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	20.84	20.73	20.62	19.34	30
	RB1#3	20.94	20.78	20.59		
	RB1#5	20.87	20.72	20.68		
	RB3#0	20.87	20.73	20.77		
	RB3#3	20.89	20.86	20.71		
	RB6#0	19.92	19.75	19.76		
1.4MHz 16QAM	RB1#0	20.67	19.31	20.25	19.08	30
	RB1#3	20.68	19.31	20.38		
	RB1#5	20.6	19.23	20.33		
	RB3#0	19.77	19.6	19.71		
	RB3#3	19.72	19.67	19.75		
	RB6#0	19.42	19.21	18.75		
3MHz QPSK	RB1#0	20.89	20.63	20.69	19.31	30
	RB1#8	20.9	20.64	20.59		
	RB1#14	20.91	20.61	20.67		
	RB6#0	19.87	19.9	19.65		
	RB6#9	19.94	19.84	19.56		
	RB15#0	19.89	19.88	19.68		
3MHz 16QAM	RB1#0	20.65	19.46	19.77	19.05	30
	RB1#8	20.6	19.51	19.73		
	RB1#14	20.54	19.52	19.68		
	RB6#0	19.42	19.01	18.72		
	RB6#9	19	19.45	18.68		
	RB15#0	19.31	19.29	18.75		
5MHz QPSK	RB1#0	20.8	20.68	20.81	19.27	30
	RB1#13	20.8	20.72	20.77		
	RB1#24	20.87	20.72	20.75		
	RB15#0	19.87	19.9	19.84		
	RB15#10	19.89	19.86	19.81		
	RB25#0	19.8	19.83	19.76		
5MHz 16QAM	RB1#0	19.92	19.6	18.84	18.42	30
	RB1#13	19.95	19.56	18.85		
	RB1#24	20.02	19.52	18.88		
	RB15#0	19.25	18.92	18.84		
	RB15#10	18.79	19.31	18.82		
	RB25#0	18.91	19.09	18.85		
10MHz QPSK	RB1#0	21.1	20.77	20.73	19.5	30
	RB1#25	20.98	20.8	20.81		
	RB1#49	21.03	20.88	20.71		
	RB25#0	19.72	19.83	19.7		

	RB25#25	19.83	19.82	19.68		
	RB50#0	19.73	19.76	19.83		
10MHz 16QAM	RB1#0	20.08	19.39	19.92	18.48	30
	RB1#25	20.03	19.31	19.95		
	RB1#49	20.05	19.31	19.95		
	RB25#0	19.03	18.99	19.24		
	RB25#25	19.04	19.37	18.81		
	RB50#0	19	19.2	18.8		
15MHz QPSK	RB1#0	21.05	20.73	20.79	19.45	30
	RB1#38	21.03	20.77	20.76		
	RB1#74	21.03	20.72	20.79		
	RB36#0	19.79	19.75	19.82		
	RB36#39	19.89	19.82	19.78		
	RB75#0	19.78	19.91	19.71		
15MHz 16QAM	RB1#0	20.1	20.1	19.98	18.52	30
	RB1#38	20.02	20.12	19.99		
	RB1#74	20.03	20.07	19.97		
	RB36#0	18.96	18.86	18.95		
	RB36#39	19.42	19.24	18.89		
	RB75#0	18.97	19.32	19.22		
20MHz QPSK	RB1#0	21	20.93	20.92	19.4	30
	RB1#50	20.98	20.86	20.93		
	RB1#99	20.99	20.92	20.92		
	RB50#0	19.94	19.87	19.67		
	RB50#50	19.9	19.93	19.78		
	RB100#0	19.96	19.84	19.78		
20MHz 16QAM	RB1#0	20.03	20.74	19.36	19.14	30
	RB1#50	19.88	20.67	19.35		
	RB1#99	19.93	20.61	19.39		
	RB50#0	18.95	18.83	18.8		
	RB50#50	19.31	19.27	18.76		
	RB100#0	19.33	19.4	18.82		
Note: EIRP= Conducted Power(dBm) - L_C(dB) + G_T(dBi)						
					Result:	**Pass**

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.77	5.68	5.88	13
	RB100#0	5.71	5.59	5.59	13
20MHz 16QAM	RB1#0	7.01	7.28	6.06	13
	RB100#0	6.55	6.43	6.61	13
				Result:	**Pass**

FCC §2.1049, §27.53:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.102	1.102	1.260	1.254	1.260
1.4MHz 16QAM	1.096	1.102	1.09	1.254	1.260	1.25
3MHz QPSK	2.695	2.695	2.695	3.012	3.012	2.988
3MHz 16QAM	2.695	2.683	2.695	3.012	3.024	3.012
5MHz QPSK	4.511	4.511	4.531	5.020	5.000	5.000
5MHz 16QAM	4.531	4.531	4.511	5.020	5.020	4.980
10MHz QPSK	8.942	8.942	8.982	9.760	9.800	9.800
10MHz 16QAM	8.942	8.942	8.942	9.800	9.840	9.720
15MHz QPSK	13.473	13.533	13.473	14.940	15.120	15.060
15MHz 16QAM	13.533	13.533	13.473	15.120	15.060	15.000
20MHz QPSK	17.964	18.124	17.964	19.600	19.840	19.600
20MHz 16QAM	18.044	17.964	18.044	19.760	19.760	19.680
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.**

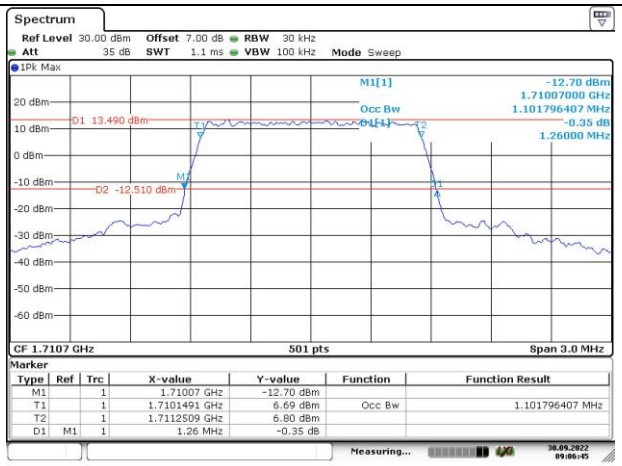
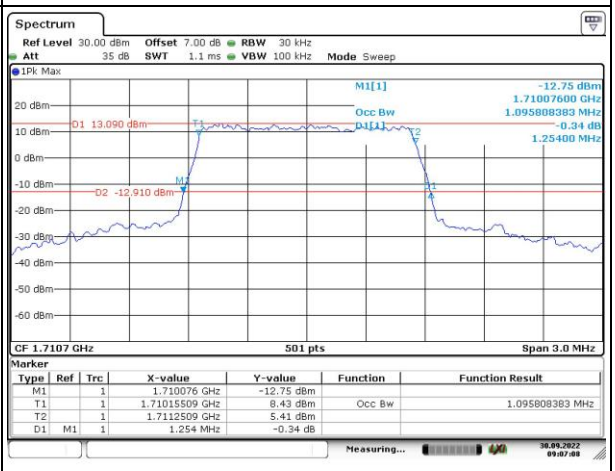
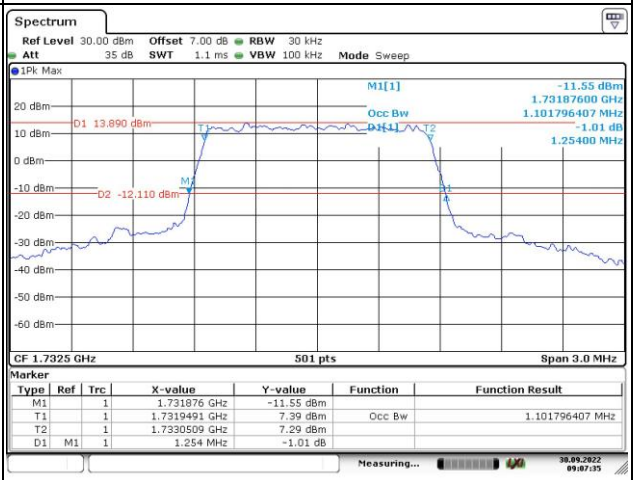
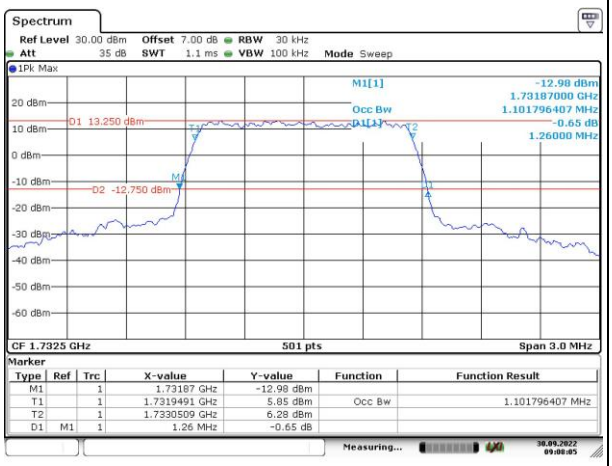
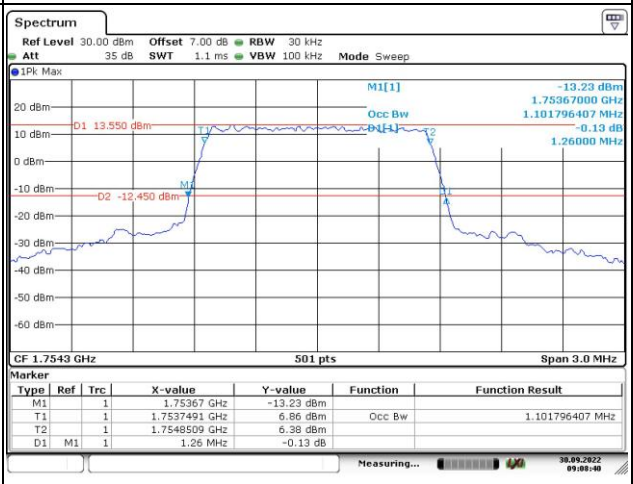
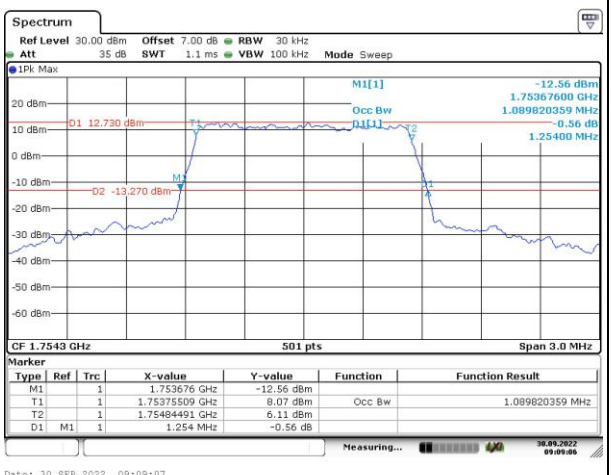
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

FCC §2.1055, §27.54: Frequency Stability

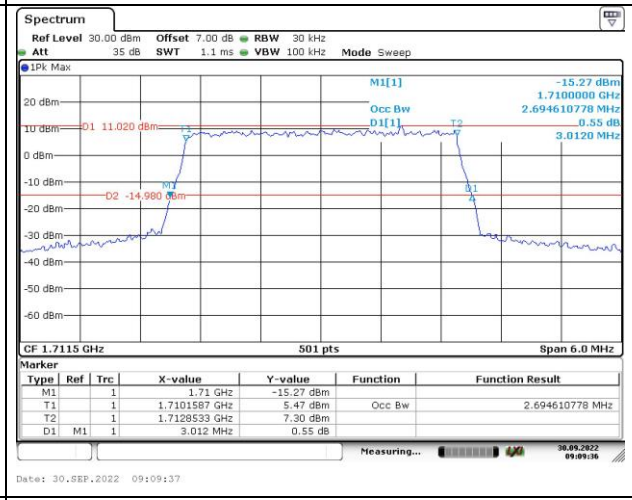
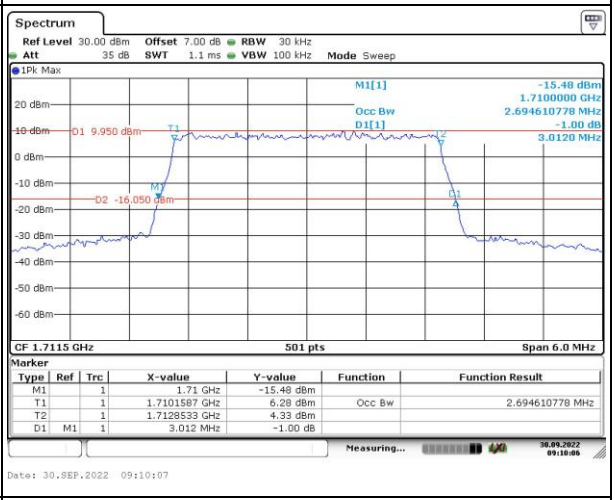
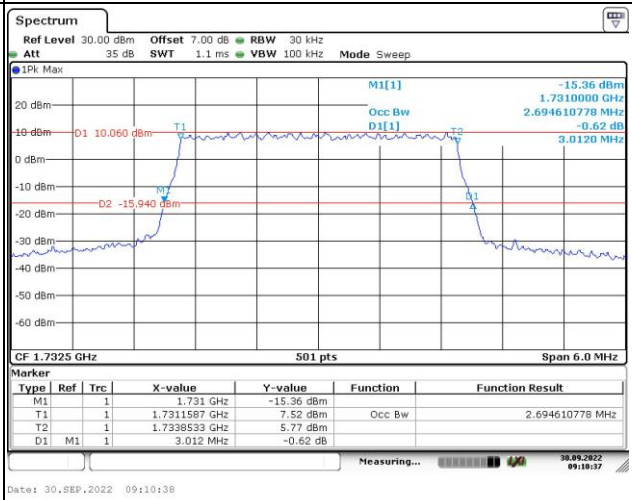
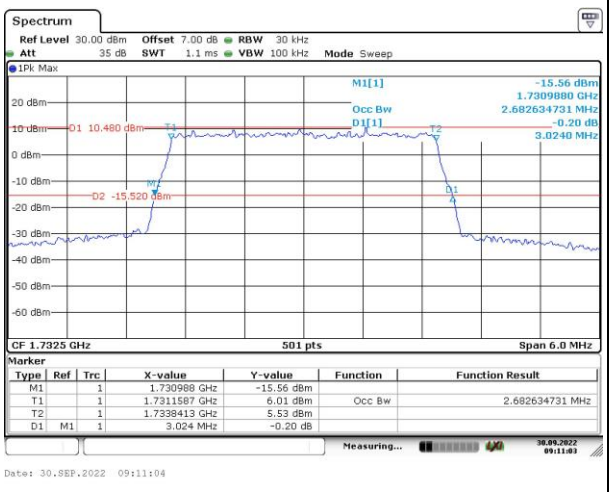
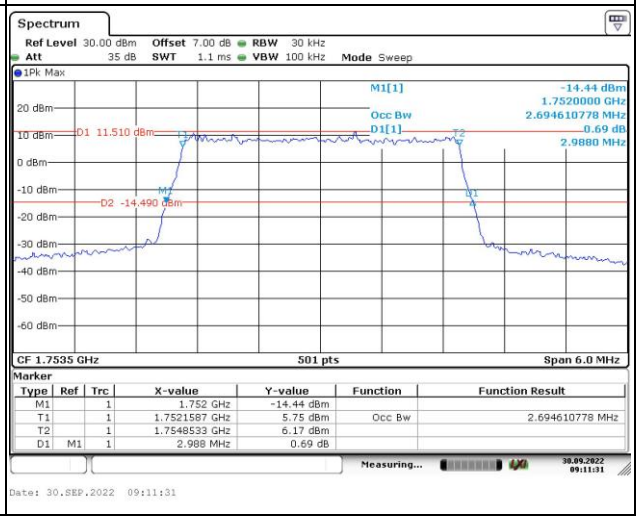
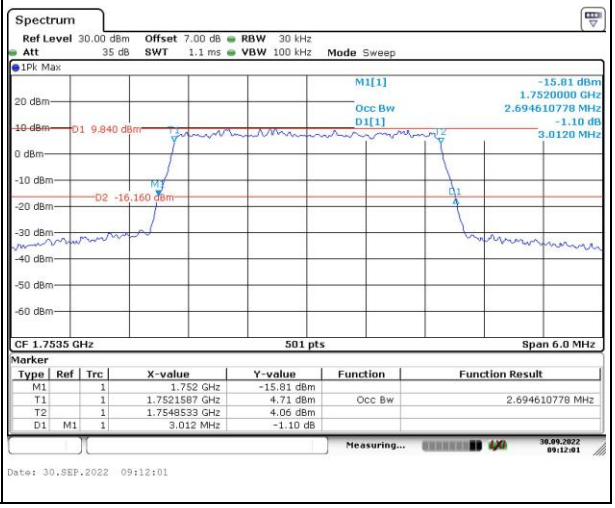
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1710.4087	1710.00	1754.6264	1755
	-20	3.85	1710.4054	1710.00	1754.6053	1755
	-10	3.85	1710.4010	1710.00	1754.6010	1755
	0	3.85	1710.4034	1710.00	1754.6100	1755
	10	3.85	1710.4069	1710.00	1754.6061	1755
	20	3.85	1710.4058	1710.00	1754.6022	1755
	30	3.85	1710.4015	1710.00	1754.6090	1755
	40	3.85	1710.4033	1710.00	1754.6086	1755
	50	3.85	1710.4070	1710.00	1754.6078	1755
Frequency Stability vs. Voltage	20	3.6	1710.4040	1710.00	1754.6089	1755
	20	4.4	1710.4085	1710.00	1754.6014	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	1710.4964	1710.00	1754.6053	1755
	-20	3.85	1710.4994	1710.00	1754.6132	1755
	-10	3.85	1710.4992	1710.00	1754.6141	1755
	0	3.85	1710.4969	1710.00	1754.6134	1755
	10	3.85	1710.4987	1710.00	1754.6138	1755
	20	3.85	1710.4978	1710.00	1754.6102	1755
	30	3.85	1710.4978	1710.00	1754.6090	1755
	40	3.85	1710.4994	1710.00	1754.6090	1755
	50	3.85	1710.4997	1710.00	1754.6143	1755
Frequency Stability vs. Voltage	20	3.6	1710.4949	1710.00	1754.6.075	1755
	20	4.4	1710.4969	1710.00	1754.6112	1755
					Result:	**Pass**

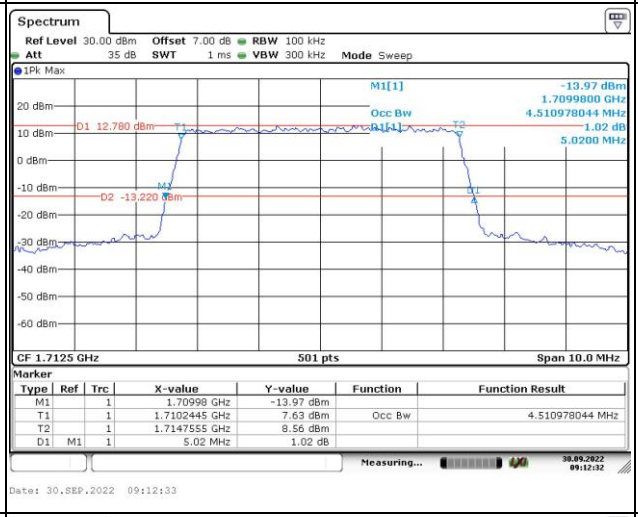
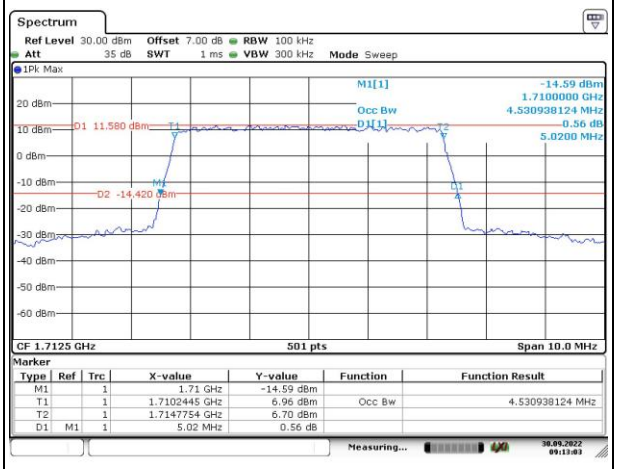
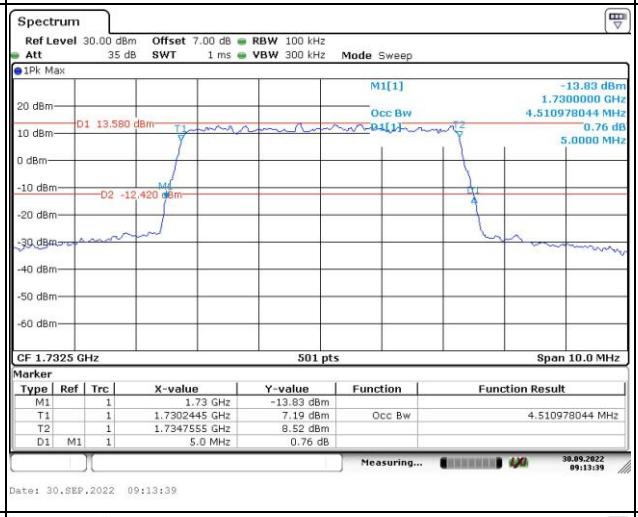
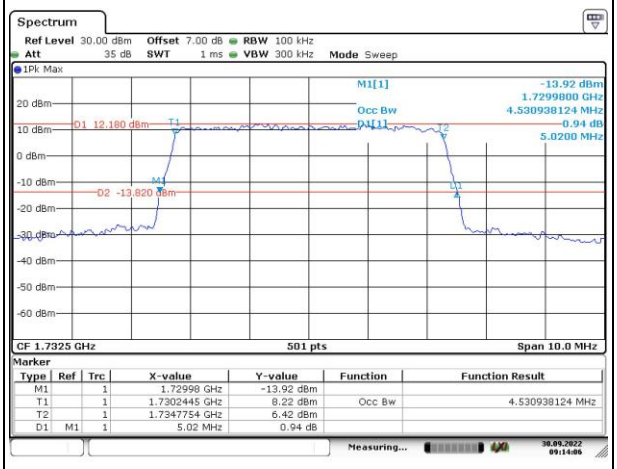
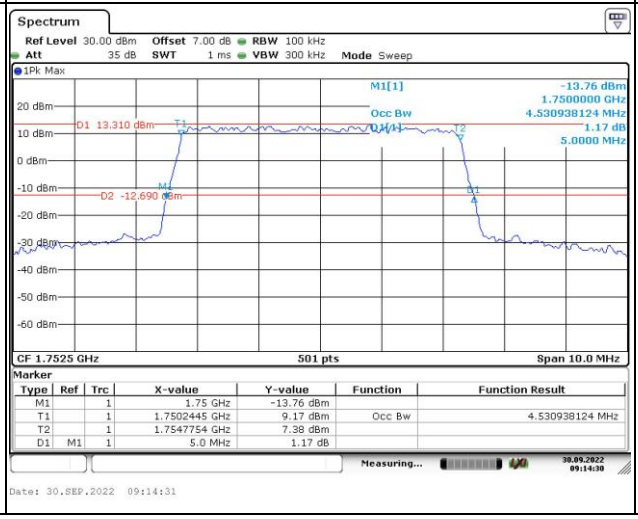
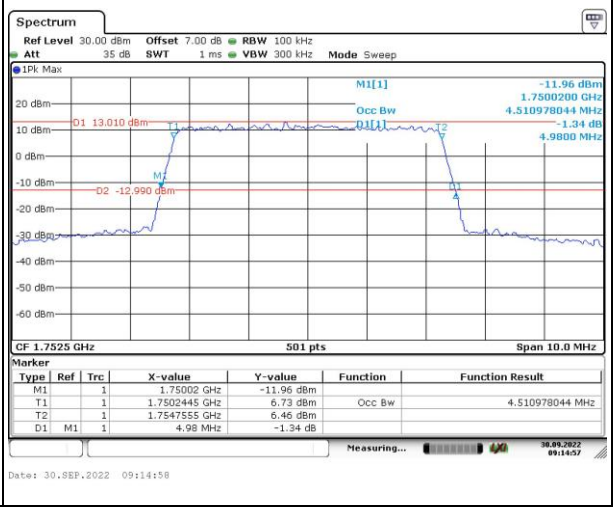
Test Plots(Note: The 7.0dB is the Insertion loss of the RF cable, Coaxial tee connector and DC Block, which was offset into the Spectrum Analyzer)**:**

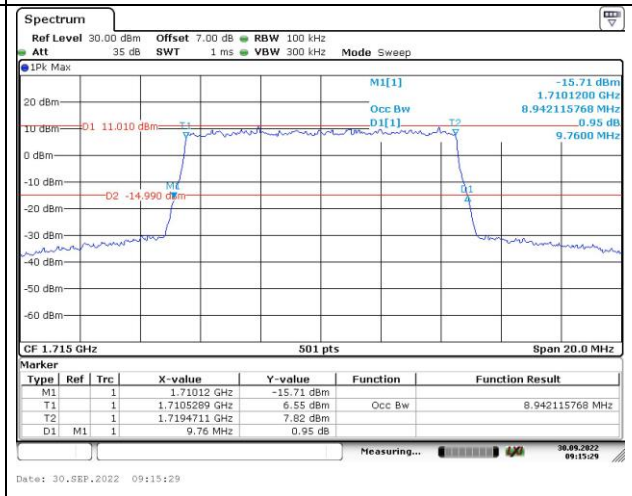
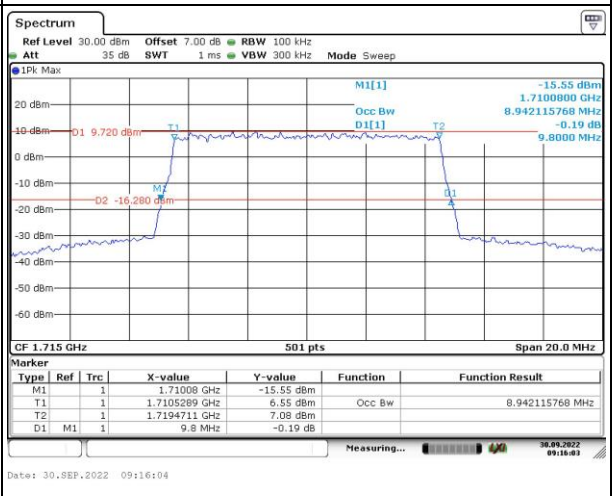
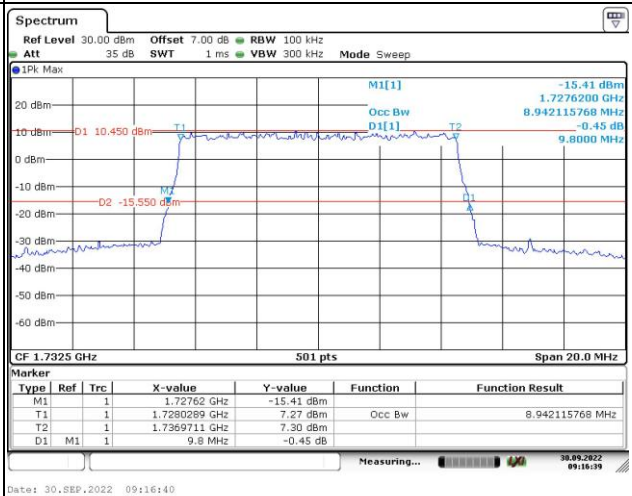
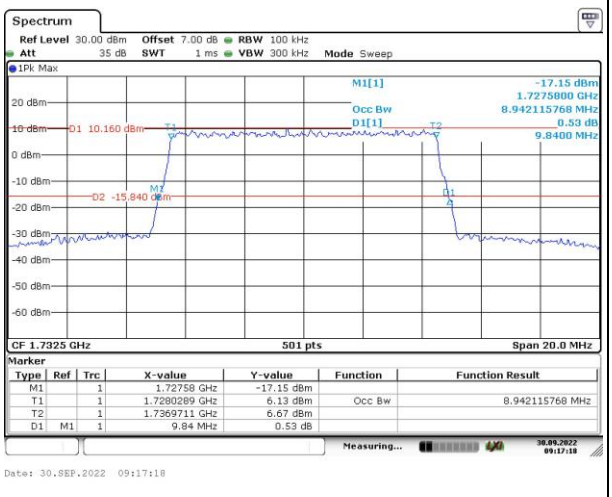
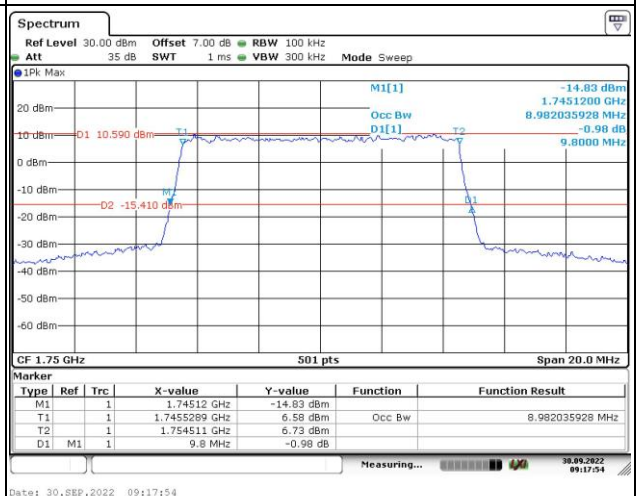
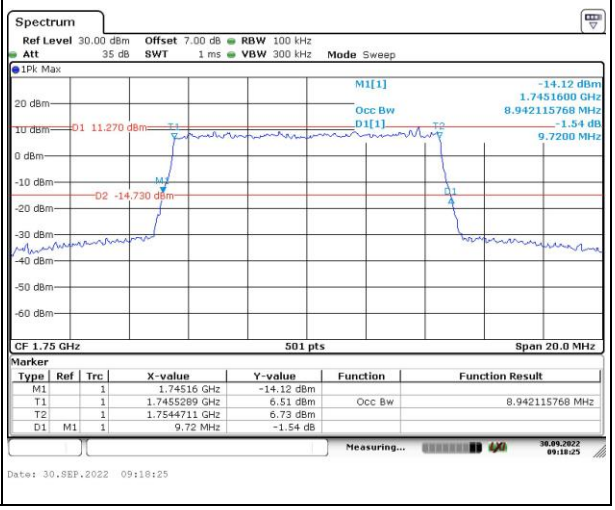
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

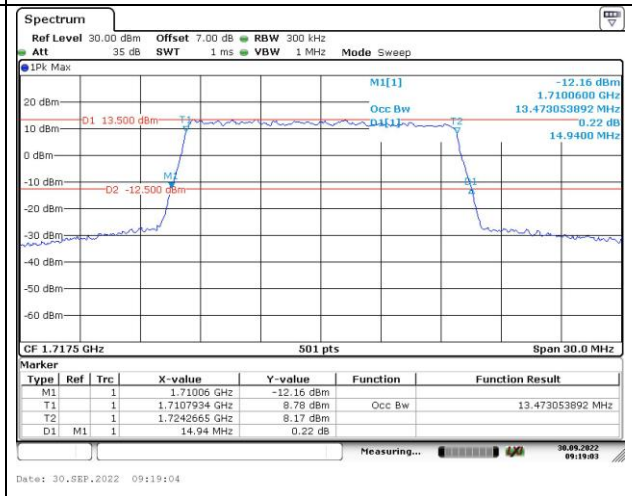
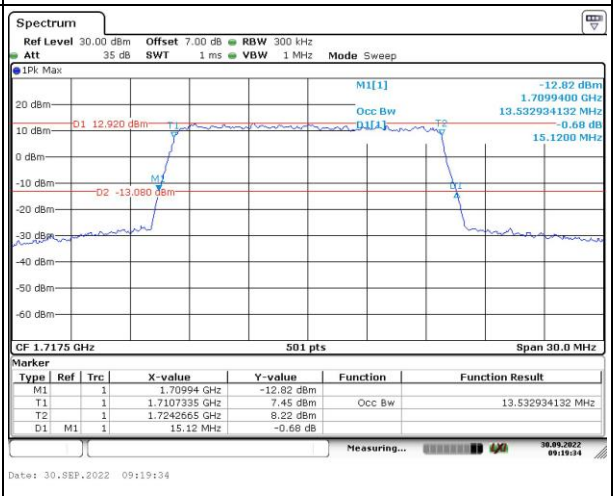
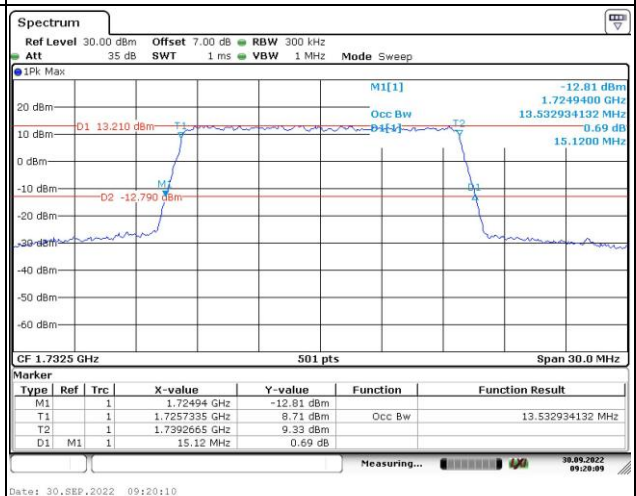
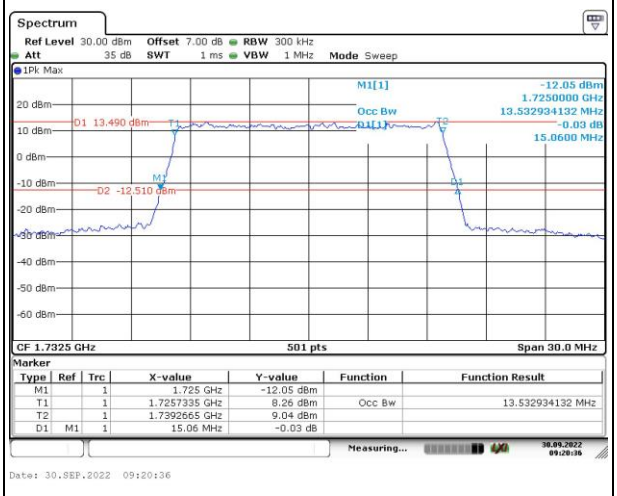
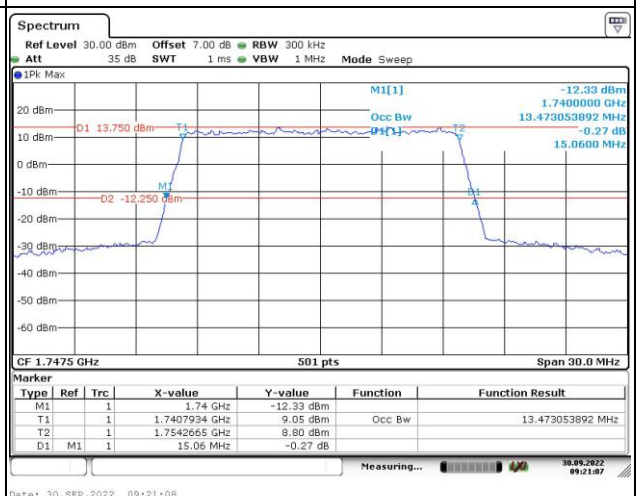
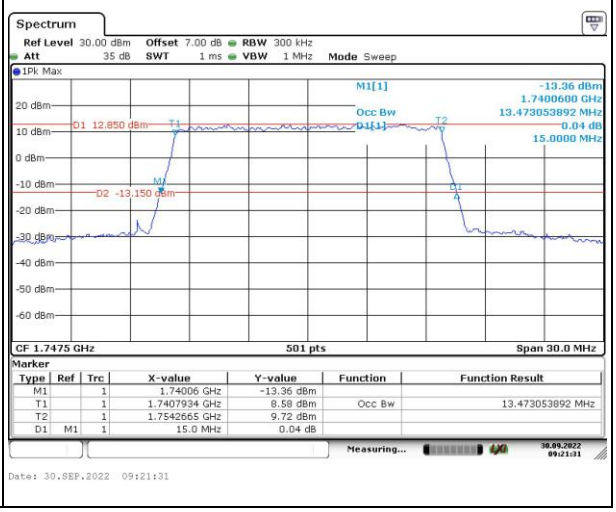
Occupied Bandwidth

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

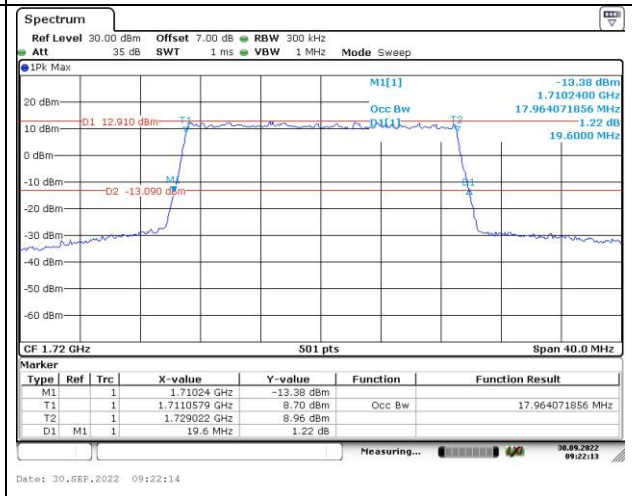
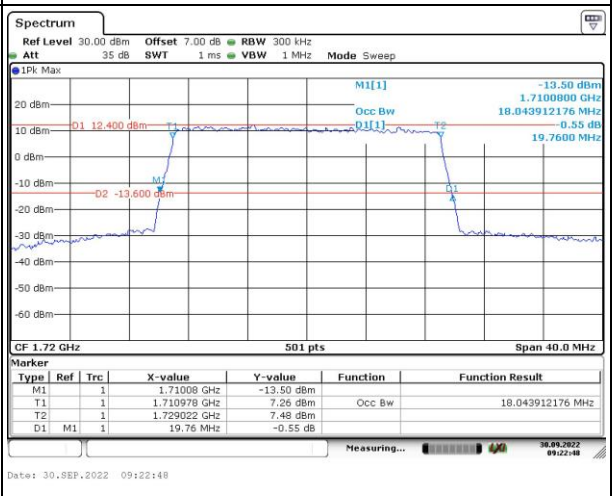
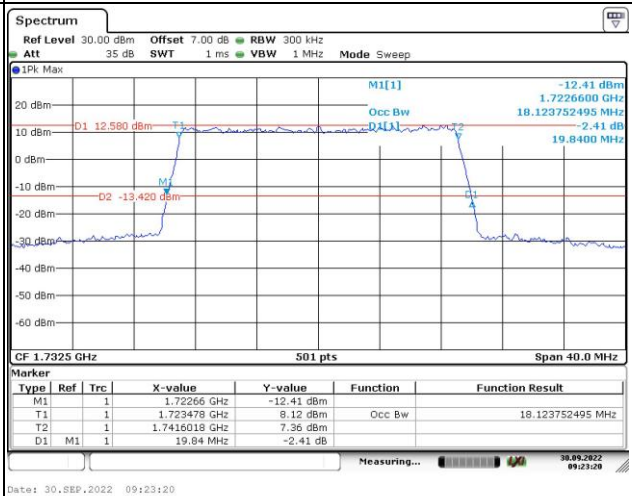
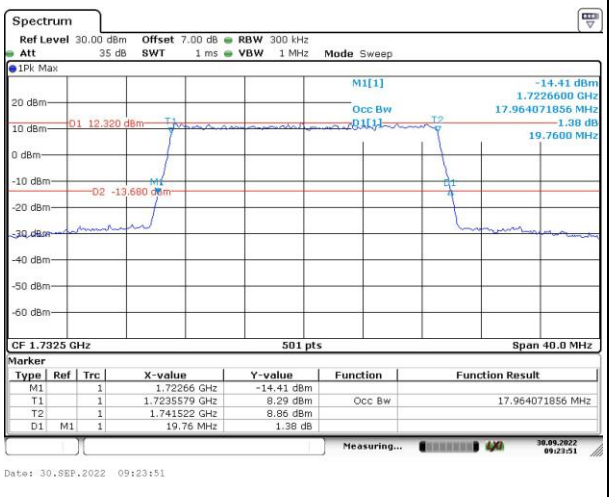
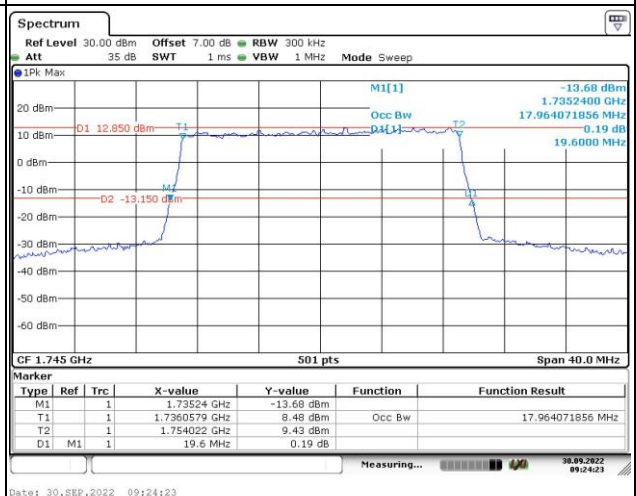
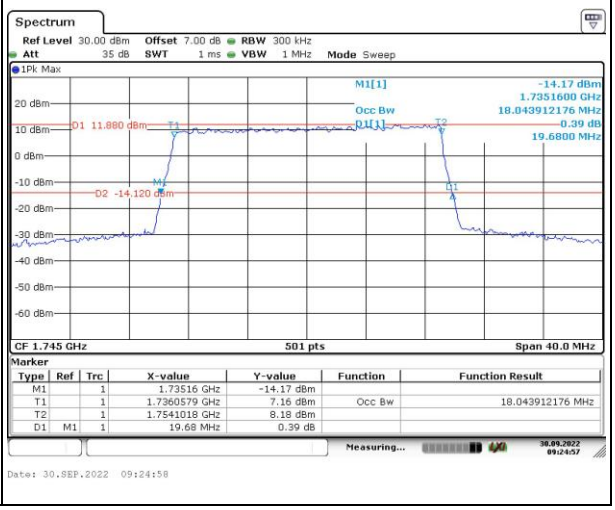
Occupied Bandwidth

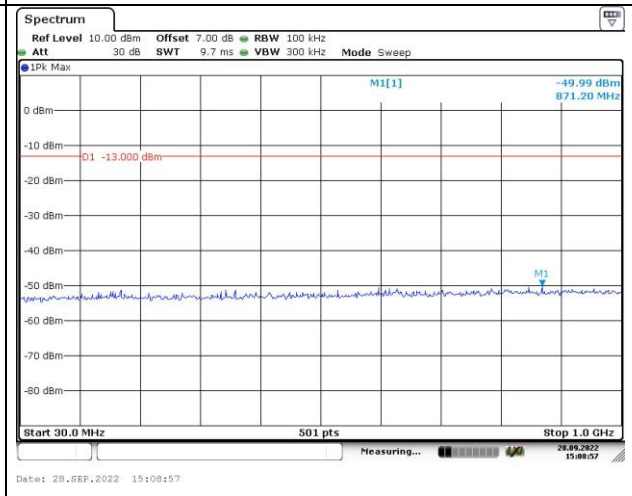
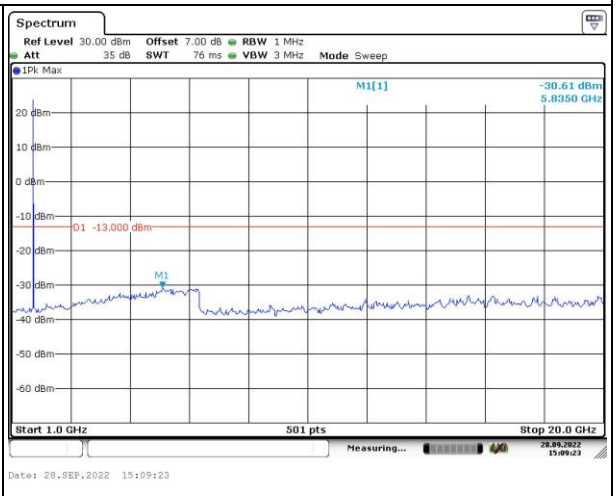
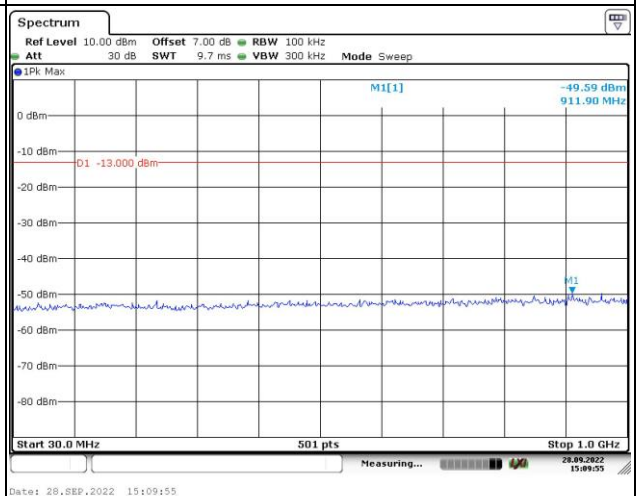
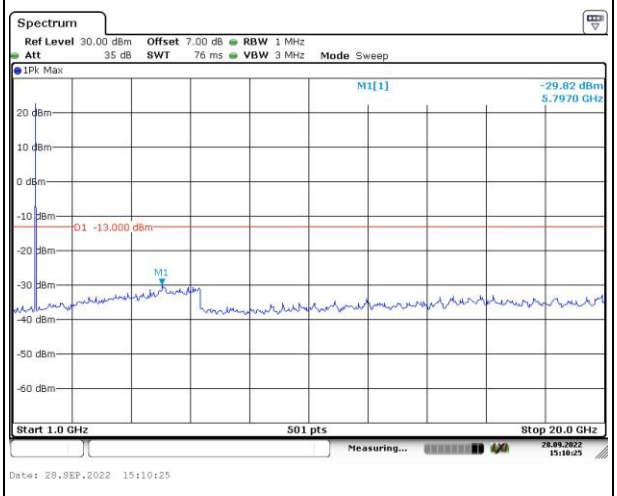
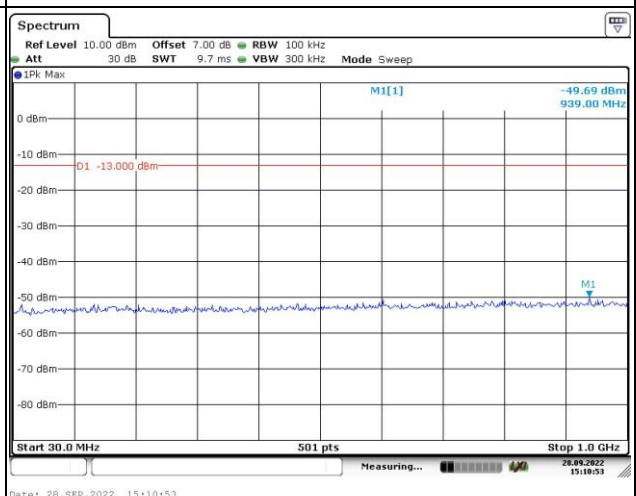
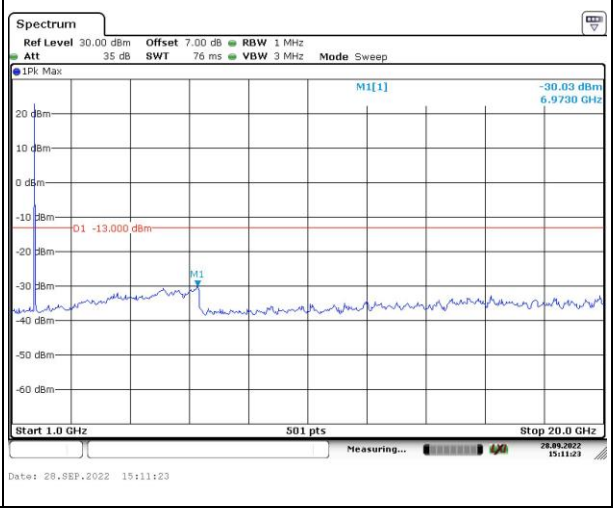
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

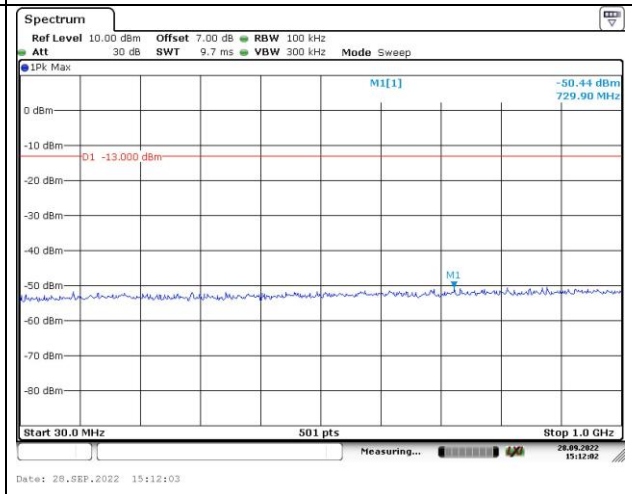
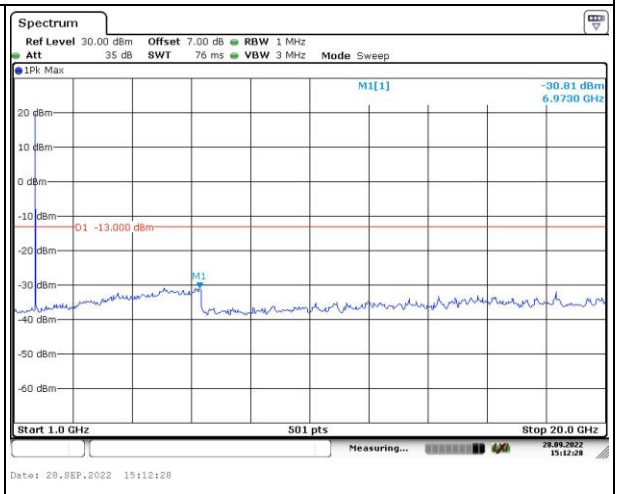
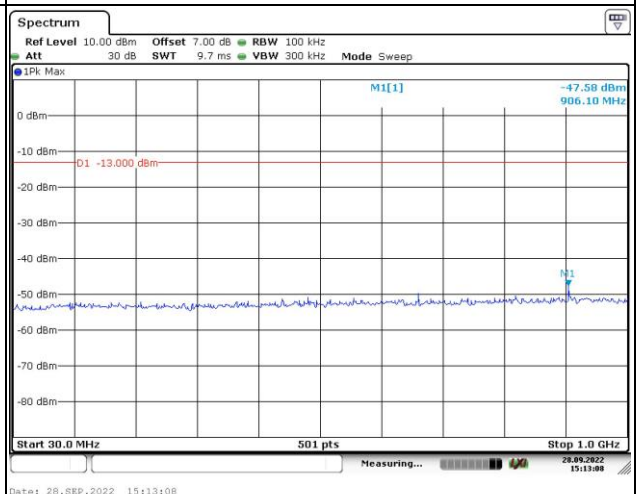
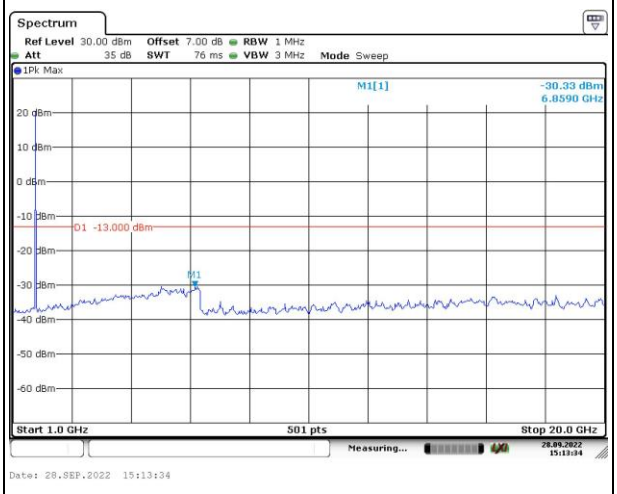
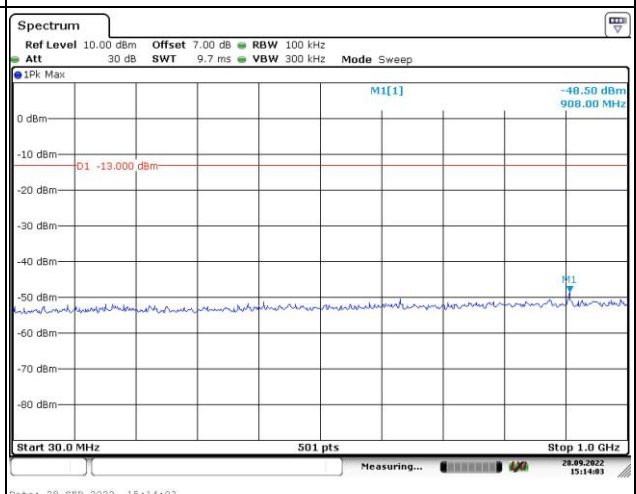
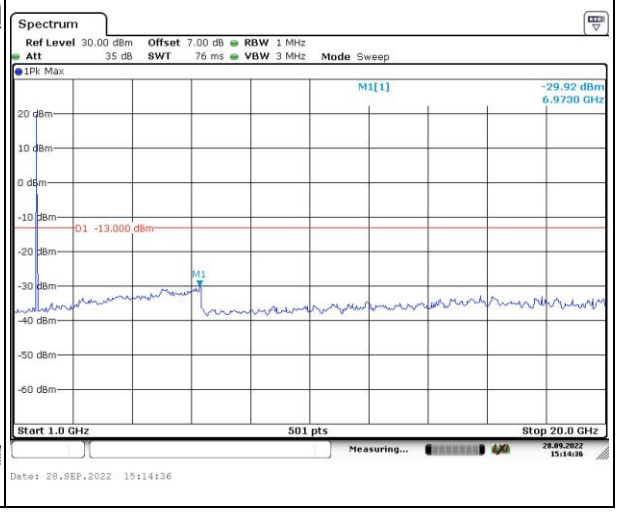
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

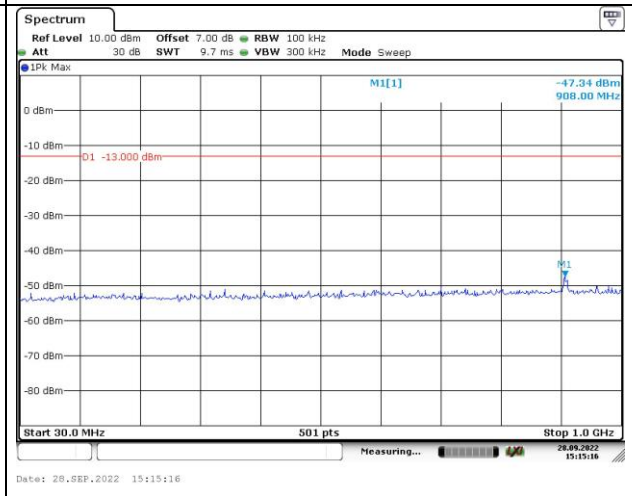
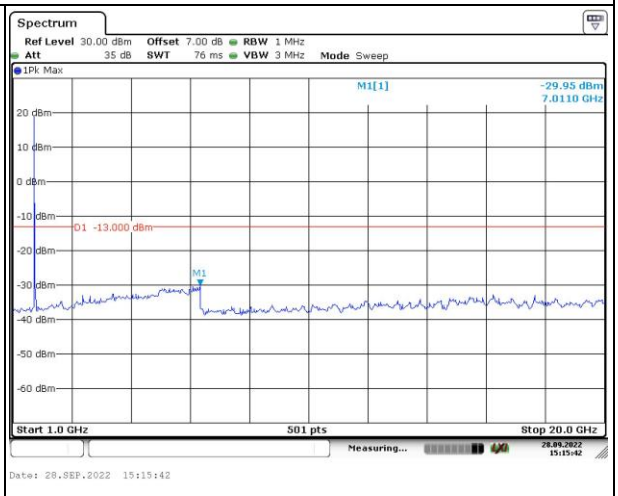
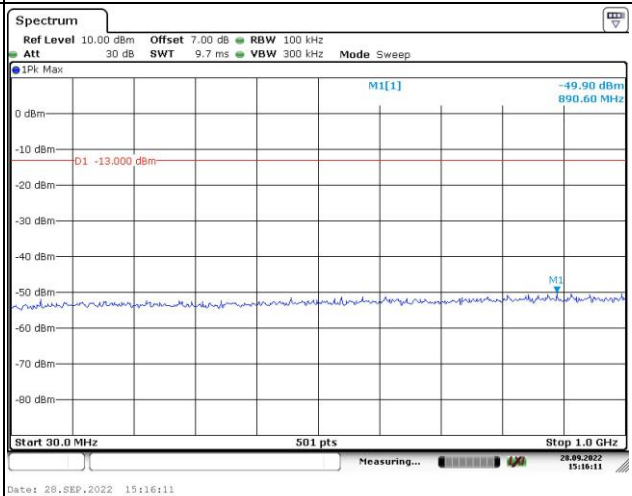
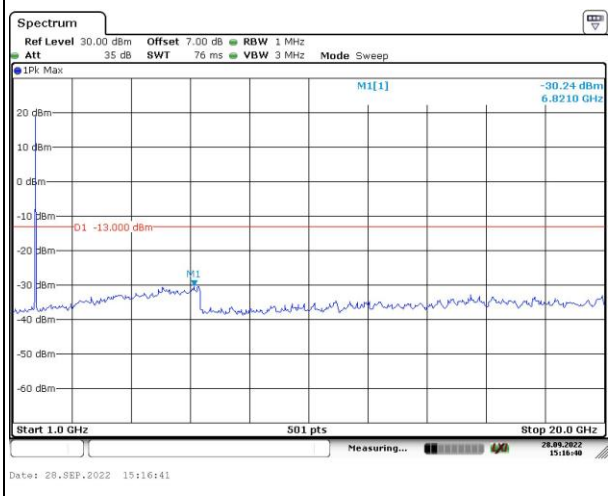
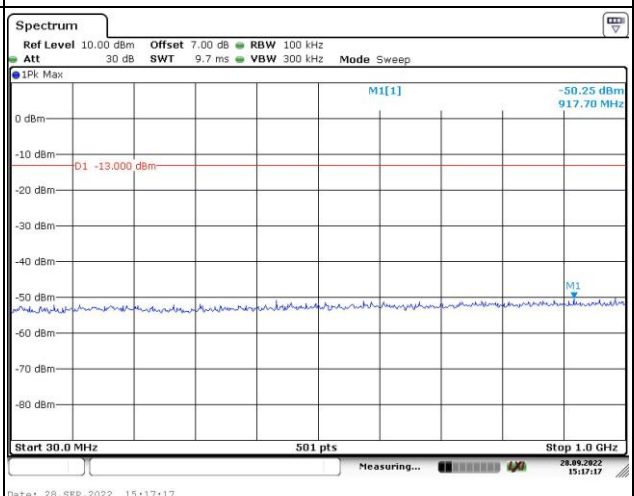
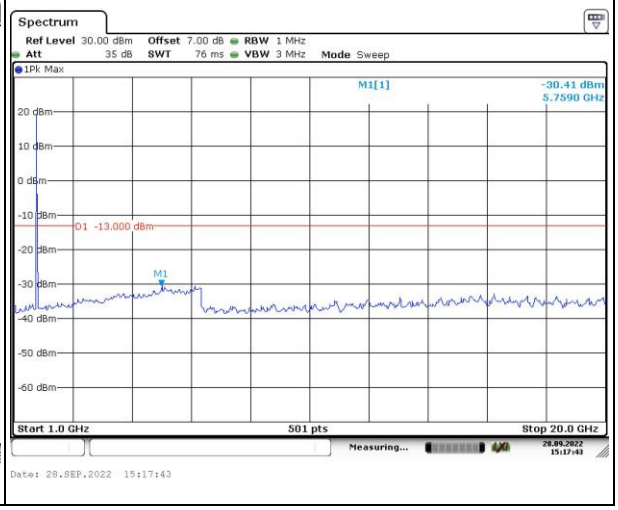
Occupied Bandwidth		
Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

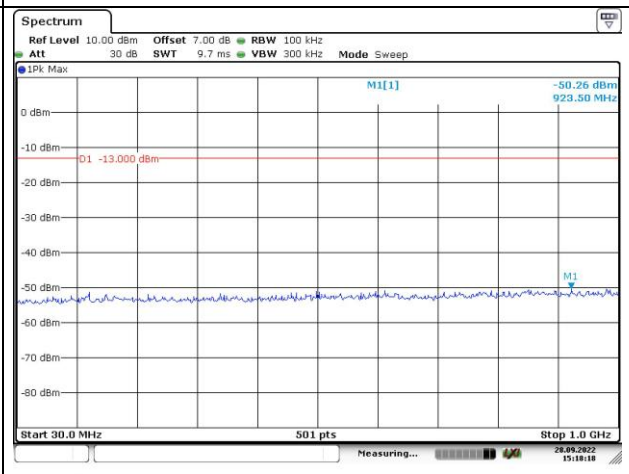
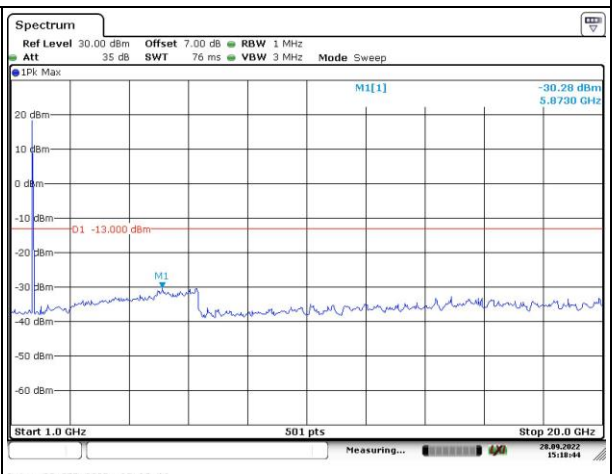
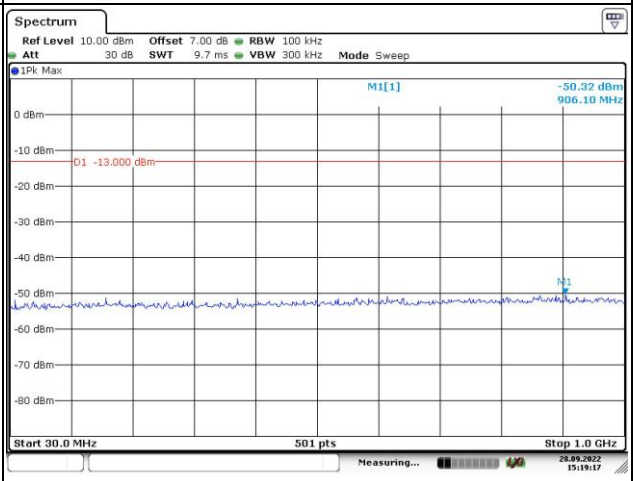
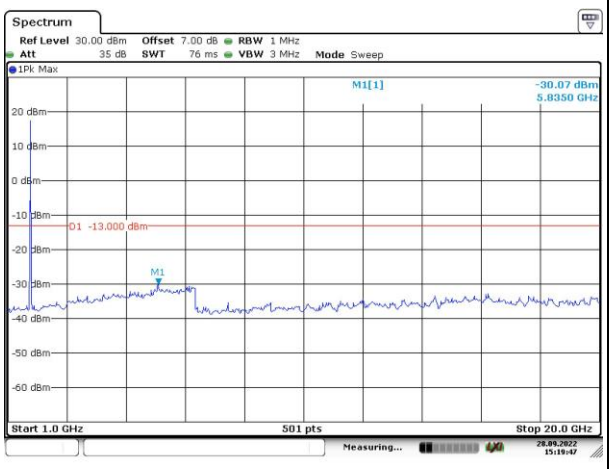
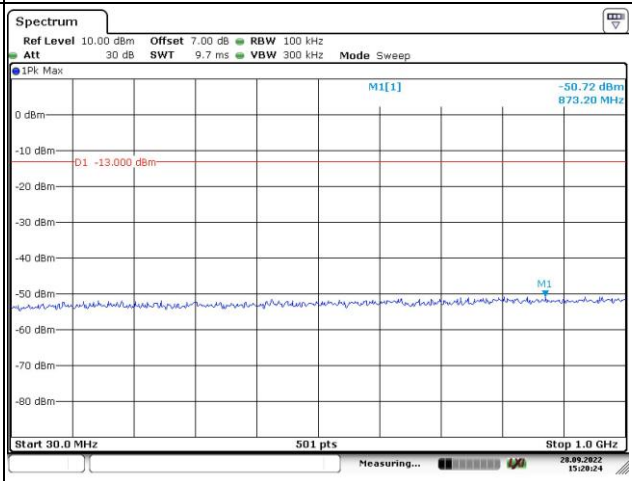
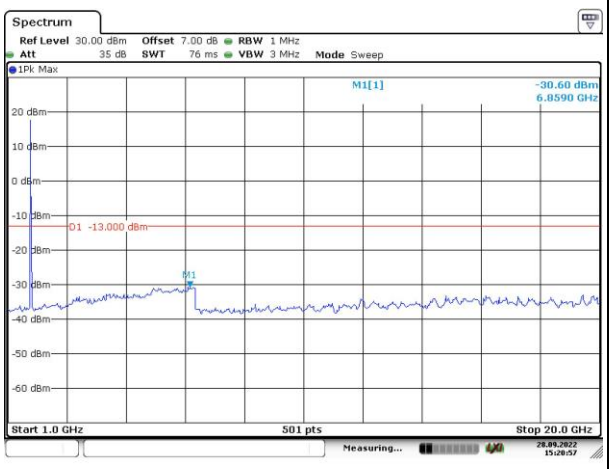
Occupied Bandwidth

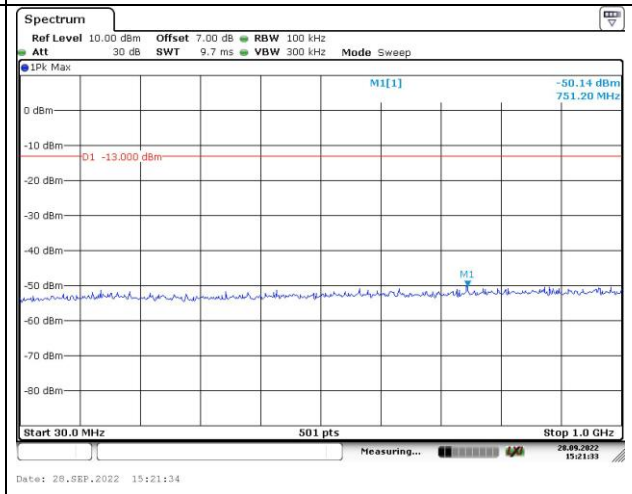
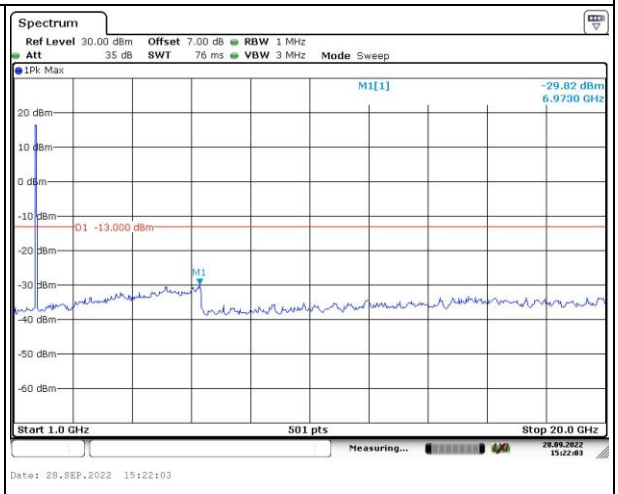
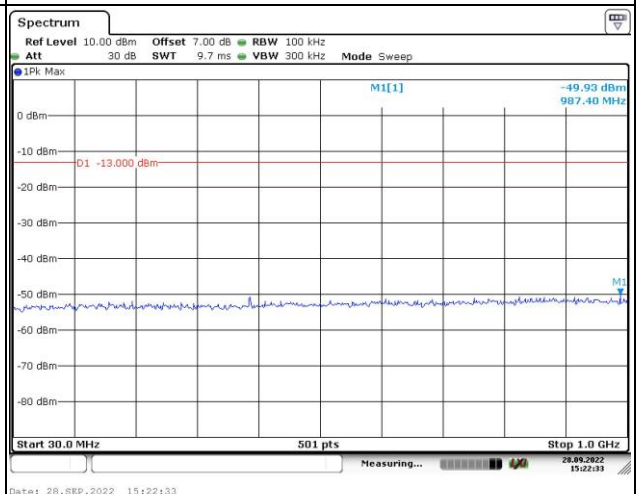
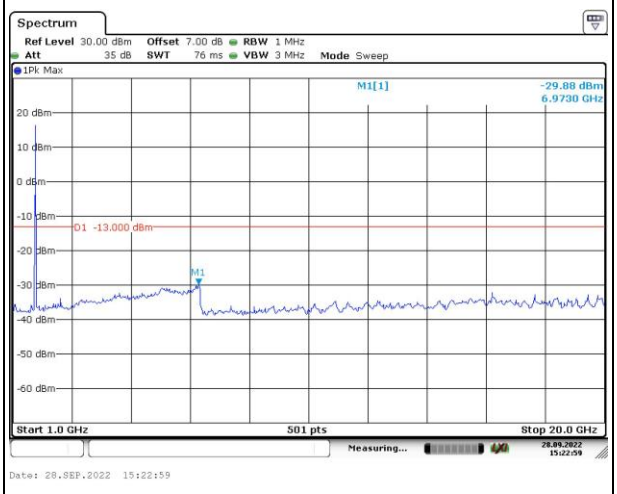
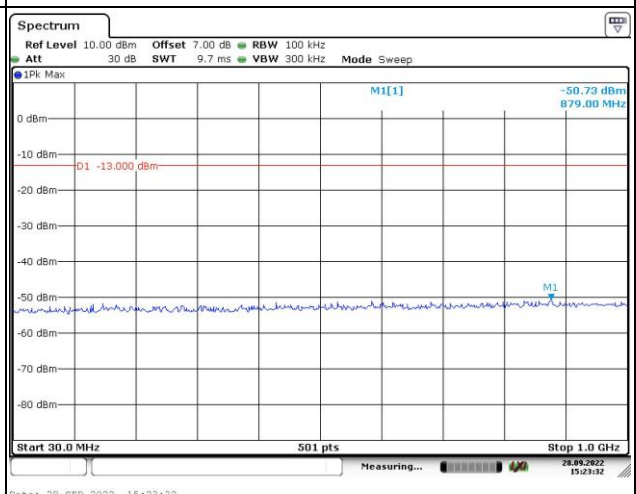
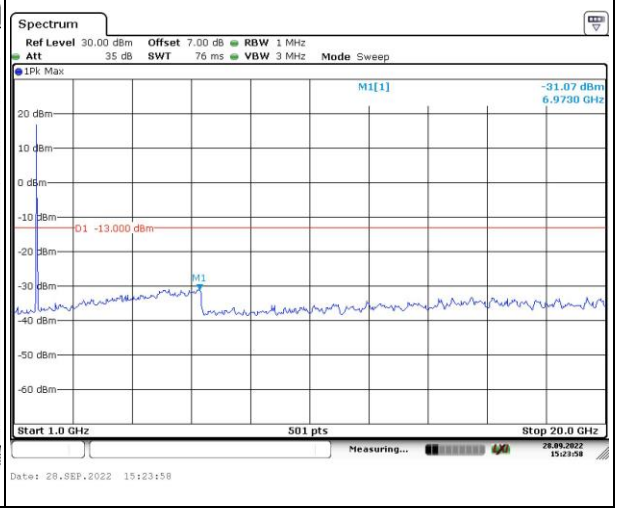
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

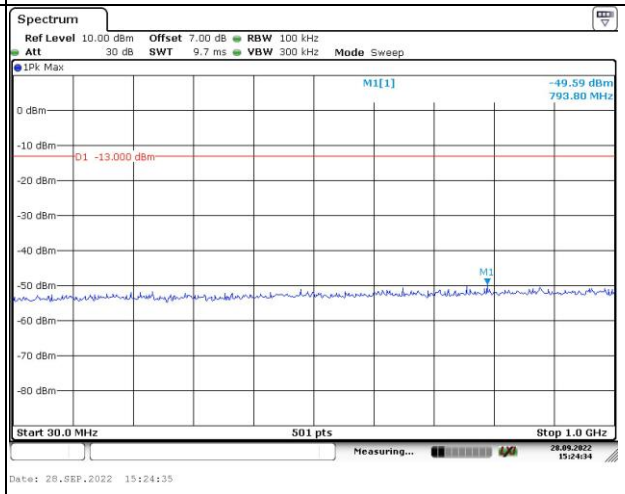
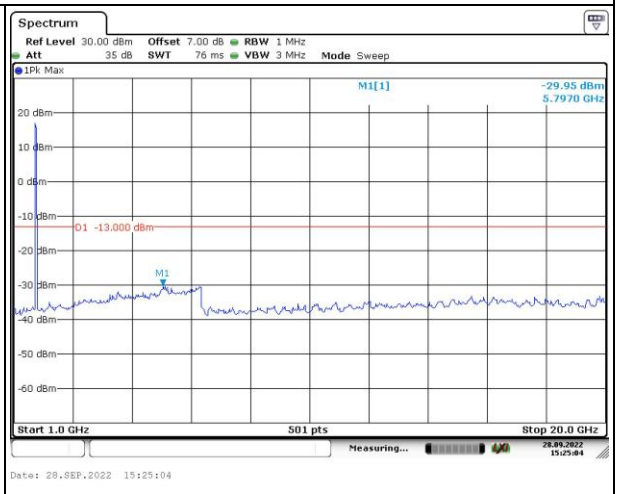
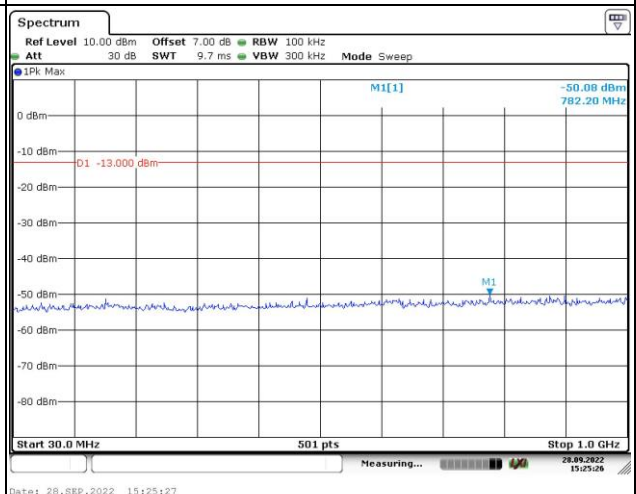
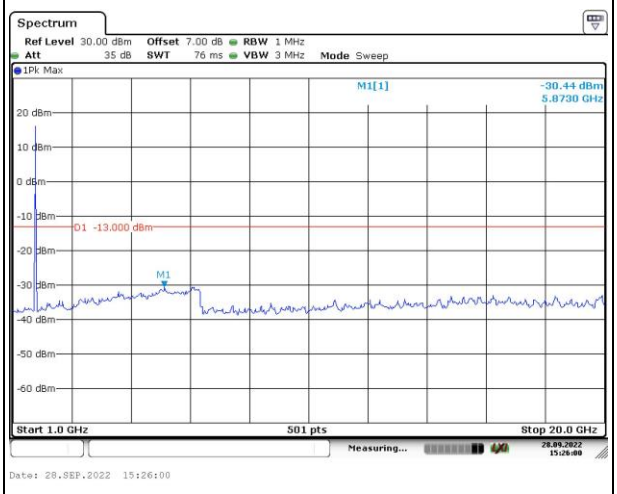
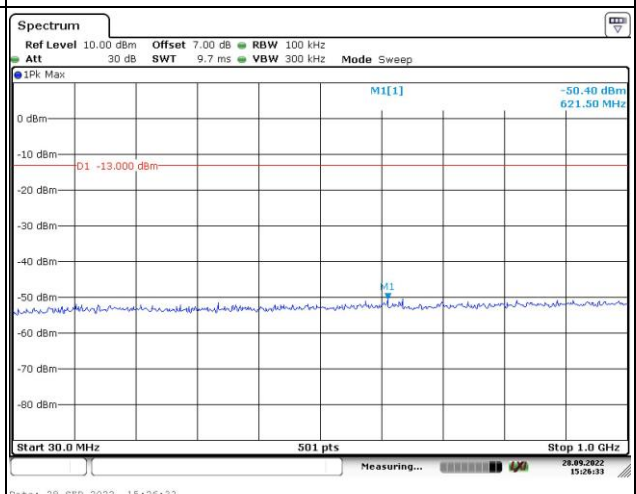
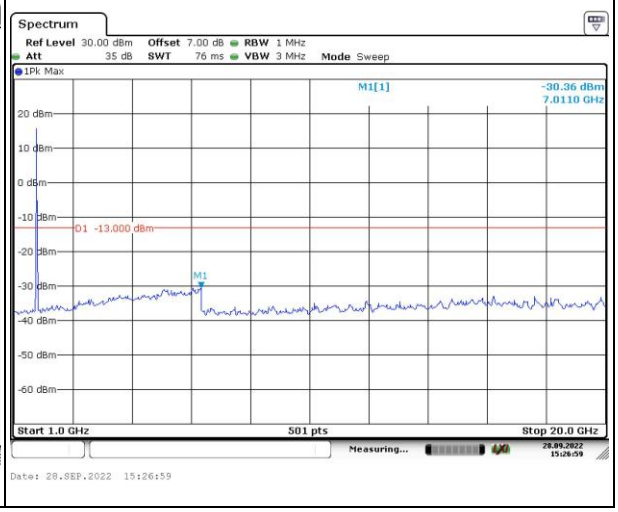
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

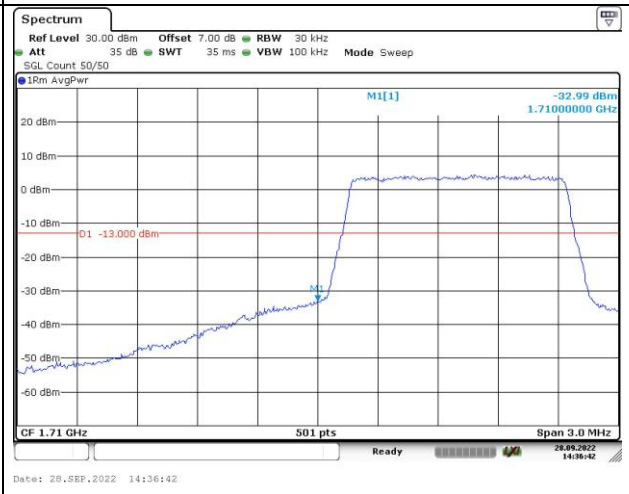
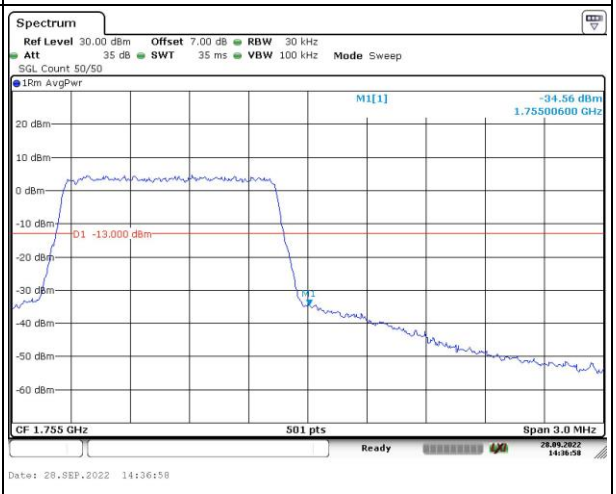
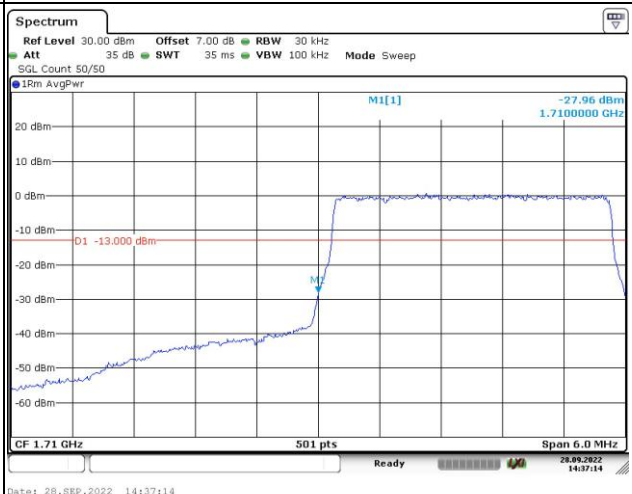
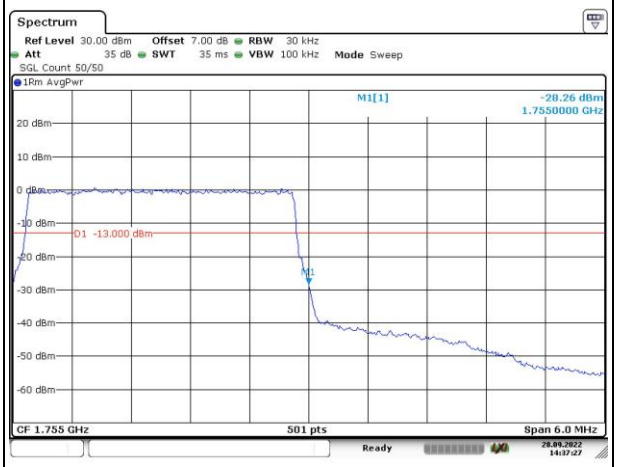
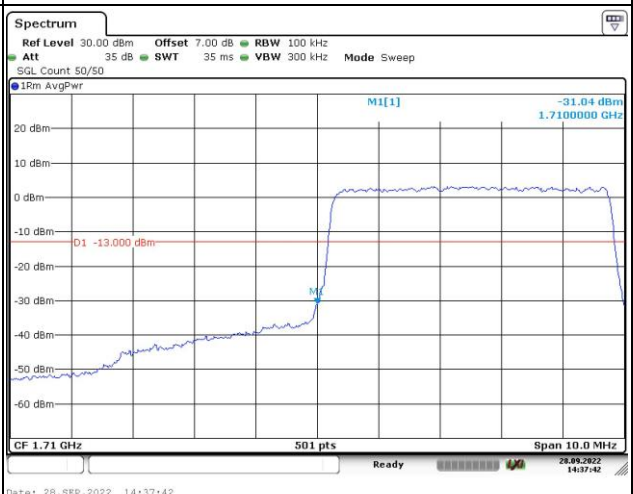
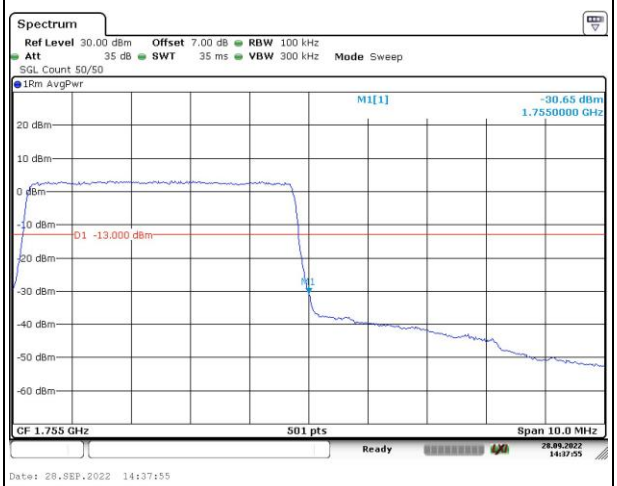
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

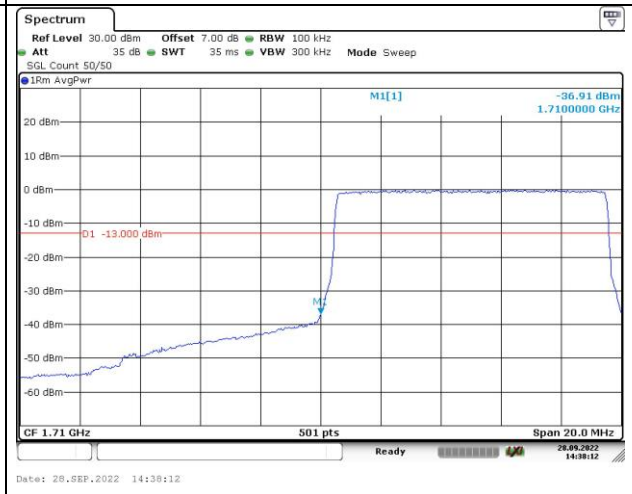
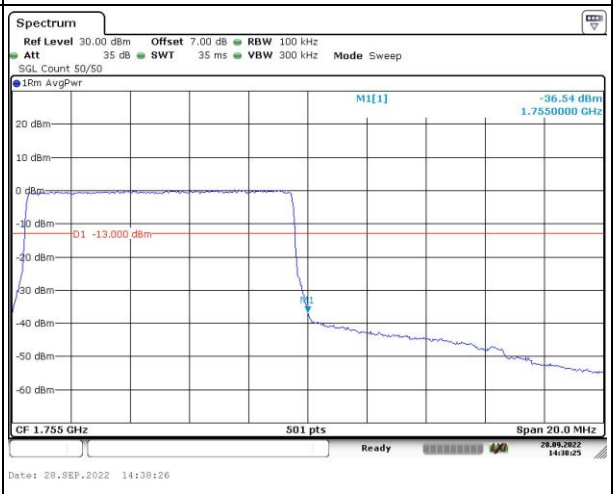
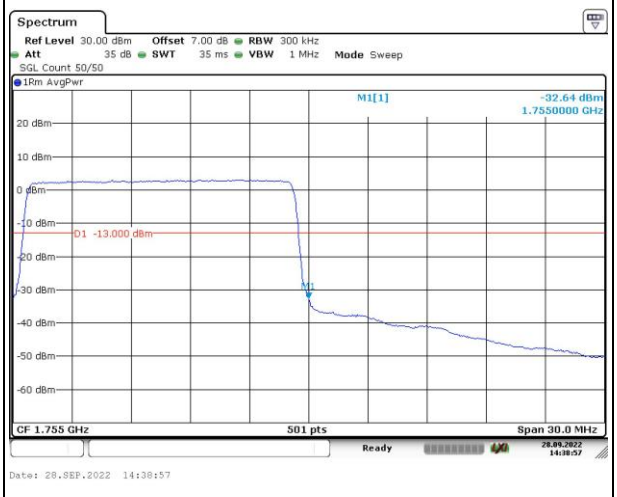
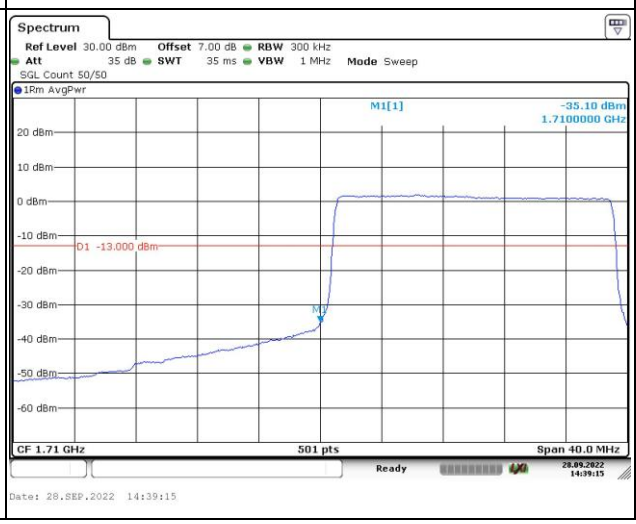
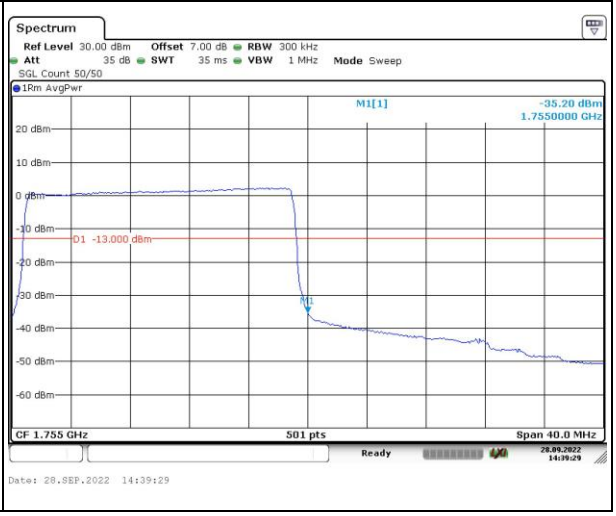
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

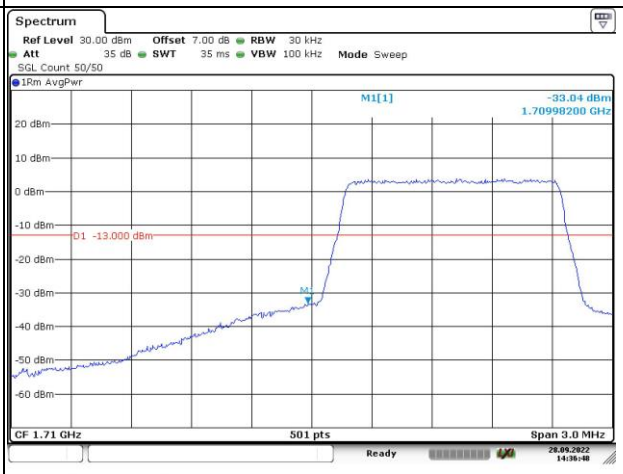
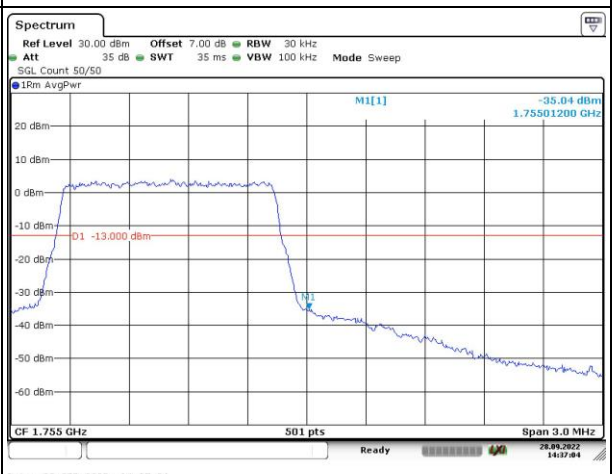
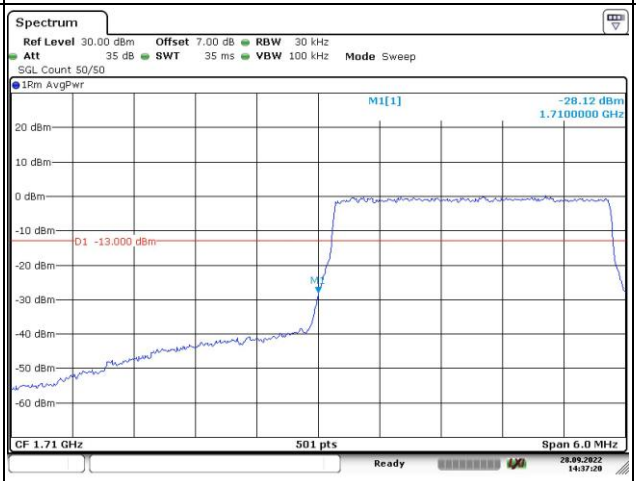
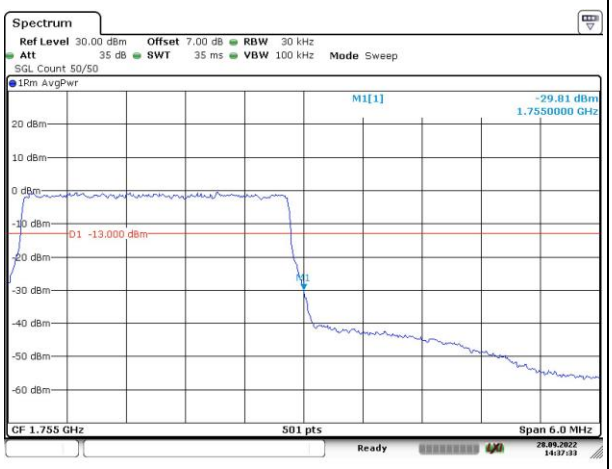
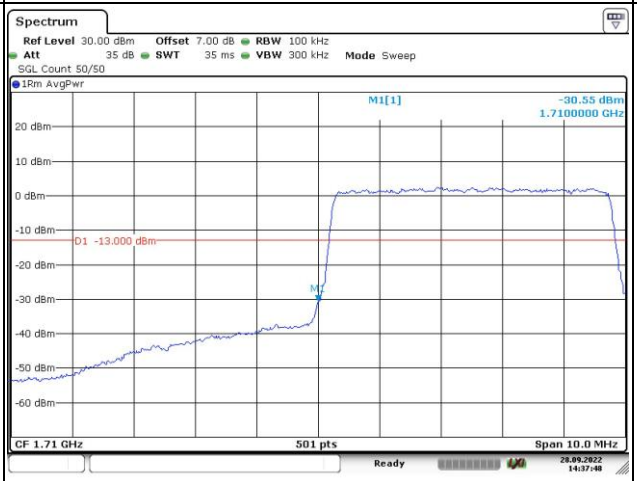
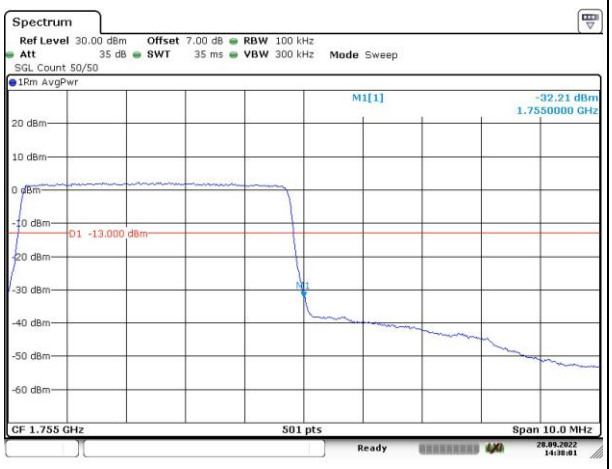
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

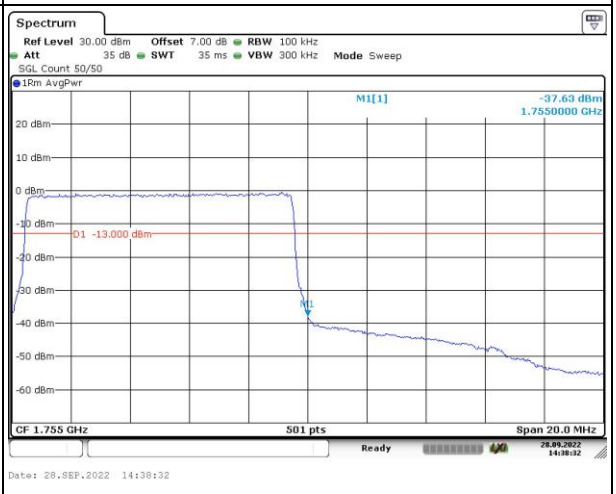
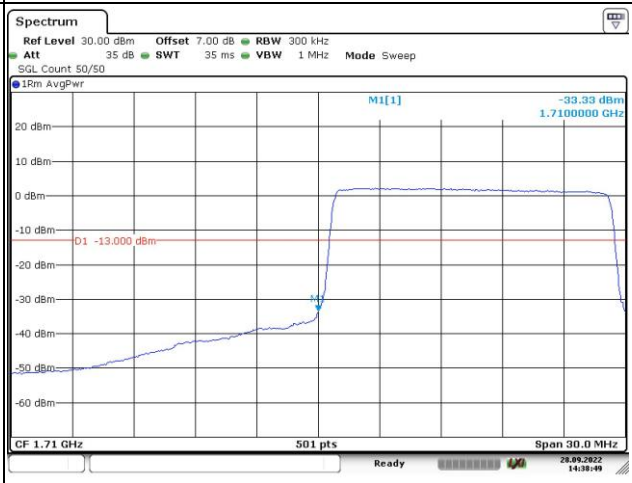
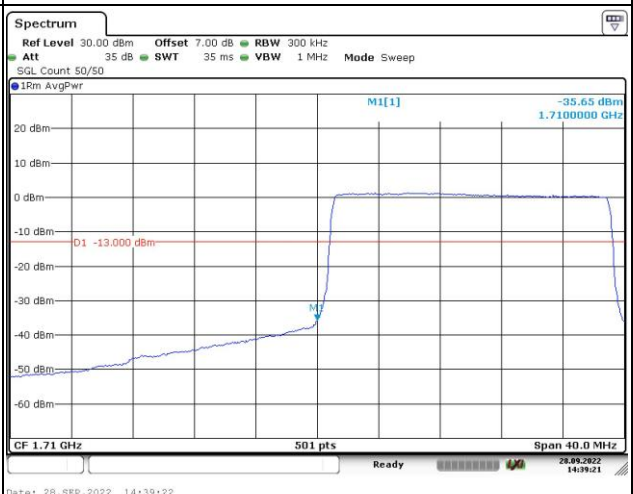
Spurious Emissions at Antenna Terminal		
Channel	**15MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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		

4.9 Antenna Port Test Data and Results for LTE Band 7

Serial Number:	CR220943987-RF-S1	Test Date:	2022-09-28~2022-10-11
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	**Pass**

Environmental Conditions:					
Temperature: (℃)	26.1~28.3	Relative Humidity: (%)	42~56	ATM Pressure: (kPa)	100.2~100.9

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100005	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2022-09-30	2023-09-29
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).*

EUT Information@LTE Band 7▲:					
Antenna Gain G_T (dBi):	1.8			Path Loss L_C (dB):	0.4
Operation Voltage(V_{DC}):					
Lowest:	3.6	Normal:	3.85	Highest:	4.4

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

Test Data:

FCC §2.1046; § 27.50(h)(2)

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		
5MHz QPSK	RB1#0	21.35	21.07	21	22.79	33
	RB1#13	21.15	21.24	21		
	RB1#24	21.39	21.03	21		
	RB15#0	20.25	20.26	20.04		
	RB15#10	20.1	20.33	19.88		
	RB25#0	20.17	20.25	20		
5MHz 16QAM	RB1#0	20.23	19.76	19.2	21.74	33
	RB1#13	20.18	19.85	19.11		
	RB1#24	20.34	19.72	19.13		
	RB15#0	19.26	19.32	19.07		
	RB15#10	19.2	19.33	19.05		
	RB25#0	19.25	19.14	19.11		
10MHz QPSK	RB1#0	21.24	21.24	21.03	22.72	33
	RB1#25	21.32	21.31	20.95		
	RB1#49	21.21	21.21	20.82		
	RB25#0	20.08	20.25	20.09		
	RB25#25	20.16	20.22	20		
	RB50#0	20.37	20.29	19.95		
10MHz 16QAM	RB1#0	20.35	19.72	20.19	21.78	33
	RB1#25	20.38	19.73	20.14		
	RB1#49	20.29	19.8	20.27		
	RB25#0	19.32	19.45	19.05		
	RB25#25	19.42	19.4	19.1		
	RB50#0	19.46	19.31	19.03		
15MHz QPSK	RB1#0	21.22	21.19	21	22.81	33
	RB1#38	21.15	21.14	20.91		
	RB1#74	21.41	21.17	20.84		
	RB36#0	20.32	20.3	20.08		
	RB36#39	20.35	20.24	20.06		
	RB75#0	20.22	20.25	20.17		
15MHz 16QAM	RB1#0	20.43	20.69	20.35	22.14	33
	RB1#38	20.38	20.74	20.26		
	RB1#74	20.63	20.66	20.08		
	RB36#0	19.36	19.33	19.34		
	RB36#39	19.43	19.25	19.16		
	RB75#0	19.4	19.32	19.19		
20MHz QPSK	RB1#0	21.35	21.29	21.2	22.89	33
	RB1#50	21.33	21.23	21.04		

	RB1#99	21.49	21.12	20.97		
	RB50#0	20.15	20.22	20.17		
	RB50#50	20.46	20.17	19.91		
	RB100#0	20.15	20.24	20.03		
20MHz 16QAM	RB1#0	20.44	21.25	20.11	22.65	33
	RB1#50	20.37	21.11	19.98		
	RB1#99	20.49	21.11	19.91		
	RB50#0	19.35	19.19	19.35		
	RB50#50	19.4	19.27	19.17		
	RB100#0	19.23	19.43	19.16		
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	4.26	5.77	5.28	13
	RB100#0	4.58	5.48	5.45	13
20MHz 16QAM	RB1#0	5.3	6.9	5.88	13
	RB100#0	5.42	6.49	6.35	13
				Result:	**Pass**

FCC §2.1049, §27.53:Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.511	4.511	4.511	5.020	5.000	5.000
5MHz 16QAM	4.531	4.551	4.511	5.020	5.040	4.960
10MHz QPSK	8.982	8.942	8.942	9.840	9.800	9.800
10MHz 16QAM	8.982	8.942	8.942	9.800	9.880	9.760
15MHz QPSK	13.473	13.533	13.533	15.060	15.120	15.060
15MHz 16QAM	13.593	13.533	13.533	15.180	15.060	15.000
20MHz QPSK	17.884	18.044	17.964	19.600	19.840	19.680
20MHz 16QAM	17.964	17.964	17.884	19.840	19.840	18.720
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	2500.3132	2500.00	2569.7075	2570
	-20	3.85	2500.3188	2500.00	2569.7030	2570
	-10	3.85	2500.3149	2500.00	2569.7076	2570
	0	3.85	2500.3177	2500.00	2569.7036	2570
	10	3.85	2500.3190	2500.00	2569.7063	2570
	20	3.85	2500.3138	2500.00	2569.7022	2570
	30	3.85	2500.3130	2500.00	2569.7083	2570
	40	3.85	2500.3123	2500.00	2569.7031	2570
	50	3.85	2500.3115	2500.00	2569.7058	2570
Frequency Stability vs. Voltage	20	3.6	2500.3113	2500.00	2569.7054	2570
	20	4.4	2500.3107	2500.00	2569.7078	2570
					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	2500.3008	2500.00	2569.7977	2570
	-20	3.85	2500.3074	2500.00	2569.7908	2570
	-10	3.85	2500.3002	2500.00	2569.7900	2570
	0	3.85	2500.3065	2500.00	2569.7928	2570
	10	3.85	2500.3038	2500.00	2569.7996	2570
	20	3.85	2500.3058	2500.00	2569.7942	2570
	30	3.85	2500.3073	2500.00	2569.7923	2570
	40	3.85	2500.3039	2500.00	2569.7901	2570
	50	3.85	2500.3013	2500.00	2569.7937	2570
Frequency Stability vs. Voltage	20	3.6	2500.3030	2500.00	2569.7987	2570
	20	4.4	2500.3043	2500.00	2569.7977	2570
					Result:	**Pass**