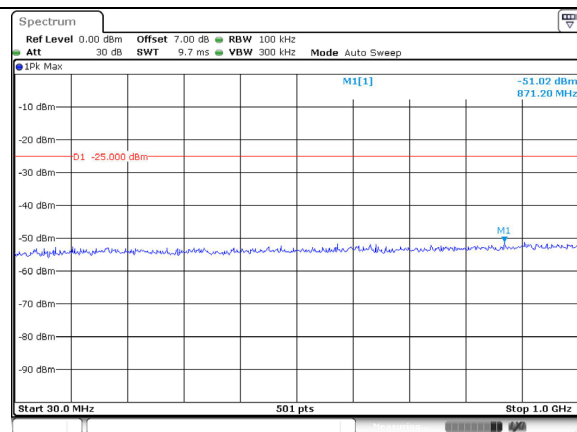


Spurious Emissions at Antenna Terminal

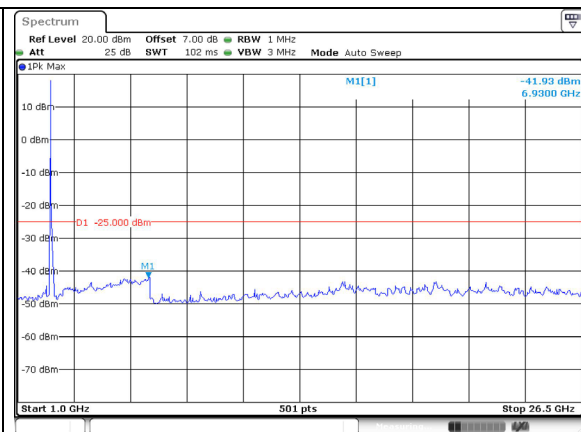
Channel

20MHz Bandwidth QPSK

Lowest

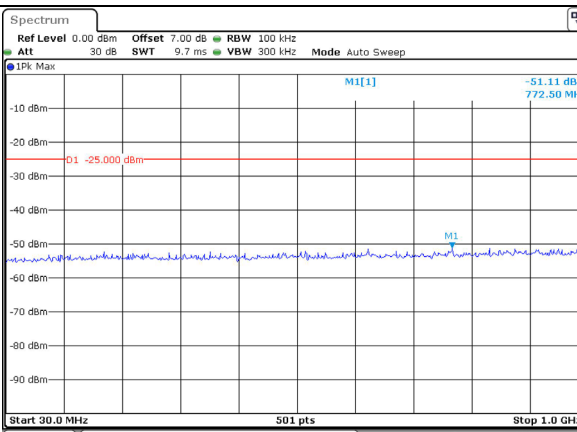


ProjectNo.:CR231058645-RF Tester: Claire Liu
Date: 2.NOV.2023 15:08:02

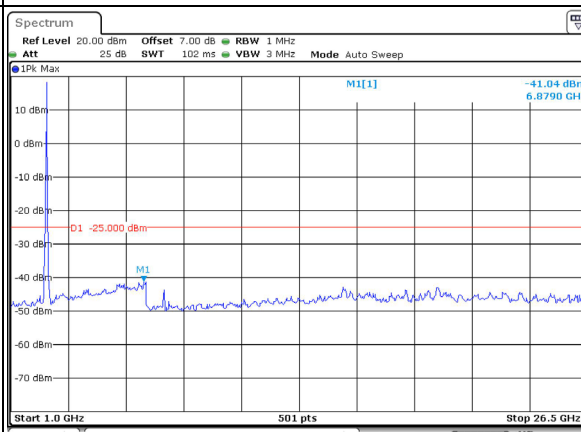


ProjectNo.:CR231058645-RF Tester: Claire Liu
Date: 2.NOV.2023 15:08:24

Middle

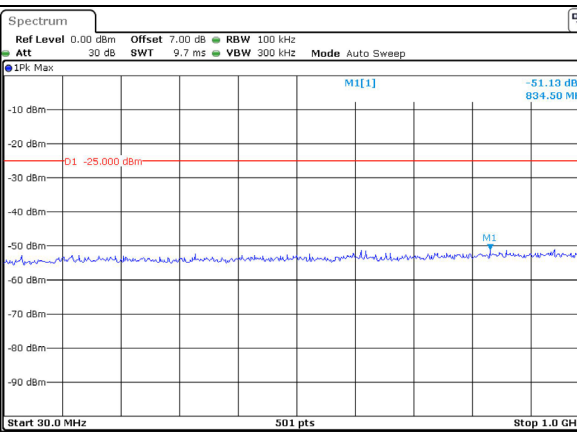


ProjectNo.:CR231058645-RF Tester: Claire Liu
Date: 2.NOV.2023 15:08:52

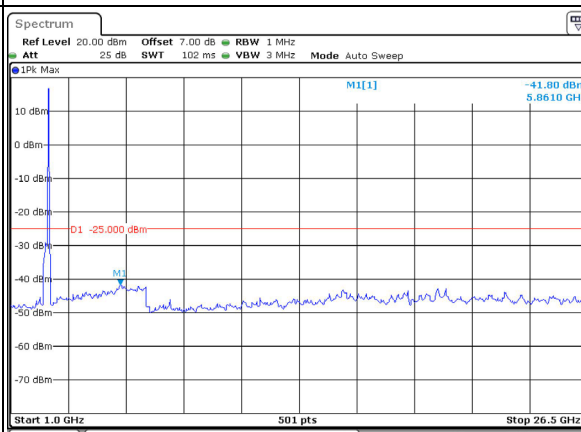


ProjectNo.:CR231058645-RF Tester: Claire Liu
Date: 2.NOV.2023 15:09:17

Highest

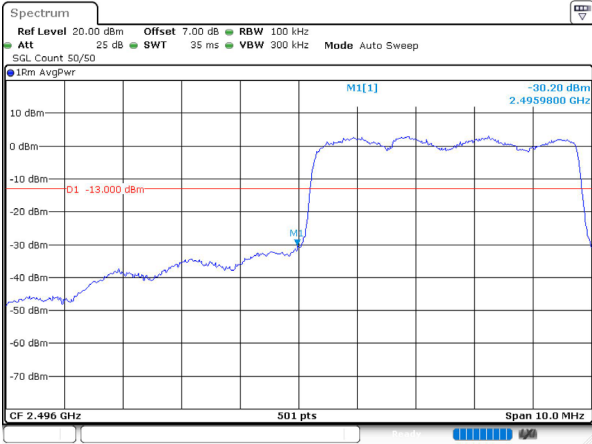
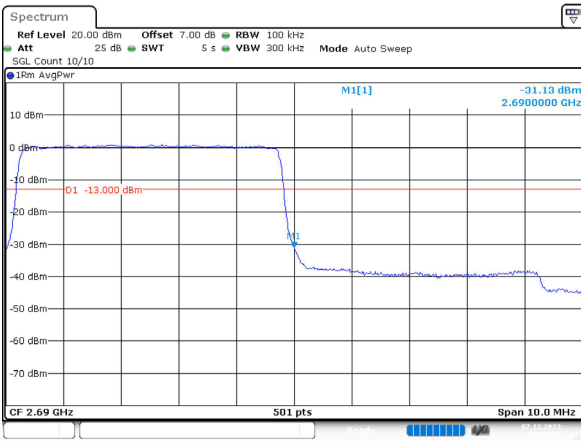
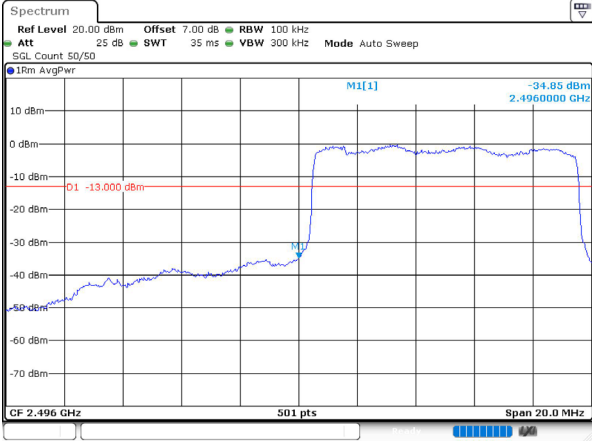
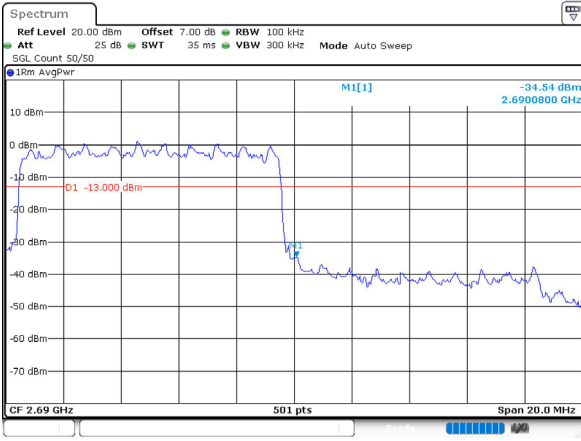
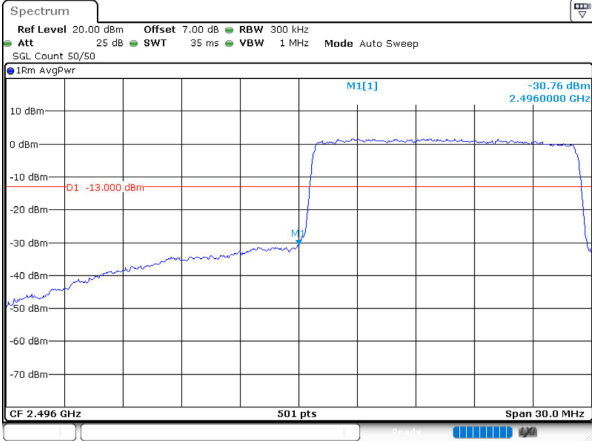
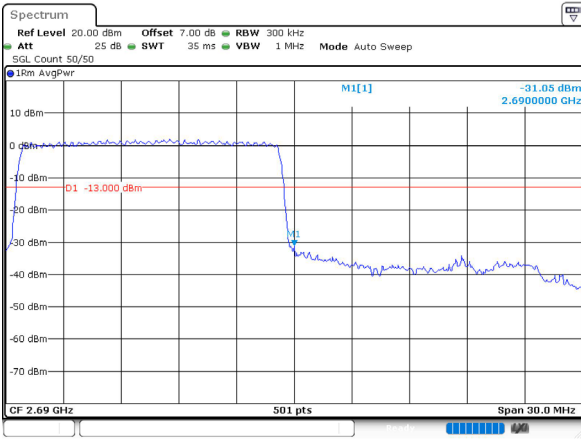


ProjectNo.:CR231058645-RF Tester: Claire Liu
Date: 2.NOV.2023 15:09:43

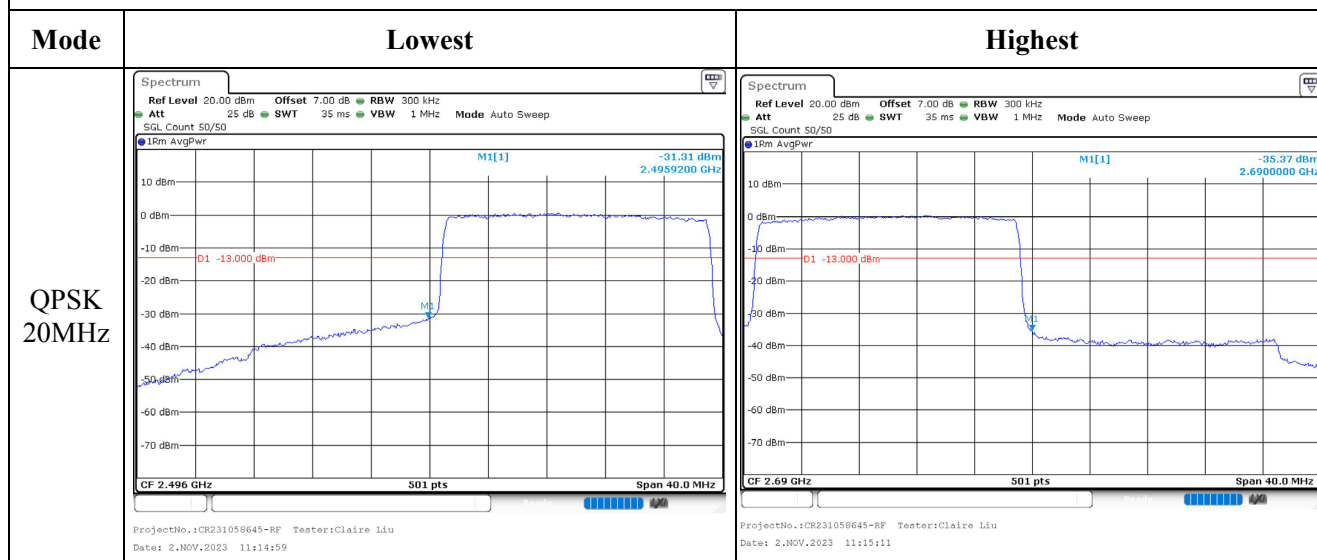


ProjectNo.:CR231058645-RF Tester: Claire Liu
Date: 2.NOV.2023 15:10:11

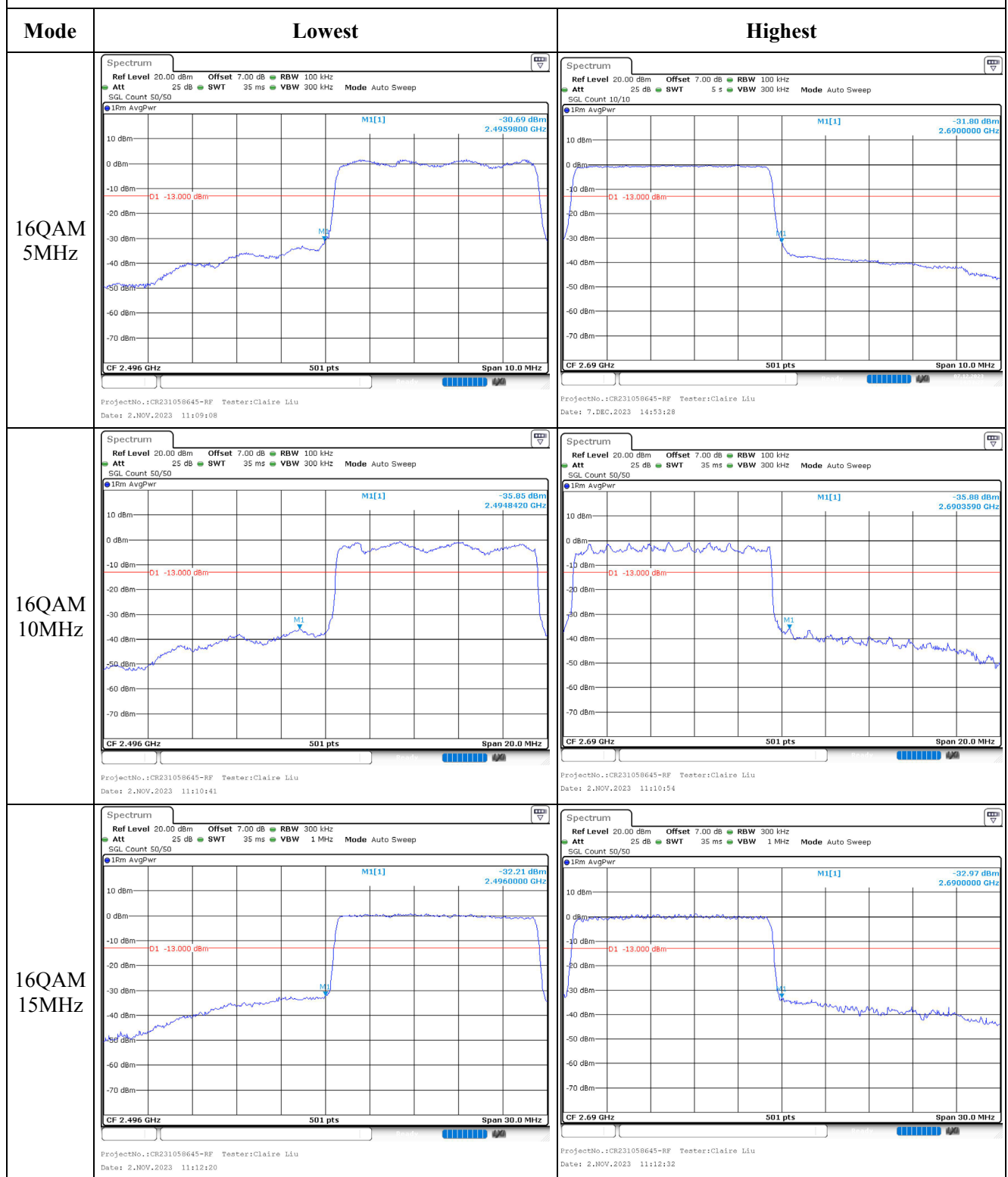
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	 ProjectNo.:CR231058645-RF Tester:Claire Liu Date: 2.NOV.2023 11:09:02	 ProjectNo.:CR231058645-RF Tester:Claire Liu Date: 7.DEC.2023 14:55:36
QPSK 10MHz	 ProjectNo.:CR231058645-RF Tester:Claire Liu Date: 2.NOV.2023 11:10:36	 ProjectNo.:CR231058645-RF Tester:Claire Liu Date: 2.NOV.2023 11:10:48
QPSK 15MHz	 ProjectNo.:CR231058645-RF Tester:Claire Liu Date: 2.NOV.2023 11:12:15	 ProjectNo.:CR231058645-RF Tester:Claire Liu Date: 2.NOV.2023 11:12:27

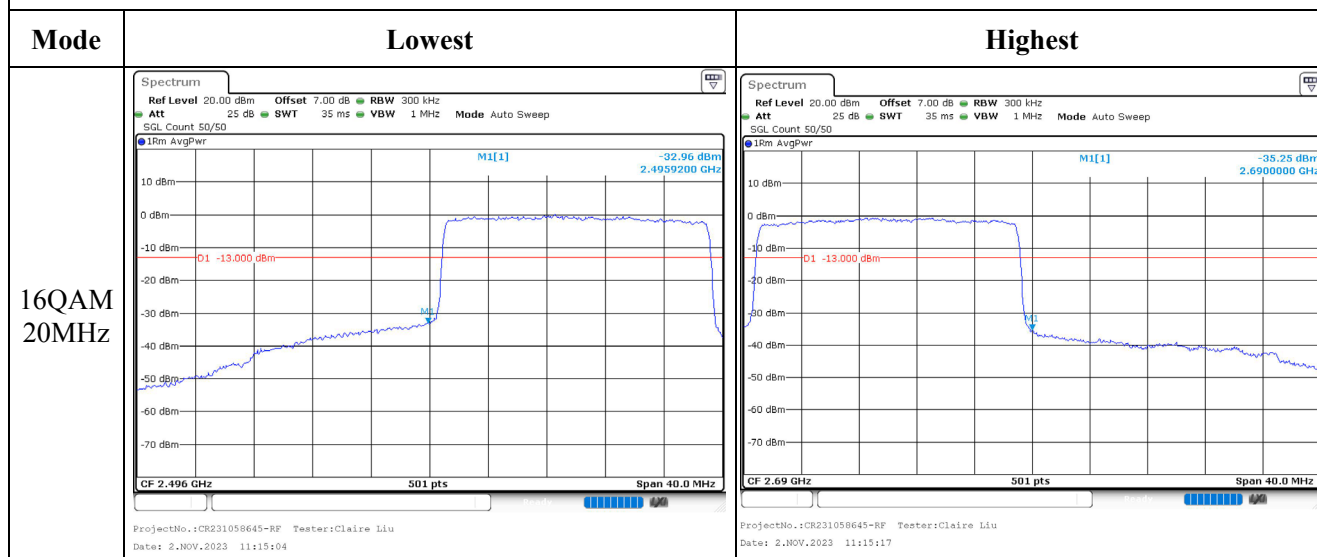
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.14 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	2C04-3	Test Date:	2023/10/29-2023/11/2
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.3-25.6	Relative Humidity: (%)	45-58	ATM Pressure: (kPa)	101-101.54
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101590	2022/11/23	2023/11/24
zhuoxiang	Coaxial Cable	SMA-178	211003	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	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	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

Test Data:**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		
1.4MHz QPSK	RB1#0	23.03	23.37	23.05	23.93	30
	RB1#3	23.41	23.39	23.12		
	RB1#5	23.08	23.58	23.11		
	RB3#0	23.21	23.42	23.06		
	RB3#3	23.2	23.27	23.35		
	RB6#0	22.25	22.41	22.2		
1.4MHz 16QAM	RB1#0	22.14	22.53	22.78	23.22	30
	RB1#3	22.24	22.87	22.84		
	RB1#5	22.1	22.63	22.47		
	RB3#0	22.41	22.51	22.16		
	RB3#3	22.17	22.28	22.25		
	RB6#0	21.1	21.67	20.99		
3MHz QPSK	RB1#0	23.36	23.26	23.13	23.71	30
	RB1#8	22.99	23.31	23.11		
	RB1#14	23.28	23.35	23.18		
	RB6#0	22.23	22.34	22.05		
	RB6#9	22.24	22.39	22.22		
	RB15#0	22.27	22.38	22.13		
3MHz 16QAM	RB1#0	22.26	22.67	22.45	23.29	30
	RB1#8	21.63	22.4	22.34		
	RB1#14	21.64	22.68	22.94		
	RB6#0	21.24	21.46	20.96		
	RB6#9	21.08	21.6	20.99		
	RB15#0	21.27	21.62	21.13		
5MHz QPSK	RB1#0	22.97	23.23	23.05	23.74	30
	RB1#13	23.08	23.25	23.25		
	RB1#24	23.18	23.39	23.17		
	RB15#0	22.3	22.29	22.12		
	RB15#10	22.19	22.34	22.18		
	RB25#0	22.29	22.41	22.09		
5MHz 16QAM	RB1#0	22.53	22.07	21.57	22.96	30
	RB1#13	22.61	22.31	21.65		
	RB1#24	22.47	22.36	21.64		
	RB15#0	21.09	21.32	20.89		
	RB15#10	21.11	21.35	21.14		
	RB25#0	21.34	21.33	21.33		
10MHz QPSK	RB1#0	23.41	23.32	22.89	23.76	30
	RB1#25	23.3	23.28	22.94		
	RB1#49	23.12	23.14	22.99		
	RB25#0	22.34	22.44	22.04		

	RB25#25	22.25	22.46	21.98		
	RB50#0	22.32	22.4	22.18		
10MHz 16QAM	RB1#0	22.67	23.01	22.08	23.56	30
	RB1#25	22.66	23.21	21.87		
	RB1#49	22.52	22.46	22.07		
	RB25#0	21.47	21.62	21.22		
	RB25#25	21.43	21.31	21.23		
	RB50#0	21.26	21.4	21.06		
	RB1#0	23.29	23.29	23.01		
15MHz QPSK	RB1#38	23.18	23.35	22.85	24.04	30
	RB1#74	23.69	22.73	23.01		
	RB36#0	22.43	22.42	22.19		
	RB36#39	22.37	22.4	22.06		
	RB75#0	22.31	22.42	22.1		
	RB1#0	22.69	23.28	22.42	23.63	30
15MHz 16QAM	RB1#38	22.46	22.87	21.85		
	RB1#74	22.77	22.08	21.44		
	RB36#0	21.37	21.62	21.14		
	RB36#39	21.52	21.43	21.04		
	RB75#0	21.48	21.38	21.17		
	RB1#0	23.44	23.42	23.17	24.12	30
20MHz QPSK	RB1#50	23.52	23.33	23.3		
	RB1#99	23.77	22.77	23		
	RB50#0	22.19	22.42	22.19		
	RB50#50	22.32	22.38	22.07		
	RB100#0	22.34	22.45	22.14		
	RB1#0	22.38	23.13	22.72	23.62	30
20MHz 16QAM	RB1#50	22.36	23.27	22.96		
	RB1#99	22.24	22.53	22.44		
	RB50#0	21.15	21.31	21.31		
	RB50#50	21.3	21.51	21.13		
	RB100#0	21.34	21.55	21.3		

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	4.87	4.84	5.01	13
	RB100#0	4.41	4.29	4.14	13
20MHz 16QAM	RB1#0	5.91	5.74	5.8	13
	RB100#0	6.14	6.06	5.94	13
				Result:	Pass

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	1.108	1.102	1.108	1.296	1.32	1.314
1.4MHz 16QAM	1.102	1.102	1.096	1.302	1.326	1.314
3MHz QPSK	2.695	2.683	2.695	2.952	2.964	2.94
3MHz 16QAM	2.683	2.683	2.695	2.964	2.94	2.952
5MHz QPSK	4.551	4.51	4.511	5.08	5.02	5.02
5MHz 16QAM	4.511	4.531	4.531	4.98	5.06	5.08
10MHz QPSK	8.982	8.942	8.942	9.8	9.72	9.76
10MHz 16QAM	8.942	8.942	8.982	9.68	9.68	9.8
15MHz QPSK	13.533	13.473	13.473	14.76	14.58	14.64
15MHz 16QAM	13.473	13.473	13.473	14.7	14.64	14.58
20MHz QPSK	17.884	17.884	17.804	19.28	19.28	19.2
20MHz 16QAM	17.964	17.964	17.884	19.36	19.2	19.2

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

Spurious Emissions at Antenna Terminal

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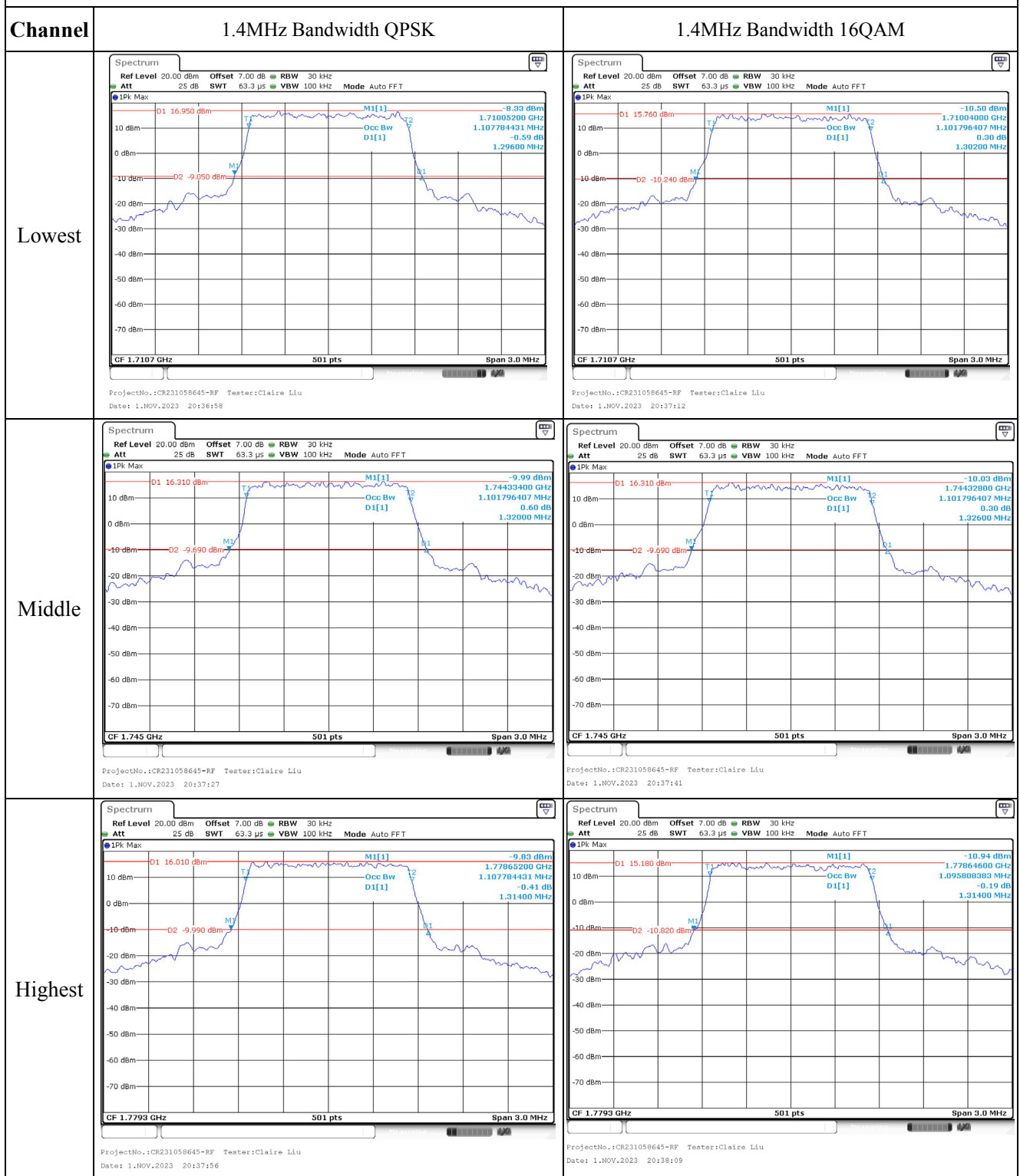
Frequency Stability

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	7.6	1710.375	1710.00	1779.537	1780
	-20	7.6	1710.398	1710.00	1779.595	1780
	-10	7.6	1710.313	1710.00	1779.543	1780
	0	7.6	1710.496	1710.00	1779.648	1780
	10	7.6	1710.488	1710.00	1779.504	1780
	20	7.6	1710.400	1710.00	1779.600	1780
	30	7.6	1710.371	1710.00	1779.606	1780
	40	7.6	1710.415	1710.00	1779.555	1780
	50	7.6	1710.439	1710.00	1779.673	1780
Frequency Stability vs. Voltage	20	6.8	1710.477	1710.00	1779.526	1780
	20	8.7	1710.344	1710.00	1779.634	1780
					Result:	Pass

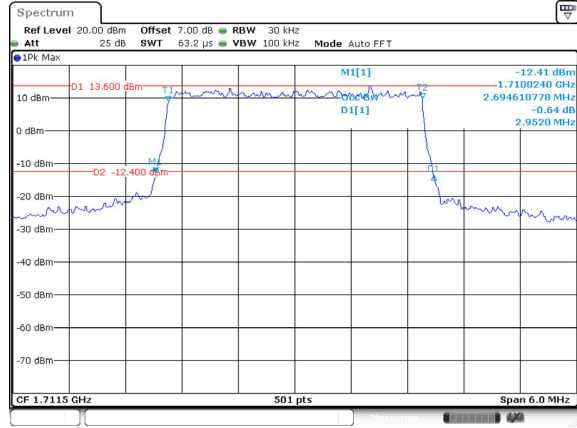
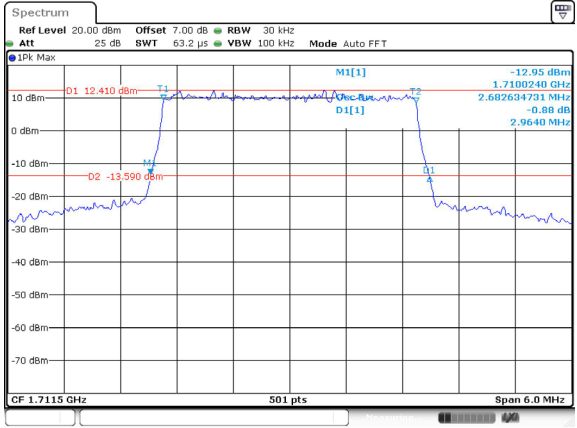
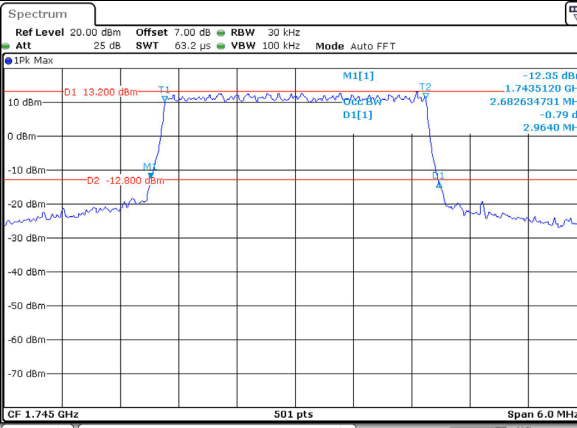
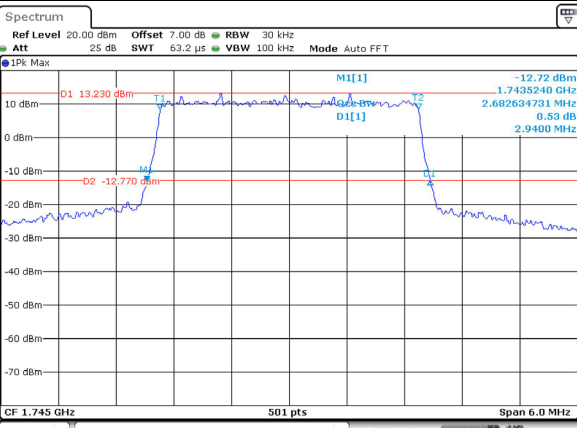
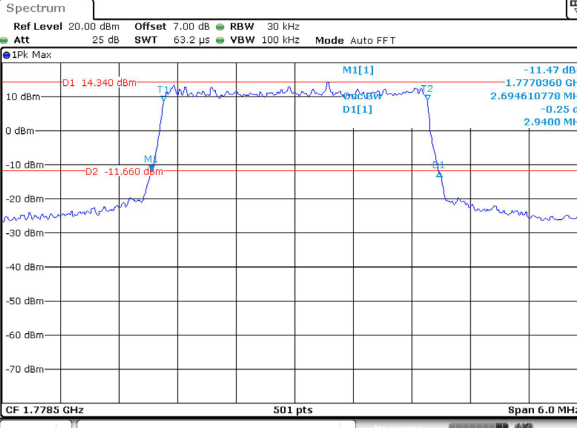
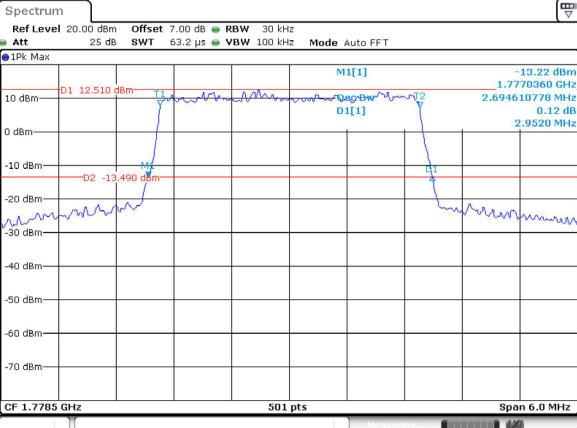
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	7.6	1710.299	1710.00	1779.716	1780
	-20	7.6	1710.240	1710.00	1779.674	1780
	-10	7.6	1710.250	1710.00	1779.581	1780
	0	7.6	1710.399	1710.00	1779.720	1780
	10	7.6	1710.223	1710.00	1779.752	1780
	20	7.6	1710.320	1710.00	1779.680	1780
	30	7.6	1710.268	1710.00	1779.708	1780
	40	7.6	1710.296	1710.00	1779.627	1780
	50	7.6	1710.321	1710.00	1779.726	1780
Frequency Stability vs. Voltage	20	6.8	1710.394	1710.00	1779.715	1780
	20	8.7	1710.276	1710.00	1779.621	1780
					Result:	Pass

Test Plots (Note: The 7 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	 ProjectNo.:CR231058645-RF Tester: Claire Liu Date: 1.NOV.2023 20:40:16	 ProjectNo.:CR231058645-RF Tester: Claire Liu Date: 1.NOV.2023 20:40:33
Middle	 ProjectNo.:CR231058645-RF Tester: Claire Liu Date: 1.NOV.2023 20:40:45	 ProjectNo.:CR231058645-RF Tester: Claire Liu Date: 1.NOV.2023 20:40:59
Highest	 ProjectNo.:CR231058645-RF Tester: Claire Liu Date: 1.NOV.2023 20:41:14	 ProjectNo.:CR231058645-RF Tester: Claire Liu Date: 1.NOV.2023 20:41:25