

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

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:03:38</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:03:56</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:04:33</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:05:04</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:05:27</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:05:48</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -17.75 dBm 2.50011600 GHz Occ Bw 8.942115768 MHz D1[1] -0.19 dB 9.6000 MHz</p> <p>D1 7.700 dBm D2 -18.200 dBm</p> <p>CF 2.505 GHz 501 pts Span 20.0 MHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:06:52</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -19.82 dBm 2.5001600 GHz Occ Bw 8.942115768 MHz D1[1] -0.54 dB 9.6400 MHz</p> <p>D1 7.500 dBm D2 -18.420 dBm</p> <p>CF 2.505 GHz 501 pts Span 20.0 MHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:07:30</p>
Middle	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -19.12 dBm 2.5001200 GHz Occ Bw 8.942115768 MHz D1[1] 1.52 dB 9.6800 MHz</p> <p>D1 7.740 dBm D2 -18.250 dBm</p> <p>CF 2.535 GHz 501 pts Span 20.0 MHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:07:50</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -18.21 dBm 2.5302000 GHz Occ Bw 8.942115768 MHz D1[1] 0.47 dB 9.6000 MHz</p> <p>D1 8.180 dBm D2 -17.820 dBm</p> <p>CF 2.535 GHz 501 pts Span 20.0 MHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:08:27</p>
Highest	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -18.72 dBm 2.5600000 GHz Occ Bw 8.942115768 MHz D1[1] 0.09 dB 9.7200 MHz</p> <p>D1 7.460 dBm D2 -18.540 dBm</p> <p>CF 2.565 GHz 501 pts Span 20.0 MHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:08:55</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 38 μs VBW 300 kHz Mode Auto FFT</p> <p>1Pk Max</p> <p>M1[1] -20.21 dBm 2.5602000 GHz Occ Bw 8.942115768 MHz D1[1] 0.27 dB 9.6400 MHz</p> <p>D1 6.550 dBm D2 -19.450 dBm</p> <p>CF 2.565 GHz 501 pts Span 20.0 MHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13_SEP.2023 12:09:25</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:10:22</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:10:50</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:11:16</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:11:46</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:12:28</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:12:55</p>

Occupied Bandwidth

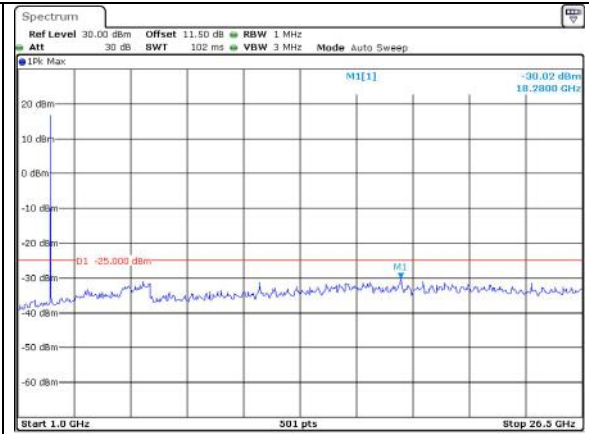
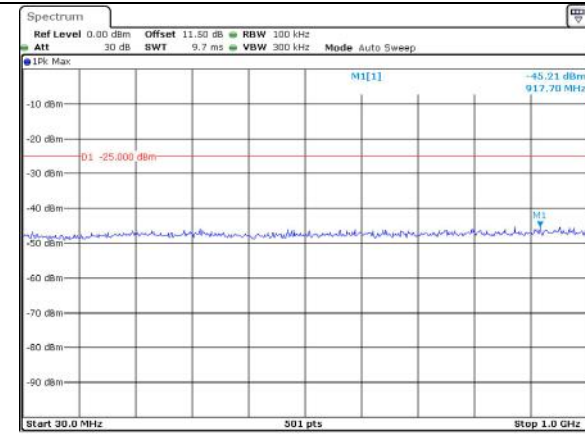
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:13:50</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:14:22</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:14:54</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:15:32</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:16:15</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:16:41</p>

Spurious Emissions at Antenna Terminal

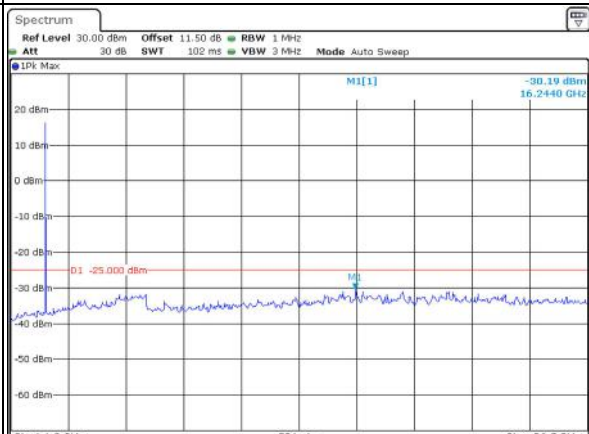
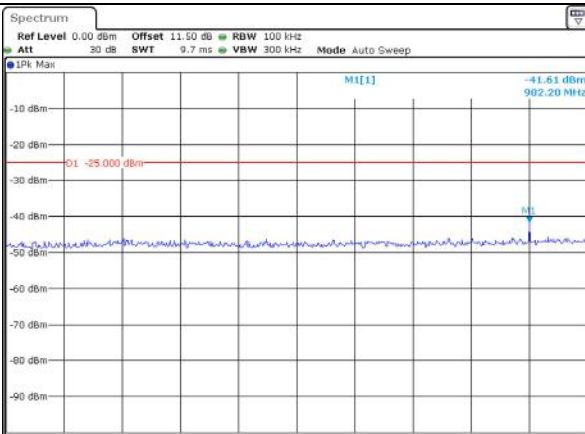
Channel

5MHz Bandwidth QPSK

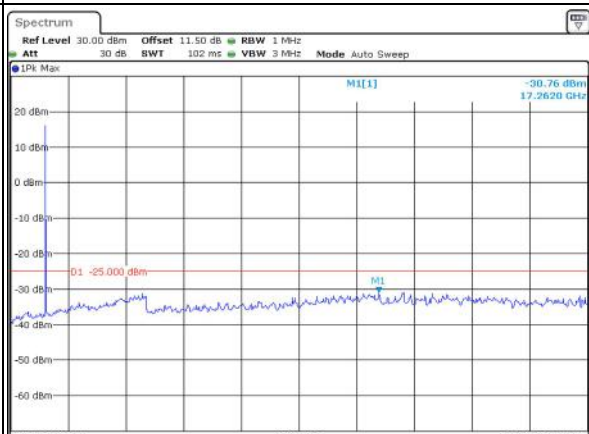
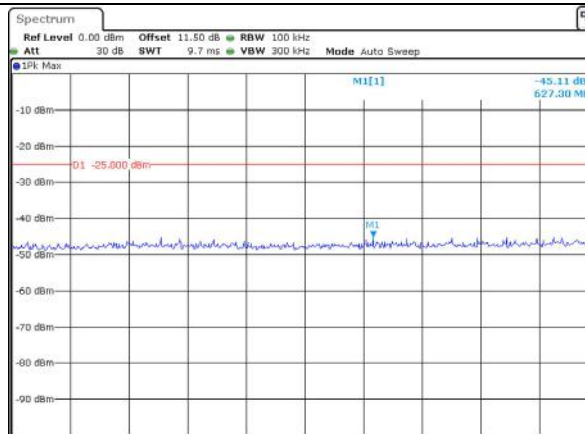
Lowest



Middle



Highest



Spurious Emissions at Antenna Terminal

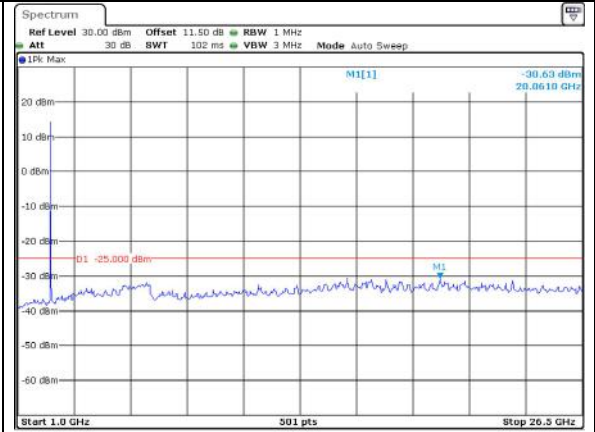
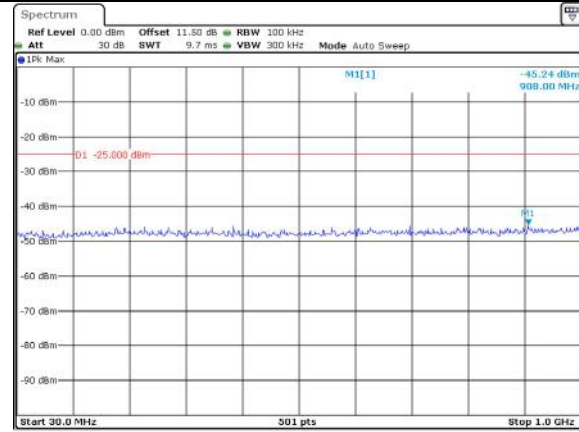
Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.19 dBm 788.00 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 12:49:11</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -29.97 dBm 16.5490 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 12:49:40</p>
Middle	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.56 dBm 301.40 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 12:50:10</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.32 dBm 18.2900 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 12:50:40</p>
Highest	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.54 dBm 970.00 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 12:51:10</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.37 dBm 18.2290 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 12:51:39</p>

Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

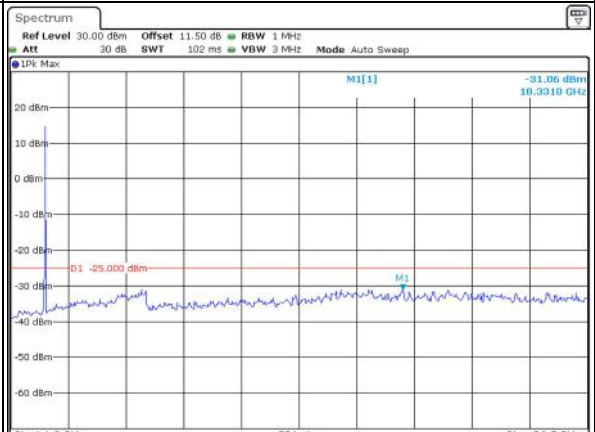
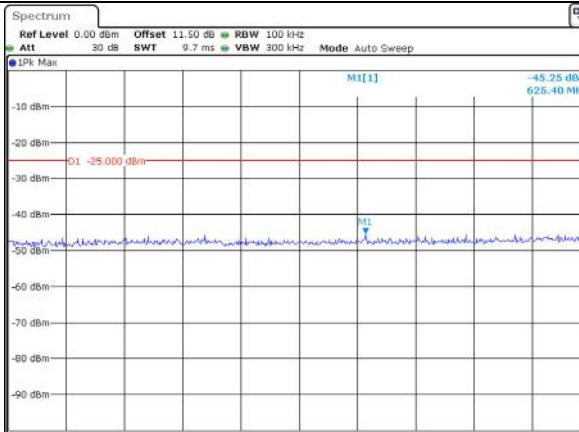
Lowest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:53:09

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:53:31

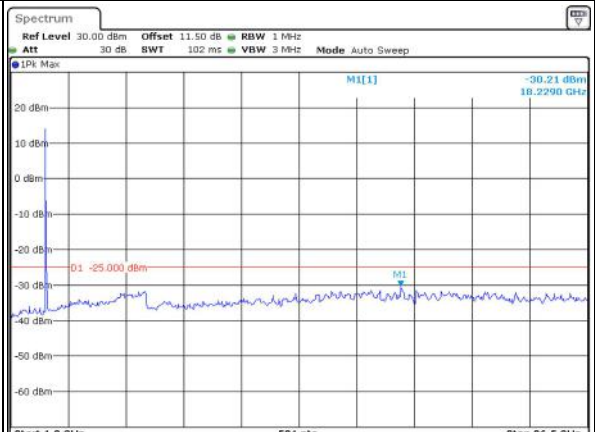
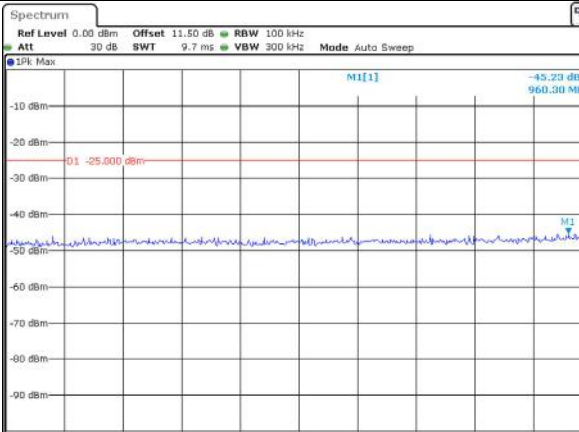
Middle



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:54:02

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:54:31

Highest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:55:02

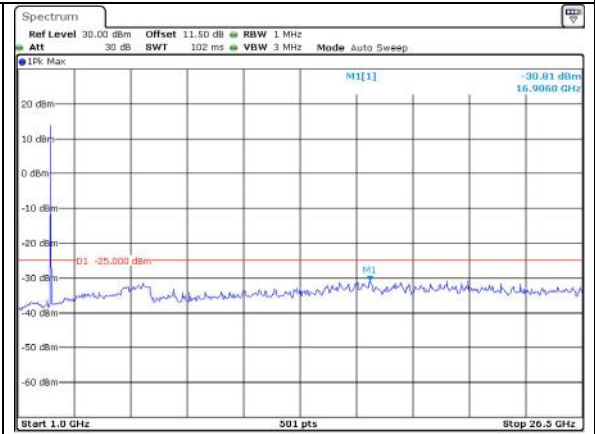
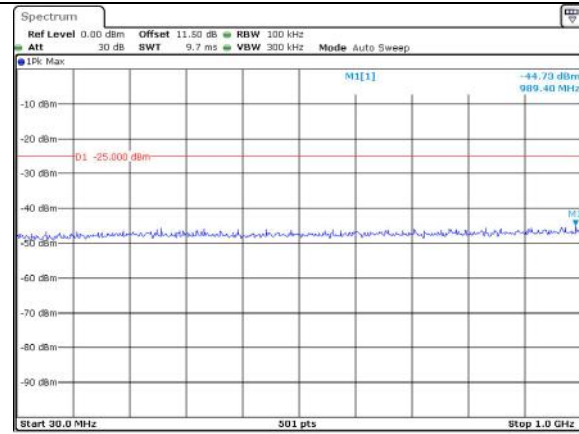
ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:55:28

Spurious Emissions at Antenna Terminal

Channel

20MHz Bandwidth QPSK

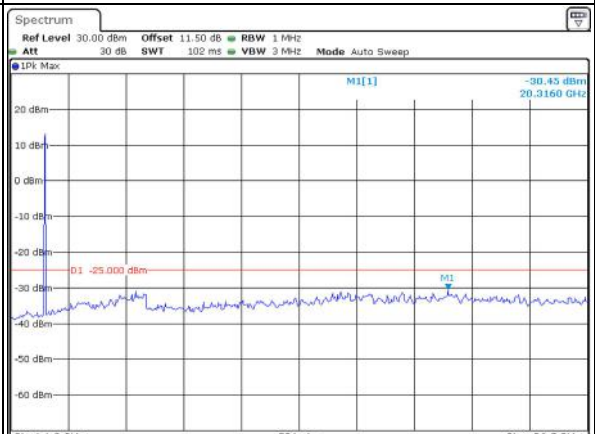
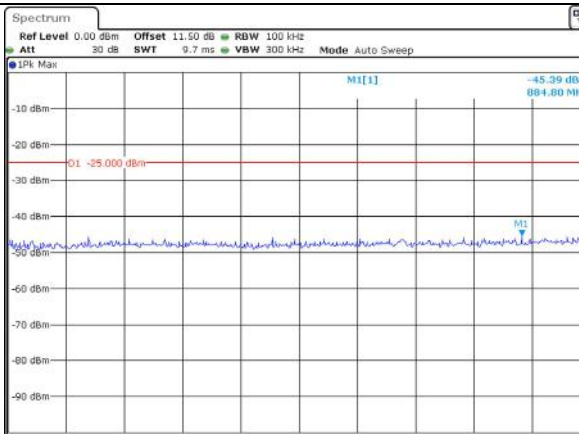
Lowest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:56:43

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:57:09

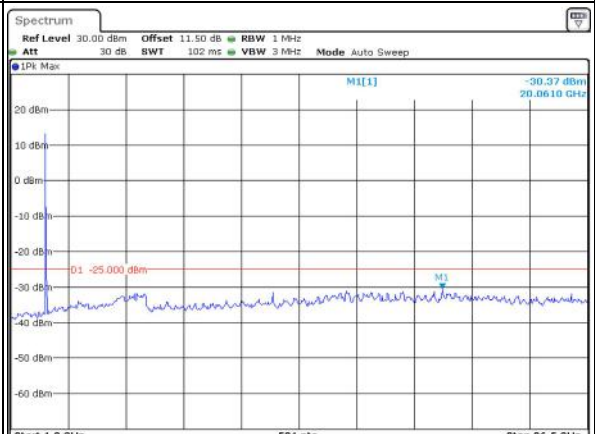
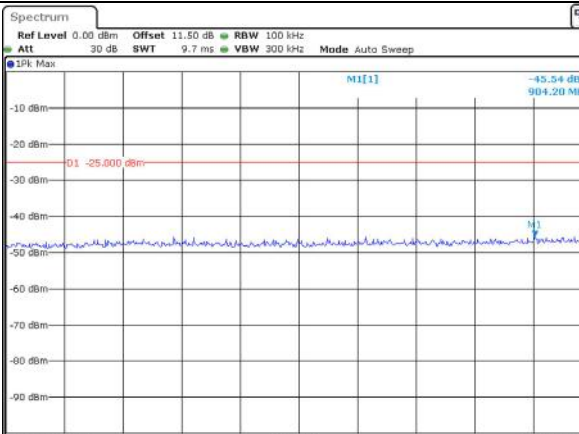
Middle



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:57:37

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:58:06

Highest



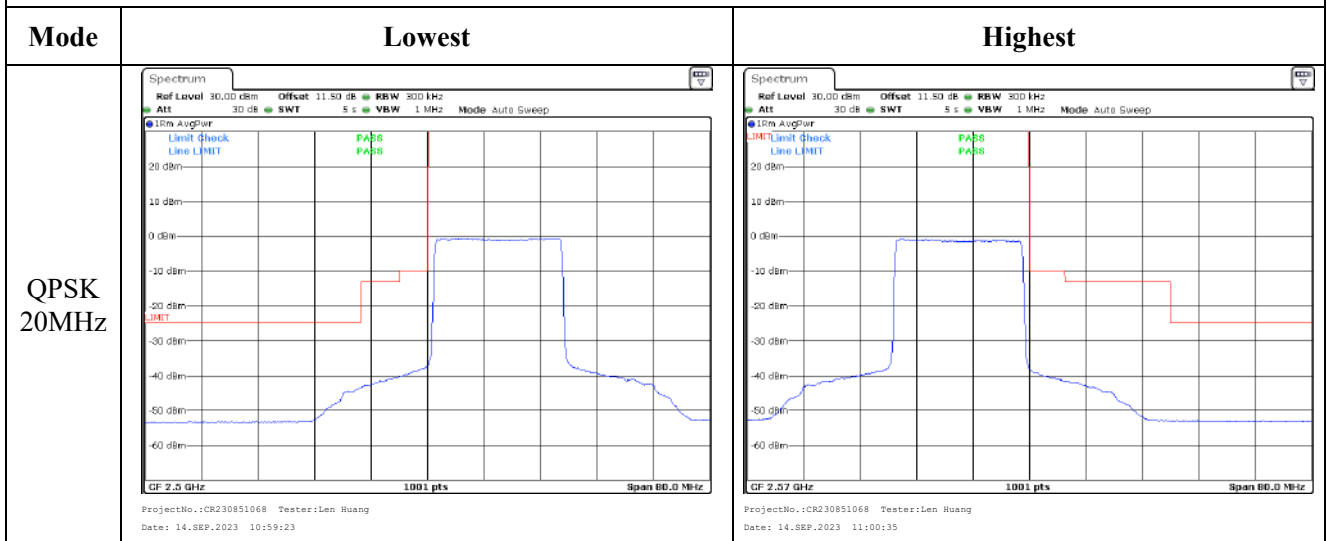
ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:58:44

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 12:59:10

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz		
QPSK 10MHz		
QPSK 15MHz		

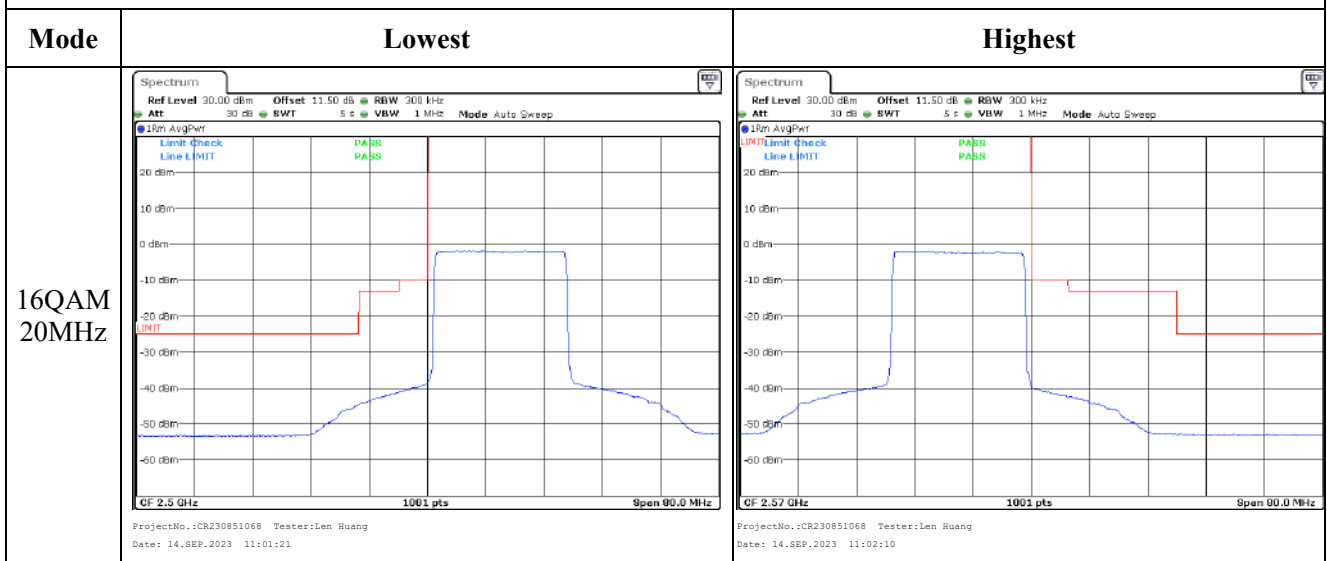
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 10:46:57</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 10:47:41</p>
16QAM 10MHz	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 10:50:50</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 10:51:36</p>
16QAM 15MHz	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 10:56:39</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 10:57:32</p>

Out of band emission, Band Edge



4.12 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	2AQ7-1	Test Date:	2023/9/13~2023/9/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.8~26.2	Relative Humidity: (%)	58~60	Temperature: (°C)	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	2022/9/29	2023/9/28
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	2572.5	2595	2617.5
10MHz	2575	2595	2615
15MHz	2577.5	2595	2612.5
20MHz	2580	2595	2610

Test Data:**FCC§2.1046;§ 27.50(h)(2)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	21.14	21.21	21.15	20.79	33
	RB1#13	21.27	21.3	21.21		
	RB1#24	21.2	21.2	21.11		
	RB15#0	20.17	20.22	20.19		
	RB15#10	20.17	20.2	20.15		
	RB25#0	20.18	20.21	20.16		
5MHz 16QAM	RB1#0	20.42	20.2	20.21	20.02	33
	RB1#13	20.53	20.29	20.29		
	RB1#24	20.44	20.2	20.19		
	RB15#0	19.21	19.17	19.2		
	RB15#10	19.22	19.15	19.19		
	RB25#0	19.16	19.25	19.21		
10MHz QPSK	RB1#0	21.29	21.32	21.31	21.1	33
	RB1#25	21.61	21.57	21.54		
	RB1#49	21.27	21.29	21.23		
	RB25#0	20.25	20.31	20.3		
	RB25#25	20.25	20.3	20.27		
	RB50#0	20.24	20.32	20.24		
10MHz 16QAM	RB1#0	20.37	20.54	20.2	20.27	33
	RB1#25	20.71	20.78	20.48		
	RB1#49	20.38	20.47	20.15		
	RB25#0	19.24	19.31	19.33		
	RB25#25	19.29	19.28	19.28		
	RB50#0	19.24	19.3	19.25		
15MHz QPSK	RB1#0	21.19	21.23	21.22	20.78	33
	RB1#38	21.29	21.27	21.24		
	RB1#74	21.17	21.19	21.12		
	RB36#0	20.23	20.23	20.25		
	RB36#39	20.24	20.2	20.2		
	RB75#0	20.24	20.22	20.24		
15MHz 16QAM	RB1#0	20.39	20.42	20.19	19.98	33
	RB1#38	20.49	20.49	20.16		
	RB1#74	20.42	20.36	20.07		
	RB36#0	19.29	19.18	19.18		
	RB36#39	19.25	19.2	19.16		
	RB75#0	19.23	19.22	19.21		
20MHz QPSK	RB1#0	21.12	21.04	20.99	21.07	33

	RB1#50	21.58	21.49	21.45		
	RB1#99	21.12	21.05	20.95		
	RB50#0	20.22	20.23	20.26		
	RB50#50	20.19	20.24	20.18		
	RB100#0	20.2	20.26	20.23		
20MHz 16QAM	RB1#0	20.3	20.13	20	20.31	33
	RB1#50	20.82	20.59	20.46		
	RB1#99	20.36	20.13	19.94		
	RB50#0	19.25	19.25	19.28		
	RB50#50	19.2	19.19	19.22		
	RB100#0	19.23	19.25	19.22		

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

Result:

Pass

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	9.45	9.19	9.39	13
	RB100#0	9.30	9.30	9.28	13
20MHz 16QAM	RB1#0	10.09	9.88	10.17	13
	RB100#0	10.06	10.09	10.03	13
Result:					Pass

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	4.980	4.940	5.180
5MHz 16QAM	4.491	4.511	4.511	5.180	5.100	5.040
10MHz QPSK	8.942	8.942	8.942	9.680	9.640	9.680
10MHz 16QAM	8.942	8.942	8.942	9.520	9.840	9.520
15MHz QPSK	13.473	13.533	13.473	15.120	15.240	14.820
15MHz 16QAM	13.473	13.533	13.533	14.580	16.140	14.700
20MHz QPSK	17.964	17.884	17.884	19.120	19.040	19.120
20MHz 16QAM	17.884	17.964	17.884	19.120	19.280	20.400

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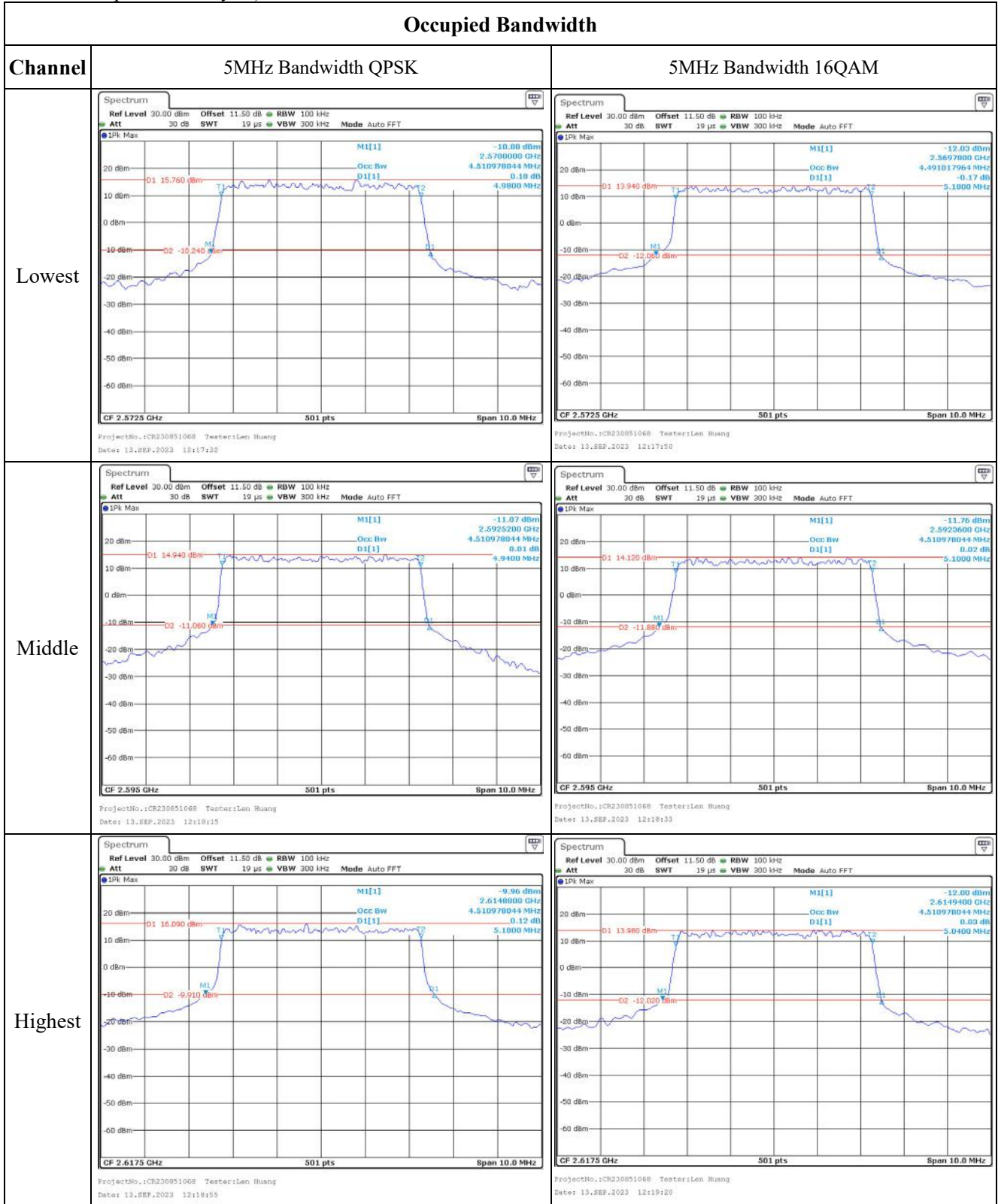
FCC §2.1051, § 27.53:Out of band emission, Band Edge

Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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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 _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2570.224	2570.00	2619.916	2620
	-20	3.87	2570.488	2570.00	2619.968	2620
	-10	3.87	2570.549	2570.00	2619.941	2620
	0	3.87	2570.581	2570.00	2619.947	2620
	10	3.87	2570.188	2570.00	2619.914	2620
	20	3.87	2570.443	2570.00	2619.957	2620
	30	3.87	2570.295	2570.00	2619.977	2620
	40	3.87	2570.134	2570.00	2619.925	2620
	50	3.87	2570.272	2570.00	2619.962	2620
Frequency Stability vs. Voltage	20	3.45	2570.390	2570.00	2619.945	2620
	20	4.45	2570.171	2570.00	2619.967	2620
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2570.107	2570.00	2619.961	2620
	-20	3.87	2570.109	2570.00	2619.953	2620
	-10	3.87	2570.145	2570.00	2619.947	2620
	0	3.87	2570.400	2570.00	2619.905	2620
	10	3.87	2570.318	2570.00	2619.951	2620
	20	3.87	2570.228	2570.00	2619.928	2620
	30	3.87	2570.129	2570.00	2619.955	2620
	40	3.87	2570.113	2570.00	2619.948	2620
	50	3.87	2570.176	2570.00	2619.985	2620
Frequency Stability vs. Voltage	20	3.45	2570.181	2570.00	2619.937	2620
	20	4.45	2570.181	2570.00	2619.916	2620
					Result:	Pass

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



Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:20:39</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:21:03</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:21:26</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:21:48</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:22:08</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:22:26</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:23:30</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:23:54</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:24:29</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:25:06</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:25:47</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:26:12</p>

Occupied Bandwidth

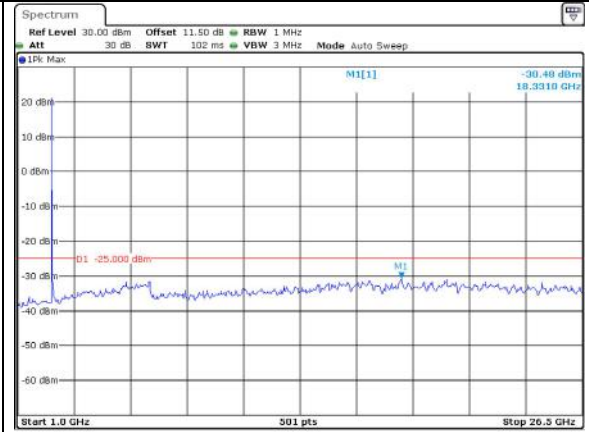
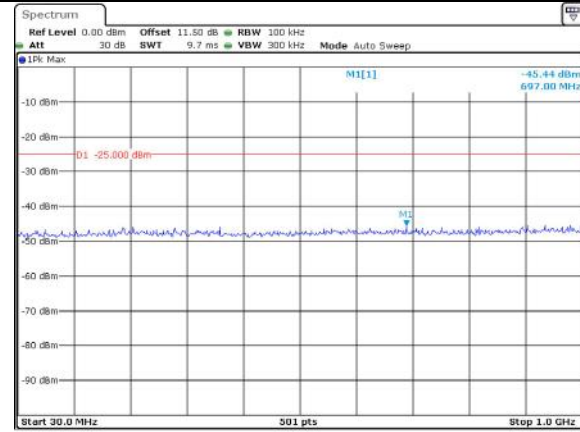
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:27:36</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:28:10</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:28:36</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:29:04</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:29:33</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 13.SEP.2023 12:31:39</p>

Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

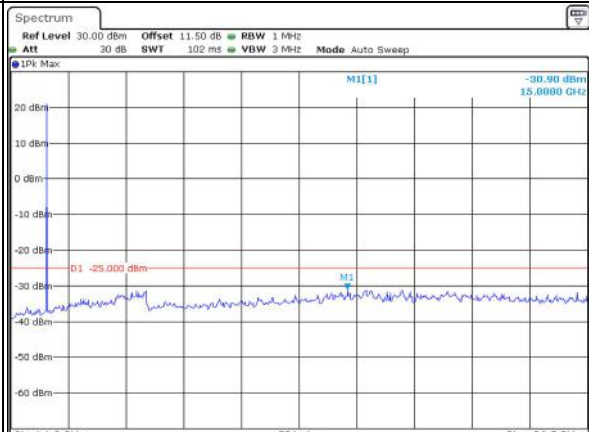
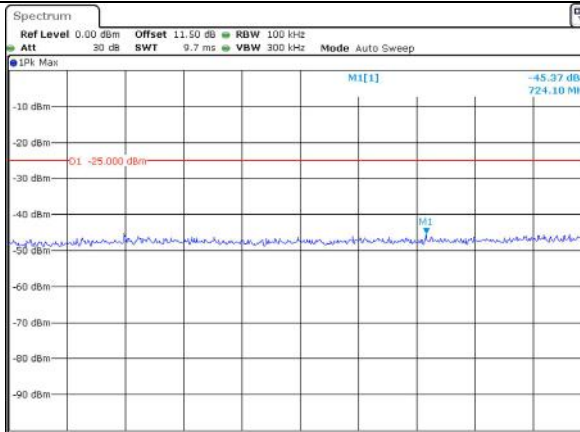
Lowest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:00:00

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:00:27

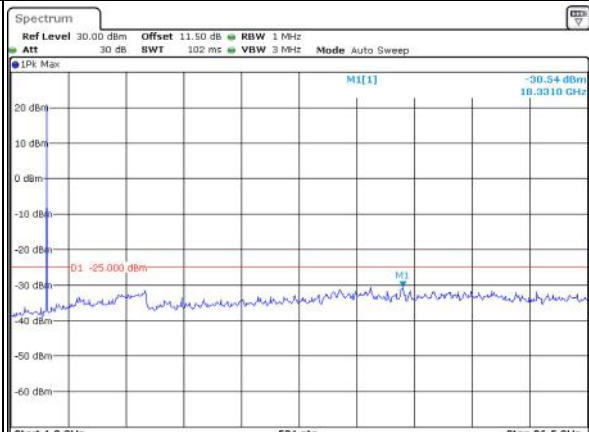
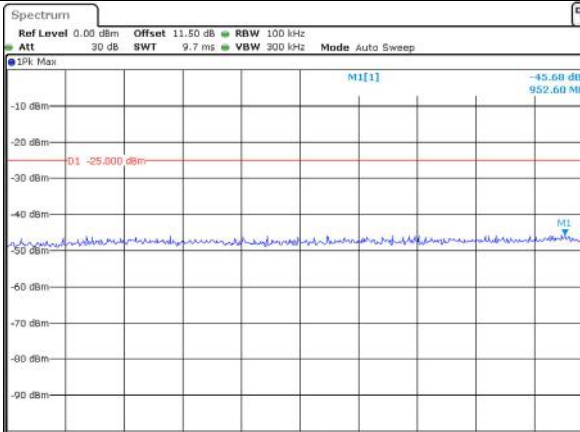
Middle



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:01:02

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:01:25

Highest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:01:55

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:02:18

Spurious Emissions at Antenna Terminal

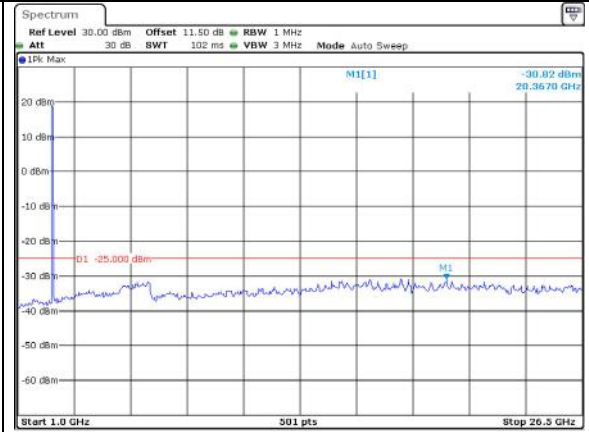
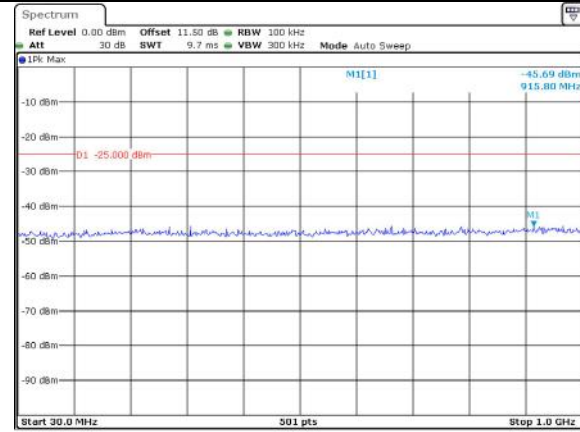
Channel	10MHz Bandwidth QPSK	
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:03:19</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:03:45</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:04:21</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:04:50</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:05:23</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:05:52</p>

Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

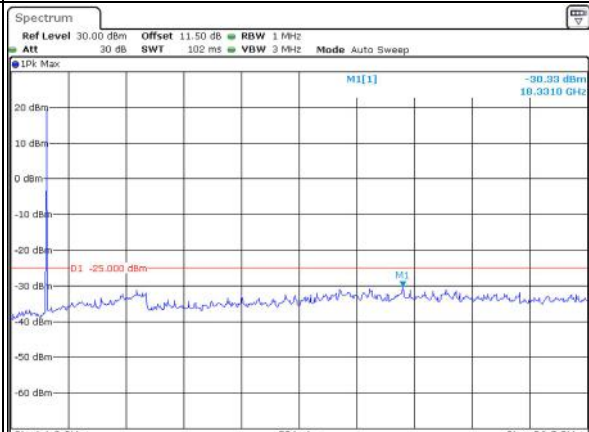
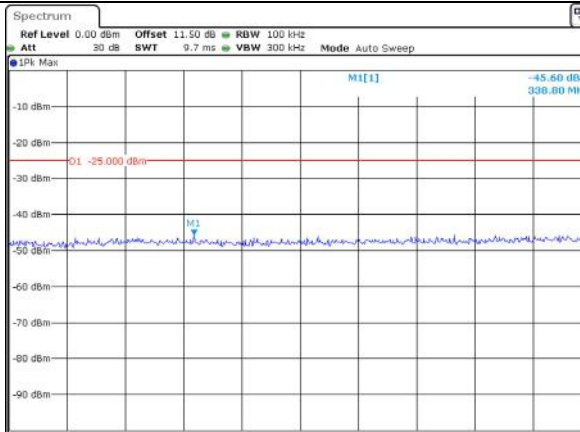
Lowest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:06:57

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:07:23

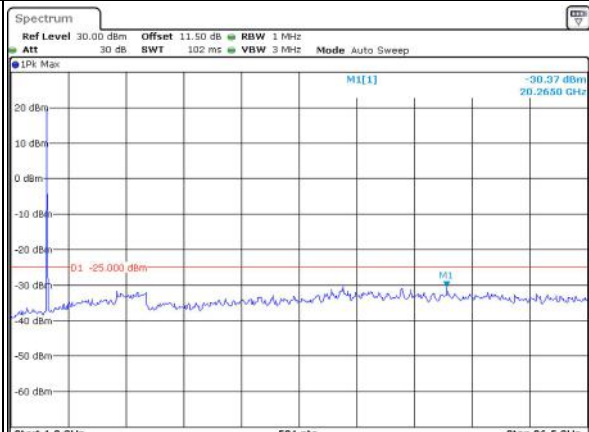
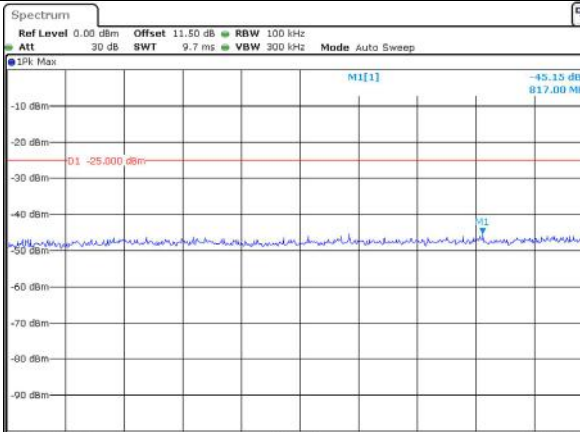
Middle



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:07:54

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:08:20

Highest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:08:44

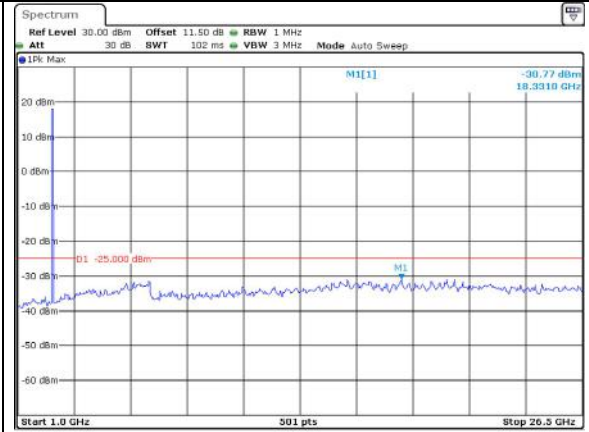
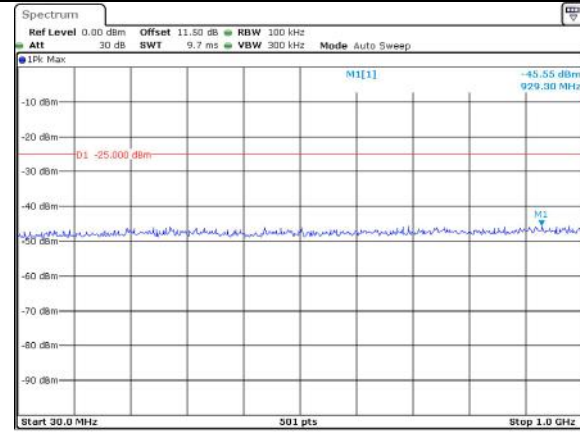
ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 13:09:10

Spurious Emissions at Antenna Terminal

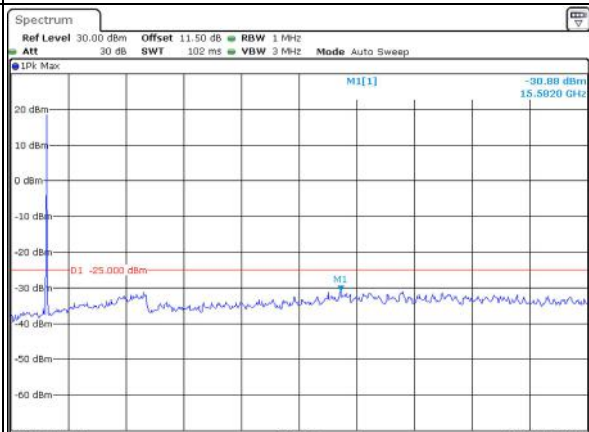
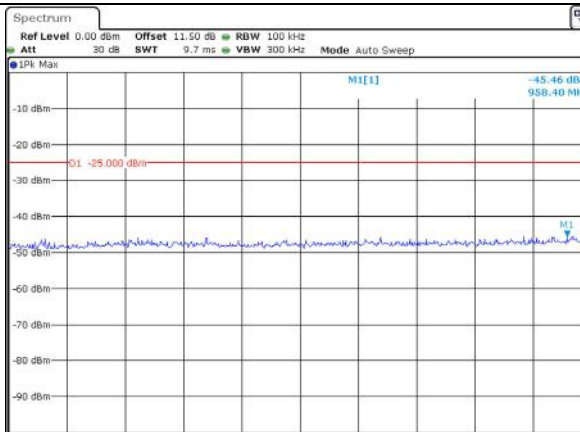
Channel

20MHz Bandwidth QPSK

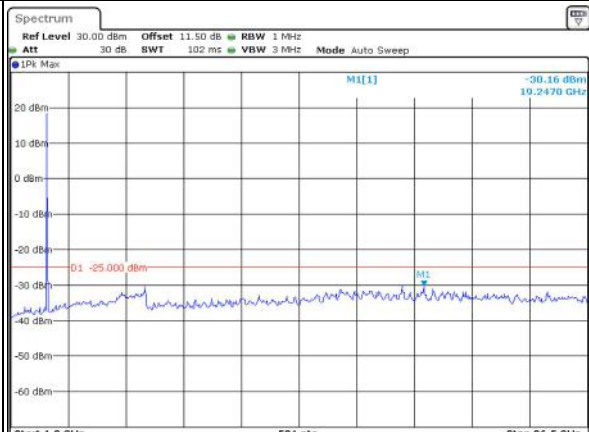
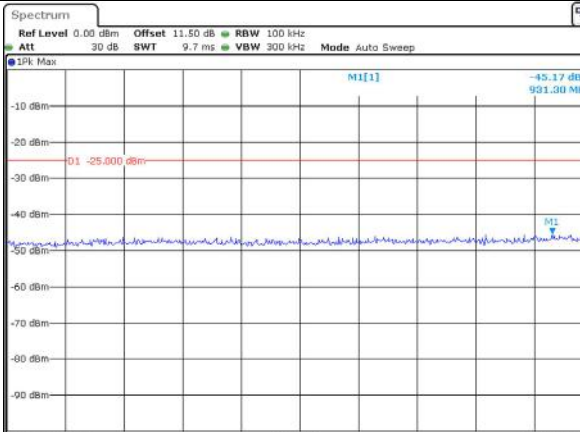
Lowest



Middle



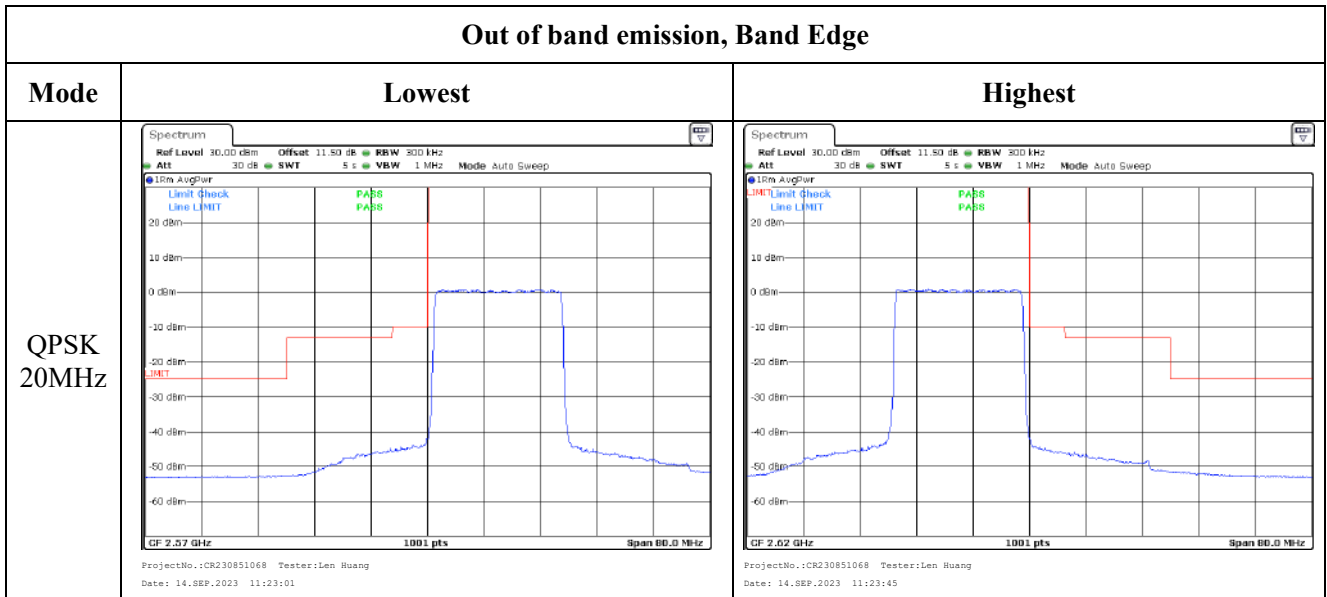
Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz		
QPSK 10MHz		
QPSK 15MHz		

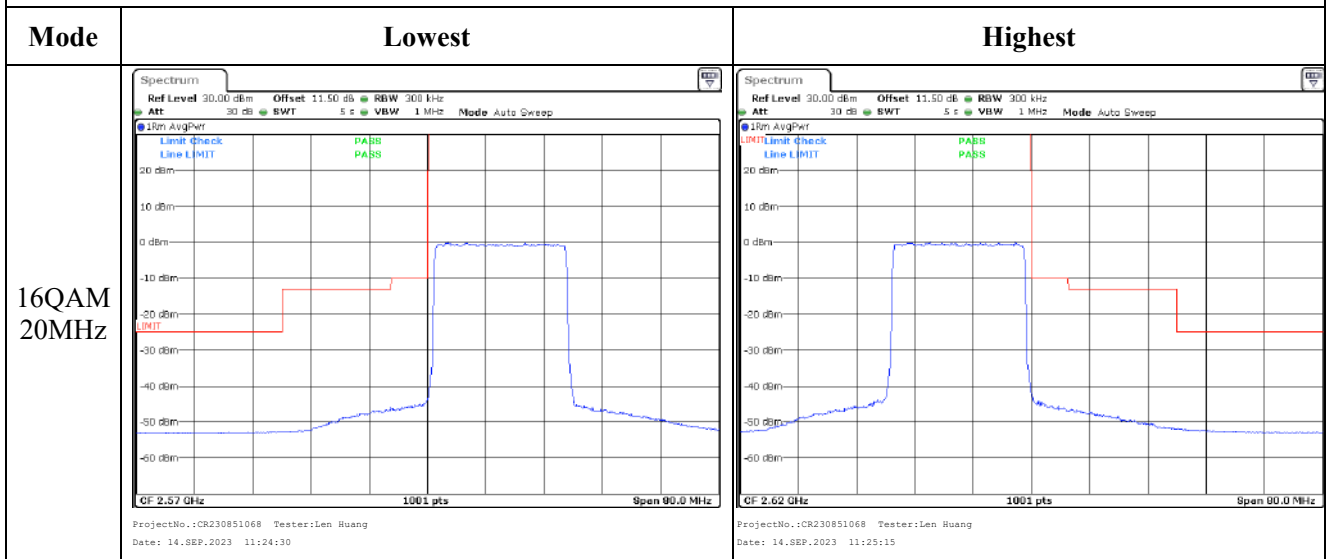
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 11:07:53</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 11:08:38</p>
16QAM 10MHz	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 11:15:53</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 11:16:36</p>
16QAM 15MHz	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 11:20:29</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 11:21:15</p>

Out of band emission, Band Edge



4.13 Antenna Port Test Data and Results for LTE Band 40

Serial Number:	2AQ7-1	Test Date:	2023/9/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2	Relative Humidity: (%)	60	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	2022/9/29	2023/9/28
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	2307.5	/	2312.5
10MHz	/	2310	/
5MHz	2352.5	/	2357.5
10MHz	/	2355	/

Test Data:

(Note:Uplink Downlink configuration 3 was tested)

FCC§2.1046;§ 27.50(a)(3)						
LTE Band 40 Lower:						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	18.94	18.94	18.92	17.22	24
	RB1#13	19.04	19.05	19.00		
	RB1#24	18.93	18.89	18.87		
	RB15#0	17.99	17.99	18.01		
	RB15#10	17.94	18.01	17.96		
	RB25#0	17.97	17.99	18.00		
5MHz 16QAM	RB1#0	18.22	17.95	18.01	16.46	24
	RB1#13	18.29	18.07	18.09		
	RB1#24	18.19	17.92	17.97		
	RB15#0	17.14	17.00	17.09		
	RB15#10	17.05	17.00	17.03		
	RB25#0	17.03	17.07	17.13		
10MHz QPSK	RB1#0	/	19.02	/	17.52	24
	RB1#25	/	19.35	/		
	RB1#49	/	19.02	/		
	RB25#0	/	18.06	/		
	RB25#25	/	18.03	/		
	RB50#0	/	18.05	/		
10MHz 16QAM	RB1#0	/	17.97	/	16.46	24
	RB1#25	/	18.29	/		
	RB1#49	/	17.94	/		
	RB25#0	/	17.19	/		
	RB25#25	/	17.15	/		
	RB50#0	/	17.15	/		

Note:
For 5MHz mode, the channel power is equal to the test result in dBm/5MHz.
For 10MHz mode, the channel power is sum of 10MHz bandwidth, the result is less than 24dBm, so in any 5MHz bandwidth, it's will not exceed limit
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	18.90	18.90	18.87	17.40	24
	RB1#13	19.02	19.00	19.01		
	RB1#24	18.87	18.88	18.88		
	RB15#0	17.94	17.94	17.95		
	RB15#10	17.93	17.94	17.95		
	RB25#0	17.95	17.91	17.95		
5MHz 16QAM	RB1#0	18.17	17.93	17.98	16.65	24
	RB1#13	18.27	18.02	18.11		
	RB1#24	18.15	17.92	17.98		
	RB15#0	17.08	16.98	17.08		
	RB15#10	17.05	16.94	17.05		
	RB25#0	17.02	17.03	17.07		
10MHz QPSK	RB1#0	/	19.06	/	17.71	24
	RB1#25	/	19.33	/		
	RB1#49	/	18.99	/		
	RB25#0	/	18.08	/		
	RB25#25	/	18.01	/		
	RB50#0	/	18.03	/		
10MHz 16QAM	RB1#0	/	17.98	/	16.62	24
	RB1#25	/	18.24	/		
	RB1#49	/	17.96	/		
	RB25#0	/	17.17	/		
	RB25#25	/	17.10	/		
	RB50#0	/	17.11	/		
Note: For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. For 10MHz mode, the channel power is sum of 10MHz bandwidth, the result is less than 24dBm, so in any 5MHz bandwidth, it's will not exceed limit $EIRP = \text{Conducted Power(dBm)} - Lc(\text{dB}) + Gt(\text{dBi})$ $EIRP \text{ PSD} = \text{Conducted PSD(dBm/5MHz)} - Lc(\text{dB}) + Gt(\text{dBi})$						
					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

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

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle channel	High Channel
5MHz QPSK	4.511	4.511	4.531	5.120	5.440	5.220
5MHz 16QAM	4.511	4.531	4.531	5.320	5.220	5.340
10MHz QPSK	/	8.982	/	/	9.920	/
10MHz 16QAM	/	8.942	/	/	9.800	/

LTE Band 40 Upper:

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle channel	High Channel
5MHz QPSK	4.511	4.511	4.531	5.100	5.300	5.220
5MHz 16QAM	4.511	4.531	4.531	5.360	5.200	5.160
10MHz QPSK	/	8.982	/	/	9.920	/
10MHz 16QAM	/	8.942	/	/	9.720	/

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

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

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

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

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

FCC §2.1055, §27.54: Frequency Stability

LTE Band 40 Lower:						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2305.124	2305.000	2314.815	2315.000
	-20	3.87	2305.618	2305.000	2314.479	2315.000
	-10	3.87	2305.469	2305.000	2314.540	2315.000
	0	3.87	2305.254	2305.000	2314.091	2315.000
	10	3.87	2305.484	2305.000	2314.177	2315.000
	20	3.87	2305.395	2305.000	2314.326	2315.000
	30	3.87	2305.156	2305.000	2314.144	2315.000
	40	3.87	2305.480	2305.000	2314.425	2315.000
Frequency Stability vs. Voltage	20	3.45	2305.664	2305.000	2314.104	2315.000
	20	4.45	2305.183	2305.000	2314.290	2315.000
					Result:	Pass

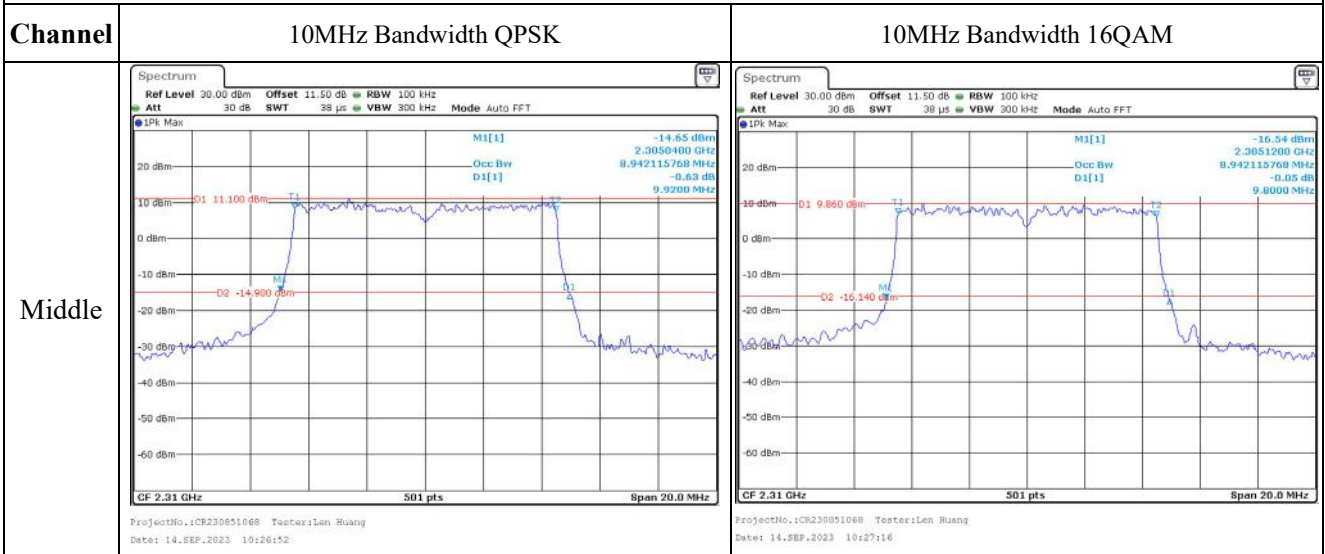
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2305.960	2305.000	2314.241	2315.000
	-20	3.87	2305.944	2305.000	2314.601	2315.000
	-10	3.87	2305.867	2305.000	2314.766	2315.000
	0	3.87	2305.039	2305.000	2314.895	2315.000
	10	3.87	2305.779	2305.000	2314.689	2315.000
	20	3.87	2305.676	2305.000	2314.203	2315.000
	30	3.87	2305.355	2305.000	2314.385	2315.000
	40	3.87	2305.792	2305.000	2314.017	2315.000
Frequency Stability vs. Voltage	20	3.45	2305.976	2305.000	2314.059	2315.000
	20	4.45	2305.857	2305.000	2314.845	2315.000
					Result:	Pass

LTE Band 40 Upper:						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2350.224	2350.000	2359.135	2360.000
	-20	3.87	2350.980	2350.000	2359.079	2360.000
	-10	3.87	2350.739	2350.000	2359.495	2360.000
	0	3.87	2350.824	2350.000	2359.428	2360.000

	10	3.87	2350.916	2350.000	2359.639	2360.000
	20	3.87	2350.989	2350.000	2359.692	2360.000
	30	3.87	2350.003	2350.000	2359.896	2360.000
	40	3.87	2350.917	2350.000	2359.472	2360.000
	50	3.87	2350.121	2350.000	2359.897	2360.000
Frequency Stability vs. Voltage	20	3.45	2350.954	2350.000	2359.732	2360.000
	20	4.45	2350.440	2350.000	2359.154	2360.000
					Result:	Pass

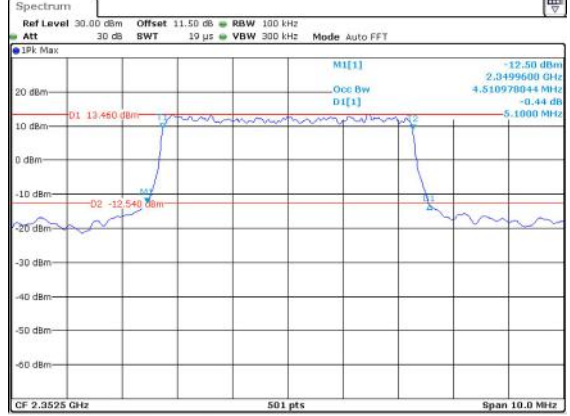
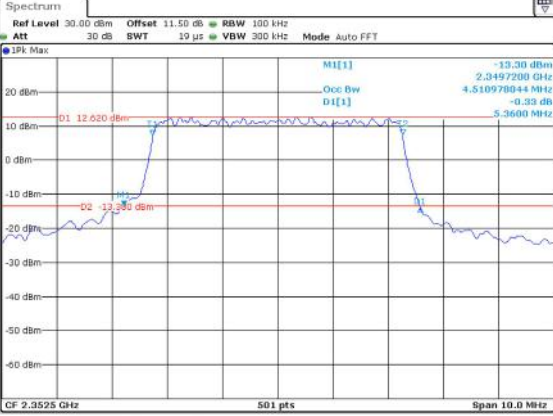
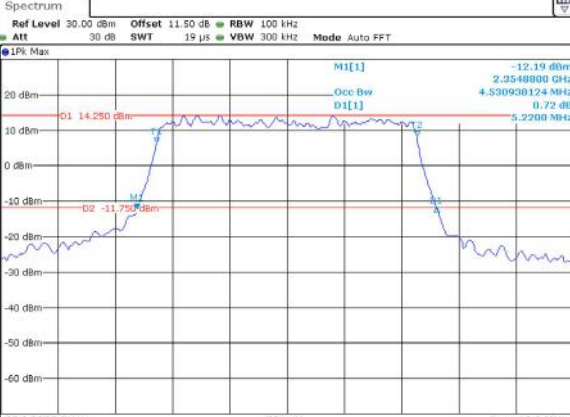
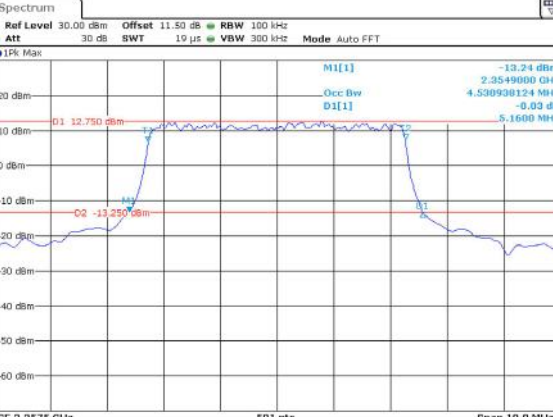
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2350.466	2350.000	2359.850	2360.000
	-20	3.87	2350.096	2350.000	2359.886	2360.000
	-10	3.87	2350.968	2350.000	2359.737	2360.000
	0	3.87	2350.704	2350.000	2359.840	2360.000
	10	3.87	2350.401	2350.000	2359.783	2360.000
	20	3.87	2350.906	2350.000	2359.894	2360.000
	30	3.87	2350.564	2350.000	2359.436	2360.000
	40	3.87	2350.916	2350.000	2359.802	2360.000
	50	3.87	2350.680	2350.000	2359.324	2360.000
Frequency Stability vs. Voltage	20	3.45	2350.915	2350.000	2359.744	2360.000
	20	4.45	2350.783	2350.000	2359.829	2360.000
					Result:	Pass

Occupied Bandwidth

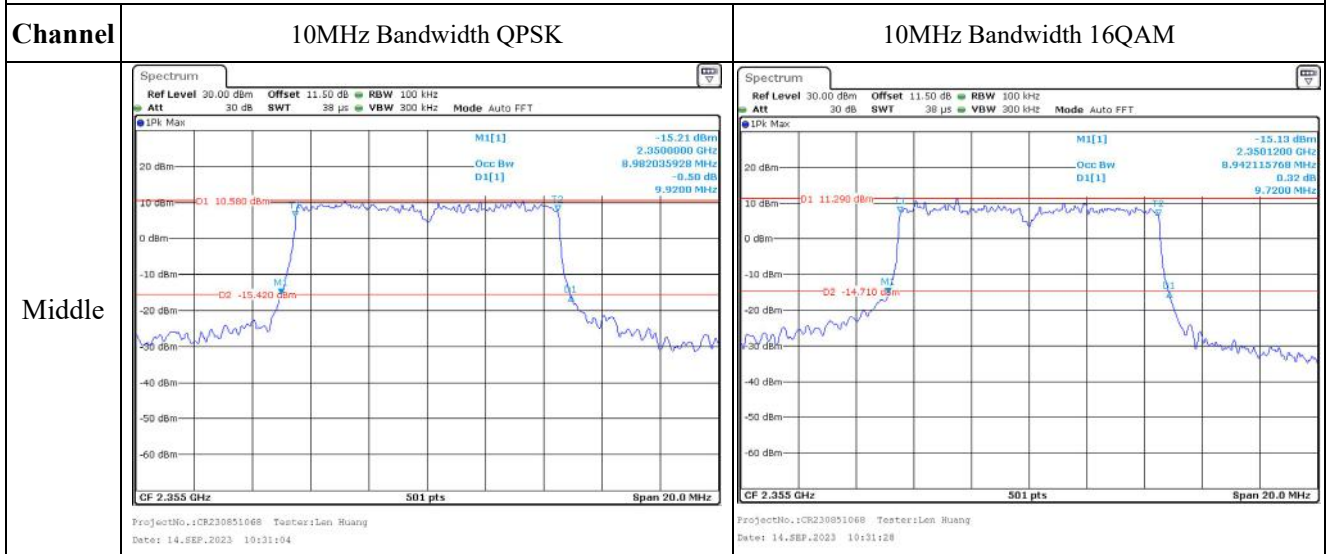


2350-2360 MHz:

Occupied Bandwidth

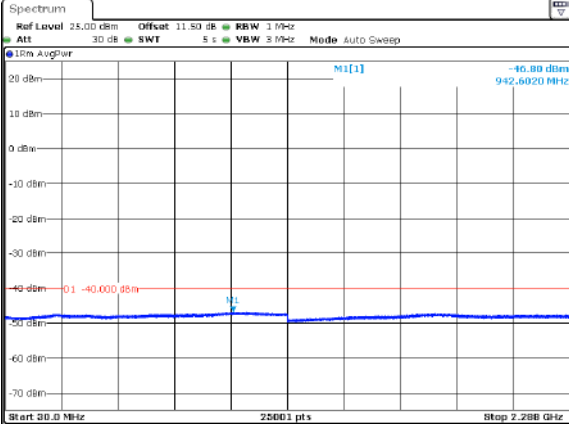
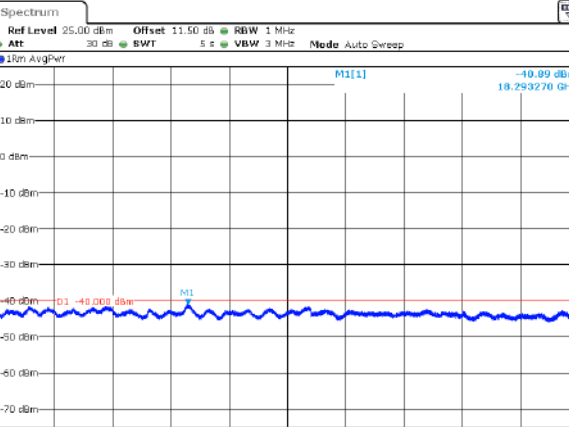

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14_SEP_2023 10:20:58</p>	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14_SEP_2023 10:29:22</p>
Highest	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14_SEP_2023 10:30:26</p>	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14_SEP_2023 10:30:43</p>

Occupied Bandwidth



2305-2315 MHz:

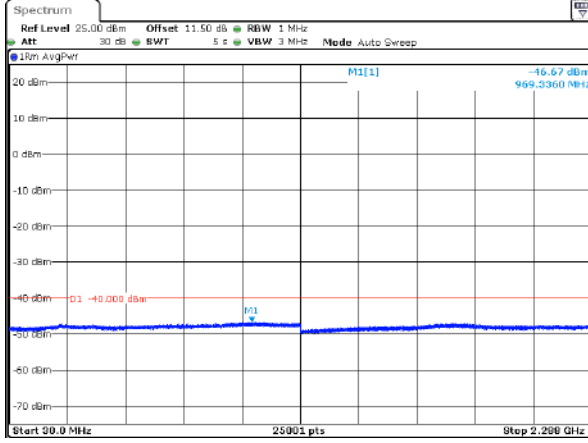
Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK
	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:14:56</p>
Lowest	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:15:37</p>
	 <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:15:55</p>

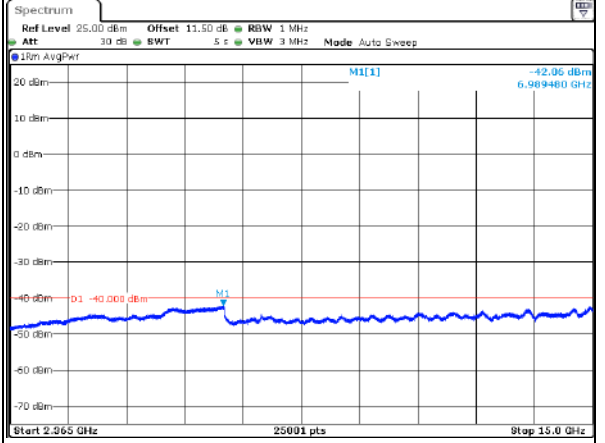
Spurious Emissions at Antenna Terminal

5MHz Bandwidth QPSK

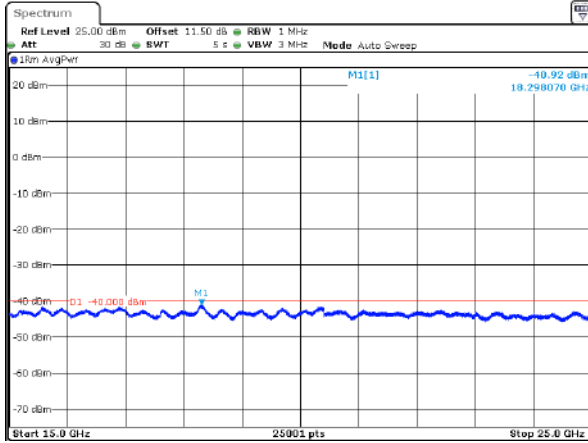
Highest



ProjectNo.:CR230851068 Tester:Len Ruang
Date: 14.SEP.2023 13:18:18

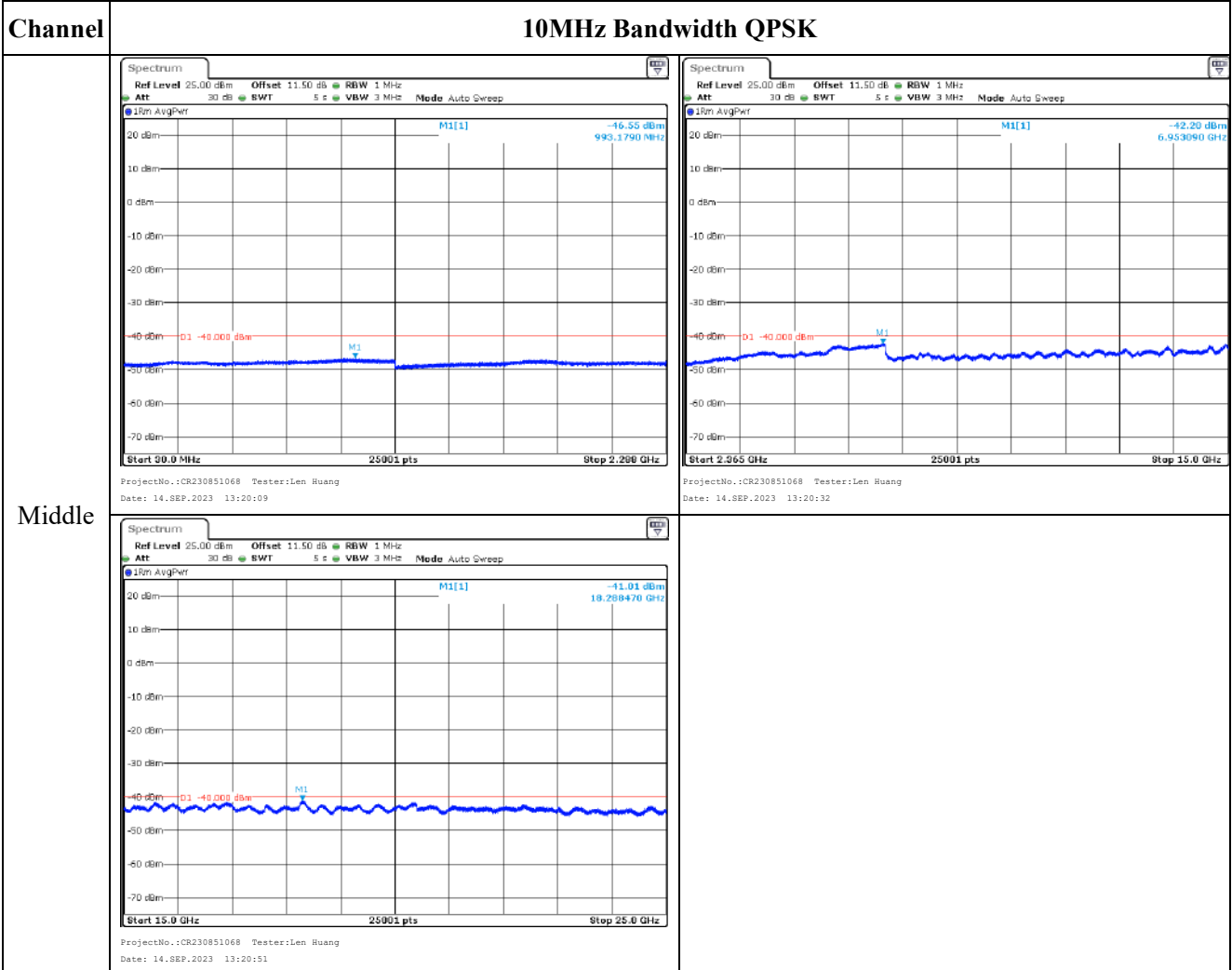


ProjectNo.:CR230851068 Tester:Len Ruang
Date: 14.SEP.2023 13:18:44

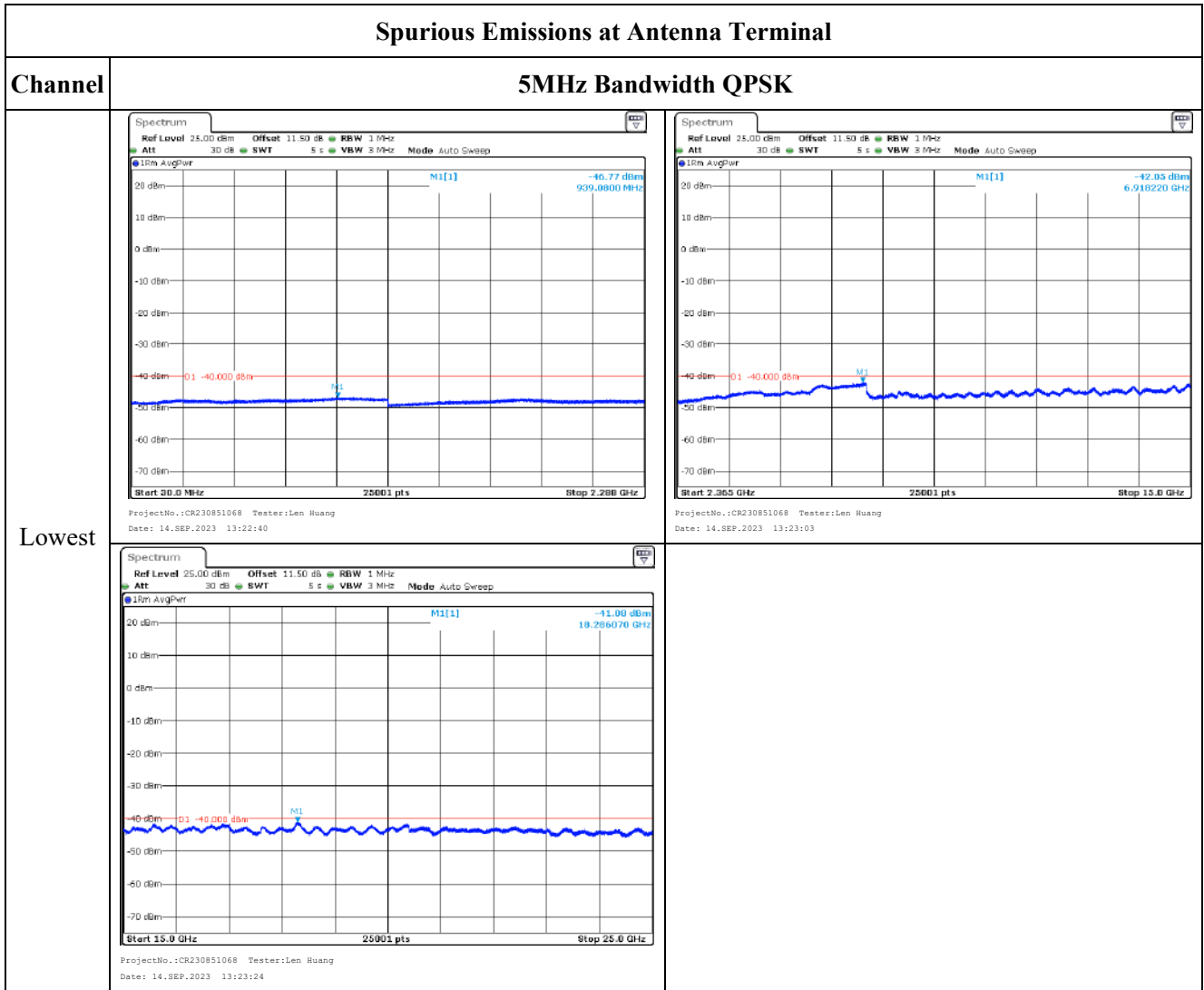


ProjectNo.:CR230851068 Tester:Len Ruang
Date: 14.SEP.2023 13:19:09

Spurious Emissions at Antenna Terminal



2350-2360 MHz:



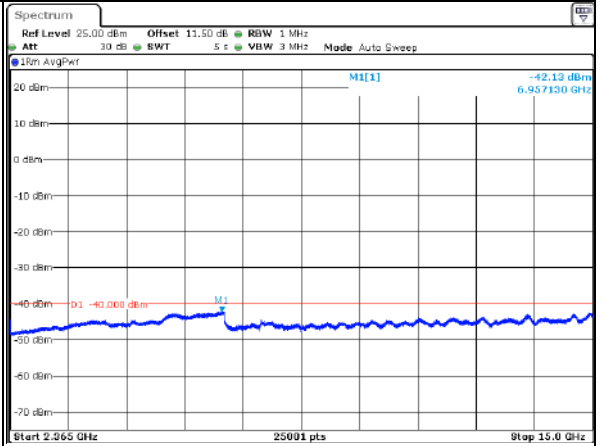
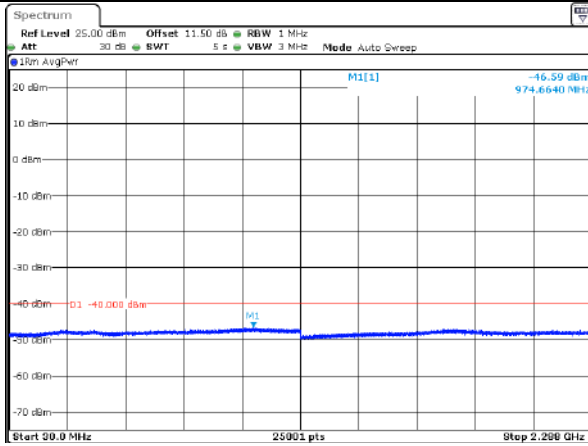
Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:25:33</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:25:57</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 13:26:16</p>	

Spurious Emissions at Antenna Terminal

Channel

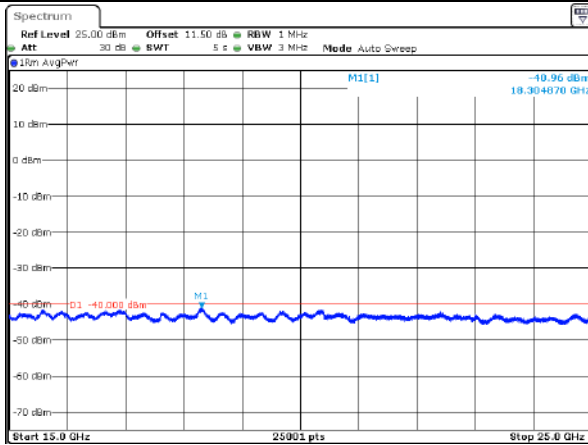
10MHz Bandwidth QPSK



ProjectNo.:CR230851068 Tester:Len Ruang
Date: 14.SEP.2023 13:27:01

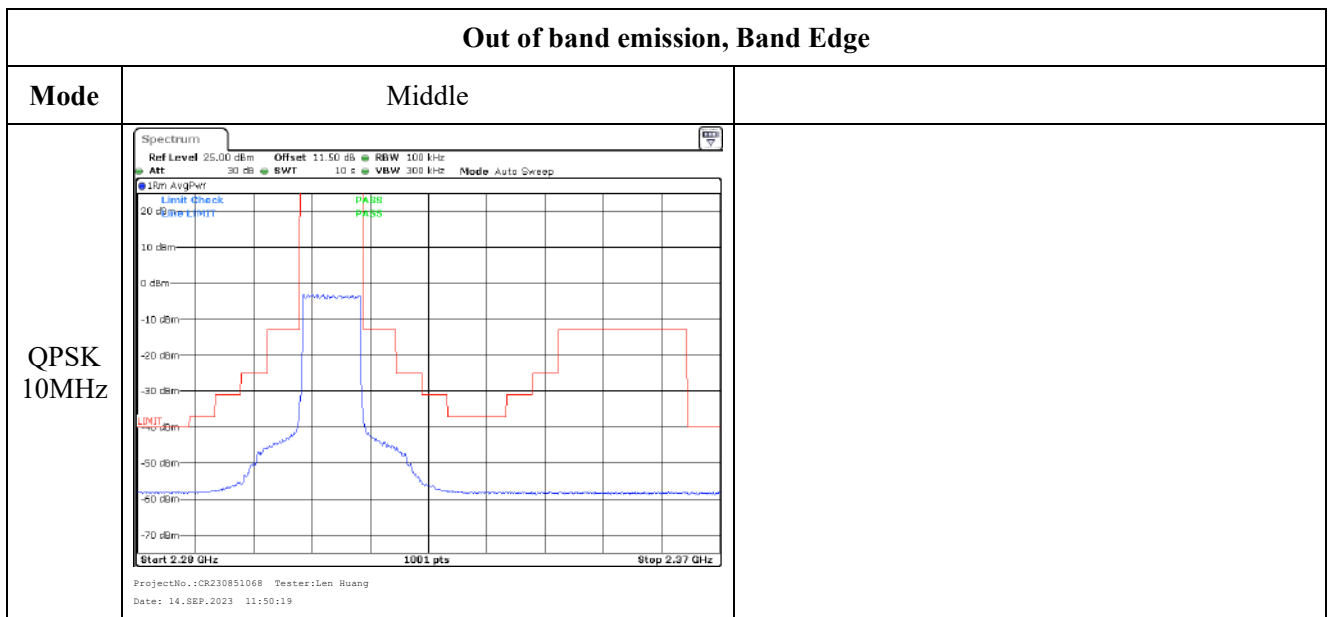
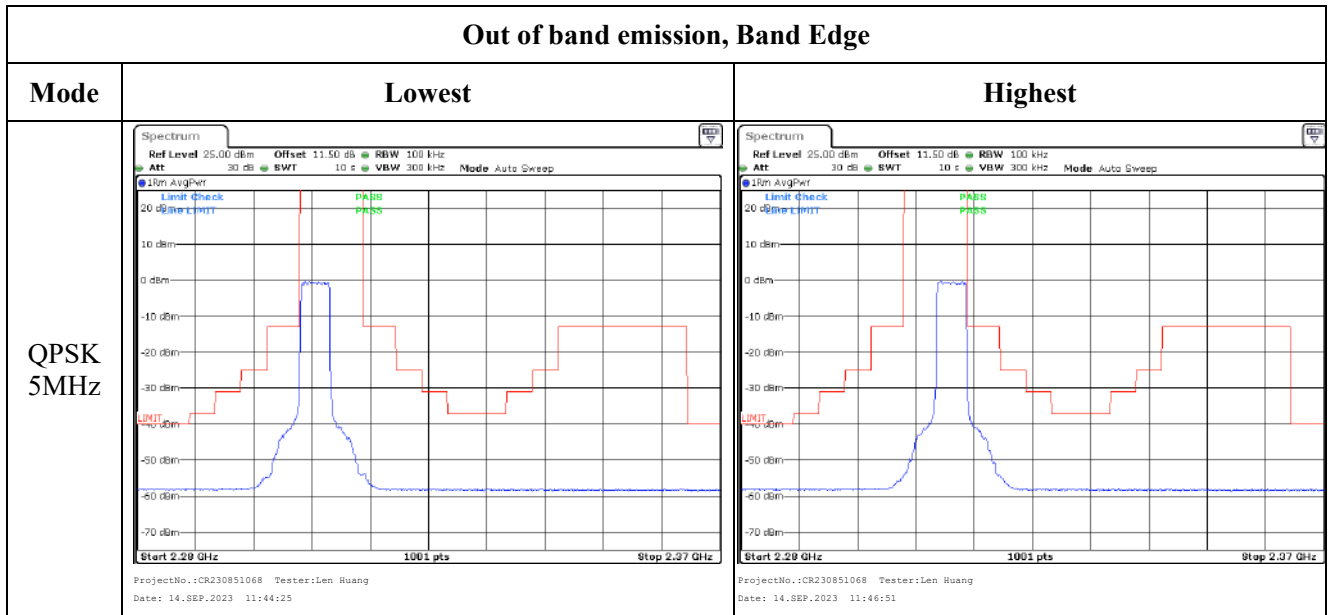
ProjectNo.:CR230851068 Tester:Len Ruang
Date: 14.SEP.2023 13:28:51

Middle

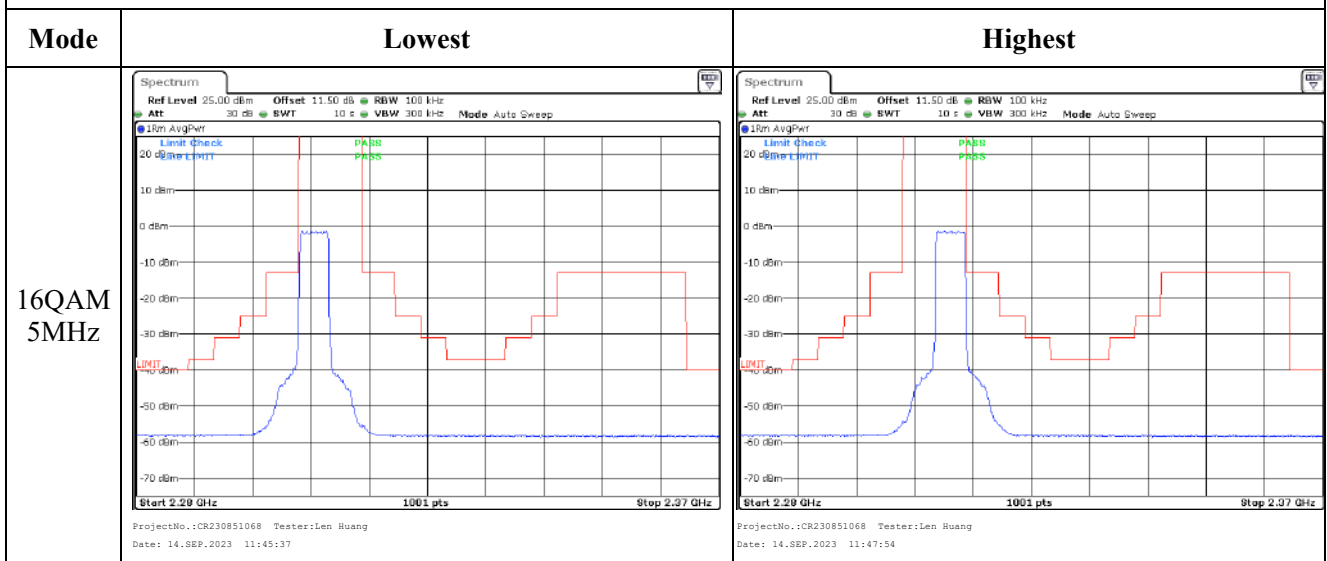


ProjectNo.:CR230851068 Tester:Len Ruang
Date: 14.SEP.2023 13:27:47

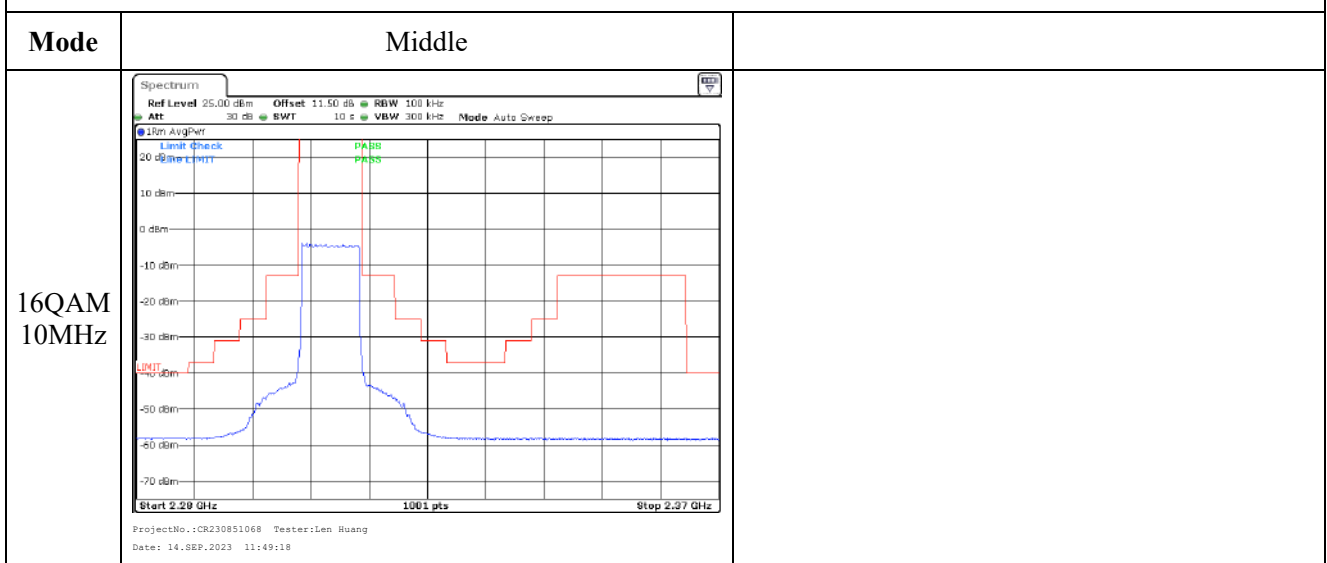
2305-2315 MHz:



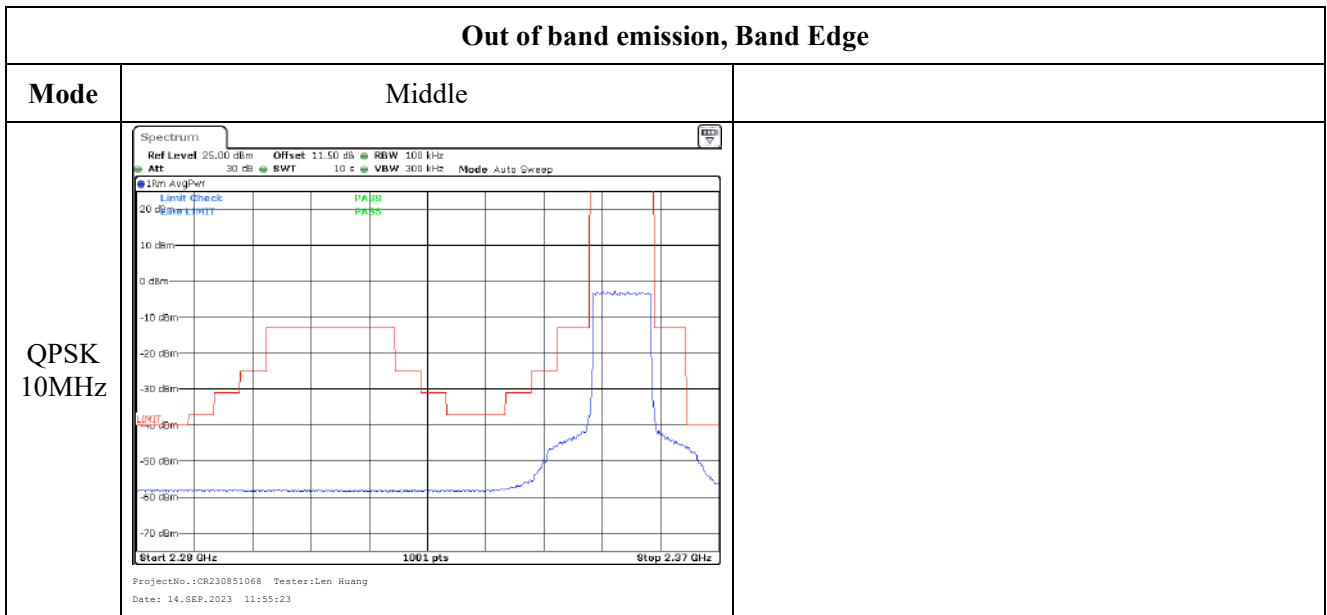
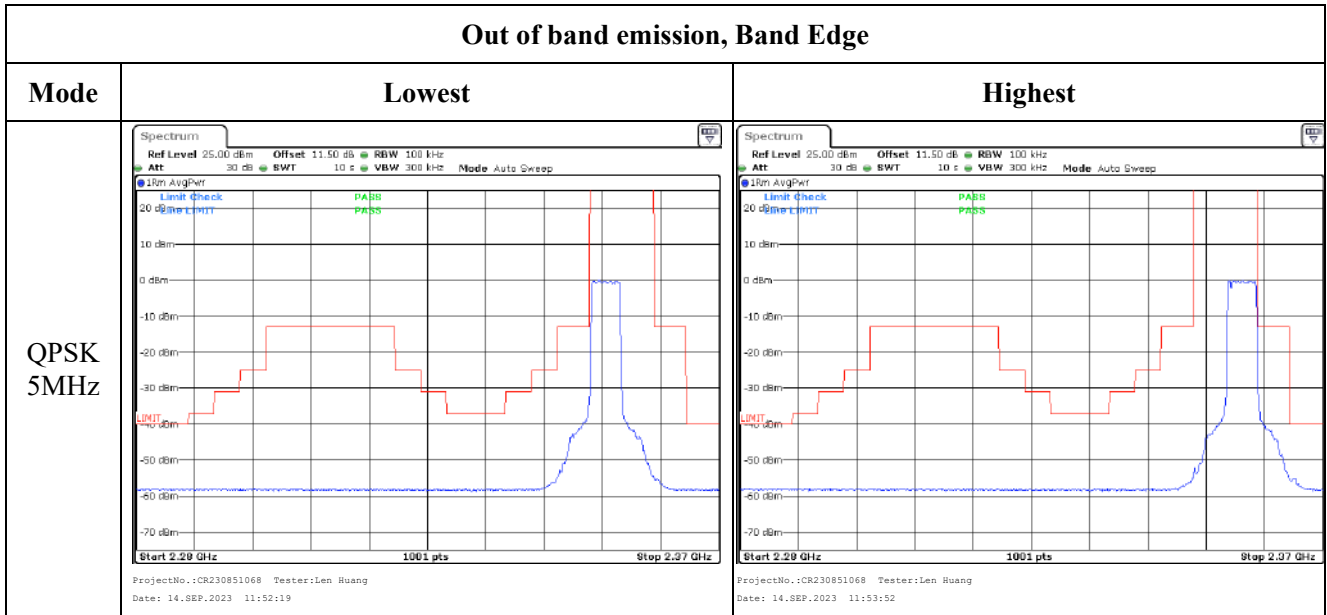
Out of band emission, Band Edge



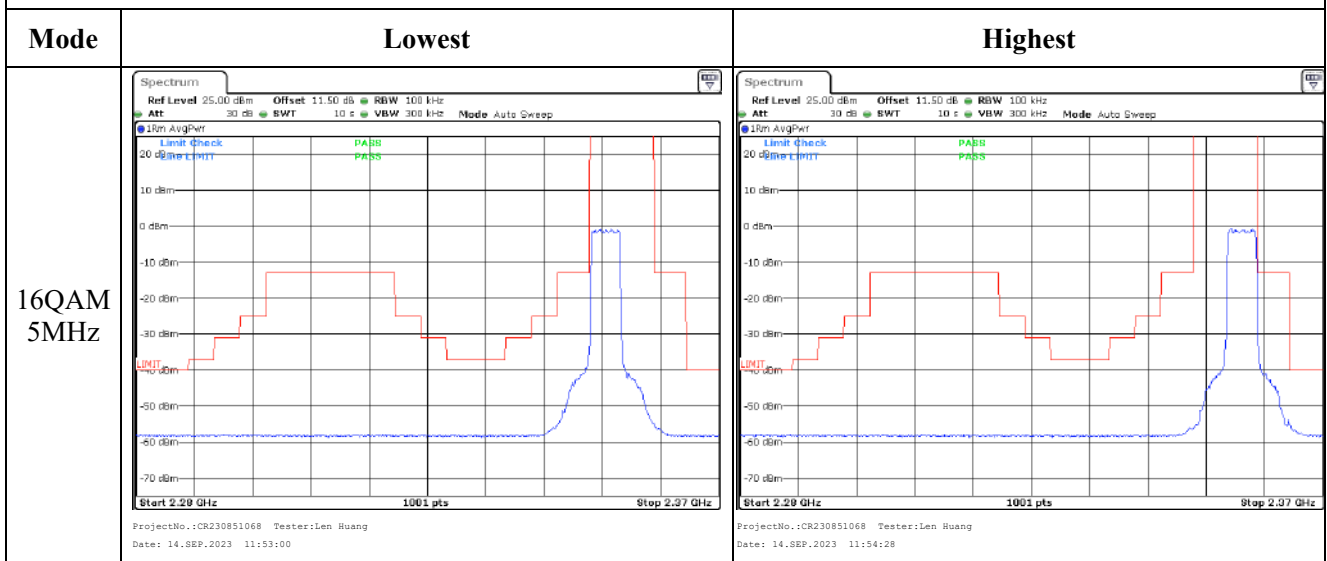
Out of band emission, Band Edge



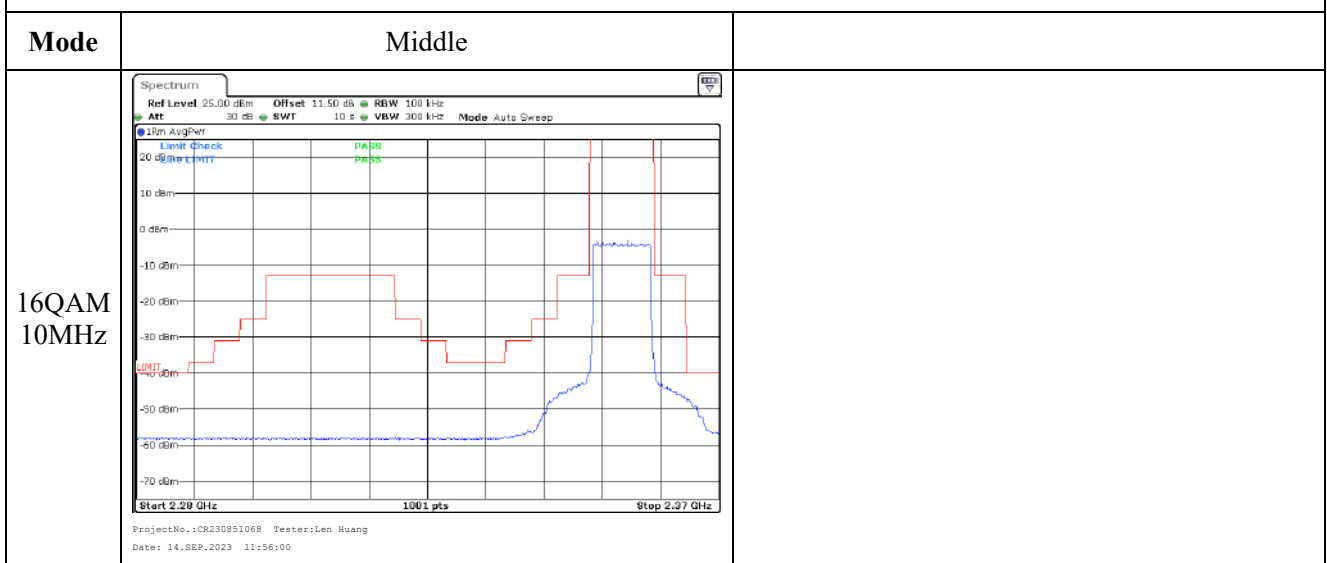
2350-2360 MHz:



Out of band emission, Band Edge

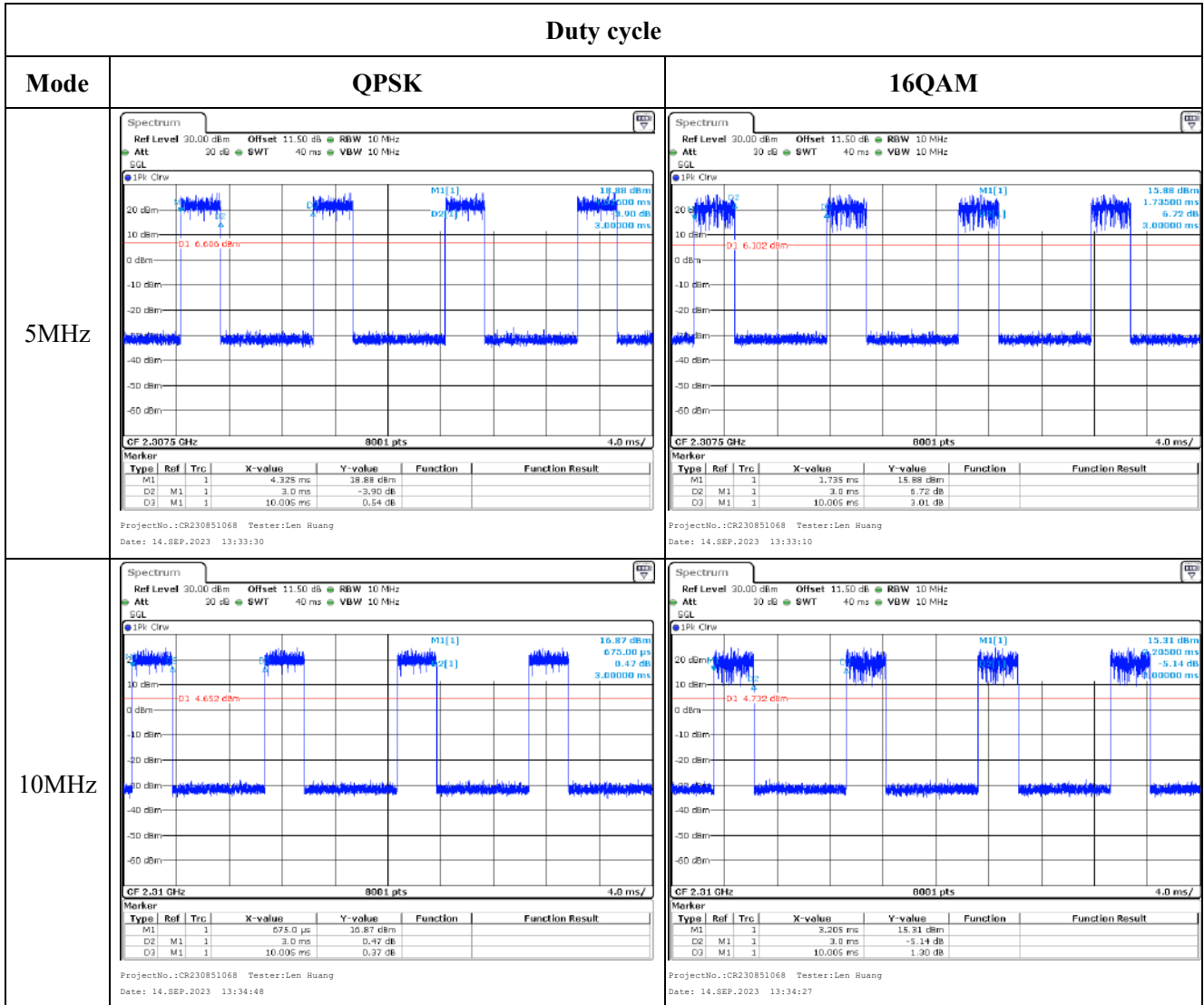


Out of band emission, Band Edge



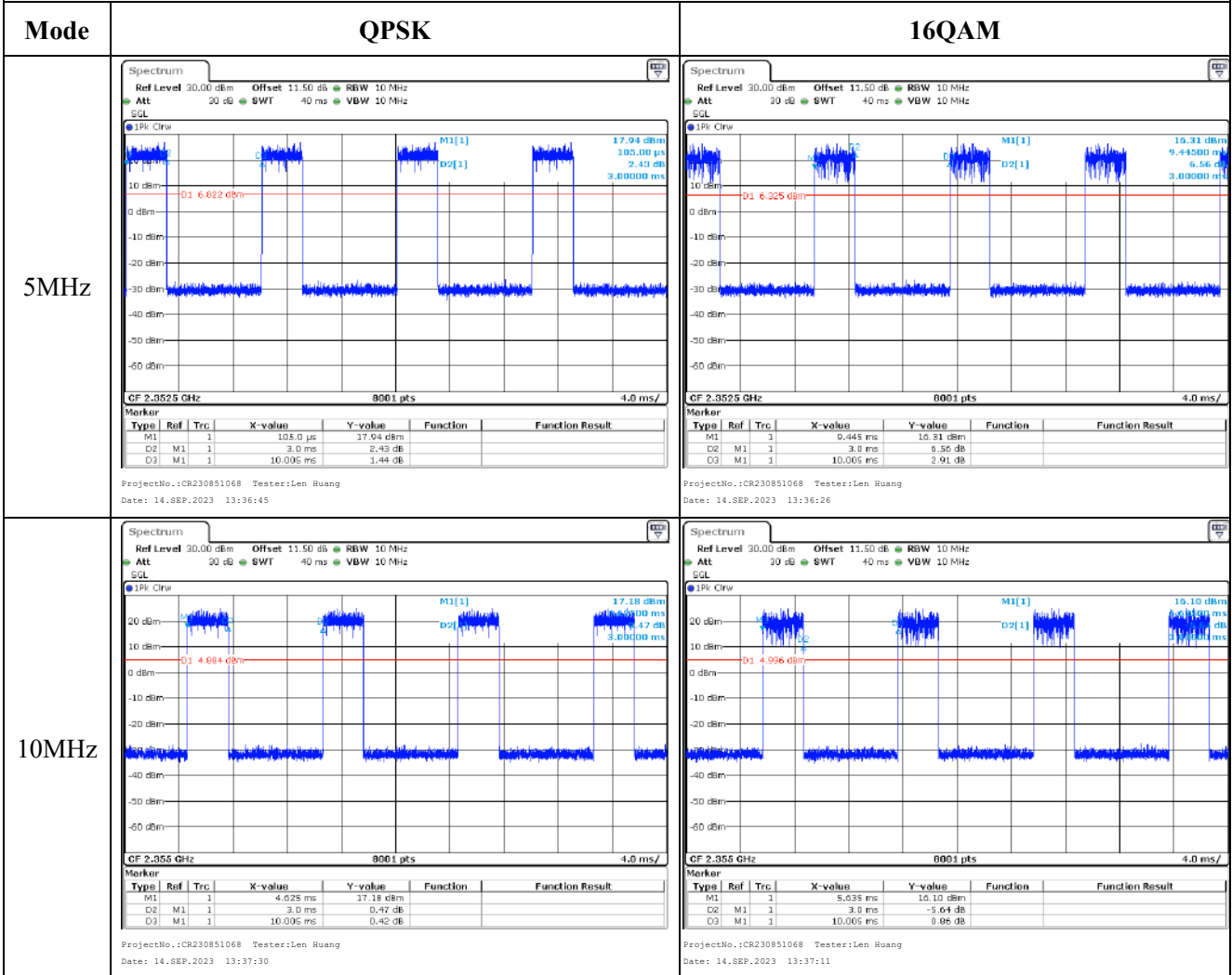
2305-2315 MHz:

Duty cycle



2350-2360 MHz:

Duty cycle



4.14 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	2AQ7-1	Test Date:	2023/9/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2	Relative Humidity: (%)	60	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	2022/9/29	2023/9/28
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	2537.5	2595	2652.5
10MHz	2540	2605	2650
15MHz	2542.5	2605	2647.5
20MHz	2545	2605	2645

Test Data:

FCC§2.1046;§ 27.50(h)(2)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	21.12	21.24	21.06	20.85	33
	RB1#13	21.27	21.36	21.22		
	RB1#24	21.14	21.21	21.08		
	RB15#0	20.14	20.28	20.18		
	RB15#10	20.13	20.25	20.11		
	RB25#0	20.14	20.24	20.13		
5MHz 16QAM	RB1#0	20.36	20.19	20.12	19.96	33
	RB1#13	20.47	20.33	20.29		
	RB1#24	20.37	20.22	20.14		
	RB15#0	19.17	19.24	19.15		
	RB15#10	19.21	19.18	19.14		
	RB25#0	19.12	19.25	19.18		
10MHz QPSK	RB1#0	21.26	21.31	21.15	21.10	33
	RB1#25	21.55	21.61	21.42		
	RB1#49	21.25	21.31	21.16		
	RB25#0	20.17	20.27	20.16		
	RB25#25	20.22	20.29	20.1		
	RB50#0	20.19	20.3	20.12		
10MHz 16QAM	RB1#0	20.32	20.51	20.06	20.30	33
	RB1#25	20.59	20.81	20.33		
	RB1#49	20.34	20.53	20.07		
	RB25#0	19.19	19.29	19.22		
	RB25#25	19.26	19.3	19.18		
	RB50#0	19.21	19.25	19.13		
15MHz QPSK	RB1#0	21.18	21.25	21.11	20.81	33
	RB1#38	21.25	21.32	21.19		
	RB1#74	21.14	21.25	21.09		
	RB36#0	20.18	20.29	20.19		
	RB36#39	20.2	20.32	20.14		
	RB75#0	20.19	20.28	20.14		
15MHz 16QAM	RB1#0	20.34	20.46	20.03	20.02	33
	RB1#38	20.48	20.53	20.09		
	RB1#74	20.33	20.46	19.99		
	RB36#0	19.19	19.27	19.1		
	RB36#39	19.25	19.3	19.05		
	RB75#0	19.16	19.26	19.11		
20MHz QPSK	RB1#0	21.09	21.1	20.89	21.03	33

	RB1#50	21.54	21.54	21.37		
	RB1#99	21.06	21.1	20.89		
	RB50#0	20.09	20.28	20.16		
	RB50#50	20.18	20.24	20.04		
	RB100#0	20.18	20.27	20.1		
20MHz 16QAM	RB1#0	20.28	20.17	19.88	20.23	33
	RB1#50	20.74	20.63	20.36		
	RB1#99	20.23	20.18	19.88		
	RB50#0	19.13	19.27	19.21		
	RB50#50	19.2	19.25	19.11		
	RB100#0	19.16	19.24	19.11		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)						
					Result:	Pass

Peak-to-average Ratio(PAR)						
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)	
		Lowest Channel	Middle Channel	Highest Channel		
20MHz QPSK	RB1#0	9.36	9.51	9.39	13	
	RB100#0	9.33	9.30	9.25	13	
20MHz 16QAM	RB1#0	10.06	10.32	10.00	13	
	RB100#0	10.09	10.12	10.03	13	
					Result:	Pass

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	5.080	4.880	5.140
5MHz 16QAM	4.511	4.471	4.511	4.960	4.940	5.060
10MHz QPSK	8.942	8.942	8.982	9.560	9.640	9.560
10MHz 16QAM	8.942	8.942	8.942	9.600	9.480	9.840
15MHz QPSK	13.413	13.533	13.473	14.640	14.700	14.460
15MHz 16QAM	13.473	13.533	13.533	14.640	15.180	14.700
20MHz QPSK	17.884	17.964	17.884	19.120	19.600	19.200
20MHz 16QAM	17.964	17.964	17.964	19.280	19.200	19.680
Note: The test plots please refer to the Plots of Occupied Bandwidth						

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

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

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2535.230	2535.00	2654.911	2655
	-20	3.87	2535.285	2535.00	2654.935	2655
	-10	3.87	2535.233	2535.00	2654.960	2655
	0	3.87	2535.195	2535.00	2654.950	2655
	10	3.87	2535.114	2535.00	2654.925	2655
	20	3.87	2535.248	2535.00	2654.933	2655
	30	3.87	2535.121	2535.00	2654.916	2655
	40	3.87	2535.274	2535.00	2654.921	2655
	50	3.87	2535.126	2535.00	2654.993	2655
Frequency Stability vs. Voltage	20	3.45	2535.117	2535.00	2654.957	2655
	20	4.45	2535.190	2535.00	2654.942	2655
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	2535.234	2535.00	2654.917	2655
	-20	3.87	2535.258	2535.00	2654.924	2655
	-10	3.87	2535.235	2535.00	2654.908	2655
	0	3.87	2535.196	2535.00	2654.960	2655
	10	3.87	2535.113	2535.00	2654.960	2655
	20	3.87	2535.148	2535.00	2654.959	2655
	30	3.87	2535.223	2535.00	2654.954	2655
	40	3.87	2535.167	2535.00	2654.928	2655
	50	3.87	2535.111	2535.00	2654.944	2655
Frequency Stability vs. Voltage	20	3.45	2535.134	2535.00	2654.959	2655
	20	4.45	2535.187	2535.00	2654.965	2655
					Result:	Pass

Test Plots (Note: The 11.5 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.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:50:09</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:50:39</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:51:09</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:51:27</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:51:48</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:52:06</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:53:04</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:53:27</p>
Middle	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:54:04</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:54:28</p>
Highest	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:54:46</p>	<p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:55:10</p>

Occupied Bandwidth

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

Occupied Bandwidth

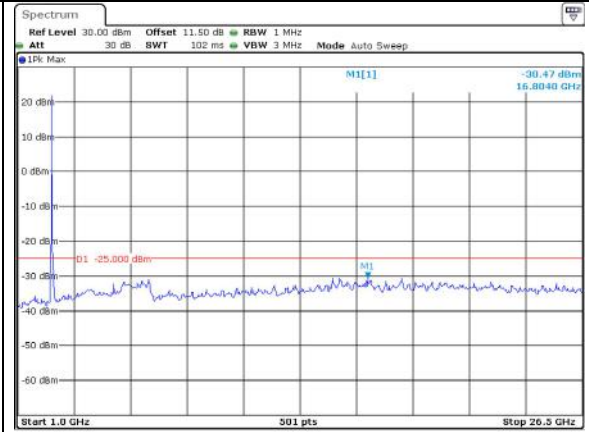
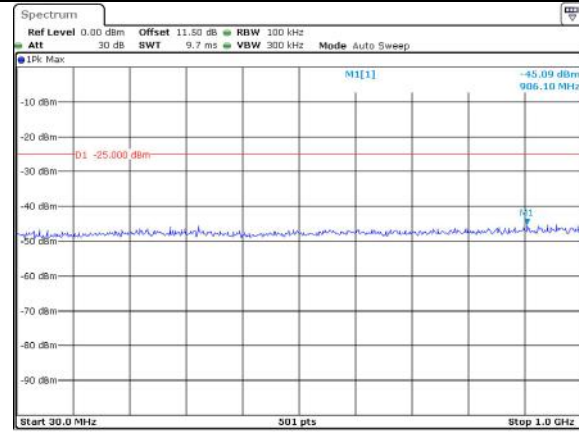
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

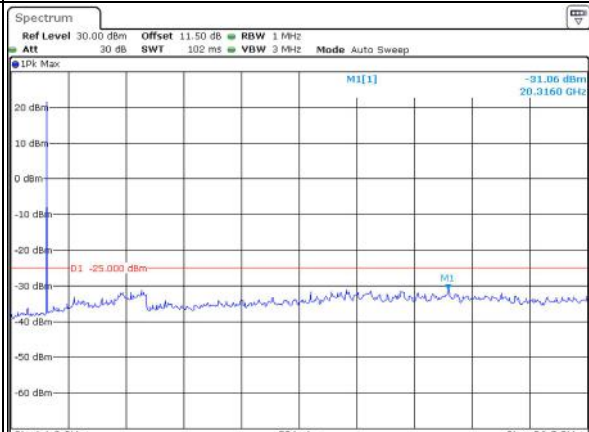
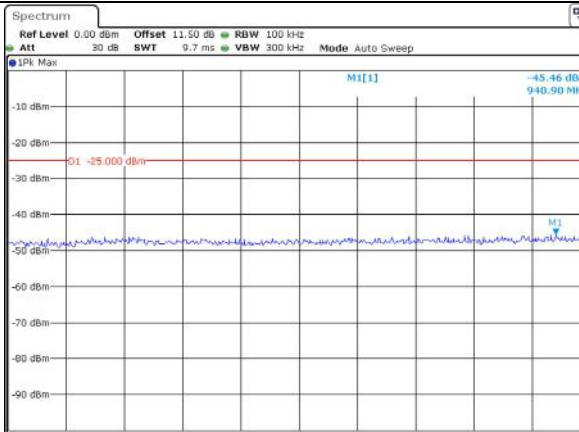
Lowest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:12:14

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:12:19

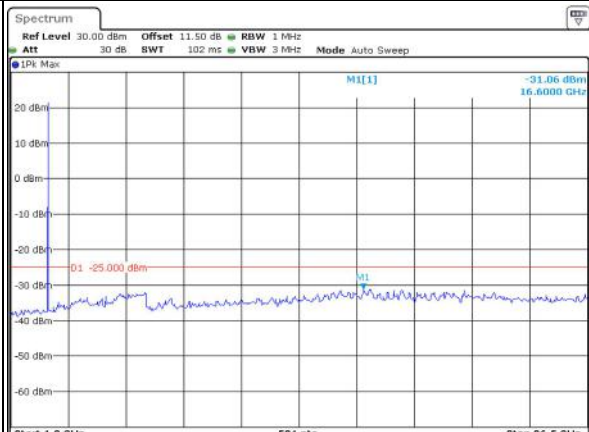
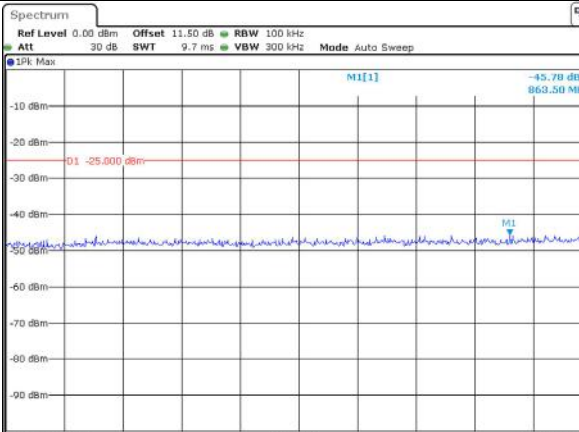
Middle



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:12:10

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:12:18

Highest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:12:11

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:12:14

Spurious Emissions at Antenna Terminal

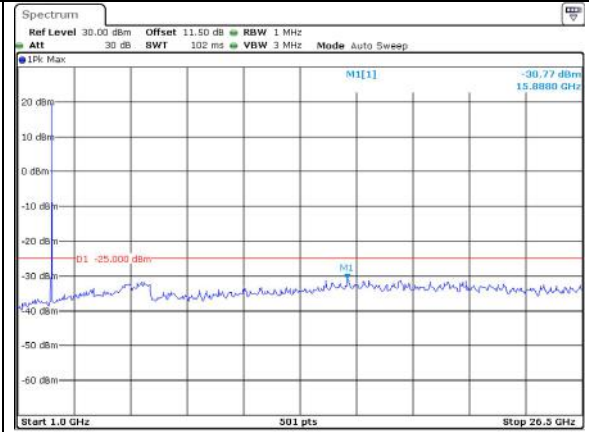
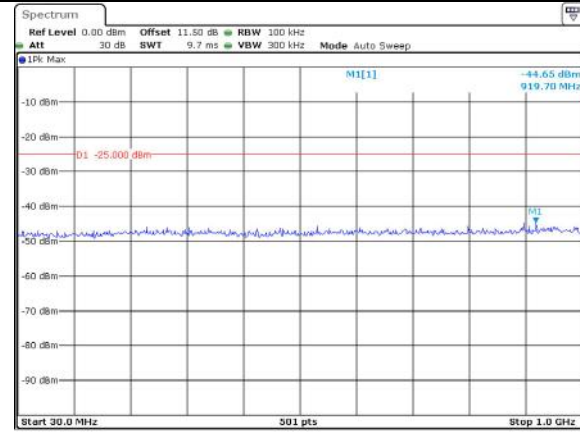
Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -44.54 dBm 660.20 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:31:53</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.45 dBm 18.2800 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:32:19</p>
Middle	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.31 dBm 970.00 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:32:49</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.18 dBm 16.7020 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:33:12</p>
Highest	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max M1[1] -45.61 dBm 985.50 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:33:39</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max M1[1] -30.93 dBm 16.6000 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:34:08</p>

Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

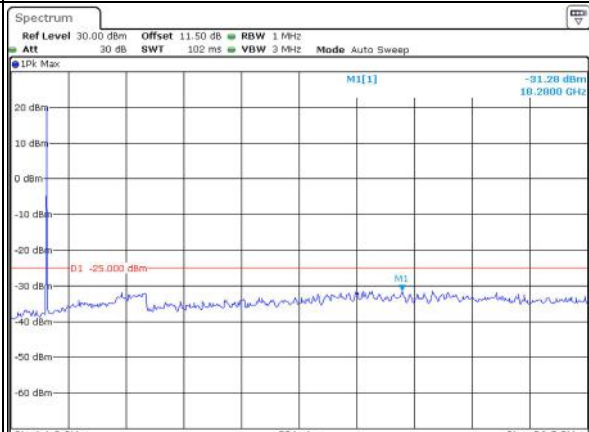
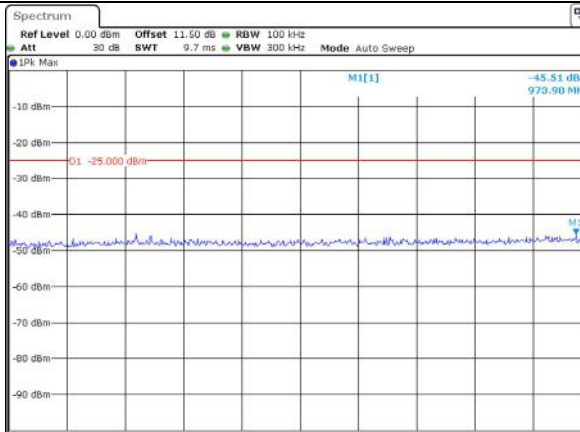
Lowest



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:35:41

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:36:04

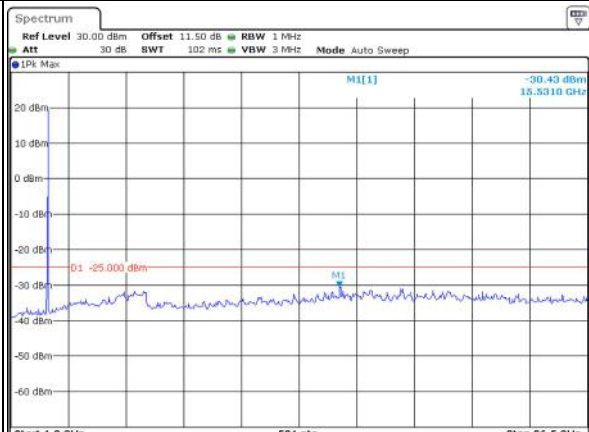
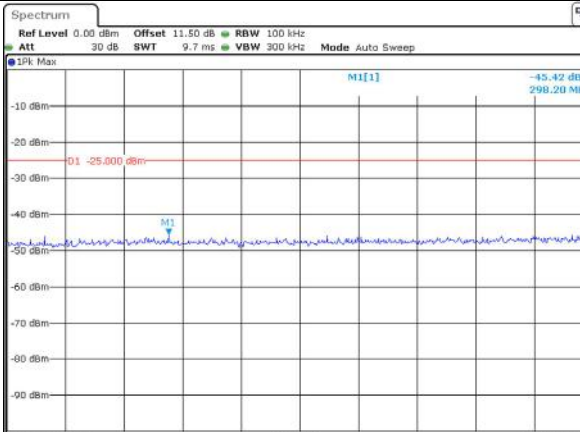
Middle



ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:36:29

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:36:52

Highest



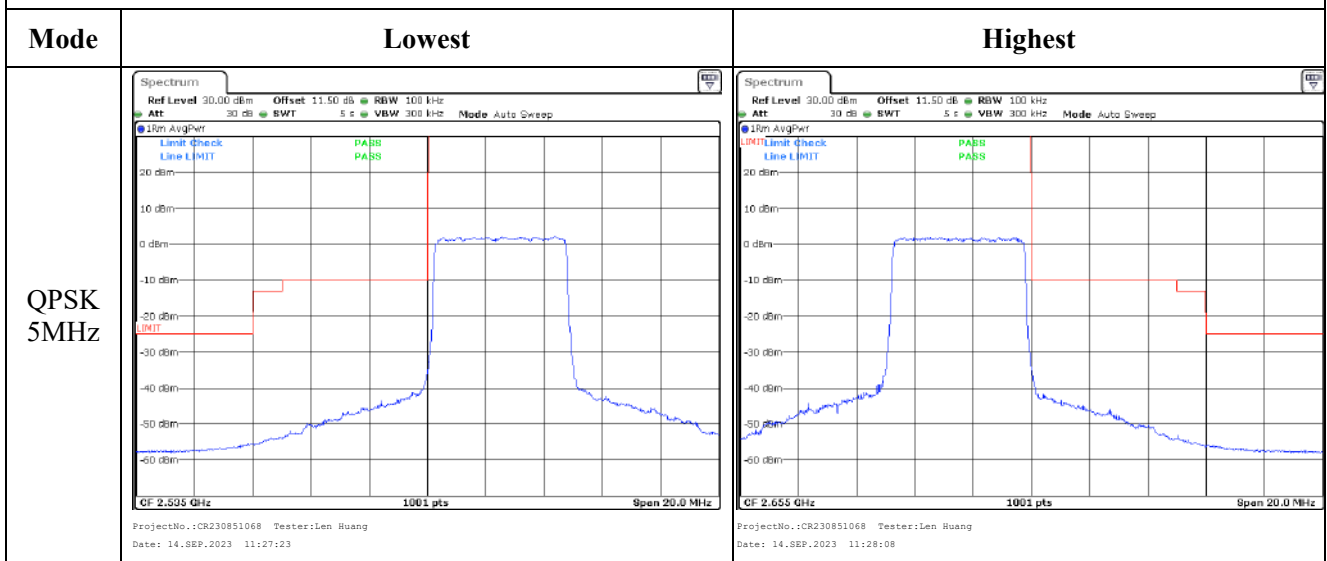
ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:37:26

ProjectNo.:CR230851068 Tester:Len Huang
Date: 14.SEP.2023 09:37:52

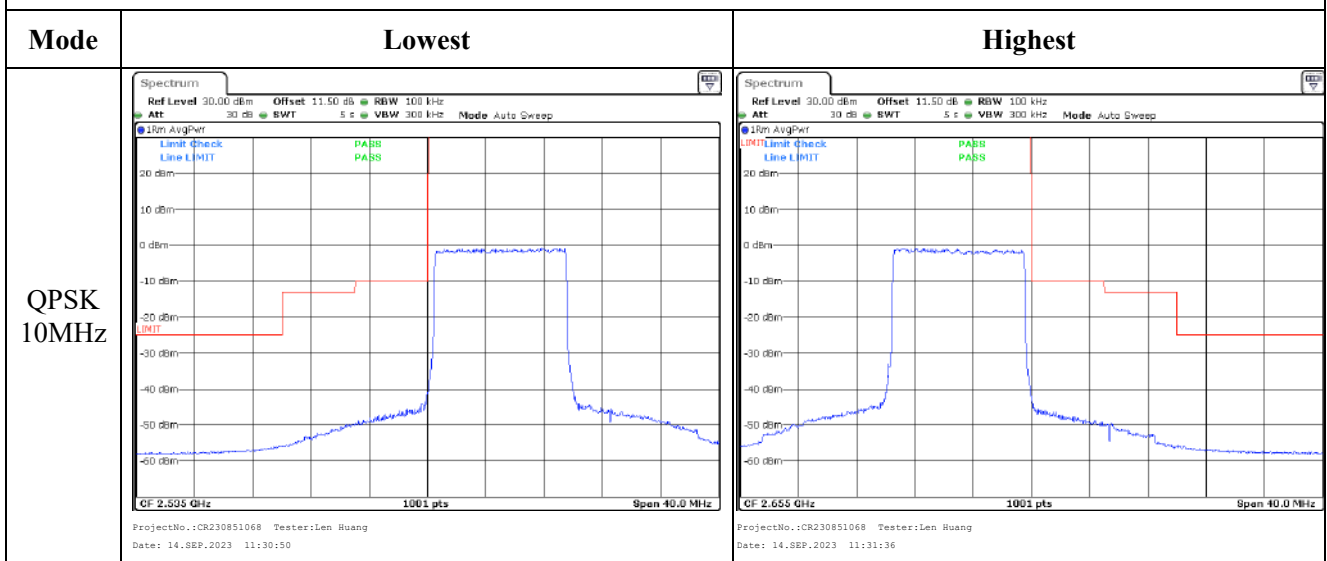
Spurious Emissions at Antenna Terminal

Channel	20MHz Bandwidth QPSK	
Lowest	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max MI[1] -45.29 dBm 801.30 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:39:23</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max MI[1] -31.42 dBm 15.8559 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:39:49</p>
Middle	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max MI[1] -45.26 dBm 668.00 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:40:20</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max MI[1] -31.09 dBm 15.5310 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:40:40</p>
Highest	<p>Ref Level 0.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep</p> <p>IPk Max MI[1] -45.19 dBm 975.80 MHz</p> <p>D1 -25.000 dBm</p> <p>Start 30.0 MHz 501 pts Stop 1.0 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:41:07</p>	<p>Ref Level 30.00 dBm Offset 11.50 dB RBW 1 MHz Att 30 dB SWT 102 ms VBW 3 MHz Mode Auto Sweep</p> <p>IPk Max MI[1] -30.97 dBm 18.2800 GHz</p> <p>D1 -25.000 dBm</p> <p>Start 1.0 GHz 501 pts Stop 26.5 GHz</p> <p>ProjectNo.:CR230851068 Tester:Len Huang Date: 14.SEP.2023 09:41:37</p>

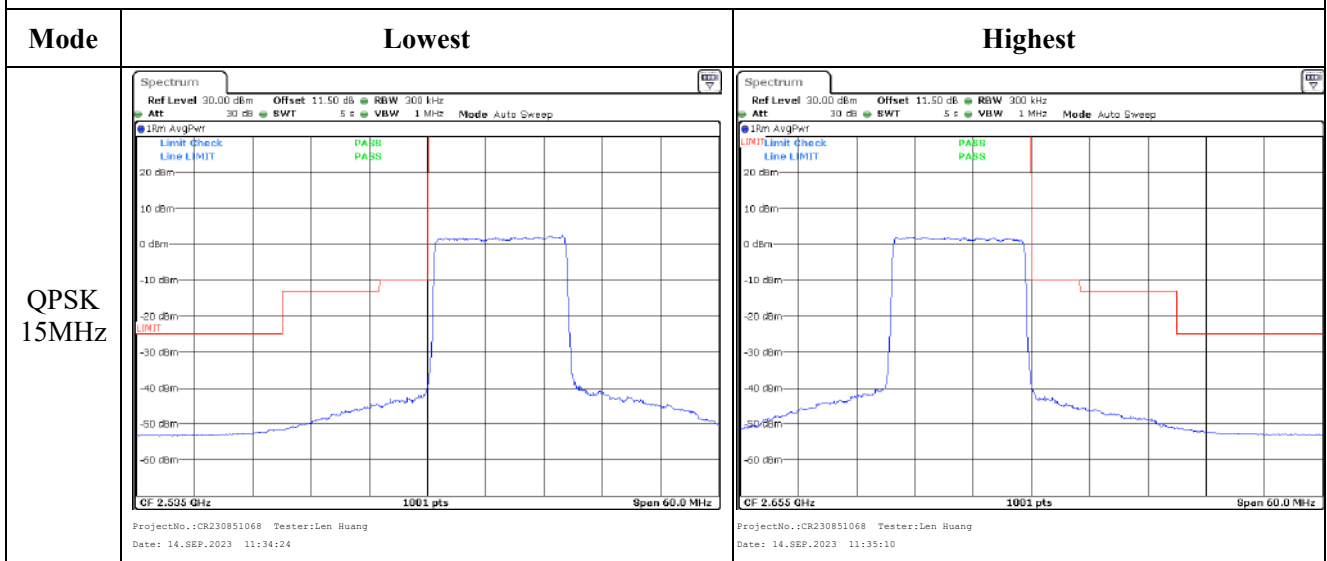
Out of band emission, Band Edge



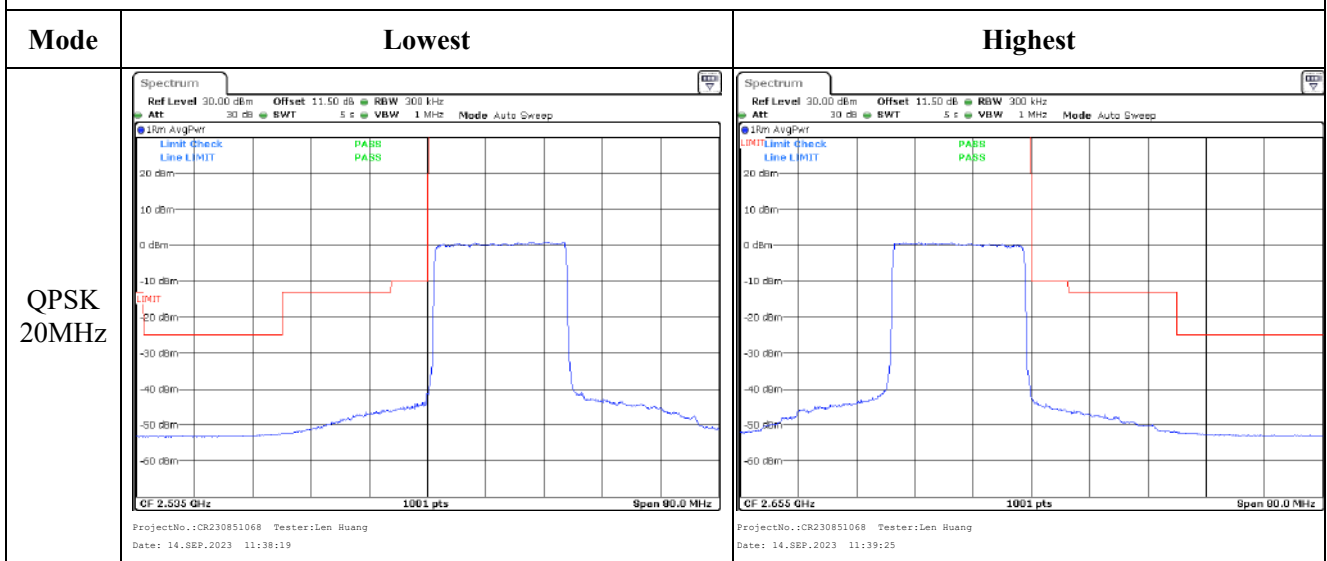
Out of band emission, Band Edge



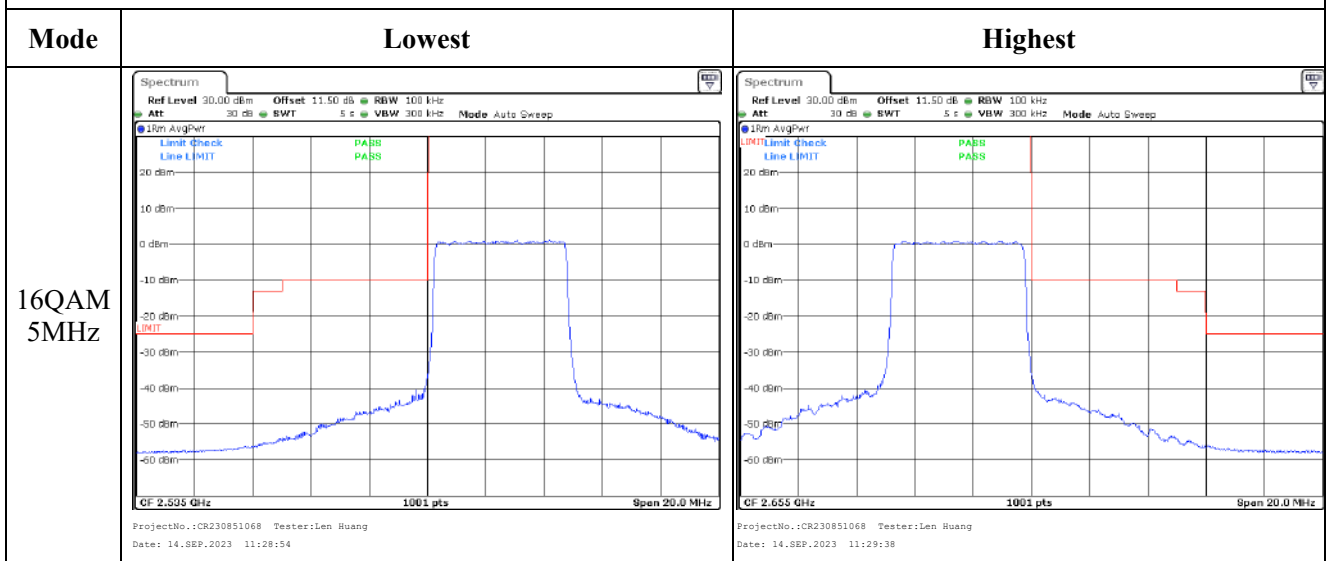
Out of band emission, Band Edge



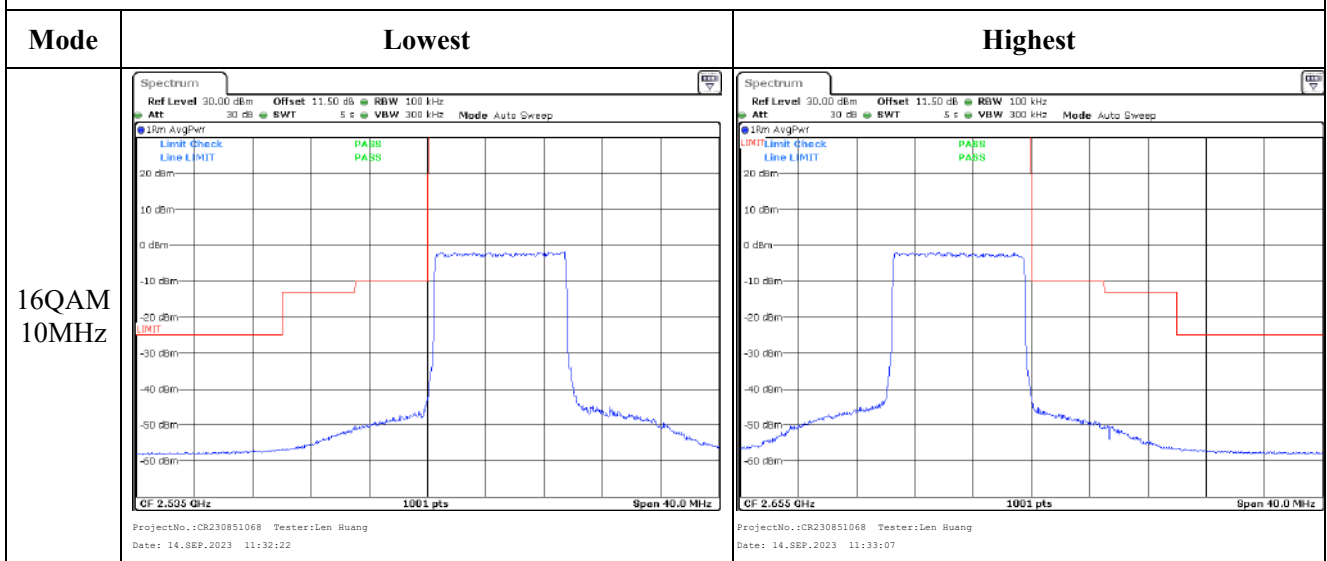
Out of band emission, Band Edge



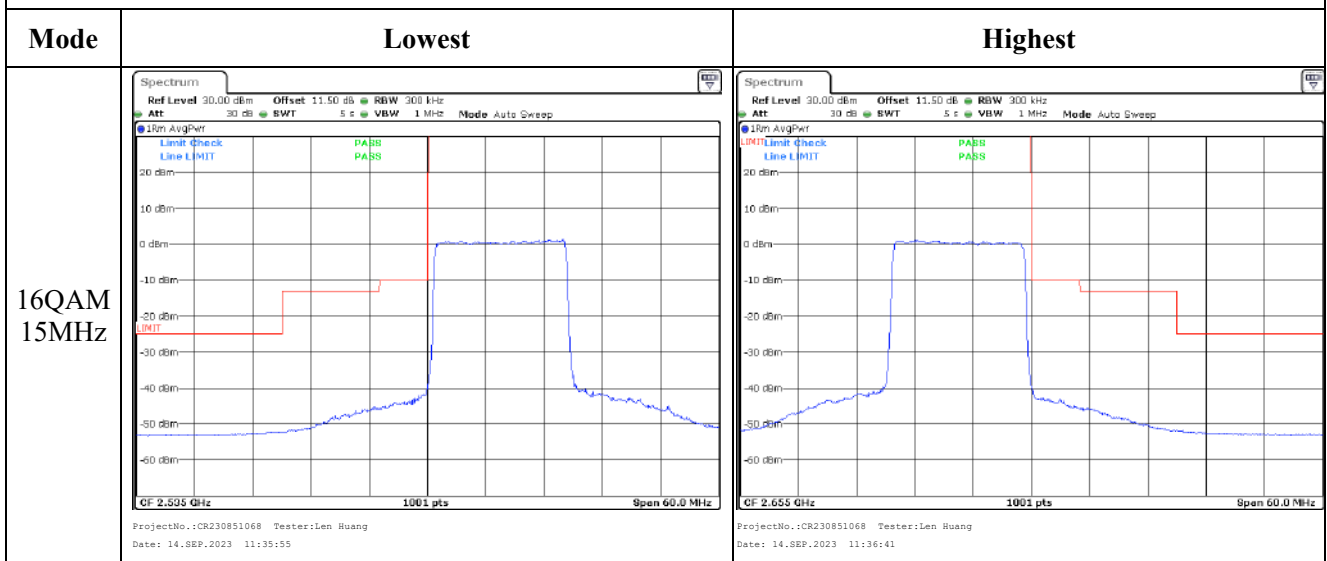
Out of band emission, Band Edge



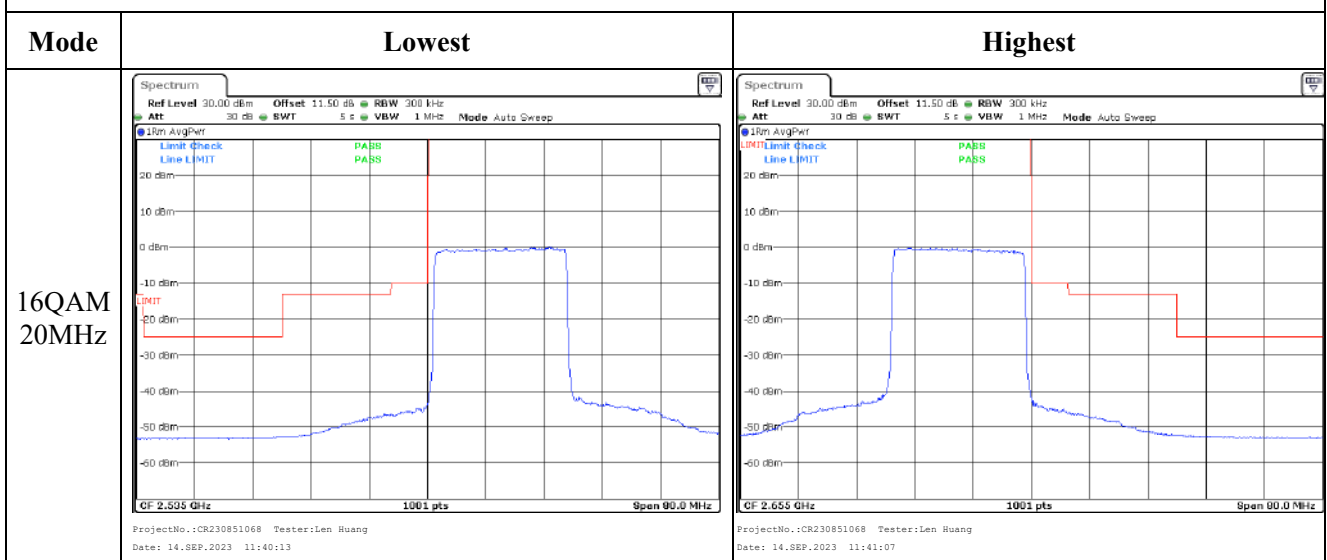
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.16 Radiated Spurious Emissions

Serial Number:	2AQ7-5	Test Date:	Below 1GHz: 2023/9/29 Above 1GHz: 2023/8/12
Test Site:	966-1, 966-2	Test Mode:	Transmitting
Tester:	Mack Huang, Vic Du	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~26.5	Relative Humidity: (%)	52~57	ATM Pressure: (kPa)	99.7~100.7
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Below 1GHz					
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Sonoma	Amplifier	310N	186165	2023/7/16	2024/7/15
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	2022/7/16	2024/7/15
Agilent	Signal Generator	E8247C	MY43321352	2022/11/18	2023/11/17
Above 1GHz					
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200- 70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362- 300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/9	2023/11/8
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	2022/7/16	2024/7/15
Agilent	Signal Generator	E8247C	MY43321352	2022/11/18	2023/11/17
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/2/5	2024/2/4
PASTERNAK	Horn Antenna	PE9852/2F-20	112001	2021/2/5	2024/2/4
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2022/9/16	2023/9/15
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2021/2/5	2024/2/4
PASTERNAK	Horn Antenna	PE9850/2F-20	072002	2021/2/5	2024/2/4
MICRO-COAX	Coaxial Cable	UFB142A-1-2362- 200200	235772-001	2023/8/6	2024/8/5

*** 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 Data:

Please refer to the below table and plots.

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

Cellular Band (30MHz-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM 850 Frequency:824.2MHz								
729.30	H	20.71	-52.02	0.00	0.53	-52.55	-13.00	39.55
679.96	V	20.62	-49.66	0.00	0.52	-50.18	-13.00	37.18
1648.400	H	42.77	-61.56	8.68	0.80	-53.68	-13.00	40.68
1648.400	V	39.06	-65.35	8.68	0.80	-57.47	-13.00	44.47
2472.600	H	42.43	-58.35	9.38	1.00	-49.97	-13.00	36.97
2472.600	V	38.09	-62.64	9.38	1.00	-54.26	-13.00	41.26
3296.800	H	31.18	-65.50	10.32	1.15	-56.33	-13.00	43.33
3296.800	V	31.81	-64.63	10.32	1.15	-55.46	-13.00	42.46
GSM 850 Frequency:836.6MHz								
912.59	H	21.42	-47.04	0.00	0.56	-47.60	-13.00	34.60
724.22	V	20.36	-49.03	0.00	0.51	-49.54	-13.00	36.54
1673.200	H	51.84	-52.47	8.71	0.85	-44.61	-13.00	31.61
1673.200	V	50.62	-53.79	8.71	0.85	-45.93	-13.00	32.93
2509.800	H	54.60	-46.01	9.42	1.01	-37.60	-13.00	24.60
2509.800	V	52.09	-48.53	9.42	1.01	-40.12	-13.00	27.12
3346.400	H	45.73	-51.44	10.34	1.16	-42.26	-13.00	29.26
3346.400	V	46.16	-50.87	10.34	1.16	-41.69	-13.00	28.69
GSM 850 Frequency:848.8MHz								
675.21	H	21.46	-51.99	0.00	0.50	-52.49	-13.00	39.49
219.32	V	20.66	-58.09	0.00	0.27	-58.36	-13.00	45.36
1697.600	H	42.57	-61.72	8.74	0.90	-53.88	-13.00	40.88
1697.600	V	40.59	-63.83	8.74	0.90	-55.99	-13.00	42.99
2546.400	H	43.72	-56.61	9.47	1.01	-48.15	-13.00	35.15
2546.400	V	41.04	-59.24	9.47	1.01	-50.78	-13.00	37.78
3395.200	H	31.91	-65.78	10.36	1.19	-56.61	-13.00	43.61
3395.200	V	33.86	-63.80	10.36	1.19	-54.63	-13.00	41.63

PCS Band (30MHz-20GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM 1900 Frequency:1850.2MHz								
210.79	H	38.25	-74.43	0.00	0.26	-74.69	-13.00	61.69
45.22	V	36.38	-60.13	-19.59	0.12	-79.84	-13.00	66.84
3700.400	H	33.98	-63.34	10.60	1.25	-53.99	-13.00	40.99
3700.400	V	36.69	-60.61	10.60	1.25	-51.26	-13.00	38.26
5550.600	H	41.68	-51.58	11.44	1.49	-41.63	-13.00	28.63
5550.600	V	39.82	-53.28	11.44	1.49	-43.33	-13.00	30.33
GSM 1900 Frequency:1880MHz								
219.84	H	37.47	-75.03	0.00	0.27	-75.30	-13.00	62.30
44.90	V	36.75	-59.42	-19.93	0.12	-79.47	-13.00	66.47
3760.000	H	33.30	-63.11	10.66	1.24	-53.69	-13.00	40.69
3760.000	V	34.91	-61.38	10.66	1.24	-51.96	-13.00	38.96
5640.000	H	41.45	-52.00	11.33	1.54	-42.21	-13.00	29.21
5640.000	V	39.28	-54.05	11.33	1.54	-44.26	-13.00	31.26
GSM 1900 Frequency:1909.8MHz								
93.84	H	37.02	-75.76	0.00	0.18	-75.94	-13.00	62.94
44.59	V	37.65	-58.11	-20.35	0.12	-78.58	-13.00	65.58
3819.600	H	34.71	-61.15	10.72	1.29	-51.72	-13.00	38.72
3819.600	V	32.39	-63.33	10.72	1.29	-53.90	-13.00	40.90
5729.400	H	40.94	-52.54	11.22	1.59	-42.91	-13.00	29.91
5729.400	V	38.42	-54.94	11.22	1.59	-45.31	-13.00	32.31

WCDMA Band 2(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band II, Frequency:1852.4 MHz								
189.76	H	36.60	-76.09	0.00	0.26	-76.35	-13.00	63.35
44.59	V	36.74	-59.02	-20.35	0.12	-79.49	-13.00	66.49
3704.800	H	33.34	-63.92	10.60	1.25	-54.57	-13.00	41.57
3704.800	V	34.91	-62.32	10.60	1.25	-52.97	-13.00	39.97
5557.200	H	34.67	-58.61	11.43	1.49	-48.67	-13.00	35.67
5557.200	V	32.69	-60.44	11.43	1.49	-50.50	-13.00	37.50
WCDMA Band II, Frequency:1880 MHz								
213.02	H	37.13	-75.50	0.00	0.27	-75.77	-13.00	62.77
68.84	V	37.50	-65.50	-5.61	0.15	-71.26	-13.00	58.26
3760.000	H	34.40	-62.01	10.66	1.24	-52.59	-13.00	39.59
3760.000	V	35.80	-60.49	10.66	1.24	-51.07	-13.00	38.07
5640.000	H	35.22	-58.23	11.33	1.54	-48.44	-13.00	35.44
5640.000	V	34.84	-58.49	11.33	1.54	-48.70	-13.00	35.70
WCDMA Band II, Frequency:1907.6MHz								
208.58	H	36.76	-75.96	0.00	0.26	-76.22	-13.00	63.22
93.37	V	36.24	-72.31	0.00	0.18	-72.49	-13.00	59.49
3815.200	H	33.49	-62.36	10.72	1.29	-52.93	-13.00	39.93
3815.200	V	33.11	-62.58	10.72	1.29	-53.15	-13.00	40.15
5722.800	H	37.29	-56.20	11.23	1.58	-46.55	-13.00	33.55
5722.800	V	37.71	-55.64	11.23	1.58	-45.99	-13.00	32.99

WCDMA Band 4(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:			1712.4	MHz				
213.02	H	36.51	-76.12	0.00	0.27	-76.39	-13.00	63.39
44.59	V	38.66	-57.10	-20.35	0.12	-77.57	-13.00	64.57
3424.800	H	38.05	-59.72	10.37	1.17	-50.52	-13.00	37.52
3424.800	V	37.32	-60.42	10.37	1.17	-51.22	-13.00	38.22
5137.200	H	32.92	-60.70	11.28	1.46	-50.88	-13.00	37.88
5137.200	V	33.66	-59.84	11.28	1.46	-50.02	-13.00	37.02
Frequency:			1732.6	MHz				
91.25	H	36.52	-76.43	0.00	0.18	-76.61	-13.00	63.61
44.74	V	36.97	-59.00	-20.14	0.12	-79.26	-13.00	66.26
3465.200	H	36.42	-61.39	10.39	1.15	-52.15	-13.00	39.15
3465.200	V	36.42	-61.35	10.39	1.15	-52.11	-13.00	39.11
5197.800	H	35.91	-58.22	11.32	1.44	-48.34	-13.00	35.34
5197.800	V	35.03	-58.95	11.32	1.44	-49.07	-13.00	36.07
Frequency:			1752.6	MHz				
216.02	H	36.56	-76.01	0.00	0.27	-76.28	-13.00	63.28
43.81	V	36.12	-58.64	-21.37	0.12	-80.13	-13.00	67.13
3505.200	H	33.12	-64.71	10.41	1.18	-55.48	-13.00	42.48
3505.200	V	34.19	-63.58	10.41	1.18	-54.35	-13.00	41.35
5257.800	H	37.01	-56.72	11.35	1.47	-46.84	-13.00	33.84
5257.800	V	35.66	-57.85	11.35	1.47	-47.97	-13.00	34.97

WCDMA Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band 5 Frequency:826.4 MHz								
932.27	H	20.44	-47.54	0.00	0.64	-48.18	-13.00	35.18
198.91	V	20.07	-57.97	0.00	0.26	-58.23	-13.00	45.23
1652.800	H	38.17	-66.16	8.68	0.81	-58.29	-13.00	45.29
1652.800	V	38.04	-66.37	8.68	0.81	-58.50	-13.00	45.50
2479.200	H	37.15	-63.61	9.39	1.01	-55.23	-13.00	42.23
2479.200	V	36.17	-64.56	9.39	1.01	-56.18	-13.00	43.18
3305.600	H	32.70	-64.03	10.32	1.15	-54.86	-13.00	41.86
3305.600	V	33.46	-63.04	10.32	1.15	-53.87	-13.00	40.87
WCDMA Band 5 Frequency:836.6MHz								
345.94	H	19.86	-58.84	0.00	0.37	-59.21	-13.00	46.21
131.10	V	20.35	-55.12	0.00	0.21	-55.33	-13.00	42.33
1673.200	H	42.38	-61.93	8.71	0.85	-54.07	-13.00	41.07
1673.200	V	39.32	-65.09	8.71	0.85	-57.23	-13.00	44.23
2509.800	H	35.39	-65.22	9.42	1.01	-56.81	-13.00	43.81
2509.800	V	35.00	-65.62	9.42	1.01	-57.21	-13.00	44.21
3346.400	H	34.05	-63.12	10.34	1.16	-53.94	-13.00	40.94
3346.400	V	31.63	-65.40	10.34	1.16	-56.22	-13.00	43.22
WCDMA Band 5 Frequency:846.6MHz								
724.44	H	20.90	-51.93	0.00	0.51	-52.44	-13.00	39.44
993.01	V	20.67	-43.64	0.00	0.64	-44.28	-13.00	31.28
1693.200	H	46.04	-58.26	8.73	0.89	-50.42	-13.00	37.42
1693.200	V	40.70	-63.72	8.73	0.89	-55.88	-13.00	42.88
2539.800	H	35.73	-64.65	9.46	1.01	-56.20	-13.00	43.20
2539.800	V	36.52	-63.82	9.46	1.01	-55.37	-13.00	42.37
3386.400	H	32.52	-65.07	10.35	1.18	-55.90	-13.00	42.90
3386.400	V	33.37	-64.17	10.35	1.18	-55.00	-13.00	42.00

LTE Bands:

(The Worst modulation and bandwidth was below)

LTE Band 2(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency:1850.7 MHz								
211.53	H	36.39	-76.27	0.00	0.26	-76.53	-13.00	63.53
68.36	V	36.25	-66.92	-5.87	0.15	-72.94	-13.00	59.94
3701.400	H	33.28	-64.03	10.60	1.25	-54.68	-13.00	41.68
3701.400	V	34.84	-62.45	10.60	1.25	-53.10	-13.00	40.10
5552.100	H	43.71	-49.56	11.44	1.49	-39.61	-13.00	26.61
5552.100	V	36.55	-56.55	11.44	1.49	-46.60	-13.00	33.60
QPSK, 1.4MHz, Frequency:1880 MHz								
91.89	H	36.41	-76.50	0.00	0.18	-76.68	-13.00	63.68
44.59	V	36.38	-59.38	-20.35	0.12	-79.85	-13.00	66.85
3760.000	H	33.13	-63.28	10.66	1.24	-53.86	-13.00	40.86
3760.000	V	33.04	-63.25	10.66	1.24	-53.83	-13.00	40.83
5640.000	H	42.04	-51.41	11.33	1.54	-41.62	-13.00	28.62
5640.000	V	41.54	-51.79	11.33	1.54	-42.00	-13.00	29.00
QPSK, 1.4MHz, Frequency:1909.3 MHz								
205.68	H	36.68	-76.10	0.00	0.26	-76.36	-13.00	63.36
43.81	V	36.11	-58.65	-21.37	0.12	-80.14	-13.00	67.14
3818.600	H	32.01	-63.85	10.72	1.29	-54.42	-13.00	41.42
3818.600	V	32.82	-62.89	10.72	1.29	-53.46	-13.00	40.46
5727.900	H	43.87	-49.61	11.23	1.59	-39.97	-13.00	26.97
5727.900	V	40.34	-53.02	11.23	1.59	-43.38	-13.00	30.38

LTE Band 4(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency:			1710.7	MHz				
225.30	H	36.71	-75.68	0.00	0.28	-75.96	-13.00	62.96
44.59	V	35.00	-60.76	-20.35	0.12	-81.23	-13.00	68.23
3421.400	H	41.40	-56.36	10.37	1.17	-47.16	-13.00	34.16
3421.400	V	40.93	-56.80	10.37	1.17	-47.60	-13.00	34.60
5132.100	H	41.27	-52.30	11.28	1.47	-42.49	-13.00	29.49
5132.100	V	39.67	-53.79	11.28	1.47	-43.98	-13.00	30.98
1.4MHz QPSK, Frequency:			1732.5	MHz				
214.51	H	36.96	-75.64	0.00	0.27	-75.91	-13.00	62.91
68.60	V	35.79	-67.30	-5.74	0.15	-73.19	-13.00	60.19
3465.000	H	36.21	-61.60	10.39	1.15	-52.36	-13.00	39.36
3465.000	V	37.89	-59.88	10.39	1.15	-50.64	-13.00	37.64
5197.500	H	45.02	-49.11	11.32	1.44	-39.23	-13.00	26.23
5197.500	V	41.34	-52.64	11.32	1.44	-42.76	-13.00	29.76
1.4MHz QPSK, Frequency:			1754.3	MHz				
309.88	H	37.15	-73.42	0.00	0.34	-73.76	-13.00	60.76
45.06	V	35.22	-61.14	-19.74	0.12	-81.00	-13.00	68.00
3508.600	H	34.52	-63.30	10.41	1.19	-54.08	-13.00	41.08
3508.600	V	37.30	-60.46	10.41	1.19	-51.24	-13.00	38.24
5262.900	H	40.86	-52.84	11.36	1.47	-42.95	-13.00	29.95
5262.900	V	36.97	-56.50	11.36	1.47	-46.61	-13.00	33.61

LTE Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency: 824.7 MHz								
942.13	H	21.50	-46.24	0.00	0.62	-46.86	-13.00	33.86
845.09	V	21.09	-45.92	0.00	0.57	-46.49	-13.00	33.49
1649.400	H	41.90	-62.43	8.68	0.80	-54.55	-13.00	41.55
1649.400	V	38.83	-65.58	8.68	0.80	-57.70	-13.00	44.70
2474.100	H	40.33	-60.45	9.38	1.00	-52.07	-13.00	39.07
2474.100	V	41.23	-59.50	9.38	1.00	-51.12	-13.00	38.12
3298.800	H	35.85	-60.83	10.32	1.15	-51.66	-13.00	38.66
3298.800	V	34.17	-62.27	10.32	1.15	-53.10	-13.00	40.10
QPSK, 1.4MHz, Frequency: 836.5 MHz								
724.45	H	21.11	-51.72	0.00	0.51	-52.23	-13.00	39.23
640.79	V	20.75	-50.24	0.00	0.52	-50.76	-13.00	37.76
1673.000	H	45.57	-58.74	8.71	0.85	-50.88	-13.00	37.88
1673.000	V	39.37	-65.04	8.71	0.85	-57.18	-13.00	44.18
2509.500	H	35.81	-64.80	9.42	1.01	-56.39	-13.00	43.39
2509.500	V	37.43	-63.19	9.42	1.01	-54.78	-13.00	41.78
3346.000	H	35.70	-61.46	10.34	1.16	-52.28	-13.00	39.28
3346.000	V	34.87	-62.15	10.34	1.16	-52.97	-13.00	39.97
QPSK, 1.4MHz, Frequency: 848.3 MHz								
442.08	H	21.20	-55.81	0.00	0.42	-56.23	-13.00	43.23
670.64	V	20.56	-49.89	0.00	0.50	-50.39	-13.00	37.39
1696.600	H	49.21	-55.08	8.74	0.89	-47.23	-13.00	34.23
1696.600	V	43.25	-61.17	8.74	0.89	-53.32	-13.00	40.32
2544.900	H	35.93	-64.41	9.47	1.01	-55.95	-13.00	42.95
2544.900	V	36.65	-63.65	9.47	1.01	-55.19	-13.00	42.19
3393.200	H	36.89	-60.78	10.36	1.19	-51.61	-13.00	38.61
3393.200	V	34.99	-62.64	10.36	1.19	-53.47	-13.00	40.47

LTE Band 7(30MHz-26.5GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2502.5 MHz								
219.84	H	36.08	-76.42	0.00	0.27	-76.69	-25.00	51.69
45.06	V	36.22	-60.14	-19.74	0.12	-80.00	-25.00	55.00
5005.000	H	43.48	-49.48	11.20	1.47	-39.75	-25.00	14.75
5005.000	V	42.54	-50.28	11.20	1.47	-40.55	-25.00	15.55
7507.500	H	37.84	-51.95	10.90	1.95	-43.00	-25.00	18.00
7507.500	V	38.81	-51.48	10.90	1.95	-42.53	-25.00	17.53
5MHz QPSK, Frequency: 2535 MHz								
205.68	H	35.59	-77.19	0.00	0.26	-77.45	-25.00	52.45
44.74	V	36.18	-59.79	-20.14	0.12	-80.05	-25.00	55.05
5070.000	H	44.77	-48.42	11.24	1.47	-38.65	-25.00	13.65
5070.000	V	41.46	-51.63	11.24	1.47	-41.86	-25.00	16.86
7605.000	H	37.84	-51.63	10.88	2.01	-42.76	-25.00	17.76
7605.000	V	39.16	-51.03	10.88	2.01	-42.16	-25.00	17.16
5MHz QPSK, Frequency: 2567.5 MHz								
213.76	H	36.63	-75.99	0.00	0.27	-76.26	-25.00	51.26
44.90	V	36.26	-59.91	-19.93	0.12	-79.96	-25.00	54.96
5135.000	H	49.37	-44.23	11.28	1.47	-34.42	-25.00	9.42
5135.000	V	40.14	-53.35	11.28	1.47	-43.54	-25.00	18.54
7702.500	H	36.88	-52.64	10.86	1.97	-43.75	-25.00	18.75
7702.500	V	38.72	-51.46	10.86	1.97	-42.57	-25.00	17.57

LTE Band 38 (30MHz-26.5GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2572.5 MHz								
216.02	H	36.56	-76.01	0.00	0.27	-76.28	-25.00	51.28
44.90	V	36.37	-59.80	-19.93	0.12	-79.85	-25.00	54.85
5145.000	H	47.58	-46.10	11.29	1.44	-36.25	-25.00	11.25
5145.000	V	42.23	-51.34	11.29	1.44	-41.49	-25.00	16.49
7717.500	H	36.69	-52.82	10.86	1.99	-43.95	-25.00	18.95
7717.500	V	39.52	-50.61	10.86	1.99	-41.74	-25.00	16.74
5MHz QPSK, Frequency: 2595 MHz								
222.94	H	36.49	-75.95	0.00	0.28	-76.23	-25.00	51.23
44.59	V	37.34	-58.42	-20.35	0.12	-78.89	-25.00	53.89
5190.000	H	41.51	-52.56	11.31	1.44	-42.69	-25.00	17.69
5190.000	V	38.54	-55.38	11.31	1.44	-45.51	-25.00	20.51
7785.000	H	36.80	-52.69	10.84	1.99	-43.84	-25.00	18.84
7785.000	V	39.56	-50.36	10.84	1.99	-41.51	-25.00	16.51
5MHz QPSK, Frequency: 2617.5 MHz								
219.07	H	36.42	-76.09	0.00	0.27	-76.36	-25.00	51.36
68.12	V	36.25	-67.00	-6.00	0.15	-73.15	-25.00	48.15
5235.000	H	45.13	-48.77	11.34	1.46	-38.89	-25.00	13.89
5235.000	V	40.31	-53.40	11.34	1.46	-43.52	-25.00	18.52
7852.500	H	36.85	-52.34	10.83	2.03	-43.54	-25.00	18.54
7852.500	V	40.63	-48.95	10.83	2.03	-40.15	-25.00	15.15

LTE Band 40 Lower (30MHz-25GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2307.5 MHz								
205.68	H	36.60	-76.18	0.00	0.26	-76.44	-40.00	36.44
67.89	V	36.55	-66.78	-6.12	0.15	-73.05	-40.00	33.05
4615.000	H	42.07	-53.29	10.74	1.41	-43.96	-40.00	3.96
4615.000	V	41.13	-54.09	10.74	1.41	-44.76	-40.00	4.76
6922.500	H	34.03	-56.99	11.22	1.88	-47.65	-40.00	7.65
6922.500	V	33.56	-57.33	11.22	1.88	-47.99	-40.00	7.99
5MHz QPSK, Frequency: 2312.5 MHz								
216.01	H	36.74	-75.83	0.00	0.27	-76.10	-40.00	36.10
44.74	V	36.98	-58.99	-20.14	0.12	-79.25	-40.00	39.25
4625.000	H	42.45	-52.84	10.75	1.41	-43.50	-40.00	3.50
4625.000	V	40.62	-54.55	10.75	1.41	-45.21	-40.00	5.21
6937.500	H	34.56	-56.42	11.21	1.90	-47.11	-40.00	7.11
6937.500	V	34.84	-56.00	11.21	1.90	-46.69	-40.00	6.69

LTE Band 40 Upper (30MHz-25GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 2352.5 MHz								
217.53	H	36.85	-75.69	0.00	0.27	-75.96	-40.00	35.96
68.36	V	36.21	-66.96	-5.87	0.15	-72.98	-40.00	32.98
4705.000	H	41.11	-53.67	10.85	1.41	-44.23	-40.00	4.23
4705.000	V	40.73	-54.07	10.85	1.41	-44.63	-40.00	4.63
7057.500	H	34.52	-55.49	11.17	1.92	-46.24	-40.00	6.24
7057.500	V	33.85	-56.05	11.17	1.92	-46.80	-40.00	6.80
5MHz QPSK, Frequency: 2357.5 MHz								
207.81	H	36.15	-76.59	0.00	0.26	-76.85	-40.00	36.85
68.84	V	36.45	-66.55	-5.61	0.15	-72.31	-40.00	32.31
4715.000	H	40.36	-54.35	10.86	1.41	-44.90	-40.00	4.90
4715.000	V	39.93	-54.78	10.86	1.41	-45.33	-40.00	5.33
7072.500	H	34.29	-55.51	11.16	1.91	-46.26	-40.00	6.26
7072.500	V	35.86	-53.85	11.16	1.91	-44.60	-40.00	4.60

LTE Band 41 (30MHz-26.55GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 5MHz, Frequency: 2537.5 MHz								
210.79	H	35.85	-76.83	0.00	0.26	-77.09	-25.00	52.09
44.74	V	36.17	-59.79	-20.14	0.12	-80.05	-25.00	55.05
5075.000	H	42.87	-50.34	11.25	1.48	-40.57	-25.00	15.57
5075.000	V	39.54	-53.57	11.25	1.48	-43.80	-25.00	18.80
7612.500	H	37.87	-51.61	10.88	2.02	-42.75	-25.00	17.75
7612.500	V	39.63	-50.56	10.88	2.02	-41.70	-25.00	16.70
QPSK, 5MHz, Frequency: 2595 MHz								
219.84	H	35.49	-77.01	0.00	0.27	-77.28	-25.00	52.28
43.35	V	36.51	-57.66	-21.97	0.12	-79.75	-25.00	54.75
5190.000	H	43.72	-50.35	11.31	1.44	-40.48	-25.00	15.48
5190.000	V	44.27	-49.65	11.31	1.44	-39.78	-25.00	14.78
7785.000	H	37.90	-51.59	10.84	1.99	-42.74	-25.00	17.74
7785.000	V	39.59	-50.33	10.84	1.99	-41.48	-25.00	16.48
QPSK, 5MHz, Frequency: 2652.5 MHz								
215.26	H	36.04	-76.55	0.00	0.27	-76.82	-25.00	51.82
44.59	V	36.88	-58.88	-20.35	0.12	-79.35	-25.00	54.35
5305.000	H	51.63	-41.81	11.38	1.46	-31.89	-25.00	6.89
5305.000	V	45.00	-48.18	11.38	1.46	-38.26	-25.00	13.26
7957.500	H	35.68	-52.74	10.81	2.09	-44.02	-25.00	19.02
7957.500	V	38.47	-50.40	10.81	2.09	-41.68	-25.00	16.68

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 3) Margin = Limit - Absolute Level

5. EUT PHOTOGRAPHS

Please refer to the attachment CR230851068-EXP EUT EXTERNAL PHOTOGRAPHS and CR230851068-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR230851068-00E-TSP TEST SETUP PHOTOGRAPHS.

==== END OF REPORT =====