

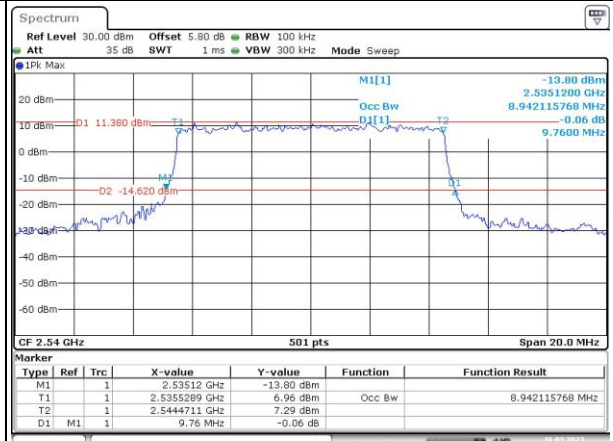
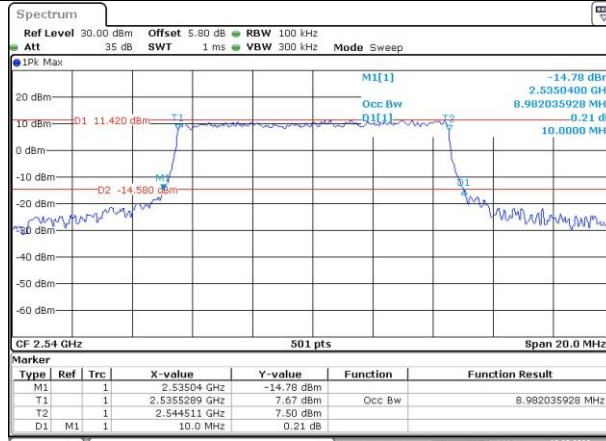
Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

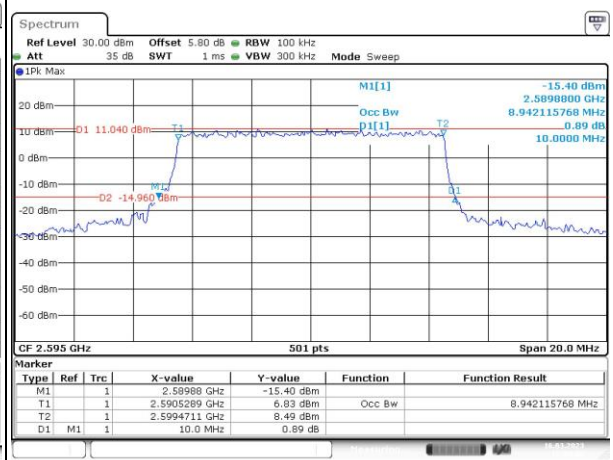
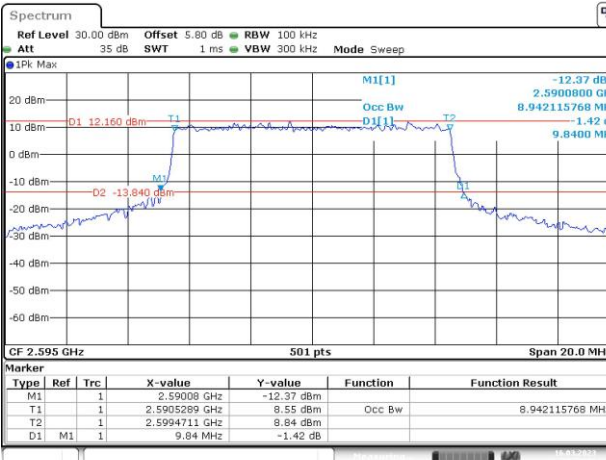
Lowest



Date: 16.MAR.2023 12:22:23

Date: 16.MAR.2023 12:22:58

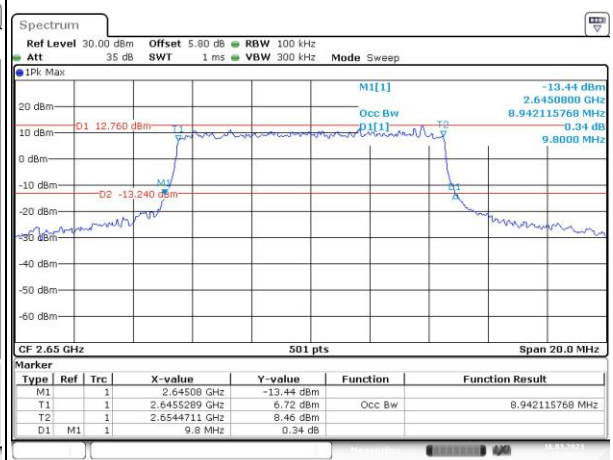
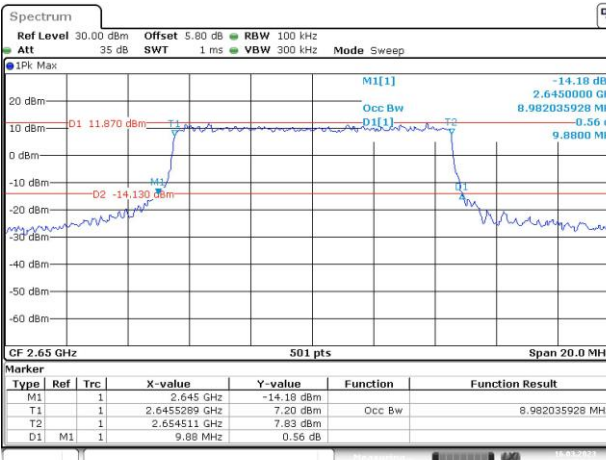
Middle



Date: 16.MAR.2023 12:23:34

Date: 16.MAR.2023 12:24:08

Highest



Date: 16.MAR.2023 12:24:44

Date: 16.MAR.2023 12:25:15

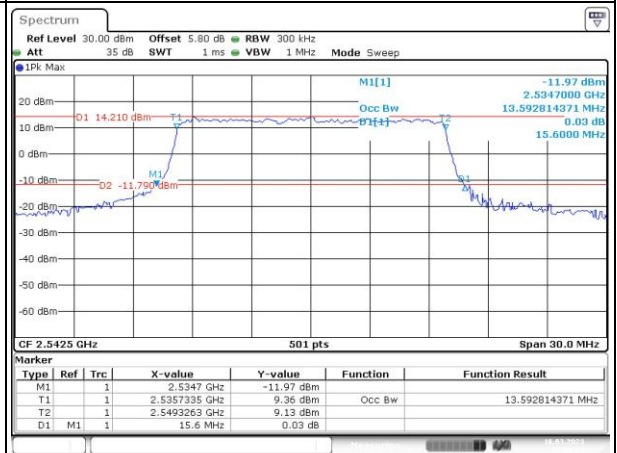
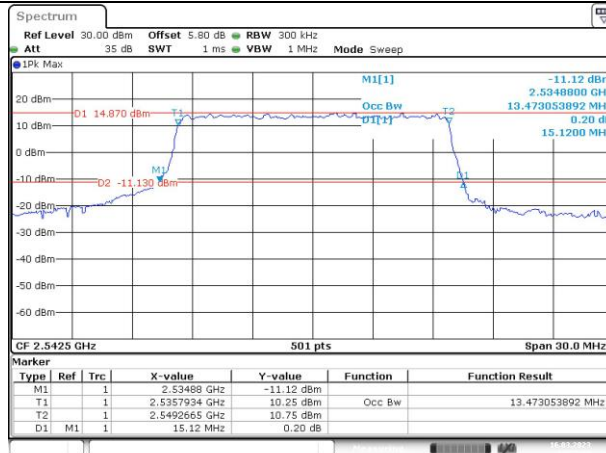
Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

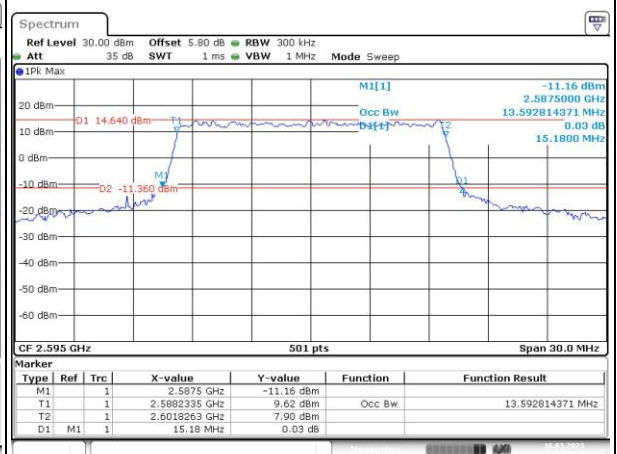
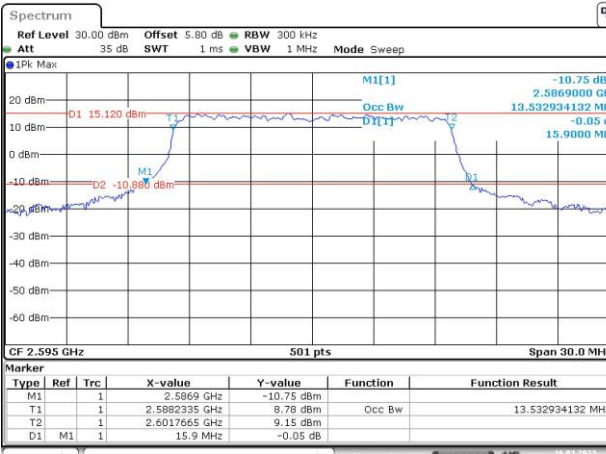
Lowest



Date: 16.MAR.2023 12:25:51

Date: 16.MAR.2023 12:26:25

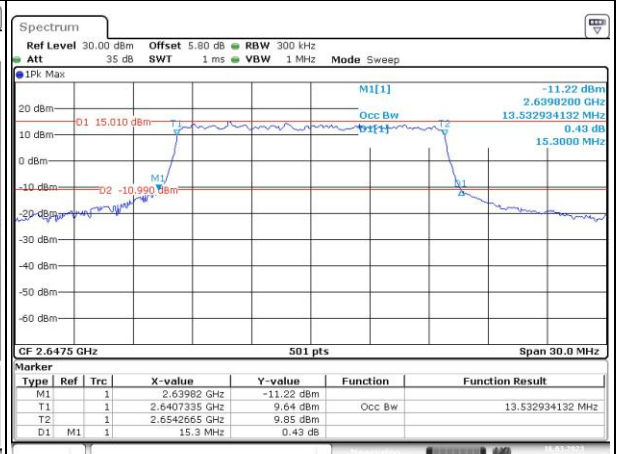
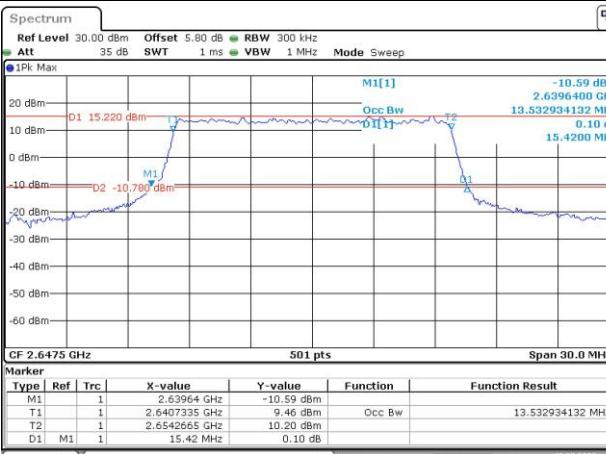
Middle



Date: 16.MAR.2023 12:27:07

Date: 16.MAR.2023 12:27:41

Highest



Date: 16.MAR.2023 12:28:20

Date: 16.MAR.2023 12:28:57

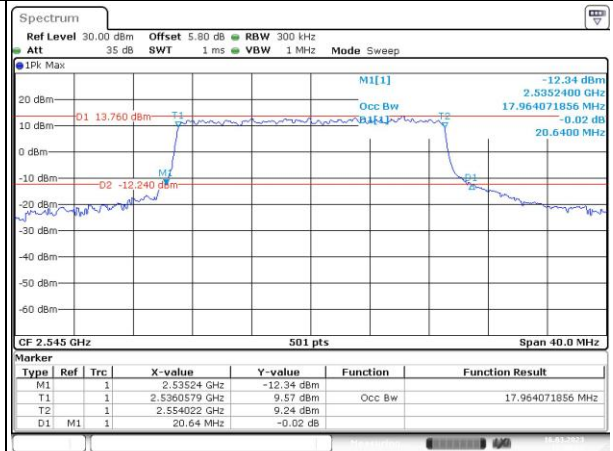
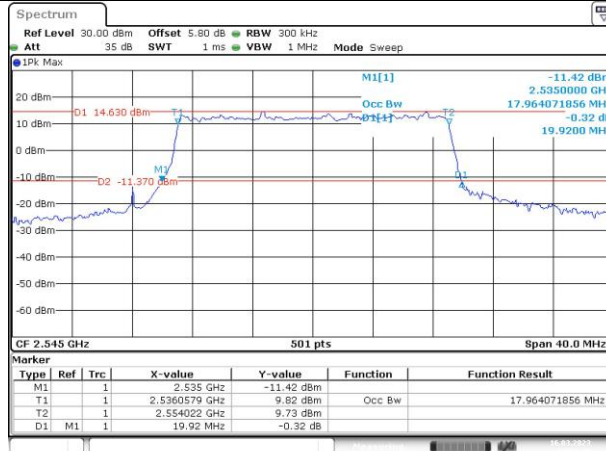
Occupied Bandwidth

Channel

20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

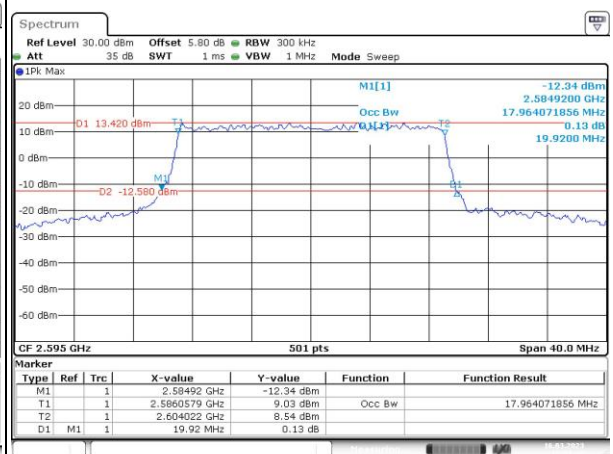
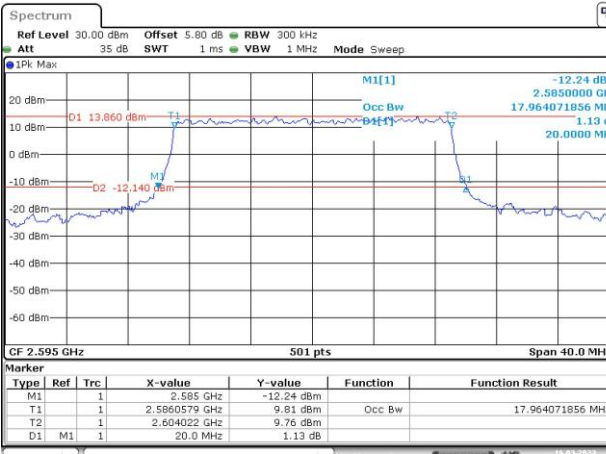
Lowest



Date: 16.MAR.2023 12:29:47

Date: 16.MAR.2023 12:30:29

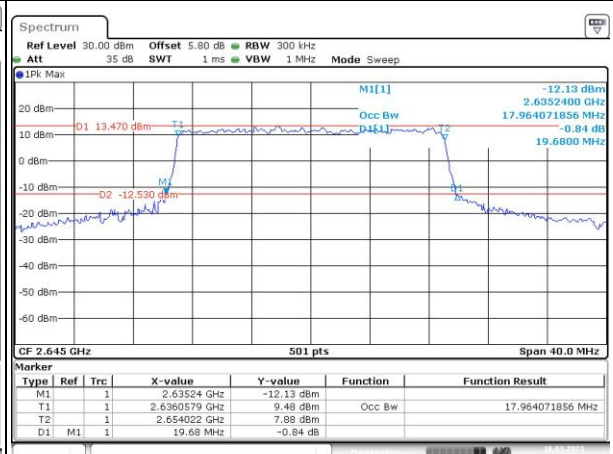
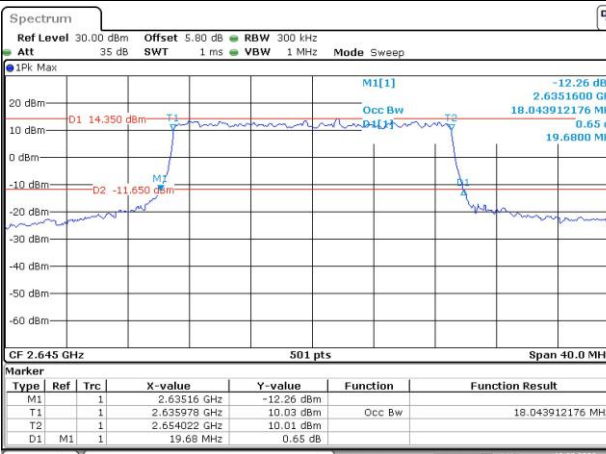
Middle



Date: 16.MAR.2023 12:13:08

Date: 16.MAR.2023 12:13:12

Highest



Date: 16.MAR.2023 12:13:17

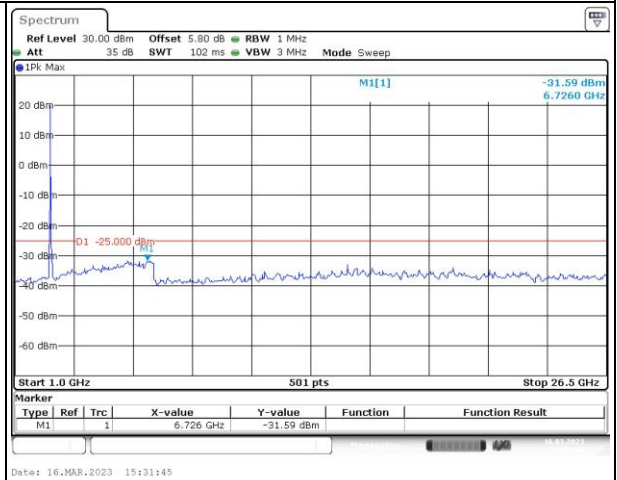
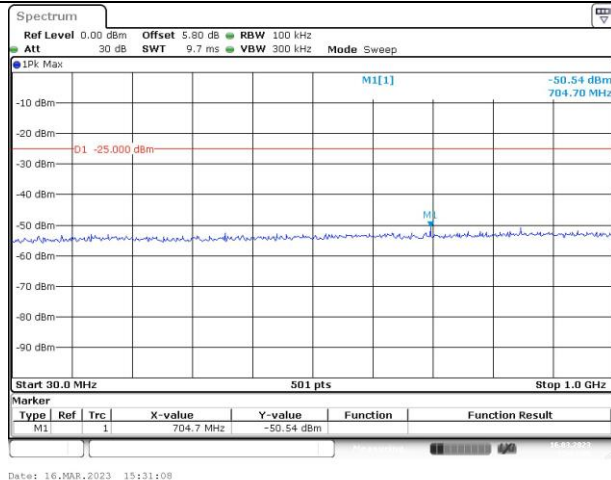
Date: 16.MAR.2023 12:13:52

Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

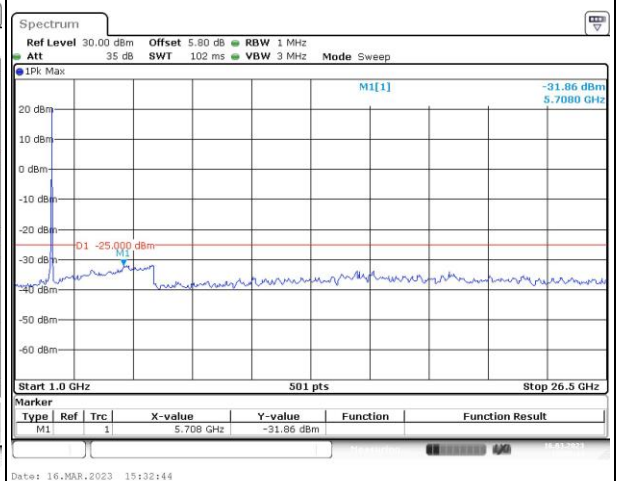
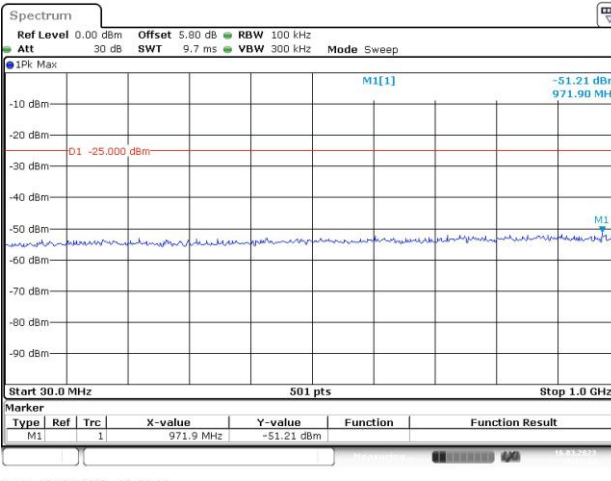
Lowest



Date: 16.MAR.2023 15:31:08

Date: 16.MAR.2023 15:31:45

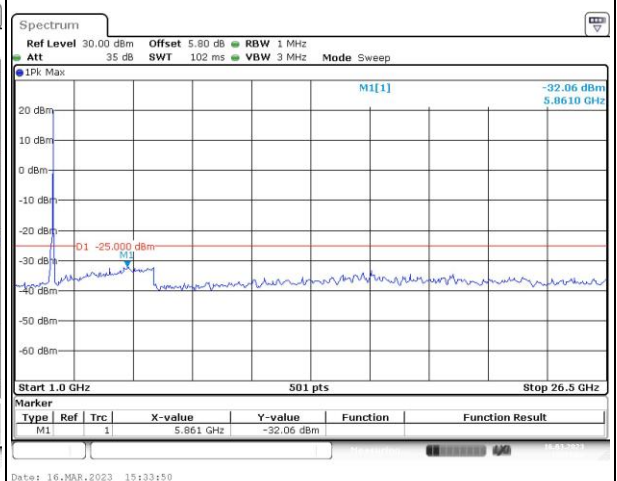
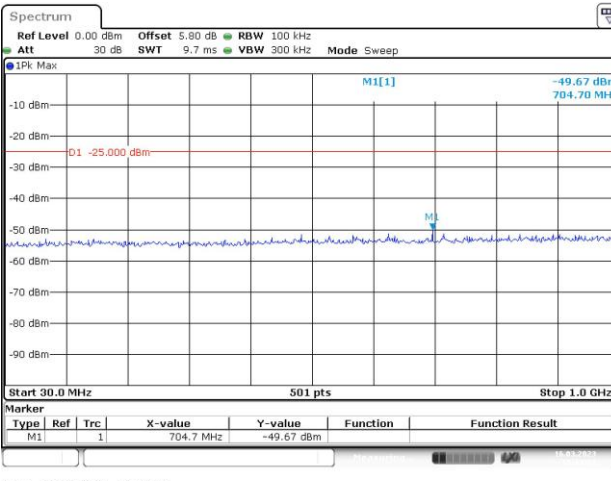
Middle



Date: 16.MAR.2023 15:32:14

Date: 16.MAR.2023 15:32:44

Highest



Date: 16.MAR.2023 15:33:20

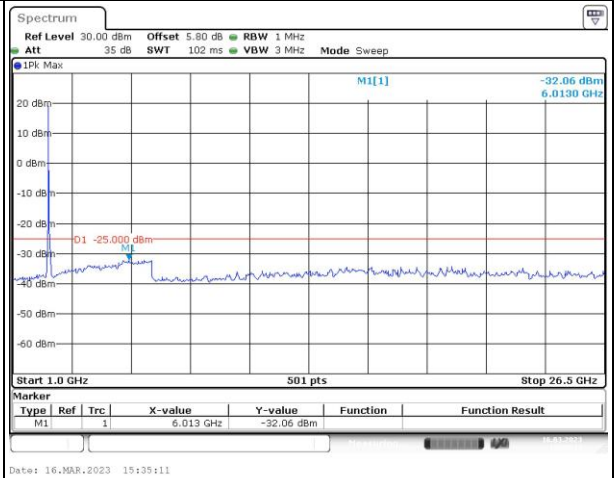
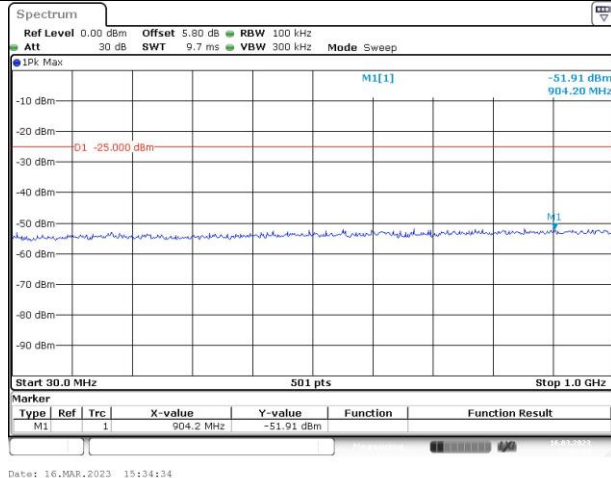
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Spurious Emissions at Antenna Terminal

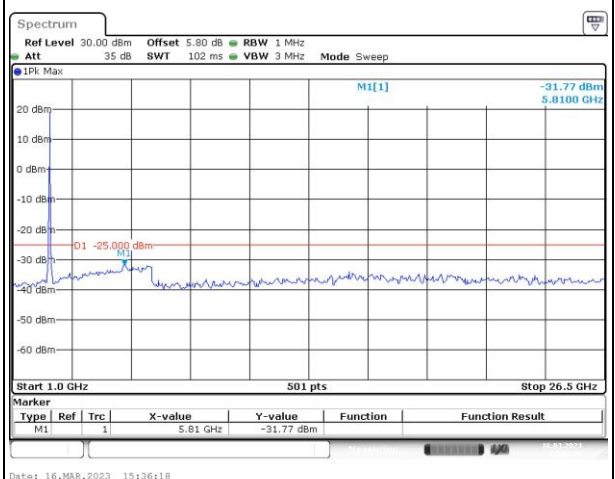
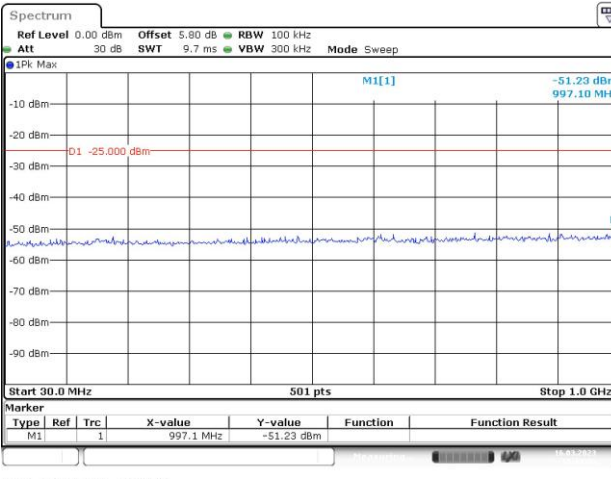
Channel

10MHz Bandwidth QPSK

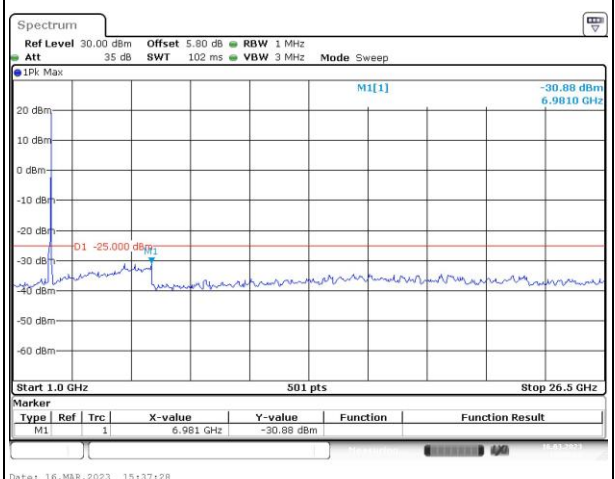
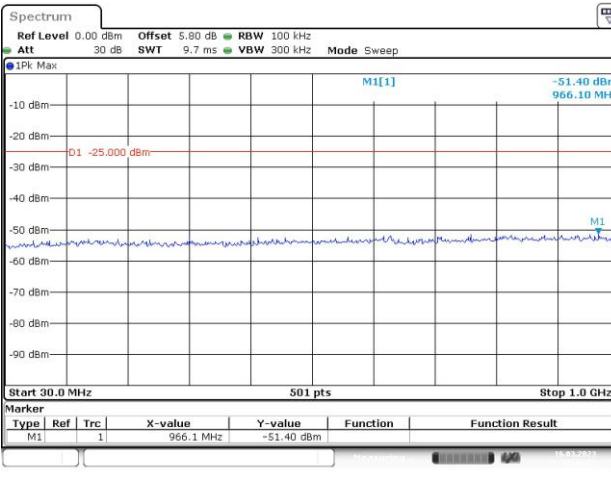
Lowest



Middle



Highest

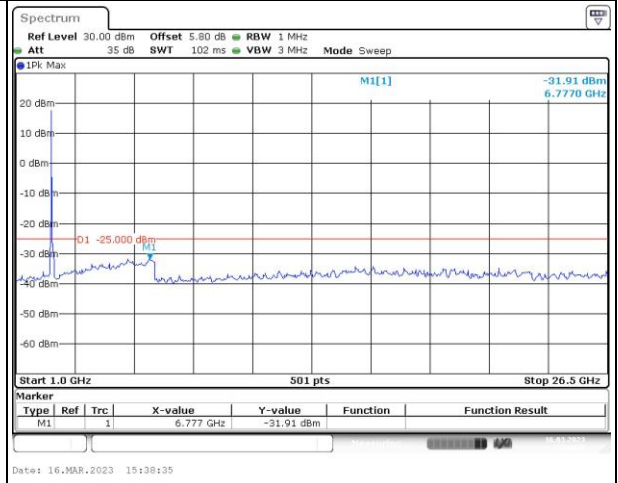
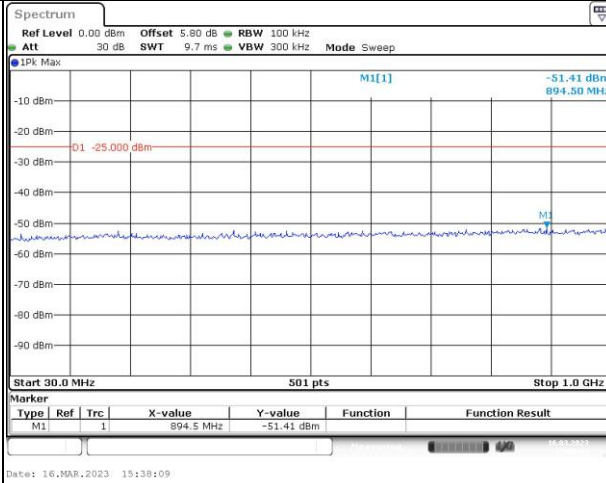


Spurious Emissions at Antenna Terminal

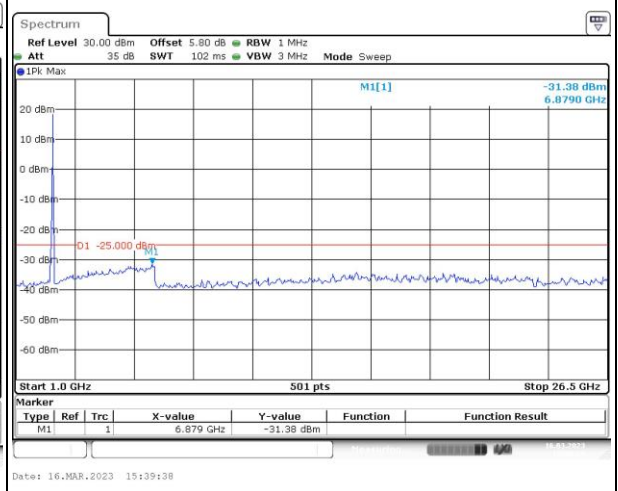
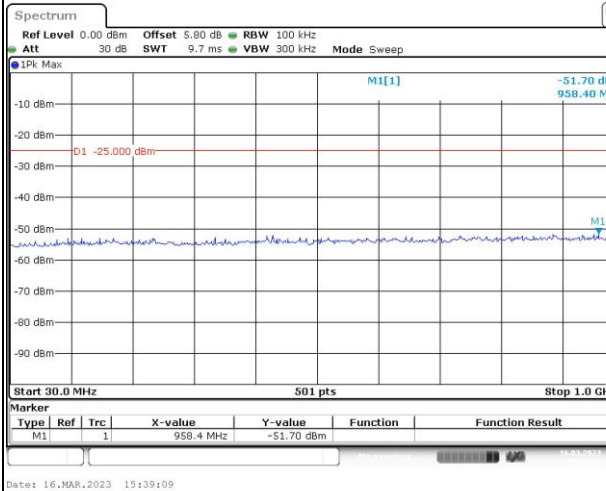
Channel

15MHz Bandwidth QPSK

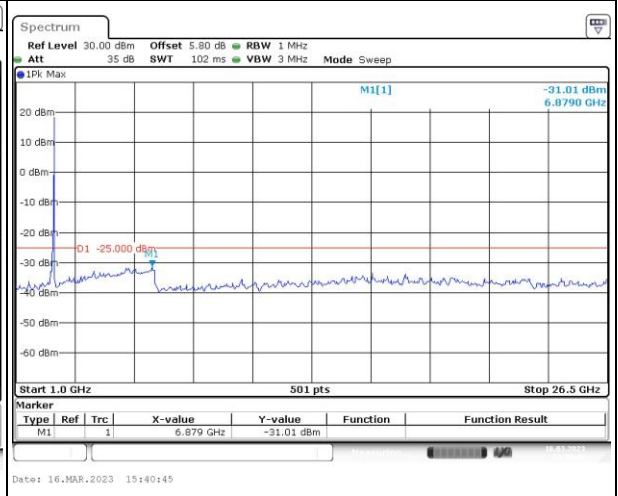
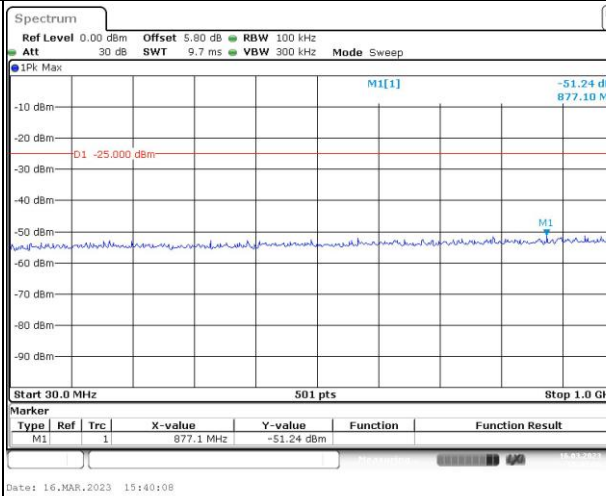
Lowest



Middle



Highest

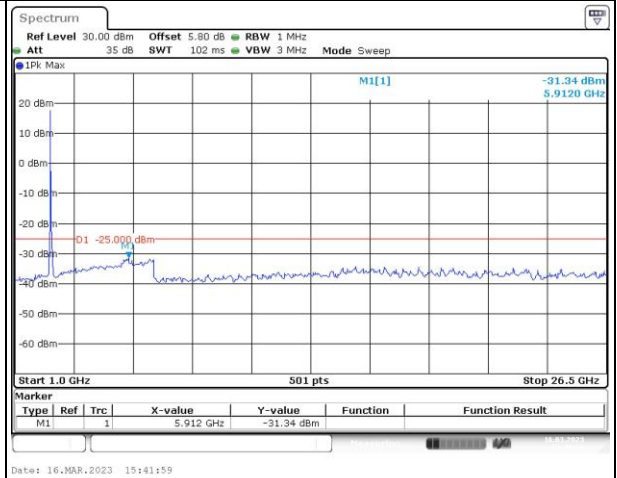
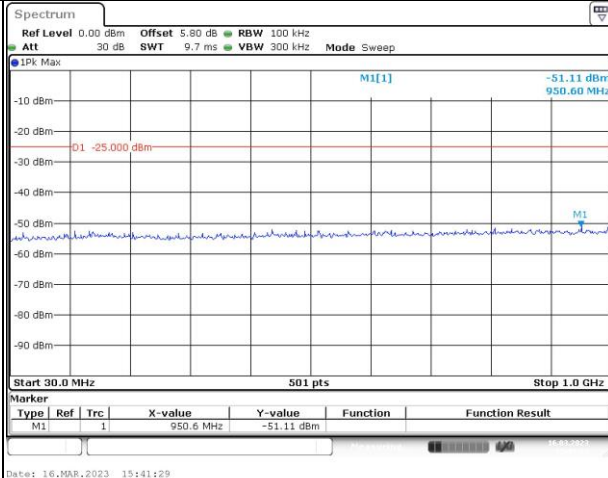


Spurious Emissions at Antenna Terminal

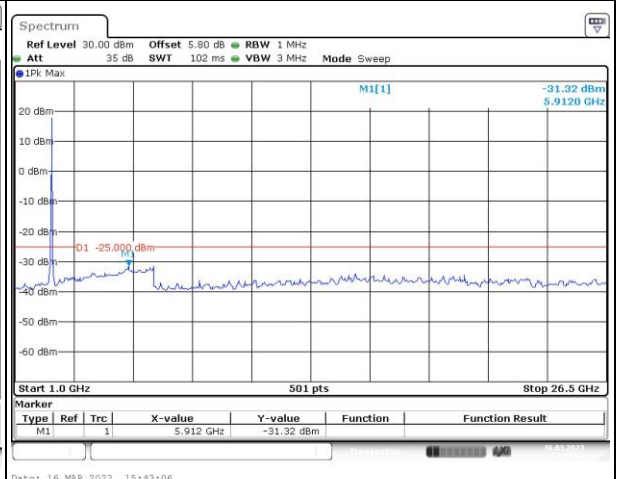
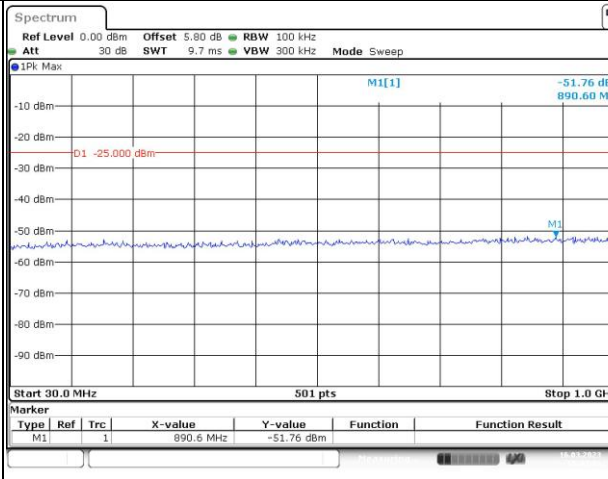
Channel

20MHz Bandwidth QPSK

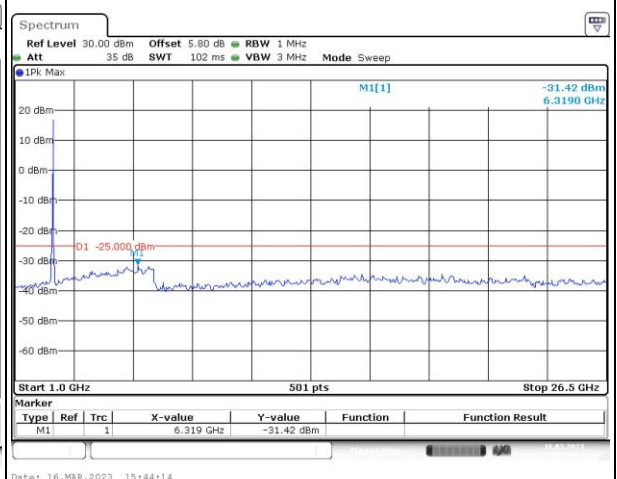
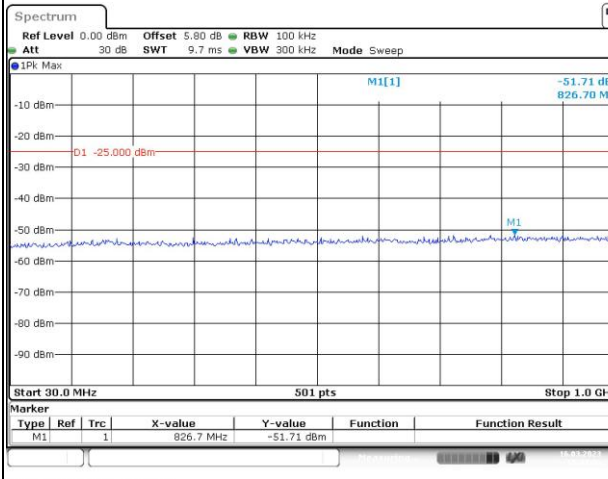
Lowest



Middle



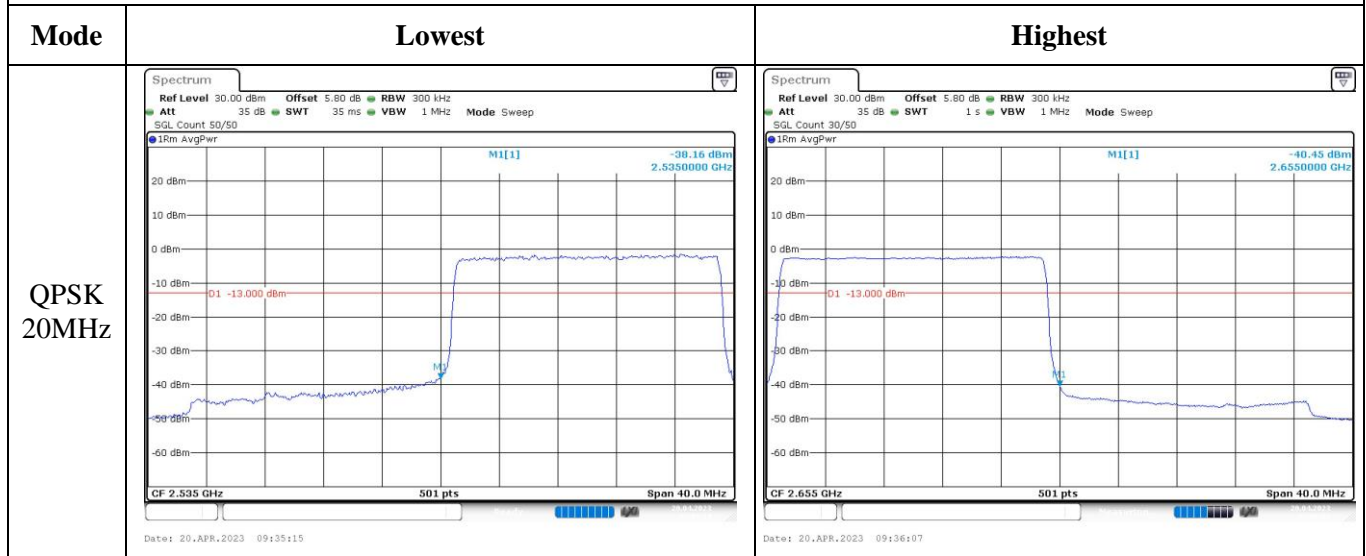
Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz		
QPSK 10MHz		
QPSK 15MHz		

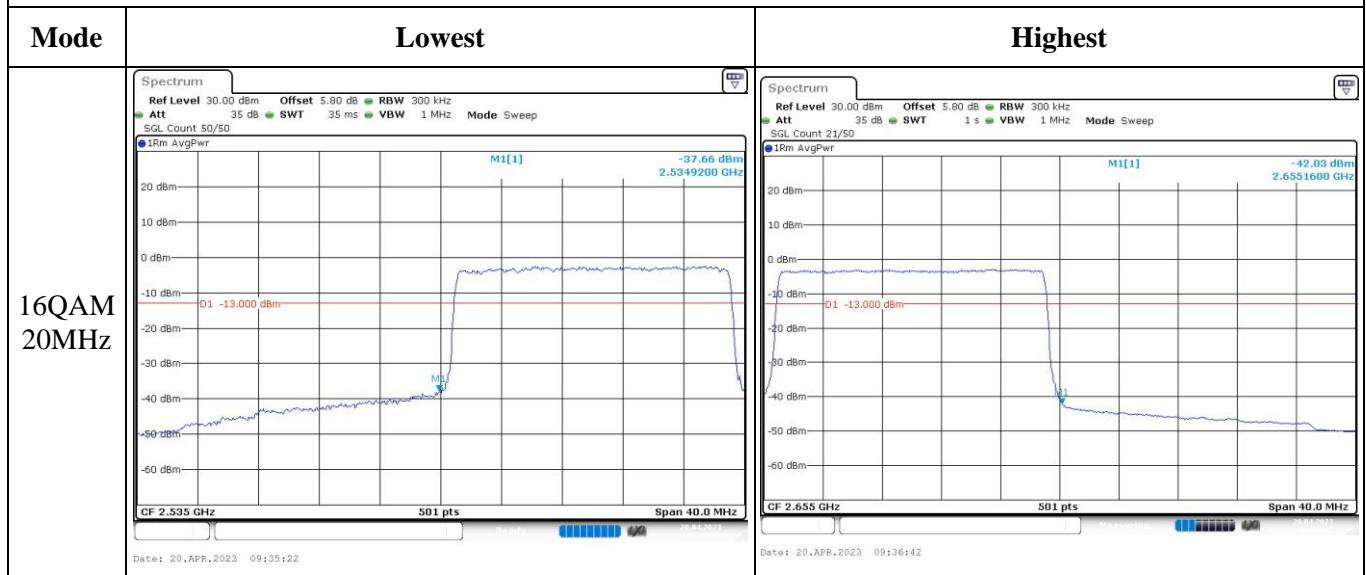
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz		
16QAM 10MHz		
16QAM 15MHz		

Out of band emission, Band Edge



4.13 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	22V0	Test Date:	2023/3/22~2023/4/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jou Zhou	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	22.8~26.7	Relative Humidity: (%)	45~60	ATM Pressure: (kPa)	99.8~101.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100004	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022/7/15	2023/7/14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/3/31	2023/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2022/9/29	2023/9/28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

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

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	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	17.56	16.57	17.34	19.49	30
	RB1#3	17.75	17.13	17.84		
	RB1#5	17.73	17.17	17.15		
	RB3#0	16.38	17.38	17.22		
	RB3#3	17.6	16.83	17.46		
	RB6#0	18	16.07	16.45		
1.4MHz 16QAM	RB1#0	16.85	17.69	17.28	19.41	30
	RB1#3	17.86	16.74	17.15		
	RB1#5	17.14	17.18	17.92		
	RB3#0	17.03	16.66	16.53		
	RB3#3	17.03	17.27	17.62		
	RB6#0	16.42	17.36	16.2		
3MHz QPSK	RB1#0	17.61	16.27	16.37	19.33	30
	RB1#8	17.26	16.4	16.63		
	RB1#14	16.12	16.01	16.85		
	RB6#0	17.66	17.69	16.43		
	RB6#9	17.23	16.49	16.31		
	RB15#0	17.84	16.17	17.14		
3MHz 16QAM	RB1#0	17.31	16.25	16.87	19.42	30
	RB1#8	16.43	17.19	17.26		
	RB1#14	16.31	17.54	17.59		
	RB6#0	16.91	16.53	16.13		
	RB6#9	16.63	17.53	16.52		
	RB15#0	17.48	17.93	16.68		
5MHz QPSK	RB1#0	17.42	17	17.07	19.39	30
	RB1#13	16.38	17.9	16.85		
	RB1#24	17.04	16.3	17.09		
	RB15#0	17.26	17.48	17.62		
	RB15#10	16.17	17.83	17.75		
	RB25#0	16.52	17.73	17.12		
5MHz 16QAM	RB1#0	16.7	17.55	17.31	19.3	30
	RB1#13	17.54	16.23	16.98		
	RB1#24	16.81	16.63	16.71		
	RB15#0	16.35	17.81	16.05		
	RB15#10	17.79	16.57	16.28		
	RB25#0	16.56	16.06	16.74		
10MHz QPSK	RB1#0	17.77	17.11	17.43	19.26	30
	RB1#25	16.9	16.71	17.48		

	RB1#49	17.5	17.13	16.12		
	RB25#0	16.42	17.55	17.22		
	RB25#25	16.71	17.25	16.18		
	RB50#0	16.76	17.23	16.03		
10MHz 16QAM	RB1#0	17.91	16.06	17.64	19.45	30
	RB1#25	16.76	17.9	16.8		
	RB1#49	16.25	17.83	17.79		
	RB25#0	17.77	16.97	17.29		
	RB25#25	17.96	17.59	16.26		
15MHz QPSK	RB1#0	16.83	16.31	16.52	19.25	30
	RB1#38	16.76	17.13	17.2		
	RB1#74	17.73	16.96	16.22		
	RB36#0	16.25	16.88	16.3		
	RB36#39	16.91	17.73	17.25		
15MHz 16QAM	RB1#0	16.1	16.05	17.2	19.46	30
	RB1#38	17.9	16.67	17.6		
	RB1#74	16.64	16.67	17.97		
	RB36#0	16.89	17.52	17.1		
	RB36#39	16.52	17.5	17.52		
20MHz QPSK	RB1#0	17.19	17.11	17.64	19.48	30
	RB1#50	17.08	17.45	16.79		
	RB1#99	16.03	16.77	17.99		
	RB50#0	16.61	16.63	16.65		
	RB50#50	16.07	16.78	16.1		
20MHz 16QAM	RB1#0	16.58	16.19	16.62	19.34	30
	RB1#50	17.85	16.98	17.28		
	RB1#99	16.17	16.25	16.32		
	RB50#0	17.52	16.83	16.09		
	RB50#50	16.56	16.9	16.2		
	RB100#0	17.04	17.22	16.42		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(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	4.96	5.19	4.72	13
	RB100#0	4.03	4.41	4.06	13
20MHz 16QAM	RB1#0	5.8	5.74	5.54	13
	RB100#0	5.77	5.97	5.71	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	1.108	1.102	1.096	1.314	1.29	1.302
1.4MHz 16QAM	1.102	1.096	1.102	1.362	1.296	1.326
3MHz QPSK	2.695	2.683	2.683	2.88	2.892	2.868
3MHz 16QAM	2.683	2.683	2.683	2.892	2.88	2.892
5MHz QPSK	4.531	4.531	4.531	5.18	5.72	5.2
5MHz 16QAM	4.531	4.551	4.511	5.2	5.58	5.12
10MHz QPSK	8.982	8.982	8.982	9.84	9.96	10
10MHz 16QAM	8.982	8.982	8.942	9.96	10.2	9.92
15MHz QPSK	13.533	13.653	13.533	15.6	19.62	15.3
15MHz 16QAM	13.533	13.653	13.533	15.18	17.64	15.06
20MHz QPSK	17.884	18.124	17.964	19.6	23.52	19.6
20MHz 16QAM	17.964	18.124	17.964	19.84	23.84	19.76

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.

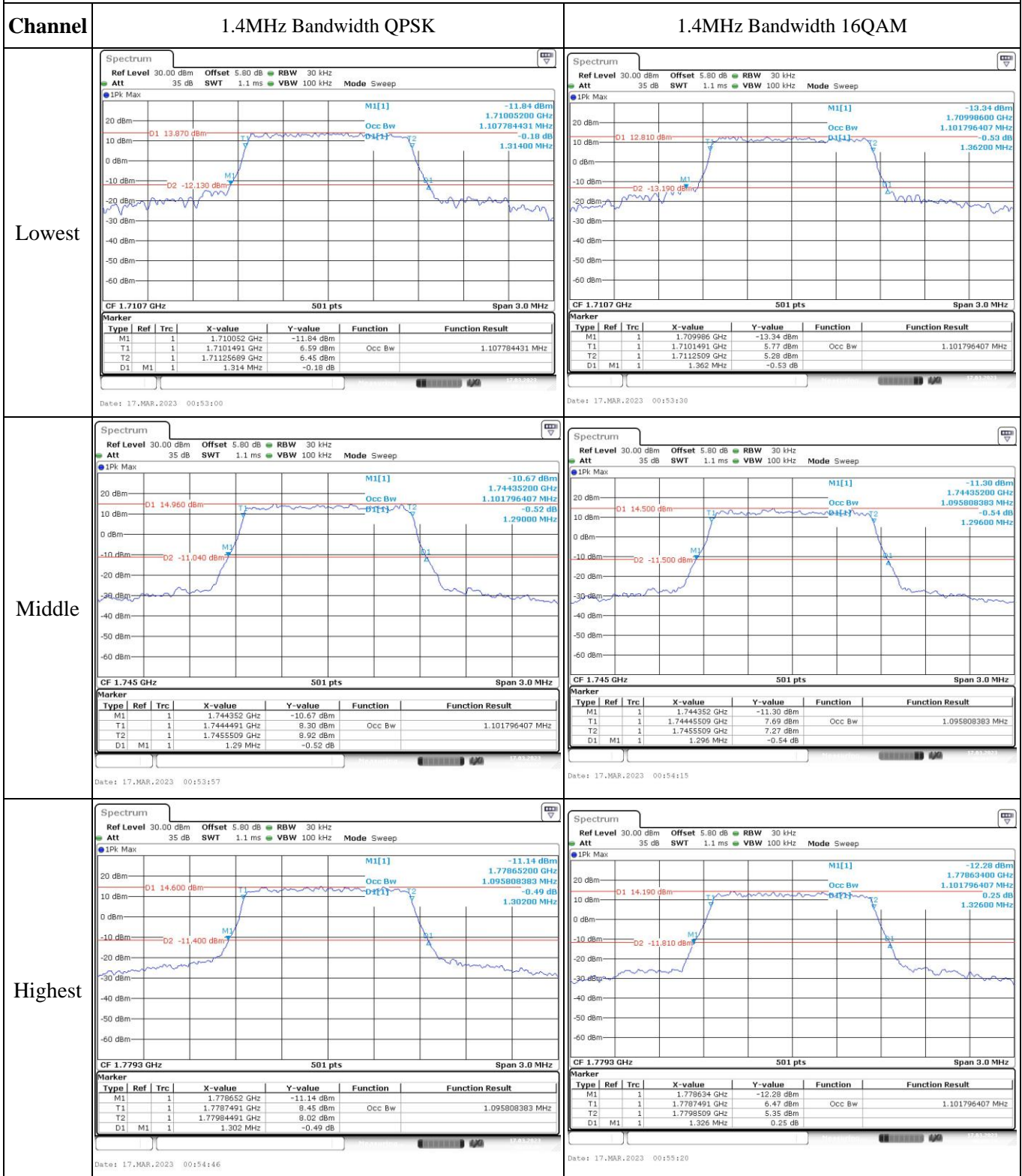
FCC §2.1051, §27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1711.147	1710.00	1779.031	1780
	-20	3.85	1711.123	1710.00	1779.029	1780
	-10	3.85	1711.101	1710.00	1779.038	1780
	0	3.85	1711.176	1710.00	1779.092	1780
	10	3.85	1711.196	1710.00	1779.012	1780
	20	3.85	1711.138	1710.00	1779.022	1780
	30	3.85	1711.174	1710.00	1779.090	1780
	40	3.85	1711.172	1710.00	1779.087	1780
	50	3.85	1711.188	1710.00	1779.012	1780
Frequency Stability vs. Voltage	20	3.5	1711.126	1710.00	1779.025	1780
	20	4.4	1711.199	1710.00	1779.075	1780
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.85	1711.076	1710.00	1754.950	1780
	-20	3.85	1711.079	1710.00	1754.950	1780
	-10	3.85	1711.072	1710.00	1754.950	1780
	0	3.85	1711.009	1710.00	1754.950	1780
	10	3.85	1711.004	1710.00	1754.950	1780
	20	3.85	1711.058	1710.00	1754.950	1780
	30	3.85	1711.045	1710.00	1754.950	1780
	40	3.85	1711.003	1710.00	1754.950	1780
Frequency Stability vs. Voltage	50	3.85	1711.007	1710.00	1754.950	1780
	20	3.5	1711.075	1710.00	1754.950	1780
	20	4.4	1711.053	1710.00	1754.950	1780
					Result:	Pass

Test Plots(Note: The 5.8dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



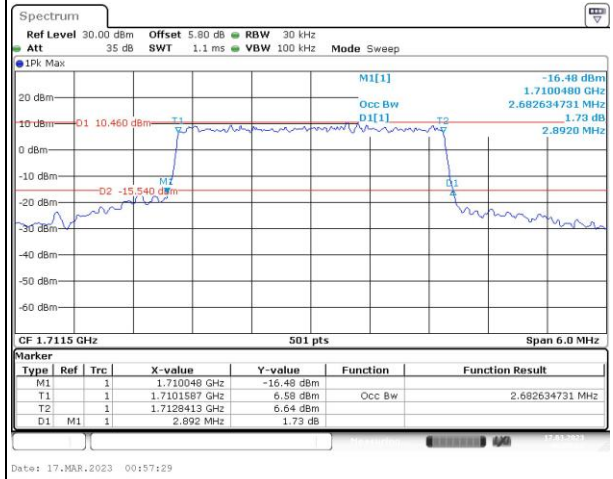
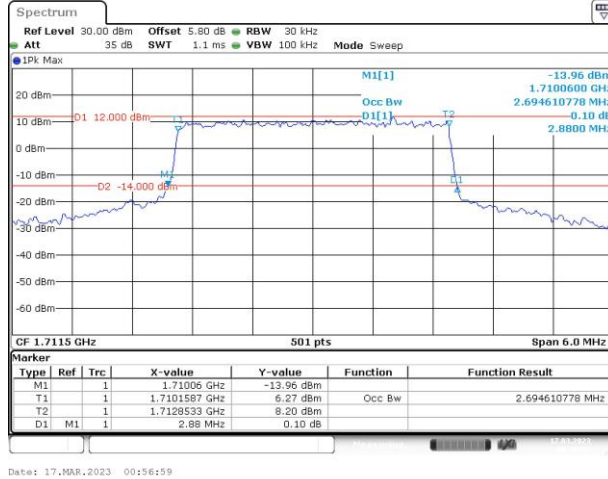
Occupied Bandwidth

Channel

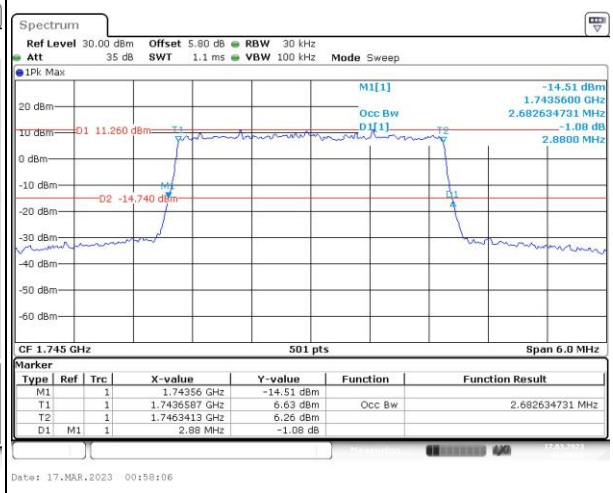
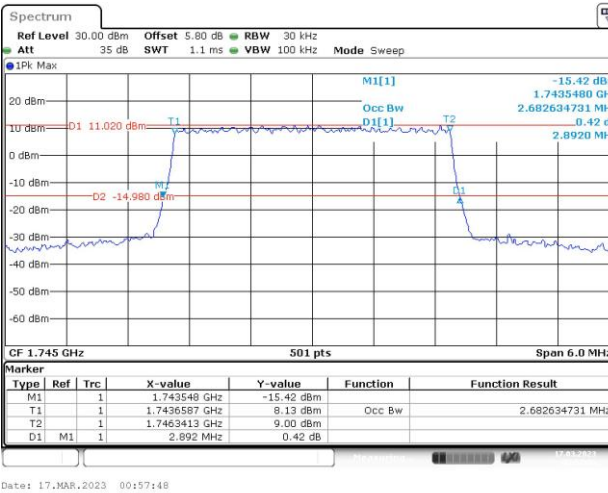
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

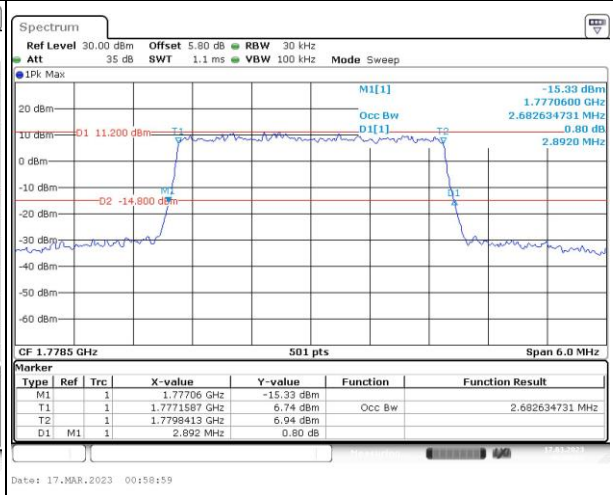
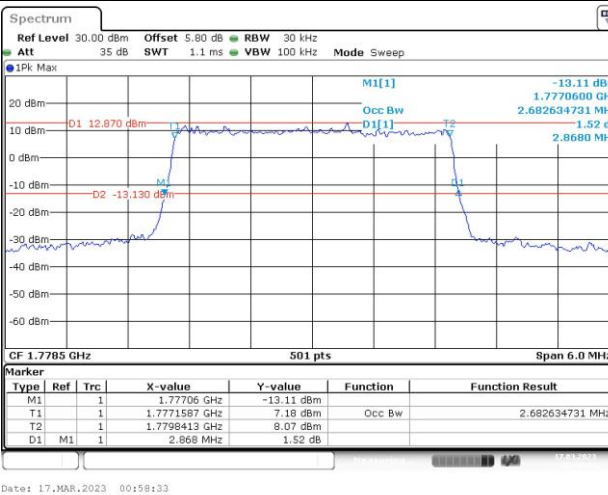
Lowest



Middle



Highest



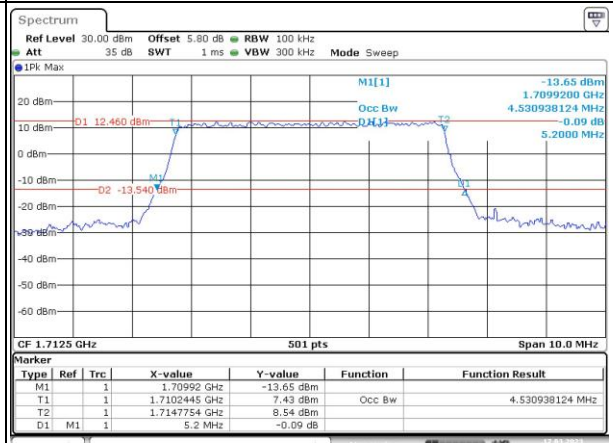
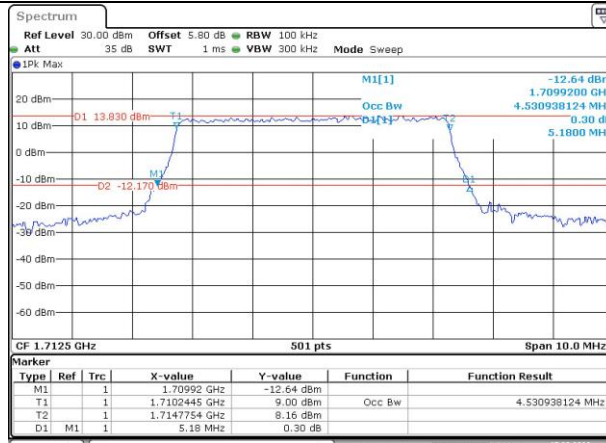
Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

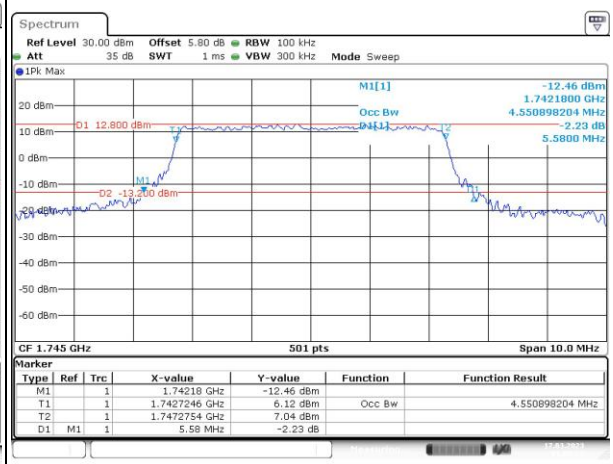
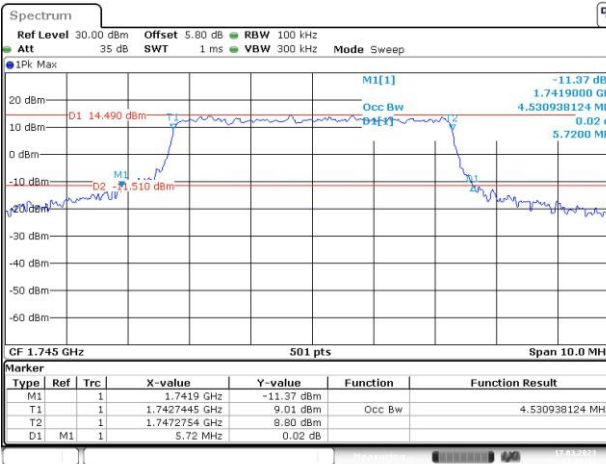
Lowest



Date: 17.MAR.2023 01:00:10

Date: 17.MAR.2023 01:00:44

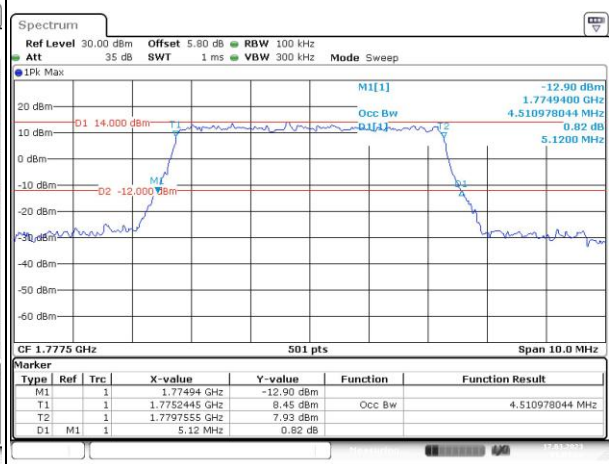
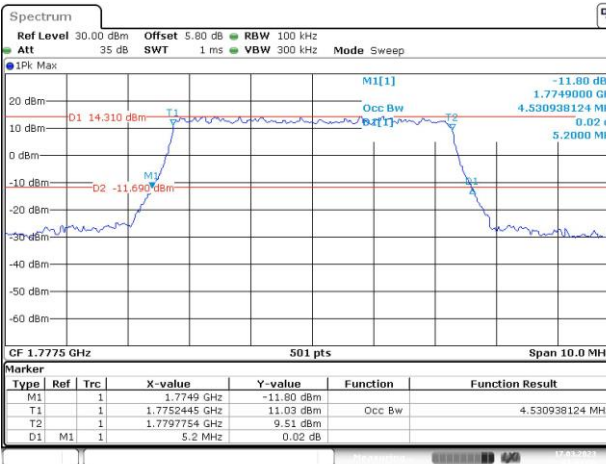
Middle



Date: 17.MAR.2023 01:01:41

Date: 17.MAR.2023 01:02:22

Highest



Date: 17.MAR.2023 01:03:01

Date: 17.MAR.2023 01:03:27

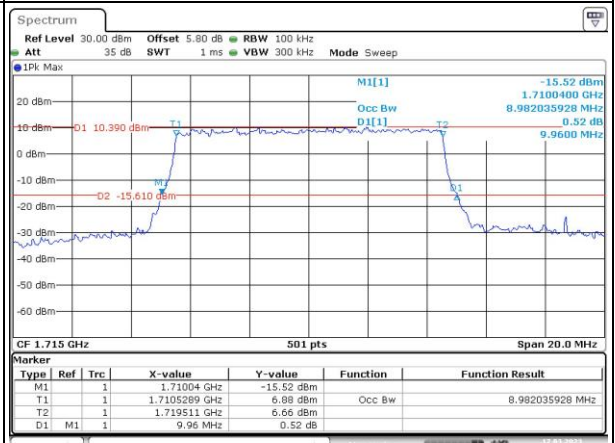
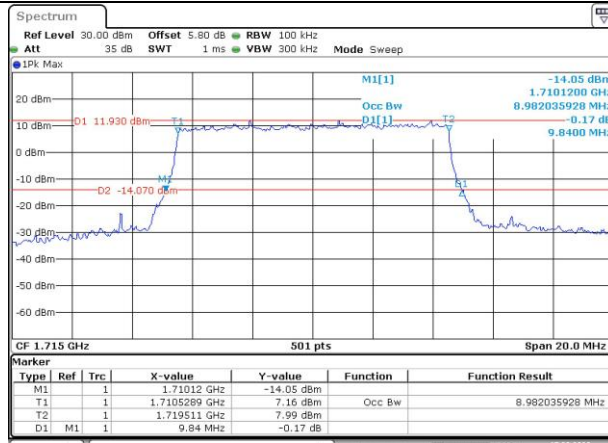
Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

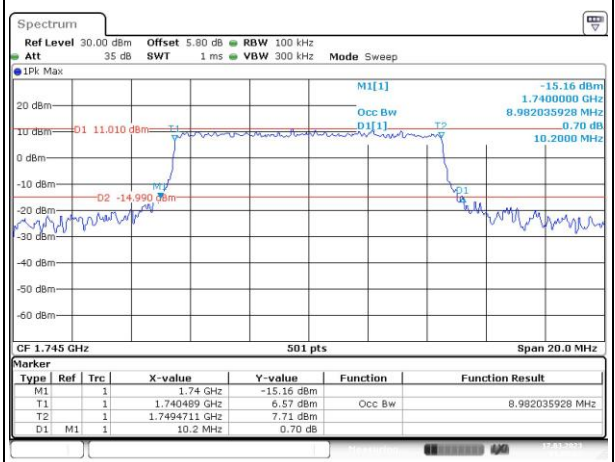
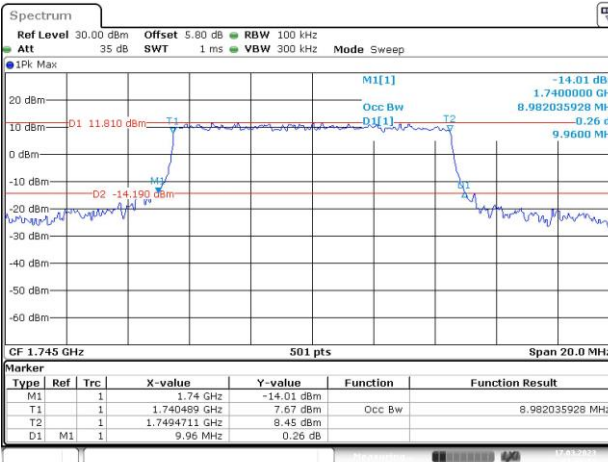
Lowest



Date: 17.MAR.2023 01:04:31

Date: 17.MAR.2023 01:05:04

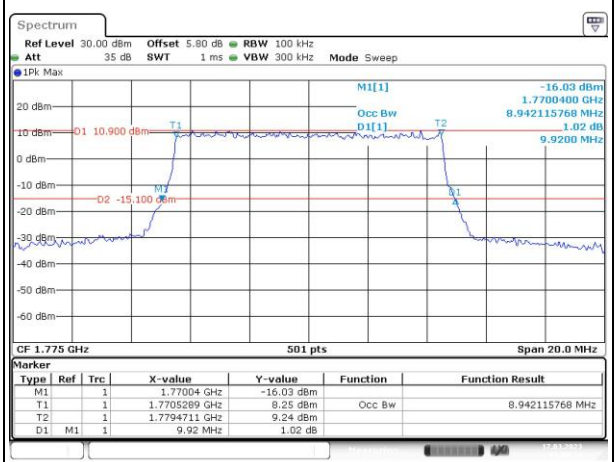
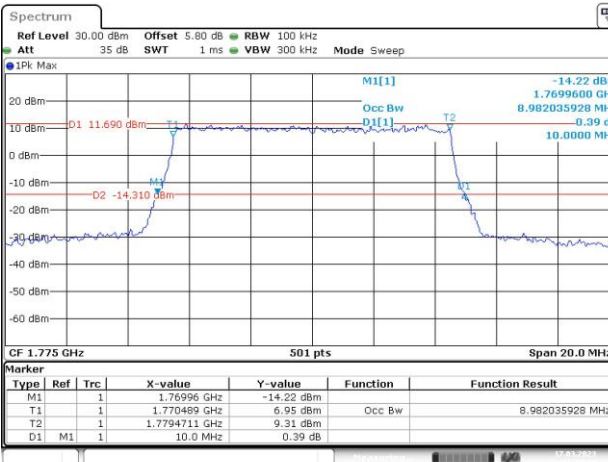
Middle



Date: 17.MAR.2023 01:06:15

Date: 17.MAR.2023 01:07:03

Highest



Date: 17.MAR.2023 01:07:37

Date: 17.MAR.2023 01:08:11

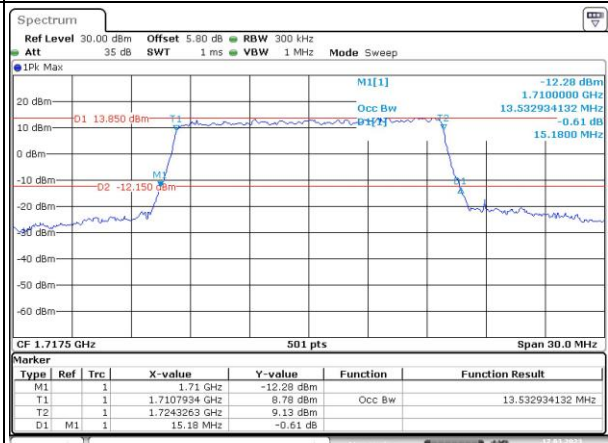
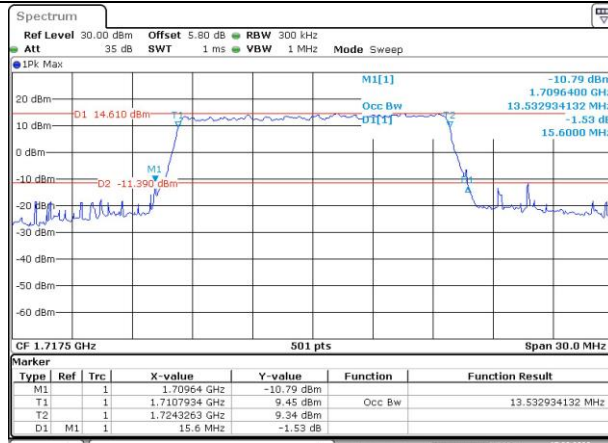
Occupied Bandwidth

Channel

15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

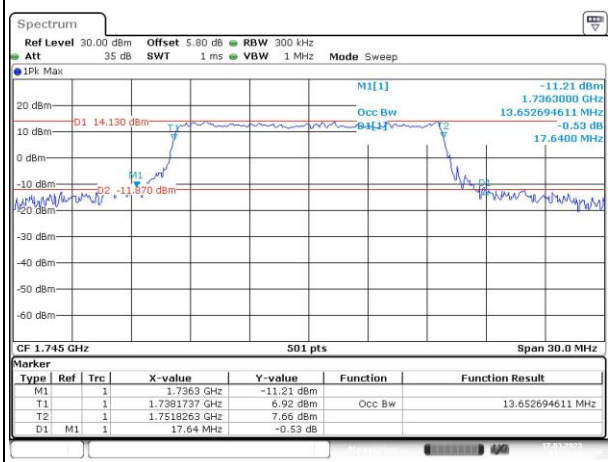
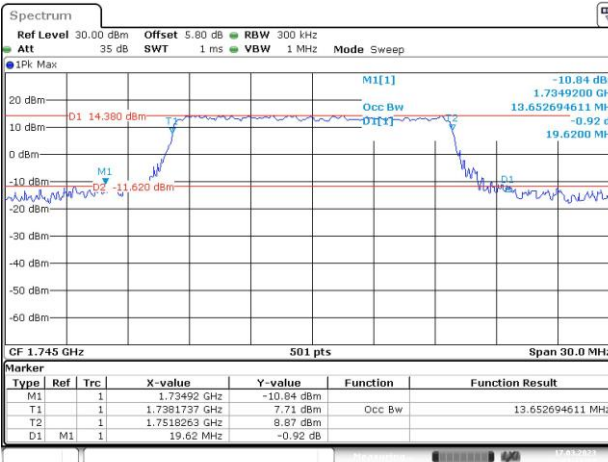
Lowest



Date: 17.MAR.2023 01:09:27

Date: 17.MAR.2023 01:09:54

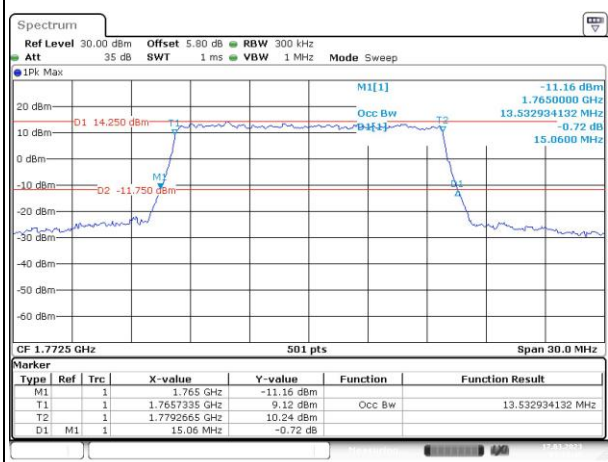
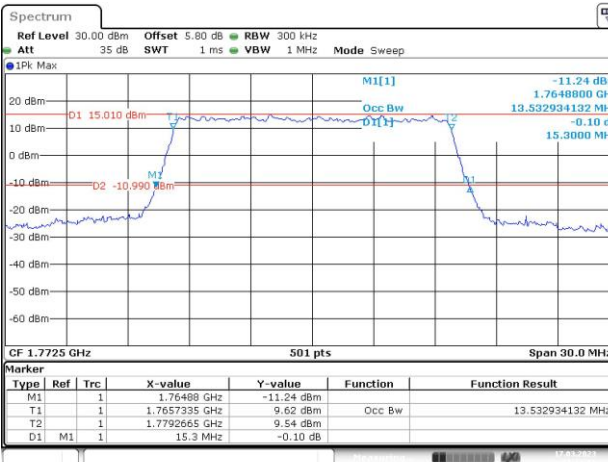
Middle



Date: 17.MAR.2023 01:11:08

Date: 17.MAR.2023 01:11:50

Highest



Date: 17.MAR.2023 01:12:18

Date: 17.MAR.2023 01:12:45

Occupied Bandwidth

