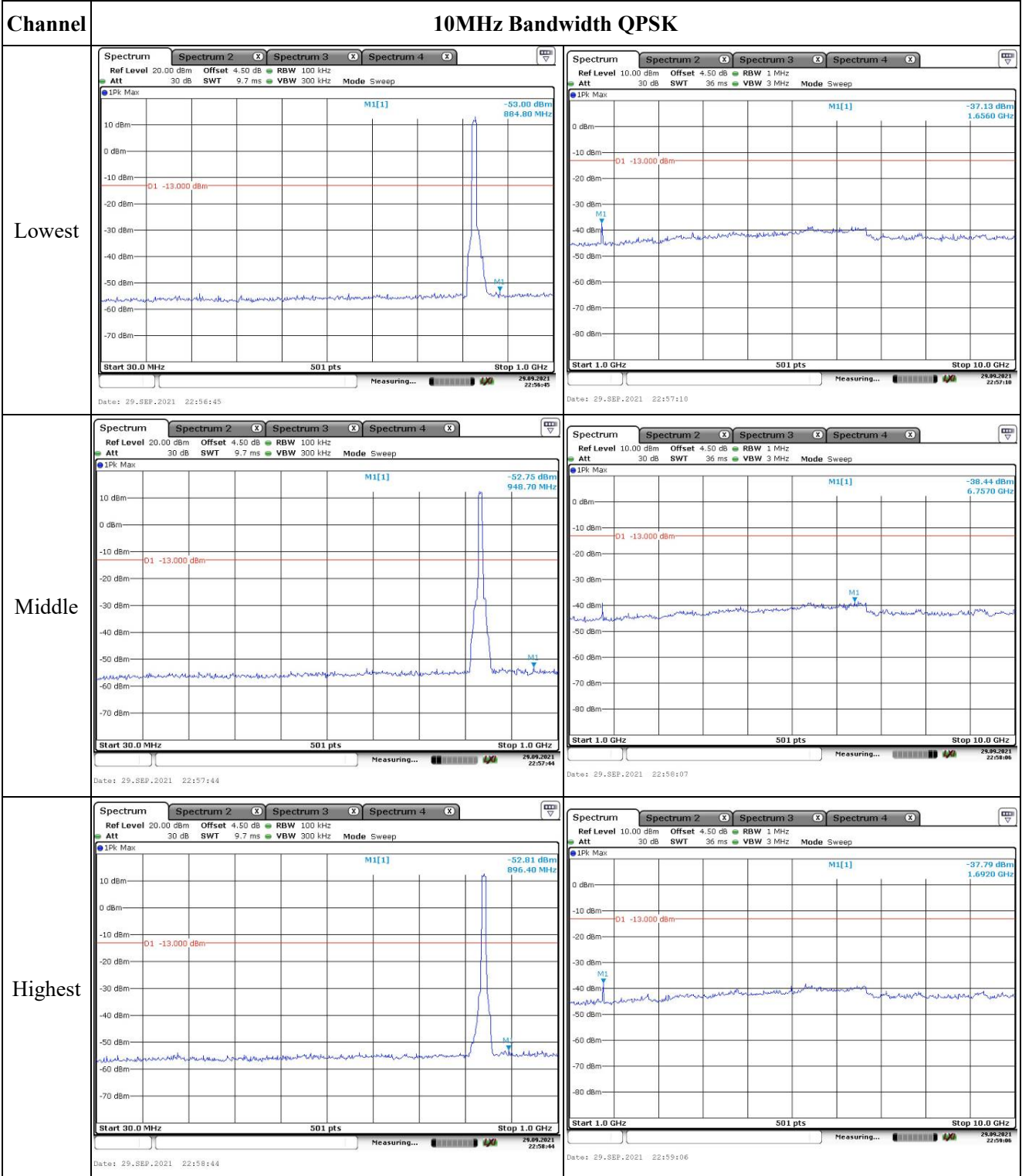


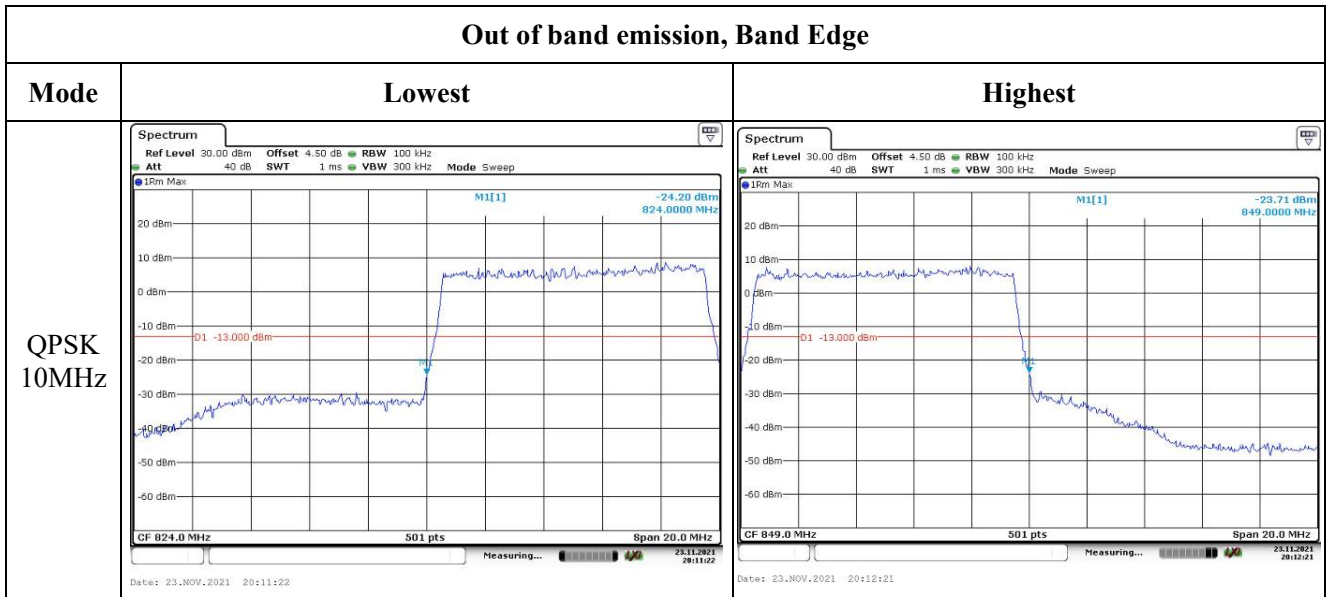
Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz		
QPSK 3MHz		
QPSK 5MHz		

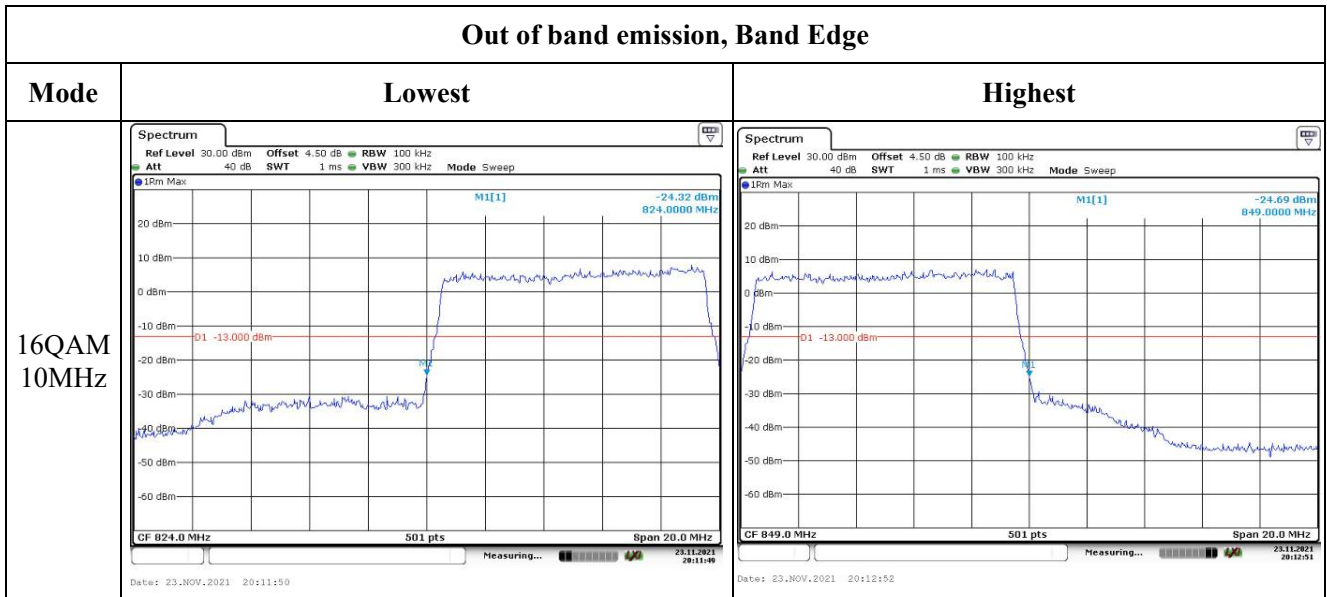
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep M1[1] -22.69 dBm 823.89220 MHz D1 -13.000 dBm CF 824.0 MHz 501 pts Span 3.0 MHz Date: 23.NOV.2021 20:04:58</p>	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep M1[1] -17.88 dBm 849.03590 MHz D1 -13.000 dBm CF 849.0 MHz 501 pts Span 3.0 MHz Date: 23.NOV.2021 20:05:33</p>
16QAM 3MHz	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep M1[1] -17.45 dBm 824.00000 MHz D1 -13.000 dBm CF 824.0 MHz 501 pts Span 6.0 MHz Date: 23.NOV.2021 20:07:15</p>	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep M1[1] -18.49 dBm 849.00000 MHz D1 -13.000 dBm CF 849.0 MHz 501 pts Span 6.0 MHz Date: 23.NOV.2021 20:07:59</p>
16QAM 5MHz	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -16.89 dBm 824.00000 MHz D1 -13.000 dBm CF 824.0 MHz 501 pts Span 10.0 MHz Date: 23.NOV.2021 20:09:02</p>	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep M1[1] -16.96 dBm 849.00000 MHz D1 -13.000 dBm CF 849.0 MHz 501 pts Span 10.0 MHz Date: 23.NOV.2021 20:10:02</p>

Out of band emission, Band Edge



**4.8 Antenna Port Test Data and Results for LTE Band 12:**

Serial Number:	CR21090101-RF-S3/16	Test Date:	2021/09/29~2021/11/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	22.2~28.3	Relative Humidity: (%)	35~42	Temperature: (°C)	22.2~28.3
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	Each Time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021/7/22	2022/7/21

\* 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 12▲:**

Antenna Gain (dBi):	3	Antenna Gain (dBd):	0.85	Cable Loss (dB):	0.2
Operation Voltage(V <sub>DC</sub> ):					
Lowest:	3.5	Normal:	3.7	Highest:	4.2

**Test Frequency For Each Mode:**

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	711

**Test Data:****FCC§2.1046;§ 27.50(c) (10)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.99	22.76	22.97	23.67	34.77
	RB1#3	22.98	22.78	23.01		
	RB1#5	22.9	22.84	23		
	RB3#0	22.92	23	23.02		
	RB3#3	23.02	22.97	22.95		
	RB6#0	21.93	21.95	21.98		
1.4MHz 16QAM	RB1#0	21.98	22.56	21.62	23.22	34.77
	RB1#3	22.05	22.57	21.59		
	RB1#5	21.99	22.54	21.6		
	RB3#0	21.85	21.76	22.01		
	RB3#3	21.79	21.85	22.05		
	RB6#0	21.09	21.06	21.22		
3MHz QPSK	RB1#0	22.89	22.8	22.96	23.72	34.77
	RB1#8	22.87	22.9	22.96		
	RB1#14	22.88	22.86	23.07		
	RB6#0	21.96	21.95	21.96		
	RB6#9	21.85	21.93	21.94		
	RB15#0	21.93	21.86	21.93		
3MHz 16QAM	RB1#0	22.12	22.62	21.62	23.27	34.77
	RB1#8	22.12	22.61	21.52		
	RB1#14	22.07	22.6	21.66		
	RB6#0	21.19	20.91	21.09		
	RB6#9	21.08	21.03	21.18		
	RB15#0	21.16	21.07	20.96		
5MHz QPSK	RB1#0	22.86	22.87	22.81	23.62	34.77
	RB1#13	22.78	22.92	22.87		
	RB1#24	22.78	22.97	22.9		
	RB15#0	21.96	21.85	22.01		
	RB15#10	21.88	21.8	21.99		
	RB25#0	21.82	21.95	21.99		
5MHz 16QAM	RB1#0	20.99	21.99	21.56	22.72	34.77
	RB1#13	21	21.89	21.6		
	RB1#24	21.12	22.07	21.69		
	RB15#0	21.05	20.79	21.1		
	RB15#10	20.94	20.86	20.93		
	RB25#0	21.05	20.98	20.76		
10MHz QPSK	RB1#0	22.73	22.76	23.06	23.78	34.77
	RB1#25	22.76	22.81	23.04		
	RB1#49	22.83	22.94	23.13		

	RB25#0	21.8	21.97	21.8		
	RB25#25	21.91	21.93	21.93		
	RB50#0	21.91	21.8	22.05		
10MHz 16QAM	RB1#0	22.03	22.08	21.52	22.91	34.77
	RB1#25	22.02	22.17	21.54		
	RB1#49	22	22.26	21.51		
	RB25#0	20.96	20.99	21.02		
	RB25#25	20.84	21.41	21.04		
	RB50#0	21.08	21.06	21.39		

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)

**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	4.84	5.65	13
	RB50#0	5.22	5.39	5.19	13
10MHz 16QAM	RB1#0	6.43	5.68	6.29	13
	RB50#0	6.14	6.26	6.06	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
1.4MHz QPSK	1.096	1.102	1.102	1.254	1.254	1.254
1.4MHz 16QAM	1.102	1.102	1.096	1.266	1.26	1.248
3MHz QPSK	2.695	2.695	2.695	2.988	3.000	3.012
3MHz 16QAM	2.695	2.683	2.695	3.012	3.000	3.024
5MHz QPSK	4.511	4.511	4.491	5.000	5.000	5.000
5MHz 16QAM	4.511	4.531	4.531	4.960	5.040	5.000
10MHz QPSK	9.022	8.982	8.942	9.840	9.720	9.760
10MHz 16QAM	8.942	8.982	8.942	9.760	9.760	9.800

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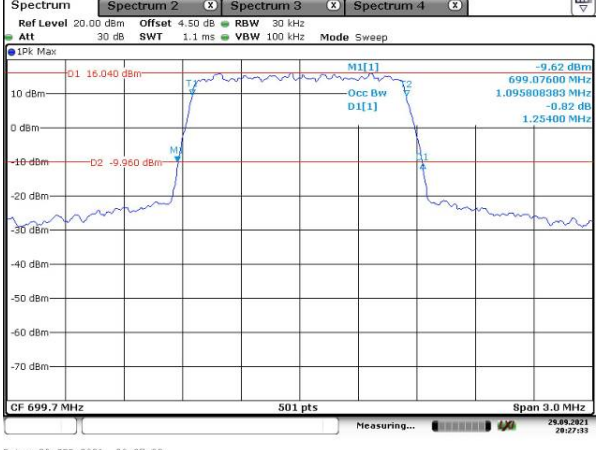
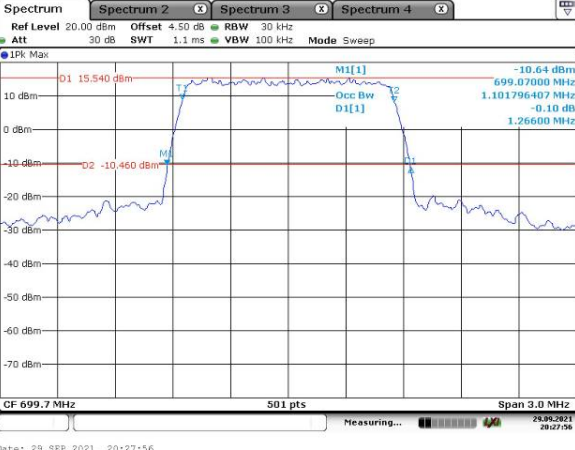
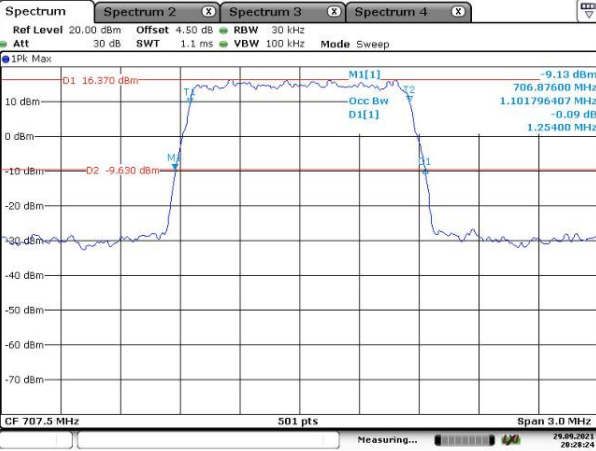
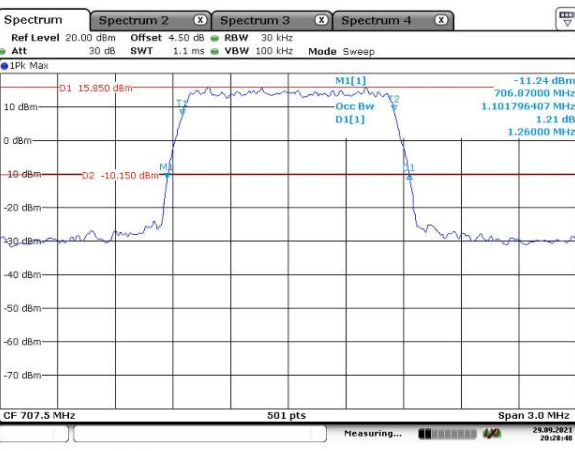
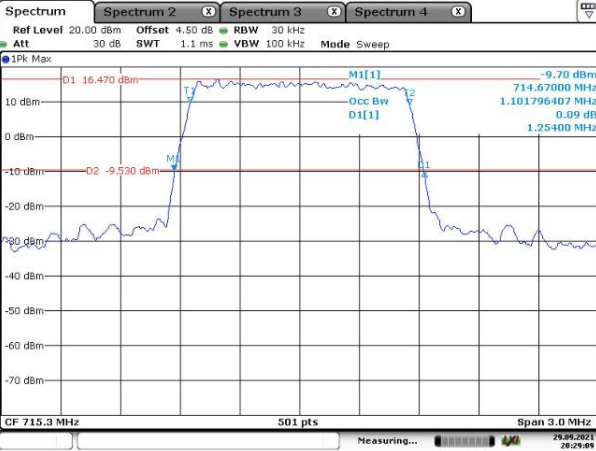
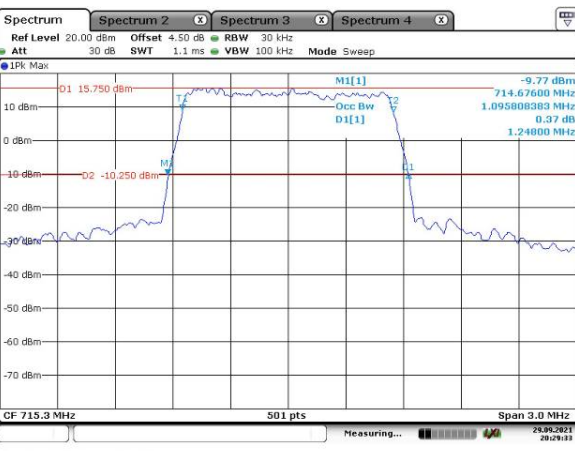
**FCC §2.1055, §27.54: Frequency Stability**

Test Mode:	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	3.7	699.3366	699.00	715.6216	716.00
	-20	3.7	699.5289	699.00	715.4711	716.00
	-10	3.7	699.3366	699.00	715.9054	716.00
	0	3.7	699.2992	699.00	715.8108	716.00
	10	3.7	699.0374	699.00	715.8581	716.00
	20	3.7	699.3366	699.00	715.8581	716.00
	30	3.7	699.1122	699.00	715.6216	716.00
	40	3.7	699.1496	699.00	715.9527	716.00
	50	3.7	699.2618	699.00	715.7162	716.00
Frequency Stability vs. Voltage	20	3.5	699.0374	699.00	715.8108	716.00
	20	4.2	699.1122	699.00	715.6216	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	3.7	699.1496	699.00	715.9054	716.00
	-20	3.7	699.5289	699.00	715.4711	716.00
	-10	3.7	699.3366	699.00	715.8108	716.00
	0	3.7	699.2992	699.00	715.5743	716.00
	10	3.7	699.1496	699.00	715.9527	716.00
	20	3.7	699.0374	699.00	715.9527	716.00
	30	3.7	699.2244	699.00	715.8581	716.00
	40	3.7	699.0374	699.00	715.5743	716.00
	50	3.7	699.1496	699.00	715.9527	716.00
Frequency Stability vs. Voltage	20	3.5	699.0748	699.00	715.6689	716.00
	20	4.2	699.2992	699.00	715.5743	716.00
					<b>Result:</b>	<b>Pass</b>

Test Plots:

Occupied Bandwidth

Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest	 <p>1.4MHz Bandwidth QPSK</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max</p> <p>D1 16.040 dBm M1[1] -9.62 dBm 699.07600 MHz 1.095808383 MHz -0.82 dB 1.25400 MHz</p> <p>D2 -9.950 dBm</p> <p>CF 699.7 MHz 501 pts Span 3.0 MHz</p> <p>Date: 29_SEP.2021 20:27:32</p>	 <p>1.4MHz Bandwidth 16QAM</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max</p> <p>D1 15.540 dBm M1[1] -10.64 dBm 699.07000 MHz 1.101796407 MHz -0.10 dB 1.26600 MHz</p> <p>D2 -10.460 dBm</p> <p>CF 699.7 MHz 501 pts Span 3.0 MHz</p> <p>Date: 29_SEP.2021 20:27:56</p>
Middle	 <p>1.4MHz Bandwidth QPSK</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max</p> <p>D1 16.370 dBm M1[1] -9.13 dBm 706.87600 MHz 1.101796407 MHz -0.09 dB 1.25400 MHz</p> <p>D2 -9.630 dBm</p> <p>CF 707.5 MHz 501 pts Span 3.0 MHz</p> <p>Date: 29_SEP.2021 20:28:24</p>	 <p>1.4MHz Bandwidth 16QAM</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max</p> <p>D1 15.850 dBm M1[1] -11.24 dBm 706.87000 MHz 1.101796407 MHz 1.21 dB 1.26000 MHz</p> <p>D2 -10.150 dBm</p> <p>CF 707.5 MHz 501 pts Span 3.0 MHz</p> <p>Date: 29_SEP.2021 20:28:47</p>
Highest	 <p>1.4MHz Bandwidth QPSK</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max</p> <p>D1 16.470 dBm M1[1] -9.70 dBm 714.67000 MHz 1.101796407 MHz 0.09 dB 1.25400 MHz</p> <p>D2 -9.530 dBm</p> <p>CF 715.3 MHz 501 pts Span 3.0 MHz</p> <p>Date: 29_SEP.2021 20:29:09</p>	 <p>1.4MHz Bandwidth 16QAM</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1Pk Max</p> <p>D1 15.750 dBm M1[1] -9.77 dBm 714.67000 MHz 1.095808383 MHz 0.37 dB 1.24800 MHz</p> <p>D2 -10.250 dBm</p> <p>CF 715.3 MHz 501 pts Span 3.0 MHz</p> <p>Date: 29_SEP.2021 20:29:33</p>

Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1PK Max</p> <p>D1 14.320 dBm M1[1] -11.63 dBm 699.0000 MHz</p> <p>D2 -11.680 dBm D1[1] -0.67 dB 2.694610778 MHz</p> <p>CF 700.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 29_SEP.2021 20:30:01</p>	<p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1PK Max</p> <p>D1 12.420 dBm M1[1] -13.81 dBm 698.9800 MHz</p> <p>D2 -13.580 dBm D1[1] 0.90 dB 2.694610778 MHz</p> <p>CF 700.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 29_SEP.2021 20:30:30</p>
Middle	<p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1PK Max</p> <p>D1 13.860 dBm M1[1] -11.27 dBm 706.0120 MHz</p> <p>D2 -12.140 dBm D1[1] -1.38 dB 2.694610778 MHz</p> <p>CF 707.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 29_SEP.2021 20:31:01</p>	<p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1PK Max</p> <p>D1 12.720 dBm M1[1] -14.22 dBm 706.0000 MHz</p> <p>D2 -13.280 dBm D1[1] 0.64 dB 2.694610778 MHz</p> <p>CF 707.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 29_SEP.2021 20:31:24</p>
Highest	<p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1PK Max</p> <p>D1 12.710 dBm M1[1] -13.61 dBm 712.9800 MHz</p> <p>D2 -13.290 dBm D1[1] -0.06 dB 2.694610778 MHz</p> <p>CF 714.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 29_SEP.2021 20:31:52</p>	<p>Ref Level 20.00 dBm Offset 4.50 dB RBW 30 kHz Att 30 dB SWT 1.1 ms VBW 100 kHz Mode Sweep</p> <p>1PK Max</p> <p>D1 12.600 dBm M1[1] -13.70 dBm 712.9760 MHz</p> <p>D2 -13.400 dBm D1[1] 0.86 dB 2.694610778 MHz</p> <p>CF 714.5 MHz 501 pts Span 6.0 MHz</p> <p>Date: 29_SEP.2021 20:32:15</p>

Occupied Bandwidth

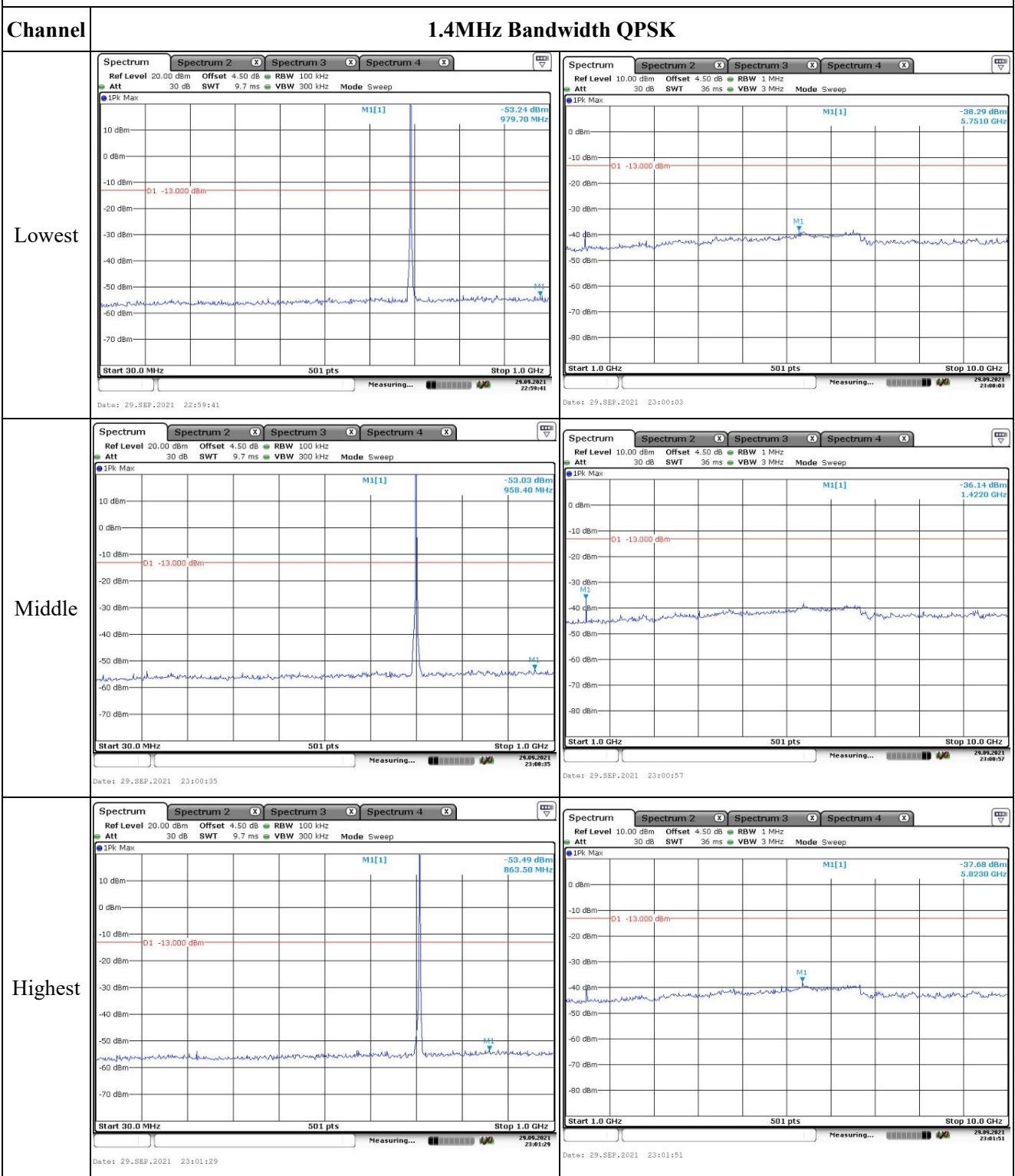
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>1Pk Max</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz</p> <p>Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>D1 15.810 dBm</p> <p>M1[1] -10.05 dBm</p> <p>Occ Bw 4.510978044 MHz</p> <p>D1[1] -1.60 dB</p> <p>5.0000 MHz</p> <p>CF 701.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:32:52</p>	<p>1Pk Max</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz</p> <p>Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>D1 15.870 dBm</p> <p>M1[1] -9.44 dBm</p> <p>Occ Bw 4.510978044 MHz</p> <p>D1[1] 0.70 dB</p> <p>4.9600 MHz</p> <p>CF 701.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:33:28</p>
Middle	<p>1Pk Max</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz</p> <p>Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>D1 15.330 dBm</p> <p>M1[1] -11.47 dBm</p> <p>Occ Bw 4.510978044 MHz</p> <p>D1[1] 0.77 dB</p> <p>5.0000 MHz</p> <p>CF 707.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:34:02</p>	<p>1Pk Max</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz</p> <p>Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>D1 14.330 dBm</p> <p>M1[1] -11.33 dBm</p> <p>Occ Bw 4.530938124 MHz</p> <p>D1[1] -1.37 dB</p> <p>5.0400 MHz</p> <p>CF 707.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:34:31</p>
Highest	<p>1Pk Max</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz</p> <p>Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>D1 16.430 dBm</p> <p>M1[1] -9.79 dBm</p> <p>Occ Bw 4.491017964 MHz</p> <p>D1[1] 0.83 dB</p> <p>5.0000 MHz</p> <p>CF 713.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:35:05</p>	<p>1Pk Max</p> <p>Ref Level 20.00 dBm Offset 4.50 dB RBW 100 kHz</p> <p>Att 30 dB SWT 1 ms VBW 300 kHz Mode Sweep</p> <p>D1 15.100 dBm</p> <p>M1[1] -10.99 dBm</p> <p>Occ Bw 4.530938124 MHz</p> <p>D1[1] 0.17 dB</p> <p>5.0000 MHz</p> <p>CF 713.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:35:35</p>

Occupied Bandwidth

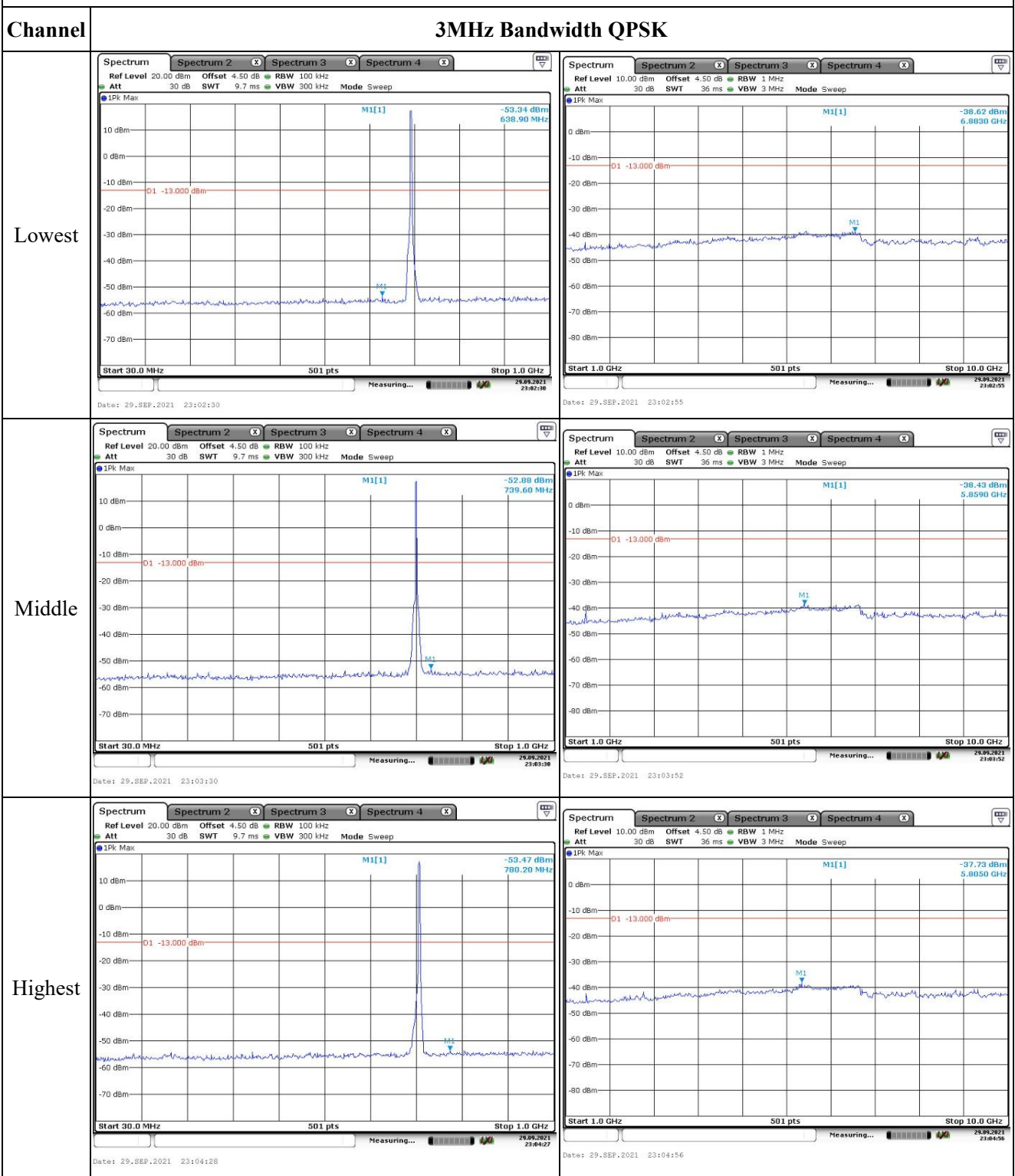
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		



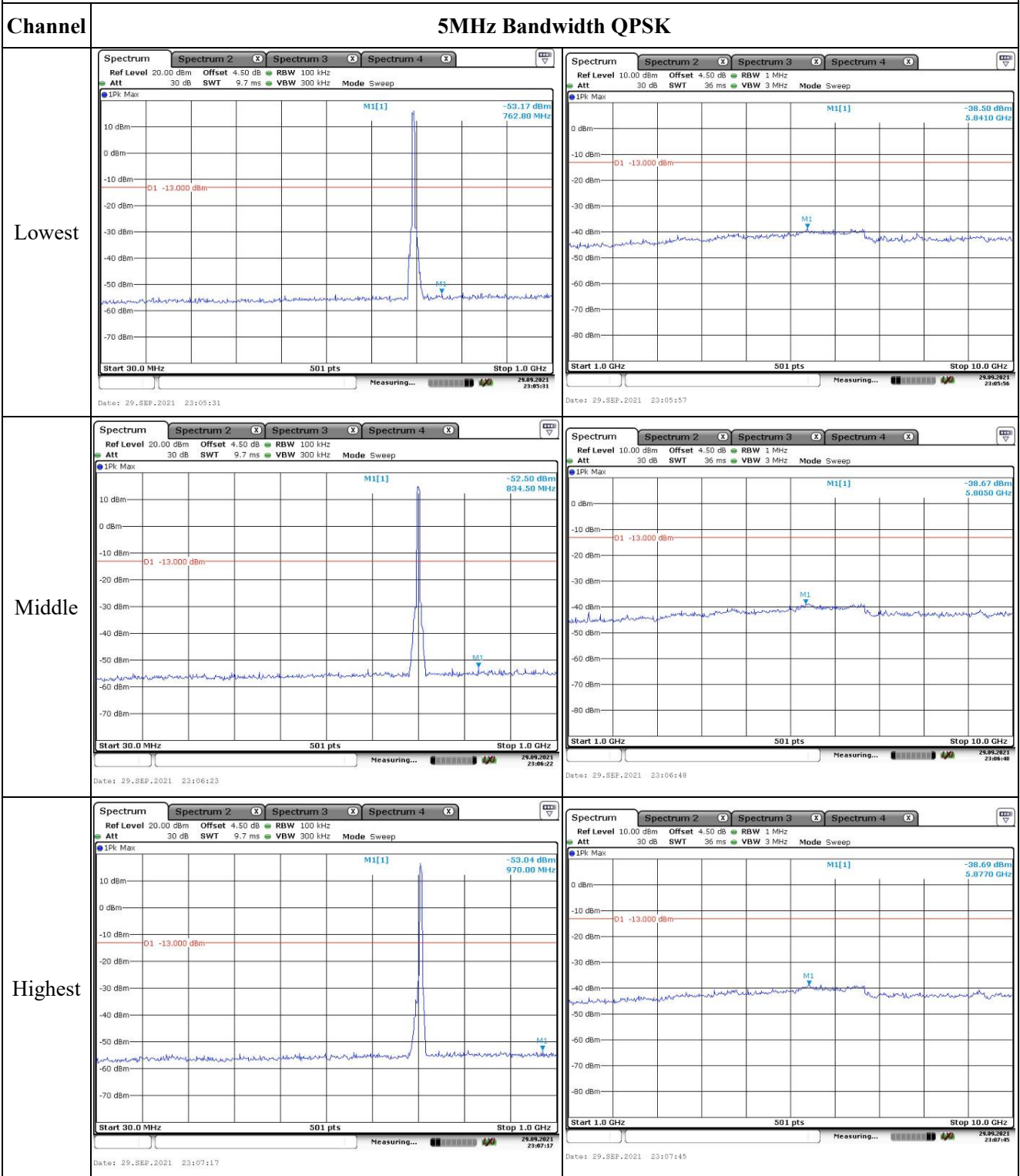
### Spurious Emissions at Antenna Terminal



Spurious Emissions at Antenna Terminal

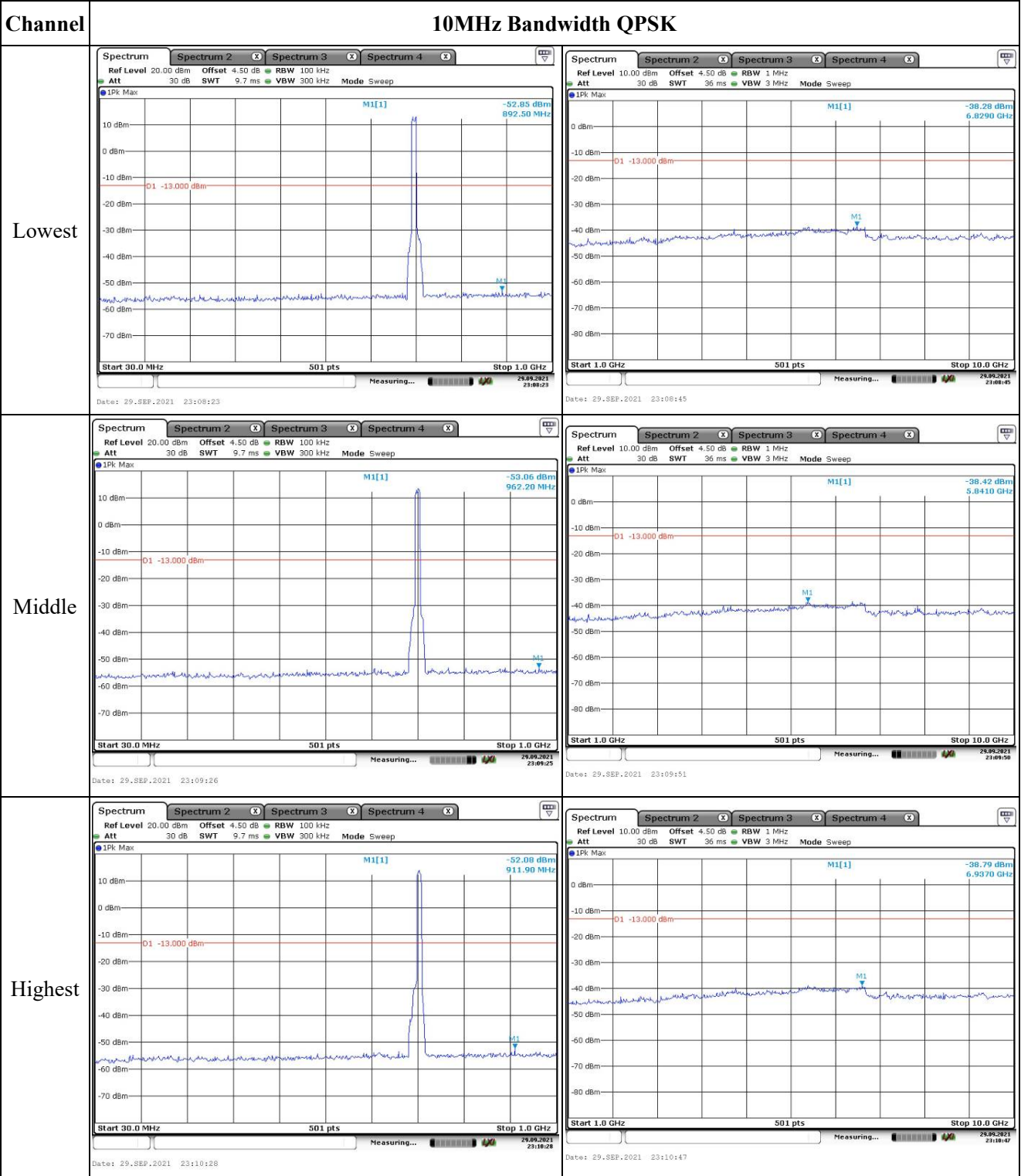


### Spurious Emissions at Antenna Terminal





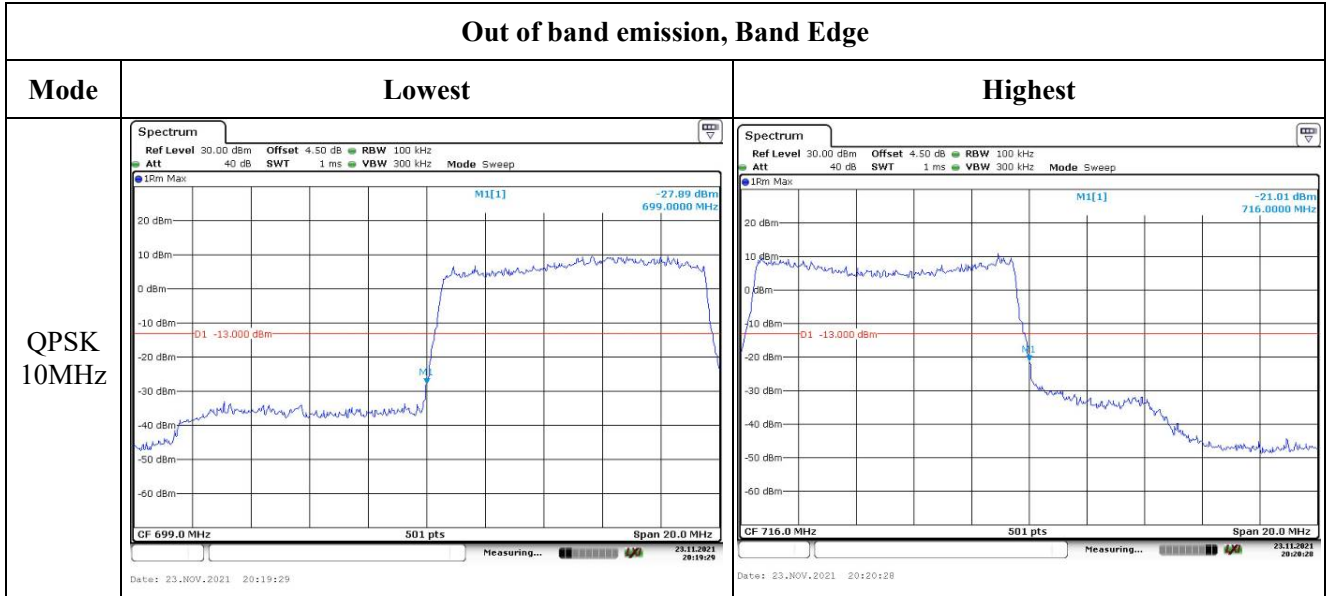
### Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -25.14 dBm 698.87430 MHz D1 -13.000 dBm CF 699.0 MHz 501 pts Span 3.0 MHz Date: 23.NOV.2021 20:13:18</p>	<p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -19.80 dBm 716.00000 MHz D1 -13.000 dBm CF 716.0 MHz 501 pts Span 3.0 MHz Date: 23.NOV.2021 20:14:05</p>
QPSK 3MHz	<p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -17.29 dBm 699.00000 MHz D1 -13.000 dBm CF 699.0 MHz 501 pts Span 6.0 MHz Date: 23.NOV.2021 20:15:51</p>	<p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Rm Max M1[1] -16.23 dBm 716.00000 MHz D1 -13.000 dBm CF 716.0 MHz 501 pts Span 6.0 MHz Date: 23.NOV.2021 20:16:37</p>
QPSK 5MHz	<p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Rm Max M1[1] -15.63 dBm 699.00000 MHz D1 -13.000 dBm CF 699.0 MHz 501 pts Span 10.0 MHz Date: 23.NOV.2021 20:17:38</p>	<p>Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 30 ms VBW 300 kHz Mode Sweep 1Rm Max M1[1] -22.19 dBm 716.00000 MHz D1 -13.000 dBm CF 716.0 MHz 501 pts Span 10.0 MHz Date: 24.NOV.2021 09:23:42</p>

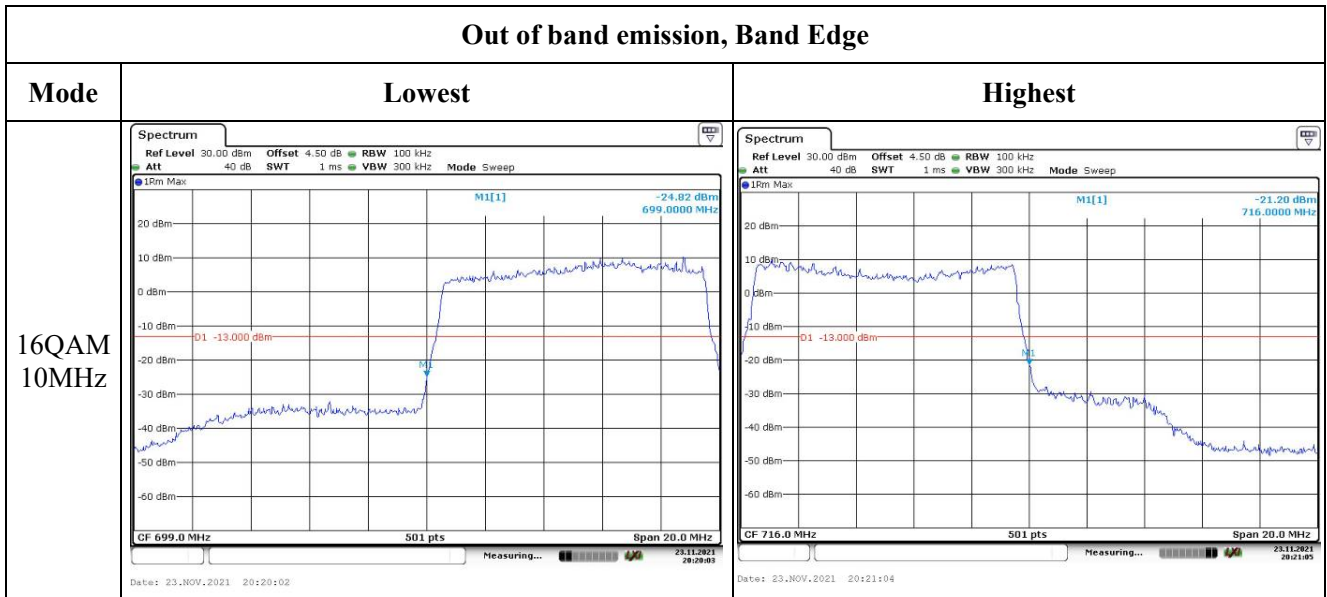
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Fm Max M1[1] -24.55 dBm 698.88020 MHz D1 -13.000 dBm CF 699.0 MHz 501 pts Span 3.0 MHz Date: 23.NOV.2021 20:13:47</p>	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Fm Max M1[1] -19.48 dBm 716.13170 MHz D1 -13.000 dBm CF 716.0 MHz 501 pts Span 3.0 MHz Date: 23.NOV.2021 20:14:26</p>
16QAM 3MHz	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Fm Max M1[1] -16.25 dBm 699.0000 MHz D1 -13.000 dBm CF 699.0 MHz 501 pts Span 6.0 MHz Date: 23.NOV.2021 20:16:16</p>	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 30 kHz Att 40 dB SWT 1.1 ms VBW 100 kHz Mode Sweep 1Fm Max M1[1] -15.65 dBm 716.0000 MHz D1 -13.000 dBm CF 716.0 MHz 501 pts Span 6.0 MHz Date: 23.NOV.2021 20:17:03</p>
16QAM 5MHz	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 1 ms VBW 300 kHz Mode Sweep 1Fm Max M1[1] -17.42 dBm 699.0000 MHz D1 -13.000 dBm CF 699.0 MHz 501 pts Span 10.0 MHz Date: 23.NOV.2021 20:18:04</p>	<p>Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 30 ms VBW 300 kHz Mode Sweep 1Fm Max M1[1] -23.40 dBm 716.0000 MHz D1 -13.000 dBm CF 716.0 MHz 501 pts Span 10.0 MHz Date: 24.NOV.2021 09:24:07</p>

Out of band emission, Band Edge



**4.9 Antenna Port Test Data and Results for LTE Band 17:**

Serial Number:	CR21090101-RF-S3/16	Test Date:	2021/09/29~2021/11/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Thor Lei	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	22.2~28.3	Relative Humidity: (%)	35~42	Temperature: (°C)	22.2~28.3
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**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	Each Time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021/7/22	2022/7/21

\* 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 17▲:**

Antenna Gain (dBi):	3	Antenna Gain (dBd):	0.85	Cable Loss (dB):	0.2
Operation Voltage(V <sub>DC</sub> ):					
Lowest:	3.5	Normal:	3.7	Highest:	4.2

**Test Frequency For Each Mode:**

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	706.5	710	713.5
10MHz	709	710	711

**Test Data:****FCC§2.1046;§ 27.50(c) (10)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP(dBm)	ERP Limit(dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.88	22.92	22.86	23.62	34.77
	RB1#13	22.95	22.96	22.84		
	RB1#24	22.93	22.97	22.92		
	RB15#0	22.01	22.01	21.93		
	RB15#10	21.97	21.96	21.9		
	RB25#0	21.88	21.99	21.91		
5MHz 16QAM	RB1#0	21.16	21.79	21.64	22.63	34.77
	RB1#13	21.12	21.98	21.56		
	RB1#24	21.12	21.91	21.71		
	RB15#0	20.99	21.24	21.08		
	RB15#10	21	21.27	21.03		
	RB25#0	21	21.4	20.76		
10MHz QPSK	RB1#0	22.81	22.87	23.09	23.87	34.77
	RB1#25	22.87	22.86	23.2		
	RB1#49	22.96	23.01	23.22		
	RB25#0	21.97	21.89	21.87		
	RB25#25	22.05	21.97	22.01		
	RB50#0	21.93	22.02	22.13		
10MHz 16QAM	RB1#0	22.01	22.23	21.55	22.95	34.77
	RB1#25	22.01	22.3	21.63		
	RB1#49	22.15	22.22	21.65		
	RB25#0	20.89	21.01	21.06		
	RB25#25	21.17	21.12	21.1		
	RB50#0	20.98	21.45	21.43		

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)

**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	5.01	5.25	4.9	13
	RB50#0	5.36	5.19	5.07	13
10MHz 16QAM	RB1#0	6.7	5.59	5.88	13
	RB50#0	6.2	6.2	6.09	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	4.531	4.511	4.511	4.980	5.000	5.000
5MHz 16QAM	4.511	4.531	4.531	4.980	5.020	5.000
10MHz QPSK	8.942	8.942	8.942	9.760	9.720	9.760
10MHz 16QAM	8.942	8.942	8.942	9.760	9.800	9.720

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:	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	3.7	704.187	704.00	715.7635	716.00
	-20	3.7	704.5289	704.00	715.4711	716.00
	-10	3.7	704.187	704.00	715.8581	716.00
	0	3.7	704.2618	704.00	715.9527	716.00
	10	3.7	704.1122	704.00	715.8108	716.00
	20	3.7	704.0374	704.00	715.7162	716.00
	30	3.7	704.2618	704.00	715.8581	716.00
	40	3.7	704.1122	704.00	715.8581	716.00
	50	3.7	704.0374	704.00	715.7162	716.00
Frequency Stability vs. Voltage	20	3.5	704.0374	704.00	715.6216	716.00
	20	4.2	704.2244	704.00	715.7162	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	3.7	704.0374	704.00	715.5743	716.00
	-20	3.7	704.5289	704.00	715.4711	716.00
	-10	3.7	704.0748	704.00	715.7635	716.00
	0	3.7	704.187	704.00	715.7635	716.00
	10	3.7	704.0374	704.00	715.9054	716.00
	20	3.7	704.1496	704.00	715.9527	716.00
	30	3.7	704.0374	704.00	715.8581	716.00
	40	3.7	704.3366	704.00	715.6216	716.00
	50	3.7	704.187	704.00	715.7635	716.00
Frequency Stability vs. Voltage	20	3.5	704.2244	704.00	715.7162	716.00
	20	4.2	704.1122	704.00	715.9527	716.00
					<b>Result:</b>	<b>Pass</b>

Test Plots:

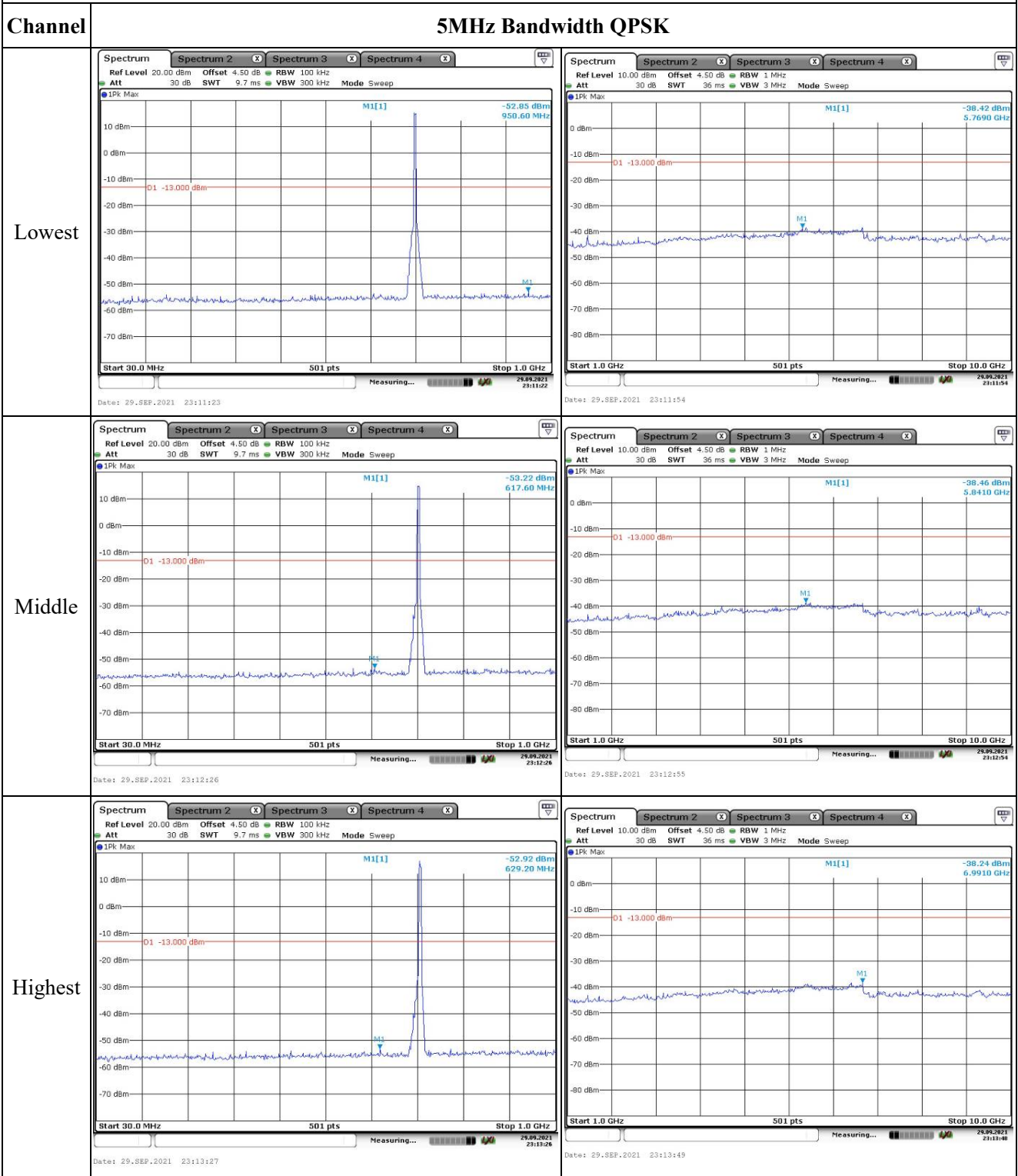
Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>CF 706.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:39:30</p>	<p>CF 706.3 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:40:03</p>
Middle	<p>CF 710.0 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:40:39</p>	<p>CF 710.0 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:41:06</p>
Highest	<p>CF 713.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:41:40</p>	<p>CF 713.5 MHz 501 pts Span 10.0 MHz</p> <p>Date: 29_SEP.2021 20:42:09</p>

Occupied Bandwidth

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

### Spurious Emissions at Antenna Terminal

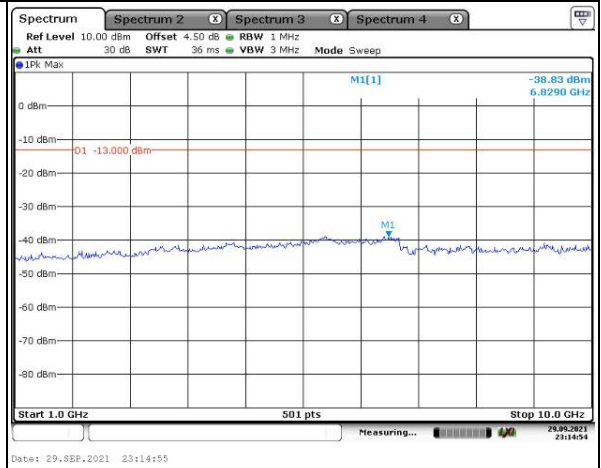
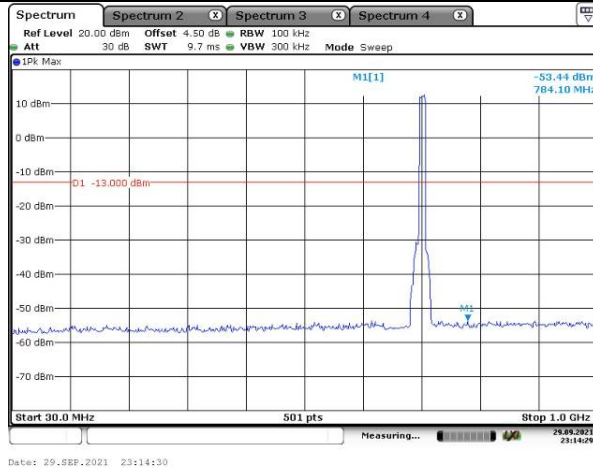


### Spurious Emissions at Antenna Terminal

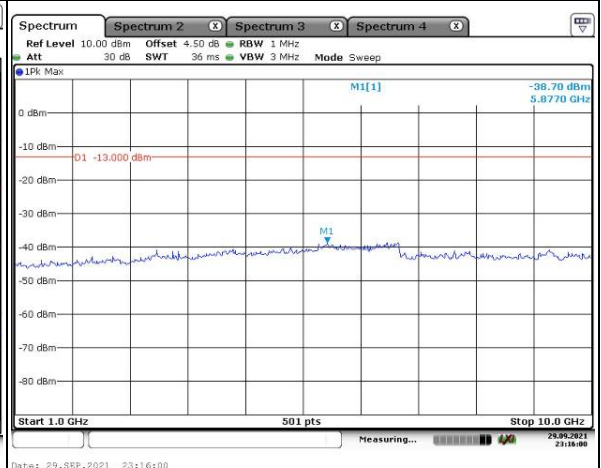
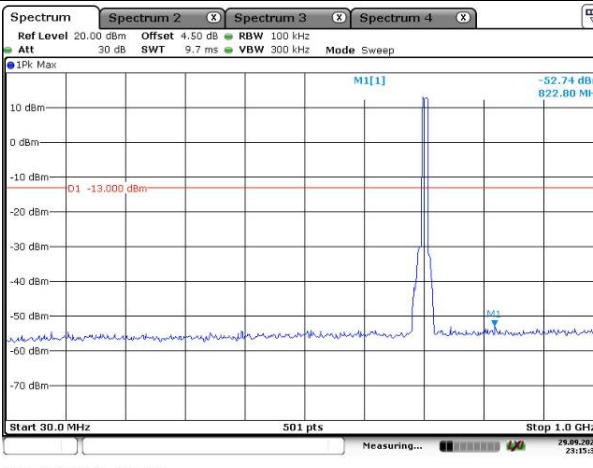
Channel

10MHz Bandwidth QPSK

Lowest



Middle



Highest

