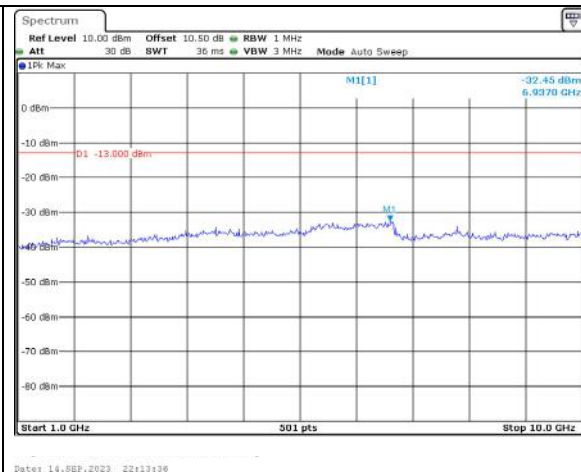
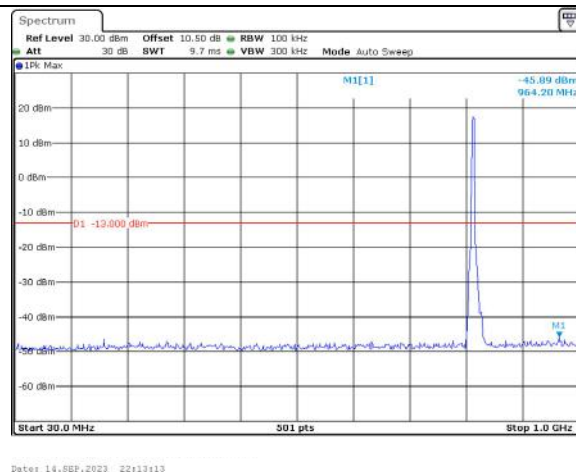
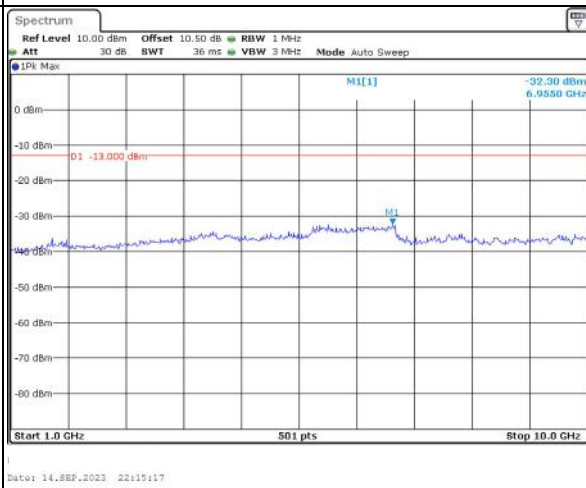
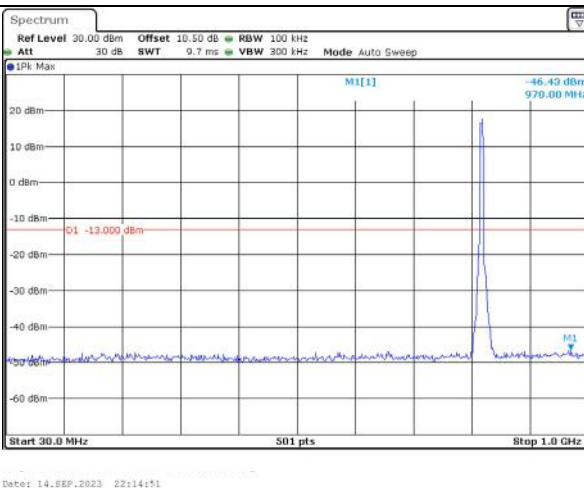
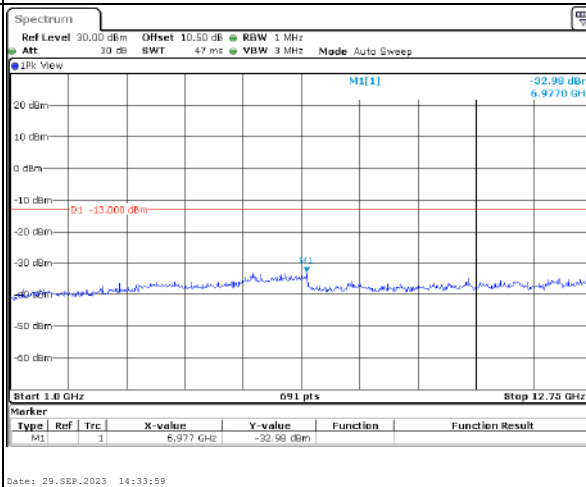
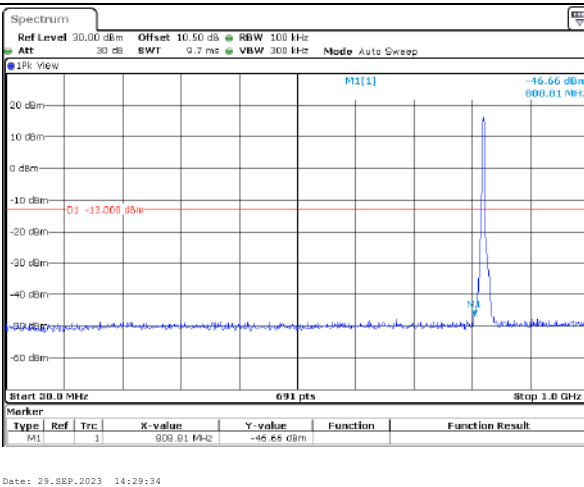


Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

Lowest
For 90SHighest
For 90SCross
Channel

Spurious Emissions at Antenna Terminal

Channel

10MHz Bandwidth QPSK

Lowest For 90S

Cross Channel

Spectrum

Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep

Start 30.0 MHz Stop 1.0 GHz

Date: 14.SEP.2023 22:15:52

Spectrum

Ref Level 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 36 ms VBW 3 MHz Mode Auto Sweep

Start 1.0 GHz Stop 10.0 GHz

Date: 14.SEP.2023 22:16:18

Spectrum

Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 30 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep

Start 30.0 MHz Stop 1.0 GHz

Date: 29.SEP.2023 14:30:30

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1			1	742.74 MHz	-46.43 dBm		

Spectrum

Ref Level 30.00 dBm Offset 10.50 dB RBW 1 MHz Att 30 dB SWT 47 ms VBW 3 MHz Mode Auto Sweep

Start 1.0 GHz Stop 12.75 GHz

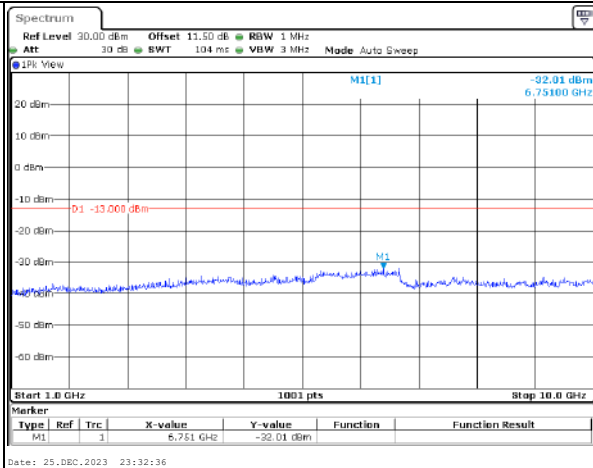
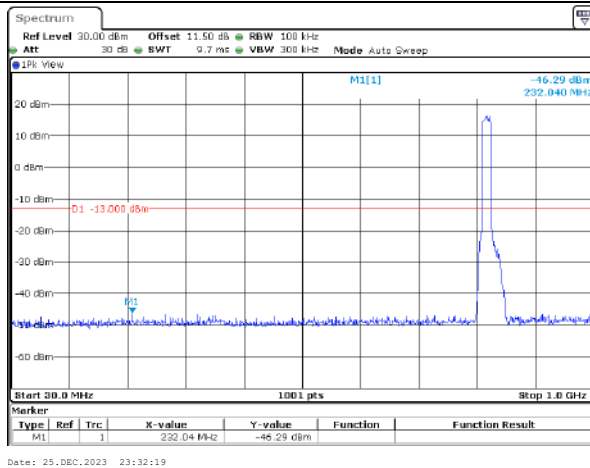
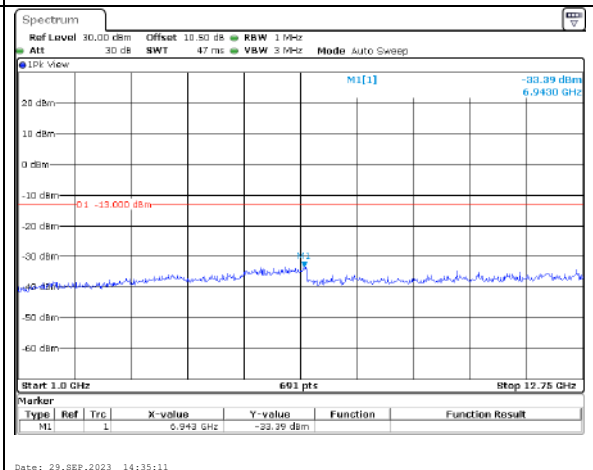
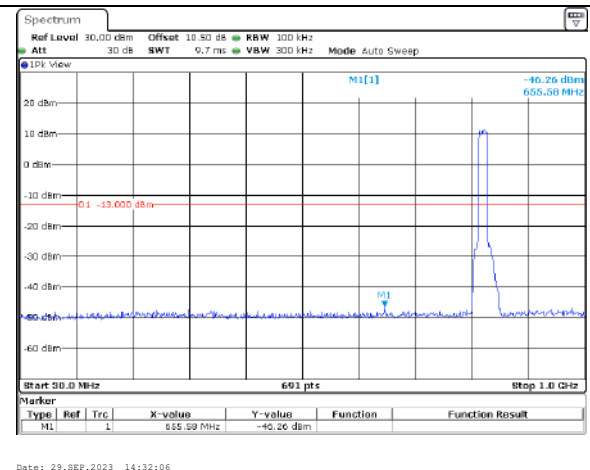
Date: 29.SEP.2023 14:34:34

Marker	Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1			1	6.739 GHz	-33.72 dBm		

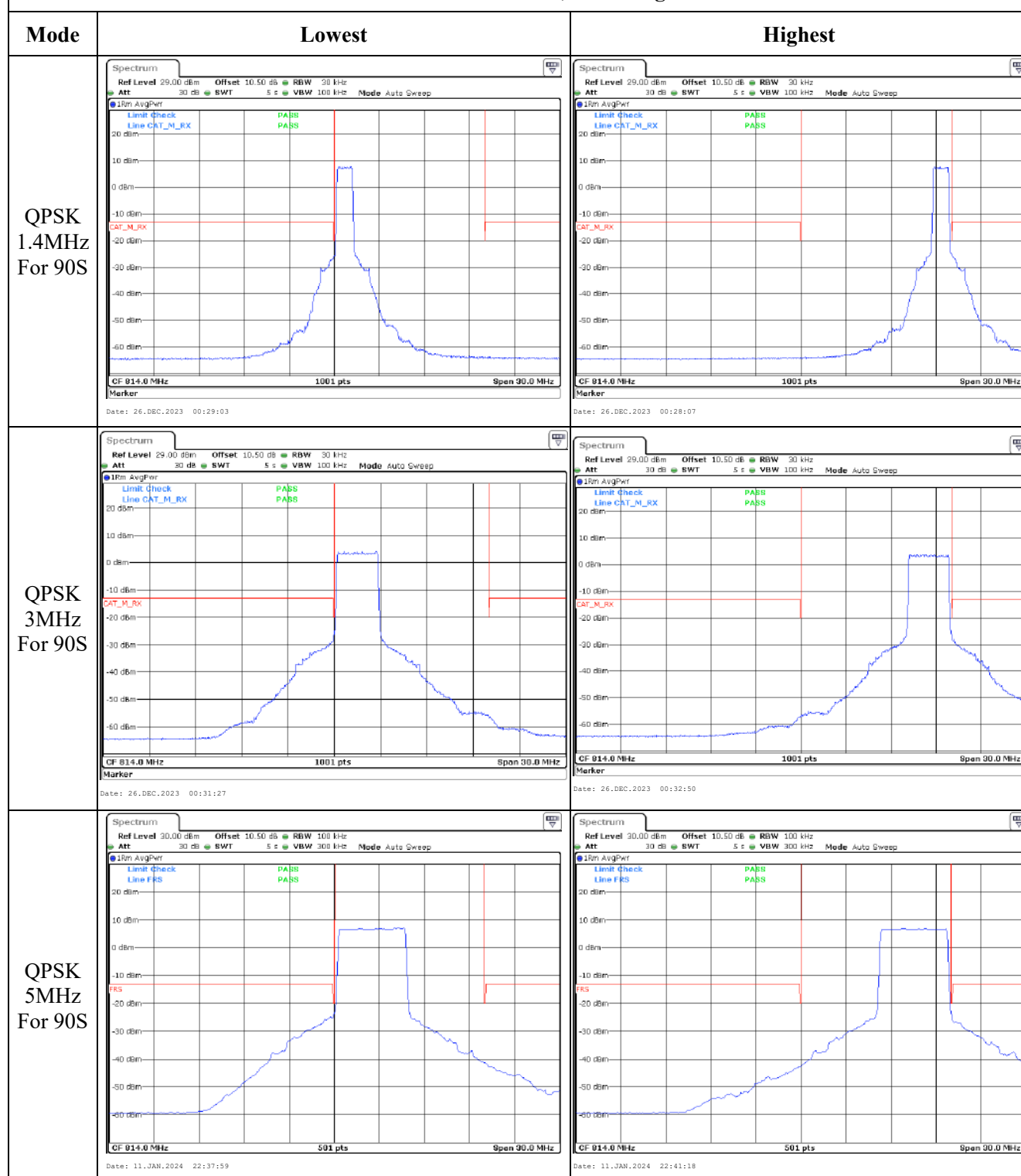
Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

Lowest
For 90SCross
Channel

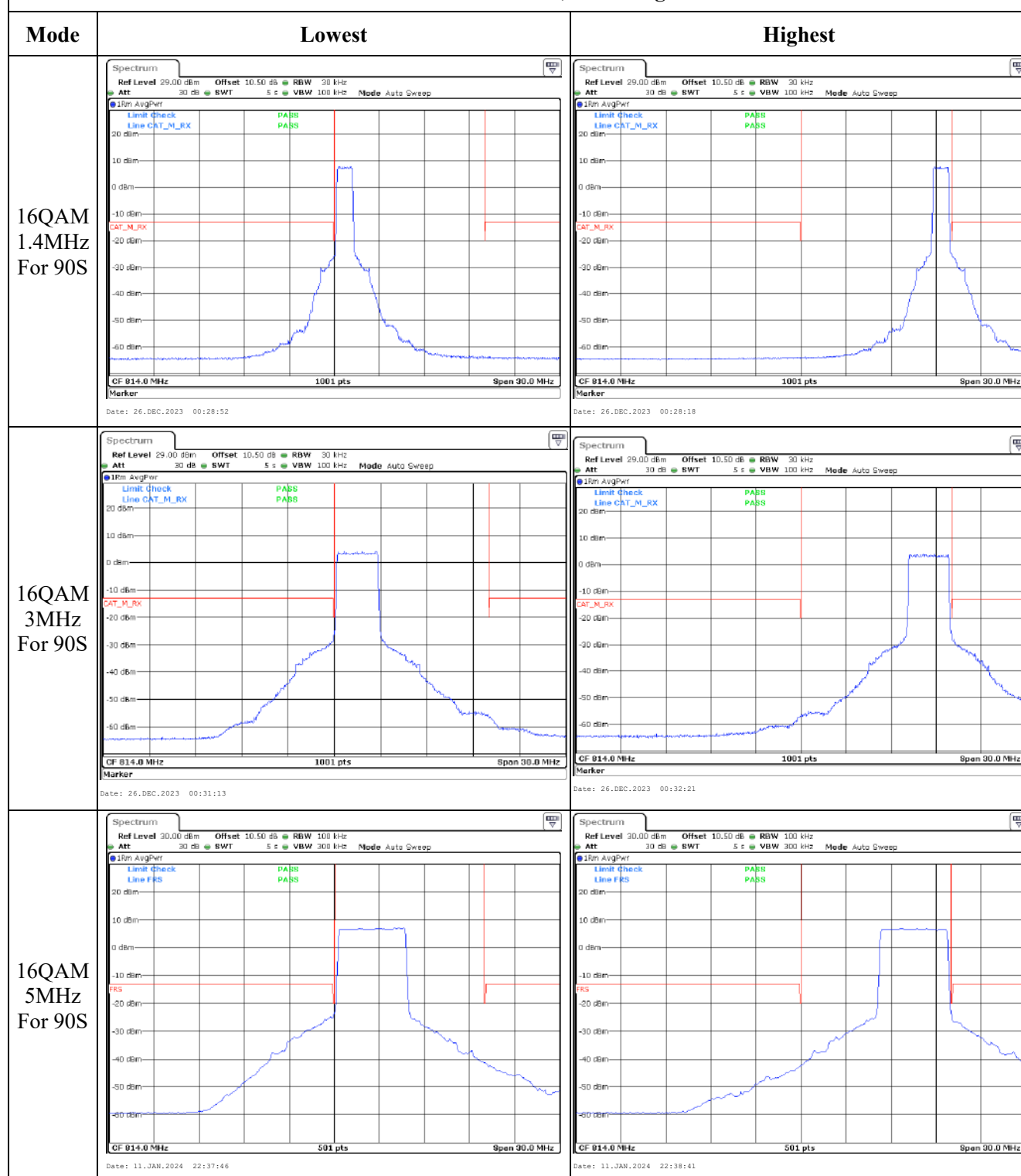
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	
QPSK 10MHz For 90S	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 20 dB SWT 5 s VBW 300 kHz Mode Auto Sweep 1Pm AvgPer Limit Check Line FRS PA5S PA5S 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm FRS CF 014.0 MHz 501 pts Span 30.0 MHz Date: 11, JAN, 2024 22:40:33
QPSK 15MHz Across 90S and 22H	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 300 kHz Att 20 dB SWT 5 s VBW 1 MHz Mode Auto Sweep 1Pm AvgPer Limit Check Line FRS PA5S PA5S 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm FRS CF 014.0 MHz 501 pts Span 30.0 MHz Date: 11, JAN, 2024 22:43:33

Out of band emission, Band Edge



Out of band emission, Band Edge		
Mode		
16QAM 10MHz For 90S	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 100 kHz Att 20 dB SWT VBW 300 kHz Mode Auto Sweep 1Pm AvgPer Limit Check Line FRS PA5S PA5S 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm FRS CF 014.0 MHz 501 pts Span 30.0 MHz Date: 11, JAN, 2024 22:40:24	
16QAM 15MHz Across 90S and 22H	Spectrum Ref Level 30.00 dBm Offset 10.50 dB RBW 300 kHz Att 20 dB SWT VBW 1 MHz Mode Auto Sweep 1Pm AvgPer Limit Check Line FRS PA5S PA5S 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm FRS CF 014.0 MHz 501 pts Span 30.0 MHz Date: 11, JAN, 2024 22:43:45	

4.14.3 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	24.01	23.97	23.91	18.06	38.45
	RB1#3	23.96	23.99	23.89		
	RB1#5	23.90	23.93	23.85		
	RB3#0	23.08	22.96	22.86		
	RB3#3	23.03	23.00	22.94		
	RB6#0	23.04	22.95	22.90		
1.4MHz 16QAM	RB1#0	23.21	23.11	23.68	17.73	38.45
	RB1#3	23.21	23.05	23.61		
	RB1#5	23.11	22.92	23.59		
	RB3#0	22.10	22.05	21.98		
	RB3#3	22.03	22.08	22.01		
	RB6#0	22.05	21.97	21.93		
3MHz QPSK	RB1#0	23.94	23.84	23.76	17.99	38.45
	RB1#8	23.83	23.79	23.70		
	RB1#14	23.89	23.74	23.60		
	RB6#0	22.89	22.82	22.80		
	RB6#9	22.96	22.92	22.85		
	RB15#0	22.90	22.82	22.80		
3MHz 16QAM	RB1#0	23.28	23.28	23.45	17.50	38.45
	RB1#8	23.14	23.32	23.41		
	RB1#14	23.22	23.27	23.35		
	RB6#0	21.88	21.83	21.83		
	RB6#9	21.94	21.90	21.88		
	RB15#0	21.93	21.81	21.85		
5MHz QPSK	RB1#0	24.13	24.06	24.06	18.19	38.45
	RB1#13	23.91	23.92	24.14		
	RB1#24	23.95	24.05	23.86		
	RB15#0	23.04	22.96	23.18		
	RB15#10	23.21	23.00	23.07		
	RB25#0	22.97	23.20	23.13		
5MHz 16QAM	RB1#0	23.05	22.85	22.95	17.29	38.45
	RB1#13	23.24	23.13	23.03		
	RB1#24	22.98	22.88	22.85		
	RB15#0	22.19	22.26	22.09		
	RB15#10	22.22	21.95	22.20		
	RB25#0	22.21	22.17	22.14		

10MHz QPSK	RB1#0	23.93	23.80	23.81	17.98	38.45
	RB1#25	23.88	23.81	23.78		
	RB1#49	23.67	23.82	23.77		
	RB25#0	21.83	21.67	21.76		
	RB25#25	21.82	21.70	21.81		
	RB50#0	21.88	21.89	21.83		
10MHz 16QAM	RB1#0	23.66	22.31	23.26	17.71	38.45
	RB1#25	23.47	22.38	23.16		
	RB1#49	23.44	22.22	23.29		
	RB25#0	21.99	21.91	21.84		
	RB25#25	21.75	21.94	21.95		
	RB50#0	21.91	21.95	21.87		
15MHz QPSK	RB1#0	24.08	23.66	23.74	18.13	38.45
	RB1#38	23.84	23.61	23.74		
	RB1#74	23.93	23.65	23.78		
	RB36#0	21.90	21.69	21.76		
	RB36#39	21.57	21.91	21.79		
	RB75#0	21.82	21.82	21.85		
15MHz 16QAM	RB1#0	23.07	22.93	23.05	17.19	38.45
	RB1#38	22.87	22.93	23.07		
	RB1#74	22.96	22.88	23.14		
	RB36#0	21.96	21.83	21.83		
	RB36#39	21.86	21.85	21.82		
	RB75#0	21.74	21.88	21.85		

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	6.24	9.53	9.51	13
	RB75#0	9.92	6.96	9.22	13
15MHz 16QAM	RB1#0	6.70	9.04	6.34	13
	RB75#0	8.92	6.17	6.94	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	1.102	1.084	1.09	1.236	1.212	1.22
1.4MHz 16QAM	1.096	1.096	1.09	1.248	1.254	1.19
3MHz QPSK	2.683	2.695	2.695	2.964	2.952	2.952
3MHz 16QAM	2.683	2.695	2.695	2.940	2.976	2.976
5MHz QPSK	4.511	4.511	4.511	4.960	5.020	5.000
5MHz 16QAM	4.511	4.511	4.531	5.060	4.980	5.000
10MHz QPSK	8.982	8.982	8.942	9.760	9.720	9.680
10MHz 16QAM	8.982	1.252	8.942	9.720	9.600	9.680
15MHz QPSK	13.473	13.473	13.473	14.880	14.820	14.700
15MHz 16QAM	13.473	13.533	13.473	14.760	14.760	14.700
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

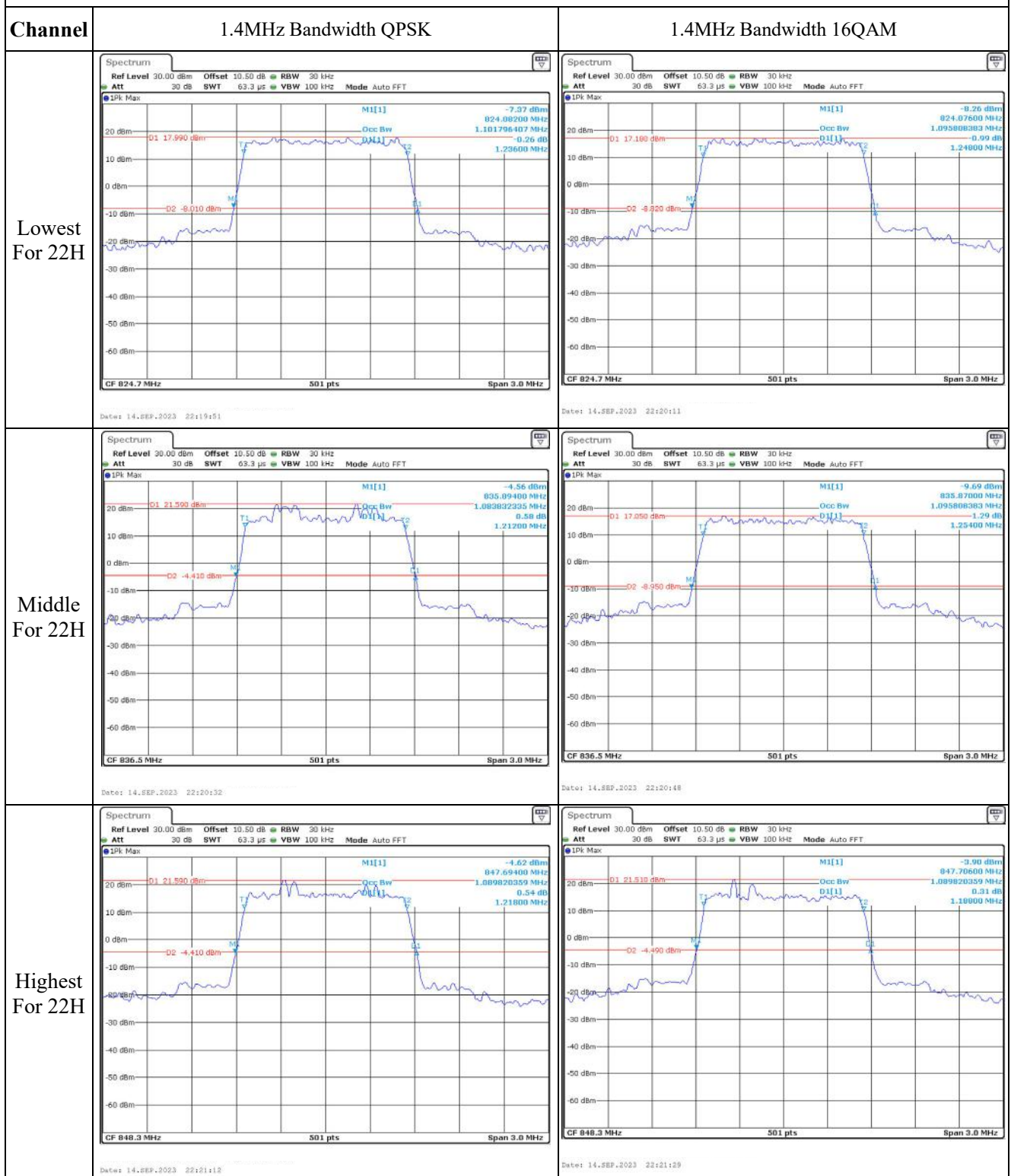
Test Modulation:	15 MHz QPSK		Test Channel:	831.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	112.471	0.135	2.5
	-20	3.85	112.226	0.135	2.5
	-10	3.85	116.556	0.140	2.5
	0	3.85	107.662	0.129	2.5
	10	3.85	113.297	0.136	2.5
	20	3.85	112.438	0.135	2.5
	30	3.85	104.104	0.125	2.5
	40	3.85	109.451	0.132	2.5
	50	3.85	108.624	0.131	2.5
Frequency Stability vs. Voltage	20	3.66	113.008	0.136	2.5
	20	4.24	111.617	0.134	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	109.004	0.131	2.5
	-20	3.85	117.858	0.142	2.5
	-10	3.85	107.249	0.129	2.5
	0	3.85	117.385	0.141	2.5
	10	3.85	105.485	0.127	2.5
	20	3.85	106.275	0.128	2.5
	30	3.85	101.019	0.121	2.5
	40	3.85	101.374	0.122	2.5
	50	3.85	102.365	0.123	2.5
Frequency Stability vs. Voltage	20	3.66	117.526	0.141	2.5
	20	4.24	112.195	0.135	2.5
				Result:	Pass

4.14.4 Test Plots for Part 22H:

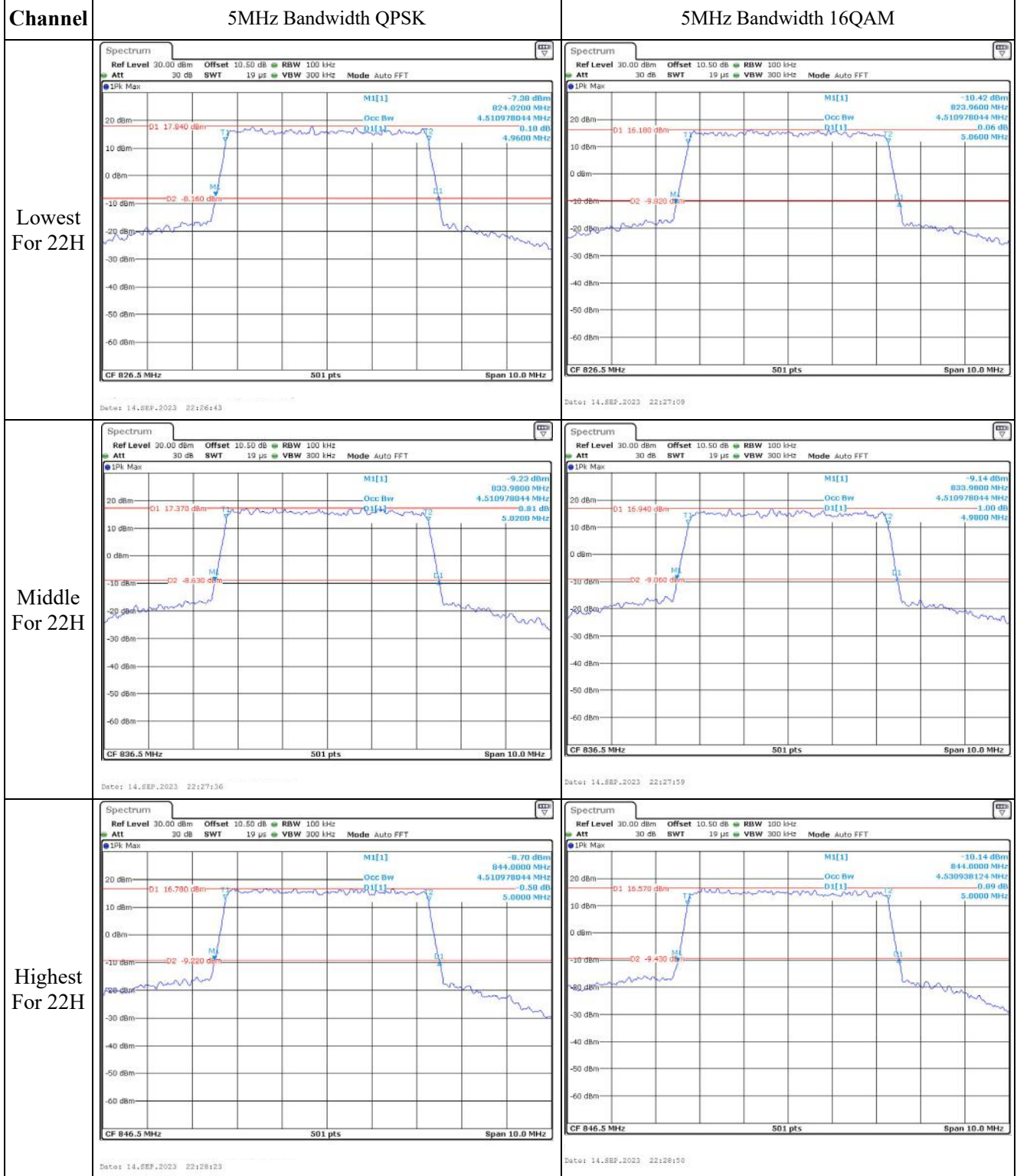
(Note: The 10.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest For 22H		
Middle For 22H		
Highest For 22H		

Occupied Bandwidth

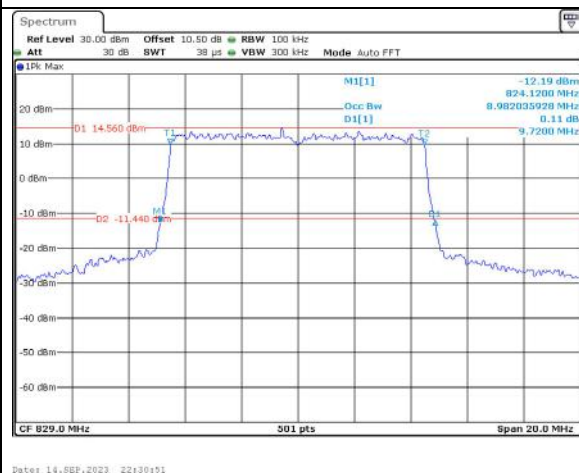
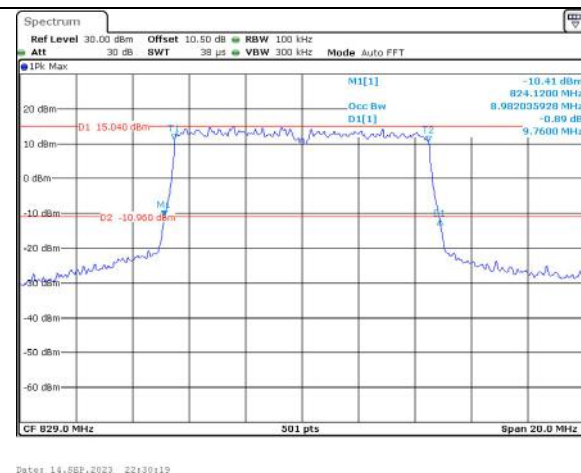
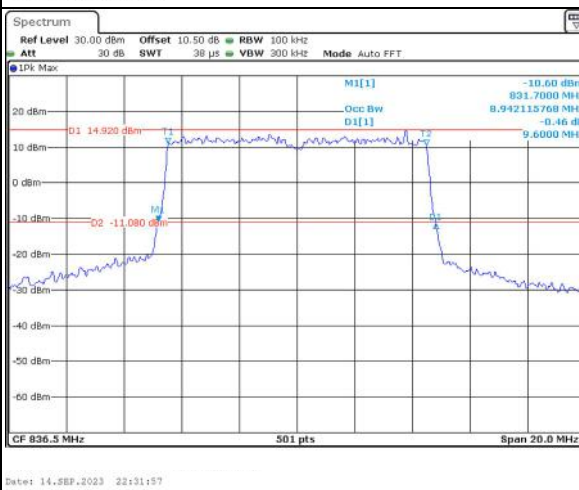
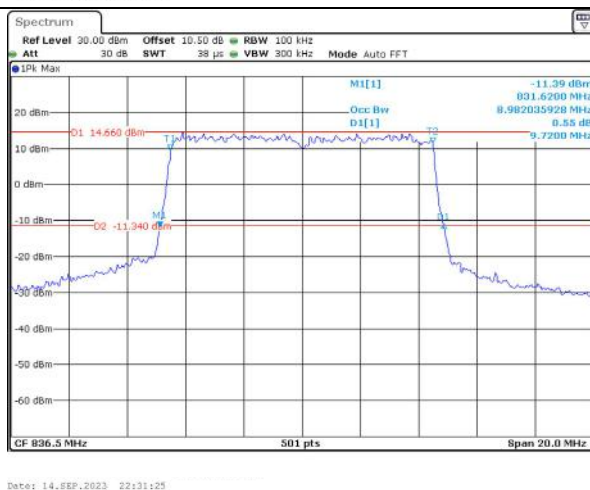
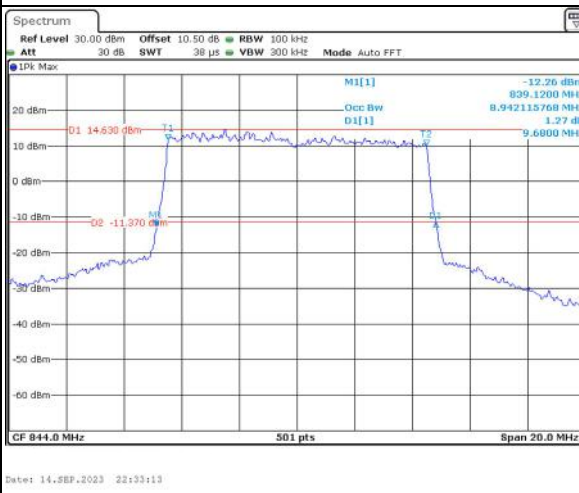
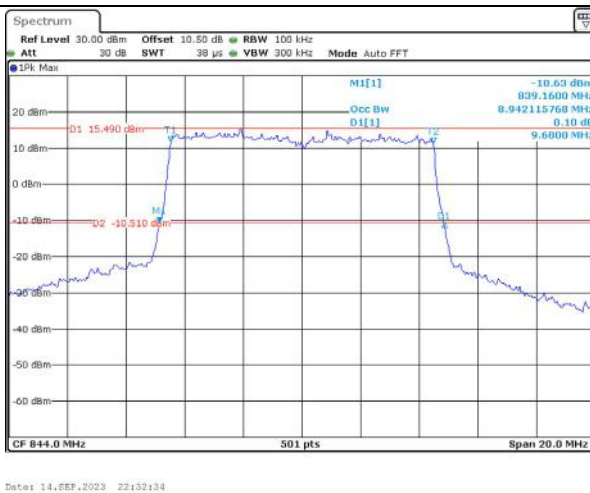


Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

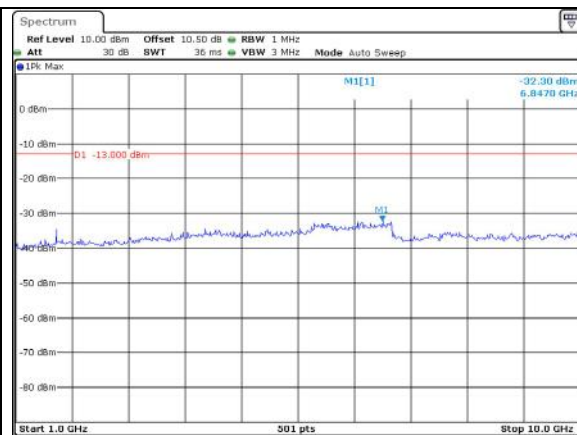
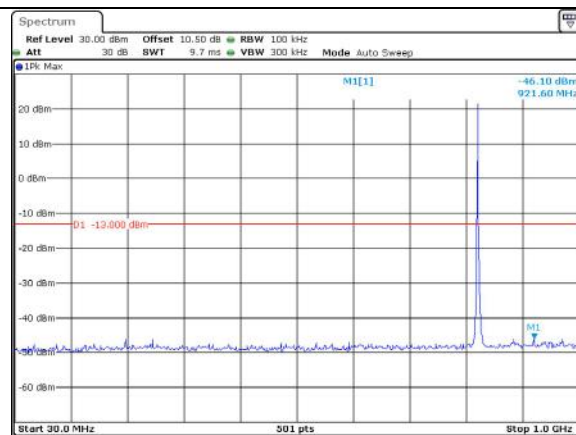
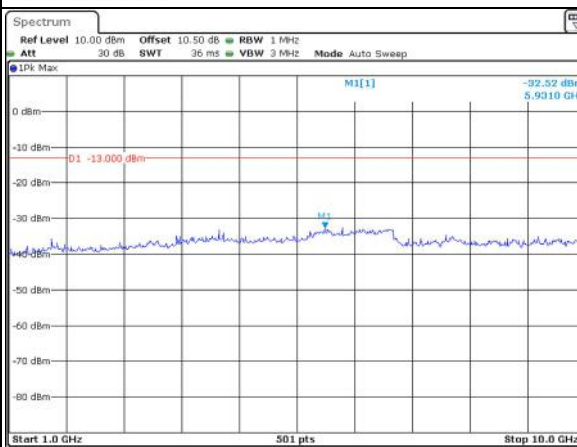
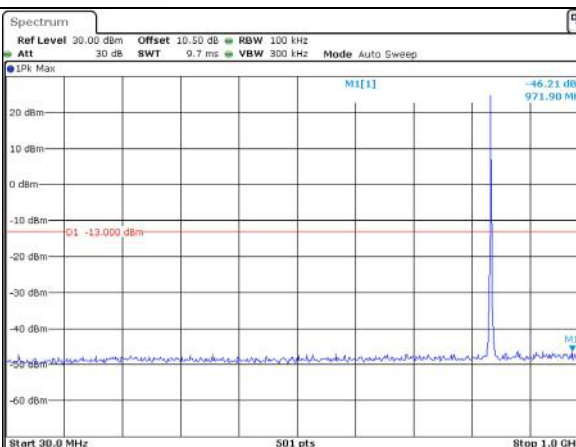
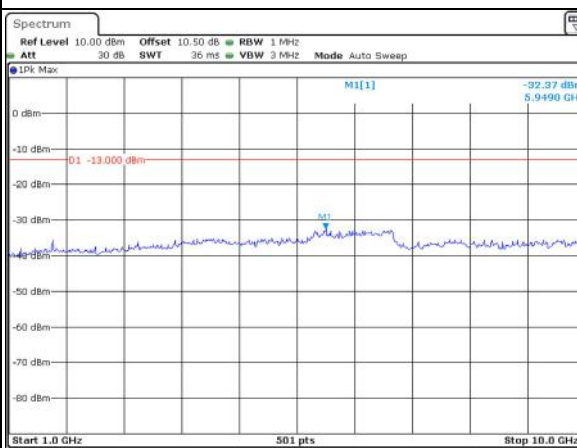
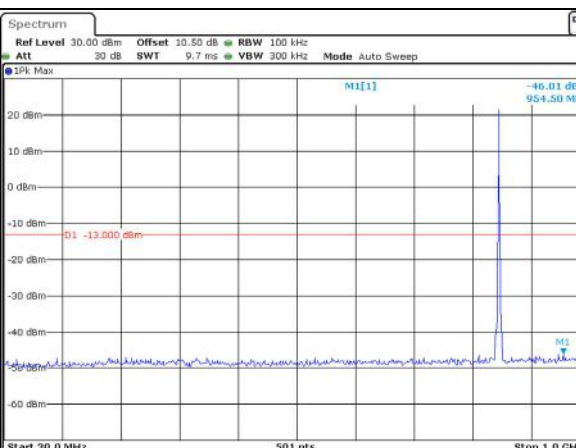
10MHz Bandwidth 16QAM

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

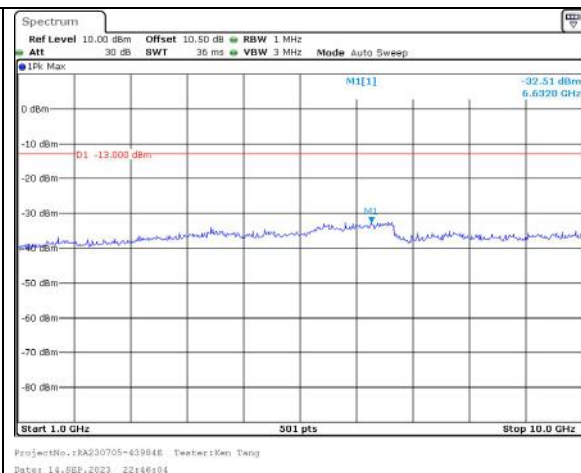
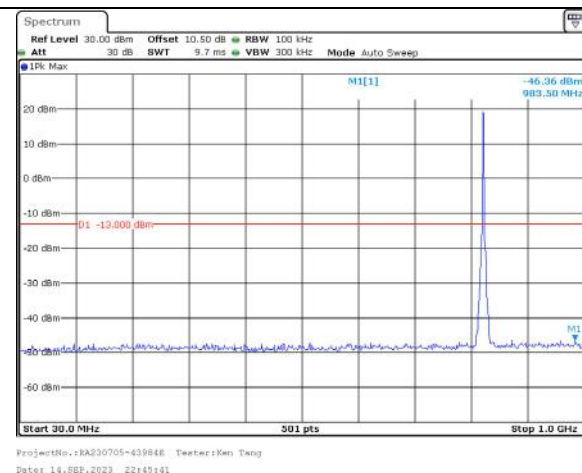
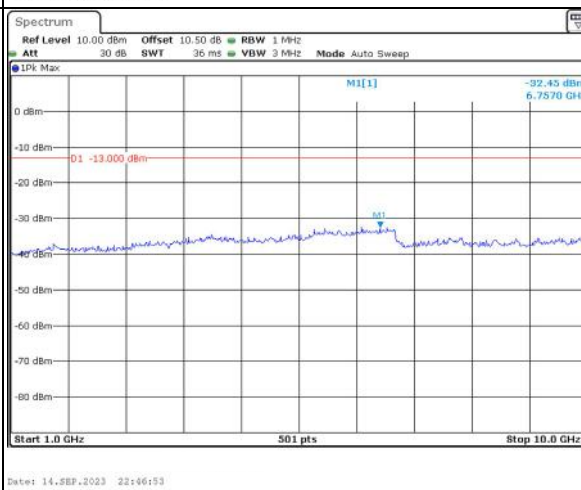
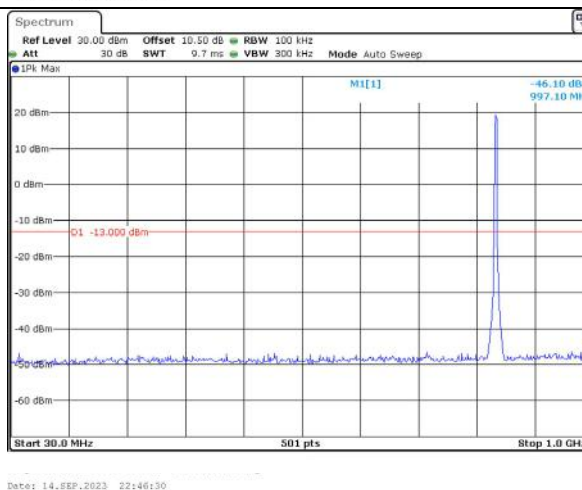
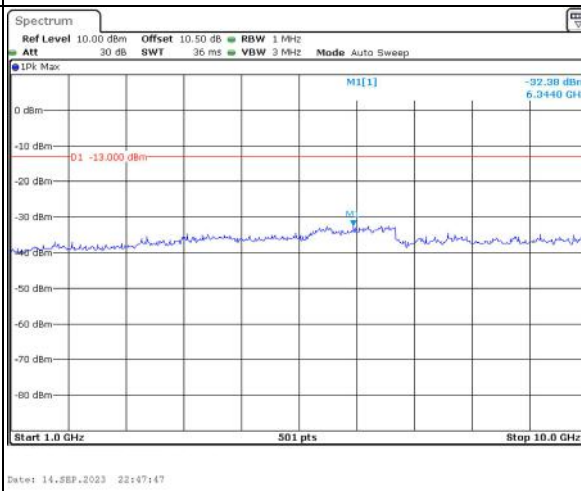
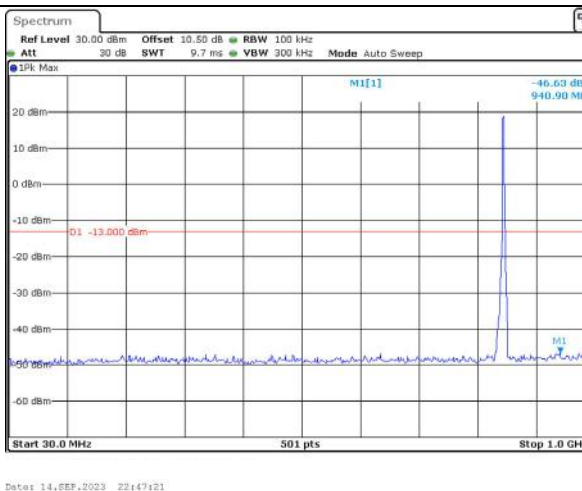
1.4MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

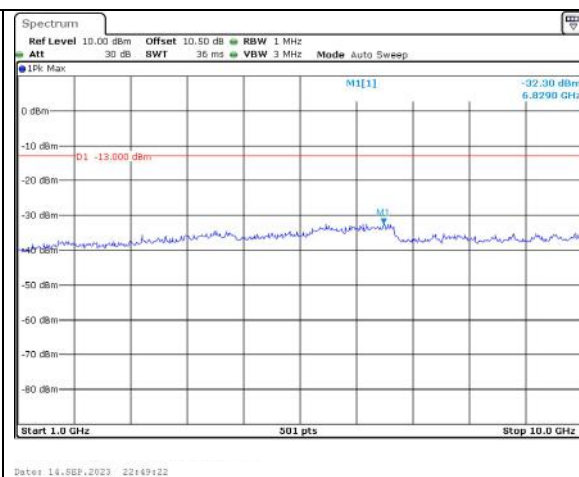
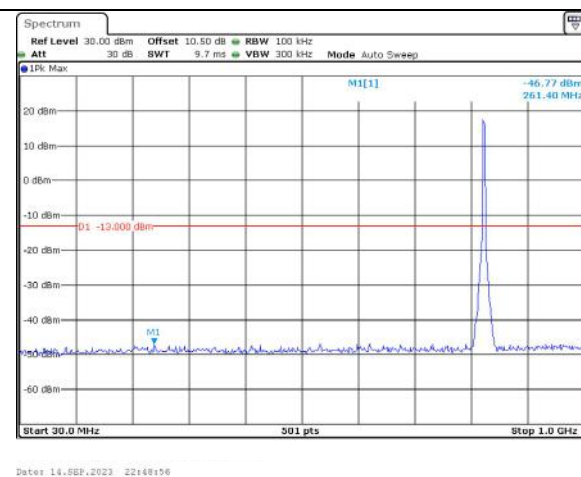
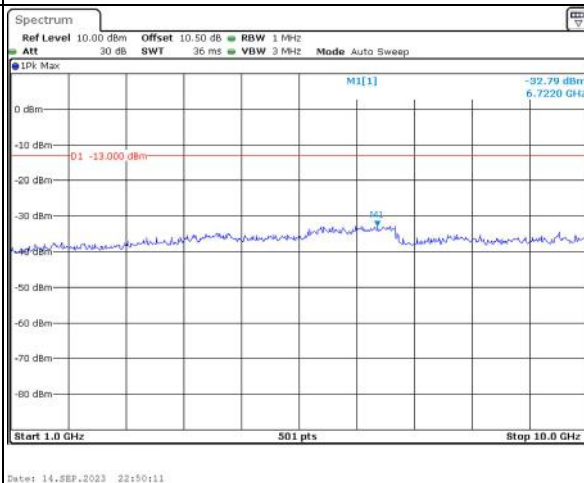
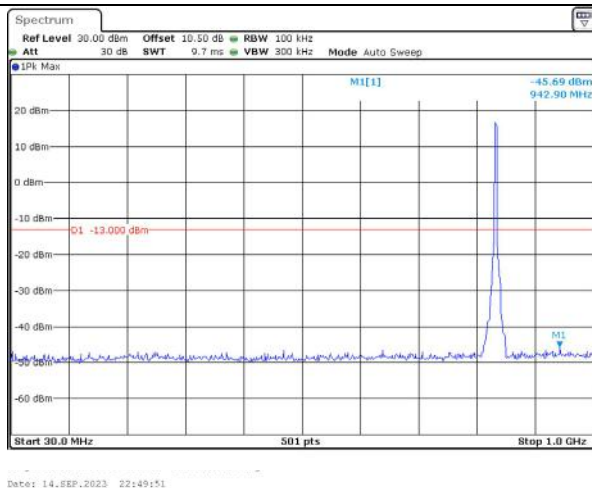
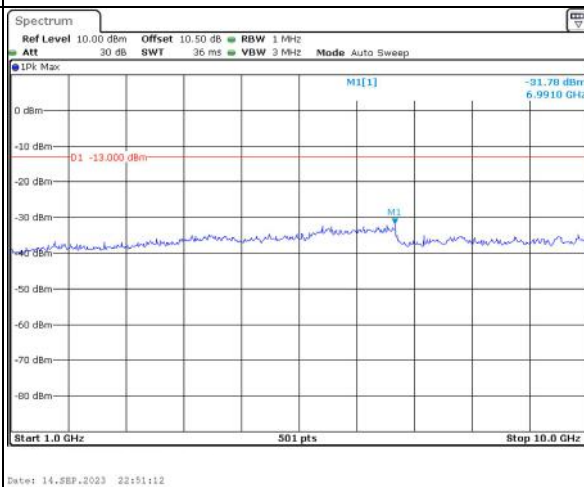
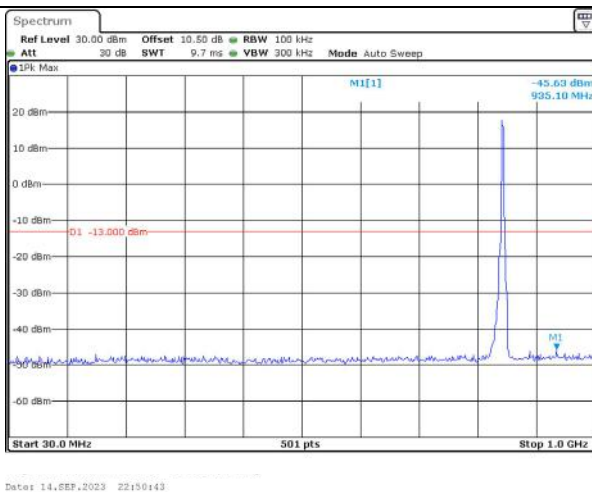
3MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

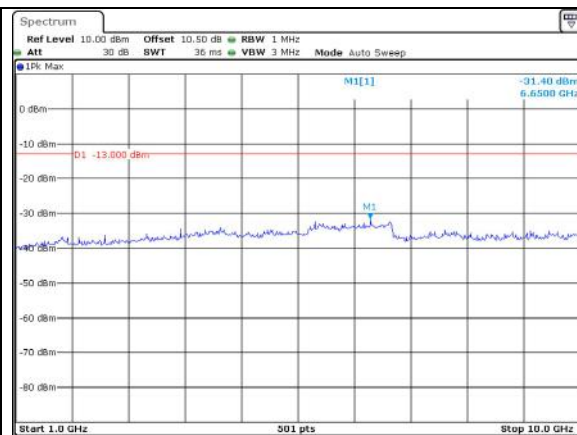
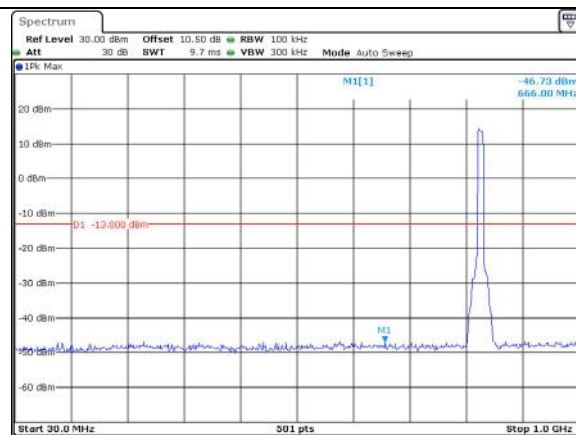
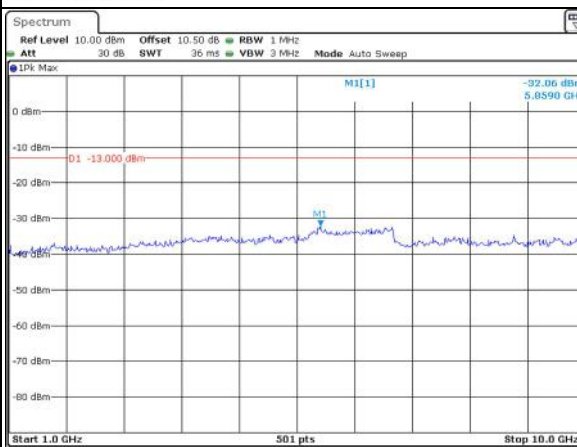
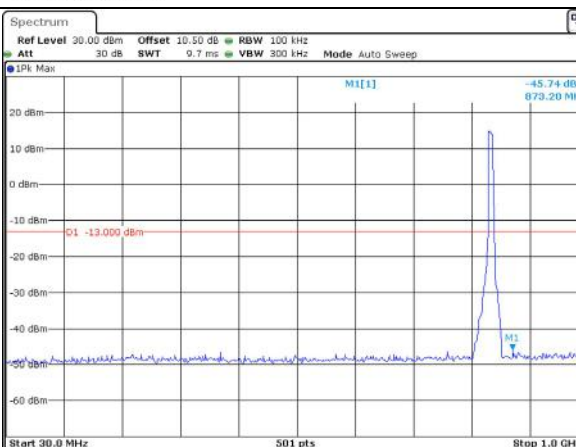
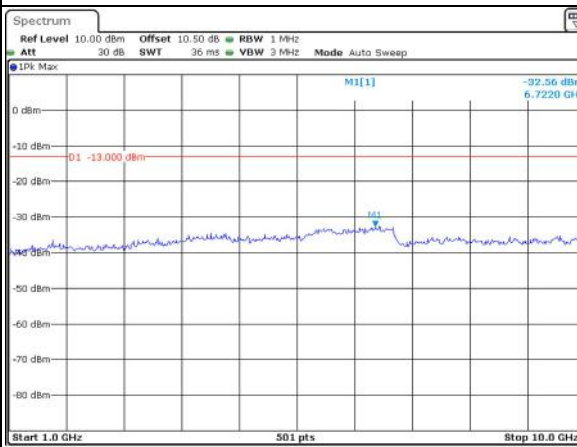
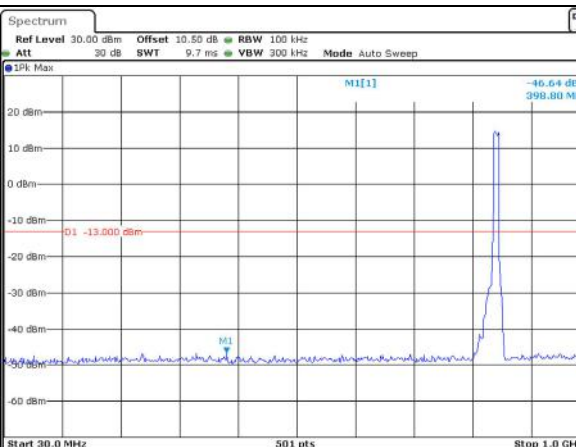
5MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

Spurious Emissions at Antenna Terminal

Channel

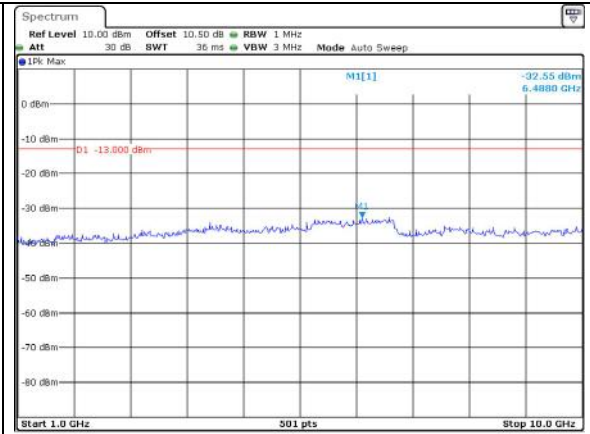
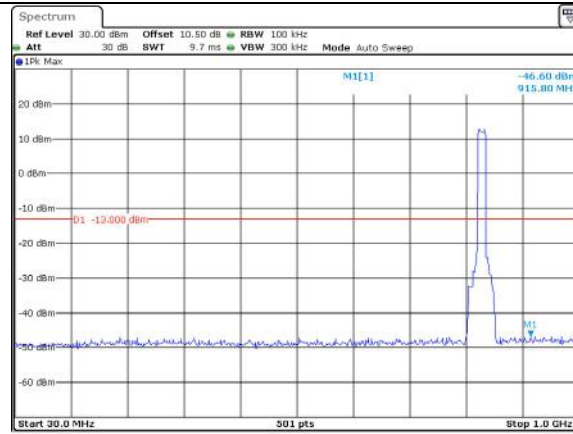
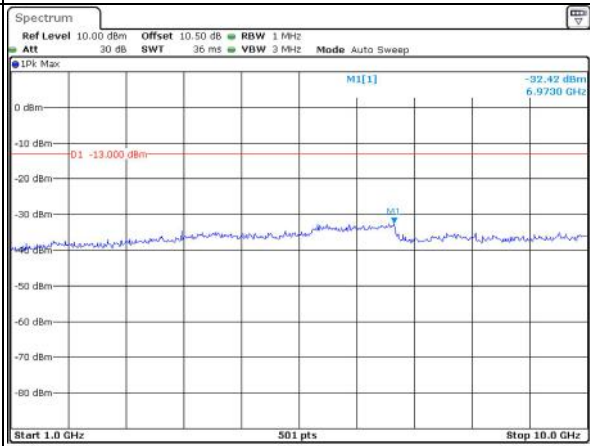
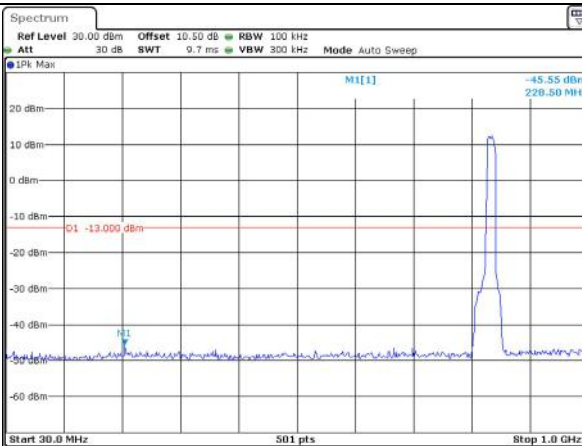
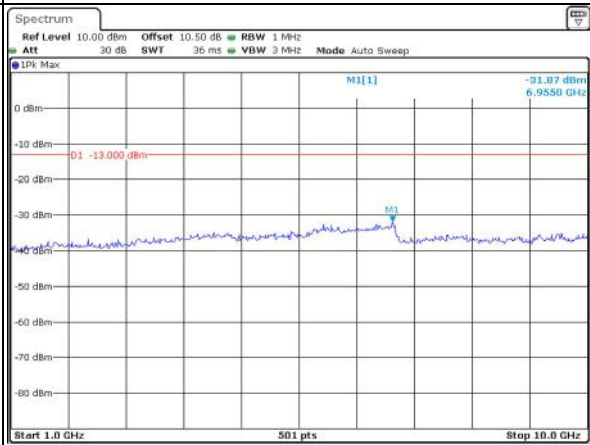
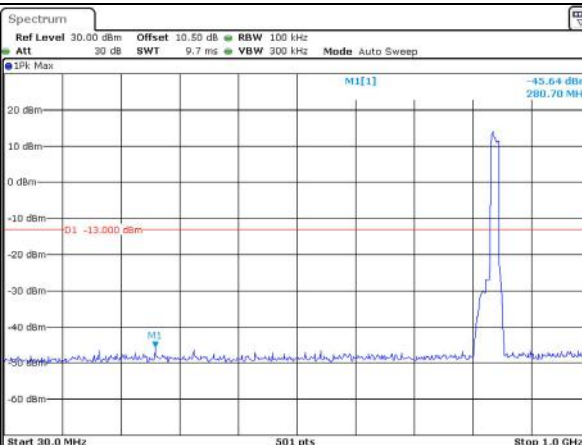
10MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

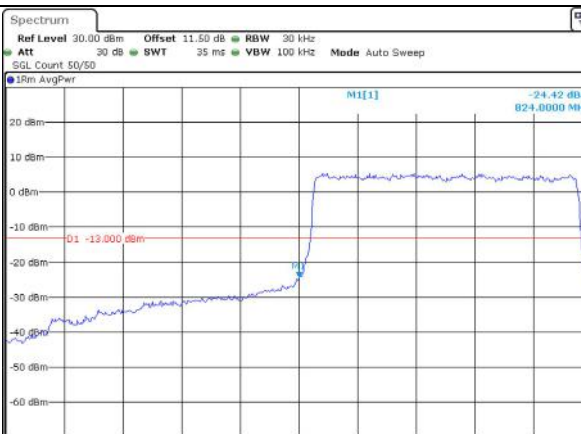
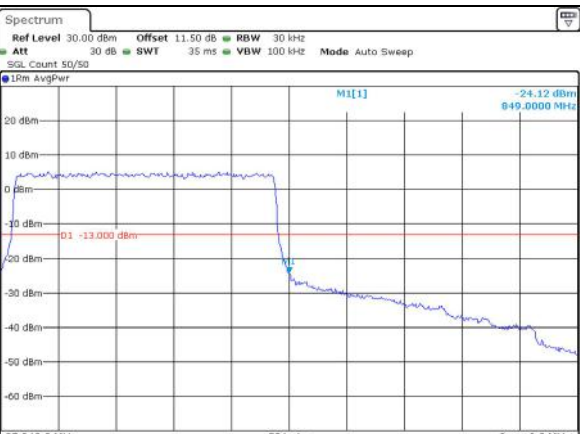
Spurious Emissions at Antenna Terminal

Channel

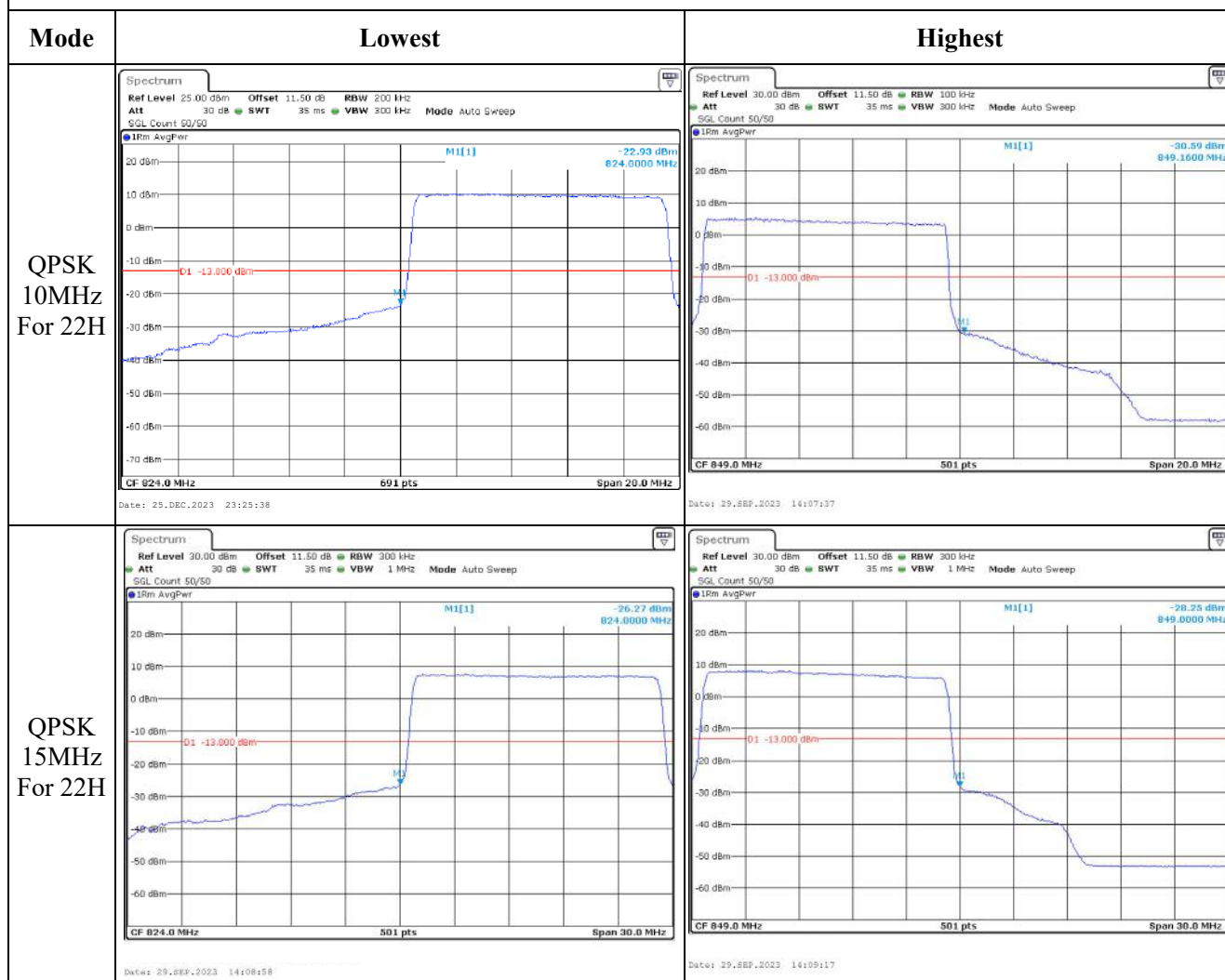
15MHz Bandwidth QPSK

Lowest
For 22HMiddle
For 22HHighest
For 22H

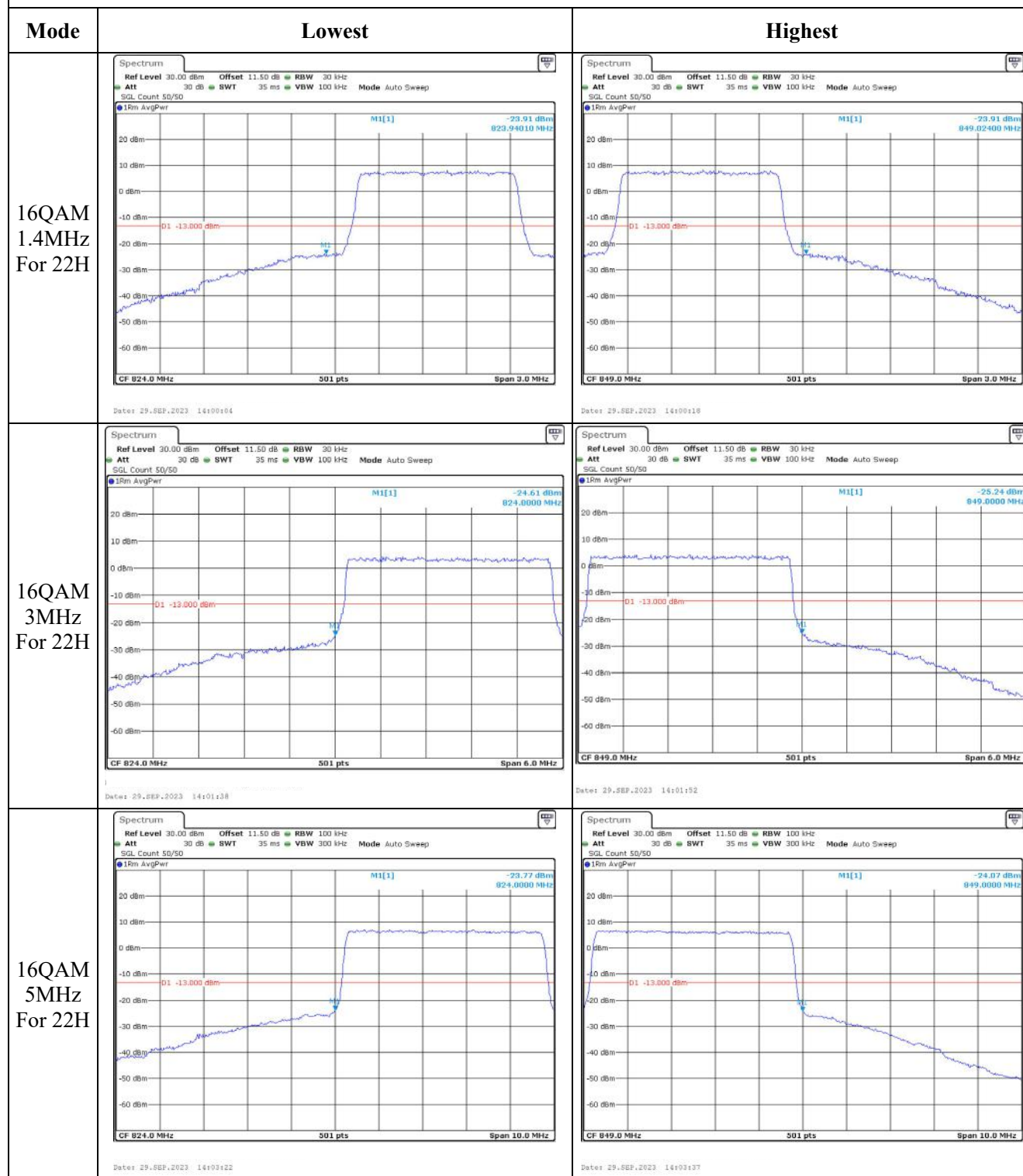
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz For 22H	 Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep SQL Count 50/50 15m AvgPer M1[1] -29.53 dBm 823.90200 MHz -13.000 dBm CF 824.0 MHz 501 pts Span 3.0 MHz Date: 29.SEP.2023 13:59:07	 Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep SQL Count 50/50 15m AvgPer M1[1] -22.99 dBm 849.02400 MHz -13.000 dBm CF 849.0 MHz 501 pts Span 3.0 MHz Date: 29.SEP.2023 14:00:11
QPSK 3MHz For 22H	 Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep SQL Count 50/50 15m AvgPer M1[1] -24.42 dBm 824.00000 MHz -13.000 dBm CF 824.0 MHz 501 pts Span 6.0 MHz Date: 29.SEP.2023 14:01:31	 Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 30 kHz Att 30 dB SWT 35 ms VBW 100 kHz Mode Auto Sweep SQL Count 50/50 15m AvgPer M1[1] -24.12 dBm 849.00000 MHz -13.000 dBm CF 849.0 MHz 501 pts Span 6.0 MHz Date: 29.SEP.2023 14:01:46
QPSK 5MHz For 22H	 Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep SQL Count 50/50 15m AvgPer M1[1] -22.98 dBm 824.00000 MHz -13.000 dBm CF 824.0 MHz 501 pts Span 10.0 MHz Date: 29.SEP.2023 14:03:14	 Spectrum Ref Level 30.00 dBm Offset 11.50 dB RBW 100 kHz Att 30 dB SWT 35 ms VBW 300 kHz Mode Auto Sweep SQL Count 50/50 15m AvgPer M1[1] -23.33 dBm 849.00000 MHz -13.000 dBm CF 849.0 MHz 501 pts Span 10.0 MHz Date: 29.SEP.2023 14:03:30

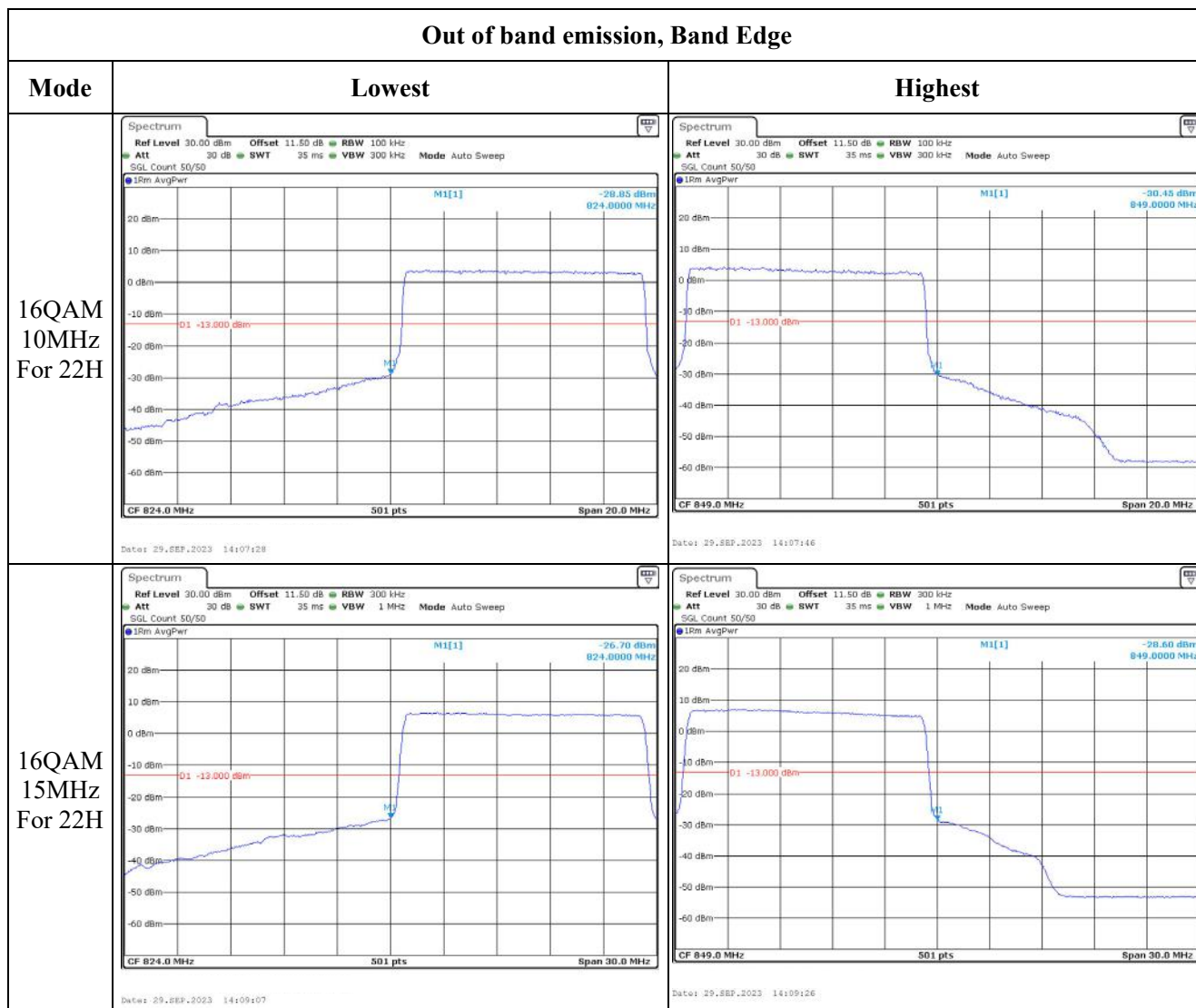
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.15 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	294A-2	Test Date:	2023/9/14-2023/9/27
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ken Tang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.7~28.4	Relative Humidity: (%)	53~58	ATM Pressure: (kPa)	100.2~100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

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

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2572.5	2595	2617.5
10MHz	2575	2595	2615
15MHz	2577.5	2595	2612.5
20MHz	2580	2595	2610

Test Data:

FCC§2.1046;§ 27.50(h)(2)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.92	22.99	23.16	22.09	33
	RB1#13	22.93	23.03	23.04		
	RB1#24	22.95	23.04	23.08		
	RB15#0	21.99	22.10	22.13		
	RB15#10	22.08	22.16	22.15		
	RB25#0	22.08	22.10	22.24		
5MHz 16QAM	RB1#0	22.16	22.56	22.05	21.53	33
	RB1#13	22.19	22.48	22.00		
	RB1#24	22.23	22.60	22.14		
	RB15#0	20.95	21.14	21.17		
	RB15#10	21.06	21.21	21.26		
	RB25#0	21.09	21.11	21.24		
10MHz QPSK	RB1#0	22.90	22.94	22.95	21.91	33
	RB1#25	22.94	22.95	22.94		
	RB1#49	22.98	22.98	22.98		
	RB25#0	21.84	21.95	22.01		
	RB25#25	21.92	22.07	22.07		
	RB50#0	21.91	21.95	22.02		
10MHz 16QAM	RB1#0	22.26	22.37	22.01	21.32	33
	RB1#25	22.27	22.39	22.03		
	RB1#49	22.35	22.38	22.05		
	RB25#0	20.88	20.97	20.96		
	RB25#25	21.03	21.03	21.01		
	RB50#0	20.95	20.94	21.10		
15MHz QPSK	RB1#0	22.79	23.03	23.03	22.02	33
	RB1#38	22.76	23.08	23.06		
	RB1#74	22.92	23.09	23.05		
	RB36#0	21.90	21.96	22.01		
	RB36#39	22.00	22.08	22.08		
	RB75#0	21.99	22.00	22.02		
15MHz 16QAM	RB1#0	22.01	22.29	22.17	21.37	33
	RB1#38	22.00	22.34	22.22		
	RB1#74	22.05	22.44	22.23		
	RB36#0	20.95	20.98	21.00		
	RB36#39	21.07	21.08	21.11		
	RB75#0	20.99	20.99	21.00		
20MHz QPSK	RB1#0	22.28	22.24	22.17	21.21	33

	RB1#50	22.26	22.27	22.13		
	RB1#99	22.27	22.21	22.12		
	RB50#0	21.29	21.18	21.18		
	RB50#50	21.28	21.21	21.21		
	RB100#0	21.30	21.21	21.15		
20MHz 16QAM	RB1#0	21.28	21.68	21.26	20.72	33
	RB1#50	21.38	21.79	21.35		
	RB1#99	21.27	21.76	21.27		
	RB50#0	20.31	20.23	20.12		
	RB50#50	20.37	20.29	20.13		
	RB100#0	20.29	20.21	20.22		

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

Result: **Pass**

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	7.29	9.91	9.82	13
	RB100#0	6.55	6.40	8.70	13
20MHz 16QAM	RB1#0	6.11	7.20	9.35	13
	RB100#0	9.18	6.40	6.40	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	5.060	4.980	5.000
5MHz 16QAM	4.511	4.511	4.511	5.160	5.360	5.040
10MHz QPSK	8.942	8.942	8.942	9.680	9.840	9.640
10MHz 16QAM	8.942	8.942	8.942	9.600	9.600	9.680
15MHz QPSK	13.533	13.533	13.413	14.760	14.760	14.940
15MHz 16QAM	13.533	13.593	13.533	14.760	14.820	14.700
20MHz QPSK	18.044	17.964	17.884	19.280	19.120	19.200
20MHz 16QAM	17.884	17.964	17.964	19.280	19.280	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.
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FCC §2.1051, § 27.53: Out of band emission, Band Edge

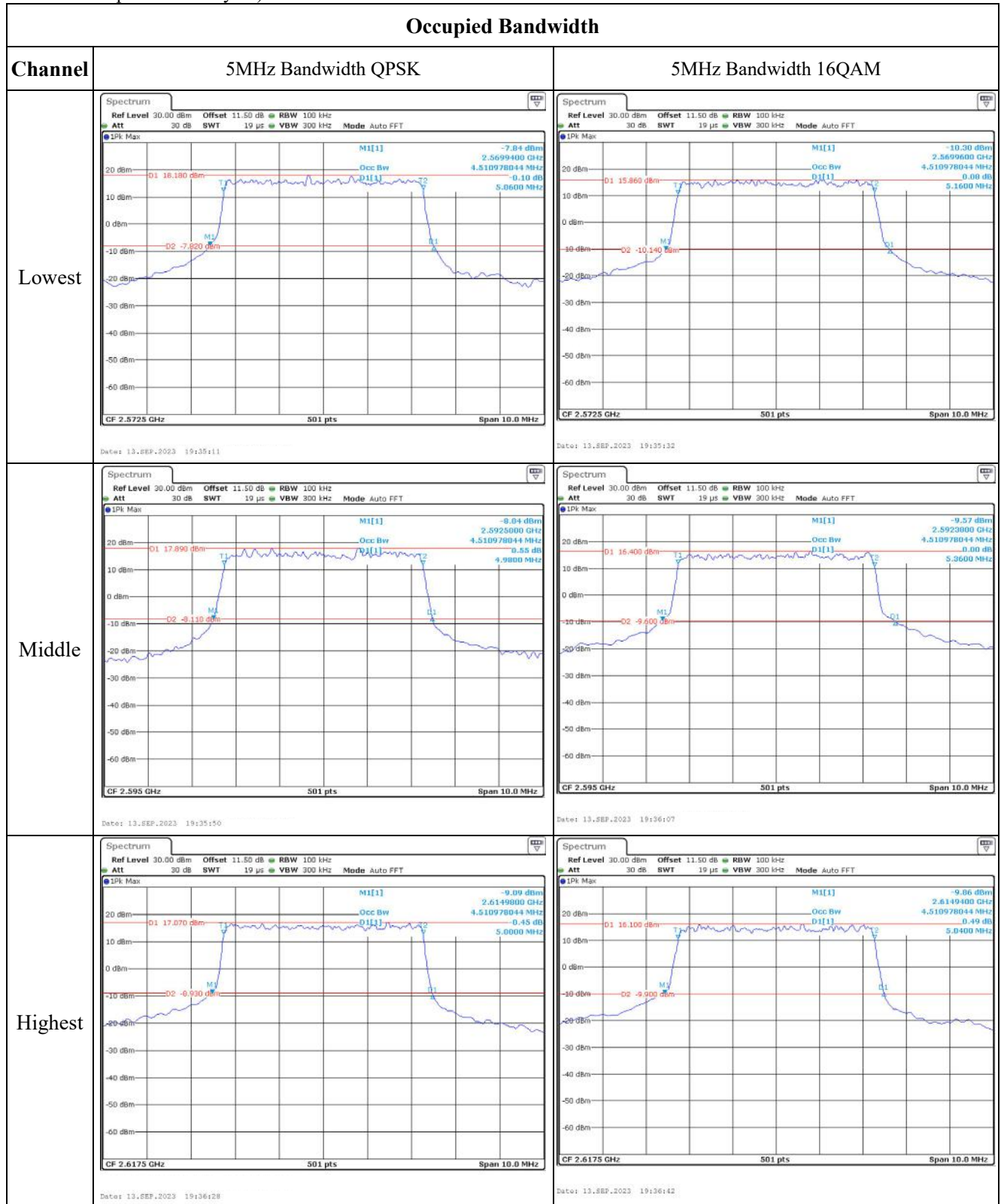
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2570.029	2570.00	2619.978	2620
	-20	3.85	2570.019	2570.00	2619.980	2620
	-10	3.85	2570.003	2570.00	2619.991	2620
	0	3.85	2570.022	2570.00	2619.982	2620
	10	3.85	2570.001	2570.00	2619.975	2620
	20	3.85	2570.028	2570.00	2619.986	2620
	30	3.85	2570.022	2570.00	2619.978	2620
	40	3.85	2570.017	2570.00	2619.977	2620
	50	3.85	2570.019	2570.00	2619.982	2620
Frequency Stability vs. Voltage	20	3.66	2570.028	2570.00	2619.985	2620
	20	4.24	2570.027	2570.00	2619.987	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	2570.011	2570.00	2619.975	2620
	-20	3.85	2570.022	2570.00	2619.997	2620
	-10	3.85	2570.028	2570.00	2619.978	2620
	0	3.85	2570.023	2570.00	2619.977	2620
	10	3.85	2570.012	2570.00	2619.920	2620
	20	3.85	2570.017	2570.00	2619.981	2620
	30	3.85	2570.023	2570.00	2619.986	2620
	40	3.85	2570.008	2570.00	2619.992	2620
	50	3.85	2570.011	2570.00	2619.988	2620
Frequency Stability vs. Voltage	20	3.66	2570.018	2570.00	2619.981	2620
	20	4.24	2570.027	2570.00	2619.970	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):



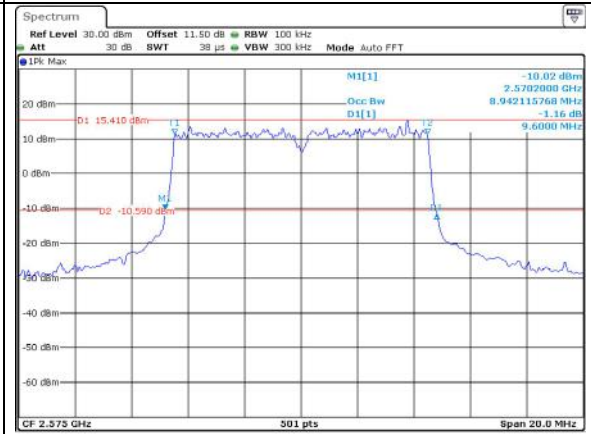
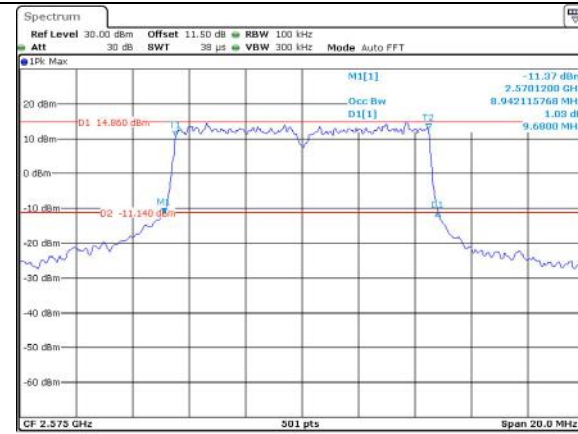
Occupied Bandwidth

Channel

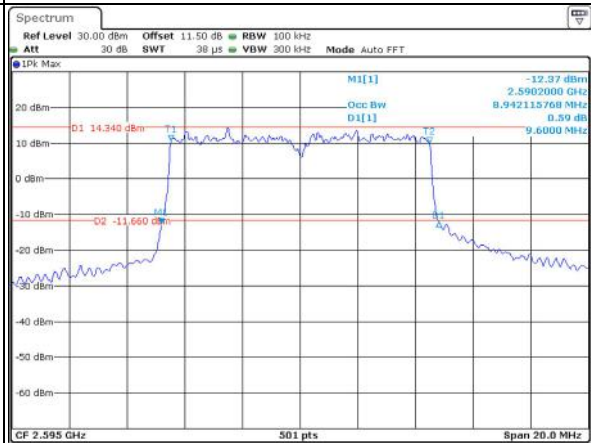
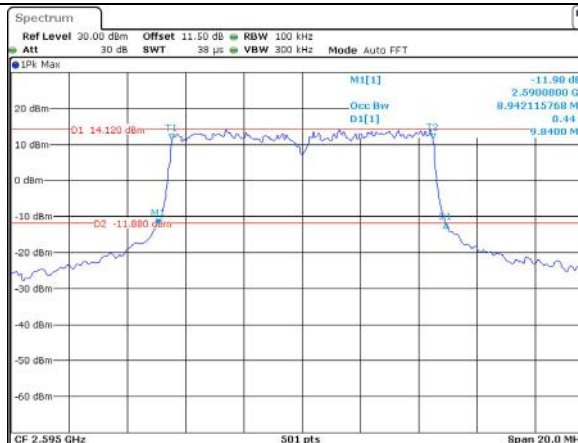
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

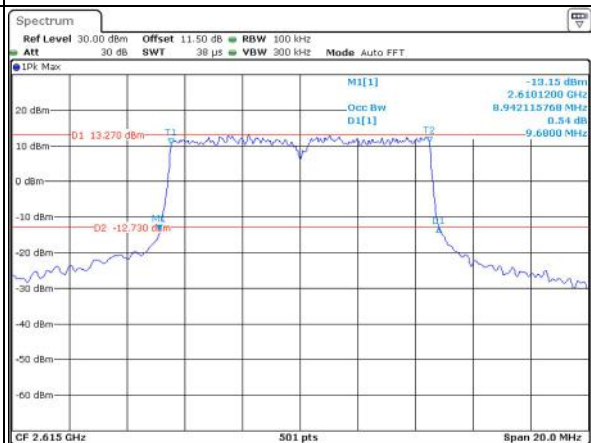
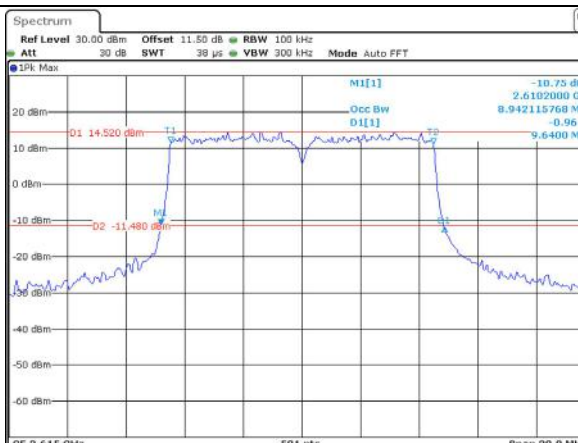
Lowest



Middle



Highest



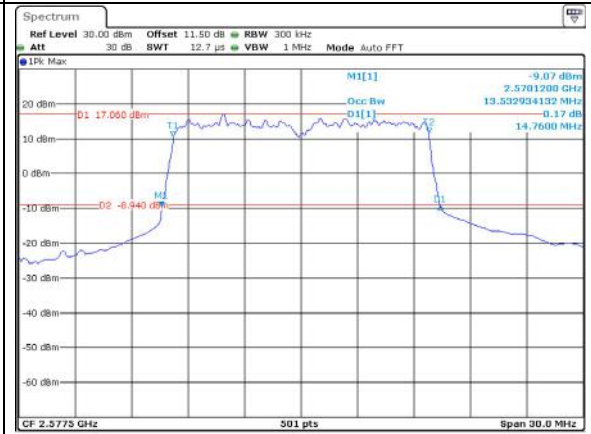
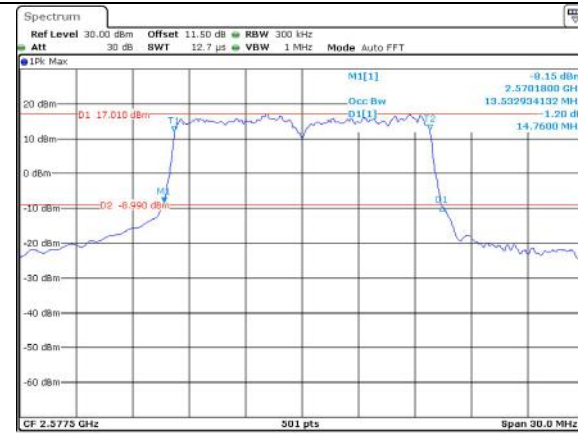
Occupied Bandwidth

Channel

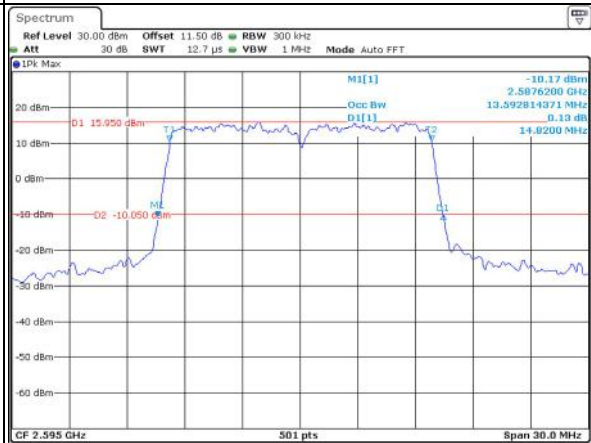
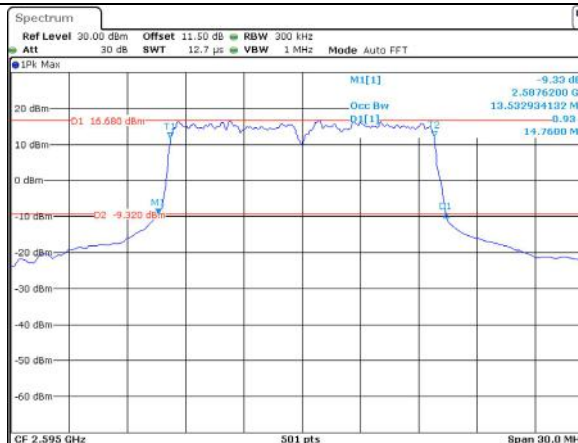
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

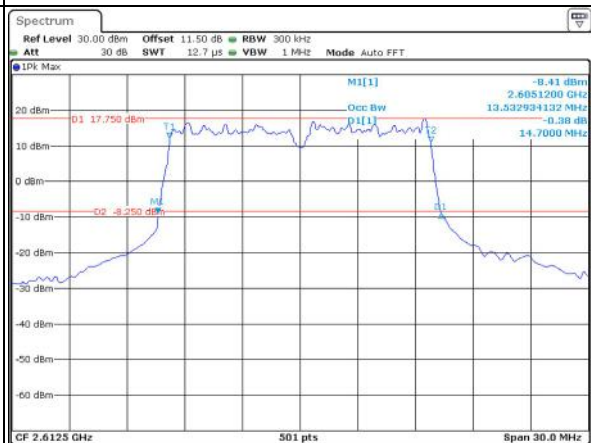
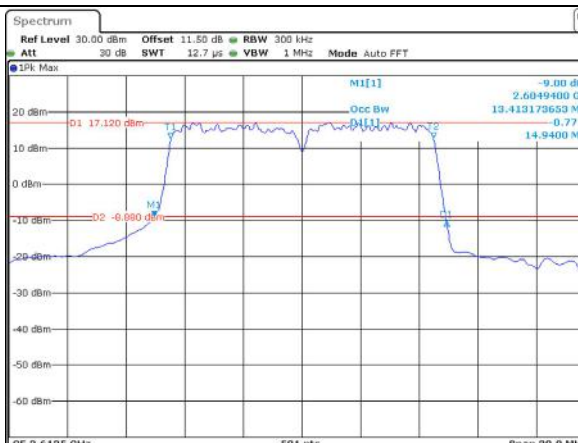
Lowest



Middle



Highest



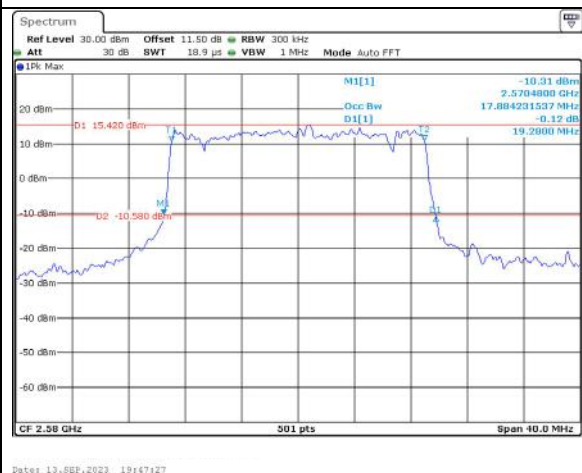
Occupied Bandwidth

Channel

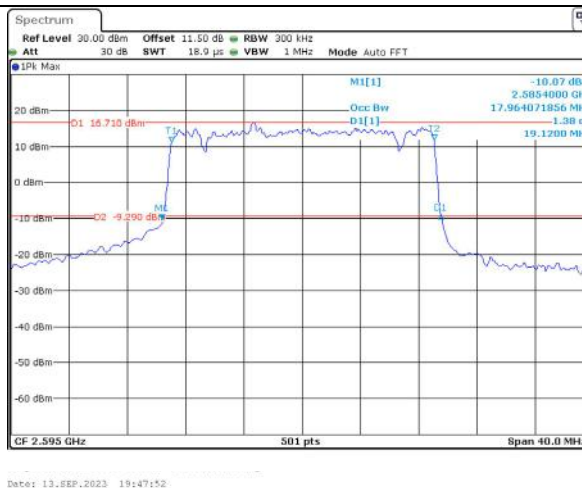
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

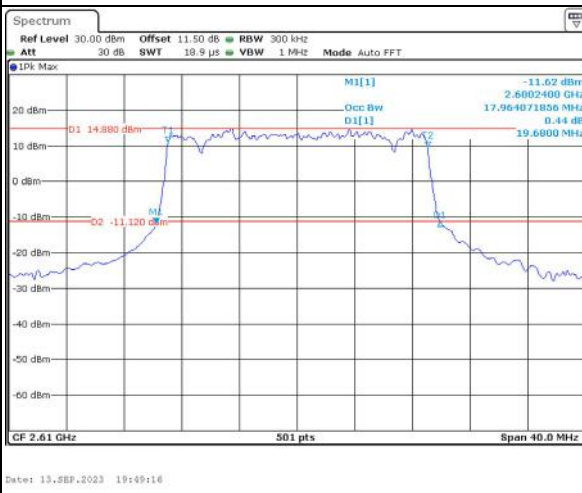
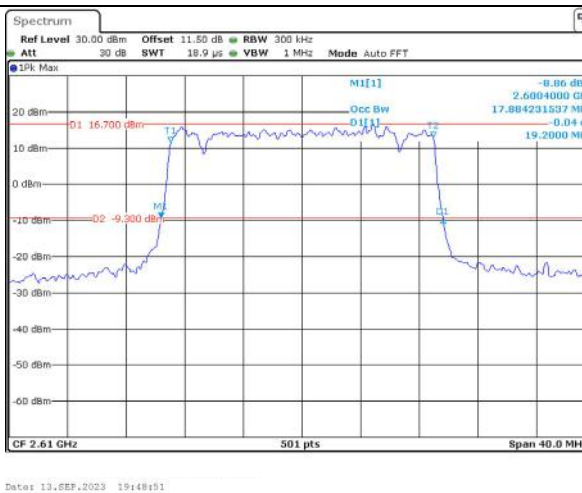
Lowest



Middle



Highest

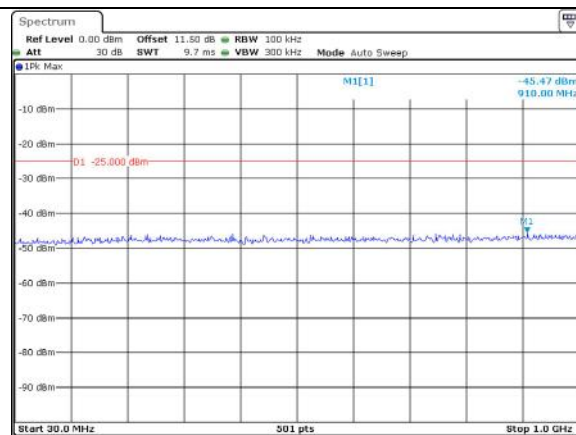


Spurious Emissions at Antenna Terminal

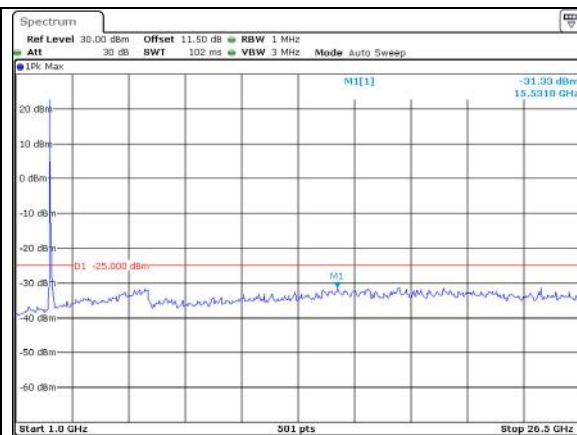
Channel

5MHz Bandwidth QPSK

Lowest

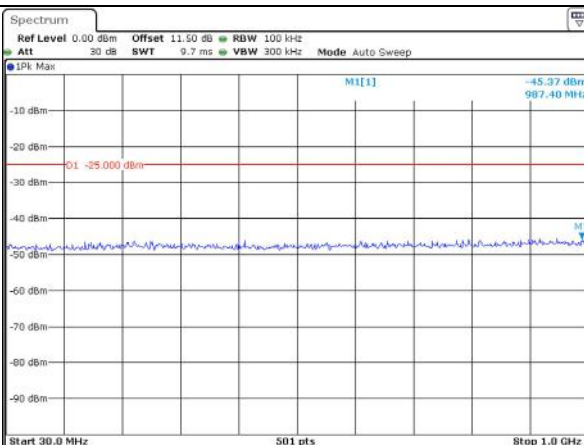


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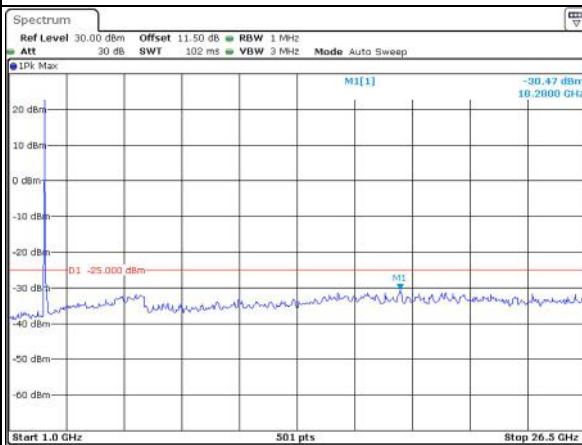


Date: 13.SEP.2023 22:26:17

Middle

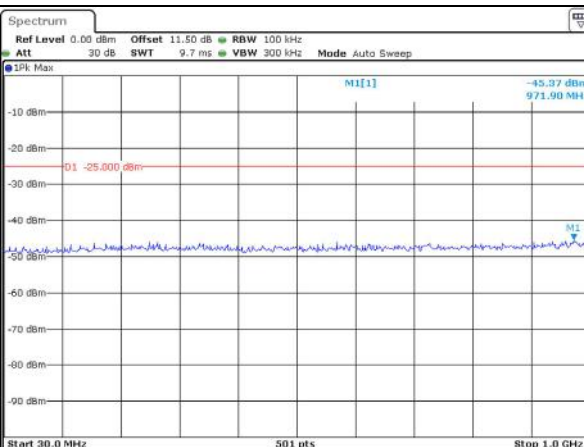


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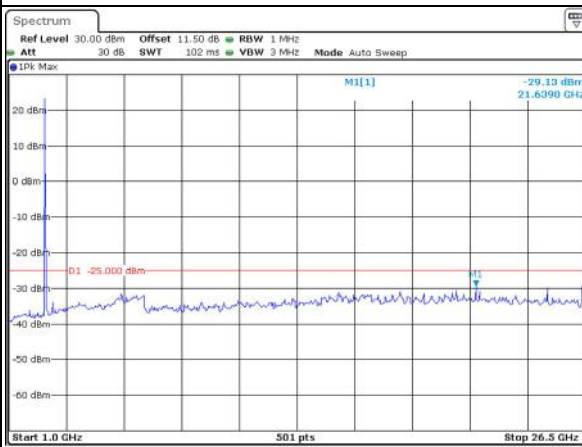


Date: 13.SEP.2023 22:27:12

Highest

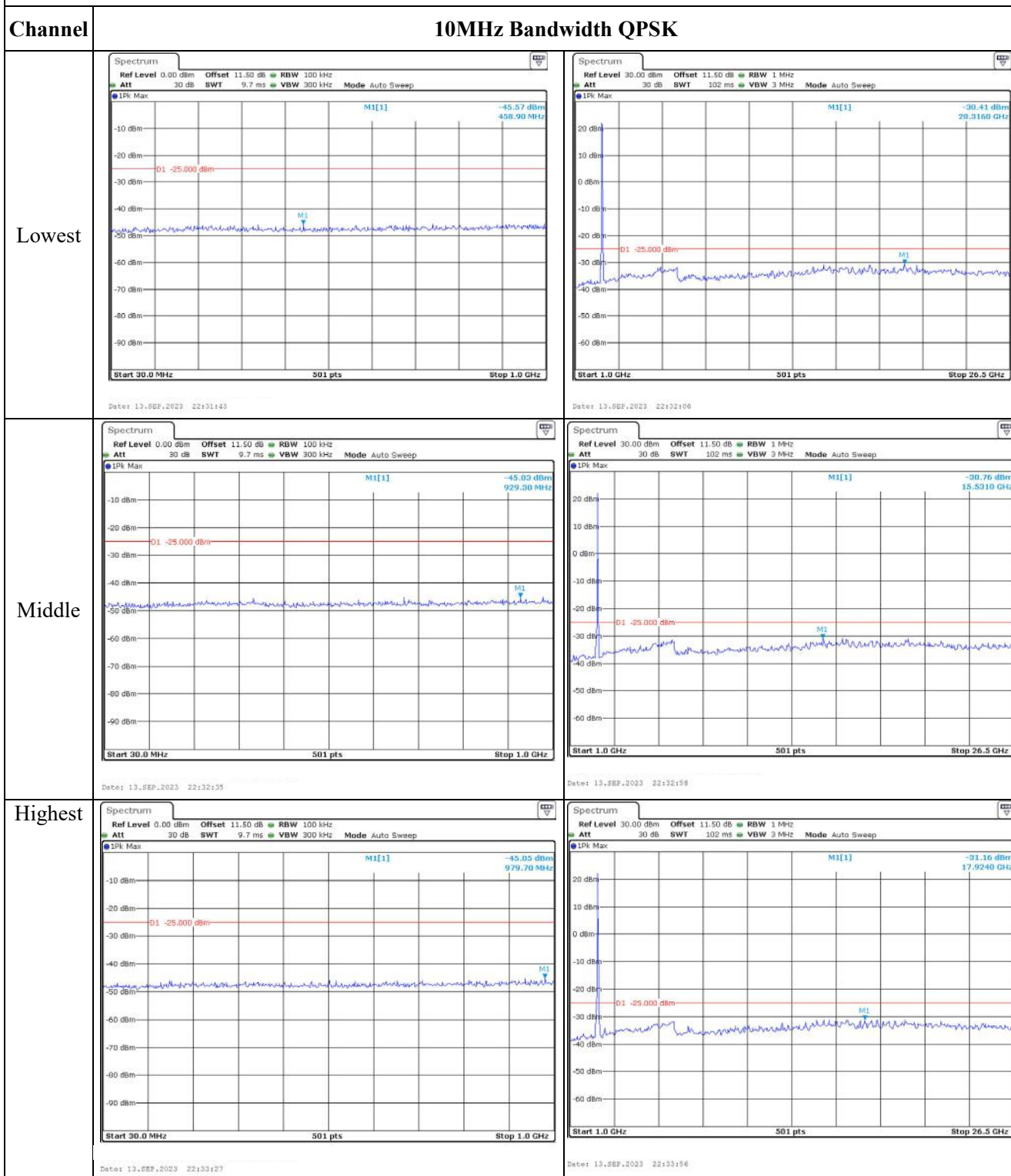


Date: 13.SEP.2023 22:27:38



Date: 13.SEP.2023 22:28:04

Spurious Emissions at Antenna Terminal

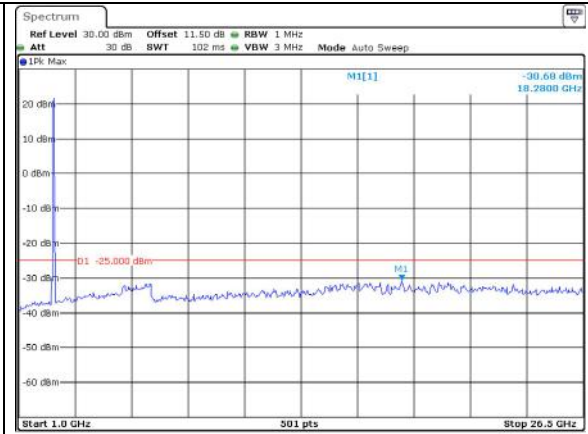
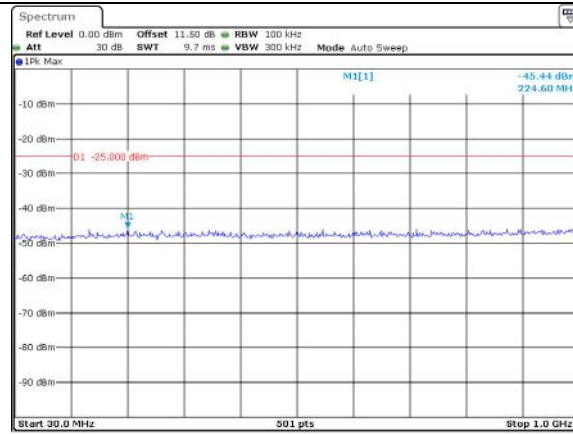


Spurious Emissions at Antenna Terminal

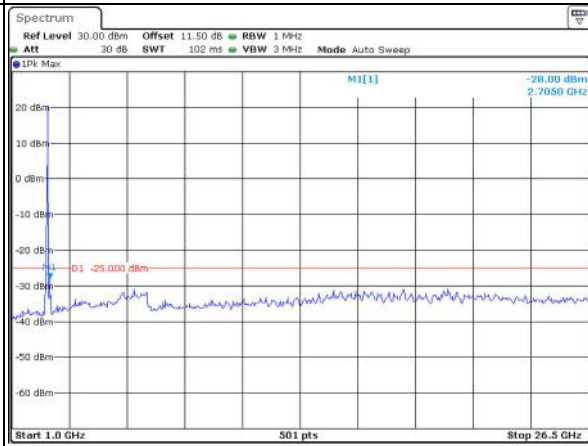
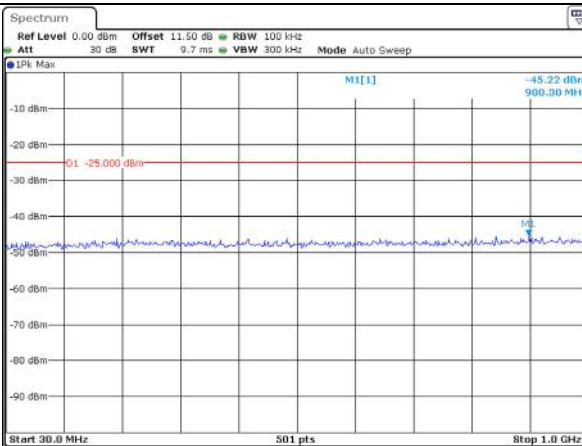
Channel

15MHz Bandwidth QPSK

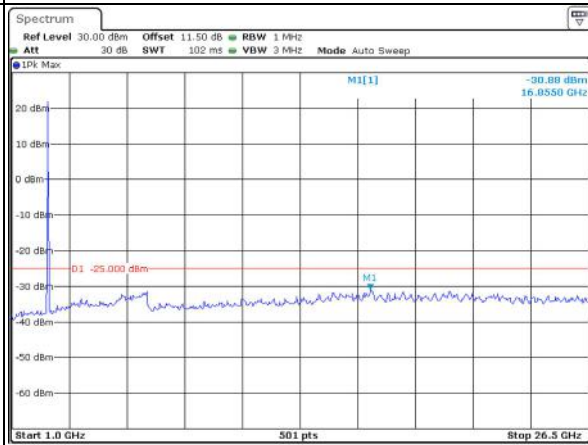
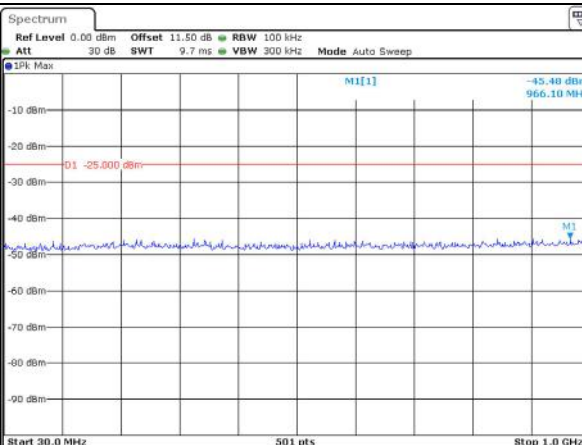
Lowest



Middle



Highest

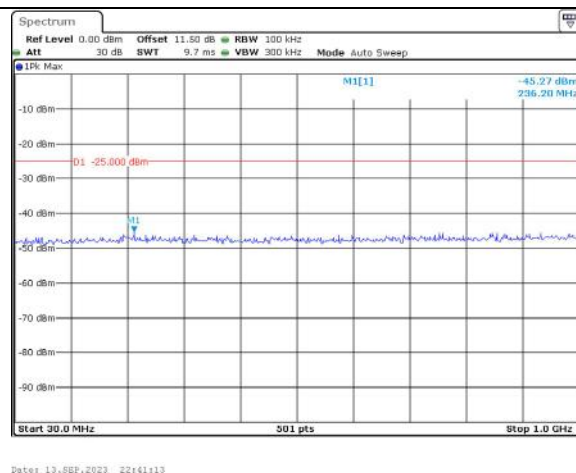


Spurious Emissions at Antenna Terminal

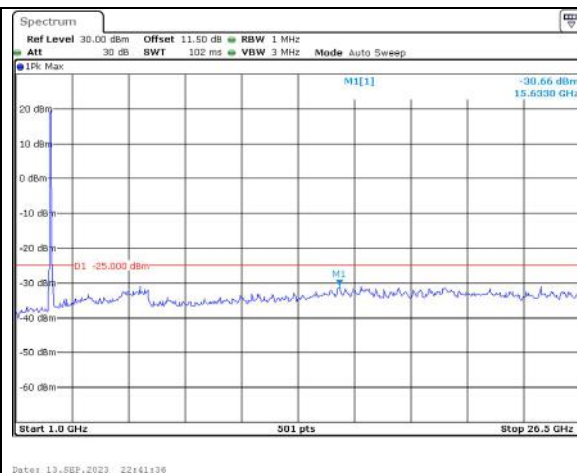
Channel

20MHz Bandwidth QPSK

Lowest

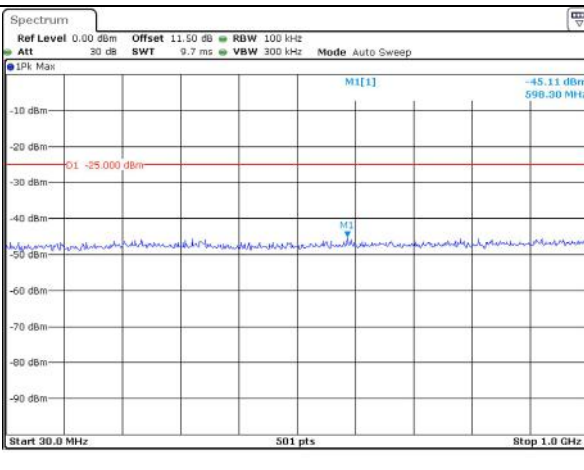


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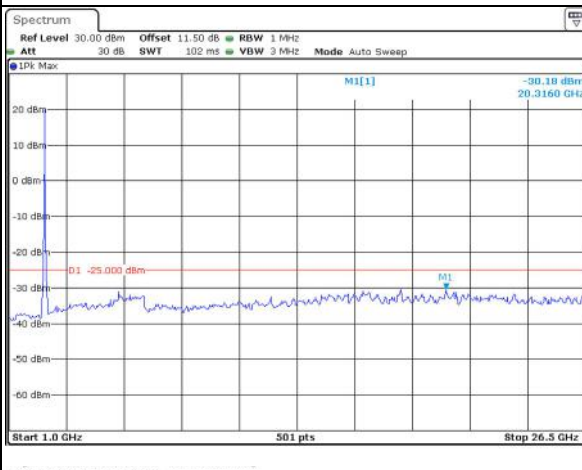


Date: 13,SEP,2023 22:41:36

Middle

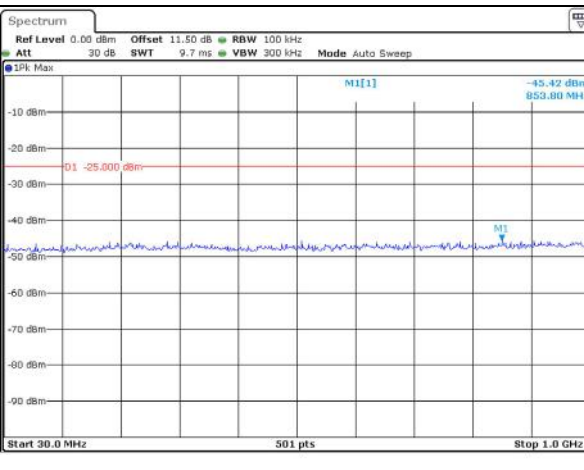


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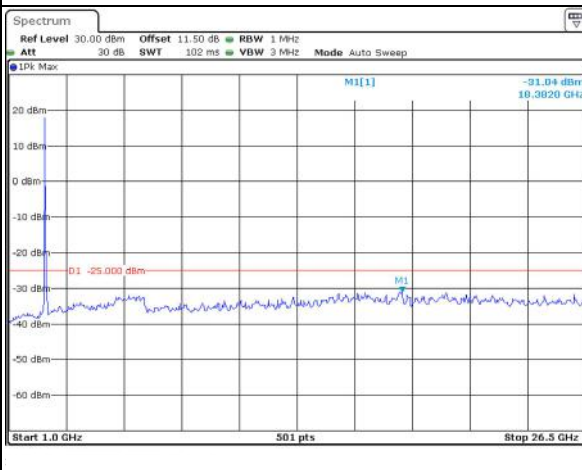


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Highest

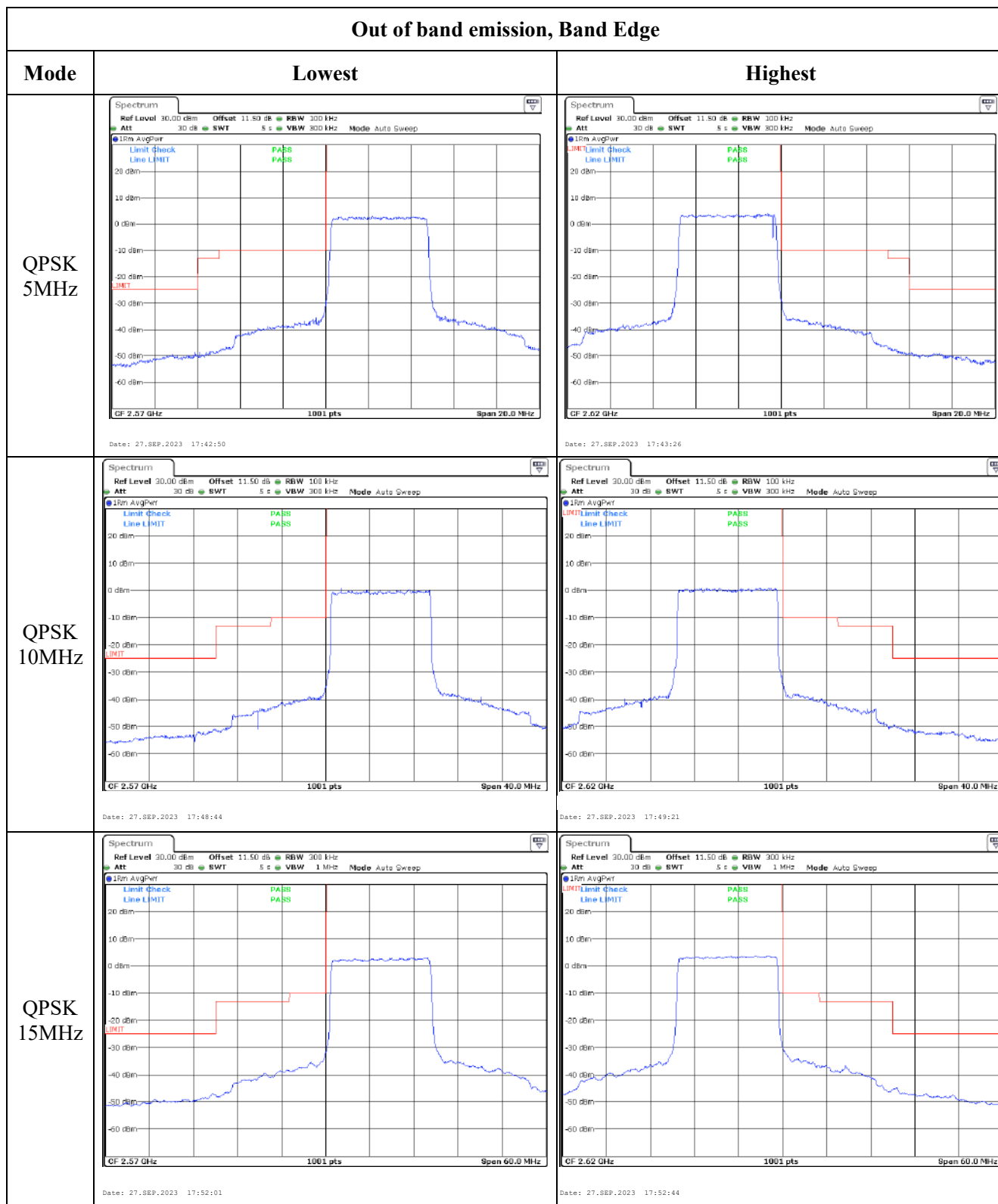


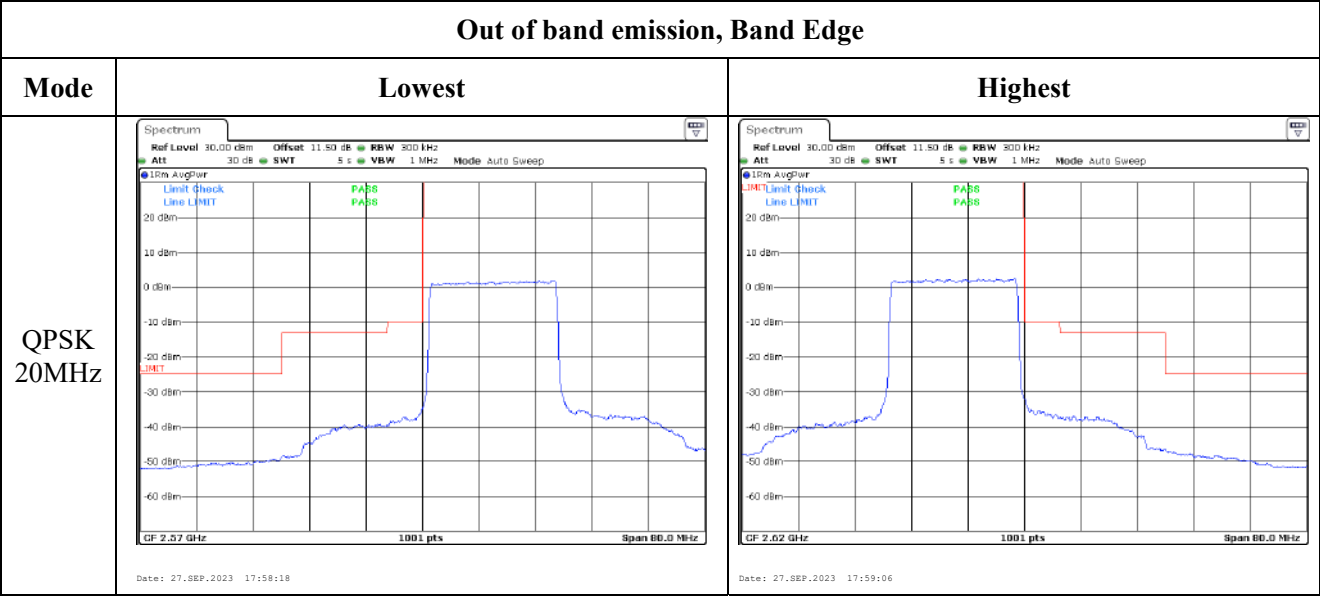
Date: 13,SEP,2023 22:43:24



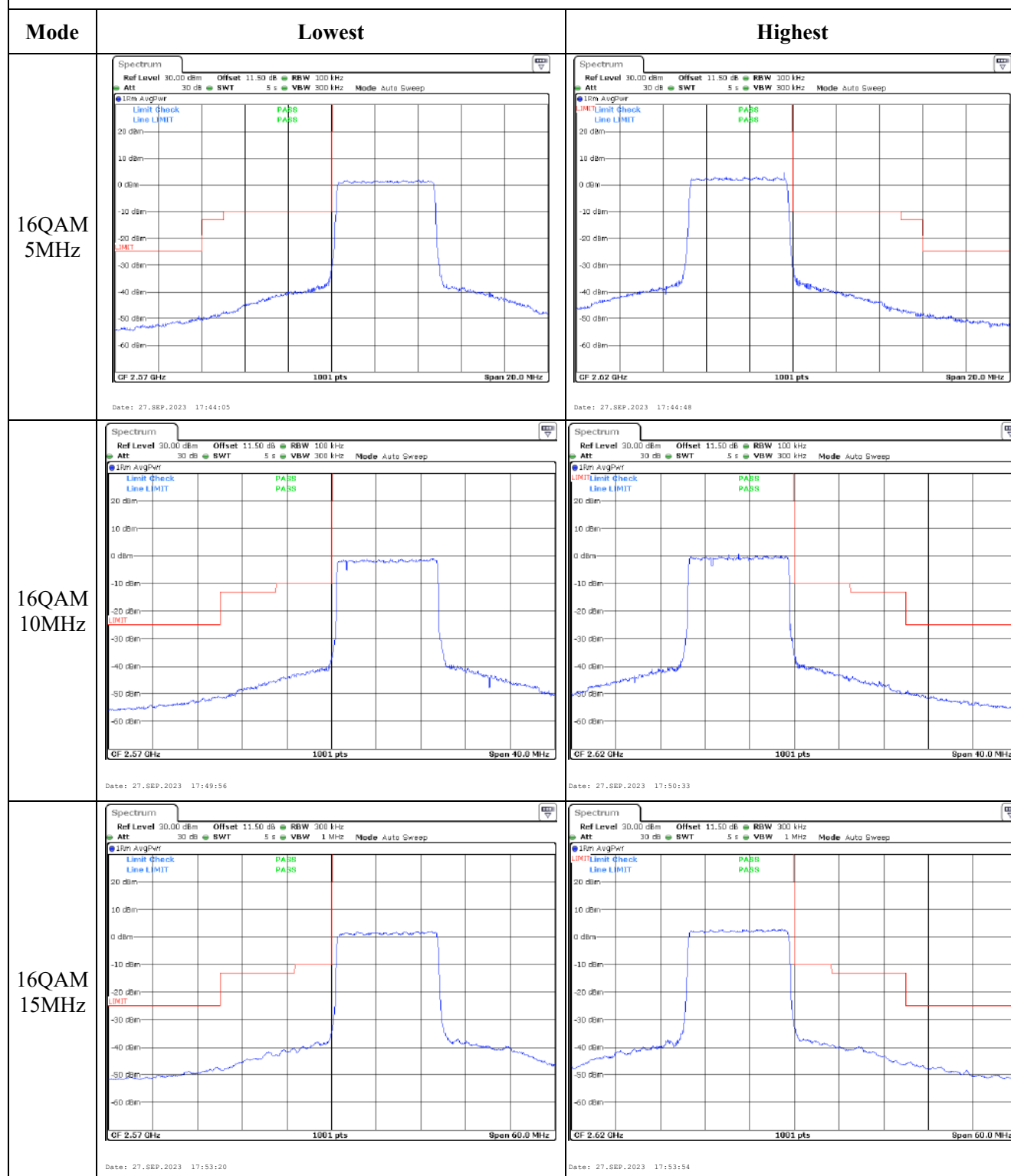
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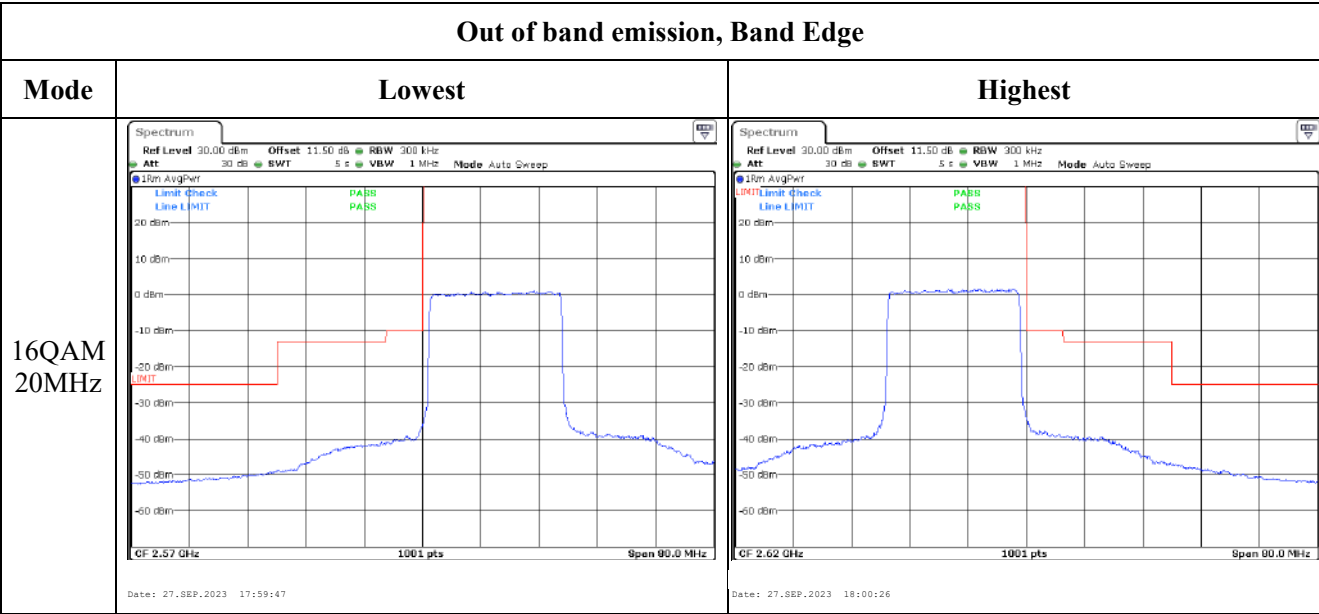
Out of band emission, Band Edge





Out of band emission, Band Edge





4.16 Antenna Port Test Data and Results for LTE Band 40

Serial Number:	294A-2	Test Date:	2023/9/14-2023/12/25
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ken Tang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.7~28.4	Relative Humidity: (%)	53~58	ATM Pressure: (kPa)	100.2~100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Minl-Circuits	Power Splitter	ZFRSC-183-S+	S F448201619	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

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

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2307.5	/	2312.5
10MHz	/	2310	/
5MHz	2352.5	/	2357.5
10MHz	/	2355	/

Test Data:

(Note:Uplink Downlink configuration 3 was tested)

FCC§2.1046;§ 27.50(a)(3)**LTE Band 40 Lower:****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.28	/	22.17	20.78	24
	RB1#13	22.26	/	22.13		
	RB1#24	22.27	/	22.12		
	RB15#0	21.29	/	21.18		
	RB15#10	21.28	/	21.21		
	RB25#0	21.3	/	21.15		
5MHz 16QAM	RB1#0	21.28	/	21.26	19.88	24
	RB1#13	21.38	/	21.35		
	RB1#24	21.27	/	21.27		
	RB15#0	20.31	/	20.12		
	RB15#10	20.37	/	20.13		
	RB25#0	20.29	/	20.22		
10MHz QPSK	RB1#0	/	22.24	/	20.77	24
	RB1#25	/	22.27	/		
	RB1#49	/	22.21	/		
	RB25#0	/	21.18	/		
	RB25#25	/	21.21	/		
	RB50#0	/	21.21	/		
10MHz 16QAM	RB1#0	/	21.68	/	20.29	24
	RB1#25	/	21.79	/		
	RB1#49	/	21.76	/		
	RB25#0	/	20.23	/		
	RB25#25	/	20.29	/		
	RB50#0	/	20.21	/		

EIRP PSD in 5MHz:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted PSD(dBm/5MHz)			Maximum EIRP PSD (dBm/5MHz)	Limit (dBm/5MHz)
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	/	22.24	/	20.81	24
	RB1#25	/	22.24	/		
	RB1#49	/	22.31	/		
	RB25#0	/	21.19	/		
	RB25#25	/	21.37	/		
	RB50#0	/	21.3	/		
10MHz 16QAM	RB1#0	/	21.35	/	20.01	24
	RB1#25	/	21.45	/		
	RB1#49	/	21.51	/		
	RB25#0	/	20.25	/		
	RB25#25	/	20.32	/		
	RB50#0	/	20.31	/		
Note: For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. EIRP=Conducted Power(dBm) - Lc(dB) + Gt(dBi) EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gt(dBi)						

LTE Band 40 Upper:**RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	22.25	/	22.18	20.75	24
	RB1#13	22.25	/	22.1		
	RB1#24	22.2	/	22.11		
	RB15#0	21.28	/	21.14		
	RB15#10	21.3	/	21.19		
	RB25#0	21.29	/	21.23		
5MHz 16QAM	RB1#0	21.62	/	21.1	20.20	24
	RB1#13	21.65	/	21.09		
	RB1#24	21.7	/	21.2		
	RB15#0	20.19	/	20.26		
	RB15#10	20.27	/	20.24		
	RB25#0	20.27	/	20.22		
10MHz QPSK	RB1#0	/	22.06	/	20.56	24
	RB1#25	/	22.05	/		
	RB1#49	/	21.99	/		
	RB25#0	/	21.09	/		
	RB25#25	/	21.11	/		
	RB50#0	/	21.12	/		
10MHz 16QAM	RB1#0	/	21.34	/	19.90	24
	RB1#25	/	21.36	/		
	RB1#49	/	21.4	/		
	RB25#0	/	20.06	/		
	RB25#25	/	20.1	/		
	RB50#0	/	20.08	/		

EIRP PSD in 5MHz:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted PSD(dBm/5MHz)			Maximum EIRP PSD (dBm/5MHz)	Limit (dBm/5MHz)
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	/	22.04	/	20.55	24
	RB1#25	/	21.96	/		
	RB1#49	/	22.05	/		
	RB25#0	/	21.02	/		
	RB25#25	/	21.07	/		
	RB50#0	/	21.01	/		
10MHz 16QAM	RB1#0	/	21.18	/	19.68	24
	RB1#25	/	21.12	/		
	RB1#49	/	21.14	/		
	RB25#0	/	19.99	/		
	RB25#25	/	20.04	/		
	RB50#0	/	19.98	/		
Note: For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. EIRP=Conducted Power(dBm) - Lc(dB) + Gt(dBi) EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gt(dBi)						
					Result:	Pass

Duty Cycle

Operation Band	Modulation	Bandwidth	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Limit (%)
LTE Band 40 Lower	QPSK	5M	3	10	30.00	38
		10M	3	10	30.00	38
	16QAM	5M	3	10	30.00	38
		10M	3	10	30.00	38
LTE Band 40 Upper	QPSK	5M	3	10	30.00	38
		10M	3	10	30.00	38
	16QAM	5M	3	10	30.00	38
		10M	3	10	30.00	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	5.040	/	5.000
5MHz 16QAM	4.511	/	4.511	5.000	/	5.040
10MHz QPSK	/	8.942	/	/	9.760	/
10MHz 16QAM	/	8.942	/	/	9.600	/
LTE Band 40 Upper:						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle channel	High Channel
5MHz QPSK	4.511	/	4.511	5.060	/	5.000
5MHz 16QAM	4.511	/	4.511	5.000	/	5.380
10MHz QPSK	/	8.942	/	/	9.720	/
10MHz 16QAM	/	8.942	/	/	9.560	/
Note: The test plots please refer to the Plots of Occupied Bandwidth						

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

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

FCC §2.1055, §27.54: Frequency Stability**LTE Band 40 Lower:**

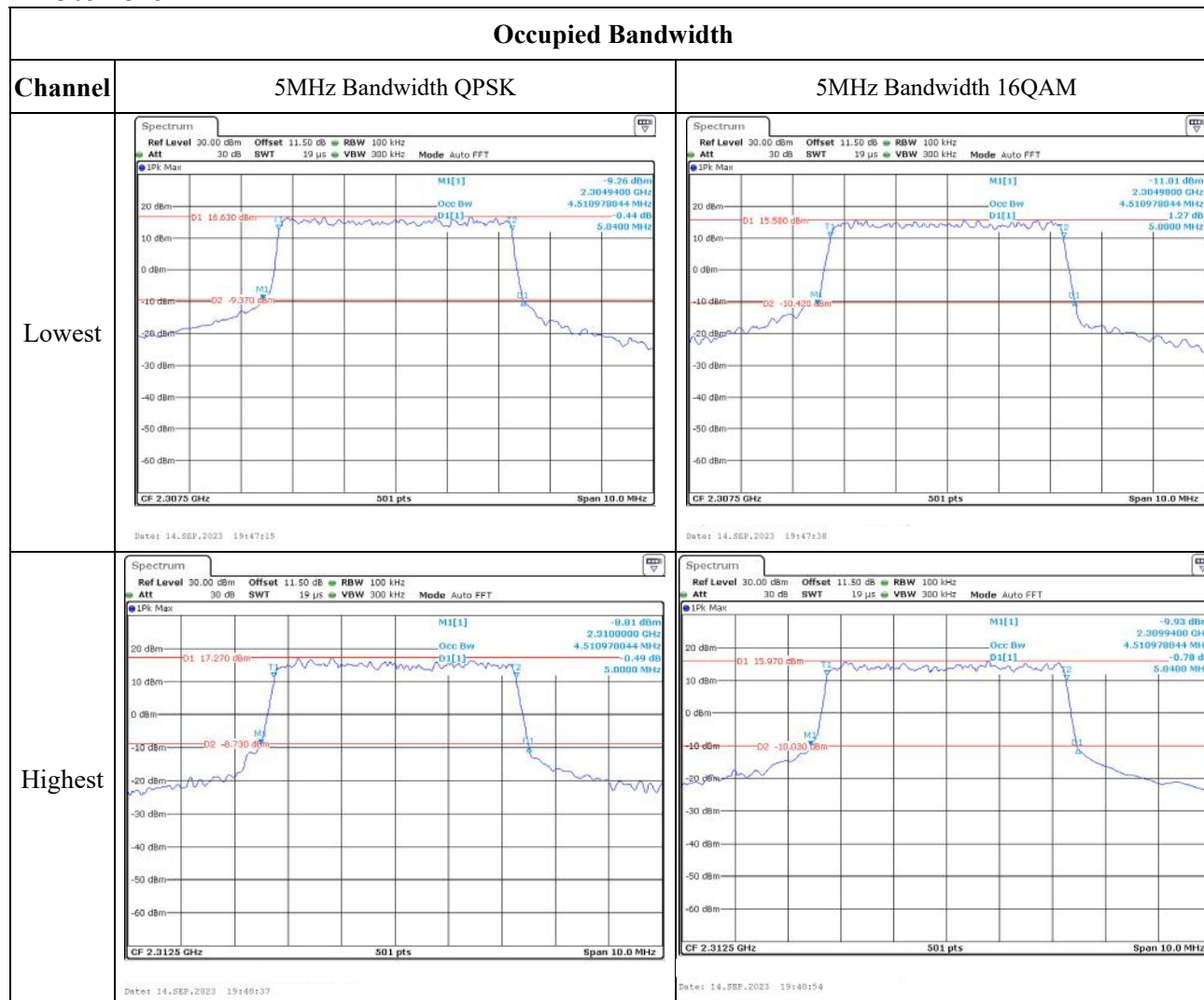
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2305.360	2305.000	2314.990	2315.000
	-20	3.85	2305.001	2305.000	2314.991	2315.000
	-10	3.85	2305.011	2305.000	2314.995	2315.000
	0	3.85	2305.017	2305.000	2314.992	2315.000
	10	3.85	2305.024	2305.000	2314.975	2315.000
	20	3.85	2305.010	2305.000	2314.978	2315.000
	30	3.85	2305.001	2305.000	2314.980	2315.000
	40	3.85	2305.011	2305.000	2314.990	2315.000
	50	3.85	2305.010	2305.000	2314.977	2315.000
Frequency Stability vs. Voltage	20	3.66	2305.022	2305.000	2314.980	2315.000
	20	4.24	2305.028	2305.000	2314.988	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	2305.029	2305.000	2314.986	2315.000
	-20	3.85	2305.029	2305.000	2314.991	2315.000
	-10	3.85	2305.001	2305.000	2314.992	2315.000
	0	3.85	2305.009	2305.000	2314.976	2315.000
	10	3.85	2305.023	2305.000	2314.984	2315.000
	20	3.85	2305.028	2305.000	2314.991	2315.000
	30	3.85	2305.020	2305.000	2314.981	2315.000
	40	3.85	2305.030	2305.000	2314.998	2315.000
	50	3.85	2305.006	2305.000	2314.984	2315.000
Frequency Stability vs. Voltage	20	3.66	2305.028	2305.000	2314.983	2315.000
	20	4.24	2305.024	2305.000	2314.981	2315.000
Result:					Pass	

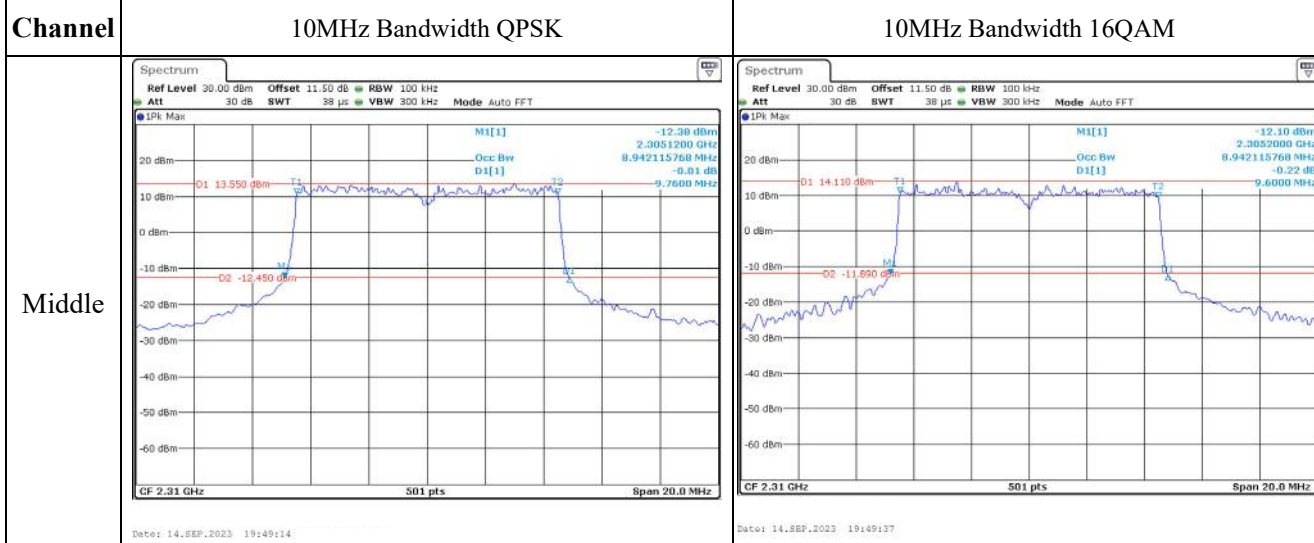
LTE Band 40 Upper:						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	2350.026	2350.000	2359.994	2360.000
	-20	3.85	2350.014	2350.000	2359.977	2360.000
	-10	3.85	2350.015	2350.000	2359.976	2360.000
	0	3.85	2350.022	2350.000	2359.975	2360.000
	10	3.85	2350.005	2350.000	2359.988	2360.000
	20	3.85	2350.026	2350.000	2359.982	2360.000
	30	3.85	2350.223	2350.000	2359.993	2360.000
	40	3.85	2350.010	2350.000	2359.983	2360.000
	50	3.85	2350.019	2350.000	2359.971	2360.000
Frequency Stability vs. Voltage	20	3.66	2350.001	2350.000	2359.972	2360.000
	20	4.24	2350.010	2350.000	2359.992	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	2350.004	2350.000	2359.995	2360.000
	-20	3.85	2350.030	2350.000	2359.995	2360.000
	-10	3.85	2350.010	2350.000	2359.987	2360.000
	0	3.85	2350.014	2350.000	2359.972	2360.000
	10	3.85	2350.016	2350.000	2359.978	2360.000
	20	3.85	2350.019	2350.000	2359.976	2360.000
	30	3.85	2350.011	2350.000	2359.987	2360.000
	40	3.85	2350.025	2350.000	2359.979	2360.000
	50	3.85	2350.006	2350.000	2359.986	2360.000
Frequency Stability vs. Voltage	20	3.66	2350.004	2350.000	2359.972	2360.000
	20	4.24	2350.005	2350.000	2359.981	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:

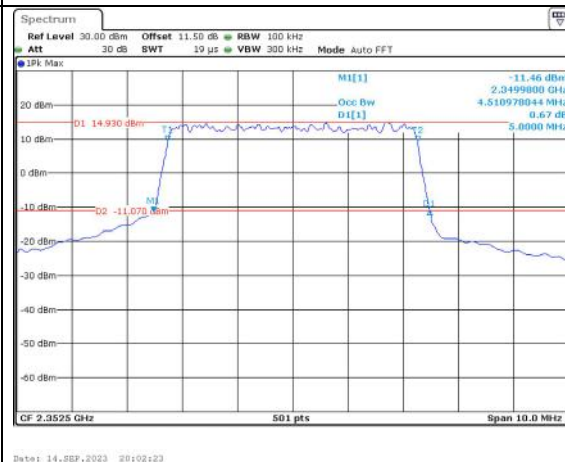
Occupied Bandwidth

Channel

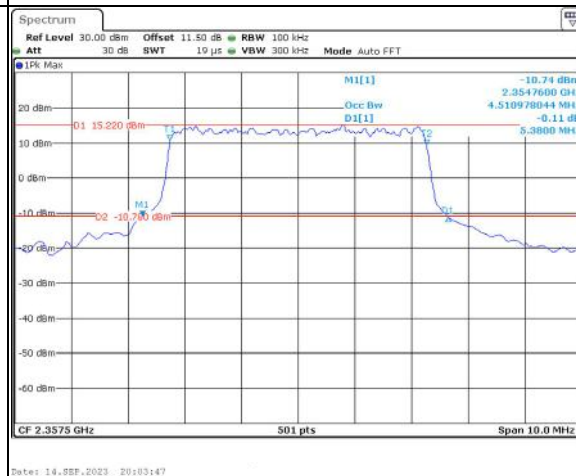
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

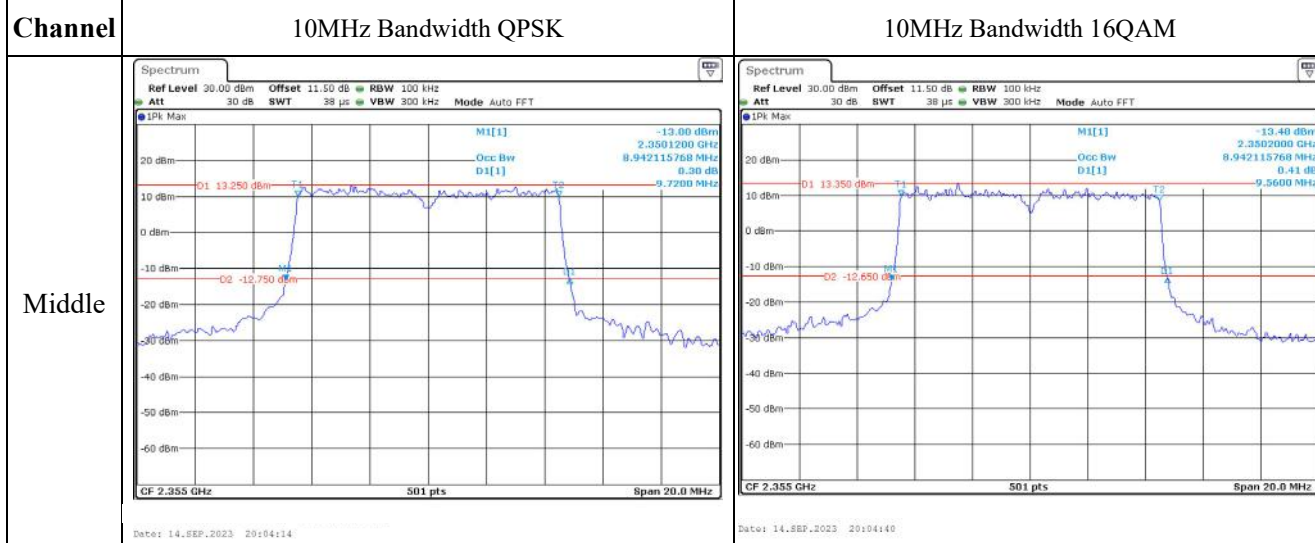
Lowest



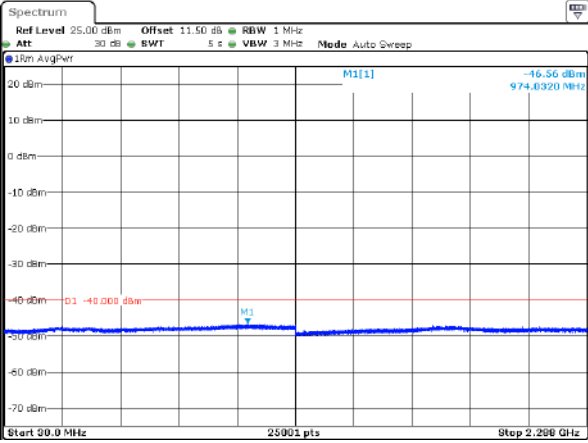
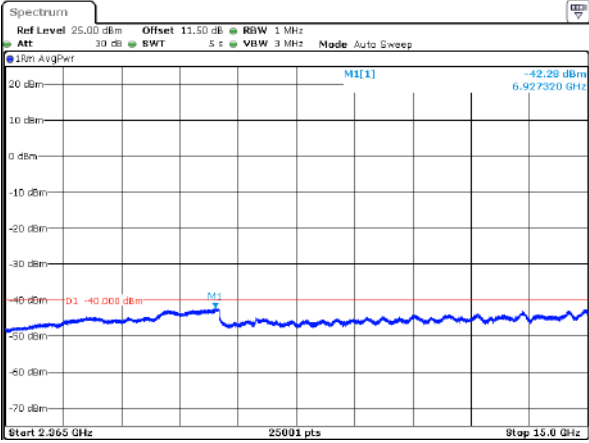
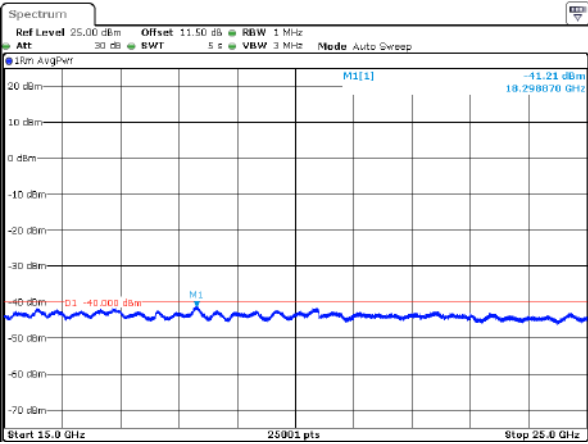
Highest



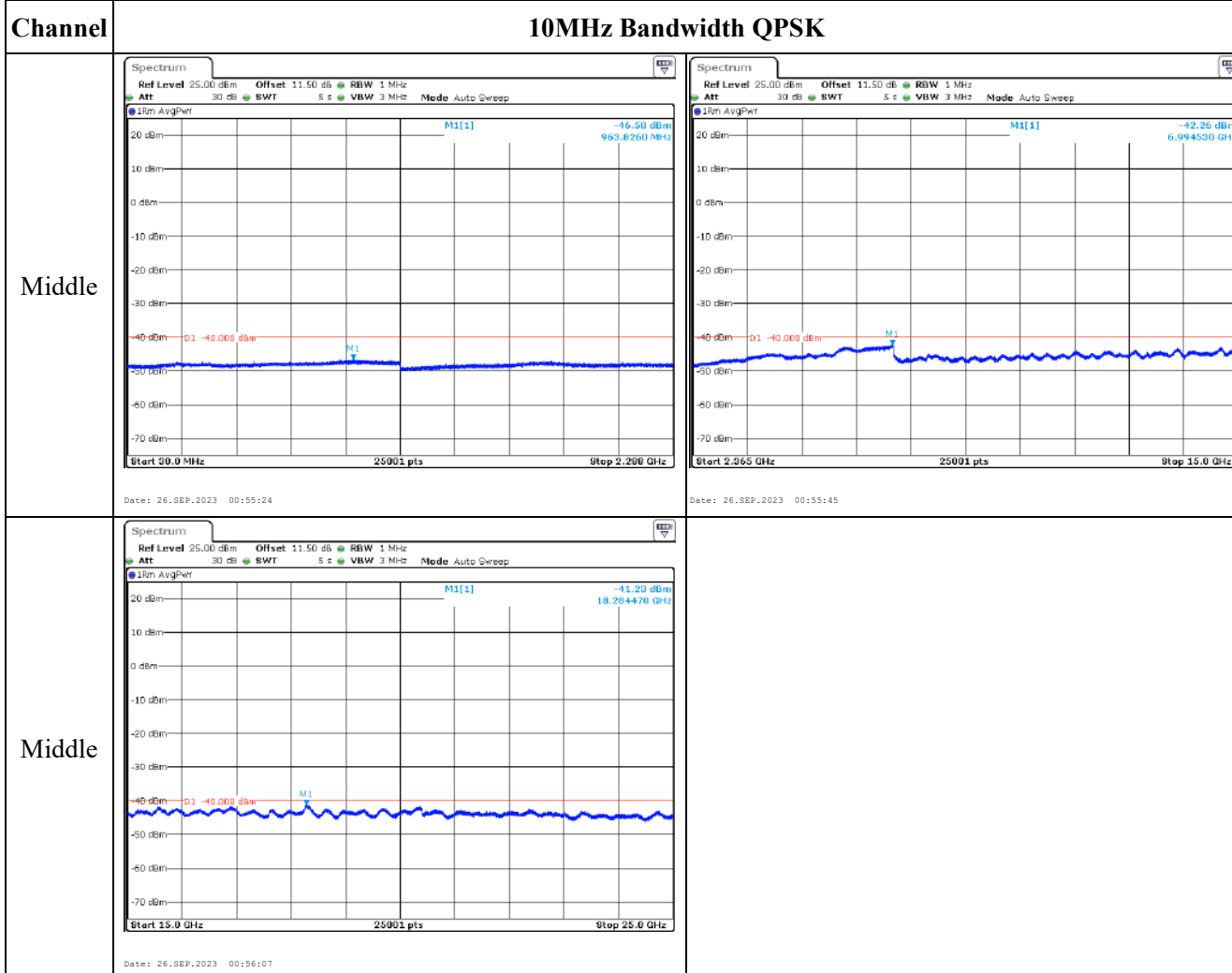
Occupied Bandwidth



Spurious Emissions at Antenna Terminal

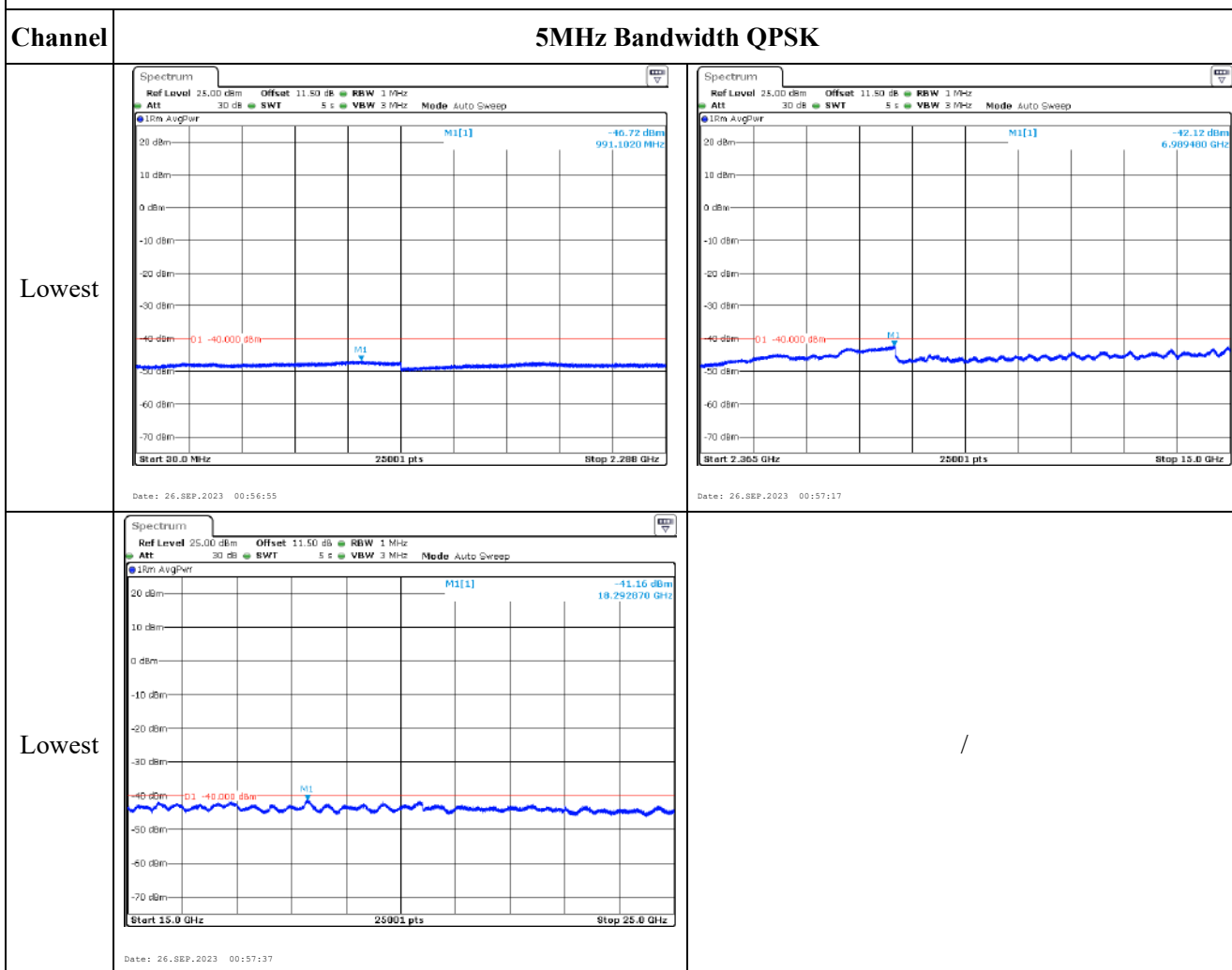
Channel	5MHz Bandwidth QPSK	
Highest		
		/

Spurious Emissions at Antenna Terminal

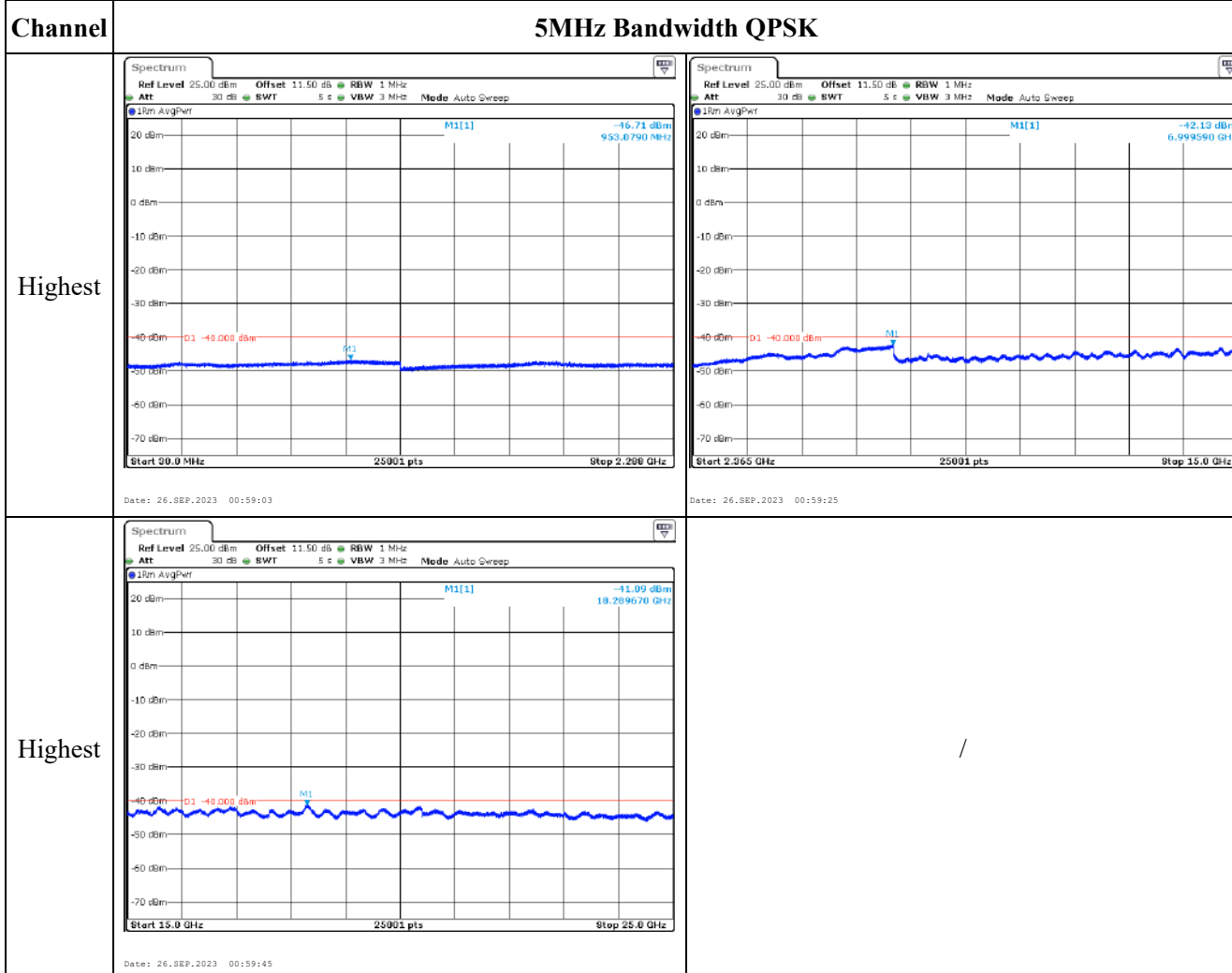


2350-2360 MHz:

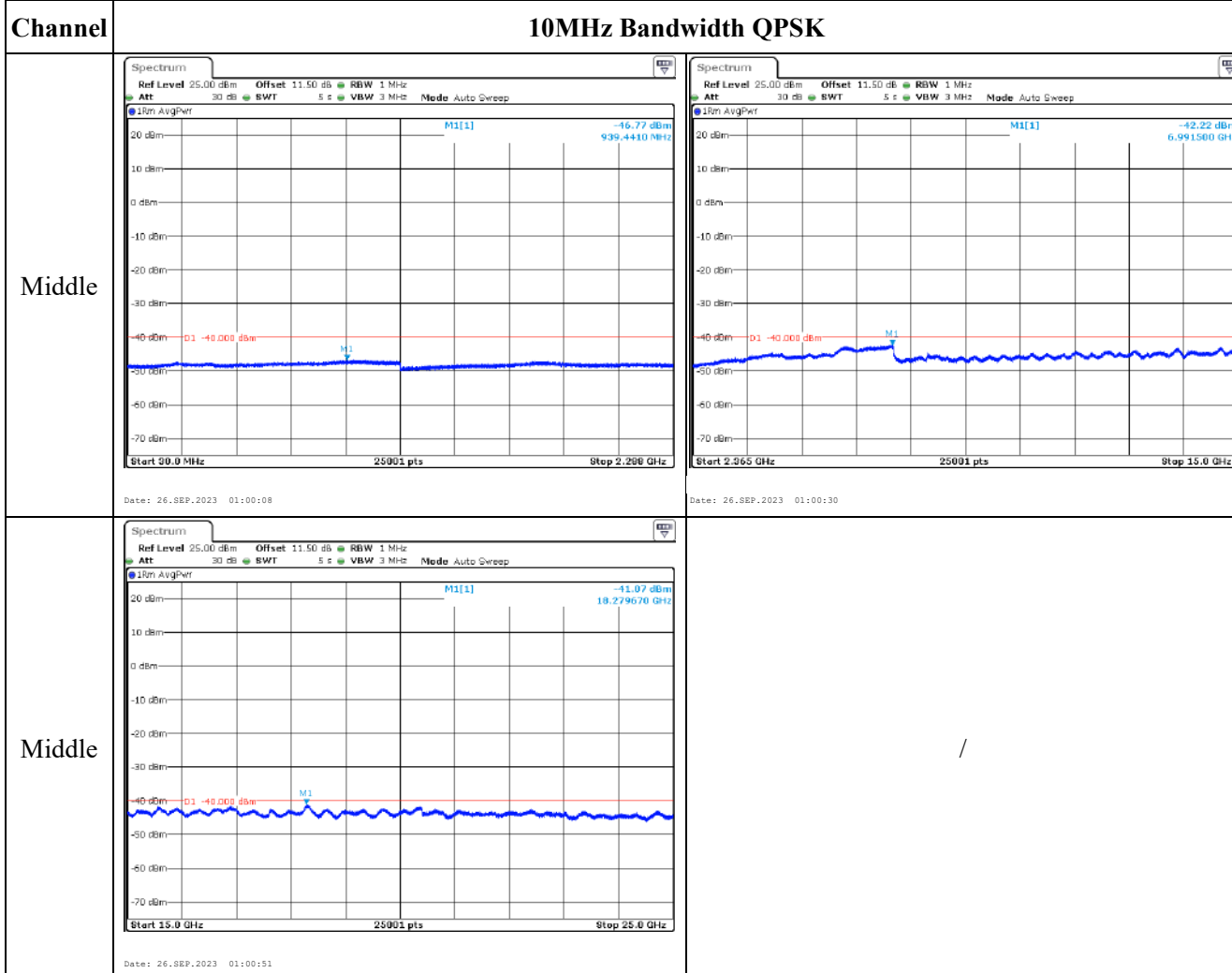
Spurious Emissions at Antenna Terminal



Spurious Emissions at Antenna Terminal

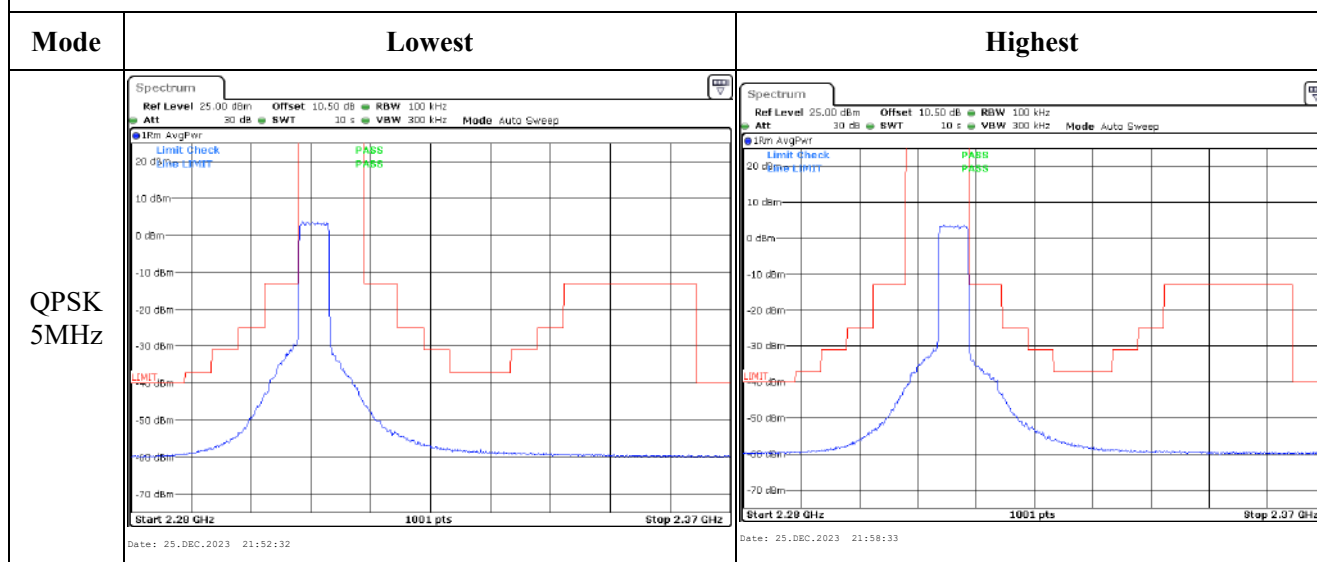


Spurious Emissions at Antenna Terminal

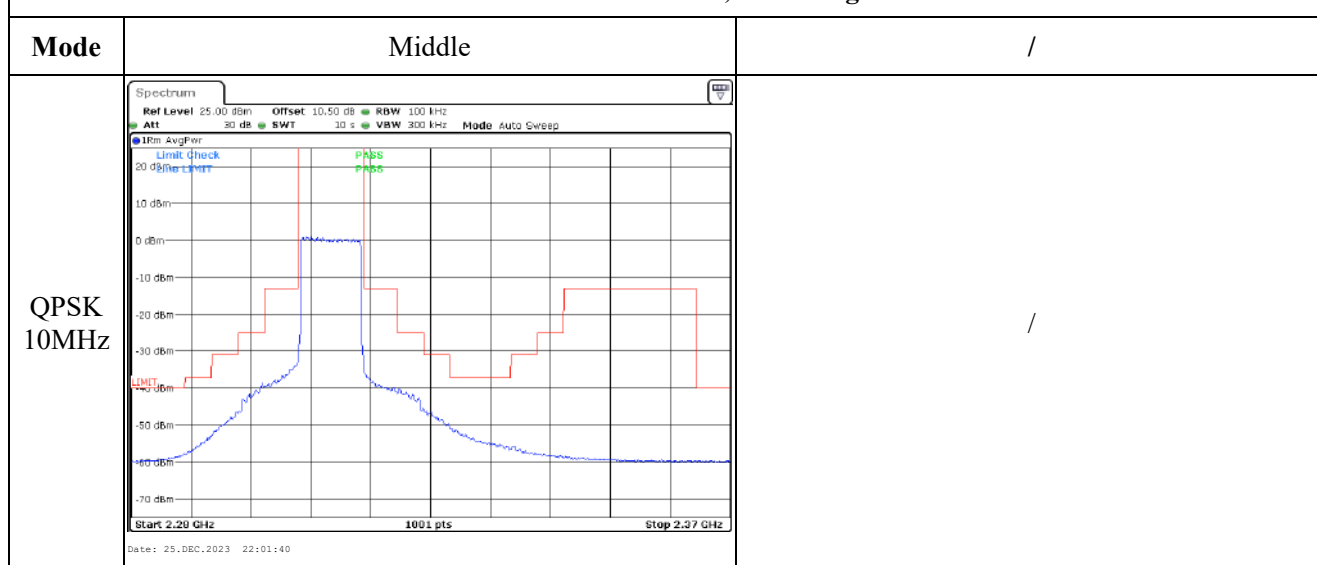


2305-2315 MHz:

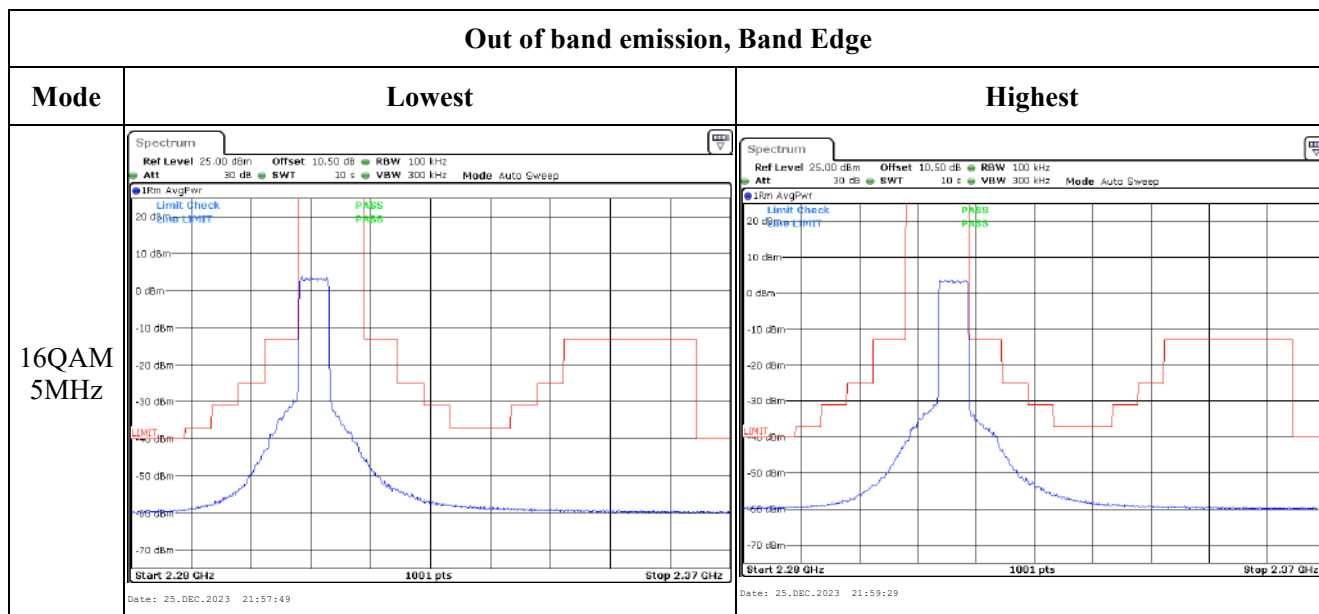
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge

