

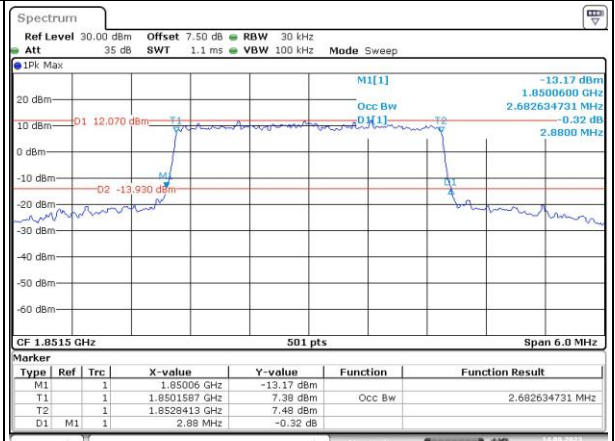
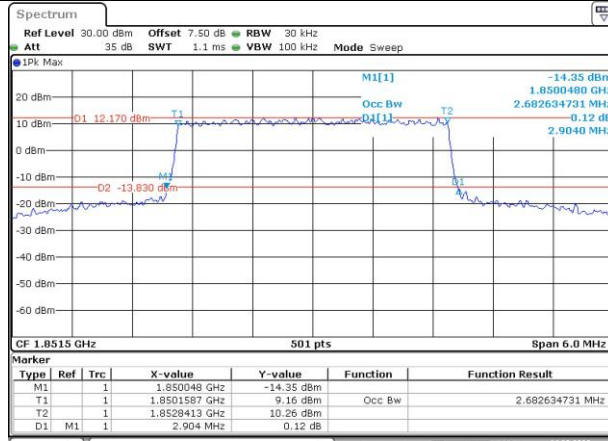
### Occupied Bandwidth

Channel

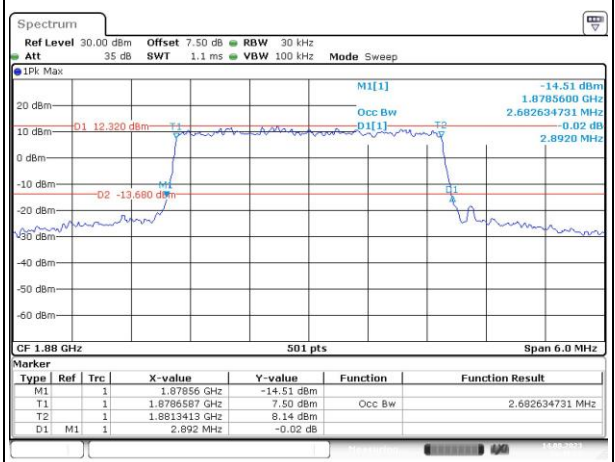
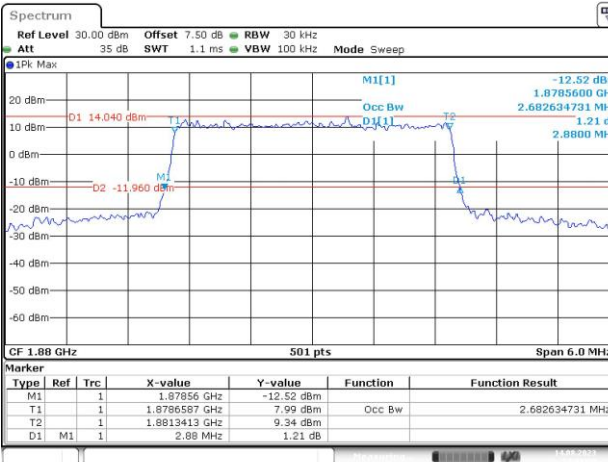
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

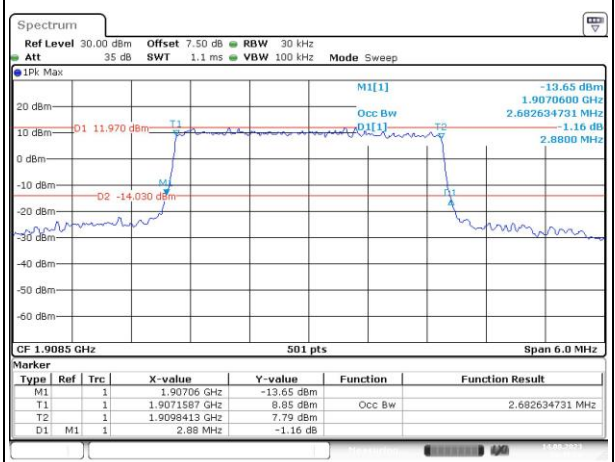
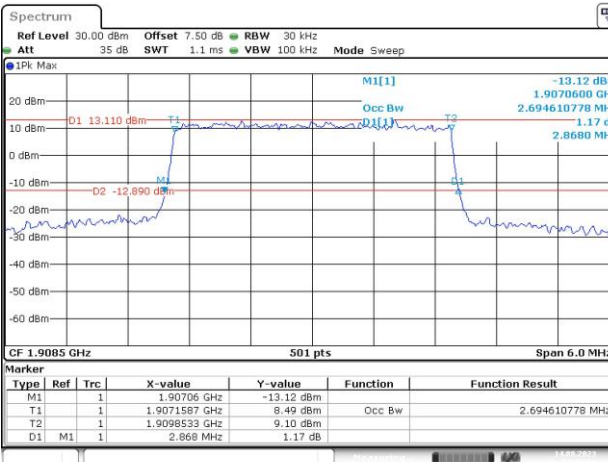
Lowest



Middle



Highest



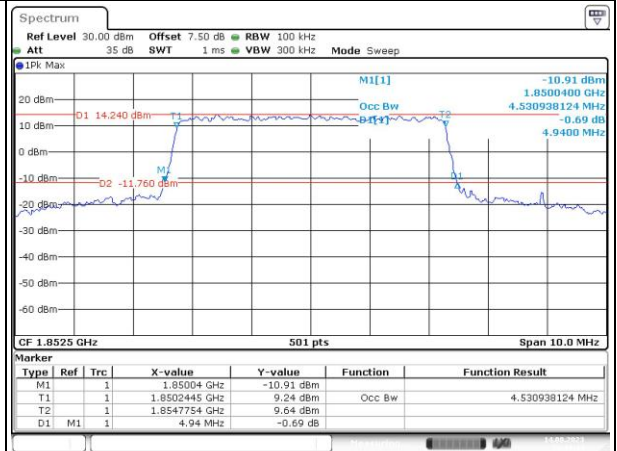
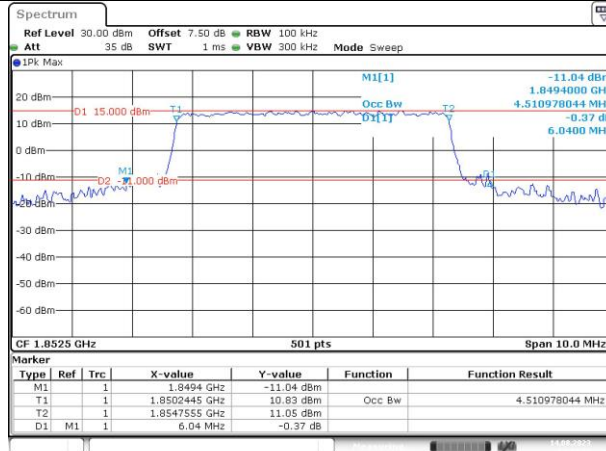
### Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

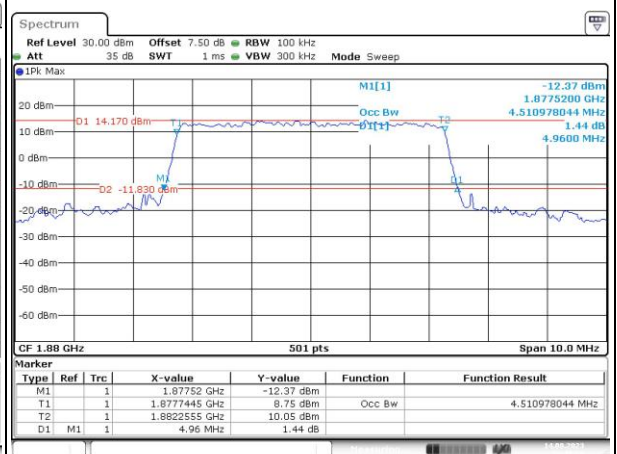
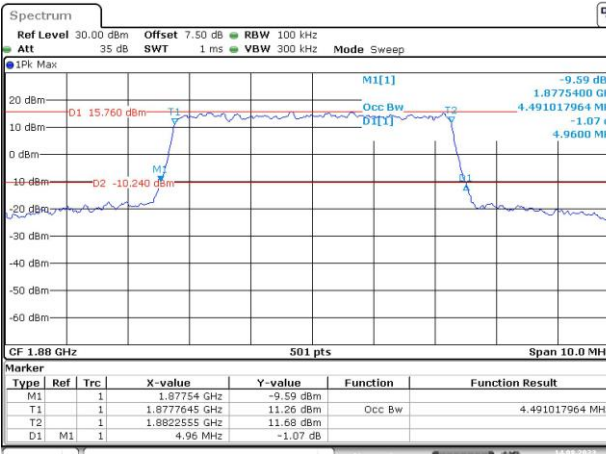
Lowest



Date: 14.AUG.2023 14:44:10

Date: 14.AUG.2023 14:44:44

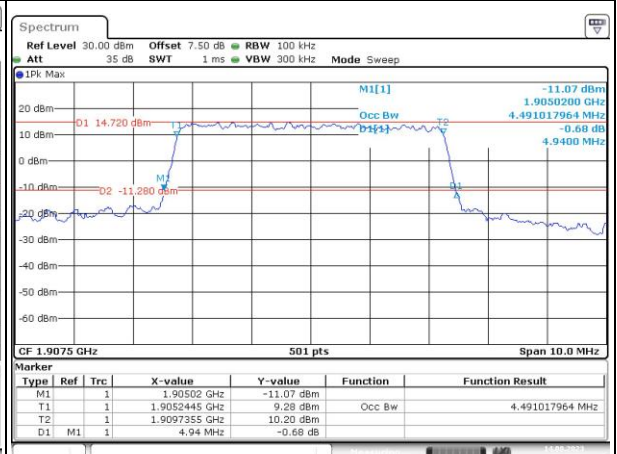
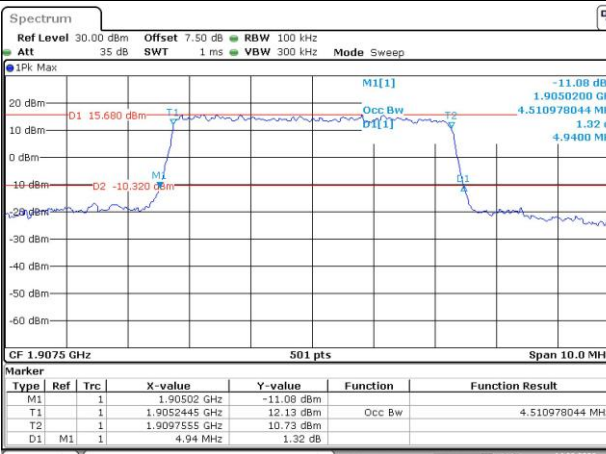
Middle



Date: 14.AUG.2023 14:45:12

Date: 14.AUG.2023 14:45:39

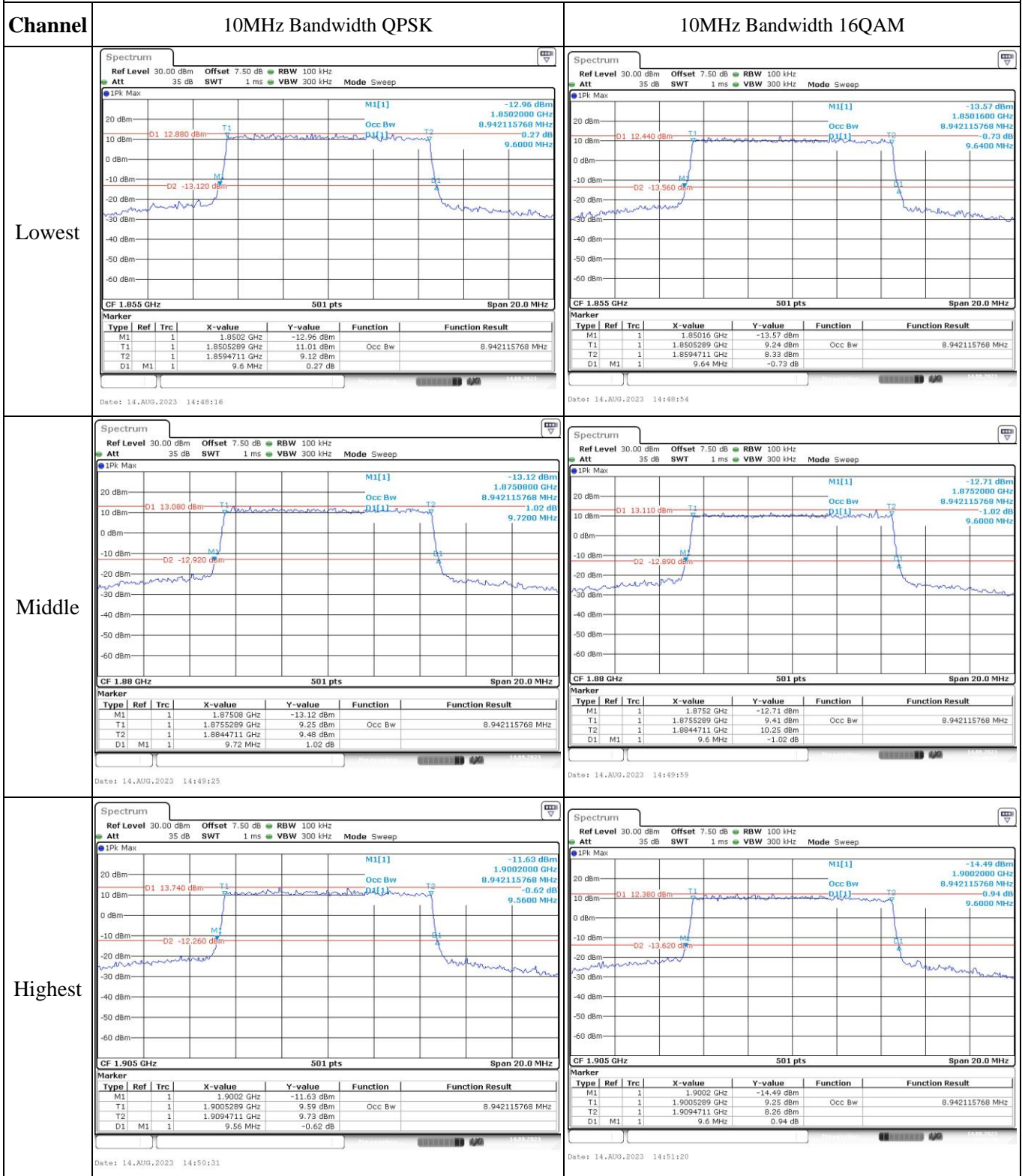
Highest



Date: 14.AUG.2023 14:46:22

Date: 14.AUG.2023 14:47:00

### Occupied Bandwidth





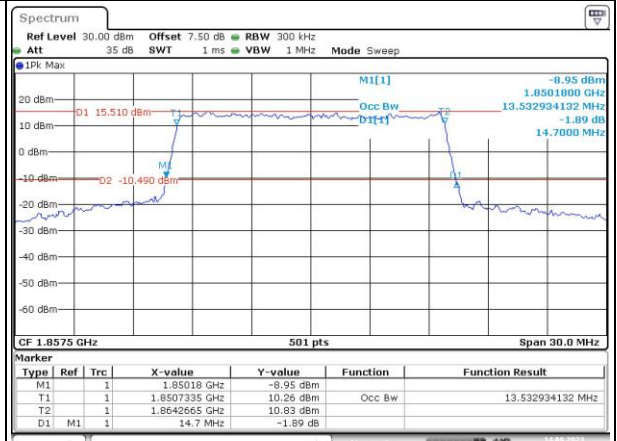
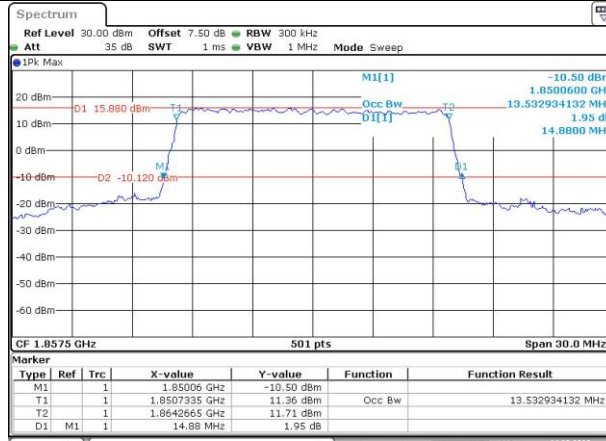
### Occupied Bandwidth

Channel

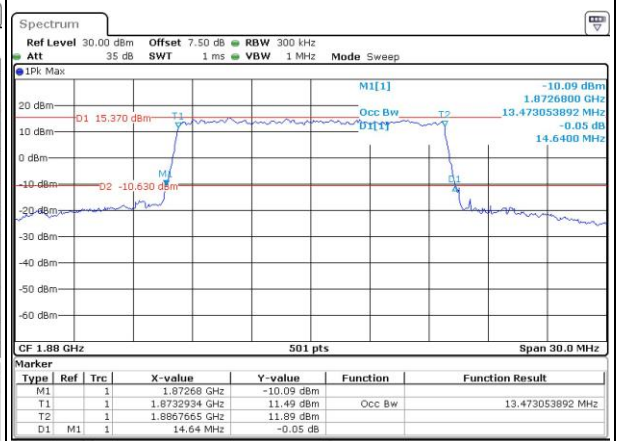
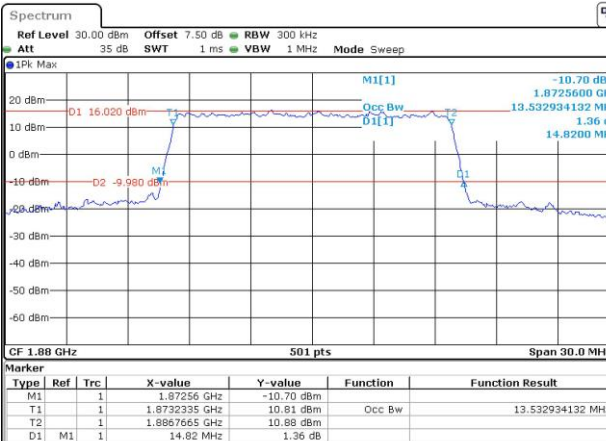
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

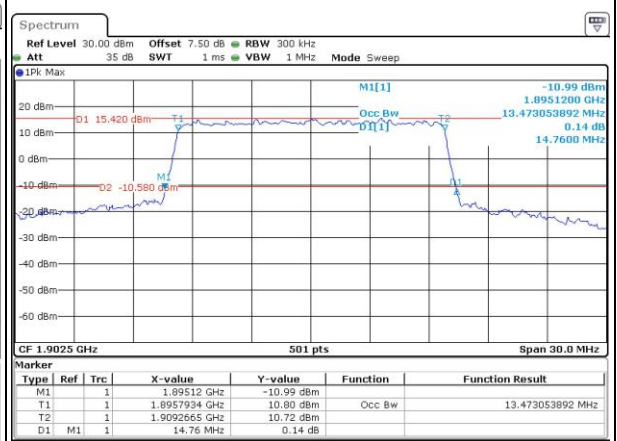
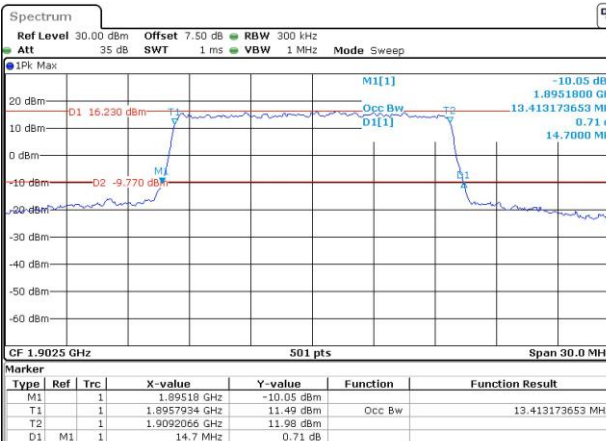
Lowest



Middle



Highest



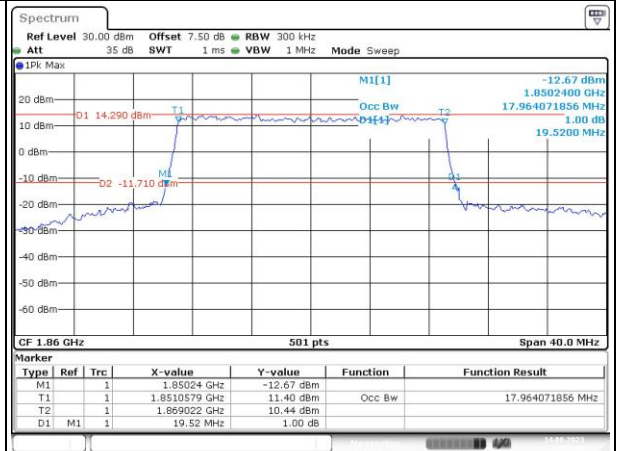
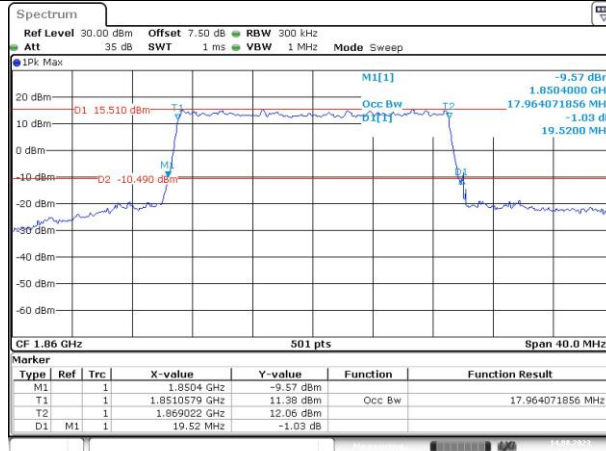
### Occupied Bandwidth

Channel

20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

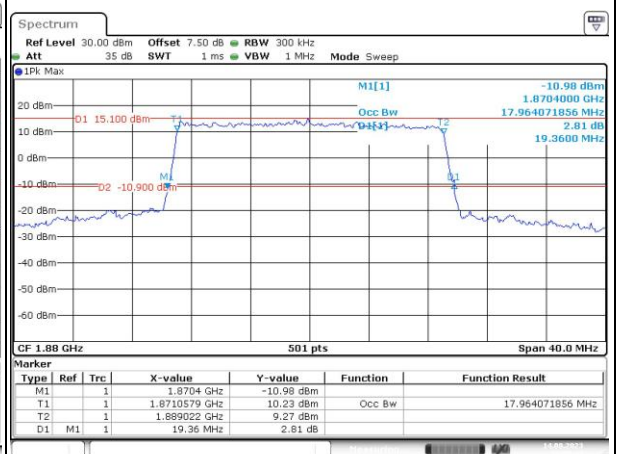
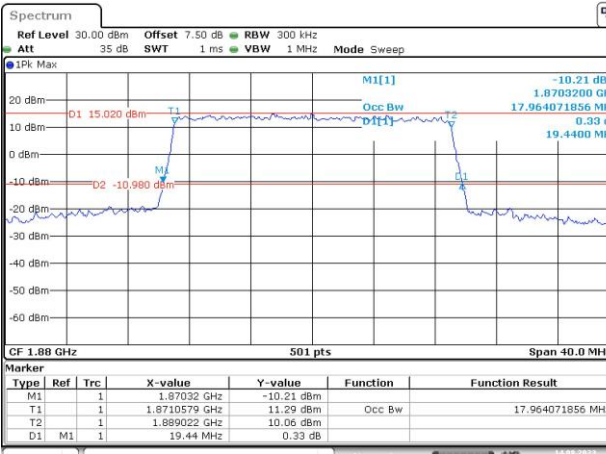
Lowest



Date: 14.AUG.2023 14:56:05

Date: 14.AUG.2023 14:56:41

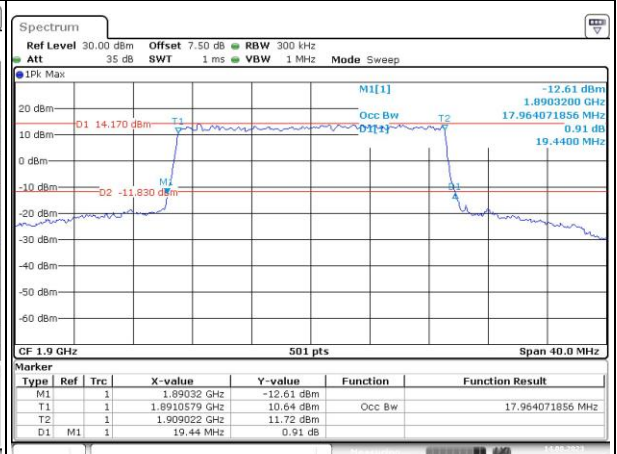
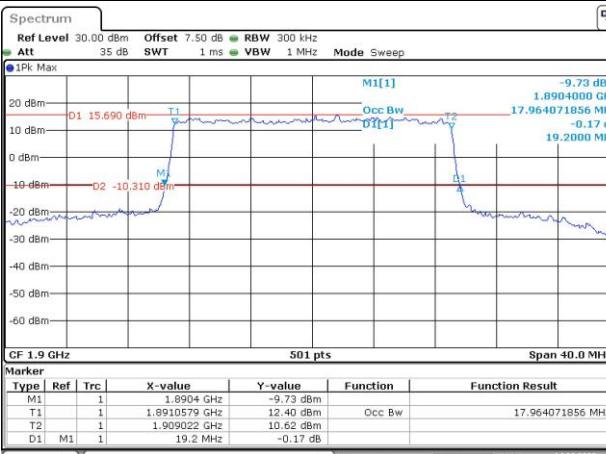
Middle



Date: 14.AUG.2023 14:57:13

Date: 14.AUG.2023 14:57:41

Highest



Date: 14.AUG.2023 14:58:14

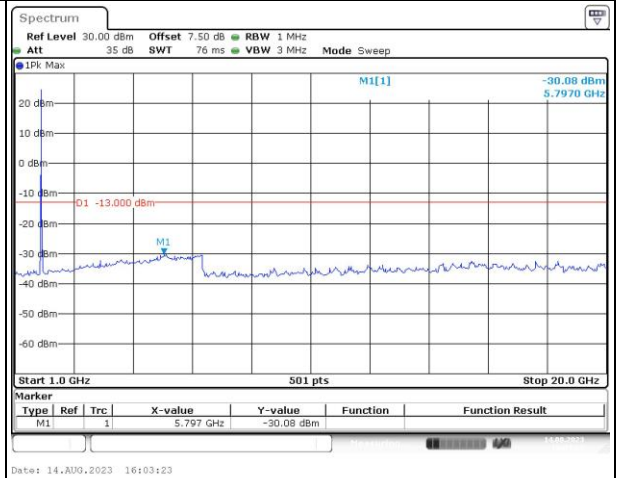
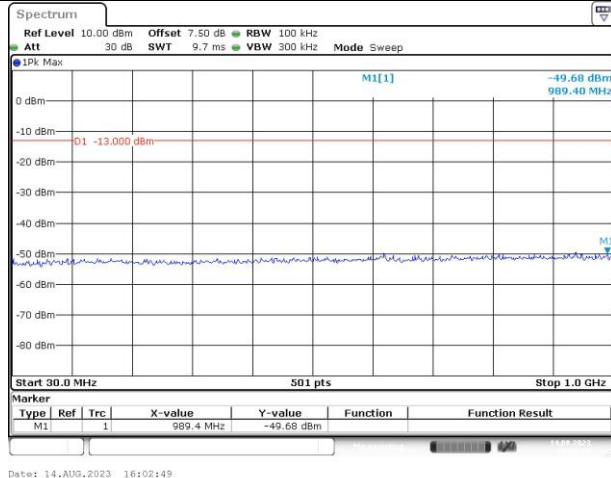
Date: 14.AUG.2023 14:58:49

### Spurious Emissions at Antenna Terminal

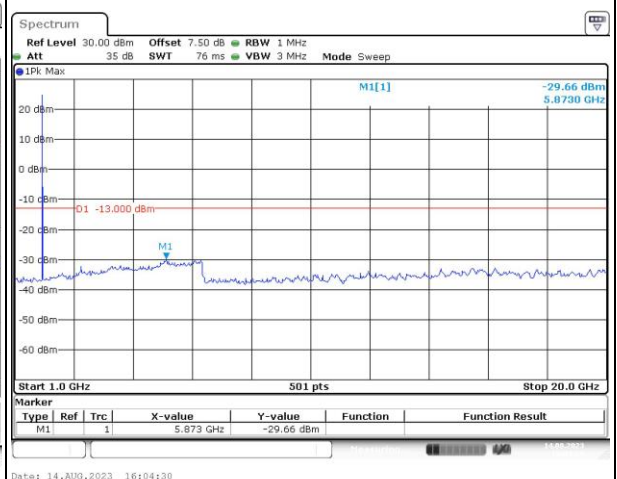
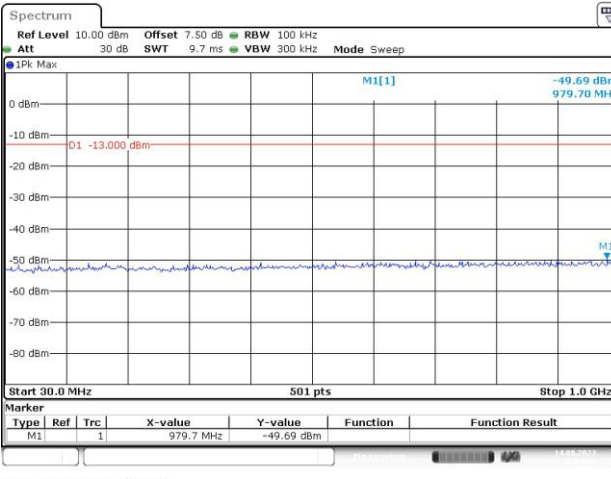
Channel

1.4MHz Bandwidth QPSK

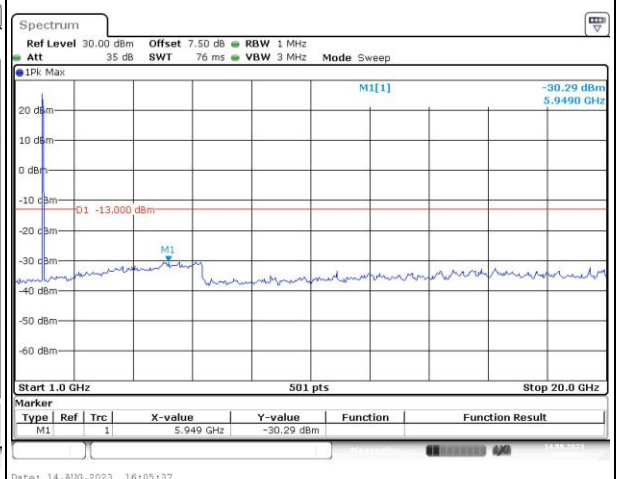
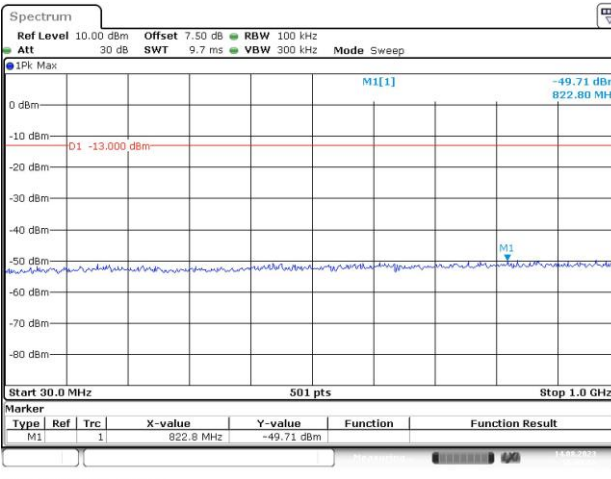
Lowest



Middle



Highest

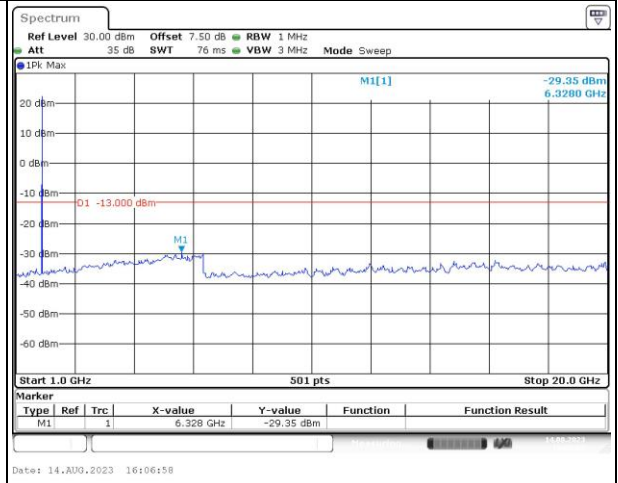
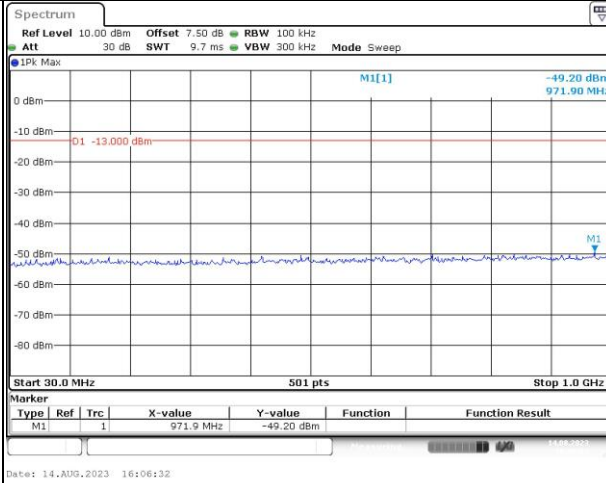


### Spurious Emissions at Antenna Terminal

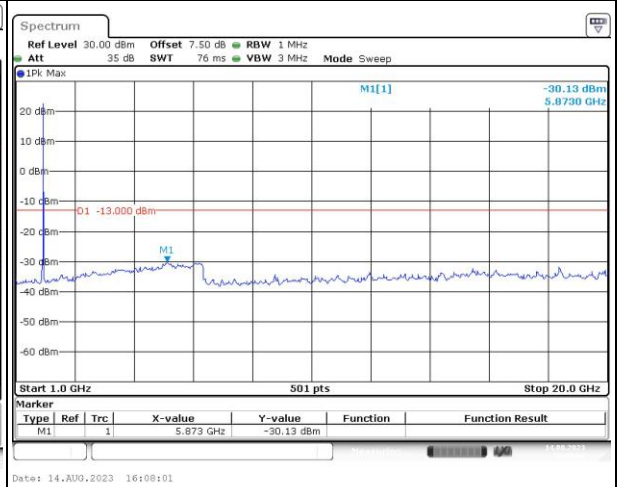
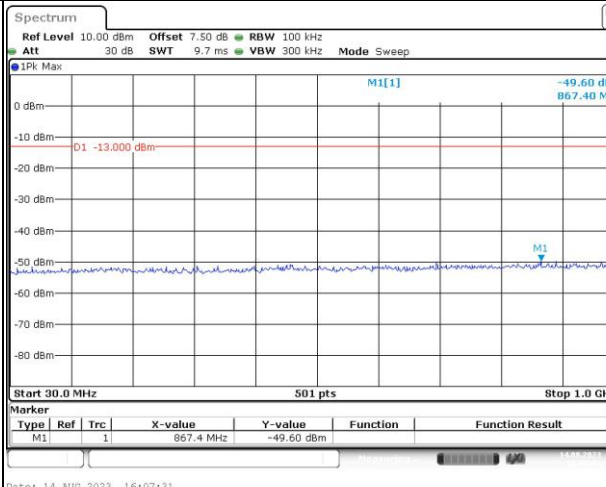
Channel

3MHz Bandwidth QPSK

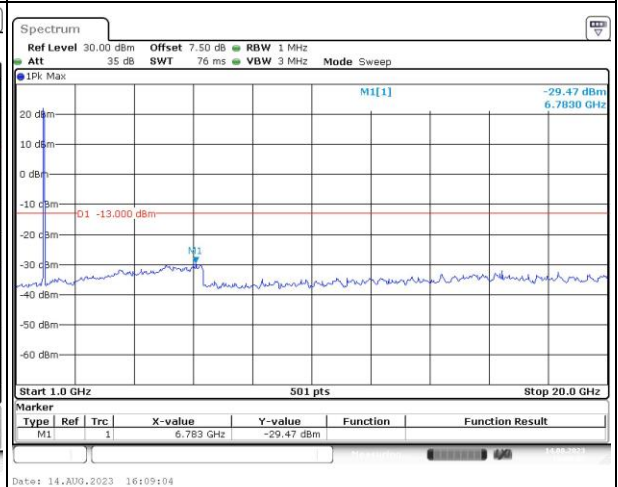
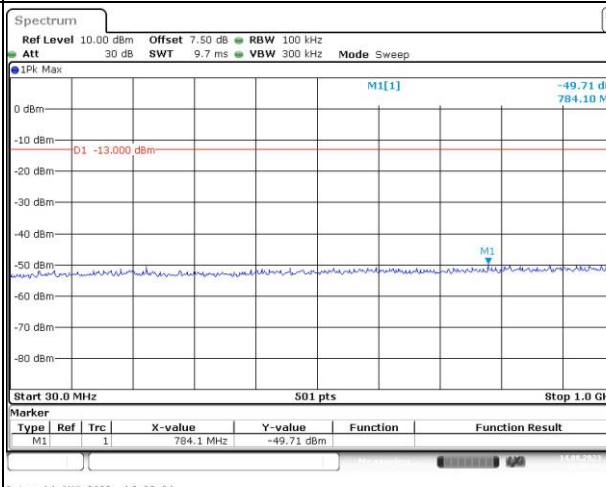
Lowest



Middle



Highest



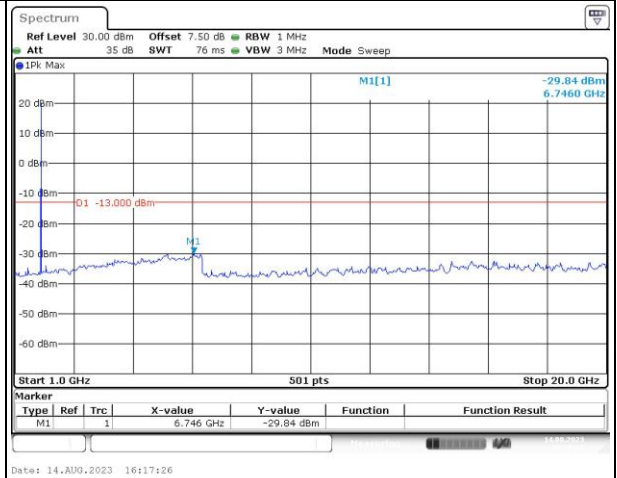
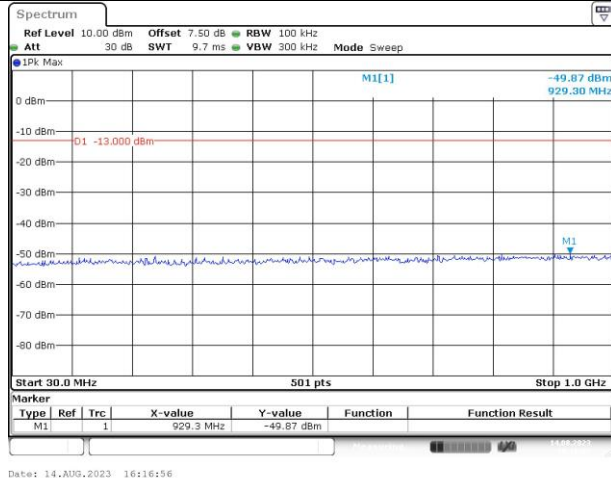


### Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

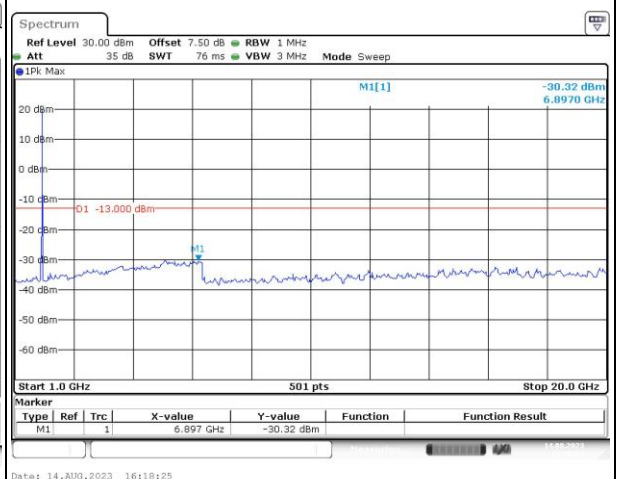
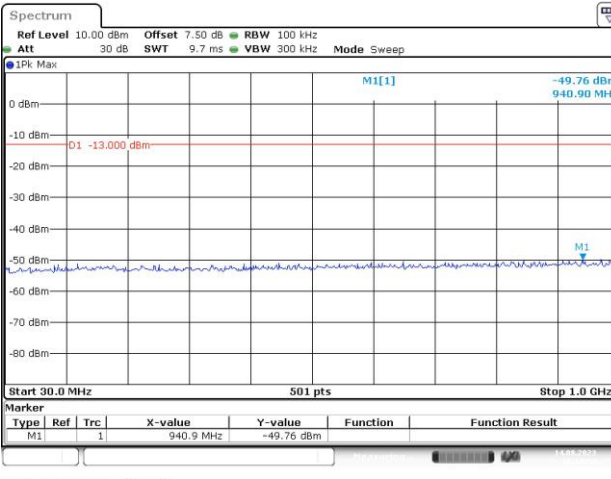
Lowest



Date: 14.AUG.2023 16:16:56

Date: 14.AUG.2023 16:17:26

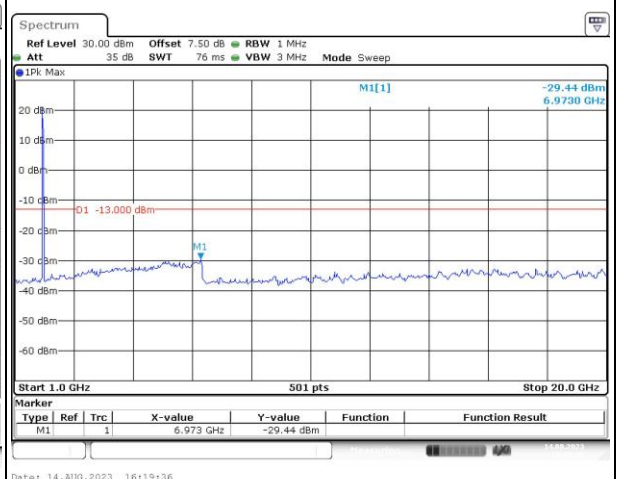
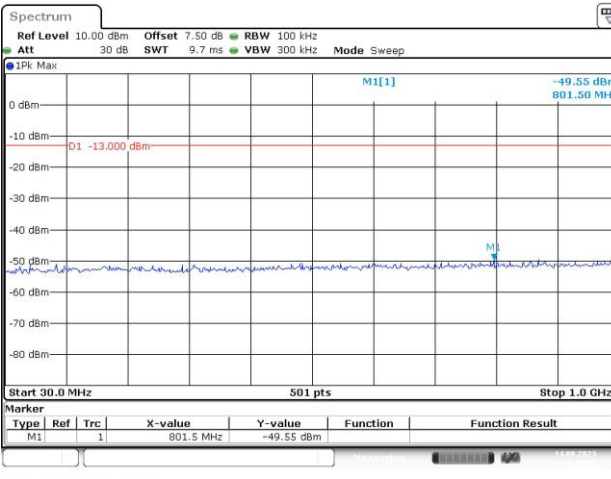
Middle



Date: 14.AUG.2023 16:17:55

Date: 14.AUG.2023 16:18:25

Highest



Date: 14.AUG.2023 16:19:02

Date: 14.AUG.2023 16:19:36

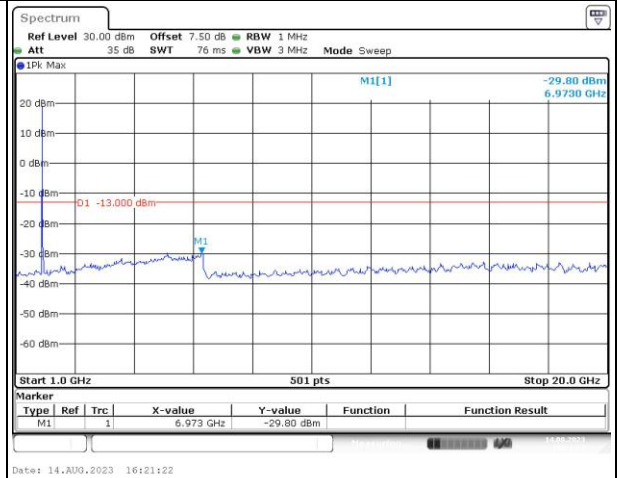
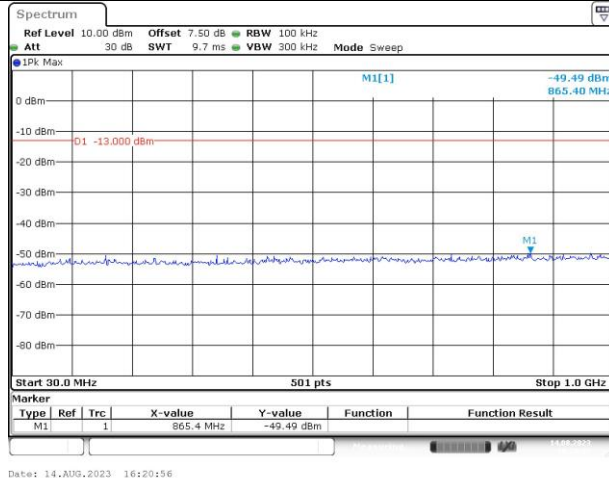


### Spurious Emissions at Antenna Terminal

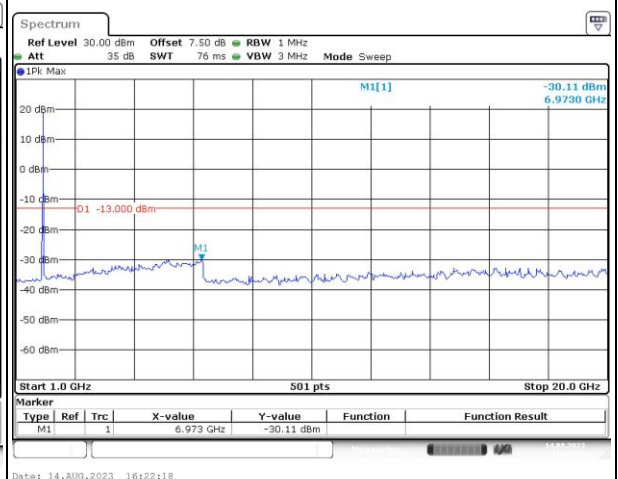
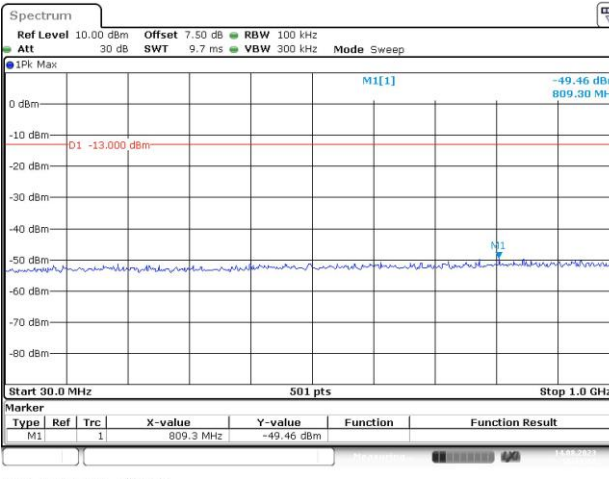
Channel

10MHz Bandwidth QPSK

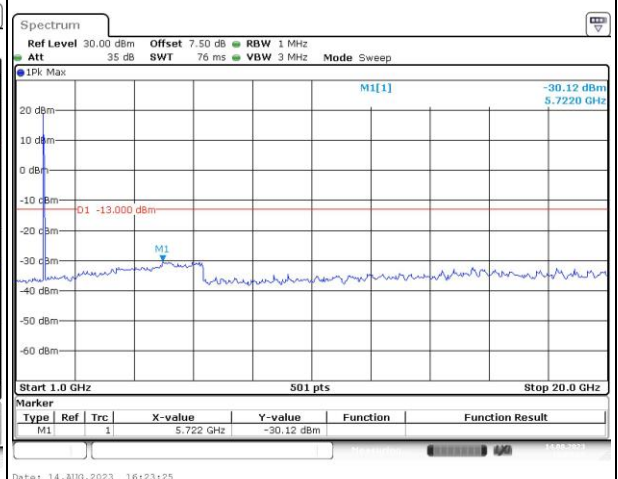
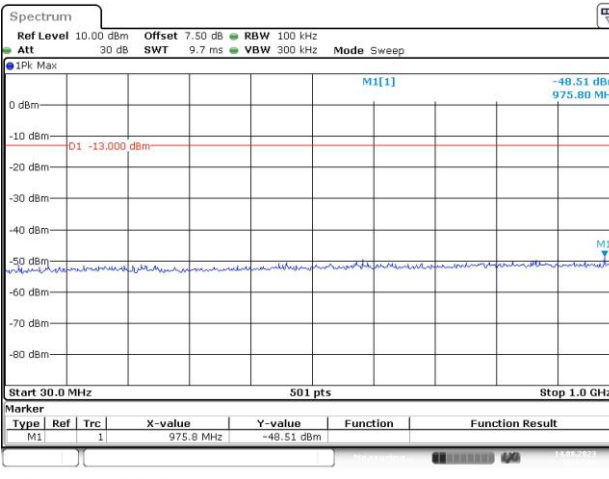
Lowest



Middle



Highest

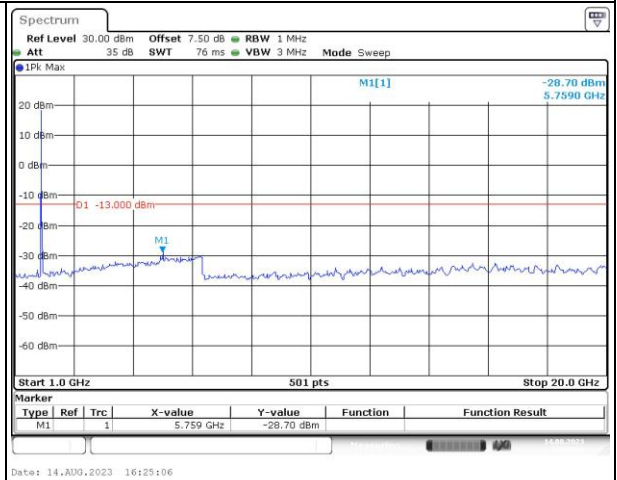
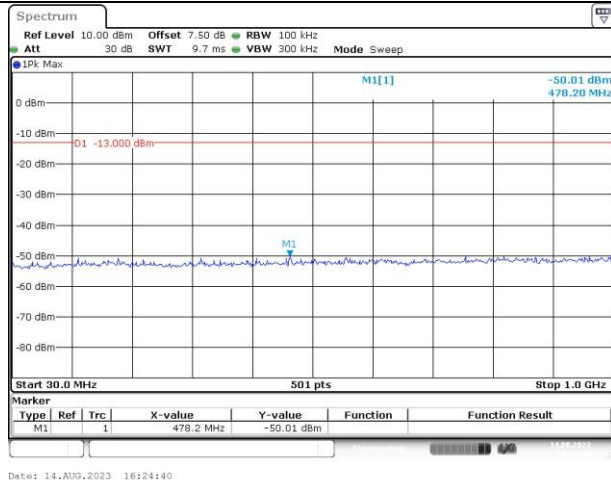


### Spurious Emissions at Antenna Terminal

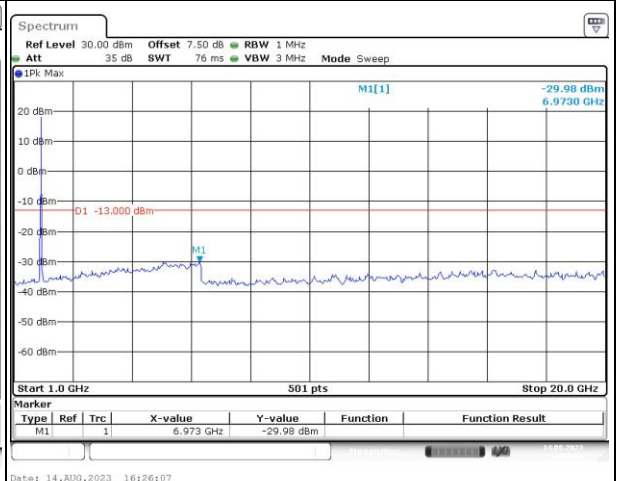
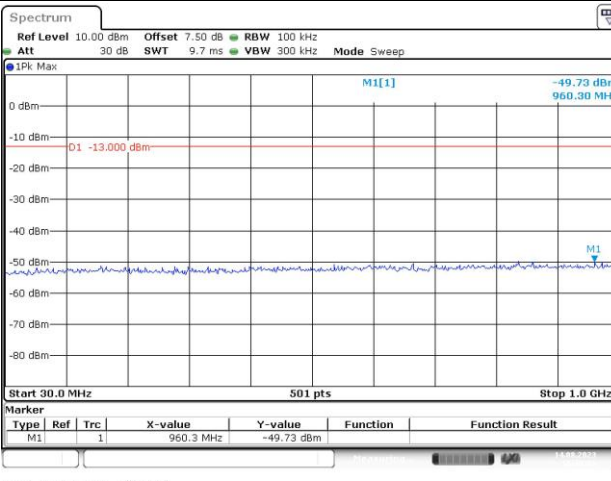
Channel

15MHz Bandwidth QPSK

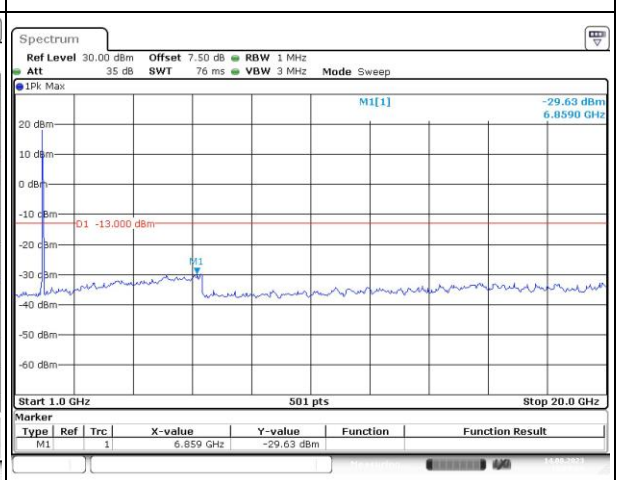
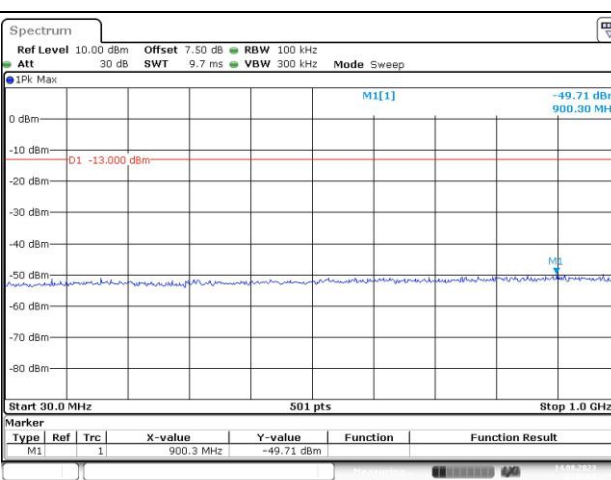
Lowest



Middle



Highest

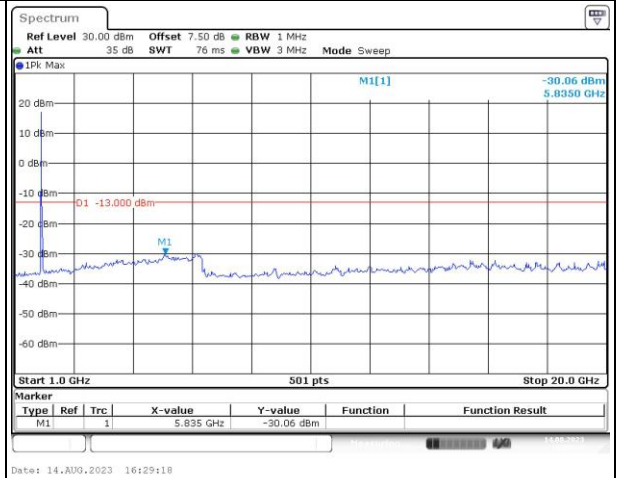
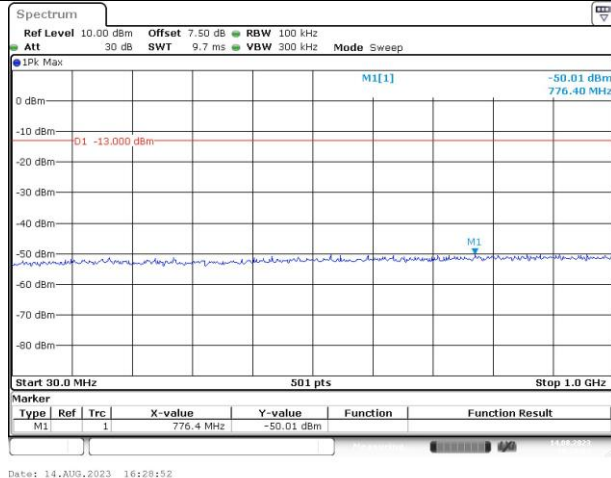


### Spurious Emissions at Antenna Terminal

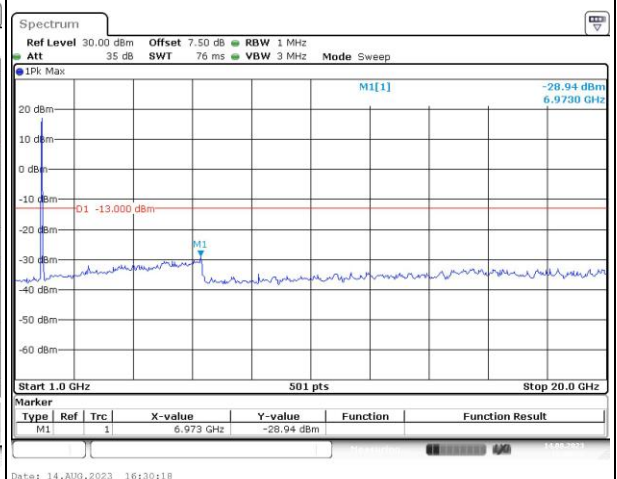
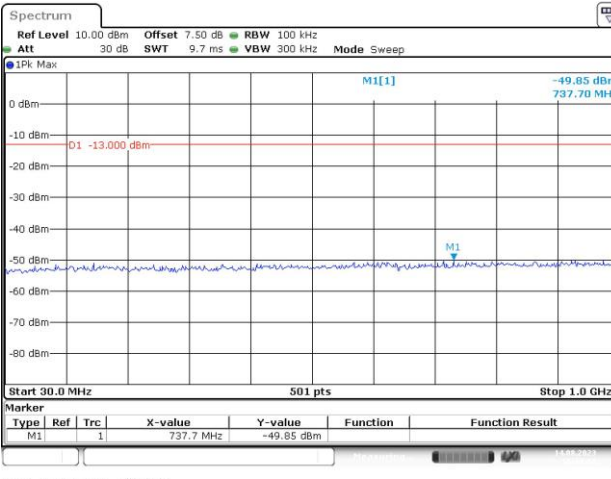
Channel

20MHz Bandwidth QPSK

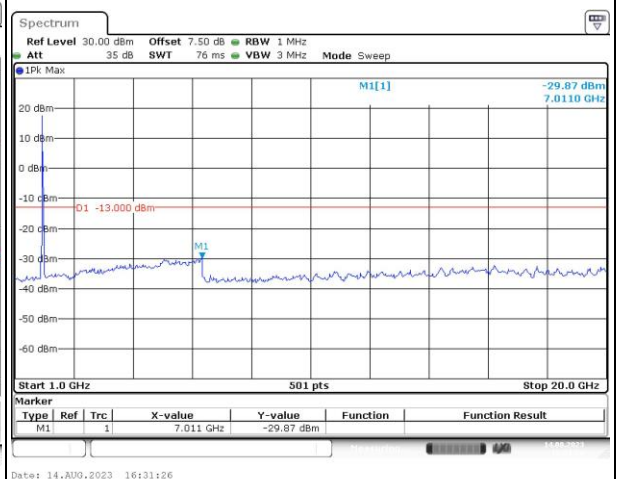
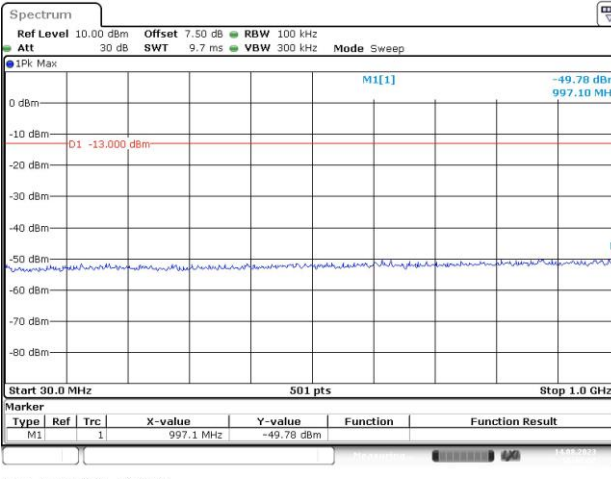
Lowest



Middle



Highest



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -28.64 dBm 1.84997600 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 3.0 MHz Date: 18.AUG.2023 15:12:29</p>	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -36.92 dBm 1.91000000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 3.0 MHz Date: 18.AUG.2023 15:12:41</p>
QPSK 3MHz	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -34.06 dBm 1.8499760 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 6.0 MHz Date: 18.AUG.2023 15:13:20</p>	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 30 kHz Att 35 dB SWT 35 ms VBW 100 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -41.26 dBm 1.9100120 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 6.0 MHz Date: 18.AUG.2023 15:13:33</p>
QPSK 5MHz	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -30.90 dBm 1.8500000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 10.0 MHz Date: 18.AUG.2023 15:14:20</p>	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -36.90 dBm 1.9100200 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 10.0 MHz Date: 18.AUG.2023 15:14:38</p>



Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -36.78 dBm 1.850000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 20.0 MHz Date: 18.AUG.2023 15:15:26</p>	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -40.65 dBm 1.910000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 20.0 MHz Date: 18.AUG.2023 15:15:41</p>
QPSK 15MHz	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 300 kHz Att 35 dB SWT 35 ms VBW 1 MHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -39.23 dBm 1.850000 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 30.0 MHz Date: 18.AUG.2023 15:16:28</p>	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 300 kHz Att 35 dB SWT 35 ms VBW 1 MHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -35.31 dBm 1.9102400 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 30.0 MHz Date: 18.AUG.2023 15:16:43</p>
QPSK 20MHz	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 300 kHz Att 35 dB SWT 35 ms VBW 1 MHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -35.39 dBm 1.8499200 GHz D1 -13.000 dBm CF 1.85 GHz 501 pts Span 40.0 MHz Date: 18.AUG.2023 15:18:55</p>	<p>Ref Level 30.00 dBm Offset 7.50 dB RBW 300 kHz Att 35 dB SWT 35 ms VBW 1 MHz Mode Sweep SGL Count 50/50 IRm AvgPwr MI[1] -30.65 dBm 1.910000 GHz D1 -13.000 dBm CF 1.91 GHz 501 pts Span 40.0 MHz Date: 18.AUG.2023 15:19:10</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz		
16QAM 3MHz		
16QAM 5MHz		

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz		
16QAM 15MHz		
16QAM 20MHz		

**4.7 Antenna Port Test Data and Results for LTE Band 5**

Serial Number:	29NT-1	Test Date:	2023/8/14~2023/8/18
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

**Environmental Conditions:**

Temperature: (°C)	24.3~27.5	Relative Humidity: (%)	42~59	ATM Pressure: (kPa)	99.6~100.3
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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	2023/7/15	2024/7/14
zhuoxiang	Coaxial Cable	SMA-178	211001	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
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2023/7/15	2024/7/14
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	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844



**Test Data:****FCC §2.1046; § 22.913 (a)****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	20.80	20.74	20.78	17.56	38.45
	RB1#3	20.97	20.92	20.95		
	RB1#5	20.82	20.75	20.79		
	RB3#0	20.78	20.8	20.82		
	RB3#3	20.79	20.79	20.85		
	RB6#0	19.89	19.88	19.94		
1.4MHz 16QAM	RB1#0	19.74	19.84	19.95	16.69	38.45
	RB1#3	19.94	20.0	20.1		
	RB1#5	19.82	19.81	19.93		
	RB3#0	19.85	19.98	19.89		
	RB3#3	19.76	20.08	19.85		
	RB6#0	18.74	18.92	18.92		
3MHz QPSK	RB1#0	20.94	20.94	20.92	17.54	38.45
	RB1#8	20.93	20.94	20.90		
	RB1#14	20.9	20.94	20.95		
	RB6#0	19.91	19.93	19.95		
	RB6#9	19.94	19.96	19.97		
	RB15#0	19.90	19.98	19.98		
3MHz 16QAM	RB1#0	20.00	20.06	20.52	17.11	38.45
	RB1#8	20.03	19.9	20.47		
	RB1#14	20.07	19.93	20.40		
	RB6#0	18.85	18.88	18.99		
	RB6#9	18.94	18.89	19.00		
	RB15#0	18.83	19.05	19.04		
5MHz QPSK	RB1#0	20.78	20.78	20.72	17.51	38.45
	RB1#13	20.92	20.87	20.88		
	RB1#24	20.77	20.75	20.76		
	RB15#0	19.8	19.94	20.0		
	RB15#10	19.9	19.9	19.8		
	RB25#0	19.85	19.9	19.86		
5MHz 16QAM	RB1#0	20.00	19.89	19.62	16.75	38.45
	RB1#13	20.16	20.0	19.82		
	RB1#24	20.09	20	19.65		
	RB15#0	18.78	19.0	18.98		
	RB15#10	18.82	18.90	18.85		
	RB25#0	18.8	18.94	18.96		
10MHz QPSK	RB1#0	20.8	20.78	20.77	17.68	38.45

	RB1#25	21.09	21.04	21.05		
	RB1#49	20.81	20.84	20.83		
	RB25#0	19.83	19.95	19.88		
	RB25#25	19.91	19.9	19.87		
	RB50#0	19.92	19.93	19.88		
10MHz 16QAM	RB1#0	19.74	20.39	19.94	17.16	38.45
	RB1#25	20.07	20.6	20.18		
	RB1#49	19.89	20.27	20.01		
	RB25#0	18.93	19.0	18.88		
	RB25#25	18.99	18.93	18.92		
	RB50#0	18.93	18.94	18.87		

Note: ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(dBi)-2.15

**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	4.41	4.2	4.49	13
	RB50#0	4.93	4.9	5.04	13
10MHz 16QAM	RB1#0	5.36	4.99	5.36	13
	RB50#0	5.83	5.86	5.97	13

**Result:**

**Pass**

### FCC §2.1049, §22.905: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	1.302	1.314	1.296
1.4MHz 16QAM	1.102	1.09	1.102	1.320	1.29	1.296
3MHz QPSK	2.683	2.683	2.683	2.892	2.880	2.868
3MHz 16QAM	2.683	2.683	2.683	2.880	2.892	2.880
5MHz QPSK	4.491	4.511	4.511	4.920	4.960	4.940
5MHz 16QAM	4.531	4.491	4.511	4.960	4.940	4.940
10MHz QPSK	8.942	8.942	8.942	9.600	9.640	9.640
10MHz 16QAM	8.942	8.942	8.942	9.600	9.600	9.640

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

### FCC §2.1051, §22.917(a):Spurious Emissions at Antenna Terminal

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

**FCC §2.1051, §22.917(a): Out of band emission, Band Edge****Result: Pass, Please refer to the test plots of Out of band emission, Band Edge.****FCC §2.1055, §22.355: Frequency Stability**

Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-8.25	-0.010	2.5
	-20	3.8	9.12	0.011	2.5
	-10	3.8	8.51	0.010	2.5
	0	3.8	-7.15	-0.009	2.5
	10	3.8	-5.29	-0.006	2.5
	20	3.8	7.24	0.009	2.5
	30	3.8	-5.81	-0.007	2.5
	40	3.8	5.59	0.007	2.5
Frequency Stability vs. Voltage	20	3.2	9.94	0.012	2.5
	20	4.35	9.99	0.012	2.5
				<b>Result:</b>	<b>Pass</b>

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V <sub>DC</sub> )	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-7.81	-0.009	2.5
	-20	3.8	6.8	0.008	2.5
	-10	3.8	-9.53	-0.011	2.5
	0	3.8	-8.15	-0.010	2.5
	10	3.8	-8.88	-0.011	2.5
	20	3.8	-9.82	-0.012	2.5
	30	3.8	8.38	0.010	2.5
	40	3.8	6.75	0.008	2.5
Frequency Stability vs. Voltage	20	3.2	8.98	0.011	2.5
	20	4.35	-7.83	-0.009	2.5
				<b>Result:</b>	<b>Pass</b>

**Test Plots**(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

**Occupied Bandwidth**

