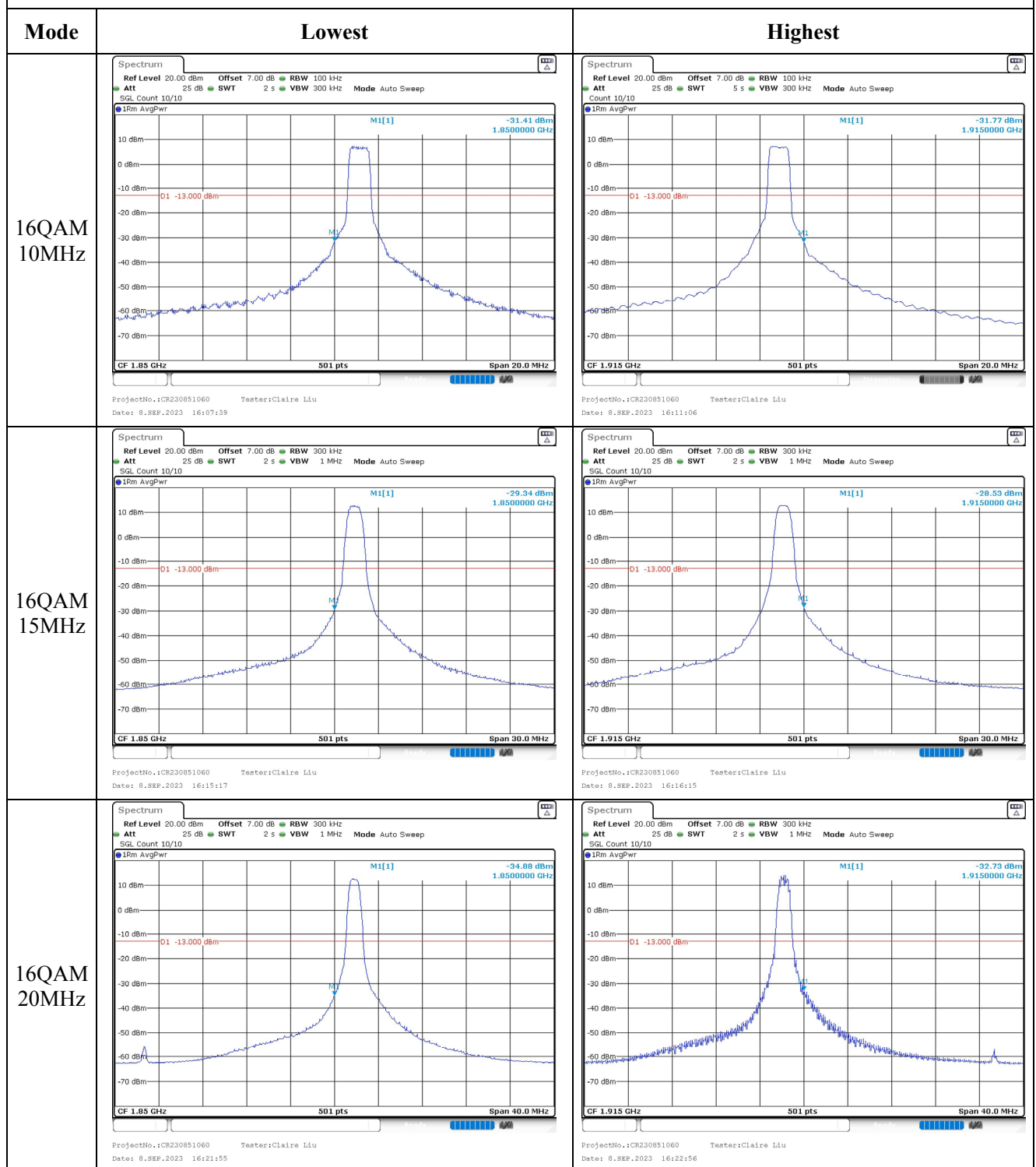


RB5 Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 26

Serial Number:	2AQ1-8	Test Date:	2023/9/8~2023/11/17
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5~26.3	Relative Humidity: (%)	52~56	ATM Pressure: (kPa)	100.2~101
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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	2022/11/25	2023/11/24
YINSAIGE	Coaxial Cable	SS402	SJ0100002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
Weinschel	Power Splitter	1515	RA914	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 For 90S (MHz)	Highest Frequency For 90S (MHz)	Channel Cross 90S and 22H	Lowest Frequency For 22H (MHz)	Middle Frequency For 22H (MHz)	Highest Frequency For 22H (MHz)
1.4MHz	814.7	823.3	824	824.7	836.5	848.3
3MHz	815.5	822.5	824	825.5	836.5	847.5
5MHz	816.5	821.5	824	826.5	836.5	846.5
10MHz	819	/	824	829	836.5	844
15MHz	821.5	/	824	831.5	836.5	841.5

Test Data:**FCC§2.1046;§ 22.913 (a),§ 90.635****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)						Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel For 90S	Highest Channel For 90S	Cross Channe	Lowest Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H		
1.4MHz QPSK	RB1#0	22.08	22.15	22.28	21.89	22.31	22.51	22.65	38.45
	RB1#3	21.82	21.87	22.19	21.83	22.12	22.31		
	RB1#5	21.74	21.79	22.17	21.8	22.03	22.32		
	RB3#0	21.02	21.04	21.24	21.1	21.3	21.49		
	RB3#3	20.97	20.88	21.29	21.14	21.3	21.38		
	RB6#0	20.07	20.14	20.49	20.24	20.3	20.55		
1.4MHz 16QAM	RB1#0	20.81	21.03	21.12	20.98	21.05	21.4	21.54	38.45
	RB1#3	20.76	20.96	20.99	20.94	20.95	21.32		
	RB1#5	20.56	21.03	20.83	20.89	20.75	21.3		
	RB3#0	19.98	20.16	20.31	20.16	20.18	20.45		
	RB3#3	19.89	19.98	20.24	20.08	20.15	20.25		
	RB5#0	20.04	20.25	20.36	20.13	20.3	20.42		
3MHz QPSK	RB1#1	22	22.17	22.28	22.13	22.33	22.57	22.71	38.45
	RB1#4	21.91	22.17	22.15	21.96	22.05	22.35		
	RB1#6	21.91	22.07	22.13	21.88	21.97	22.48		
	RB3#1	21.23	21.28	21.32	21.2	21.28	21.5		
	RB3#4	21.17	21.12	21.21	21.15	21.32	21.35		
	RB6#1	20.28	20.31	20.28	20.26	20.34	20.61		
3MHz 16QAM	RB1#1	21.02	21.14	21.1	20.99	21.08	21.46	21.6	38.45
	RB1#4	20.98	21.06	21.15	21.04	20.92	21.37		
	RB1#6	20.75	20.96	20.83	20.92	20.8	21.28		
	RB3#1	20.11	20.33	20.3	20.28	20.18	20.45		
	RB3#4	20.12	20.26	20.13	20.12	20.1	20.32		
	RB5#1	20.26	20.07	20.3	20.26	20.35	20.65		
5MHz QPSK	RB1#0	22.04	22.19	22.01	22.2	22.13	22.57	22.71	38.45
	RB1#3	21.86	22.2	21.93	22.08	21.96	22.34		
	RB1#5	21.87	22.11	21.83	21.99	21.94	22.29		
	RB3#0	21.32	21.23	21.34	21.33	21.38	21.53		
	RB3#3	21.24	21.16	21.19	21.16	21.22	21.5		
	RB6#0	21.45	21.44	21.37	21.25	21.38	21.59		
5MHz 16QAM	RB1#0	21.85	22.14	21.84	22.13	21.94	22.4	22.54	38.45
	RB1#3	21.68	21.89	21.71	21.9	21.66	22.19		
	RB1#5	21.57	21.79	21.68	21.77	21.64	22.08		
	RB3#0	21.3	21.08	21.1	21.12	21.27	21.32		
	RB3#3	21.21	21.09	21.18	21.11	21.31	21.24		
	RB5#0	20.28	20.31	20.07	20.1	20.32	20.42		
10MHz QPSK	RB1#1	22.13	/	22.1	22.2	22.18	22.53	22.8	38.45
	RB1#4	21.84	/	21.9	22.11	21.98	22.44		
	RB1#6	21.85	/	21.99	22.08	21.98	22.44		
	RB3#1	22.12	/	22.16	22.27	22.25	22.66		
	RB3#4	22.17	/	22.21	22.24	22.3	22.46		
	RB6#1	21.28	/	21.43	21.38	21.42	21.58		
10MHz 16QAM	RB1#1	21.74	/	21.67	22.11	21.88	22.54	22.68	38.45
	RB1#4	21.67	/	21.58	22.01	21.71	22.15		
	RB1#6	21.59	/	21.61	21.96	21.62	22.22		

	RB3#1	22.11	/	21.87	22.13	22.02	22.52		
	RB3#4	22.15	/	21.89	22.12	22.29	22.29		
	RB5#1	21.16	/	21.26	21.13	21.3	21.34		
15MHz QPSK	RB1#1	21.84	/	22.01	21.93	22.08	22.46	22.79	38.45
	RB1#4	21.94	/	21.94	21.9	21.88	22.45		
	RB1#6	22.06	/	21.83	21.79	21.86	22.27		
	RB3#1	21.98	/	22.33	22.22	22.29	22.65		
	RB3#4	21.98	/	22.14	22.19	22.18	22.46		
	RB6#1	22.15	/	22.43	22.36	22.35	22.61		
15MHz 16QAM	RB1#1	22.11	/	21.92	21.79	21.98	22.5	22.64	38.45
	RB1#4	21.75	/	21.66	21.78	21.73	22.44		
	RB1#6	21.53	/	21.62	21.81	21.81	22.34		
	RB3#1	22.26	/	22	22.21	22.29	22.4		
	RB3#4	22.04	/	21.82	22.2	22.2	22.33		
	RB5#1	21.99	/	22.24	22.26	22.16	22.41		

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 Frequency For 22H	Middle Frequency For 22H	Highest Frequency For 22H	
15MHz QPSK	RB1#1	11.22	11.16	11.04	13
	RB6#1	11.25	11.22	11.19	13
15MHz 16QAM	RB1#1	11.91	11.86	11.71	13
	RB5#1	11.83	11.83	11.62	13
Result:					Pass

FCC §2.1049, §22.905, §90.209:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)					
	Lowest For 90S	Highest For 90S	Cross	Lowest For 22H	Middle For 22H	Highest For 22H
1.4MHz QPSK	1.096	1.09	1.102	1.096	1.096	1.09
1.4MHz 16QAM	0.928	0.928	0.928	0.928	0.928	0.928
3MHz QPSK	1.09	1.102	1.102	1.102	1.09	1.09
3MHz 16QAM	0.934	0.934	0.934	0.934	0.934	0.934
5MHz QPSK	1.098	1.098	1.118	1.118	1.118	1.098
5MHz 16QAM	0.937	0.937	0.938	0.958	0.958	0.937
10MHz QPSK	1.118	/	1.118	1.118	1.118	1.158
10MHz 16QAM	0.958	/	0.958	0.958	0.958	0.958
15MHz QPSK	1.118	/	1.138	1.138	1.138	1.138
15MHz 16QAM	1.357	/	0.958	0.958	0.958	0.958
Operation Mode	26 dB Occupied Bandwidth (MHz)					
	Lowest For 90S	Highest For 90S	Cross	Lowest For 22H	Middle For 22H	Highest For 22H
1.4MHz QPSK	1.284	1.280	1.305	1.296	1.290	1.270
1.4MHz 16QAM	1.134	1.194	1.138	1.134	1.134	1.194
3MHz QPSK	1.300	1.320	1.293	1.296	1.310	1.270
3MHz 16QAM	1.140	1.128	1.138	1.140	1.140	1.200
5MHz QPSK	1.300	1.300	1.333	1.340	1.340	1.300

5MHz 16QAM	1.160	1.160	1.174	1.160	1.180	1.160
10MHz QPSK	1.320	/	1.313	1.320	1.320	1.320
10MHz 16QAM	1.200	/	1.194	1.200	1.200	1.120
15MHz QPSK	0.958	/	1.393	1.380	1.380	1.380
15MHz 16QAM	1.198	/	1.273	1.260	1.200	1.200

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

FCC §2.1051, §22.917(a),§90.691: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, §22.917(a),§90.691: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, §22.355, §90.213: Frequency Stability					
Test Modulation:	QPSK		Test Channel:	821.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	12	-4.79	-0.006	2.5
	-20	12	-5.08	-0.006	2.5
	-10	12	-4.83	-0.006	2.5
	0	12	-4.9	-0.006	2.5
	10	12	-5.1	-0.006	2.5
	20	12	-4.76	-0.006	2.5
	30	12	-4.96	-0.006	2.5
	40	12	-5.38	-0.006	2.5
	50	12	-5.23	-0.006	2.5
Frequency Stability vs. Voltage	20	9	-4.78	-0.006	2.5
	20	14	-4.5	-0.005	2.5
				Result:	Pass

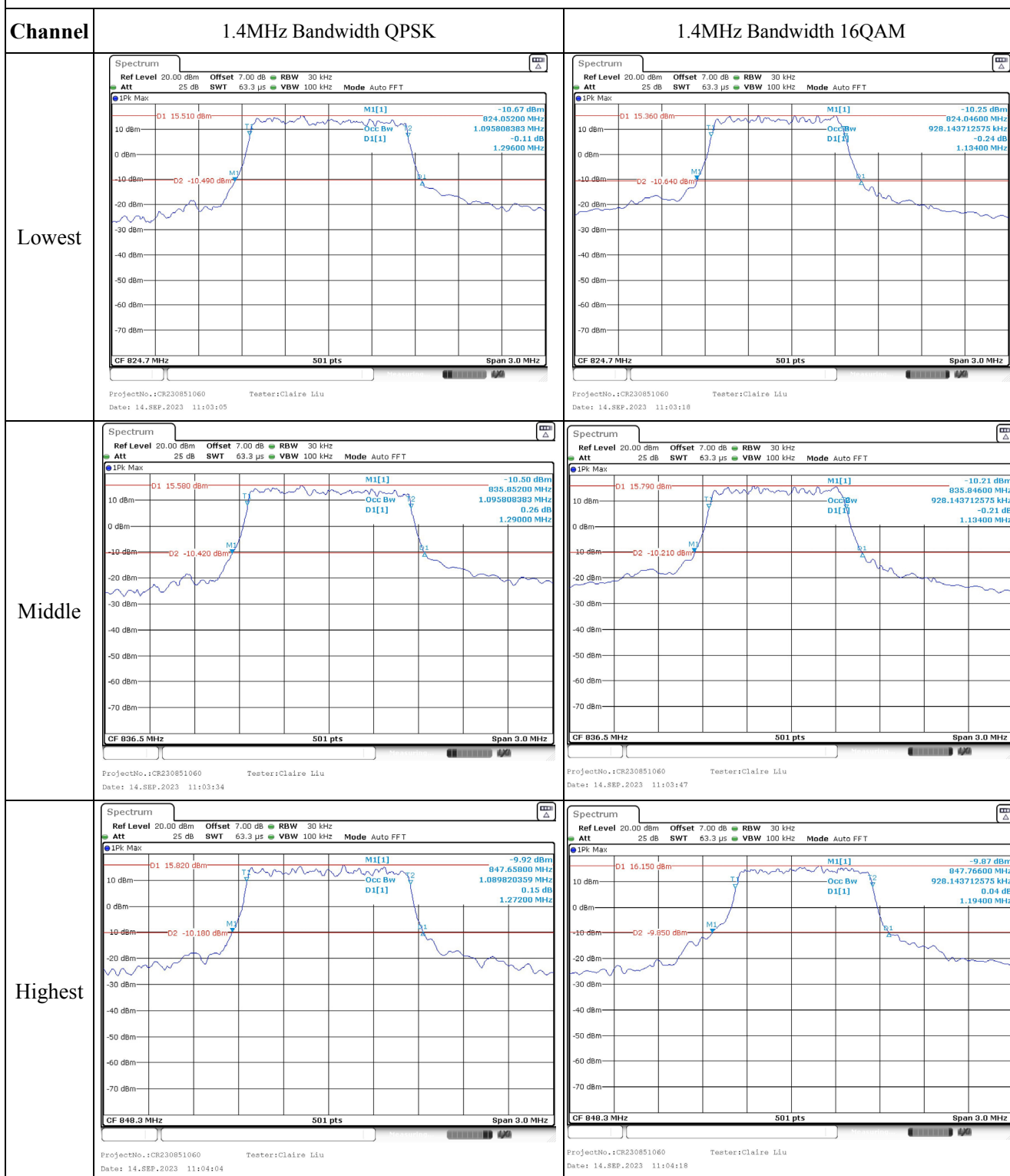
FCC §2.1055, §22.355, §90.213: Frequency Stability					
Test Modulation:	QAM		Test Channel:	821.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	12	-4.86	-0.006	2.5
	-20	12	-5.22	-0.006	2.5
	-10	12	-5.51	-0.007	2.5
	0	12	-5.88	-0.007	2.5
	10	12	-5.92	-0.007	2.5
	20	12	-6.05	-0.007	2.5
	30	12	-6.32	-0.008	2.5
	40	12	-6.24	-0.008	2.5
	50	12	-6.53	-0.008	2.5
Frequency Stability vs. Voltage	20	9	-6.75	-0.008	2.5
	20	14	-6.55	-0.008	2.5
				Result:	Pass

FCC §2.1055, §22.355, §90.213: Frequency Stability					
Test Modulation:	15 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	12	-2.5	-0.003	2.5
	-20	12	-2.6	-0.003	2.5
	-10	12	-2.16	-0.003	2.5
	0	12	-2.17	-0.003	2.5
	10	12	-2.64	-0.003	2.5
	20	12	-2.95	-0.004	2.5
	30	12	-3.18	-0.004	2.5
	40	12	-3.55	-0.004	2.5
	50	12	-3.4	-0.004	2.5
Frequency Stability vs. Voltage	20	9	-2.92	-0.004	2.5
	20	14	-2.98	-0.004	2.5
				Result:	Pass

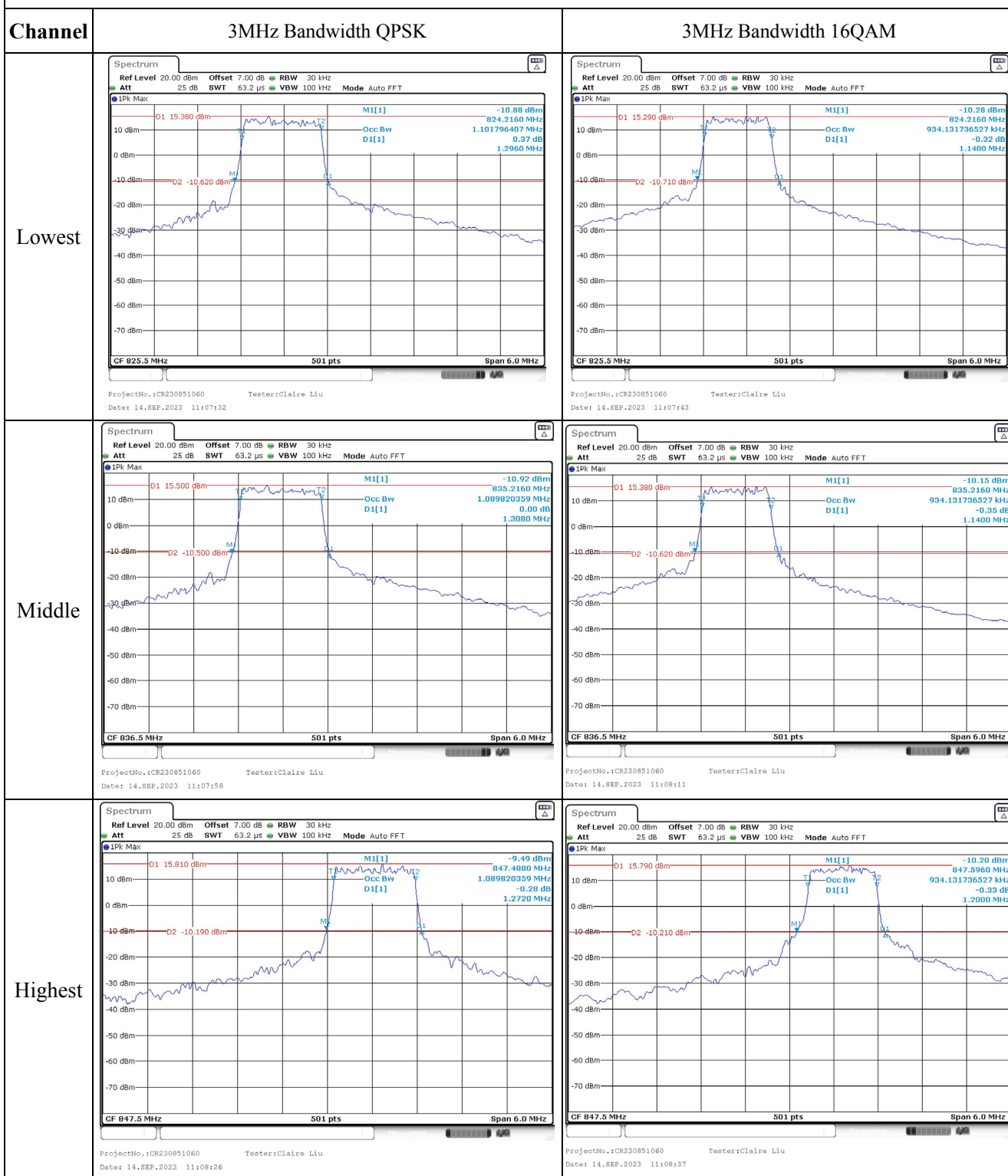
FCC §2.1055, §22.355, §90.213: Frequency Stability					
Test Modulation:	15 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	12	-7.33	-0.009	2.5
	-20	12	-6.95	-0.008	2.5
	-10	12	-6.52	-0.008	2.5
	0	12	-6.09	-0.007	2.5
	10	12	-5.99	-0.007	2.5
	20	12	-5.92	-0.007	2.5
	30	12	-6.17	-0.007	2.5
	40	12	-6.27	-0.008	2.5
	50	12	-6.74	-0.008	2.5
Frequency Stability vs. Voltage	20	9	-6.63	-0.008	2.5
	20	14	-6.85	-0.008	2.5
				Result:	Pass

1) Band26 (824MHz-849MHz)

Occupied Bandwidth



Occupied Bandwidth



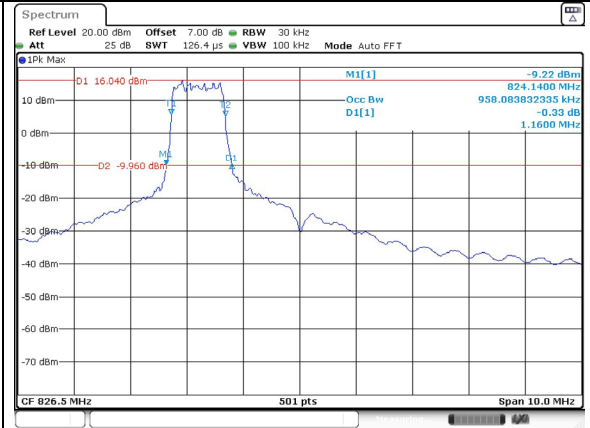
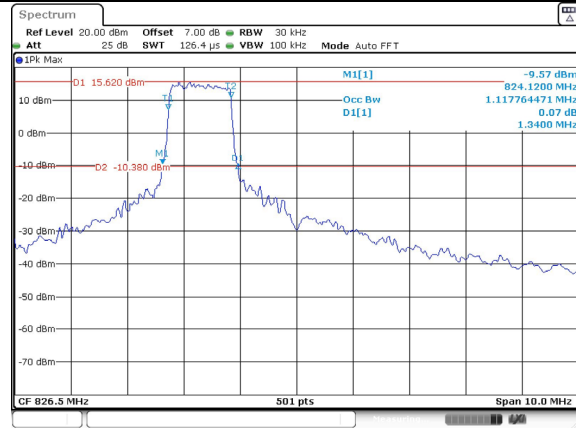
Occupied Bandwidth

Channel

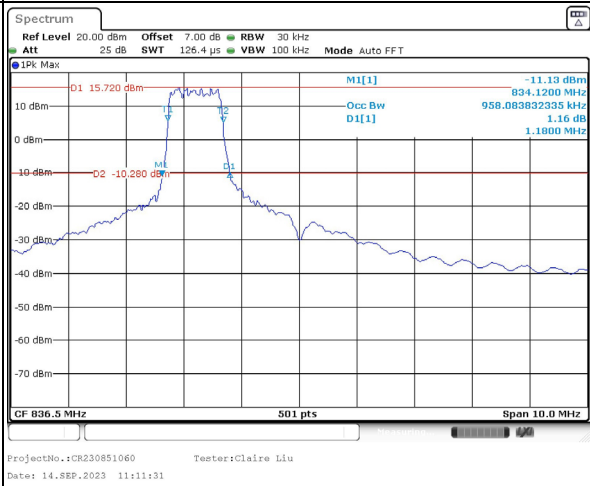
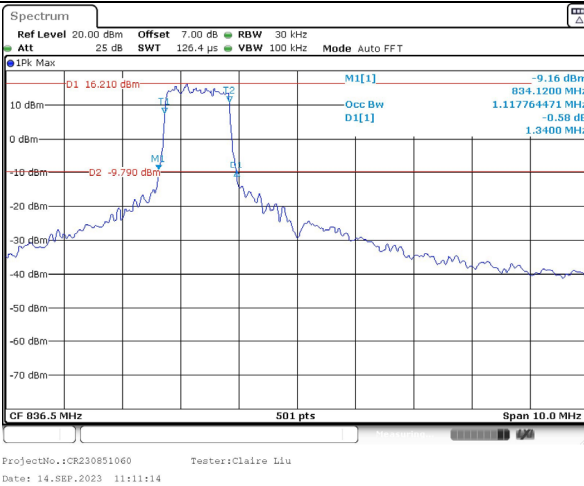
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

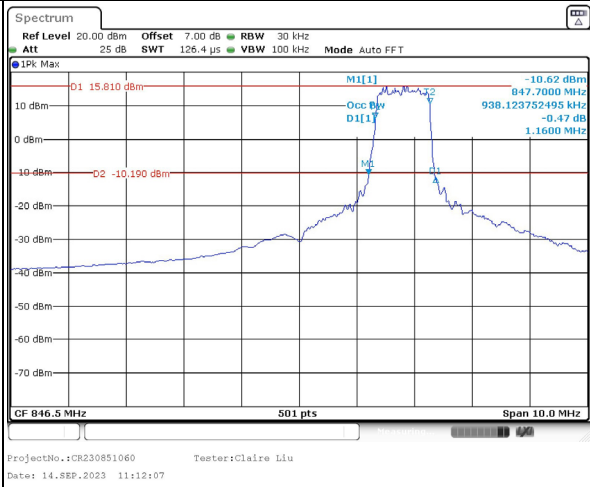
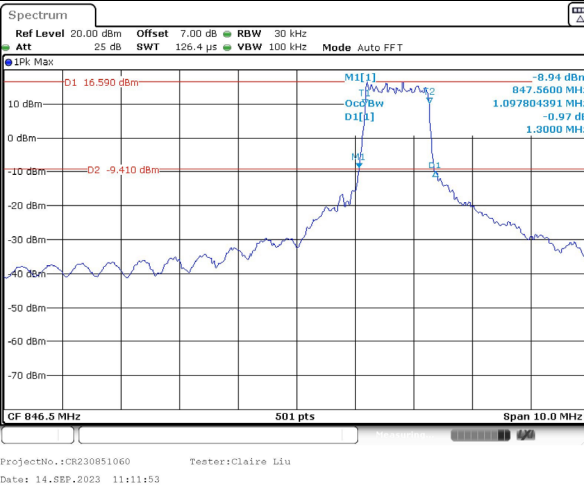
Lowest



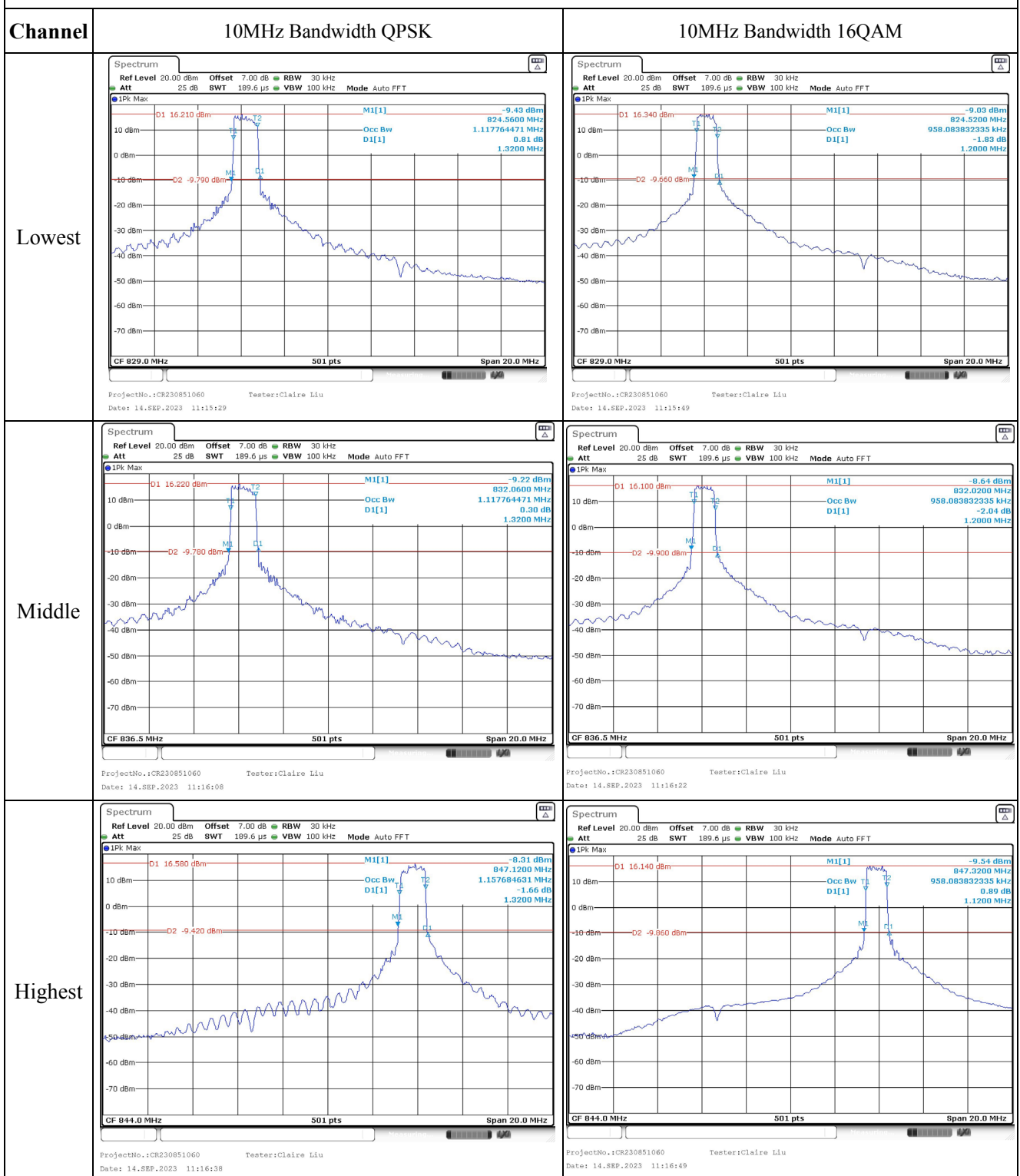
Middle



Highest



Occupied Bandwidth



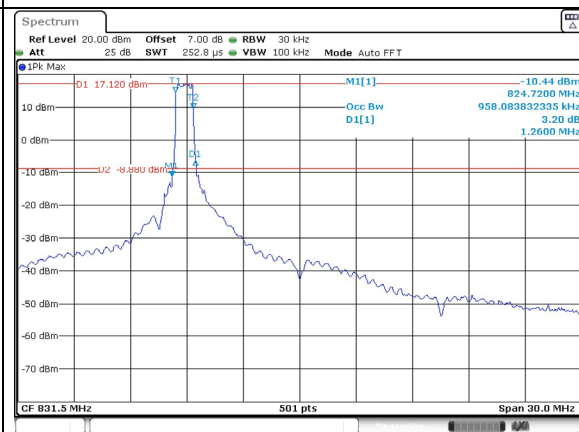
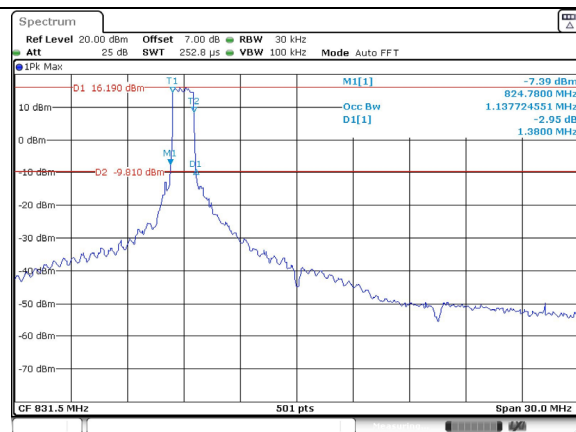
Occupied Bandwidth

Channel

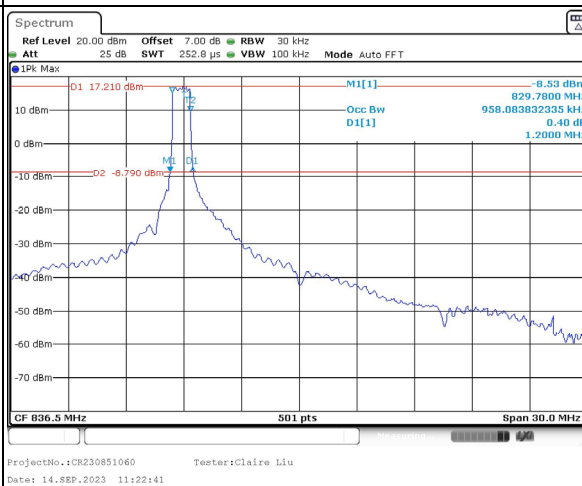
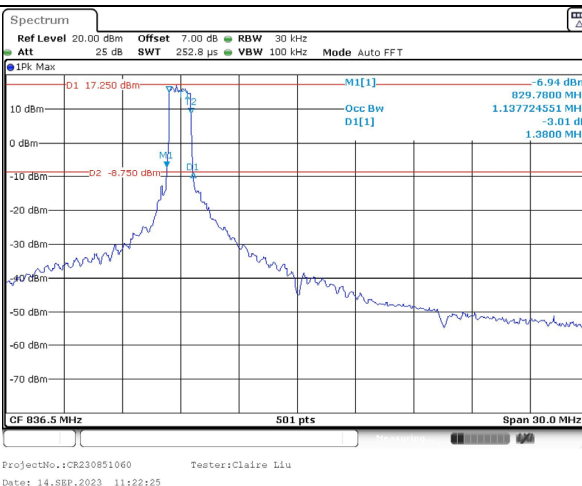
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

Lowest



Middle



Highest

