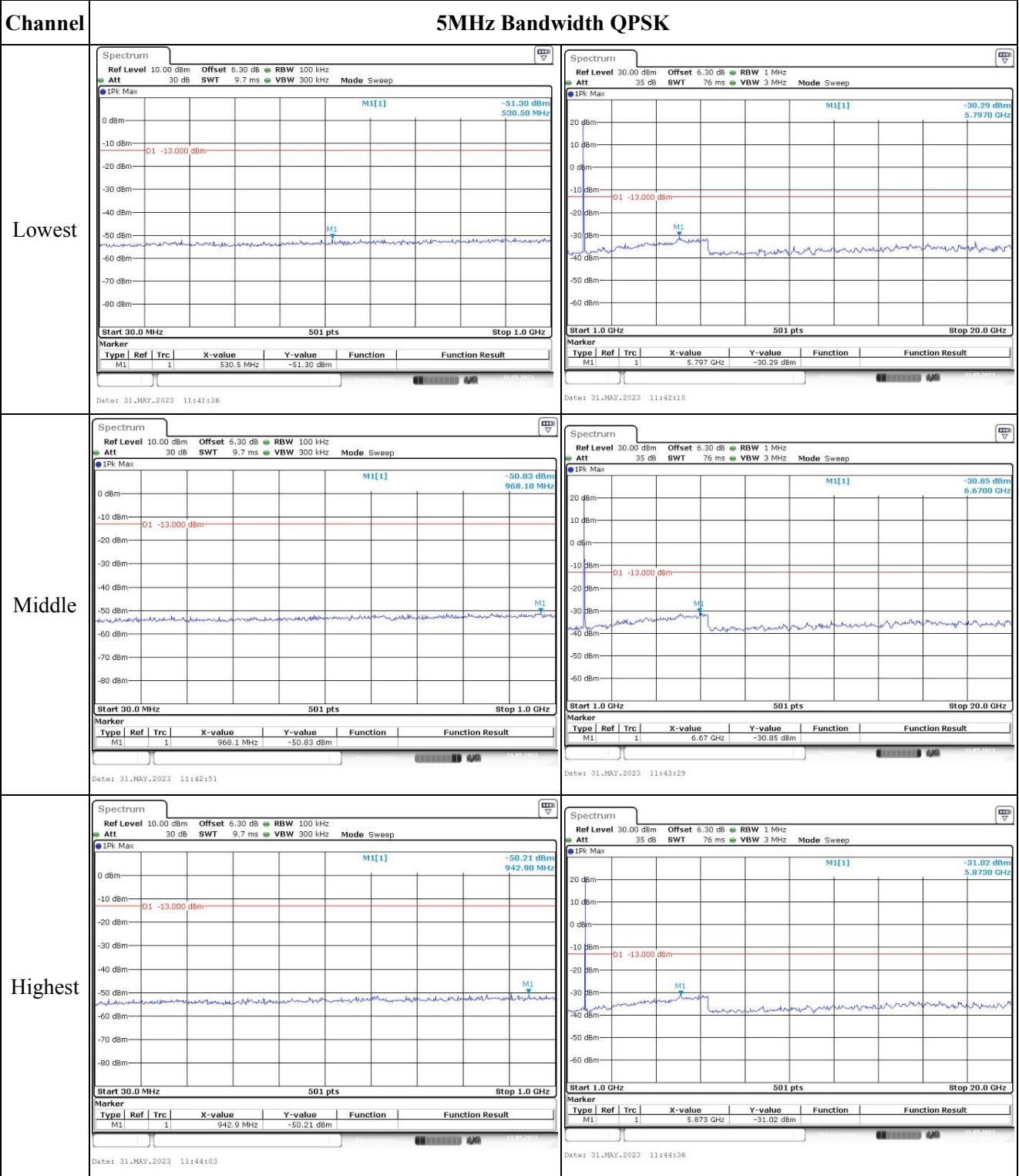
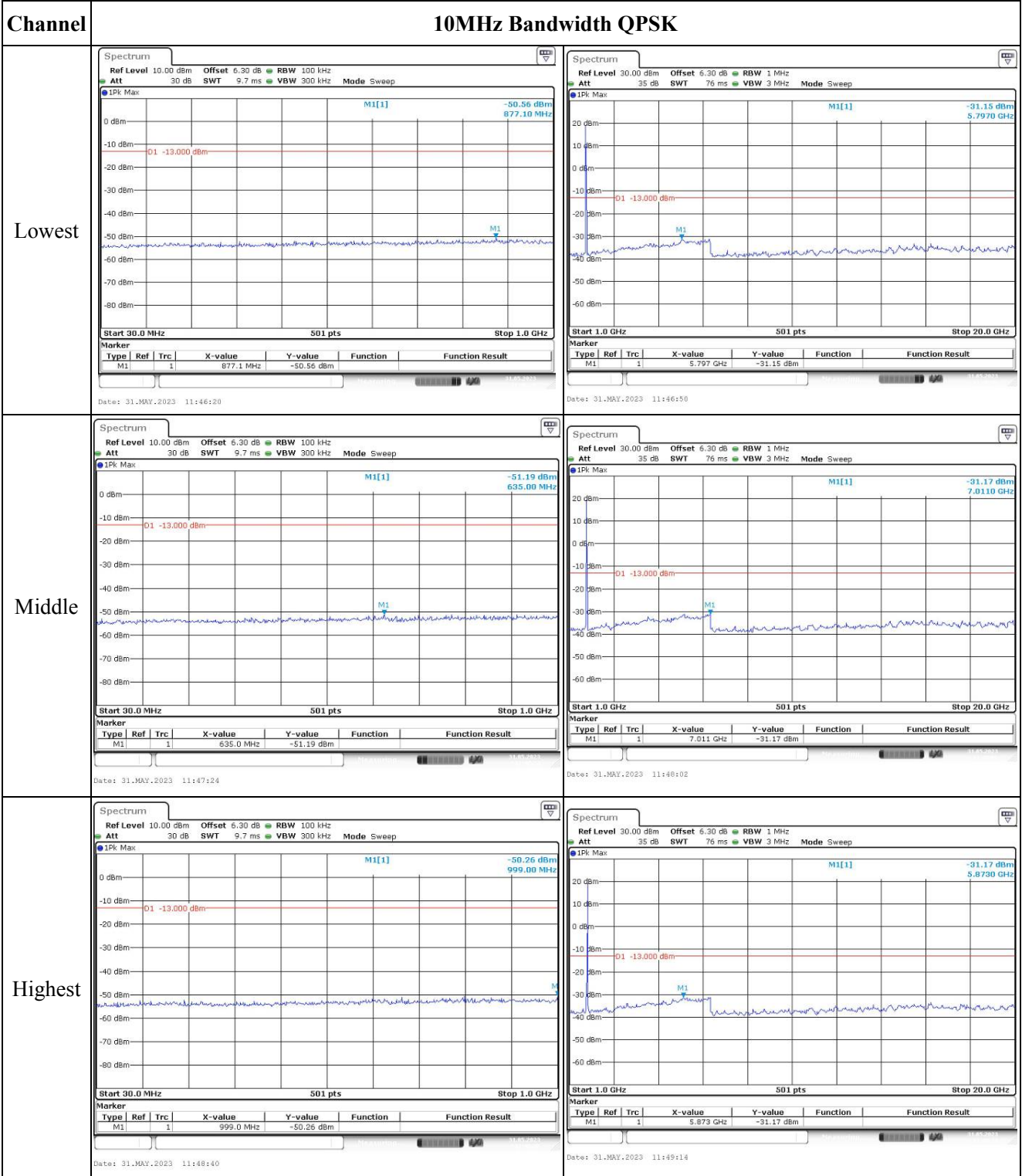


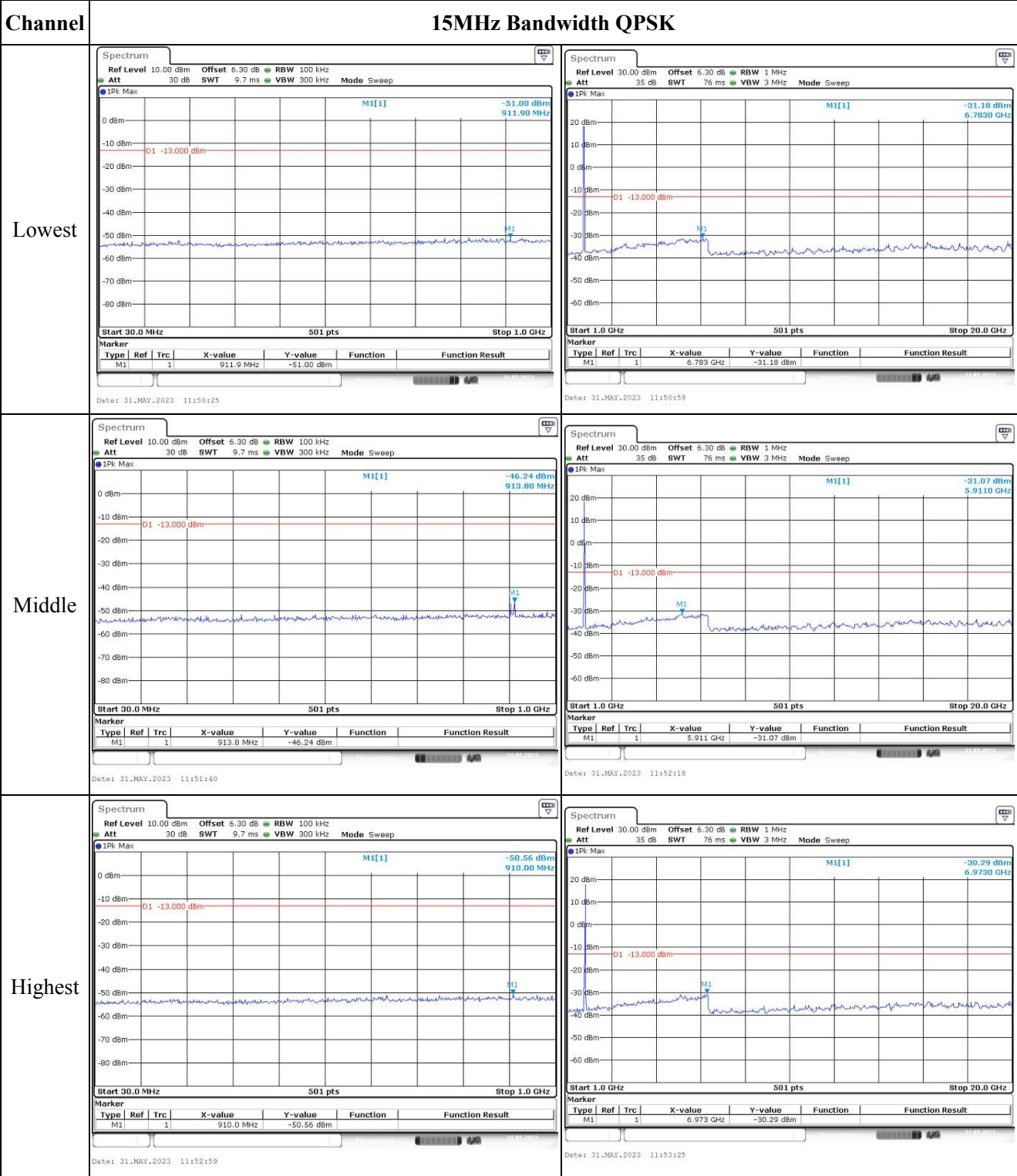
### Spurious Emissions at Antenna Terminal



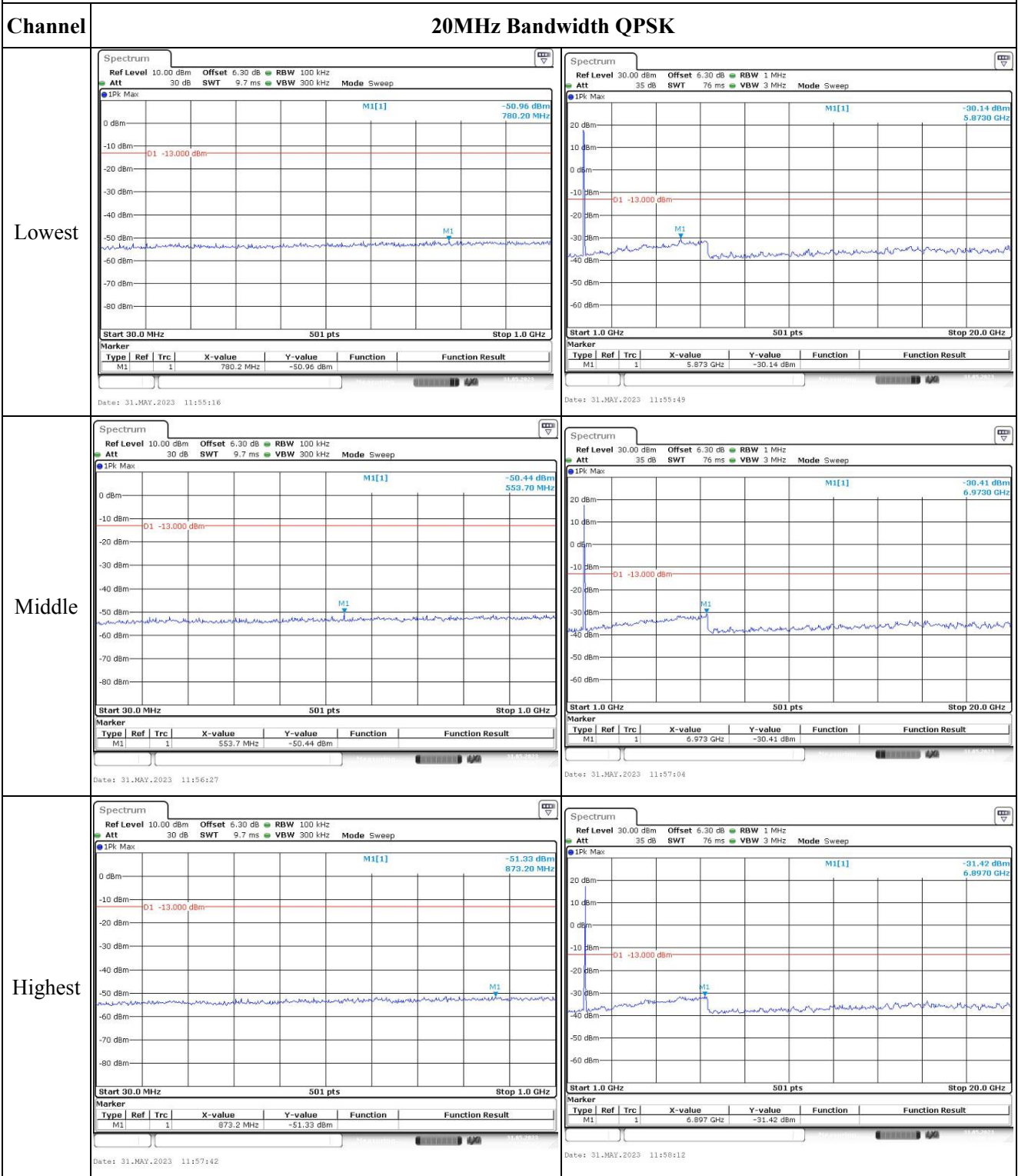
### Spurious Emissions at Antenna Terminal



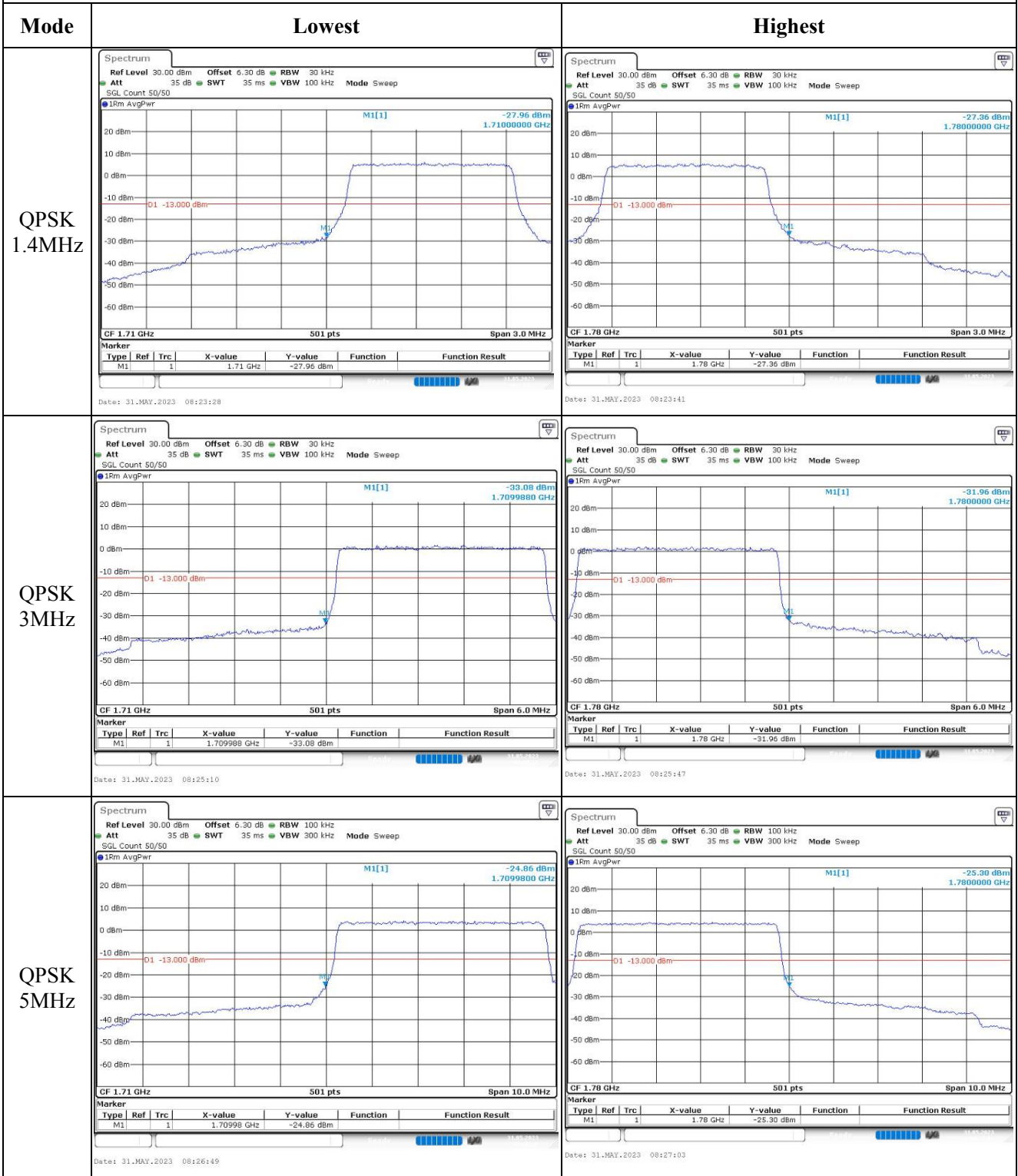
### Spurious Emissions at Antenna Terminal



### Spurious Emissions at Antenna Terminal

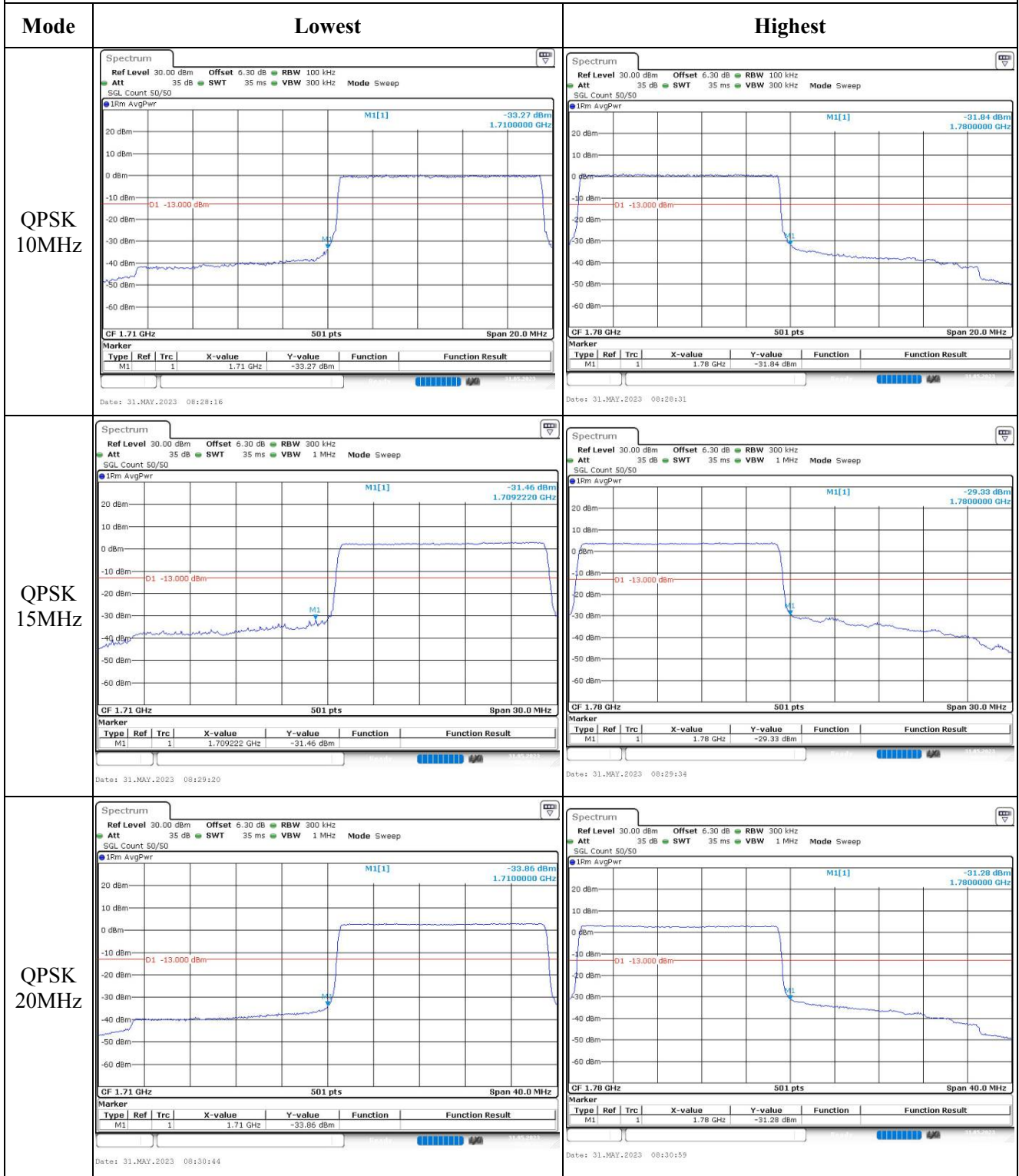


Out of band emission, Band Edge

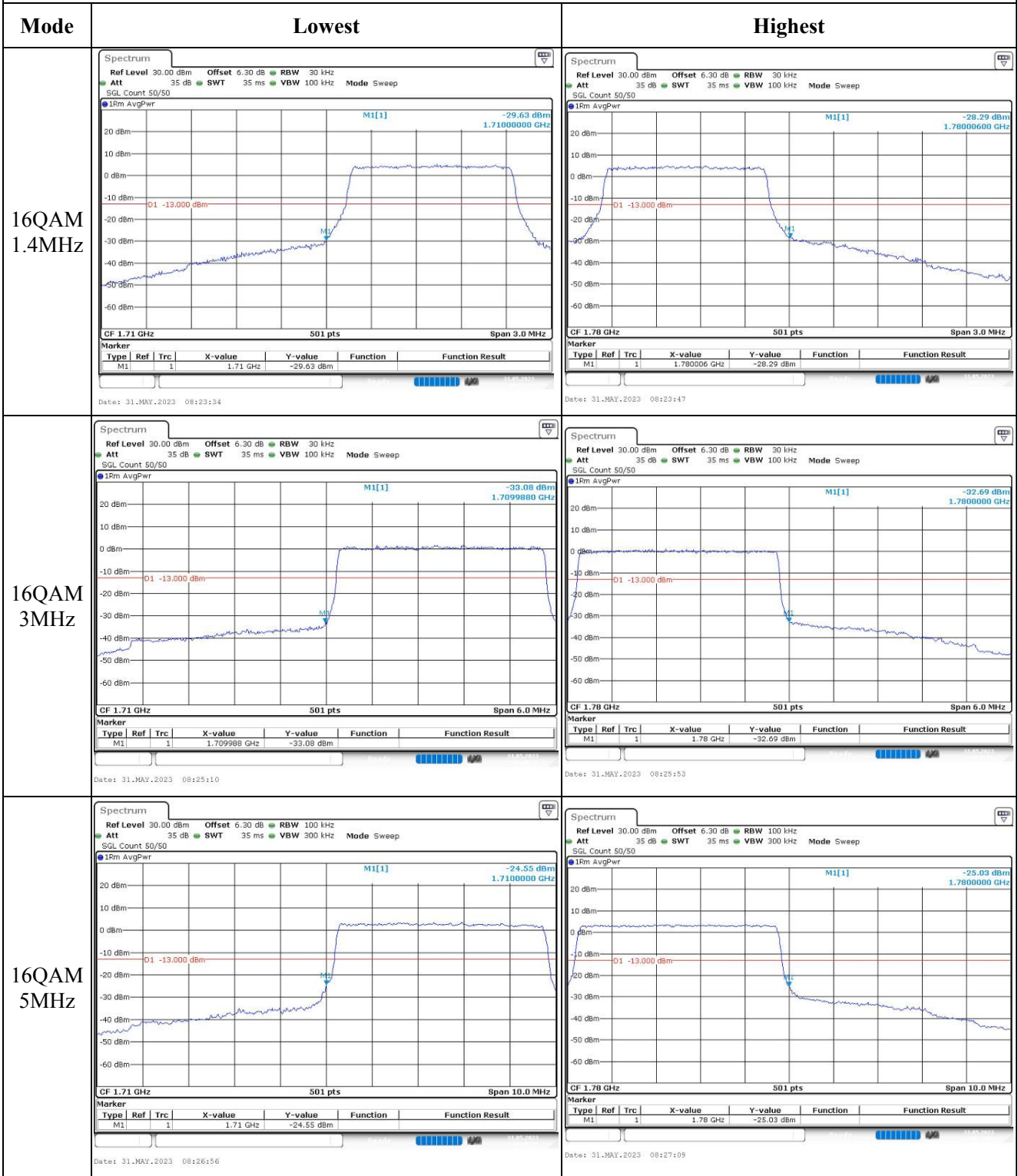




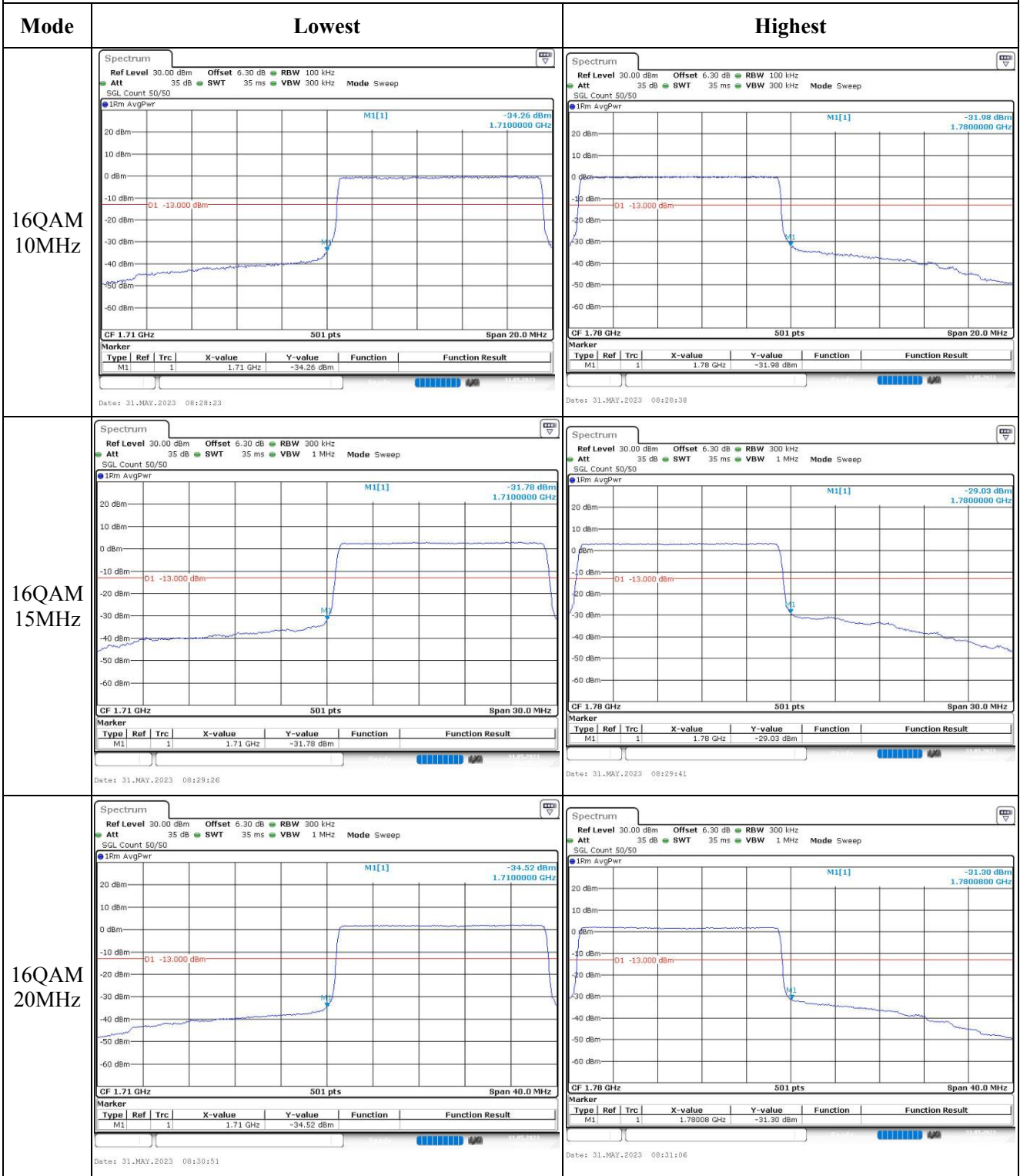
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge





**4.19 Antenna Port Test Data and Results for LTE Band 71**

Serial Number:	25K9-3	Test Date:	2023/6/1
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

**Environmental Conditions:**

Temperature:	26.3	Relative Humidity:	41	ATM Pressure:	99.8
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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	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
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	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)
5MHz	665.5	680.5	695.5
10MHz	668	680.5	693
15MHz	670.5	680.5	690.5
20MHz	673	680.5	688

**Test Data:**

<b>RF Output Power:</b>						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	23.32	23.06	22.85	15.86	34.77
	RB1#13	23.34	23.21	23.02		
	RB1#24	23.23	23.04	22.92		
	RB15#0	22.23	22.15	21.97		
	RB15#10	22.31	22.1	21.97		
	RB25#0	22.26	22.06	21.94		
5MHz 16QAM	RB1#0	22.51	21.93	21.73	15.14	34.77
	RB1#13	22.62	22.03	21.88		
	RB1#24	22.52	21.91	21.8		
	RB15#0	21.26	21.2	21.06		
	RB15#10	21.35	21.21	21.03		
	RB25#0	21.35	21.18	21.05		
10MHz QPSK	RB1#0	23.25	23.08	22.92	15.93	34.77
	RB1#25	23.41	23.32	23.1		
	RB1#49	23.21	23.03	22.99		
	RB25#0	22.24	22.24	21.99		
	RB25#25	22.35	22.18	22		
	RB50#0	22.28	22.19	22.01		
10MHz 16QAM	RB1#0	22.86	22.63	22.49	15.49	34.77
	RB1#25	22.97	22.88	22.66		
	RB1#49	22.8	22.67	22.55		
	RB25#0	21.31	21.29	21.06		
	RB25#25	21.45	21.27	21.12		
	RB50#0	21.32	21.24	21.08		
15MHz QPSK	RB1#0	23.22	23.04	22.88	15.82	34.77
	RB1#38	23.3	23.15	23.03		
	RB1#74	23.2	23.04	23.01		
	RB36#0	22.24	22.24	22.04		
	RB36#39	22.29	22.25	22.1		
	RB75#0	22.25	22.23	22.04		
15MHz 16QAM	RB1#0	22.76	22.64	22.49	15.43	34.77
	RB1#38	22.91	22.67	22.58		
	RB1#74	22.77	22.62	22.58		
	RB36#0	21.27	21.24	21.07		
	RB36#39	21.28	21.24	21.13		
	RB75#0	21.3	21.25	21.08		

20MHz QPSK	RB1#0	23.03	22.89	22.83	15.98	34.77
	RB1#50	23.46	23.32	23.22		
	RB1#99	23.01	22.92	22.9		
	RB50#0	22.13	22.26	22.02		
	RB50#50	22.12	22.27	22.14		
	RB100#0	22.13	22.23	22.08		
20MHz 16QAM	RB1#0	22.25	22.16	22.11	15.09	34.77
	RB1#50	22.57	22.55	22.45		
	RB1#99	22.17	22.15	22.17		
	RB50#0	21.18	21.28	21.07		
	RB50#50	21.15	21.27	21.14		
	RB100#0	21.17	21.31	21.1		

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	
20MHz QPSK	RB1#0	5.13	5.45	5.19	13
	RB100#0	5.28	8.43	5.22	13
20MHz 16QAM	RB1#0	6	6.32	6.03	13
	RB100#0	6.14	6.17	6.06	13

**Result:****Pass****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
5MHz QPSK	4.551	4.531	4.531	5.64	5.2	5.18
5MHz 16QAM	4.531	4.511	4.511	5.2	5.16	5.16
10MHz QPSK	8.982	8.982	8.942	10	10.04	9.96
10MHz 16QAM	8.982	8.982	8.942	10.04	9.88	9.88
15MHz QPSK	13.473	13.533	13.533	15.3	15.36	15.18
15MHz 16QAM	13.473	13.533	13.533	15.06	15.24	15.12
20MHz QPSK	17.964	17.964	17.964	20.32	19.68	19.6
20MHz 16QAM	17.964	18.044	17.964	20.08	19.92	19.76

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

**Spurious Emissions at Antenna Terminal**

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

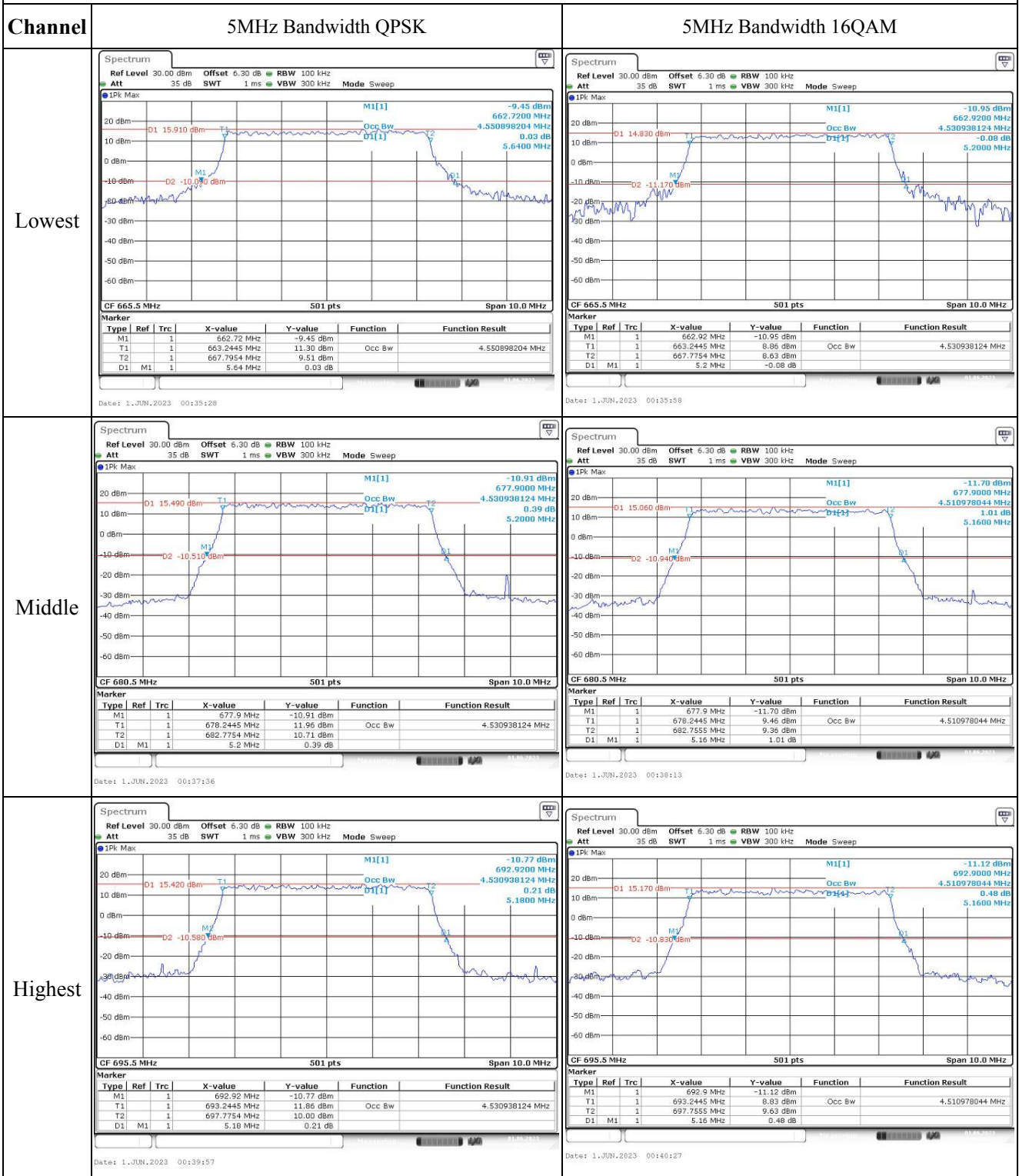
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	664.039	663.00	697.084	698.00
	-20	3.87	664.069	663.00	697.078	698.00
	-10	3.87	664.031	663.00	697.055	698.00
	0	3.87	664.029	663.00	697.073	698.00
	10	3.87	664.081	663.00	697.043	698.00
	20	3.87	664.058	663.00	697.022	698.00
	30	3.87	664.027	663.00	697.041	698.00
	40	3.87	664.065	663.00	697.080	698.00
	50	3.87	664.034	663.00	697.066	698.00
Frequency Stability vs. Voltage	20	3.47	664.075	663.00	697.063	698.00
	20	4.45	664.090	663.00	697.100	698.00
					<b>Result:</b>	<b>Pass</b>

Test Mode:	20M 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	3.87	664.065	663.00	697.040	698.00
	-20	3.87	664.096	663.00	697.024	698.00
	-10	3.87	664.035	663.00	697.066	698.00
	0	3.87	664.038	663.00	697.038	698.00
	10	3.87	664.067	663.00	697.085	698.00
	20	3.87	664.058	663.00	697.022	698.00
	30	3.87	664.057	663.00	697.043	698.00
	40	3.87	664.088	663.00	697.024	698.00
	50	3.87	664.005	663.00	697.076	698.00
Frequency Stability vs. Voltage	20	3.47	664.040	663.00	697.041	698.00
	20	4.45	664.023	663.00	697.037	698.00
					<b>Result:</b>	<b>Pass</b>

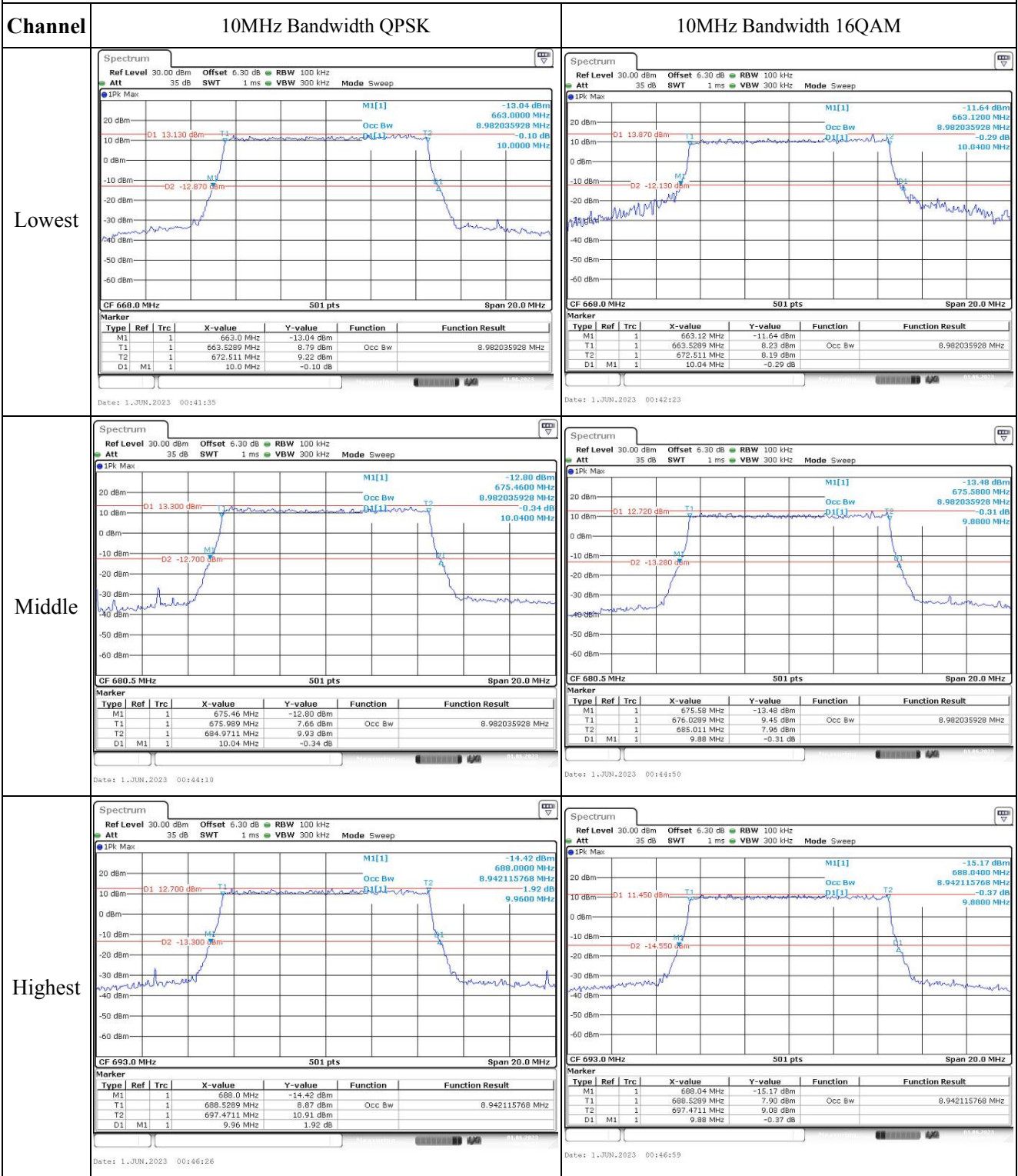


**Test Plots**(Note: The 6.3dB is the Insertion loss of the RF cable, Coaxial tee connector and DC Block, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**



### Occupied Bandwidth

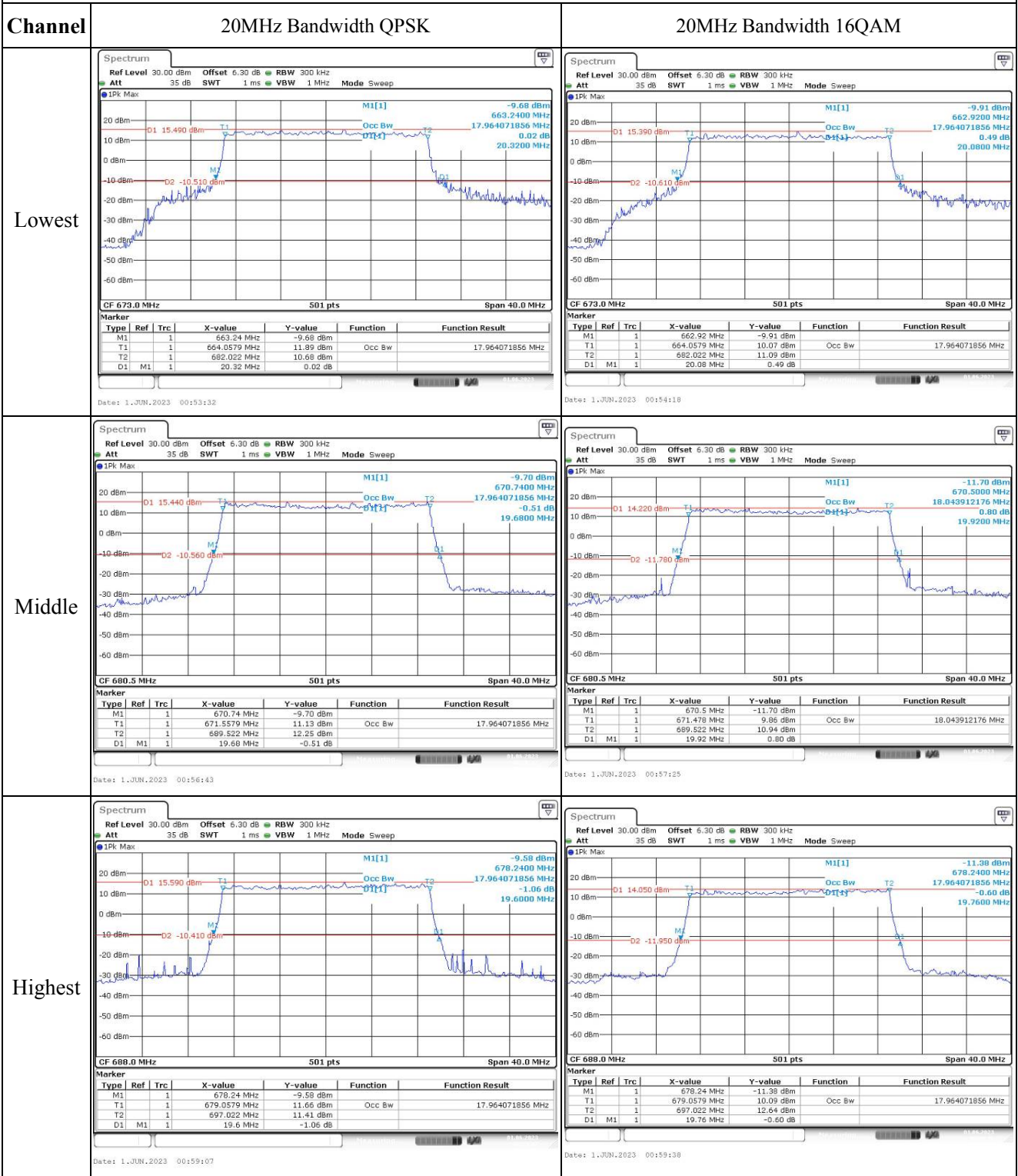


Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM																																																																																
Lowest	<p>CF 670.5 MHz 501 pts Span 30.0 MHz</p> <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>662.8800 MHz</td> <td>-10.28 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>663.7934 MHz</td> <td>11.21 dBm</td> <td>Occ Bw</td> <td>13.473053892 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>677.2665 MHz</td> <td>10.97 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>15.3 MHz</td> <td>-0.31 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 1.JUN.2023 00:47:55</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			662.8800 MHz	-10.28 dBm			T1	1			663.7934 MHz	11.21 dBm	Occ Bw	13.473053892 MHz	T2	1			677.2665 MHz	10.97 dBm			D1	M1	1		15.3 MHz	-0.31 dB			<p>CF 670.5 MHz 501 pts Span 30.0 MHz</p> <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>663.0 MHz</td> <td>-10.86 dBm</td> <td></td> <td></td> </tr> <tr> <td>T1</td> <td>1</td> <td></td> <td></td> <td>663.7934 MHz</td> <td>10.95 dBm</td> <td>Occ Bw</td> <td>13.473053892 MHz</td> </tr> <tr> <td>T2</td> <td>1</td> <td></td> <td></td> <td>677.2665 MHz</td> <td>12.13 dBm</td> <td></td> <td></td> </tr> <tr> <td>D1</td> <td>M1</td> <td>1</td> <td></td> <td>15.06 MHz</td> <td>0.54 dB</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 1.JUN.2023 00:48:22</p>	Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1			663.0 MHz	-10.86 dBm			T1	1			663.7934 MHz	10.95 dBm	Occ Bw	13.473053892 MHz	T2	1			677.2665 MHz	12.13 dBm			D1	M1	1		15.06 MHz	0.54 dB		
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M1	1			683.0 MHz	-10.68 dBm																																																																													
T1	1			683.7934 MHz	10.97 dBm	Occ Bw	13.532934132 MHz																																																																											
T2	1			697.3263 MHz	10.02 dBm																																																																													
D1	M1	1		15.12 MHz	-0.29 dB																																																																													



Occupied Bandwidth



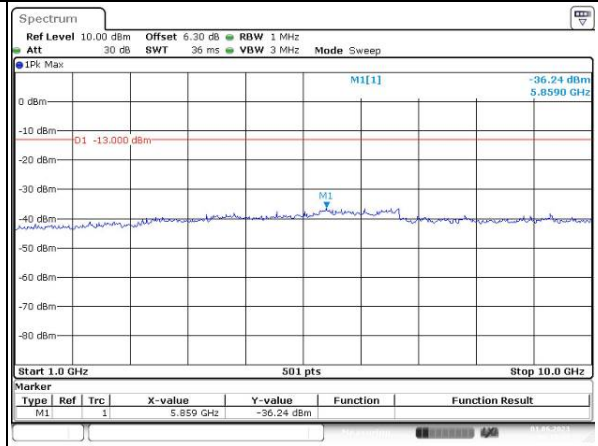
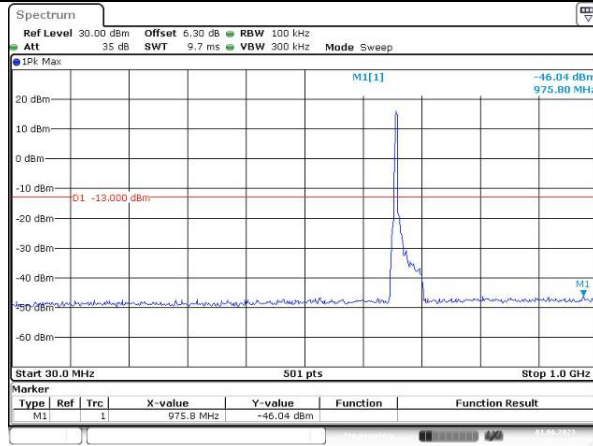


### Spurious Emissions at Antenna Terminal

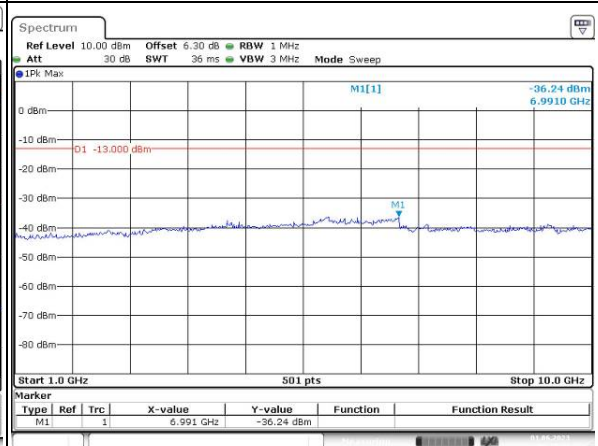
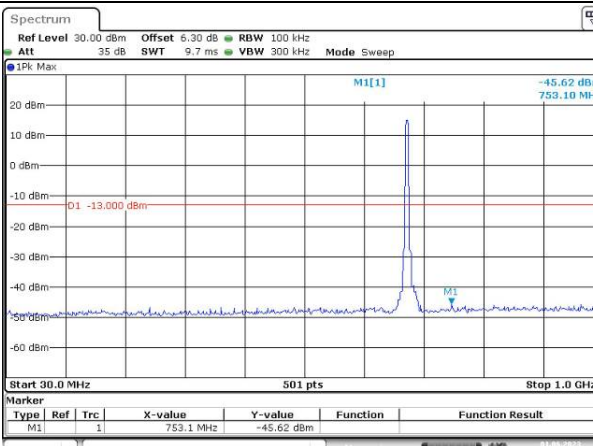
Channel

5MHz Bandwidth QPSK

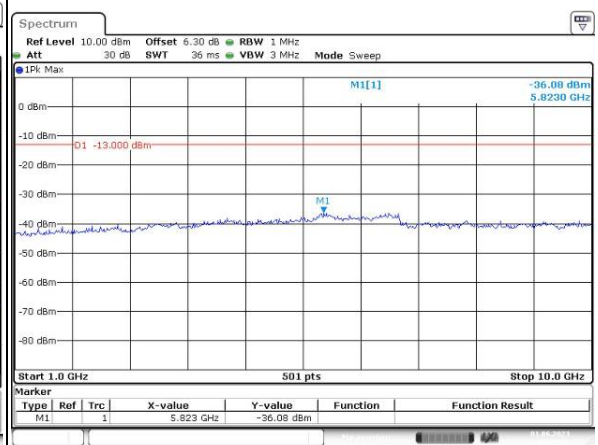
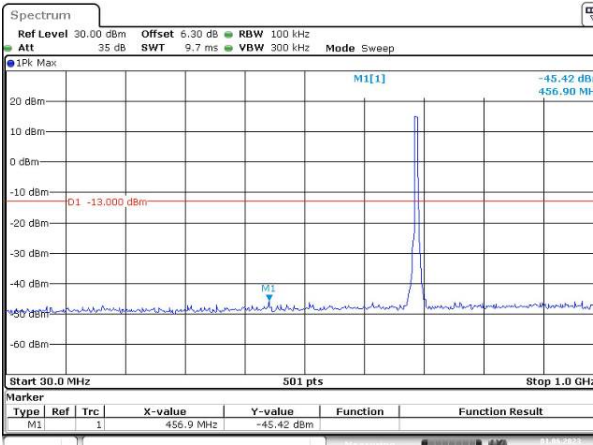
Lowest



Middle



Highest

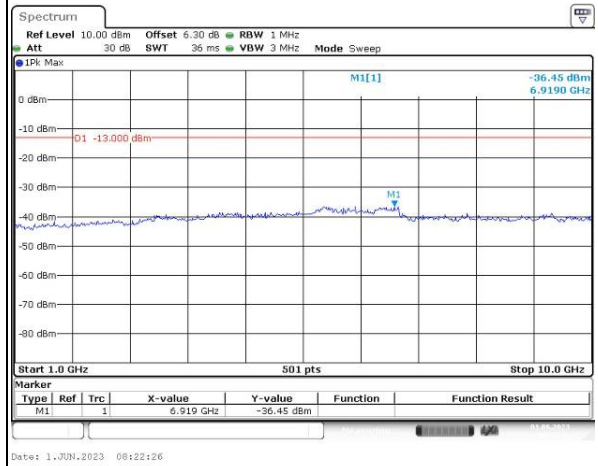
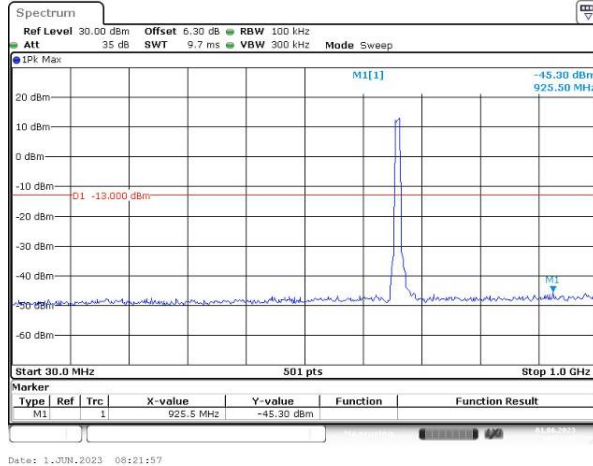


### Spurious Emissions at Antenna Terminal

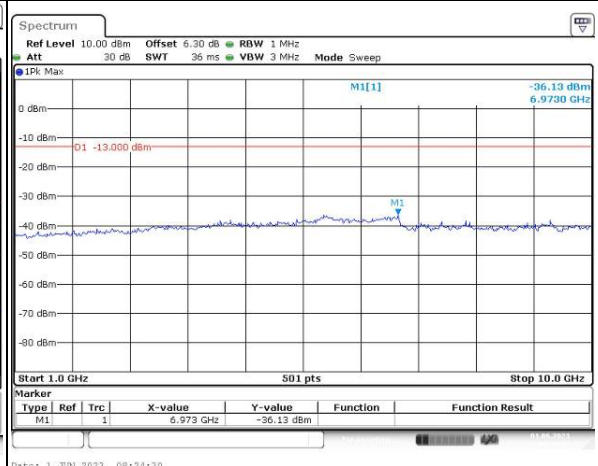
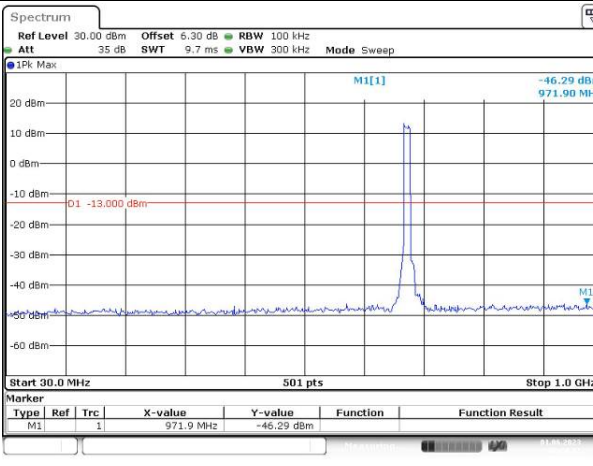
Channel

10MHz Bandwidth QPSK

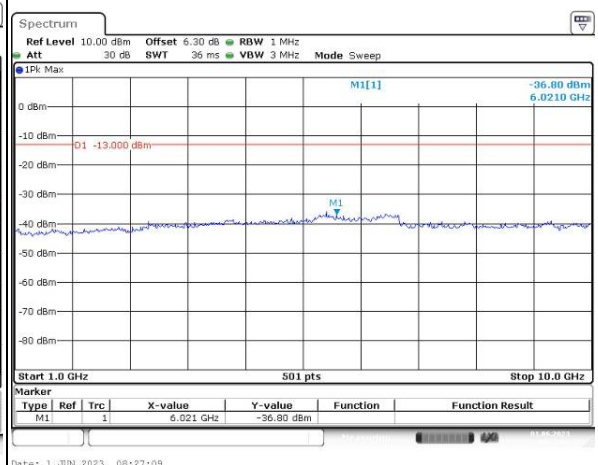
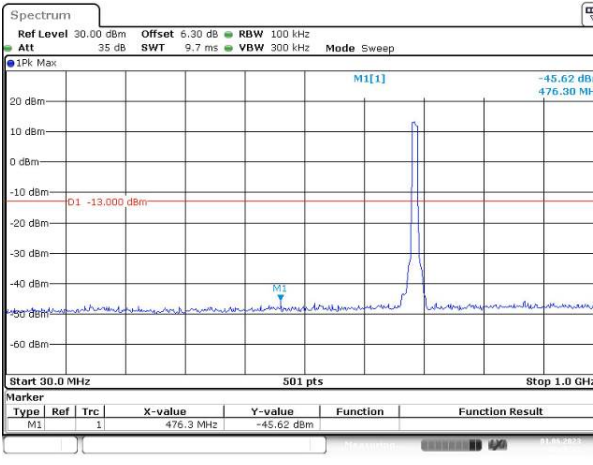
Lowest



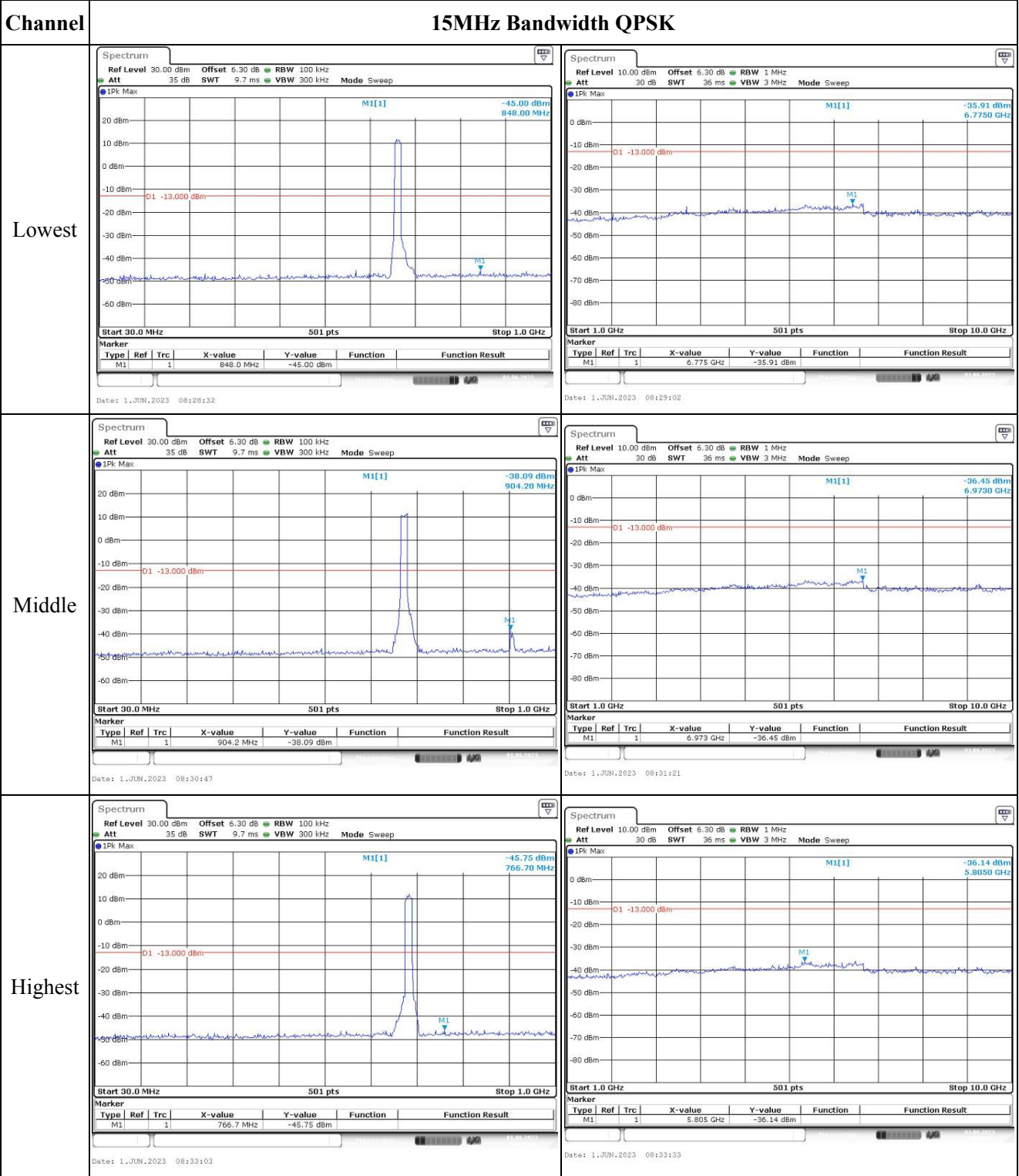
Middle



Highest



Spurious Emissions at Antenna Terminal

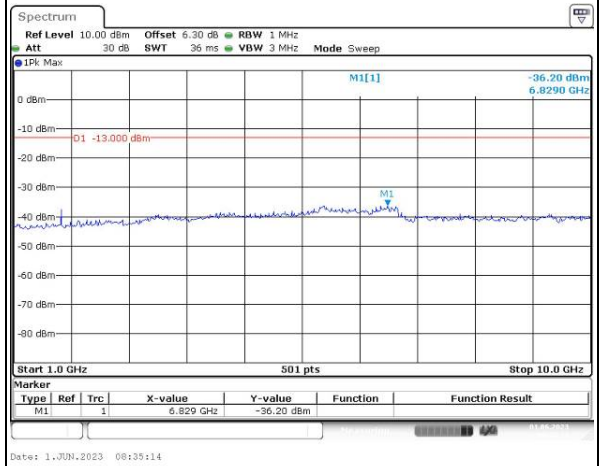
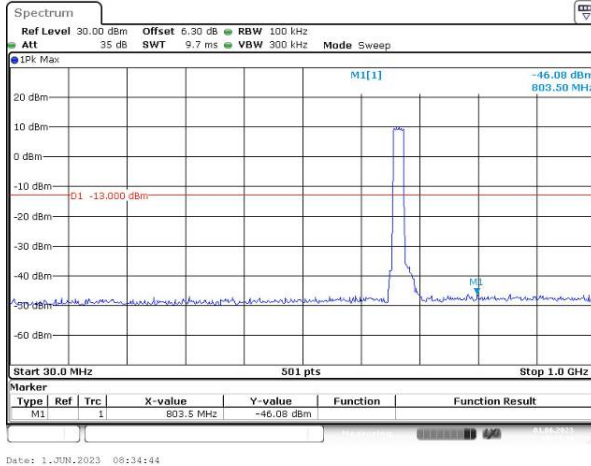


Spurious Emissions at Antenna Terminal

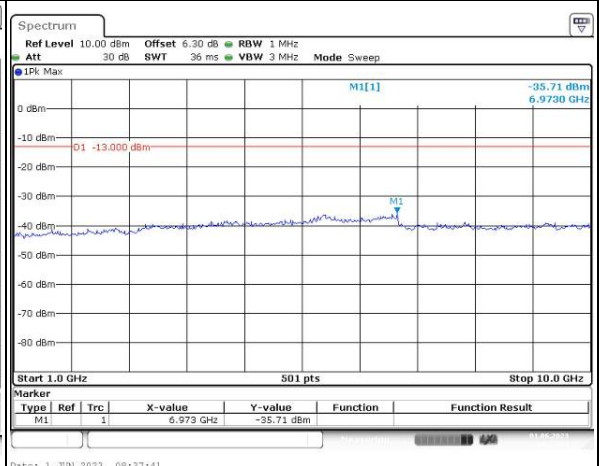
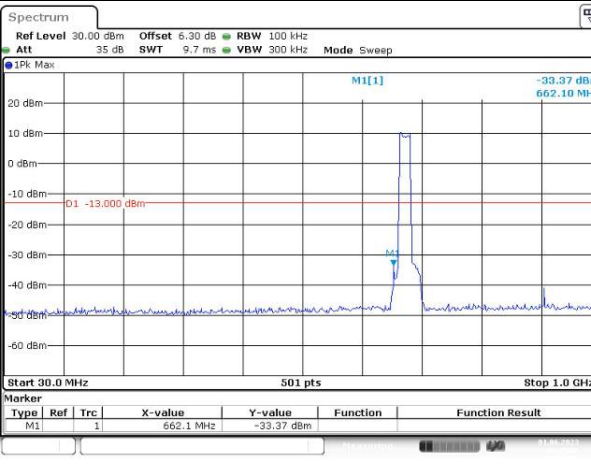
Channel

20MHz Bandwidth QPSK

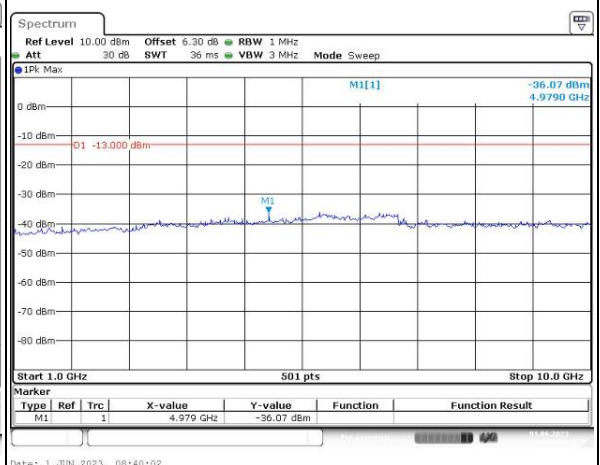
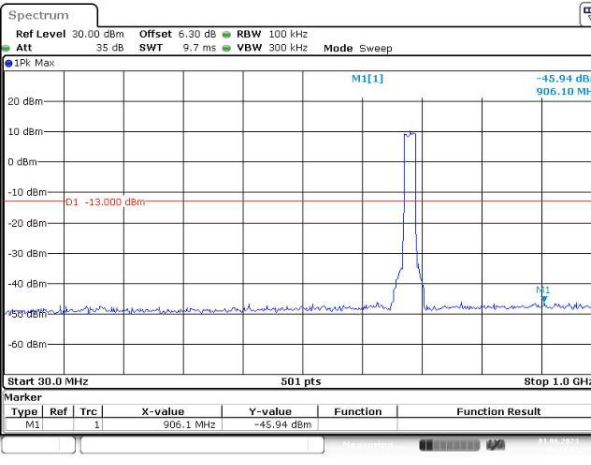
Lowest



Middle

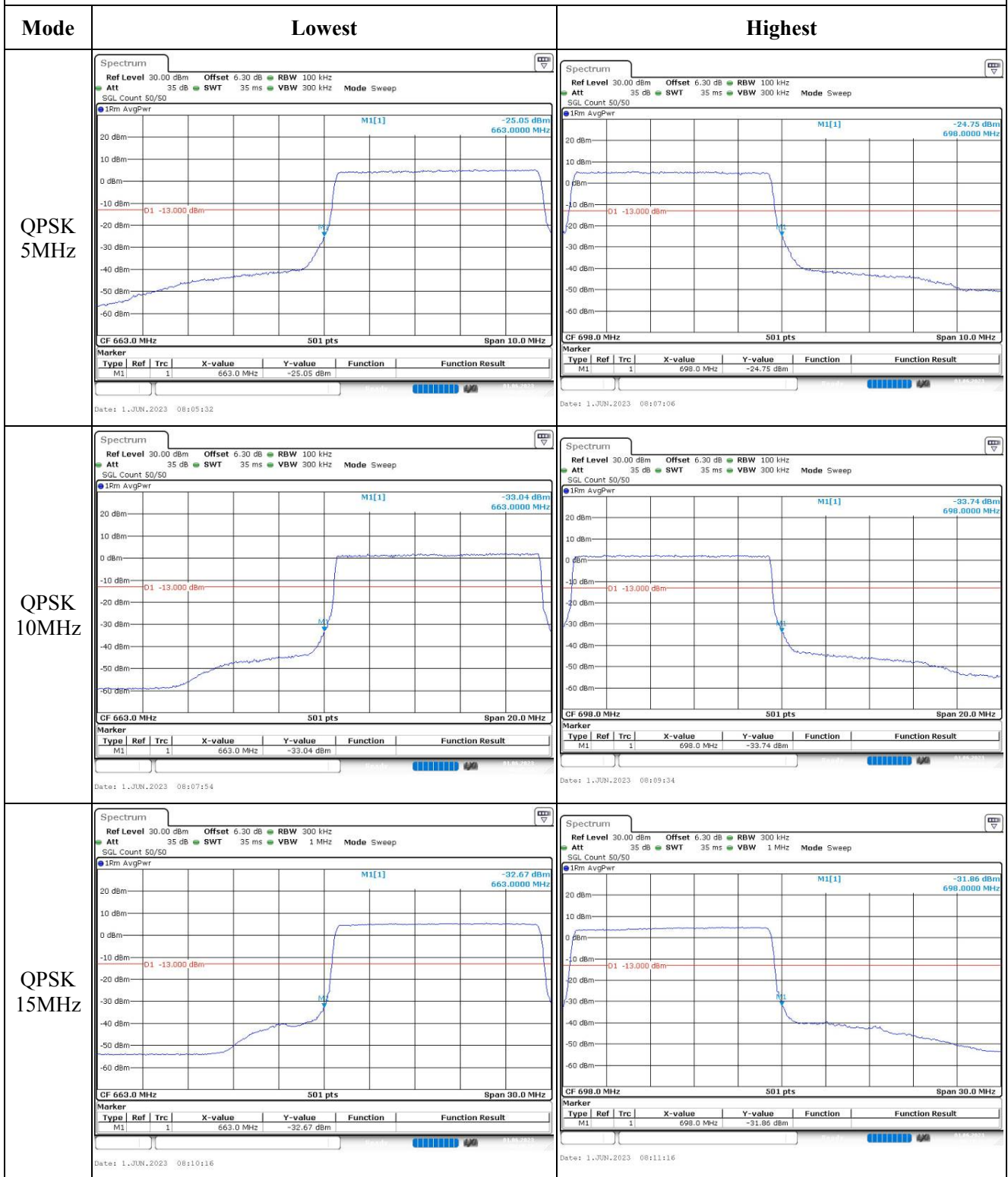


Highest





Out of band emission, Band Edge



Out of band emission, Band Edge

