

10MHz 16QAM	RB1#0	/	21.97	/	20.97	24
	RB1#25	/	22.04	/		
	RB1#49	/	21.94	/		
	RB25#0	/	21.13	/		
	RB25#25	/	21.14	/		
	RB50#0	/	21.06	/		

Note:

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

EIRP=Conducted Power(dBm) - LC(dB) + GT(dBi)

EIRP PSD=Conducted PSD(dBm/5MHz) - LC(dB) + GT(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	23.54	/	23.28	22.47	24
	RB1#13	23.44	/	23.17		
	RB1#24	23.40	/	23.10		
	RB15#0	22.36	/	22.25		
	RB15#10	22.30	/	22.14		
	RB25#0	22.30	/	22.17		
5MHz 16QAM	RB1#0	22.39	/	22.46	21.39	24
	RB1#13	22.29	/	22.40		
	RB1#24	22.22	/	22.33		
	RB15#0	21.30	/	21.28		
	RB15#10	21.20	/	21.13		
	RB25#0	21.30	/	21.15		
10MHz QPSK	RB1#0	/	23.28	/	22.21	24
	RB1#25	/	23.19	/		
	RB1#49	/	23.16	/		
	RB25#0	/	22.28	/		
	RB25#25	/	22.18	/		
	RB50#0	/	22.24	/		
10MHz 16QAM	RB1#0	/	22.32	/	21.25	24
	RB1#25	/	22.28	/		
	RB1#49	/	22.21	/		
	RB25#0	/	21.29	/		
	RB25#25	/	21.23	/		
	RB50#0	/	21.28	/		

**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	/	23.38	/	22.31	24
	RB1#25	/	23.28	/		
	RB1#49	/	23.09	/		
	RB25#0	/	22.30	/		
	RB25#25	/	22.15	/		
	RB50#0	/	22.25	/		
10MHz 16QAM	RB1#0	/	22.56	/	21.49	24
	RB1#25	/	22.45	/		
	RB1#49	/	22.29	/		
	RB25#0	/	21.32	/		
	RB25#25	/	21.18	/		
	RB50#0	/	21.18	/		

Note:

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

EIRP=Conducted Power(dBm) - LC(dB) + GT(dBi)

EIRP PSD=Conducted PSD(dBm/5MHz) - LC(dB) + GT(dBi)

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

Operation Band	Modulation	Bandwidth	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Limit (%)
LTE Band 40 Lower	QPSK	5M	3	10.005	29.99	38
		10M	3	10.005	29.99	38
	16QAM	5M	3	10.005	29.99	38
		10M	3	10.005	29.99	38
LTE Band 40 Upper	QPSK	5M	3	10.005	29.99	38
		10M	3	10.005	29.99	38
	16QAM	5M	3	10.005	29.99	38
		10M	3	10.005	29.99	38

**Result:****Pass**

<b>FCC §2.1049, §27.53:Occupied Bandwidth</b>						
<b>LTE Band 40 Lower:</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	4.511	/	4.511	5.320	/	4.980
5MHz 16QAM	4.511	/	4.511	5.040	/	5.080
10MHz QPSK	/	8.942	/	/	9.880	/
10MHz 16QAM	/	8.942	/	/	9.520	/

**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	5.420	/	5.040
5MHz 16QAM	4.491	/	4.511	5.000	/	5.040
10MHz QPSK	/	8.942	/	/	9.720	/
10MHz 16QAM	/	8.942	/	/	9.520	/

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**

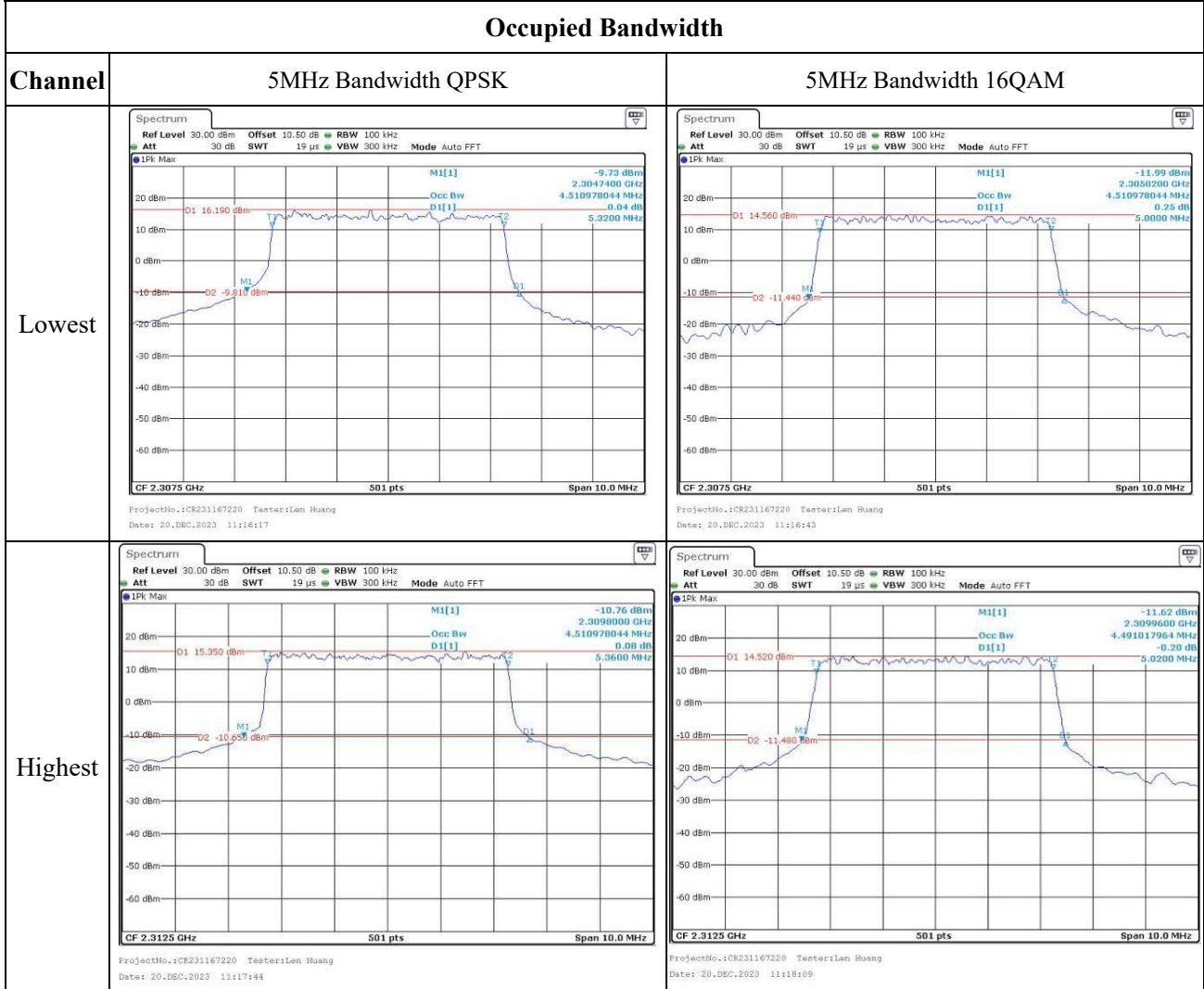
<b>LTE Band 40 Lower:</b>						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (VDC)	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2305.128	2305.000	2314.816	2315.000
	-20	3.91	2305.625	2305.000	2314.488	2315.000
	-10	3.91	2305.470	2305.000	2314.538	2315.000
	0	3.91	2305.245	2305.000	2314.090	2315.000
	10	3.91	2305.481	2305.000	2314.174	2315.000
	20	3.91	2305.396	2305.000	2314.317	2315.000
	30	3.91	2305.154	2305.000	2314.146	2315.000
	40	3.91	2305.480	2305.000	2314.417	2315.000
	50	3.91	2305.707	2305.000	2314.013	2315.000
Frequency Stability vs. Voltage	20	3.45	2305.658	2305.000	2314.107	2315.000
	20	4.5	2305.188	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 (VDC)	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2305.964	2305.000	2314.244	2315.000
	-20	3.91	2305.936	2305.000	2314.593	2315.000
	-10	3.91	2305.876	2305.000	2314.773	2315.000
	0	3.91	2305.041	2305.000	2314.901	2315.000
	10	3.91	2305.776	2305.000	2314.682	2315.000
	20	3.91	2305.676	2305.000	2314.207	2315.000
	30	3.91	2305.356	2305.000	2314.391	2315.000
	40	3.91	2305.798	2305.000	2314.015	2315.000
	50	3.91	2305.132	2305.000	2314.940	2315.000
Frequency Stability vs. Voltage	20	3.45	2305.969	2305.000	2314.069	2315.000
	20	4.5	2305.853	2305.000	2314.845	2315.000
					<b>Result:</b>	<b>Pass</b>

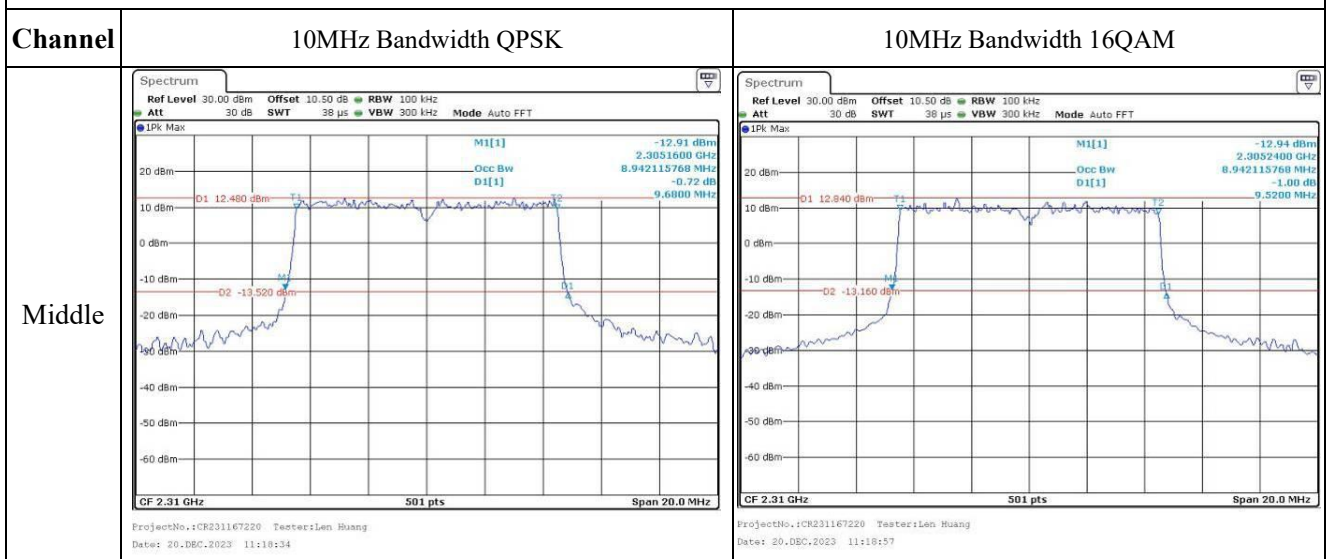
<b>LTE Band 40 Upper:</b>						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (VDC)	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2350.216	2350.000	2359.144	2360.000
	-20	3.91	2350.969	2350.000	2359.078	2360.000
	-10	3.91	2350.734	2350.000	2359.492	2360.000
	0	3.91	2350.821	2350.000	2359.433	2360.000
	10	3.91	2350.911	2350.000	2359.646	2360.000
	20	3.91	2350.993	2350.000	2359.688	2360.000
	30	3.91	2350.003	2350.000	2359.887	2360.000
	40	3.91	2350.911	2350.000	2359.476	2360.000
Frequency Stability vs. Voltage	20	3.45	2350.958	2350.000	2359.736	2360.000
	20	4.5	2350.448	2350.000	2359.145	2360.000
<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 (VDC)	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2350.474	2350.000	2359.851	2360.000
	-20	3.91	2350.093	2350.000	2359.880	2360.000
	-10	3.91	2350.974	2350.000	2359.729	2360.000
	0	3.91	2350.710	2350.000	2359.841	2360.000
	10	3.91	2350.398	2350.000	2359.785	2360.000
	20	3.91	2350.898	2350.000	2359.902	2360.000
	30	3.91	2350.563	2350.000	2359.437	2360.000
	40	3.91	2350.919	2350.000	2359.800	2360.000
Frequency Stability vs. Voltage	20	3.45	2350.689	2350.000	2359.333	2360.000
	20	4.5	2350.923	2350.000	2359.750	2360.000
<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):  
2305-2315 MHz:



### Occupied Bandwidth



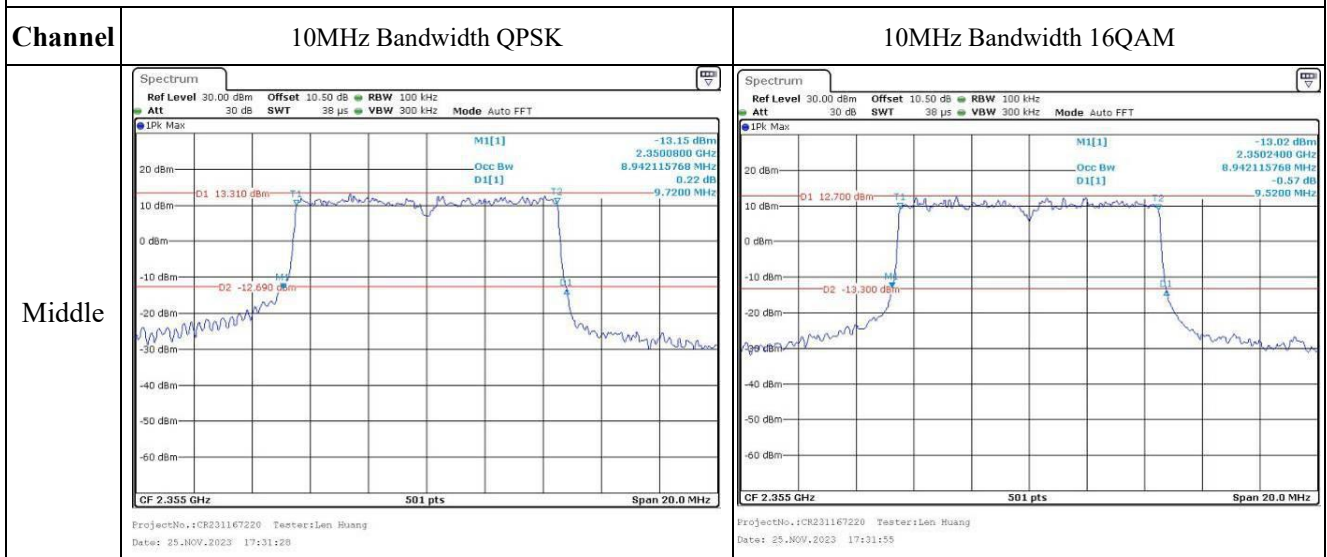
2350-2360 MHz:

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:29:20</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:29:41</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:30:44</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:31:08</p>



Occupied Bandwidth



2305-2315 MHz:

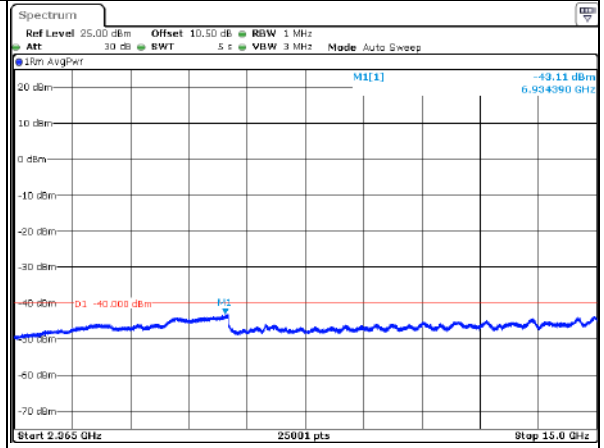
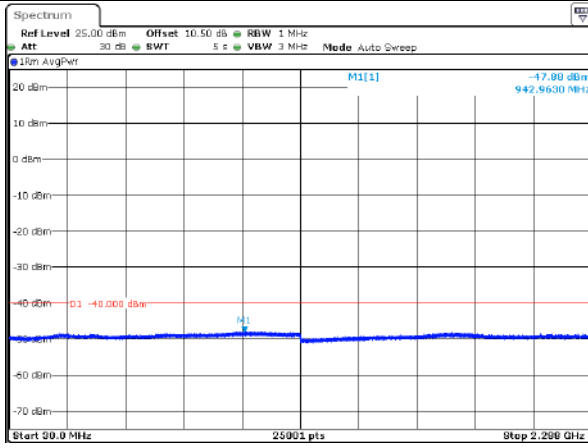
Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 23.NOV.2023 16:48:44</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 23.NOV.2023 16:49:05</p>
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 23.NOV.2023 16:49:28</p>	

### Spurious Emissions at Antenna Terminal

Channel

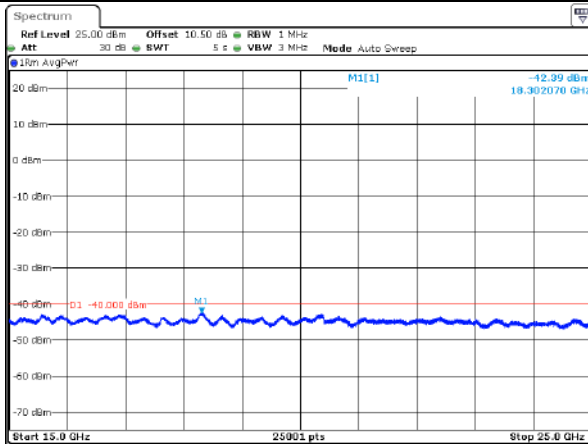
5MHz Bandwidth QPSK



ProjectNo.:CR231167220 Tester:Len Huang  
Date: 23.NOV.2023 16:52:56

ProjectNo.:CR231167220 Tester:Len Huang  
Date: 23.NOV.2023 16:53:17

Highest



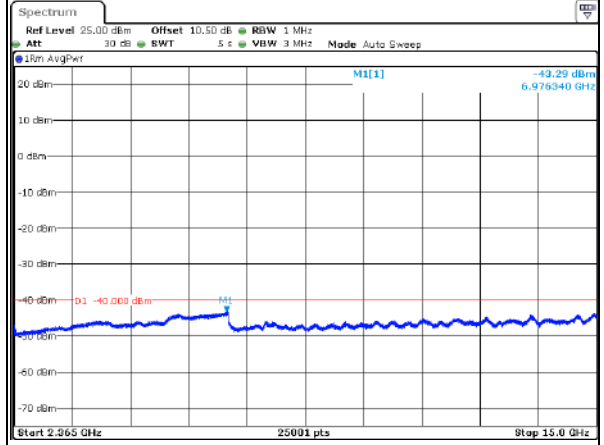
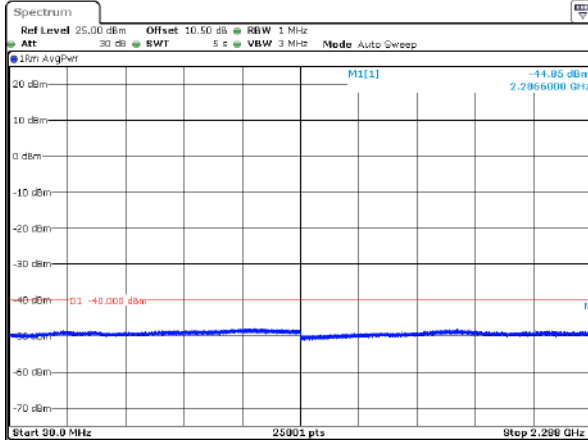
ProjectNo.:CR231167220 Tester:Len Huang  
Date: 23.NOV.2023 16:53:40

Spurious Emissions at Antenna Terminal

Channel

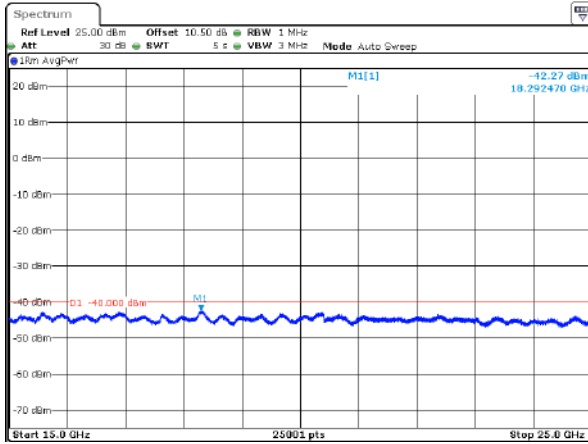
10MHz Bandwidth QPSK

Middle



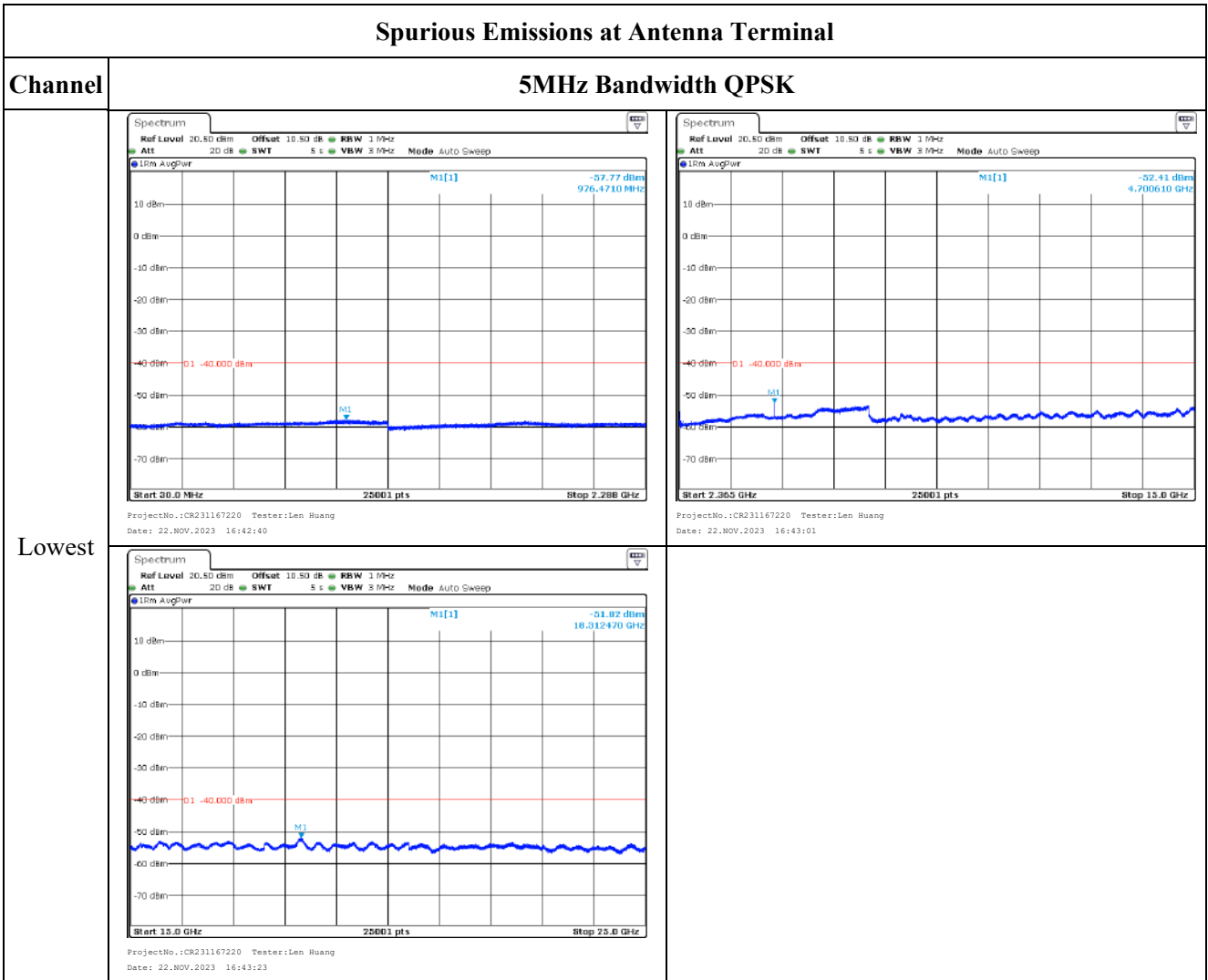
ProjectNo.:CR231167220 Tester:Len Huang  
 Date: 23.NOV.2023 16:55:27

ProjectNo.:CR231167220 Tester:Len Huang  
 Date: 23.NOV.2023 16:55:48



ProjectNo.:CR231167220 Tester:Len Huang  
 Date: 23.NOV.2023 16:56:10

2350-2360 MHz:

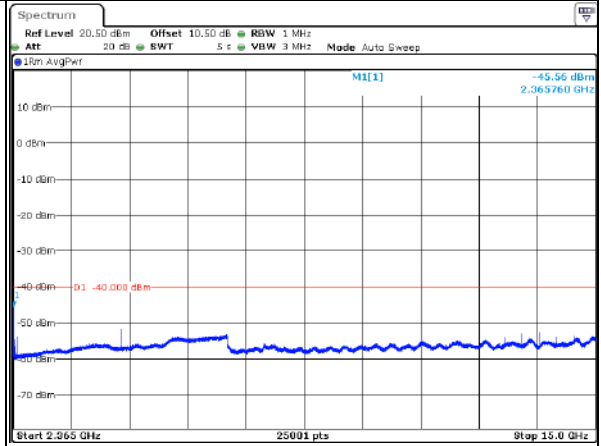
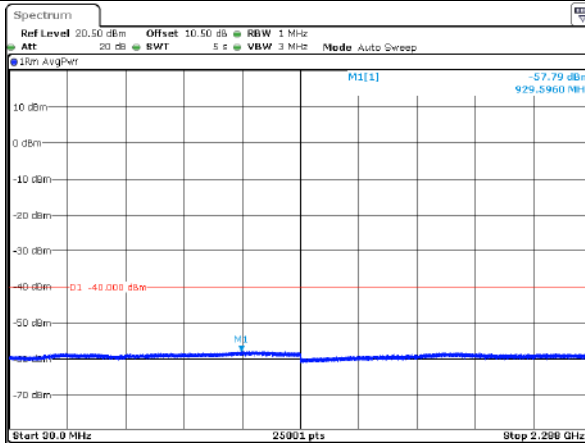


Spurious Emissions at Antenna Terminal

Channel

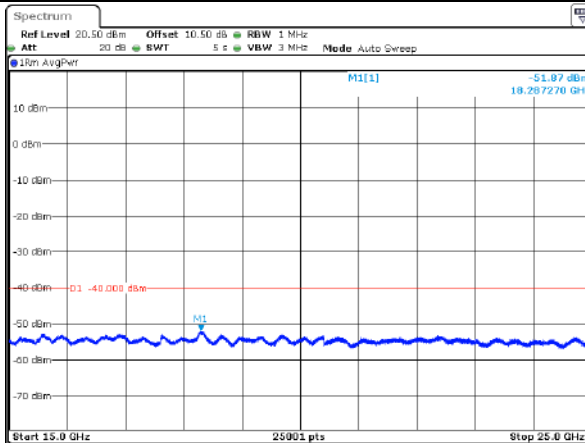
5MHz Bandwidth QPSK

Highest



ProjectNo.:CR231167220 Tester:Len Huang  
Date: 22.NOV.2023 16:45:32

ProjectNo.:CR231167220 Tester:Len Huang  
Date: 22.NOV.2023 16:45:53



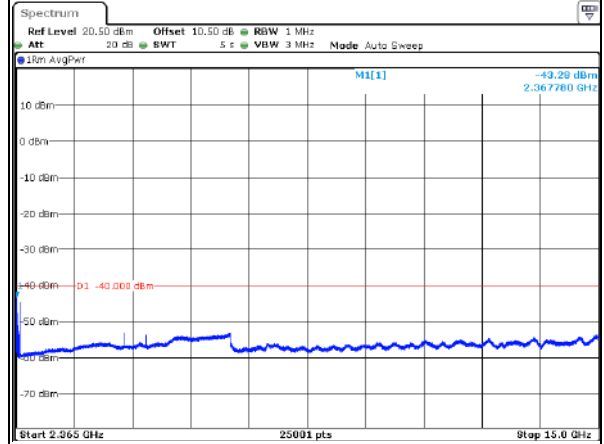
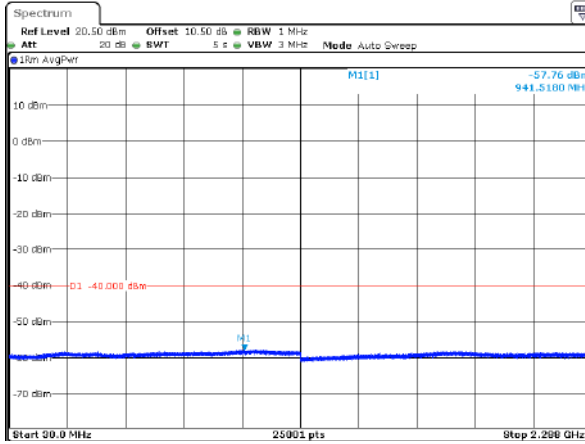
ProjectNo.:CR231167220 Tester:Len Huang  
Date: 22.NOV.2023 16:46:15

Spurious Emissions at Antenna Terminal

Channel

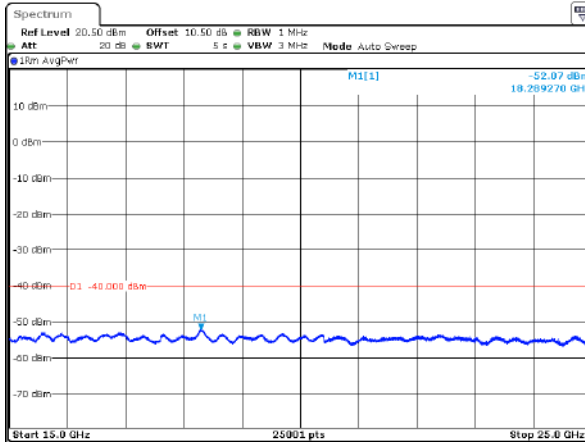
10MHz Bandwidth QPSK

Middle



ProjectNo.:CR231167220 Tester:Len Ruang  
Date: 22.NOV.2023 16:47:18

ProjectNo.:CR231167220 Tester:Len Ruang  
Date: 22.NOV.2023 16:47:40



ProjectNo.:CR231167220 Tester:Len Ruang  
Date: 22.NOV.2023 16:48:24

2305-2315 MHz:

Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
QPSK 5MHz		



Out of band emission, Band Edge

Mode	Middle/1RB0	Middle/1RBmax
QPSK 10MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 14:18:40</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 14:32:07</p>
	Middle /Full RB	
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:33:36</p>	

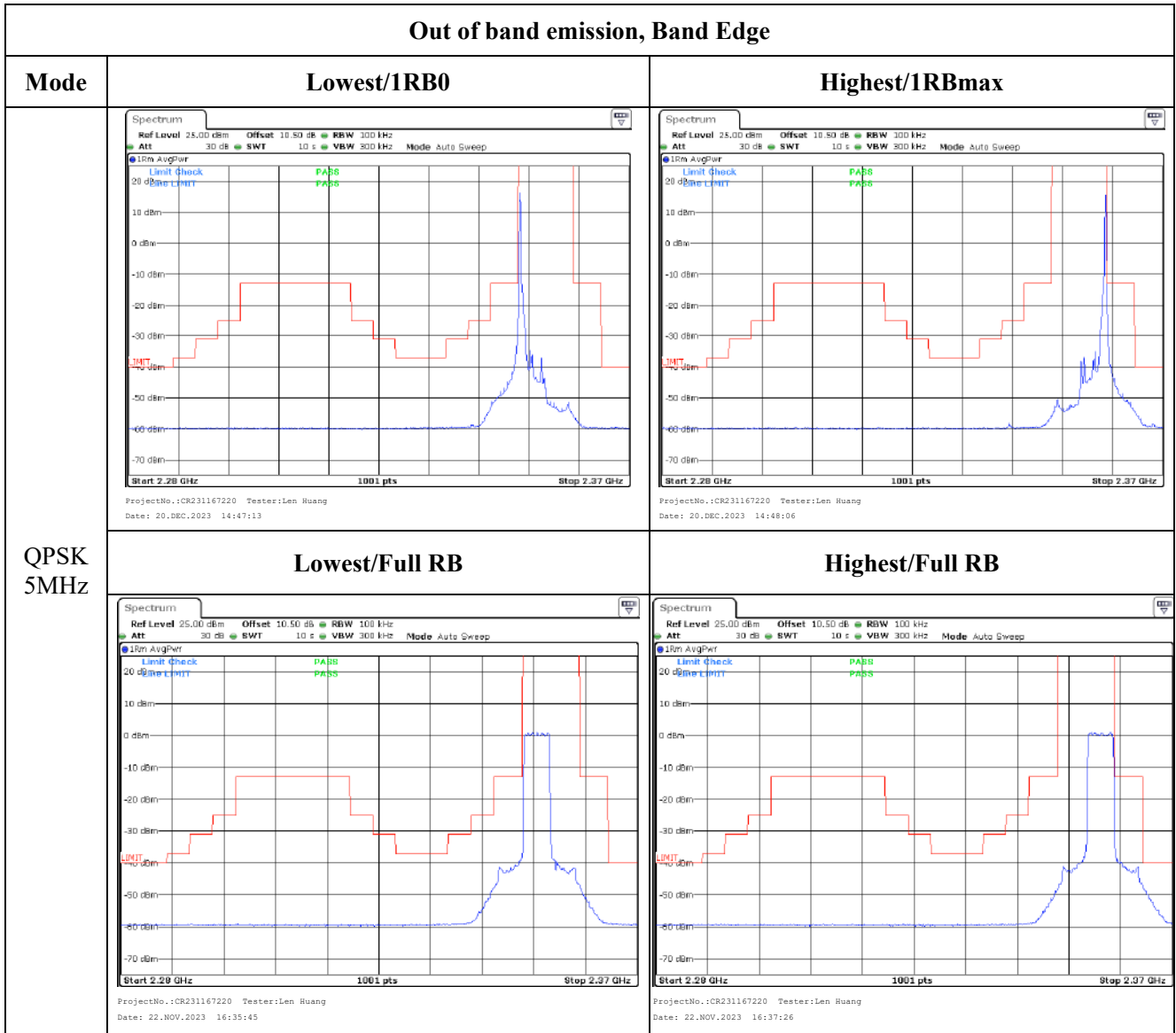
Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
16QAM 5MHz		

Out of band emission, Band Edge

Mode	Middle/1RB0	Middle/1RBmax
16QAM 10MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 14:19:45</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 14:33:15</p>
	Middle /Full RB	
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:34:05</p>	

2350-2360 MHz:



Out of band emission, Band Edge

Mode	Middle/1RB0	Middle/1RBmax
QPSK 10MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 15:00:27</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 15:02:01</p>
	<p>Middle /Full RB</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:39:24</p>	

Out of band emission, Band Edge

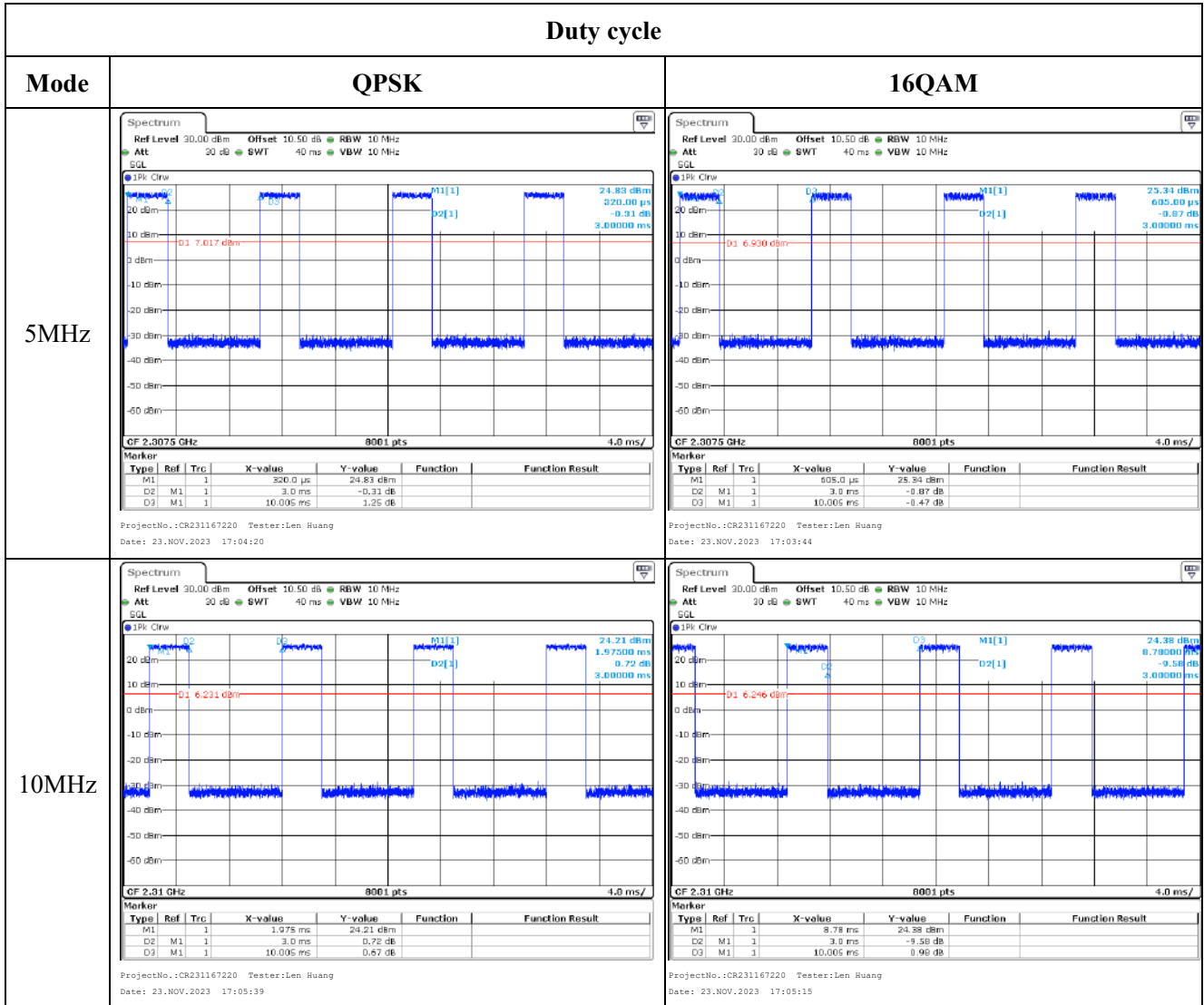
Mode	Lowest/1RB0	Highest/1RBmax
16QAM 5MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 14:48:52</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 14:51:07</p>
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:36:46</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:37:54</p>

Out of band emission, Band Edge

Mode	Middle/1RB0	Middle/1RBmax
	<b>Middle /Full RB</b>	
<p>16QAM 10MHz</p>		

2305-2315 MHz:

Duty cycle





2350-2360 MHz:

Duty cycle



**4.14 Antenna Port Test Data and Results for LTE Band 41**

Serial Number:	2DMI-1	Test Date:	2023/11/22-2023/12/20
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24.3-26	Relative Humidity: (%)	40-55	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
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Frequency for Each Mode:**

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2498.5	2593	2687.5
10MHz	2501	2593	2685
15MHz	2503.5	2593	2682.5
20MHz	2506	2593	2680

**Test Data:**

<b>FCC§2.1046;§ 27.50(h)(2)</b>						
<b>RF Output Power:</b>						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.57	22.42	22.79	20.74	33
	RB1#13	22.56	22.41	22.76		
	RB1#24	22.61	22.36	22.67		
	RB15#0	22.63	22.40	22.62		
	RB15#10	22.63	22.39	22.57		
	RB25#0	22.62	22.40	22.58		
5MHz 16QAM	RB1#0	22.62	22.60	22.61	20.66	33
	RB1#13	22.62	22.61	22.58		
	RB1#24	22.63	22.60	22.45		
	RB15#0	22.67	22.42	22.60		
	RB15#10	22.66	22.43	22.53		
	RB25#0	22.71	22.41	22.65		
10MHz QPSK	RB1#0	22.58	22.38	22.71	20.66	33
	RB1#25	22.65	22.45	22.65		
	RB1#49	22.59	22.34	22.49		
	RB25#0	22.62	22.37	22.67		
	RB25#25	22.62	22.41	22.61		
	RB50#0	22.64	22.41	22.64		
10MHz 16QAM	RB1#0	22.49	22.52	22.87	<b>20.82</b>	33
	RB1#25	22.55	22.60	22.80		
	RB1#49	22.49	22.50	22.65		
	RB25#0	22.71	22.40	22.69		
	RB25#25	22.68	22.45	22.65		
	RB50#0	22.66	22.40	22.63		
15MHz QPSK	RB1#0	22.54	22.30	22.73	20.68	33
	RB1#38	22.65	22.43	22.63		
	RB1#74	22.57	22.31	22.39		
	RB36#0	22.55	22.32	22.68		
	RB36#39	22.62	22.34	22.54		
	RB75#0	22.59	22.36	22.67		
15MHz 16QAM	RB1#0	22.73	22.51	22.66	20.77	33
	RB1#38	22.82	22.59	22.57		
	RB1#74	22.76	22.53	22.32		
	RB36#0	22.60	22.33	22.69		
	RB36#39	22.70	22.32	22.57		
	RB75#0	22.63	22.29	22.69		
20MHz QPSK	RB1#0	22.48	22.33	22.63	<b>20.75</b>	33

	RB1#50	22.59	22.48	22.68		
	RB1#99	22.48	22.32	22.37		
	RB50#0	22.58	22.35	22.80		
	RB50#50	22.64	22.43	22.67		
	RB100#0	22.57	22.41	22.71		
20MHz 16QAM	RB1#0	22.50	22.61	22.69	20.75	33
	RB1#50	22.61	22.77	22.73		
	RB1#99	22.53	22.62	22.37		
	RB50#0	22.69	22.34	22.80		
	RB50#50	22.69	22.44	22.66		
	RB100#0	22.61	22.41	22.71		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)						
					<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		
20MHz QPSK	RB1#0	8.43	8.81	8.26	13	
	RB100#0	8.72	8.72	8.58	13	
20MHz 16QAM	RB1#0	8.61	9.13	8.55	13	
	RB100#0	9.28	9.25	9.01	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	5.380	5.200	5.020
5MHz 16QAM	4.511	4.511	4.511	5.000	5.000	5.220
10MHz QPSK	8.942	8.942	8.942	9.760	9.920	9.640
10MHz 16QAM	8.942	8.942	8.942	9.520	9.520	9.680
15MHz QPSK	13.473	13.473	13.533	14.580	14.820	15.060
15MHz 16QAM	13.533	13.593	13.533	14.880	15.480	16.440
20MHz QPSK	17.964	17.964	17.964	19.120	19.680	19.600
20MHz 16QAM	17.884	17.964	18.044	19.840	19.200	19.280
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>	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

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

<b>FCC §2.1055, §27.54: Frequency Stability</b>						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2496.033	2496.00	2689.979	2690
	-20	3.91	2496.089	2496.00	2689.897	2690
	-10	3.91	2496.076	2496.00	2689.885	2690
	0	3.91	2496.184	2496.00	2689.812	2690
	10	3.91	2496.115	2496.00	2689.804	2690
	20	3.91	2496.036	2496.00	2689.901	2690
	30	3.91	2496.193	2496.00	2689.822	2690
	40	3.91	2496.169	2496.00	2689.835	2690
	50	3.91	2496.079	2496.00	2689.974	2690
Frequency Stability vs. Voltage	20	3.45	2496.174	2496.00	2689.890	2690
	20	4.5	2496.111	2496.00	2689.912	2690
					<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	3.91	2496.044	2496.00	2689.880	2690
	-20	3.91	2496.184	2496.00	2689.978	2690
	-10	3.91	2496.063	2496.00	2689.962	2690
	0	3.91	2496.088	2496.00	2689.800	2690
	10	3.91	2496.074	2496.00	2689.957	2690
	20	3.91	2496.079	2496.00	2689.881	2690
	30	3.91	2496.007	2496.00	2689.925	2690
	40	3.91	2496.071	2496.00	2689.842	2690
	50	3.91	2496.060	2496.00	2689.955	2690
Frequency Stability vs. Voltage	20	3.45	2496.009	2496.00	2689.951	2690
	20	4.5	2496.093	2496.00	2689.968	2690
					<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**

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:19:57</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:20:18</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:20:36</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:20:53</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:21:17</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:21:44</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:23:04</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:23:25</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:23:56</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:24:19</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:24:47</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:25:17</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:26:59</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:27:32</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:27:55</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:28:24</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:28:51</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:29:28</p>



Occupied Bandwidth

Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:30:37</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:31:16</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:31:45</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:32:08</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:33:41</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 16:33:18</p>

Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:10:40</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 28.NOV.2023 08:52:15</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:11:46</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 28.NOV.2023 08:54:01</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:12:44</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 28.NOV.2023 08:55:12</p>

Spurious Emissions at Antenna Terminal

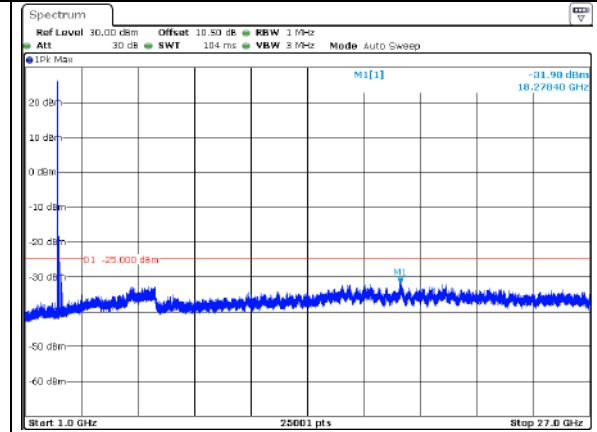
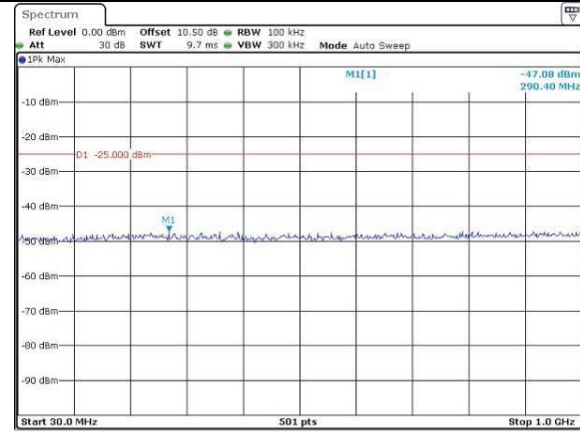
Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref Level 0.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -46.45 dBm 915.80 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:14:18</p>	<p>Ref Level 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 104 ms VBW 3 MHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -31.22 dBm 16.30830 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 25001 pts Stop 27.0 GHz</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 28.NOV.2023 08:56:32</p>
Middle	<p>Ref Level 0.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -46.41 dBm 865.40 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:15:19</p>	<p>Ref Level 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 104 ms VBW 3 MHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -32.05 dBm 20.35520 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 25001 pts Stop 27.0 GHz</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 28.NOV.2023 08:57:54</p>
Highest	<p>Ref Level 0.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -46.61 dBm 869.30 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 25.NOV.2023 17:16:14</p>	<p>Ref Level 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 104 ms VBW 3 MHz Mode Auto Sweep</p> <p>1Pk Max M1[1] -30.41 dBm 10.31690 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 25001 pts Stop 27.0 GHz</p> <p>ProjectNo.:CR231167220 Tester:Len Huang Date: 28.NOV.2023 08:59:08</p>

Spurious Emissions at Antenna Terminal

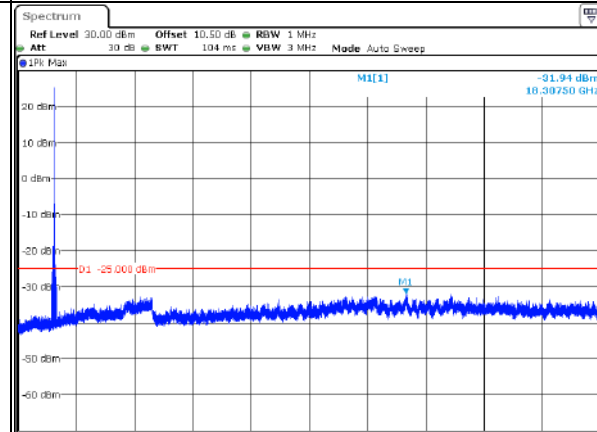
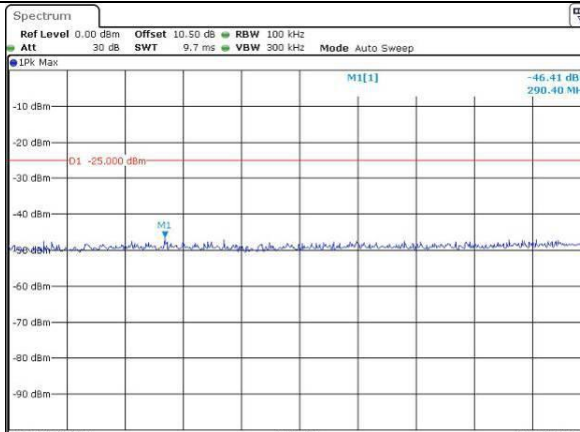
Channel

15MHz Bandwidth QPSK

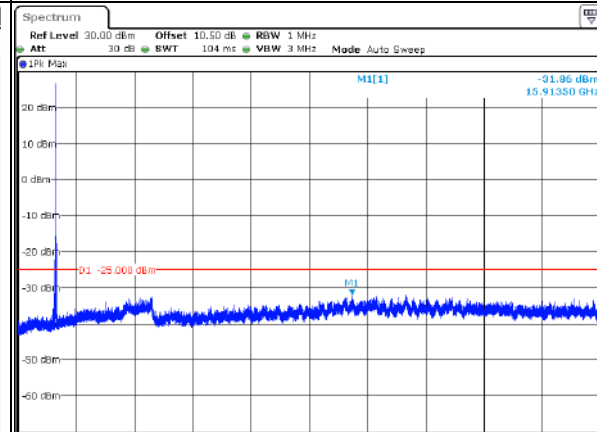
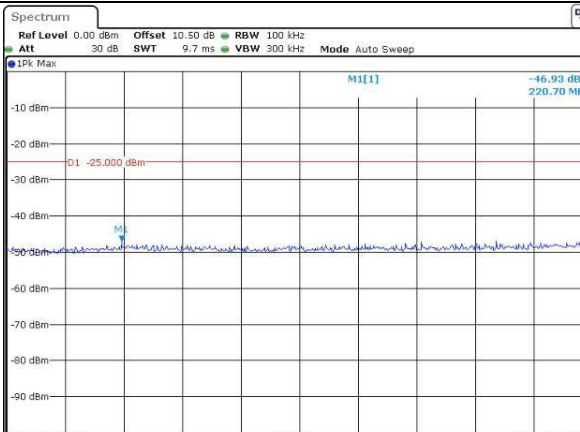
Lowest



Middle



Highest

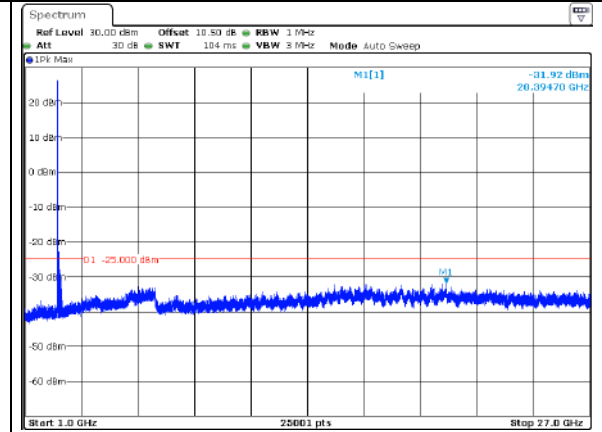
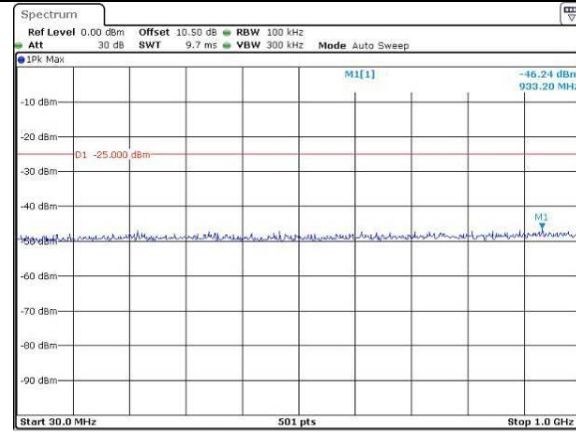


Spurious Emissions at Antenna Terminal

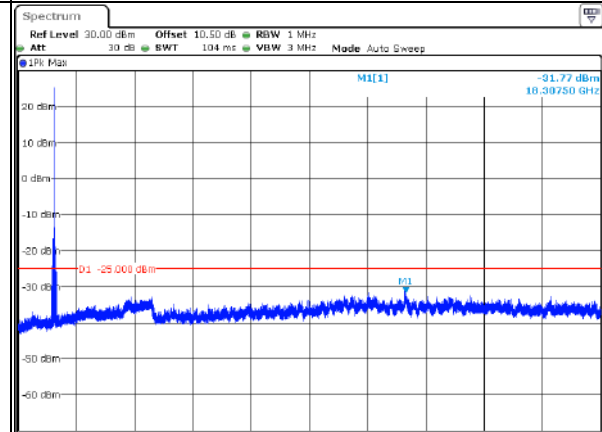
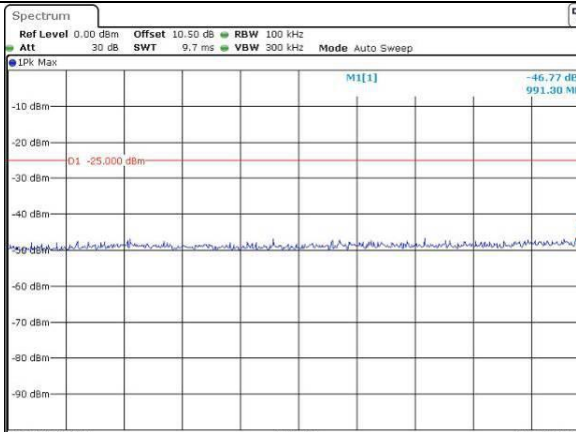
Channel

20MHz Bandwidth QPSK

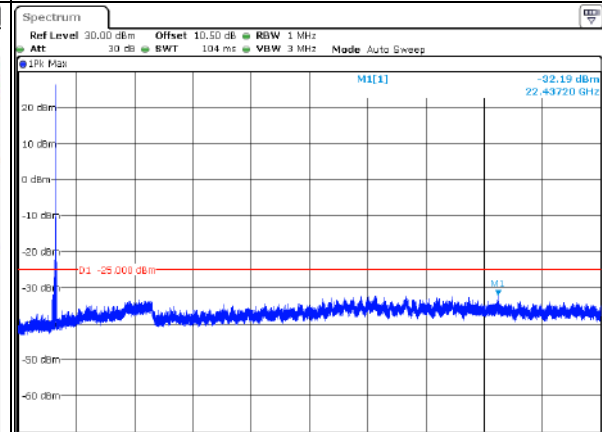
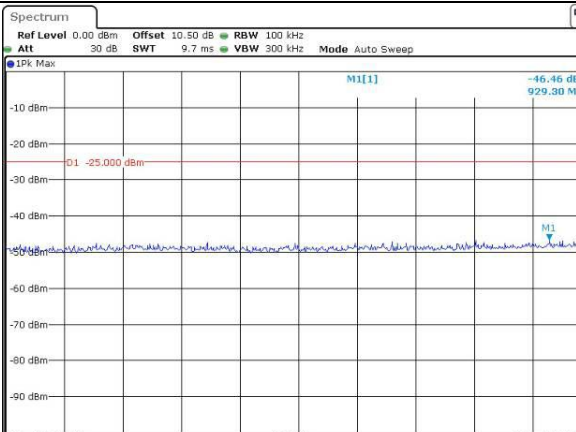
Lowest



Middle



Highest



Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
QPSK 5MHz	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 20.DEC.2023 13:39:58</p>	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 20.DEC.2023 13:40:50</p>
	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 22.NOV.2023 16:12:38</p>	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 22.NOV.2023 16:13:28</p>

Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
QPSK 10MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:44:06</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:44:52</p>
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:17:48</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:18:34</p>

Out of band emission, Band Edge

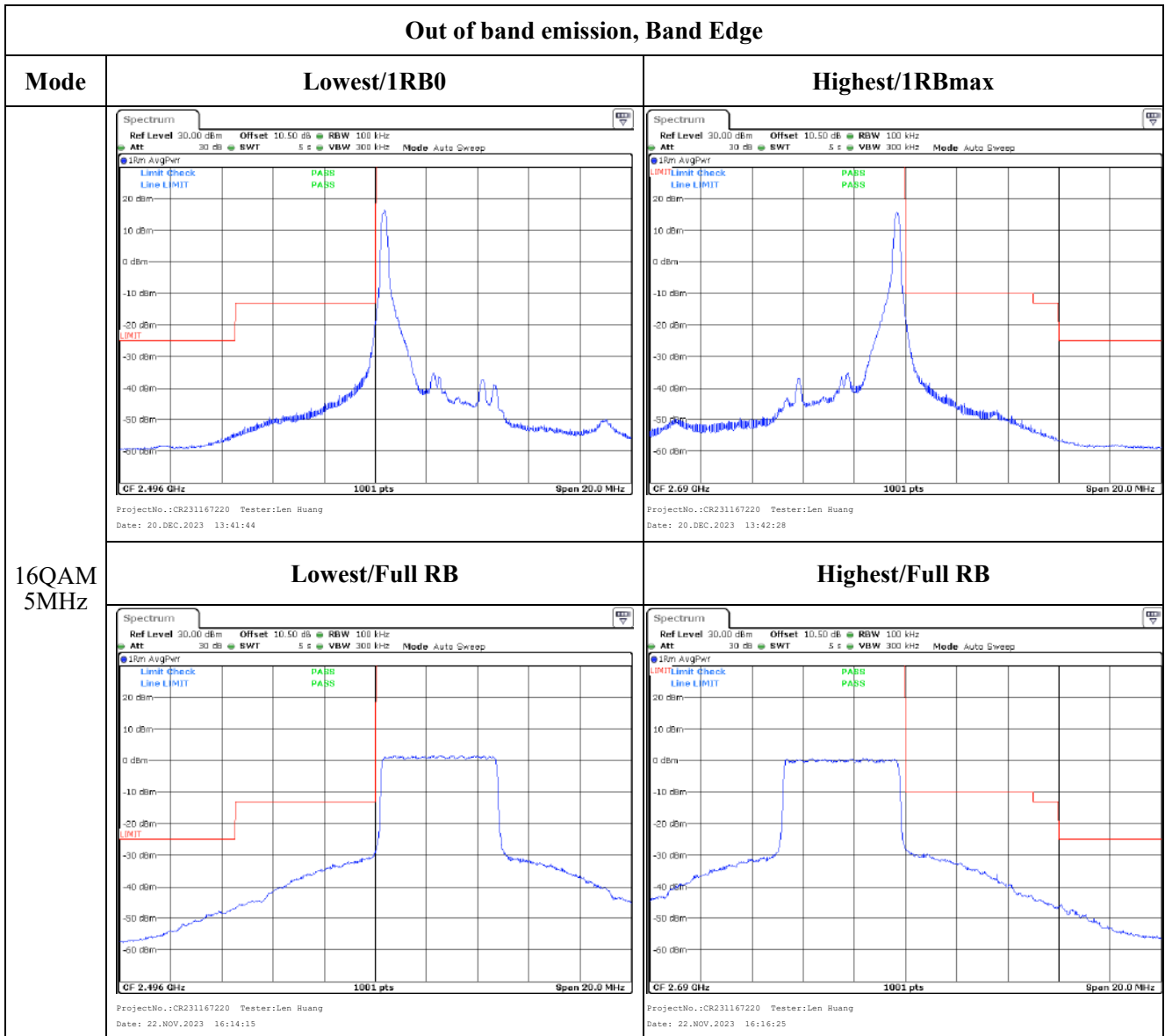
Mode	Lowest/1RB0	Highest/1RBmax
QPSK 15MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:49:10</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:49:56</p>
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:21:32</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:22:17</p>



Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
QPSK 20MHz	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 20.DEC.2023 13:52:33</p>	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 20.DEC.2023 13:53:18</p>
	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 22.NOV.2023 16:25:12</p>	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 22.NOV.2023 16:25:56</p>

Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
16QAM 10MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:45:38</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:47:50</p>
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:19:12</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:19:44</p>

Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
16QAM 15MHz	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:50:43</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 20.DEC.2023 13:51:30</p>
	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:23:01</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 22.NOV.2023 16:23:38</p>

Out of band emission, Band Edge

Mode	Lowest/1RB0	Highest/1RBmax
16QAM 20MHz	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 20.DEC.2023 13:54:29</p>	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 20.DEC.2023 13:55:26</p>
	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 22.NOV.2023 16:26:38</p>	<p>ProjectNo.: CR231167220 Tester: Len Huang Date: 22.NOV.2023 16:27:21</p>

**4.15 Antenna Port Test Data and Results for LTE Band 42**

Serial Number:	2DMI-1	Test Date:	2023/12/13-2023/12/16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24.5-25.8	Relative Humidity: (%)	46-57	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
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

**Test Frequency for Each Mode:**

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	3452.5	3500	3547.5
10MHz	3455	3500	3545
15MHz	3457.5	3500	3542.5
20MHz	3460	3500	3540

**Test Data:**

<b>FCC§2.1046;§ 27.50(k)(3)</b>						
<b>RF Output Power:</b>						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	23.43	23.16	22.78	<b>18.31</b>	30
	RB1#13	23.40	23.18	22.78		
	RB1#24	23.39	23.22	22.80		
	RB15#0	22.30	22.16	21.77		
	RB15#10	22.22	22.14	21.74		
	RB25#0	22.22	22.16	21.73		
5MHz 16QAM	RB1#0	22.26	22.21	21.95	17.14	30
	RB1#13	22.24	22.24	21.94		
	RB1#24	22.23	22.23	22.01		
	RB15#0	21.38	21.33	20.92		
	RB15#10	21.30	21.30	20.71		
	RB25#0	21.38	21.33	20.85		
10MHz QPSK	RB1#0	23.22	23.06	22.74	18.10	30
	RB1#25	23.20	23.22	22.80		
	RB1#49	23.16	23.11	22.74		
	RB25#0	22.15	22.09	21.70		
	RB25#25	22.15	22.13	21.72		
	RB50#0	22.17	22.13	21.74		
10MHz 16QAM	RB1#0	22.10	22.23	21.79	17.20	30
	RB1#25	22.10	22.32	21.83		
	RB1#49	22.05	22.27	21.80		
	RB25#0	21.33	21.25	20.80		
	RB25#25	21.35	21.33	20.83		
	RB50#0	21.31	21.26	20.86		
15MHz QPSK	RB1#0	23.05	22.99	22.66	18.03	30
	RB1#38	23.08	23.15	22.69		
	RB1#74	22.98	23.03	22.66		
	RB36#0	22.04	22.01	21.61		
	RB36#39	21.95	22.07	21.67		
	RB75#0	22.03	22.05	21.62		
15MHz 16QAM	RB1#0	22.02	22.14	21.83	17.21	30
	RB1#38	22.01	22.33	21.85		
	RB1#74	21.90	22.23	21.85		
	RB36#0	21.15	21.20	20.81		
	RB36#39	21.10	21.23	20.84		
	RB75#0	21.19	21.18	20.72		
20MHz QPSK	RB1#0	23.02	22.95	22.62	18.08	30

	RB1#50	23.07	23.20	22.69		
	RB1#99	22.88	23.03	22.59		
	RB50#0	22.09	22.01	21.72		
	RB50#50	22.00	22.07	21.68		
	RB100#0	22.03	22.06	21.70		
20MHz 16QAM	RB1#0	22.00	22.21	21.74	17.33	30
	RB1#50	22.03	22.45	21.74		
	RB1#99	21.86	22.30	21.69		
	RB50#0	21.29	21.12	20.82		
	RB50#50	21.16	21.20	20.84		
	RB100#0	21.19	21.16	20.84		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)						
					<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		
20MHz QPSK	RB1#0	8.55	8.52	8.38	13	
	RB100#0	8.93	8.84	8.90	13	
20MHz 16QAM	RB1#0	9.36	9.22	9.07	13	
	RB100#0	9.74	9.65	9.7	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	4.531	4.511	5.060	5.400	5.240
5MHz 16QAM	4.511	4.491	4.511	5.040	5.040	5.000
10MHz QPSK	8.942	8.942	8.942	9.600	9.560	9.680
10MHz 16QAM	8.942	8.942	8.942	9.520	9.600	9.560
15MHz QPSK	13.533	13.473	13.473	14.640	15.300	15.540
15MHz 16QAM	13.413	13.533	13.533	14.760	14.580	14.940
20MHz QPSK	17.884	18.044	17.884	19.280	19.040	19.600
20MHz 16QAM	17.884	17.884	17.884	19.280	19.280	19.120
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>	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

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



<b>FCC §2.1055, §27.54: Frequency Stability</b>						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	0	3450.05080	3450.00000	3549.94730	3550.00000
	-20	0	3450.06750	3450.00000	3549.95340	3550.00000
	-10	0	3450.04440	3450.00000	3549.98670	3550.00000
	0	0	3450.04740	3450.00000	3549.99060	3550.00000
	10	0	3450.04680	3450.00000	3549.98520	3550.00000
	20	0	3450.00600	3450.00000	3549.96660	3550.00000
	30	0	3450.07210	3450.00000	3549.96840	3550.00000
	40	0	3450.01760	3450.00000	3549.93810	3550.00000
	50	0	3450.04970	3450.00000	3549.94460	3550.00000
Frequency Stability vs. Voltage	20	0	3450.09640	3450.00000	3549.90710	3550.00000
	20	0	3450.03960	3450.00000	3549.95860	3550.00000
					<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	0	3450.01590	3450.00000	3549.80680	3550.00000
	-20	0	3450.05500	3450.00000	3549.93420	3550.00000
	-10	0	3450.06870	3450.00000	3549.98600	3550.00000
	0	0	3450.07940	3450.00000	3549.80540	3550.00000
	10	0	3450.02440	3450.00000	3549.97940	3550.00000
	20	0	3450.01950	3450.00000	3549.94980	3550.00000
	30	0	3450.04250	3450.00000	3549.83420	3550.00000
	40	0	3450.05330	3450.00000	3549.82680	3550.00000
	50	0	3450.05780	3450.00000	3549.88720	3550.00000
Frequency Stability vs. Voltage	20	0	3450.09350	3450.00000	3549.93140	3550.00000
	20	0	3450.07540	3450.00000	3549.90500	3550.00000
					<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**

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:10:19</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:10:39</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:10:59</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:11:29</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:11:44</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:12:04</p>

Occupied Bandwidth

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

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:15:26</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:15:50</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:16:16</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:16:39</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:17:16</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:17:48</p>

Occupied Bandwidth

Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:18:19</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:18:46</p>
Middle	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:19:09</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:19:38</p>
Highest	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:20:02</p>	<p>ProjectNo.:CR231167220 Tester:Len Huang Date: 16.DEC.2023 15:20:28</p>