

**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		
5MHz QPSK	RB1#0	23.32	23.47	23.37	15.19	34.77
	RB1#13	23.54	23.41	23.28		
	RB1#24	23.44	23.29	23.1		
	RB15#0	22.4	22.39	22.31		
	RB15#10	22.37	22.4	22.12		
	RB25#0	22.36	22.28	22.15		
5MHz 16QAM	RB1#0	22.18	21.98	21.37	14.06	34.77
	RB1#13	22.34	21.78	21.35		
	RB1#24	22.41	21.72	21.27		
	RB15#0	21.2	21.41	21.76		
	RB15#10	21.37	21.34	21.33		
	RB25#0	21.4	21.12	21.33		
10MHz QPSK	RB1#0	23.4	23.44	23.42	15.17	34.77
	RB1#25	23.52	23.38	23.23		
	RB1#49	23.36	23.29	23.23		
	RB25#0	22.35	22.33	22.55		
	RB25#25	22.17	22.18	22.13		
	RB50#0	22.47	22.39	22.41		
10MHz 16QAM	RB1#0	22.37	21.86	22.51	14.21	34.77
	RB1#25	22.56	21.85	22.38		
	RB1#49	22.26	21.72	22.3		
	RB25#0	21.49	21.57	21.41		
	RB25#25	21.87	21.9	21.23		
	RB50#0	21.45	21.33	21.33		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + G<sub>T</sub>(dBd)G<sub>T</sub>(dBd)=G<sub>T</sub>(dBi)-2.15**Result:****Pass**

<b>Peak-to-average Ratio(PAR)</b>					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	3.51	3.51	3.77	13
	RB50#0	4.96	4.81	4.81	13
10MHz 16QAM	RB1#0	4.55	4.43	4.99	13
	RB50#0	5.94	5.94	5.86	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
5MHz QPSK	4.531	4.491	4.511	5.040	4.980	4.960
5MHz 16QAM	4.551	4.531	4.491	5.020	5.020	4.980
10MHz QPSK	8.942	8.942	8.942	9.720	9.720	9.680
10MHz 16QAM	8.982	8.942	8.942	9.840	9.800	9.680

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>

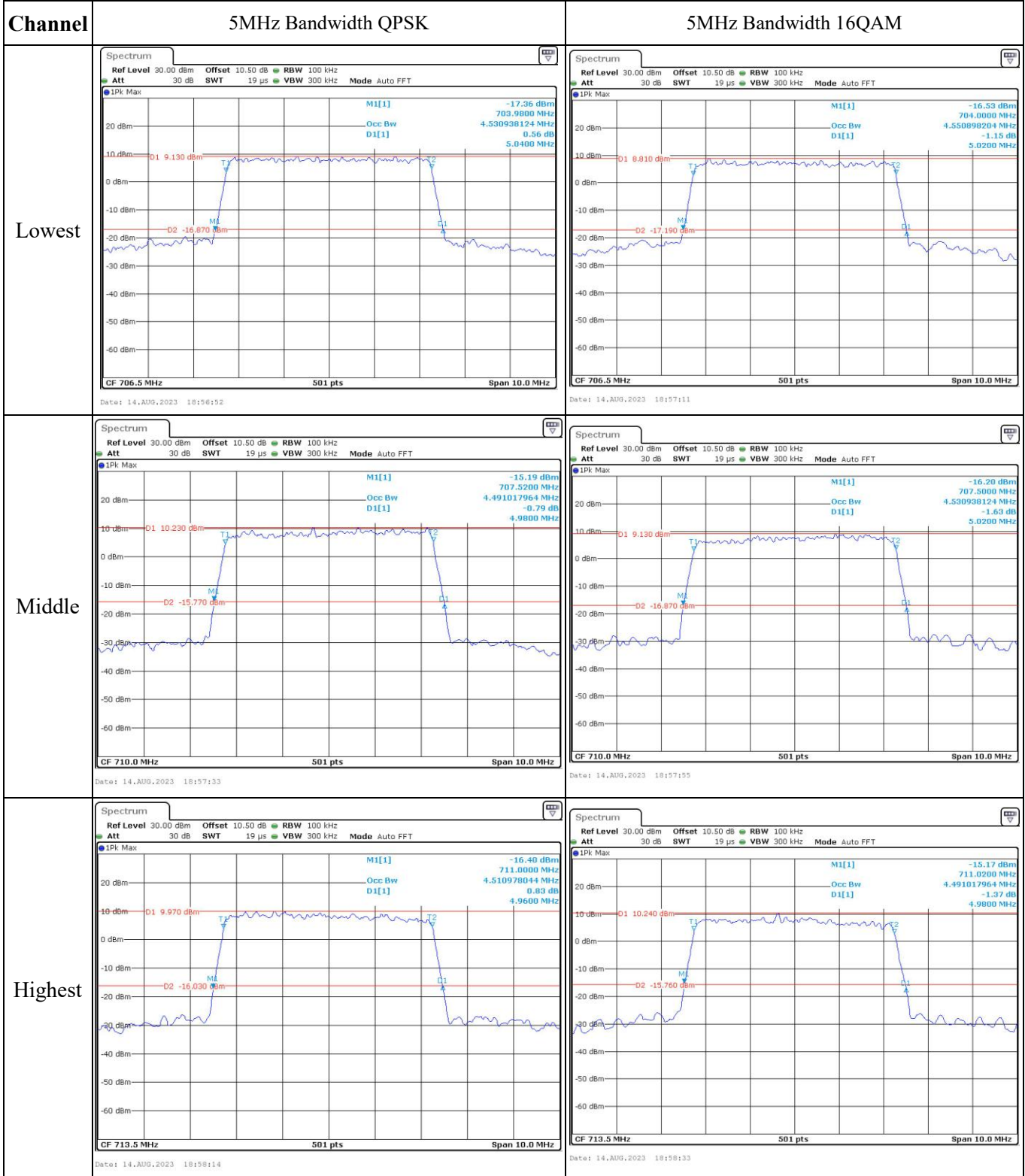
<b>FCC §2.1051, §27.53:Out of band emission, Band Edge</b>	
<b>Result:</b>	<b>Pass, Please refer to the test plots of Out of band emission, Band Edge.</b>

FCC §2.1055, §27.54: Frequency Stability						
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	3.85	704.123	704.00	715.877	716.00
	-20	3.85	704.246	704.00	715.863	716.00
	-10	3.85	704.604	704.00	715.847	716.00
	0	3.85	704.664	704.00	715.859	716.00
	10	3.85	704.231	704.00	715.849	716.00
	20	3.85	704.368	704.00	715.835	716.00
	30	3.85	704.243	704.00	715.836	716.00
	40	3.85	704.233	704.00	715.838	716.00
Frequency Stability vs. Voltage	20	3.35	704.615	704.00	715.864	716.00
	20	4.4	704.361	704.00	715.876	716.00
					<b>Result:</b>	<b>Pass</b>

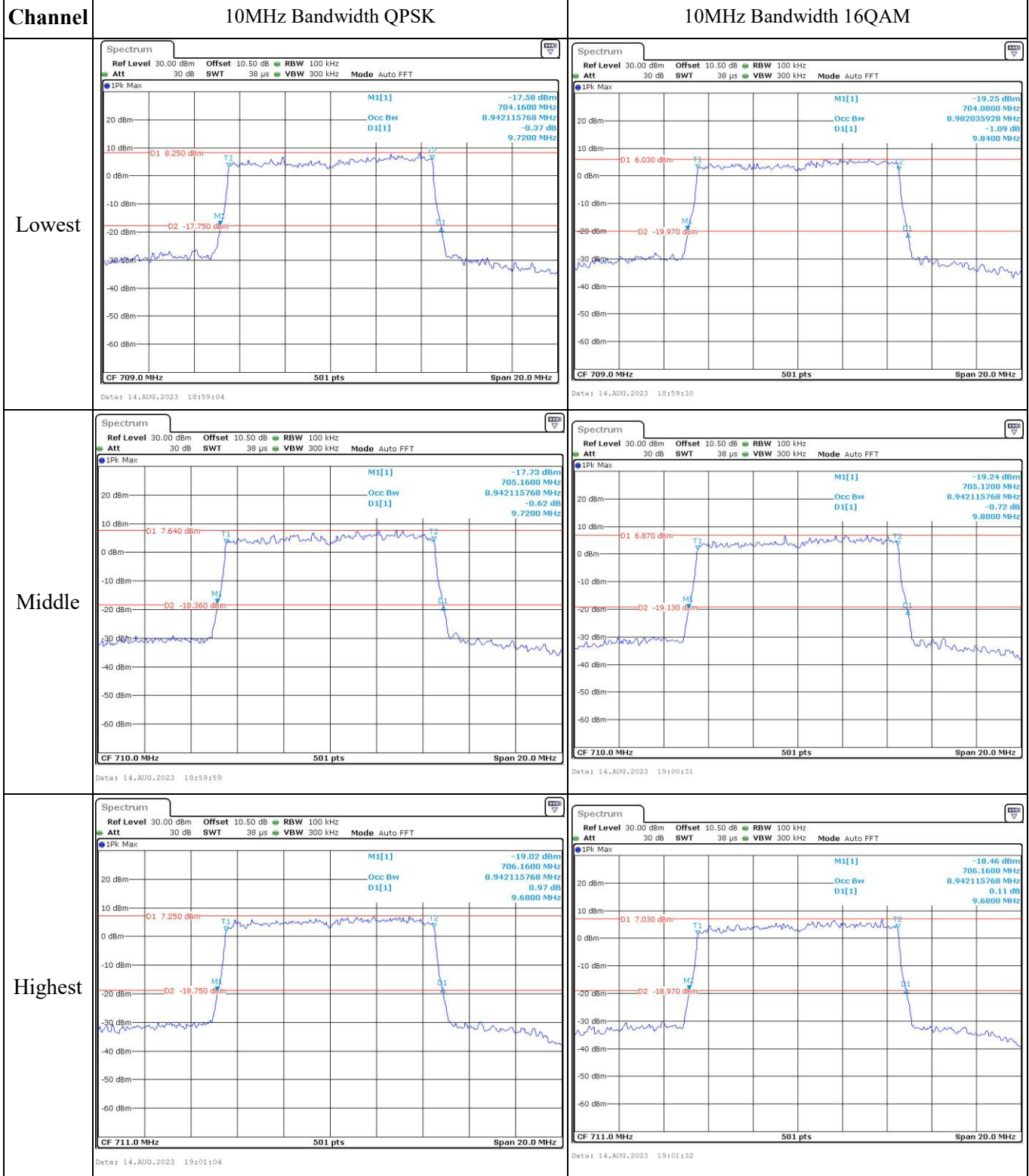
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	704.227	704.00	715.917	716.00
	-20	3.85	704.204	704.00	715.917	716.00
	-10	3.85	704.397	704.00	715.905	716.00
	0	3.85	704.106	704.00	715.913	716.00
	10	3.85	704.325	704.00	715.952	716.00
	20	3.85	704.366	704.00	715.959	716.00
	30	3.85	704.583	704.00	715.933	716.00
	40	3.85	704.158	704.00	715.919	716.00
Frequency Stability vs. Voltage	20	3.35	704.191	704.00	715.938	716.00
	20	4.4	704.371	704.00	715.867	716.00
					<b>Result:</b>	<b>Pass</b>

**Test Plots**(Note: The 10.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**



### Occupied Bandwidth

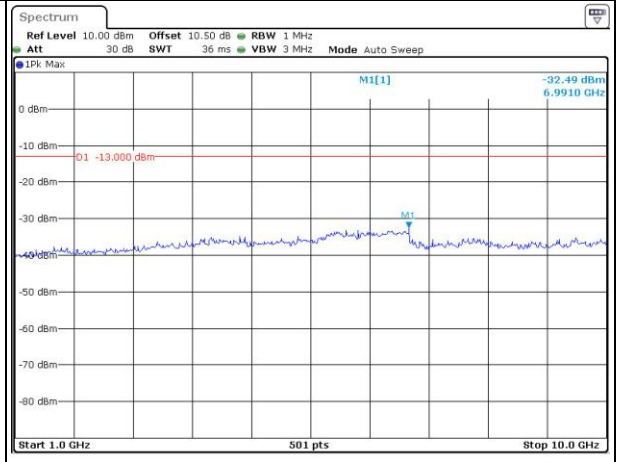
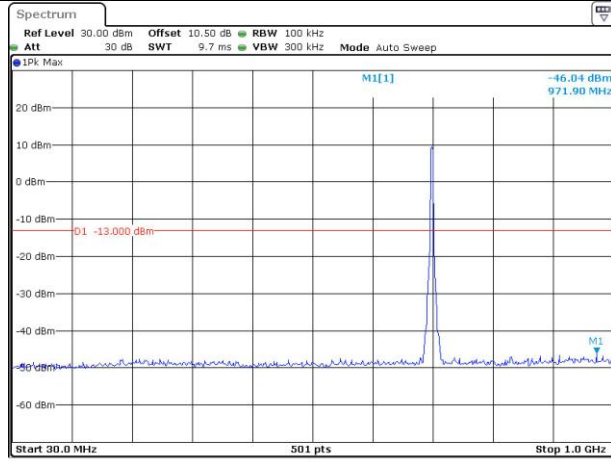


### Spurious Emissions at Antenna Terminal

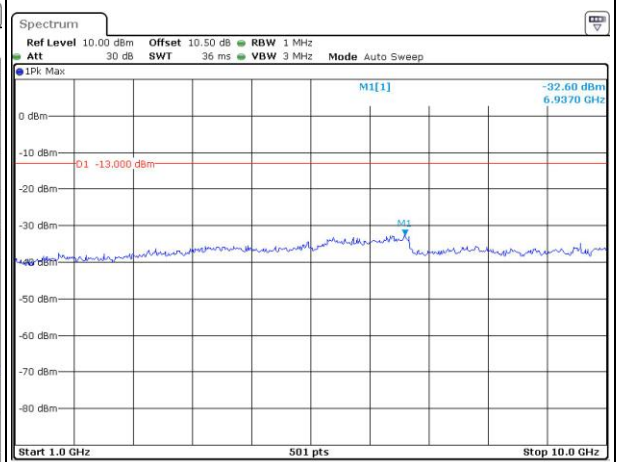
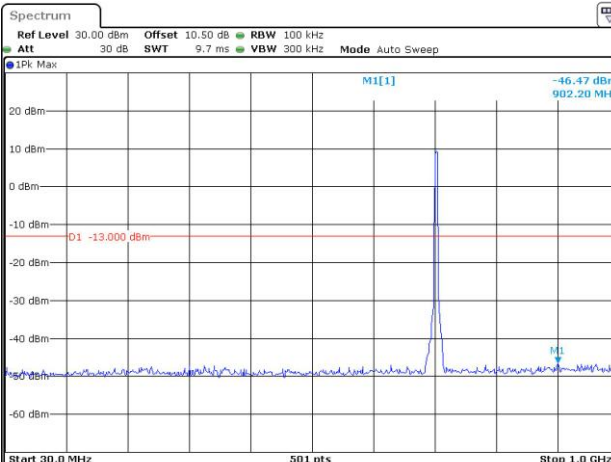
Channel

5MHz Bandwidth QPSK

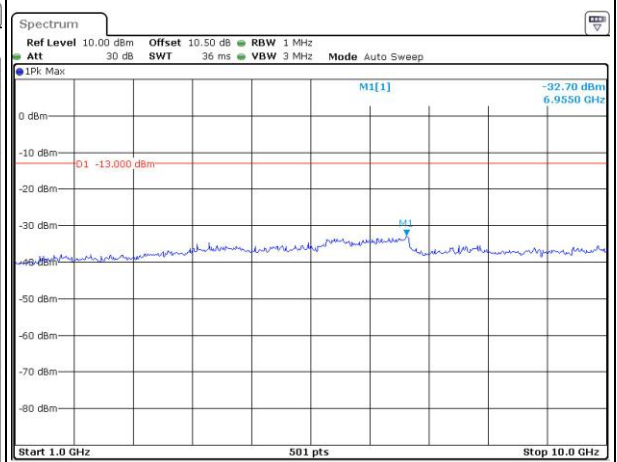
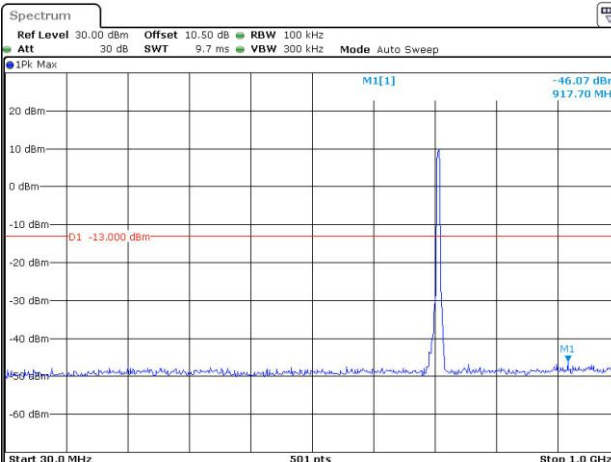
Lowest



Middle



Highest

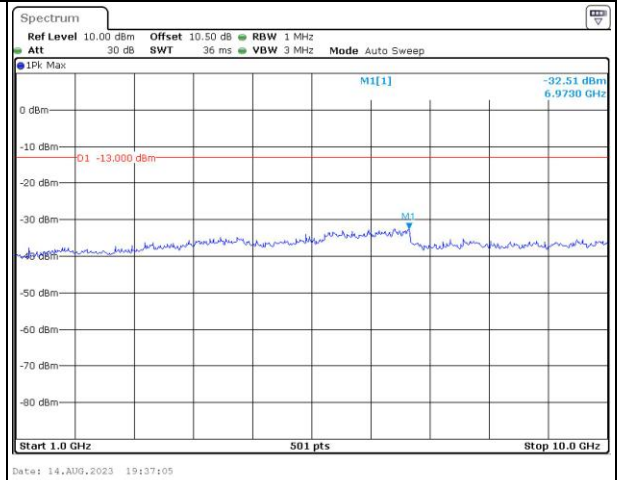
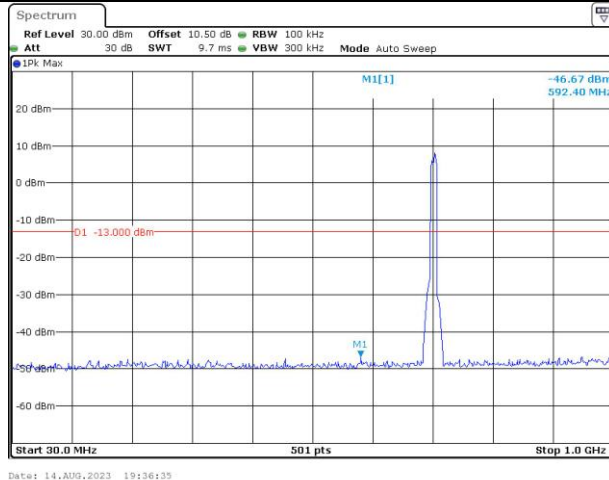


### Spurious Emissions at Antenna Terminal

Channel

10MHz Bandwidth QPSK

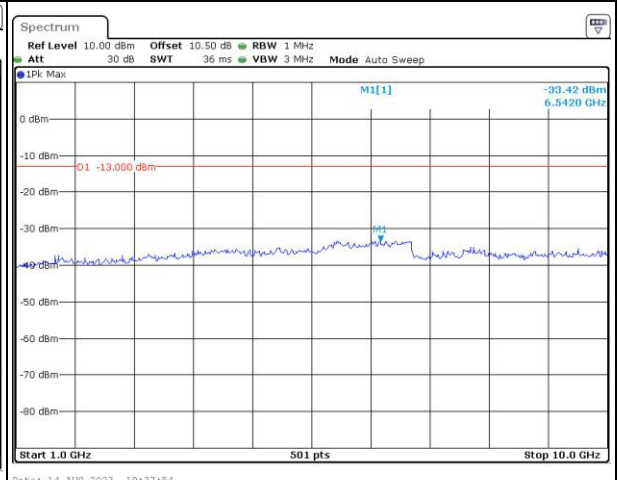
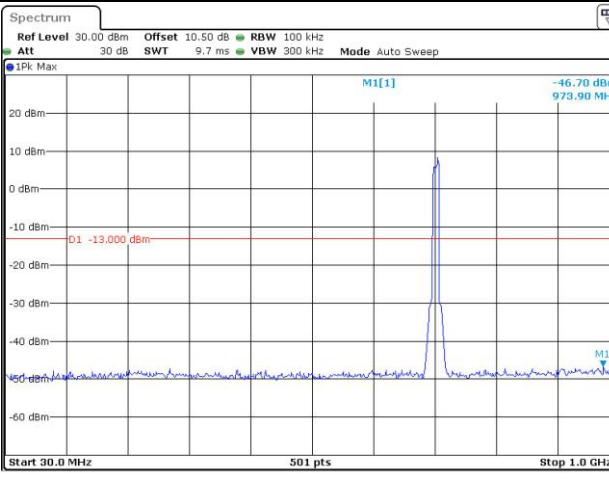
Lowest



Date: 14.AUG.2023 19:36:35

Date: 14.AUG.2023 19:37:05

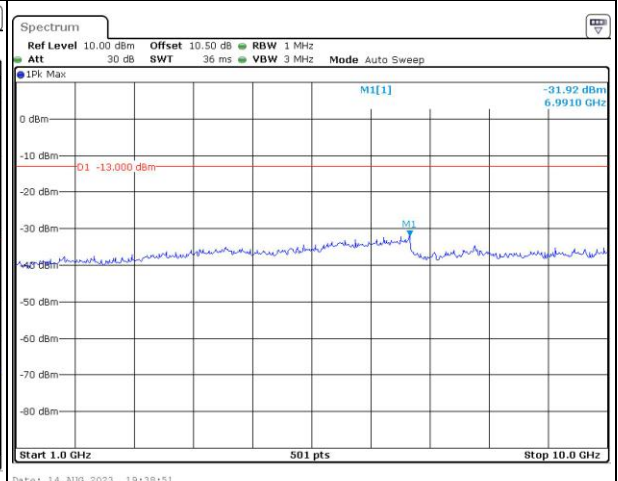
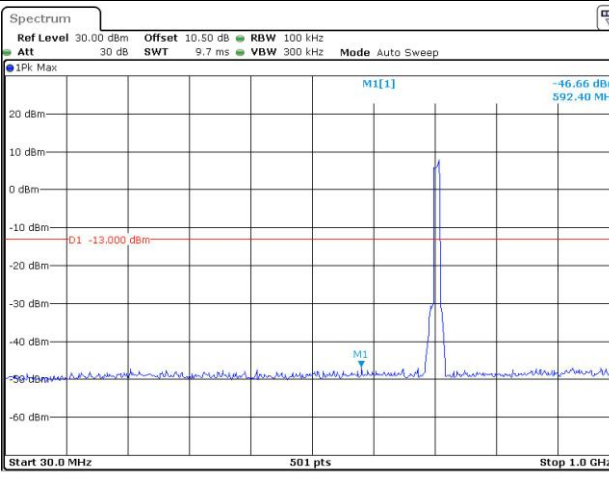
Middle



Date: 14.AUG.2023 19:37:34

Date: 14.AUG.2023 19:37:54

Highest



Date: 14.AUG.2023 19:38:24

Date: 14.AUG.2023 19:38:51

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz		
QPSK 10MHz		



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz		
16QAM 10MHz		

**4.12 Antenna Port Test Data and Results for LTE Band 38**

Serial Number:	2A4I-1	Test Date:	2023/8/13-2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Panda Sun	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.3~25.6	Relative Humidity: (%)	64-68	ATM Pressure: (kPa)	101
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	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
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
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	2572.5	2595	2617.5
10MHz	2575	2595	2615
15MHz	2577.5	2595	2612.5
20MHz	2580	2595	2610

**Test Data:****FCC§2.1046;§ 27.50(h)(2)****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		
5MHz QPSK	RB1#0	19.3	19.34	19.74	19.58	33
	RB1#13	19.19	19.4	19.78		
	RB1#24	19.15	19.44	19.74		
	RB15#0	18.92	18.94	19.25		
	RB15#10	18.87	19.08	19.24		
	RB25#0	18.87	18.91	19.21		
5MHz 16QAM	RB1#0	18.09	18.62	18.97	18.79	33
	RB1#13	18.12	18.8	18.98		
	RB1#24	18.29	18.27	18.99		
	RB15#0	17.48	17.83	18.32		
	RB15#10	17.42	17.81	18.32		
	RB25#0	17.38	17.88	18.31		
10MHz QPSK	RB1#0	19.51	19.39	19.79	19.67	33
	RB1#25	19.46	19.41	19.82		
	RB1#49	19.47	19.47	19.87		
	RB25#0	18.82	18.98	19.18		
	RB25#25	18.86	19.04	19.27		
	RB50#0	18.77	19.08	19.22		
10MHz 16QAM	RB1#0	19.06	18.34	18.85	18.86	33
	RB1#25	18.46	18.42	18.77		
	RB1#49	18.54	18.48	18.78		
	RB25#0	17.46	17.13	17.3		
	RB25#25	17.65	17.32	17.39		
	RB50#0	17.45	17.21	17.35		
15MHz QPSK	RB1#0	19.46	19.29	19.83	19.71	33
	RB1#38	19.48	19.36	19.84		
	RB1#74	19.55	19.46	19.91		
	RB36#0	18.79	18.99	19.24		
	RB36#39	18.89	18.98	19.19		
	RB75#0	18.9	18.97	19.28		
15MHz 16QAM	RB1#0	19.04	18.48	18.73	18.84	33
	RB1#38	18.61	18.61	18.76		
	RB1#74	18.57	18.54	18.83		
	RB36#0	17.96	17.35	18.03		
	RB36#39	17.92	17.35	17.81		
	RB75#0	17.98	17.3	17.9		
20MHz QPSK	RB1#0	19.43	19.44	19.36	19.31	33

	RB1#50	19.31	19.46	19.47		
	RB1#99	19.38	19.51	19.48		
	RB50#0	18.91	18.94	19.17		
	RB50#50	18.92	19.03	19.18		
	RB100#0	18.95	19.01	19.29		
20MHz 16QAM	RB1#0	17.83	19.26	18.12	19.33	33
	RB1#50	17.95	19.28	18.31		
	RB1#99	17.66	19.53	18.29		
	RB50#0	17.01	18.28	17.07		
	RB50#50	16.91	18.27	16.81		
	RB100#0	16.91	18.24	16.94		

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	9.36	9.57	9.1	13
	RB100#0	9.16	9.22	9.16	13
20MHz 16QAM	RB1#0	10.09	10.03	9.77	13
	RB100#0	9.88	9.94	9.91	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	5.220	5.000	5.080
5MHz 16QAM	4.511	4.531	4.511	5.060	5.080	5.220
10MHz QPSK	8.942	8.942	8.942	9.800	9.760	9.760
10MHz 16QAM	8.942	8.942	8.942	9.760	9.880	9.760
15MHz QPSK	13.533	13.473	13.533	15.360	15.360	15.060
15MHz 16QAM	13.533	13.533	13.533	15.060	14.880	15.000
20MHz QPSK	17.964	17.884	17.964	20.480	19.600	19.600
20MHz 16QAM	17.964	17.964	17.964	20.160	19.520	19.600

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:**

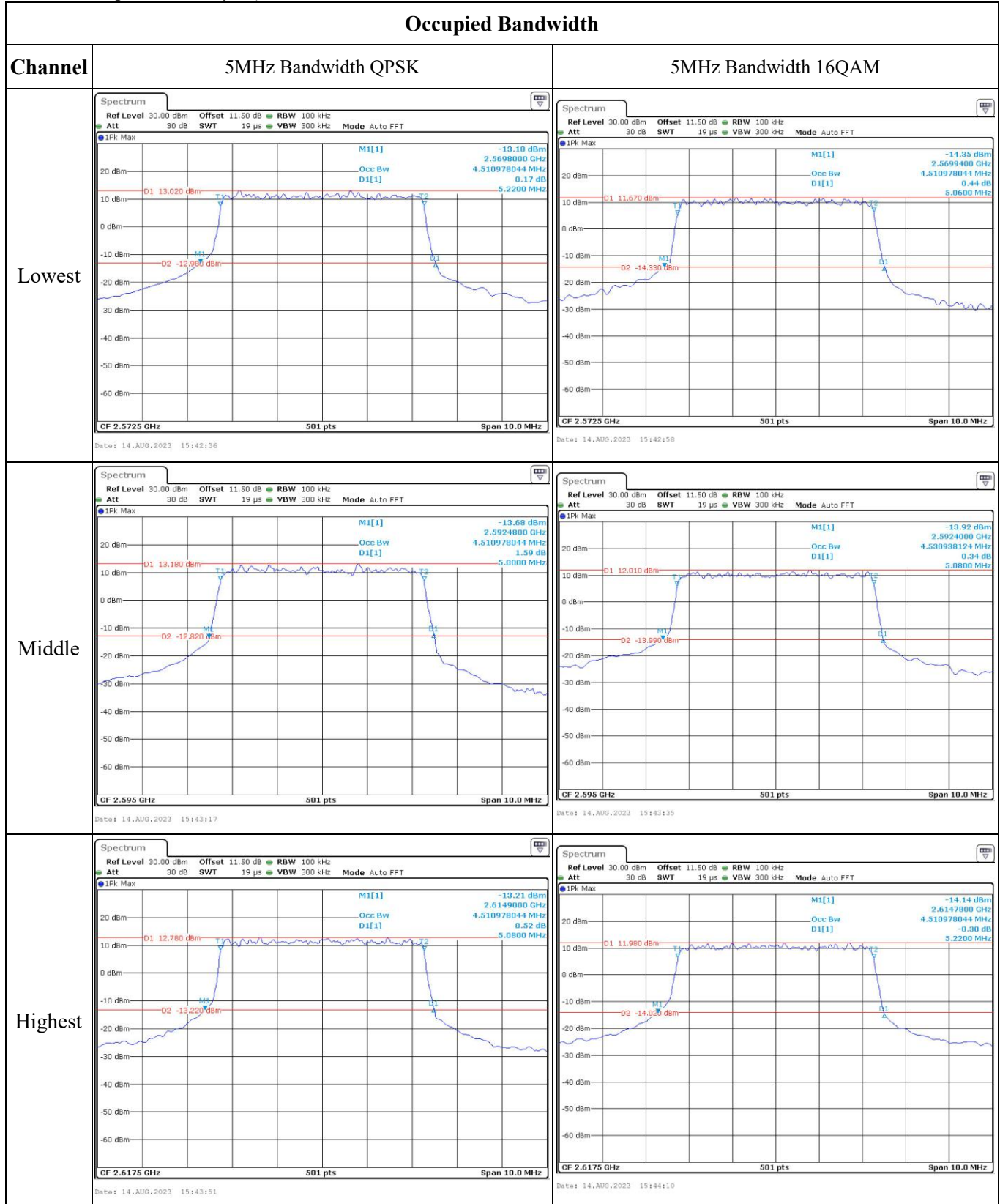
Pass, Please refer to the test plots of Out of band emission, Band Edge.

**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	3.85	2570.221	2570.00	2619.918	2620
	-20	3.85	2570.493	2570.00	2619.960	2620
	-10	3.85	2570.551	2570.00	2619.937	2620
	0	3.85	2570.572	2570.00	2619.943	2620
	10	3.85	2570.178	2570.00	2619.914	2620
	20	3.85	2570.452	2570.00	2619.959	2620
	30	3.85	2570.294	2570.00	2619.980	2620
	40	3.85	2570.133	2570.00	2619.935	2620
Frequency Stability vs. Voltage	20	3.35	2570.389	2570.00	2619.954	2620
	20	4.4	2570.165	2570.00	2619.959	2620
<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	3.85	2570.108	2570.00	2619.970	2620
	-20	3.85	2570.116	2570.00	2619.953	2620
	-10	3.85	2570.148	2570.00	2619.952	2620
	0	3.85	2570.401	2570.00	2619.904	2620
	10	3.85	2570.327	2570.00	2619.947	2620
	20	3.85	2570.231	2570.00	2619.933	2620
	30	3.85	2570.138	2570.00	2619.953	2620
	40	3.85	2570.104	2570.00	2619.948	2620
Frequency Stability vs. Voltage	20	3.35	2570.181	2570.00	2619.934	2620
	20	4.4	2570.177	2570.00	2619.911	2620
<b>Result:</b>					<b>Pass</b>	

**Test Plots**(Note: The 11.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):



### Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

### Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		



### Occupied Bandwidth

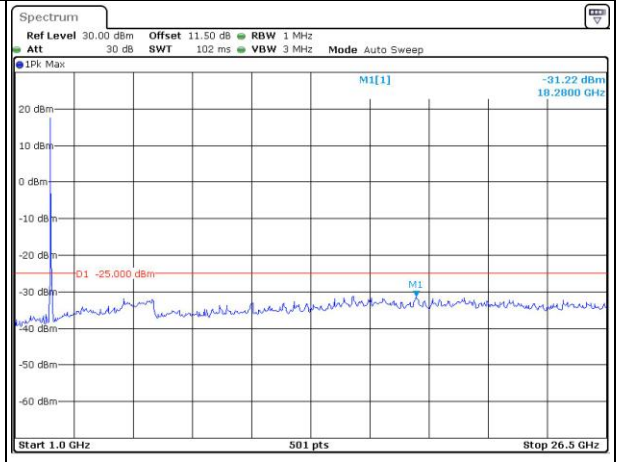
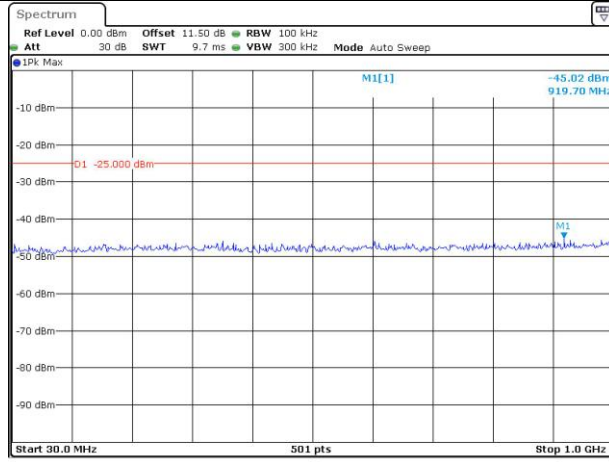
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>CF 2.58 GHz 501 pts Span 40.0 MHz Date: 14.AUG.2023 15:50:15</p>	<p>CF 2.58 GHz 501 pts Span 40.0 MHz Date: 14.AUG.2023 15:51:29</p>
Middle	<p>CF 2.595 GHz 501 pts Span 40.0 MHz Date: 14.AUG.2023 15:52:17</p>	<p>CF 2.595 GHz 501 pts Span 40.0 MHz Date: 14.AUG.2023 15:52:52</p>
Highest	<p>CF 2.61 GHz 501 pts Span 40.0 MHz Date: 14.AUG.2023 15:53:24</p>	<p>CF 2.61 GHz 501 pts Span 40.0 MHz Date: 14.AUG.2023 15:53:55</p>

### Spurious Emissions at Antenna Terminal

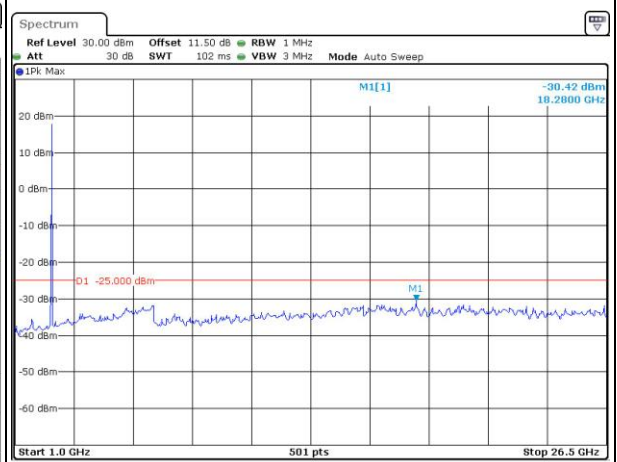
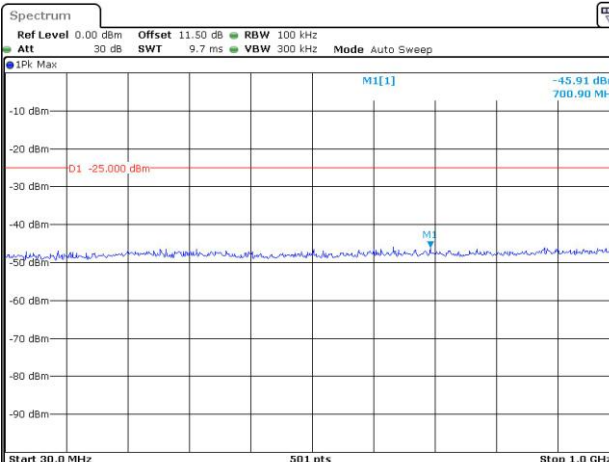
Channel

5MHz Bandwidth QPSK

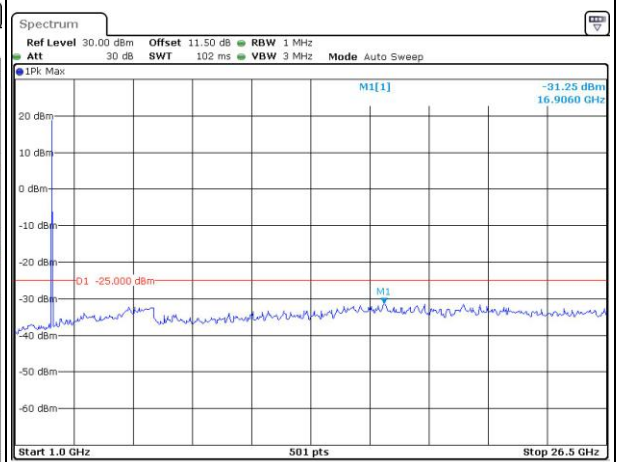
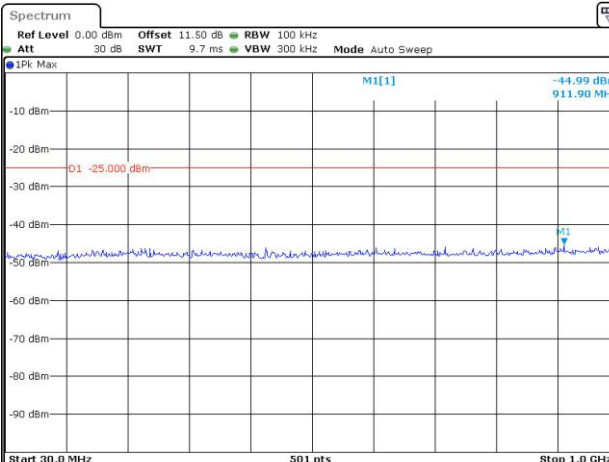
Lowest



Middle



Highest

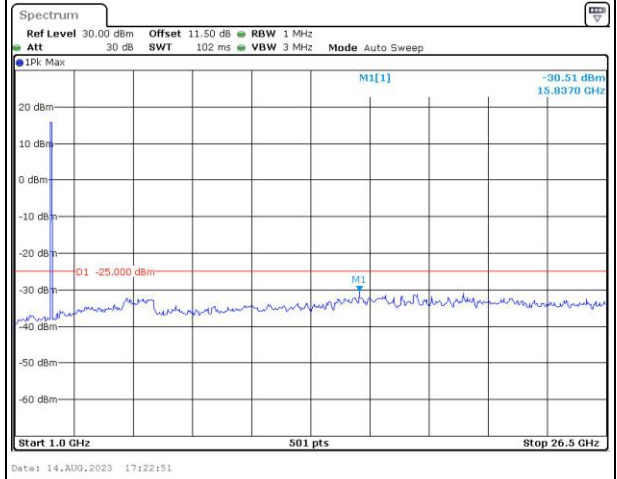
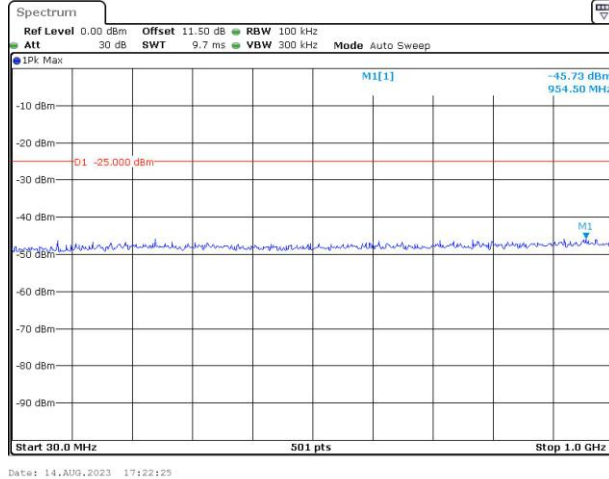


Spurious Emissions at Antenna Terminal

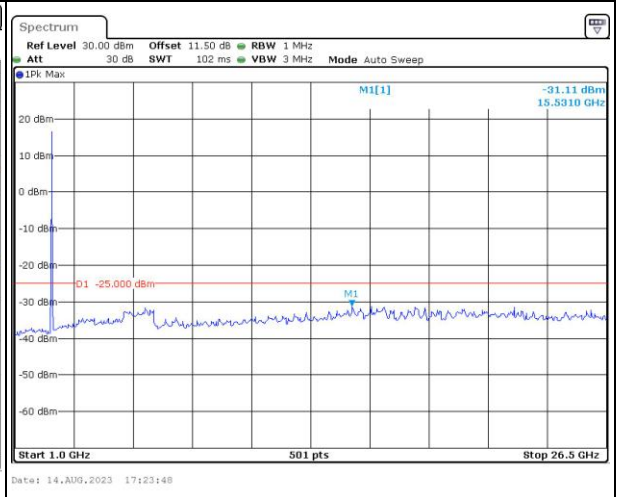
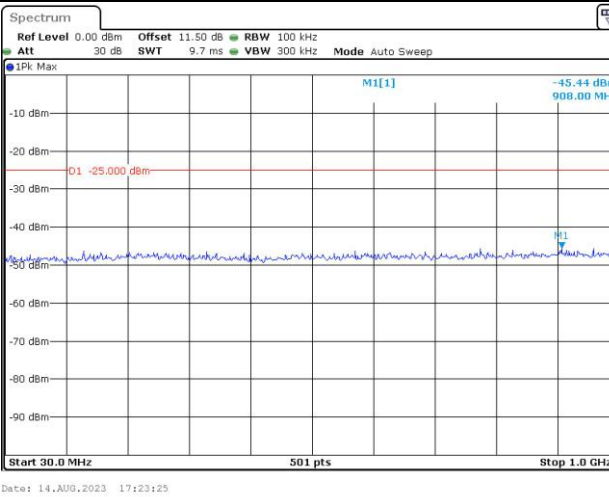
Channel

10MHz Bandwidth QPSK

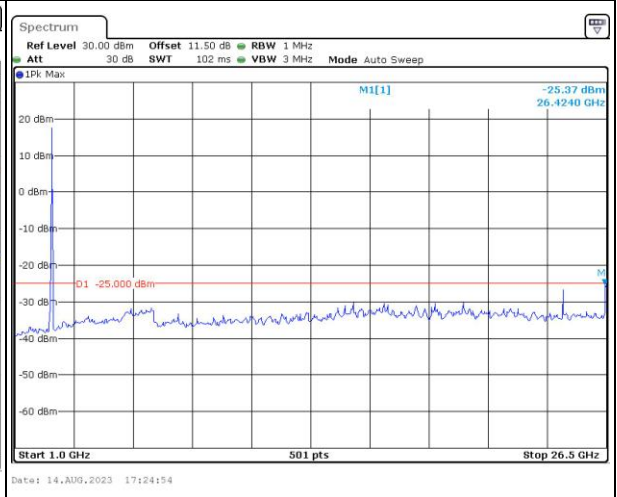
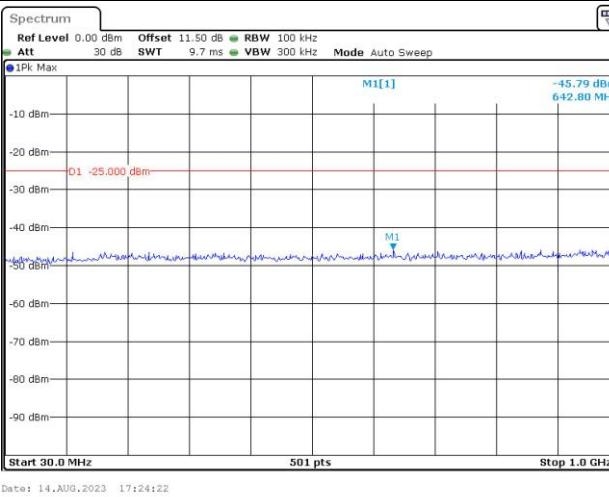
Lowest



Middle



Highest



### Spurious Emissions at Antenna Terminal

Channel	15MHz Bandwidth QPSK	
Lowest	<p><b>Spectrum</b>                      Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.39 dBm 940.90 MHz                      -25.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:25:12</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.61 dBm 20.3670 GHz                      -25.000 dBm                      Start 1.0 GHz 501 pts Stop 26.5 GHz                      Date: 14.AUG.2023 17:26:01</p>
	<p><b>Spectrum</b>                      Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.69 dBm 917.70 MHz                      -25.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:26:35</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.93 dBm 19.7050 GHz                      -25.000 dBm                      Start 1.0 GHz 501 pts Stop 26.5 GHz                      Date: 14.AUG.2023 17:26:58</p>
Highest	<p><b>Spectrum</b>                      Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.35 dBm 987.40 MHz                      -25.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:27:25</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -31.35 dBm 18.3310 GHz                      -25.000 dBm                      Start 1.0 GHz 501 pts Stop 26.5 GHz                      Date: 14.AUG.2023 17:27:48</p>

### Spurious Emissions at Antenna Terminal

Channel	20MHz Bandwidth QPSK	
Lowest	<p><b>Spectrum</b>                      Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.59 dBm 956.40 MHz                      -25.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:28:23</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.88 dBm 16.9570 GHz                      -25.000 dBm                      Start 1.0 GHz 501 pts Stop 26.5 GHz                      Date: 14.AUG.2023 17:28:53</p>
	<p><b>Spectrum</b>                      Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -45.12 dBm 950.40 MHz                      -25.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:29:24</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.94 dBm 16.9060 GHz                      -25.000 dBm                      Start 1.0 GHz 501 pts Stop 26.5 GHz                      Date: 14.AUG.2023 17:29:50</p>
Highest	<p><b>Spectrum</b>                      Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz                      Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep                      IPk Max M1[1] -46.05 dBm 991.30 MHz                      -25.000 dBm                      Start 30.0 MHz 501 pts Stop 1.0 GHz                      Date: 14.AUG.2023 17:30:24</p>	<p><b>Spectrum</b>                      Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz                      Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep                      IPk Max M1[1] -30.86 dBm 18.3310 GHz                      -25.000 dBm                      Start 1.0 GHz 501 pts Stop 26.5 GHz                      Date: 14.AUG.2023 17:30:47</p>

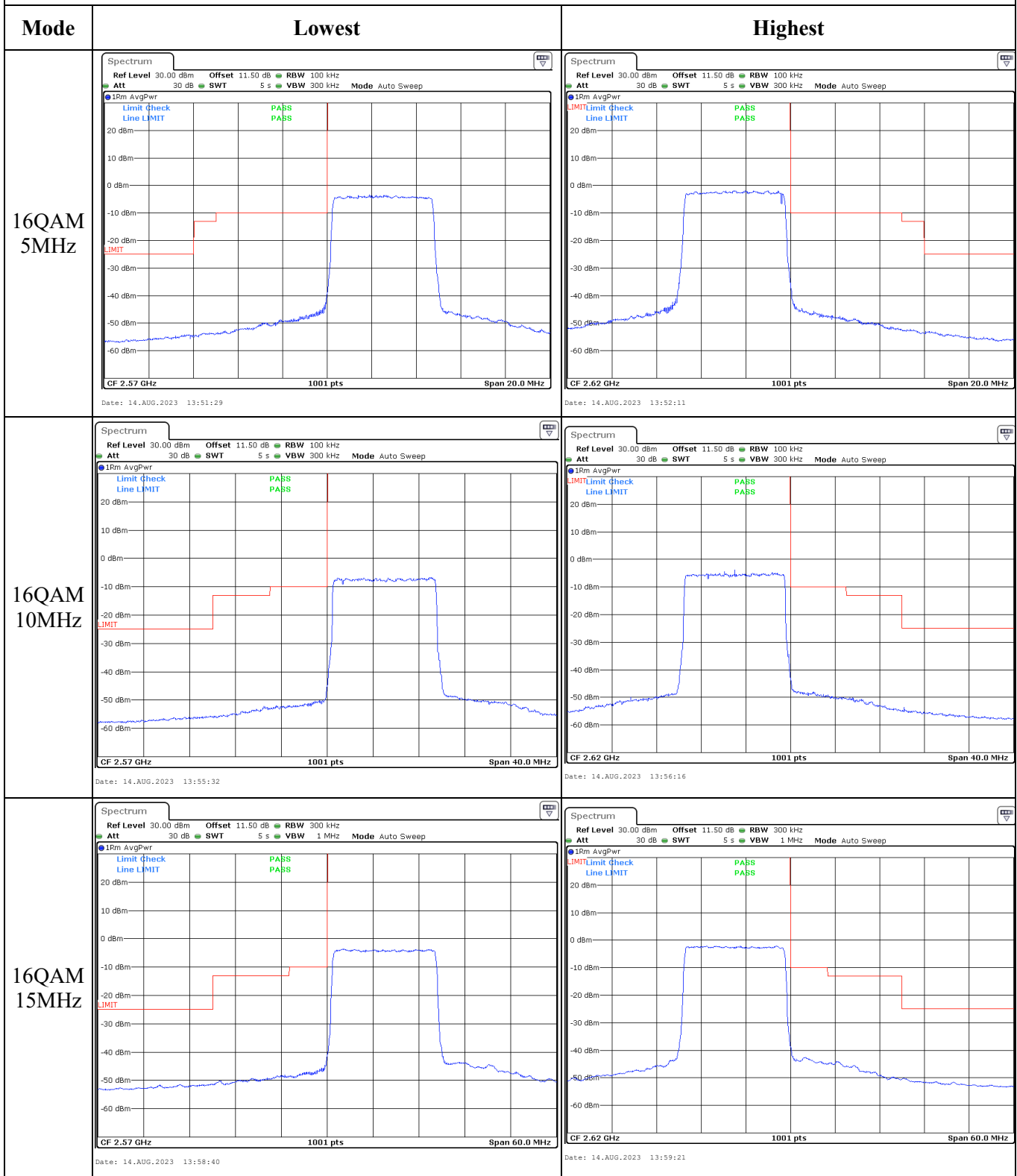
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	<p>Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 5 s VBW 300 kHz Mode Auto Sweep 1Rm AvgPwr Limit Check Line LIMIT 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.57 GHz 1001 pts Span 20.0 MHz Date: 14.AUG.2023 13:50:01</p>	<p>Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 5 s VBW 300 kHz Mode Auto Sweep 1Rm AvgPwr Limit Check Line LIMIT 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.62 GHz 1001 pts Span 20.0 MHz Date: 14.AUG.2023 13:50:46</p>
QPSK 10MHz	<p>Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 5 s VBW 300 kHz Mode Auto Sweep 1Rm AvgPwr Limit Check Line LIMIT 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.57 GHz 1001 pts Span 40.0 MHz Date: 14.AUG.2023 13:54:03</p>	<p>Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 5 s VBW 300 kHz Mode Auto Sweep 1Rm AvgPwr Limit Check Line LIMIT 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.62 GHz 1001 pts Span 40.0 MHz Date: 14.AUG.2023 13:54:44</p>
QPSK 15MHz	<p>Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 5 s VBW 1 MHz Mode Auto Sweep 1Rm AvgPwr Limit Check Line LIMIT 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.57 GHz 1001 pts Span 60.0 MHz Date: 14.AUG.2023 13:57:11</p>	<p>Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 300 kHz Att 30 dB SWT 5 s VBW 1 MHz Mode Auto Sweep 1Rm AvgPwr Limit Check Line LIMIT 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm CF 2.62 GHz 1001 pts Span 60.0 MHz Date: 14.AUG.2023 13:57:54</p>

Out of band emission, Band Edge

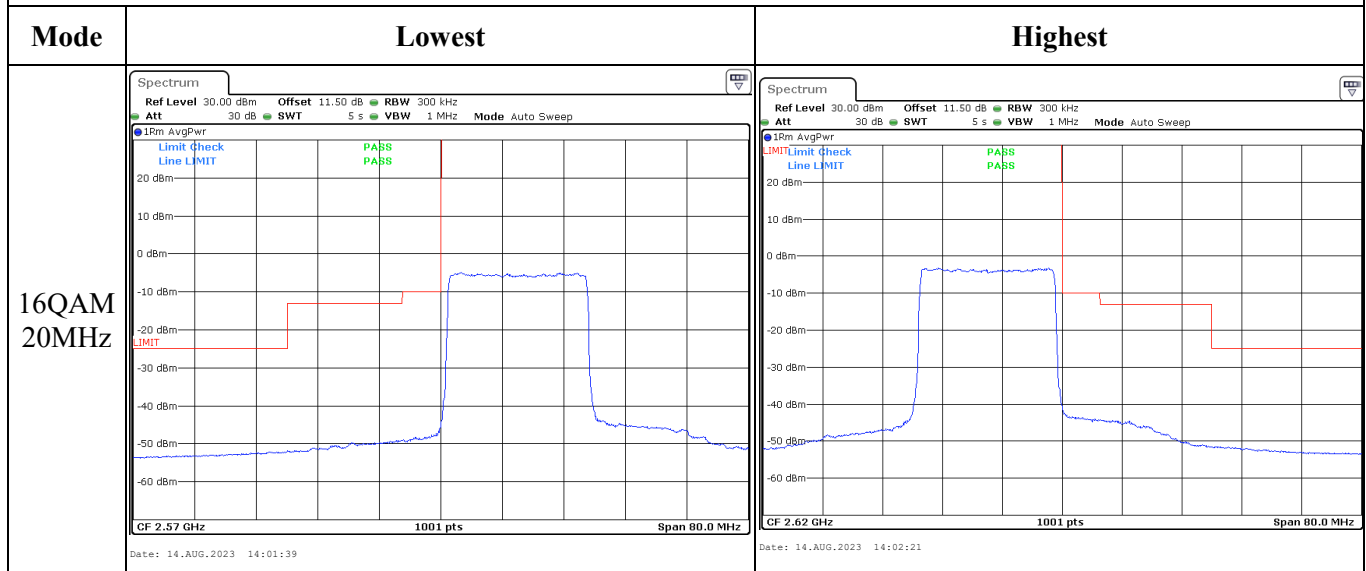


Out of band emission, Band Edge





### Out of band emission, Band Edge



**4.13 Antenna Port Test Data and Results for LTE Band 40**

Serial Number:	2A4I-1	Test Date:	2023/8/13-2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Panda Sun	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.3~25.6	Relative Humidity: (%)	64-68	ATM Pressure: (kPa)	101
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	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
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
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	2307.5	2310	2312.5
10MHz	/	2310	/
5MHz	2352.5	2355	2357.5
10MHz	/	2355	/

**Test Data:**

(Note:Uplink Downlink configuration 3 was tested)

**FCC§2.1046;§ 27.50(a)(3)****LTE Band 40 Lower:****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	19.99	20.14	20.06	19.35	24
	RB1#13	20.06	20.15	20.06		
	RB1#24	19.91	20.11	20.07		
	RB15#0	19.59	19.49	19.52		
	RB15#10	19.58	19.55	19.47		
	RB25#0	19.53	19.44	19.45		
5MHz 16QAM	RB1#0	18.93	18.89	19.33	18.53	24
	RB1#13	18.75	19.01	19.23		
	RB1#24	18.98	18.87	19.24		
	RB15#0	18.07	17.99	18.38		
	RB15#10	18.21	17.95	18.58		
	RB25#0	18.07	17.93	18.48		
10MHz QPSK	RB1#0	/	20.14	/	19.35	24
	RB1#25	/	20.15	/		
	RB1#49	/	20.15	/		
	RB25#0	/	19.45	/		
	RB25#25	/	19.42	/		
	RB50#0	/	19.54	/		
10MHz 16QAM	RB1#0	/	19.34	/	18.54	24
	RB1#25	/	19.19	/		
	RB1#49	/	19.33	/		
	RB25#0	/	17.44	/		
	RB25#25	/	18.14	/		
	RB50#0	/	17.79	/		

**EIRP PSD in 5MHz:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted PSD(dBm/5MHz)			Maximum EIRP PSD (dBm/5MHz)	Limit (dBm/5MHz)
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	/	20.14	/	19.35	24
	RB1#25	/	20.15	/		
	RB1#49	/	20.15	/		
	RB25#0	/	19.45	/		
	RB25#25	/	19.42	/		
	RB50#0	/	18.39	/		
10MHz 16QAM	RB1#0	/	19.34	/	18.54	24
	RB1#25	/	19.19	/		

	RB1#49	/	19.33	/		
	RB25#0	/	17.44	/		
	RB25#25	/	18.14	/		
	RB50#0	/	16.57	/		

Note:

For 5MHz mode, the channel power is equal to the test result in dBm/5MHz.

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

EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gr(dBi)

**LTE Band 40 Upper:****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		
5MHz QPSK	RB1#0	19.85	19.88	19.73	19.09	24
	RB1#13	19.79	19.89	19.83		
	RB1#24	19.72	19.89	19.82		
	RB15#0	19.35	19.23	19.43		
	RB15#10	19.37	19.26	19.33		
	RB25#0	19.31	19.36	19.42		
5MHz 16QAM	RB1#0	18.77	19.2	18.72	18.40	24
	RB1#13	18.56	19.07	18.69		
	RB1#24	18.64	19.09	18.81		
	RB15#0	17.95	18.53	18.06		
	RB15#10	17.98	18.56	18.13		
	RB25#0	17.88	18.53	18.02		
10MHz QPSK	RB1#0	/	20.06	/	19.26	24
	RB1#25	/	19.95	/		
	RB1#49	/	20.03	/		
	RB25#0	/	19.35	/		
	RB25#25	/	19.31	/		
	RB50#0	/	19.37	/		
10MHz 16QAM	RB1#0	/	19.19	/	18.42	24
	RB1#25	/	18.99	/		
	RB1#49	/	19.22	/		
	RB25#0	/	18.08	/		
	RB25#25	/	18.45	/		
	RB50#0	/	18.25	/		

**EIRP PSD in 5MHz:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted PSD(dBm/5MHz)			Maximum EIRP PSD (dBm/5MHz)	Limit (dBm/5MHz)
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	/	20.06	/	19.26	24
	RB1#25	/	19.95	/		
	RB1#49	/	20.03	/		

	RB25#0	/	19.35	/		
	RB25#25	/	19.31	/		
	RB50#0	/	18.15	/		
10MHz 16QAM	RB1#0	/	19.19	/	18.42	24
	RB1#25	/	18.99	/		
	RB1#49	/	19.22	/		
	RB25#0	/	18.08	/		
	RB25#25	/	18.45	/		
	RB50#0	/	17.13	/		

Note:

For 5MHz mode, the channel power is equal to the test result in dBm/5MHz.

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

EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gr(dBi)

**Result:****Pass****Duty Cycle**

Operation Band	Modulation	Bandwidth	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Limit (%)
LTE Band 40 Lower	QPSK	5M	2.995	10.005	29.94	38
		10M	2.995	10.005	29.94	38
	16QAM	5M	3.000	10.005	29.99	38
		10M	3.000	10.005	29.99	38
LTE Band 40 Upper	QPSK	5M	3.000	10.005	29.99	38
		10M	3.000	10.005	29.99	38
	16QAM	5M	3.000	10.005	29.99	38
		10M	3.000	10.005	29.99	38
					<b>Result:</b>	<b>Pass</b>

**FCC §2.1049, §27.53:Occupied Bandwidth****LTE Band 40 Lower:**

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	5.140	5.000	5.040
5MHz 16QAM	4.511	4.531	4.511	5.120	5.140	5.140
10MHz QPSK	/	8.942	/	/	9.840	/
10MHz 16QAM	/	8.942	/	/	9.800	/

**LTE Band 40 Upper:**

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	5.100	5.000	5.060
5MHz 16QAM	4.511	4.531	4.511	5.120	5.140	5.160

10MHz QPSK	/	8.942	/	/	9.800	/
10MHz 16QAM	/	8.942	/	/	9.800	/

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

#### LTE Band 40 Lower:

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	3.85	2305.130	2305.000	2314.825	2315.000
	-20	3.85	2305.616	2305.000	2314.488	2315.000
	-10	3.85	2305.470	2305.000	2314.539	2315.000
	0	3.85	2305.262	2305.000	2314.088	2315.000
	10	3.85	2305.485	2305.000	2314.185	2315.000
	20	3.85	2305.398	2305.000	2314.334	2315.000
	30	3.85	2305.155	2305.000	2314.147	2315.000
	40	3.85	2305.488	2305.000	2314.416	2315.000
Frequency Stability vs. Voltage	20	3.35	2305.671	2305.000	2314.107	2315.000
	20	4.4	2305.187	2305.000	2314.282	2315.000
					<b>Result:</b>	<b>Pass</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	3.85	2305.970	2305.000	2314.239	2315.000
	-20	3.85	2305.943	2305.000	2314.592	2315.000
	-10	3.85	2305.865	2305.000	2314.766	2315.000
	0	3.85	2305.048	2305.000	2314.888	2315.000
	10	3.85	2305.781	2305.000	2314.697	2315.000
	20	3.85	2305.666	2305.000	2314.197	2315.000
	30	3.85	2305.361	2305.000	2314.384	2315.000
	40	3.85	2305.782	2305.000	2314.007	2315.000
Frequency Stability vs. Voltage	20	3.35	2305.978	2305.000	2314.068	2315.000
	20	4.4	2305.865	2305.000	2314.843	2315.000
					<b>Result:</b>	<b>Pass</b>