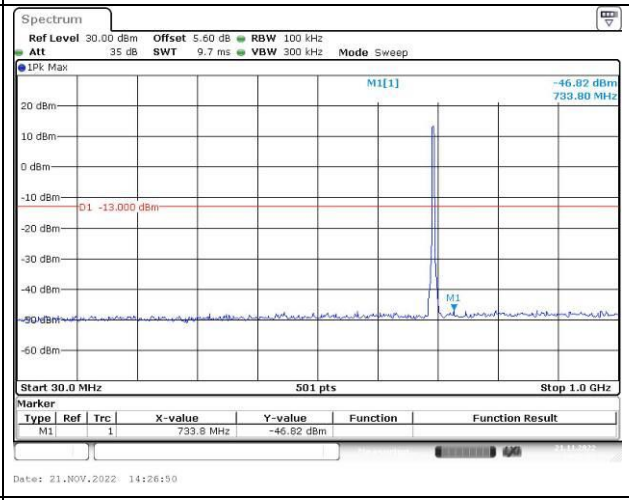
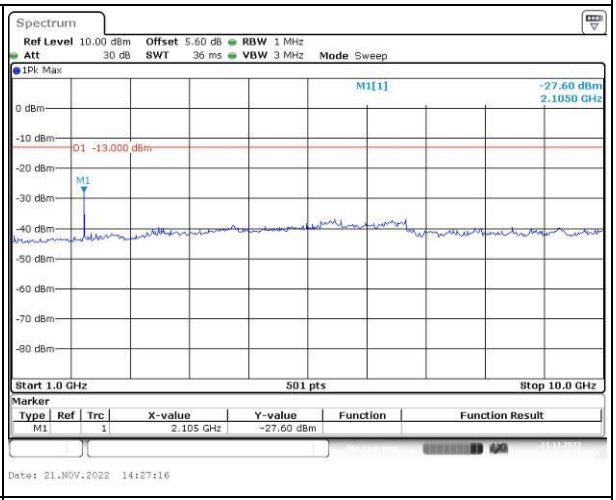
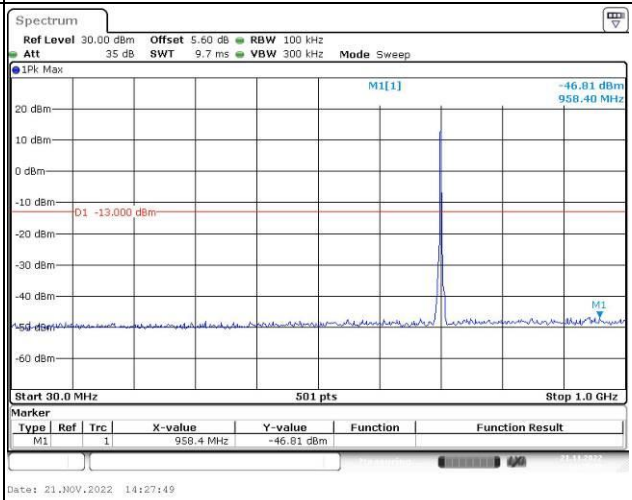
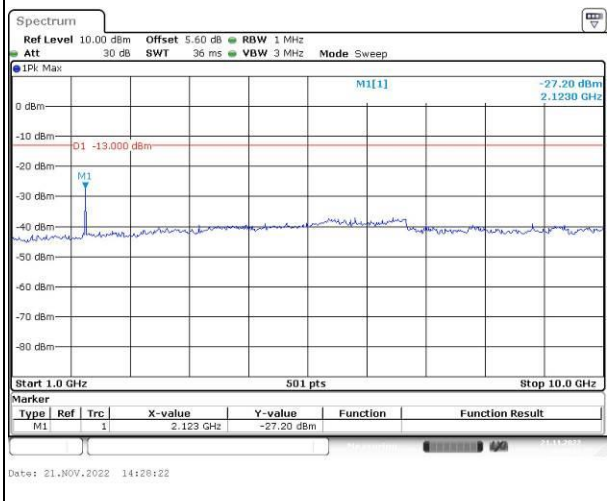
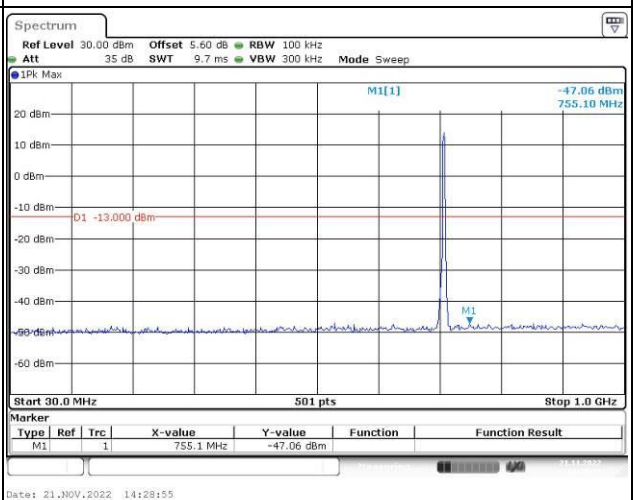
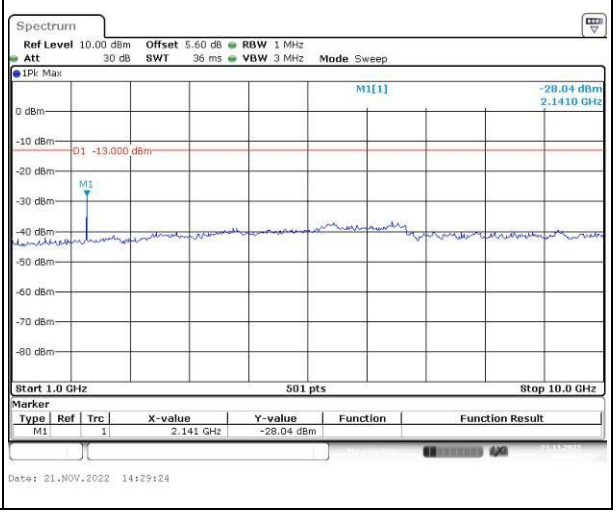
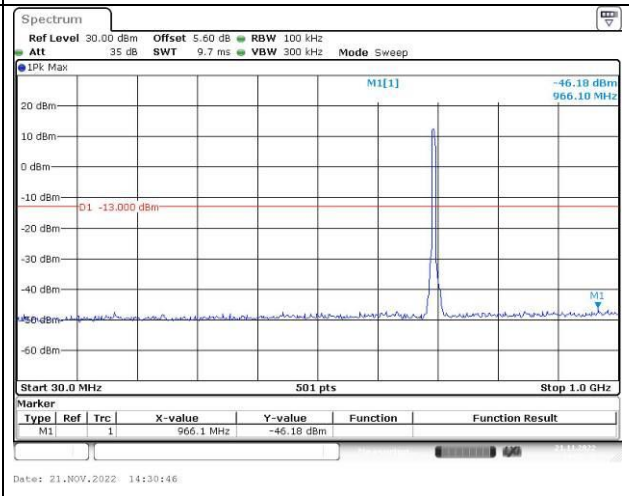
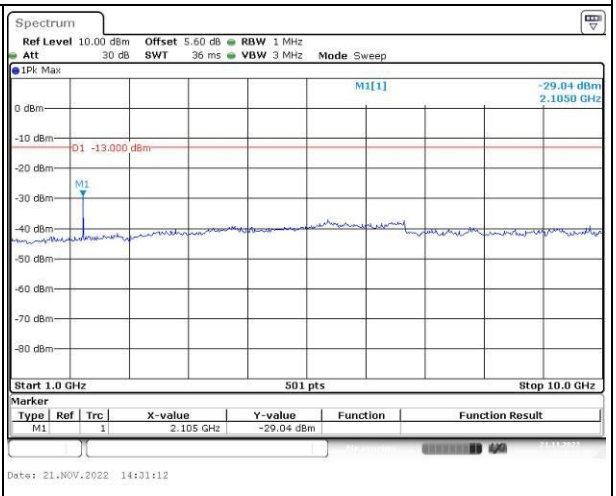
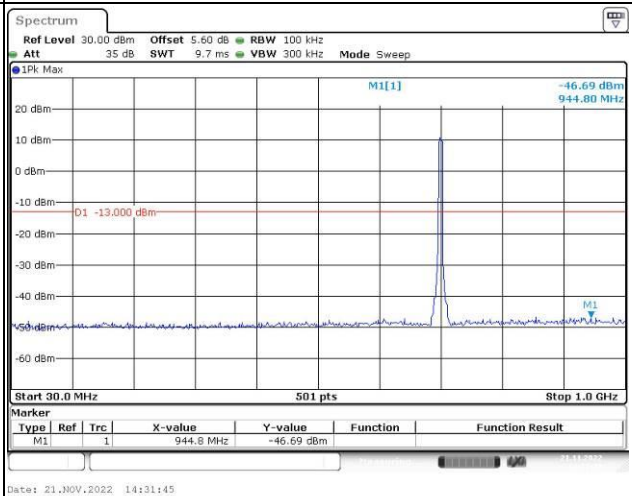
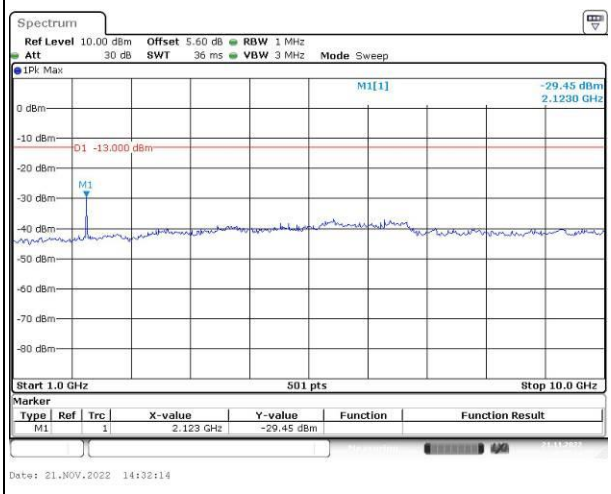
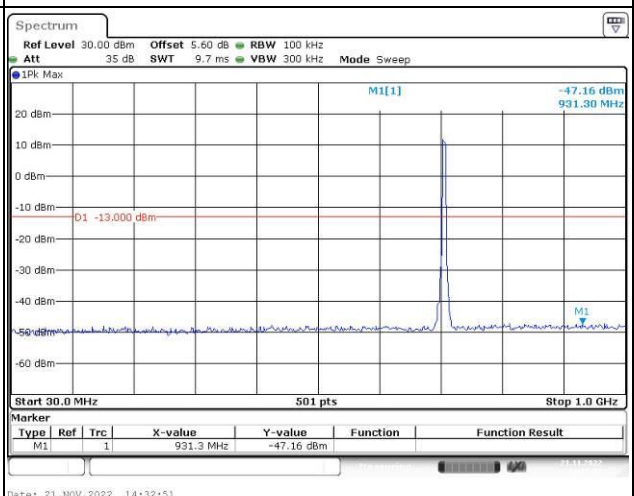
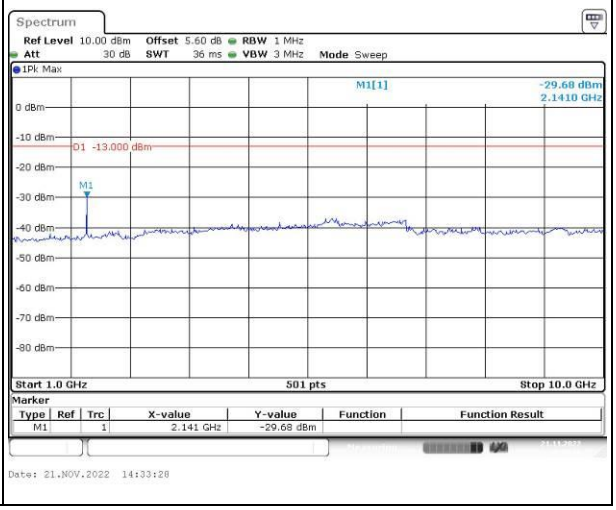
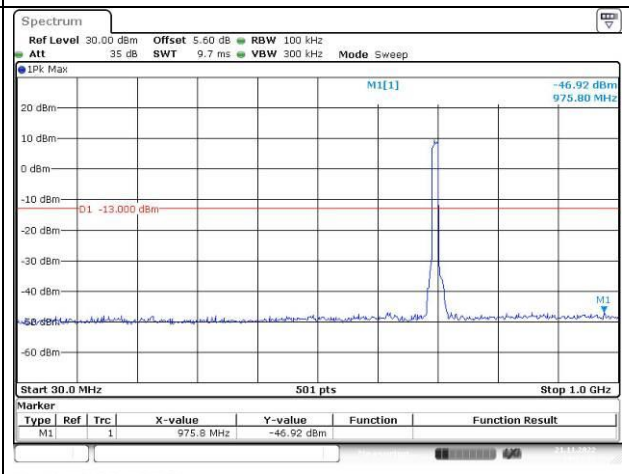
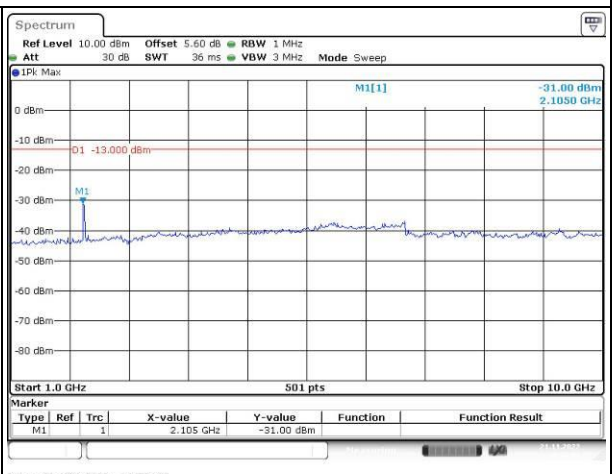
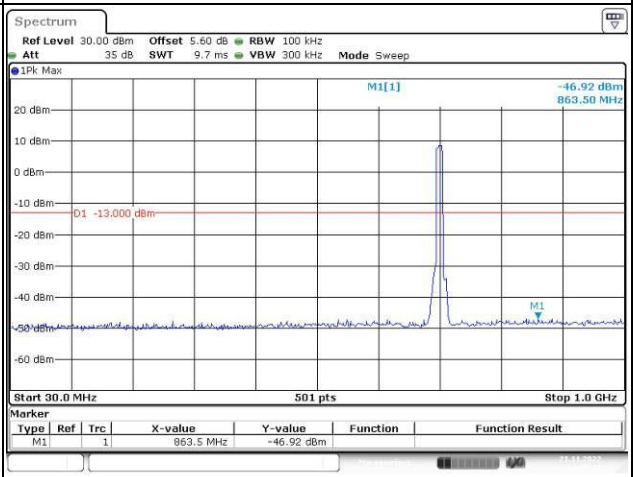
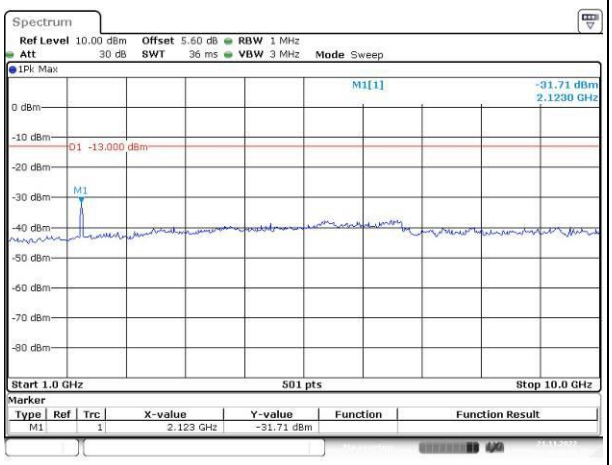
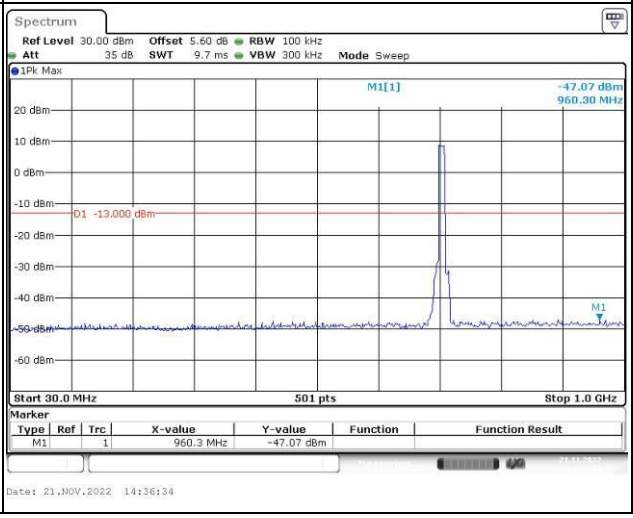
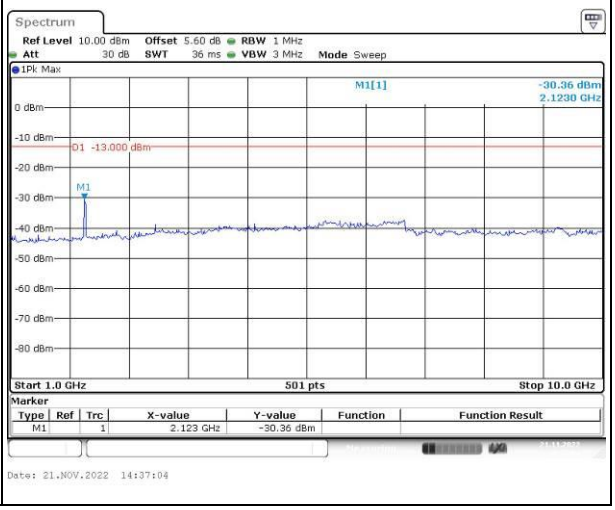
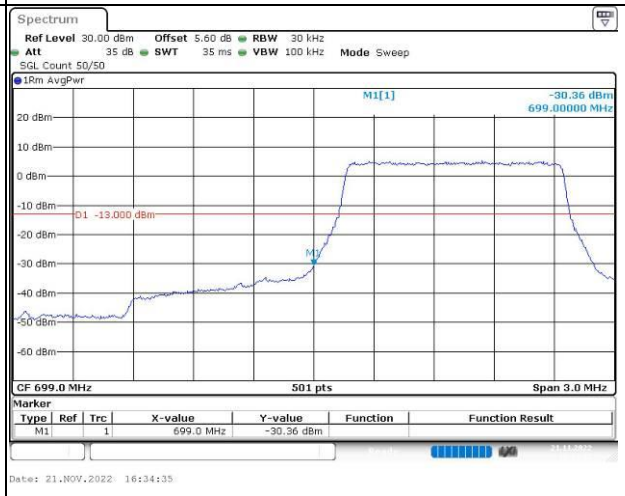
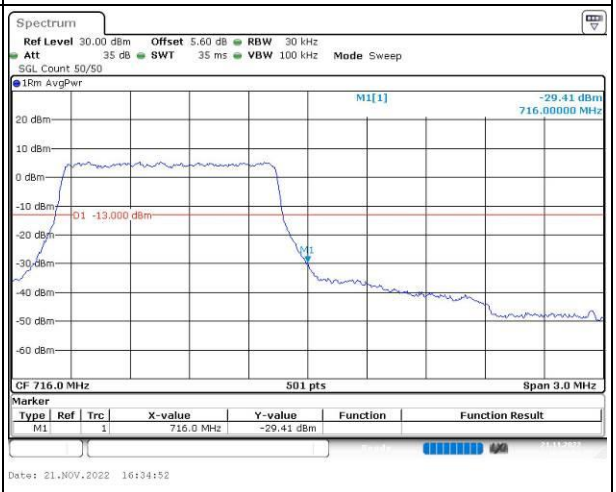
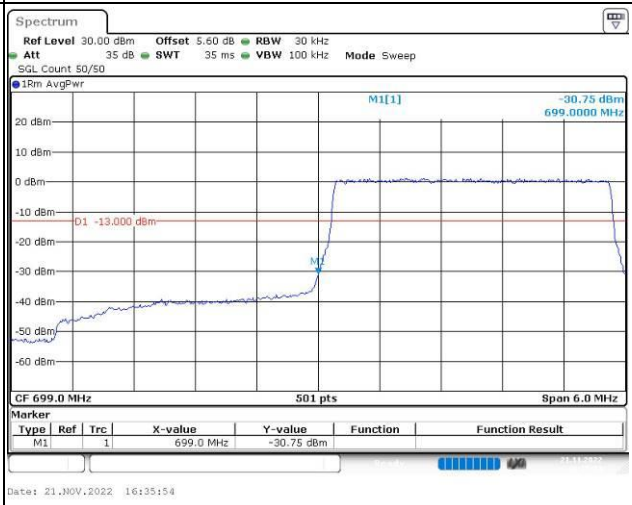
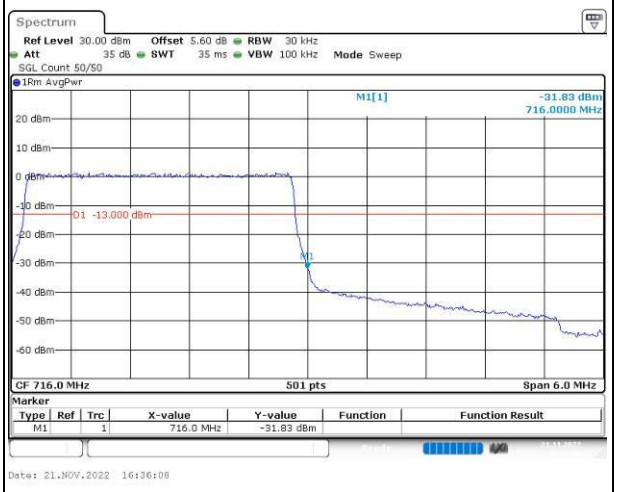
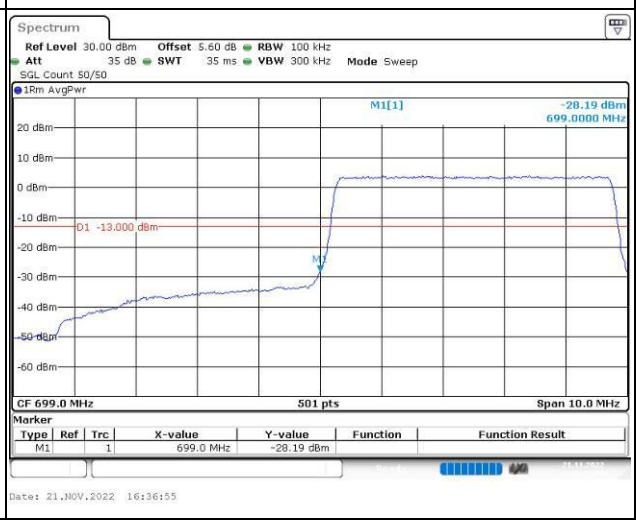
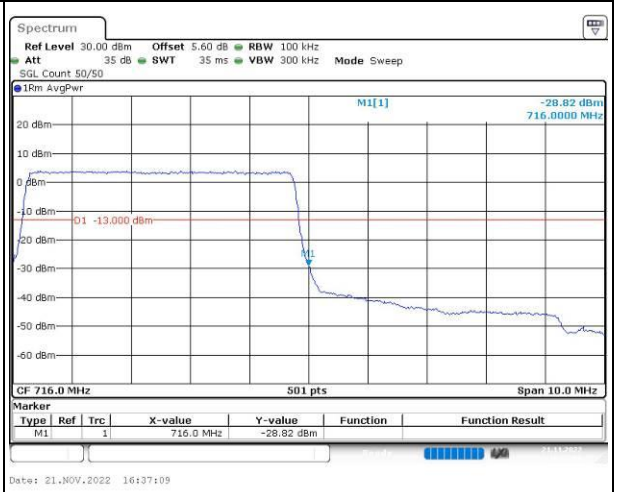
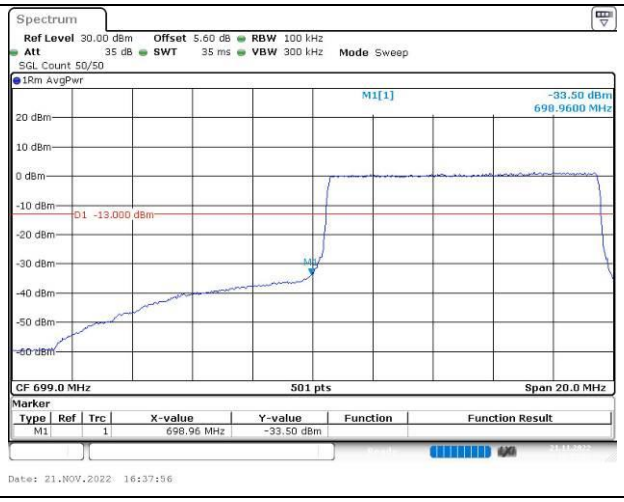
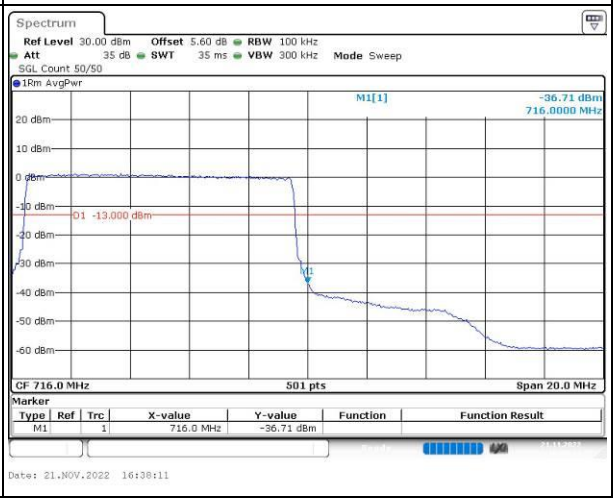
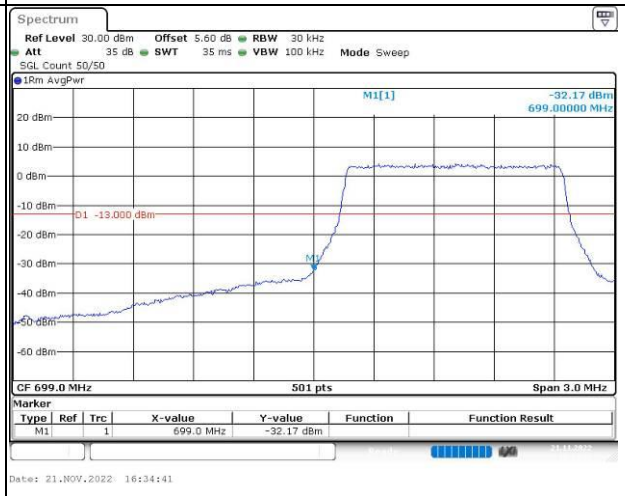
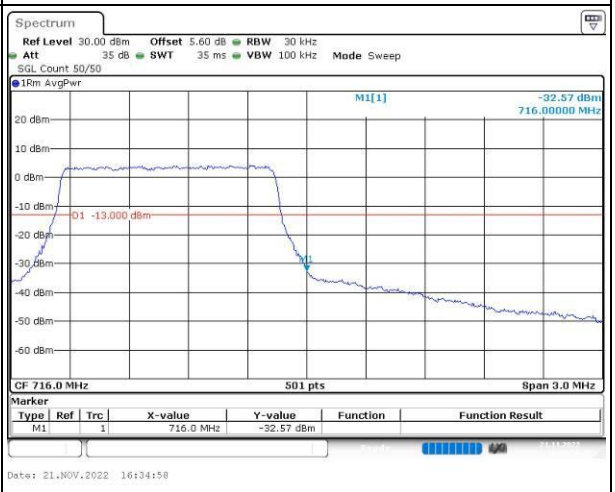
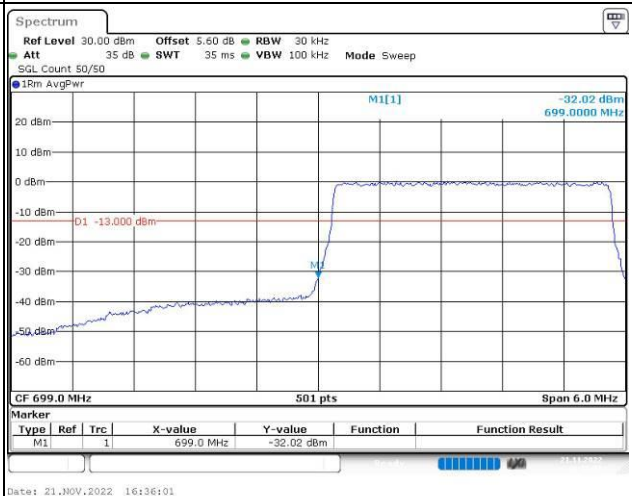
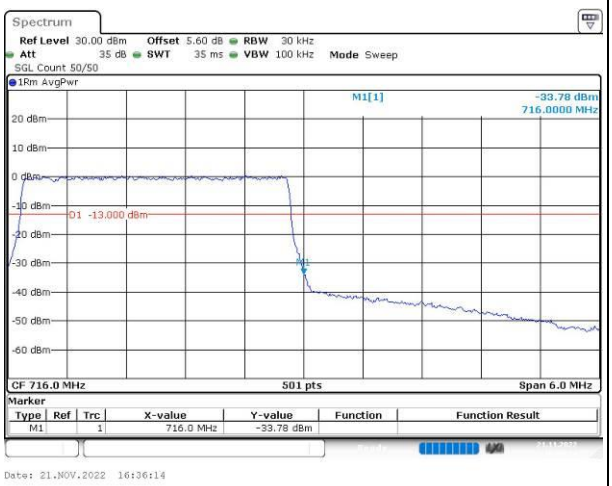
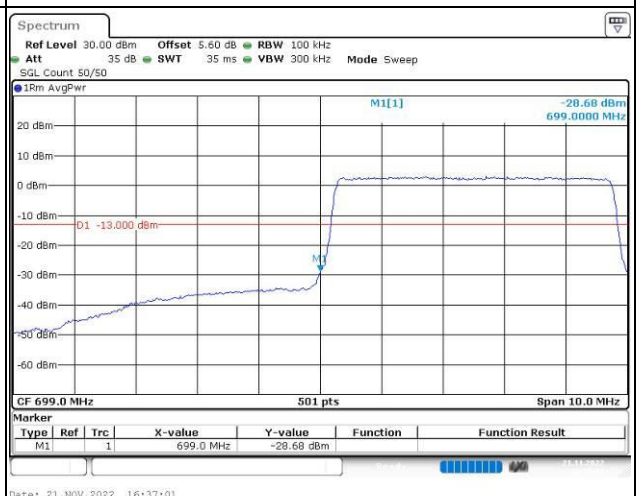
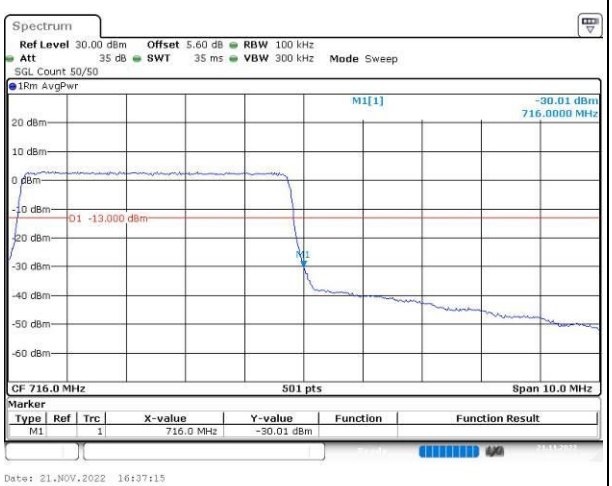
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

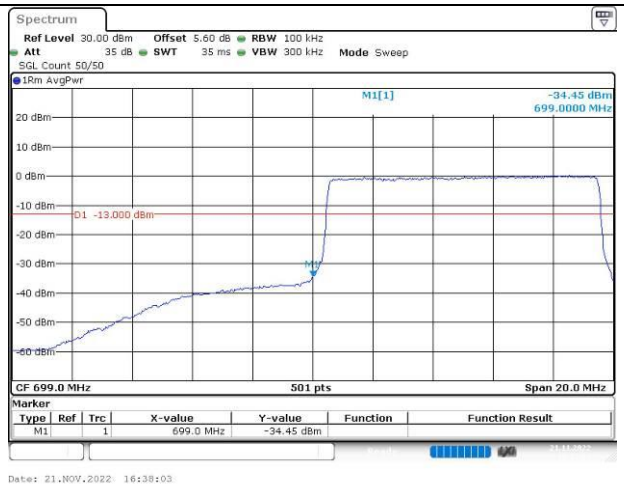
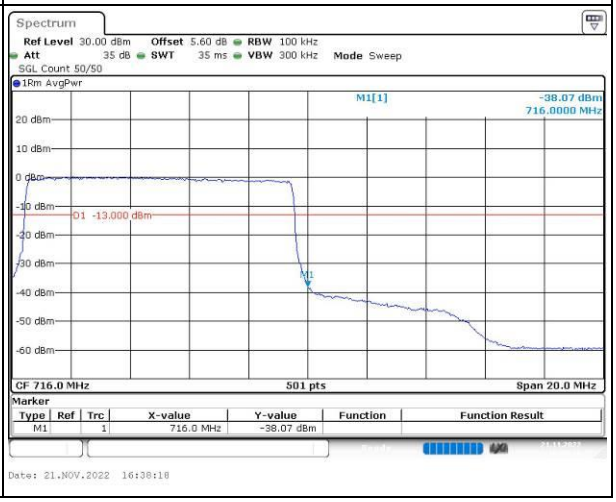
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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

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		

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		

4.11 Antenna Port Test Data and Results for LTE Band 17

Serial Number:	1OGW	Test Date:	2022/11/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	25.8	Relative Humidity: (%)	66	ATM Pressure: (kPa)	101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
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	149218	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/4/6	2023/4/5
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)
5MHz	706.5	710	713.5
10MHz	709	710	711

Test Data:

FCC §2.1046; § 27.50(c) (10)

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		
5MHz QPSK	RB1#0	22.23	22.25	22.54	19.6	34.77
	RB1#13	22.4	22.35	22.55		
	RB1#24	22.36	22.41	22.52		
	RB15#0	21.31	21.26	21.57		
	RB15#10	21.29	21.39	21.57		
	RB25#0	21.32	21.38	21.58		
5MHz 16QAM	RB1#0	21.39	21.36	21.42	18.74	34.77
	RB1#13	21.69	21.4	21.46		
	RB1#24	21.63	21.48	21.45		
	RB15#0	20.3	20.27	20.56		
	RB15#10	20.28	20.42	20.57		
	RB25#0	20.29	20.39	20.56		
10MHz QPSK	RB1#0	22.35	22.36	22.47	19.67	34.77
	RB1#25	22.22	22.34	22.33		
	RB1#49	22.58	22.62	22.6		
	RB25#0	21.27	21.3	21.32		
	RB25#25	21.37	21.46	21.45		
	RB50#0	21.33	21.4	21.42		
10MHz 16QAM	RB1#0	21.42	21.33	22.06	19.19	34.77
	RB1#25	21.32	21.32	21.88		
	RB1#49	21.62	21.64	22.14		
	RB25#0	20.37	20.42	20.4		
	RB25#25	20.36	20.52	20.5		
	RB50#0	20.33	20.39	20.43		

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	5.39	5.68	5.57	13
	RB50#0	5.22	5.3	5.33	13
10MHz 16QAM	RB1#0	6.03	6.52	6.52	13
	RB50#0	6.2	6.17	6.2	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	4.531	5.02	5	5.04
5MHz 16QAM	4.531	4.511	4.511	5.04	5.04	5.02
10MHz QPSK	8.942	8.942	8.982	9.72	9.72	9.8
10MHz 16QAM	8.942	8.942	8.942	9.64	9.68	9.72
Note: The test plots please refer to the Plots of Occupied Bandwidth						

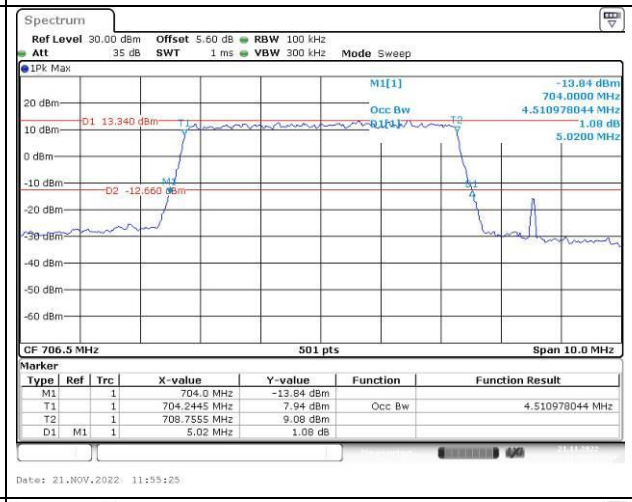
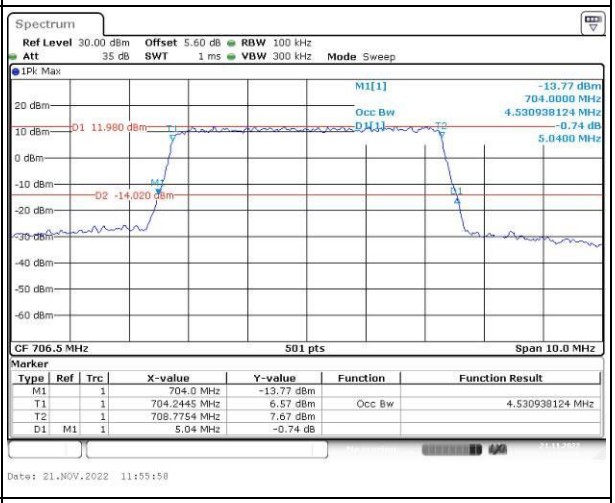
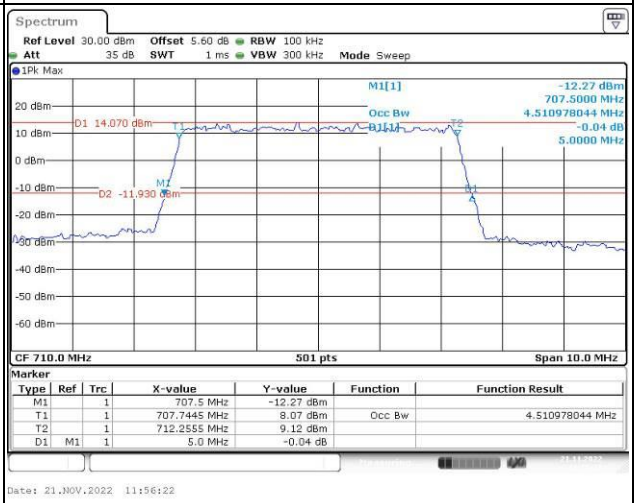
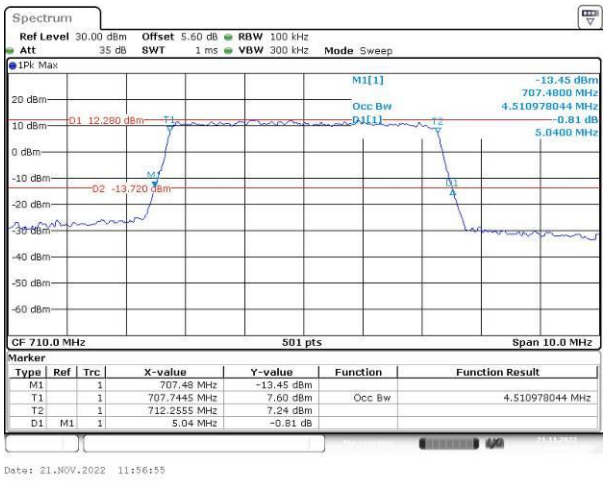
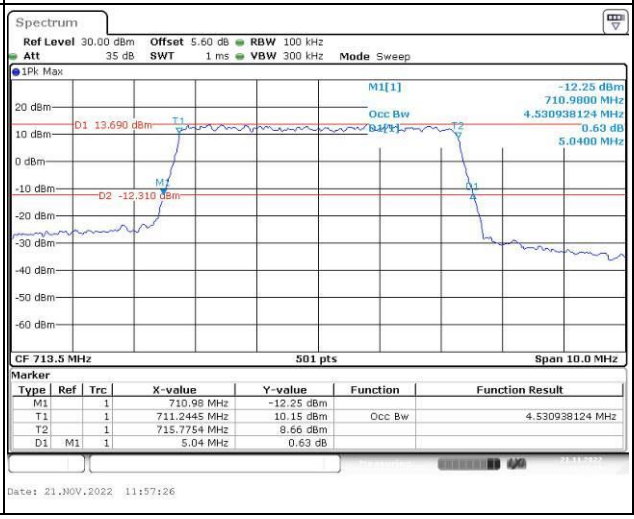
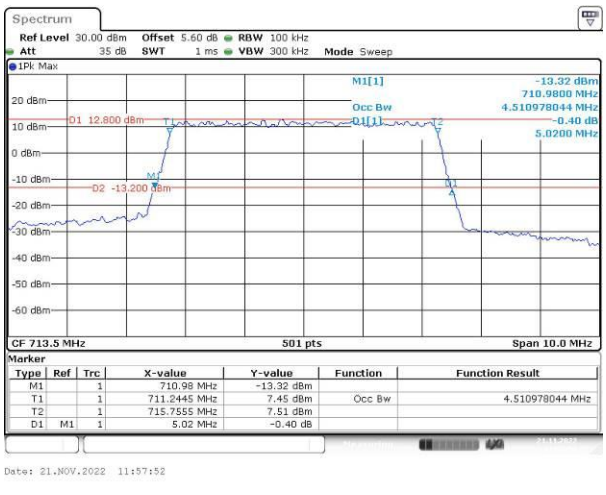
FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal	
Result:	**Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

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.**

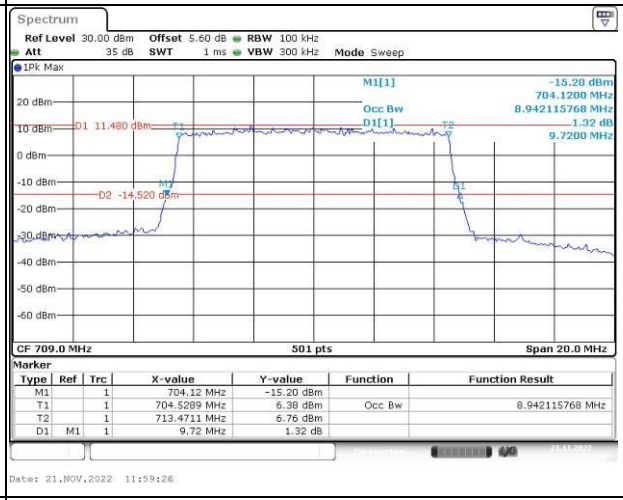
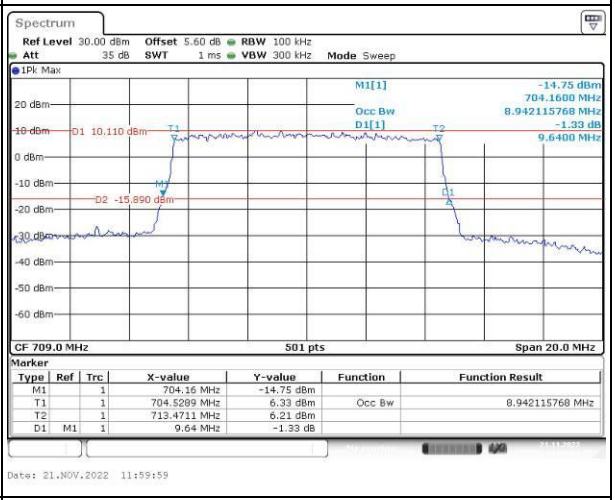
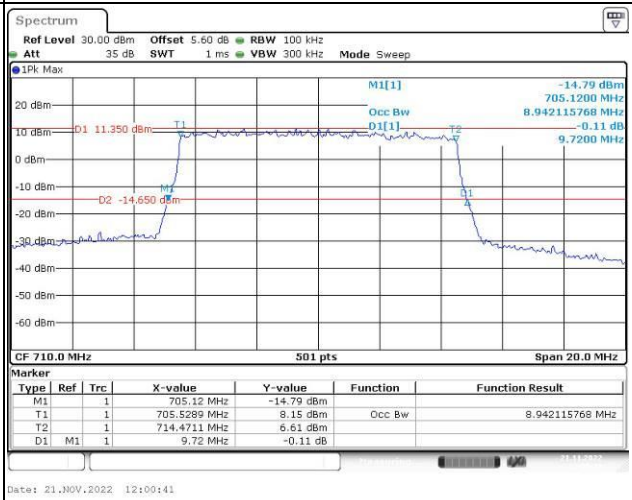
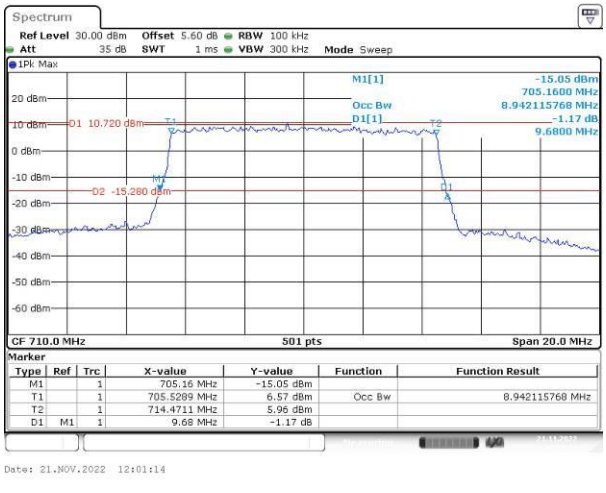
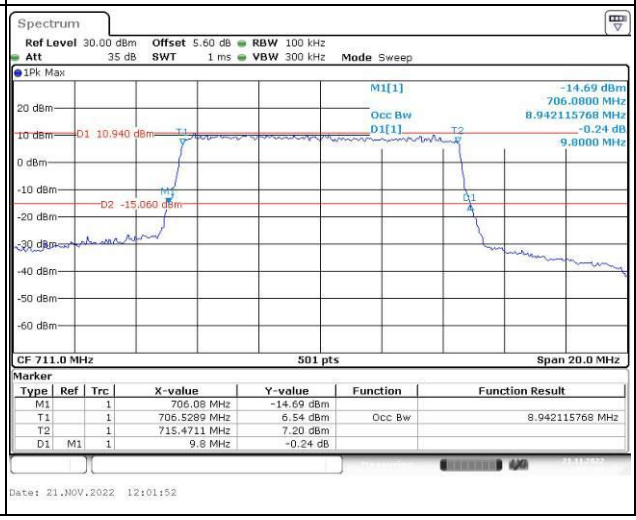
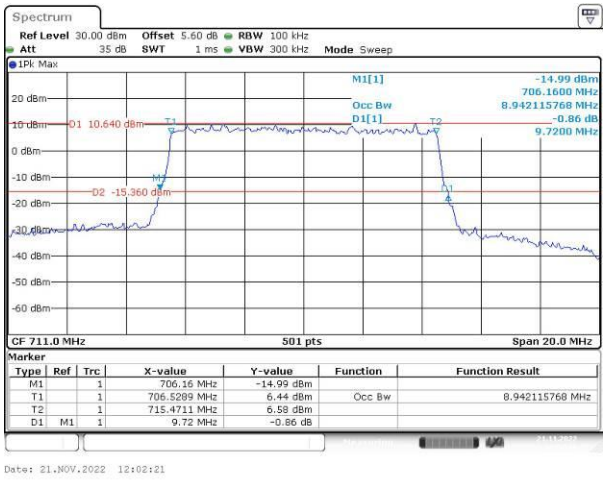
FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	704.572	704.00	715.408	716.00
	-20	3.87	704.533	704.00	715.492	716.00
	-10	3.87	704.554	704.00	715.422	716.00
	0	3.87	704.507	704.00	715.500	716.00
	10	3.87	704.528	704.00	715.451	716.00
	20	3.87	704.529	704.00	715.471	716.00
	30	3.87	704.553	704.00	715.485	716.00
	40	3.87	704.506	704.00	715.495	716.00
	50	3.87	704.521	704.00	715.426	716.00
Frequency Stability vs. Voltage	20	3.3	704.569	704.00	715.449	716.00
	20	4.45	704.521	704.00	715.403	716.00
					Result:	**Pass**

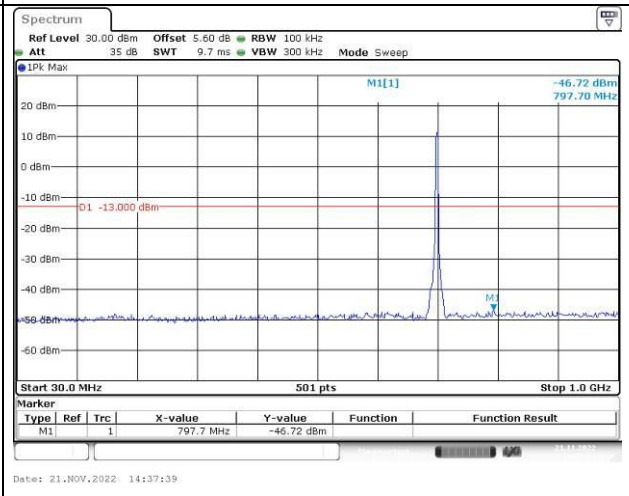
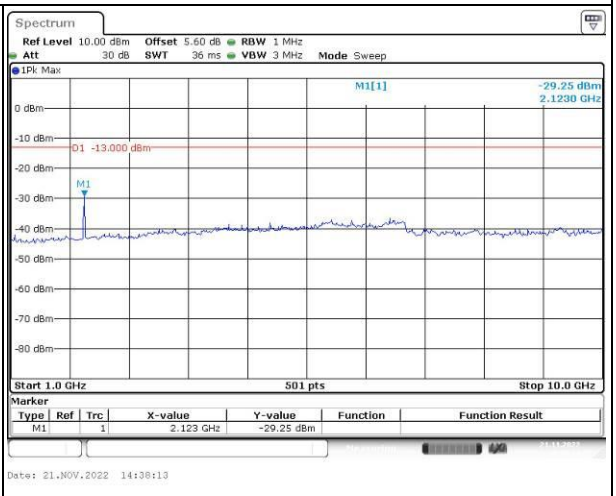
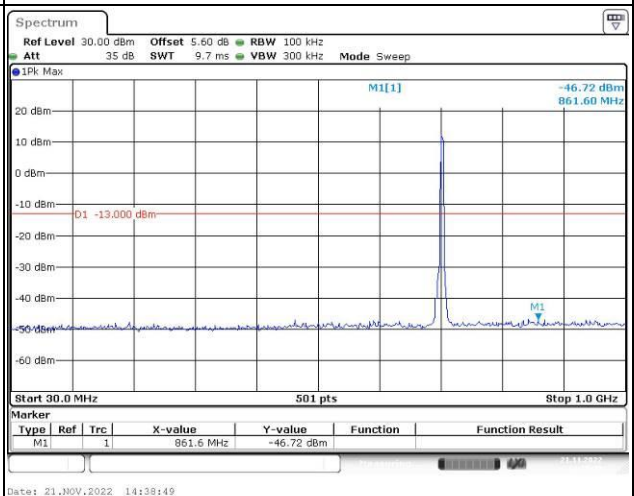
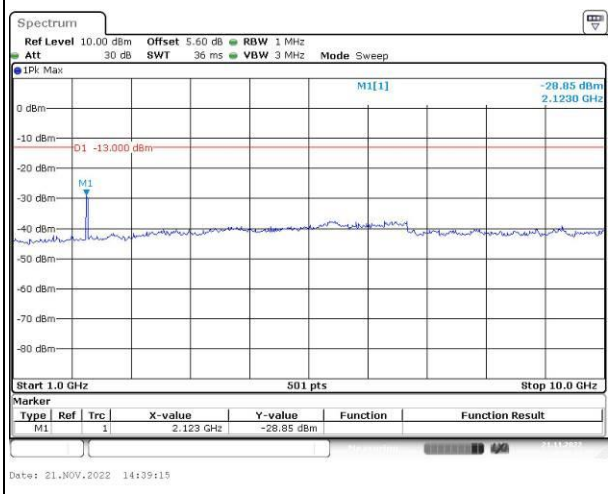
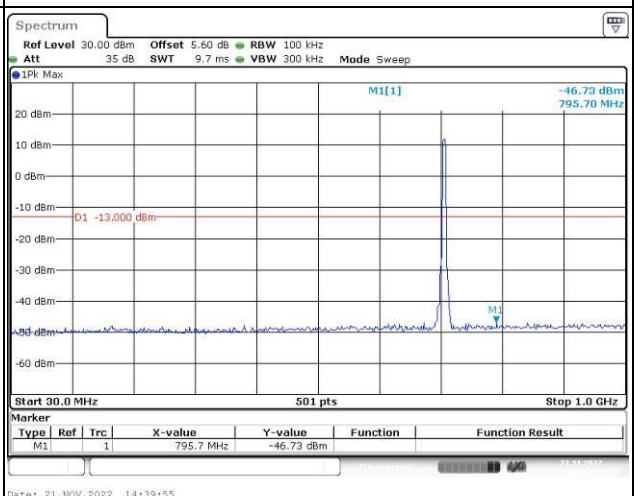
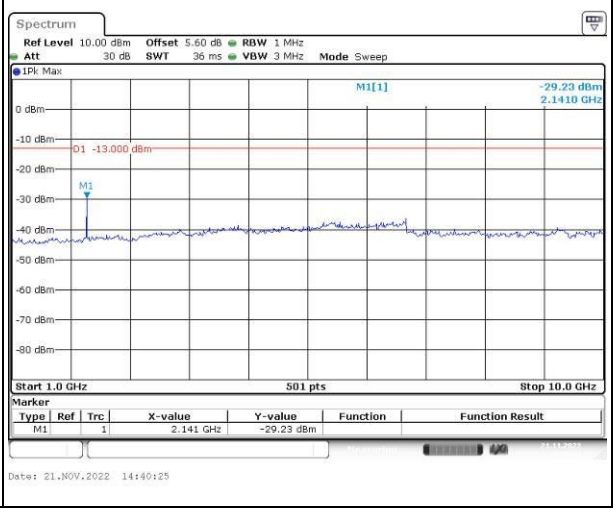
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	704.593	704.00	715.432	716.00
	-20	3.87	704.515	704.00	715.437	716.00
	-10	3.87	704.582	704.00	715.484	716.00
	0	3.87	704.596	704.00	715.414	716.00
	10	3.87	704.549	704.00	715.436	716.00
	20	3.87	704.529	704.00	715.471	716.00
	30	3.87	704.506	704.00	715.408	716.00
	40	3.87	704.590	704.00	715.413	716.00
	50	3.87	704.514	704.00	715.437	716.00
Frequency Stability vs. Voltage	20	3.3	704.539	704.00	715.414	716.00
	20	4.45	704.520	704.00	715.447	716.00
					Result:	**Pass**

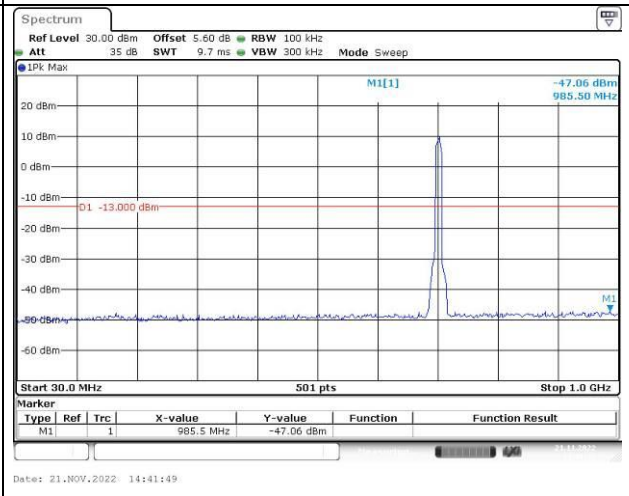
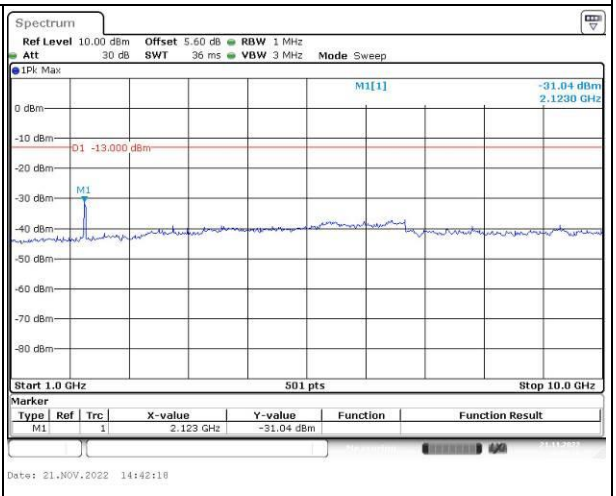
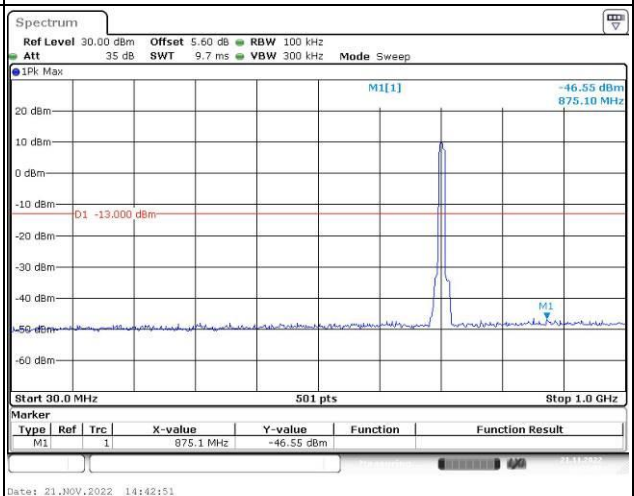
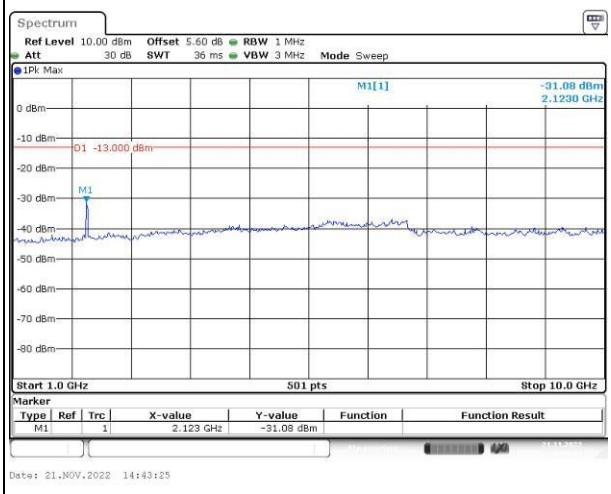
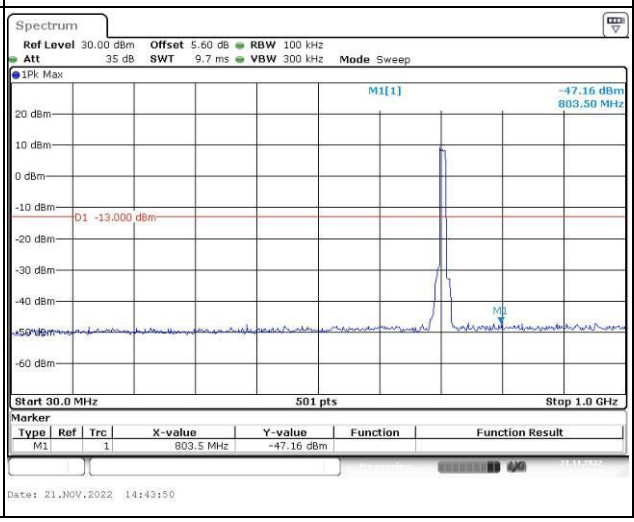
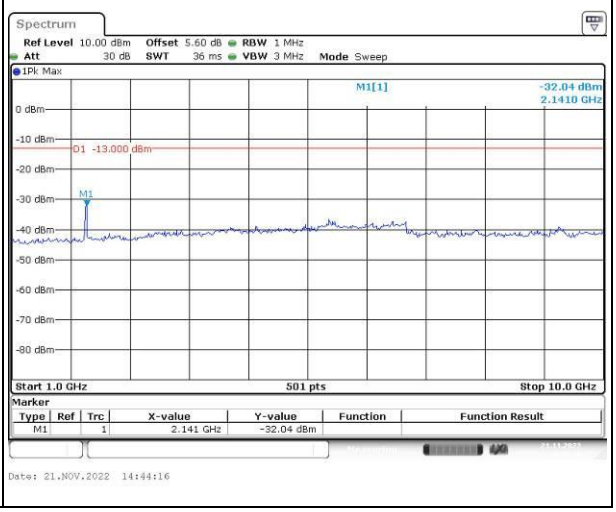
Test Plots(Note: The 5.6dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer)**:**

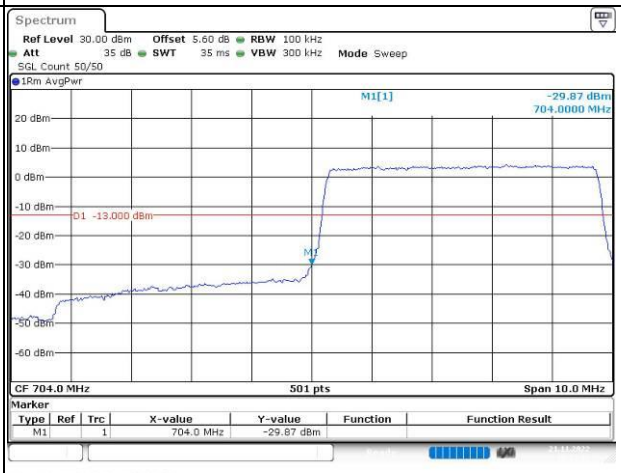
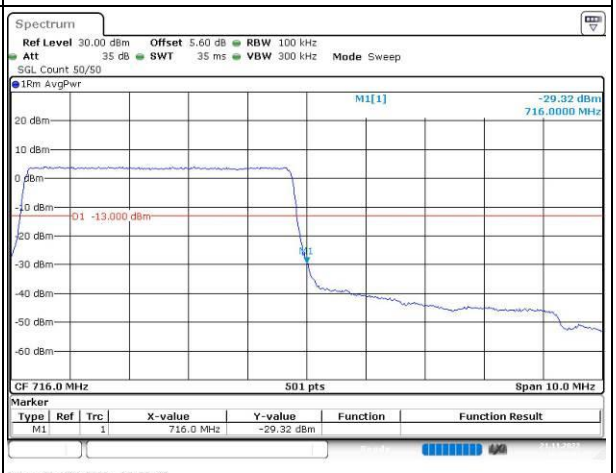
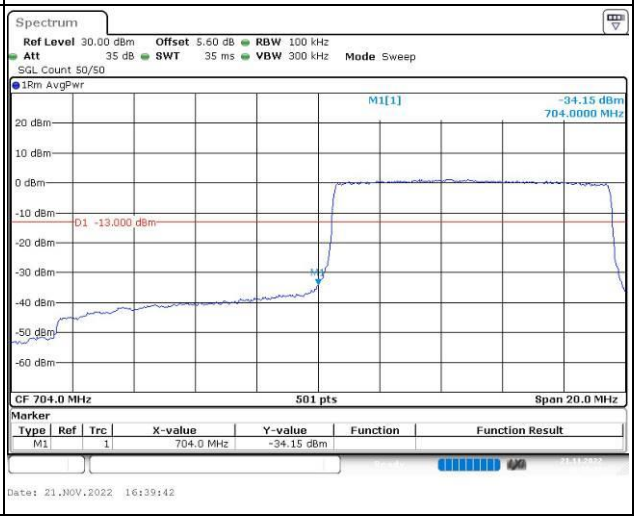
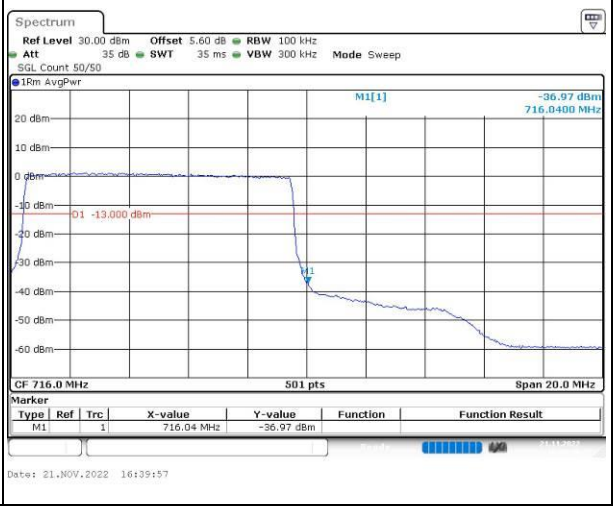
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

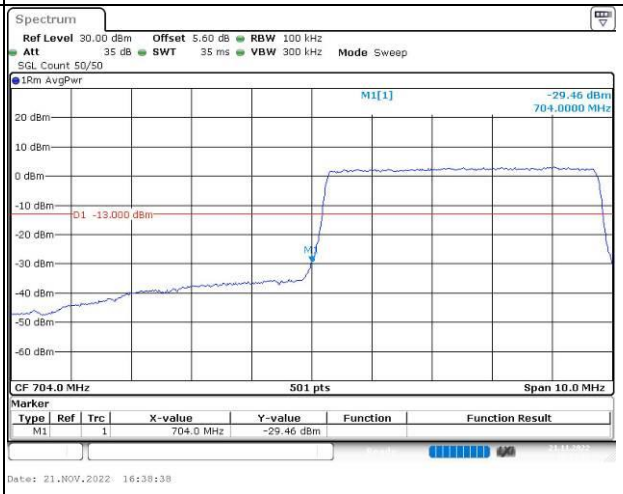
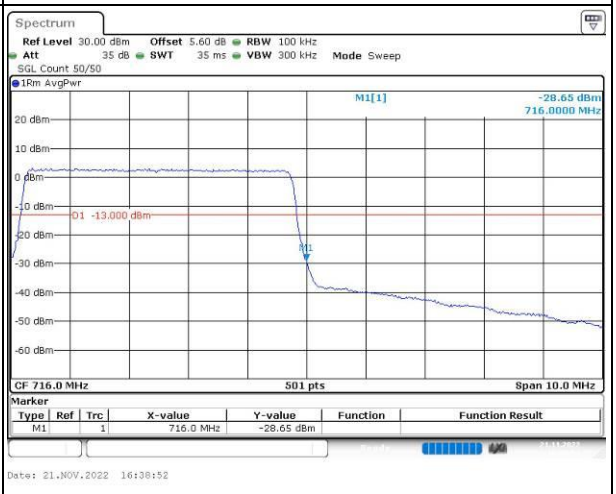
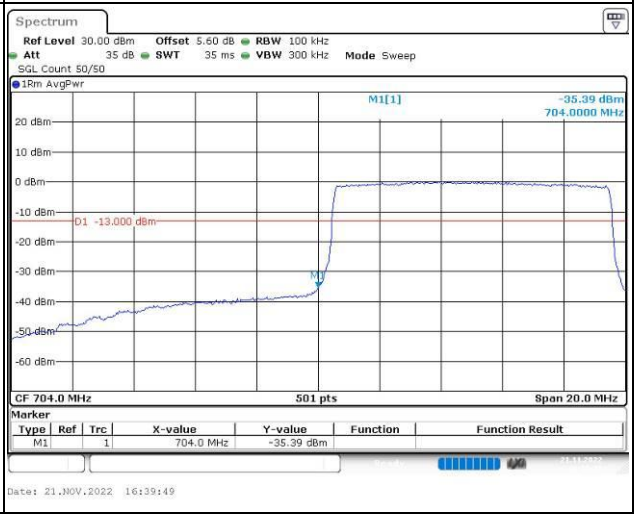
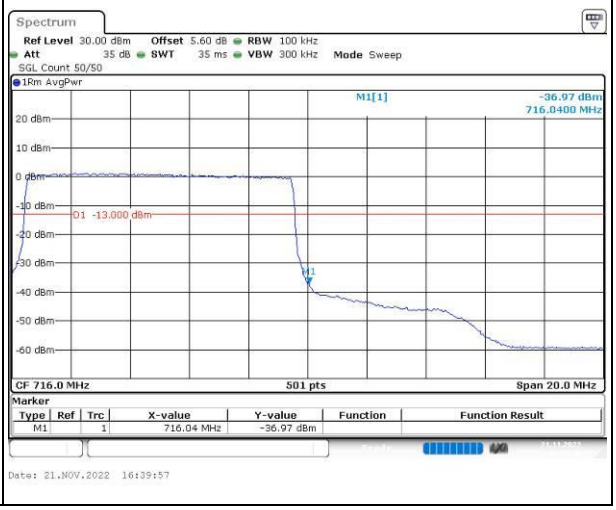
Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz 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		

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

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

4.12 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	1OGW	Test Date:	2022/11/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	25.8	Relative Humidity: (%)	66	ATM Pressure: (kPa)	101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
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	149218	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/4/6	2023/4/5
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	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

Test Data:

FCC §2.1046; § 27.50(d)(4)

RF Output Power:

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.33	22.22	22.41	22.45	30
	RB1#3	22.41	22.22	22.4		
	RB1#5	22.3	22.22	22.38		
	RB3#0	22.33	22.23	22.45		
	RB3#3	22.35	22.19	22.41		
	RB6#0	21.17	21.23	21.42		
1.4MHz 16QAM	RB1#0	21.2	21.23	21.42	21.62	30
	RB1#3	21.24	21.34	21.46		
	RB1#5	21.23	21.26	21.4		
	RB3#0	21.33	21.2	21.55		
	RB3#3	21.29	21.2	21.62		
	RB6#0	20.08	20.26	20.42		
3MHz QPSK	RB1#0	22.45	22.26	22.43	22.45	30
	RB1#8	22.34	22.22	22.43		
	RB1#14	22.28	22.21	22.32		
	RB6#0	21.38	21.22	21.39		
	RB6#9	21.29	21.25	21.35		
	RB15#0	21.34	21.27	21.35		
3MHz 16QAM	RB1#0	21.44	21.25	21.93	21.93	30
	RB1#8	21.4	21.22	21.87		
	RB1#14	21.34	21.21	21.82		
	RB6#0	20.45	20.15	20.44		
	RB6#9	20.36	20.15	20.4		
	RB15#0	20.29	20.3	20.45		
5MHz QPSK	RB1#0	22.53	22.37	22.44	22.53	30
	RB1#13	22.37	22.26	22.4		
	RB1#24	22.4	22.15	22.34		
	RB15#0	21.39	21.29	21.42		
	RB15#10	21.41	21.3	21.38		
	RB25#0	21.37	21.24	21.38		
5MHz 16QAM	RB1#0	21.77	21.39	21.38	21.77	30
	RB1#13	21.66	21.3	21.33		
	RB1#24	21.67	21.18	21.28		
	RB15#0	20.35	20.3	20.44		
	RB15#10	20.34	20.32	20.39		
	RB25#0	20.36	20.29	20.42		

10MHz QPSK	RB1#0	21.8	21.57	21.81	22.91	30
	RB1#25	22.33	22.2	22.36		
	RB1#49	22.79	22.62	22.91		
	RB25#0	21.3	21.19	21.33		
	RB25#25	21.54	21.27	21.54		
	RB50#0	21.4	21.26	21.47		
10MHz 16QAM	RB1#0	20.85	20.58	21.38	22.28	30
	RB1#25	21.43	21.3	21.96		
	RB1#49	21.85	21.64	22.28		
	RB25#0	20.31	20.27	20.38		
	RB25#25	20.53	20.36	20.51		
	RB50#0	20.41	20.27	20.45		
15MHz QPSK	RB1#0	22.56	22.38	22.58	22.58	30
	RB1#38	22.2	22.08	22.26		
	RB1#74	22.47	22.3	22.51		
	RB36#0	21.43	21.19	21.42		
	RB36#39	21.27	21.09	21.33		
	RB75#0	21.28	21.19	21.28		
15MHz 16QAM	RB1#0	22.13	21.45	21.87	22.13	30
	RB1#38	21.76	21.12	21.6		
	RB1#74	22.03	21.35	21.73		
	RB36#0	20.41	20.17	20.4		
	RB36#39	20.29	20.06	20.29		
	RB75#0	20.27	20.17	20.27		
20MHz QPSK	RB1#0	22.18	21.92	22.01	22.7	30
	RB1#50	22.31	22.13	22.3		
	RB1#99	22.7	22.58	22.66		
	RB50#0	21.24	21.05	21.24		
	RB50#50	21.23	21.14	21.33		
	RB100#0	21.28	21.14	21.31		
20MHz 16QAM	RB1#0	21.42	21.16	21.57	22.26	30
	RB1#50	21.59	21.43	21.82		
	RB1#99	21.97	21.75	22.26		
	RB50#0	20.23	20.04	20.24		
	RB50#50	20.22	20.13	20.32		
	RB100#0	20.25	20.13	20.29		
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	5.48	6.17	5.39	13
	RB100#0	4.03	4.2	4.12	13
20MHz 16QAM	RB1#0	6	7.07	5.86	13
	RB100#0	5.65	5.74	5.68	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
1.4MHz QPSK	1.102	1.102	1.102	1.314	1.314	1.314
1.4MHz 16QAM	1.108	1.102	1.102	1.32	1.32	1.314
3MHz QPSK	2.695	2.695	2.695	2.952	2.964	2.94
3MHz 16QAM	2.683	2.683	2.695	2.952	2.952	2.976
5MHz QPSK	4.491	4.531	4.511	5.02	5.04	5.02
5MHz 16QAM	4.531	4.511	4.511	5.02	5.02	5.06
10MHz QPSK	8.942	8.942	8.942	9.72	9.72	9.88
10MHz 16QAM	8.942	8.942	8.982	9.72	9.72	9.68
15MHz QPSK	13.473	13.473	13.533	14.82	14.94	14.94
15MHz 16QAM	13.473	13.473	13.533	14.82	14.88	14.82
20MHz QPSK	17.964	17.964	17.964	19.28	19.68	19.44
20MHz 16QAM	17.884	17.964	17.964	19.6	19.44	19.52
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.**

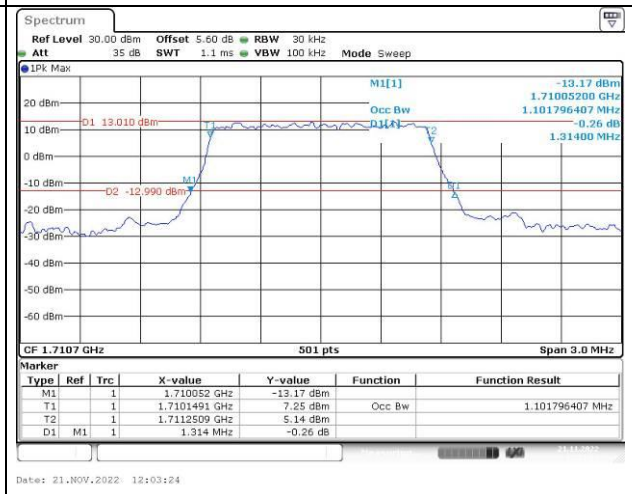
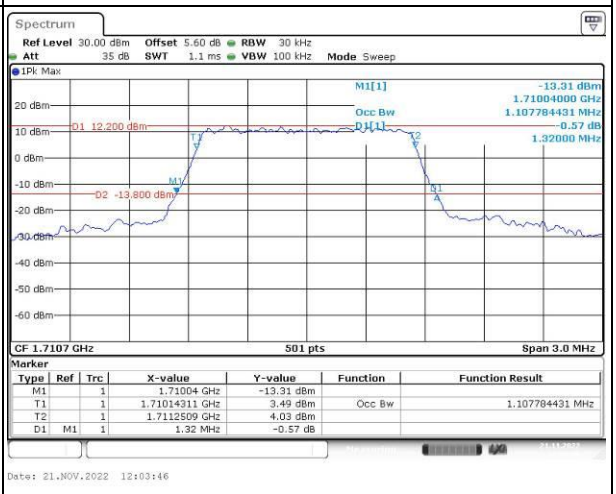
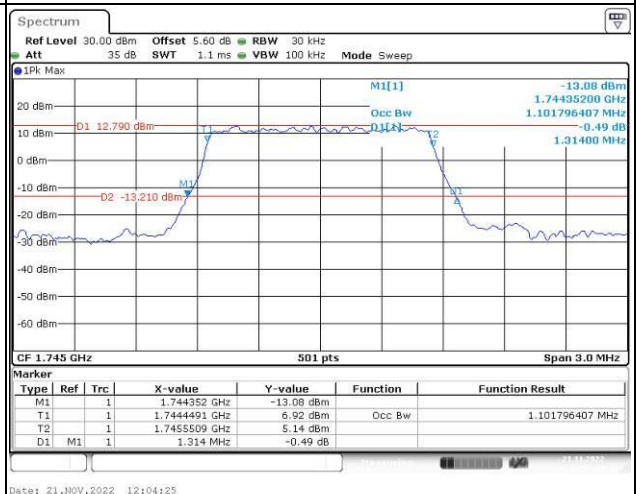
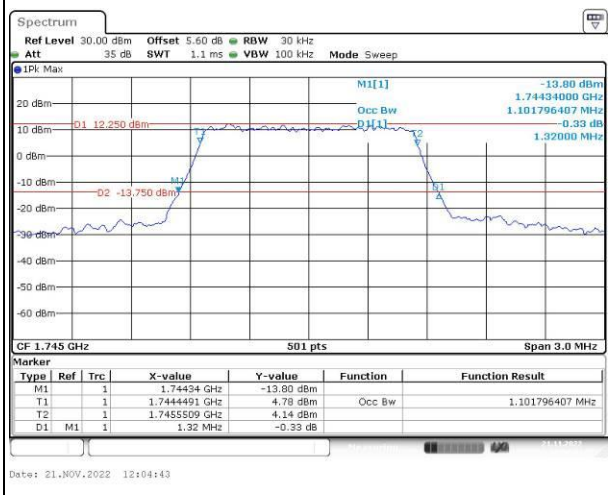
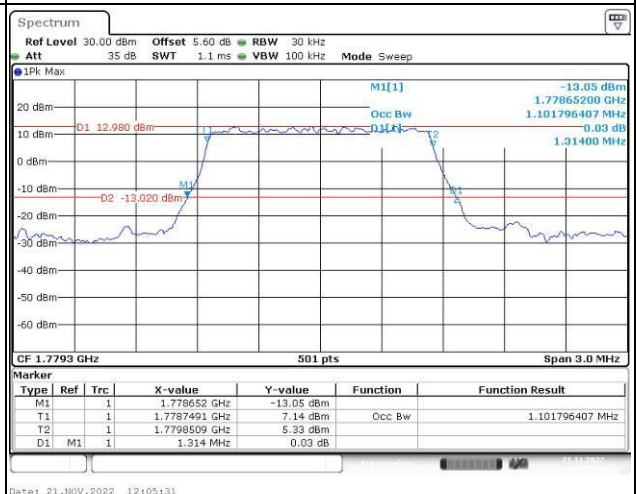
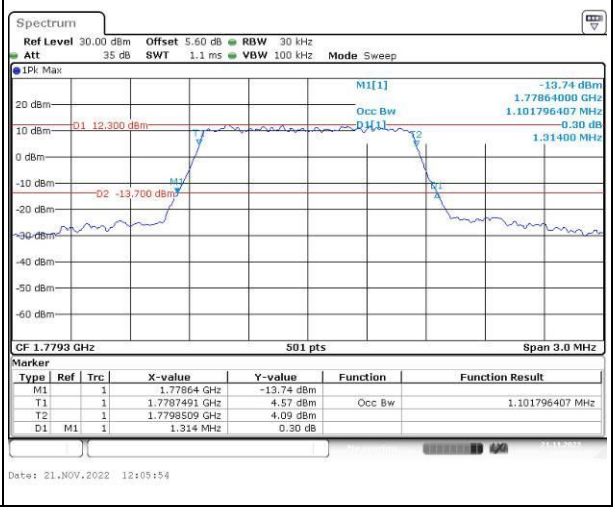
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

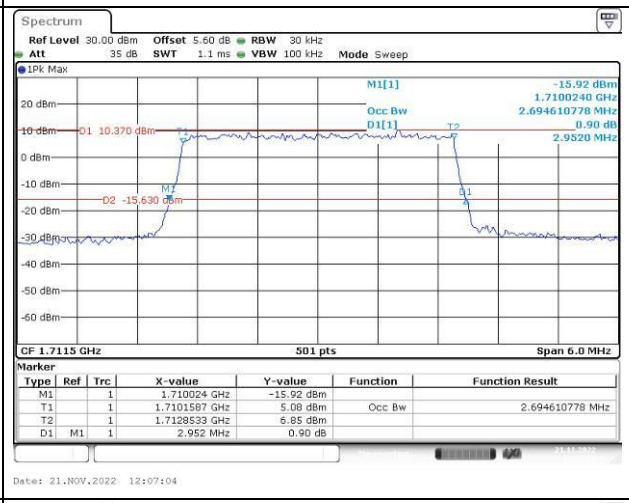
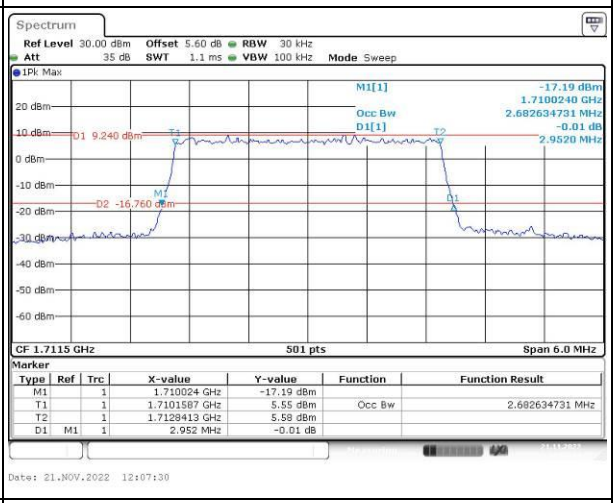
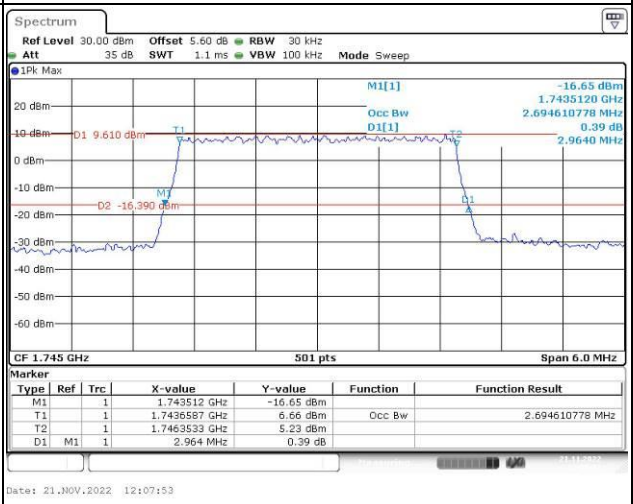
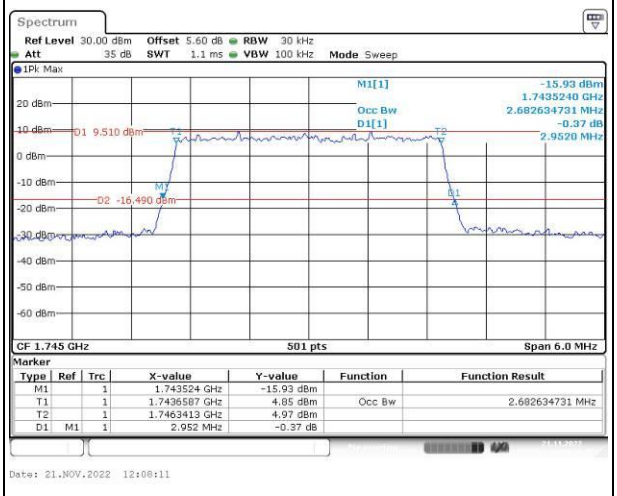
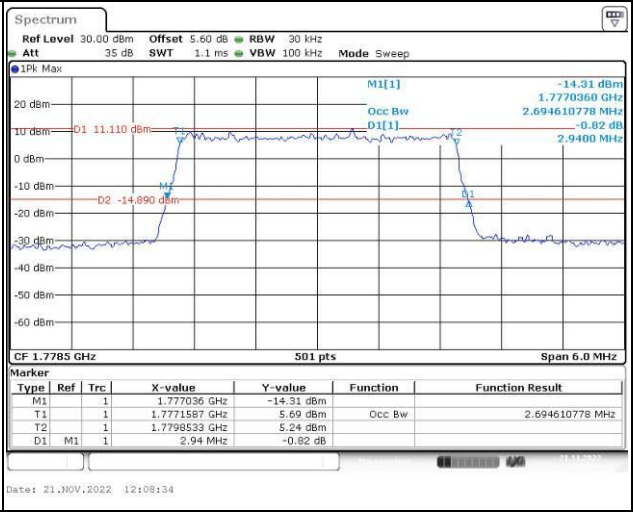
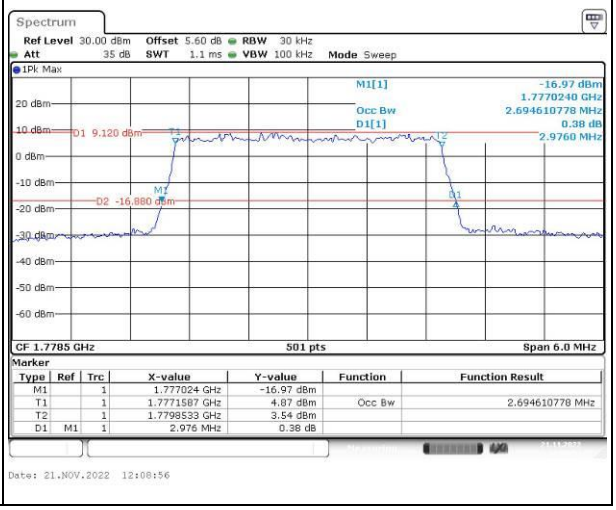
FCC §2.1055, §27.54: Frequency Stability

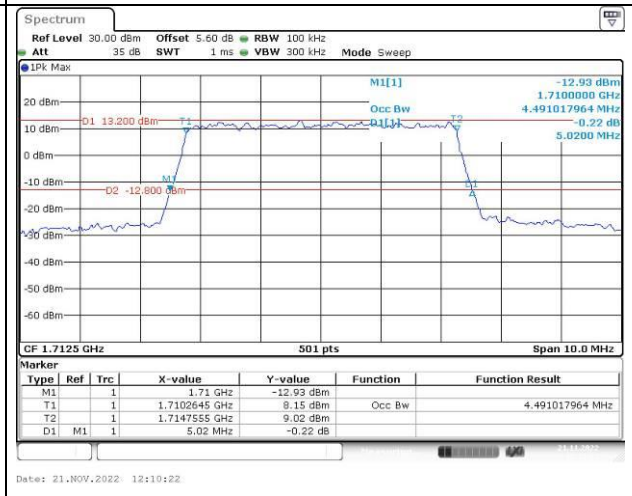
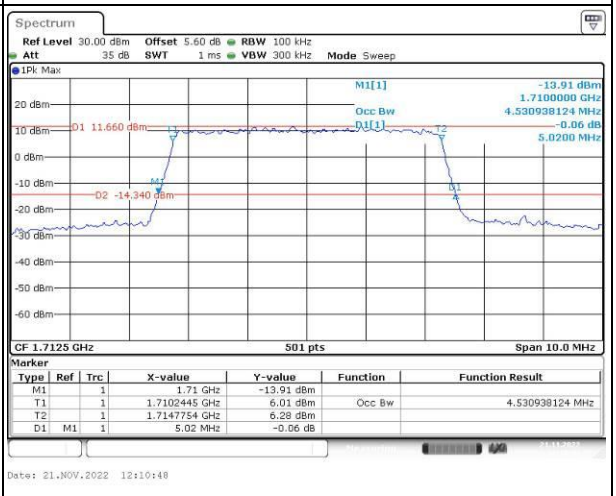
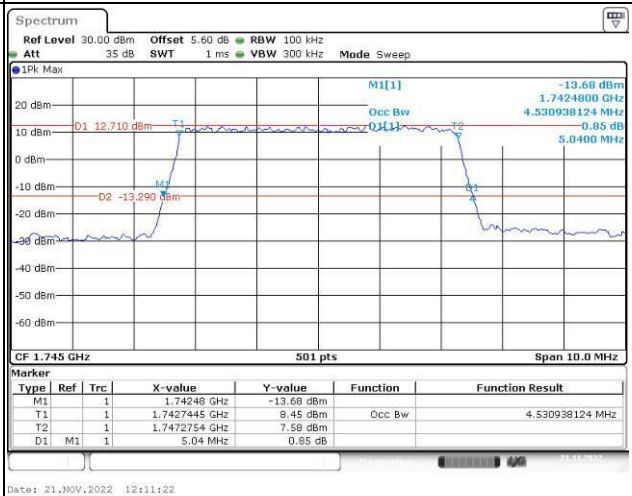
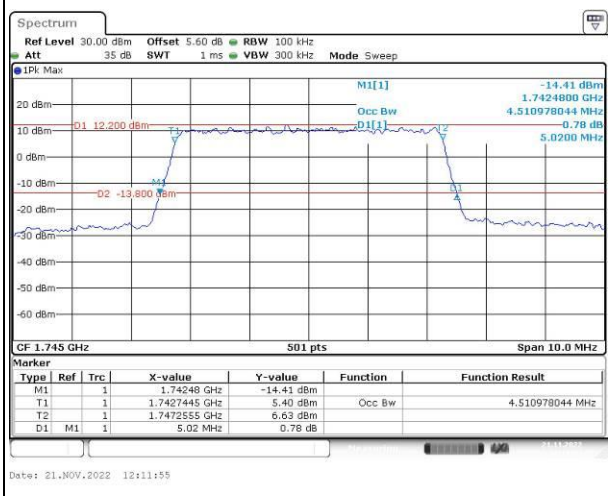
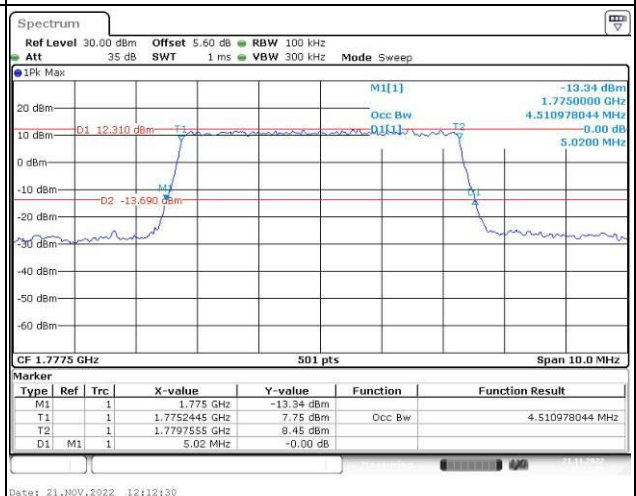
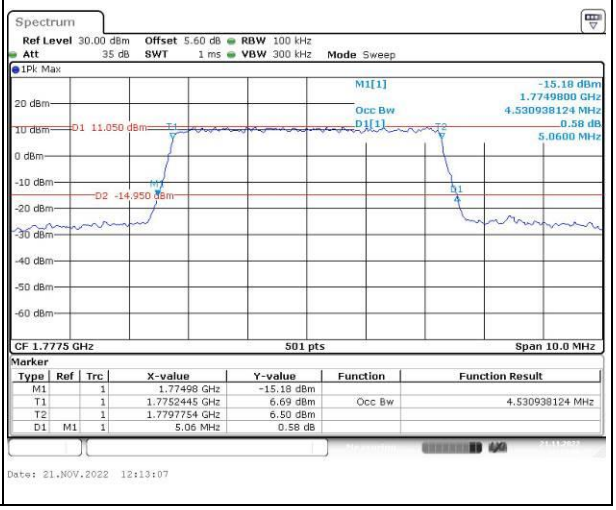
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.87	1710.463	1710.00	1779.606	1780
	-20	3.87	1710.463	1710.00	1779.690	1780
	-10	3.87	1710.422	1710.00	1779.626	1780
	0	3.87	1710.422	1710.00	1779.666	1780
	10	3.87	1710.477	1710.00	1779.657	1780
	20	3.87	1710.458	1710.00	1779.622	1780
	30	3.87	1710.479	1710.00	1779.658	1780
	40	3.87	1710.478	1710.00	1779.680	1780
	50	3.87	1710.411	1710.00	1779.669	1780
Frequency Stability vs. Voltage	20	3.3	1710.425	1710.00	1779.658	1780
	20	4.45	1710.435	1710.00	1779.652	1780
					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	3.87	1710.442	1710.00	1779.658	1780
	-20	3.87	1710.475	1710.00	1779.660	1780
	-10	3.87	1710.418	1710.00	1779.601	1780
	0	3.87	1710.491	1710.00	1779.620	1780
	10	3.87	1710.414	1710.00	1779.611	1780
	20	3.87	1710.458	1710.00	1779.622	1780
	30	3.87	1710.438	1710.00	1779.647	1780
	40	3.87	1710.457	1710.00	1779.632	1780
	50	3.87	1710.472	1710.00	1779.617	1780
Frequency Stability vs. Voltage	20	3.3	1710.470	1710.00	1779.678	1780
	20	4.45	1710.463	1710.00	1779.617	1780
					Result:	**Pass**

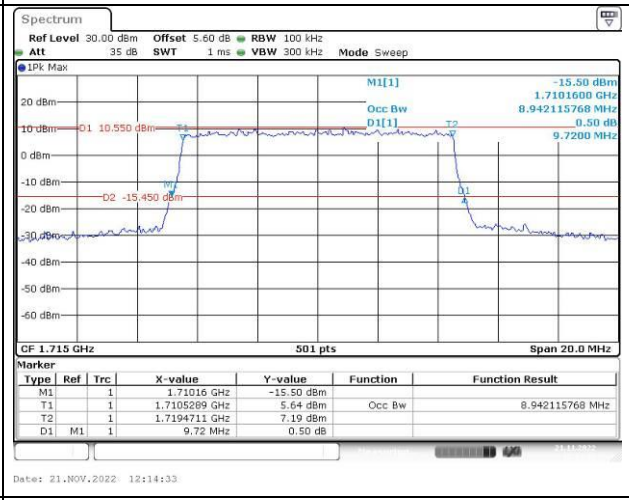
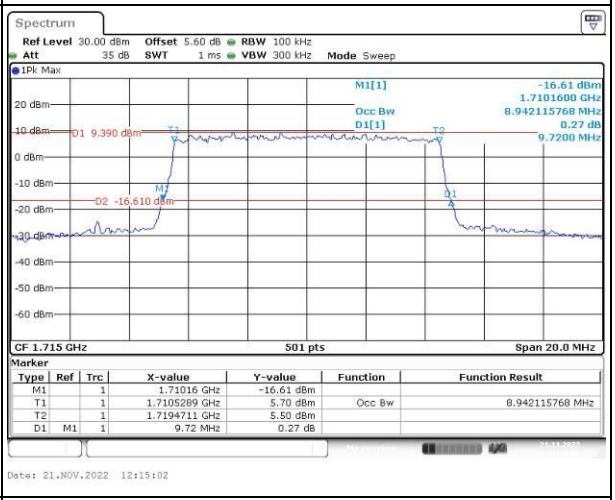
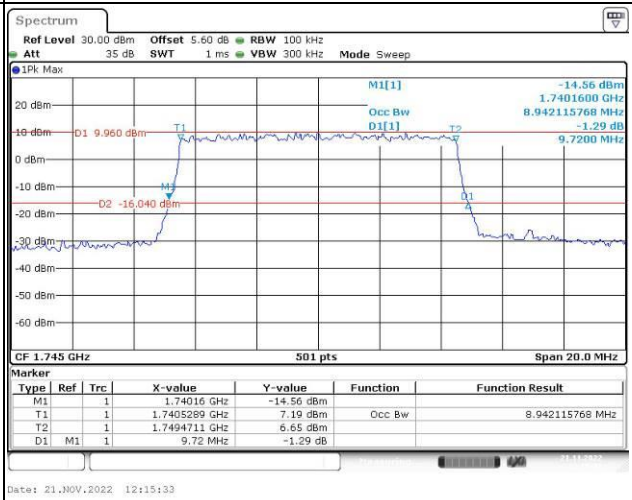
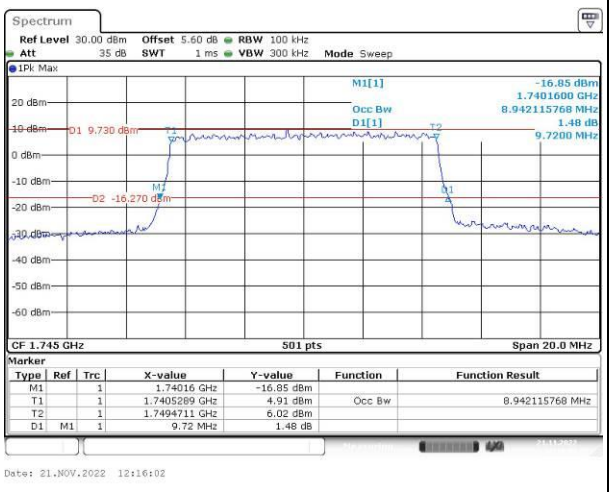
Test Plots(Note: The 5.6dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer)**:**

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		

Occupied Bandwidth

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