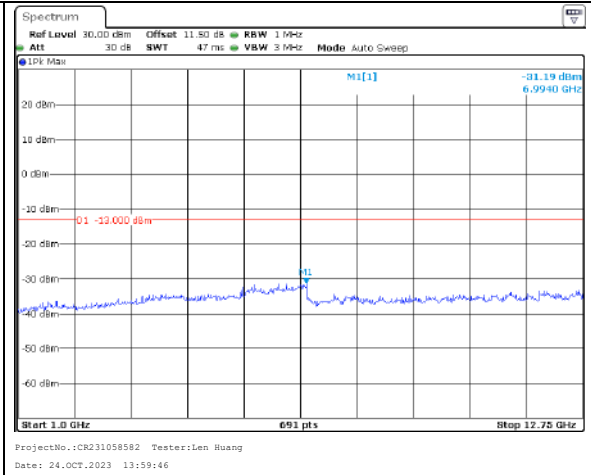
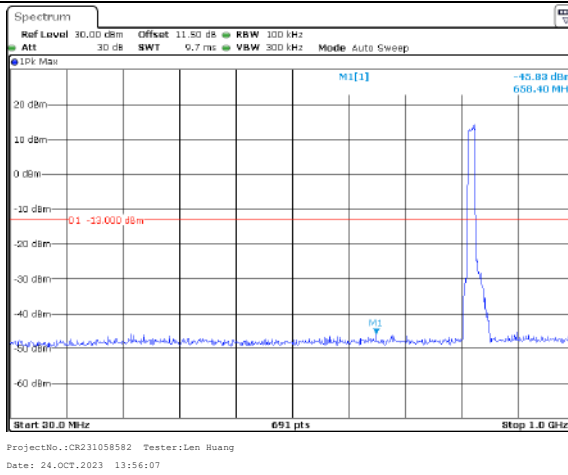
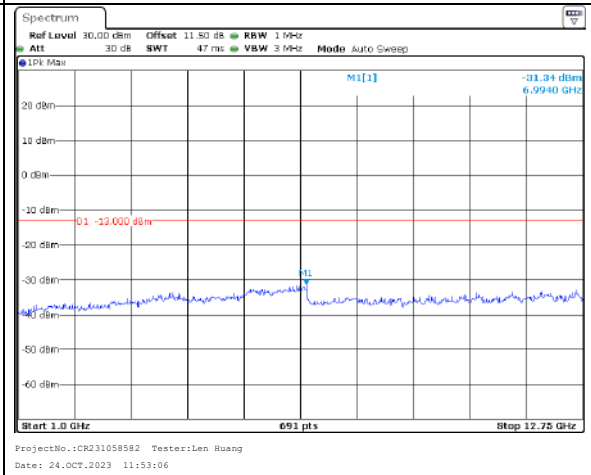
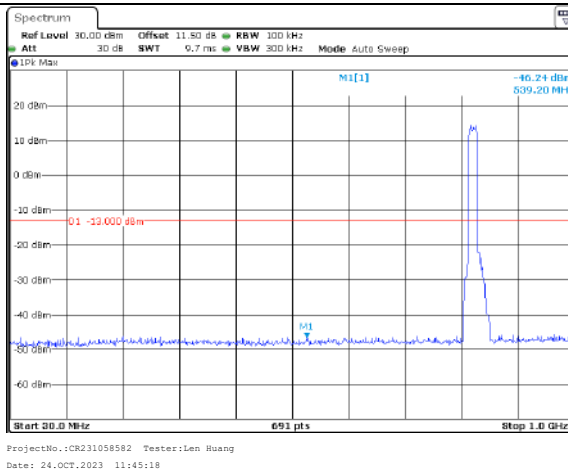


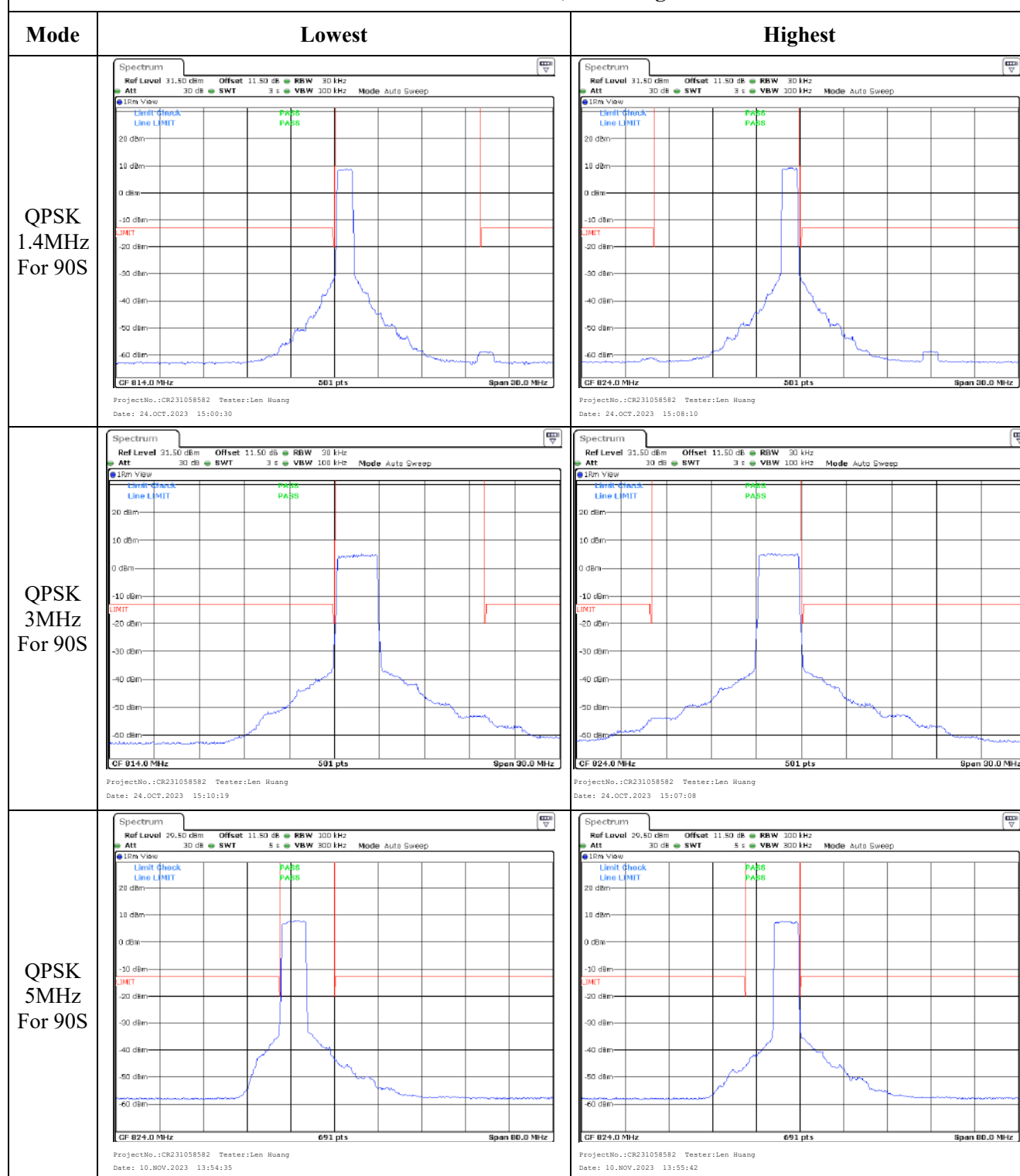
Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

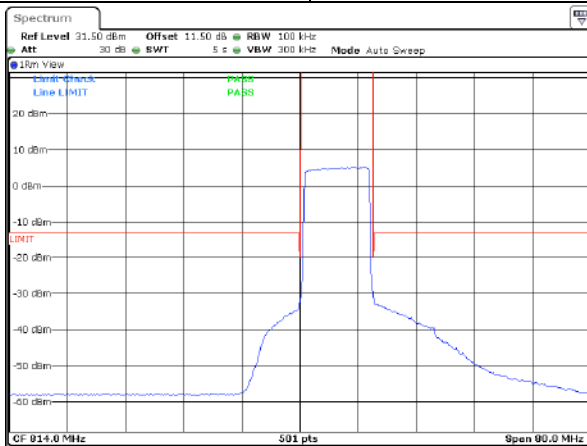
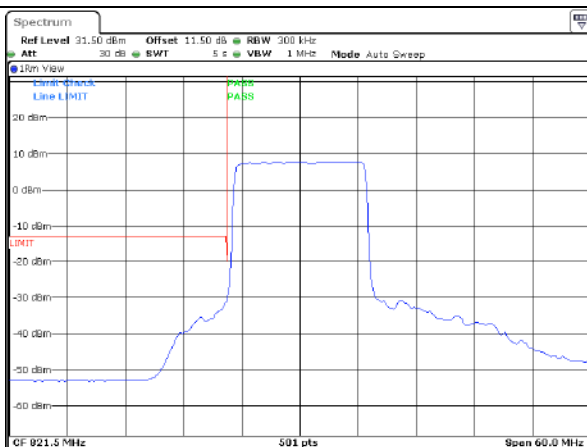
Lowest
For 90SCross
Channel

Out of band emission, Band Edge

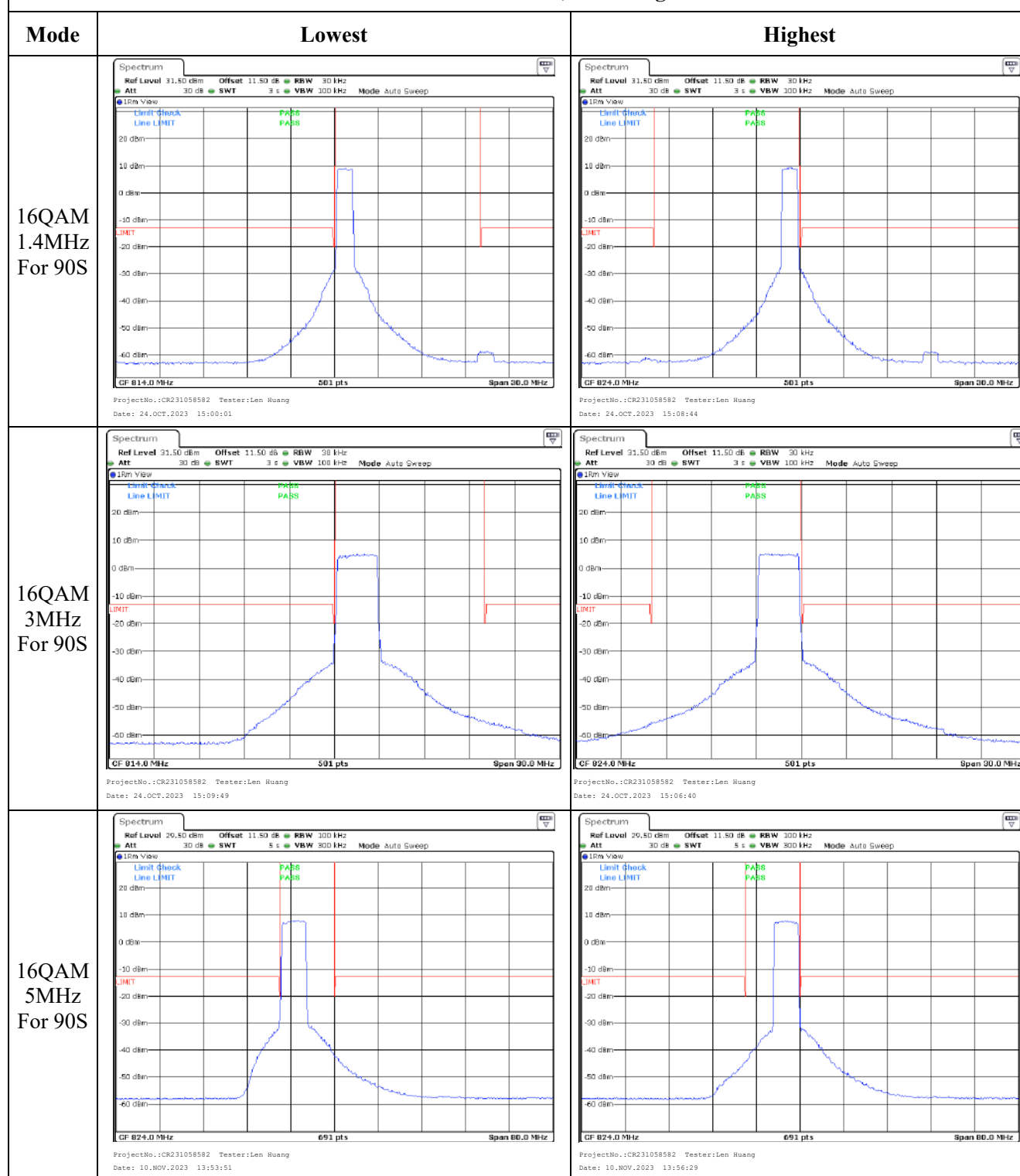


Out of band emission, Band Edge

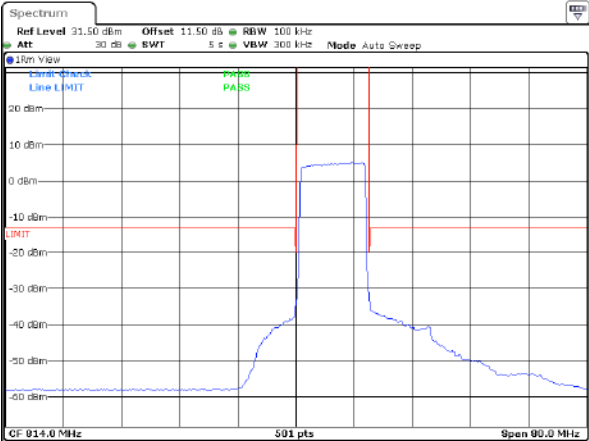
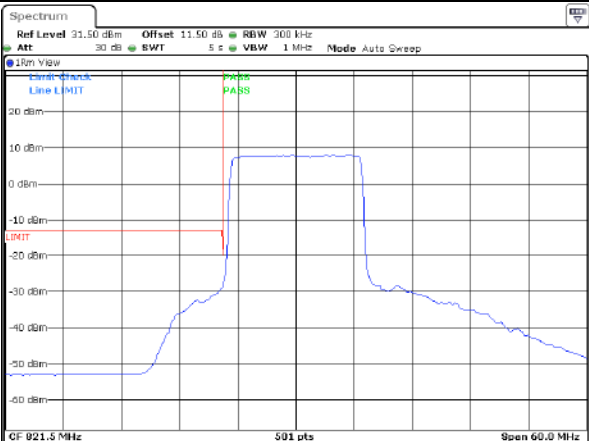
Mode

QPSK
10MHz
For 90SQPSK
15MHz
Across
90S and
22H

Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	
16QAM 10MHz For 90S	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 14:47:05
16QAM 15MHz Across 90S and 22H	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 14:54:13

4.12.3 Test Data for Part 22H:

FCC§2.1046; § 22.913 (a)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H		
1.4MHz QPSK	RB1#0	23.03	23.29	23.14	17.64	38.45
	RB1#3	23.03	23.2	23.30		
	RB1#5	23.05	23.33	23.34		
	RB3#0	24.11	24.49	24.3		
	RB3#3	24.06	24.45	24.31		
	RB6#0	22.25	22.44	22.30		
1.4MHz 16QAM	RB1#0	23	23.06	21.89	16.56	38.45
	RB1#3	23	23.04	22.1		
	RB1#5	22.57	23.10	22.10		
	RB3#0	23.15	23.28	23.35		
	RB3#3	23.25	23.23	23.41		
	RB6#0	22.59	22.50	22.57		
3MHz QPSK	RB1#0	22.99	23.22	23.11	16.45	38.45
	RB1#8	23.1	23.26	23.06		
	RB1#14	23.01	23.3	23.19		
	RB6#0	22.29	22.5	22.18		
	RB6#9	22.08	22.33	22.22		
	RB15#0	22.36	22.28	22.1		
3MHz 16QAM	RB1#0	22.8	22.01	22.49	15.95	38.45
	RB1#8	22.76	21.98	22.44		
	RB1#14	22.73	21.98	22.57		
	RB6#0	22.46	22.80	22.2		
	RB6#9	22.21	22.57	22.43		
	RB15#0	22.43	22.36	22.23		
5MHz QPSK	RB1#0	23.05	23.2	23.21	16.4	38.45
	RB1#13	23.12	23.19	23.13		
	RB1#24	23.08	23.17	23.25		
	RB15#0	22.31	22.54	22.2		
	RB15#10	22.13	22.35	22.15		
	RB25#0	22.01	22.27	22.1		
5MHz 16QAM	RB1#0	22.26	22.32	21.24	15.73	38.45
	RB1#13	22.13	22.34	21.24		
	RB1#24	21.99	22.39	21.45		
	RB15#0	22.19	22.58	22.3		
	RB15#10	22	22.34	22.33		
	RB25#0	22.03	22.48	22.4		

10MHz QPSK	RB1#0	23.18	22.97	23.22	16.52	38.45
	RB1#25	23.12	23.35	23.11		
	RB1#49	23.37	23.33	23.18		
	RB25#0	21.97	22.6	22.18		
	RB25#25	22	22.3	22.22		
	RB50#0	22.09	22.29	22.18		
10MHz 16QAM	RB1#0	22.22	21.76	22.55	15.9	38.45
	RB1#25	22.18	22.13	22.37		
	RB1#49	22.53	22.07	22.56		
	RB25#0	22.25	22.75	22.4		
	RB25#25	22.15	22.59	22.28		
	RB50#0	22.16	22.48	22.3		
15MHz QPSK	RB1#0	23.28	22.99	23.16	16.61	38.45
	RB1#38	23.1	23.23	23.26		
	RB1#74	23.46	23.2	23.31		
	RB36#0	22.04	22.28	22.38		
	RB36#39	22.48	22.21	22.2		
	RB75#0	21.96	22.24	22.33		
15MHz 16QAM	RB1#0	22.2	22.28	22.82	15.98	38.45
	RB1#38	22.15	22.64	22.75		
	RB1#74	22.54	22.55	22.83		
	RB36#0	22.16	22.41	22.4		
	RB36#39	22.7	22.35	22.22		
	RB75#0	22.14	22.39	22.34		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15**Result:****Pass****Peak-to-average Ratio (PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H	
15MHz QPSK	RB1#0	5.42	5.04	4.67	13
	RB75#0	4.96	4.96	5.10	13
15MHz 16QAM	RB1#0	6.06	6.00	5.71	13
	RB75#0	5.68	5.71	6.43	13
				Result:	Pass

FCC §2.1049, §22.905: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Lowest For 22H	Middle For 22H	Highest For 22H	Lowest For 22H	Middle For 22H	Highest For 22H
1.4MHz QPSK	1.10	1.10	1.102	1.25	1.25	1.254
1.4MHz 16QAM	1.102	1.10	1.102	1.266	1.25	1.248
3MHz QPSK	2.695	2.695	2.683	3.012	3.000	3.024
3MHz 16QAM	2.683	2.695	2.695	2.916	3.000	3.012
5MHz QPSK	4.511	4.511	4.511	5.000	4.960	5.000
5MHz 16QAM	4.491	4.531	4.531	4.860	5.000	5.000
10MHz QPSK	8.942	8.942	8.982	9.720	9.760	9.760
10MHz 16QAM	8.942	8.942	8.982	9.720	9.760	9.840
15MHz QPSK	13.413	13.533	13.473	14.820	15.060	14.940
15MHz 16QAM	13.533	13.533	13.473	15.000	14.880	14.760
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §22.917(a): Spurious Emissions at Antenna Terminal

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

FCC §2.1051, §22.917(a): Out of band emission, Band Edge

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

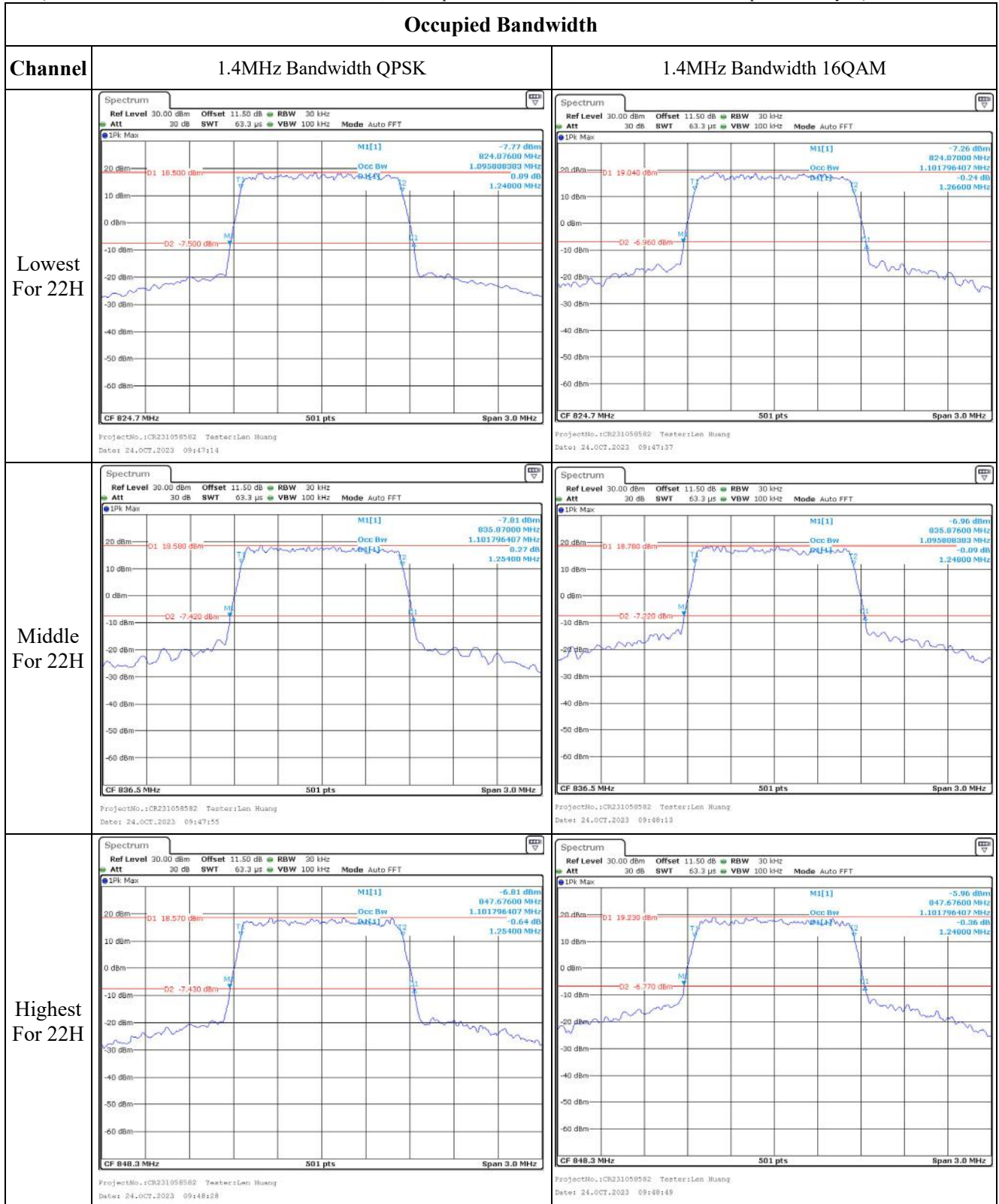
FCC §2.1055, §22.355: Frequency Stability

Test Modulation:	15 MHz QPSK		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	117.125	0.141	2.5
	-20	3.85	107.967	0.130	2.5
	-10	3.85	113.506	0.137	2.5
	0	3.85	112.676	0.136	2.5
	10	3.85	105.663	0.127	2.5
	20	3.85	113.431	0.136	2.5
	30	3.85	112.725	0.136	2.5
	40	3.85	114.006	0.137	2.5
	50	3.85	103.014	0.124	2.5
Frequency Stability vs. Voltage	20	3.27	119.160	0.143	2.5
	20	4.43	102.656	0.123	2.5
Result:				Pass	

FCC §2.1055, §22.355: Frequency Stability					
Test Modulation:	15 MHz 16QAM		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	102.958	0.124	2.5
	-20	3.85	117.717	0.142	2.5
	-10	3.85	107.557	0.129	2.5
	0	3.85	104.789	0.126	2.5
	10	3.85	116.706	0.140	2.5
	20	3.85	102.290	0.123	2.5
	30	3.85	100.895	0.121	2.5
	40	3.85	110.289	0.133	2.5
	50	3.85	116.205	0.140	2.5
Frequency Stability vs. Voltage	20	3.27	118.867	0.143	2.5
	20	4.43	116.997	0.141	2.5
Result:				Pass	

4.12.4 Test Plots for Part 22H:

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

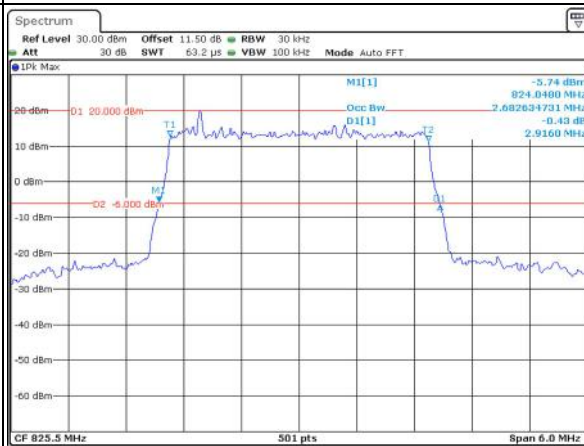
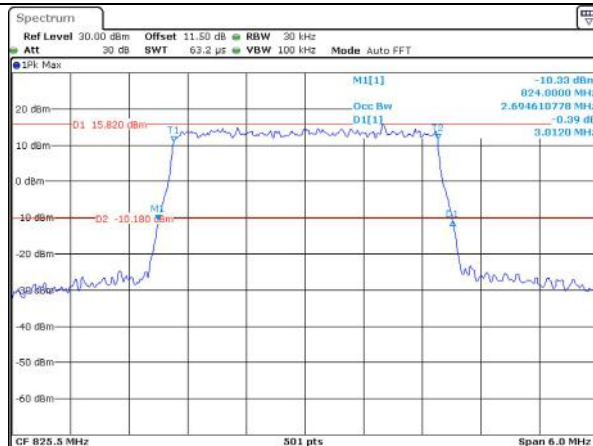
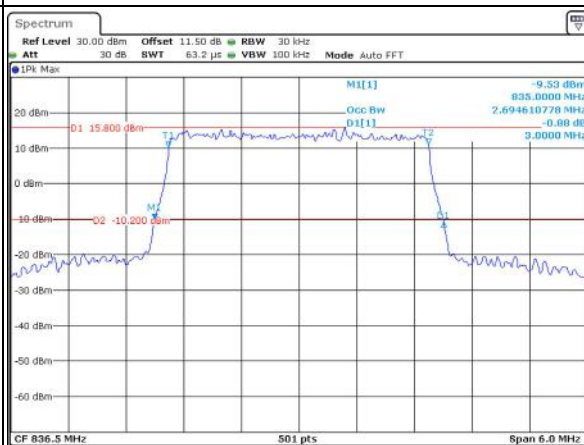
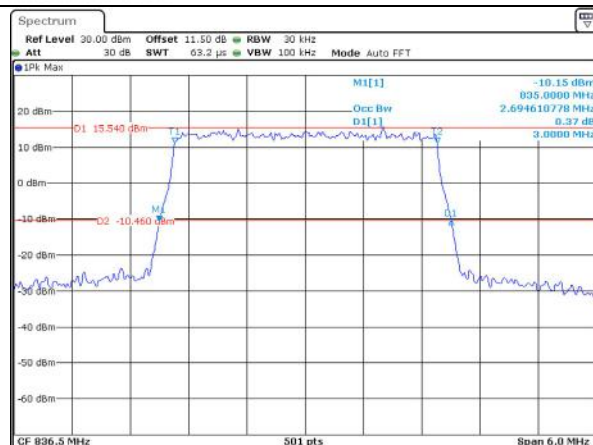
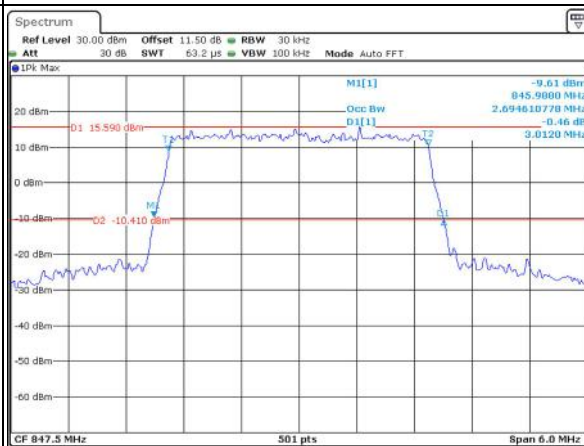
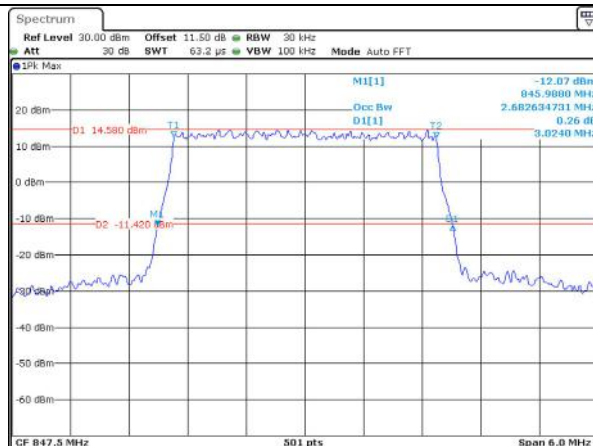


Occupied Bandwidth

Channel

3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

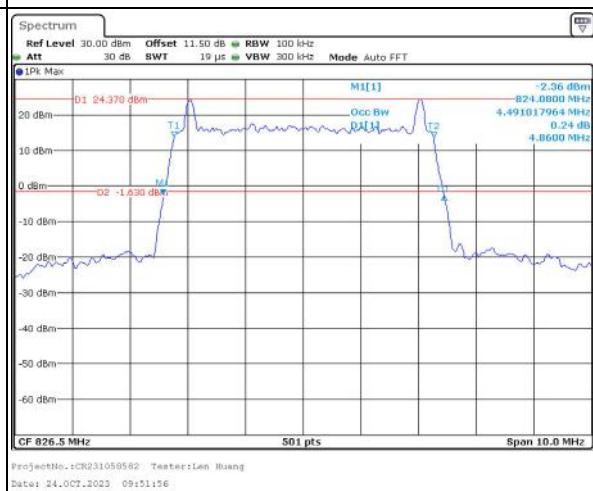
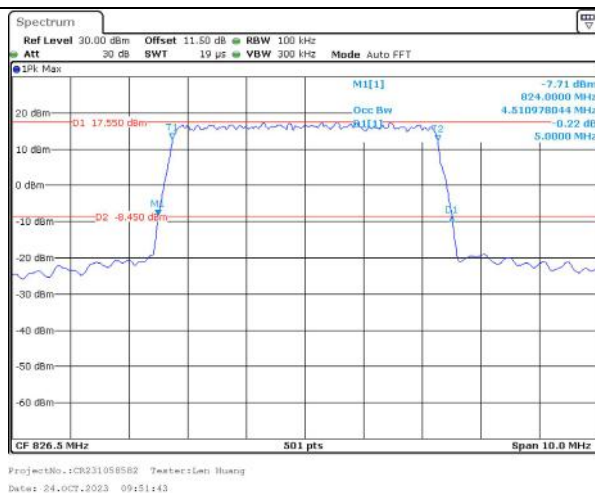
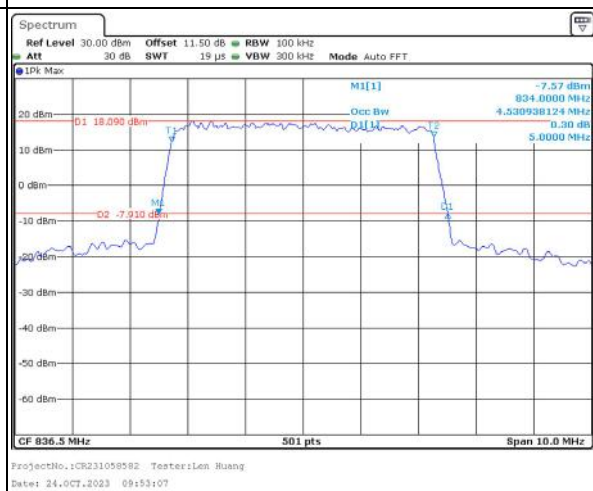
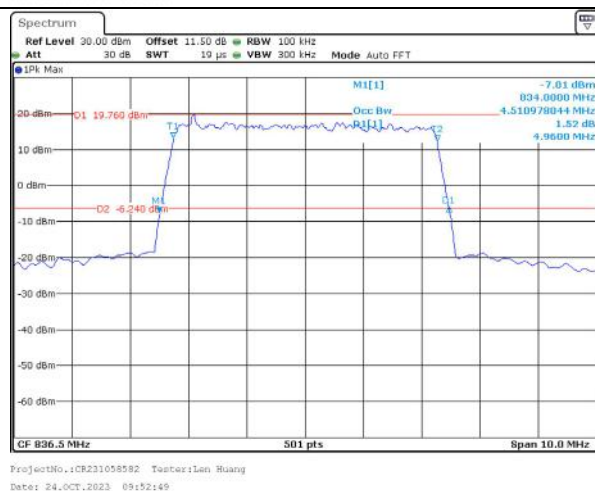
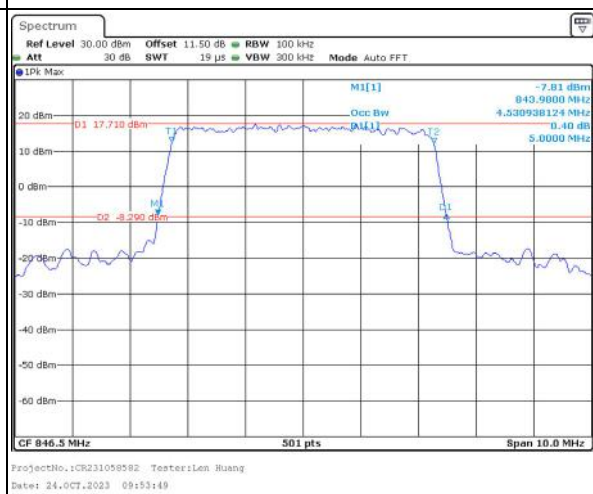
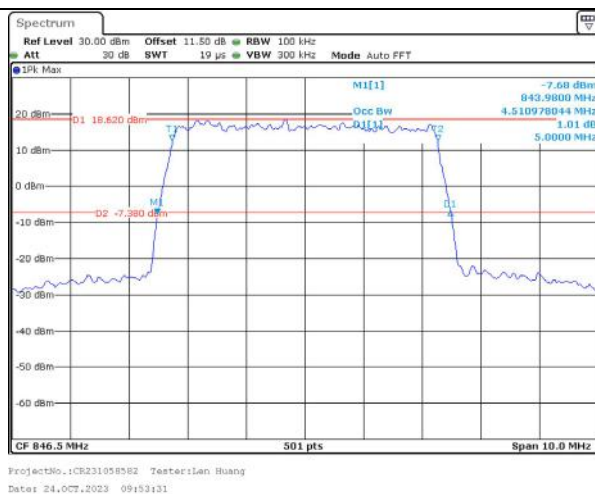
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

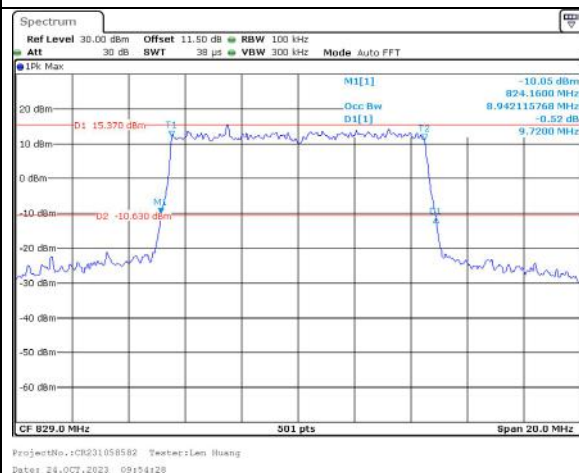
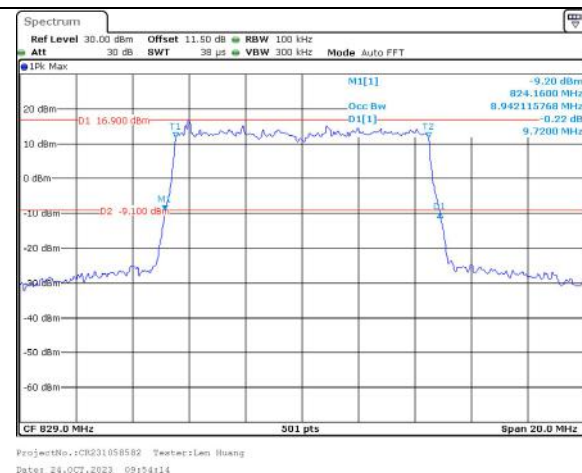
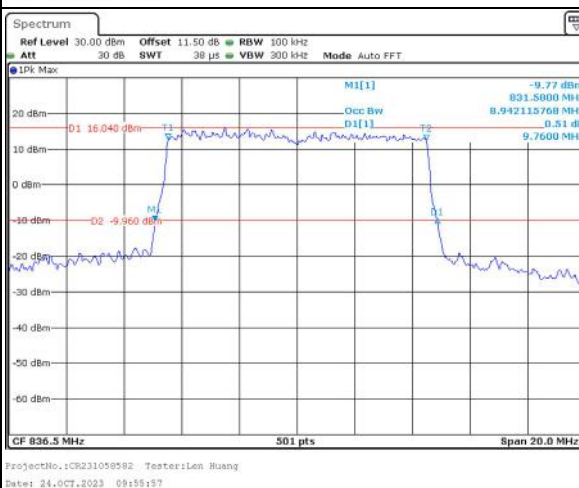
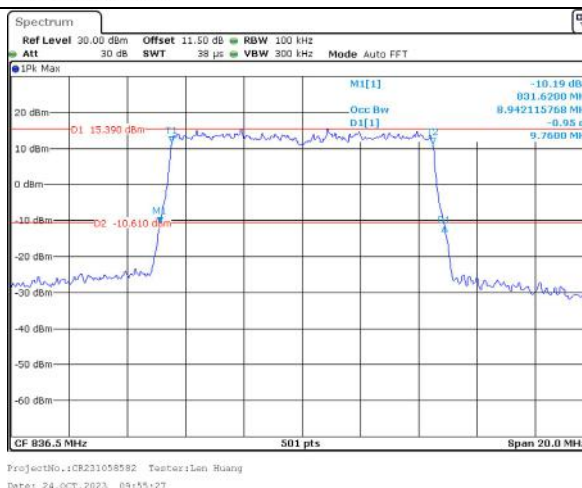
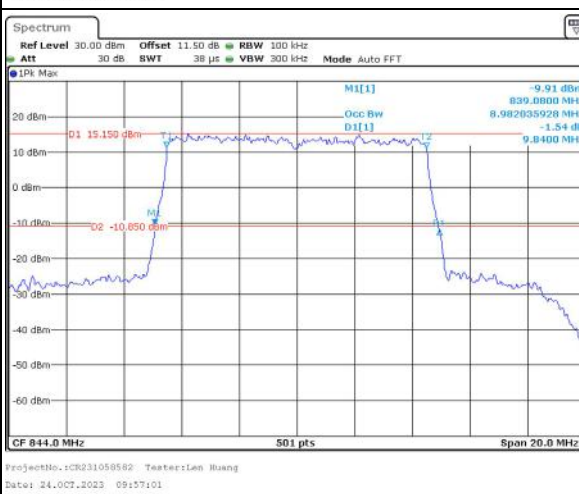
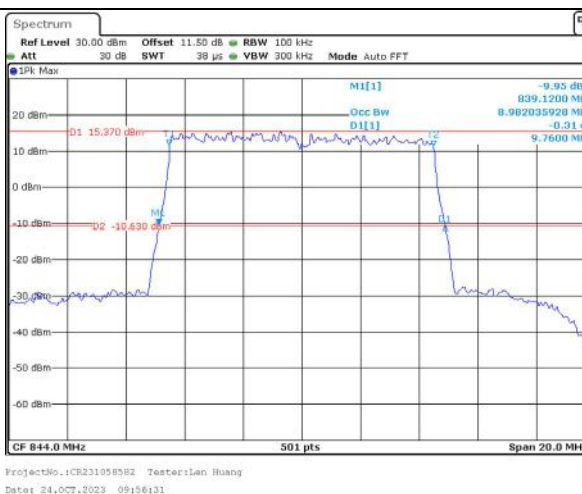
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

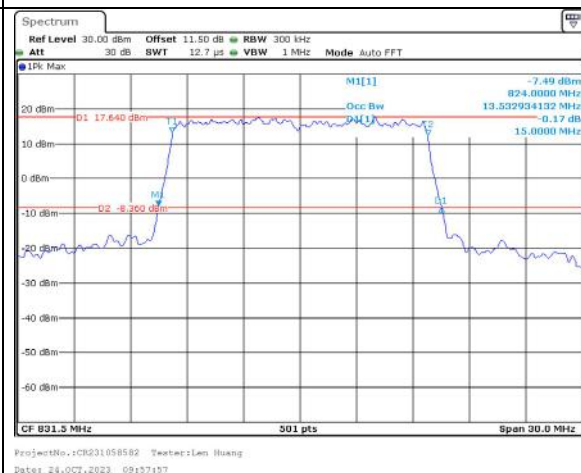
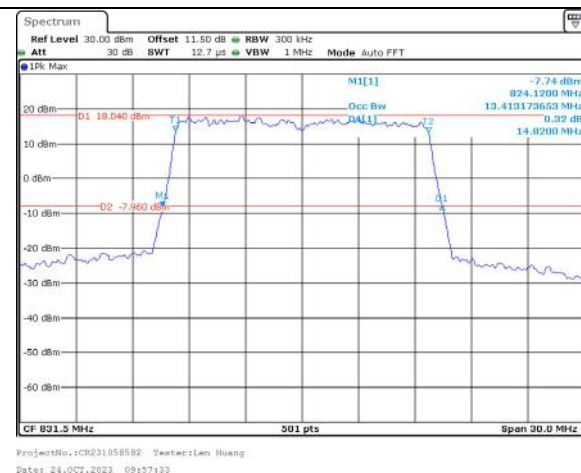
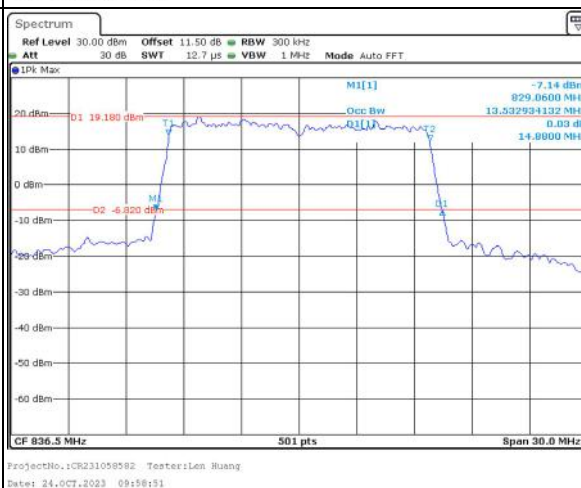
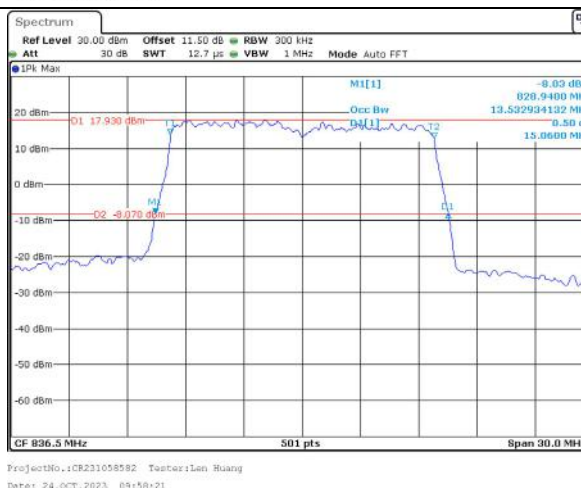
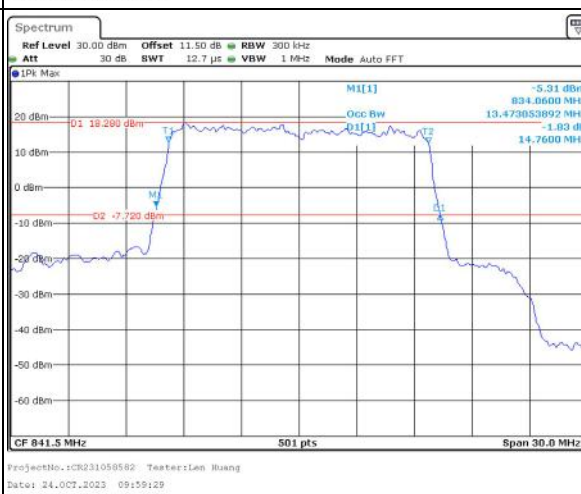
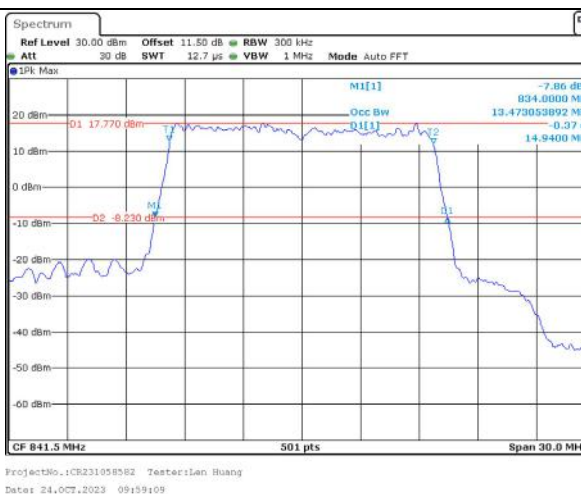
Lowest
For 22HMiddle
For 22HHighest
For 22H

Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

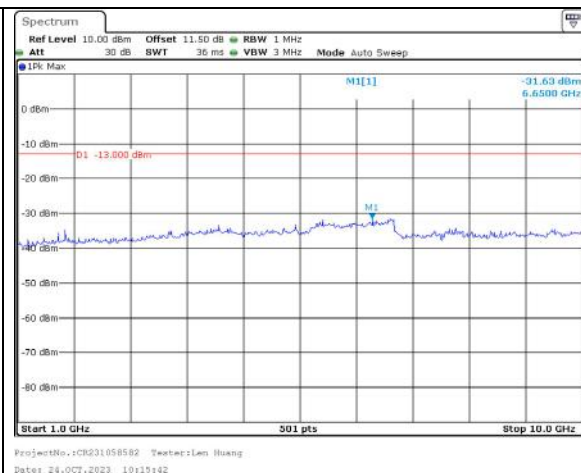
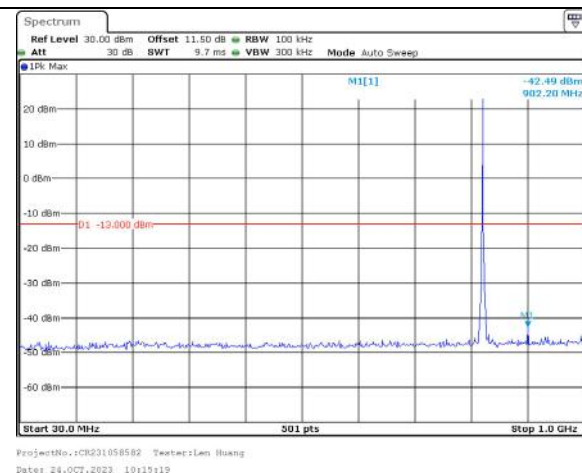
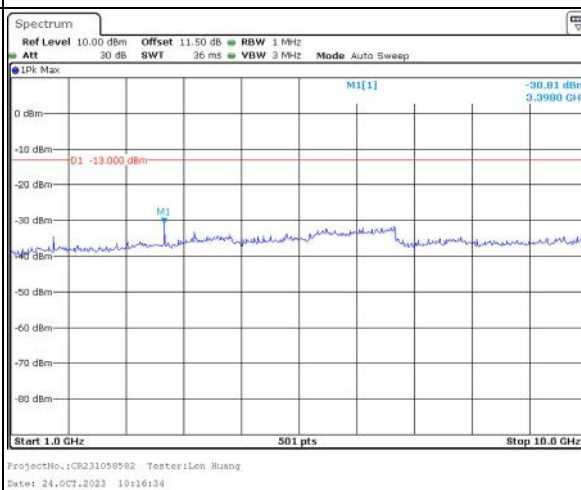
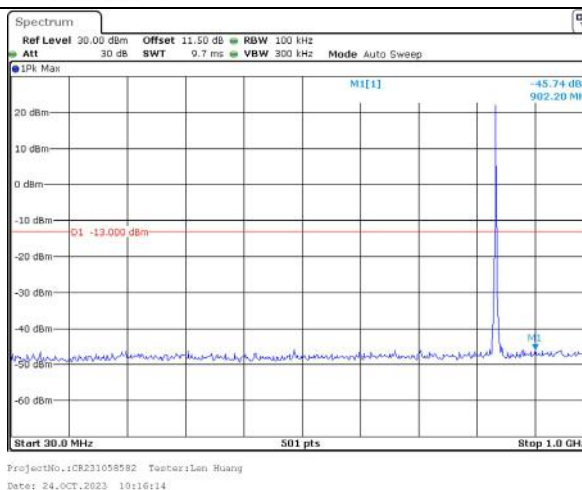
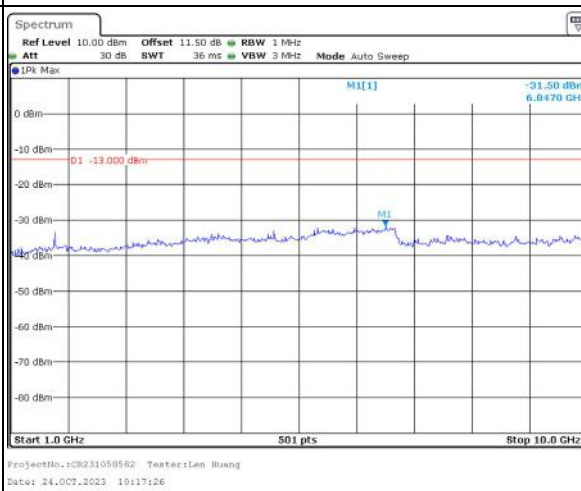
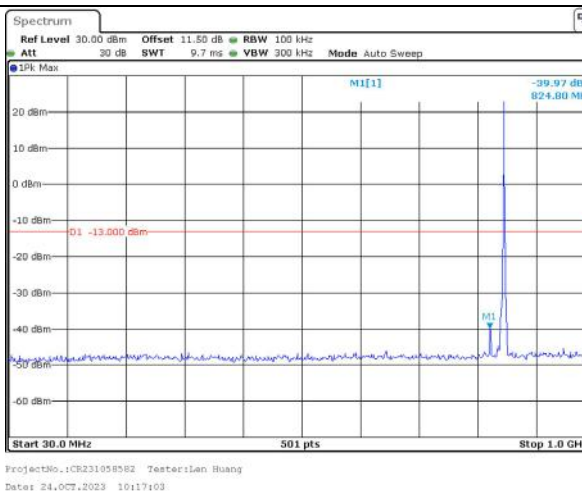
15MHz Bandwidth 16QAM

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

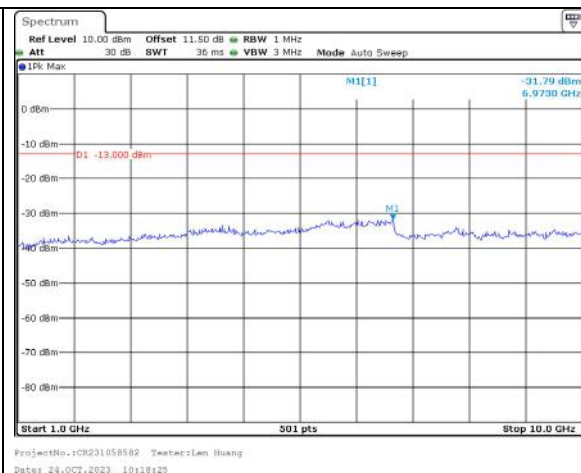
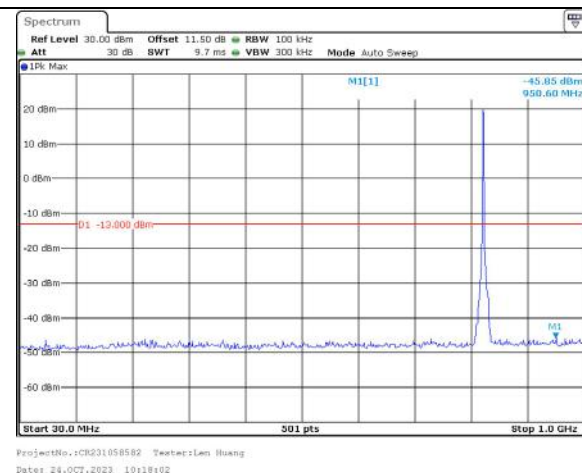
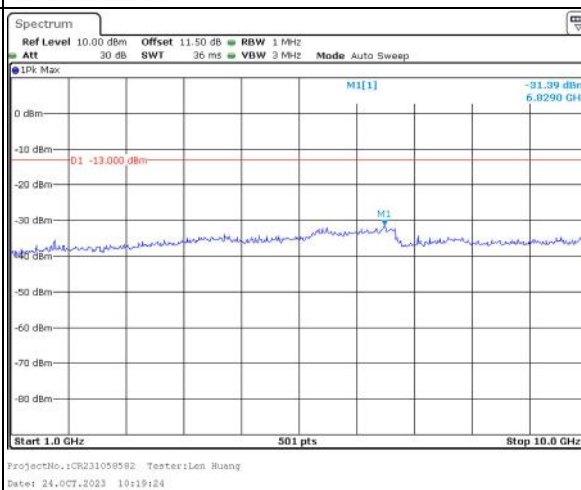
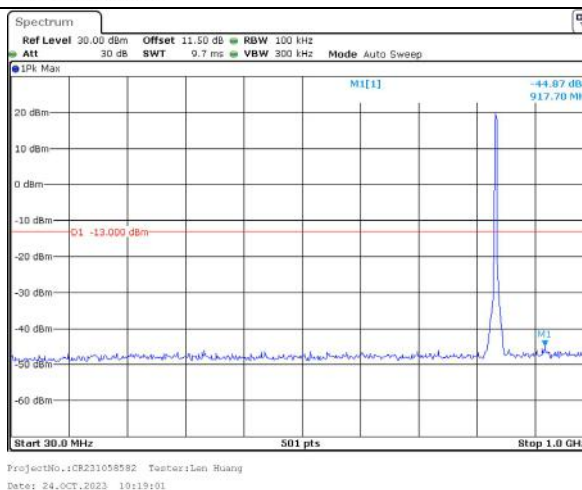
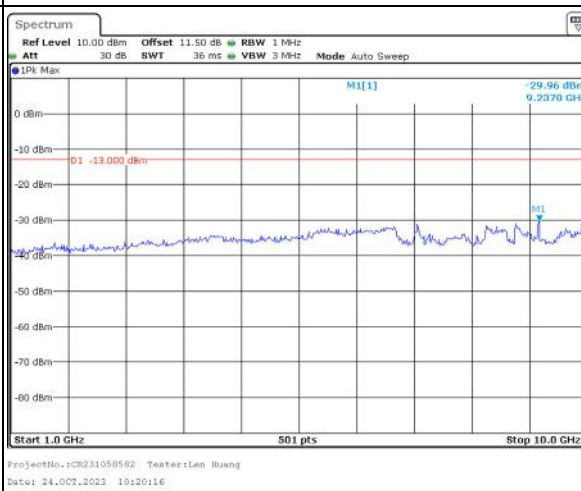
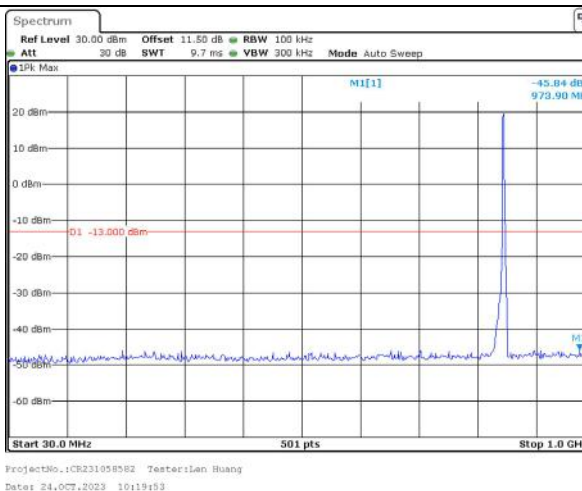
1.4MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

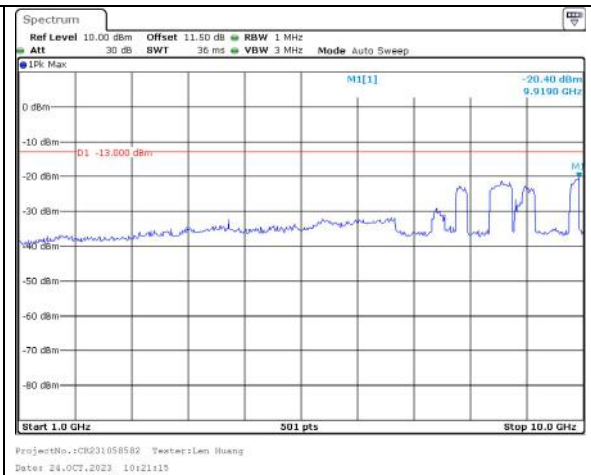
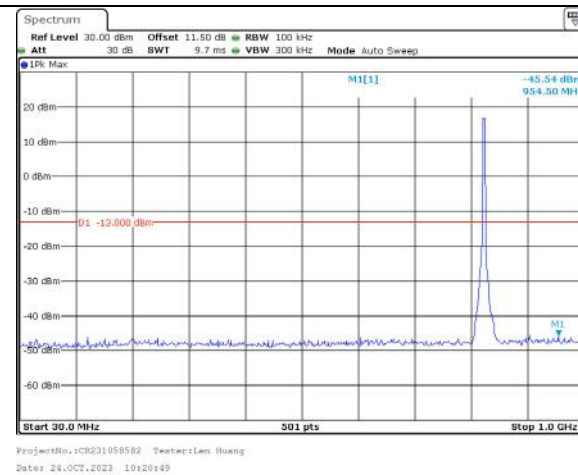
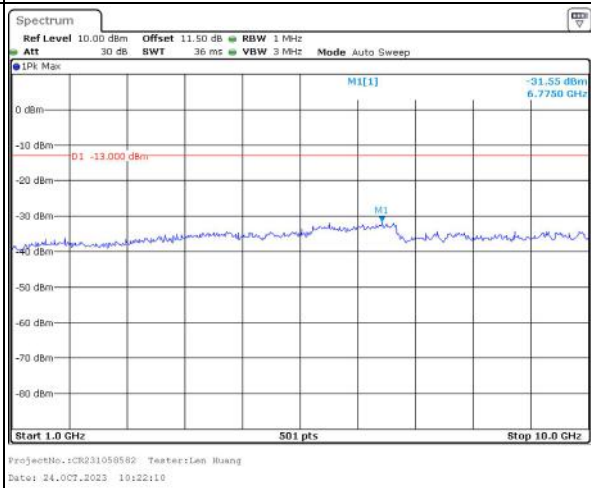
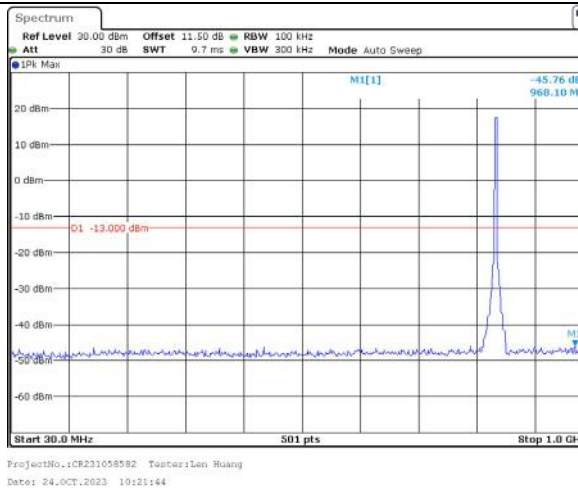
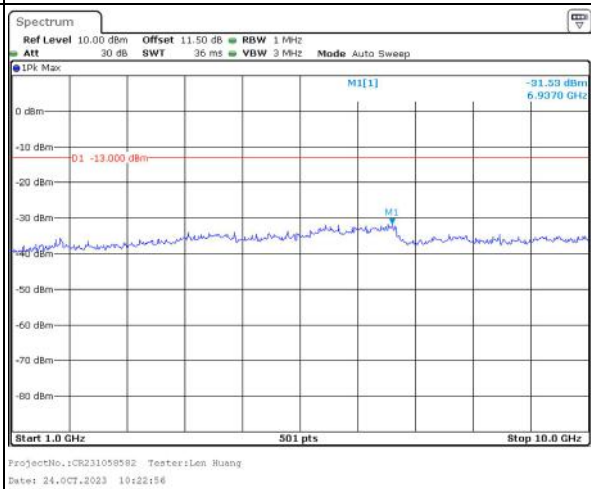
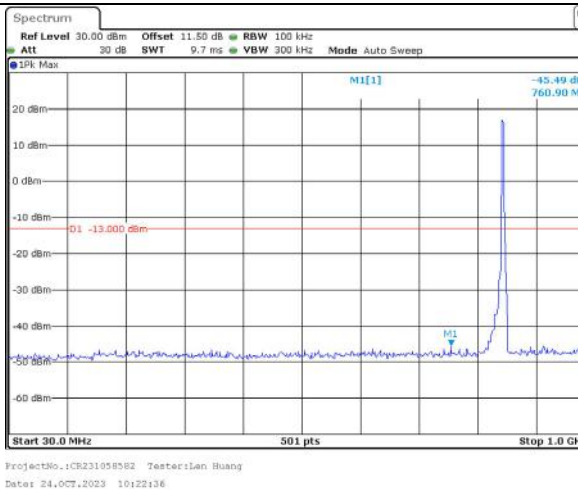
3MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

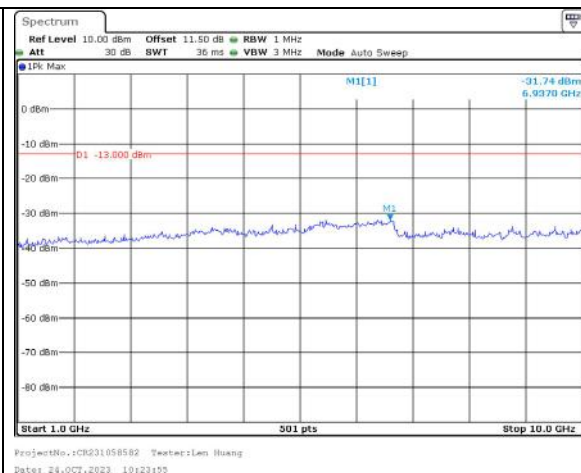
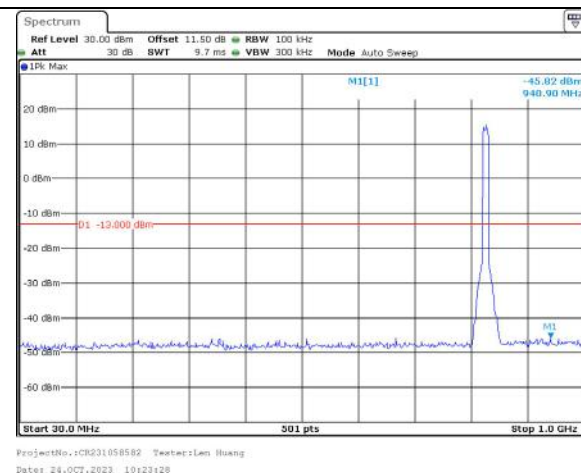
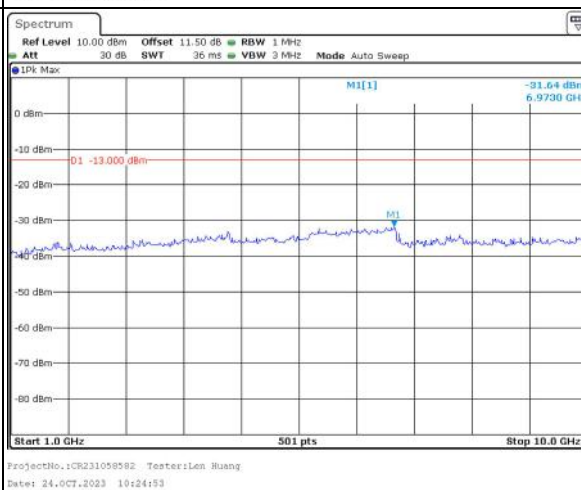
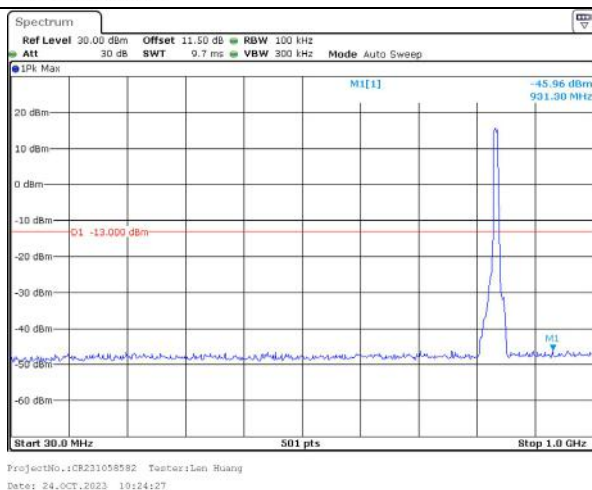
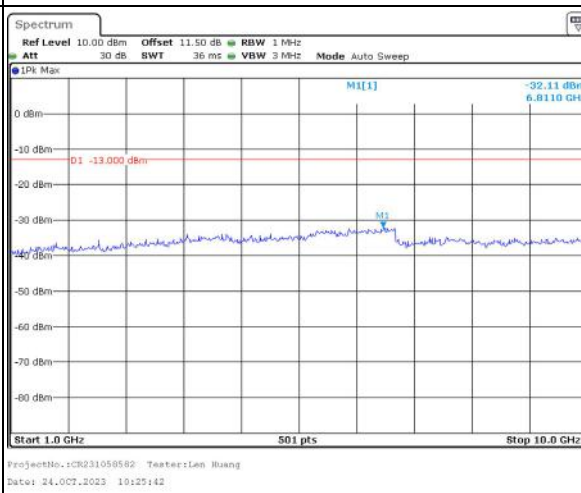
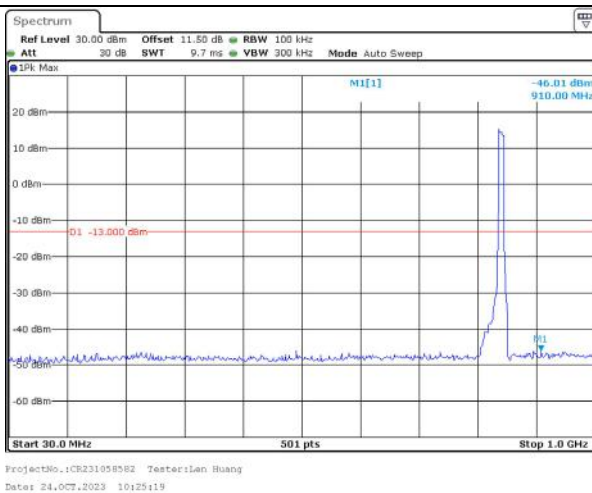
5MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

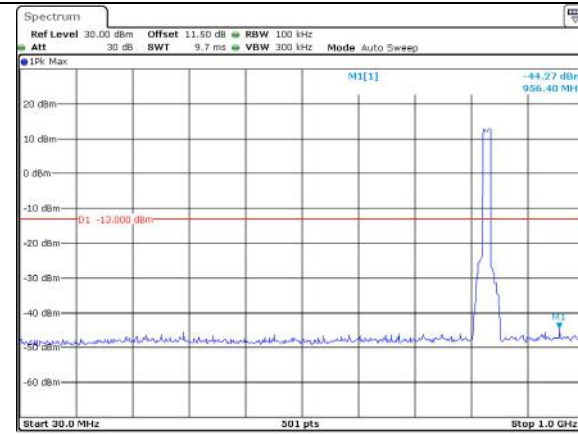
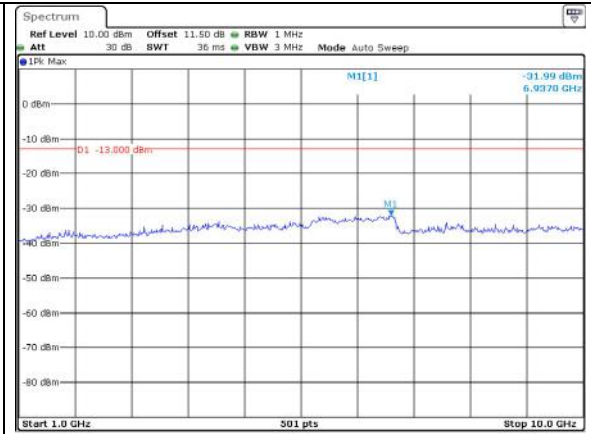
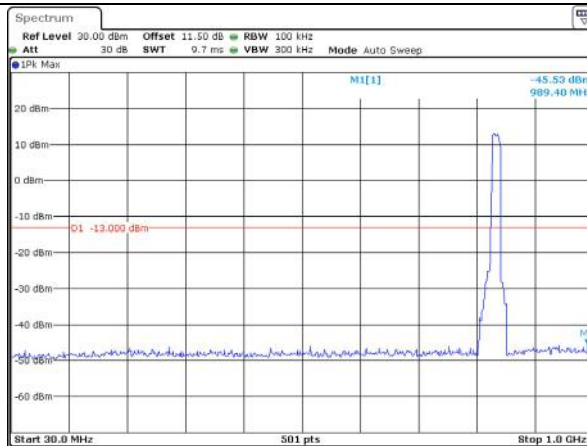
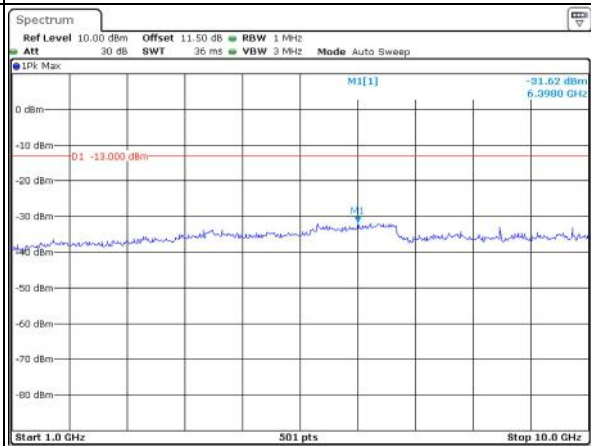
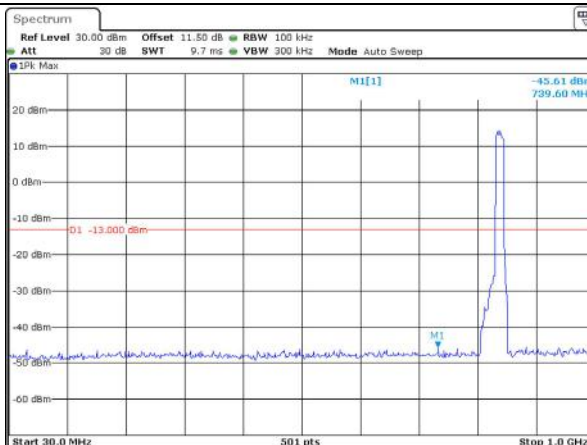
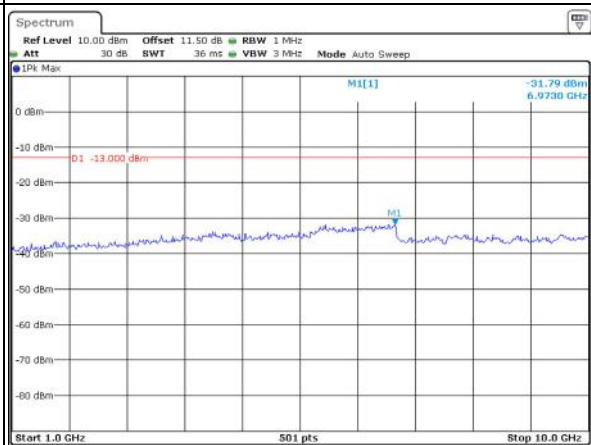
10MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

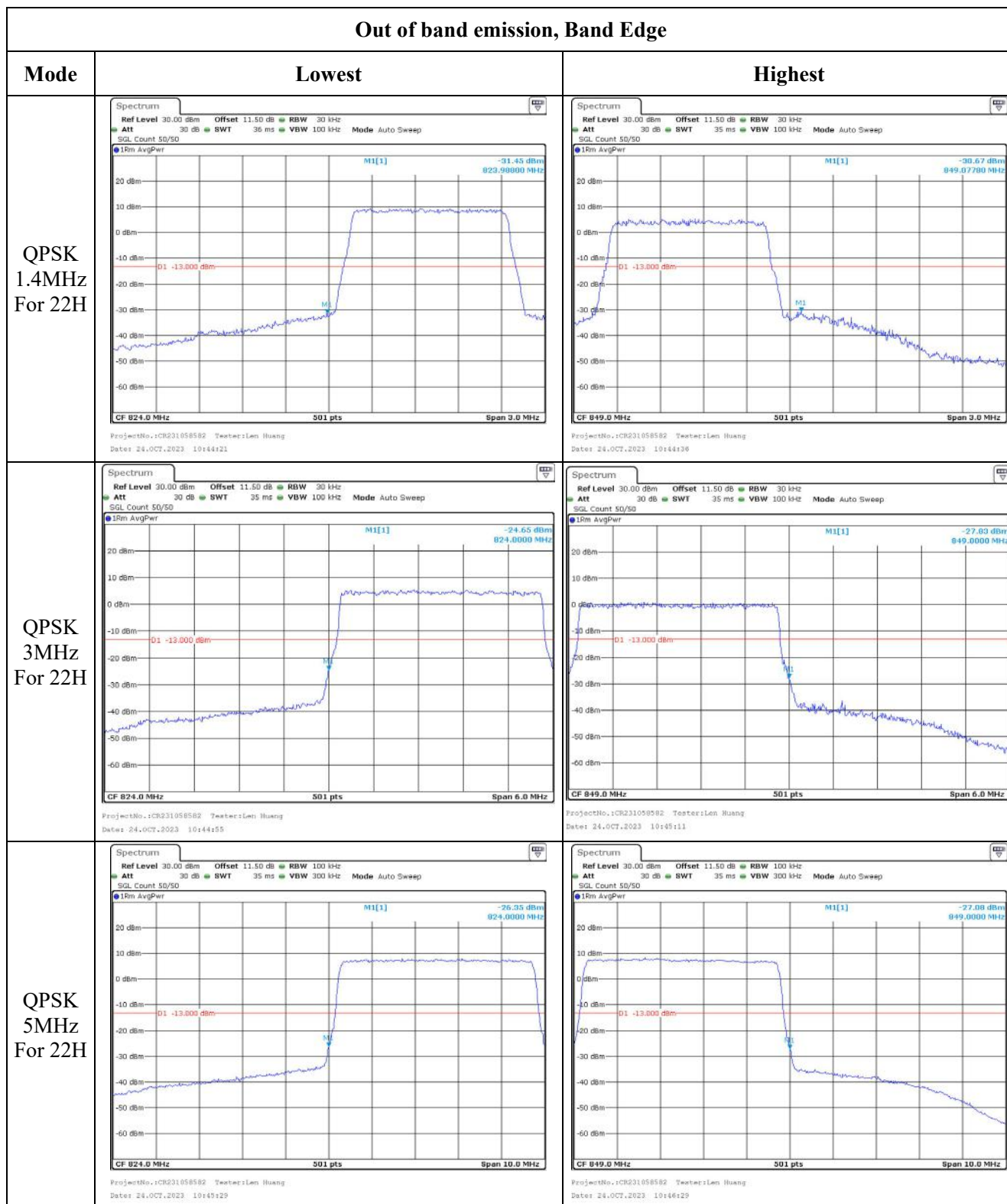
Spurious Emissions at Antenna Terminal

Channel

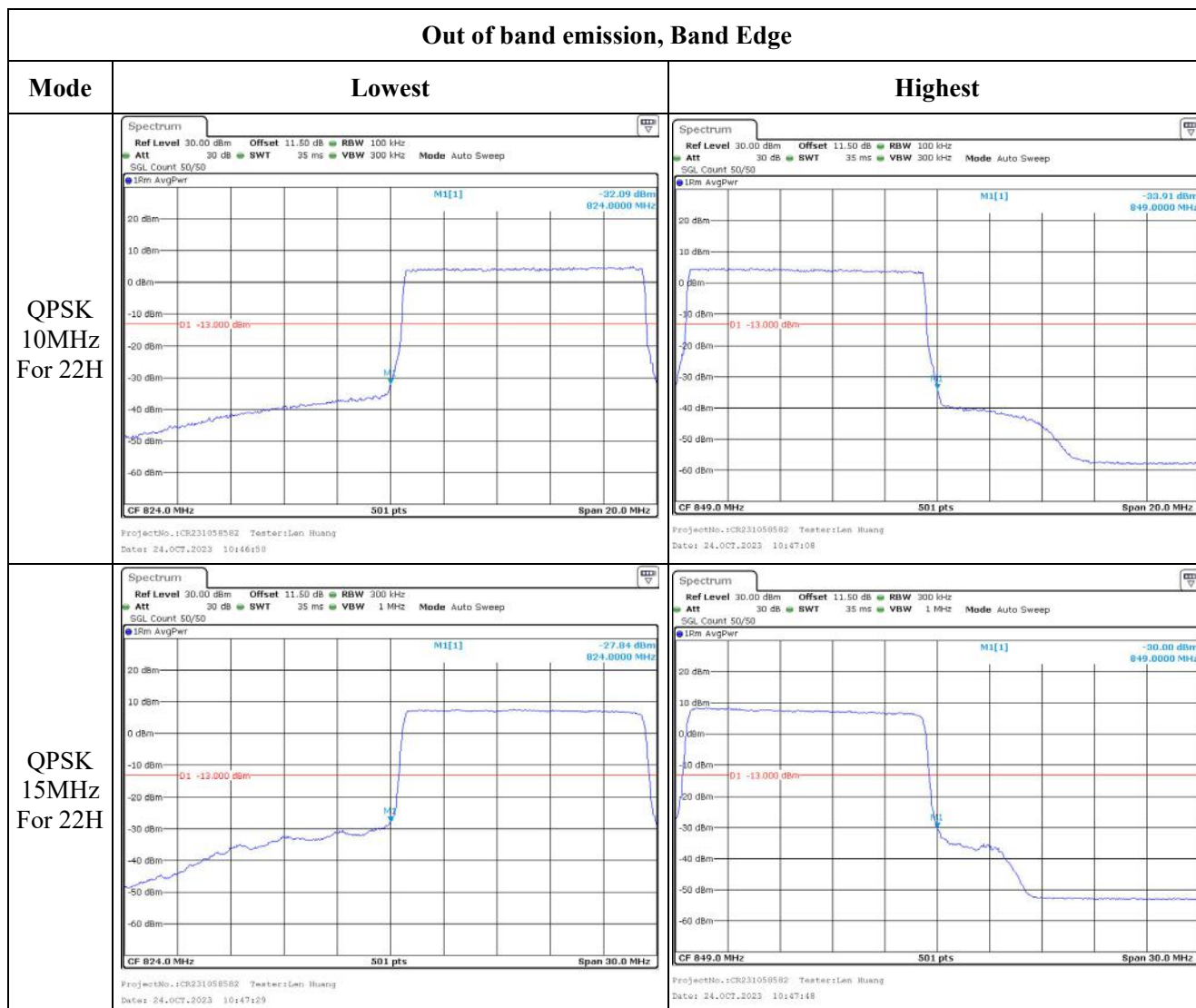
15MHz Bandwidth QPSK

Lowest
For 22HProjectNo.:CR231058582 Tester:Len Huang
Date: 24.OCT.2023 10:26:17ProjectNo.:CR231058582 Tester:Len Huang
Date: 24.OCT.2023 10:26:40Middle
For 22HProjectNo.:CR231058582 Tester:Len Huang
Date: 24.OCT.2023 10:27:03ProjectNo.:CR231058582 Tester:Len Huang
Date: 24.OCT.2023 10:27:35Highest
For 22HProjectNo.:CR231058582 Tester:Len Huang
Date: 24.OCT.2023 10:28:11ProjectNo.:CR231058582 Tester:Len Huang
Date: 24.OCT.2023 10:28:40

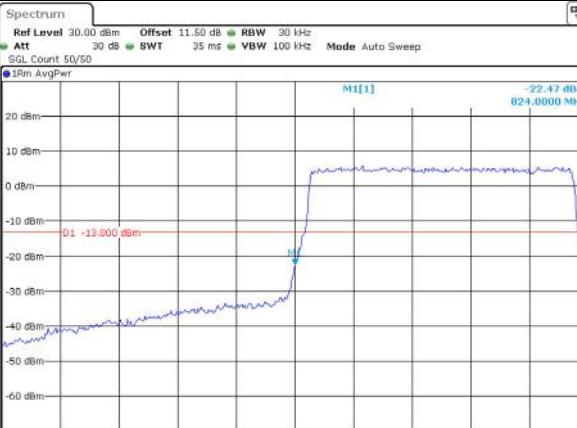
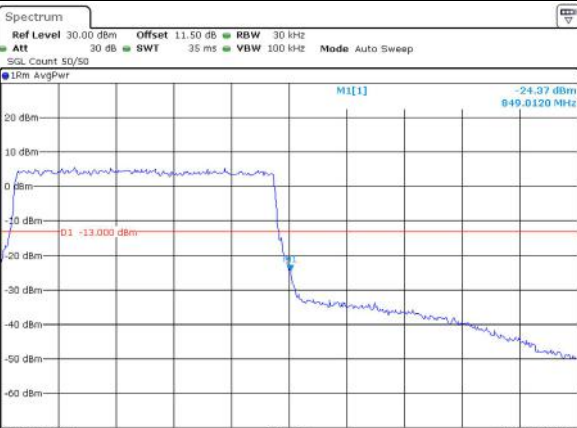
Out of band emission, Band Edge



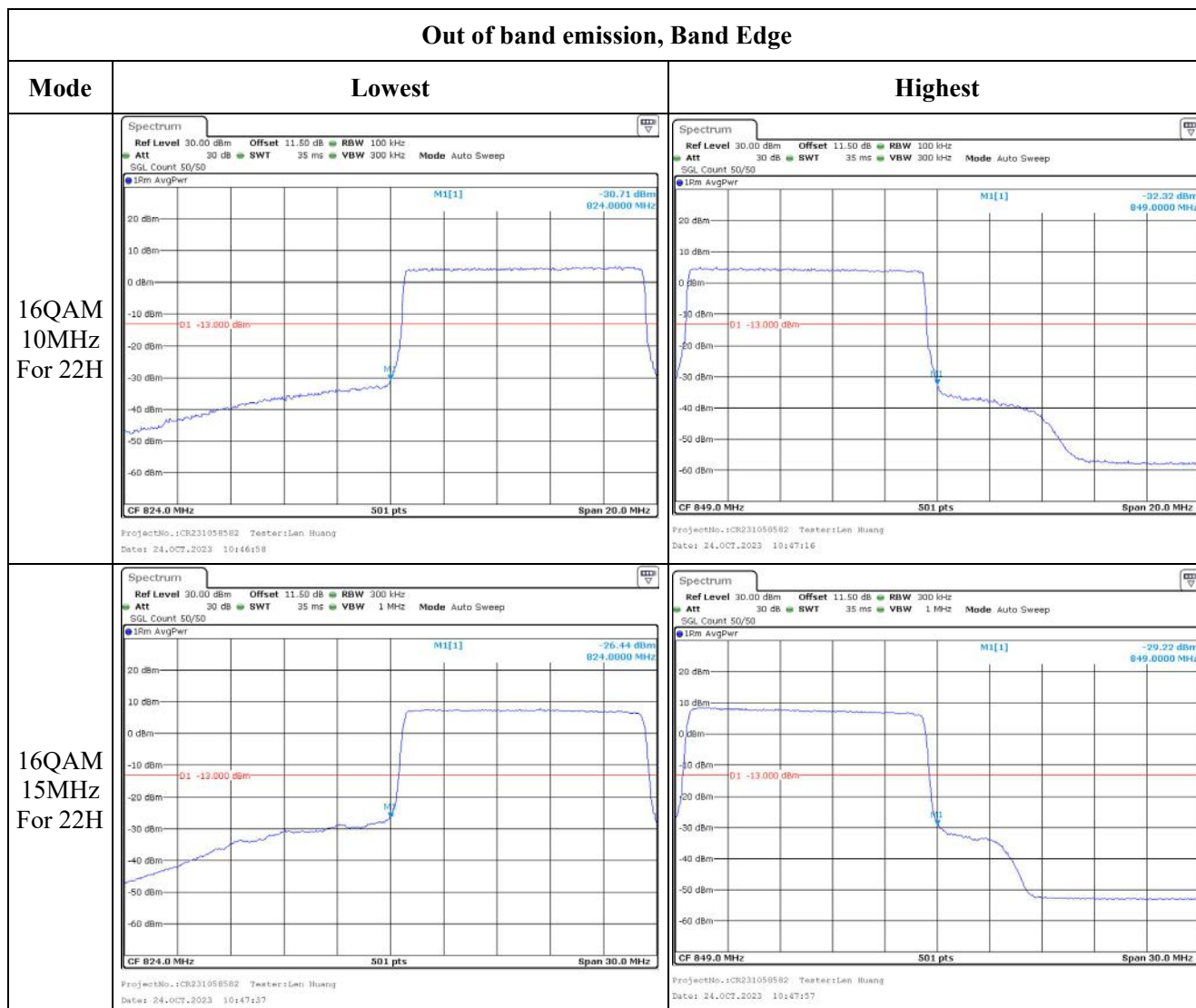
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz For 22H	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 10:44:28	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 10:44:43
16QAM 3MHz For 22H	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 10:45:03	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 10:45:18
16QAM 5MHz For 22H	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 10:45:37	 ProjectNo.:CR231058582 Tester:Len Huang Date: 24.OCT.2023 10:46:36

Out of band emission, Band Edge



4.13 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	2BZE-3	Test Date:	2023/11/2-2023/11/3
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-25.5	Relative Humidity: (%)	45-46	ATM Pressure: (kPa)	101-101.1
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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	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	22.44	22.68	22.79	22.4	33
	RB1#13	22.49	22.55	22.73		
	RB1#24	22.57	22.64	22.8		
	RB15#0	21.52	21.65	21.67		
	RB15#10	21.52	21.7	21.69		
	RB25#0	21.48	21.65	21.67		
5MHz 16QAM	RB1#0	21.75	22.06	21.53	21.96	33
	RB1#13	21.73	22.36	21.83		
	RB1#24	21.87	22.19	22.12		
	RB15#0	20.61	20.84	20.8		
	RB15#10	20.66	20.88	20.91		
	RB25#0	20.61	20.63	20.99		
10MHz QPSK	RB1#0	22.32	22.86	22.67	22.46	33
	RB1#25	22.39	22.72	22.68		
	RB1#49	22.49	22.75	22.81		
	RB25#0	21.37	21.54	21.58		
	RB25#25	21.5	21.59	21.64		
	RB50#0	21.36	21.5	21.56		
10MHz 16QAM	RB1#0	21.42	21.77	22.41	22.01	33
	RB1#25	21.53	21.76	21.72		
	RB1#49	21.72	21.71	22.32		
	RB25#0	20.64	20.62	20.8		
	RB25#25	20.6	20.73	20.81		
	RB50#0	20.47	20.7	20.86		
15MHz QPSK	RB1#0	22.65	22.27	22.44	22.37	33
	RB1#38	22.76	22.21	22.6		
	RB1#74	22.77	22.28	22.59		
	RB36#0	21.4	21.61	21.62		
	RB36#39	21.55	21.71	21.61		
	RB75#0	21.47	21.59	21.61		
15MHz 16QAM	RB1#0	21.77	21.88	21.61	21.56	33
	RB1#38	21.85	21.86	21.63		
	RB1#74	21.94	21.96	21.68		
	RB36#0	20.46	20.65	20.67		
	RB36#39	20.59	20.71	20.65		
	RB75#0	20.7	20.7	20.79		
20MHz QPSK	RB1#0	22.46	22.7	22.44	22.39	33

	RB1#50	22.63	22.75	22.55		
	RB1#99	22.67	22.79	22.48		
	RB50#0	21.48	21.59	21.77		
	RB50#50	21.6	21.72	21.75		
	RB100#0	21.51	21.57	21.76		
	RB1#0	21.36	22.74	21.4		
20MHz 16QAM	RB1#50	21.42	22.45	21.56	22.36	33
	RB1#99	21.65	22.76	21.49		
	RB50#0	20.65	20.82	20.95		
	RB50#50	20.78	20.8	20.96		
	RB100#0	20.53	20.76	20.81		

Note: EIRP=Conducted Power(dBm) - L_c(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	8.87	9.13	8.99	13
	RB100#0	9.01	9.16	9.22	13
20MHz 16QAM	RB1#0	9.42	9.71	9.36	13
	RB100#0	9.80	9.80	9.88	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	5.100	5.000	5.140
5MHz 16QAM	4.511	4.531	4.511	5.160	5.160	5.180
10MHz QPSK	8.942	8.942	8.982	9.800	9.640	9.720
10MHz 16QAM	8.942	8.942	8.942	9.760	10.240	9.800
15MHz QPSK	13.533	13.473	13.533	16.122	14.940	15.060
15MHz 16QAM	13.473	13.533	13.533	14.880	15.120	15.000
20MHz QPSK	17.964	17.964	18.044	20.400	19.760	19.440
20MHz 16QAM	18.044	17.884	17.964	20.720	19.600	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

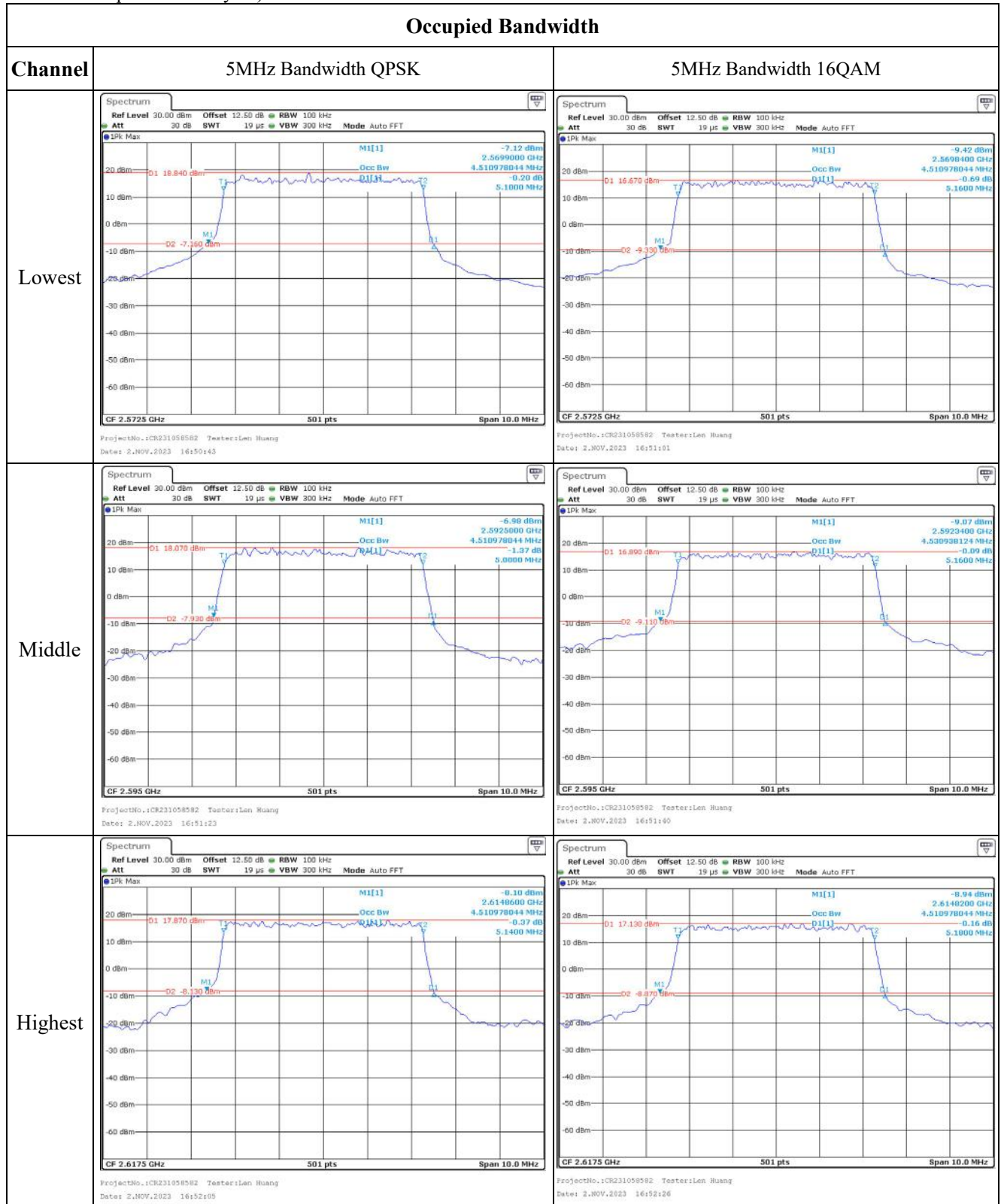
Result: Pass, Please refer to the test plots of Out of band emission, Band Edge.

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	3.85	2570.224	2570.00	2619.916	2620
	-20	3.85	2570.487	2570.00	2619.970	2620
	-10	3.85	2570.550	2570.00	2619.940	2620
	0	3.85	2570.580	2570.00	2619.949	2620
	10	3.85	2570.188	2570.00	2619.913	2620
	20	3.85	2570.444	2570.00	2619.956	2620
	30	3.85	2570.295	2570.00	2619.979	2620
	40	3.85	2570.132	2570.00	2619.924	2620
	50	3.85	2570.271	2570.00	2619.962	2620
Frequency Stability vs. Voltage	20	3.27	2570.390	2570.00	2619.944	2620
	20	4.43	2570.171	2570.00	2619.965	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	3.85	2570.108	2570.00	2619.963	2620
	-20	3.85	2570.111	2570.00	2619.952	2620
	-10	3.85	2570.146	2570.00	2619.948	2620
	0	3.85	2570.399	2570.00	2619.904	2620
	10	3.85	2570.318	2570.00	2619.949	2620
	20	3.85	2570.228	2570.00	2619.928	2620
	30	3.85	2570.128	2570.00	2619.956	2620
	40	3.85	2570.113	2570.00	2619.947	2620
	50	3.85	2570.175	2570.00	2619.984	2620
Frequency Stability vs. Voltage	20	3.27	2570.179	2570.00	2619.938	2620
	20	4.43	2570.180	2570.00	2619.917	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):



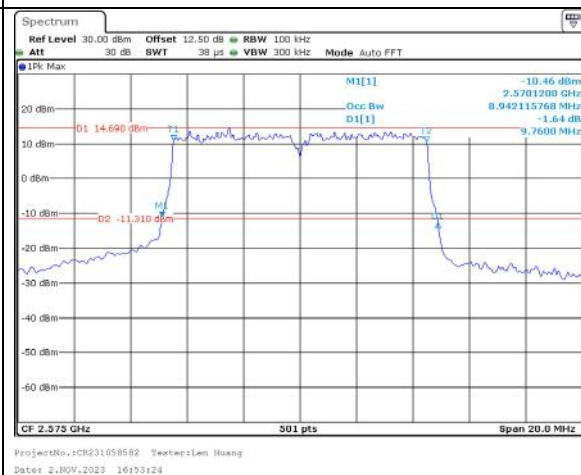
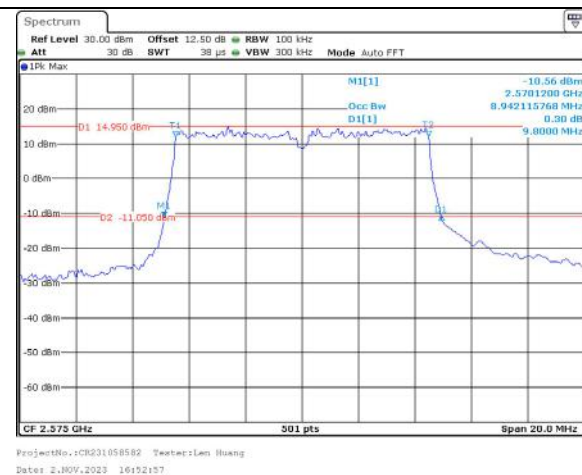
Occupied Bandwidth

Channel

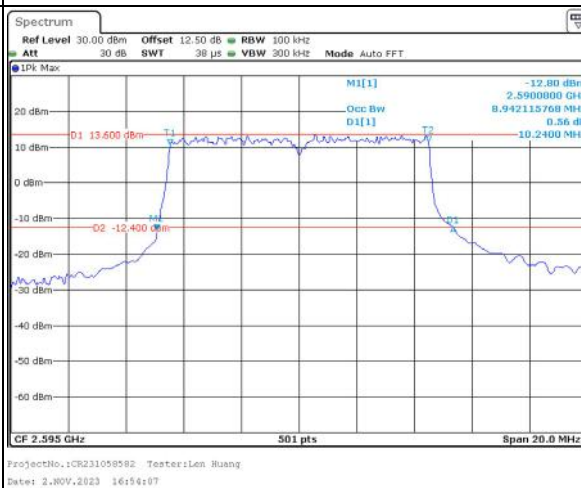
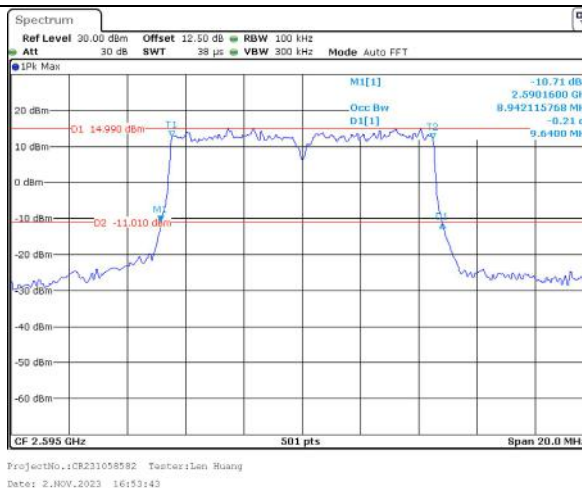
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

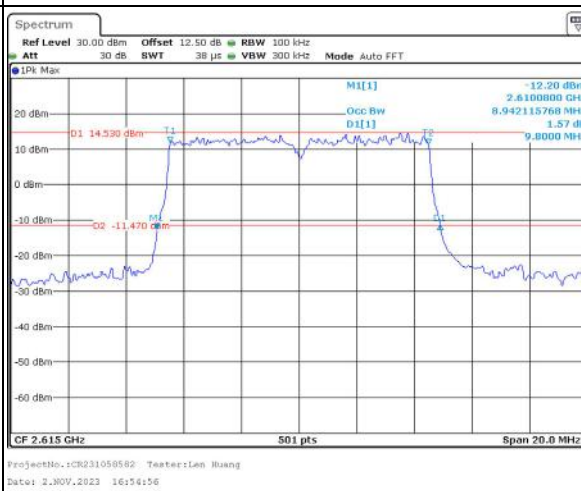
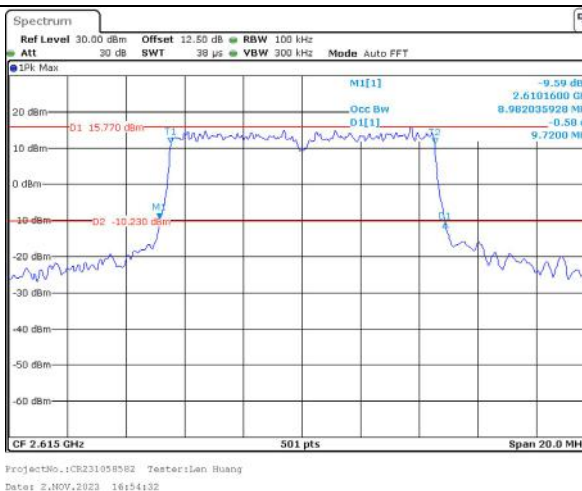
Lowest



Middle



Highest



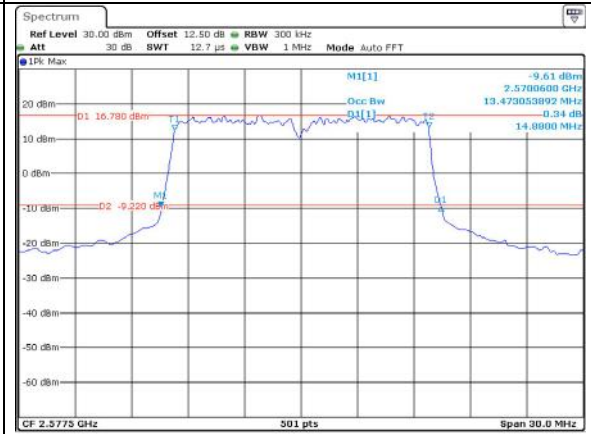
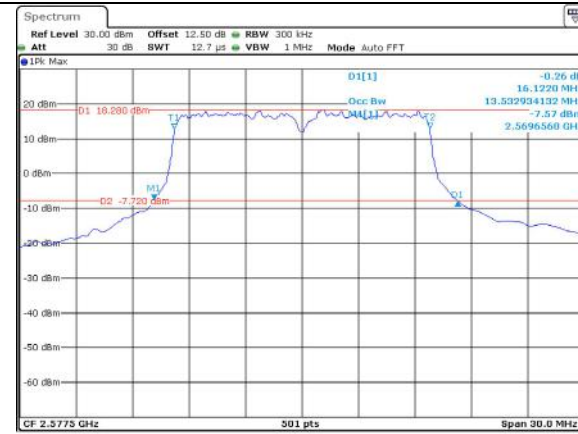
Occupied Bandwidth

Channel

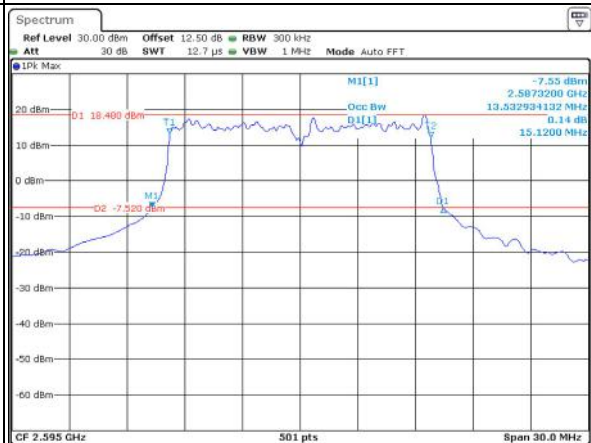
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

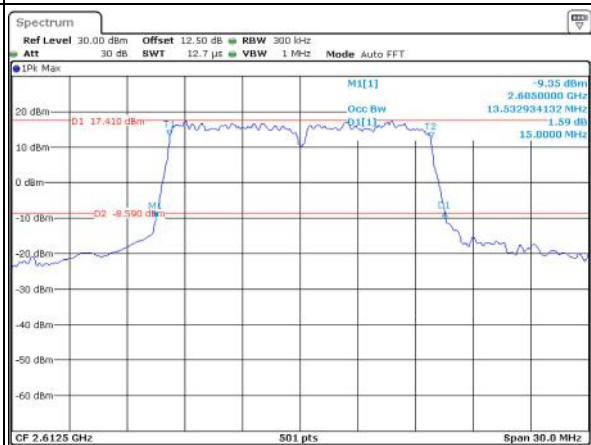
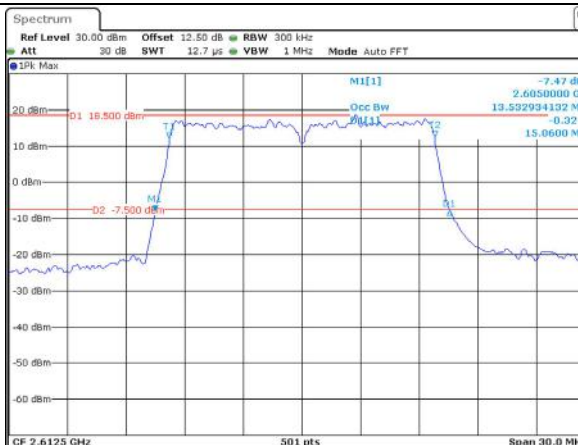
Lowest



Middle



Highest



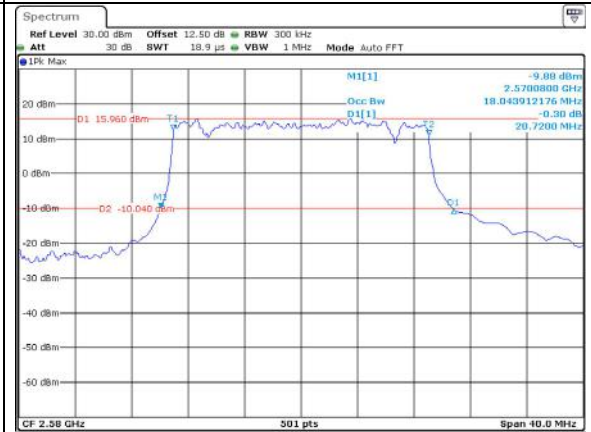
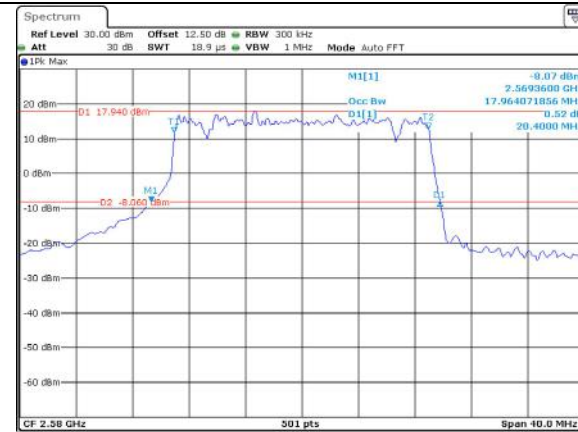
Occupied Bandwidth

Channel

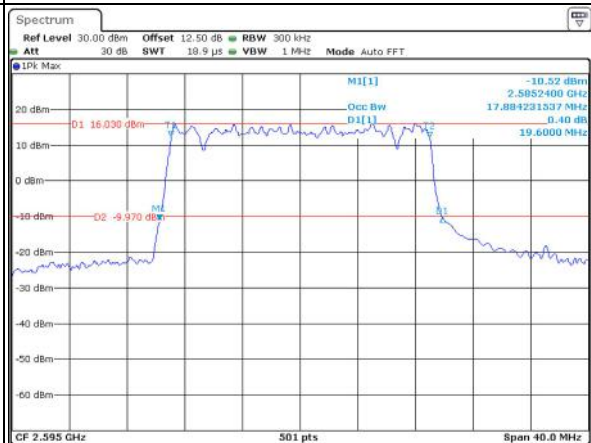
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

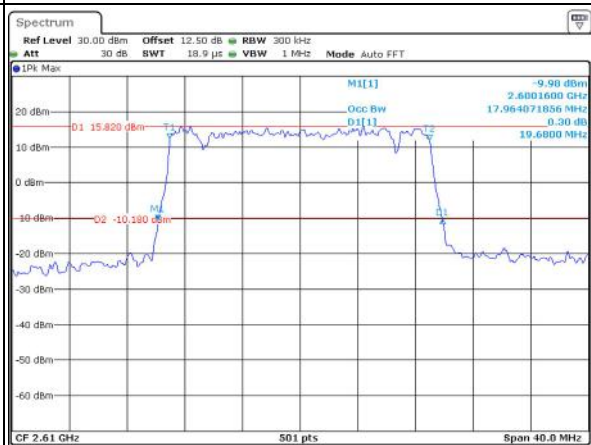
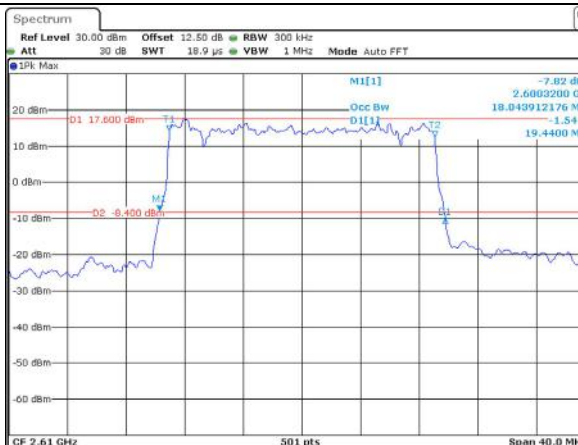
Lowest



Middle



Highest

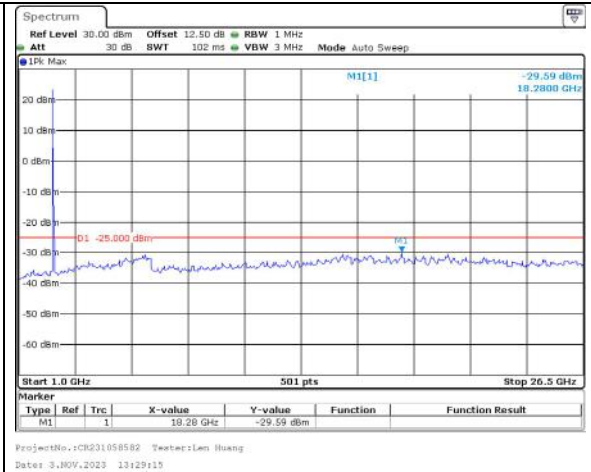
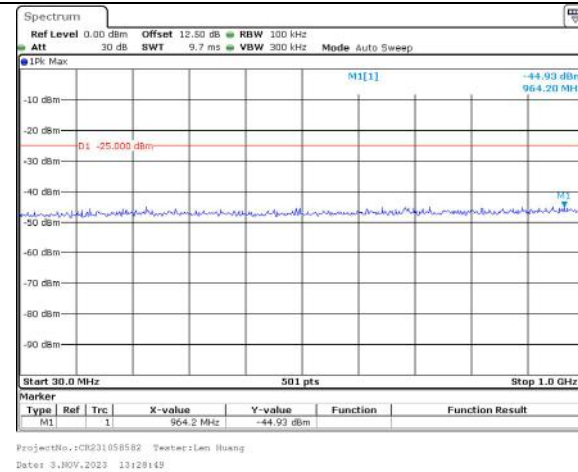


Spurious Emissions at Antenna Terminal

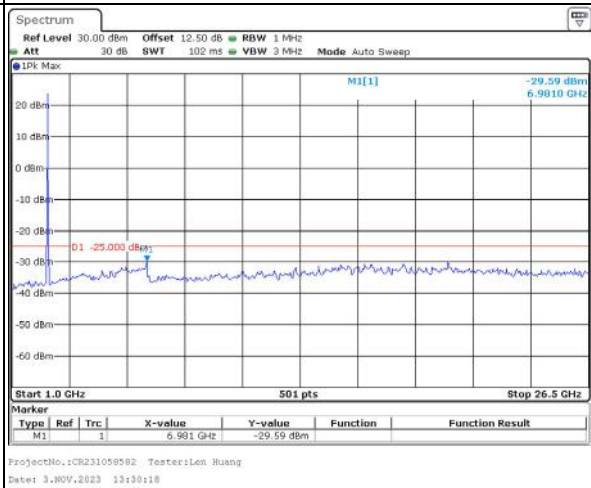
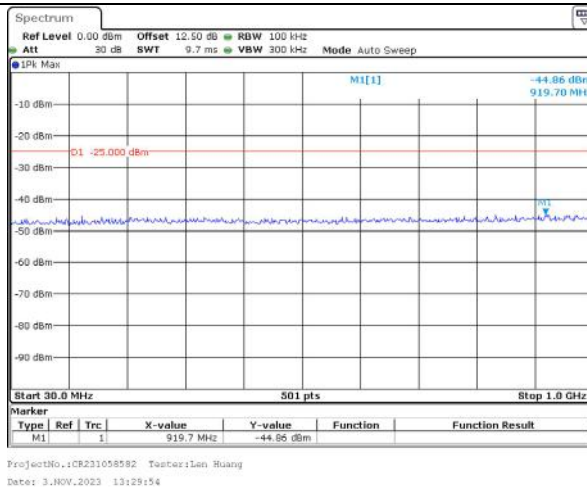
Channel

5MHz Bandwidth QPSK

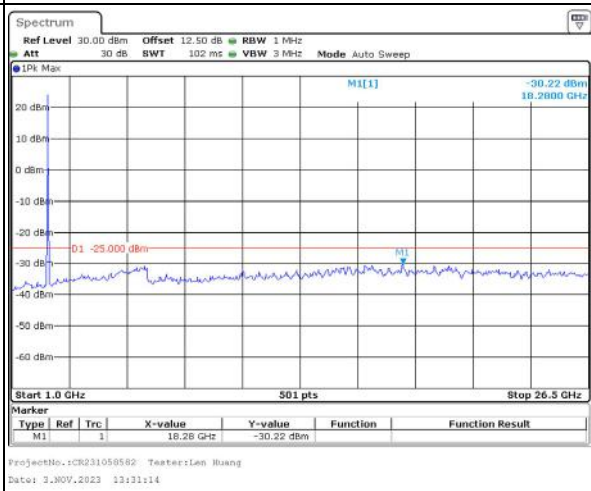
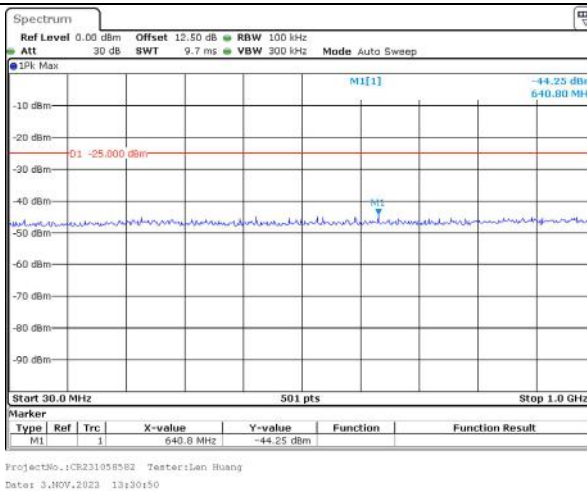
Lowest



Middle



Highest

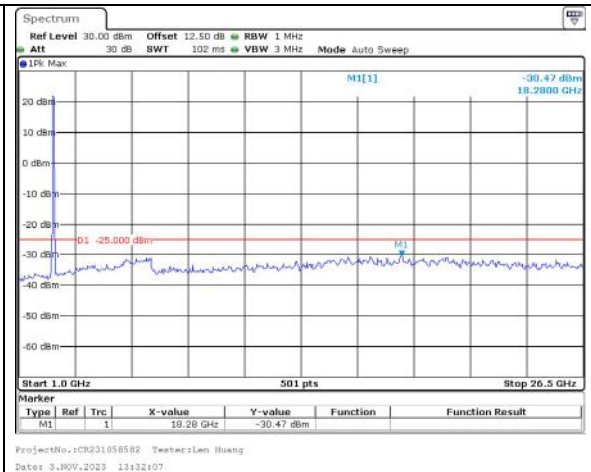
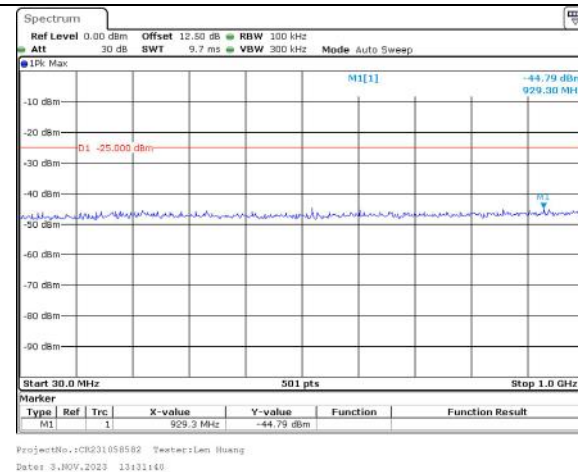


Spurious Emissions at Antenna Terminal

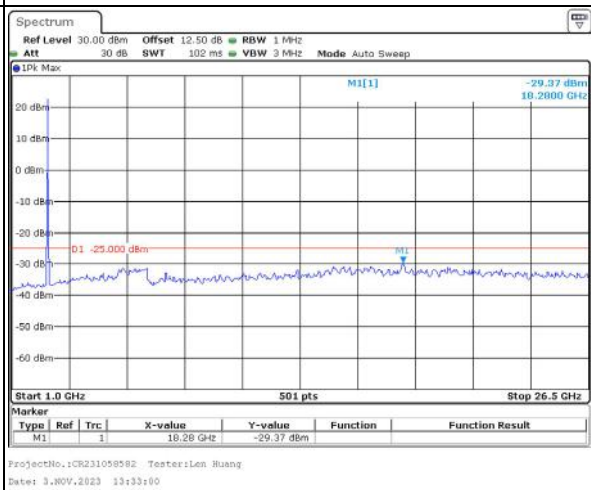
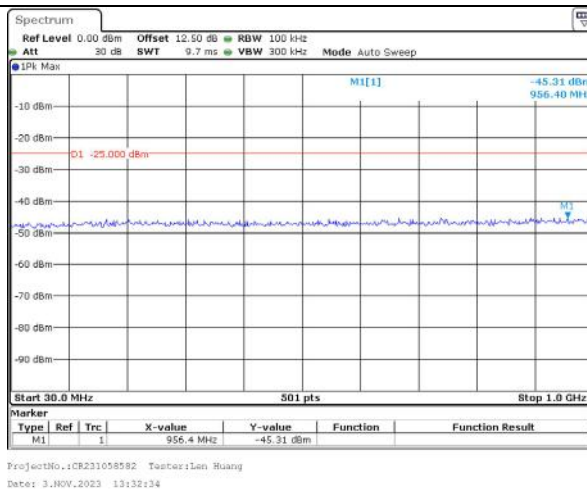
Channel

10MHz Bandwidth QPSK

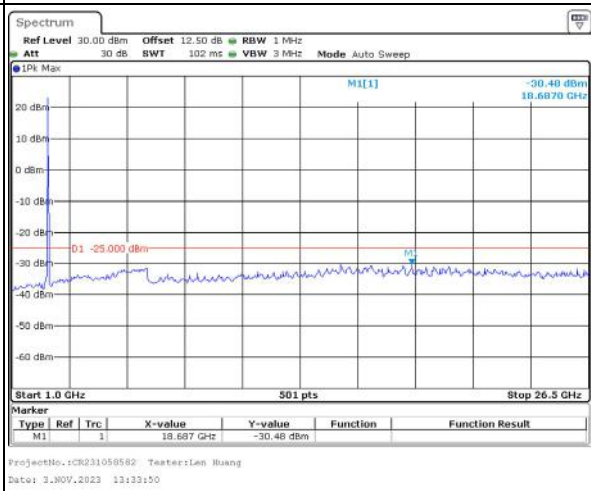
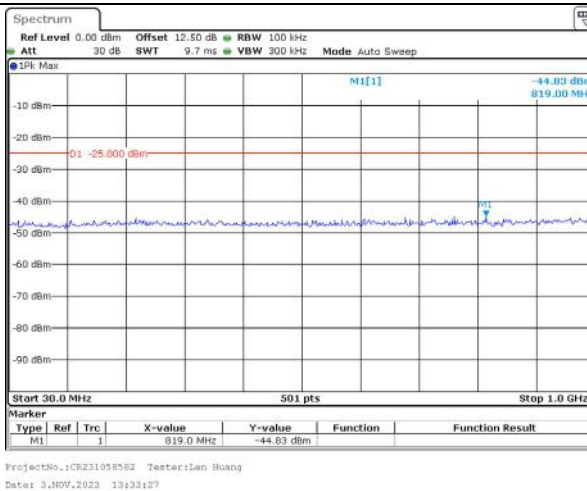
Lowest



Middle



Highest

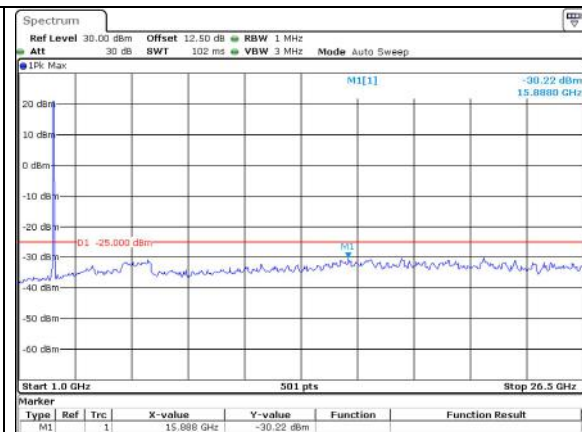
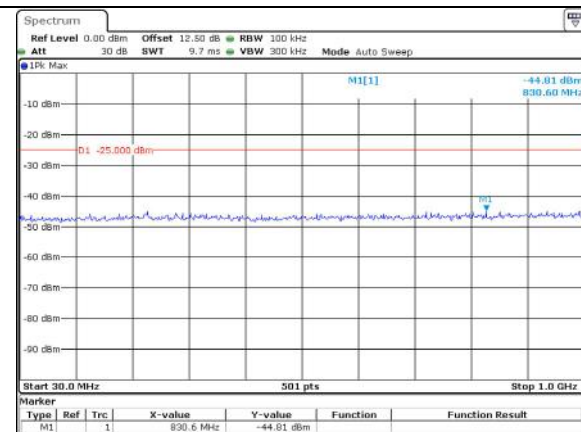


Spurious Emissions at Antenna Terminal

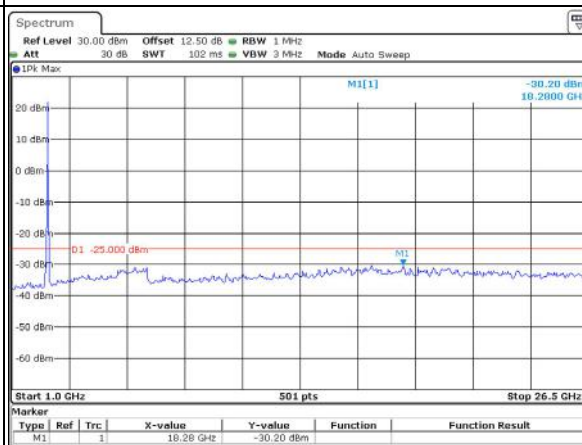
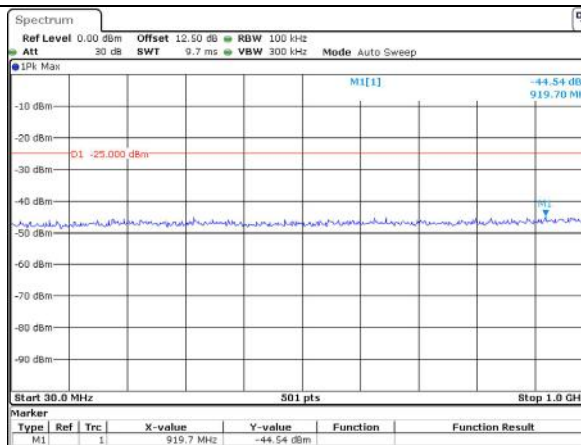
Channel

15MHz Bandwidth QPSK

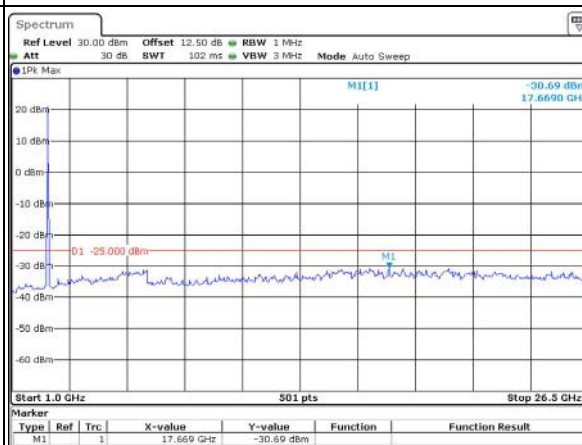
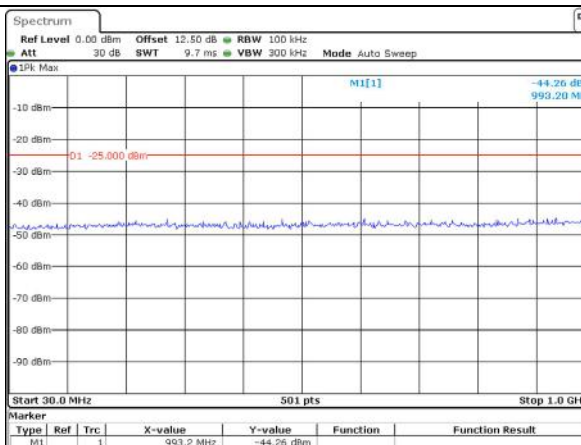
Lowest



Middle



Highest

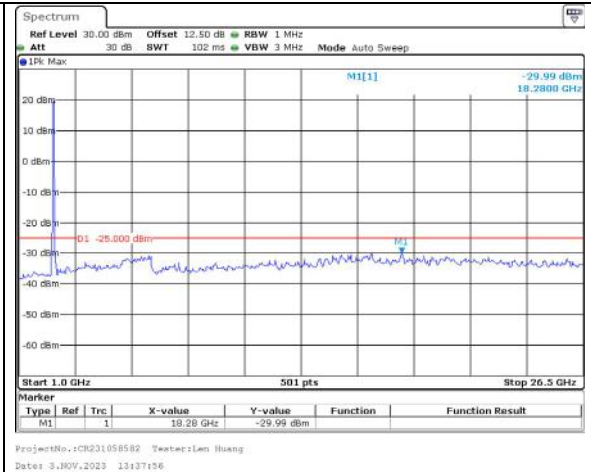
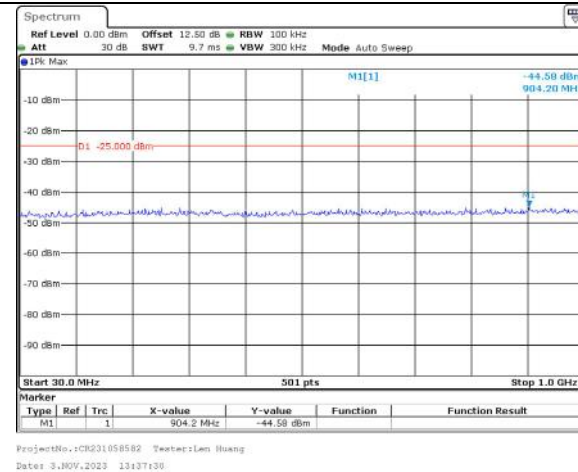


Spurious Emissions at Antenna Terminal

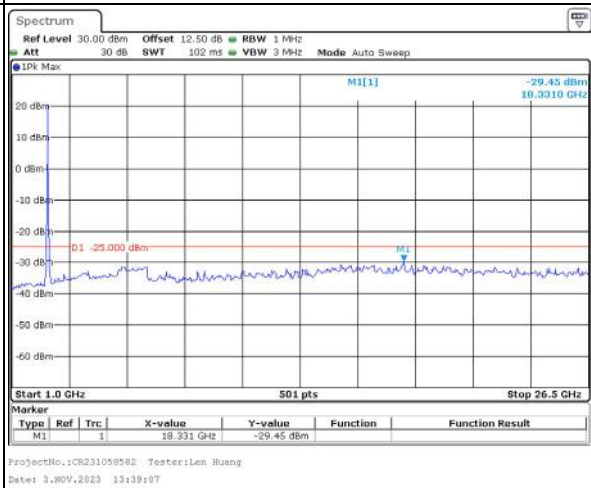
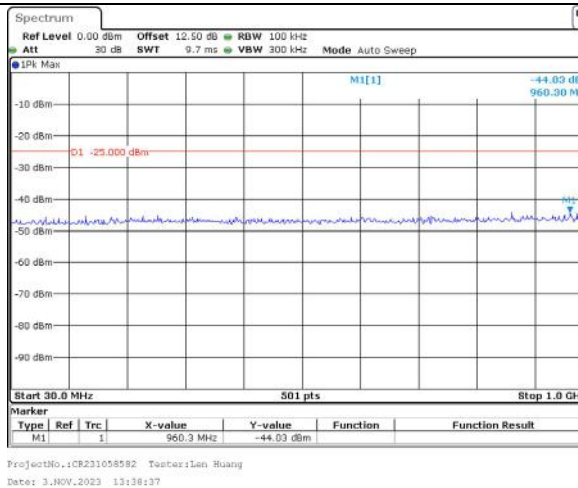
Channel

20MHz Bandwidth QPSK

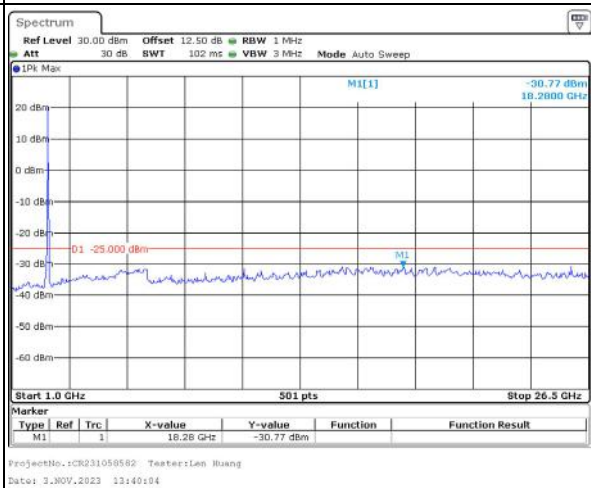
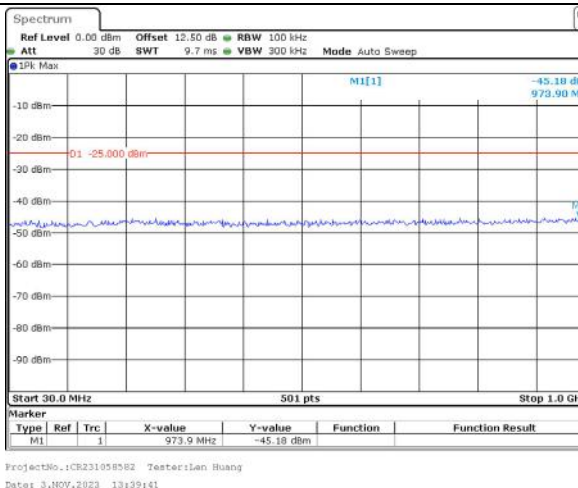
Lowest



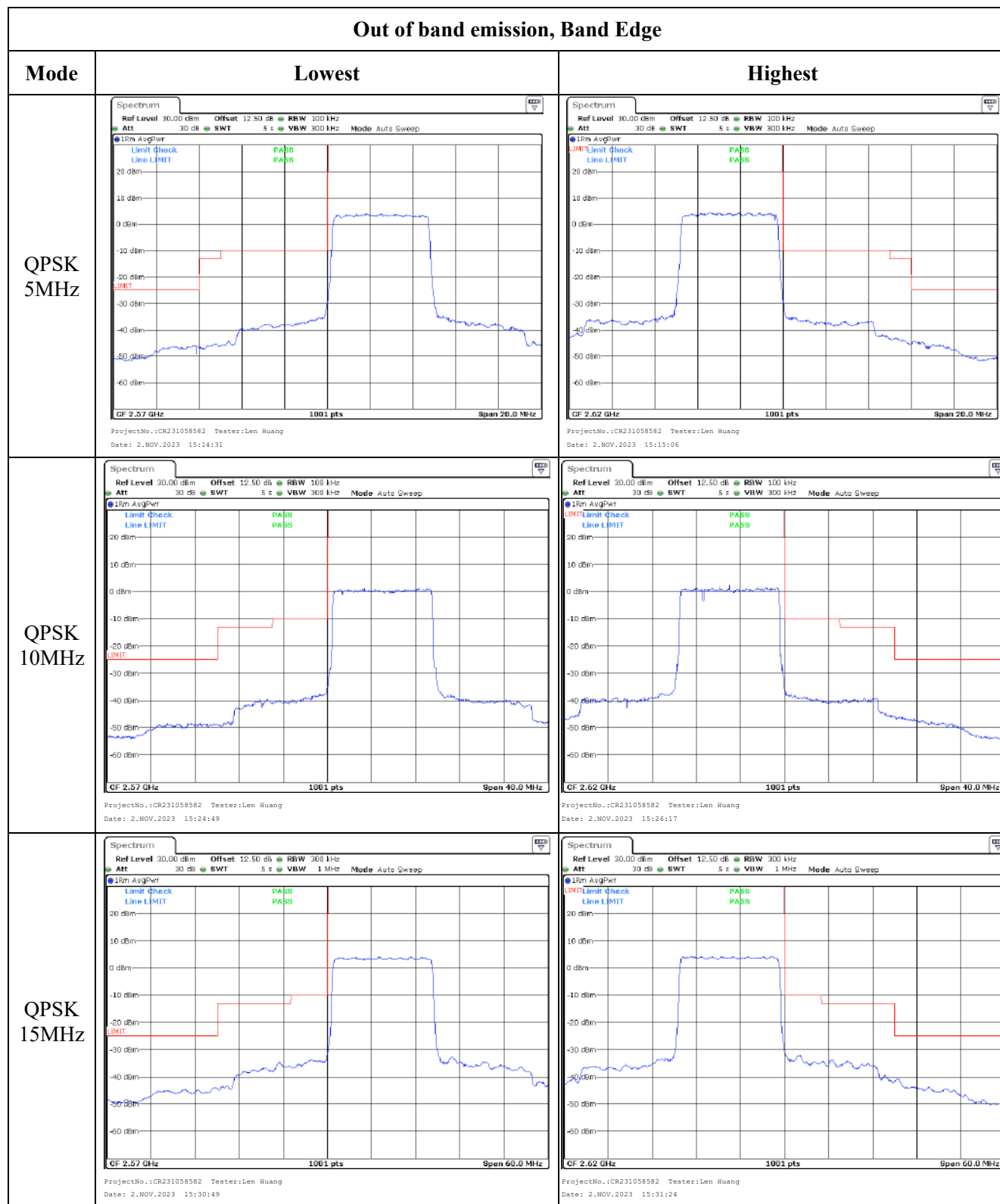
Middle



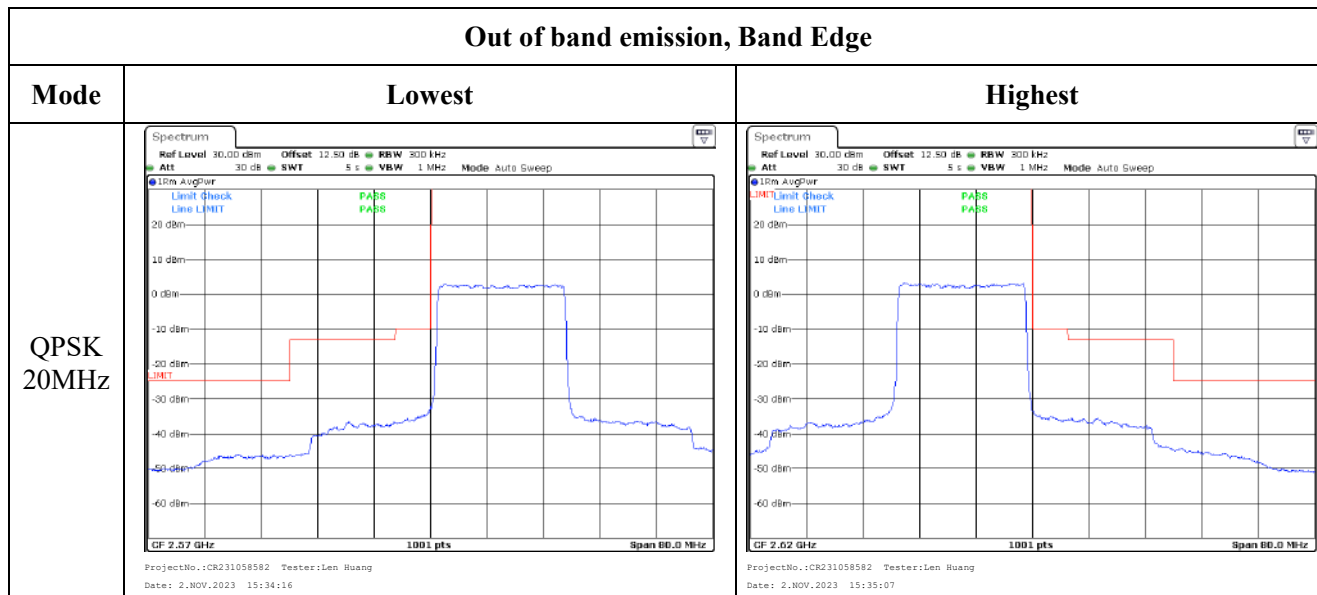
Highest



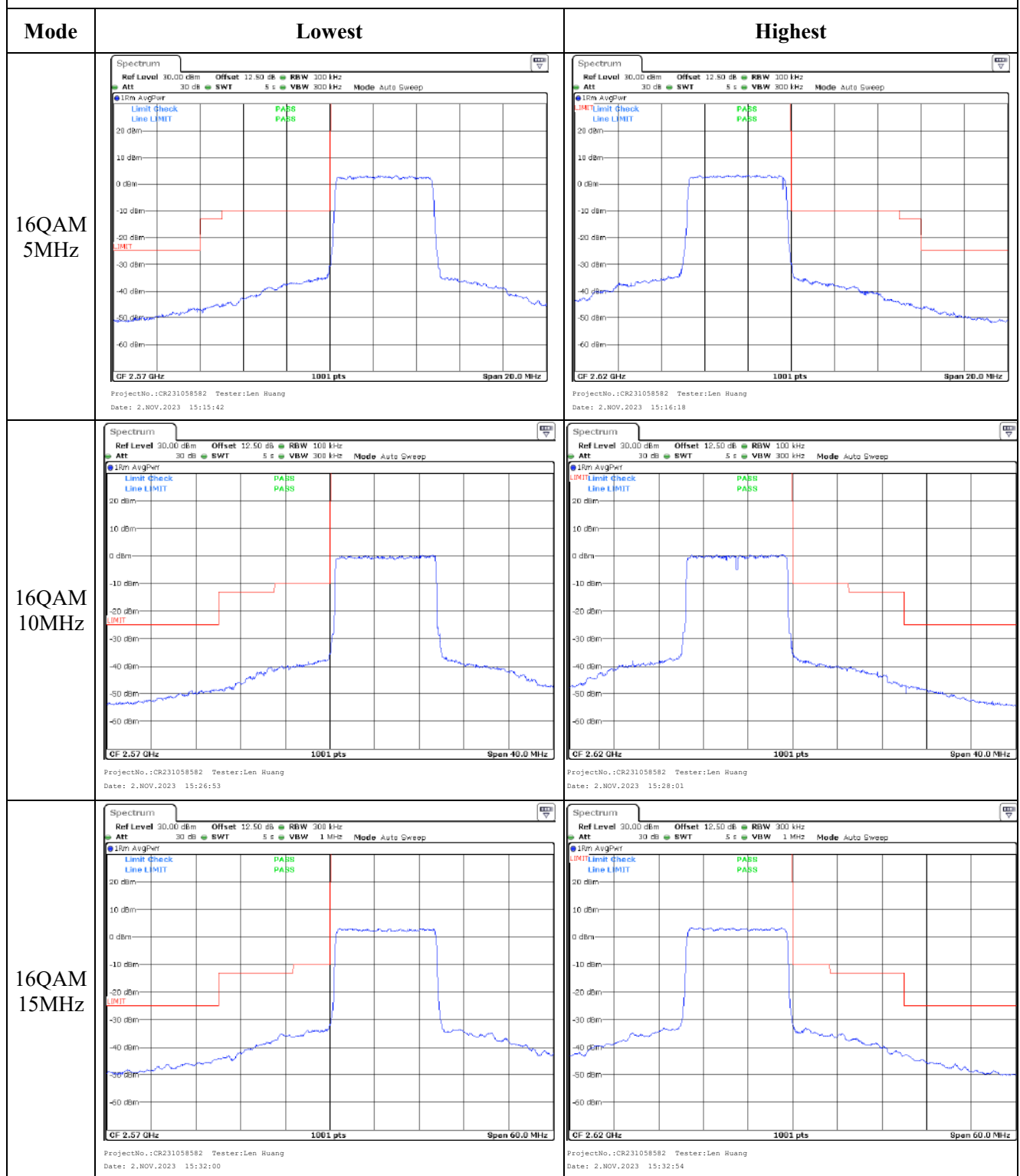
Out of band emission, Band Edge

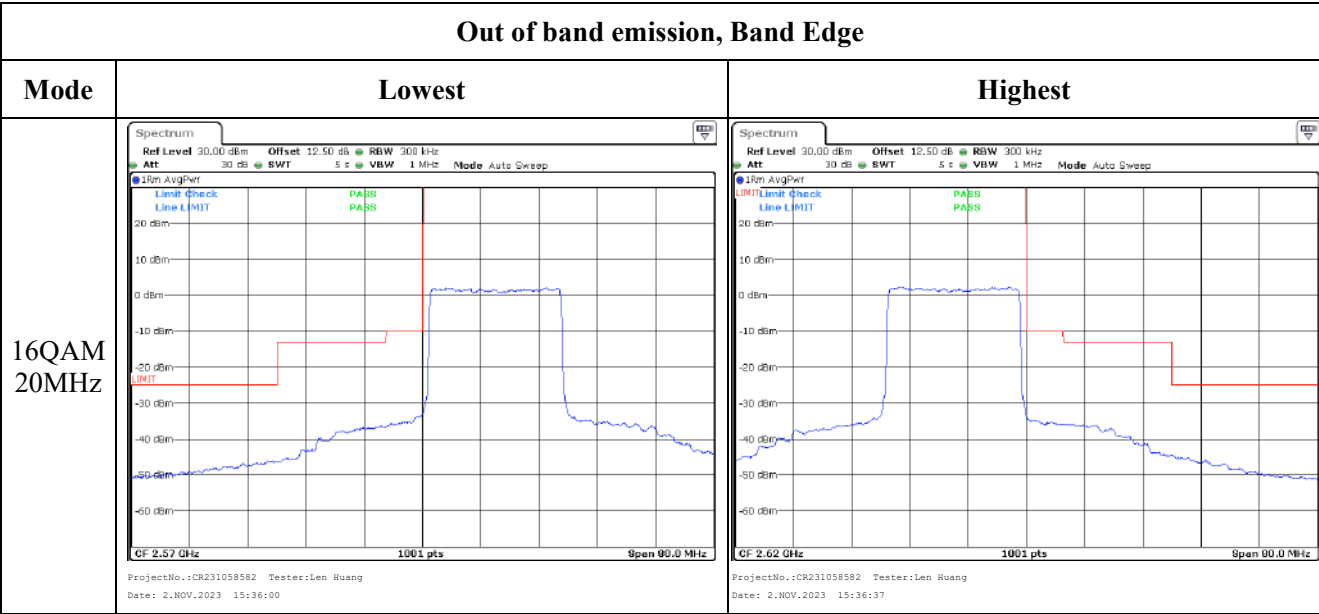


Out of band emission, Band Edge



Out of band emission, Band Edge





4.14 Antenna Port Test Data and Results for LTE Band 40

Serial Number:	2BZE-3	Test Date:	2023/10/24-2023/11/2
Test Site:	RF	Test Mode:	Transmitting
Tester:	Len Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.5-25.6	Relative Humidity: (%)	46-50	ATM Pressure: (kPa)	101-101.1
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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	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	15.49	/	15.41	15.42	24
	RB1#13	16.04	/	16.12		
	RB1#24	15.59	/	15.8		
	RB15#0	14.75	/	14.8		
	RB15#10	14.8	/	14.98		
	RB25#0	14.74	/	14.85		
5MHz 16QAM	RB1#0	14.62	/	14.41	14.48	24
	RB1#13	15.18	/	15.13		
	RB1#24	14.75	/	14.81		
	RB15#0	13.85	/	13.8		
	RB15#10	13.91	/	13.98		
	RB25#0	13.79	/	13.87		
10MHz QPSK	RB1#0	/	15.25	/	15.2	24
	RB1#25	/	15.9	/		
	RB1#49	/	15.57	/		
	RB25#0	/	14.63	/		
	RB25#25	/	14.75	/		
	RB50#0	/	14.66	/		
10MHz 16QAM	RB1#0	/	14.24	/	14.15	24
	RB1#25	/	14.85	/		
	RB1#49	/	14.52	/		
	RB25#0	/	13.55	/		
	RB25#25	/	13.67	/		
	RB50#0	/	13.67	/		

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	15.4	/	14.97	15.15	24
	RB1#13	15.85	/	15.44		
	RB1#24	15.3	/	14.9		
	RB15#0	14.57	/	14.23		
	RB15#10	14.54	/	14.23		
	RB25#0	14.51	/	14.19		
5MHz 16QAM	RB1#0	14.49	/	13.95	14.27	24
	RB1#13	14.97	/	14.46		
	RB1#24	14.4	/	13.92		
	RB15#0	13.76	/	13.64		
	RB15#10	13.73	/	13.63		
	RB25#0	13.66	/	13.62		
10MHz QPSK	RB1#0	/	15.09	/	14.76	24
	RB1#25	/	15.46	/		
	RB1#49	/	14.92	/		
	RB25#0	/	14.26	/		
	RB25#25	/	14.23	/		
	RB50#0	/	14.21	/		
10MHz 16QAM	RB1#0	/	13.94	/	13.7	24
	RB1#25	/	14.4	/		
	RB1#49	/	13.87	/		
	RB25#0	/	13.58	/		
	RB25#25	/	13.57	/		
	RB50#0	/	13.63	/		
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 $EIRP = \text{Conducted Power(dBm)} - L_c(\text{dB}) + G_T(\text{dBi})$ $EIRP \text{ PSD} = \text{Conducted PSD(dBm/5MHz)} - L_c(\text{dB}) + G_T(\text{dBi})$					Result:	Pass

Duty Cycle

Operation Band	Modulation	Bandwidth	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Limit (%)
LTE Band 40 Lower	QPSK	5M	2.995	10.005	29.94	38
		10M	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	4.511	5.160	4.980	5.080
5MHz 16QAM	4.511	4.511	4.491	5.100	4.980	4.960
10MHz QPSK	/	8.982	/	/	9.840	/
10MHz 16QAM	/	8.942	/	/	9.720	/

LTE Band 40 Upper:

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle channel	High Channel
5MHz QPSK	4.511	4.511	4.511	5.080	4.980	5.120
5MHz 16QAM	4.511	4.511	4.511	5.120	5.160	5.160
10MHz QPSK	/	8.942	/	/	9.760	/
10MHz 16QAM	/	8.942	/	/	9.360	/

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						
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	3.85	2305.082	2305.000	2314.770	2315.000
	-20	3.85	2305.650	2305.000	2314.409	2315.000
	-10	3.85	2305.544	2305.000	2314.498	2315.000
	0	3.85	2305.305	2305.000	2314.016	2315.000
	10	3.85	2305.401	2305.000	2314.164	2315.000
	20	3.85	2305.296	2305.000	2314.409	2315.000
	30	3.85	2305.169	2305.000	2314.138	2315.000
	40	3.85	2305.417	2305.000	2314.507	2315.000
	50	3.85	2305.806	2305.000	2314.645	2315.000
Frequency Stability vs. Voltage	20	3.27	2305.593	2305.000	2314.183	2315.000
	20	4.43	2305.155	2305.000	2314.238	2315.000
					Result:	Pass

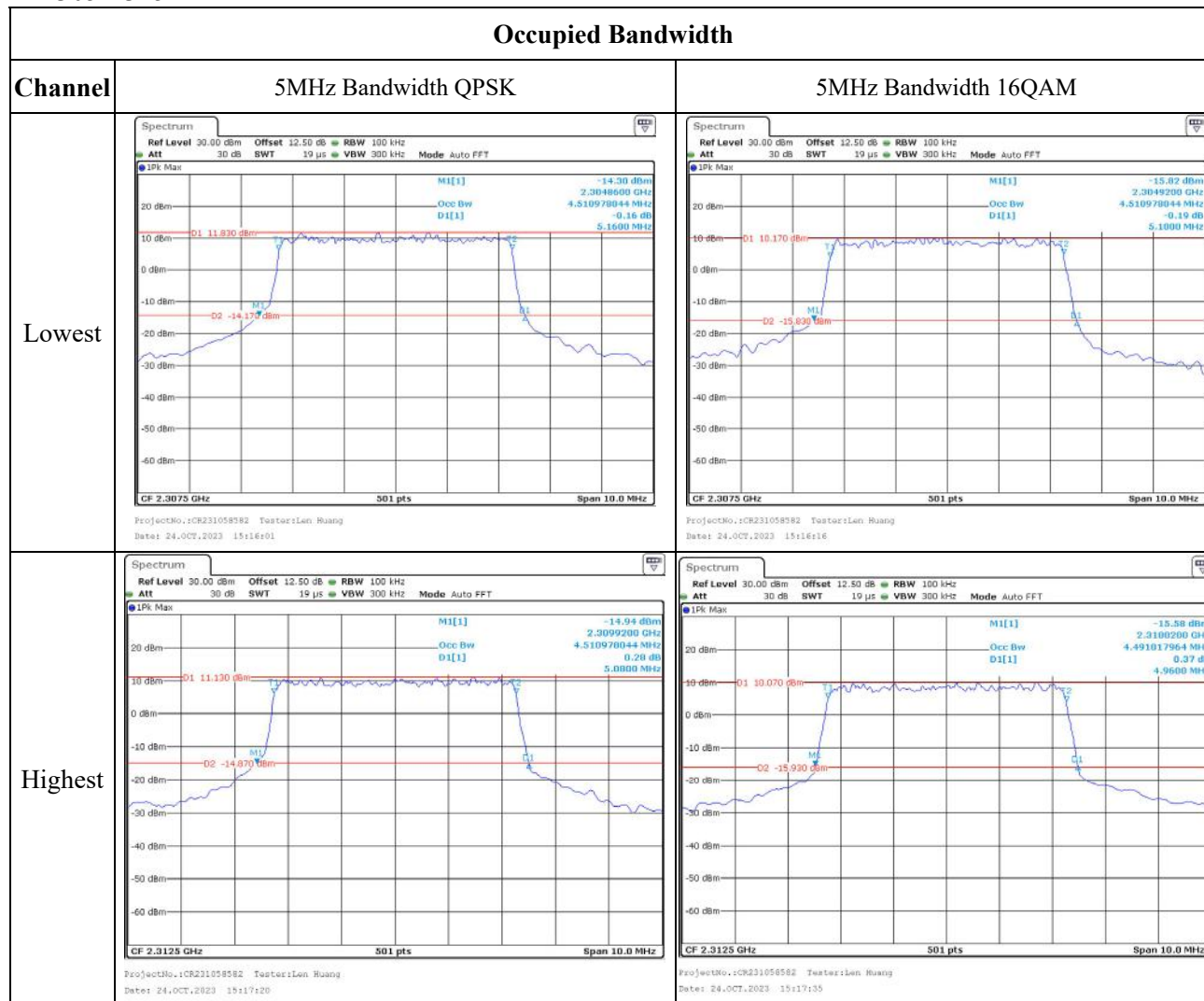
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2305.049	2305.000	2314.299	2315.000
	-20	3.85	2305.933	2305.000	2314.588	2315.000
	-10	3.85	2305.867	2305.000	2314.685	2315.000
	0	3.85	2305.077	2305.000	2314.951	2315.000
	10	3.85	2305.859	2305.000	2314.602	2315.000
	20	3.85	2305.707	2305.000	2314.207	2315.000
	30	3.85	2305.321	2305.000	2314.325	2315.000
	40	3.85	2305.761	2305.000	2314.081	2315.000
	50	3.85	2305.071	2305.000	2314.968	2315.000
Frequency Stability vs. Voltage	20	3.27	2305.880	2305.000	2314.017	2315.000
	20	4.43	2305.791	2305.000	2314.781	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	3.85	2350.244	2350.000	2359.125	2360.000
	-20	3.85	2350.080	2350.000	2359.146	2360.000
	-10	3.85	2350.804	2350.000	2359.395	2360.000
	0	3.85	2350.912	2350.000	2359.399	2360.000

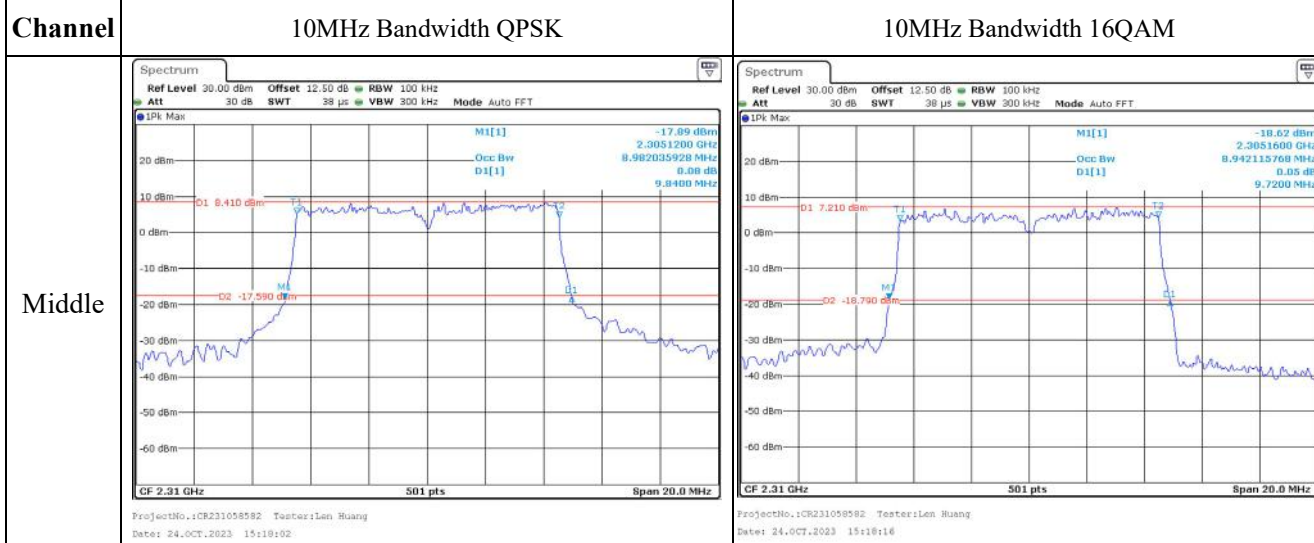
	10	3.85	2350.873	2350.000	2359.683	2360.000
	20	3.85	2350.043	2350.000	2359.756	2360.000
	30	3.85	2350.076	2350.000	2359.869	2360.000
	40	3.85	2350.922	2350.000	2359.456	2360.000
	50	3.85	2350.030	2350.000	2359.884	2360.000
Frequency Stability vs. Voltage	20	3.27	2350.915	2350.000	2359.756	2360.000
	20	4.43	2350.505	2350.000	2359.077	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	3.85	2350.416	2350.000	2359.935	2360.000
	-20	3.85	2350.194	2350.000	2359.811	2360.000
	-10	3.85	2350.035	2350.000	2359.685	2360.000
	0	3.85	2350.779	2350.000	2359.788	2360.000
	10	3.85	2350.356	2350.000	2359.794	2360.000
	20	3.85	2350.905	2350.000	2359.811	2360.000
	30	3.85	2350.656	2350.000	2359.337	2360.000
	40	3.85	2350.839	2350.000	2359.862	2360.000
	50	3.85	2350.663	2350.000	2359.414	2360.000
Frequency Stability vs. Voltage	20	3.27	2350.857	2350.000	2359.778	2360.000
	20	4.43	2350.762	2350.000	2359.804	2360.000
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):
2305-2315 MHz:



Occupied Bandwidth



2350-2360 MHz:

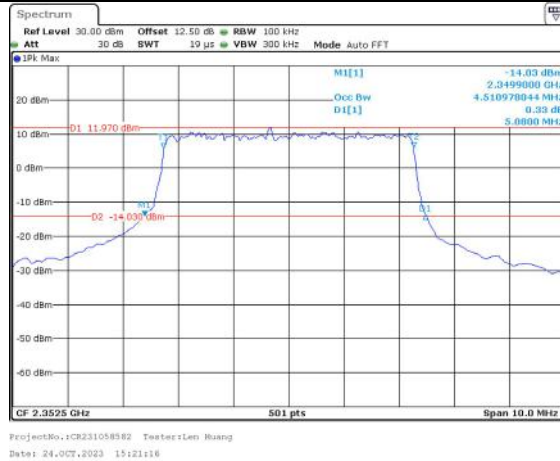
Occupied Bandwidth

Channel

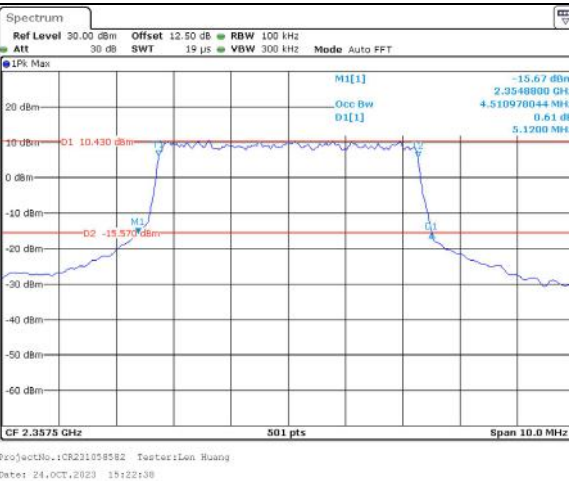
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

Lowest



Highest



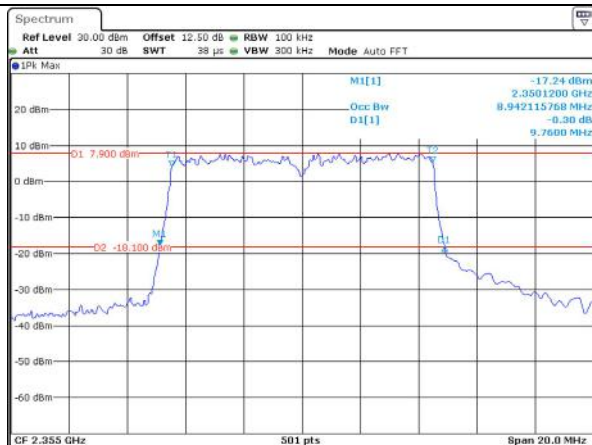
Occupied Bandwidth

Channel

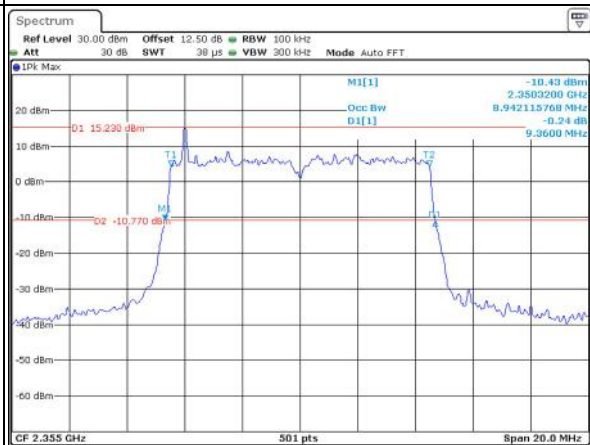
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Middle



ProjectNo.:CR231058582 Tester:Len Ruang
Date: 24.OCT.2023 15:23:19



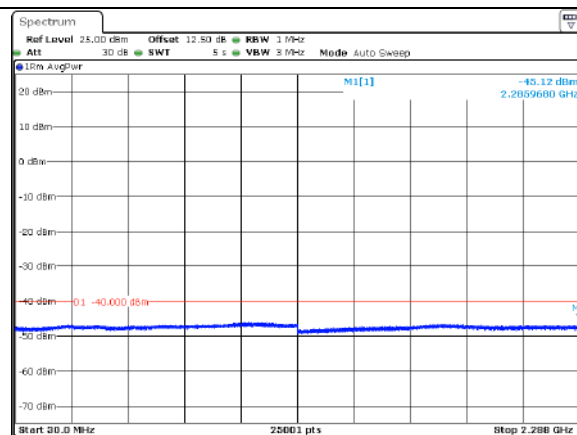
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Date: 24.OCT.2023 15:23:55

2305-2315 MHz:

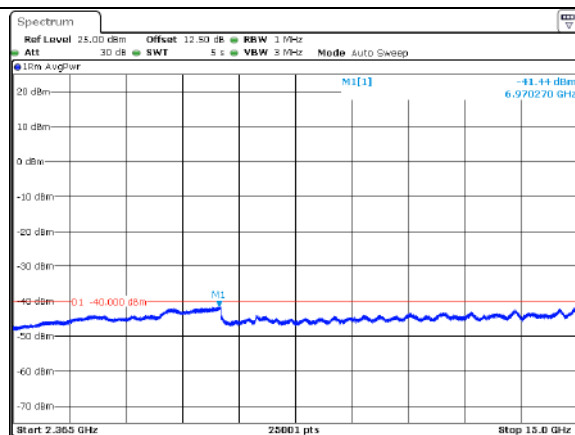
Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

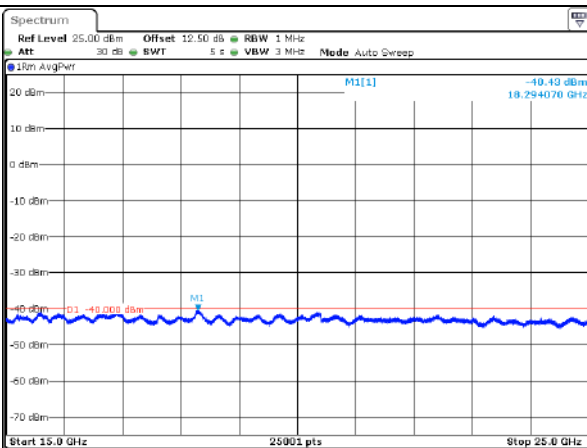


ProjectNo.:CR231058582 Tester:Len Huang
Date: 2.NOV.2023 16:21:00



ProjectNo.:CR231058582 Tester:Len Huang
Date: 2.NOV.2023 16:21:21

Lowest



ProjectNo.:CR231058582 Tester:Len Huang
Date: 2.NOV.2023 16:21:57

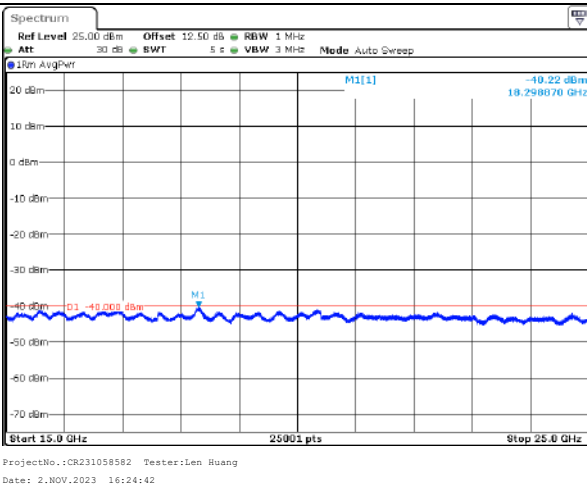
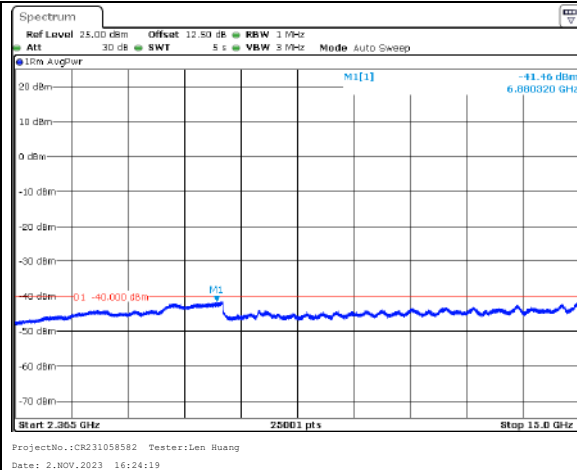
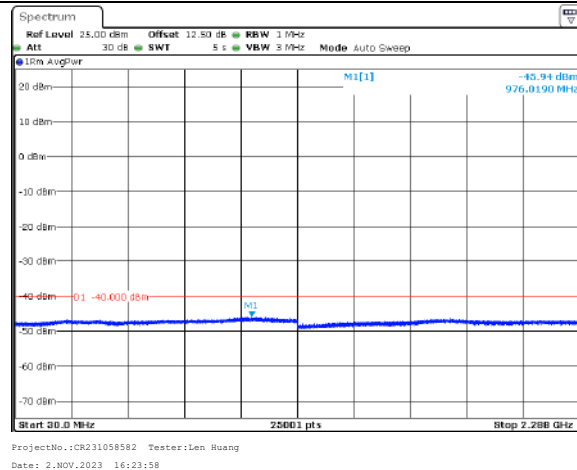
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Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

Highest



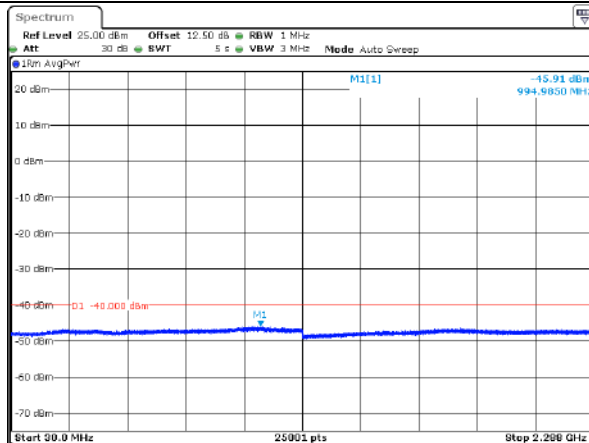
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Spurious Emissions at Antenna Terminal

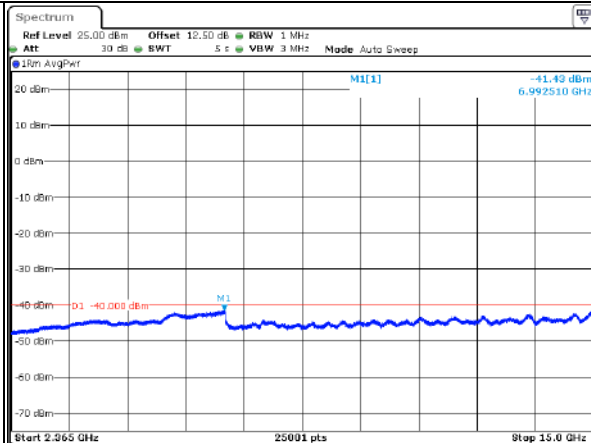
Channel

10MHz Bandwidth QPSK

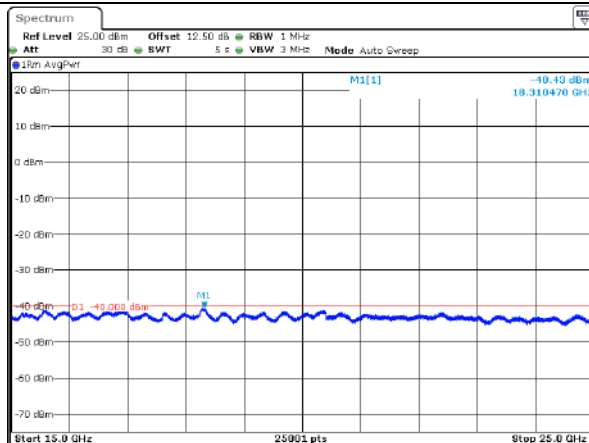
Middle



ProjectNo.: CR231058582 Tester: Len Huang
Date: 2.NOV.2023 16:25:29

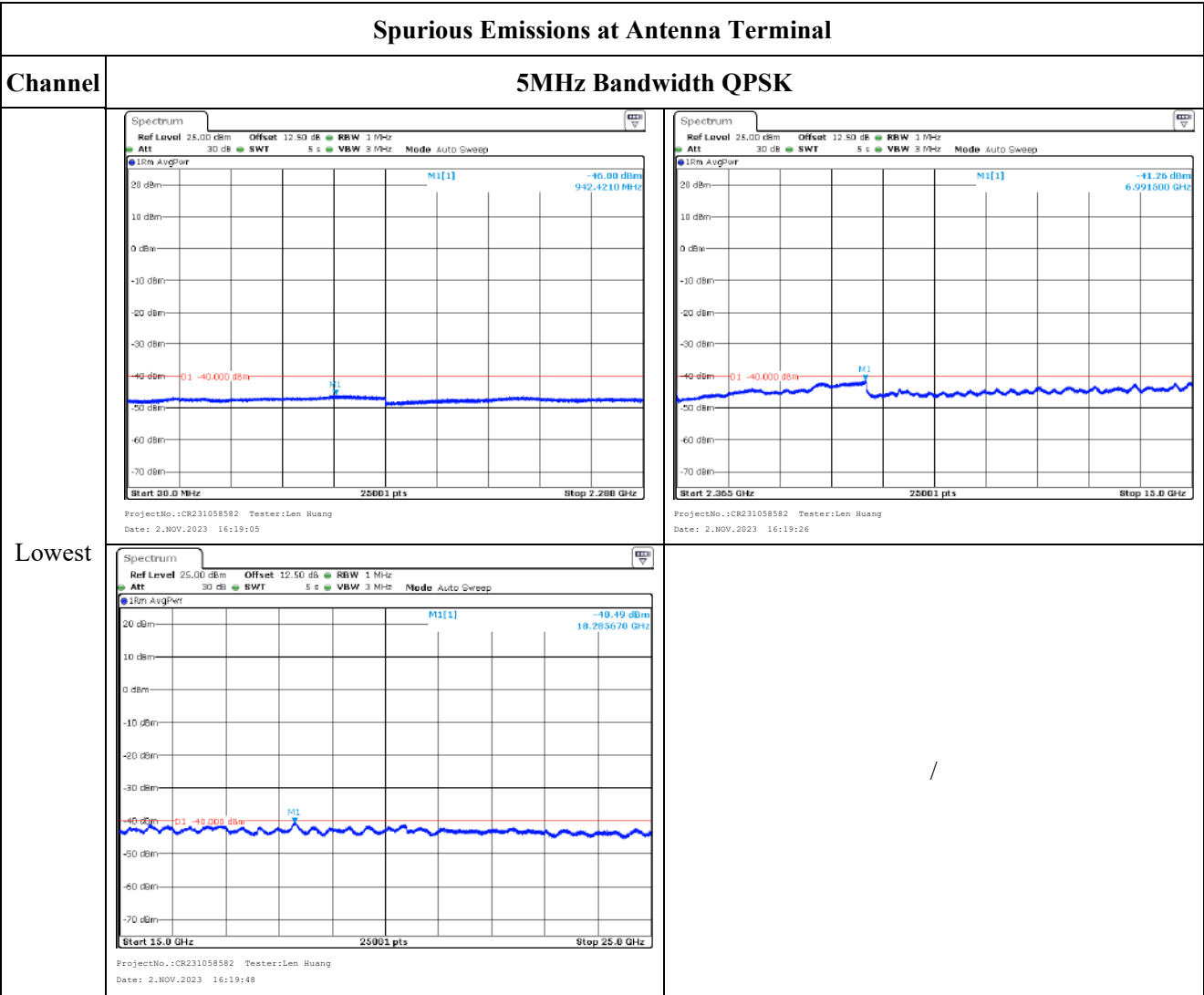


ProjectNo.: CR231058582 Tester: Len Huang
Date: 2.NOV.2023 16:25:51



ProjectNo.: CR231058582 Tester: Len Huang
Date: 2.NOV.2023 16:26:13

2350-2360 MHz:

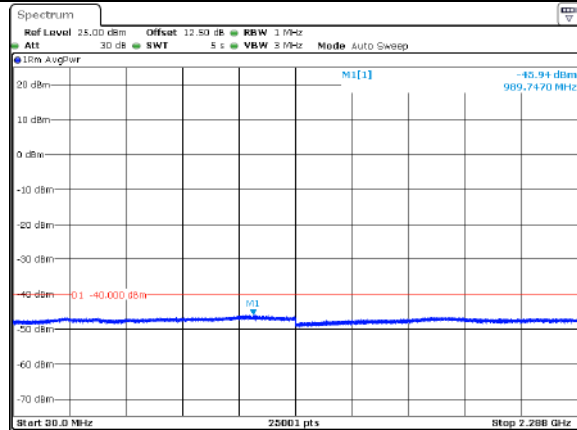


Spurious Emissions at Antenna Terminal

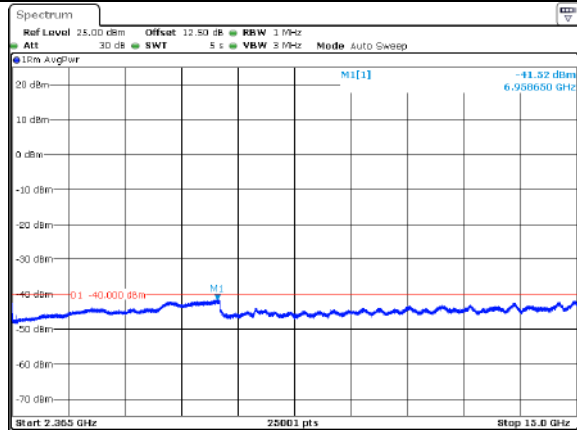
Channel

5MHz Bandwidth QPSK

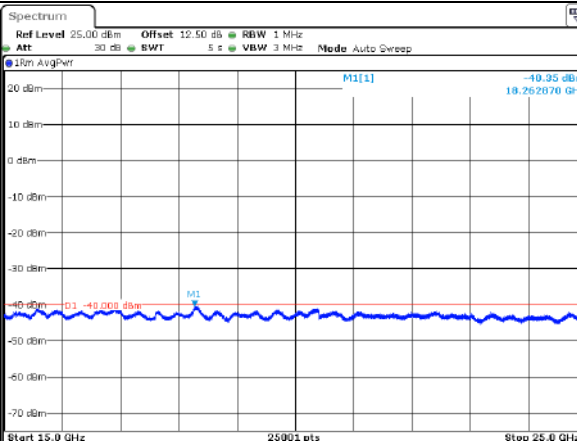
Highest



ProjectNo.:CR231058582 Tester:Len Huang
Date: 2.NOV.2023 16:13:31



ProjectNo.:CR231058582 Tester:Len Huang
Date: 2.NOV.2023 16:13:54



ProjectNo.:CR231058582 Tester:Len Huang
Date: 2.NOV.2023 16:14:15

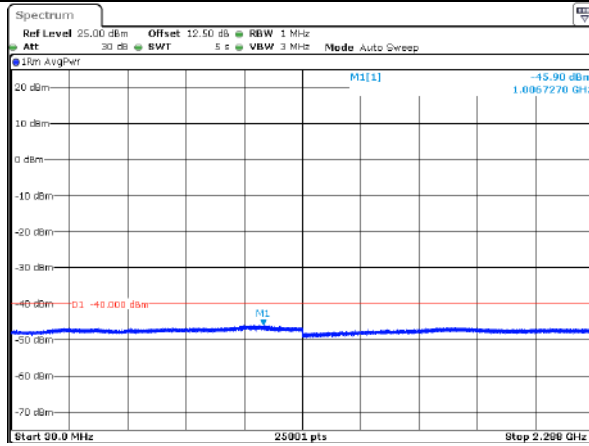
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Spurious Emissions at Antenna Terminal

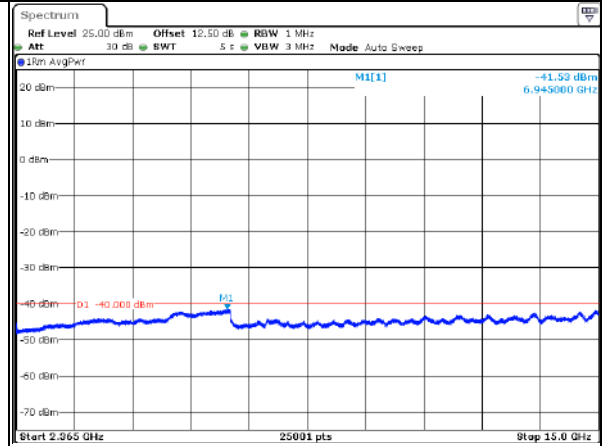
Channel

10MHz Bandwidth QPSK

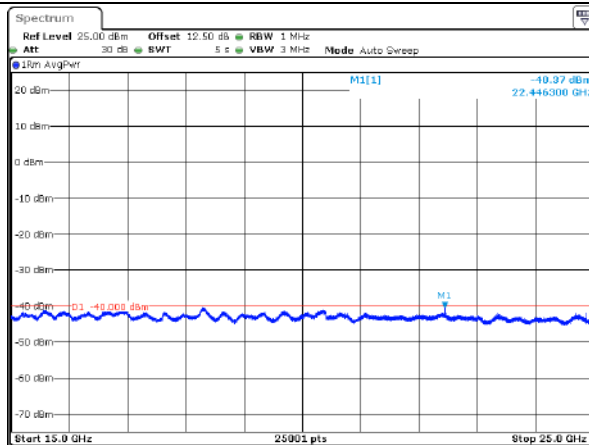
Middle



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Date: 2.NOV.2023 16:15:07



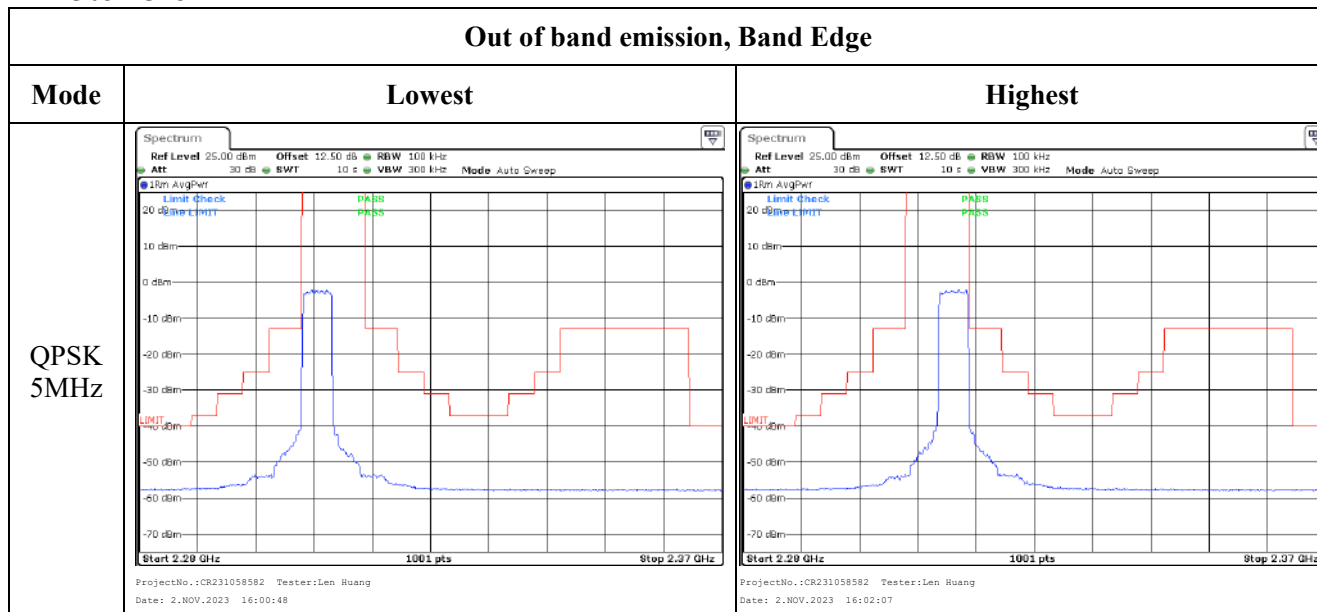
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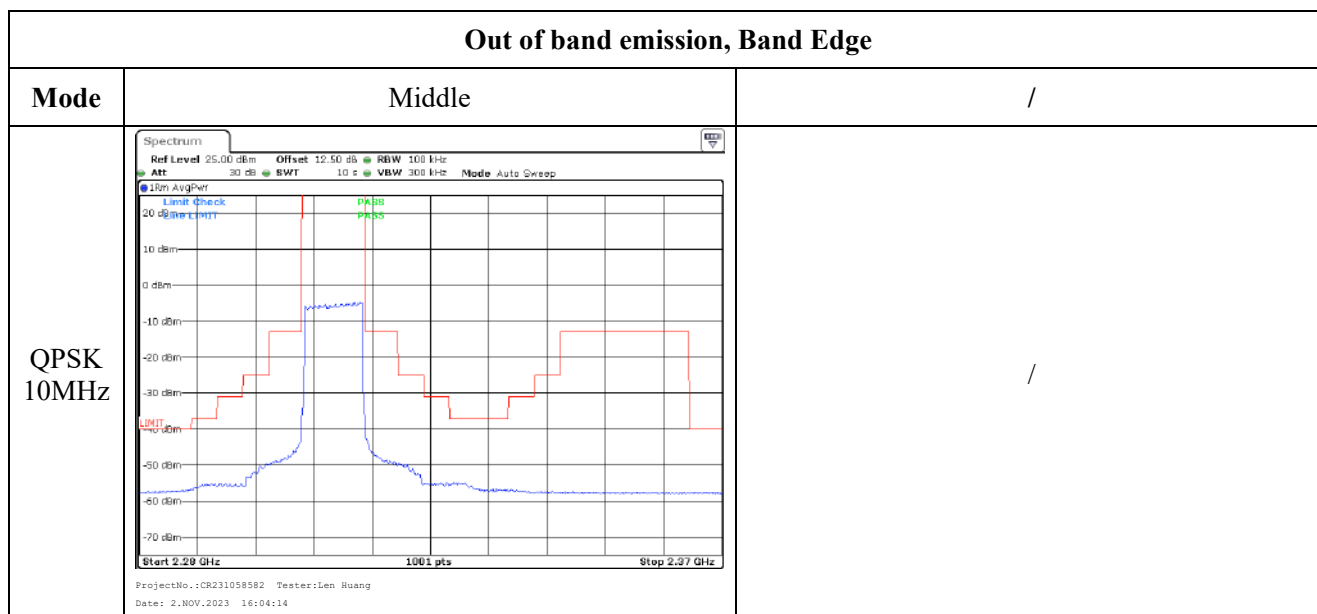
ProjectNo.: CR231058582 Tester: Len Ruang
Date: 2.NOV.2023 16:15:50

2305-2315 MHz:

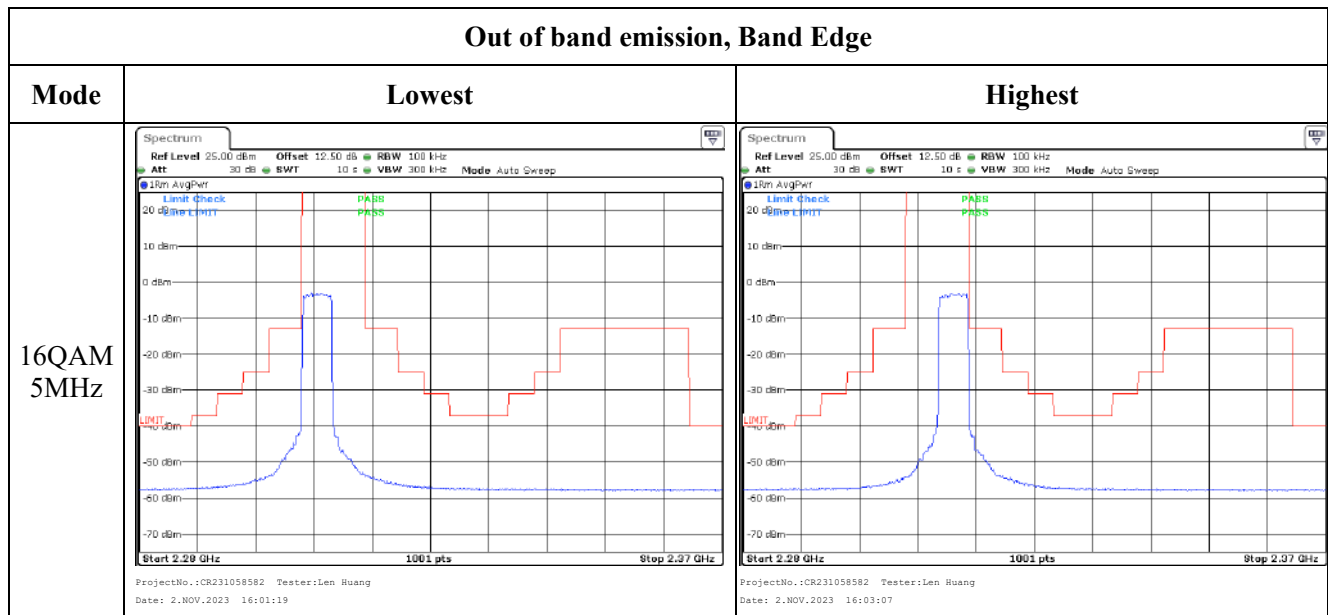
Out of band emission, Band Edge



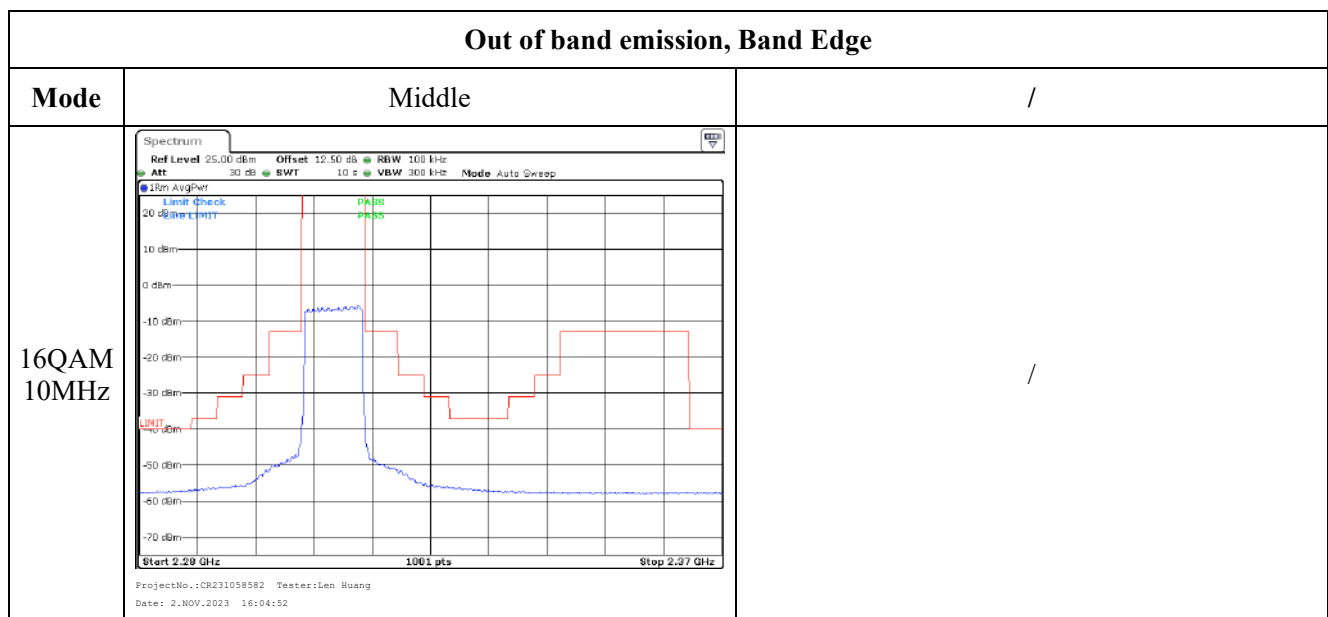
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



2350-2360 MHz:

