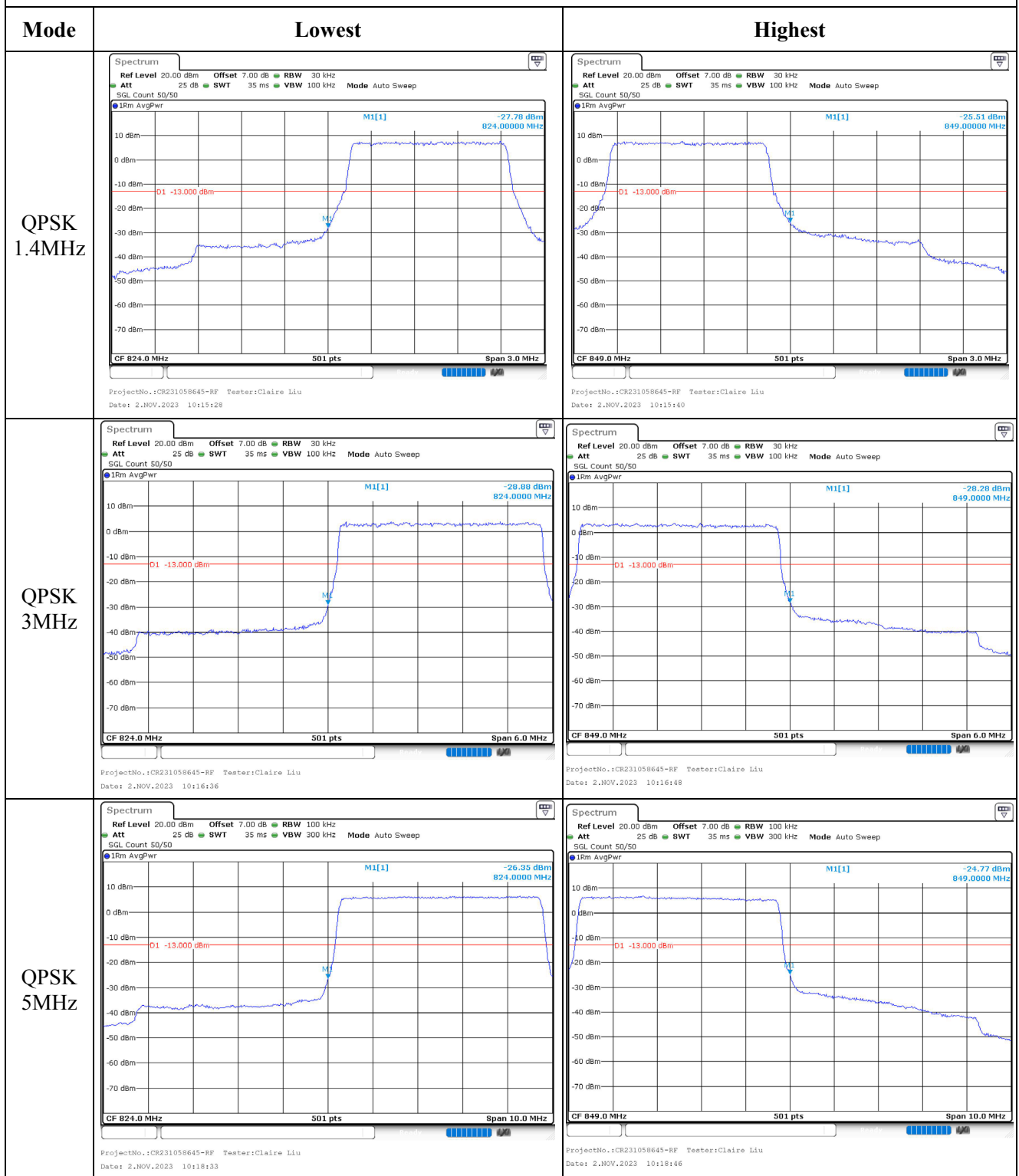
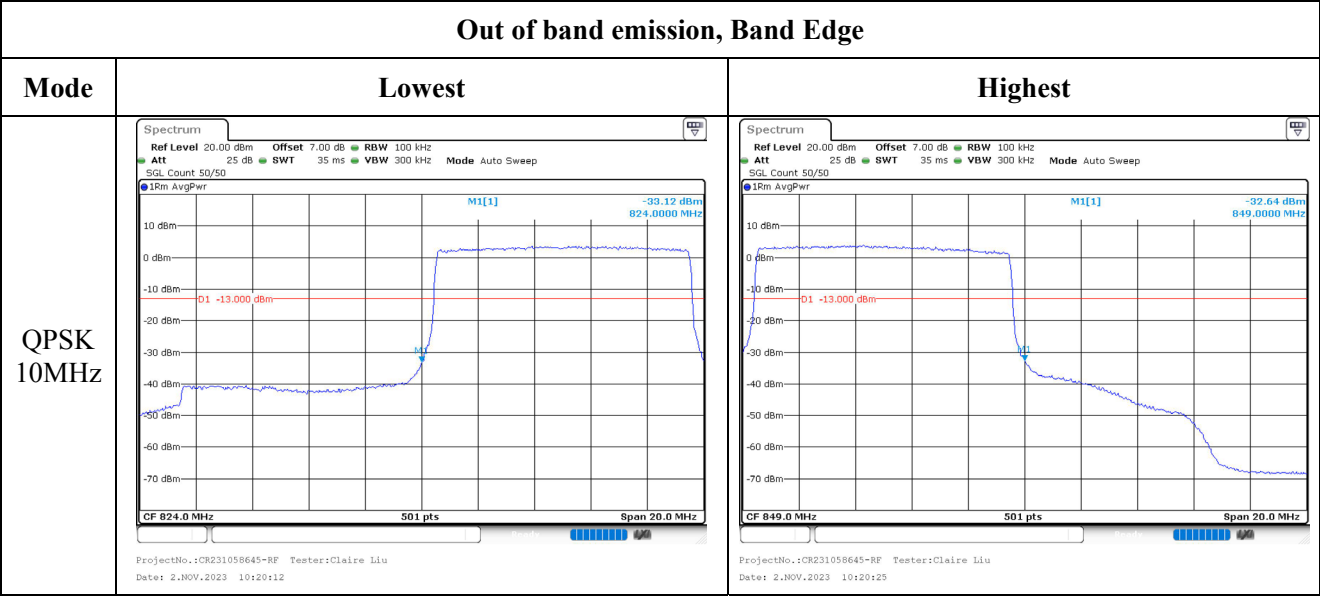
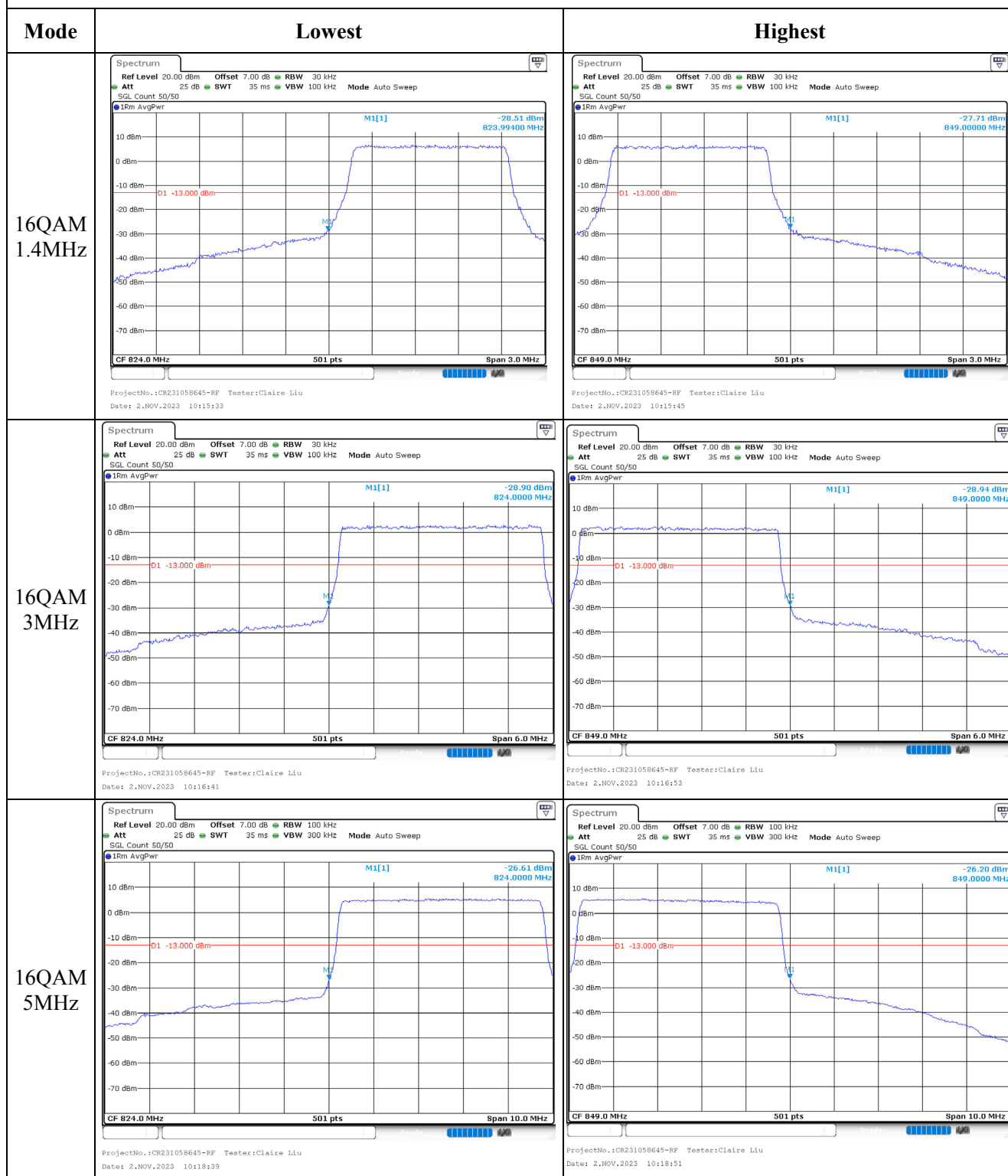


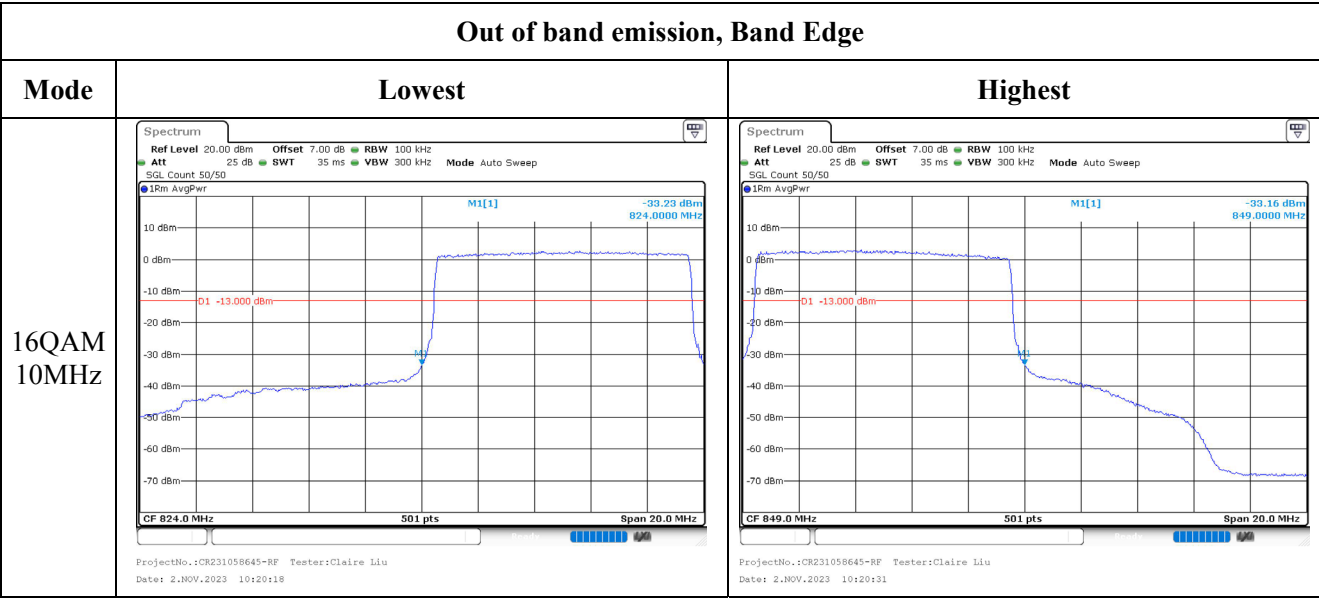
Out of band emission, Band Edge





Out of band emission, Band Edge





4.8 Antenna Port Test Data and Results for LTE Band 7

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)
5MHz	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

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		
5MHz QPSK	RB1#0	22.88	22.74	22.77	23.51	33
	RB1#13	22.71	22.77	22.75		
	RB1#24	22.9	22.96	22.84		
	RB15#0	22.03	21.96	21.84		
	RB15#10	21.82	21.78	21.83		
	RB25#0	21.78	21.91	21.79		
5MHz 16QAM	RB1#0	22.3	21.83	21.48	22.85	33
	RB1#13	22.24	21.65	21.1		
	RB1#24	22.24	21.5	21.44		
	RB15#0	20.96	21.05	21.02		
	RB15#10	20.79	20.94	20.62		
	RB25#0	21.12	21	21.05		
10MHz QPSK	RB1#0	22.04	21.91	22.06	22.82	33
	RB1#25	22.1	22.27	22.03		
	RB1#49	22.23	21.92	22.04		
	RB25#0	20.98	21	20.93		
	RB25#25	21.23	20.89	20.9		
	RB50#0	21.05	21.02	20.94		
10MHz 16QAM	RB1#0	21.07	20.89	21.48	22.18	33
	RB1#25	20.76	21.43	21.63		
	RB1#49	20.63	21.32	21.16		
	RB25#0	20.34	20.2	20.04		
	RB25#25	20.49	19.96	20.05		
	RB50#0	20.13	20.11	20.03		
15MHz QPSK	RB1#0	22.24	21.88	21.89	22.79	33
	RB1#38	22.22	21.82	22.08		
	RB1#74	22.12	21.93	21.93		
	RB36#0	21.11	20.98	20.81		
	RB36#39	21.11	20.93	20.97		
	RB75#0	21.14	20.98	20.85		
15MHz 16QAM	RB1#0	21.36	21.63	20.87	22.18	33
	RB1#38	21.31	21.37	20.88		
	RB1#74	21.51	21.39	20.88		
	RB36#0	20.16	20.15	19.85		
	RB36#39	20.23	19.95	19.85		
	RB75#0	20.09	20.12	20.02		
20MHz QPSK	RB1#0	22.32	21.9	21.76	22.87	33
	RB1#50	22.09	22.26	21.83		
	RB1#99	22.03	21.76	21.92		
	RB50#0	21.23	21.03	20.82		

	RB50#50	21.06	21.1	21		
	RB100#0	21.1	21.03	20.97		
20MHz 16QAM	RB1#0	21.84	20.95	21.98	22.53	33
	RB1#50	21.7	20.9	21.55		
	RB1#99	21.52	21.11	21.8		
	RB50#0	20.34	20.15	19.84		
	RB50#50	20.32	20.02	20.14		
	RB100#0	20.25	20.19	20.08		
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	3.51	4.35	4.03	13
	RB100#0	4.09	3.71	4.09	13
20MHz 16QAM	RB1#0	4.55	5.33	5.22	13
	RB100#0	5.77	5.42	5.86	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
5MHz QPSK	4.511	4.511	4.511	5.08	5.02	5.04
5MHz 16QAM	4.531	4.531	4.491	5.04	5.08	5
10MHz QPSK	8.942	8.942	8.942	9.72	9.8	9.68
10MHz 16QAM	8.982	8.942	8.942	9.64	9.72	9.68
15MHz QPSK	13.473	13.353	13.413	14.7	14.58	14.58
15MHz 16QAM	13.473	13.473	13.413	14.64	14.58	14.64
20MHz QPSK	17.964	17.804	17.884	19.36	19.12	19.2
20MHz 16QAM	17.964	17.804	17.884	19.36	19.44	19.44

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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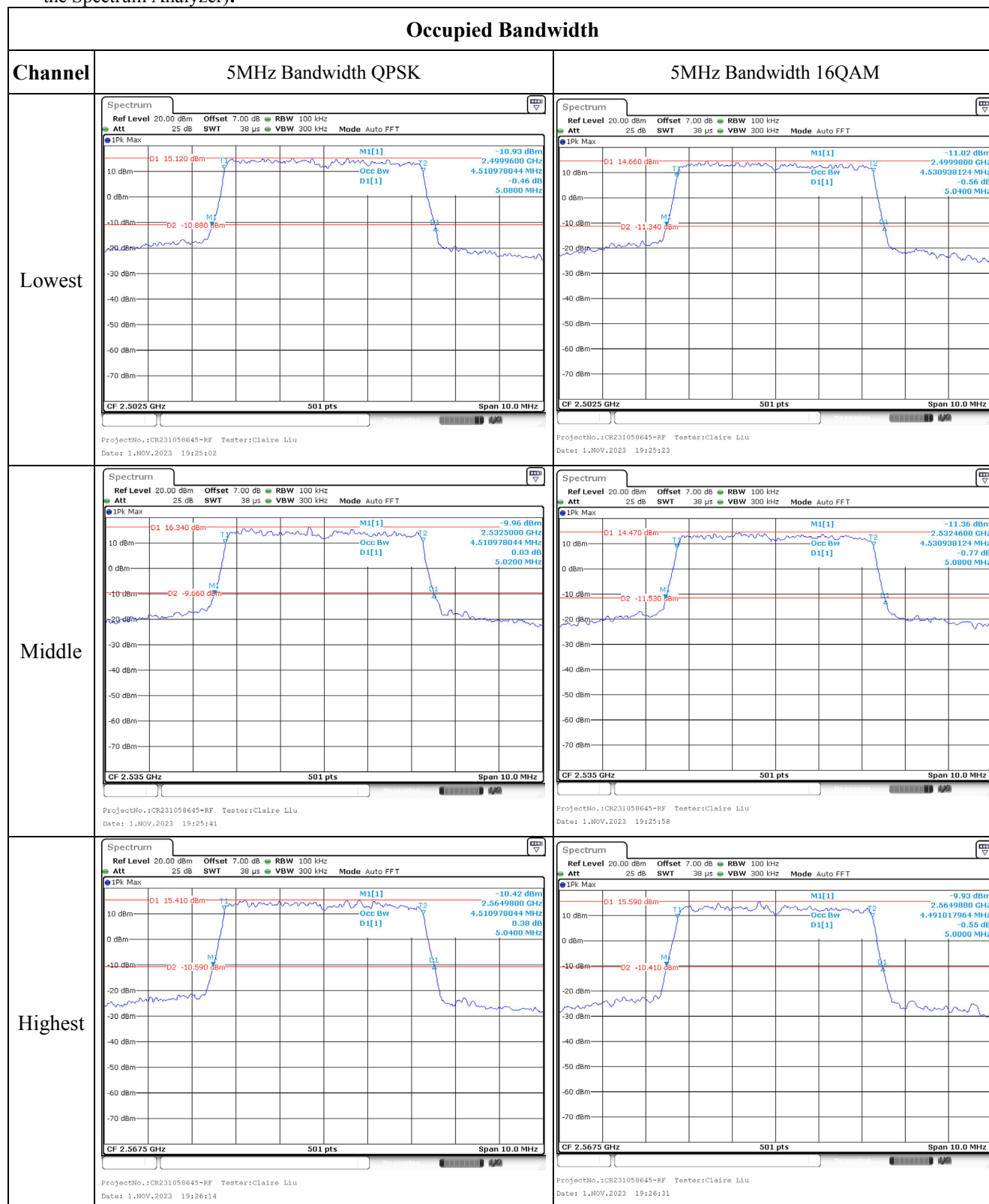
Out of band emission, Band Edge

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	2500.409	2500.00	2569.516	2570
	-20	7.6	2500.270	2500.00	2569.570	2570
	-10	7.6	2500.275	2500.00	2569.611	2570
	0	7.6	2500.305	2500.00	2569.572	2570
	10	7.6	2500.304	2500.00	2569.647	2570
	20	7.6	2500.320	2500.00	2569.600	2570
	30	7.6	2500.265	2500.00	2569.684	2570
	40	7.6	2500.349	2500.00	2569.571	2570
	50	7.6	2500.315	2500.00	2569.632	2570
Frequency Stability vs. Voltage	20	6.8	2500.264	2500.00	2569.536	2570
	20	8.7	2500.373	2500.00	2569.529	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	7.6	2500.233	2500.00	2569.754	2570
	-20	7.6	2500.309	2500.00	2569.880	2570
	-10	7.6	2500.375	2500.00	2569.870	2570
	0	7.6	2500.288	2500.00	2569.935	2570
	10	7.6	2500.275	2500.00	2569.925	2570
	20	7.6	2500.320	2500.00	2569.840	2570
	30	7.6	2500.409	2500.00	2569.868	2570
	40	7.6	2500.281	2500.00	2569.876	2570
	50	7.6	2500.331	2500.00	2569.833	2570
Frequency Stability vs. Voltage	20	6.8	2500.307	2500.00	2569.925	2570
	20	8.7	2500.341	2500.00	2569.740	2570
					Result:	Pass

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



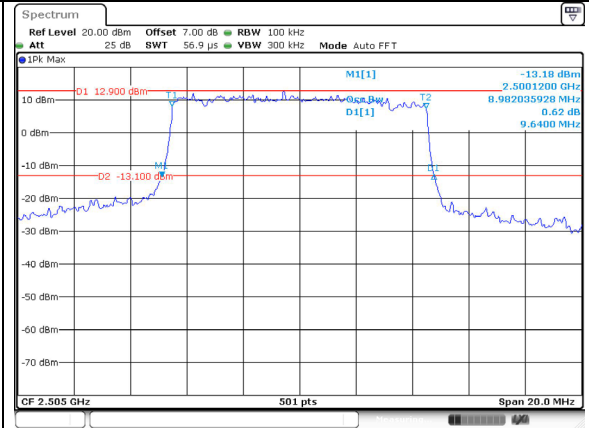
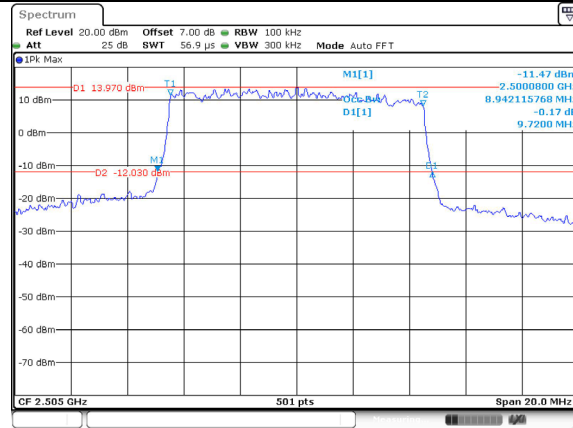
Occupied Bandwidth

Channel

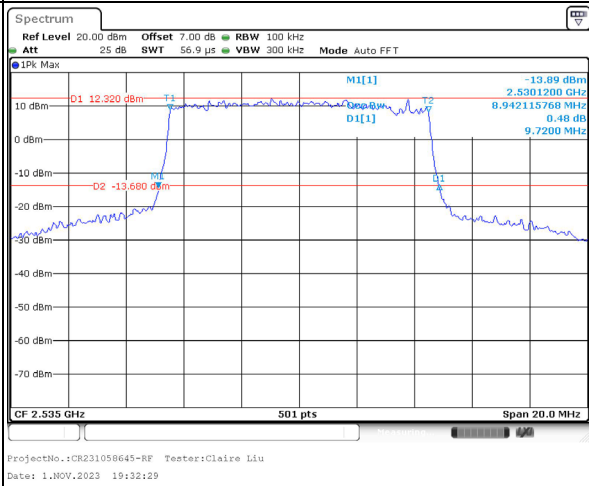
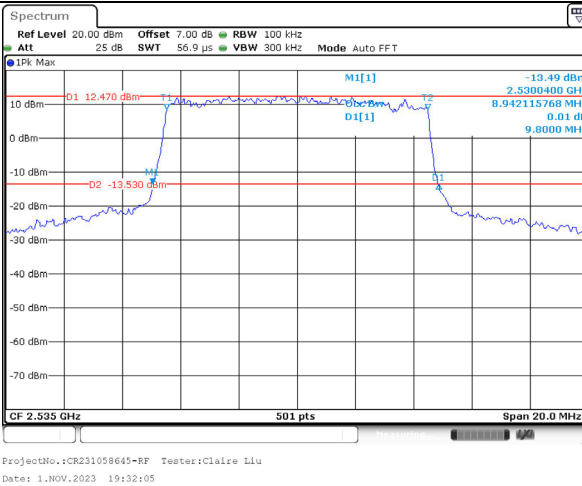
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

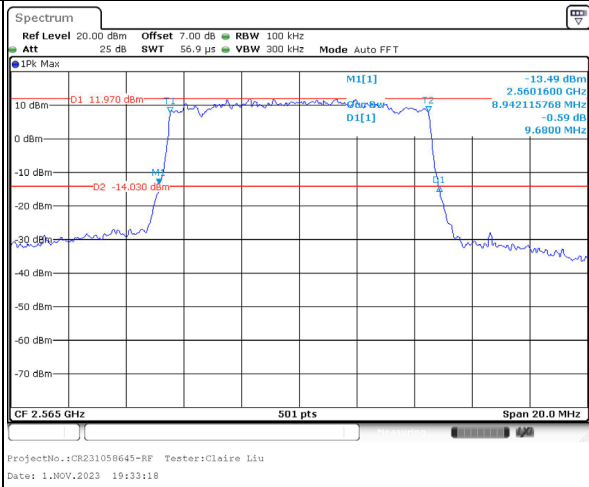
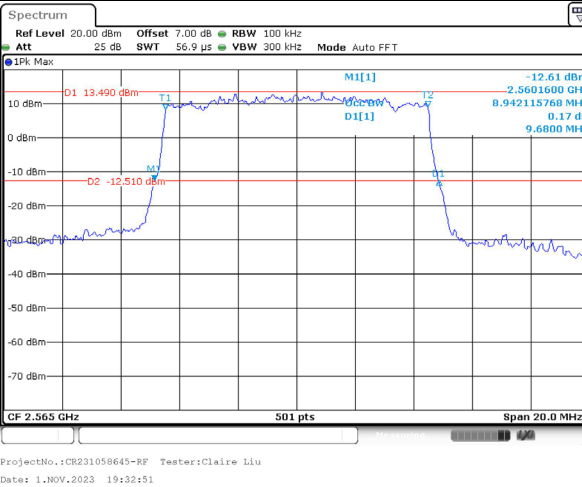
Lowest



Middle



Highest



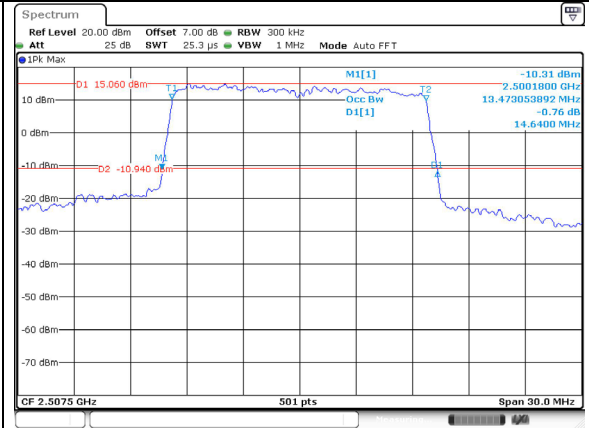
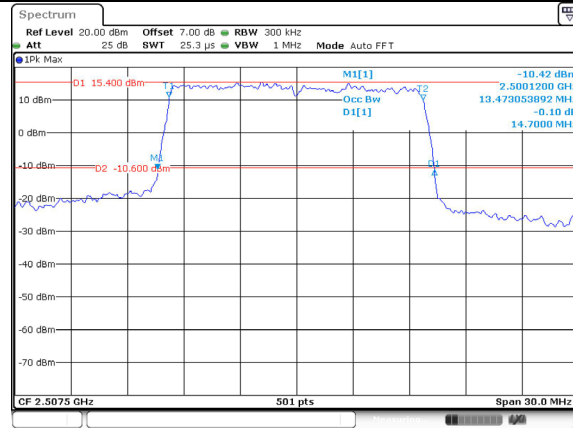
Occupied Bandwidth

Channel

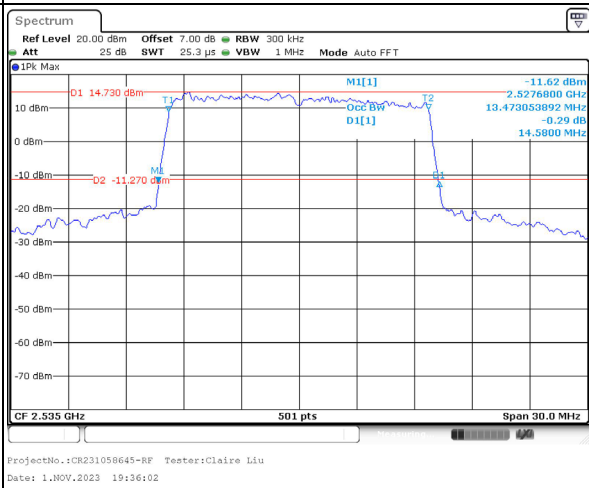
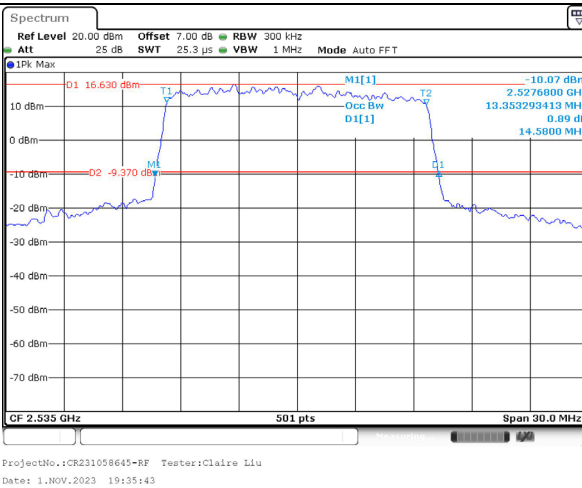
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

Lowest



Middle



Highest

