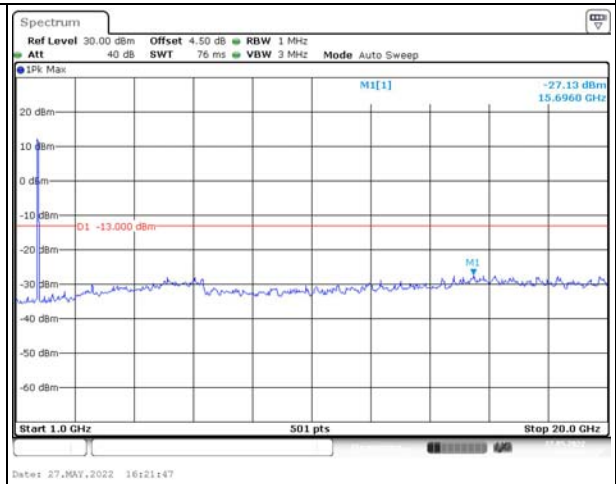
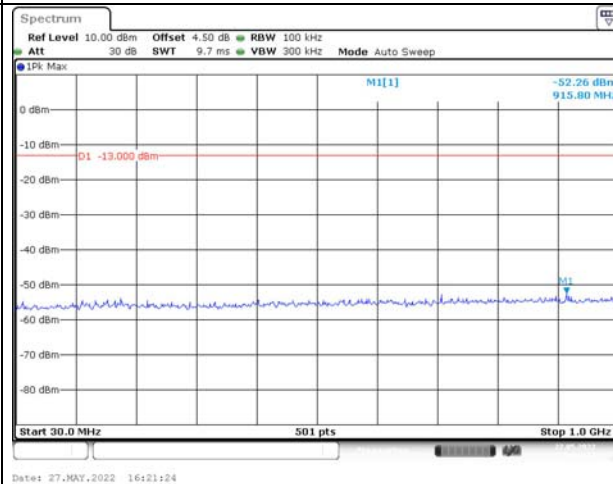


Spurious Emissions at Antenna Terminal

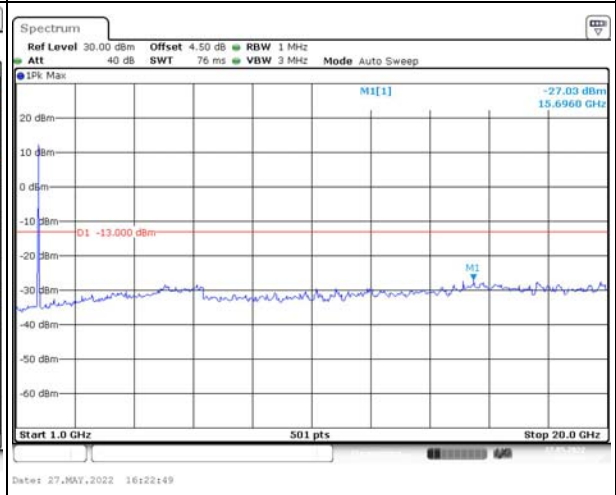
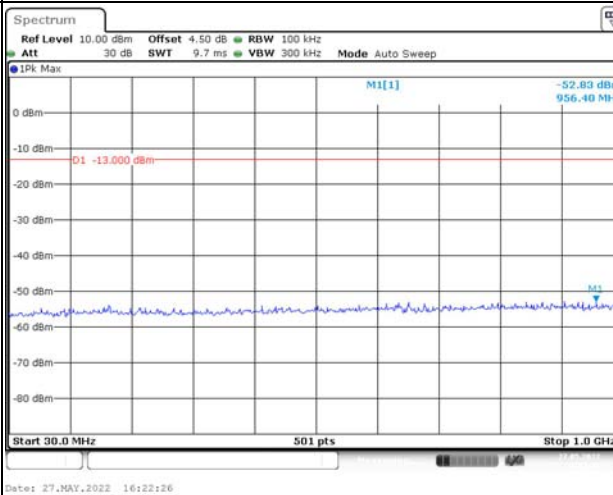
Channel

15MHz Bandwidth QPSK

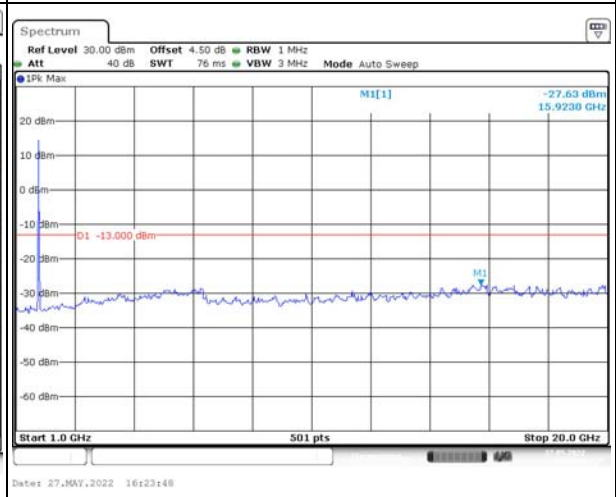
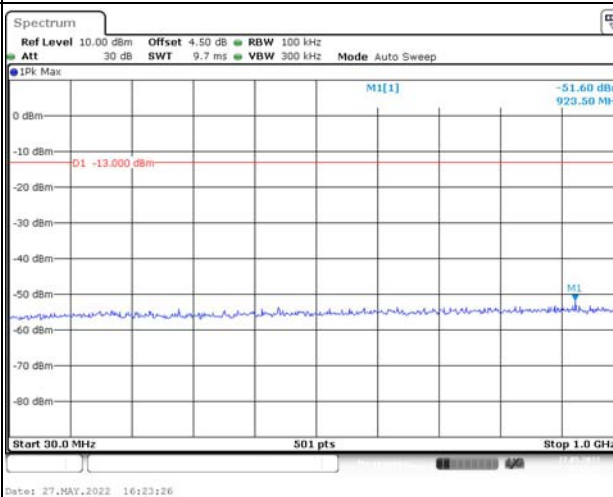
Lowest



Middle



Highest

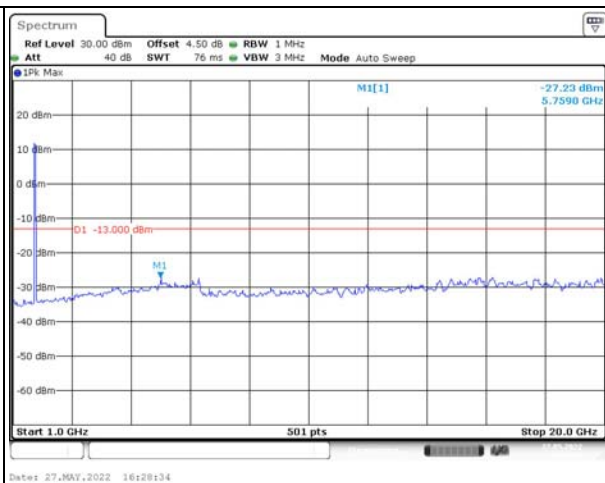
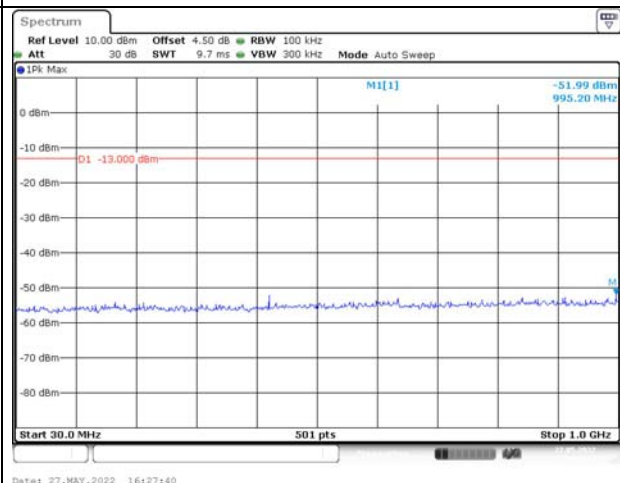


Spurious Emissions at Antenna Terminal

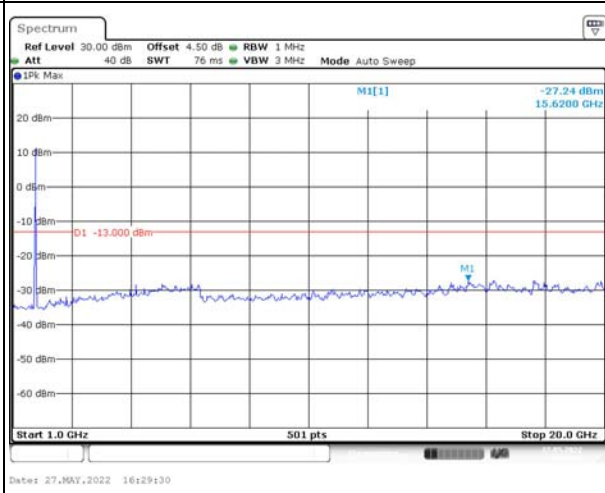
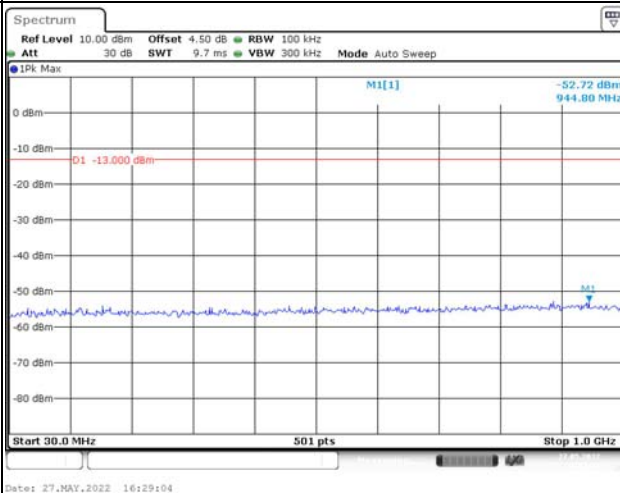
Channel

20MHz Bandwidth QPSK

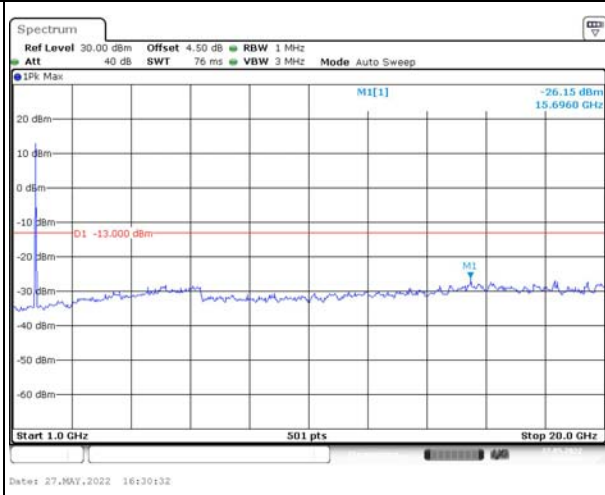
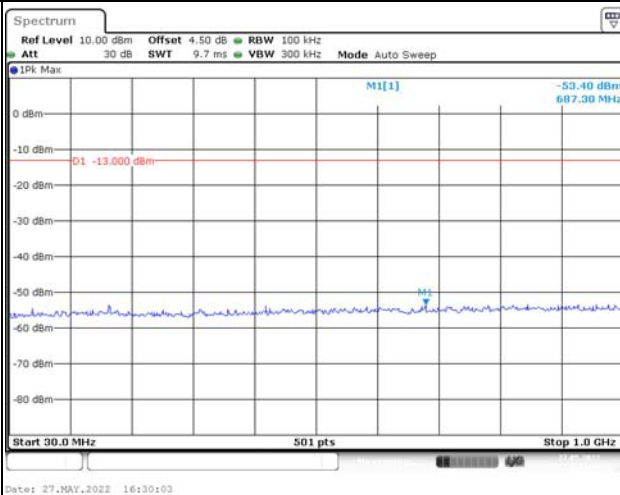
Lowest



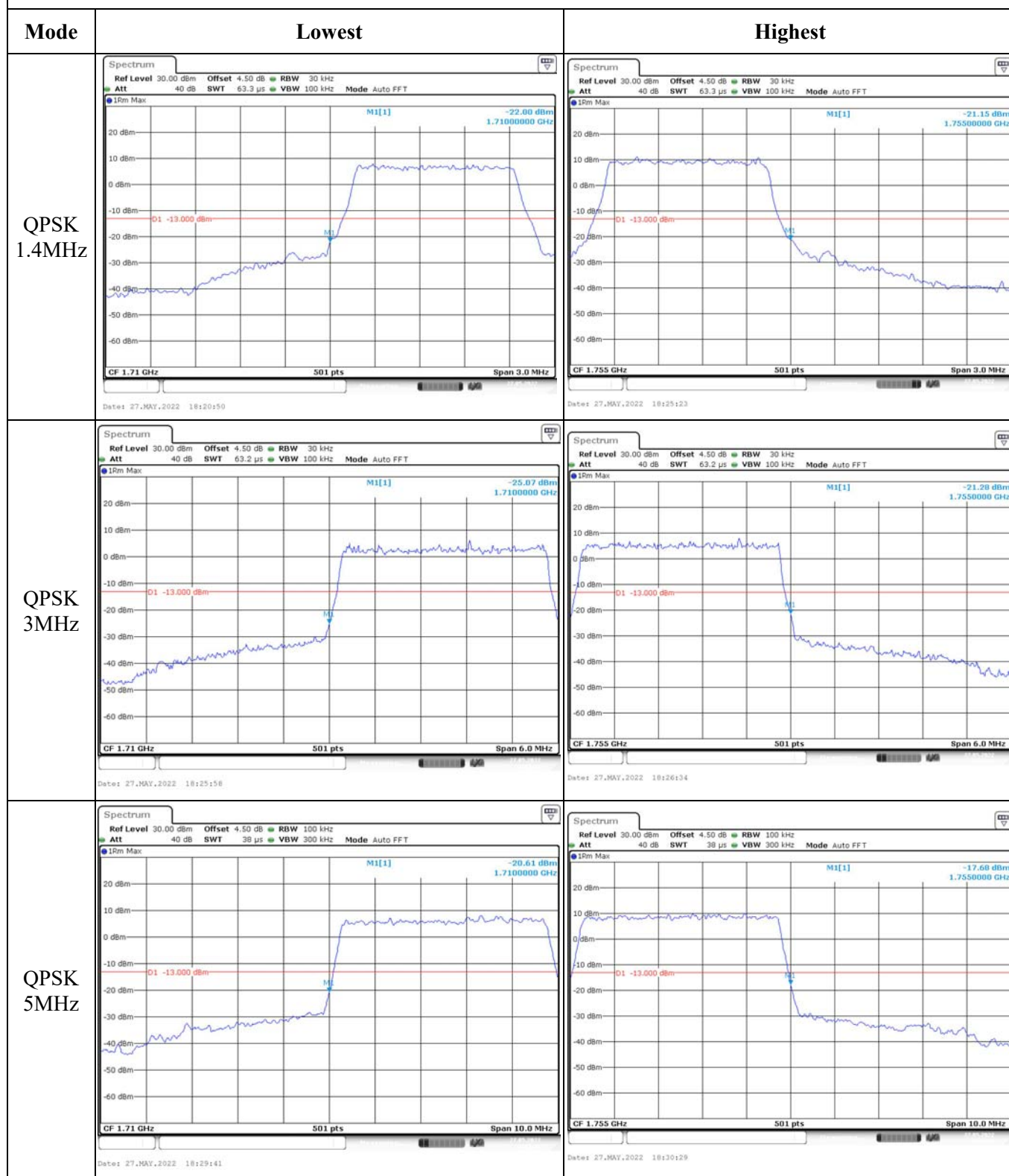
Middle



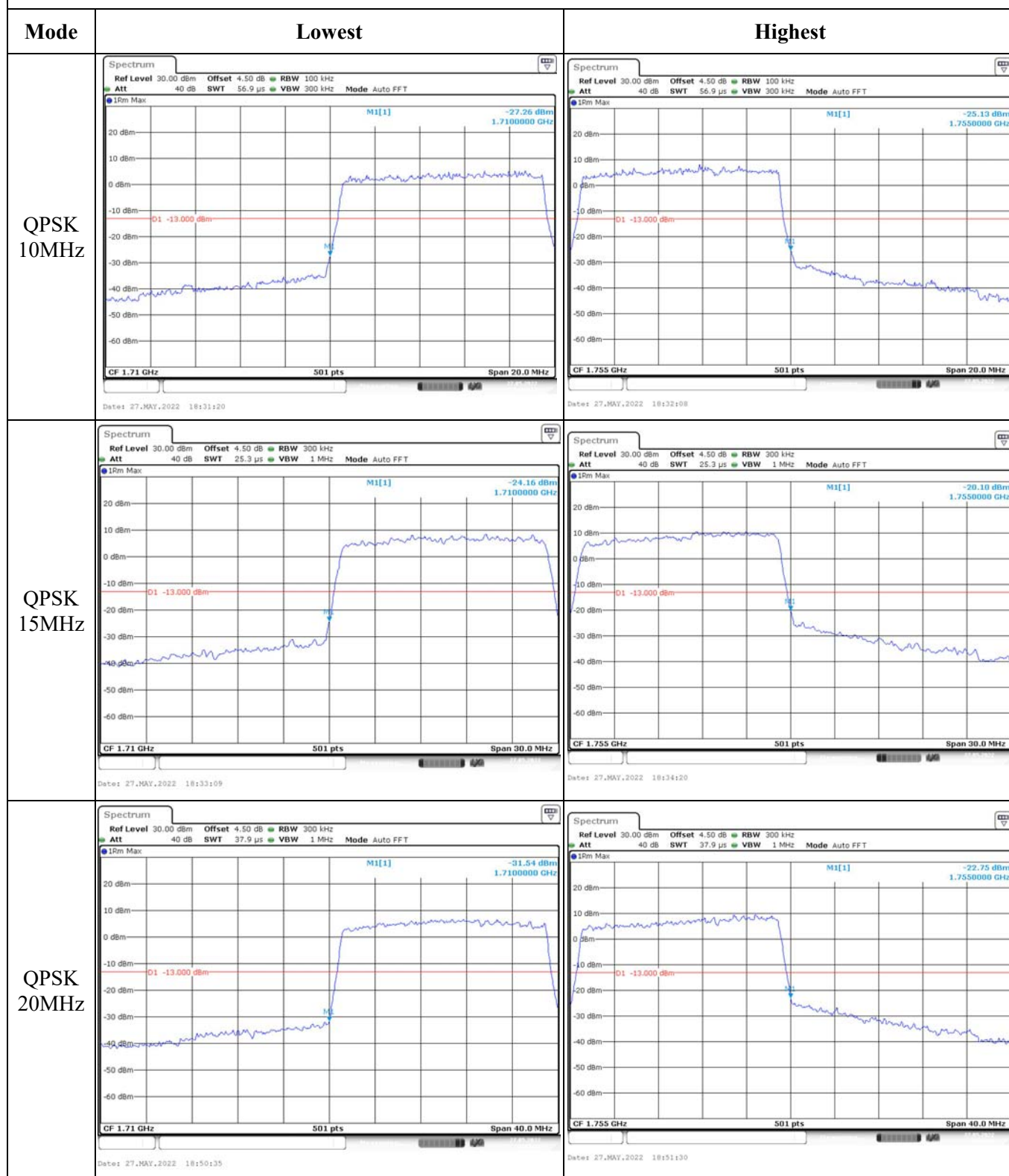
Highest



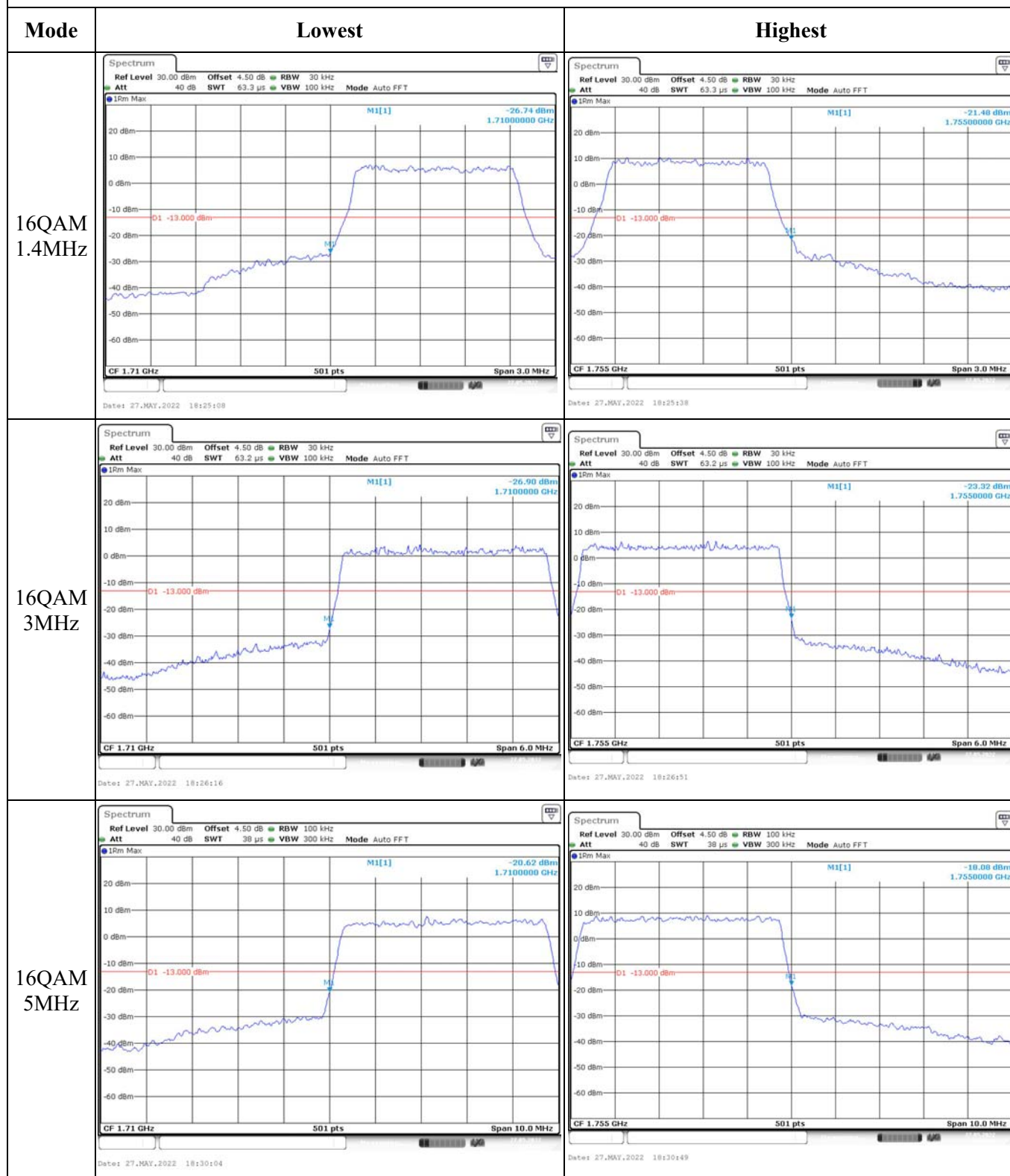
Out of band emission, Band Edge



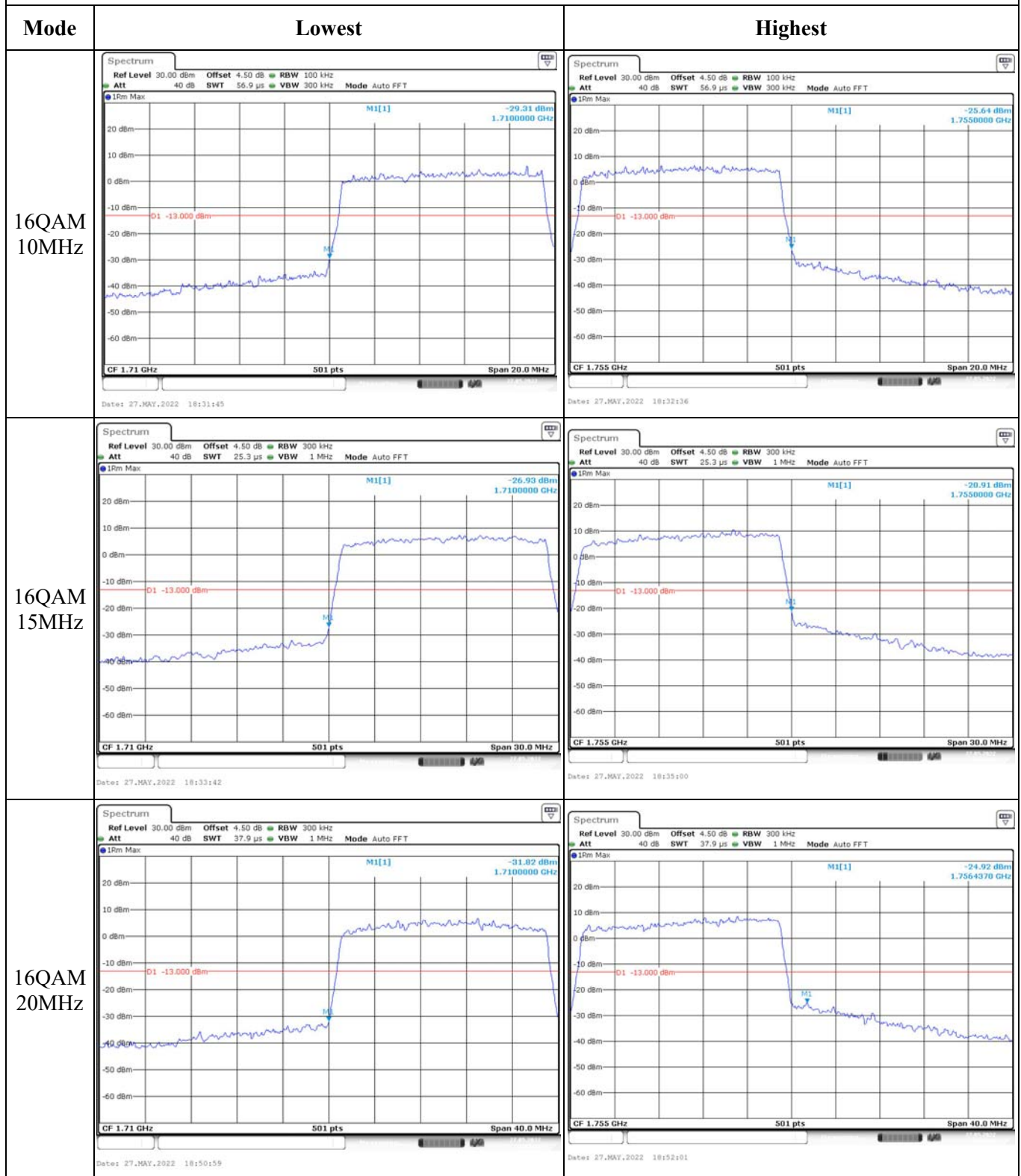
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.3 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	CR22030086-RF-S1/3	Test Date:	2022-05-27
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ada Yan	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1~25.3	Relative Humidity: (%)	66~67	ATM Pressure: (kPa)	100.1~100.2
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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	2021-10-10	2022-10-09
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
R&S	Wideband Radio	CMW500	110479	2021-10-26	2022-10-25
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-07-22	2022-07-21
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	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).*

EUT Information@ LTE Band 5▲:

Antenna Gain (dBi):	-2	Antenna Gain (dBd):	-4.15	Cable Loss (dB):	0
Operation Voltage(V _{DC}):					
Lowest:	3.5	Normal:	3.8	Highest:	4.35

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:**FCC§2.1046;§ 22.913 (a)****RF Output Power:**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.40	22.15	22.10	18.64	38.45
	RB1#3	22.62	22.16	22.02		
	RB1#5	22.79	22.10	21.83		
	RB3#0	22.13	22.21	22.18		
	RB3#3	22.10	22.18	22.08		
	RB6#0	22.31	21.16	21.15		
1.4MHz 16QAM	RB1#0	21.38	21.42	21.33	17.47	38.45
	RB1#3	21.25	21.48	21.47		
	RB1#5	21.62	21.37	21.25		
	RB3#0	21.11	21.16	21.34		
	RB3#3	21.03	21.20	21.32		
	RB6#0	21.19	20.37	20.19		
3MHz QPSK	RB1#0	22.14	22.19	21.94	18.13	38.45
	RB1#8	22.01	22.14	21.88		
	RB1#14	22.18	22.28	21.99		
	RB6#0	21.18	21.17	21.20		
	RB6#9	21.12	21.25	21.11		
	RB15#0	21.15	21.18	21.21		
3MHz 16QAM	RB1#0	21.81	21.71	21.17	17.66	38.45
	RB1#8	21.50	21.56	20.85		
	RB1#14	21.39	21.74	20.78		
	RB6#0	20.44	20.08	20.29		
	RB6#9	20.06	20.09	20.18		
	RB15#0	20.33	19.95	20.19		
5MHz QPSK	RB1#0	22.16	21.92	21.88	18.04	38.45
	RB1#13	22.16	22.08	21.92		
	RB1#24	22.05	22.19	21.92		
	RB15#0	21.23	21.14	21.22		
	RB15#10	21.11	21.21	21.05		
	RB25#0	21.25	21.11	21.18		
5MHz 16QAM	RB1#0	20.68	21.38	20.82	17.3	38.45
	RB1#13	20.69	21.45	20.78		
	RB1#24	20.66	21.45	20.81		
	RB15#0	19.95	20.01	19.99		
	RB15#10	19.92	19.93	20.06		
	RB25#0	20.05	20.02	20.14		

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	22.01	22.18	21.94	18.22	38.45
	RB1#25	22.04	22.30	22.37		
	RB1#49	22.23	22.17	22.09		
	RB25#0	21.15	21.20	21.22		
	RB25#25	21.31	21.30	21.16		
	RB50#0	21.18	21.17	21.27		
10MHz 16QAM	RB1#0	21.55	21.65	21.16	17.92	38.45
	RB1#25	21.64	22.07	21.27		
	RB1#49	21.59	21.62	20.83		
	RB25#0	20.02	20.41	20.50		
	RB25#25	20.27	20.41	20.11		
	RB50#0	20.07	20.27	20.12		

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)

Result:**Pass****Peak-to-average Ratio(PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	4.87	4.67	4.72	13
	RB50#0	5.07	5.04	4.93	13
10MHz 16QAM	RB1#0	5.91	5.71	5.71	13
	RB50#0	6.17	5.97	5.94	13
				Result:	Pass

FCC §2.1049, §22.905:Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.108	1.108	1.308	1.314	1.290
1.4MHz 16QAM	1.102	1.096	1.102	1.308	1.296	1.308
3MHz QPSK	2.695	2.695	2.683	2.940	2.940	2.964
3MHz 16QAM	2.683	2.683	2.683	2.964	2.952	2.940
5MHz QPSK	4.511	4.511	4.511	5.020	5.040	5.000
5MHz 16QAM	4.511	4.531	4.531	5.000	5.040	5.060
10MHz QPSK	8.942	8.942	8.942	9.800	9.720	9.720
10MHz 16QAM	8.942	8.942	8.942	9.680	9.760	9.680

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

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

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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FCC §2.1051, §22.917(a):Out of band emission, Band Edge

Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §22.355: Frequency Stability

Test Mode:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	-9.00	-0.011	2.5
	-20	3.8	-6.00	-0.007	2.5
	-10	3.8	8.00	0.010	2.5
	0	3.8	-8.00	-0.010	2.5
	10	3.8	7.00	0.008	2.5
	20	3.8	1.00	0.001	2.5
	30	3.8	5.00	0.006	2.5
	40	3.8	-7.00	-0.008	2.5
	50	3.8	-5.00	-0.006	2.5
Frequency Stability vs. Voltage	20	3.5	7.00	0.008	2.5
	20	4.35	-5.00	-0.006	2.5
				Result:	Pass

Test Mode:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	2.00	0.002	2.5
	-20	3.8	-7.00	-0.008	2.5
	-10	3.8	6.00	0.007	2.5
	0	3.8	7.00	0.008	2.5
	10	3.8	7.00	0.008	2.5
	20	3.8	-1.00	-0.001	2.5
	30	3.8	9.00	0.011	2.5
	40	3.8	8.00	0.010	2.5
	50	3.8	8.00	0.010	2.5
Frequency Stability vs. Voltage	20	3.5	5.00	0.006	2.5
	20	4.35	6.00	0.007	2.5
				Result:	Pass

Test Plots:

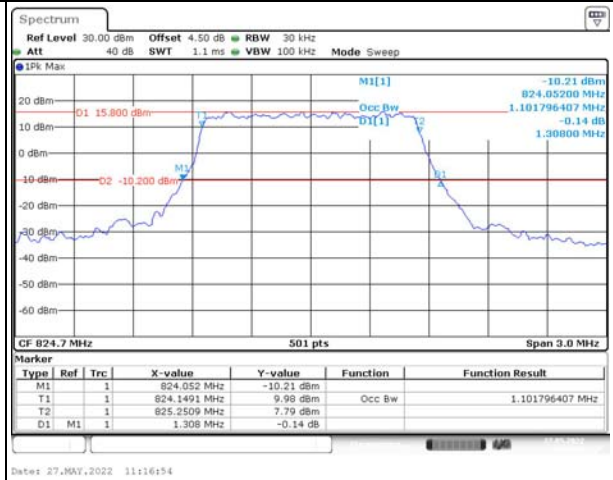
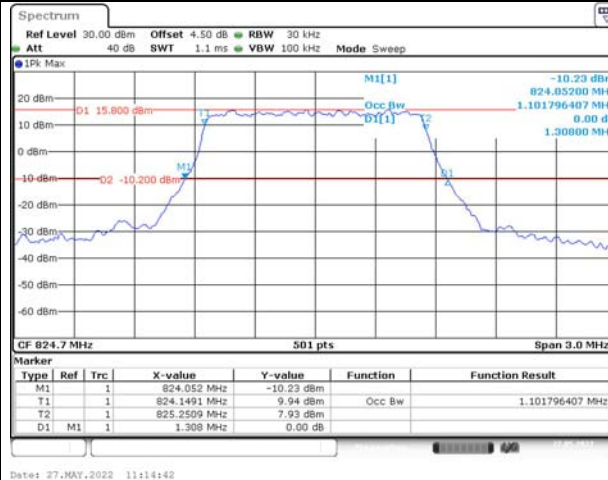
Occupied Bandwidth

Channel

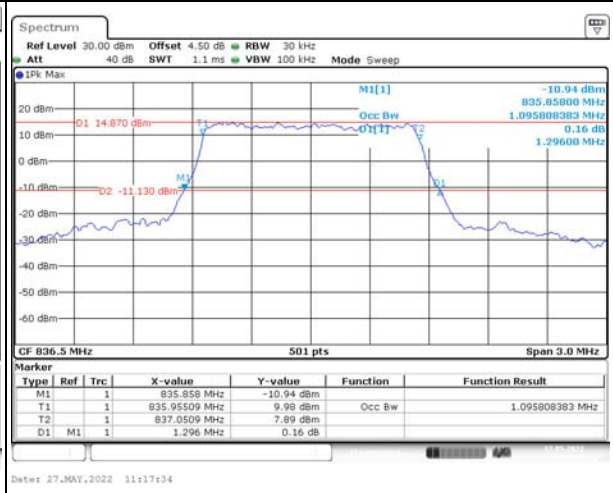
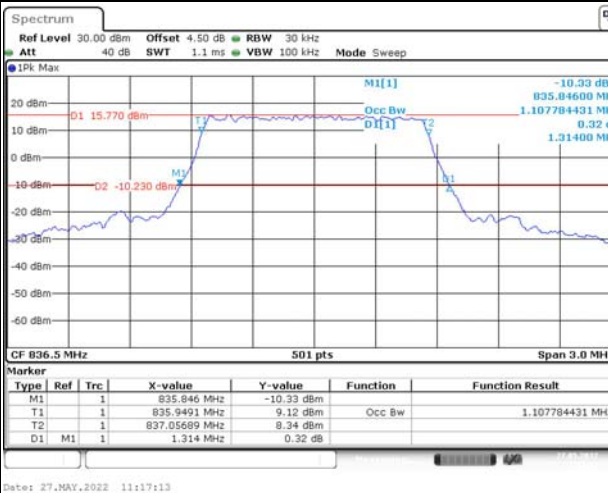
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

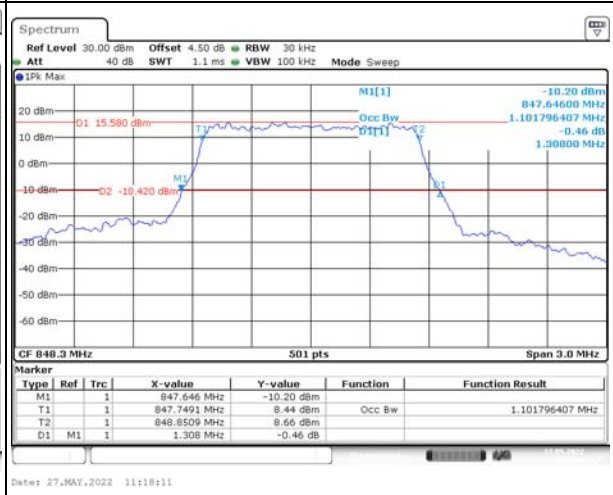
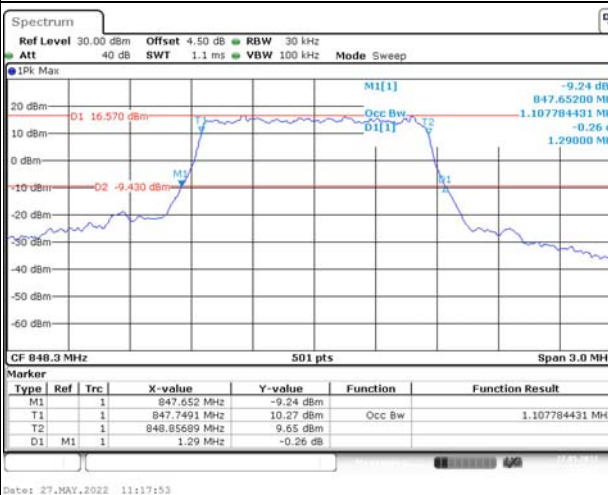
Lowest



Middle



Highest



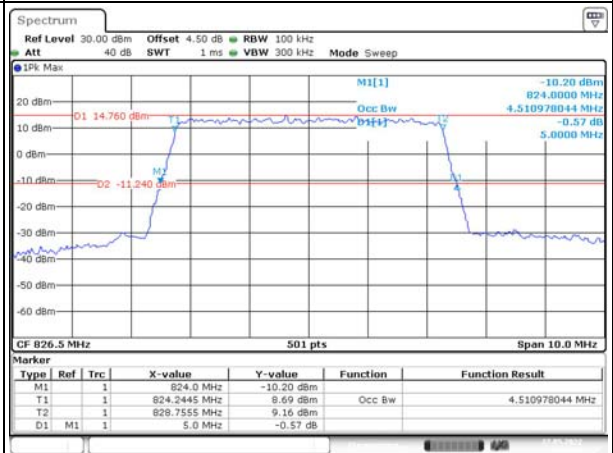
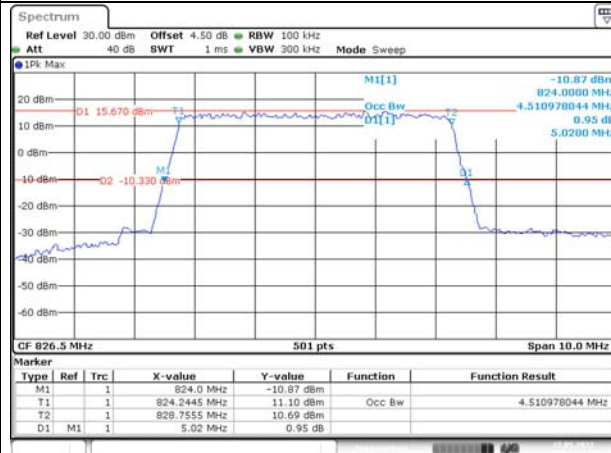
Occupied Bandwidth

Channel

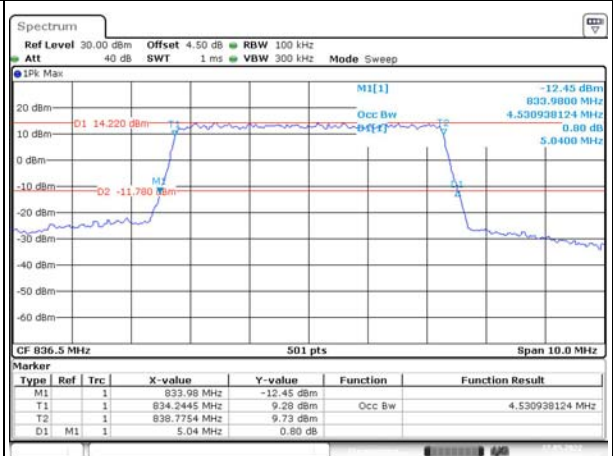
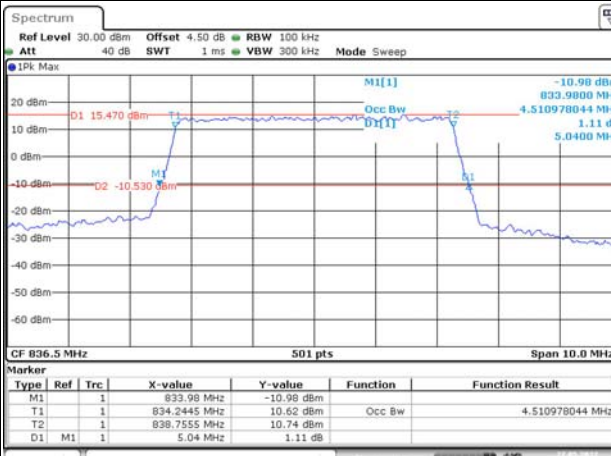
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

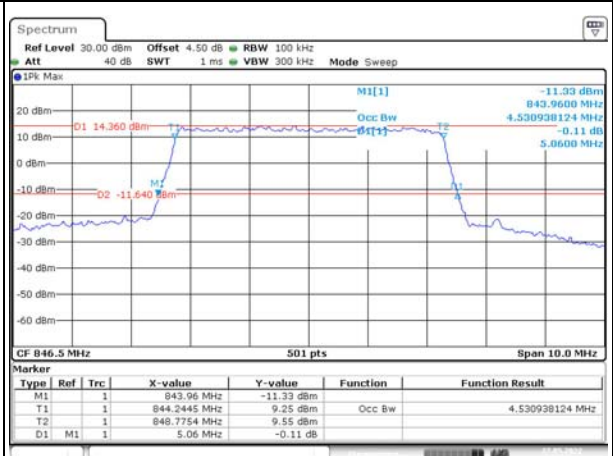
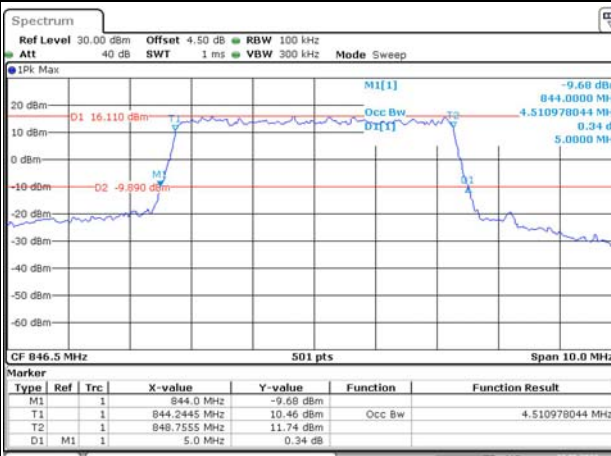
Lowest



Middle



Highest



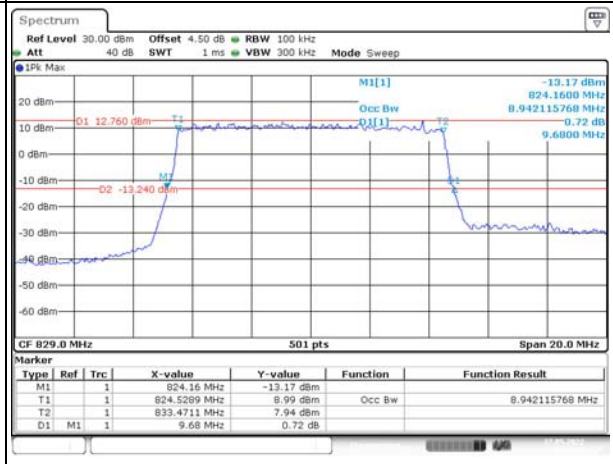
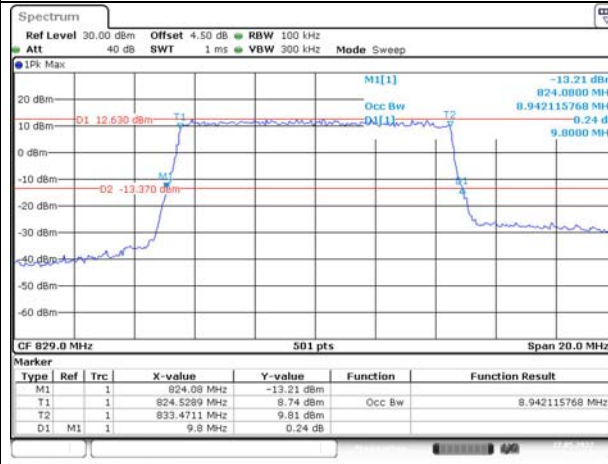
Occupied Bandwidth

Channel

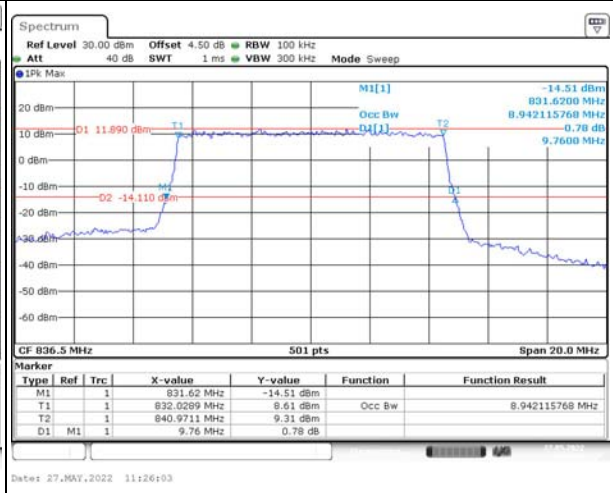
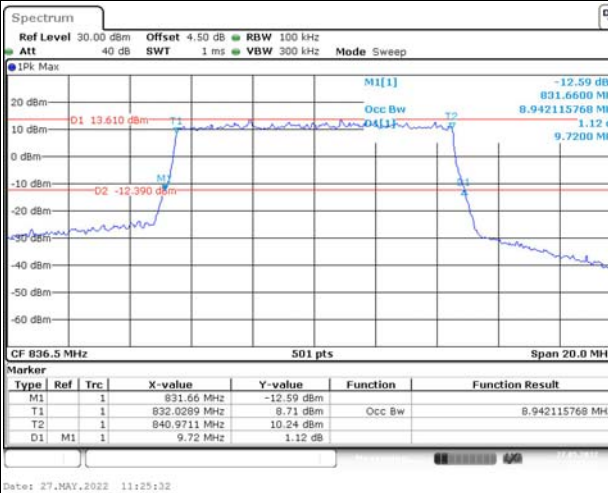
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

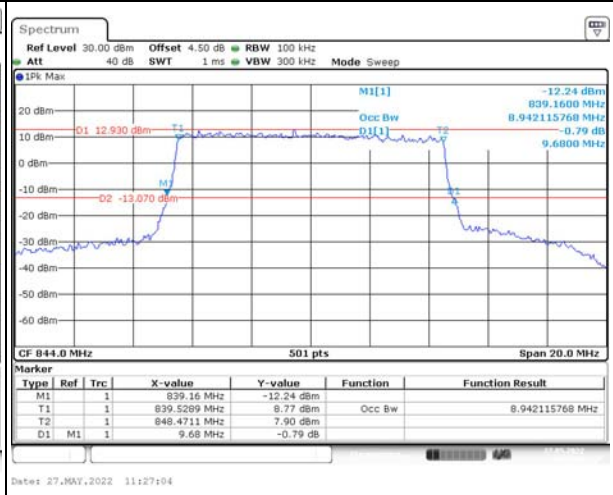
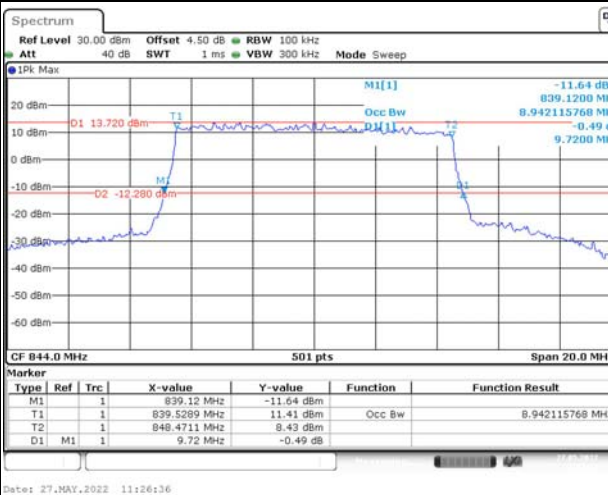
Lowest



Middle



Highest

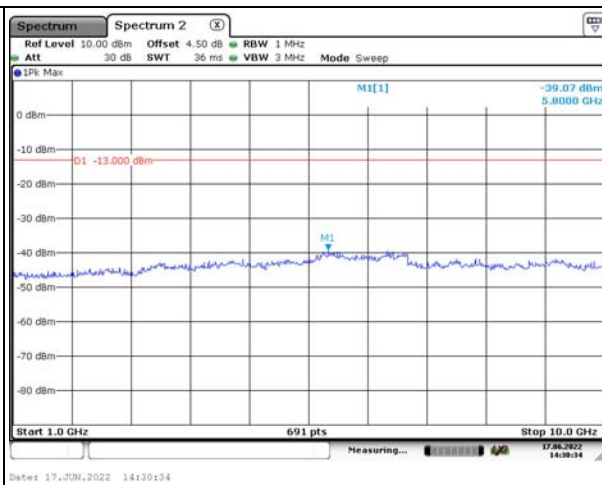
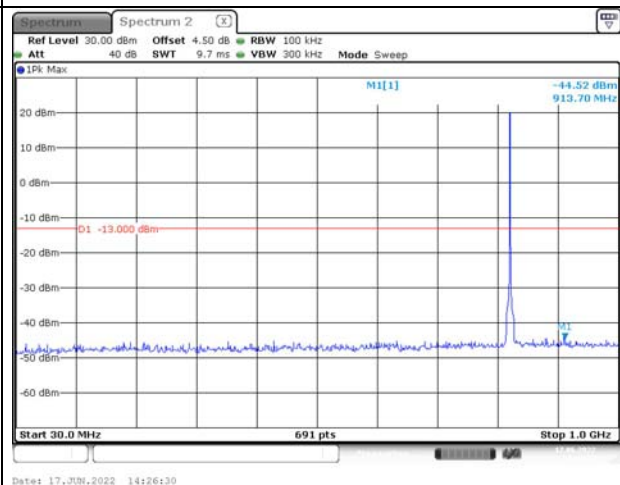


Spurious Emissions at Antenna Terminal

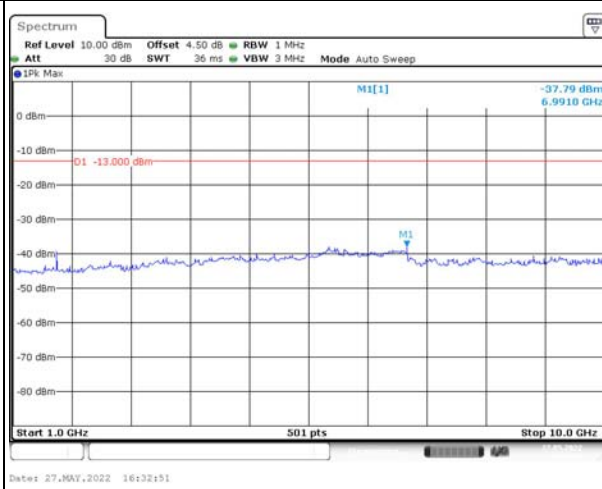
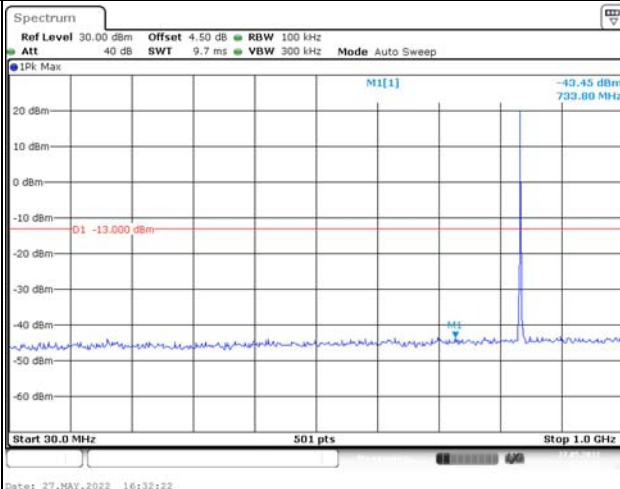
Channel

1.4MHz Bandwidth QPSK

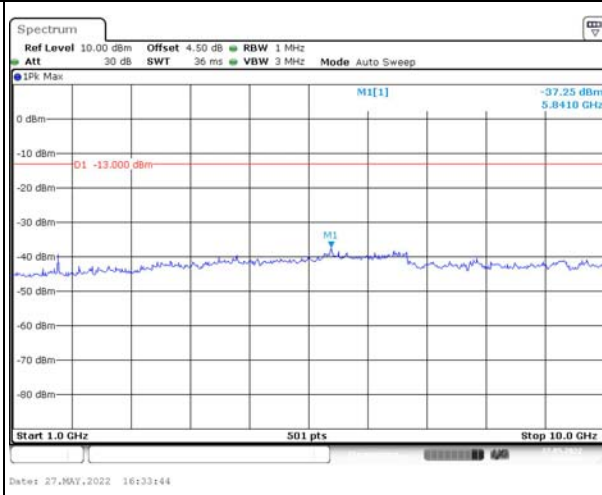
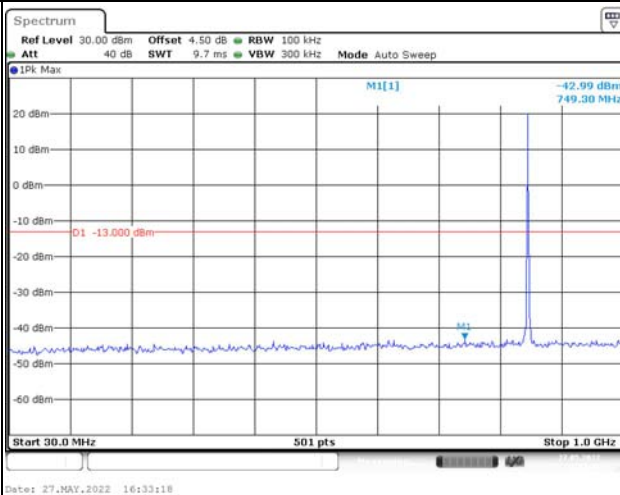
Lowest



Middle



Highest

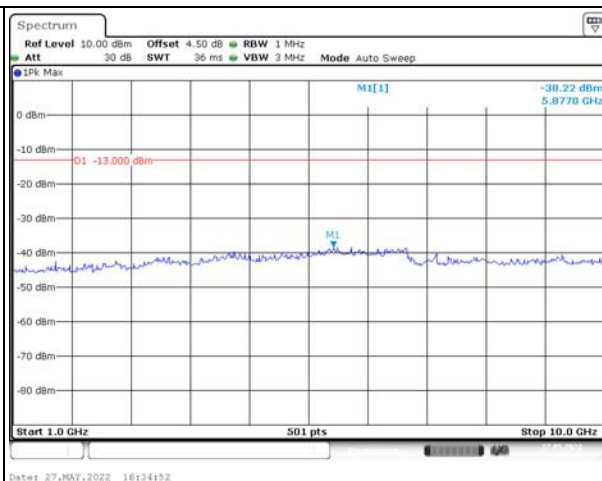
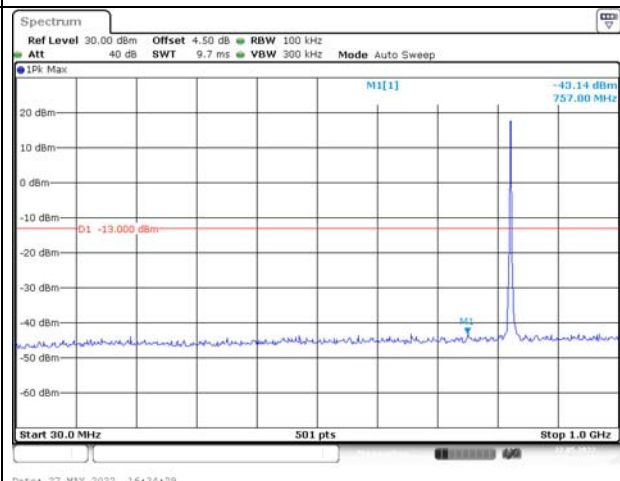


Spurious Emissions at Antenna Terminal

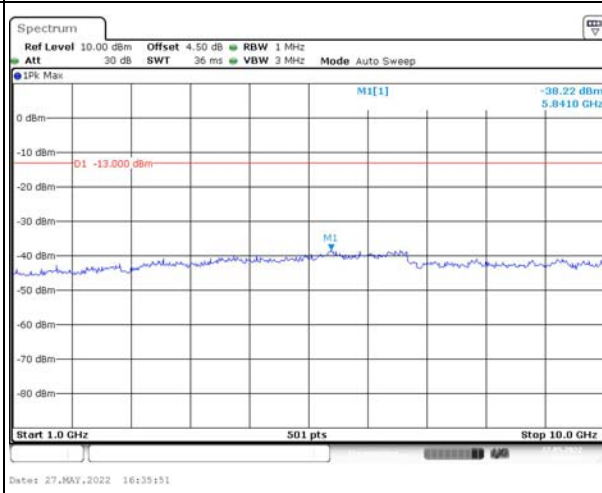
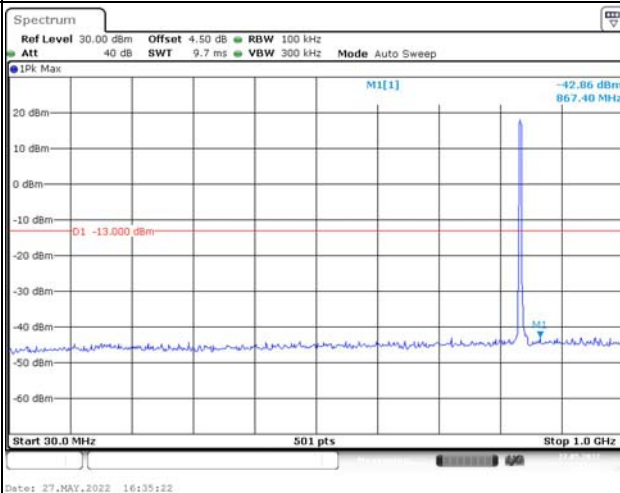
Channel

3MHz Bandwidth QPSK

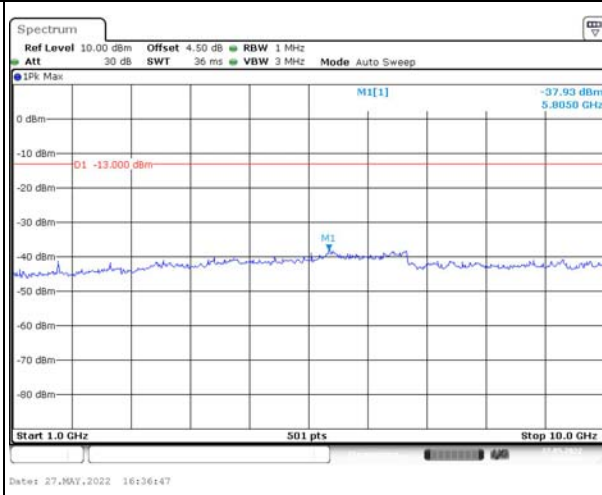
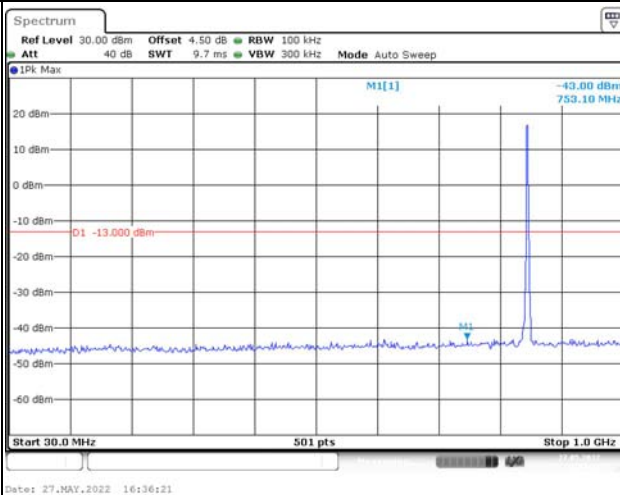
Lowest



Middle



Highest

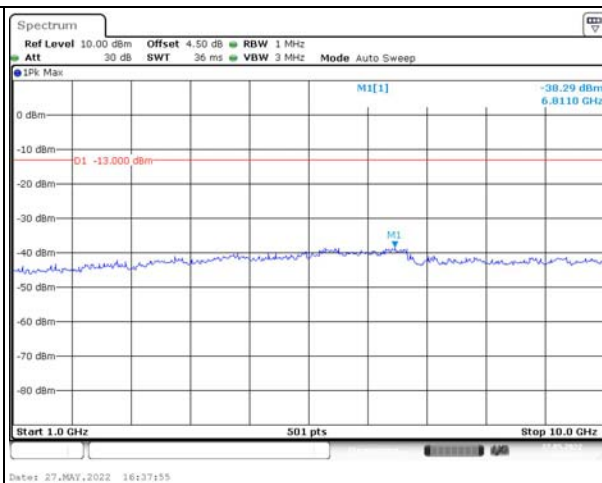
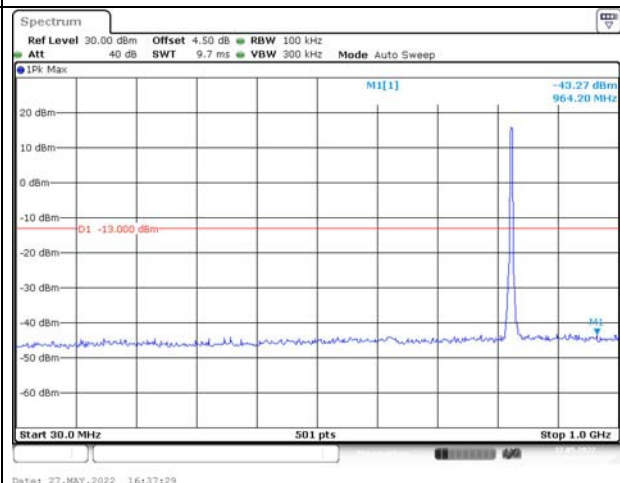


Spurious Emissions at Antenna Terminal

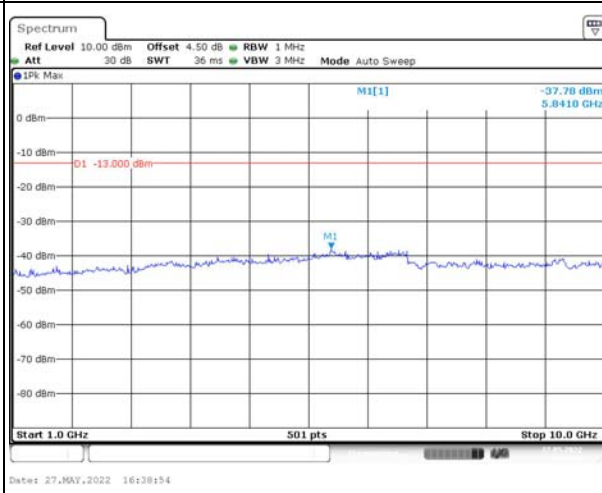
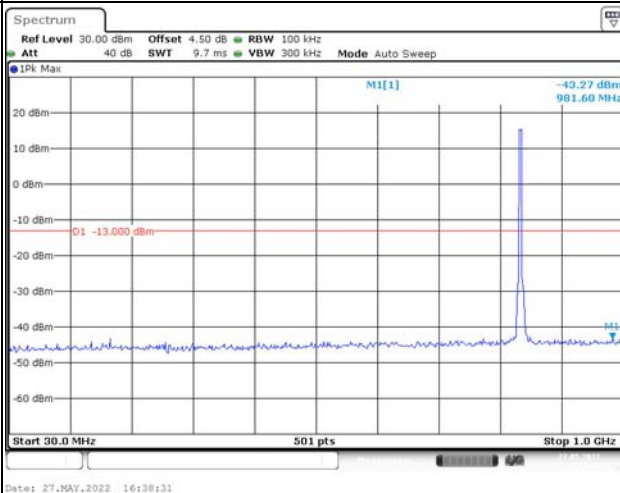
Channel

5MHz Bandwidth QPSK

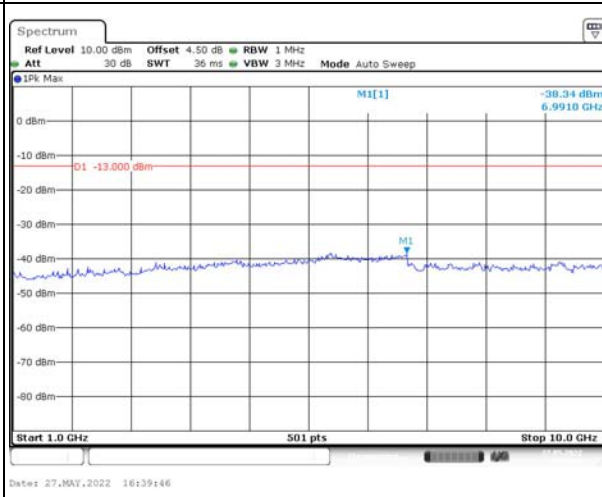
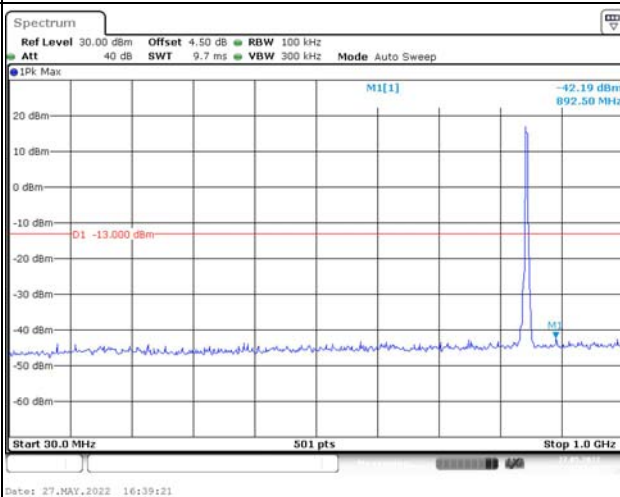
Lowest



Middle



Highest

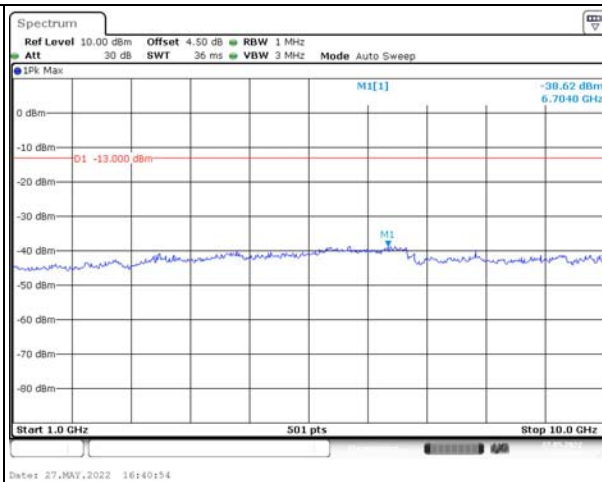
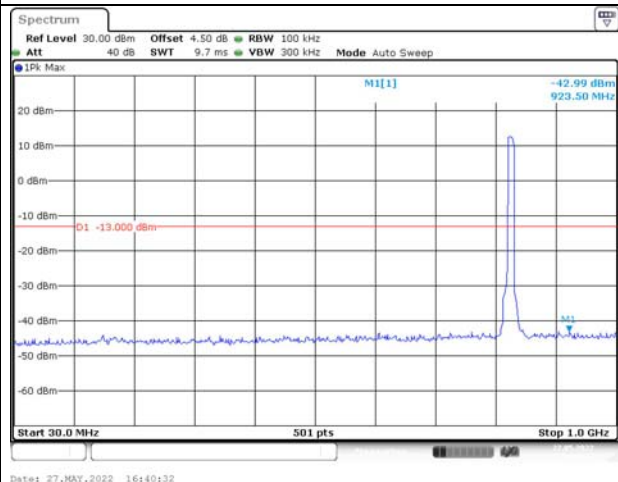


Spurious Emissions at Antenna Terminal

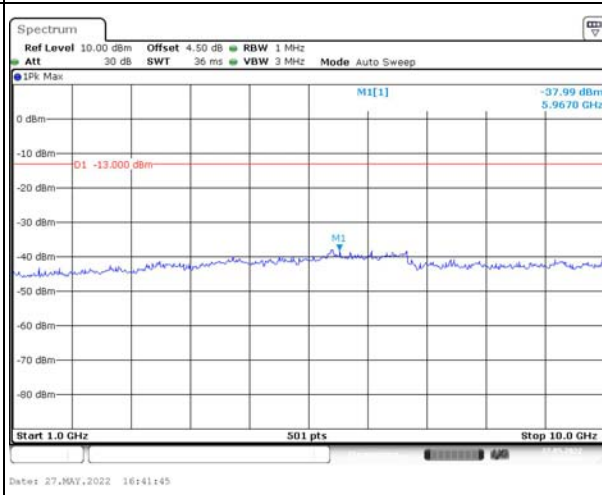
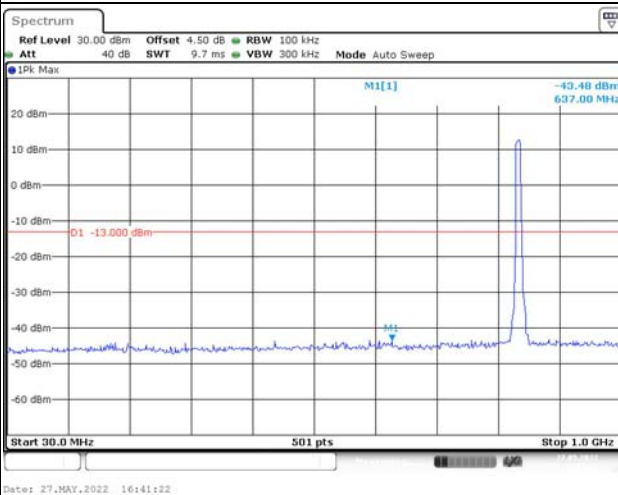
Channel

10MHz Bandwidth QPSK

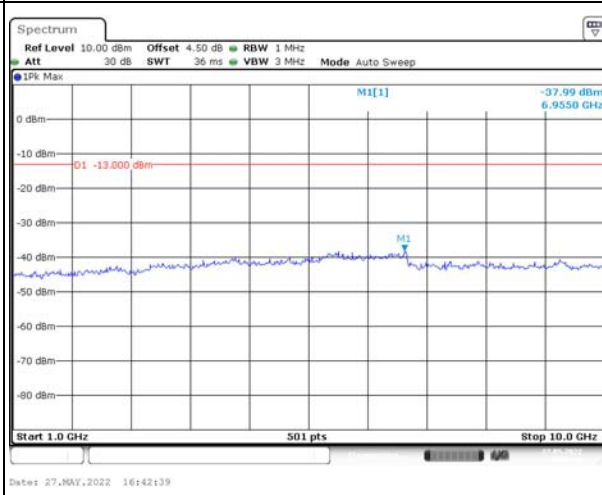
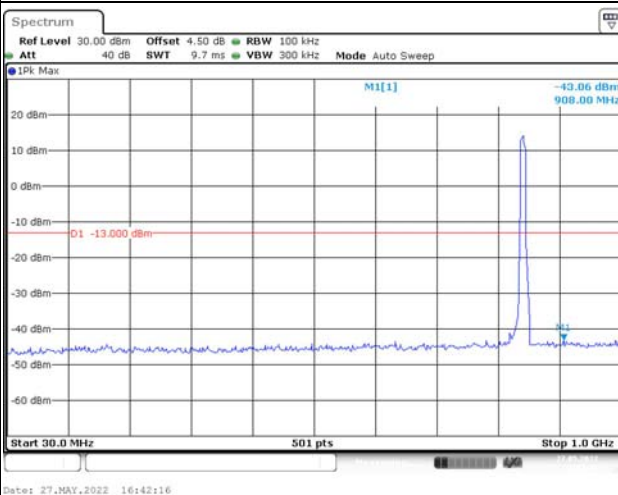
Lowest



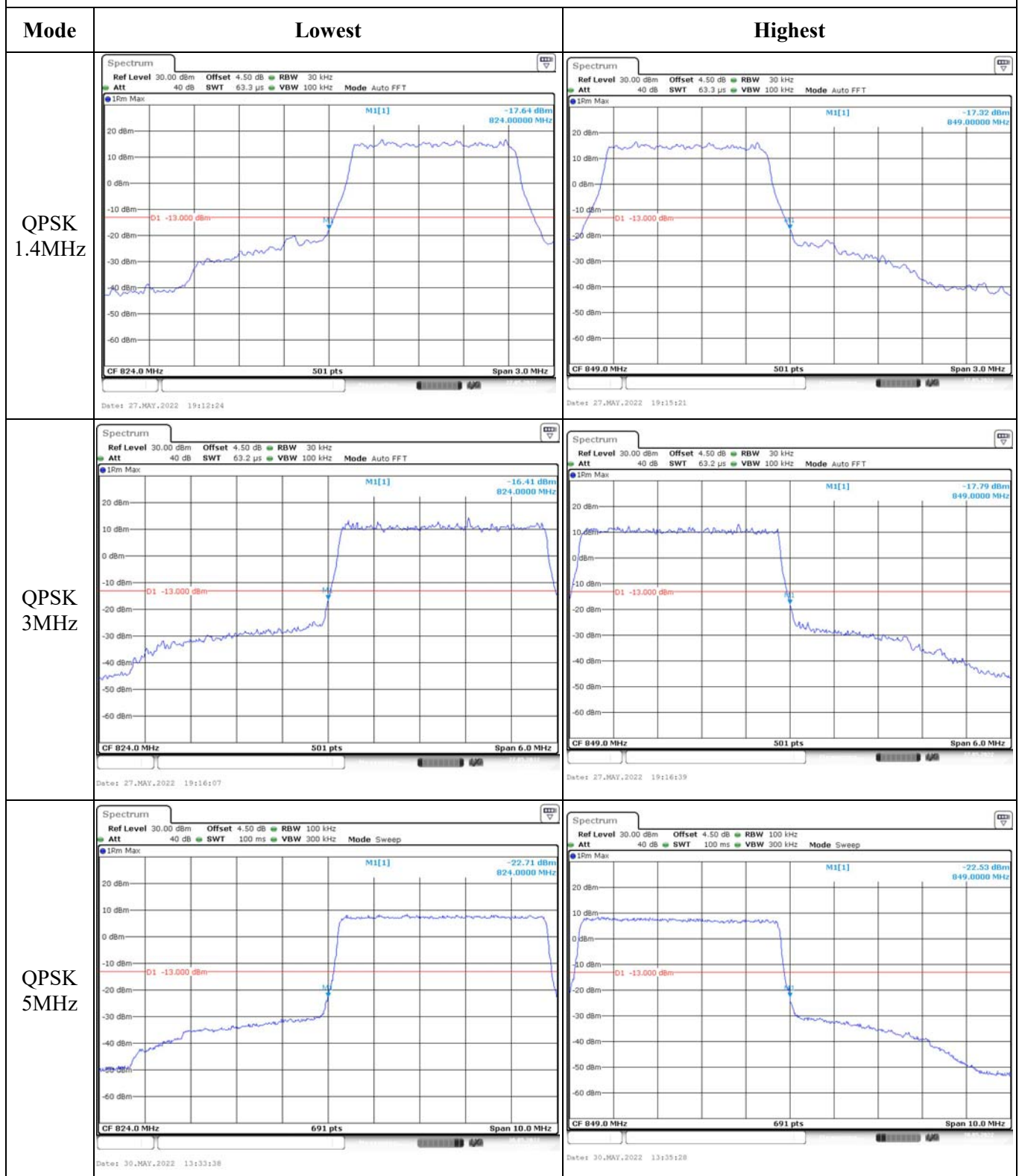
Middle



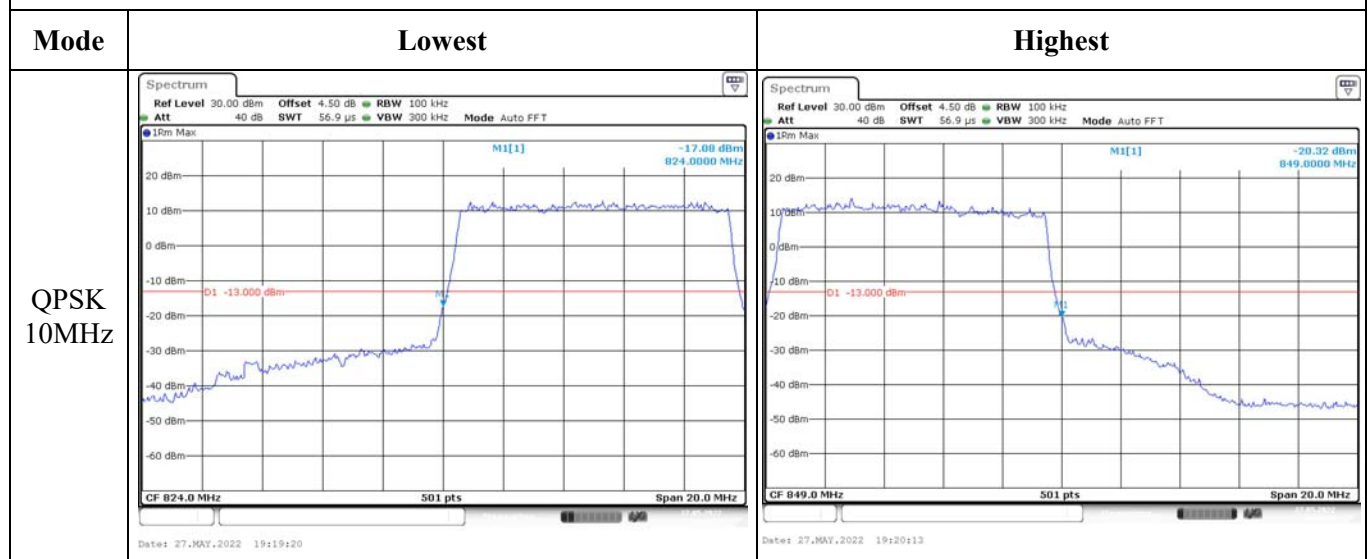
Highest



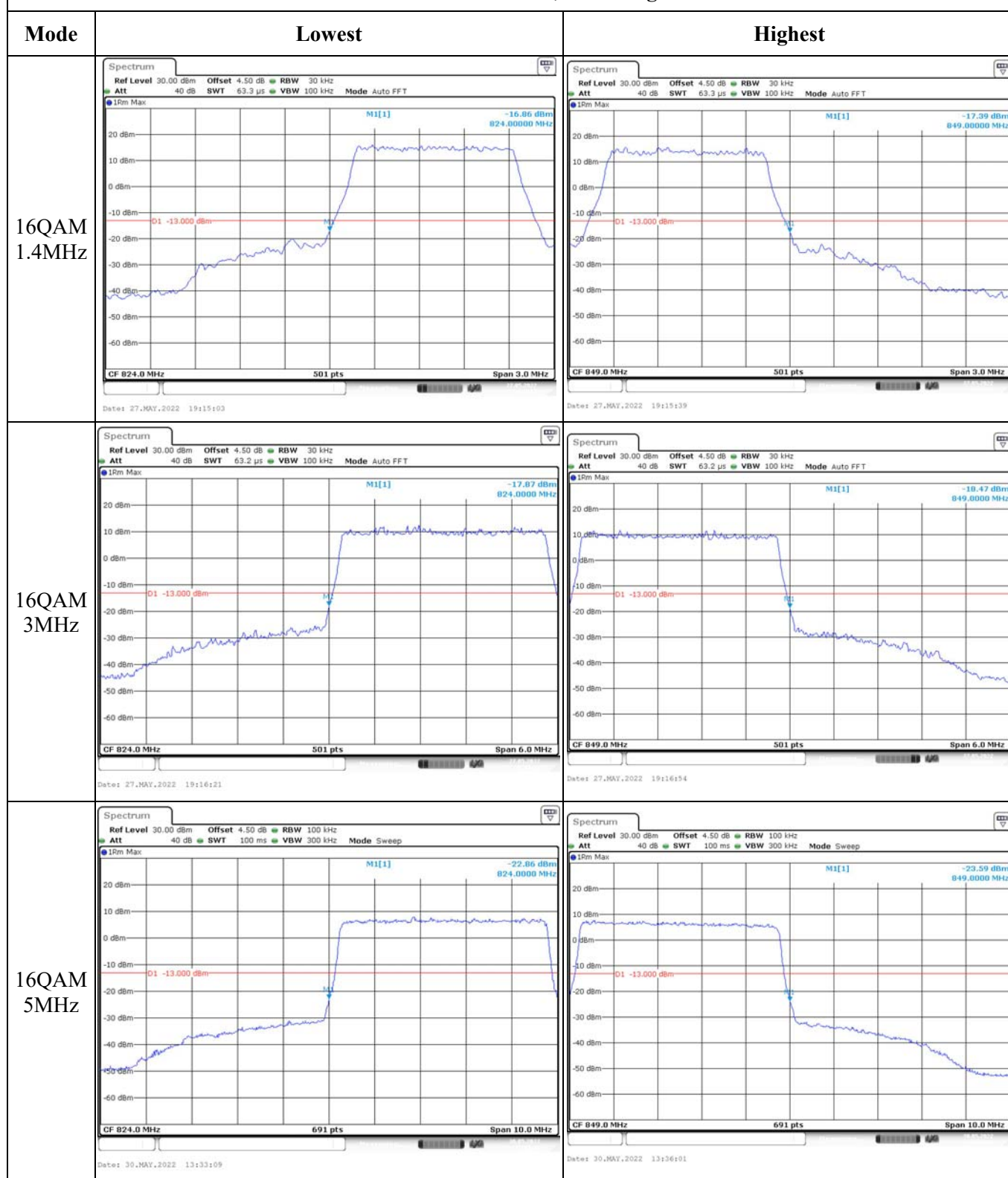
Out of band emission, Band Edge



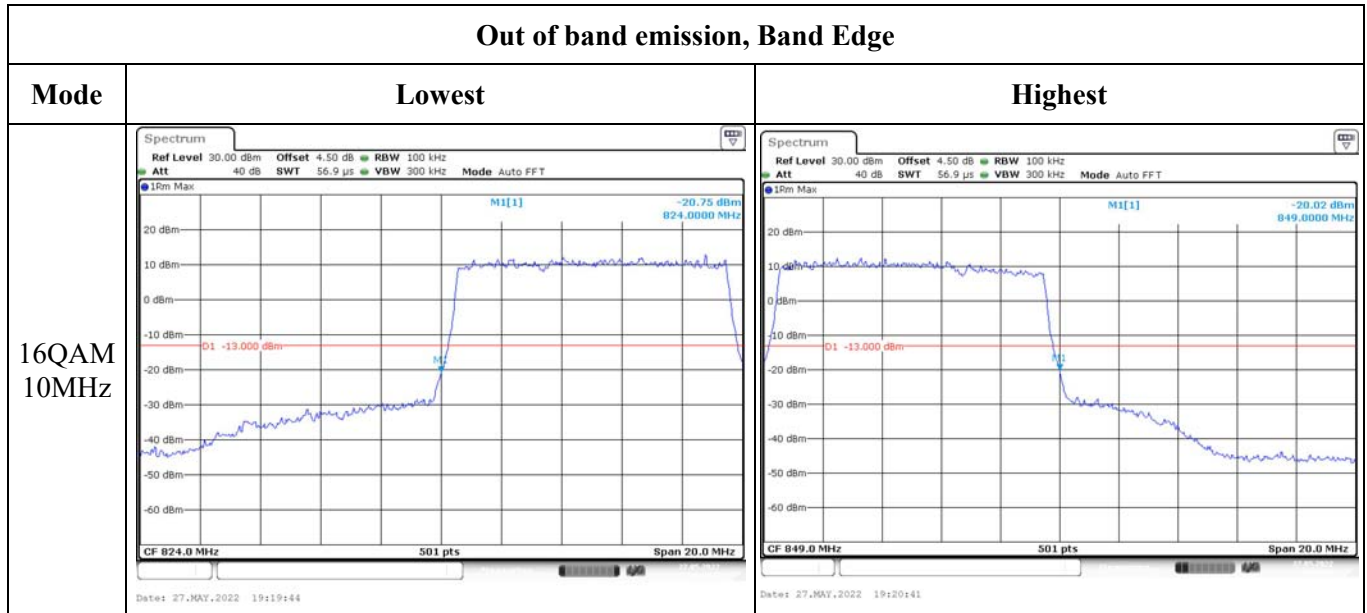
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.4 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	CR22030086-RF-S1/3	Test Date:	2022-05-27~2022-05-30
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ada Yan	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1	Relative Humidity: (%)	66	ATM Pressure: (kPa)	100.1
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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	2021-10-10	2022-10-09
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
R&S	Wideband Radio	CMW500	110479	2021-10-26	2022-10-25
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-07-22	2022-07-21
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	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).*

EUT Information@ LTE Band 12▲:

Antenna Gain (dBi):	-2.3	Antenna Gain (dBd):	-4.45	Cable Loss (dB):	0
Operation Voltage(V _{DC}):					
Lowest:	3.5	Normal:	3.8	Highest:	4.35

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	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	20.82	20.84	21.05	16.85	34.77
	RB1#3	20.78	20.92	21.14		
	RB1#5	21.00	20.77	21.10		
	RB3#0	20.76	21.15	21.30		
	RB3#3	20.90	21.08	21.23		
	RB6#0	19.87	20.06	20.24		
1.4MHz 16QAM	RB1#0	19.84	20.13	20.20	16.2	34.77
	RB1#3	20.26	20.65	20.25		
	RB1#5	20.04	20.58	20.18		
	RB3#0	19.68	20.03	20.54		
	RB3#3	19.86	19.67	20.29		
	RB6#0	19.07	18.77	19.34		
3MHz QPSK	RB1#0	20.63	21.00	21.07	16.92	34.77
	RB1#8	20.80	20.80	21.37		
	RB1#14	20.99	20.88	21.21		
	RB6#0	19.72	20.08	20.10		
	RB6#9	20.04	19.93	20.26		
	RB15#0	19.79	20.09	20.17		
3MHz 16QAM	RB1#0	20.06	20.25	20.03	16.17	34.77
	RB1#8	20.07	20.19	20.13		
	RB1#14	20.62	20.43	20.09		
	RB6#0	18.65	19.17	19.21		
	RB6#9	19.16	18.86	19.38		
	RB15#0	18.71	19.10	19.06		
5MHz QPSK	RB1#0	20.53	20.80	20.83	16.79	34.77
	RB1#13	21.01	20.88	21.18		
	RB1#24	20.92	20.76	21.24		
	RB15#0	19.69	20.06	19.98		
	RB15#10	20.03	19.90	20.21		
	RB25#0	19.83	20.03	20.03		
5MHz 16QAM	RB1#0	19.30	20.28	19.91	15.94	34.77
	RB1#13	19.42	20.23	20.34		
	RB1#24	19.59	20.25	20.39		
	RB15#0	18.59	19.14	18.88		
	RB15#10	18.90	18.78	19.18		
	RB25#0	18.83	18.71	18.97		

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	20.57	20.78	20.76	16.75	34.77
	RB1#25	21.18	20.90	20.89		
	RB1#49	21.00	20.91	21.20		
	RB25#0	19.85	19.95	19.99		
	RB25#25	20.13	19.98	20.18		
	RB50#0	19.88	20.09	20.08		
10MHz 16QAM	RB1#0	20.01	20.13	20.03	16.07	34.77
	RB1#25	20.52	20.51	20.07		
	RB1#49	20.24	20.27	20.22		
	RB25#0	18.74	19.03	19.03		
	RB25#25	19.03	18.88	19.13		
	RB50#0	18.85	18.87	18.79		
Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)						
					Result:	Pass

Peak-to-average Ratio(PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	4.84	4.87	4.90	13
	RB50#0	5.19	5.10	5.10	13
10MHz 16QAM	RB1#0	5.83	5.88	5.59	13
	RB50#0	6.17	6.09	6.06	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	1.108	1.308	1.314	1.296
1.4MHz 16QAM	1.102	1.096	1.102	1.326	1.296	1.302
3MHz QPSK	2.695	2.695	2.683	2.940	2.940	2.952
3MHz 16QAM	2.695	2.683	2.683	2.964	2.952	2.952
5MHz QPSK	4.531	4.511	4.491	5.020	5.040	4.960
5MHz 16QAM	4.491	4.551	4.511	5.000	5.040	5.040
10MHz QPSK	8.942	8.942	8.942	9.680	9.720	9.680
10MHz 16QAM	8.901	8.981	8.942	9.600	9.760	9.640
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	699.522	699.00	715.489	716.00
	-20	3.8	699.515	699.00	715.487	716.00
	-10	3.8	699.514	699.00	715.486	716.00
	0	3.8	699.513	699.00	715.491	716.00
	10	3.8	699.517	699.00	715.488	716.00
	20	3.8	699.514	699.00	715.486	716.00
	30	3.8	699.511	699.00	715.482	716.00
	40	3.8	699.511	699.00	715.481	716.00
	50	3.8	699.514	699.00	715.486	716.00
Frequency Stability vs. Voltage	20	3.5	699.512	699.00	715.484	716.00
	20	4.35	699.512	699.00	715.486	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	699.518	699.00	715.492	716.00
	-20	3.8	699.517	699.00	715.488	716.00
	-10	3.8	699.514	699.00	715.486	716.00
	0	3.8	699.519	699.00	715.489	716.00
	10	3.8	699.515	699.00	715.492	716.00
	20	3.8	699.514	699.00	715.486	716.00
	30	3.8	699.512	699.00	715.482	716.00
	40	3.8	699.514	699.00	715.481	716.00
	50	3.8	699.513	699.00	715.486	716.00
Frequency Stability vs. Voltage	20	3.5	699.510	699.00	715.485	716.00
	20	4.35	699.514	699.00	715.481	716.00
Result:					Pass	

Test Plots:

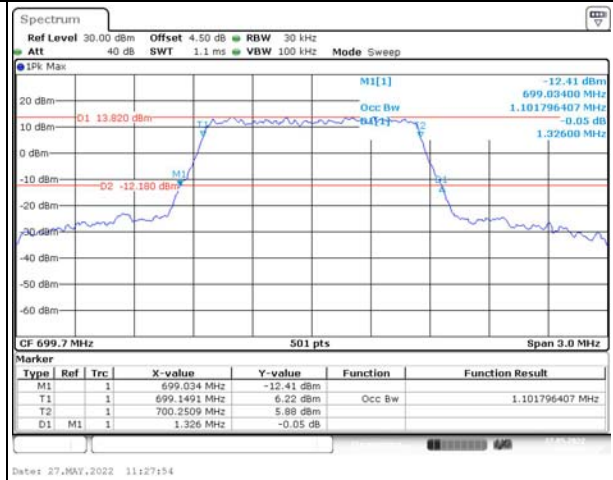
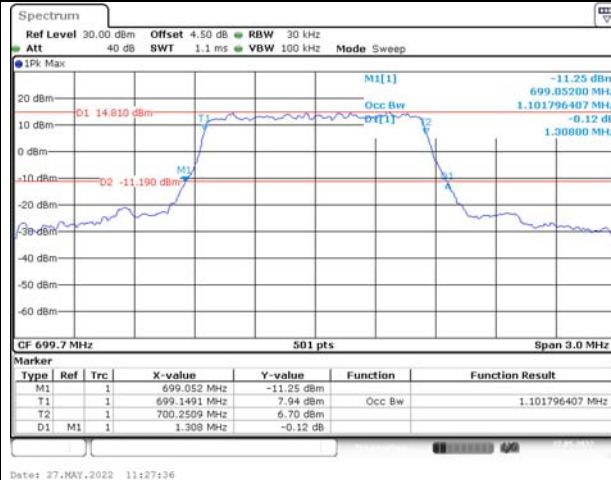
Occupied Bandwidth

Channel

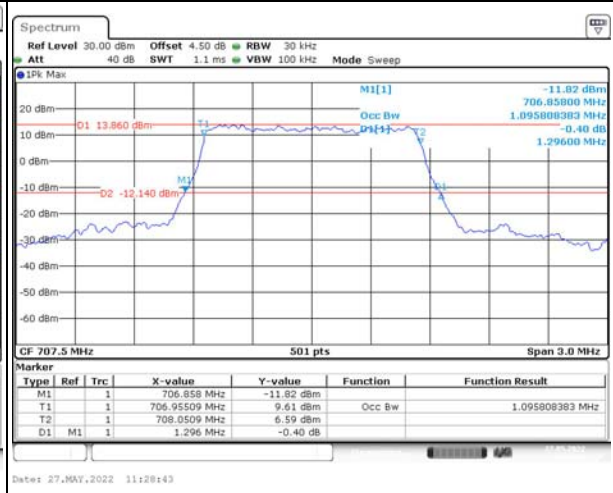
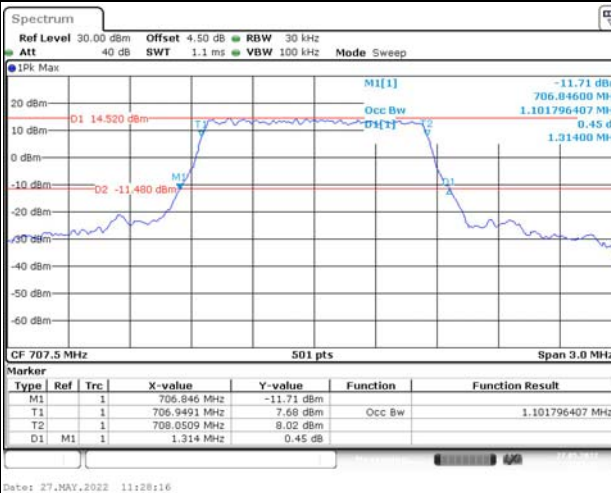
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

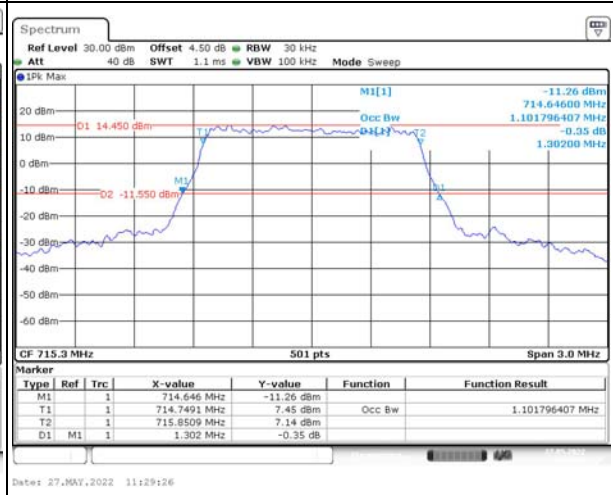
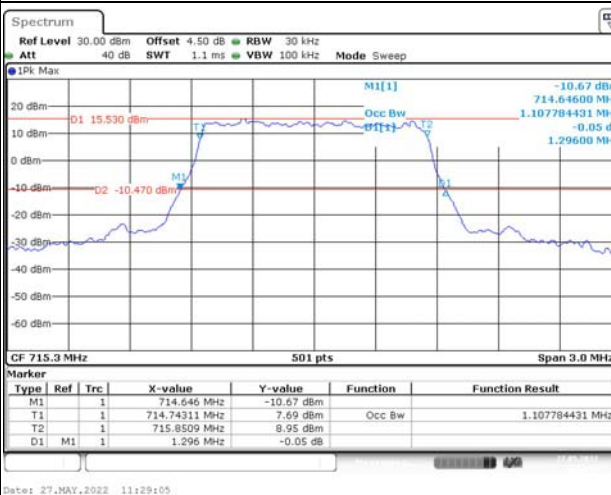
Lowest



Middle



Highest



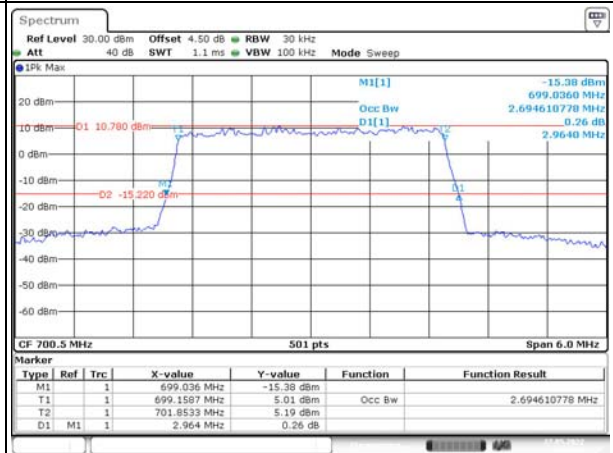
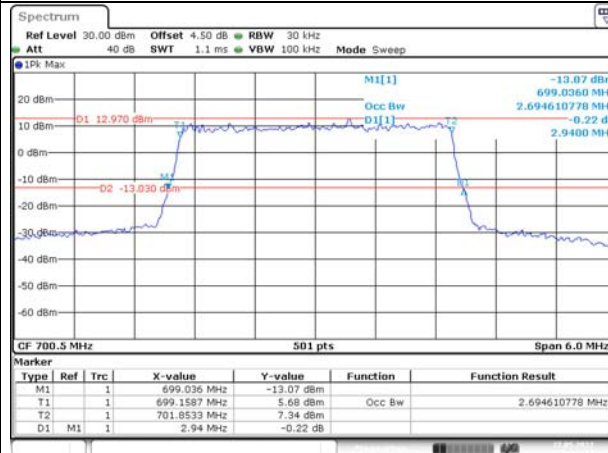
Occupied Bandwidth

Channel

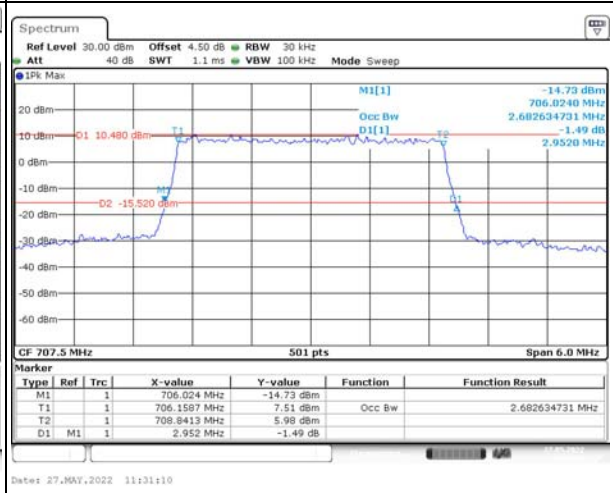
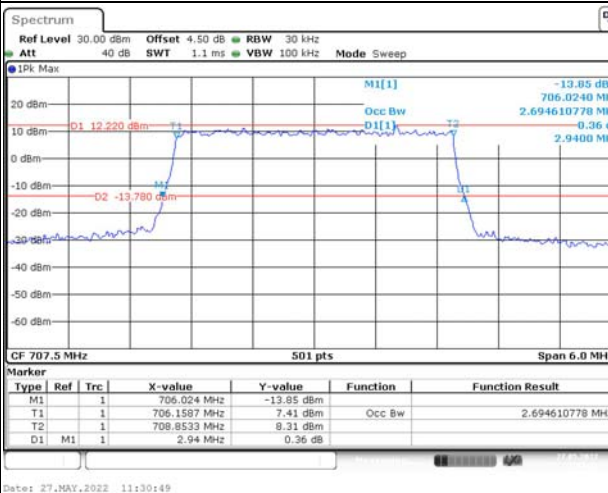
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

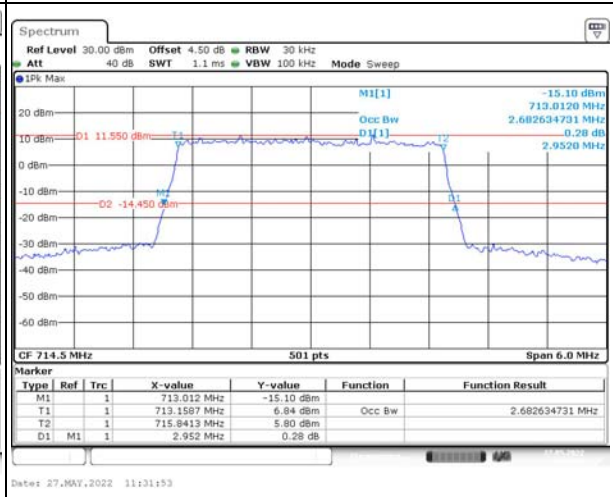
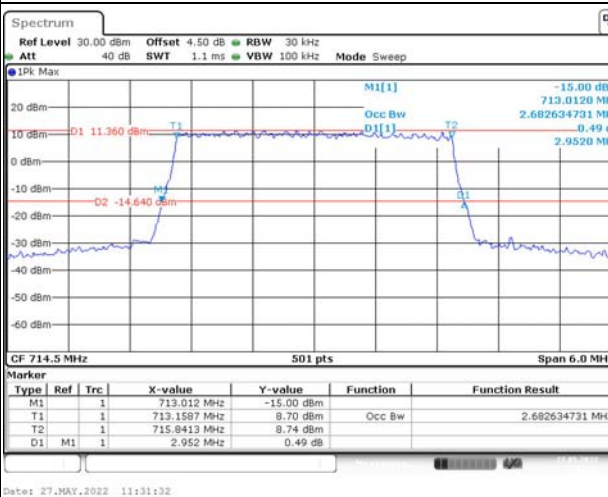
Lowest



Middle



Highest



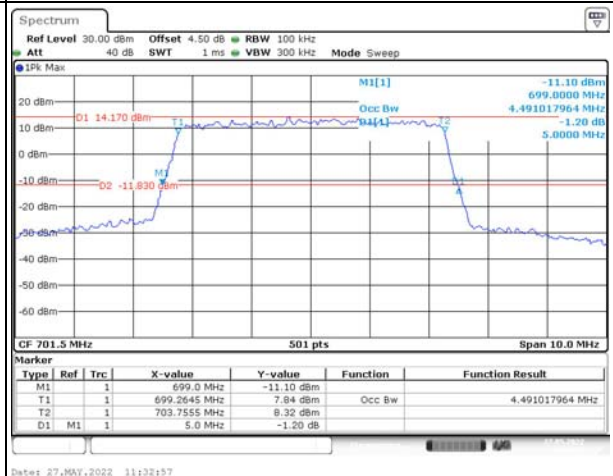
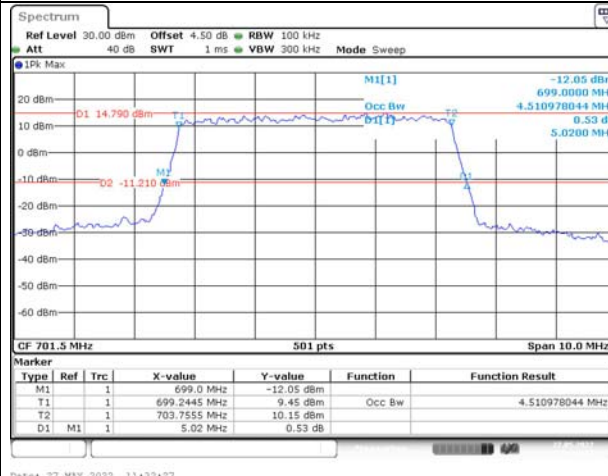
Occupied Bandwidth

Channel

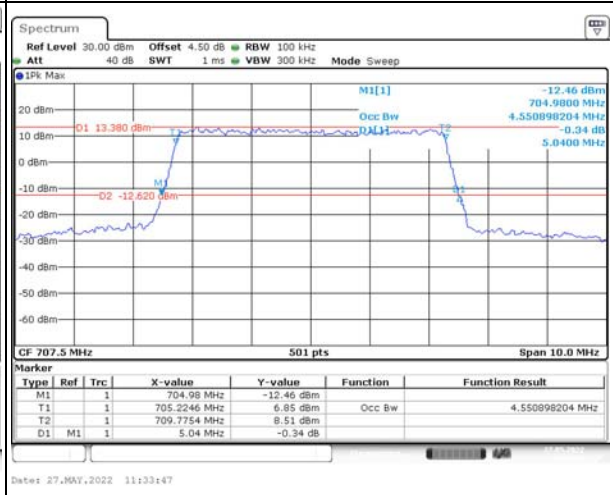
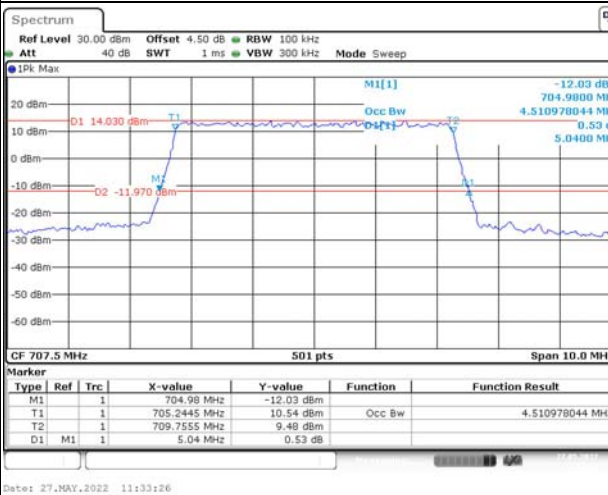
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

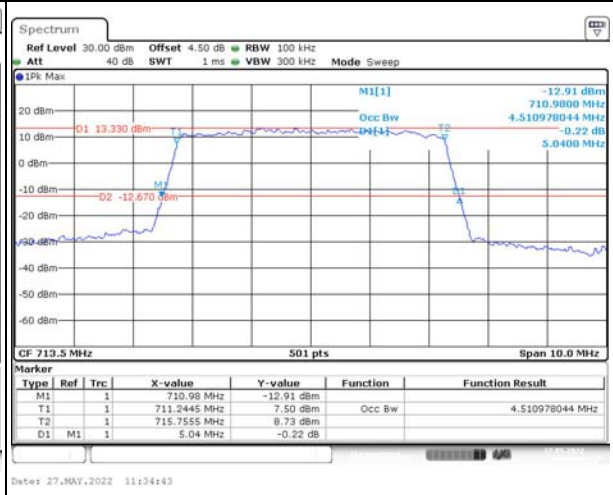
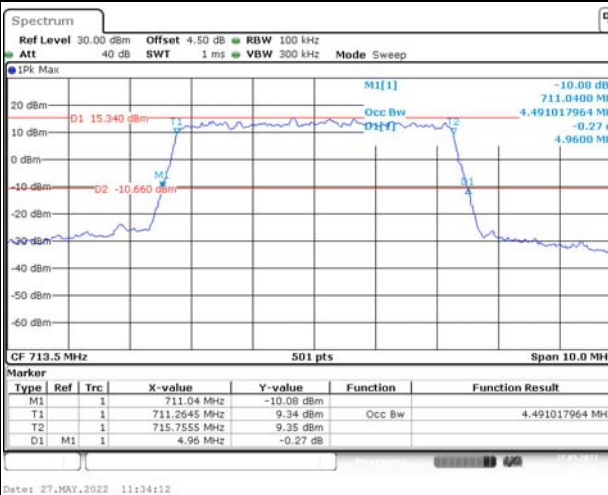
Lowest



Middle



Highest



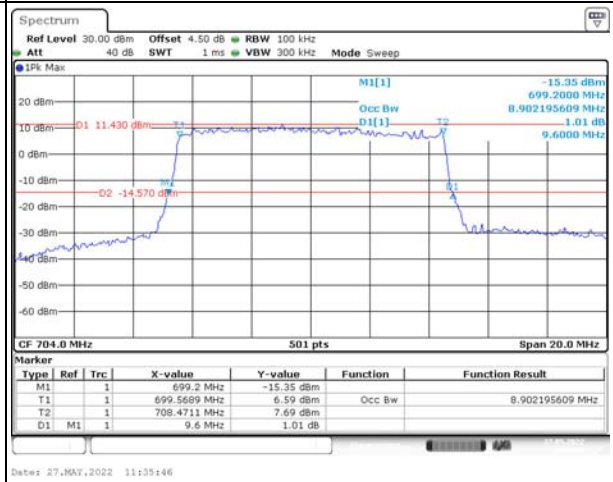
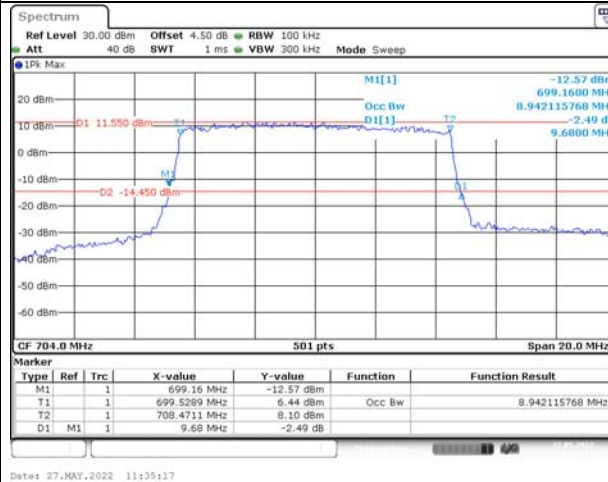
Occupied Bandwidth

Channel

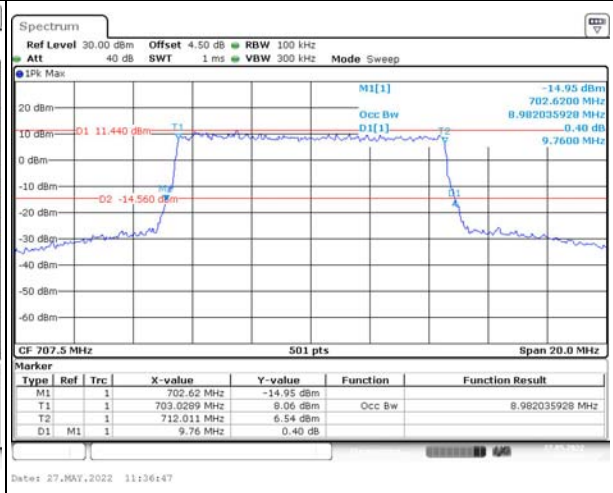
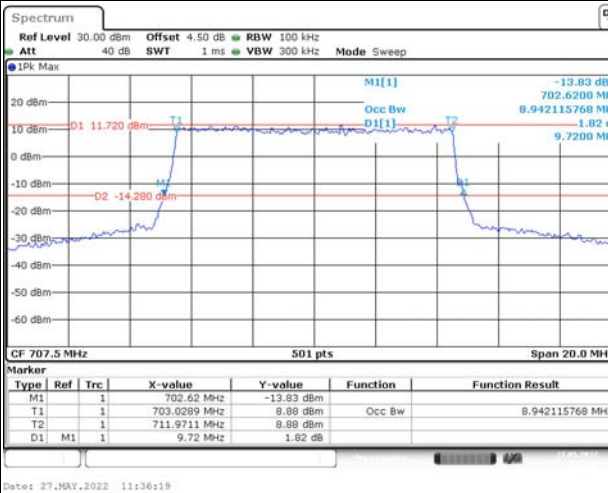
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

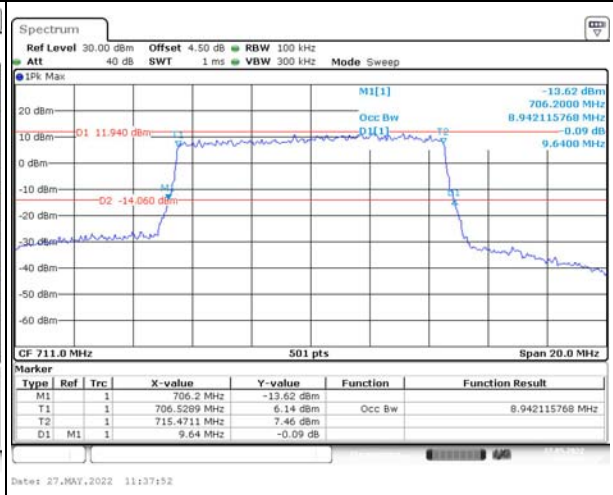
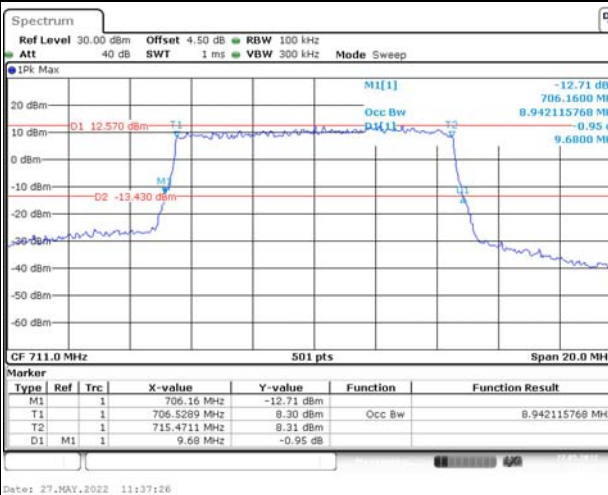
Lowest



Middle



Highest

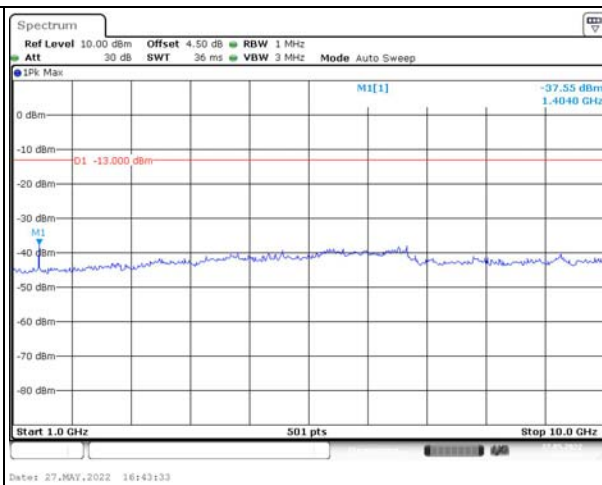
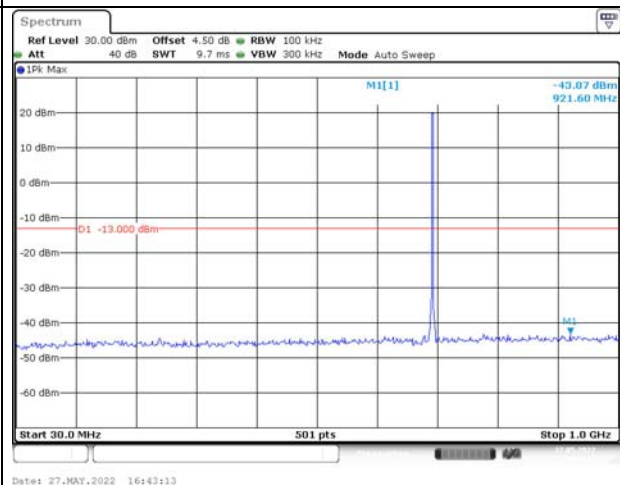


Spurious Emissions at Antenna Terminal

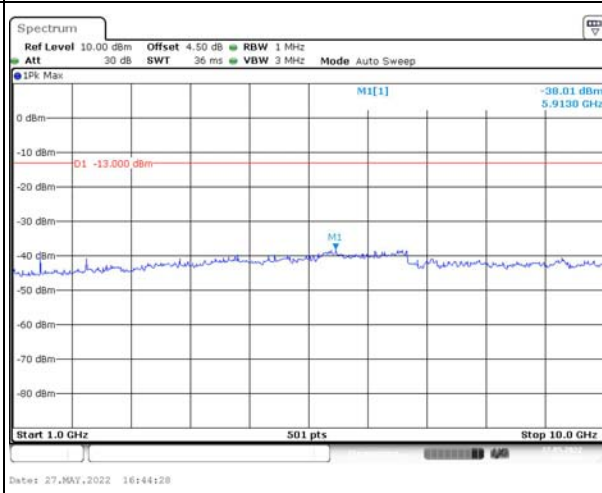
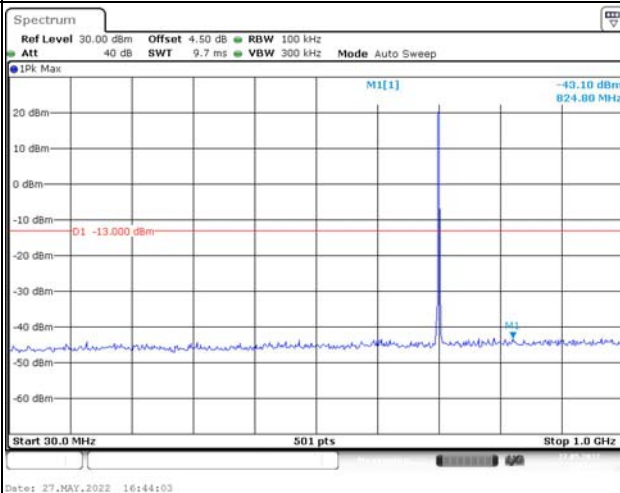
Channel

1.4MHz Bandwidth QPSK

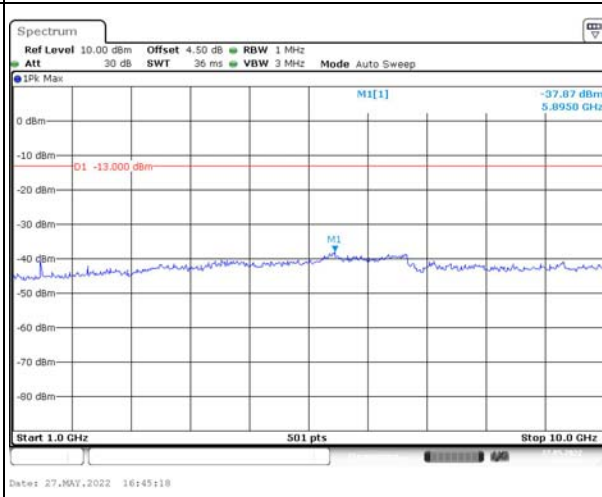
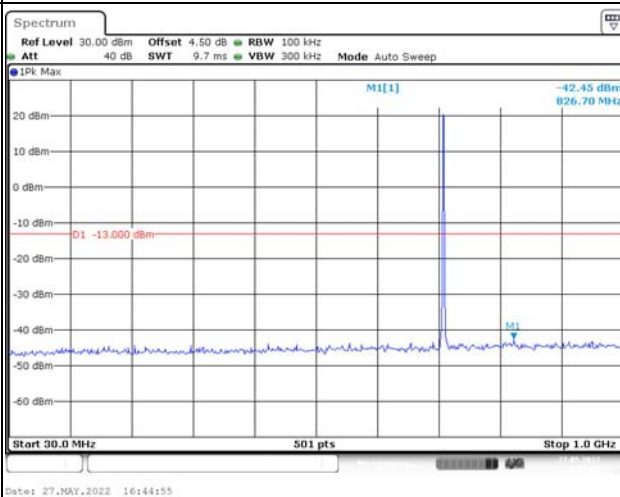
Lowest



Middle



Highest

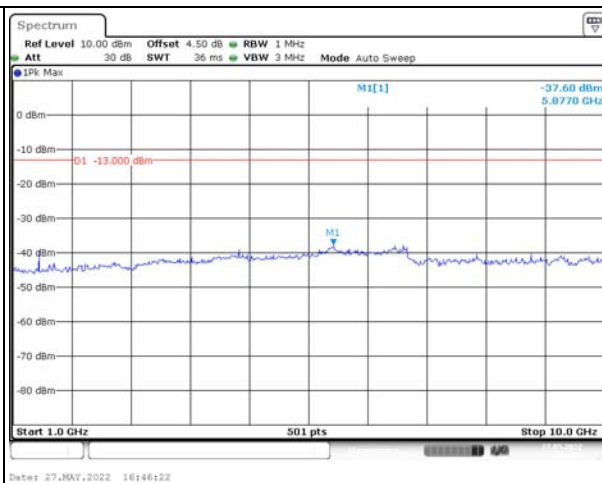
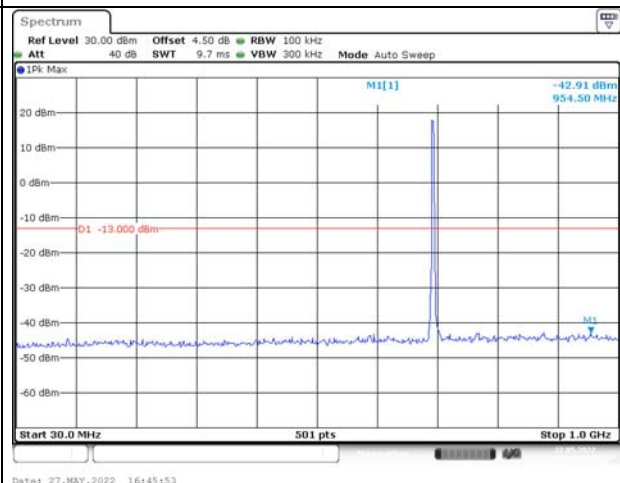


Spurious Emissions at Antenna Terminal

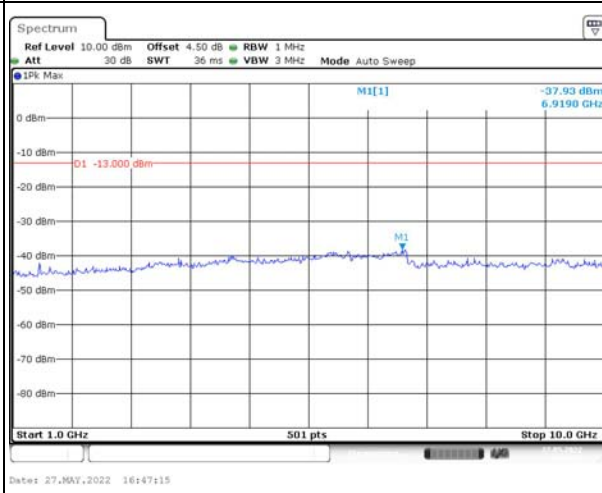
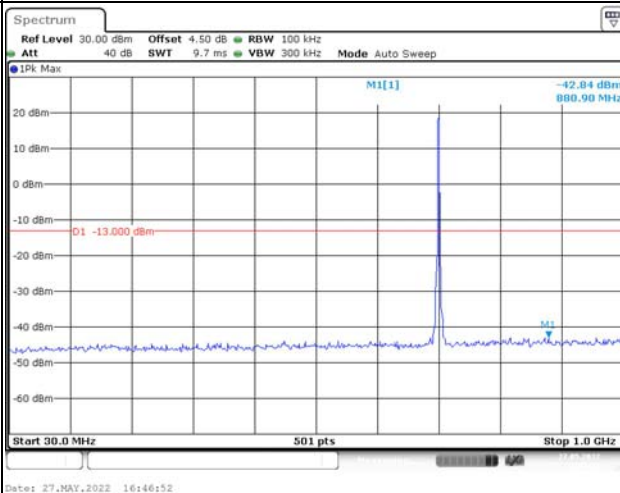
Channel

3MHz Bandwidth QPSK

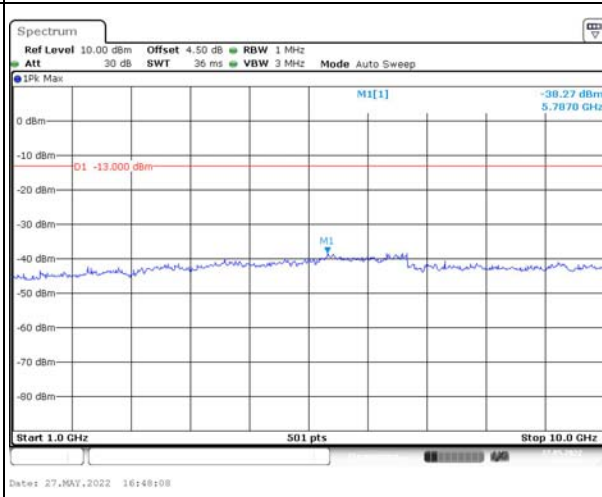
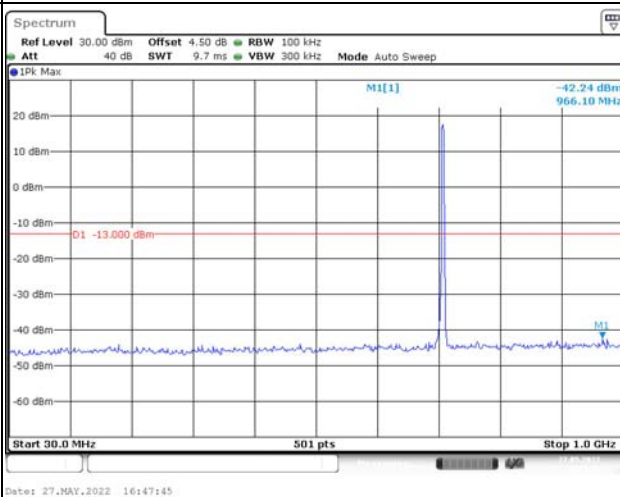
Lowest



Middle



Highest

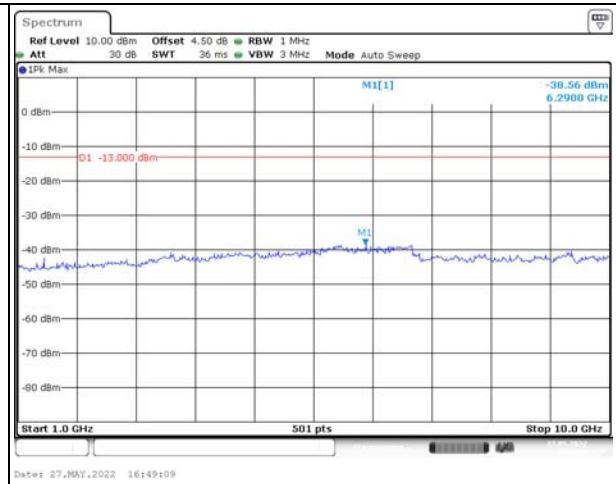
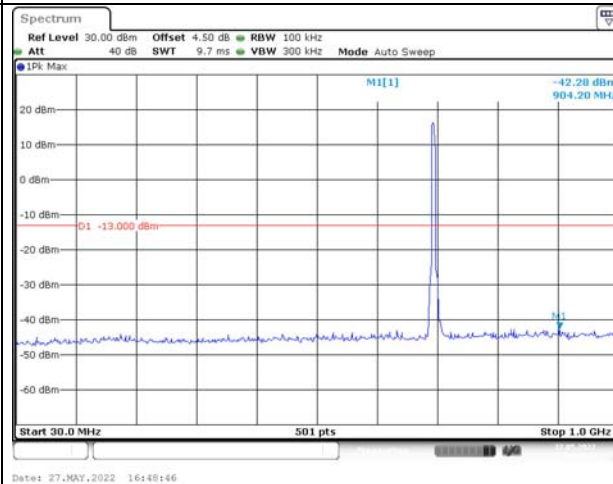


Spurious Emissions at Antenna Terminal

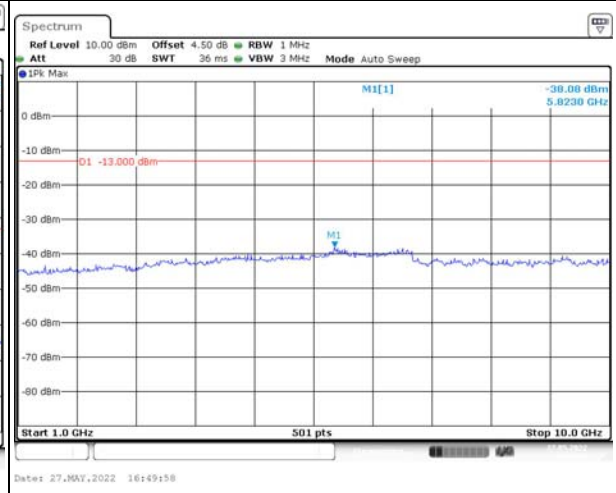
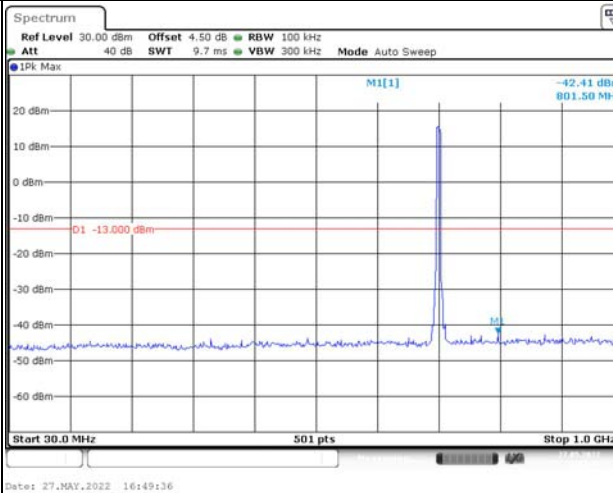
Channel

5MHz Bandwidth QPSK

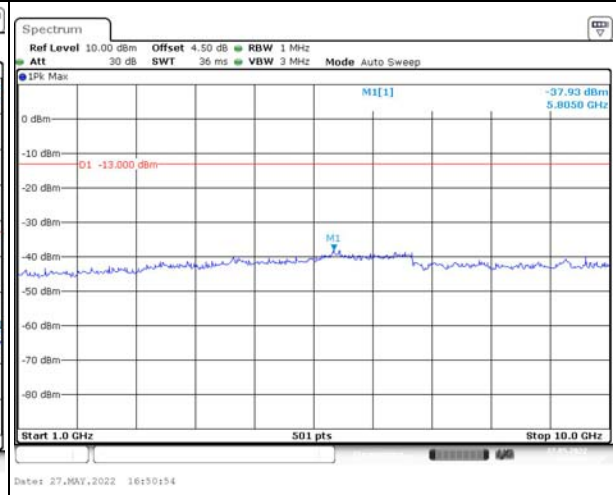
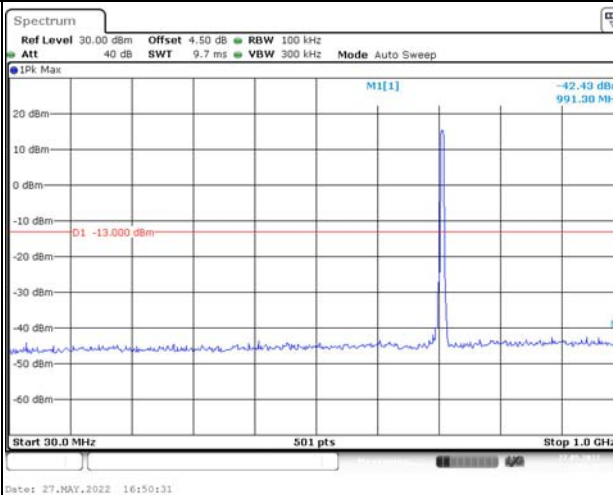
Lowest



Middle



Highest

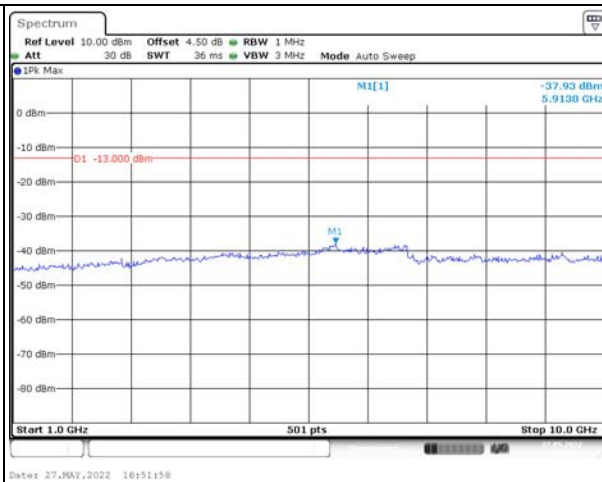
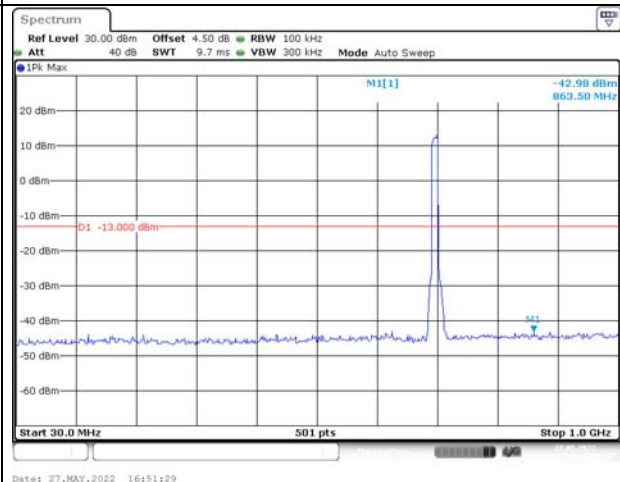


Spurious Emissions at Antenna Terminal

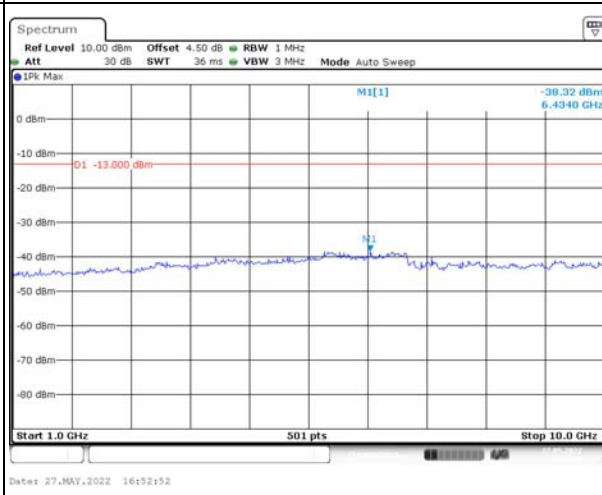
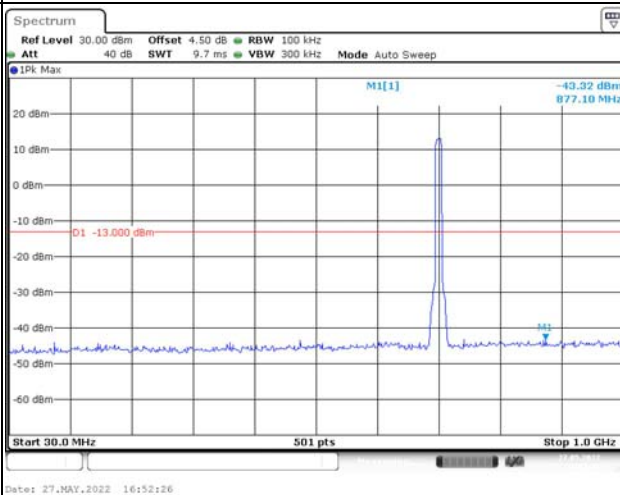
Channel

10MHz Bandwidth QPSK

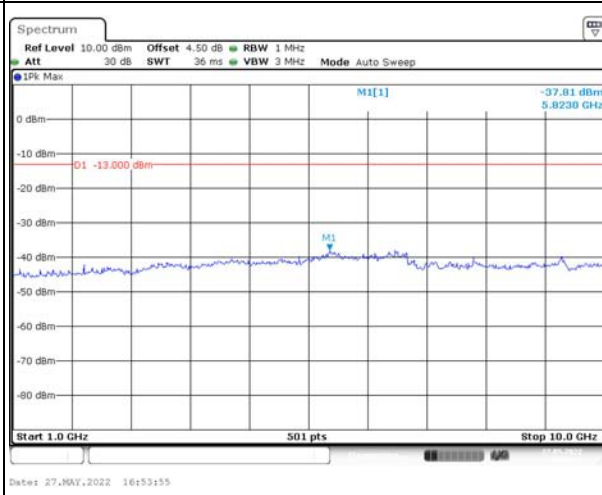
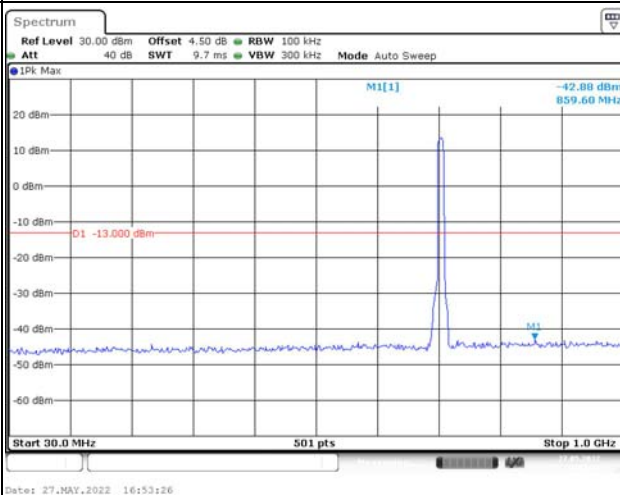
Lowest



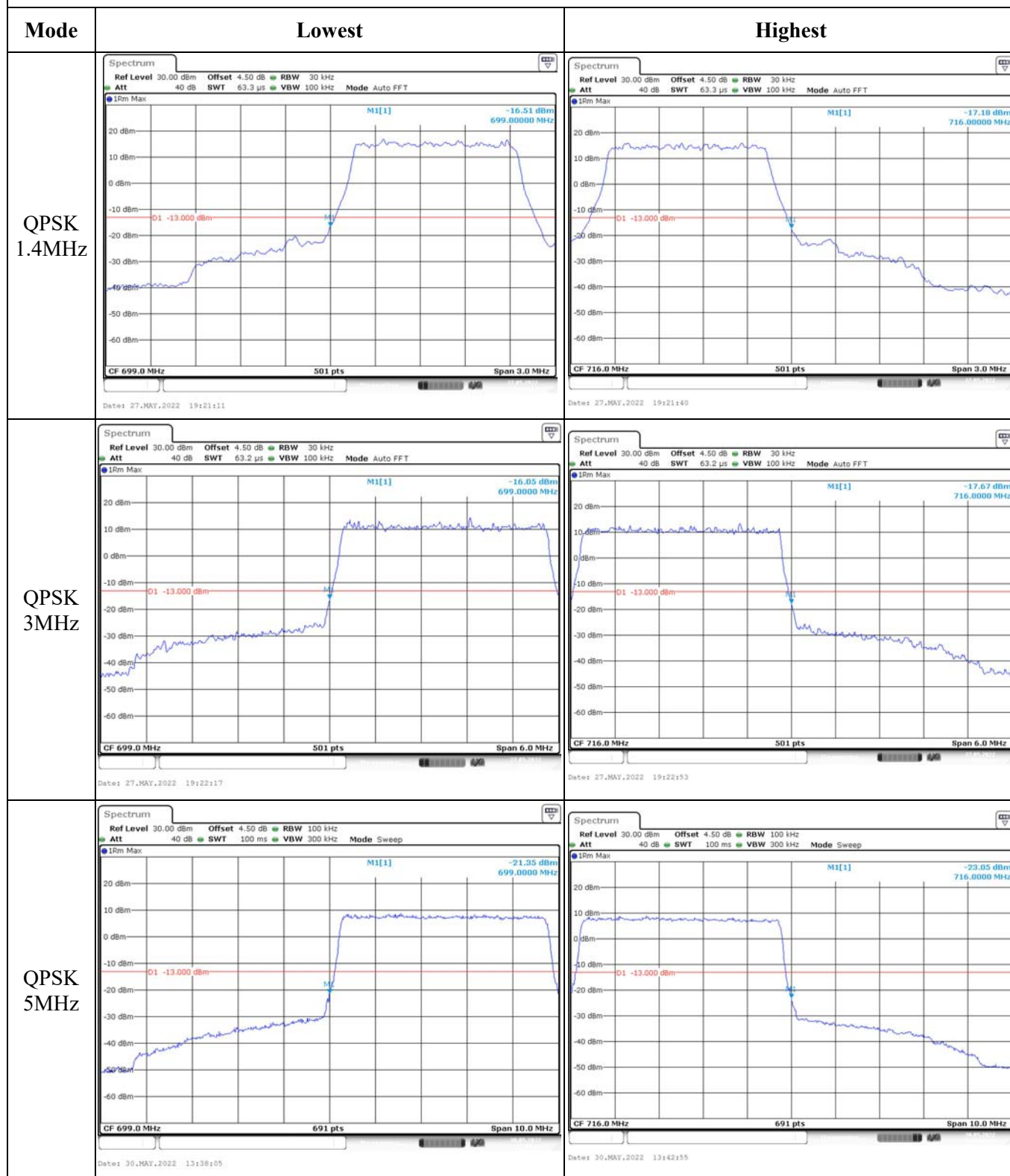
Middle



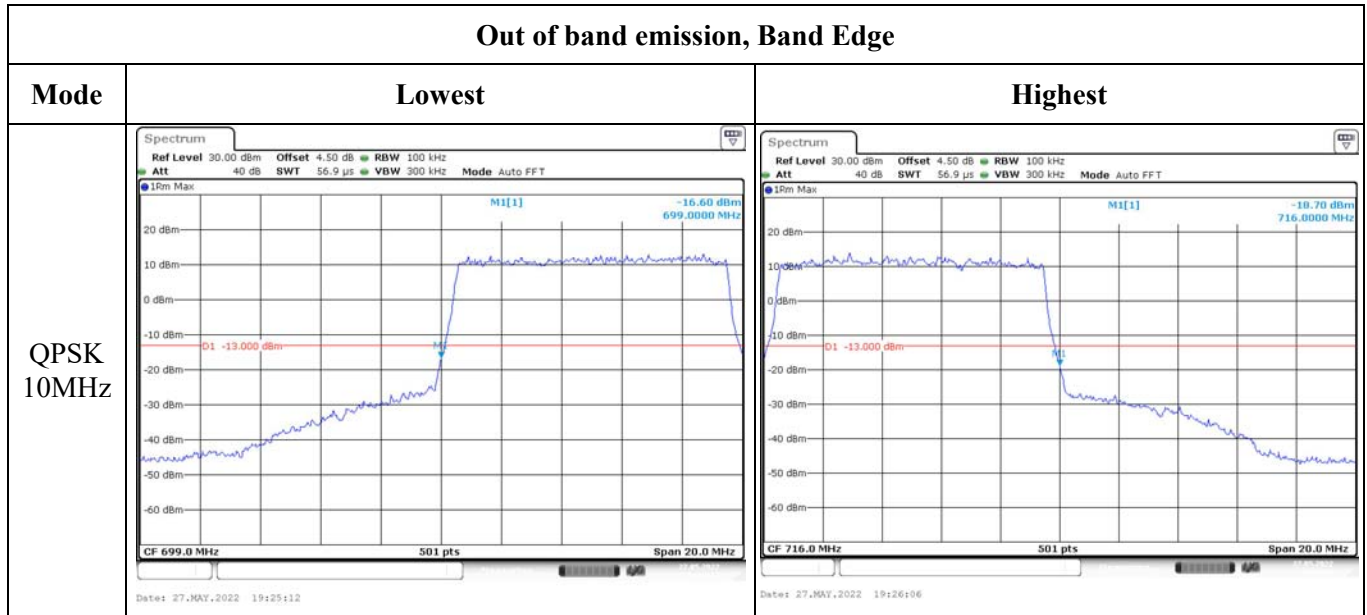
Highest



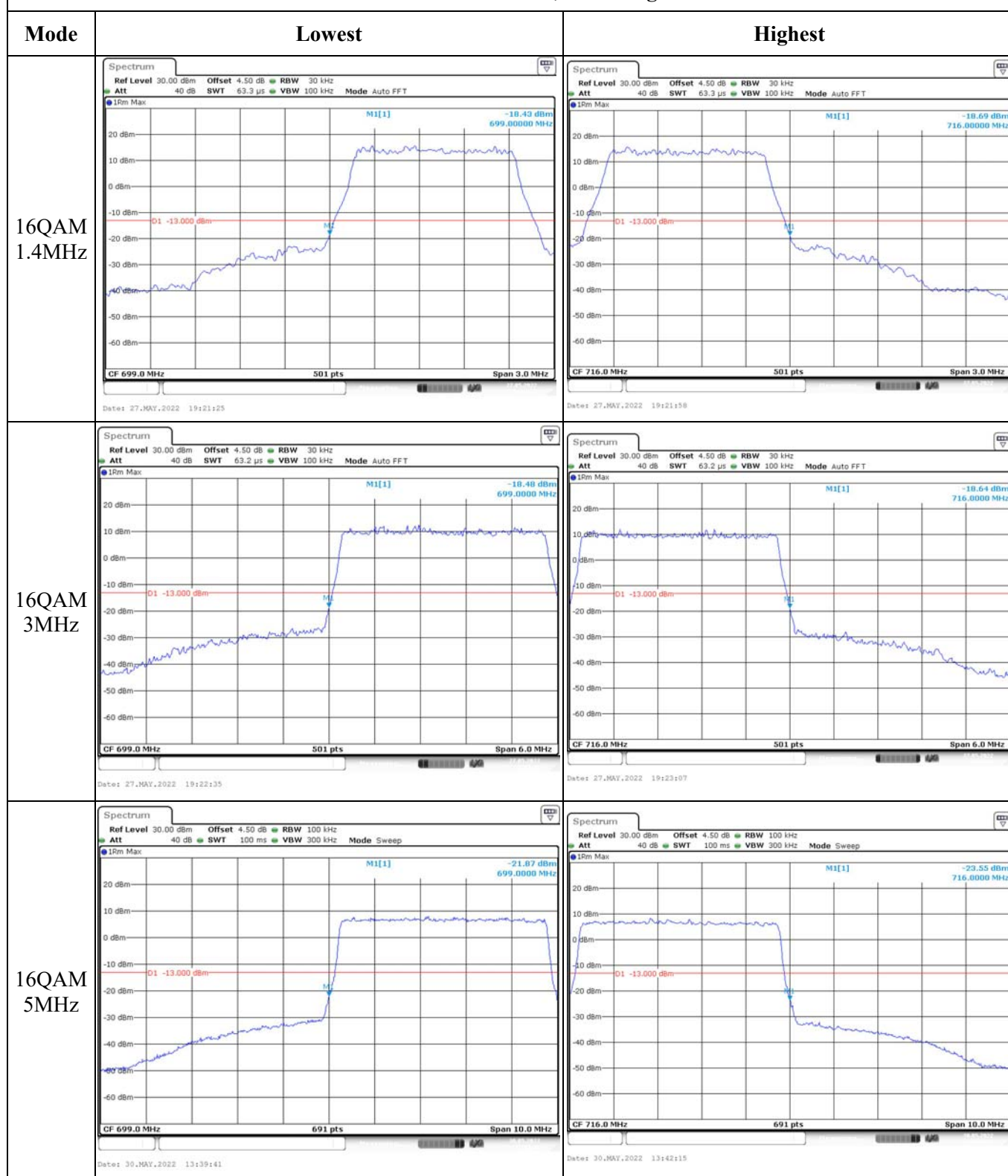
Out of band emission, Band Edge



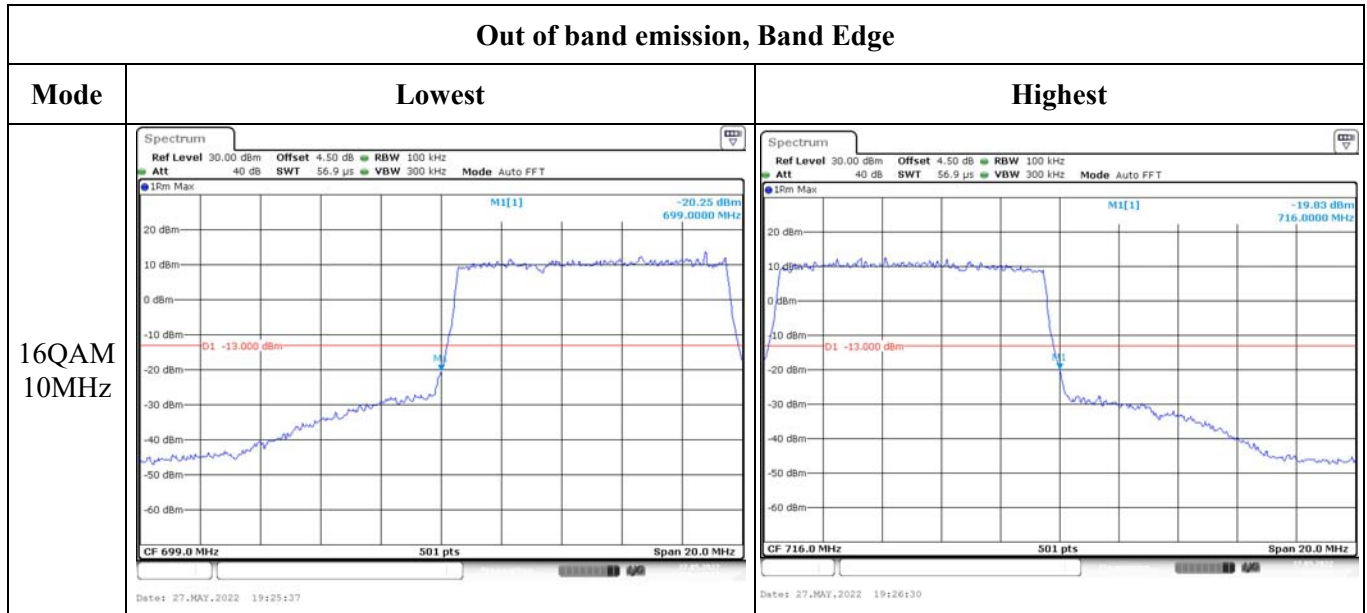
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.5 Antenna Port Test Data and Results for LTE Band 13

Serial Number:	CR22030086-RF-S1/3	Test Date:	2022-05-27~2022-07-05
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ada Yan	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.1~27	Relative Humidity: (%)	61~66	ATM Pressure: (kPa)	99.8~100.1
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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	2021-10-10	2022-10-09
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
R&S	Wideband Radio	CMW500	110479	2021-10-26	2022-10-25
Weinschel	Coaxial Attenuator	53-20-34	LN751	Each time	N/A
BACL	TEMP&HUMI Test Chamber	BTH-150	30026	2021-07-22	2022-07-21
UNI-T	Multimeter	UT39A+	C210582554	2021-07-22	2022-07-21
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	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).*

EUT Information@LTE Band 13▲:

Antenna Gain (dBi):	-2.1	Antenna Gain (dBd):	-4.25	Cable Loss (dB):	0
Operation Voltage(V _{DC}):					
Lowest:	3.5	Normal:	3.8	Highest:	4.35

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	779.5	/	784.5
10MHz	/	782	/

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	21.45	/	21.71	17.54	34.77
	RB1#13	21.54	/	21.79		
	RB1#24	21.73	/	21.75		
	RB15#0	20.71	/	20.68		
	RB15#10	20.70	/	20.78		
	RB25#0	20.70	/	20.71		
5MHz 16QAM	RB1#0	20.17	/	20.64	16.81	34.77
	RB1#13	20.00	/	20.82		
	RB1#24	20.24	/	20.90		
	RB15#0	19.64	/	19.56		
	RB15#10	19.49	/	19.77		
	RB25#0	19.78	/	19.57		
10MHz QPSK	RB1#0	/	21.24	/	17.55	34.77
	RB1#25	/	21.80	/		
	RB1#49	/	21.79	/		
	RB25#0	/	20.68	/		
	RB25#25	/	20.86	/		
	RB50#0	/	20.73	/		
10MHz 16QAM	RB1#0	/	20.76	/	17.08	34.77
	RB1#25	/	21.10	/		
	RB1#49	/	21.33	/		
	RB25#0	/	19.50	/		
	RB25#25	/	19.45	/		
	RB50#0	/	19.46	/		

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)

Result:**Pass****Peak-to-average Ratio(PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	/	4.87	/	13
	RB50#0	/	5.16	/	13
10MHz 16QAM	RB1#0	/	5.91	/	13
	RB50#0	/	6.17	/	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	4.531	/	4.511	5.06	/	4.98
5MHz 16QAM	4.531	/	4.511	5.04	/	5
10MHz QPSK	/	8.942	/	/	9.64	/
10MHz 16QAM	/	8.902	/	/	9.64	/

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	777.249	777.00	786.759	787.00
	-20	3.8	777.245	777.00	786.763	787.00
	-10	3.8	777.248	777.00	786.762	787.00
	0	3.8	777.248	777.00	786.756	787.00
	10	3.8	777.249	777.00	786.757	787.00
	20	3.8	777.245	777.00	786.756	787.00
	30	3.8	777.241	777.00	786.751	787.00
	40	3.8	777.244	777.00	786.756	787.00
Frequency Stability vs. Voltage	20	3.5	777.242	777.00	786.750	787.00
	20	4.35	777.245	777.00	786.752	787.00
	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	777.248	777.00	786.758	787.00
	-20	3.8	777.245	777.00	786.762	787.00
	-10	3.8	777.246	777.00	786.759	787.00
	0	3.8	777.247	777.00	786.763	787.00
	10	3.8	777.262	777.00	786.756	787.00
	20	3.8	777.245	777.00	786.756	787.00
	30	3.8	777.245	777.00	786.755	787.00
	40	3.8	777.242	777.00	786.756	787.00
	50	3.8	777.241	777.00	786.750	787.00
Frequency Stability vs. Voltage	20	3.5	777.245	777.00	786.752	787.00
	20	4.35	777.242	777.00	786.751	787.00
					Result:	Pass

Test Plots:

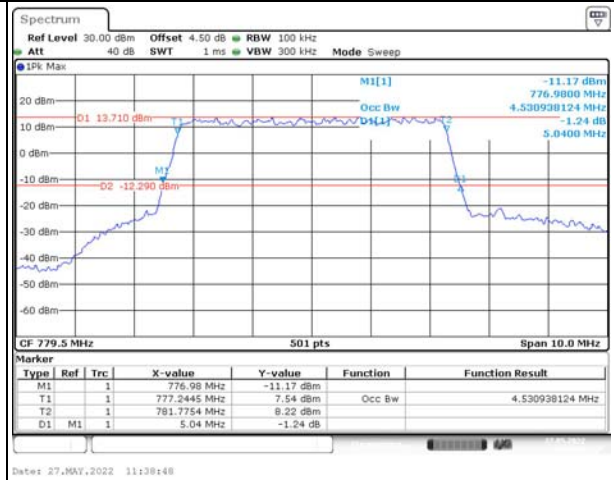
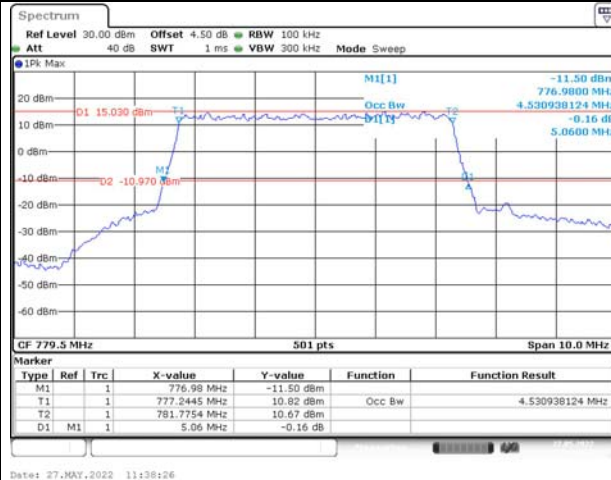
Occupied Bandwidth

Channel

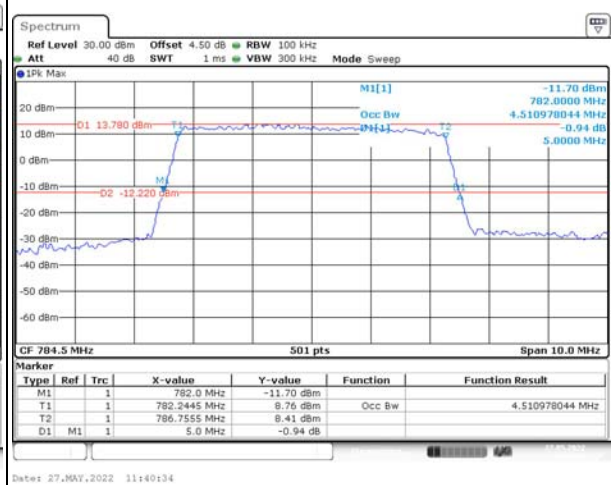
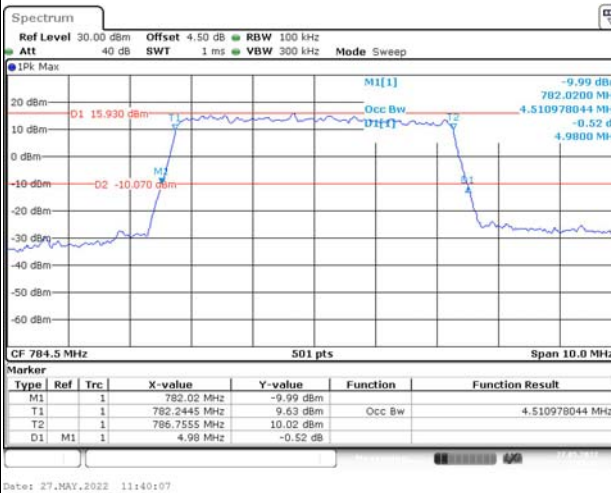
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

Lowest



Highest



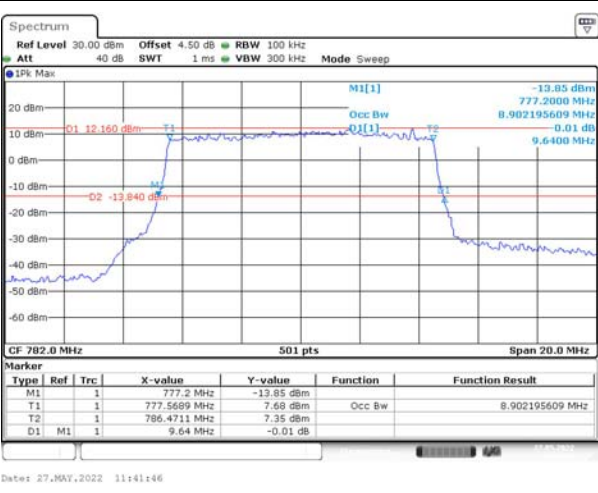
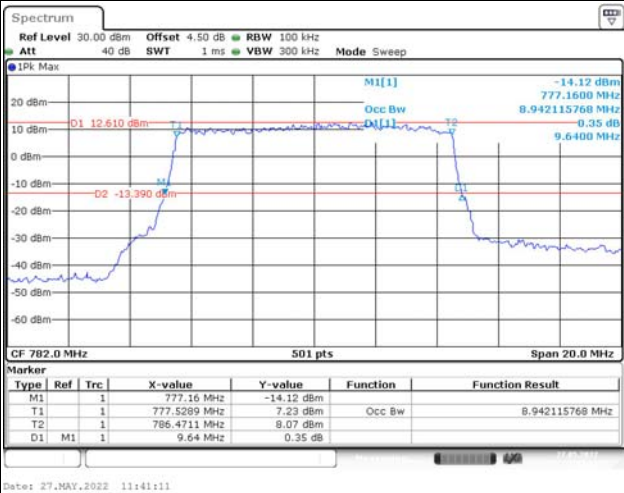
Occupied Bandwidth

Channel

10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Middle

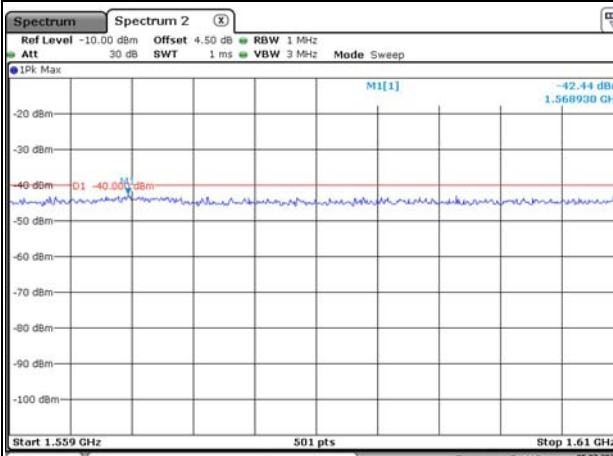
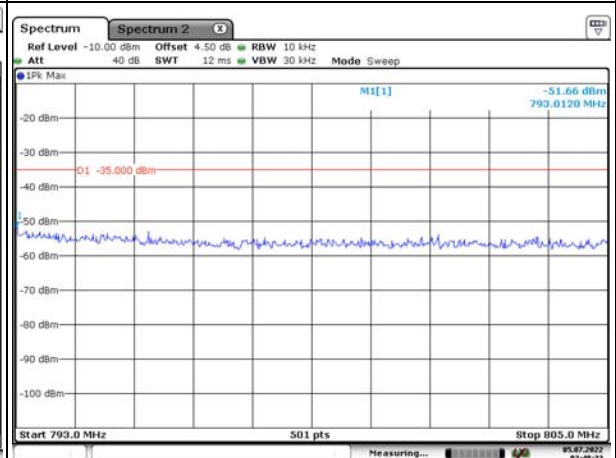
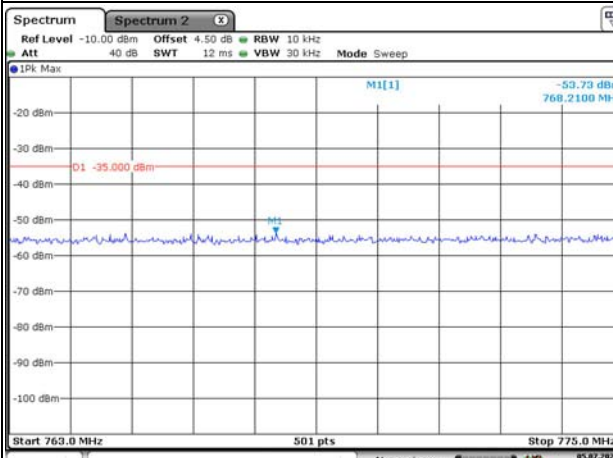
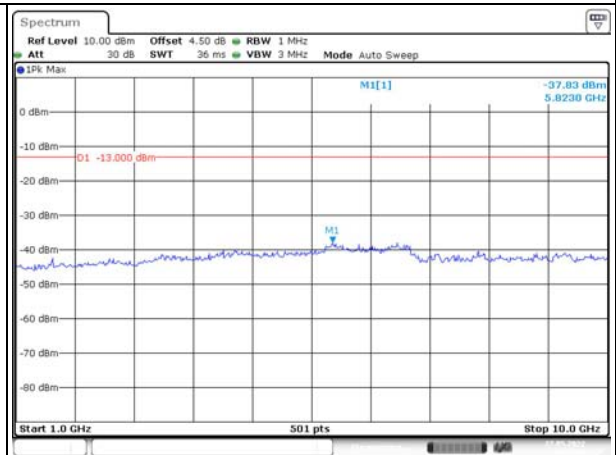
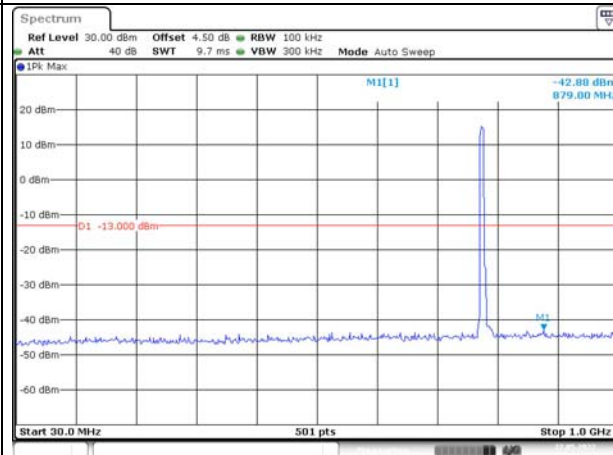


Spurious Emissions at Antenna Terminal

Channel

5MHz Bandwidth QPSK

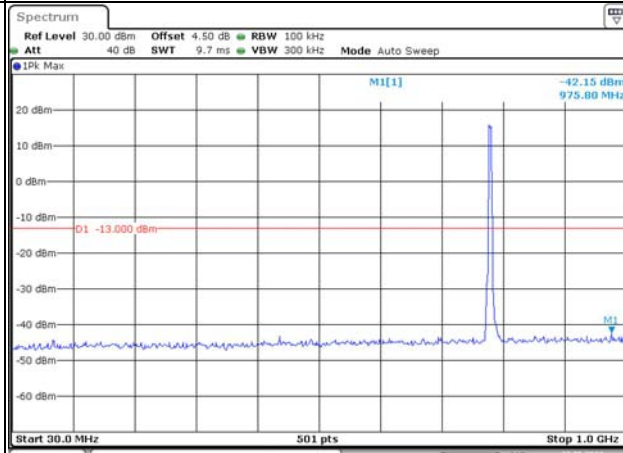
Lowest



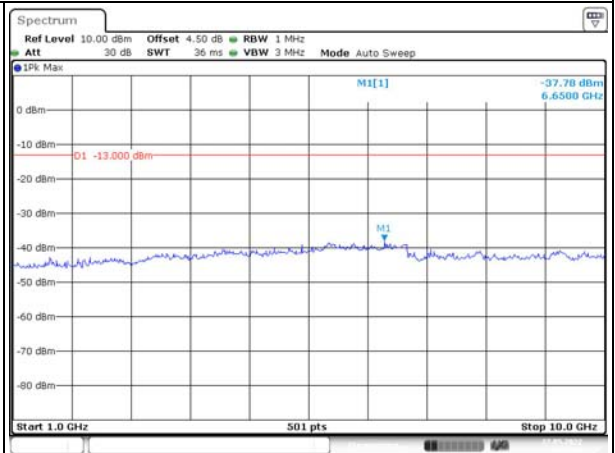
Spurious Emissions at Antenna Terminal

Channel

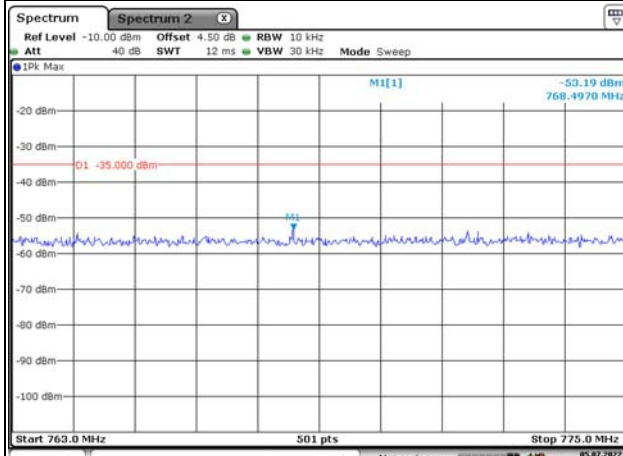
5MHz Bandwidth QPSK



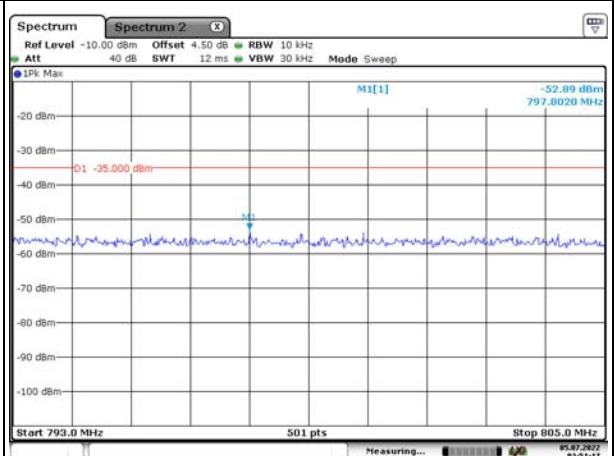
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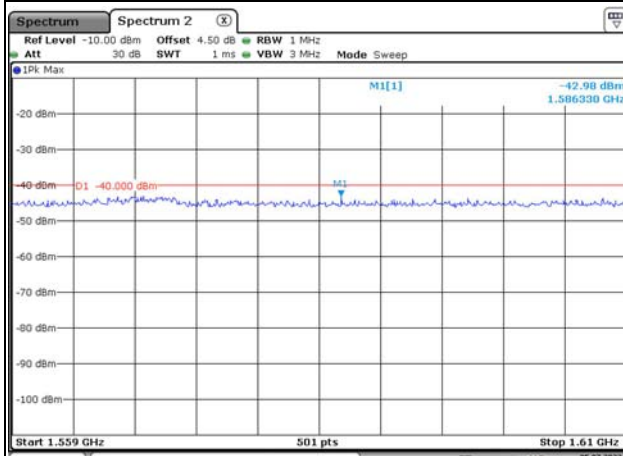
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Date: 5.JUL.2022 03:43:37



Date: 5.JUL.2022 03:51:18



Date: 5.JUL.2022 03:55:19

Highest

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