

Out of band emission, Band Edge

Mode	Lowest	Highest																												
16QAM 1.4MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr</p> <p>M1[1] -25.94 dBm 1.84999400 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.85 GHz 501 pts Span 3.0 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>1.849994 GHz</td> <td>-25.94 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 18.MAY.2023 17:39:35</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.849994 GHz	-25.94 dBm			<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr</p> <p>M1[1] -26.53 dBm 1.91001200 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.91 GHz 501 pts Span 3.0 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>1.910012 GHz</td> <td>-26.53 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 18.MAY.2023 17:39:47</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.910012 GHz	-26.53 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1	1		1.849994 GHz	-25.94 dBm																										
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M1	1		1.910012 GHz	-26.53 dBm																										
16QAM 3MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr</p> <p>M1[1] -23.72 dBm 1.85000000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.85 GHz 501 pts Span 6.0 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>1.85 GHz</td> <td>-23.72 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 18.MAY.2023 17:40:03</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.85 GHz	-23.72 dBm			<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr</p> <p>M1[1] -24.49 dBm 1.91000000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.91 GHz 501 pts Span 6.0 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>1.91 GHz</td> <td>-24.49 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 18.MAY.2023 17:40:16</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.91 GHz	-24.49 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1	1		1.85 GHz	-23.72 dBm																										
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M1	1		1.91 GHz	-24.49 dBm																										
16QAM 5MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr</p> <p>M1[1] -25.11 dBm 1.85000000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.85 GHz 501 pts Span 10.0 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>1.85 GHz</td> <td>-25.11 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 18.MAY.2023 17:40:33</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.85 GHz	-25.11 dBm			<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr</p> <p>M1[1] -25.59 dBm 1.91000000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.91 GHz 501 pts Span 10.0 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>1.91 GHz</td> <td>-25.59 dBm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Date: 18.MAY.2023 17:40:47</p>	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.91 GHz	-25.59 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																								
M1	1		1.85 GHz	-25.11 dBm																										
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M1	1		1.91 GHz	-25.59 dBm																										

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz		
16QAM 15MHz		
16QAM 20MHz		

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

Serial Number:	253A-1	Test Date:	2023/5/18~2023/5/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.3~27.2	Relative Humidity: (%)	42~61	ATM Pressure: (kPa)	100.5~101.9
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
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	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-03-31	2024-03-30
UNI-T	Multimeter	UT39A+	C210582554	2022-09-29	2023-09-28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	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	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

**Test Data:**

FCC§2.1046;§ 27.50(d)(4)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP(dBm)	EIRP Limit(dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	23.4	23.47	23.89	24.2	30
	RB1#3	23.5	23.63	23.81		
	RB1#5	23.5	23.57	23.84		
	RB3#0	23.6	23.62	23.73		
	RB3#3	23.61	23.64	23.72		
	RB6#0	22.4	22.65	22.62		
1.4MHz 16QAM	RB1#0	22.53	23.37	22.67	23.68	30
	RB1#3	22.56	23.37	22.71		
	RB1#5	22.56	23.32	22.79		
	RB3#0	22.45	22.52	22.7		
	RB3#3	22.45	22.52	22.75		
	RB6#0	21.63	21.8	22.04		
3MHz QPSK	RB1#0	23.75	23.48	23.56	24.06	30
	RB1#8	23.67	23.58	23.59		
	RB1#14	23.68	23.46	23.57		
	RB6#0	22.65	22.72	22.66		
	RB6#9	22.51	22.63	22.63		
	RB15#0	22.66	22.71	22.66		
3MHz 16QAM	RB1#0	22.81	22.5	22.78	23.16	30
	RB1#8	22.78	22.5	22.77		
	RB1#14	22.76	22.46	22.85		
	RB6#0	21.85	21.91	21.72		
	RB6#9	21.83	21.92	21.74		
	RB15#0	21.76	21.8	21.84		
5MHz QPSK	RB1#0	23.75	23.66	23.69	24.14	30
	RB1#13	23.74	23.59	23.76		
	RB1#24	23.83	23.06	23.74		
	RB15#0	22.57	22.69	22.85		
	RB15#10	22.6	22.57	22.76		
	RB25#0	22.55	22.6	22.66		
5MHz 16QAM	RB1#0	22.66	22.37	21.96	23.05	30
	RB1#13	22.68	22.35	22.06		
	RB1#24	22.74	22.45	22		
	RB15#0	21.62	21.78	21.86		
	RB15#10	21.54	21.84	21.82		
	RB25#0	21.66	21.75	21.88		
10MHz QPSK	RB1#0	23.58	23.64	23.58	24.03	30
	RB1#25	23.64	23.68	23.67		
	RB1#49	23.65	23.32	23.72		

	RB25#0	22.59	22.73	22.7		
	RB25#25	22.69	22.64	22.65		
	RB50#0	22.73	22.71	22.81		
10MHz 16QAM	RB1#0	23.39	22.18	23.05	23.73	30
	RB1#25	23.37	22.16	23.08		
	RB1#49	23.42	22.13	23.08		
	RB25#0	21.73	21.92	21.82		
	RB25#25	21.83	21.9	21.8		
	RB50#0	21.74	21.81	22		
15MHz QPSK	RB1#0	23.59	23.53	23.07	24.01	30
	RB1#38	23.6	23.53	23.67		
	RB1#74	23.63	23.12	23.7		
	RB36#0	22.59	22.61	22.76		
	RB36#39	22.63	22.66	22.74		
	RB75#0	22.52	22.62	22.7		
15MHz 16QAM	RB1#0	23.36	22.97	22.98	23.68	30
	RB1#38	23.37	22.98	23.06		
	RB1#74	23.34	23.02	23.06		
	RB36#0	21.75	21.81	21.84		
	RB36#39	21.76	21.77	21.83		
	RB75#0	21.83	21.77	21.77		
20MHz QPSK	RB1#0	23.7	23.74	23.46	24.35	30
	RB1#50	23.73	23.67	24.01		
	RB1#99	23.78	23.62	24.04		
	RB50#0	22.62	22.78	22.69		
	RB50#50	22.71	22.72	22.85		
	RB100#0	22.6	22.62	22.73		
20MHz 16QAM	RB1#0	22.69	23.45	22.12	23.81	30
	RB1#50	22.63	23.47	22.24		
	RB1#99	22.7	23.5	22.28		
	RB50#0	21.71	21.8	21.87		
	RB50#50	21.85	21.76	21.96		
	RB100#0	21.64	21.87	21.82		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G<sub>T</sub>(dBi)

**Result:**

**Pass**

### Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	4.58	3.8	5.3	13
	RB100#0	4.7	4.7	4.96	13
20MHz 16QAM	RB1#0	5.71	4.9	5.57	13
	RB100#0	5.65	5.62	5.94	13
				<b>Result:</b>	<b>Pass</b>

<b>FCC §2.1049, §27.53:Occupied Bandwidth</b>						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.102	1.102	1.254	1.260	1.260
1.4MHz 16QAM	1.11	1.096	1.102	1.27	1.254	1.260
3MHz QPSK	2.707	2.683	2.695	3.000	3.024	2.988
3MHz 16QAM	2.695	2.695	2.695	2.976	3.024	3.012
5MHz QPSK	4.511	4.511	4.531	5.000	4.980	5.000
5MHz 16QAM	4.531	4.551	4.491	5.000	5.040	5.000
10MHz QPSK	8.902	8.942	8.982	9.760	9.800	9.800
10MHz 16QAM	8.982	8.942	8.942	9.800	9.840	9.800
15MHz QPSK	13.413	13.533	13.533	15.000	15.060	15.060
15MHz 16QAM	13.473	13.533	13.533	15.000	15.060	15.060
20MHz QPSK	17.884	18.044	17.964	19.520	19.840	19.680
20MHz 16QAM	17.964	18.044	18.044	19.760	19.760	19.760

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

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

<b>FCC §2.1051, § 27.53:Out of band emission, Band Edge</b>	
<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:	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	3.7	1711.023	1710.00	1754.011	1755
	-20	3.7	1711.003	1710.00	1754.032	1755
	-10	3.7	1711.068	1710.00	1754.006	1755
	0	3.7	1711.036	1710.00	1754.021	1755
	10	3.7	1711.094	1710.00	1754.080	1755
	20	3.7	1711.058	1710.00	1754.022	1755
	30	3.7	1711.078	1710.00	1754.039	1755
	40	3.7	1711.033	1710.00	1754.033	1755
Frequency Stability vs. Voltage	20	3.6	1711.075	1710.00	1754.071	1755
	20	4.35	1711.076	1710.00	1754.038	1755
					<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	3.7	1711.026	1710.00	1754.046	1755
	-20	3.7	1711.060	1710.00	1754.048	1755
	-10	3.7	1711.030	1710.00	1754.047	1755
	0	3.7	1711.027	1710.00	1754.084	1755
	10	3.7	1711.009	1710.00	1754.054	1755
	20	3.7	1711.058	1710.00	1754.102	1755
	30	3.7	1711.100	1710.00	1754.087	1755
	40	3.7	1711.053	1710.00	1754.072	1755
	50	3.7	1711.025	1710.00	1754.094	1755
Frequency Stability vs. Voltage	20	3.6	1711.018	1710.00	1754.067	1755
	20	4.35	1711.066	1710.00	1754.009	1755
					<b>Result:</b>	<b>Pass</b>



**Test Plots**(Note: The 8dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**

Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max M1[1] -11.28 dBm Occ Bw 2.706586926 MHz D1[1] -9.92 dB</p> <p>D1 14.500 dBm D2 -11.500 dBm</p> <p>CF 1.7115 GHz 501 pts Span 6.0 MHz</p> <p>Date: 26.MAY.2023 19:17:07</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max M1[1] -12.41 dBm Occ Bw 2.694610778 MHz D1[1] 0.42 dB</p> <p>D1 13.270 dBm D2 -10.730 dBm</p> <p>CF 1.7115 GHz 501 pts Span 6.0 MHz</p> <p>Date: 26.MAY.2023 19:17:35</p>
Middle	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max M1[1] -13.08 dBm Occ Bw 2.682634731 MHz D1[1] 0.95 dB</p> <p>D1 13.110 dBm D2 -12.890 dBm</p> <p>CF 1.7325 GHz 501 pts Span 6.0 MHz</p> <p>Date: 26.MAY.2023 19:17:59</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max M1[1] -12.16 dBm Occ Bw 2.694610778 MHz D1[1] 0.02 dB</p> <p>D1 13.430 dBm D2 -12.570 dBm</p> <p>CF 1.7325 GHz 501 pts Span 6.0 MHz</p> <p>Date: 26.MAY.2023 19:18:24</p>
Highest	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max M1[1] -11.18 dBm Occ Bw 2.694610778 MHz D1[1] 1.35 dB</p> <p>D1 15.170 dBm D2 -10.830 dBm</p> <p>CF 1.7535 GHz 501 pts Span 6.0 MHz</p> <p>Date: 26.MAY.2023 19:18:44</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max M1[1] -12.23 dBm Occ Bw 2.694610778 MHz D1[1] 0.31 dB</p> <p>D1 13.390 dBm D2 -10.610 dBm</p> <p>CF 1.7535 GHz 501 pts Span 6.0 MHz</p> <p>Date: 26.MAY.2023 19:19:33</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -10.23 dBm 1.7100000 GHz Occ Bw 4.510978044 MHz -0.30 dB 5.0000 MHz</p> <p>D1 16.400 dBm D2 -9.200 dBm</p> <p>CF 1.7125 GHz 501 pts Span 10.0 MHz</p> <p>Date: 26.MAY.2023 19:20:18</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -9.90 dBm 1.7100200 GHz Occ Bw 4.530938124 MHz -0.15 dB 5.0000 MHz</p> <p>D1 15.110 dBm D2 -10.890 dBm</p> <p>CF 1.7125 GHz 501 pts Span 10.0 MHz</p> <p>Date: 26.MAY.2023 19:20:52</p>
Middle	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -9.77 dBm 1.7300000 GHz Occ Bw 4.510978044 MHz -2.34 dB 4.9800 MHz</p> <p>D1 17.100 dBm D2 -8.900 dBm</p> <p>CF 1.7325 GHz 501 pts Span 10.0 MHz</p> <p>Date: 26.MAY.2023 19:21:23</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -11.39 dBm 1.7299800 GHz Occ Bw 4.530938124 MHz 0.94 dB 5.0400 MHz</p> <p>D1 15.400 dBm D2 -10.500 dBm</p> <p>CF 1.7325 GHz 501 pts Span 10.0 MHz</p> <p>Date: 26.MAY.2023 19:22:00</p>
Highest	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -10.06 dBm 1.7500000 GHz Occ Bw 4.530938124 MHz -0.03 dB 5.0000 MHz</p> <p>D1 16.800 dBm D2 -9.200 dBm</p> <p>CF 1.7525 GHz 501 pts Span 10.0 MHz</p> <p>Date: 26.MAY.2023 19:22:31</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -9.18 dBm 1.7500200 GHz Occ Bw 4.510978044 MHz -1.13 dB 5.0000 MHz</p> <p>D1 16.400 dBm D2 -9.600 dBm</p> <p>CF 1.7525 GHz 501 pts Span 10.0 MHz</p> <p>Date: 26.MAY.2023 19:23:01</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>10MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -12.08 dBm 1.7101600 GHz Occ Bw 8.902193609 MHz D1[1] 1.22 dB 9.7600 MHz</p> <p>D1 14.610 dBm D2 -11.390 dBm</p> <p>CF 1.715 GHz 501 pts Span 20.0 MHz</p> <p>Date: 26.MAY.2023 19:23:36</p>	<p>10MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -13.62 dBm 1.7101200 GHz Occ Bw 8.982035928 MHz D1[1] 0.50 dB 9.8000 MHz</p> <p>D1 12.900 dBm D2 -10.100 dBm</p> <p>CF 1.715 GHz 501 pts Span 20.0 MHz</p> <p>Date: 26.MAY.2023 19:24:10</p>
Middle	<p>10MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -11.09 dBm 1.7276200 GHz Occ Bw 8.942115768 MHz D1[1] -1.51 dB 9.8000 MHz</p> <p>D1 13.940 dBm D2 -12.060 dBm</p> <p>CF 1.7325 GHz 501 pts Span 20.0 MHz</p> <p>Date: 26.MAY.2023 19:25:03</p>	<p>10MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -13.00 dBm 1.7275800 GHz Occ Bw 8.942115768 MHz D1[1] 0.02 dB 9.8400 MHz</p> <p>D1 12.820 dBm D2 -12.180 dBm</p> <p>CF 1.7325 GHz 501 pts Span 20.0 MHz</p> <p>Date: 26.MAY.2023 19:25:40</p>
Highest	<p>10MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -11.79 dBm 1.7451200 GHz Occ Bw 8.982035928 MHz D1[1] 0.62 dB 9.8000 MHz</p> <p>D1 14.760 dBm D2 -11.240 dBm</p> <p>CF 1.75 GHz 501 pts Span 20.0 MHz</p> <p>Date: 26.MAY.2023 19:26:11</p>	<p>10MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -11.76 dBm 1.7451200 GHz Occ Bw 8.942115768 MHz D1[1] 0.44 dB 9.8000 MHz</p> <p>D1 13.850 dBm D2 -12.150 dBm</p> <p>CF 1.75 GHz 501 pts Span 20.0 MHz</p> <p>Date: 26.MAY.2023 19:26:38</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>15MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 300 kHz Att 35 dB SWT 1 ms VBW 1 MHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -9.24 dBm Occ Bw 15.0000 MHz 13.413173653 MHz -0.13 dB</p> <p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <p>Date: 26.MAY.2023 19:27:13</p>	<p>15MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 300 kHz Att 35 dB SWT 1 ms VBW 1 MHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -8.25 dBm Occ Bw 15.0000 MHz 13.473053892 MHz -0.44 dB</p> <p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <p>Date: 26.MAY.2023 19:27:17</p>
Middle	<p>15MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 300 kHz Att 35 dB SWT 1 ms VBW 1 MHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -8.82 dBm Occ Bw 15.0600 MHz 13.532934132 MHz 0.64 dB</p> <p>CF 1.7325 GHz 501 pts Span 30.0 MHz</p> <p>Date: 26.MAY.2023 19:28:09</p>	<p>15MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 300 kHz Att 35 dB SWT 1 ms VBW 1 MHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -8.33 dBm Occ Bw 15.0600 MHz 13.532934132 MHz -1.14 dB</p> <p>CF 1.7325 GHz 501 pts Span 30.0 MHz</p> <p>Date: 26.MAY.2023 19:28:16</p>
Highest	<p>15MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 300 kHz Att 35 dB SWT 1 ms VBW 1 MHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -7.99 dBm Occ Bw 15.0600 MHz 13.532934132 MHz -0.17 dB</p> <p>CF 1.7475 GHz 501 pts Span 30.0 MHz</p> <p>Date: 26.MAY.2023 19:29:01</p>	<p>15MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 8.00 dB RBW 300 kHz Att 35 dB SWT 1 ms VBW 1 MHz Mode Sweep</p> <p>1Pk Max</p> <p>M1[1] -8.77 dBm Occ Bw 15.0600 MHz 13.532934132 MHz -1.26 dB</p> <p>CF 1.7475 GHz 501 pts Span 30.0 MHz</p> <p>Date: 26.MAY.2023 19:29:29</p>



Occupied Bandwidth

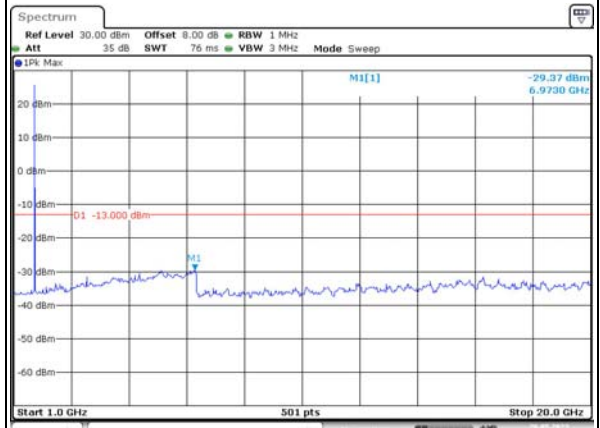
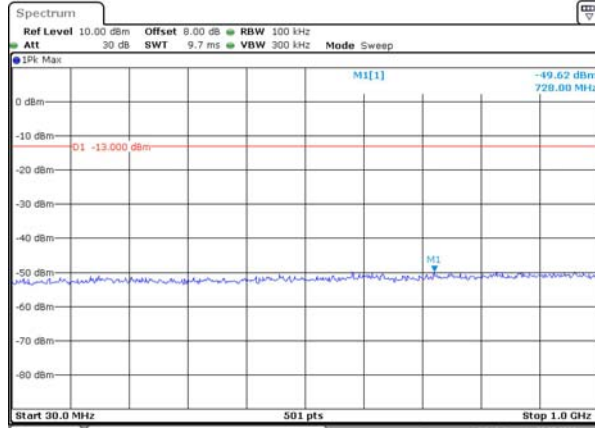
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Spurious Emissions at Antenna Terminal

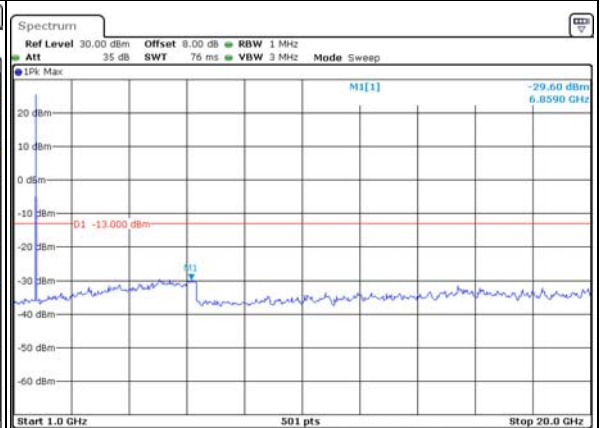
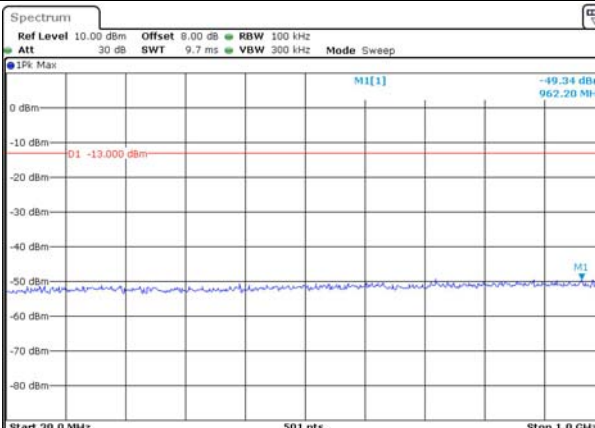
Channel

1.4MHz Bandwidth QPSK

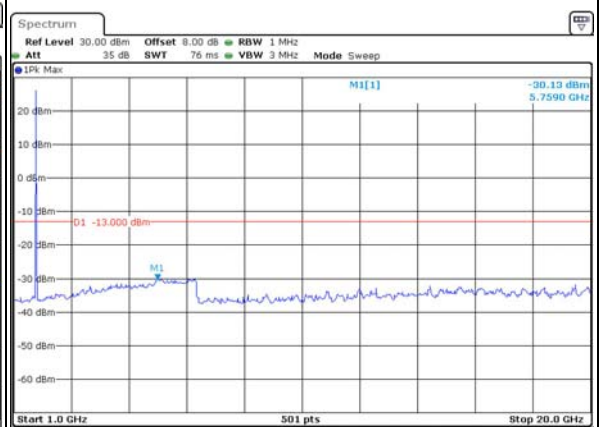
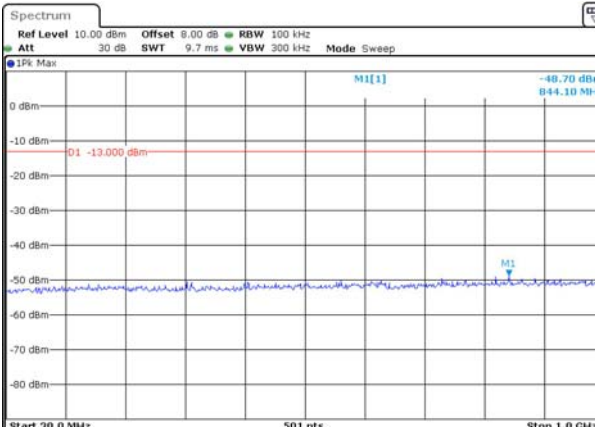
Lowest



Middle



Highest

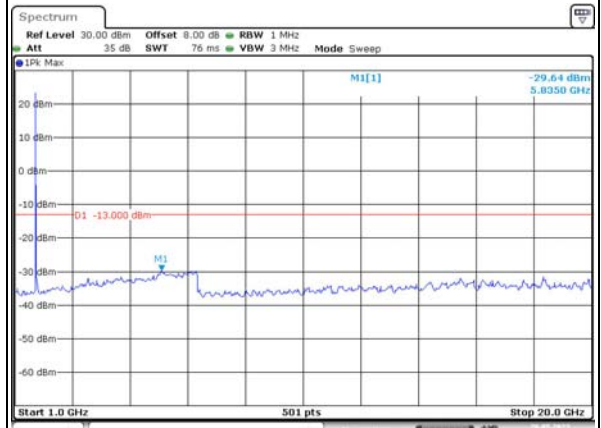
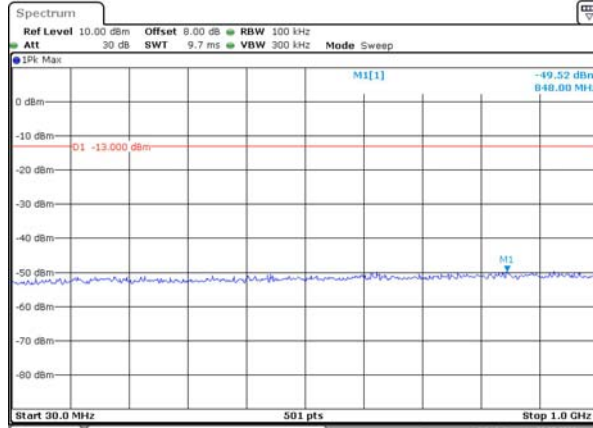


### Spurious Emissions at Antenna Terminal

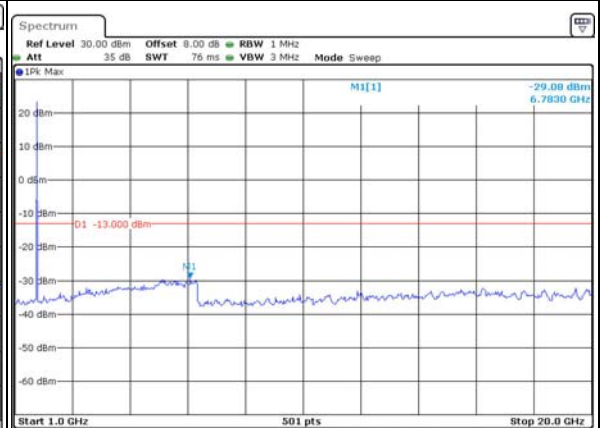
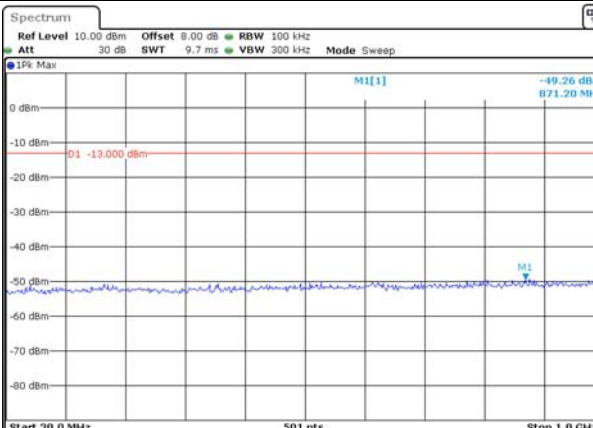
Channel

3MHz Bandwidth QPSK

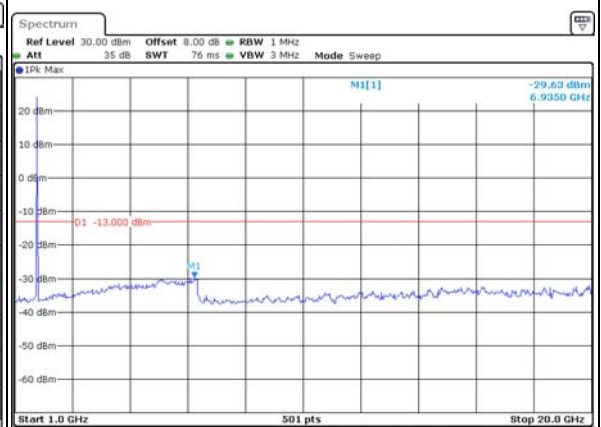
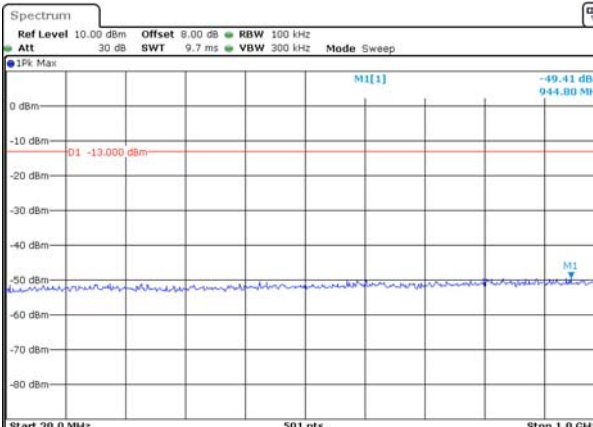
Lowest



Middle



Highest



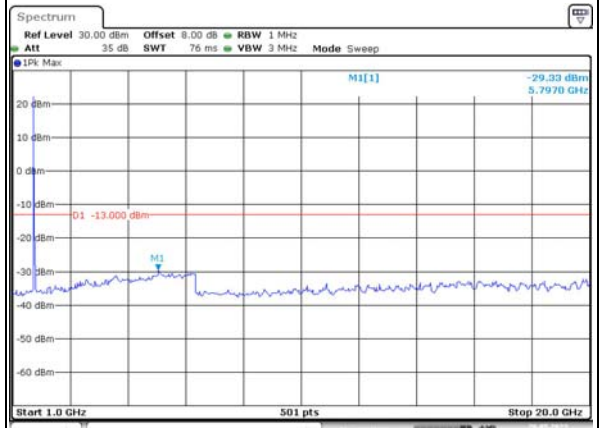
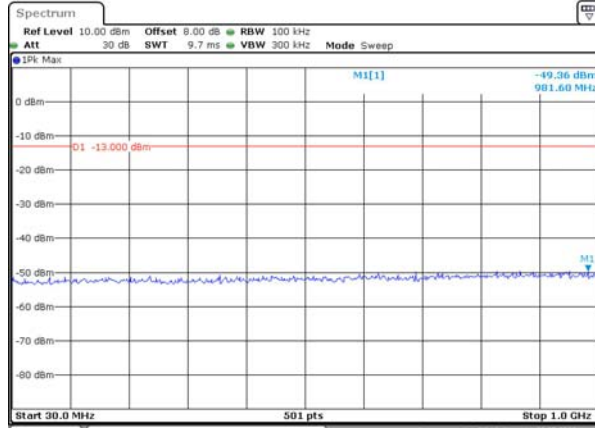


### Spurious Emissions at Antenna Terminal

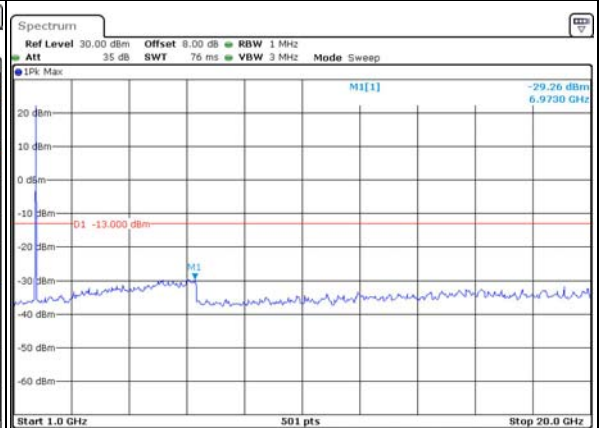
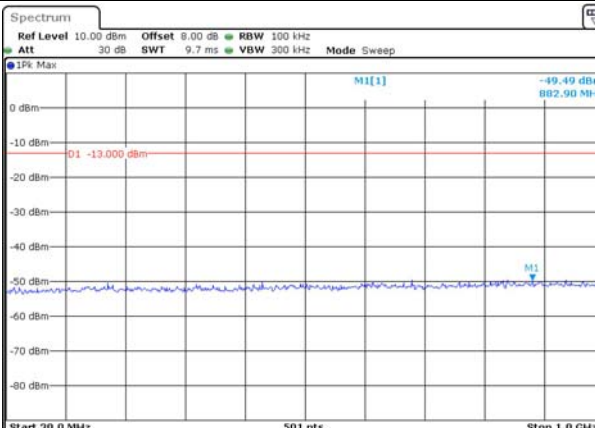
Channel

5MHz Bandwidth QPSK

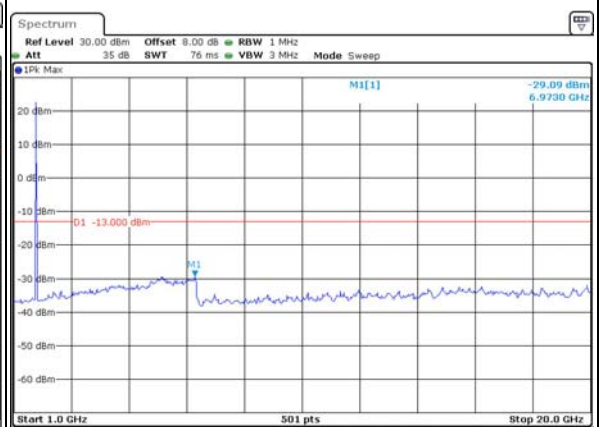
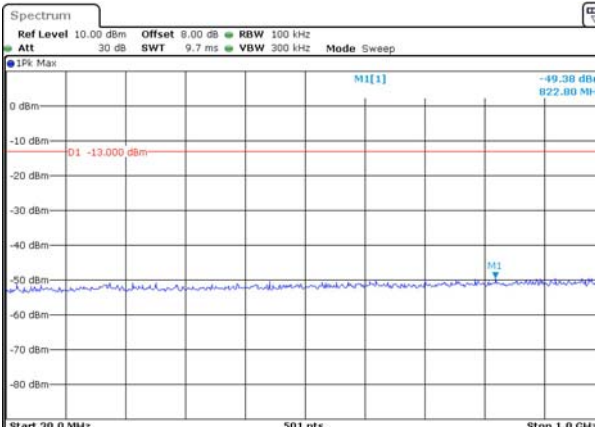
Lowest



Middle



Highest

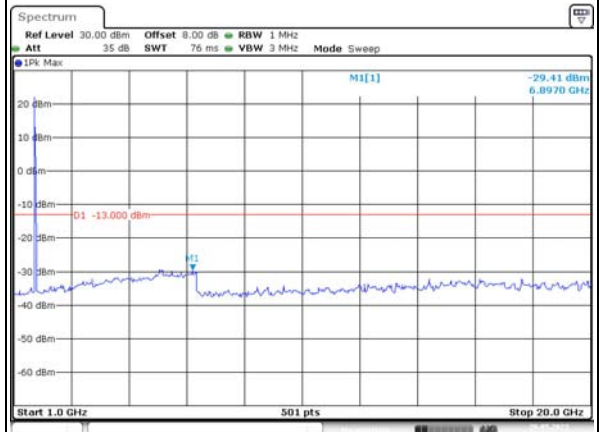
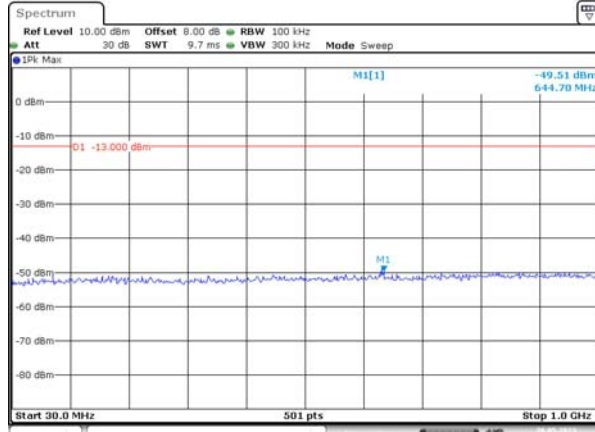


Spurious Emissions at Antenna Terminal

Channel

10MHz Bandwidth QPSK

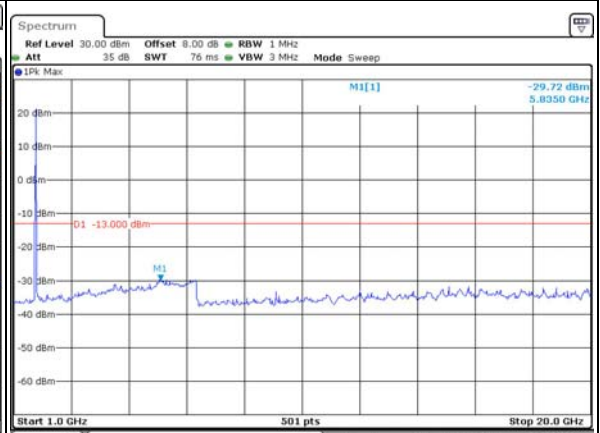
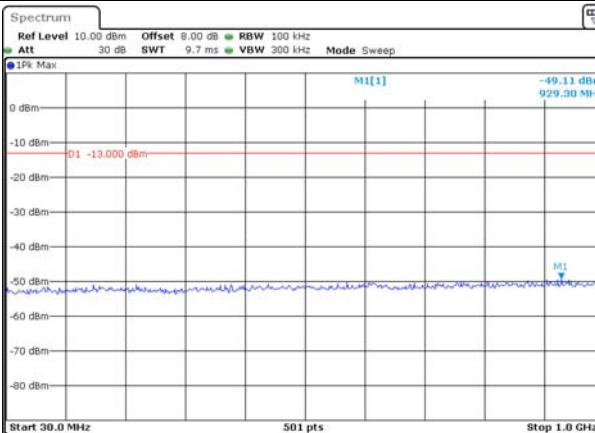
Lowest



Date: 26.MAY.2023 19:48:12

Date: 26.MAY.2023 19:48:49

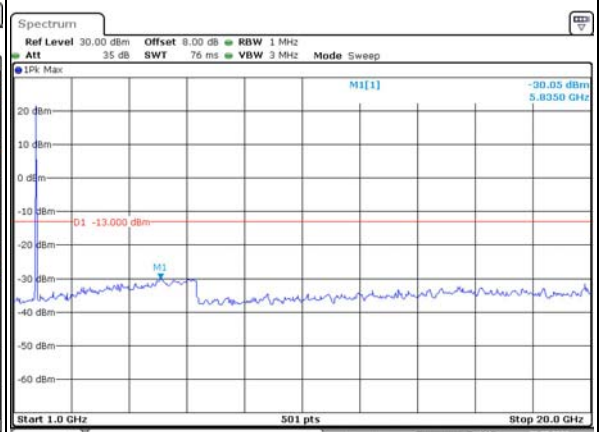
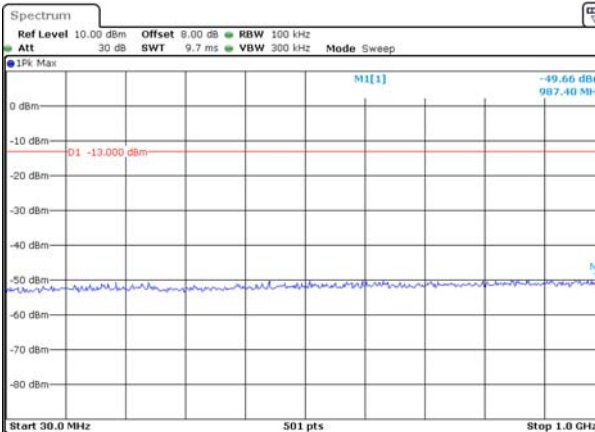
Middle



Date: 26.MAY.2023 19:49:22

Date: 26.MAY.2023 19:49:55

Highest



Date: 26.MAY.2023 19:50:29

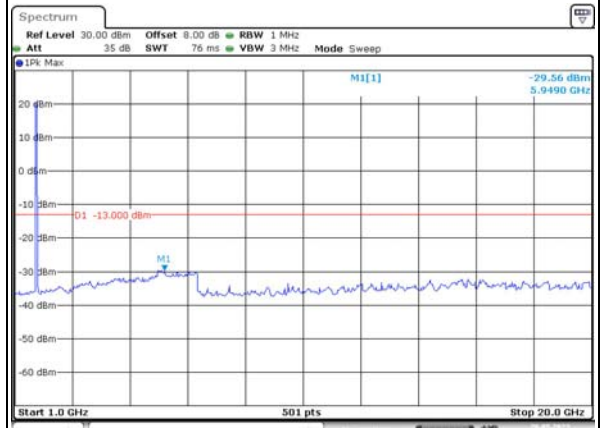
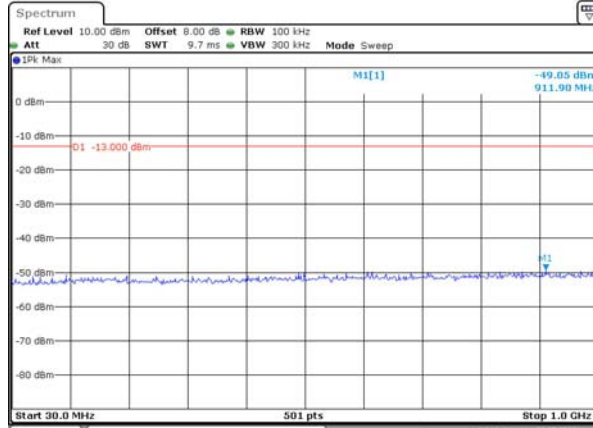
Date: 26.MAY.2023 19:50:51

Spurious Emissions at Antenna Terminal

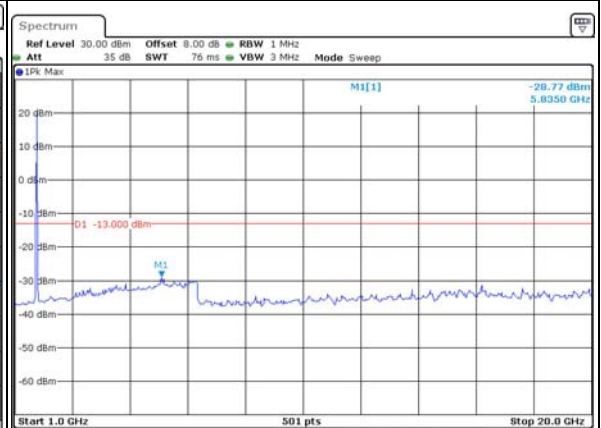
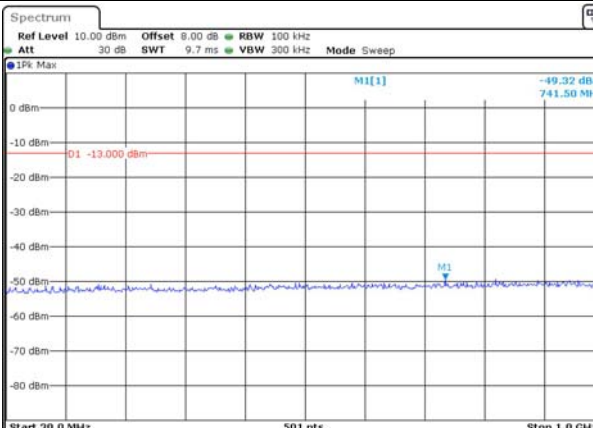
Channel

15MHz Bandwidth QPSK

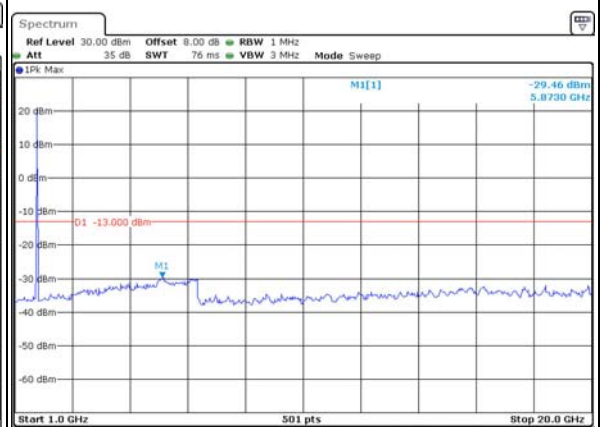
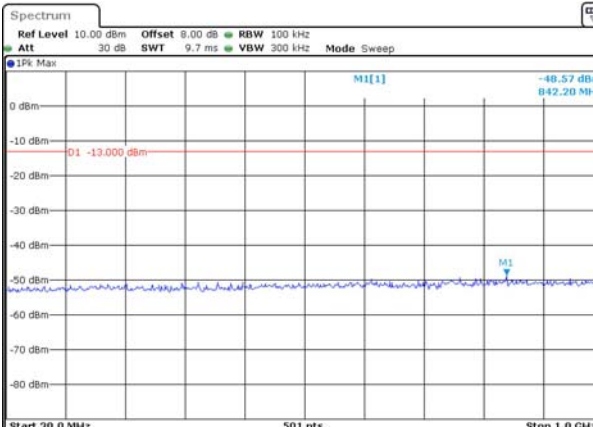
Lowest



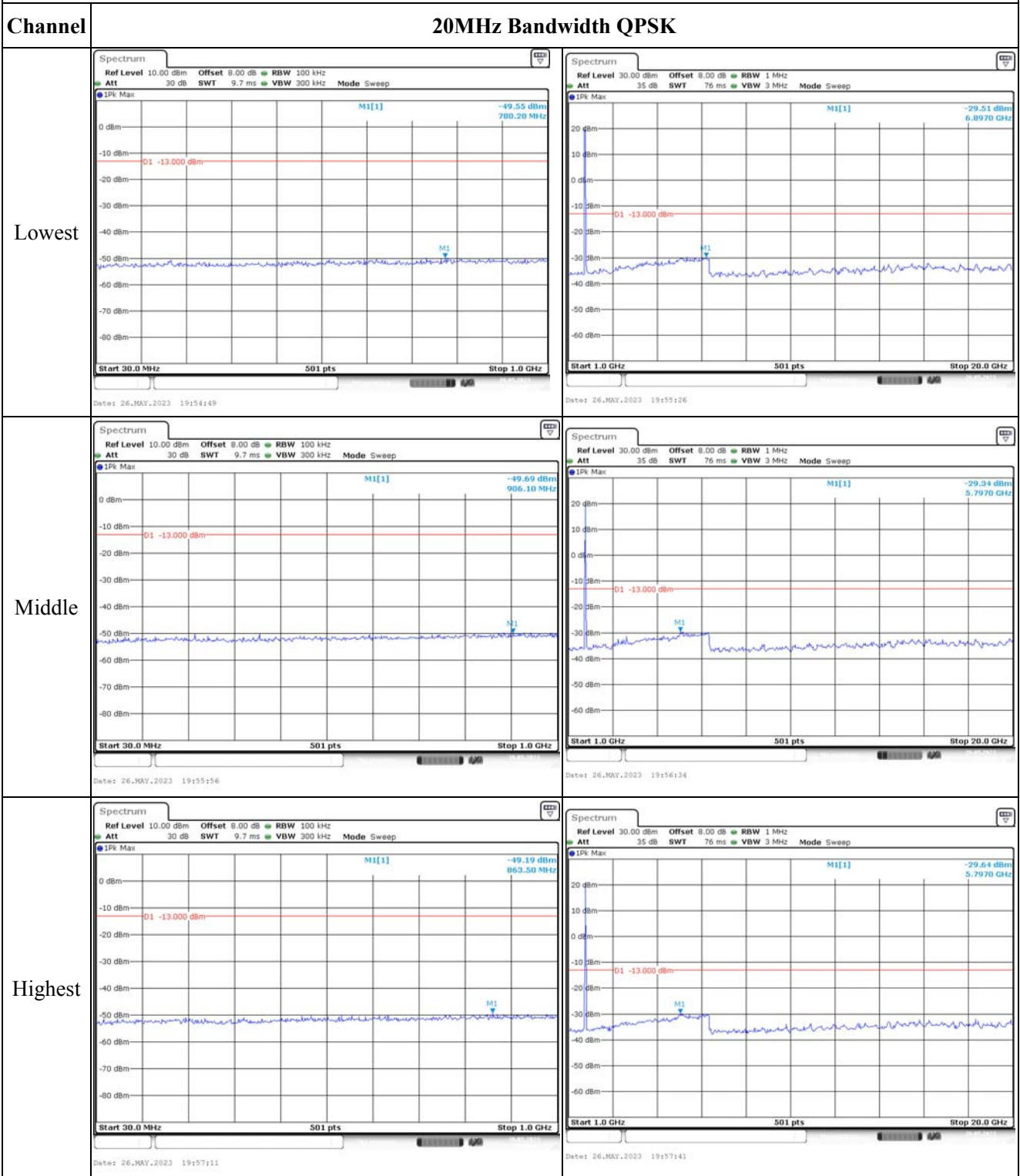
Middle



Highest



Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr MI[1] -31.09 dBm 1.70990000 GHz -13.000 dBm CF 1.71 GHz 501 pts Span 3.0 MHz Date: 26.MAY.2023 19:34:51</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr MI[1] -27.29 dBm 1.75509500 GHz -13.000 dBm CF 1.755 GHz 501 pts Span 3.0 MHz Date: 26.MAY.2023 19:35:04</p>
QPSK 3MHz	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr MI[1] -25.70 dBm 1.71000000 GHz -13.000 dBm CF 1.71 GHz 501 pts Span 6.0 MHz Date: 26.MAY.2023 19:35:21</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr MI[1] -24.72 dBm 1.75500000 GHz -13.000 dBm CF 1.755 GHz 501 pts Span 6.0 MHz Date: 26.MAY.2023 19:35:34</p>
QPSK 5MHz	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr MI[1] -26.20 dBm 1.71000000 GHz -13.000 dBm CF 1.71 GHz 501 pts Span 10.0 MHz Date: 26.MAY.2023 19:35:50</p>	<p>Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 1Pm AvgPwr MI[1] -24.74 dBm 1.75500000 GHz -13.000 dBm CF 1.755 GHz 501 pts Span 10.0 MHz Date: 26.MAY.2023 19:36:03</p>



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz		
QPSK 15MHz		
QPSK 20MHz		

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Spectrum                      Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz                      Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep                      SGL Count 50/50                      1Pm AvgPwr                      M1[1] -31.69 dBm 1.70997010 GHz                      01 -13.000 dBm                      CF 1.71 GHz 501 pts Span 3.0 MHz                      Date: 26.MAY.2023 19:34:57</p>	<p>Spectrum                      Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz                      Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep                      SGL Count 50/50                      1Pm AvgPwr                      M1[1] -27.60 dBm 1.75501200 GHz                      01 -13.000 dBm                      CF 1.755 GHz 501 pts Span 3.0 MHz                      Date: 26.MAY.2023 19:35:10</p>
16QAM 3MHz	<p>Spectrum                      Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz                      Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep                      SGL Count 50/50                      1Pm AvgPwr                      M1[1] -26.65 dBm 1.71000000 GHz                      01 -13.000 dBm                      CF 1.71 GHz 501 pts Span 6.0 MHz                      Date: 26.MAY.2023 19:35:27</p>	<p>Spectrum                      Ref Level 30.00 dBm Offset 8.00 dB RBW 30 kHz                      Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep                      SGL Count 50/50                      1Pm AvgPwr                      M1[1] -25.65 dBm 1.75500000 GHz                      01 -13.000 dBm                      CF 1.755 GHz 501 pts Span 6.0 MHz                      Date: 26.MAY.2023 19:35:40</p>
16QAM 5MHz	<p>Spectrum                      Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz                      Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep                      SGL Count 50/50                      1Pm AvgPwr                      M1[1] -28.32 dBm 1.71000000 GHz                      01 -13.000 dBm                      CF 1.71 GHz 501 pts Span 10.0 MHz                      Date: 26.MAY.2023 19:35:56</p>	<p>Spectrum                      Ref Level 30.00 dBm Offset 8.00 dB RBW 100 kHz                      Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep                      SGL Count 50/50                      1Pm AvgPwr                      M1[1] -25.97 dBm 1.75500000 GHz                      01 -13.000 dBm                      CF 1.755 GHz 501 pts Span 10.0 MHz                      Date: 26.MAY.2023 19:36:10</p>



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz		
16QAM 15MHz		
16QAM 20MHz		

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

Serial Number:	253A-1	Test Date:	2023/5/18~2023/5/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.3~27.2	Relative Humidity: (%)	42~61	ATM Pressure: (kPa)	100.5~101.9
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
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	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-03-31	2024-03-30
UNI-T	Multimeter	UT39A+	C210582554	2022-09-29	2023-09-28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	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:**

<b>FCC§2.1046;§ 22.913 (a)</b>						
<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		
1.4MHz QPSK	RB1#0	23.28	23	23.13	20	38.45
	RB1#3	23.23	22.93	23.22		
	RB1#5	23.21	22.99	23.18		
	RB3#0	23.23	23.13	23.17		
	RB3#3	23.33	23.19	23.11		
	RB6#0	22.4	22.17	22.15		
1.4MHz 16QAM	RB1#0	22.93	21.65	22.54	19.62	38.45
	RB1#3	22.95	21.79	22.55		
	RB1#5	22.89	21.78	22.6		
	RB3#0	22.19	22.29	21.92		
	RB3#3	22.17	22.25	22.01		
	RB6#0	21.82	21.32	21.15		
3MHz QPSK	RB1#0	23.22	23.13	23.08	20.04	38.45
	RB1#8	23.21	22.99	23.05		
	RB1#14	23.37	22.98	23.15		
	RB6#0	22.38	22.13	22.1		
	RB6#9	22.35	22.24	22.11		
	RB15#0	22.23	22.21	22.08		
3MHz 16QAM	RB1#0	22.98	21.68	22.26	19.65	38.45
	RB1#8	22.92	21.72	22.31		
	RB1#14	22.91	21.76	22.34		
	RB6#0	21.75	21.78	21.48		
	RB6#9	21.32	21.34	21.02		
	RB15#0	21.79	21.18	21.52		
5MHz QPSK	RB1#0	23.23	23.11	23.12	20.12	38.45
	RB1#13	23.45	22.98	23.06		
	RB1#24	23.16	23.07	23.07		
	RB15#0	22.19	22.14	22.02		
	RB15#10	22.24	22.22	22.14		
	RB25#0	22.33	22.15	22.08		
5MHz 16QAM	RB1#0	22.35	21.7	21.16	19.04	38.45
	RB1#13	22.36	21.83	21.17		
	RB1#24	22.37	21.75	21.16		
	RB15#0	21.63	21.66	21.25		
	RB15#10	21.15	21.16	21.56		
	RB25#0	21.23	21.08	21.67		
10MHz QPSK	RB1#0	23.31	23.19	23.04	19.99	38.45
	RB1#25	23.32	23.05	23		
	RB1#49	23.3	23.22	23.07		

	RB25#0	22.29	22.17	22		
	RB25#25	22.26	22.09	22.03		
	RB50#0	22.33	22.21	22.1		
10MHz 16QAM	RB1#0	22.37	21.74	22.16	19.08	38.45
	RB1#25	22.41	21.67	22.23		
	RB1#49	22.37	21.7	22.28		
	RB25#0	21.34	21.8	21.55		
	RB25#25	21.33	21.79	21.52		
	RB50#0	21.36	21.21	21.52		

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	5.68	5.3	13
	RB50#0	5.48	5.45	5.25	13
10MHz 16QAM	RB1#0	6.12	6.64	6.03	13
	RB50#0	6.32	6.38	6.14	13

**Result:****Pass****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	1.102	1.102	1.096	1.26	1.26	1.26
1.4MHz 16QAM	1.102	1.09	1.102	1.254	1.254	1.26
3MHz QPSK	2.695	2.695	2.695	3	3.012	2.988
3MHz 16QAM	2.683	2.683	2.695	3	3.024	3
5MHz QPSK	4.511	4.491	4.511	5	4.98	5
5MHz 16QAM	4.531	4.531	4.491	5	5.02	5
10MHz QPSK	8.942	8.942	8.942	9.76	9.8	9.72
10MHz 16QAM	8.942	8.942	8.942	9.8	9.84	9.72

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

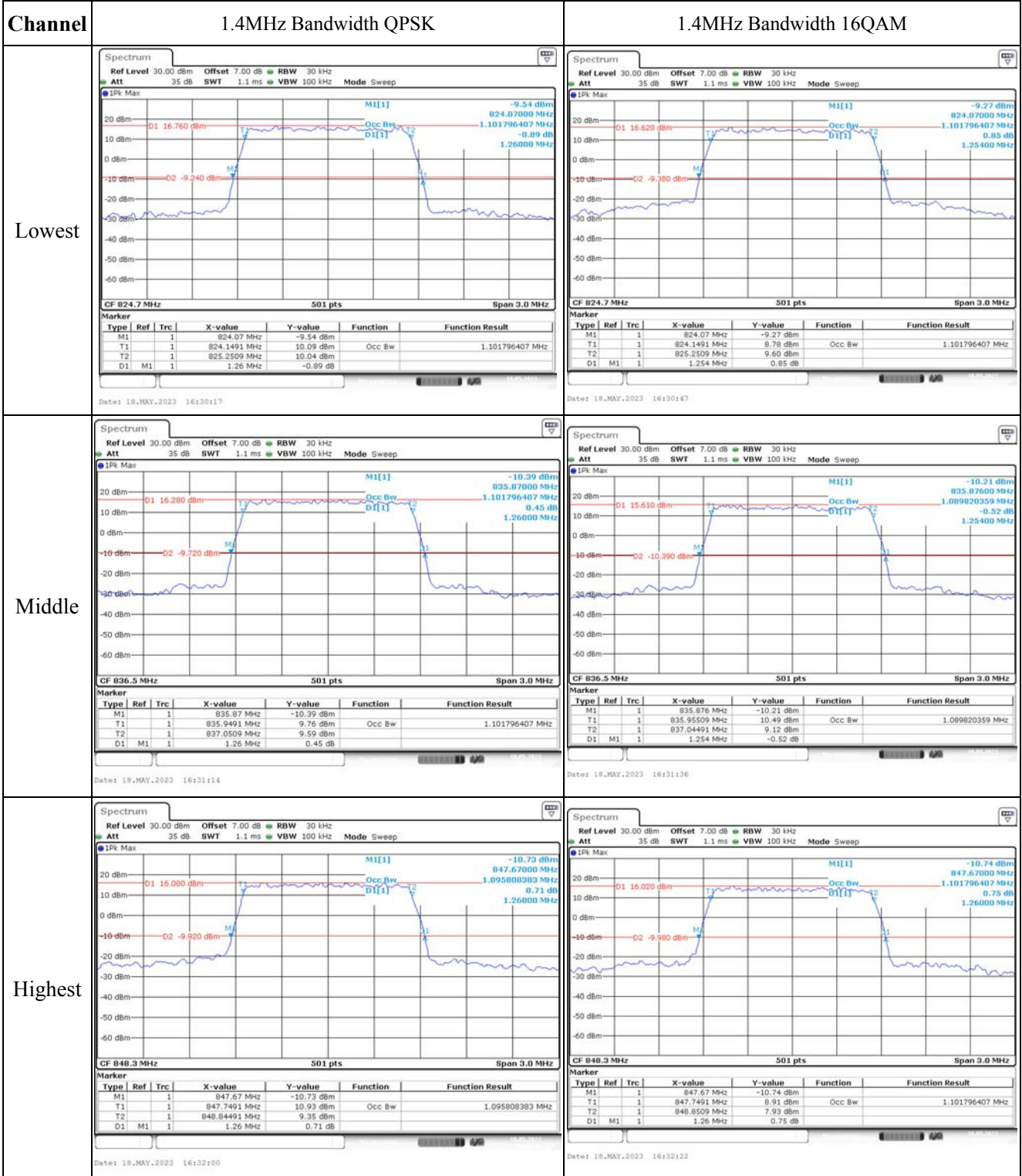
**FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal****Result:****Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.****FCC §2.1051, §22.917(a):Out of band emission, Band Edge****Result:****Pass, Please refer to the test plots of Out of band emission, Band Edge.**

<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	3.7	-22.86	-0.027	2.5
	-20	3.7	-6.97	-0.008	2.5
	-10	3.7	-5.5	-0.007	2.5
	0	3.7	6.06	0.007	2.5
	10	3.7	9.8	0.012	2.5
	20	3.7	5.03	0.006	2.5
	30	3.7	-6.62	-0.008	2.5
	40	3.7	-8.73	-0.010	2.5
	50	3.7	-7.05	-0.008	2.5
Frequency Stability vs. Voltage	20	3.6	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	3.7	-34.68	-0.041	2.5
	-20	3.7	8.1	0.010	2.5
	-10	3.7	-8.59	-0.010	2.5
	0	3.7	9.33	0.011	2.5
	10	3.7	-6.94	-0.008	2.5
	20	3.7	7.54	0.009	2.5
	30	3.7	6.43	0.008	2.5
	40	3.7	-6.17	-0.007	2.5
	50	3.7	-6.44	-0.008	2.5
Frequency Stability vs. Voltage	20	3.6	6.34	0.008	2.5
	20	4.35	-6.89	-0.008	2.5
				<b>Result:</b>	<b>Pass</b>

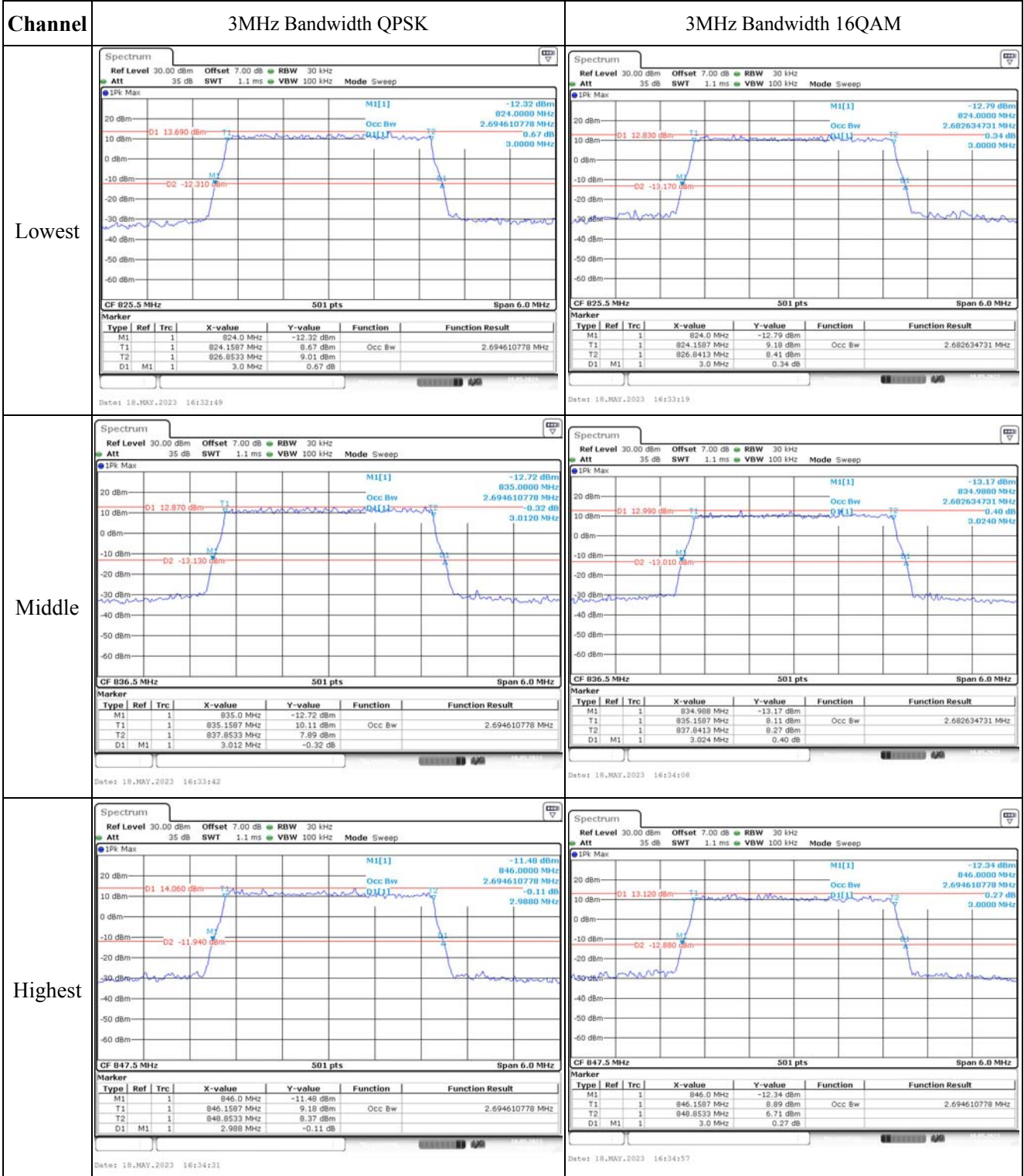
**Test Plots**(Note: The 8dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**



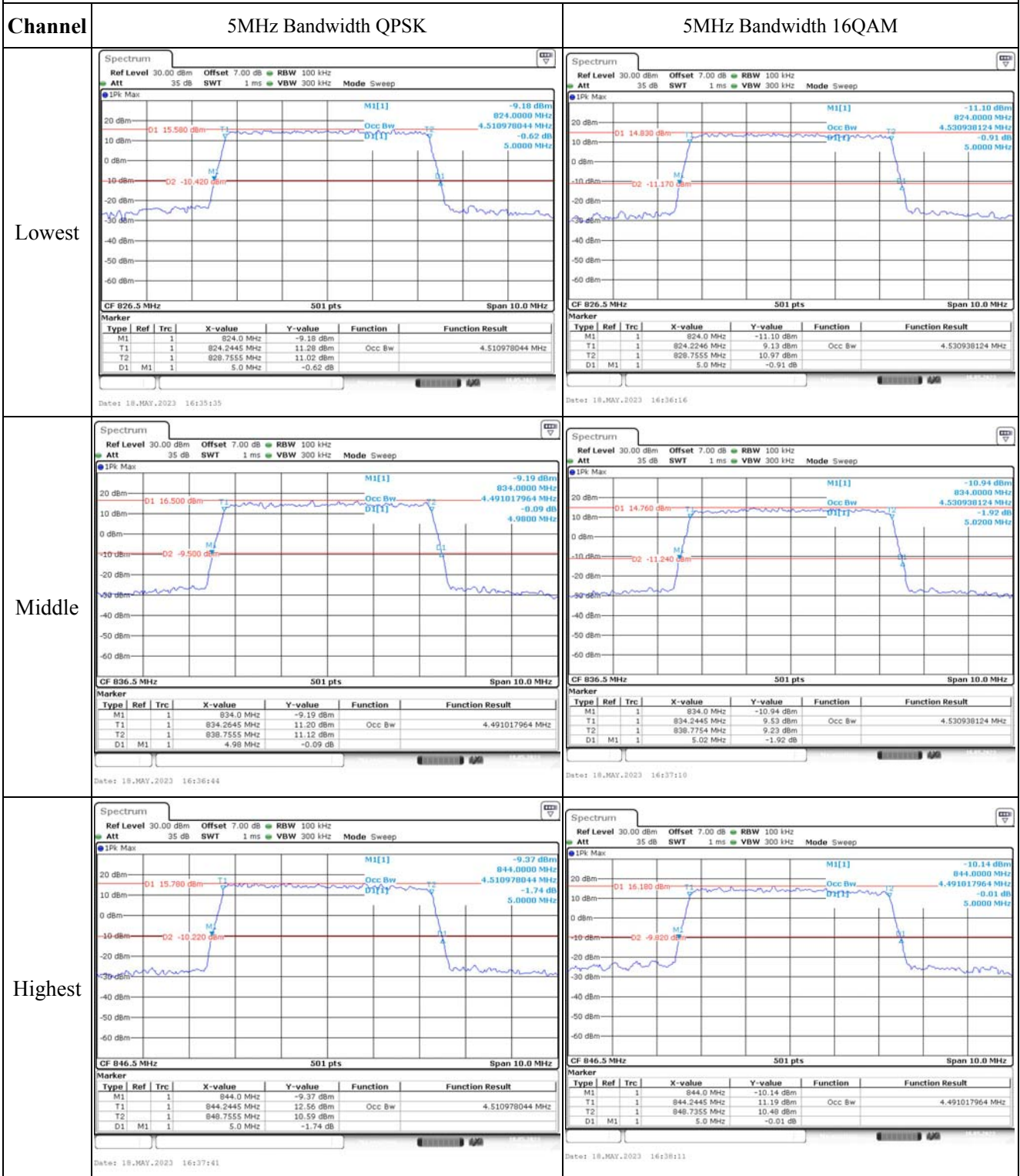


Occupied Bandwidth





Occupied Bandwidth



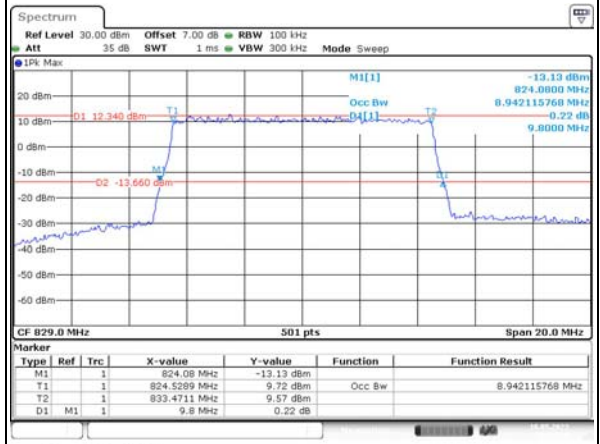
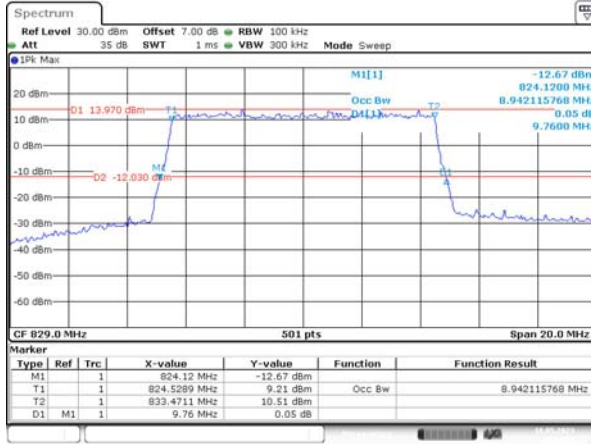
Occupied Bandwidth

Channel

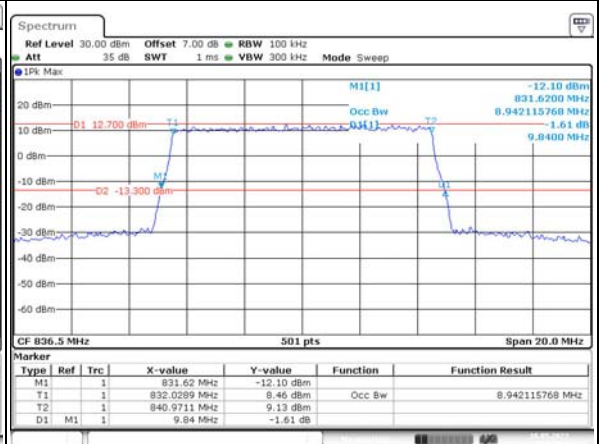
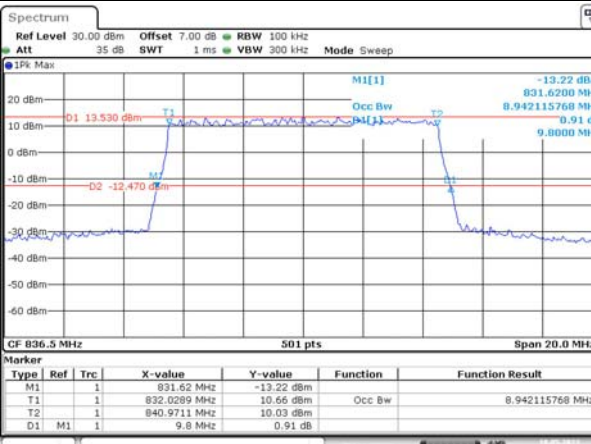
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

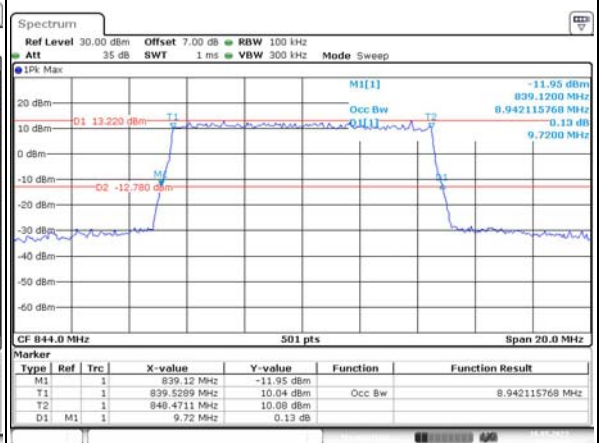
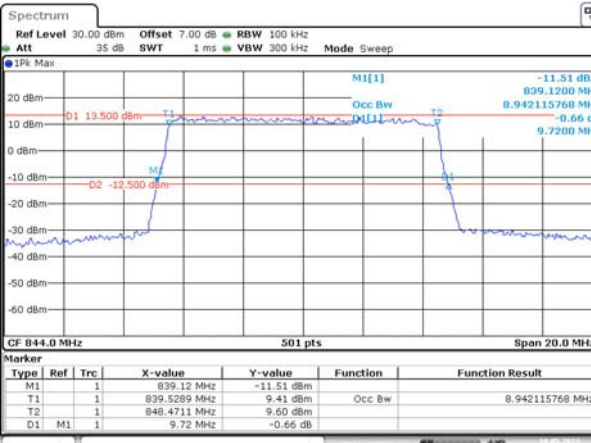
Lowest



Middle



Highest

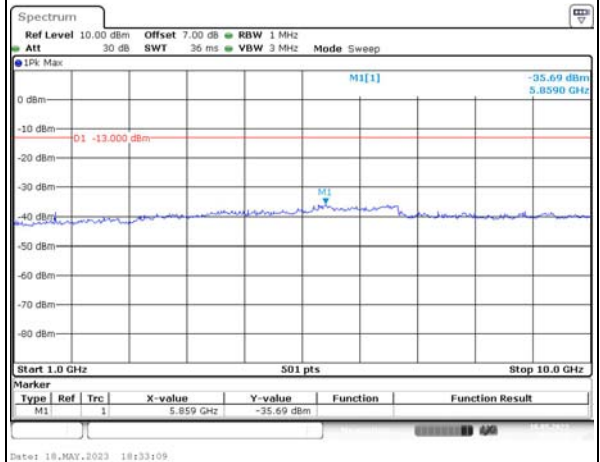
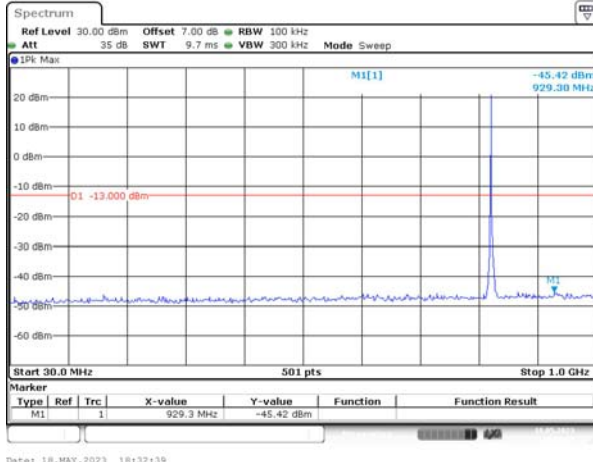


Spurious Emissions at Antenna Terminal

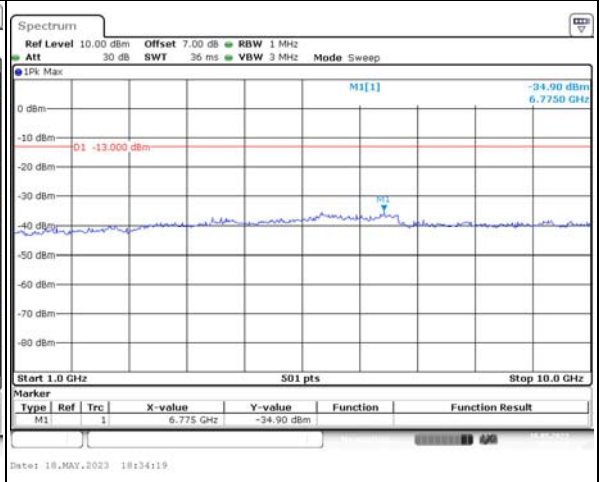
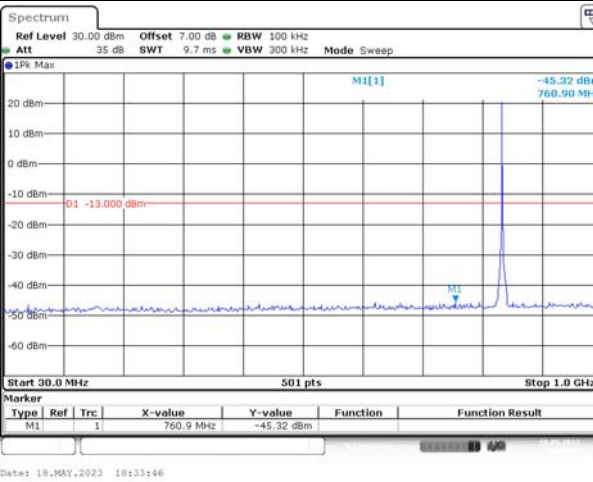
Channel

1.4MHz Bandwidth QPSK

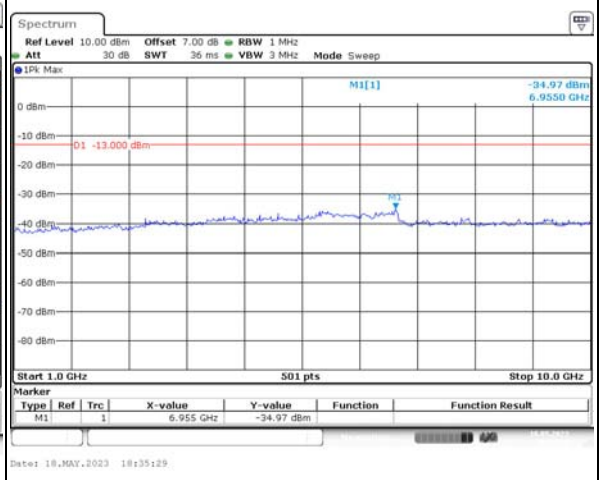
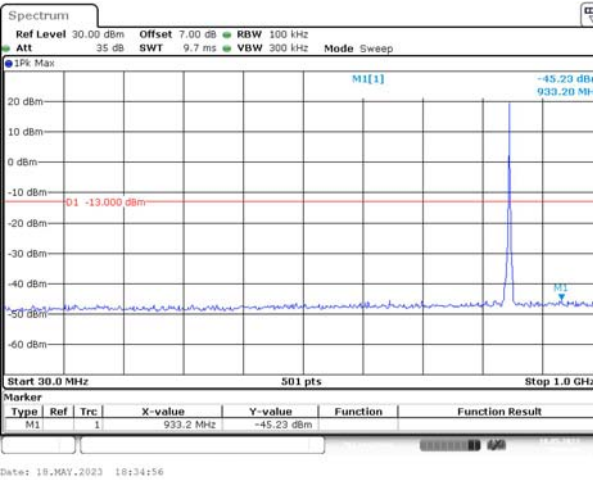
Lowest



Middle



Highest

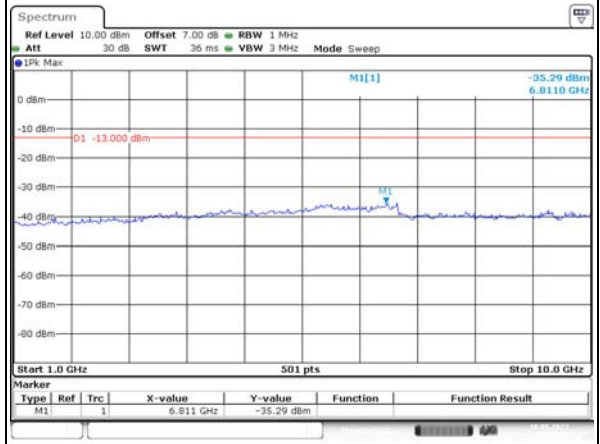
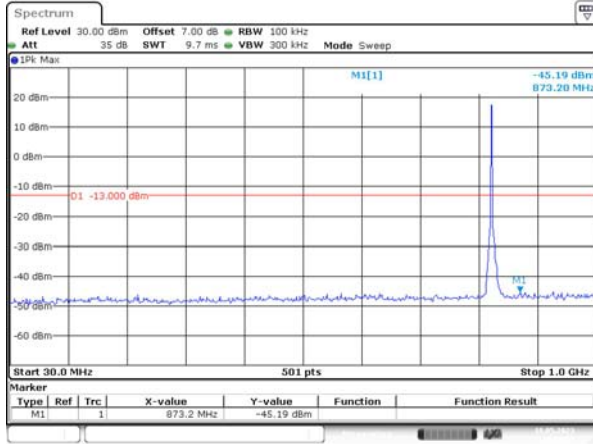


Spurious Emissions at Antenna Terminal

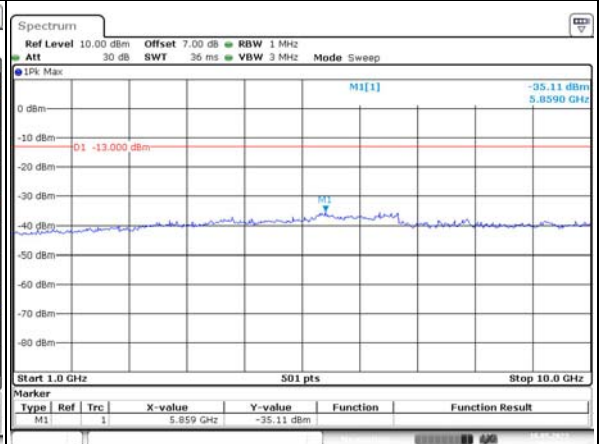
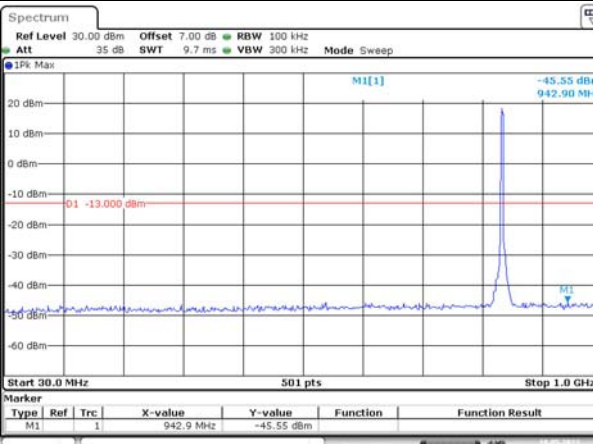
Channel

3MHz Bandwidth QPSK

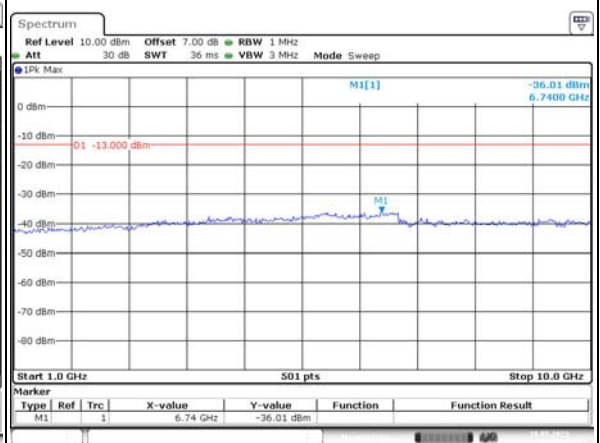
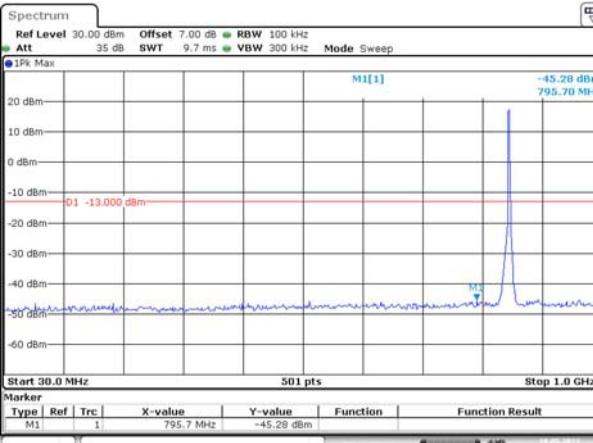
Lowest



Middle



Highest



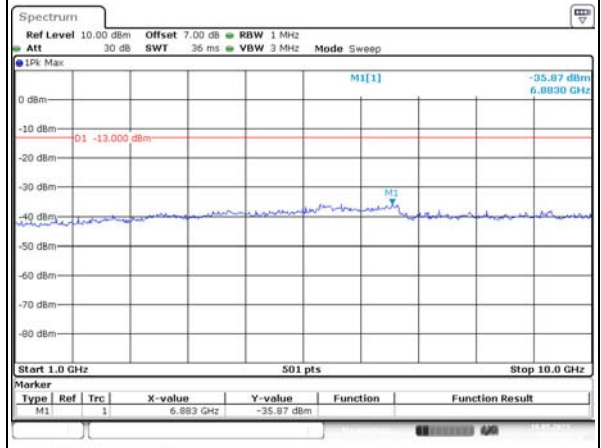
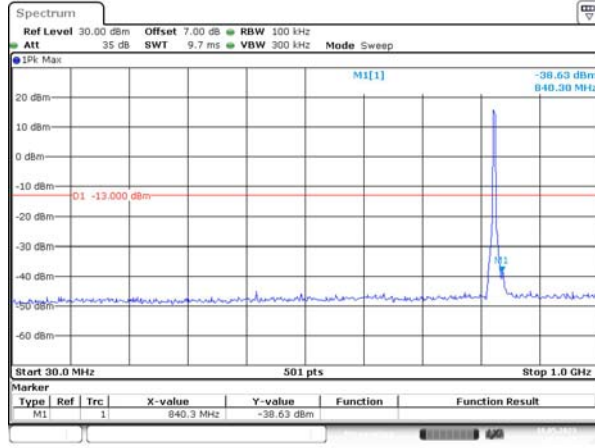


### Spurious Emissions at Antenna Terminal

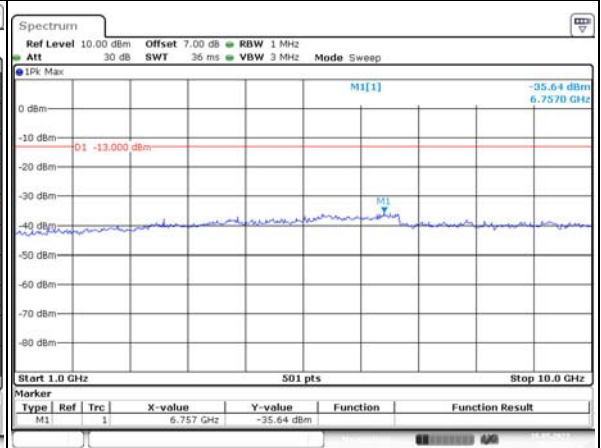
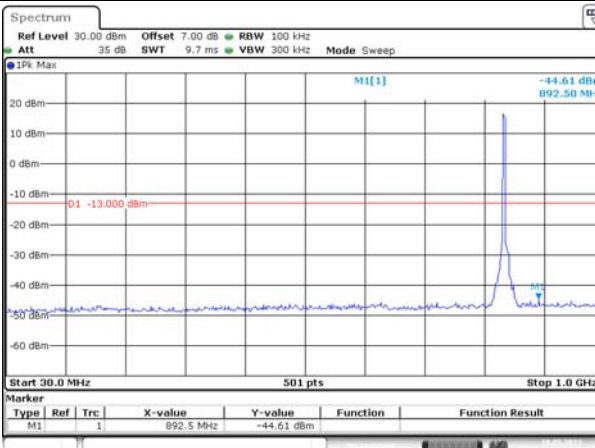
Channel

5MHz Bandwidth QPSK

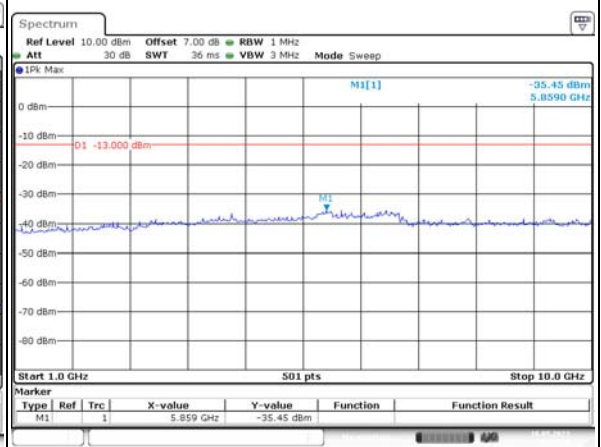
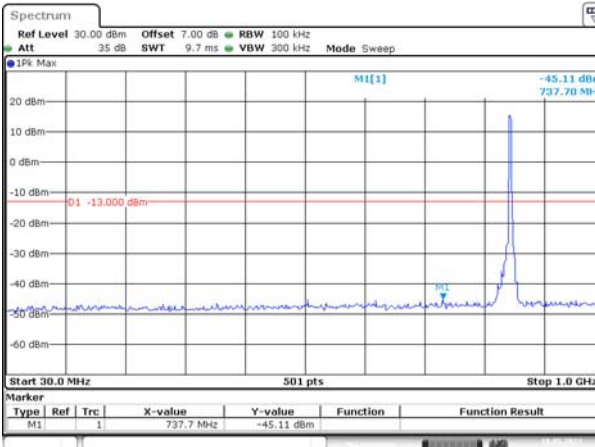
Lowest



Middle

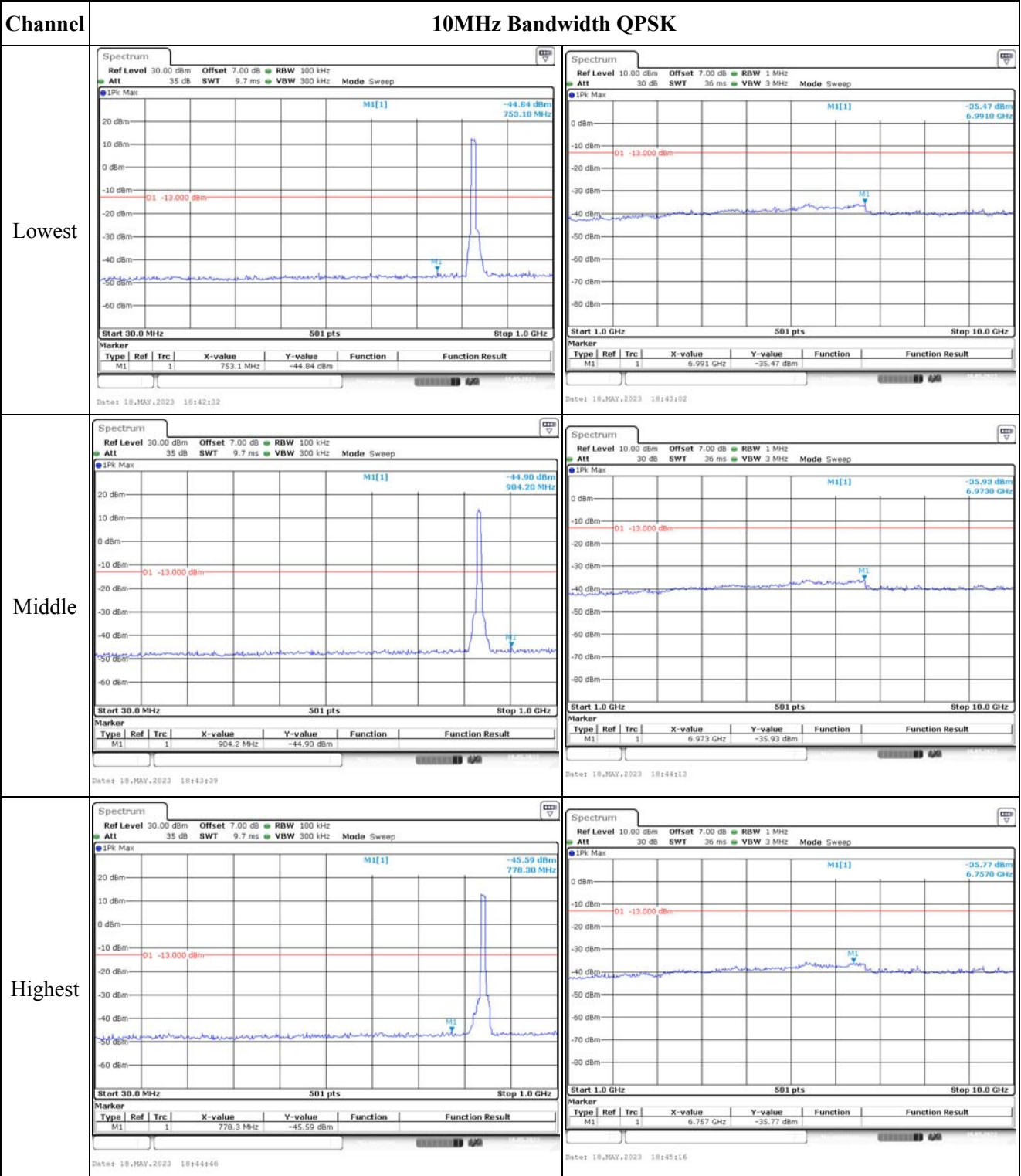


Highest

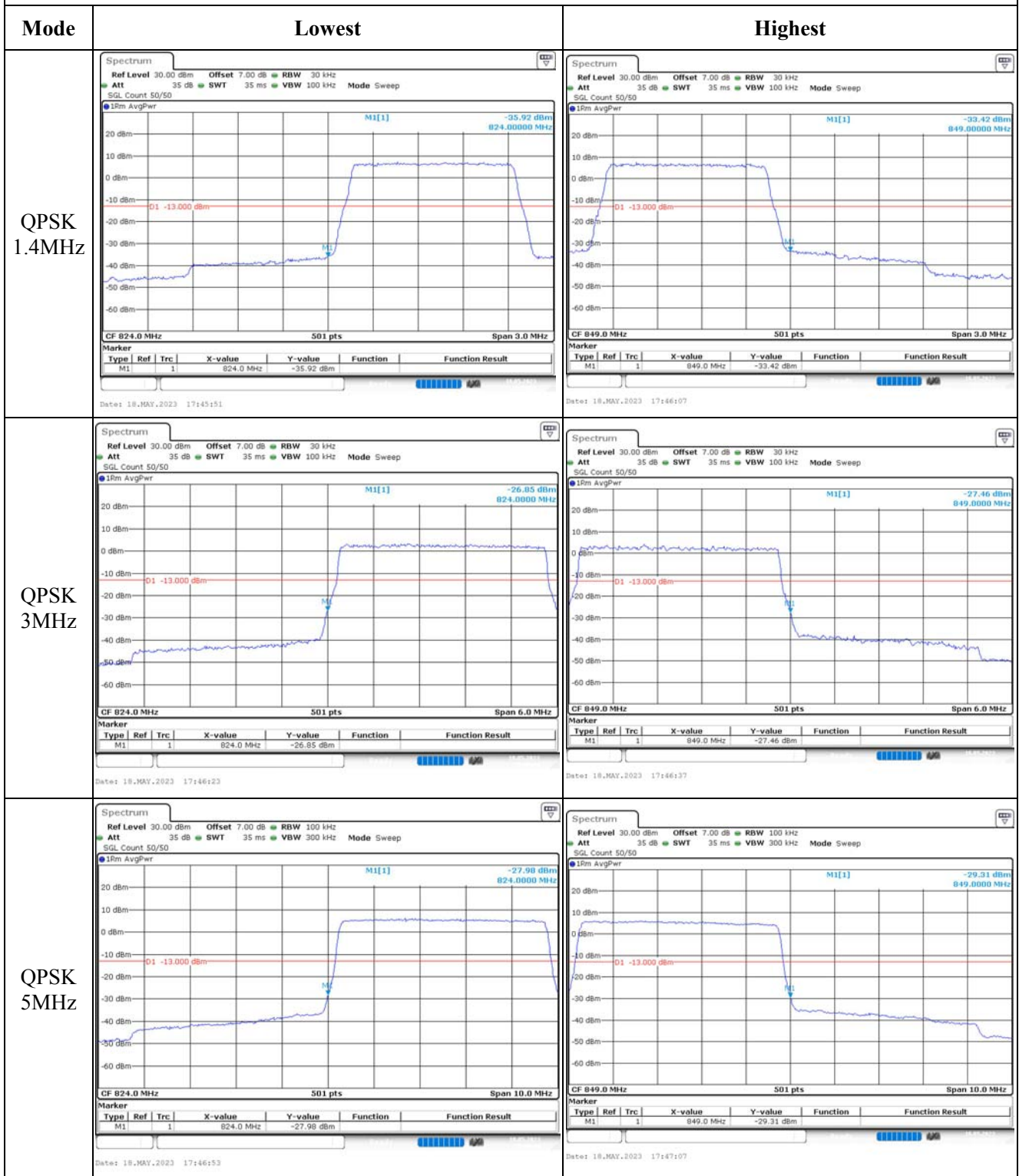




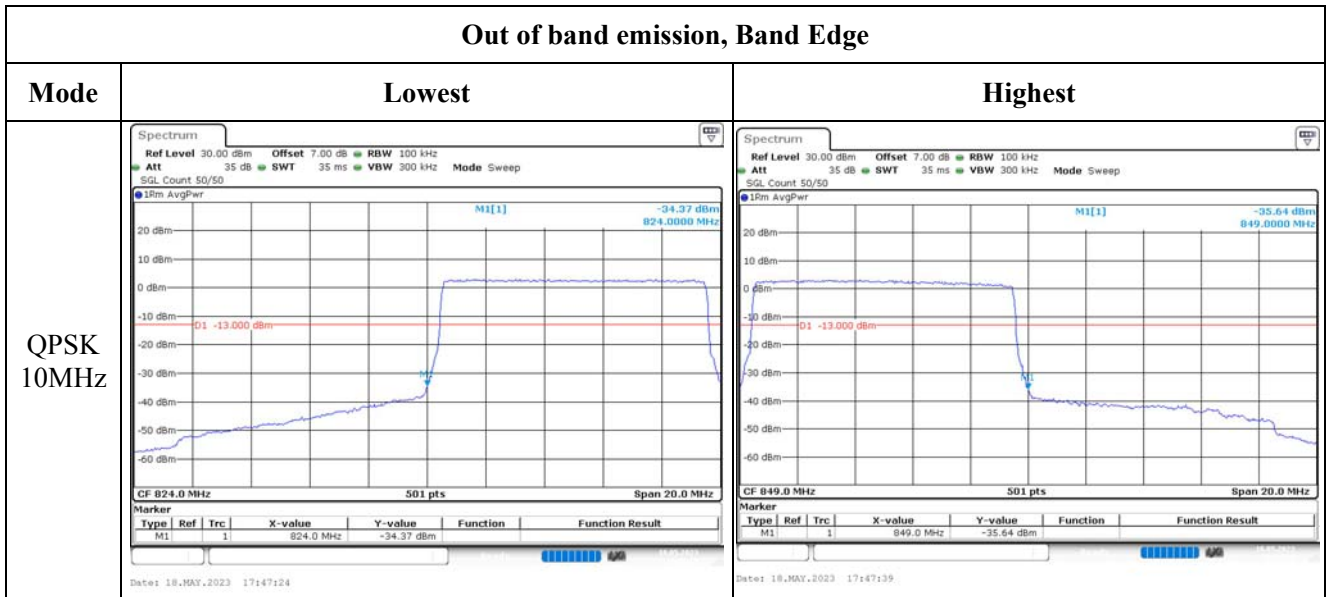
Spurious Emissions at Antenna Terminal



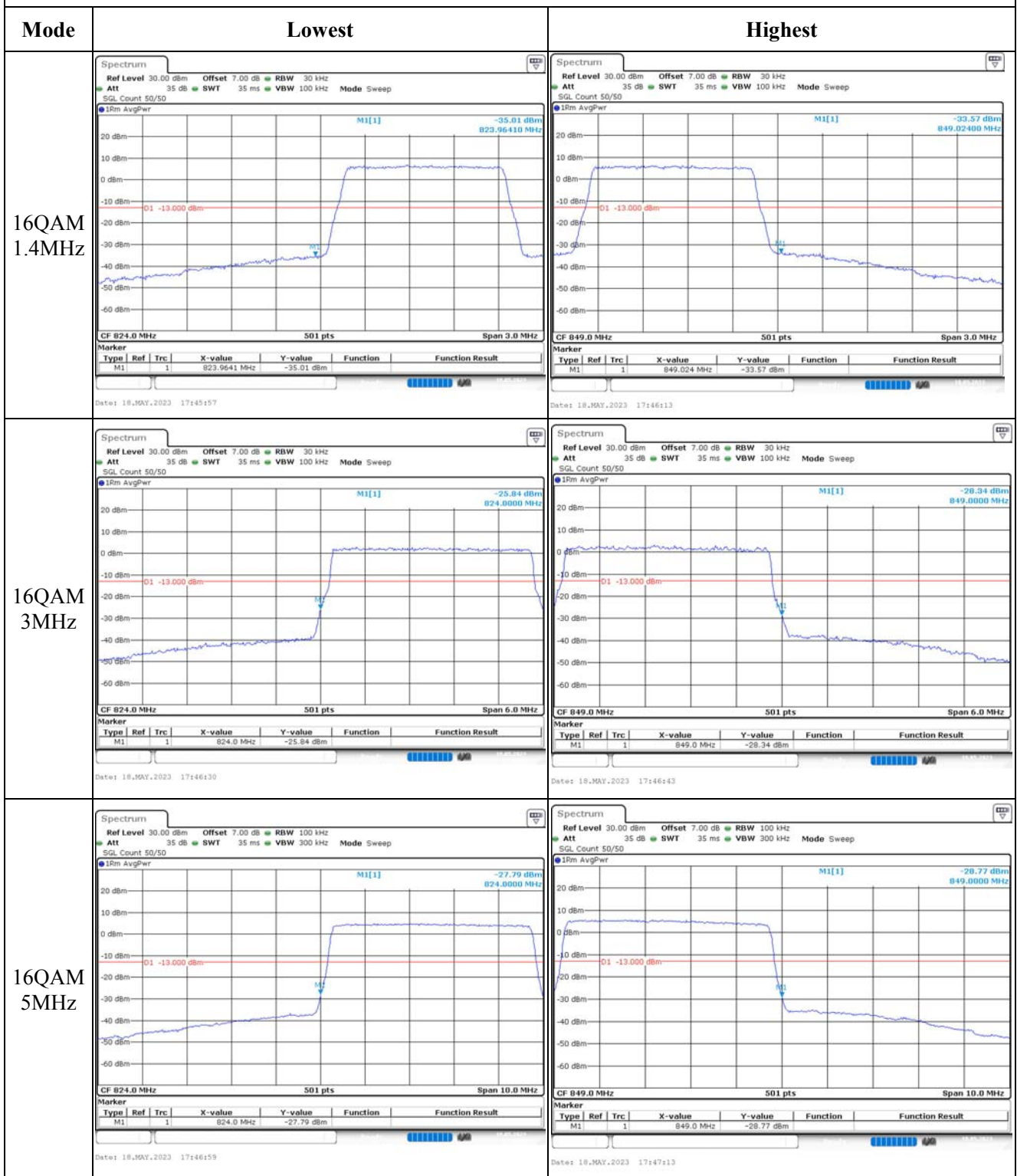
Out of band emission, Band Edge



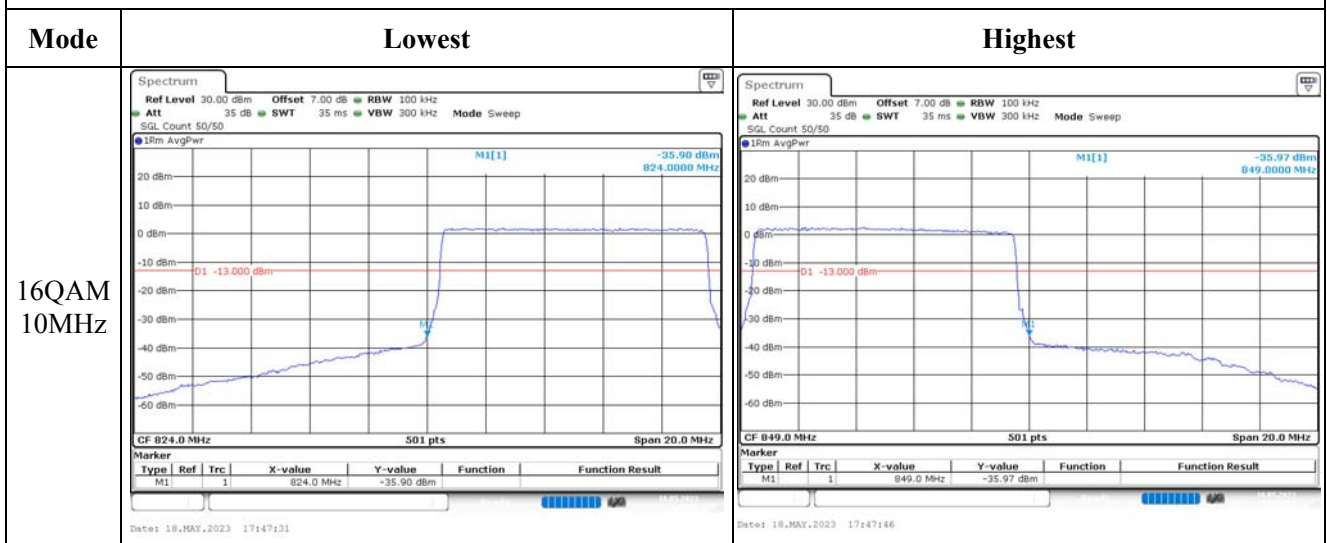
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge





**4.8 Antenna Port Test Data and Results for LTE Band 7**

Serial Number:	253A-1	Test Date:	2023/5/18~2023/5/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.3~27.2	Relative Humidity: (%)	42~61	ATM Pressure: (kPa)	100.5~101.9
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
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	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-03-31	2024-03-30
UNI-T	Multimeter	UT39A+	C210582554	2022-09-29	2023-09-28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	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	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

**Test Data:**

<b>FCC§2.1046;§ 27.50(h)(2)</b>						
<b>RF Output Power:</b>						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.5	22.59	22.54	22.86	33
	RB1#13	22.45	22.5	22.35		
	RB1#24	22.54	22.56	22.36		
	RB15#0	21.42	21.7	21.34		
	RB15#10	21.5	21.65	21.41		
	RB25#0	21.44	21.63	21.39		
5MHz 16QAM	RB1#0	21.53	21.28	20.76	21.8	33
	RB1#13	21.5	21.12	20.61		
	RB1#24	21.51	21.24	20.66		
	RB15#0	20.38	20.28	19.91		
	RB15#10	20.49	20.25	19.83		
	RB25#0	20.42	20.05	19.87		
10MHz QPSK	RB1#0	22.52	22.58	22.4	22.91	33
	RB1#25	22.55	22.52	22.39		
	RB1#49	22.64	22.63	22.15		
	RB25#0	21.48	21.57	21.48		
	RB25#25	21.56	21.49	21.29		
	RB50#0	21.55	21.65	21.47		
10MHz 16QAM	RB1#0	21.68	21.11	21.6	21.95	33
	RB1#25	21.62	21.13	21.63		
	RB1#49	21.68	21.08	21.49		
	RB25#0	20.38	20.46	20.53		
	RB25#25	20.82	20.59	20.54		
	RB50#0	20.6	20.48	20.51		
15MHz QPSK	RB1#0	22.52	22.55	22.32	22.92	33
	RB1#38	22.54	22.57	22.27		
	RB1#74	22.65	22.51	22.34		
	RB36#0	21.54	21.55	21.57		
	RB36#39	21.64	21.63	21.45		
	RB75#0	21.46	21.72	21.33		
15MHz 16QAM	RB1#0	21.71	22.07	21.64	22.4	33
	RB1#38	21.64	22.13	21.51		
	RB1#74	21.8	22.06	21.56		
	RB36#0	20.89	20.51	20.44		
	RB36#39	21.19	20.36	20.22		
	RB75#0	21.04	20.34	20.36		
20MHz QPSK	RB1#0	22.65	22.51	22.51	22.97	33
	RB1#50	22.7	22.53	22.44		
	RB1#99	22.69	22.62	22.39		

	RB50#0	21.56	21.54	21.48		
	RB50#50	21.55	21.53	21.53		
	RB100#0	21.57	21.55	21.49		
20MHz 16QAM	RB1#0	21.74	22.5	21.56	22.78	33
	RB1#50	21.77	22.51	21.44		
	RB1#99	21.89	22.47	21.35		
	RB50#0	20.58	20.68	20.32		
	RB50#50	21.31	20.81	20.4		
	RB100#0	20.96	20.74	20.39		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)

**Result:**

**Pass**

### Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit(dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.13	5.13	4.87	13
	RB100#0	5.22	5.16	5.04	13
20MHz 16QAM	RB1#0	6.14	6.12	5.74	13
	RB100#0	5.91	5.97	5.94	13
<b>Result:</b>					<b>Pass</b>

### 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
5MHz QPSK	4.511	4.511	4.511	5	5	5
5MHz 16QAM	4.531	4.551	4.511	5.02	5	4.98
10MHz QPSK	8.982	8.942	8.942	9.8	9.8	9.76
10MHz 16QAM	8.982	8.942	8.942	9.84	9.84	9.76
15MHz QPSK	13.473	13.533	13.533	15	15.12	15.06
15MHz 16QAM	13.593	13.533	13.533	15.12	15.06	15
20MHz QPSK	17.884	18.044	17.964	19.52	19.76	19.6
20MHz 16QAM	17.964	17.964	17.964	19.76	19.76	19.68

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

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

**Result:** Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

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

**Result:** Pass, Please refer to the test plots of Out of band emission, Band Edge.

### FCC §2.1055, §27.54: Frequency Stability

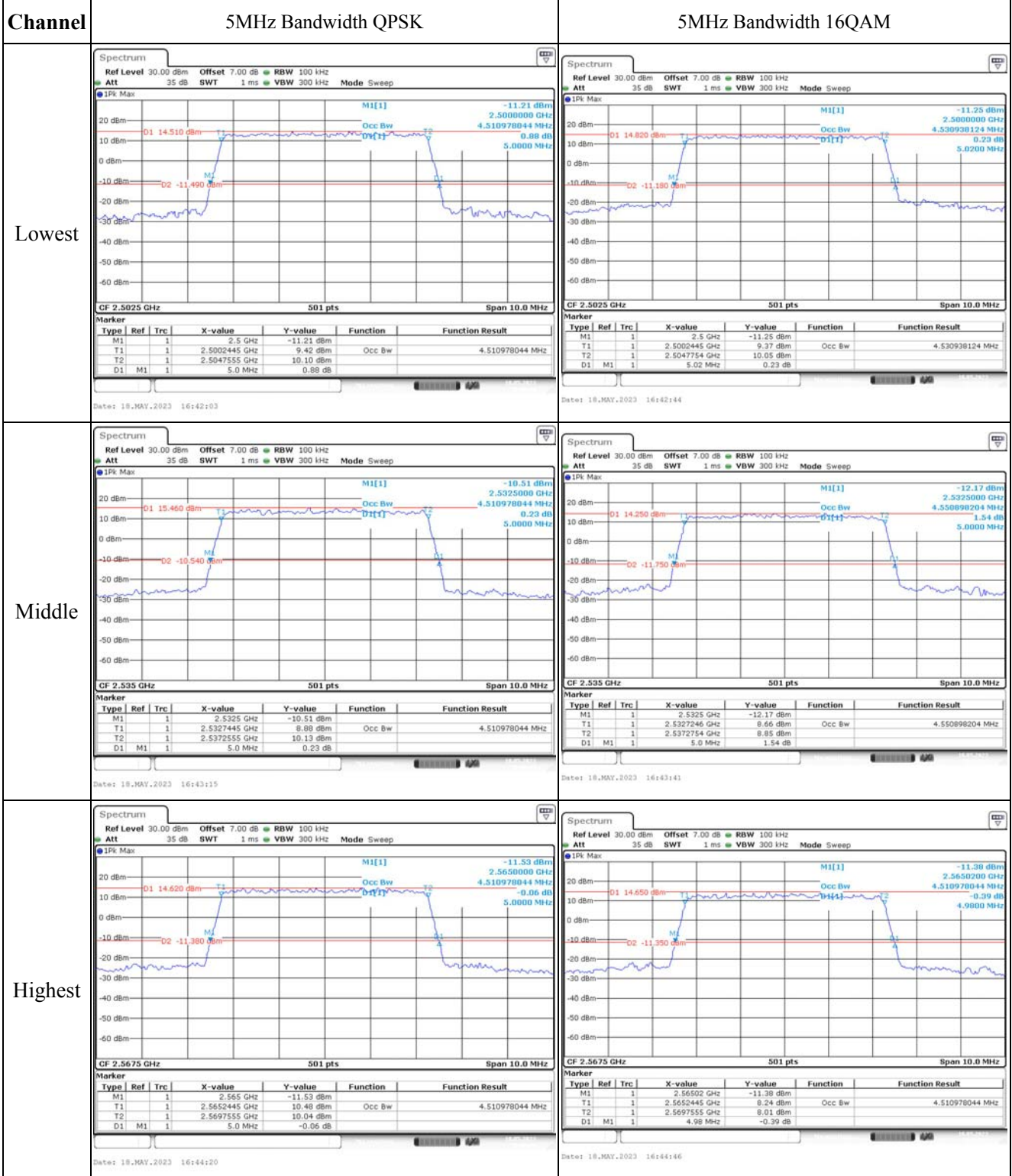
Test Mode: 20M QPSK Test Channel: Lowest for Lower Edge,Highest for Upper Edge

Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	2501.072	2500.00	2569.031	2570
	-20	3.7	2501.058	2500.00	2569.028	2570
	-10	3.7	2501.007	2500.00	2569.093	2570
	0	3.7	2501.033	2500.00	2569.054	2570
	10	3.7	2501.079	2500.00	2569.016	2570
	20	3.7	2501.032	2500.00	2569.022	2570
	30	3.7	2501.053	2500.00	2569.014	2570
	40	3.7	2501.046	2500.00	2569.025	2570
Frequency Stability vs. Voltage	20	3.6	2501.067	2500.00	2569.001	2570
	20	4.35	2501.015	2500.00	2569.020	2570
					<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	3.7	2501.065	2500.00	2569.078	2570
	-20	3.7	2501.062	2500.00	2569.019	2570
	-10	3.7	2501.094	2500.00	2569.058	2570
	0	3.7	2501.020	2500.00	2569.011	2570
	10	3.7	2501.066	2500.00	2569.035	2570
	20	3.7	2501.058	2500.00	2569.022	2570
	30	3.7	2501.067	2500.00	2569.040	2570
	40	3.7	2501.006	2500.00	2569.056	2570
Frequency Stability vs. Voltage	20	3.6	2501.092	2500.00	2569.094	2570
	20	4.35	2501.081	2500.00	2569.017	2570
					<b>Result:</b>	<b>Pass</b>

**Test Plots**(Note: The 7dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**





Occupied Bandwidth

