

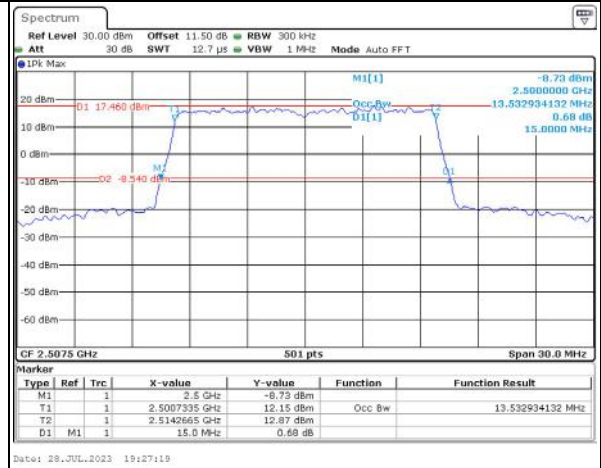
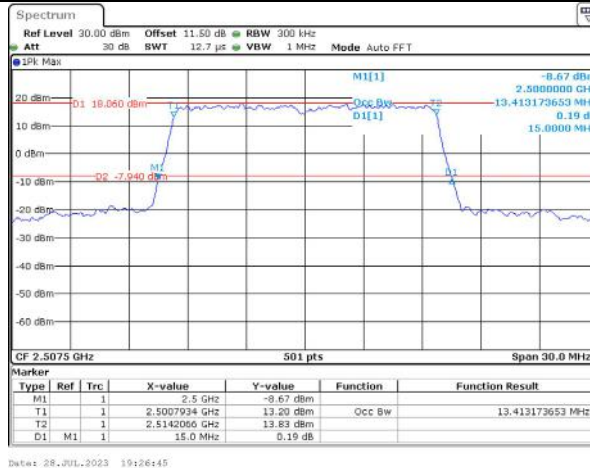
Occupied Bandwidth

Channel

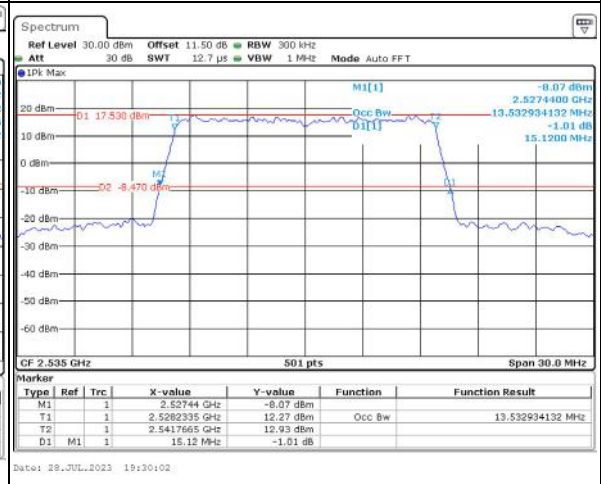
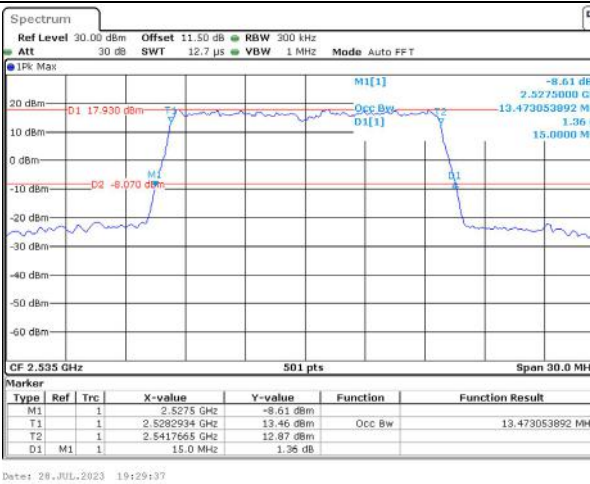
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

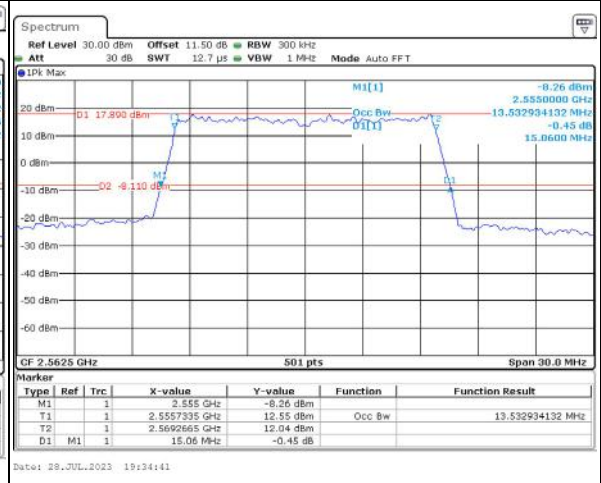
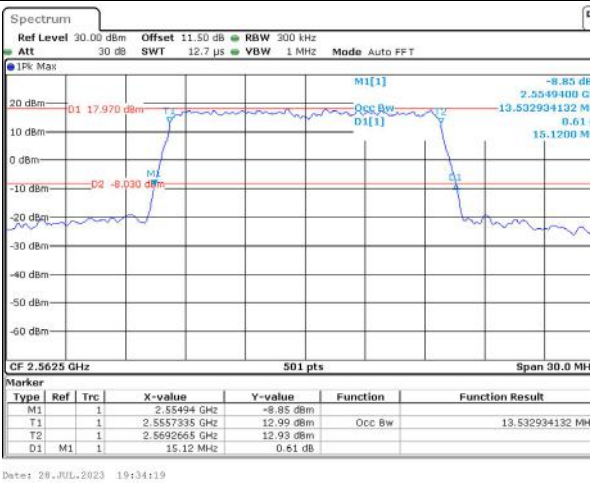
Lowest



Middle



Highest



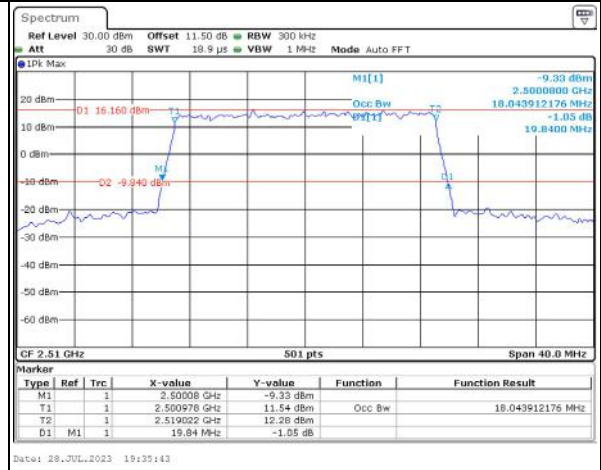
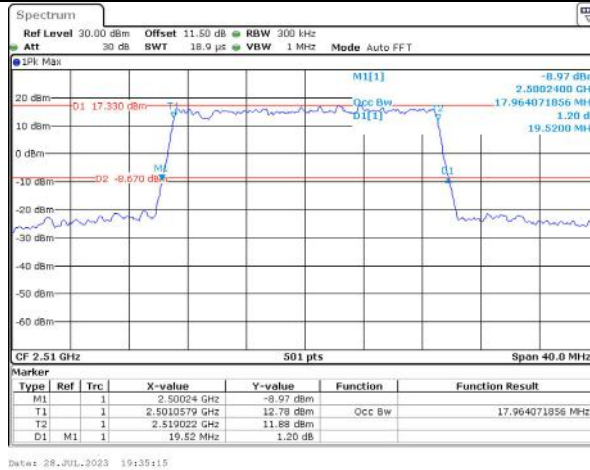
Occupied Bandwidth

Channel

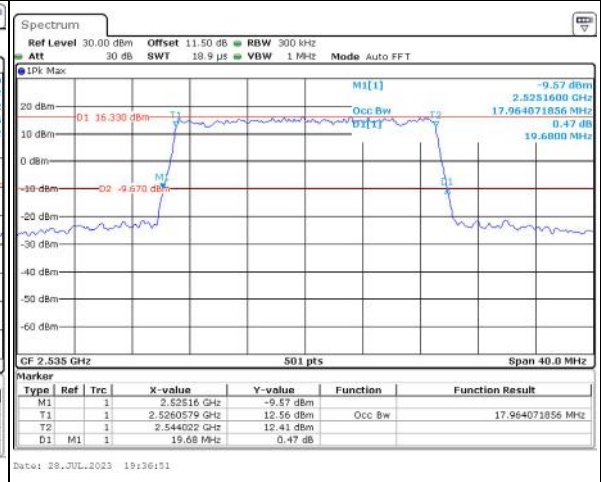
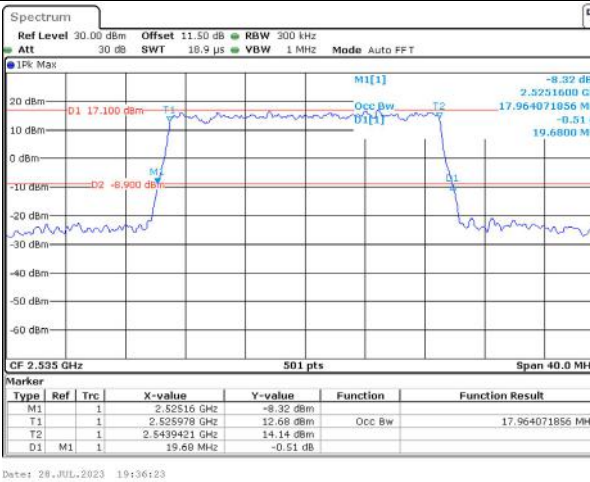
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

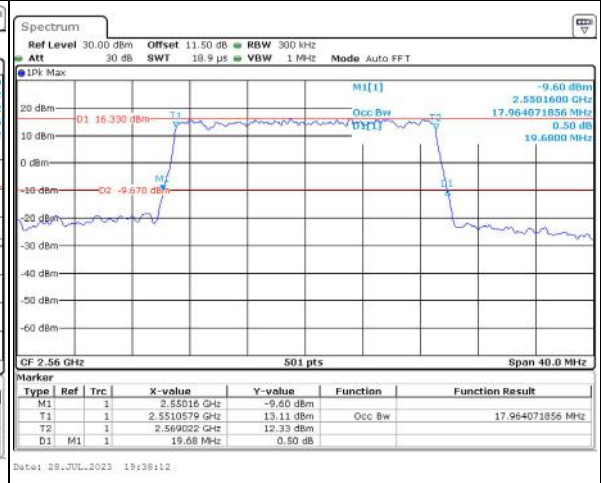
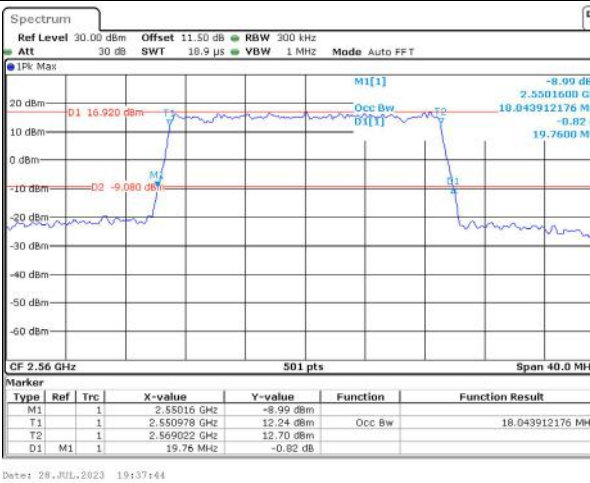
Lowest



Middle



Highest

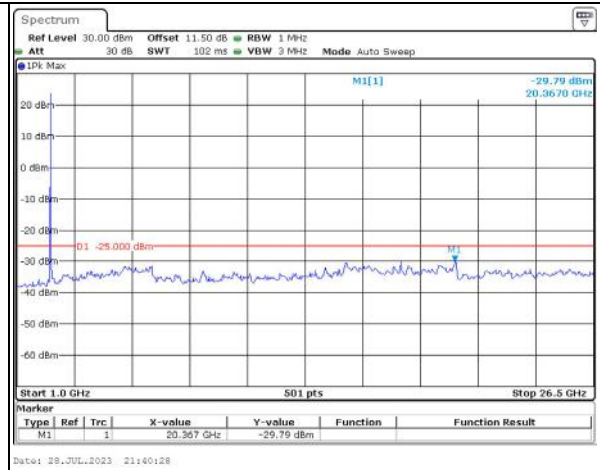
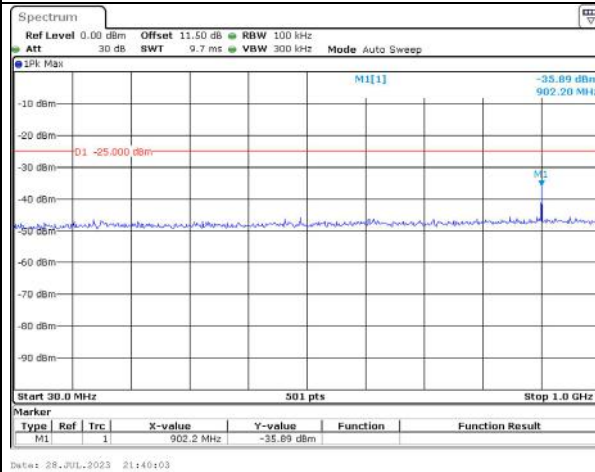


Spurious Emissions at Antenna Terminal

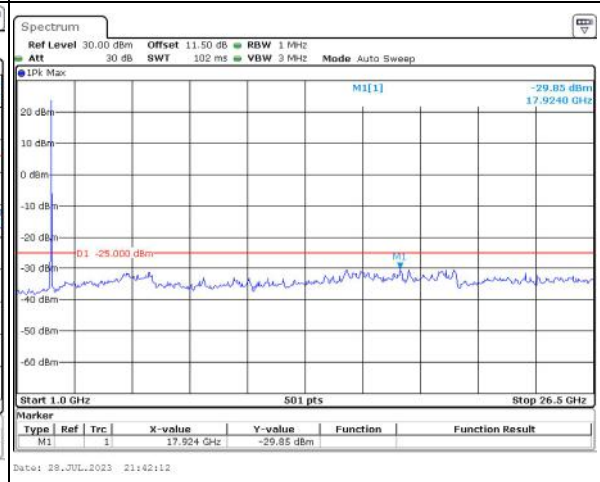
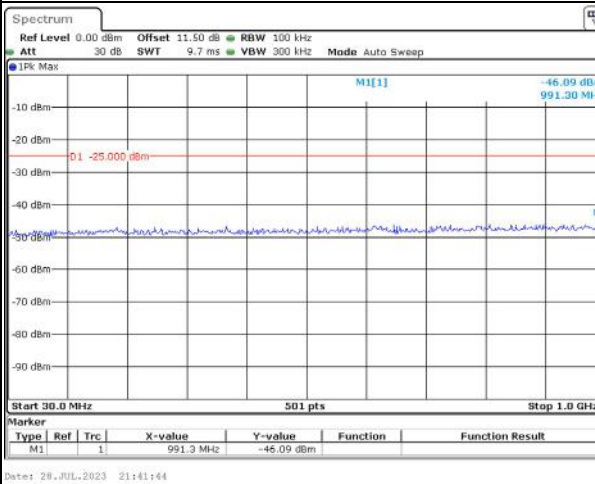
Channel

5MHz Bandwidth QPSK

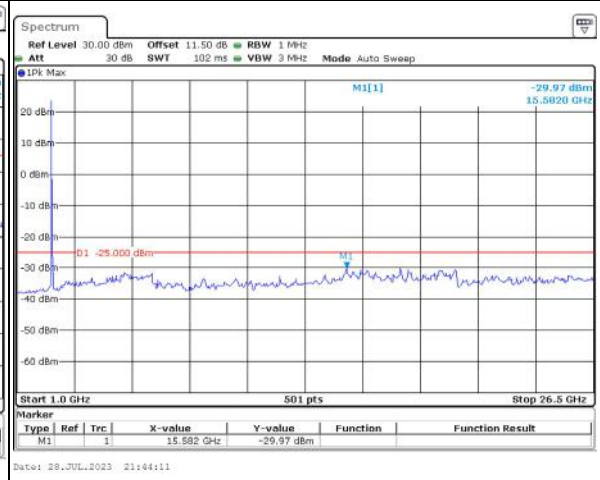
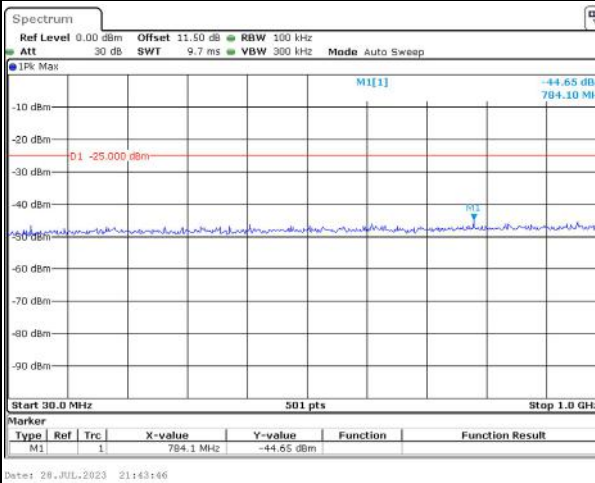
Lowest



Middle



Highest

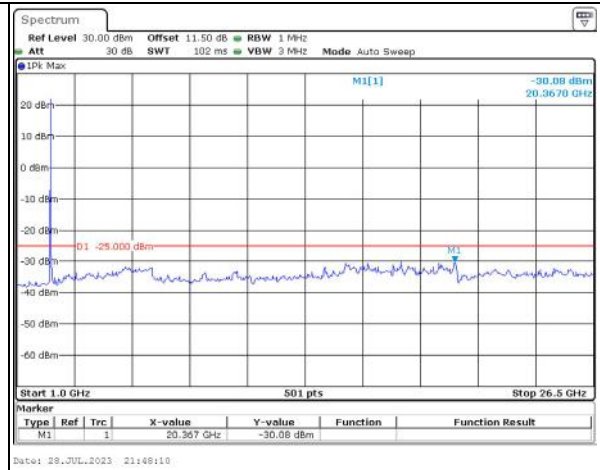
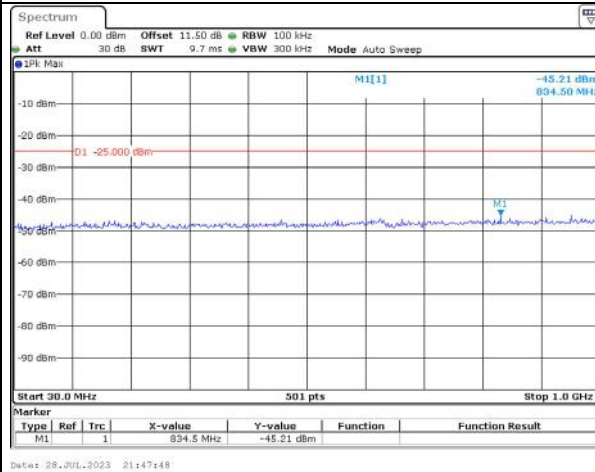


Spurious Emissions at Antenna Terminal

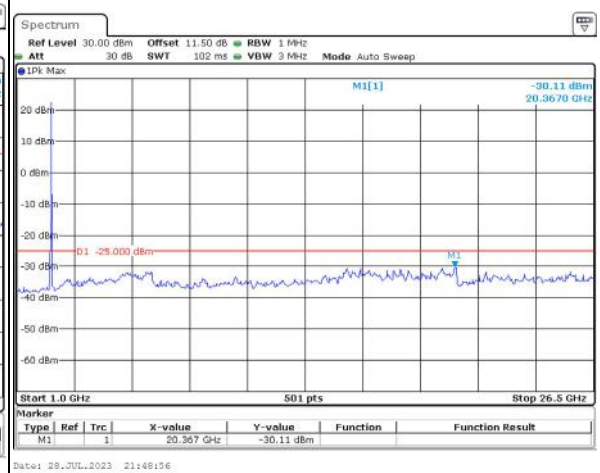
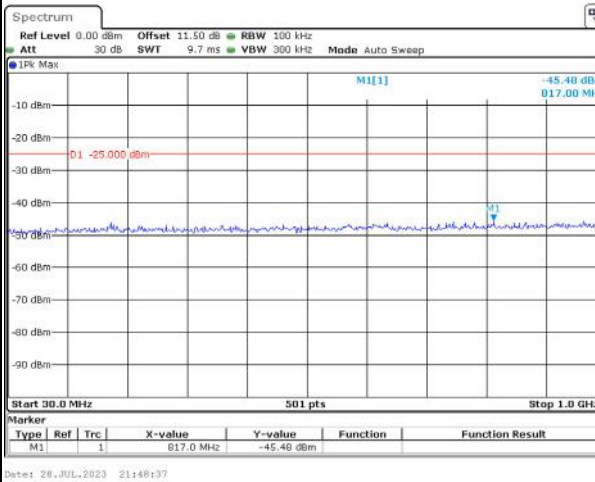
Channel

10MHz Bandwidth QPSK

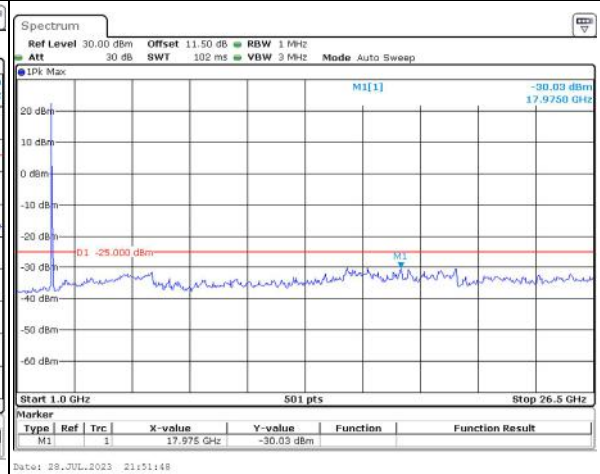
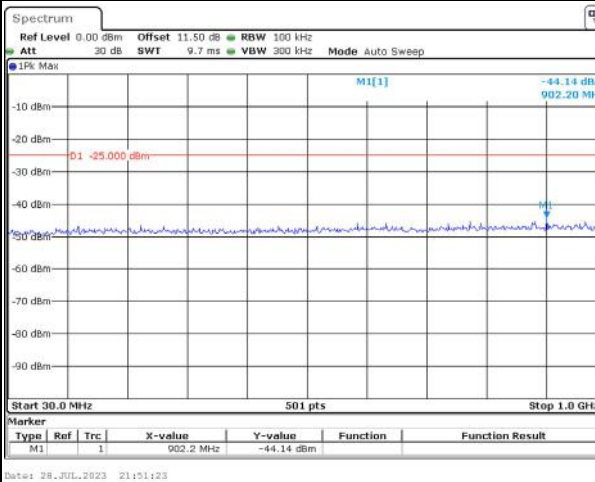
Lowest



Middle



Highest

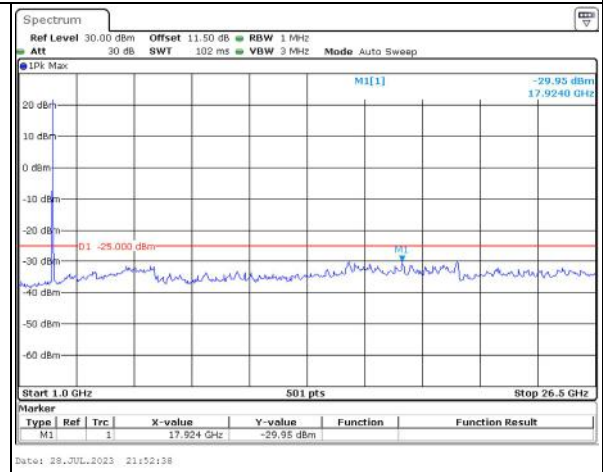
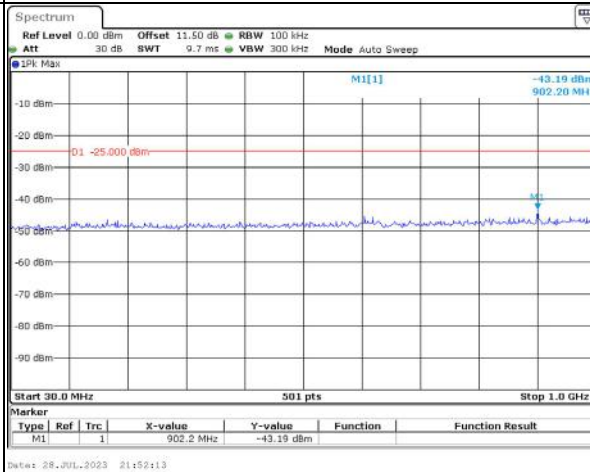


Spurious Emissions at Antenna Terminal

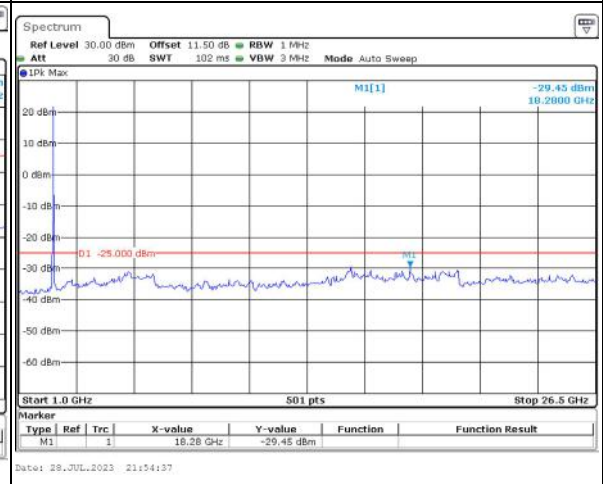
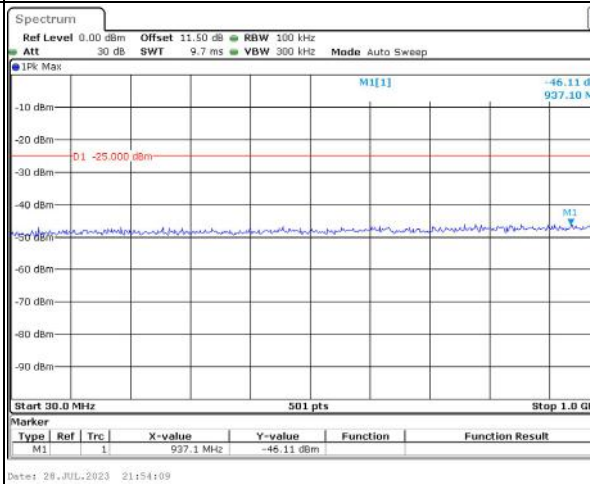
Channel

15MHz Bandwidth QPSK

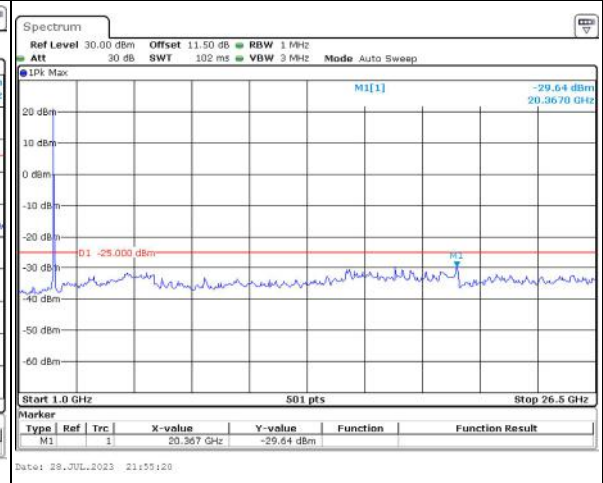
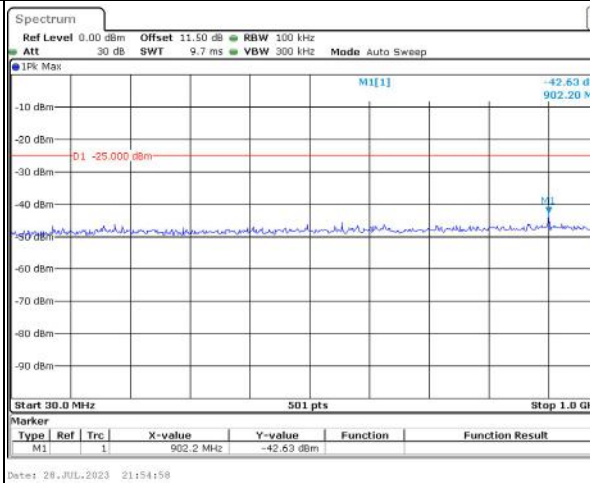
Lowest



Middle



Highest

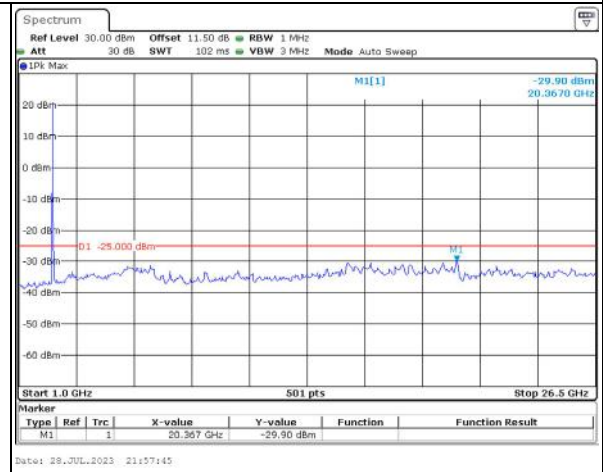
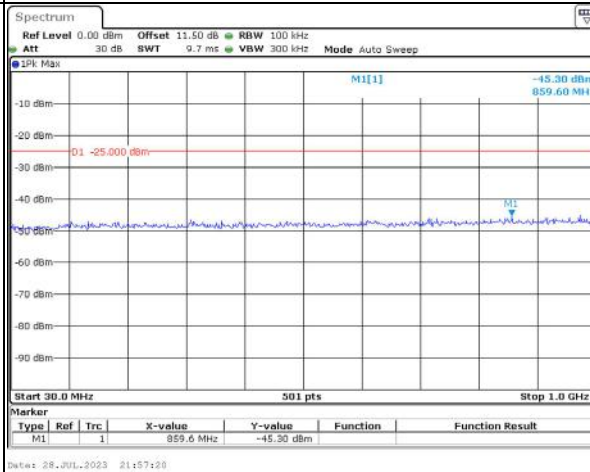


Spurious Emissions at Antenna Terminal

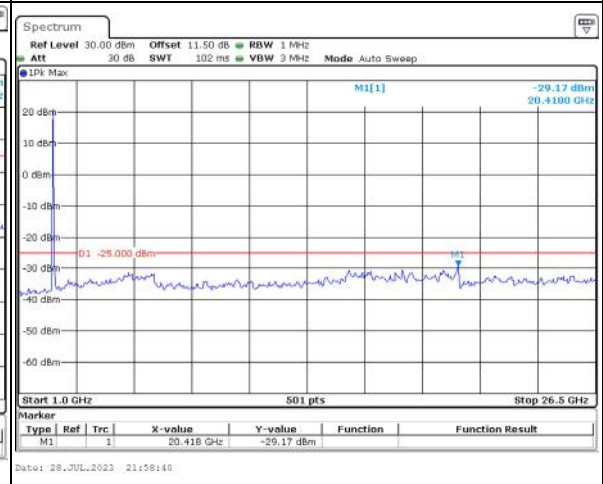
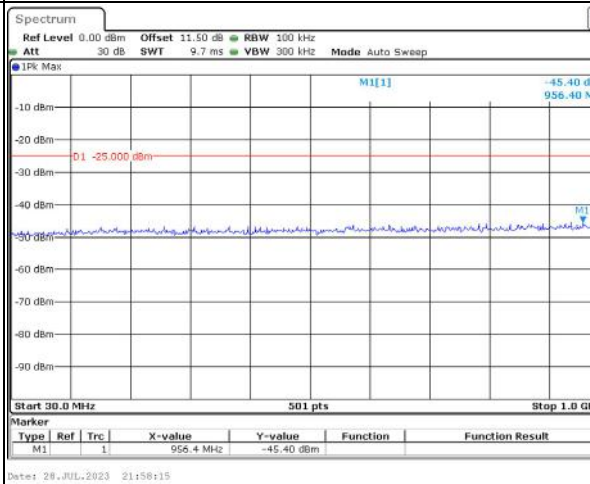
Channel

20MHz Bandwidth QPSK

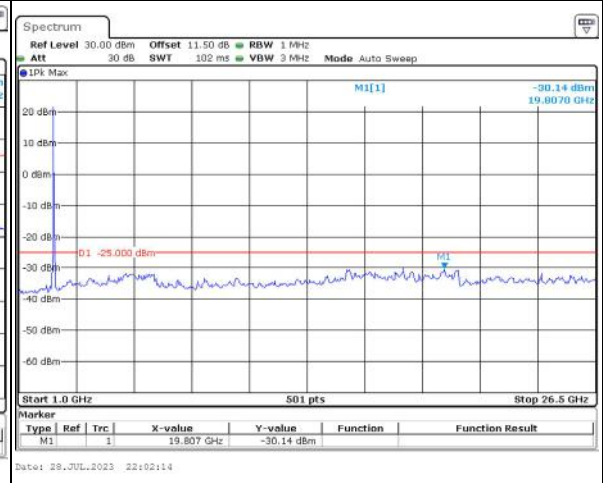
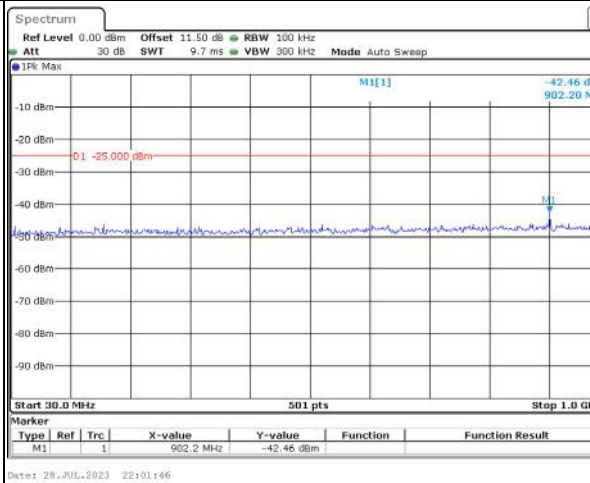
Lowest



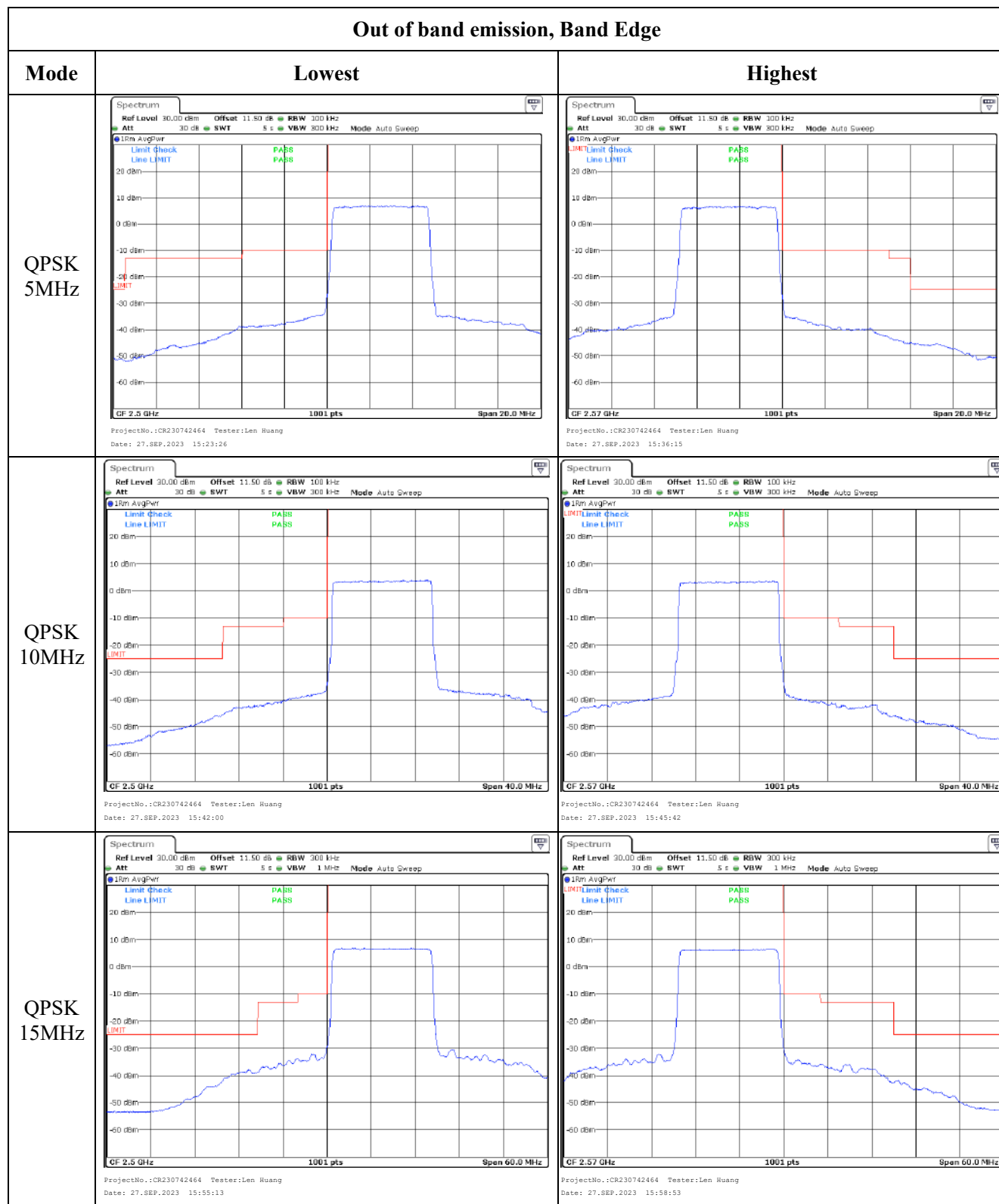
Middle



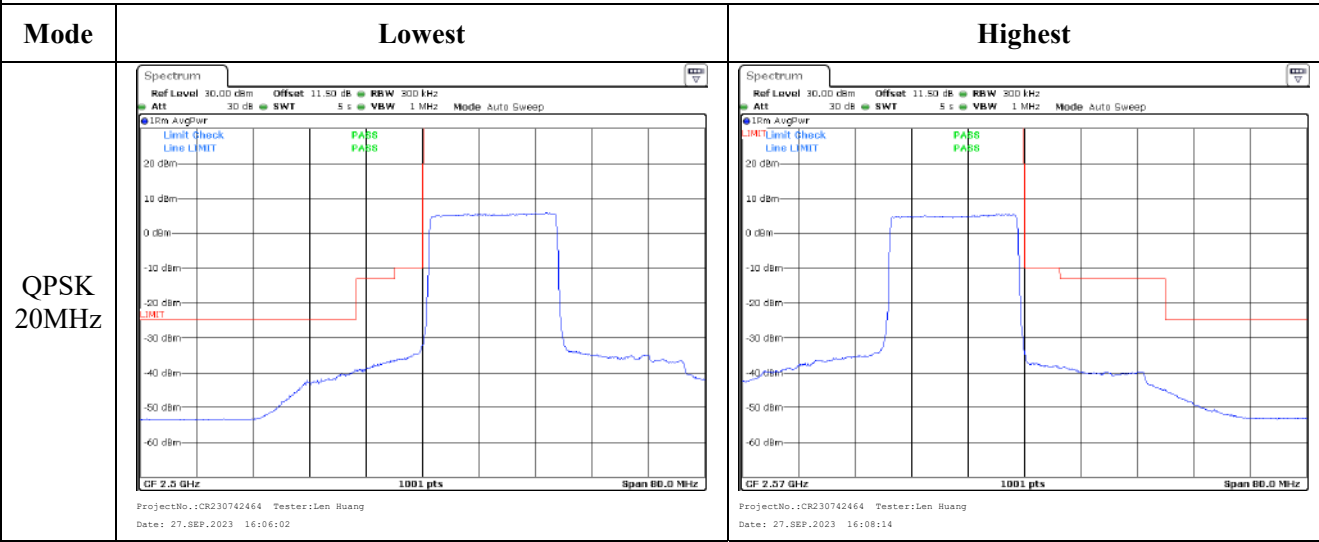
Highest



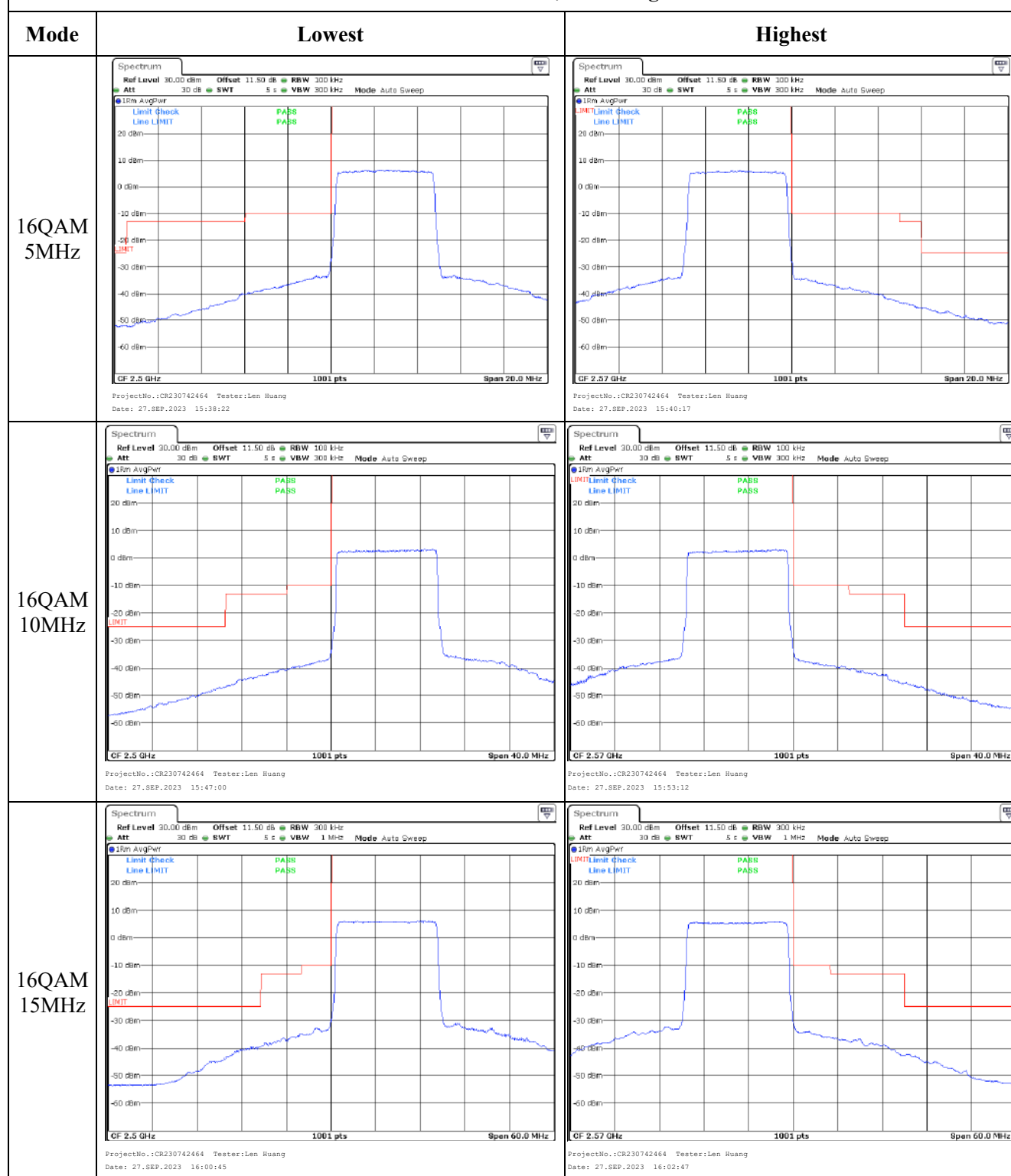
Out of band emission, Band Edge

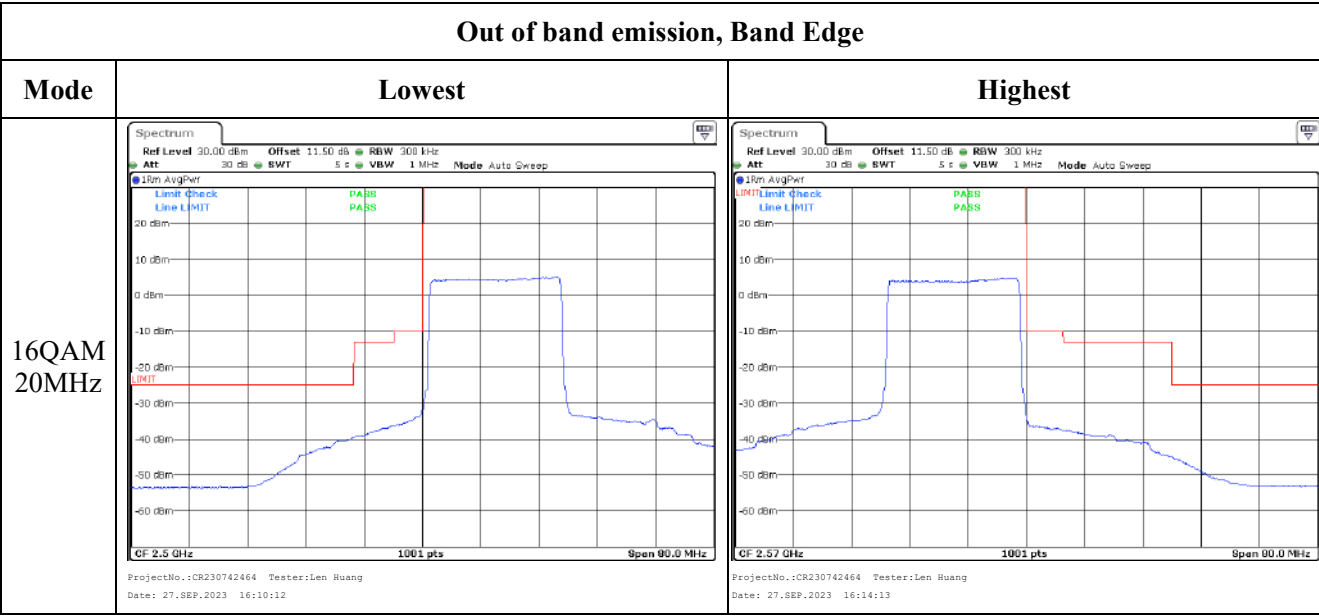


Out of band emission, Band Edge



Out of band emission, Band Edge





4.10 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	2803-4	Test Date:	2023/7/28-2023/7/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	64	ATM Pressure: (kPa)	101
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
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
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	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	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		
1.4MHz QPSK	RB1#0	22.17	22.11	22.23	19.99	34.77
	RB1#3	22.17	22.22	22.3		
	RB1#5	22.18	22.13	22.23		
	RB3#0	22.17	22.25	22.33		
	RB3#3	22.23	22.32	22.37		
	RB6#0	21.16	21.14	21.68		
1.4MHz 16QAM	RB1#0	21.89	20.75	21.76	19.68	34.77
	RB1#3	21.76	20.83	22.06		
	RB1#5	21.81	20.76	22.05		
	RB3#0	20.99	21.42	21.37		
	RB3#3	20.98	21.31	21.8		
	RB6#0	20.65	20.42	20.96		
3MHz QPSK	RB1#0	22.22	22.35	22.27	19.97	34.77
	RB1#8	22.14	22.16	22.2		
	RB1#14	22.25	22.18	22.35		
	RB6#0	21.19	21.11	21.48		
	RB6#9	21.31	21.13	21.69		
	RB15#0	21.15	21.19	21.4		
3MHz 16QAM	RB1#0	21.93	20.76	21.64	19.55	34.77
	RB1#8	21.9	20.81	21.63		
	RB1#14	21.9	20.75	21.92		
	RB6#0	20.62	20.22	20.21		
	RB6#9	20.24	20.4	20.73		
	RB15#0	20.66	20.22	20.29		
5MHz QPSK	RB1#0	22.12	22.23	22.67	20.31	34.77
	RB1#13	22.25	22.22	22.27		
	RB1#24	22.69	22.24	22.38		
	RB15#0	21.15	21.09	21.75		
	RB15#10	21.28	21.2	21.49		
	RB25#0	21.26	21.2	21.44		
5MHz 16QAM	RB1#0	21.29	20.65	20.79	19.39	34.77
	RB1#13	21.26	20.71	20.39		
	RB1#24	21.77	20.73	20.79		
	RB15#0	20.54	20.14	20.87		
	RB15#10	19.87	20.23	20.31		
	RB25#0	20.15	20.01	20.39		

10MHz QPSK	RB1#0	22.18	22.21	22.11	20.4	34.77
	RB1#25	22.64	22.28	22.07		
	RB1#49	22.35	22.78	22.34		
	RB25#0	21.26	21.27	21.14		
	RB25#25	21.2	21.29	21.4		
	RB50#0	21.72	21.18	21.3		
10MHz 16QAM	RB1#0	21.22	20.65	21.18	19.36	34.77
	RB1#25	21.73	20.72	21.19		
	RB1#49	21.22	21.27	21.74		
	RB25#0	20.23	20.23	20.16		
	RB25#25	20.22	20.89	20.33		
	RB50#0	20.69	20.24	20.83		

Note: ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(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	5.88	5.54	5.45	13
	RB50#0	5.59	5.51	5.45	13
10MHz 16QAM	RB1#0	6.67	6.29	7.19	13
	RB50#0	6.38	6.26	6.26	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	1.248	1.254	1.248
1.4MHz 16QAM	1.09	1.102	1.102	1.248	1.248	1.260
3MHz QPSK	2.695	2.695	2.695	3.012	3.012	2.988
3MHz 16QAM	2.695	2.683	2.695	3.000	3.024	3.000
5MHz QPSK	4.511	4.511	4.511	5.020	5.000	4.980
5MHz 16QAM	4.531	4.551	4.511	5.000	5.020	4.980
10MHz QPSK	8.942	8.942	8.942	9.760	9.760	9.760
10MHz 16QAM	8.942	8.942	8.942	9.840	9.880	9.680

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

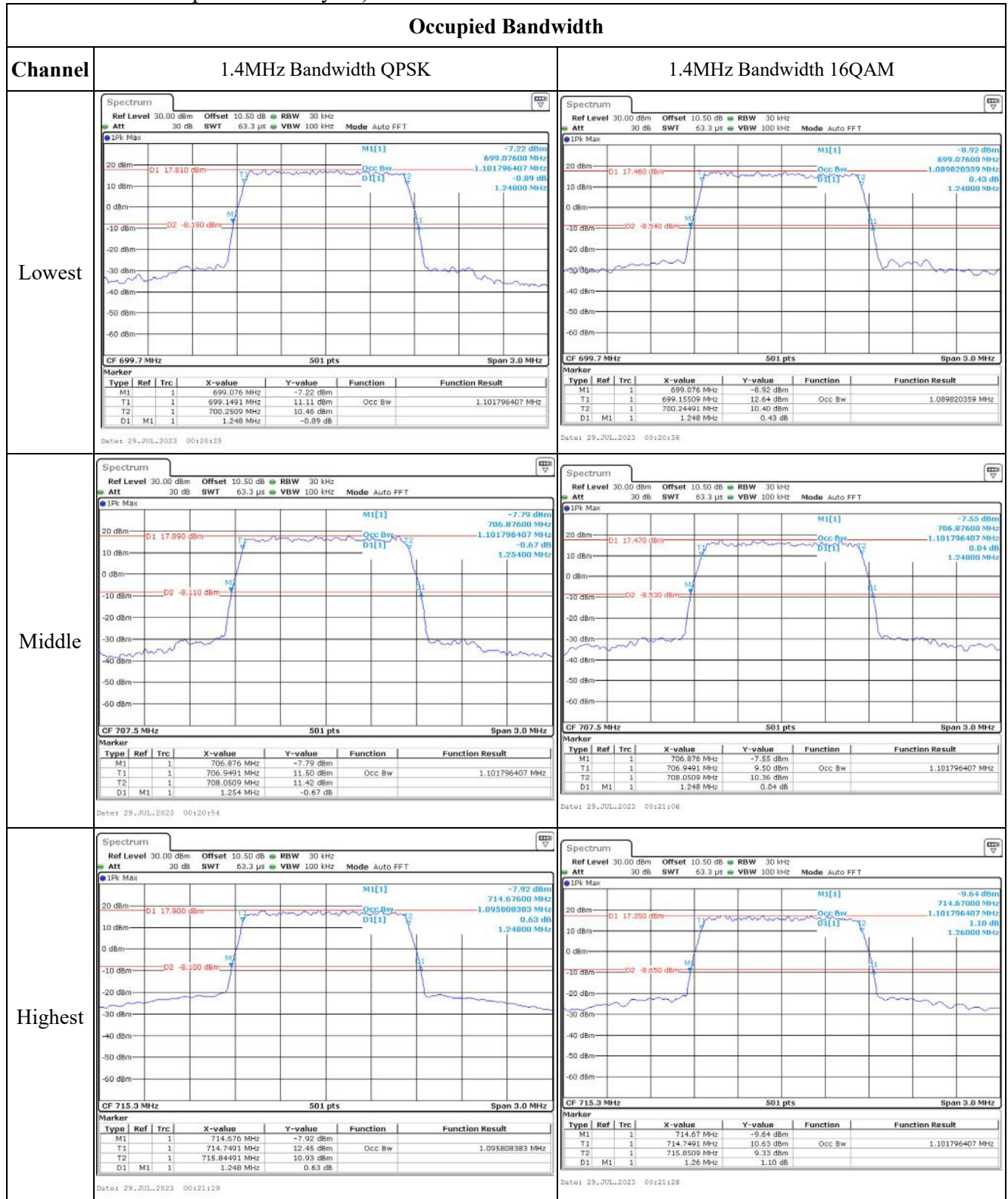
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability

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	3.8	699.1438	699.00	715.8874	716.00
	-20	3.8	699.1444	699.00	715.8733	716.00
	-10	3.8	699.1433	699.00	715.8461	716.00
	0	3.8	699.1436	699.00	715.8639	716.00
	10	3.8	699.1325	699.00	715.8416	716.00
	20	3.8	699.1426	699.00	715.8282	716.00
	30	3.8	699.1387	699.00	715.8321	716.00
	40	3.8	699.1341	699.00	715.8306	716.00
	50	3.8	699.1448	699.00	715.8462	716.00
Frequency Stability vs. Voltage	20	3.4	699.1367	699.00	715.8667	716.00
	20	4.35	699.1379	699.00	715.8678	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	3.8	699.1327	699.00	715.8358	716.00
	-20	3.8	699.1336	699.00	715.8325	716.00
	-10	3.8	699.1311	699.00	715.8359	716.00
	0	3.8	699.1311	699.00	715.8333	716.00
	10	3.8	699.1315	699.00	715.83	716.00
	20	3.8	699.1309	699.00	715.8384	716.00
	30	3.8	699.1371	699.00	715.8315	716.00
	40	3.8	699.1344	699.00	715.8314	716.00
	50	3.8	699.1344	699.00	715.8347	716.00
Frequency Stability vs. Voltage	20	3.4	699.1374	699.00	715.8354	716.00
	20	4.35	699.1357	699.00	715.8382	716.00
Result:					Pass	

Test Plots(Note: The 10.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



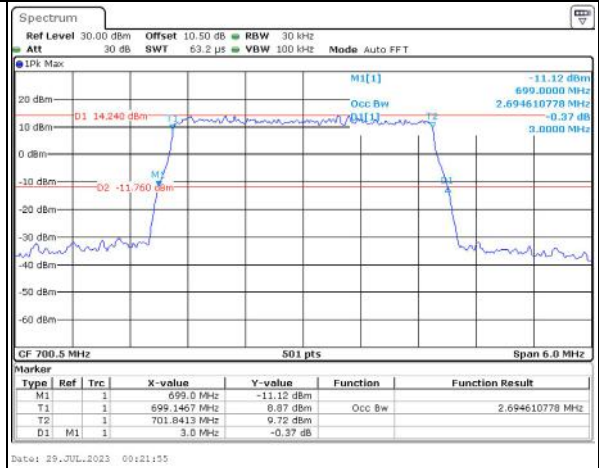
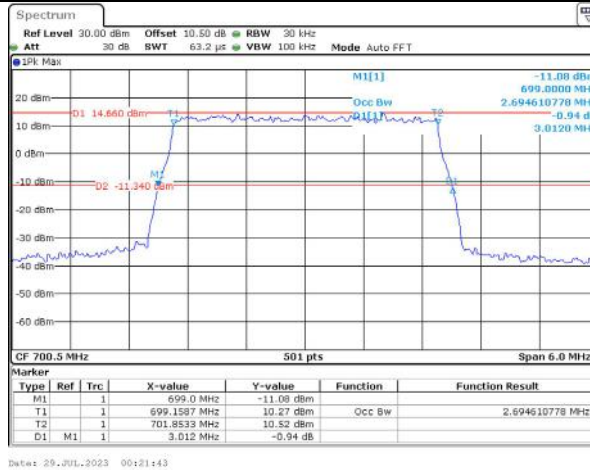
Occupied Bandwidth

Channel

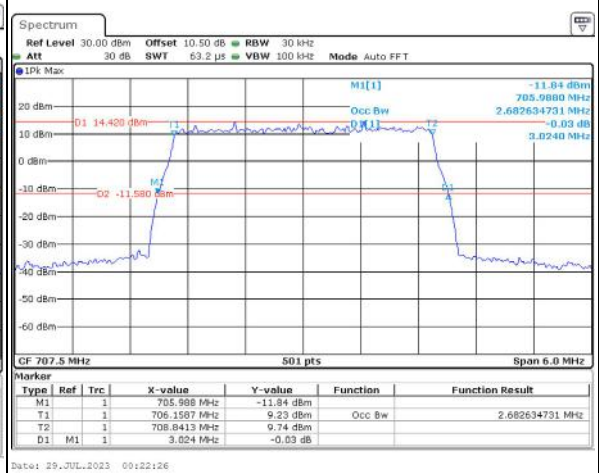
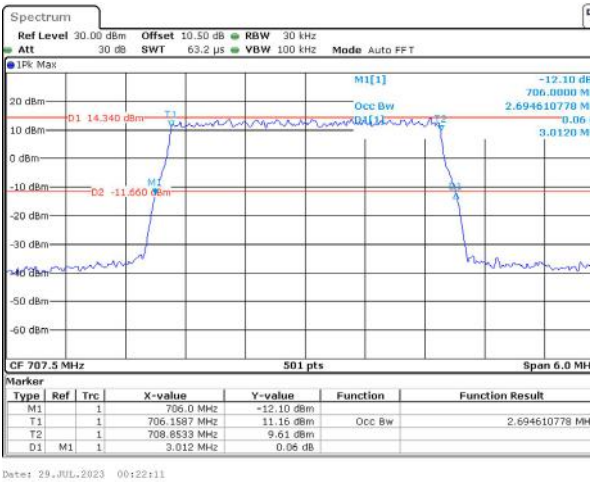
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

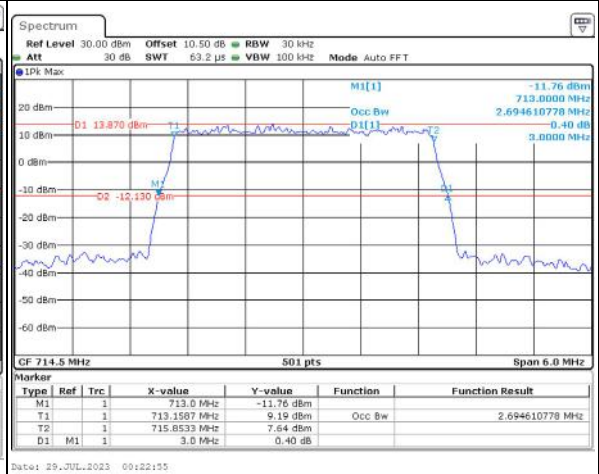
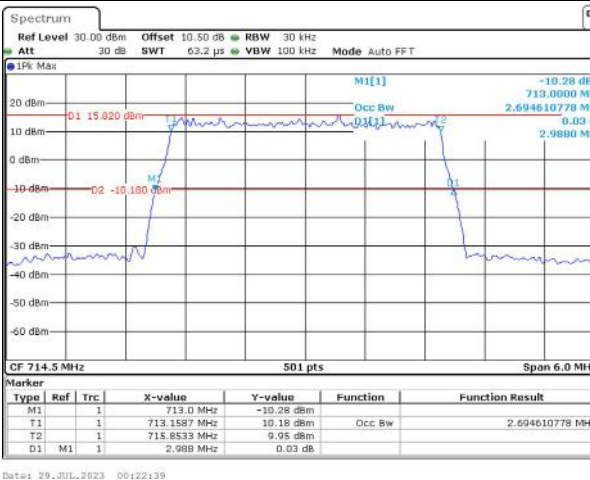
Lowest



Middle



Highest



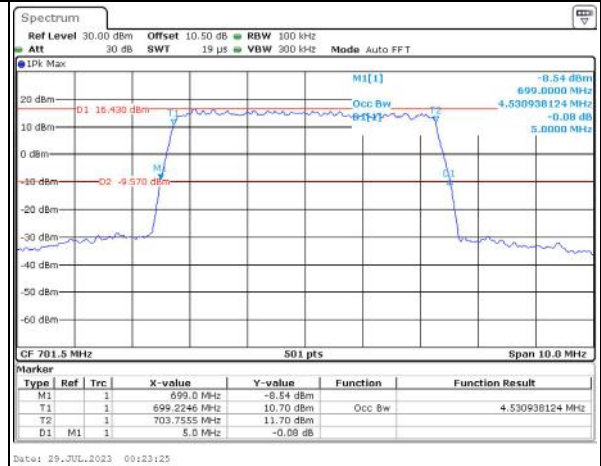
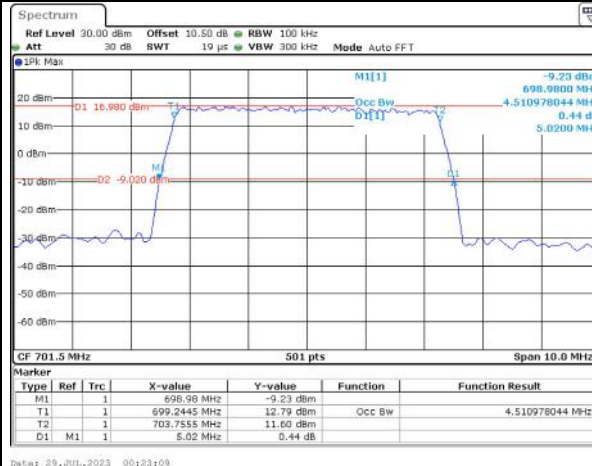
Occupied Bandwidth

Channel

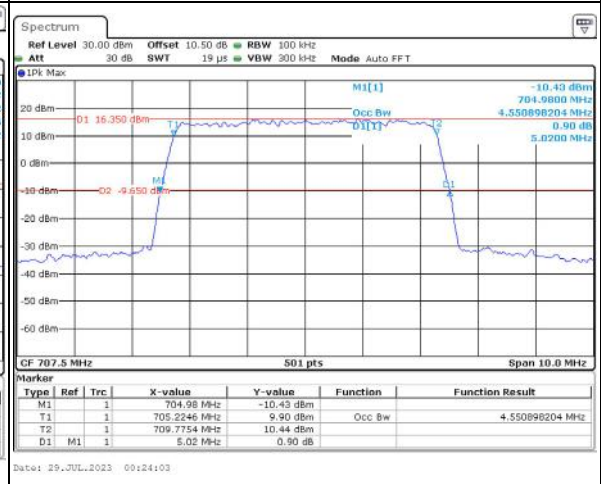
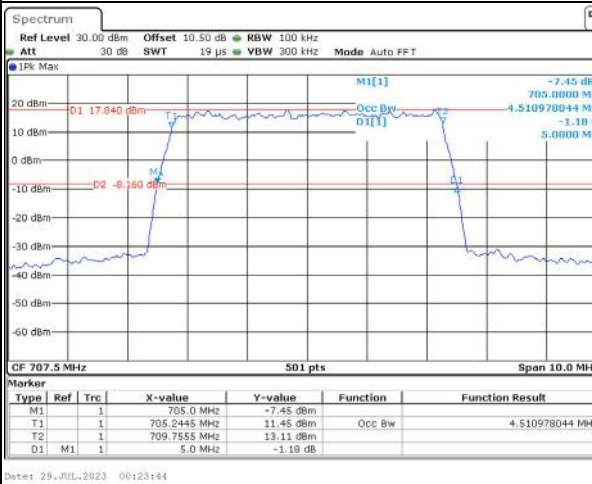
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

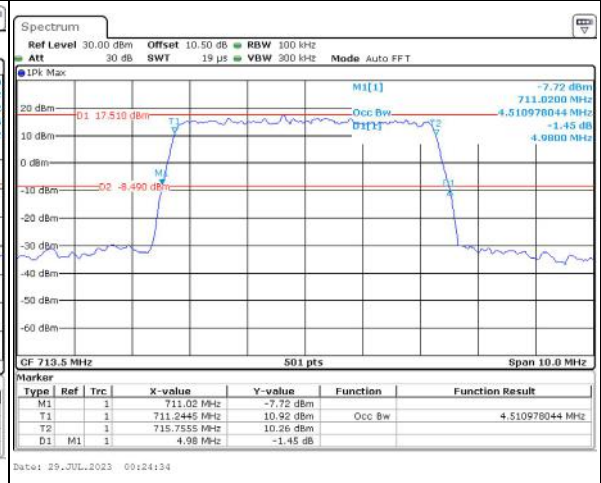
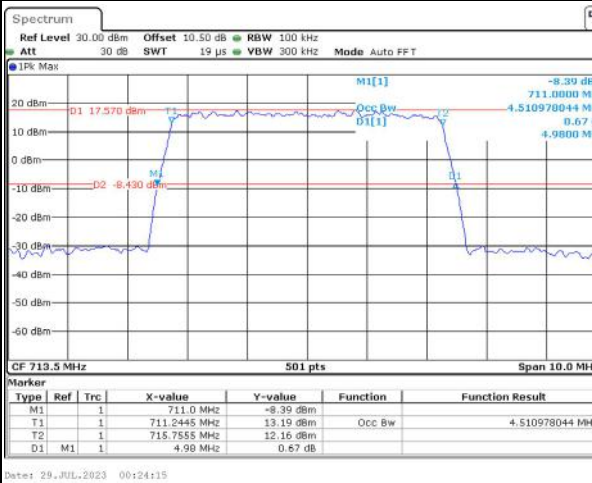
Lowest



Middle



Highest



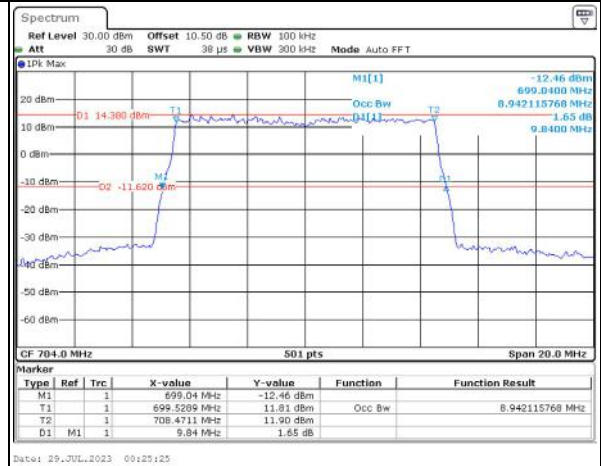
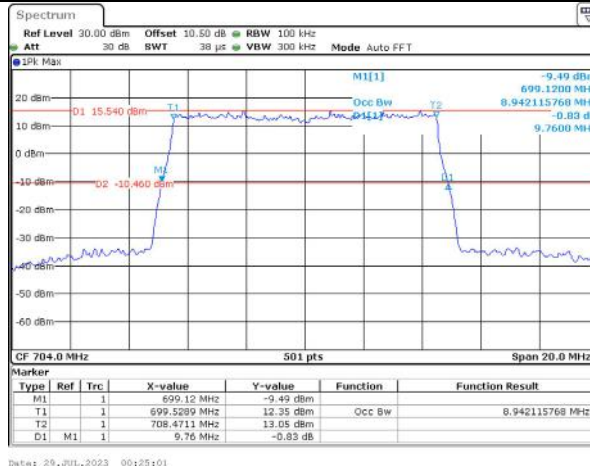
Occupied Bandwidth

Channel

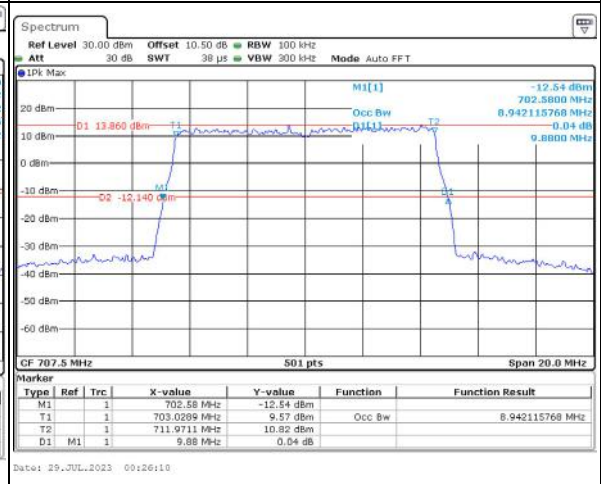
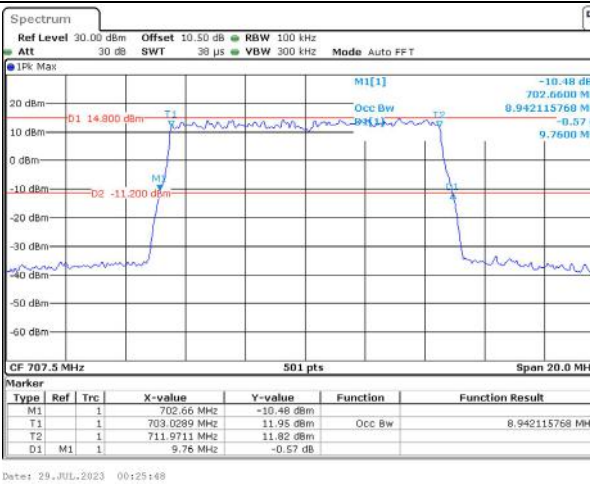
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

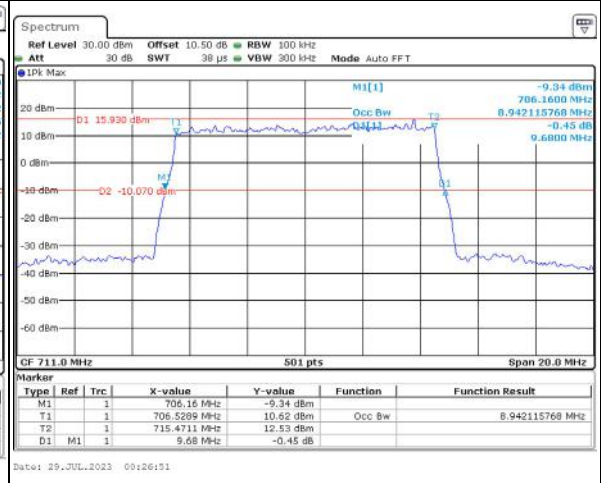
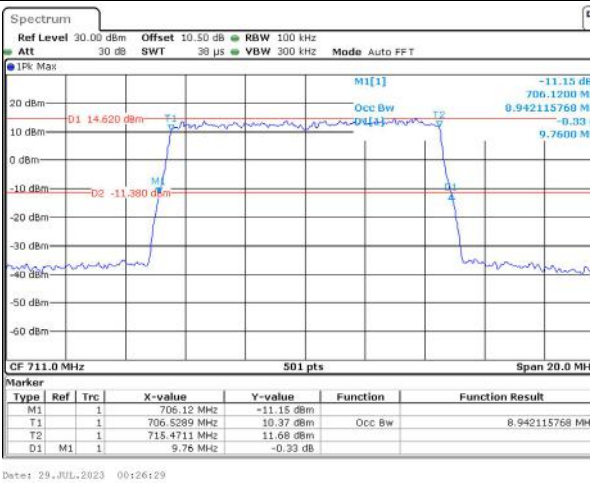
Lowest



Middle



Highest

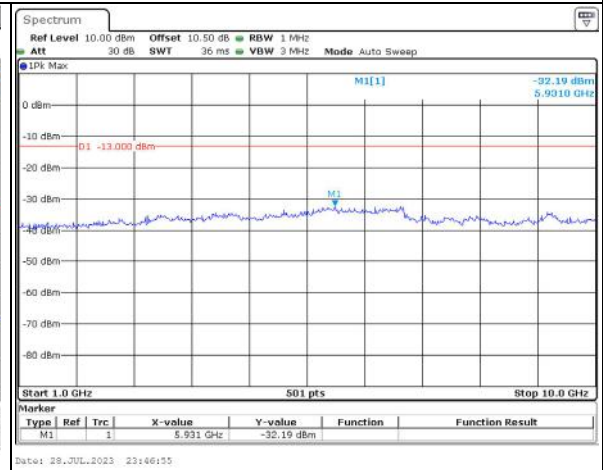
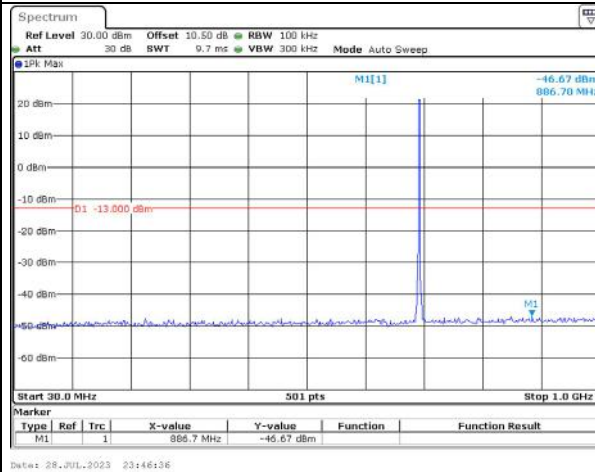


Spurious Emissions at Antenna Terminal

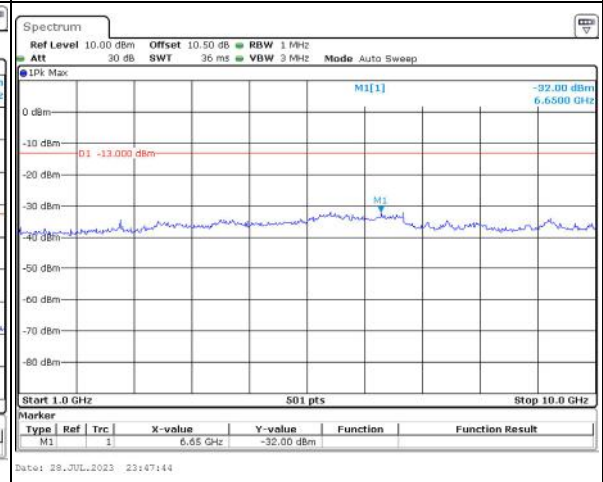
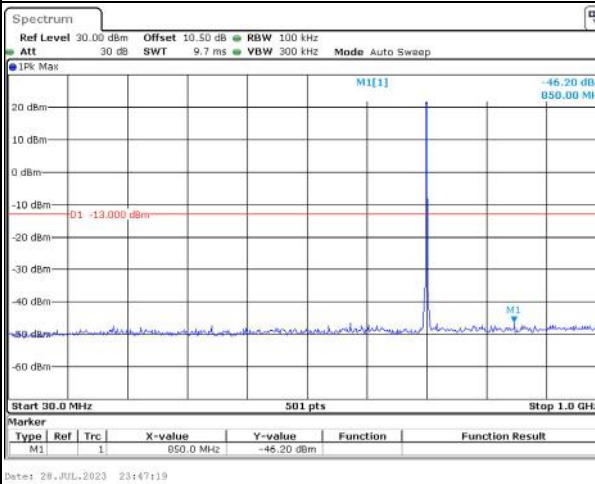
Channel

1.4MHz Bandwidth QPSK

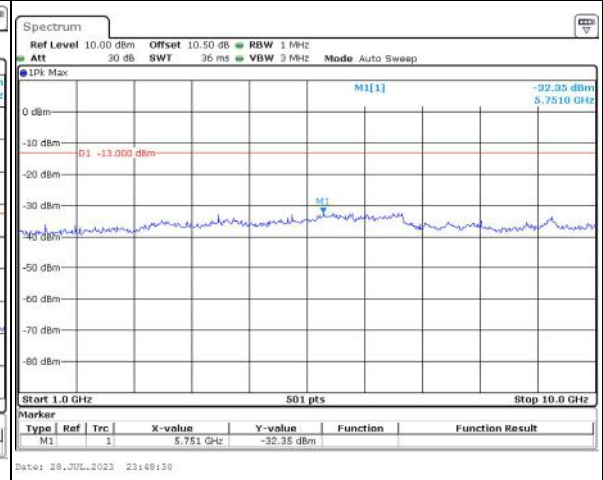
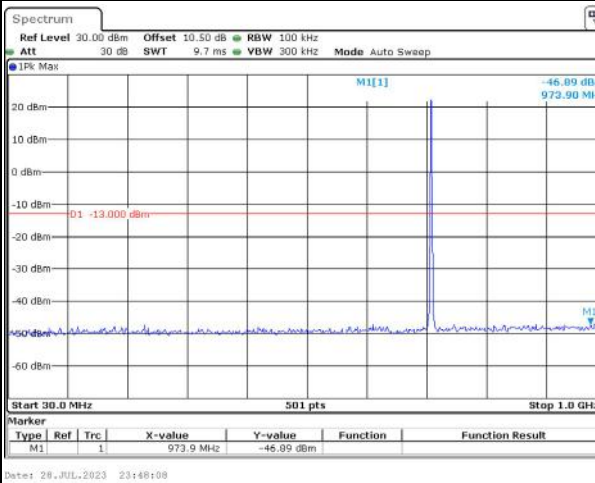
Lowest



Middle



Highest

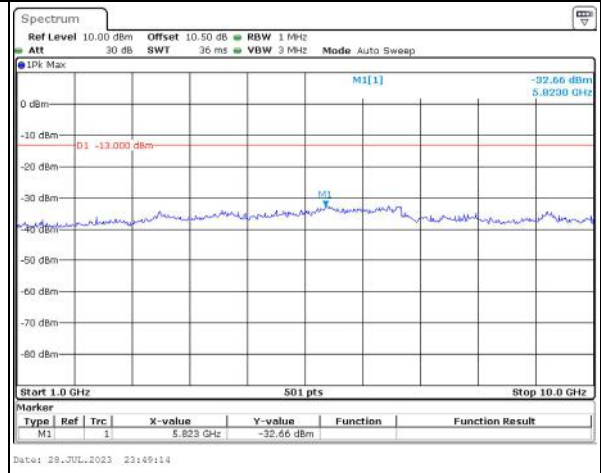
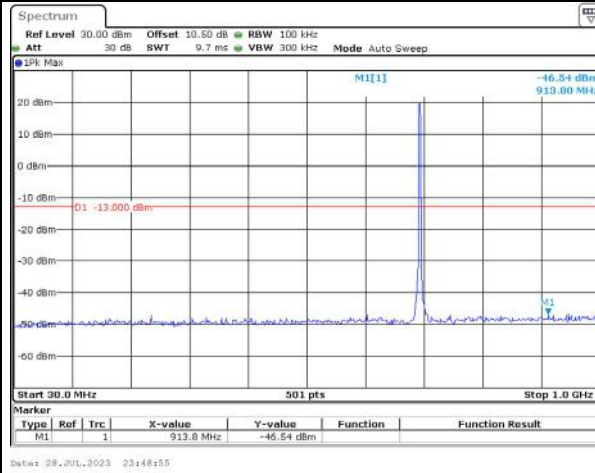


Spurious Emissions at Antenna Terminal

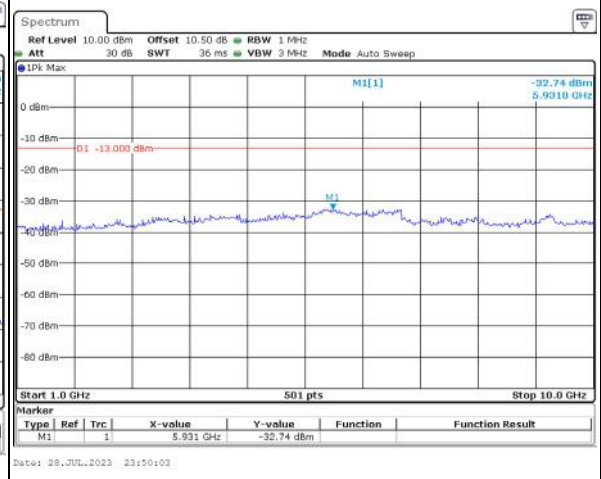
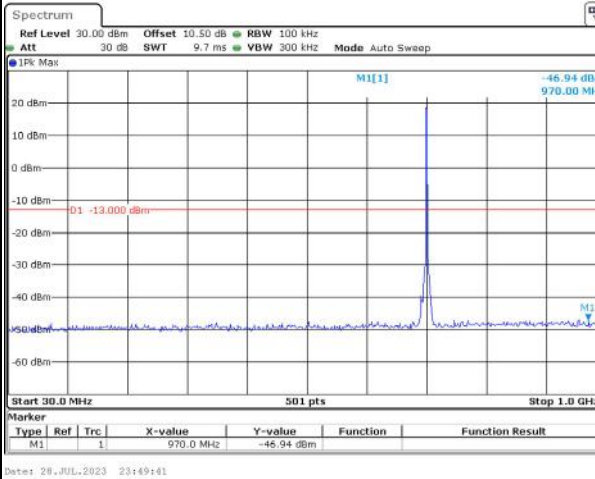
Channel

3MHz Bandwidth QPSK

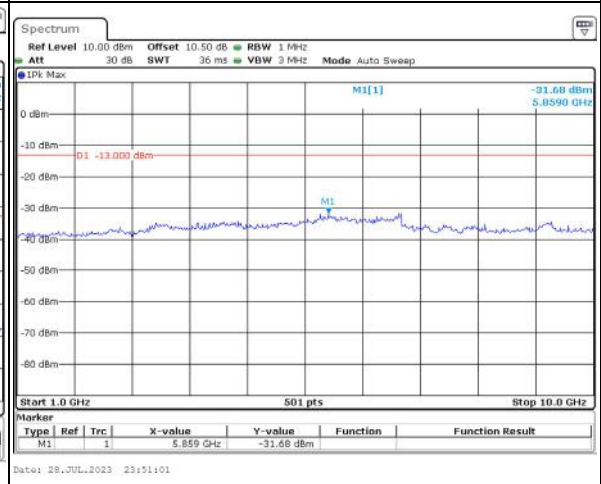
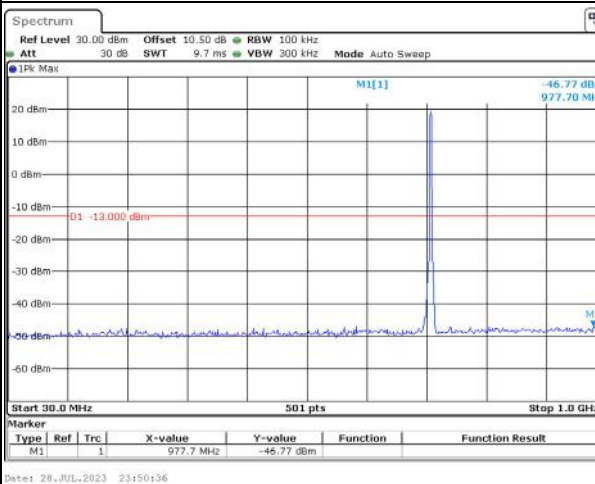
Lowest



Middle



Highest

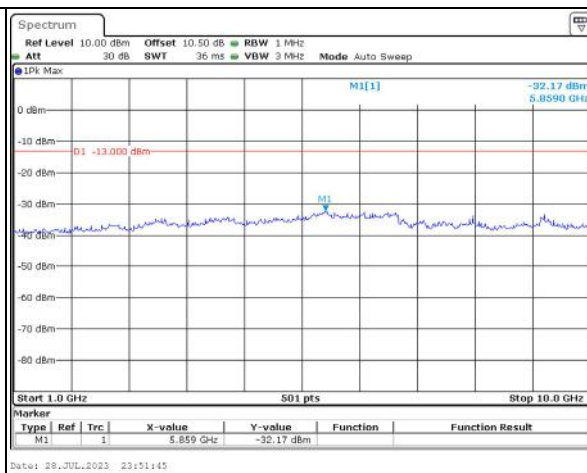
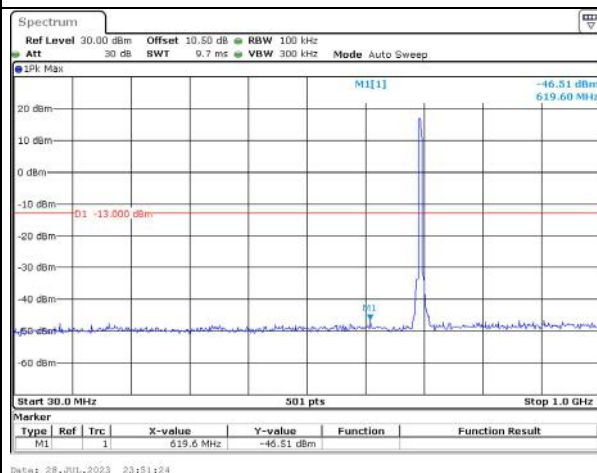


Spurious Emissions at Antenna Terminal

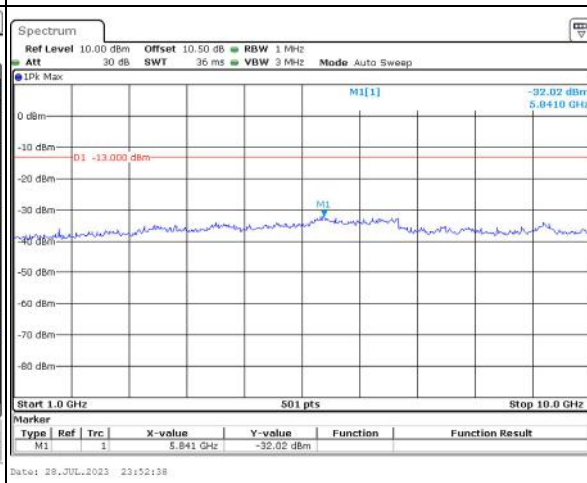
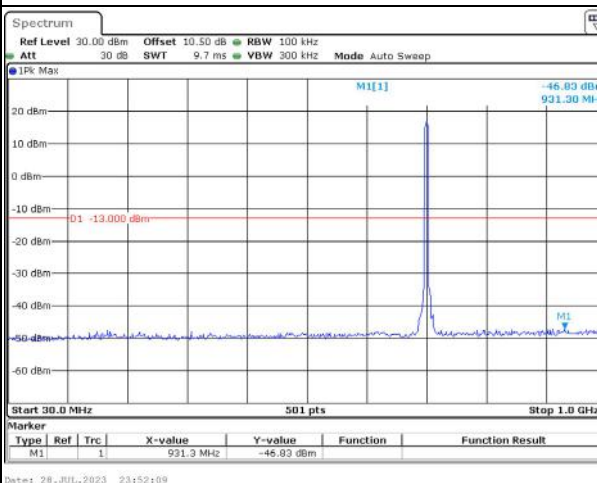
Channel

5MHz Bandwidth QPSK

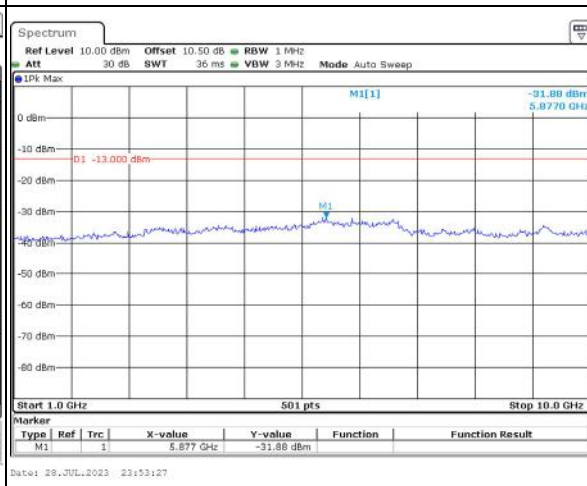
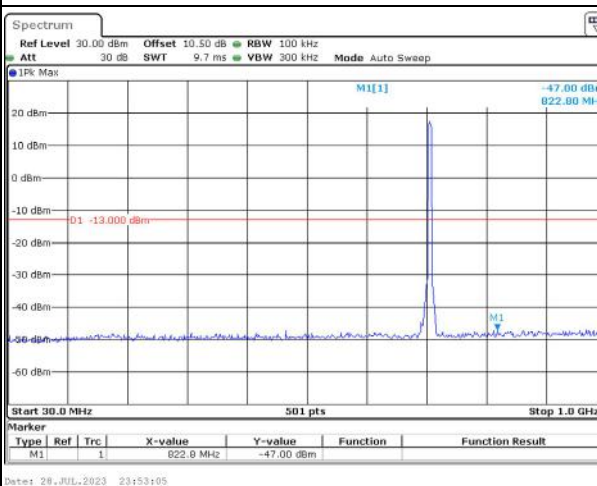
Lowest



Middle



Highest

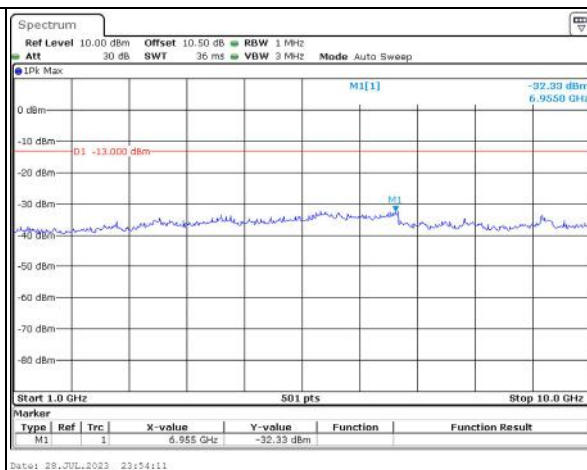
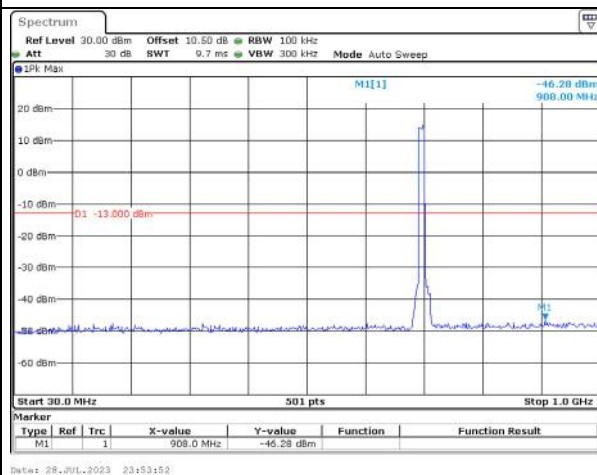


Spurious Emissions at Antenna Terminal

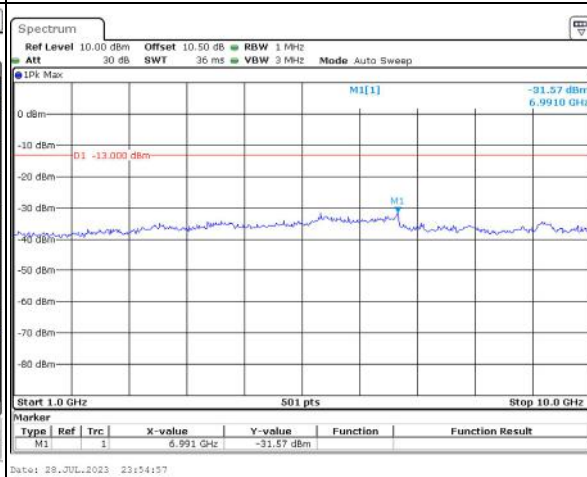
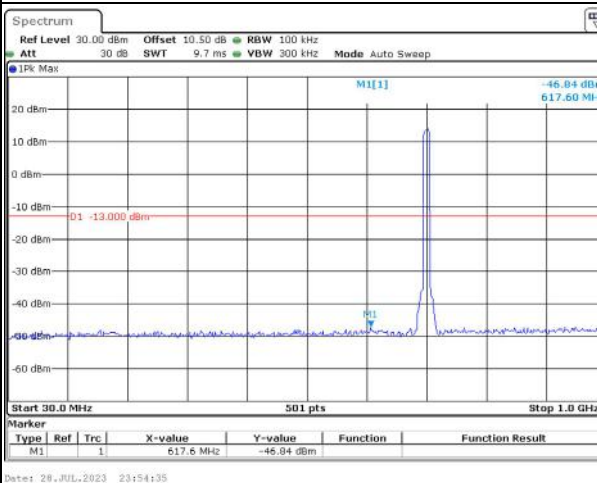
Channel

10MHz Bandwidth QPSK

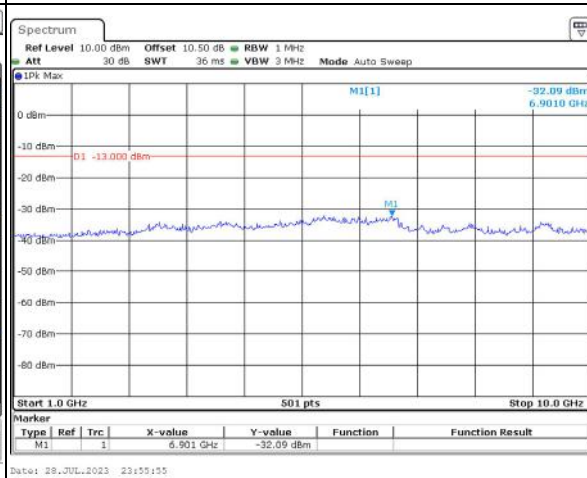
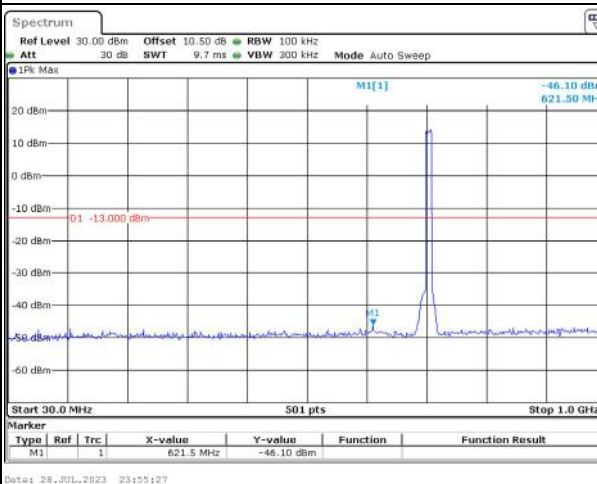
Lowest



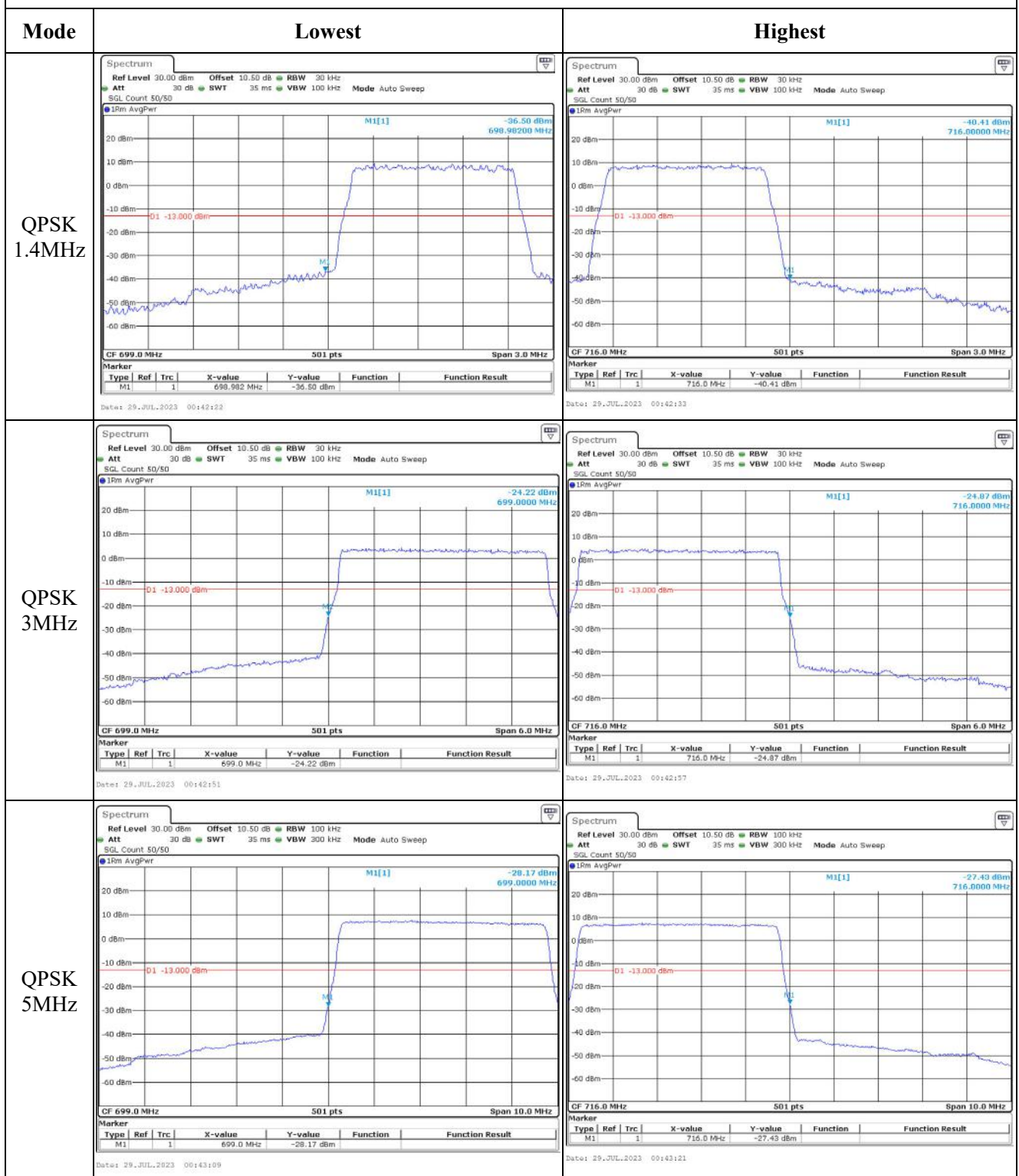
Middle



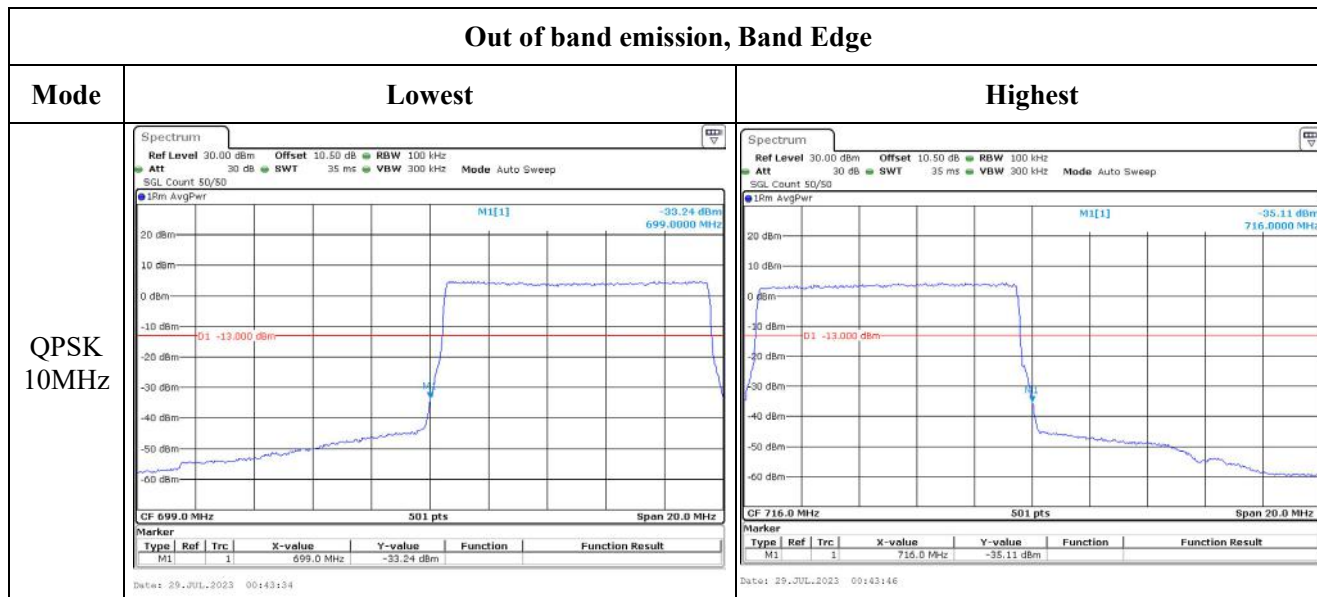
Highest



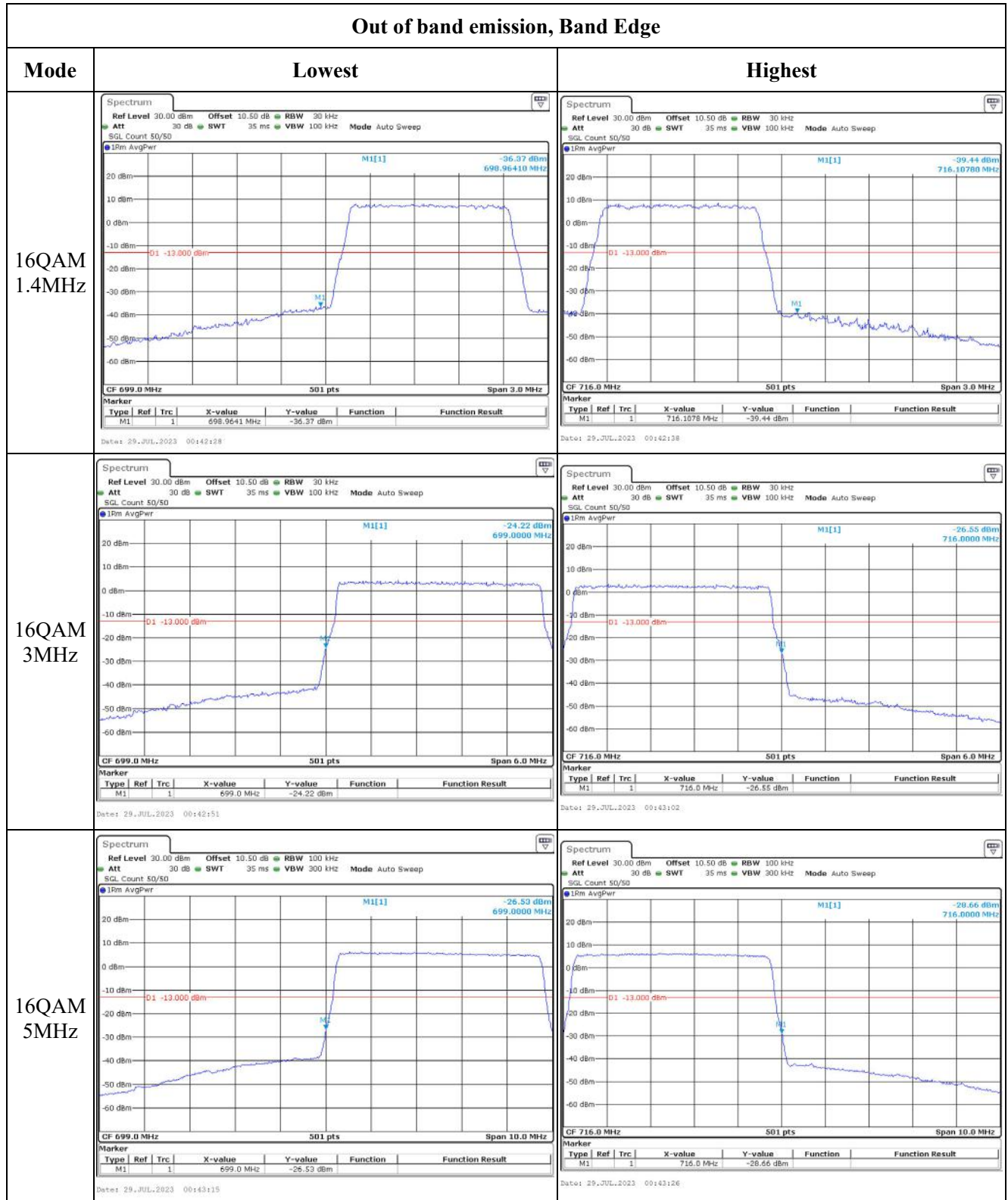
Out of band emission, Band Edge



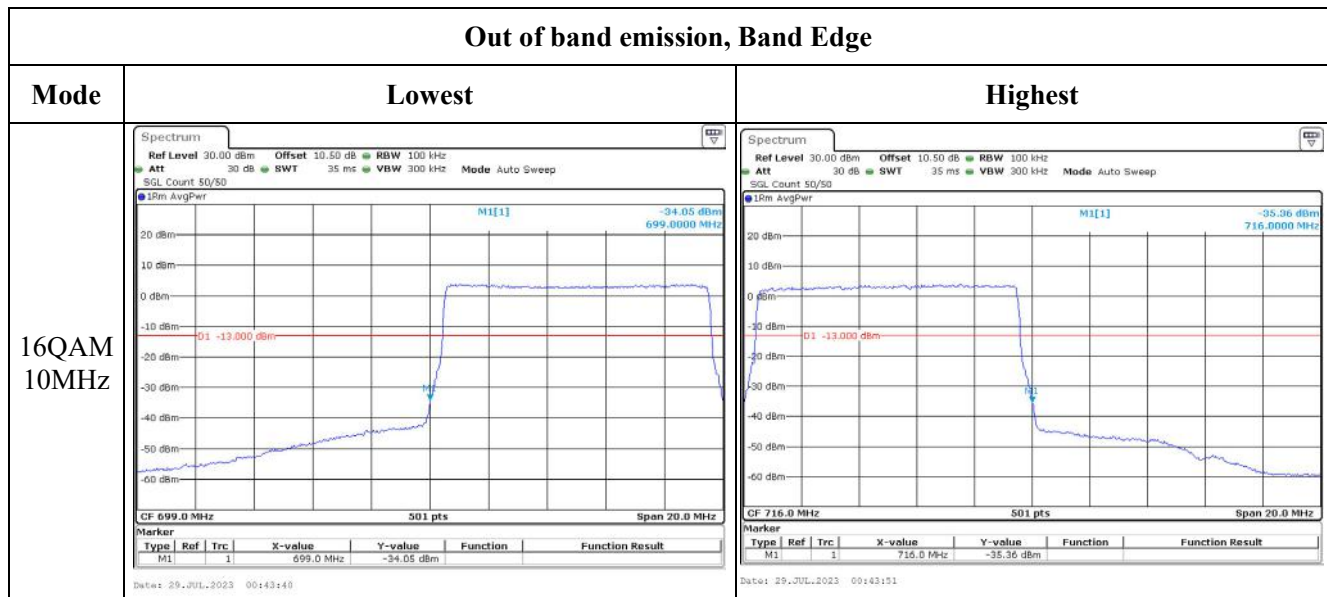
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.11 Antenna Port Test Data and Results for LTE Band 17

Serial Number:	28O3-4	Test Date:	2023/7/28-2023/7/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	64	ATM Pressure: (kPa)	101
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
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
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	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	22.6	22.25	22.72	20.34	34.77
	RB1#13	22.22	22.23	22.27		
	RB1#24	22.2	22.61	22.33		
	RB15#0	21.18	21.31	21.69		
	RB15#10	21.16	21.22	21.38		
	RB25#0	21.15	21.24	21.41		
5MHz 16QAM	RB1#0	21.58	20.69	20.78	19.2	34.77
	RB1#13	21.03	20.73	20.43		
	RB1#24	21.09	21.23	20.79		
	RB15#0	20.03	20.77	20.74		
	RB15#10	20.11	20.72	20.27		
	RB25#0	20.12	20.66	20.37		
10MHz QPSK	RB1#0	22.63	22.47	22.22	20.25	34.77
	RB1#25	22.24	22.36	21.97		
	RB1#49	22.36	22.32	22.23		
	RB25#0	21.2	21.16	21.12		
	RB25#25	21.7	21.72	21.38		
	RB50#0	21.1	21.25	21.25		
10MHz 16QAM	RB1#0	21.75	20.7	21.16	19.37	34.77
	RB1#25	21.16	20.7	21.19		
	RB1#49	21.47	20.83	21.73		
	RB25#0	20.12	20.27	20.21		
	RB25#25	20.89	20.87	20.32		
	RB50#0	20.26	20.75	20.84		

Note: ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(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	5.86	4.9	5.74	13
	RB50#0	5.48	5.45	5.48	13
10MHz 16QAM	RB1#0	6.41	6.29	6.2	13
	RB50#0	6.55	6.29	6.29	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	5.000	5.000	5.000
5MHz 16QAM	4.551	4.531	4.511	5.020	5.000	4.980
10MHz QPSK	8.942	8.942	8.942	9.760	9.800	9.760
10MHz 16QAM	8.982	8.942	8.942	9.800	9.800	9.680

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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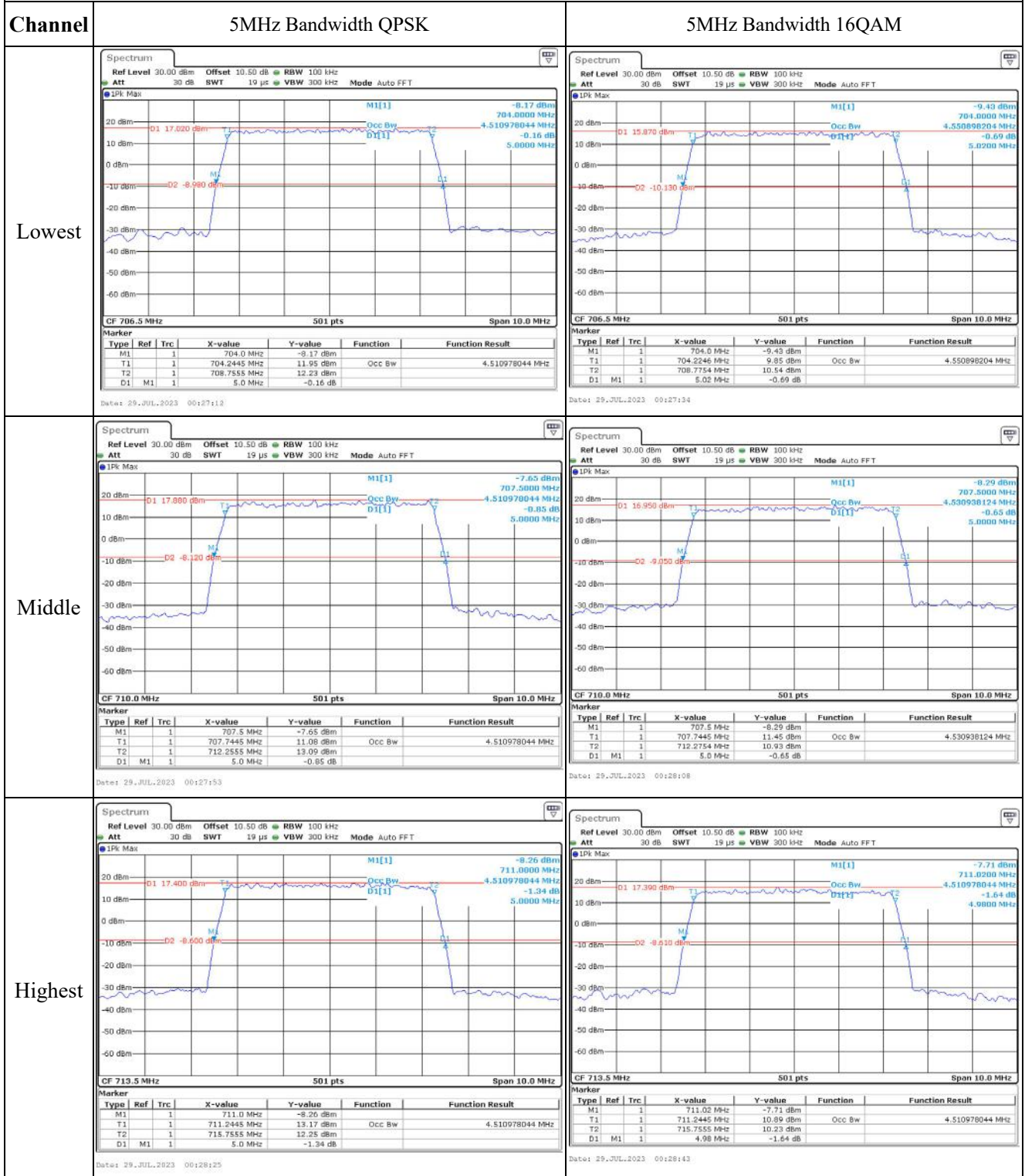
FCC §2.1055, §27.54: Frequency Stability

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	3.8	704.1253	704.00	715.8869	716.00
	-20	3.8	704.2365	704.00	715.8732	716.00
	-10	3.8	704.5954	704.00	715.8458	716.00
	0	3.8	704.6581	704.00	715.8629	716.00
	10	3.8	704.2375	704.00	715.8425	716.00
	20	3.8	704.3608	704.00	715.8283	716.00
	30	3.8	704.2519	704.00	715.8332	716.00
	40	3.8	704.2307	704.00	715.8306	716.00
Frequency Stability vs. Voltage	50	3.8	704.3624	704.00	715.8455	716.00
	20	3.4	704.6245	704.00	715.8677	716.00
	20	4.35	704.3613	704.00	715.868	716.00
Result:					Pass	

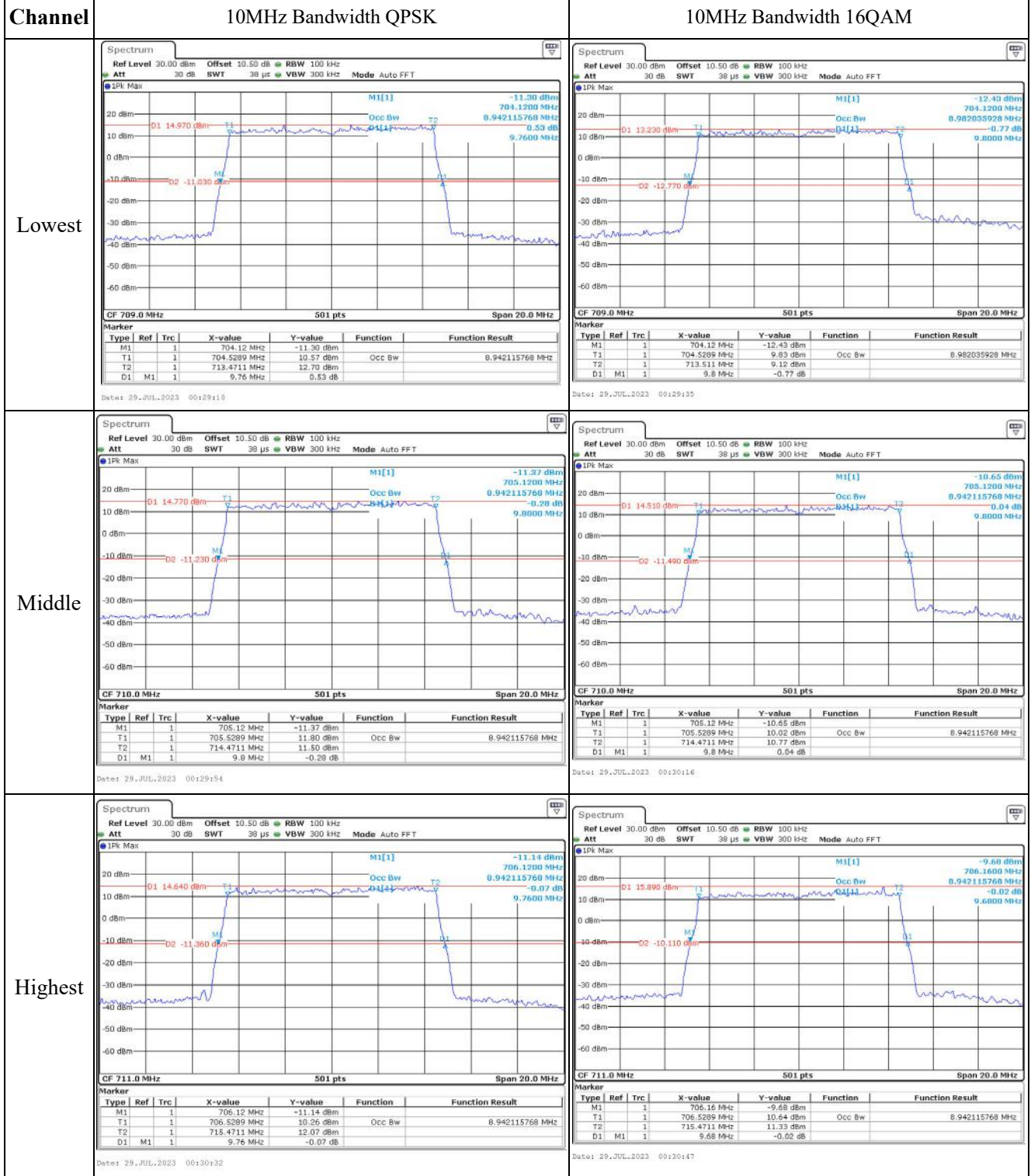
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	704.2194	704.00	715.9265	716.00
	-20	3.8	704.1967	704.00	715.9263	716.00
	-10	3.8	704.3983	704.00	715.9125	716.00
	0	3.8	704.1134	704.00	715.9125	716.00
	10	3.8	704.3229	704.00	715.9562	716.00
	20	3.8	704.356	704.00	715.9509	716.00
	30	3.8	704.5741	704.00	715.9422	716.00
	40	3.8	704.1553	704.00	715.9128	716.00
	50	3.8	704.1669	704.00	715.942	716.00
Frequency Stability vs. Voltage	20	3.4	704.1964	704.00	715.9457	716.00
	20	4.35	704.2838	704.00	715.9119	716.00
					Result:	Pass

Test Plots(Note: The 10.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



Occupied Bandwidth

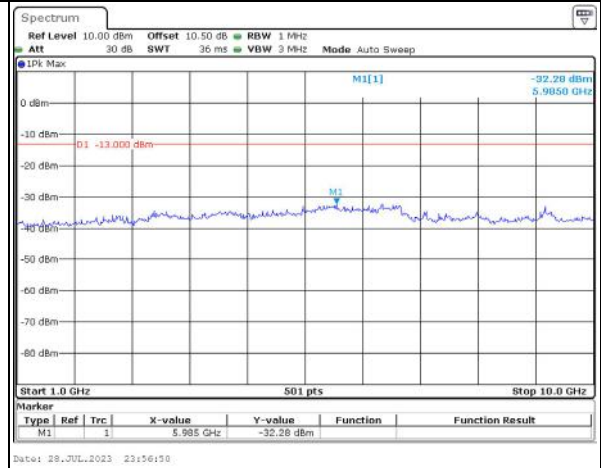
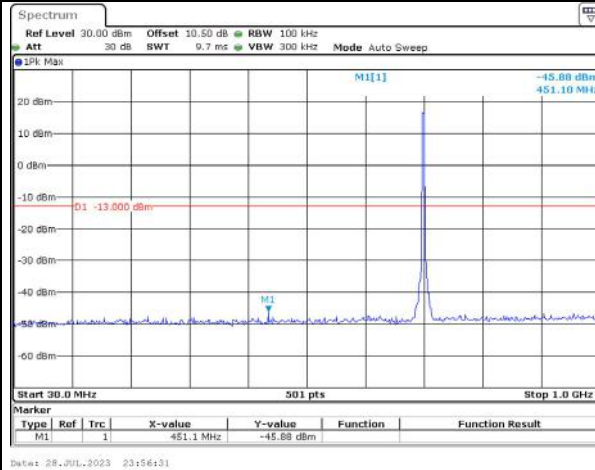


Spurious Emissions at Antenna Terminal

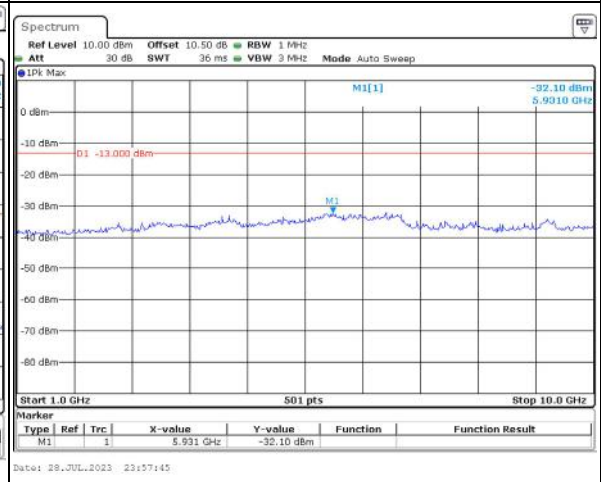
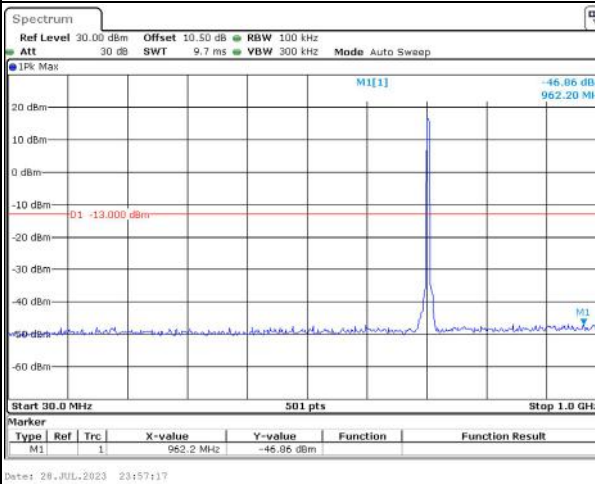
Channel

5MHz Bandwidth QPSK

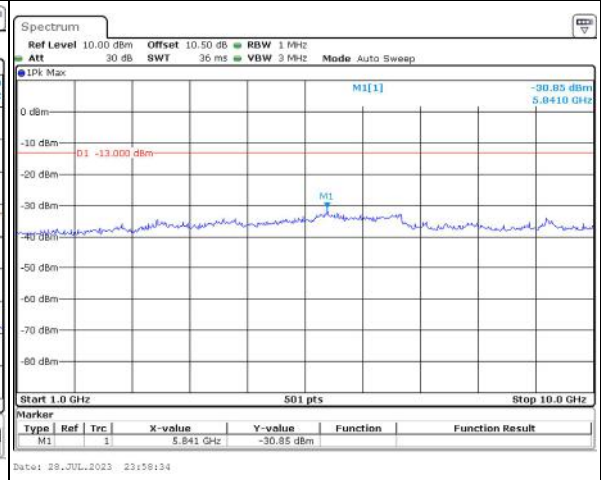
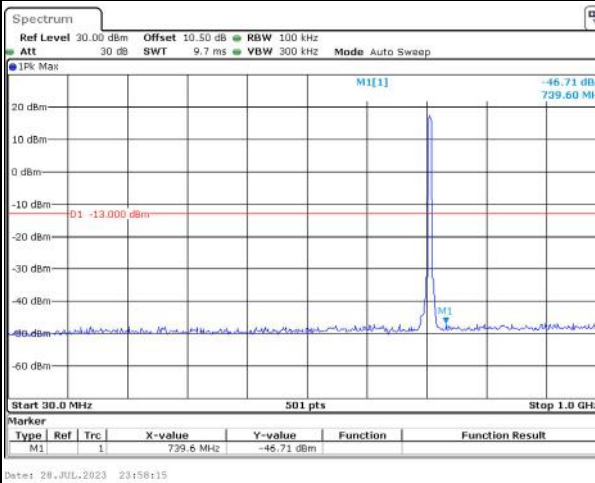
Lowest



Middle



Highest

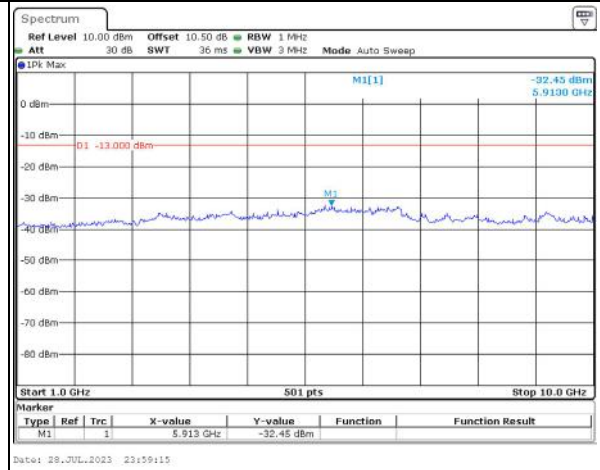
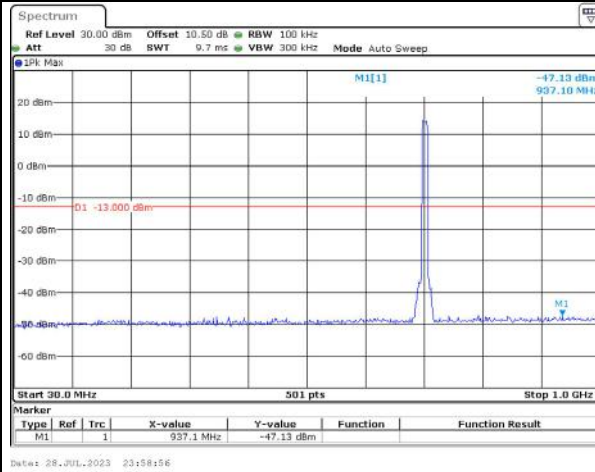


Spurious Emissions at Antenna Terminal

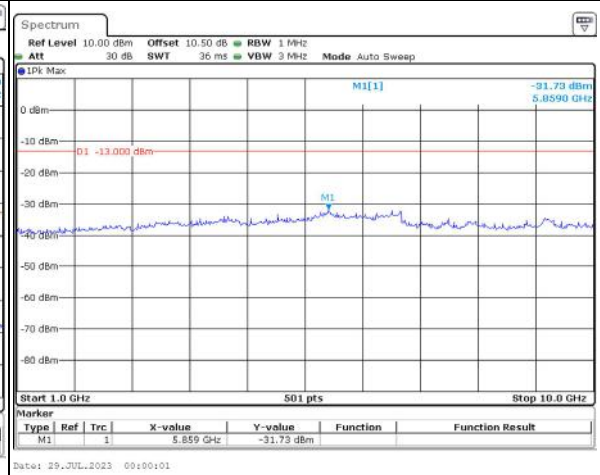
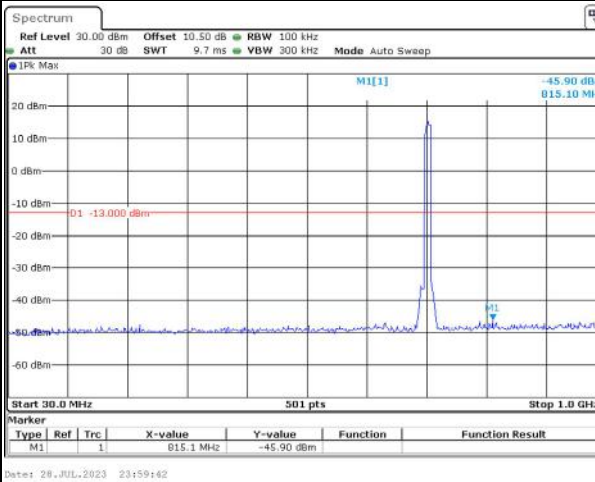
Channel

10MHz Bandwidth QPSK

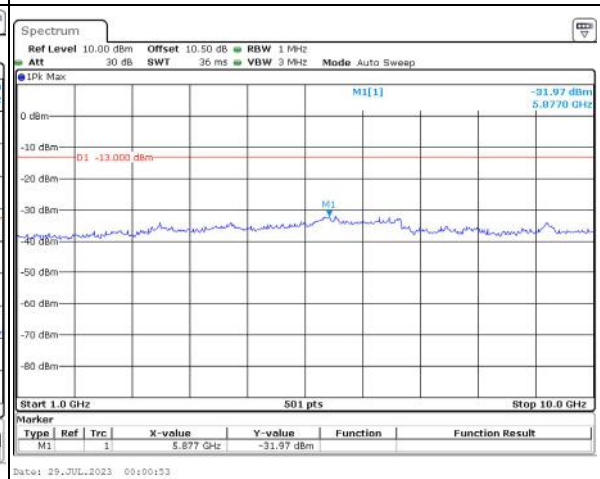
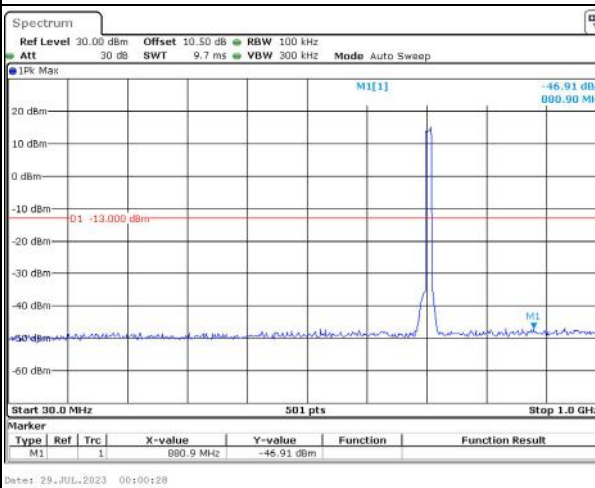
Lowest



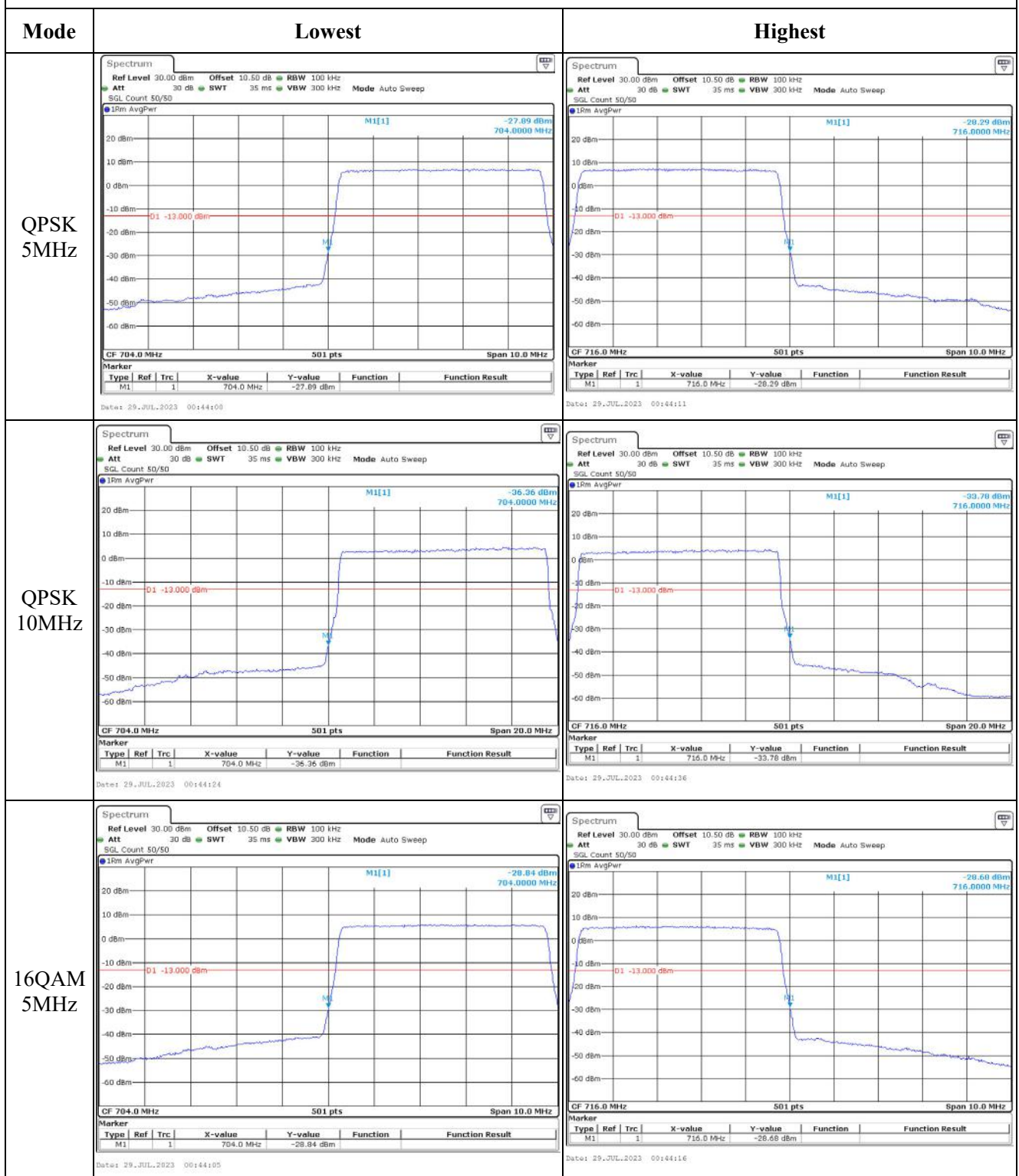
Middle



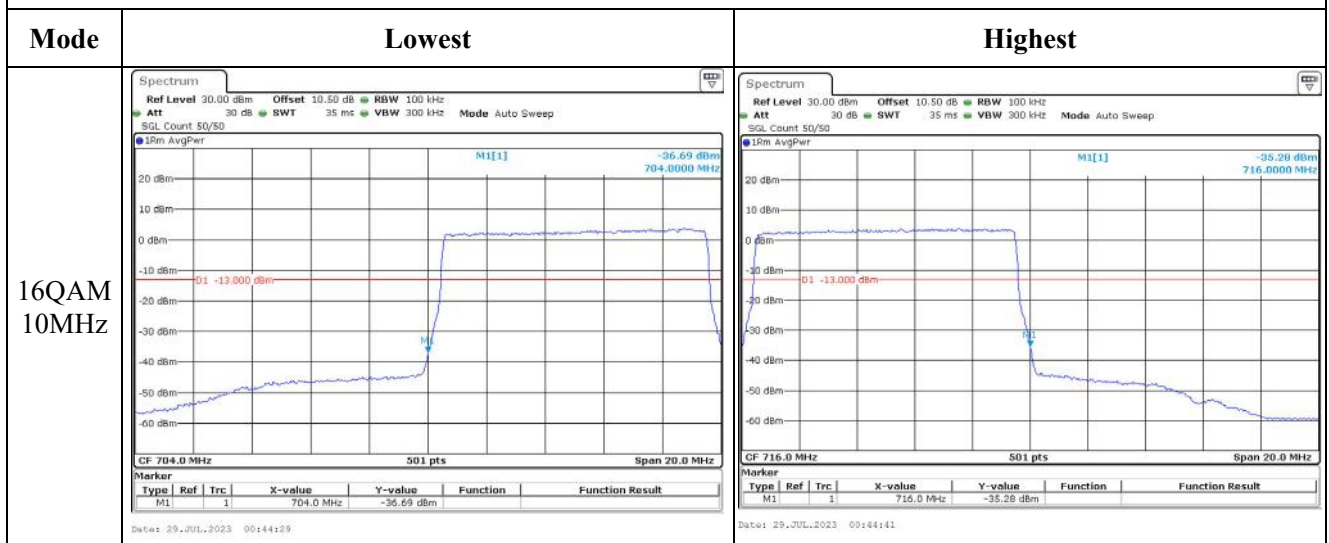
Highest



Out of band emission, Band Edge



Out of band emission, Band Edge



4.12 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	28O3-4	Test Date:	2023/7/28-2023/9/27
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6-26.9	Relative Humidity: (%)	61~64	ATM Pressure: (kPa)	100~101
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
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
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	2572.5	2595	2617.5
10MHz	2575	2595	2615
15MHz	2577.5	2595	2612.5
20MHz	2580	2595	2610

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	22.01	22.28	22.63	24.4	33
	RB1#13	22	22.3	22.67		
	RB1#24	22.05	22.43	22.65		
	RB15#0	21.11	21.34	21.56		
	RB15#10	21.14	21.37	21.6		
	RB25#0	21.11	21.33	21.55		
5MHz 16QAM	RB1#0	21	21.57	22	23.76	33
	RB1#13	20.9	21.7	21.91		
	RB1#24	21.03	21.39	22.03		
	RB15#0	20.38	20.48	20.78		
	RB15#10	20.39	20.4	20.83		
	RB25#0	19.96	20.41	20.79		
10MHz QPSK	RB1#0	22.21	22.26	22.42	24.35	33
	RB1#25	22.36	22.41	22.6		
	RB1#49	22.41	22.47	22.62		
	RB25#0	21.1	21.29	21.43		
	RB25#25	21.15	21.33	21.64		
	RB50#0	21.15	21.16	21.47		
10MHz 16QAM	RB1#0	21.47	21.49	21.49	23.81	33
	RB1#25	21.97	21.62	21.56		
	RB1#49	22.08	21.87	21.63		
	RB25#0	20.2	20.5	20.48		
	RB25#25	20.35	20.57	20.68		
	RB50#0	20.15	20.39	20.65		
15MHz QPSK	RB1#0	22.25	22.11	22.44	24.44	33
	RB1#38	22.39	22.19	22.6		
	RB1#74	22.39	22.25	22.71		
	RB36#0	21.12	21.28	21.53		
	RB36#39	21.23	21.38	21.62		
	RB75#0	21.17	21.32	21.57		
15MHz 16QAM	RB1#0	21.57	21.48	21.45	23.47	33
	RB1#38	21.64	21.59	21.56		
	RB1#74	21.74	21.65	21.62		
	RB36#0	20.25	20.32	20.44		
	RB36#39	20.36	20.42	20.53		
	RB75#0	20.21	20.31	20.58		

20MHz QPSK	RB1#0	22.01	22.34	22.33	24.38	33
	RB1#50	22.11	22.42	22.43		
	RB1#99	22.28	22.6	22.65		
	RB50#0	21.15	21.26	21.36		
	RB50#50	21.16	21.44	21.57		
	RB100#0	21.13	21.22	21.49		
20MHz 16QAM	RB1#0	20.92	21.99	21.81	23.88	33
	RB1#50	20.93	22.13	21.82		
	RB1#99	20.98	22.15	21.98		
	RB50#0	20.37	20.44	20.69		
	RB50#50	20.39	20.45	20.88		
	RB100#0	20.25	20.4	20.63		

Note: EIRP=Conducted Power(dBm) - L_c(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	7.94	10.23	7.62	13
	RB100#0	8.78	8.7	8.58	13
20MHz 16QAM	RB1#0	8.58	8.55	8.12	13
	RB100#0	9.59	9.51	9.42	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	5.020	4.980	5.160
5MHz 16QAM	4.511	4.511	4.511	5.020	5.080	4.980
10MHz QPSK	8.942	8.942	8.982	9.960	9.800	9.760
10MHz 16QAM	8.942	8.942	8.942	9.720	9.840	9.680
15MHz QPSK	13.533	13.533	13.533	15.000	15.360	14.940
15MHz 16QAM	13.533	13.533	13.533	15.120	14.880	15.000
20MHz QPSK	17.964	17.964	18.044	19.520	19.760	20.240
20MHz 16QAM	18.044	17.964	17.964	19.600	19.600	19.520

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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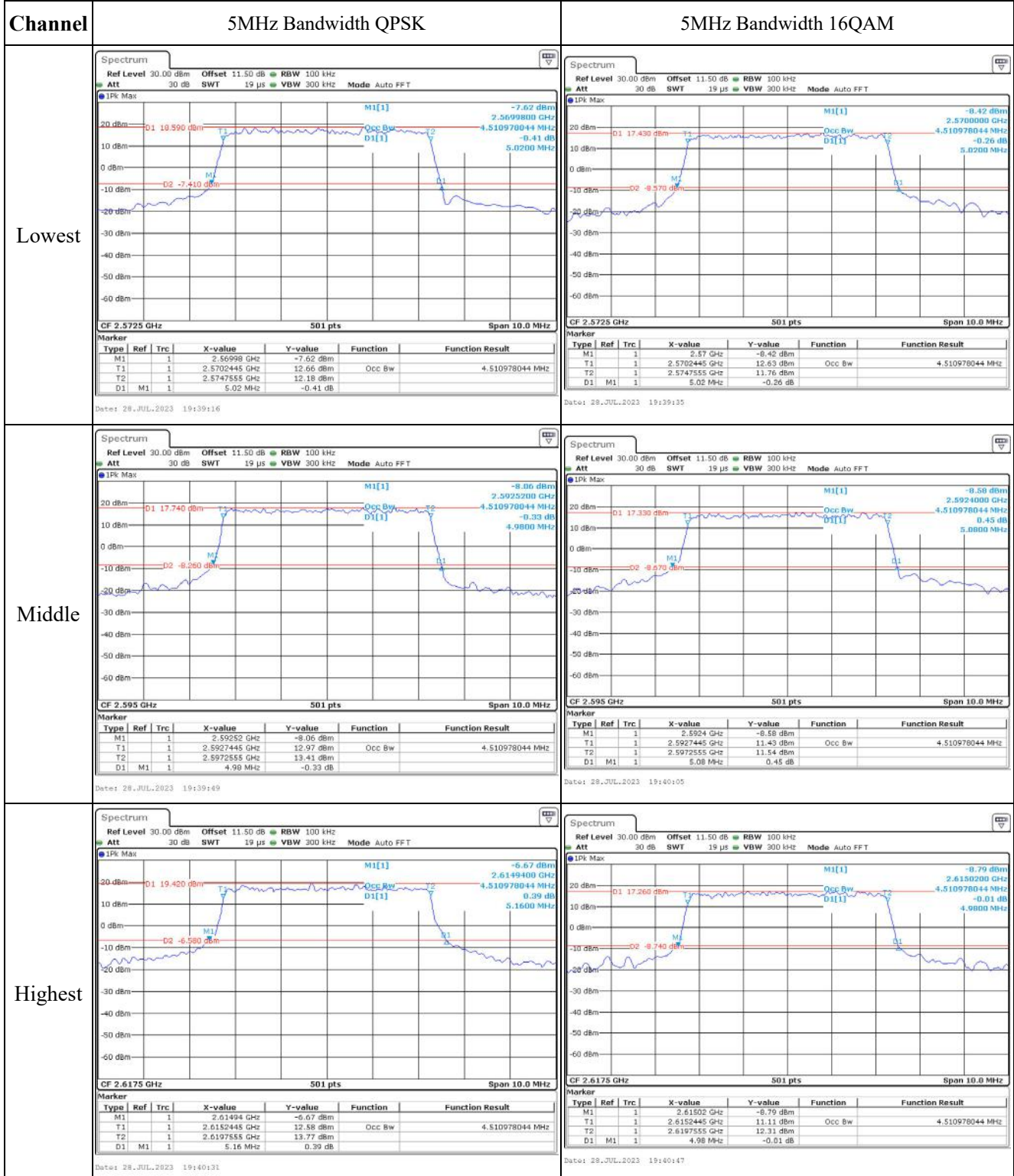
FCC §2.1055, §27.54: Frequency Stability

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	2570.2118	2570.00	2619.9252	2620
	-20	3.8	2570.4992	2570.00	2619.9687	2620
	-10	3.8	2570.5614	2570.00	2619.9257	2620
	0	3.8	2570.5776	2570.00	2619.936	2620
	10	3.8	2570.1759	2570.00	2619.9136	2620
	20	3.8	2570.4468	2570.00	2619.9589	2620
	30	3.8	2570.2849	2570.00	2619.9873	2620
	40	3.8	2570.1373	2570.00	2619.9459	2620
	50	3.8	2570.2732	2570.00	2619.9633	2620
Frequency Stability vs. Voltage	20	3.4	2570.3885	2570.00	2619.9596	2620
	20	4.35	2570.1726	2570.00	2619.9676	2620
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	3.8	2570.1054	2570.00	2619.9623	2620
	-20	3.8	2570.1251	2570.00	2619.9595	2620
	-10	3.8	2570.1555	2570.00	2619.9466	2620
	0	3.8	2570.3925	2570.00	2619.9124	2620
	10	3.8	2570.3258	2570.00	2619.9569	2620
	20	3.8	2570.2398	2570.00	2619.9242	2620
	30	3.8	2570.1439	2570.00	2619.9594	2620
	40	3.8	2570.1125	2570.00	2619.956	2620
	50	3.8	2570.1682	2570.00	2619.985	2620
Frequency Stability vs. Voltage	20	3.4	2570.1745	2570.00	2619.9255	2620
	20	4.35	2570.1822	2570.00	2619.9101	2620
Result:					Pass	

Test Plots(Note: The 11.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



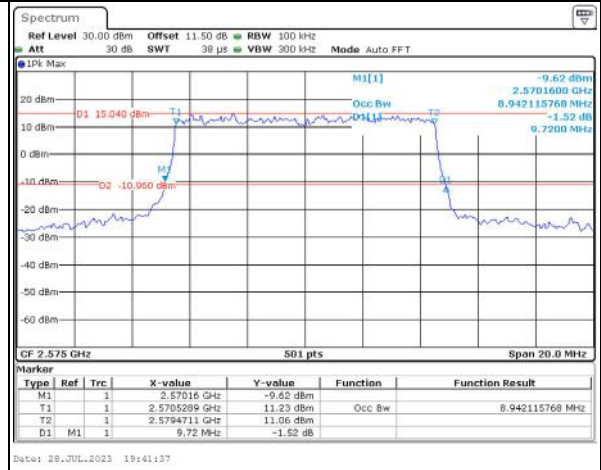
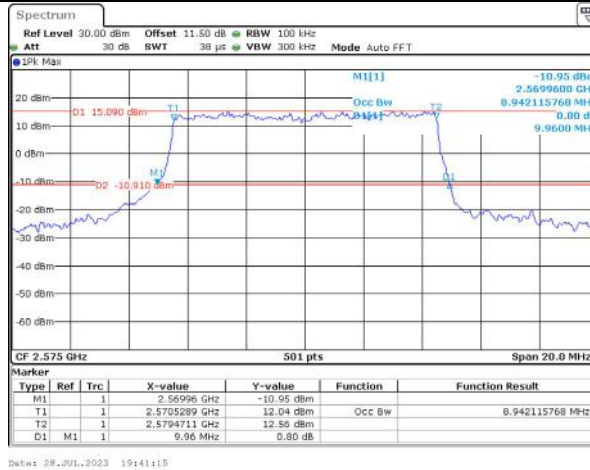
Occupied Bandwidth

Channel

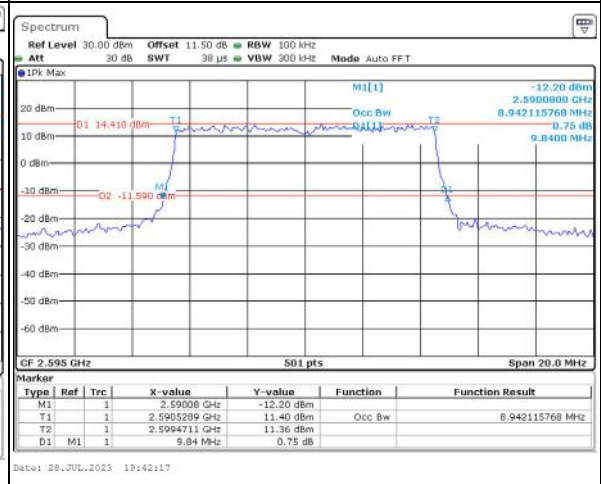
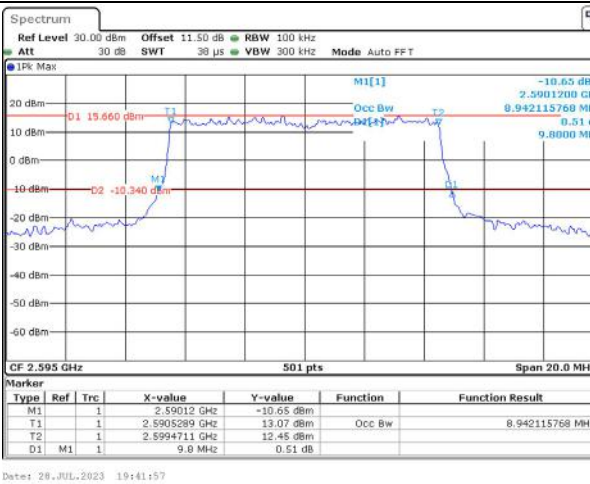
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

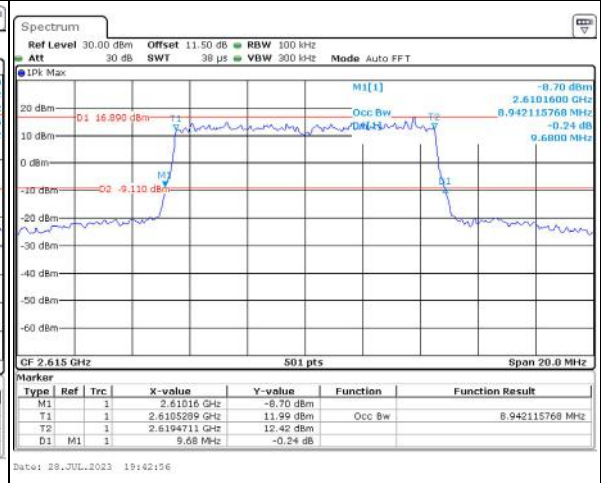
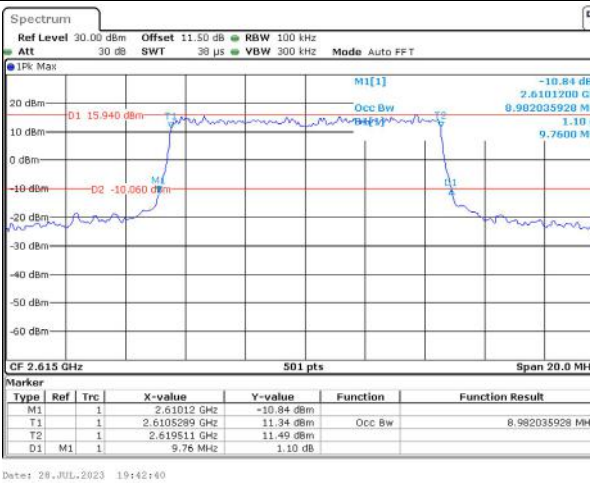
Lowest



Middle



Highest



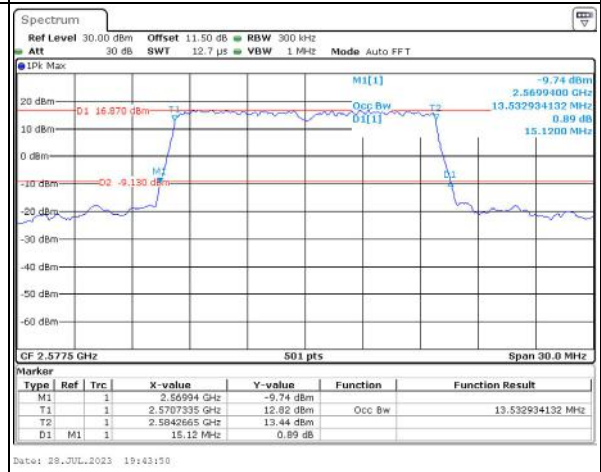
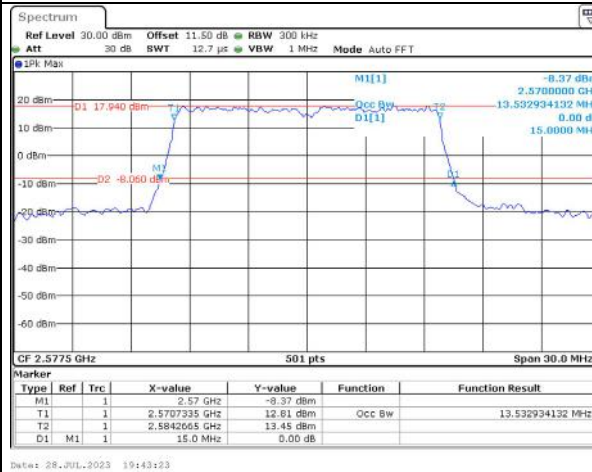
Occupied Bandwidth

Channel

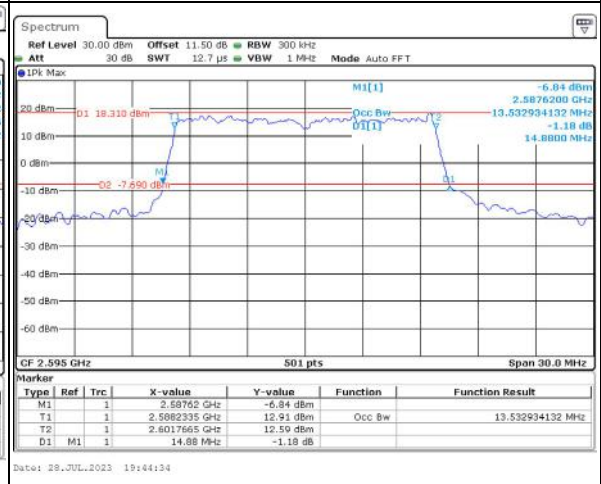
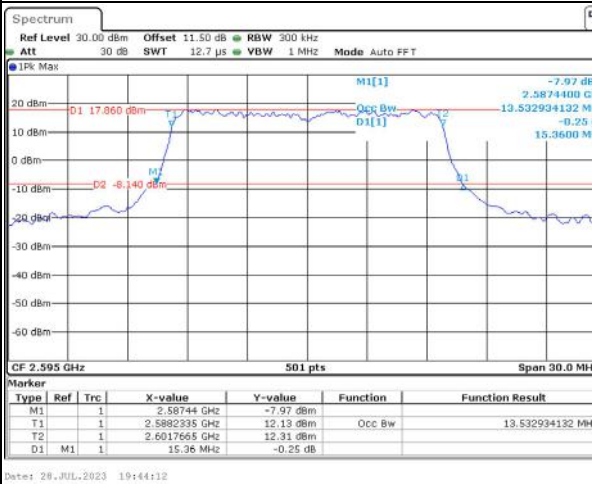
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

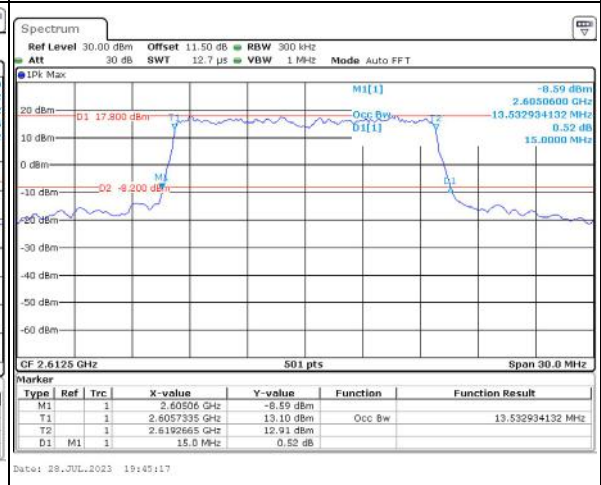
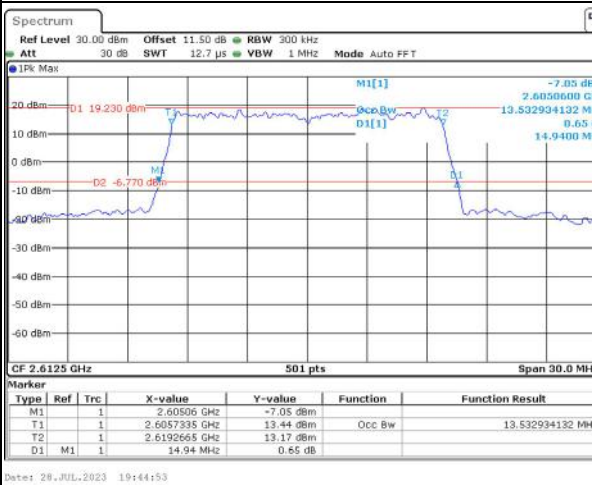
Lowest



Middle



Highest



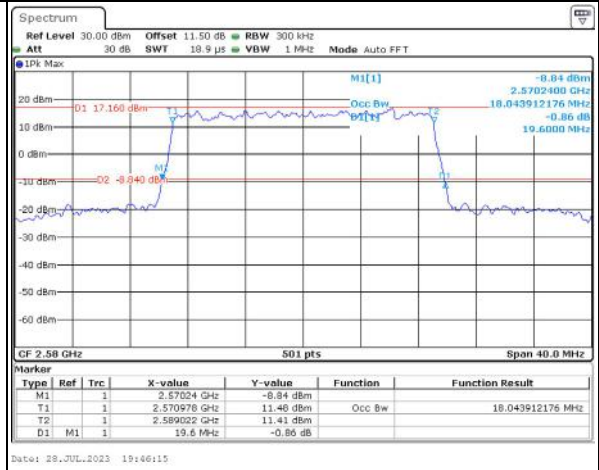
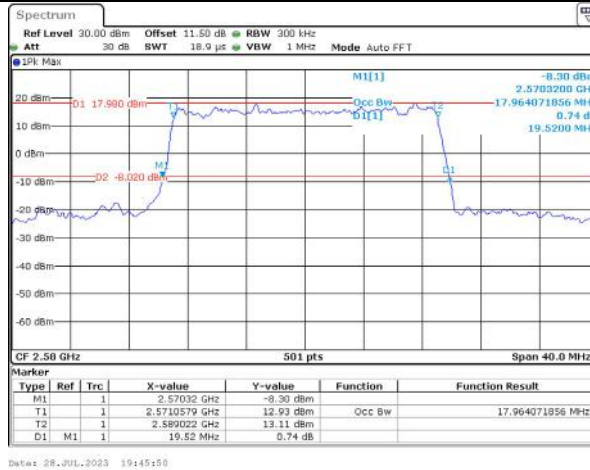
Occupied Bandwidth

Channel

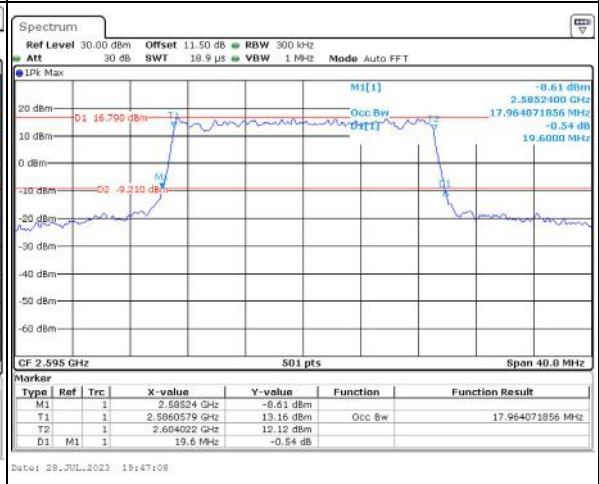
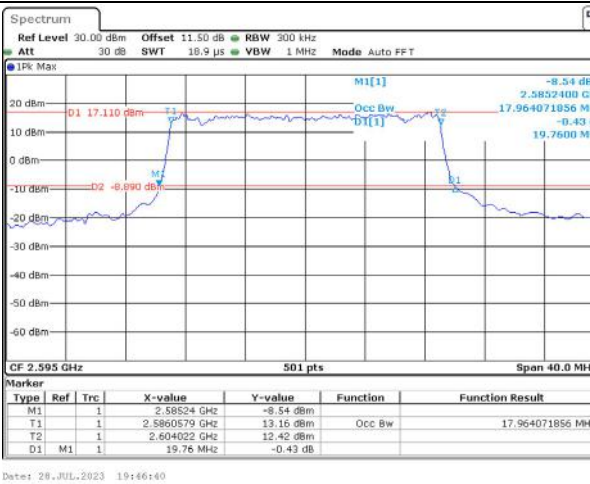
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

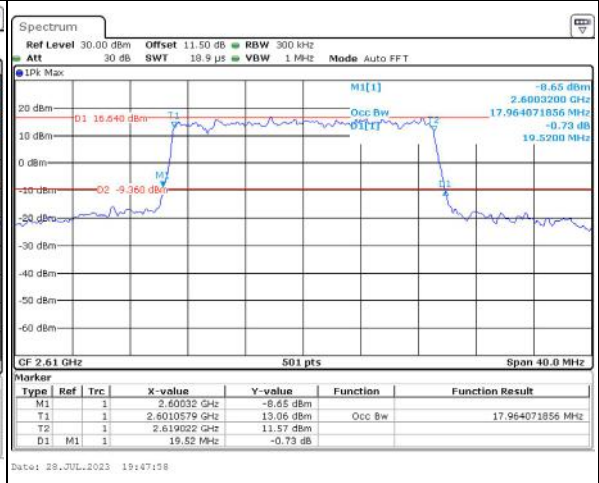
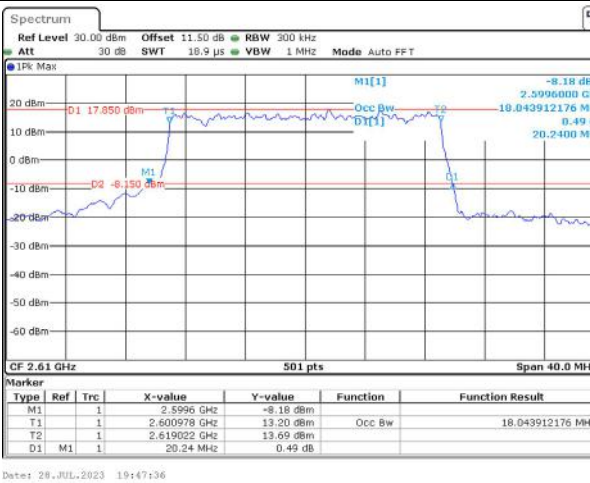
Lowest



Middle



Highest

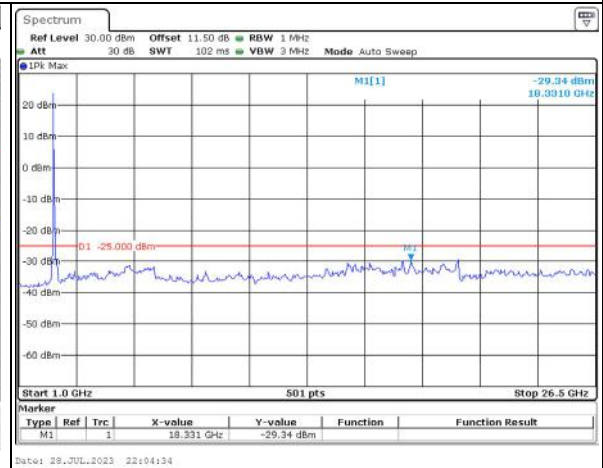
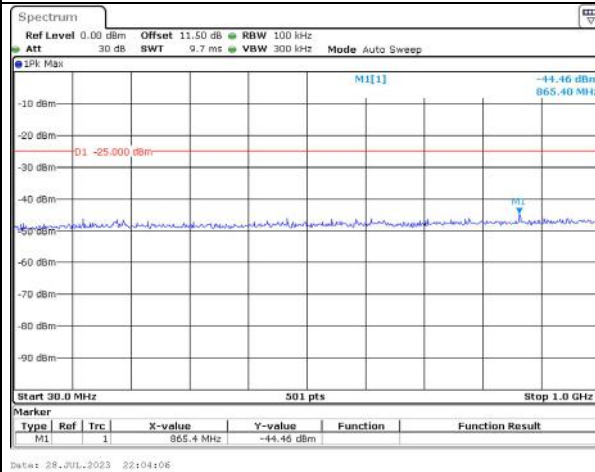


Spurious Emissions at Antenna Terminal

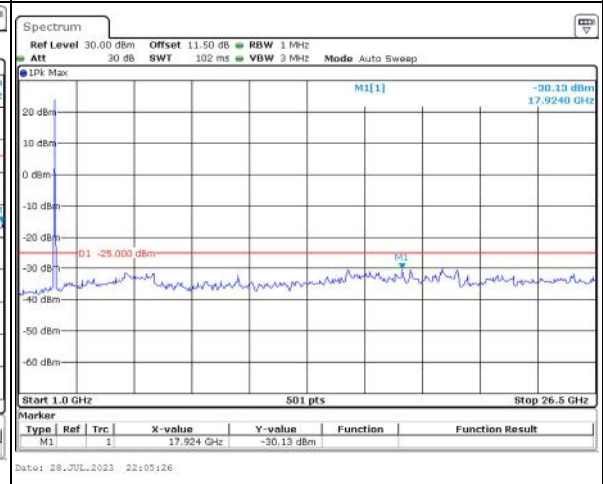
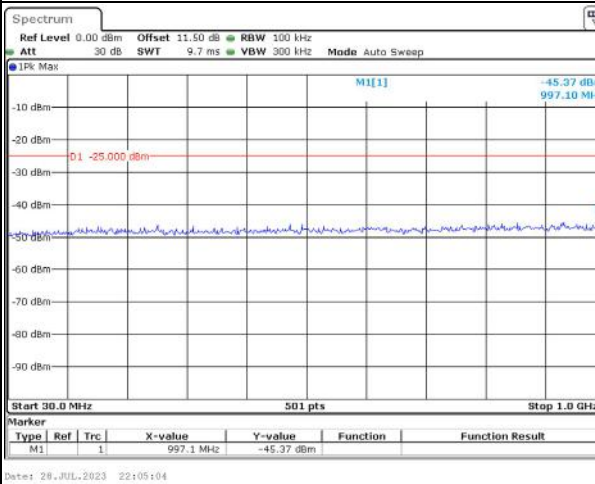
Channel

5MHz Bandwidth QPSK

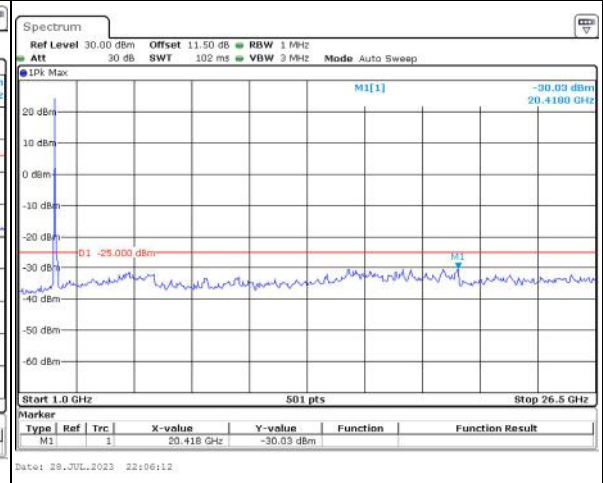
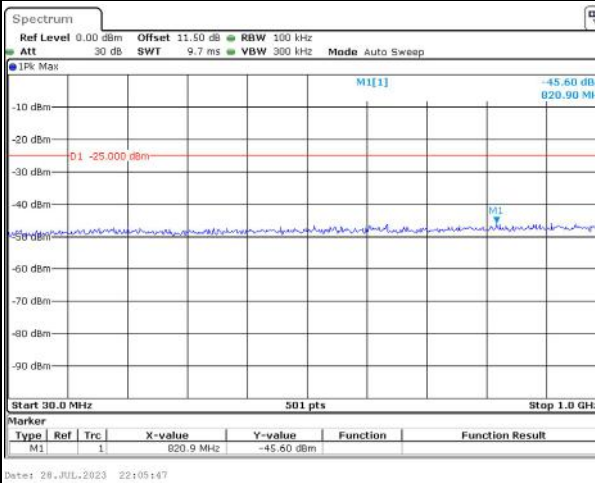
Lowest



Middle



Highest

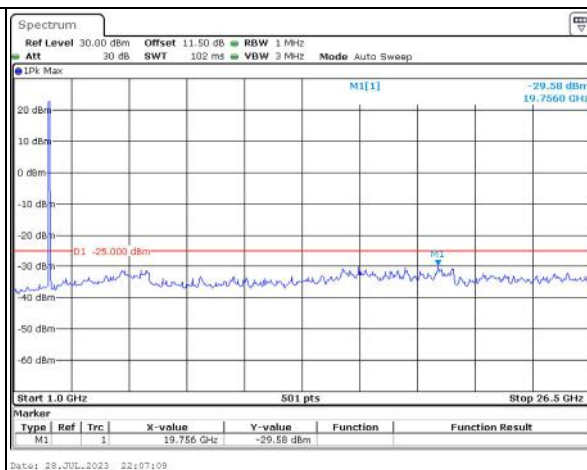
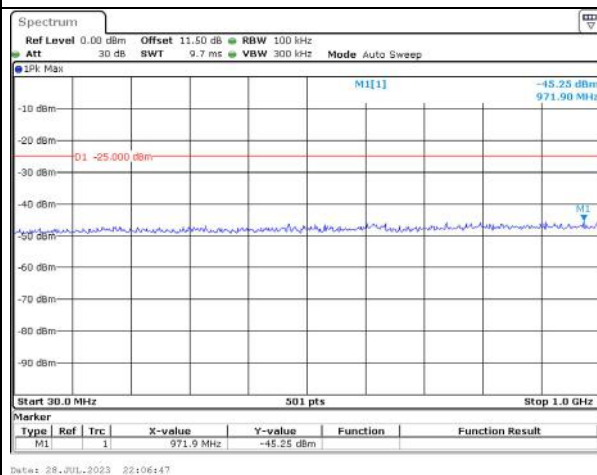


Spurious Emissions at Antenna Terminal

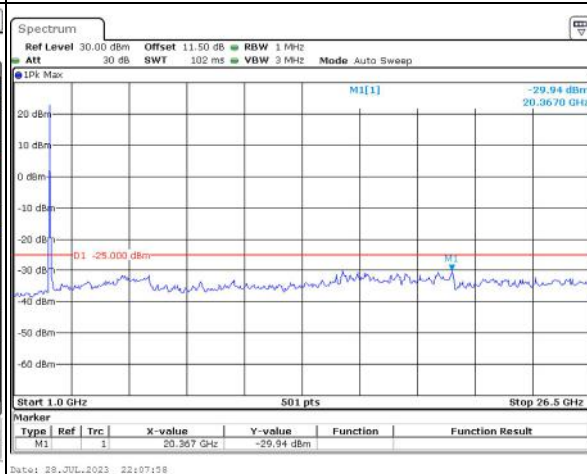
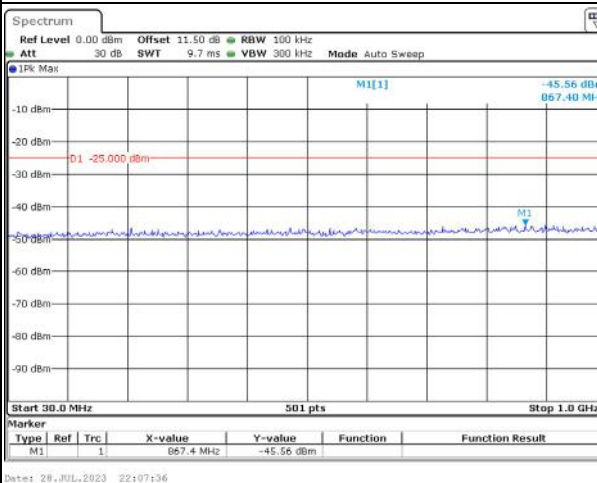
Channel

10MHz Bandwidth QPSK

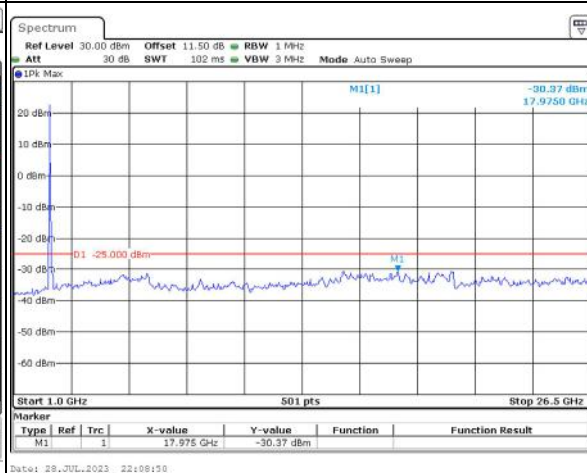
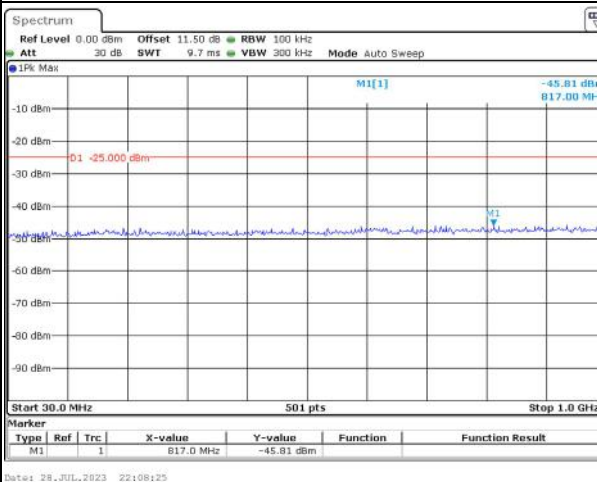
Lowest



Middle



Highest

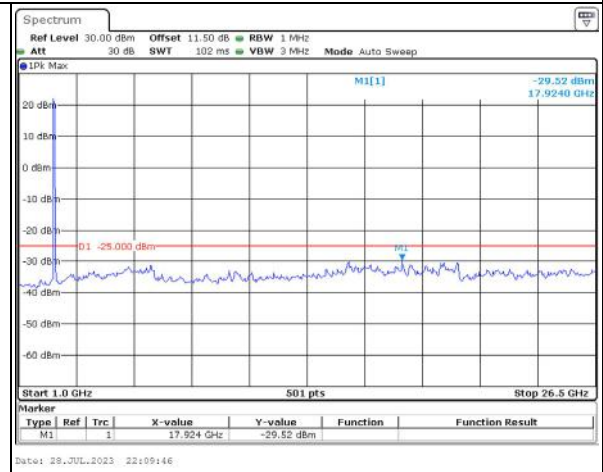
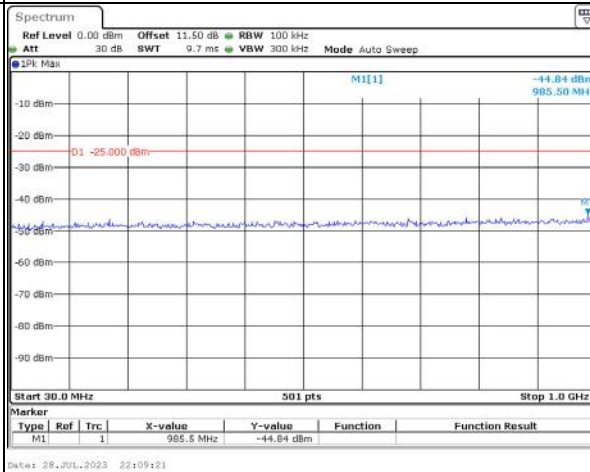


Spurious Emissions at Antenna Terminal

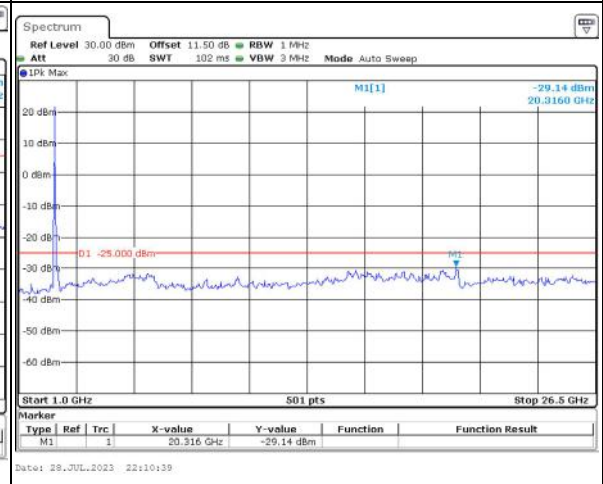
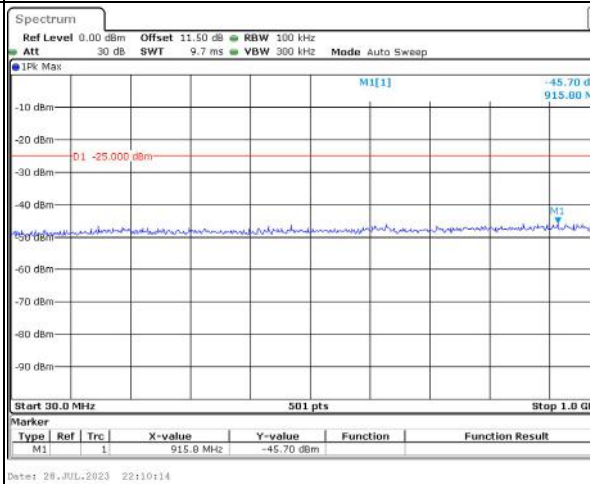
Channel

15MHz Bandwidth QPSK

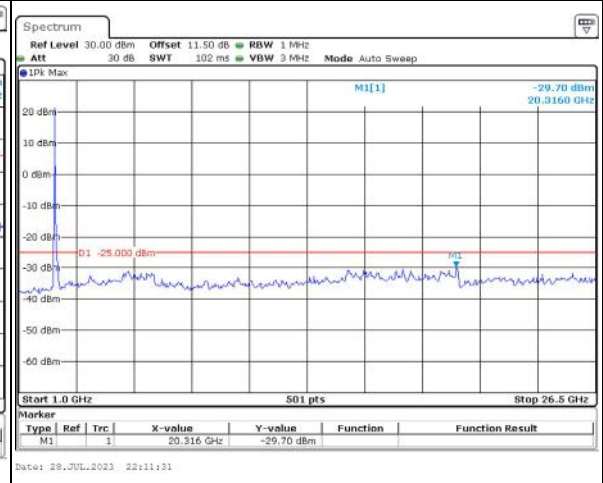
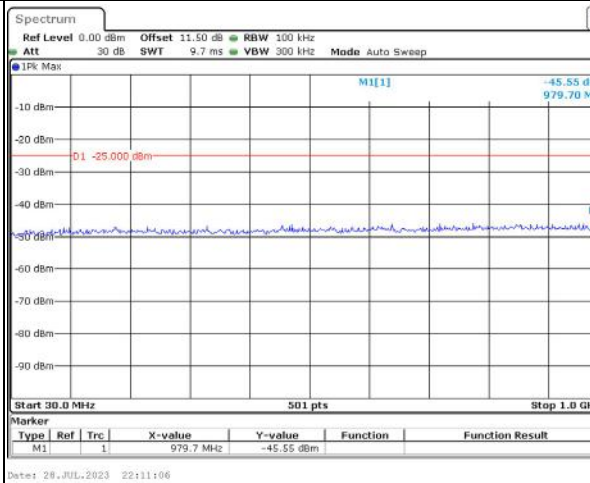
Lowest



Middle



Highest

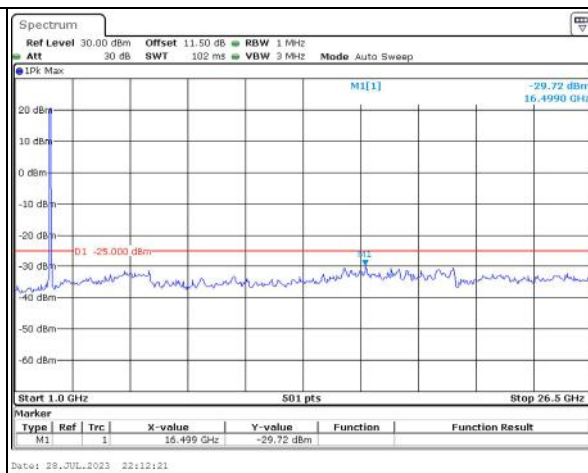
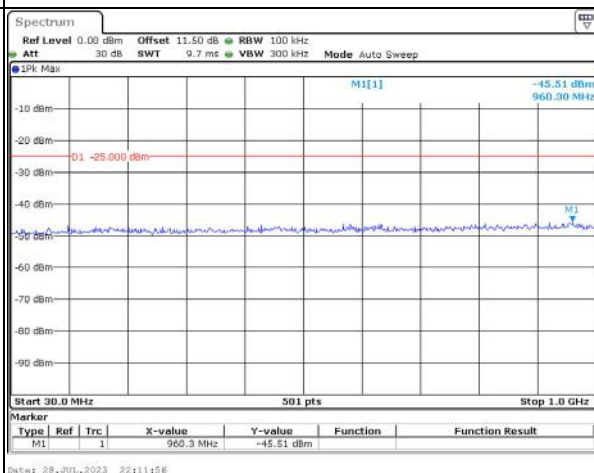


Spurious Emissions at Antenna Terminal

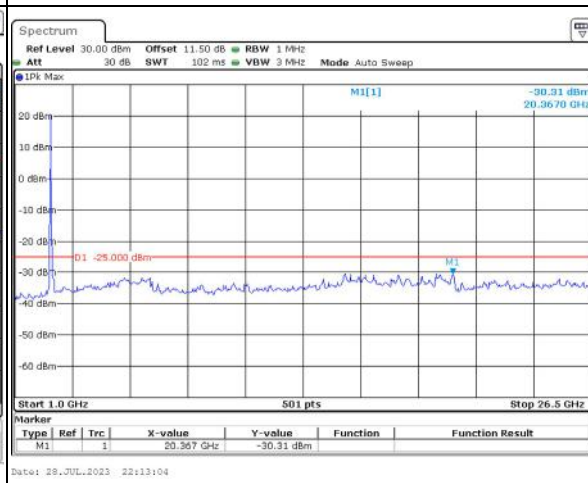
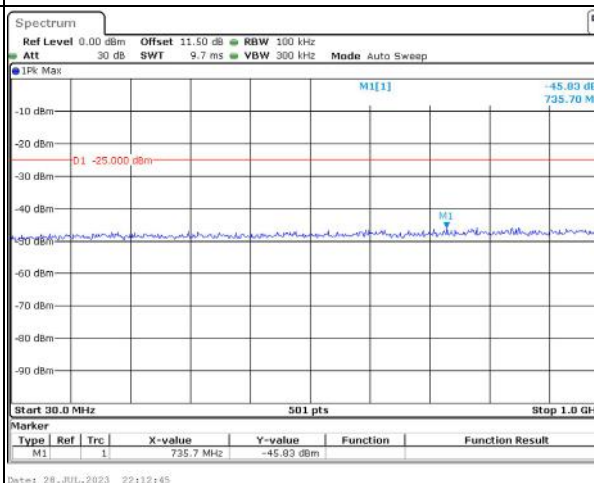
Channel

20MHz Bandwidth QPSK

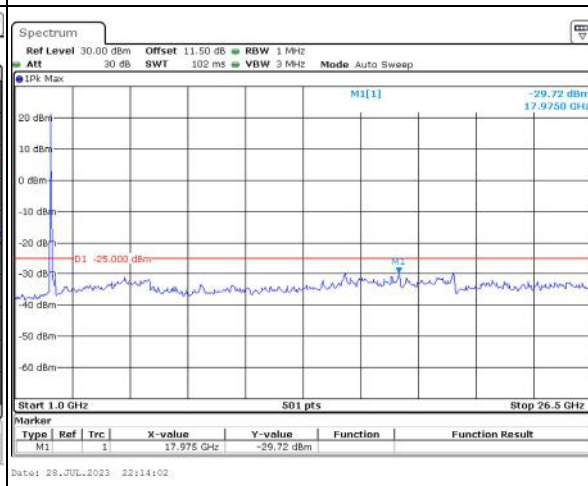
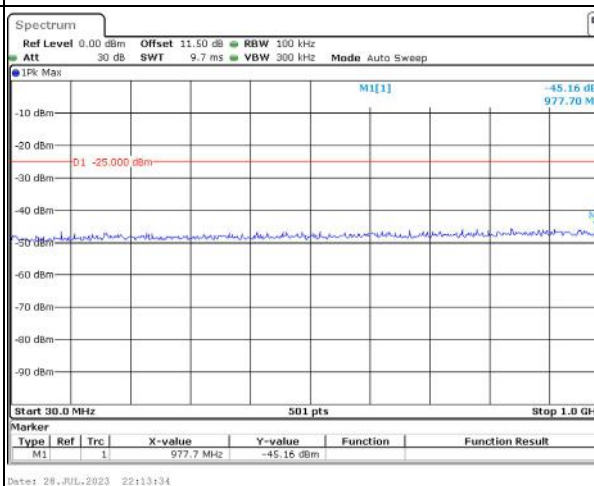
Lowest



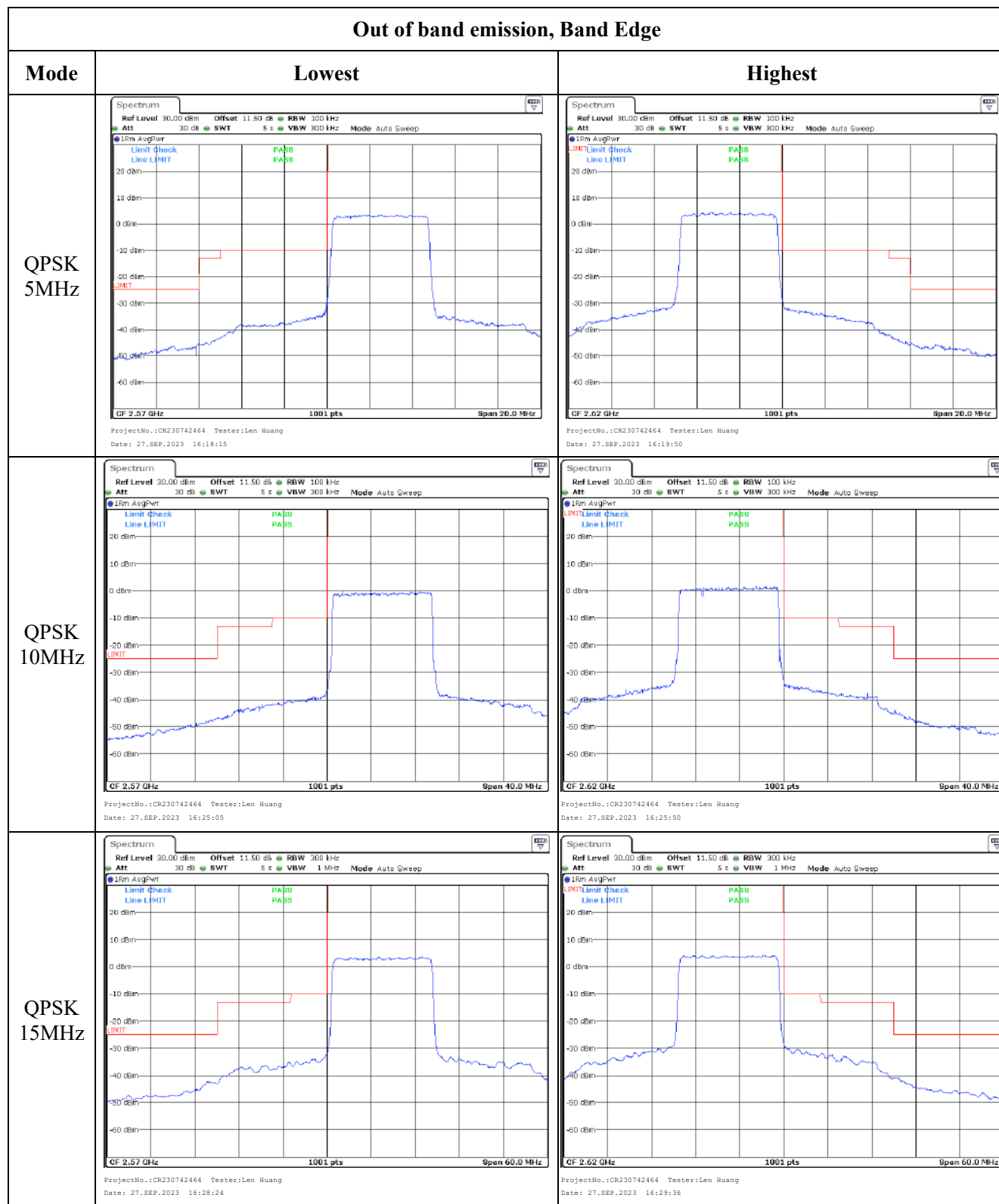
Middle



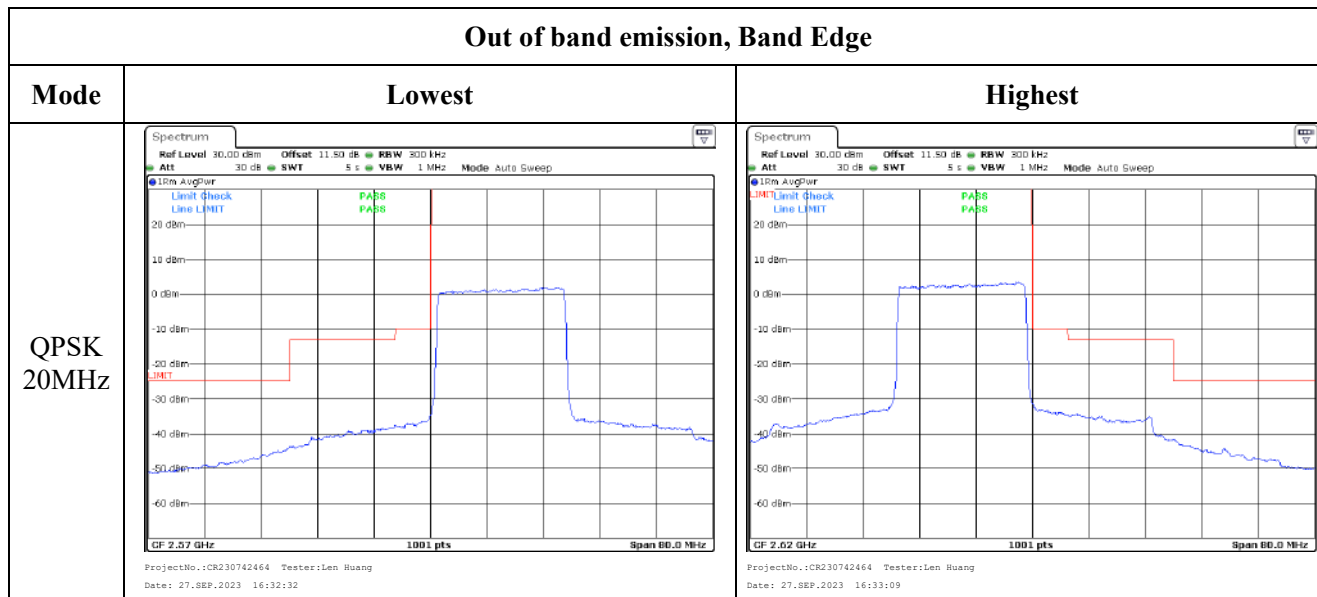
Highest



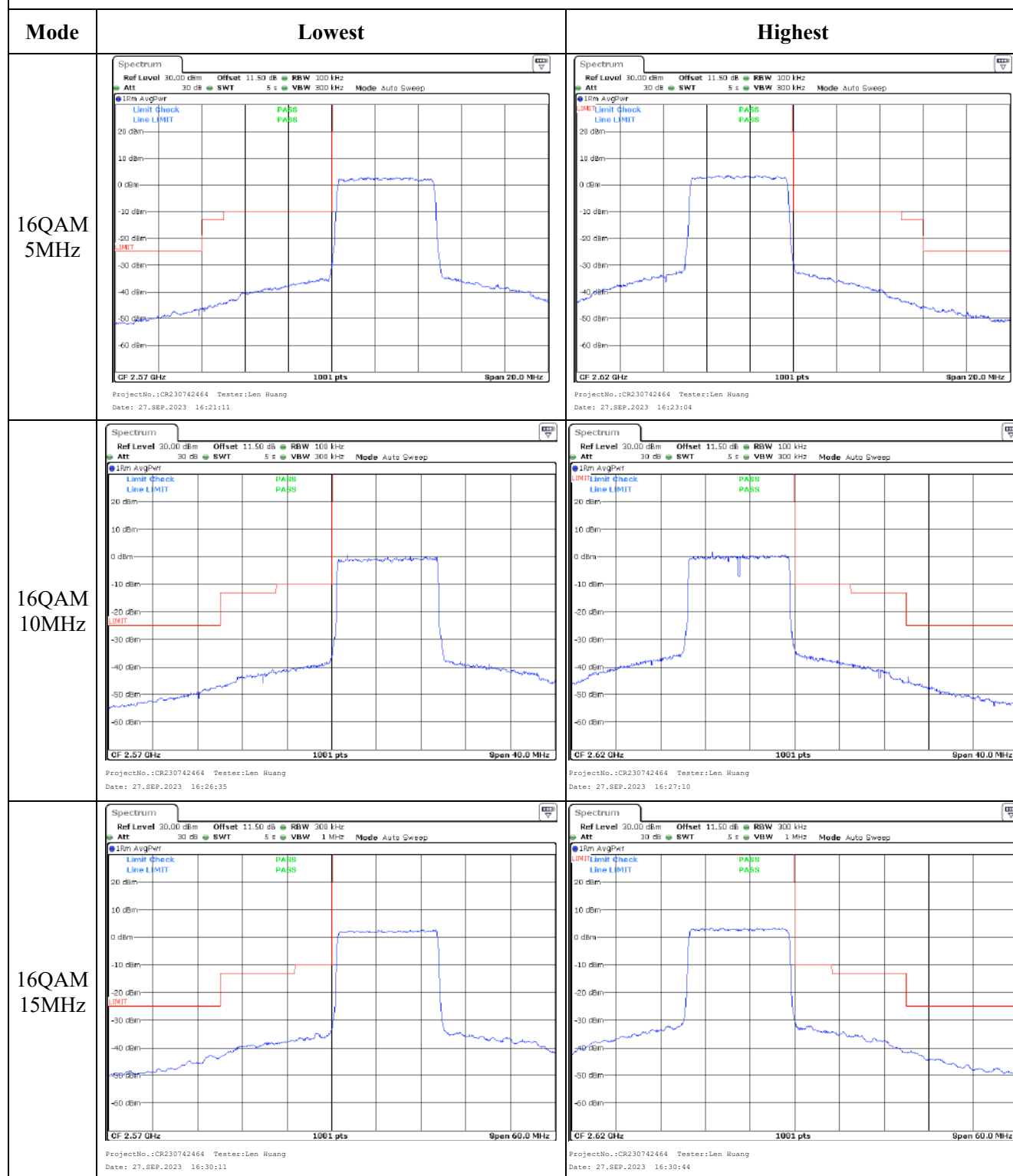
Out of band emission, Band Edge

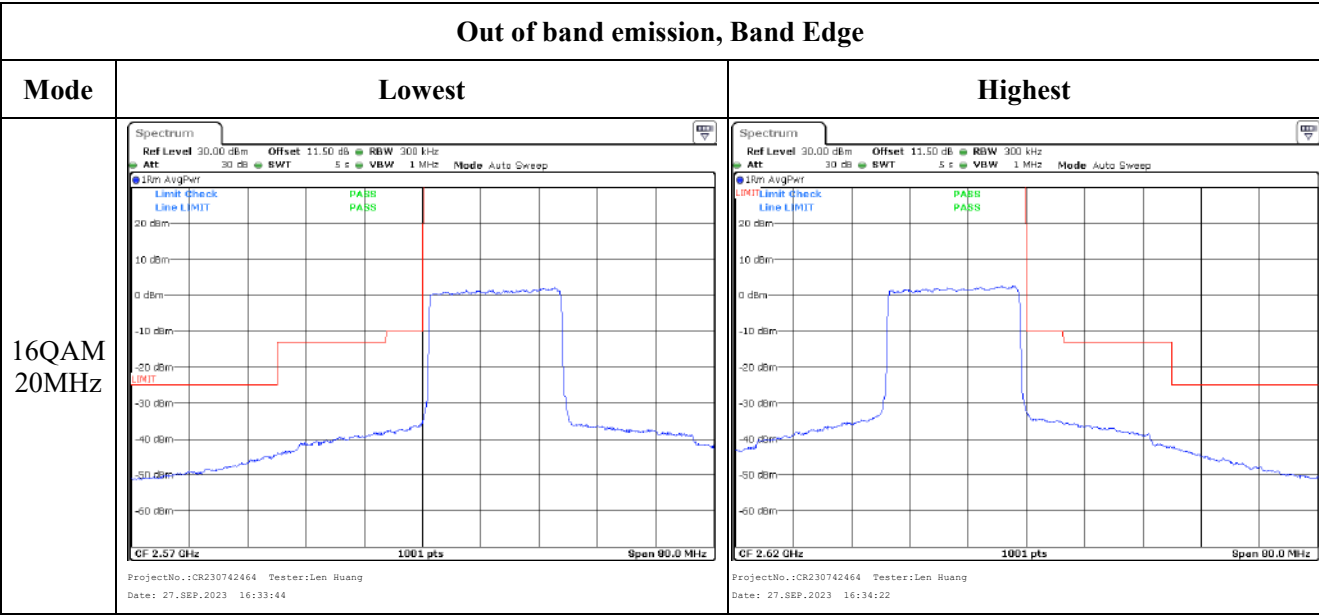


Out of band emission, Band Edge



Out of band emission, Band Edge





4.13 Antenna Port Test Data and Results for LTE Band 40

Serial Number:	2803-4	Test Date:	2023/7/28-2023/7/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.6	Relative Humidity: (%)	64	ATM Pressure: (kPa)	101
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40-N	102259	2023/4/18	2024/4/17
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
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
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	2307.5	2310	2312.5
10MHz	/	2310	/
5MHz	2352.5	2355	2357.5
10MHz	/	2355	/

Test Data:

(Note: Uplink Downlink configuration 3 was tested)

FCC§2.1046;§ 27.50(a)(3)**LTE Band 40 Lower:****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	21.79	21.35	21.39	23.32	24
	RB1#13	21.76	21.43	21.4		
	RB1#24	21.81	21.31	21.47		
	RB15#0	20.76	20.4	20.35		
	RB15#10	20.73	20.38	20.37		
	RB25#0	20.71	20.35	20.32		
5MHz 16QAM	RB1#0	21.15	20.32	20.53	22.66	24
	RB1#13	21.05	20.36	20.5		
	RB1#24	21.03	20.26	21.04		
	RB15#0	19.91	19.65	19.54		
	RB15#10	19.87	19.75	19.61		
	RB25#0	20.04	19.35	19.55		
10MHz QPSK	RB1#0	/	21.42	/	22.93	24
	RB1#25	/	21.37	/		
	RB1#49	/	21.35	/		
	RB25#0	/	20.34	/		
	RB25#25	/	20.43	/		
	RB50#0	/	20.27	/		
10MHz 16QAM	RB1#0	/	21.37	/	22.88	24
	RB1#25	/	21.26	/		
	RB1#49	/	21.24	/		
	RB25#0	/	19.64	/		
	RB25#25	/	19.58	/		
	RB50#0	/	19.46	/		

Note:

For 5MHz mode, the channel power is equal to the test result in dBm/5MHz.

For 10MHz mode, the channel power is sum of 10MHz bandwidth, the result is less than 24dBm, so in any 5MHz bandwidth, it's will not exceed limit

EIRP=Conducted Power(dBm) - Lc(dB) + Gt(dBi)

EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gt(dBi)

LTE Band 40 Upper:**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	21.94	21.42	21.49	23.45	24
	RB1#13	21.81	21.37	21.45		

	RB1#24	21.74	21.35	21.4		
	RB15#0	20.79	20.34	20.37		
	RB15#10	20.65	20.43	20.31		
	RB25#0	20.7	20.27	20.33		
5MHz 16QAM	RB1#0	21.2	21.37	20.15	22.9	24
	RB1#13	21.39	21.26	20.2		
	RB1#24	21.31	21.24	20.09		
	RB15#0	19.92	19.64	19.36		
	RB15#10	19.81	19.58	19.36		
	RB25#0	19.84	19.46	19.49		
10MHz QPSK	RB1#0	/	21.88	/	23.39	24
	RB1#25	/	21.82	/		
	RB1#49	/	21.63	/		
	RB25#0	/	20.81	/		
	RB25#25	/	20.65	/		
	RB50#0	/	20.65	/		
10MHz 16QAM	RB1#0	/	21.18	/	22.7	24
	RB1#25	/	21.18	/		
	RB1#49	/	21.19	/		
	RB25#0	/	19.9	/		
	RB25#25	/	19.73	/		
	RB50#0	/	19.88	/		
Note: For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. For 10MHz mode, the channel power is sum of 10MHz bandwidth, the result is less than 24dBm, so in any 5MHz bandwidth, it's will not exceed limit EIRP=Conducted Power(dBm) - Lc(dB) + Gt(dBi) EIRP PSD=Conducted PSD(dBm/5MHz) - Lc(dB) + Gt(dBi)						
					Result:	Pass

Duty Cycle

Operation Band	Modulation	Bandwidth	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	Limit (%)
LTE Band 40 Lower	QPSK	5M	3.000	10.005	29.99	38
		10M	3.000	10.005	29.99	38
	16QAM	5M	3.000	10.005	29.99	38
		10M	3.000	10.005	29.99	38
LTE Band 40 Upper	QPSK	5M	3.000	10.005	29.99	38
		10M	2.995	10.005	29.94	38
	16QAM	5M	2.995	10.005	29.94	38
		10M	3.000	10.005	29.99	38
					Result:	Pass

FCC §2.1049, §27.53:Occupied Bandwidth**LTE Band 40 Lower:**

Operation Mode	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
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	Low Channel	Middle channel	High Channel	Low Channel	Middle channel	High Channel
5MHz QPSK	4.511	4.511	4.511	5.100	4.980	4.940
5MHz 16QAM	4.511	4.511	4.511	5.040	4.980	4.980
10MHz QPSK	/	8.942	/	/	9.800	/
10MHz 16QAM	/	8.942	/	/	9.760	/

LTE Band 40 Upper:

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	4.491	5.020	4.980	4.980
5MHz 16QAM	4.511	4.511	4.511	5.020	4.980	5.000
10MHz QPSK	/	8.942	/	/	9.840	/
10MHz 16QAM	/	8.942	/	/	9.720	/

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**LTE Band 40 Lower:**

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	3.8	2305.1015	2305.000	2314.9351	2315.000
	-20	3.8	2305.1045	2305.000	2314.9326	2315.000
	-10	3.8	2305.1069	2305.000	2314.9348	2315.000
	0	3.8	2305.1085	2305.000	2314.9356	2315.000
	10	3.8	2305.1071	2305.000	2314.933	2315.000
	20	3.8	2305.1082	2305.000	2314.9321	2315.000
	30	3.8	2305.1096	2305.000	2314.9375	2315.000
	40	3.8	2305.1035	2305.000	2314.9312	2315.000
	50	3.8	2305.1061	2305.000	2314.9348	2315.000
Frequency Stability vs. Voltage	20	3.4	2305.1048	2305.000	2314.9335	2315.000
	20	4.35	2305.1059	2305.000	2314.9324	2315.000
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	3.8	2305.9728	2305.000	2314.2365	2315.000
	-20	3.8	2305.9467	2305.000	2314.5954	2315.000
	-10	3.8	2305.8666	2305.000	2314.7676	2315.000
	0	3.8	2305.0531	2305.000	2314.8877	2315.000
	10	3.8	2305.7854	2305.000	2314.6966	2315.000
	20	3.8	2305.6646	2305.000	2314.1954	2315.000
	30	3.8	2305.3596	2305.000	2314.3877	2315.000
	40	3.8	2305.7845	2305.000	2314.3073	2315.000
	50	3.8	2305.1272	2305.000	2314.9320	2315.000
Frequency Stability vs. Voltage	20	3.4	2305.9785	2305.000	2314.0675	2315.000
	20	4.35	2305.8686	2305.000	2314.8434	2315.000
					Result:	Pass

LTE Band 40 Upper:						
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	3.8	2350.0157	2350.000	2359.9851	2360.000
	-20	3.8	2350.0168	2350.000	2359.9862	2360.000
	-10	3.8	2350.0135	2350.000	2359.9859	2360.000
	0	3.8	2350.0124	2350.000	2359.9884	2360.000
	10	3.8	2350.0115	2350.000	2359.9875	2360.000
	20	3.8	2350.0126	2350.000	2359.9812	2360.000
	30	3.8	2350.0159	2350.000	2359.9853	2360.000
	40	3.8	2350.0148	2350.000	2359.9869	2360.000
	50	3.8	2350.0175	2350.000	2359.9854	2360.000
Frequency Stability vs. Voltage	20	3.4	2350.0189	2350.000	2359.9815	2360.000
	20	4.35	2350.0114	2350.000	2359.9848	2360.000
					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	3.8	2350.4645	2350.000	2359.8517	2360.000
	-20	3.8	2350.1044	2350.000	2359.8893	2360.000
	-10	3.8	2350.9676	2350.000	2359.7331	2360.000
	0	3.8	2350.6982	2350.000	2359.8372	2360.000
	10	3.8	2350.3918	2350.000	2359.7793	2360.000
	20	3.8	2350.9017	2350.000	2359.8992	2360.000

Frequency Stability vs. Voltage	30	3.8	2350.5625	2350.000	2359.4424	2360.000
	40	3.8	2350.9092	2350.000	2359.8054	2360.000
	50	3.8	2350.6756	2350.000	2359.3335	2360.000
	20	3.4	2350.9246	2350.000	2359.7392	2360.000
	20	4.35	2350.7862	2350.000	2359.8233	2360.000
					Result:	Pass

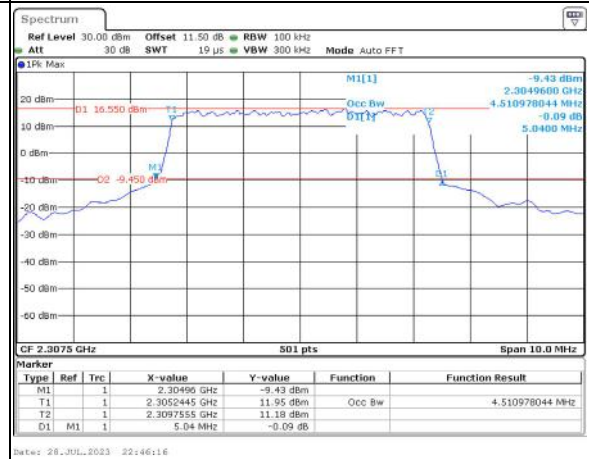
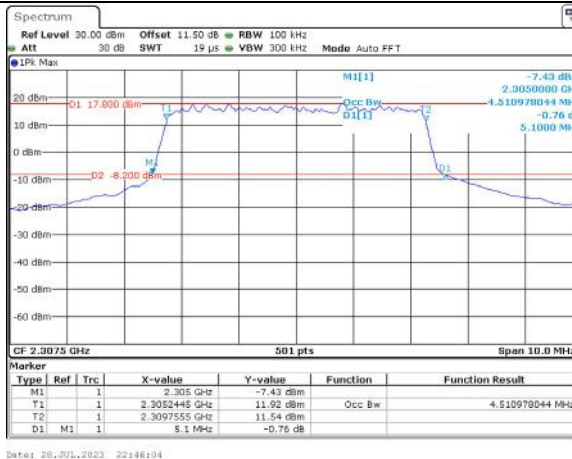
Test Plots (Note: The 11.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):
2305-2315 MHz:

Occupied Bandwidth**Channel**

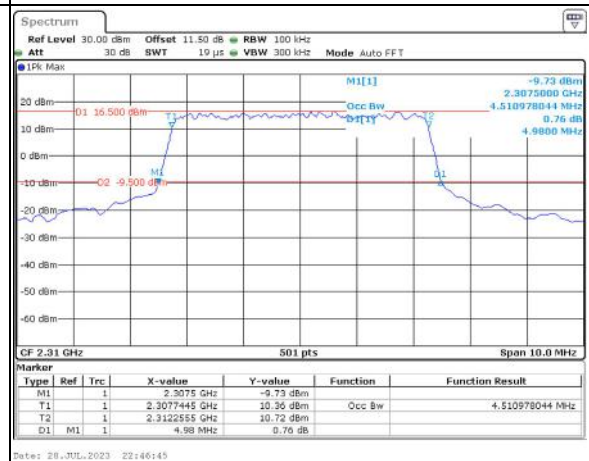
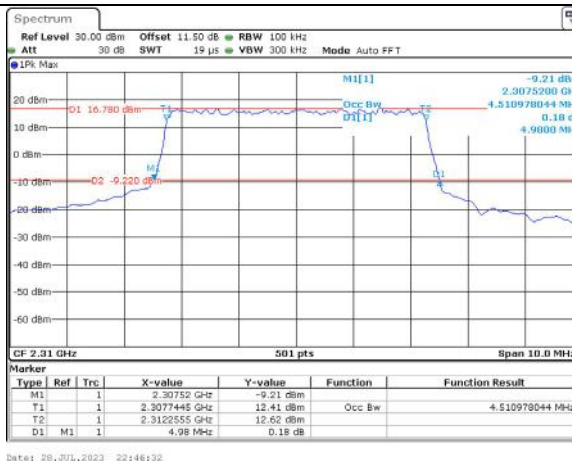
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

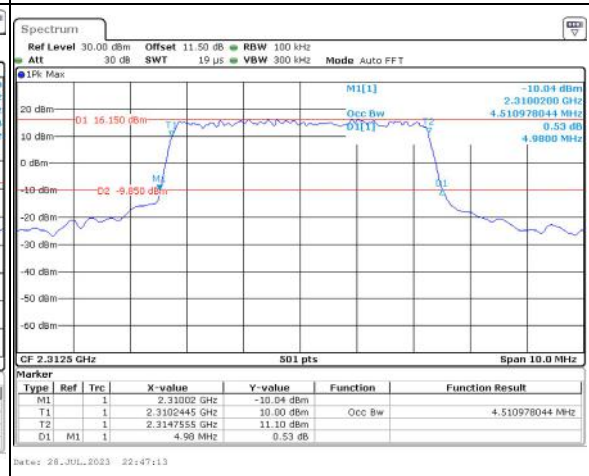
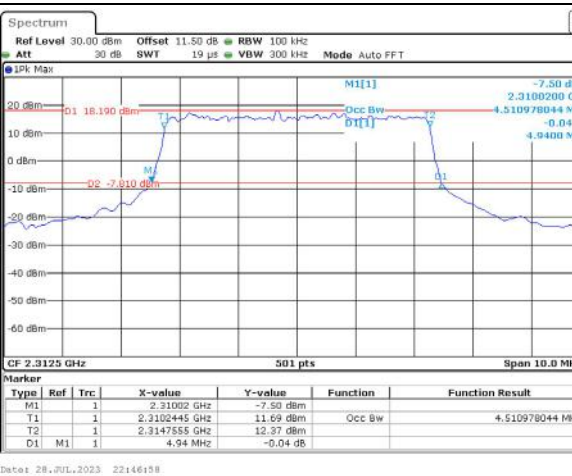
Lowest



Middle



Highest



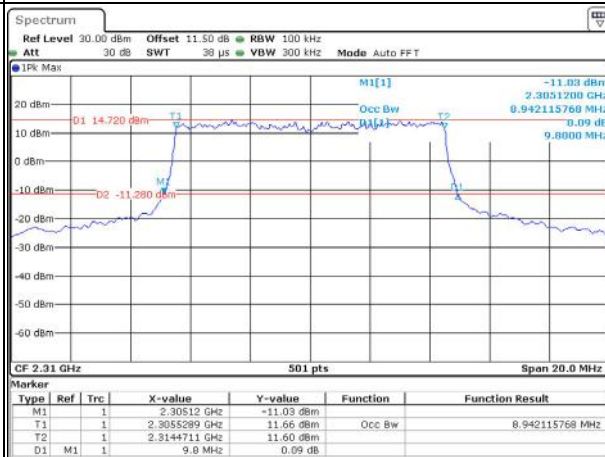
Occupied Bandwidth

Channel

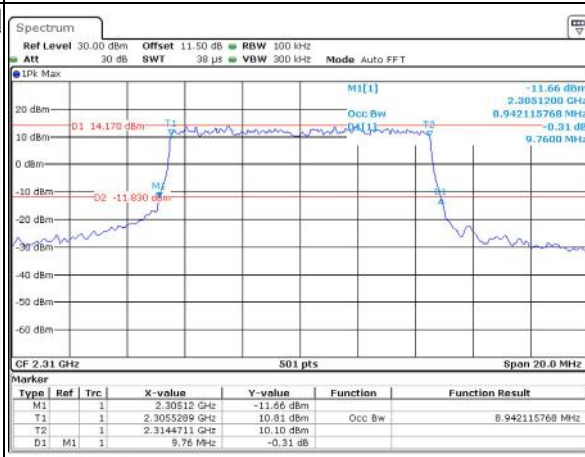
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Middle



Date: 28.JUL.2023 22:47:34



Date: 28.JUL.2023 22:47:55

2350-2360 MHz:

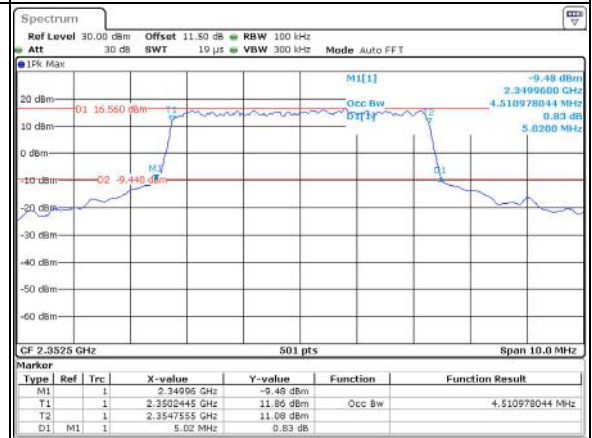
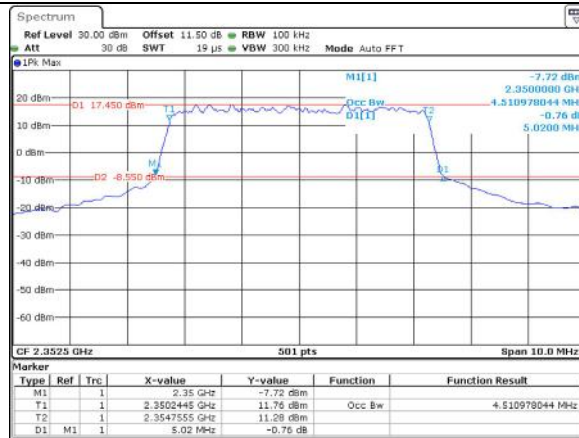
Occupied Bandwidth

Channel

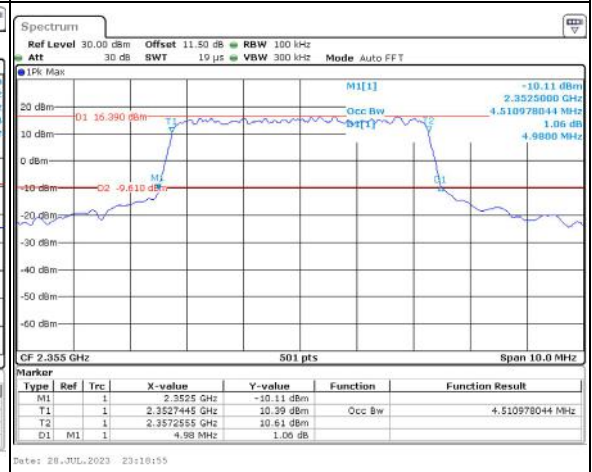
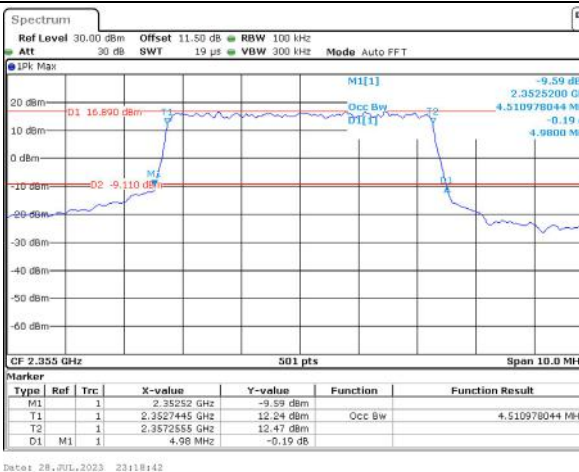
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

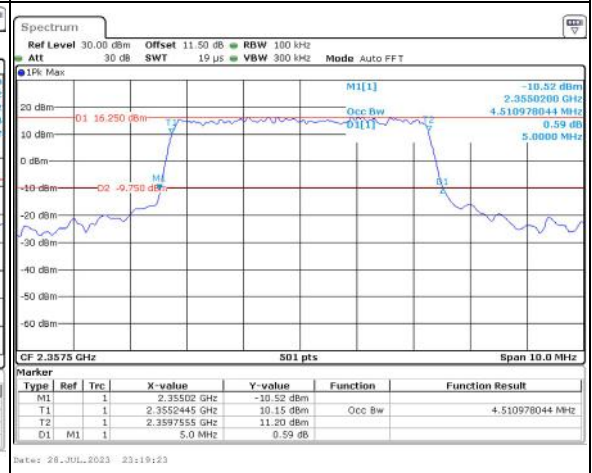
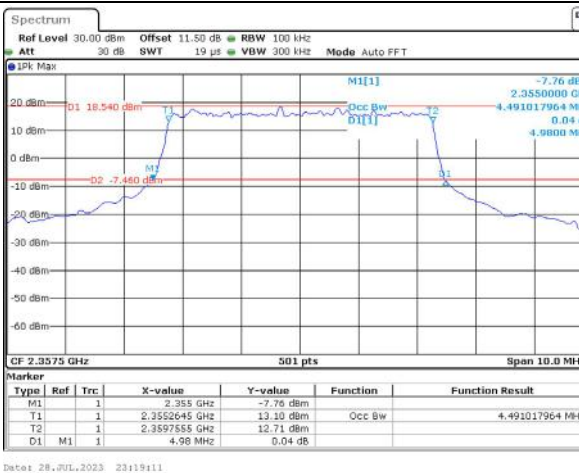
Lowest



Middle



Highest



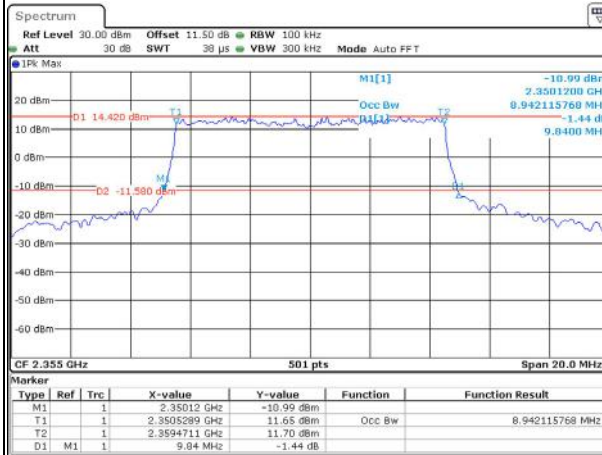
Occupied Bandwidth

Channel

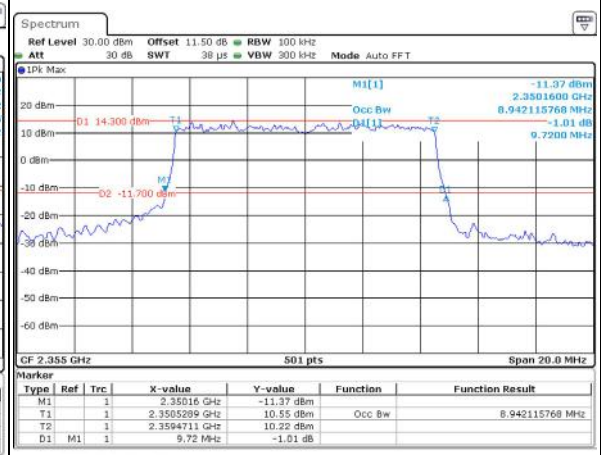
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Middle



Date: 28.JUL.2023 23:19:43



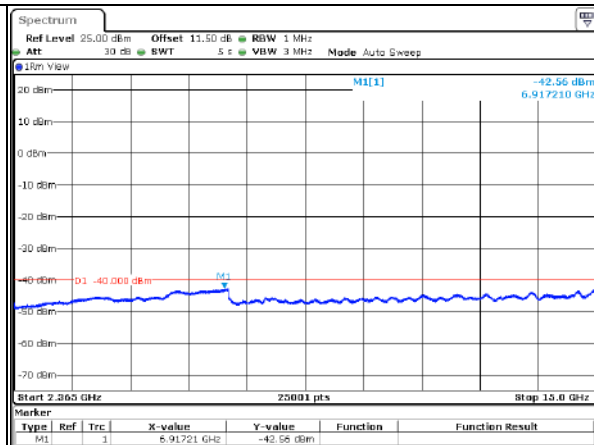
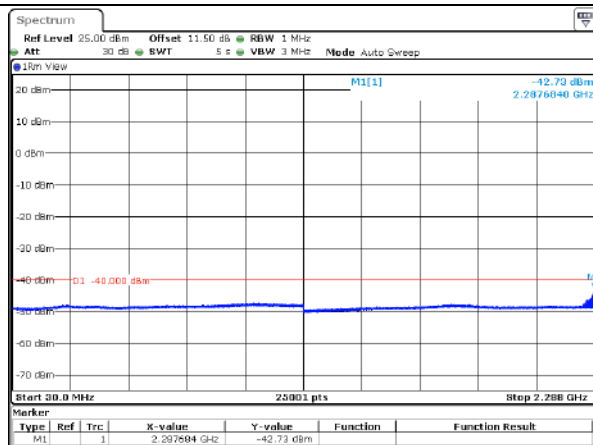
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2305-2315 MHz:

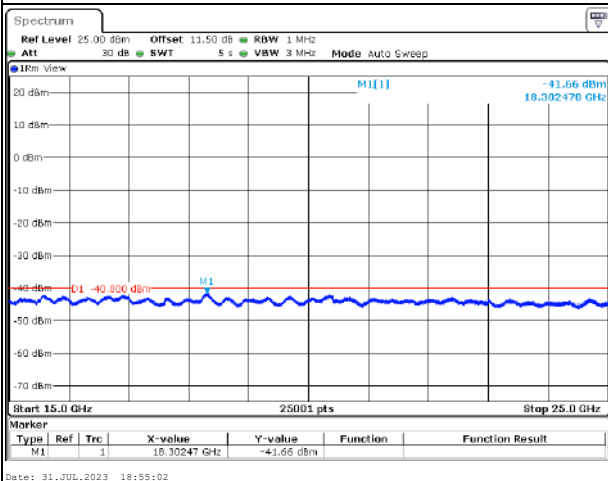
Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK



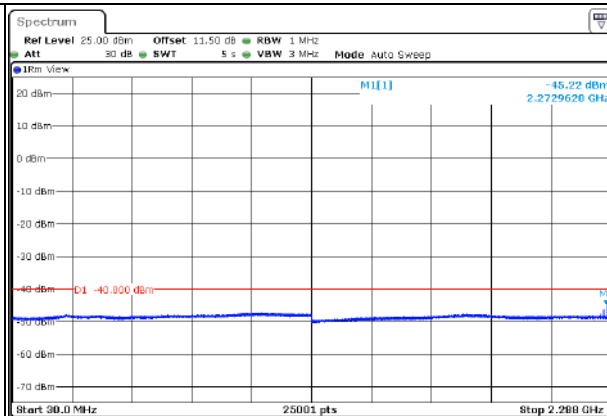
Lowest



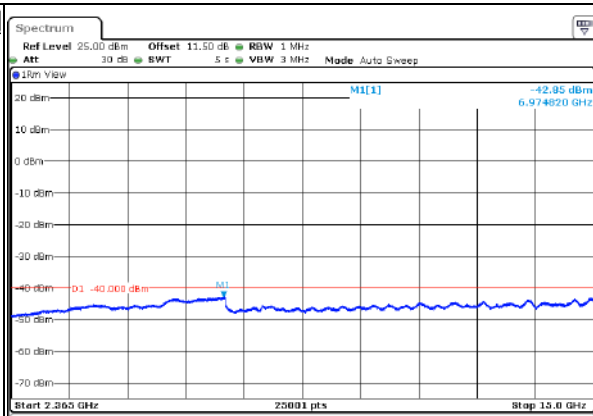
Spurious Emissions at Antenna Terminal

5MHz Bandwidth QPSK

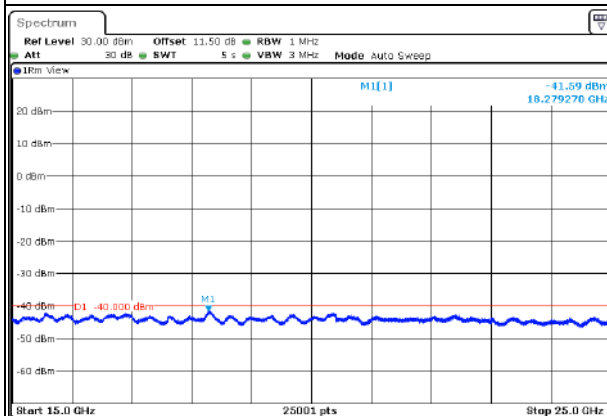
Middle



Date: 31.JUL.2023 18:56:56



Date: 31.JUL.2023 18:57:36

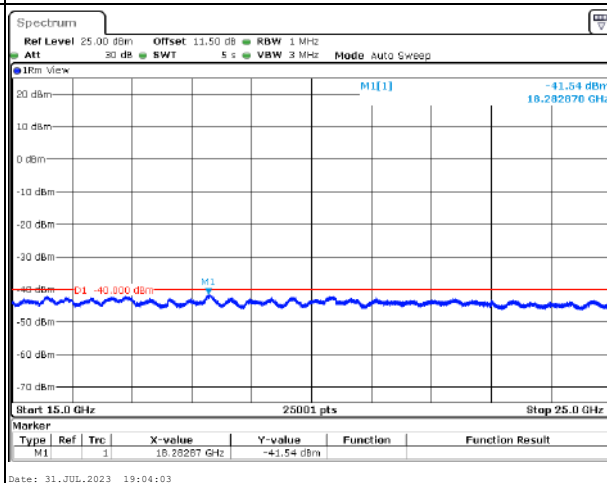
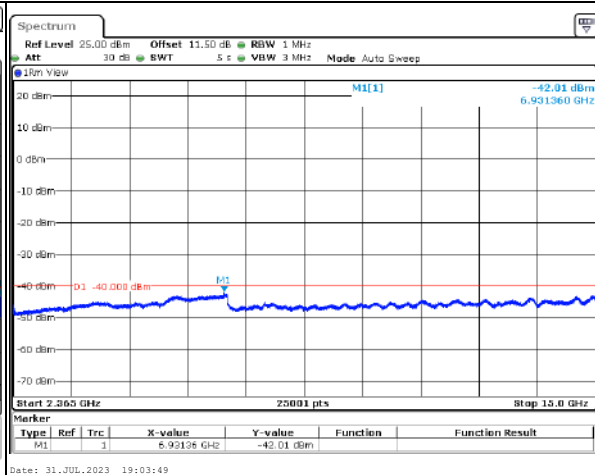
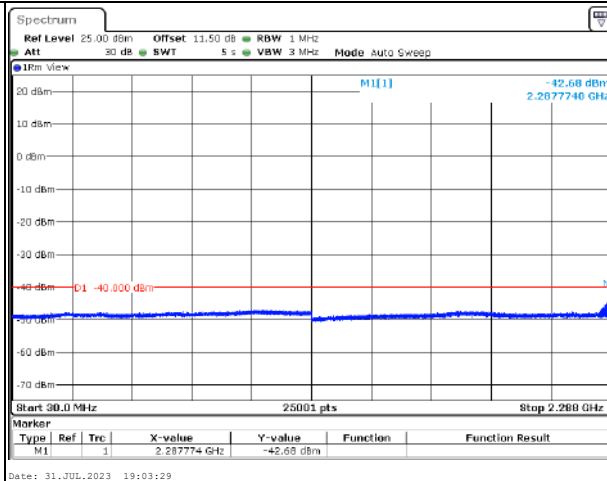


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Spurious Emissions at Antenna Terminal

5MHz Bandwidth QPSK

Highest



Spurious Emissions at Antenna Terminal

Channel

10MHz Bandwidth QPSK

Middle

