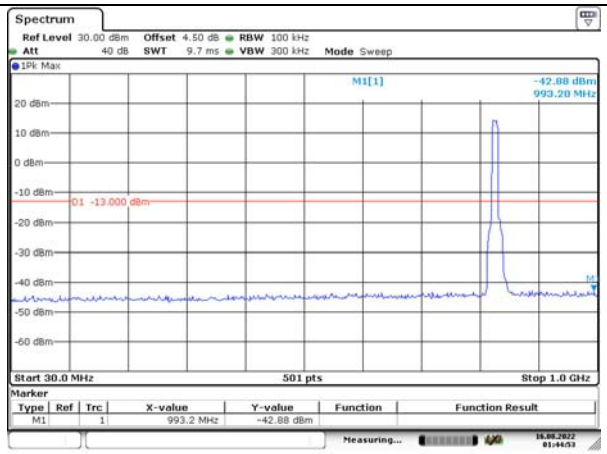
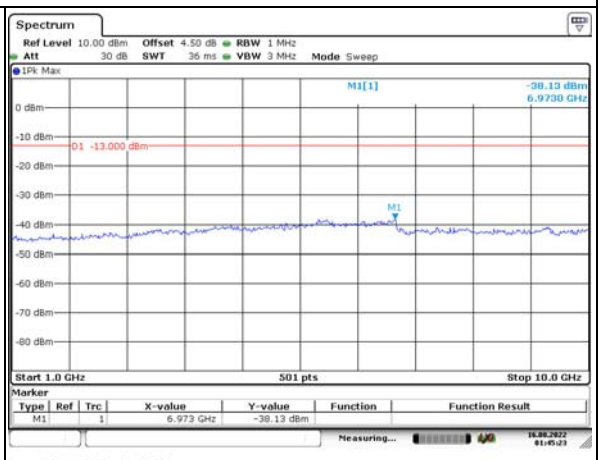
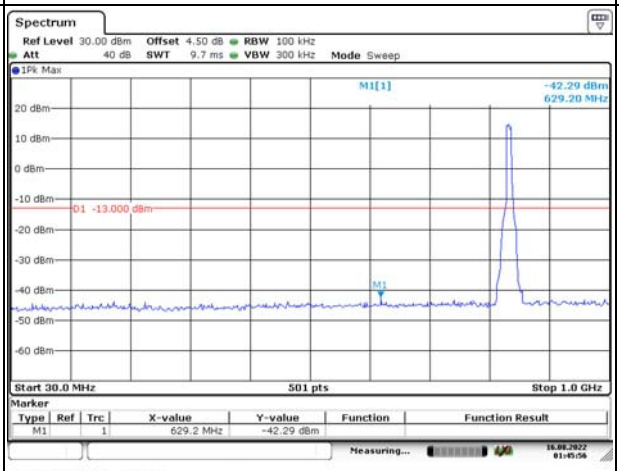
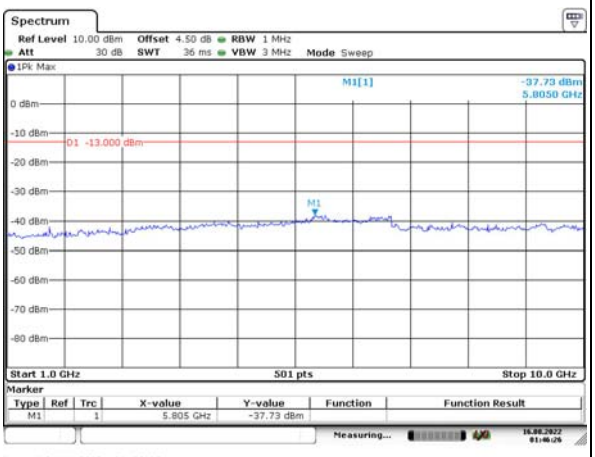
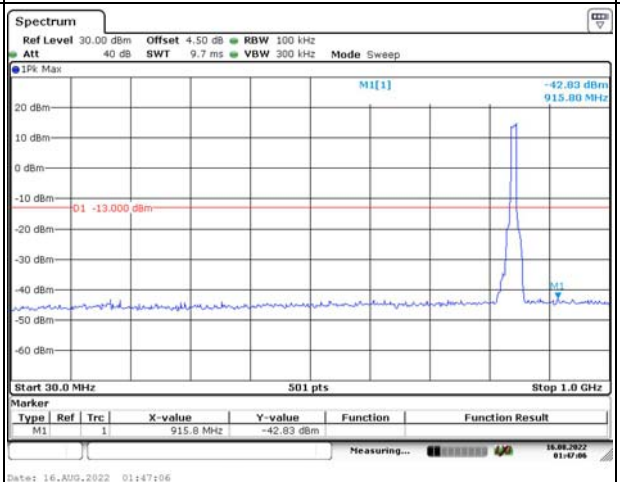
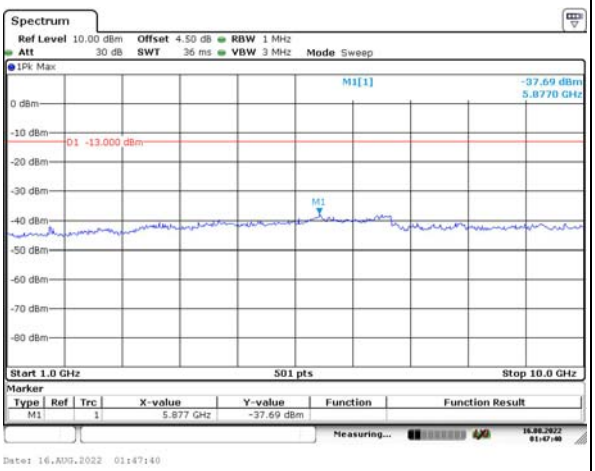
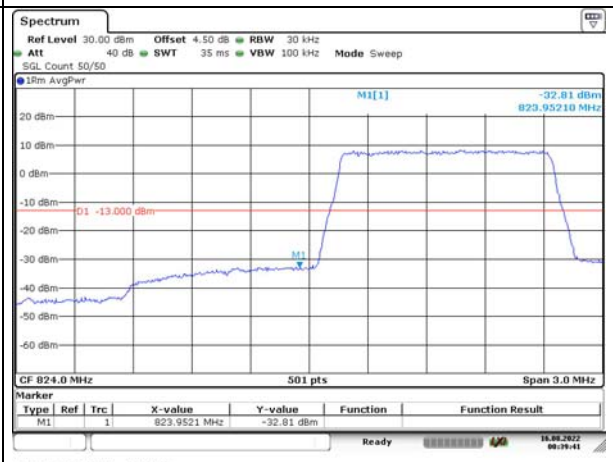
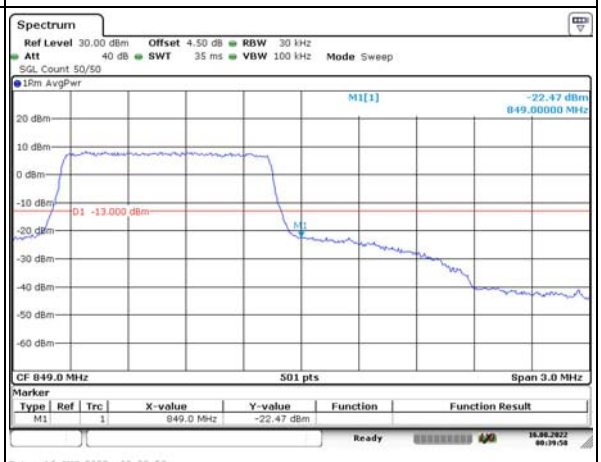
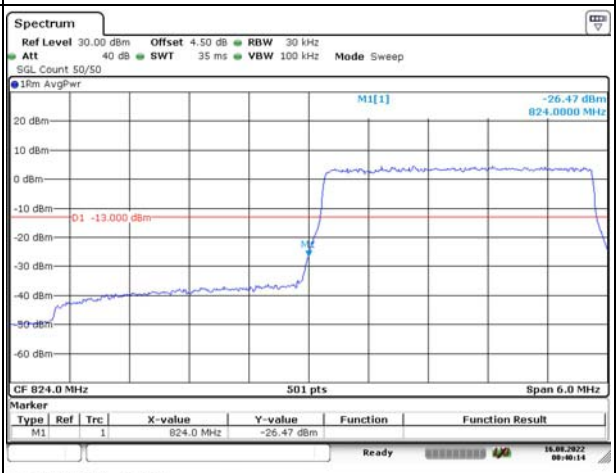
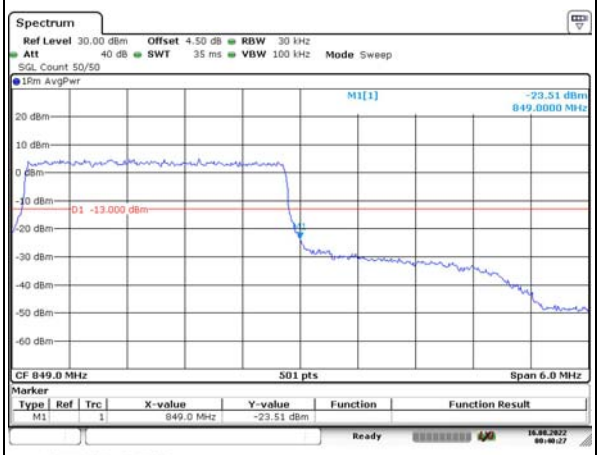
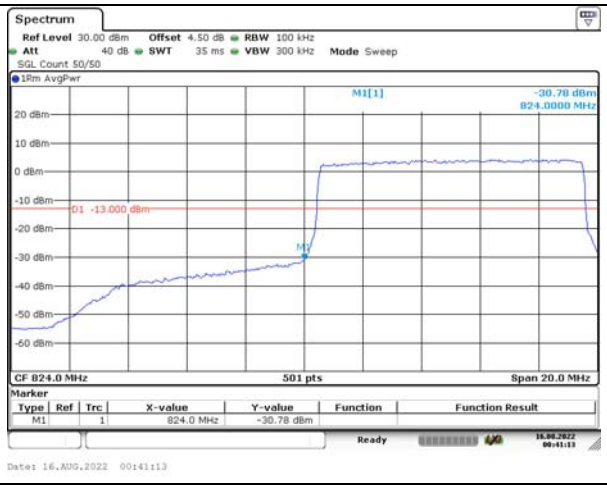
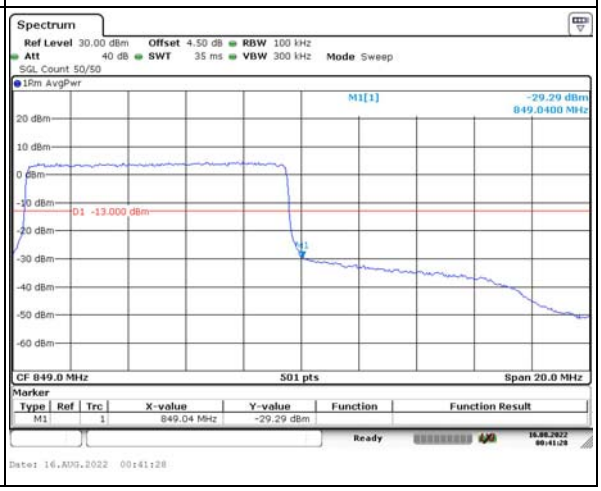
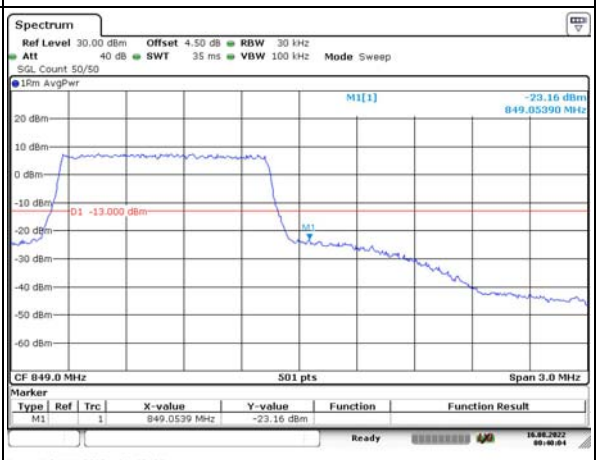
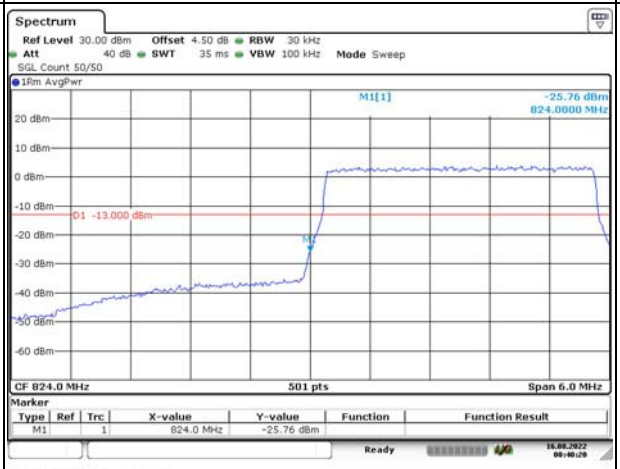
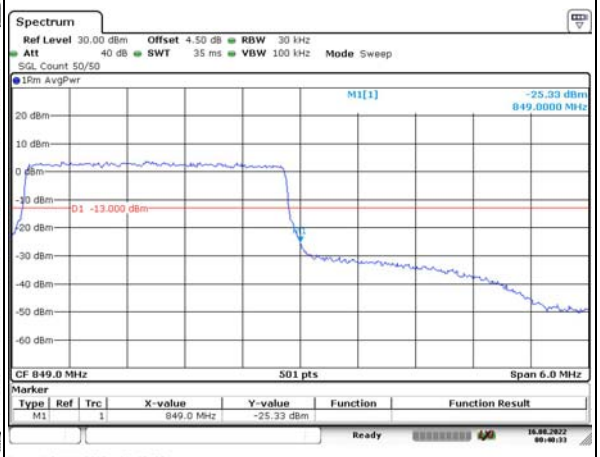
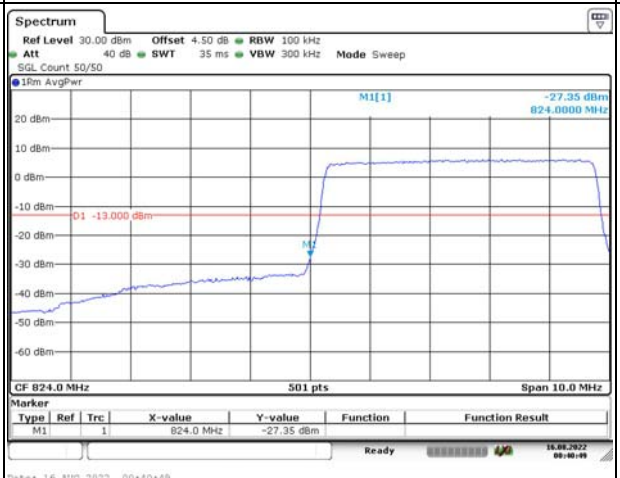
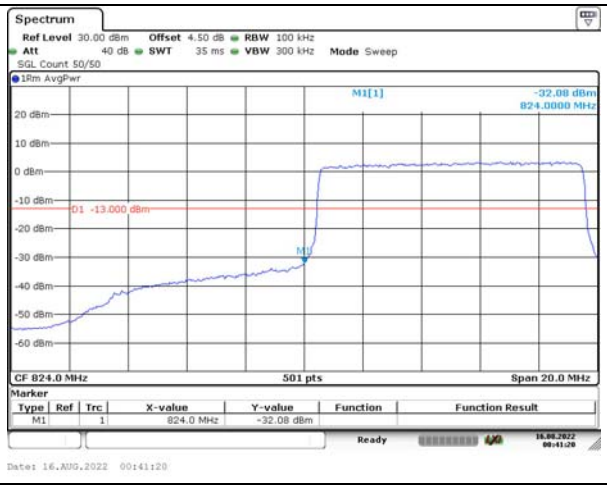
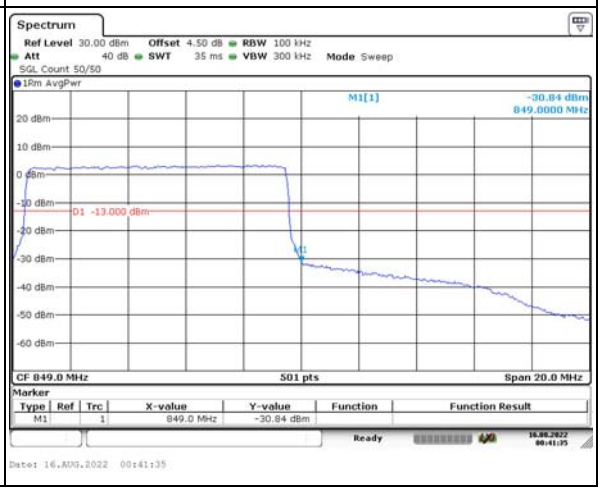
Spurious Emissions at Antenna Terminal		
Channel	**10MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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:	CR22080013-RF-S1	Test Date:	2022-08-13~2022-08-25
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.1~25.9	Relative Humidity: (%)	52~63	ATM Pressure: (kPa)	99.9~100.8

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	211002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
Unknown	RF Cable	Unknown	RF Cable 003	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05

** 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 12▲:					
Antenna Gain (dBi):	0.31	Antenna Gain (dBd):	-1.84	Path Loss L_C (dB):	0.3
Operation Voltage(V_{DC}):					
Lowest:	3.5	Normal:	3.8	Highest:	4.35

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:

FCC§2.1046;§ 27.50(c) (10)

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	22.28	22.45	22.32	20.41	34.77
	RB1#3	22.28	22.52	22.21		
	RB1#5	22.29	22.5	22.26		
	RB3#0	22.35	22.55	22.37		
	RB3#3	22.42	22.54	22.33		
	RB6#0	21.26	21.54	21.36		
1.4MHz 16QAM	RB1#0	20.73	22.01	21	20.09	34.77
	RB1#3	20.78	22.23	20.84		
	RB1#5	20.77	22.19	21		
	RB3#0	21.3	21.48	21.3		
	RB3#3	21.29	21.46	21.43		
	RB6#0	20.51	20.7	20.95		
3MHz QPSK	RB1#0	22.29	22.49	22.35	20.39	34.77
	RB1#8	22.32	22.53	22.33		
	RB1#14	22.41	22.53	22.33		
	RB6#0	21.32	21.34	21.29		
	RB6#9	21.37	21.55	21.41		
	RB15#0	21.29	21.56	21.41		
3MHz 16QAM	RB1#0	21.94	20.9	21.48	19.91	34.77
	RB1#8	21.92	21.06	21.5		
	RB1#14	22.05	21.1	21.64		
	RB6#0	20.41	20.84	20.31		
	RB6#9	20.41	20.89	20.7		
	RB15#0	20.37	20.71	20.39		
5MHz QPSK	RB1#0	22.49	22.31	22.45	20.41	34.77
	RB1#13	22.38	22.34	22.44		
	RB1#24	22.55	22.38	22.43		
	RB15#0	21.39	21.31	21.46		
	RB15#10	21.51	21.57	21.45		
	RB25#0	21.56	21.5	21.44		
5MHz 16QAM	RB1#0	21.39	20.96	20.51	19.76	34.77
	RB1#13	21.55	21.01	20.49		
	RB1#24	21.9	21.07	20.62		
	RB15#0	20.26	20.64	20.68		
	RB15#10	20.38	20.74	20.68		
	RB25#0	20.49	20.61	20.64		
10MHz QPSK	RB1#0	22.34	22.57	22.35	20.53	34.77
	RB1#25	22.42	22.67	22.34		

	RB1#49	22.51	22.58	22.41		
	RB25#0	21.42	21.29	21.5		
	RB25#25	21.33	21.51	21.47		
	RB50#0	21.59	21.57	21.57		
10MHz 16QAM	RB1#0	21.54	20.9	21.42	19.77	34.77
	RB1#25	21.91	21.13	21.53		
	RB1#49	21.81	21.12	21.62		
	RB25#0	20.56	20.73	20.63		
	RB25#25	20.72	20.81	20.66		
	RB50#0	20.8	20.72	20.76		
Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)						
					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	5.22	5.39	13
	RB50#0	5.59	5.8	5.39	13
10MHz 16QAM	RB1#0	6.58	6.14	6.29	13
	RB50#0	6.41	6.64	6.41	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	1.096	1.102	1.260	1.254	1.260
1.4MHz 16QAM	1.096	1.108	1.096	1.254	1.266	1.248
3MHz QPSK	2.695	2.695	2.695	2.988	3.012	2.988
3MHz 16QAM	2.683	2.707	2.695	3.000	3.024	3.012
5MHz QPSK	4.511	4.511	4.511	5.000	5.000	4.980
5MHz 16QAM	4.511	4.551	4.491	5.000	5.040	4.980
10MHz QPSK	8.942	8.982	8.942	9.680	9.800	9.720
10MHz 16QAM	8.942	8.982	8.942	9.760	9.880	9.760
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §27.53:Spurious Emissions at Antenna Terminal	
Result:	**Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

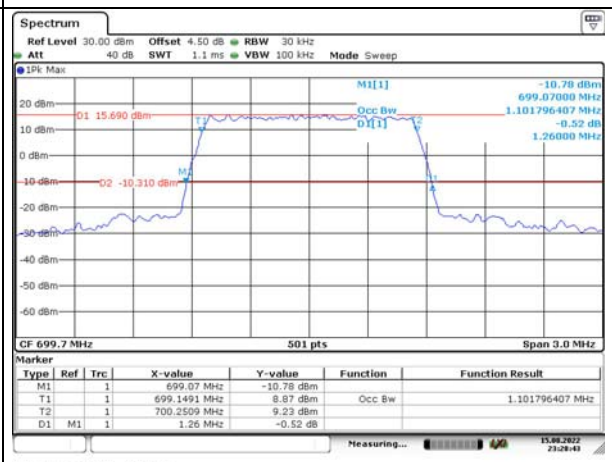
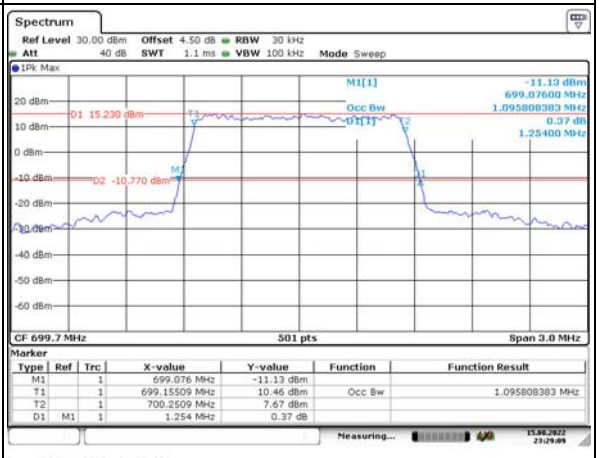
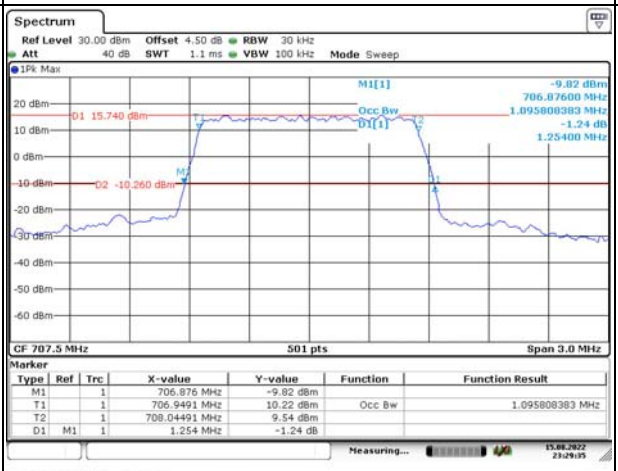
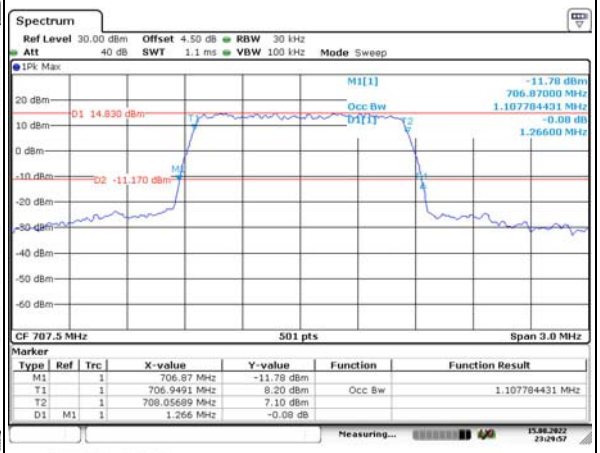
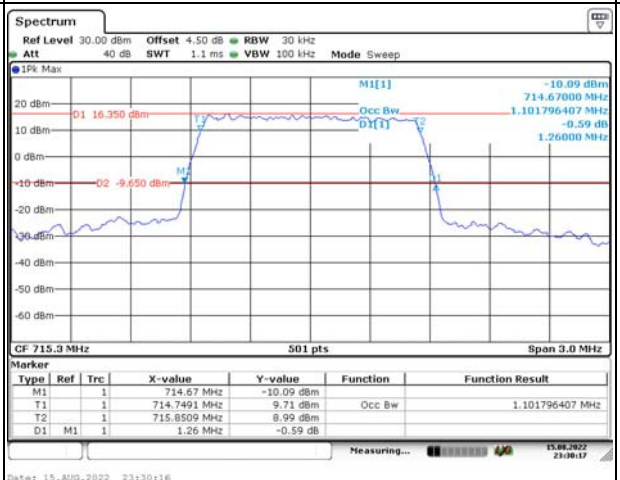
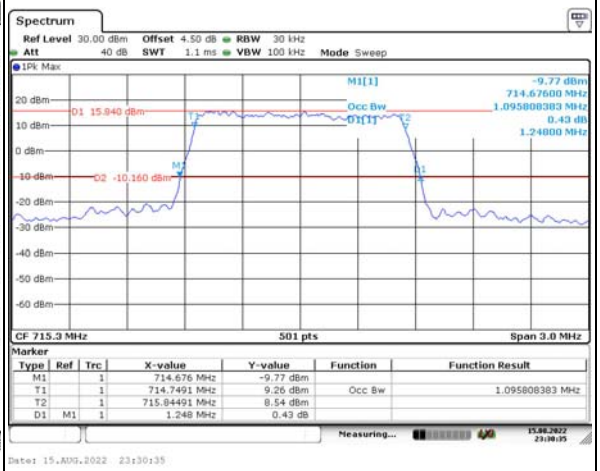
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

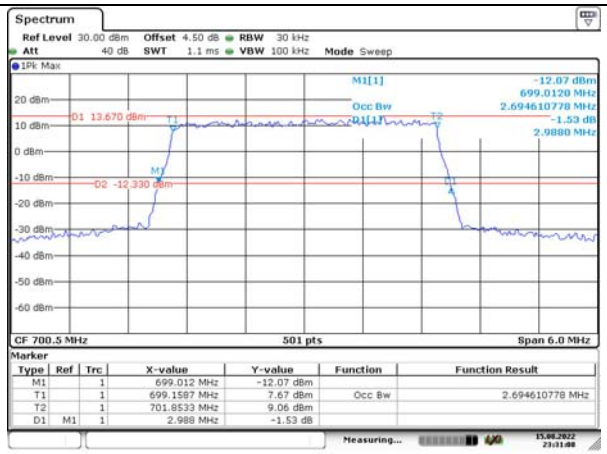
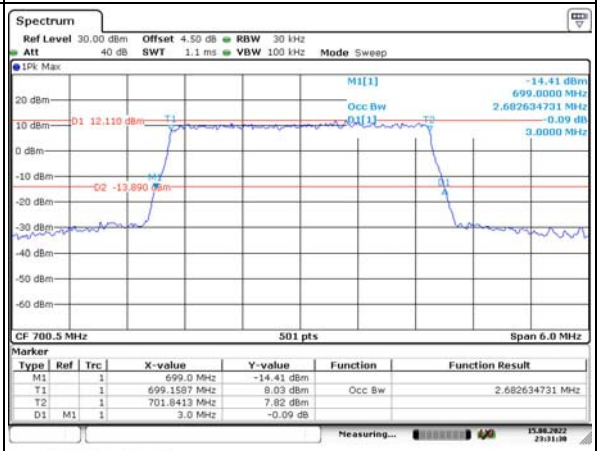
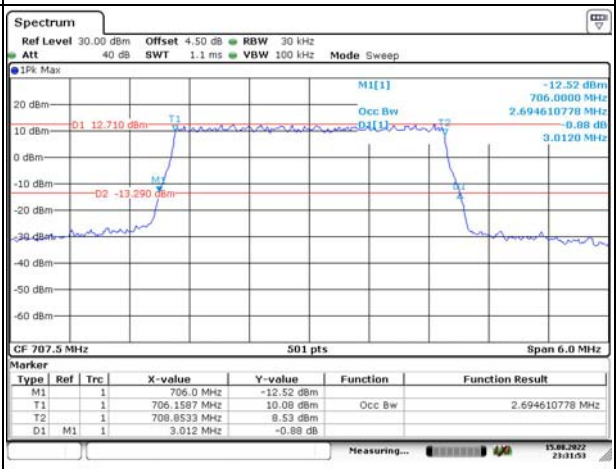
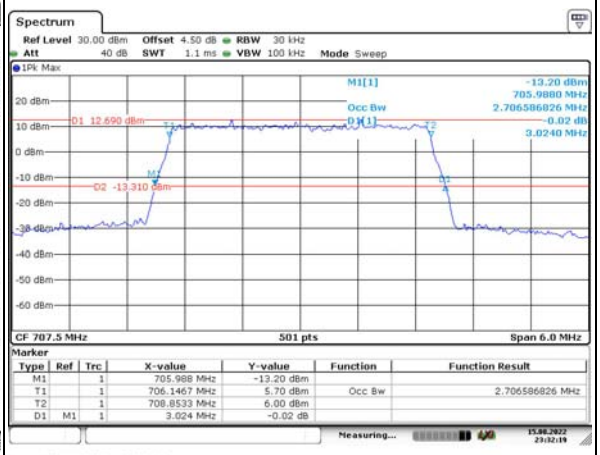
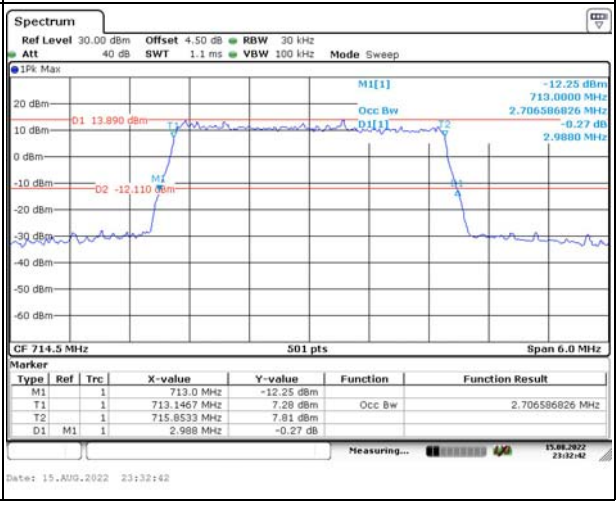
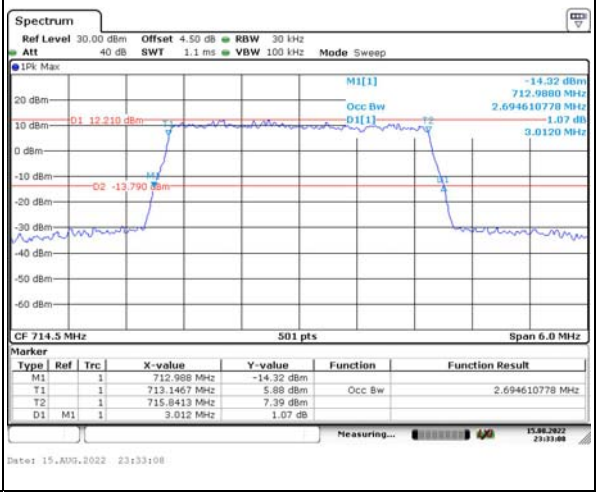
FCC §2.1055, §27.54: Frequency Stability

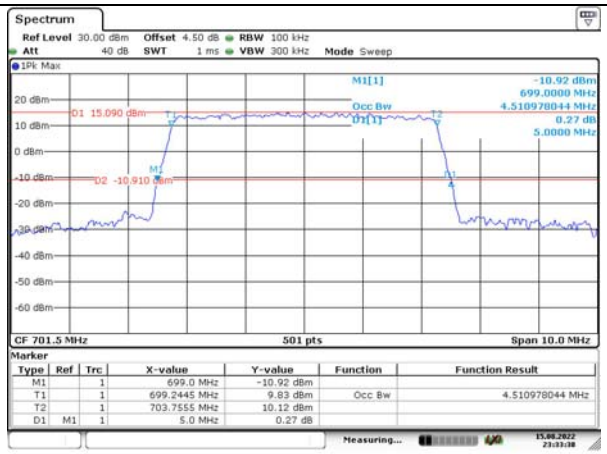
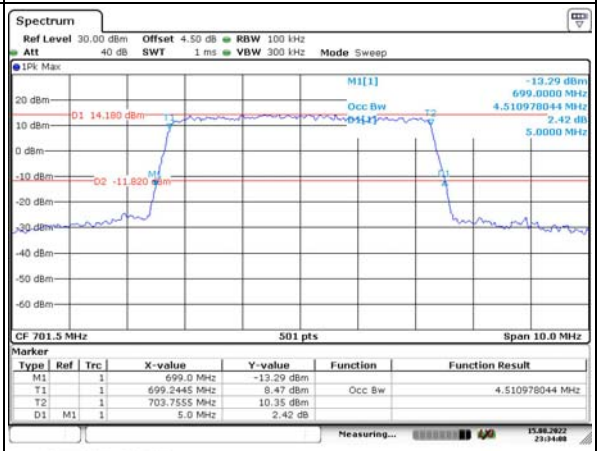
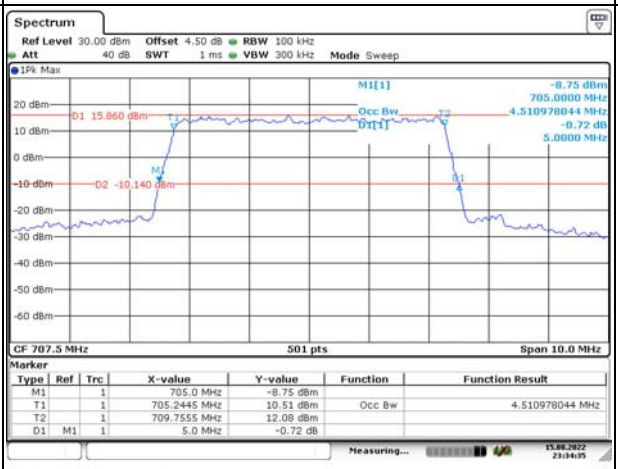
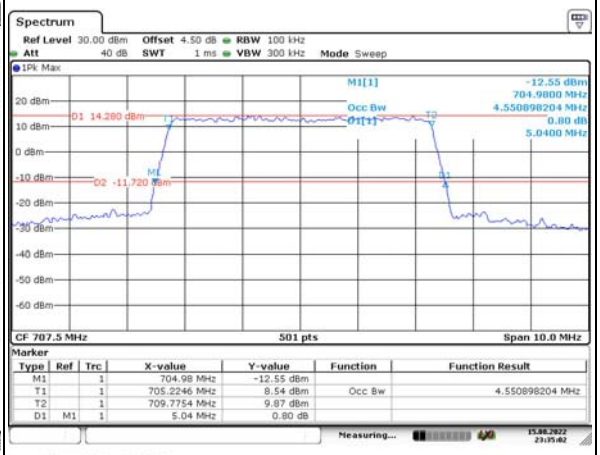
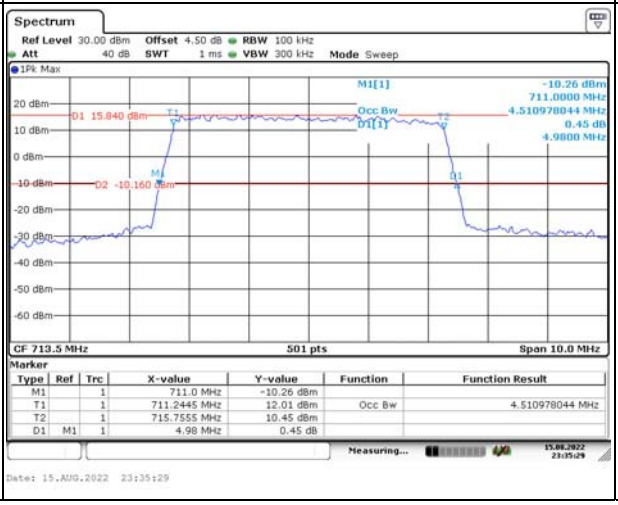
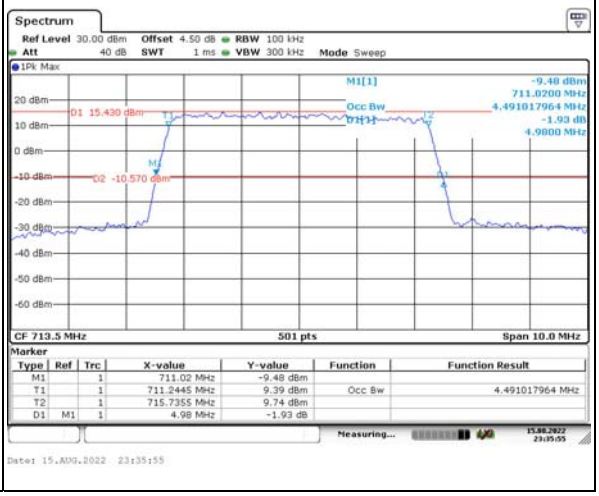
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.544	699.00	715.477	716.00
	-20	3.8	699.509	699.00	715.437	716.00
	-10	3.8	699.526	699.00	715.496	716.00
	0	3.8	699.524	699.00	715.496	716.00
	10	3.8	699.543	699.00	715.481	716.00
	20	3.8	699.529	699.00	715.471	716.00
	30	3.8	699.531	699.00	715.439	716.00
	40	3.8	699.551	699.00	715.478	716.00
	50	3.8	699.532	699.00	715.478	716.00
Frequency Stability vs. Voltage	20	3.5	699.487	699.00	715.418	716.00
	20	4.35	699.547	699.00	715.409	716.00
					Result:	**Pass**

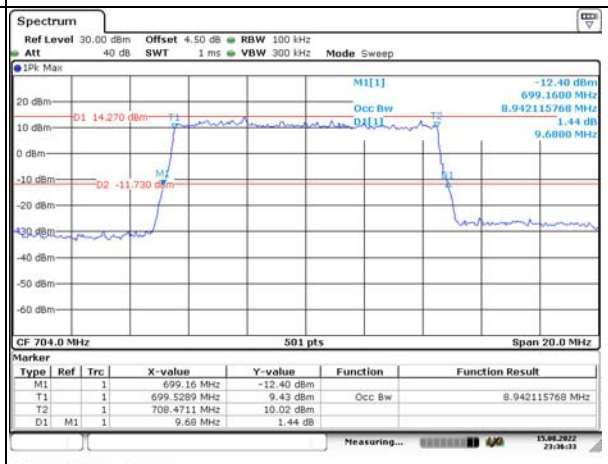
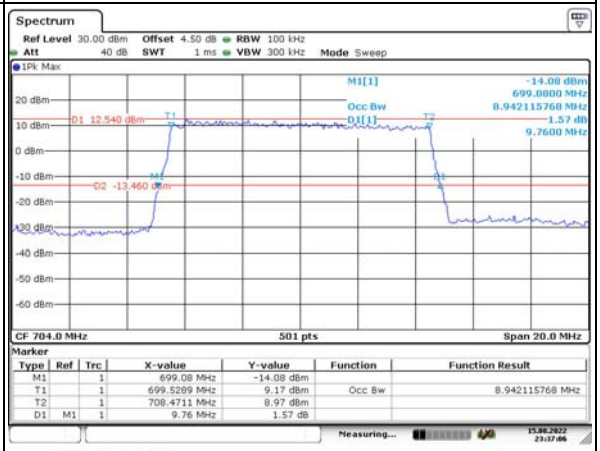
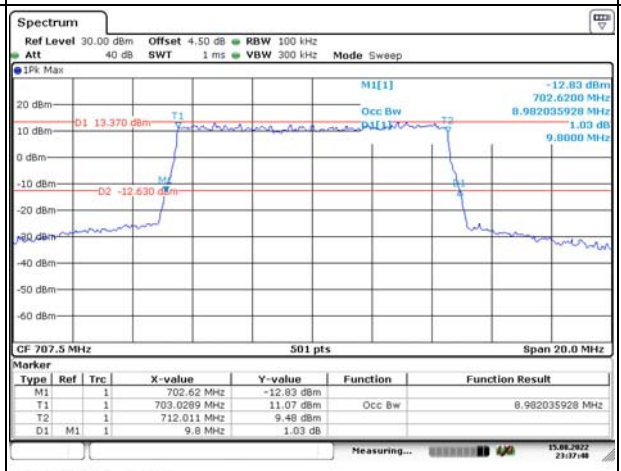
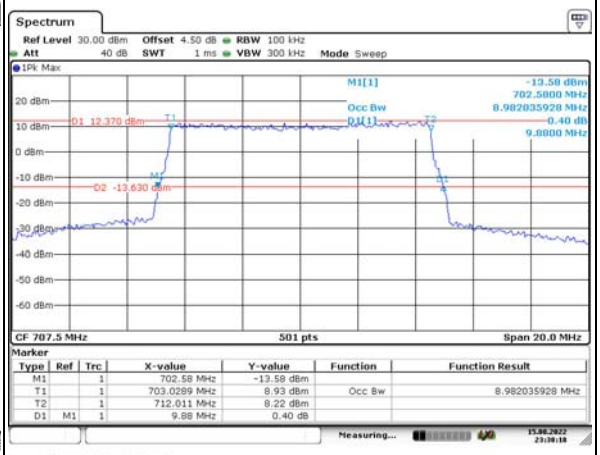
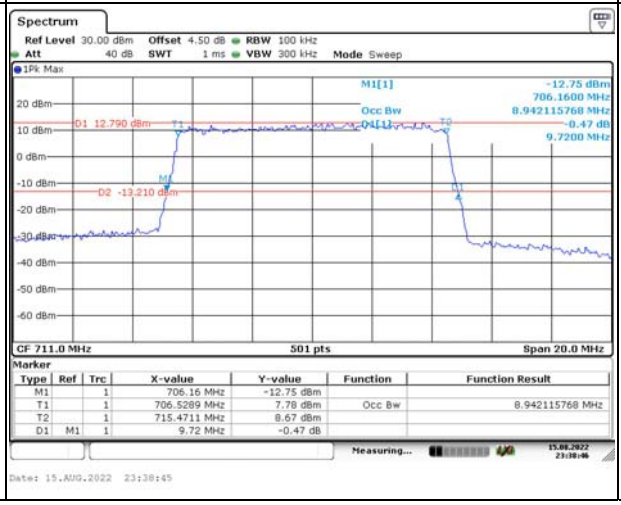
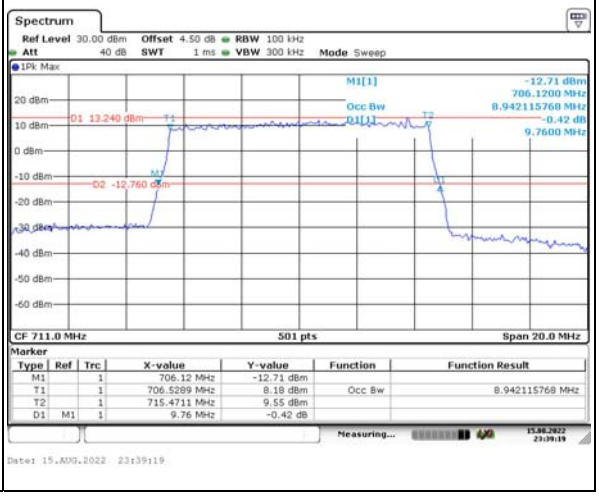
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.542	699.00	715.437	716.00
	-20	3.8	699.537	699.00	715.455	716.00
	-10	3.8	699.481	699.00	715.426	716.00
	0	3.8	699.525	699.00	715.425	716.00
	10	3.8	699.549	699.00	715.445	716.00
	20	3.8	699.529	699.00	715.471	716.00
	30	3.8	699.496	699.00	715.415	716.00
	40	3.8	699.487	699.00	715.468	716.00
	50	3.8	699.490	699.00	715.413	716.00
Frequency Stability vs. Voltage	20	3.5	699.514	699.00	715.410	716.00
	20	4.35	699.553	699.00	715.423	716.00
					Result:	**Pass**

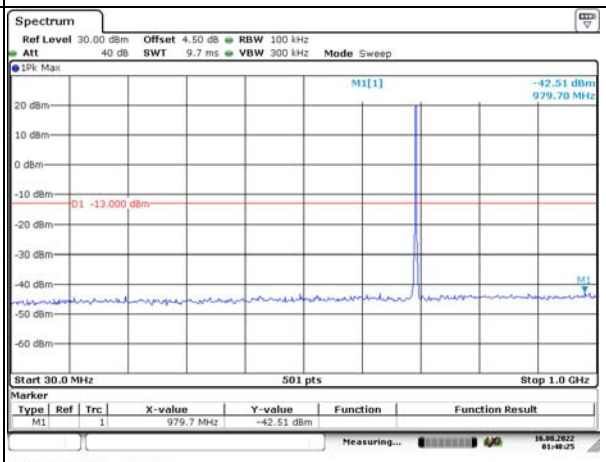
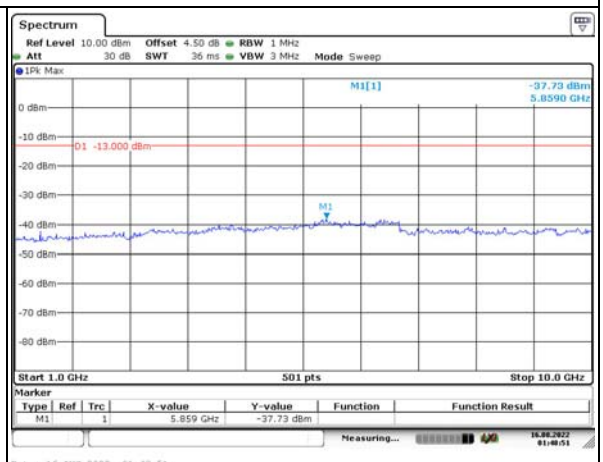
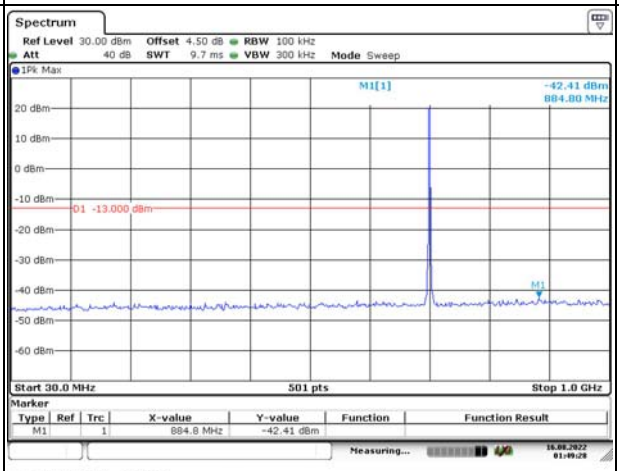
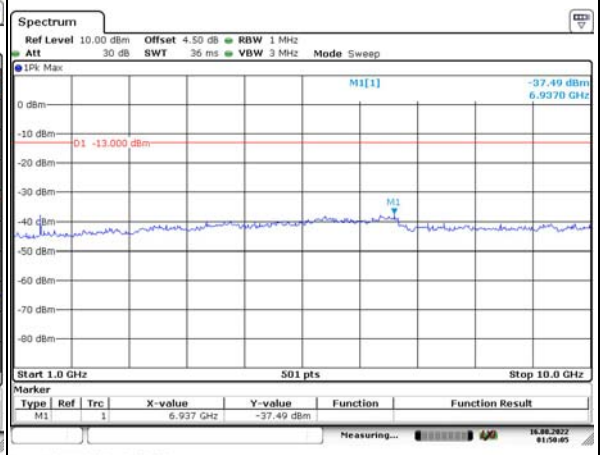
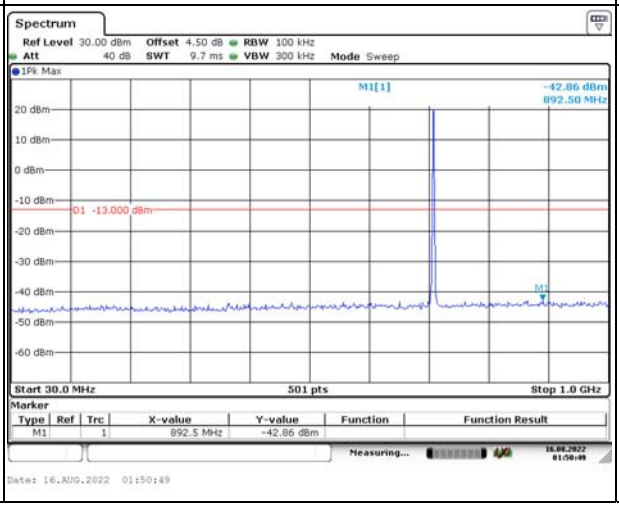
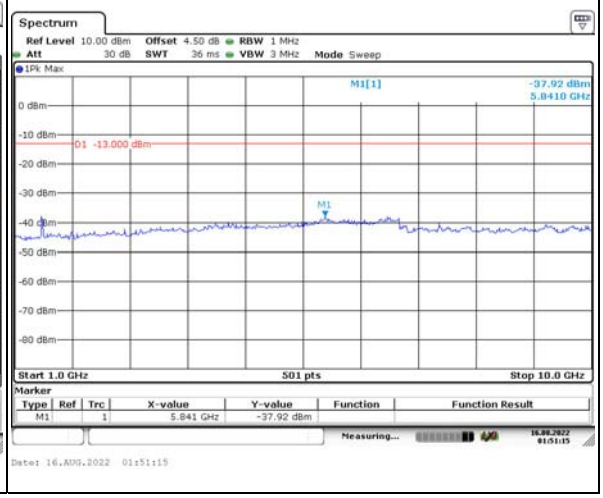
Test Plots:

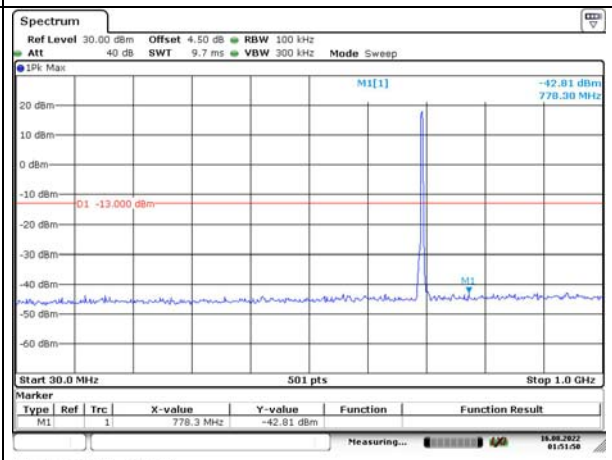
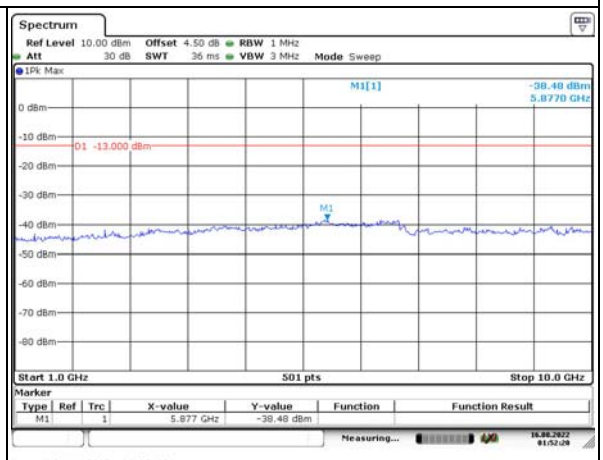
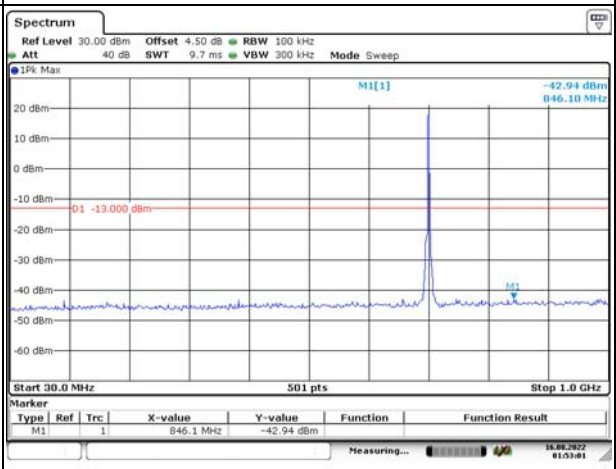
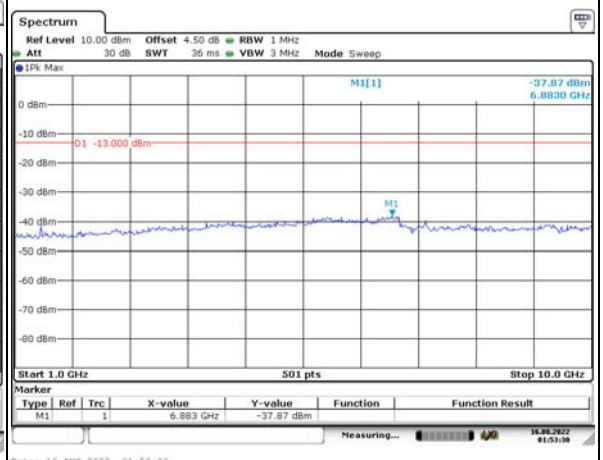
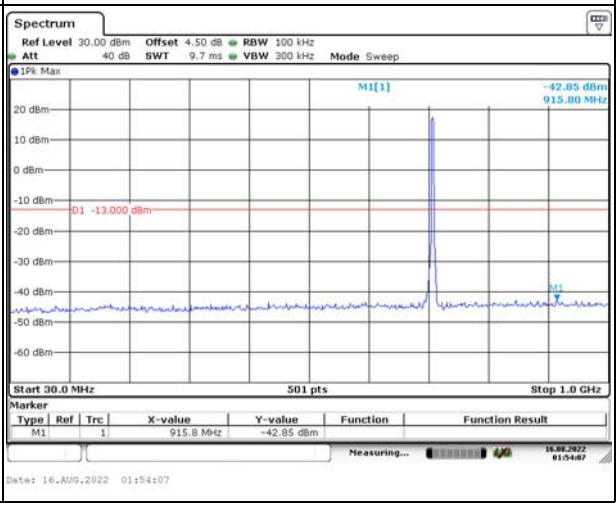
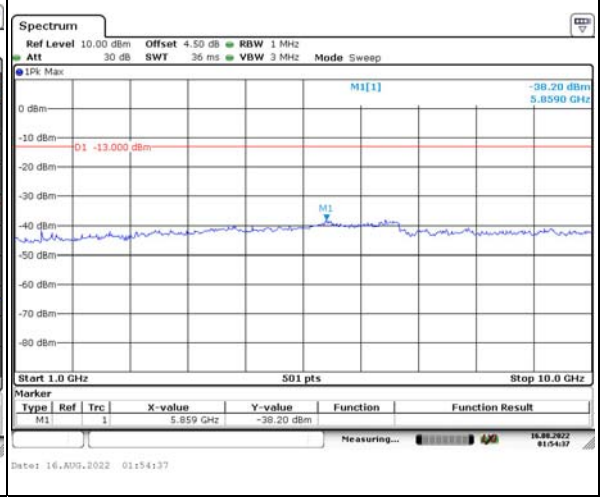
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

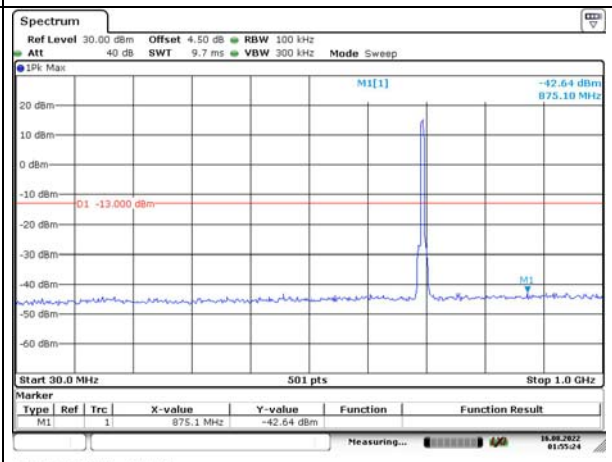
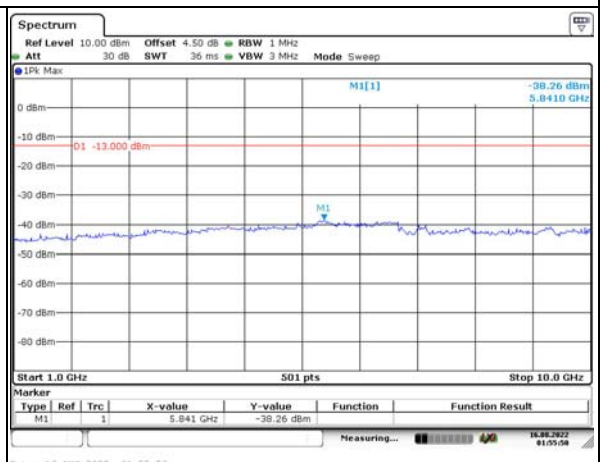
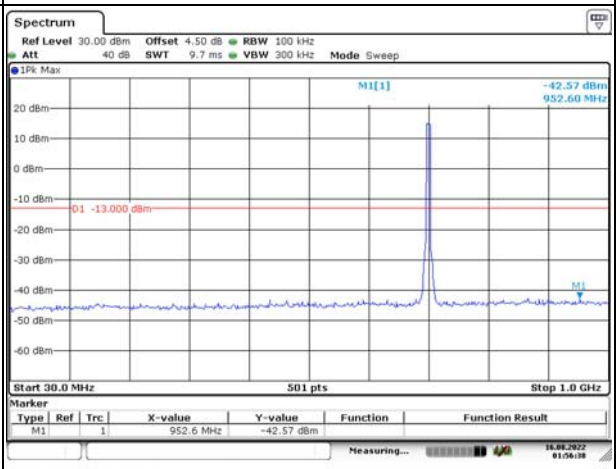
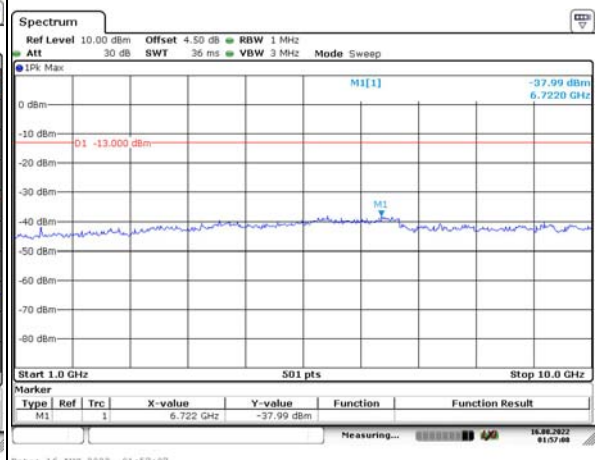
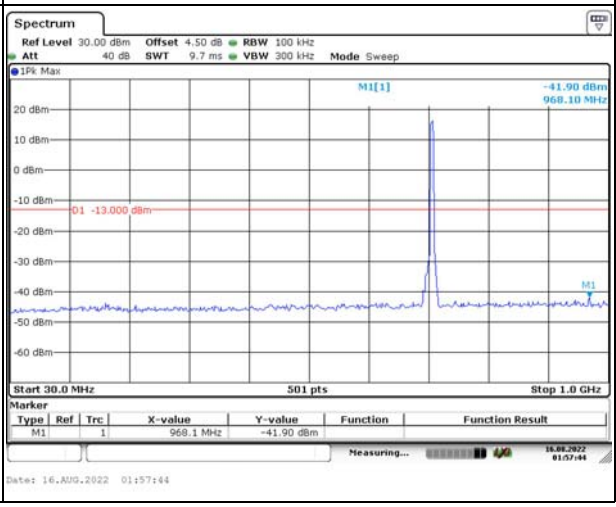
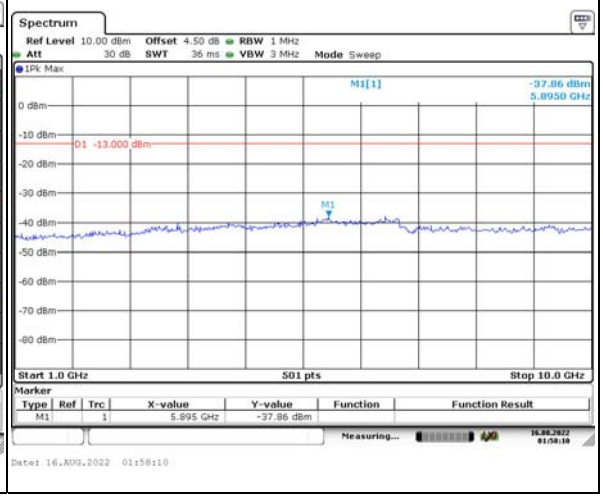
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

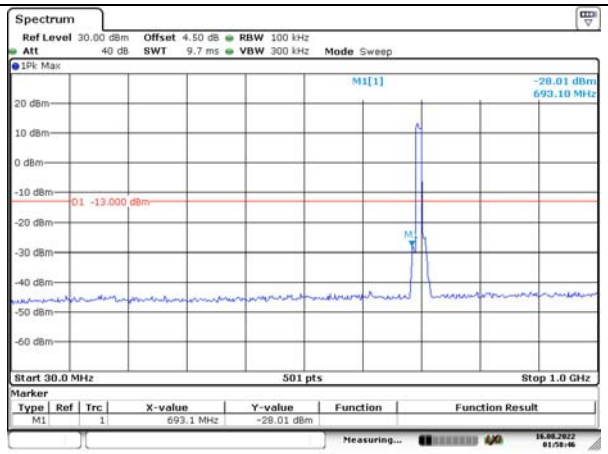
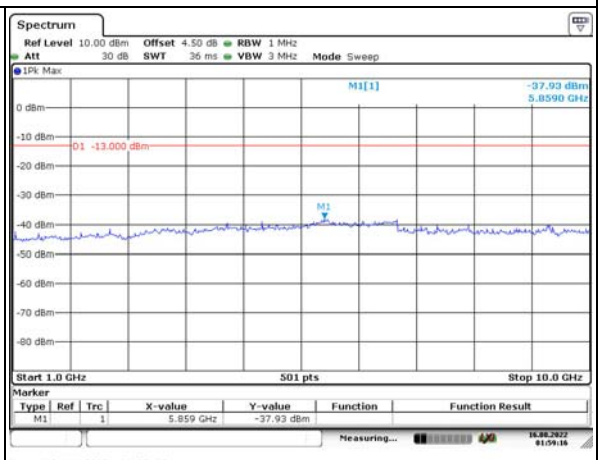
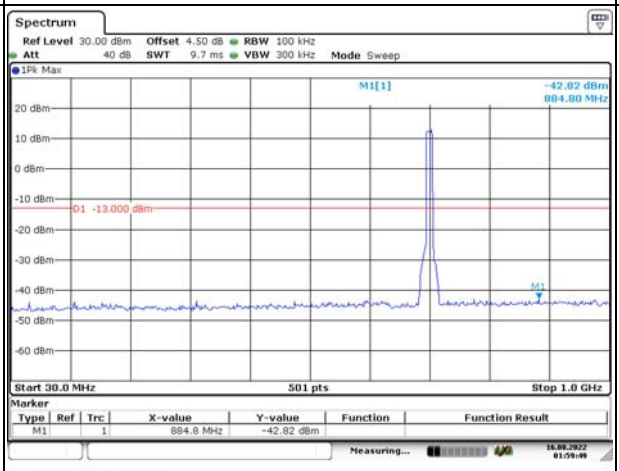
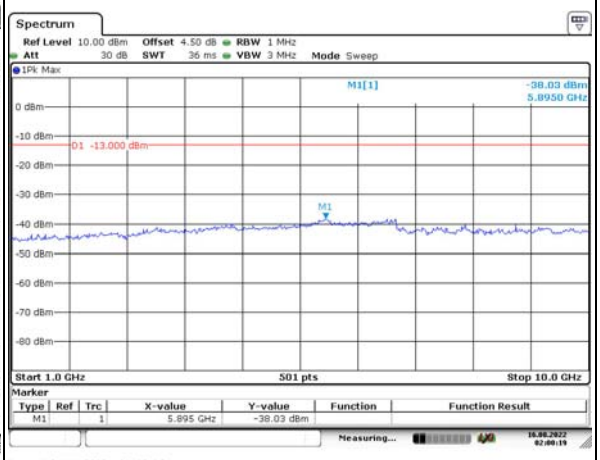
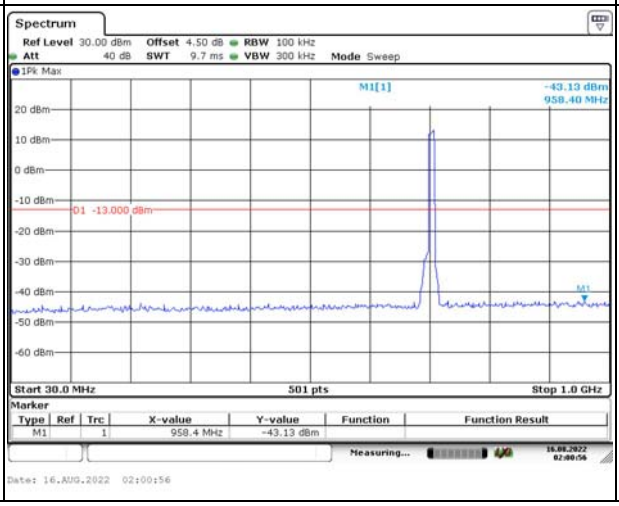
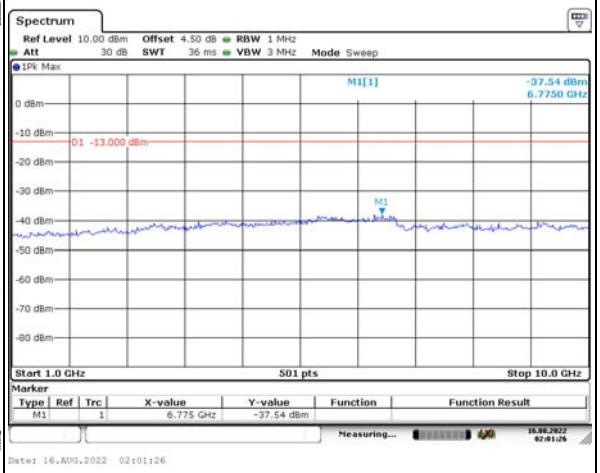
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

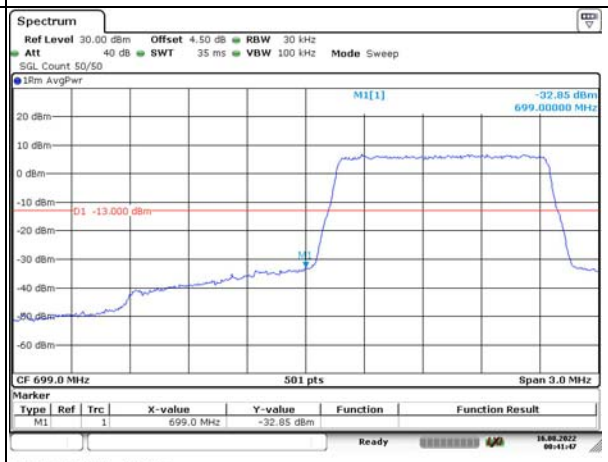
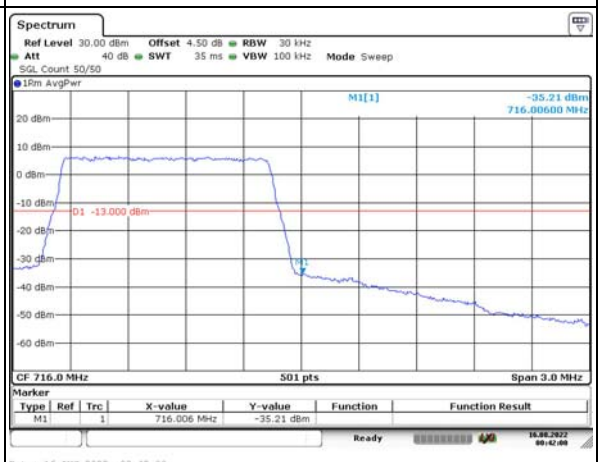
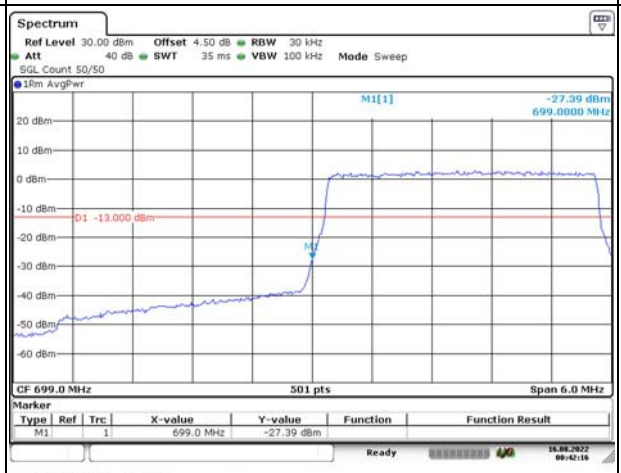
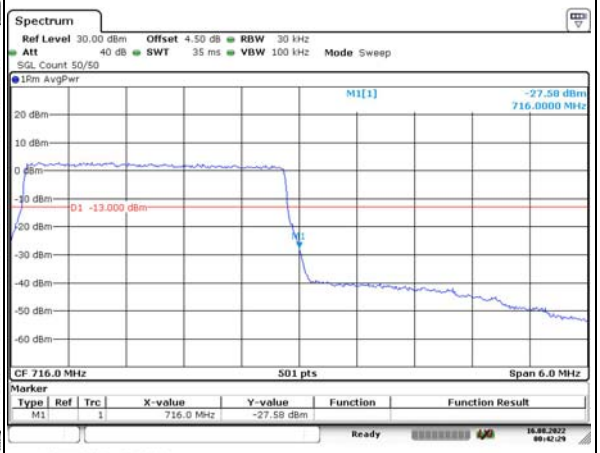
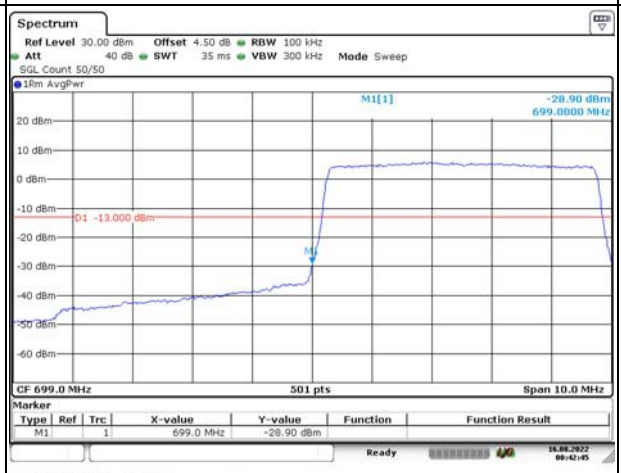
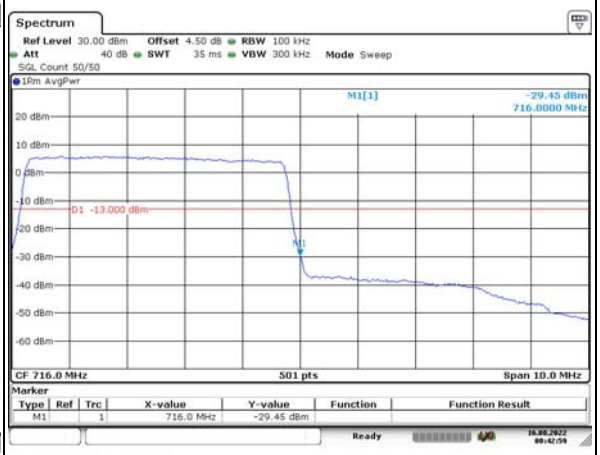
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

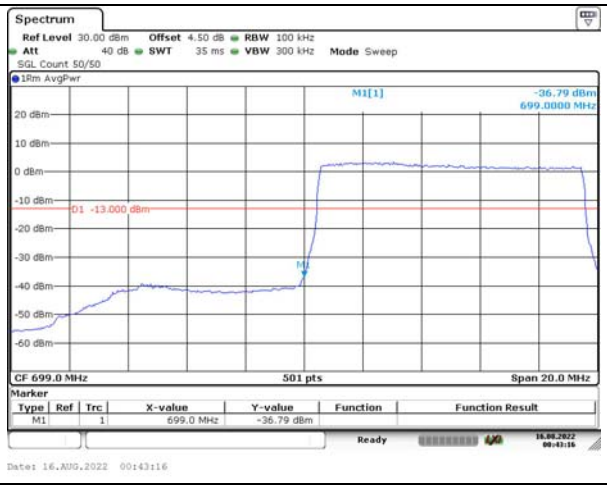
Spurious Emissions at Antenna Terminal		
Channel	**1.4MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

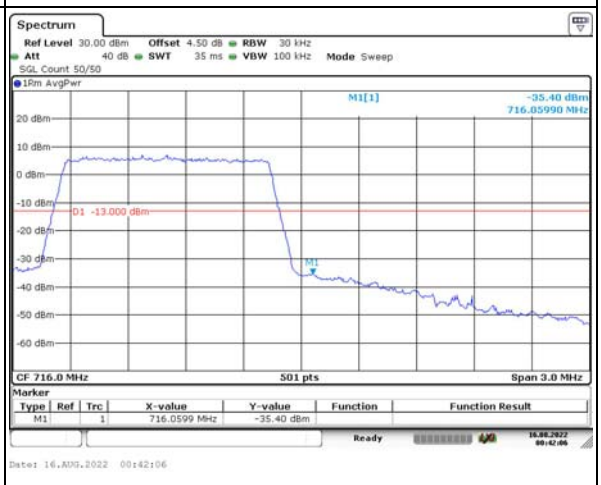
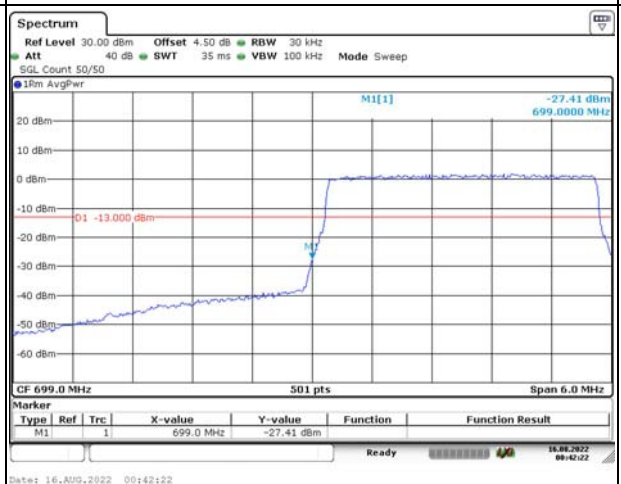
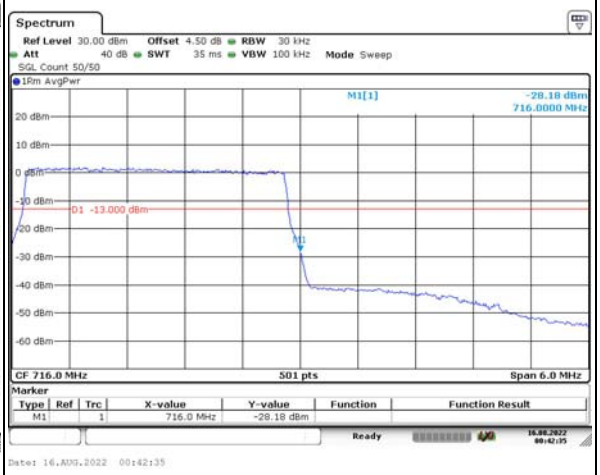
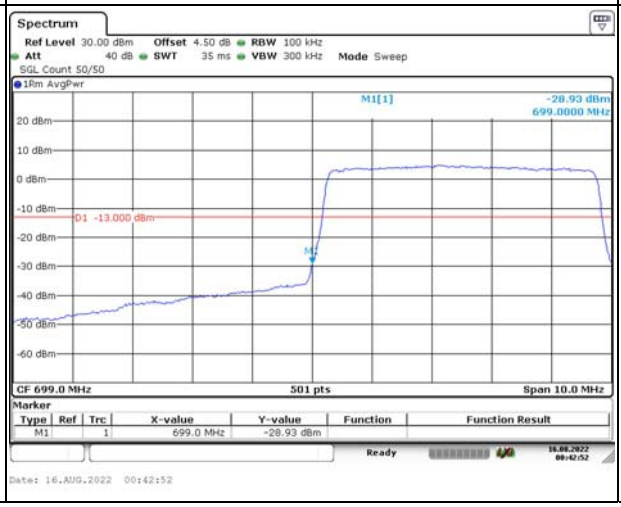
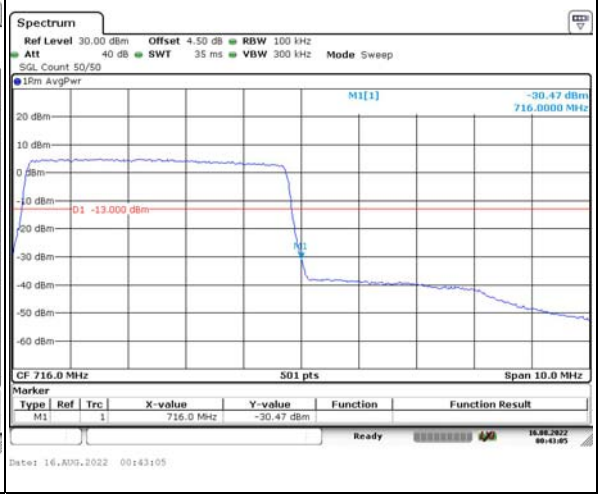
Spurious Emissions at Antenna Terminal		
Channel	**3MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

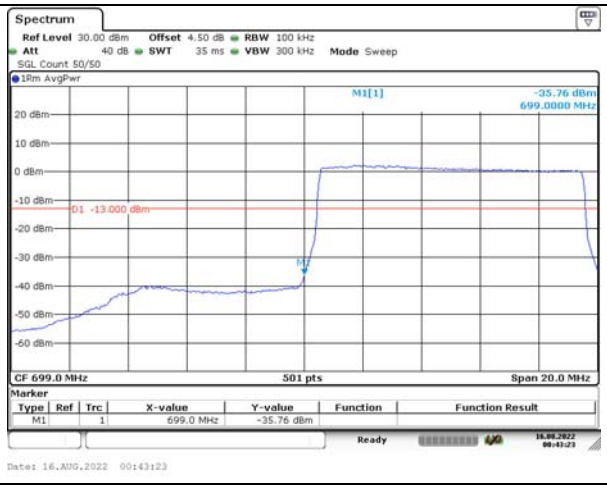
Spurious Emissions at Antenna Terminal		
Channel	**5MHz Bandwidth QPSK**	
Lowest		
Middle		
Highest		

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		

4.10 Antenna Port Test Data and Results for LTE Band 17

Serial Number:	CR22080013-RF-S1	Test Date:	2022-08-13~2022-08-25
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.1~25.9	Relative Humidity: (%)	52~63	ATM Pressure: (kPa)	99.9~100.8

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	211002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
Unknown	RF Cable	Unknown	RF Cable 003	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05

** 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 17▲:					
Antenna Gain (dBi):	0.31	Antenna Gain (dBd):	-1.84	Path Loss L_C (dB):	0.3
Operation Voltage(V_{DC}):					
Lowest:	3.5	Normal:	3.8	Highest:	4.35

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	706.5	710	713.5
10MHz	709	710	711

Test Data:

FCC§2.1046;§ 27.50(c) (10)						
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		
5MHz QPSK	RB1#0	22.37	22.42	22.43	20.38	34.77
	RB1#13	22.4	22.32	22.43		
	RB1#24	22.52	22.29	22.43		
	RB15#0	21.31	21.58	21.45		
	RB15#10	21.54	21.56	21.44		
	RB25#0	21.33	21.48	21.46		
5MHz 16QAM	RB1#0	21.63	21	20.49	19.49	34.77
	RB1#13	21.38	21	20.54		
	RB1#24	21.48	21.04	20.61		
	RB15#0	20.48	20.75	20.65		
	RB15#10	20.56	20.67	20.66		
	RB25#0	20.61	20.52	20.61		
10MHz QPSK	RB1#0	22.35	22.59	22.31	20.52	34.77
	RB1#25	22.43	22.58	22.31		
	RB1#49	22.38	22.66	22.38		
	RB25#0	21.25	21.52	21.5		
	RB25#25	21.51	21.44	21.55		
	RB50#0	21.48	21.51	21.54		
10MHz 16QAM	RB1#0	21.84	20.89	21.33	19.7	34.77
	RB1#25	21.71	21.11	21.51		
	RB1#49	21.67	21.06	21.55		
	RB25#0	20.61	20.72	20.69		
	RB25#25	20.69	20.68	20.61		
	RB50#0	20.74	20.67	20.73		
Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)						
					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	5.39	5.59	5.42	13
	RB50#0	5.68	5.54	5.36	13
10MHz 16QAM	RB1#0	6.49	6.43	6.29	13
	RB50#0	6.52	6.46	6.38	13
				Result:	**Pass**

FCC §2.1049, §27.53:Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.531	4.511	4.511	5.040	5.000	4.980
5MHz 16QAM	4.551	4.531	4.491	5.040	5.000	4.980
10MHz QPSK	8.942	8.942	8.942	9.760	9.760	9.760
10MHz 16QAM	8.982	8.942	8.942	9.880	9.800	9.720
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.**

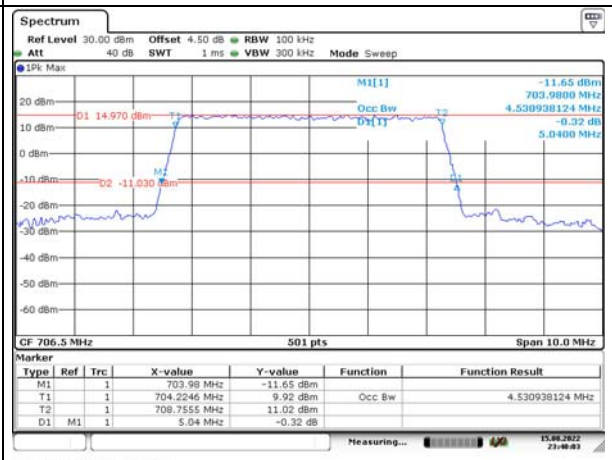
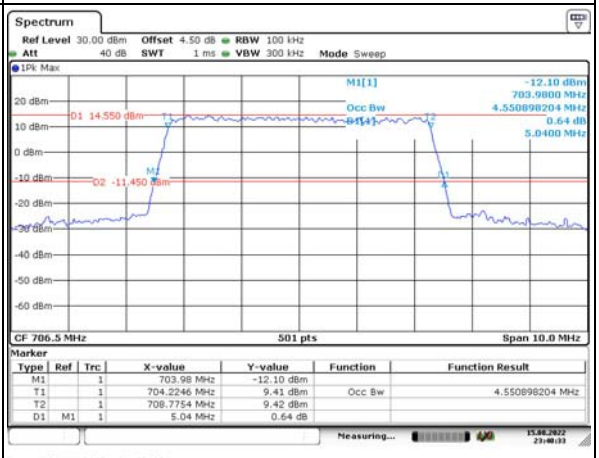
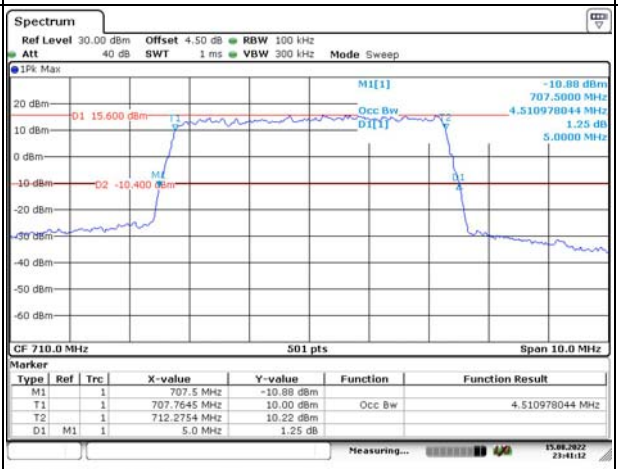
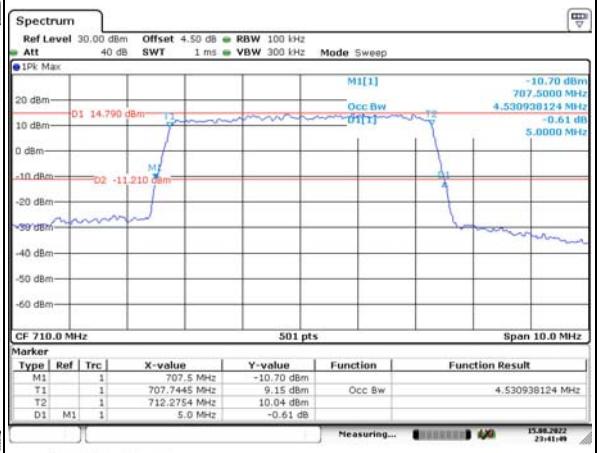
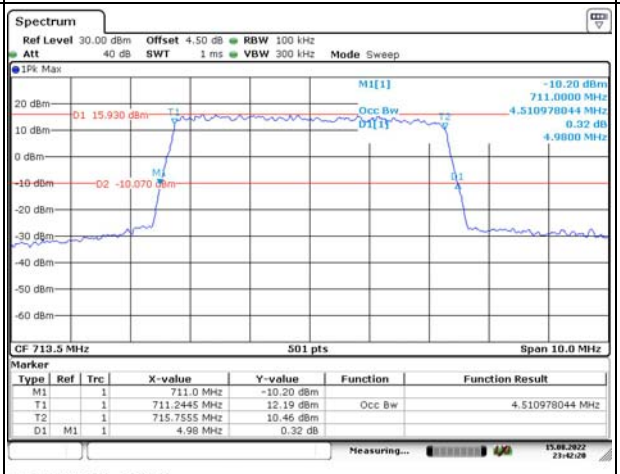
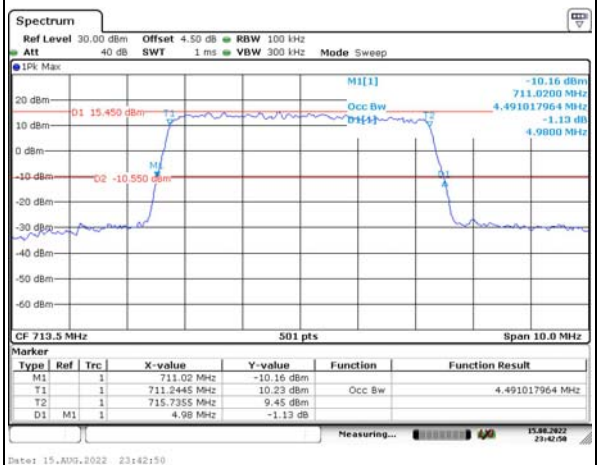
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

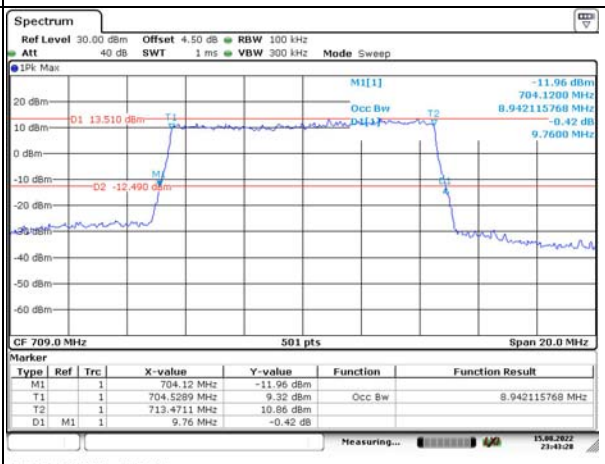
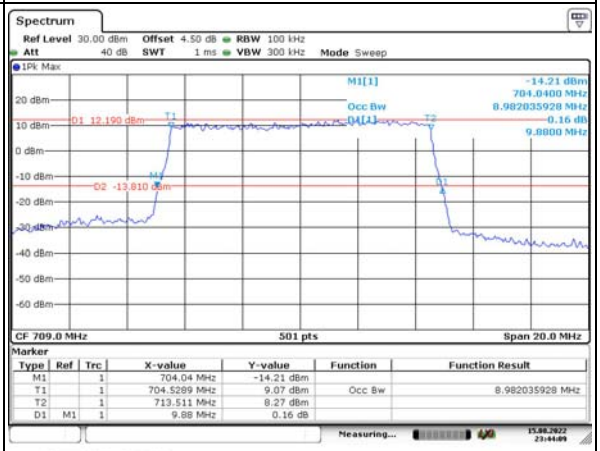
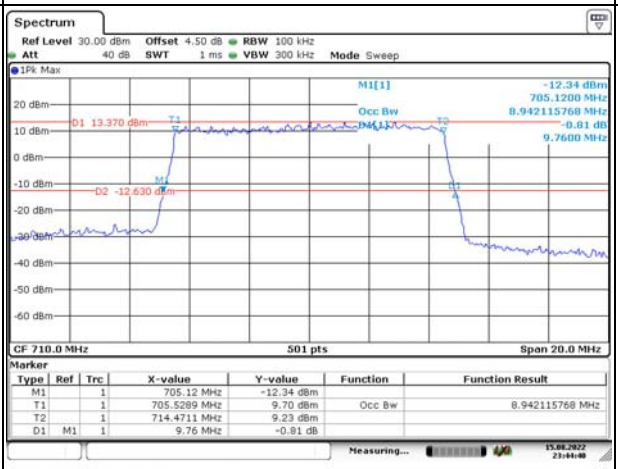
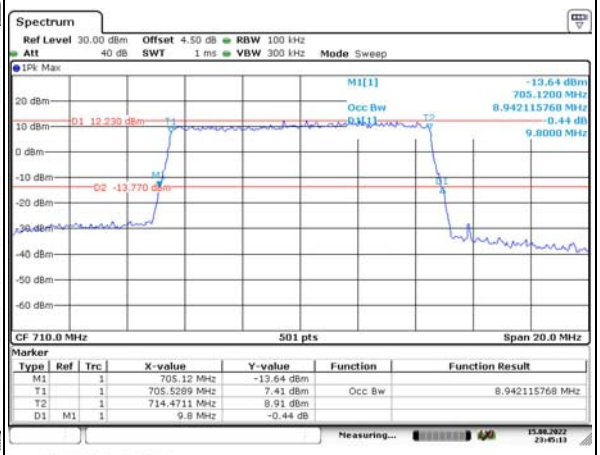
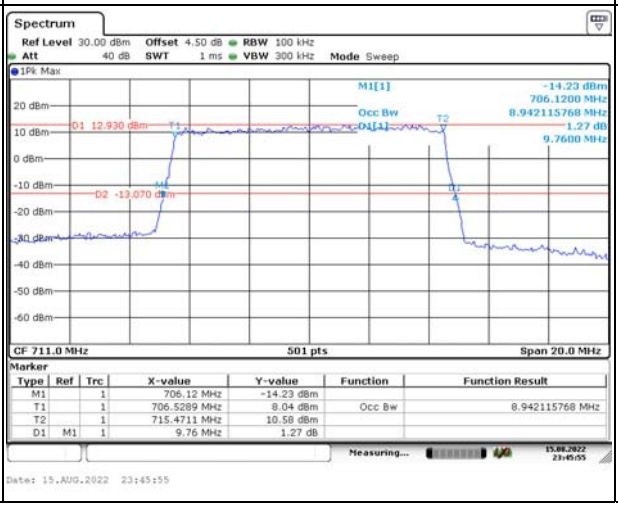
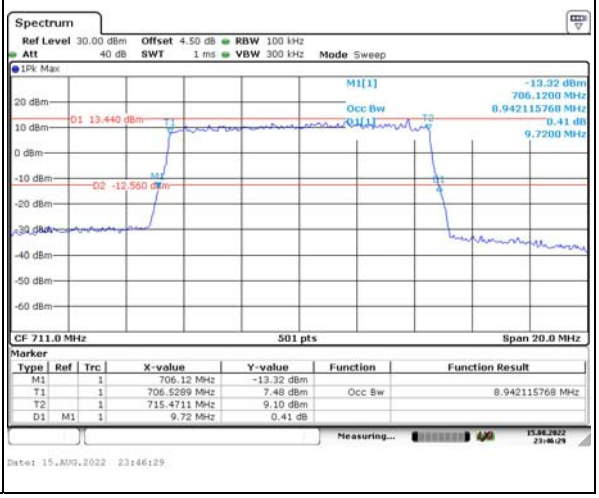
FCC §2.1055, §27.54: Frequency Stability

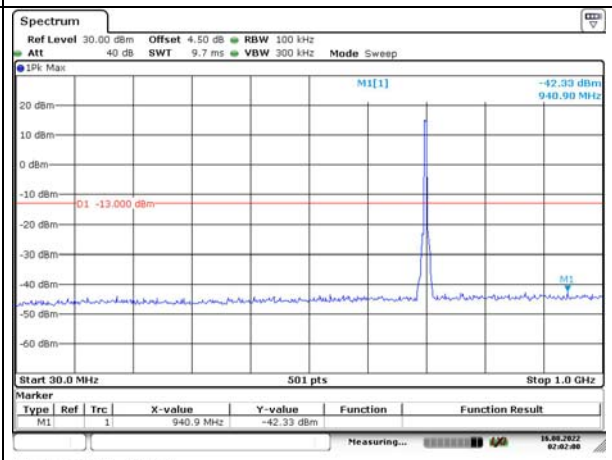
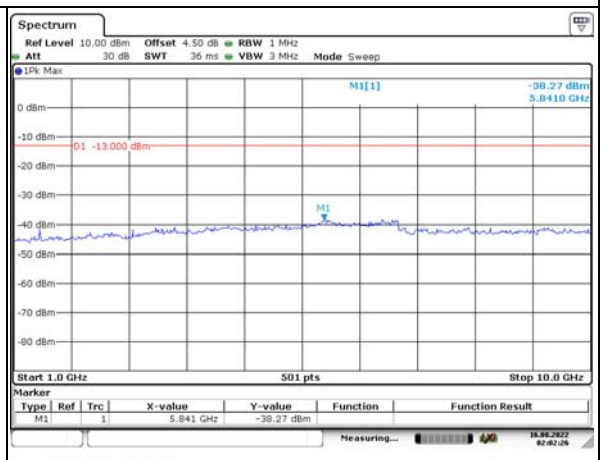
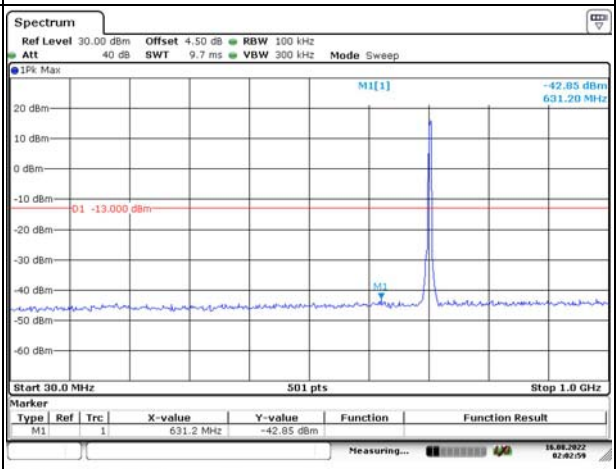
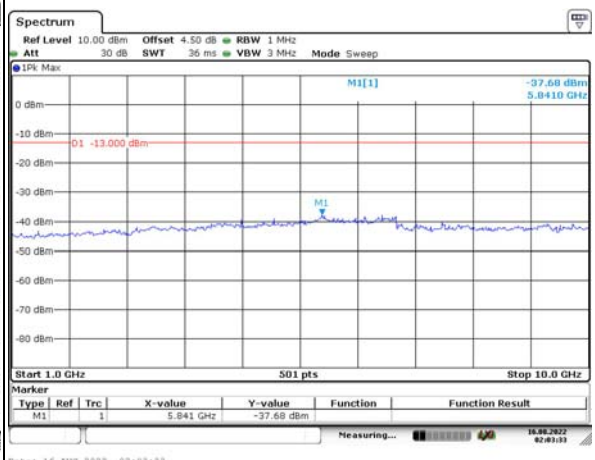
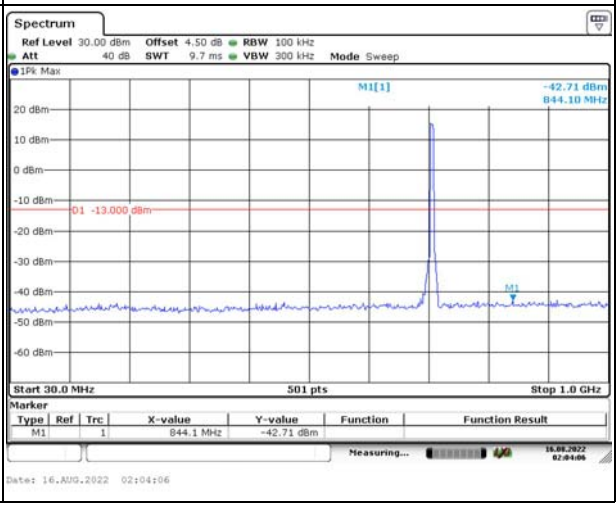
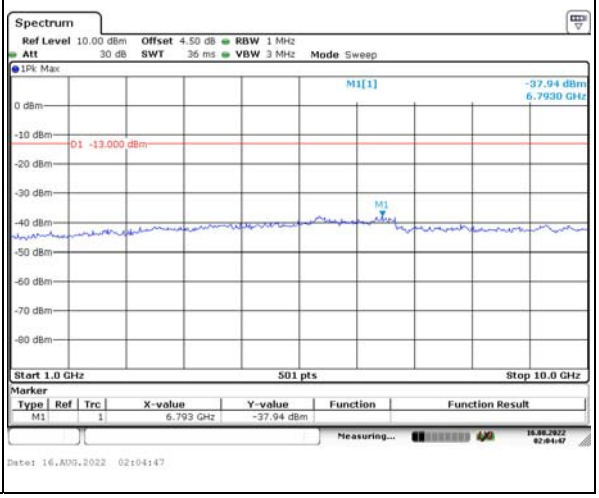
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	704.454	704.00	715.448	716.00
	-20	3.8	704.520	704.00	715.463	716.00
	-10	3.8	704.511	704.00	715.429	716.00
	0	3.8	704.519	704.00	715.441	716.00
	10	3.8	704.452	704.00	715.495	716.00
	20	3.8	704.529	704.00	715.471	716.00
	30	3.8	704.502	704.00	715.425	716.00
	40	3.8	704.486	704.00	715.425	716.00
	50	3.8	704.456	704.00	715.407	716.00
Frequency Stability vs. Voltage	20	3.5	704.482	704.00	715.442	716.00
	20	4.35	704.496	704.00	715.428	716.00
					Result:	**Pass**

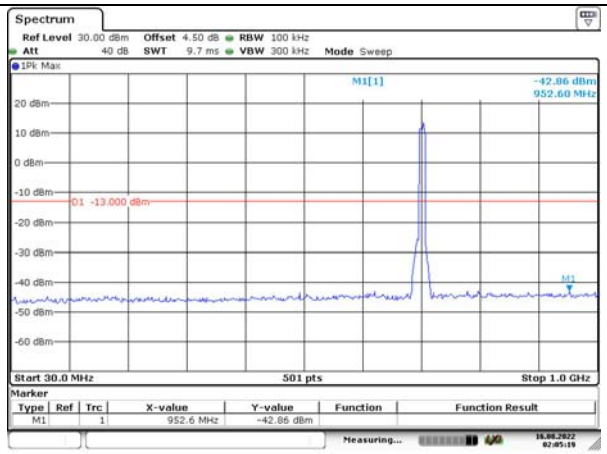
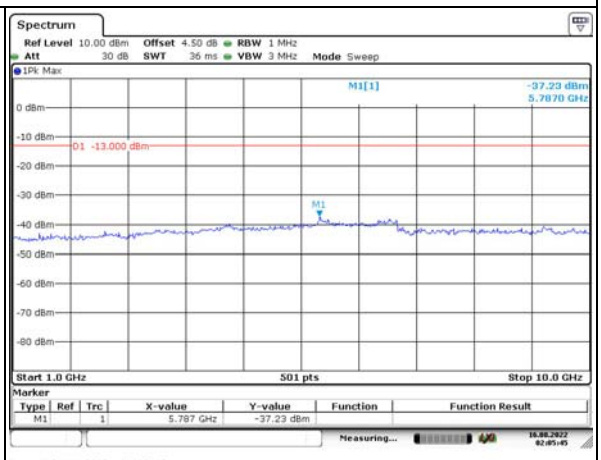
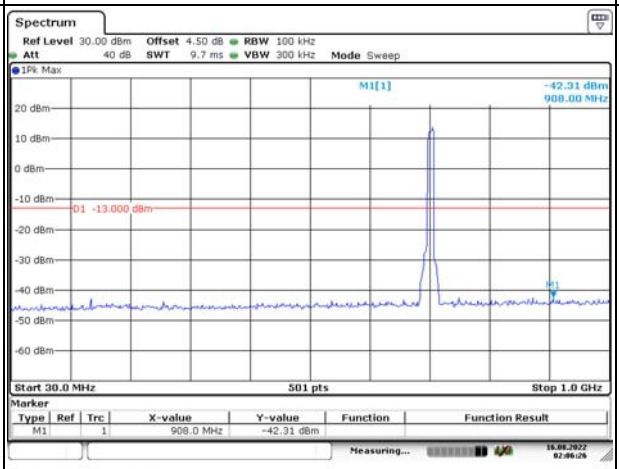
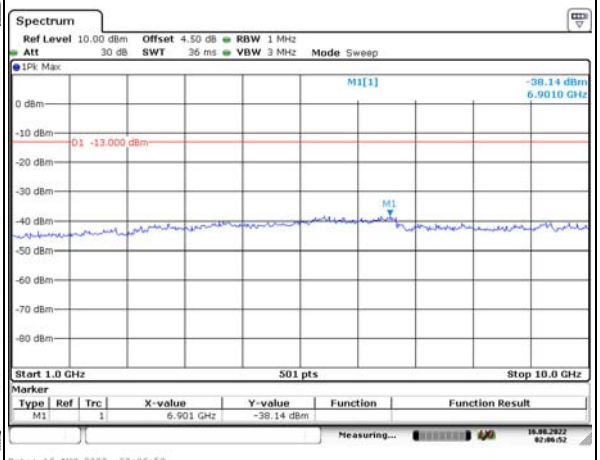
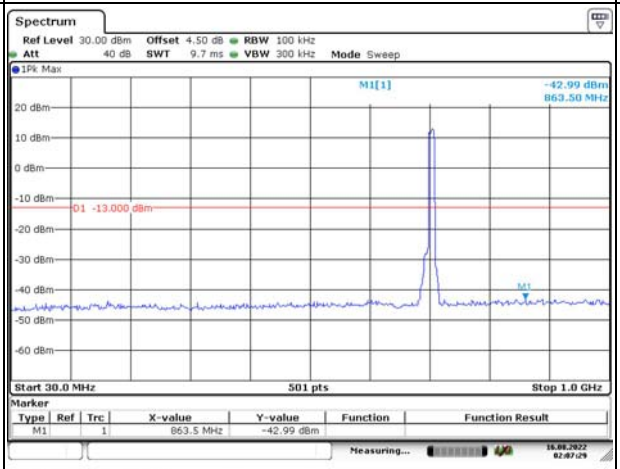
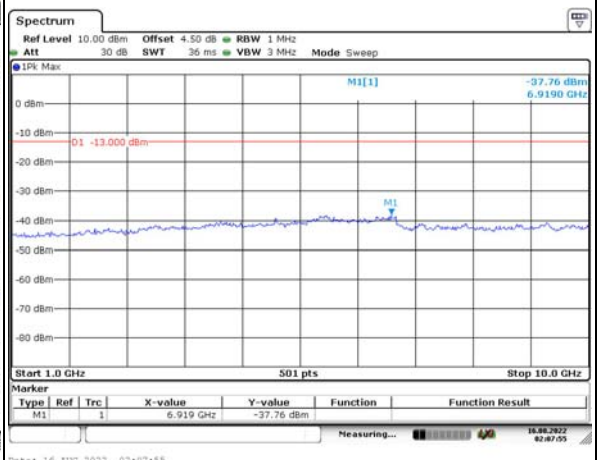
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	704.504	704.00	715.462	716.00
	-20	3.8	704.492	704.00	715.409	716.00
	-10	3.8	704.528	704.00	715.431	716.00
	0	3.8	704.458	704.00	715.469	716.00
	10	3.8	704.494	704.00	715.468	716.00
	20	3.8	704.529	704.00	715.471	716.00
	30	3.8	704.501	704.00	715.485	716.00
	40	3.8	704.544	704.00	715.494	716.00
	50	3.8	704.535	704.00	715.493	716.00
Frequency Stability vs. Voltage	20	3.5	704.481	704.00	715.455	716.00
	20	4.35	704.475	704.00	715.415	716.00
					Result:	**Pass**

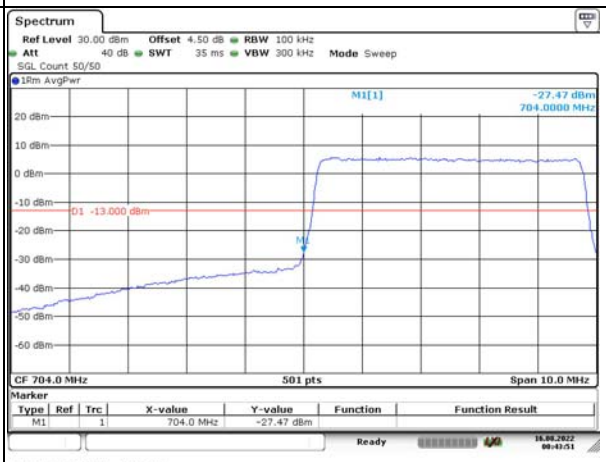
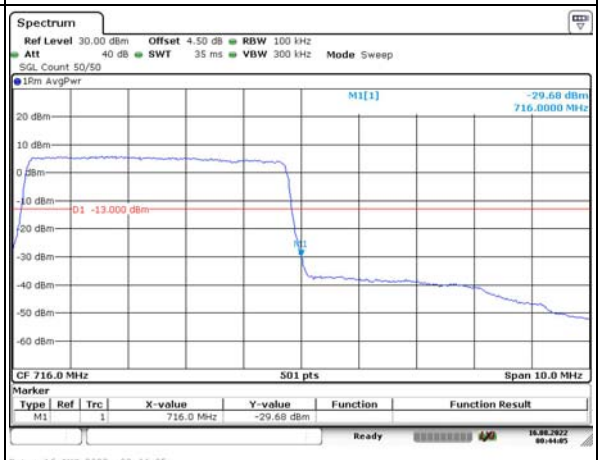
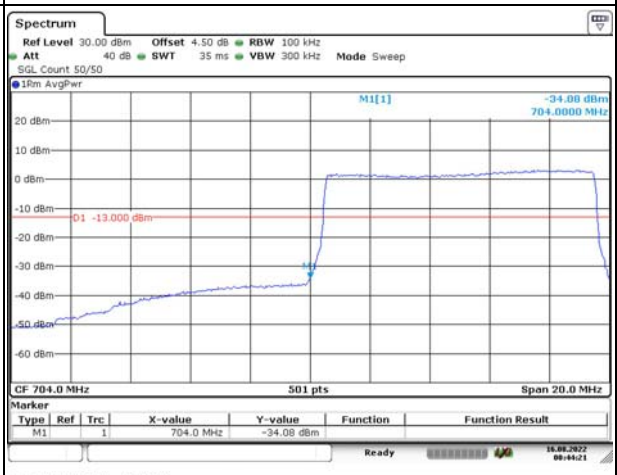
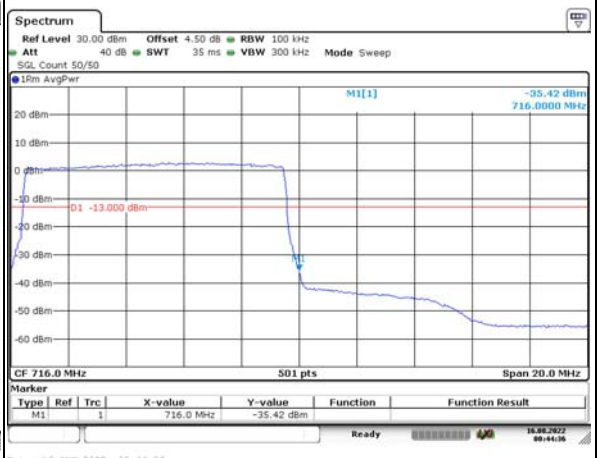
Test Plots:

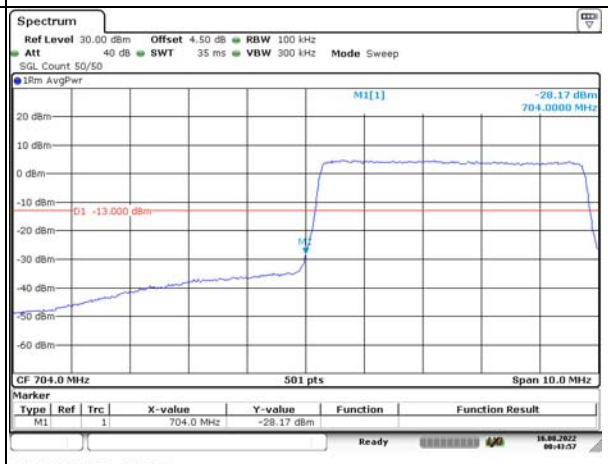
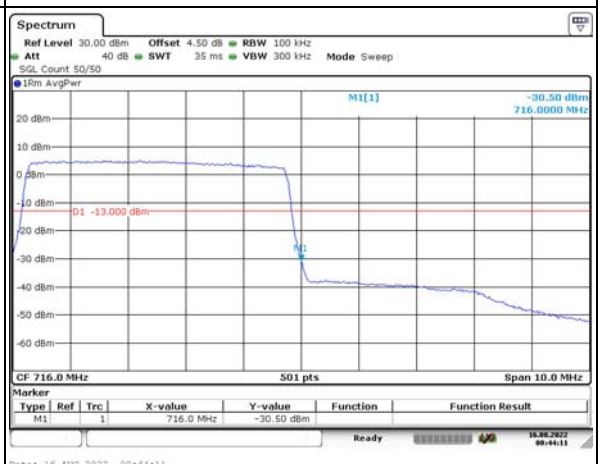
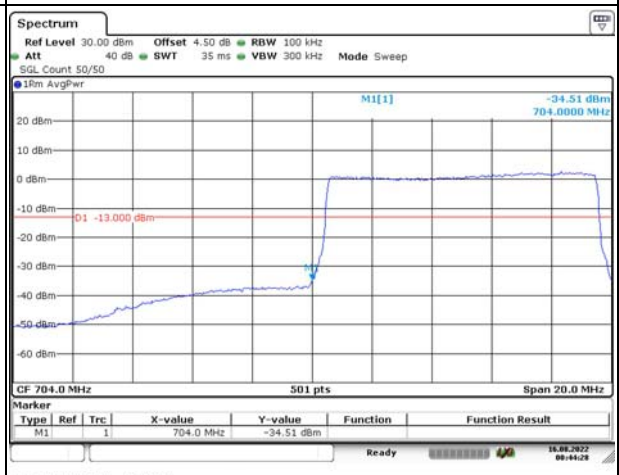
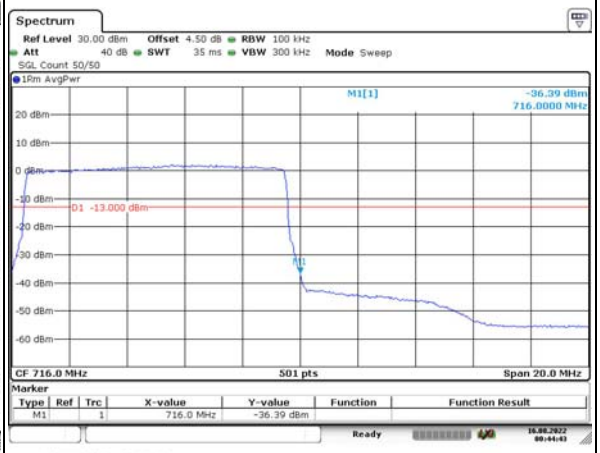
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

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

Spurious Emissions at Antenna Terminal		
Channel	**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 5MHz		
QPSK 10MHz		

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

4.11 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	CR22080013-RF-S1	Test Date:	2022-08-13~2022-09-26
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.1~26.8	Relative Humidity: (%)	52~65	ATM Pressure: (kPa)	99.9~101.1

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	211002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
Unknown	RF Cable	Unknown	RF Cable 003	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05

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

EUT Information@ LTE Band 66▲:					
Antenna Gain (dBi):	0.54			Path Loss L_C (dB):	0.4
Operation Voltage(V_{DC}):					
Lowest:	3.5	Normal:	3.8	Highest:	4.35

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5

20MHz	1720	1745	1770

Test Data:

FCC§2.1046;§ 27.50(d)(4)

RF Output Power:

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.56	22.54	22.05	22.78	30
	RB1#3	22.53	22.45	22.09		
	RB1#5	22.54	22.49	22.08		
	RB3#0	22.57	22.27	22.11		
	RB3#3	22.64	22.26	22.24		
	RB6#0	21.59	21.27	21.12		
1.4MHz 16QAM	RB1#0	21.34	22.34	21.98	22.57	30
	RB1#3	21.37	22.36	22.43		
	RB1#5	21.41	22.34	21.96		
	RB3#0	21.68	21.56	22.16		
	RB3#3	21.62	21.64	22.09		
	RB6#0	20.88	20.42	21.16		
3MHz QPSK	RB1#0	22.58	22.79	23.02	23.16	30
	RB1#8	22.65	22.87	22.97		
	RB1#14	22.7	22.92	22.97		
	RB6#0	21.68	21.79	22.08		
	RB6#9	21.78	21.82	21.97		
	RB15#0	21.66	21.84	22.1		
3MHz 16QAM	RB1#0	22.49	21.99	22.42	22.72	30
	RB1#8	22.49	21.93	22.35		
	RB1#14	22.58	21.91	22.31		
	RB6#0	20.86	21.18	21.17		
	RB6#9	20.81	21.17	21.09		
	RB15#0	20.8	20.99	21.25		
5MHz QPSK	RB1#0	22.76	22.66	22.99	23.13	30
	RB1#13	22.91	22.67	22.98		
	RB1#24	22.85	22.78	22.93		
	RB15#0	21.6	21.84	22.22		
	RB15#10	21.74	21.86	22.06		
	RB25#0	21.64	21.82	22.16		
5MHz 16QAM	RB1#0	21.89	21.53	21.69	22.08	30
	RB1#13	21.94	21.52	21.72		
	RB1#24	21.92	21.56	21.71		
	RB15#0	20.75	20.96	21.28		
	RB15#10	20.74	20.99	21.23		
	RB25#0	20.82	20.83	21.37		
10MHz QPSK	RB1#0	22.61	22.83	23.03	23.17	30

	RB1#25	22.69	22.83	23		
	RB1#49	22.74	22.98	22.96		
	RB25#0	21.77	21.7	22.19		
	RB25#25	21.87	21.71	22.02		
	RB50#0	21.77	21.84	22.13		
10MHz 16QAM	RB1#0	21.73	21.29	22.37	22.51	30
	RB1#25	21.86	21.37	22.36		
	RB1#49	21.89	21.4	22.32		
	RB25#0	20.85	20.96	21.23		
	RB25#25	20.96	21.01	21.28		
	RB50#0	20.92	21.02	21.33		
15MHz QPSK	RB1#0	22.59	22.77	22.97	23.16	30
	RB1#38	22.76	22.8	23.02		
	RB1#74	22.8	22.97	23.01		
	RB36#0	21.78	21.63	22.05		
	RB36#39	21.73	21.68	22.09		
	RB75#0	21.78	21.66	22.04		
15MHz 16QAM	RB1#0	22.5	22.02	22.26	22.81	30
	RB1#38	22.65	22.13	22.37		
	RB1#74	22.67	22.14	22.3		
	RB36#0	20.83	20.87	21.3		
	RB36#39	20.91	20.94	21.33		
	RB75#0	20.88	20.88	21.23		
20MHz QPSK	RB1#0	22.76	22.65	23.06	23.39	30
	RB1#50	22.85	22.66	23.25		
	RB1#99	22.83	22.92	23.12		
	RB50#0	21.65	21.72	22.03		
	RB50#50	21.82	21.77	22.11		
	RB100#0	21.83	21.7	22.01		
20MHz 16QAM	RB1#0	21.76	22.44	22.2	22.71	30
	RB1#50	21.85	22.57	22.24		
	RB1#99	21.96	22.52	22.24		
	RB50#0	20.89	20.83	21.25		
	RB50#50	20.89	20.94	21.24		
	RB100#0	20.92	21.03	21.21		
Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBi)						
					Result:	**Pass**

Peak-to-average Ratio(PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	3.3	5.39	1.51	13
	RB100#0	3.68	5.25	2.9	13
20MHz 16QAM	RB1#0	4.29	6.12	2.7	13
	RB100#0	4.61	6.14	3.94	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	1.114	1.290	1.254	1.596
1.4MHz 16QAM	1.114	1.096	1.120	1.290	1.254	1.584
3MHz QPSK	2.707	2.695	2.707	3.000	3.012	3.036
3MHz 16QAM	2.695	2.683	2.707	3.024	3.024	3.072
5MHz QPSK	4.531	4.511	4.551	5.020	5.000	6.680
5MHz 16QAM	4.551	4.531	4.551	5.000	5.000	5.980
10MHz QPSK	8.942	8.982	9.022	9.880	9.760	14.040
10MHz 16QAM	8.982	8.942	9.022	9.880	9.880	12.000
15MHz QPSK	13.473	13.593	13.653	15.360	15.180	22.680
15MHz 16QAM	13.533	13.533	13.653	15.420	15.060	20.940
20MHz QPSK	17.884	18.044	18.124	19.680	19.840	29.840
20MHz 16QAM	17.964	18.044	18.124	19.840	19.840	29.120
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal	
Result:	**Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**

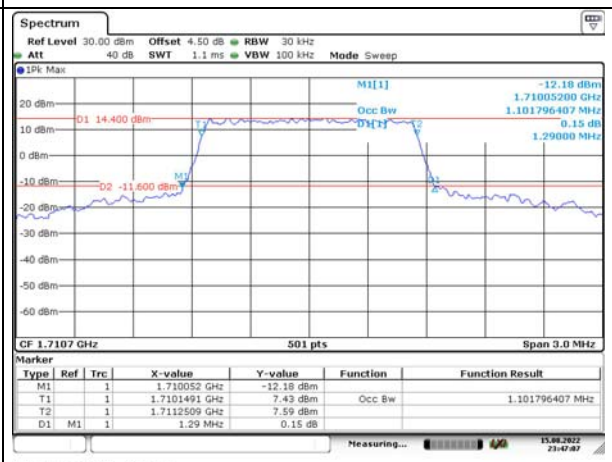
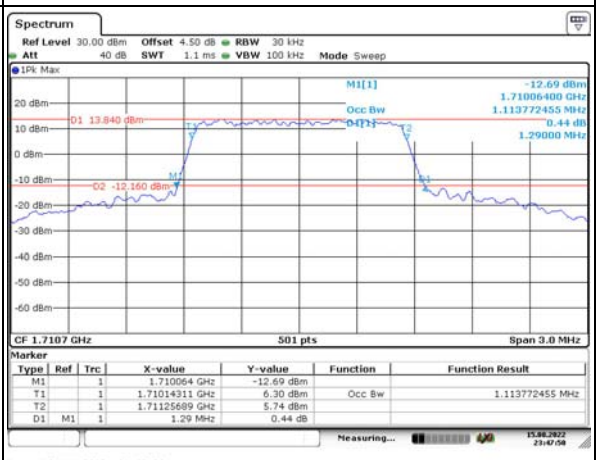
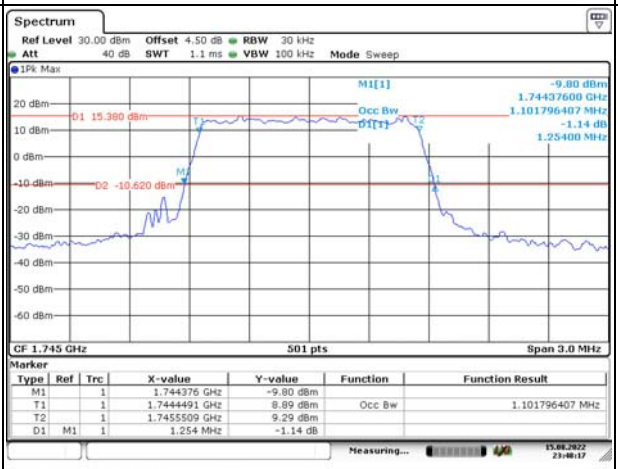
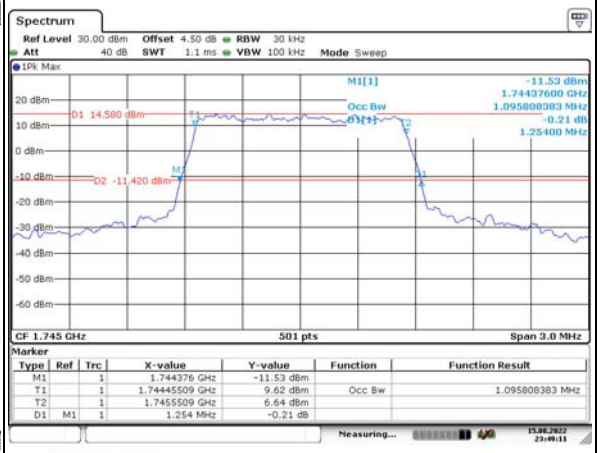
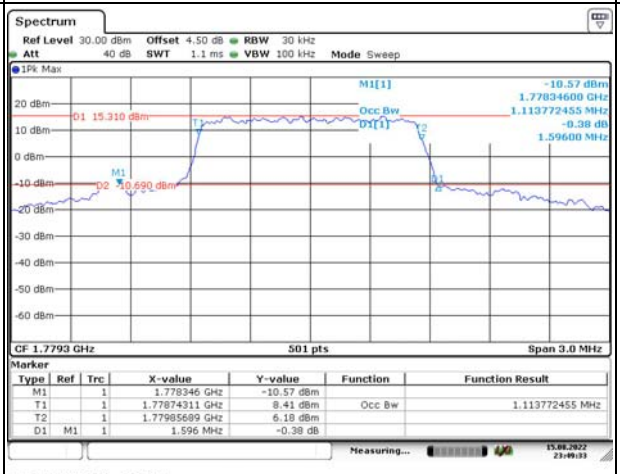
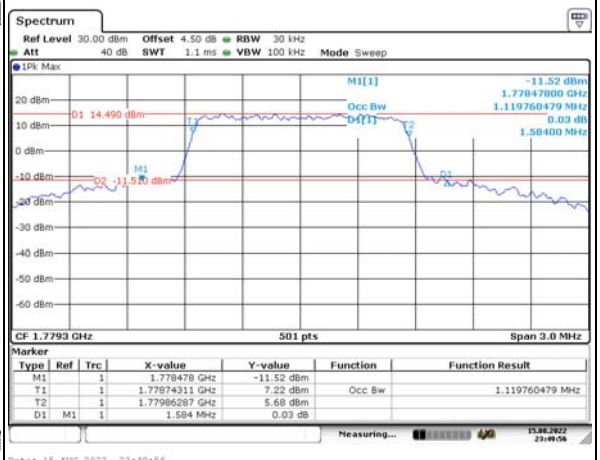
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	**Pass, Please refer to the test plots of Out of band emission, Band Edge.**

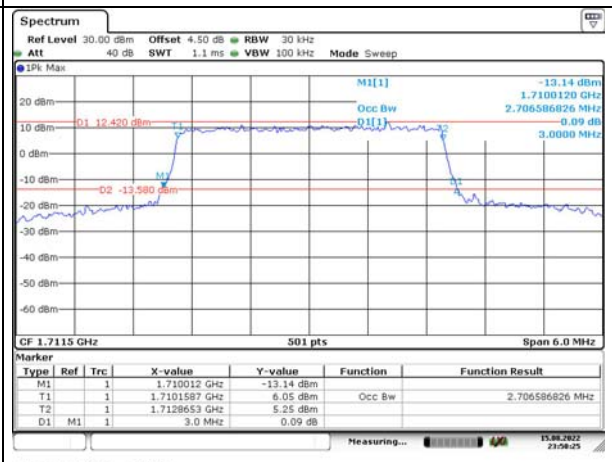
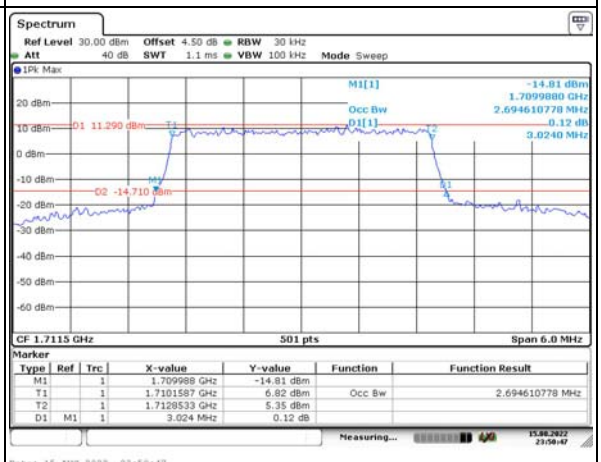
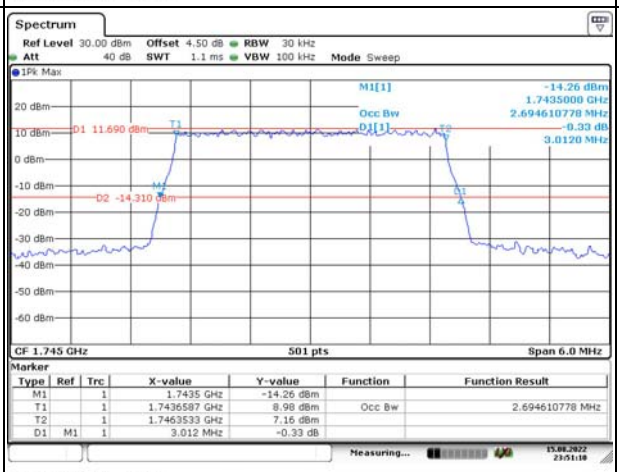
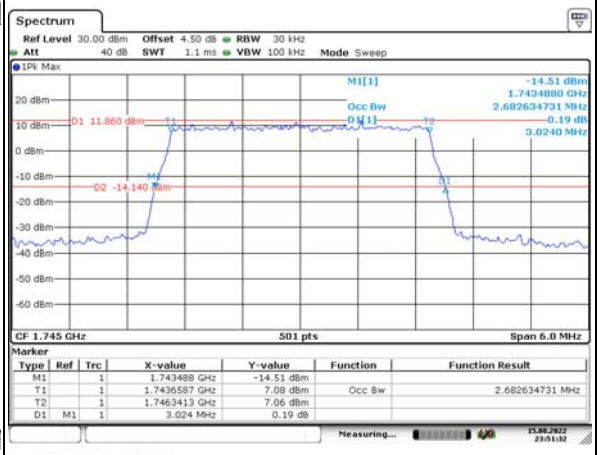
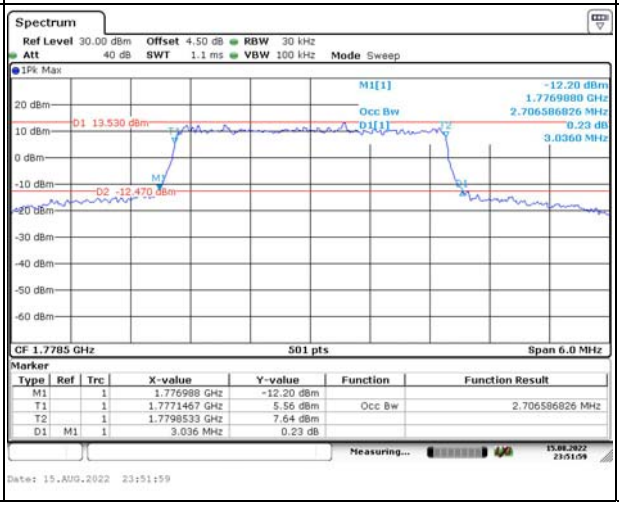
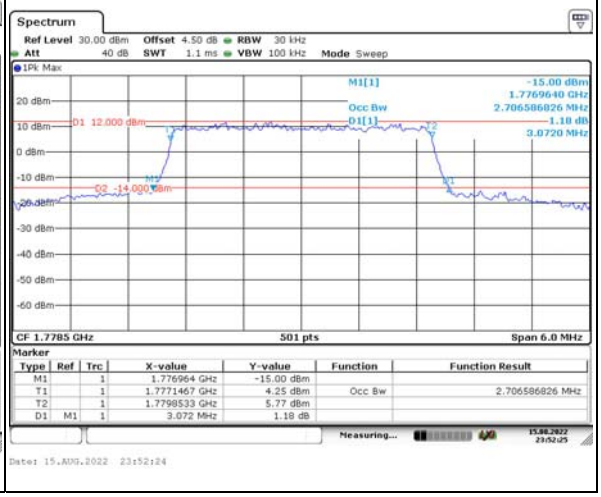
FCC §2.1055, §27.54: Frequency Stability

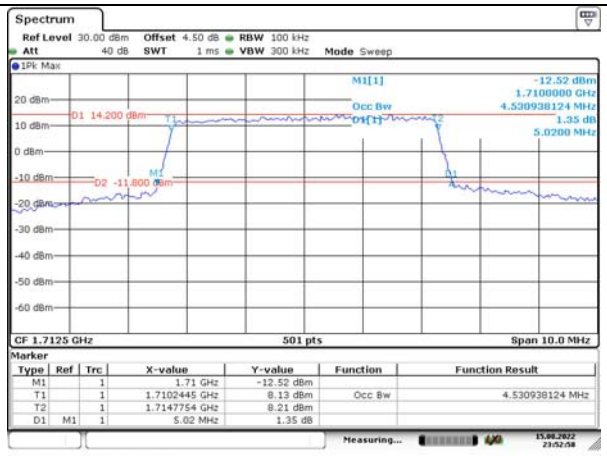
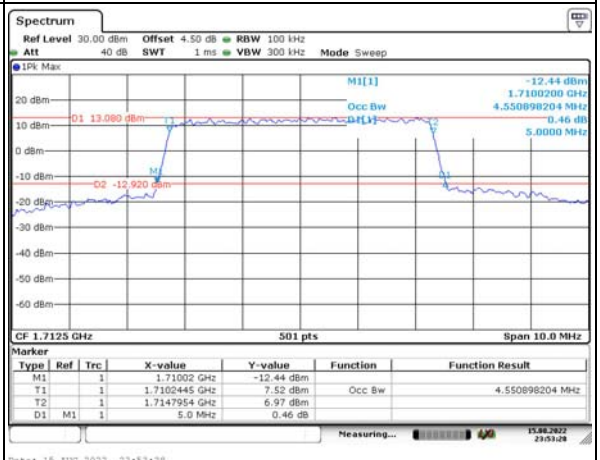
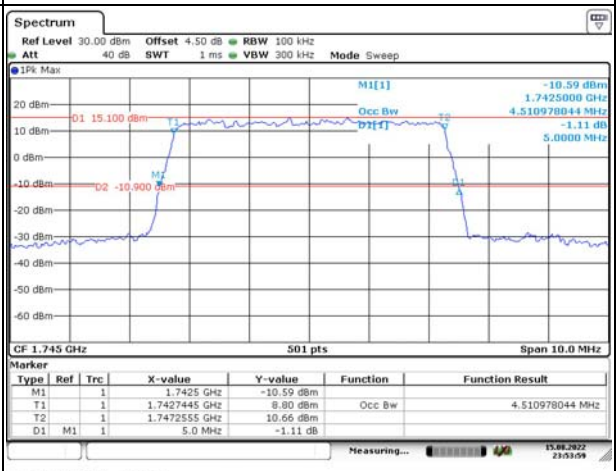
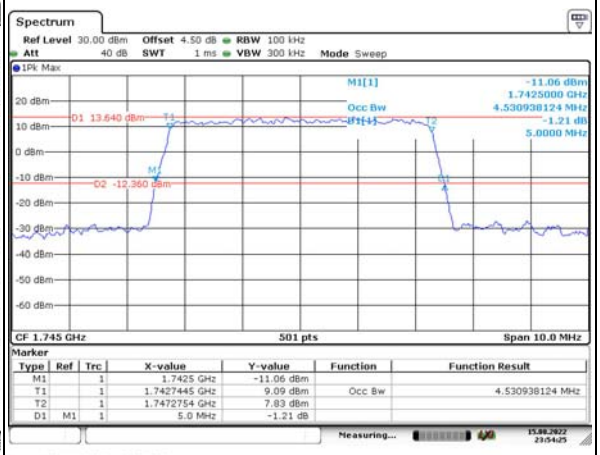
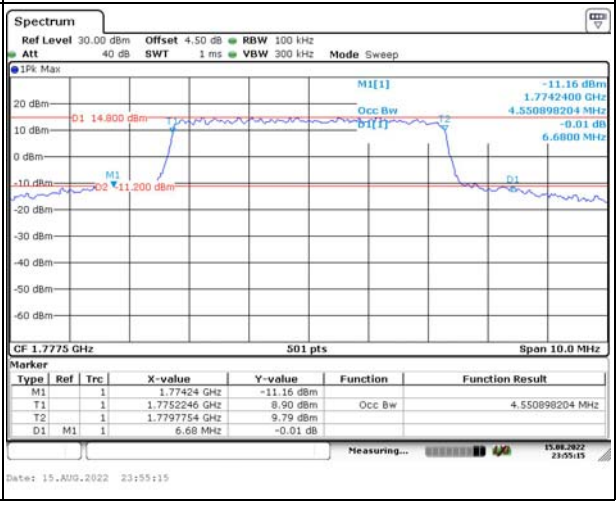
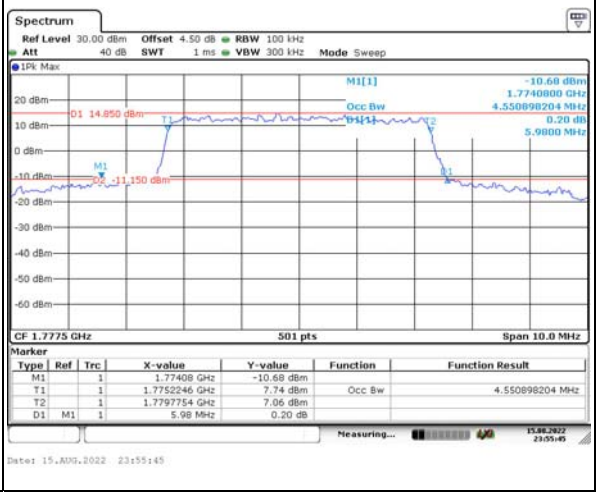
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.121	1710.00	1779.083	1780
	-20	3.8	1711.085	1710.00	1779.140	1780
	-10	3.8	1711.103	1710.00	1779.074	1780
	0	3.8	1711.075	1710.00	1779.136	1780
	10	3.8	1711.141	1710.00	1779.145	1780
	20	3.8	1711.138	1710.00	1779.102	1780
	30	3.8	1711.088	1710.00	1779.119	1780
	40	3.8	1711.096	1710.00	1779.080	1780
	50	3.8	1711.063	1710.00	1779.065	1780
Frequency Stability vs. Voltage	20	3.5	1711.136	1710.00	1779.057	1780
	20	4.35	1711.083	1710.00	1779.057	1780
					Result:	**Pass**

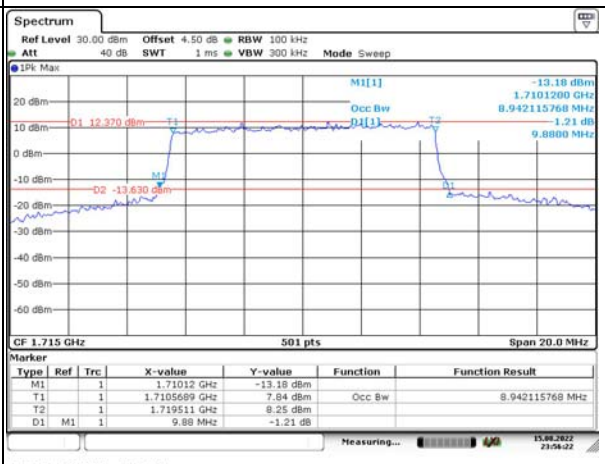
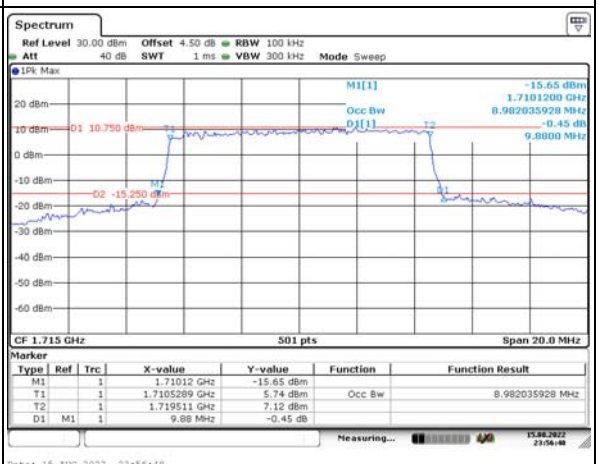
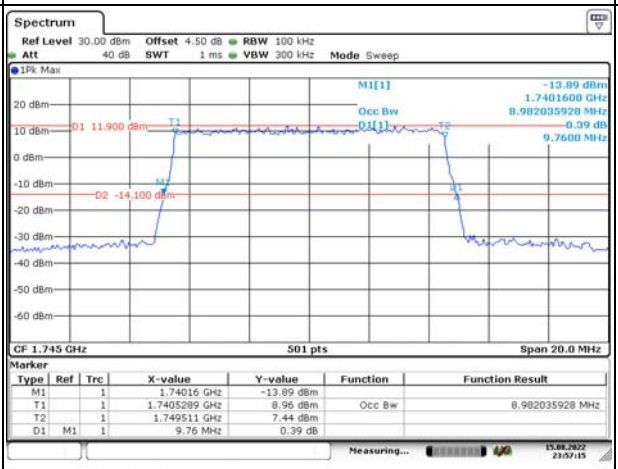
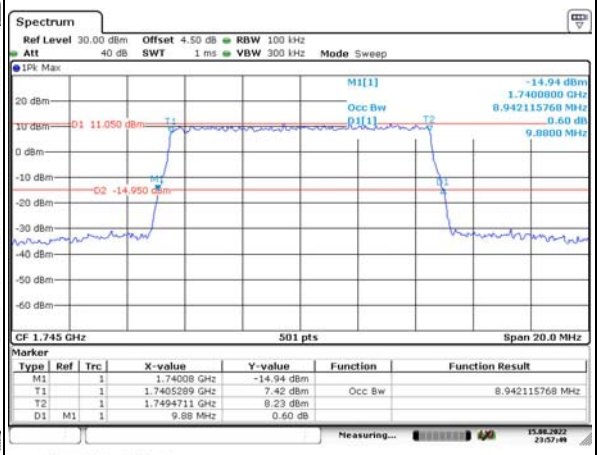
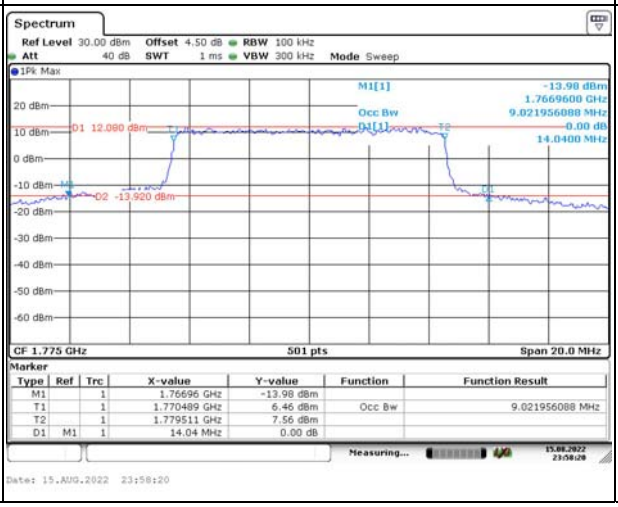
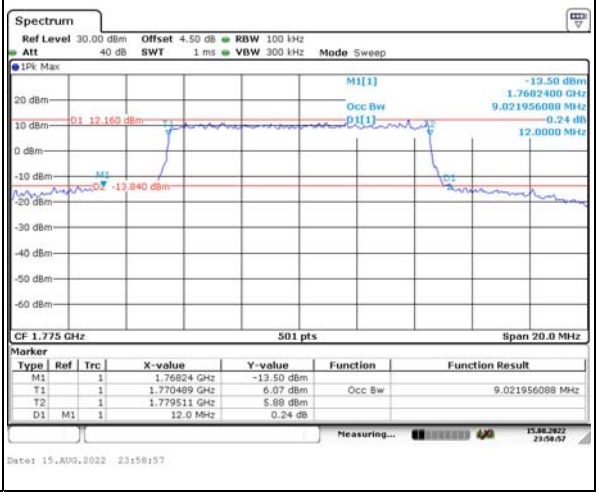
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (℃)	Voltage (V_{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.066	1710.00	1779.092	1780
	-20	3.8	1711.076	1710.00	1779.097	1780
	-10	3.8	1711.143	1710.00	1779.148	1780
	0	3.8	1711.082	1710.00	1779.104	1780
	10	3.8	1711.086	1710.00	1779.136	1780
	20	3.8	1711.058	1710.00	1779.102	1780
	30	3.8	1711.129	1710.00	1779.099	1780
	40	3.8	1711.135	1710.00	1779.060	1780
	50	3.8	1711.050	1710.00	1779.115	1780
Frequency Stability vs. Voltage	20	3.5	1711.107	1710.00	1779.130	1780
	20	4.35	1711.071	1710.00	1779.086	1780
					Result:	**Pass**

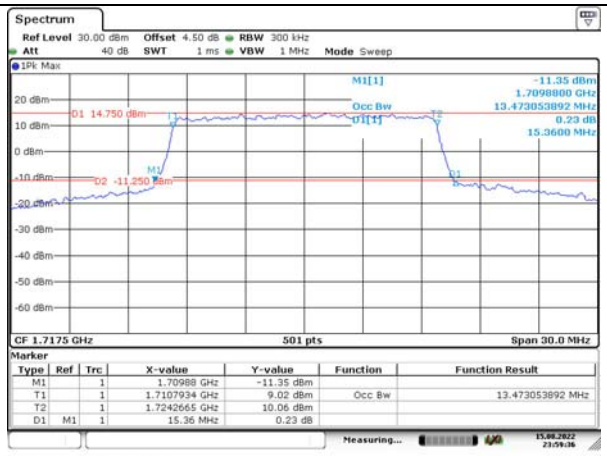
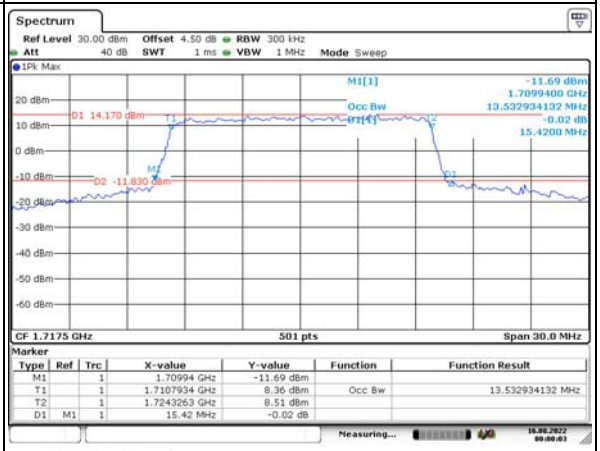
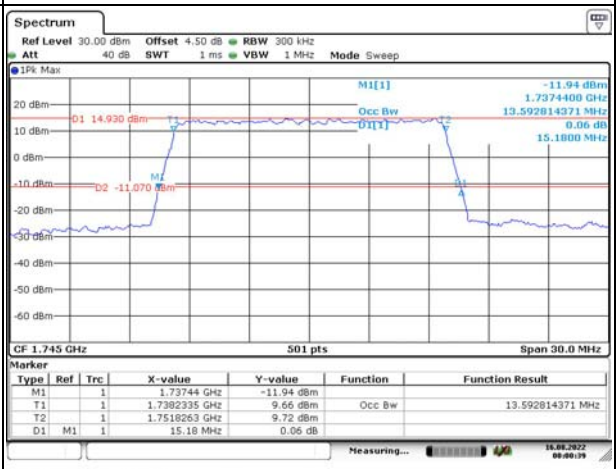
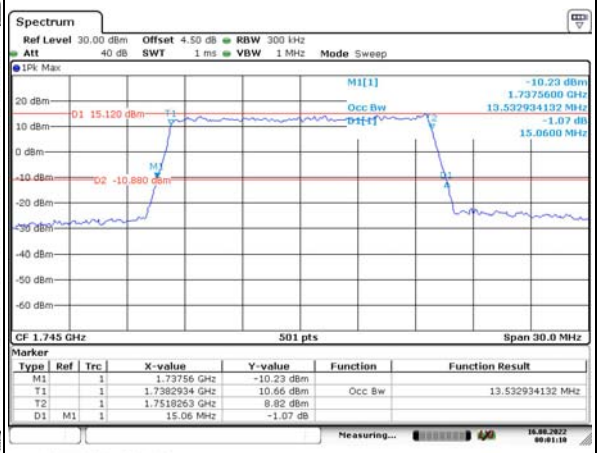
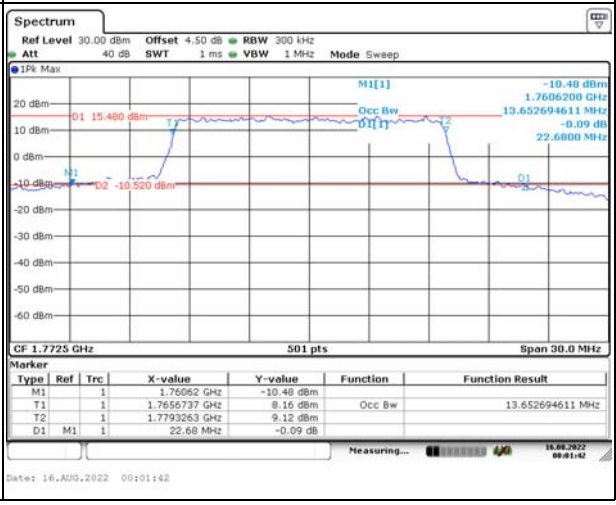
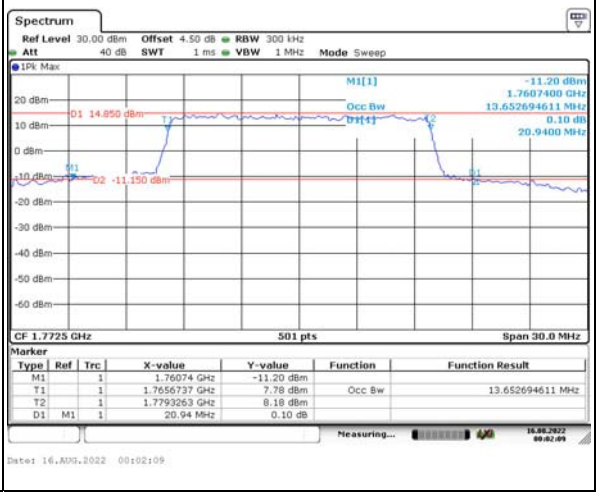
Test Plots:

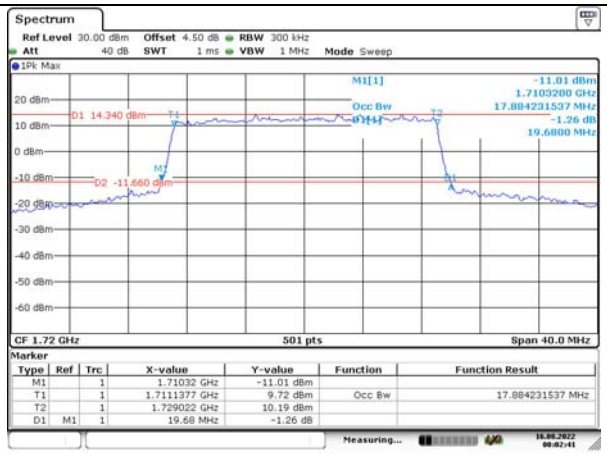
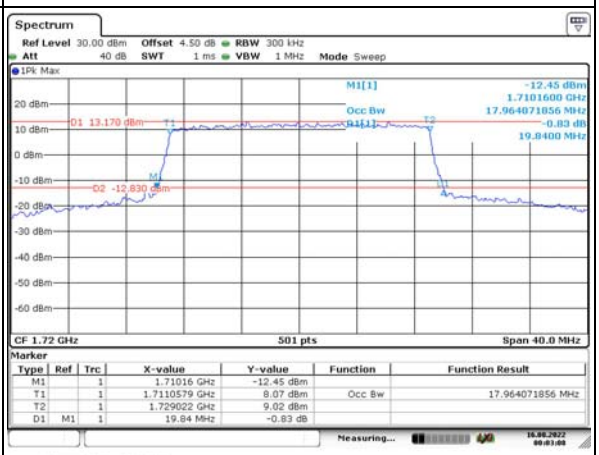
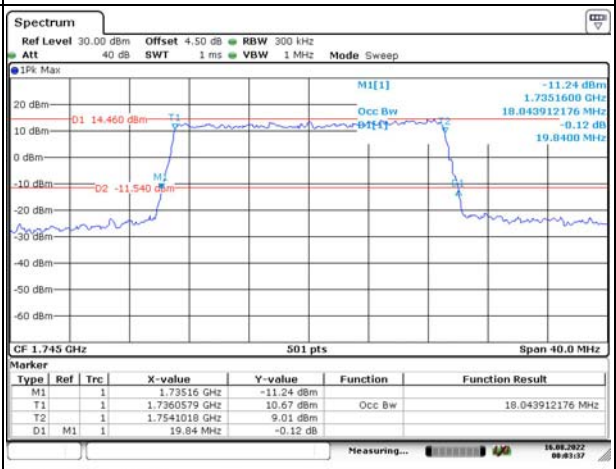
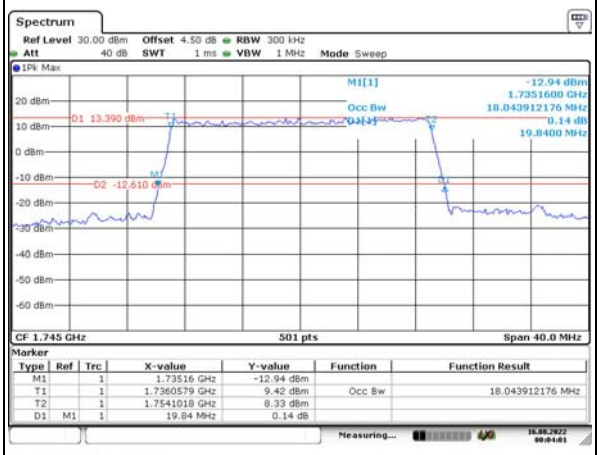
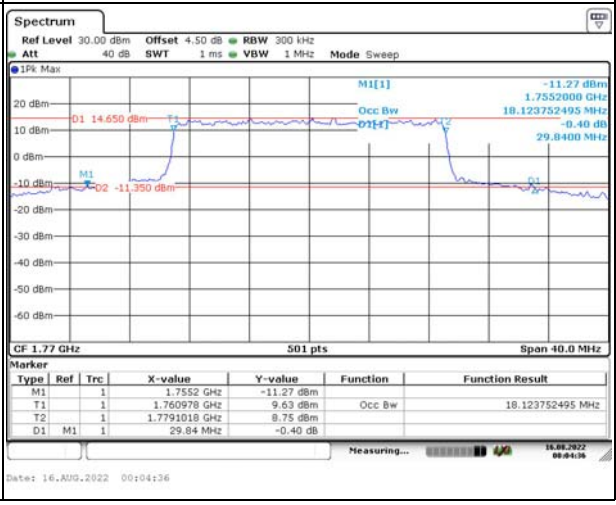
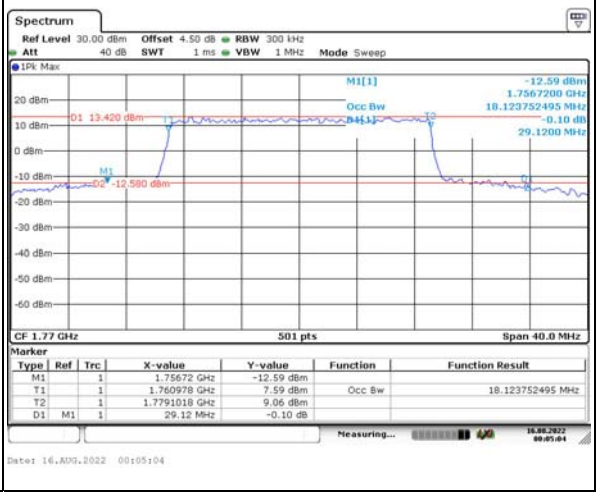
Occupied Bandwidth		
Channel	1.4MHz Bandwidth QPSK	1.4MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

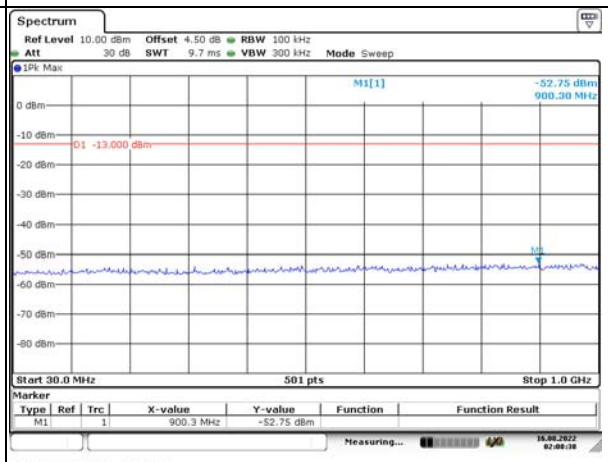
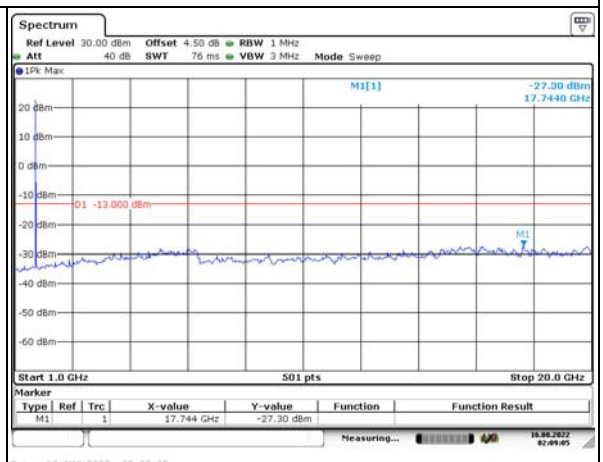
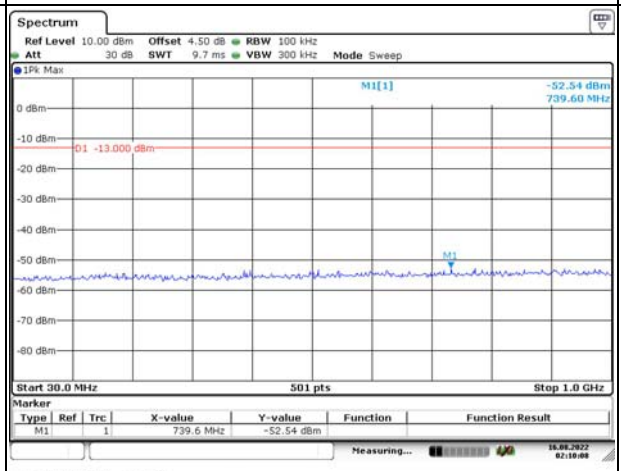
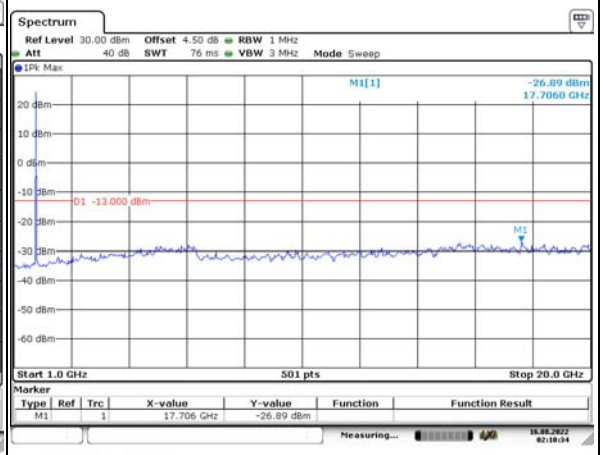
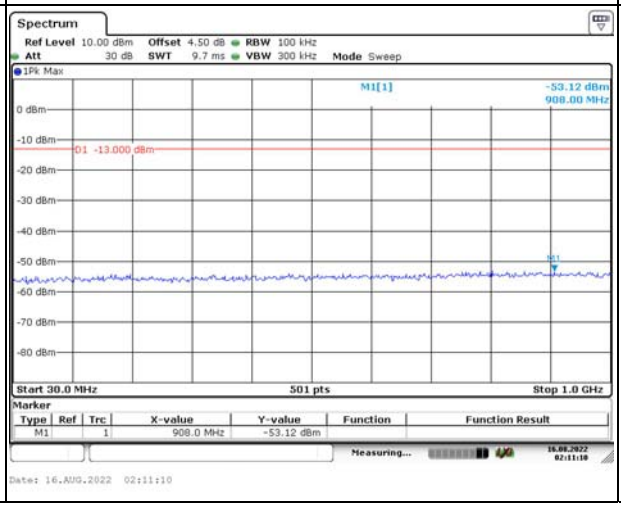
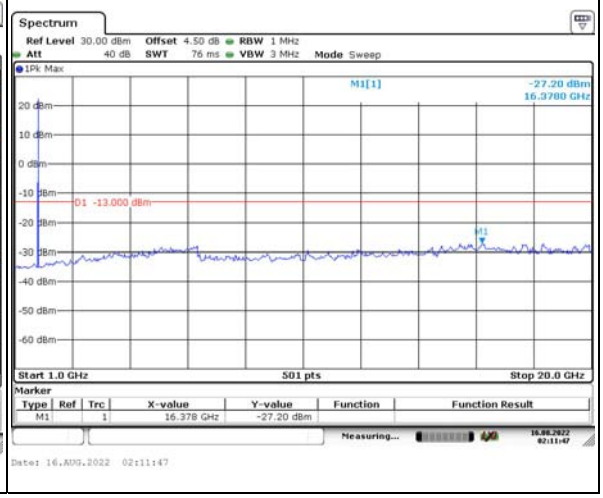
Occupied Bandwidth		
Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

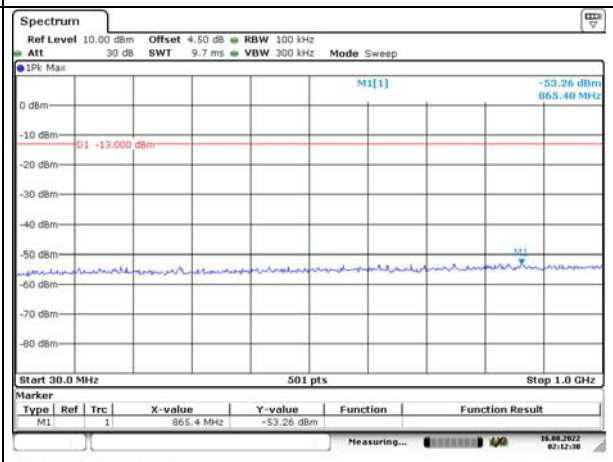
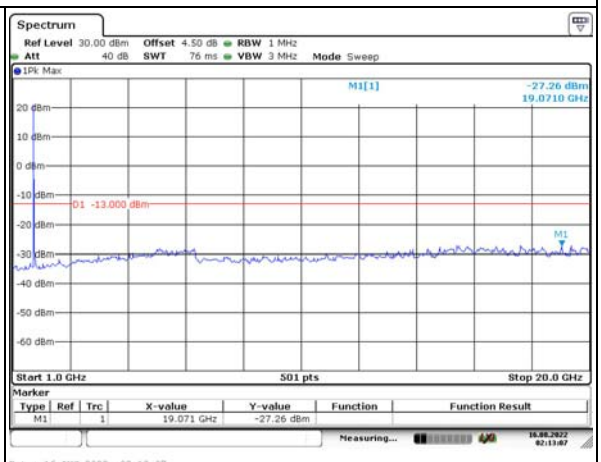
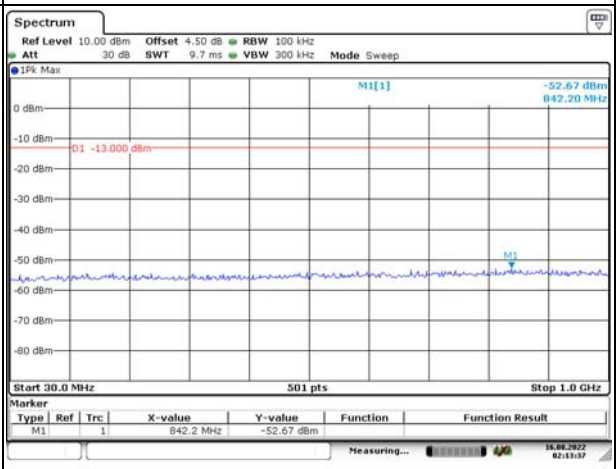
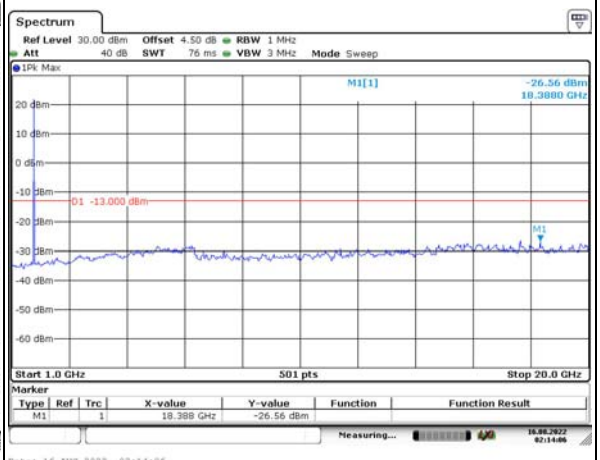
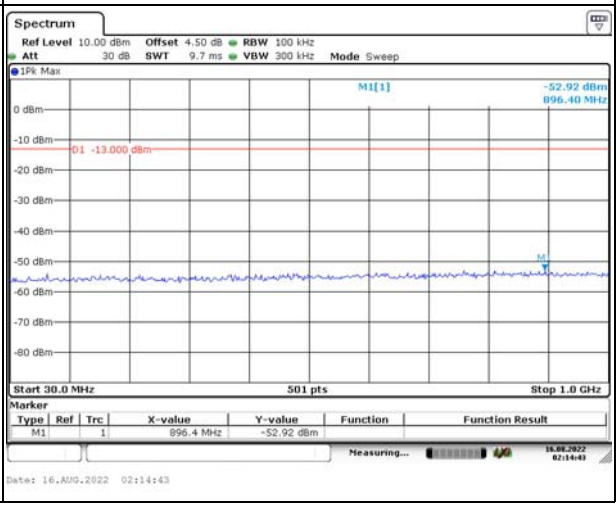
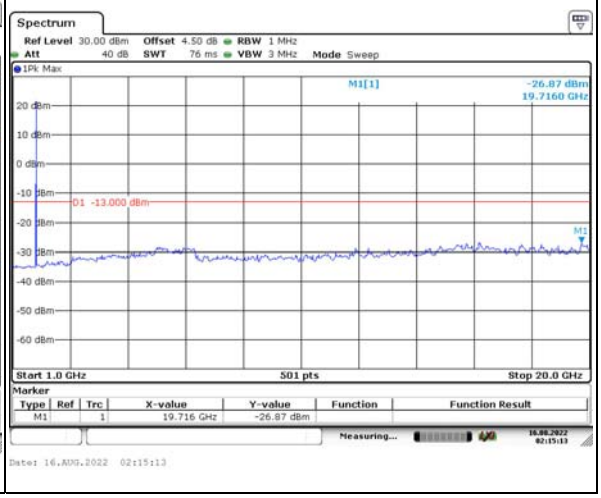
Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

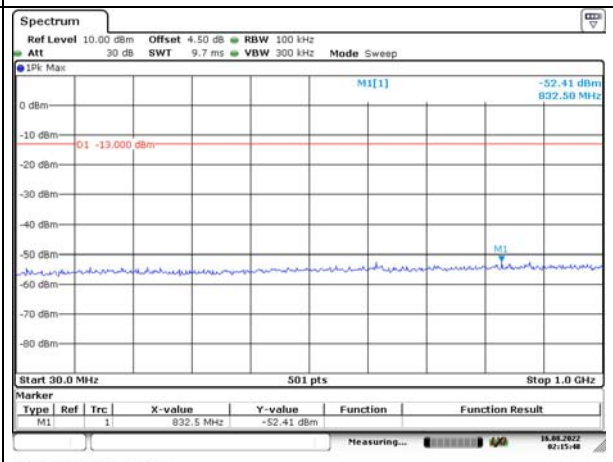
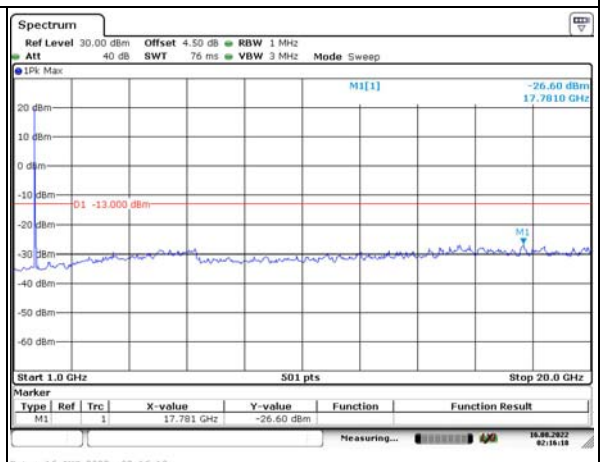
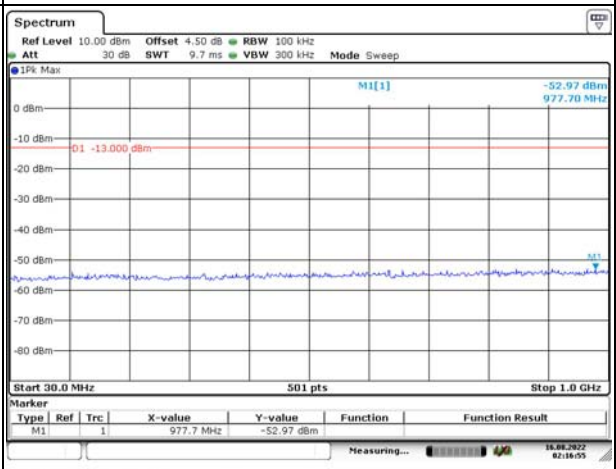
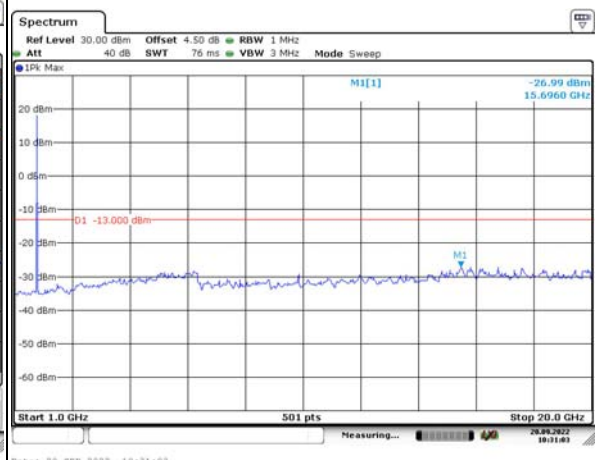
Occupied Bandwidth		
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

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

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

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

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

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