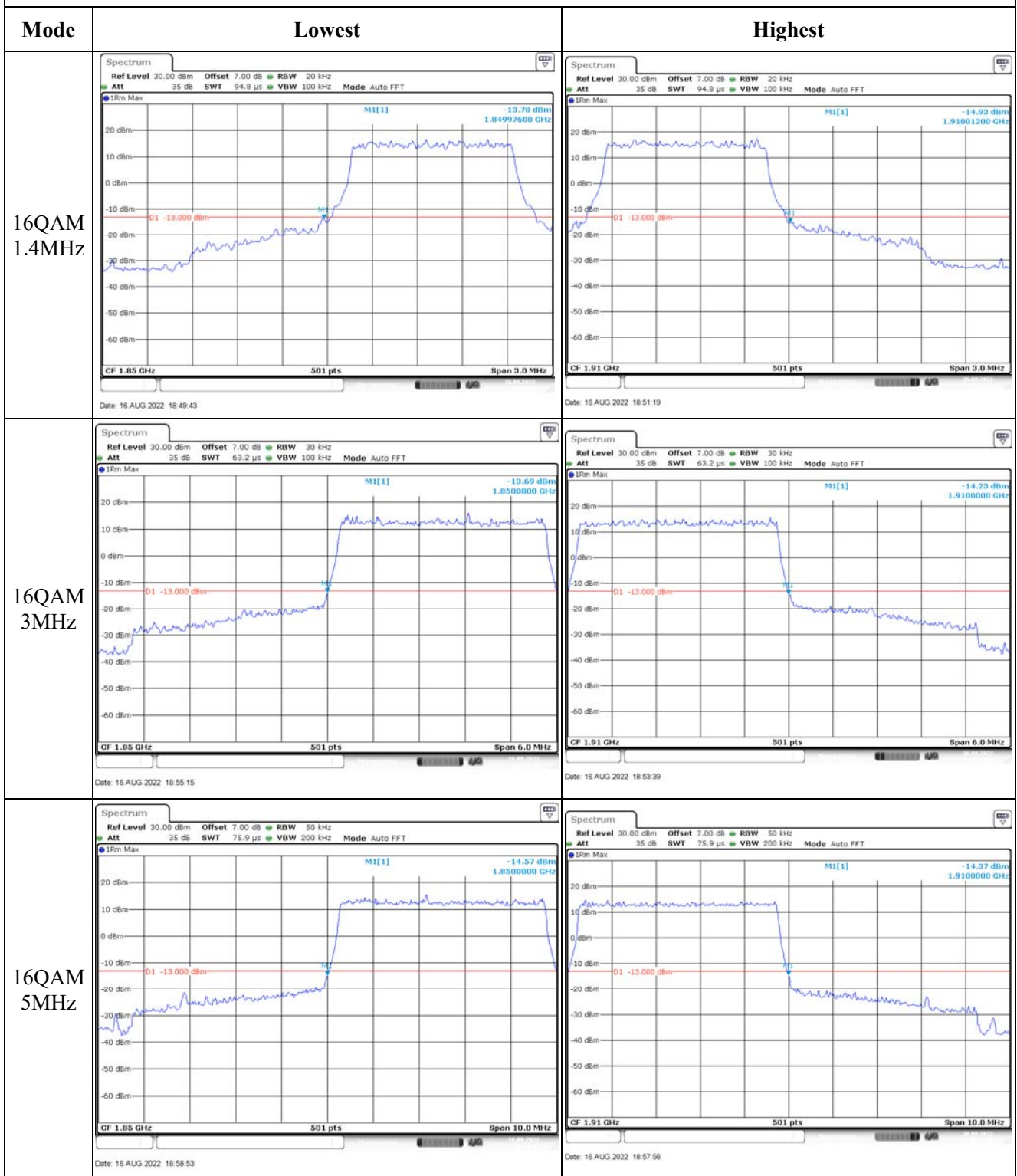


Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT M1[1] -14.28 dBm 1.8500000 GHz 01 -13.000 dBm CF 1.85 GHz 501 pts Span 20.0 MHz Date: 16 AUG 2022 18:59:17</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT M1[1] -15.28 dBm 1.9100000 GHz 01 -13.000 dBm CF 1.91 GHz 501 pts Span 20.0 MHz Date: 16 AUG 2022 19:00:02</p>
QPSK 15MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 200 kHz Att 35 dB SWT 38 μs VBW 1 MHz Mode Auto FFT M1[1] -16.47 dBm 1.8500000 GHz 01 -13.000 dBm CF 1.85 GHz 501 pts Span 30.0 MHz Date: 16 AUG 2022 19:03:01</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 200 kHz Att 35 dB SWT 38 μs VBW 1 MHz Mode Auto FFT M1[1] -15.50 dBm 1.9100000 GHz 01 -13.000 dBm CF 1.91 GHz 501 pts Span 30.0 MHz Date: 16 AUG 2022 19:02:10</p>
QPSK 20MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 37.9 μs VBW 1 MHz Mode Auto FFT M1[1] -18.56 dBm 1.8497600 GHz 01 -13.000 dBm CF 1.85 GHz 501 pts Span 40.0 MHz Date: 16 AUG 2022 20:07:42</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 37.9 μs VBW 1 MHz Mode Auto FFT M1[1] -15.56 dBm 1.9100000 GHz 01 -13.000 dBm CF 1.91 GHz 501 pts Span 40.0 MHz Date: 16 AUG 2022 19:06:42</p>

Out of band emission, Band Edge



Out of band emission, Band Edge

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

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

Serial Number:	CR220050077-RF-S1	Test Date:	2022/7/5~2022/8/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ted Min	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24.5~26.7	Relative Humidity: (%)	51~58	ATM Pressure: (kPa)	100.1~100.3
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2021-10-10	2022-10-09
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-21	2022-07-20
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204006	Each time	N/A
Unknown	RF Cable	Unknown	RF Cable 004	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108042	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	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).

**EUT Information@ LTE Band 4▲:**

Antenna Gain (dBi):	2.38	Path Loss L <sub>C</sub> (dB):	0.5
Operation Voltage(V <sub>DC</sub> ):			
Lowest:	6.66	Normal:	7.4
		Highest:	8.14

**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	21.94	21.95	22.06	24.05	30
	RB1#3	21.92	22.07	22.16		
	RB1#5	21.96	22.09	22.17		
	RB3#0	21.8	21.9	22		
	RB3#3	21.9	21.9	22.03		
	RB6#0	21.45	21.52	21.54		
1.4MHz 16QAM	RB1#0	21.54	21.58	21.56	23.79	30
	RB1#3	21.52	21.62	21.58		
	RB1#5	21.78	21.81	21.91		
	RB3#0	21.64	21.67	21.84		
	RB3#3	21.75	21.84	21.9		
	RB6#0	21.41	21.55	21.57		
3MHz QPSK	RB1#0	21.86	21.91	21.93	23.9	30
	RB1#8	21.89	21.94	21.93		
	RB1#14	21.93	22.02	21.96		
	RB6#0	21.88	21.98	21.78		
	RB6#9	21.9	21.94	21.8		
	RB15#0	21.54	21.59	21.38		
3MHz 16QAM	RB1#0	21.5	21.61	21.44	23.66	30
	RB1#8	21.63	21.65	21.4		
	RB1#14	21.69	21.78	21.54		
	RB6#0	21.54	21.61	21.51		
	RB6#9	21.6	21.7	21.76		
	RB15#0	21.31	21.39	21.45		
5MHz QPSK	RB1#0	21.96	21.86	21.95	23.97	30
	RB1#13	22	21.95	22.01		
	RB1#24	22.09	21.96	22.08		
	RB15#0	22	21.81	21.94		
	RB15#10	22.01	21.93	21.93		
	RB25#0	21.67	21.53	21.61		
5MHz 16QAM	RB1#0	21.68	21.47	21.47	23.58	30
	RB1#13	21.7	21.61	21.53		
	RB1#24	21.67	21.62	21.61		
	RB15#0	21.52	21.48	21.47		
	RB15#10	21.49	21.5	21.51		

	RB25#0	21.22	21.22	21.14		
10MHz QPSK	RB1#0	21.91	21.96	21.86	23.98	30
	RB1#25	22.01	21.94	21.97		
	RB1#49	22.1	21.97	21.95		
	RB25#0	21.94	21.94	21.9		
	RB25#25	21.93	22.05	21.88		
	RB50#0	21.62	21.67	21.59		
10MHz 16QAM	RB1#0	21.54	21.58	21.51	23.66	30
	RB1#25	21.51	21.71	21.57		
	RB1#49	21.63	21.78	21.59		
	RB25#0	21.51	21.62	21.49		
	RB25#25	21.49	21.6	21.54		
	RB50#0	21.27	21.31	21.11		
15MHz QPSK	RB1#0	21.89	21.94	21.99	24.05	30
	RB1#38	21.99	22.04	22.12		
	RB1#74	22.02	22.12	22.17		
	RB36#0	22.01	22.07	22.06		
	RB36#39	21.98	21.96	22.03		
	RB75#0	21.62	21.85	21.7		
15MHz 16QAM	RB1#0	21.68	21.84	21.66	23.72	30
	RB1#38	21.72	21.81	21.69		
	RB1#74	21.78	21.76	21.64		
	RB36#0	21.64	21.58	21.46		
	RB36#39	21.77	21.58	21.47		
	RB75#0	21.26	21.24	21.13		
20MHz QPSK	RB1#0	21.96	22.01	22.1	24.05	30
	RB1#50	22.03	22.01	22.08		
	RB1#99	22.11	22.01	22.17		
	RB50#0	22.04	21.99	21.94		
	RB50#50	22.1	22.02	21.99		
	RB100#0	21.65	21.7	21.62		
20MHz 16QAM	RB1#0	21.78	21.57	21.51	23.71	30
	RB1#50	21.76	21.72	21.51		
	RB1#99	21.83	21.72	21.63		
	RB50#0	21.78	21.71	21.52		
	RB50#50	21.75	21.83	21.59		
	RB100#0	21.38	21.41	21.28		

Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBi)

**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	
20MHz QPSK	RB1#0	3.26	3.31	3.28	13
	RB100#0	5.11	5.21	5.16	13
20MHz 16QAM	RB1#0	4.21	4.26	4.22	13
	RB100#0	6.39	6.27	6.31	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	1.096	1.102	1.102	1.314	1.326	1.296
1.4MHz 16QAM	1.102	1.096	1.102	1.314	1.296	1.332
3MHz QPSK	2.695	2.695	2.683	2.952	2.94	2.964
3MHz 16QAM	2.695	2.683	2.683	2.964	2.952	2.964
5MHz QPSK	4.531	4.511	4.511	5.04	5.08	5.08
5MHz 16QAM	4.511	4.551	4.551	5.04	5.04	5.08
10MHz QPSK	8.942	8.942	8.942	9.84	9.8	9.8
10MHz 16QAM	8.942	8.942	8.942	9.68	9.72	9.72
15MHz QPSK	13.533	13.533	13.533	14.94	14.82	14.88
15MHz 16QAM	13.533	13.533	13.533	14.76	14.82	14.88
20MHz QPSK	17.964	17.884	17.964	19.44	19.44	19.6
20MHz 16QAM	17.964	17.964	17.964	19.52	19.6	19.44
Note: The test plots please refer to the Plots of Occupied Bandwidth						

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

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

<b>Result:</b>	<b>Pass, Please refer to the test plots of Out of band emission, Band Edge.</b>
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**FCC §2.1055, §27.54: Frequency Stability**

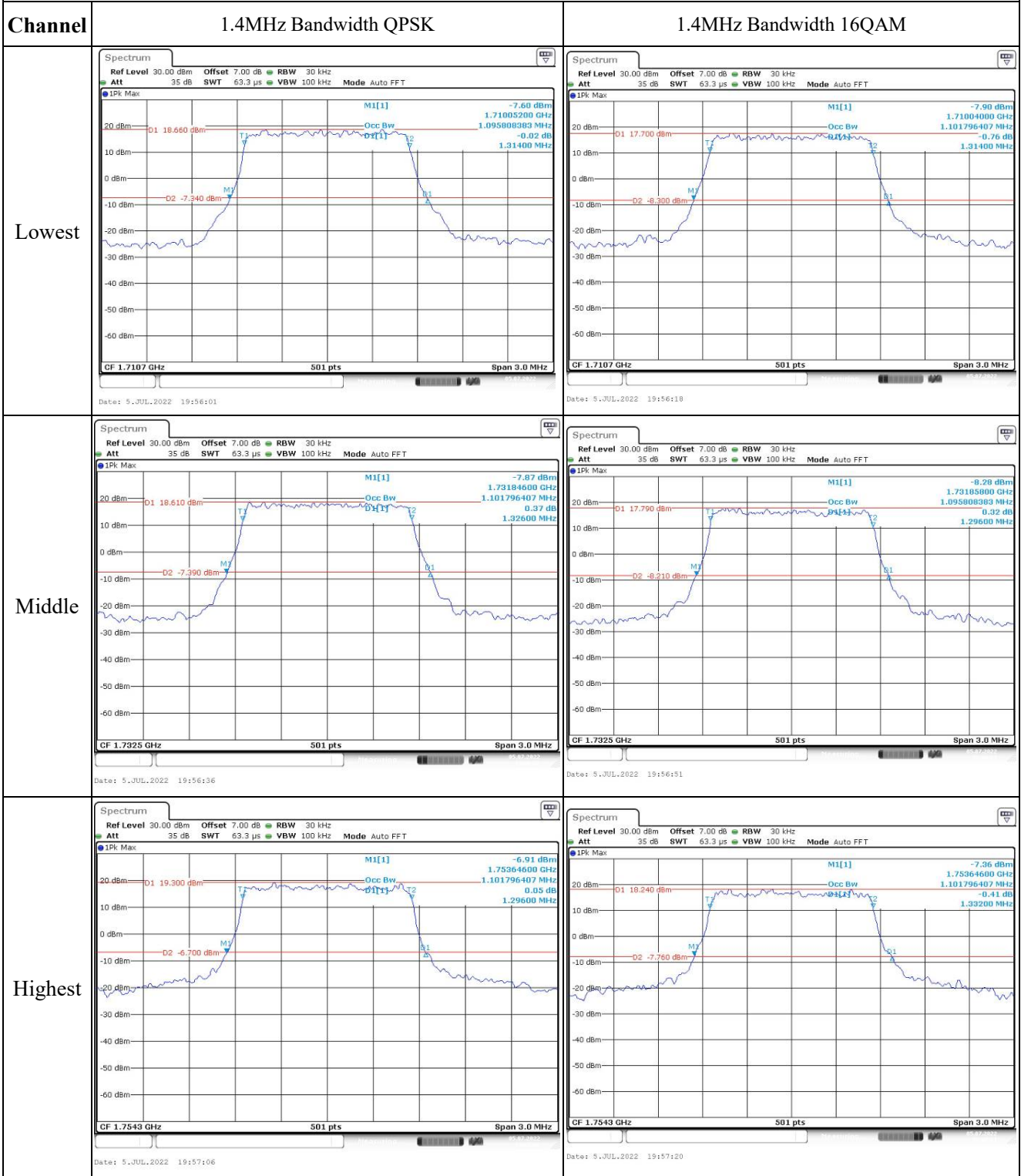
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.4	1710.233	1710.00	1754.885	1755
	-20	7.4	1710.350	1710.00	1754.889	1755
	-10	7.4	1710.283	1710.00	1754.830	1755
	0	7.4	1710.362	1710.00	1754.799	1755
	10	7.4	1710.313	1710.00	1754.775	1755
	20	7.4	1710.283	1710.00	1754.862	1755
	30	7.4	1710.410	1710.00	1754.898	1755
	40	7.4	1710.228	1710.00	1754.732	1755
Frequency Stability vs. Voltage	50	7.4	1710.326	1710.00	1754.715	1755
	20	6.66	1710.223	1710.00	1754.875	1755
	20	8.14	1710.295	1710.00	1754.857	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	7.4	1710.371	1710.00	1754.906	1755
	-20	7.4	1710.376	1710.00	1754.881	1755
	-10	7.4	1710.331	1710.00	1754.727	1755
	0	7.4	1710.267	1710.00	1754.831	1755
	10	7.4	1710.286	1710.00	1754.798	1755
	20	7.4	1710.406	1710.00	1754.904	1755
	30	7.4	1710.319	1710.00	1754.743	1755
	40	7.4	1710.244	1710.00	1754.822	1755
Frequency Stability vs. Voltage	50	7.4	1710.345	1710.00	1754.762	1755
	20	6.66	1710.248	1710.00	1754.761	1755
	20	8.14	1710.324	1710.00	1754.839	1755
<b>Result:</b>					<b>Pass</b>	



Test Plots:

Occupied Bandwidth



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -9.73 dBm 1.7100240 GHz Occ Bw 2.694610778 MHz D1[1] -0.13 dB 2.9520 MHz</p> <p>D1 16.760 dBm D2 -9.240 dBm</p> <p>CF 1.7115 GHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 19:57:42</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -10.52 dBm 1.7100960 GHz Occ Bw 2.694610778 MHz D1[1] -0.94 dB 2.9640 MHz</p> <p>D1 15.000 dBm D2 -11.000 dBm</p> <p>CF 1.7115 GHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 19:57:59</p>
Middle	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -10.39 dBm 1.7310240 GHz Occ Bw 2.694610778 MHz D1[1] -0.64 dB 2.9400 MHz</p> <p>D1 16.080 dBm D2 -9.920 dBm</p> <p>CF 1.7325 GHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 19:58:18</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -10.97 dBm 1.7310240 GHz Occ Bw 2.682634731 MHz D1[1] 0.04 dB 2.9520 MHz</p> <p>D1 14.980 dBm D2 -11.020 dBm</p> <p>CF 1.7325 GHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 19:58:35</p>
Highest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -10.79 dBm 1.7520120 GHz Occ Bw 2.682634731 MHz D1[1] 0.43 dB 2.9640 MHz</p> <p>D1 15.450 dBm D2 -10.550 dBm</p> <p>CF 1.7535 GHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 19:58:50</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -10.67 dBm 1.7520120 GHz Occ Bw 2.682634731 MHz D1[1] -0.10 dB 2.9640 MHz</p> <p>D1 15.500 dBm D2 -10.500 dBm</p> <p>CF 1.7535 GHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 19:59:05</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -6.95 dBm 1.7099800 GHz Occ Bw -0.12 dB 5.0400 MHz</p> <p>D1 18.550 dBm D2 -7.450 dBm</p> <p>CF 1.7125 GHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 19:59:26</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.43 dBm 1.7099600 GHz Occ Bw 0.94 dB 5.0400 MHz</p> <p>D1 18.080 dBm D2 -7.920 dBm</p> <p>CF 1.7125 GHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 19:59:44</p>
Middle	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.48 dBm 1.7299600 GHz Occ Bw -0.26 dB 5.0800 MHz</p> <p>D1 17.960 dBm D2 -8.040 dBm</p> <p>CF 1.7325 GHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:00:02</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.97 dBm 1.7299600 GHz Occ Bw 1.07 dB 5.0800 MHz</p> <p>D1 17.420 dBm D2 -8.590 dBm</p> <p>CF 1.7325 GHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:00:19</p>
Highest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -7.70 dBm 1.7499600 GHz Occ Bw -0.19 dB 5.0800 MHz</p> <p>D1 18.720 dBm D2 -7.280 dBm</p> <p>CF 1.7525 GHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:00:37</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.97 dBm 1.7499600 GHz Occ Bw -0.12 dB 5.0800 MHz</p> <p>D1 16.970 dBm D2 -9.030 dBm</p> <p>CF 1.7525 GHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:00:52</p>

Occupied Bandwidth

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

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>15MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.35 dBm 1.7100000 GHz 13.532934132 MHz 0.86 dB 14.9400 MHz</p> <p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <p>Date: 5.JUL.2022 20:03:58</p>	<p>15MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.14 dBm 1.7101200 GHz 13.532934132 MHz -0.31 dB 14.7600 MHz</p> <p>CF 1.7175 GHz 501 pts Span 30.0 MHz</p> <p>Date: 5.JUL.2022 20:04:30</p>
Middle	<p>15MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -7.97 dBm 1.7250600 GHz 13.532934132 MHz 1.11 dB 14.8200 MHz</p> <p>CF 1.7325 GHz 501 pts Span 30.0 MHz</p> <p>Date: 5.JUL.2022 20:05:00</p>	<p>15MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.44 dBm 1.7251200 GHz 13.532934132 MHz 0.35 dB 14.8200 MHz</p> <p>CF 1.7325 GHz 501 pts Span 30.0 MHz</p> <p>Date: 5.JUL.2022 20:05:29</p>
Highest	<p>15MHz Bandwidth QPSK</p> <p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -7.48 dBm 1.7400000 GHz 13.532934132 MHz 0.03 dB 14.8800 MHz</p> <p>CF 1.7475 GHz 501 pts Span 30.0 MHz</p> <p>Date: 5.JUL.2022 20:05:59</p>	<p>15MHz Bandwidth 16QAM</p> <p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 12.7 μs VBW 1 MHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.84 dBm 1.7400000 GHz 13.532934132 MHz 0.97 dB 14.8800 MHz</p> <p>CF 1.7475 GHz 501 pts Span 30.0 MHz</p> <p>Date: 5.JUL.2022 20:06:25</p>

Occupied Bandwidth

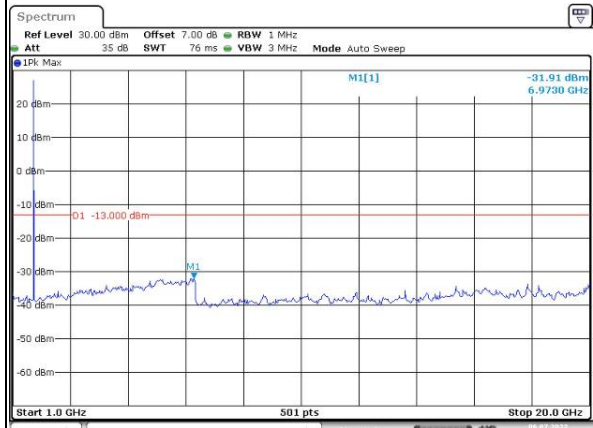
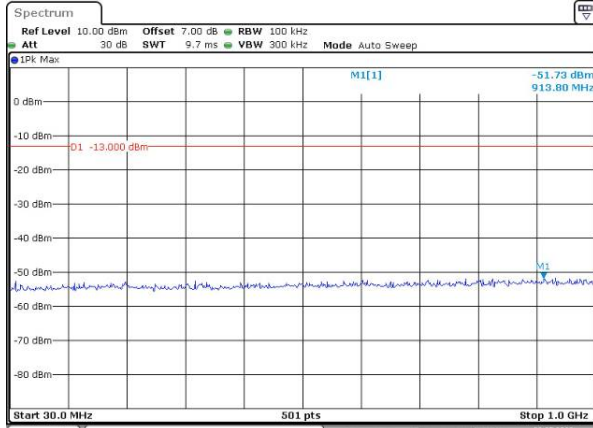
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 18.9 μs VBW 1 MHz Mode Auto FFT M1[1] -8.75 dBm Occ Bw 17.964071856 MHz D1[1] -0.42 dB D2 -8.790 dBm CF 1.72 GHz 501 pts Span 40.0 MHz Date: 5 JUL 2022 20:06:58</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 18.9 μs VBW 1 MHz Mode Auto FFT M1[1] -10.65 dBm Occ Bw 19.5200 MHz D1[1] -0.42 dB D2 -10.010 dBm CF 1.72 GHz 501 pts Span 40.0 MHz Date: 5 JUL 2022 20:07:21</p>
Middle	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 18.9 μs VBW 1 MHz Mode Auto FFT M1[1] -7.61 dBm Occ Bw 19.4400 MHz D1[1] -1.16 dB D2 -7.880 dBm CF 1.7325 GHz 501 pts Span 40.0 MHz Date: 5 JUL 2022 20:07:54</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 18.9 μs VBW 1 MHz Mode Auto FFT M1[1] -9.34 dBm Occ Bw 19.6000 MHz D1[1] -0.63 dB D2 -9.310 dBm CF 1.7325 GHz 501 pts Span 40.0 MHz Date: 5 JUL 2022 20:08:26</p>
Highest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 18.9 μs VBW 1 MHz Mode Auto FFT M1[1] -9.18 dBm Occ Bw 19.6000 MHz D1[1] -1.53 dB D2 -8.700 dBm CF 1.745 GHz 501 pts Span 40.0 MHz Date: 5 JUL 2022 20:08:53</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 18.9 μs VBW 1 MHz Mode Auto FFT M1[1] -8.82 dBm Occ Bw 19.4400 MHz D1[1] 0.32 dB D2 -8.380 dBm CF 1.745 GHz 501 pts Span 40.0 MHz Date: 5 JUL 2022 20:09:12</p>

Spurious Emissions at Antenna Terminal

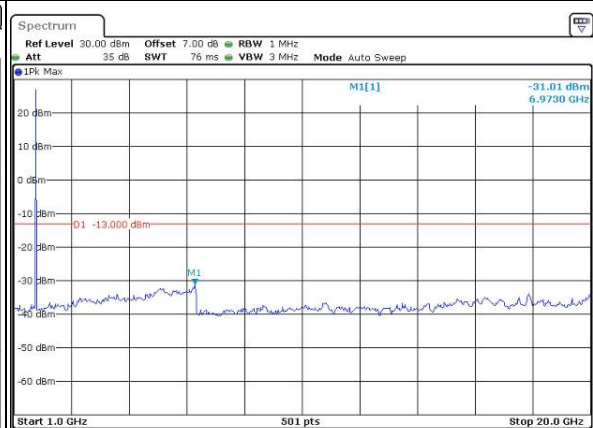
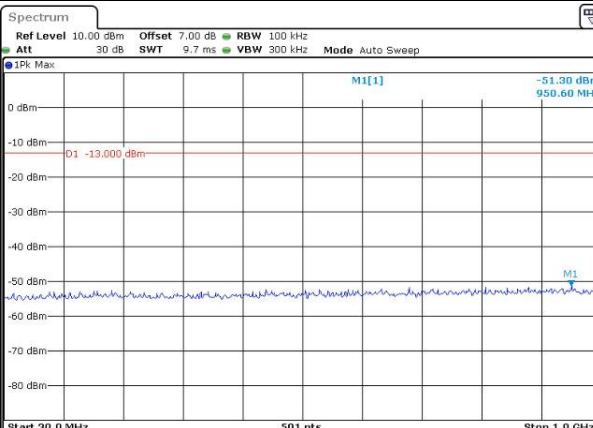
Channel

1.4MHz Bandwidth QPSK

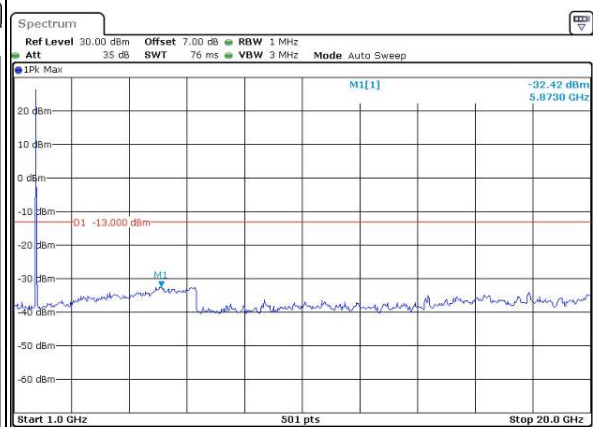
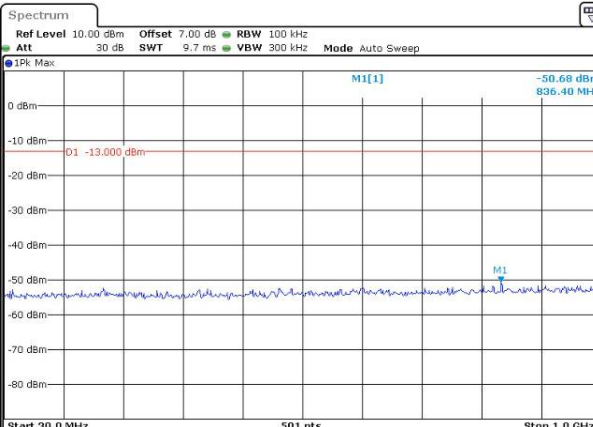
Lowest



Middle



Highest

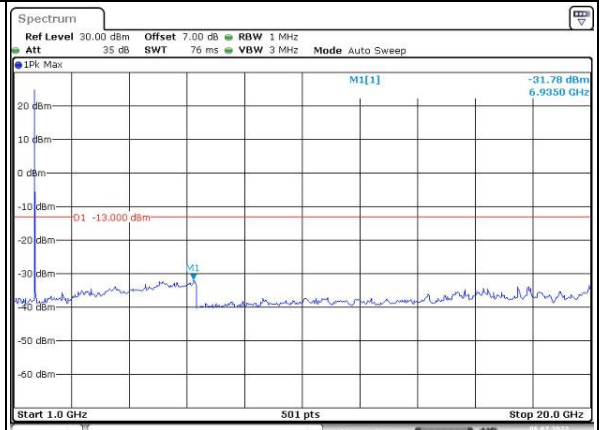
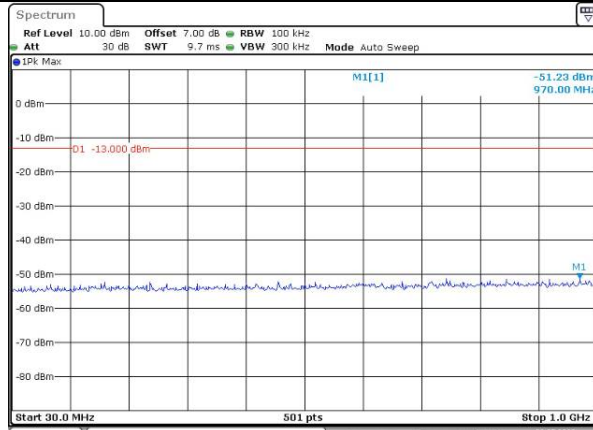


### Spurious Emissions at Antenna Terminal

Channel

3MHz Bandwidth QPSK

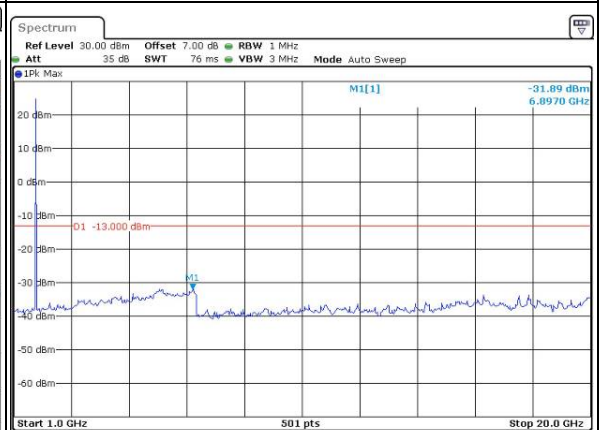
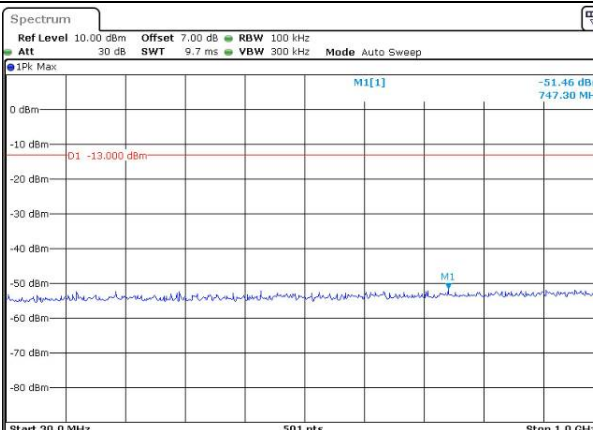
Lowest



Date: 6.JUL.2022 13:36:47

Date: 6.JUL.2022 13:37:13

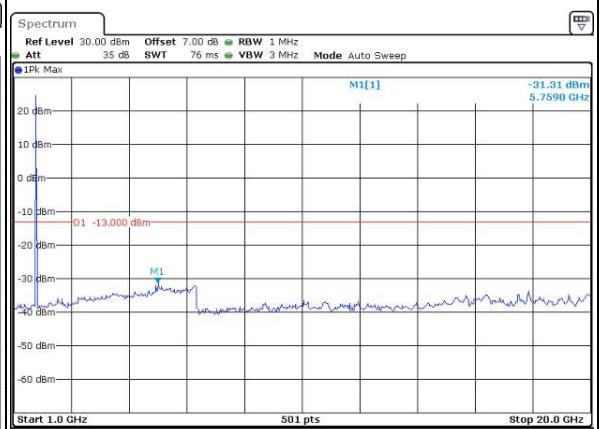
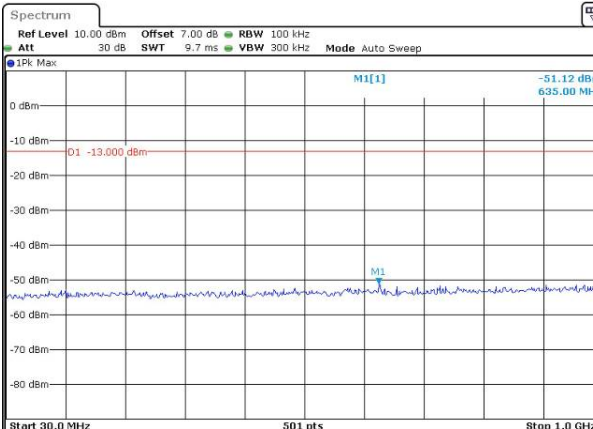
Middle



Date: 6.JUL.2022 13:37:42

Date: 6.JUL.2022 13:38:11

Highest

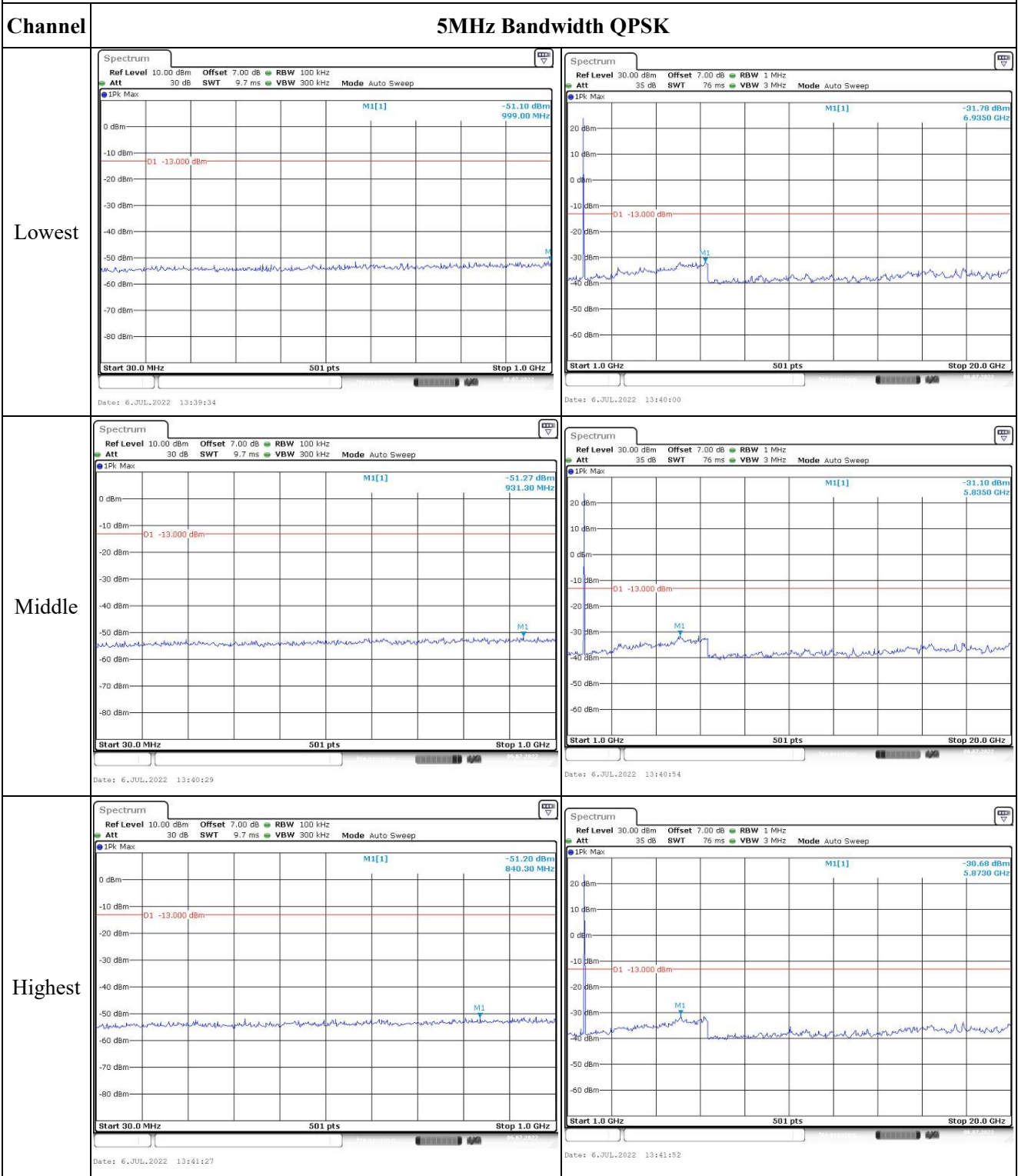


Date: 6.JUL.2022 13:38:43

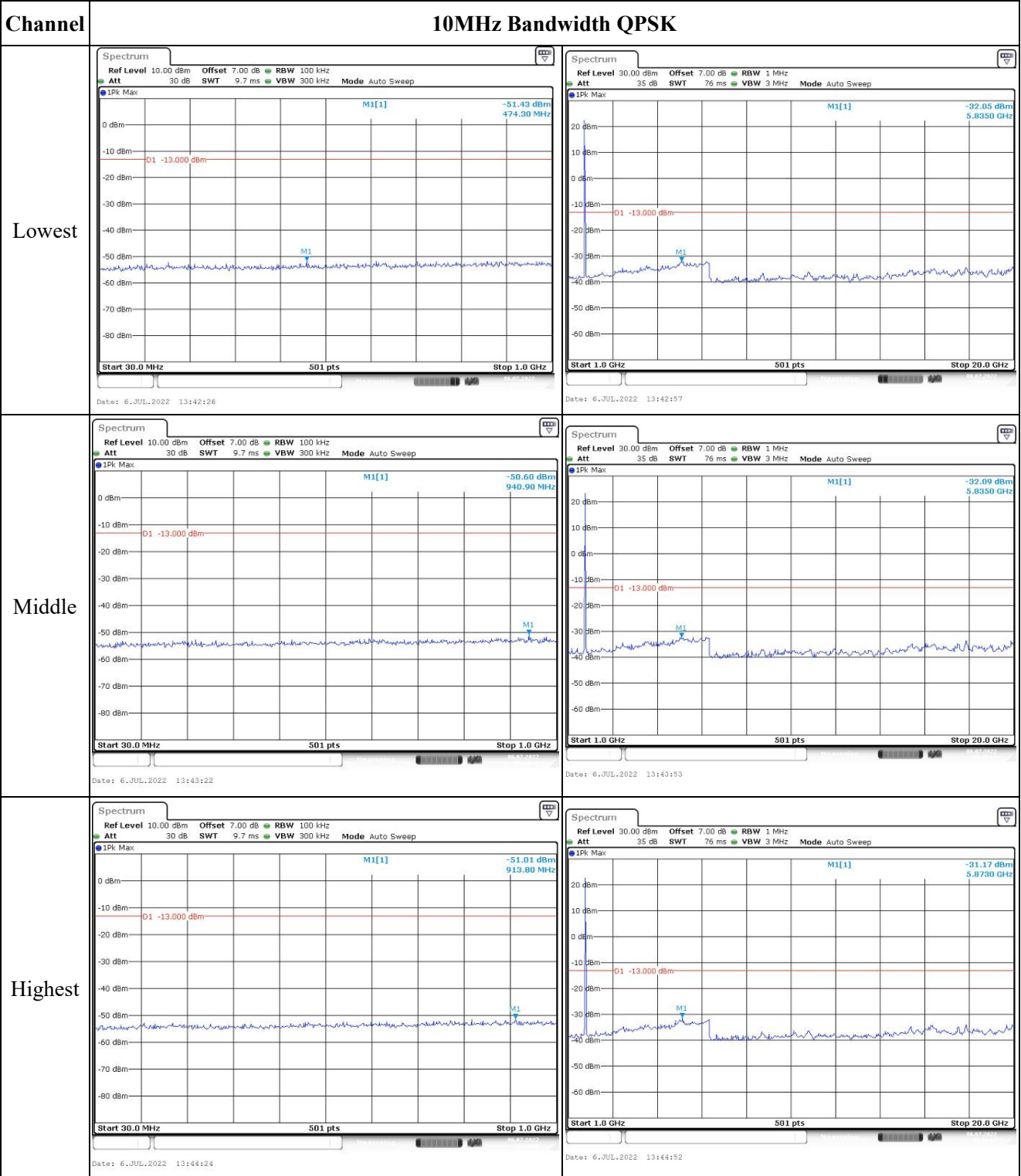
Date: 6.JUL.2022 13:39:05



Spurious Emissions at Antenna Terminal



### Spurious Emissions at Antenna Terminal



### Spurious Emissions at Antenna Terminal

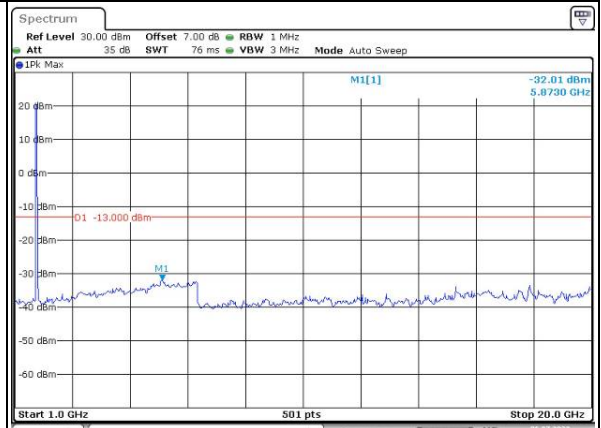
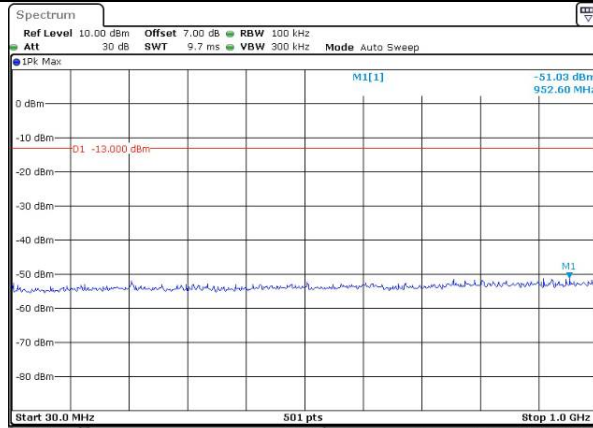
Channel	15MHz Bandwidth QPSK	
Lowest	<p>Ref Level 10.00 dBm Offset 7.00 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -51.51 dBm 764.80 MHz</p> <p>0 dBm -10 dBm -13.000 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 6.JUL.2022 13:45:27</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 1 MHz Att 35 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -32.26 dBm 6.7080 GHz</p> <p>20 dBm 10 dBm 0 dBm -10 dBm -13.000 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 6.JUL.2022 13:45:55</p>
Middle	<p>Ref Level 10.00 dBm Offset 7.00 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -51.12 dBm 700.90 MHz</p> <p>0 dBm -10 dBm -13.000 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 6.JUL.2022 13:46:24</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 1 MHz Att 35 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -32.05 dBm 6.9350 GHz</p> <p>20 dBm 10 dBm 0 dBm -10 dBm -13.000 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 6.JUL.2022 13:46:49</p>
Highest	<p>Ref Level 10.00 dBm Offset 7.00 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -51.29 dBm 989.40 MHz</p> <p>0 dBm -10 dBm -13.000 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -80 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>Date: 6.JUL.2022 13:47:18</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 1 MHz Att 35 dB SWT 76 ms VBW 3 MHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -31.71 dBm 5.9490 GHz</p> <p>20 dBm 10 dBm 0 dBm -10 dBm -13.000 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm</p> <p>Start 1.0 GHz 501 pts Stop 20.0 GHz</p> <p>Date: 6.JUL.2022 13:47:43</p>

### Spurious Emissions at Antenna Terminal

Channel

20MHz Bandwidth QPSK

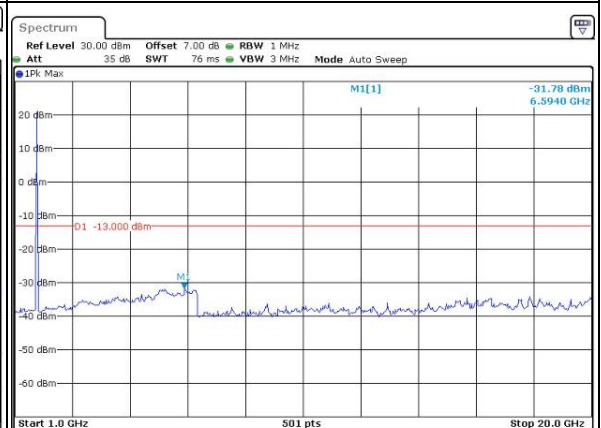
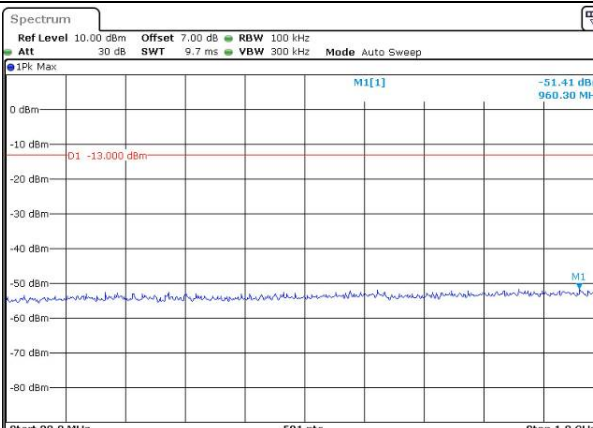
Lowest



Date: 6.JUL.2022 13:48:21

Date: 6.JUL.2022 13:48:46

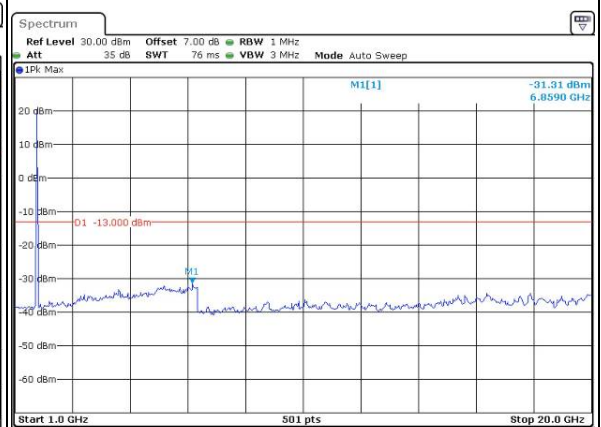
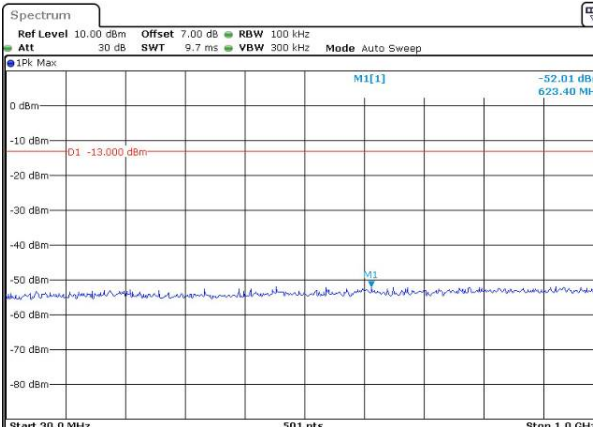
Middle



Date: 6.JUL.2022 13:49:18

Date: 6.JUL.2022 13:49:43

Highest



Date: 6.JUL.2022 13:50:12

Date: 6.JUL.2022 13:50:37

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 20 kHz Att 35 dB SWT 94.8 μs VBW 100 kHz Mode Auto FFT M1[1] -16.77 dBm 1.7100000 GHz 01 -13.000 dBm CF 1.71 GHz 501 pts Span 3.0 MHz Date: 16 AUG 2022 19:09:53</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 20 kHz Att 35 dB SWT 94.8 μs VBW 100 kHz Mode Auto FFT M1[1] -14.32 dBm 1.7550000 GHz 01 -13.000 dBm CF 1.755 GHz 501 pts Span 3.0 MHz Date: 16 AUG 2022 19:08:55</p>
QPSK 3MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT M1[1] -14.28 dBm 1.7100000 GHz 01 -13.000 dBm CF 1.71 GHz 501 pts Span 6.0 MHz Date: 16 AUG 2022 19:20:43</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT M1[1] -13.22 dBm 1.7550000 GHz 01 -13.000 dBm CF 1.755 GHz 501 pts Span 6.0 MHz Date: 16 AUG 2022 19:19:46</p>
QPSK 5MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 50 kHz Att 35 dB SWT 75.9 μs VBW 200 kHz Mode Auto FFT M1[1] -15.02 dBm 1.7100000 GHz 01 -13.000 dBm CF 1.71 GHz 501 pts Span 10.0 MHz Date: 16 AUG 2022 19:11:16</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 50 kHz Att 35 dB SWT 75.9 μs VBW 200 kHz Mode Auto FFT M1[1] -14.89 dBm 1.7550000 GHz 01 -13.000 dBm CF 1.755 GHz 501 pts Span 10.0 MHz Date: 16 AUG 2022 19:18:34</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT M1[1] -14.92 dBm 1.7100000 GHz 01 -13.000 dBm CF 1.71 GHz 501 pts Span 20.0 MHz Date: 16 AUG 2022 19:12:02</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT M1[1] -17.31 dBm 1.7550000 GHz 01 -13.000 dBm CF 1.755 GHz 501 pts Span 20.0 MHz Date: 16 AUG 2022 19:17:28</p>
QPSK 15MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 200 kHz Att 35 dB SWT 38 μs VBW 1 MHz Mode Auto FFT M1[1] -19.51 dBm 1.7100000 GHz 01 -13.000 dBm CF 1.71 GHz 501 pts Span 30.0 MHz Date: 16 AUG 2022 19:13:06</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 200 kHz Att 35 dB SWT 38 μs VBW 1 MHz Mode Auto FFT M1[1] -17.62 dBm 1.7550000 GHz 01 -13.000 dBm CF 1.755 GHz 501 pts Span 30.0 MHz Date: 16 AUG 2022 19:16:28</p>
QPSK 20MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 37.9 μs VBW 1 MHz Mode Auto FFT M1[1] -19.31 dBm 1.7100000 GHz 01 -13.000 dBm CF 1.71 GHz 501 pts Span 40.0 MHz Date: 16 AUG 2022 19:14:15</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 37.9 μs VBW 1 MHz Mode Auto FFT M1[1] -19.76 dBm 1.7550000 GHz 01 -13.000 dBm CF 1.755 GHz 501 pts Span 40.0 MHz Date: 16 AUG 2022 19:15:11</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 20 kHz Att 35 dB SWT 94.8 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -16.84 dBm 1.7100000 GHz</p> <p>CF 1.71 GHz 501 pts Span 3.0 MHz</p> <p>Date: 16 AUG 2022 19:10:22</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 20 kHz Att 35 dB SWT 94.8 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -14.66 dBm 1.7550000 GHz</p> <p>CF 1.755 GHz 501 pts Span 3.0 MHz</p> <p>Date: 16 AUG 2022 19:09:18</p>
16QAM 3MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -14.35 dBm 1.7100000 GHz</p> <p>CF 1.71 GHz 501 pts Span 6.0 MHz</p> <p>Date: 16 AUG 2022 19:21:04</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>M1[1] -13.39 dBm 1.7550000 GHz</p> <p>CF 1.755 GHz 501 pts Span 6.0 MHz</p> <p>Date: 16 AUG 2022 19:20:02</p>
16QAM 5MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 50 kHz Att 35 dB SWT 75.9 μs VBW 200 kHz Mode Auto FFT</p> <p>M1[1] -15.85 dBm 1.7100000 GHz</p> <p>CF 1.71 GHz 501 pts Span 10.0 MHz</p> <p>Date: 16 AUG 2022 19:11:31</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 50 kHz Att 35 dB SWT 75.9 μs VBW 200 kHz Mode Auto FFT</p> <p>M1[1] -15.47 dBm 1.7550000 GHz</p> <p>CF 1.755 GHz 501 pts Span 10.0 MHz</p> <p>Date: 16 AUG 2022 19:18:55</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -15.95 dBm 1.7100000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.71 GHz 501 pts Span 20.0 MHz</p> <p>Date: 16 AUG 2022 19:12:22</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 56.9 μs VBW 300 kHz Mode Auto FFT</p> <p>M1[1] -16.90 dBm 1.7550000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.755 GHz 501 pts Span 20.0 MHz</p> <p>Date: 16 AUG 2022 19:17:50</p>
16QAM 15MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 200 kHz Att 35 dB SWT 38 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -18.01 dBm 1.7100000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.71 GHz 501 pts Span 30.0 MHz</p> <p>Date: 16 AUG 2022 19:13:33</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 200 kHz Att 35 dB SWT 38 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -17.57 dBm 1.7550000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.755 GHz 501 pts Span 30.0 MHz</p> <p>Date: 16 AUG 2022 19:16:50</p>
16QAM 20MHz	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 37.9 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -19.89 dBm 1.7100000 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.71 GHz 501 pts Span 40.0 MHz</p> <p>Date: 16 AUG 2022 19:14:36</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 300 kHz Att 35 dB SWT 37.9 μs VBW 1 MHz Mode Auto FFT</p> <p>M1[1] -18.96 dBm 1.7551600 GHz</p> <p>01 -13.000 dBm</p> <p>CF 1.755 GHz 501 pts Span 40.0 MHz</p> <p>Date: 16 AUG 2022 19:15:40</p>



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

Serial Number:	CR220050077-RF-S1	Test Date:	2022/7/8~2022/8/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ted Min	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24.5~26.7	Relative Humidity: (%)	51~58	ATM Pressure: (kPa)	100.1~100.3
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2021-10-10	2022-10-09
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-21	2022-07-20
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204006	Each time	N/A
Unknown	RF Cable	Unknown	RF Cable 004	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108042	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	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).

**EUT Information@ LTE Band 5▲:**

Antenna Gain (dBi):	-1.9	Antenna Gain (dBd):	-4.05	Path Loss L <sub>C</sub> (dB):	0.3
Operation Voltage(V <sub>DC</sub> ):					
Lowest:	6.66	Normal:	7.4	Highest:	8.14

**Test Frequency For Each Mode:**

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

**Test Data:****FCC§2.1046;§ 22.913 (a)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.16	22.18	22.1	17.98	38.45
	RB1#3	22.29	22.2	22.23		
	RB1#5	22.33	22.15	22.19		
	RB3#0	22.19	22.08	22.04		
	RB3#3	22.21	22.12	22.03		
	RB6#0	21.86	21.84	21.81		
1.4MHz 16QAM	RB1#0	21.81	21.64	21.74	17.6	38.45
	RB1#3	21.87	21.67	21.76		
	RB1#5	21.95	21.86	21.84		
	RB3#0	21.76	21.75	21.71		
	RB3#3	21.79	21.66	21.74		
	RB6#0	21.42	21.31	21.35		
3MHz QPSK	RB1#0	21.98	21.97	22.03	17.84	38.45
	RB1#8	22.06	22.11	22.06		
	RB1#14	22.17	22.06	22.19		
	RB6#0	21.98	21.98	22.12		
	RB6#9	22.04	22.1	22.17		
	RB15#0	21.74	21.61	21.82		
3MHz 16QAM	RB1#0	21.67	21.71	21.68	17.58	38.45
	RB1#8	21.6	21.69	21.67		
	RB1#14	21.93	21.86	21.89		
	RB6#0	21.53	21.71	21.61		
	RB6#9	21.55	21.78	21.65		
	RB15#0	21.22	21.31	21.36		
5MHz QPSK	RB1#0	22.05	22.07	22.1	17.94	38.45
	RB1#13	22.12	22.14	22.17		
	RB1#24	22.15	22.2	22.29		
	RB15#0	22.03	22.13	22.13		
	RB15#10	22.1	22.11	22.13		
	RB25#0	21.67	21.83	21.83		
5MHz 16QAM	RB1#0	21.66	21.8	21.64	17.57	38.45
	RB1#13	21.69	21.89	21.67		
	RB1#24	21.83	21.92	21.78		
	RB15#0	21.8	21.73	21.75		
	RB15#10	21.73	21.69	21.74		
	RB25#0	21.54	21.52	21.36		
10MHz QPSK	RB1#0	22.12	22.1	22.13	17.99	38.45
	RB1#25	22.2	22.19	22.12		

	RB1#49	22.34	22.27	22.23		
	RB25#0	22.14	22.07	22.05		
	RB25#25	22.14	22.14	22.05		
	RB50#0	21.88	21.74	21.75		
10MHz 16QAM	RB1#0	21.76	21.83	21.63	17.58	38.45
	RB1#25	21.89	21.8	21.71		
	RB1#49	21.89	21.93	21.69		
	RB25#0	21.69	21.86	21.62		
	RB25#25	21.74	21.91	21.6		
	RB50#0	21.45	21.62	21.41		
Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)						
					<b>Result:</b>	<b>Pass</b>

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	3.22	3.23	3.41	13
	RB50#0	5.16	5.19	5.24	13
10MHz 16QAM	RB1#0	4.21	4.26	4.31	13
	RB50#0	6.39	6.34	6.35	13
<b>Result:</b>					<b>Pass</b>

FCC §2.1049, §22.905:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.102	1.102	1.338	1.32	1.284
1.4MHz 16QAM	1.102	1.096	1.102	1.32	1.296	1.296
3MHz QPSK	2.695	2.695	2.683	2.964	2.94	2.952
3MHz 16QAM	2.695	2.683	2.683	2.964	2.964	2.964
5MHz QPSK	4.531	4.511	4.511	5.06	5.06	5.04
5MHz 16QAM	4.511	4.551	4.551	5.02	5.04	5.06
10MHz QPSK	8.982	8.942	8.982	9.84	9.72	9.76
10MHz 16QAM	8.942	8.942	8.982	9.72	9.76	9.8
Note: The test plots please refer to the Plots of Occupied Bandwidth						

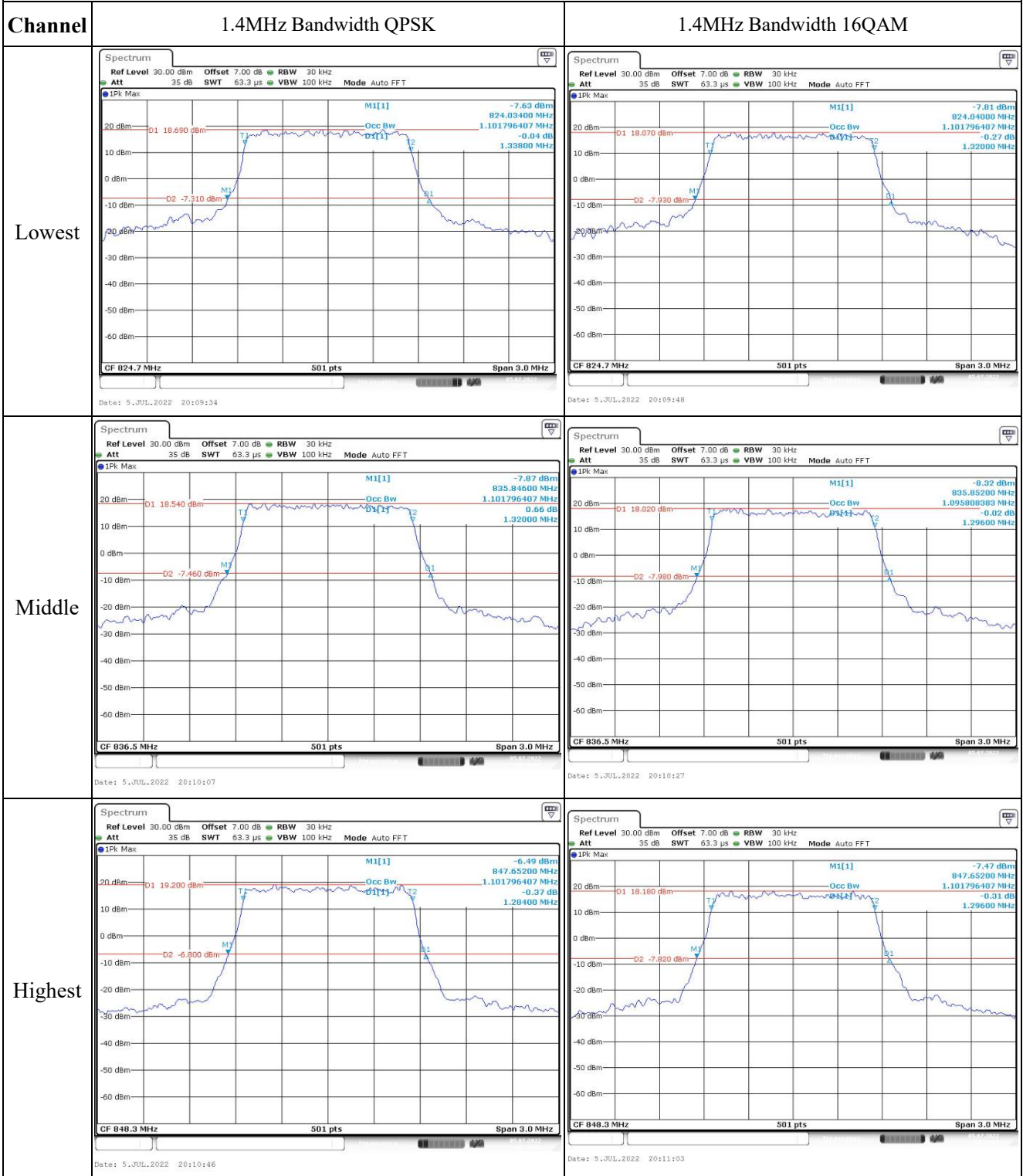
**FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal****Result:** Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**FCC §2.1051, §22.917(a):Out of band emission, Band Edge****Result:** Pass, Please refer to the test plots of Out of band emission, Band Edge.**FCC §2.1055, §22.355: Frequency Stability**

Test Mode:	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	7.4	6	0.007	2.5
	-20	7.4	11	0.013	2.5
	-10	7.4	16	0.019	2.5
	0	7.4	8	0.010	2.5
	10	7.4	3	0.004	2.5
	20	7.4	-3	-0.004	2.5
	30	7.4	-7	-0.008	2.5
	40	7.4	1	0.001	2.5
	50	7.4	8	0.010	2.5
Frequency Stability vs. Voltage	20	6.66	11	0.013	2.5
	20	8.14	6	0.007	2.5
<b>Result:</b>					<b>Pass</b>

Test Mode:	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	7.4	8	0.010	2.5
	-20	7.4	11	0.013	2.5
	-10	7.4	6	0.007	2.5
	0	7.4	2	0.002	2.5
	10	7.4	-4	-0.005	2.5
	20	7.4	-1	-0.001	2.5
	30	7.4	6	0.007	2.5
	40	7.4	13	0.016	2.5
	50	7.4	11	0.013	2.5
Frequency Stability vs. Voltage	20	6.66	7	0.008	2.5
	20	8.14	12	0.014	2.5
<b>Result:</b>					<b>Pass</b>

Test Plots:

Occupied Bandwidth



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -9.39 dBm 824.0120 MHz Occ Bw 2.694610778 MHz D1[1] -0.58 dB 2.9640 MHz</p> <p>CF 825.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 20:11:22</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -10.20 dBm 824.0360 MHz Occ Bw 2.694610778 MHz D1[1] -0.97 dB 2.9640 MHz</p> <p>CF 825.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 20:11:37</p>
Middle	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -9.87 dBm 835.0240 MHz Occ Bw 2.694610778 MHz D1[1] -0.63 dB 2.9400 MHz</p> <p>CF 836.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 20:11:55</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -11.34 dBm 835.0120 MHz Occ Bw 2.682634731 MHz D1[1] 0.08 dB 2.9640 MHz</p> <p>CF 836.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 20:12:10</p>
Highest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -11.09 dBm 846.0120 MHz Occ Bw 2.682634731 MHz D1[1] -1.41 dB 2.9520 MHz</p> <p>CF 847.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 20:12:28</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 30 kHz Att 35 dB SWT 63.2 μs VBW 100 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -11.17 dBm 846.0120 MHz Occ Bw 2.682634731 MHz D1[1] -0.16 dB 2.9640 MHz</p> <p>CF 847.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 5.JUL.2022 20:12:42</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -7.88 dBm 823.9600 MHz Occ Bw 4.53098124 MHz 1.00 dB 5.0600 MHz</p> <p>D1 18.620 dBm D2 -7.380 dBm</p> <p>CF 826.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:13:07</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -6.88 dBm 823.9800 MHz Occ Bw 4.510978044 MHz -0.11 dB 5.0200 MHz</p> <p>D1 18.470 dBm D2 -7.530 dBm</p> <p>CF 826.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:13:24</p>
Middle	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.51 dBm 833.9600 MHz Occ Bw 4.510978044 MHz 1.18 dB 5.0600 MHz</p> <p>D1 17.940 dBm D2 -8.060 dBm</p> <p>CF 836.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:13:46</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -8.04 dBm 833.9800 MHz Occ Bw 4.550898204 MHz 0.27 dB 5.0400 MHz</p> <p>D1 17.770 dBm D2 -8.230 dBm</p> <p>CF 836.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:14:03</p>
Highest	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -7.45 dBm 843.9800 MHz Occ Bw 4.510978044 MHz 0.27 dB 5.0400 MHz</p> <p>D1 18.680 dBm D2 -7.320 dBm</p> <p>CF 846.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:14:22</p>	<p>Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -9.06 dBm 843.9600 MHz Occ Bw 4.550898204 MHz -0.49 dB 5.0600 MHz</p> <p>D1 18.680 dBm D2 -9.320 dBm</p> <p>CF 846.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 5.JUL.2022 20:14:39</p>