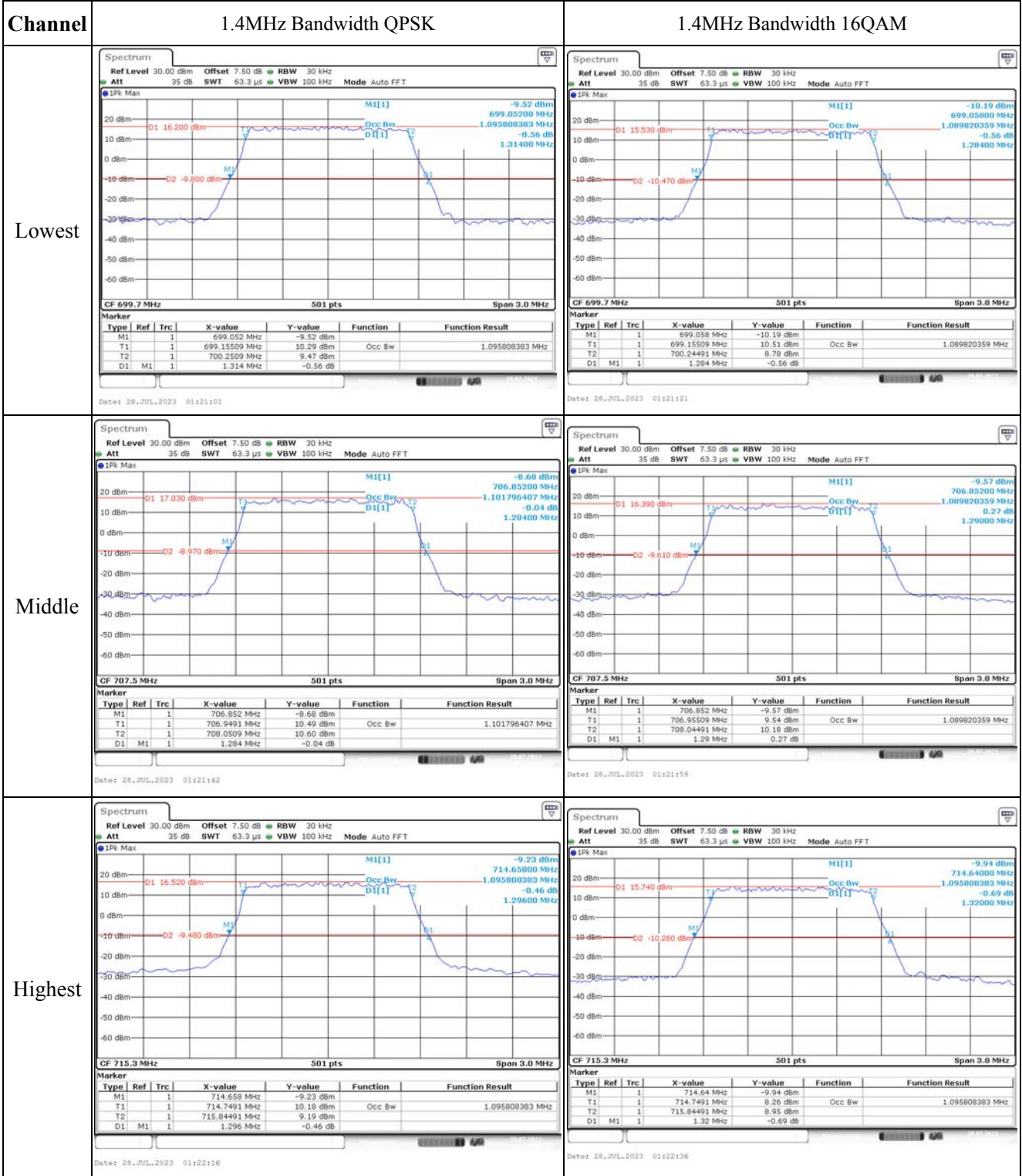
<b>FCC §2.1055, §27.54: Frequency Stability</b>						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.598	699.00	715.417	716.00
	-20	3.8	699.557	699.00	715.457	716.00
	-10	3.8	699.561	699.00	715.430	716.00
	0	3.8	699.536	699.00	715.496	716.00
	10	3.8	699.566	699.00	715.446	716.00
	20	3.8	699.529	699.00	715.471	716.00
	30	3.8	699.594	699.00	715.446	716.00
	40	3.8	699.571	699.00	715.496	716.00
	50	3.8	699.525	699.00	715.481	716.00
Frequency Stability vs. Voltage	20	3.65	699.584	699.00	715.404	716.00
	20	4.35	699.571	699.00	715.428	716.00
					<b>Result:</b>	<b>Pass</b>

<b>FCC §2.1055, §27.54: Frequency Stability</b>						
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.506	699.00	715.409	716.00
	-20	3.8	699.599	699.00	715.429	716.00
	-10	3.8	699.567	699.00	715.470	716.00
	0	3.8	699.524	699.00	715.401	716.00
	10	3.8	699.516	699.00	715.480	716.00
	20	3.8	699.529	699.00	715.471	716.00
	30	3.8	699.508	699.00	715.424	716.00
	40	3.8	699.598	699.00	715.432	716.00
	50	3.8	699.549	699.00	715.468	716.00
Frequency Stability vs. Voltage	20	3.65	699.554	699.00	715.448	716.00
	20	4.35	699.551	699.00	715.498	716.00
					<b>Result:</b>	<b>Pass</b>

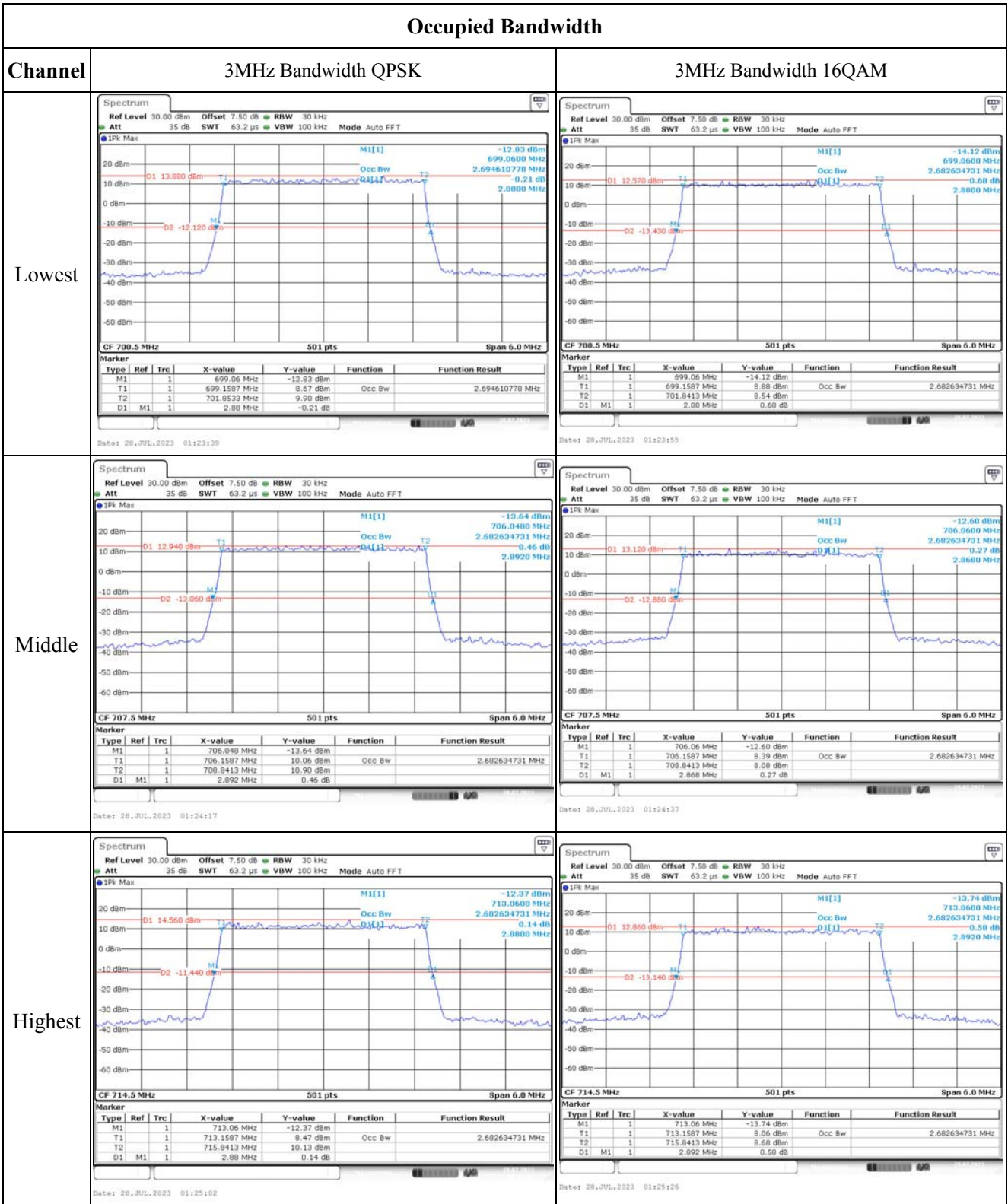


**Test Plots**(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

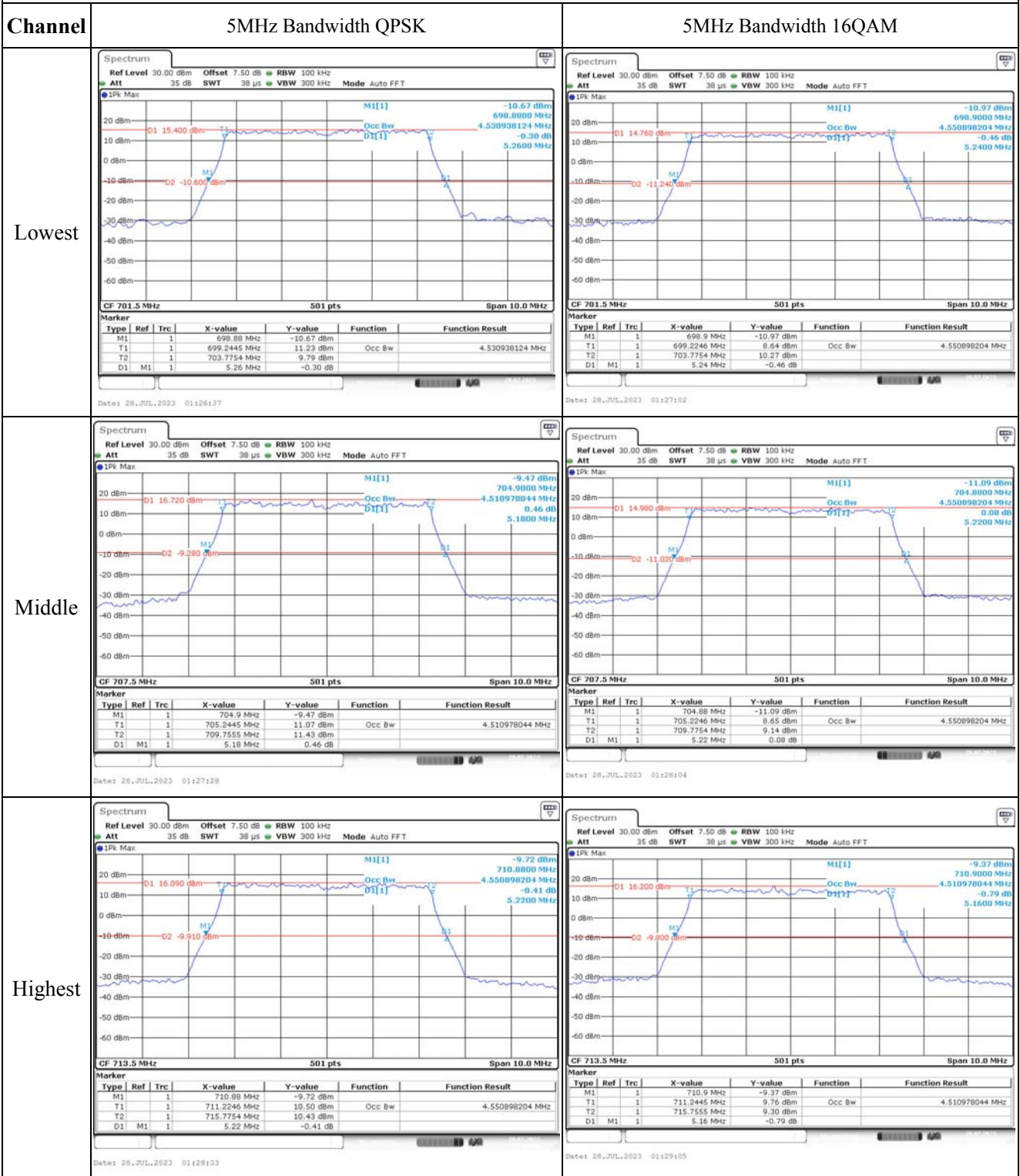
**Occupied Bandwidth**



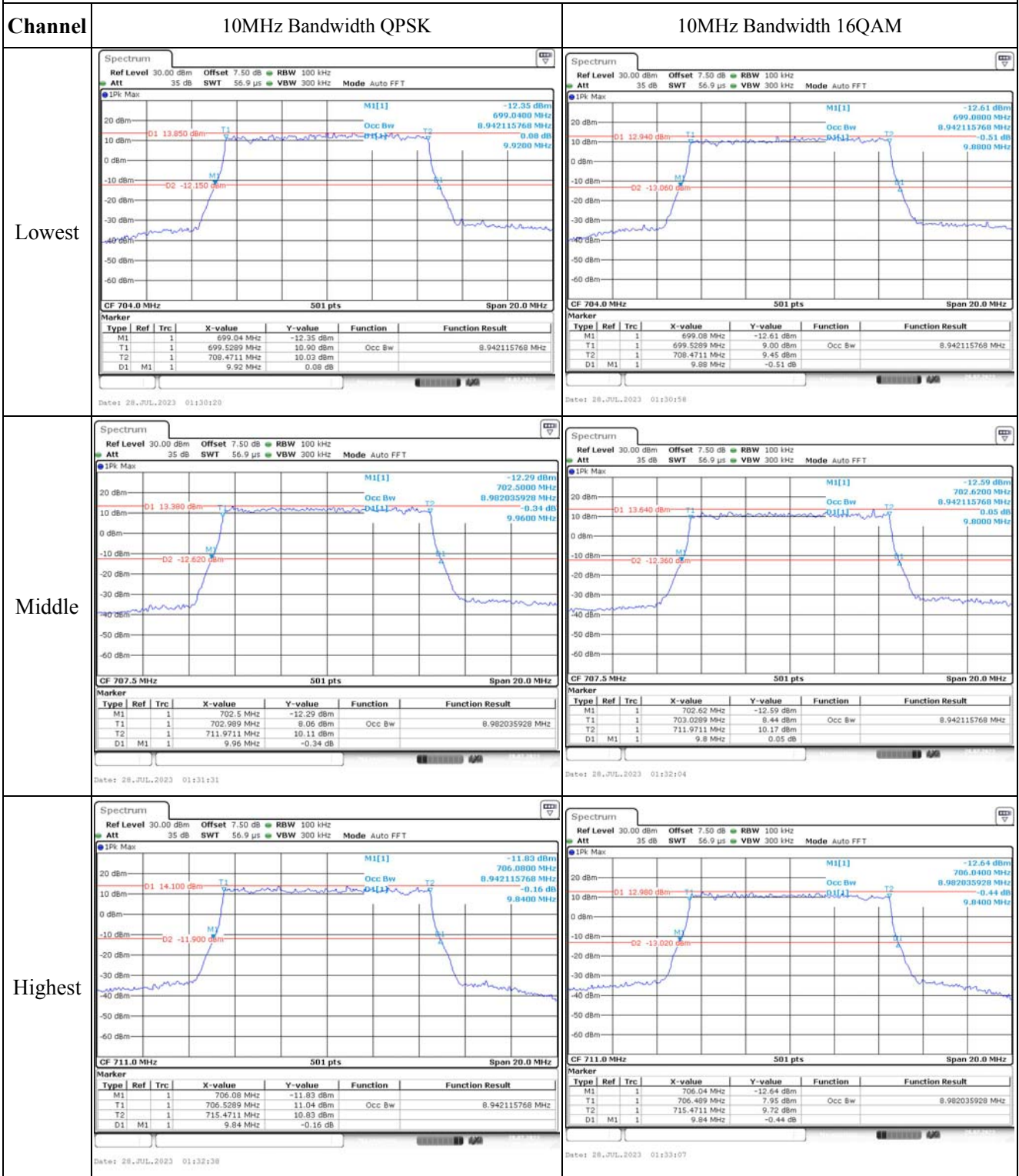
### Occupied Bandwidth



Occupied Bandwidth



Occupied Bandwidth

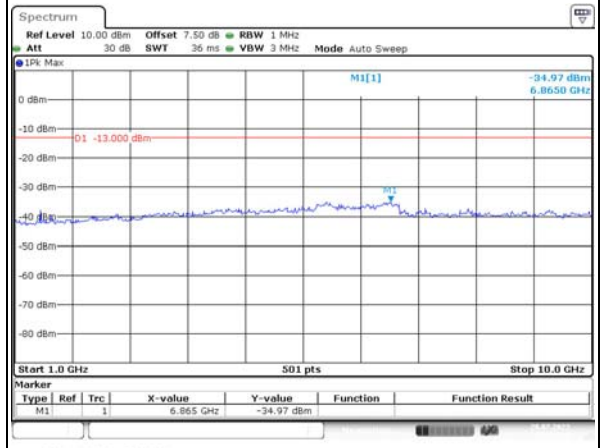
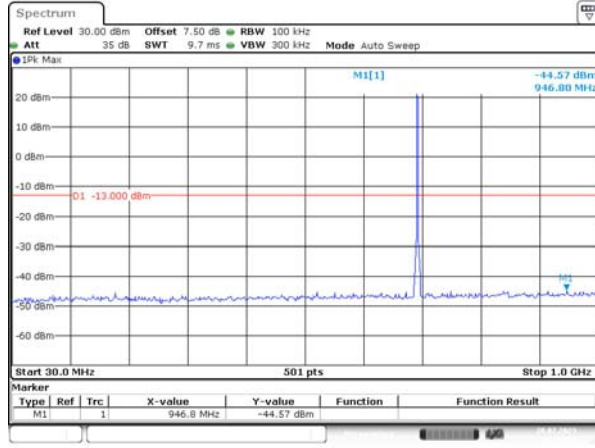


### Spurious Emissions at Antenna Terminal

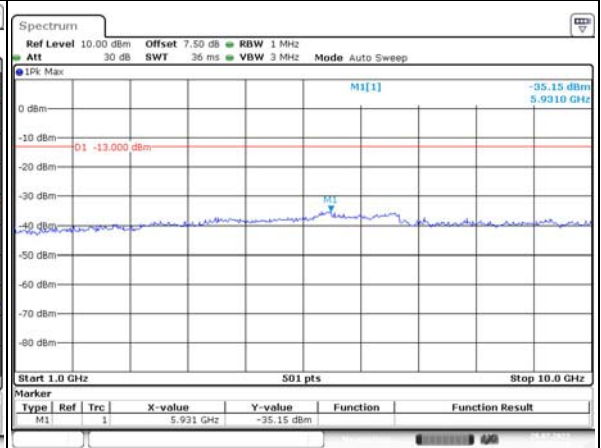
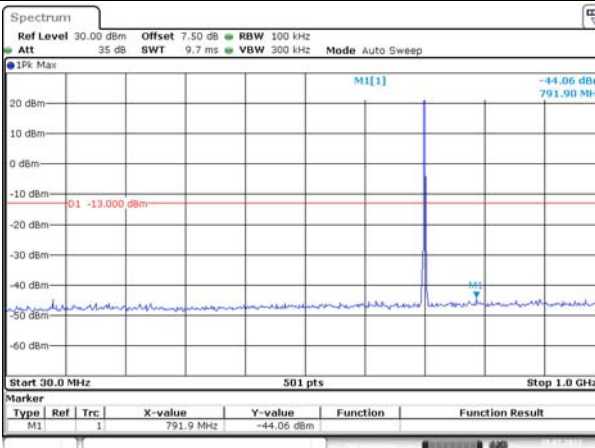
Channel

1.4MHz Bandwidth QPSK

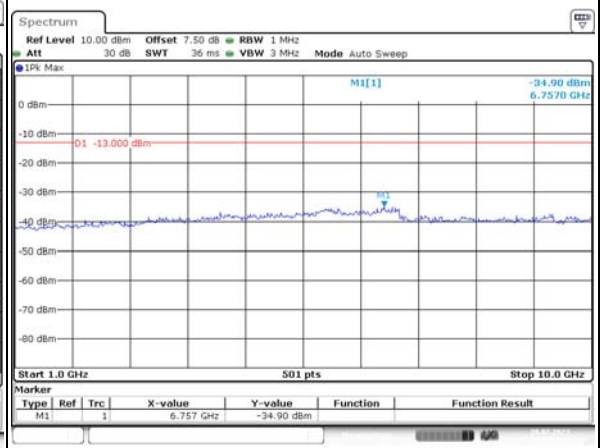
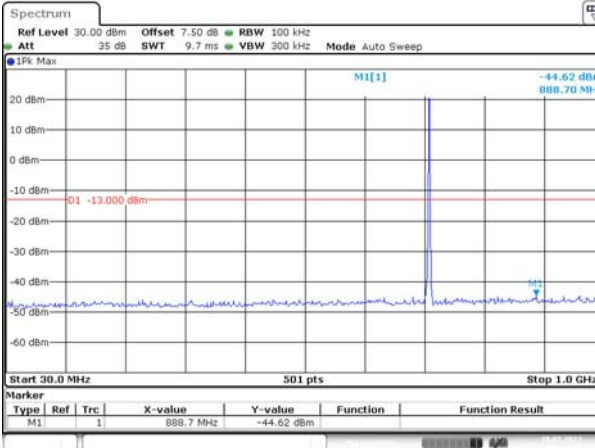
Lowest



Middle



Highest

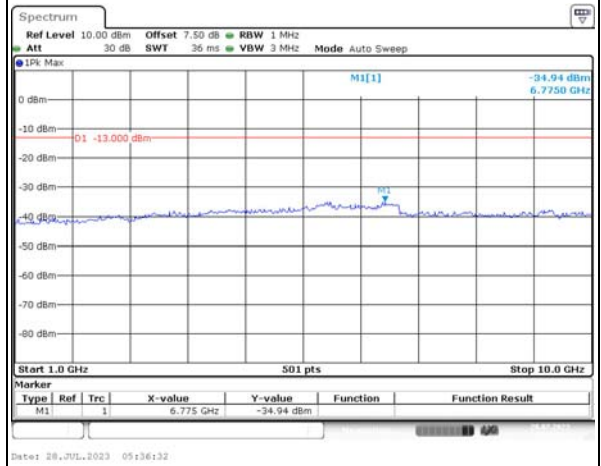
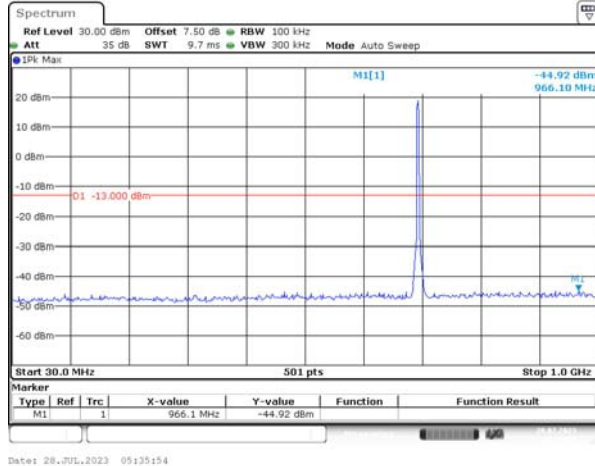


### Spurious Emissions at Antenna Terminal

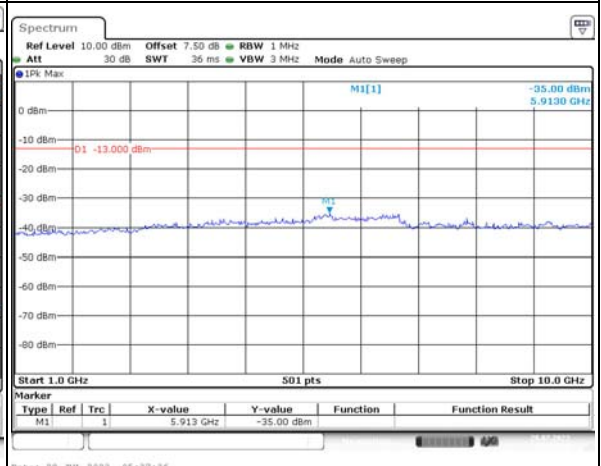
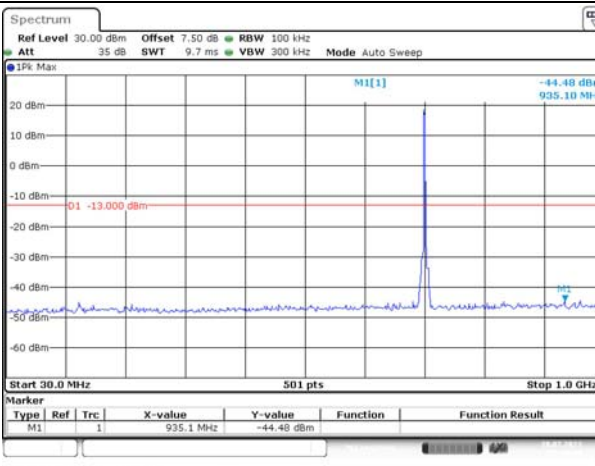
Channel

3MHz Bandwidth QPSK

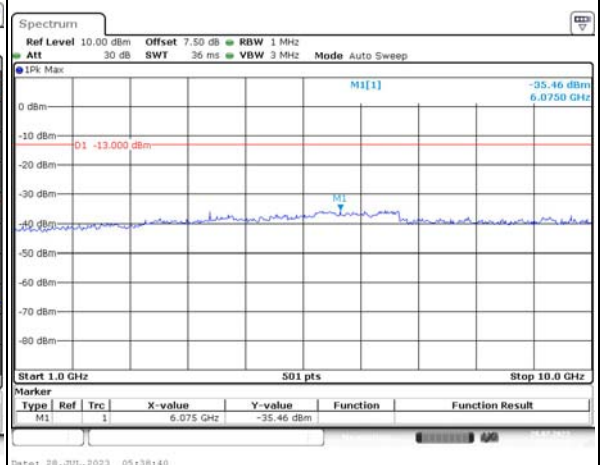
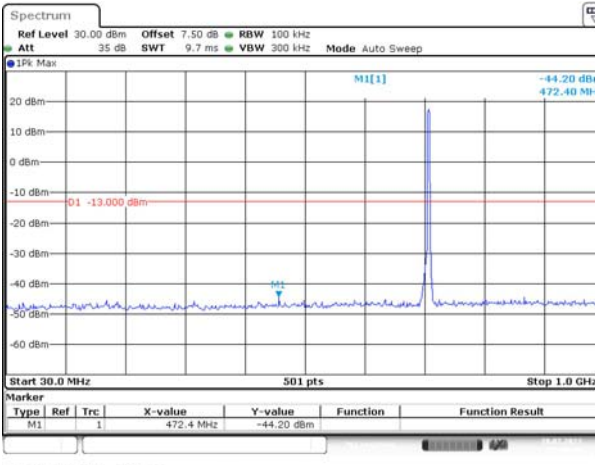
Lowest



Middle



Highest

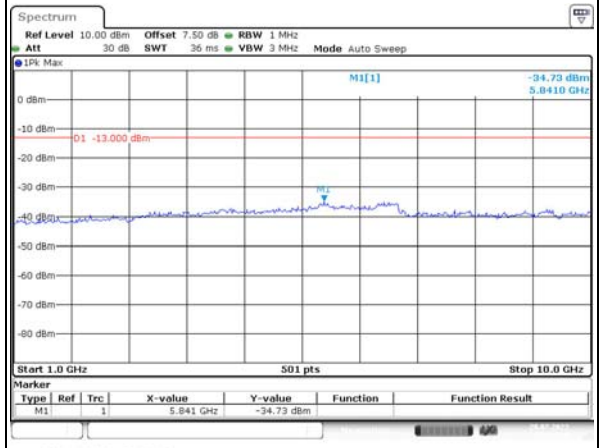
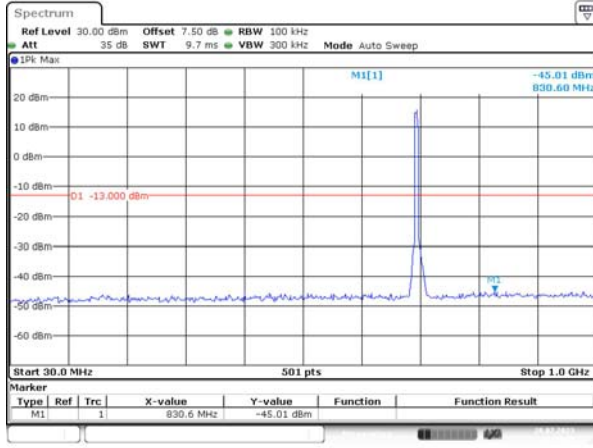


Spurious Emissions at Antenna Terminal

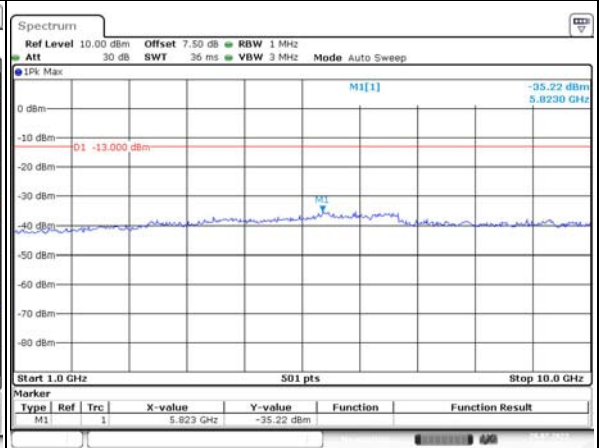
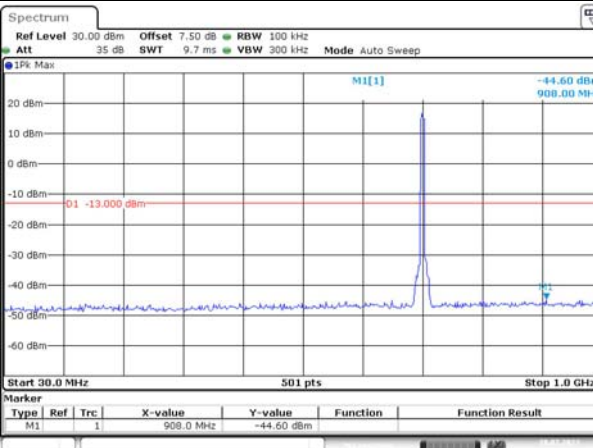
Channel

5MHz Bandwidth QPSK

Lowest



Middle



Highest

