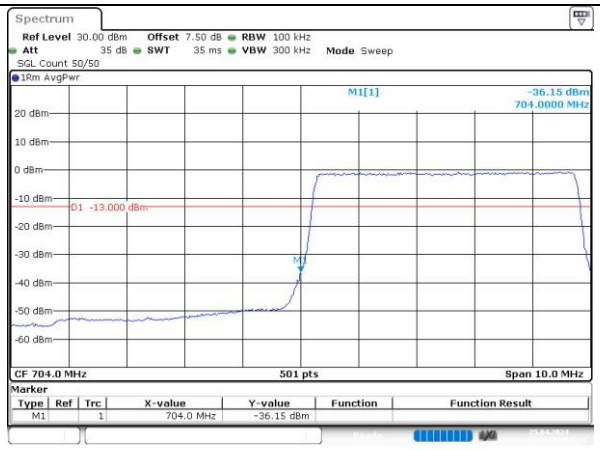
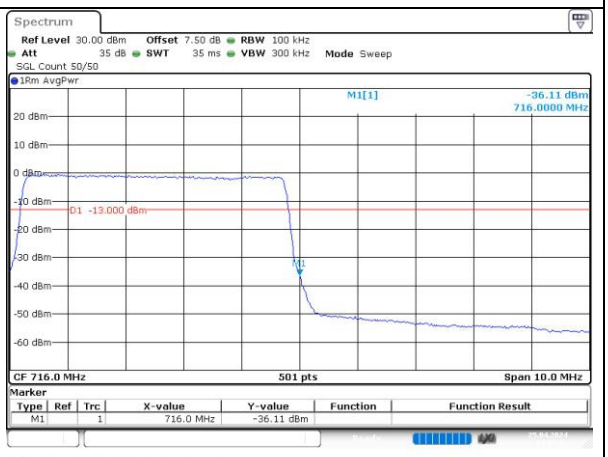
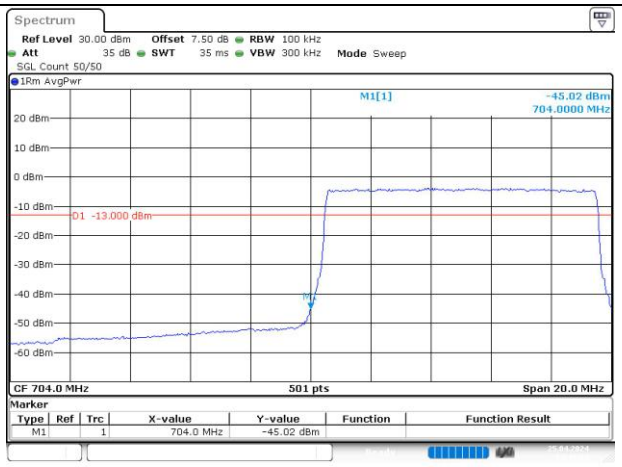
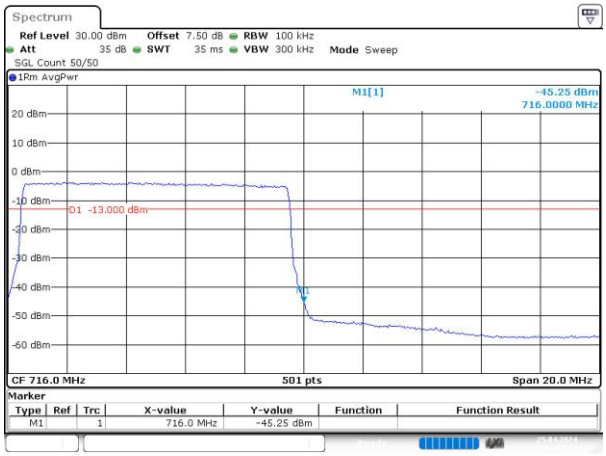
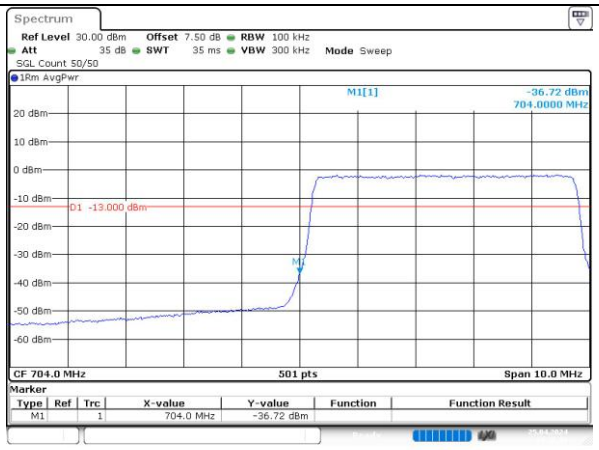
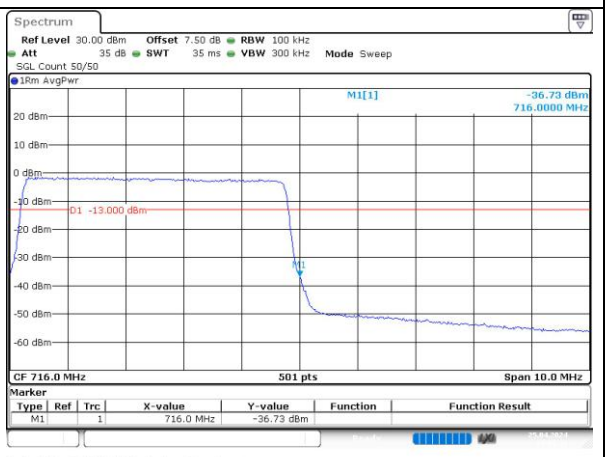
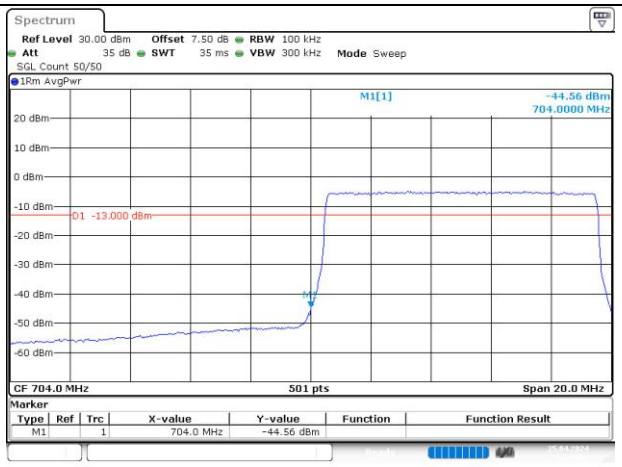
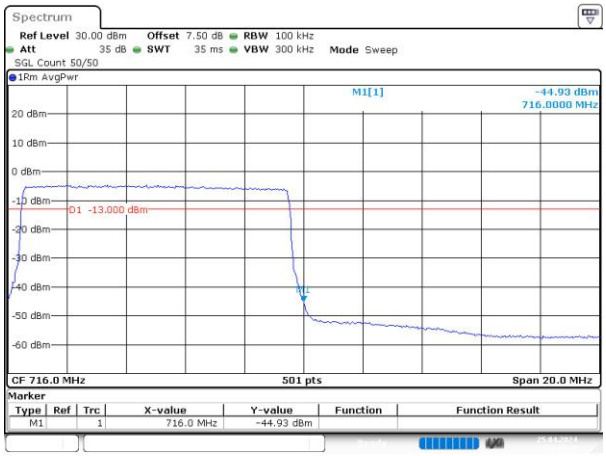
Out of band emission, Band Edge		
Mode	**Lowest-Full RB**	**Highest-Full RB**
QPSK 5MHz		
QPSK 10MHz		

Out of band emission, Band Edge		
Mode	**Lowest-Full RB**	**Highest-Full RB**
16QAM 5MHz		
16QAM 10MHz		

5.13 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	OSEB119574-2	Test Date:	2024/4/25~2024/4/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	Karl Liang,Loge Long	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	25.5~25.6	Relative Humidity: (%)	66~70	ATM Pressure: (kPa)	100.6~100.9

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101461	2023/11/27	2024/11/26
Micro-Coax	Coaxial Cable	UFB205A	323308-024	2024/1/2	2025/1/1
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM502	2023/9/10	2024/9/9
Minl-Clrcuits	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/2/25	2025/2/24
R&S	Wideband Radio Communication Tester	CMW500	144976	2023/10/18	2024/10/17
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2023/10/18	2024/10/17
All-sun	Clamp Meter	EM305A	8348897	2023/8/3	2024/8/2
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (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	14.86	14.83	14.95	11.95	33
	RB1#13	14.89	14.85	14.95		
	RB1#24	14.84	14.92	14.94		
	RB15#0	13.85	13.78	13.87		
	RB15#10	13.81	13.82	13.87		
	RB25#0	13.8	13.82	13.91		
5MHz 16QAM	RB1#0	13.87	13.91	14.15	11.19	33
	RB1#13	13.9	13.93	14.19		
	RB1#24	13.87	13.93	14.19		
	RB15#0	12.83	12.83	12.97		
	RB15#10	12.79	12.9	12.96		
	RB25#0	12.9	12.86	12.94		
10MHz QPSK	RB1#0	14.88	14.9	14.98	12.04	33
	RB1#25	14.89	14.95	15.04		
	RB1#49	14.82	14.93	15		
	RB25#0	13.85	13.8	13.88		
	RB25#25	13.8	13.82	13.91		
	RB50#0	13.85	13.82	13.92		
10MHz 16QAM	RB1#0	14.06	13.83	14.01	11.06	33
	RB1#25	14.12	13.8	14.06		
	RB1#49	14.01	13.84	14.06		
	RB25#0	12.87	12.92	12.93		
	RB25#25	12.88	12.9	12.98		
	RB50#0	12.87	12.81	12.96		
15MHz QPSK	RB1#0	14.79	14.79	14.89	11.94	33
	RB1#38	14.85	14.91	14.94		
	RB1#74	14.76	14.8	14.91		
	RB36#0	13.79	13.75	13.83		
	RB36#39	13.78	13.85	13.85		
	RB75#0	13.78	13.84	13.85		
15MHz 16QAM	RB1#0	14.02	13.97	13.81	11.1	33
	RB1#38	14.05	14.1	13.89		
	RB1#74	13.98	14	13.82		
	RB36#0	12.96	12.8	12.87		
	RB36#39	12.85	12.83	12.82		
	RB75#0	12.86	12.85	12.91		

20MHz QPSK	RB1#0	14.81	14.7	14.94	12.07	33
	RB1#50	14.85	14.91	15.07		
	RB1#99	14.77	14.78	14.94		
	RB50#0	13.85	13.8	13.85		
	RB50#50	13.82	13.86	13.82		
	RB100#0	13.81	13.81	13.82		
20MHz 16QAM	RB1#0	13.86	13.66	14.03	11.18	33
	RB1#50	13.9	13.86	14.18		
	RB1#99	13.84	13.76	14.12		
	RB50#0	12.89	12.91	12.91		
	RB50#50	12.84	12.91	12.87		
	RB100#0	12.81	12.82	12.87		
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	9.77	10.03	10.14	13
	RB100#0	8.61	8.64	8.67	13
20MHz 16QAM	RB1#0	10.46	10.81	10.72	13
	RB100#0	10.06	10.09	10.12	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	5.2	5.02	5.02
5MHz 16QAM	4.511	4.491	4.491	4.98	4.98	4.98
10MHz QPSK	8.982	8.942	8.942	9.76	10	9.68
10MHz 16QAM	8.942	8.942	8.942	9.52	9.56	9.64
15MHz QPSK	13.473	13.533	13.473	16.68	15.3	15.48
15MHz 16QAM	13.533	13.533	13.593	15.54	17.34	16.62
20MHz QPSK	17.964	18.044	17.964	21.04	19.6	20.32
20MHz 16QAM	17.964	17.964	18.044	20.08	21.84	23.12
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.**

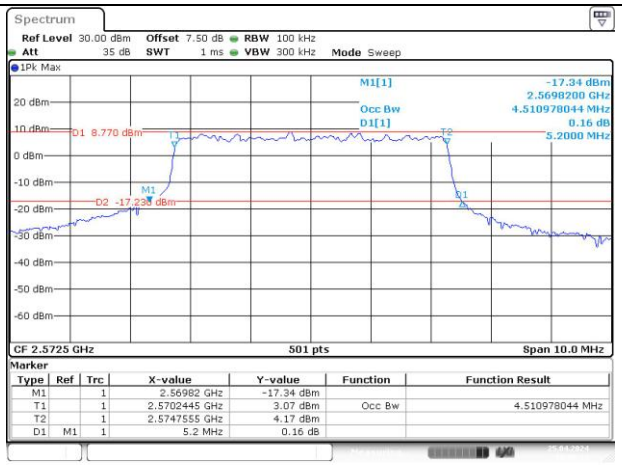
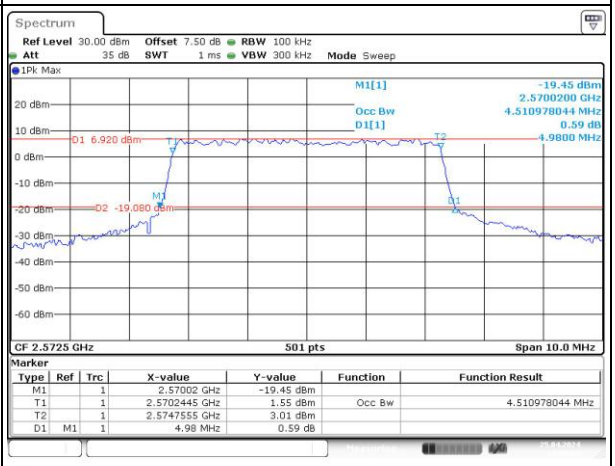
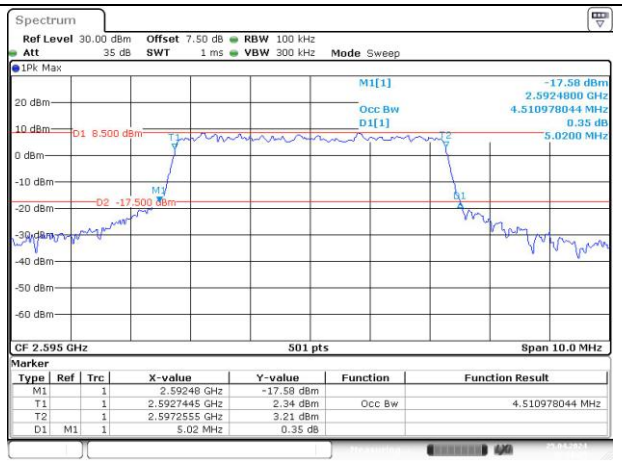
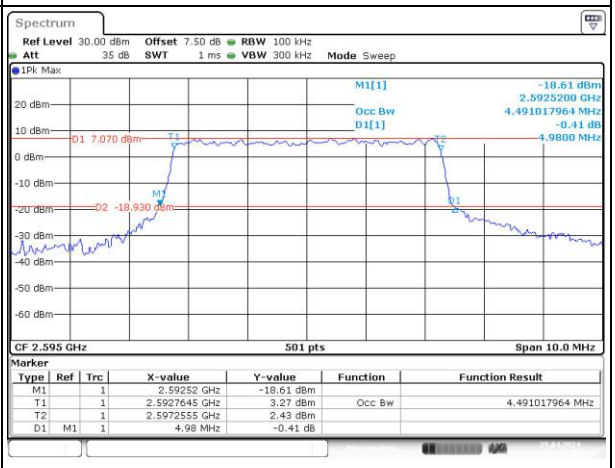
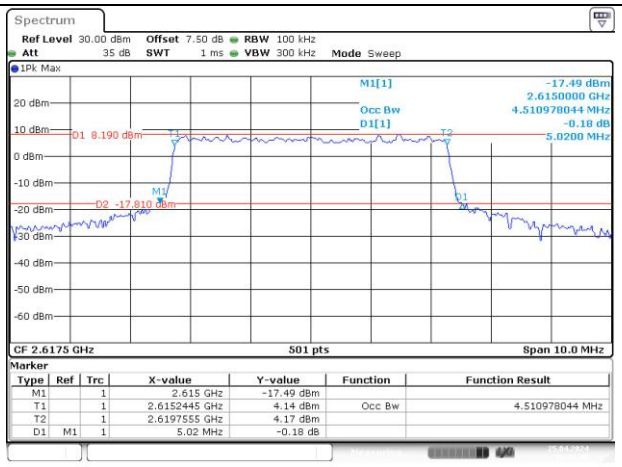
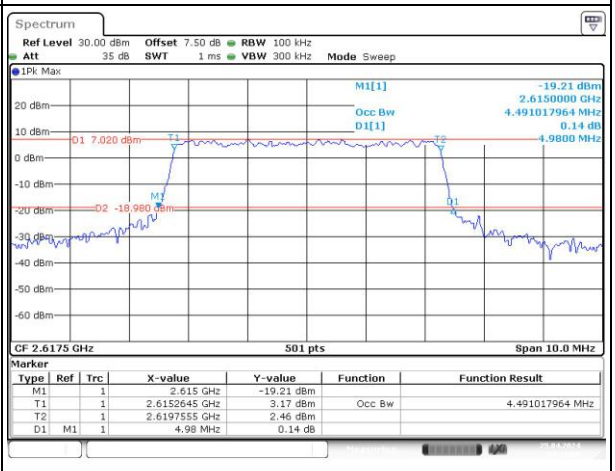
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

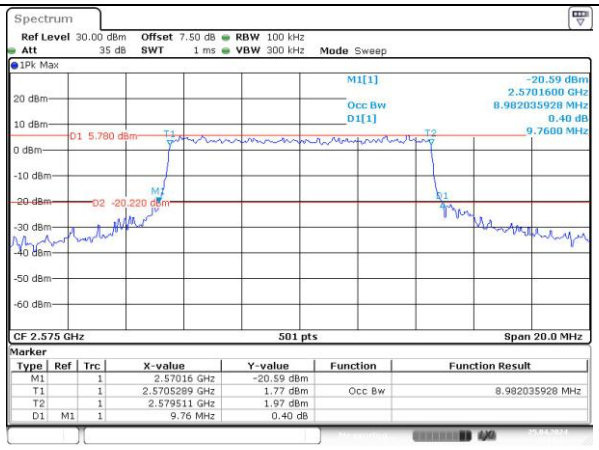
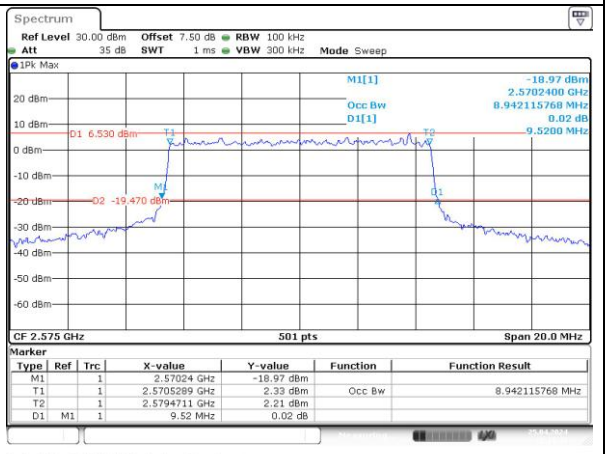
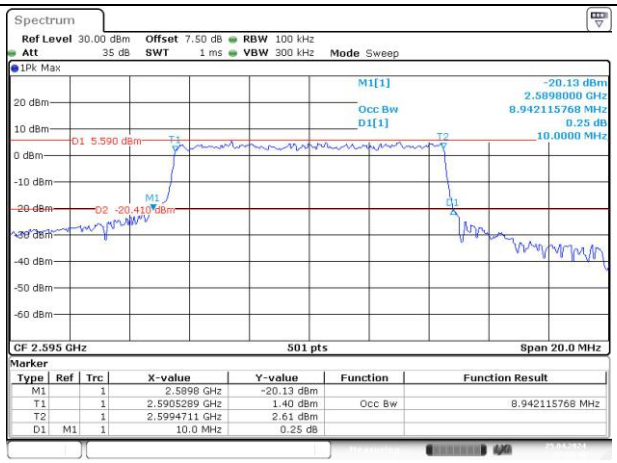
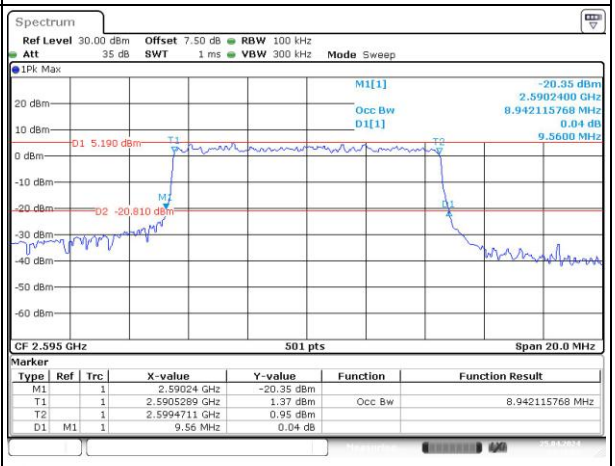
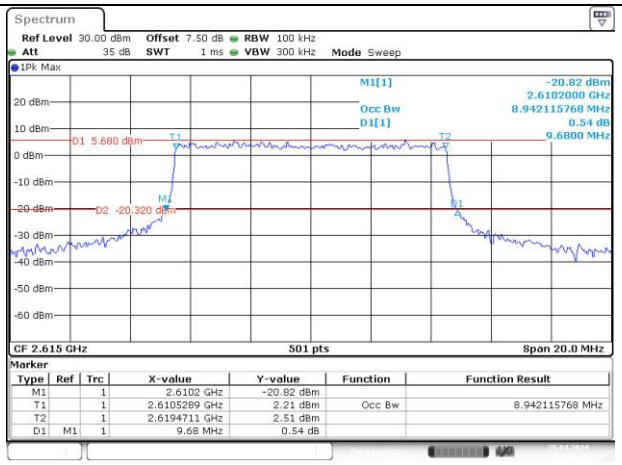
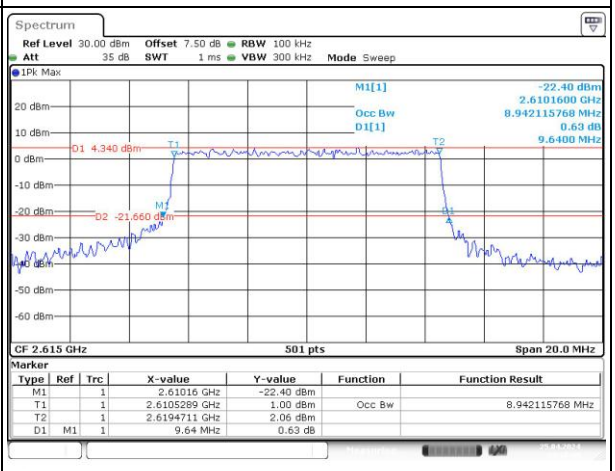
FCC §2.1055, §27.54: Frequency Stability

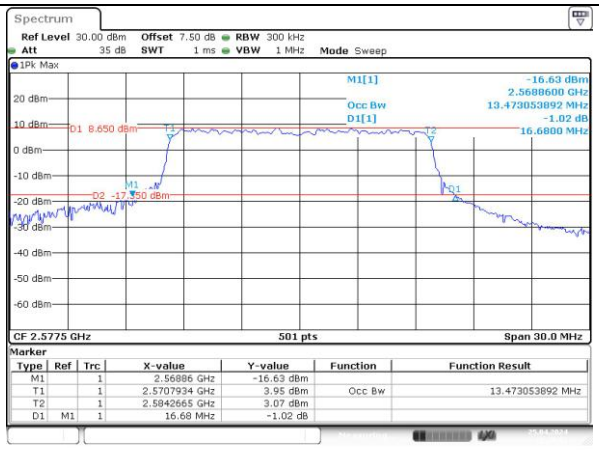
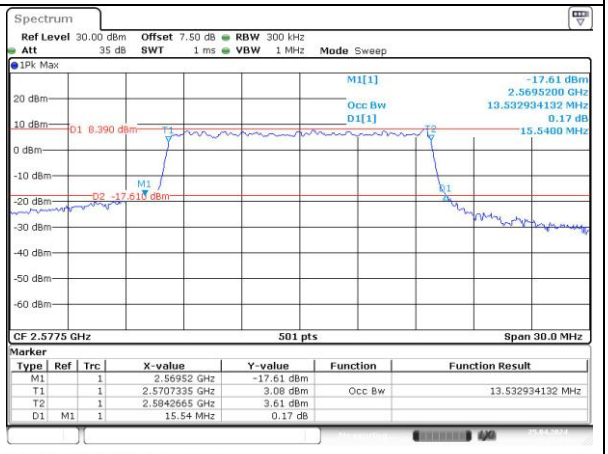
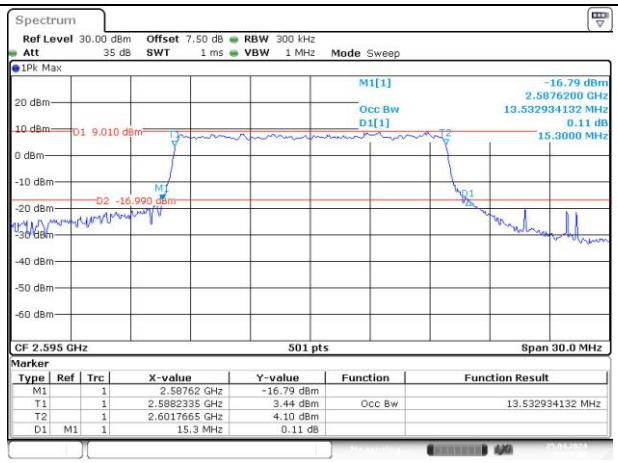
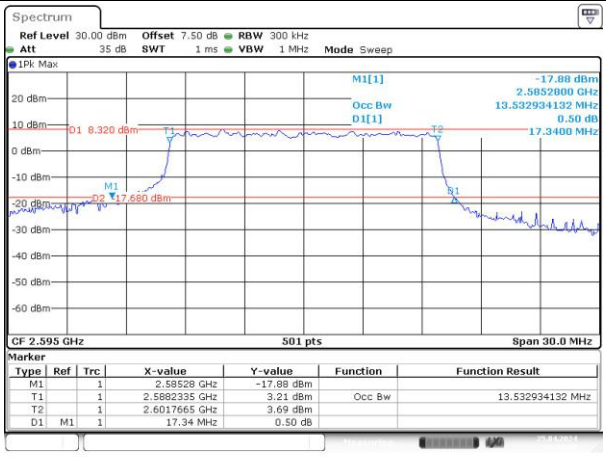
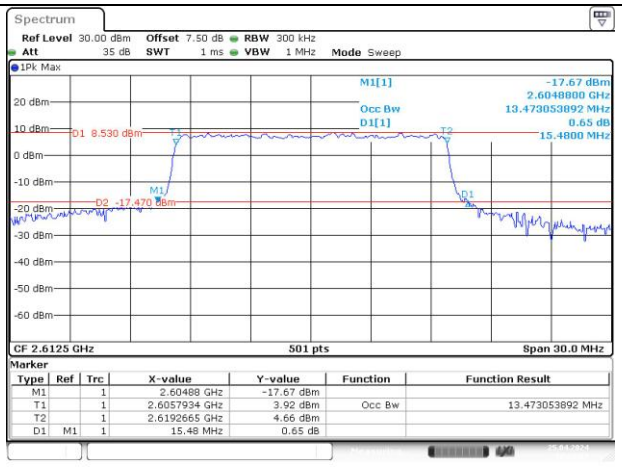
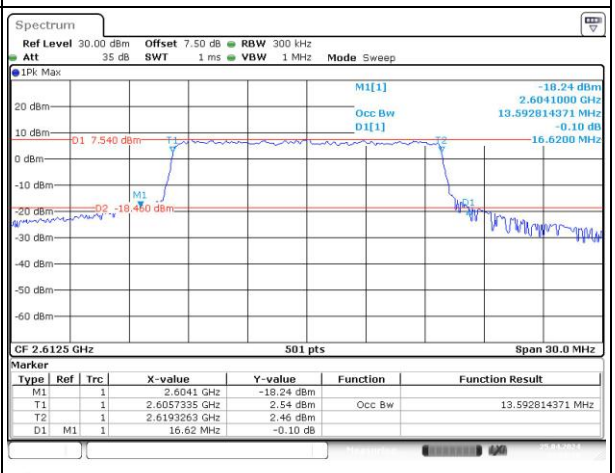
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2571.031	2570.00	2619.007	2620
	-20	3.91	2571.043	2570.00	2619.019	2620
	-10	3.91	2571.037	2570.00	2619.001	2620
	0	3.91	2571.034	2570.00	2619.016	2620
	10	3.91	2571.052	2570.00	2618.995	2620
	20	3.91	2571.058	2570.00	2619.022	2620
	30	3.91	2571.067	2570.00	2619.043	2620
	40	3.91	2571.073	2570.00	2619.046	2620
	50	3.91	2571.064	2570.00	2619.040	2620
Frequency Stability vs. Voltage	20	3.45	2571.076	2570.00	2619.028	2620
	20	4.5	2571.070	2570.00	2619.037	2620
					Result:	**Pass**

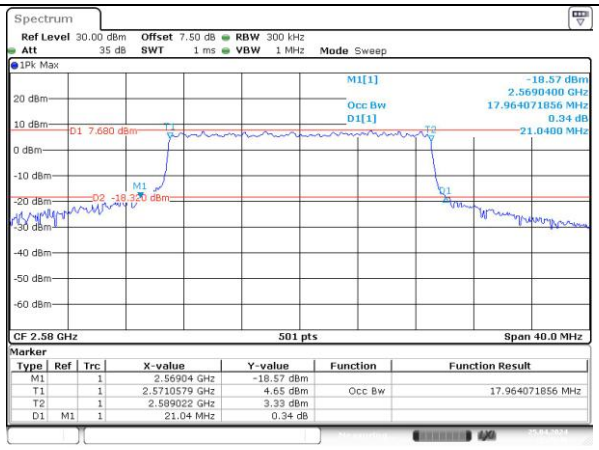
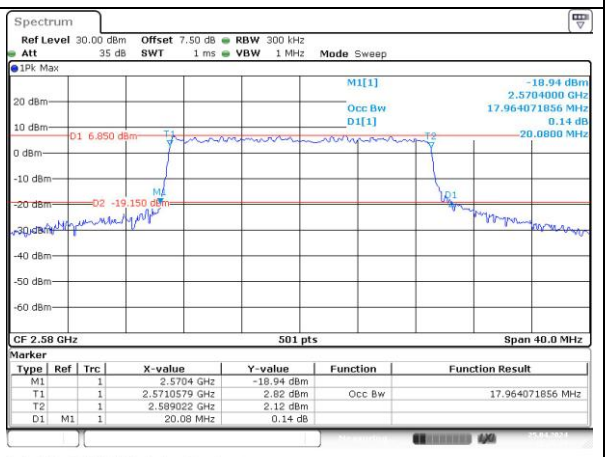
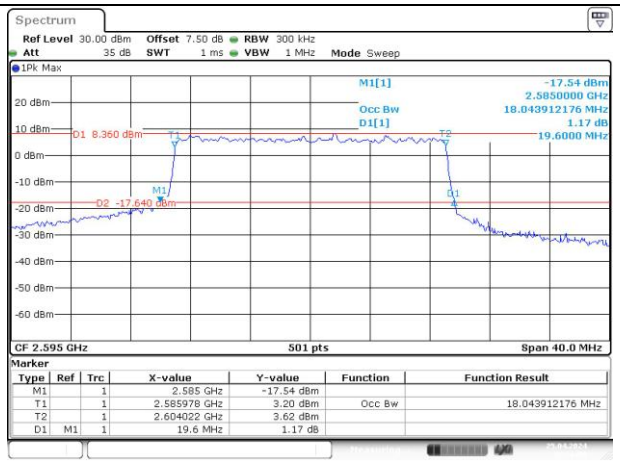
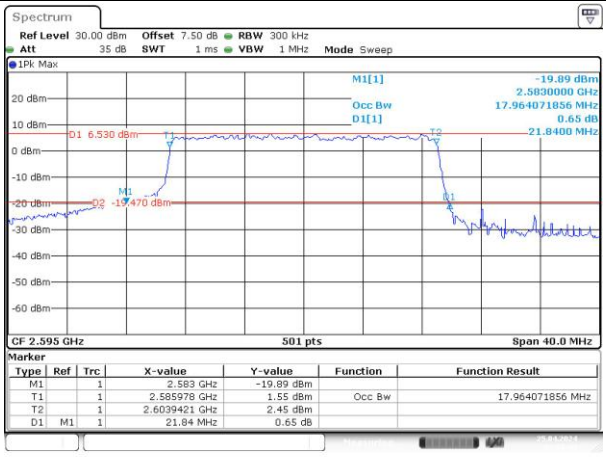
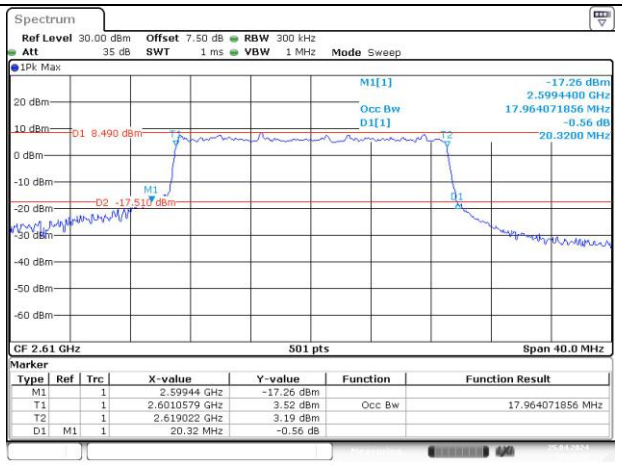
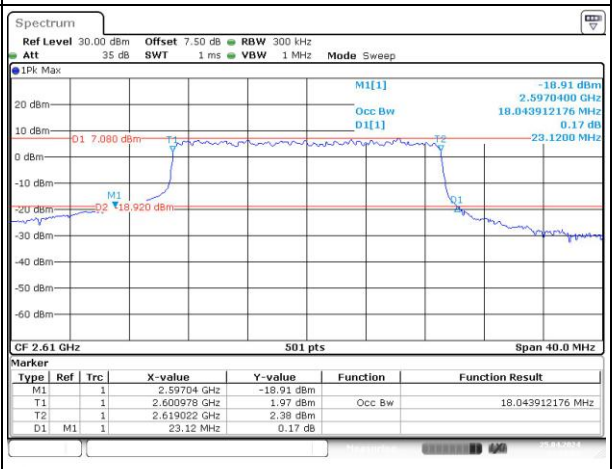
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2571.028	2570.00	2619.016	2620
	-20	3.91	2571.031	2570.00	2619.013	2620
	-10	3.91	2571.055	2570.00	2619.010	2620
	0	3.91	2571.034	2570.00	2618.998	2620
	10	3.91	2571.031	2570.00	2619.013	2620
	20	3.91	2571.058	2570.00	2619.022	2620
	30	3.91	2571.082	2570.00	2619.031	2620
	40	3.91	2571.064	2570.00	2619.037	2620
	50	3.91	2571.082	2570.00	2619.043	2620
Frequency Stability vs. Voltage	20	3.45	2571.076	2570.00	2619.043	2620
	20	4.5	2571.082	2570.00	2619.049	2620
					Result:	**Pass**

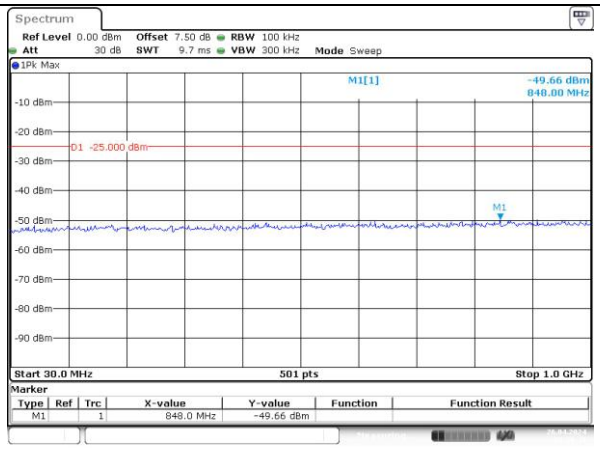
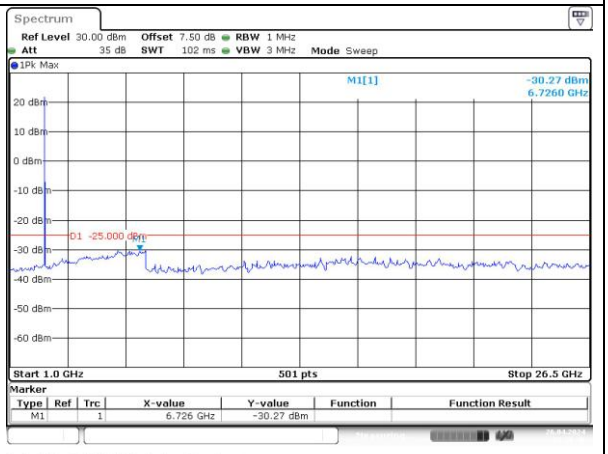
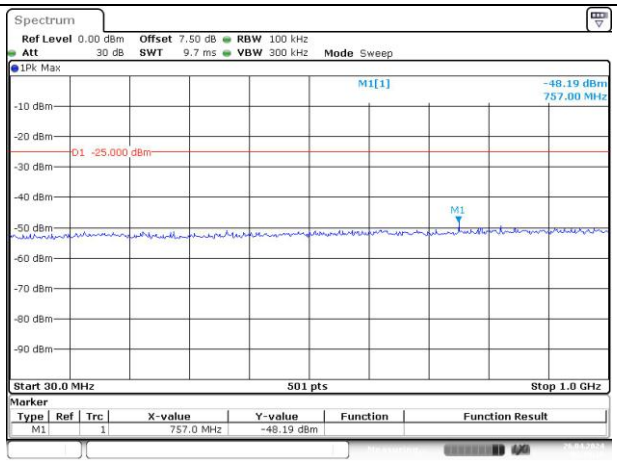
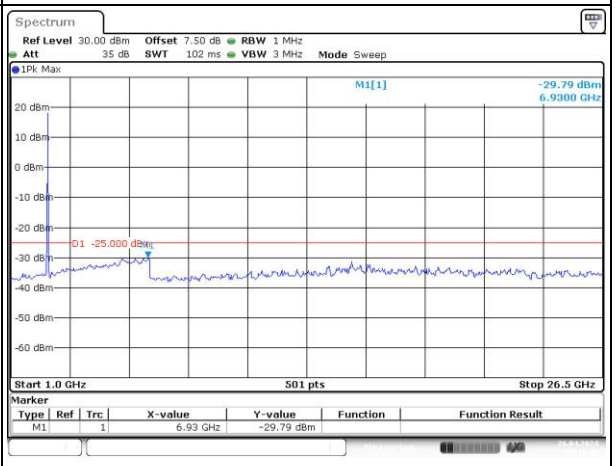
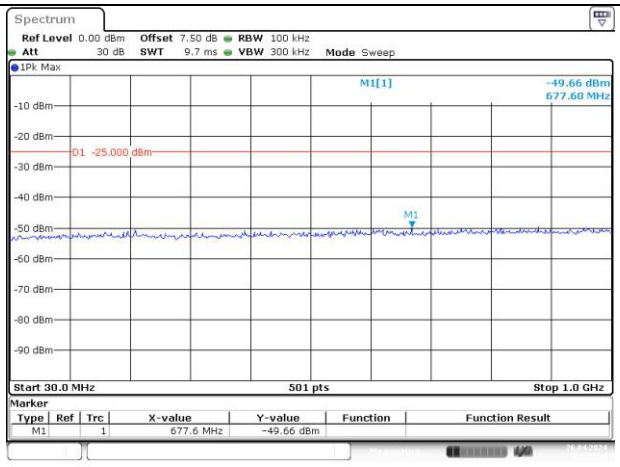
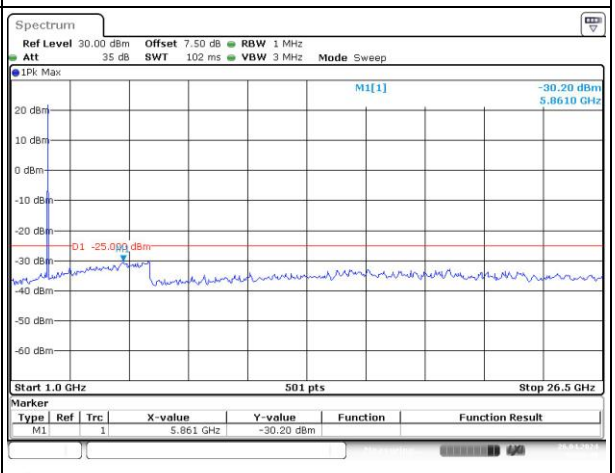
Test Plots:

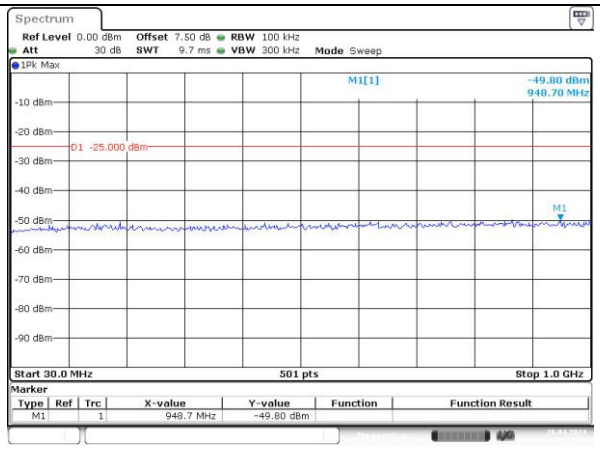
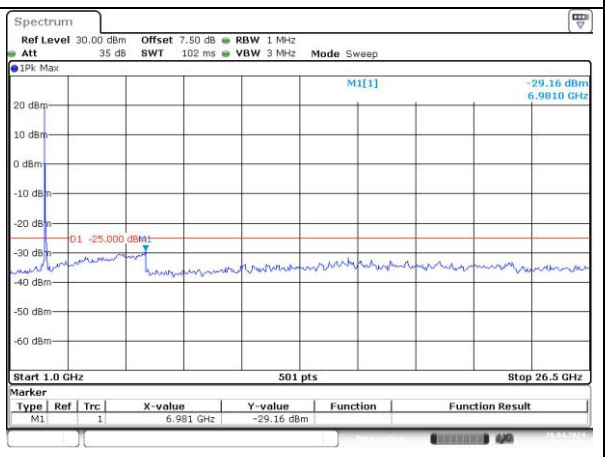
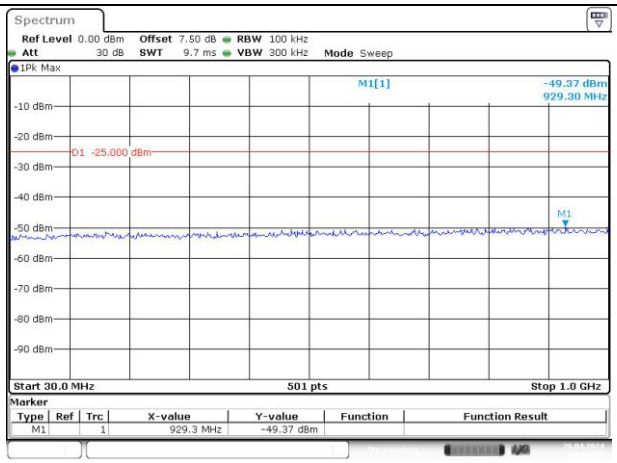
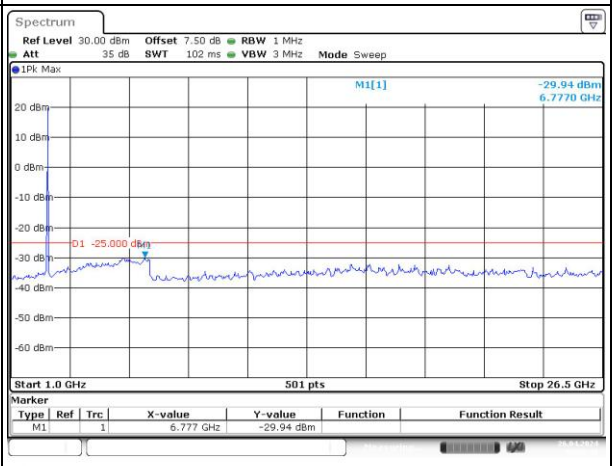
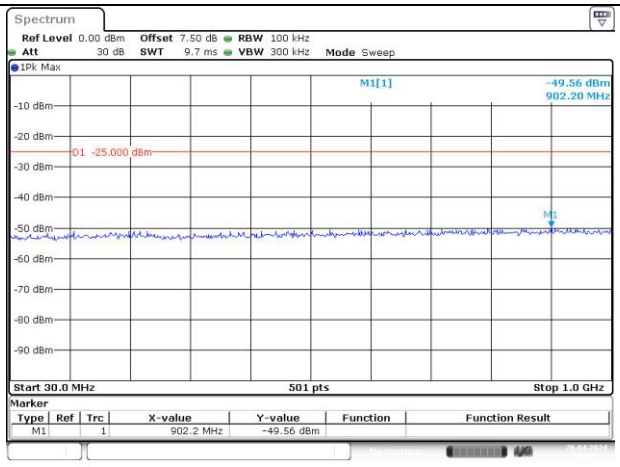
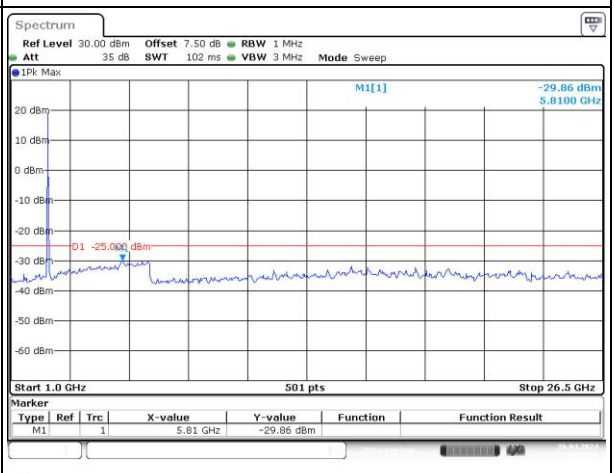
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

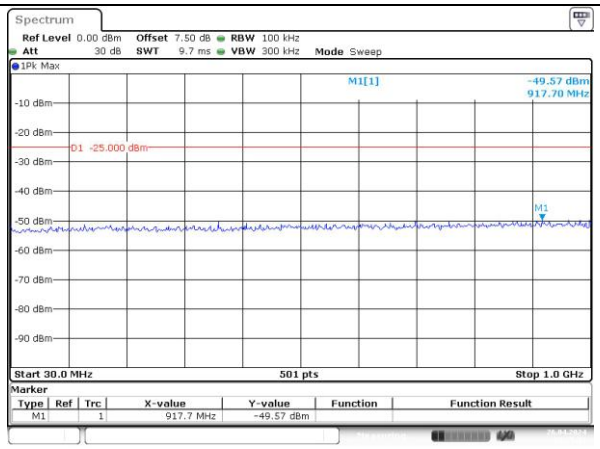
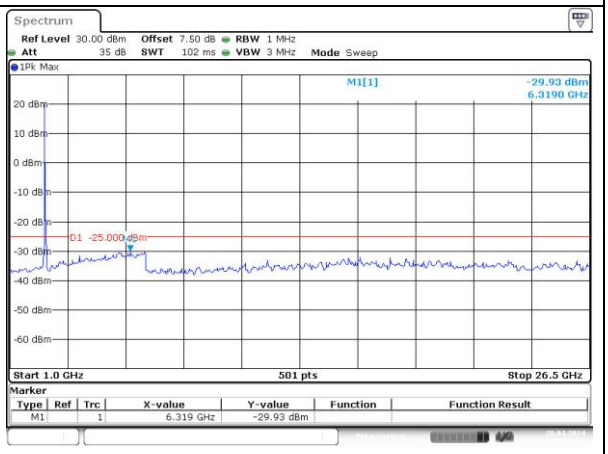
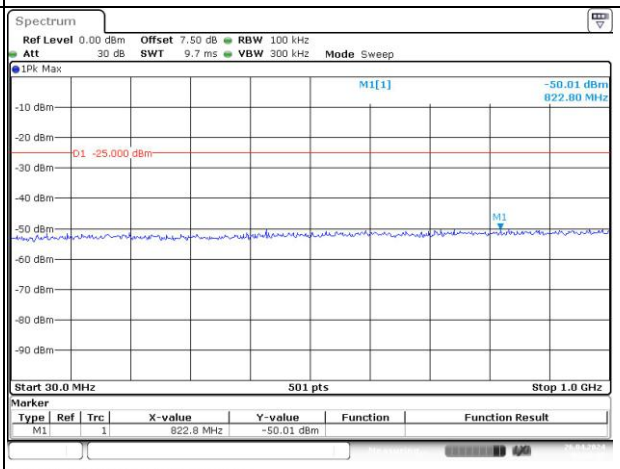
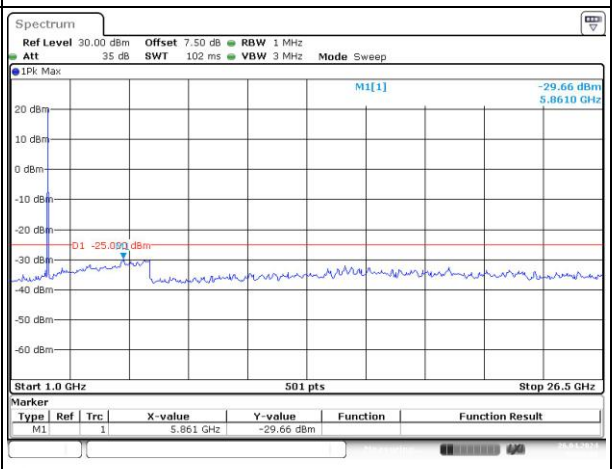
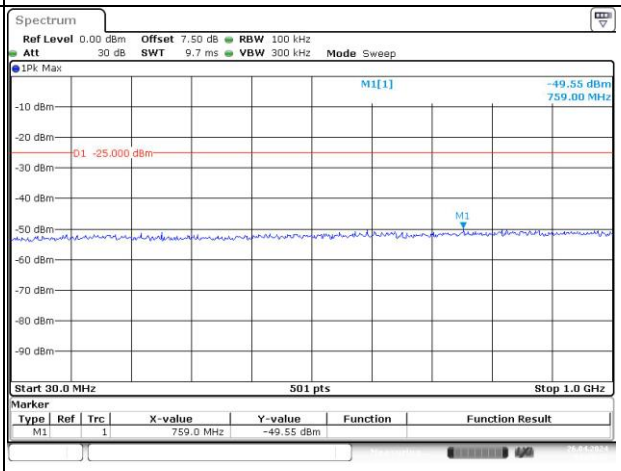
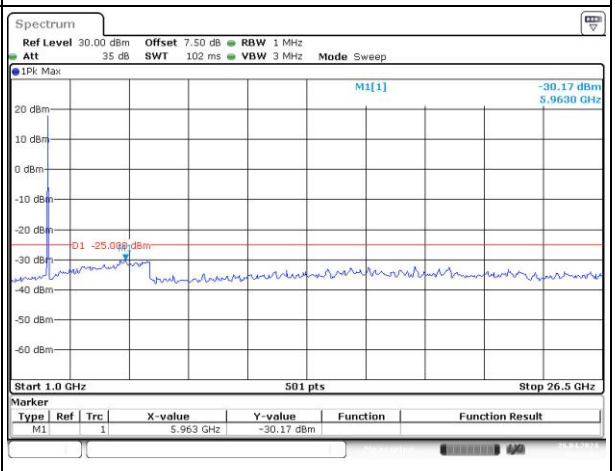
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

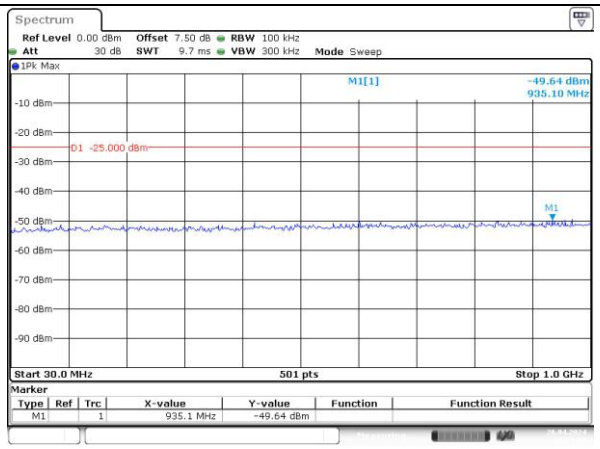
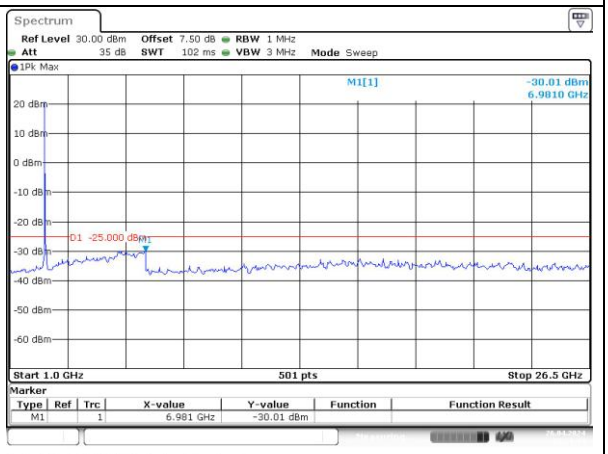
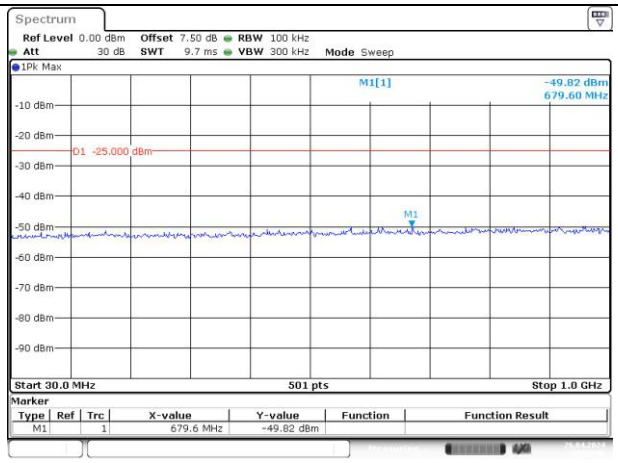
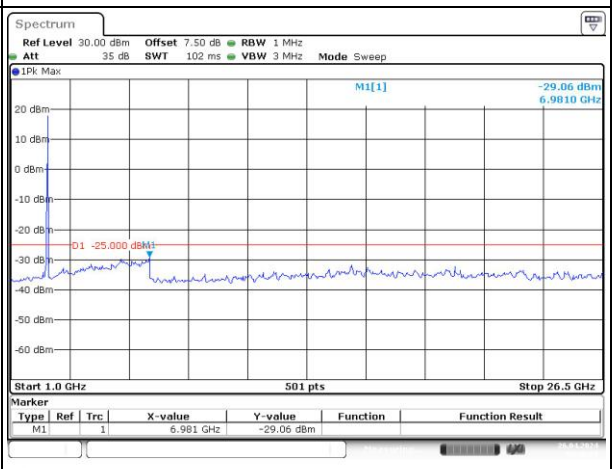
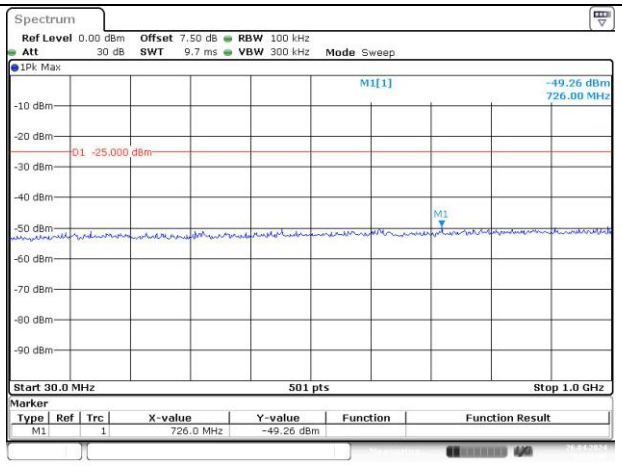
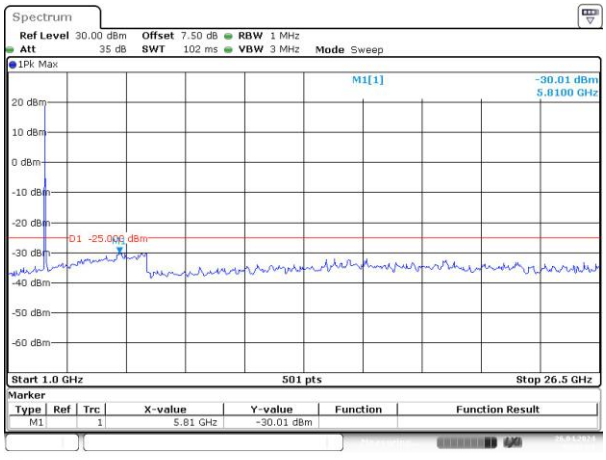
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

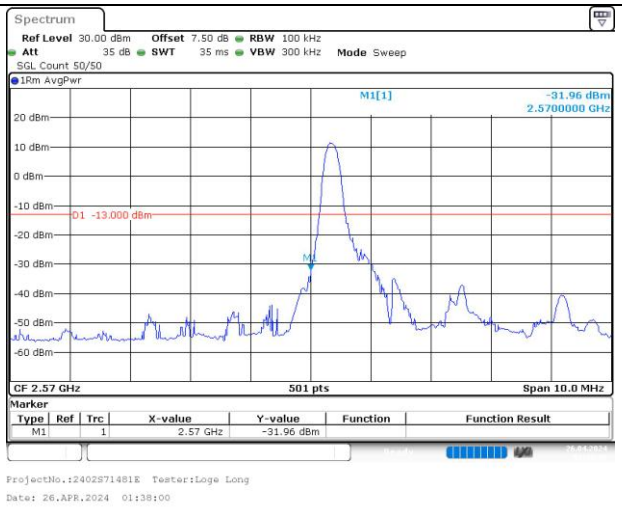
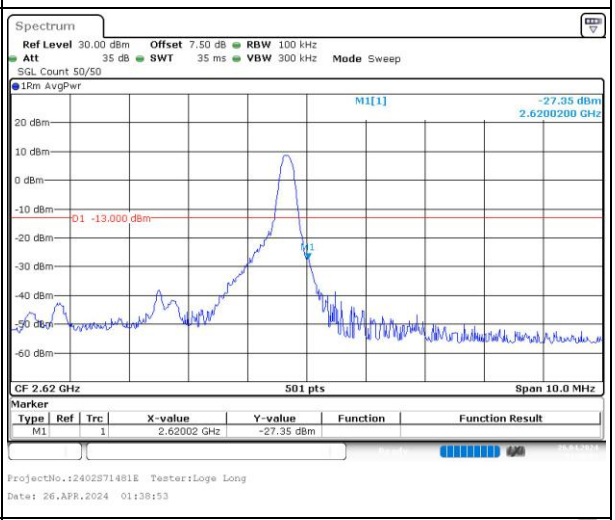
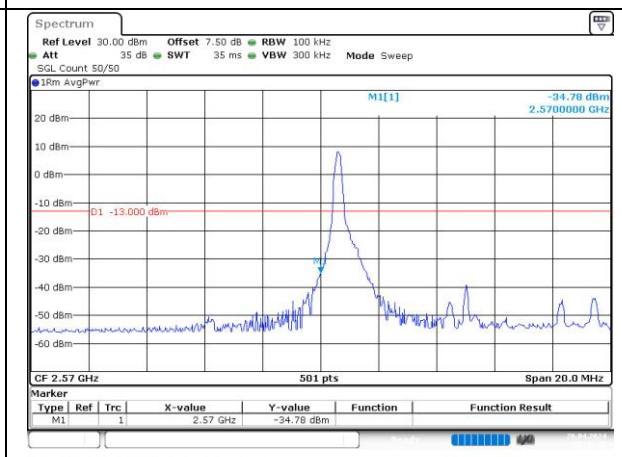
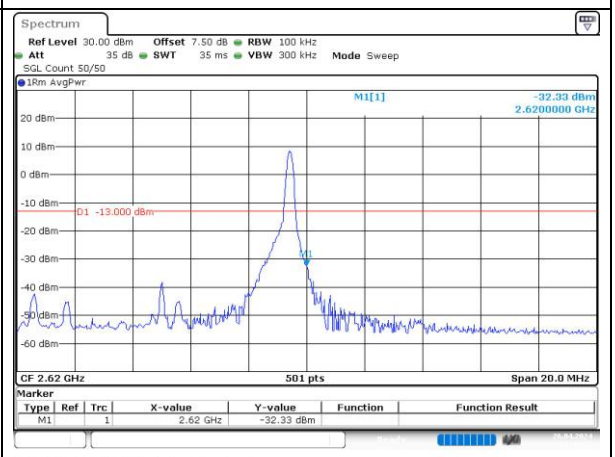
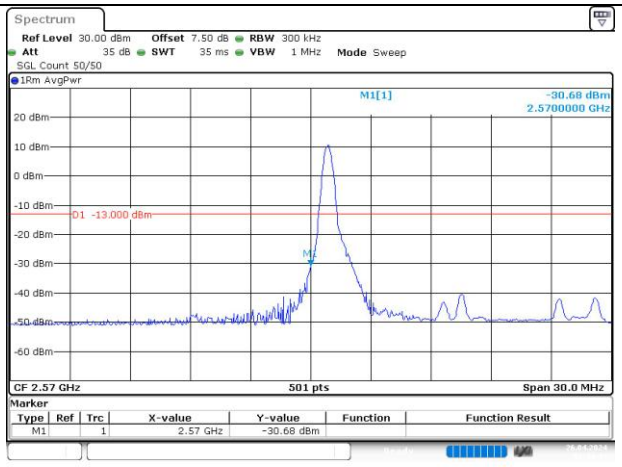
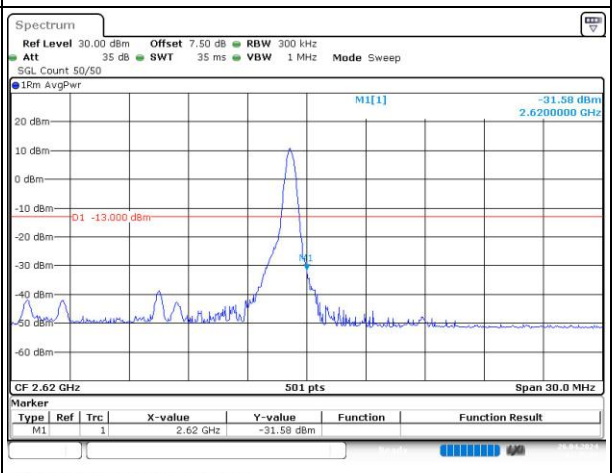
Occupied Bandwidth		
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

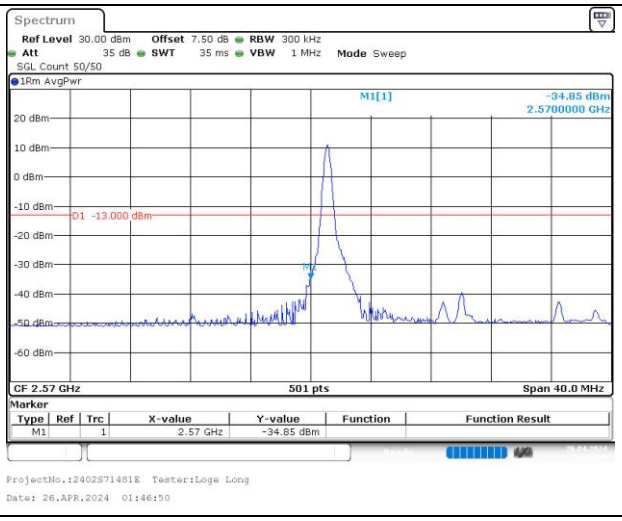
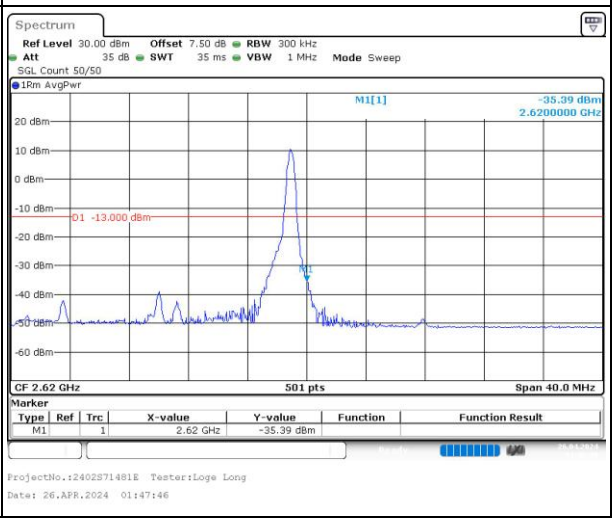
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

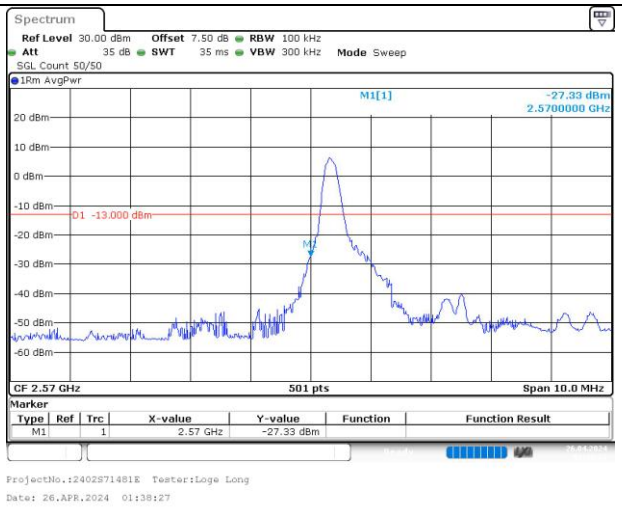
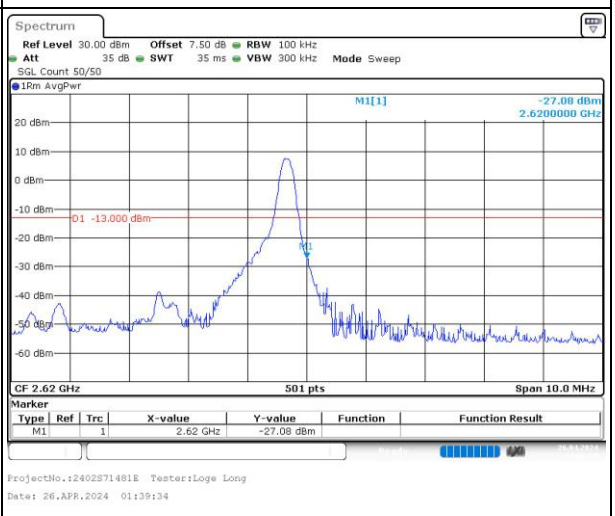
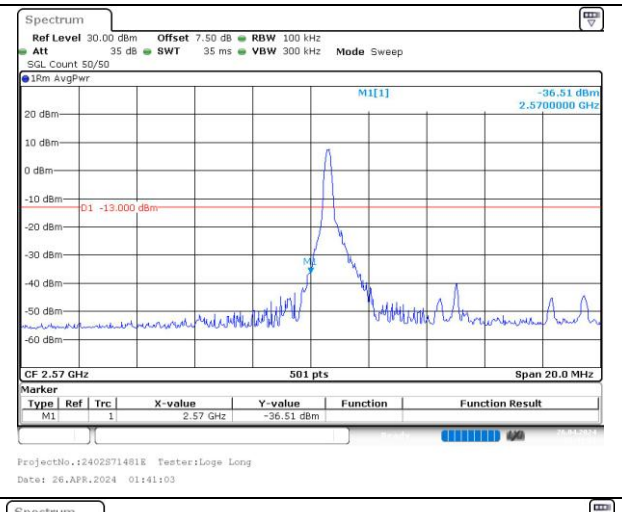
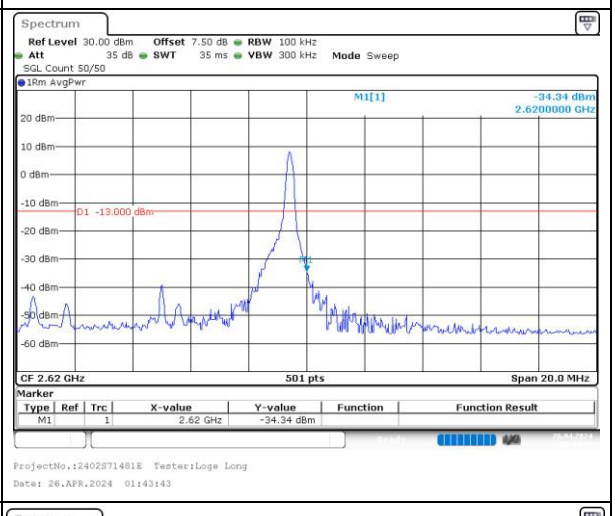
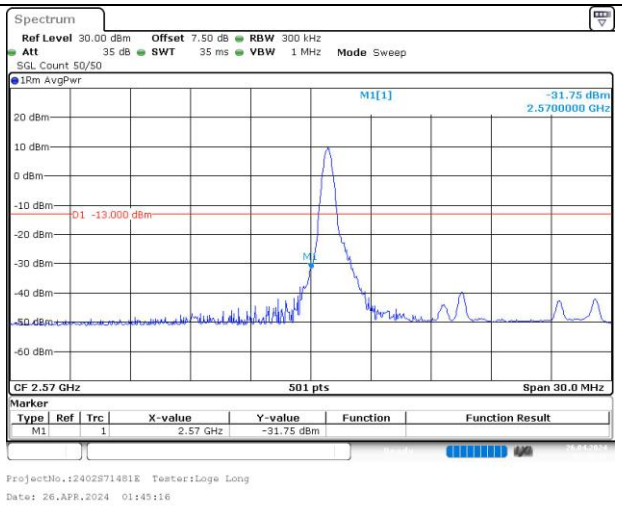
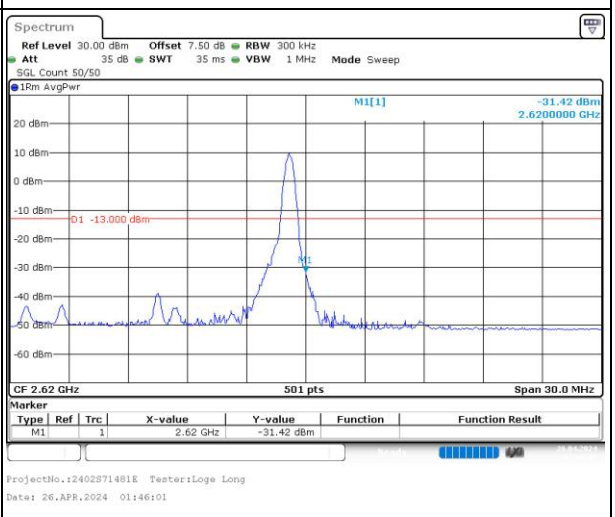
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

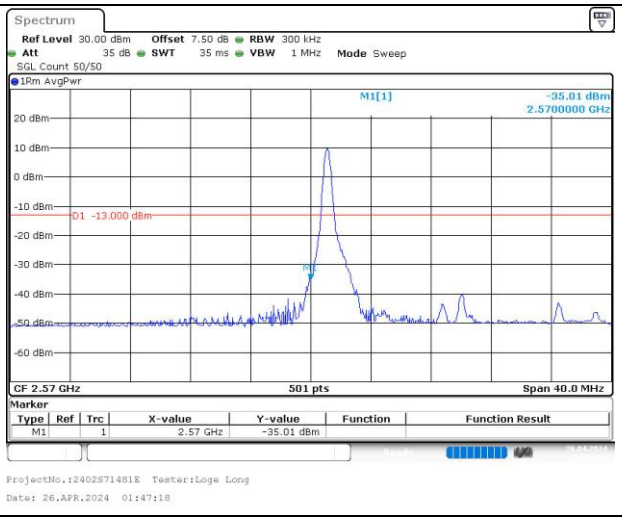
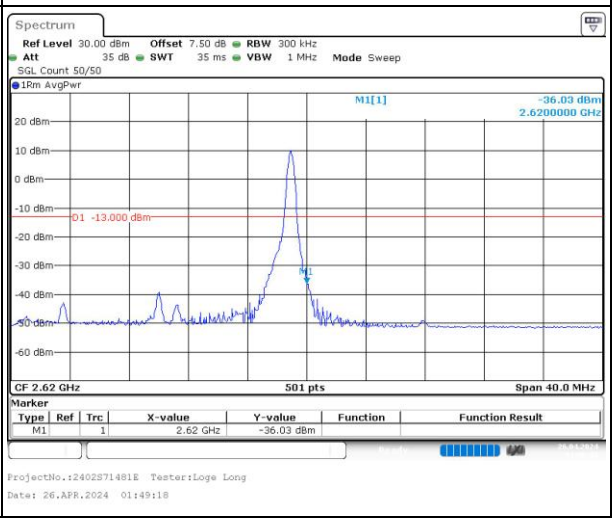
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

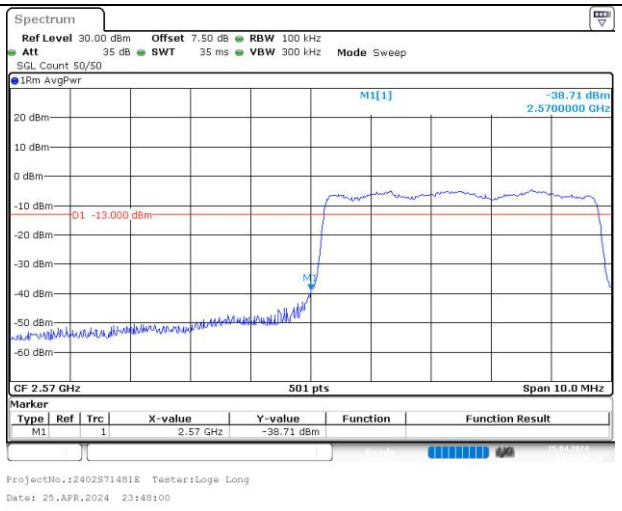
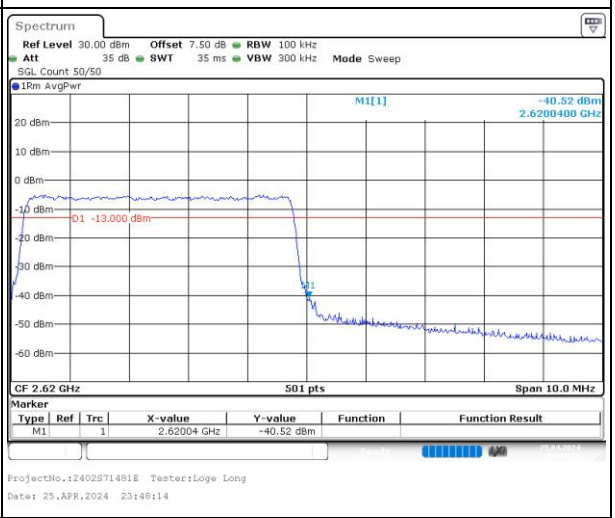
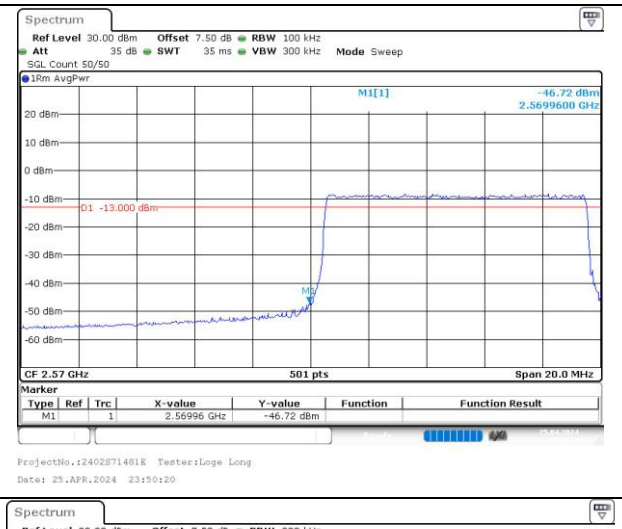
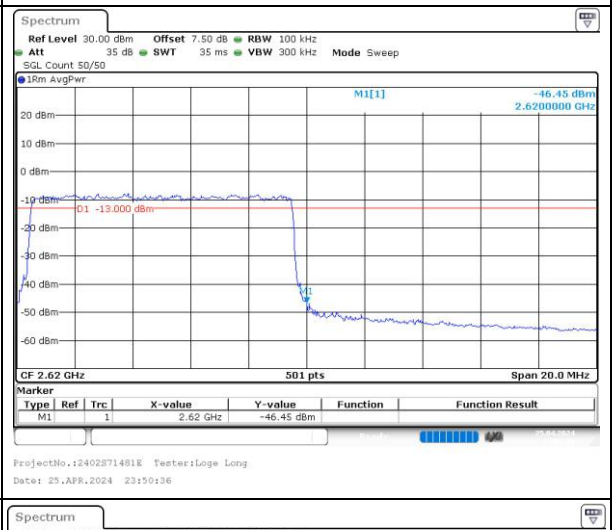
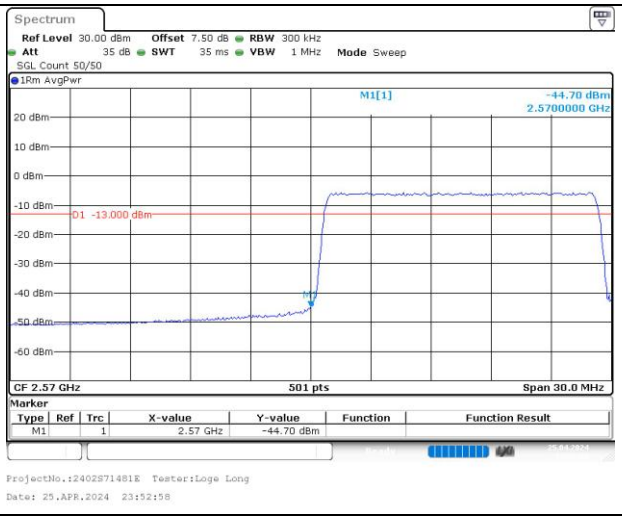
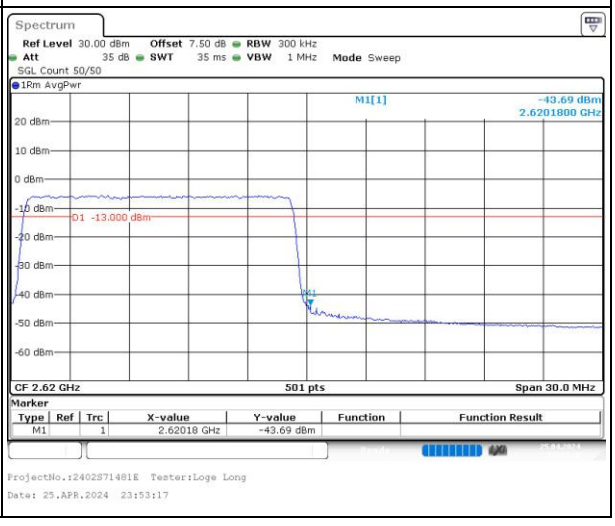
Spurious Emissions at Antenna Terminal		
Channel	**20MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

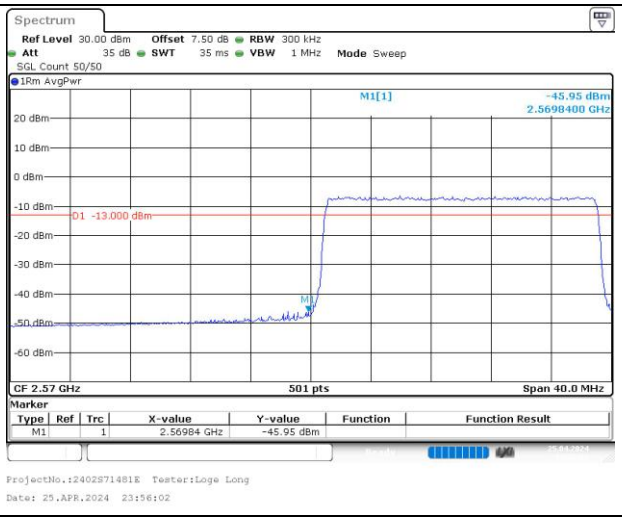
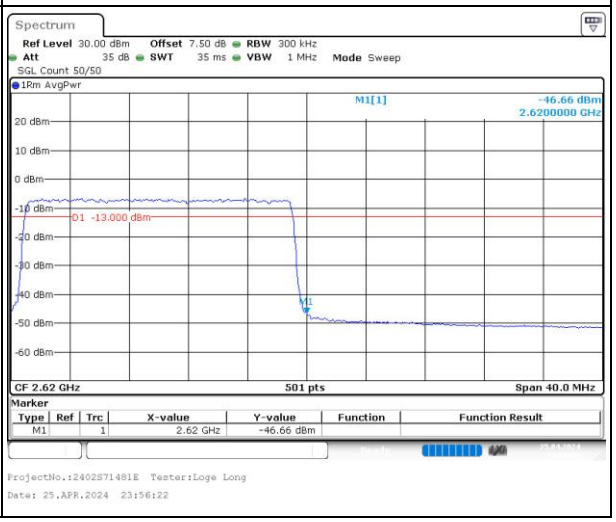
Out of band emission, Band Edge		
Mode	**Lowest-RB 1#0**	**Highest-RB 1#Max**
QPSK 5MHz		
QPSK 10MHz		
QPSK 15MHz		

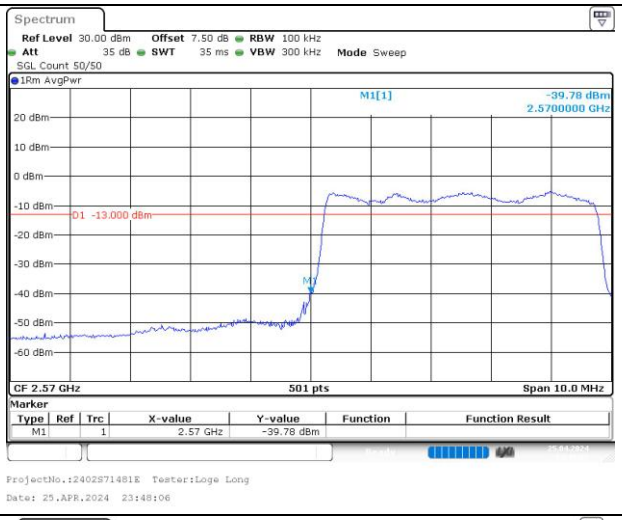
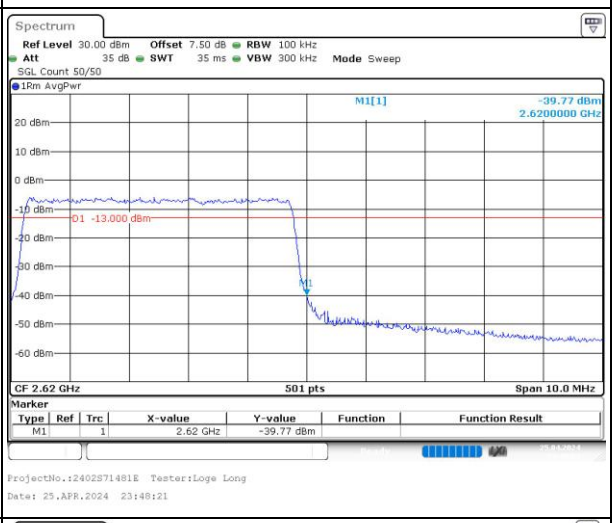
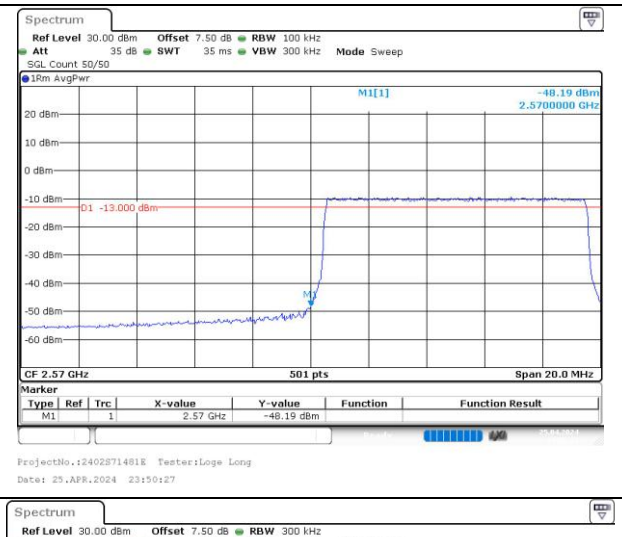
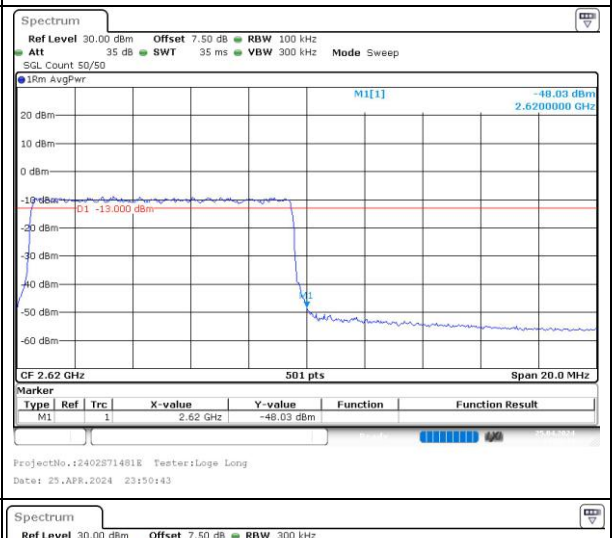
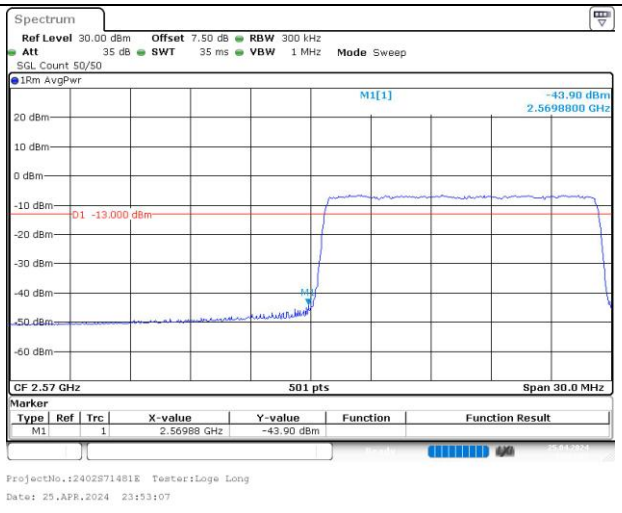
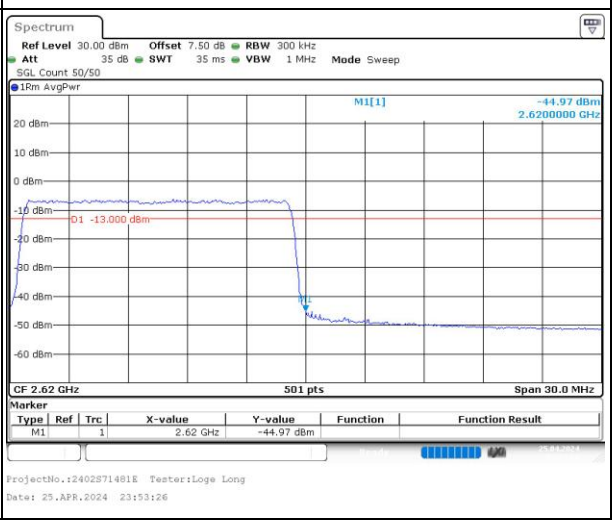
Out of band emission, Band Edge		
Mode	**Lowest-RB 1#0**	**Highest-RB 1#Max**
QPSK 20MHz		

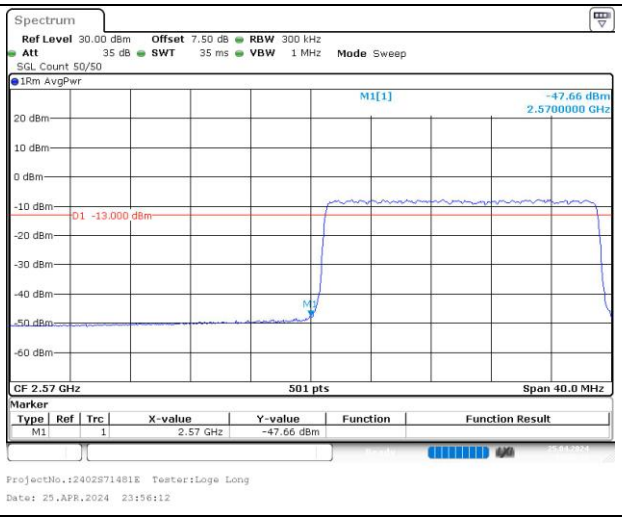
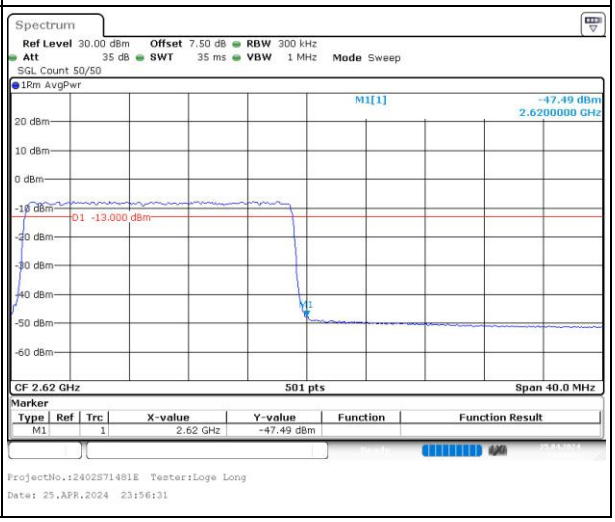
Out of band emission, Band Edge		
Mode	**Lowest-RB 1#0**	**Highest-RB 1#Max**
16QAM 5MHz		
16QAM 10MHz		
16QAM 15MHz		

Out of band emission, Band Edge		
Mode	**Lowest-RB 1#0**	**Highest-RB 1#Max**
16QAM 20MHz		

Out of band emission, Band Edge		
Mode	**Lowest-Full RB**	**Highest-Full RB**
QPSK 5MHz		
QPSK 10MHz		
QPSK 15MHz		

Out of band emission, Band Edge		
Mode	**Lowest-Full RB**	**Highest-Full RB**
QPSK 20MHz		

Out of band emission, Band Edge		
Mode	**Lowest-Full RB**	**Highest-Full RB**
16QAM 5MHz		
16QAM 10MHz		
16QAM 15MHz		

Out of band emission, Band Edge		
Mode	**Lowest-Full RB**	**Highest-Full RB**
16QAM 20MHz		

5.14 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	OSEB119574-2	Test Date:	2024/5/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Karl Liang	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	25.5	Relative Humidity: (%)	66	ATM Pressure: (kPa)	100.1

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101461	2023/11/27	2024/11/26
Micro-Coax	Coaxial Cable	UFB205A	323308-024	2024/1/2	2025/1/1
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM502	2023/9/10	2024/9/9
Minl-Clrcuits	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/2/25	2025/2/24
R&S	Wideband Radio Communication Tester	CMW500	144976	2023/10/18	2024/10/17
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2023/10/18	2024/10/17
All-sun	Clamp Meter	EM305A	8348897	2023/8/3	2024/8/2
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (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	2498.5	2593	2687.5
10MHz	2501	2593	2685
15MHz	2503.5	2593	2682.5
20MHz	2506	2593	2680

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	14.37	14.38	14.35	11.39	33
	RB1#13	14.36	14.33	14.3		
	RB1#24	14.39	14.38	14.35		
	RB15#0	13.35	13.35	13.35		
	RB15#10	13.31	13.27	13.3		
	RB25#0	13.32	13.29	13.34		
5MHz 16QAM	RB1#0	13.58	13.36	13.39	10.64	33
	RB1#13	13.57	13.35	13.37		
	RB1#24	13.64	13.33	13.37		
	RB15#0	12.41	12.35	12.39		
	RB15#10	12.41	12.24	12.37		
	RB25#0	12.35	12.39	12.41		
10MHz QPSK	RB1#0	14.32	14.41	14.33	11.46	33
	RB1#25	14.43	14.46	14.35		
	RB1#49	14.32	14.38	14.3		
	RB25#0	13.21	13.36	13.25		
	RB25#25	13.35	13.37	13.27		
	RB50#0	13.33	13.38	13.32		
10MHz 16QAM	RB1#0	13.5	13.31	13.39	10.61	33
	RB1#25	13.61	13.31	13.42		
	RB1#49	13.55	13.29	13.33		
	RB25#0	12.33	12.44	12.36		
	RB25#25	12.38	12.47	12.34		
	RB50#0	12.34	12.42	12.32		
15MHz QPSK	RB1#0	14.25	14.32	14.29	11.38	33
	RB1#38	14.32	14.38	14.3		
	RB1#74	14.22	14.29	14.17		
	RB36#0	13.2	13.27	13.25		
	RB36#39	13.25	13.26	13.28		
	RB75#0	13.32	13.3	13.26		
15MHz 16QAM	RB1#0	13.42	13.25	13.5	10.53	33
	RB1#38	13.52	13.32	13.53		
	RB1#74	13.47	13.24	13.44		
	RB36#0	12.24	12.3	12.36		
	RB36#39	12.3	12.32	12.39		
	RB75#0	12.25	12.34	12.3		

20MHz QPSK	RB1#0	14.19	14.28	14.38	11.48	33
	RB1#50	14.34	14.41	14.48		
	RB1#99	14.28	14.3	14.33		
	RB50#0	13.22	13.37	13.35		
	RB50#50	13.34	13.33	13.32		
	RB100#0	13.3	13.36	13.32		
20MHz 16QAM	RB1#0	13.29	13.24	13.5	10.63	33
	RB1#50	13.41	13.37	13.63		
	RB1#99	13.32	13.22	13.49		
	RB50#0	12.23	12.45	12.4		
	RB50#50	12.35	12.43	12.38		
	RB100#0	12.32	12.37	12.38		
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	9.39	10.03	10.14	13
	RB100#0	8.61	8.64	8.64	13
20MHz 16QAM	RB1#0	10.49	10.75	10.64	13
	RB100#0	10.09	10.09	10.12	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	4.491	4.511	4.511	5	5.1	5.14
5MHz 16QAM	4.491	4.491	4.511	5	4.96	4.96
10MHz QPSK	8.982	8.942	8.942	9.76	10.04	9.68
10MHz 16QAM	8.982	8.942	8.942	9.52	9.56	9.64
15MHz QPSK	13.533	13.473	13.473	15.9	15.48	16.5
15MHz 16QAM	13.533	13.593	13.533	15.9	15.06	15.72
20MHz QPSK	17.964	17.964	17.964	19.52	20.24	19.84
20MHz 16QAM	17.964	18.044	17.964	20.72	21.76	19.92
Note: The test plots please refer to the Plots of Occupied Bandwidth						

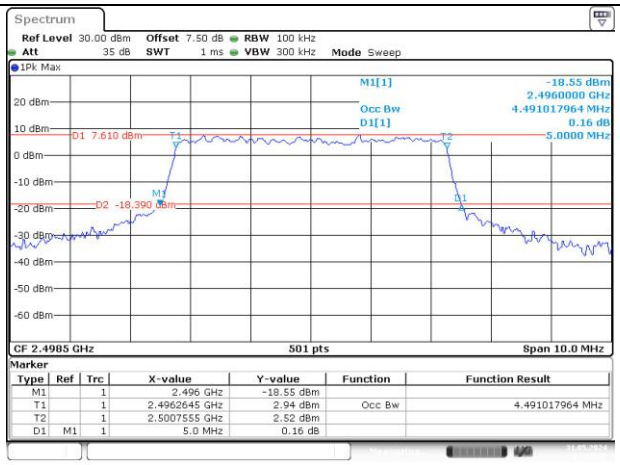
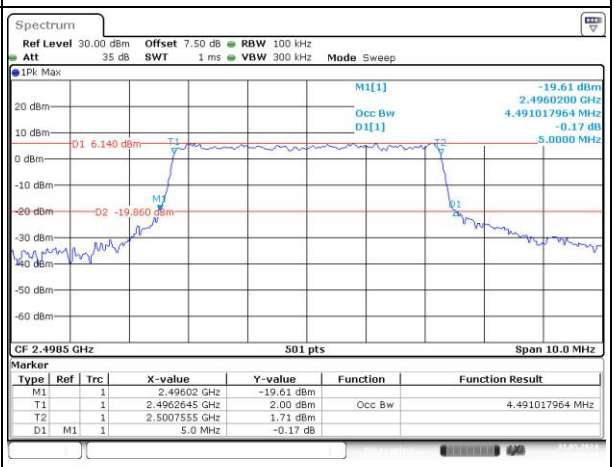
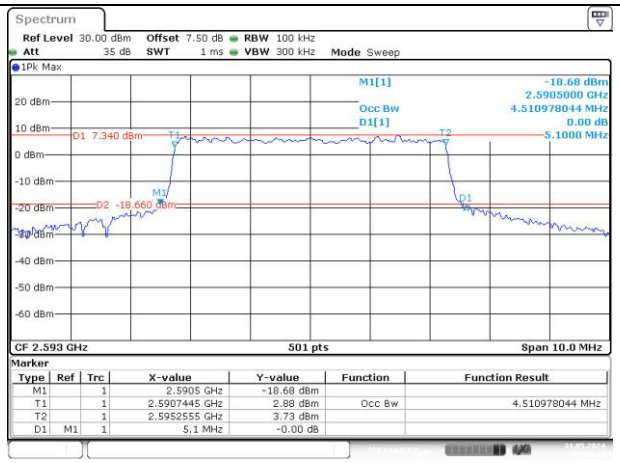
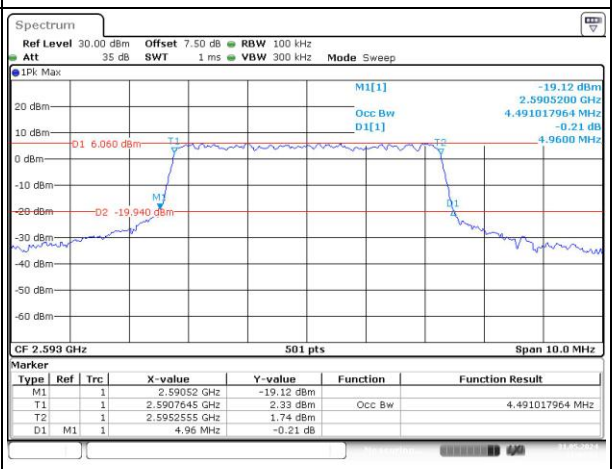
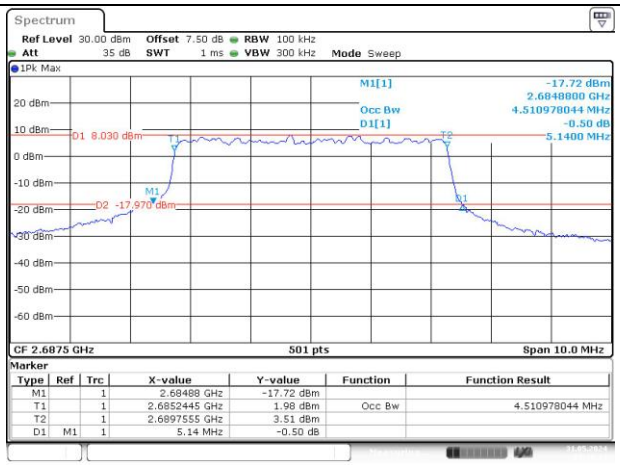
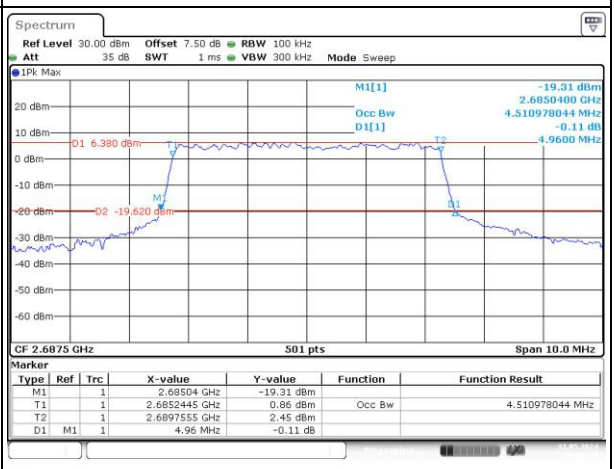
FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal	
Result:	**Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

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 (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2497.010	2496.00	2689.010	2690
	-20	3.91	2497.034	2496.00	2689.013	2690
	-10	3.91	2497.037	2496.00	2689.016	2690
	0	3.91	2497.055	2496.00	2689.019	2690
	10	3.91	2497.037	2496.00	2688.995	2690
	20	3.91	2497.058	2496.00	2689.022	2690
	30	3.91	2497.073	2496.00	2689.025	2690
	40	3.91	2497.061	2496.00	2689.046	2690
	50	3.91	2497.070	2496.00	2689.031	2690
Frequency Stability vs. Voltage	20	3.45	2497.076	2496.00	2689.031	2690
	20	4.5	2497.082	2496.00	2689.037	2690
					Result:	**Pass**

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.91	2497.019	2496.00	2689.010	2690
	-20	3.91	2497.031	2496.00	2688.998	2690
	-10	3.91	2497.049	2496.00	2689.013	2690
	0	3.91	2497.049	2496.00	2689.013	2690
	10	3.91	2497.043	2496.00	2689.004	2690
	20	3.91	2497.058	2496.00	2689.022	2690
	30	3.91	2497.079	2496.00	2689.049	2690
	40	3.91	2497.073	2496.00	2689.025	2690
	50	3.91	2497.067	2496.00	2689.025	2690
Frequency Stability vs. Voltage	20	3.45	2497.064	2496.00	2689.040	2690
	20	4.5	2497.085	2496.00	2689.040	2690
					Result:	**Pass**

Test Plots:

Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest