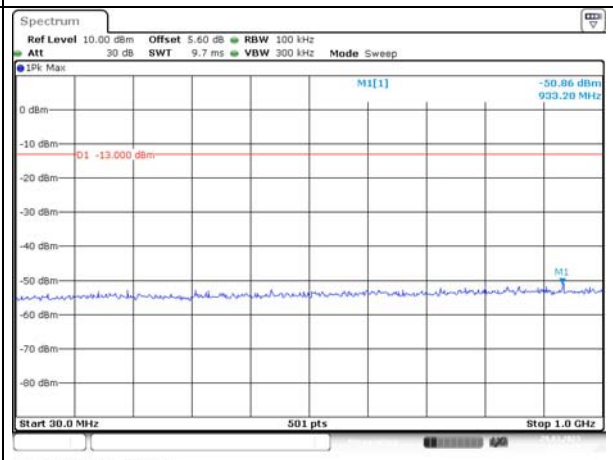
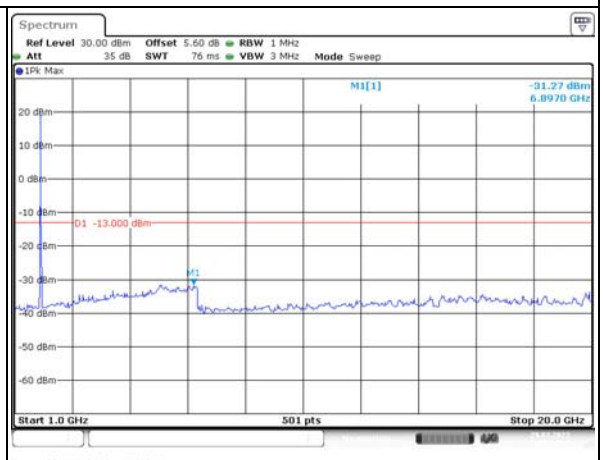
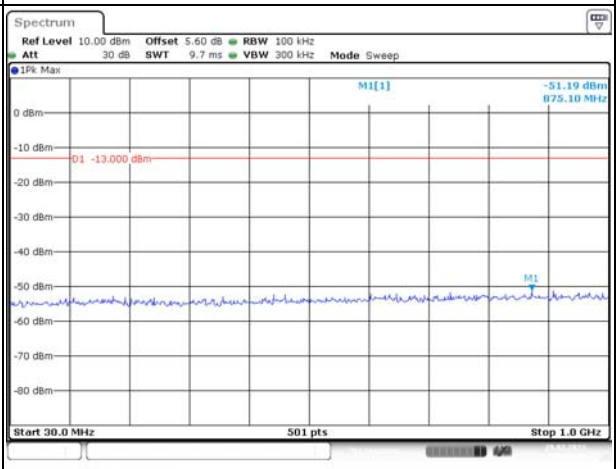
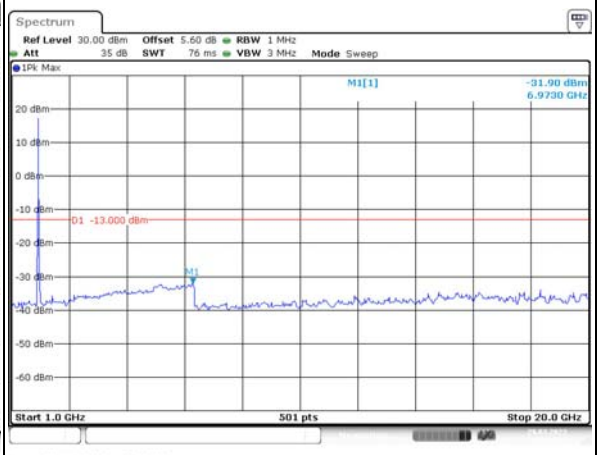
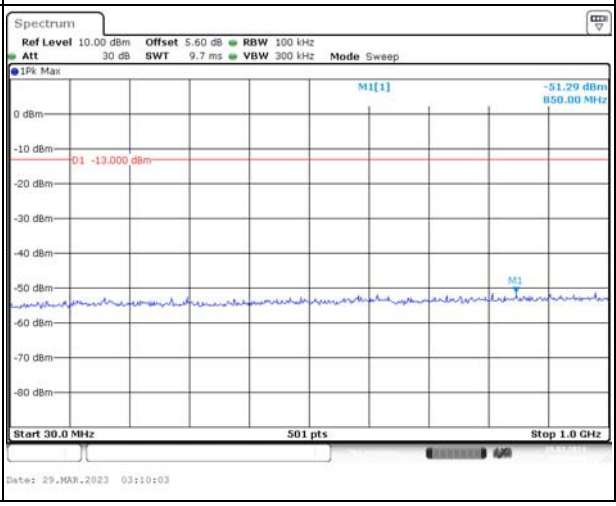
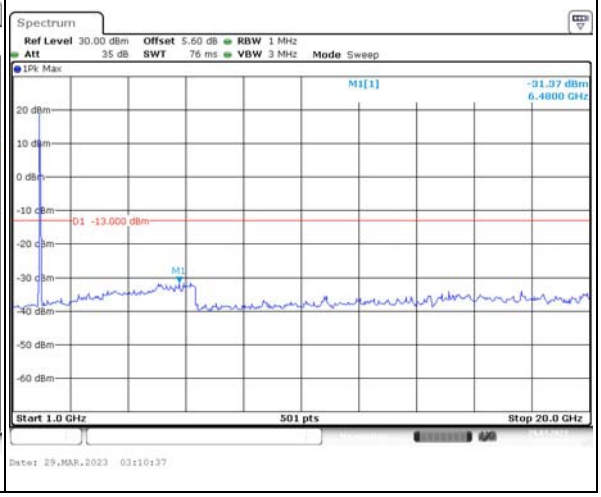
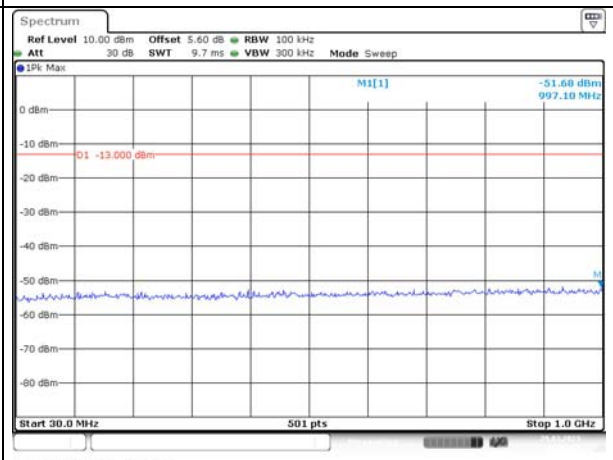
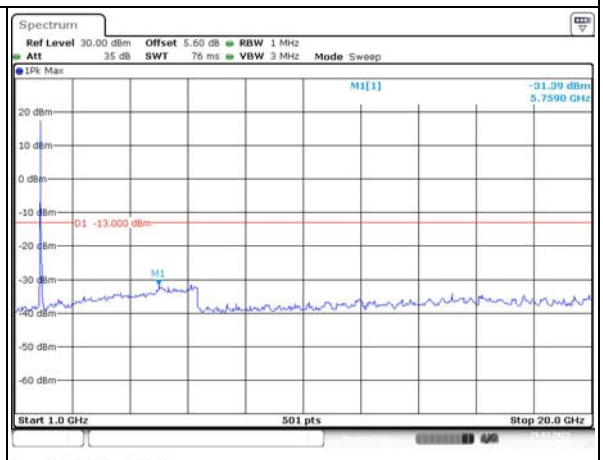
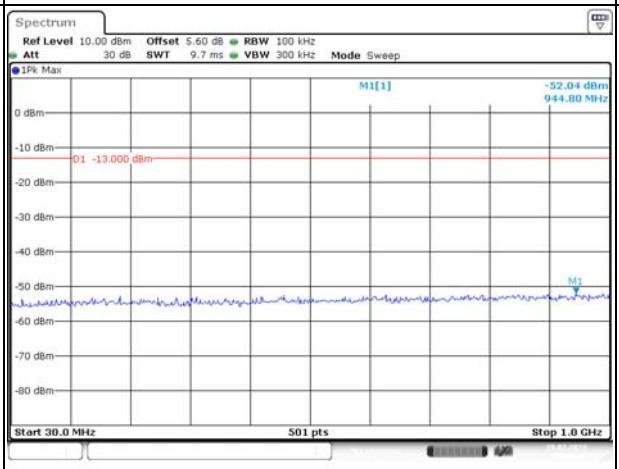
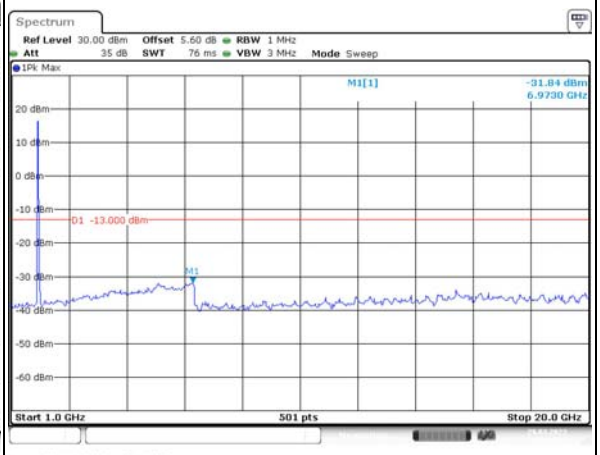
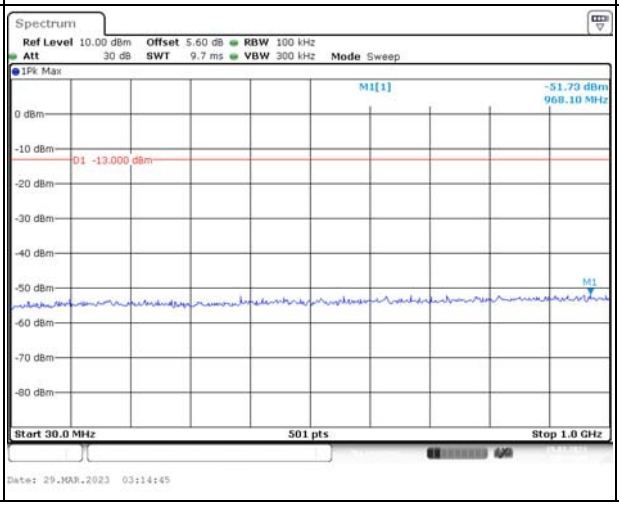
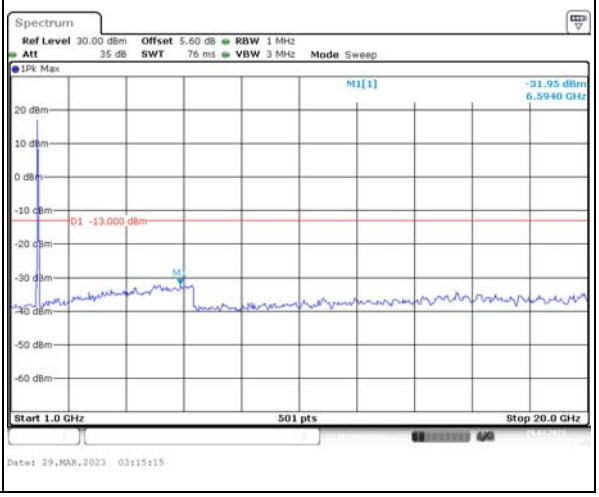
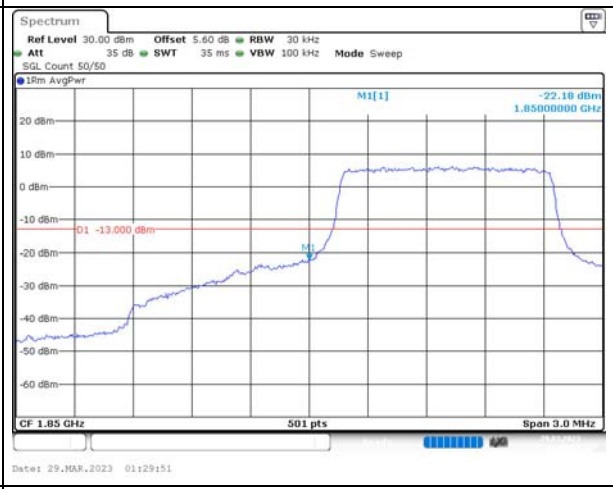
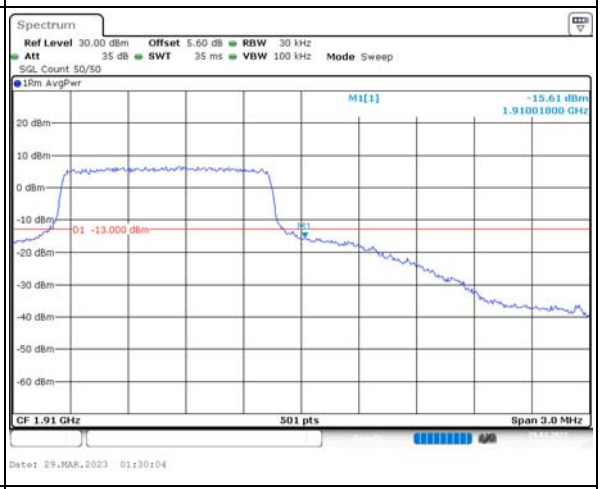
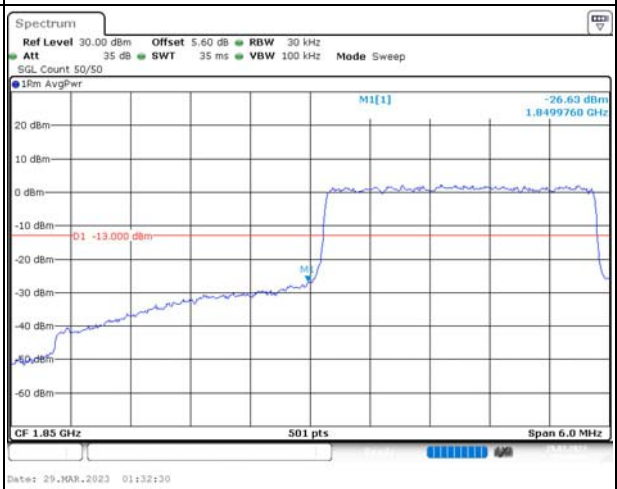
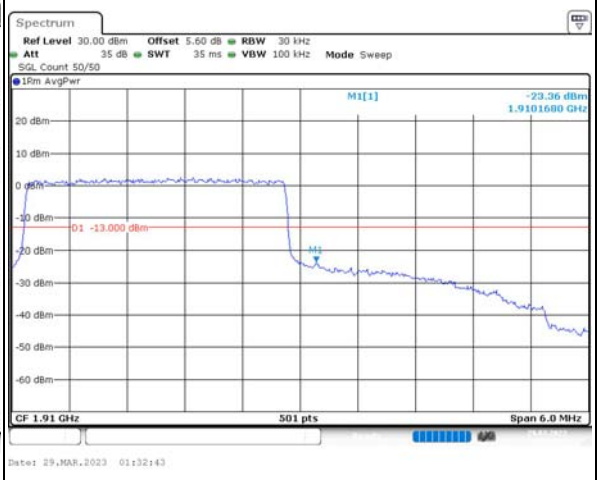
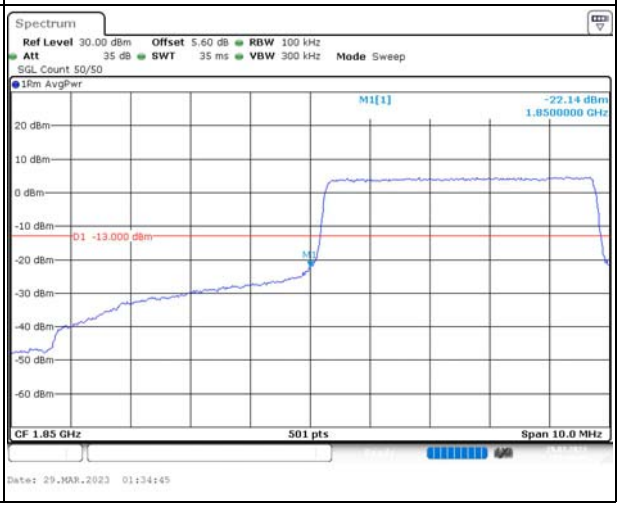
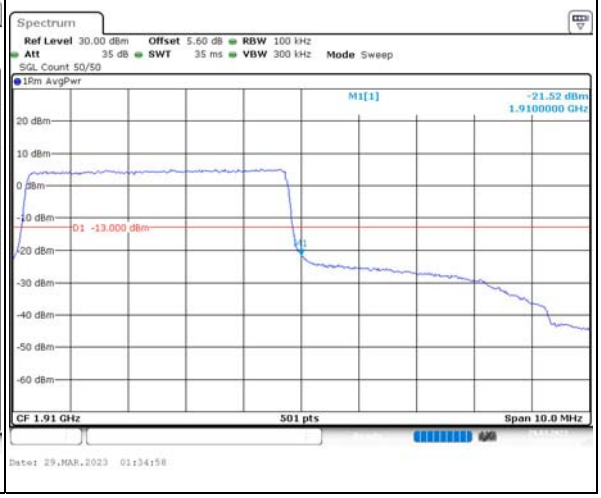
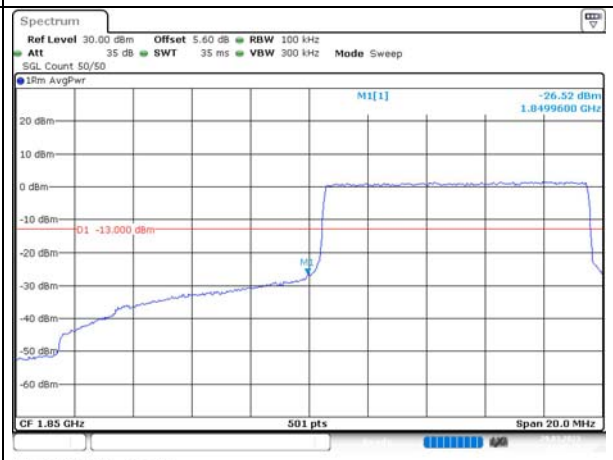
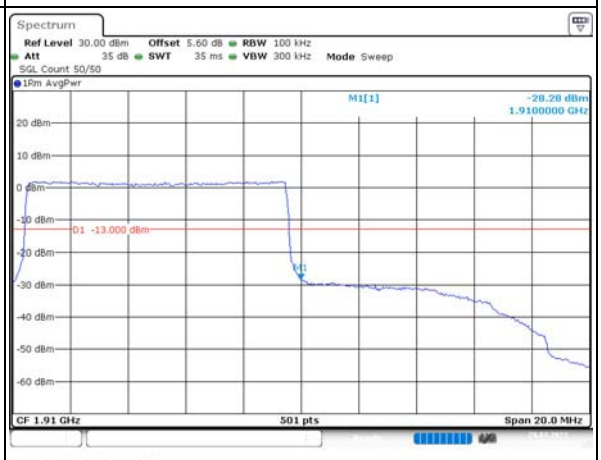
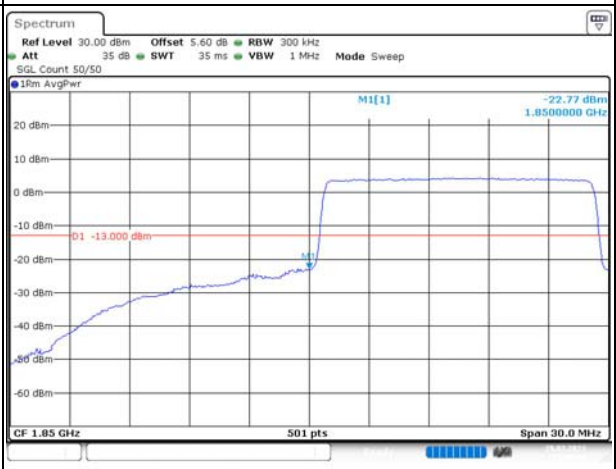
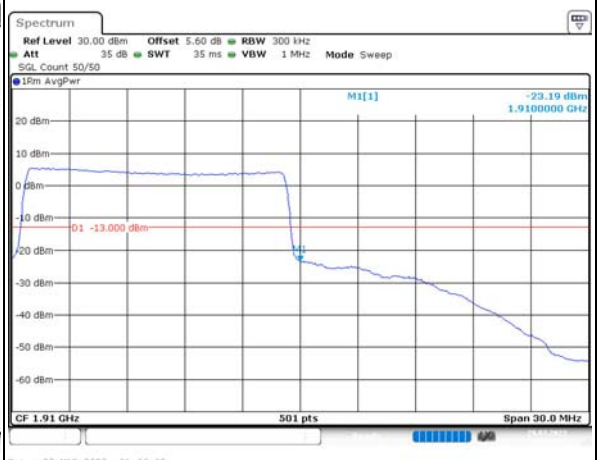
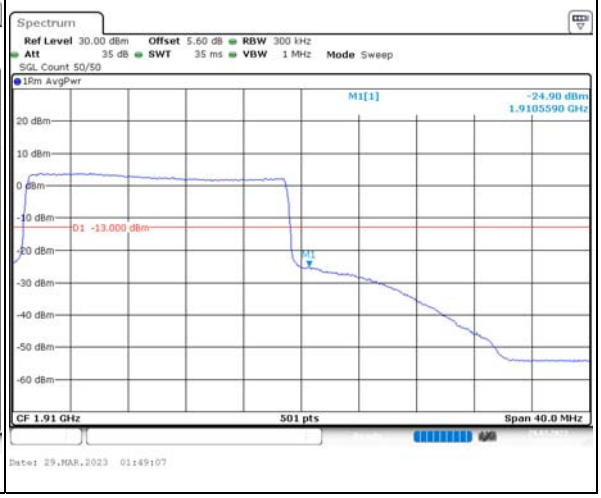
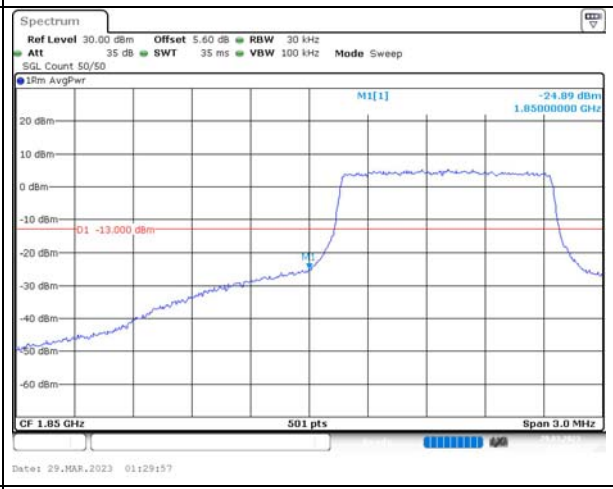
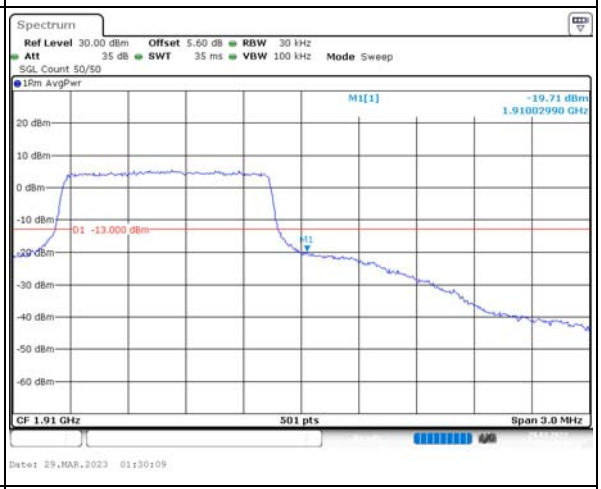
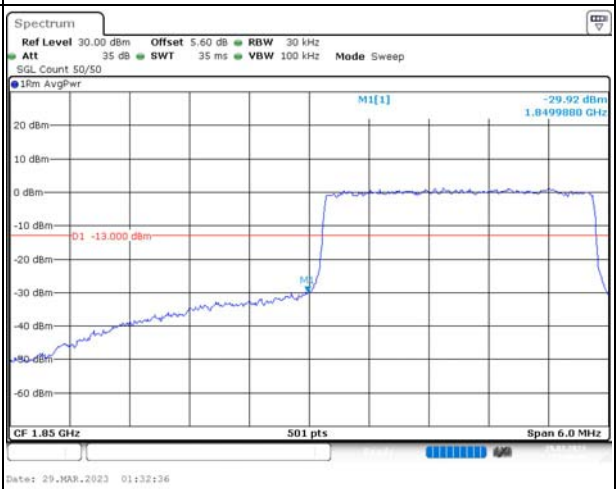
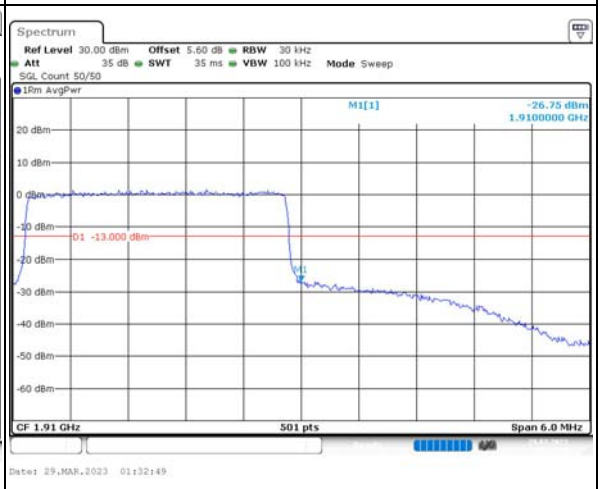
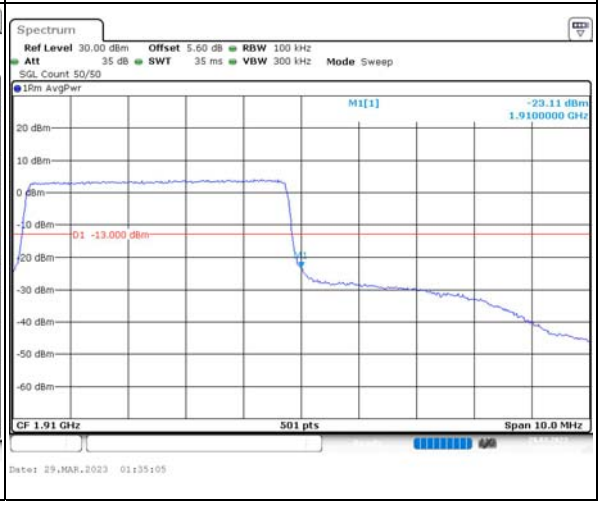
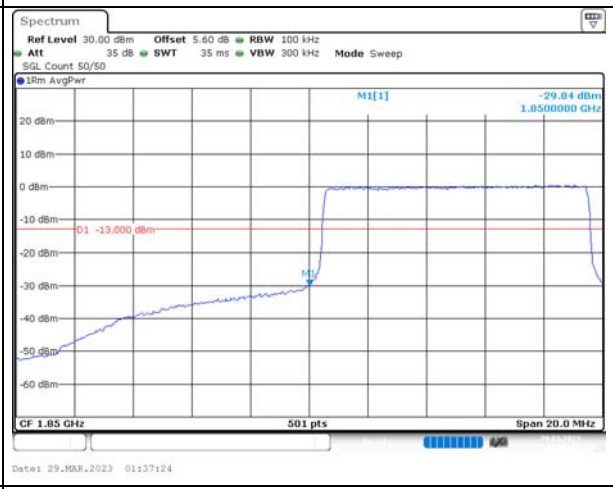
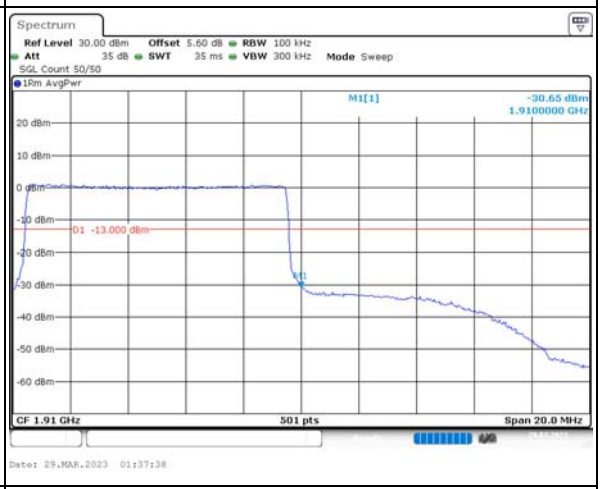
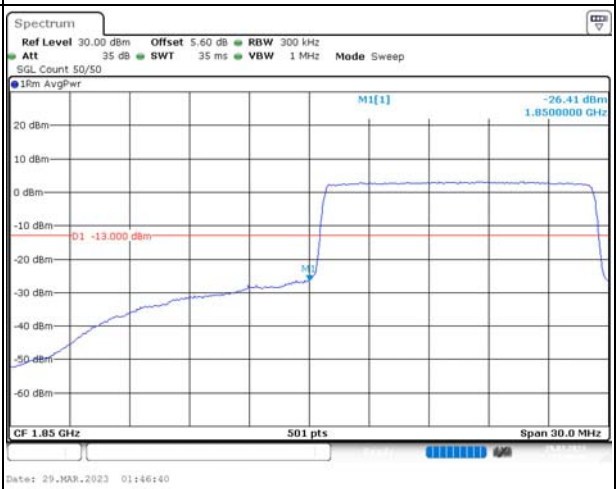
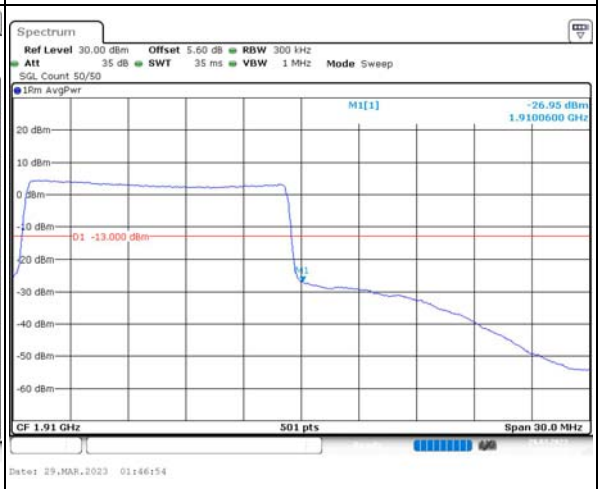
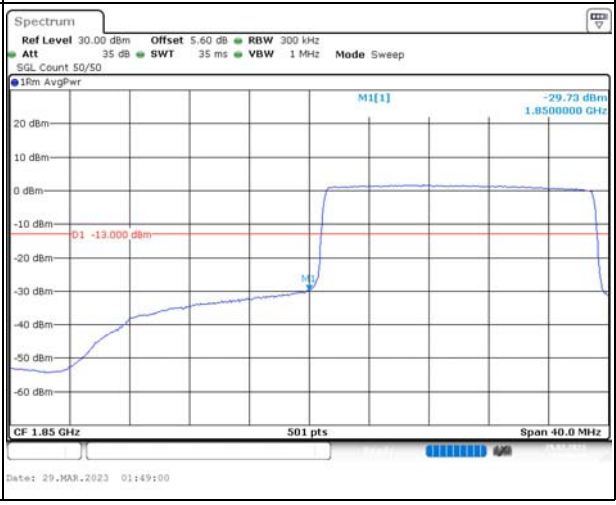
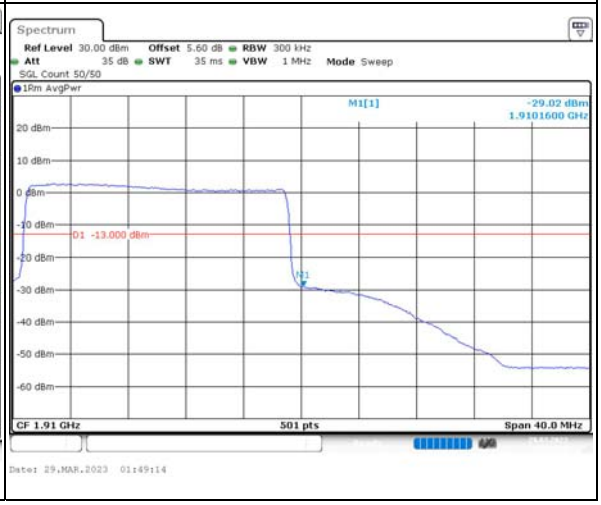
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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:	23CF-1	Test Date:	2023/3/29~2023/4/12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jou Zhou	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	24.3~25.6	Relative Humidity: (%)	26~45	ATM Pressure: (kPa)	100.3~101.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100004	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/3/31	2023/3/30
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	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:

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	22.3	22.79	23.51	20.08	30
	RB1#3	22.48	22.95	23.48		
	RB1#5	22.32	22.78	23.19		
	RB3#0	22.34	22.78	23.11		
	RB3#3	22.37	22.59	23.14		
	RB6#0	21.37	21.85	22.44		
1.4MHz 16QAM	RB1#0	21.4	21.57	22.04	18.92	30
	RB1#3	21.59	21.95	22.26		
	RB1#5	21.38	21.76	22.1		
	RB3#0	21.28	21.72	22.32		
	RB3#3	21.25	21.87	22.35		
	RB6#0	20.39	20.85	21.59		
3MHz QPSK	RB1#0	22.35	22.85	23.53	20.19	30
	RB1#8	22.4	22.87	23.62		
	RB1#14	22.37	22.88	23.59		
	RB6#0	21.28	21.85	22.6		
	RB6#9	21.34	21.91	22.58		
	RB15#0	21.37	21.92	22.6		
3MHz 16QAM	RB1#0	21.34	22.31	22.67	19.32	30
	RB1#8	21.35	22.35	22.75		
	RB1#14	21.32	22.38	22.69		
	RB6#0	20.23	20.88	21.57		
	RB6#9	20.28	20.94	21.63		
	RB15#0	20.4	20.96	21.6		
5MHz QPSK	RB1#0	22.23	22.67	23.47	20.18	30
	RB1#13	22.4	22.92	23.61		
	RB1#24	22.33	22.82	23.53		
	RB15#0	21.34	21.9	22.6		
	RB15#10	21.46	21.93	22.67		
	RB25#0	21.41	21.92	22.59		
5MHz 16QAM	RB1#0	21.24	21.57	22.73	19.46	30
	RB1#13	21.41	21.78	22.89		
	RB1#24	21.36	21.74	22.7		
	RB15#0	20.36	20.96	21.6		
	RB15#10	20.48	20.97	21.63		
	RB25#0	20.37	20.94	21.59		
10MHz QPSK	RB1#0	22.31	22.74	23.33	20.19	30
	RB1#25	22.53	23.05	23.62		
	RB1#49	22.55	23.09	23.6		
	RB25#0	21.33	21.91	22.5		

	RB25#25	21.56	22.04	22.67		
	RB50#0	21.48	21.98	22.58		
10MHz 16QAM	RB1#0	21.44	21.71	22.86	19.72	30
	RB1#25	21.71	21.97	23.15		
	RB1#49	21.65	22.06	23.1		
	RB25#0	20.34	21	21.55		
	RB25#25	20.55	21.11	21.7		
	RB50#0	20.47	21	21.62		
15MHz QPSK	RB1#0	22.23	22.59	23.05	20.11	30
	RB1#38	22.48	22.9	23.48		
	RB1#74	22.57	23.04	23.54		
	RB36#0	21.42	21.89	22.4		
	RB36#39	21.69	22.11	22.67		
	RB75#0	21.54	22.08	22.58		
15MHz 16QAM	RB1#0	21.58	22.04	22.22	19.24	30
	RB1#38	21.83	22.38	22.62		
	RB1#74	21.89	22.58	22.67		
	RB36#0	20.38	20.88	21.42		
	RB36#39	20.66	21.12	21.69		
	RB75#0	20.5	21.01	21.54		
20MHz QPSK	RB1#0	22.06	22.27	22.69	20.02	30
	RB1#50	22.72	23.01	23.45		
	RB1#99	22.56	23	23.41		
	RB50#0	21.36	21.87	22.24		
	RB50#50	21.67	22.09	22.6		
	RB100#0	21.53	21.97	22.4		
20MHz 16QAM	RB1#0	21.24	21.83	21.98	19.35	30
	RB1#50	21.85	22.46	22.78		
	RB1#99	21.73	22.52	22.66		
	RB50#0	20.34	20.82	21.21		
	RB50#50	20.64	21.08	21.54		
	RB100#0	20.51	20.96	21.43		
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	4.38	3.94	3.97	13
	RB100#0	3.88	3.91	3.97	13
20MHz 16QAM	RB1#0	5.13	4.9	5.01	13
	RB100#0	5.62	5.62	5.68	13
				Result:	**Pass**

Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.096	1.102	1.102	1.314	1.296	1.302
1.4MHz 16QAM	1.096	1.09	1.102	1.284	1.284	1.32
3MHz QPSK	2.695	2.683	2.683	2.88	2.892	2.88
3MHz 16QAM	2.683	2.683	2.683	2.88	2.868	2.892
5MHz QPSK	4.531	4.511	4.511	5.16	5.2	5.18
5MHz 16QAM	4.511	4.551	4.551	5.14	5.16	5.22
10MHz QPSK	8.942	8.982	8.982	9.92	10.04	9.88
10MHz 16QAM	8.942	8.942	8.982	9.88	9.84	9.88
15MHz QPSK	13.593	13.533	13.533	15.24	15.18	15.42
15MHz 16QAM	13.533	13.533	13.533	15.12	15.12	15.3
20MHz QPSK	17.964	18.044	17.964	19.92	19.68	21.84
20MHz 16QAM	17.964	17.964	18.044	19.76	19.6	24.48
Note: The test plots please refer to the Plots of Occupied Bandwidth						

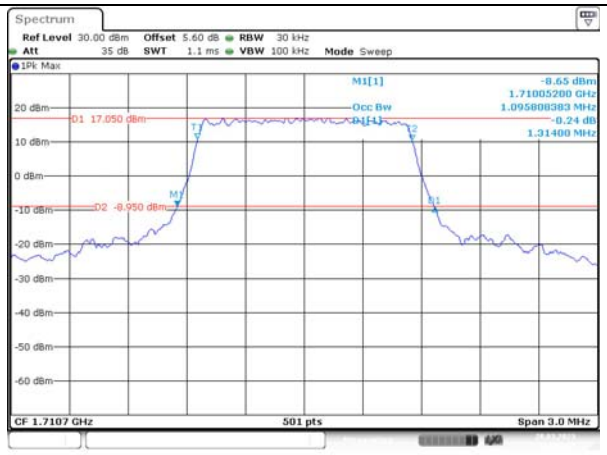
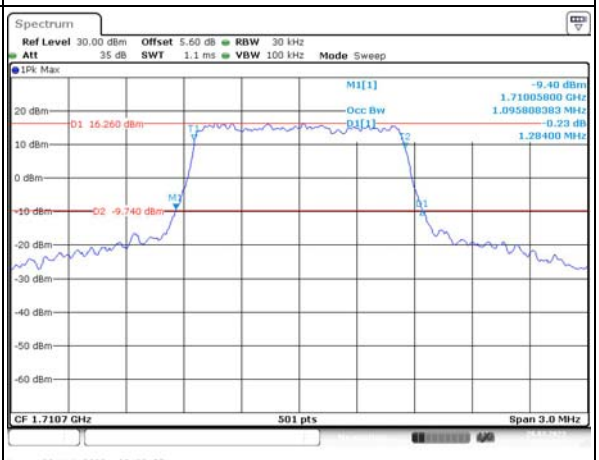
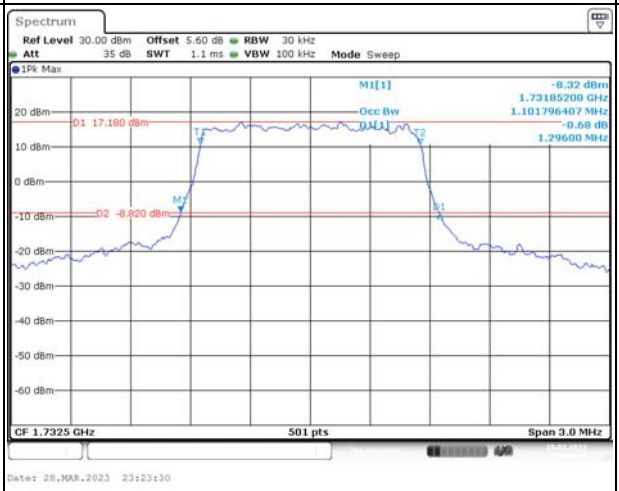
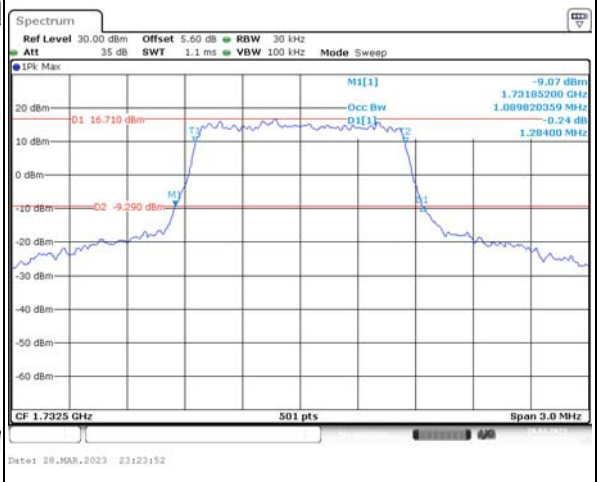
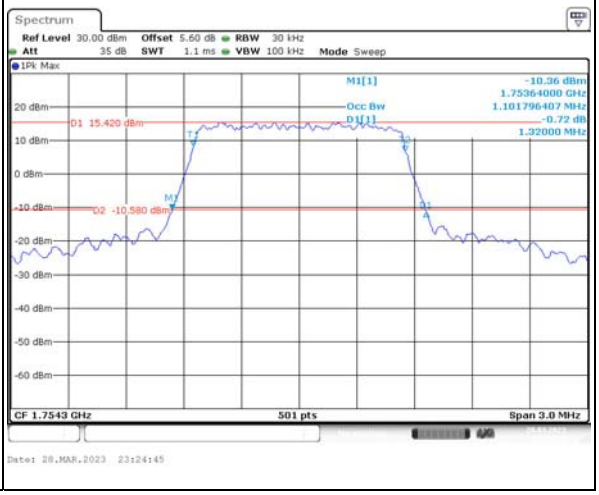
Spurious Emissions at Antenna Terminal	
Result:	**Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

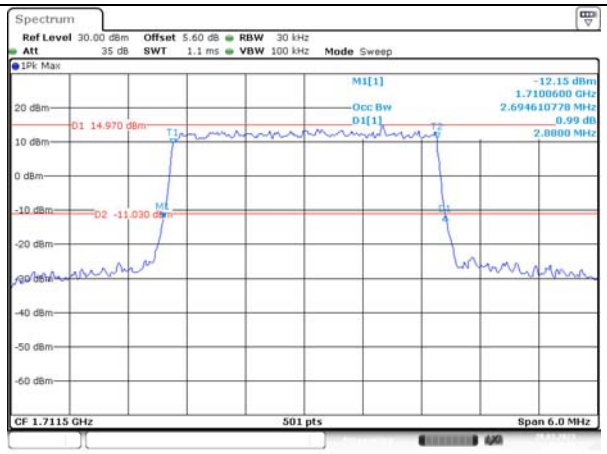
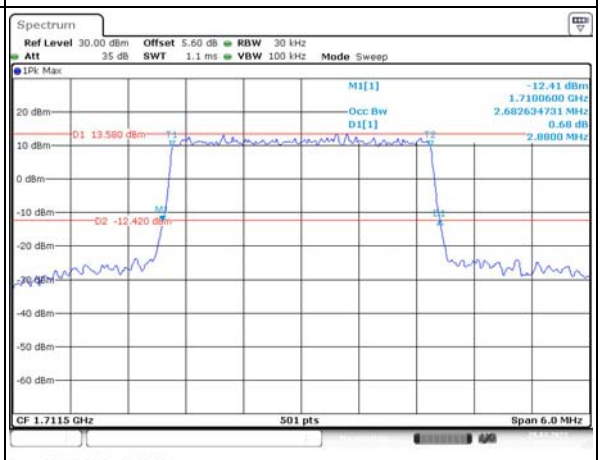
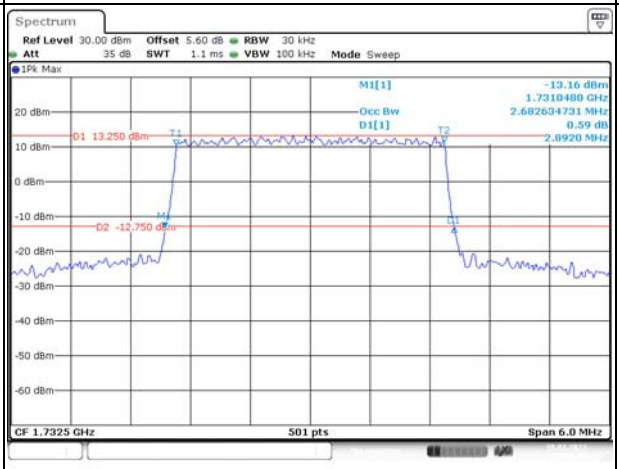
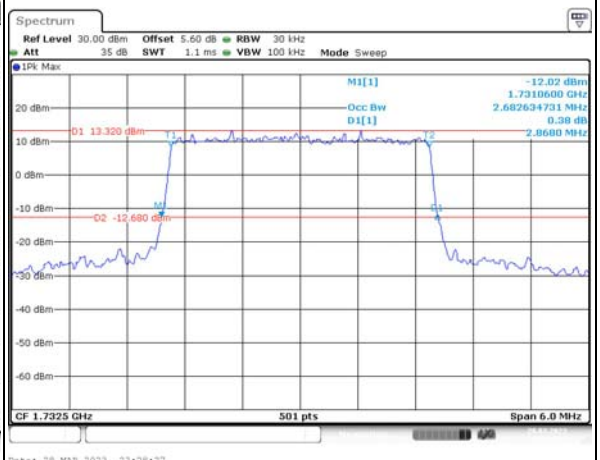
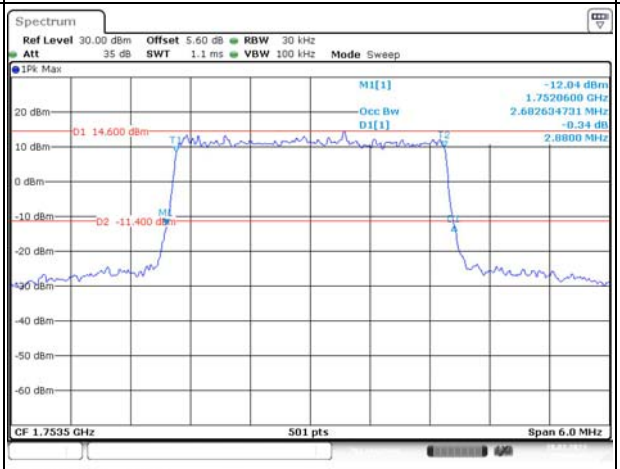
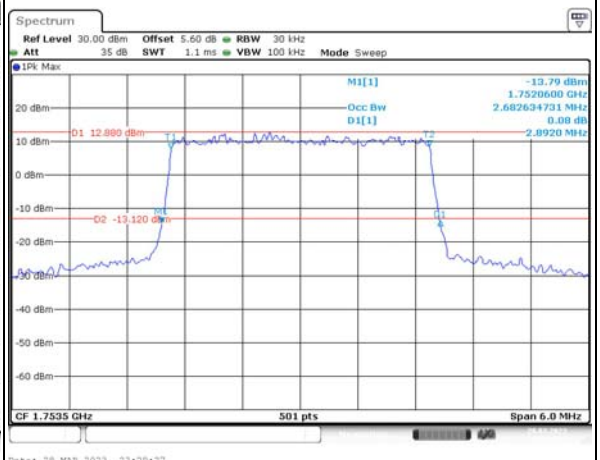
Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

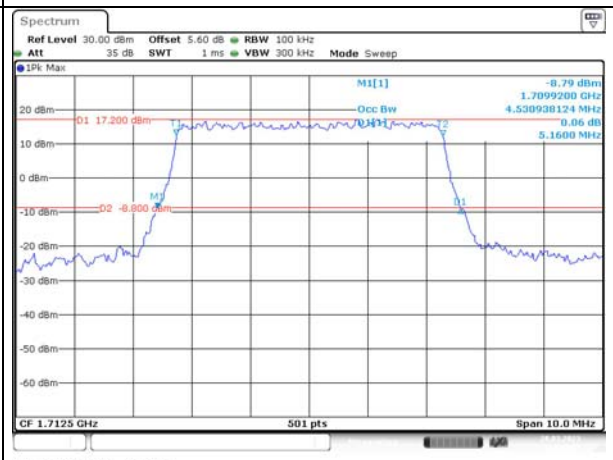
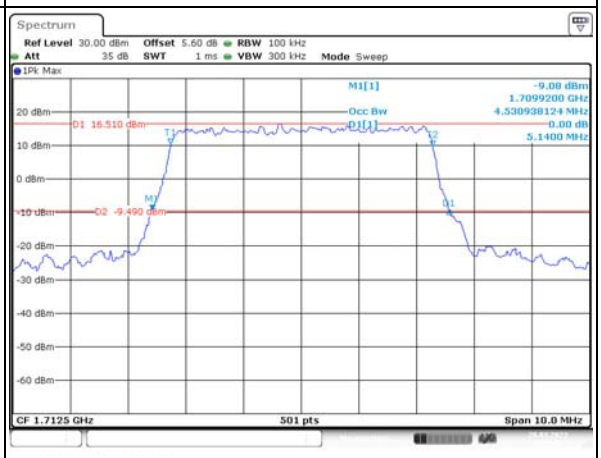
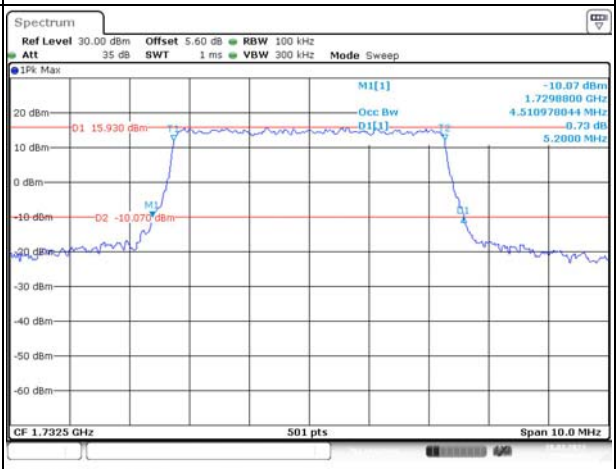
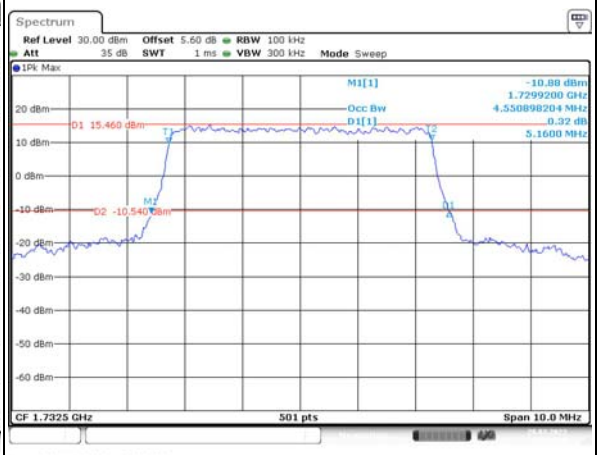
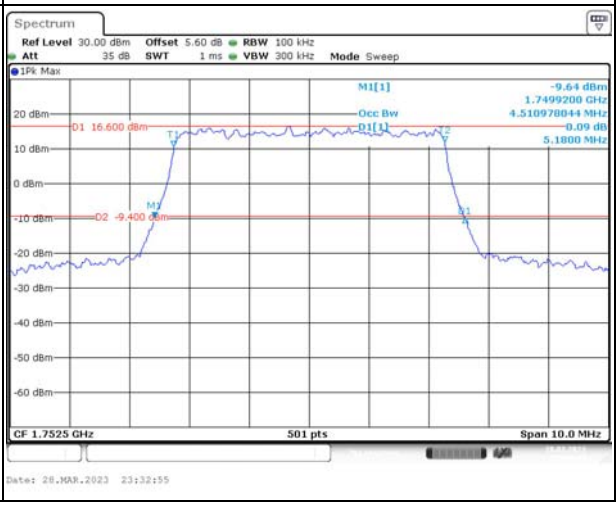
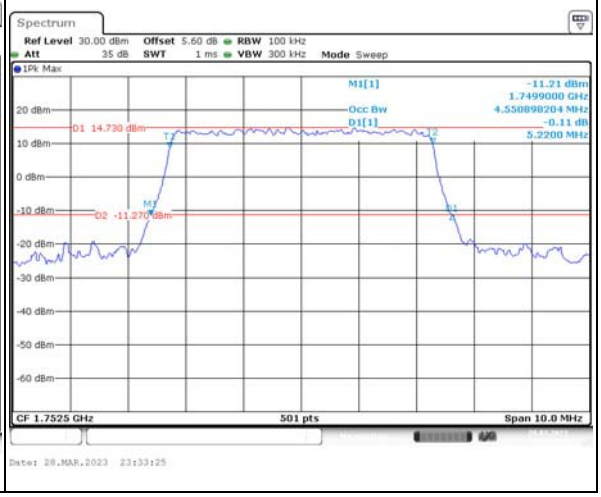
Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.025	1710.00	1753.928	1755
	-20	3.8	1711.022	1710.00	1753.926	1755
	-10	3.8	1711.002	1710.00	1753.919	1755
	0	3.8	1711.001	1710.00	1753.928	1755
	10	3.8	1711.017	1710.00	1753.940	1755
	20	3.8	1711.029	1710.00	1753.914	1755
	30	3.8	1711.020	1710.00	1753.919	1755
	40	3.8	1711.010	1710.00	1753.934	1755
	50	3.8	1711.020	1710.00	1753.918	1755
Frequency Stability vs. Voltage	20	3.6	1711.007	1710.00	1753.921	1755
	20	4.35	1711.024	1710.00	1753.922	1755
					Result:	**Pass**

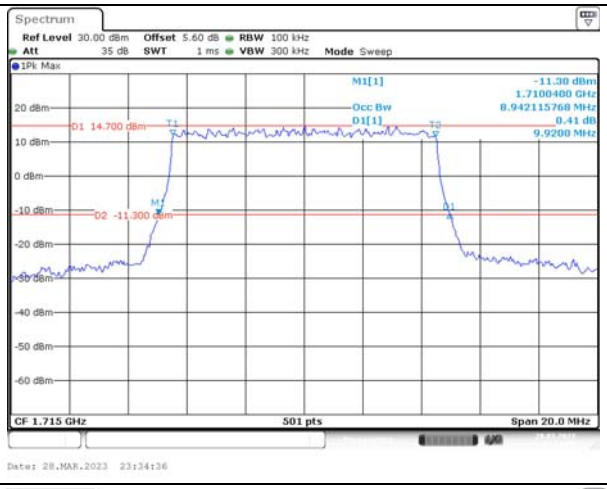
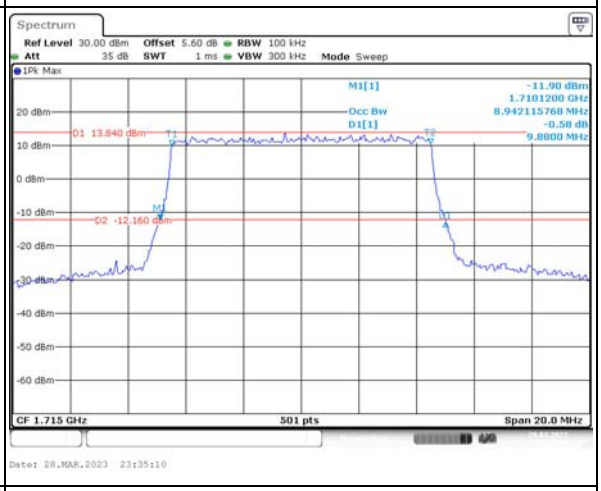
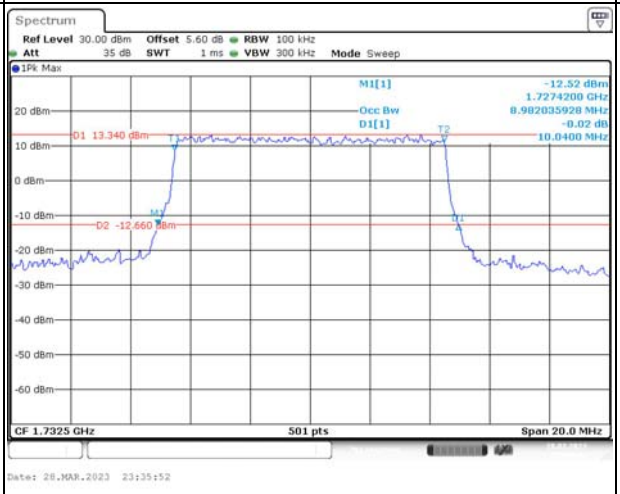
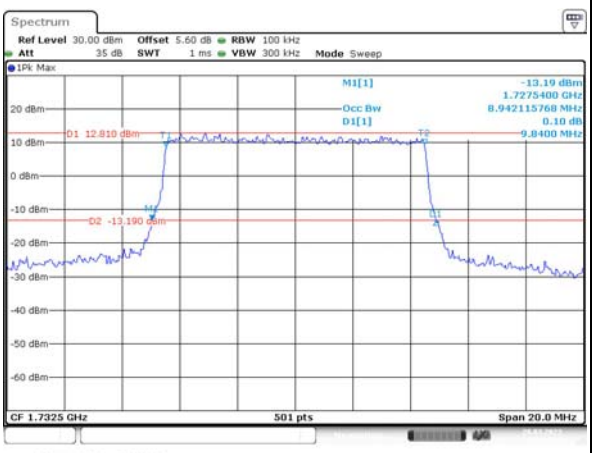
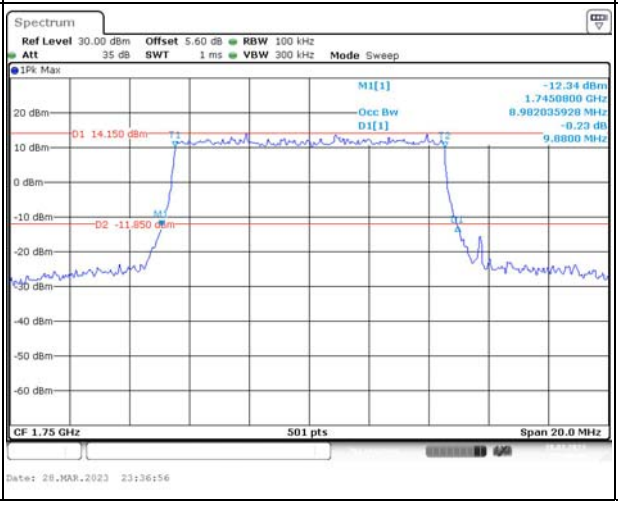
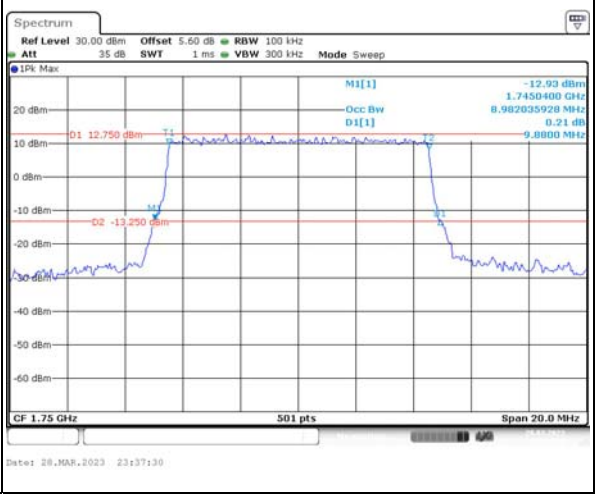
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.024	1710.00	1753.990	1755
	-20	3.8	1711.010	1710.00	1753.979	1755
	-10	3.8	1711.008	1710.00	1753.993	1755
	0	3.8	1711.006	1710.00	1753.990	1755
	10	3.8	1711.003	1710.00	1753.983	1755
	20	3.8	1711.029	1710.00	1753.971	1755
	30	3.8	1711.008	1710.00	1753.997	1755
	40	3.8	1711.005	1710.00	1753.975	1755
	50	3.8	1711.023	1710.00	1754.000	1755
Frequency Stability vs. Voltage	20	3.6	1711.019	1710.00	1753.980	1755
	20	4.35	1711.013	1710.00	1753.997	1755
					Result:	**Pass**

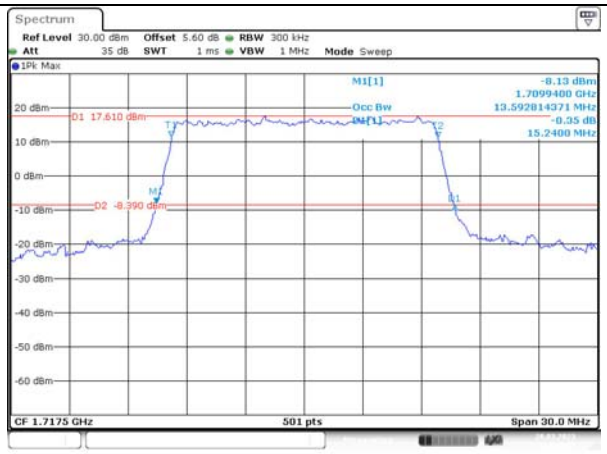
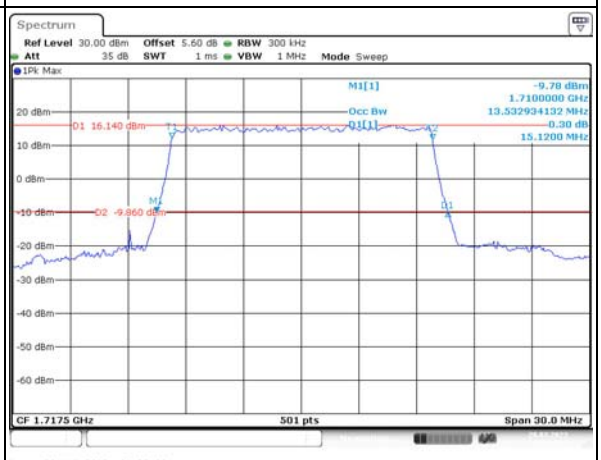
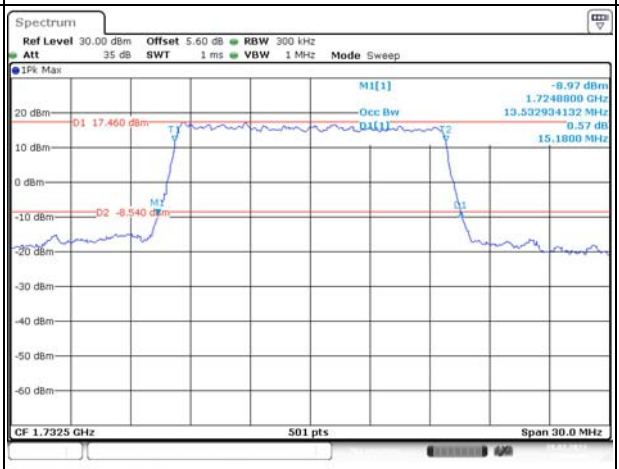
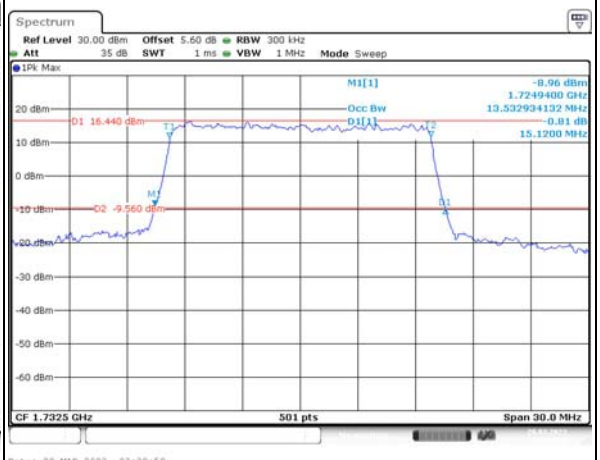
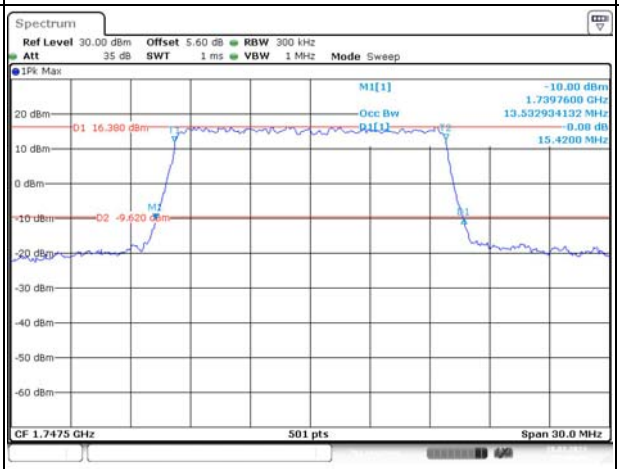
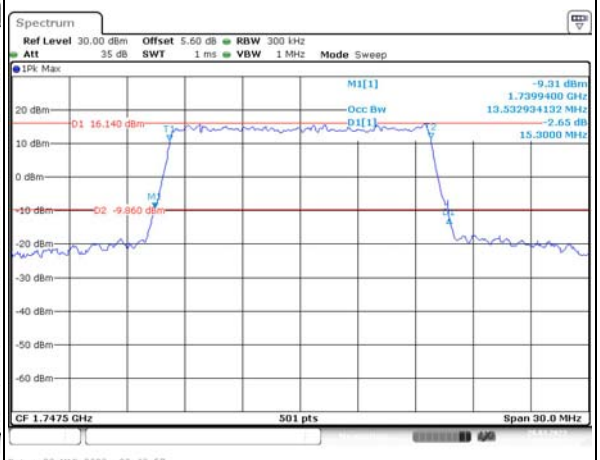
Test Plots(Note: The 5.6 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

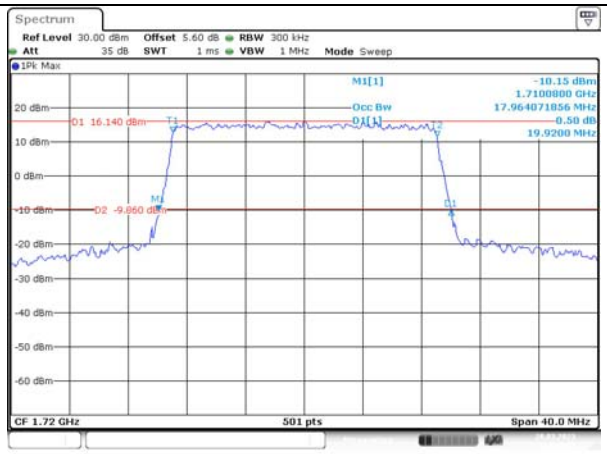
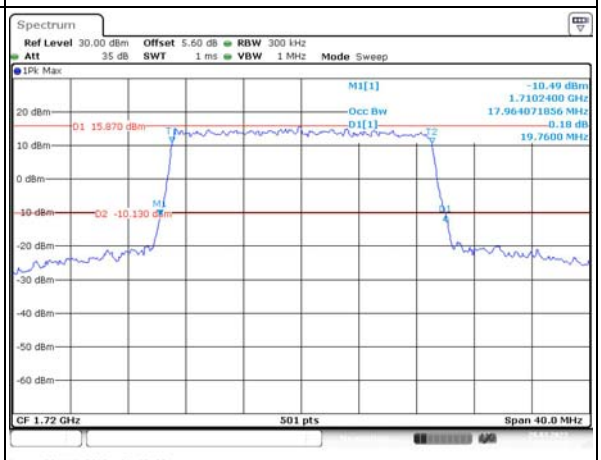
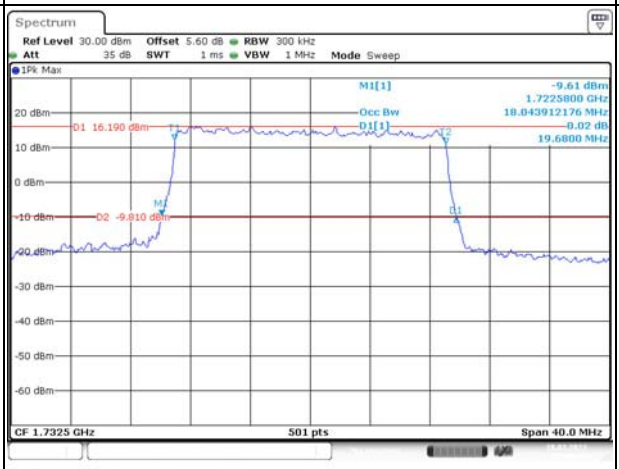
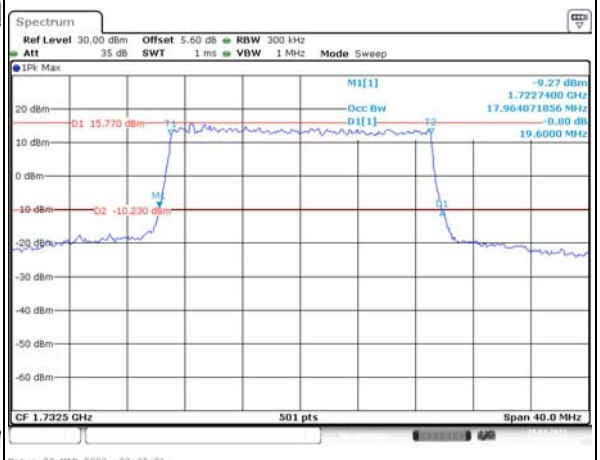
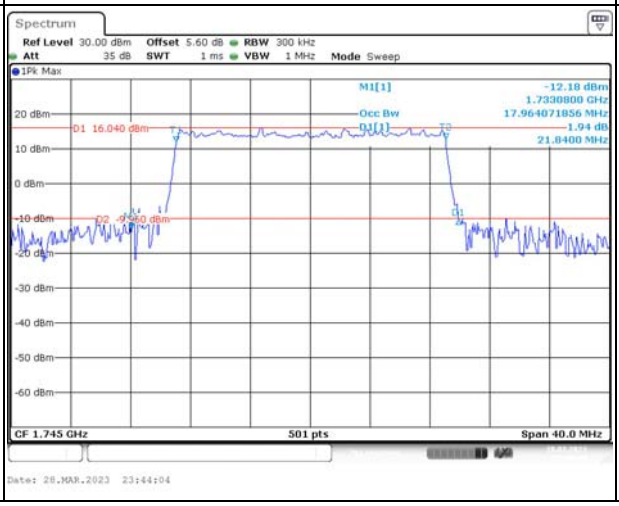
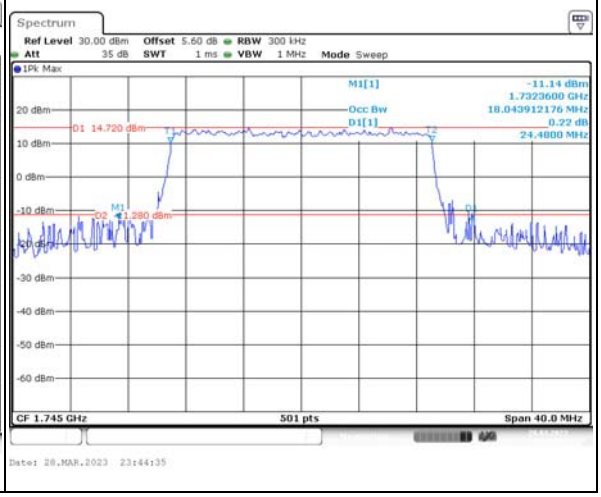
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

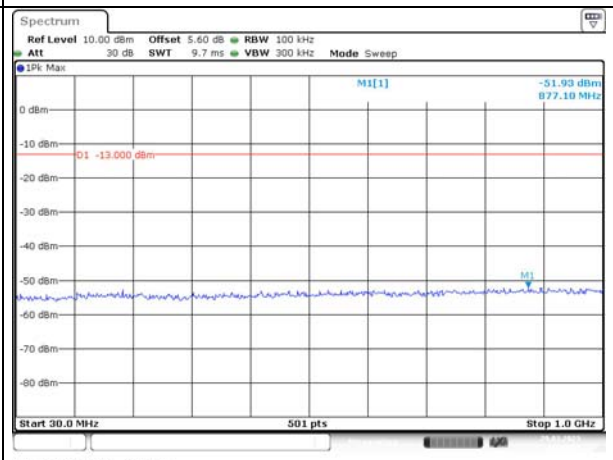
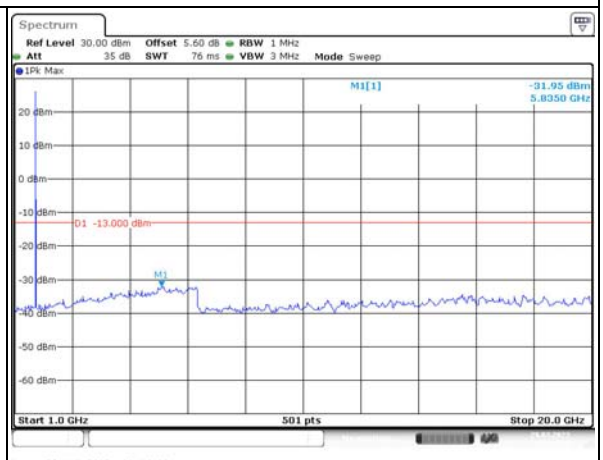
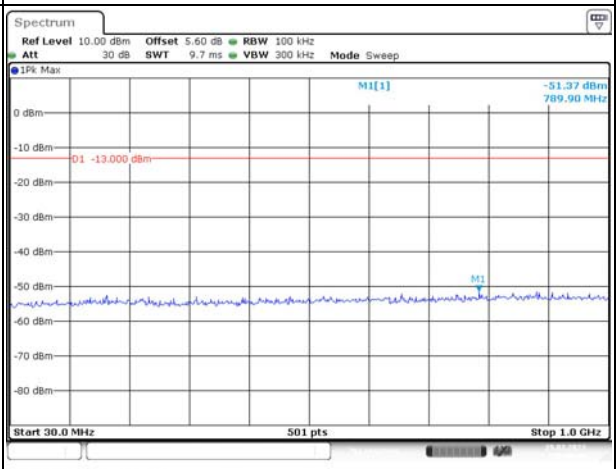
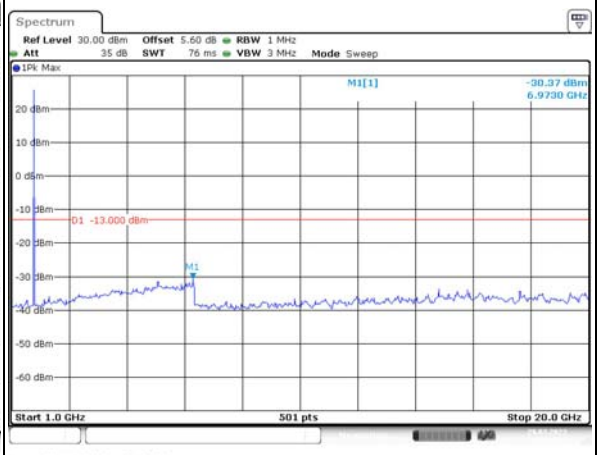
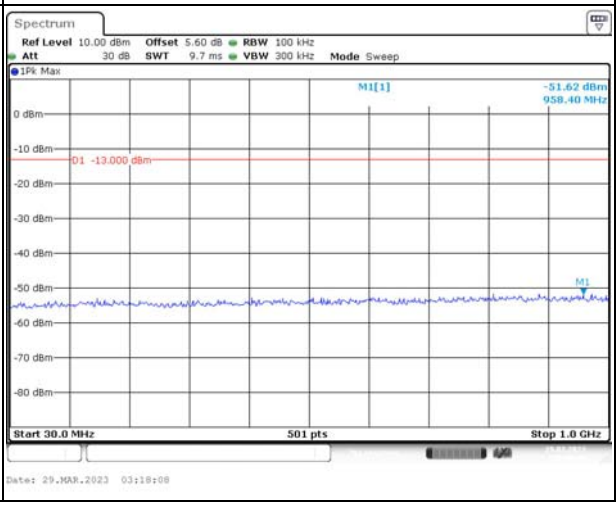
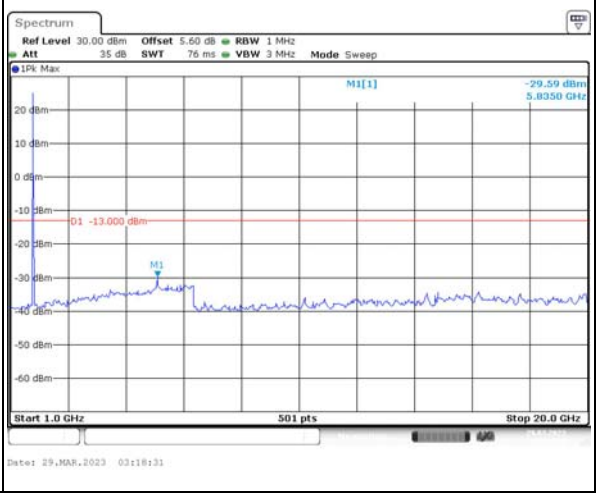
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

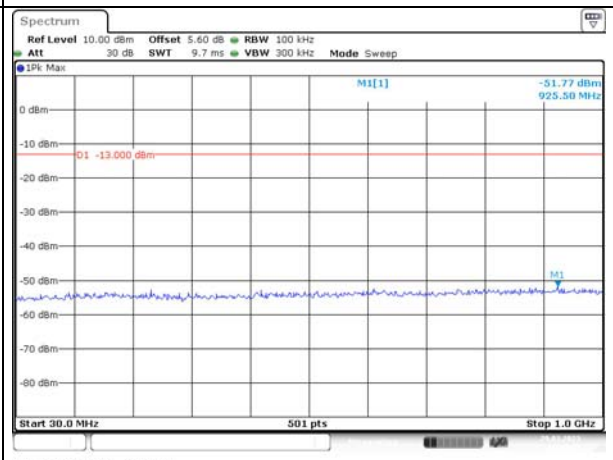
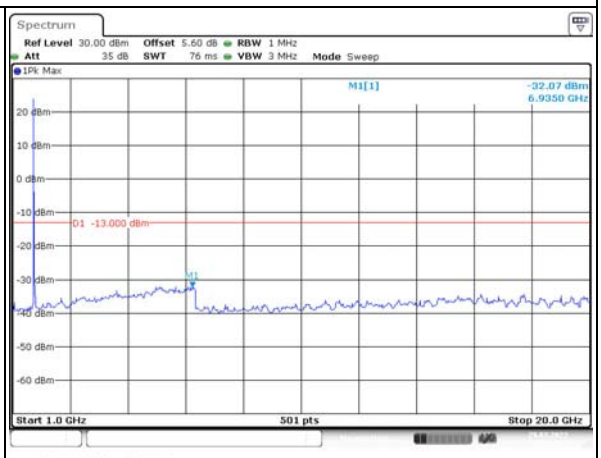
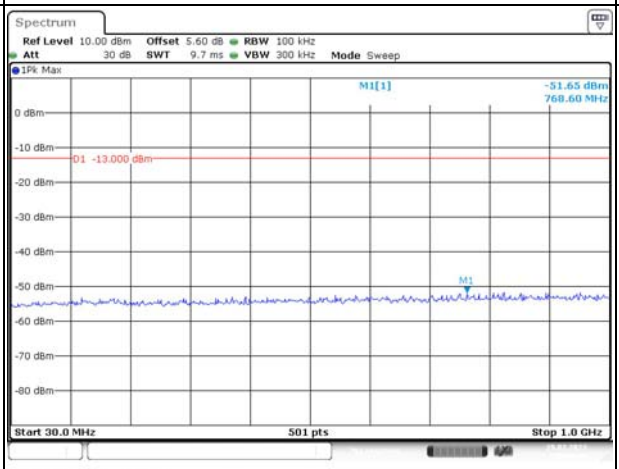
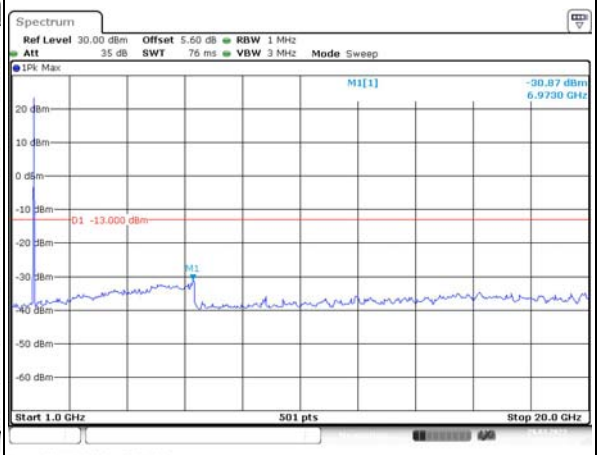
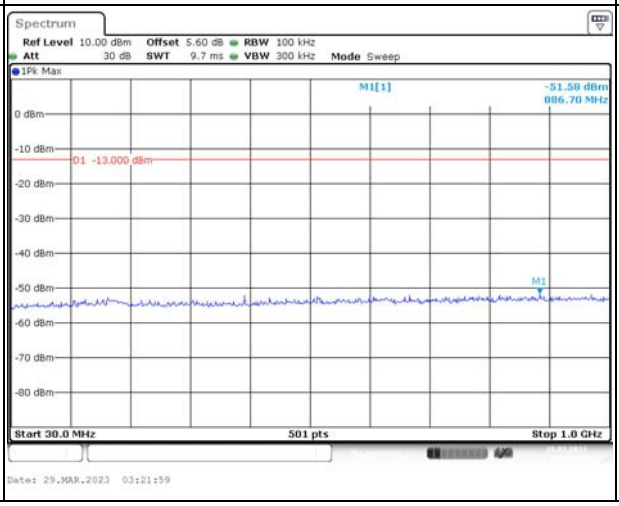
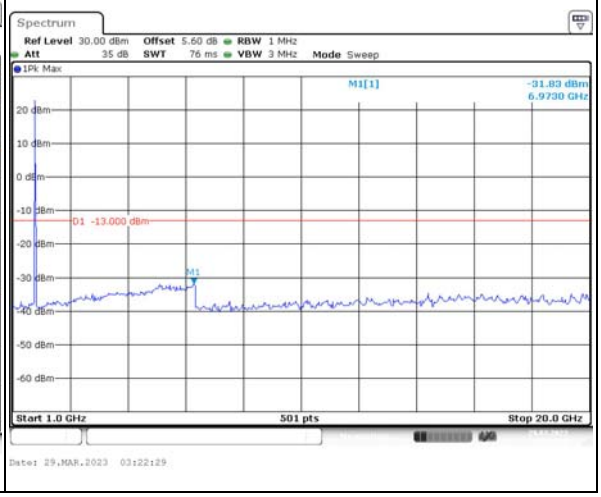
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

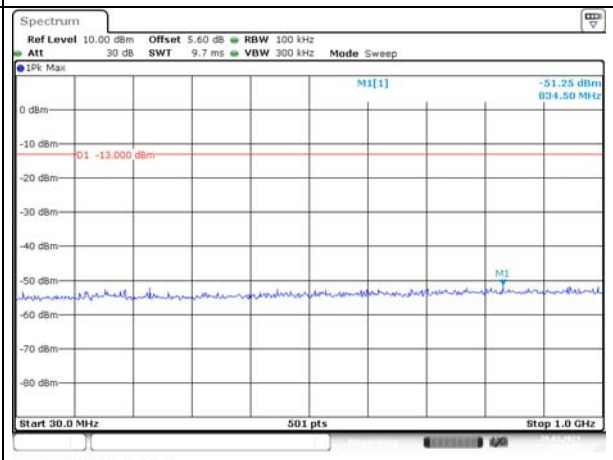
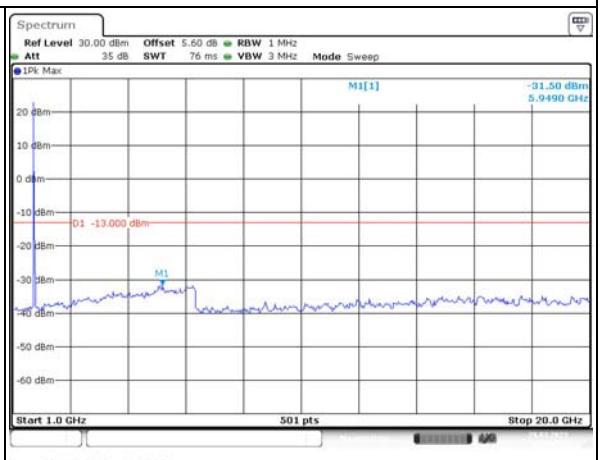
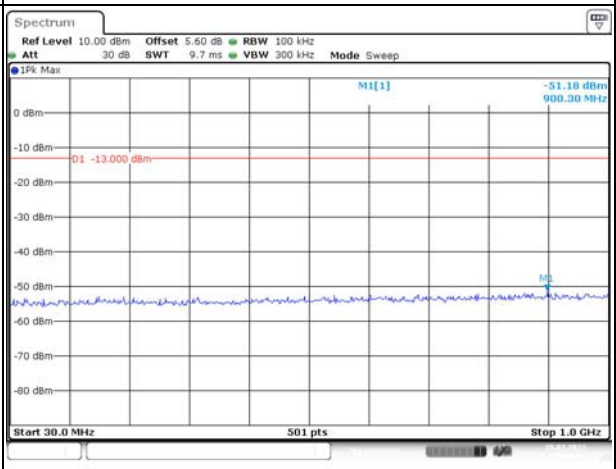
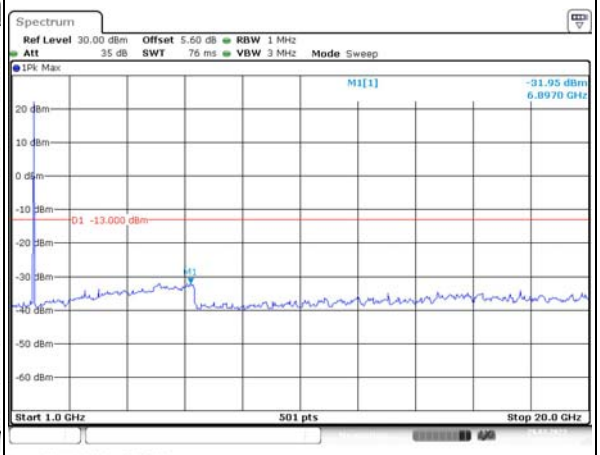
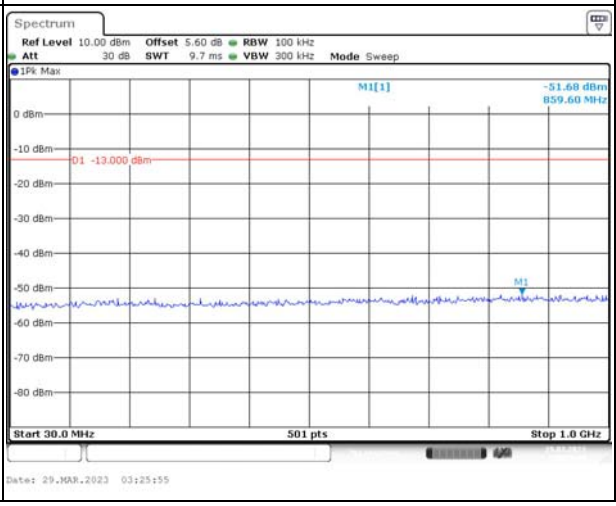
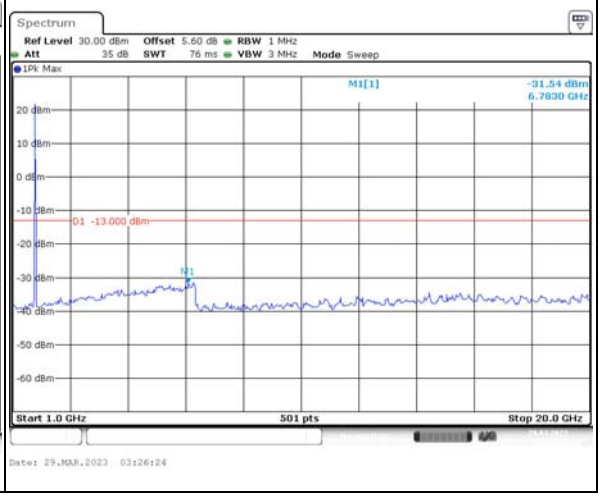
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

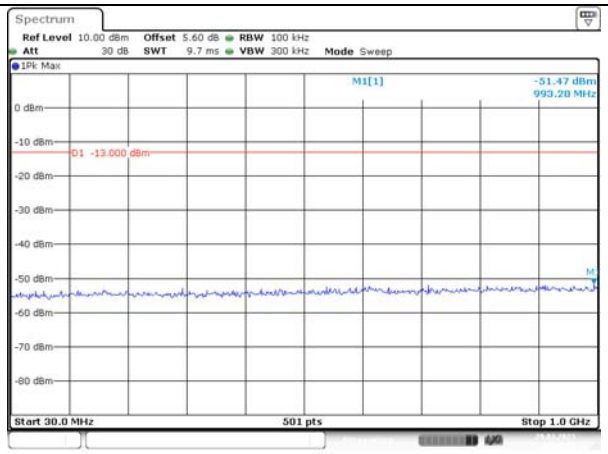
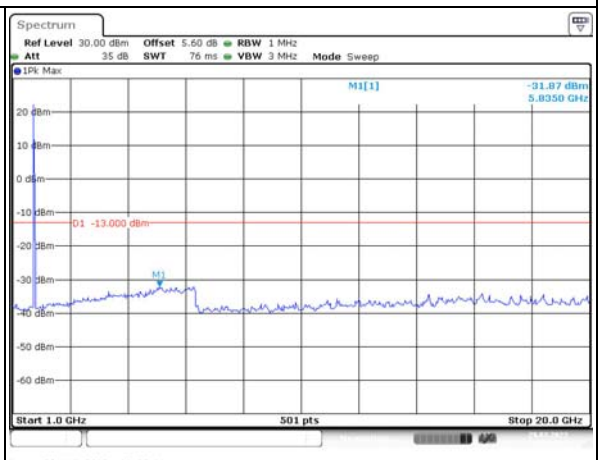
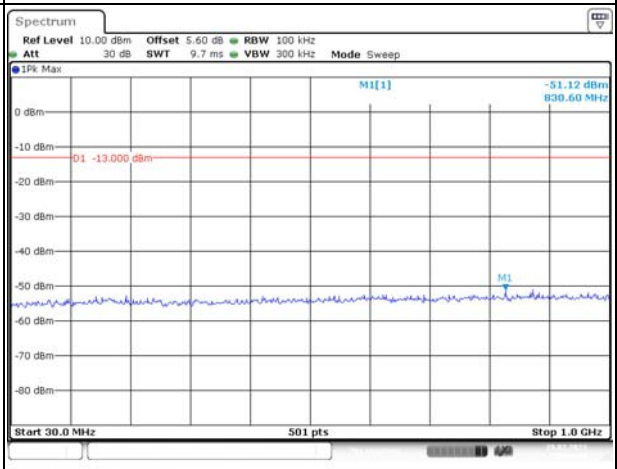
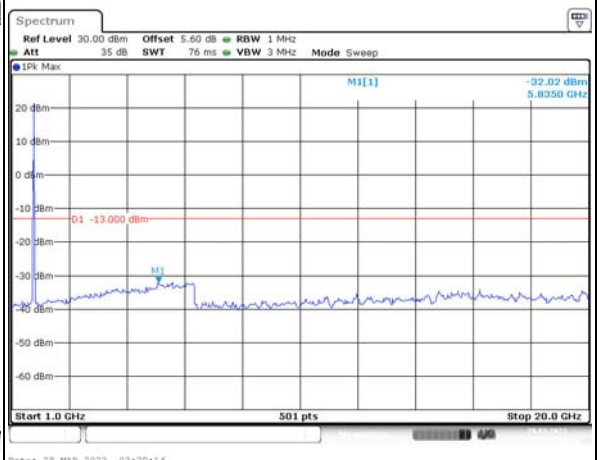
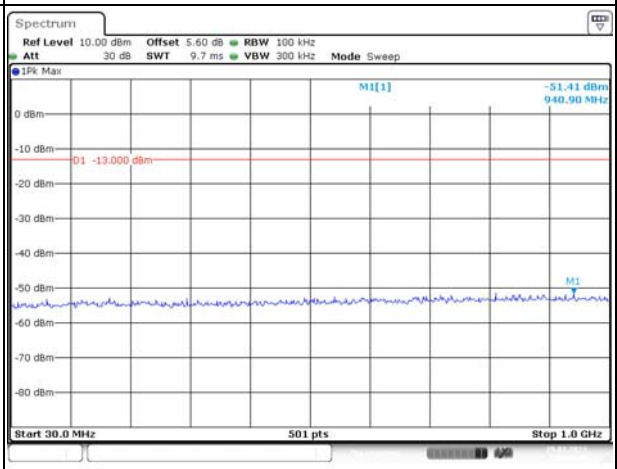
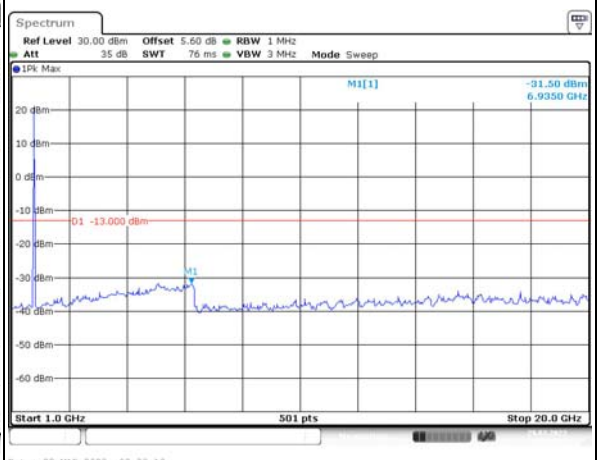
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

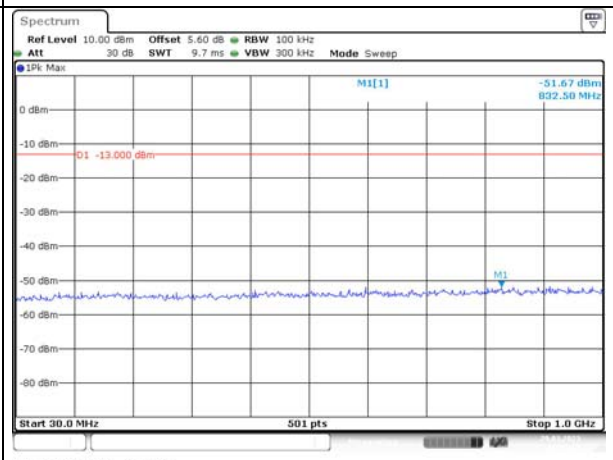
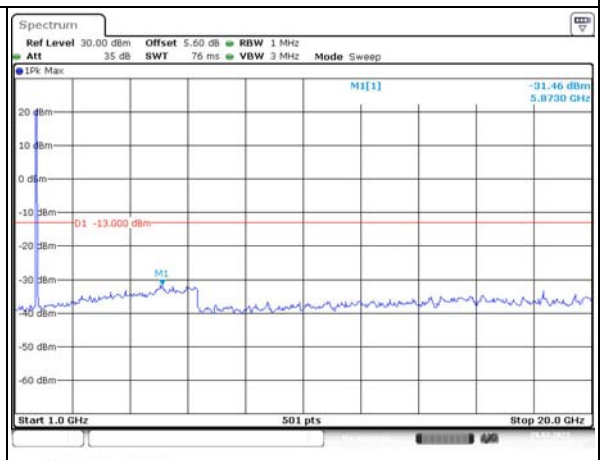
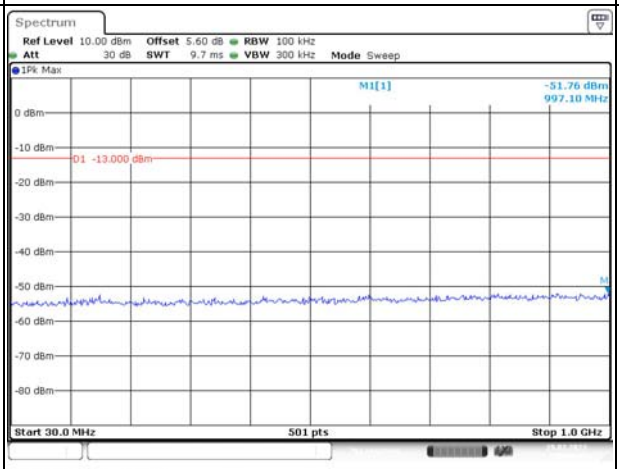
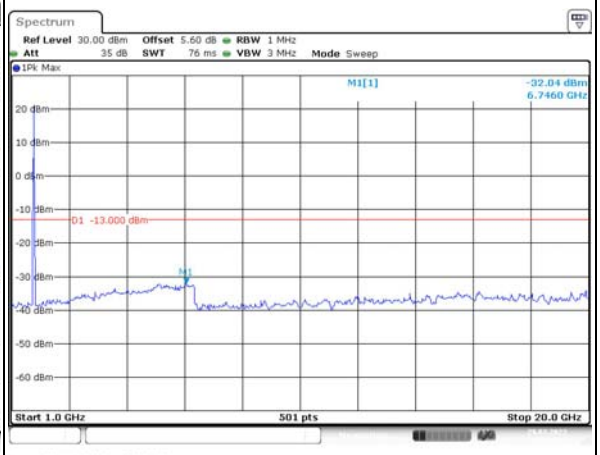
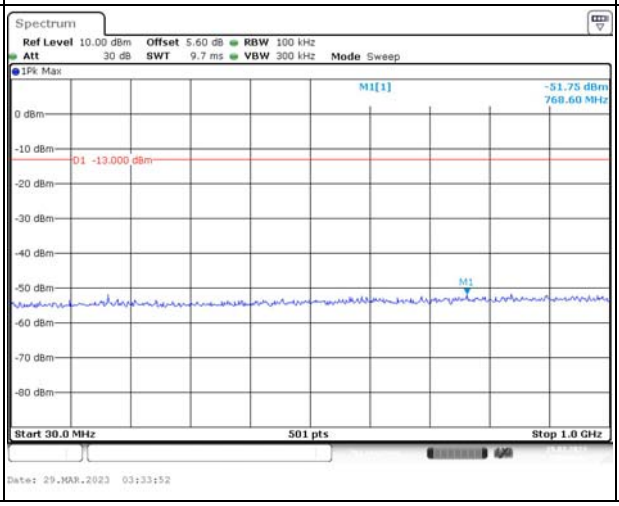
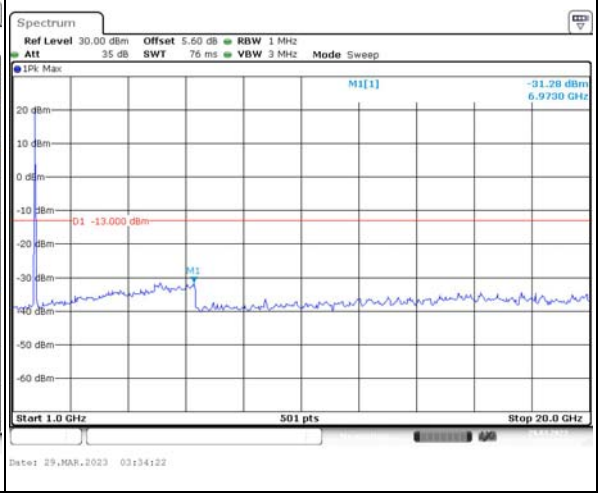
Occupied Bandwidth		
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

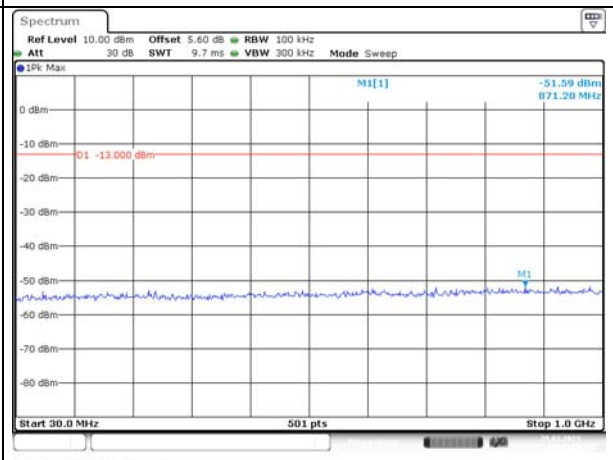
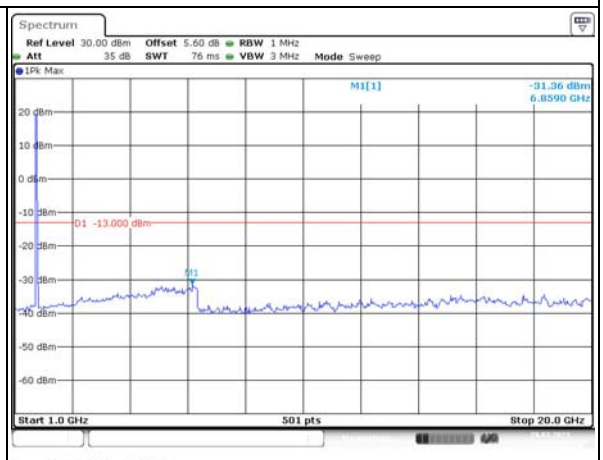
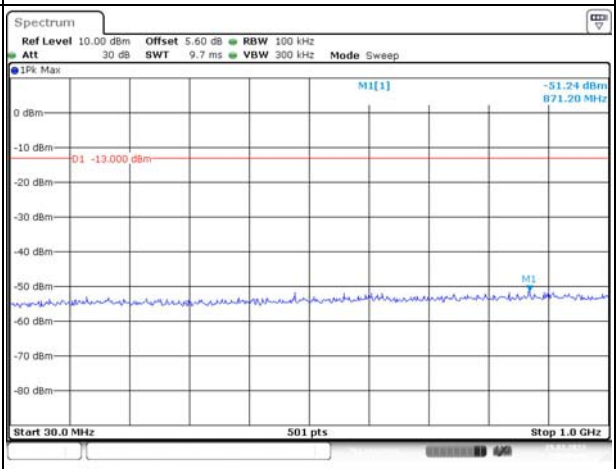
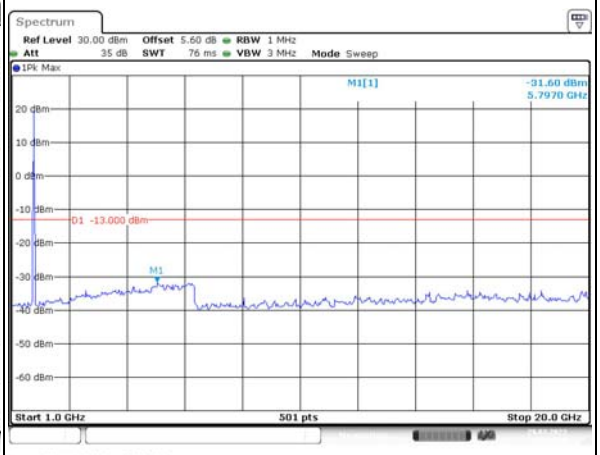
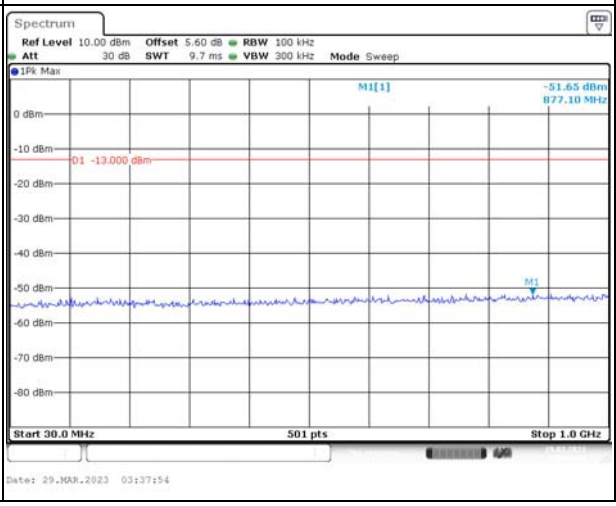
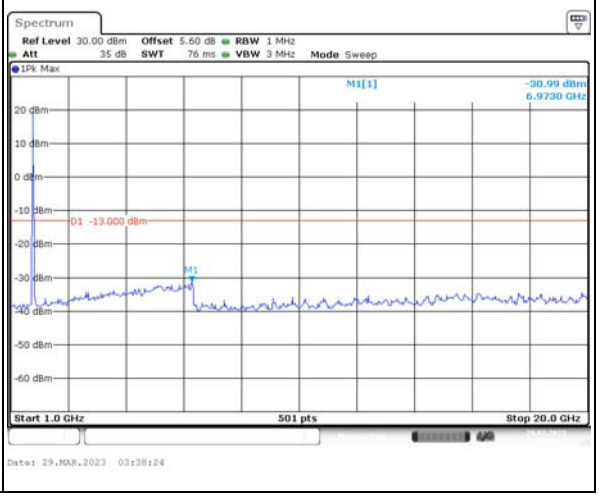
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

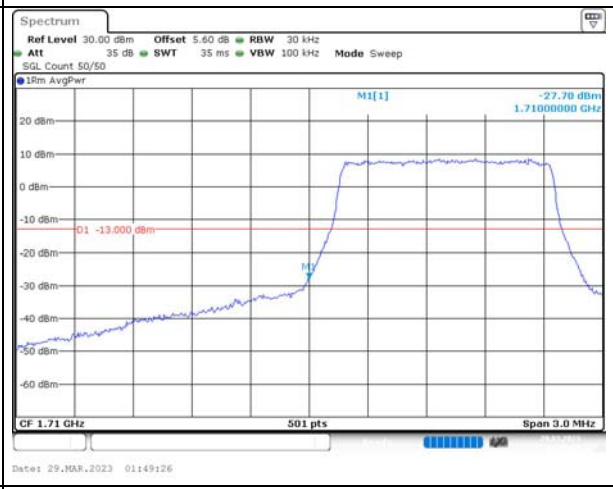
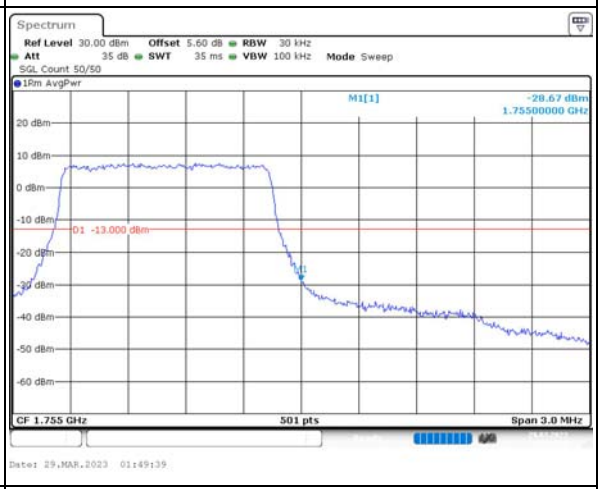
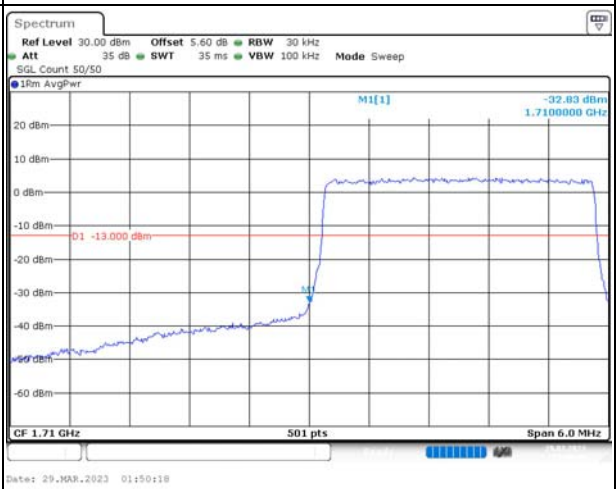
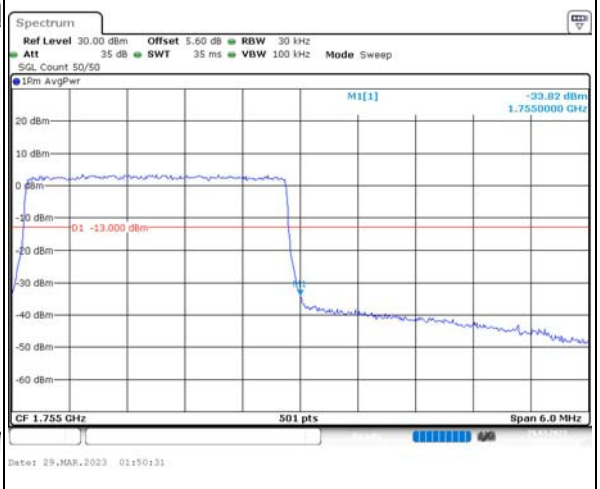
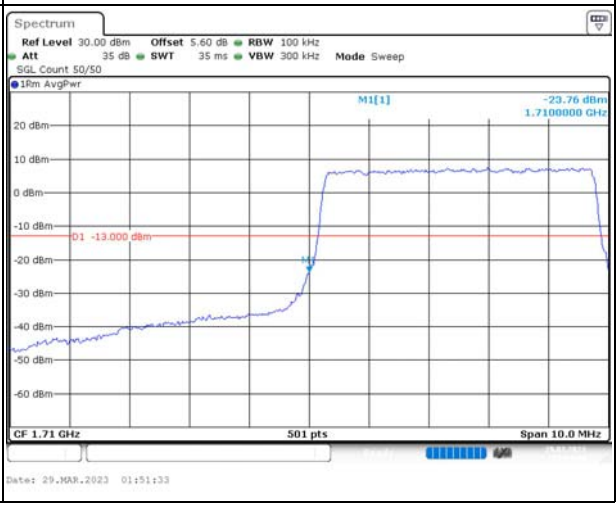
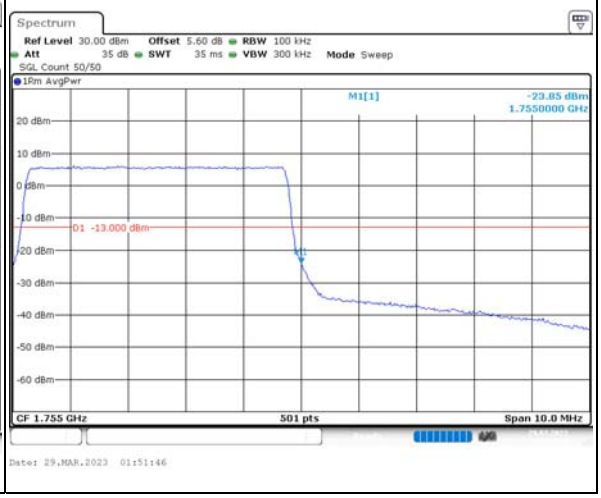
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

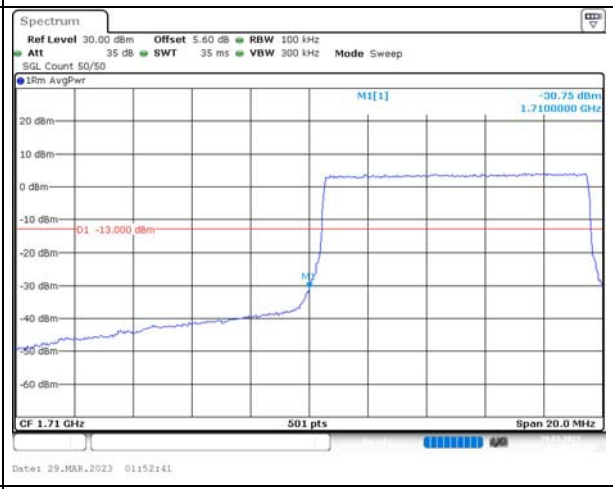
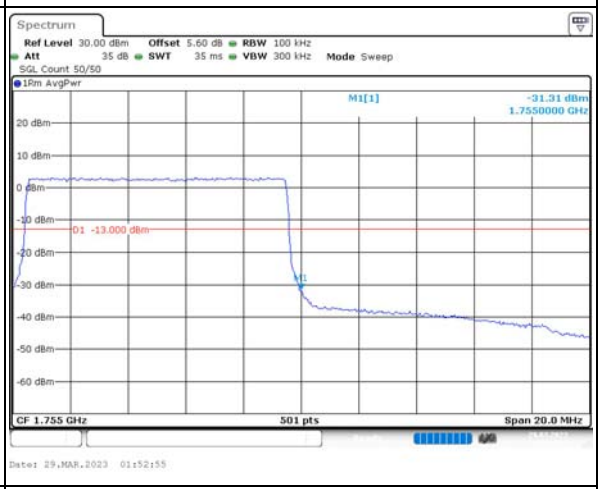
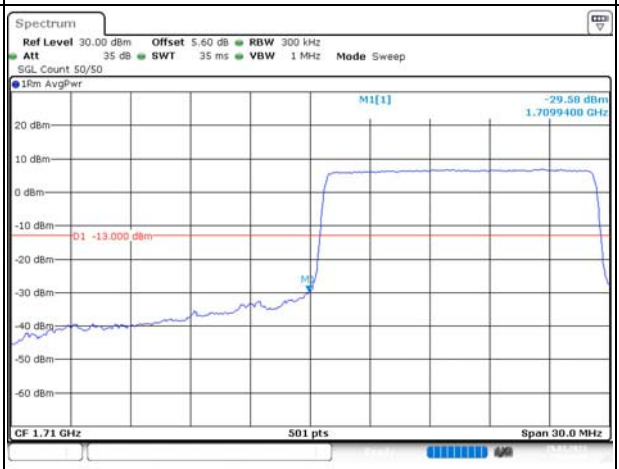
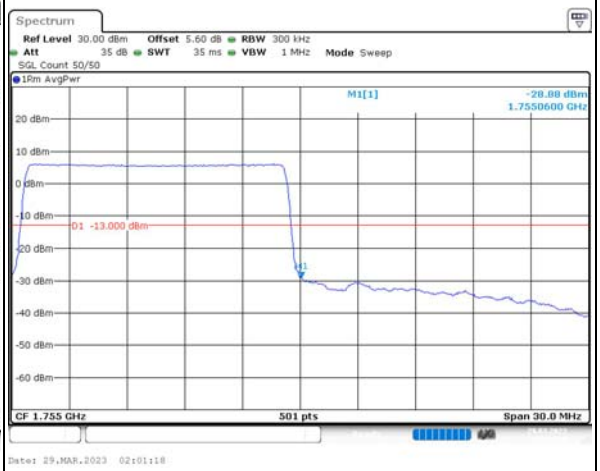
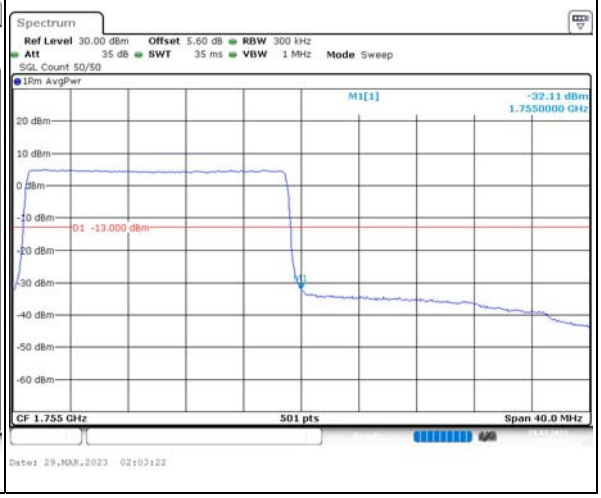
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

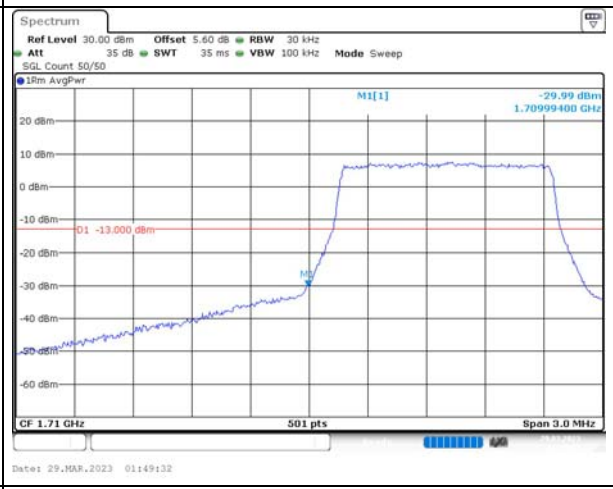
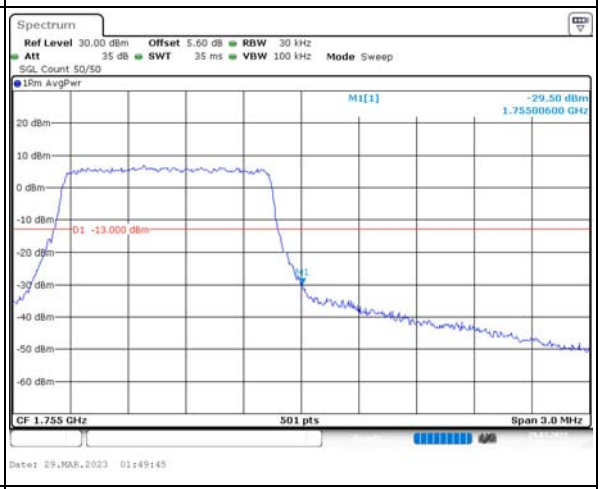
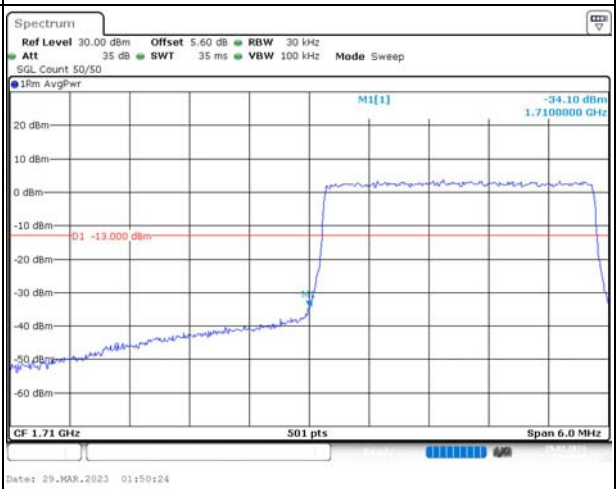
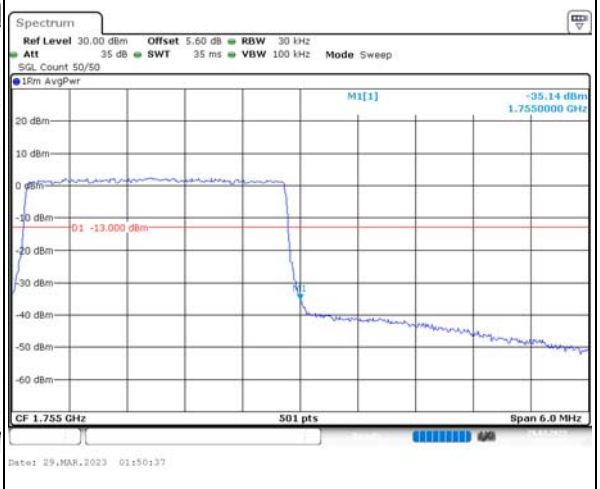
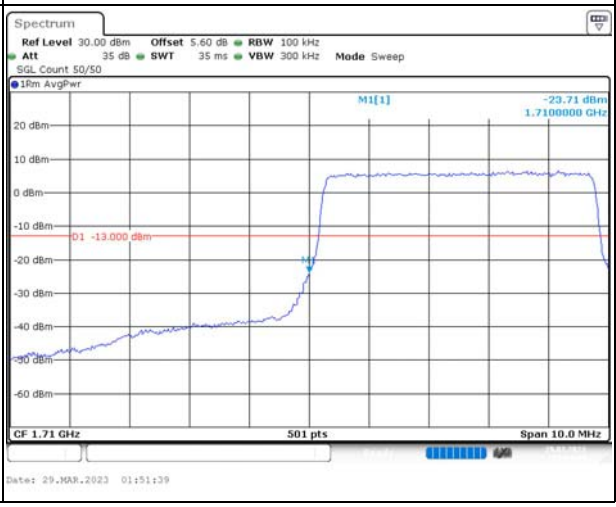
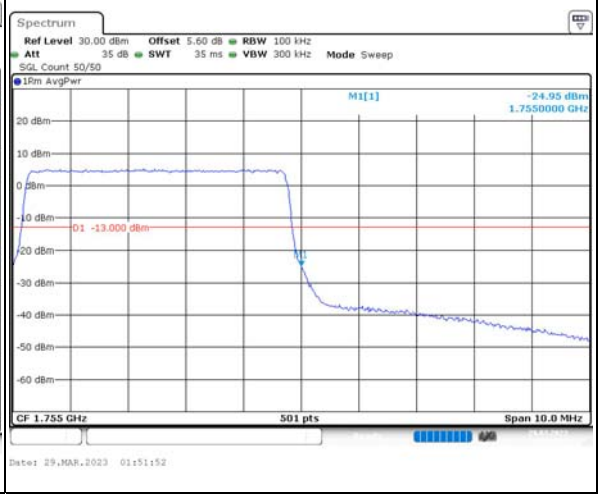
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

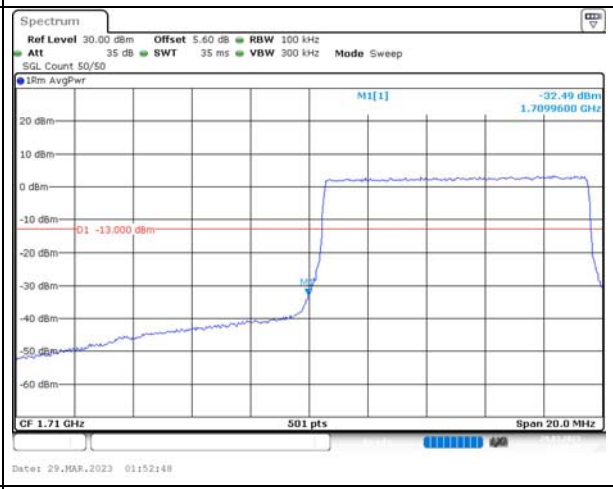
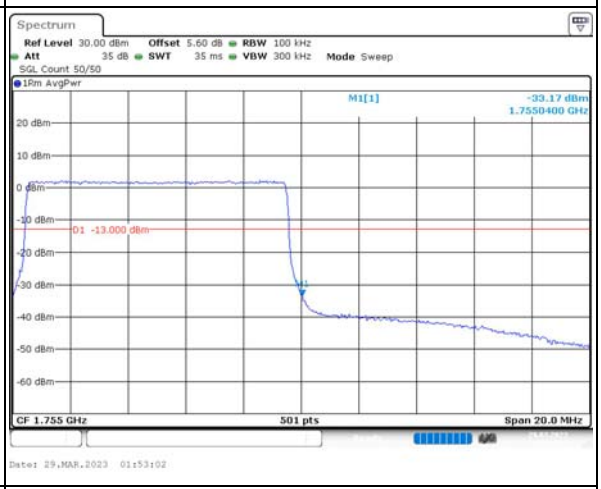
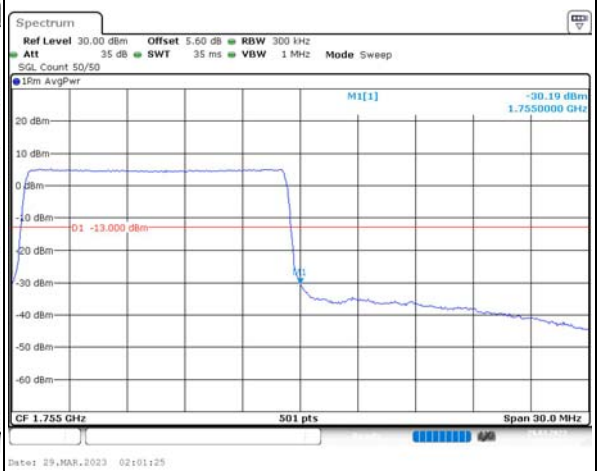
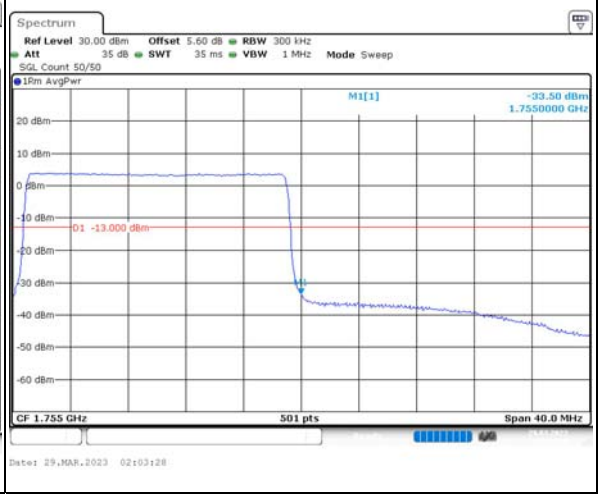
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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

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

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

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

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

4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	23CF-1	Test Date:	2023/3/29~2023/4/12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jou Zhou	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	24.3~25.6	Relative Humidity: (%)	26~45	ATM Pressure: (kPa)	100.3~101.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100004	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/3/31	2023/3/30
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:

RF Output Power:

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.81	23.05	22.79	16.46	38.45
	RB1#3	22.99	23.2	22.87		
	RB1#5	22.85	23.03	22.7		
	RB3#0	22.87	23.08	22.76		
	RB3#3	22.86	23.07	22.73		
	RB6#0	21.9	22.09	21.79		
1.4MHz 16QAM	RB1#0	21.91	22.02	21.73	15.5	38.45
	RB1#3	22.1	22.17	21.85		
	RB1#5	21.94	21.98	21.62		
	RB3#0	21.86	22.16	21.92		
	RB3#3	21.92	22.24	21.79		
	RB6#0	20.93	20.99	20.76		
3MHz QPSK	RB1#0	22.85	23.06	22.82	16.35	38.45
	RB1#8	22.93	23.07	22.77		
	RB1#14	22.96	23.09	22.73		
	RB6#0	21.85	22.04	21.81		
	RB6#9	21.91	22.02	21.75		
	RB15#0	21.91	22.06	21.75		
3MHz 16QAM	RB1#0	21.94	22.06	22.3	15.56	38.45
	RB1#8	22.05	22.01	22.3		
	RB1#14	22.05	22.01	22.23		
	RB6#0	20.82	20.96	20.81		
	RB6#9	20.92	20.95	20.79		
	RB15#0	20.83	21.07	20.82		
5MHz QPSK	RB1#0	22.83	23	22.75	16.37	38.45
	RB1#13	23.08	23.11	22.86		
	RB1#24	22.92	22.99	22.69		
	RB15#0	21.94	22.08	21.84		
	RB15#10	22.01	22.09	21.77		
	RB25#0	21.98	22.08	21.82		
5MHz 16QAM	RB1#0	21.65	22.24	21.81	15.62	38.45
	RB1#13	21.87	22.36	21.91		
	RB1#24	21.84	22.23	21.67		
	RB15#0	20.96	21.02	20.81		
	RB15#10	21.02	21.02	20.81		
	RB25#0	21	21	20.84		
10MHz QPSK	RB1#0	22.87	23.02	22.95	16.44	38.45
	RB1#25	23.17	23.18	23		
	RB1#49	23.16	22.98	22.77		
	RB25#0	22	22.02	22.03		

	RB25#25	22.23	22.08	21.87		
	RB50#0	22.09	22.03	21.93		
10MHz 16QAM	RB1#0	21.82	22.55	21.94	15.91	38.45
	RB1#25	22.13	22.65	22.1		
	RB1#49	22.06	22.49	21.69		
	RB25#0	21.02	21.01	20.91		
	RB25#25	21.22	21.12	20.9		
	RB50#0	21.09	21.03	20.9		
Note: ERP= Conducted Power(dBm) - L_C(dB) + G_T(dBd) G_T(dBd)=G_T(dBi)-2.15						
					Result:	**Pass**

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	5.57	5.01	5.25	13
	RB50#0	5.39	5.1	5.28	13
10MHz 16QAM	RB1#0	6.52	5.62	5.94	13
	RB50#0	6.23	6.03	6.12	13
				Result:	**Pass**

Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.096	1.102	1.296	1.302	1.314
1.4MHz 16QAM	1.102	1.096	1.09	1.296	1.326	1.29
3MHz QPSK	2.683	2.683	2.695	2.892	2.88	2.868
3MHz 16QAM	2.683	2.683	2.683	2.88	2.892	2.88
5MHz QPSK	4.531	4.531	4.531	5.2	5.78	5.18
5MHz 16QAM	4.551	4.551	4.511	5.22	5.24	5.18
10MHz QPSK	8.982	8.942	8.982	9.84	9.92	10
10MHz 16QAM	8.982	8.942	8.942	10.04	9.88	9.76
Note: The test plots please refer to the Plots of Occupied Bandwidth						

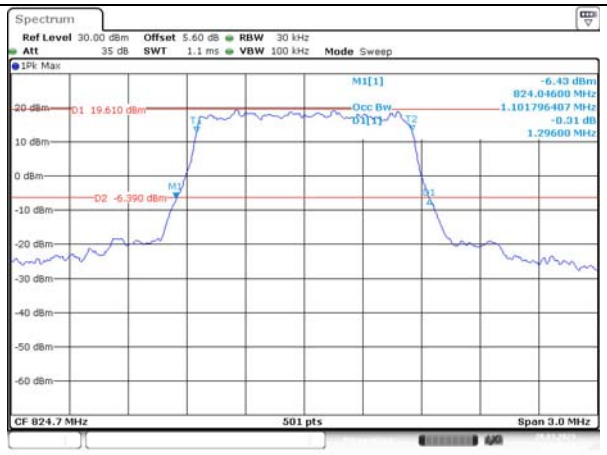
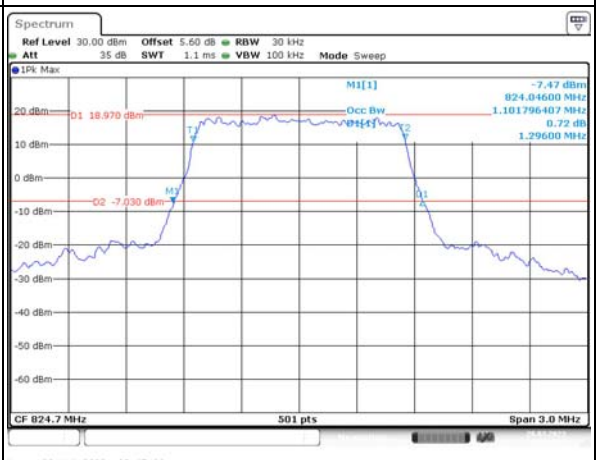
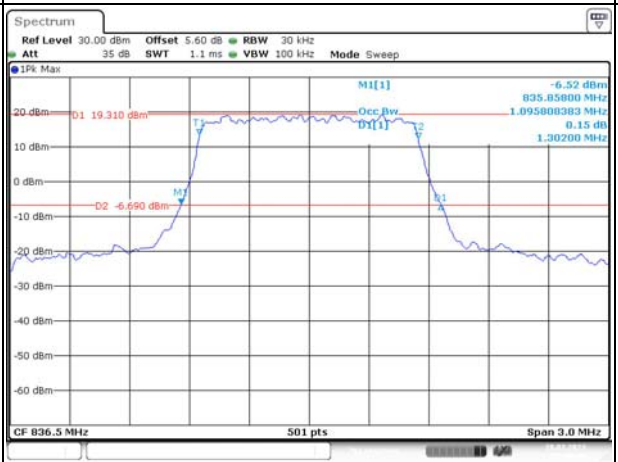
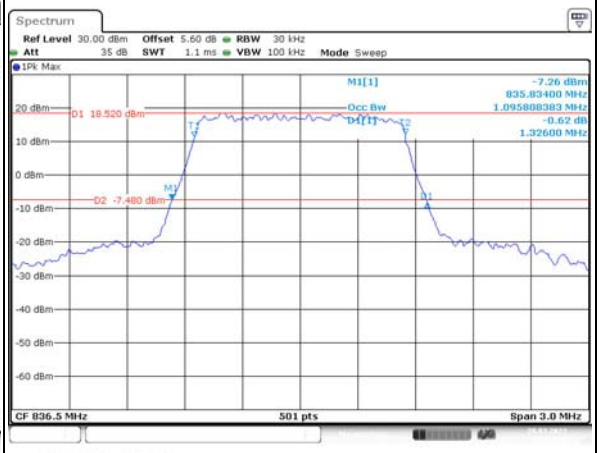
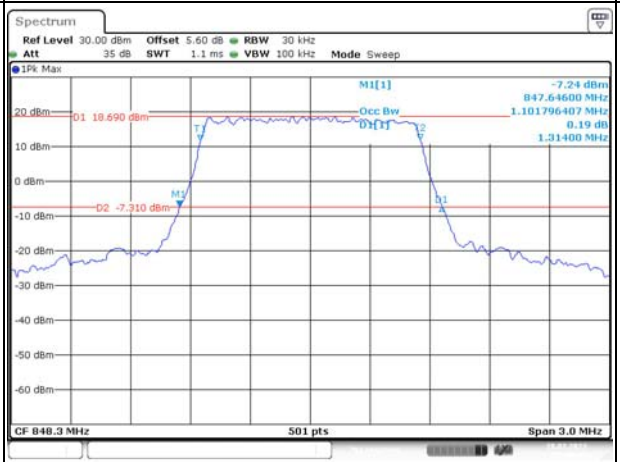
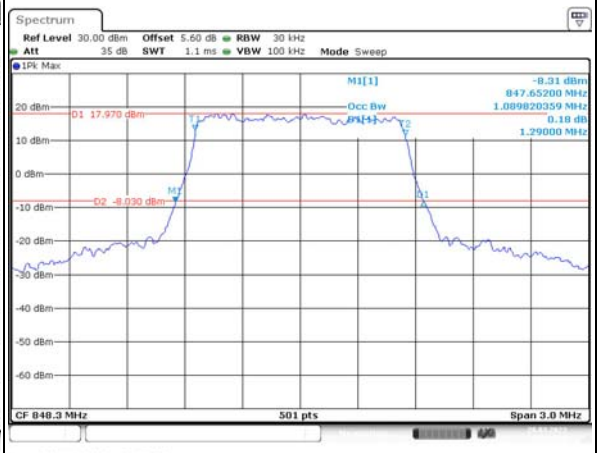
Spurious Emissions at Antenna Terminal	
Result:	**Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

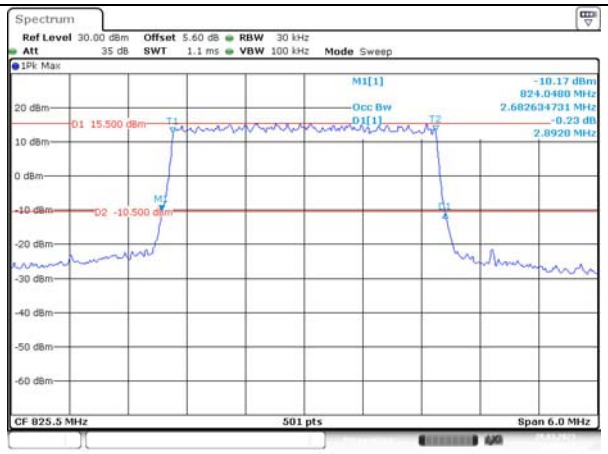
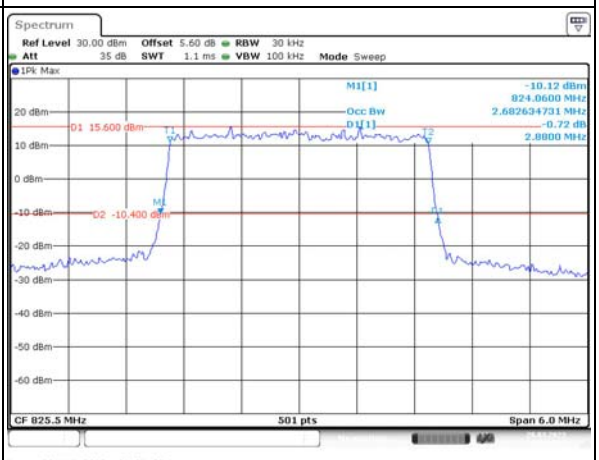
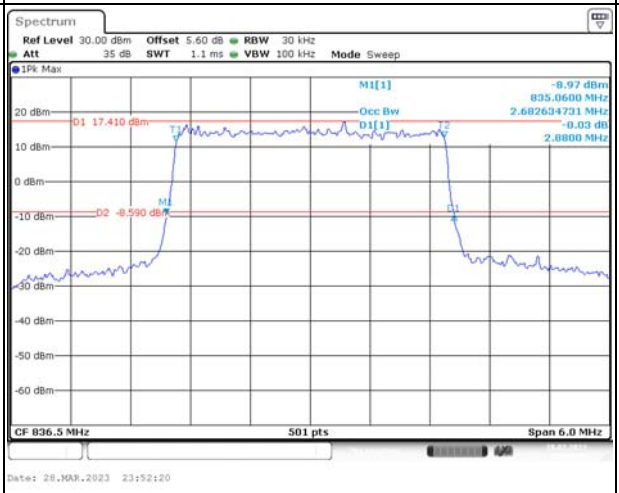
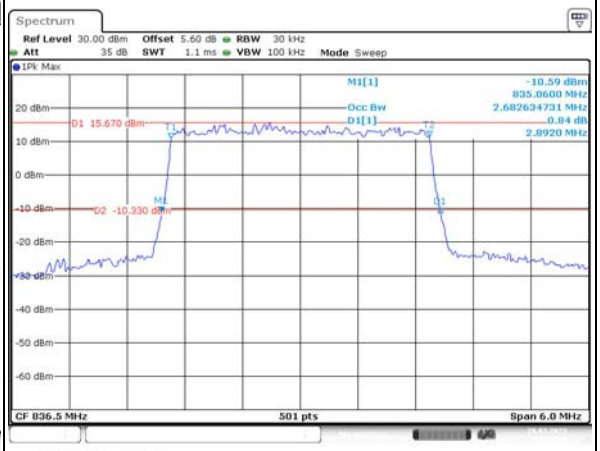
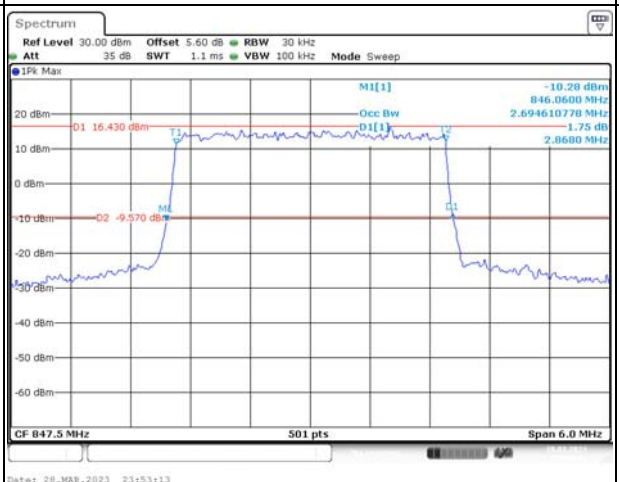
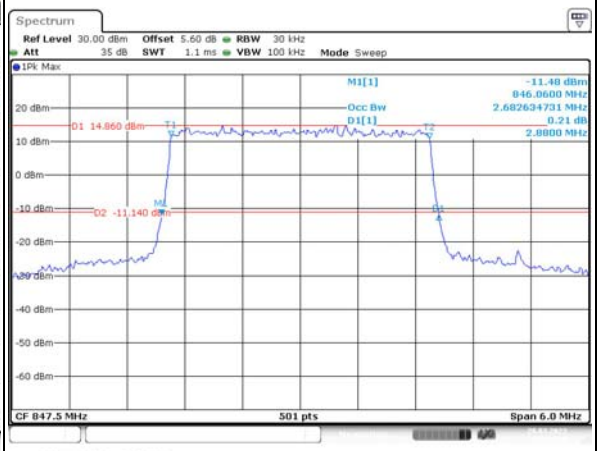
Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

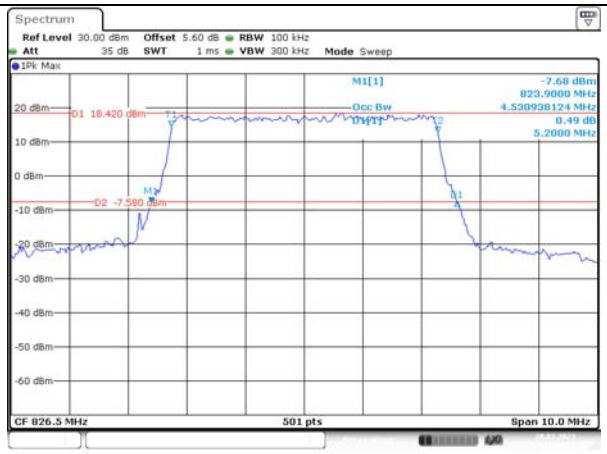
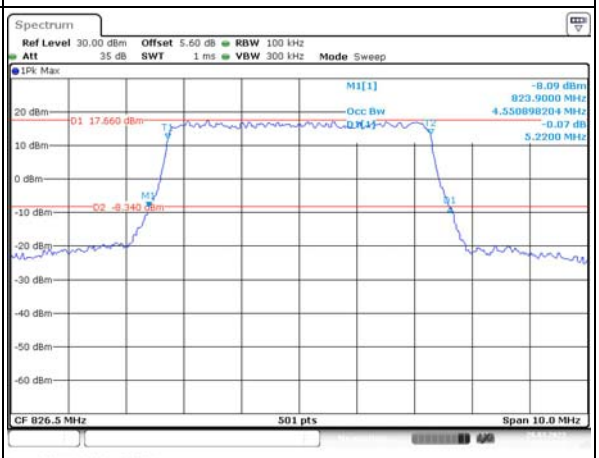
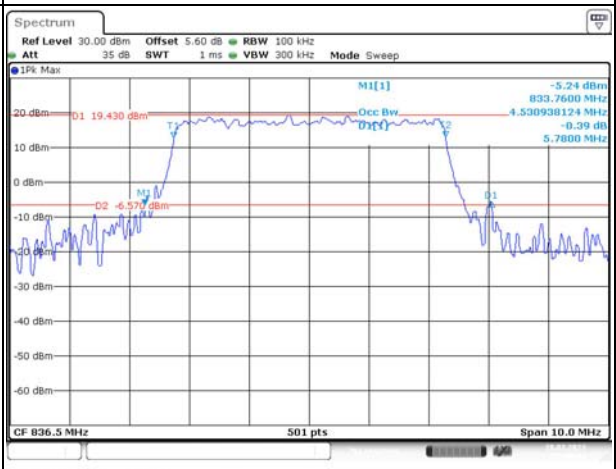
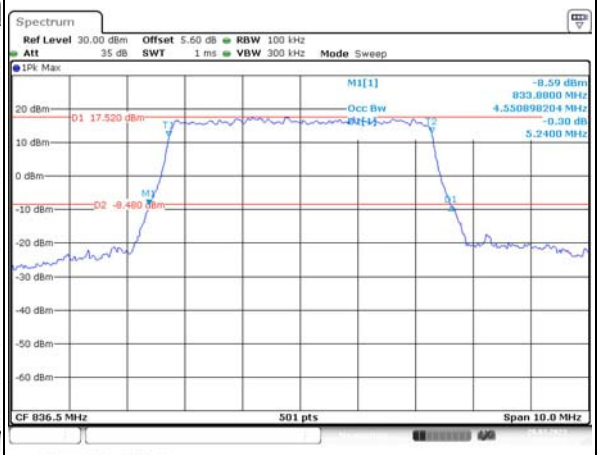
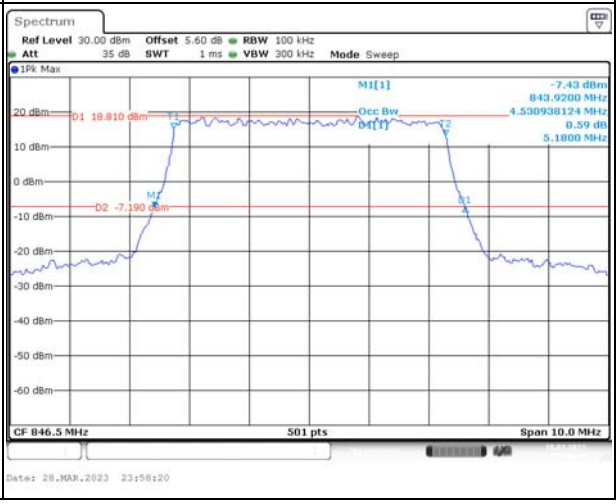
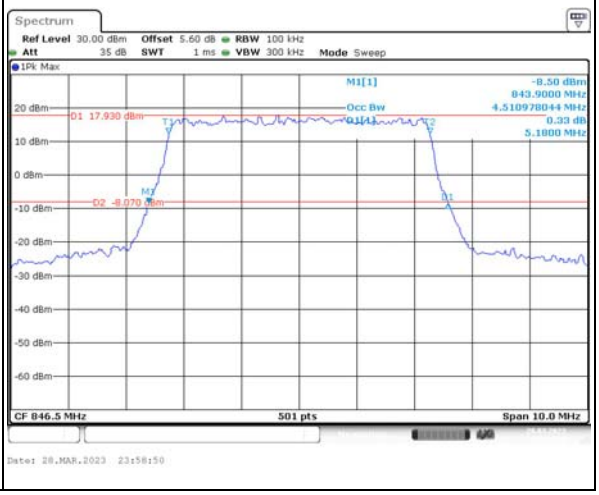
Frequency Stability					
Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (℃)	Voltage (V_{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	25	0.030	2.5
	-20	3.8	35	0.042	2.5
	-10	3.8	26	0.031	2.5
	0	3.8	8	0.010	2.5
	10	3.8	56	0.067	2.5
	20	3.8	13	0.016	2.5
	30	3.8	22	0.026	2.5
	40	3.8	34	0.041	2.5
	50	3.8	25	0.030	2.5
Frequency Stability vs. Voltage	20	3.6	26	0.031	2.5
	20	4.35	22	0.026	2.5
				Result:	**Pass**

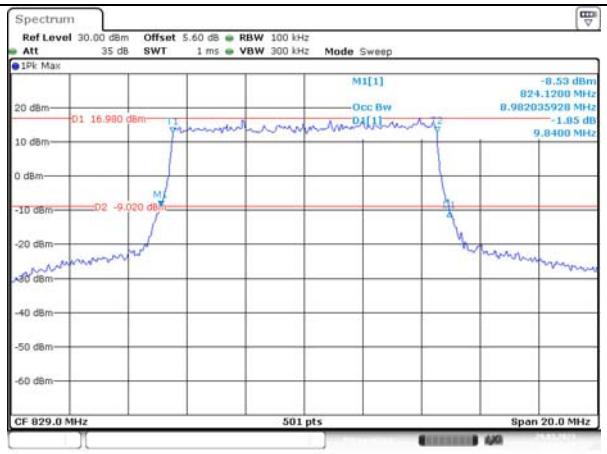
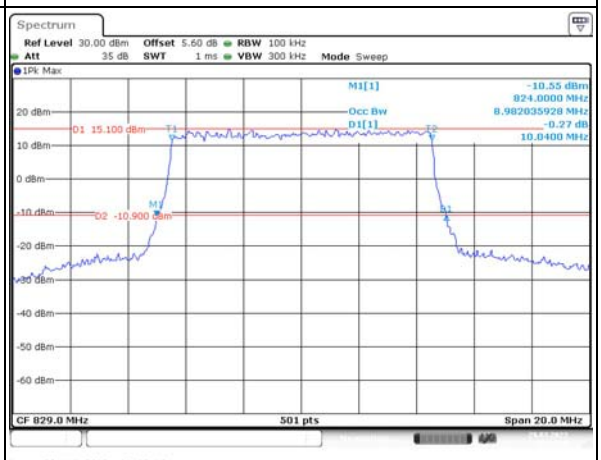
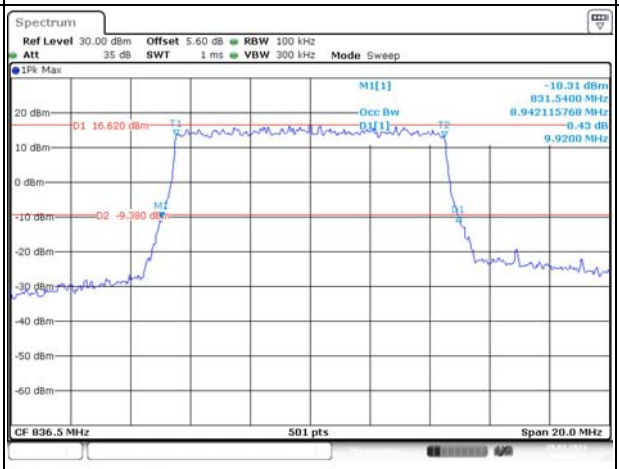
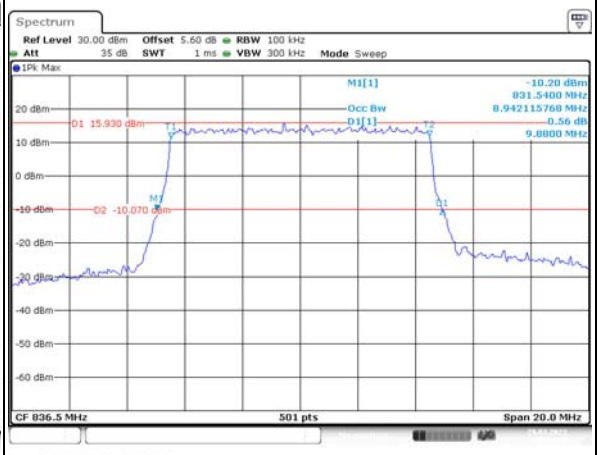
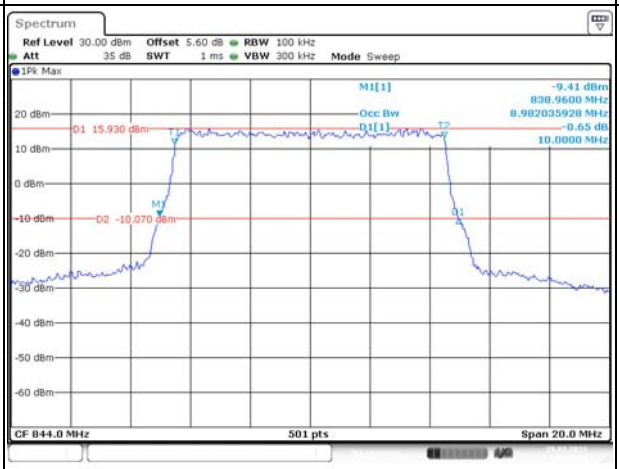
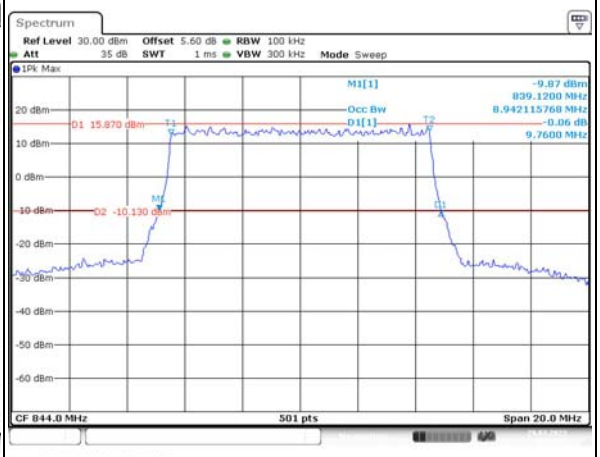
Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (℃)	Voltage (V_{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	15	0.018	2.5
	-20	3.8	19	0.023	2.5
	-10	3.8	37	0.044	2.5
	0	3.8	56	0.067	2.5
	10	3.8	15	0.018	2.5
	20	3.8	18	0.022	2.5
	30	3.8	20	0.024	2.5
	40	3.8	26	0.031	2.5
	50	3.8	28	0.033	2.5
Frequency Stability vs. Voltage	20	3.6	47	0.056	2.5
	20	4.35	31	0.037	2.5
				Result:	**Pass**

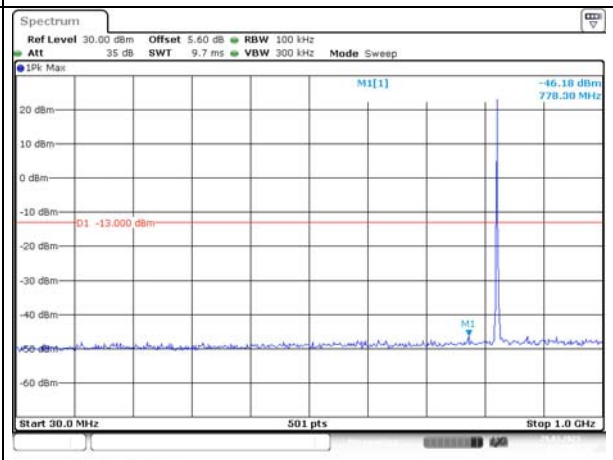
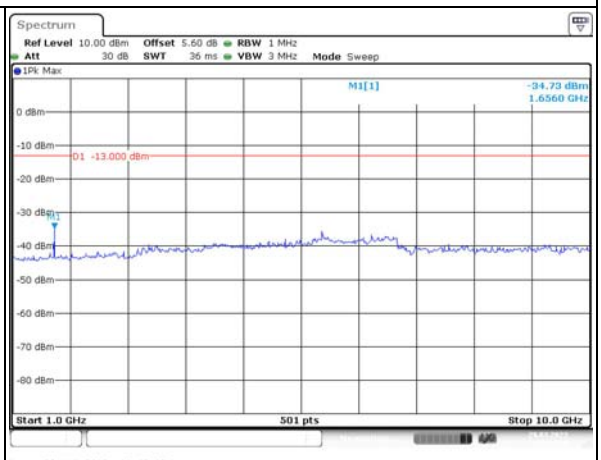
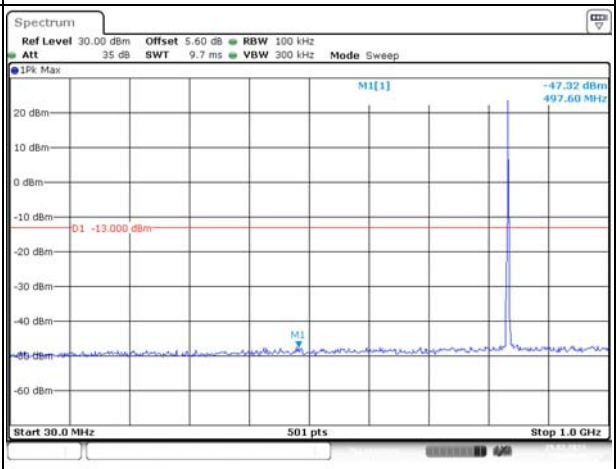
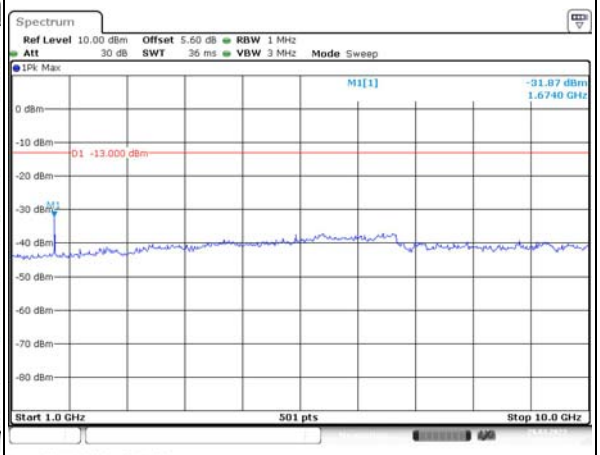
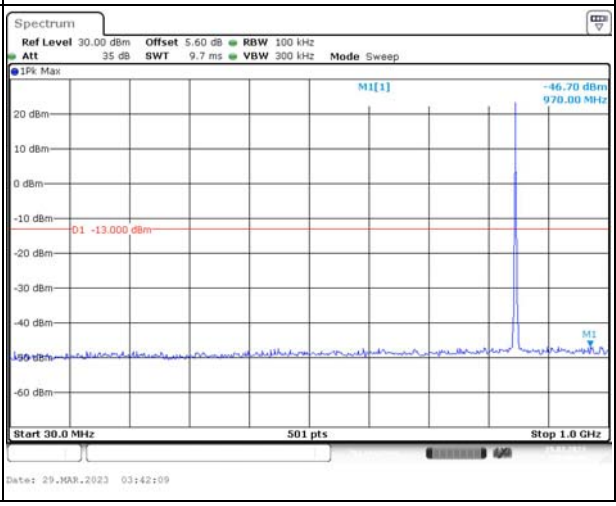
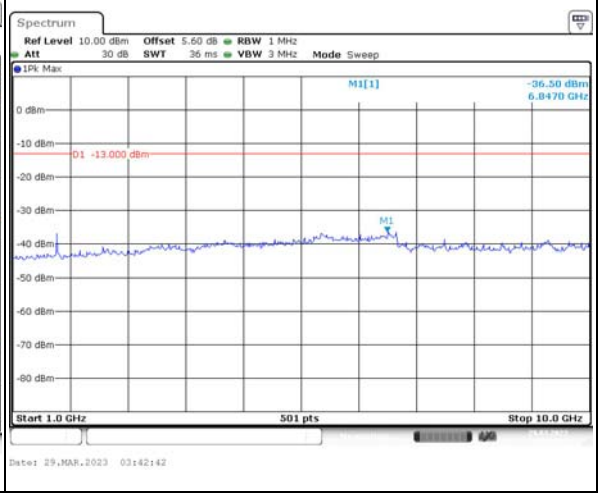
Test Plots(Note: The 5.6 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

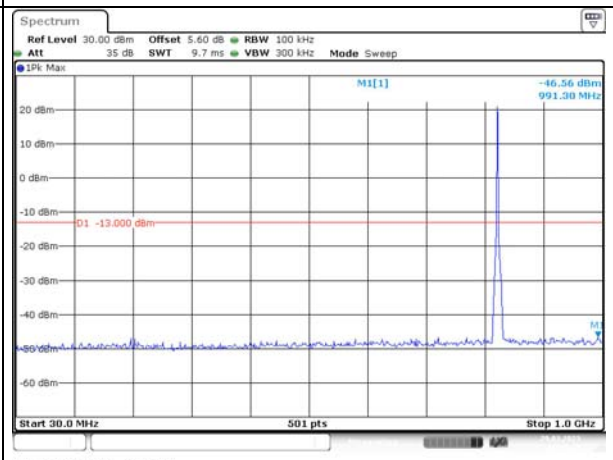
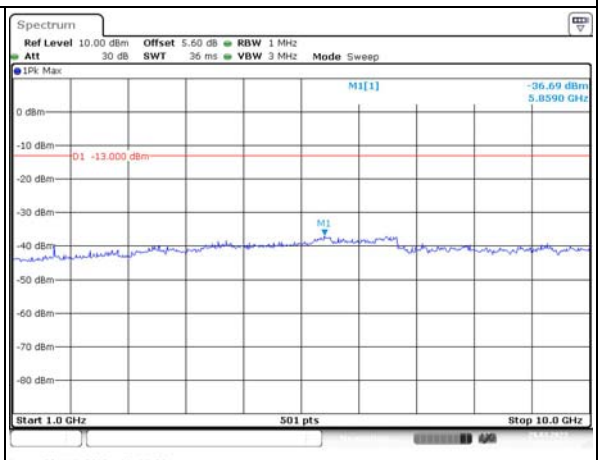
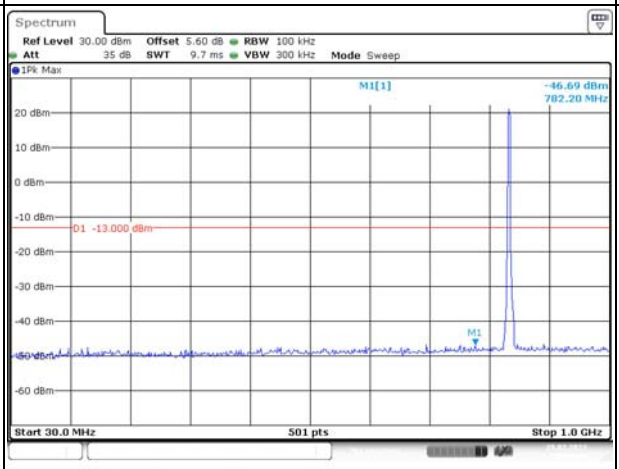
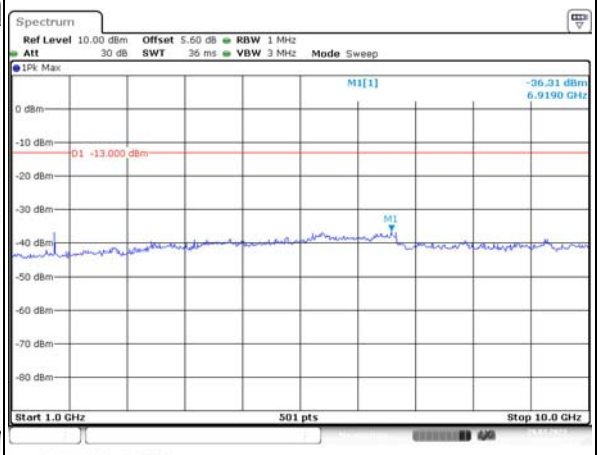
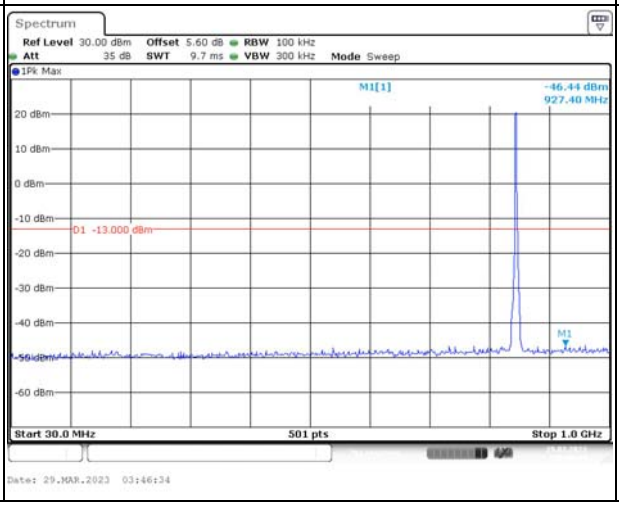
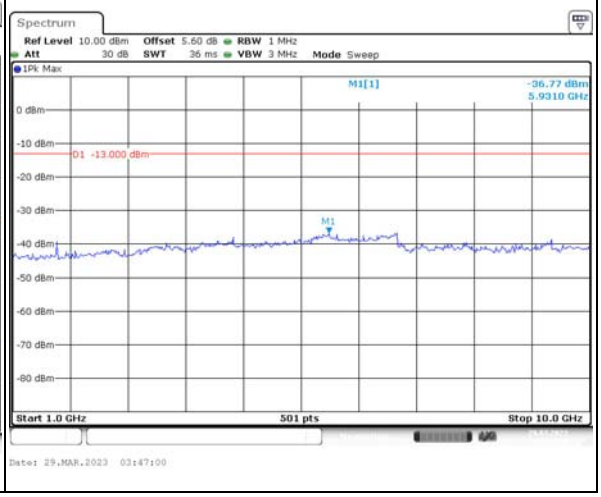
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

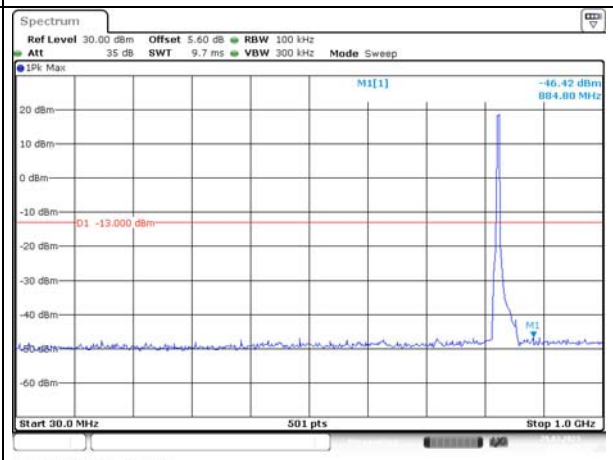
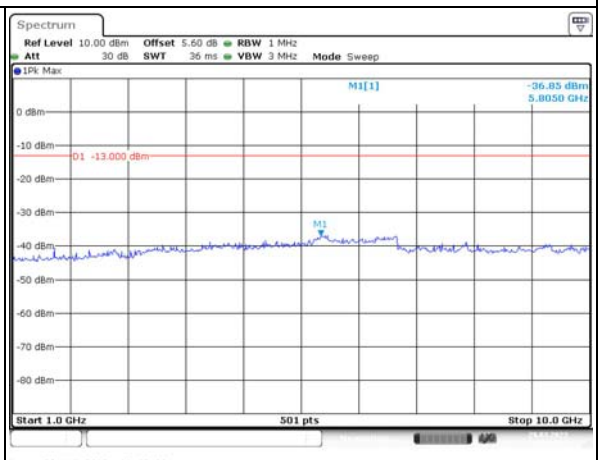
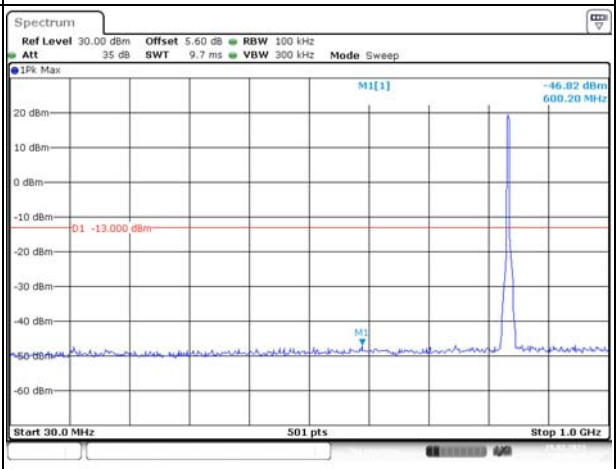
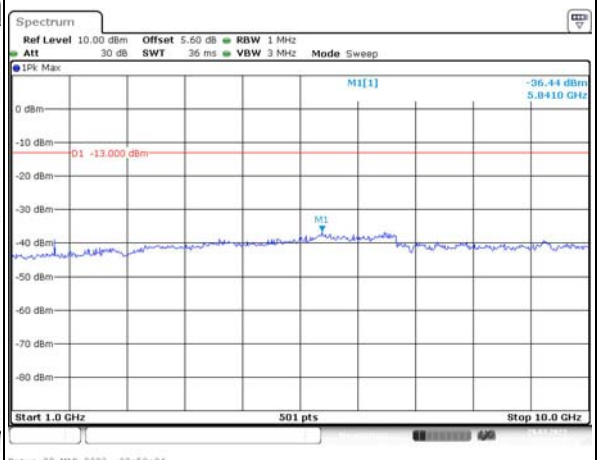
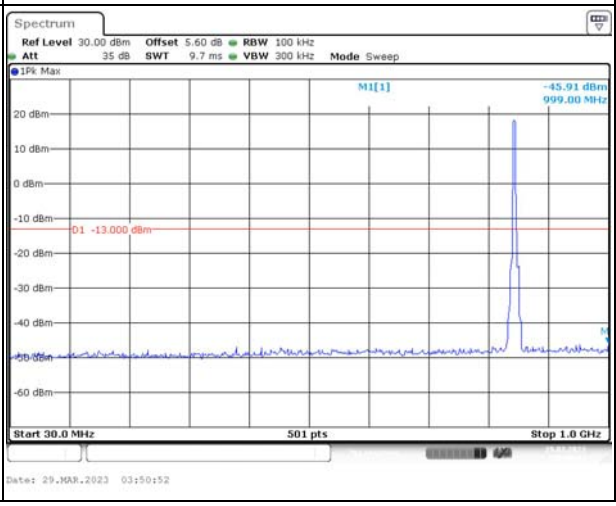
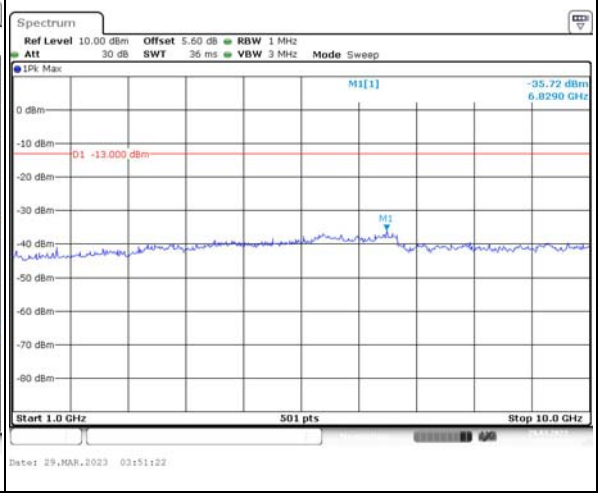
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

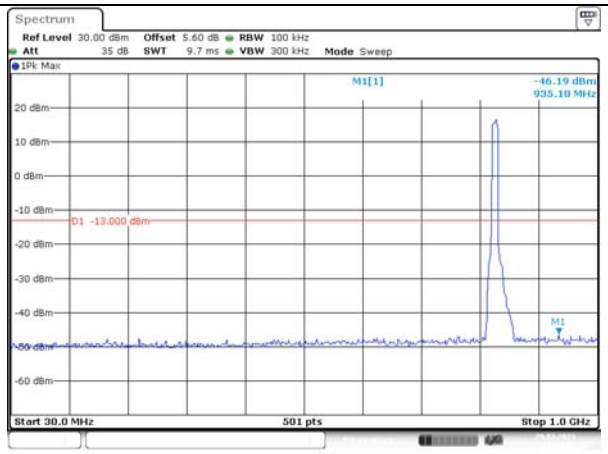
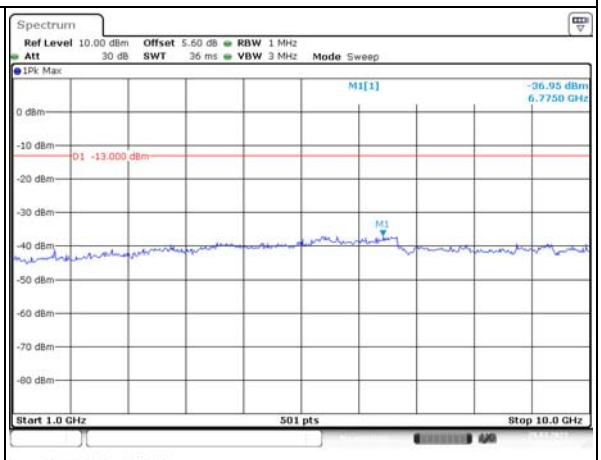
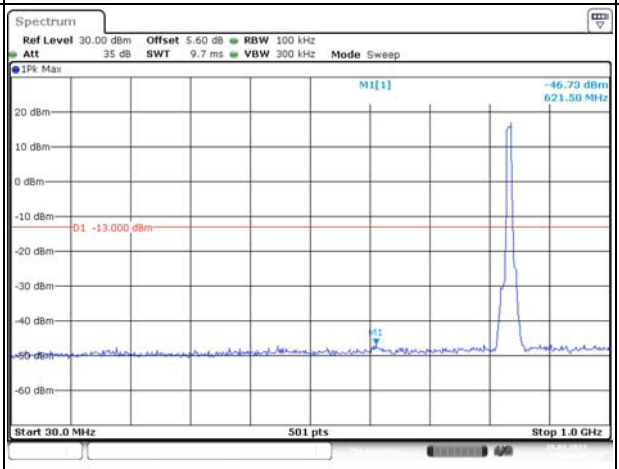
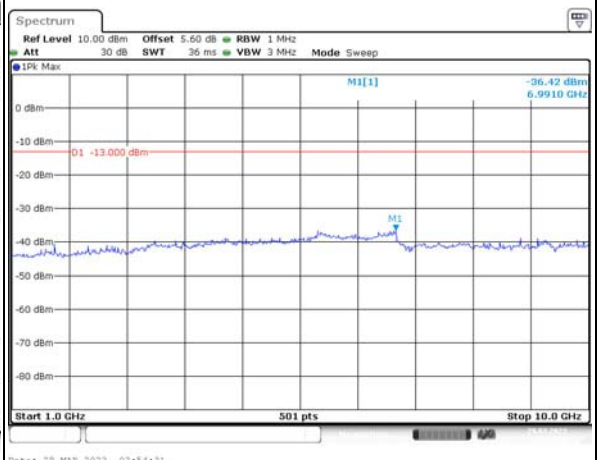
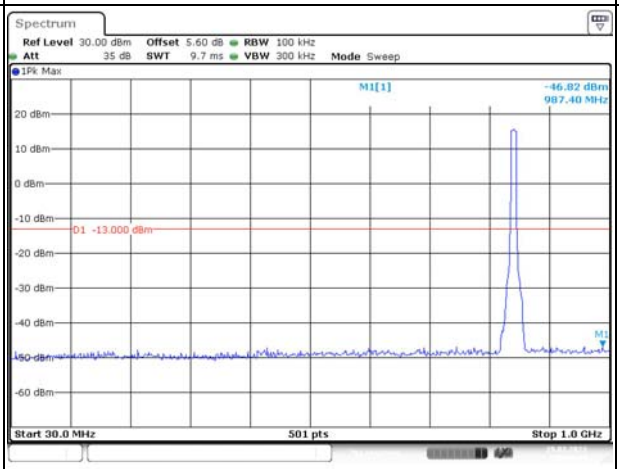
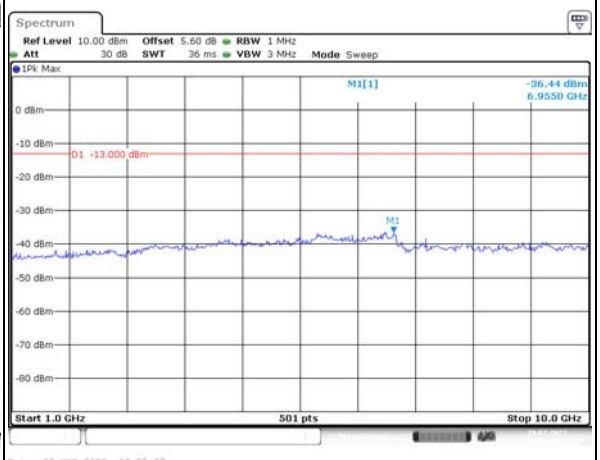
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

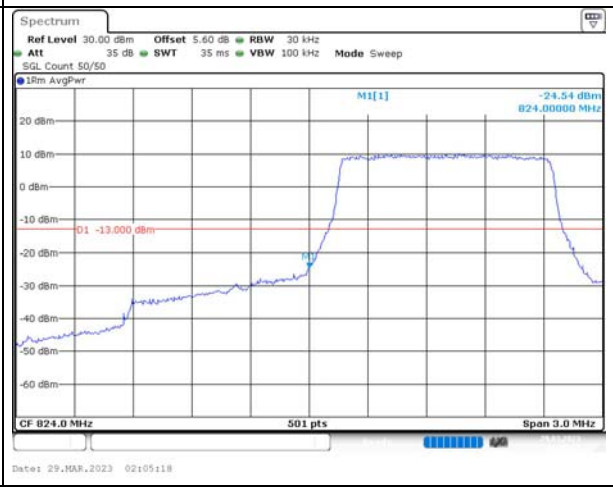
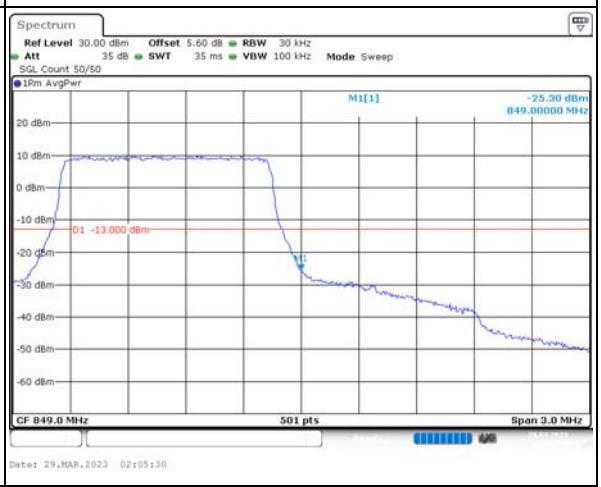
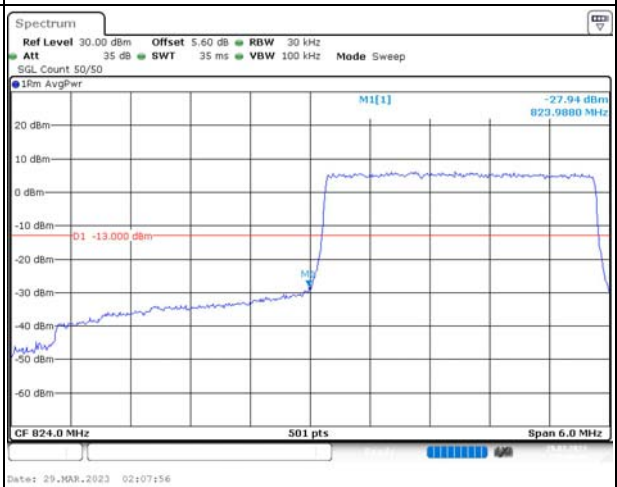
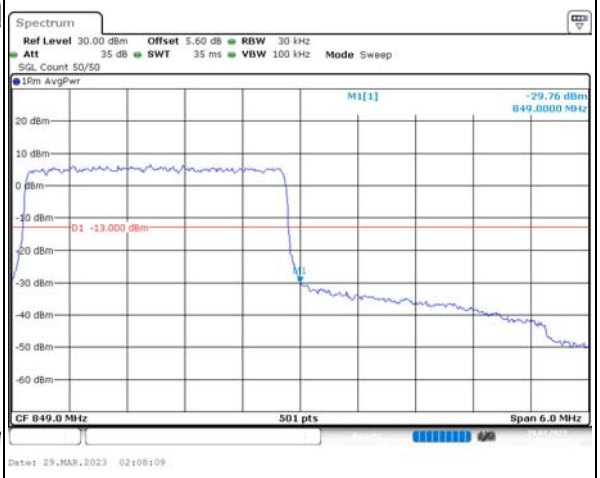
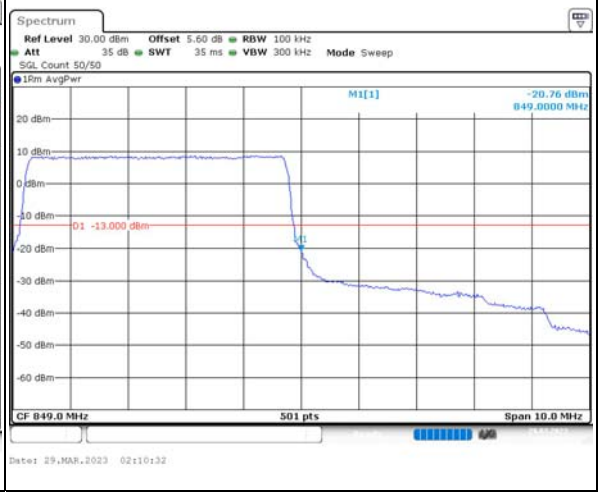
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

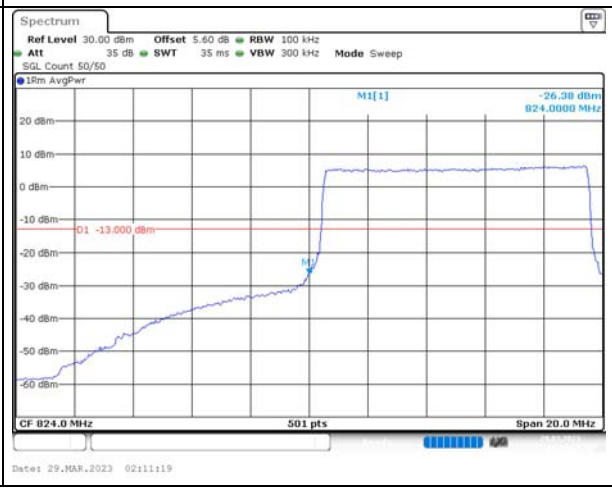
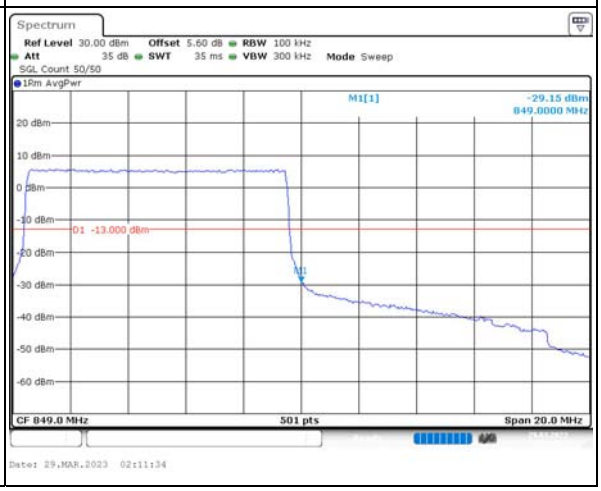
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

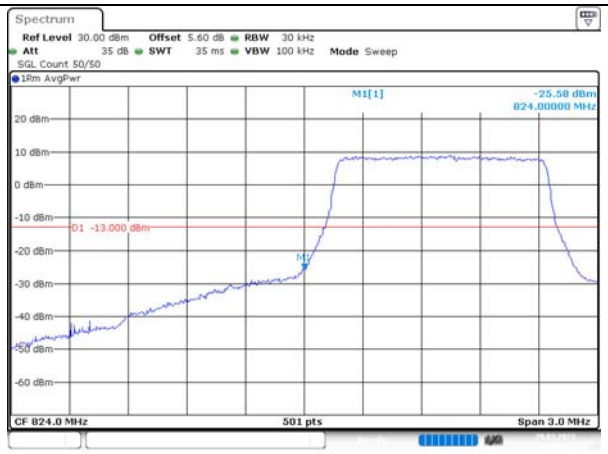
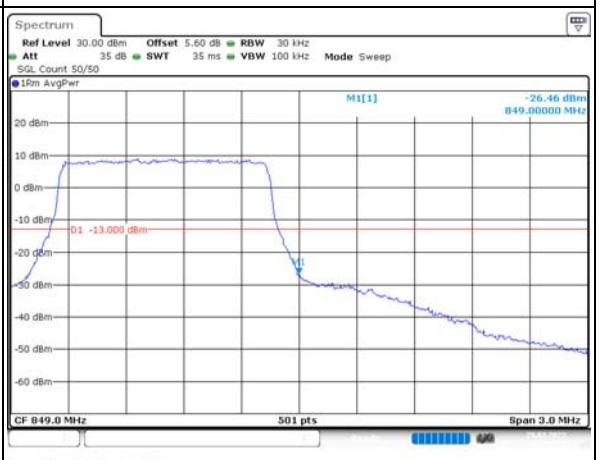
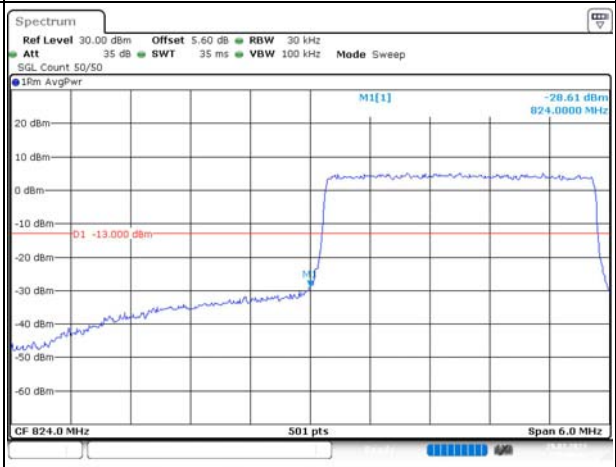
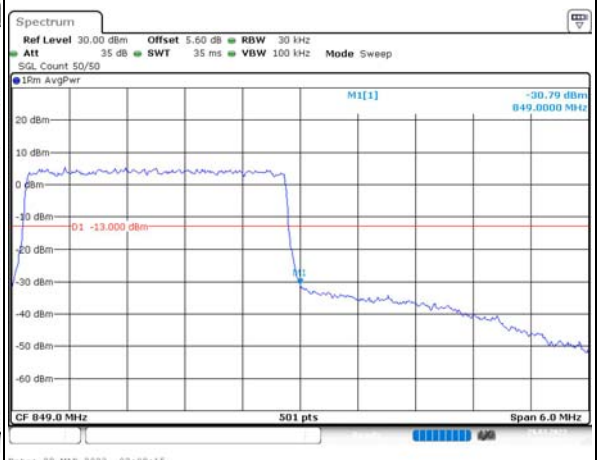
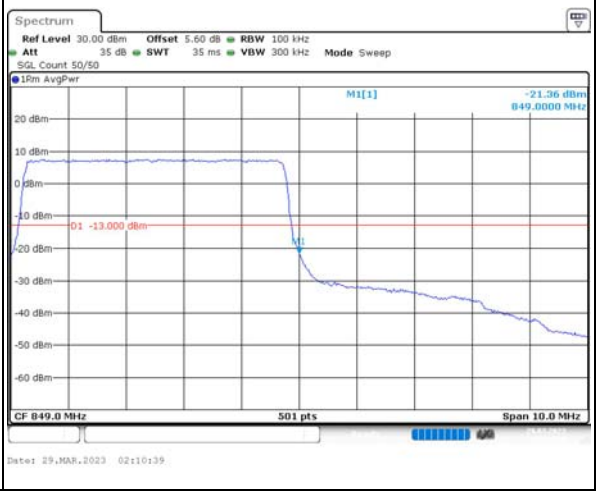
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

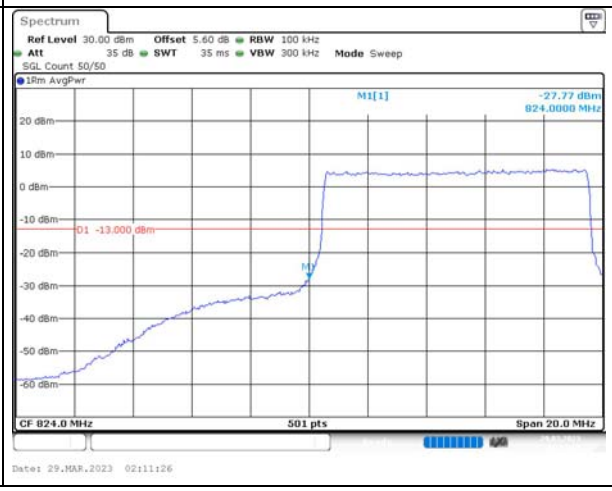
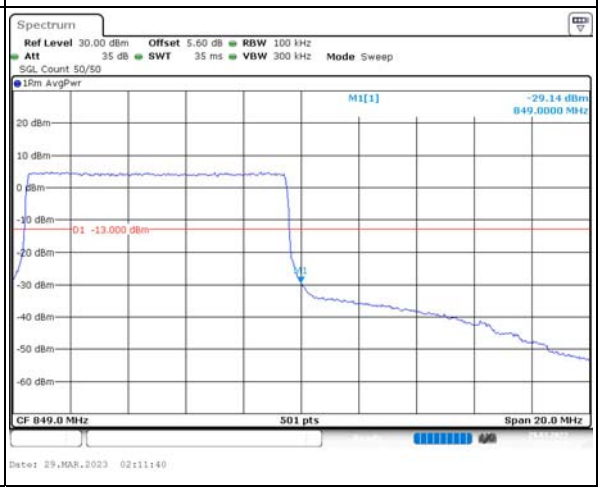
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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

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

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

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

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

4.9 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	23CF-1	Test Date:	2023/3/29~2023/4/12
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jou Zhou	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	24.3~25.6	Relative Humidity: (%)	26~45	ATM Pressure: (kPa)	100.3~101.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100004	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/3/31	2023/3/30
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	711

Test Data:

RF Output Power:

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	21.73	21.8	21.46	17.95	34.77
	RB1#3	21.86	21.96	21.58		
	RB1#5	21.76	21.81	21.55		
	RB3#0	21.87	21.81	21.46		
	RB3#3	21.83	21.84	21.48		
	RB6#0	20.8	20.6	21.03		
1.4MHz 16QAM	RB1#0	20.78	20.5	20.39	16.94	34.77
	RB1#3	20.95	20.51	20.63		
	RB1#5	20.81	20.52	20.47		
	RB3#0	20.72	20.43	20.75		
	RB3#3	20.75	20.46	20.94		
	RB6#0	19.8	19.35	19.96		
3MHz QPSK	RB1#0	21.88	21.83	21.95	18.02	34.77
	RB1#8	21.85	21.8	21.98		
	RB1#14	21.87	21.79	22.03		
	RB6#0	20.81	20.81	20.97		
	RB6#9	20.83	20.83	20.96		
	RB15#0	20.8	20.85	20.94		
3MHz 16QAM	RB1#0	20.79	21.37	21.02	17.36	34.77
	RB1#8	20.78	21.36	21.05		
	RB1#14	20.81	21.37	21.12		
	RB6#0	19.75	19.8	19.91		
	RB6#9	19.72	19.89	19.97		
	RB15#0	19.79	19.87	19.86		
5MHz QPSK	RB1#0	21.78	21.78	21.81	17.98	34.77
	RB1#13	21.89	21.89	21.99		
	RB1#24	21.78	21.82	21.95		
	RB15#0	20.86	20.84	20.89		
	RB15#10	20.78	20.92	20.91		
	RB25#0	20.82	20.88	20.86		
5MHz 16QAM	RB1#0	20.57	21.01	20.84	17.18	34.77
	RB1#13	20.72	21.19	20.98		
	RB1#24	20.65	21.11	20.98		
	RB15#0	19.84	19.78	19.88		
	RB15#10	19.72	19.86	19.92		
	RB25#0	19.81	19.84	19.85		
10MHz QPSK	RB1#0	21.78	21.74	21.74	18.02	34.77
	RB1#25	21.98	21.98	22.01		
	RB1#49	21.98	21.98	22.03		
	RB25#0	20.97	20.96	20.77		

	RB25#25	20.91	21.08	20.99		
	RB50#0	20.89	21.02	20.97		
10MHz 16QAM	RB1#0	20.86	20.73	21.33	16.41	34.77
	RB1#25	21.07	20.96	21.56		
	RB1#49	21.08	20.91	21.49		
	RB25#0	19.91	19.99	19.79		
	RB25#25	19.85	20.14	20.05		
	RB50#0	19.85	20.02	19.94		

Note:
ERP= Conducted Power(dBm) - L_C(dB) + G_T(dBd)
G_T(dBd)=G_T(dBi)-2.15

Result:	**Pass**

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	4.72	4.58	5.36	13
	RB50#0	5.16	5.28	5.13	13
10MHz 16QAM	RB1#0	5.68	5.28	6.23	13
	RB50#0	6.03	6.12	5.97	13
				Result:	**Pass**

Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.096	1.102	1.096	1.308	1.29	1.314
1.4MHz 16QAM	1.09	1.102	1.102	1.29	1.29	1.32
3MHz QPSK	2.683	2.683	2.683	2.892	2.88	2.88
3MHz 16QAM	2.683	2.683	2.683	2.88	2.892	2.88
5MHz QPSK	4.511	4.531	4.531	5.18	5.18	5.2
5MHz 16QAM	4.511	4.531	4.511	5.16	5.24	5.14
10MHz QPSK	8.982	8.982	8.982	9.96	9.92	9.88
10MHz 16QAM	8.942	8.982	8.982	9.84	9.96	9.92

Note: The test plots please refer to the Plots of Occupied Bandwidth

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

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

Frequency Stability						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.500	699.00	715.491	716.00
	-20	3.8	699.496	699.00	715.486	716.00
	-10	3.8	699.492	699.00	715.510	716.00
	0	3.8	699.489	699.00	715.491	716.00
	10	3.8	699.501	699.00	715.508	716.00
	20	3.8	699.514	699.00	715.486	716.00
	30	3.8	699.495	699.00	715.508	716.00
	40	3.8	699.503	699.00	715.487	716.00
	50	3.8	699.505	699.00	715.501	716.00
Frequency Stability vs. Voltage	20	3.6	699.485	699.00	715.504	716.00
	20	4.35	699.507	699.00	715.514	716.00
					Result:	**Pass**

Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.493	699.00	715.490	716.00
	-20	3.8	699.507	699.00	715.503	716.00
	-10	3.8	699.499	699.00	715.500	716.00
	0	3.8	699.486	699.00	715.497	716.00
	10	3.8	699.493	699.00	715.493	716.00
	20	3.8	699.514	699.00	715.486	716.00
	30	3.8	699.489	699.00	715.488	716.00
	40	3.8	699.489	699.00	715.503	716.00
	50	3.8	699.495	699.00	715.500	716.00
Frequency Stability vs. Voltage	20	3.6	699.510	699.00	715.491	716.00
	20	4.35	699.491	699.00	715.506	716.00
					Result:	**Pass**