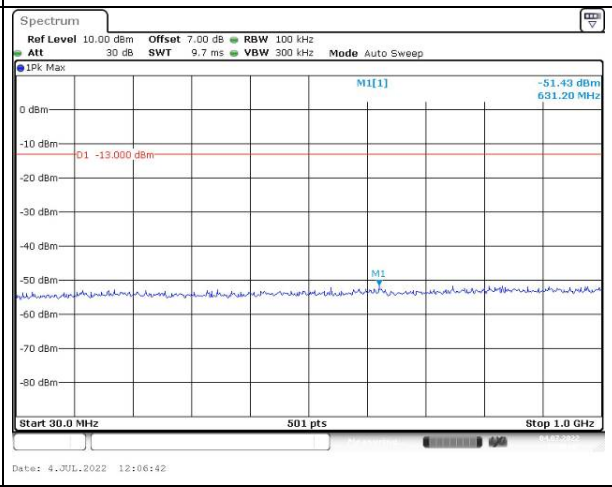
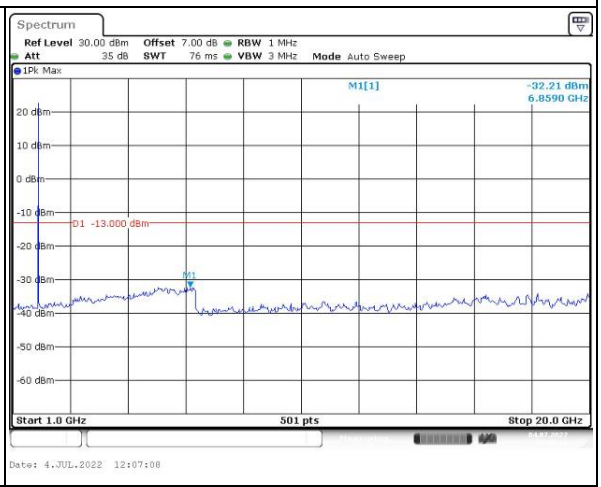
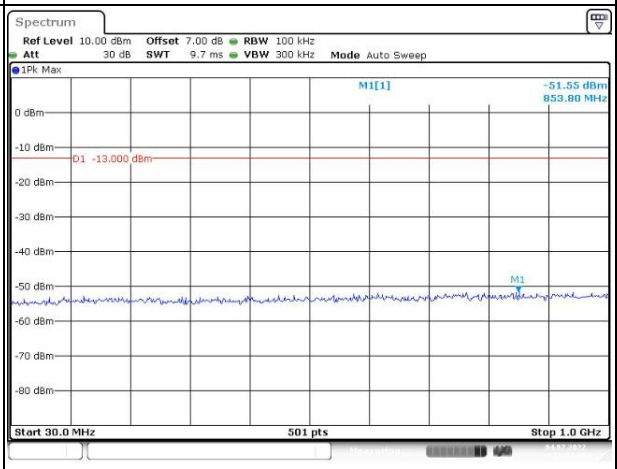
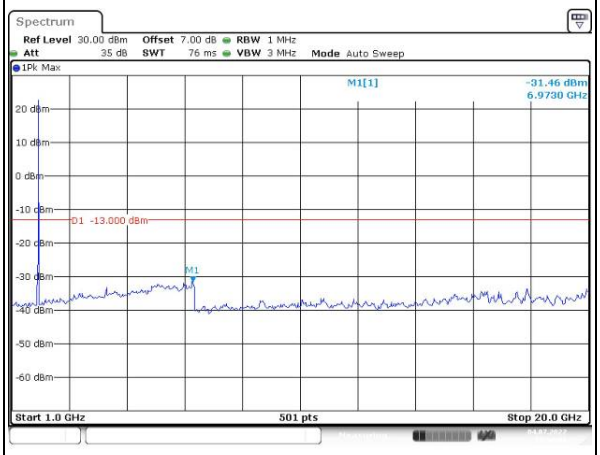
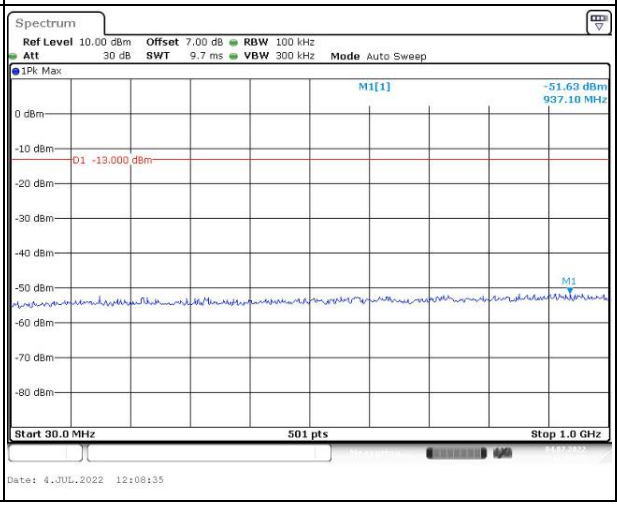
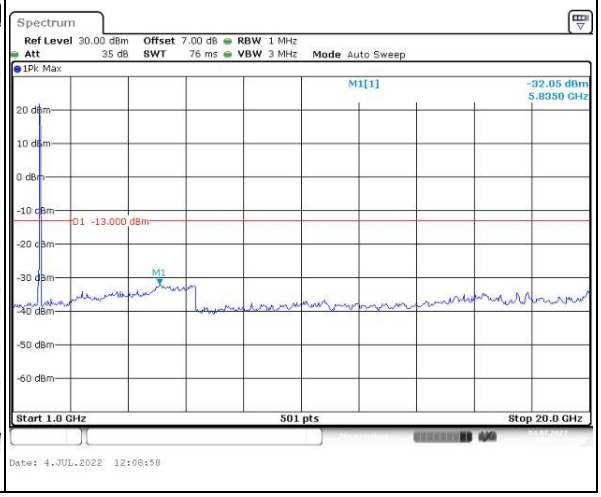
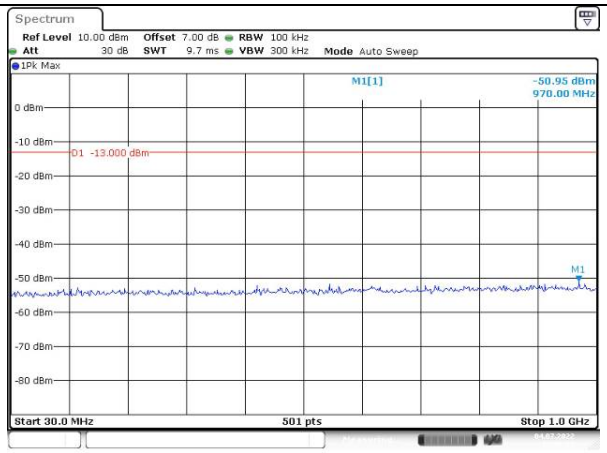
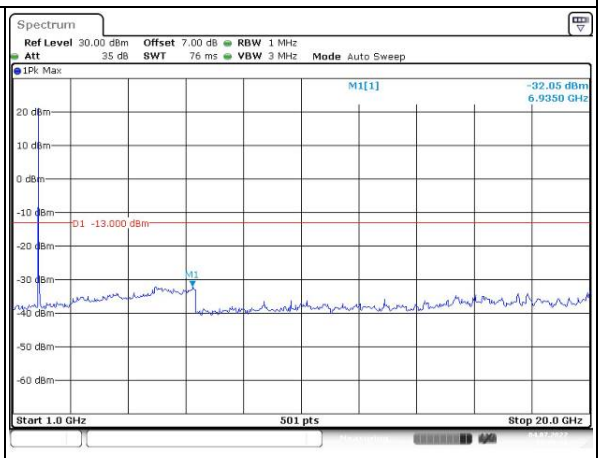
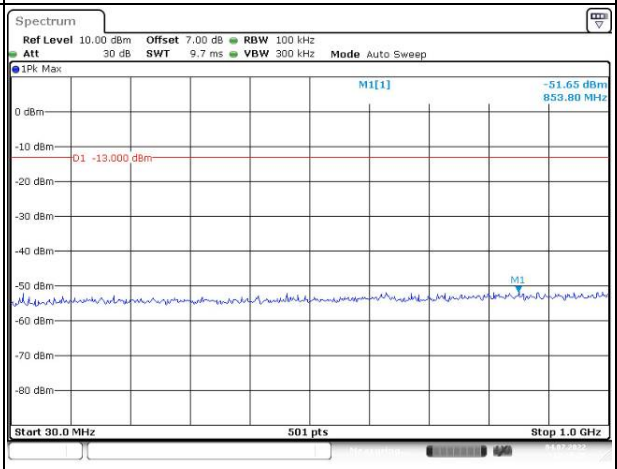
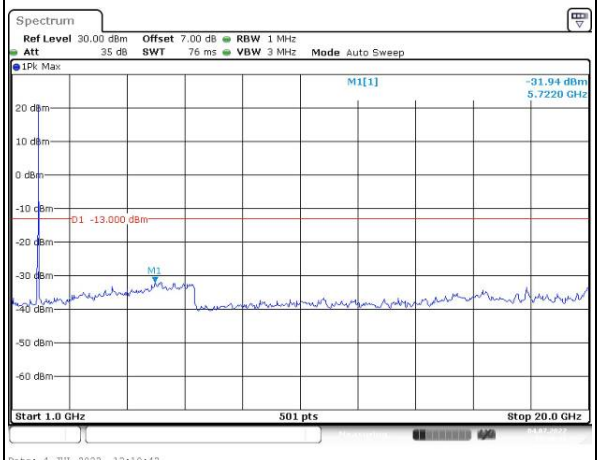
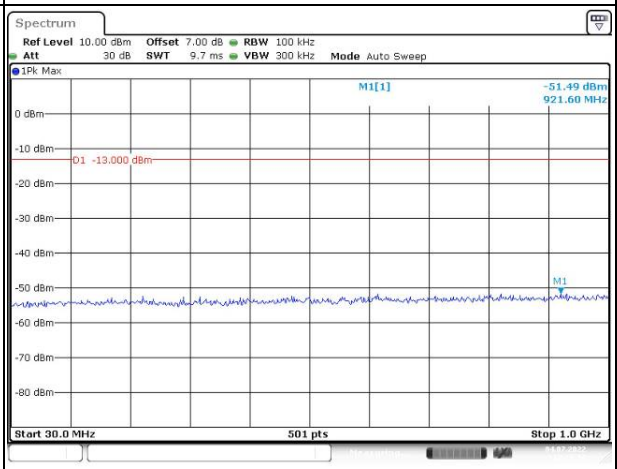
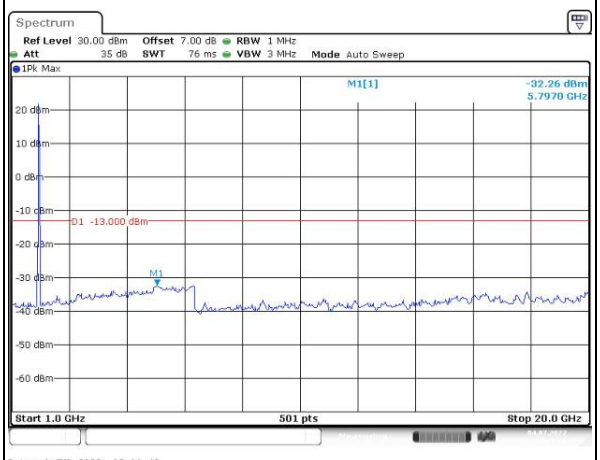
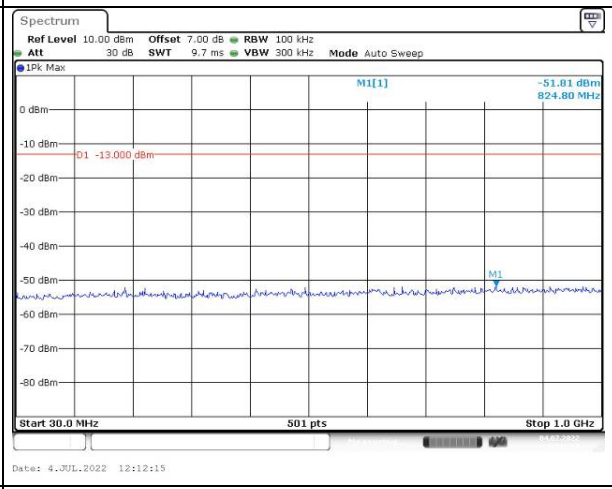
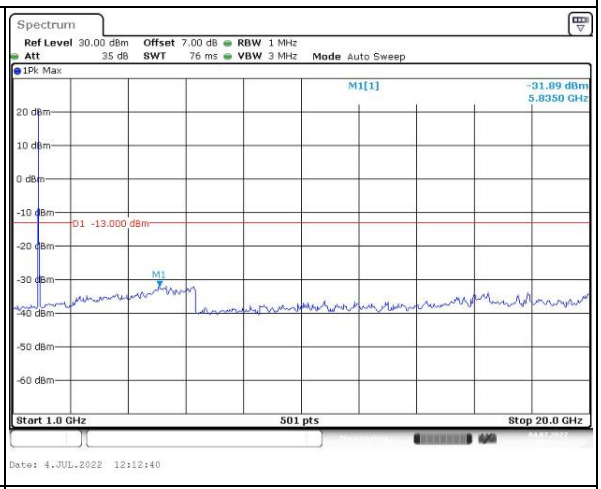
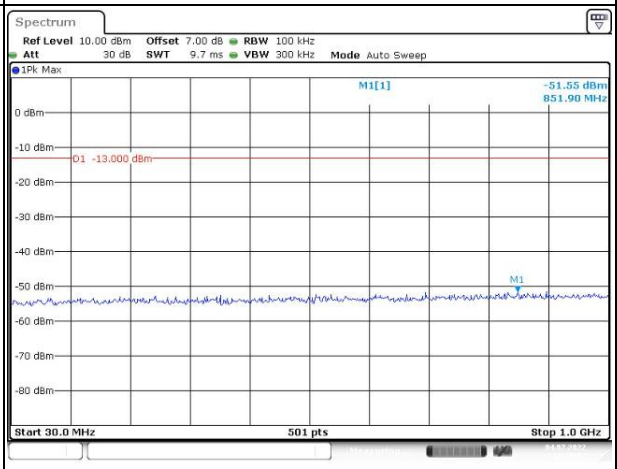
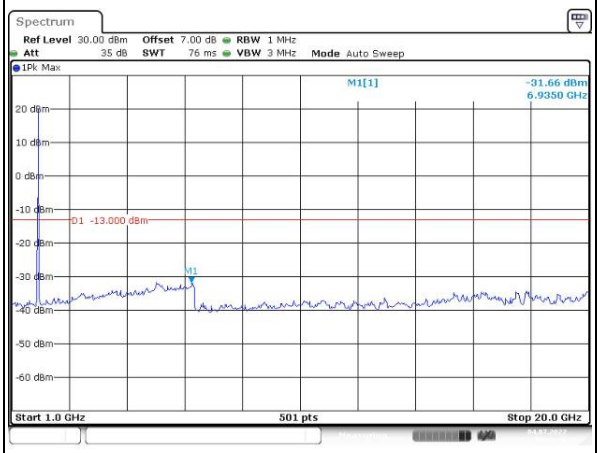
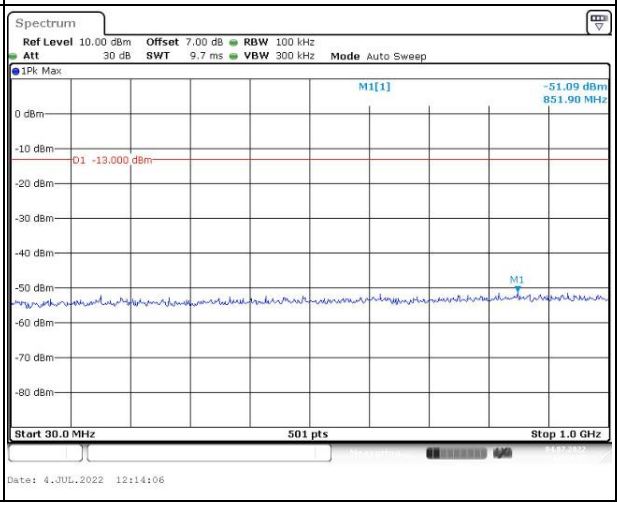
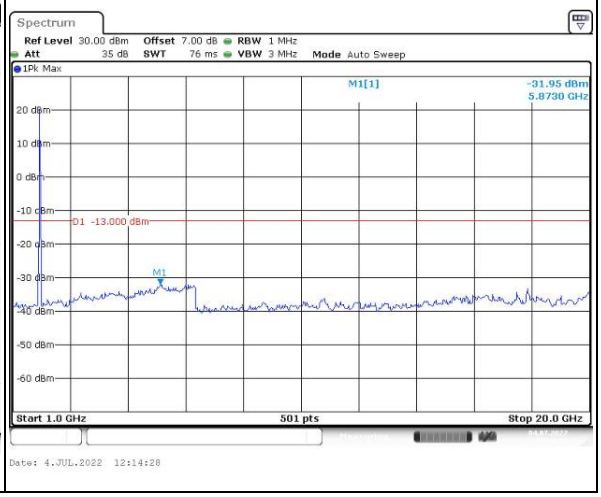
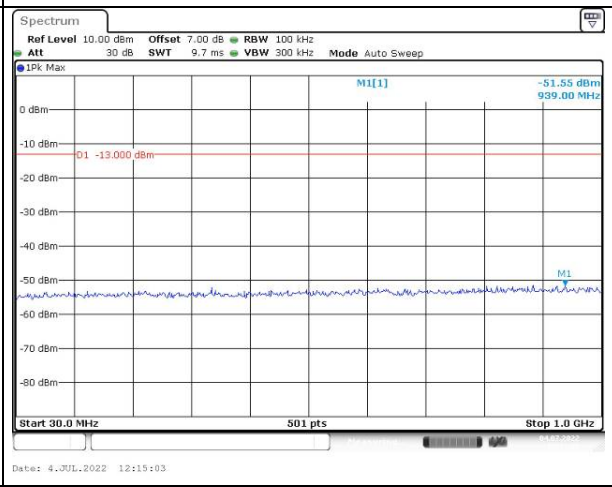
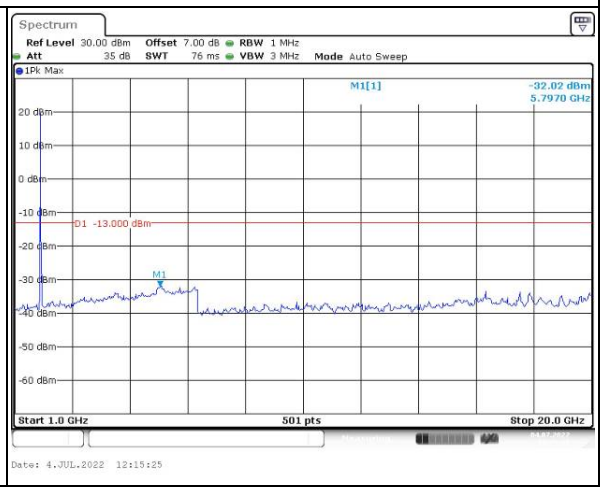
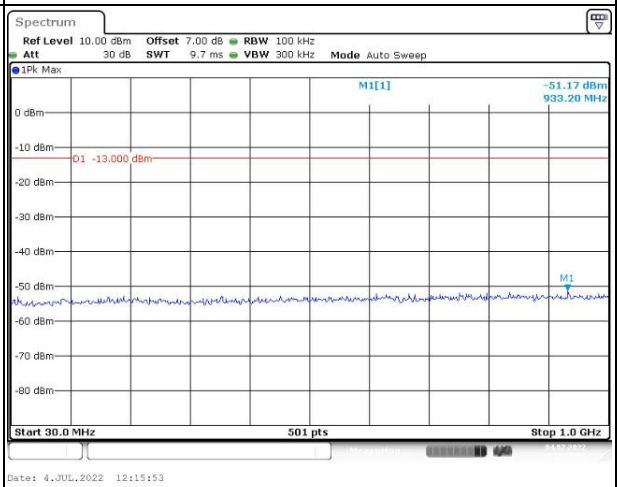
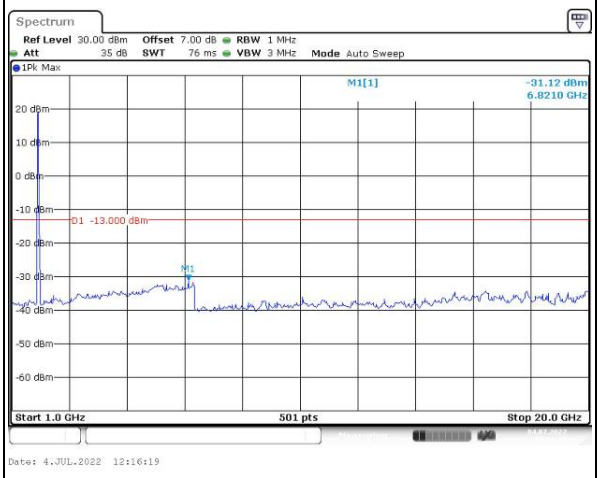
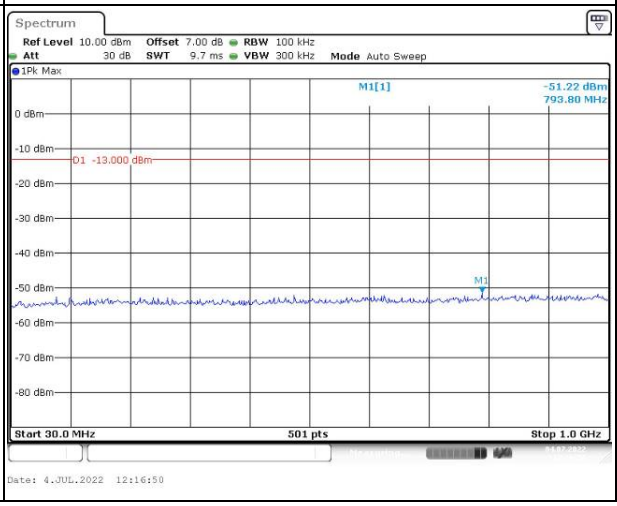
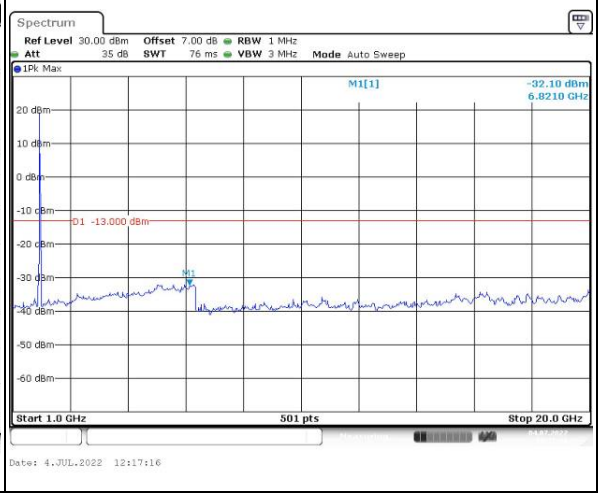
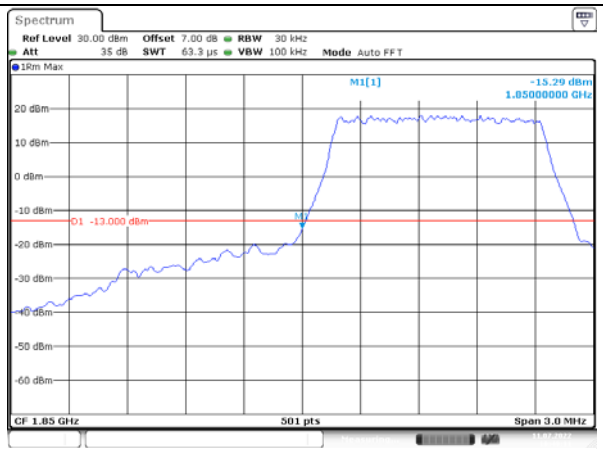
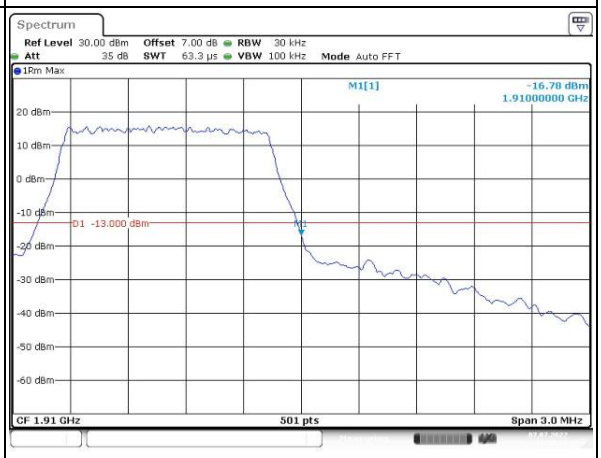
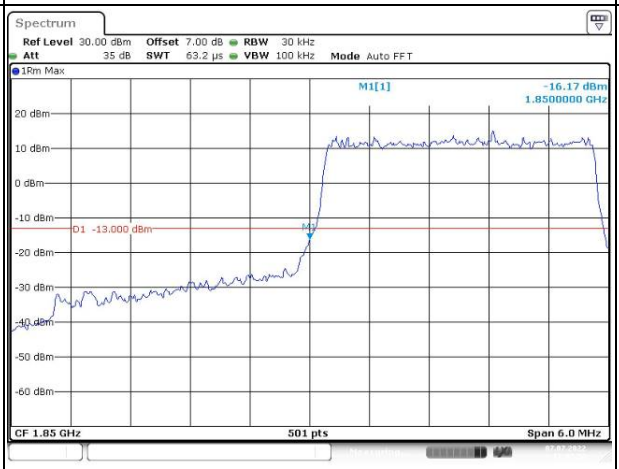
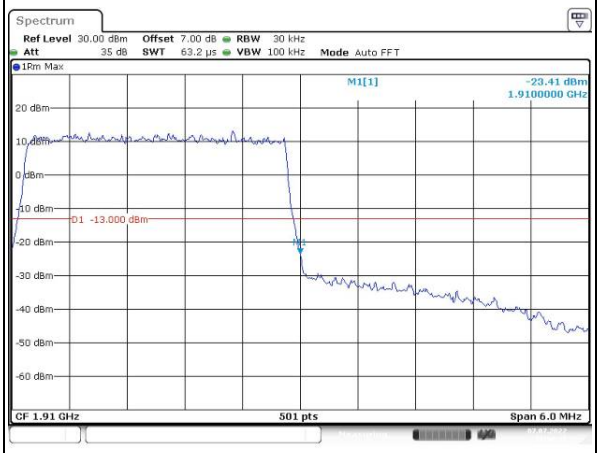
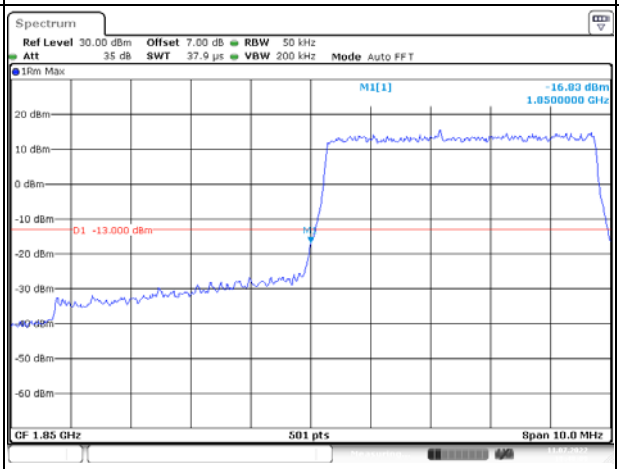
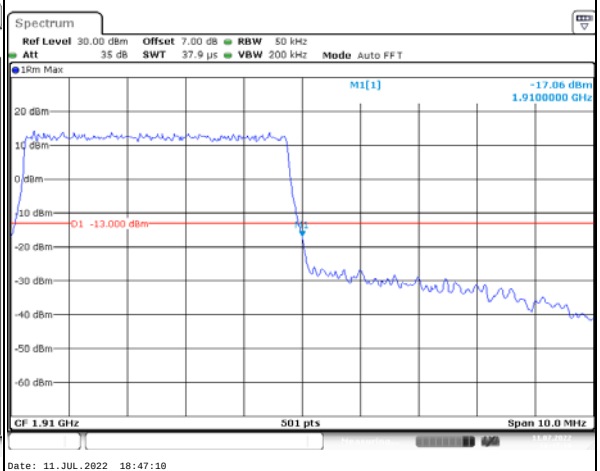
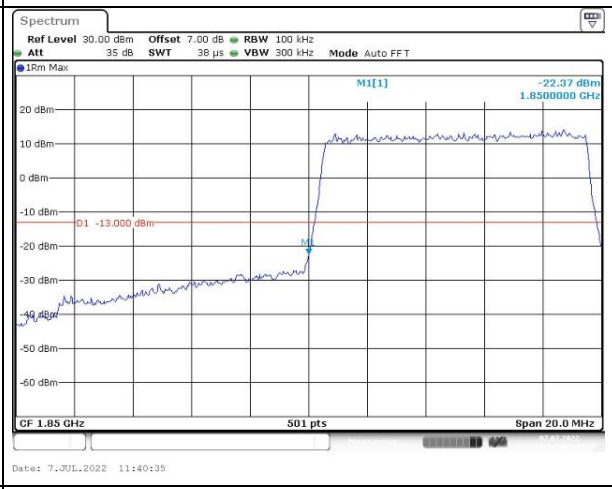
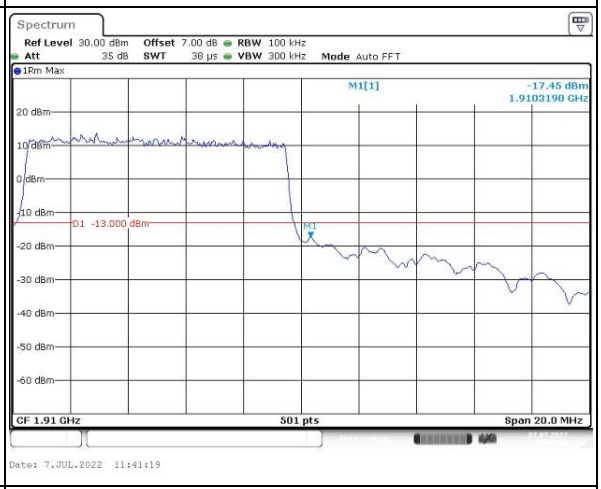
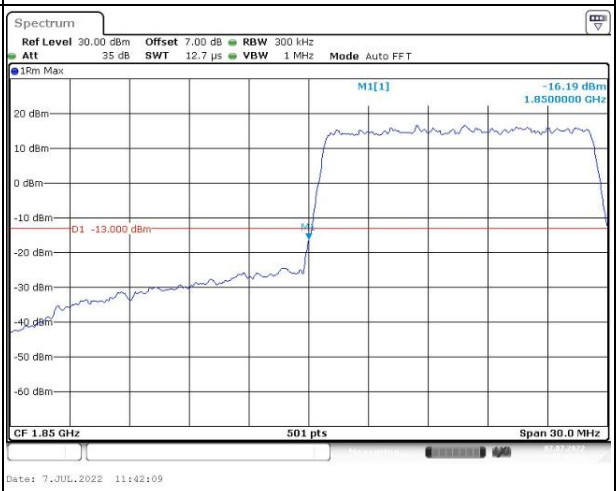
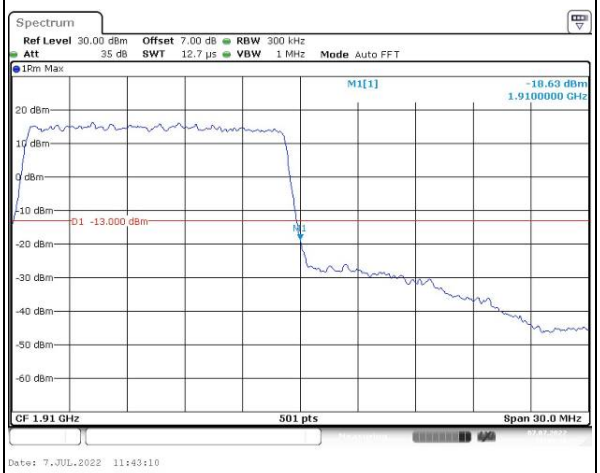
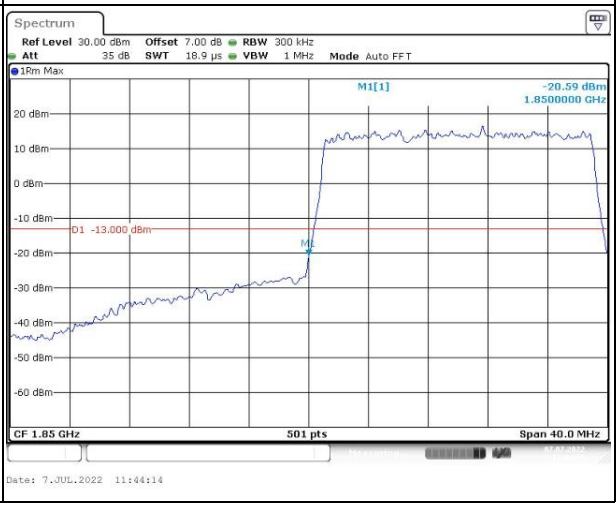
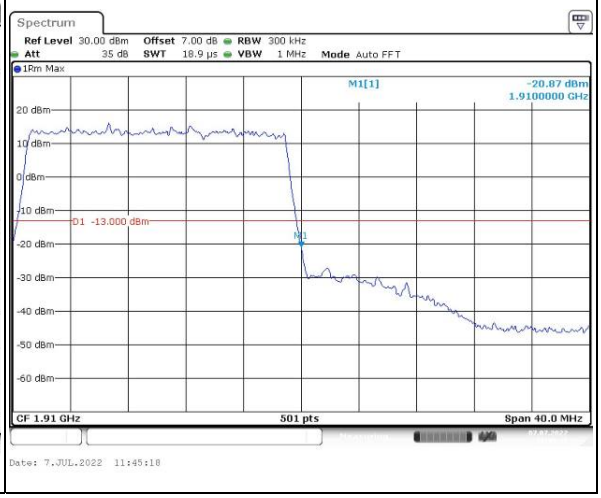
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

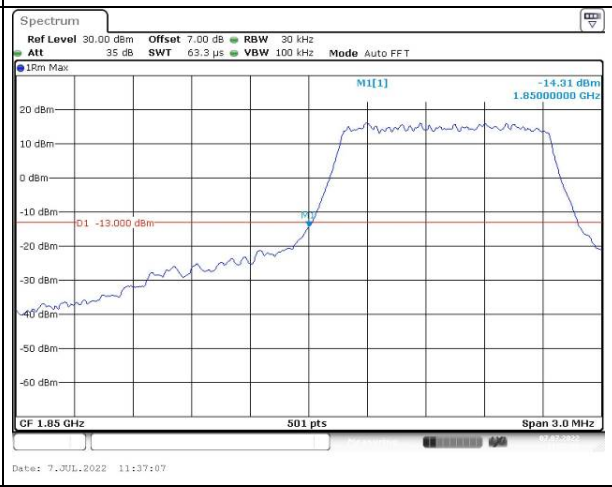
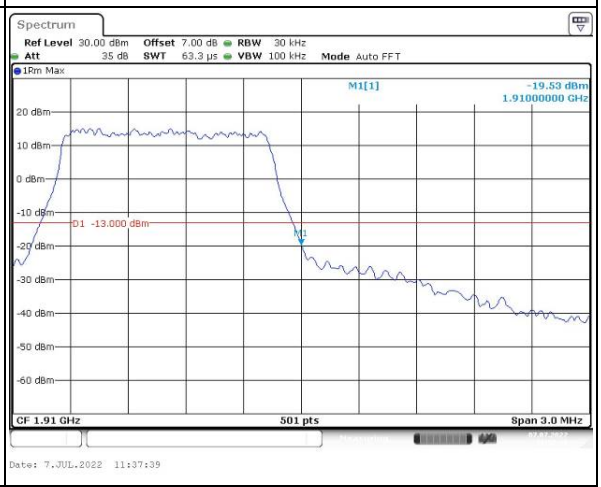
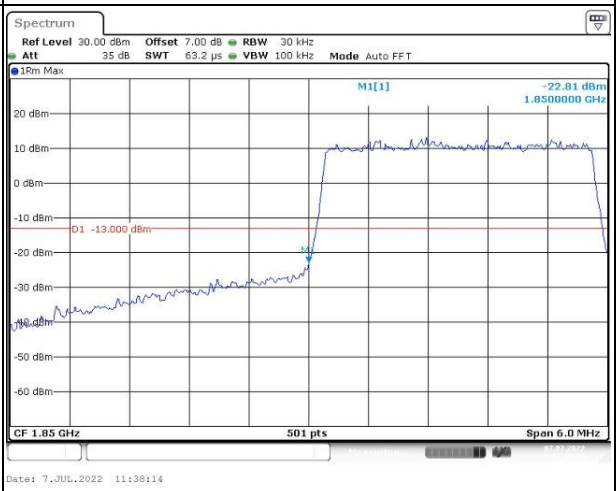
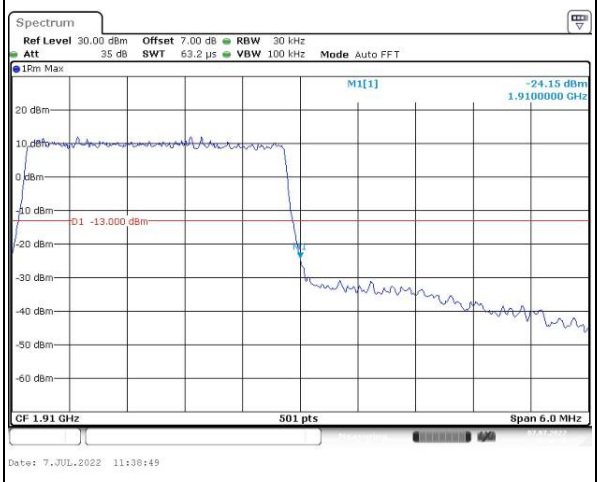
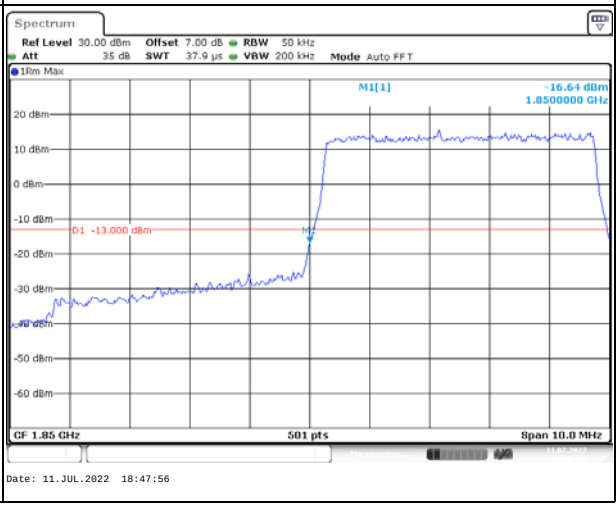
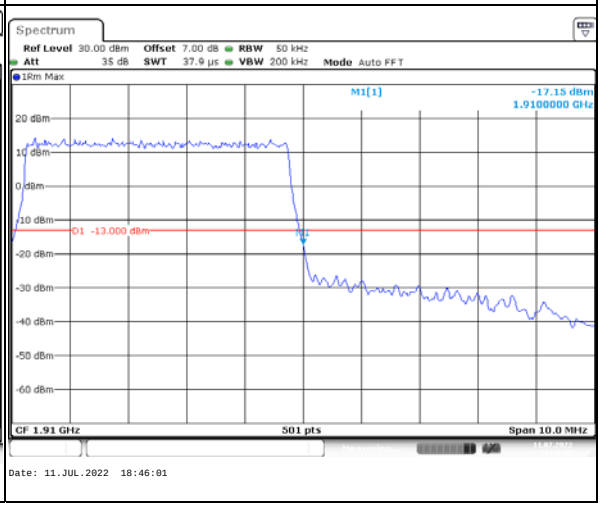
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

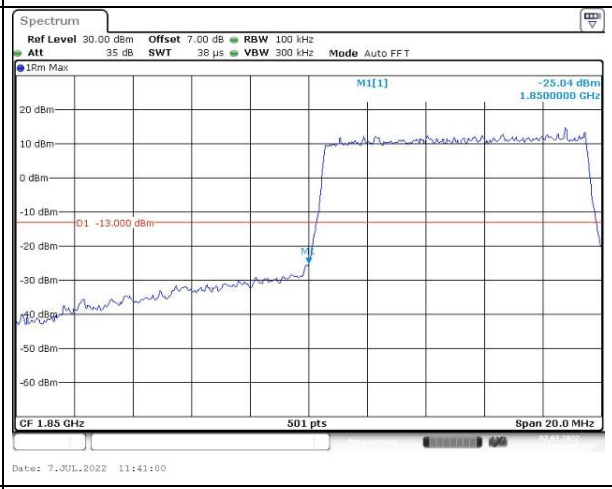
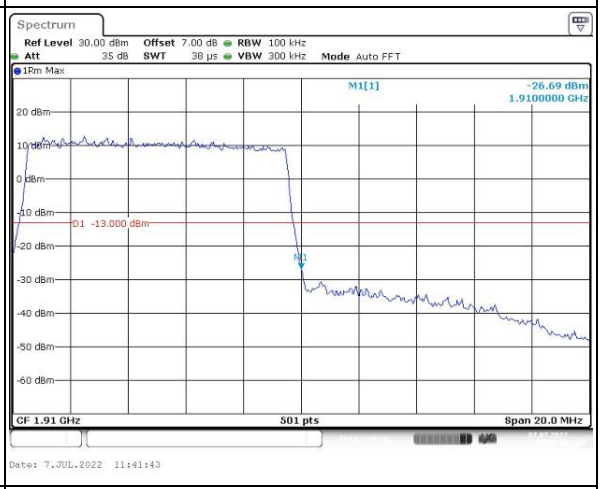
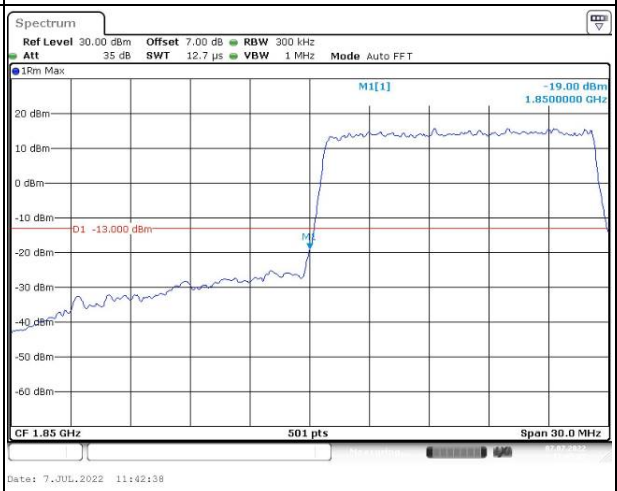
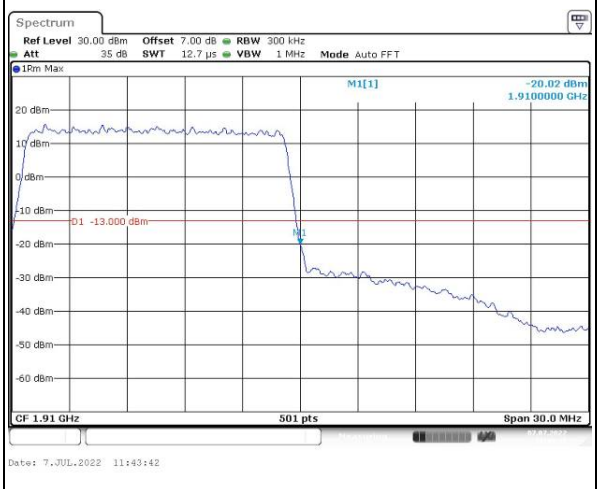
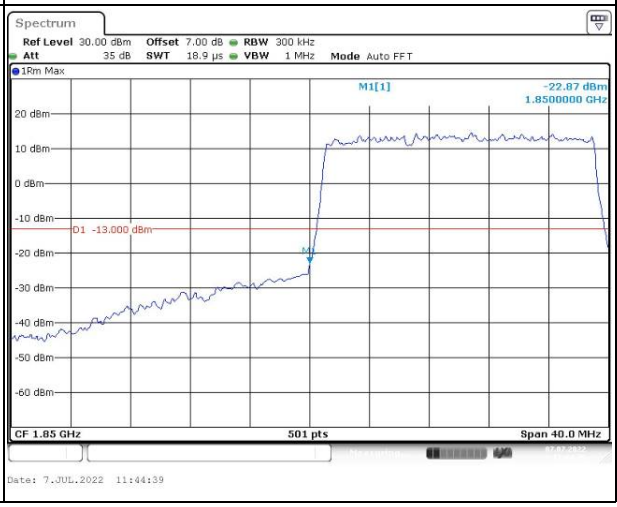
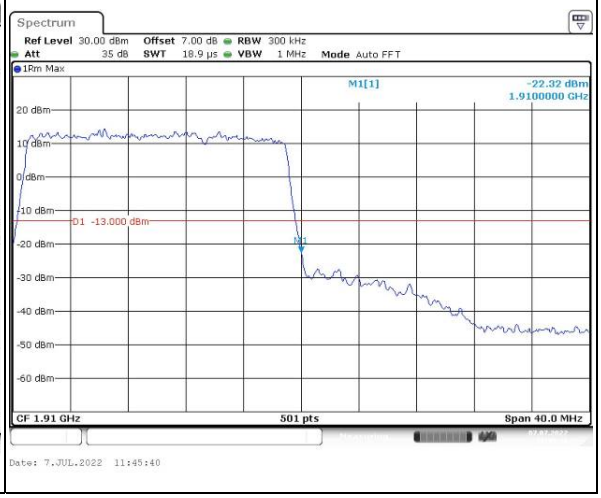
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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		

4.6 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	CR220050079-RF-S1	Test Date:	2022/7/2~2022/7/11
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ted Min	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	24.3~24.8	Relative Humidity: (%)	49~52	ATM Pressure: (kPa)	100.0~100.2

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2021-10-10	2022-10-09
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-21	2022-07-20
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
E-Microwave	Two-way Spliter	ODP-1-6	OE0120176	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108042	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100003	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 4▲:					
Antenna Gain (dBi):	-1.15			Path Loss L_C (dB):	0
Operation Voltage(V_{DC}):					
Lowest:	3.42	Normal:	3.8	Highest:	4.18

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

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	22.02	21.8	21.91	20.96	30
	RB1#3	22.03	21.88	21.93		
	RB1#5	22.11	21.86	22.07		
	RB3#0	21.99	21.69	22.02		
	RB3#3	22.1	21.66	21.81		
	RB6#0	21.73	21.47	21.71		
1.4MHz 16QAM	RB1#0	21.89	21.48	21.78	20.79	30
	RB1#3	21.92	21.58	21.86		
	RB1#5	21.94	21.63	21.75		
	RB3#0	21.81	21.51	21.76		
	RB3#3	21.8	21.63	21.73		
	RB6#0	21.48	21.11	21.36		
3MHz QPSK	RB1#0	22.04	21.95	21.9	21.02	30
	RB1#8	22.13	22.07	21.87		
	RB1#14	22.17	22.13	22.01		
	RB6#0	22.13	21.99	21.97		
	RB6#9	22.15	22.09	22.07		
	RB15#0	21.91	21.64	21.59		
3MHz 16QAM	RB1#0	21.86	21.74	21.78	20.89	30
	RB1#8	21.94	21.38	21.58		
	RB1#14	21.95	21.52	21.62		
	RB6#0	22.03	21.32	21.56		
	RB6#9	22.04	21.4	21.59		
	RB15#0	21.83	20.93	21.32		
5MHz QPSK	RB1#0	21.87	21.79	21.75	20.95	30
	RB1#13	21.99	21.86	21.75		
	RB1#24	21.94	21.83	21.75		
	RB15#0	22.1	21.92	21.59		
	RB15#10	22.02	21.68	21.67		
	RB25#0	21.69	21.4	21.29		
5MHz 16QAM	RB1#0	21.62	21.48	21.42	20.74	30
	RB1#13	21.72	21.51	21.48		
	RB1#24	21.89	21.68	21.72		
	RB15#0	21.85	21.66	21.59		
	RB15#10	21.88	21.69	21.6		
	RB25#0	21.63	21.37	21.35		

10MHz QPSK	RB1#0	21.92	21.86	21.85	20.93	30
	RB1#25	21.91	21.9	21.9		
	RB1#49	22.08	22.01	21.93		
	RB25#0	21.95	21.91	21.83		
	RB25#25	21.97	21.95	21.93		
	RB50#0	21.48	21.39	21.35		
10MHz 16QAM	RB1#0	21.57	21.44	21.35	20.77	30
	RB1#25	21.91	21.81	21.61		
	RB1#49	21.92	21.9	21.64		
	RB25#0	21.91	21.77	21.54		
	RB25#25	21.81	21.79	21.58		
	RB50#0	21.64	21.53	21.19		
15MHz QPSK	RB1#0	21.84	22.04	21.83	21.17	30
	RB1#38	21.9	22.18	21.88		
	RB1#74	22.01	22.32	21.89		
	RB36#0	21.82	22.17	21.75		
	RB36#39	21.83	22.12	21.84		
	RB75#0	21.52	21.99	21.41		
15MHz 16QAM	RB1#0	21.61	22.03	21.51	20.98	30
	RB1#38	21.72	22.12	21.66		
	RB1#74	21.72	22.13	21.61		
	RB36#0	21.68	22.02	21.55		
	RB36#39	21.63	21.96	21.63		
	RB75#0	21.36	21.86	21.29		
20MHz QPSK	RB1#0	22	21.95	21.82	21.21	30
	RB1#50	22.28	22.06	21.99		
	RB1#99	22.36	21.12	22.11		
	RB50#0	21.94	21.87	21.85		
	RB50#50	21.94	21.84	21.86		
	RB100#0	21.67	21.63	21.57		
20MHz 16QAM	RB1#0	21.65	21.73	21.73	20.76	30
	RB1#50	21.67	21.8	21.86		
	RB1#99	21.77	21.76	21.91		
	RB50#0	21.58	21.59	21.85		
	RB50#50	21.6	21.71	21.9		
	RB100#0	21.2	21.38	21.51		
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	3.12	3.24	3.41	13
	RB100#0	5.06	5.19	5.26	13
20MHz 16QAM	RB1#0	4.18	4.35	4.11	13
	RB100#0	6.36	6.19	6.27	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	1.108	1.296	1.32	1.314
1.4MHz 16QAM	1.096	1.09	1.102	1.326	1.284	1.308
3MHz QPSK	2.683	2.683	2.683	2.88	2.88	2.892
3MHz 16QAM	2.683	2.683	2.683	2.892	2.88	2.88
5MHz QPSK	4.511	4.511	4.491	4.98	5.32	4.94
5MHz 16QAM	4.491	4.511	4.511	5.06	5.5	4.98
10MHz QPSK	8.942	8.942	8.942	9.64	9.64	9.72
10MHz 16QAM	8.942	8.942	8.942	9.6	9.64	9.64
15MHz QPSK	13.473	13.413	13.533	14.82	14.58	14.76
15MHz 16QAM	13.473	13.533	13.533	14.7	14.7	14.76
20MHz QPSK	17.964	17.884	18.044	19.36	19.2	19.52
20MHz 16QAM	17.964	17.884	17.884	19.28	19.36	19.36
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.**

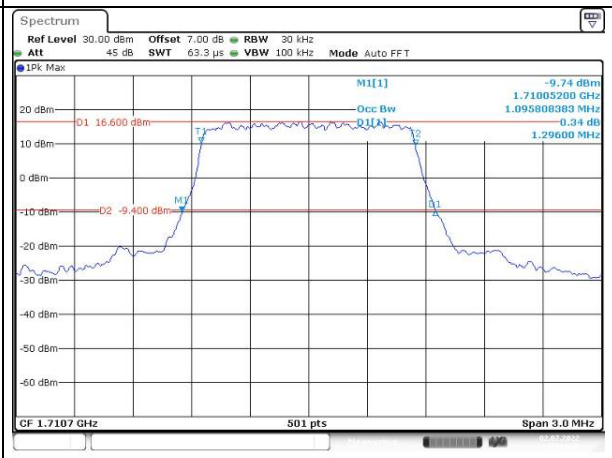
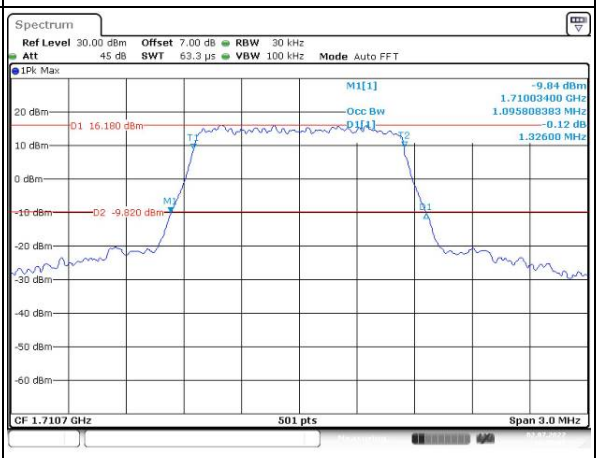
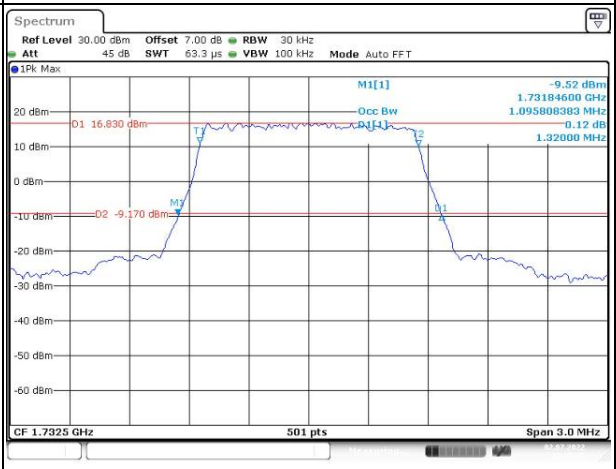
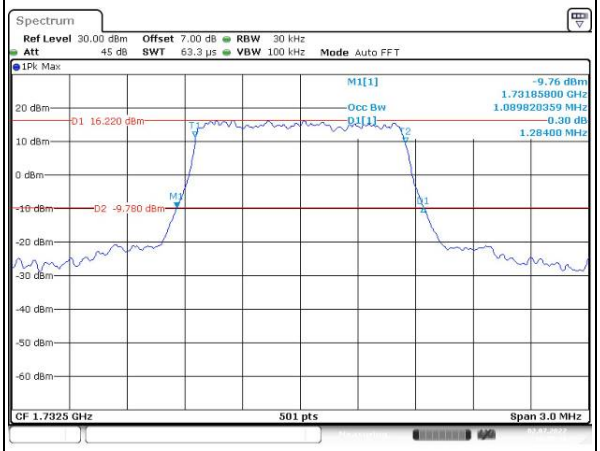
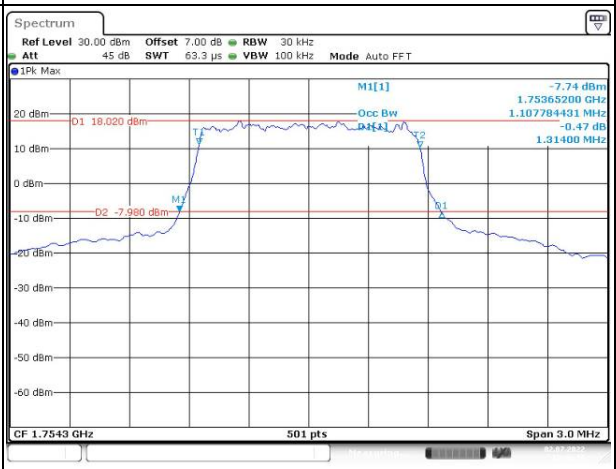
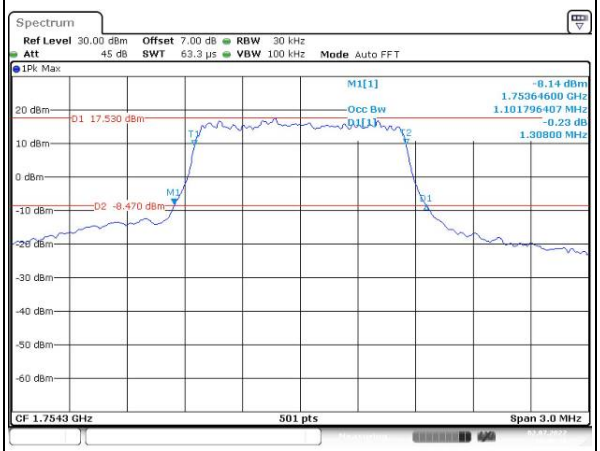
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

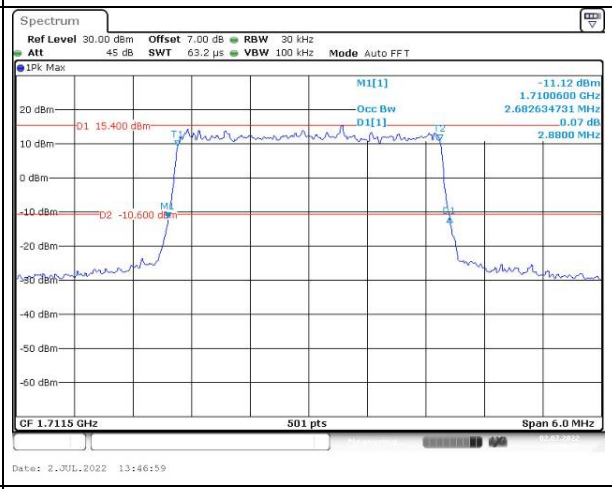
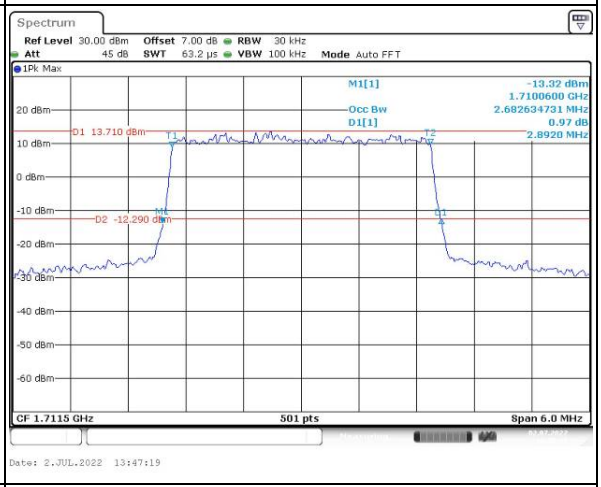
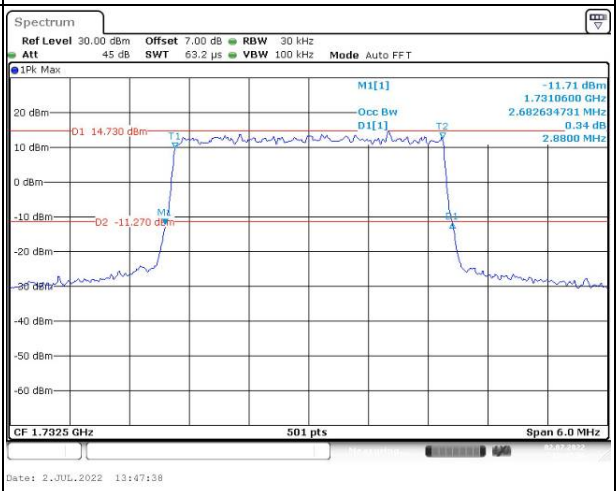
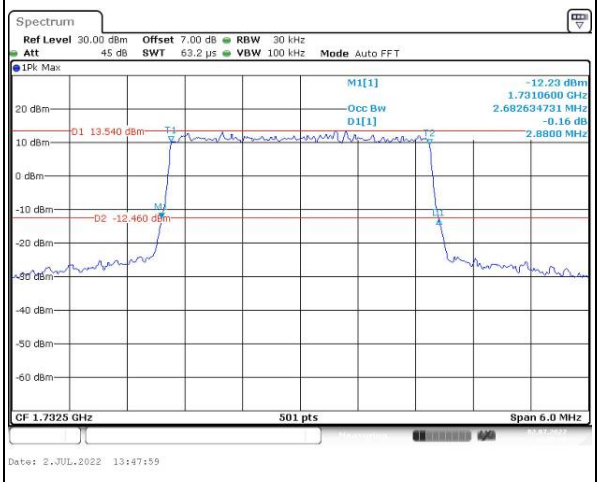
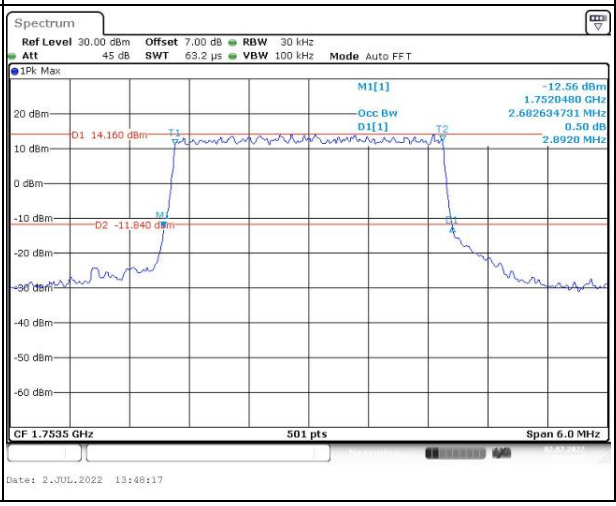
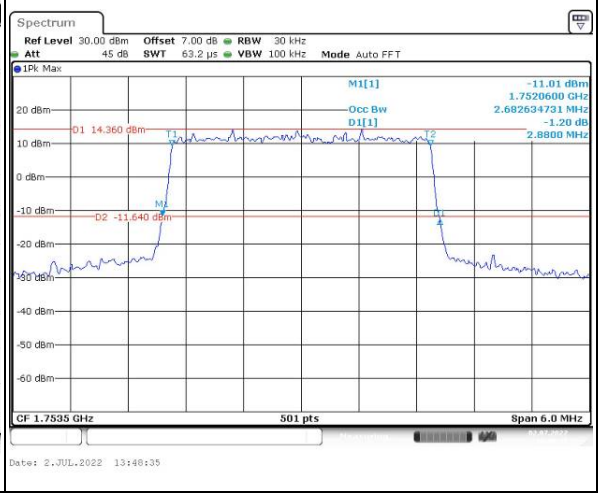
FCC §2.1055, §27.54: Frequency Stability

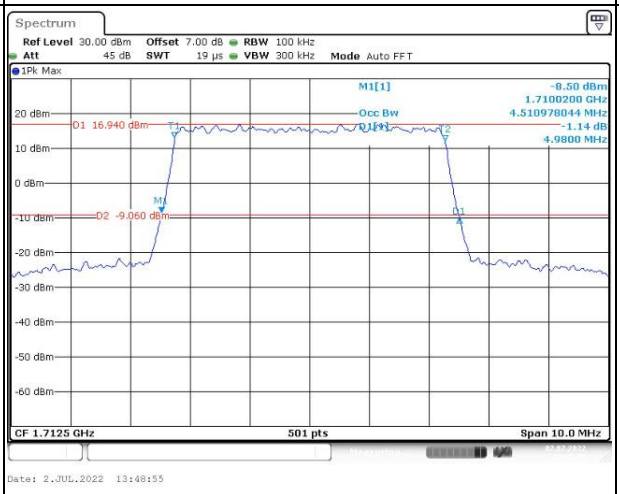
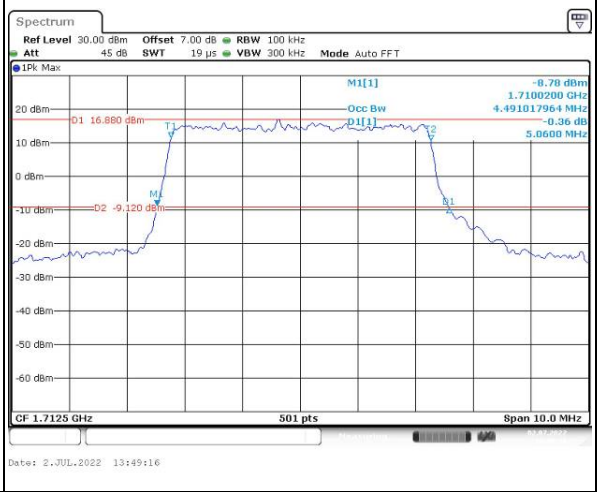
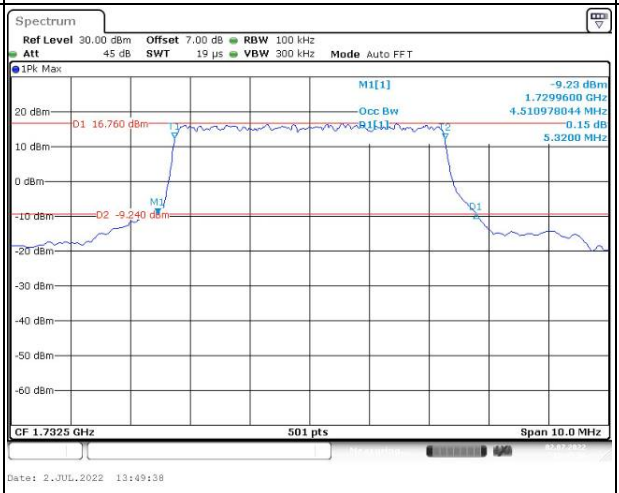
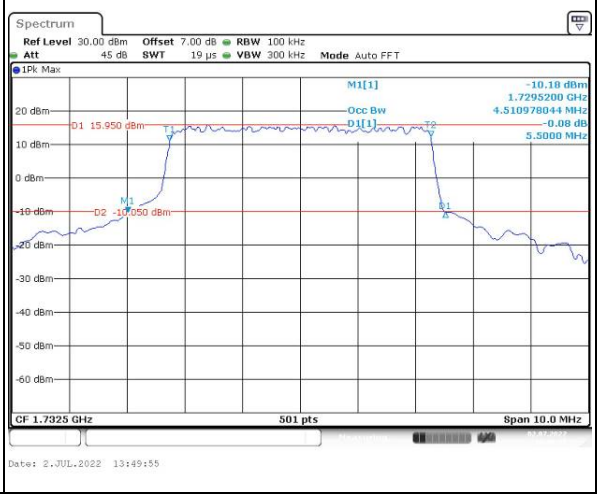
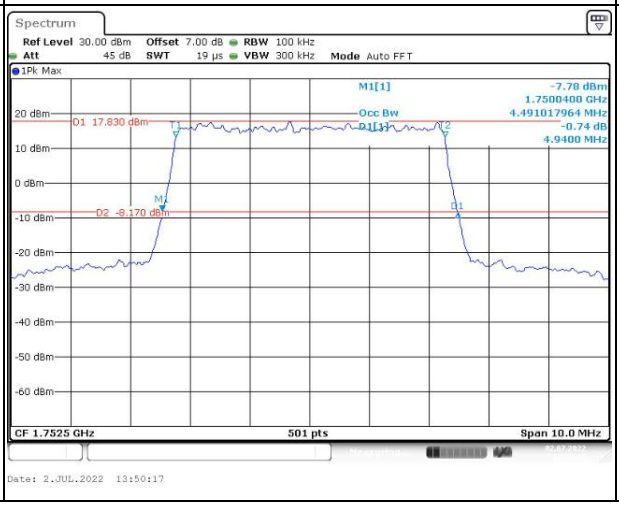
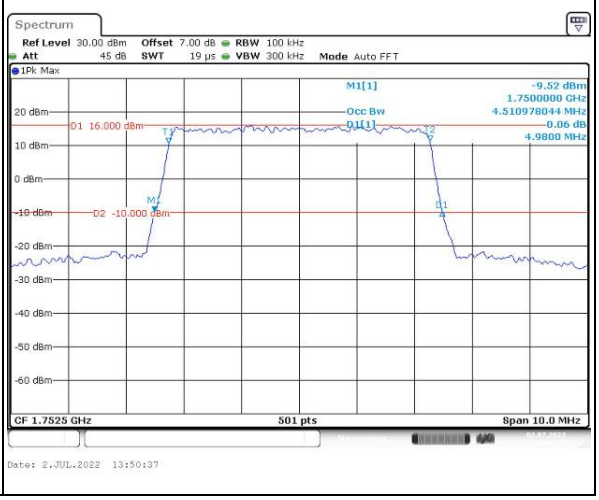
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.276	1710.00	1754.770	1755
	-20	3.8	1710.332	1710.00	1754.721	1755
	-10	3.8	1710.219	1710.00	1754.814	1755
	0	3.8	1710.323	1710.00	1754.769	1755
	10	3.8	1710.286	1710.00	1754.672	1755
	20	3.8	1710.226	1710.00	1754.828	1755
	30	3.8	1710.283	1710.00	1754.684	1755
	40	3.8	1710.323	1710.00	1754.739	1755
	50	3.8	1710.308	1710.00	1754.647	1755
Frequency Stability vs. Voltage	20	3.42	1710.277	1710.00	1754.759	1755
	20	4.18	1710.201	1710.00	1754.783	1755
					Result:	**Pass**

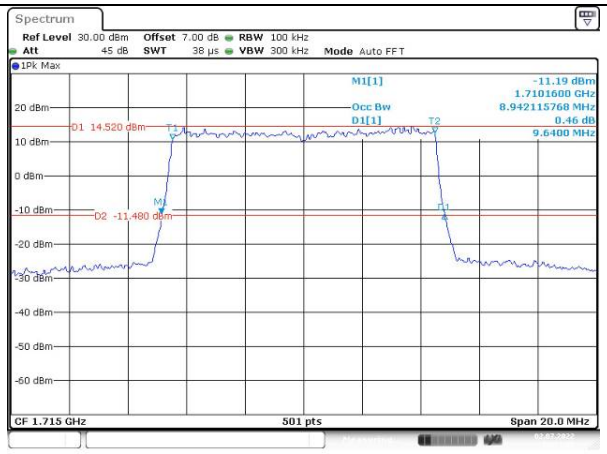
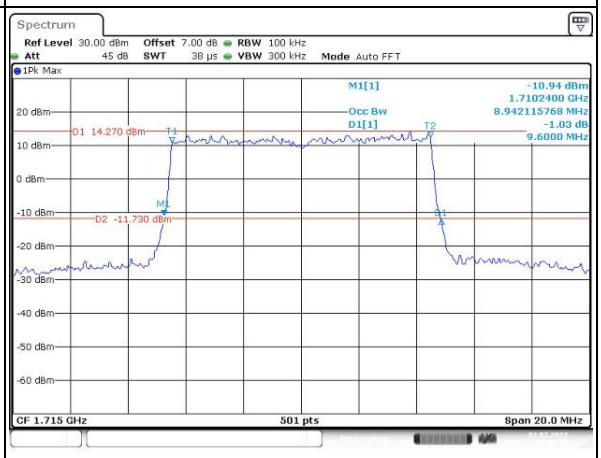
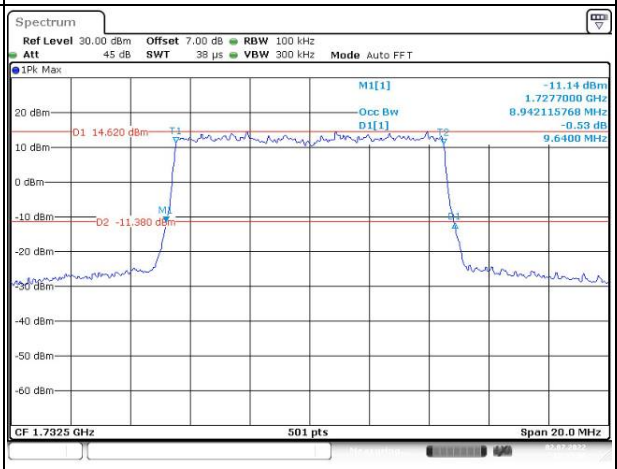
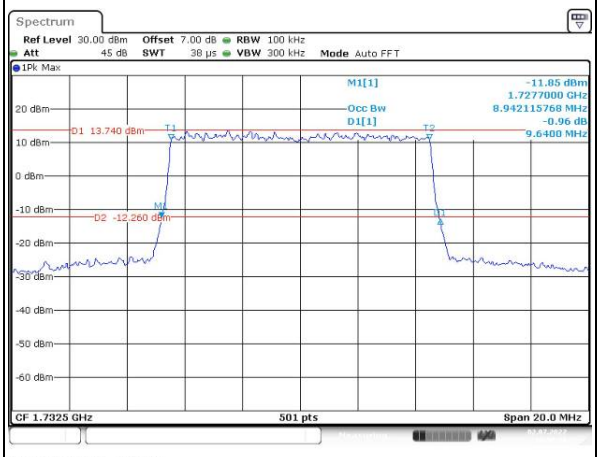
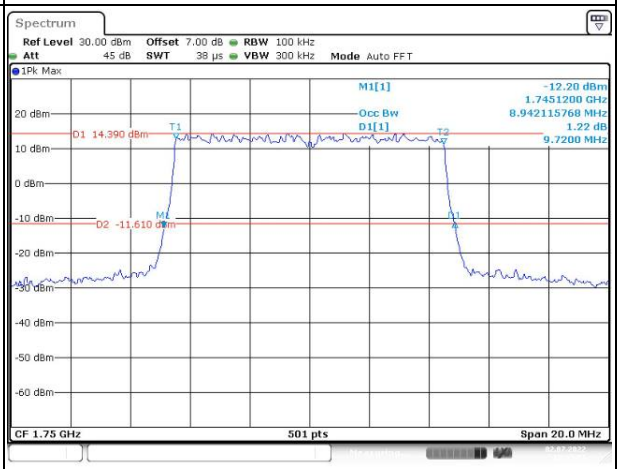
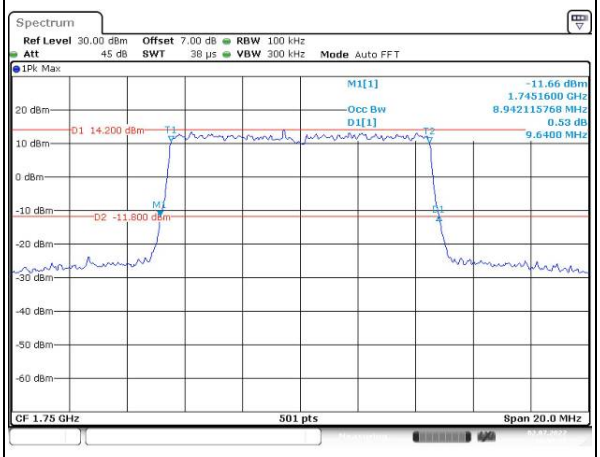
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.338	1710.00	1754.663	1755
	-20	3.8	1710.328	1710.00	1754.623	1755
	-10	3.8	1710.362	1710.00	1754.693	1755
	0	3.8	1710.390	1710.00	1754.757	1755
	10	3.8	1710.305	1710.00	1754.787	1755
	20	3.8	1710.329	1710.00	1754.623	1755
	30	3.8	1710.315	1710.00	1754.722	1755
	40	3.8	1710.202	1710.00	1754.746	1755
	50	3.8	1710.276	1710.00	1754.615	1755
Frequency Stability vs. Voltage	20	3.42	1710.288	1710.00	1754.611	1755
	20	4.18	1710.298	1710.00	1754.682	1755
					Result:	**Pass**

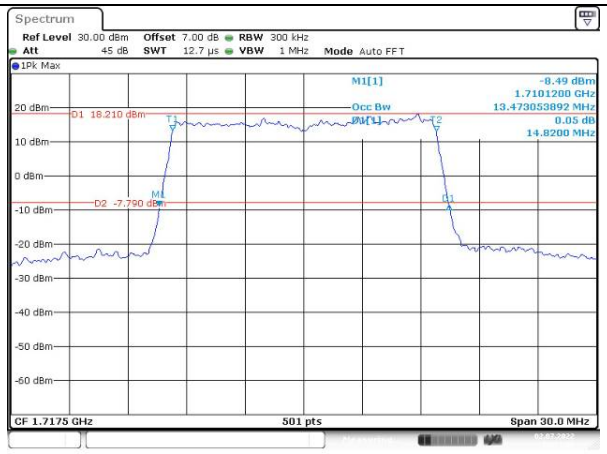
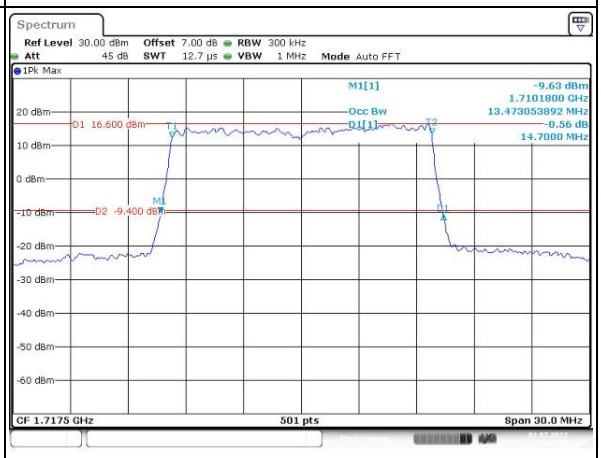
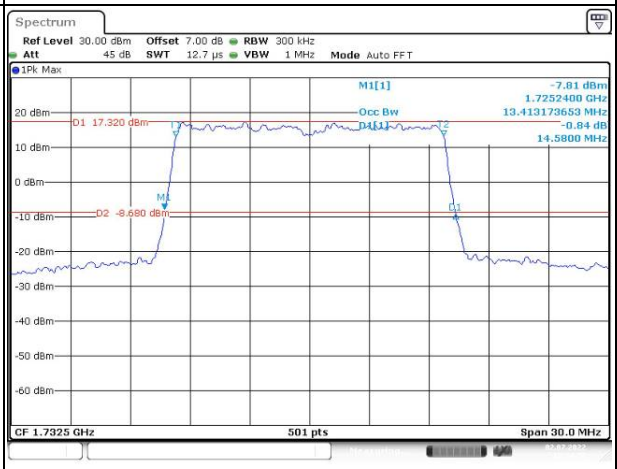
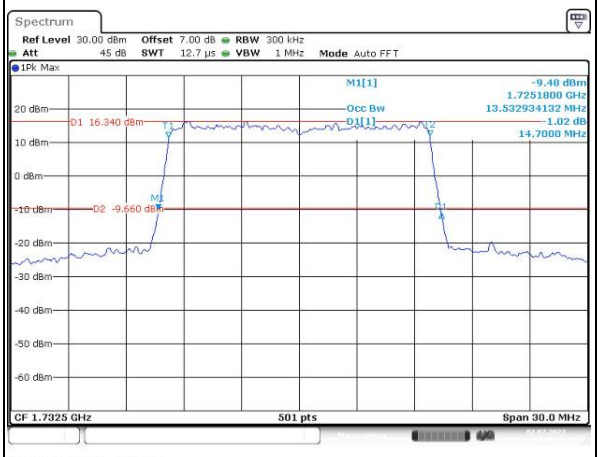
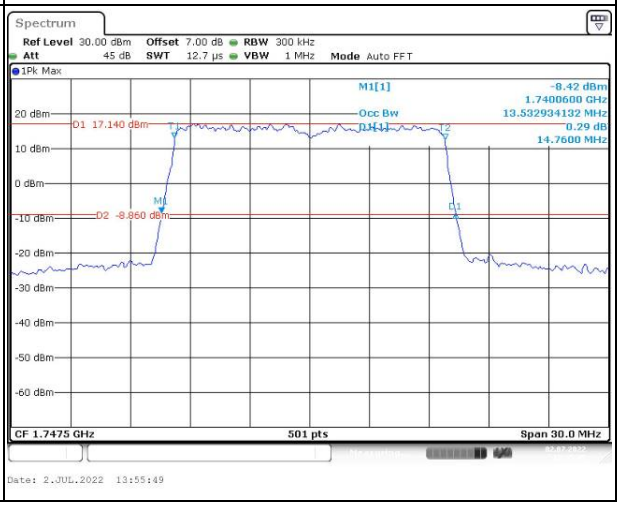
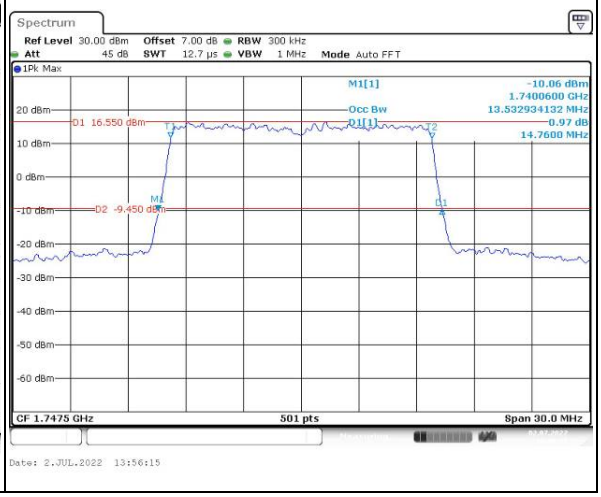
Test Plots:

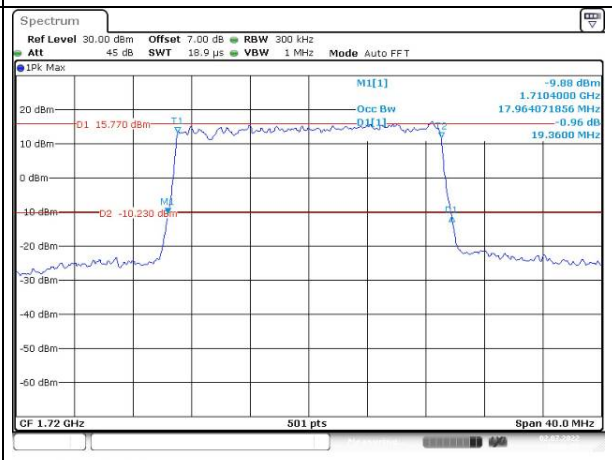
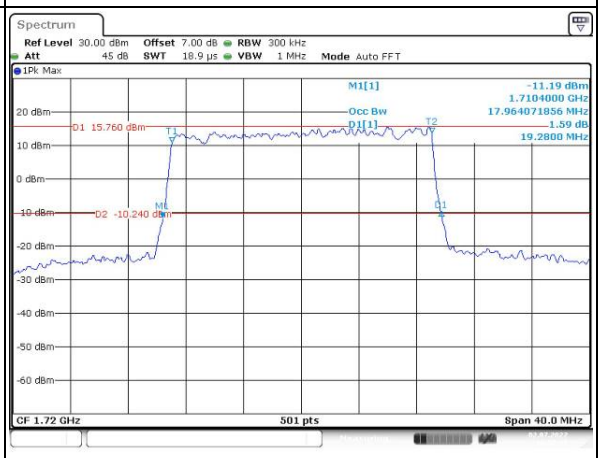
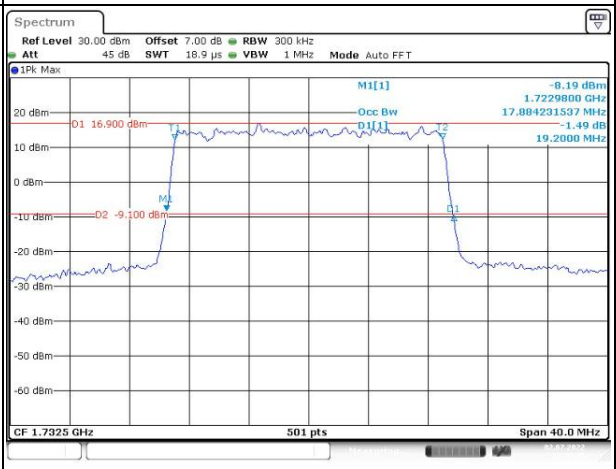
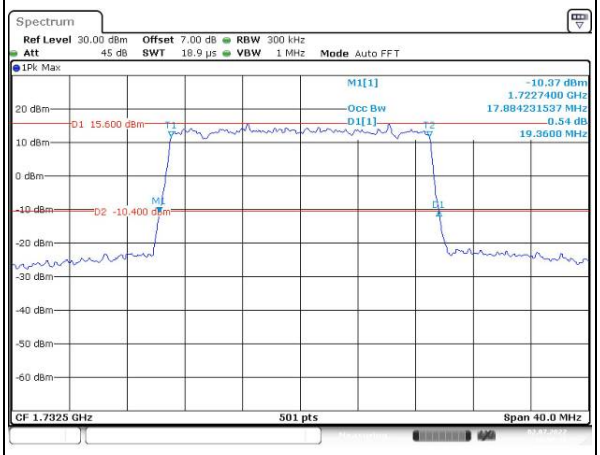
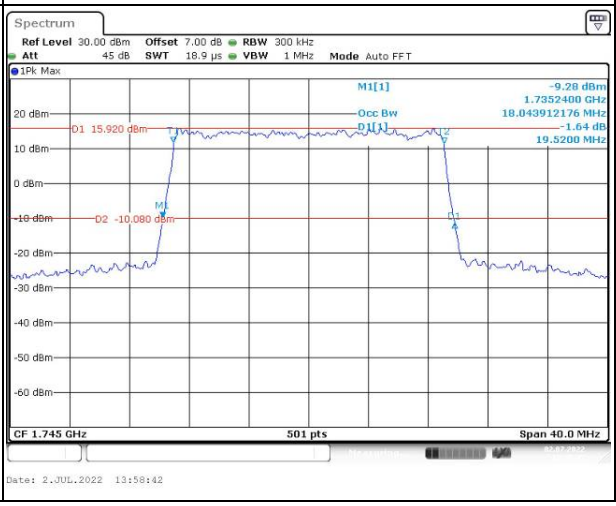
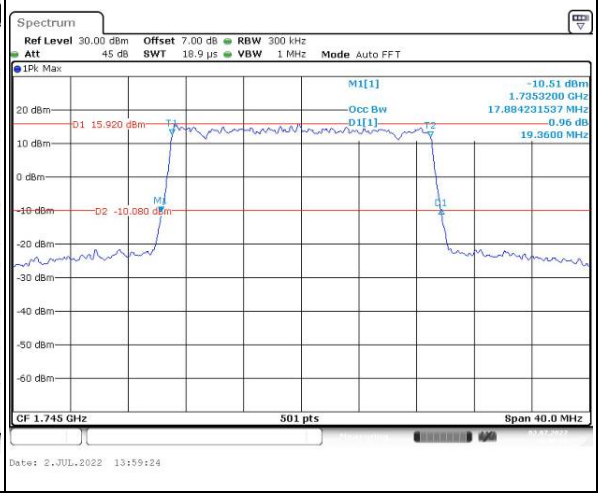
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

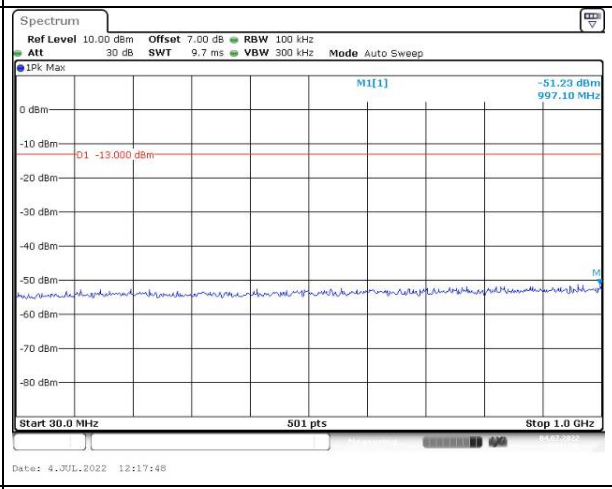
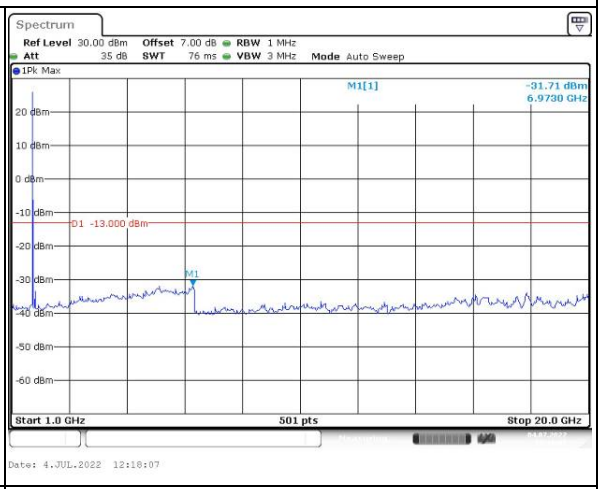
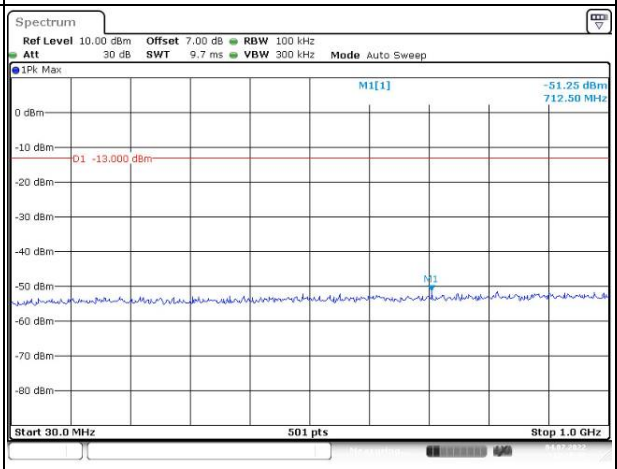
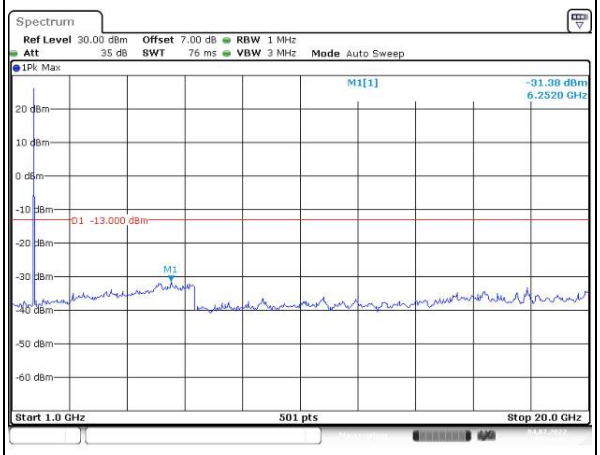
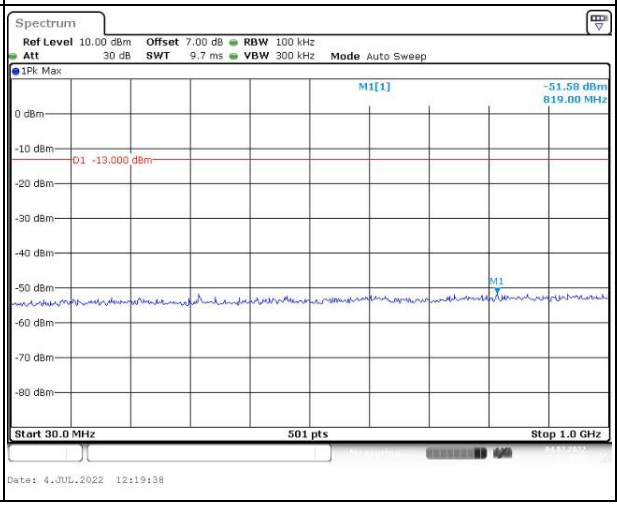
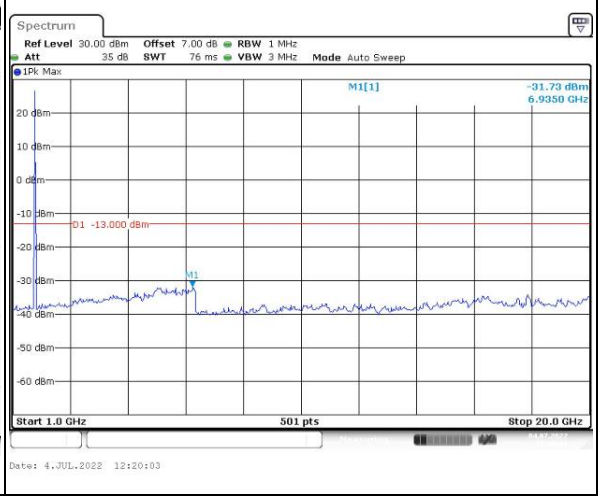
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

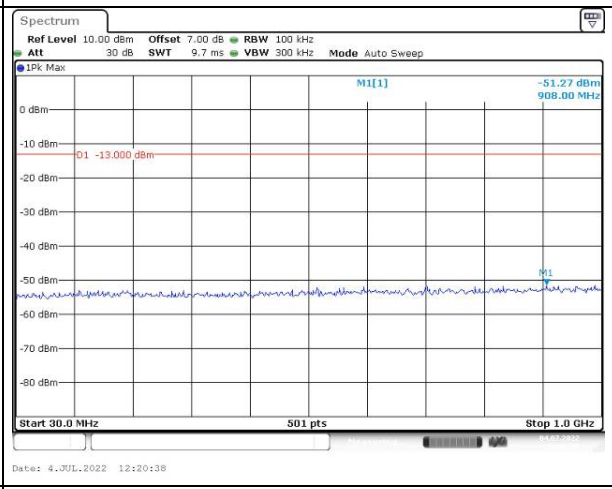
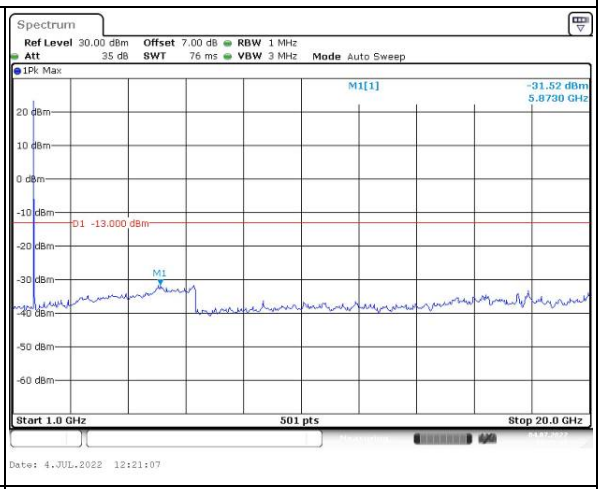
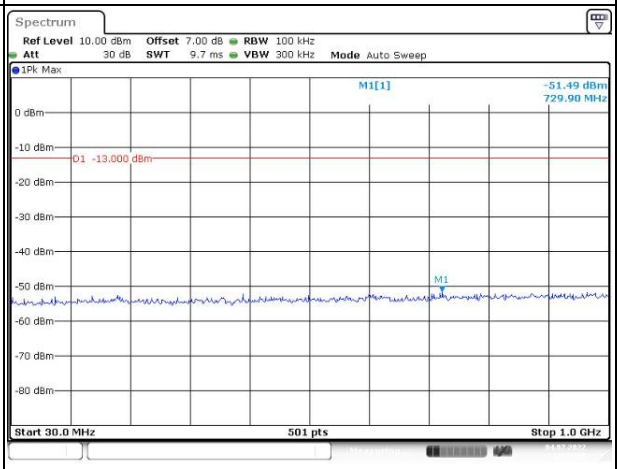
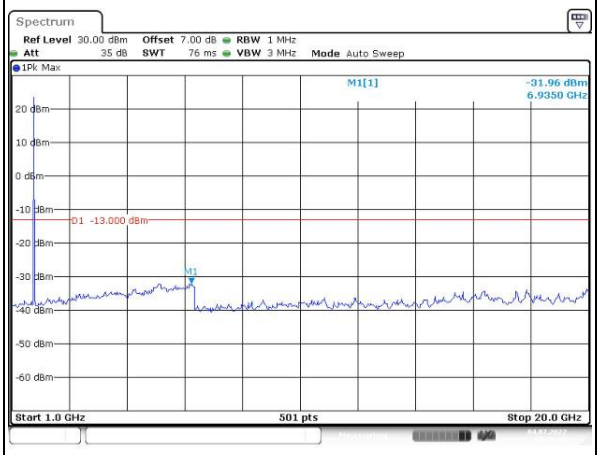
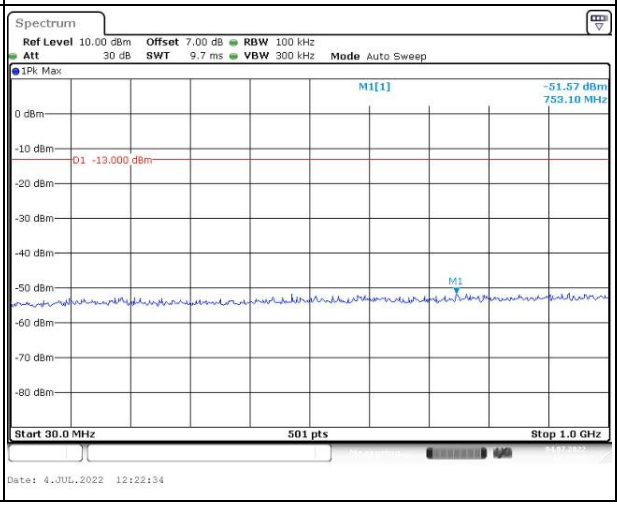
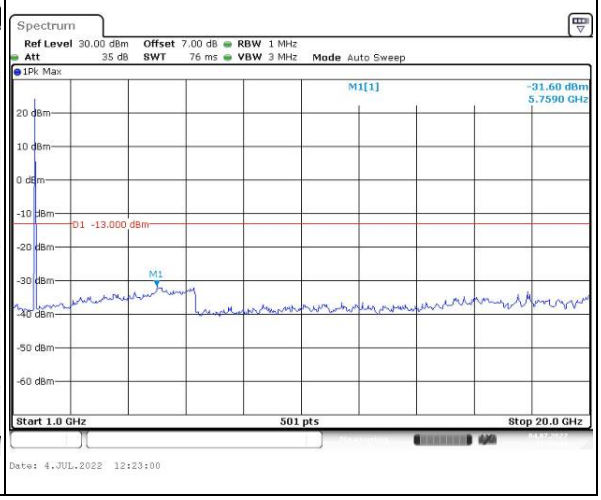
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

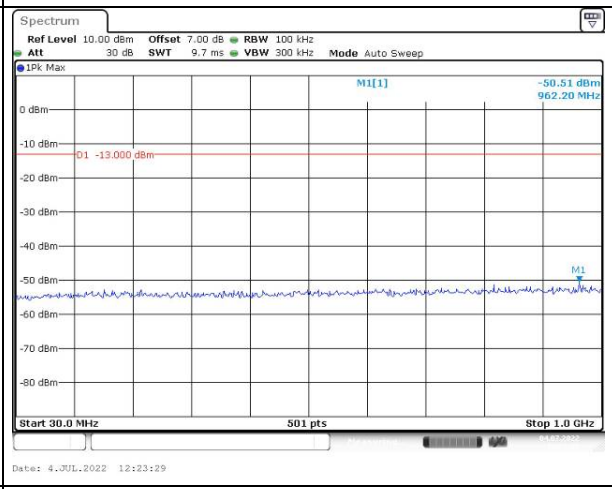
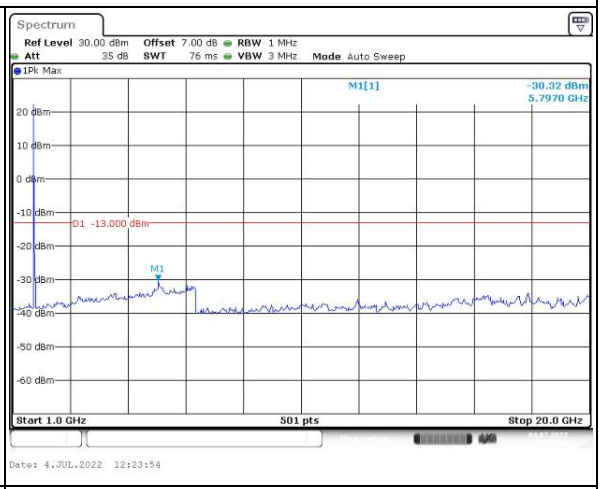
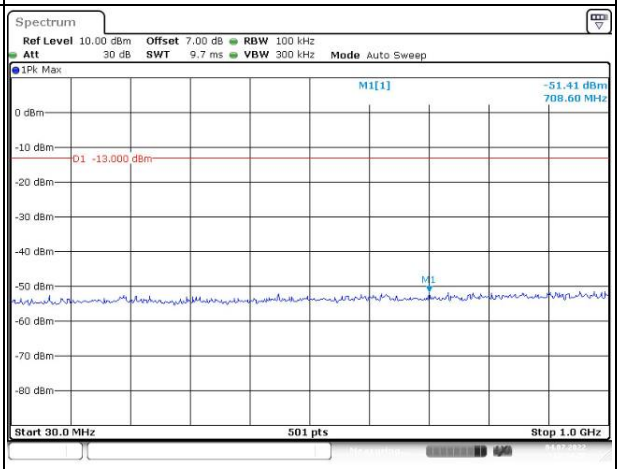
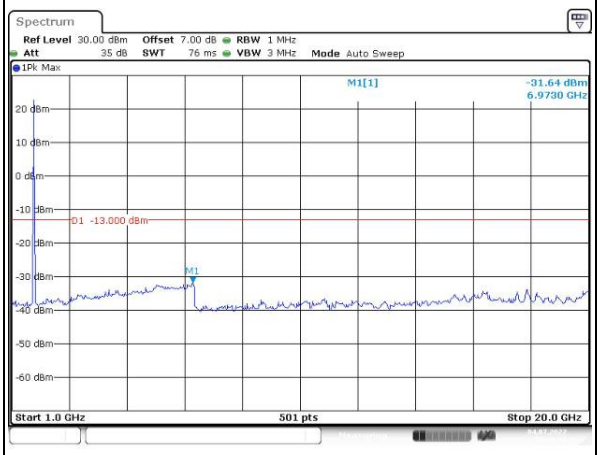
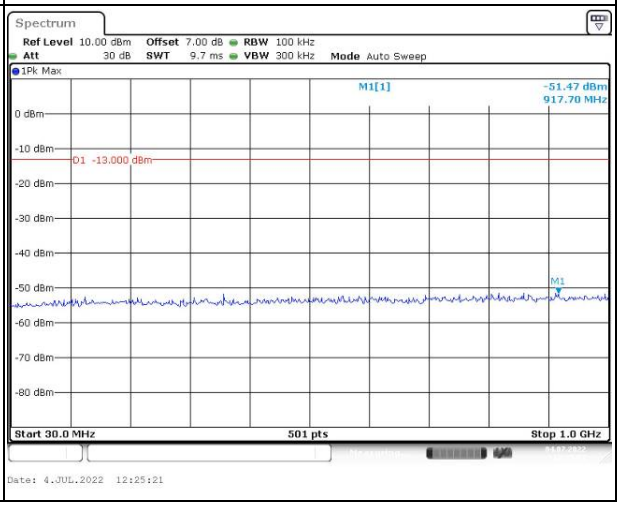
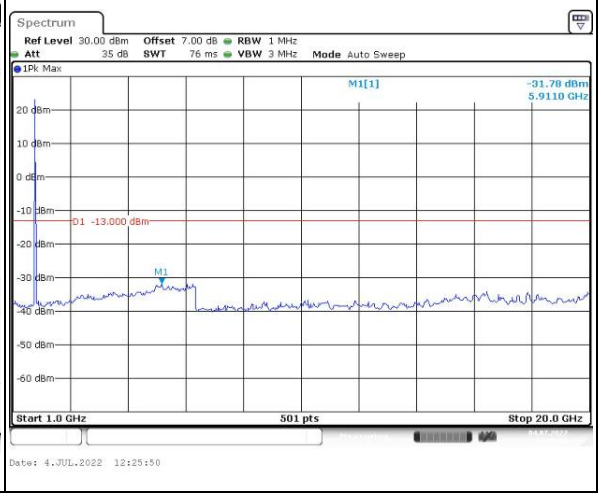
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

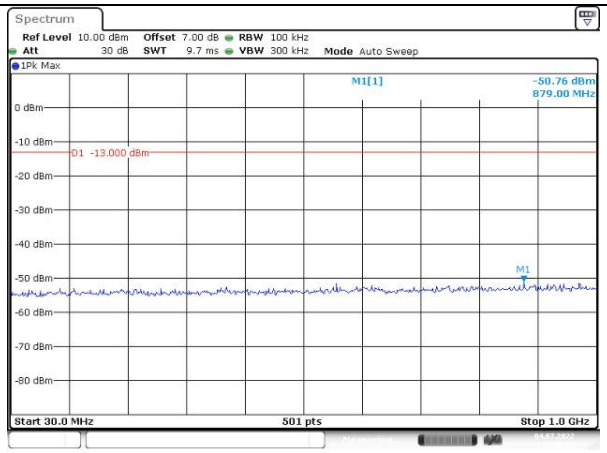
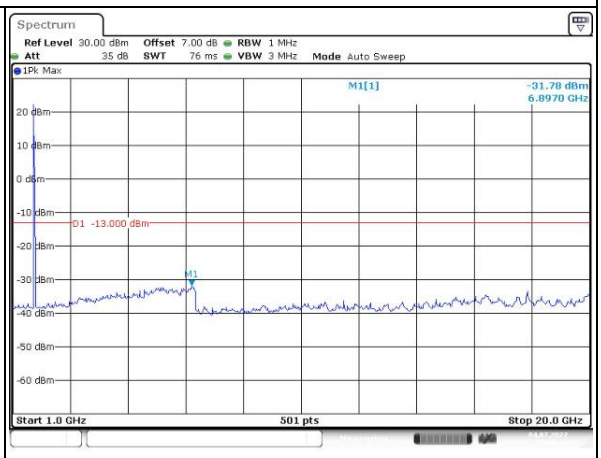
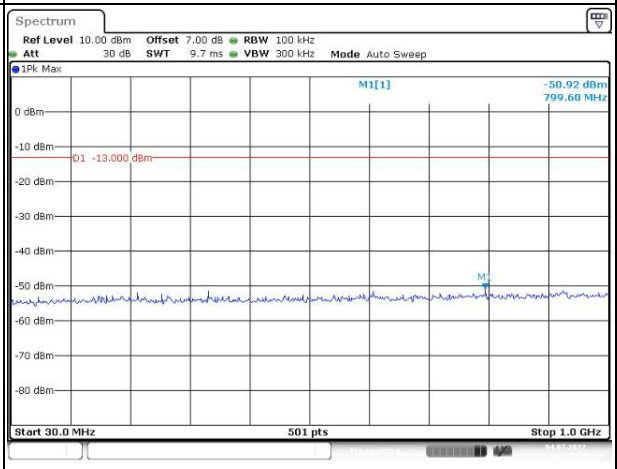
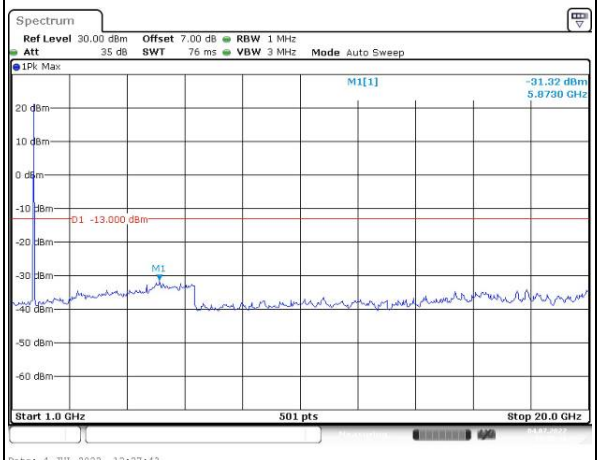
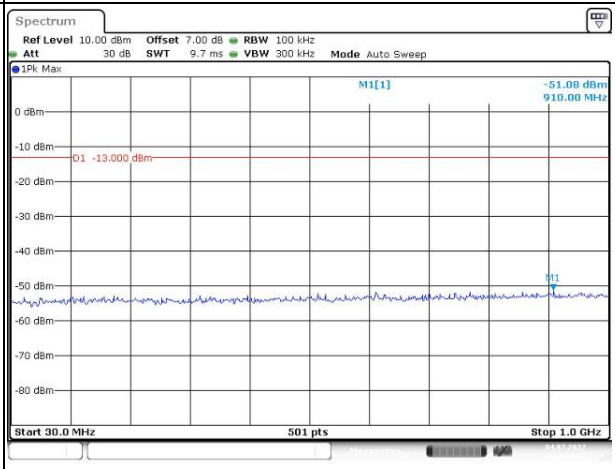
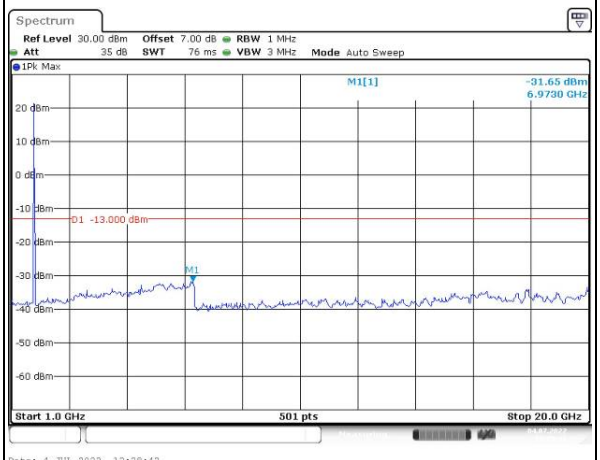
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

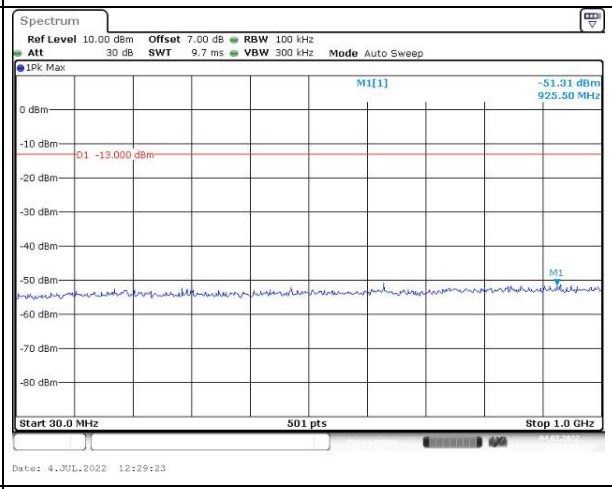
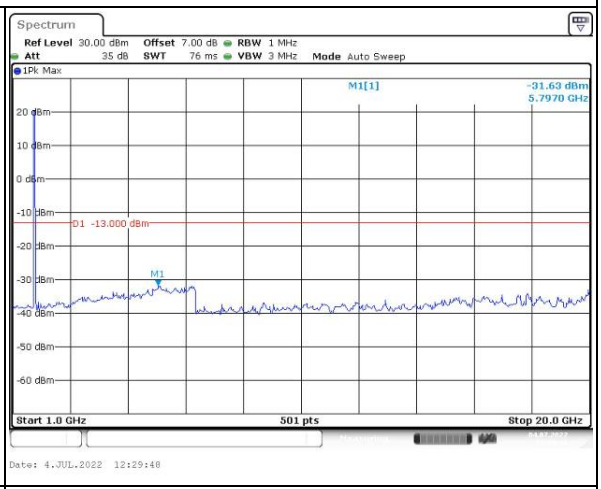
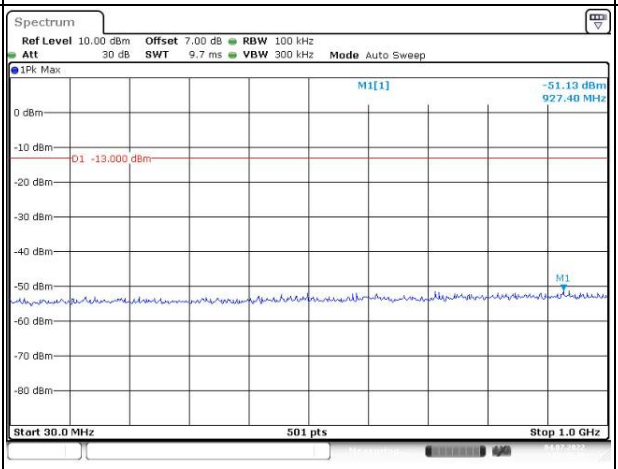
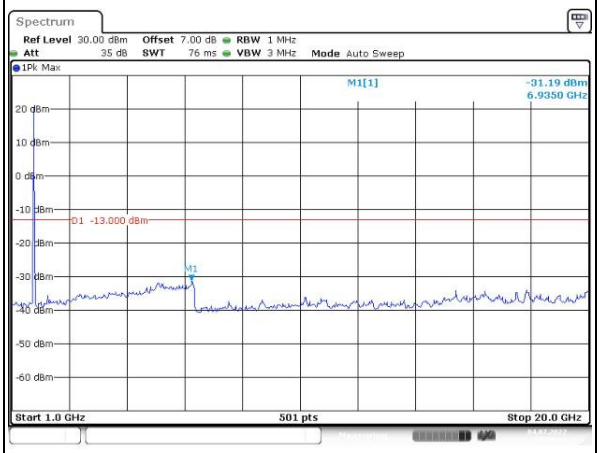
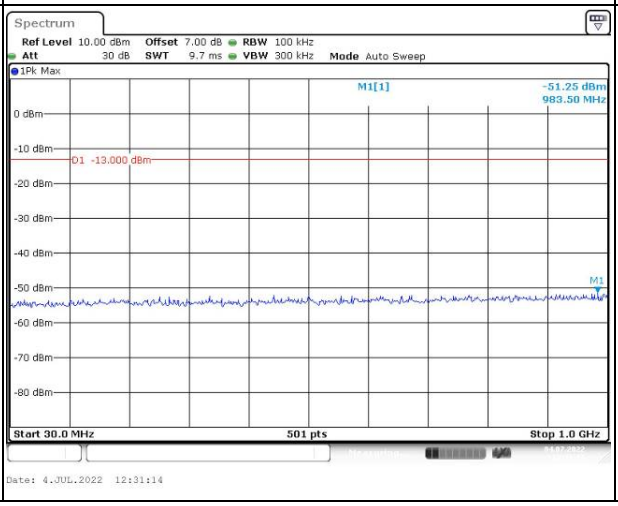
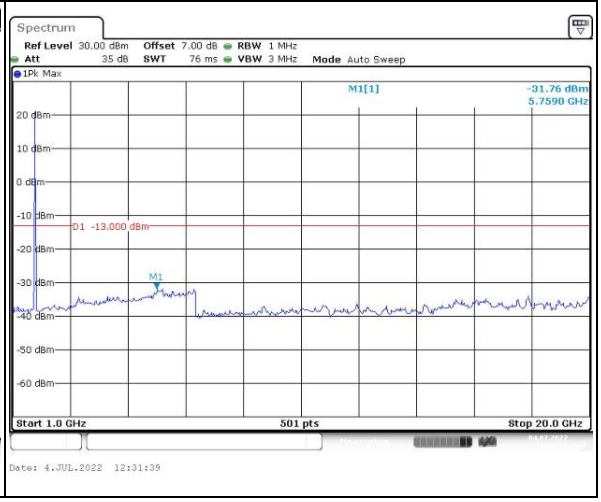
Occupied Bandwidth		
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

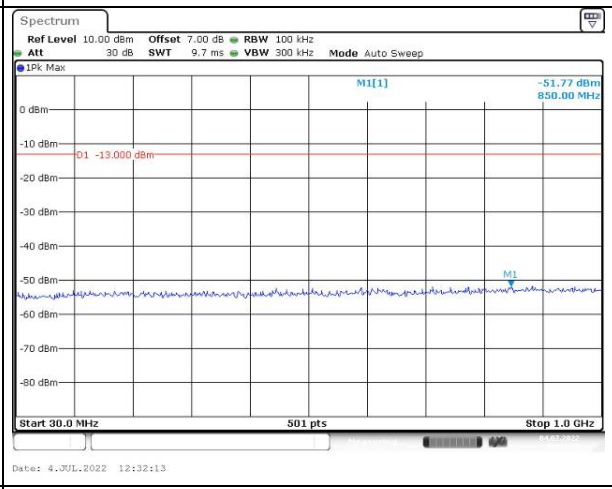
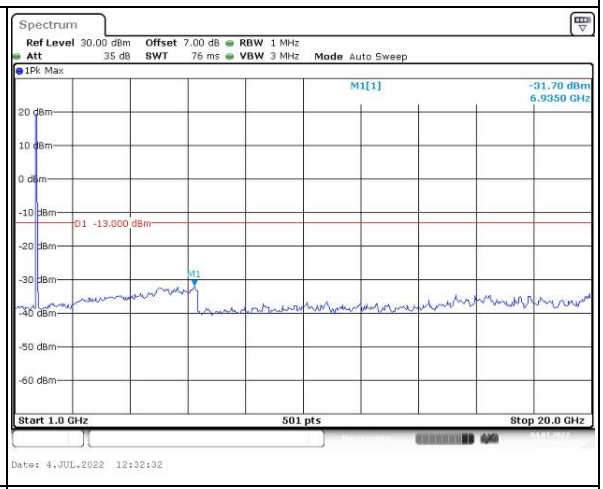
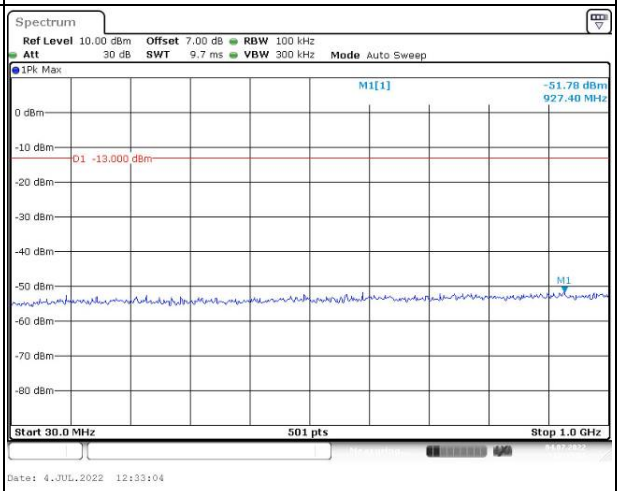
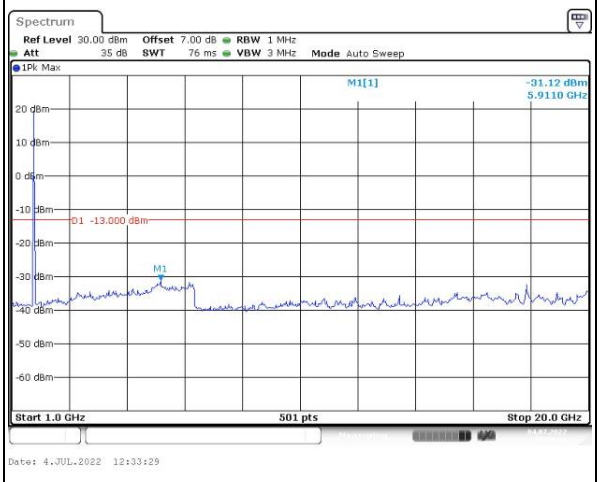
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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