

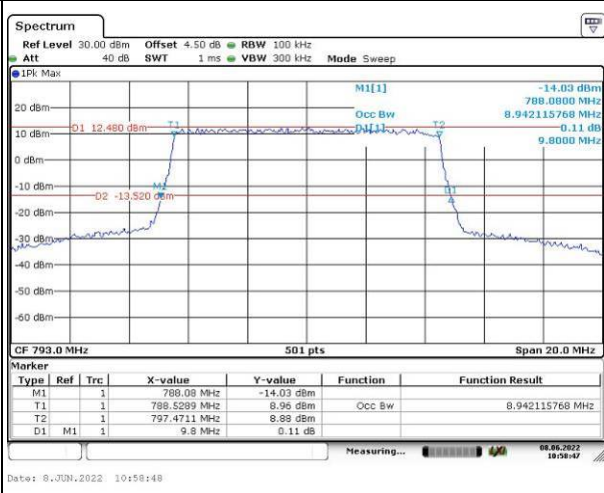
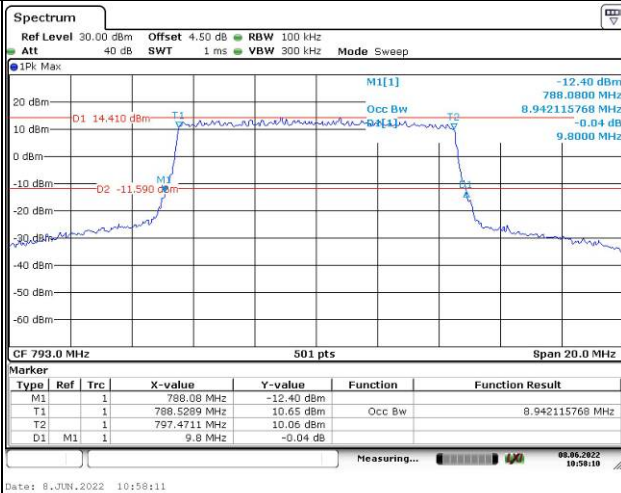
Occupied Bandwidth

Channel

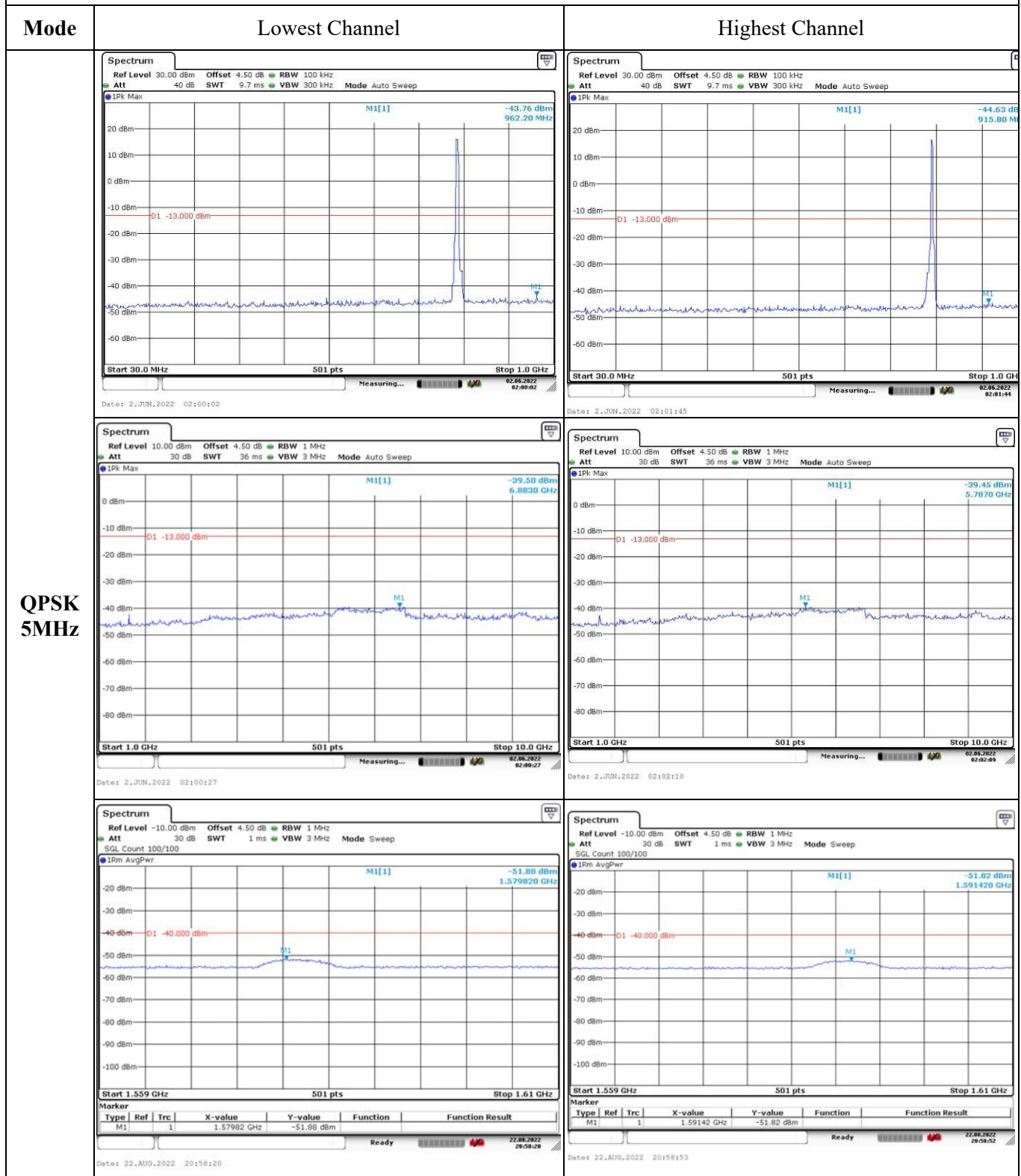
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Middle



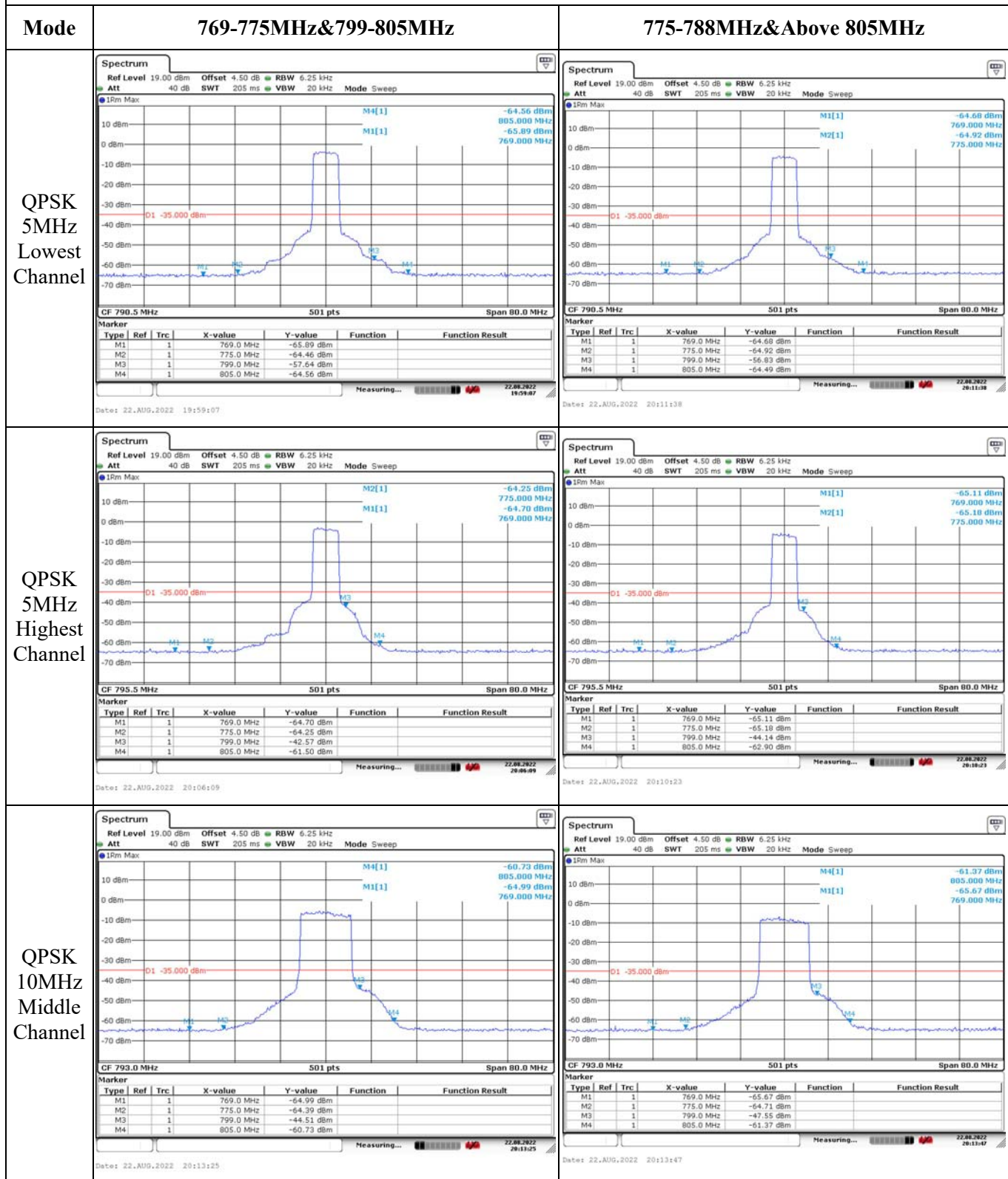
Spurious Emissions at Antenna Terminal



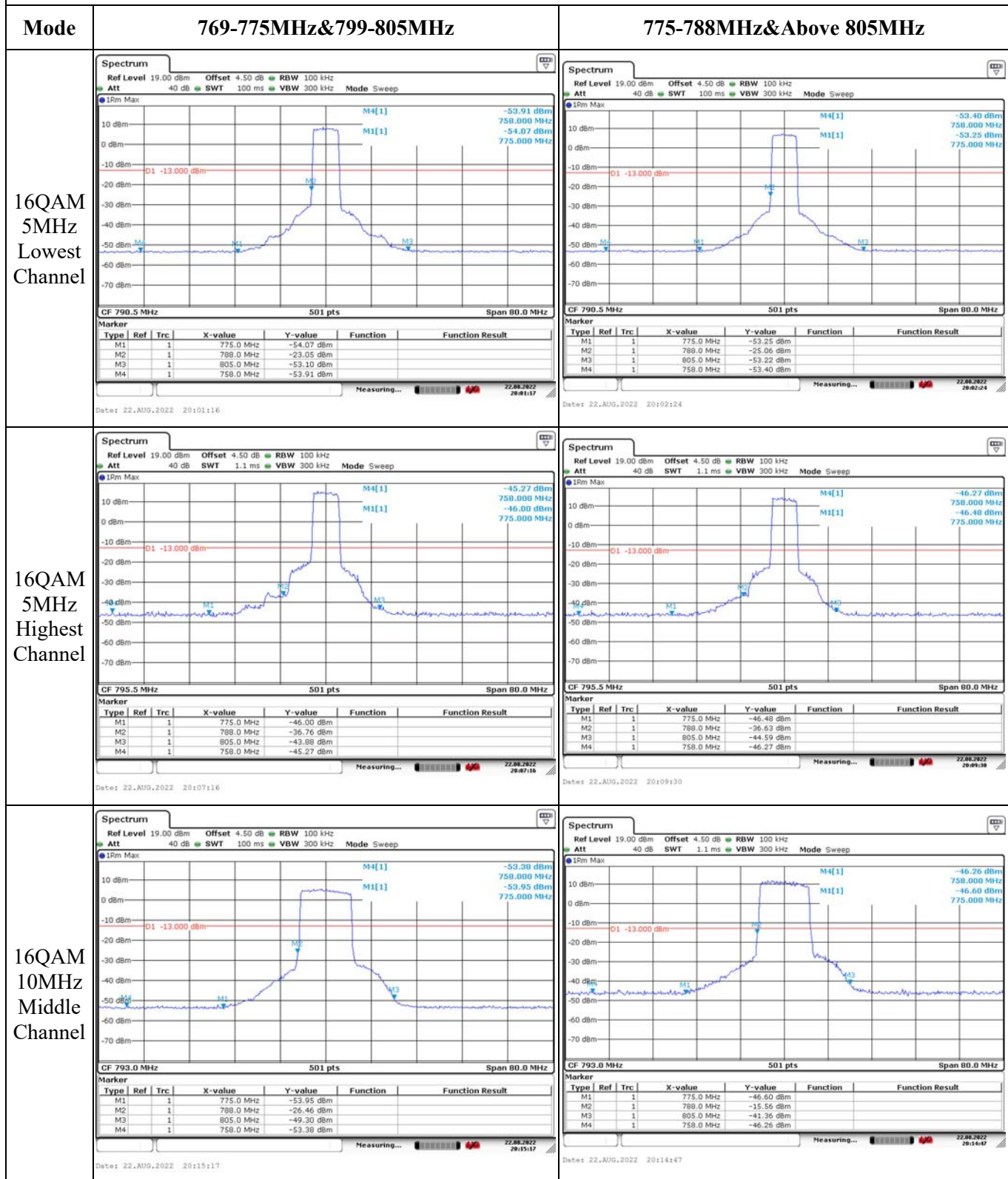
Spurious Emissions at Antenna Terminal

Spurious Emissions at Antenna Terminal															
Mode	Middle Channel	/													
QPSK 10MHz	Spectrum Ref Level 30.00 dBm Offset 4.50 dB RBW 100 kHz Att 40 dB SWT 9.7 ms VBW 300 kHz Mode Auto Sweep 1Pk Max M1[1] -44.22 dBm 844.10 MHz -13.000 dBm Start 30.0 MHz 501 pts Stop 1.0 GHz Measuring... 02.06.2022 02:02:47 Date: 2.JUN.2022 02:02:48	/													
	Spectrum Ref Level 10.00 dBm Offset 4.50 dB RBW 1 MHz Att 30 dB SWT 36 ms VBW 3 MHz Mode Auto Sweep 1Pk Max M1[1] -38.98 dBm 6.6500 GHz -13.000 dBm Start 1.0 GHz 501 pts Stop 10.0 GHz Measuring... 02.06.2022 02:03:12 Date: 2.JUN.2022 02:03:13	/													
	Spectrum Ref Level -10.00 dBm Offset 4.50 dB RBW 1 MHz Att 30 dB SWT 1 ms VBW 3 MHz Mode Sweep SQL Count 100/100 15m AvgPwr M1[1] -52.83 dBm 1.586030 GHz -40.000 dBm Start 1.559 GHz 501 pts Stop 1.61 GHz Marker <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>1.58603 GHz</td><td>-52.83 dBm</td><td></td><td></td></tr></table> Ready 22.06.2022 20:57:14 Date: 22.AUG.2022 20:57:14	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		1.58603 GHz	-52.83 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result									
M1	1		1.58603 GHz	-52.83 dBm											

Out of band emission, Band Edge



Out of band emission, Band Edge



4.10 Antenna Port Test Data and Results for LTE Band 66:

Serial Number:	CR22050037-RF-S1	Test Date:	2022-06-02~2022-07-13
Test Site:	RF	Test Mode:	Transmitting
Tester:	Rinka Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.9~26	Relative Humidity: (%)	67	ATM Pressure: (kPa)	100.0~100.1
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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	2021-07-22	2022-07-21
zhuoxiang	Coaxial Cable	SMA-178	211002	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554404	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-07-22	2022-07-21
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	Each Time	N/A

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

EUT Information@ LTE Band 66▲:

Antenna Gain (dBi):	3.87	Cable Loss (dB):	0
Operation Voltage(V _{DC}):			
Lowest:	10.8	Normal:	13.8
		Highest:	36

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;§ 24.232****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	22.08	22.13	21.66	26.1	30
	RB1#3	22.11	22.23	21.83		
	RB1#5	21.92	22.14	21.77		
	RB3#0	21.95	22.16	21.74		
	RB3#3	21.92	22.14	21.68		
	RB6#0	20.99	21.13	20.71		
1.4MHz 16QAM	RB1#0	20.87	21.14	20.75	25.04	30
	RB1#3	21.14	21.09	20.83		
	RB1#5	21	21.09	20.66		
	RB3#0	21.01	21.17	20.72		
	RB3#3	21.01	21.09	20.62		
	RB6#0	20.12	20.1	19.85		
3MHz QPSK	RB1#0	22.05	22.18	21.76	26.12	30
	RB1#8	21.94	22.07	21.73		
	RB1#14	22	22.25	21.73		
	RB6#0	21.03	21.23	20.88		
	RB6#9	21.03	21.07	20.67		
	RB15#0	20.97	21.07	20.81		
3MHz 16QAM	RB1#0	21.02	21.03	21.01	24.93	30
	RB1#8	20.89	20.94	20.8		
	RB1#14	21.06	21	20.68		
	RB6#0	20.11	20.17	19.93		
	RB6#9	20.07	20.05	19.75		
	RB15#0	20.08	20.15	19.85		
5MHz QPSK	RB1#0	22.03	22.16	21.77	26.03	30
	RB1#13	22	22.04	21.76		
	RB1#24	22	22.03	21.65		
	RB15#0	21.14	21.21	20.89		
	RB15#10	21.06	21.09	20.72		
	RB25#0	21.15	21.12	20.83		
5MHz 16QAM	RB1#0	21.08	21.22	20.92	25.09	30
	RB1#13	21.11	21.1	20.78		
	RB1#24	20.95	21.17	20.58		
	RB15#0	20.1	20.22	19.89		
	RB15#10	20.04	20.13	19.82		
	RB25#0	20.06	20.12	19.84		

10MHz QPSK	RB1#0	22.14	22.36	21.95	26.24	30
	RB1#25	22.2	22.37	22.05		
	RB1#49	22.14	22.13	21.79		
	RB25#0	21.18	21.35	20.82		
	RB25#25	21.08	21.08	20.78		
	RB50#0	21.17	21.28	20.86		
10MHz 16QAM	RB1#0	20.79	21.2	20.91	25.07	30
	RB1#25	21.06	21.2	21.04		
	RB1#49	20.97	21.11	20.67		
	RB25#0	20.14	20.37	19.92		
	RB25#25	20.14	20.17	19.87		
	RB50#0	20.18	20.25	19.87		
15MHz QPSK	RB1#0	22.2	22.3	21.87	26.17	30
	RB1#38	22.18	22.09	21.81		
	RB1#74	22.16	22.08	21.64		
	RB36#0	21.19	21.38	20.71		
	RB36#39	21.07	21.05	20.77		
	RB75#0	21.05	21.2	20.75		
15MHz 16QAM	RB1#0	20.92	21.25	20.74	25.12	30
	RB1#38	20.9	21.1	20.76		
	RB1#74	20.89	20.98	20.54		
	RB36#0	20.16	20.35	19.81		
	RB36#39	20.11	20.15	19.77		
	RB75#0	20.08	20.25	19.89		
20MHz QPSK	RB1#0	21.92	22.25	21.87	26.23	30
	RB1#50	22.12	22.36	21.79		
	RB1#99	21.96	22.27	21.6		
	RB50#0	21.07	21.27	20.67		
	RB50#50	20.99	21	20.8		
	RB100#0	21.03	21.11	20.61		
20MHz 16QAM	RB1#0	20.89	21.02	20.72	25.06	30
	RB1#50	21.19	21.07	21.05		
	RB1#99	21.05	20.79	20.51		
	RB50#0	20.06	20.28	19.84		
	RB50#50	20.06	20.11	19.79		
	RB100#0	20.03	20.18	19.69		

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	4.09	4.52	4.09	13
	RB100#0	4.9	4.64	4.26	13
20MHz 16QAM	RB1#0	5.19	5.36	5.28	13
	RB100#0	5.88	5.74	5.3	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	1.096	1.102	1.102	1.32	1.344	1.338
1.4MHz 16QAM	1.096	1.102	1.102	1.314	1.356	1.308
3MHz QPSK	2.683	2.695	2.695	2.952	2.976	2.964
3MHz 16QAM	2.695	2.695	2.695	2.964	2.952	2.988
5MHz QPSK	4.531	4.531	4.511	5.04	5.04	5.02
5MHz 16QAM	4.511	4.511	4.511	5.04	5	5
10MHz QPSK	8.981	8.942	8.942	9.76	9.8	9.76
10MHz 16QAM	8.942	8.942	8.942	9.8	9.76	9.68
15MHz QPSK	13.473	13.413	13.413	14.82	14.82	14.82
15MHz 16QAM	13.473	13.413	13.413	14.82	14.76	14.76
20MHz QPSK	17.884	17.884	17.884	19.36	19.36	19.36
20MHz 16QAM	17.884	17.804	17.884	19.36	19.36	19.44
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.

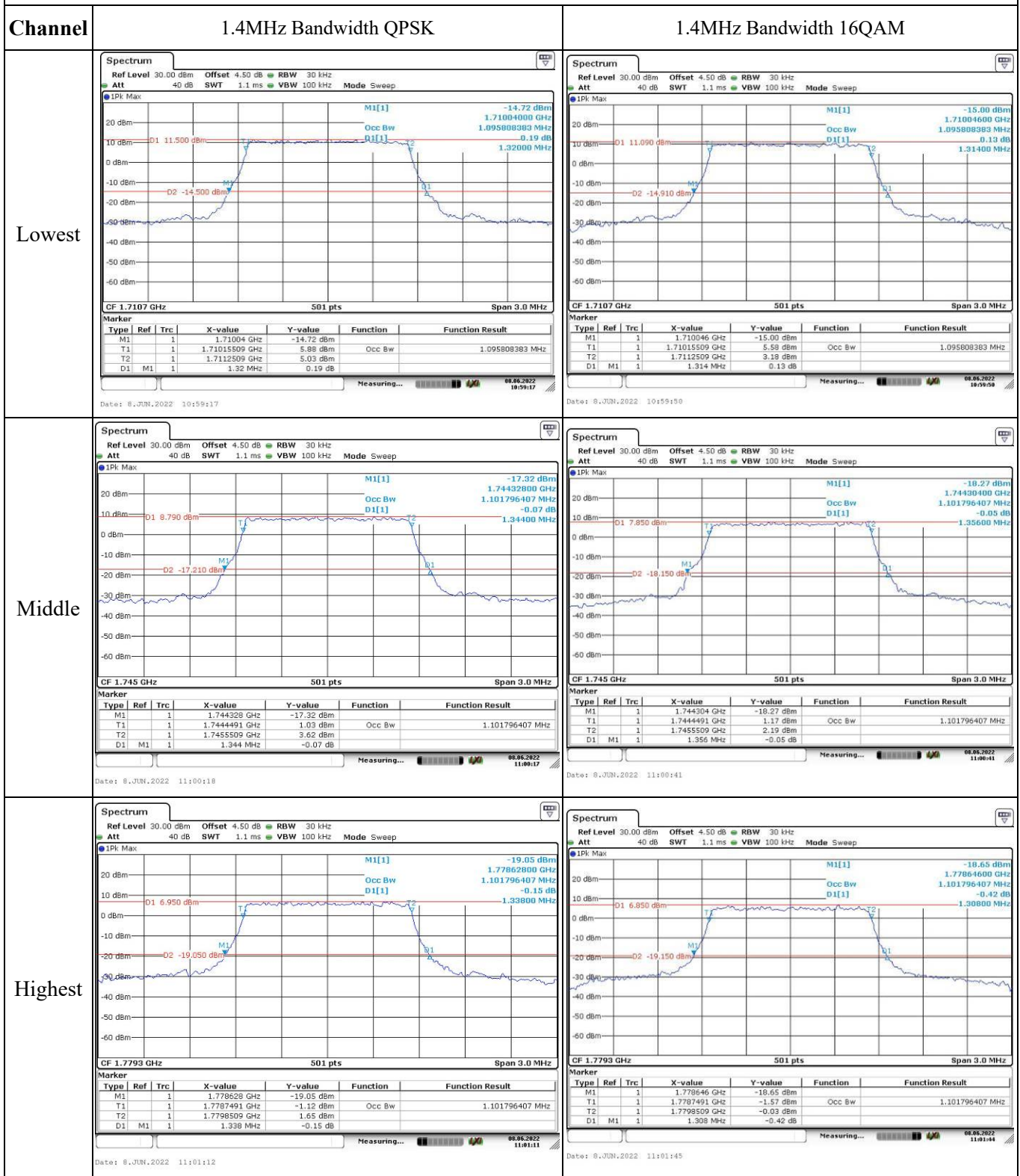
FCC §2.1055, §27.54: Frequency Stability

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	13.8	1710.120	1710.00	1779.958	1780
	-20	13.8	1710.109	1710.00	1779.947	1780
	-10	13.8	1710.104	1710.00	1779.938	1780
	0	13.8	1710.103	1710.00	1779.927	1780
	10	13.8	1710.099	1710.00	1779.919	1780
	20	13.8	1710.085	1710.00	1779.915	1780
	30	13.8	1710.087	1710.00	1779.921	1780
	40	13.8	1710.092	1710.00	1779.931	1780
	50	13.8	1710.105	1710.00	1779.933	1780
Frequency Stability vs. Voltage	20	10.8	1710.112	1710.00	1779.941	1780
	20	36	1710.112	1710.00	1779.951	1780
					Result:	Pass

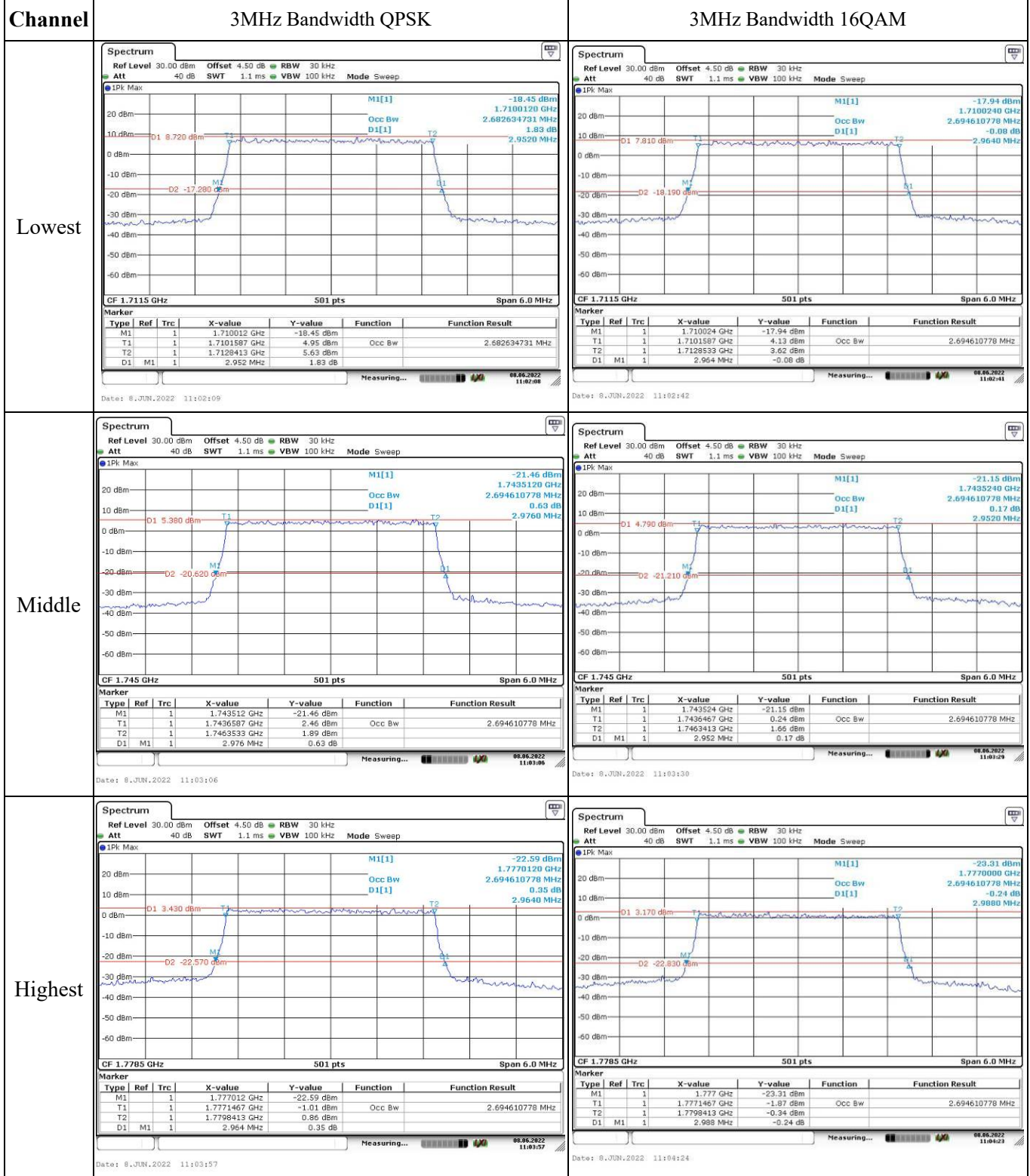
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	13.8	1710.103	1710.00	1779.944	1780
	-20	13.8	1710.103	1710.00	1779.935	1780
	-10	13.8	1710.102	1710.00	1779.935	1780
	0	13.8	1710.094	1710.00	1779.925	1780
	10	13.8	1710.088	1710.00	1779.916	1780
	20	13.8	1710.085	1710.00	1779.915	1780
	30	13.8	1710.097	1710.00	1779.925	1780
	40	13.8	1710.105	1710.00	1779.932	1780
	50	13.8	1710.107	1710.00	1779.944	1780
Frequency Stability vs. Voltage	20	10.8	1710.107	1710.00	1779.949	1780
	20	36	1710.108	1710.00	1779.949	1780
					Result:	Pass

Test Plots:

Occupied Bandwidth



Occupied Bandwidth



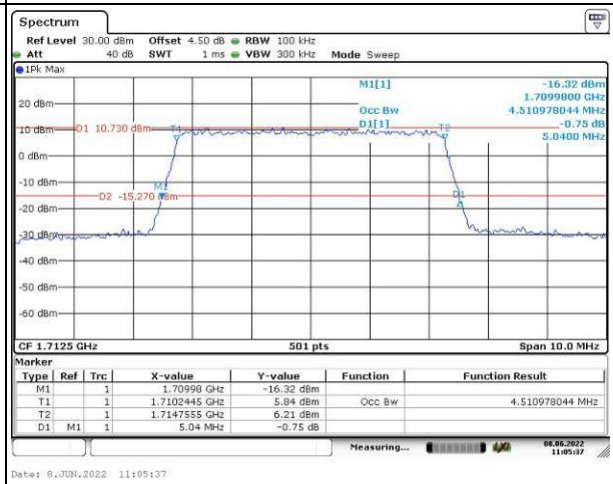
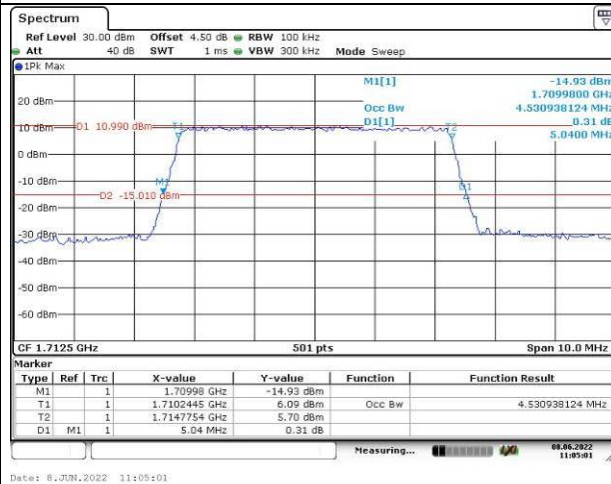
Occupied Bandwidth

Channel

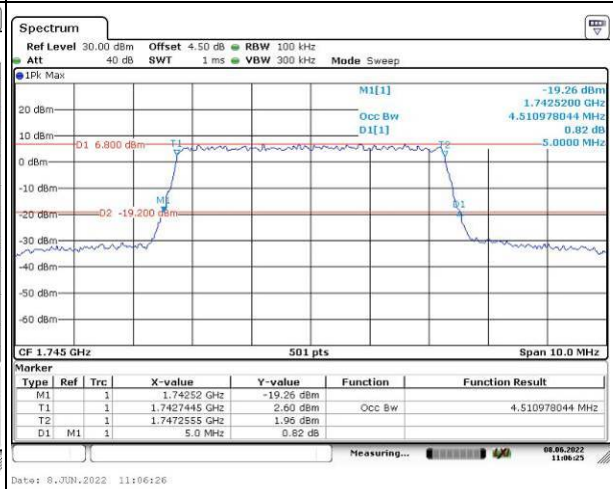
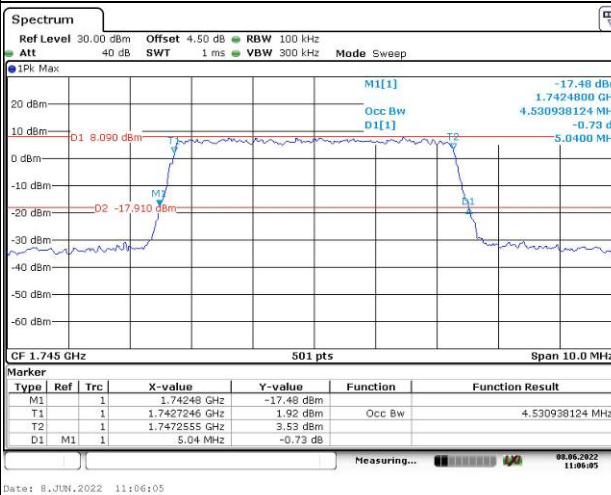
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

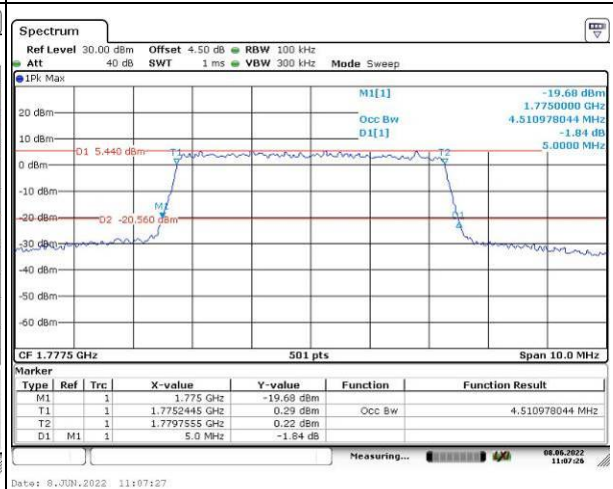
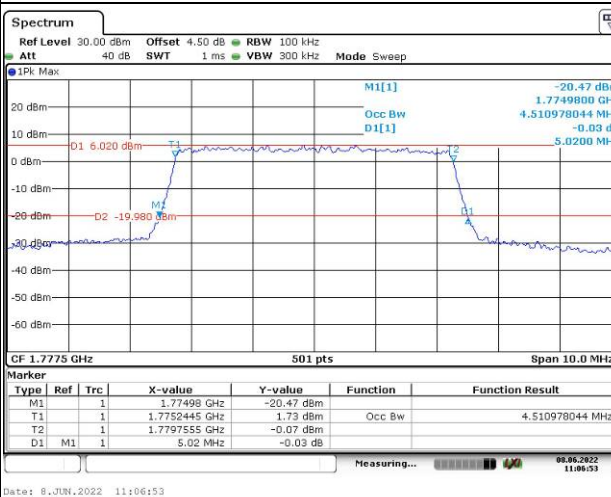
Lowest



Middle



Highest



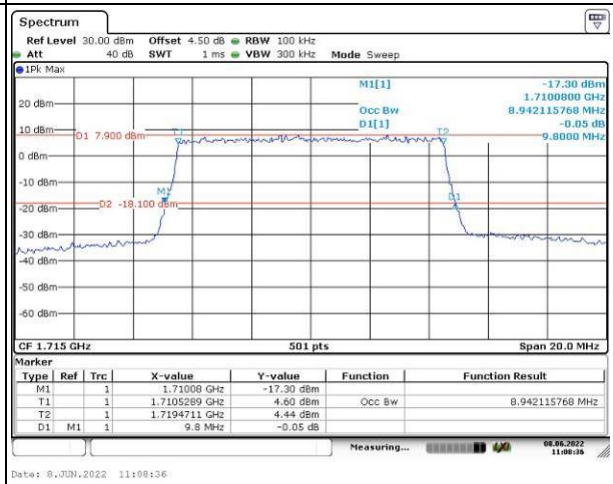
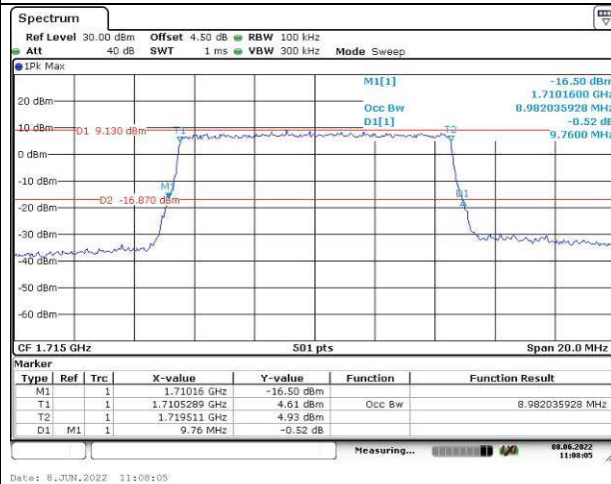
Occupied Bandwidth

Channel

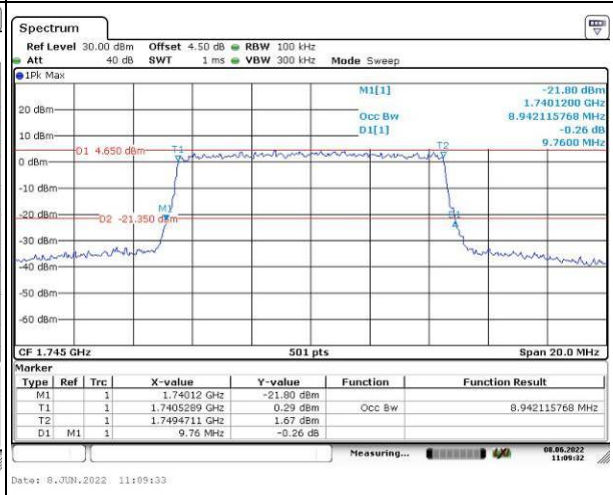
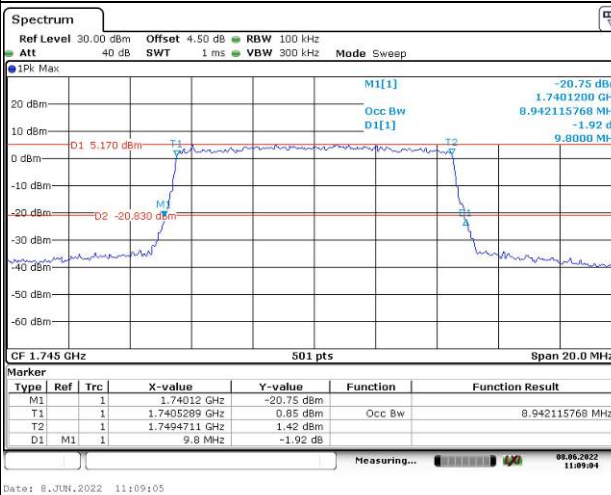
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

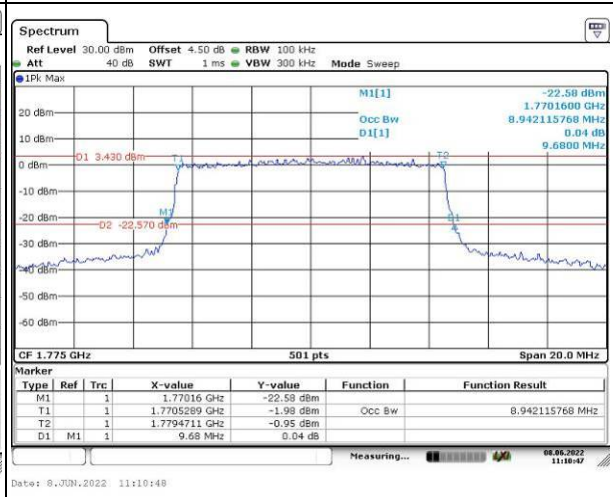
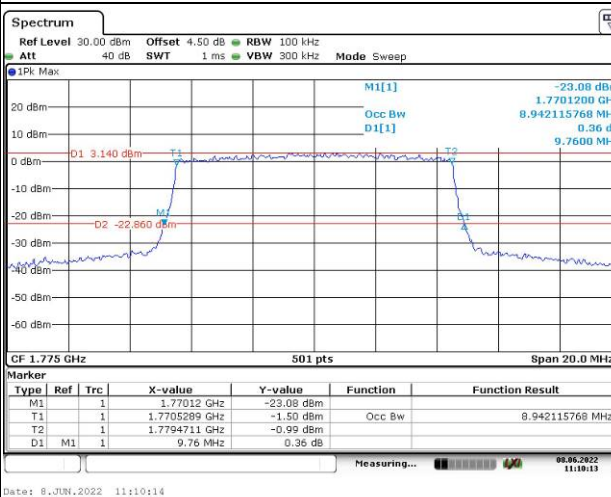
Lowest



Middle



Highest



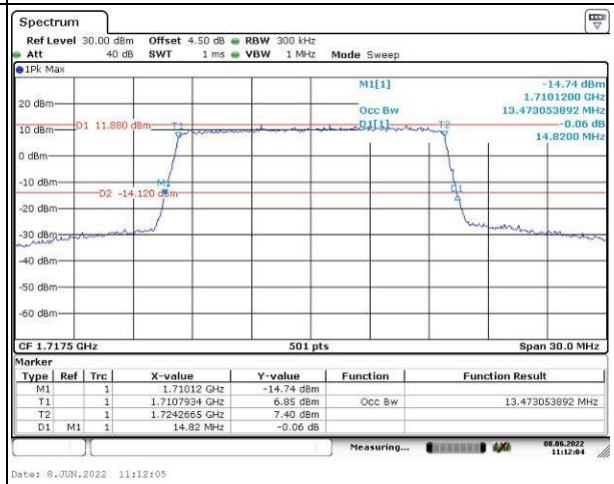
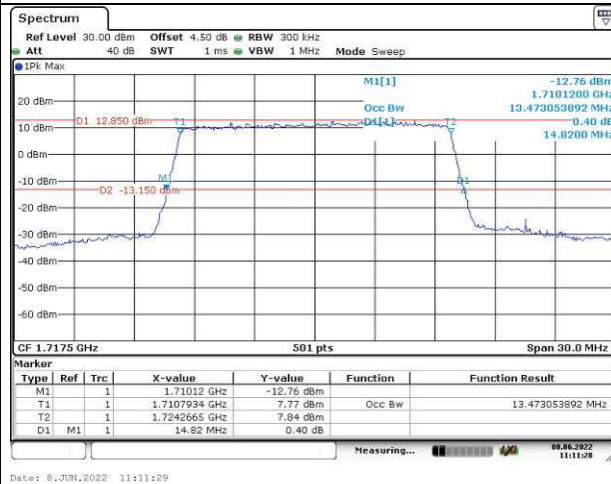
Occupied Bandwidth

Channel

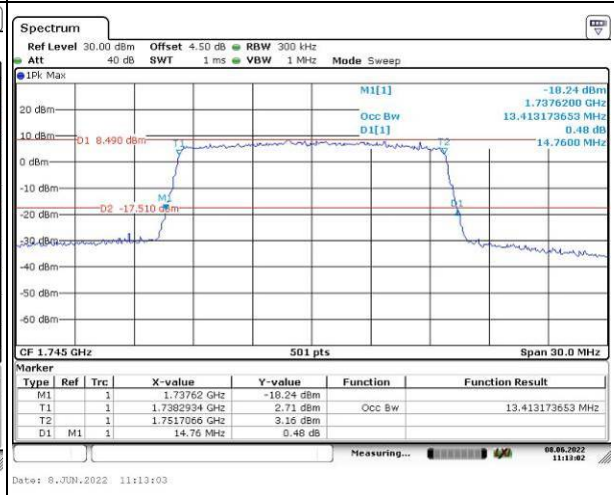
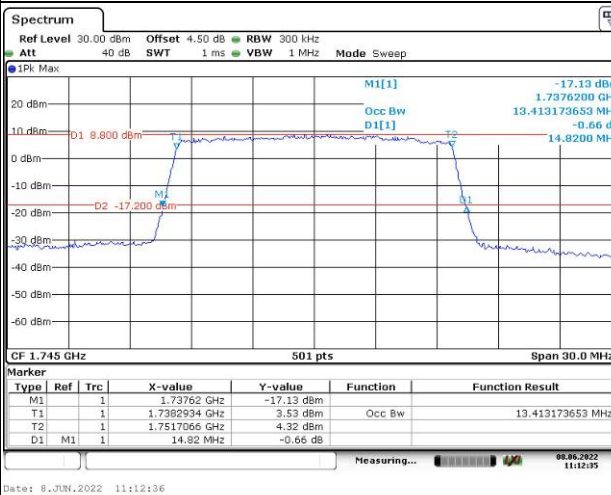
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

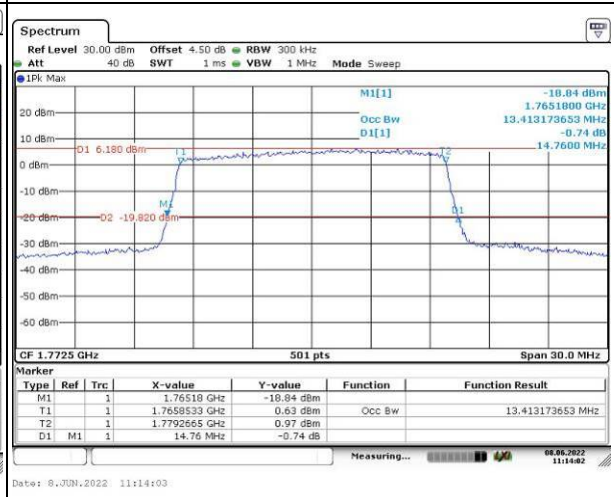
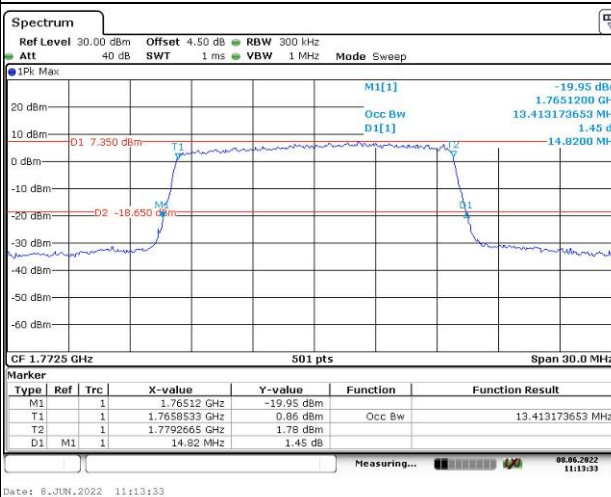
Lowest



Middle



Highest



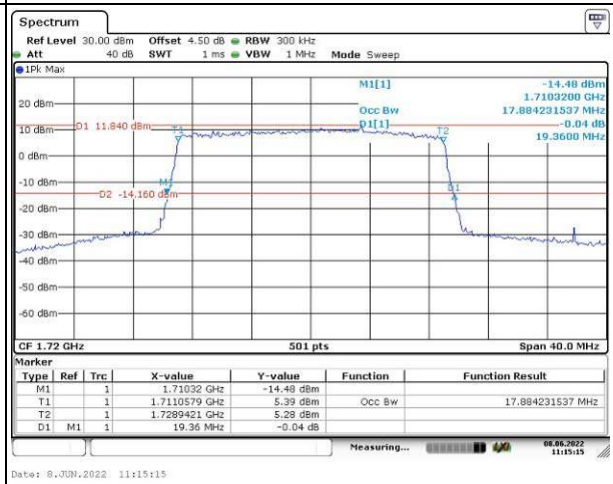
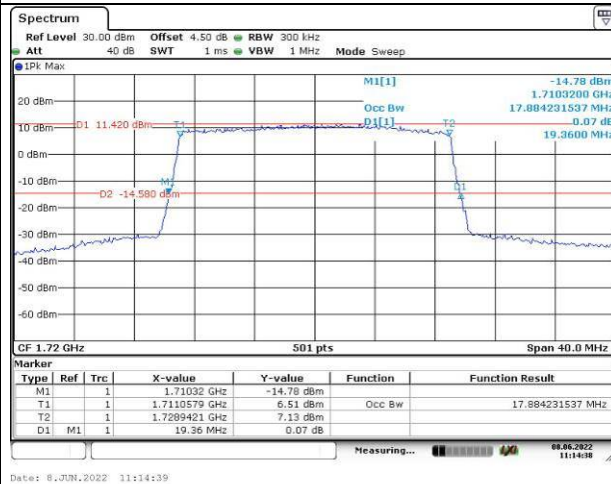
Occupied Bandwidth

Channel

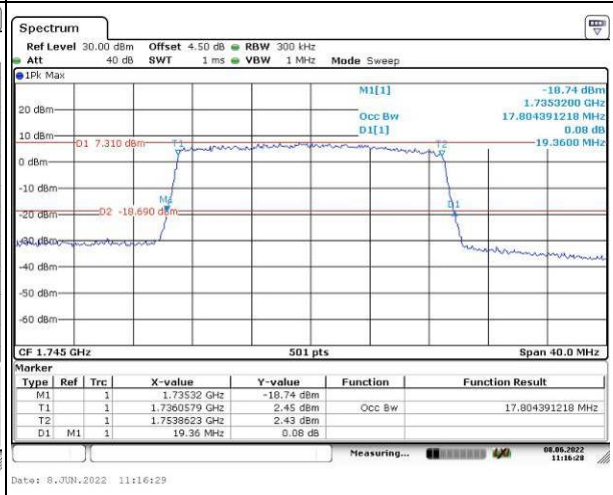
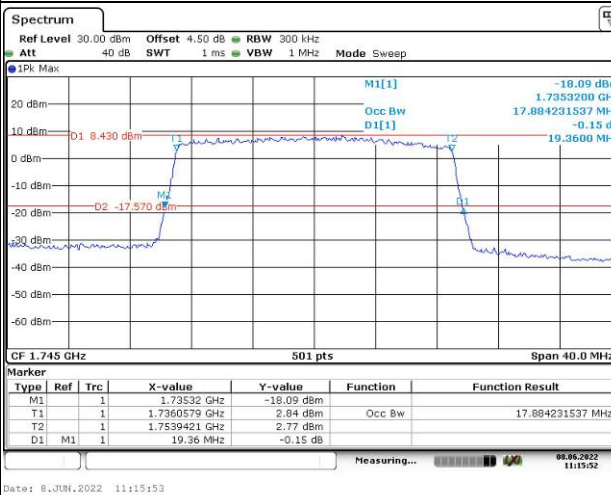
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

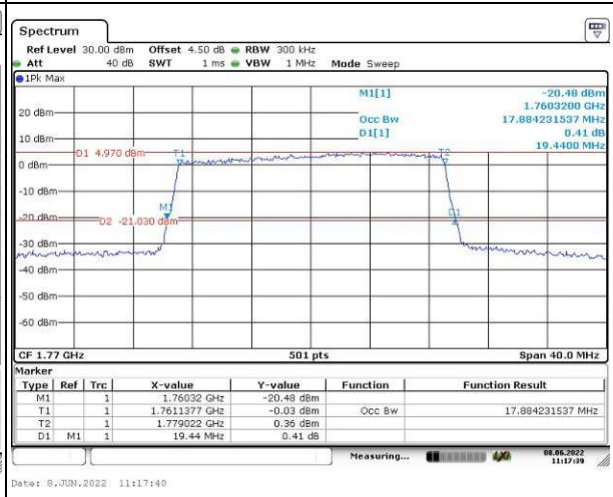
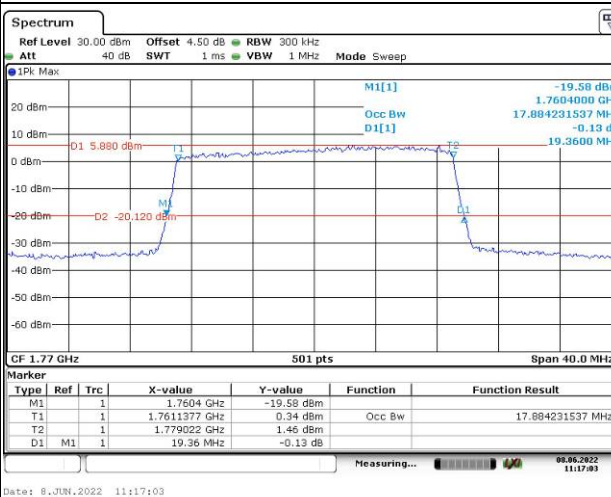
Lowest



Middle



Highest

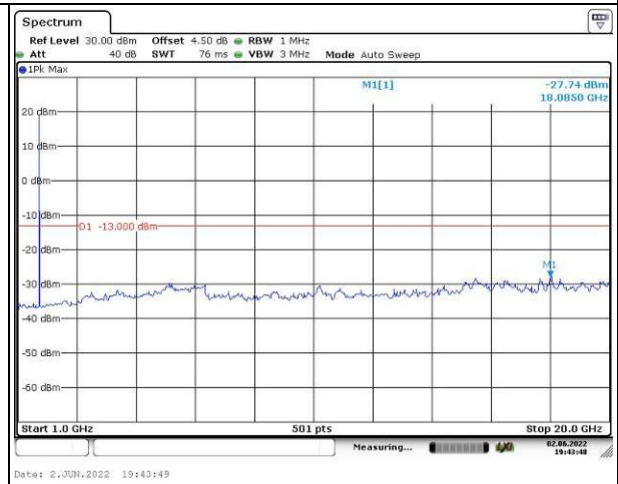
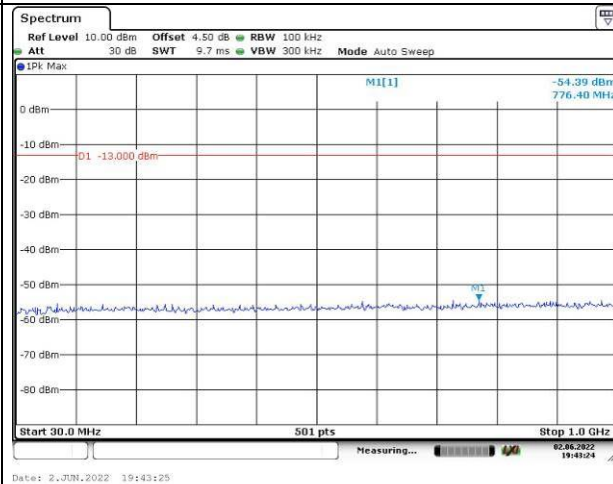


Spurious Emissions at Antenna Terminal

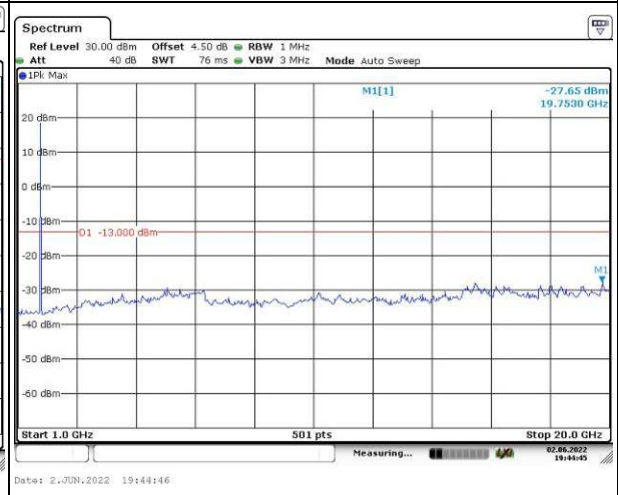
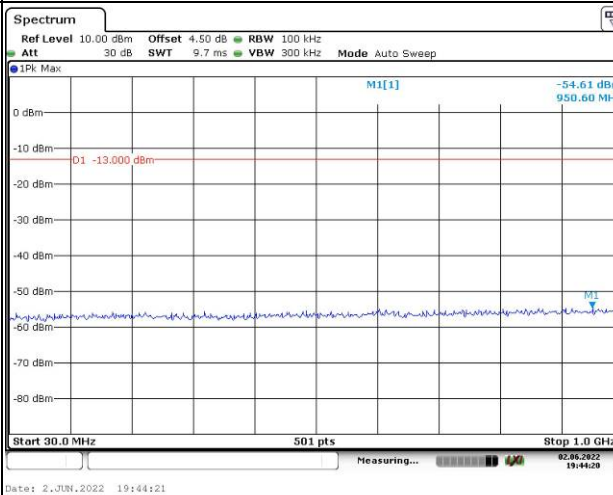
Channel

1.4MHz Bandwidth QPSK

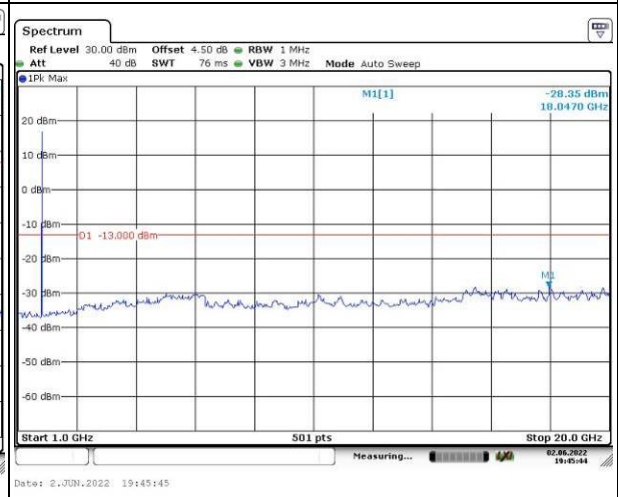
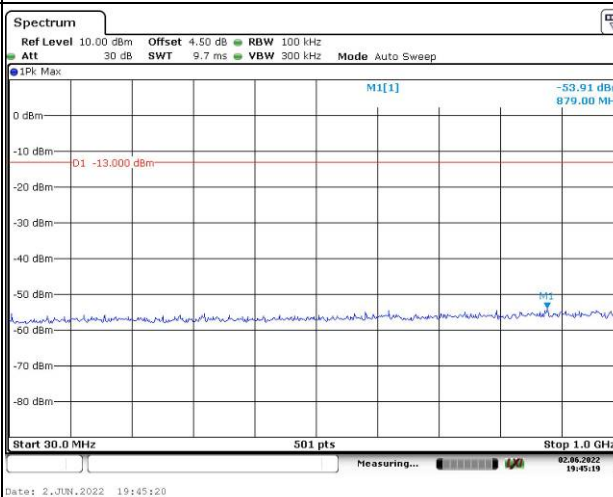
Lowest



Middle



Highest

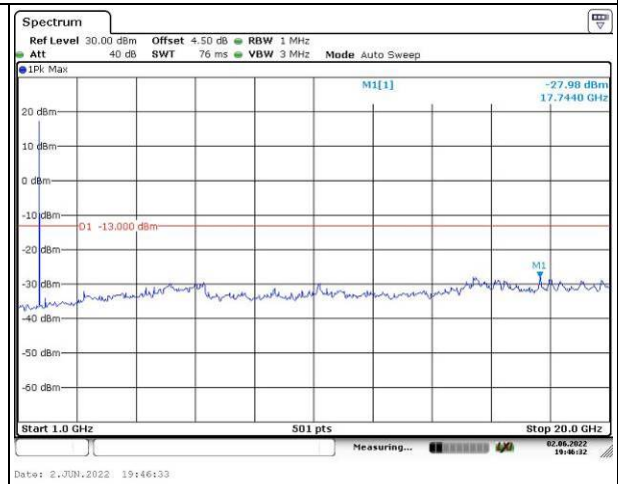
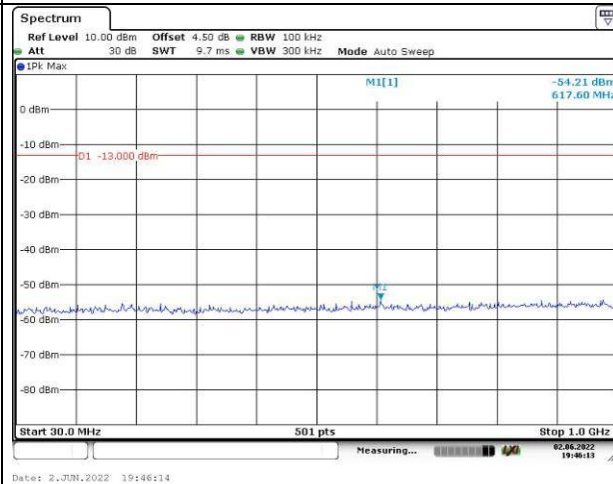


Spurious Emissions at Antenna Terminal

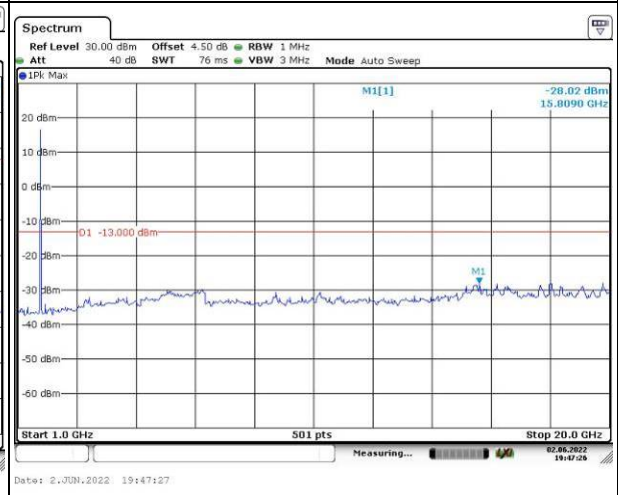
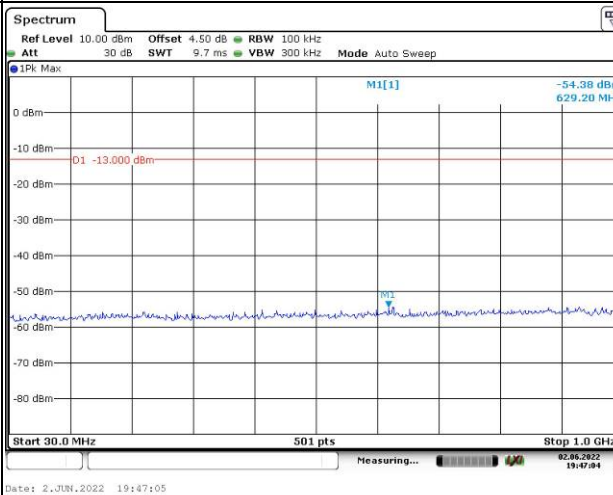
Channel

3MHz Bandwidth QPSK

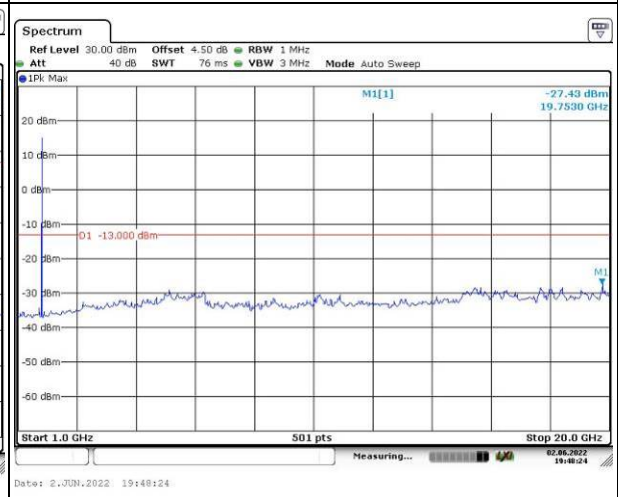
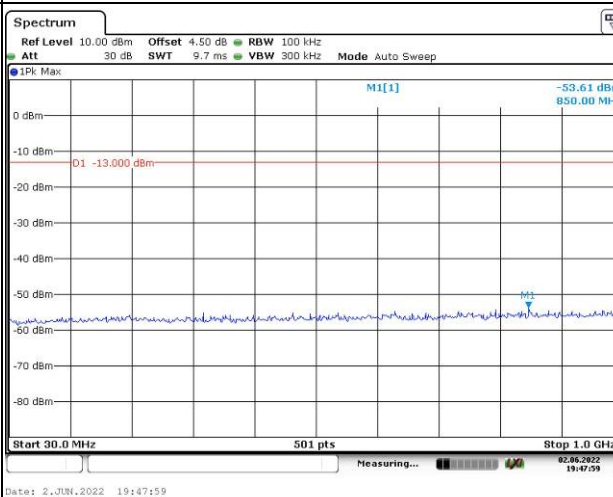
Lowest



Middle



Highest

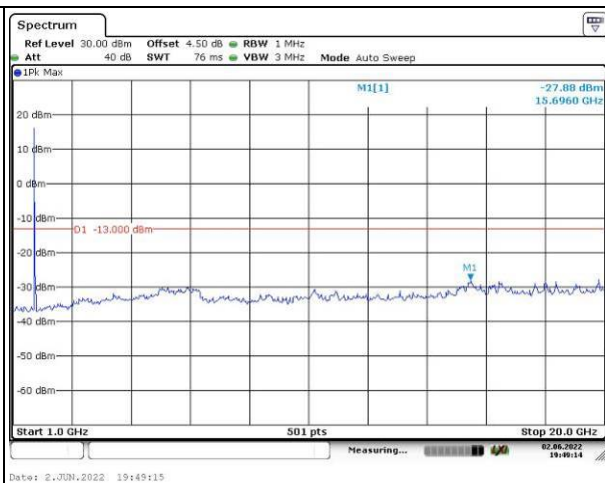
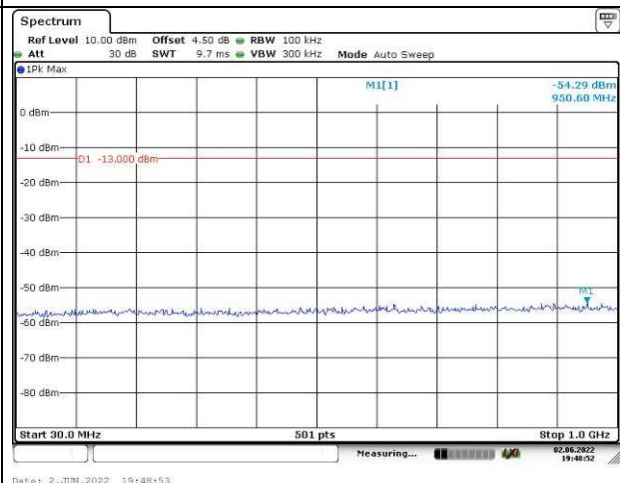


Spurious Emissions at Antenna Terminal

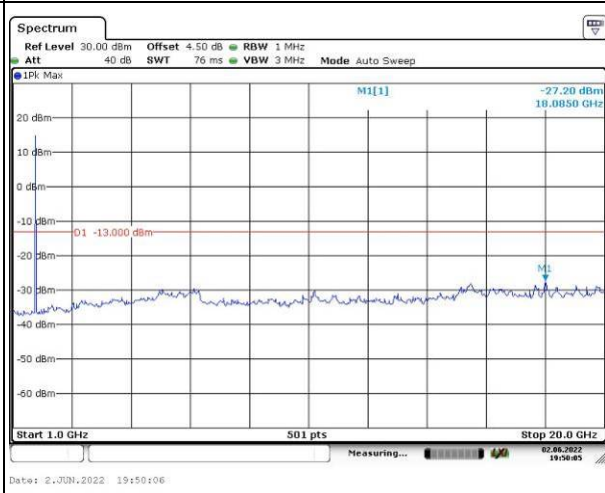
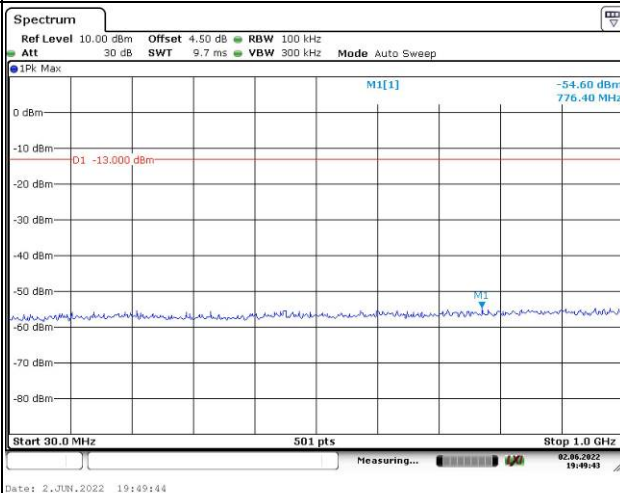
Channel

5MHz Bandwidth QPSK

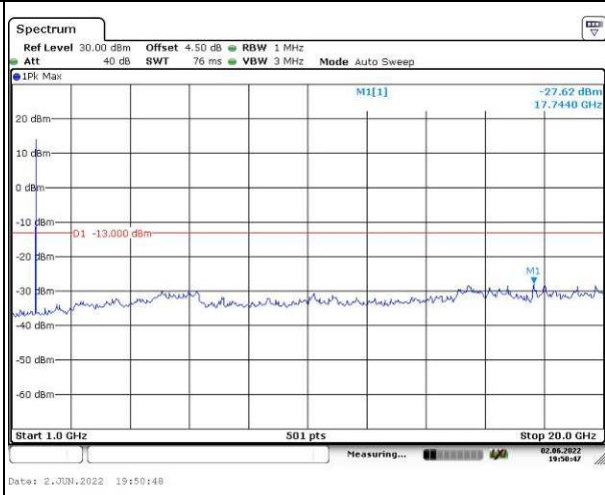
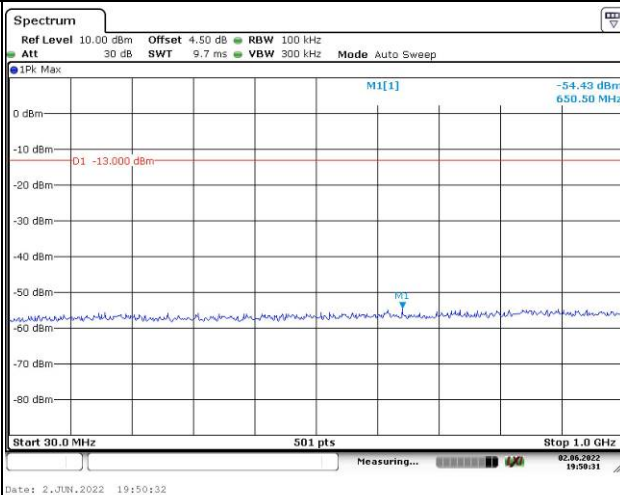
Lowest



Middle



Highest

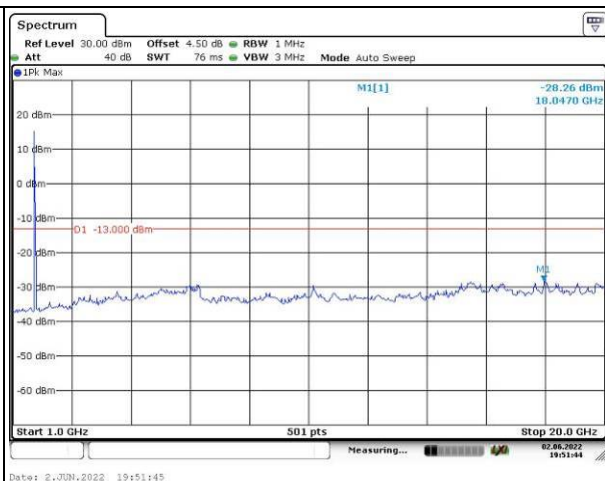
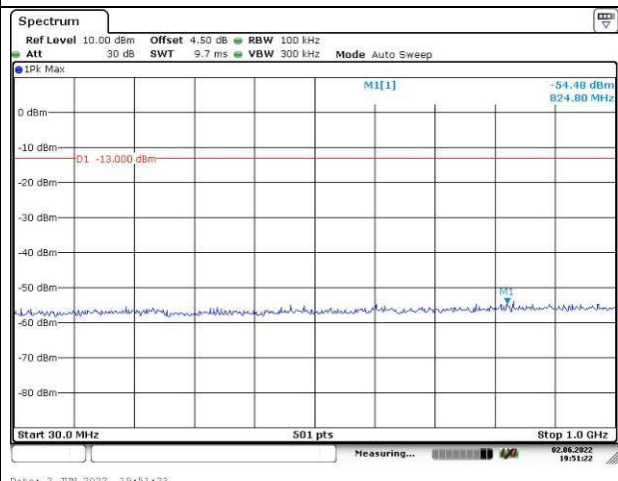


Spurious Emissions at Antenna Terminal

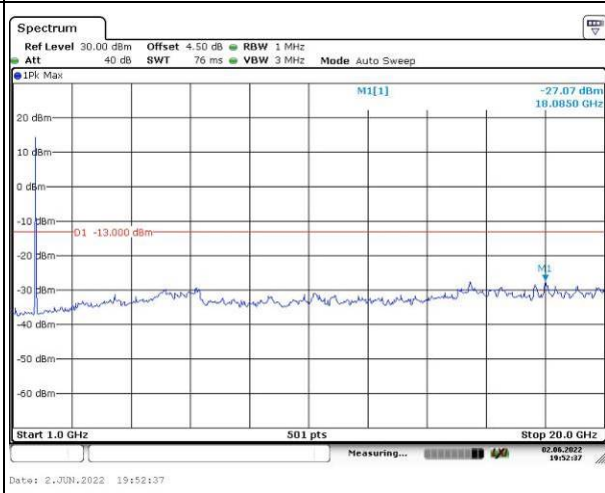
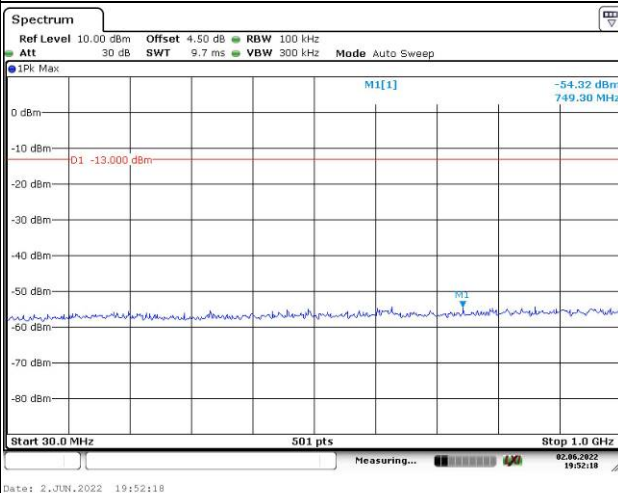
Channel

10MHz Bandwidth QPSK

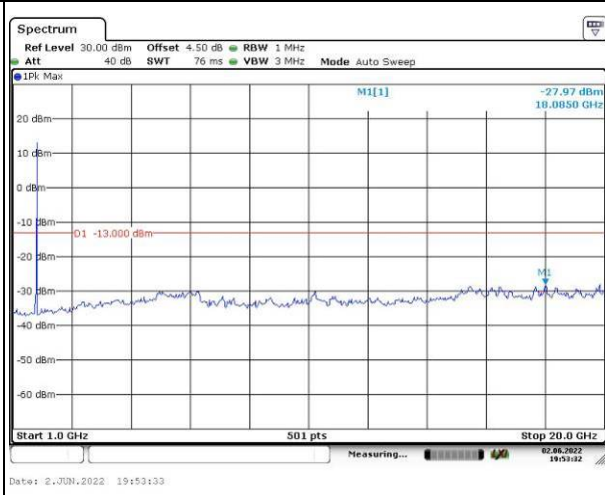
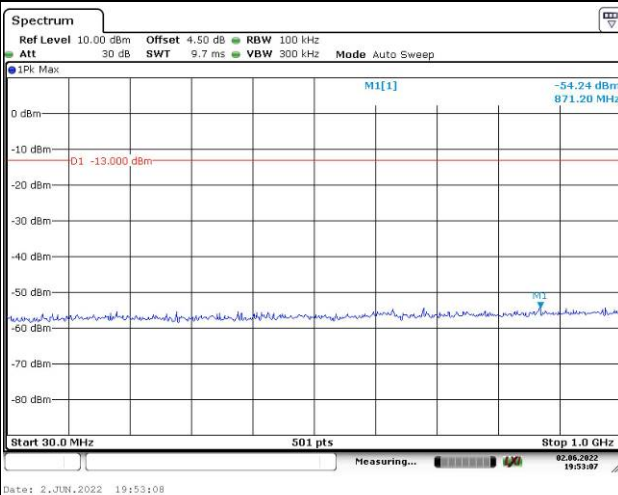
Lowest



Middle



Highest

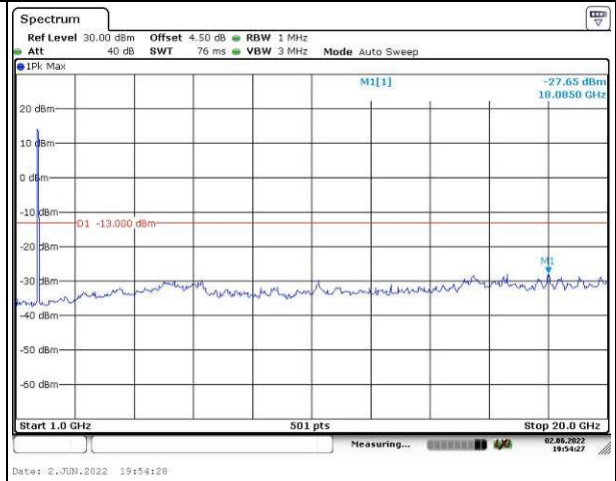
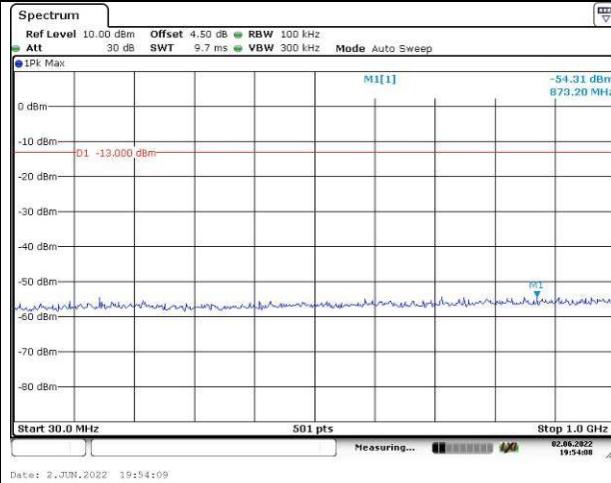


Spurious Emissions at Antenna Terminal

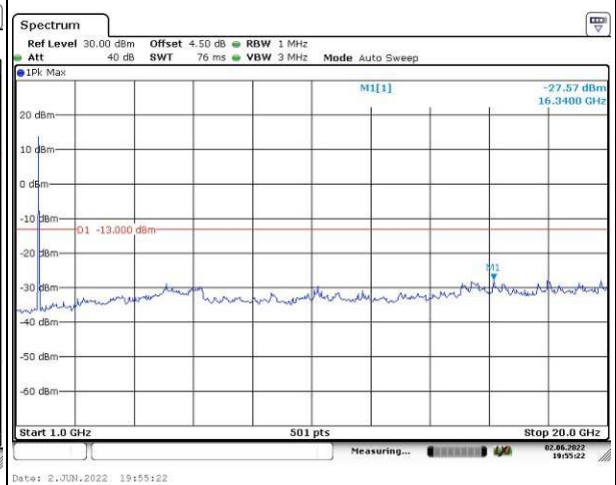
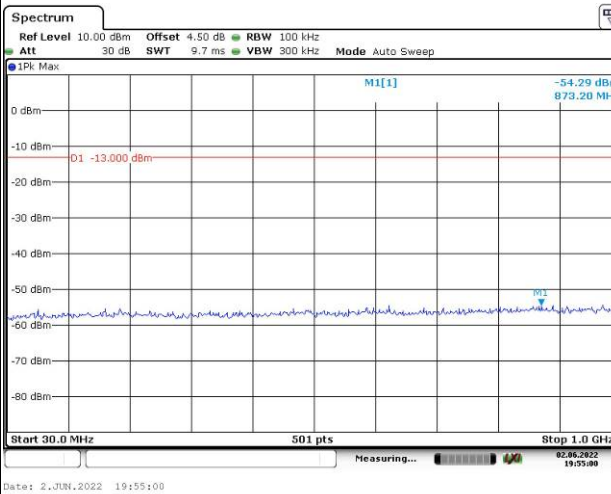
Channel

15MHz Bandwidth QPSK

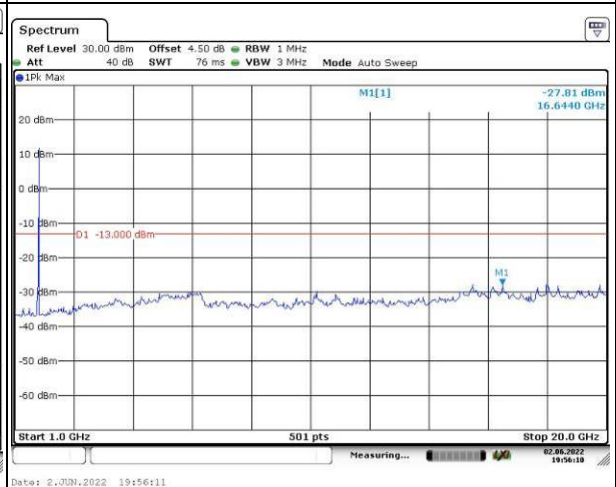
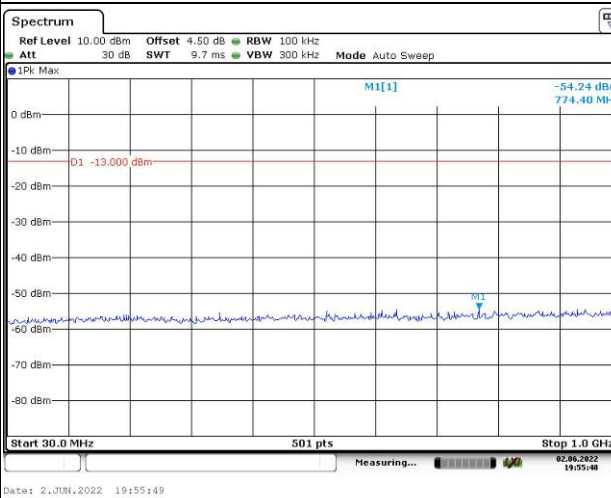
Lowest



Middle



Highest

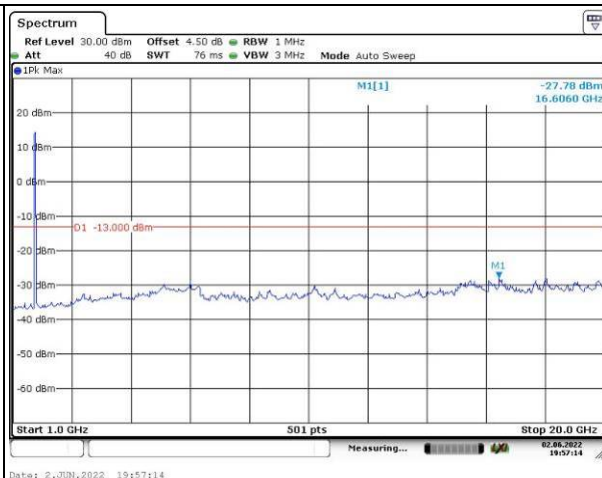
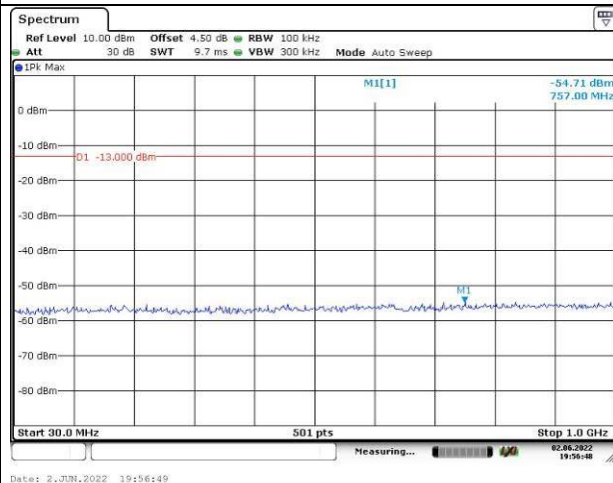


Spurious Emissions at Antenna Terminal

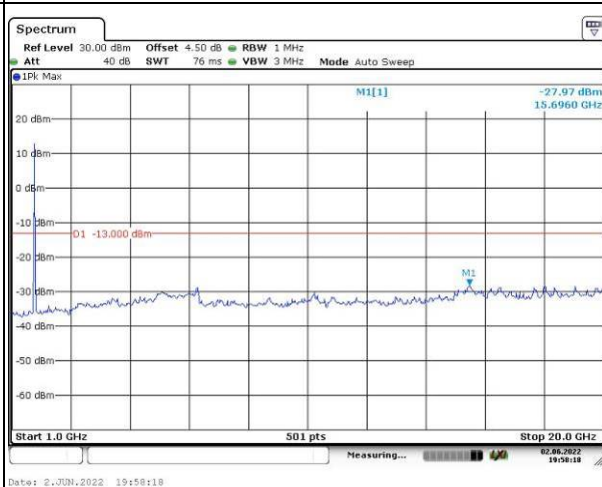
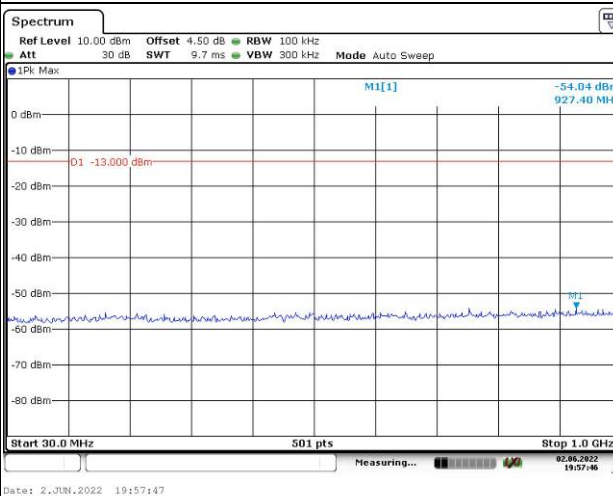
Channel

20MHz Bandwidth QPSK

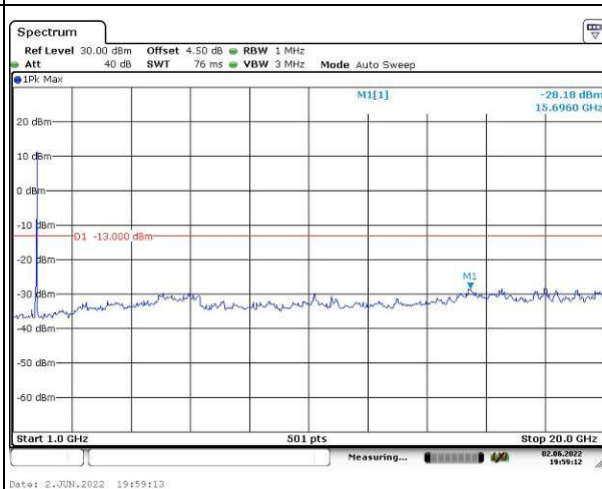
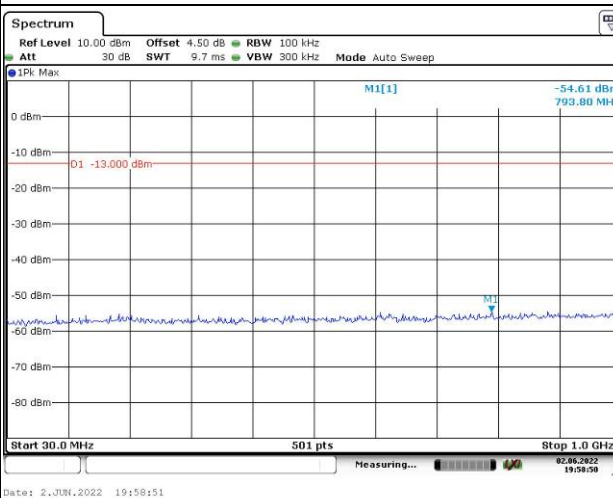
Lowest



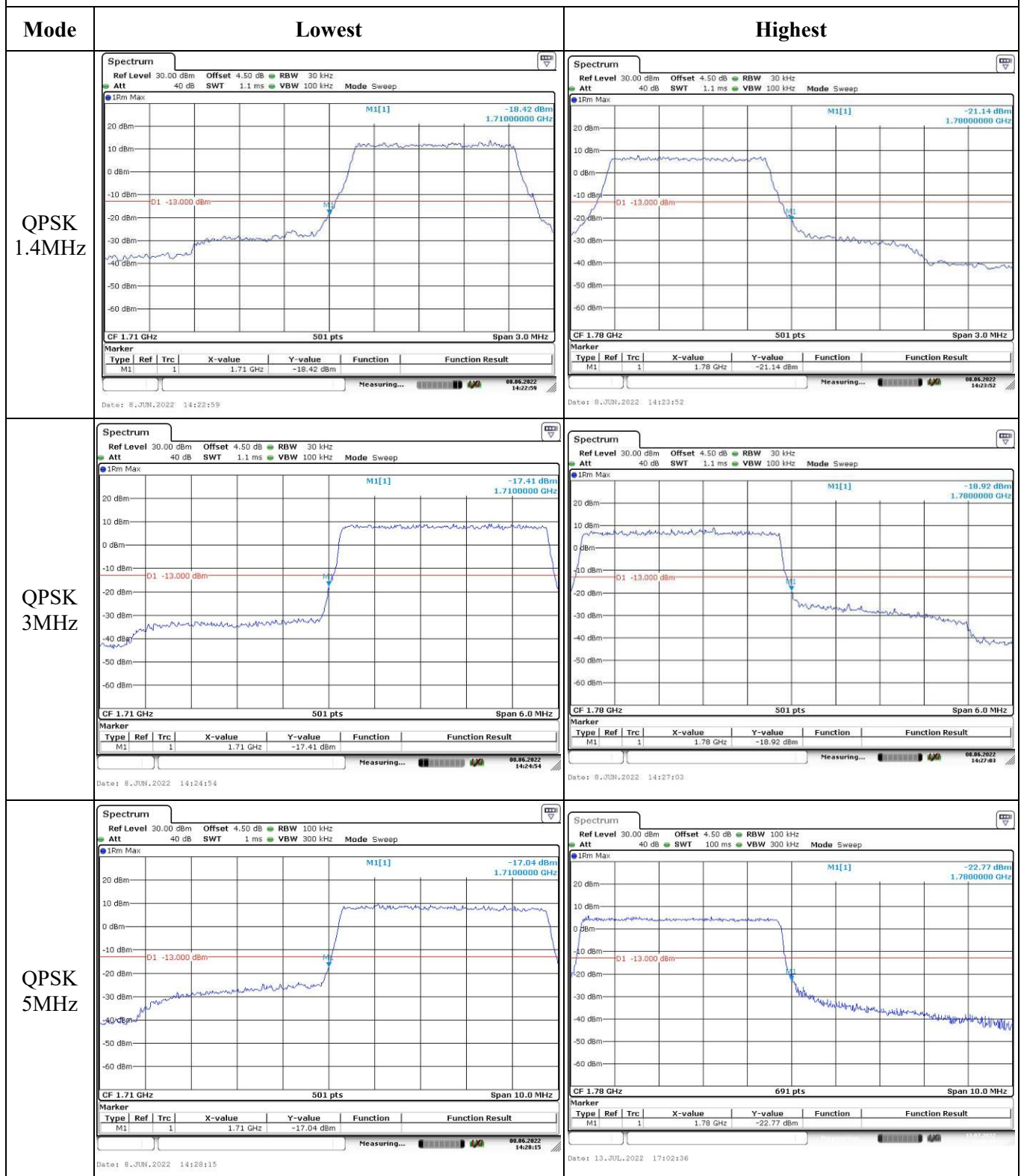
Middle



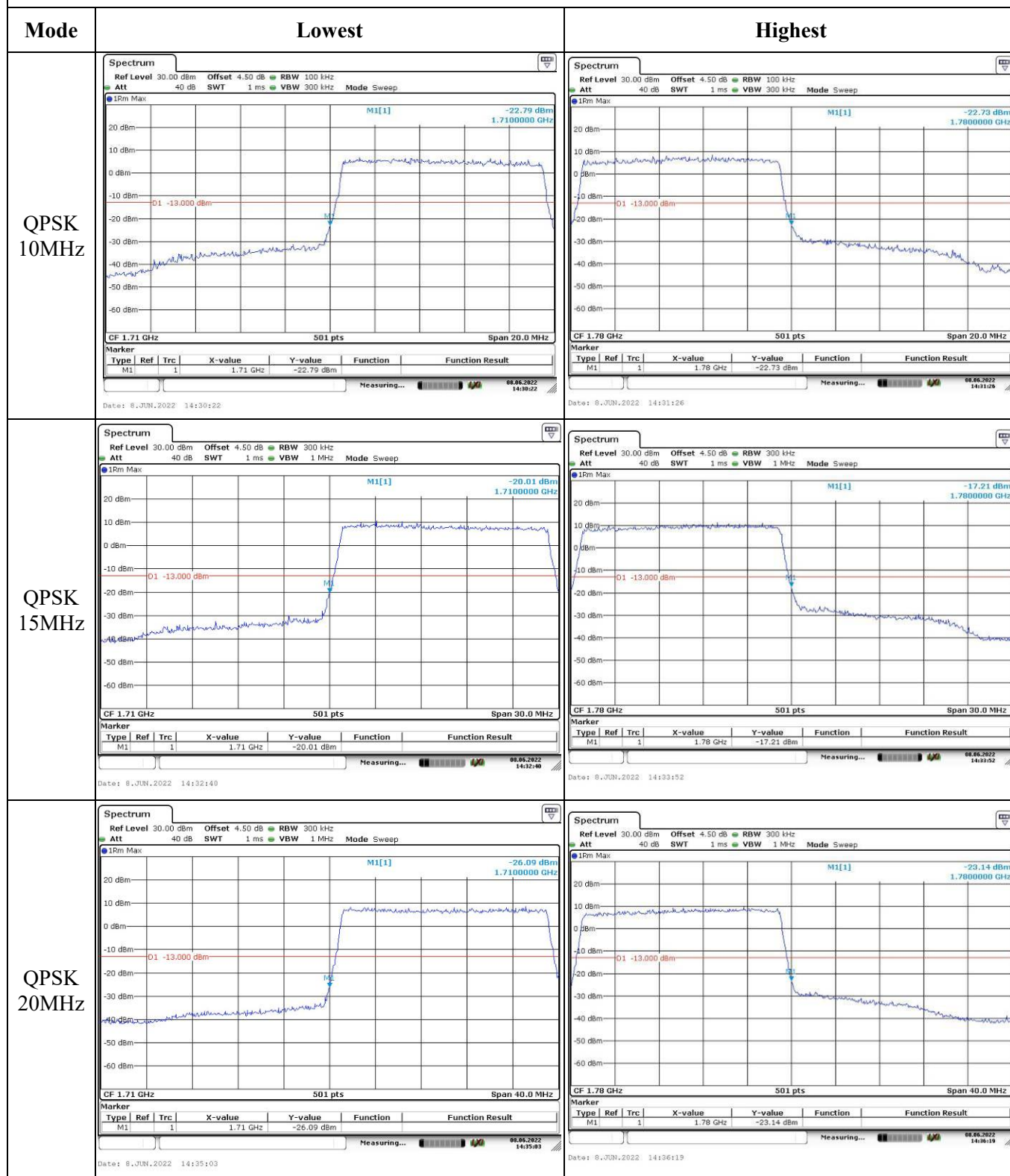
Highest



Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge

