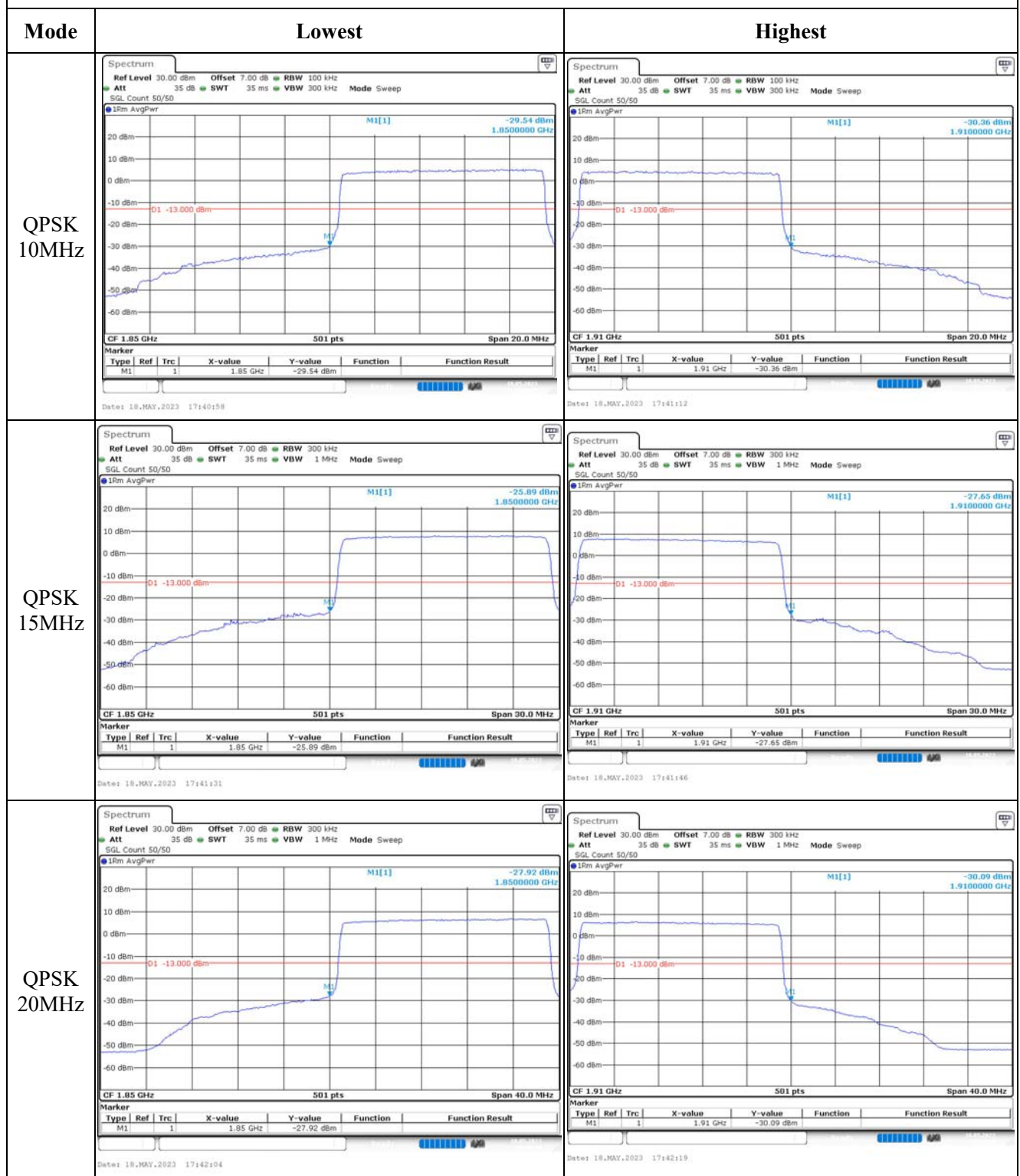
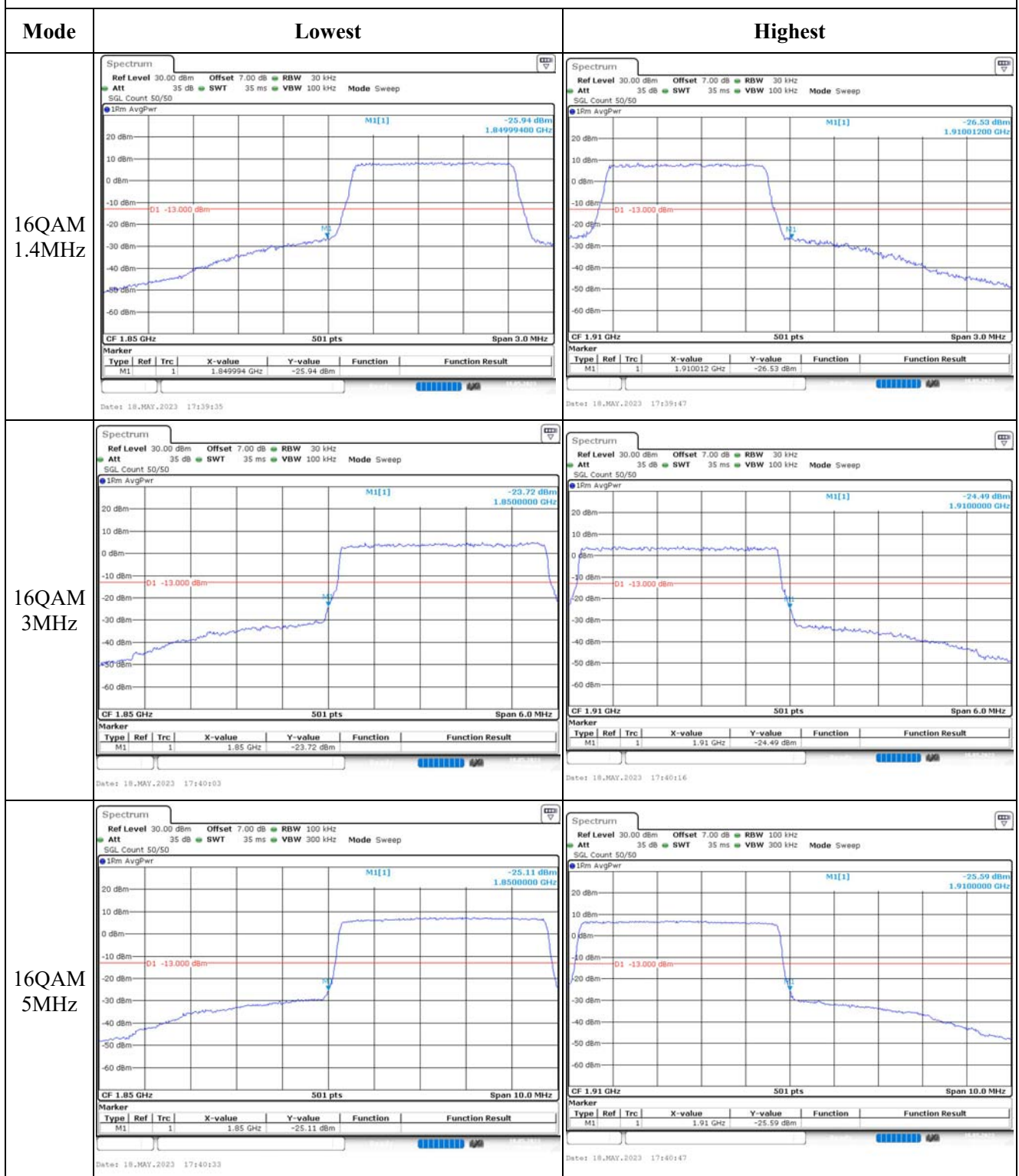


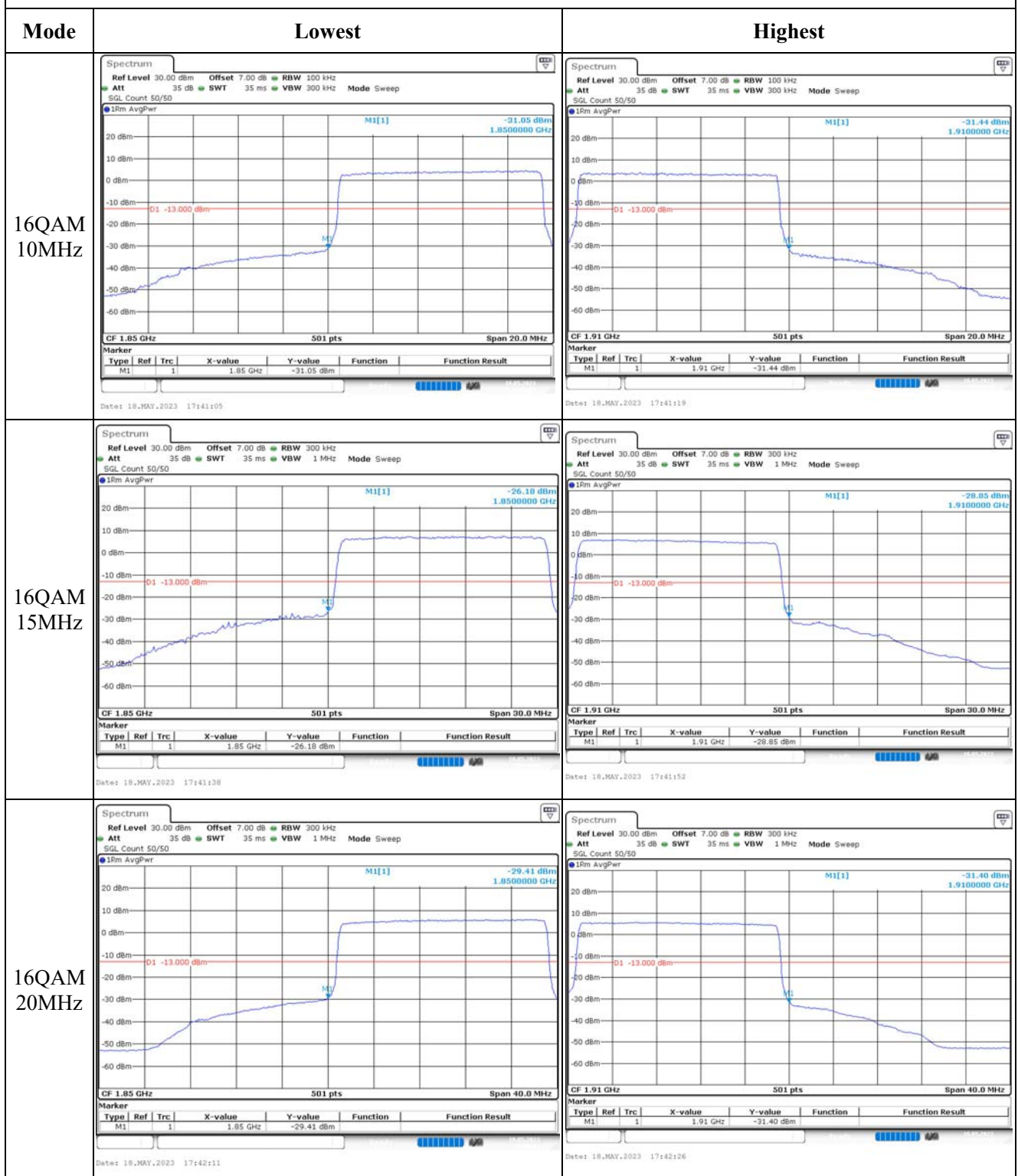
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.6 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	253A-1	Test Date:	2023/5/18~2023/5/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~27.2	Relative Humidity: (%)	42~61	ATM Pressure: (kPa)	100.5~101.9
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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	2022-07-15	2023-07-14
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	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-03-31	2024-03-30
UNI-T	Multimeter	UT39A+	C210582554	2022-09-29	2023-09-28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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).

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

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	23.4	23.47	23.89	24.2	30
	RB1#3	23.5	23.63	23.81		
	RB1#5	23.5	23.57	23.84		
	RB3#0	23.6	23.62	23.73		
	RB3#3	23.61	23.64	23.72		
	RB6#0	22.4	22.65	22.62		
1.4MHz 16QAM	RB1#0	22.53	23.37	22.67	23.68	30
	RB1#3	22.56	23.37	22.71		
	RB1#5	22.56	23.32	22.79		
	RB3#0	22.45	22.52	22.7		
	RB3#3	22.45	22.52	22.75		
	RB6#0	21.63	21.8	22.04		
3MHz QPSK	RB1#0	23.75	23.48	23.56	24.06	30
	RB1#8	23.67	23.58	23.59		
	RB1#14	23.68	23.46	23.57		
	RB6#0	22.65	22.72	22.66		
	RB6#9	22.51	22.63	22.63		
	RB15#0	22.66	22.71	22.66		
3MHz 16QAM	RB1#0	22.81	22.5	22.78	23.16	30
	RB1#8	22.78	22.5	22.77		
	RB1#14	22.76	22.46	22.85		
	RB6#0	21.85	21.91	21.72		
	RB6#9	21.83	21.92	21.74		
	RB15#0	21.76	21.8	21.84		
5MHz QPSK	RB1#0	23.75	23.66	23.69	24.14	30
	RB1#13	23.74	23.59	23.76		
	RB1#24	23.83	23.06	23.74		
	RB15#0	22.57	22.69	22.85		
	RB15#10	22.6	22.57	22.76		
	RB25#0	22.55	22.6	22.66		
5MHz 16QAM	RB1#0	22.66	22.37	21.96	23.05	30
	RB1#13	22.68	22.35	22.06		
	RB1#24	22.74	22.45	22		
	RB15#0	21.62	21.78	21.86		
	RB15#10	21.54	21.84	21.82		
	RB25#0	21.66	21.75	21.88		
10MHz QPSK	RB1#0	23.58	23.64	23.58	24.03	30
	RB1#25	23.64	23.68	23.67		
	RB1#49	23.65	23.32	23.72		

	RB25#0	22.59	22.73	22.7		
	RB25#25	22.69	22.64	22.65		
	RB50#0	22.73	22.71	22.81		
10MHz 16QAM	RB1#0	23.39	22.18	23.05	23.73	30
	RB1#25	23.37	22.16	23.08		
	RB1#49	23.42	22.13	23.08		
	RB25#0	21.73	21.92	21.82		
	RB25#25	21.83	21.9	21.8		
	RB50#0	21.74	21.81	22		
15MHz QPSK	RB1#0	23.59	23.53	23.07	24.01	30
	RB1#38	23.6	23.53	23.67		
	RB1#74	23.63	23.12	23.7		
	RB36#0	22.59	22.61	22.76		
	RB36#39	22.63	22.66	22.74		
	RB75#0	22.52	22.62	22.7		
15MHz 16QAM	RB1#0	23.36	22.97	22.98	23.68	30
	RB1#38	23.37	22.98	23.06		
	RB1#74	23.34	23.02	23.06		
	RB36#0	21.75	21.81	21.84		
	RB36#39	21.76	21.77	21.83		
	RB75#0	21.83	21.77	21.77		
20MHz QPSK	RB1#0	23.7	23.74	23.46	24.35	30
	RB1#50	23.73	23.67	24.01		
	RB1#99	23.78	23.62	24.04		
	RB50#0	22.62	22.78	22.69		
	RB50#50	22.71	22.72	22.85		
	RB100#0	22.6	22.62	22.73		
20MHz 16QAM	RB1#0	22.69	23.45	22.12	23.81	30
	RB1#50	22.63	23.47	22.24		
	RB1#99	22.7	23.5	22.28		
	RB50#0	21.71	21.8	21.87		
	RB50#50	21.85	21.76	21.96		
	RB100#0	21.64	21.87	21.82		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G_T(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	4.58	3.8	5.3	13
	RB100#0	4.7	4.7	4.96	13
20MHz 16QAM	RB1#0	5.71	4.9	5.57	13
	RB100#0	5.65	5.62	5.94	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	1.102	1.254	1.260	1.260
1.4MHz 16QAM	1.11	1.096	1.102	1.27	1.254	1.260
3MHz QPSK	2.707	2.683	2.695	3.000	3.024	2.988
3MHz 16QAM	2.695	2.695	2.695	2.976	3.024	3.012
5MHz QPSK	4.511	4.511	4.531	5.000	4.980	5.000
5MHz 16QAM	4.531	4.551	4.491	5.000	5.040	5.000
10MHz QPSK	8.902	8.942	8.982	9.760	9.800	9.800
10MHz 16QAM	8.982	8.942	8.942	9.800	9.840	9.800
15MHz QPSK	13.413	13.533	13.533	15.000	15.060	15.060
15MHz 16QAM	13.473	13.533	13.533	15.000	15.060	15.060
20MHz QPSK	17.884	18.044	17.964	19.520	19.840	19.680
20MHz 16QAM	17.964	18.044	18.044	19.760	19.760	19.760
Note: The test plots please refer to the Plots of Occupied Bandwidth						

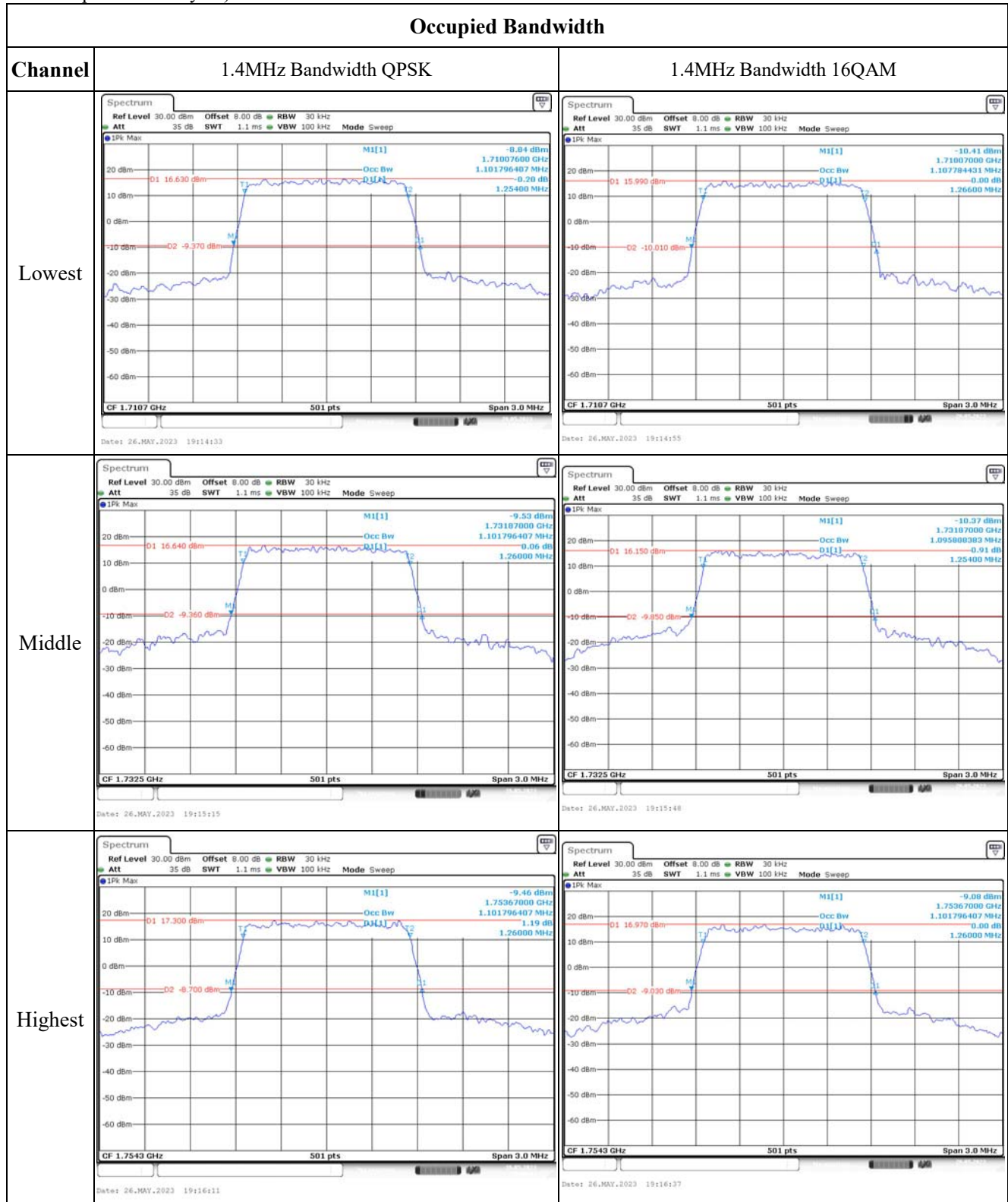
FCC §2.1051, § 27.53:Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

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.

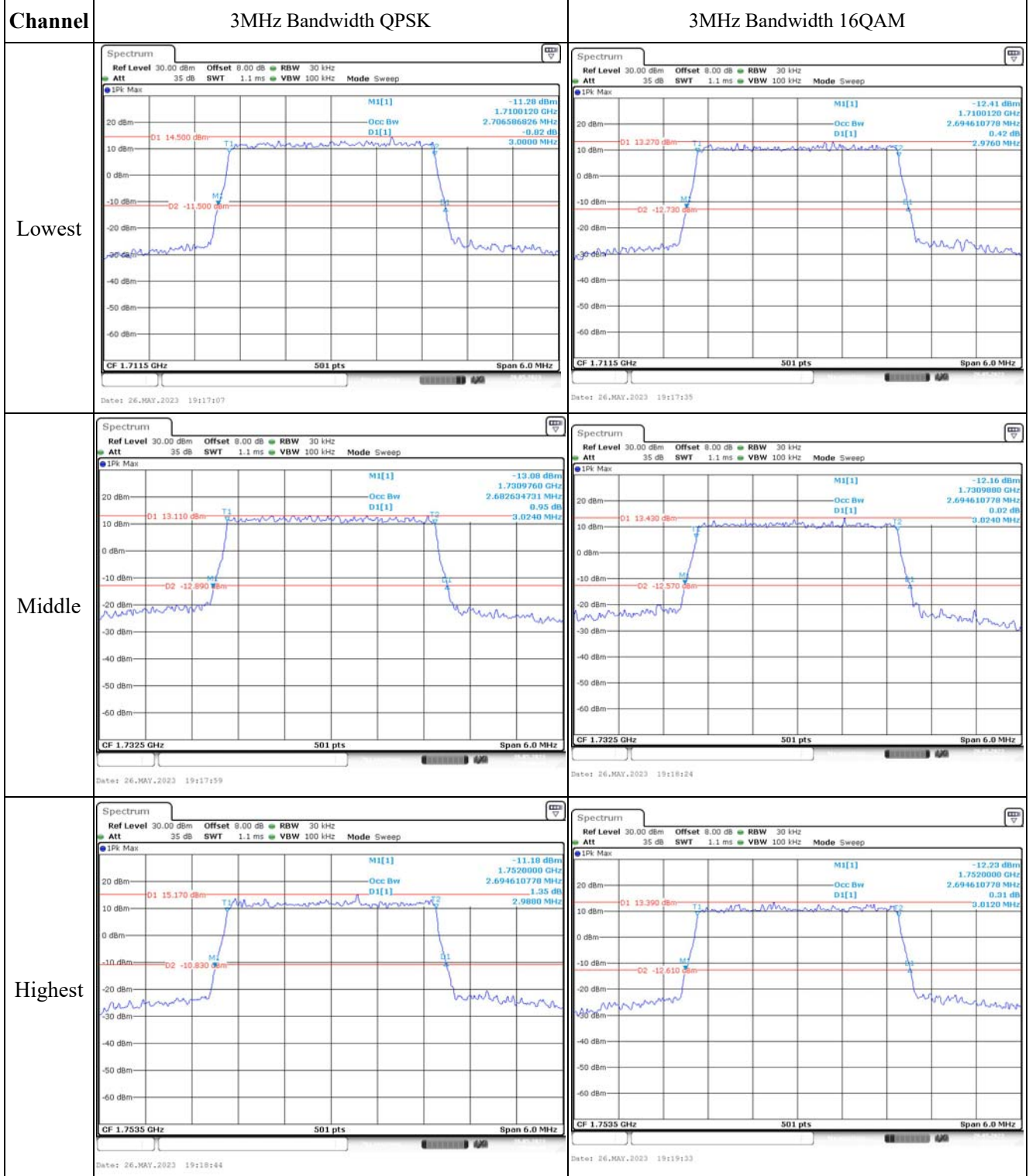
FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	1711.023	1710.00	1754.011	1755
	-20	3.7	1711.003	1710.00	1754.032	1755
	-10	3.7	1711.068	1710.00	1754.006	1755
	0	3.7	1711.036	1710.00	1754.021	1755
	10	3.7	1711.094	1710.00	1754.080	1755
	20	3.7	1711.058	1710.00	1754.022	1755
	30	3.7	1711.078	1710.00	1754.039	1755
	40	3.7	1711.033	1710.00	1754.033	1755
	50	3.7	1711.075	1710.00	1754.071	1755
Frequency Stability vs. Voltage	20	3.6	1711.076	1710.00	1754.038	1755
	20	4.35	1711.021	1710.00	1754.041	1755
					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	3.7	1711.026	1710.00	1754.046	1755
	-20	3.7	1711.060	1710.00	1754.048	1755
	-10	3.7	1711.030	1710.00	1754.047	1755
	0	3.7	1711.027	1710.00	1754.084	1755
	10	3.7	1711.009	1710.00	1754.054	1755
	20	3.7	1711.058	1710.00	1754.102	1755
	30	3.7	1711.100	1710.00	1754.087	1755
	40	3.7	1711.053	1710.00	1754.072	1755
	50	3.7	1711.025	1710.00	1754.094	1755
Frequency Stability vs. Voltage	20	3.6	1711.018	1710.00	1754.067	1755
	20	4.35	1711.066	1710.00	1754.009	1755
					Result:	Pass

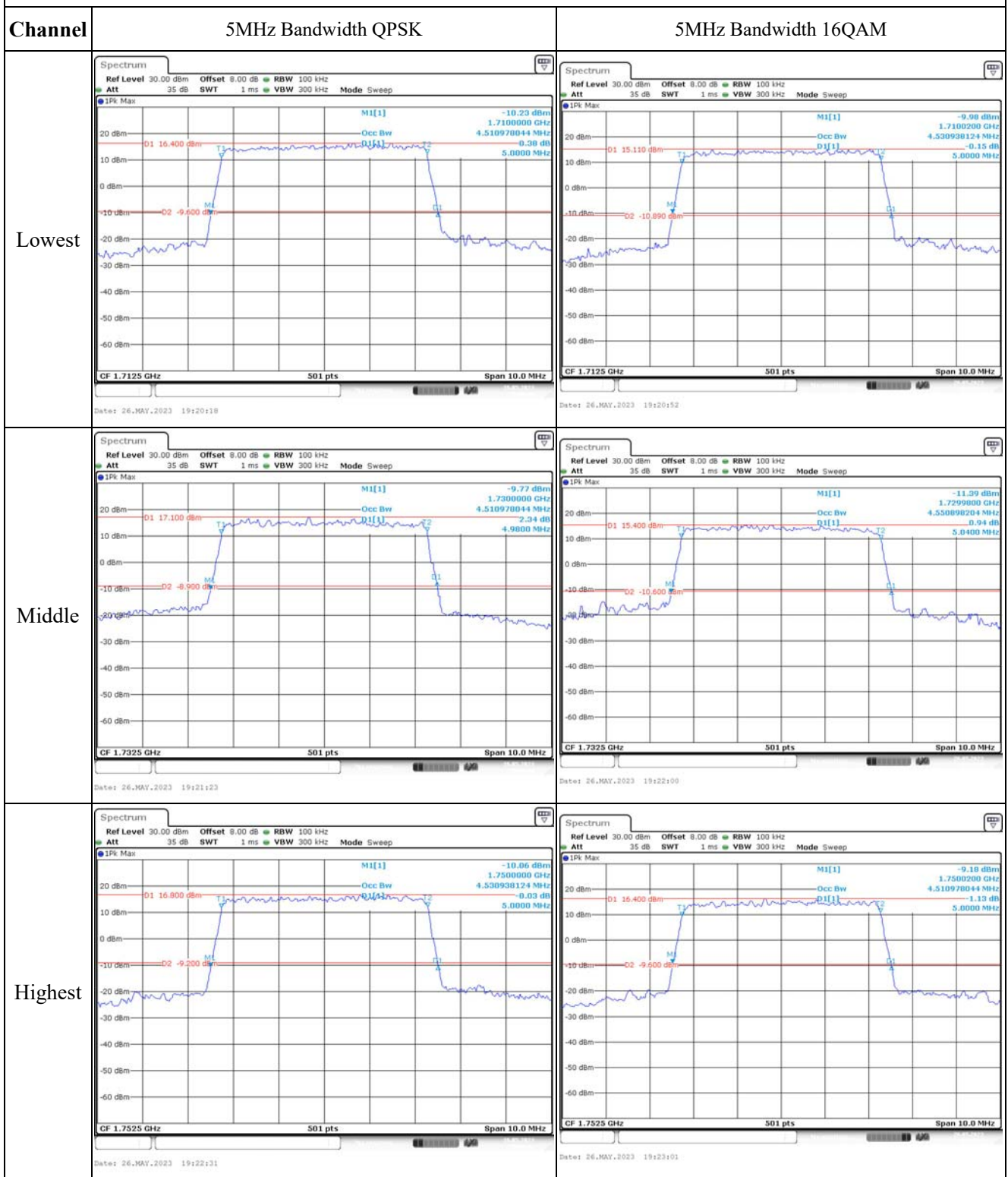
Test Plots(Note: The 8dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):



Occupied Bandwidth



Occupied Bandwidth



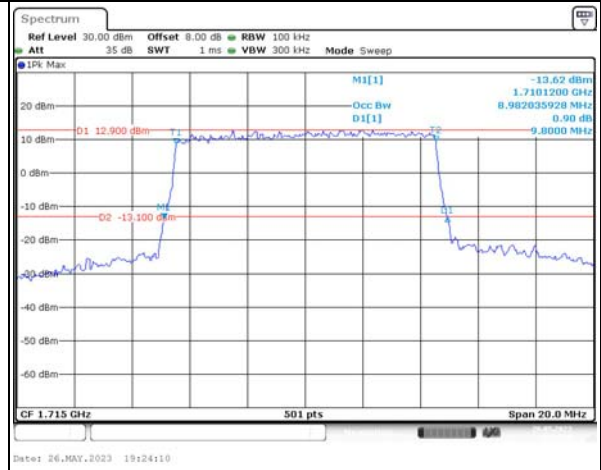
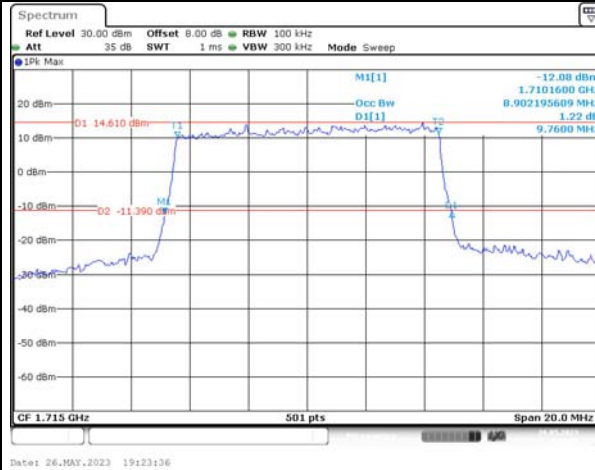
Occupied Bandwidth

Channel

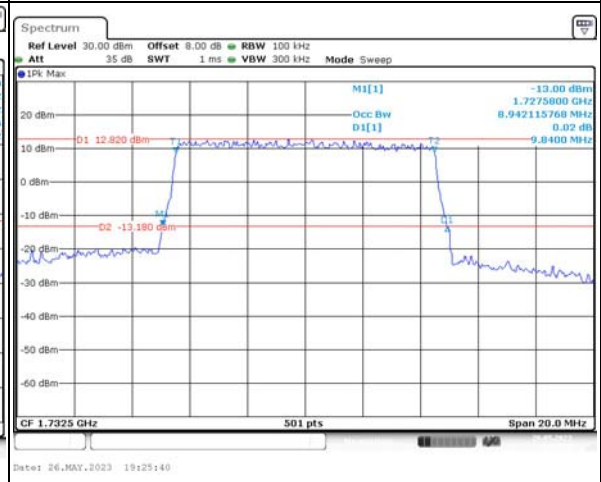
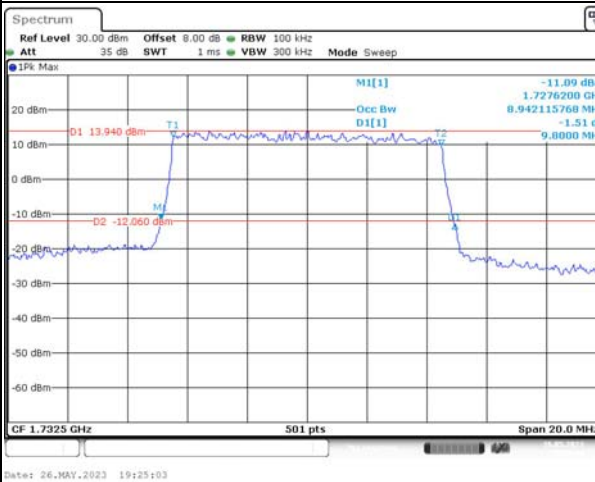
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

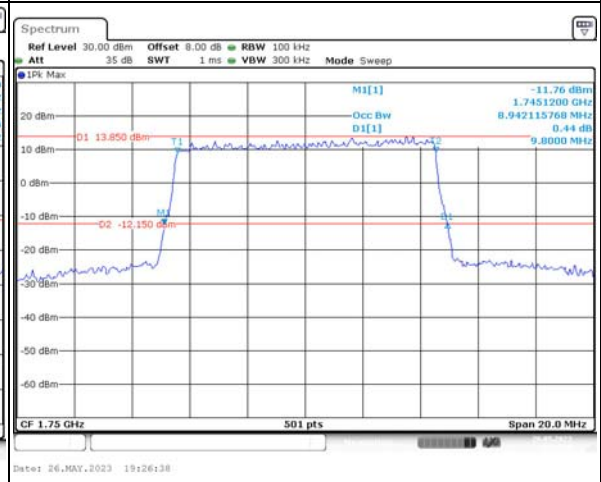
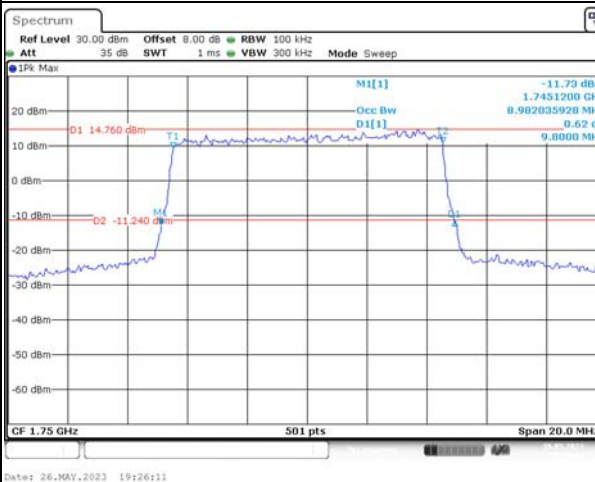
Lowest



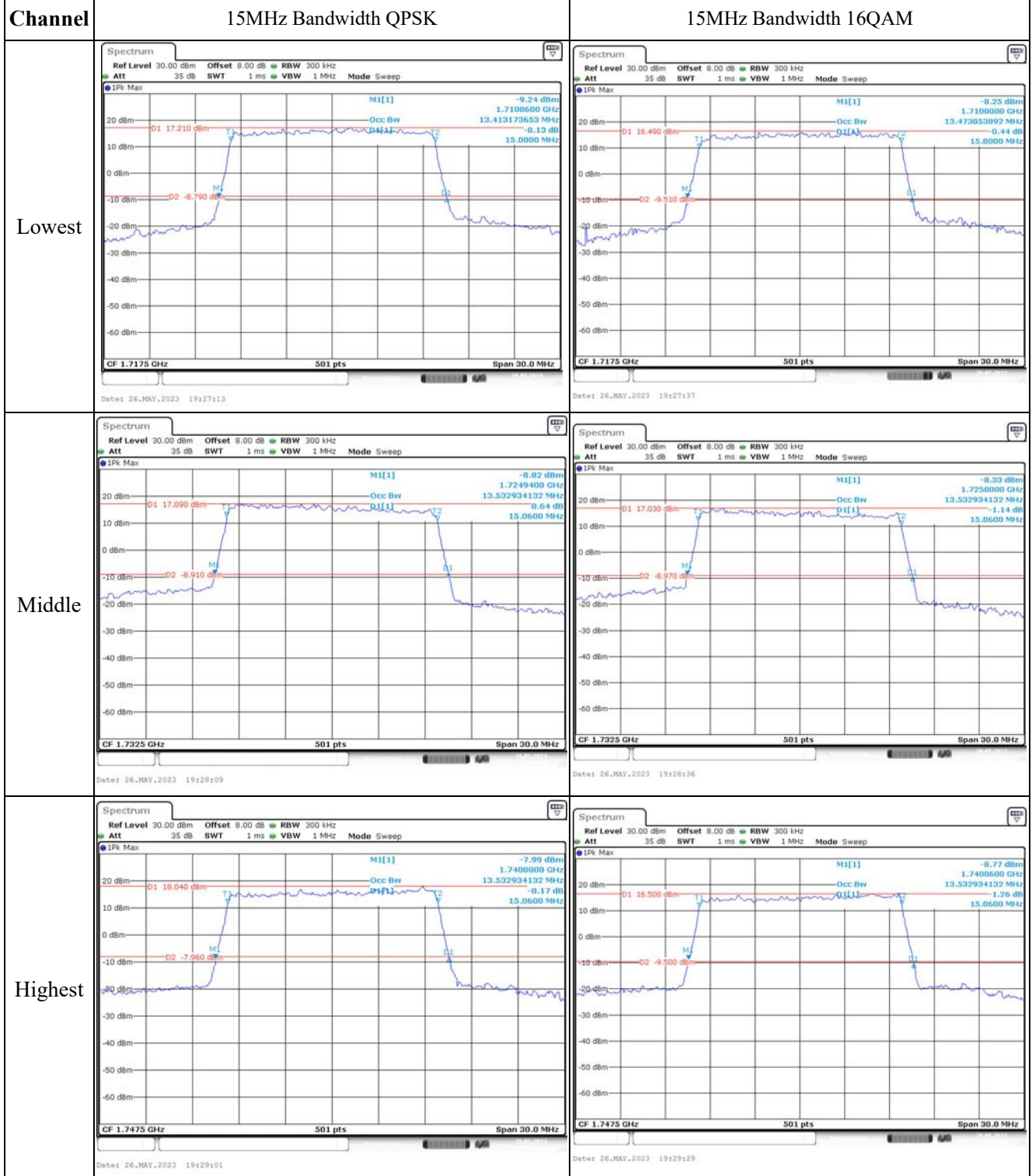
Middle



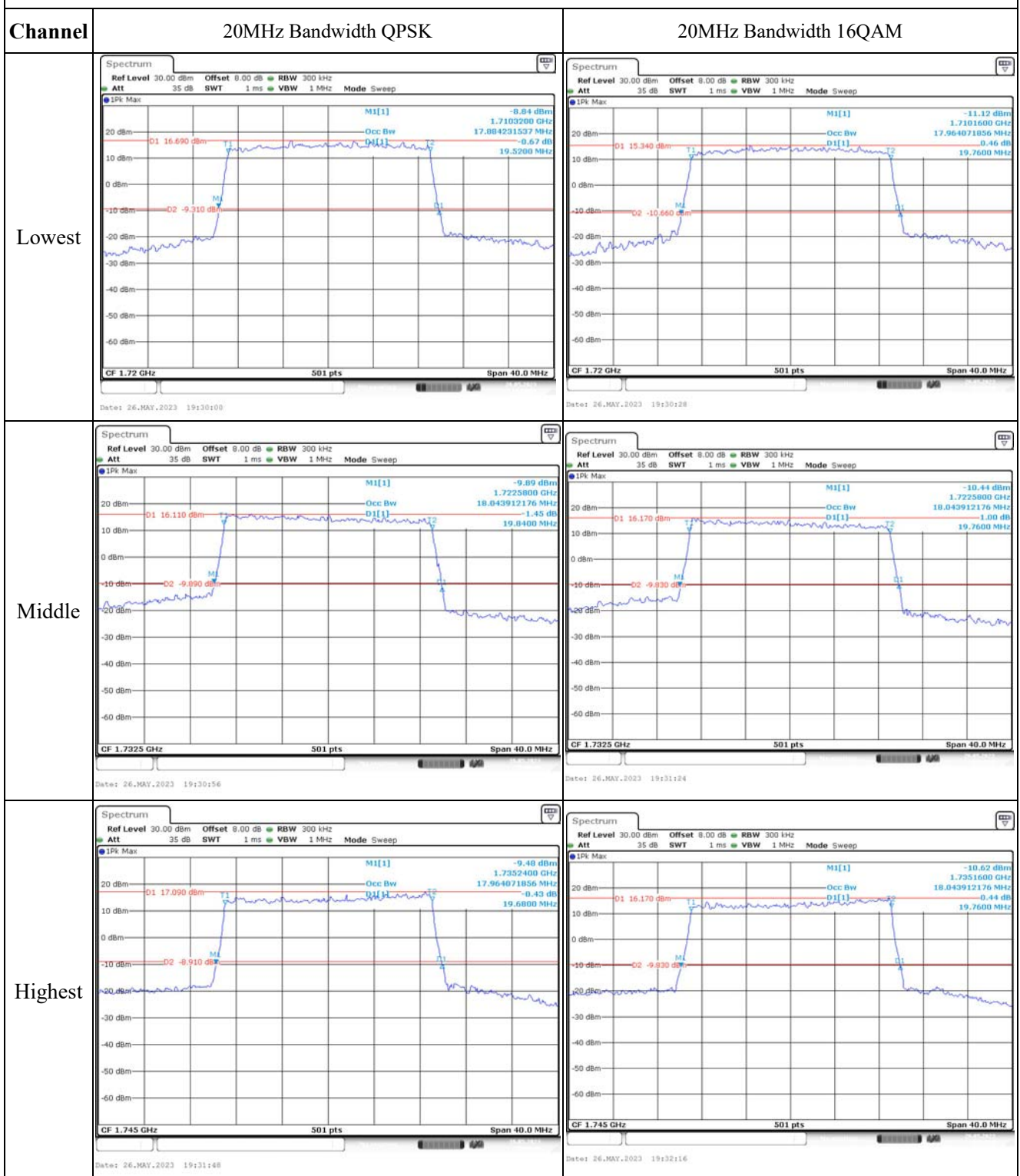
Highest



Occupied Bandwidth



Occupied Bandwidth

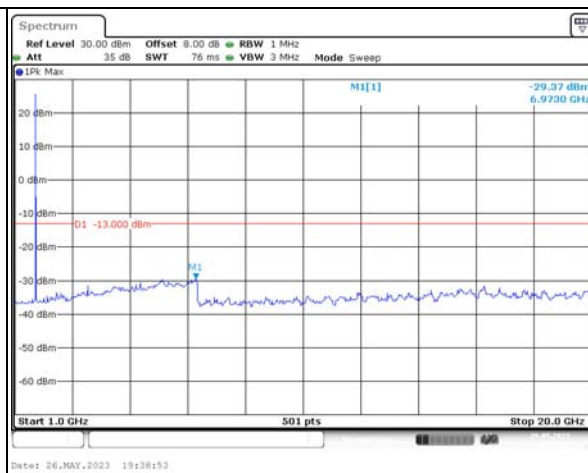
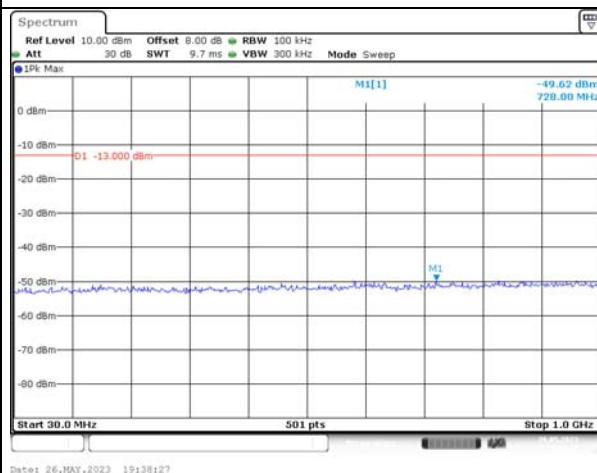


Spurious Emissions at Antenna Terminal

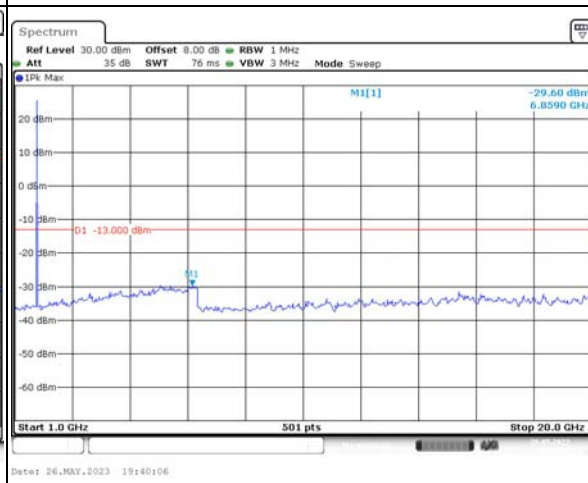
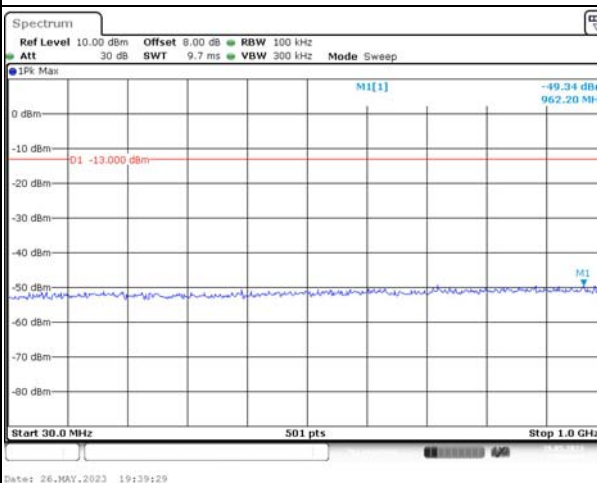
Channel

1.4MHz Bandwidth QPSK

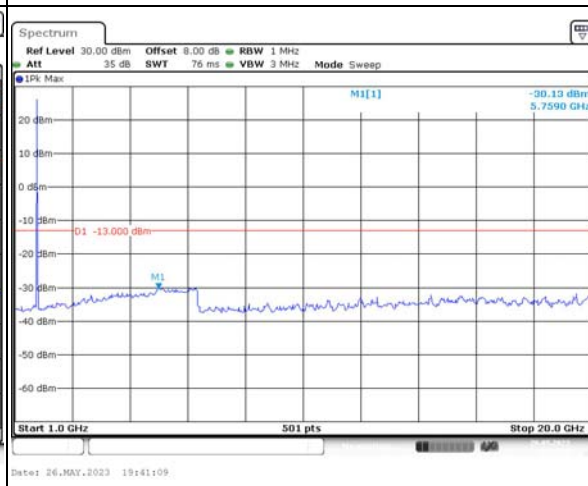
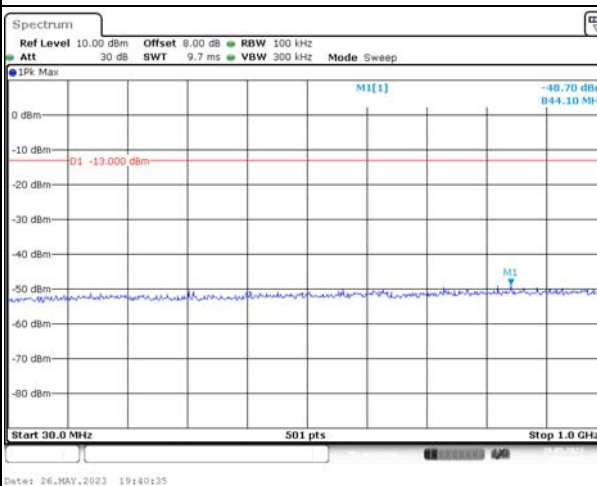
Lowest



Middle



Highest

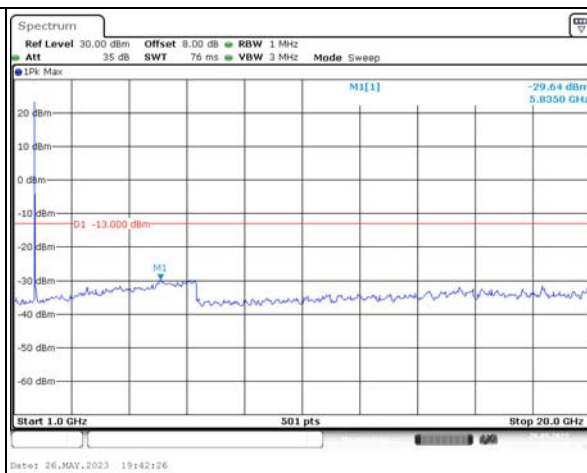
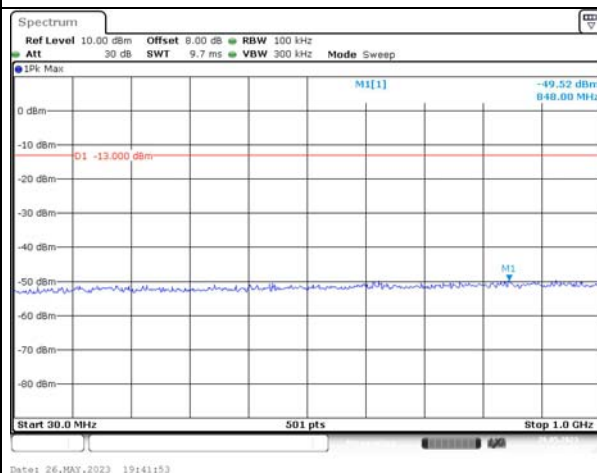


Spurious Emissions at Antenna Terminal

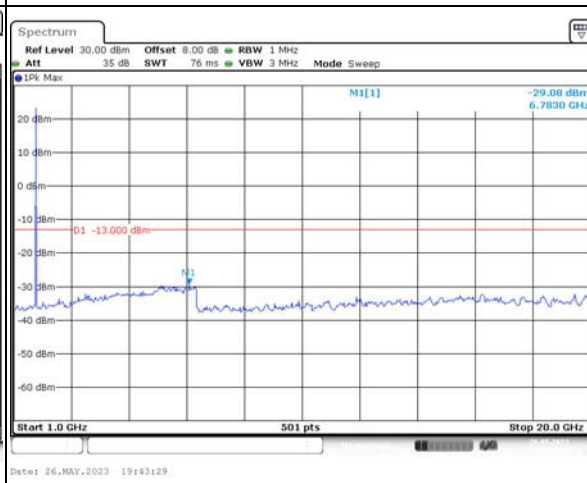
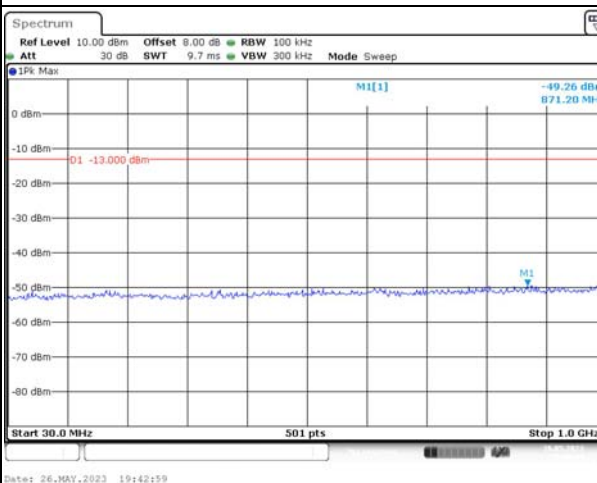
Channel

3MHz Bandwidth QPSK

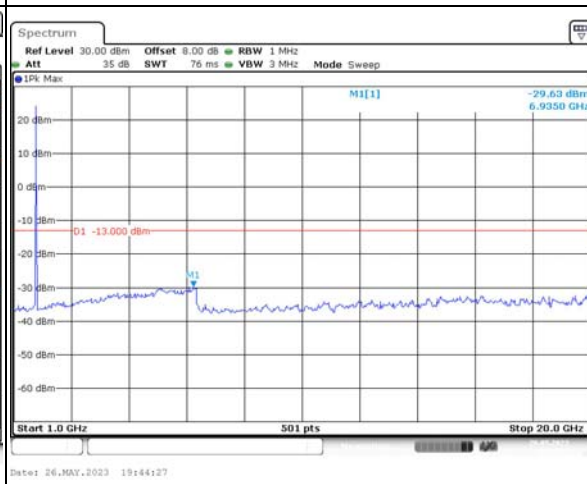
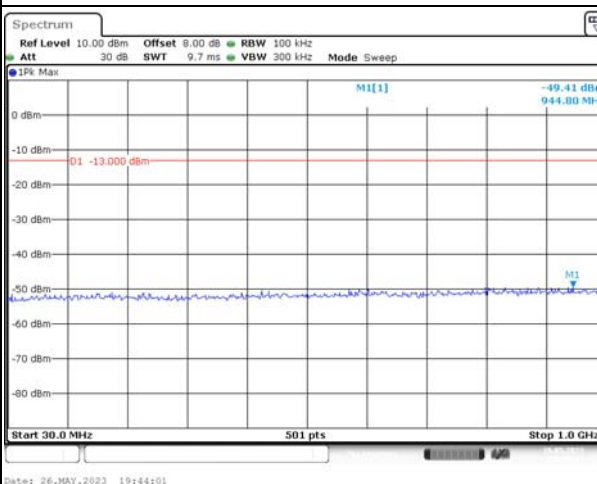
Lowest



Middle



Highest

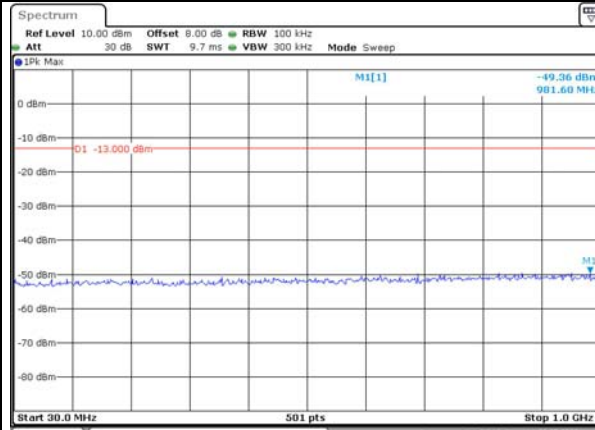


Spurious Emissions at Antenna Terminal

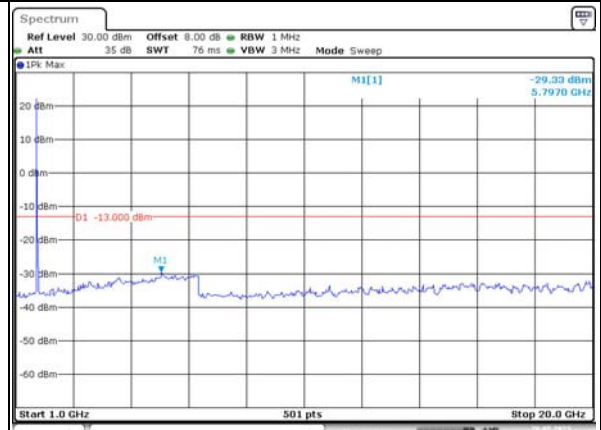
Channel

5MHz Bandwidth QPSK

Lowest

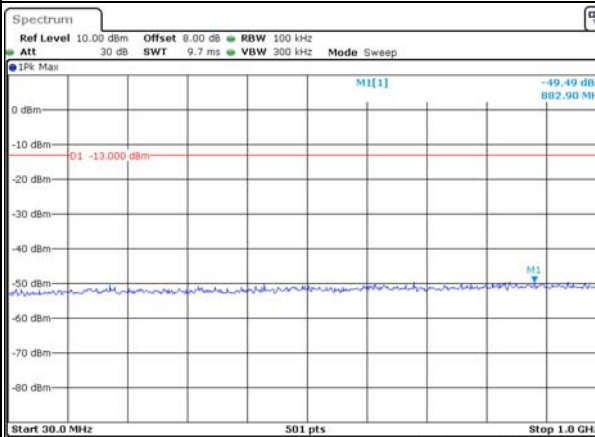


Date: 26.MAY.2023 19:45:04

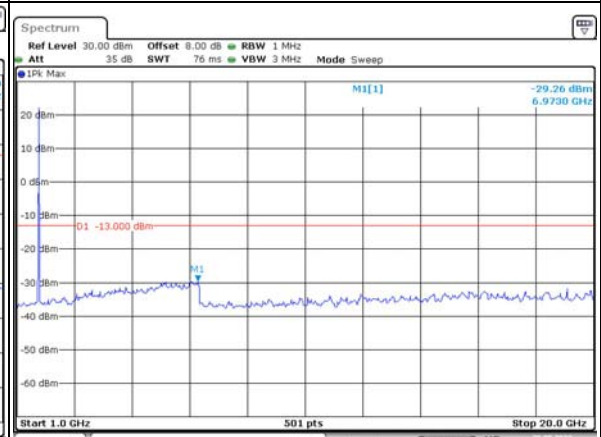


Date: 26.MAY.2023 19:45:04

Middle

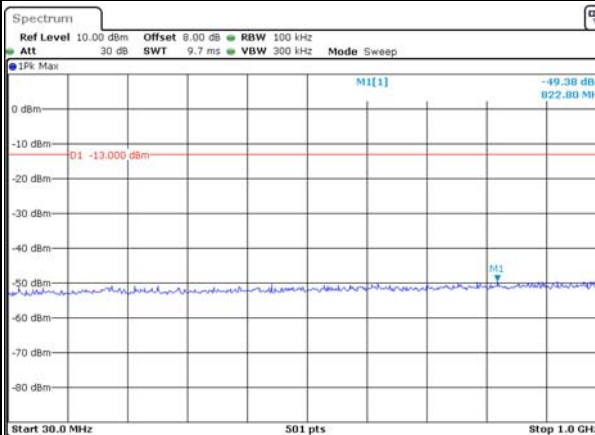


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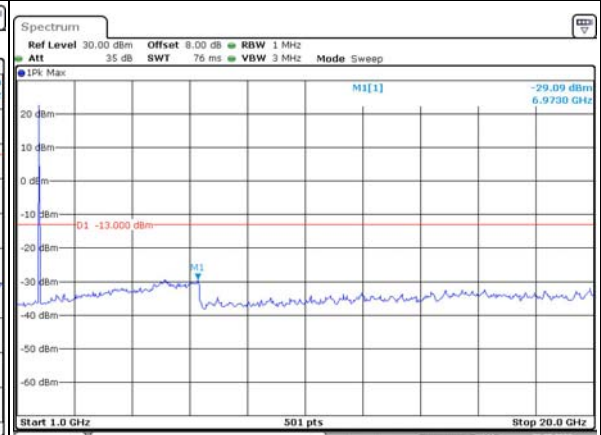


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Highest



Date: 26.MAY.2023 19:47:09



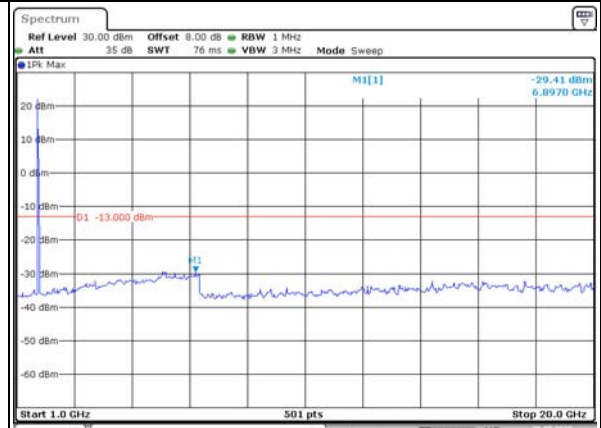
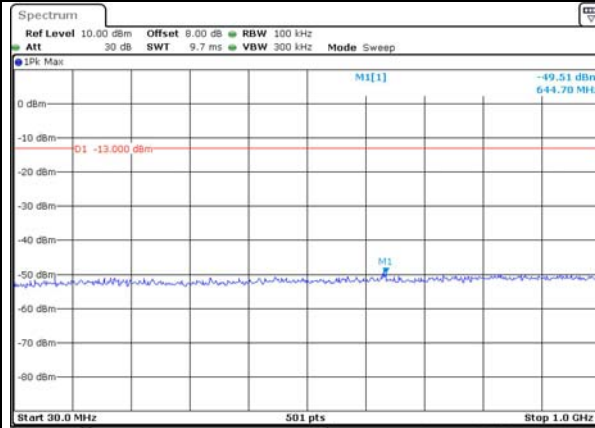
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Spurious Emissions at Antenna Terminal

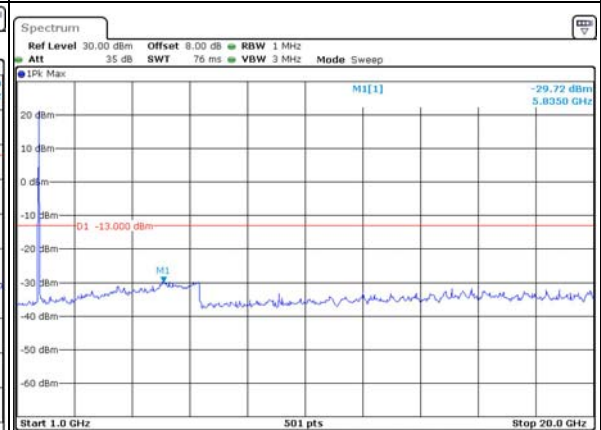
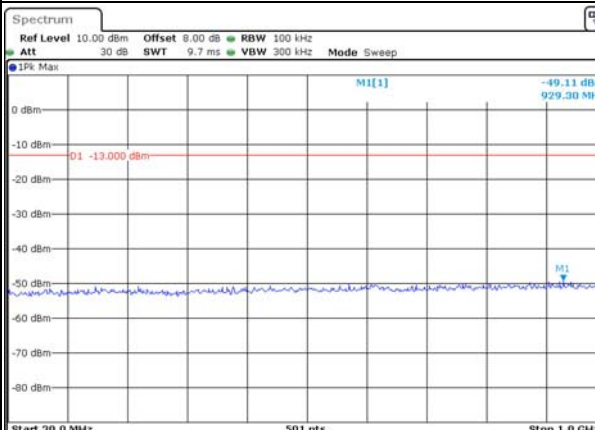
Channel

10MHz Bandwidth QPSK

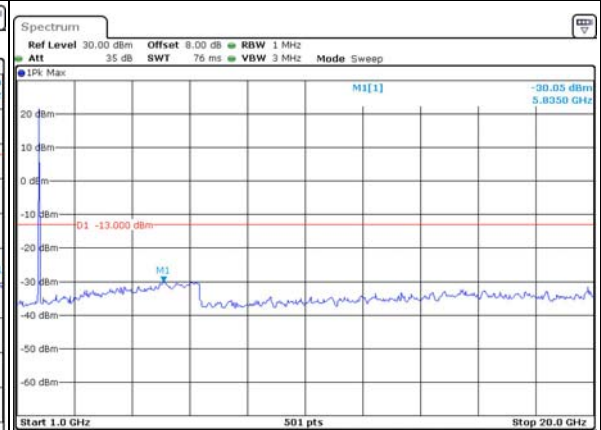
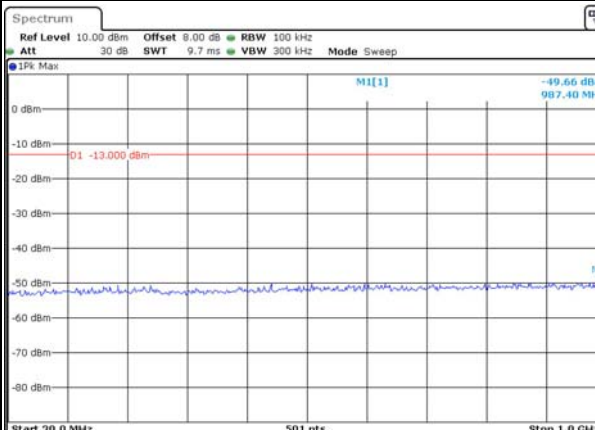
Lowest



Middle



Highest

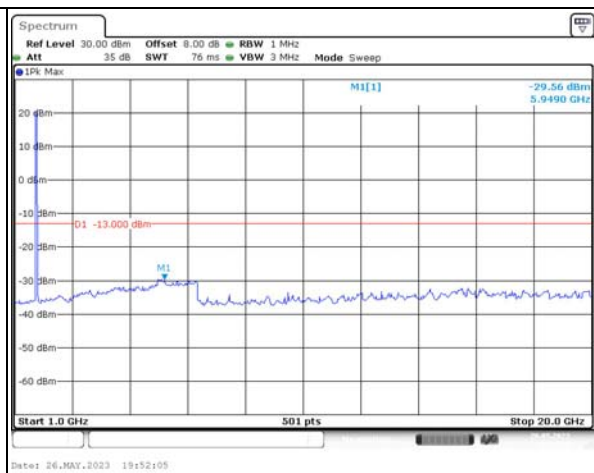
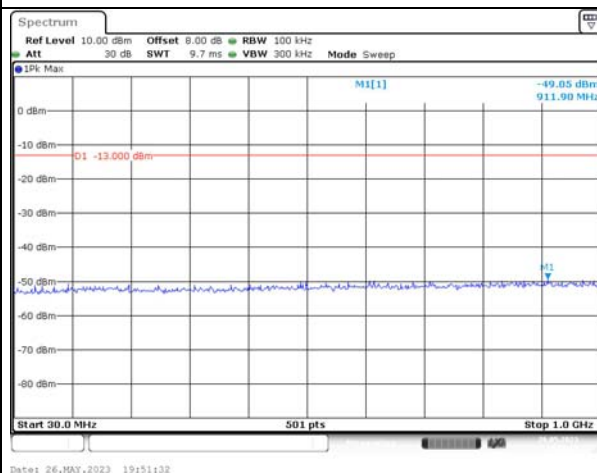


Spurious Emissions at Antenna Terminal

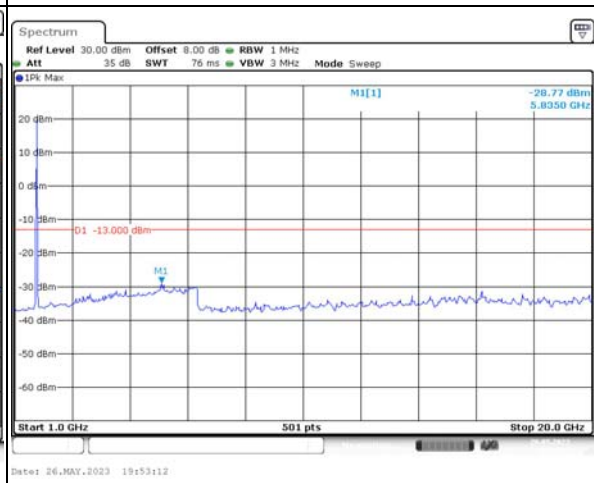
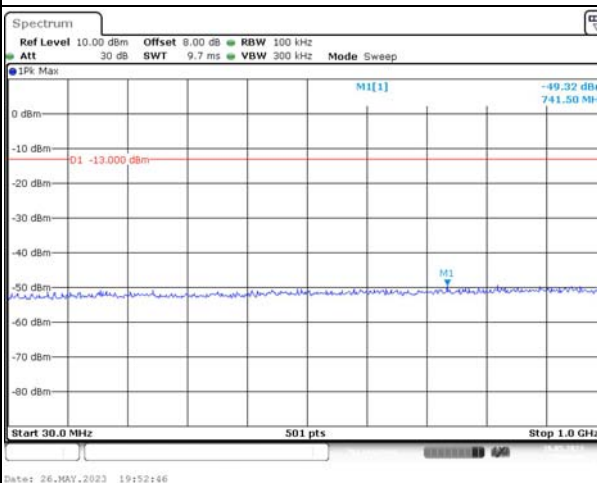
Channel

15MHz Bandwidth QPSK

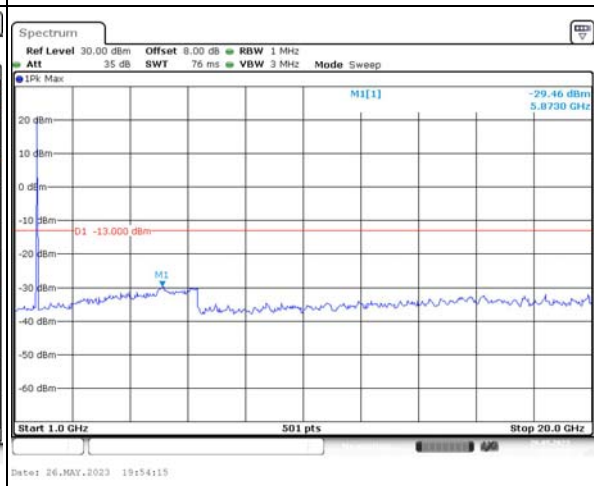
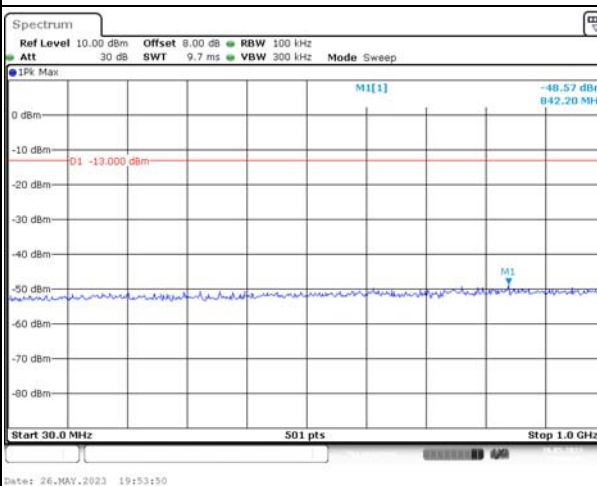
Lowest



Middle



Highest

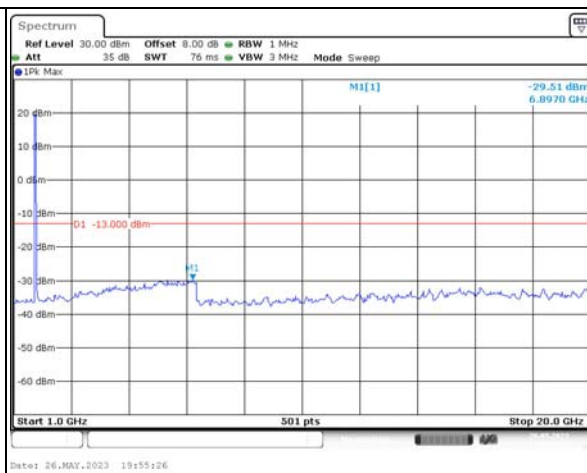
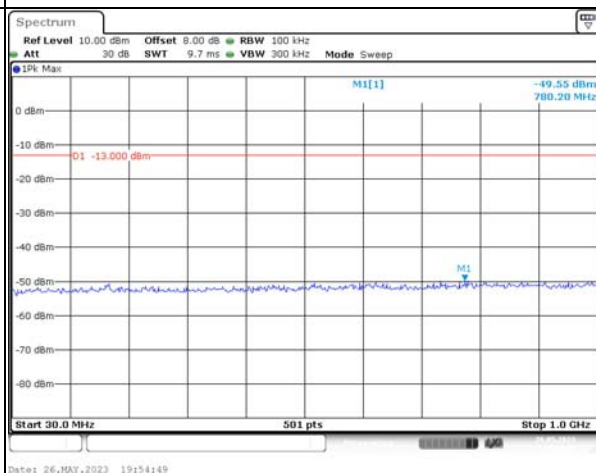


Spurious Emissions at Antenna Terminal

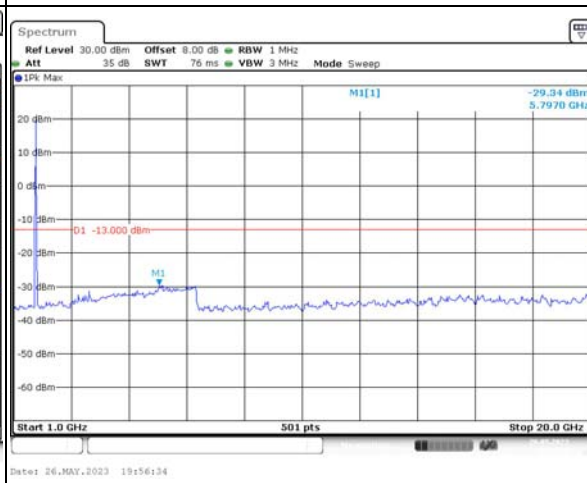
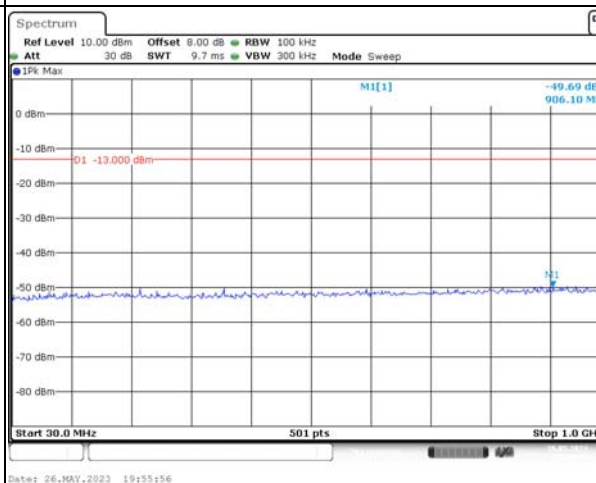
Channel

20MHz Bandwidth QPSK

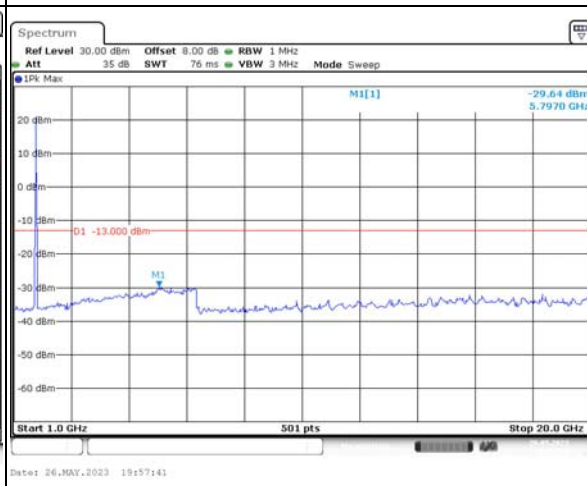
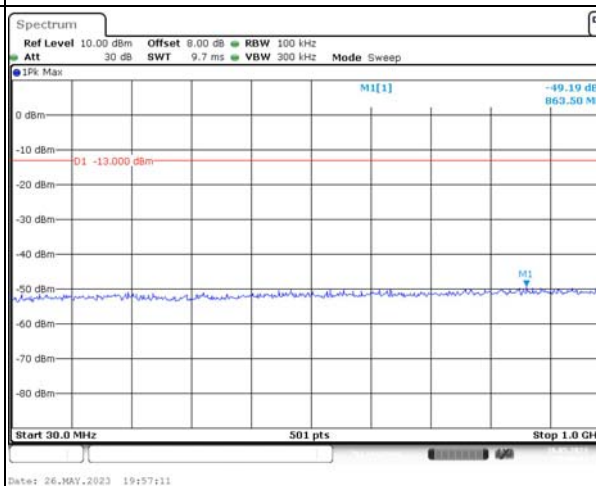
Lowest



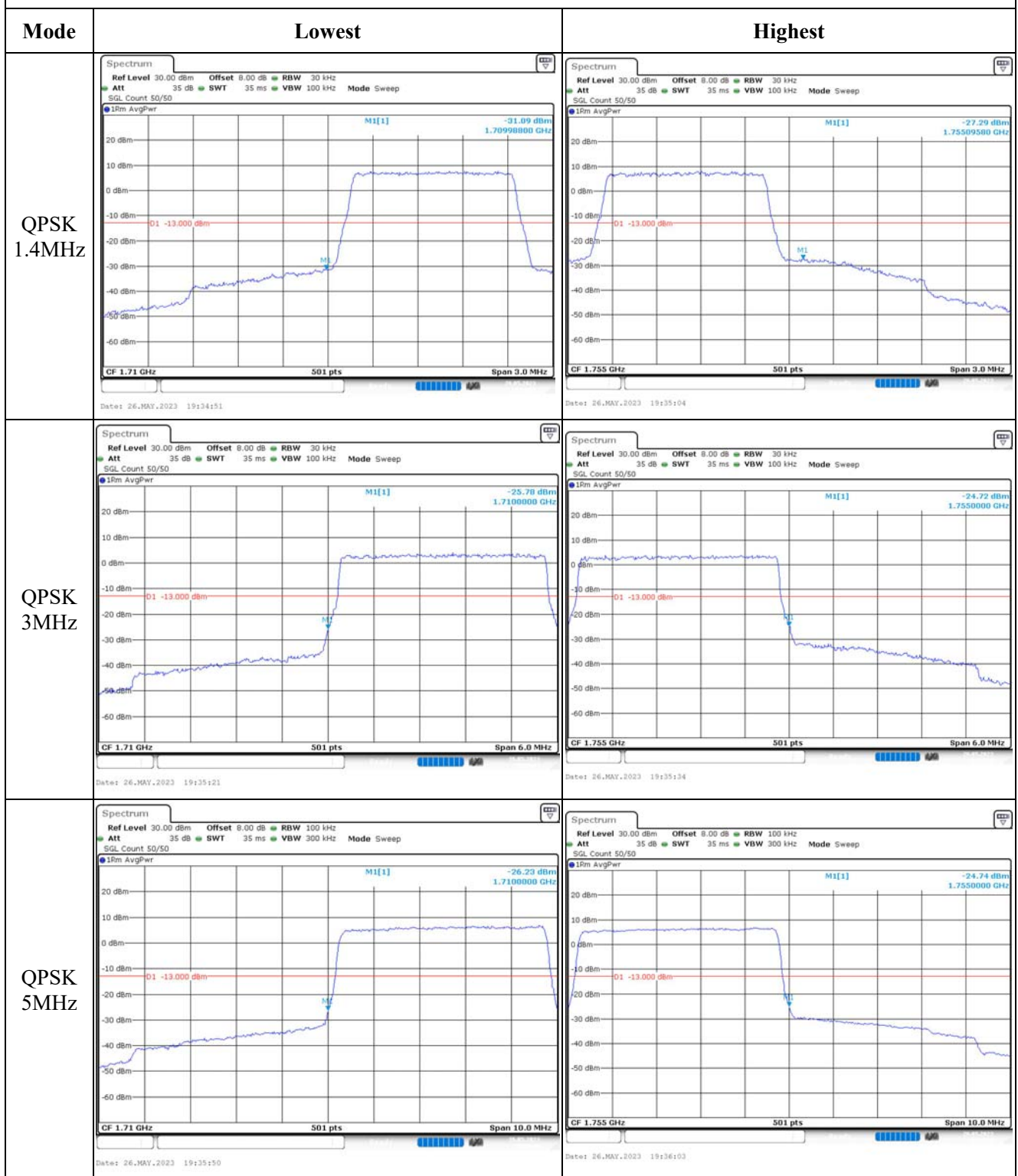
Middle



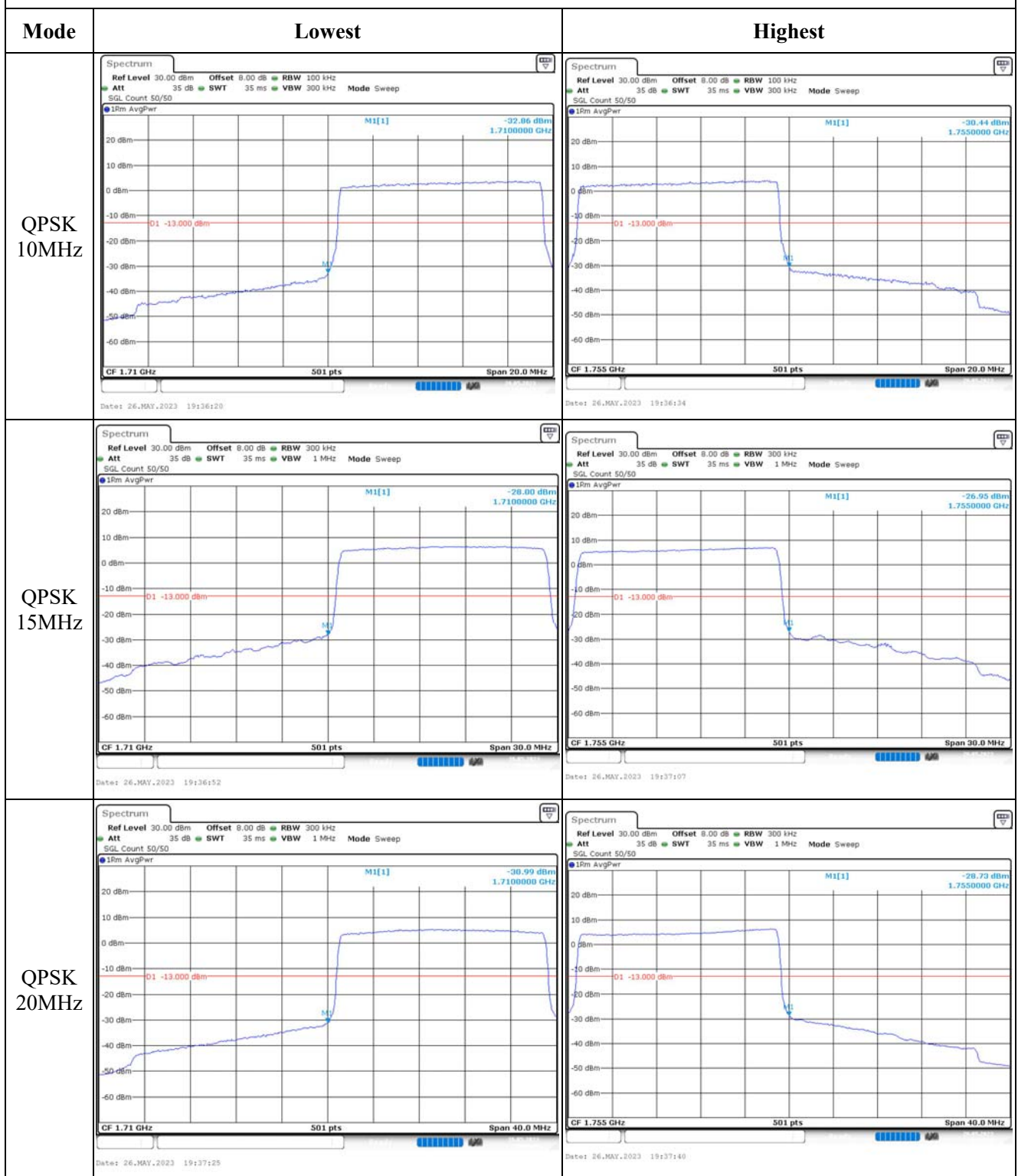
Highest



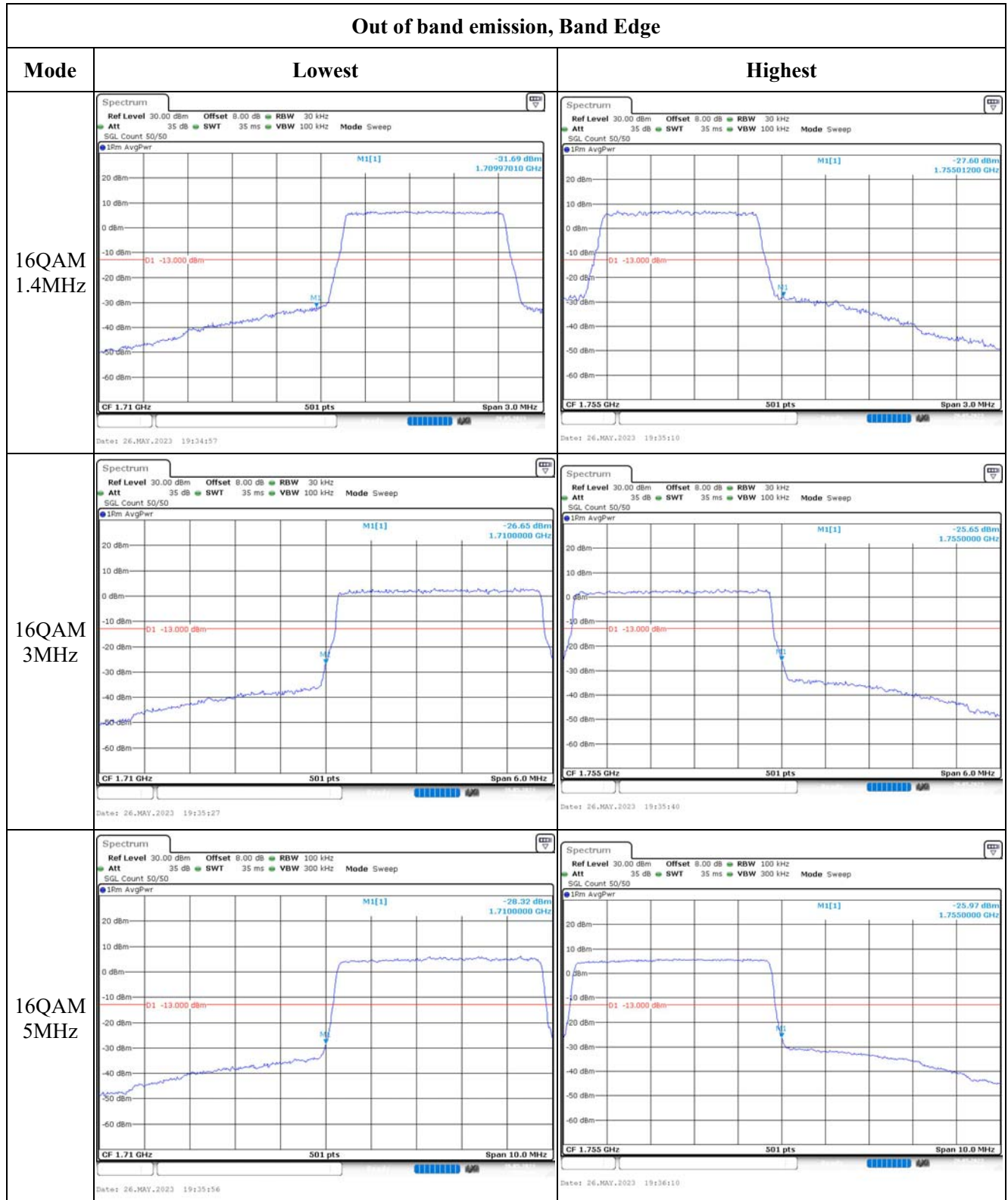
Out of band emission, Band Edge



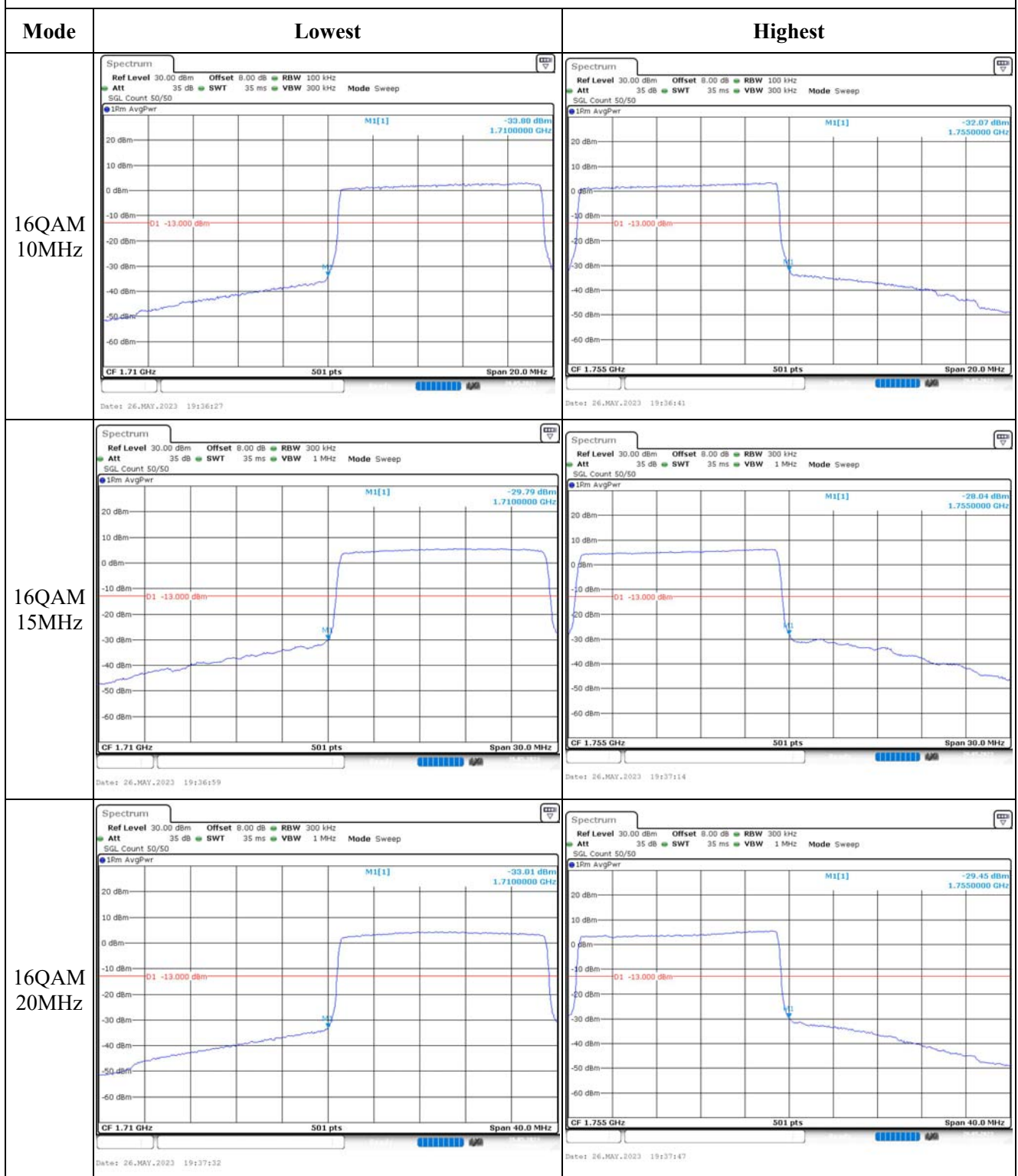
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	253A-1	Test Date:	2023/5/18~2023/5/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~27.2	Relative Humidity: (%)	42~61	ATM Pressure: (kPa)	100.5~101.9
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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	2022-07-15	2023-07-14
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	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-03-31	2024-03-30
UNI-T	Multimeter	UT39A+	C210582554	2022-09-29	2023-09-28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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).

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	23.28	23	23.13	20	38.45
	RB1#3	23.23	22.93	23.22		
	RB1#5	23.21	22.99	23.18		
	RB3#0	23.23	23.13	23.17		
	RB3#3	23.33	23.19	23.11		
	RB6#0	22.4	22.17	22.15		
1.4MHz 16QAM	RB1#0	22.93	21.65	22.54	19.62	38.45
	RB1#3	22.95	21.79	22.55		
	RB1#5	22.89	21.78	22.6		
	RB3#0	22.19	22.29	21.92		
	RB3#3	22.17	22.25	22.01		
	RB6#0	21.82	21.32	21.15		
3MHz QPSK	RB1#0	23.22	23.13	23.08	20.04	38.45
	RB1#8	23.21	22.99	23.05		
	RB1#14	23.37	22.98	23.15		
	RB6#0	22.38	22.13	22.1		
	RB6#9	22.35	22.24	22.11		
	RB15#0	22.23	22.21	22.08		
3MHz 16QAM	RB1#0	22.98	21.68	22.26	19.65	38.45
	RB1#8	22.92	21.72	22.31		
	RB1#14	22.91	21.76	22.34		
	RB6#0	21.75	21.78	21.48		
	RB6#9	21.32	21.34	21.02		
	RB15#0	21.79	21.18	21.52		
5MHz QPSK	RB1#0	23.23	23.11	23.12	20.12	38.45
	RB1#13	23.45	22.98	23.06		
	RB1#24	23.16	23.07	23.07		
	RB15#0	22.19	22.14	22.02		
	RB15#10	22.24	22.22	22.14		
	RB25#0	22.33	22.15	22.08		
5MHz 16QAM	RB1#0	22.35	21.7	21.16	19.04	38.45
	RB1#13	22.36	21.83	21.17		
	RB1#24	22.37	21.75	21.16		
	RB15#0	21.63	21.66	21.25		
	RB15#10	21.15	21.16	21.56		
	RB25#0	21.23	21.08	21.67		
10MHz QPSK	RB1#0	23.31	23.19	23.04	19.99	38.45
	RB1#25	23.32	23.05	23		
	RB1#49	23.3	23.22	23.07		

10MHz 16QAM	RB25#0	22.29	22.17	22	19.08	38.45
	RB25#25	22.26	22.09	22.03		
	RB50#0	22.33	22.21	22.1		
	RB1#0	22.37	21.74	22.16		
	RB1#25	22.41	21.67	22.23		
	RB1#49	22.37	21.7	22.28		
	RB25#0	21.34	21.8	21.55		
	RB25#25	21.33	21.79	21.52		
	RB50#0	21.36	21.21	21.52		

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	5.16	5.68	5.3	13
	RB50#0	5.48	5.45	5.25	13
10MHz 16QAM	RB1#0	6.12	6.64	6.03	13
	RB50#0	6.32	6.38	6.14	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	1.102	1.102	1.096	1.26	1.26	1.26
1.4MHz 16QAM	1.102	1.09	1.102	1.254	1.254	1.26
3MHz QPSK	2.695	2.695	2.695	3	3.012	2.988
3MHz 16QAM	2.683	2.683	2.695	3	3.024	3
5MHz QPSK	4.511	4.491	4.511	5	4.98	5
5MHz 16QAM	4.531	4.531	4.491	5	5.02	5
10MHz QPSK	8.942	8.942	8.942	9.76	9.8	9.72
10MHz 16QAM	8.942	8.942	8.942	9.8	9.84	9.72

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.
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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.
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FCC §2.1055, §22.355: Frequency Stability					
Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.7	-22.86	-0.027	2.5
	-20	3.7	-6.97	-0.008	2.5
	-10	3.7	-5.5	-0.007	2.5
	0	3.7	6.06	0.007	2.5
	10	3.7	9.8	0.012	2.5
	20	3.7	5.03	0.006	2.5
	30	3.7	-6.62	-0.008	2.5
	40	3.7	-8.73	-0.010	2.5
	50	3.7	-7.05	-0.008	2.5
Frequency Stability vs. Voltage	20	3.6	8.99	0.011	2.5
	20	4.35	-7.17	-0.009	2.5
				Result:	Pass

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.7	-34.68	-0.041	2.5
	-20	3.7	8.1	0.010	2.5
	-10	3.7	-8.59	-0.010	2.5
	0	3.7	9.33	0.011	2.5
	10	3.7	-6.94	-0.008	2.5
	20	3.7	7.54	0.009	2.5
	30	3.7	6.43	0.008	2.5
	40	3.7	-6.17	-0.007	2.5
	50	3.7	-6.44	-0.008	2.5
Frequency Stability vs. Voltage	20	3.6	6.34	0.008	2.5
	20	4.35	-6.89	-0.008	2.5
				Result:	Pass

Test Plots(Note: The 8dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

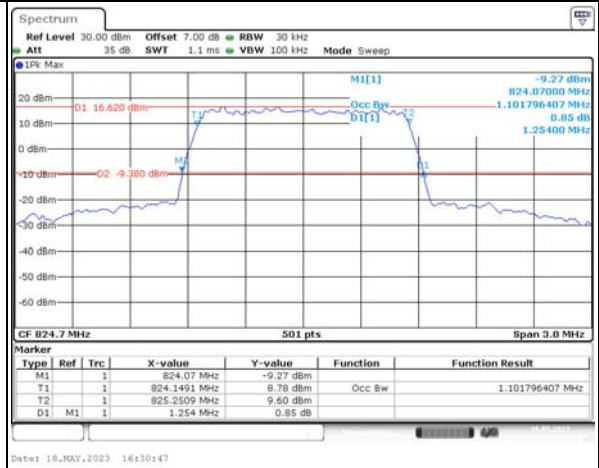
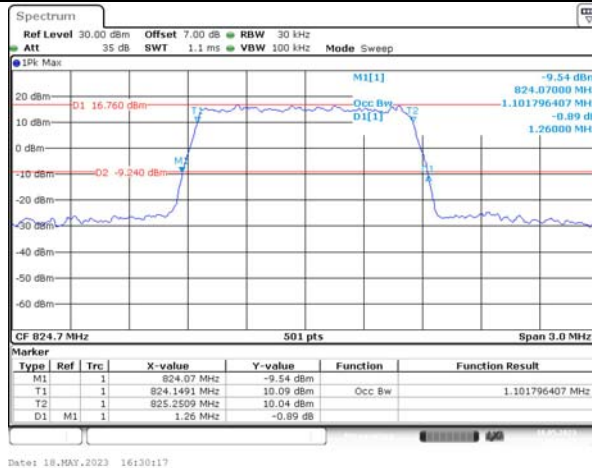
Occupied Bandwidth

Channel

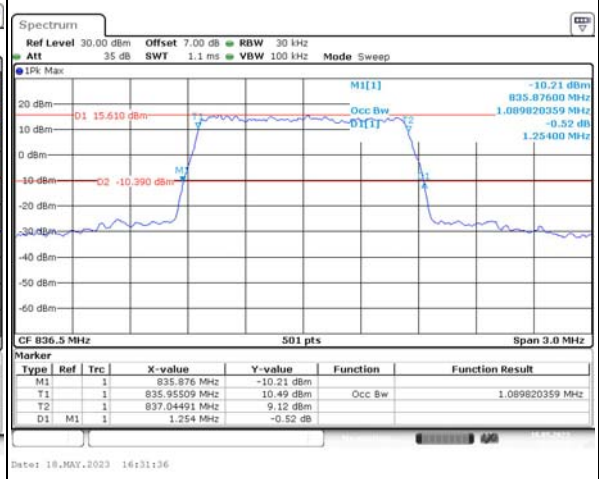
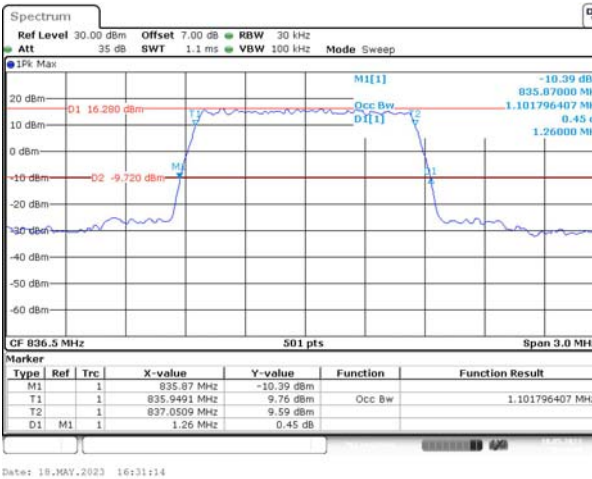
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

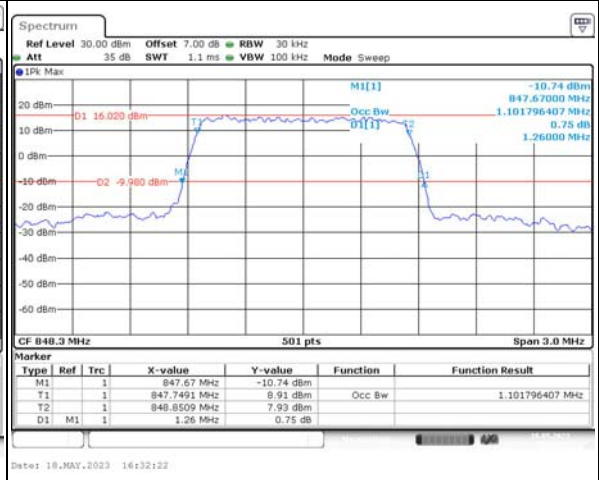
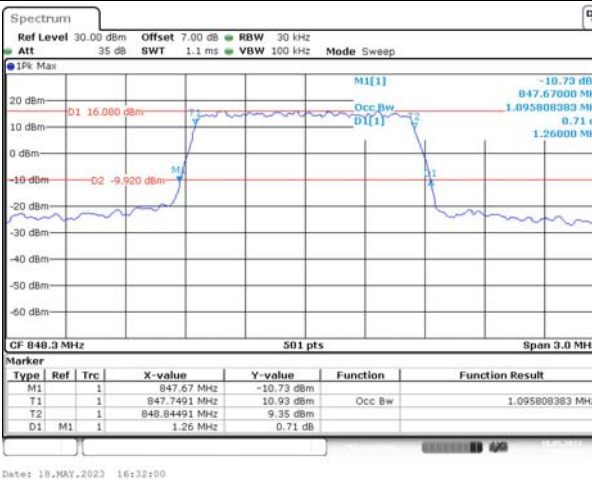
Lowest



Middle



Highest



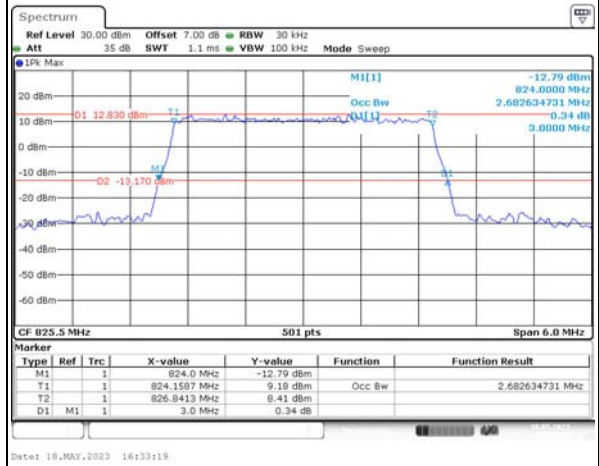
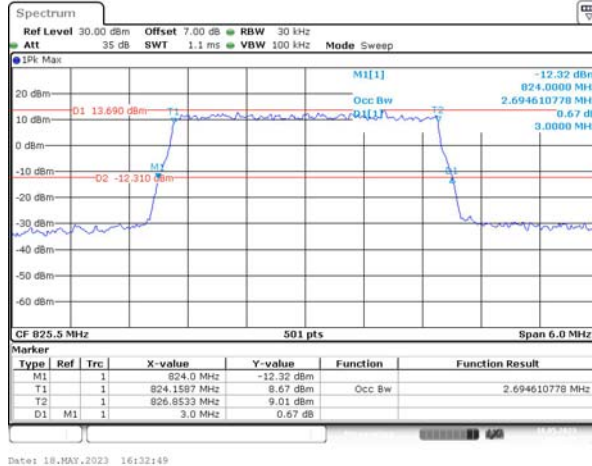
Occupied Bandwidth

Channel

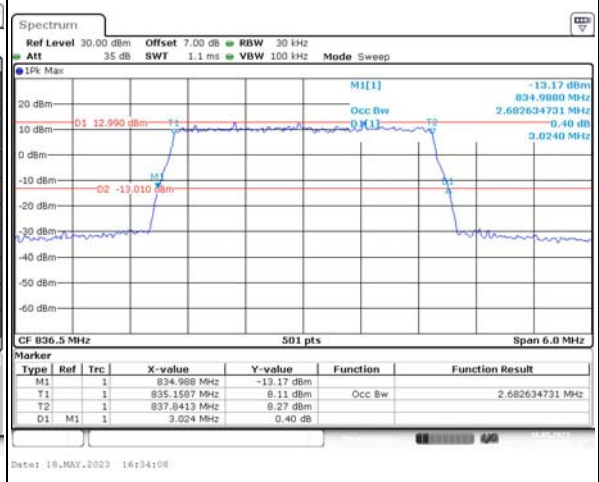
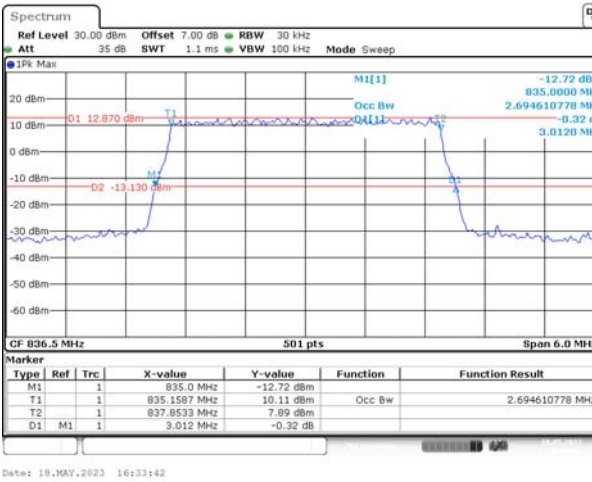
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

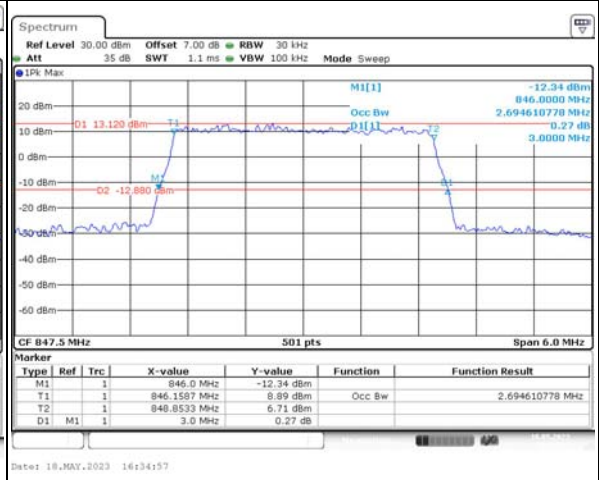
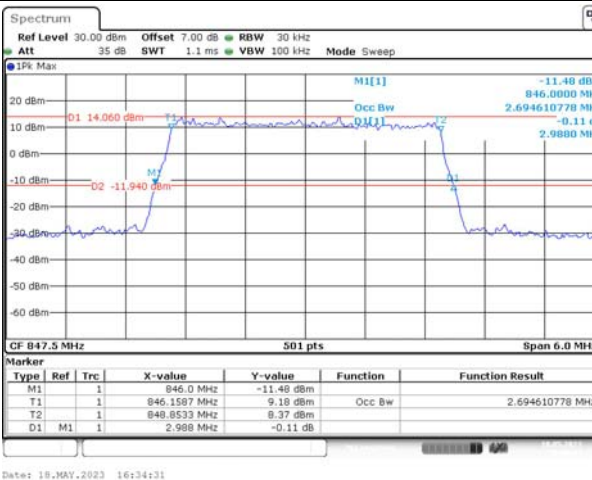
Lowest



Middle



Highest



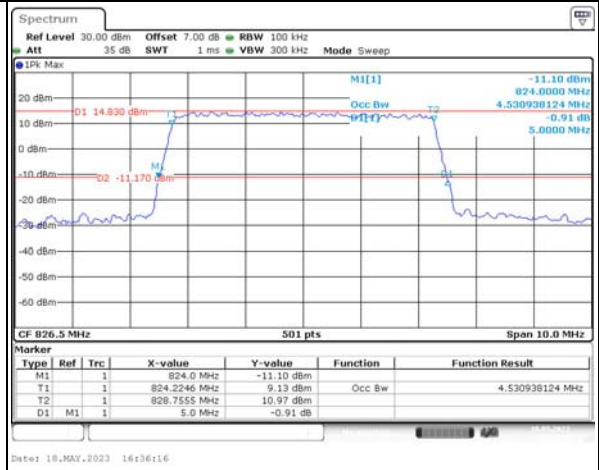
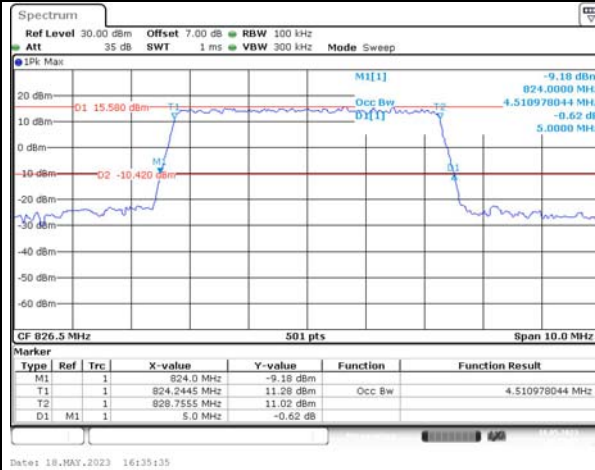
Occupied Bandwidth

Channel

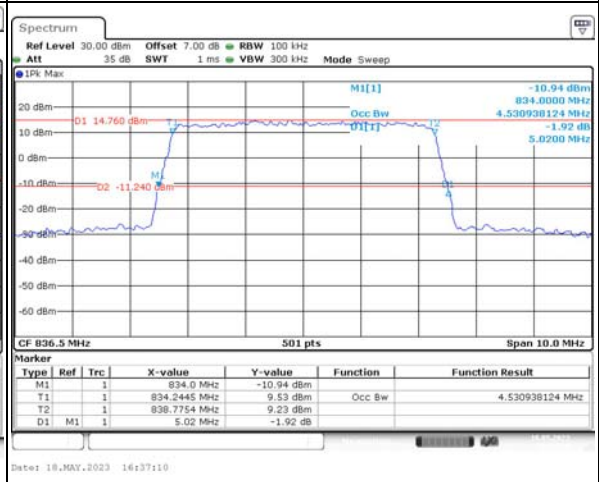
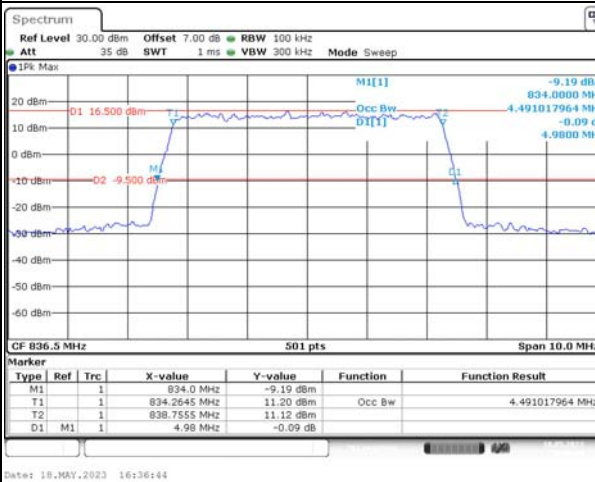
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

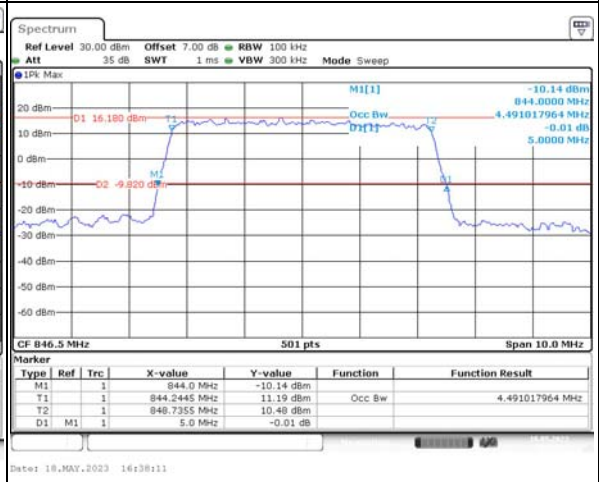
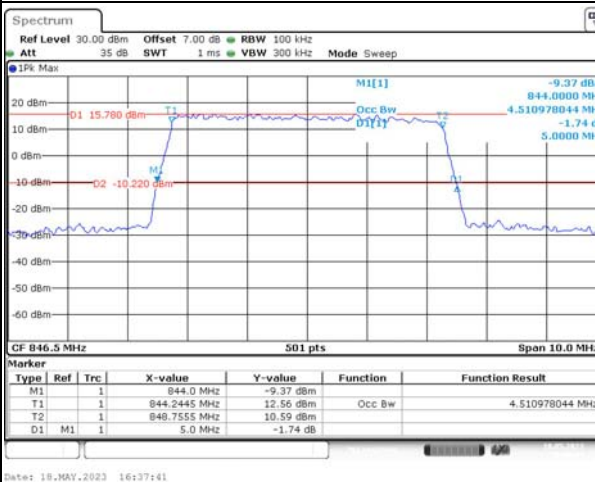
Lowest



Middle



Highest



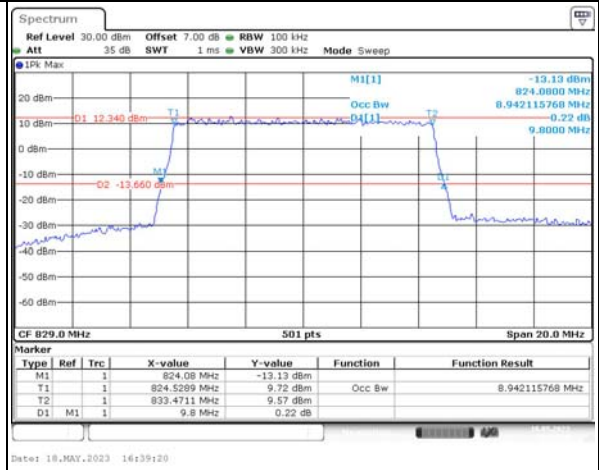
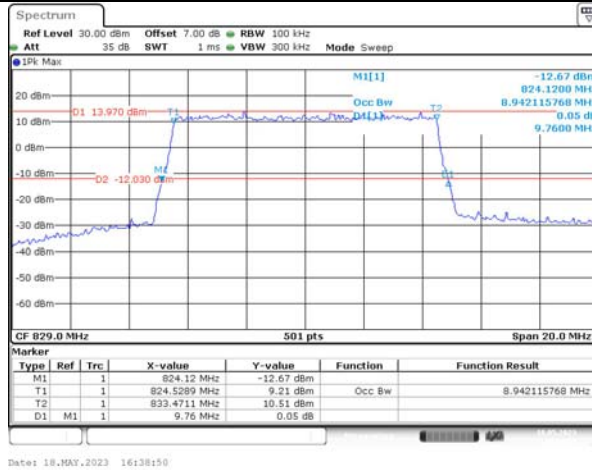
Occupied Bandwidth

Channel

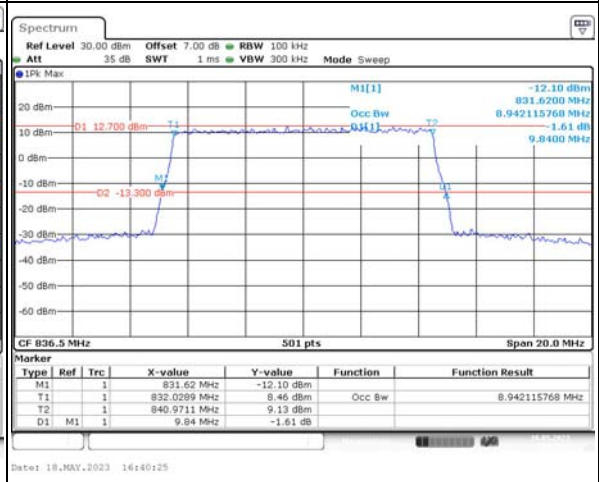
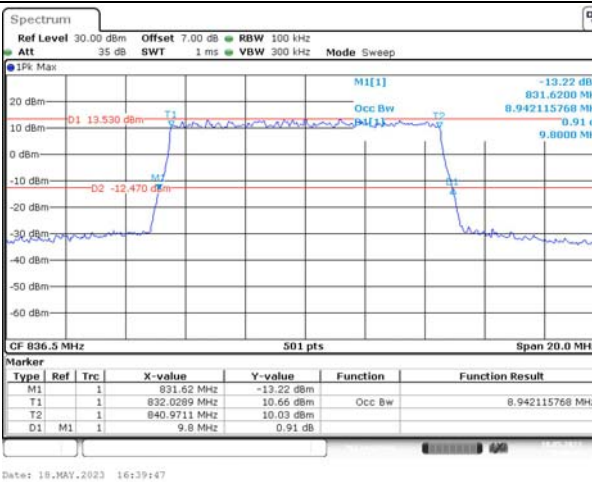
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

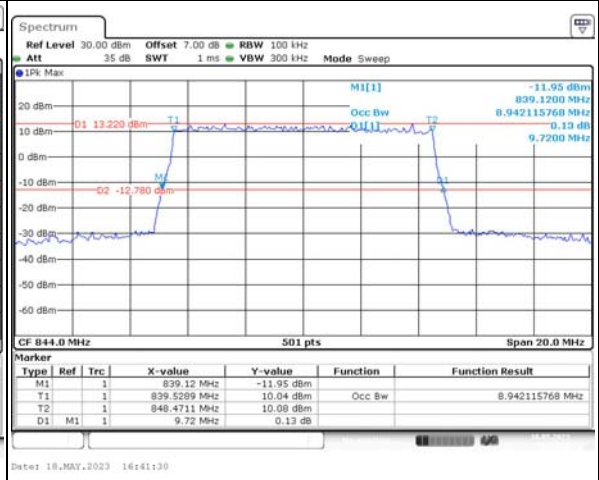
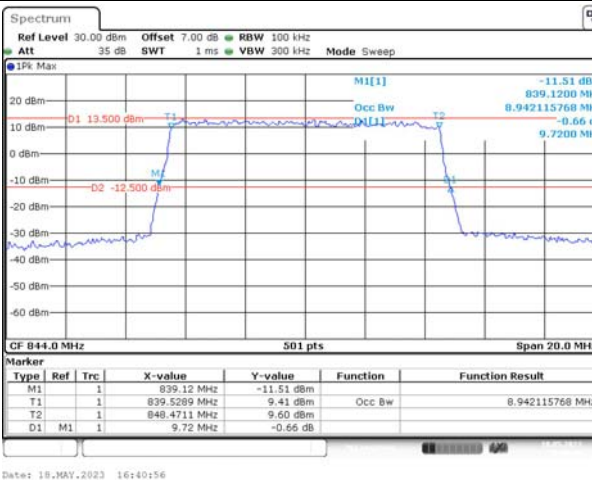
Lowest



Middle



Highest

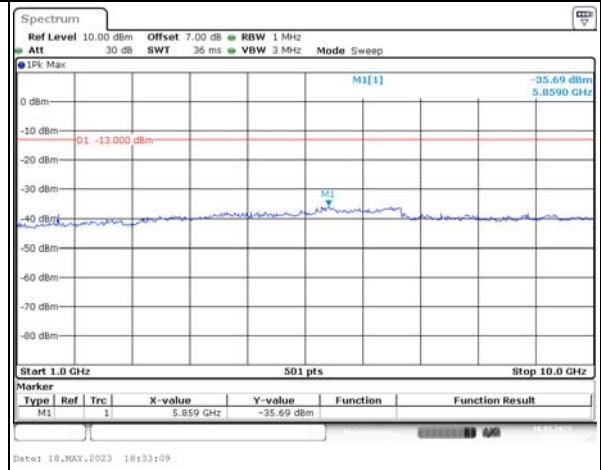
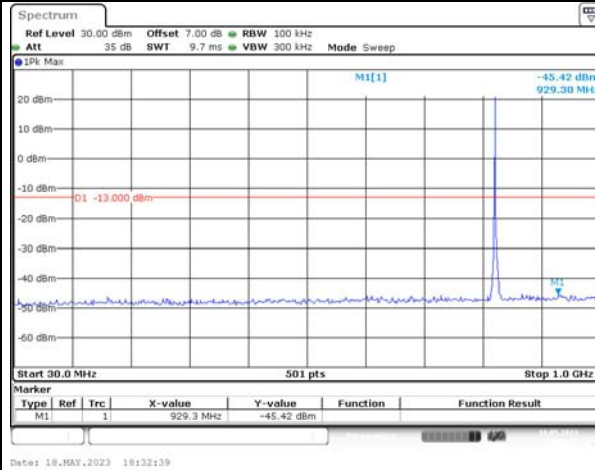


Spurious Emissions at Antenna Terminal

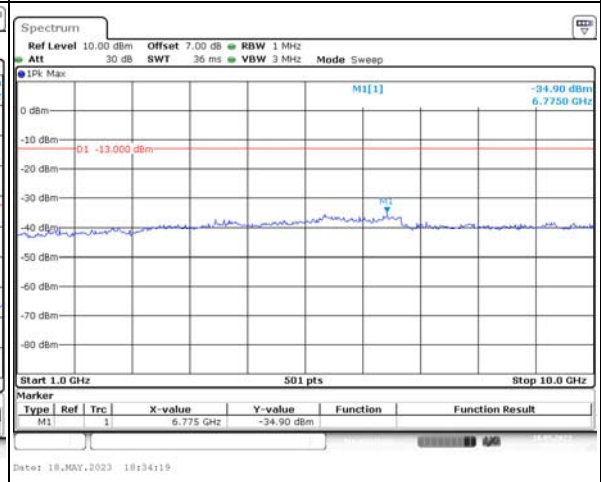
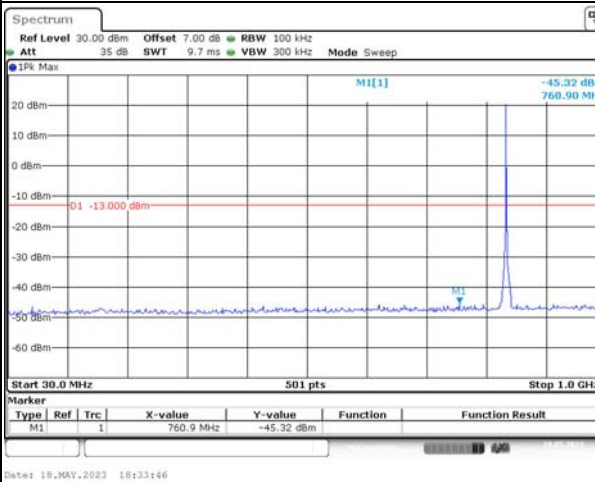
Channel

1.4MHz Bandwidth QPSK

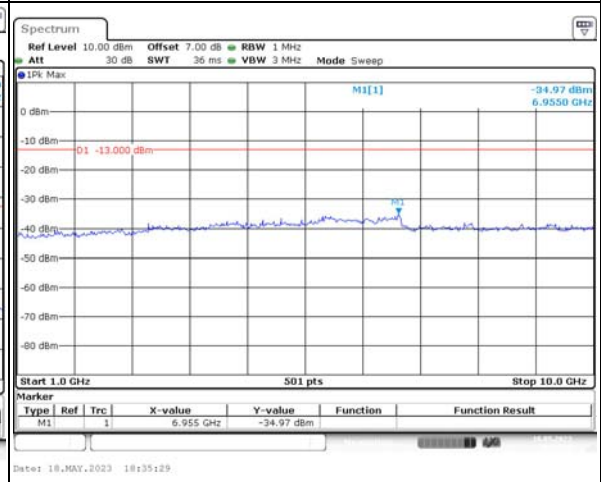
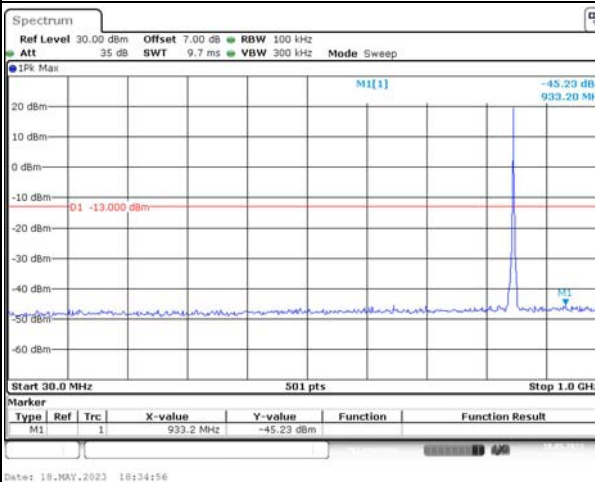
Lowest



Middle



Highest

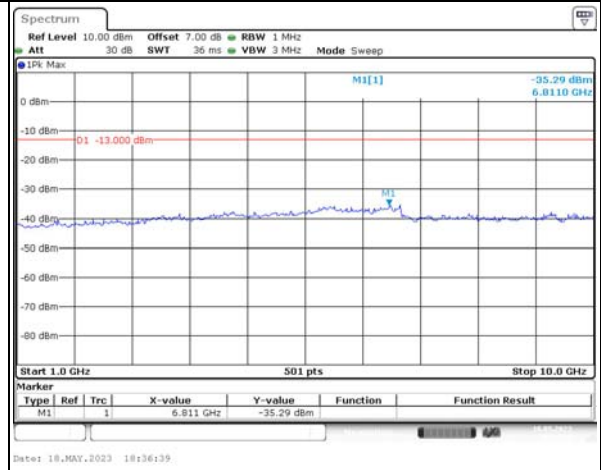
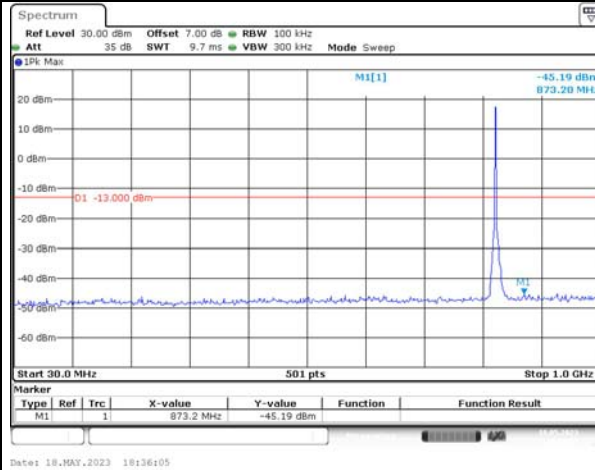


Spurious Emissions at Antenna Terminal

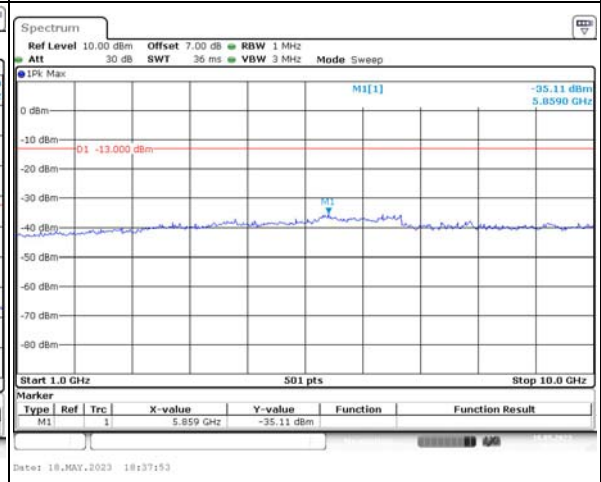
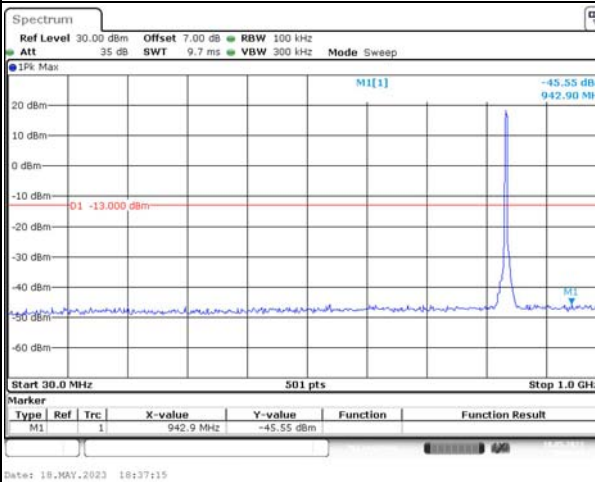
Channel

3MHz Bandwidth QPSK

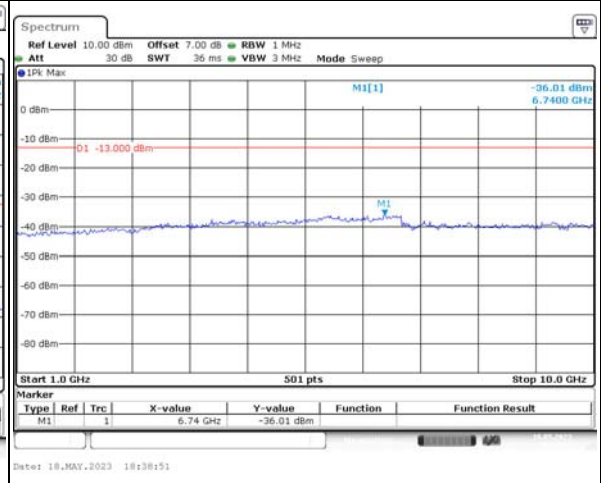
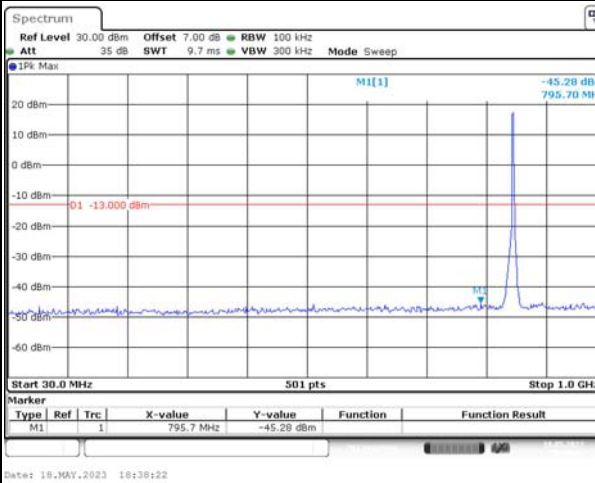
Lowest



Middle



Highest

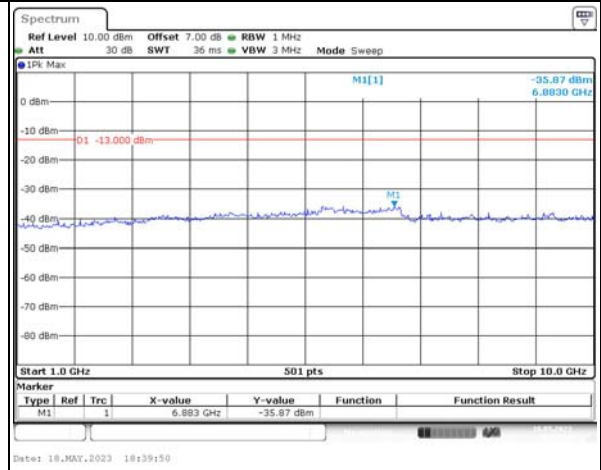
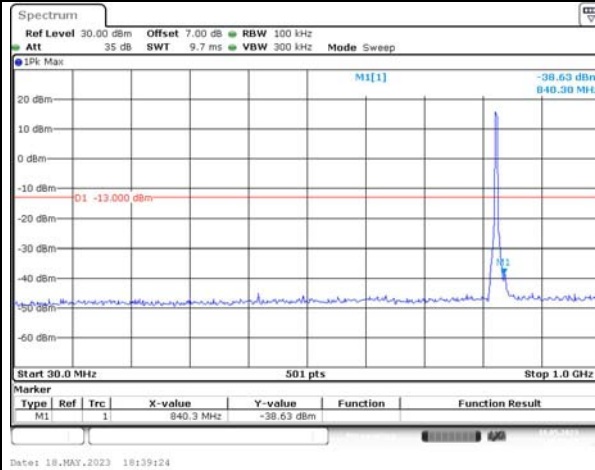


Spurious Emissions at Antenna Terminal

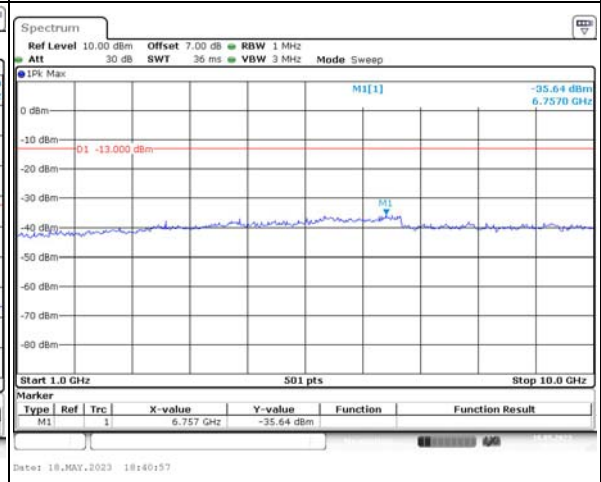
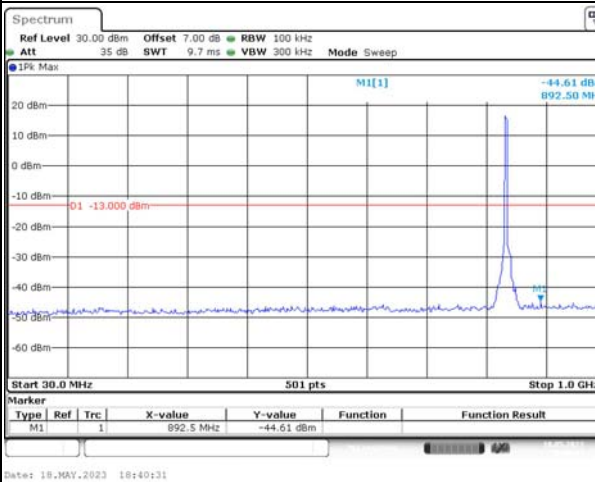
Channel

5MHz Bandwidth QPSK

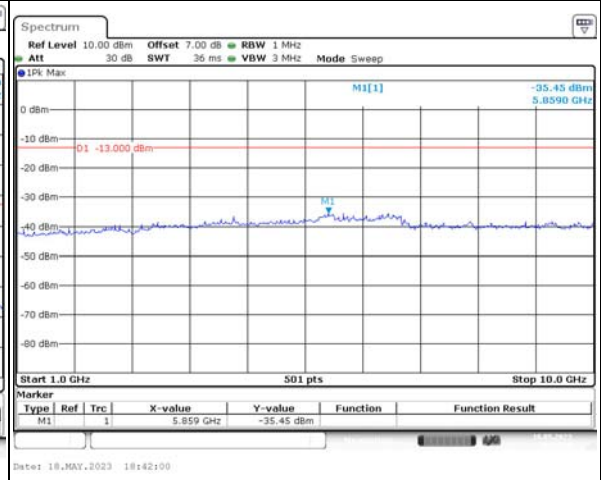
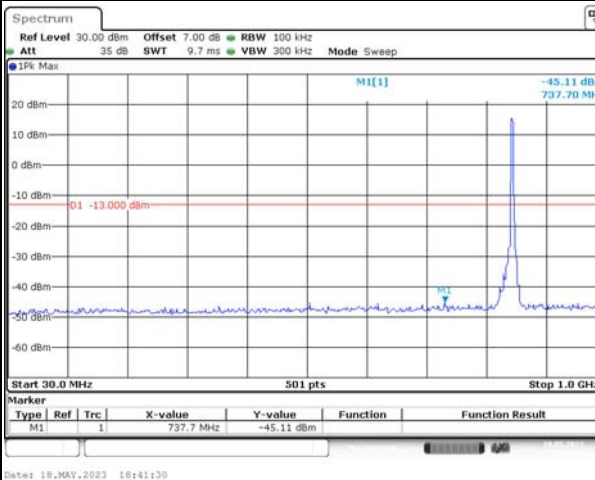
Lowest



Middle



Highest

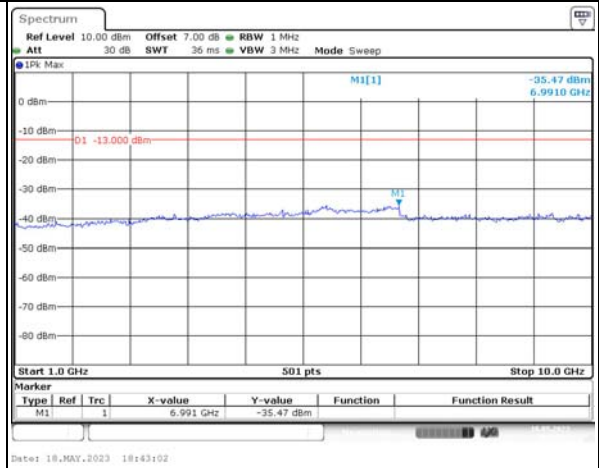
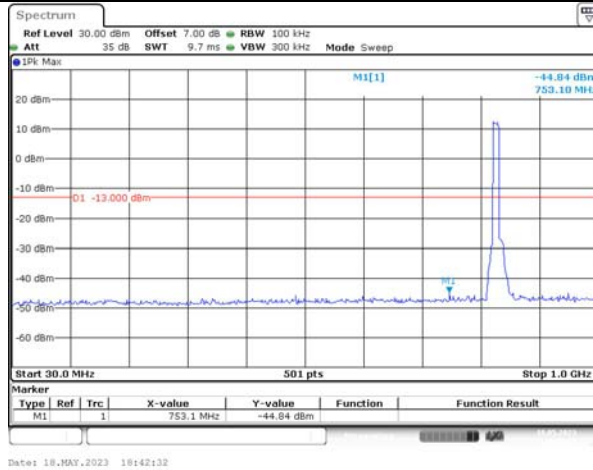


Spurious Emissions at Antenna Terminal

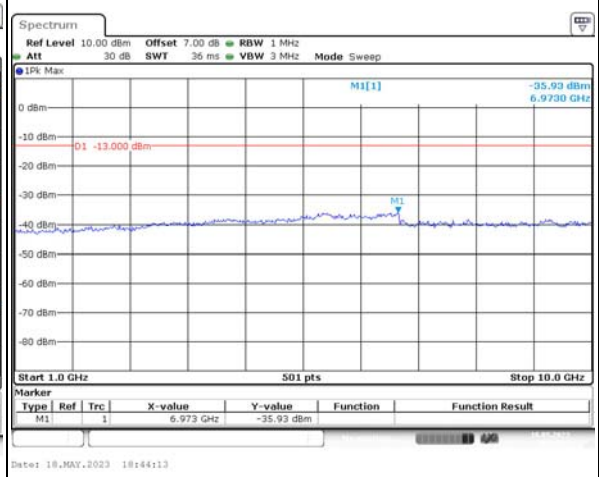
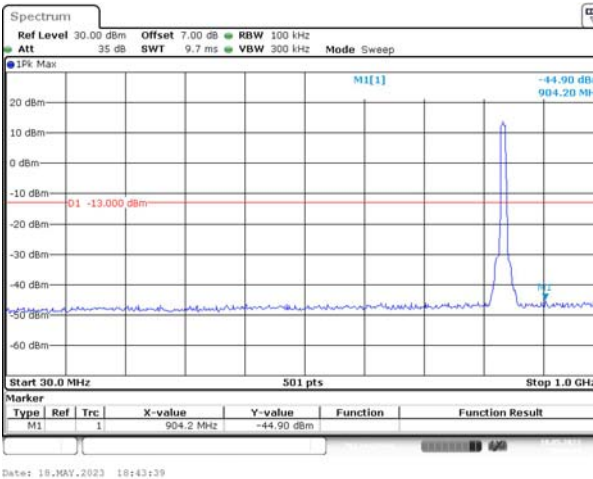
Channel

10MHz Bandwidth QPSK

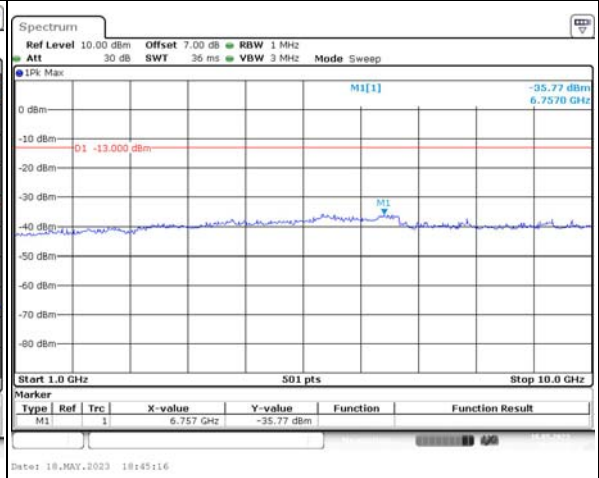
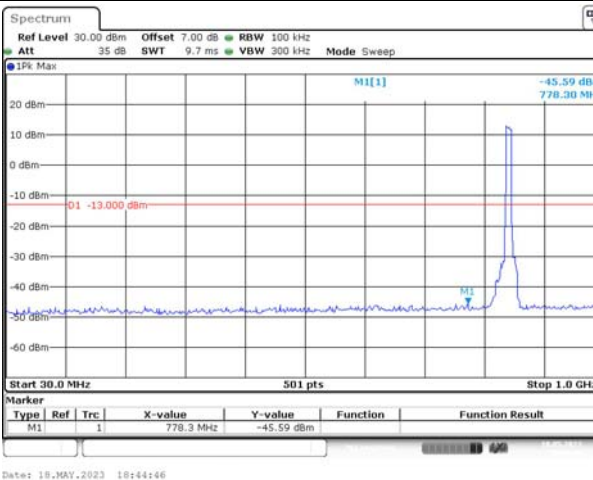
Lowest



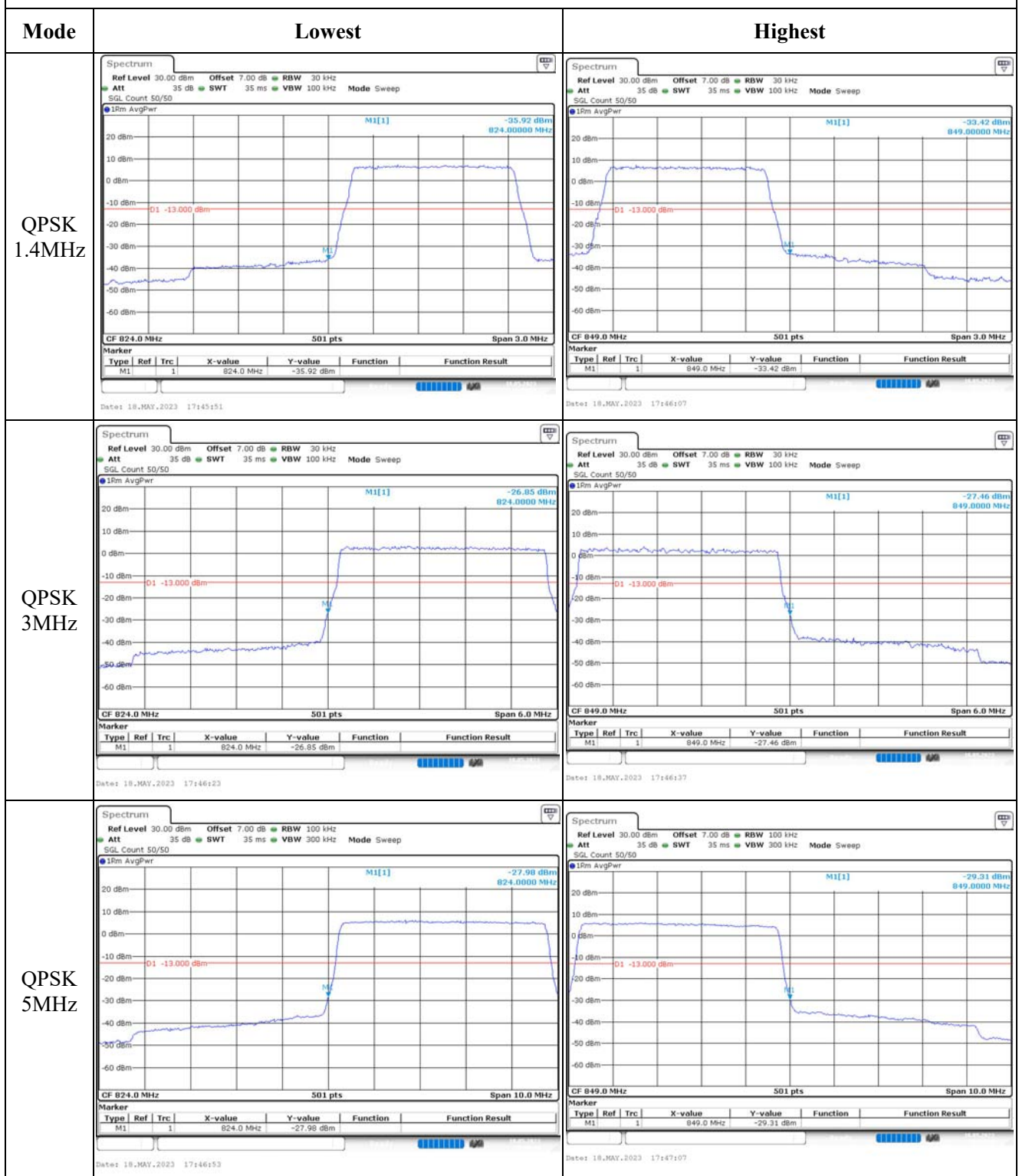
Middle



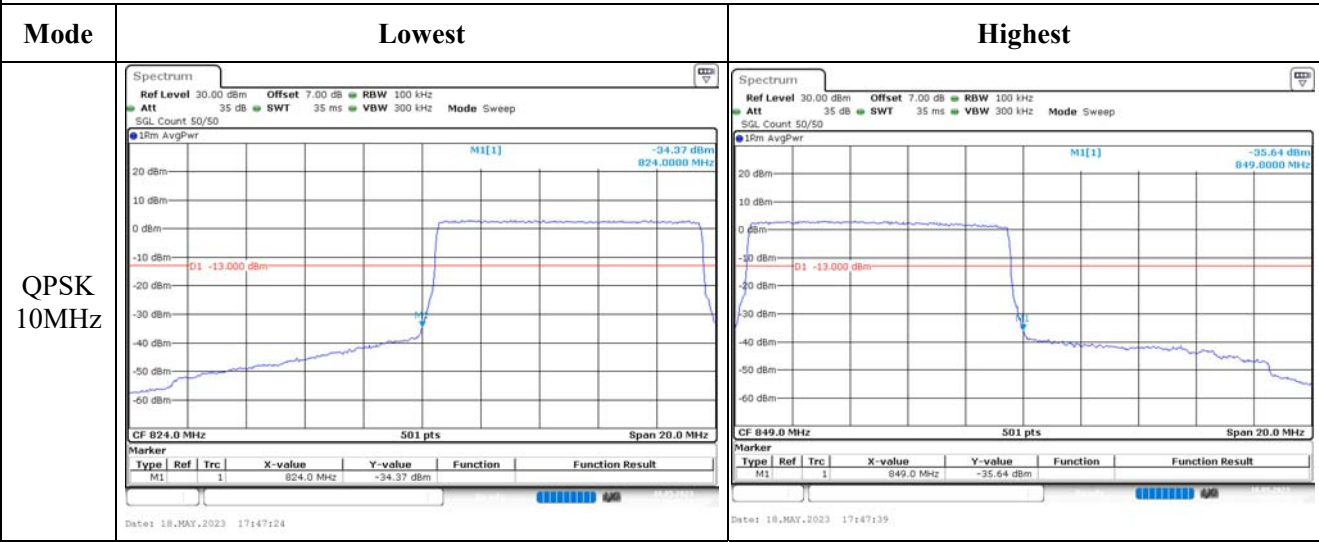
Highest



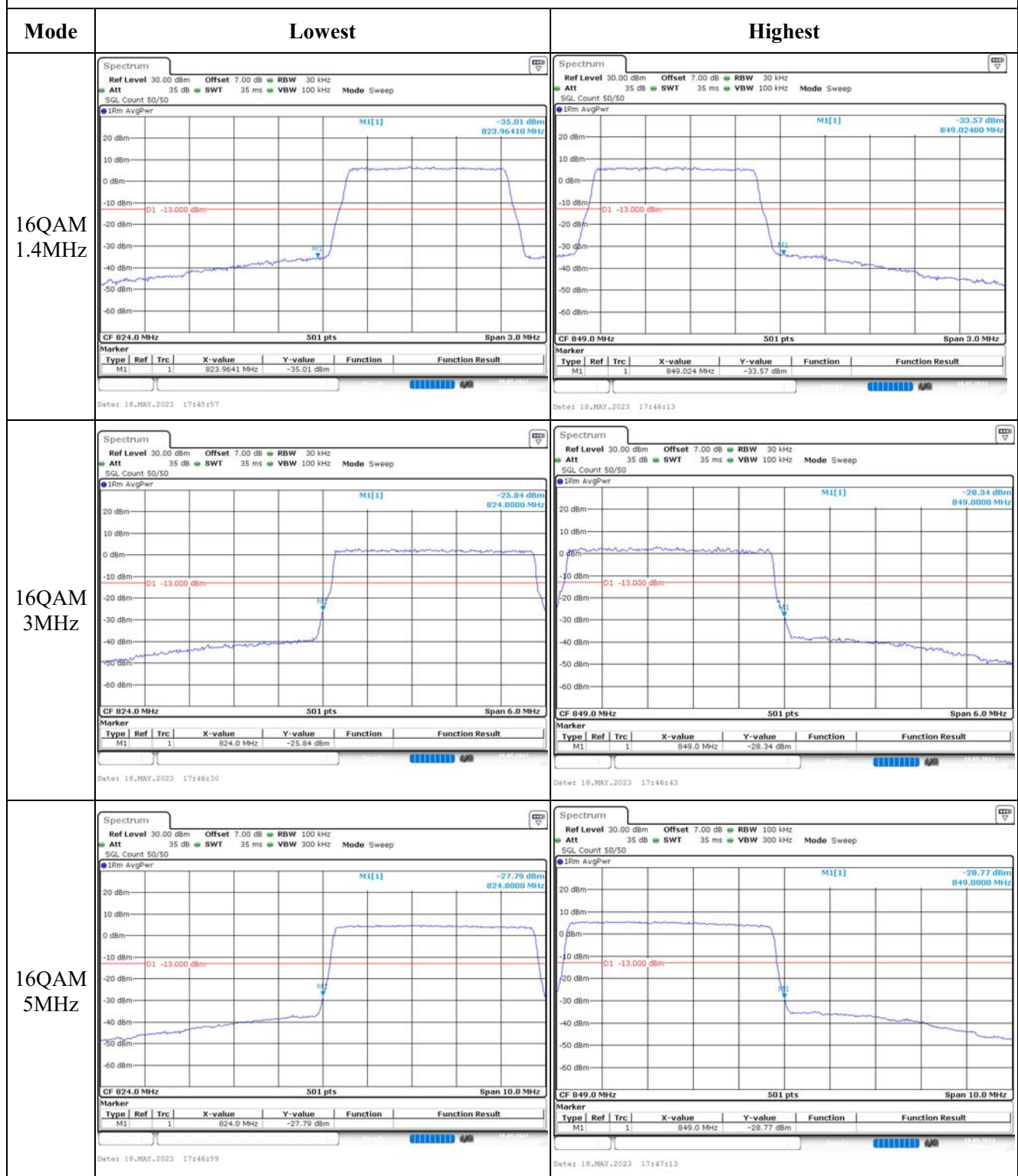
Out of band emission, Band Edge



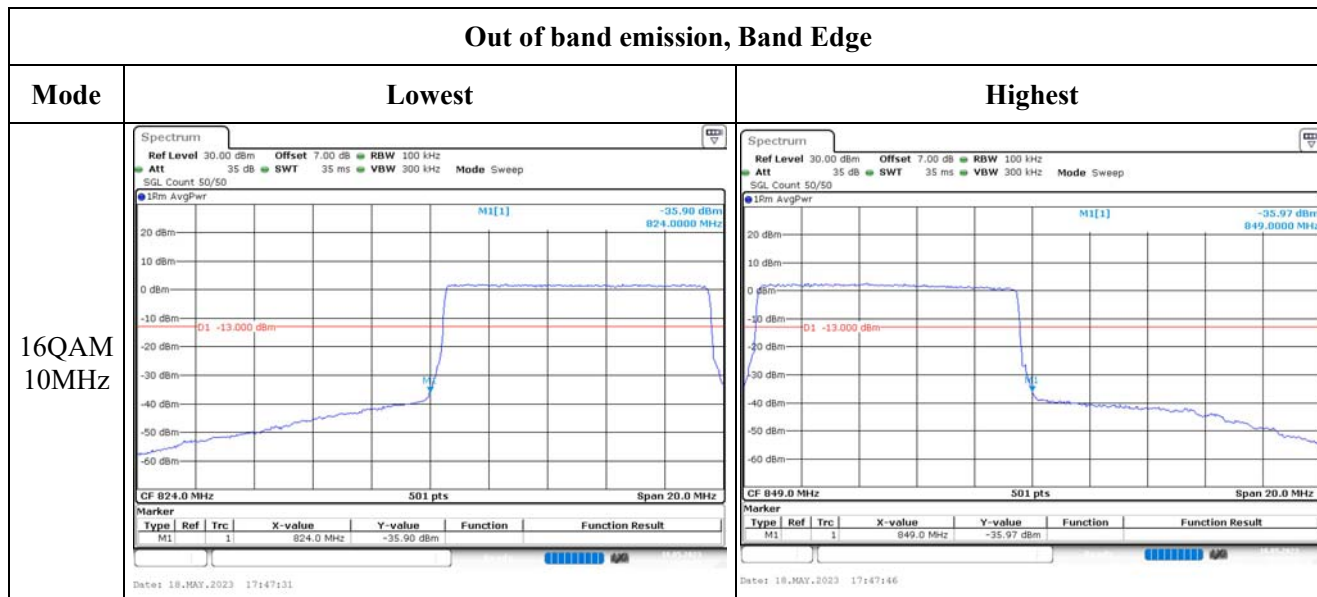
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.8 Antenna Port Test Data and Results for LTE Band 7

Serial Number:	253A-1	Test Date:	2023/5/18~2023/5/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.3~27.2	Relative Humidity: (%)	42~61	ATM Pressure: (kPa)	100.5~101.9
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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	2022-07-15	2023-07-14
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	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-03-31	2024-03-30
UNI-T	Multimeter	UT39A+	C210582554	2022-09-29	2023-09-28
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	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).

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

Test Data:

FCC§2.1046;§ 27.50(h)(2)						
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		
5MHz QPSK	RB1#0	22.5	22.59	22.54	22.86	33
	RB1#13	22.45	22.5	22.35		
	RB1#24	22.54	22.56	22.36		
	RB15#0	21.42	21.7	21.34		
	RB15#10	21.5	21.65	21.41		
	RB25#0	21.44	21.63	21.39		
5MHz 16QAM	RB1#0	21.53	21.28	20.76	21.8	33
	RB1#13	21.5	21.12	20.61		
	RB1#24	21.51	21.24	20.66		
	RB15#0	20.38	20.28	19.91		
	RB15#10	20.49	20.25	19.83		
	RB25#0	20.42	20.05	19.87		
10MHz QPSK	RB1#0	22.52	22.58	22.4	22.91	33
	RB1#25	22.55	22.52	22.39		
	RB1#49	22.64	22.63	22.15		
	RB25#0	21.48	21.57	21.48		
	RB25#25	21.56	21.49	21.29		
	RB50#0	21.55	21.65	21.47		
10MHz 16QAM	RB1#0	21.68	21.11	21.6	21.95	33
	RB1#25	21.62	21.13	21.63		
	RB1#49	21.68	21.08	21.49		
	RB25#0	20.38	20.46	20.53		
	RB25#25	20.82	20.59	20.54		
	RB50#0	20.6	20.48	20.51		
15MHz QPSK	RB1#0	22.52	22.55	22.32	22.92	33
	RB1#38	22.54	22.57	22.27		
	RB1#74	22.65	22.51	22.34		
	RB36#0	21.54	21.55	21.57		
	RB36#39	21.64	21.63	21.45		
	RB75#0	21.46	21.72	21.33		
15MHz 16QAM	RB1#0	21.71	22.07	21.64	22.4	33
	RB1#38	21.64	22.13	21.51		
	RB1#74	21.8	22.06	21.56		
	RB36#0	20.89	20.51	20.44		
	RB36#39	21.19	20.36	20.22		
	RB75#0	21.04	20.34	20.36		
20MHz QPSK	RB1#0	22.65	22.51	22.51	22.97	33
	RB1#50	22.7	22.53	22.44		
	RB1#99	22.69	22.62	22.39		

20MHz 16QAM	RB50#0	21.56	21.54	21.48	22.78	33
	RB50#50	21.55	21.53	21.53		
	RB100#0	21.57	21.55	21.49		
	RB1#0	21.74	22.5	21.56		
	RB1#50	21.77	22.51	21.44		
	RB1#99	21.89	22.47	21.35		
	RB50#0	20.58	20.68	20.32		
	RB50#50	21.31	20.81	20.4		
	RB100#0	20.96	20.74	20.39		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G_T(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	5.13	5.13	4.87	13
	RB100#0	5.22	5.16	5.04	13
20MHz 16QAM	RB1#0	6.14	6.12	5.74	13
	RB100#0	5.91	5.97	5.94	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
5MHz QPSK	4.511	4.511	4.511	5	5	5
5MHz 16QAM	4.531	4.551	4.511	5.02	5	4.98
10MHz QPSK	8.982	8.942	8.942	9.8	9.8	9.76
10MHz 16QAM	8.982	8.942	8.942	9.84	9.84	9.76
15MHz QPSK	13.473	13.533	13.533	15	15.12	15.06
15MHz 16QAM	13.593	13.533	13.533	15.12	15.06	15
20MHz QPSK	17.884	18.044	17.964	19.52	19.76	19.6
20MHz 16QAM	17.964	17.964	17.964	19.76	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

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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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.
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FCC §2.1055, §27.54: Frequency Stability

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge
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Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	2501.072	2500.00	2569.031	2570
	-20	3.7	2501.058	2500.00	2569.028	2570
	-10	3.7	2501.007	2500.00	2569.093	2570
	0	3.7	2501.033	2500.00	2569.054	2570
	10	3.7	2501.079	2500.00	2569.016	2570
	20	3.7	2501.032	2500.00	2569.022	2570
	30	3.7	2501.053	2500.00	2569.014	2570
	40	3.7	2501.046	2500.00	2569.025	2570
	50	3.7	2501.021	2500.00	2569.004	2570
Frequency Stability vs. Voltage	20	3.6	2501.067	2500.00	2569.001	2570
	20	4.35	2501.015	2500.00	2569.020	2570
					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	3.7	2501.065	2500.00	2569.078	2570
	-20	3.7	2501.062	2500.00	2569.019	2570
	-10	3.7	2501.094	2500.00	2569.058	2570
	0	3.7	2501.020	2500.00	2569.011	2570
	10	3.7	2501.066	2500.00	2569.035	2570
	20	3.7	2501.058	2500.00	2569.022	2570
	30	3.7	2501.067	2500.00	2569.040	2570
	40	3.7	2501.006	2500.00	2569.056	2570
	50	3.7	2501.061	2500.00	2569.047	2570
Frequency Stability vs. Voltage	20	3.6	2501.092	2500.00	2569.094	2570
	20	4.35	2501.081	2500.00	2569.017	2570
					Result:	Pass

Test Plots(Note: The 7dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

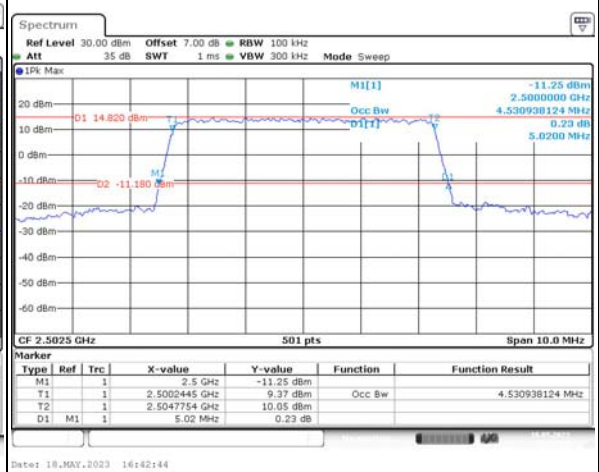
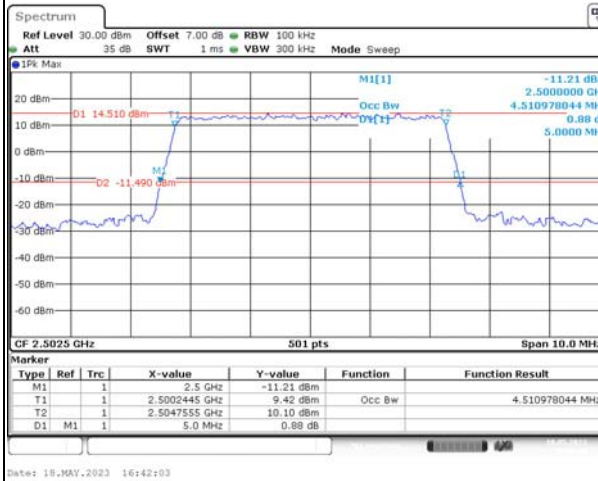
Occupied Bandwidth

Channel

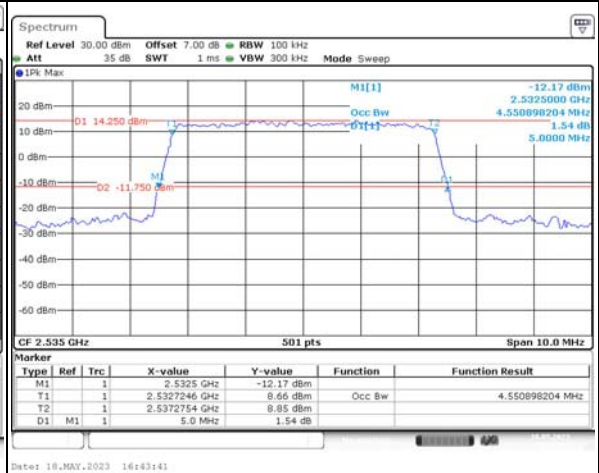
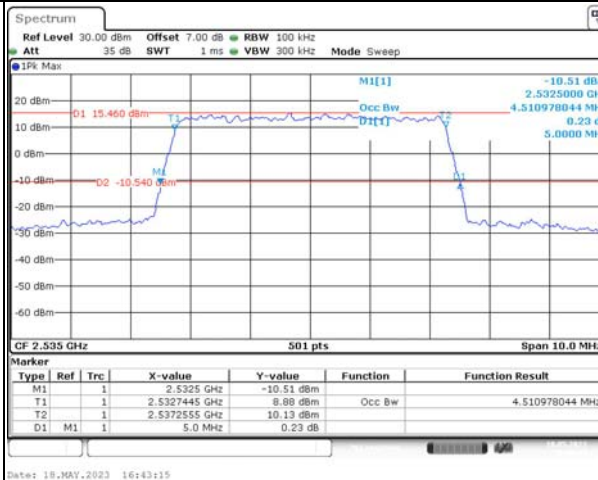
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

Lowest



Middle



Highest

