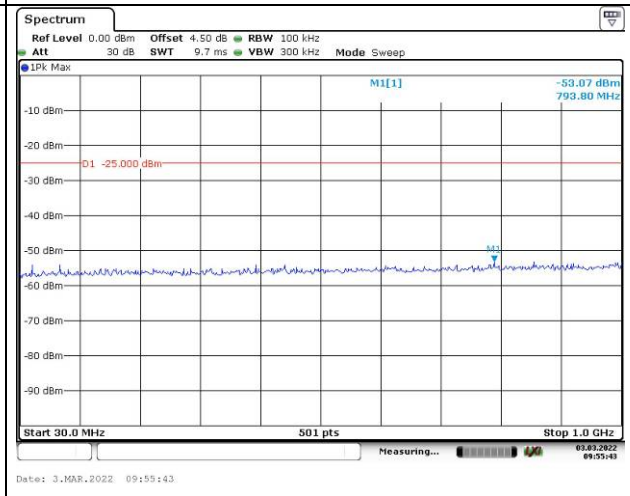
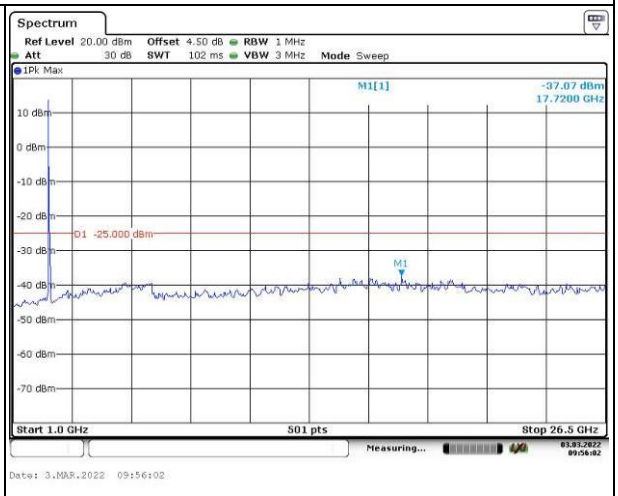
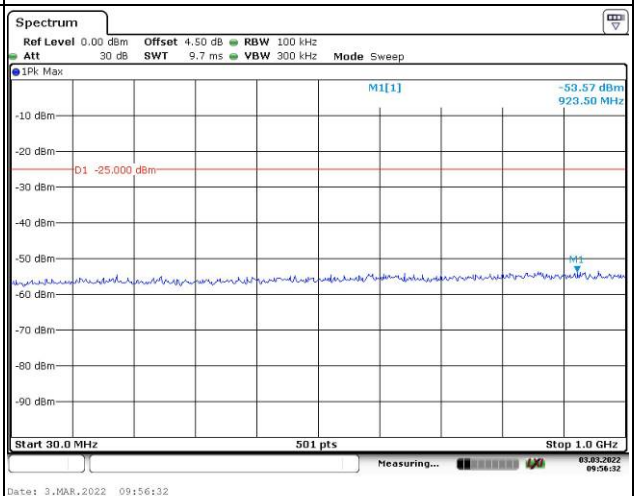
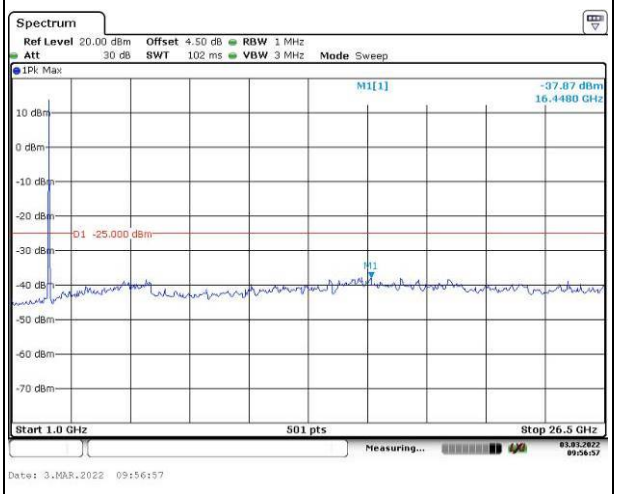
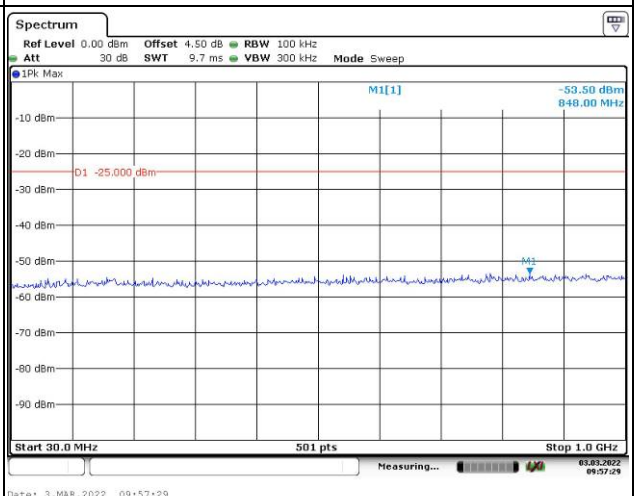
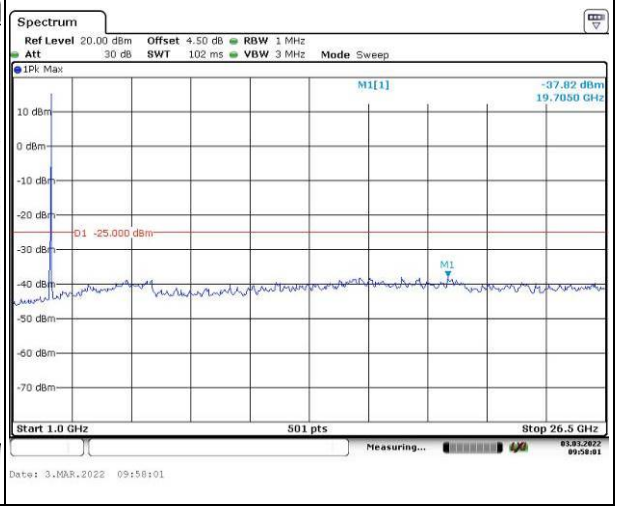
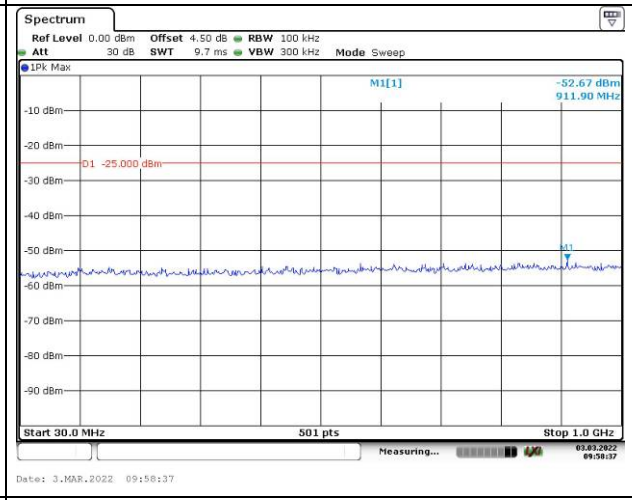
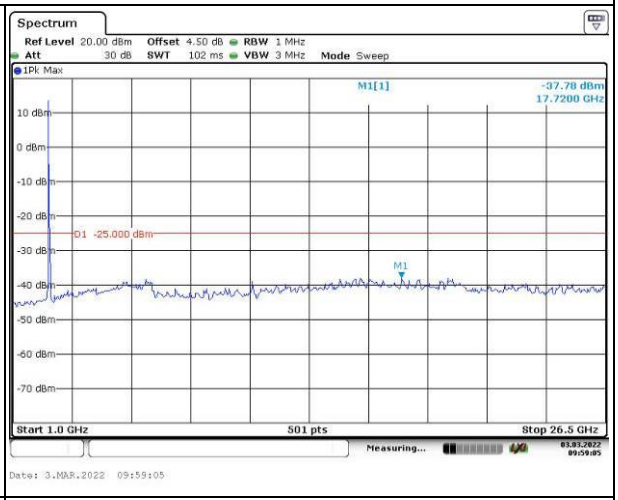
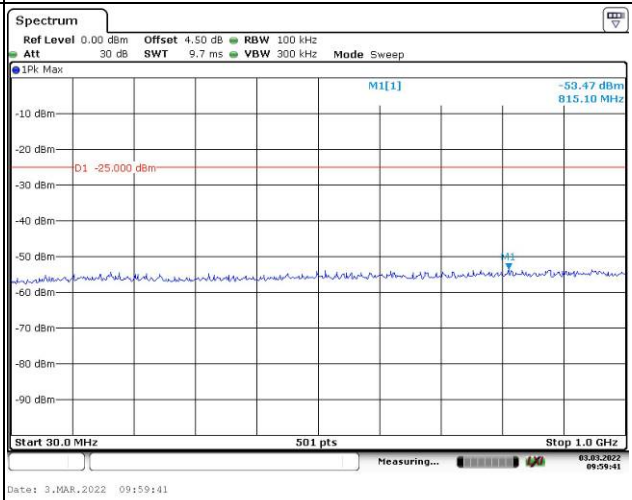
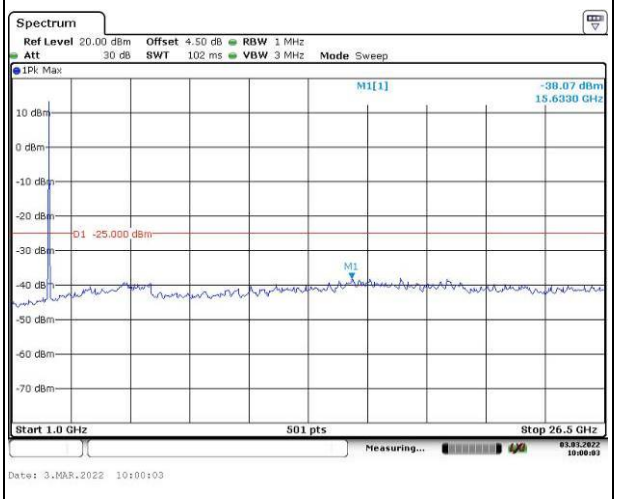
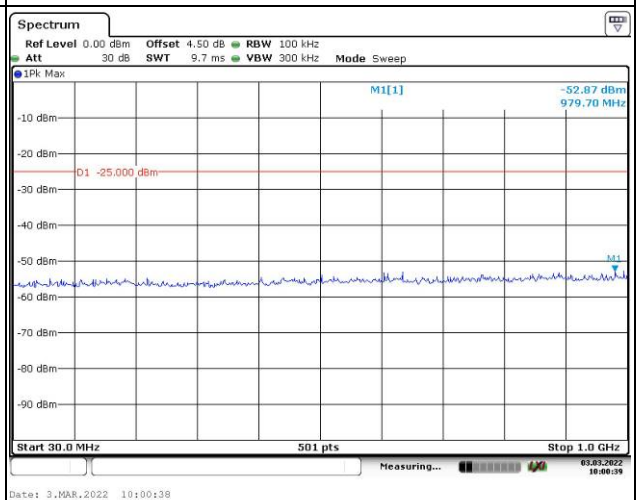
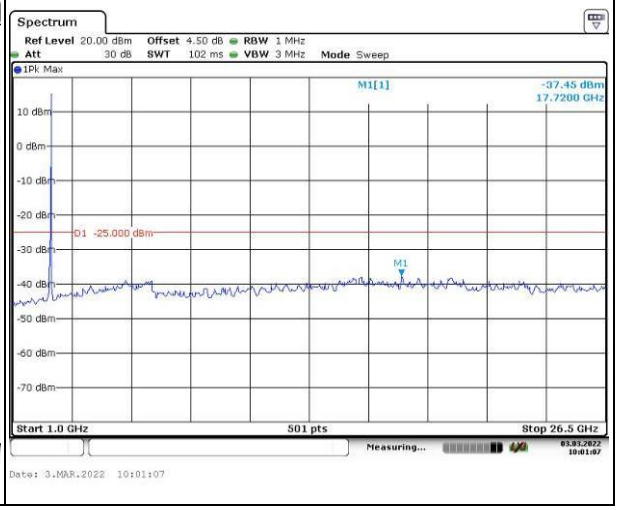
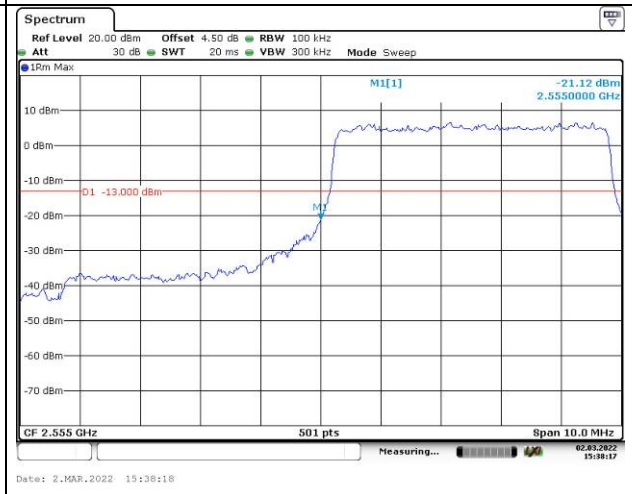
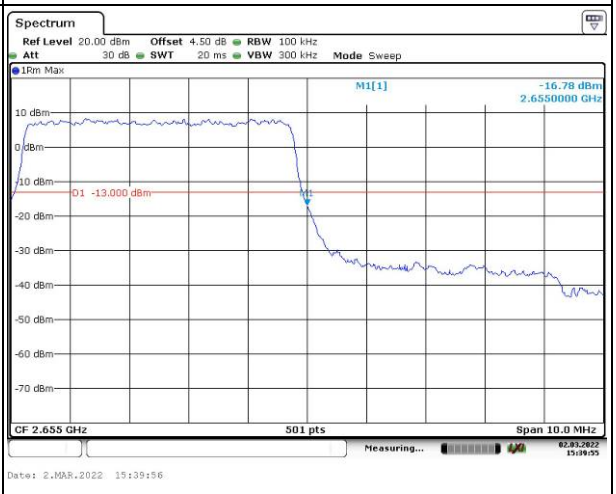
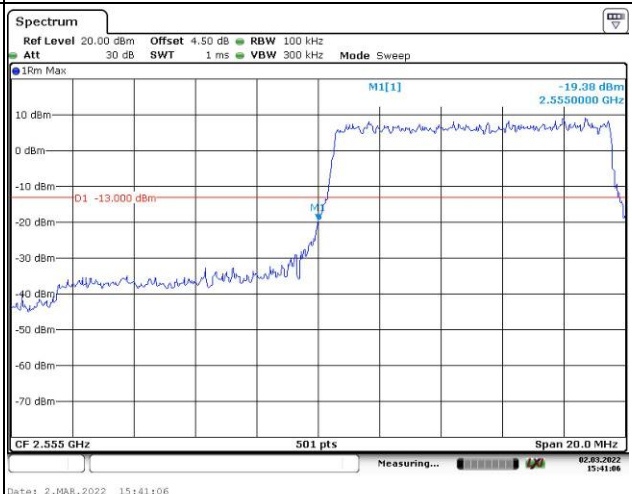
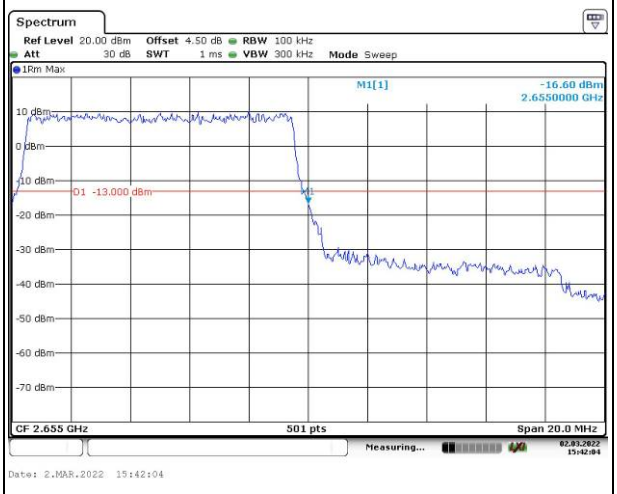
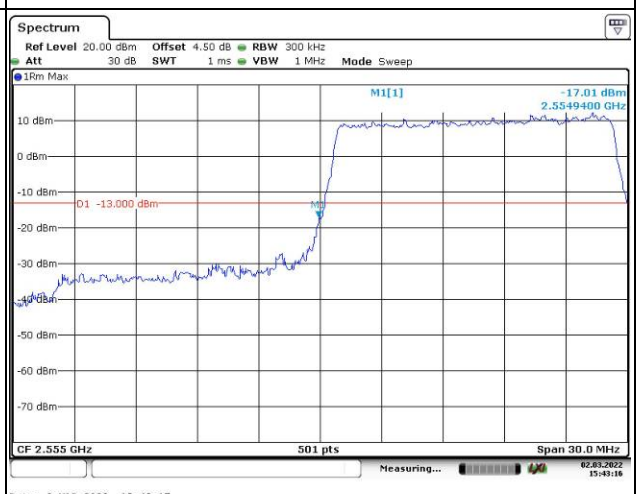
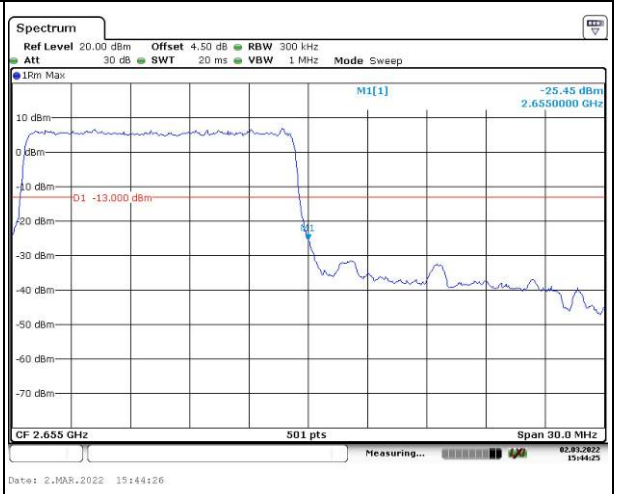
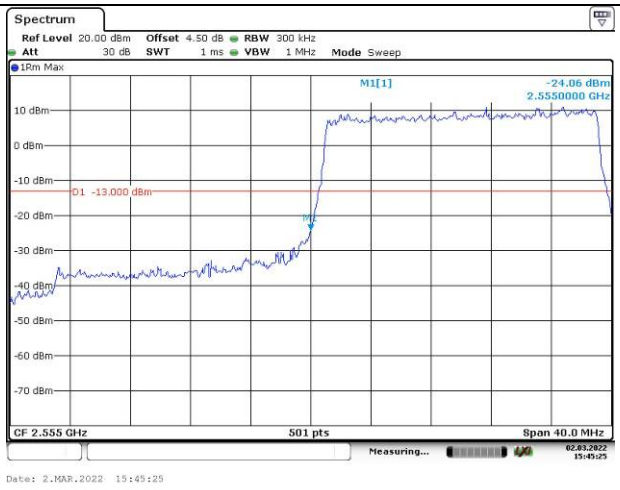
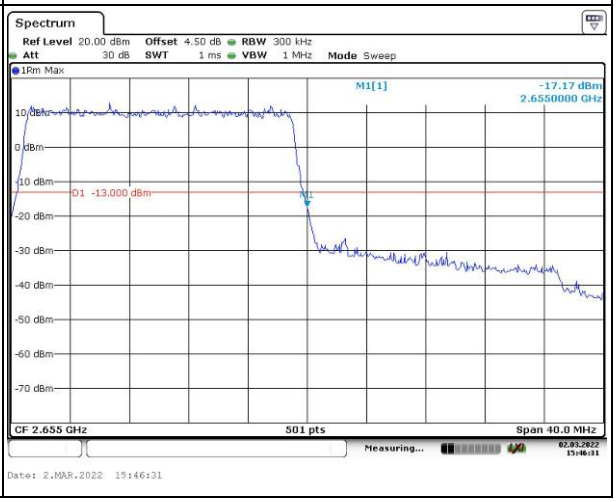
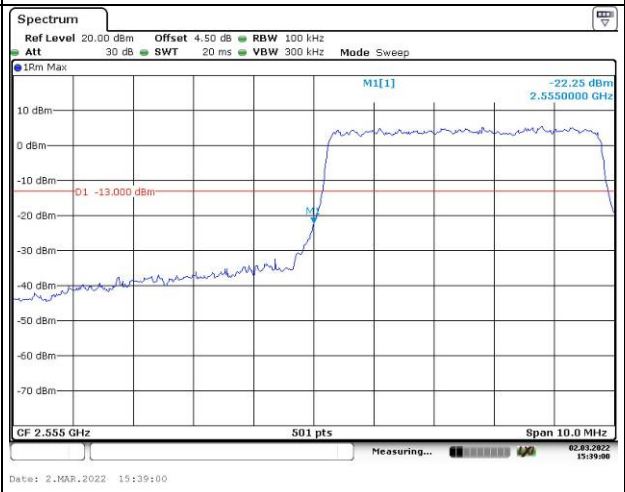
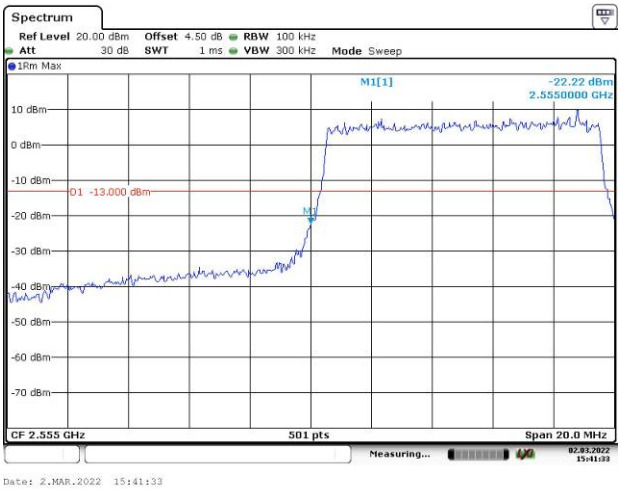
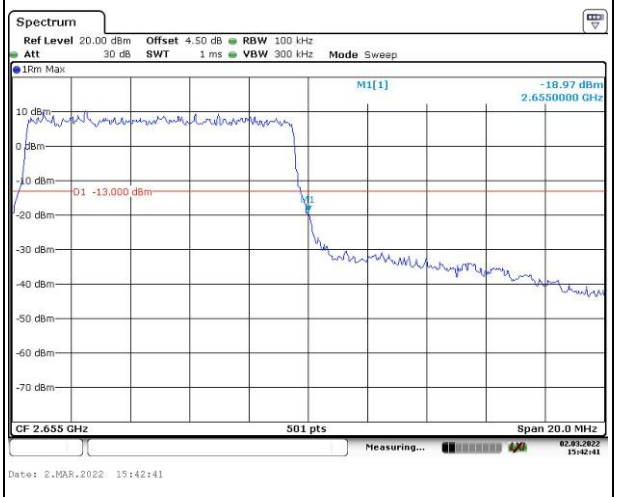
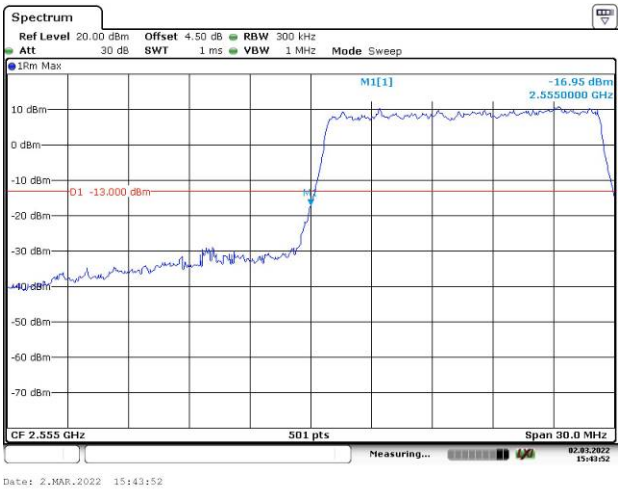
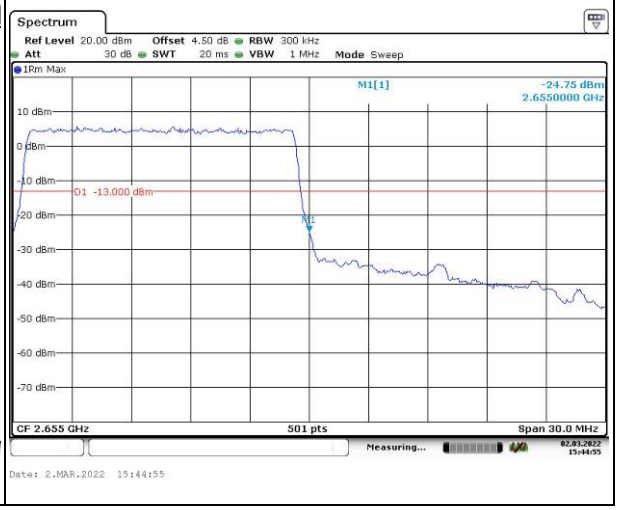
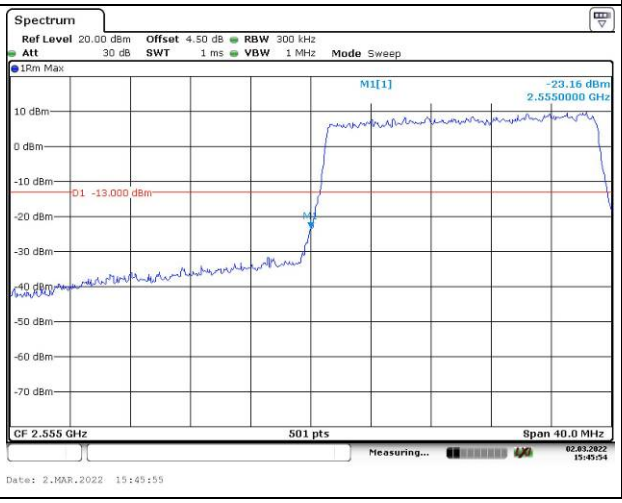
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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

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

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

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

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

4.13 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	CR22020002-RF-S1/3	Test Date:	2022-02-12~2022-03-03
Test Site:	RF	Test Mode:	Transmitting
Tester:	Le Qiao	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	21~23.1	Relative Humidity: (%)	51~66	ATM Pressure: (kPa)	100.8~101.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2021/7/22	2022/7/21
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021/7/22	2022/7/21
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021/7/22	2022/7/22
UNI-T	Multimeter	UT39A+	C210582554	2021/9/30	2022/9/30
E-Microwave	Two-way Spliter	ODP-1-6	OE0120176	Each Time	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).*

EUT Information@ LTE Band 66▲:					
Antenna Gain (dBi):	1			Cable Loss (dB):	0.1
Operation Voltage(V_{DC}):					
Lowest:	3.6	Normal:	3.8	Highest:	4.3

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	22.34	22.24	22.14	23.4	30
	RB1#3	22.50	22.41	22.32		
	RB1#5	22.32	22.24	22.14		
	RB3#0	22.44	22.30	22.20		
	RB3#3	22.43	22.28	22.24		
	RB6#0	21.46	21.35	21.26		
1.4MHz 16QAM	RB1#0	21.40	21.35	21.18	22.63	30
	RB1#3	21.58	21.56	21.30		
	RB1#5	21.36	21.39	21.18		
	RB3#0	21.69	21.40	21.34		
	RB3#3	21.73	21.41	21.35		
	RB6#0	20.47	20.35	20.16		
3MHz QPSK	RB1#0	22.40	22.29	22.24	23.3	30
	RB1#8	22.38	22.29	22.23		
	RB1#14	22.34	22.24	22.18		
	RB6#0	21.43	21.27	21.24		
	RB6#9	21.41	21.27	21.21		
	RB15#0	21.44	21.33	21.29		
3MHz 16QAM	RB1#0	21.99	21.50	21.27	22.89	30
	RB1#8	21.98	21.45	21.27		
	RB1#14	21.91	21.47	21.20		
	RB6#0	20.46	20.28	20.17		
	RB6#9	20.44	20.33	20.12		
	RB15#0	20.47	20.30	20.33		
5MHz QPSK	RB1#0	22.31	22.19	22.12	23.31	30
	RB1#13	22.41	22.33	22.21		
	RB1#24	22.23	22.17	22.06		
	RB15#0	21.35	21.34	21.35		
	RB15#10	21.49	21.35	21.28		
	RB25#0	21.39	21.35	21.24		
5MHz 16QAM	RB1#0	21.21	21.50	21.25	22.61	30
	RB1#13	21.32	21.71	21.33		
	RB1#24	21.18	21.55	21.15		
	RB15#0	20.42	20.31	20.37		
	RB15#10	20.51	20.37	20.31		
	RB25#0	20.46	20.37	20.27		

10MHz QPSK	RB1#0	22.36	22.24	22.26	23.35	30
	RB1#25	22.45	22.43	22.41		
	RB1#49	22.31	22.27	22.19		
	RB25#0	21.32	21.37	21.42		
	RB25#25	21.48	21.43	21.23		
	RB50#0	21.43	21.45	21.36		
10MHz 16QAM	RB1#0	21.97	21.46	21.23	22.99	30
	RB1#25	22.09	21.65	21.44		
	RB1#49	21.91	21.42	21.23		
	RB25#0	20.39	20.38	20.48		
	RB25#25	20.58	20.45	20.34		
	RB50#0	20.44	20.40	20.37		
15MHz QPSK	RB1#0	22.29	22.22	22.19	23.26	30
	RB1#38	22.36	22.31	22.25		
	RB1#74	22.21	22.21	22.11		
	RB36#0	21.36	21.40	21.43		
	RB36#39	21.45	21.41	21.33		
	RB75#0	21.43	21.42	21.40		
15MHz 16QAM	RB1#0	21.87	21.40	21.56	22.86	30
	RB1#38	21.96	21.50	21.63		
	RB1#74	21.86	21.42	21.52		
	RB36#0	20.34	20.43	20.35		
	RB36#39	20.48	20.44	20.26		
	RB75#0	20.41	20.42	20.25		
20MHz QPSK	RB1#0	22.15	22.10	21.93	23.41	30
	RB1#50	22.51	22.48	22.36		
	RB1#99	22.13	22.11	21.95		
	RB50#0	21.28	21.43	21.30		
	RB50#50	21.42	21.44	21.16		
	RB100#0	21.30	21.42	21.23		
20MHz 16QAM	RB1#0	21.44	21.36	21.54	22.78	30
	RB1#50	21.85	21.70	21.88		
	RB1#99	21.46	21.32	21.52		
	RB50#0	20.23	20.40	20.28		
	RB50#50	20.41	20.45	20.17		
	RB100#0	20.34	20.43	20.22		
Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(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	4.75	5.45	5.42	13
	RB100#0	5.28	5.33	5.48	13
20MHz 16QAM	RB1#0	5.57	7.07	6.43	13
	RB100#0	6.32	6.35	6.52	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	1.096	1.096	1.102	1.308	1.314	1.290
1.4MHz 16QAM	1.102	1.090	1.102	1.326	1.284	1.296
3MHz QPSK	2.671	2.695	2.683	2.868	2.880	2.892
3MHz 16QAM	2.671	2.683	2.683	2.880	2.880	2.880
5MHz QPSK	4.551	4.531	4.511	5.600	5.360	5.160
5MHz 16QAM	4.531	4.551	4.531	5.160	5.260	5.240
10MHz QPSK	8.942	8.942	8.981	9.920	9.880	9.960
10MHz 16QAM	8.942	8.981	8.981	9.720	9.960	9.880
15MHz QPSK	13.533	13.533	13.533	14.880	15.960	14.820
15MHz 16QAM	13.533	13.533	13.533	14.820	15.780	15.480
20MHz QPSK	17.964	17.884	17.964	19.440	19.680	20.000
20MHz 16QAM	17.964	18.044	17.964	19.600	20.480	19.760
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.**

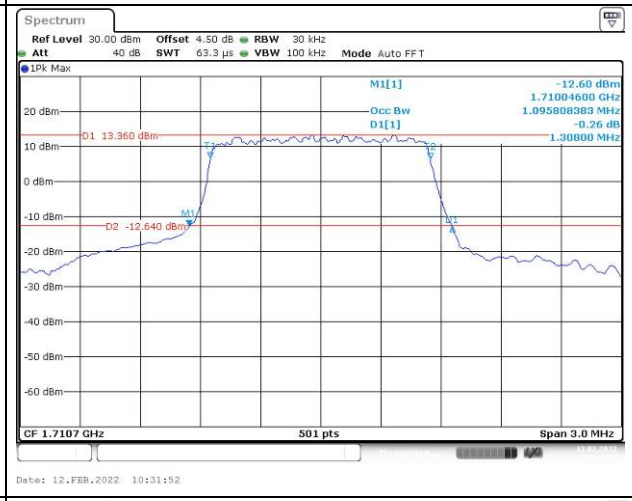
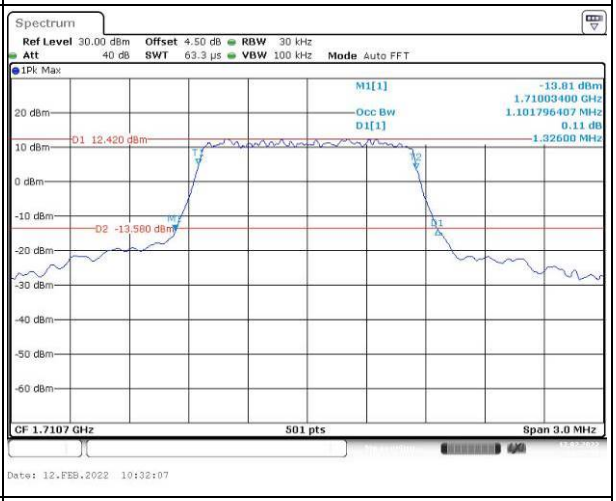
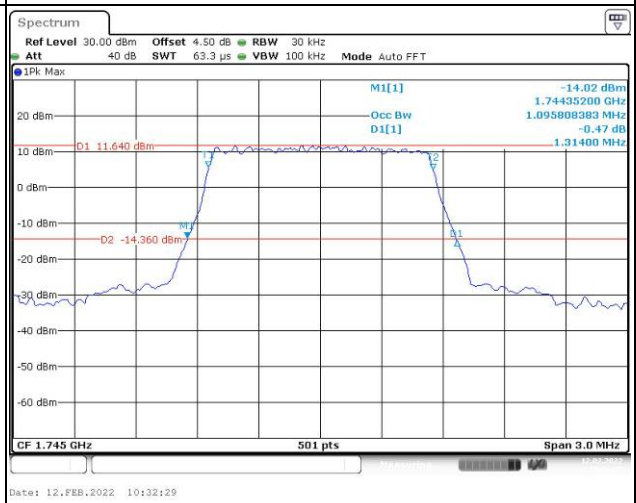
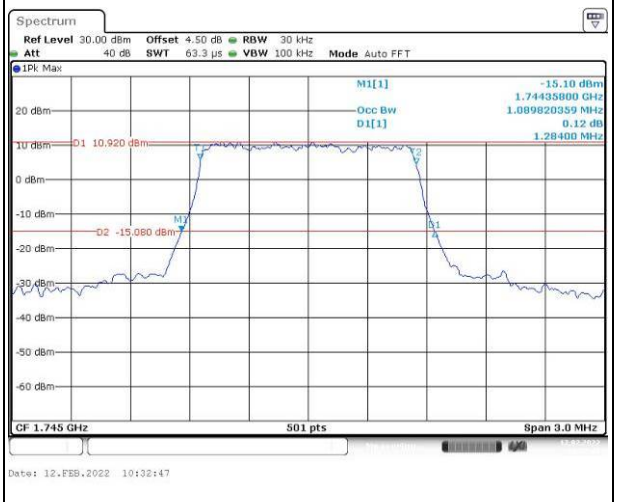
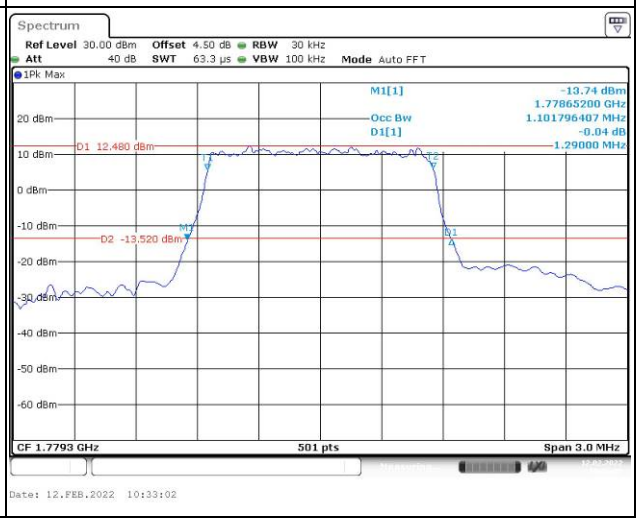
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

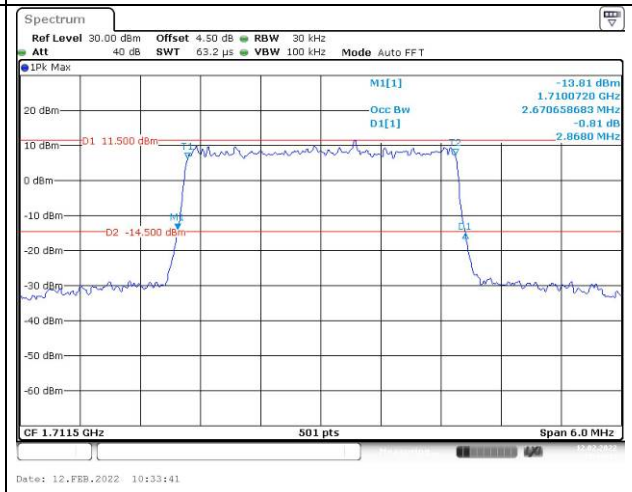
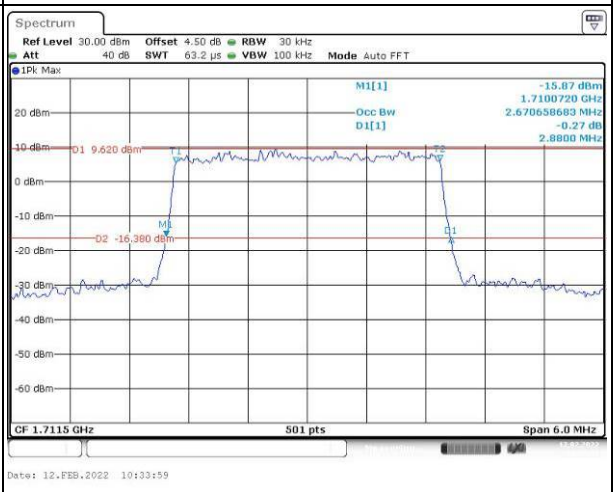
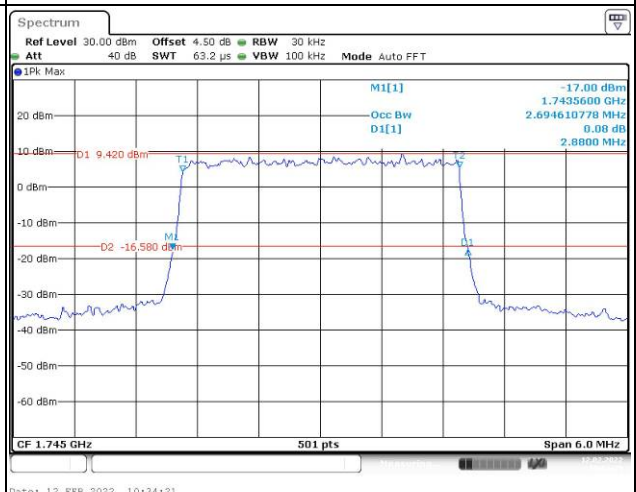
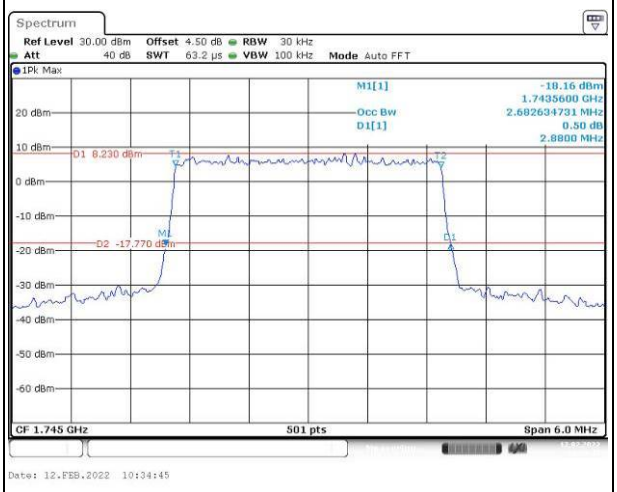
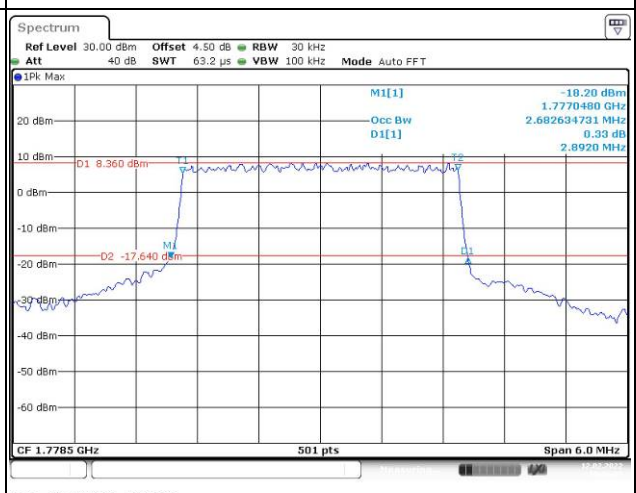
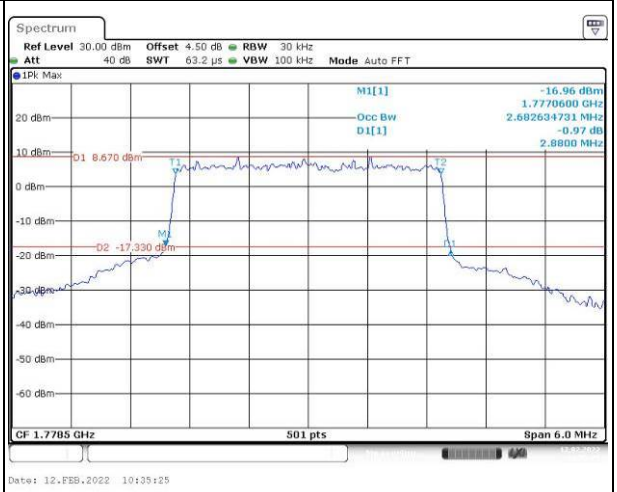
FCC §2.1055, §27.54: Frequency Stability

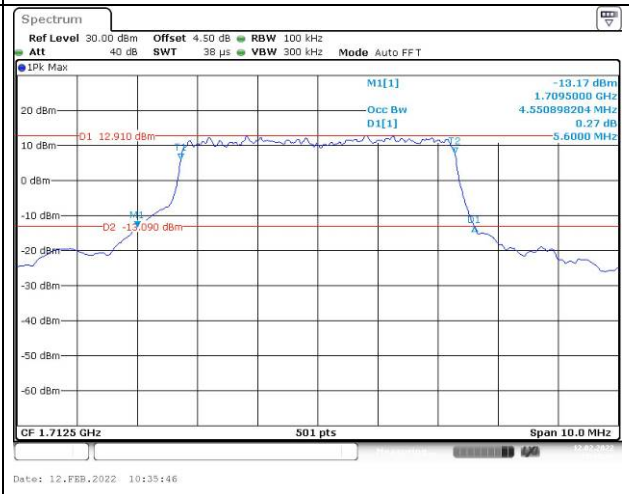
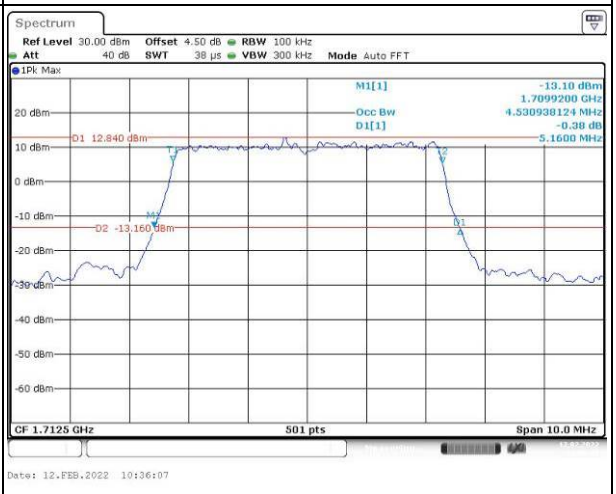
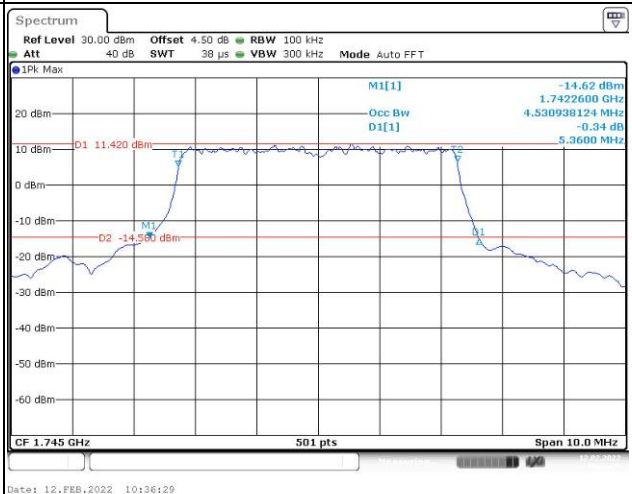
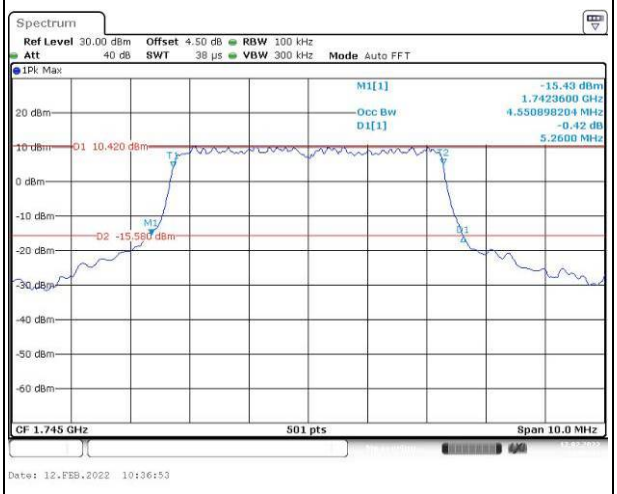
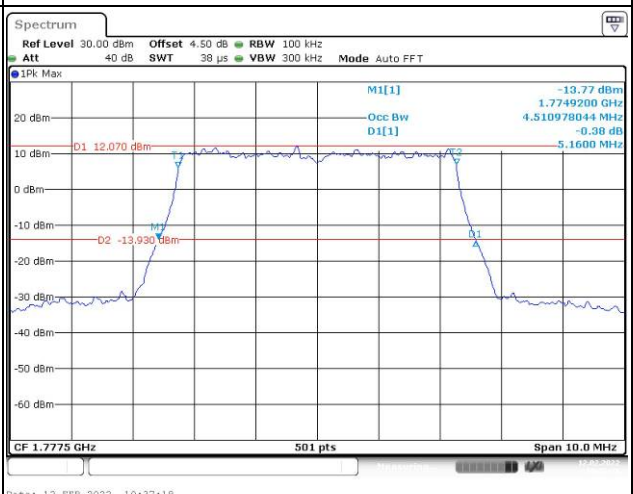
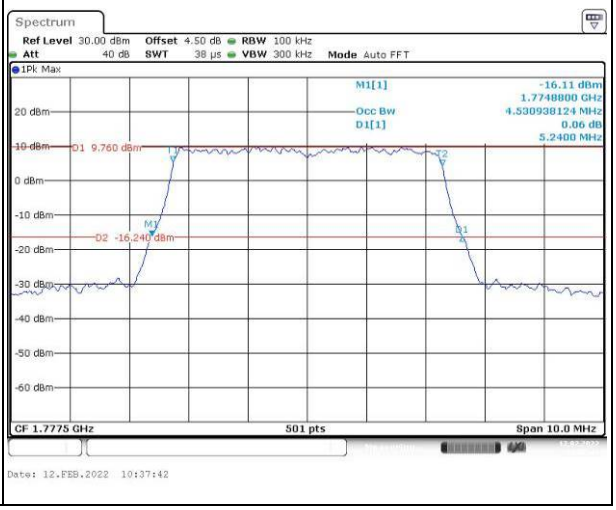
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.543	1710.00	1779.486	1780
	-20	3.8	1710.544	1710.00	1779.488	1780
	-10	3.8	1710.543	1710.00	1779.486	1780
	0	3.8	1710.542	1710.00	1779.482	1780
	10	3.8	1710.541	1710.00	1779.485	1780
	20	3.8	1710.543	1710.00	1779.486	1780
	30	3.8	1710.542	1710.00	1779.489	1780
	40	3.8	1710.543	1710.00	1779.486	1780
	50	3.8	1710.546	1710.00	1779.485	1780
Frequency Stability vs. Voltage	20	3.6	1710.543	1710.00	1779.486	1780
	20	4.3	1710.548	1710.00	1779.487	1780
					Result:	**Pass**

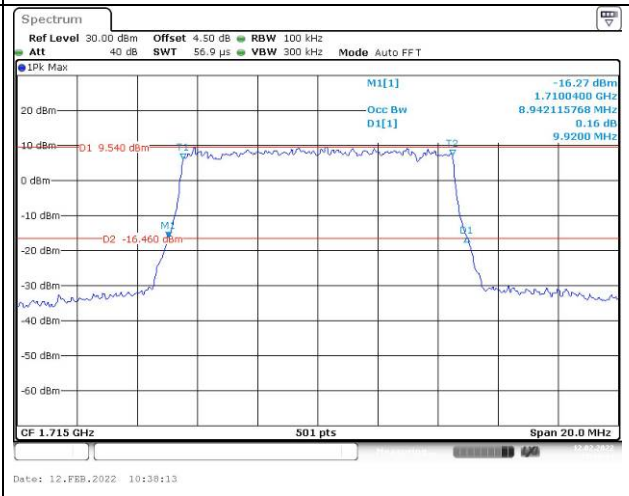
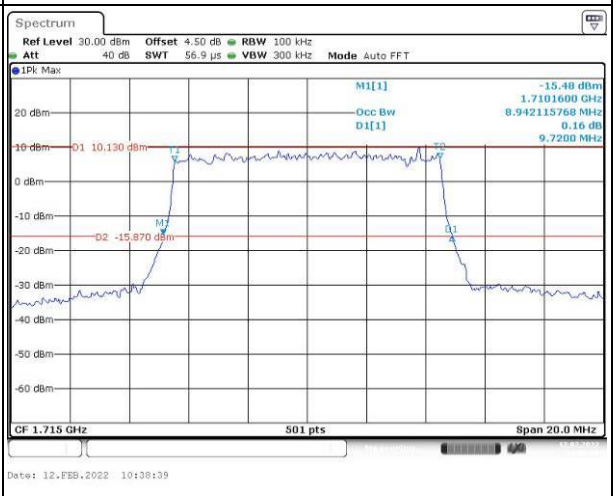
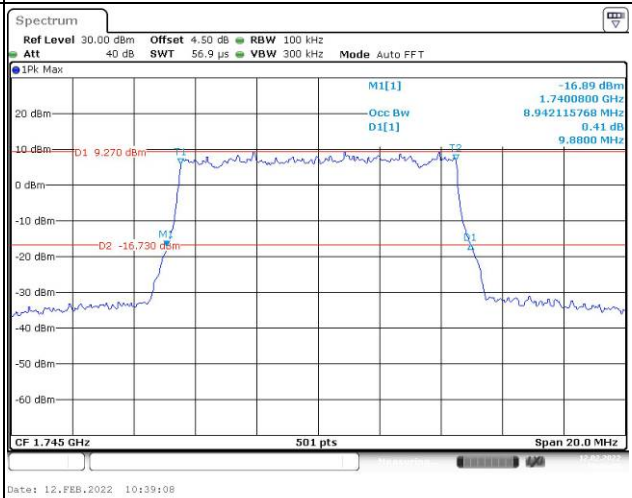
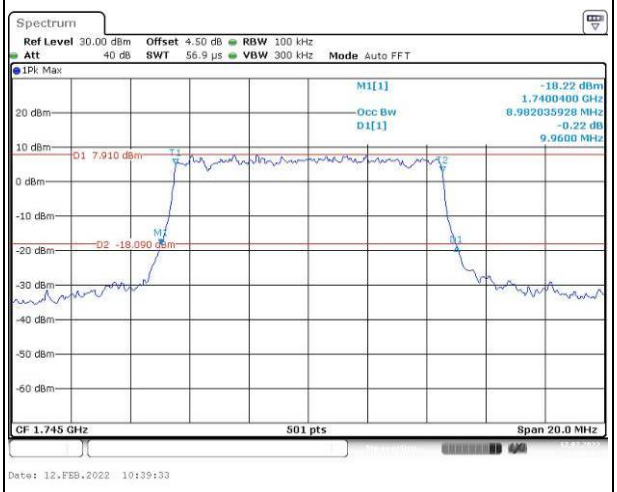
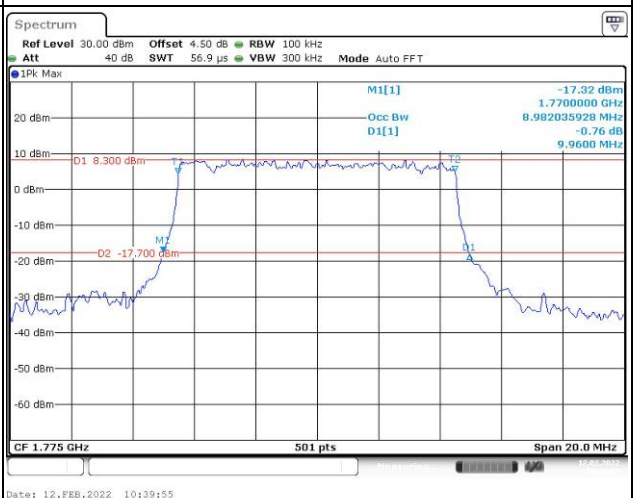
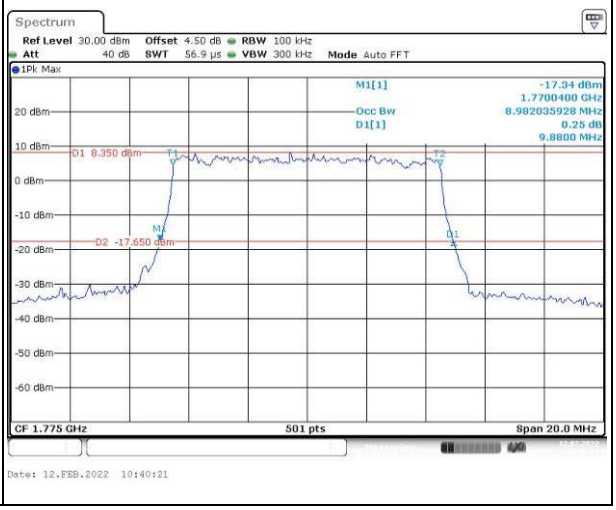
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.514	1710.00	1779.486	1780
	-20	3.8	1710.515	1710.00	1779.486	1780
	-10	3.8	1710.514	1710.00	1779.482	1780
	0	3.8	1710.516	1710.00	1779.486	1780
	10	3.8	1710.515	1710.00	1779.481	1780
	20	3.8	1710.514	1710.00	1779.486	1780
	30	3.8	1710.513	1710.00	1779.482	1780
	40	3.8	1710.514	1710.00	1779.486	1780
	50	3.8	1710.515	1710.00	1779.488	1780
Frequency Stability vs. Voltage	20	3.6	1710.514	1710.00	1779.486	1780
	20	4.3	1710.516	1710.00	1779.486	1780
					Result:	**Pass**

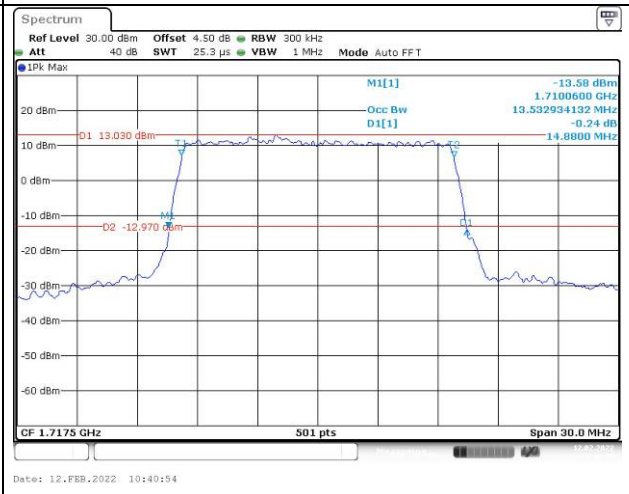
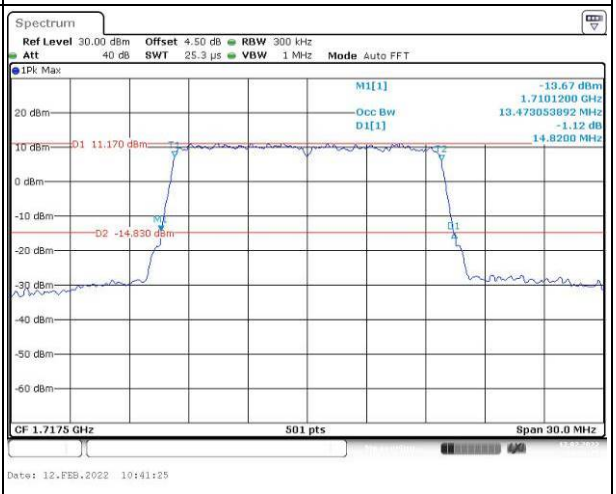
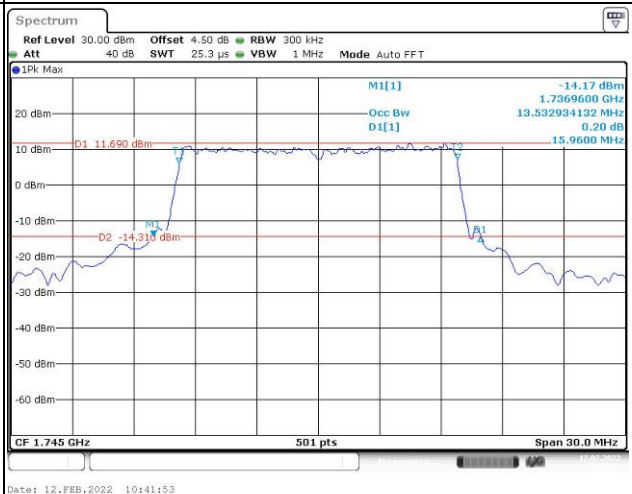
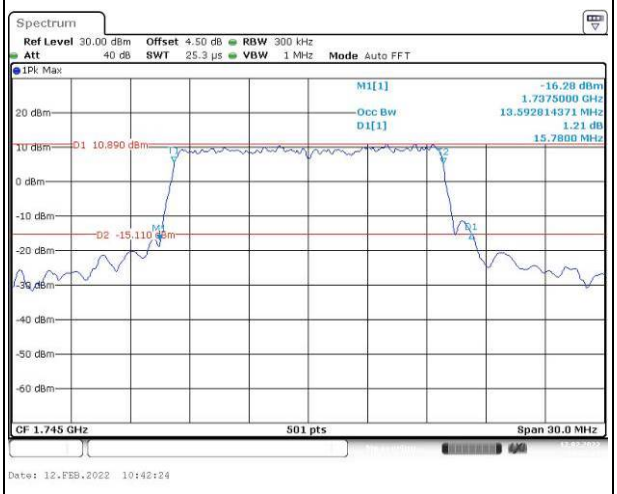
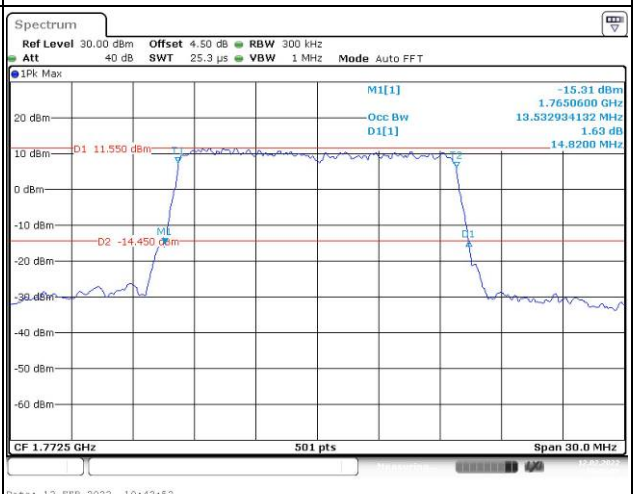
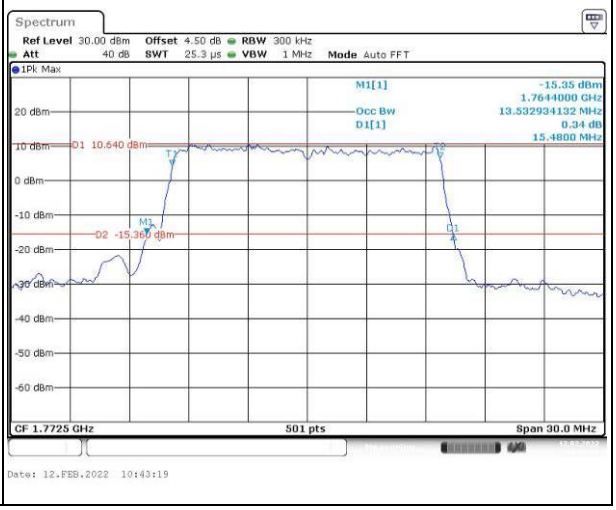
Test Plots:

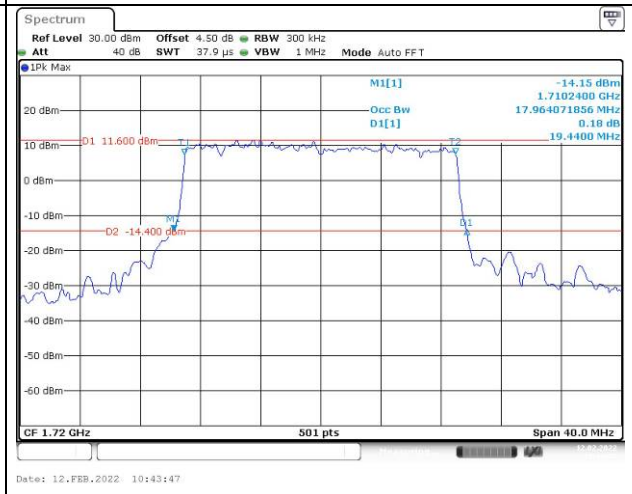
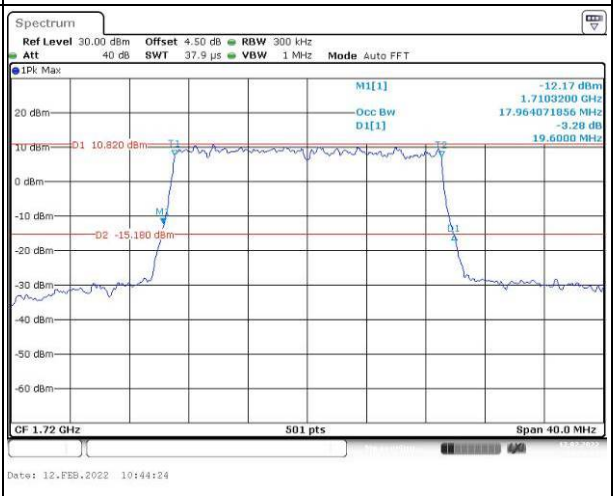
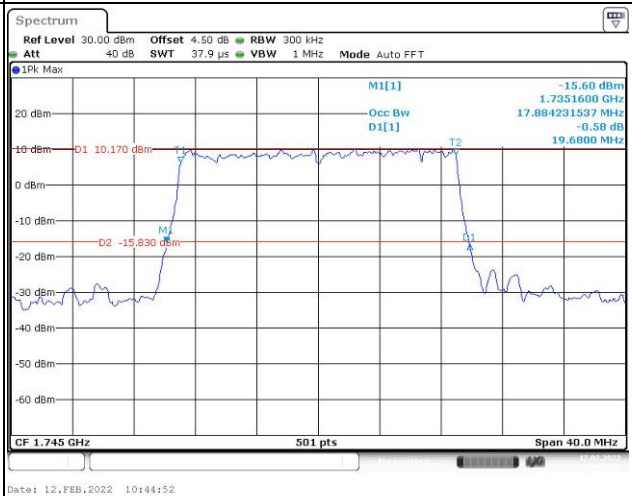
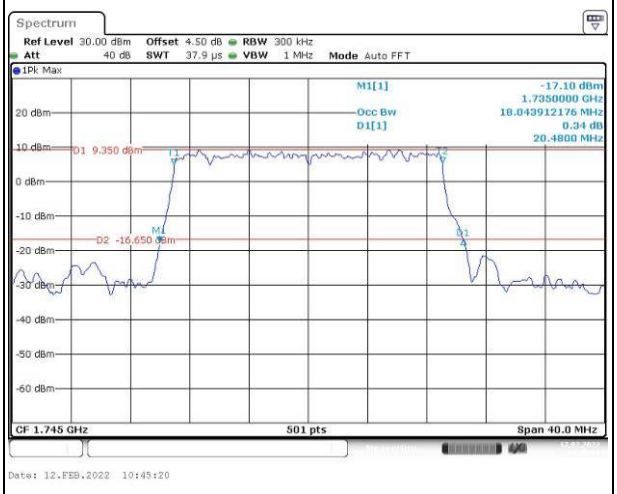
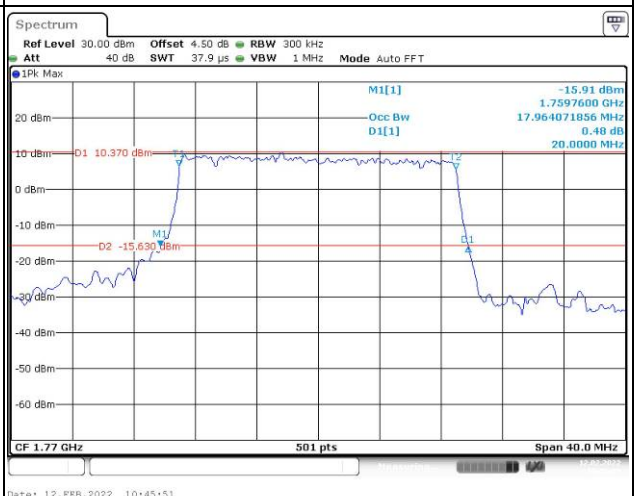
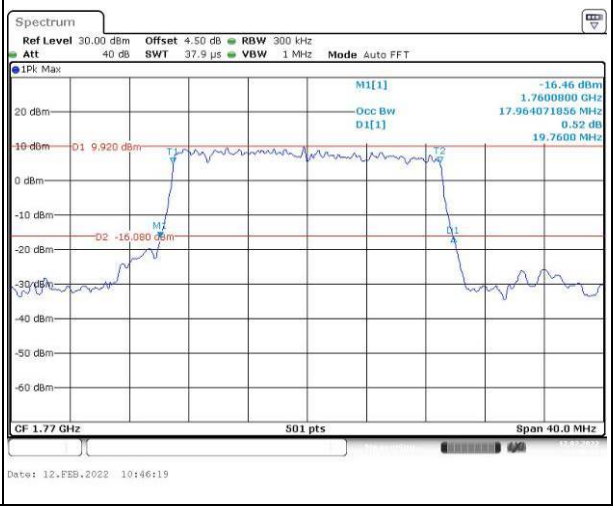
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

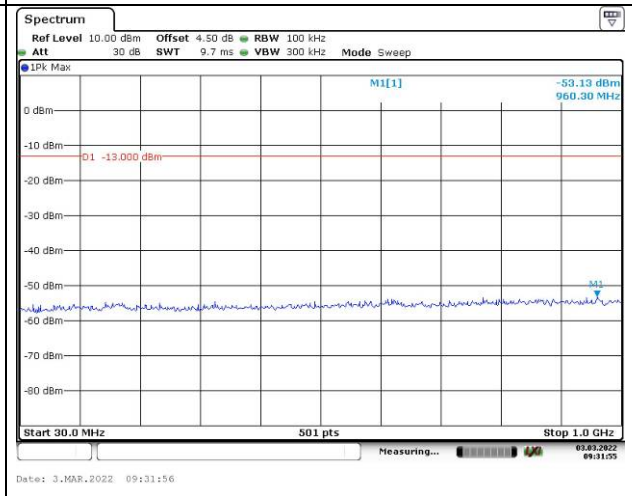
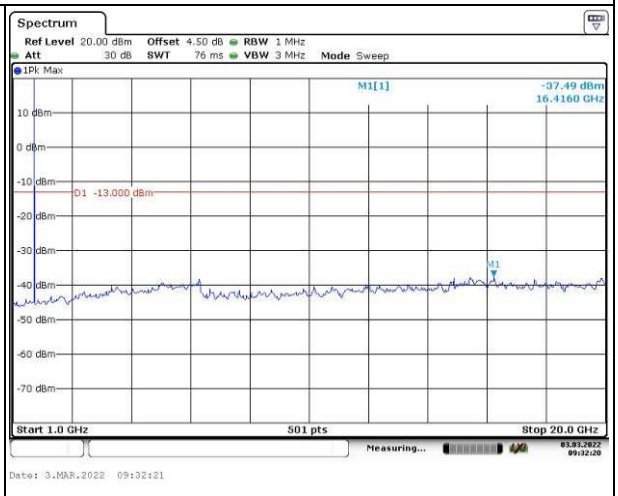
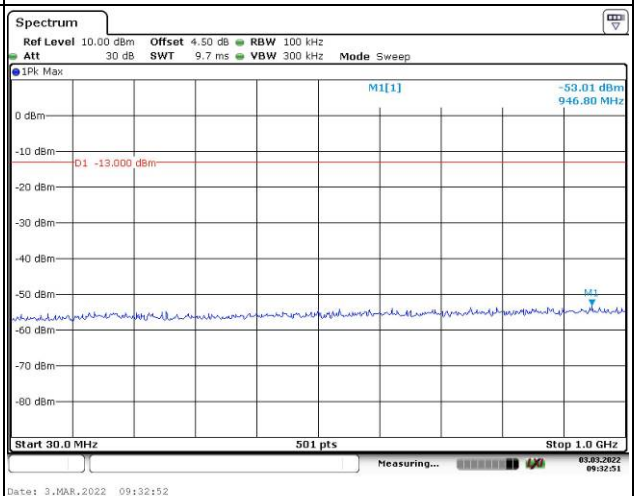
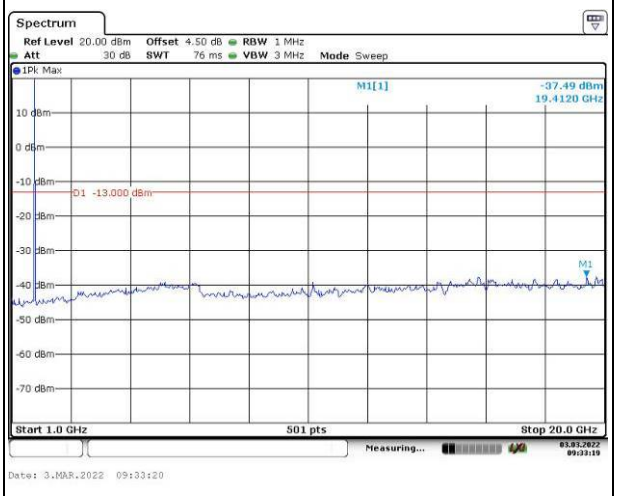
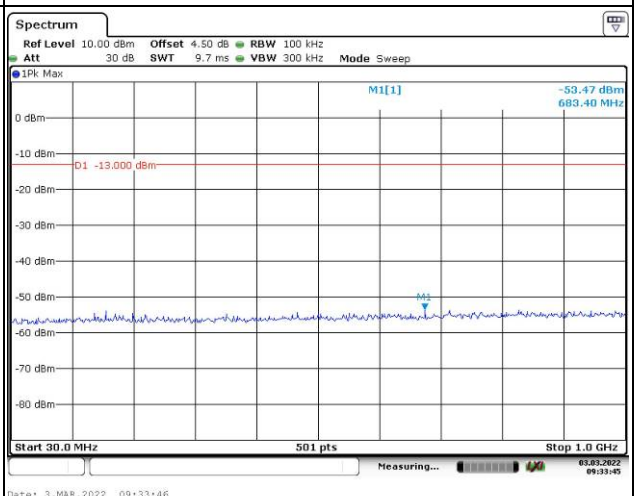
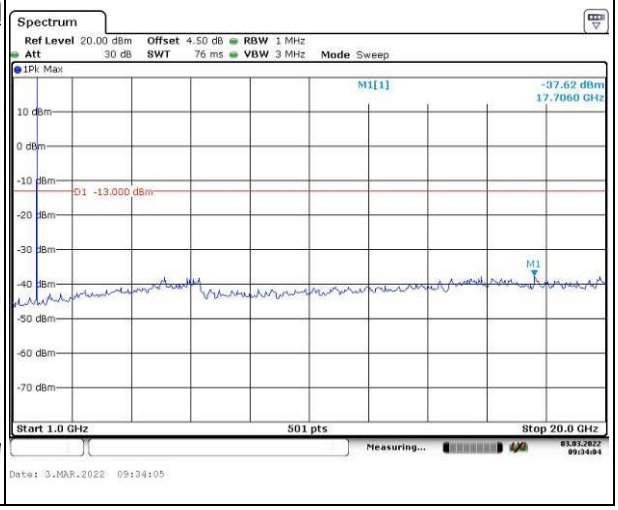
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

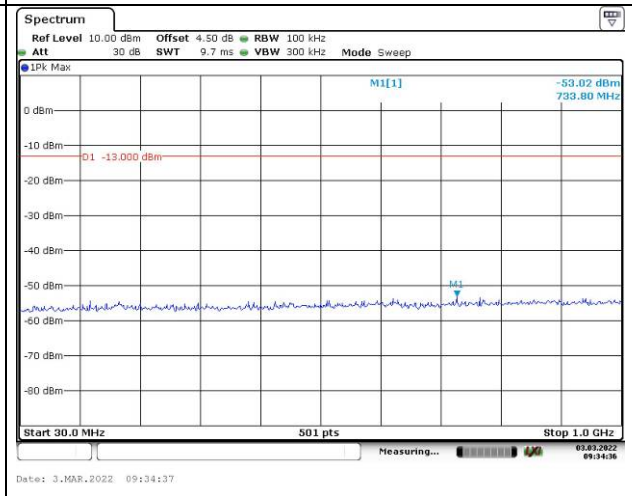
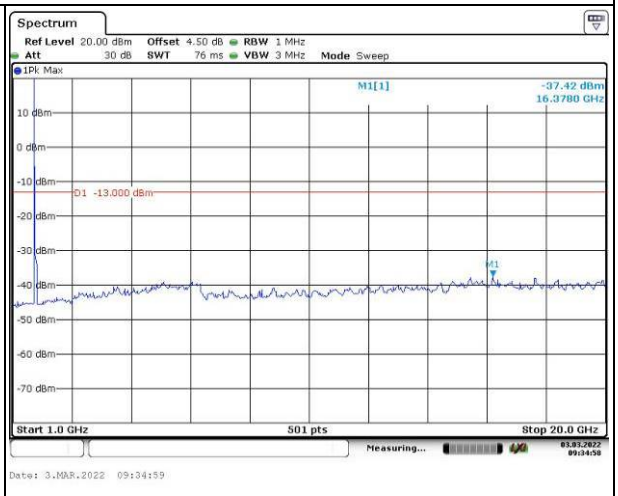
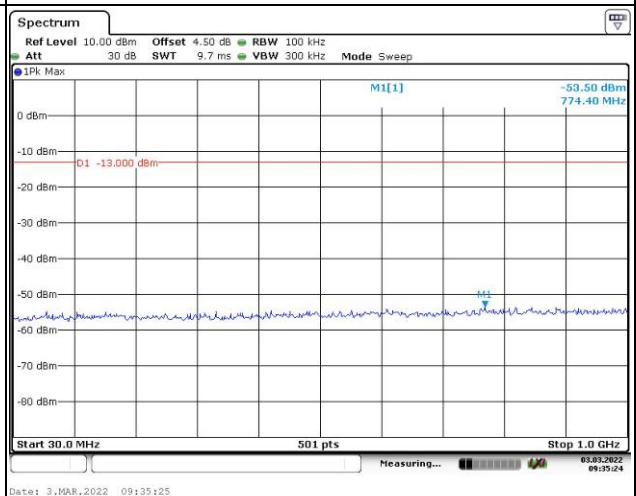
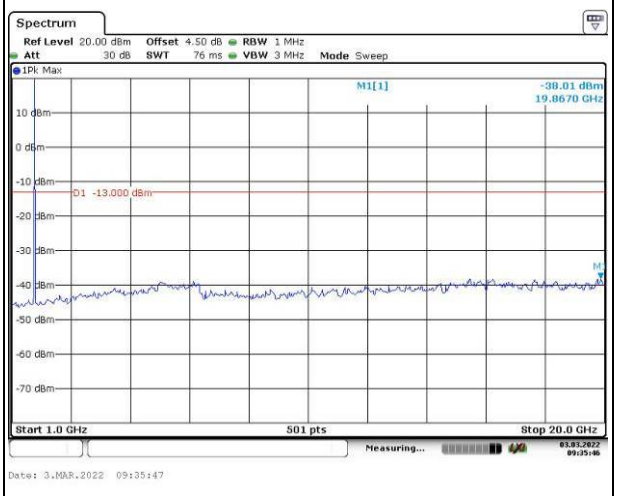
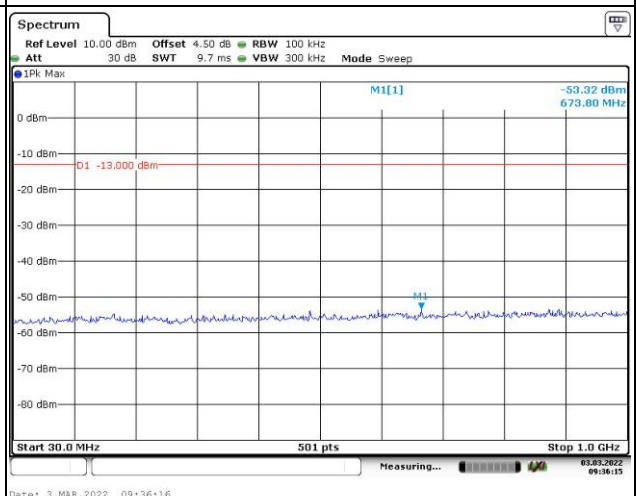
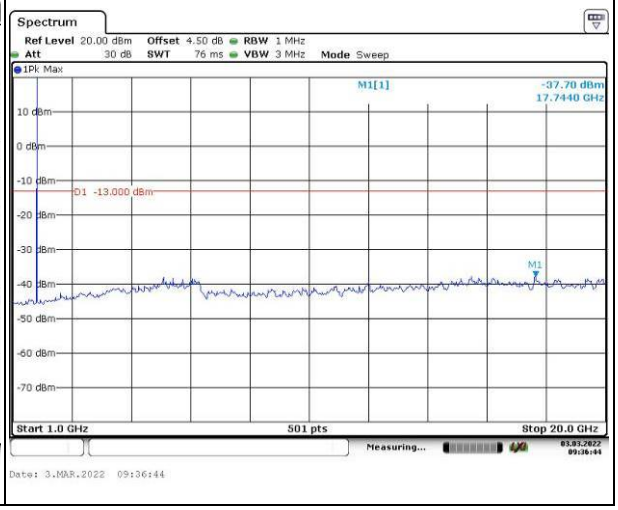
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

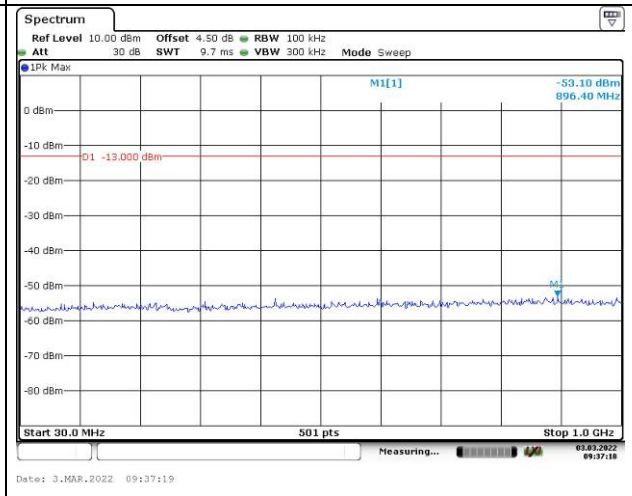
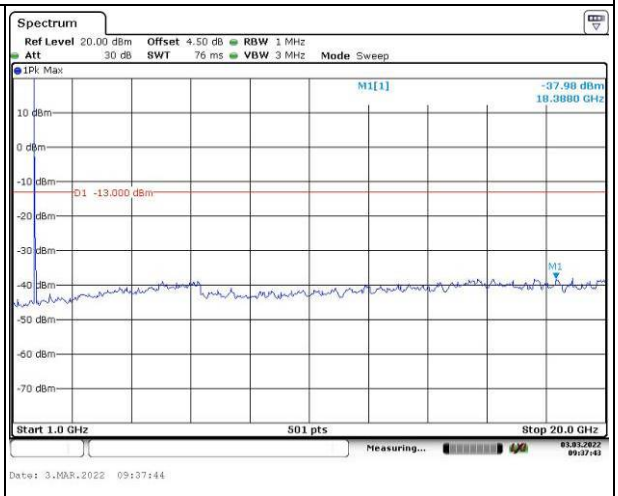
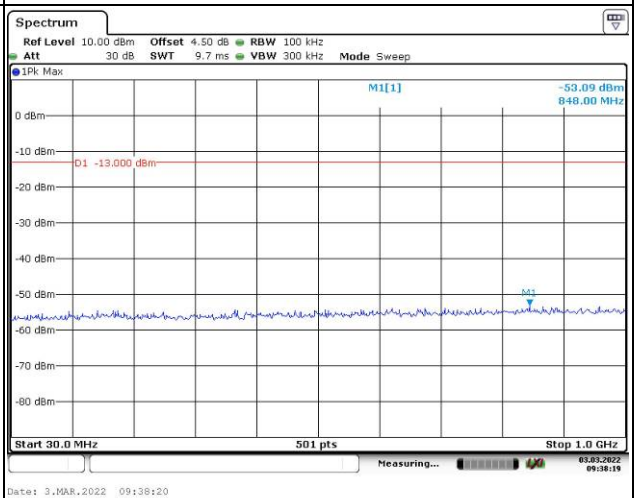
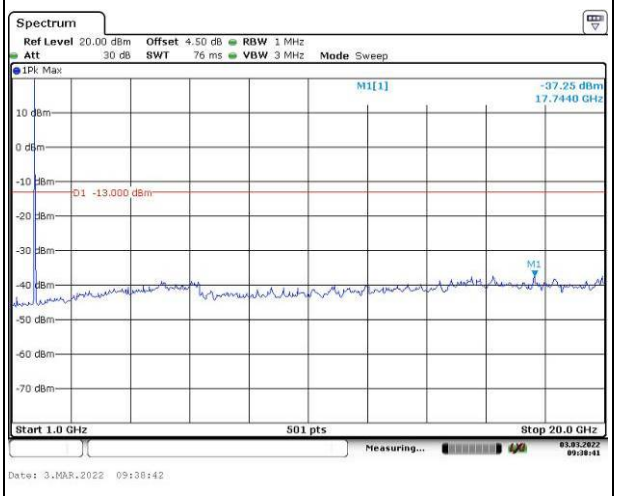
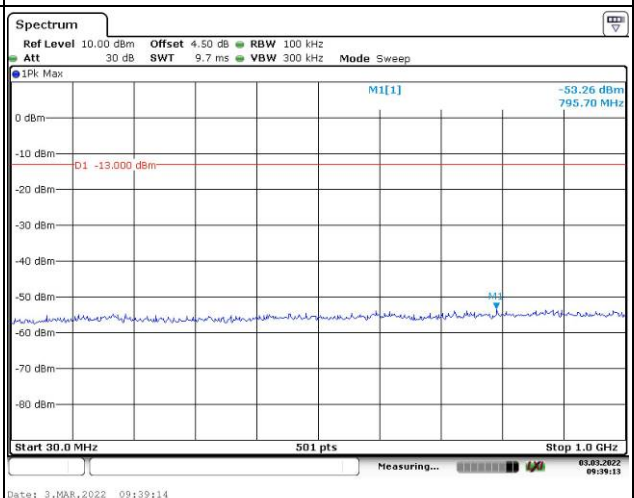
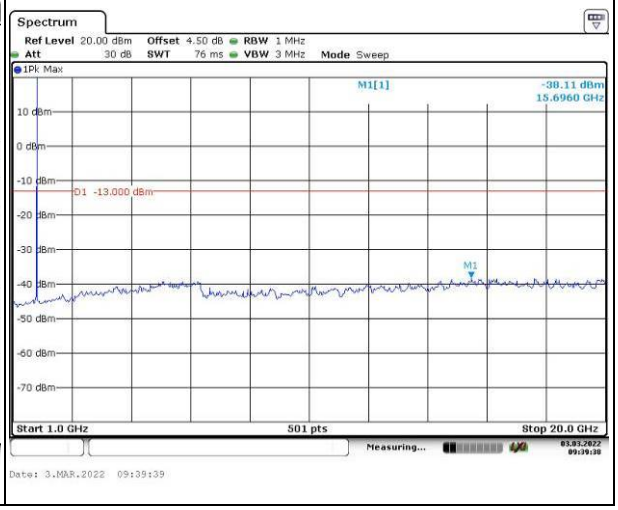
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

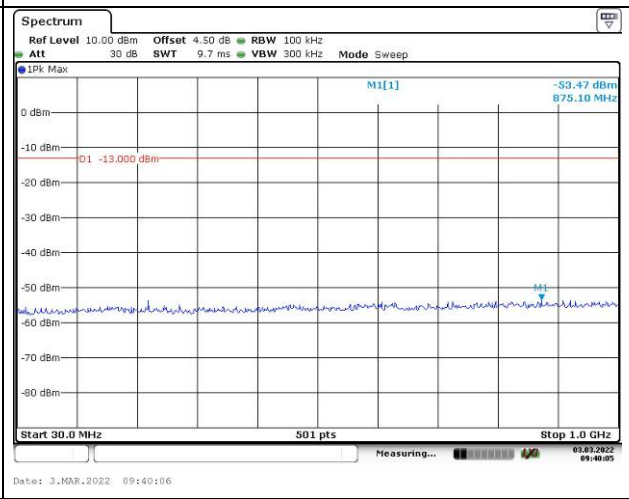
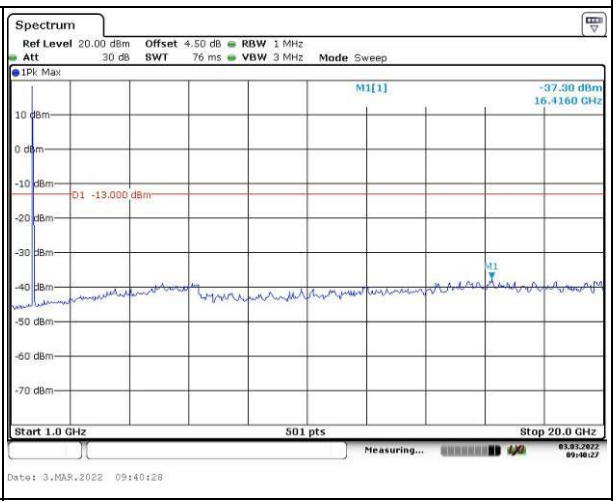
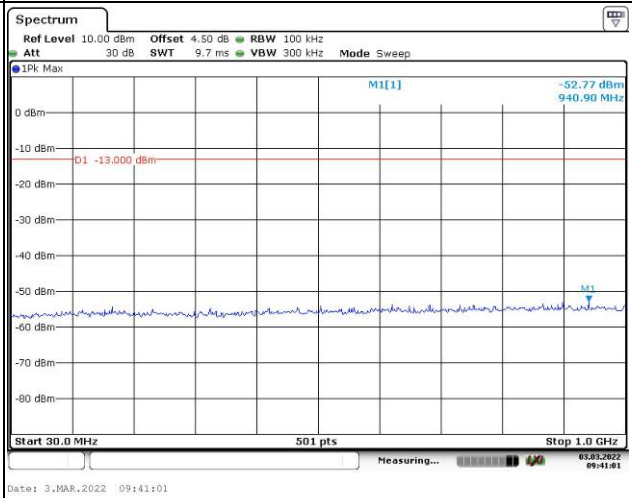
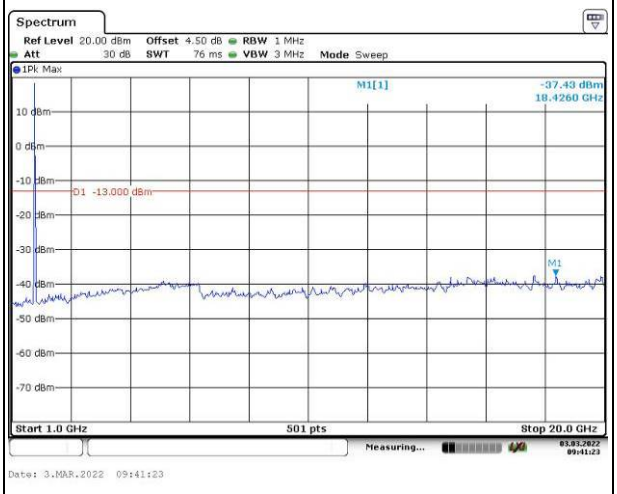
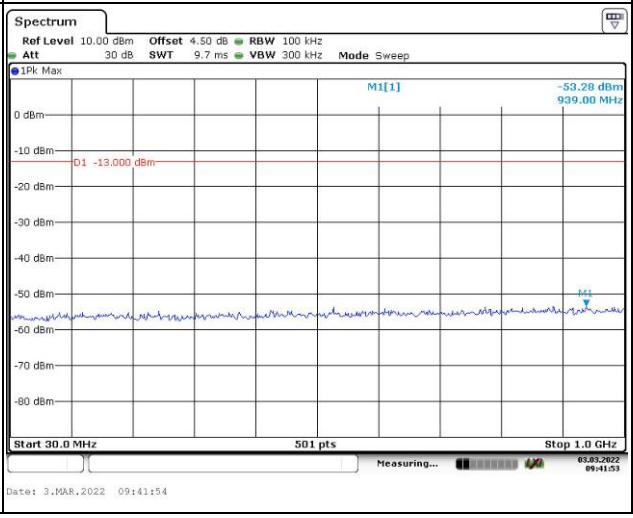
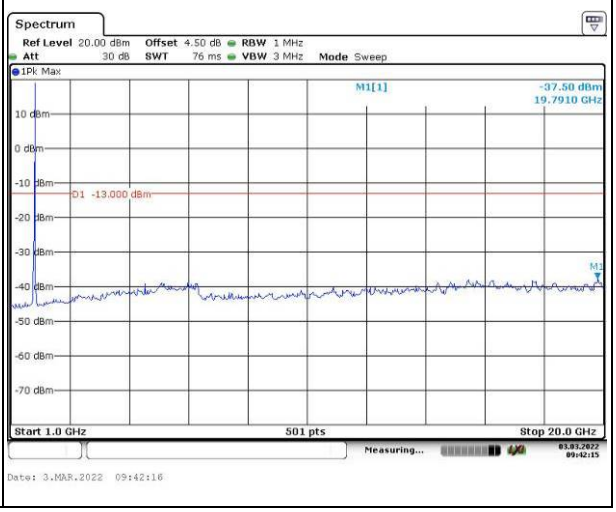
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

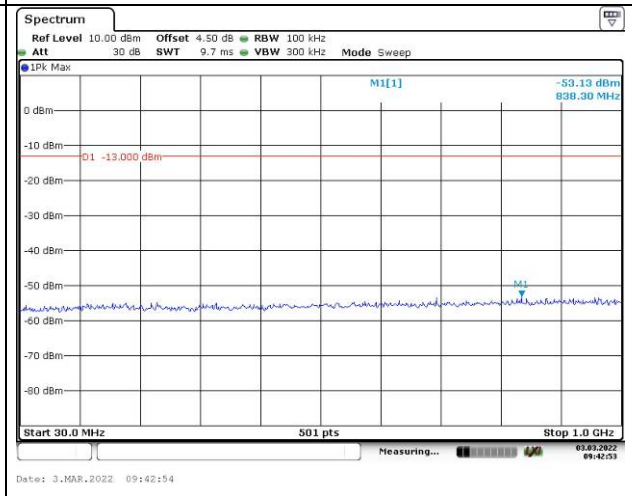
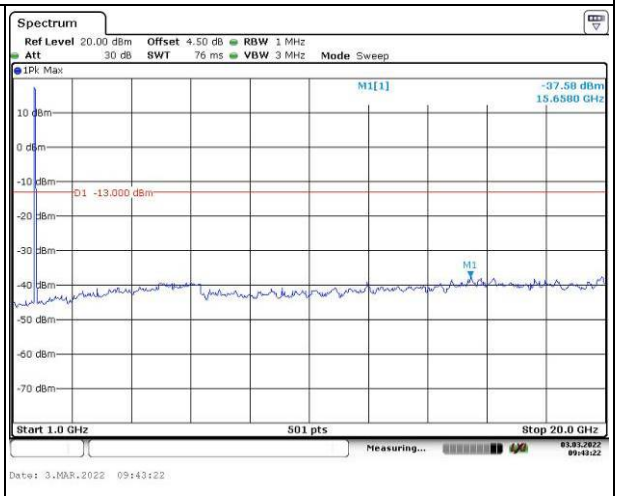
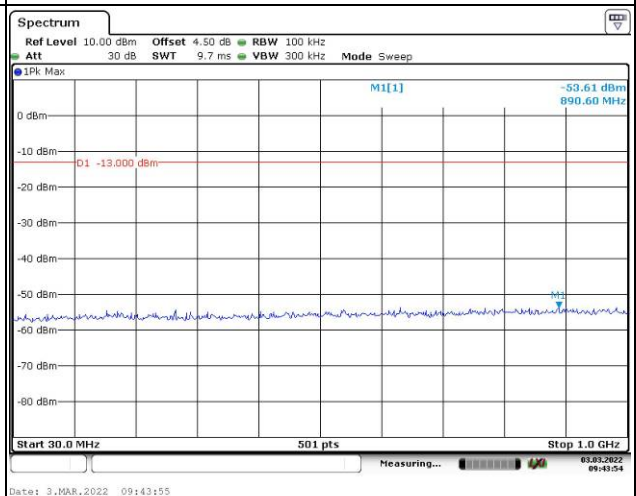
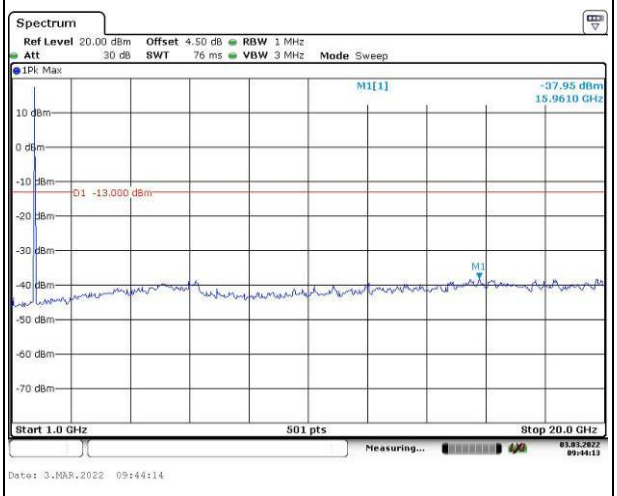
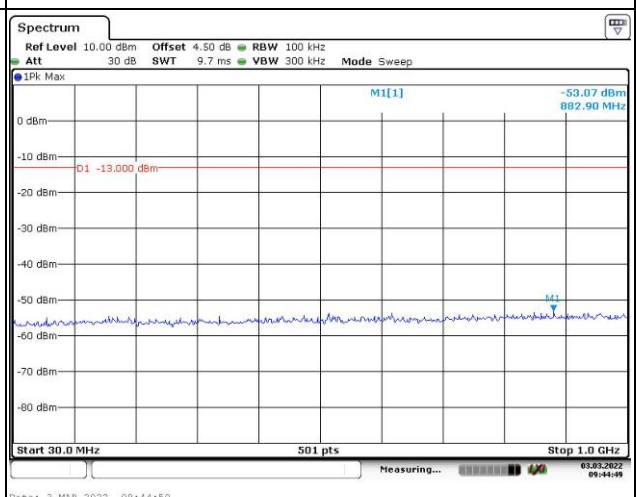
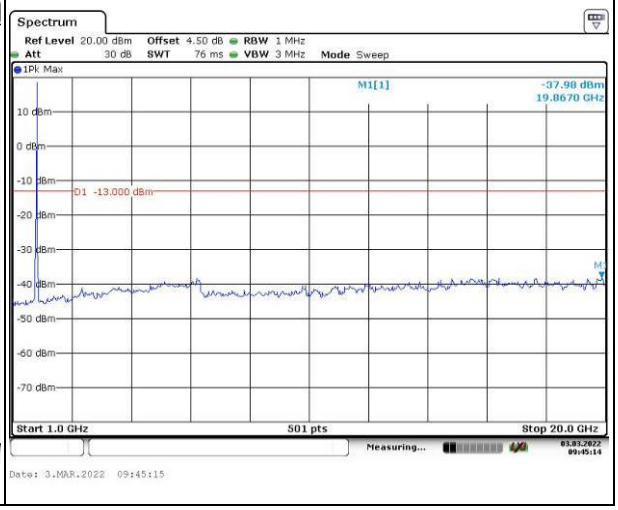
Occupied Bandwidth		
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

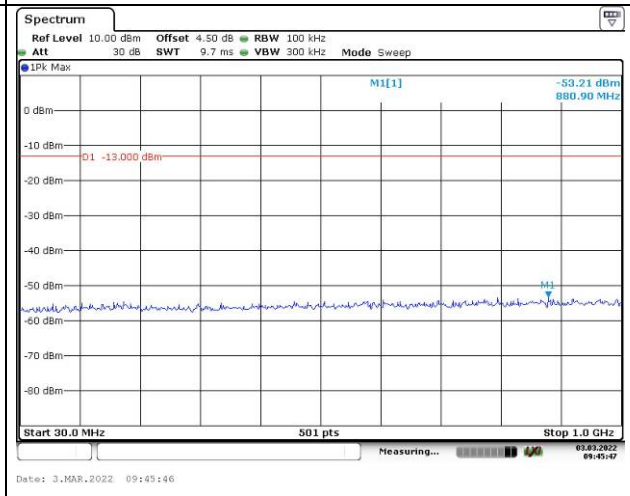
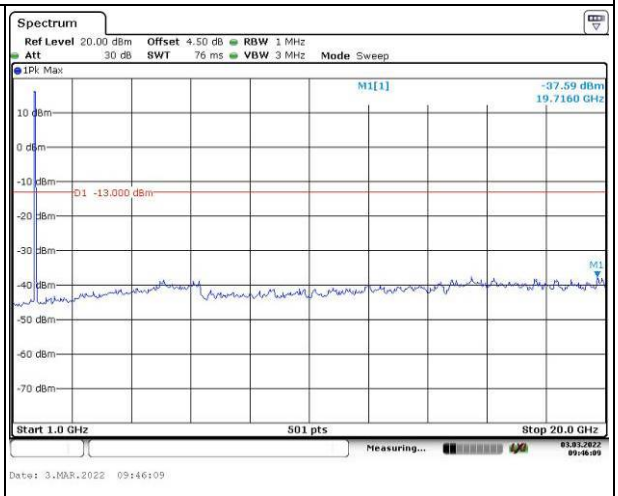
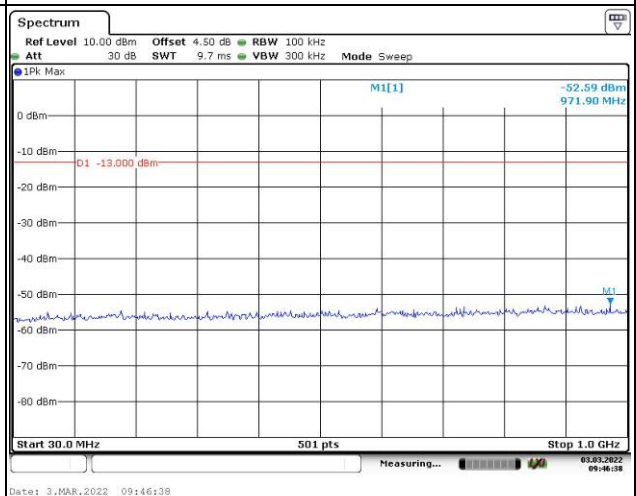
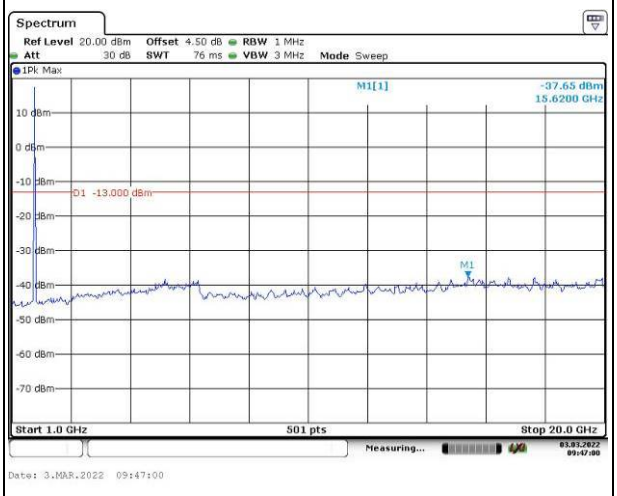
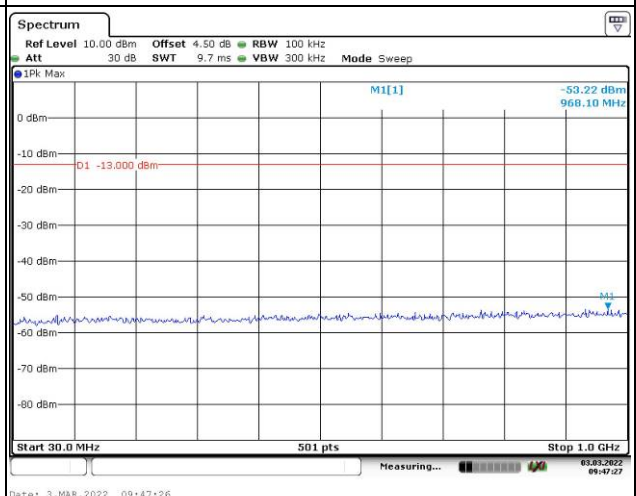
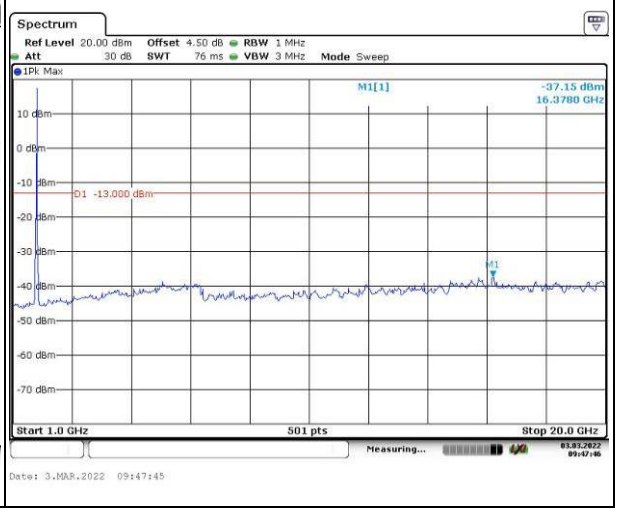
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

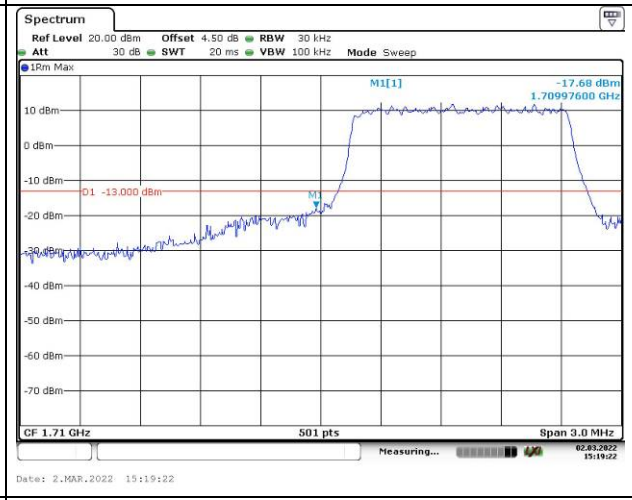
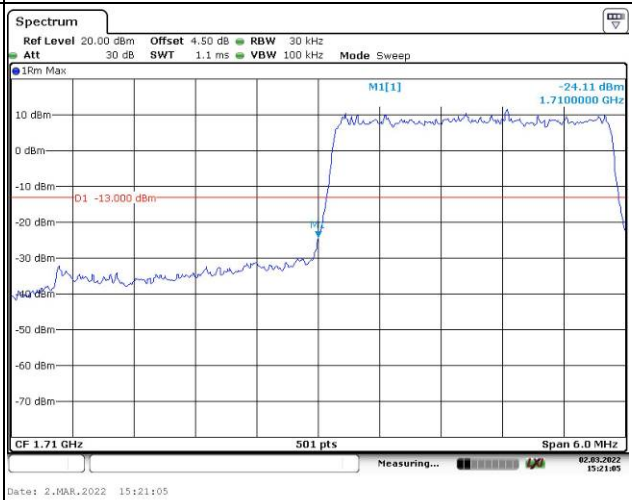
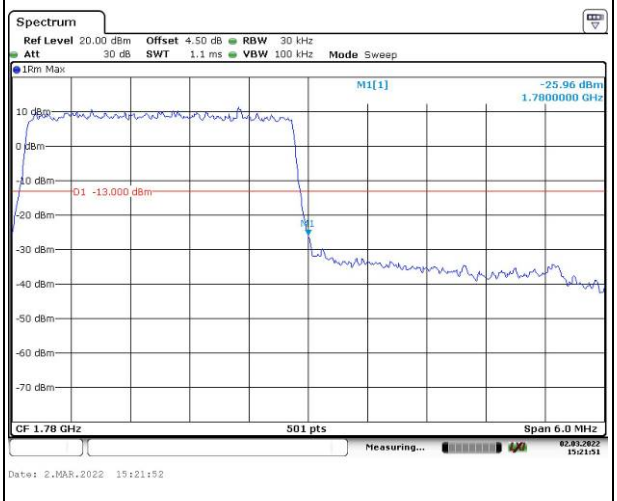
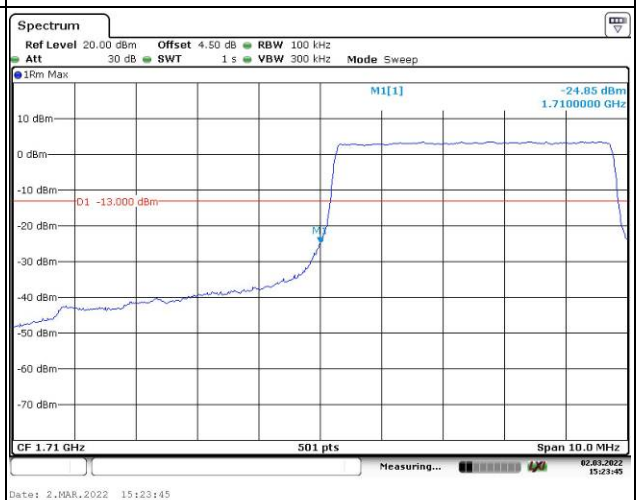
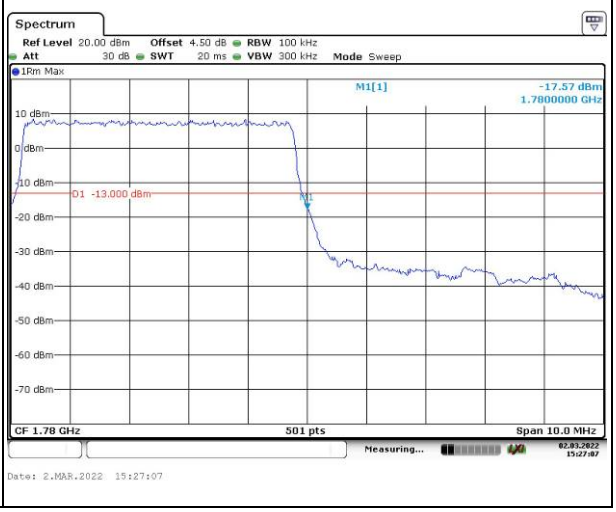
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

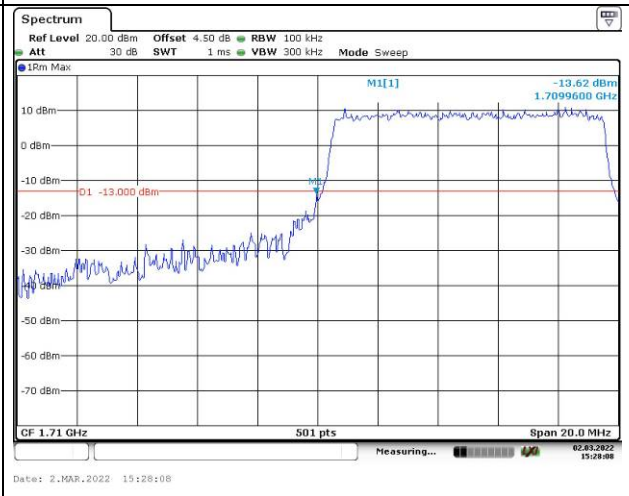
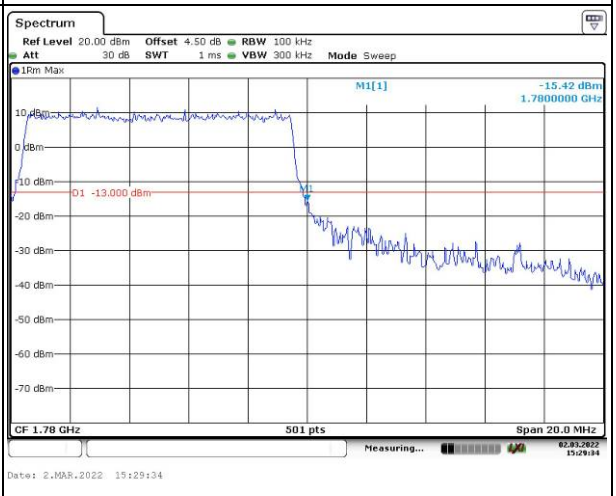
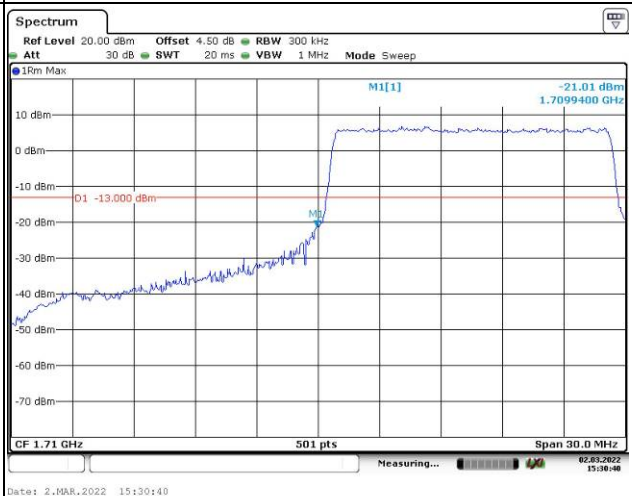
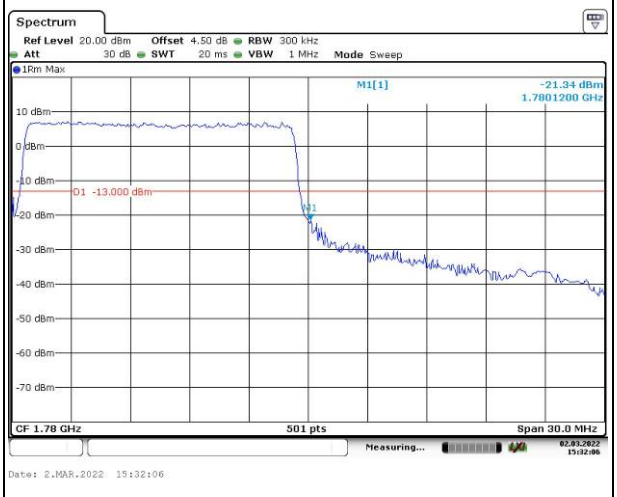
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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