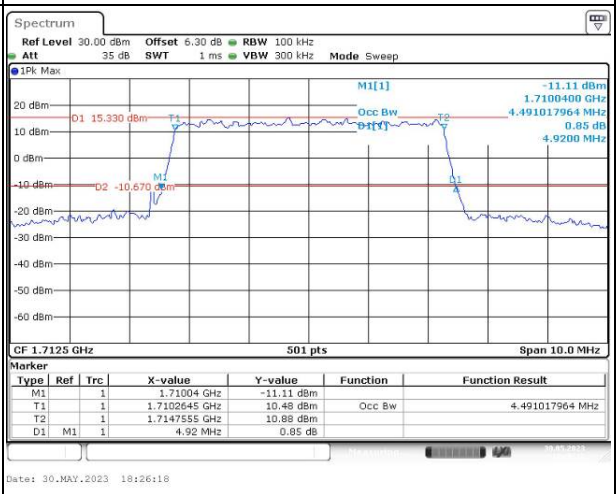
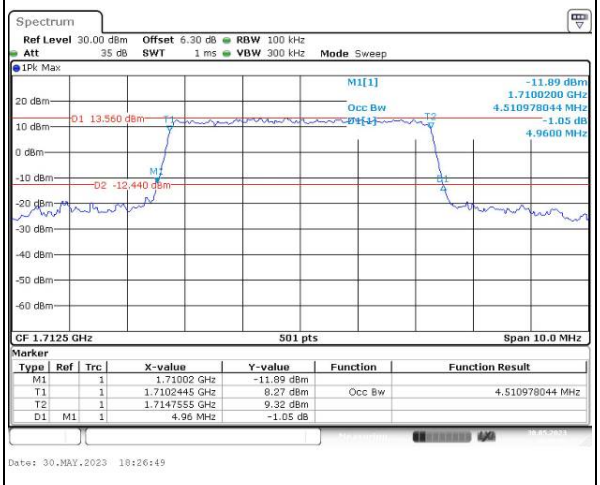
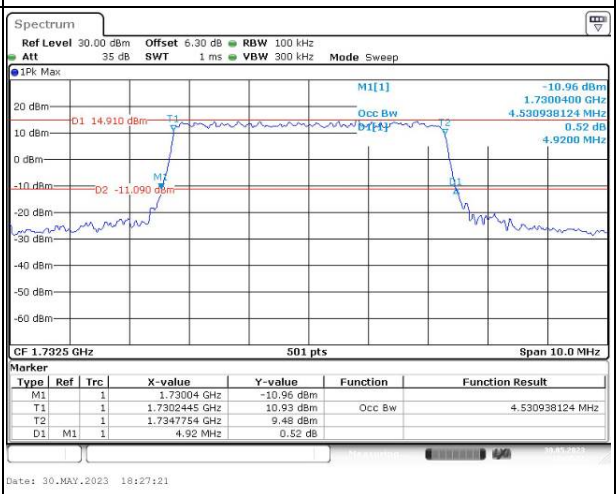
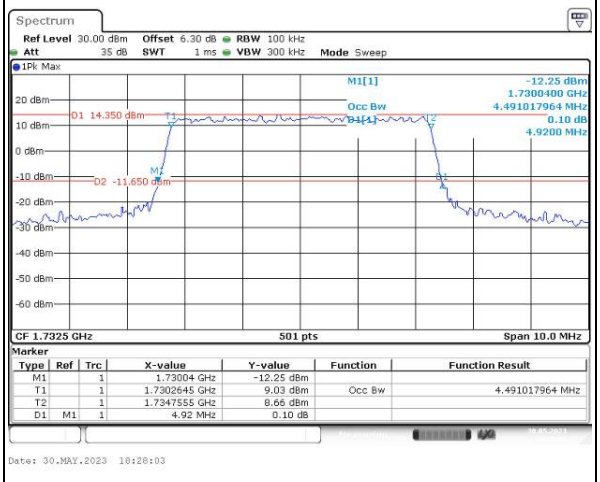
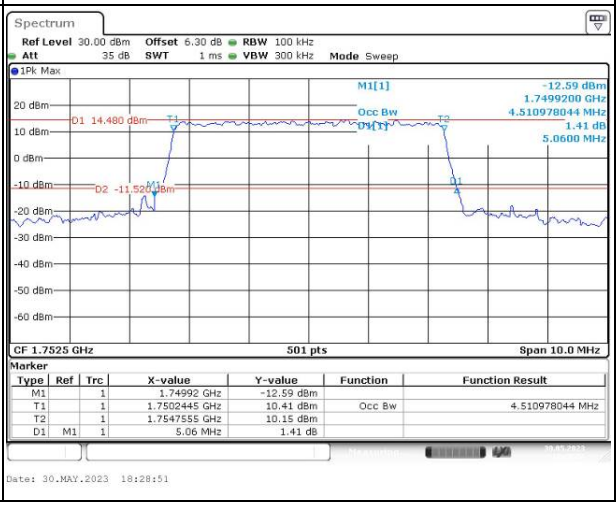
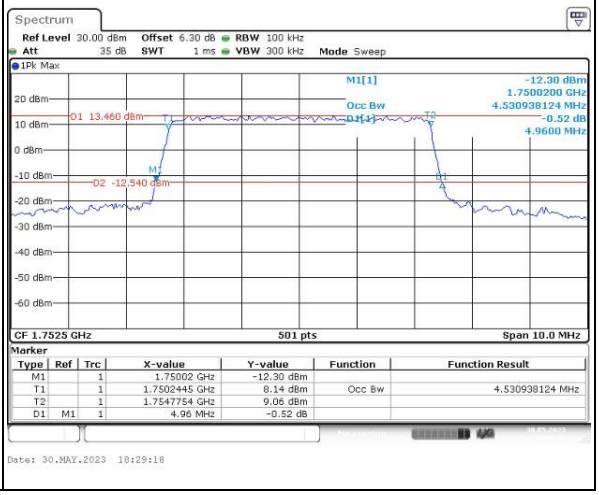
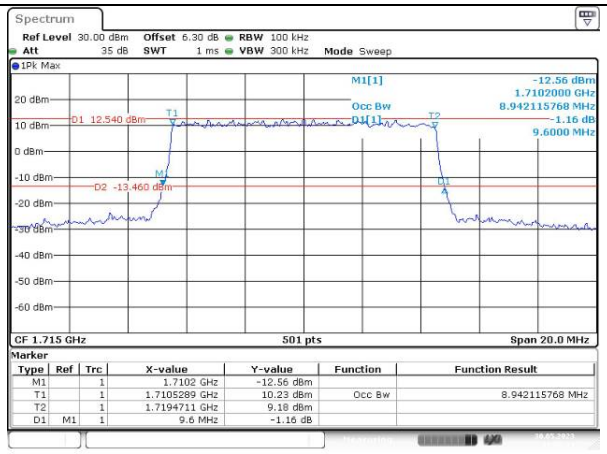
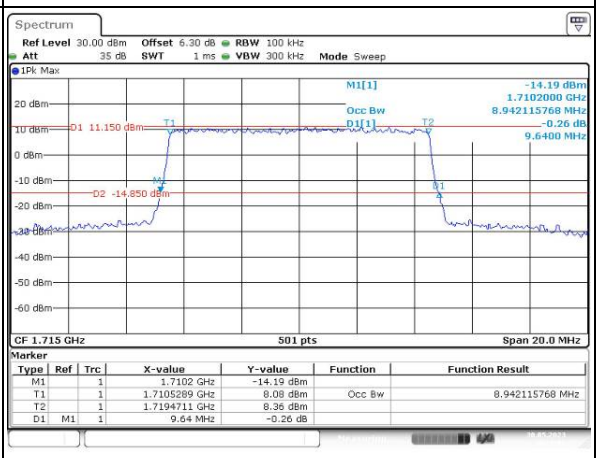
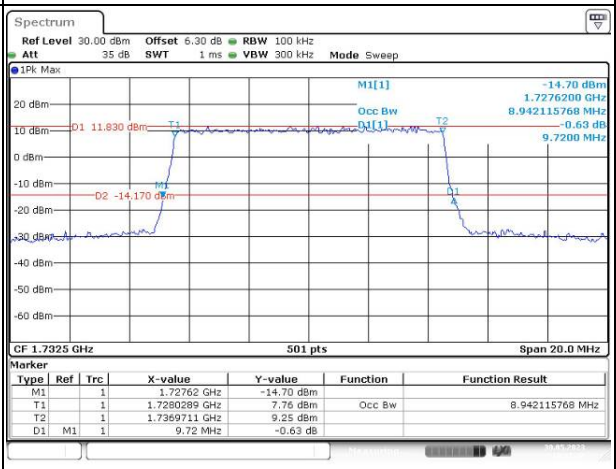
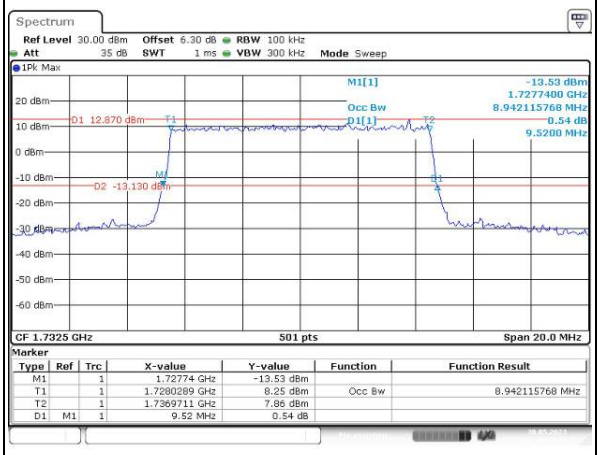
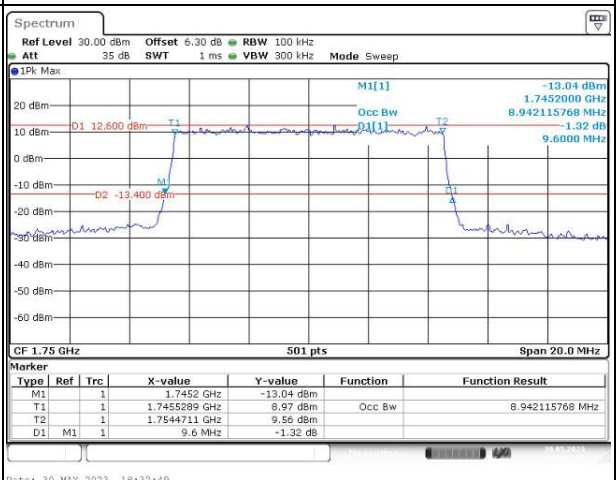
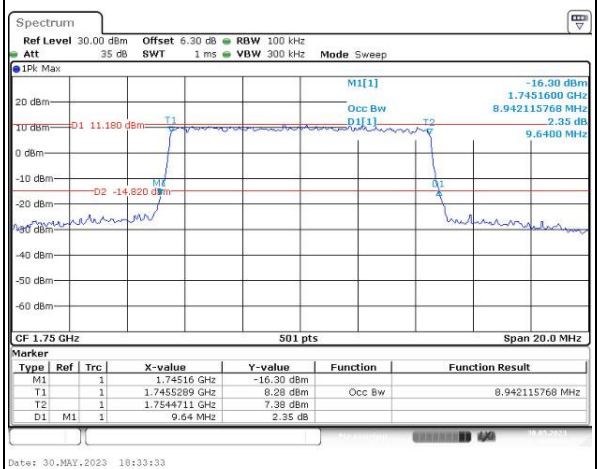
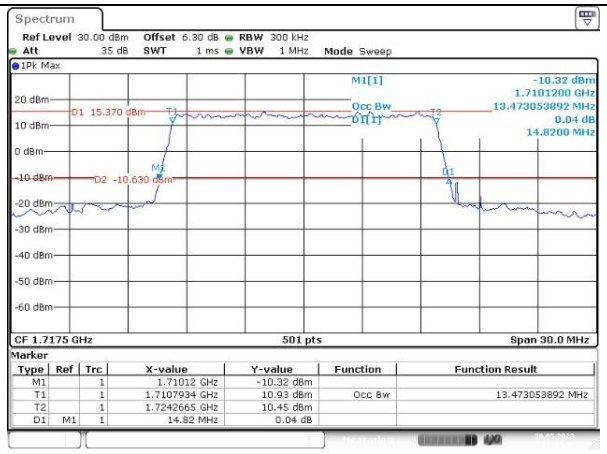
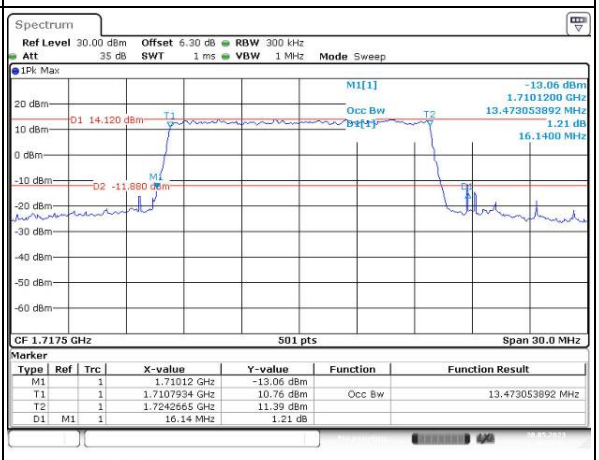
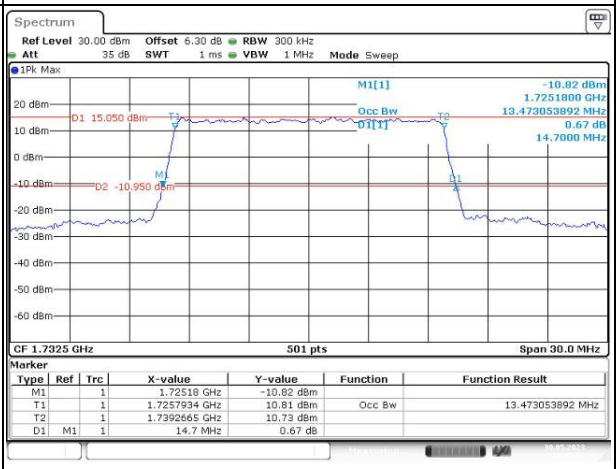
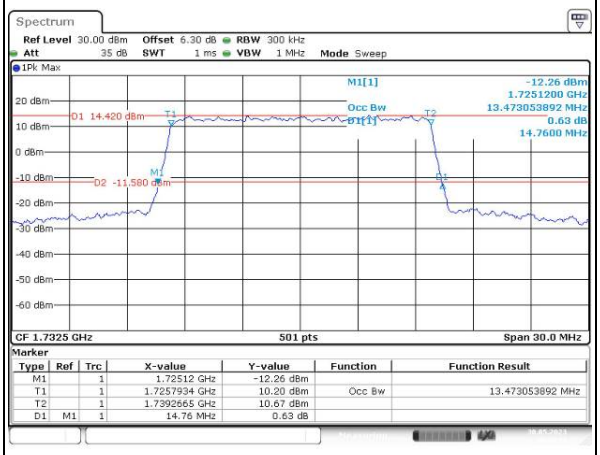
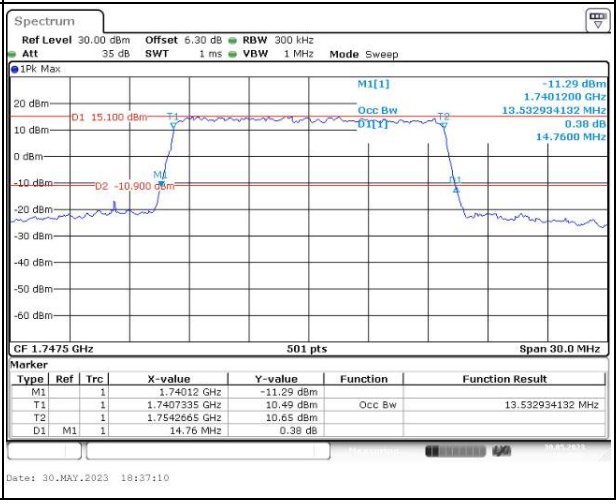
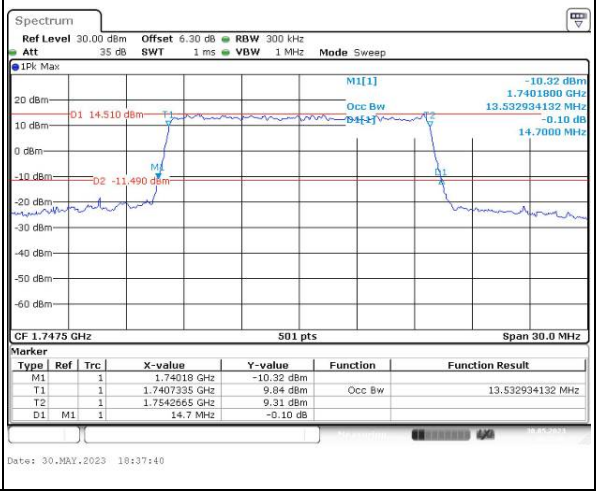
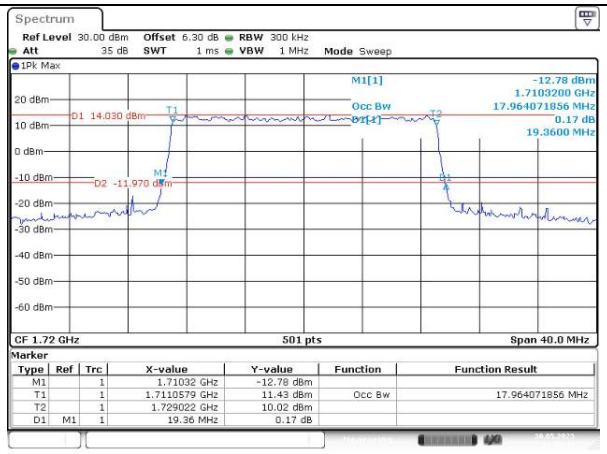
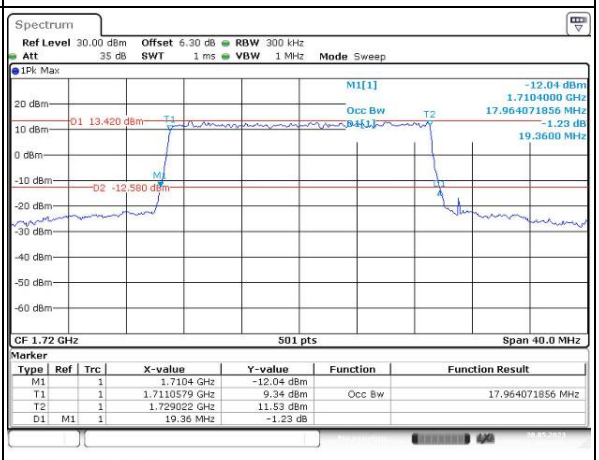
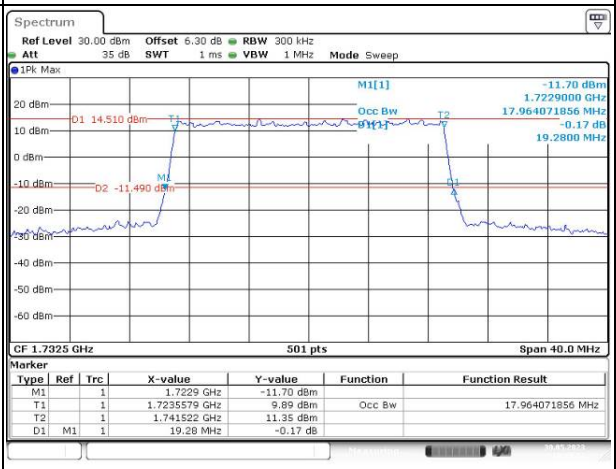
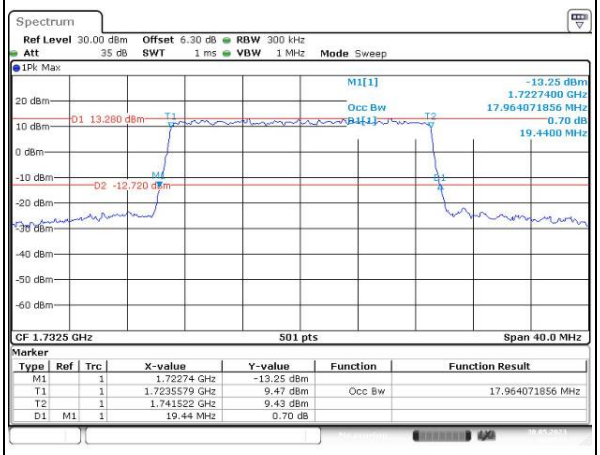
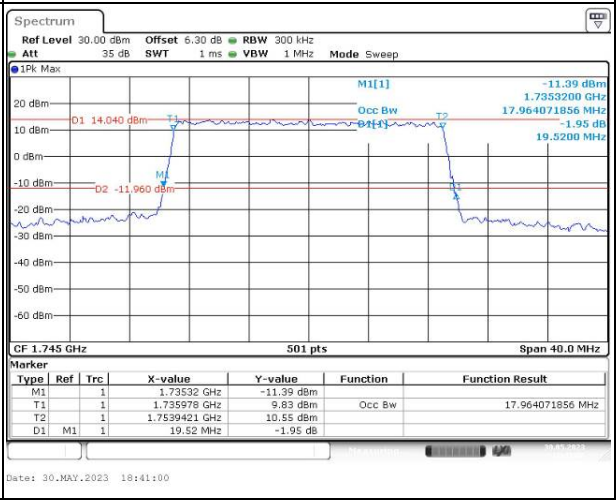
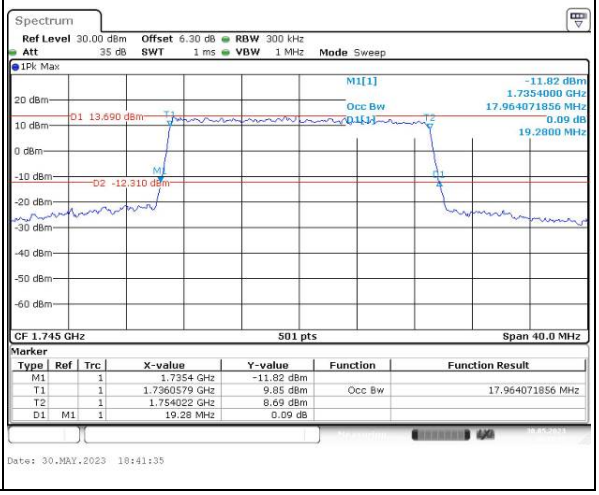
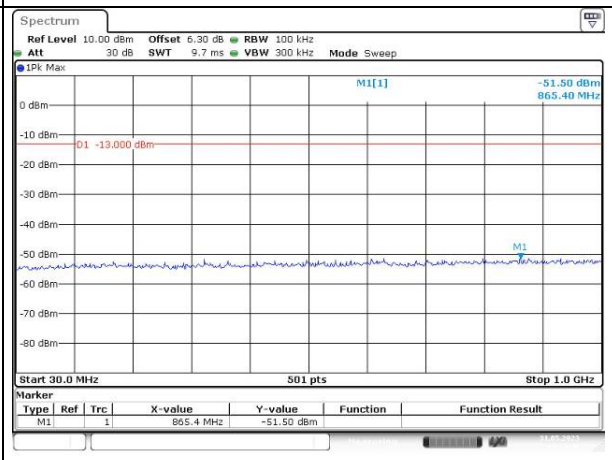
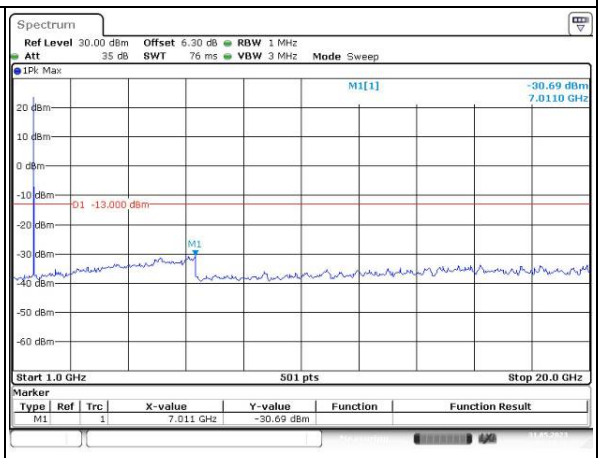
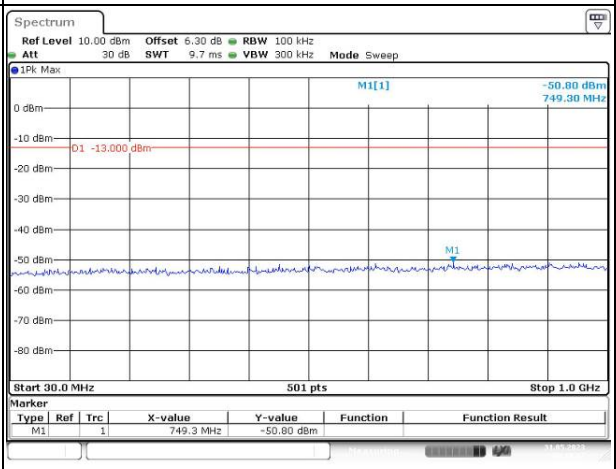
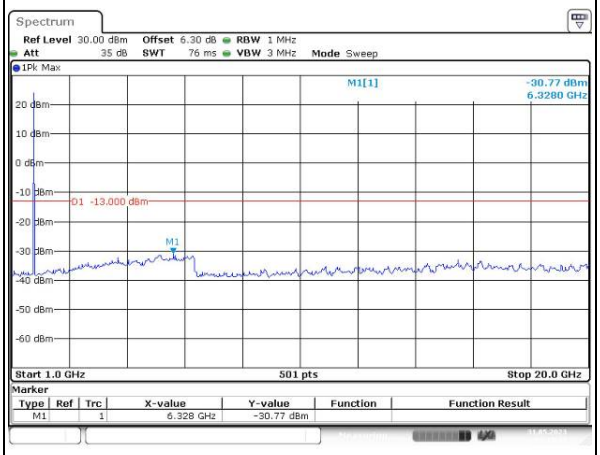
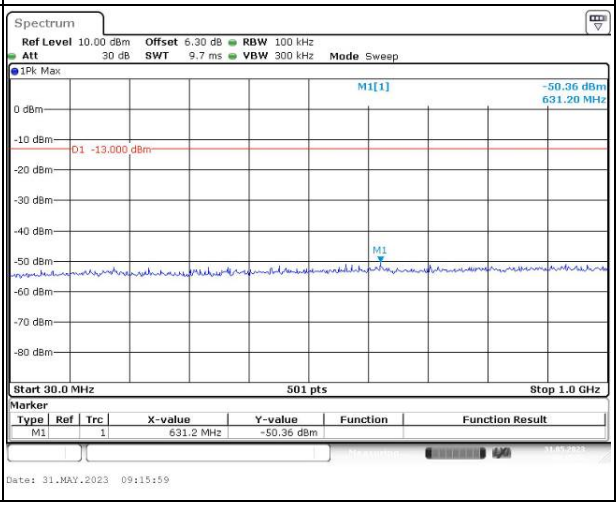
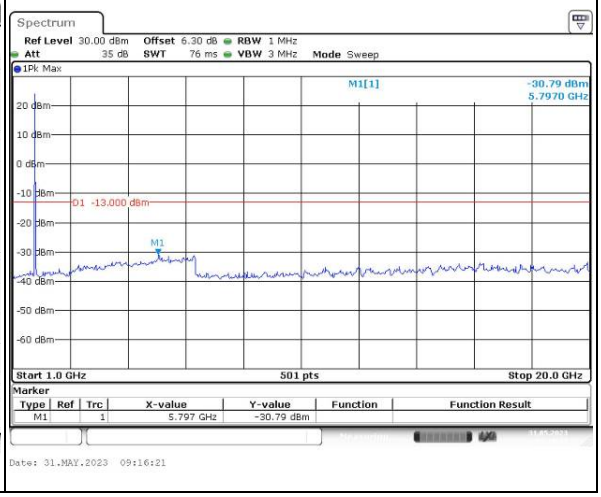
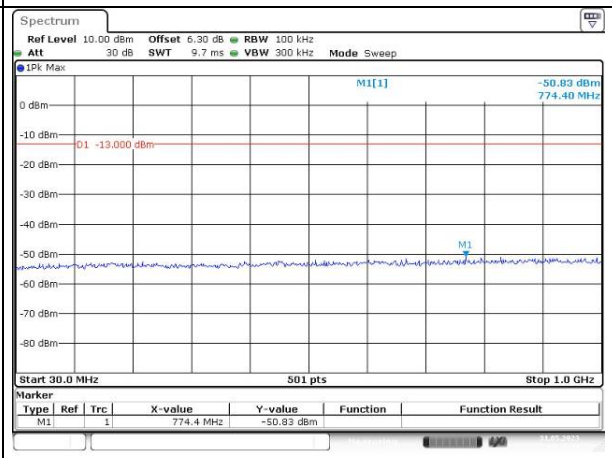
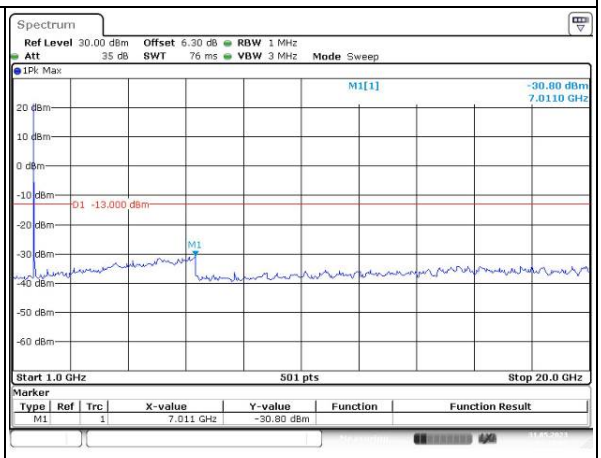
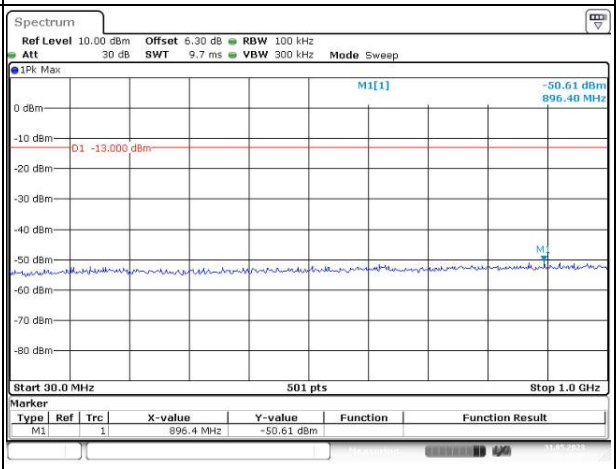
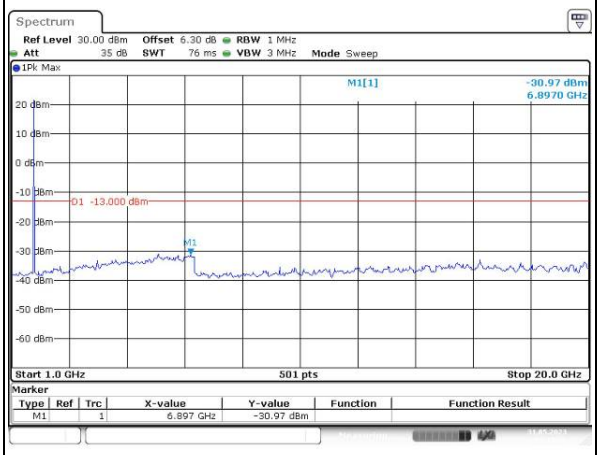
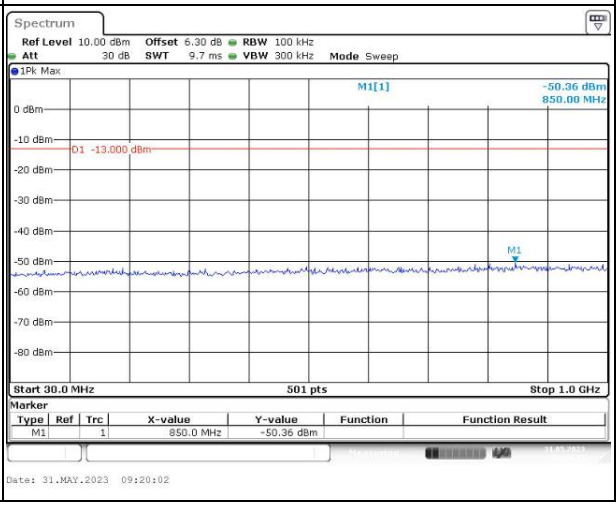
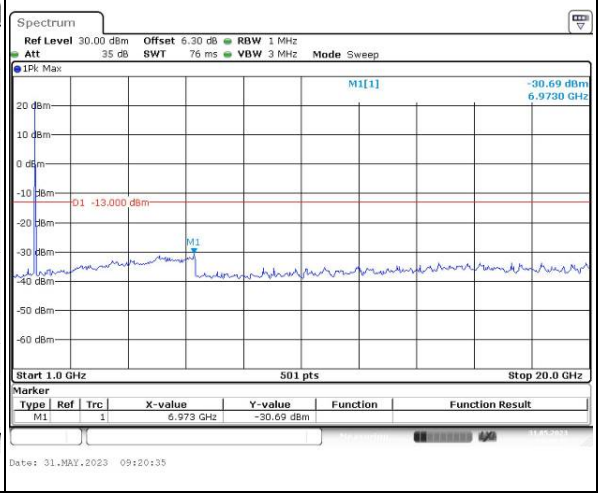
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

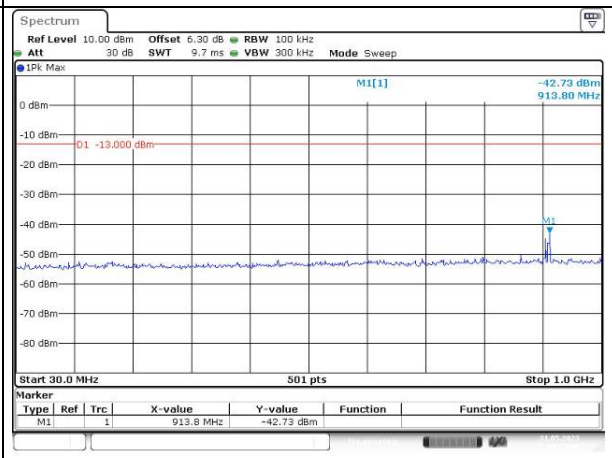
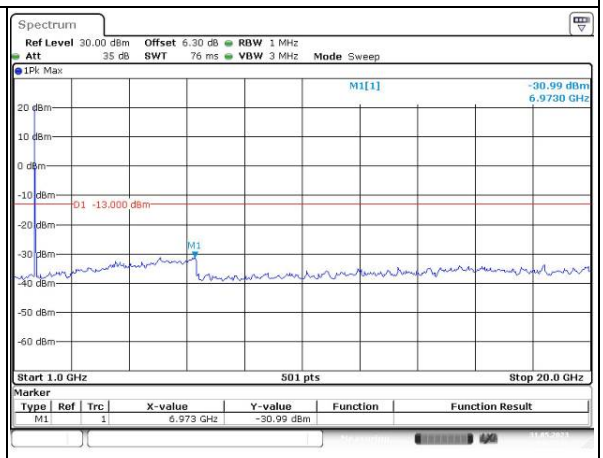
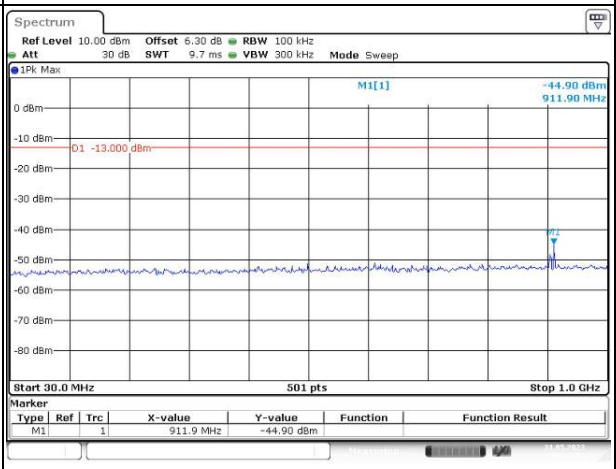
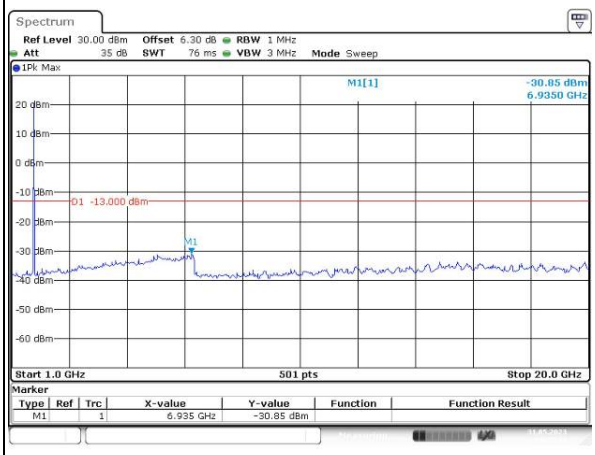
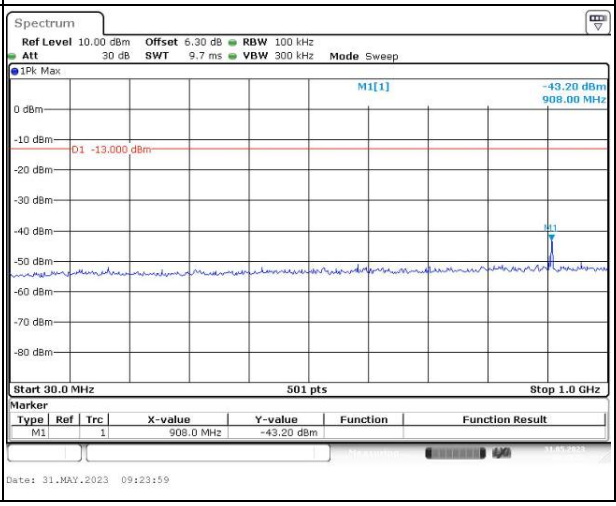
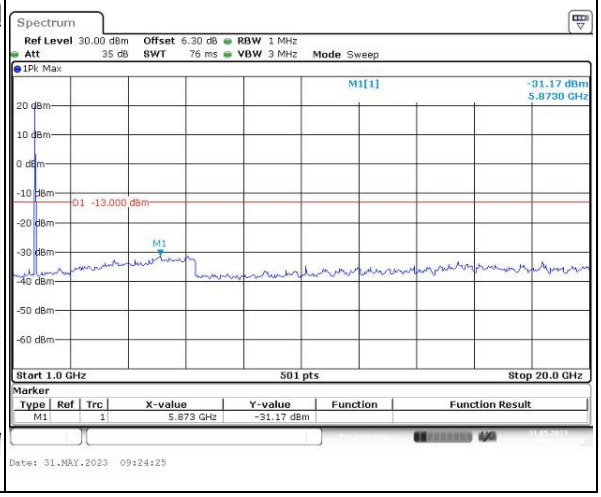
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

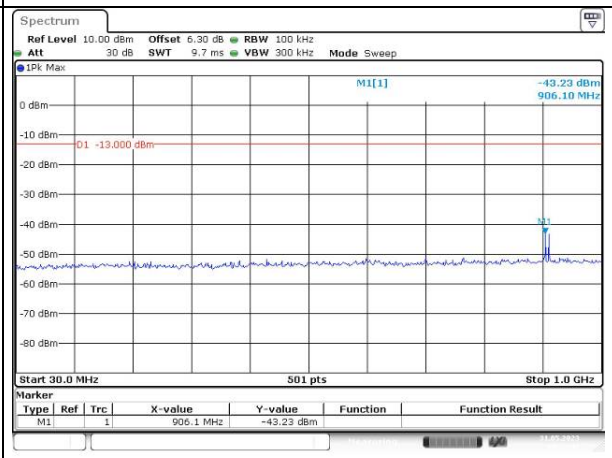
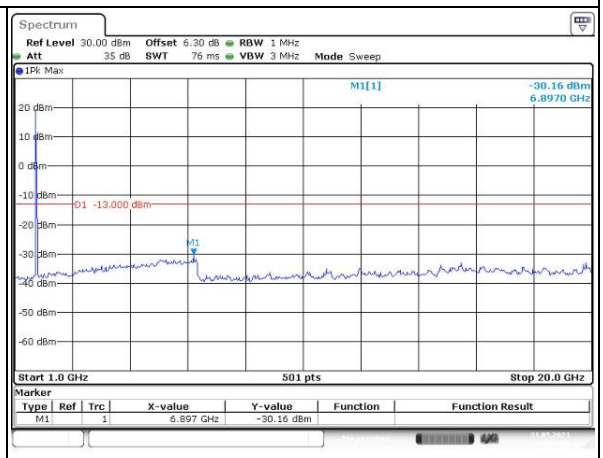
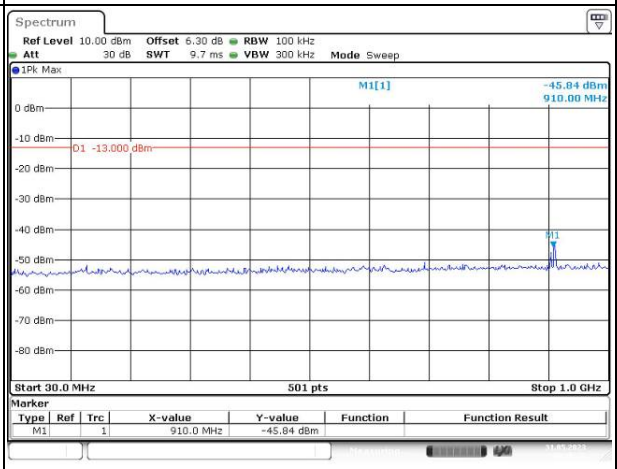
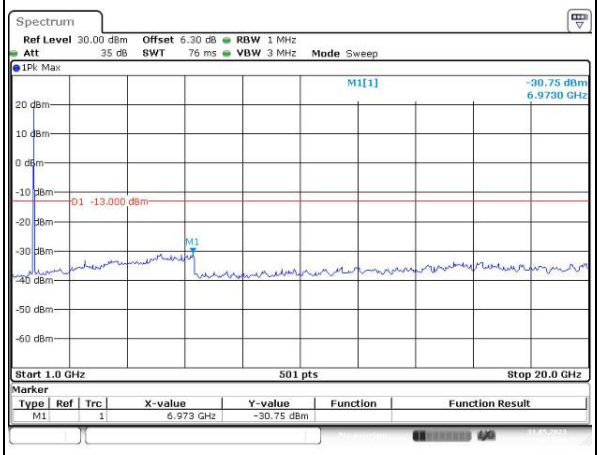
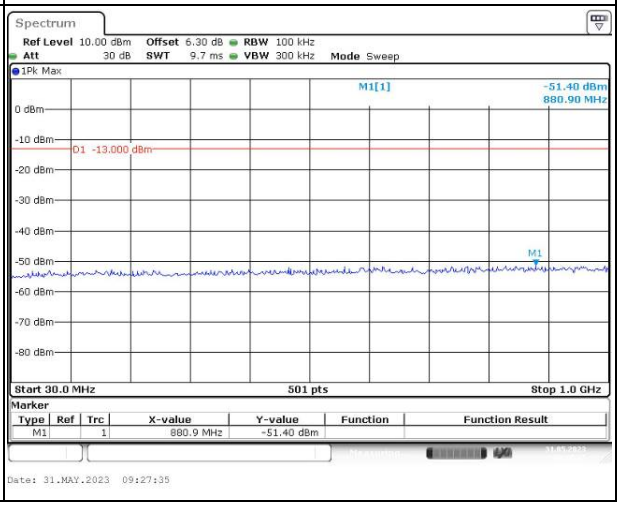
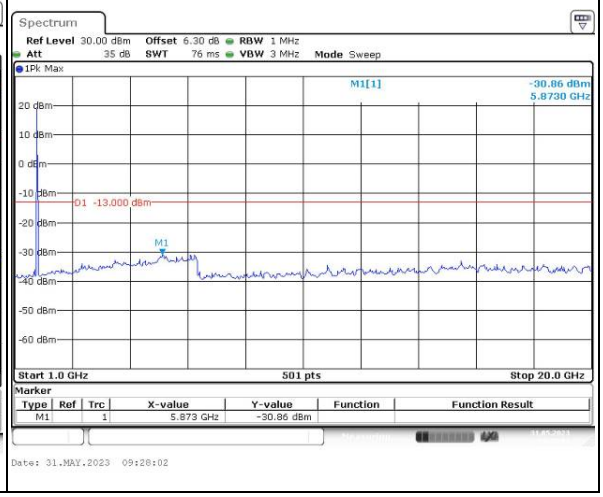
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

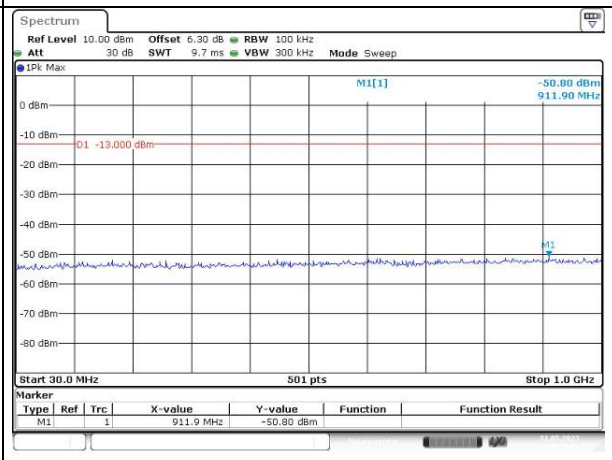
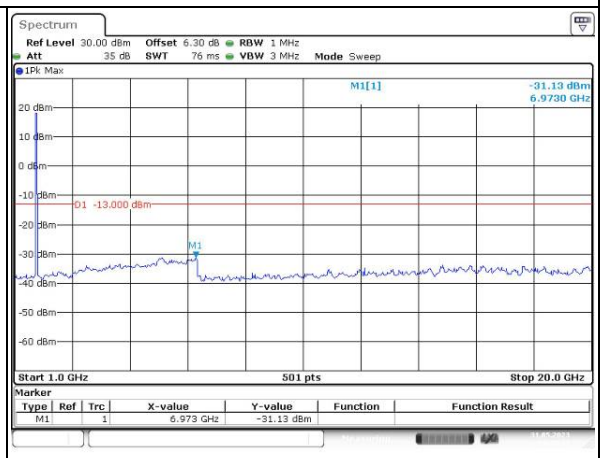
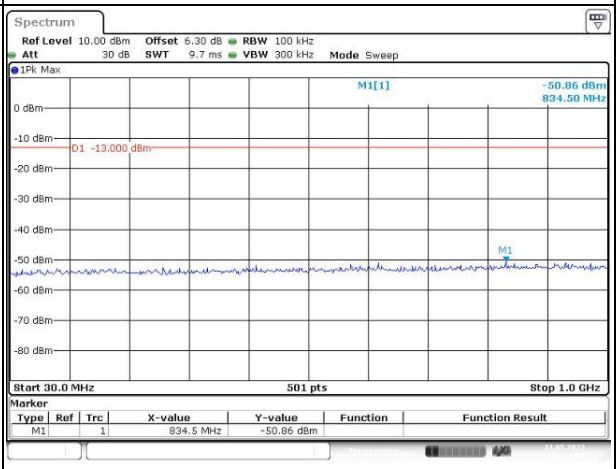
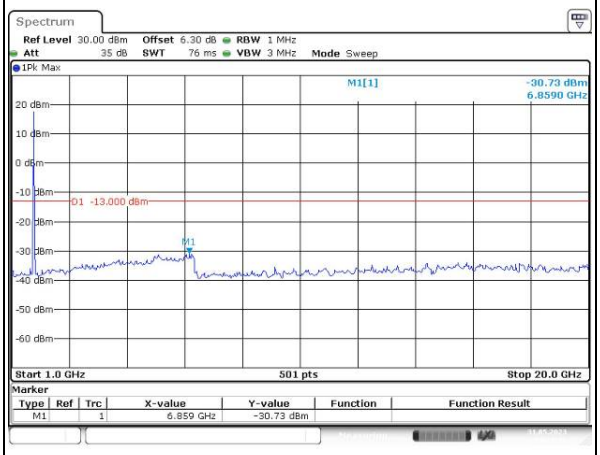
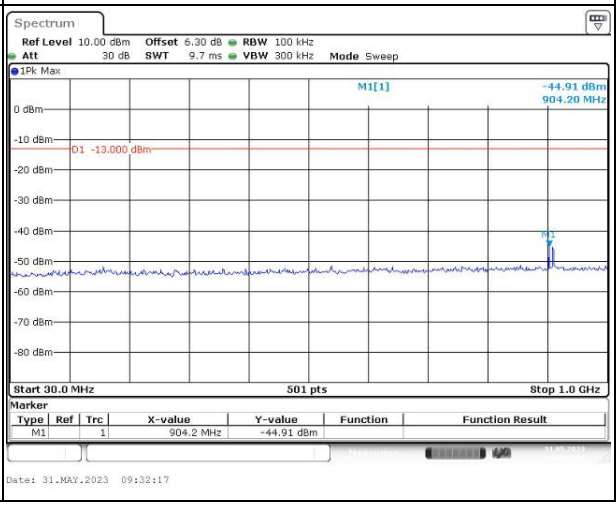
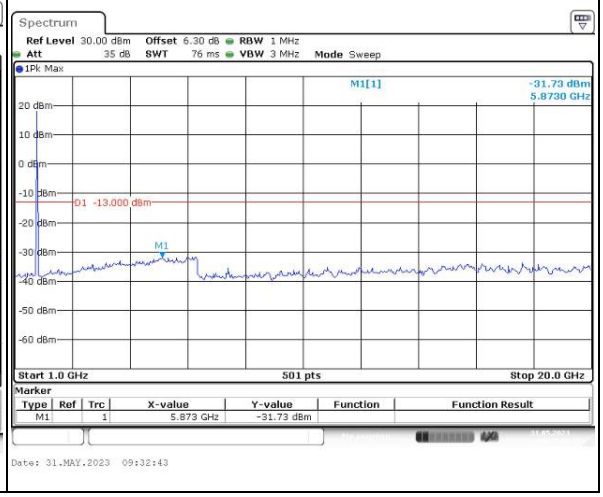
Occupied Bandwidth		
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

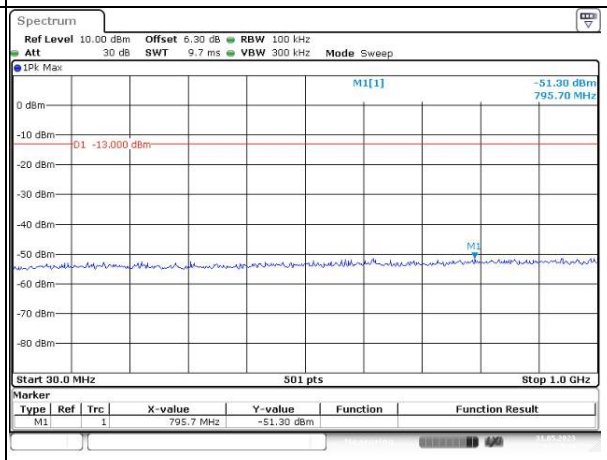
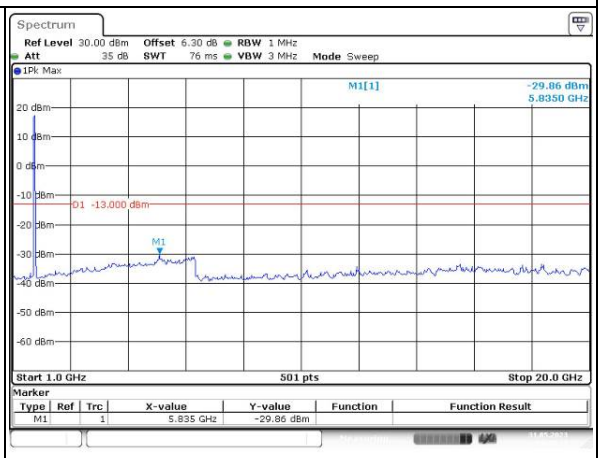
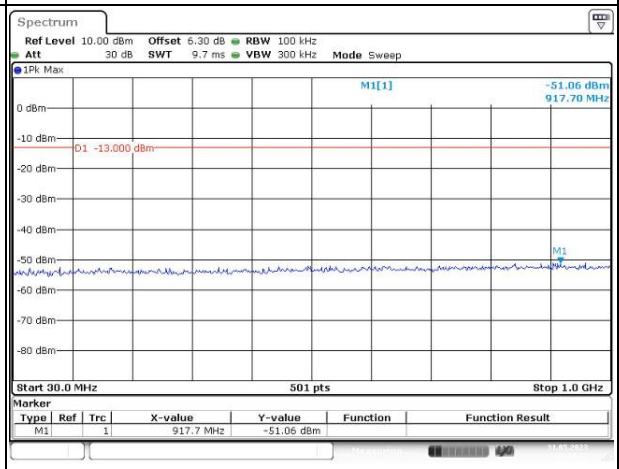
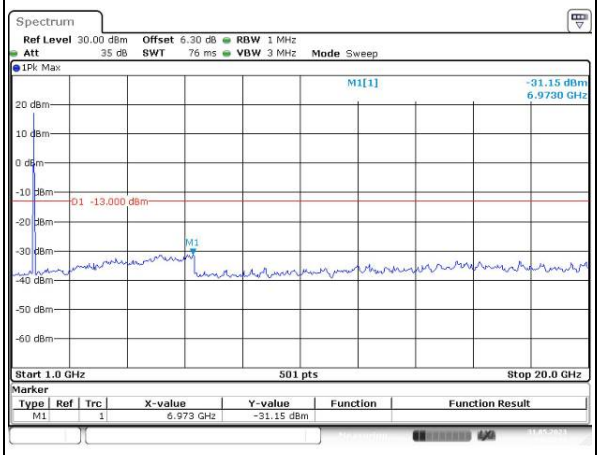
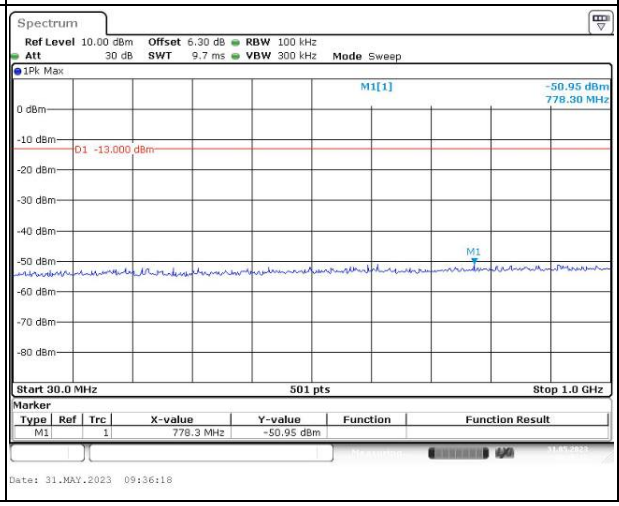
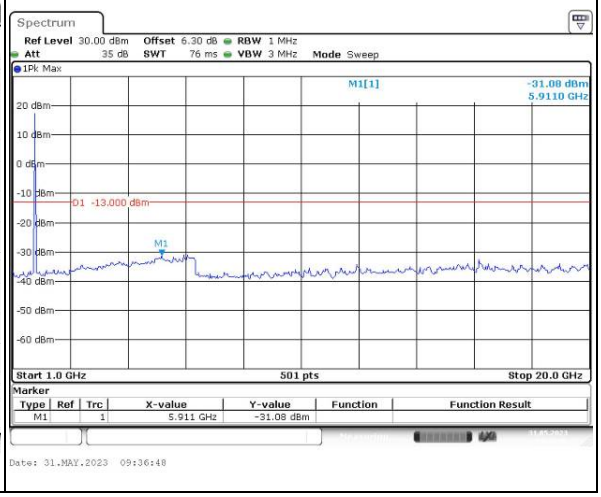
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

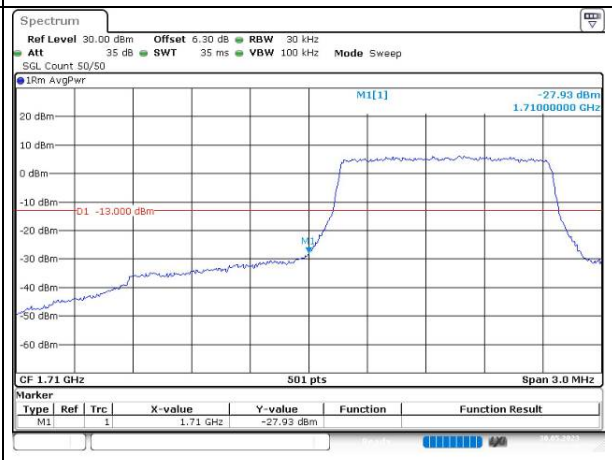
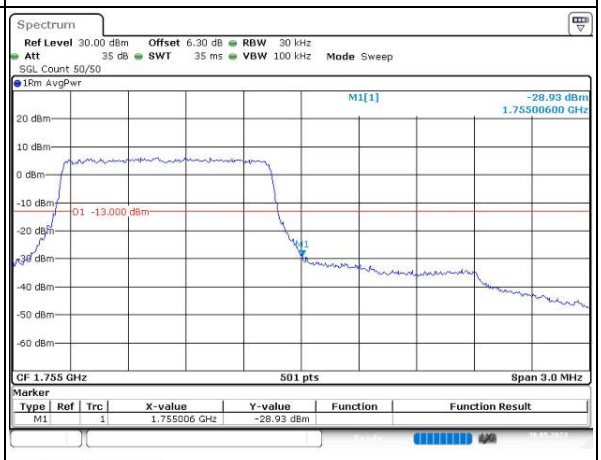
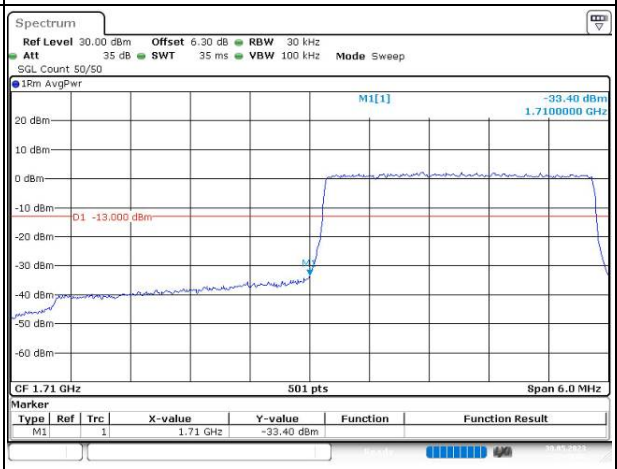
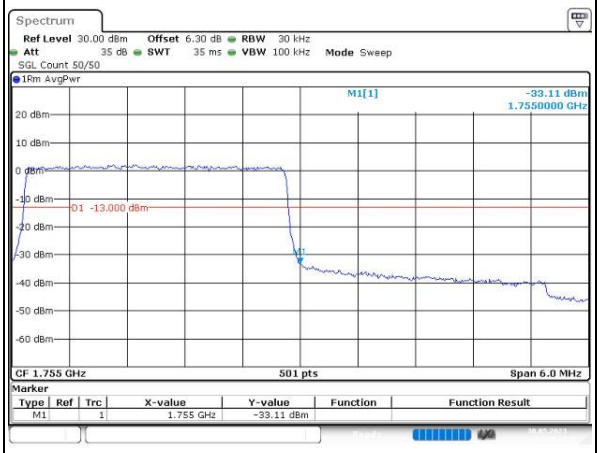
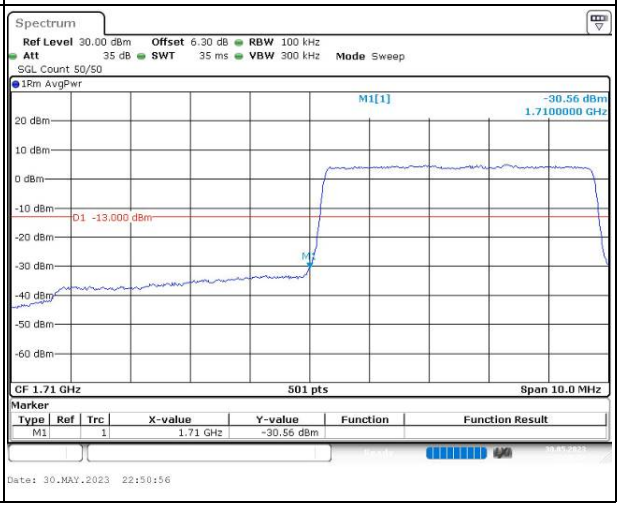
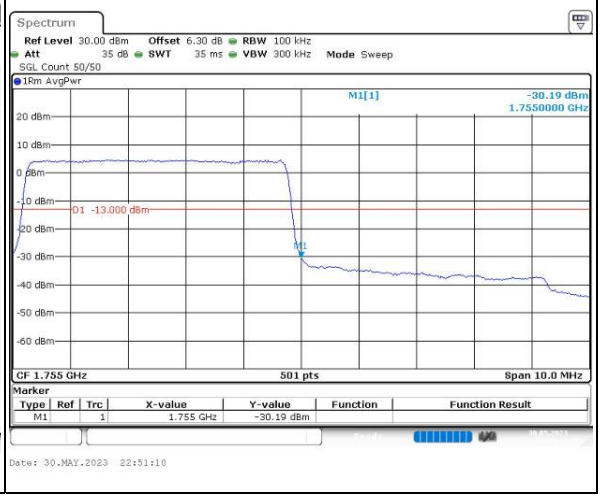
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

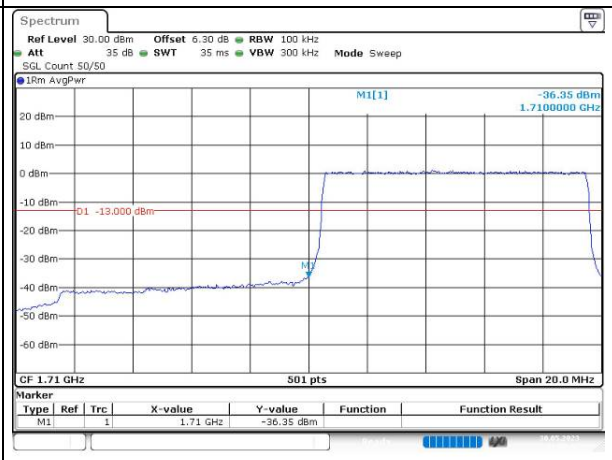
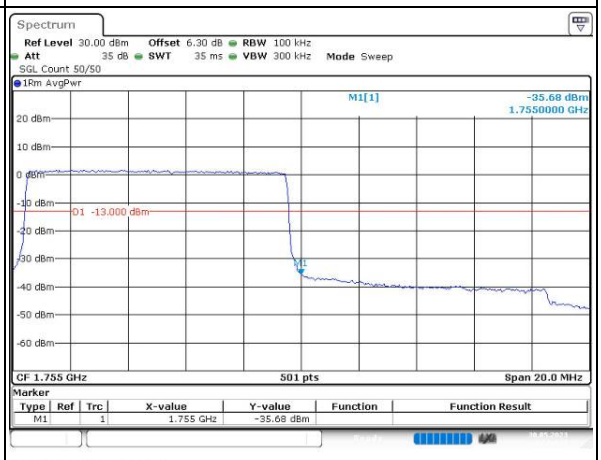
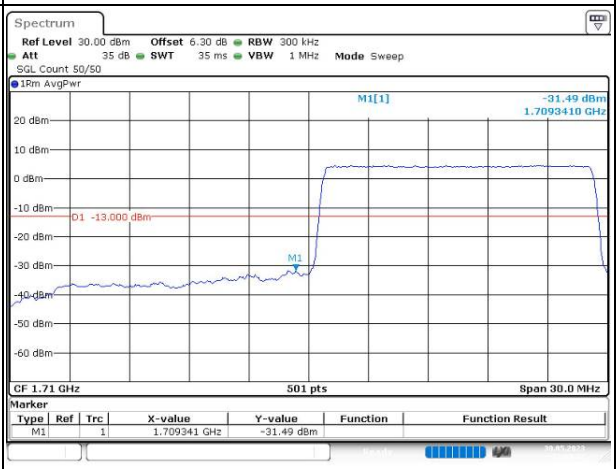
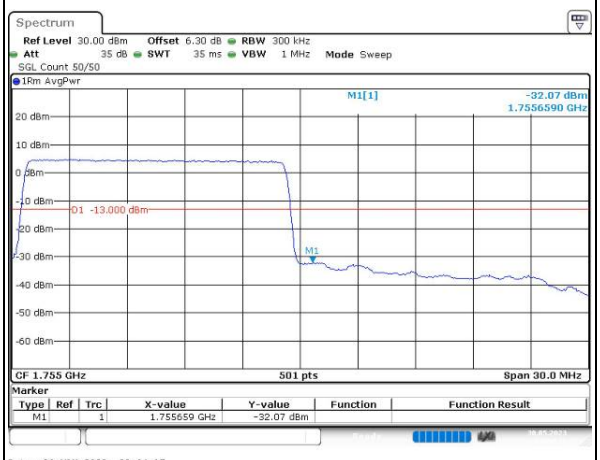
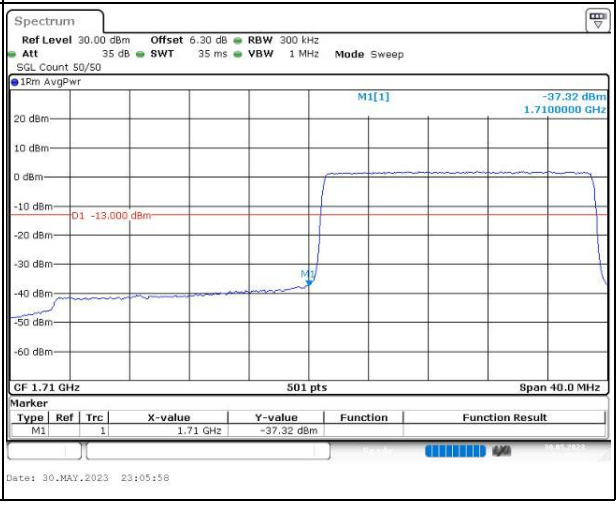
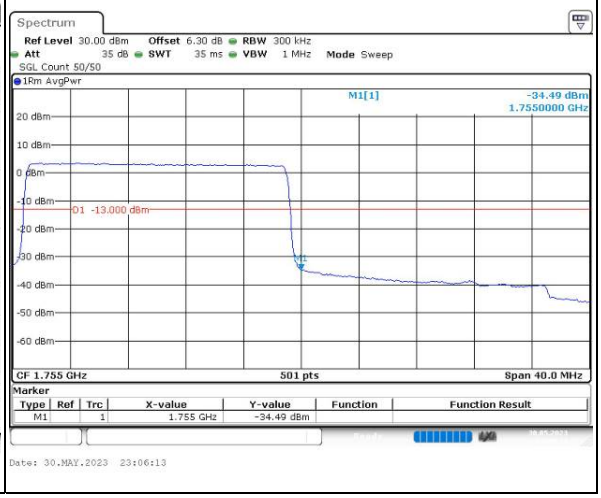
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

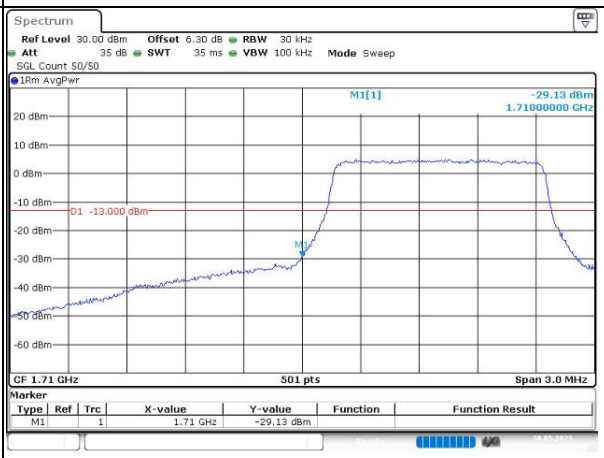
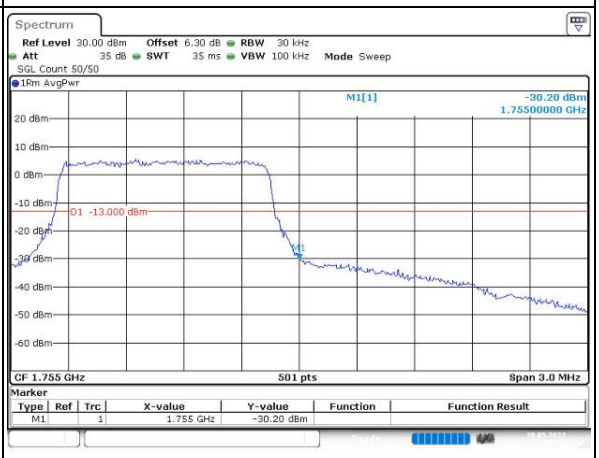
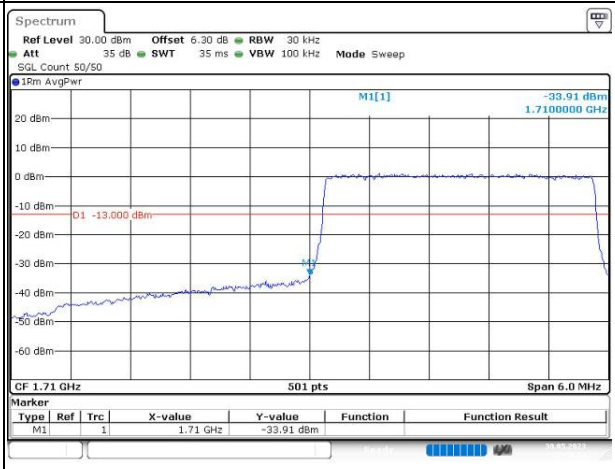
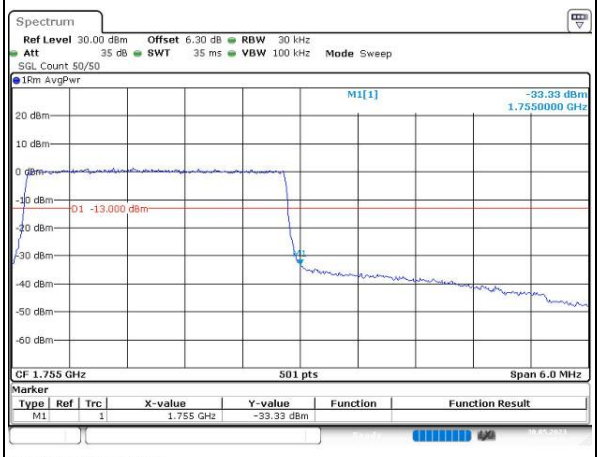
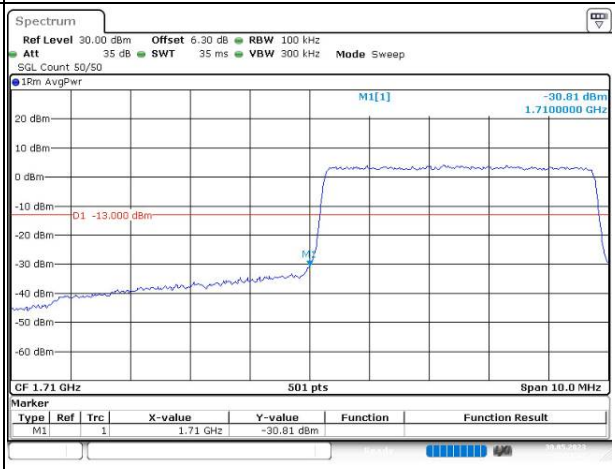
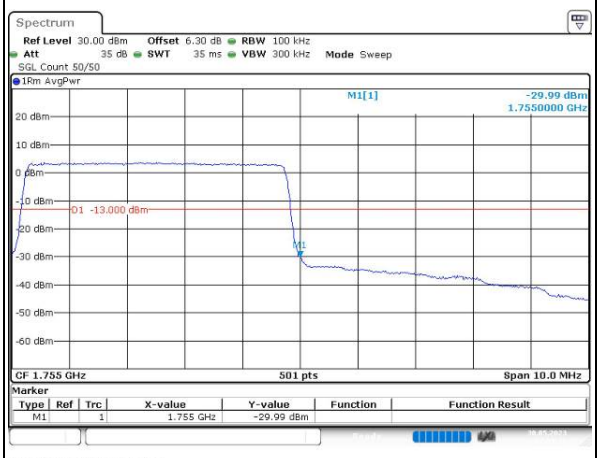
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

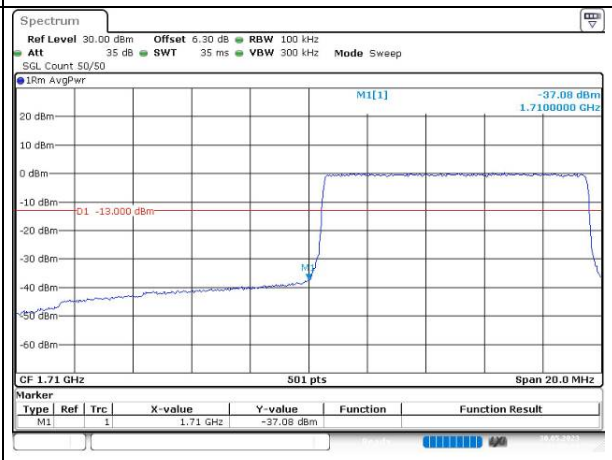
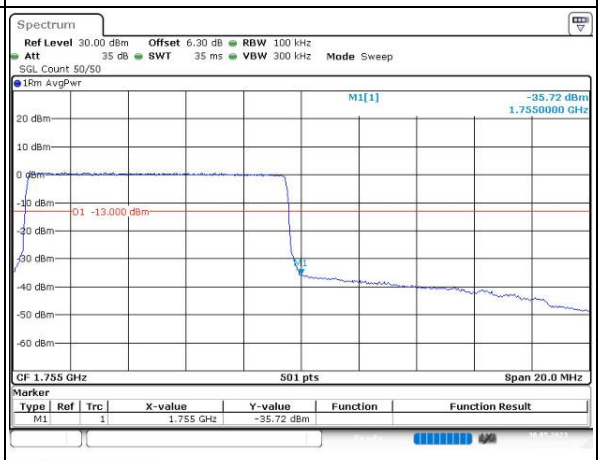
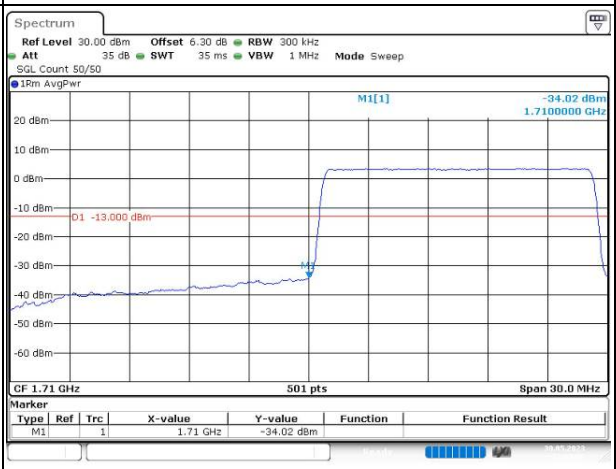
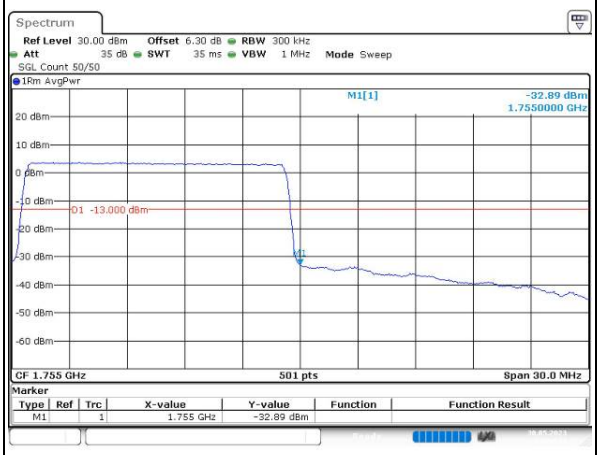
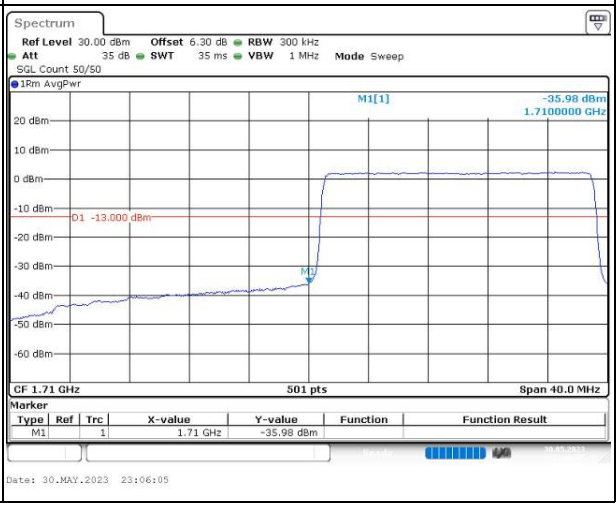
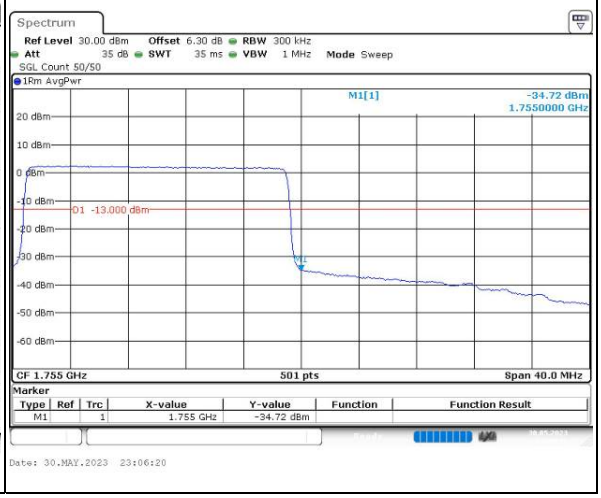
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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

Out of band emission, Band Edge		
Mode	**Lowest**	**Highest**
QPSK 1.4MHz		
QPSK 3MHz		
QPSK 5MHz		

Out of band emission, Band Edge		
Mode	**Lowest**	**Highest**
QPSK 10MHz		
QPSK 15MHz		
QPSK 20MHz		

Out of band emission, Band Edge		
Mode	**Lowest**	**Highest**
16QAM 1.4MHz		
16QAM 3MHz		
16QAM 5MHz		

Out of band emission, Band Edge		
Mode	**Lowest**	**Highest**
16QAM 10MHz		
16QAM 15MHz		
16QAM 20MHz		

4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	25K9-3	Test Date:	2023/05/30~2023/05/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	**Pass**

Environmental Conditions:					
Temperature:	26.7~27.2	Relative Humidity:	49~55	ATM Pressure:	99.6~100.0

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	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)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:

RF Output Power:

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)	
		Lowest Channel	Middle Channel	Highest Channel		FCC	IC
1.4MHz QPSK	RB1#0	23.24	23.25	23.22	19.85	38.45	34.77
	RB1#3	23.32	23.44	23.46			
	RB1#5	23.21	23.3	23.26			
	RB3#0	23.33	23.35	23.35			
	RB3#3	23.28	23.35	23.38			
	RB6#0	22.31	22.34	22.34			
1.4MHz 16QAM	RB1#0	22.35	22.42	22.26	18.99	38.45	34.77
	RB1#3	22.49	22.6	22.51			
	RB1#5	22.29	22.45	22.31			
	RB3#0	22.54	22.38	22.43			
	RB3#3	22.54	22.41	22.4			
	RB6#0	21.34	21.39	21.31			
3MHz QPSK	RB1#0	23.3	23.36	23.37	19.77	38.45	34.77
	RB1#8	23.27	23.33	23.33			
	RB1#14	23.31	23.38	23.36			
	RB6#0	22.3	22.32	22.37			
	RB6#9	22.29	22.32	22.37			
	RB15#0	22.36	22.41	22.4			
3MHz 16QAM	RB1#0	22.96	22.52	22.42	19.35	38.45	34.77
	RB1#8	22.88	22.51	22.37			
	RB1#14	22.92	22.53	22.4			
	RB6#0	21.42	21.3	21.3			
	RB6#9	21.33	21.42	21.3			
	RB15#0	21.41	21.37	21.43			
5MHz QPSK	RB1#0	23.28	23.26	23.24	19.79	38.45	34.77
	RB1#13	23.36	23.37	23.4			
	RB1#24	23.32	23.24	23.27			
	RB15#0	22.38	22.37	22.46			
	RB15#10	22.39	22.43	22.35			
	RB25#0	22.42	22.39	22.35			
5MHz 16QAM	RB1#0	22.58	22.4	22.2	19.12	38.45	34.77
	RB1#13	22.73	22.51	22.28			
	RB1#24	22.62	22.4	22.23			
	RB15#0	21.4	21.42	21.46			
	RB15#10	21.38	21.47	21.39			
	RB25#0	21.42	21.42	21.43			

10MHz QPSK	RB1#0	23.32	23.37	23.32	19.92	38.45	34.77
	RB1#25	23.51	23.52	23.53			
	RB1#49	23.44	23.39	23.41			
	RB25#0	22.45	22.43	22.42			
	RB25#25	22.52	22.47	22.39			
	RB50#0	22.5	22.49	22.43			
10MHz 16QAM	RB1#0	22.49	22.4	22.96	19.54	38.45	34.77
	RB1#25	22.67	22.63	23.15			
	RB1#49	22.59	22.44	22.97			
	RB25#0	21.51	21.55	21.54			
	RB25#25	21.57	21.58	21.44			
	RB50#0	21.52	21.51	21.44			
Note: ERP= Conducted Power(dBm) - L_C(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 Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	5.45	5.42	5.1	13
	RB50#0	5.48	5.36	5.28	13
10MHz 16QAM	RB1#0	6.29	6.41	5.77	13
	RB50#0	6.32	6.29	6.2	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	1.108	1.096	1.32	1.308	1.302
1.4MHz 16QAM	1.102	1.102	1.096	1.38	1.344	1.32
3MHz QPSK	2.683	2.683	2.683	2.88	2.88	2.892
3MHz 16QAM	2.683	2.683	2.683	2.868	2.88	2.868
5MHz QPSK	4.511	4.511	4.491	4.96	4.94	4.92
5MHz 16QAM	4.491	4.531	4.511	4.92	4.96	4.96
10MHz QPSK	8.942	8.942	8.942	9.68	9.6	9.68
10MHz 16QAM	8.942	8.942	8.942	9.56	9.64	9.64
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.**

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

Frequency Stability(For FCC)

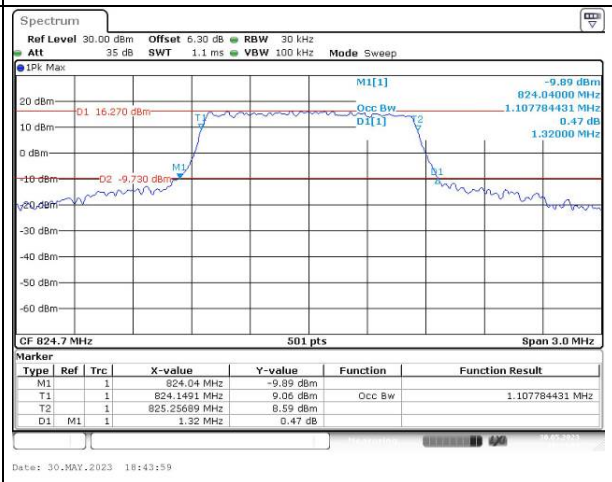
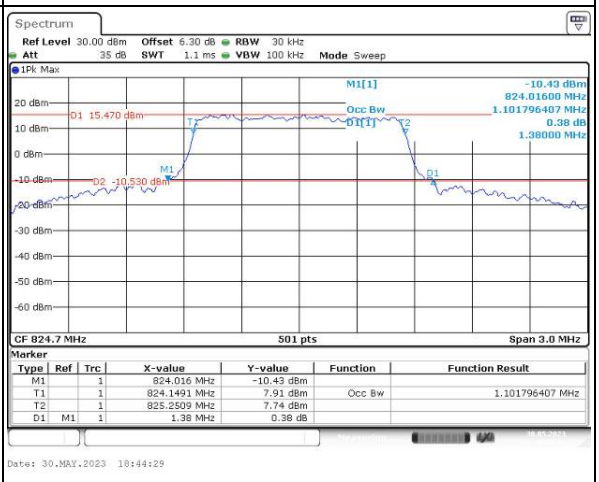
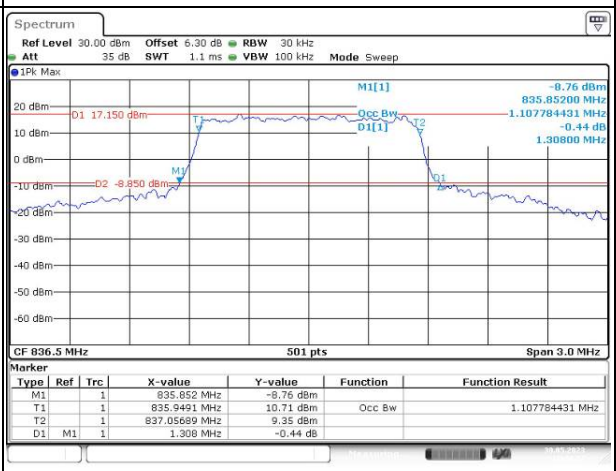
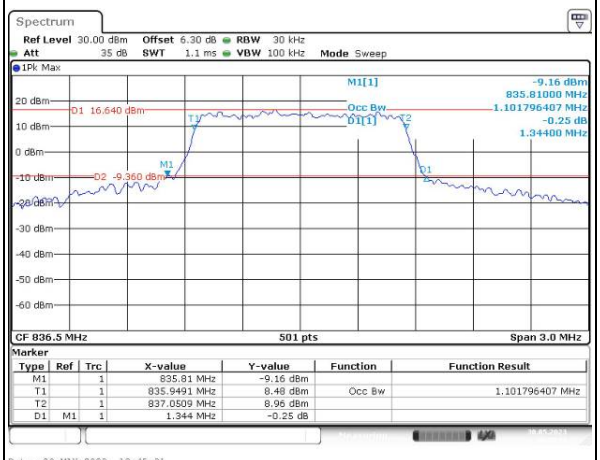
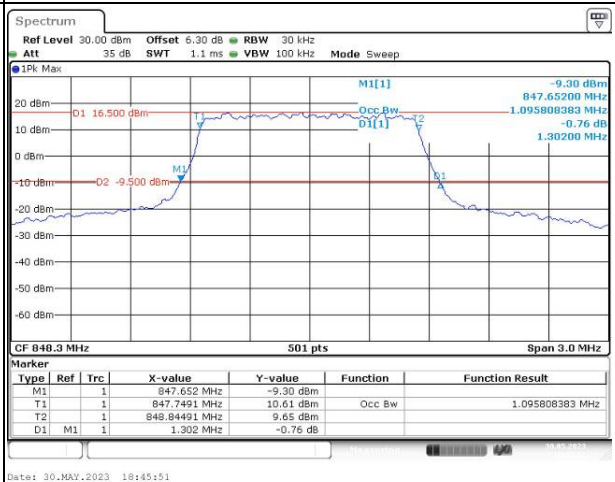
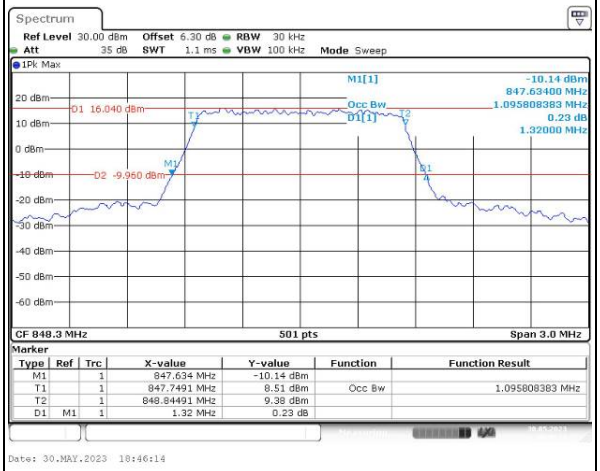
Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (℃)	Voltage (V_{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.87	-7.14	-0.009	2.5
	-20	3.87	8.45	0.010	2.5
	-10	3.87	-5.63	-0.007	2.5
	0	3.87	-6.88	-0.008	2.5
	10	3.87	-5.19	-0.006	2.5
	20	3.87	8.05	0.010	2.5
	30	3.87	-7.87	-0.009	2.5
	40	3.87	8.05	0.010	2.5
	50	3.87	-8.4	-0.010	2.5
Frequency Stability vs. Voltage	20	3.47	5.64	0.007	2.5
	20	4.45	-6.56	-0.008	2.5
				Result:	**Pass**

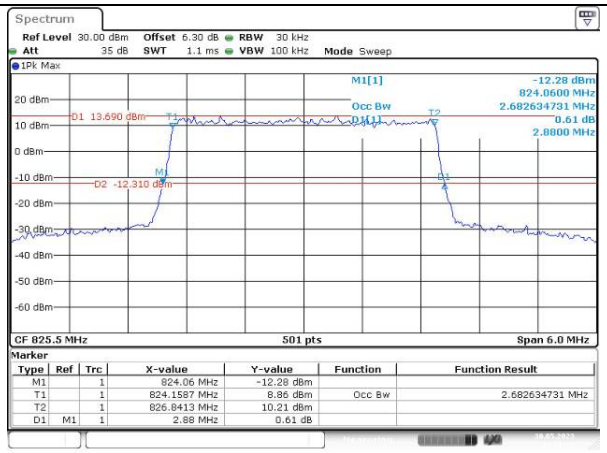
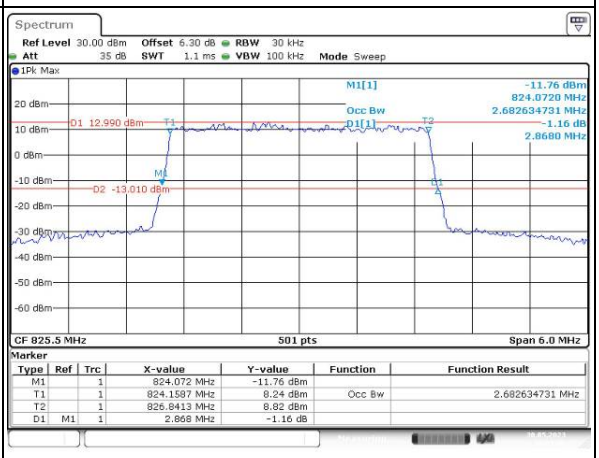
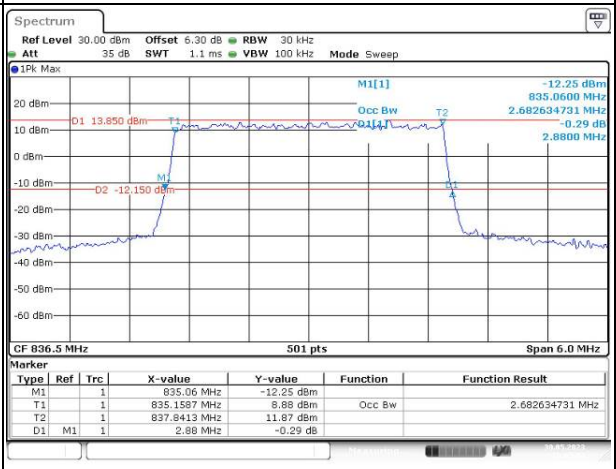
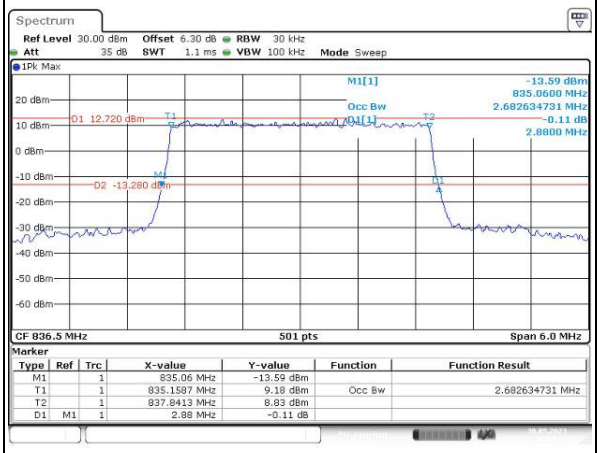
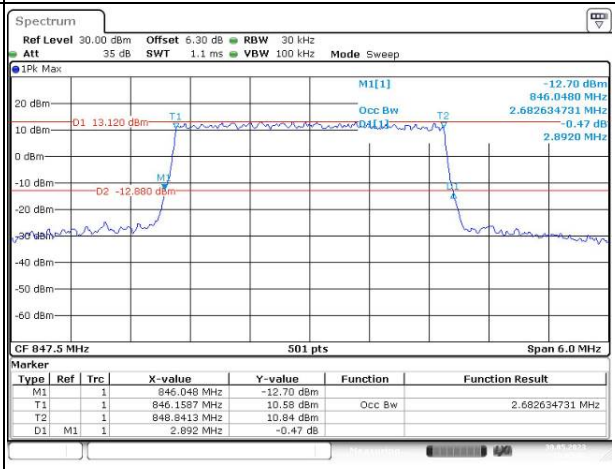
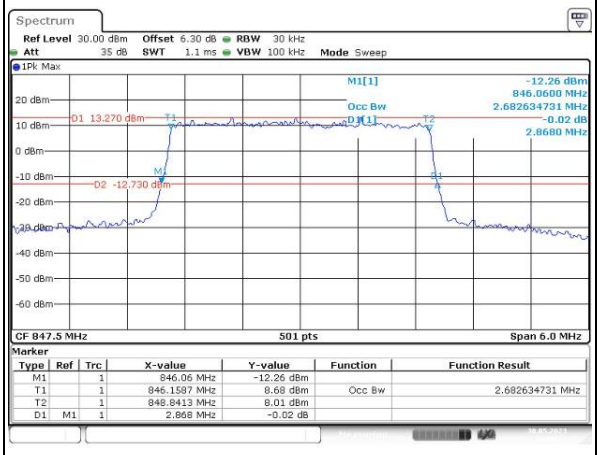
Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (℃)	Voltage (V_{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.87	-4.95	-0.006	2.5
	-20	3.87	6.05	0.007	2.5
	-10	3.87	-7.14	-0.009	2.5
	0	3.87	5.55	0.007	2.5
	10	3.87	-9.38	-0.011	2.5
	20	3.87	7.37	0.009	2.5
	30	3.87	-8.29	-0.010	2.5
	40	3.87	8.96	0.011	2.5
	50	3.87	-8.82	-0.011	2.5
Frequency Stability vs. Voltage	20	3.47	-7.1	-0.008	2.5
	20	4.45	9.64	0.012	2.5
				Result:	**Pass**

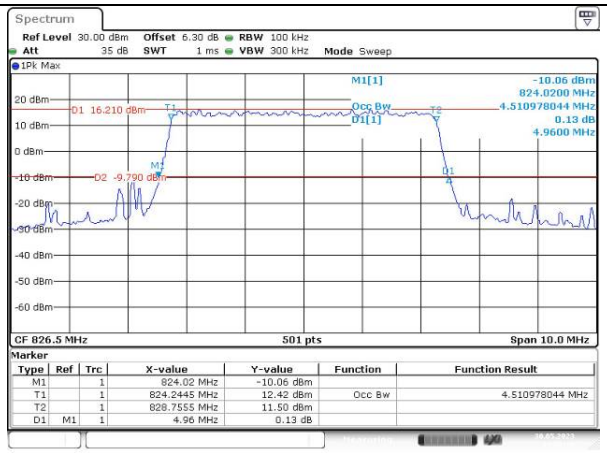
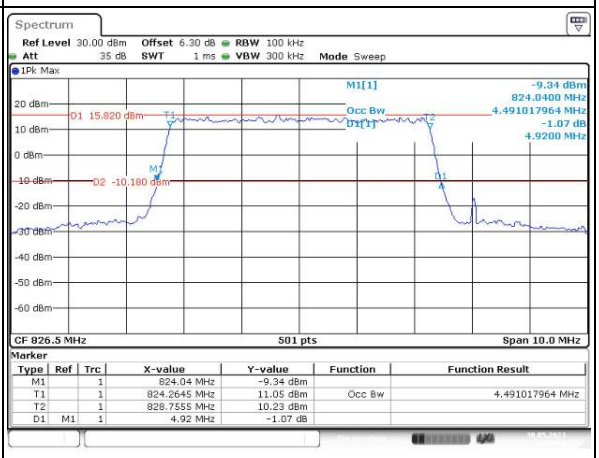
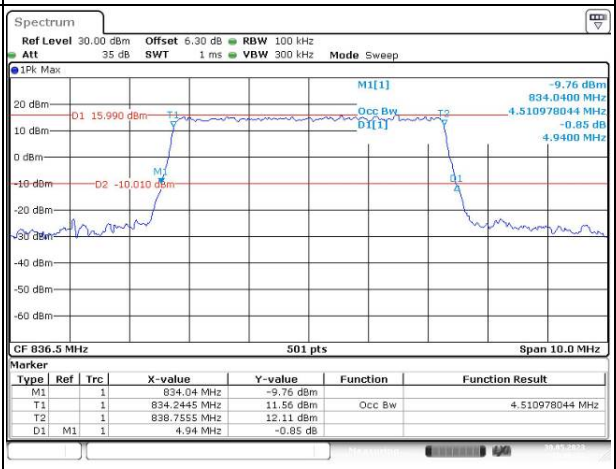
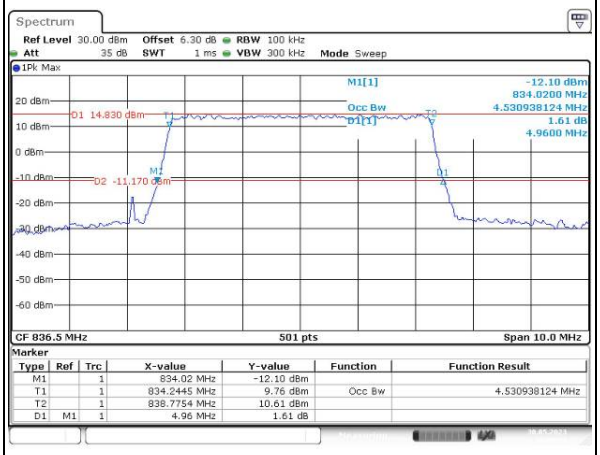
Frequency Stability(For IC)						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	824.531	824.000	848.484	849.000
	-20	3.87	824.521	824.000	848.470	849.000
	-10	3.87	824.522	824.000	848.472	849.000
	0	3.87	824.524	824.000	848.485	849.000
	10	3.87	824.535	824.000	848.477	849.000
	20	3.87	824.529	824.000	848.471	849.000
	30	3.87	824.534	824.000	848.469	849.000
	40	3.87	824.536	824.000	848.484	849.000
	50	3.87	824.541	824.000	848.470	849.000
Frequency Stability vs. Voltage	20	3.47	824.520	824.000	848.485	849.000
	20	4.45	824.543	824.000	848.474	849.000
					Result:	**Pass**

Test Mode:	10M 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	3.87	824.540	824.000	848.465	849.000
	-20	3.87	824.520	824.000	848.486	849.000
	-10	3.87	824.538	824.000	848.466	849.000
	0	3.87	824.522	824.000	848.477	849.000
	10	3.87	824.527	824.000	848.477	849.000
	20	3.87	824.529	824.000	848.471	849.000
	30	3.87	824.536	824.000	848.473	849.000
	40	3.87	824.542	824.000	848.478	849.000
	50	3.87	824.537	824.000	848.471	849.000
Frequency Stability vs. Voltage	20	3.47	824.520	824.000	848.471	849.000
	20	4.45	824.531	824.000	848.474	849.000
					Result:	**Pass**

Test Plots(Note: The 6.3dB is the Insertion loss of the RF cable, Coaxial tee connector and DC Block, which was offset into the Spectrum Analyzer)**:**

Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

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