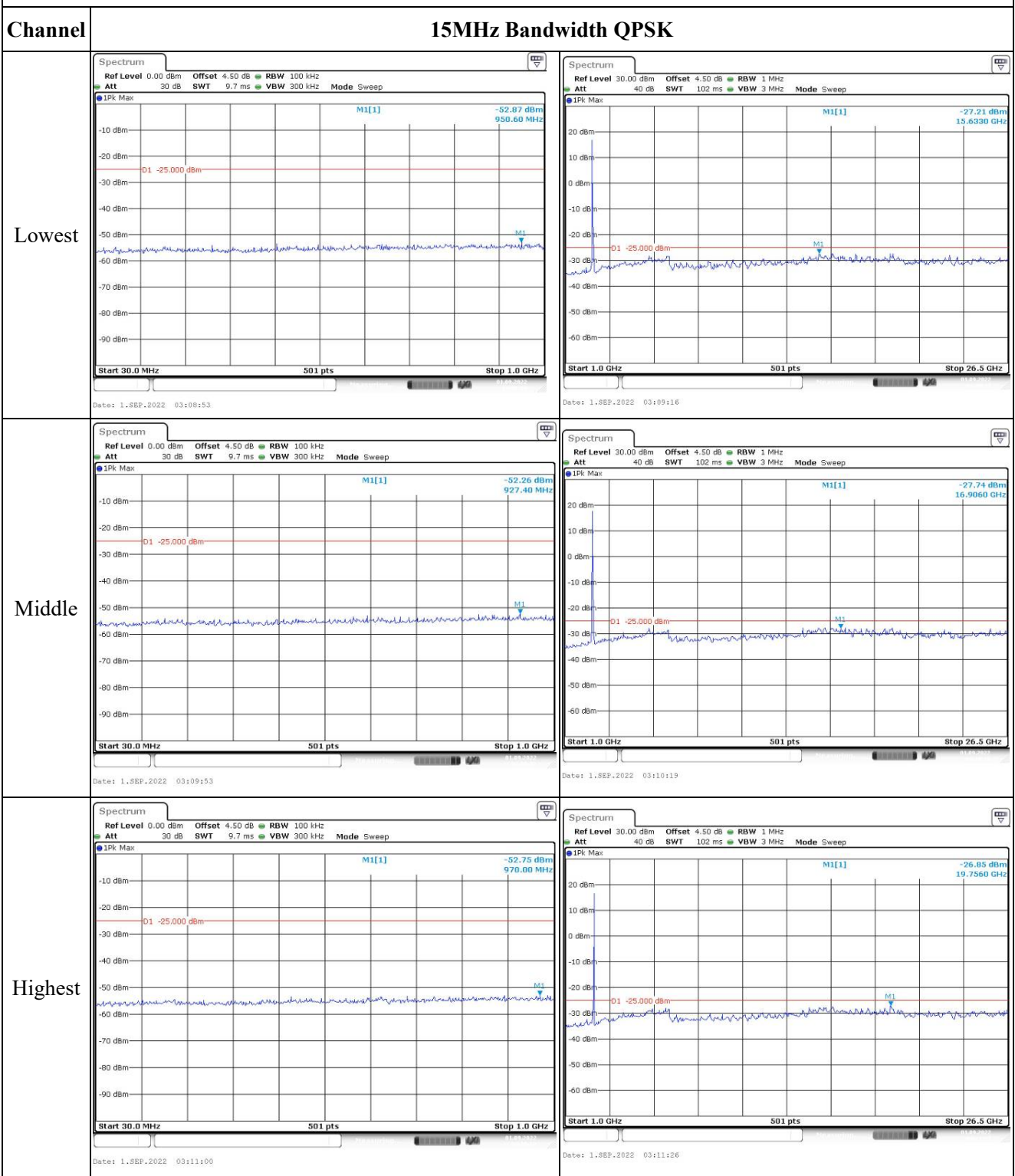
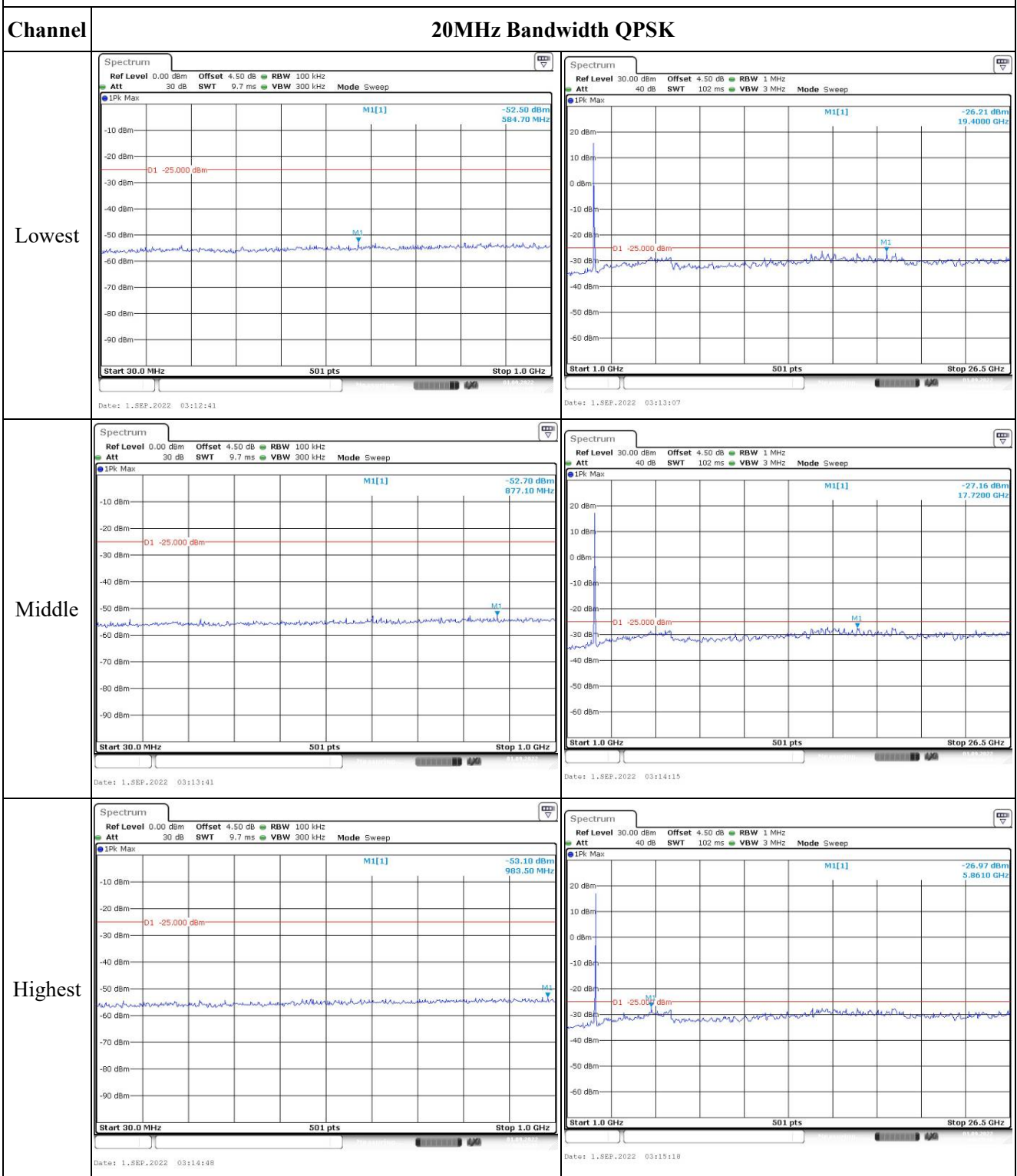


### Spurious Emissions at Antenna Terminal



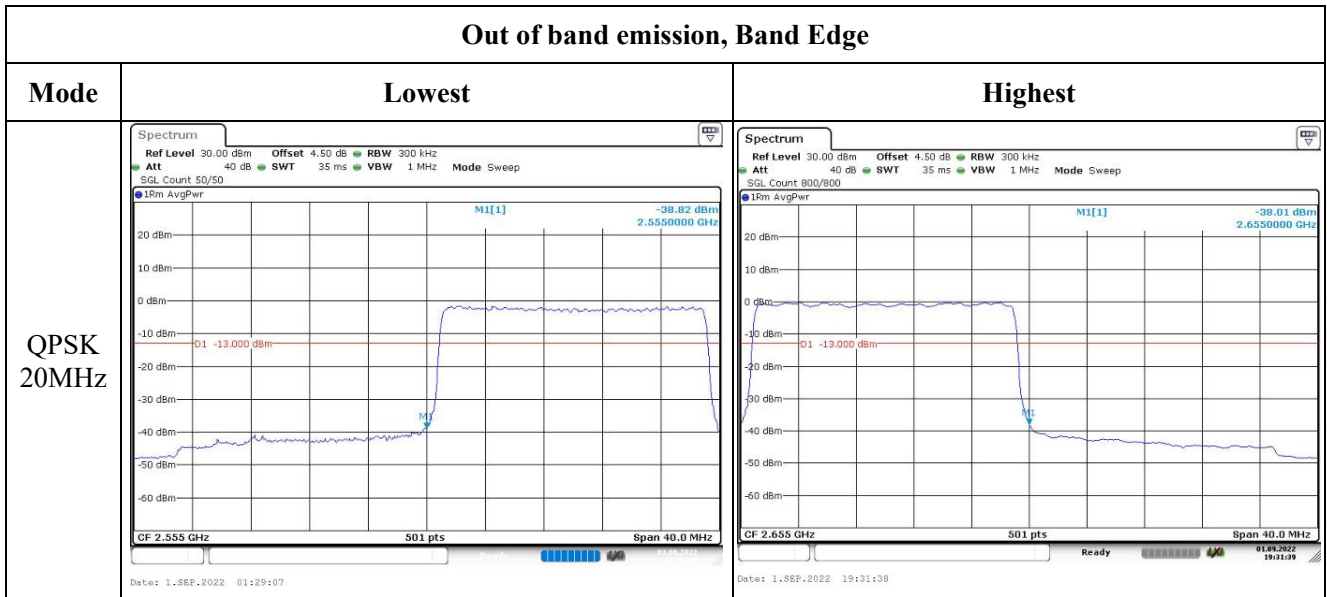
Spurious Emissions at Antenna Terminal



Out of band emission, Band Edge

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

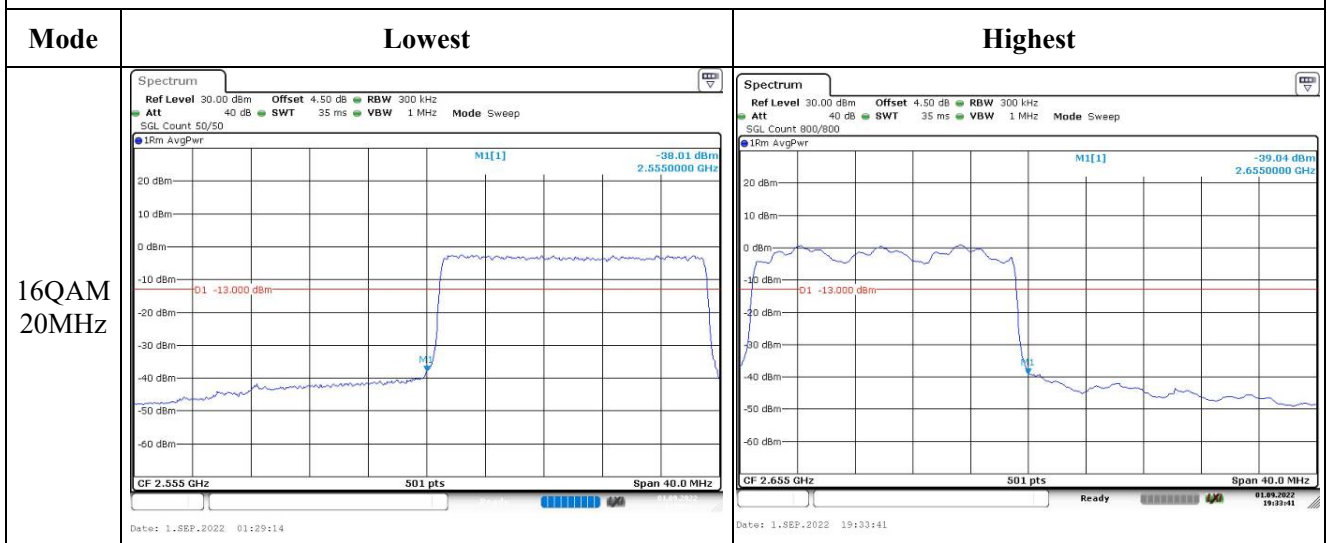
Out of band emission, Band Edge



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:	CR22080045-RF-S1	Test Date:	2022-08-31~2022-09-02
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	25.2~25.9	Relative Humidity: (%)	53~61	ATM Pressure: (kPa)	100.1~100.6
----------------------	-----------	---------------------------	-------	------------------------	-------------

**Test Equipment List and Details:**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	2023-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

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

**EUT Information@ LTE Band 66▲:**

Antenna Gain (dBi):	0.59	Path Loss L <sub>C</sub> (dB):	0.3
Operation Voltage(V <sub>DC</sub> ):			
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	22.43	22.79	22.52	23.09	30
	RB1#3	22.5	22.73	22.51		
	RB1#5	22.53	22.8	22.56		
	RB3#0	22.68	22.65	22.58		
	RB3#3	22.68	22.67	22.63		
	RB6#0	21.57	21.59	21.48		
1.4MHz 16QAM	RB1#0	21.4	22.54	22.24	22.86	30
	RB1#3	21.38	22.56	22.26		
	RB1#5	21.44	22.57	22.18		
	RB3#0	21.73	21.77	21.66		
	RB3#3	21.68	21.81	21.73		
	RB6#0	20.86	20.74	20.78		
3MHz QPSK	RB1#0	22.6	22.7	22.47	23.06	30
	RB1#8	22.62	22.72	22.47		
	RB1#14	22.56	22.77	22.44		
	RB6#0	21.58	21.64	21.48		
	RB6#9	21.59	21.73	21.5		
	RB15#0	21.59	21.72	21.54		
3MHz 16QAM	RB1#0	22.34	21.52	21.94	22.63	30
	RB1#8	22.32	21.62	21.89		
	RB1#14	22.28	21.66	21.9		
	RB6#0	20.73	20.98	20.45		
	RB6#9	20.68	20.95	20.46		
	RB15#0	20.69	20.79	20.6		
5MHz QPSK	RB1#0	22.61	22.54	22.5	22.96	30
	RB1#13	22.62	22.57	22.43		
	RB1#24	22.67	22.55	22.46		
	RB15#0	21.58	21.62	21.59		
	RB15#10	21.48	21.7	21.5		
	RB25#0	21.53	21.63	21.5		
5MHz 16QAM	RB1#0	21.76	21.16	20.73	22.05	30
	RB1#13	21.65	21.35	20.73		
	RB1#24	21.69	21.31	20.72		
	RB15#0	20.52	20.77	20.63		
	RB15#10	20.52	20.74	20.6		
	RB25#0	20.57	20.53	20.65		
10MHz QPSK	RB1#0	22.67	22.7	22.44	23.08	30
	RB1#25	22.6	22.79	22.42		



	RB1#49	22.58	22.64	22.49		
	RB25#0	21.48	21.54	21.57		
	RB25#25	21.49	21.59	21.54		
	RB50#0	21.47	21.75	21.59		
10MHz 16QAM	RB1#0	21.73	21.15	21.7	22.03	30
	RB1#25	21.71	21.24	21.74		
	RB1#49	21.71	21.15	21.71		
	RB25#0	20.68	20.67	20.57		
	RB25#25	21.03	20.76	20.59		
	RB50#0	20.64	20.77	20.64		
15MHz QPSK	RB1#0	22.62	22.65	22.44	23.04	30
	RB1#38	22.57	22.73	22.45		
	RB1#74	22.54	22.75	22.48		
	RB36#0	21.53	21.46	21.55		
	RB36#39	21.4	21.55	21.55		
	RB75#0	21.41	21.67	21.59		
15MHz 16QAM	RB1#0	21.7	21.85	21.72	22.28	30
	RB1#38	21.66	21.99	21.76		
	RB1#74	21.65	21.93	21.68		
	RB36#0	20.62	20.57	20.58		
	RB36#39	20.66	20.74	20.64		
	RB75#0	20.94	20.73	20.57		
20MHz QPSK	RB1#0	22.76	22.51	22.62	23.05	30
	RB1#50	22.68	22.69	22.59		
	RB1#99	22.58	22.68	22.6		
	RB50#0	21.57	21.53	21.57		
	RB50#50	21.55	21.66	21.47		
	RB100#0	21.55	21.56	21.51		
20MHz 16QAM	RB1#0	21.68	22.24	21.61	22.74	30
	RB1#50	21.65	22.45	21.67		
	RB1#99	21.51	22.37	21.64		
	RB50#0	20.56	20.6	20.68		
	RB50#50	20.53	20.7	20.63		
	RB100#0	20.53	20.8	20.62		

Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBi)

**Result:**

**Pass**

<b>Peak-to-average Ratio(PAR)</b>					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	4.46	4.99	4.14	13
	RB100#0	5.07	5.01	4.93	13
20MHz 16QAM	RB1#0	5.45	5.77	5.3	13
	RB100#0	6	6	5.94	13
<b>Result:</b>					<b>Pass</b>

<b>FCC §2.1049, §27.53:Occupied Bandwidth</b>						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.102	1.102	1.254	1.254	1.266
1.4MHz 16QAM	1.102	1.108	1.09	1.26	1.266	1.248
3MHz QPSK	2.695	2.695	2.695	3	3	2.988
3MHz 16QAM	2.683	2.695	2.695	3.012	3.024	3.012
5MHz QPSK	4.511	4.511	4.531	5.02	5	5
5MHz 16QAM	4.551	4.531	4.511	5.02	5	5.02
10MHz QPSK	8.942	8.942	8.982	9.76	9.8	9.8
10MHz 16QAM	8.982	8.942	8.982	9.84	9.8	9.76
15MHz QPSK	13.473	13.533	13.533	14.94	15.06	15
15MHz 16QAM	13.533	13.533	13.593	15.12	15.06	15.06
20MHz QPSK	17.964	18.044	18.044	19.6	19.84	19.6
20MHz 16QAM	18.044	17.964	18.044	19.84	19.76	19.68

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

**FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal**

<b>Result:</b>	<b>Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.</b>
----------------	--

**FCC §2.1051, § 27.53:Out of band emission, Band Edge**

<b>Result:</b>	<b>Pass, Please refer to the test plots of Out of band emission, Band Edge.</b>
----------------	---

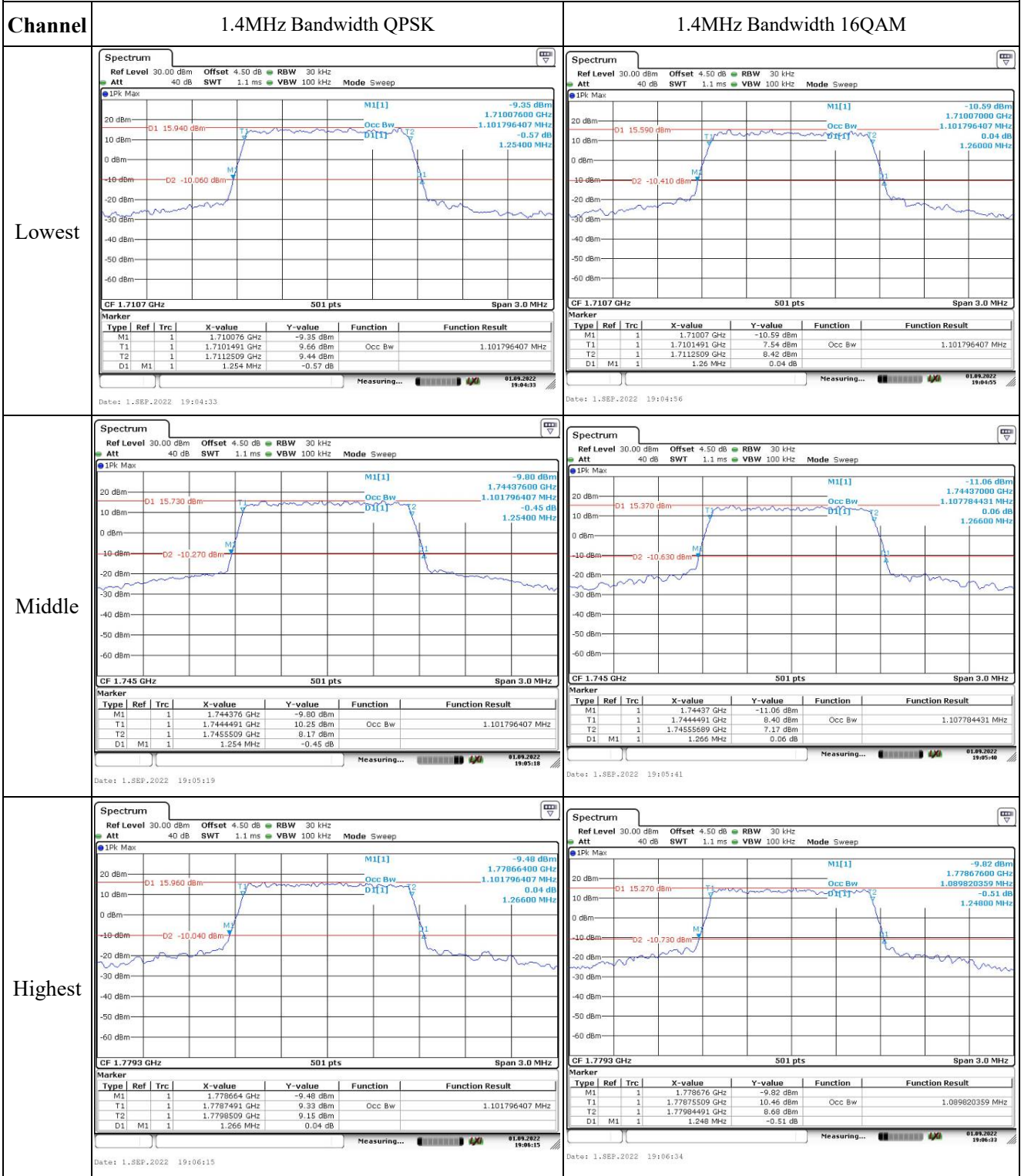
**FCC §2.1055, §27.54: Frequency Stability**

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>Dc</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.063	1710.00	1779.045	1780
	-20	3.8	1711.052	1710.00	1779.036	1780
	-10	3.8	1711.062	1710.00	1779.035	1780
	0	3.8	1711.064	1710.00	1779.050	1780
	10	3.8	1711.000	1710.00	1779.020	1780
	20	3.8	1711.058	1710.00	1779.022	1780
	30	3.8	1711.064	1710.00	1779.012	1780
	40	3.8	1711.035	1710.00	1779.063	1780
	50	3.8	1711.066	1710.00	1779.009	1780
Frequency Stability vs. Voltage	20	3.5	1711.072	1710.00	1779.011	1780
	20	4.35	1711.010	1710.00	1779.032	1780
					<b>Result:</b>	<b>Pass</b>

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V <sub>Dc</sub> )	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.915	1710.00	1779.036	1780
	-20	3.8	1710.923	1710.00	1779.037	1780
	-10	3.8	1710.922	1710.00	1779.071	1780
	0	3.8	1710.998	1710.00	1779.074	1780
	10	3.8	1710.930	1710.00	1779.091	1780
	20	3.8	1710.948	1710.00	1779.022	1780
	30	3.8	1710.988	1710.00	1779.078	1780
	40	3.8	1710.984	1710.00	1779.060	1780
	50	3.8	1710.946	1710.00	1779.017	1780
Frequency Stability vs. Voltage	20	3.5	1710.912	1710.00	1779.097	1780
	20	4.35	1710.943	1710.00	1779.050	1780
					<b>Result:</b>	<b>Pass</b>

Test Plots:

Occupied Bandwidth



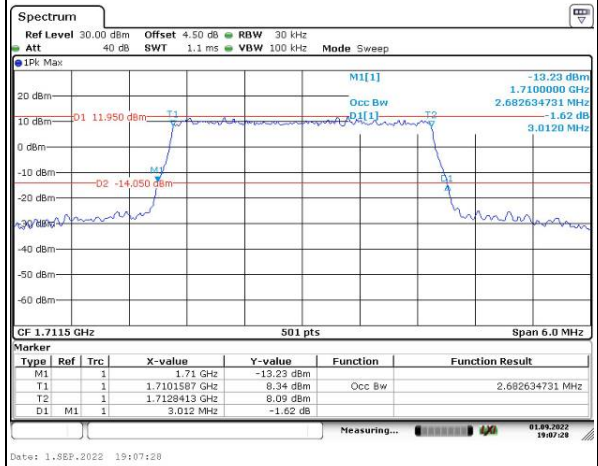
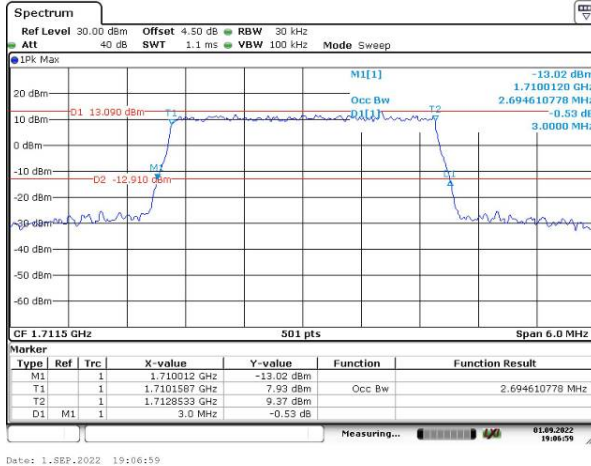
### Occupied Bandwidth

Channel

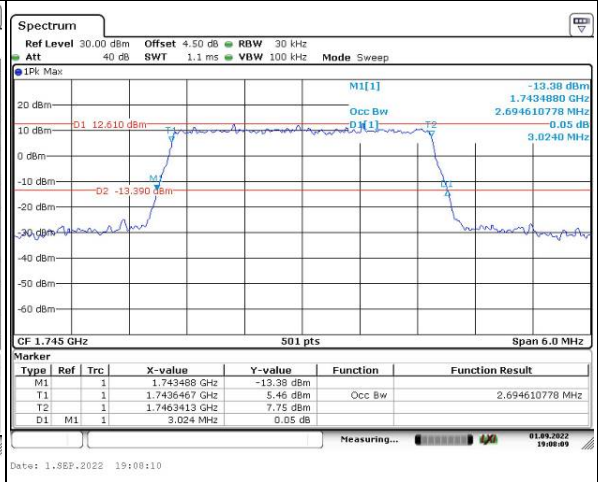
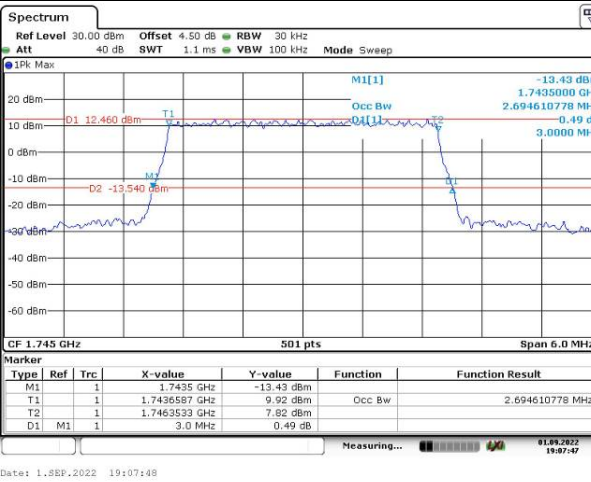
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

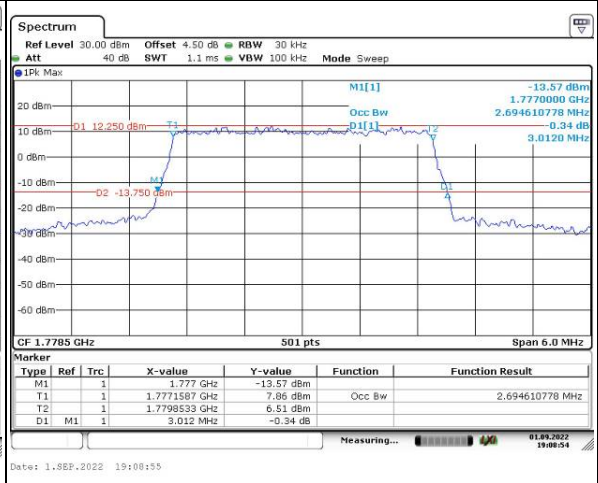
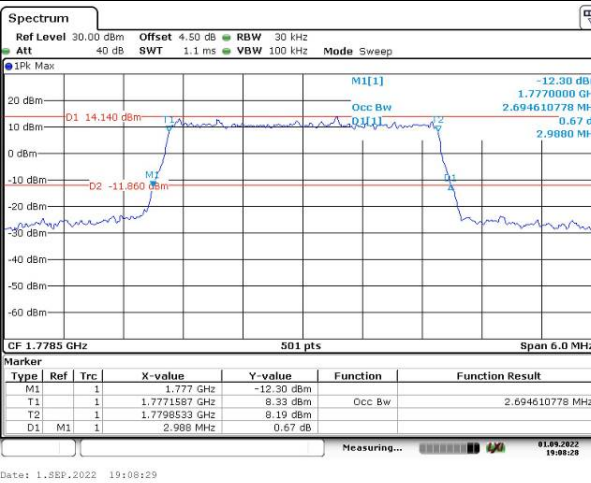
Lowest



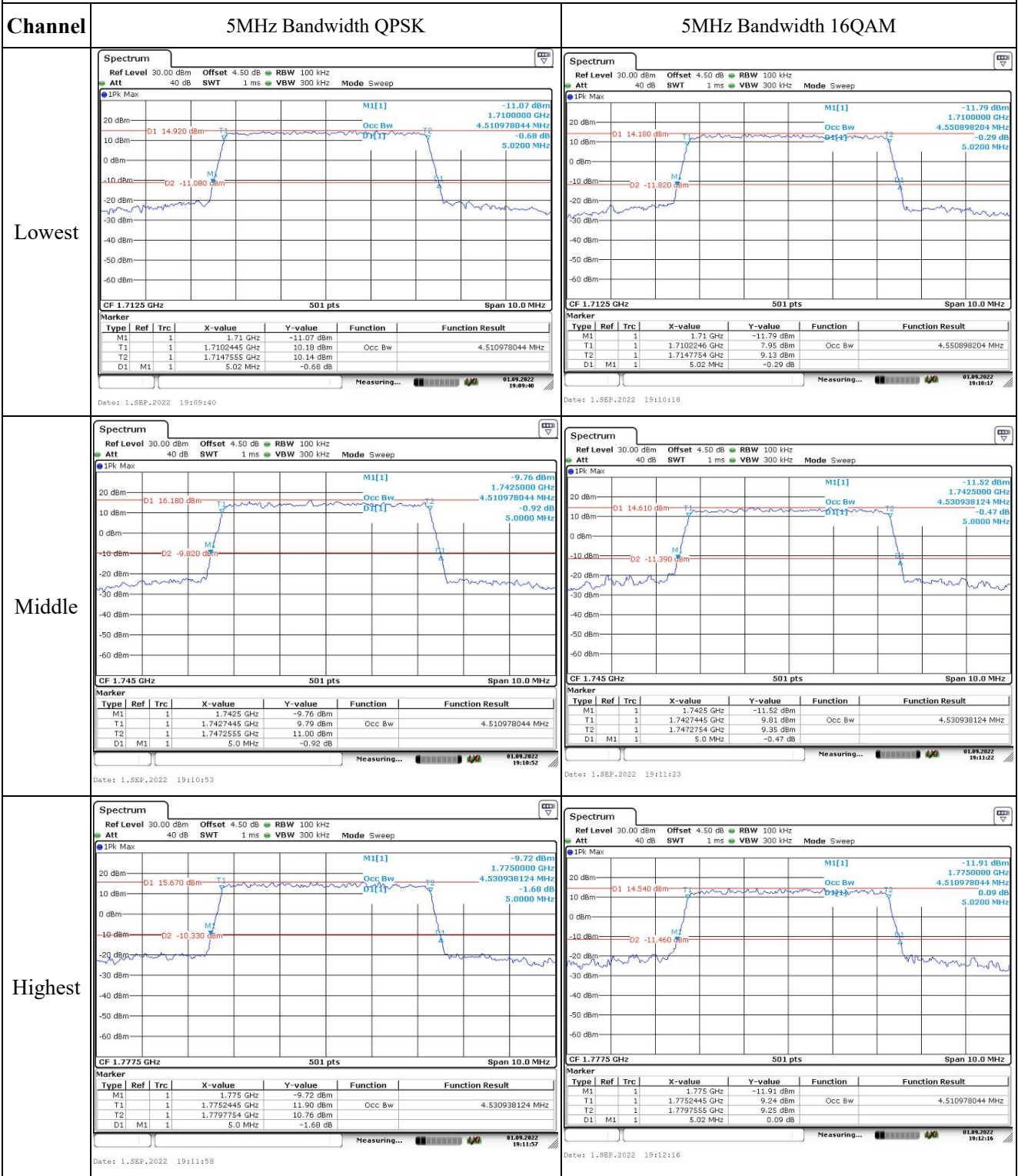
Middle



Highest

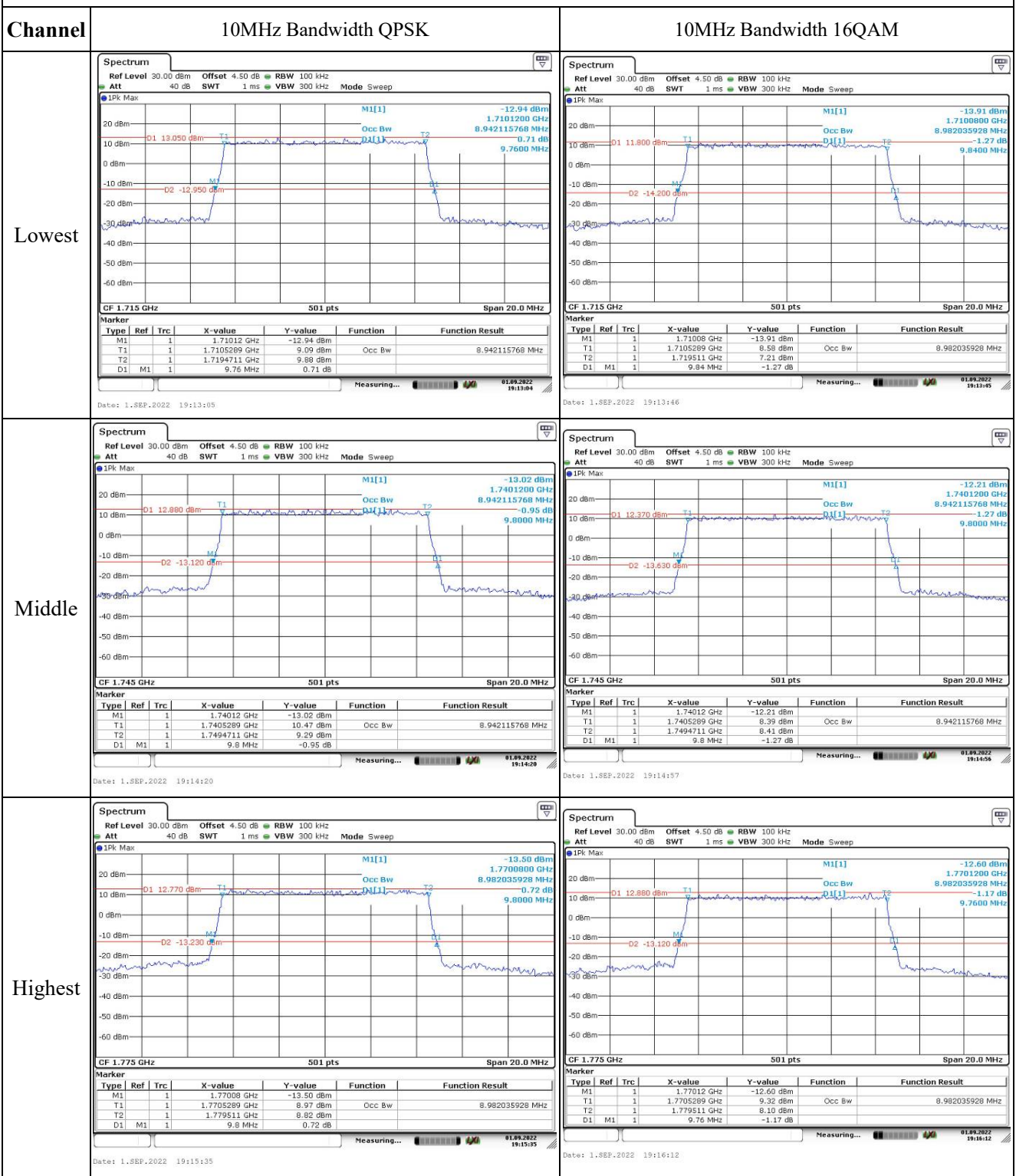


### Occupied Bandwidth



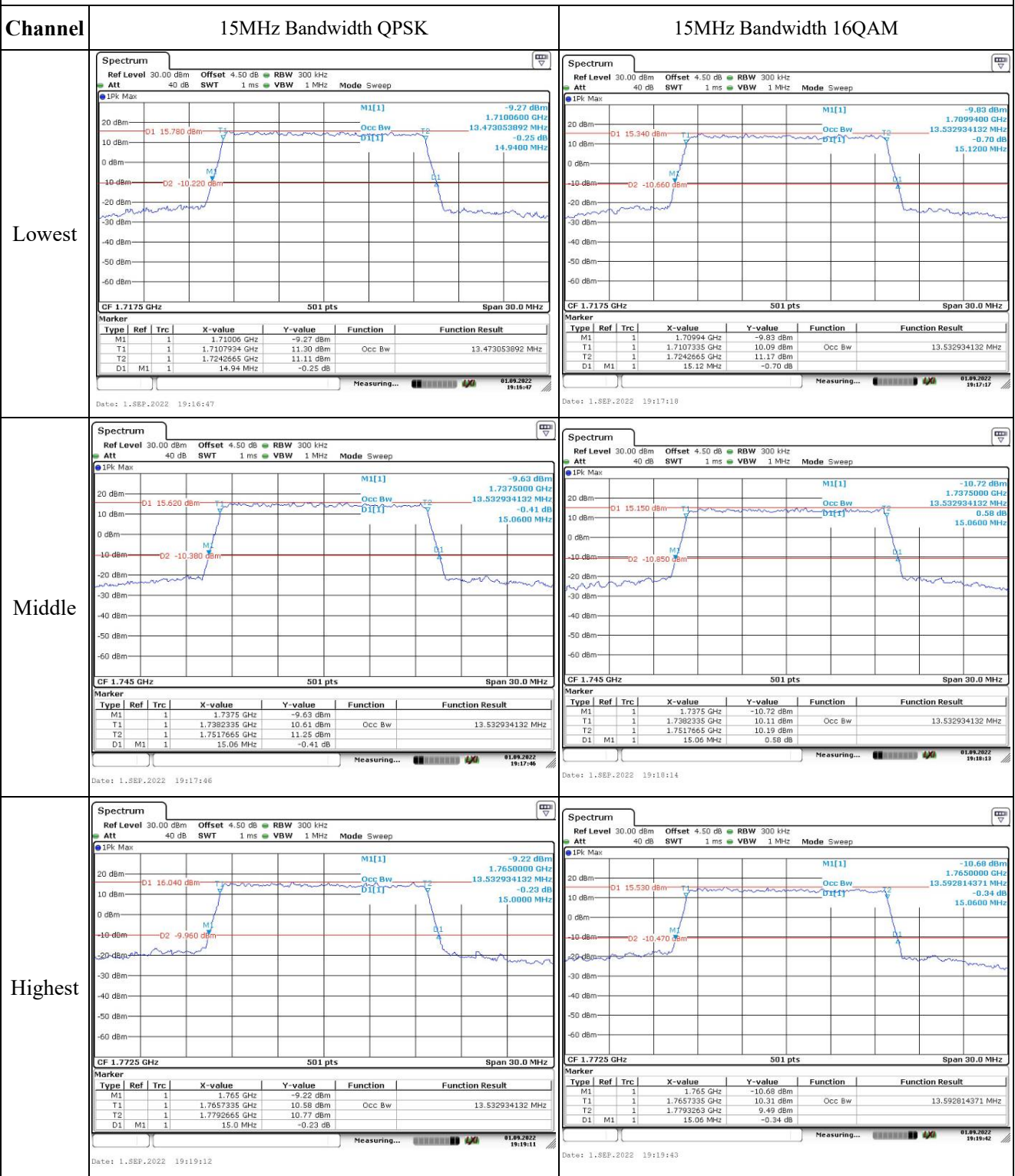


### Occupied Bandwidth

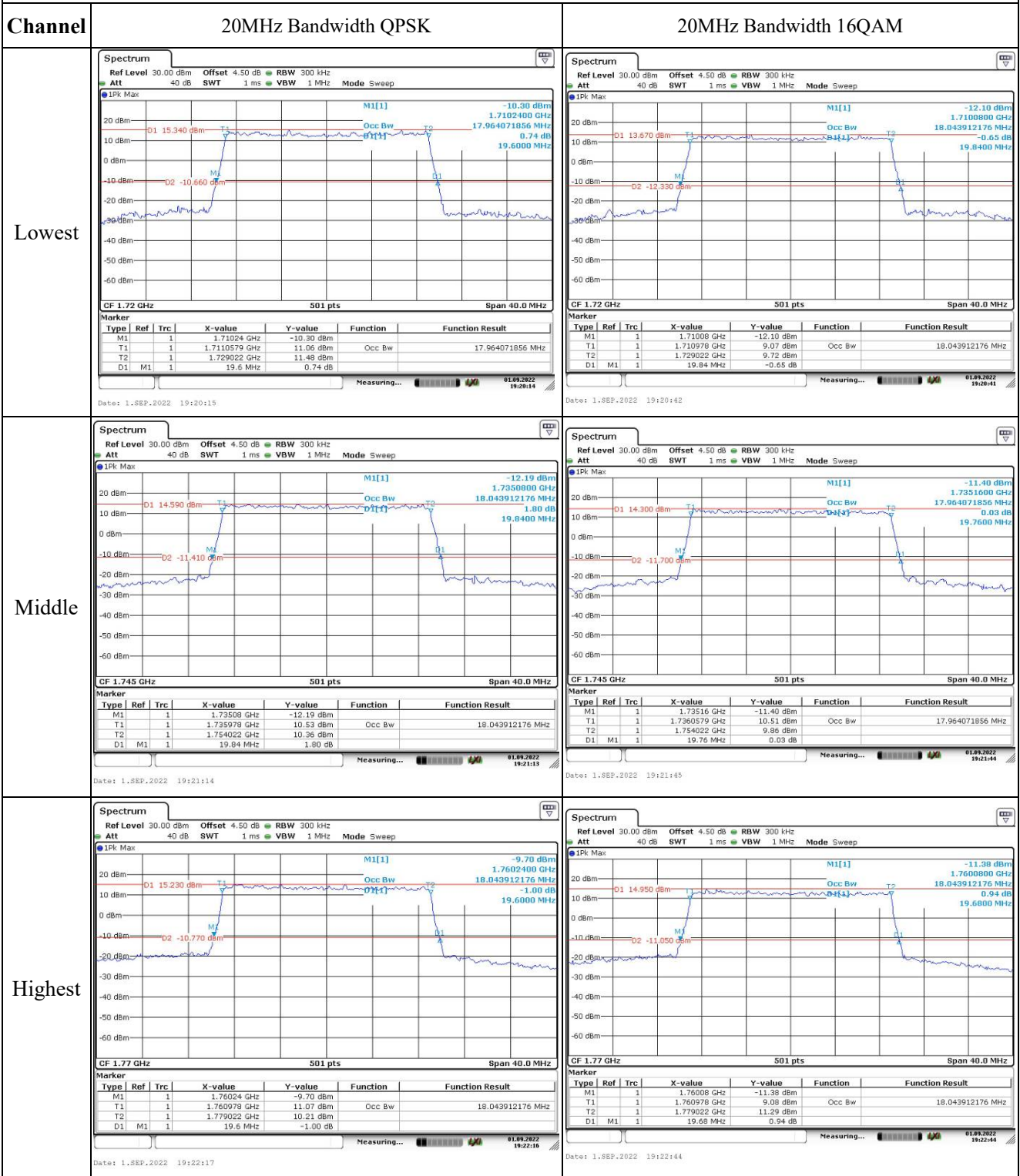




Occupied Bandwidth



Occupied Bandwidth

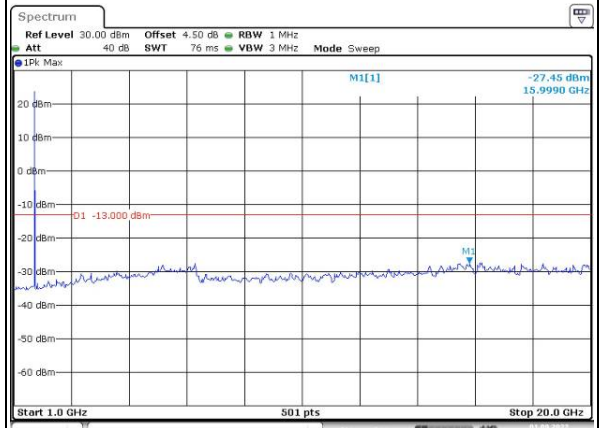
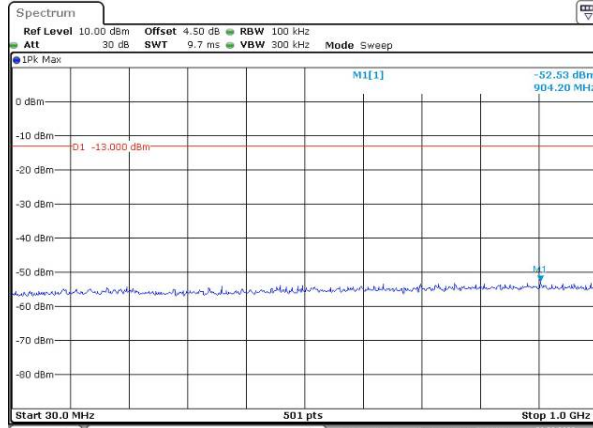


Spurious Emissions at Antenna Terminal

Channel

1.4MHz Bandwidth QPSK

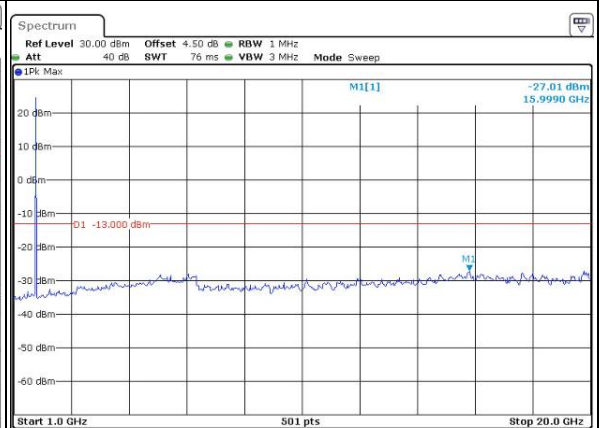
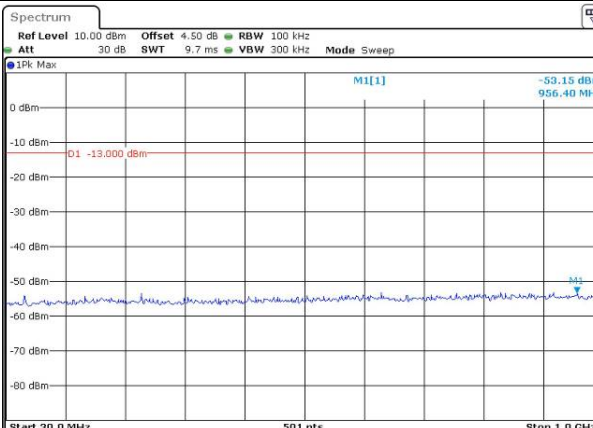
Lowest



Date: 1.SEP.2022 03:16:57

Date: 1.SEP.2022 03:17:27

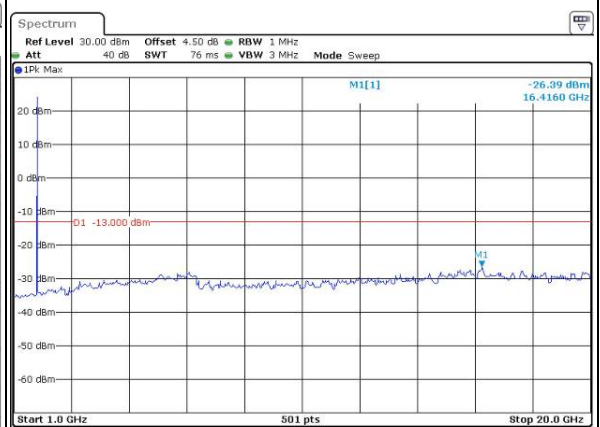
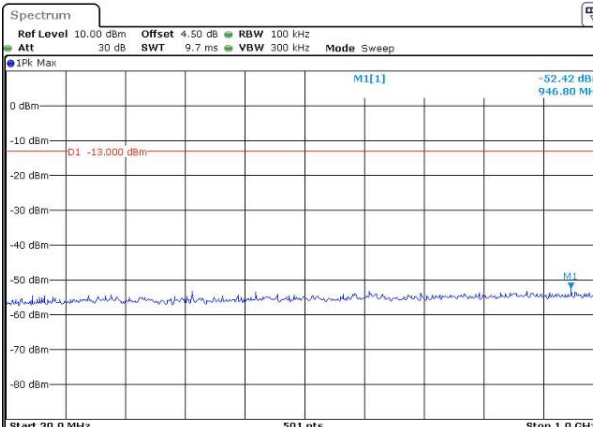
Middle



Date: 1.SEP.2022 03:17:59

Date: 1.SEP.2022 03:18:29

Highest



Date: 1.SEP.2022 03:18:58

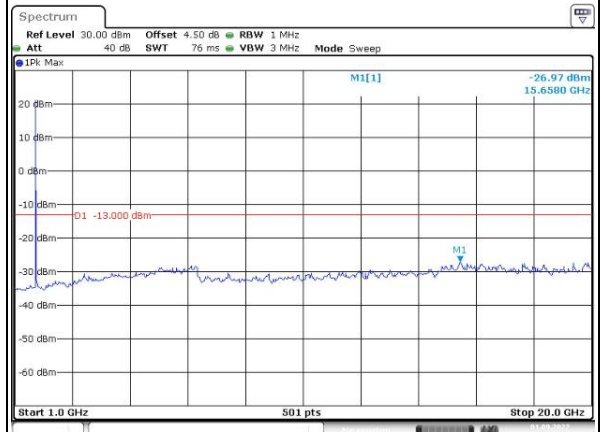
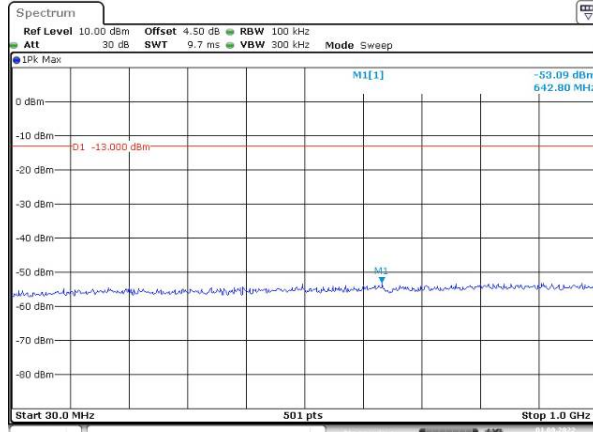
Date: 1.SEP.2022 03:19:32

### Spurious Emissions at Antenna Terminal

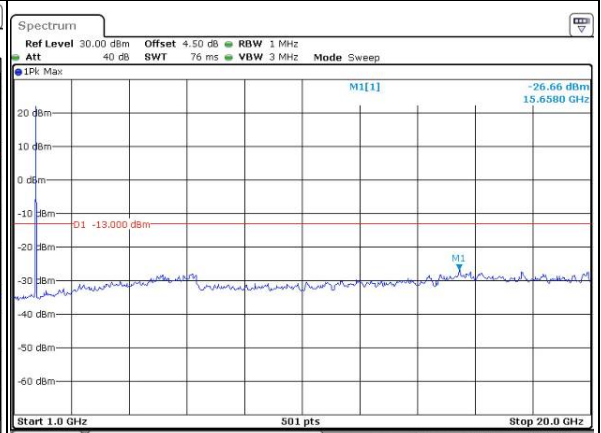
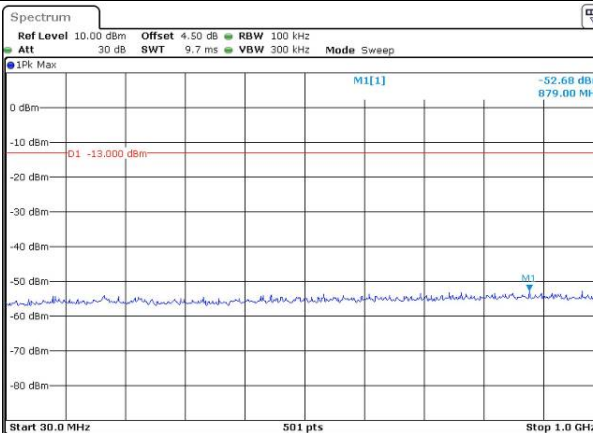
Channel

3MHz Bandwidth QPSK

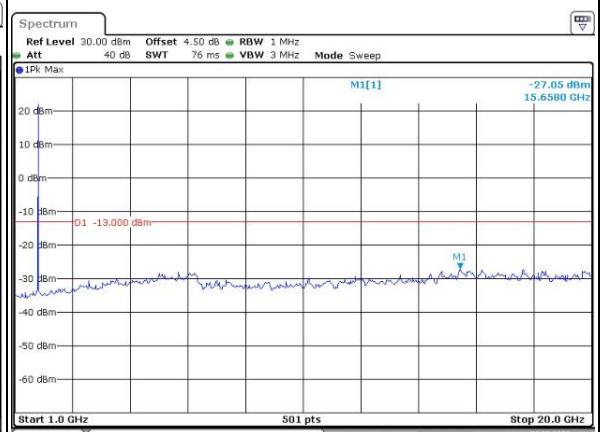
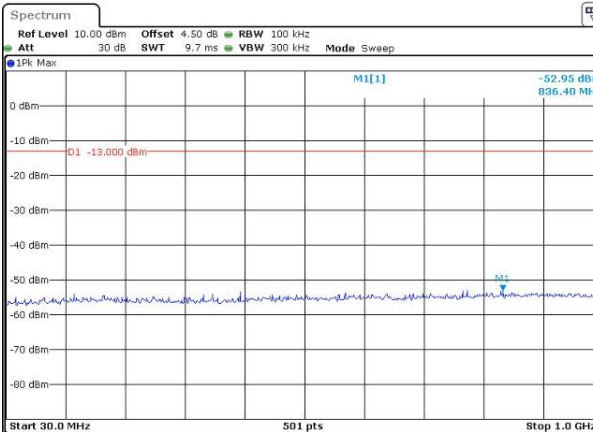
Lowest



Middle



Highest



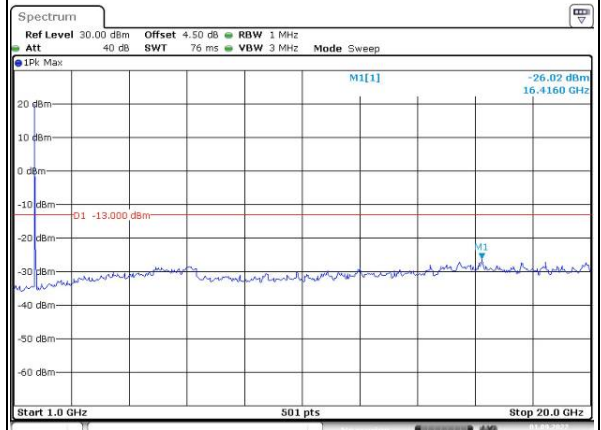
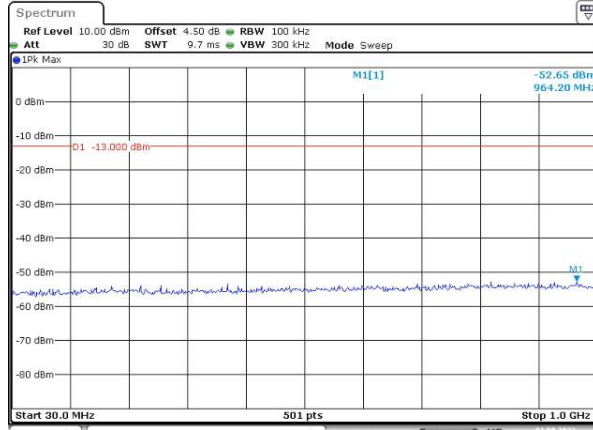


### Spurious Emissions at Antenna Terminal

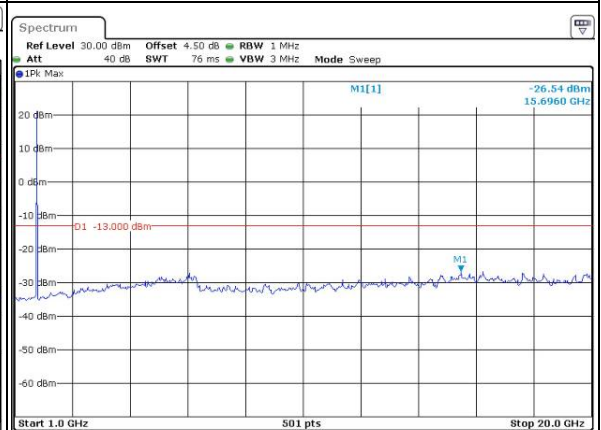
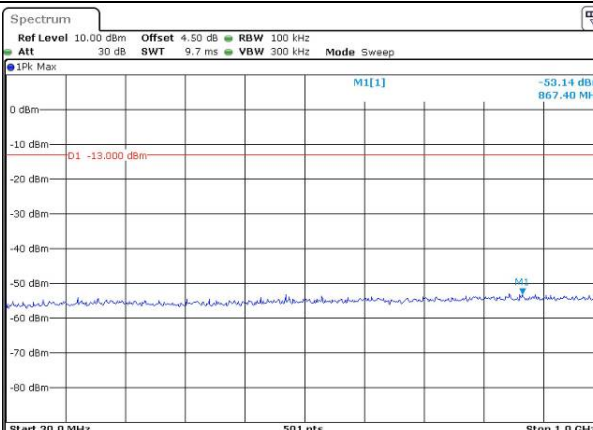
Channel

5MHz Bandwidth QPSK

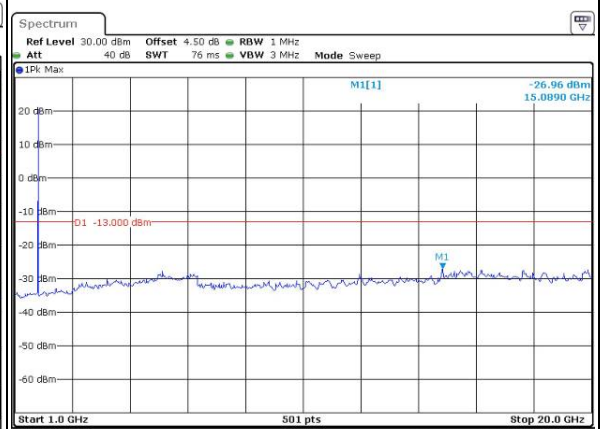
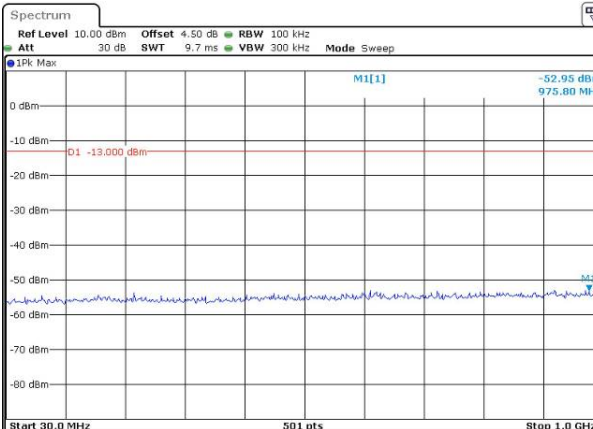
Lowest



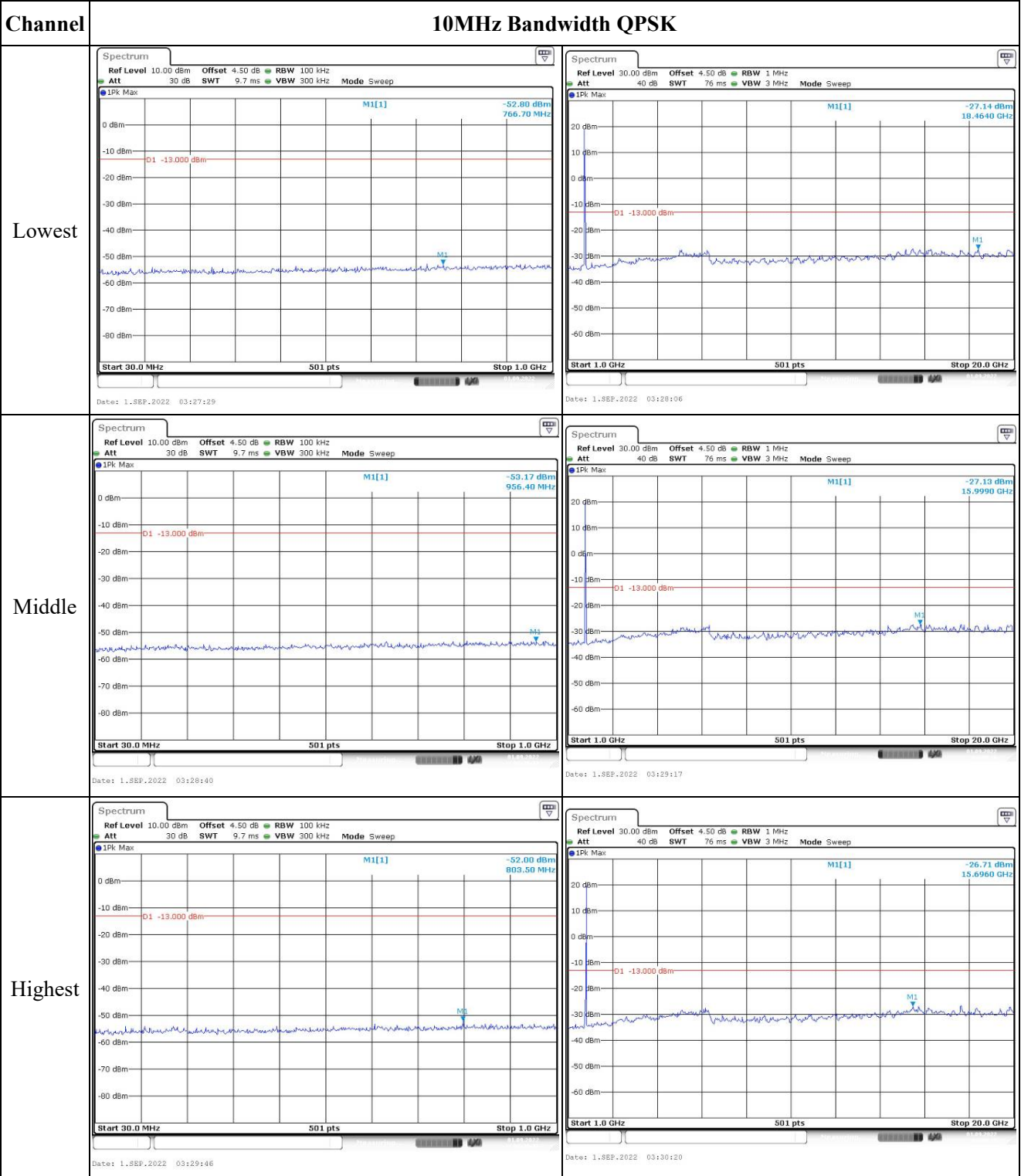
Middle



Highest



Spurious Emissions at Antenna Terminal

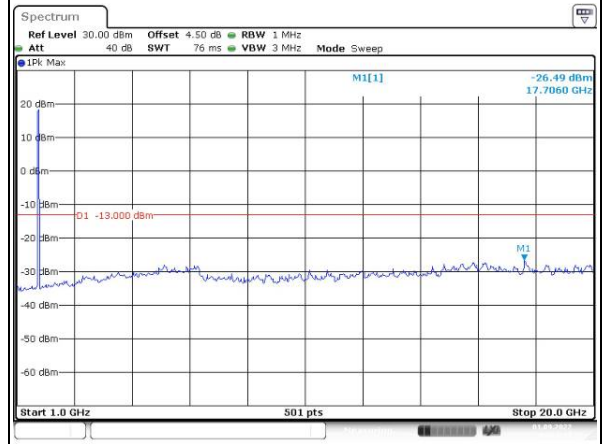
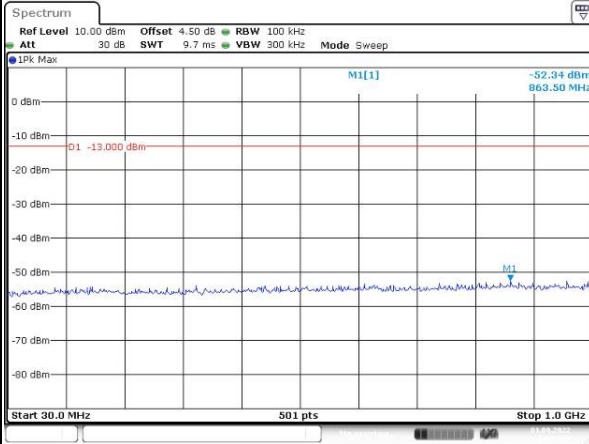


Spurious Emissions at Antenna Terminal

Channel

15MHz Bandwidth QPSK

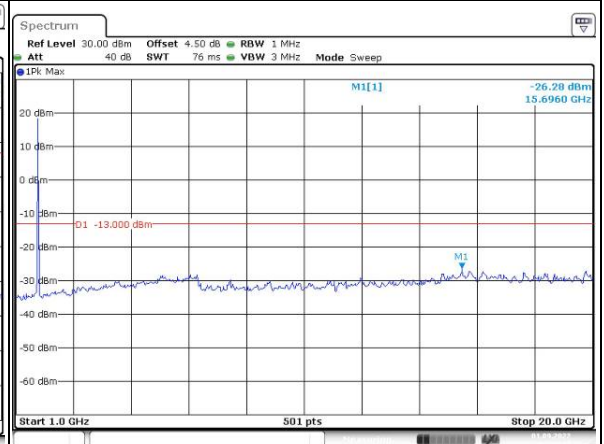
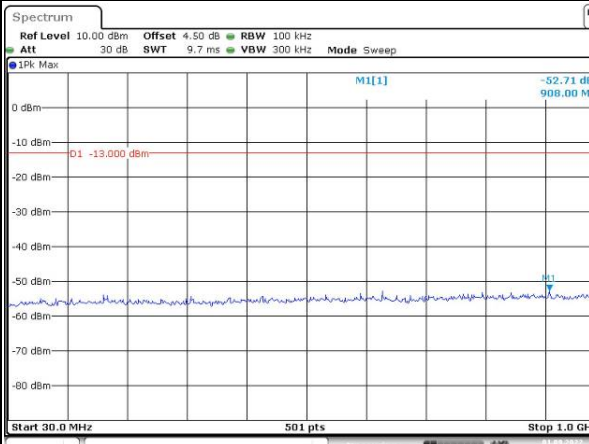
Lowest



Date: 1.SEP.2022 03:31:08

Date: 1.SEP.2022 03:31:38

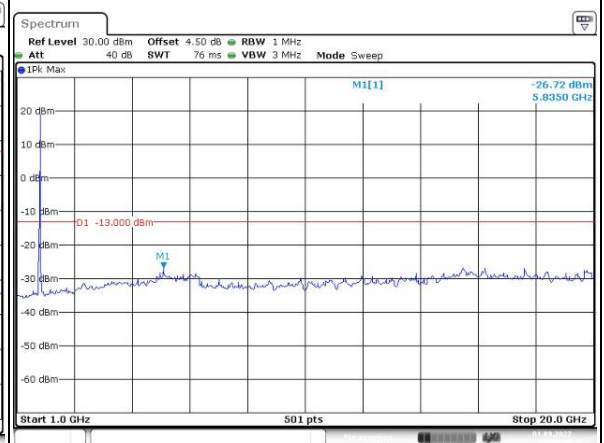
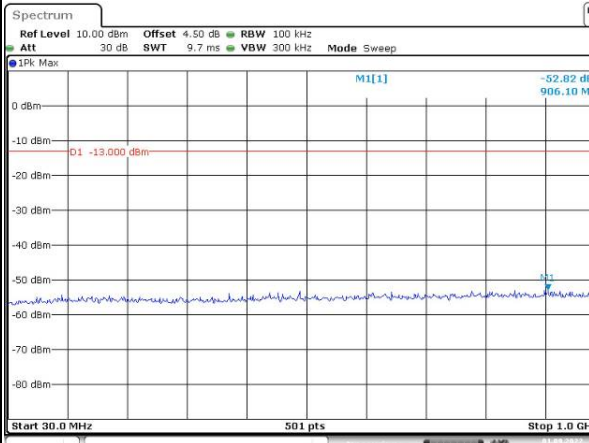
Middle



Date: 1.SEP.2022 03:32:08

Date: 1.SEP.2022 03:32:37

Highest



Date: 1.SEP.2022 03:33:15

Date: 1.SEP.2022 03:33:41

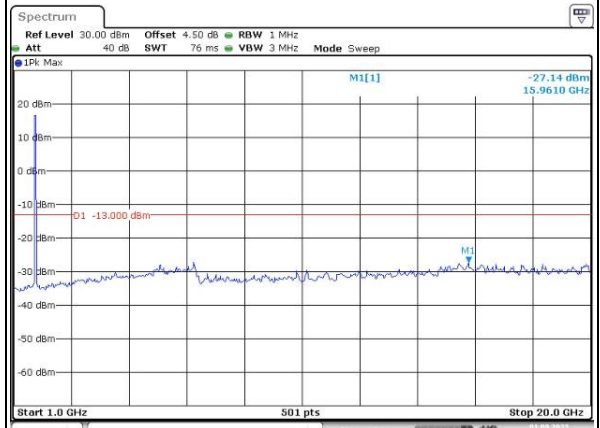
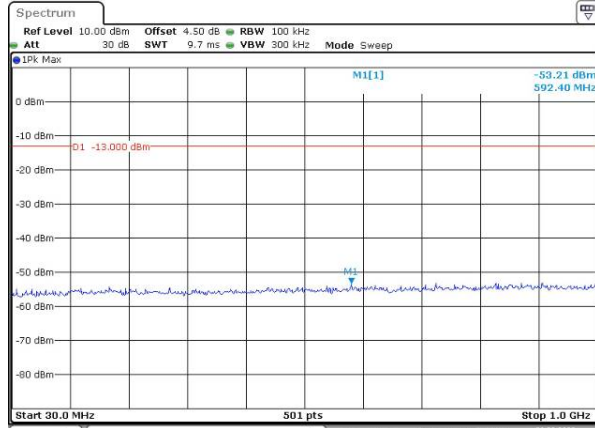


### Spurious Emissions at Antenna Terminal

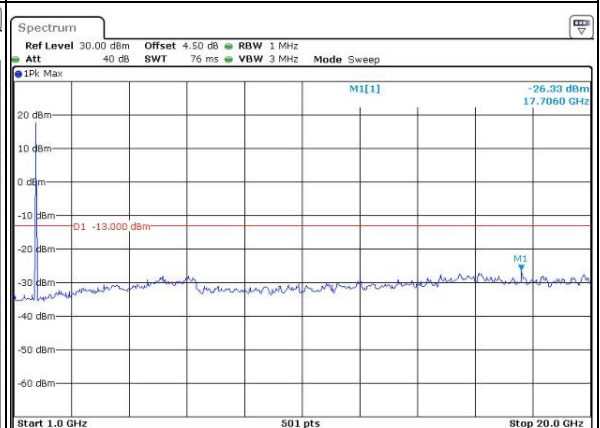
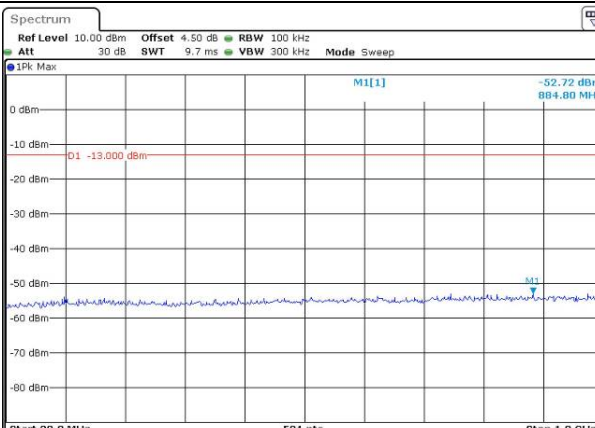
Channel

20MHz Bandwidth QPSK

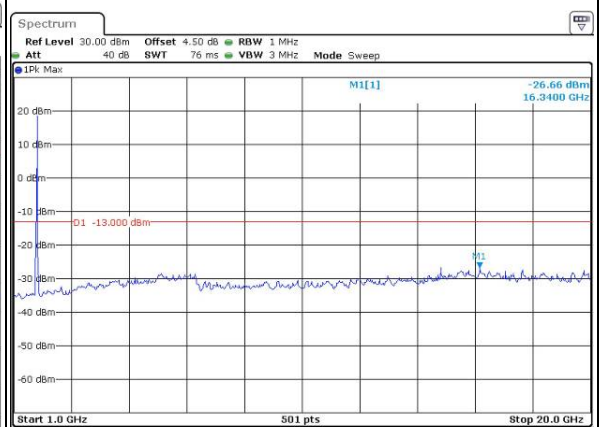
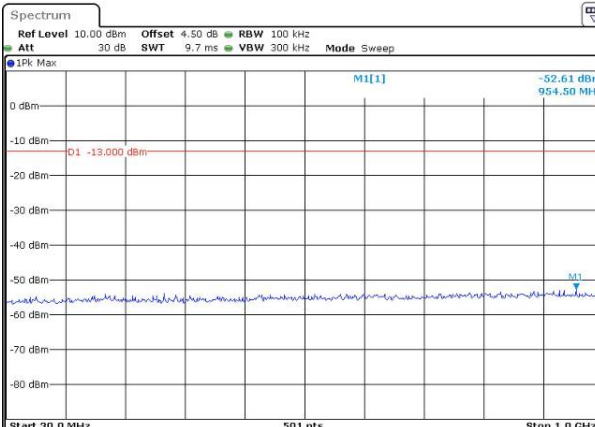
Lowest



Middle



Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz		
QPSK 3MHz		
QPSK 5MHz		