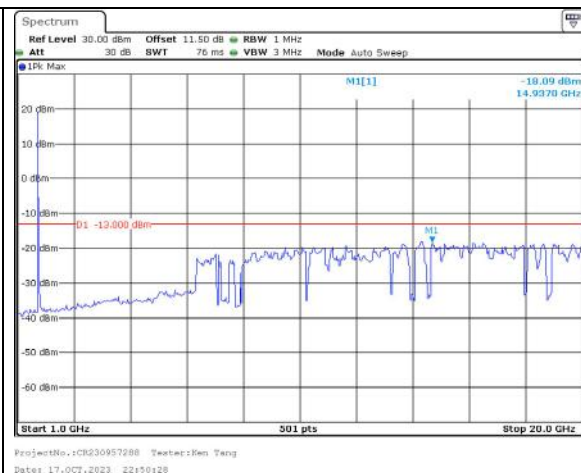
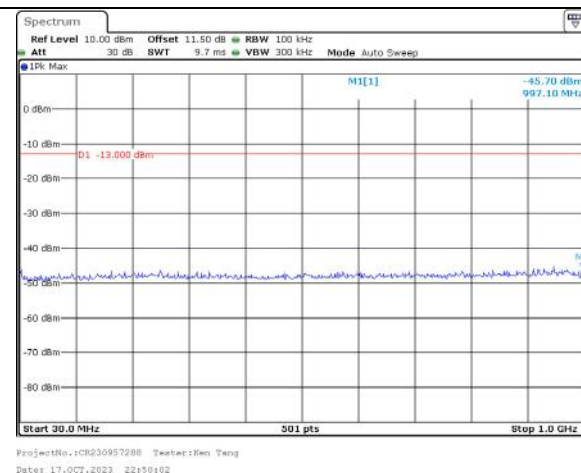


Spurious Emissions at Antenna Terminal

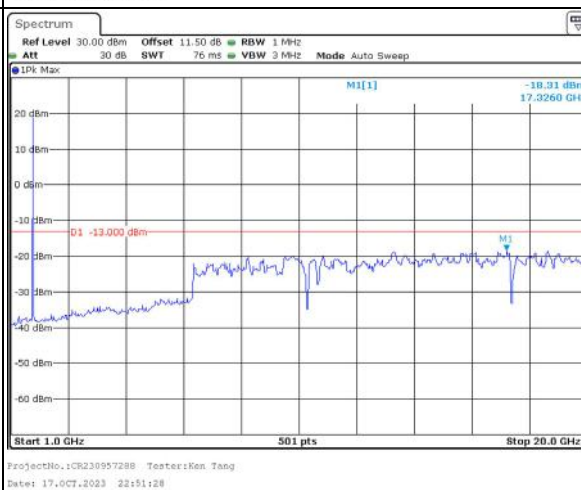
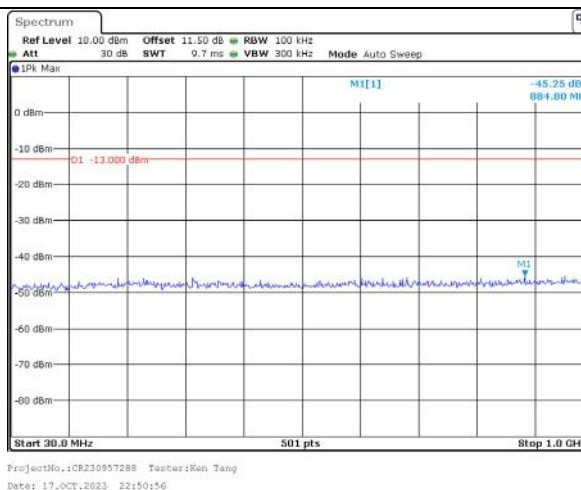
Channel

1.4MHz Bandwidth QPSK

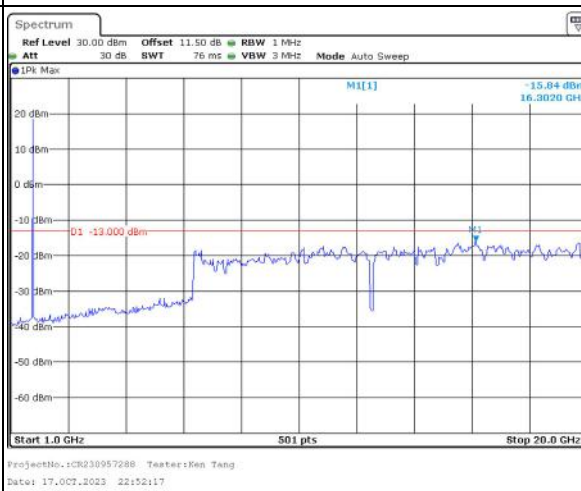
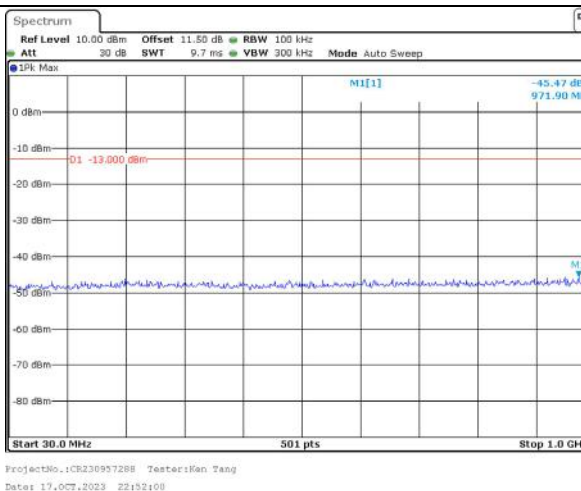
Lowest



Middle



Highest

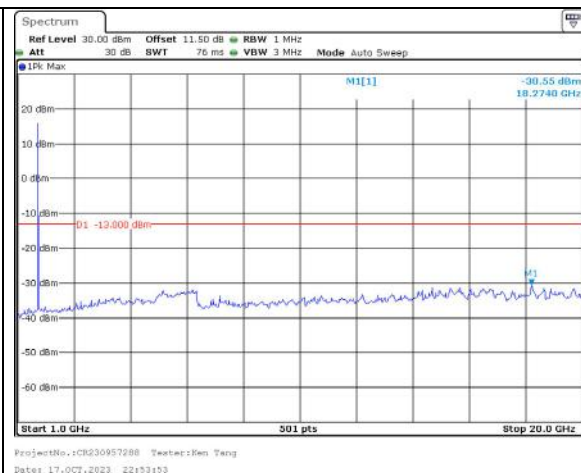
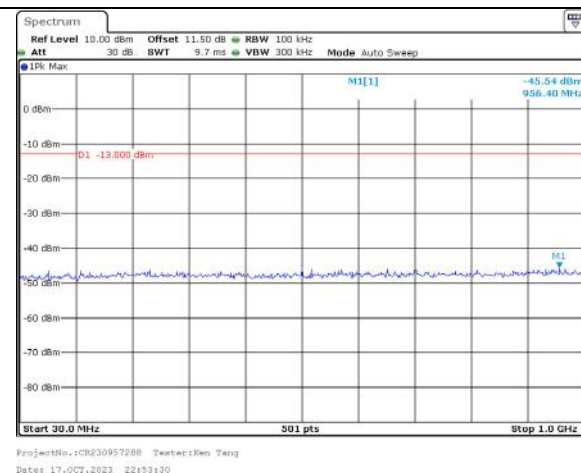


Spurious Emissions at Antenna Terminal

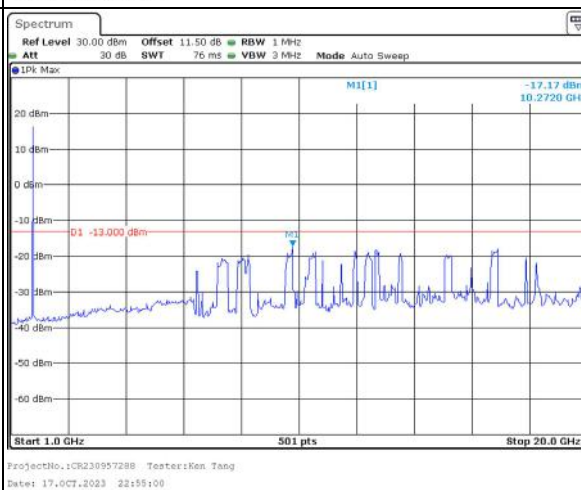
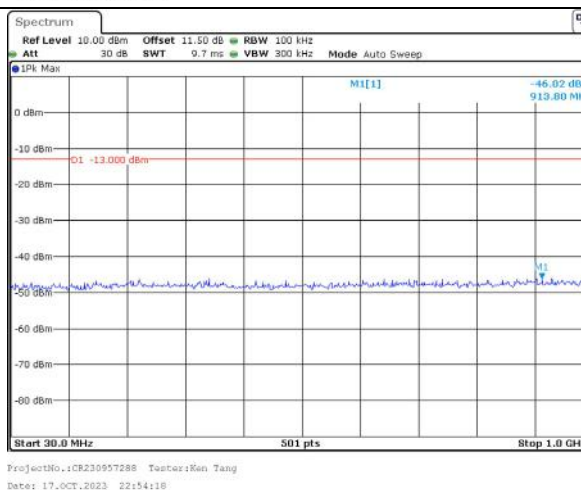
Channel

3MHz Bandwidth QPSK

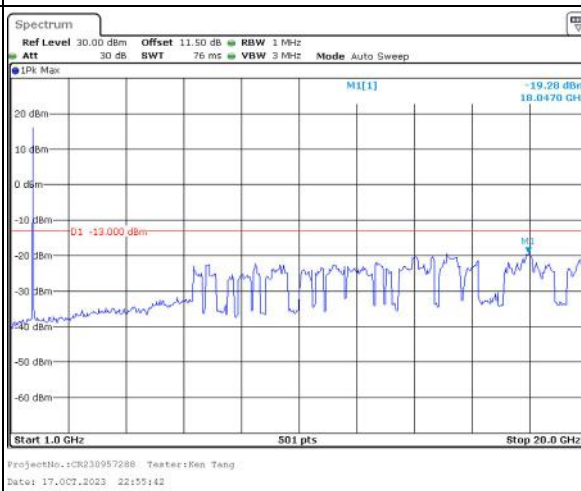
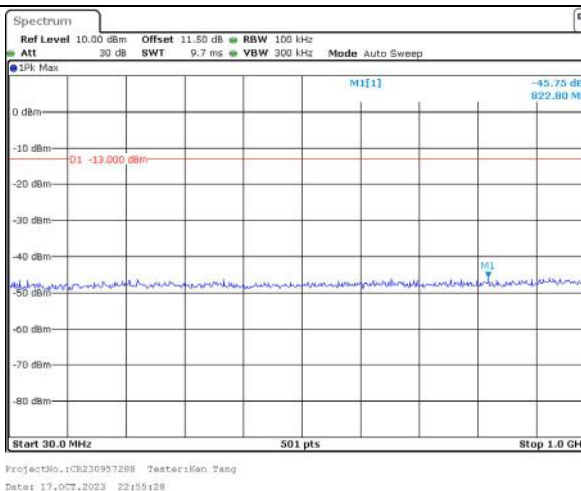
Lowest



Middle



Highest

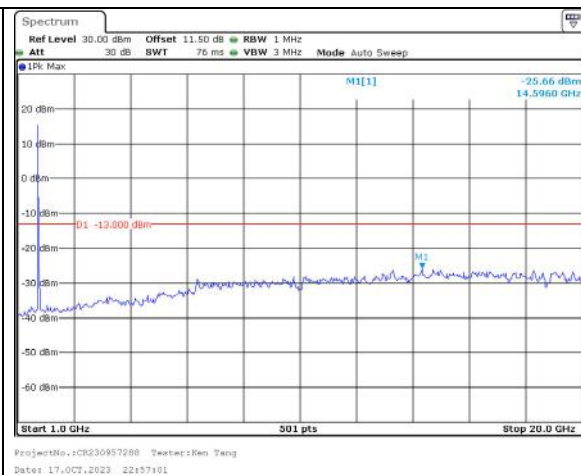
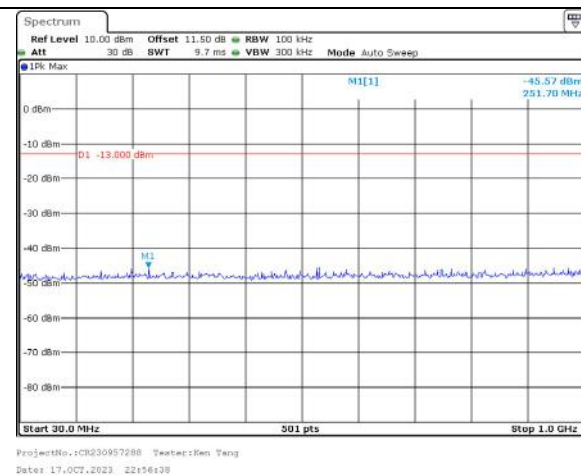


Spurious Emissions at Antenna Terminal

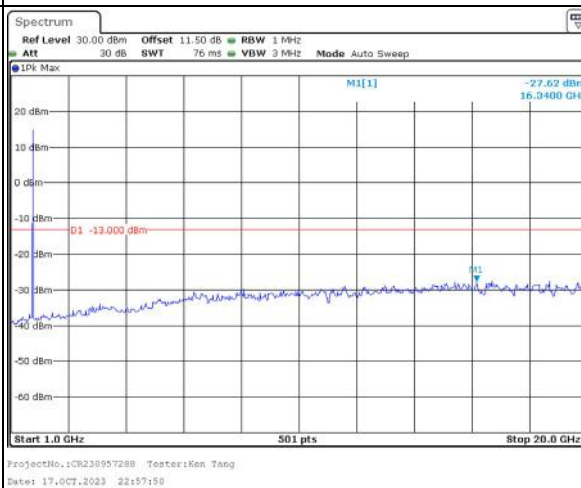
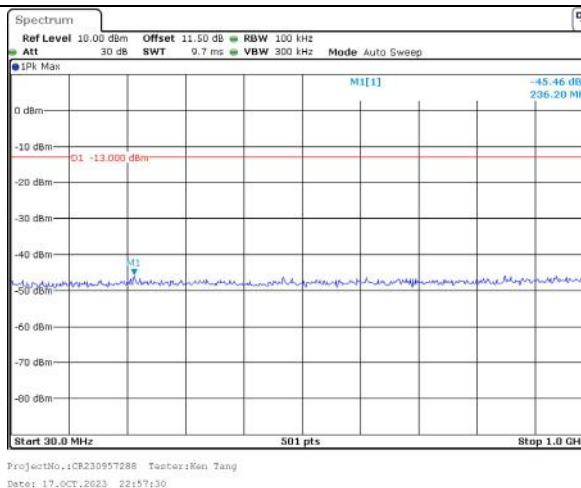
Channel

5MHz Bandwidth QPSK

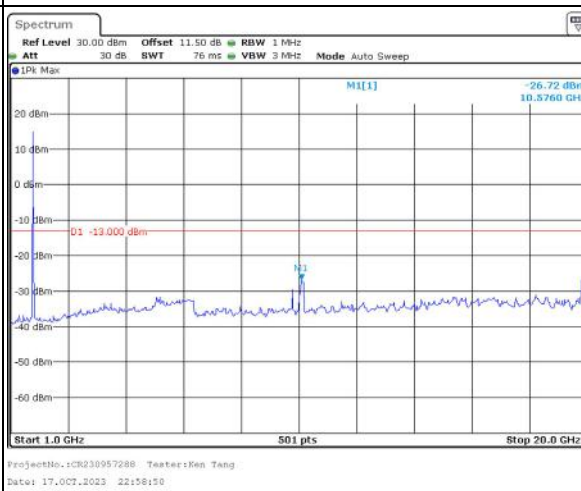
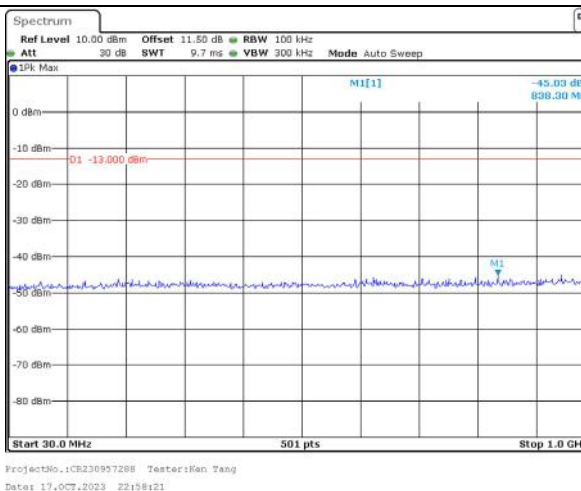
Lowest



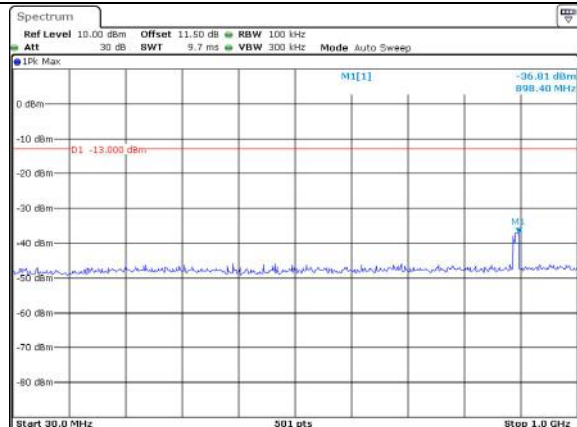
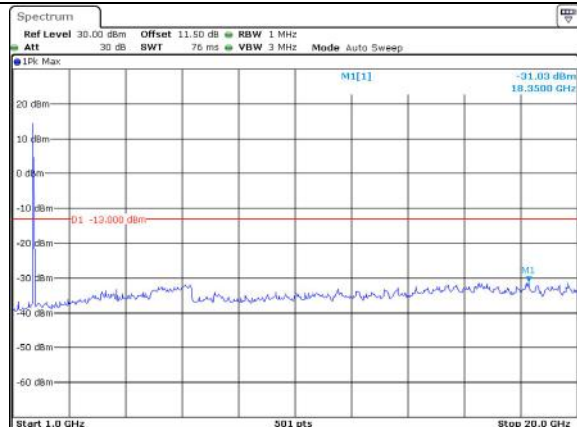
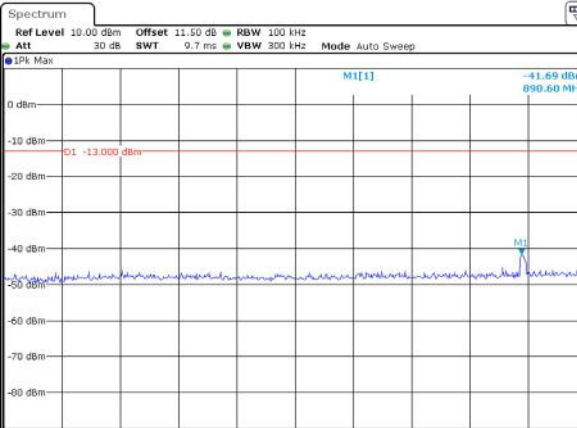
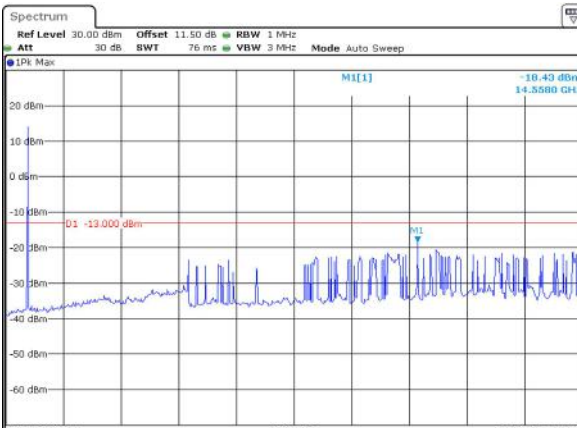
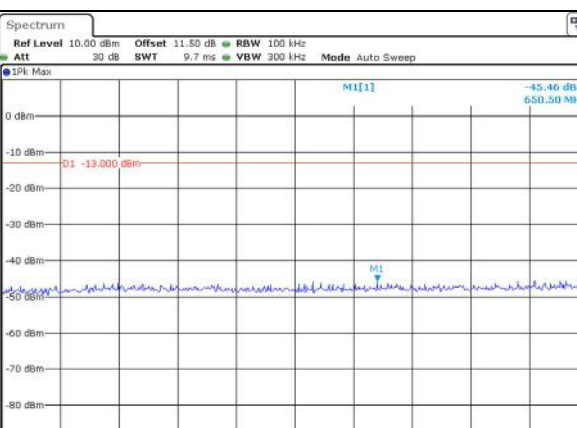
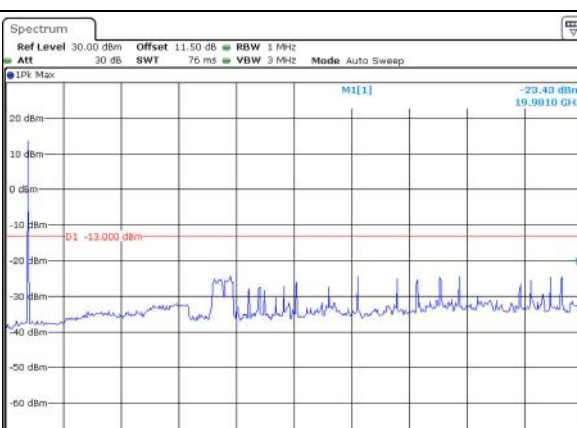
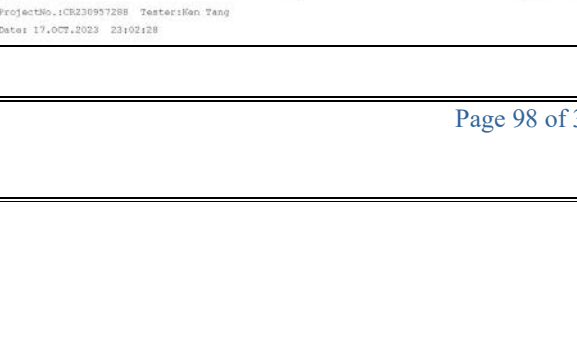
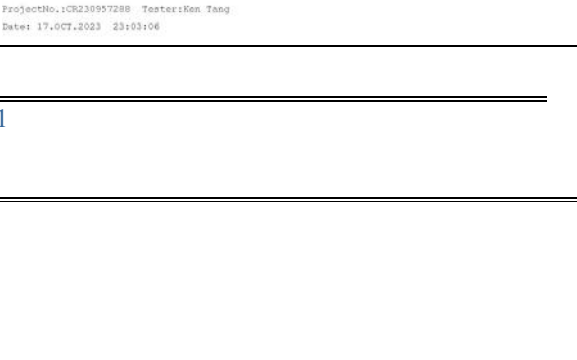
Middle



Highest



Spurious Emissions at Antenna Terminal

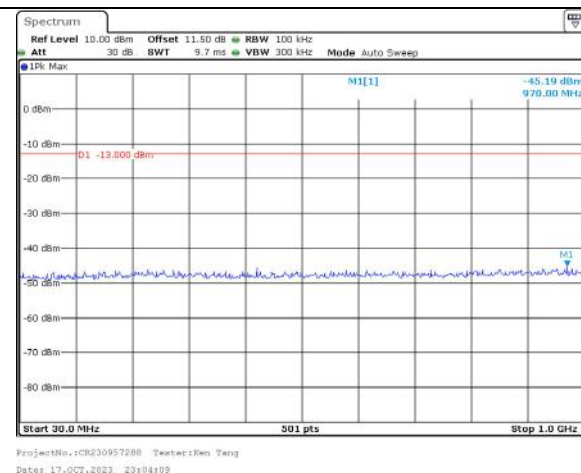
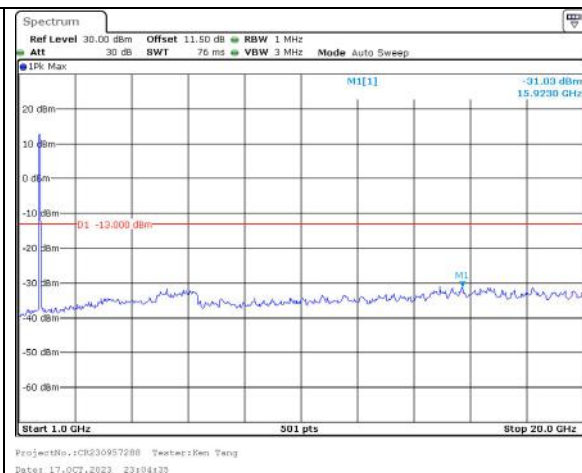
Channel	10MHz Bandwidth QPSK	
Lowest	 	 
Middle	 	 
Highest		

Spurious Emissions at Antenna Terminal

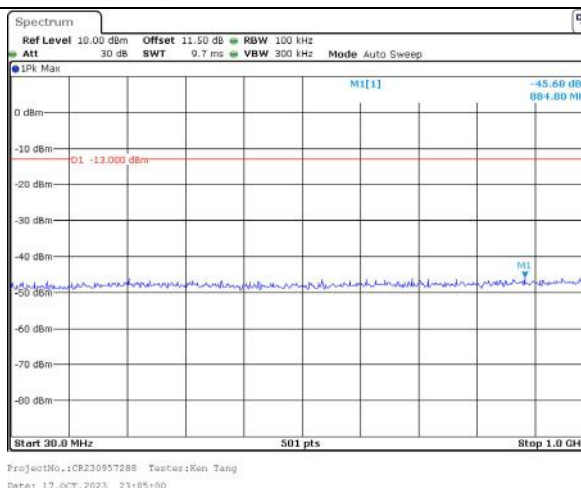
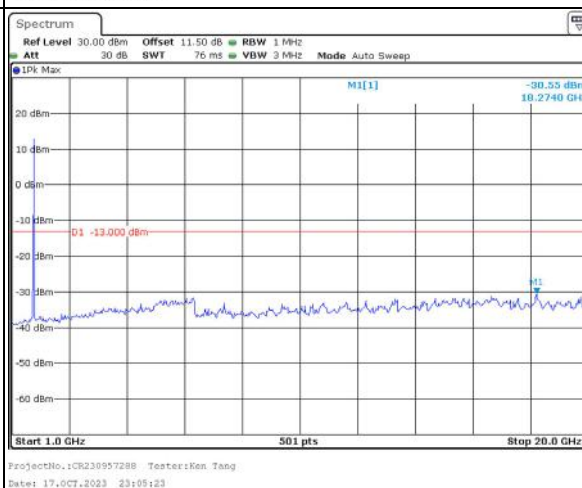
Channel

15MHz Bandwidth QPSK

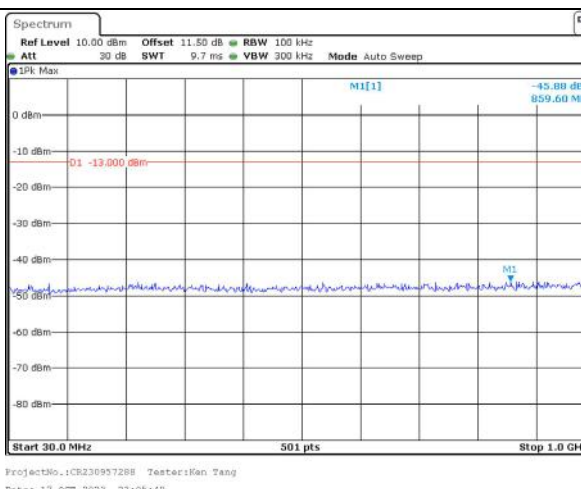
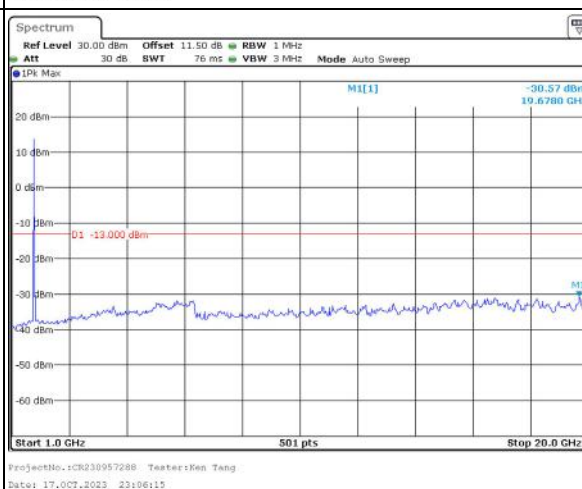
Lowest

ProjectNo.:CR230957288 Tester:Ken Tang
Date: 17.OCT.2023 23:04:09ProjectNo.:CR230957288 Tester:Ken Tang
Date: 17.OCT.2023 23:04:10

Middle

ProjectNo.:CR230957288 Tester:Ken Tang
Date: 17.OCT.2023 23:05:00ProjectNo.:CR230957288 Tester:Ken Tang
Date: 17.OCT.2023 23:05:13

Highest

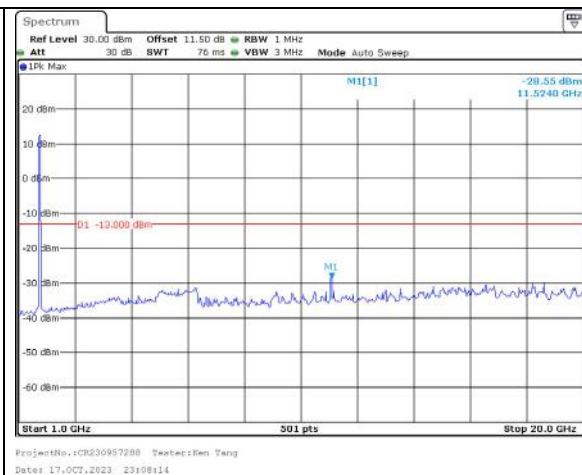
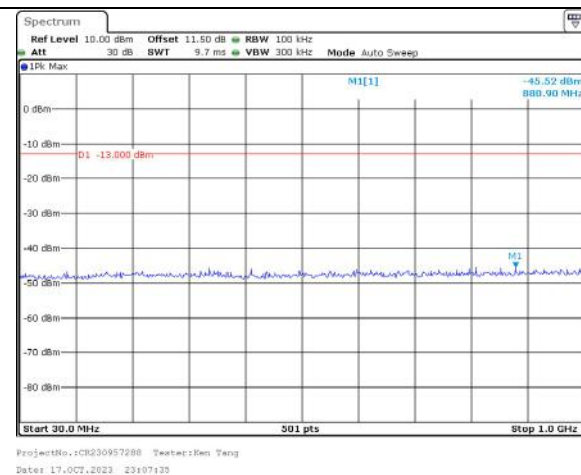
ProjectNo.:CR230957288 Tester:Ken Tang
Date: 17.OCT.2023 23:06:19ProjectNo.:CR230957288 Tester:Ken Tang
Date: 17.OCT.2023 23:06:15

Spurious Emissions at Antenna Terminal

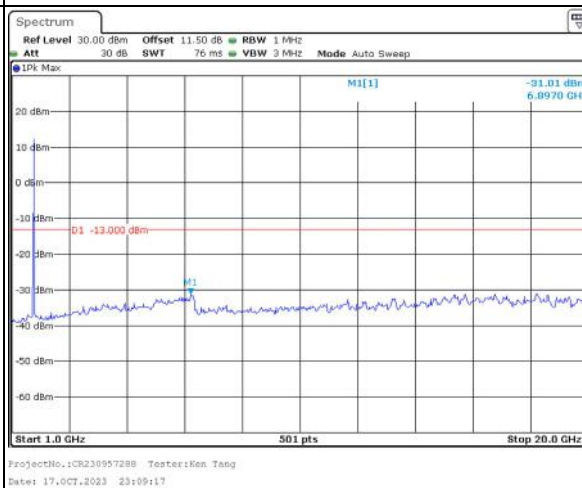
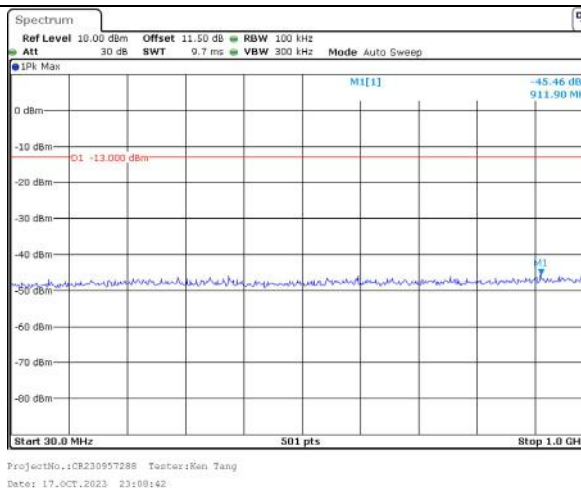
Channel

20MHz Bandwidth QPSK

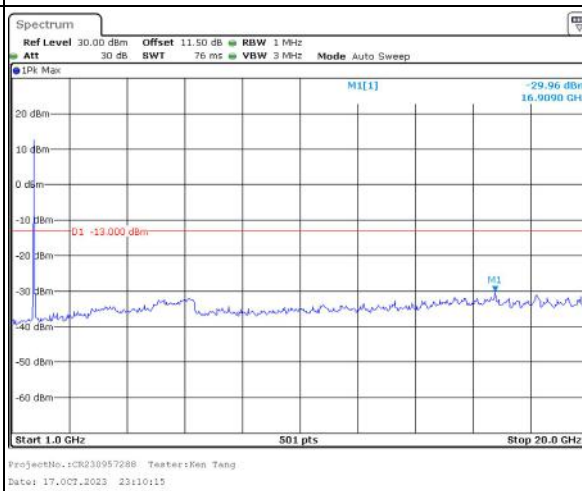
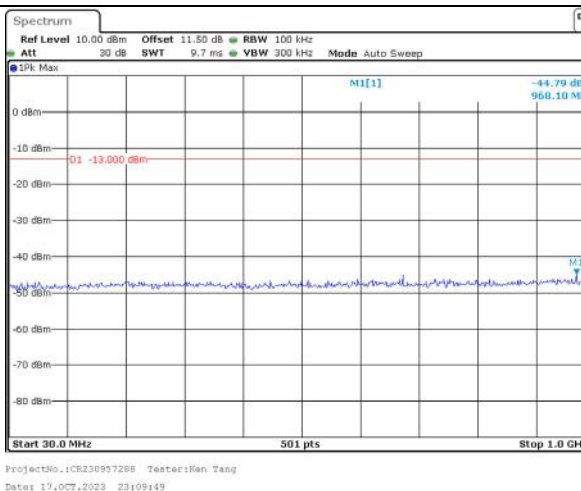
Lowest



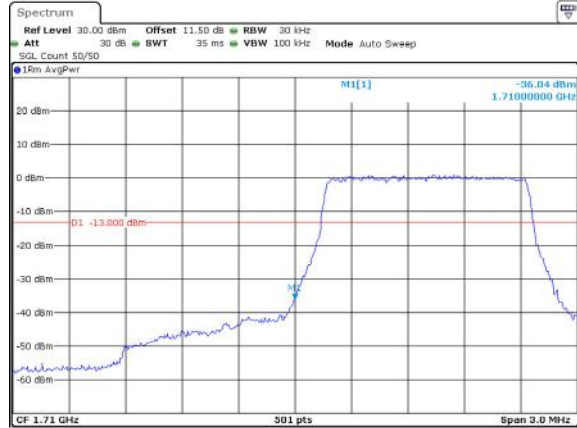
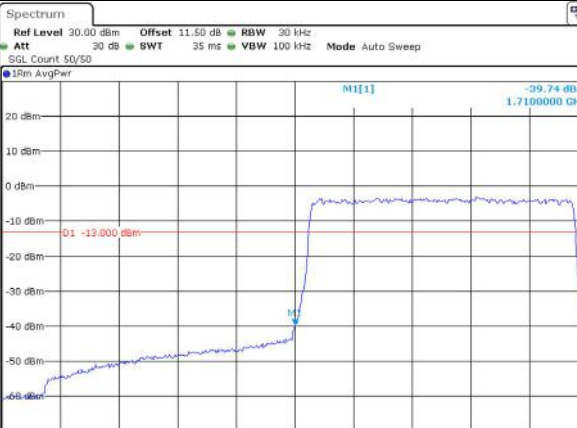
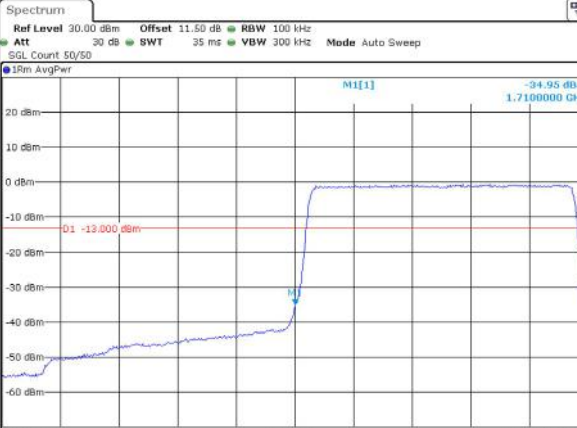
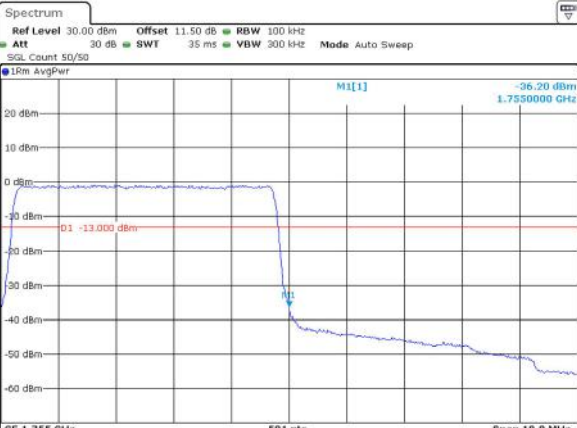
Middle



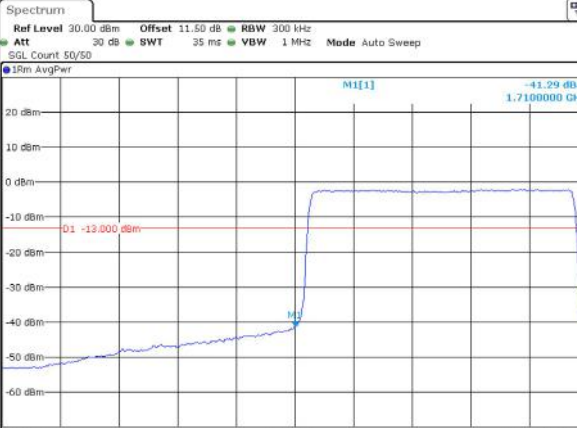
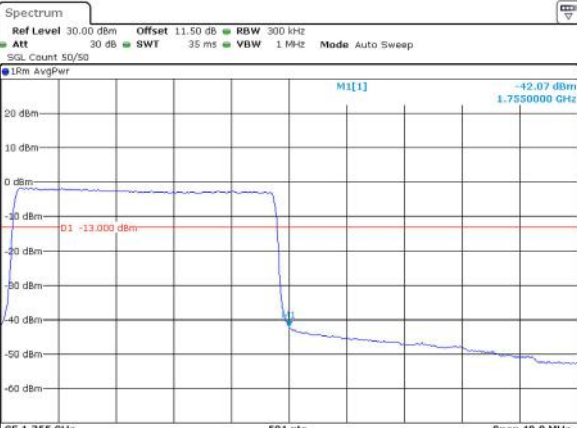
Highest



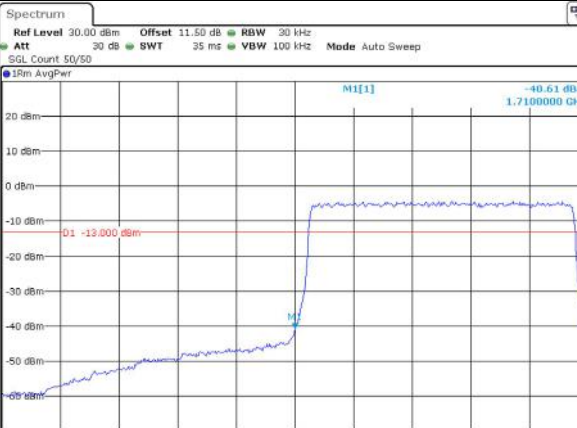
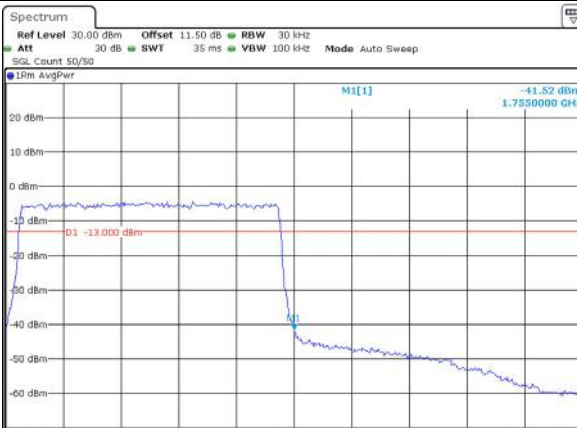
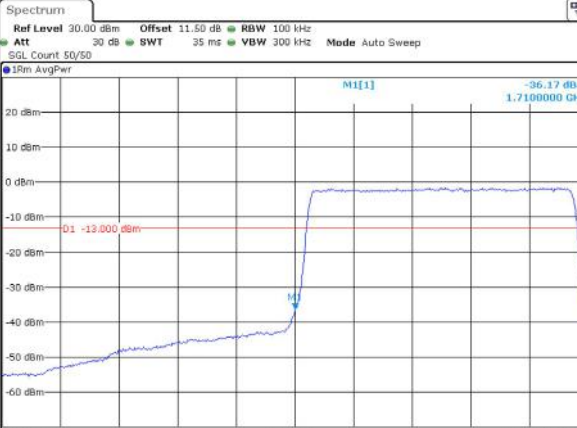
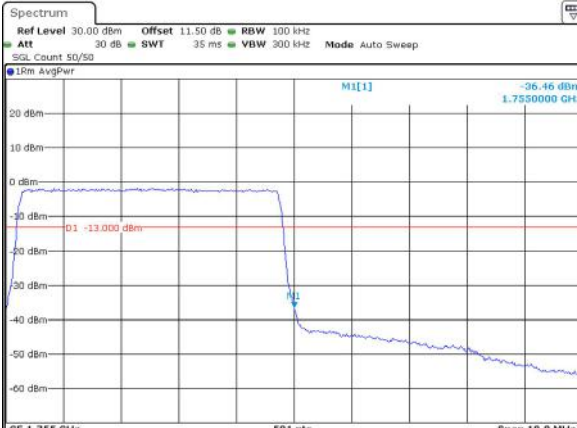
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:44	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:59
QPSK 3MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:45	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:59
QPSK 5MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:10:47	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:11:01

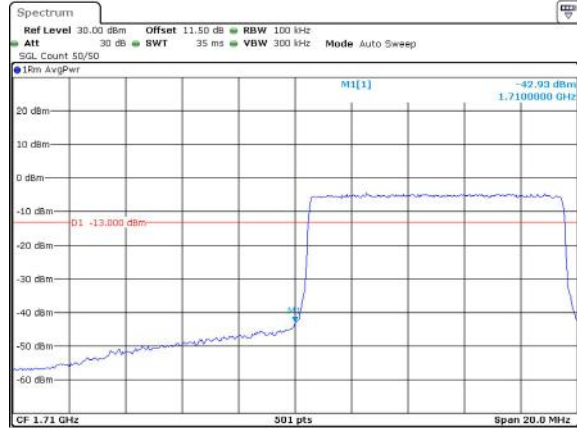
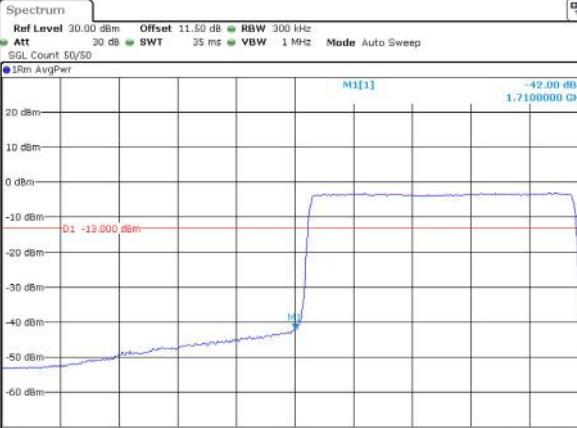
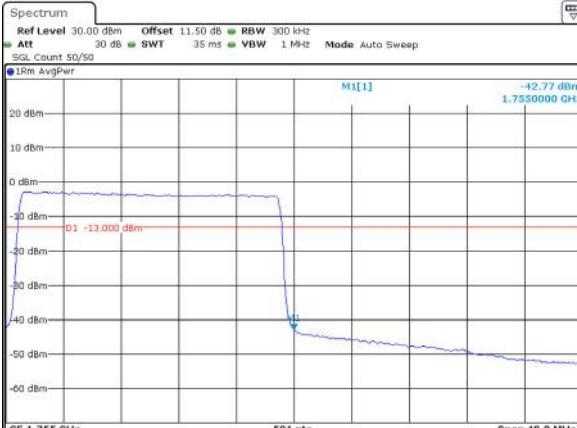
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:11:50	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:12:05
QPSK 15MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:12:53	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:13:07
QPSK 20MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:13:55	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:14:09

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:50	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:04
16QAM 3MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:09:52	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:10:06
16QAM 5MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:10:54	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 17.OCT.2023 22:11:08

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	 ProjectNo.: CR230957288 Tester: Ken Tang Date: 17.OCT.2023 22:11:57	 ProjectNo.: CR230957288 Tester: Ken Tang Date: 17.OCT.2023 22:12:12
16QAM 15MHz	 ProjectNo.: CR230957288 Tester: Ken Tang Date: 17.OCT.2023 22:13:00	 ProjectNo.: CR230957288 Tester: Ken Tang Date: 17.OCT.2023 22:13:14
16QAM 20MHz	 ProjectNo.: CR230957288 Tester: Ken Tang Date: 17.OCT.2023 22:14:02	 ProjectNo.: CR230957288 Tester: Ken Tang Date: 17.OCT.2023 22:14:15

4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	2BUF-5	Test Date:	2023/10/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ken Tang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26	Relative Humidity: (%)	49	ATM Pressure: (kPa)	101.5
----------------------	----	---------------------------	----	------------------------	-------

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)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

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

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	23.12	23	22.91	15.39	38.45
	RB1#3	23.24	23.11	23.09		
	RB1#5	23.02	22.97	22.9		
	RB3#0	23.21	23.09	23.03		
	RB3#3	23.17	23.01	23.02		
	RB6#0	22.14	22.06	21.97		
1.4MHz 16QAM	RB1#0	22.09	21.98	22.01	14.48	38.45
	RB1#3	22.33	22.16	22.21		
	RB1#5	22.08	21.98	22.01		
	RB3#0	22.25	22.26	22		
	RB3#3	22.21	22.26	21.99		
	RB6#0	21.05	21.06	21.04		
3MHz QPSK	RB1#0	23.15	22.99	22.88	15.3	38.45
	RB1#8	23.1	22.97	22.94		
	RB1#14	23.05	22.98	22.9		
	RB6#0	22.04	21.99	21.87		
	RB6#9	22.01	21.99	21.88		
	RB15#0	22.06	22.07	21.93		
3MHz 16QAM	RB1#0	22.18	22.57	22.06	14.73	38.45
	RB1#8	22.12	22.57	22.07		
	RB1#14	22.08	22.58	22.05		
	RB6#0	20.99	21.08	20.92		
	RB6#9	20.98	21.03	20.9		
	RB15#0	21.12	21.14	20.95		
5MHz QPSK	RB1#0	23.06	22.92	22.87	15.29	38.45
	RB1#13	23.14	23.02	22.98		
	RB1#24	22.98	22.87	22.84		
	RB15#0	22.11	22.06	22.01		
	RB15#10	22.08	22.04	21.93		
	RB25#0	22.1	22.04	21.97		
5MHz 16QAM	RB1#0	22.07	21.83	22.13	14.42	38.45
	RB1#13	22.18	21.93	22.27		
	RB1#24	22.03	21.8	22.11		
	RB15#0	21.13	21.09	21		
	RB15#10	21.11	21.09	20.91		
	RB25#0	21.06	21.11	20.98		
10MHz QPSK	RB1#0	23.12	23.04	22.98	15.43	38.45

	RB1#25	23.28	23.19	23.08		
	RB1#49	23.05	22.92	22.88		
	RB25#0	22.11	22.08	22.06		
	RB25#25	22.11	22	21.85		
	RB50#0	22.08	22.07	21.95		
10MHz 16QAM	RB1#0	22.09	22.59	22.12	14.85	38.45
	RB1#25	22.27	22.7	22.18		
	RB1#49	21.99	22.48	22.06		
	RB25#0	21.2	21.17	21.09		
	RB25#25	21.22	21.06	20.89		
	RB50#0	21.09	21.1	20.98		

Note: ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)
Gr(dBd)=Gr(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 Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	6.35	7.76	6.76	13
	RB50#0	7.26	8.80	7.01	13
10MHz 16QAM	RB1#0	6.16	8.25	6.43	13
	RB50#0	6.31	7.52	6.91	13
				Result:	Pass

FCC §2.1049, §22.905:Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.096	1.102	1.284	1.296	1.308
1.4MHz 16QAM	1.090	1.096	1.090	1.296	1.320	1.284
3MHz QPSK	2.683	2.683	2.683	2.892	2.880	2.868
3MHz 16QAM	2.683	2.683	2.683	2.868	2.892	2.880
5MHz QPSK	4.511	4.531	4.491	5.580	5.800	4.960
5MHz 16QAM	4.511	4.511	4.511	5.400	4.920	4.960
10MHz QPSK	8.982	8.942	8.942	10.000	9.640	9.560
10MHz 16QAM	8.982	8.942	8.942	9.680	9.600	9.640

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

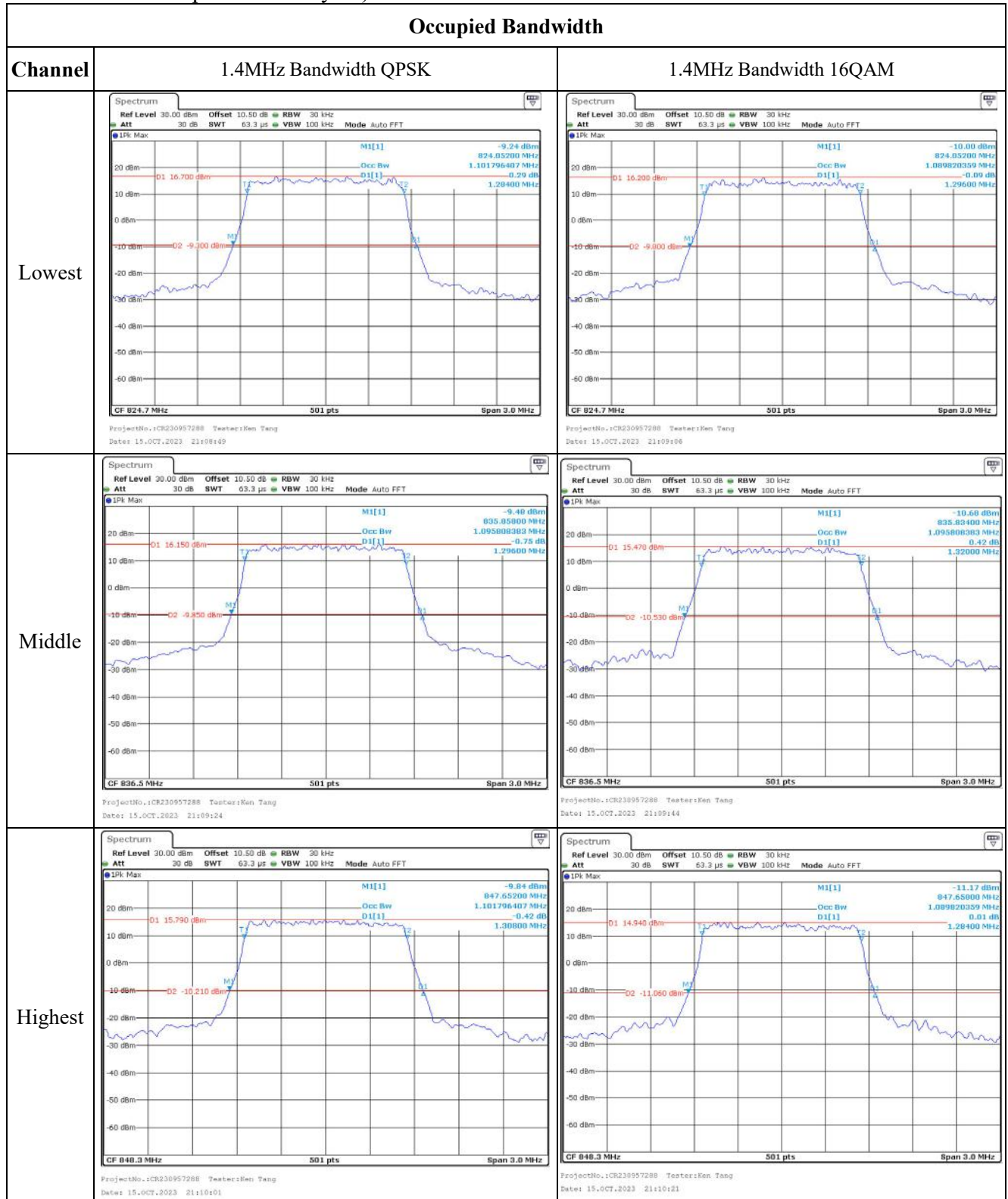
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
----------------	---

FCC §2.1055, §22.355: Frequency Stability

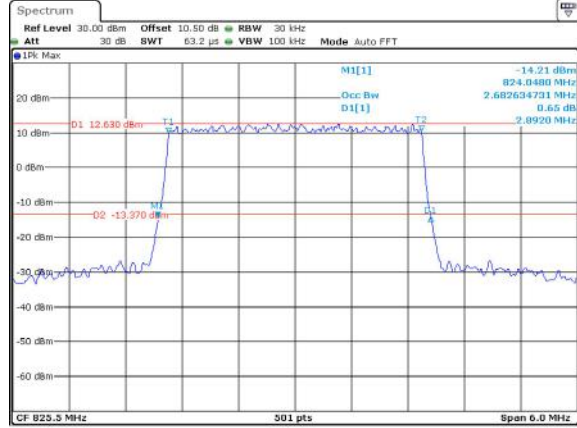
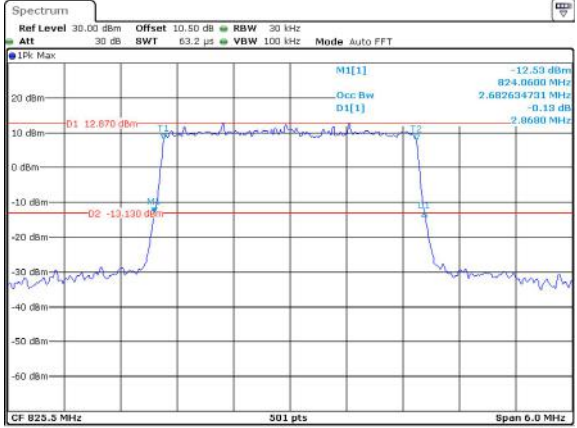
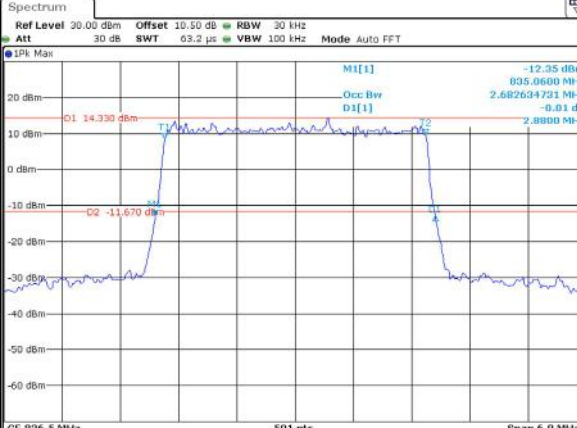
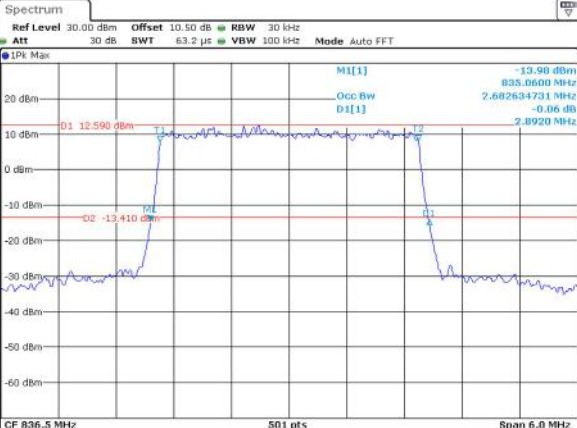
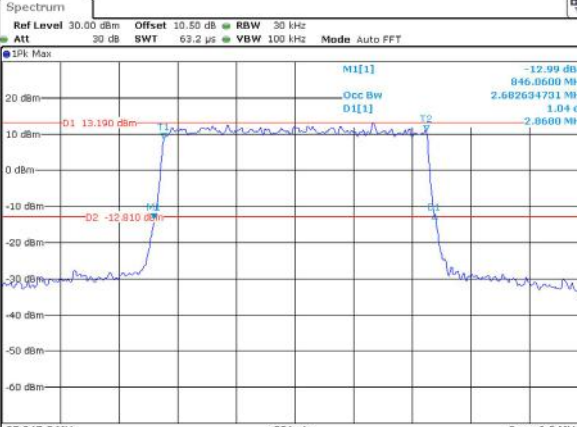
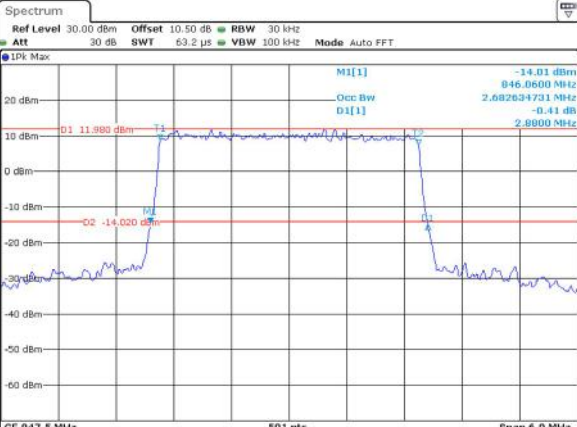
Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.87	108.969	0.130	2.5
	-20	3.87	104.798	0.125	2.5
	-10	3.87	114.082	0.136	2.5
	0	3.87	106.186	0.127	2.5
	10	3.87	104.340	0.125	2.5
	20	3.87	110.013	0.132	2.5
	30	3.87	111.216	0.133	2.5
	40	3.87	113.923	0.136	2.5
	50	3.87	114.180	0.136	2.5
Frequency Stability vs. Voltage	20	3.29	115.584	0.138	2.5
	20	4.45	107.953	0.129	2.5
				Result:	Pass

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.87	104.597	0.125	2.5
	-20	3.87	117.790	0.141	2.5
	-10	3.87	113.090	0.135	2.5
	0	3.87	100.494	0.120	2.5
	10	3.87	118.814	0.142	2.5
	20	3.87	115.012	0.137	2.5
	30	3.87	112.235	0.134	2.5
	40	3.87	100.788	0.120	2.5
	50	3.87	100.648	0.120	2.5
Frequency Stability vs. Voltage	20	3.29	109.208	0.131	2.5
	20	4.45	101.256	0.121	2.5
				Result:	Pass

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



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	 ProjectNo.:CR230957288 Testter:Ken Tang Date: 15.OCT.2023 21:11:11	 ProjectNo.:CR230957288 Testter:Ken Tang Date: 15.OCT.2023 21:11:14
Middle	 ProjectNo.:CR230957288 Testter:Ken Tang Date: 15.OCT.2023 21:11:15	 ProjectNo.:CR230957288 Testter:Ken Tang Date: 15.OCT.2023 21:11:15
Highest	 ProjectNo.:CR230957288 Testter:Ken Tang Date: 15.OCT.2023 21:12:10	 ProjectNo.:CR230957288 Testter:Ken Tang Date: 15.OCT.2023 21:12:12

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 19 μs VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] -10.03 dBm Occ Bw 4.510978044 MHz D1[1] 0.15 dB CF 826.5 MHz 501 pts Span 10.0 MHz ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 21:13:32	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 19 μs VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] -11.69 dBm Occ Bw 4.510978044 MHz D1[1] 0.07 dB CF 826.5 MHz 501 pts Span 10.0 MHz ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 21:13:46
Middle	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 19 μs VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] -10.14 dBm Occ Bw 4.530938124 MHz D1[1] 0.07 dB CF 836.5 MHz 501 pts Span 10.0 MHz ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 21:14:03	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 19 μs VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] -10.30 dBm Occ Bw 4.510978044 MHz D1[1] 0.05 dB CF 836.5 MHz 501 pts Span 10.0 MHz ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 21:14:20
Highest	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 19 μs VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] -11.41 dBm Occ Bw 4.491017964 MHz D1[1] 0.40 dB CF 846.5 MHz 501 pts Span 10.0 MHz ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 21:14:37	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 19 μs VBW 300 kHz Mode Auto FFT 1Pk Max M1[1] -11.21 dBm Occ Bw 4.510978044 MHz D1[1] 0.08 dB CF 846.5 MHz 501 pts Span 10.0 MHz ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 21:15:00

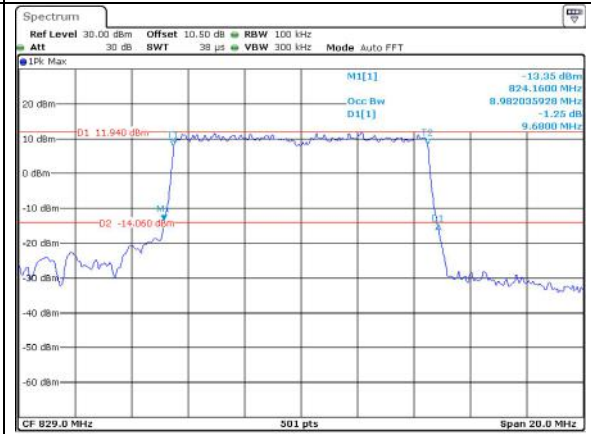
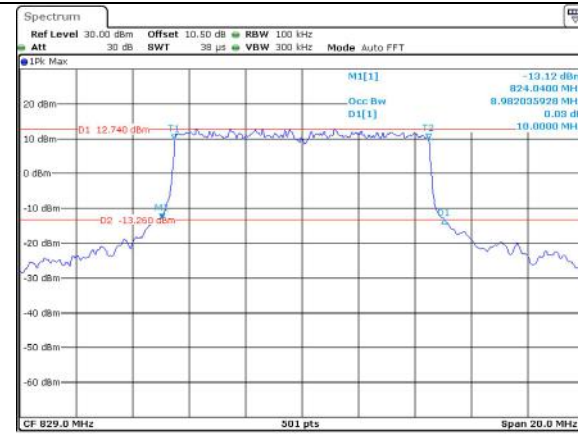
Occupied Bandwidth

Channel

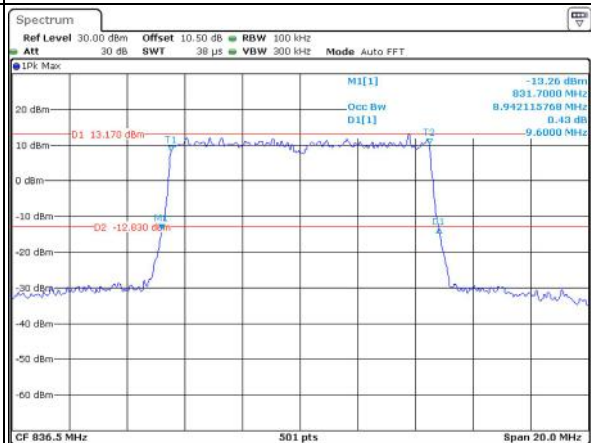
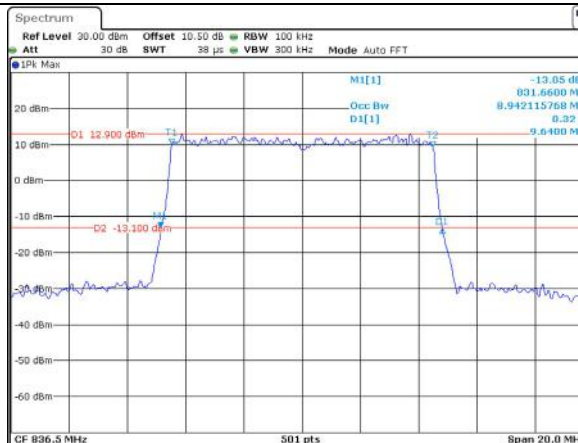
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

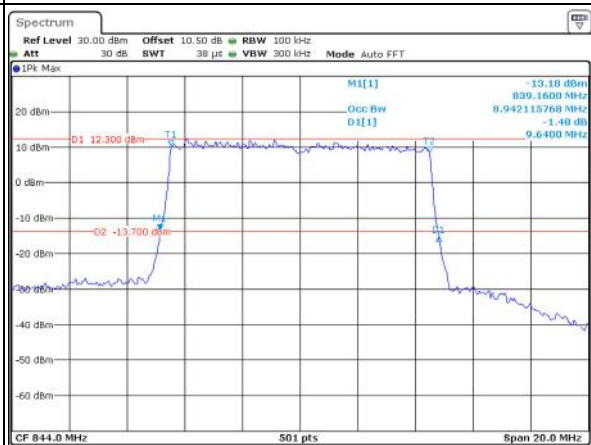
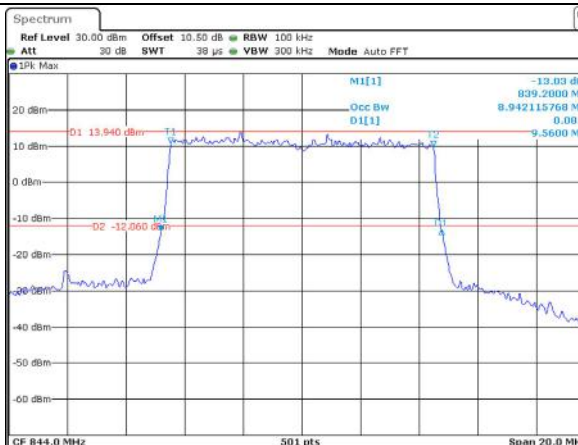
Lowest



Middle



Highest

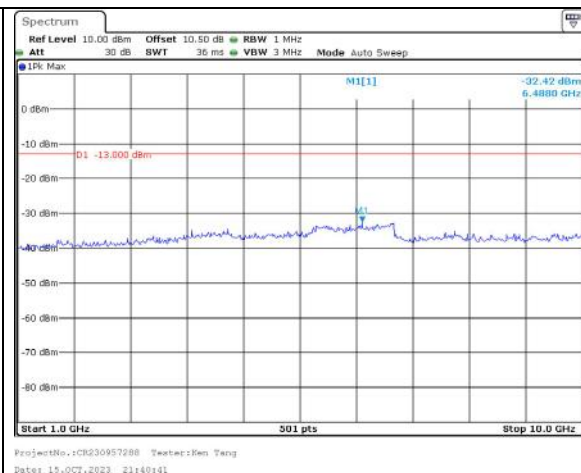
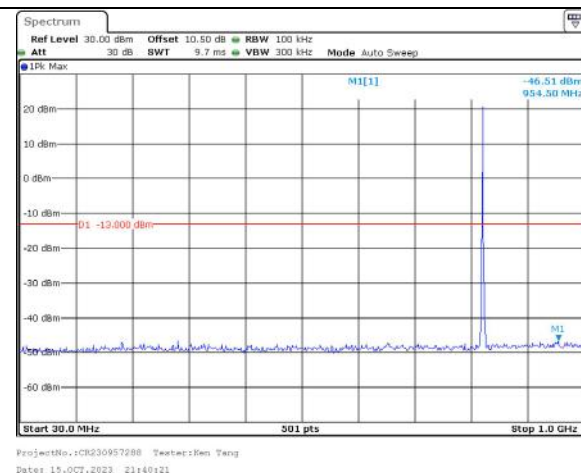


Spurious Emissions at Antenna Terminal

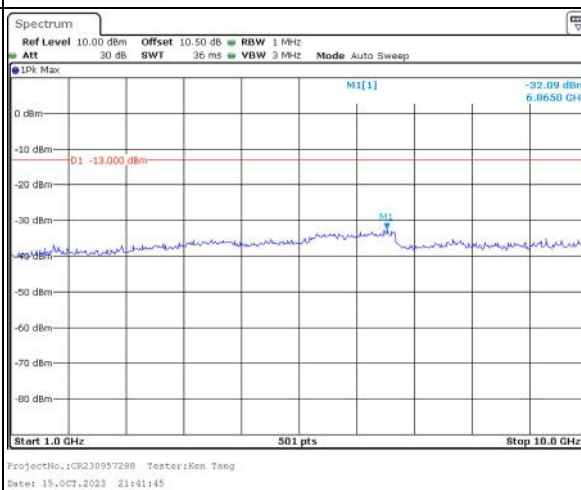
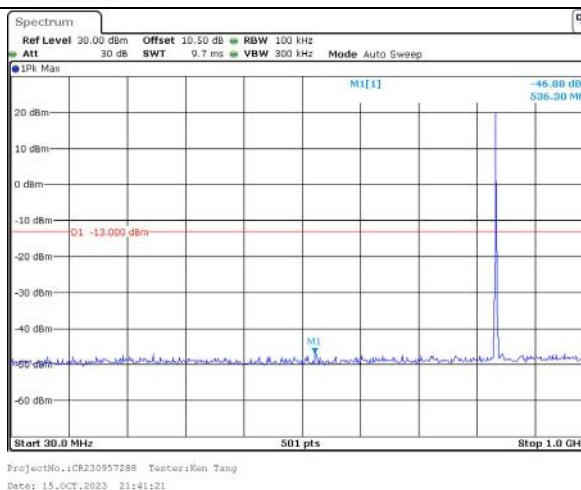
Channel

1.4MHz Bandwidth QPSK

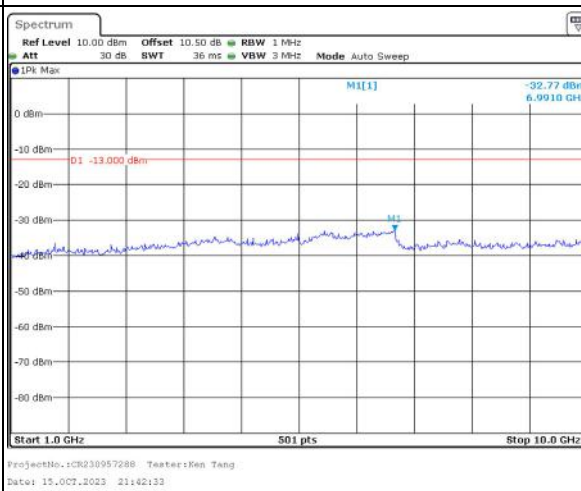
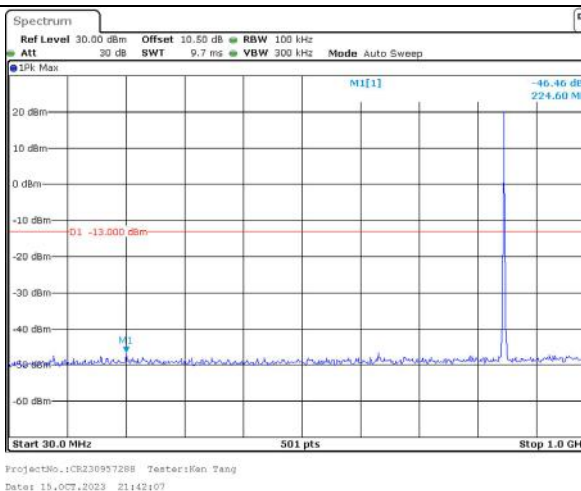
Lowest



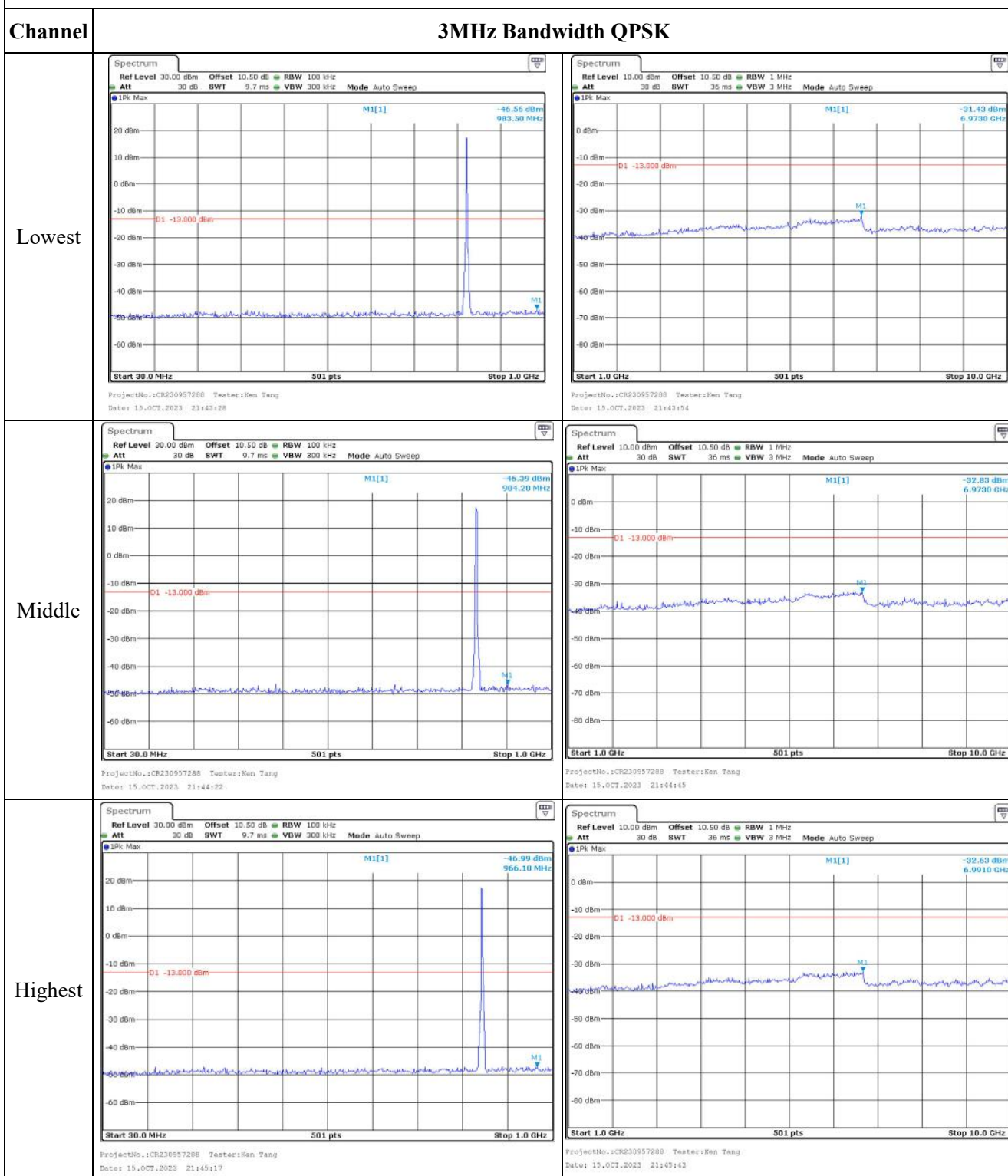
Middle



Highest



Spurious Emissions at Antenna Terminal

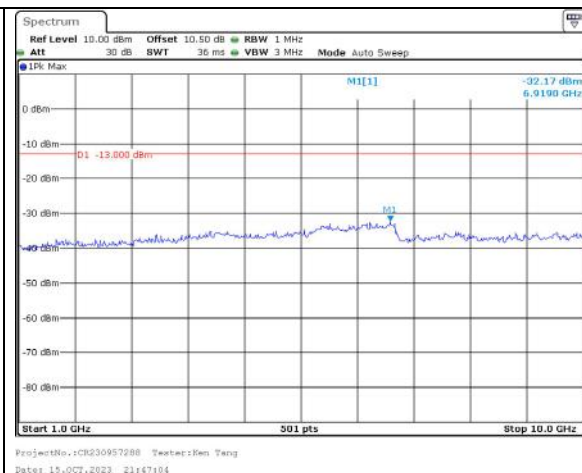
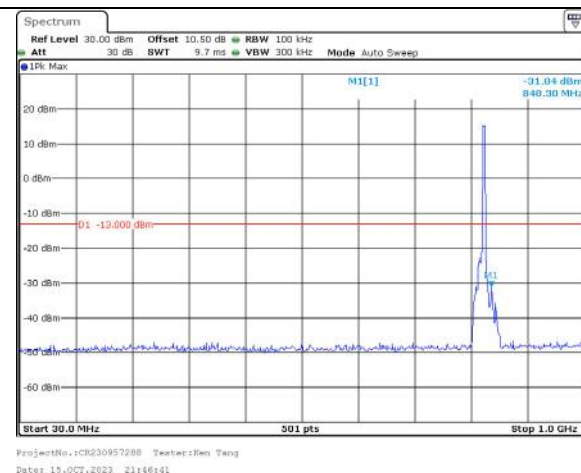


Spurious Emissions at Antenna Terminal

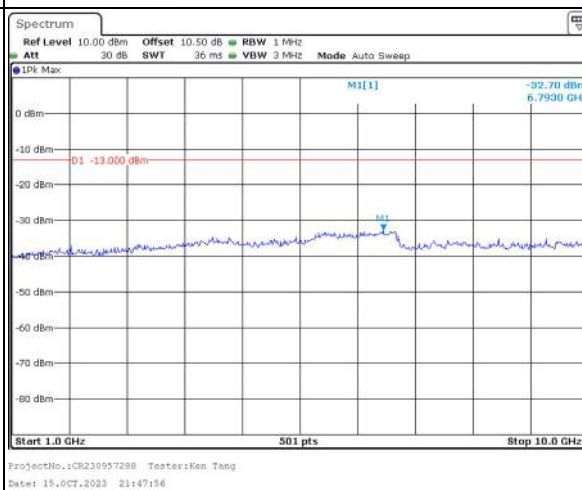
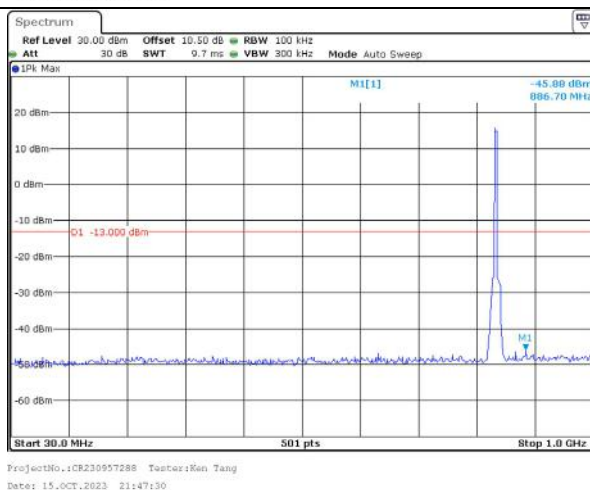
Channel

5MHz Bandwidth QPSK

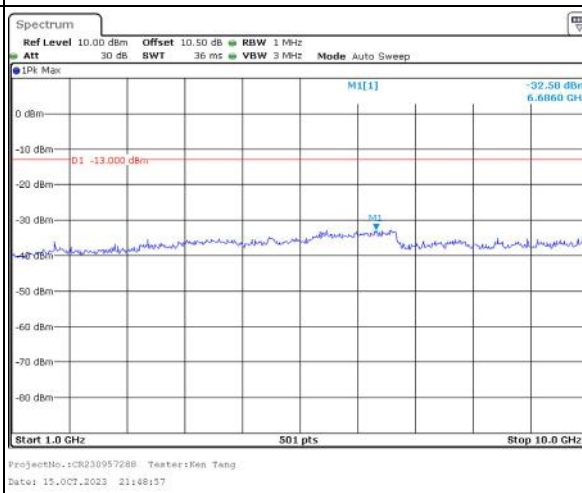
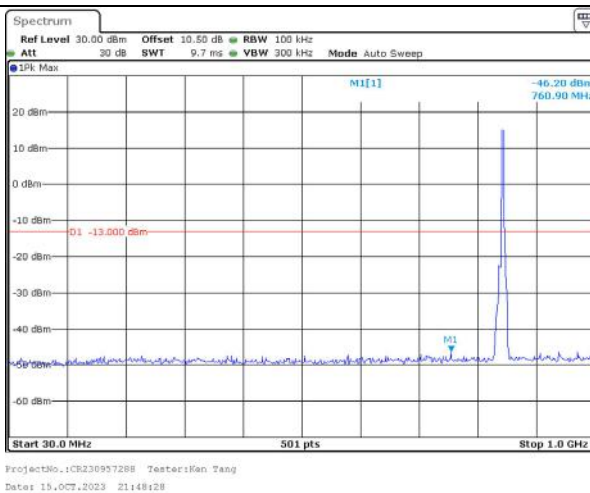
Lowest



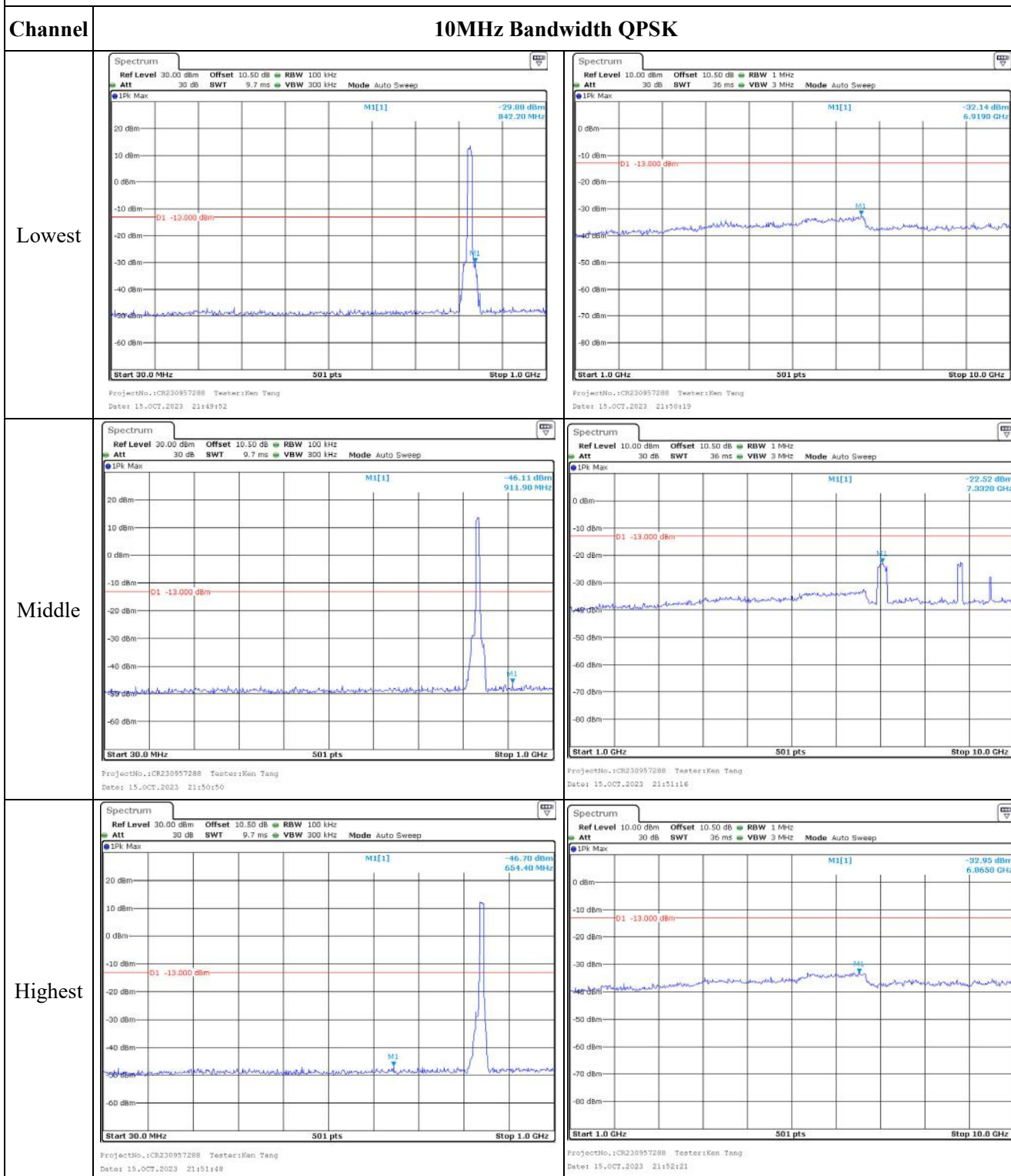
Middle



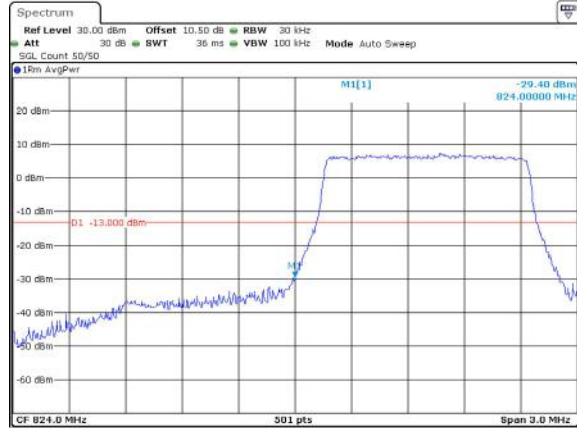
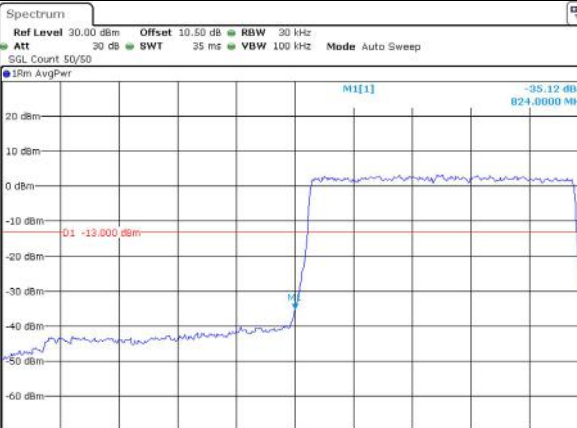
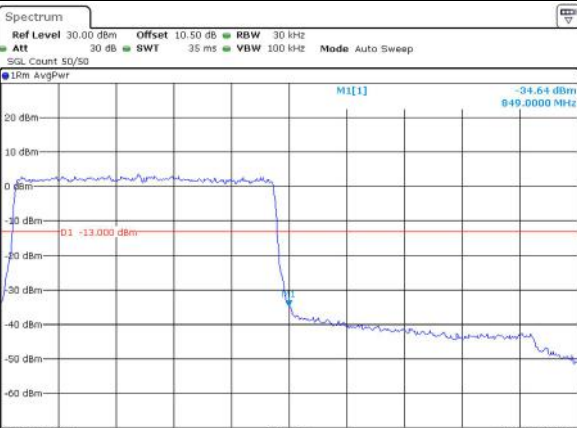
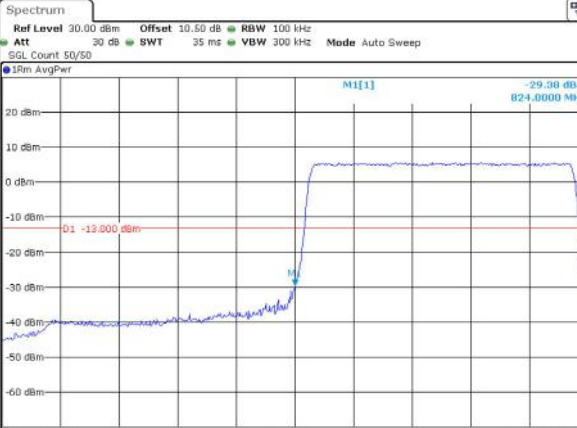
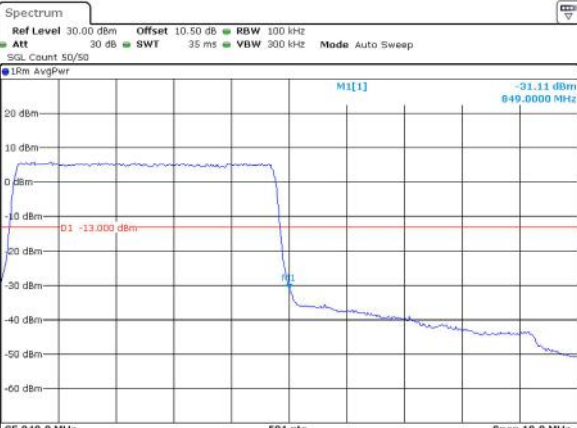
Highest

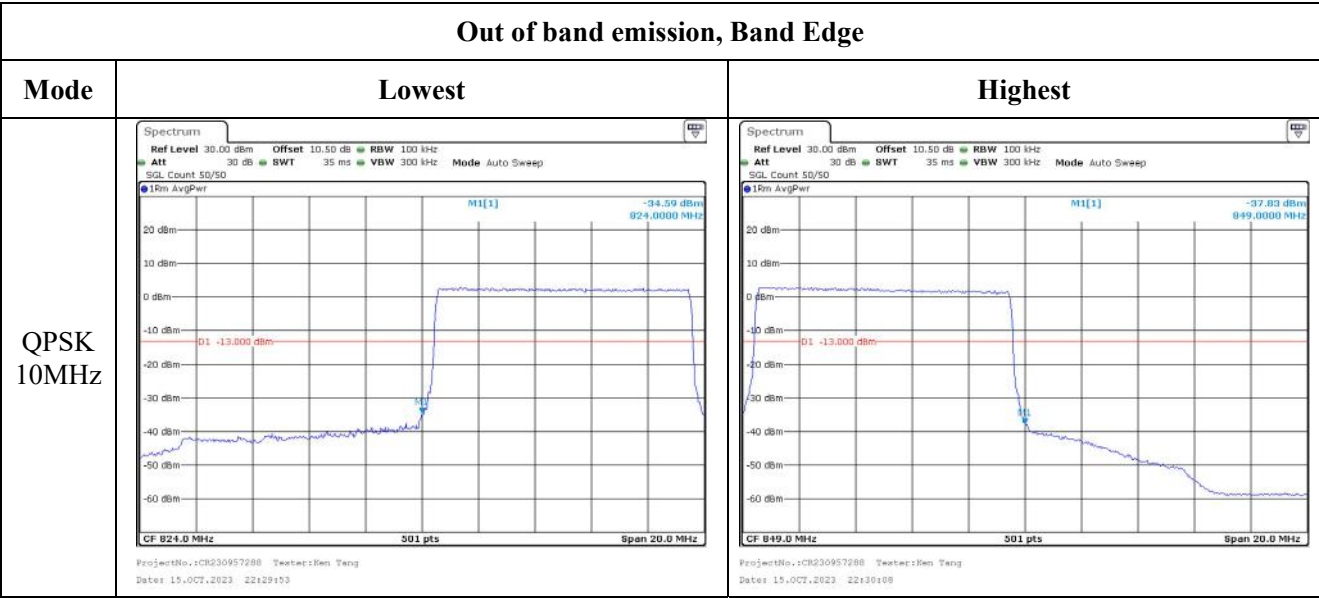


Spurious Emissions at Antenna Terminal

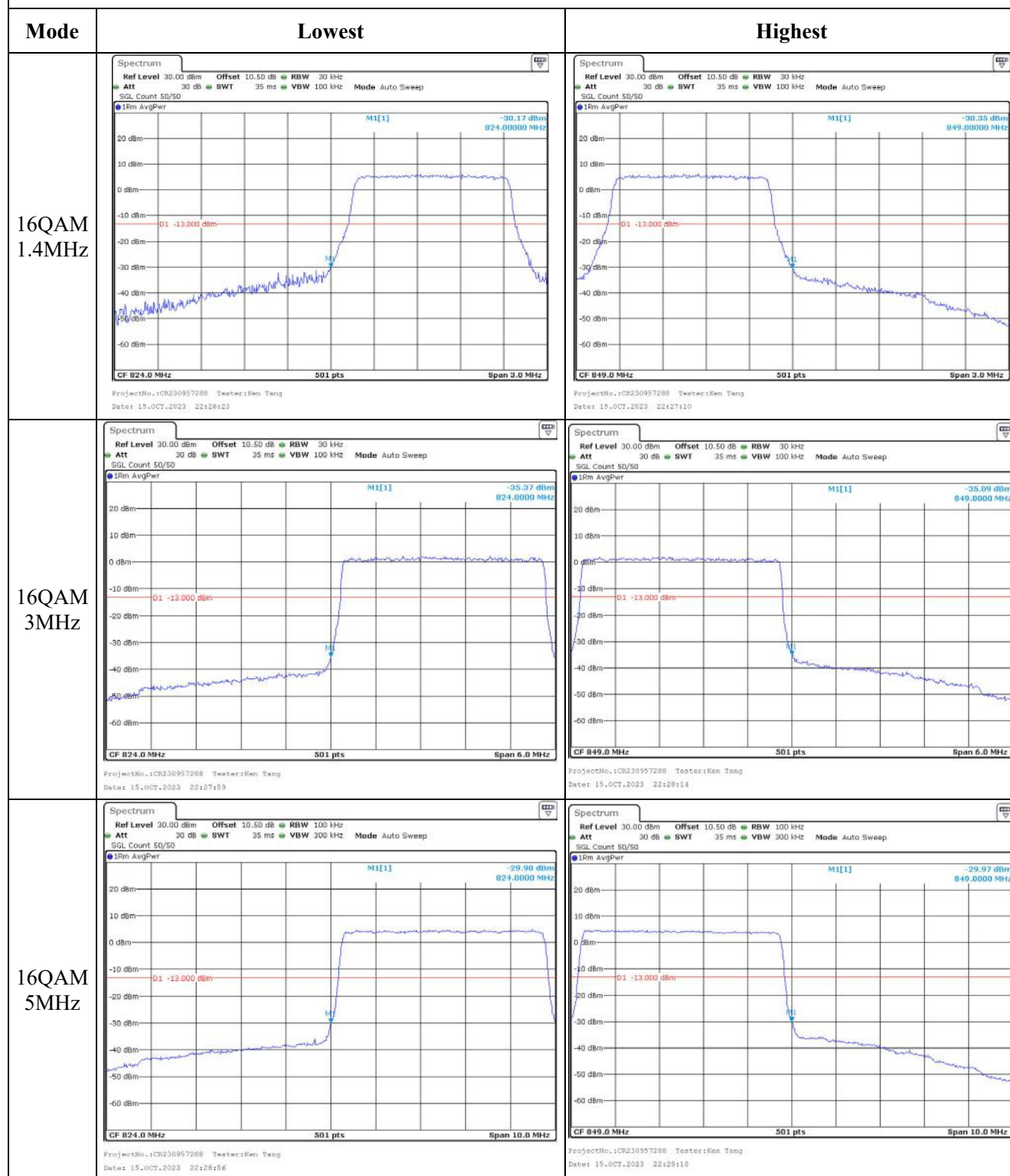


Out of band emission, Band Edge

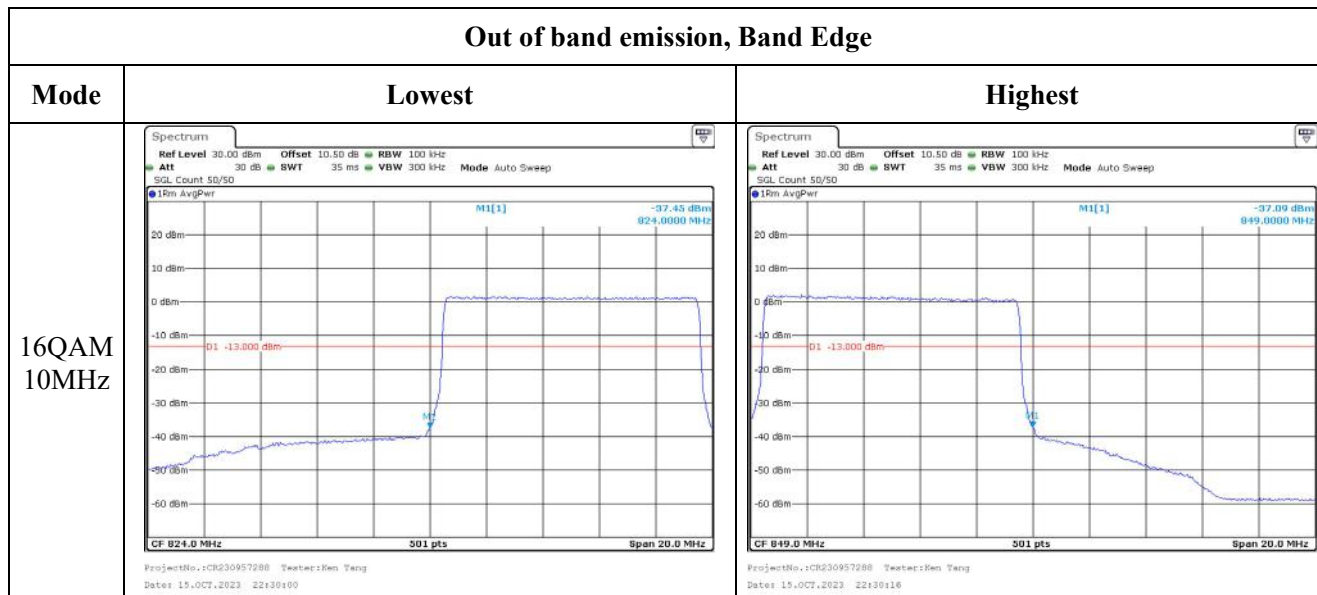
Mode	Lowest	Highest
QPSK 1.4MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 22:26:17	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 22:27:04
QPSK 3MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 22:27:52	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 22:28:07
QPSK 5MHz	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 22:28:48	 ProjectNo.:CR230957288 Tester:Ken Tang Date: 15.OCT.2023 22:29:03



Out of band emission, Band Edge



Out of band emission, Band Edge



4.9 Antenna Port Test Data and Results for LTE Band 7

Serial Number:	2BUF-5	Test Date:	2023/10/18
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ken Tang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	49	ATM Pressure: (kPa)	101.3
----------------------	------	---------------------------	----	------------------------	-------

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	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

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	15.18	15.03	14.93	14.79	33
	RB1#13	15.30	15.23	15.05		
	RB1#24	15.14	14.99	14.84		
	RB15#0	14.31	14.19	14.04		
	RB15#10	14.35	14.12	13.95		
	RB25#0	14.31	14.14	14.02		
5MHz 16QAM	RB1#0	14.35	13.96	14.27	13.98	33
	RB1#13	14.49	14.1	14.42		
	RB1#24	14.32	13.96	14.23		
	RB15#0	13.4	13.25	13.02		
	RB15#10	13.43	13.18	13		
	RB25#0	13.38	13.22	13.03		
10MHz QPSK	RB1#0	15.27	15.08	15.02	14.93	33
	RB1#25	15.44	15.24	15.17		
	RB1#49	15.2	14.98	14.93		
	RB25#0	14.34	14.25	14.09		
	RB25#25	14.35	14.17	14.01		
	RB50#0	14.38	14.2	14.03		
10MHz 16QAM	RB1#0	14.36	14.86	14.21	14.47	33
	RB1#25	14.5	14.98	14.38		
	RB1#49	14.26	14.81	14.12		
	RB25#0	13.48	13.33	13.15		
	RB25#25	13.47	13.27	13.04		
	RB50#0	13.46	13.29	13.09		
15MHz QPSK	RB1#0	15.24	15.20	15.35	15.04	33
	RB1#38	15.55	15.48	15.46		
	RB1#74	15.42	15.22	15.37		
	RB36#0	14.34	14.41	14.51		
	RB36#39	14.46	14.35	14.44		
	RB75#0	14.51	14.60	14.55		
15MHz 16QAM	RB1#0	14.5	14.41	14.49	14.27	33
	RB1#38	14.74	14.57	14.78		
	RB1#74	14.54	14.36	14.48		
	RB36#0	13.43	13.44	13.51		
	RB36#39	13.55	13.57	13.65		
	RB75#0	13.63	13.59	13.49		
20MHz QPSK	RB1#0	15.51	15.30	15.53	15.17	33

	RB1#50	15.5	15.68	15.45		
	RB1#99	15.31	15.48	15.28		
	RB50#0	14.38	14.47	14.62		
	RB50#50	14.58	14.53	14.55		
	RB100#0	14.39	14.63	14.47		
	RB1#0	14.39	14.6	14.36		
20MHz 16QAM	RB1#50	14.59	14.62	14.70	14.19	33
	RB1#99	14.53	14.47	14.36		
	RB50#0	13.61	13.5	13.77		
	RB50#50	14.46	14.35	14.53		
	RB100#0	13.60	13.73	13.65		

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	5.8	5.51	6.9	13
	RB100#0	4.75	4.7	4.67	13
20MHz 16QAM	RB1#0	8.2	6.7	7.45	13
	RB100#0	6.29	6.23	6.23	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	4.960	4.940	4.980
5MHz 16QAM	4.511	4.511	4.471	4.960	4.980	4.940
10MHz QPSK	8.942	8.942	8.942	9.560	9.640	9.680
10MHz 16QAM	8.942	8.942	8.942	9.640	9.640	9.560
15MHz QPSK	13.473	13.533	13.413	14.580	14.760	14.580
15MHz 16QAM	13.473	13.533	13.533	14.580	14.700	14.640
20MHz QPSK	18.044	17.964	17.884	19.520	19.120	19.120
20MHz 16QAM	17.964	17.884	17.964	19.280	19.280	19.360

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.
---------	---

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

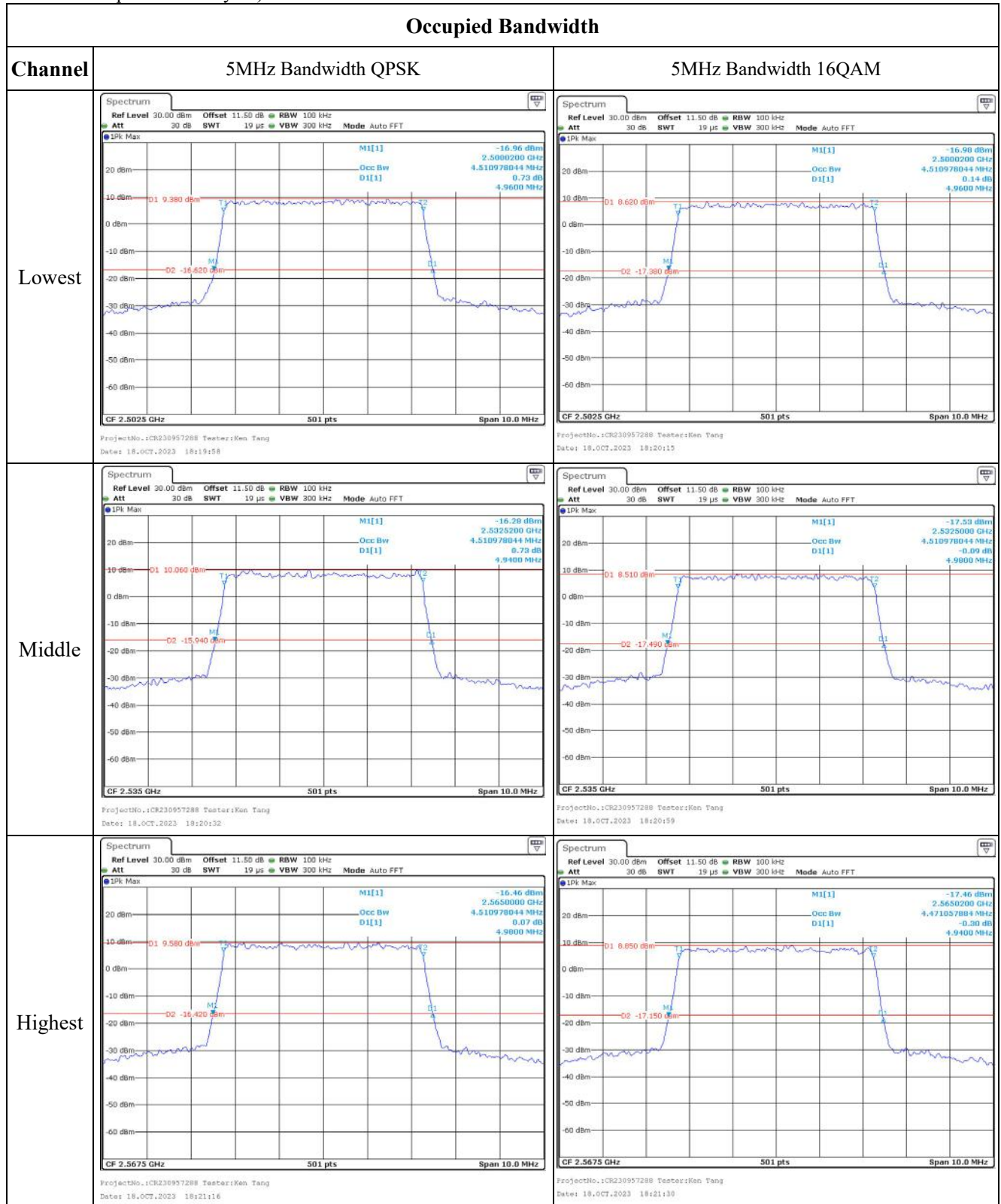
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
---------	--

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	2500.030	2500.00	2569.971	2570
	-20	3.87	2500.029	2500.00	2569.987	2570
	-10	3.87	2500.014	2500.00	2569.981	2570
	0	3.87	2500.014	2500.00	2569.981	2570
	10	3.87	2500.007	2500.00	2569.986	2570
	20	3.87	2500.003	2500.00	2569.989	2570
	30	3.87	2500.017	2500.00	2569.984	2570
	40	3.87	2500.027	2500.00	2569.979	2570
	50	3.87	2500.029	2500.00	2569.973	2570
Frequency Stability vs. Voltage	20	3.29	2500.001	2500.00	2569.992	2570
	20	4.45	2500.026	2500.00	2569.993	2570
					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	2500.010	2500.00	2569.994	2570
	-20	3.87	2500.022	2500.00	2569.978	2570
	-10	3.87	2500.028	2500.00	2569.997	2570
	0	3.87	2500.014	2500.00	2569.985	2570
	10	3.87	2500.001	2500.00	2569.993	2570
	20	3.87	2500.017	2500.00	2569.991	2570
	30	3.87	2500.005	2500.00	2569.986	2570
	40	3.87	2500.011	2500.00	2569.994	2570
	50	3.87	2500.010	2500.00	2569.998	2570
Frequency Stability vs. Voltage	20	3.29	2500.016	2500.00	2569.977	2570
	20	4.45	2500.007	2500.00	2569.998	2570
					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):



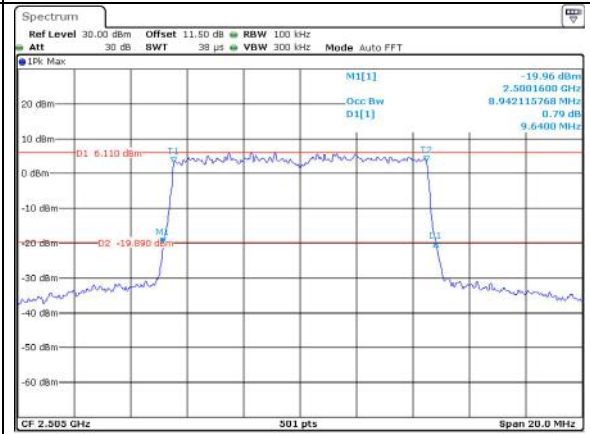
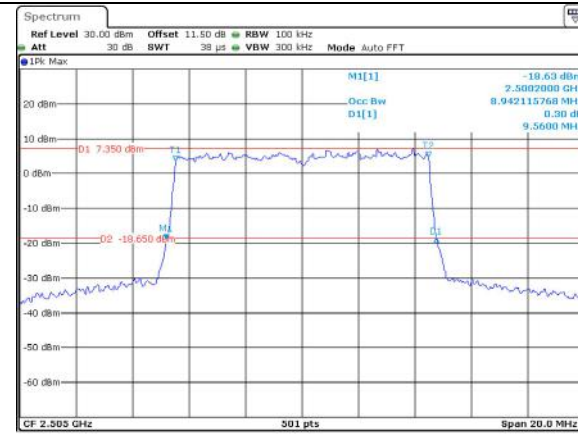
Occupied Bandwidth

Channel

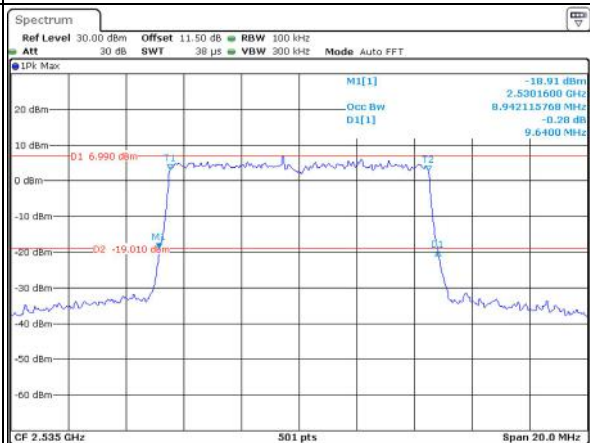
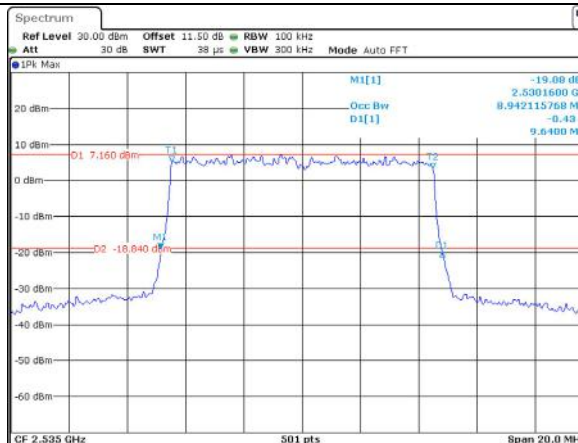
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

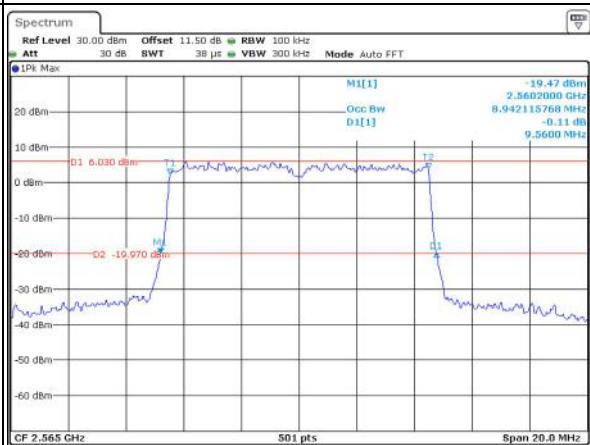
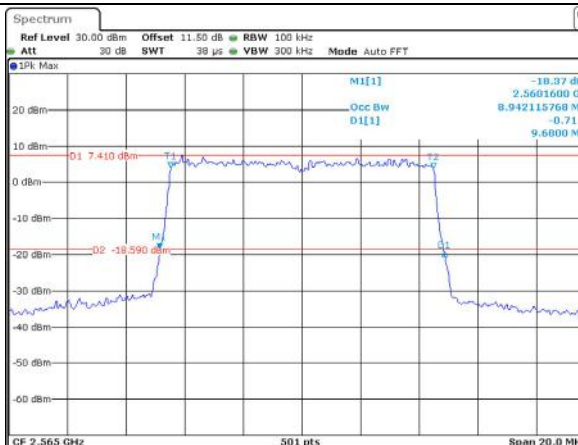
Lowest



Middle



Highest



Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	ProjectNo.:CR230957288 Tester:Ken Tang Date: 18.OCT.2023 18:26:43	ProjectNo.:CR230957288 Tester:Ken Tang Date: 18.OCT.2023 18:27:25
Middle	ProjectNo.:CR230957288 Tester:Ken Tang Date: 18.OCT.2023 18:27:54	ProjectNo.:CR230957288 Tester:Ken Tang Date: 18.OCT.2023 18:28:17
Highest	ProjectNo.:CR230957288 Tester:Ken Tang Date: 18.OCT.2023 18:28:47	ProjectNo.:CR230957288 Tester:Ken Tang Date: 18.OCT.2023 18:29:29

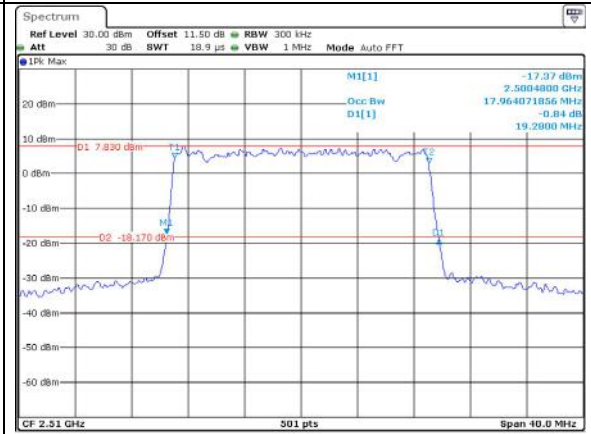
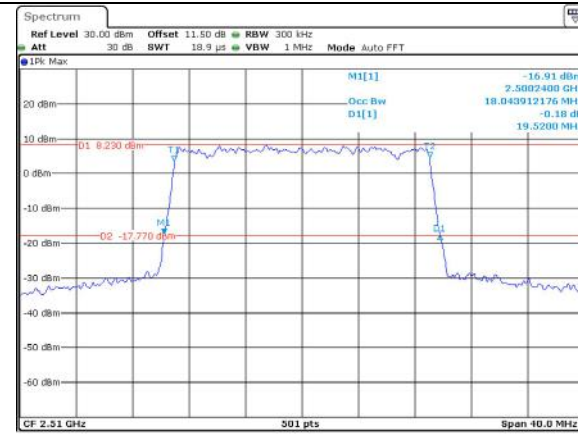
Occupied Bandwidth

Channel

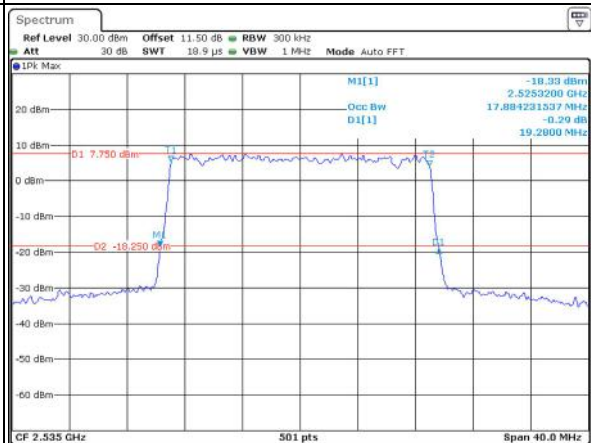
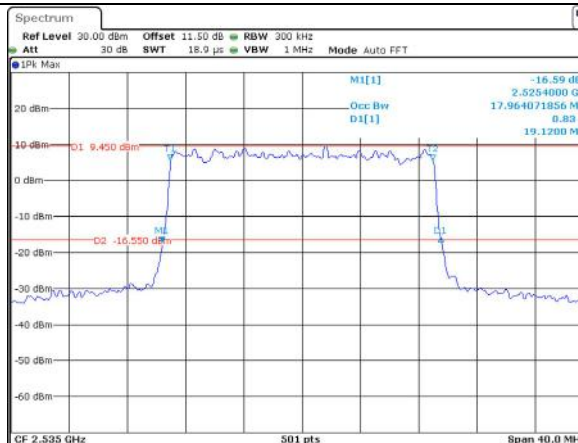
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

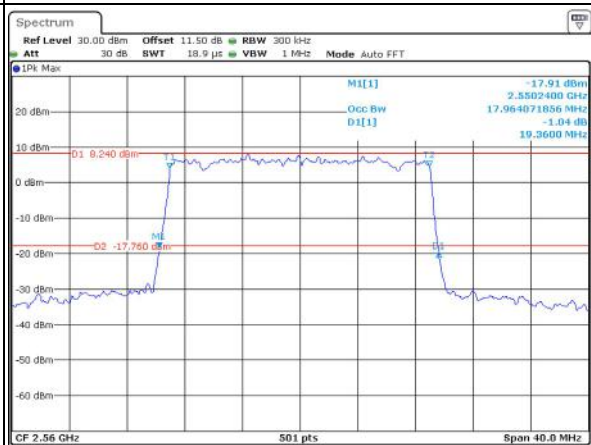
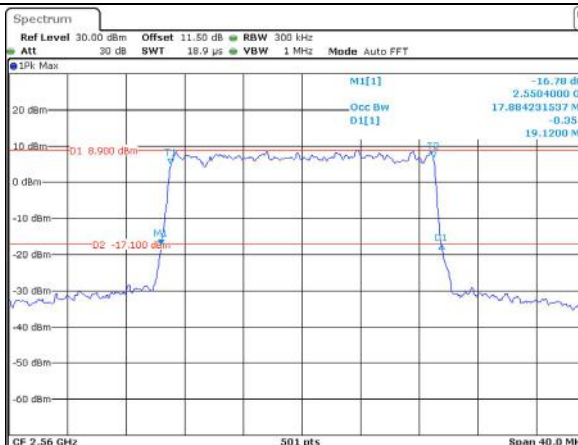
Lowest



Middle



Highest

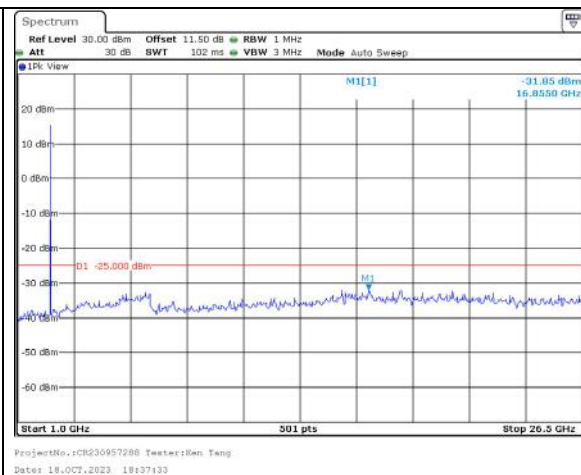
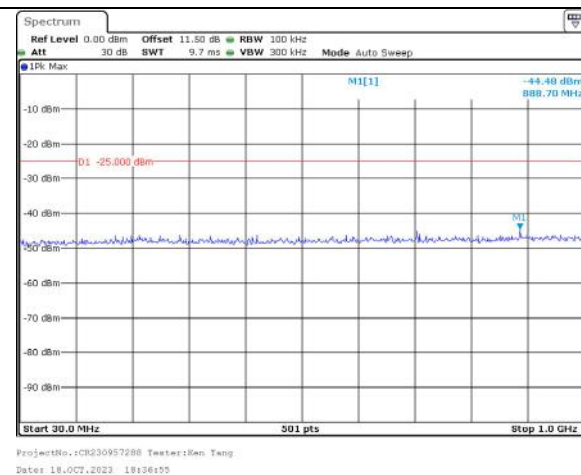


Spurious Emissions at Antenna Terminal

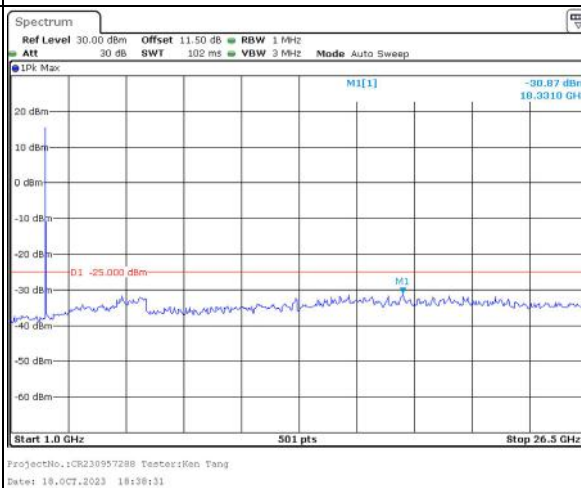
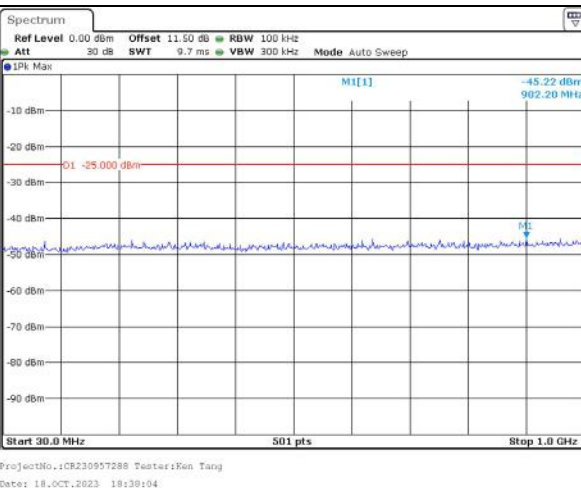
Channel

5MHz Bandwidth QPSK

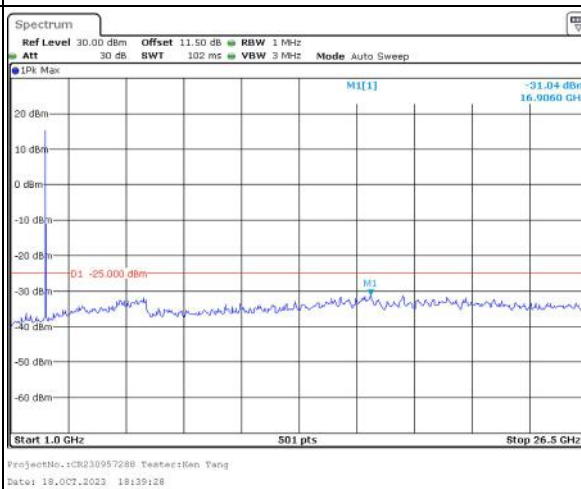
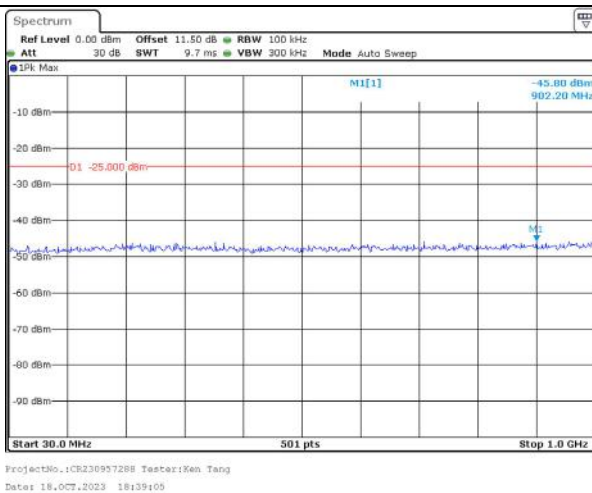
Lowest



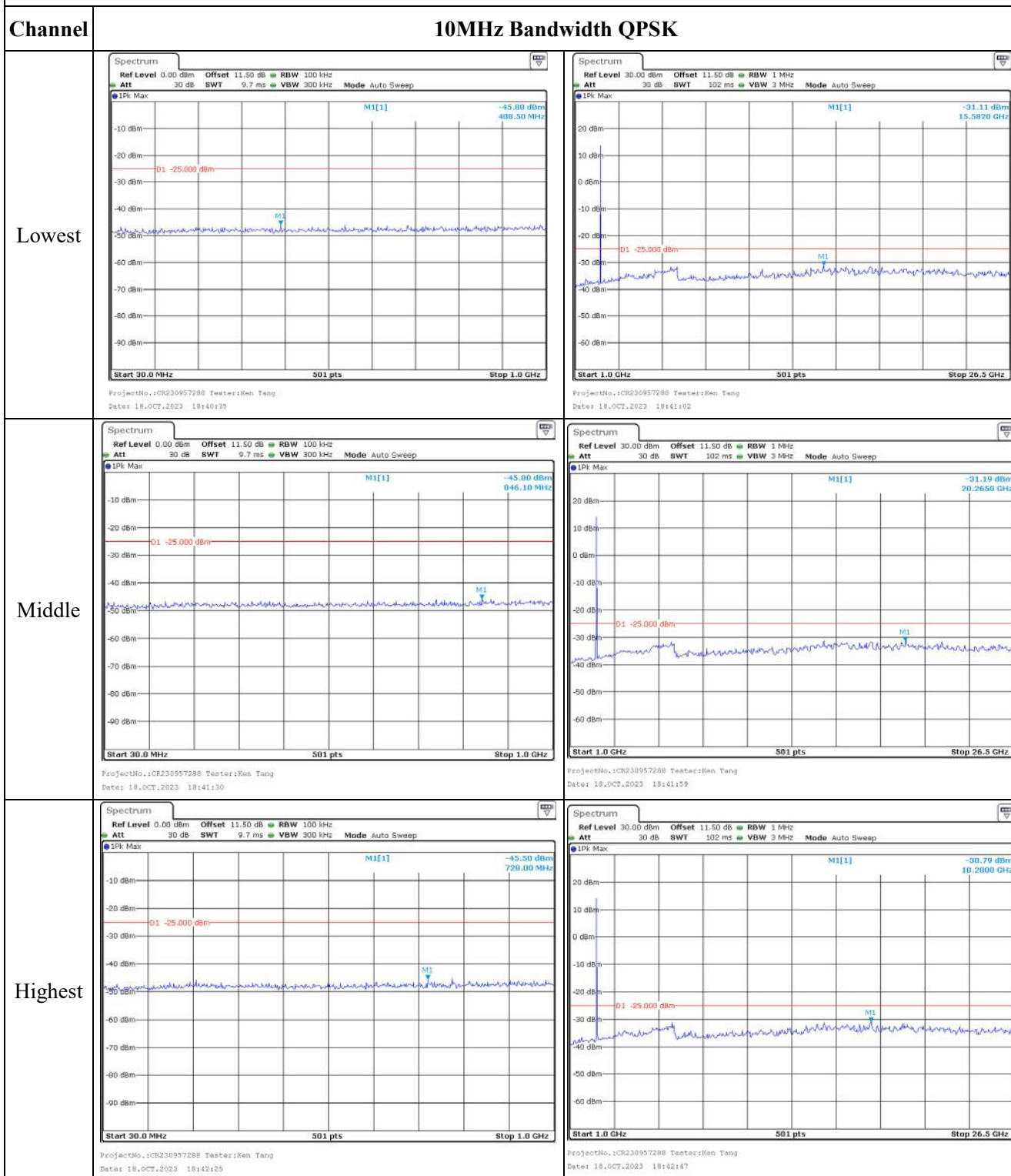
Middle



Highest



Spurious Emissions at Antenna Terminal

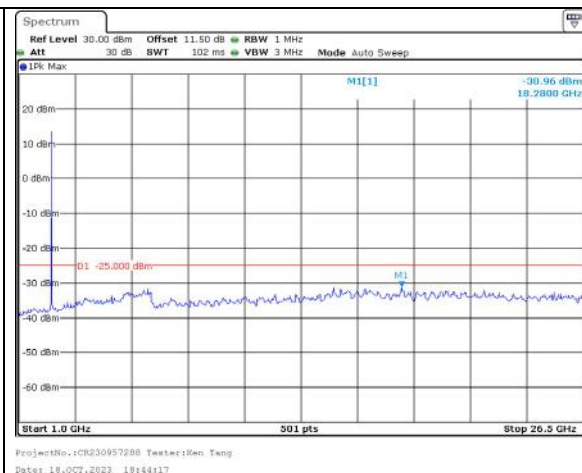
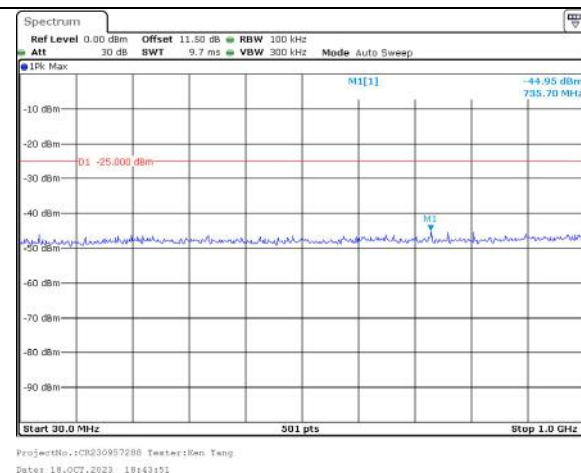


Spurious Emissions at Antenna Terminal

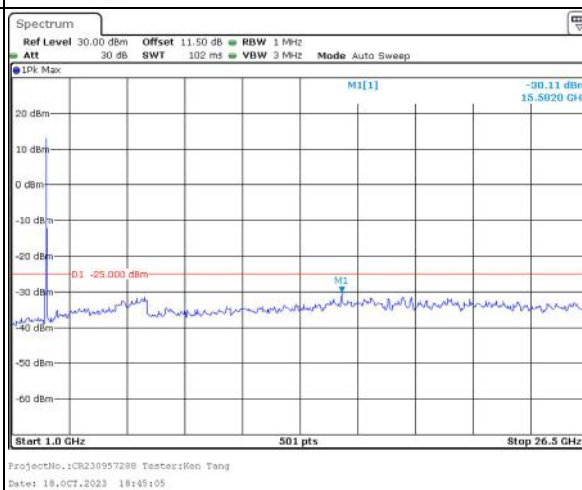
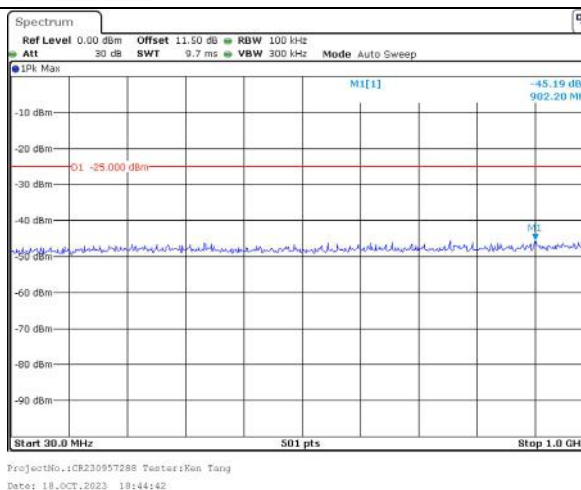
Channel

15MHz Bandwidth QPSK

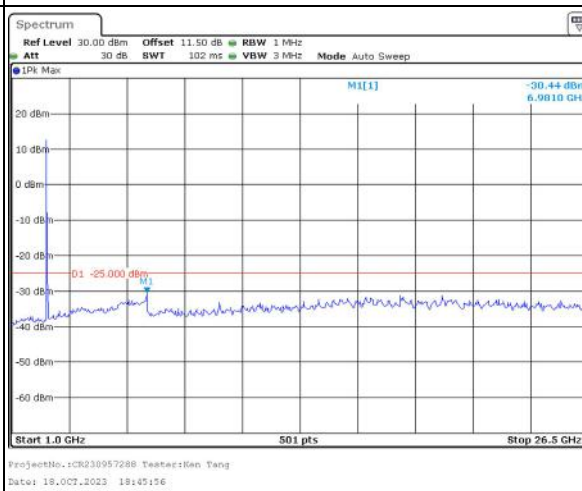
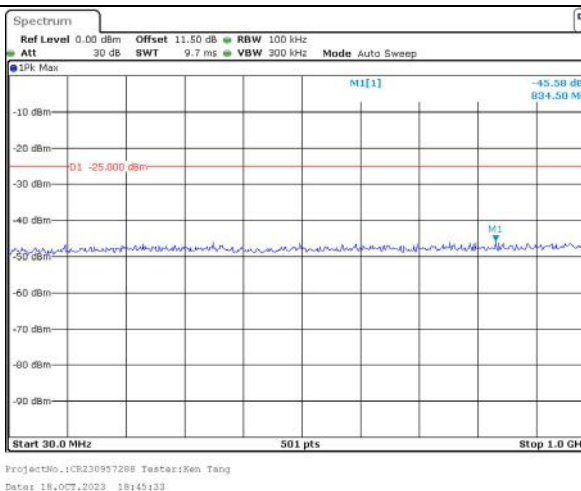
Lowest



Middle



Highest

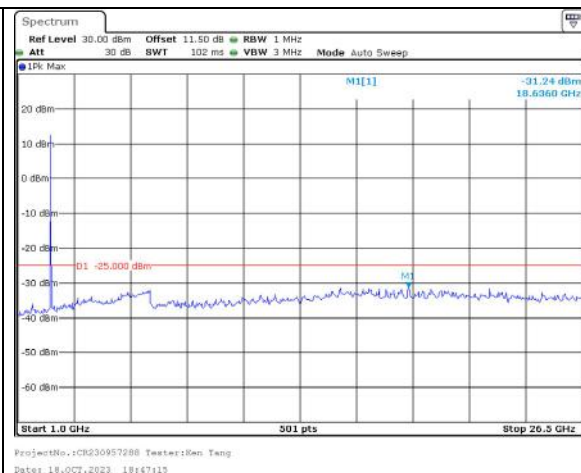
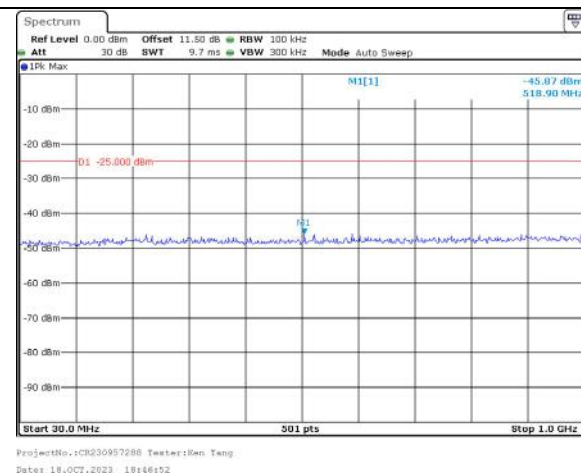


Spurious Emissions at Antenna Terminal

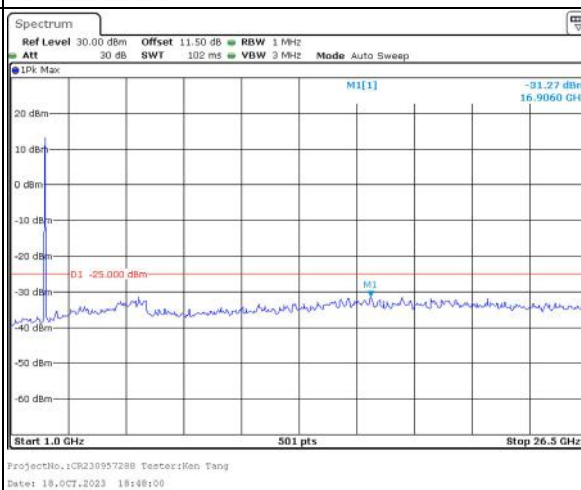
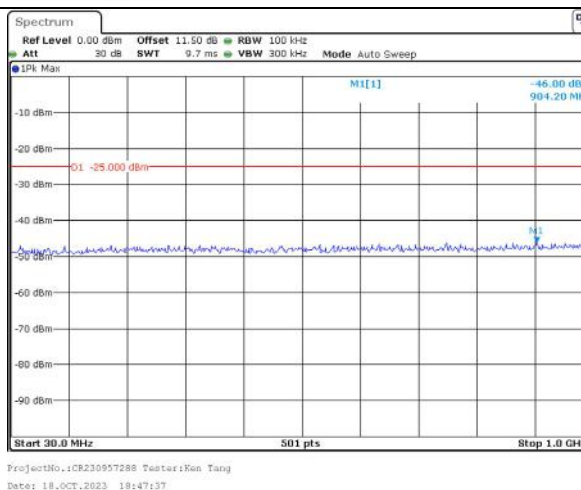
Channel

20MHz Bandwidth QPSK

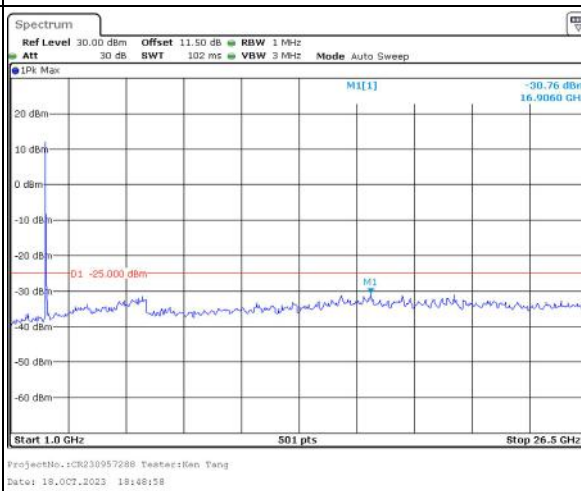
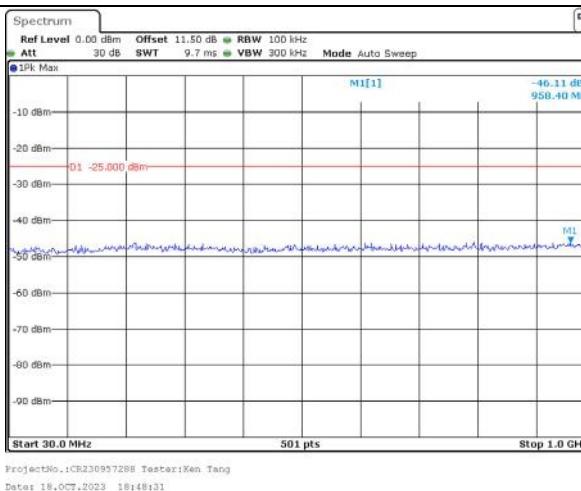
Lowest



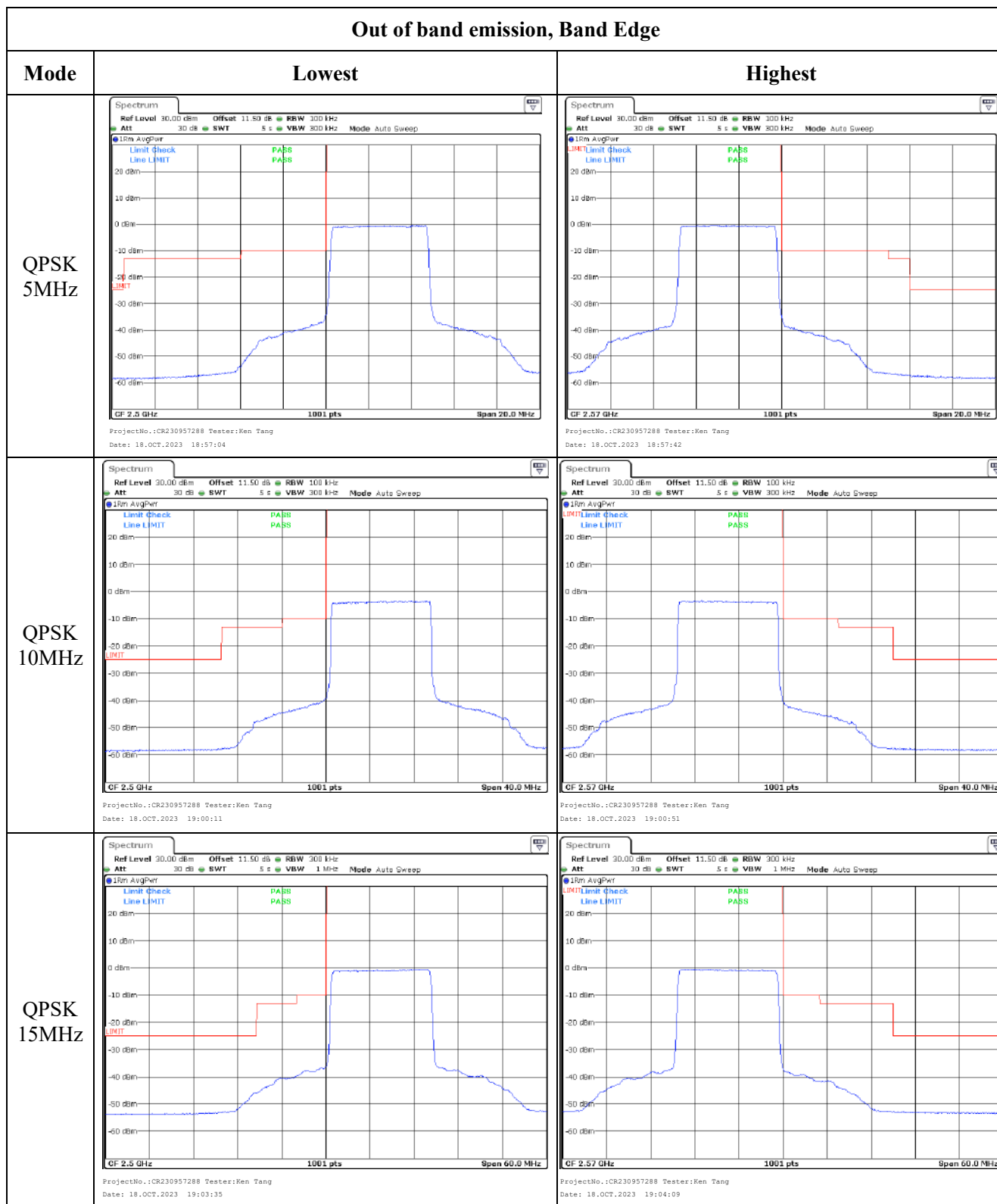
Middle



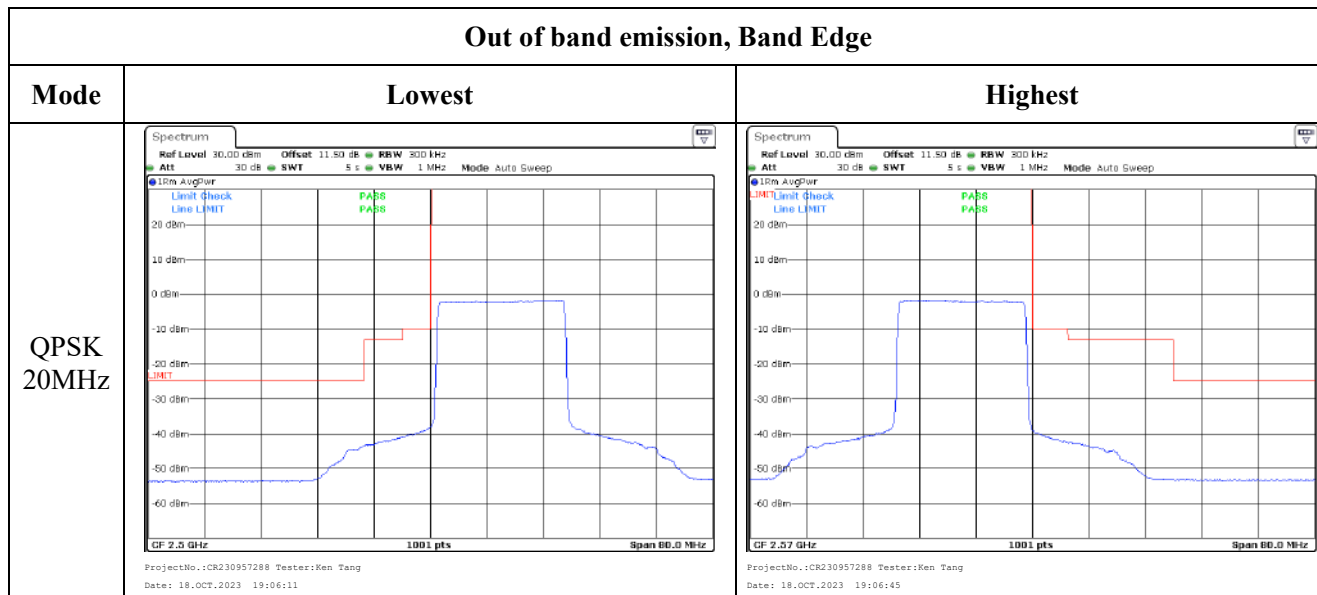
Highest



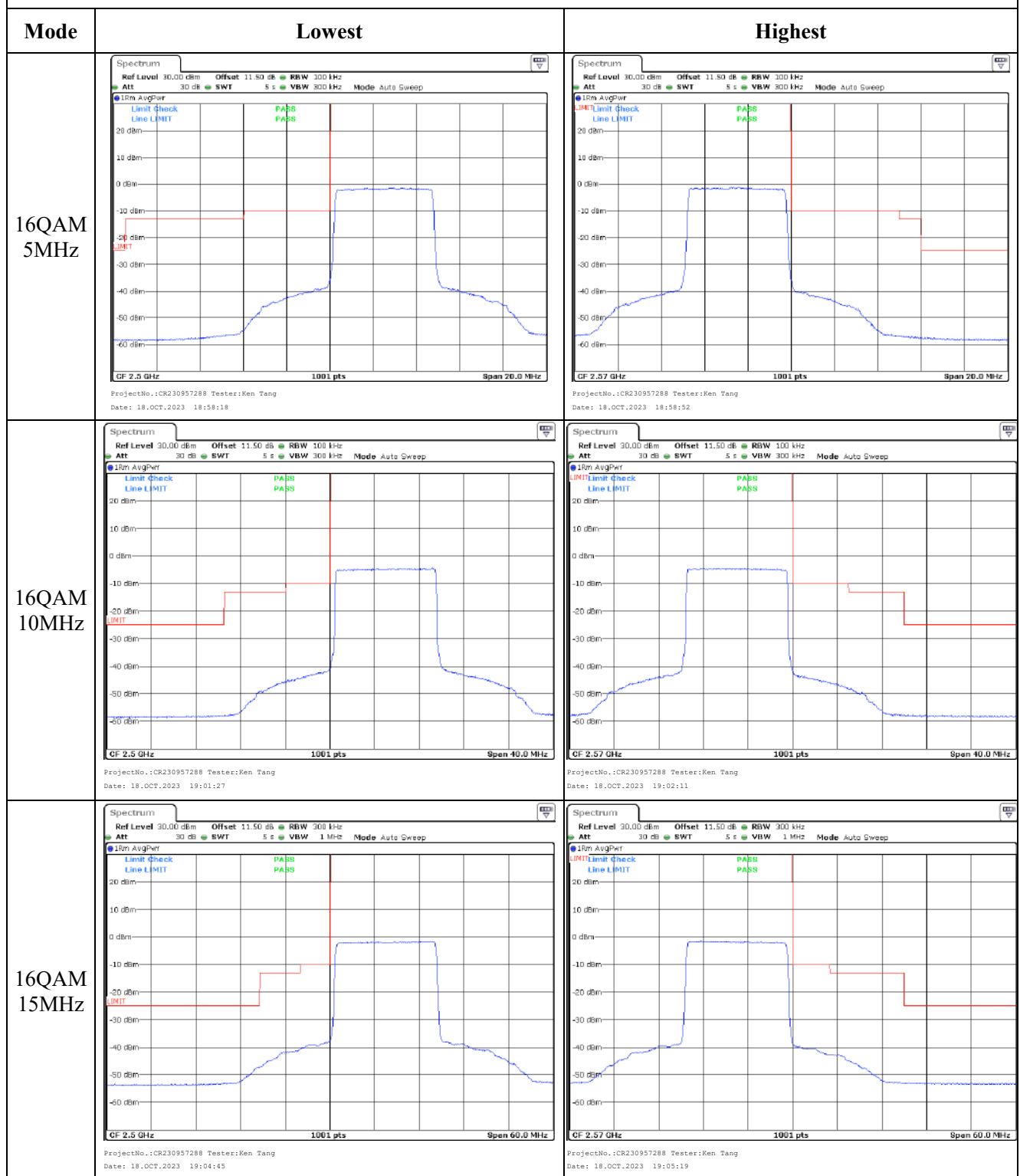
Out of band emission, Band Edge

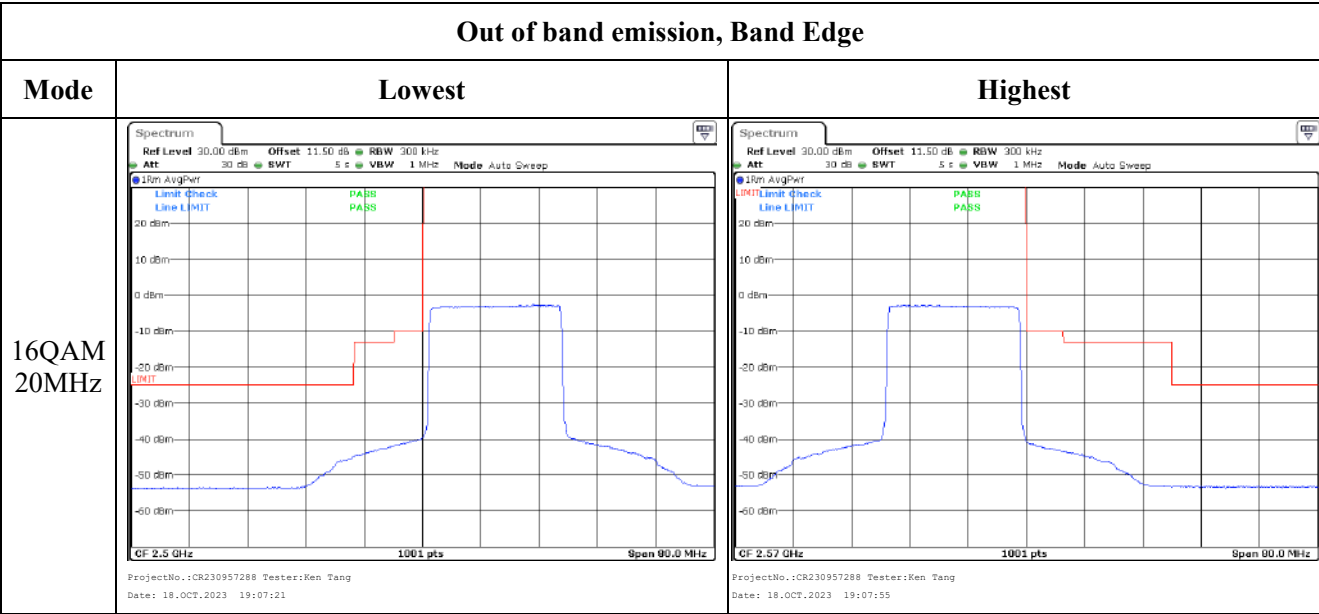


Out of band emission, Band Edge



Out of band emission, Band Edge





4.10 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	2BUF-5	Test Date:	2023/10/15
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ken Tang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26	Relative Humidity: (%)	49	ATM Pressure: (kPa)	101.5
----------------------	----	---------------------------	----	------------------------	-------

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-Clruids	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)
1.4MHz	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	711

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

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.79	22.78	22.76	15.94	34.77
	RB1#3	22.88	22.94	22.99		
	RB1#5	22.73	22.78	22.79		
	RB3#0	22.84	22.87	22.86		
	RB3#3	22.77	22.86	22.90		
	RB6#0	21.73	21.85	21.91		
1.4MHz 16QAM	RB1#0	21.74	21.89	21.8	15.02	34.77
	RB1#3	21.84	22.07	22.05		
	RB1#5	21.70	21.87	21.88		
	RB3#0	21.96	21.82	21.99		
	RB3#3	21.90	21.86	21.97		
	RB6#0	20.80	20.89	20.83		
3MHz QPSK	RB1#0	22.85	22.81	22.82	15.8	34.77
	RB1#8	22.77	22.79	22.81		
	RB1#14	22.76	22.75	22.83		
	RB6#0	21.71	21.78	21.9		
	RB6#9	21.75	21.77	21.84		
	RB15#0	21.73	21.81	21.84		
3MHz 16QAM	RB1#0	21.84	22.38	22	15.33	34.77
	RB1#8	21.75	22.37	21.99		
	RB1#14	21.72	22.33	22.02		
	RB6#0	20.67	20.84	20.89		
	RB6#9	20.69	20.84	20.92		
	RB15#0	20.78	20.87	20.81		
5MHz QPSK	RB1#0	22.79	22.74	22.75	15.84	34.77
	RB1#13	22.81	22.89	22.85		
	RB1#24	22.7	22.75	22.75		
	RB15#0	21.68	21.84	21.88		
	RB15#10	21.79	21.84	21.8		
	RB25#0	21.71	21.81	21.83		
5MHz 16QAM	RB1#0	21.78	21.62	22.1	15.11	34.77
	RB1#13	21.88	21.72	22.16		
	RB1#24	21.76	21.65	22.11		
	RB15#0	20.68	20.9	20.84		
	RB15#10	20.83	20.86	20.75		
	RB25#0	20.77	20.86	20.82		

10MHz QPSK	RB1#0	22.84	22.76	22.81	15.95	34.77
	RB1#25	22.93	23	22.93		
	RB1#49	22.85	22.82	22.86		
	RB25#0	21.74	21.88	21.86		
	RB25#25	21.85	21.89	21.84		
	RB50#0	21.79	21.92	21.87		
10MHz 16QAM	RB1#0	21.94	21.73	22.36	15.57	34.77
	RB1#25	22.1	21.97	22.62		
	RB1#49	21.96	21.86	22.44		
	RB25#0	20.77	20.98	20.94		
	RB25#25	20.85	21	20.89		
	RB50#0	20.78	20.95	20.89		

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 Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	6.74	9.29	7.43	13
	RB50#0	6.73	9.41	7.19	13
10MHz 16QAM	RB1#0	8.88	9.11	7.03	13
	RB50#0	7.72	9.61	8.46	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
1.4MHz QPSK	1.096	1.108	1.096	1.314	1.332	1.296
1.4MHz 16QAM	1.09	1.102	1.096	1.29	1.344	1.314
3MHz QPSK	2.683	2.683	2.683	2.892	2.880	2.868
3MHz 16QAM	2.683	2.683	2.683	2.868	2.892	2.868
5MHz QPSK	4.511	4.511	4.531	5.160	5.200	5.200
5MHz 16QAM	4.531	4.551	4.511	5.200	5.240	5.140
10MHz QPSK	8.942	8.982	8.942	9.760	9.960	9.960
10MHz 16QAM	8.942	8.982	8.942	9.880	9.880	9.760

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:	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	699.028	699.00	715.974	716.00
	-20	3.87	699.004	699.00	715.995	716.00
	-10	3.87	699.006	699.00	715.980	716.00
	0	3.87	699.020	699.00	715.990	716.00
	10	3.87	699.022	699.00	715.978	716.00
	20	3.87	699.021	699.00	715.996	716.00
	30	3.87	699.014	699.00	715.984	716.00
	40	3.87	699.014	699.00	715.984	716.00
	50	3.87	699.029	699.00	715.996	716.00
Frequency Stability vs. Voltage	20	3.29	699.007	699.00	715.981	716.00
	20	4.45	699.011	699.00	715.980	716.00
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	699.023	699.00	715.995	716.00
	-20	3.87	699.006	699.00	715.999	716.00
	-10	3.87	699.019	699.00	715.977	716.00
	0	3.87	699.024	699.00	715.993	716.00
	10	3.87	699.010	699.00	715.982	716.00
	20	3.87	699.010	699.00	715.975	716.00
	30	3.87	699.010	699.00	715.992	716.00
	40	3.87	699.017	699.00	715.985	716.00
	50	3.87	699.019	699.00	715.993	716.00
Frequency Stability vs. Voltage	20	3.29	699.019	699.00	715.998	716.00
	20	4.45	699.021	699.00	715.973	716.00
Result:					Pass	

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

