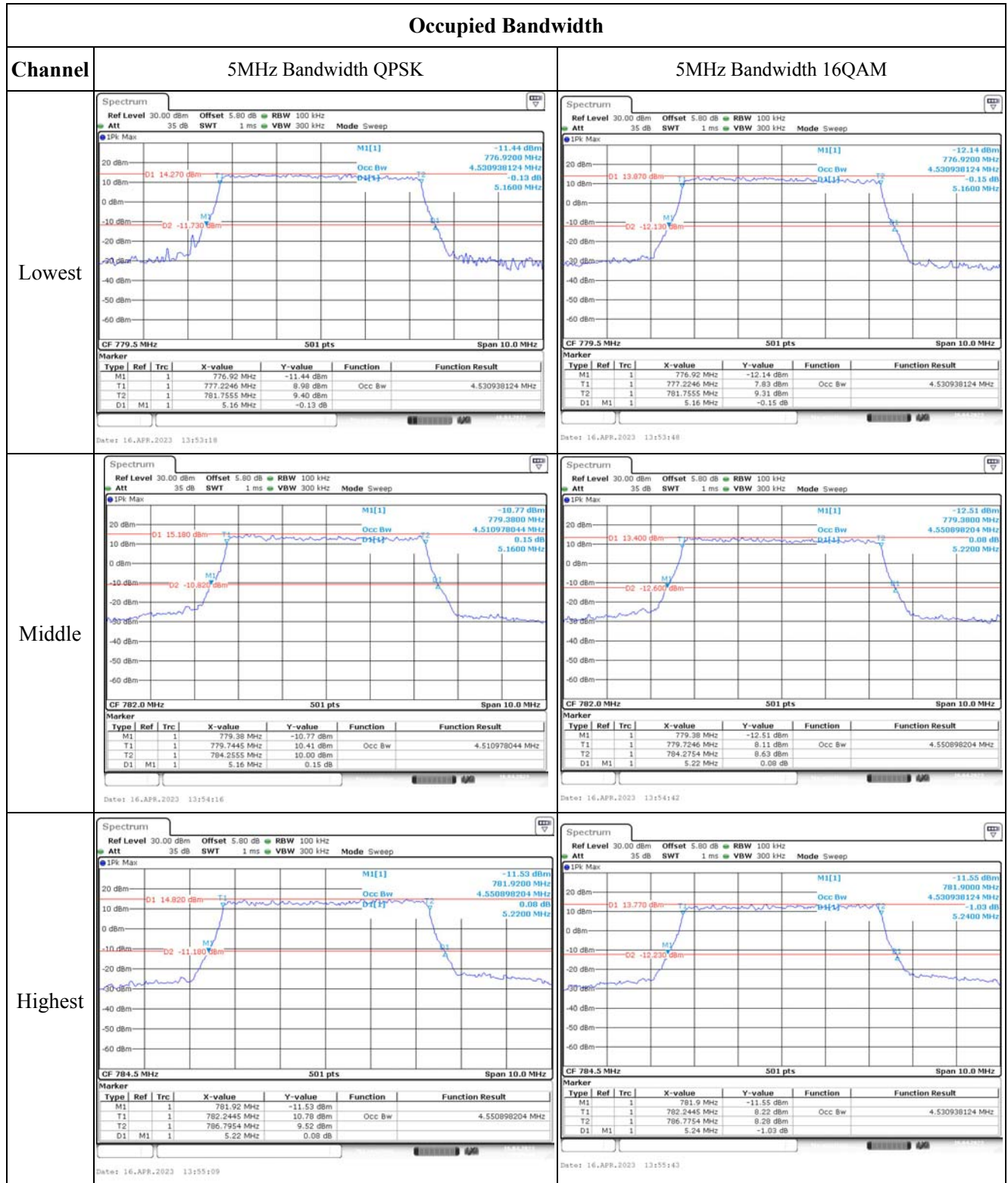
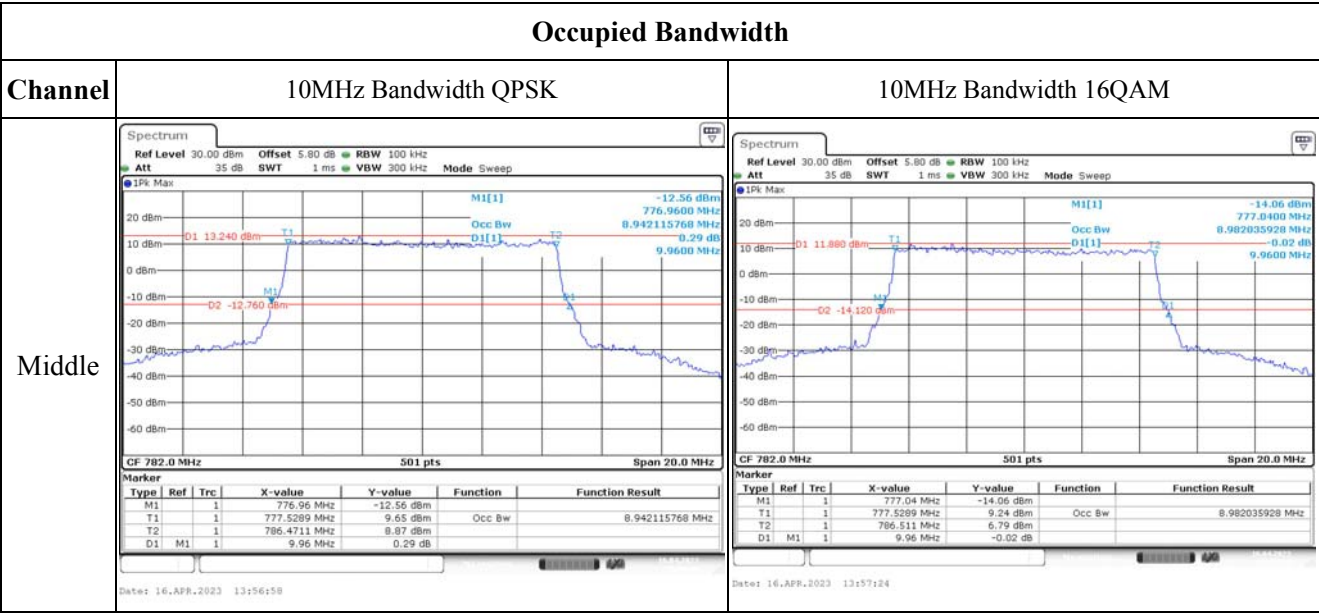


Test Plots(Note: The 5.8dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):



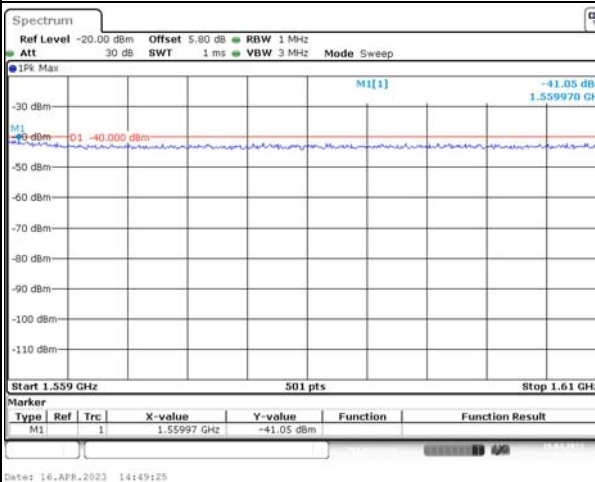
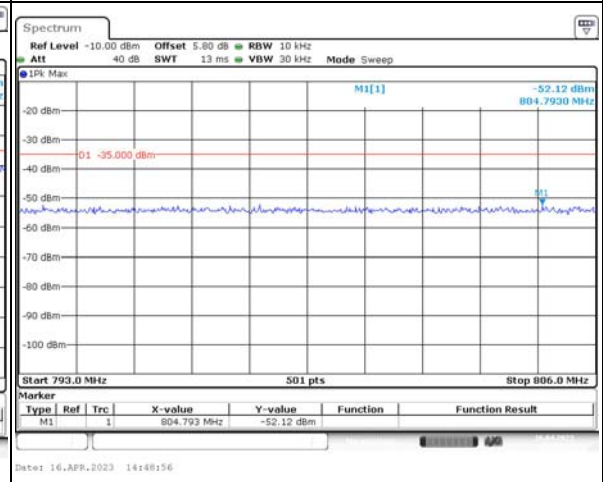
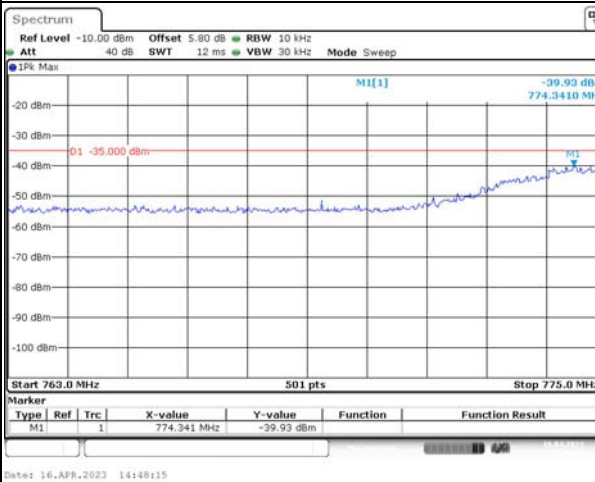
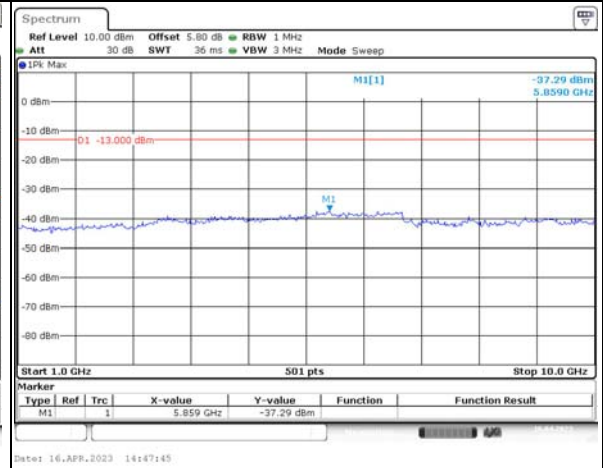
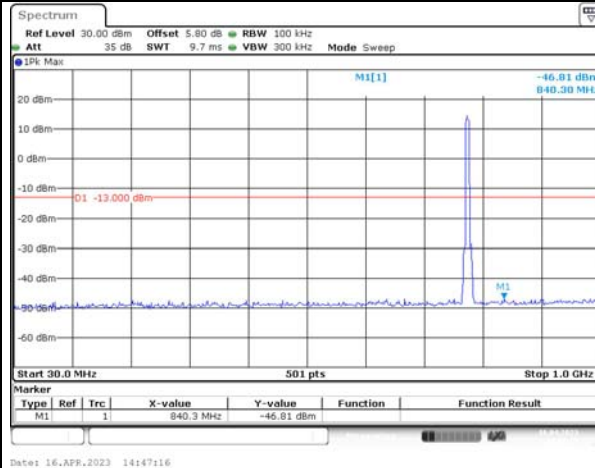


Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

Lowest

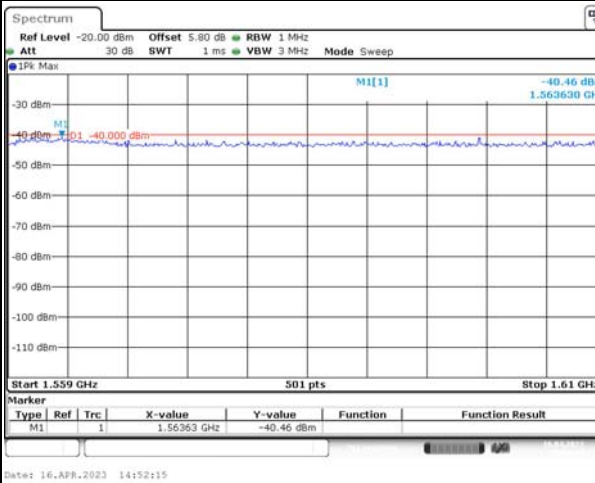
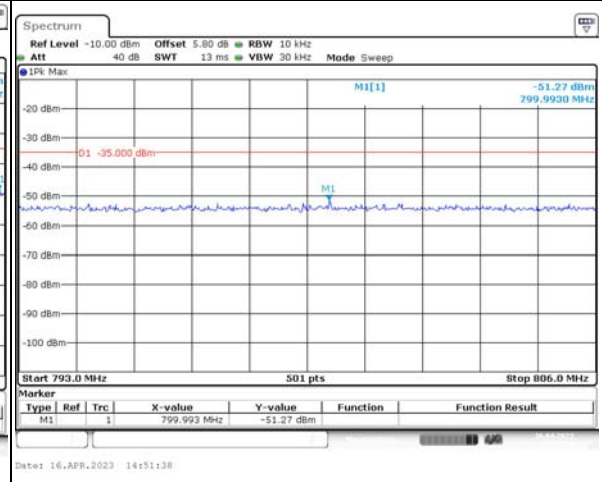
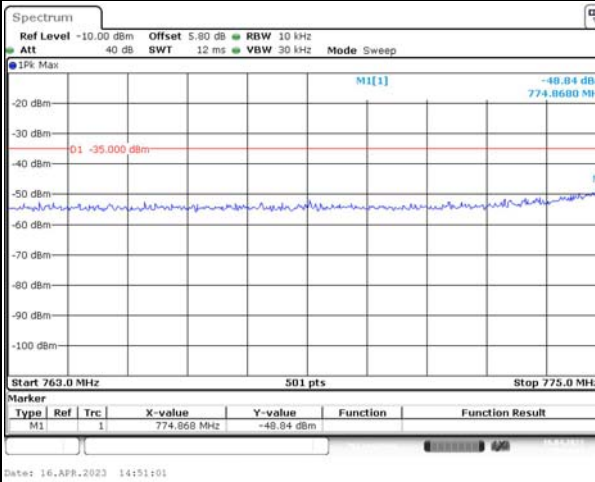
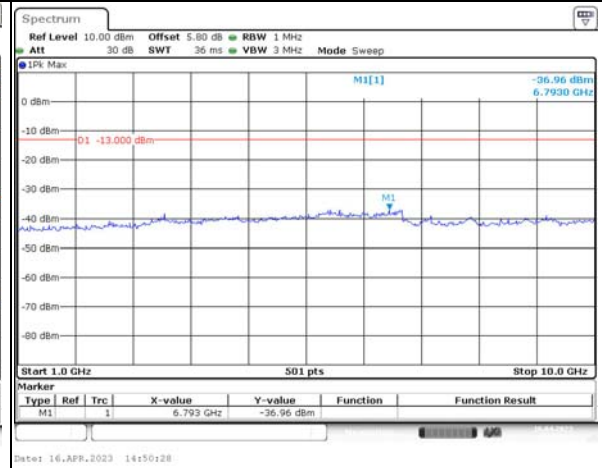
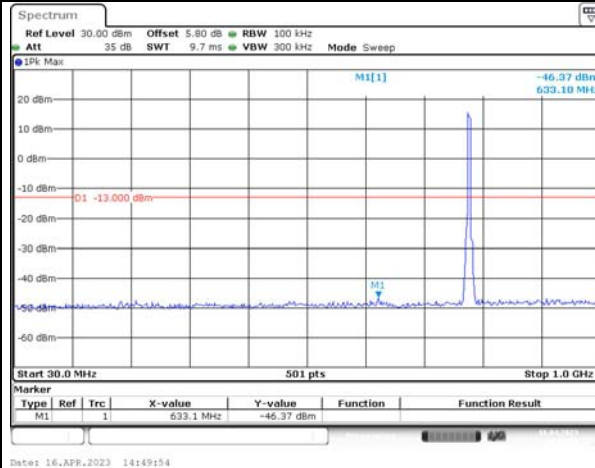


Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

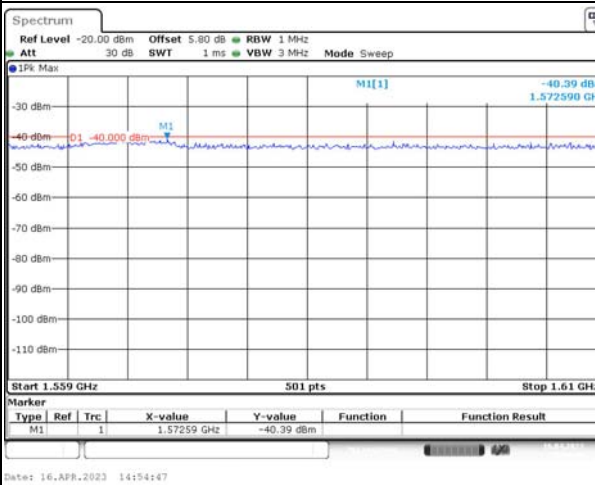
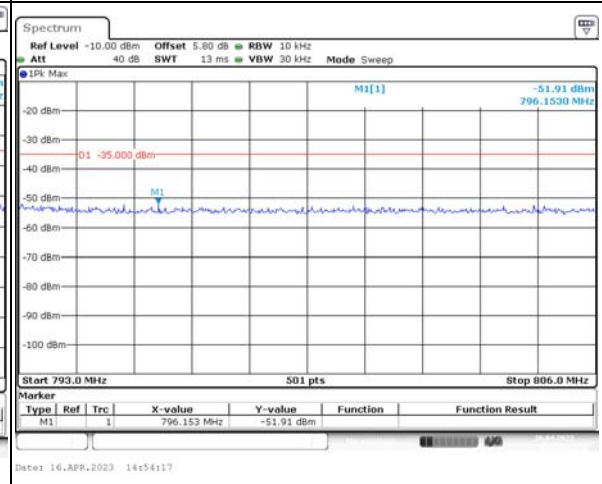
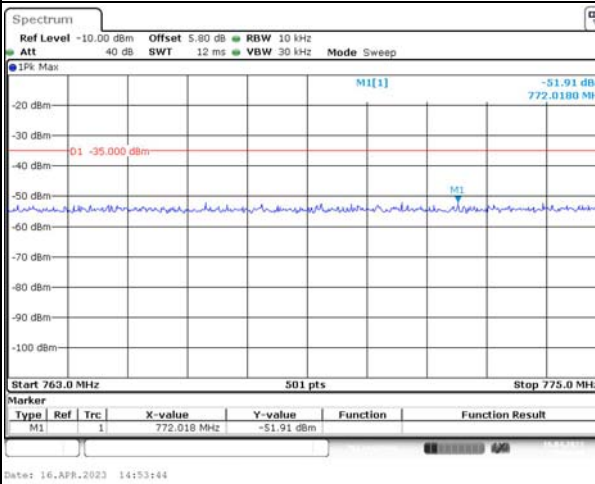
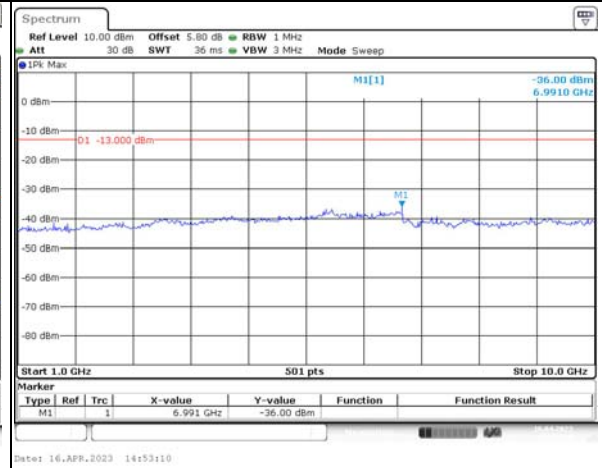
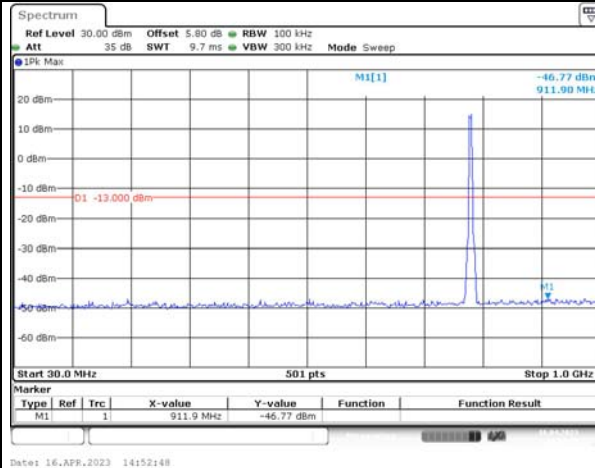
Middle



Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK



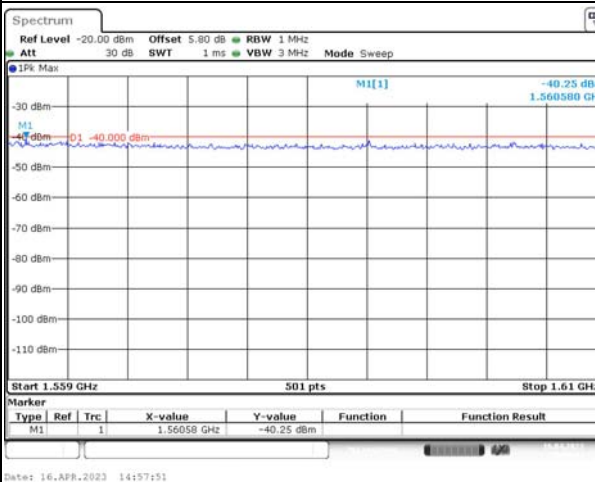
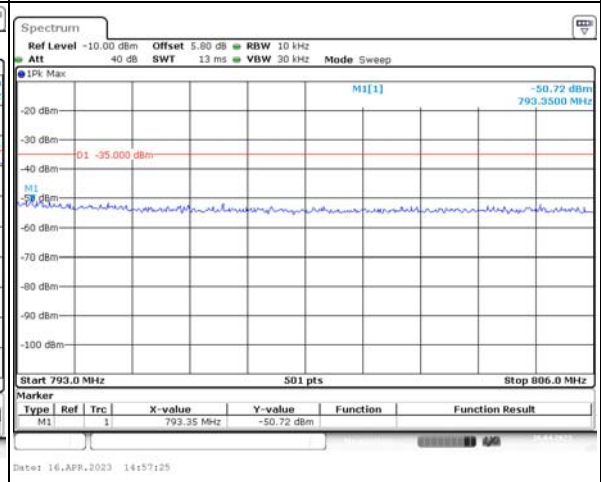
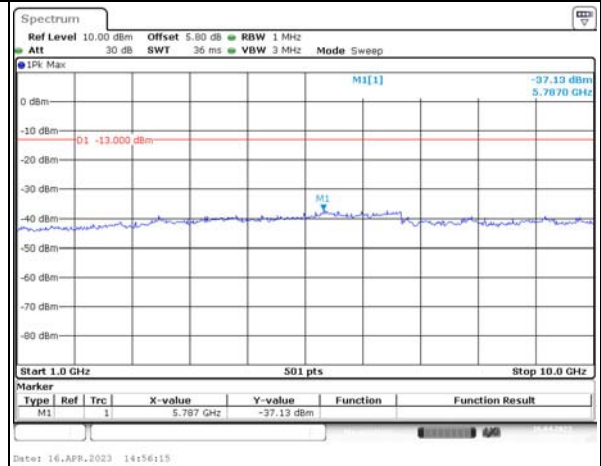
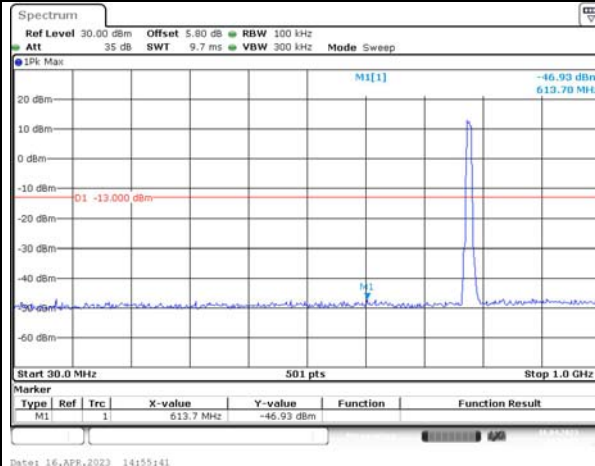
Highest

Spurious Emissions at Antenna Terminal

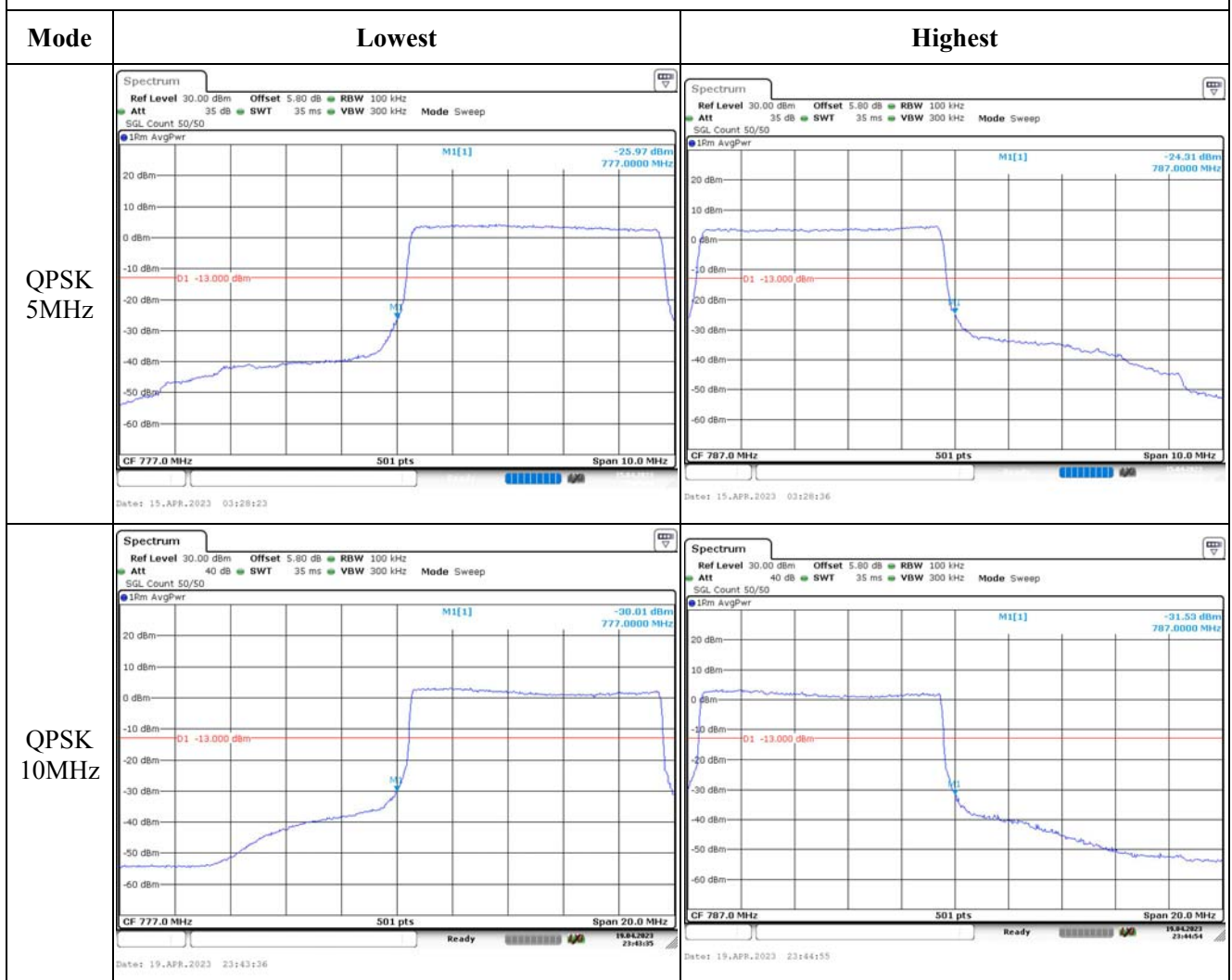
Channel

10MHz Bandwidth QPSK

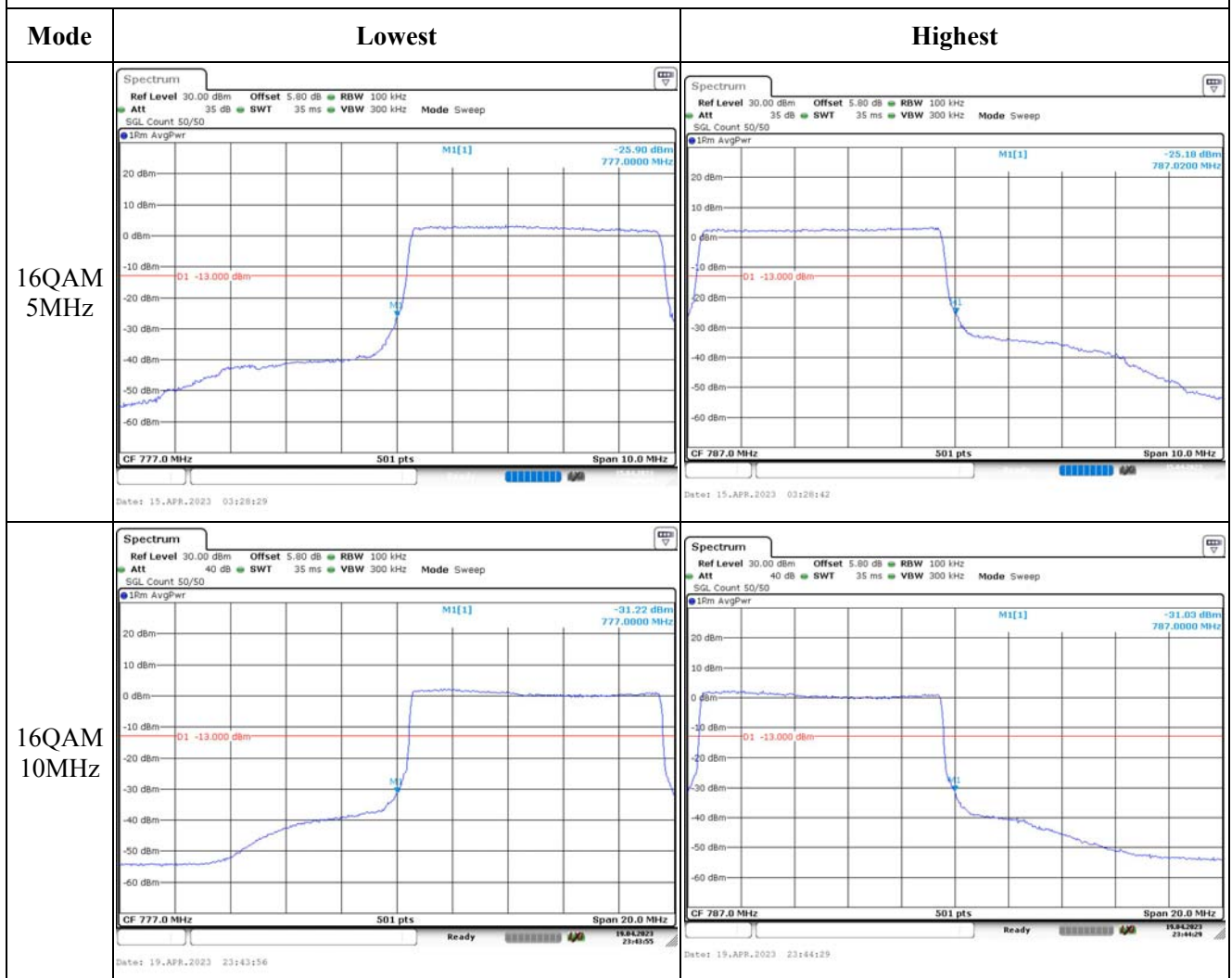
Middle



Out of band emission, Band Edge



Out of band emission, Band Edge



4.7 Antenna Port Test Data and Results for LTE Band 17

Serial Number:	247B_1	Test Date:	2023/4/14~2023/4/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.2~26.1	Relative Humidity: (%)	38~56	ATM Pressure: (kPa)	99.9~102.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	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	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

* 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	706.5	710	713.5
10MHz	709	710	711

Test Data:**FCC§2.1046;§ 27.50(c) (10)****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		
5MHz QPSK	RB1#0	20.99	20.97	21.07	18.93	34.77
	RB1#13	21.14	21.06	21.38		
	RB1#24	21.01	21.13	21.28		
	RB15#0	20.08	20.04	20.24		
	RB15#10	20.08	20.25	20.31		
	RB25#0	20.09	20.13	20.29		
5MHz 16QAM	RB1#0	20.23	20.02	20	17.94	34.77
	RB1#13	20.39	20.22	20.25		
	RB1#24	20.3	20.24	20.27		
	RB15#0	19	19.06	19.23		
	RB15#10	19.04	19.24	19.35		
	RB25#0	19.08	19.13	19.29		
10MHz QPSK	RB1#0	20.98	20.98	20.91	18.87	34.77
	RB1#25	21.2	21.26	21.27		
	RB1#49	21.26	21.32	21.32		
	RB25#0	20.08	20.04	20.04		
	RB25#25	20.32	20.3	20.35		
	RB50#0	20.22	20.18	20.17		
10MHz 16QAM	RB1#0	20.03	19.91	20.54	18.54	34.77
	RB1#25	20.41	20.28	20.95		
	RB1#49	20.42	20.36	20.99		
	RB25#0	19.05	19.09	19.05		
	RB25#25	19.31	19.37	19.34		
	RB50#0	19.17	19.2	19.15		

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	5.59	5.91	5.83	13
	RB50#0	5.57	5.57	5.48	13
10MHz 16QAM	RB1#0	6.12	6.81	6.87	13
	RB50#0	6.41	6.38	6.38	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	4.531	4.531	5.2	5.14	5.2
5MHz 16QAM	4.551	4.531	4.511	5.2	5.22	5.16
10MHz QPSK	8.982	8.982	8.942	9.96	9.8	9.96
10MHz 16QAM	8.982	8.982	8.942	9.72	10.04	9.8

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

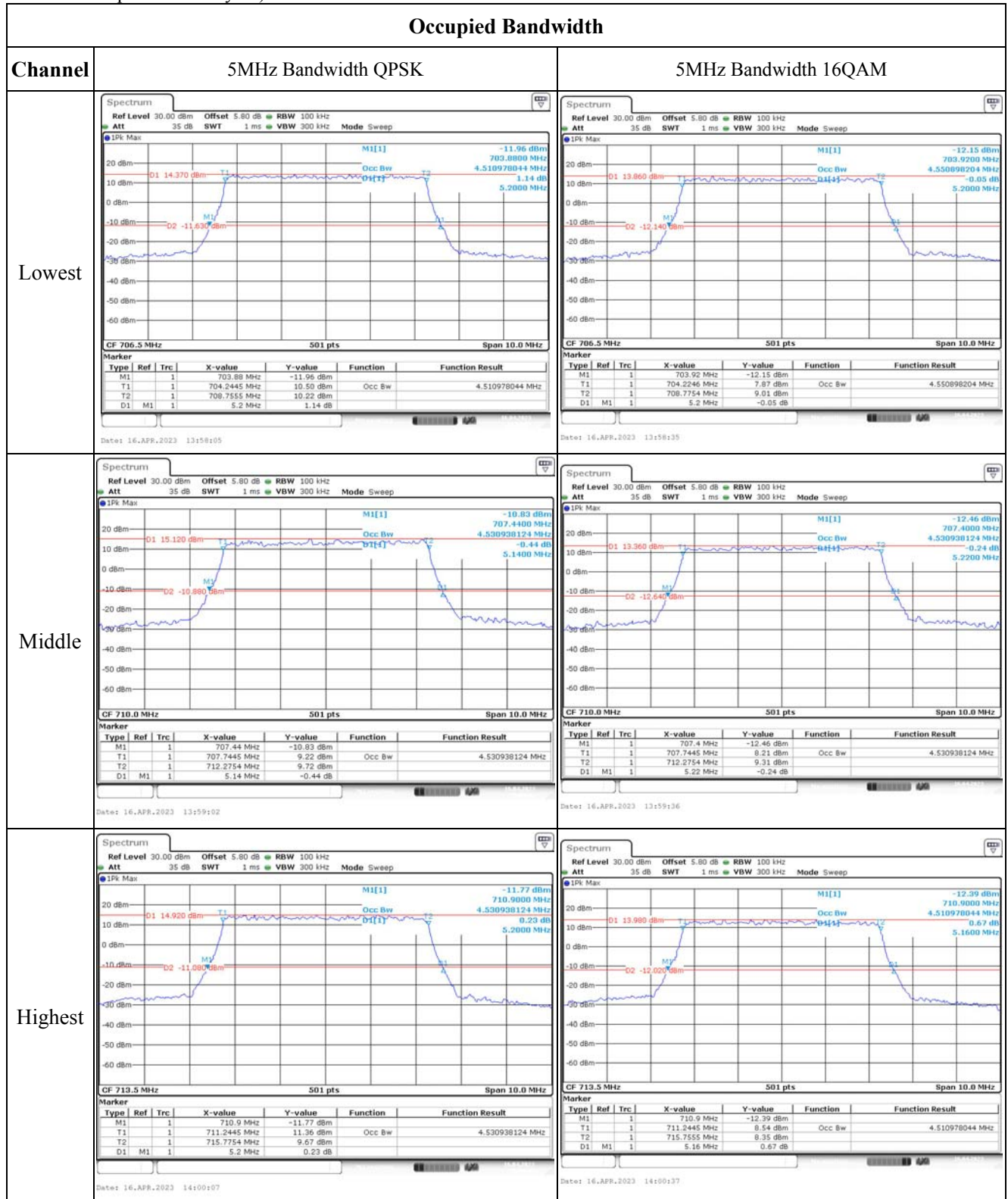
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability

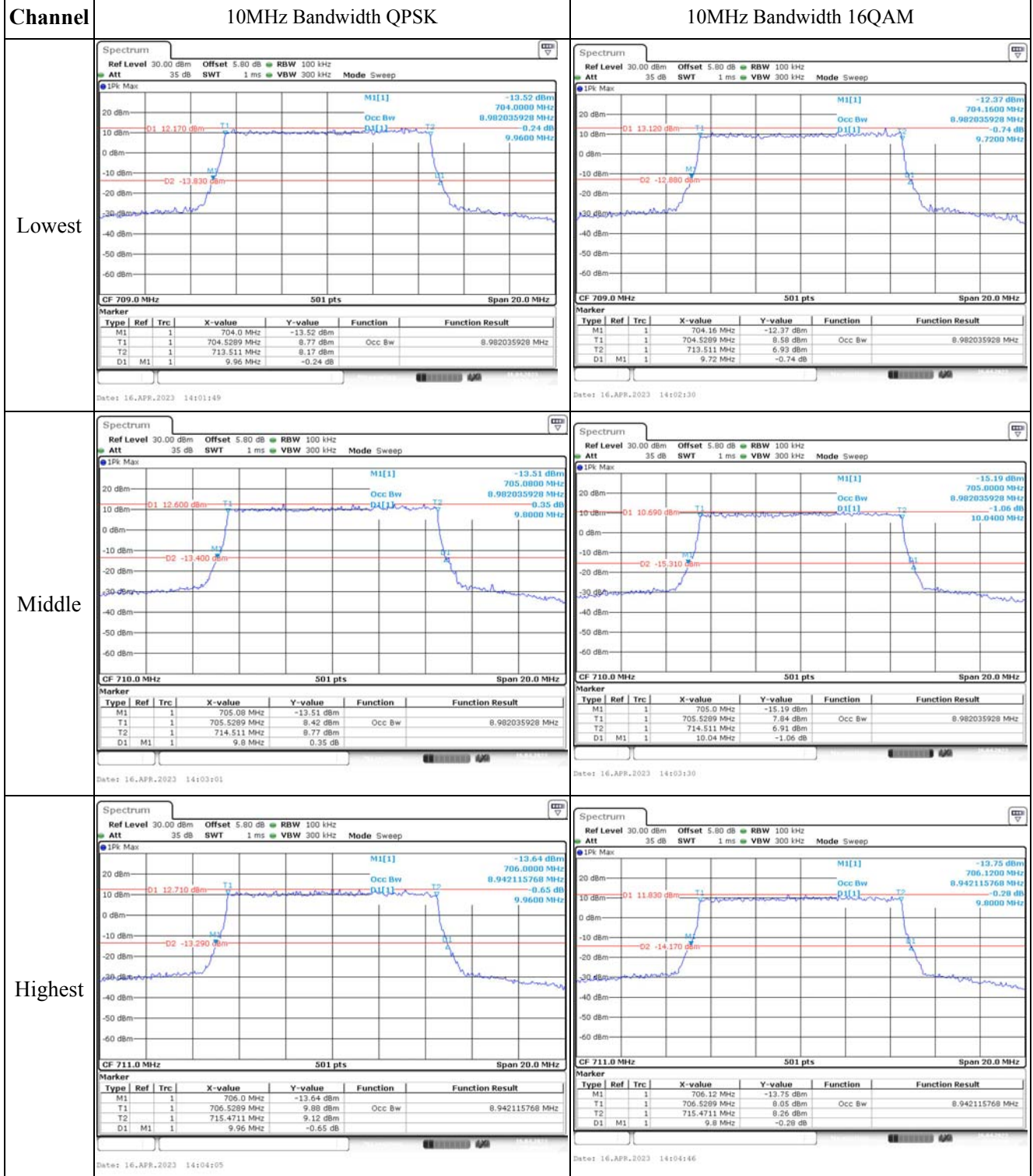
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	704.522	704.00	715.455	716.00
	-20	3.7	704.594	704.00	715.473	716.00
	-10	3.7	704.560	704.00	715.428	716.00
	0	3.7	704.504	704.00	715.508	716.00
	10	3.7	704.594	704.00	715.489	716.00
	20	3.7	704.529	704.00	715.471	716.00
	30	3.7	704.520	704.00	715.442	716.00
	40	3.7	704.502	704.00	715.473	716.00
Frequency Stability vs. Voltage	20	3.6	704.503	704.00	715.428	716.00
	20	4.35	704.529	704.00	715.471	716.00
					Result:	Pass

Test Mode:	10M 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	704.589	704.00	715.488	716.00
	-20	3.7	704.525	704.00	715.509	716.00
	-10	3.7	704.588	704.00	715.479	716.00
	0	3.7	704.600	704.00	715.461	716.00
	10	3.7	704.540	704.00	715.451	716.00
	20	3.7	704.529	704.00	715.471	716.00
	30	3.7	704.589	704.00	715.470	716.00
	40	3.7	704.562	704.00	715.444	716.00
	50	3.7	704.598	704.00	715.510	716.00
Frequency Stability vs. Voltage	20	3.6	704.538	704.00	715.423	716.00
	20	4.35	704.577	704.00	715.495	716.00
					Result:	Pass

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



Occupied Bandwidth

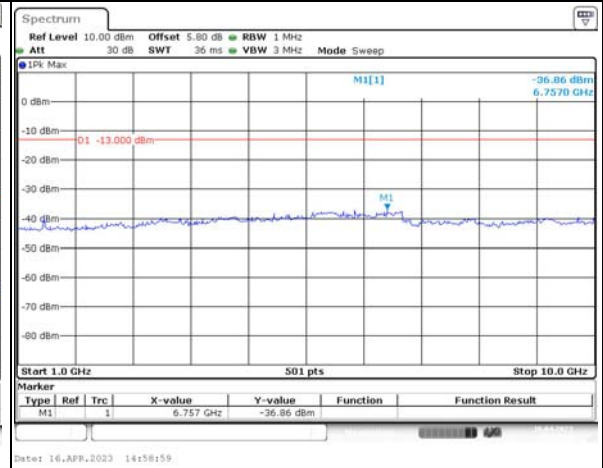
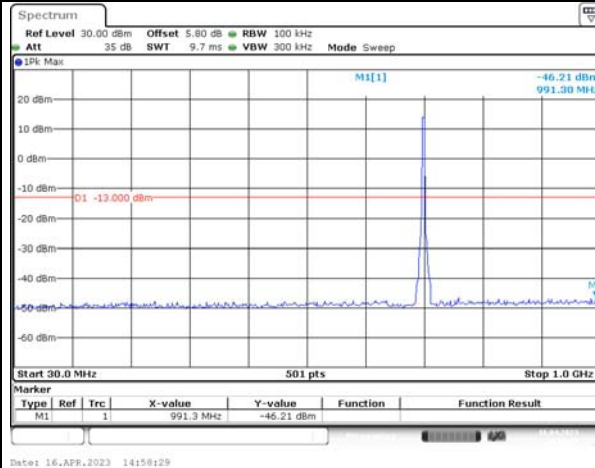


Spurious Emissions at Antenna Terminal

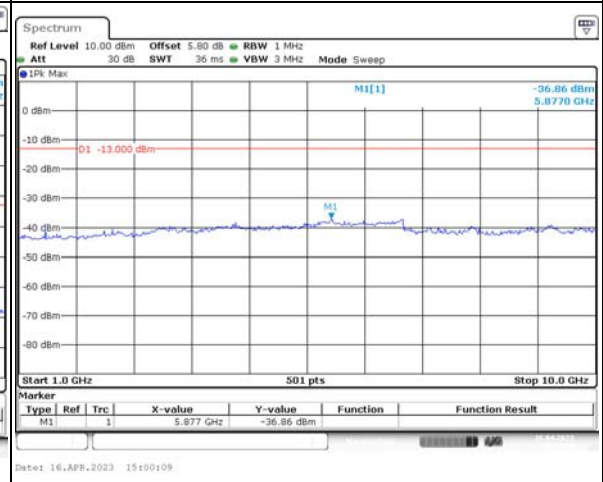
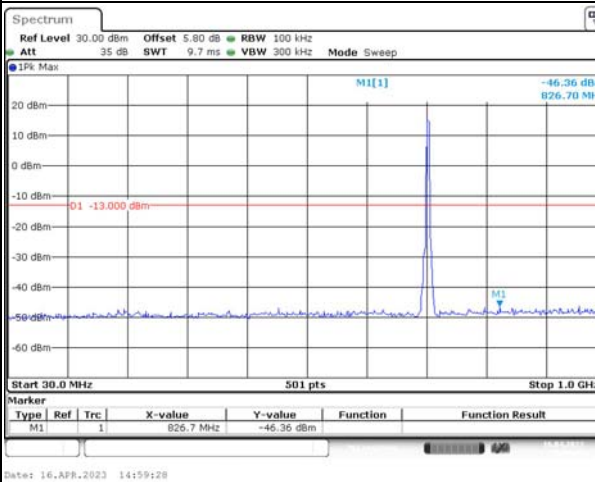
Channel

5MHz Bandwidth QPSK

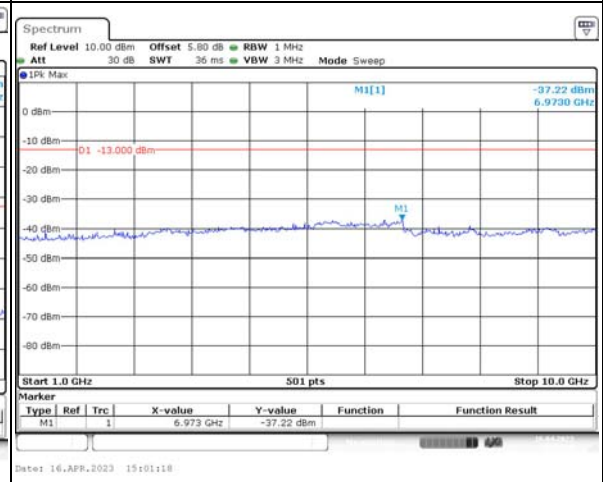
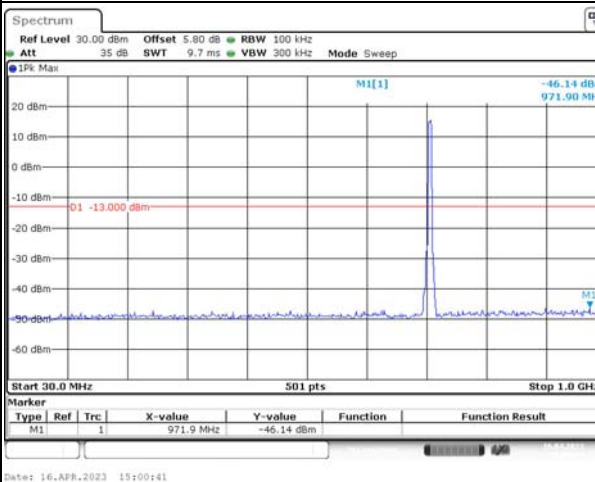
Lowest



Middle



Highest

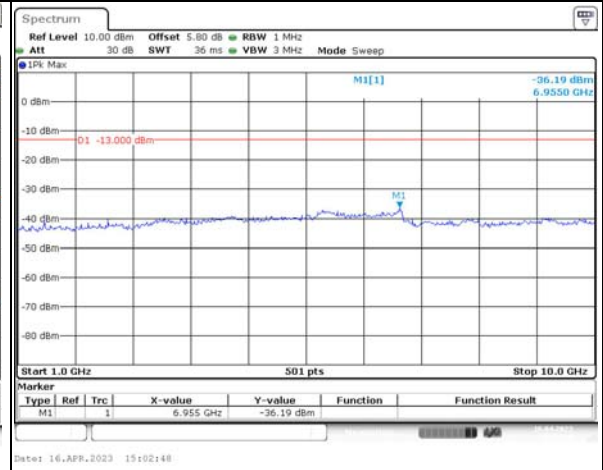
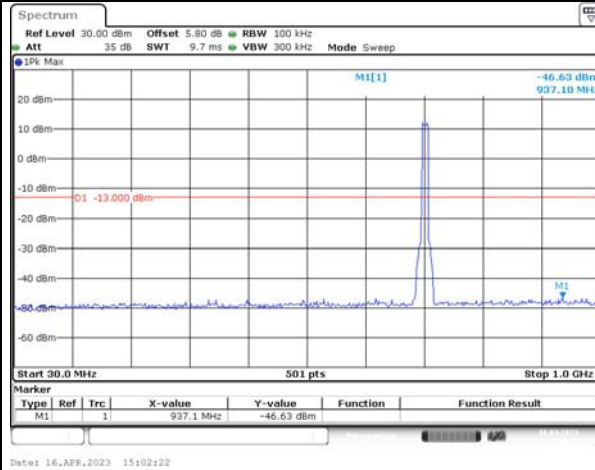


Spurious Emissions at Antenna Terminal

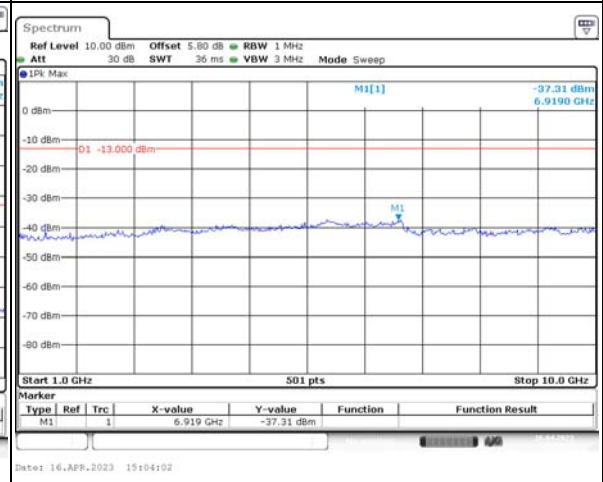
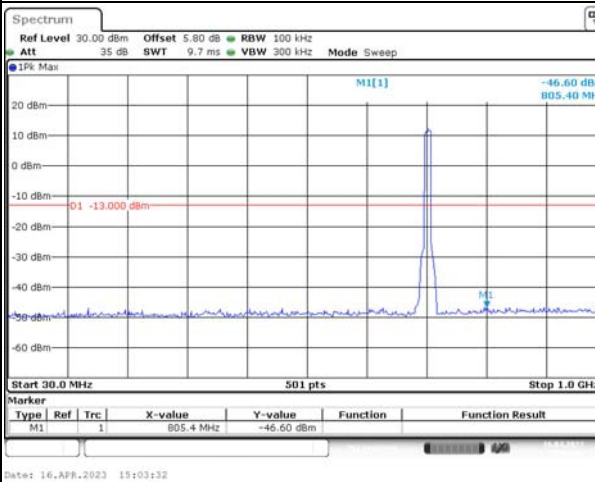
Channel

10MHz Bandwidth QPSK

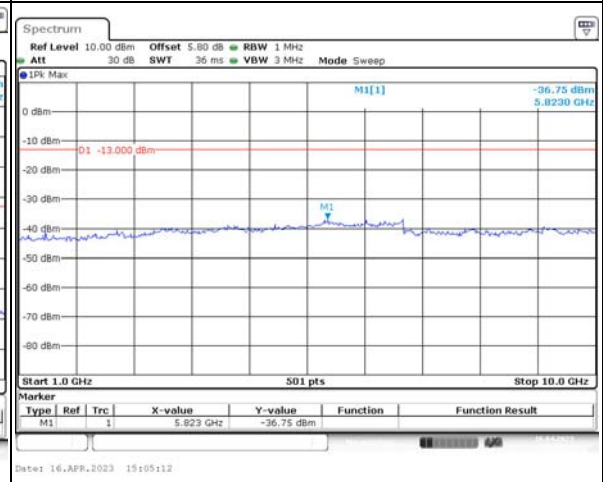
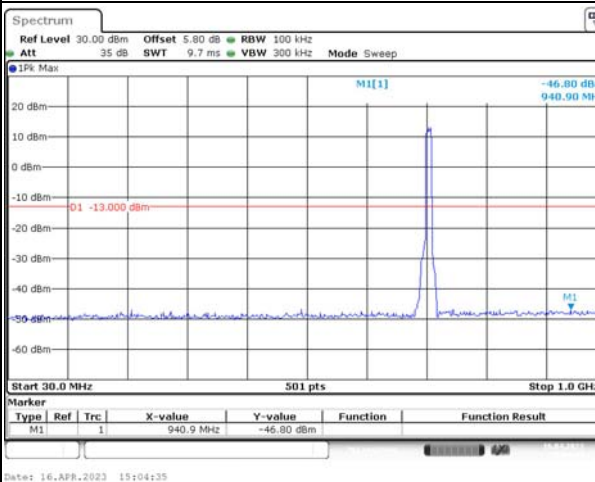
Lowest



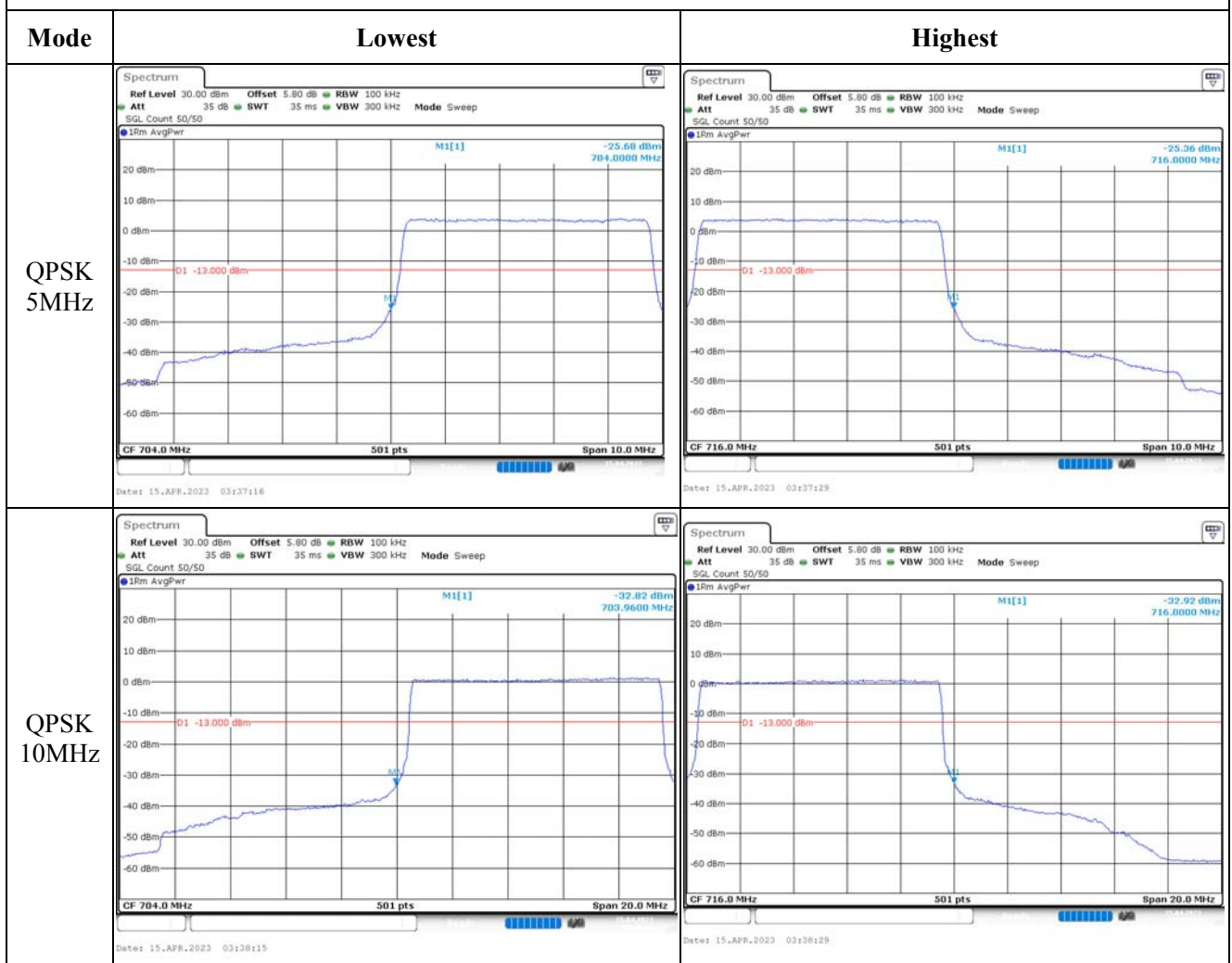
Middle



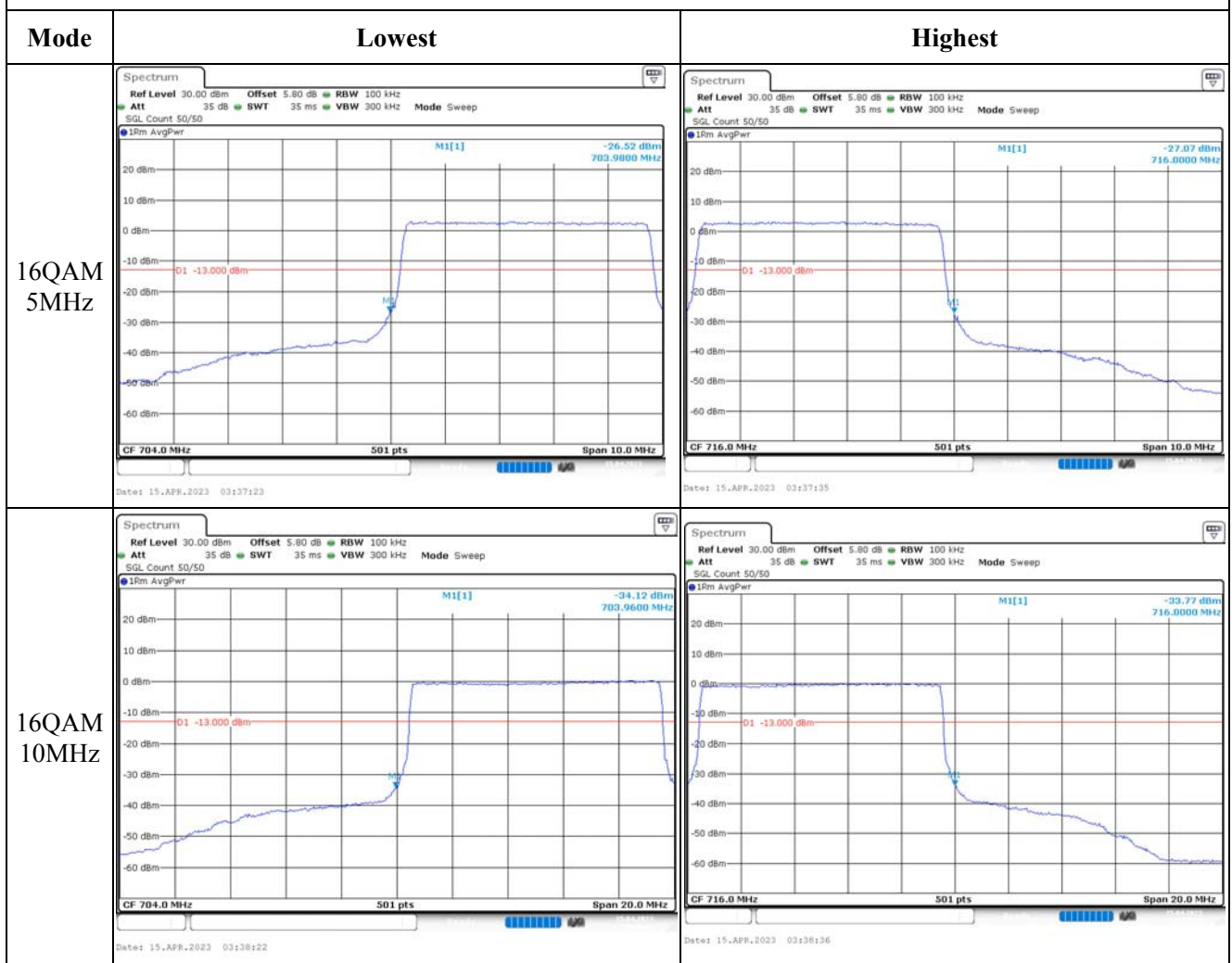
Highest



Out of band emission, Band Edge



Out of band emission, Band Edge



4.8 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	247B_1	Test Date:	2023/4/14~2023/4/21
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.2~26.1	Relative Humidity: (%)	38~56	ATM Pressure: (kPa)	99.9~102.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022-07-15	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	2022-09-29	2023-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022-07-15	2023-07-14

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

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

Test Data:**FCC§2.1046;§ 27.50(d)(4)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.96	22.53	22.83	23.29	30
	RB1#3	23.14	22.73	22.99		
	RB1#5	22.94	22.55	22.82		
	RB3#0	23.03	22.63	22.86		
	RB3#3	23.03	22.65	22.85		
	RB6#0	22.06	21.6	21.91		
1.4MHz 16QAM	RB1#0	22.1	21.59	21.84	22.42	30
	RB1#3	22.27	21.75	22		
	RB1#5	22.09	21.6	21.83		
	RB3#0	22.06	21.79	22.07		
	RB3#3	22.09	21.73	22.09		
	RB6#0	21.07	20.55	20.85		
3MHz QPSK	RB1#0	23.01	22.65	22.88	23.19	30
	RB1#8	23.04	22.59	22.93		
	RB1#14	23.03	22.57	22.89		
	RB6#0	22.04	21.63	21.85		
	RB6#9	22.08	21.62	21.88		
	RB15#0	22.09	21.68	21.93		
3MHz 16QAM	RB1#0	22.13	22.24	22.04	22.39	30
	RB1#8	22.07	22.23	22.06		
	RB1#14	22.05	22.18	22.02		
	RB6#0	20.96	20.68	20.89		
	RB6#9	20.94	20.64	20.91		
	RB15#0	21.16	20.73	20.88		
5MHz QPSK	RB1#0	22.43	22.07	22.25	22.69	30
	RB1#13	22.54	22.23	22.39		
	RB1#24	22.41	22.06	22.32		
	RB15#0	21.59	21.21	21.4		
	RB15#10	21.65	21.19	21.44		
	RB25#0	21.58	21.16	21.39		
5MHz 16QAM	RB1#0	21.55	20.95	21.57	21.9	30
	RB1#13	21.69	21.13	21.75		
	RB1#24	21.53	21.01	21.63		
	RB15#0	20.63	20.22	20.36		
	RB15#10	20.64	20.2	20.41		
	RB25#0	20.62	20.2	20.38		
10MHz QPSK	RB1#0	22.99	22.14	22.24	23.14	30
	RB1#25	22.6	22.25	22.43		
	RB1#49	22.41	22.03	22.36		

	RB25#0	21.57	21.24	21.35		
	RB25#25	21.58	21.18	21.41		
	RB50#0	21.6	21.21	21.38		
10MHz 16QAM	RB1#0	22.14	21.28	21.29	22.41	30
	RB1#25	22.26	21.41	21.46		
	RB1#49	22.04	21.23	21.38		
	RB25#0	20.62	20.25	20.42		
	RB25#25	20.64	20.2	20.47		
	RB50#0	20.62	20.25	20.37		
15MHz QPSK	RB1#0	22.94	22.04	22.12	23.09	30
	RB1#38	22.52	22.11	22.31		
	RB1#74	22.3	22	22.29		
	RB36#0	21.58	21.2	21.32		
	RB36#39	21.46	21.16	21.47		
	RB75#0	21.51	21.16	21.36		
15MHz 16QAM	RB1#0	21.9	21.67	21.34	22.12	30
	RB1#38	21.97	21.71	21.49		
	RB1#74	21.79	21.58	21.44		
	RB36#0	20.55	20.22	20.37		
	RB36#39	20.51	20.16	20.46		
	RB75#0	20.47	20.19	20.38		
20MHz QPSK	RB1#0	22.74	21.99	21.84	22.89	30
	RB1#50	22.58	22.3	22.35		
	RB1#99	22.04	21.95	22.08		
	RB50#0	21.54	21.17	21.22		
	RB50#50	21.4	21.12	21.35		
	RB100#0	21.5	21.13	21.28		
20MHz 16QAM	RB1#0	21.58	21.2	21.38	22.08	30
	RB1#50	21.93	21.51	21.88		
	RB1#99	21.43	21.13	21.63		
	RB50#0	20.5	20.2	20.22		
	RB50#50	20.38	20.14	20.29		
	RB100#0	20.5	20.12	20.29		

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	4.84	5.1	4.99	13
	RB100#0	5.39	5.39	5.19	13
20MHz 16QAM	RB1#0	5.59	5.91	6	13
	RB100#0	6.35	6.32	6.14	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	1.096	1.32	1.302	1.314
1.4MHz 16QAM	1.096	1.102	1.102	1.296	1.302	1.32
3MHz QPSK	2.683	2.683	2.695	2.892	2.868	2.88
3MHz 16QAM	2.683	2.683	2.683	2.88	2.892	2.892
5MHz QPSK	4.531	4.511	4.531	5.18	5.2	5.2
5MHz 16QAM	4.551	4.551	4.511	5.22	5.2	5.18
10MHz QPSK	8.982	8.942	8.942	9.96	9.88	9.92
10MHz 16QAM	8.982	8.942	8.982	9.84	9.84	9.88
15MHz QPSK	13.533	13.593	13.473	15.3	15.36	15.3
15MHz 16QAM	13.533	13.533	13.533	15.24	15.18	15.48
20MHz QPSK	17.964	17.964	17.964	19.6	19.68	20
20MHz 16QAM	17.964	18.044	17.964	19.68	19.84	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.

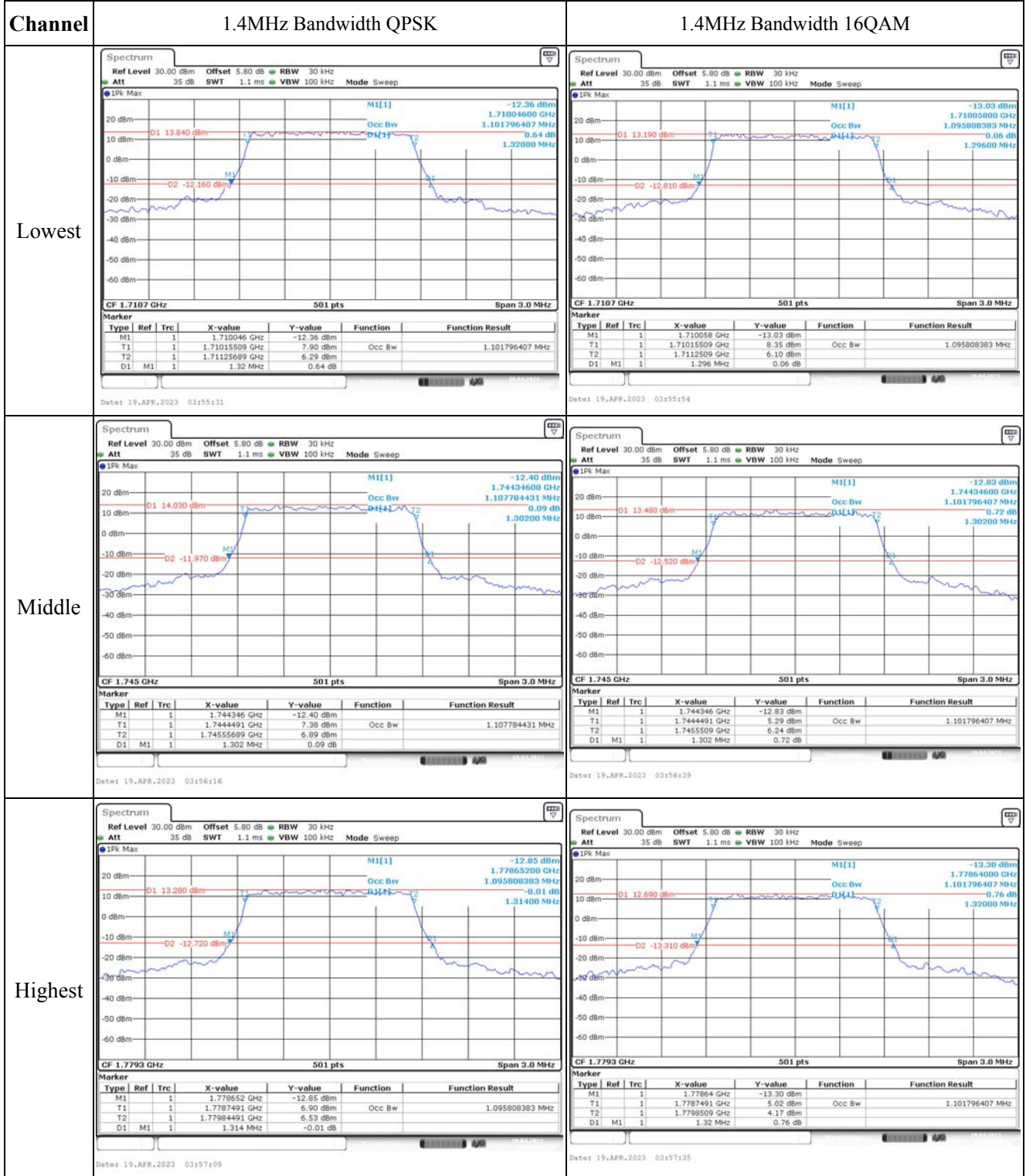
FCC §2.1051, § 27.53:Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

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	1711.046	1710.00	1779.002	1780
	-20	3.7	1711.076	1710.00	1779.024	1780
	-10	3.7	1711.034	1710.00	1779.008	1780
	0	3.7	1711.089	1710.00	1779.084	1780
	10	3.7	1711.057	1710.00	1779.040	1780
	20	3.7	1711.058	1710.00	1779.022	1780
	30	3.7	1711.051	1710.00	1779.089	1780
	40	3.7	1711.042	1710.00	1779.044	1780
	50	3.7	1711.058	1710.00	1779.009	1780
Frequency Stability vs. Voltage	20	3.6	1711.099	1710.00	1779.022	1780
	20	4.35	1711.057	1710.00	1779.039	1780
Result:					Pass	

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	1711.061	1710.00	1779.006	1780
	-20	3.7	1711.007	1710.00	1779.092	1780
	-10	3.7	1711.009	1710.00	1779.099	1780
	0	3.7	1711.089	1710.00	1779.034	1780
	10	3.7	1711.074	1710.00	1779.075	1780
	20	3.7	1711.058	1710.00	1779.022	1780
	30	3.7	1711.061	1710.00	1779.093	1780
	40	3.7	1711.051	1710.00	1779.052	1780
	50	3.7	1711.031	1710.00	1779.021	1780
Frequency Stability vs. Voltage	20	3.6	1711.015	1710.00	1779.070	1780
	20	4.35	1711.003	1710.00	1779.097	1780
					Result:	Pass

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

Occupied Bandwidth



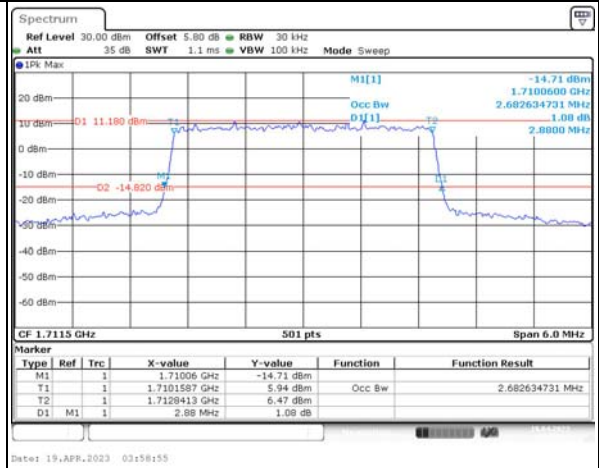
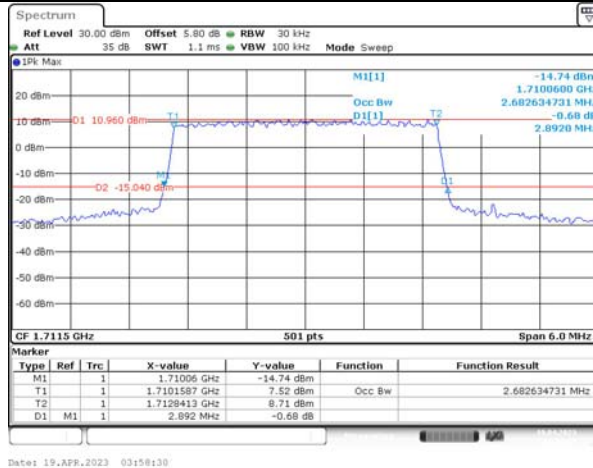
Occupied Bandwidth

Channel

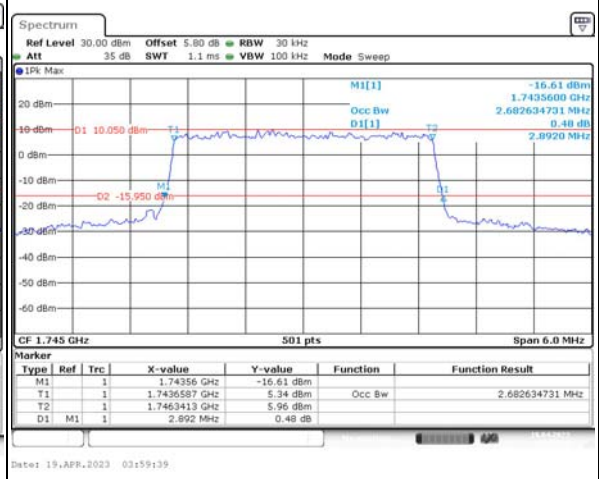
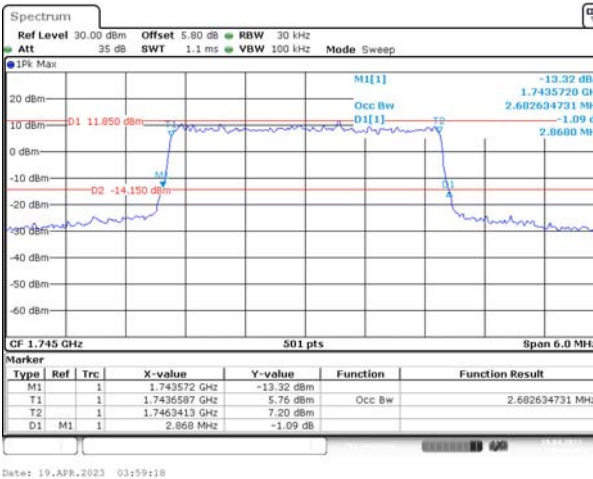
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

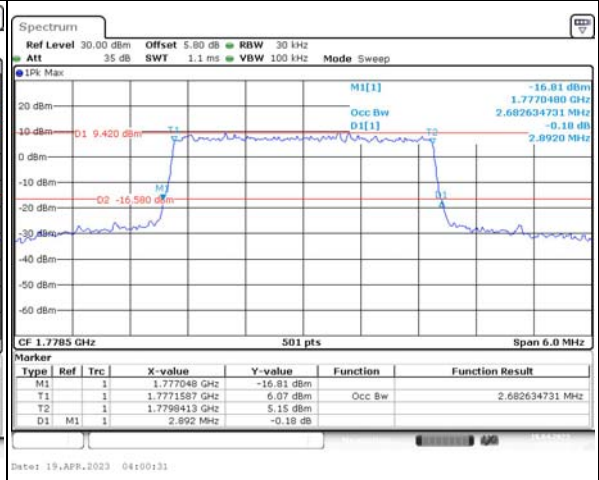
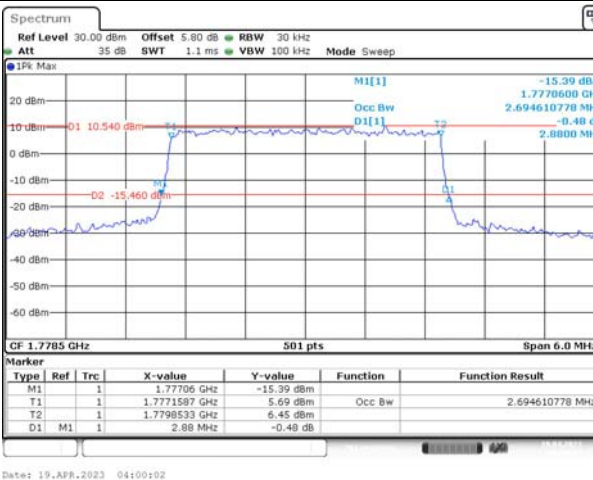
Lowest



Middle



Highest



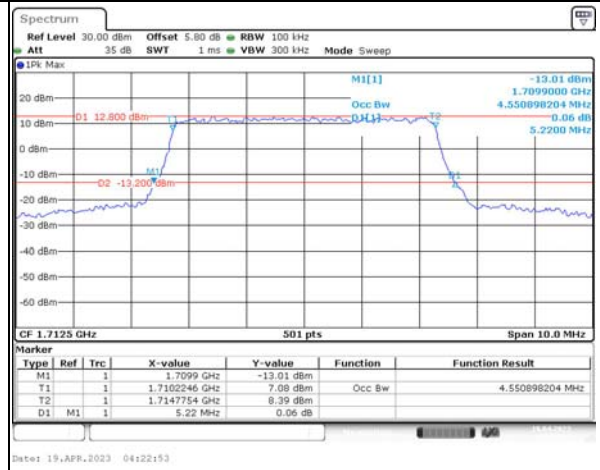
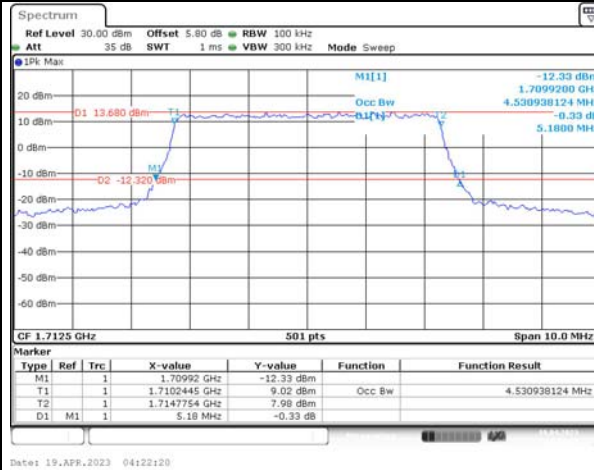
Occupied Bandwidth

Channel

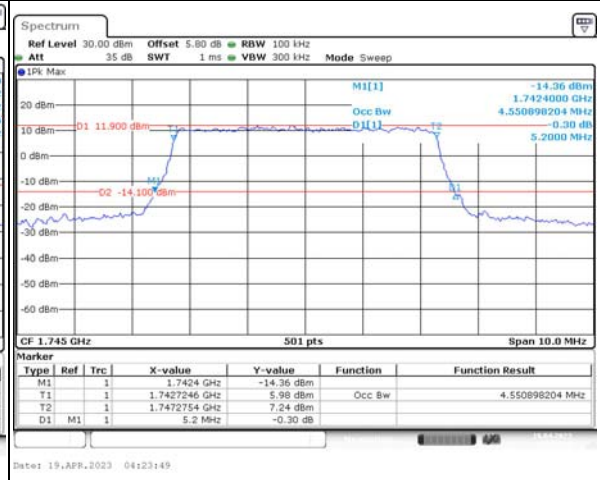
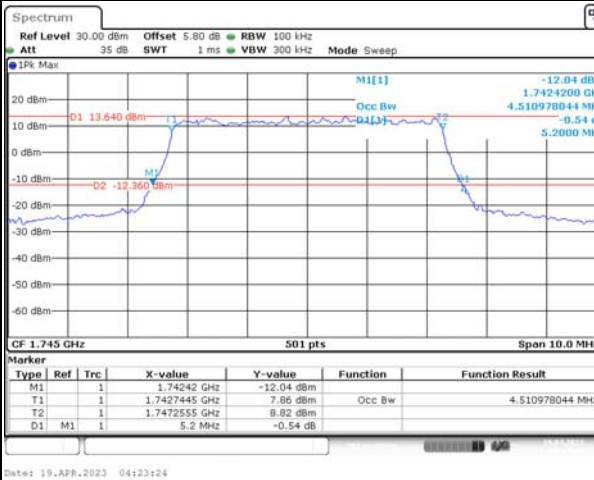
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

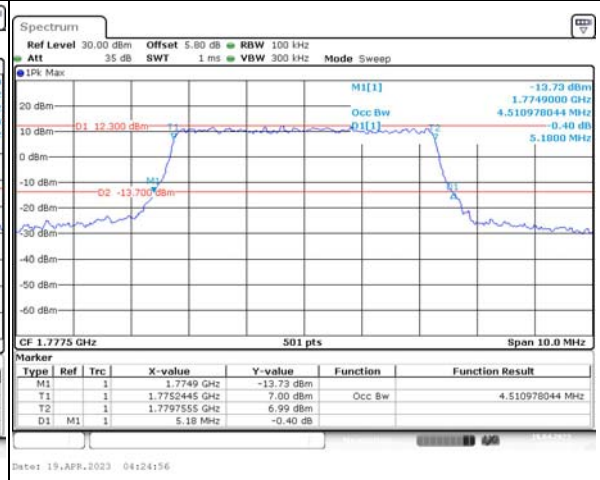
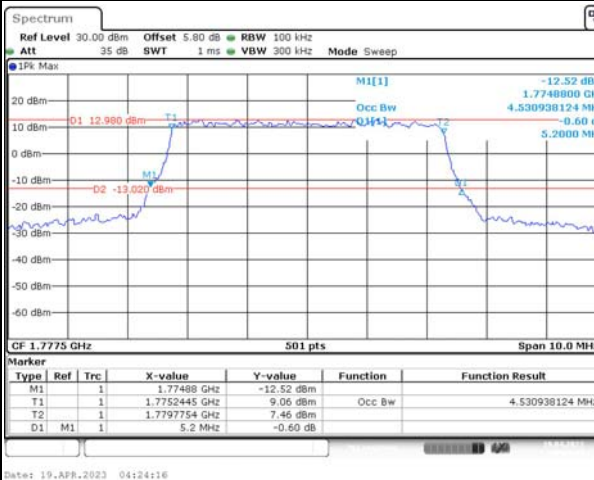
Lowest



Middle



Highest



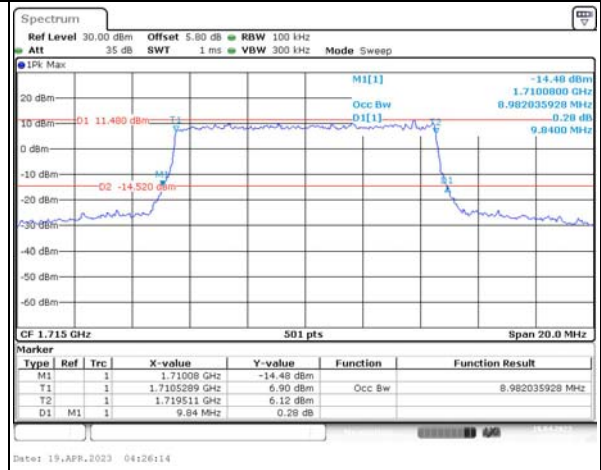
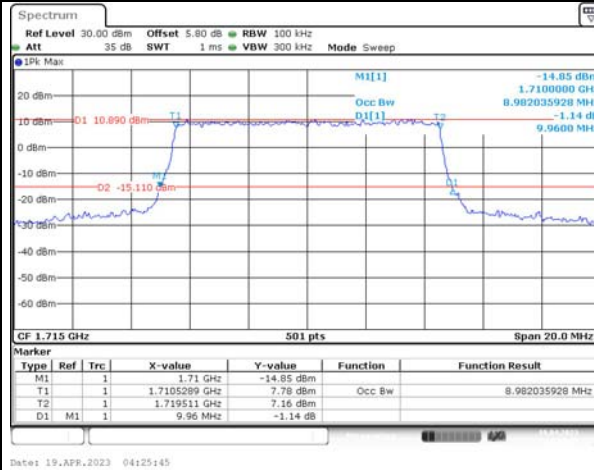
Occupied Bandwidth

Channel

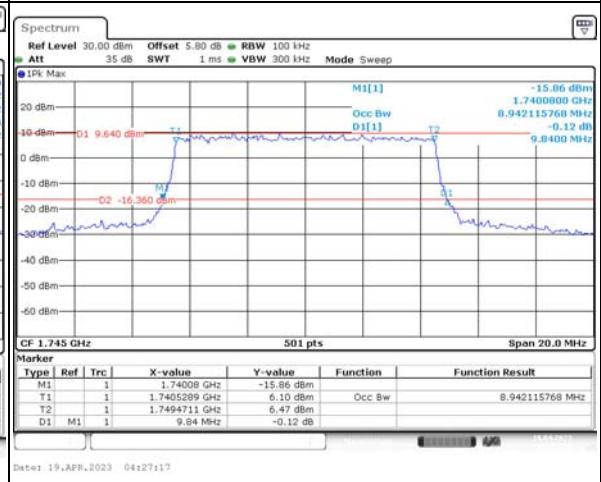
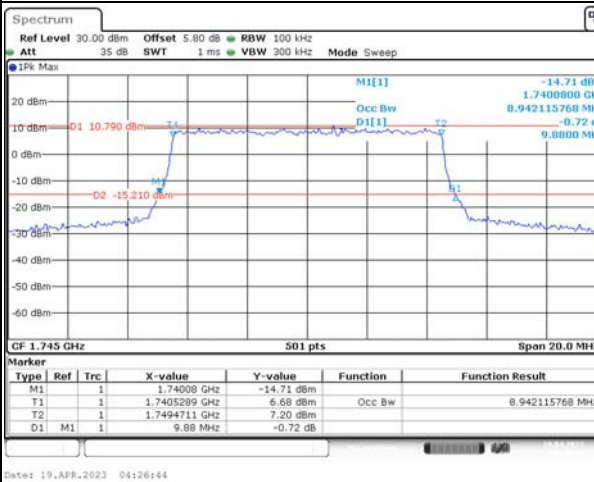
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

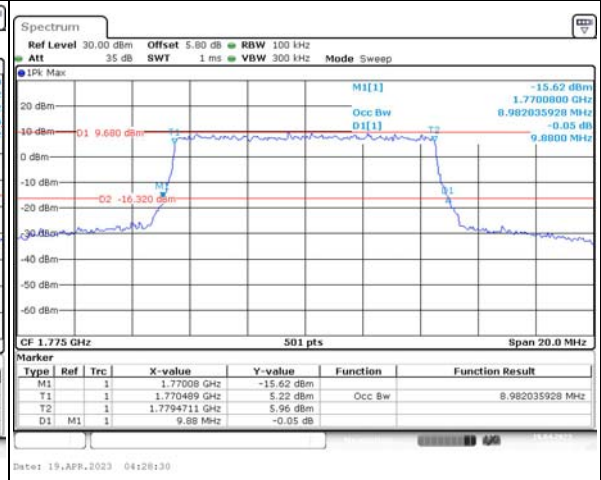
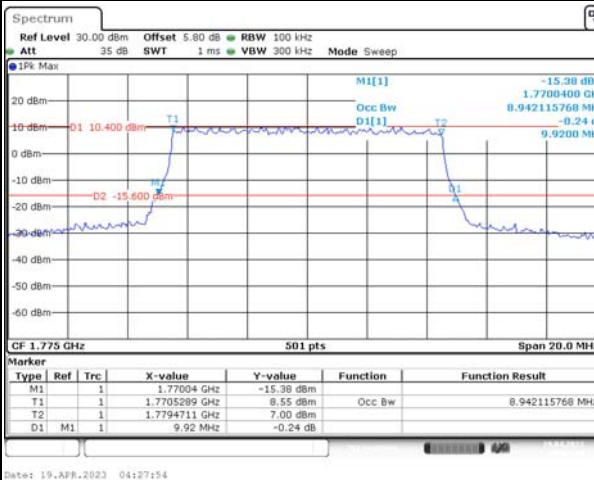
Lowest



Middle



Highest



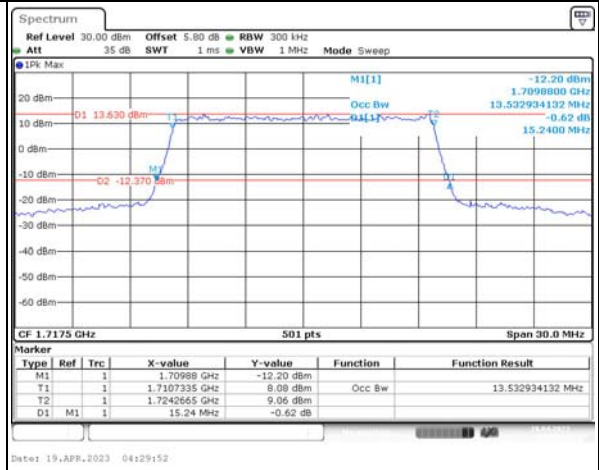
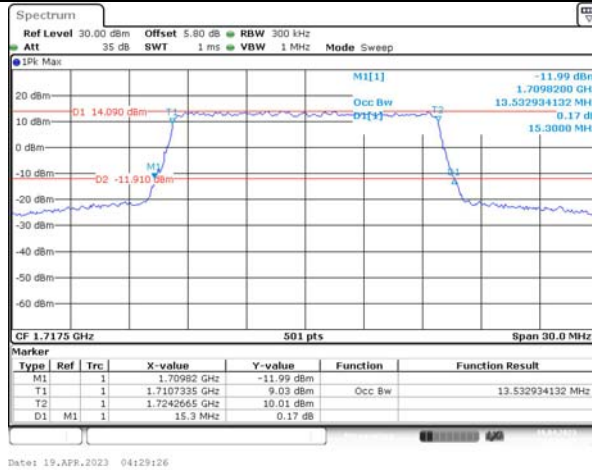
Occupied Bandwidth

Channel

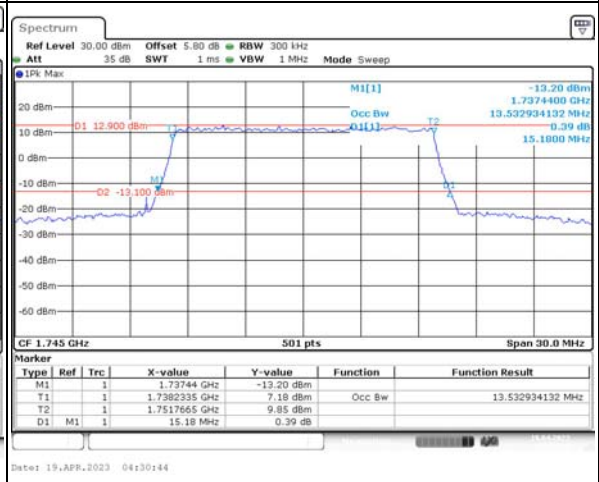
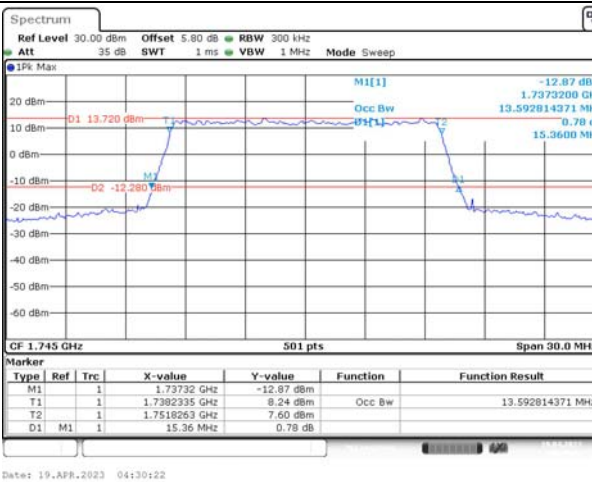
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

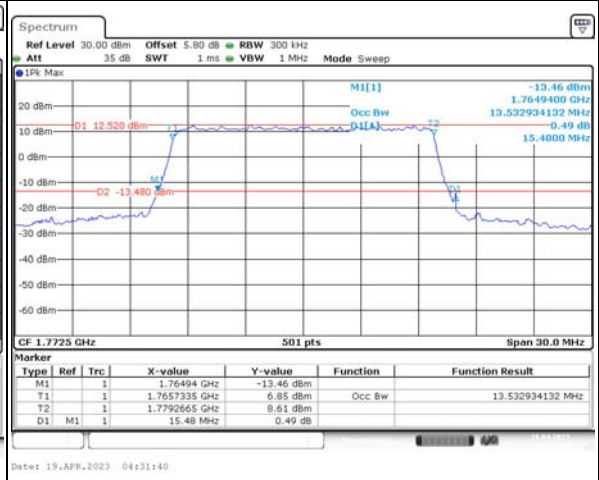
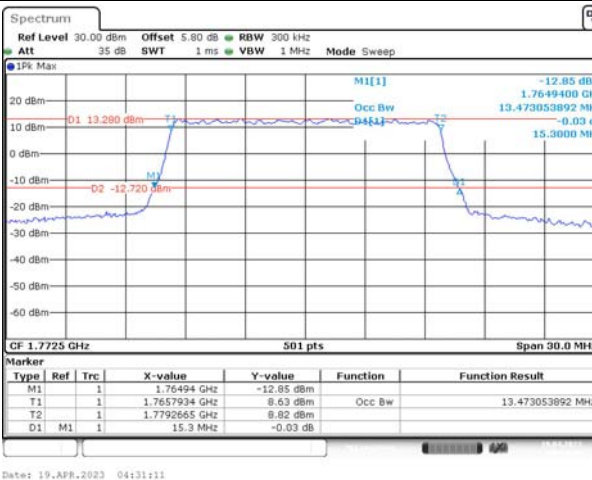
Lowest



Middle



Highest



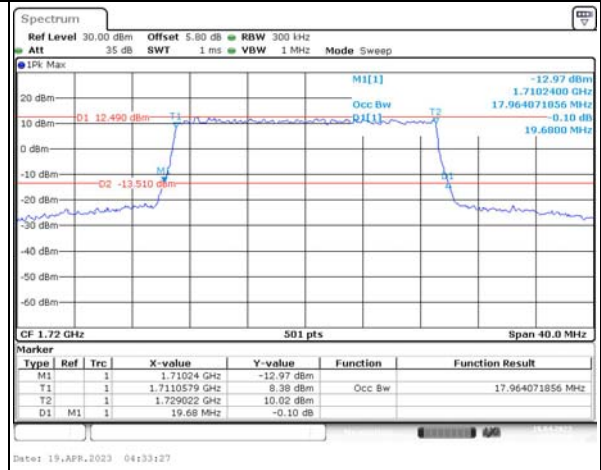
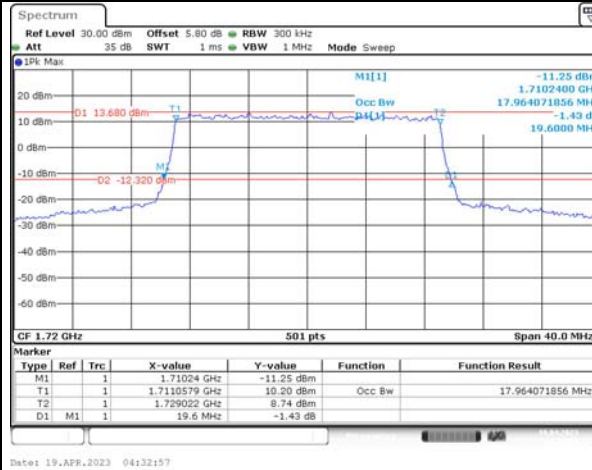
Occupied Bandwidth

Channel

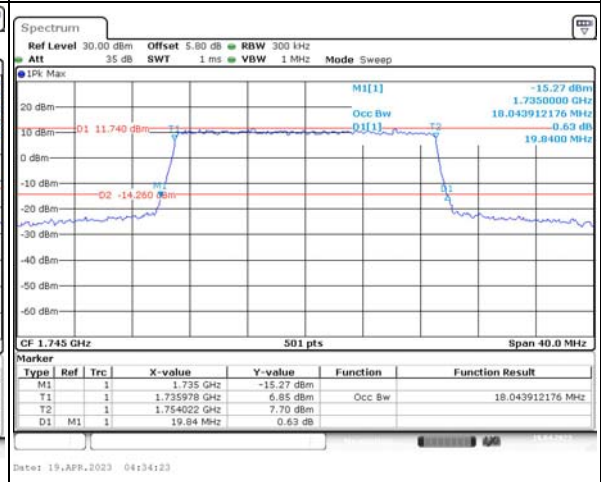
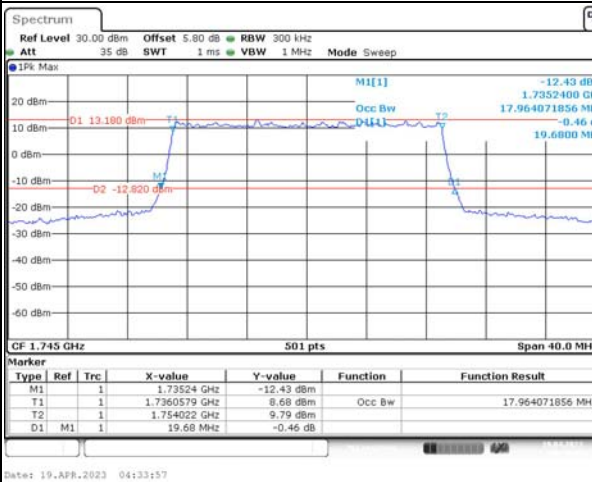
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

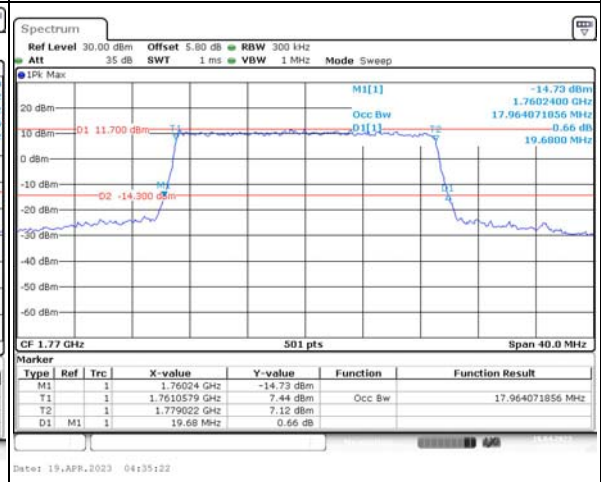
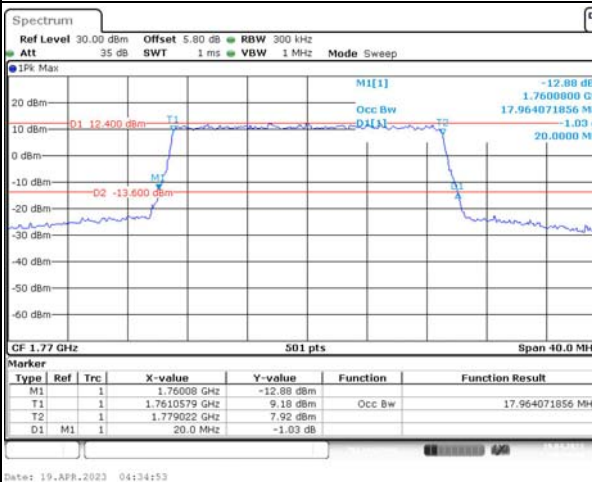
Lowest



Middle



Highest

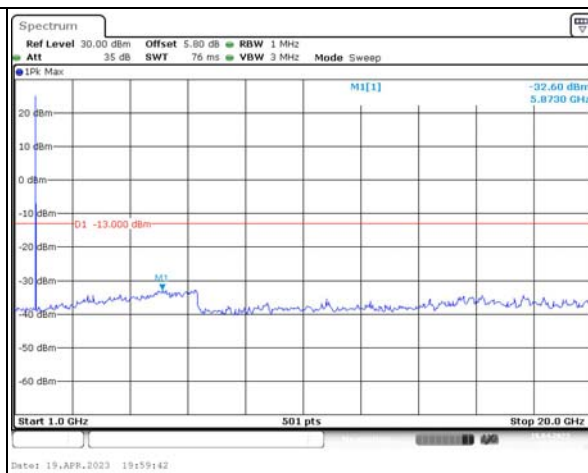
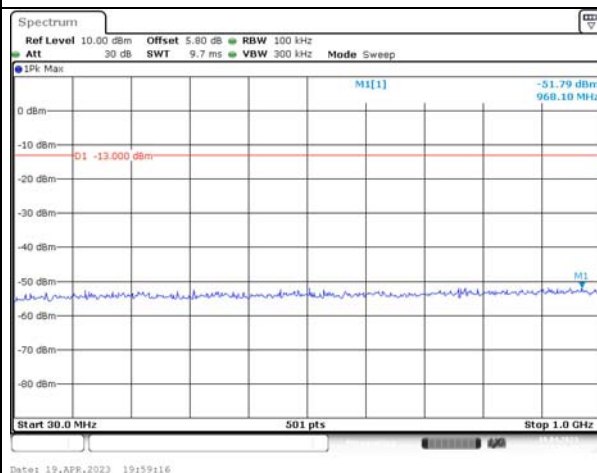


Spurious Emissions at Antenna Terminal

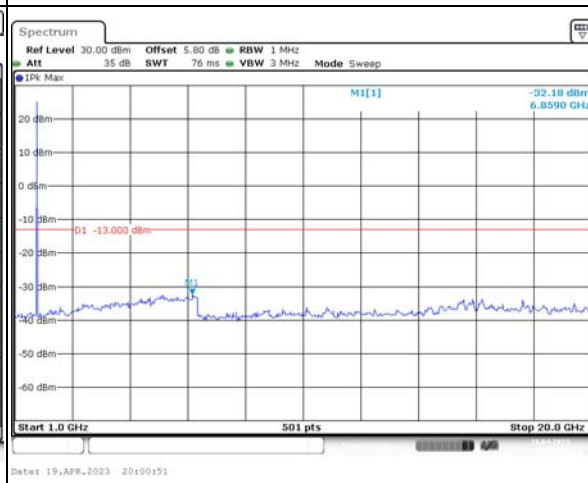
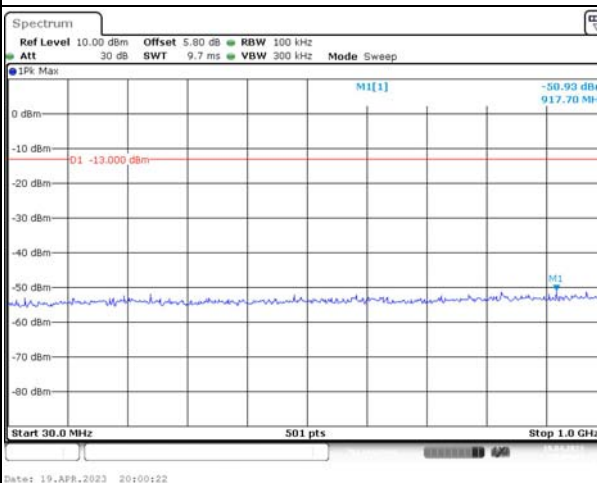
Channel

1.4MHz Bandwidth QPSK

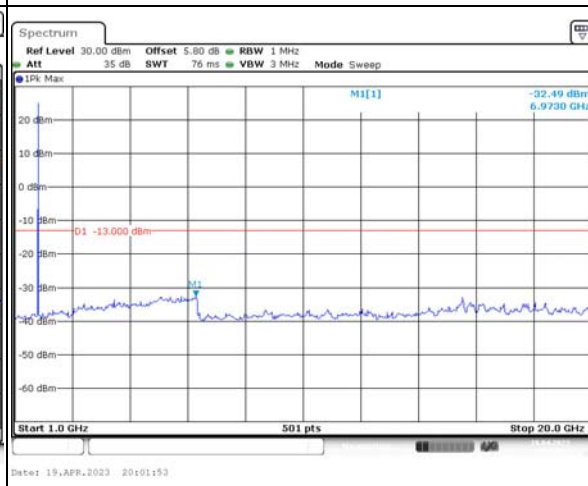
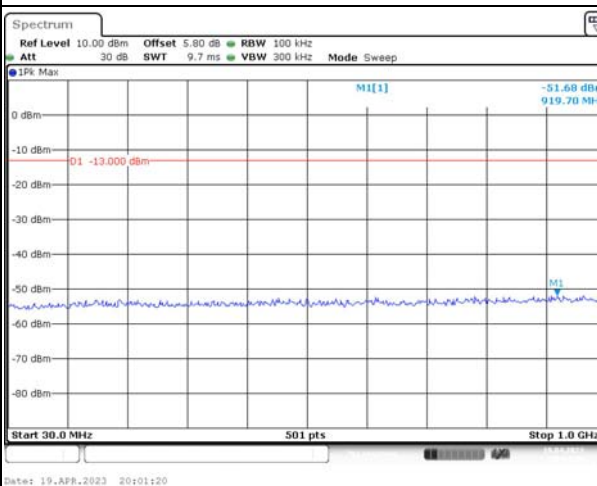
Lowest



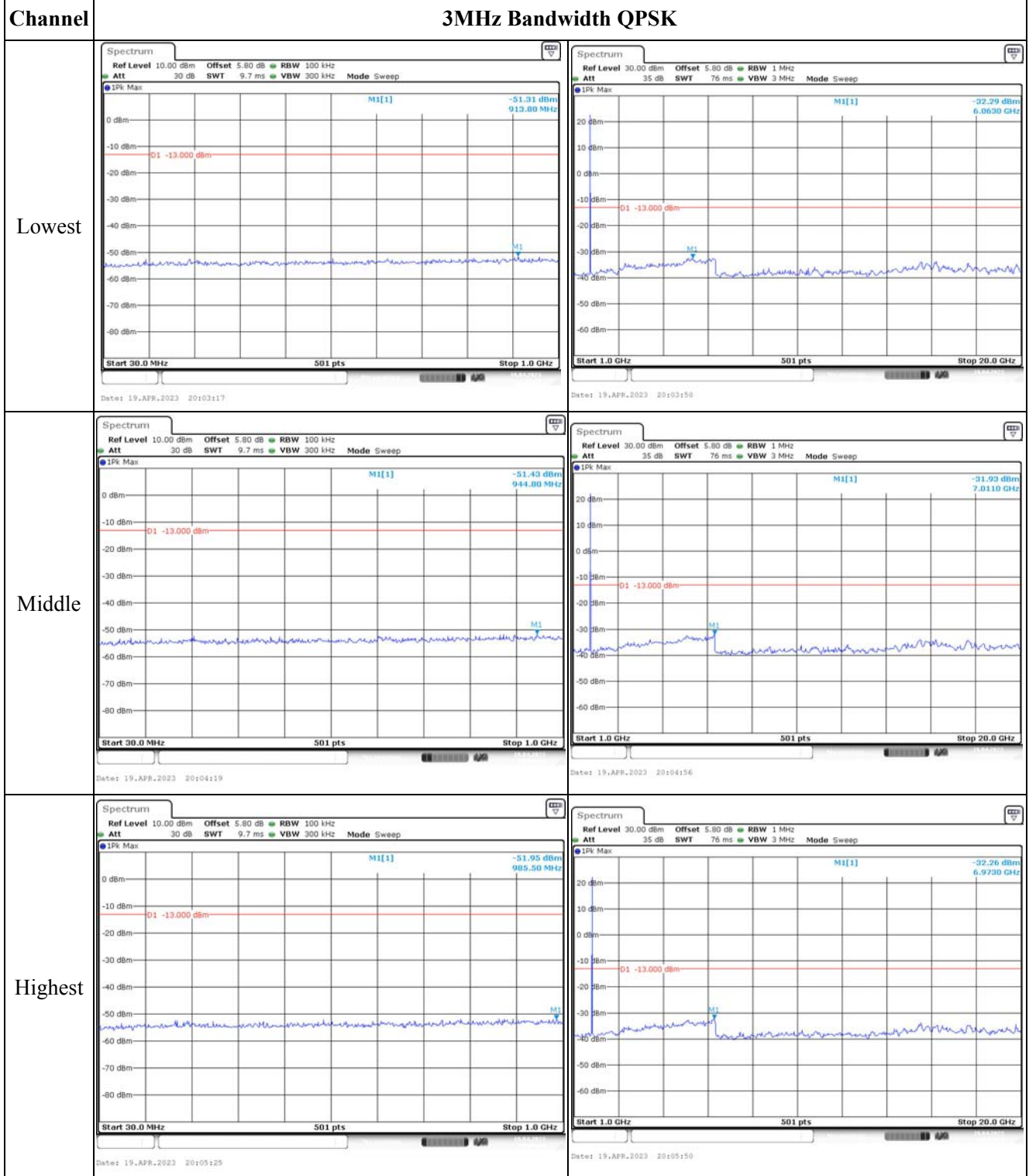
Middle



Highest



Spurious Emissions at Antenna Terminal

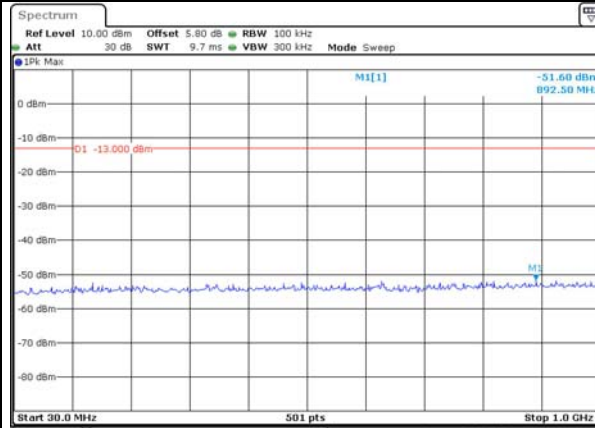


Spurious Emissions at Antenna Terminal

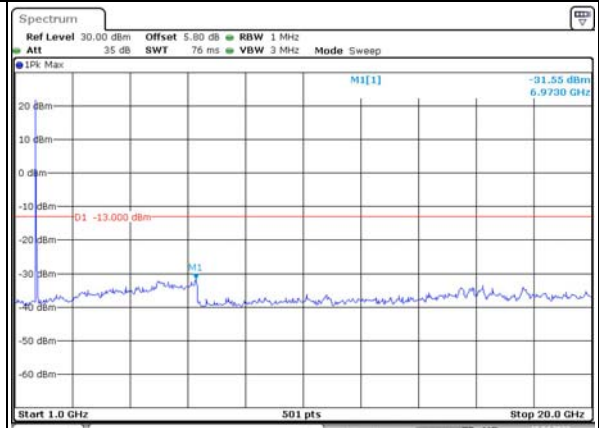
Channel

5MHz Bandwidth QPSK

Lowest

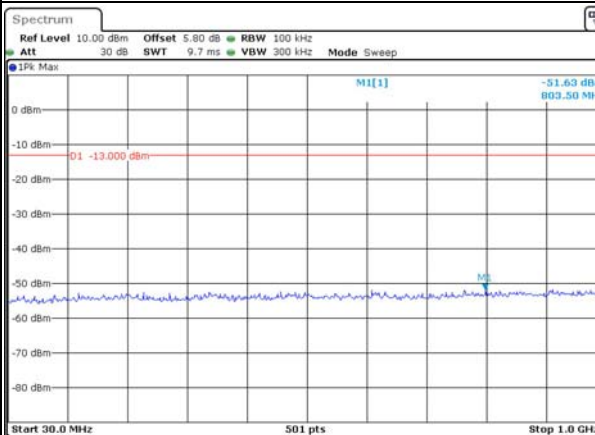


Date: 19.APR.2023 20:06:53

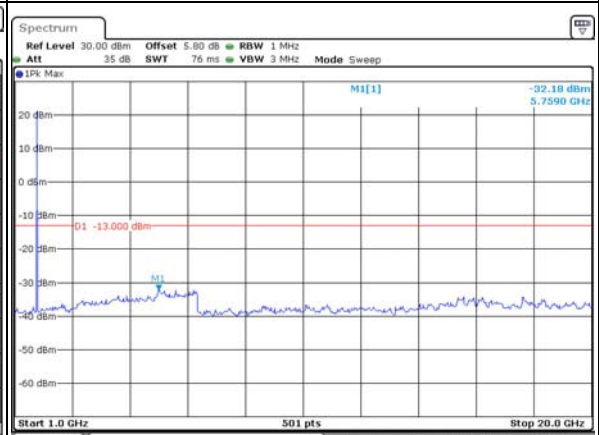


Date: 19.APR.2023 20:07:26

Middle

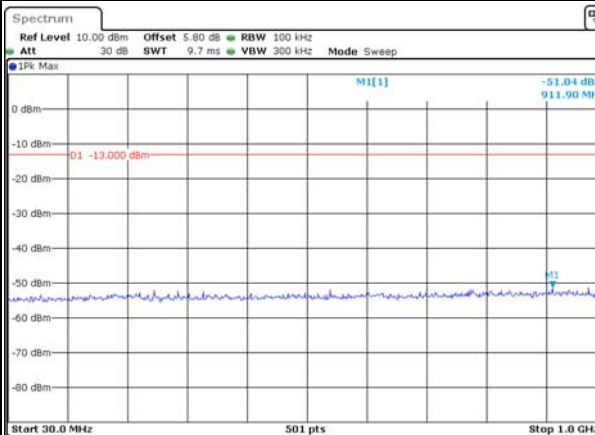


Date: 19.APR.2023 20:08:06

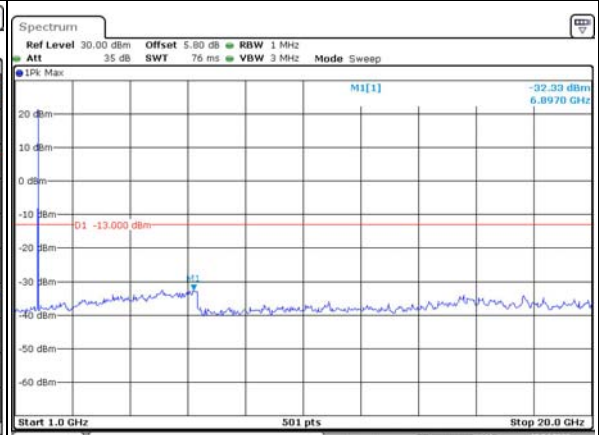


Date: 19.APR.2023 20:08:39

Highest



Date: 19.APR.2023 20:09:35



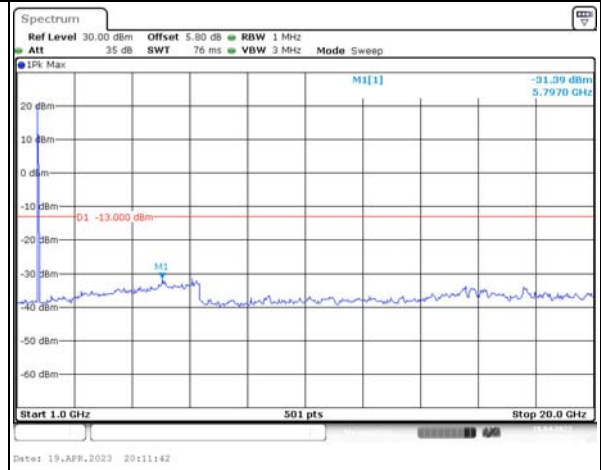
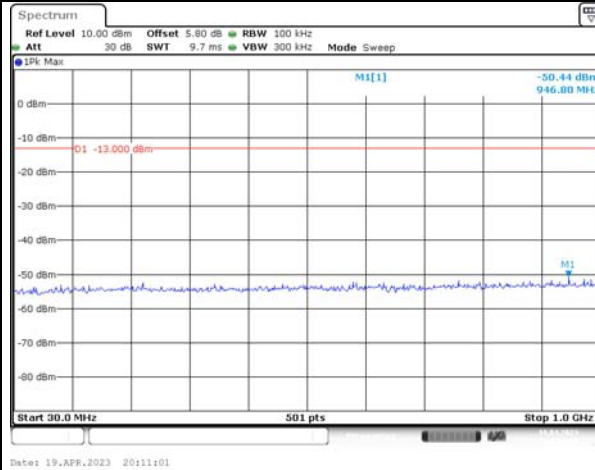
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Spurious Emissions at Antenna Terminal

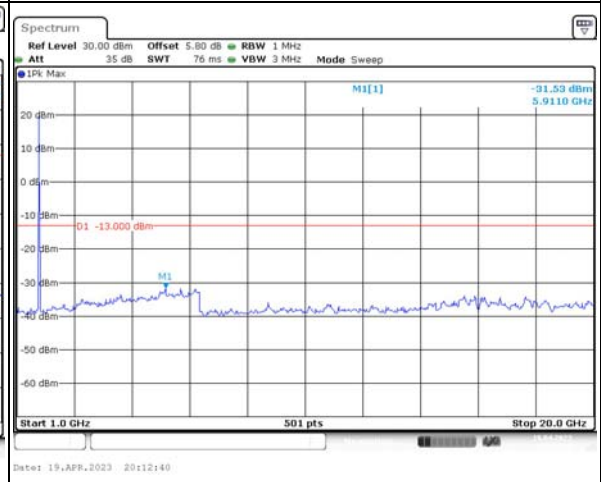
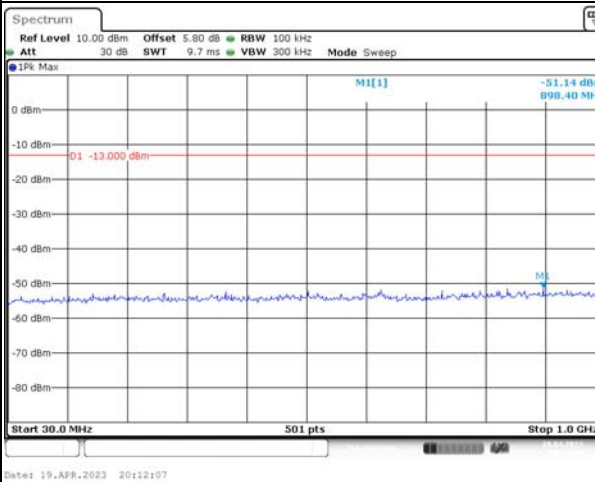
Channel

10MHz Bandwidth QPSK

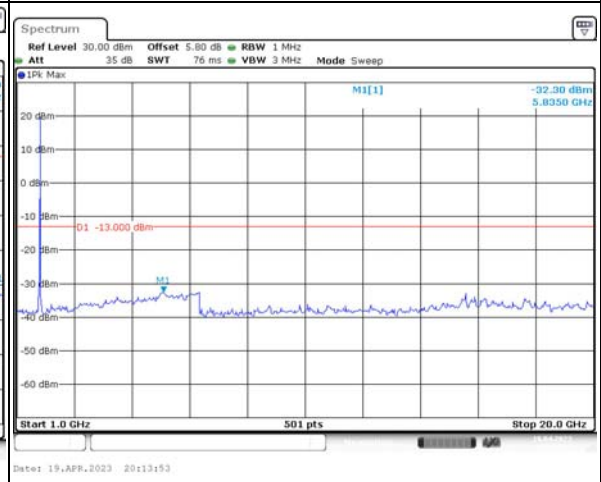
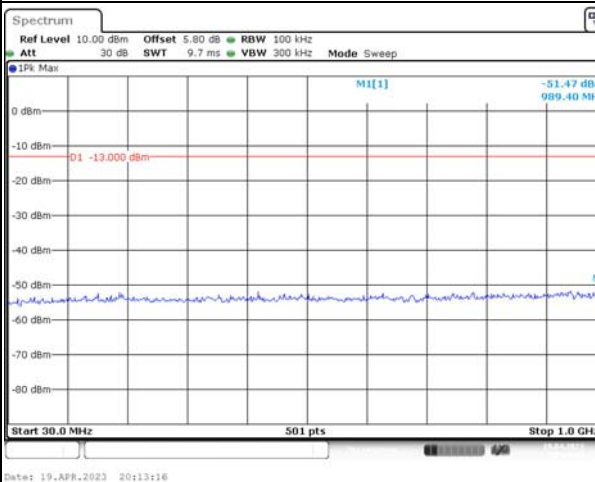
Lowest



Middle



Highest

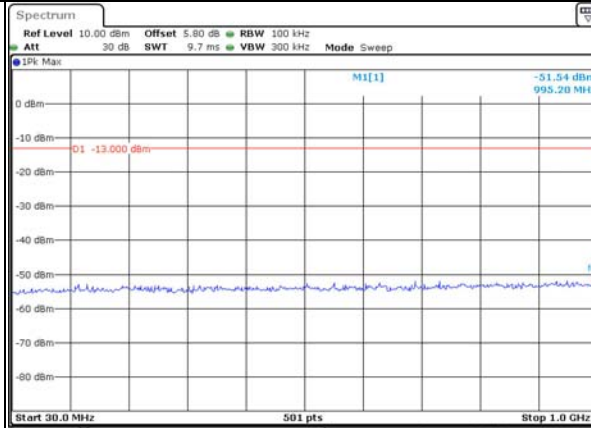


Spurious Emissions at Antenna Terminal

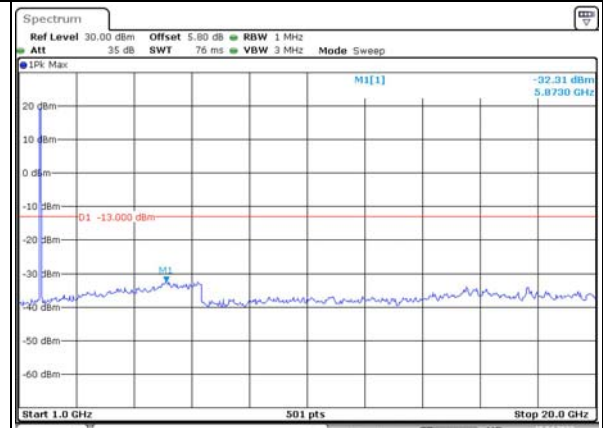
Channel

15MHz Bandwidth QPSK

Lowest

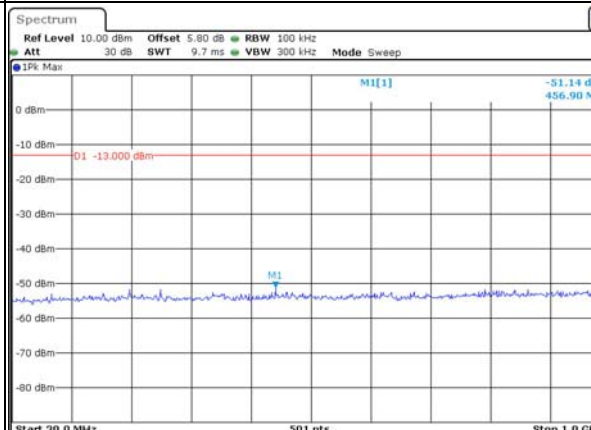


Date: 19.APR.2023 20:15:10

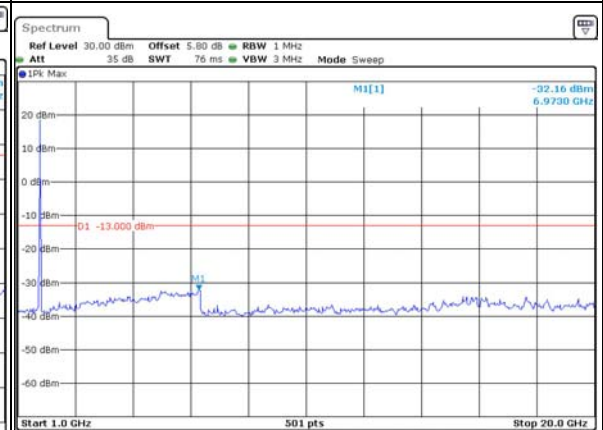


Date: 19.APR.2023 20:15:51

Middle

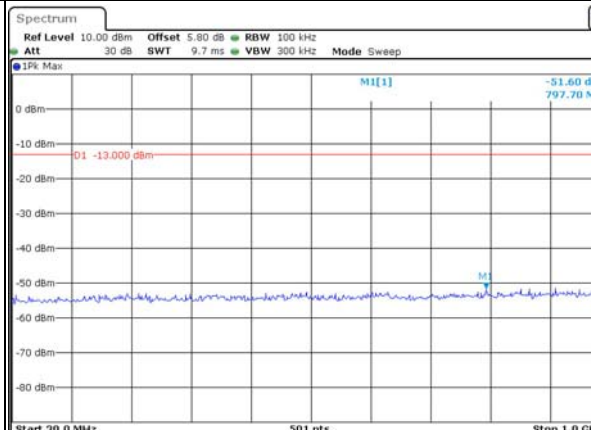


Date: 19.APR.2023 20:16:27

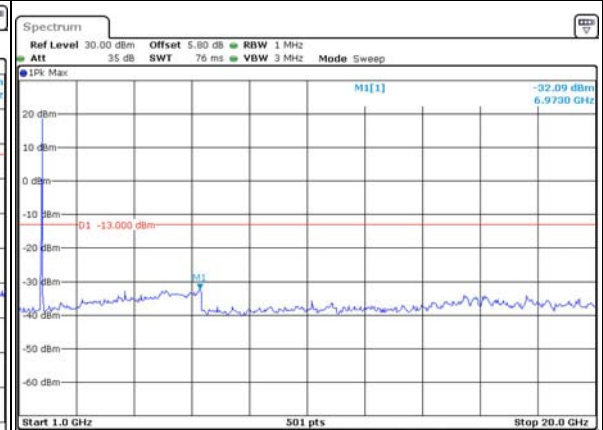


Date: 19.APR.2023 20:17:01

Highest



Date: 19.APR.2023 20:17:25



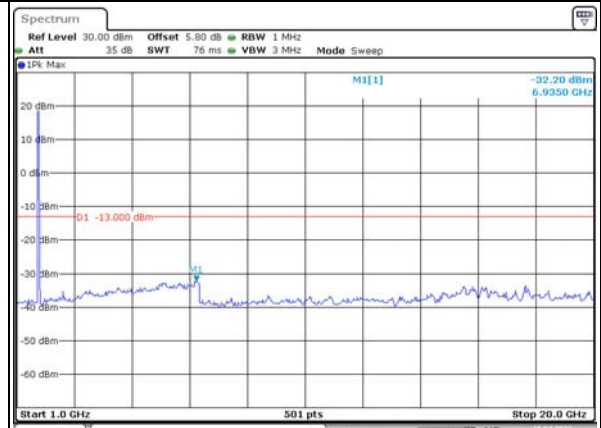
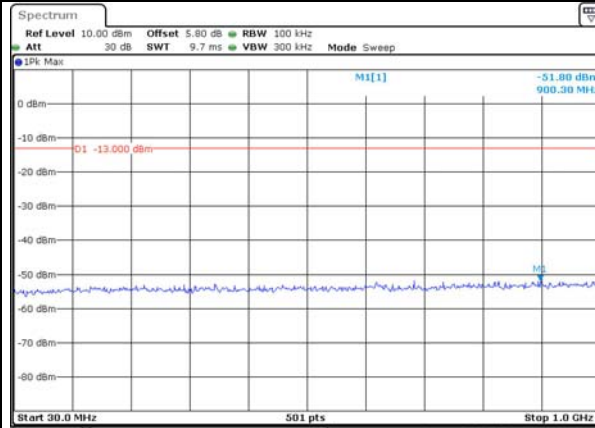
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Spurious Emissions at Antenna Terminal

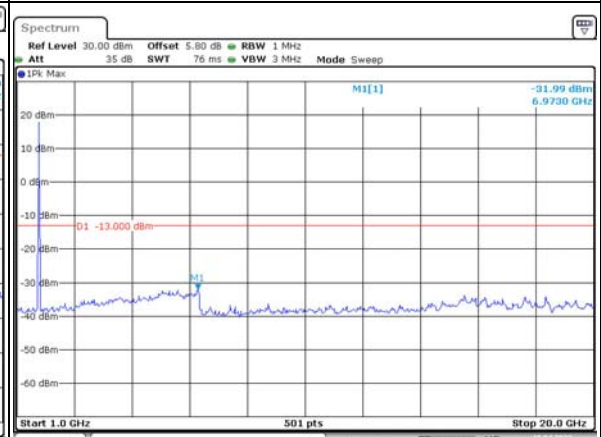
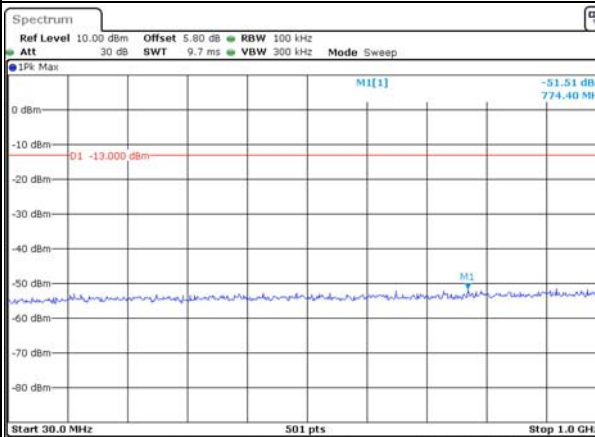
Channel

20MHz Bandwidth QPSK

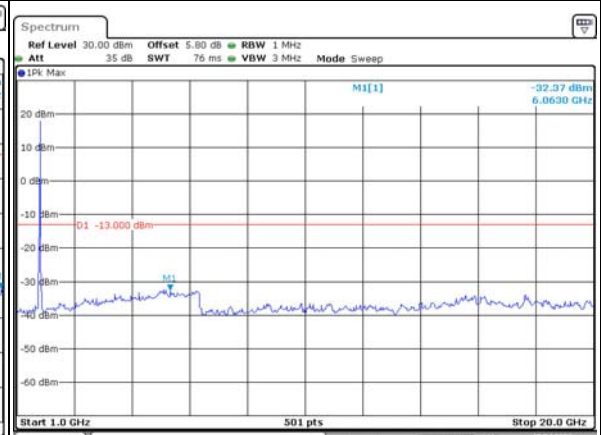
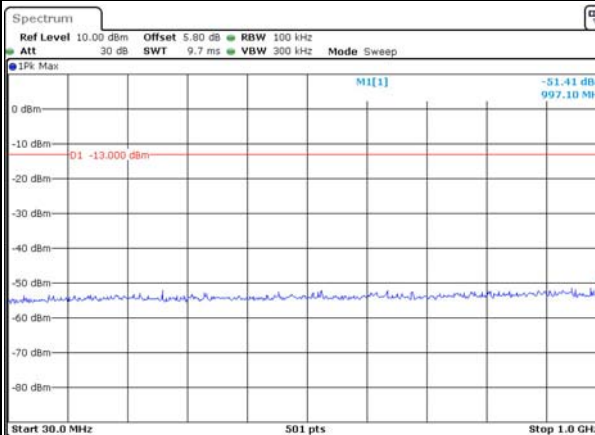
Lowest



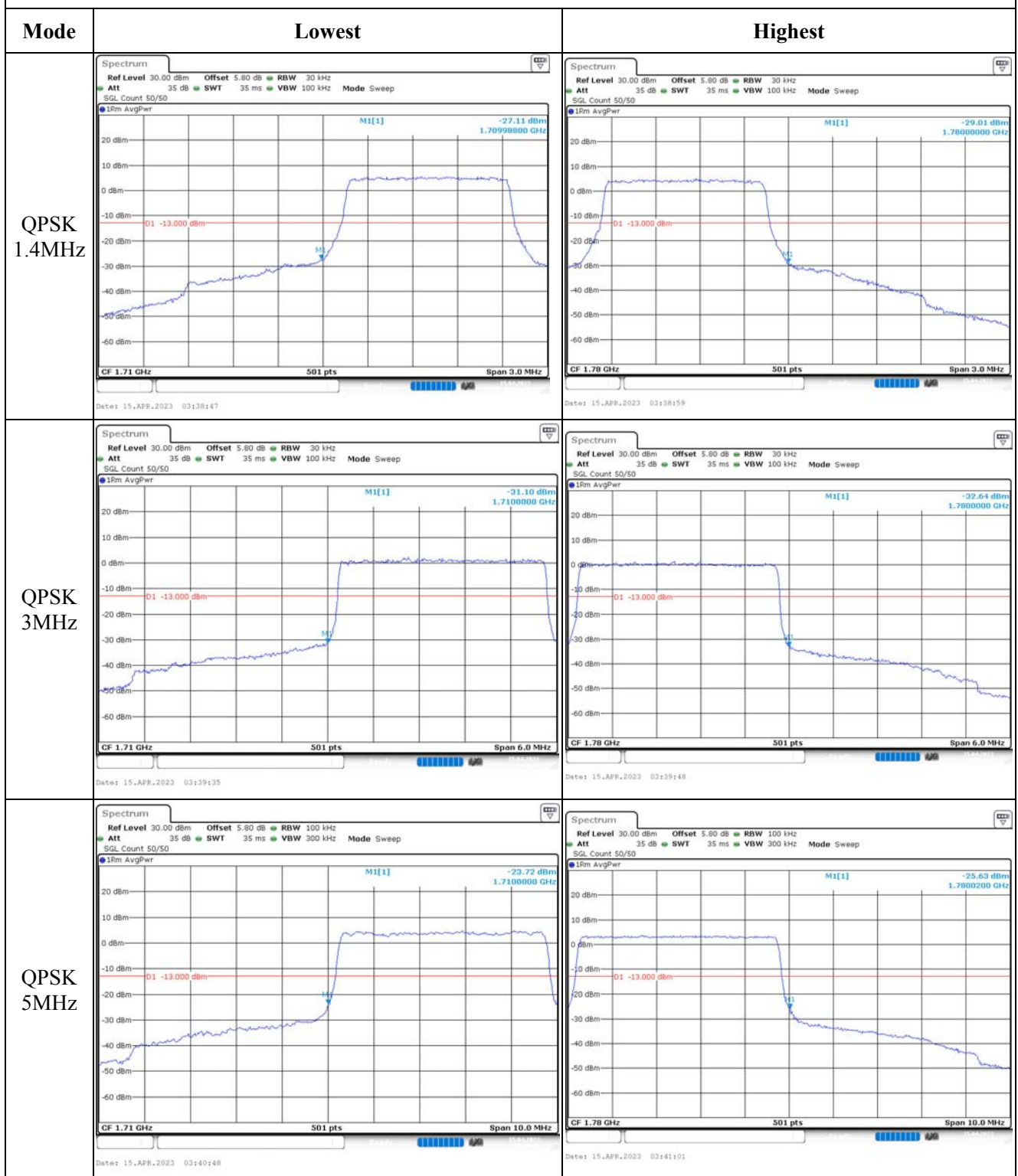
Middle



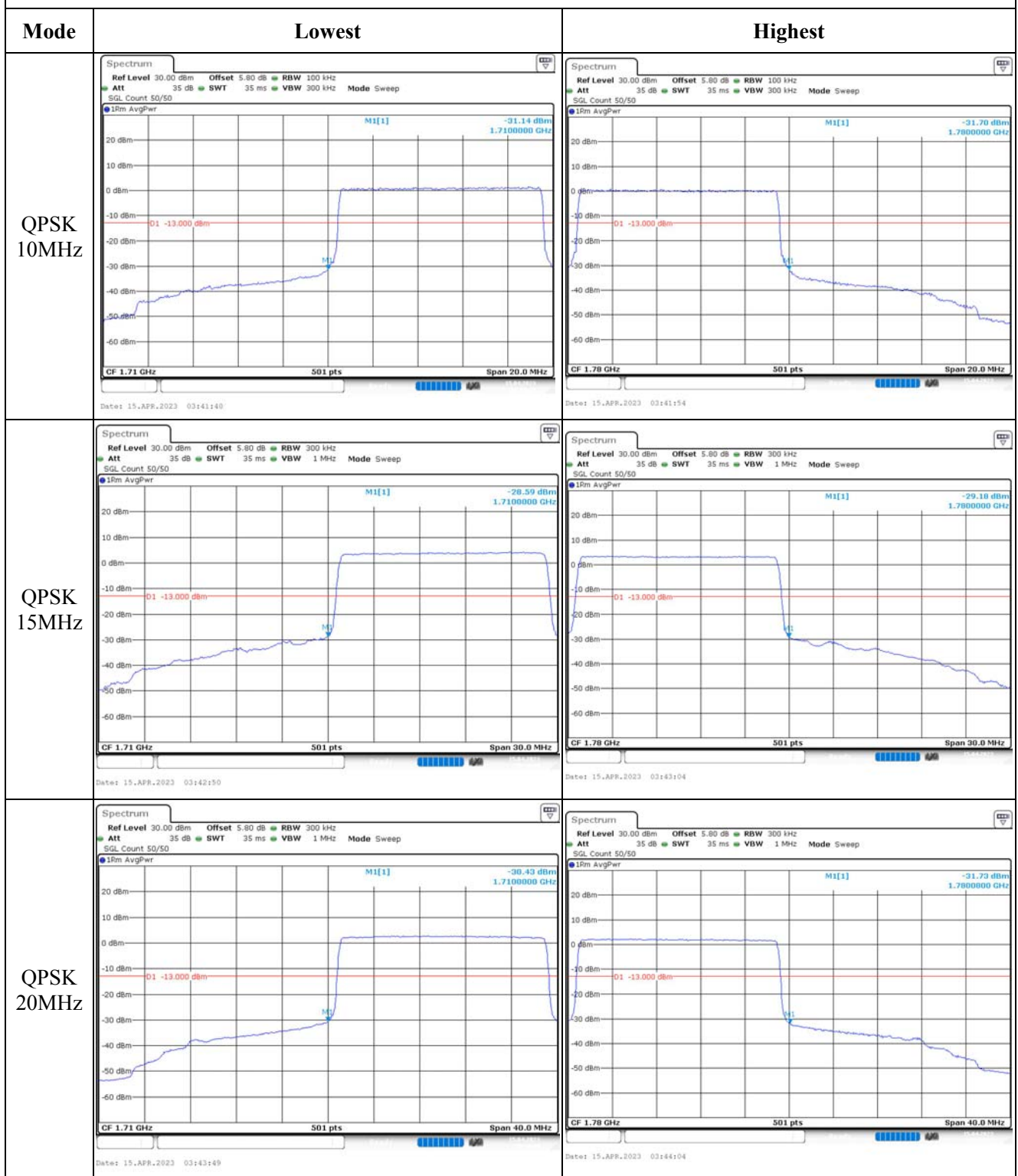
Highest



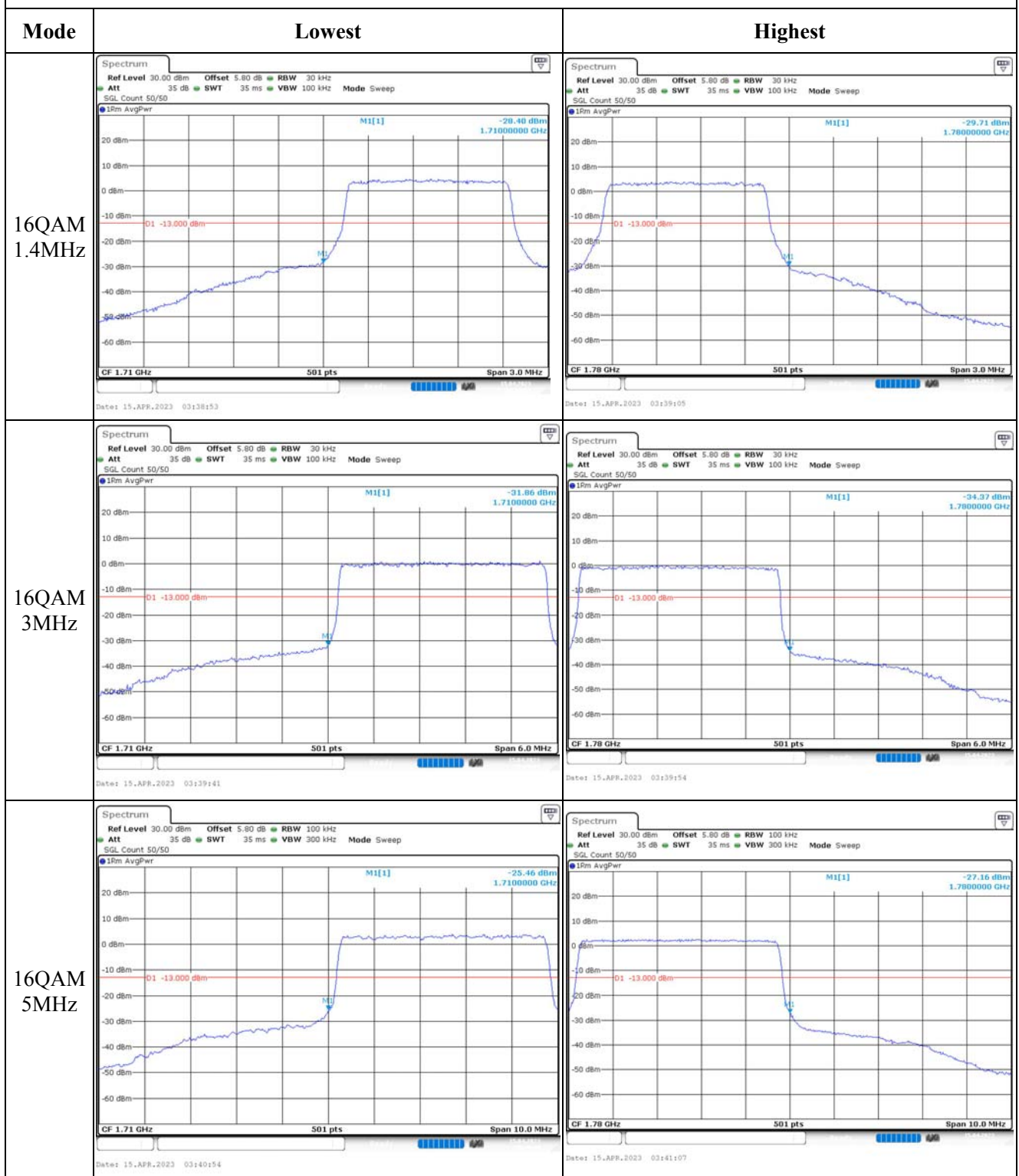
Out of band emission, Band Edge



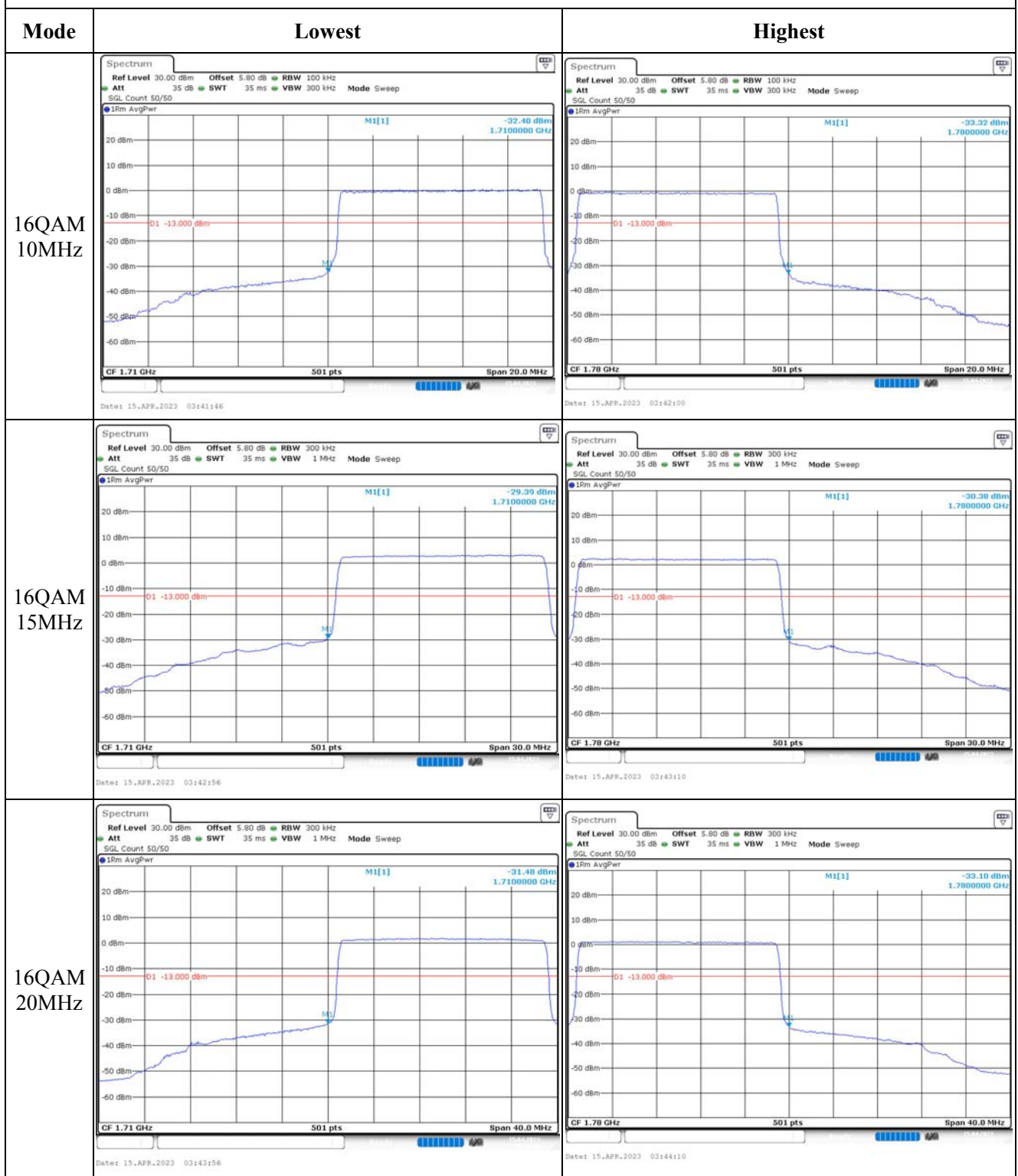
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.9 Radiated Spurious Emissions

Serial Number:	247B_1	Test Date:	2023/4/13~2023/4/14
Test Site:	966-2,966-1	Test Mode:	Transmitting
Tester:	Carl Xue, Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6~26.7	Relative Humidity: (%)	50~65	ATM Pressure: (kPa)	100.5~100.7
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2022/07/17	2023/07/16
Agilent	Signal Generator	E8247C	MY43321352	2022/11/18	2023/11/17
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
R&S	Spectrum Analyzer	FSV40	101591	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2022/08/07	2023/08/06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2022/08/07	2023/08/06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/09	2023/11/08
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/02/05	2024/02/04
PASTERNAK	Horn Antenna	PE9852/2F-20	112001	2021/02/05	2024/02/04
AH	Preamplifier	PAM-1840VH	190	2022/11/09	2023/11/08
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2022/08/07	2023/08/06

*** 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 Data:

Please refer to the below table and plots.

Note: The device can be mounted in multiple orientations, test was performed with X,Y, Z Axis according to C63.26 figure 5, the worst orientation was photographed and it's data was recorded.

Cellular Band (PART 22H)**WCDMA Band 5(30MHz-10GHz):**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band 5 Frequency:826.4 MHz								
729.46	H	21.39	-51.33	0.00	0.53	-51.86	-13.00	38.86
709.29	V	21.37	-48.35	0.00	0.52	-48.87	-13.00	35.87
1652.800	H	35.67	-68.66	8.68	0.81	-60.79	-13.00	47.79
1652.800	V	36.78	-67.63	8.68	0.81	-59.76	-13.00	46.76
2479.200	H	35.21	-65.55	9.39	1.01	-57.17	-13.00	44.17
2479.200	V	35.39	-65.34	9.39	1.01	-56.96	-13.00	43.96
3305.600	H	36.39	-60.34	10.32	1.15	-51.17	-13.00	38.17
3305.600	V	35.46	-61.04	10.32	1.15	-51.87	-13.00	38.87
WCDMA Band 5 Frequency:836.6MHz								
701.88	H	21.26	-52.02	0.00	0.55	-52.57	-13.00	39.57
729.45	V	20.87	-48.41	0.00	0.53	-48.94	-13.00	35.94
1673.200	H	36.45	-67.86	8.71	0.85	-60.00	-13.00	47.00
1673.200	V	36.28	-68.13	8.71	0.85	-60.27	-13.00	47.27
2509.800	H	35.17	-65.44	9.42	1.01	-57.03	-13.00	44.03
2509.800	V	35.45	-65.17	9.42	1.01	-56.76	-13.00	43.76
3346.400	H	37.03	-60.14	10.34	1.16	-50.96	-13.00	37.96
3346.400	V	36.39	-60.64	10.34	1.16	-51.46	-13.00	38.46
WCDMA Band 5 Frequency:846.6MHz								
724.36	H	20.80	-52.03	0.00	0.51	-52.54	-13.00	39.54
704.34	V	20.85	-48.98	0.00	0.55	-49.53	-13.00	36.53
1693.200	H	37.26	-67.04	8.73	0.89	-59.20	-13.00	46.20
1693.200	V	36.45	-67.97	8.73	0.89	-60.13	-13.00	47.13
2539.800	H	35.78	-64.60	9.46	1.01	-56.15	-13.00	43.15
2539.800	V	36.23	-64.11	9.46	1.01	-55.66	-13.00	42.66
3386.400	H	36.89	-60.70	10.35	1.18	-51.53	-13.00	38.53
3386.400	V	35.11	-62.43	10.35	1.18	-53.26	-13.00	40.26

LTE Bands:

(The Worst modulation and bandwidth was below)

LTE Band 2 (30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK,Frequency:1850.7 MHz								
248.55	H	41.60	-70.33	0.00	0.30	-70.63	-13.00	57.63
97.15	V	45.85	-61.84	0.00	0.19	-62.03	-13.00	49.03
3701.400	H	40.36	-56.95	10.60	1.25	-47.60	-13.00	34.60
3701.400	V	41.18	-56.11	10.60	1.25	-46.76	-13.00	33.76
5552.100	H	36.78	-56.49	11.44	1.49	-46.54	-13.00	33.54
5552.100	V	36.73	-56.37	11.44	1.49	-46.42	-13.00	33.42
QPSK,Frequency:1880 MHz								
249.49	H	41.09	-70.82	0.00	0.30	-71.12	-13.00	58.12
94.42	V	43.91	-64.40	0.00	0.18	-64.58	-13.00	51.58
3760.000	H	40.41	-56.00	10.66	1.24	-46.58	-13.00	33.58
3760.000	V	39.63	-56.66	10.66	1.24	-47.24	-13.00	34.24
5640.000	H	44.08	-49.37	11.33	1.54	-39.58	-13.00	26.58
5640.000	V	39.91	-53.42	11.33	1.54	-43.63	-13.00	30.63
QPSK,Frequency:1909.3 MHz								
249.42	H	41.31	-70.60	0.00	0.30	-70.90	-13.00	57.90
94.09	V	45.59	-62.80	0.00	0.18	-62.98	-13.00	49.98
3818.600	H	40.22	-55.64	10.72	1.29	-46.21	-13.00	33.21
3818.600	V	40.42	-55.29	10.72	1.29	-45.86	-13.00	32.86
5727.900	H	42.00	-51.48	11.23	1.59	-41.84	-13.00	28.84
5727.900	V	38.79	-54.57	11.23	1.59	-44.93	-13.00	31.93

LTE Band 4 (30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 1710.7 MHz								
249.42	H	41.52	-70.39	0.00	0.30	-70.69	-13.00	57.69
94.42	V	46.44	-61.87	0.00	0.18	-62.05	-13.00	49.05
3421.400	H	51.82	-45.94	10.37	1.17	-36.74	-13.00	23.74
3421.400	V	56.54	-41.19	10.37	1.17	-31.99	-13.00	18.99
5132.100	H	39.54	-54.03	11.28	1.47	-44.22	-13.00	31.22
5132.100	V	39.42	-54.04	11.28	1.47	-44.23	-13.00	31.23
QPSK, Frequency: 1732.5 MHz								
246.81	H	41.59	-70.37	0.00	0.30	-70.67	-13.00	57.67
96.09	V	45.99	-61.94	0.00	0.19	-62.13	-13.00	49.13
3465.000	H	47.61	-50.20	10.39	1.15	-40.96	-13.00	27.96
3465.000	V	48.35	-49.42	10.39	1.15	-40.18	-13.00	27.18
5197.500	H	36.80	-57.33	11.32	1.44	-47.45	-13.00	34.45
5197.500	V	36.48	-57.50	11.32	1.44	-47.62	-13.00	34.62
QPSK, Frequency: 1754.3MHz								
249.42	H	41.18	-70.73	0.00	0.30	-71.03	-13.00	58.03
97.79	V	46.31	-61.23	0.00	0.19	-61.42	-13.00	48.42
3508.600	H	53.03	-44.79	10.41	1.19	-35.57	-13.00	22.57
3508.600	V	52.56	-45.20	10.41	1.19	-35.98	-13.00	22.98
5262.900	H	42.79	-50.91	11.36	1.47	-41.02	-13.00	28.02
5262.900	V	37.12	-56.35	11.36	1.47	-46.46	-13.00	33.46

LTE Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 824.7 MHz								
627.45	H	21.06	-52.65	0.00	0.48	-53.13	-13.00	40.13
729.46	V	21.01	-48.27	0.00	0.53	-48.80	-13.00	35.80
1649.400	H	35.33	-69.00	8.68	0.80	-61.12	-13.00	48.12
1649.400	V	35.74	-68.67	8.68	0.80	-60.79	-13.00	47.79
2474.100	H	36.01	-64.77	9.38	1.00	-56.39	-13.00	43.39
2474.100	V	34.56	-66.17	9.38	1.00	-57.79	-13.00	44.79
3298.800	H	35.61	-61.07	10.32	1.15	-51.90	-13.00	38.90
3298.800	V	35.78	-60.66	10.32	1.15	-51.49	-13.00	38.49
QPSK, Frequency: 836.5 MHz								
711.79	H	20.65	-52.43	0.00	0.51	-52.94	-13.00	39.94
721.83	V	21.16	-48.28	0.00	0.50	-48.78	-13.00	35.78
1673.000	H	35.12	-69.19	8.71	0.85	-61.33	-13.00	48.33
1673.000	V	36.33	-68.08	8.71	0.85	-60.22	-13.00	47.22
2509.500	H	34.78	-65.83	9.42	1.01	-57.42	-13.00	44.42
2509.500	V	35.29	-65.33	9.42	1.01	-56.92	-13.00	43.92
3346.000	H	36.04	-61.12	10.34	1.16	-51.94	-13.00	38.94
3346.000	V	35.22	-61.80	10.34	1.16	-52.62	-13.00	39.62
QPSK, Frequency: 848.3 MHz								
724.35	H	21.68	-51.15	0.00	0.51	-51.66	-13.00	38.66
704.33	V	21.36	-48.47	0.00	0.55	-49.02	-13.00	36.02
1696.600	H	45.29	-59.00	8.74	0.89	-51.15	-13.00	38.15
1696.600	V	40.12	-64.30	8.74	0.89	-56.45	-13.00	43.45
2544.900	H	42.33	-58.01	9.47	1.01	-49.55	-13.00	36.55
2544.900	V	41.73	-58.57	9.47	1.01	-50.11	-13.00	37.11
3393.200	H	36.41	-61.26	10.36	1.19	-52.09	-13.00	39.09
3393.200	V	35.85	-61.78	10.36	1.19	-52.61	-13.00	39.61

LTE Band 12 (30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 699.7 MHz								
582.94	H	20.57	-53.63	0.00	0.46	-54.09	-13.00	41.09
534.06	V	21.35	-50.28	0.00	0.46	-50.74	-13.00	37.74
1399.400	H	51.10	-52.60	8.22	0.71	-45.09	-13.00	32.09
1399.400	V	52.56	-51.19	8.22	0.71	-43.68	-13.00	30.68
2099.100	H	38.54	-63.34	9.16	0.91	-55.09	-13.00	42.09
2099.100	V	36.47	-65.36	9.16	0.91	-57.11	-13.00	44.11
2798.800	H	35.41	-64.52	9.88	1.04	-55.68	-13.00	42.68
2798.800	V	35.27	-64.53	9.88	1.04	-55.69	-13.00	42.69
QPSK, Frequency: 707.5 MHz								
629.64	H	20.63	-53.07	0.00	0.48	-53.55	-13.00	40.55
799.05	V	20.87	-46.89	0.00	0.59	-47.48	-13.00	34.48
1415.000	H	51.24	-52.43	8.26	0.72	-44.89	-13.00	31.89
1415.000	V	49.85	-53.87	8.26	0.72	-46.33	-13.00	33.33
2122.500	H	38.61	-63.38	9.17	0.92	-55.13	-13.00	42.13
2122.500	V	37.76	-64.21	9.17	0.92	-55.96	-13.00	42.96
2830.000	H	39.05	-60.75	9.93	1.06	-51.88	-13.00	38.88
2830.000	V	40.24	-59.49	9.93	1.06	-50.62	-13.00	37.62
QPSK, Frequency: 715.3 MHz								
589.10	H	20.61	-53.46	0.00	0.48	-53.94	-13.00	40.94
510.28	V	20.52	-51.08	0.00	0.45	-51.53	-13.00	38.53
1430.600	H	49.92	-53.71	8.31	0.73	-46.13	-13.00	33.13
1430.600	V	47.91	-55.78	8.31	0.73	-48.20	-13.00	35.20
2145.900	H	37.11	-64.99	9.19	0.93	-56.73	-13.00	43.73
2145.900	V	35.70	-66.41	9.19	0.93	-58.15	-13.00	45.15
2861.200	H	36.58	-63.07	9.98	1.07	-54.16	-13.00	41.16
2861.200	V	35.63	-64.04	9.98	1.07	-55.13	-13.00	42.13

LTE Band 13(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 779.5 MHz								
721.78	H	20.68	-52.20	0.00	0.50	-52.70	-13.00	39.70
719.43	V	20.73	-48.77	0.00	0.49	-49.26	-13.00	36.26
1559.000	H	36.28	-67.71	8.57	0.80	-59.94	-40.00	19.94
1559.000	V	35.46	-68.59	8.57	0.80	-60.82	-40.00	20.82
2338.500	H	36.10	-65.49	9.30	0.97	-57.16	-13.00	44.16
2338.500	V	35.11	-66.25	9.30	0.97	-57.92	-13.00	44.92
3118.000	H	36.03	-61.46	10.25	1.13	-52.34	-13.00	39.34
3118.000	V	35.89	-61.46	10.25	1.13	-52.34	-13.00	39.34
5MHz QPSK, Frequency: 784.5 MHz								
528.45	H	21.01	-54.26	0.00	0.44	-54.70	-13.00	41.70
472.41	V	20.75	-51.93	0.00	0.43	-52.36	-13.00	39.36
1569.000	H	36.64	-67.44	8.58	0.81	-59.67	-40.00	19.67
1569.000	V	35.66	-68.47	8.58	0.81	-60.70	-40.00	20.70
2353.500	H	35.24	-66.21	9.31	0.97	-57.87	-13.00	44.87
2353.500	V	36.37	-64.85	9.31	0.97	-56.51	-13.00	43.51
3138.000	H	34.19	-63.21	10.26	1.14	-54.09	-13.00	41.09
3138.000	V	35.43	-61.80	10.26	1.14	-52.68	-13.00	39.68

LTE Band 17 (30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 706.5 MHz								
625.22	H	21.09	-52.63	0.00	0.48	-53.11	-13.00	40.11
584.96	V	20.53	-51.18	0.00	0.46	-51.64	-13.00	38.64
1413.000	H	51.33	-52.34	8.26	0.72	-44.80	-13.00	31.80
1413.000	V	49.93	-53.79	8.26	0.72	-46.25	-13.00	33.25
2119.500	H	36.35	-65.62	9.17	0.92	-57.37	-13.00	44.37
2119.500	V	35.78	-66.17	9.17	0.92	-57.92	-13.00	44.92
2826.000	H	35.13	-64.68	9.92	1.06	-55.82	-13.00	42.82
2826.000	V	36.08	-63.66	9.92	1.06	-54.80	-13.00	41.80
QPSK, Frequency: 710 MHz								
578.84	H	20.76	-53.52	0.00	0.46	-53.98	-13.00	40.98
353.22	V	20.58	-55.91	0.00	0.36	-56.27	-13.00	43.27
1420.000	H	49.24	-54.42	8.28	0.73	-46.87	-13.00	33.87
1420.000	V	47.19	-56.52	8.28	0.73	-48.97	-13.00	35.97
2130.000	H	36.11	-65.91	9.18	0.92	-57.65	-13.00	44.65
2130.000	V	35.78	-66.23	9.18	0.92	-57.97	-13.00	44.97
2840.000	H	36.41	-63.34	9.94	1.06	-54.46	-13.00	41.46
2840.000	V	35.40	-64.31	9.94	1.06	-55.43	-13.00	42.43
QPSK, Frequency: 713.5 MHz								
470.76	H	20.63	-55.80	0.00	0.43	-56.23	-13.00	43.23
556.96	V	20.46	-51.21	0.00	0.48	-51.69	-13.00	38.69
1427.000	H	44.80	-58.84	8.30	0.73	-51.27	-13.00	38.27
1427.000	V	42.88	-60.81	8.30	0.73	-53.24	-13.00	40.24
2140.500	H	36.78	-65.29	9.18	0.93	-57.04	-13.00	44.04
2140.500	V	36.33	-65.75	9.18	0.93	-57.50	-13.00	44.50
2854.000	H	35.85	-63.84	9.97	1.07	-54.94	-13.00	41.94
2854.000	V	36.79	-62.89	9.97	1.07	-53.99	-13.00	40.99

LTE Band 66(30MHz-20GHz):

SITE Data to (Cellular Frequency):								
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency: 1710.7 MHz								
251.18	H	40.52	-71.35	0.00	0.30	-71.65	-13.00	58.65
98.14	V	45.60	-61.86	0.00	0.19	-62.05	-13.00	49.05
3421.400	H	51.99	-45.77	10.37	1.17	-36.57	-13.00	23.57
3421.400	V	56.81	-40.92	10.37	1.17	-31.72	-13.00	18.72
5132.100	H	40.74	-52.83	11.28	1.47	-43.02	-13.00	30.02
5132.100	V	39.58	-53.88	11.28	1.47	-44.07	-13.00	31.07
QPSK, Frequency:1745 MHz								
248.55	H	39.60	-72.33	0.00	0.30	-72.63	-13.00	59.63
94.76	V	45.27	-62.97	0.00	0.19	-63.16	-13.00	50.16
3490.000	H	47.96	-49.88	10.40	1.17	-40.65	-13.00	27.65
3490.000	V	53.45	-44.33	10.40	1.17	-35.10	-13.00	22.10
5235.000	H	54.80	-39.10	11.34	1.46	-29.22	-13.00	16.22
5235.000	V	59.89	-33.82	11.34	1.46	-23.94	-13.00	10.94
QPSK, Frequency: 1779.3 MHz								
250.30	H	39.60	-72.29	0.00	0.30	-72.59	-13.00	59.59
99.52	V	45.28	-61.86	0.00	0.19	-62.05	-13.00	49.05
3558.600	H	43.27	-54.40	10.46	1.22	-45.16	-13.00	32.16
3558.600	V	47.60	-49.97	10.46	1.22	-40.73	-13.00	27.73
5337.900	H	37.55	-55.92	11.40	1.47	-45.99	-13.00	32.99
5337.900	V	35.74	-57.59	11.40	1.47	-47.66	-13.00	34.66

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 3) Margin = Limit-Absolute Level

==== END OF REPORT =====