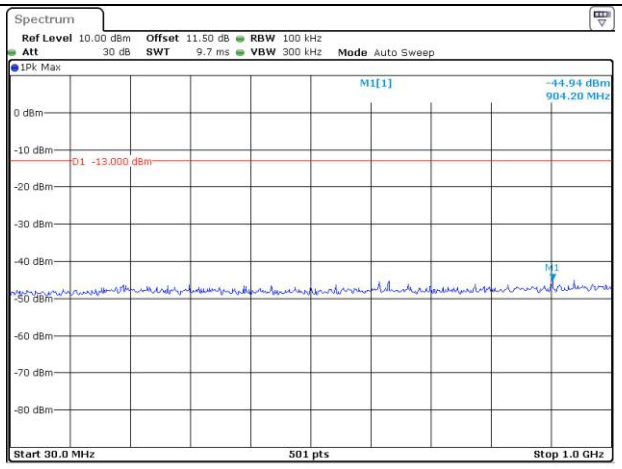
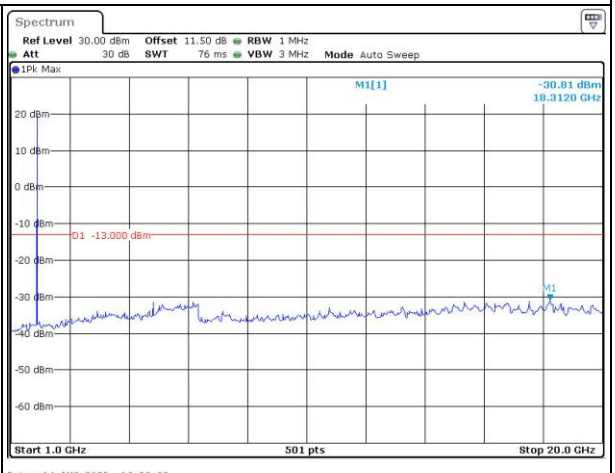
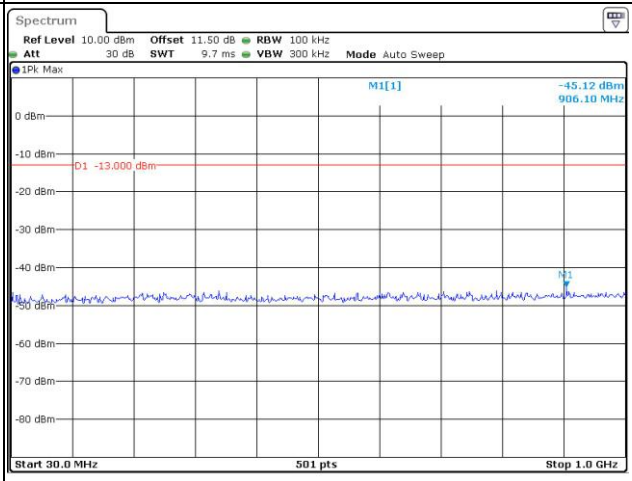
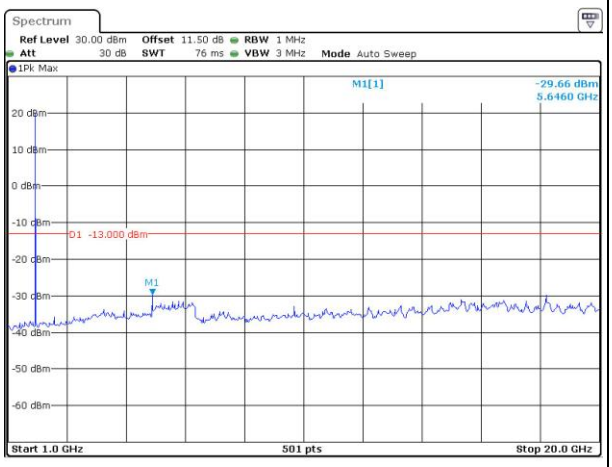
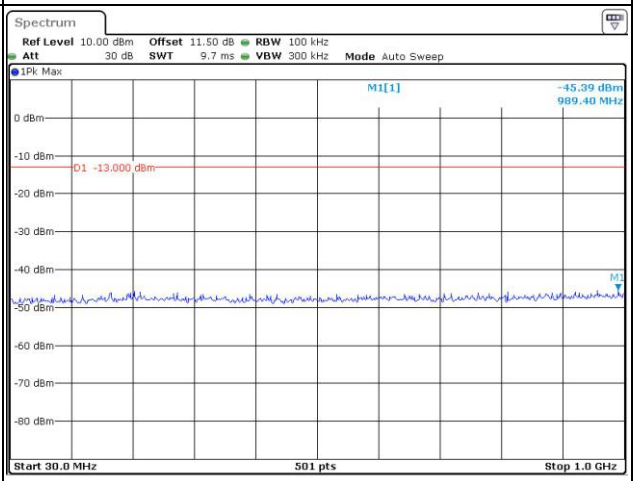
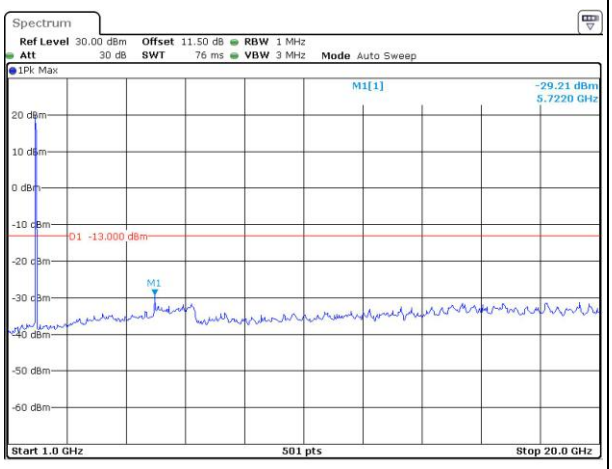
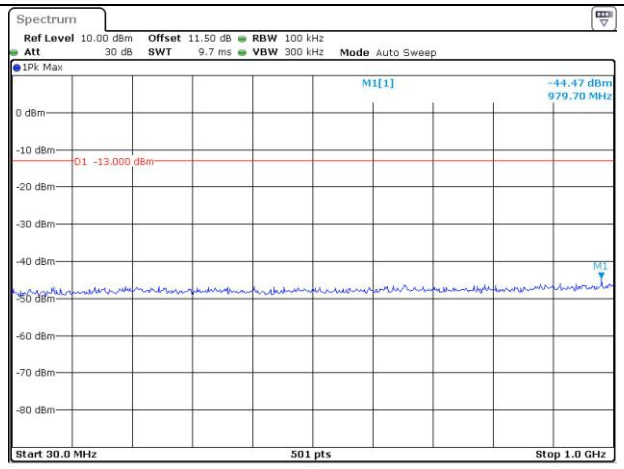
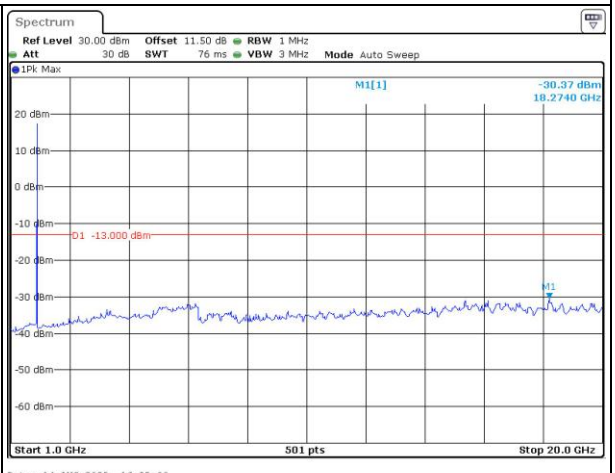
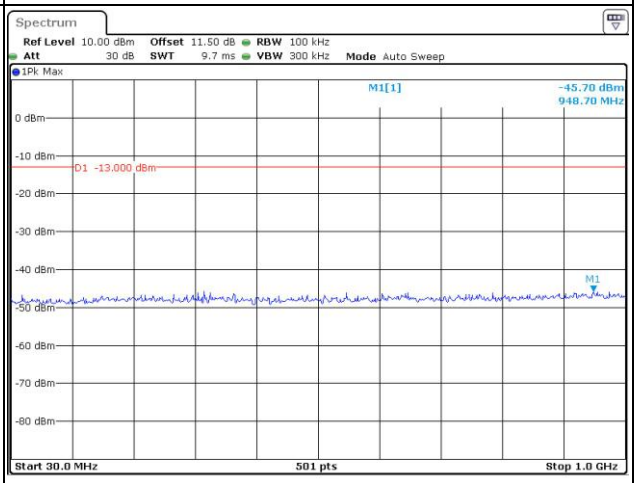
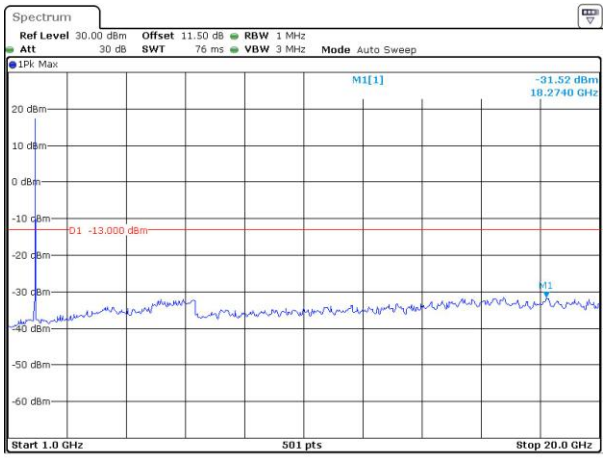
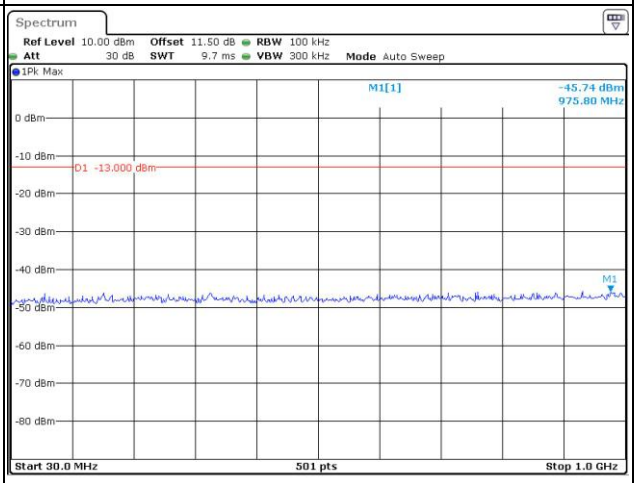
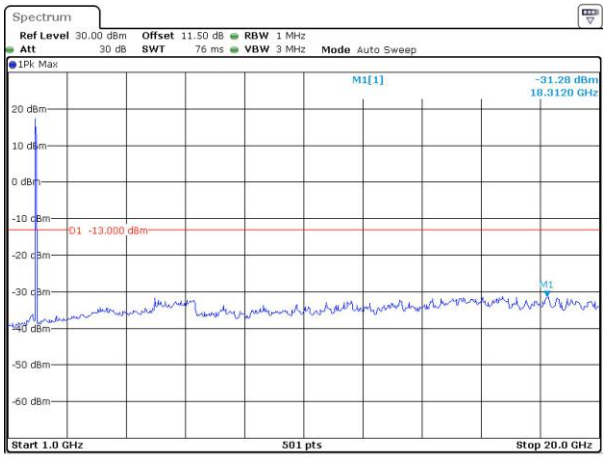
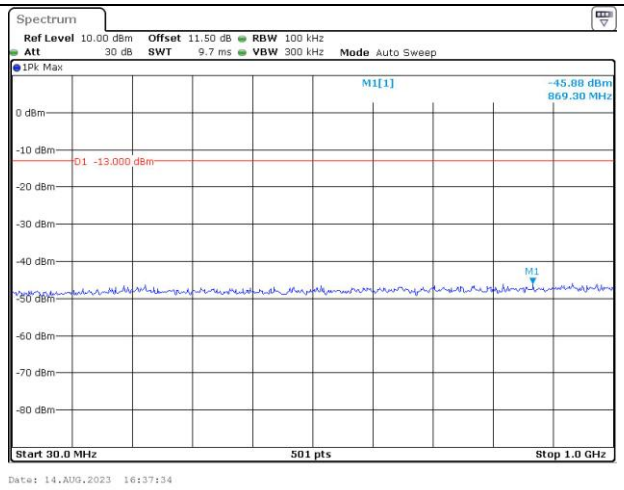
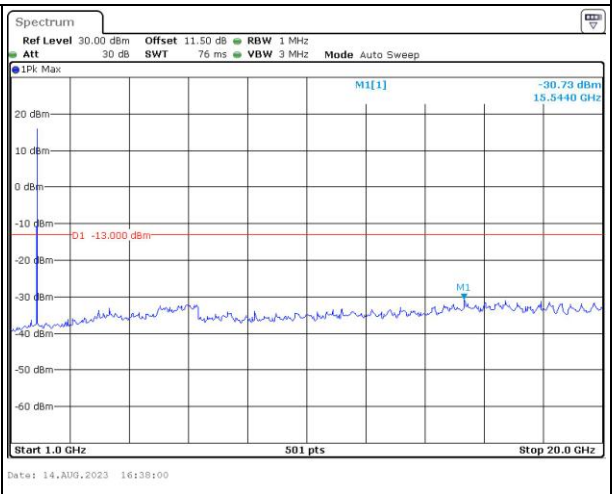
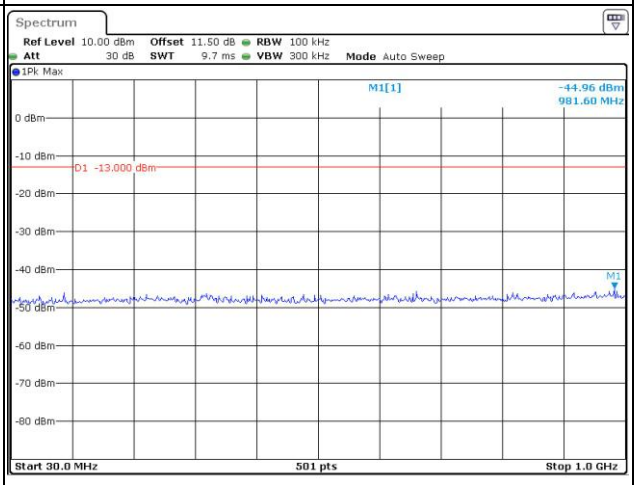
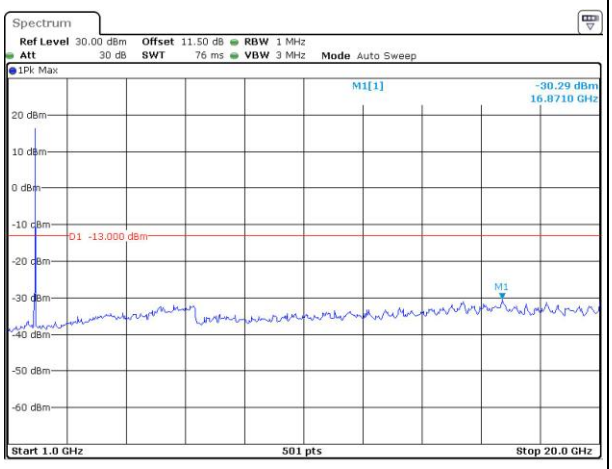
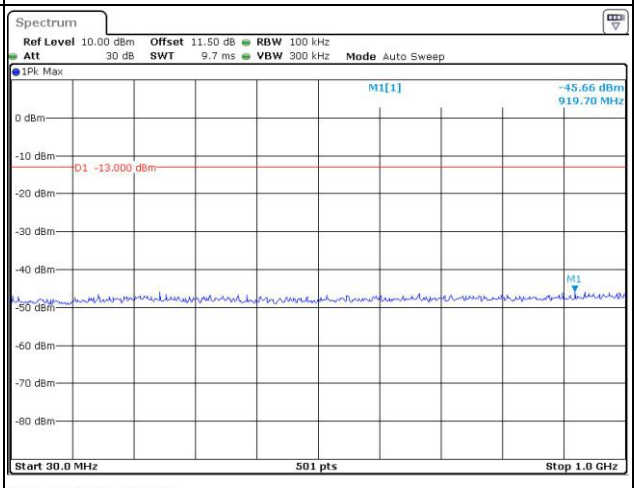
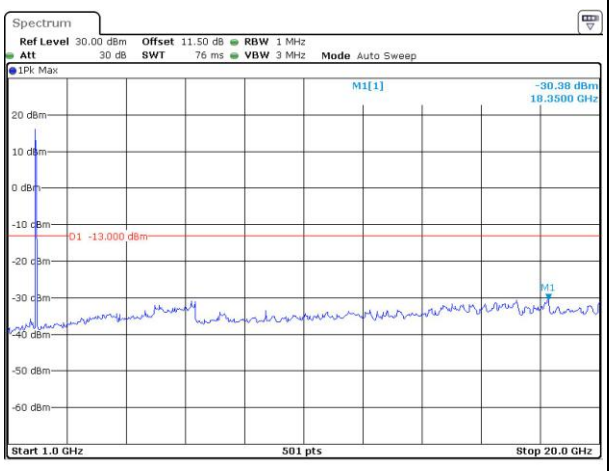
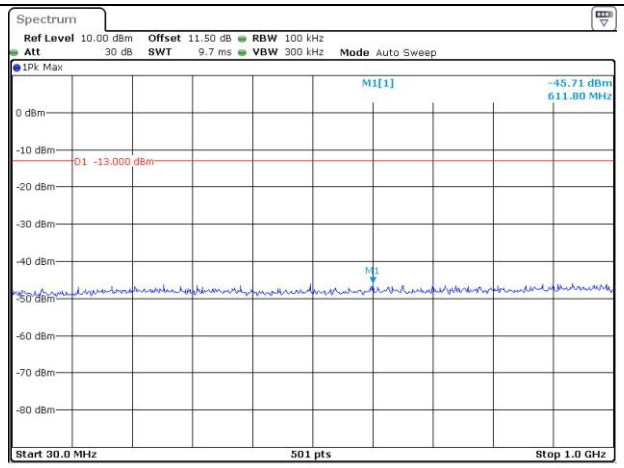
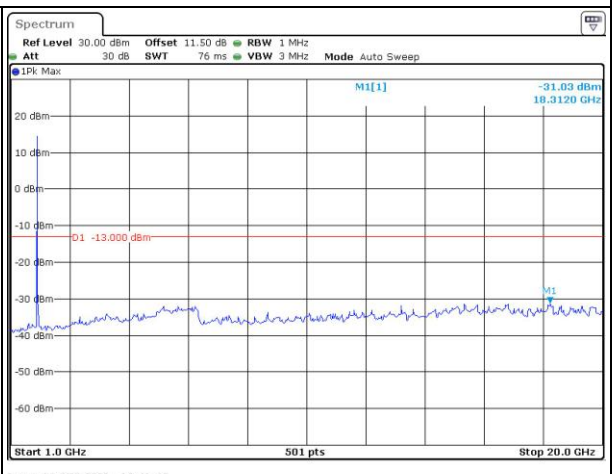
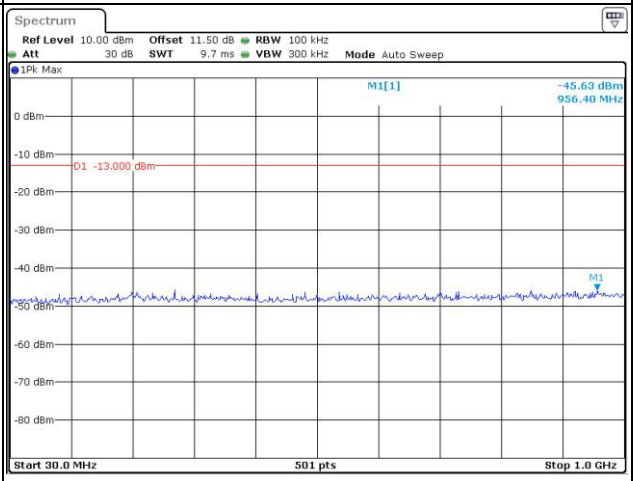
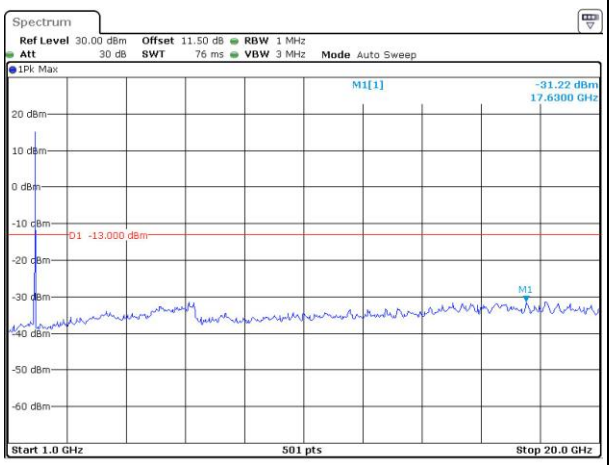
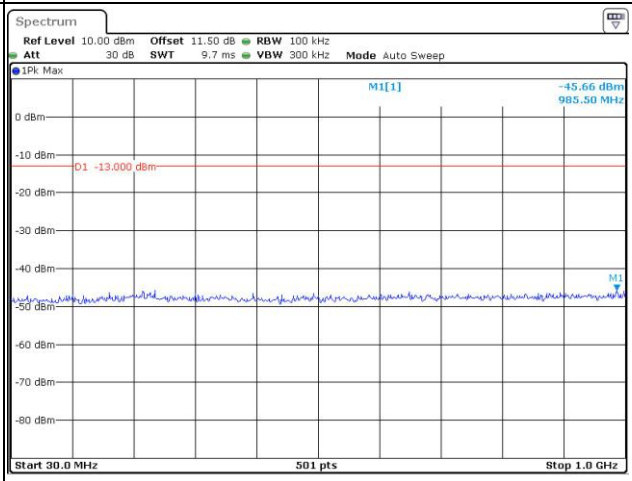
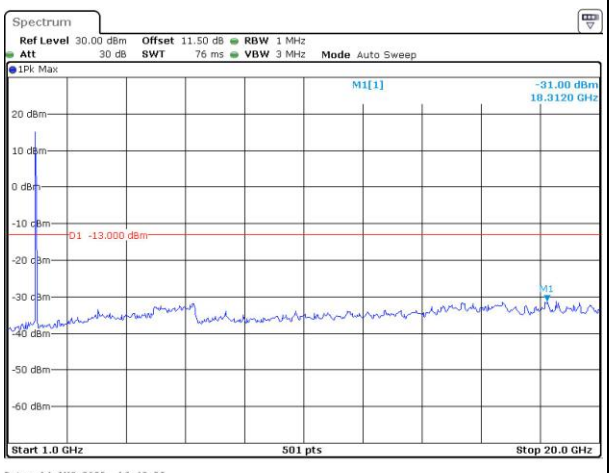
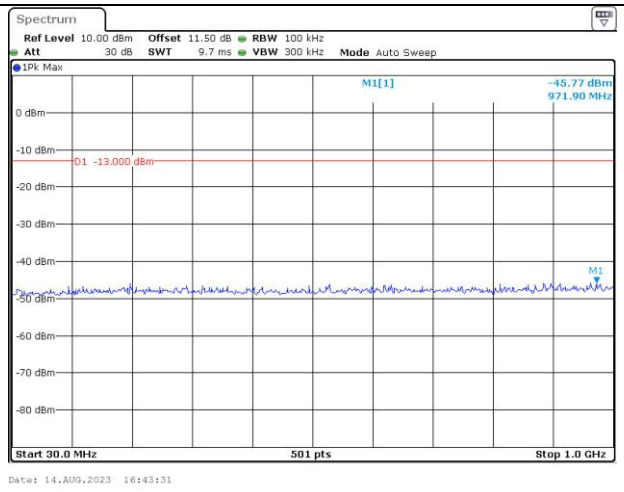
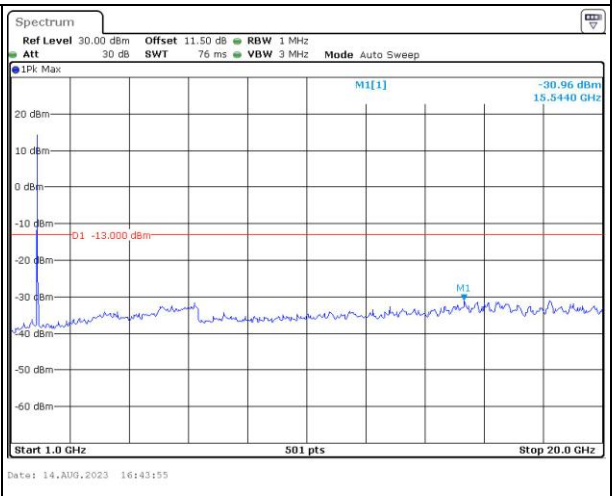
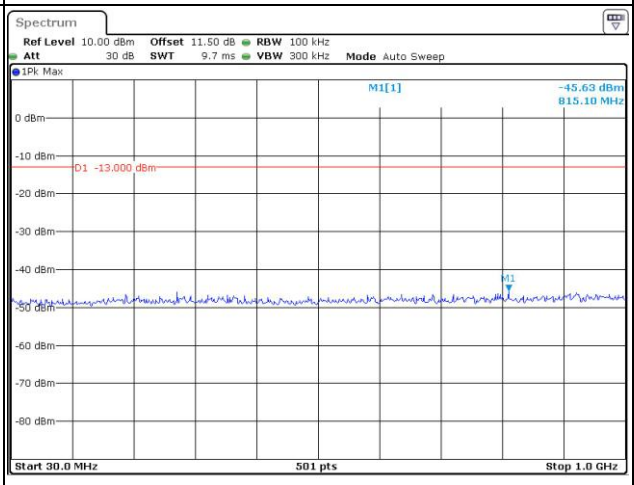
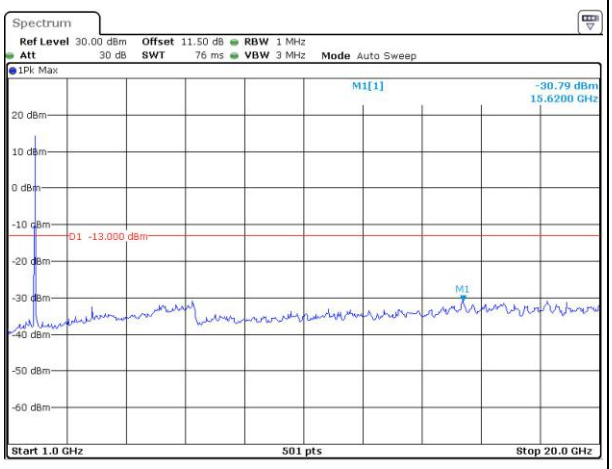
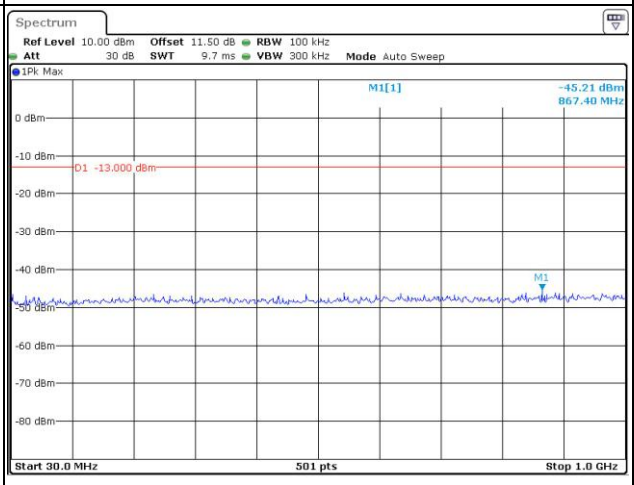
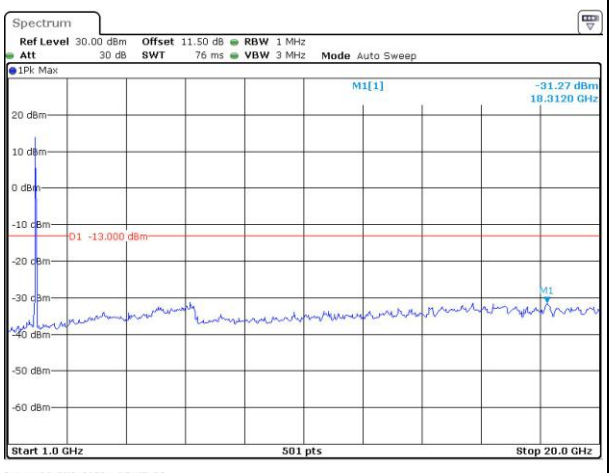
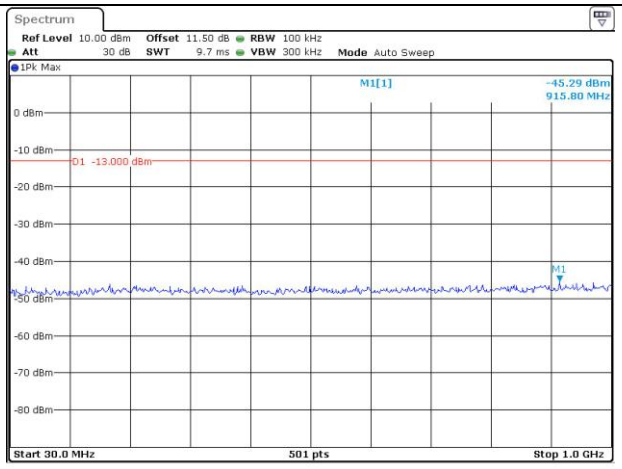
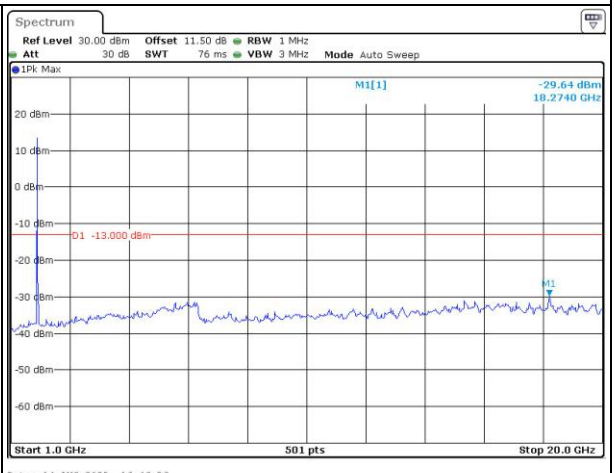
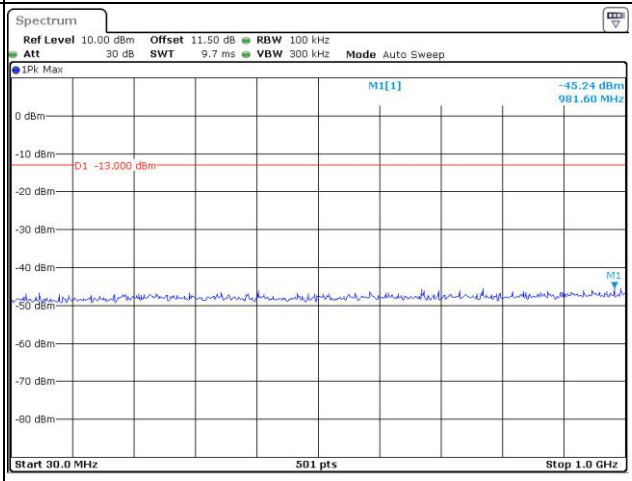
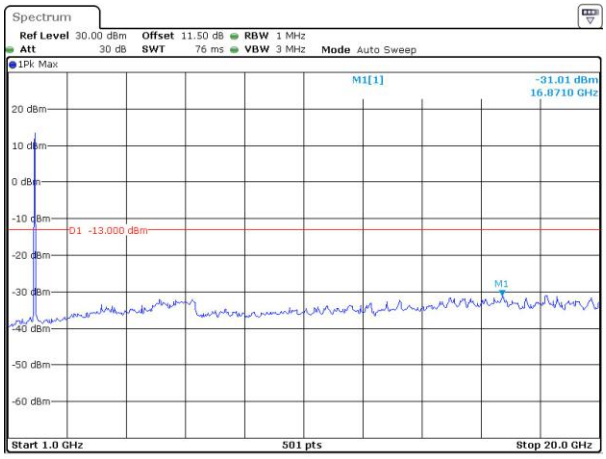
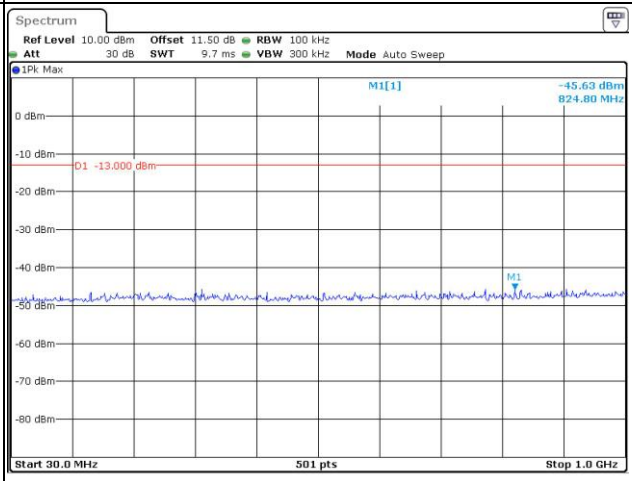
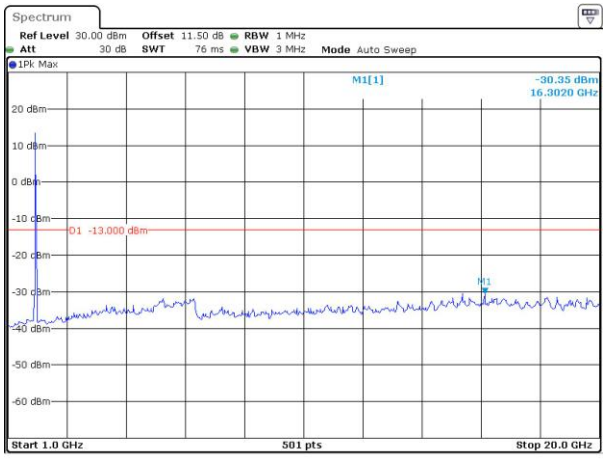
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

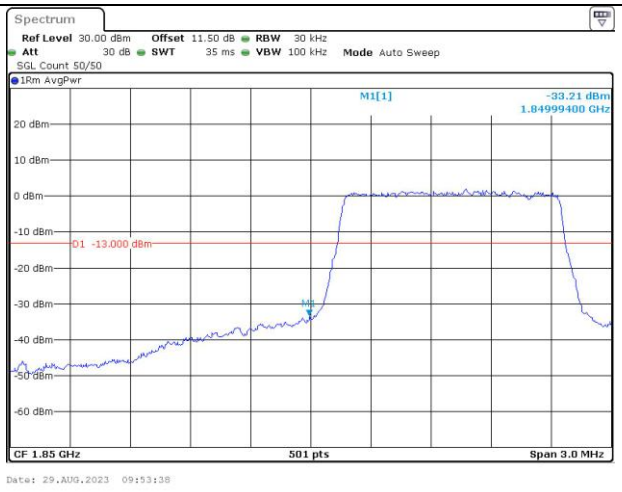
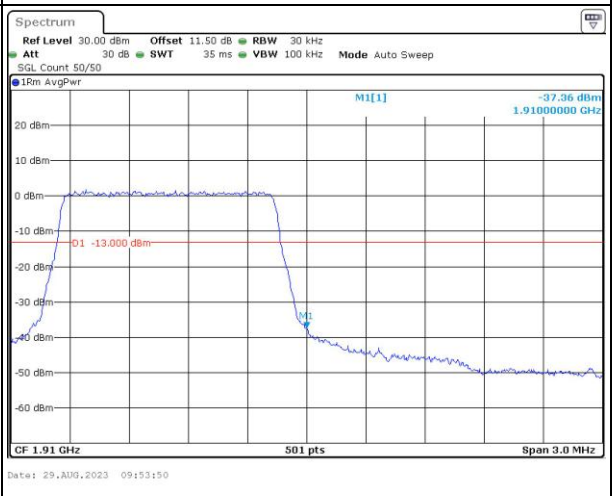
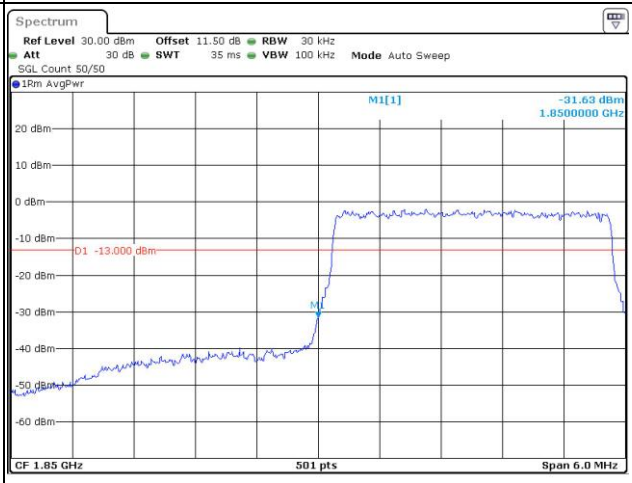
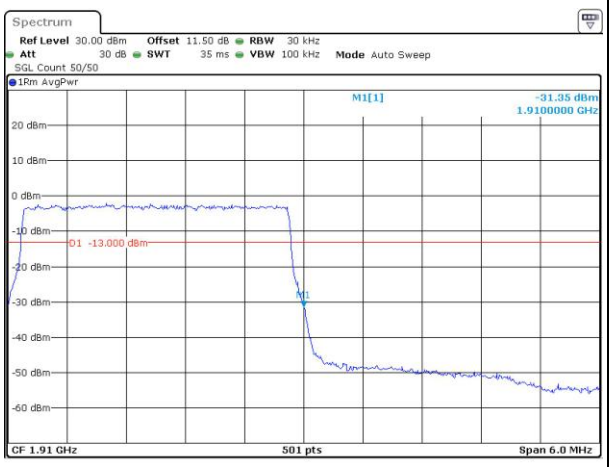
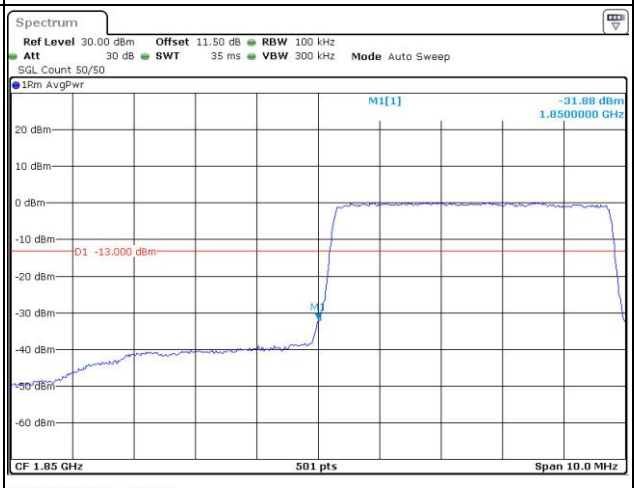
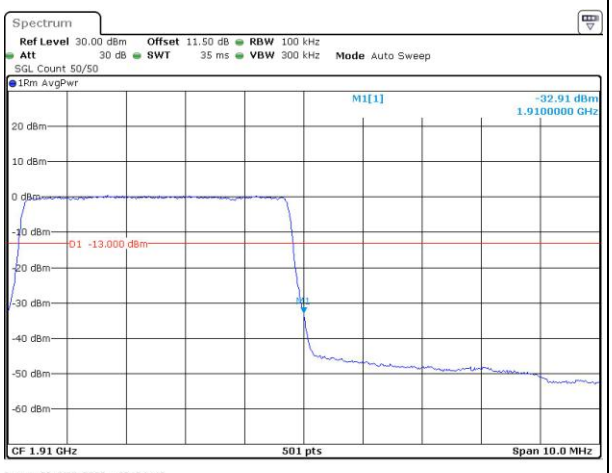
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

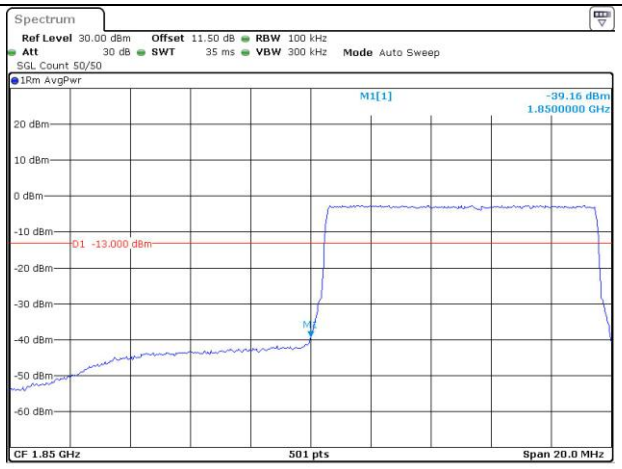
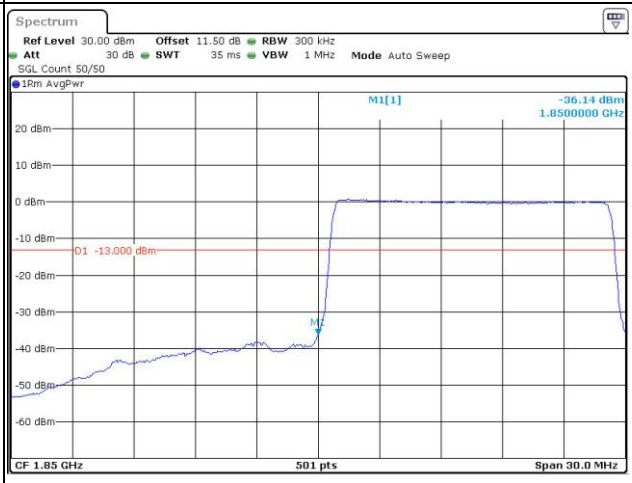
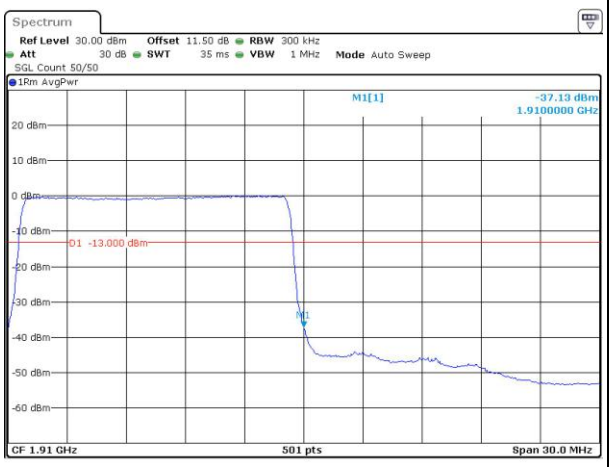
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

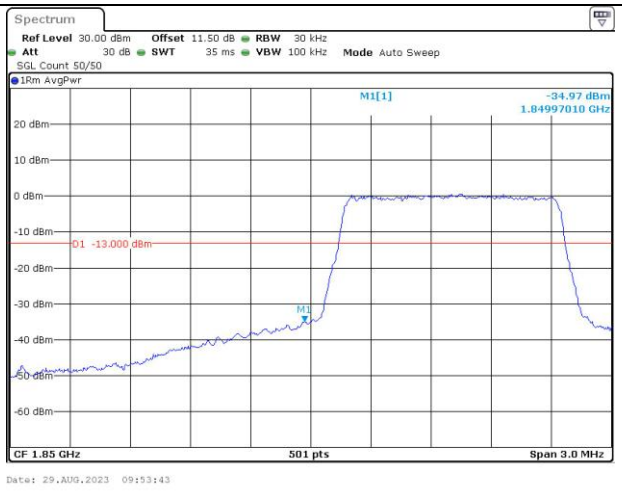
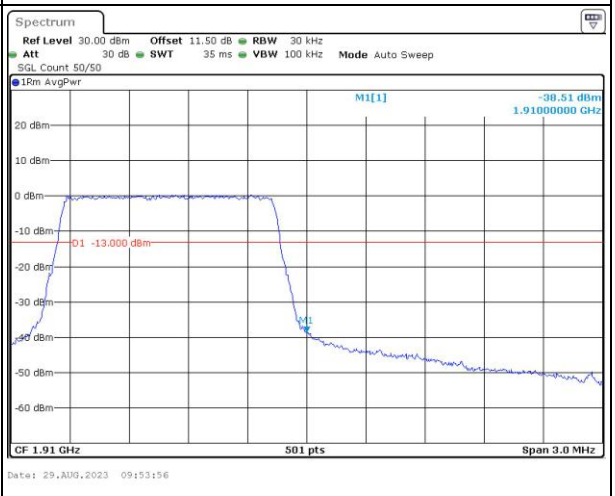
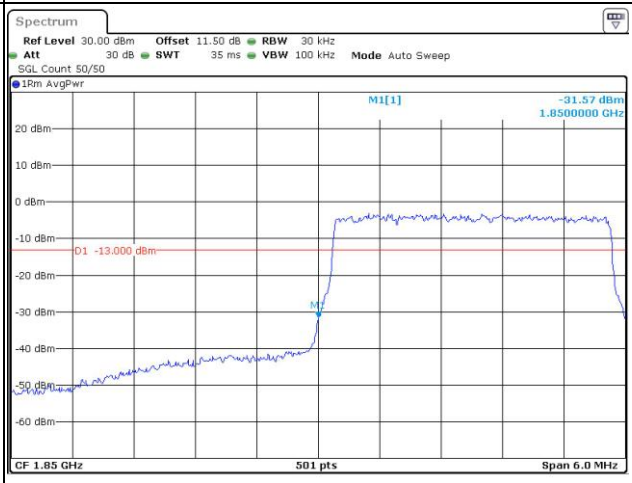
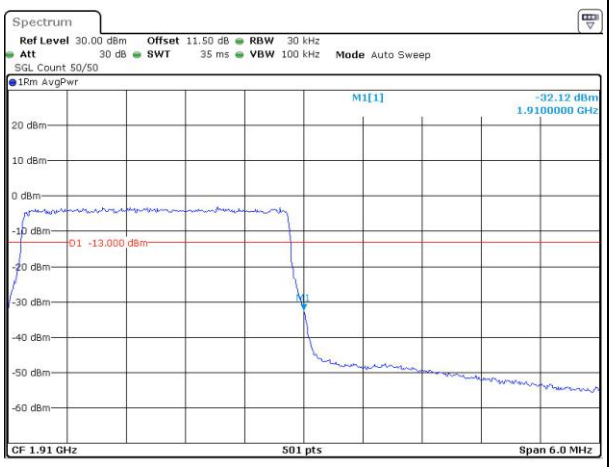
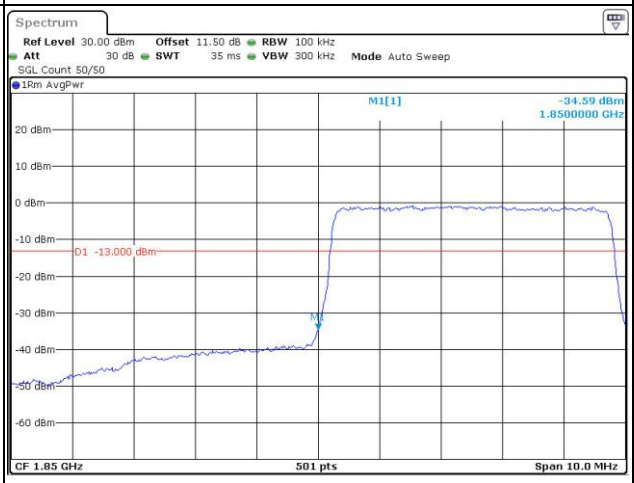
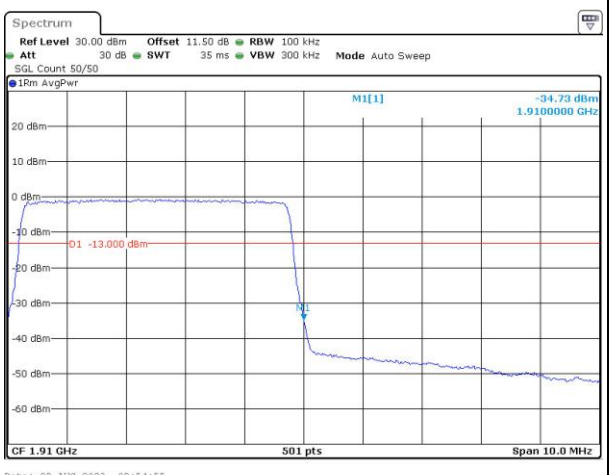
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

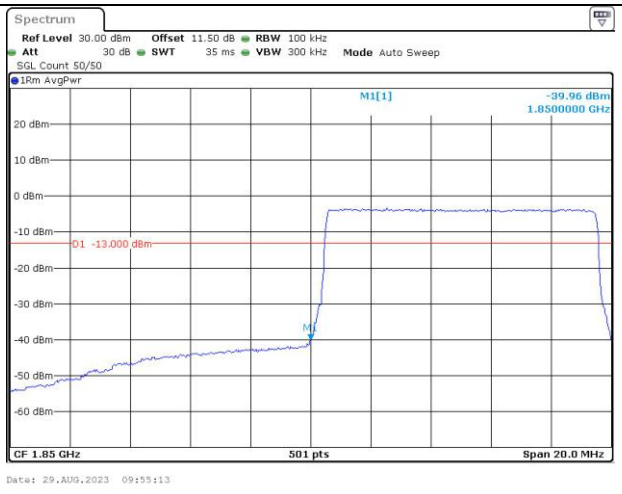
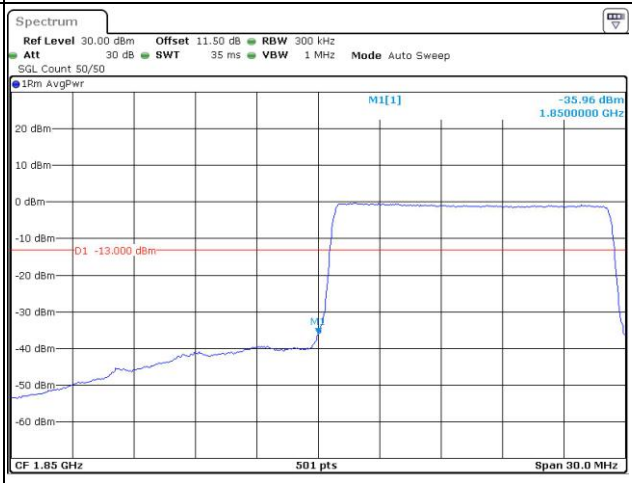
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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

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

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

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

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

4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	2A4I-1	Test Date:	2023/8/13-2023/8/14
Test Site:	RF	Test Mode:	Transmitting
Tester:	Panda Sun	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	25.3~25.6	Relative Humidity: (%)	64-68	ATM Pressure: (kPa)	101

Test Equipment List and Details:					
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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).*					

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	16.74	17.11	17.07	15.91	30
	RB1#3	16.98	17.31	17.24		
	RB1#5	16.82	17.12	17.04		
	RB3#0	16.82	17.25	17.19		
	RB3#3	16.88	17.27	17.17		
	RB6#0	15.88	16.25	16.14		
1.4MHz 16QAM	RB1#0	15.84	16.14	16.05	14.99	30
	RB1#3	16.13	16.35	16.24		
	RB1#5	15.98	16.18	16.04		
	RB3#0	15.87	16.39	16.38		
	RB3#3	15.97	16.38	16.37		
	RB6#0	15.11	15.41	15.31		
3MHz QPSK	RB1#0	16.69	17.12	17.05	15.85	30
	RB1#8	17	17.25	17.16		
	RB1#14	16.98	17.1	17.01		
	RB6#0	15.85	16.23	16.17		
	RB6#9	16.07	16.25	16.15		
	RB15#0	16	16.27	16.2		
3MHz 16QAM	RB1#0	15.84	16.16	16.68	15.40	30
	RB1#8	16.19	16.3	16.8		
	RB1#14	16.17	16.17	16.64		
	RB6#0	15.08	15.39	15.38		
	RB6#9	15.31	15.41	15.36		
	RB15#0	15.15	15.53	15.41		
5MHz QPSK	RB1#0	16.4	16.8	16.83	15.94	30
	RB1#13	17.21	17.33	17.34		
	RB1#24	16.79	16.77	16.78		
	RB15#0	15.96	16.23	16.15		
	RB15#10	16.14	16.23	16.16		
	RB25#0	16.01	16.19	16.12		
5MHz 16QAM	RB1#0	15.7	15.92	15.71	15.17	30
	RB1#13	16.57	16.45	16.23		
	RB1#24	16.15	15.92	15.68		
	RB15#0	15.13	15.44	15.34		
	RB15#10	15.34	15.46	15.33		
	RB25#0	15.22	15.42	15.3		
10MHz QPSK	RB1#0	16.55	16.95	16.91	16.12	30

	RB1#25	17.18	17.26	17.14		
	RB1#49	17.48	17.52	17.44		
	RB25#0	16	16.24	16.14		
	RB25#25	16.37	16.51	16.41		
	RB50#0	16.19	16.38	16.28		
10MHz 16QAM	RB1#0	15.68	16	16.51	15.65	30
	RB1#25	16.32	16.3	16.78		
	RB1#49	16.65	16.59	17.05		
	RB25#0	15.24	15.52	15.32		
	RB25#25	15.61	15.79	15.59		
	RB50#0	15.41	15.6	15.42		
15MHz QPSK	RB1#0	16.87	17.18	17.36	16.08	30
	RB1#38	17.08	17.23	17.26		
	RB1#74	17.4	17.43	17.48		
	RB36#0	16.16	16.43	16.57		
	RB36#39	16.41	16.47	16.61		
	RB75#0	16.28	16.46	16.59		
15MHz 16QAM	RB1#0	15.97	16.72	16.85	15.50	30
	RB1#38	16.24	16.76	16.75		
	RB1#74	16.56	16.9	16.88		
	RB36#0	15.42	15.51	15.75		
	RB36#39	15.63	15.59	15.77		
	RB75#0	15.51	15.54	15.74		
20MHz QPSK	RB1#0	17.34	17.73	18.01	16.66	30
	RB1#50	17.21	17.25	17.31		
	RB1#99	17.73	17.77	18.06		
	RB50#0	16.33	16.56	16.81		
	RB50#50	16.53	16.62	16.86		
	RB100#0	16.42	16.58	16.82		
20MHz 16QAM	RB1#0	16.46	17.29	17.39	16.06	30
	RB1#50	16.41	16.87	16.74		
	RB1#99	16.9	17.35	17.46		
	RB50#0	15.5	15.76	15.81		
	RB50#50	15.7	15.81	15.85		
	RB100#0	15.59	15.78	15.85		
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	6	6.12	5.83	13
	RB100#0	5.62	5.68	5.59	13

20MHz 16QAM	RB1#0	6.75	7.33	6.26	13
	RB100#0	6.43	6.46	6.38	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	1.096	1.254	1.260	1.254
1.4MHz 16QAM	1.09	1.102	1.108	1.26	1.260	1.272
3MHz QPSK	2.695	2.695	2.695	3.012	3.012	3.000
3MHz 16QAM	2.683	2.683	2.695	3.012	3.024	3.012
5MHz QPSK	4.511	4.511	4.531	5.020	5.000	5.020
5MHz 16QAM	4.511	4.531	4.511	5.040	5.020	5.000
10MHz QPSK	8.942	8.942	8.942	9.800	9.800	9.840
10MHz 16QAM	8.982	8.942	8.942	9.720	9.840	9.760
15MHz QPSK	13.473	13.533	13.533	15.000	15.000	15.000
15MHz 16QAM	13.533	13.533	13.533	14.940	15.000	15.000
20MHz QPSK	17.964	17.964	18.044	19.600	19.840	19.520
20MHz 16QAM	18.044	17.964	18.044	19.680	19.680	19.600

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.**

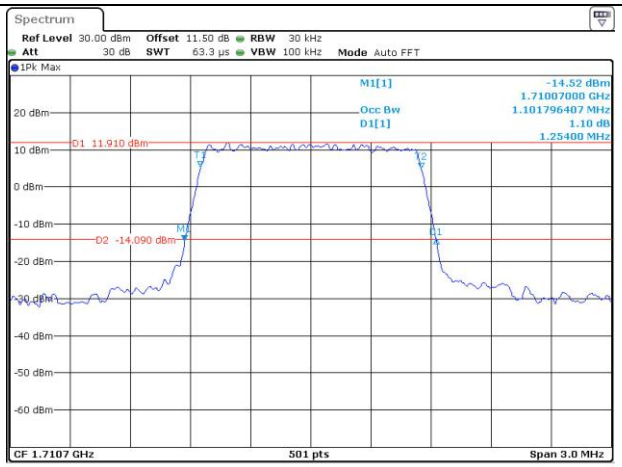
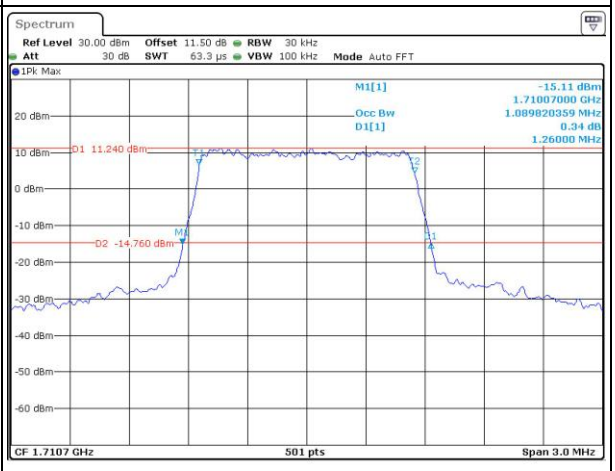
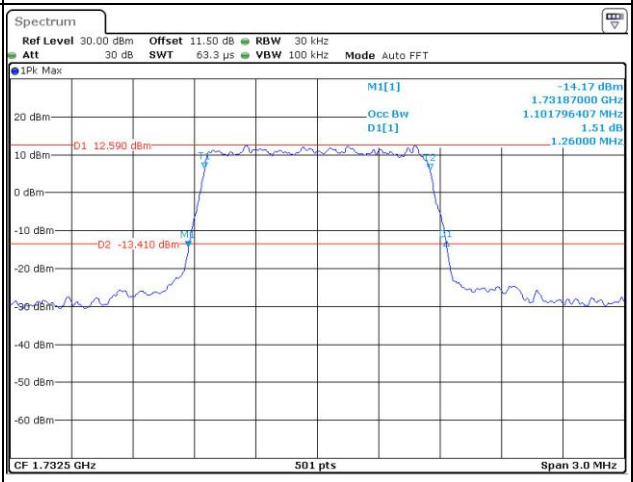
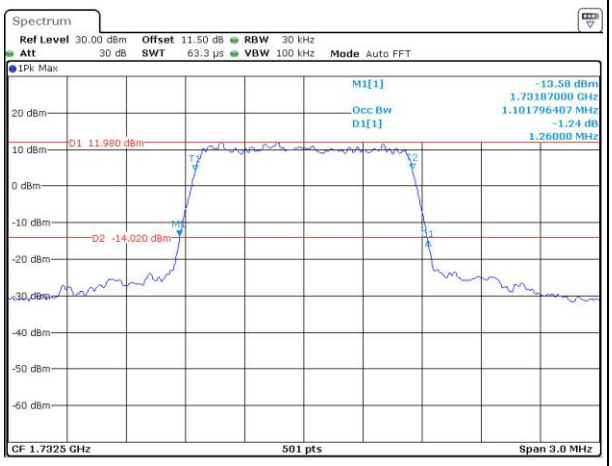
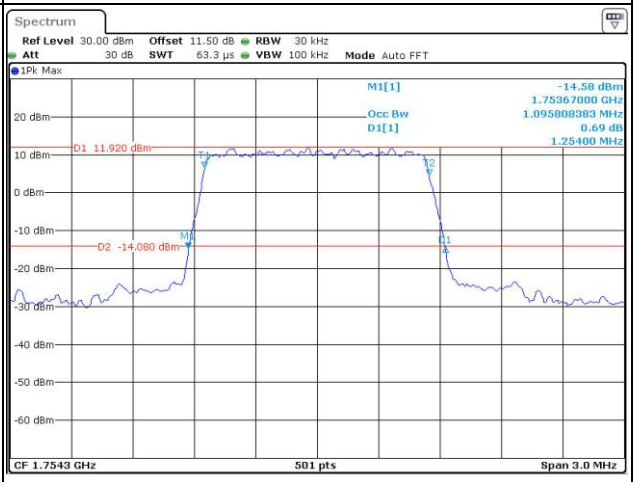
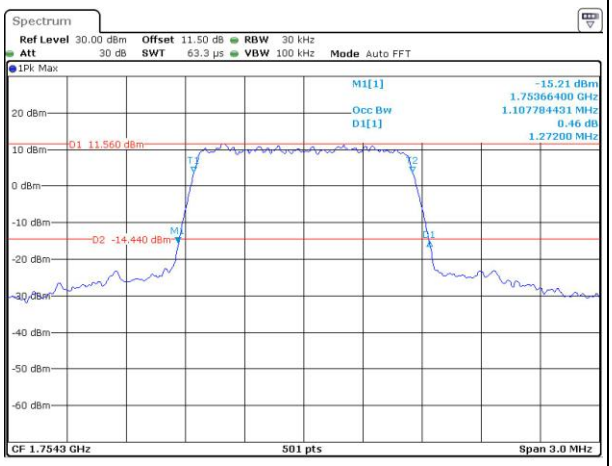
FCC §2.1055, §27.54: Frequency Stability

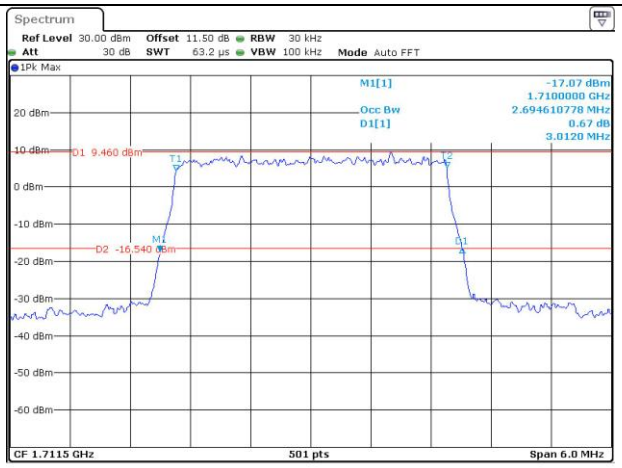
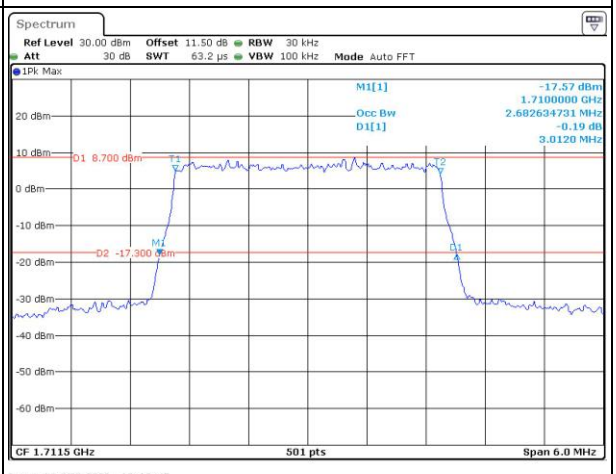
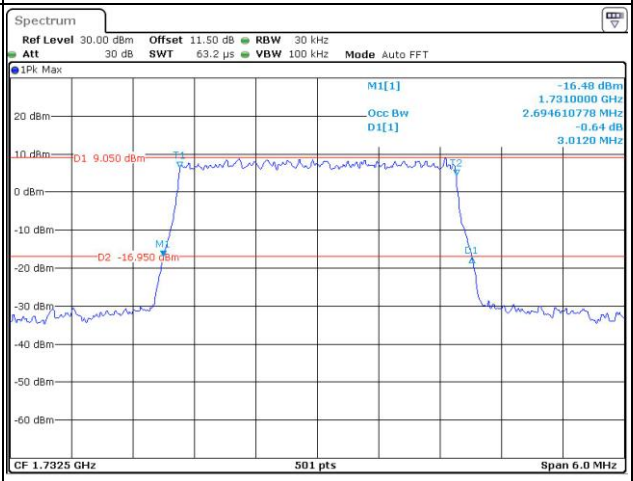
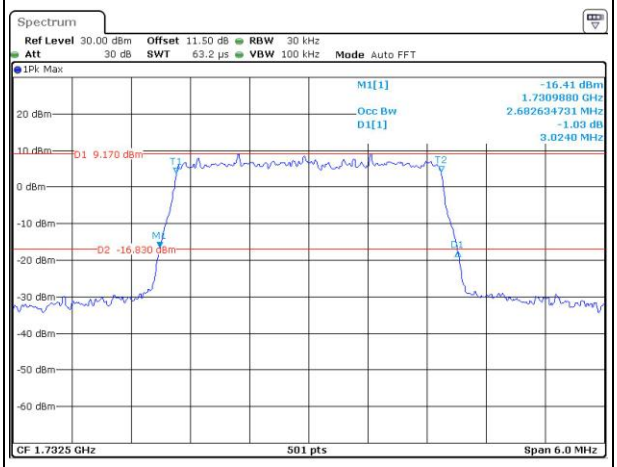
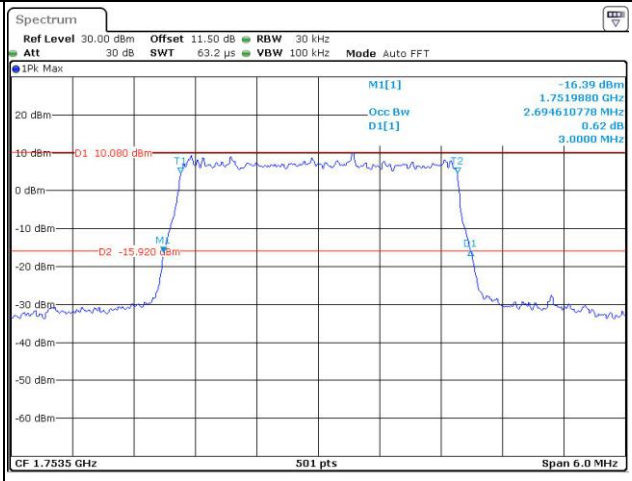
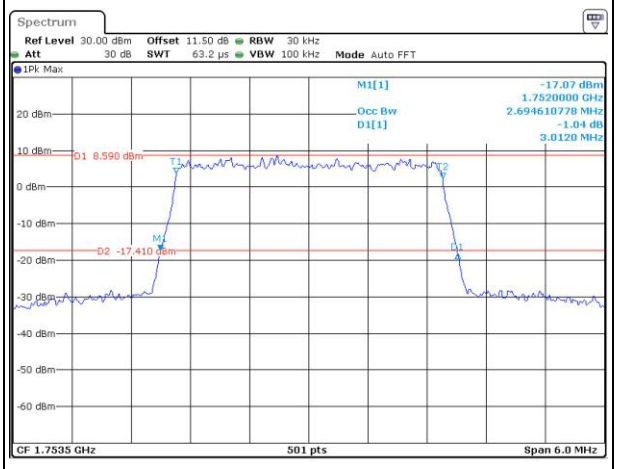
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge			
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1710.288	1710.00	1754.774	1755
	-20	3.85	1710.292	1710.00	1754.756	1755
	-10	3.85	1710.281	1710.00	1754.777	1755
	0	3.85	1710.259	1710.00	1754.751	1755
	10	3.85	1710.273	1710.00	1754.737	1755
	20	3.85	1710.270	1710.00	1754.758	1755
	30	3.85	1710.265	1710.00	1754.766	1755
	40	3.85	1710.264	1710.00	1754.767	1755
	50	3.85	1710.260	1710.00	1754.773	1755

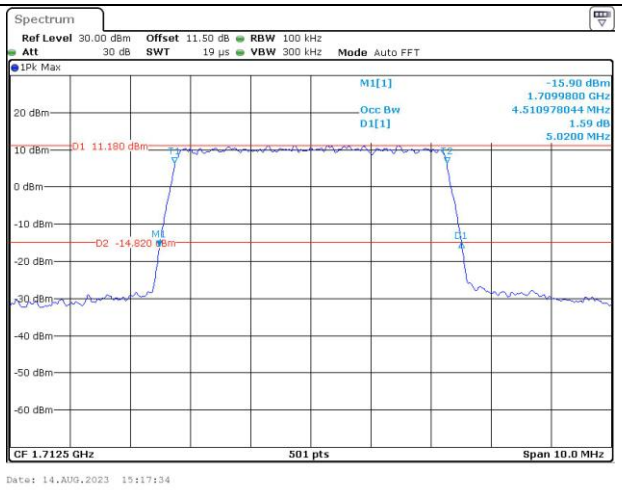
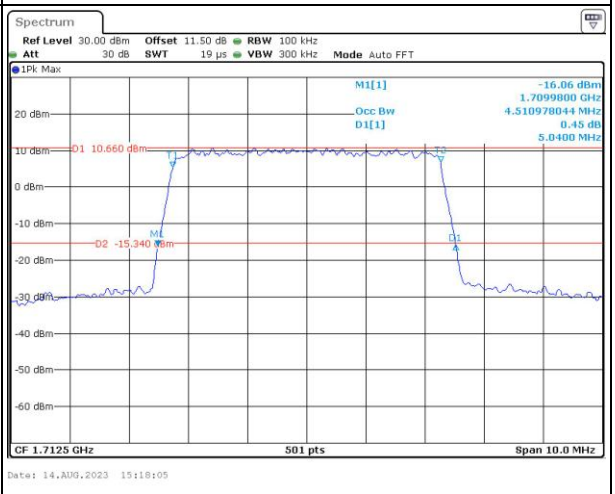
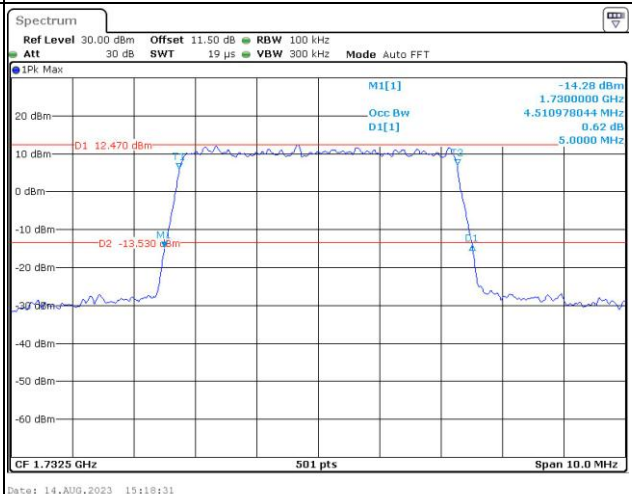
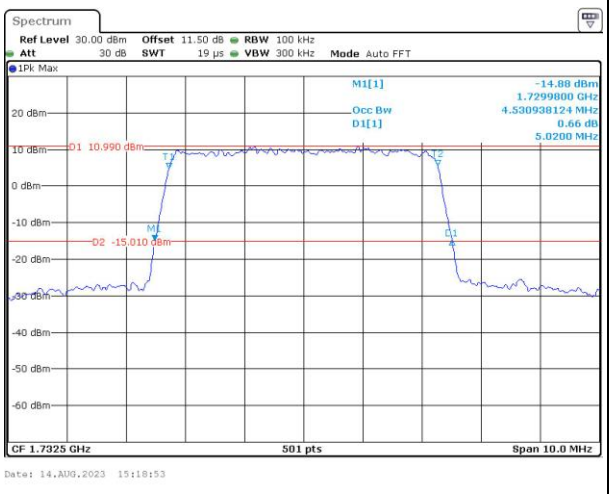
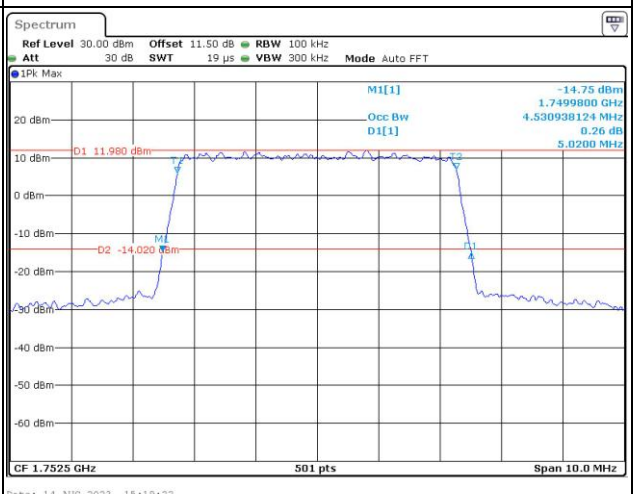
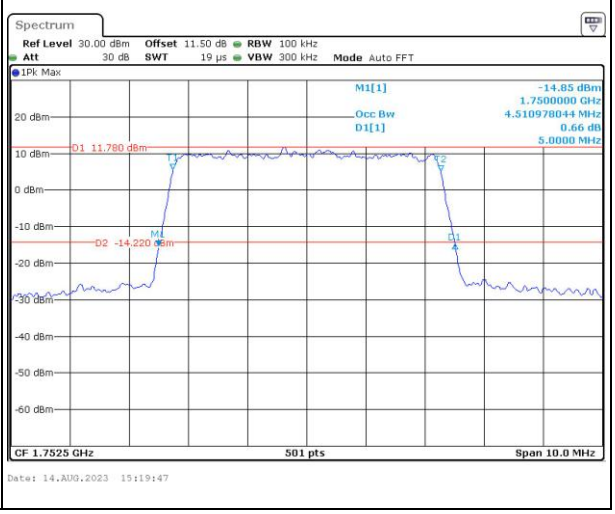
Frequency Stability vs. Voltage	20	3.35	1710.255	1710.00	1754.756	1755
	20	4.4	1710.269	1710.00	1754.753	1755
					Result:	**Pass**

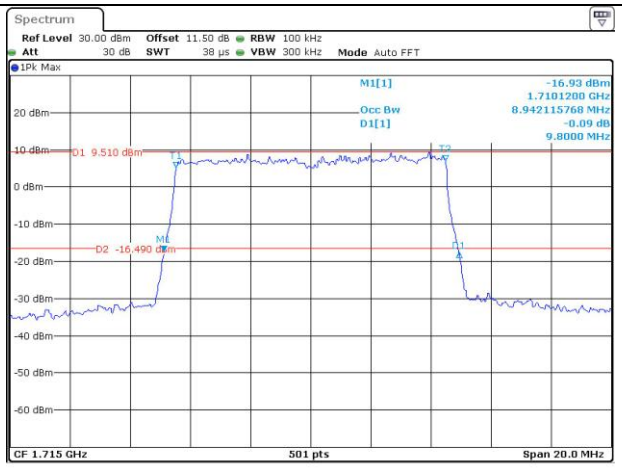
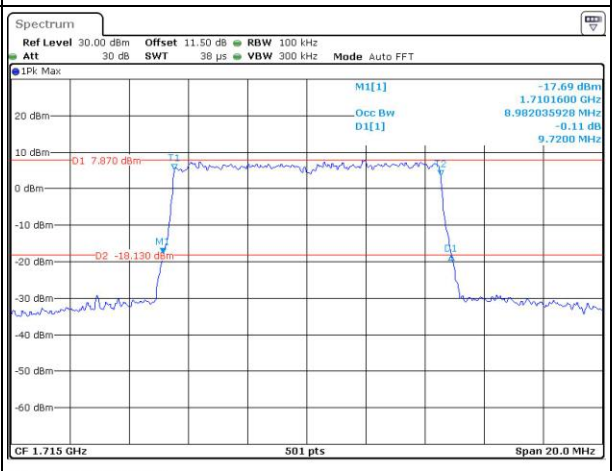
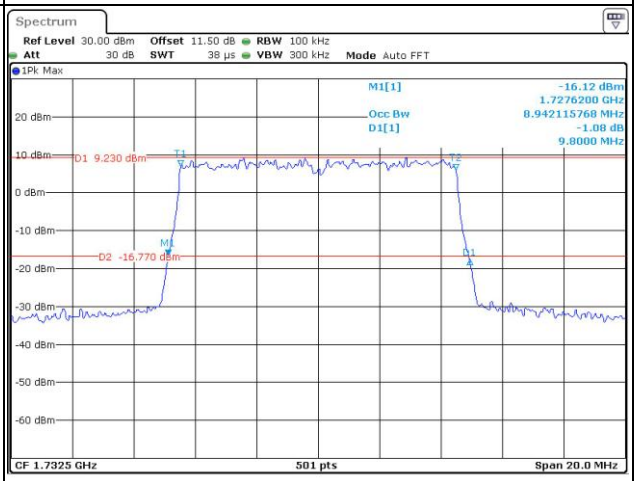
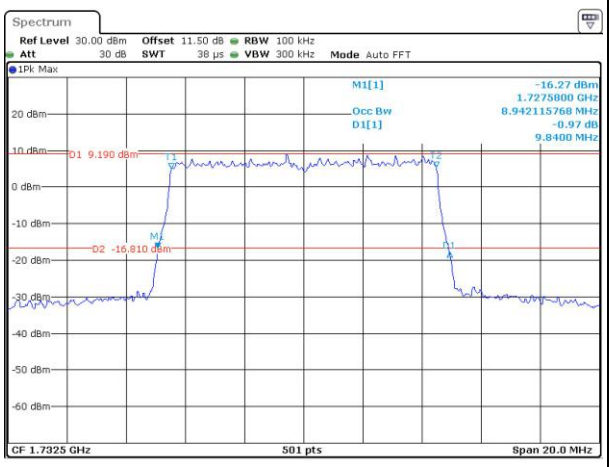
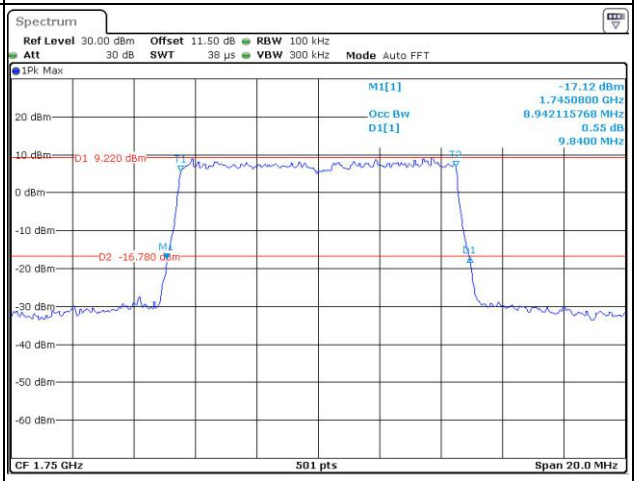
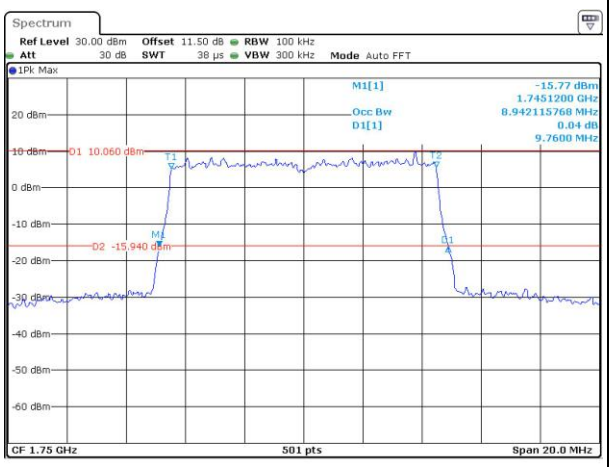
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1710.123	1710.00	1754.867	1755
	-20	3.85	1710.124	1710.00	1754.867	1755
	-10	3.85	1710.125	1710.00	1754.873	1755
	0	3.85	1710.122	1710.00	1754.877	1755
	10	3.85	1710.123	1710.00	1754.872	1755
	20	3.85	1710.119	1710.00	1754.880	1755
	30	3.85	1710.118	1710.00	1754.884	1755
	40	3.85	1710.111	1710.00	1754.878	1755
	50	3.85	1710.118	1710.00	1754.876	1755
Frequency Stability vs. Voltage	20	3.35	1710.109	1710.00	1754.884	1755
	20	4.4	1710.093	1710.00	1754.870	1755
					Result:	**Pass**

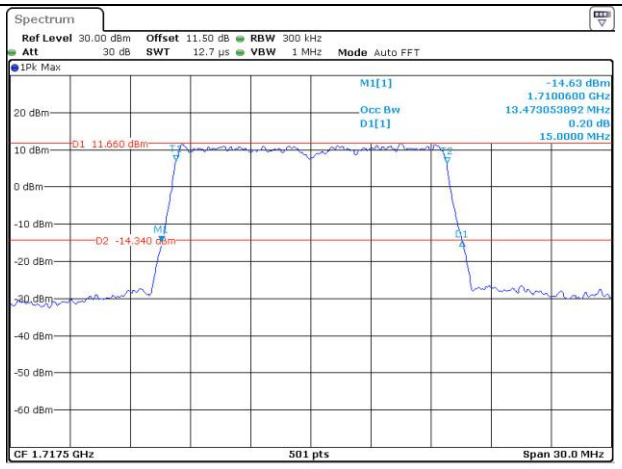
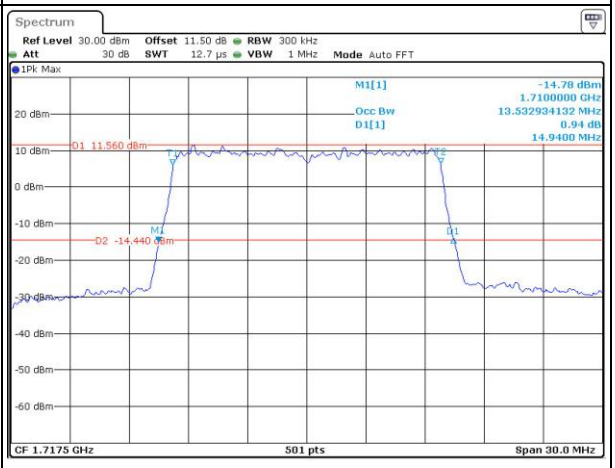
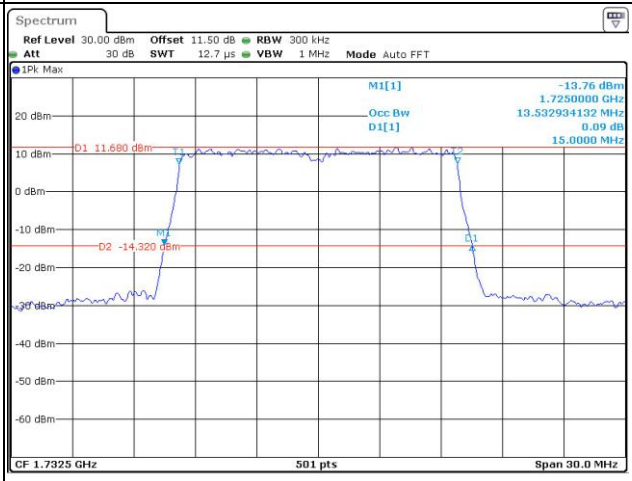
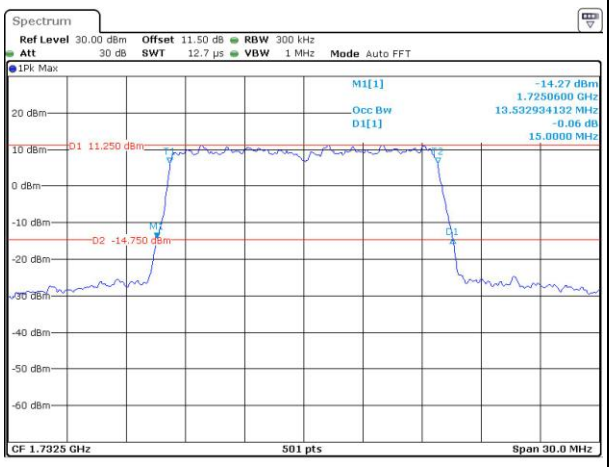
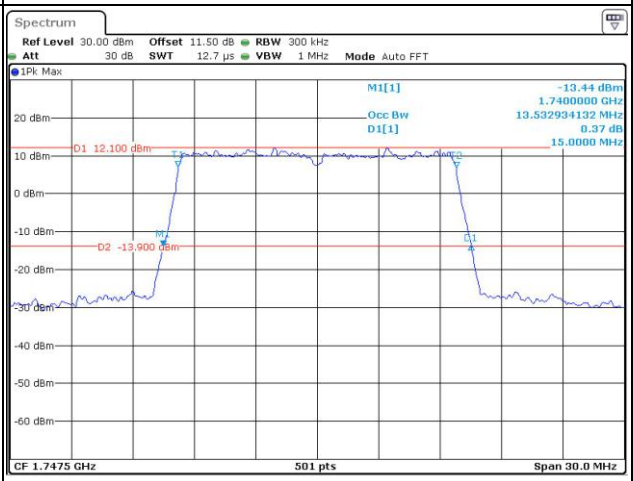
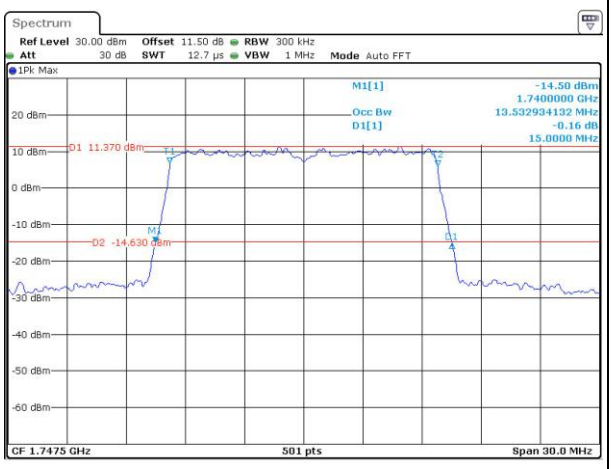
Test Plots(Note: The 11.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

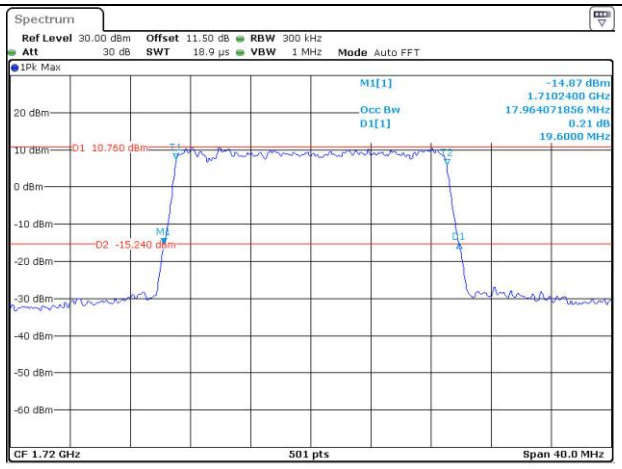
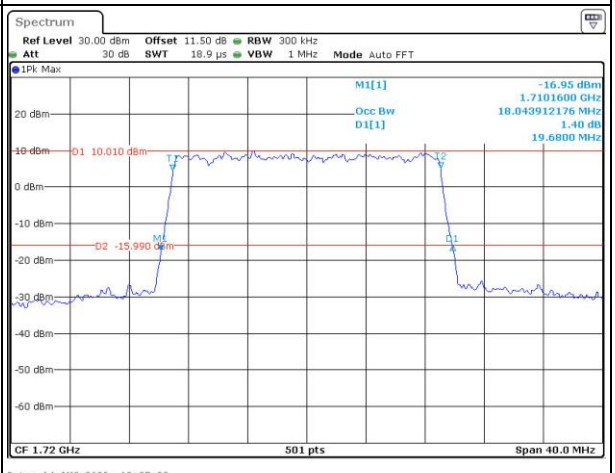
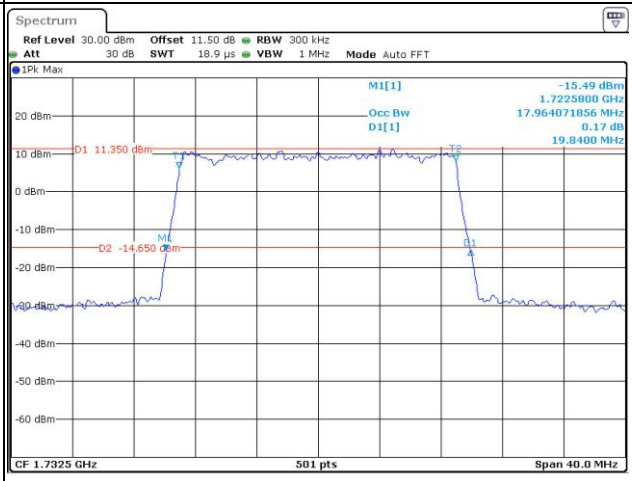
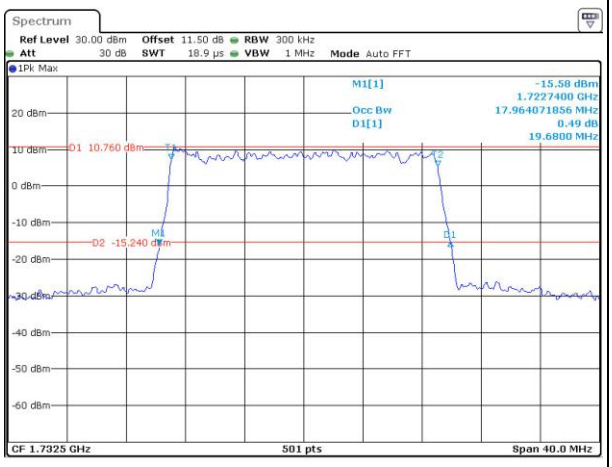
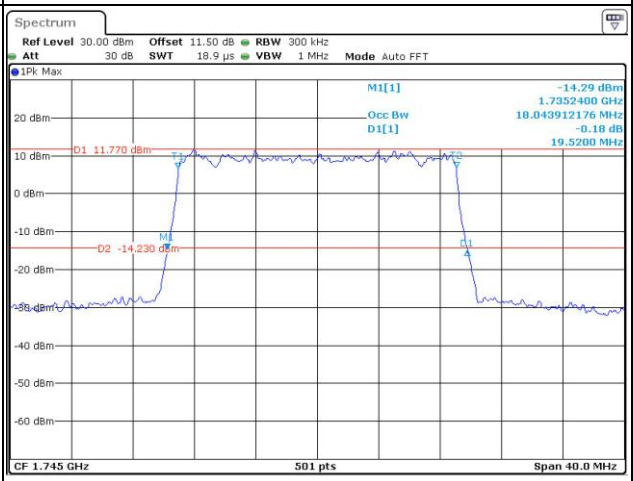
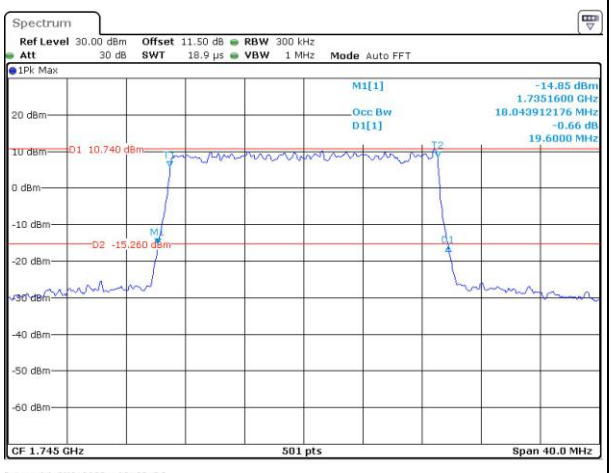
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

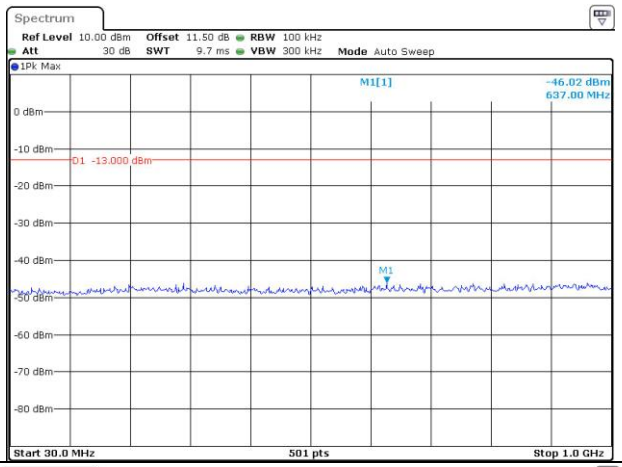
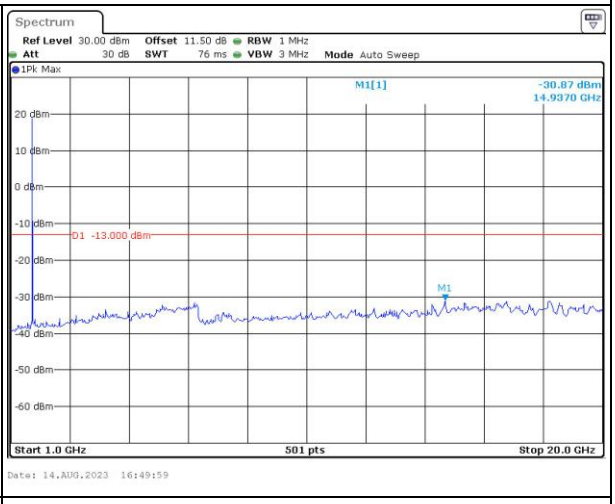
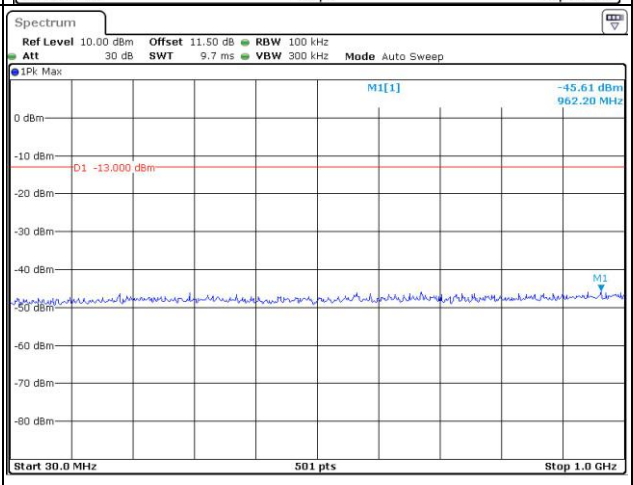
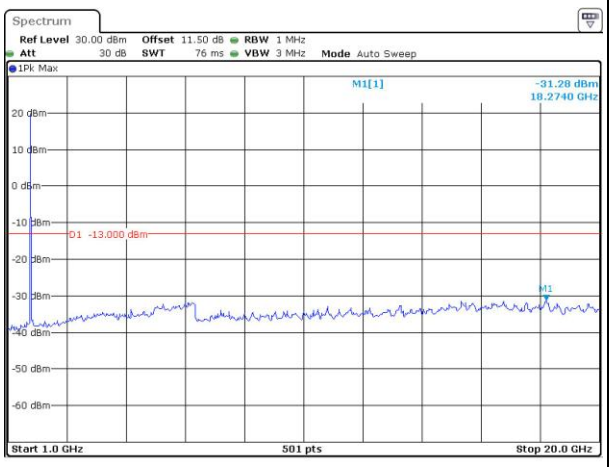
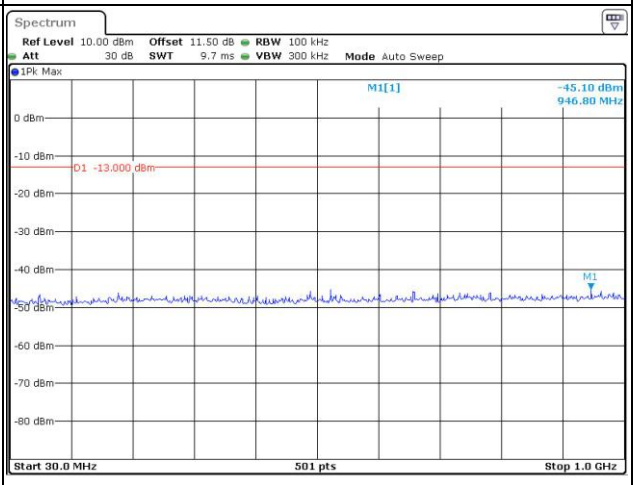
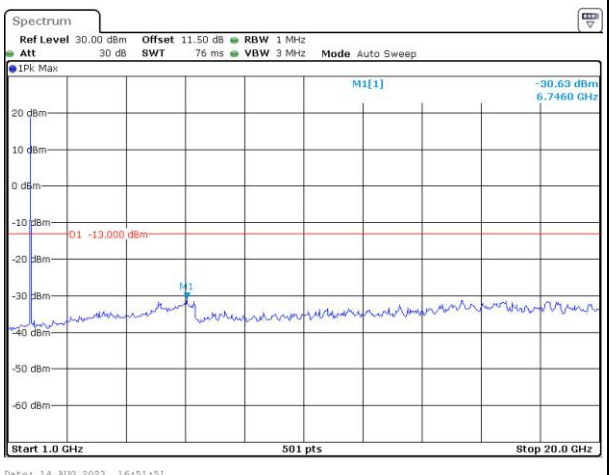
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

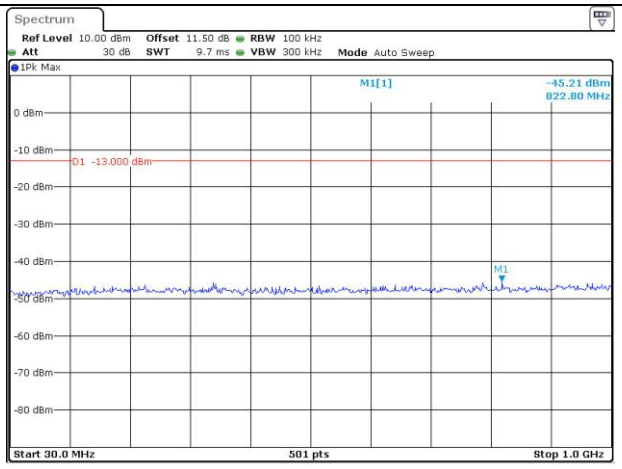
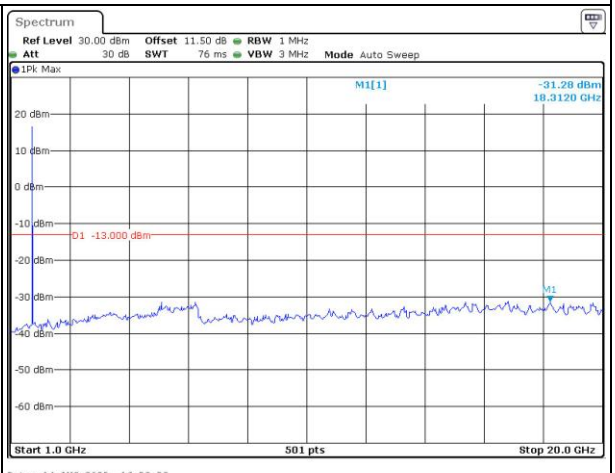
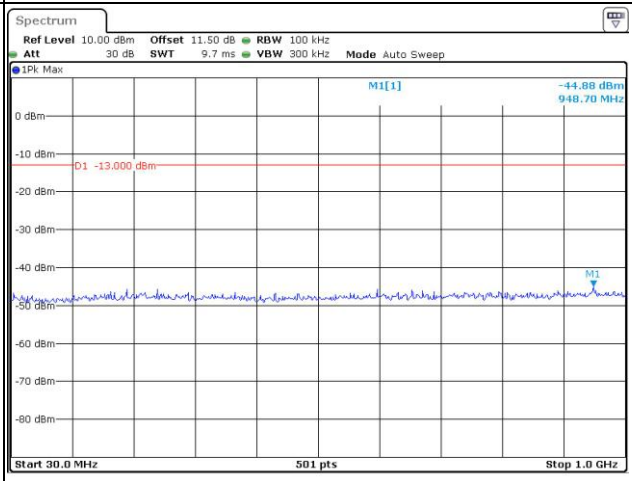
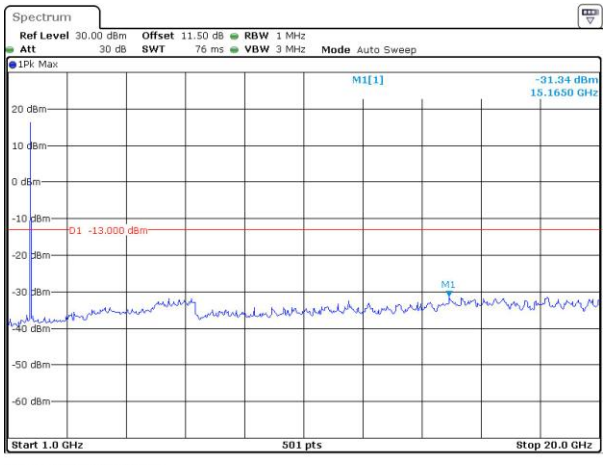
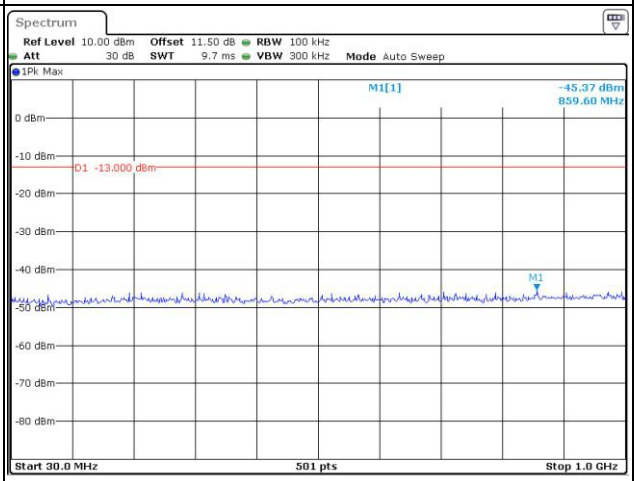
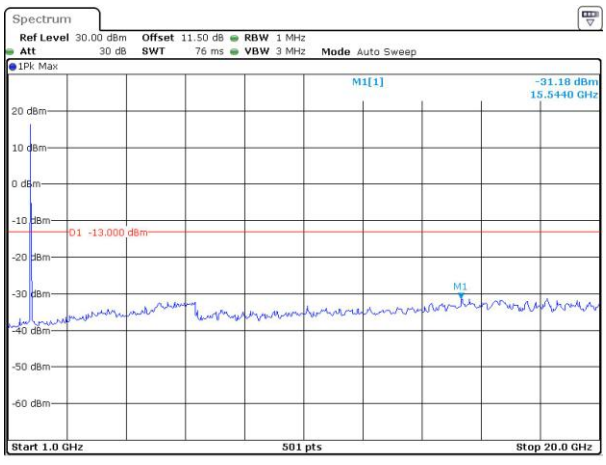
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

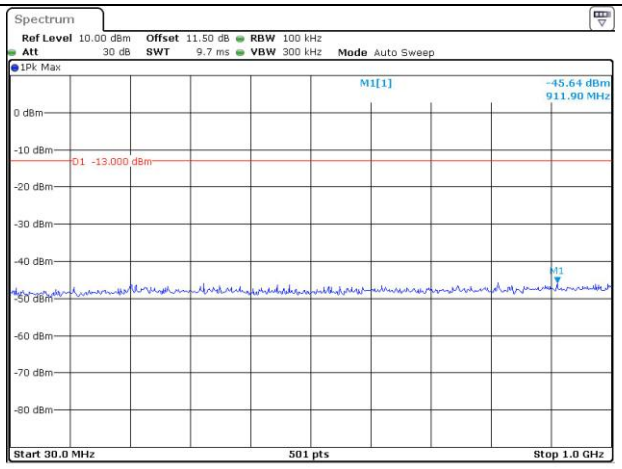
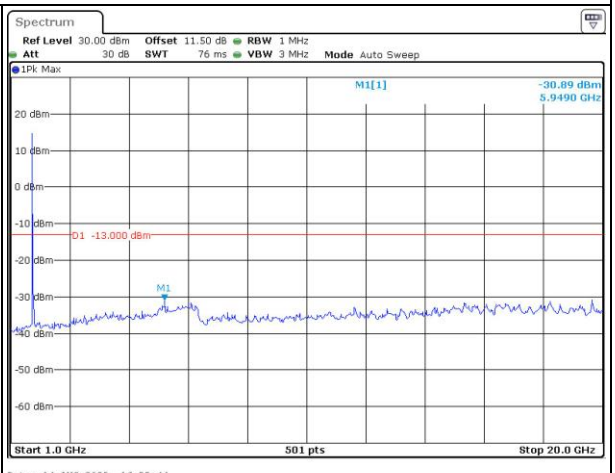
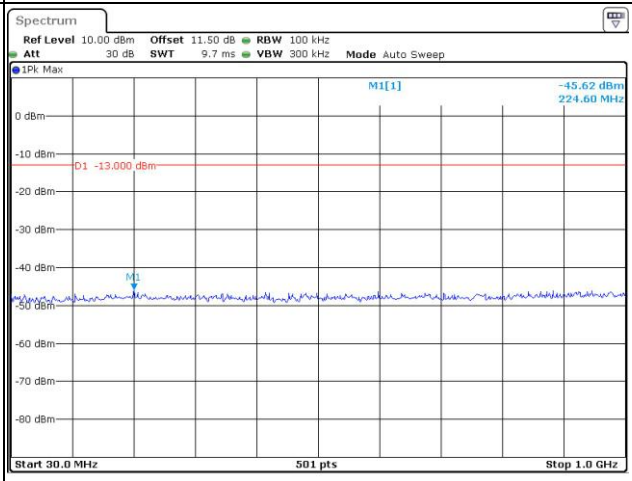
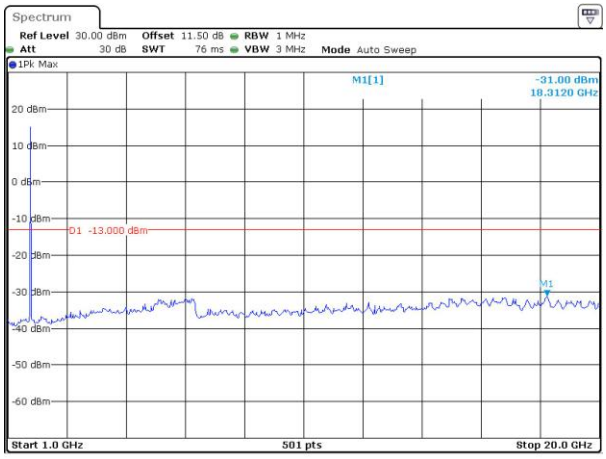
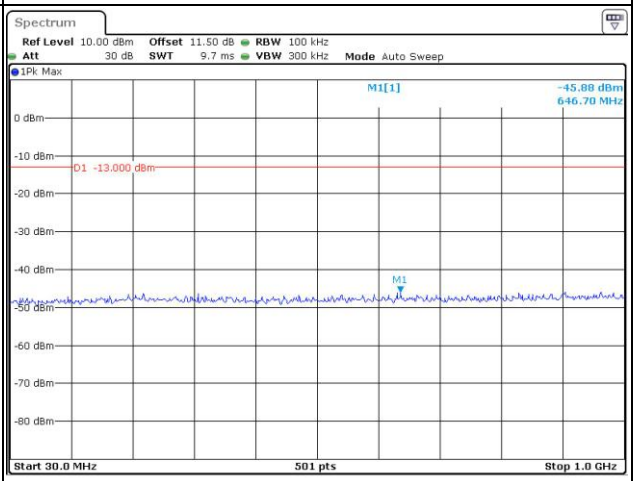
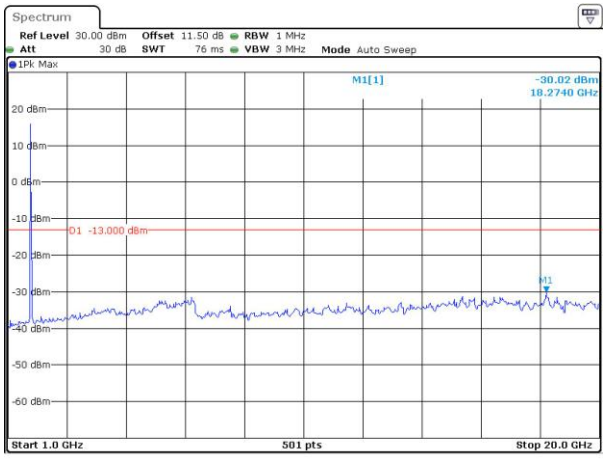
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

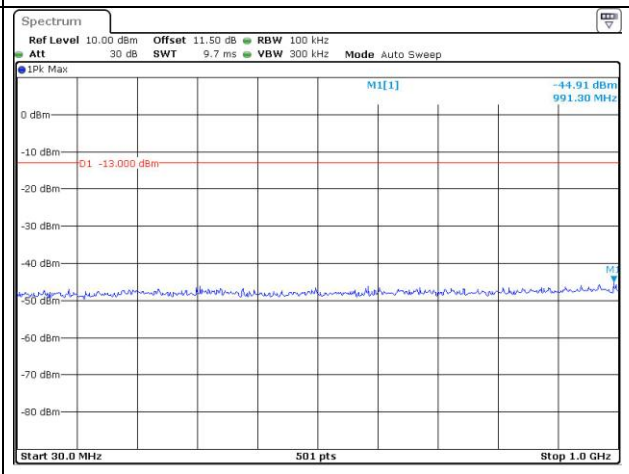
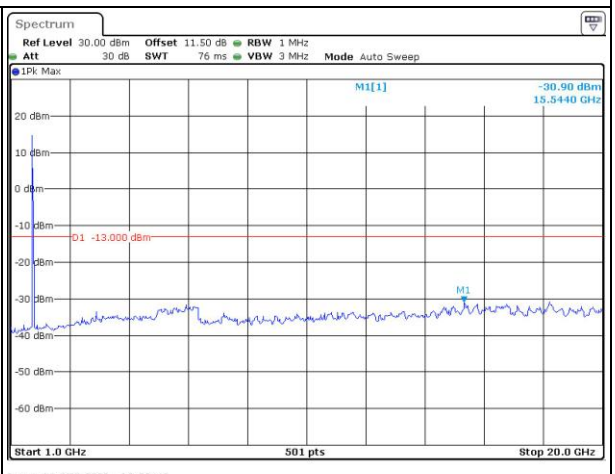
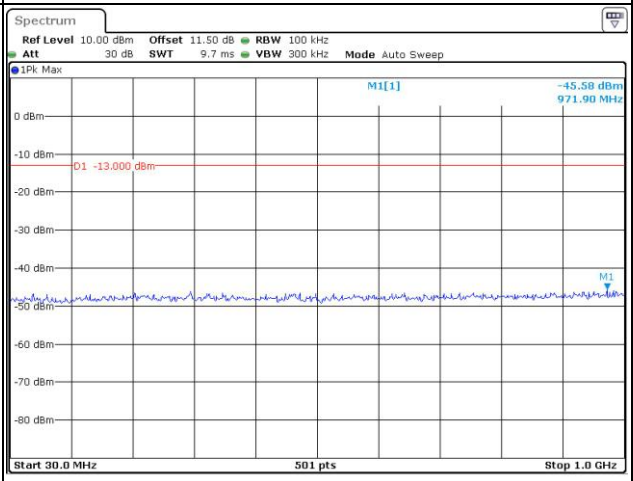
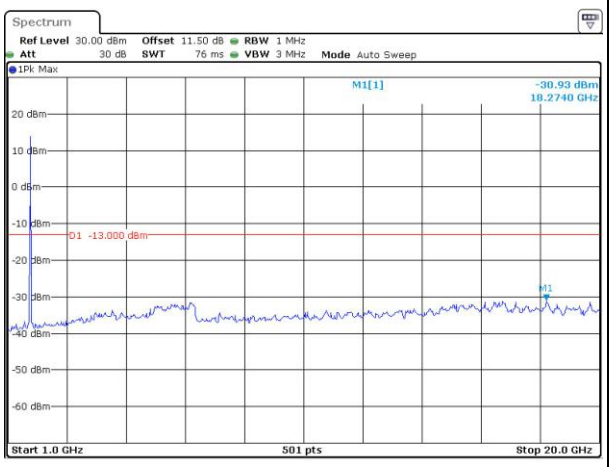
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

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