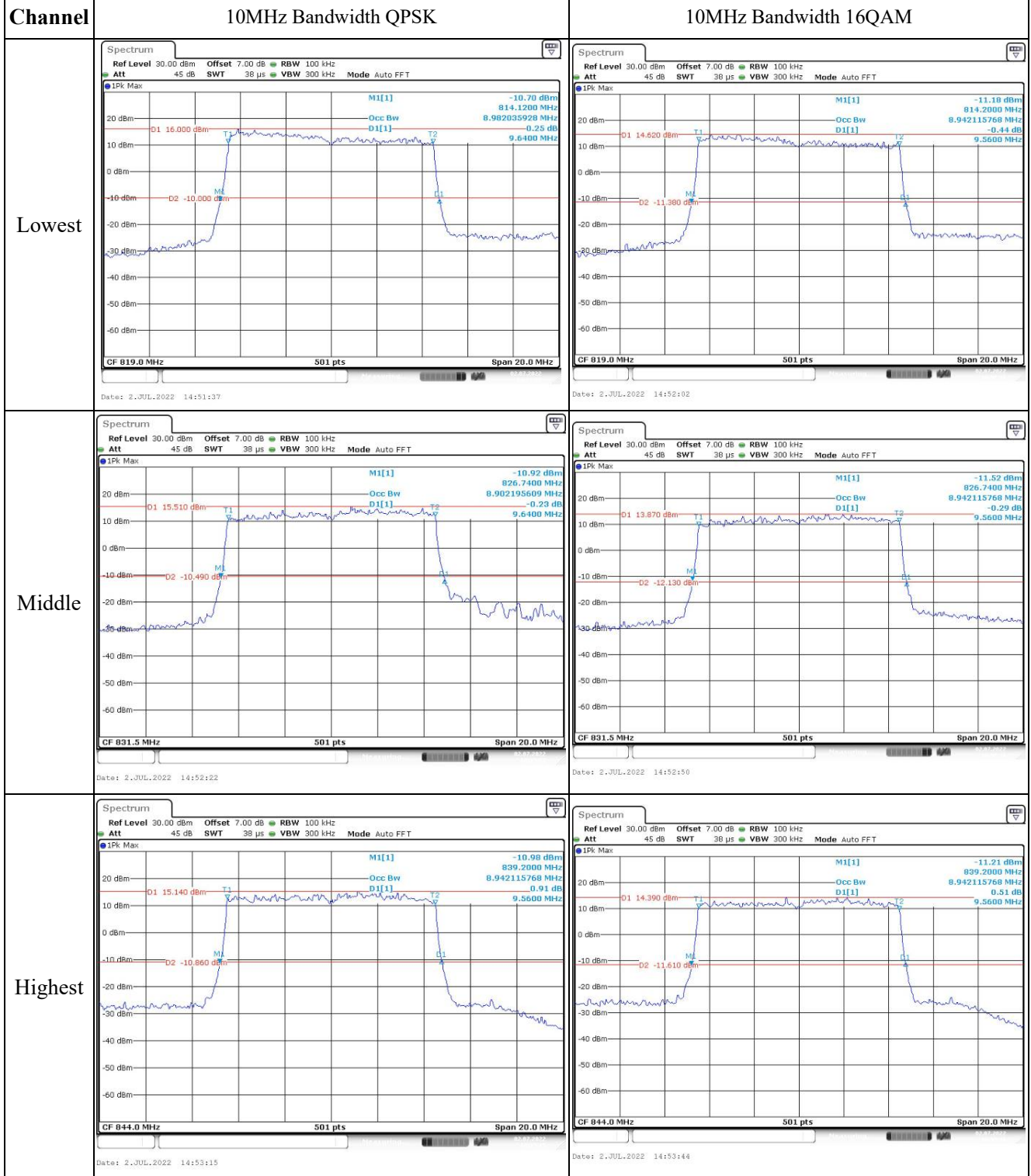
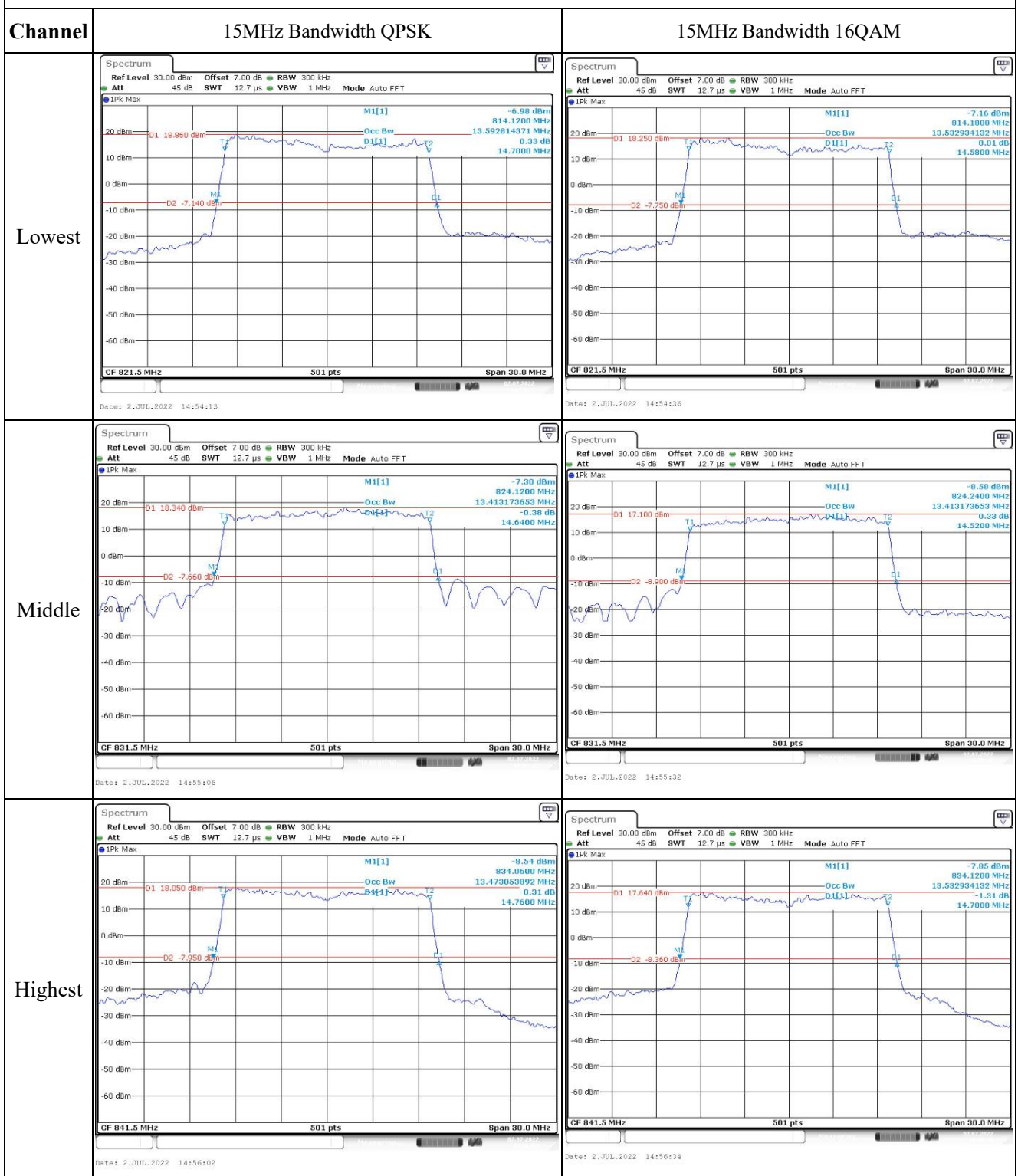


Occupied Bandwidth



Occupied Bandwidth

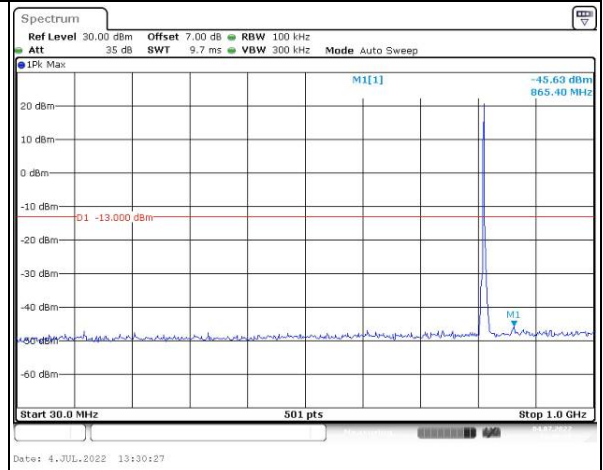
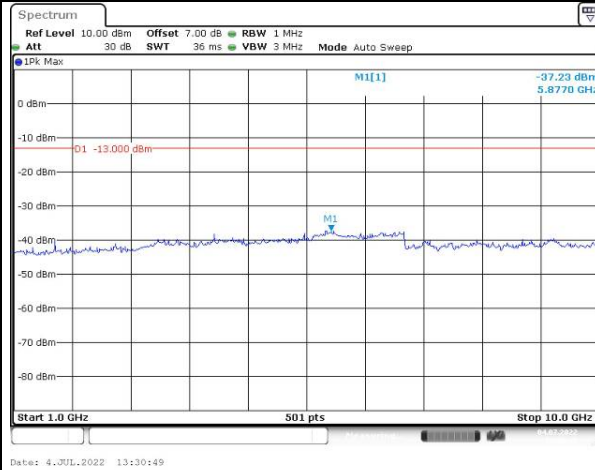


Spurious Emissions at Antenna Terminal

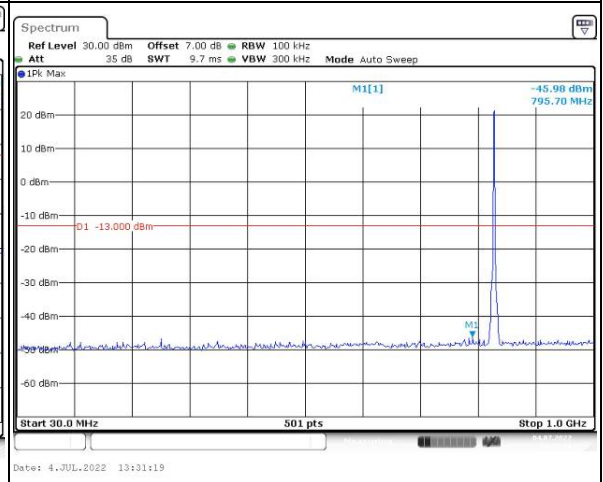
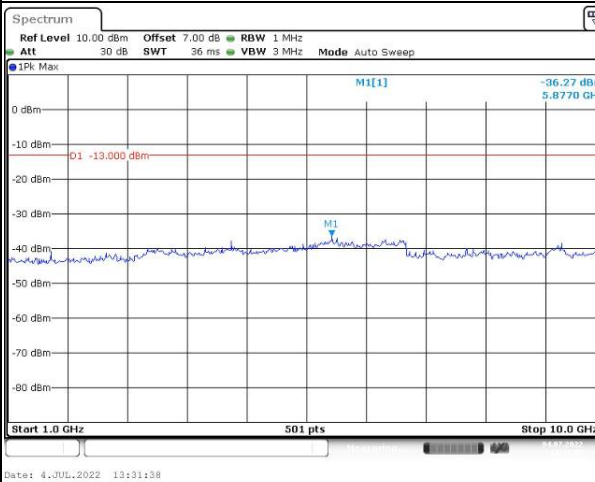
Channel

1.4MHz Bandwidth QPSK

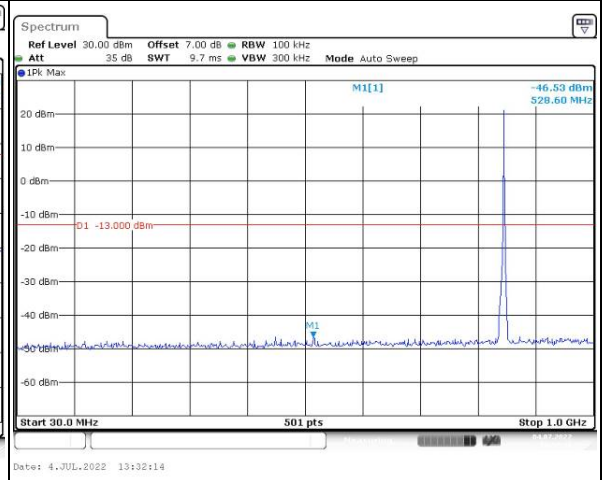
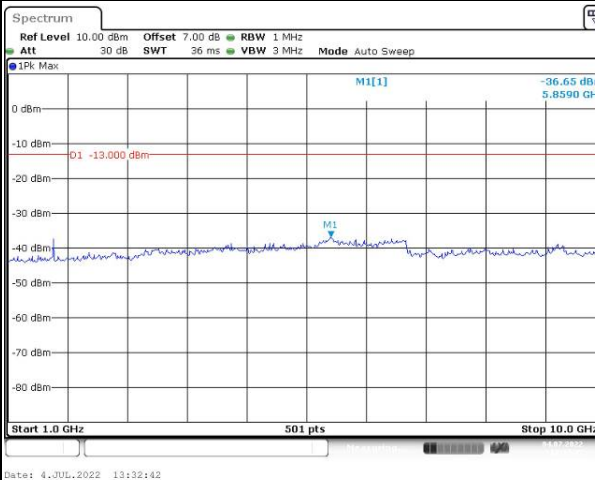
Lowest



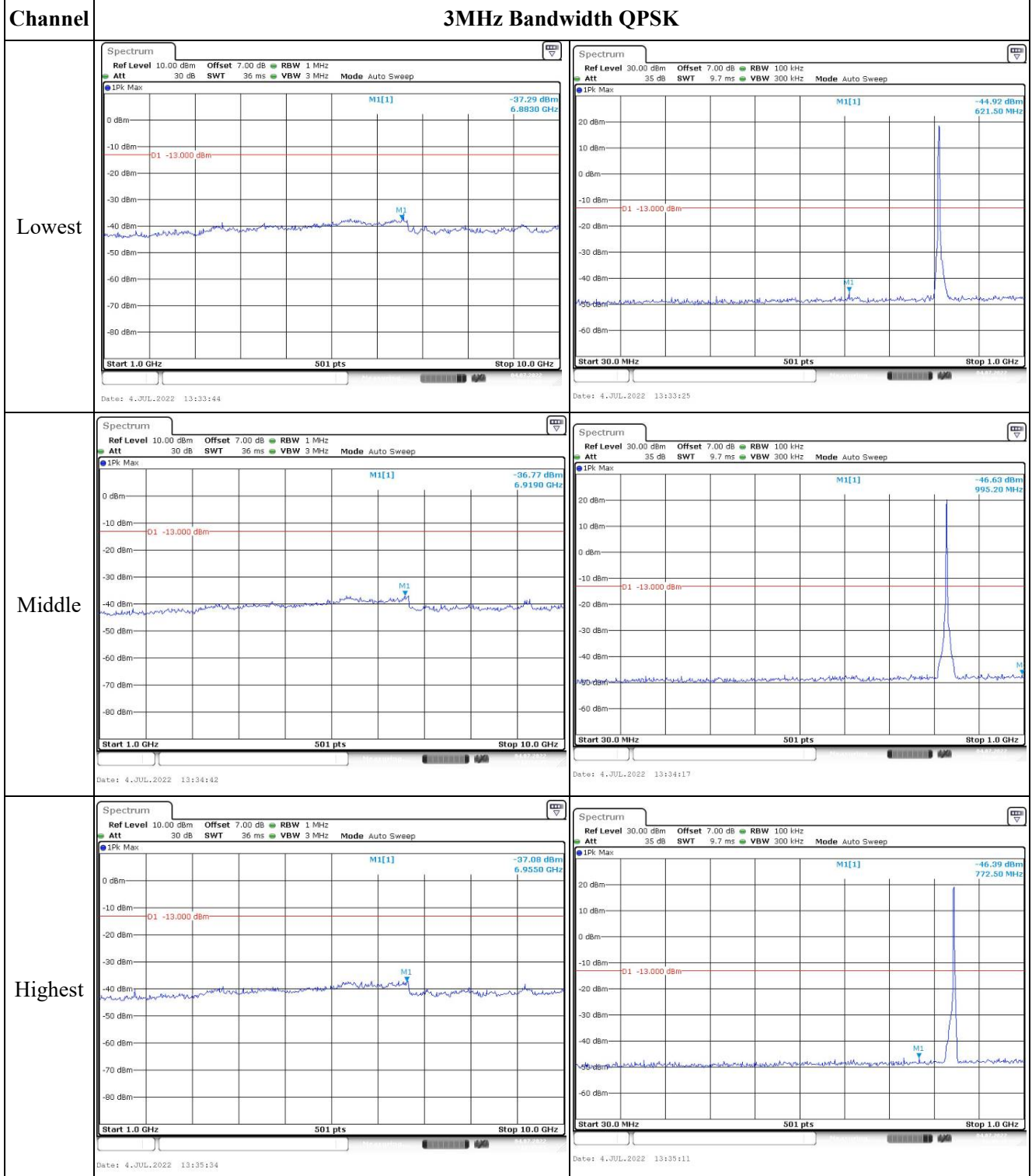
Middle



Highest



Spurious Emissions at Antenna Terminal

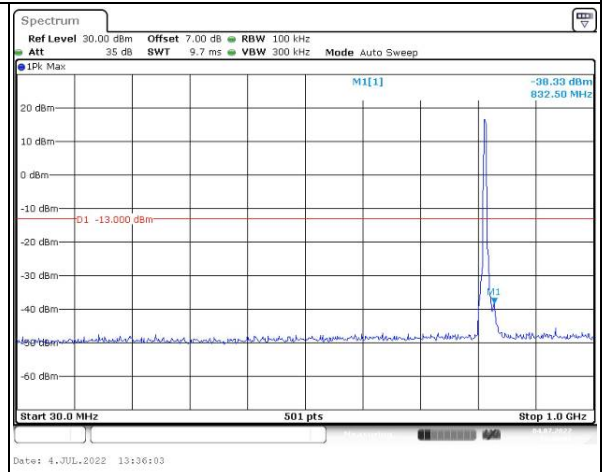
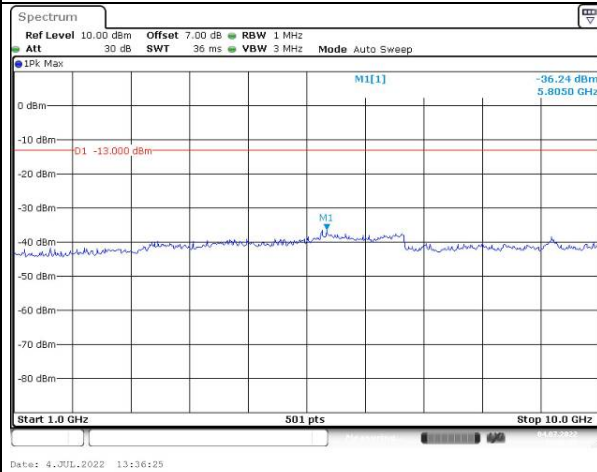


Spurious Emissions at Antenna Terminal

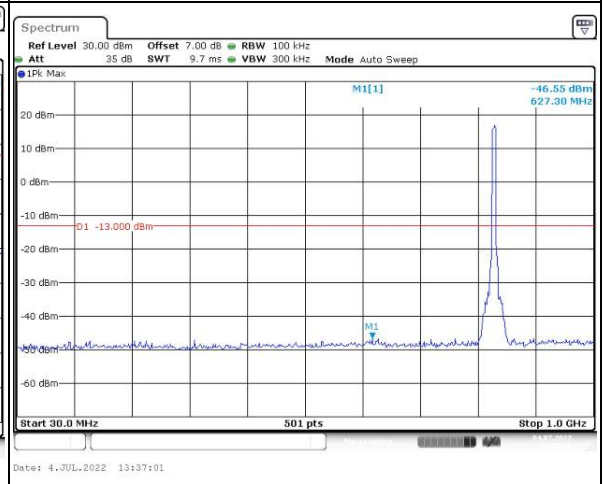
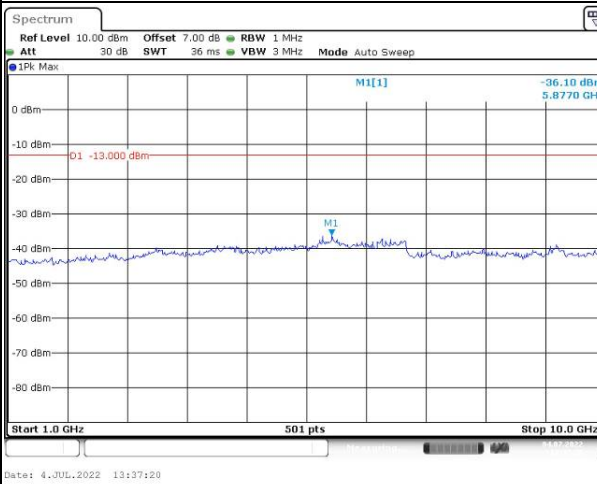
Channel

5MHz Bandwidth QPSK

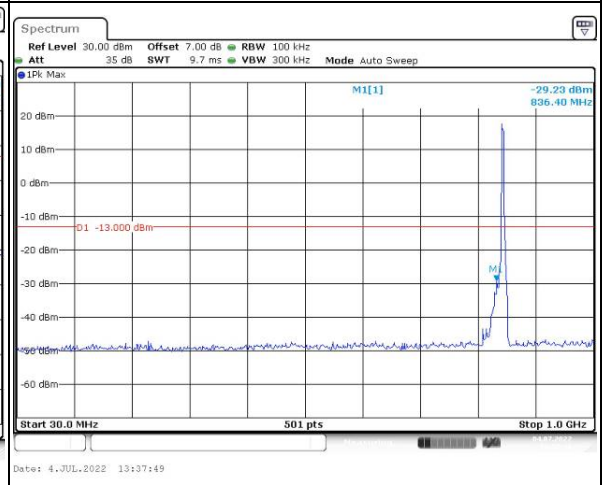
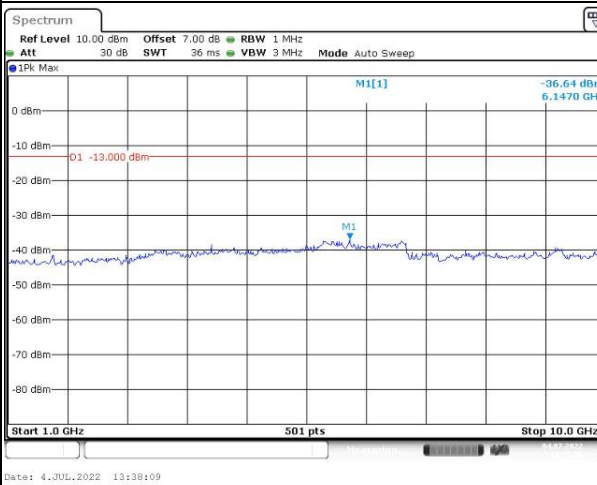
Lowest



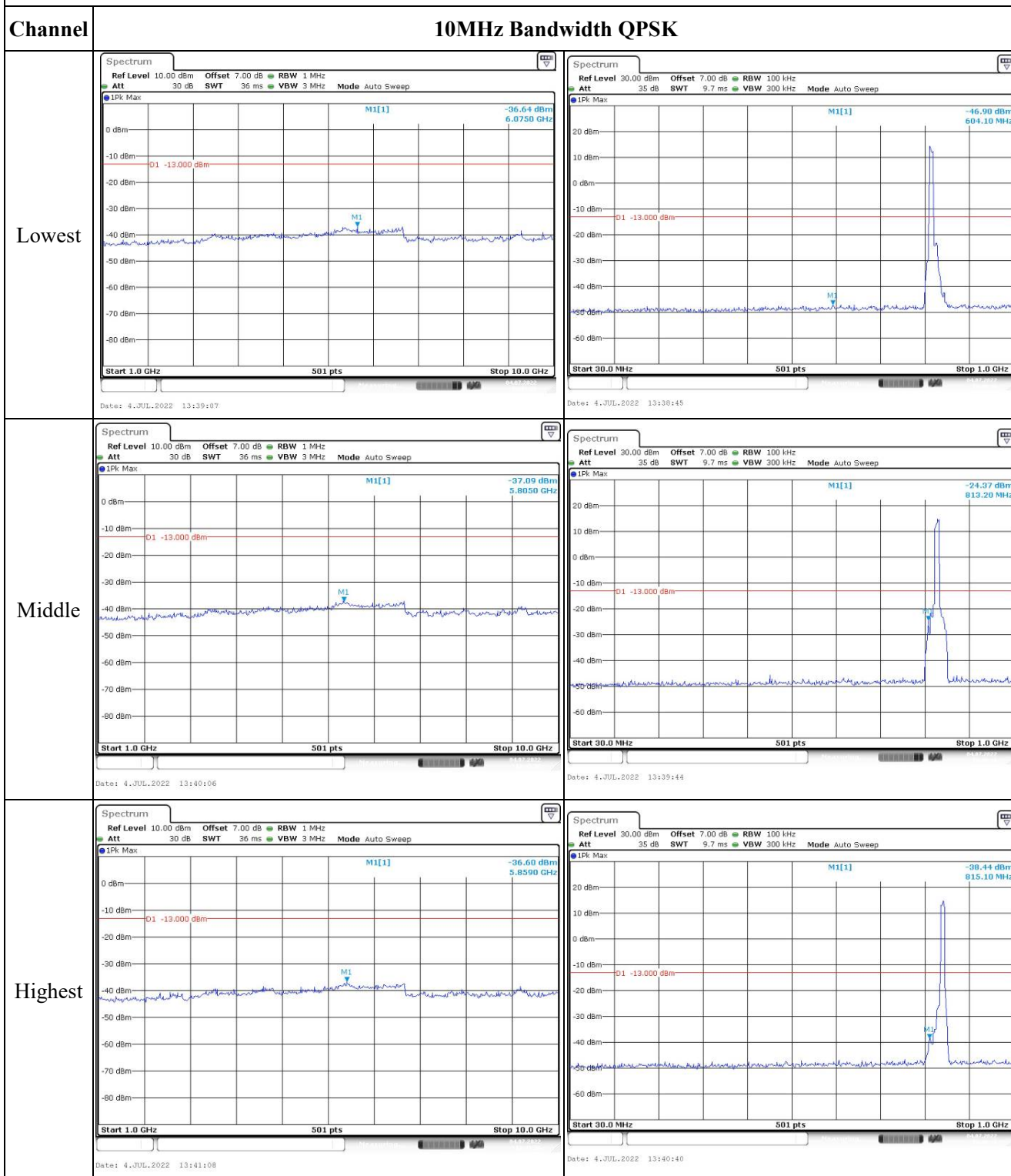
Middle



Highest



Spurious Emissions at Antenna Terminal

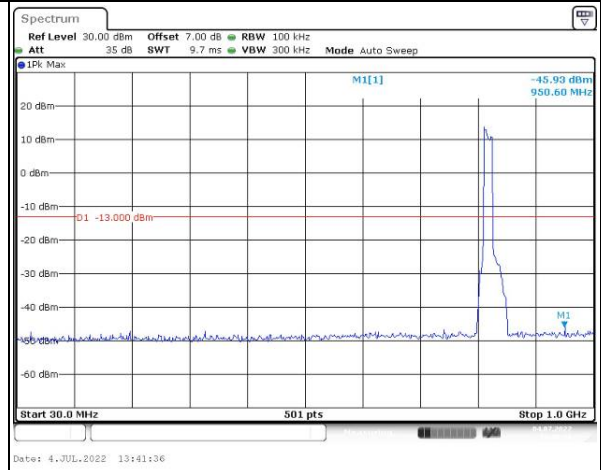
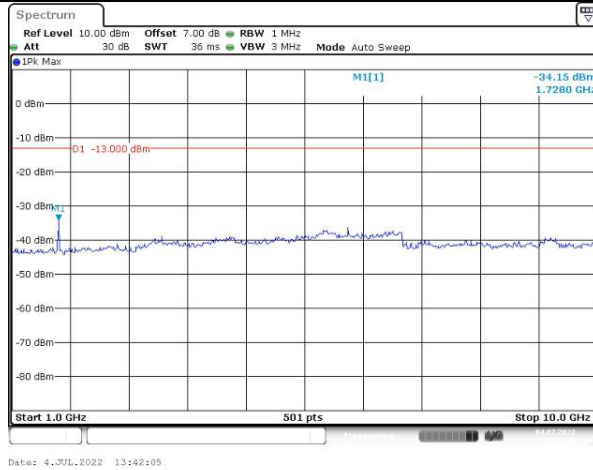


Spurious Emissions at Antenna Terminal

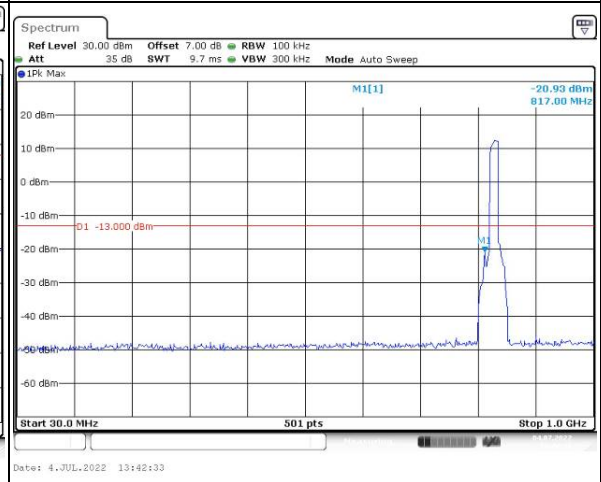
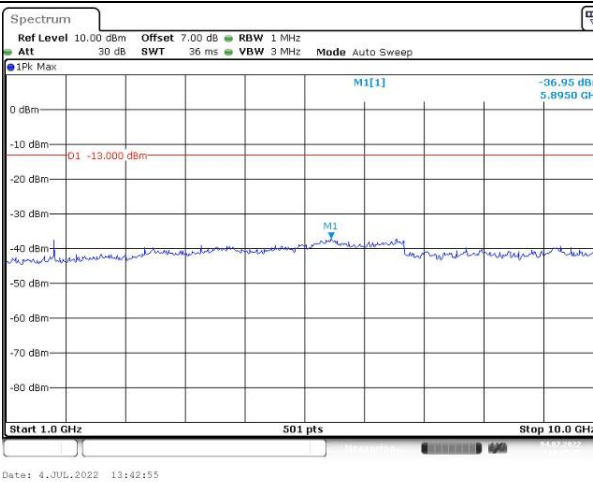
Channel

15MHz Bandwidth QPSK

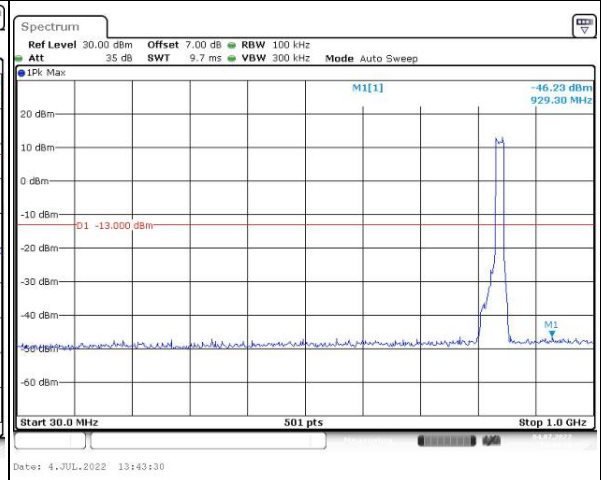
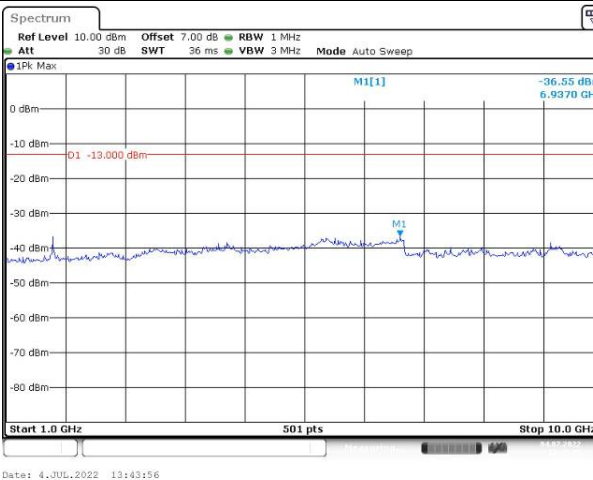
Lowest



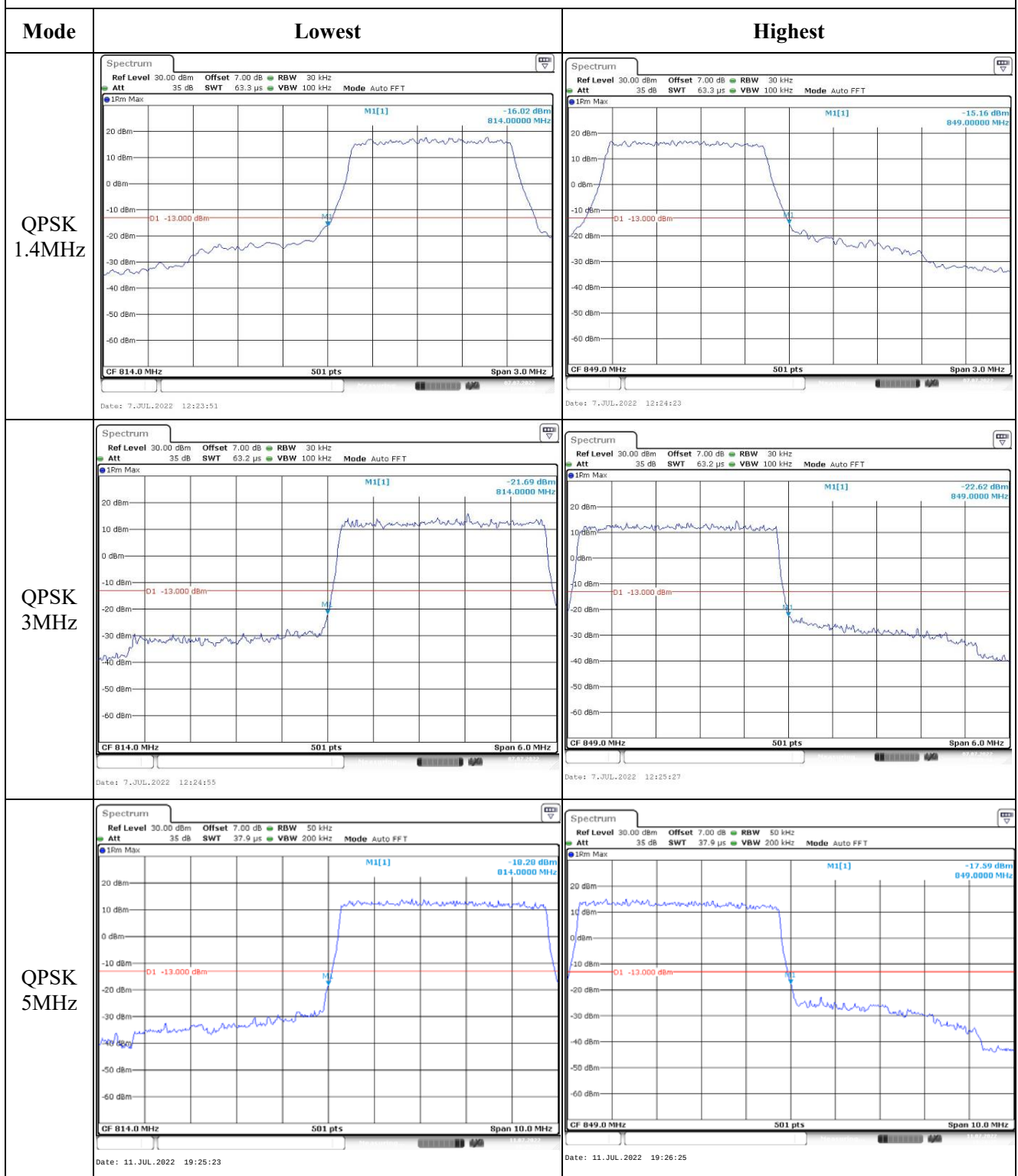
Middle



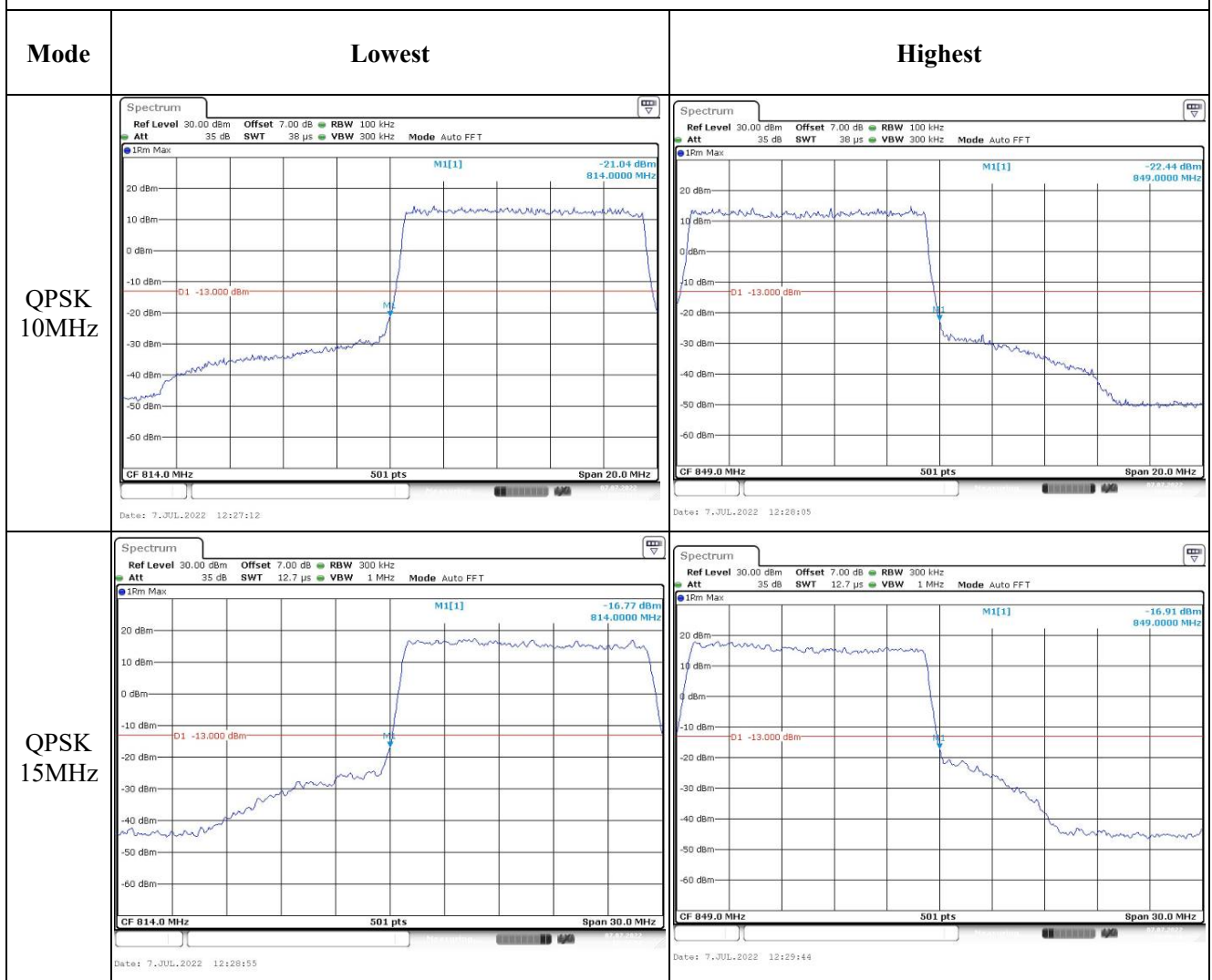
Highest



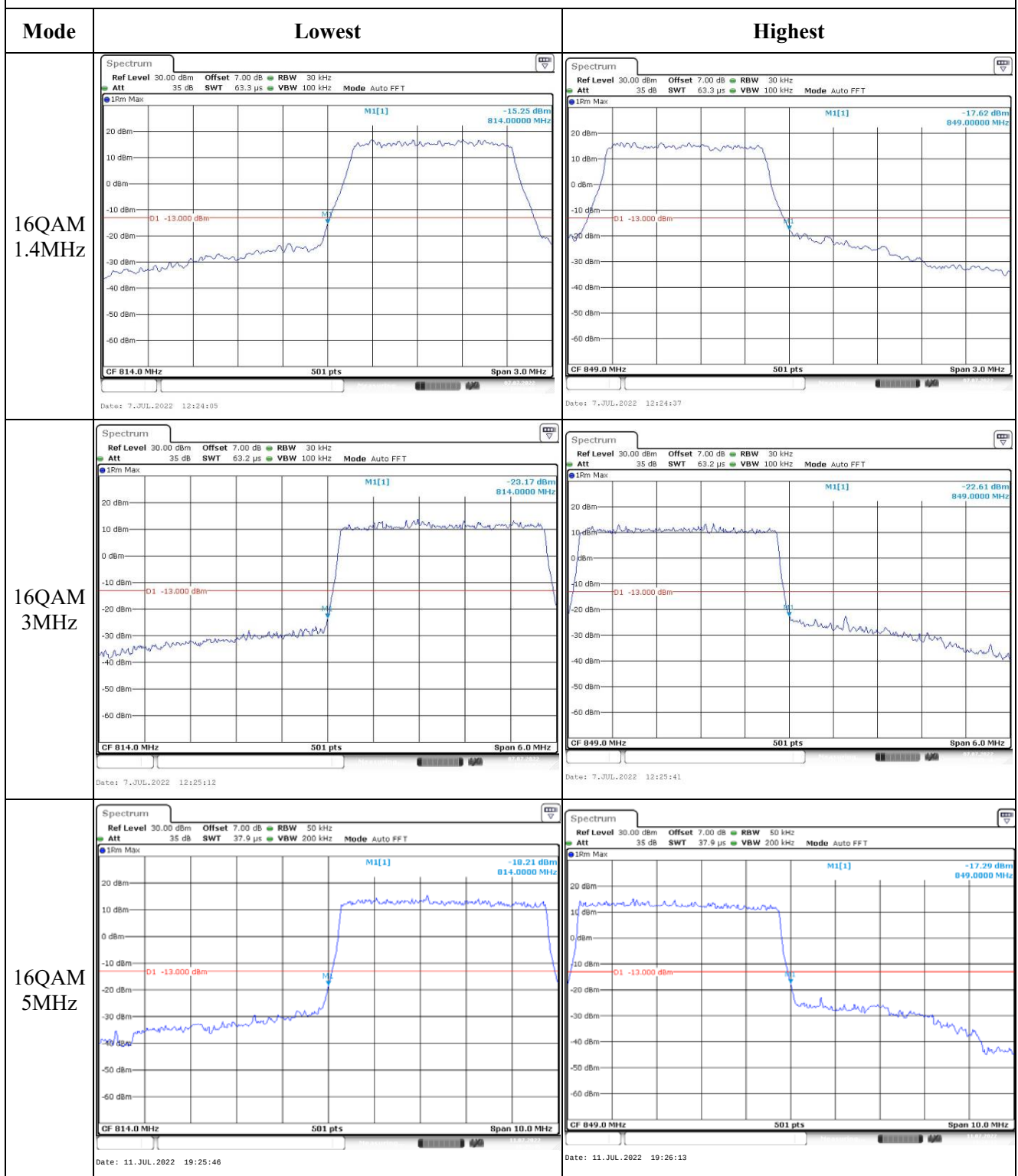
Out of band emission, Band Edge



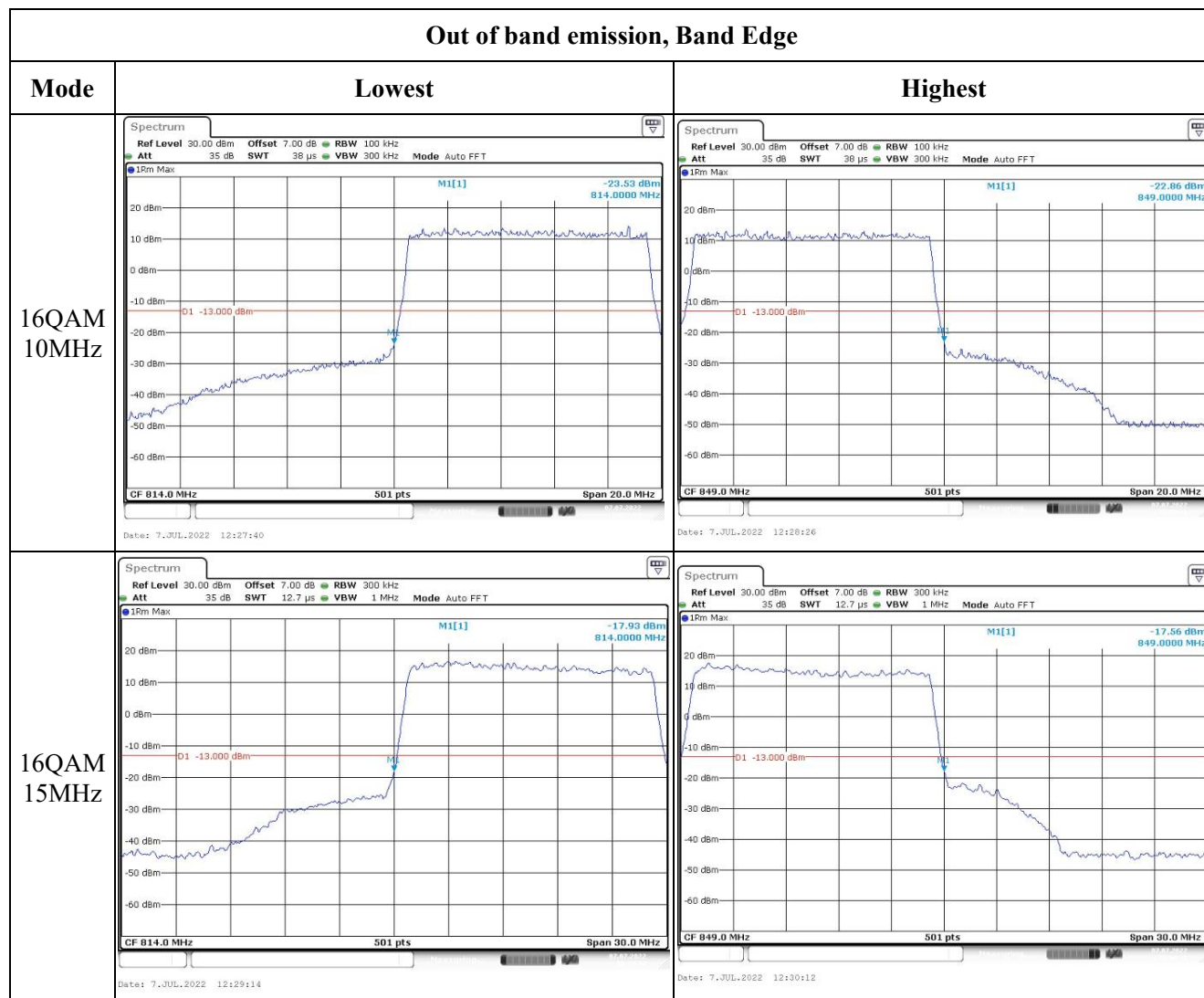
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



4.13 Antenna Port Test Data and Results for LTE Band 38

Serial Number:	CR220050079-RF-S1	Test Date:	2022/7/7~2022/7/11
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ted Min	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6~25.3	Relative Humidity: (%)	49~55	ATM Pressure: (kPa)	100.0~100.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2021-10-10	2022-10-09
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-21	2022-07-20
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108042	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100003	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 38▲:

Antenna Gain (dBi):	0.72	Path Loss L_c (dB):	0
Operation Voltage(V_{DC}):			
Lowest:	3.42	Normal:	3.8
		Highest:	4.18

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	21.93	22.01	21.92	22.87	33
	RB1#13	22	22.12	21.95		
	RB1#24	22.07	22.15	22.06		
	RB15#0	21.91	22.06	21.97		
	RB15#10	22.03	22.02	22		
	RB25#0	21.58	21.69	21.58		
5MHz 16QAM	RB1#0	21.62	21.64	21.51	22.55	33
	RB1#13	21.78	21.76	21.68		
	RB1#24	21.83	21.82	21.79		
	RB15#0	21.56	21.53	21.48		
	RB15#10	21.49	21.51	21.4		
	RB25#0	21.13	21.15	21.06		
10MHz QPSK	RB1#0	21.79	22.03	22.04	22.76	33
	RB1#25	21.79	21.99	22.02		
	RB1#49	21.8	21.95	22		
	RB25#0	21.72	21.8	21.87		
	RB25#25	21.8	21.83	21.88		
	RB50#0	21.39	21.56	21.56		
10MHz 16QAM	RB1#0	21.57	21.68	21.68	22.58	33
	RB1#25	21.7	21.71	21.76		
	RB1#49	21.8	21.81	21.86		
	RB25#0	21.68	21.66	21.65		
	RB25#25	21.75	21.7	21.66		
	RB50#0	21.27	21.37	21.35		
15MHz QPSK	RB1#0	21.83	21.73	21.91	22.69	33
	RB1#38	21.79	21.69	21.9		
	RB1#74	21.85	21.8	21.92		
	RB36#0	21.67	21.6	21.85		
	RB36#39	21.79	21.73	21.97		
	RB75#0	21.33	21.2	21.6		
15MHz 16QAM	RB1#0	21.51	21.37	21.59	22.53	33
	RB1#38	21.63	21.53	21.66		
	RB1#74	21.7	21.64	21.81		
	RB36#0	21.67	21.47	21.77		
	RB36#39	21.7	21.54	21.8		
	RB75#0	21.25	21.11	21.43		

20MHz QPSK	RB1#0	21.87	21.85	21.96	22.92	33
	RB1#50	21.91	21.96	22.06		
	RB1#99	21.98	22.06	22.2		
	RB50#0	21.7	21.95	22.02		
	RB50#50	21.67	21.86	21.99		
	RB100#0	21.32	21.41	21.53		
20MHz 16QAM	RB1#0	21.38	21.48	21.51	22.66	33
	RB1#50	21.73	21.78	21.94		
	RB1#99	21.6	21.67	21.71		
	RB50#0	21.39	21.41	21.49		
	RB50#50	21.44	21.38	21.51		
	RB100#0	21.14	21.03	21.16		
Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(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	3.08	3.17	3.12	13
	RB100#0	5.13	5.01	5.15	13
20MHz 16QAM	RB1#0	4.09	4.18	4.08	13
	RB100#0	6.22	6.19	6.25	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	5.02	5.26	5.32
5MHz 16QAM	4.511	4.511	4.511	5.28	5.22	5.08
10MHz QPSK	8.942	8.942	8.942	9.6	9.72	9.56
10MHz 16QAM	8.942	8.942	8.942	9.6	9.52	9.96
15MHz QPSK	13.473	13.473	13.413	15	15.24	14.64
15MHz 16QAM	13.473	13.533	13.533	15.78	15.18	15.3
20MHz QPSK	18.044	17.884	17.884	19.2	19.28	19.36
20MHz 16QAM	17.964	17.964	17.884	19.28	19.68	19.28
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

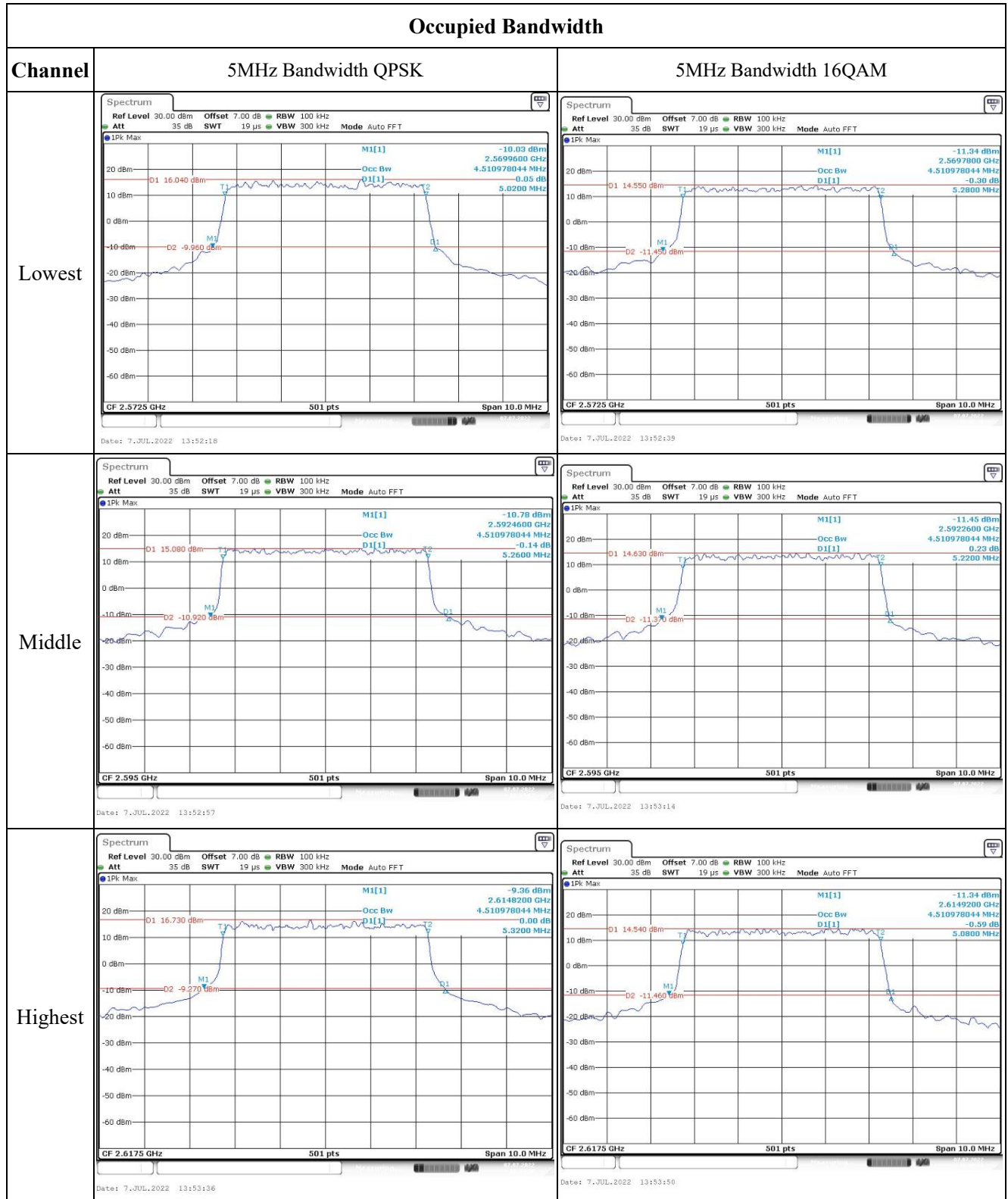
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability

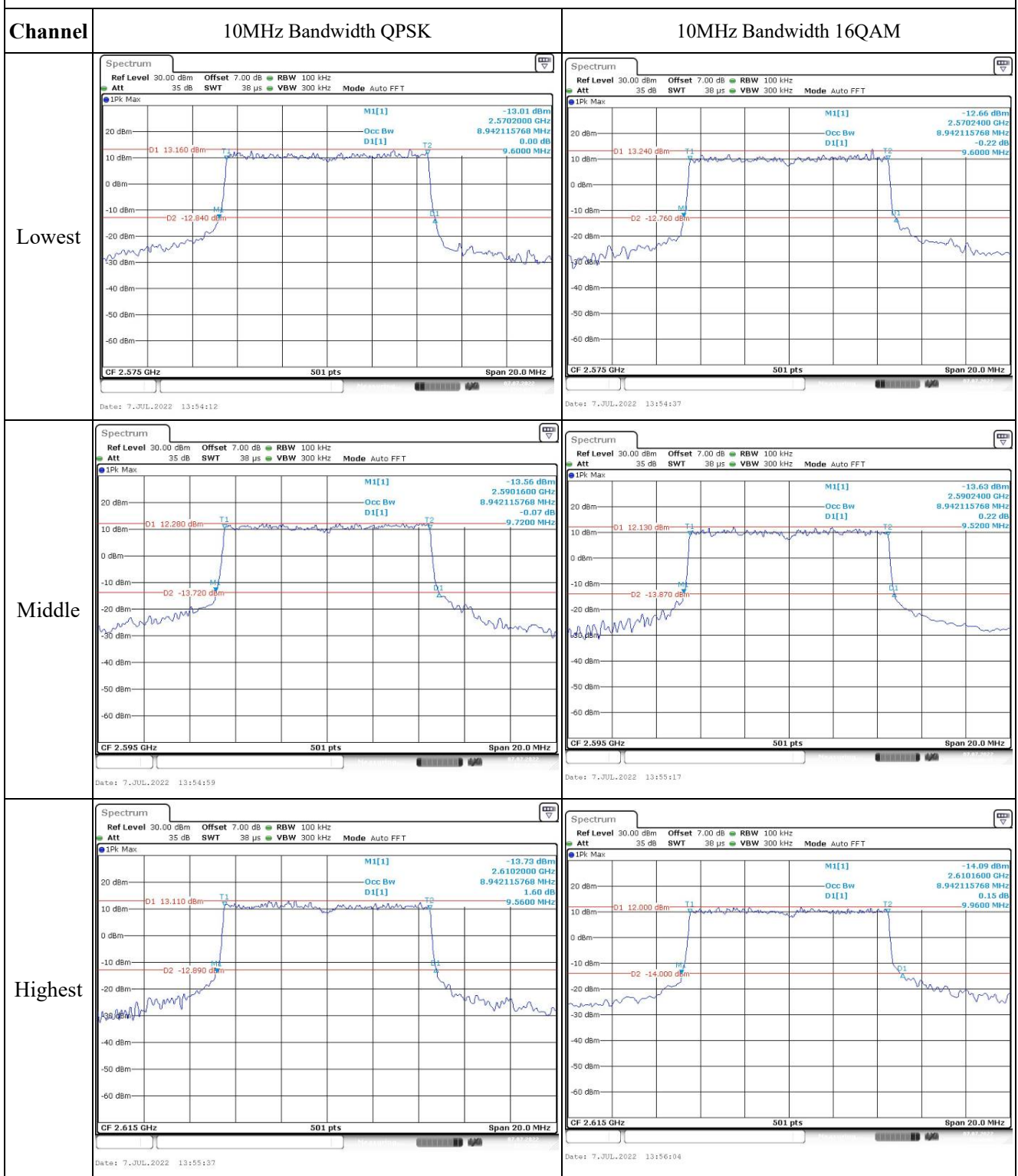
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	2570.270	2570.00	2619.768	2620
	-20	3.8	2570.316	2570.00	2619.701	2620
	-10	3.8	2570.229	2570.00	2619.840	2620
	0	3.8	2570.400	2570.00	2619.842	2620
	10	3.8	2570.347	2570.00	2619.817	2620
	20	3.8	2570.321	2570.00	2619.732	2620
	30	3.8	2570.209	2570.00	2619.777	2620
	40	3.8	2570.352	2570.00	2619.759	2620
	50	3.8	2570.377	2570.00	2619.863	2620
Frequency Stability vs. Voltage	20	3.42	2570.257	2570.00	2619.807	2620
	20	4.18	2570.220	2570.00	2619.723	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	2570.396	2570.00	2619.689	2620
	-20	3.8	2570.250	2570.00	2619.707	2620
	-10	3.8	2570.402	2570.00	2619.709	2620
	0	3.8	2570.277	2570.00	2619.860	2620
	10	3.8	2570.375	2570.00	2619.754	2620
	20	3.8	2570.240	2570.00	2619.781	2620
	30	3.8	2570.368	2570.00	2619.775	2620
	40	3.8	2570.408	2570.00	2619.826	2620
	50	3.8	2570.264	2570.00	2619.732	2620
Frequency Stability vs. Voltage	20	3.42	2570.348	2570.00	2619.694	2620
	20	4.18	2570.401	2570.00	2619.661	2620
Result:					Pass	

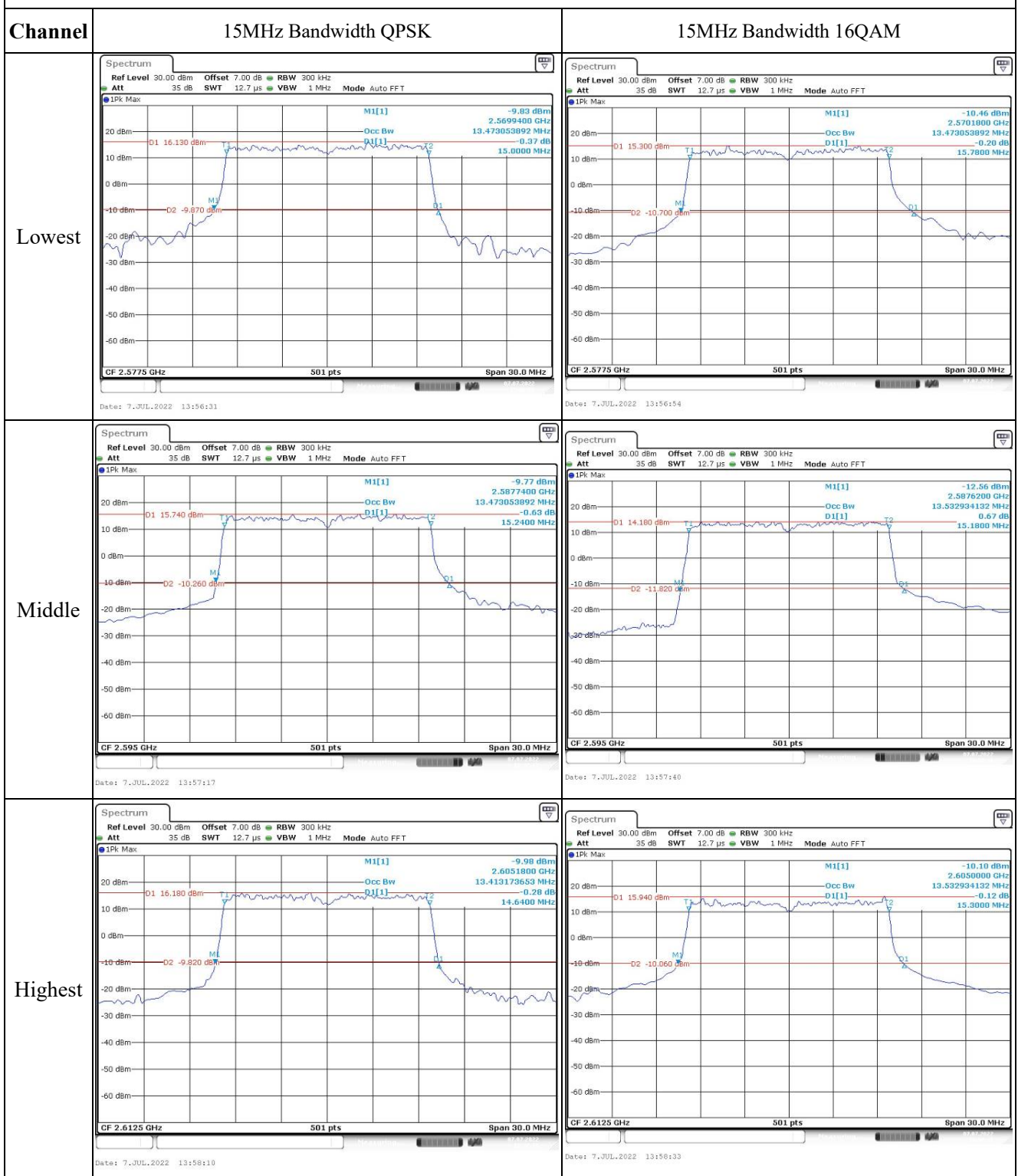
Test Plots:



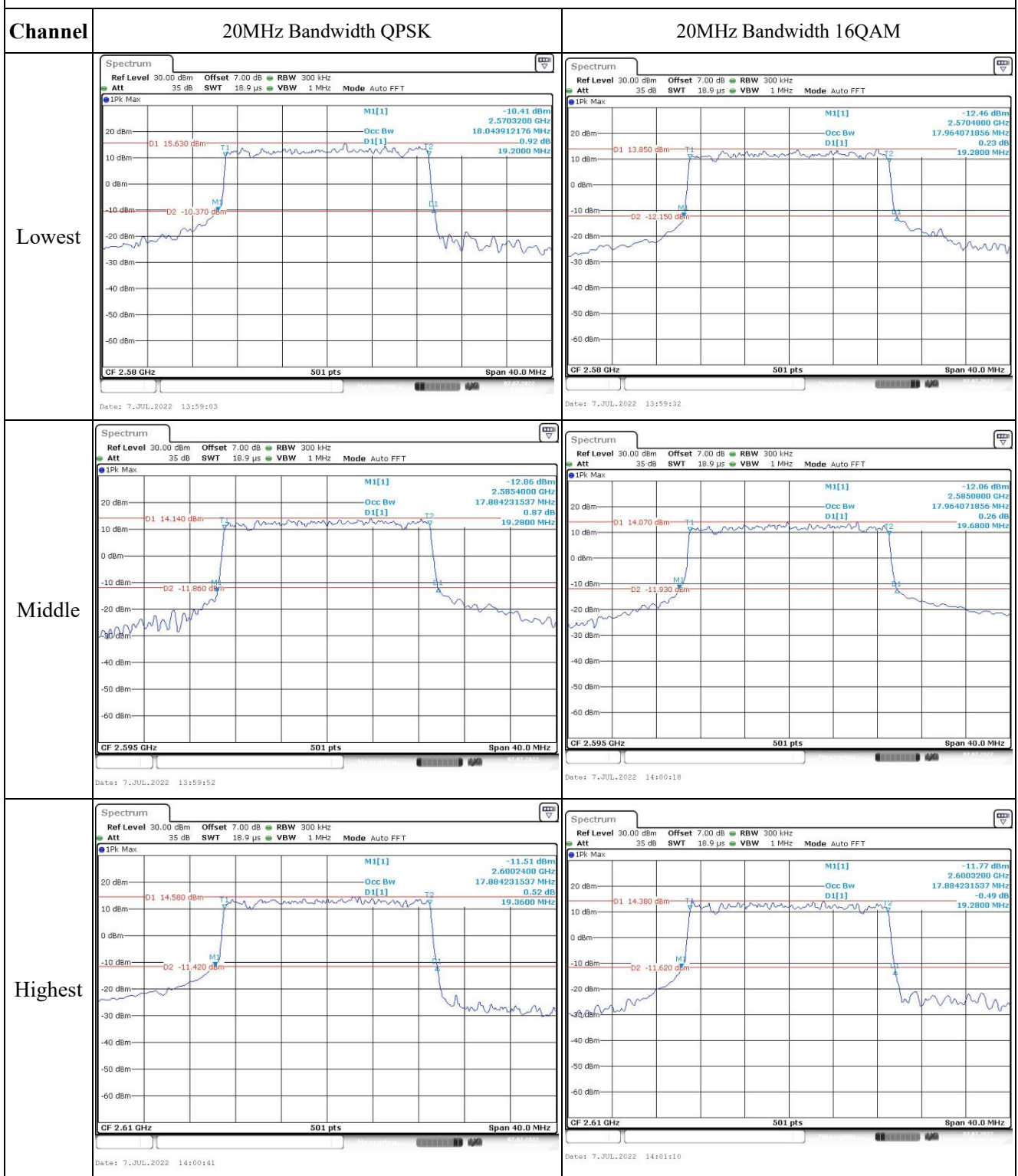
Occupied Bandwidth



Occupied Bandwidth



Occupied Bandwidth

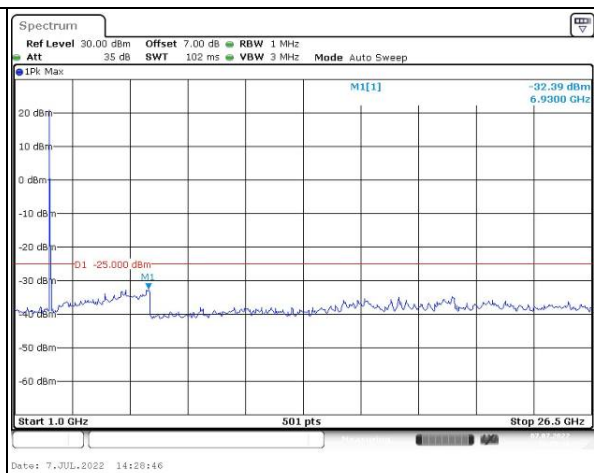
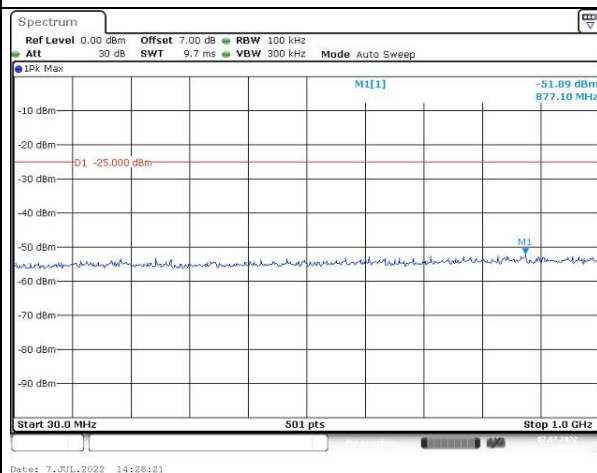


Spurious Emissions at Antenna Terminal

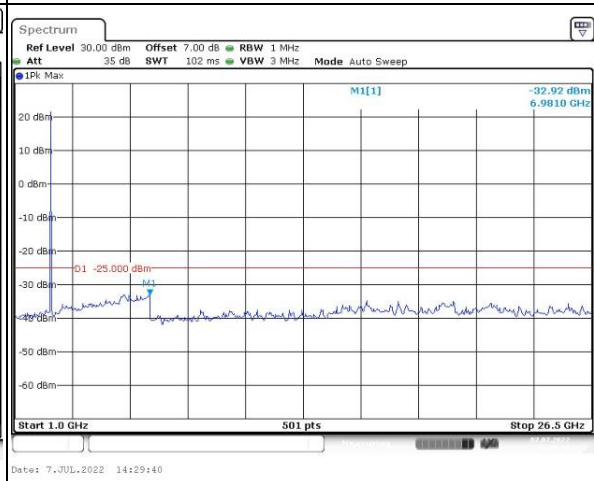
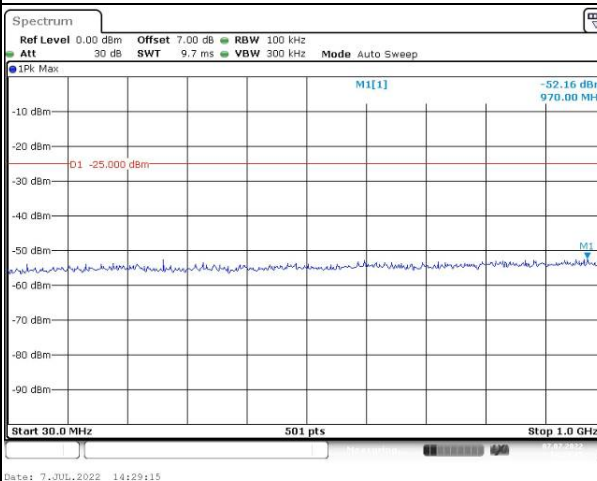
Channel

5MHz Bandwidth QPSK

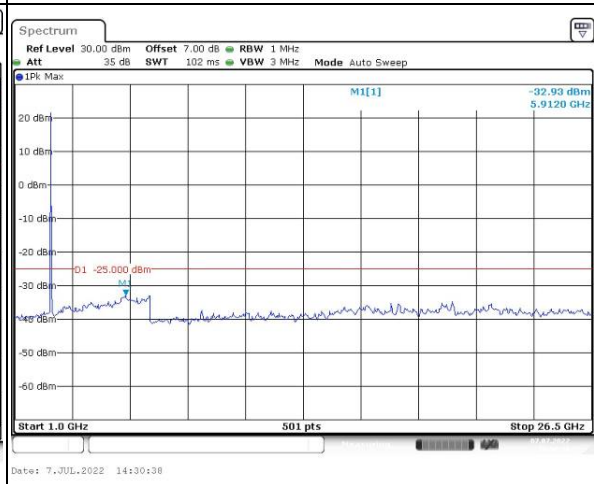
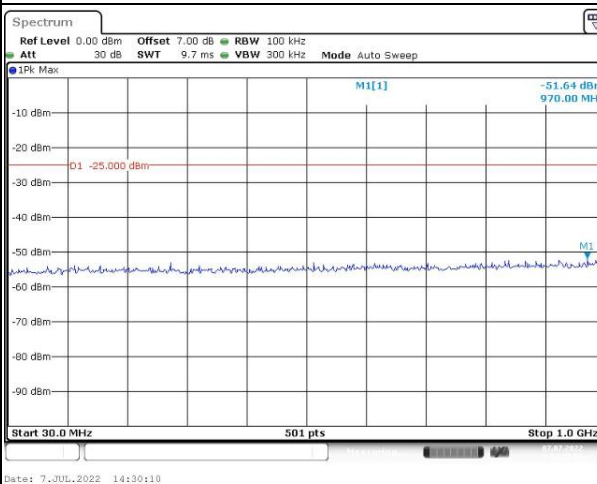
Lowest



Middle



Highest

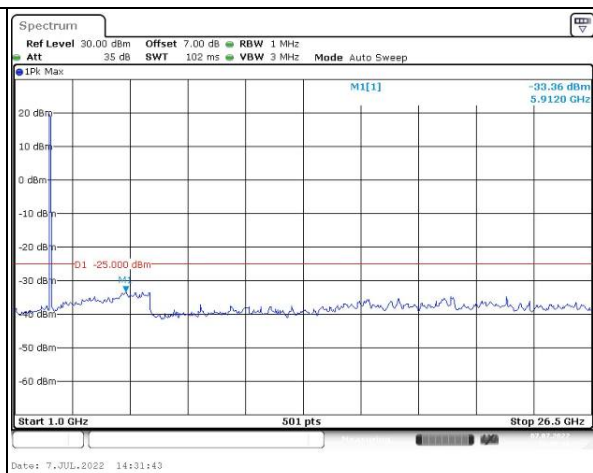
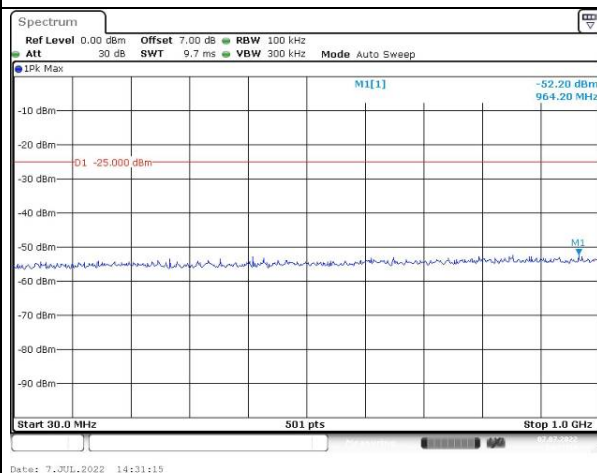


Spurious Emissions at Antenna Terminal

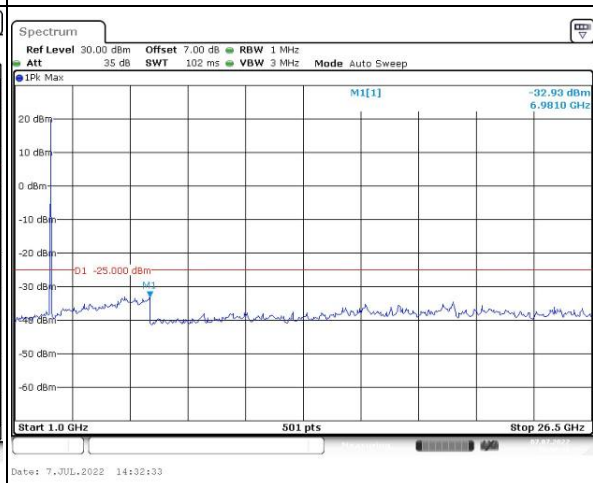
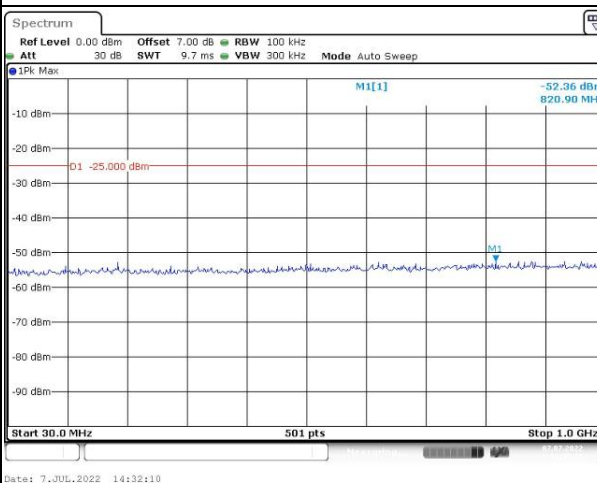
Channel

10MHz Bandwidth QPSK

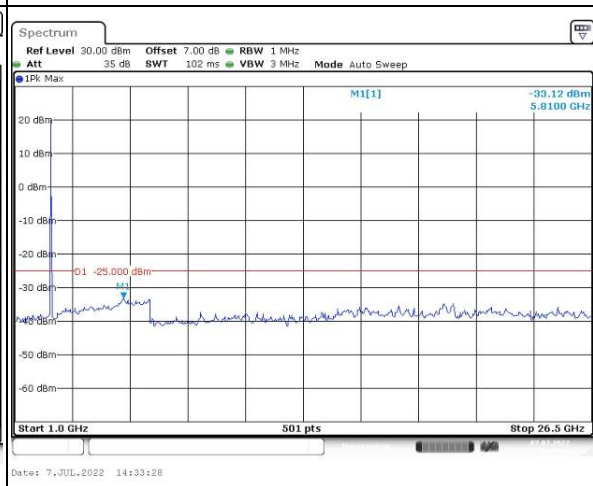
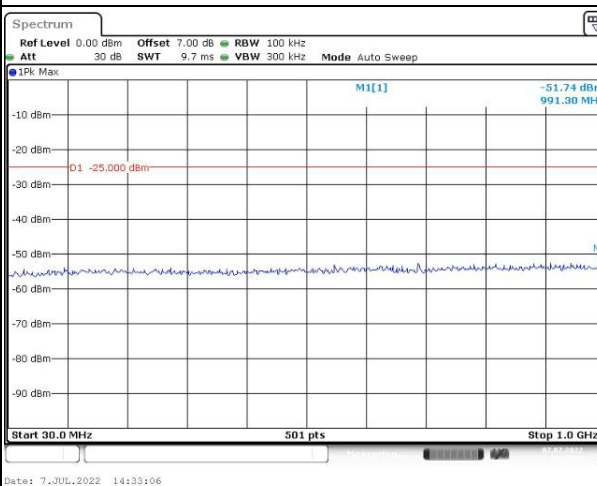
Lowest



Middle



Highest

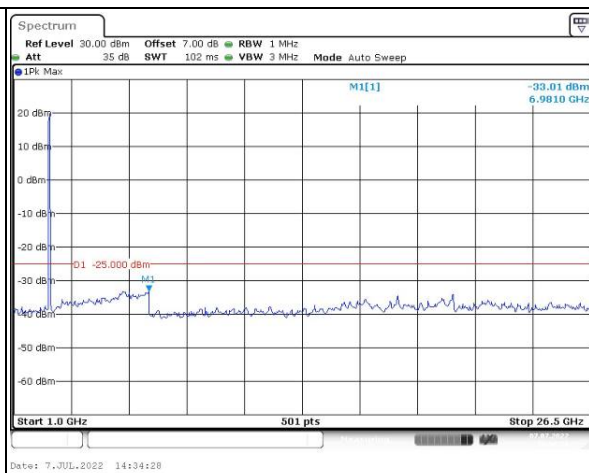
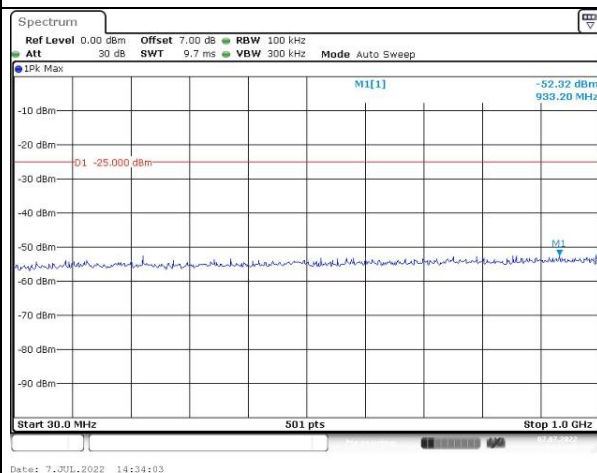


Spurious Emissions at Antenna Terminal

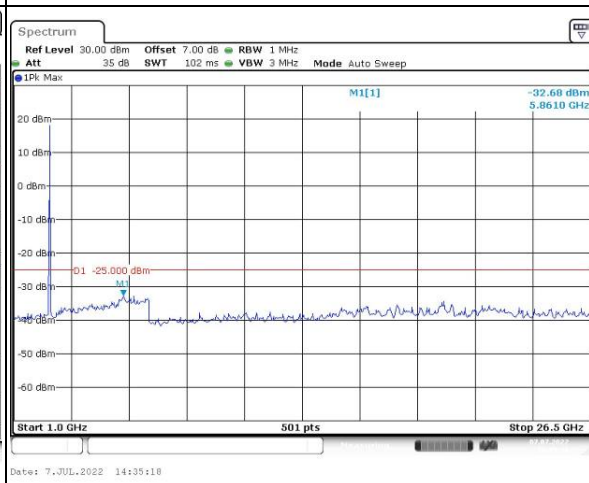
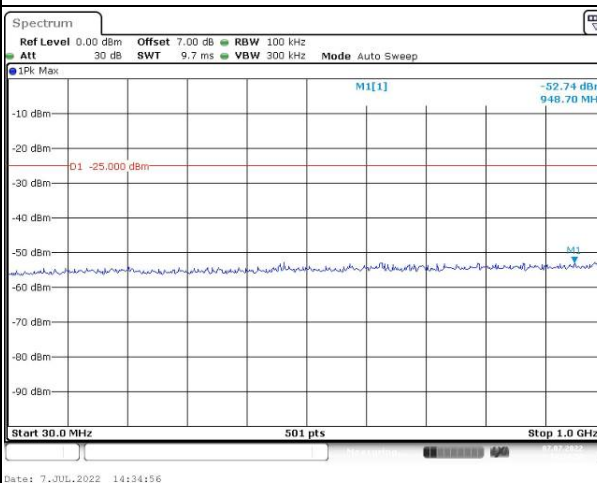
Channel

15MHz Bandwidth QPSK

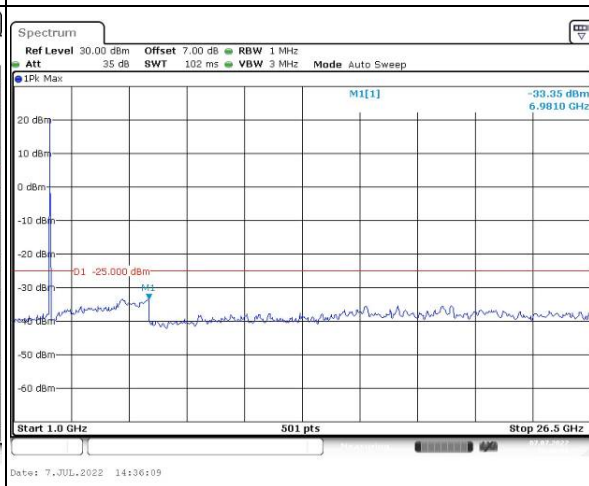
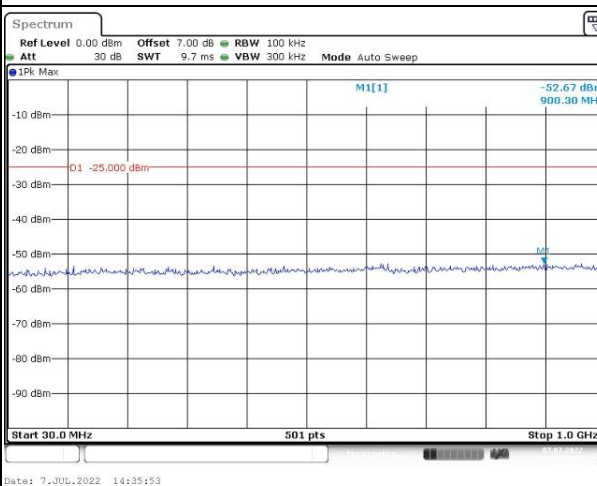
Lowest



Middle



Highest

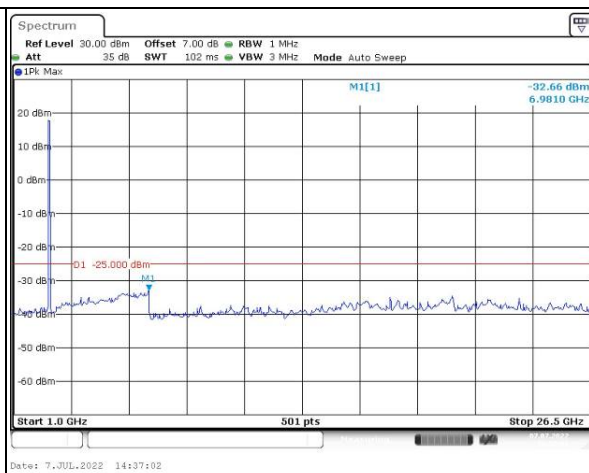
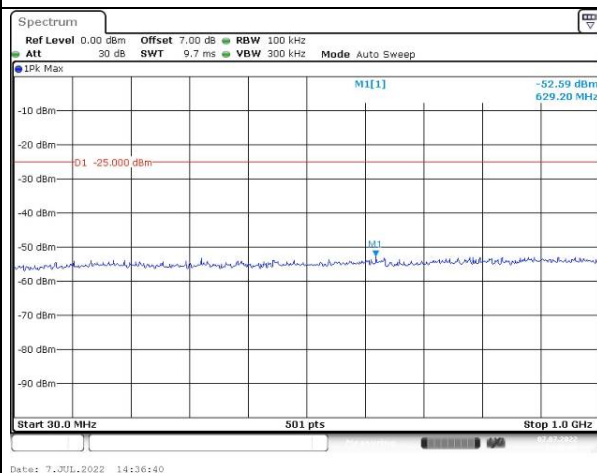


Spurious Emissions at Antenna Terminal

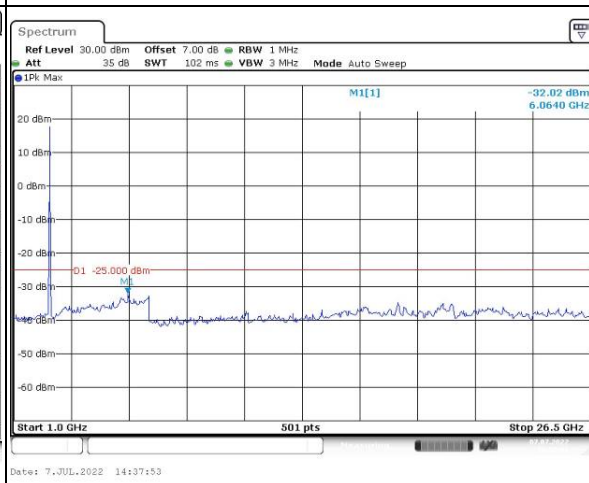
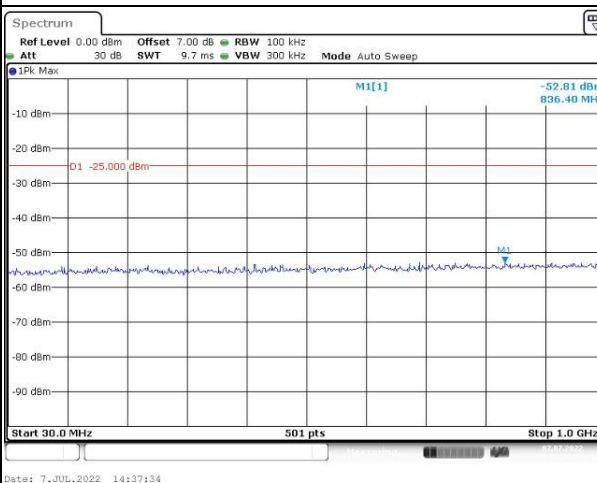
Channel

20MHz Bandwidth QPSK

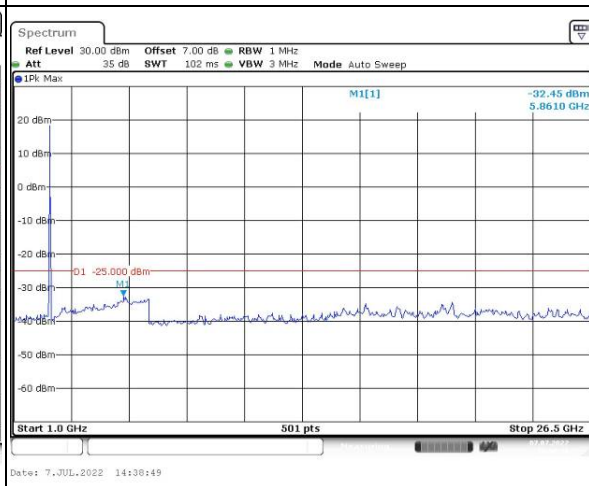
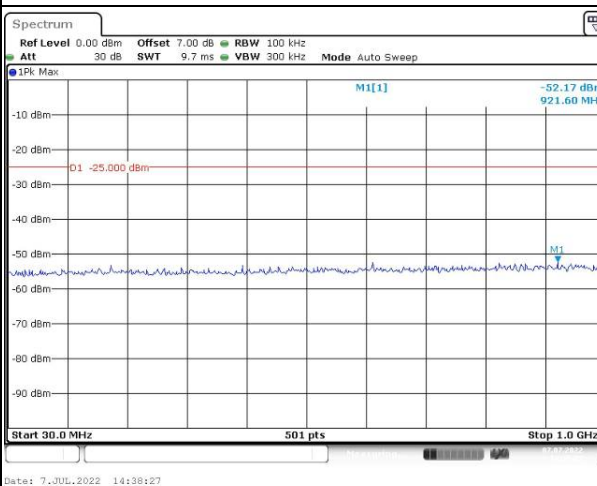
Lowest



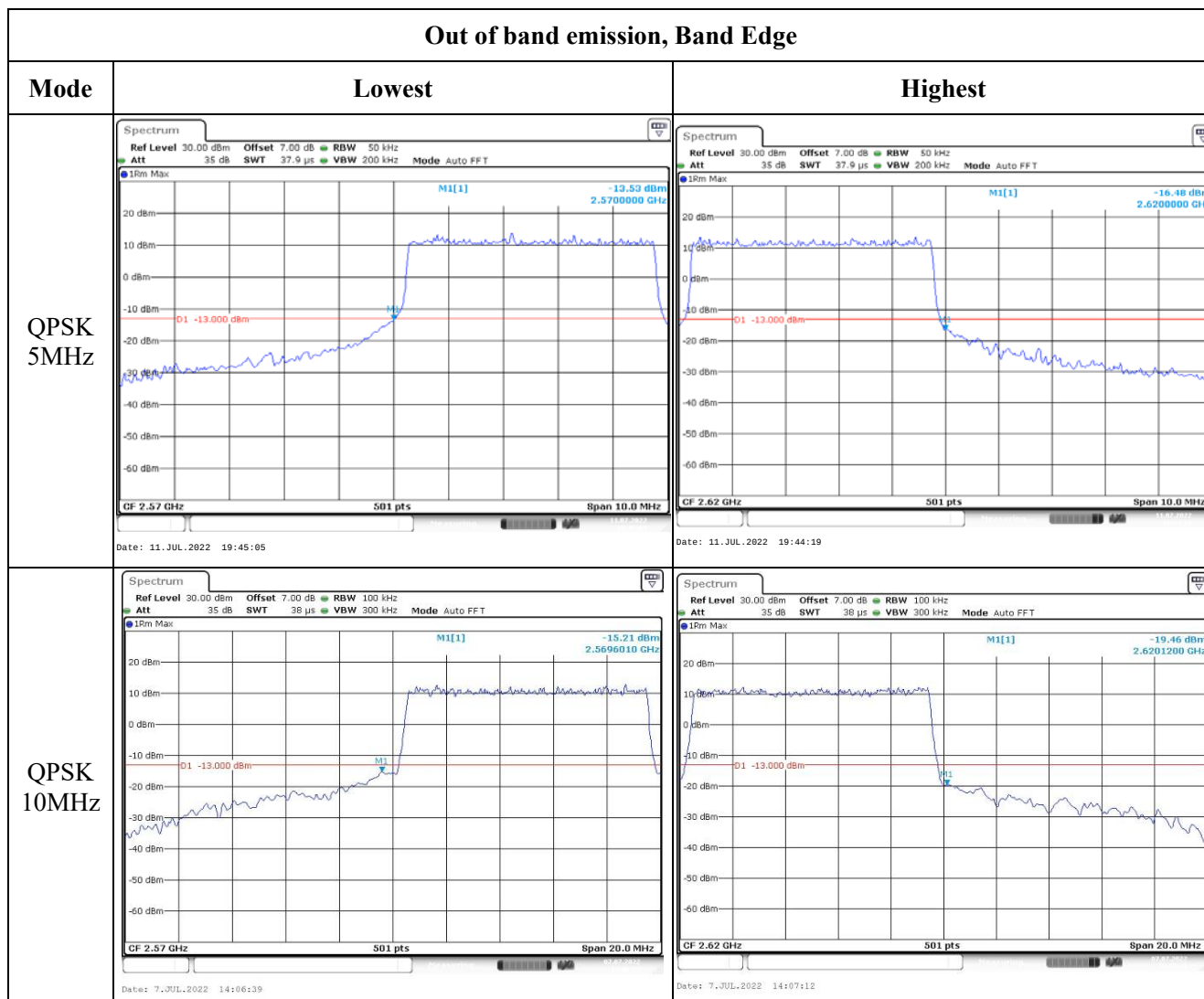
Middle



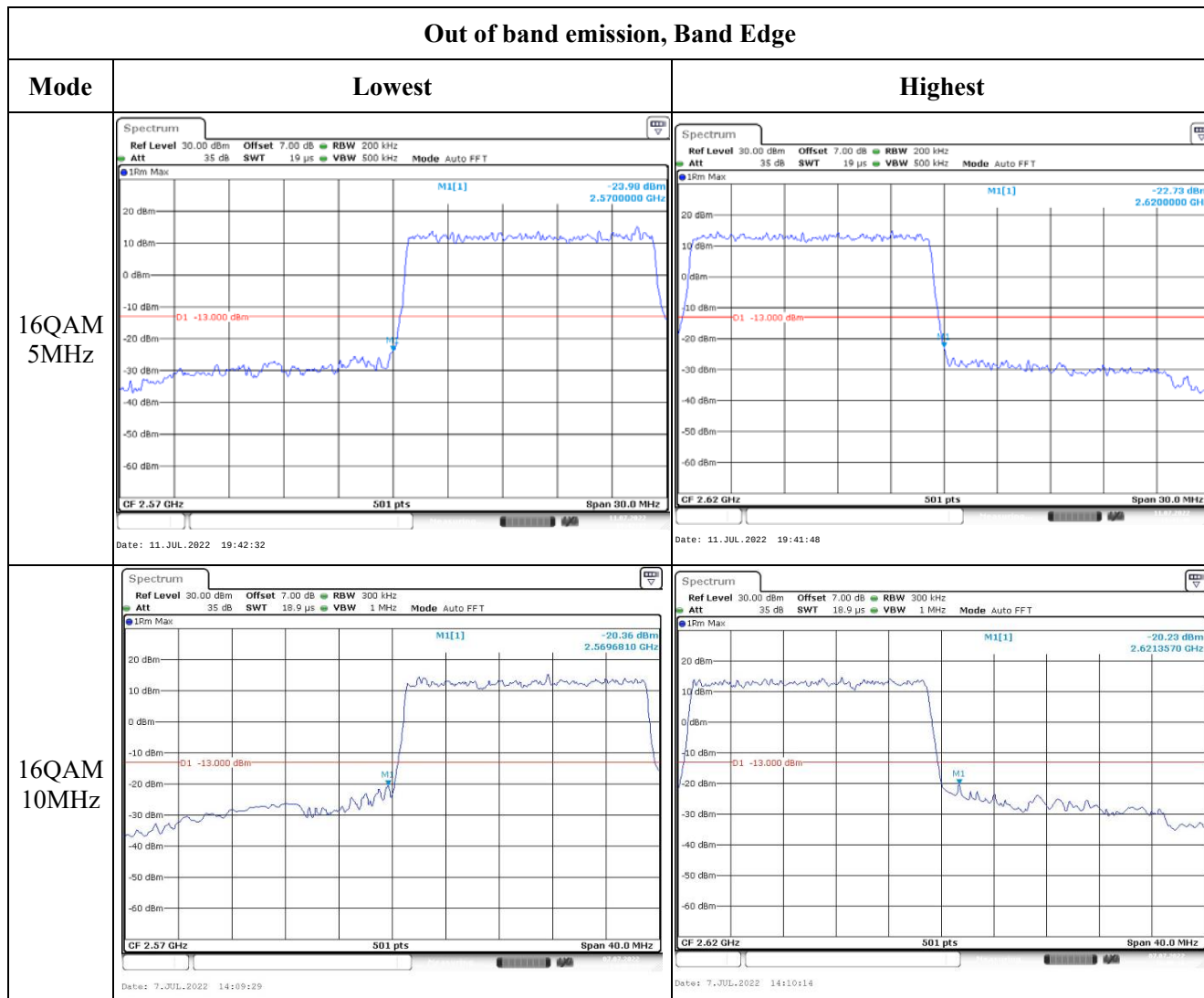
Highest



Out of band emission, Band Edge



Out of band emission, Band Edge



4.14 Antenna Port Test Data and Results for LTE Band 40 lower

Serial Number:	CR220050079-RF-S1	Test Date:	2022/7/12~2022/8/8
Test Site:	RF	Test Mode:	Transmitting
Tester:	Ted Min	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25~26.2	Relative Humidity: (%)	56~60	ATM Pressure: (kPa)	100.2~100.4
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2021-10-10	2022-10-09
R&S	Wideband Radio Communication Tester	CMW500	149218	2021-07-21	2022-07-20
R&S	Wideband Radio Communication Tester	CMW500	149218	2022-07-15	2023-07-14
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022-04-06	2023-04-05
UNI-T	Multimeter	UT39A+	C210582554	2021-09-30	2022-09-29
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6	OE0120176	Each time	N/A
HuiXunDa	DC Block	SMA-JK 18G	DCB181108042	Each time	N/A
Weinschel	Coaxial Attenuators	53-20-34	LN751	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100003	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 40▲:

Antenna Gain (dBi):	0.13	Path Loss L_c (dB):	0
Operation Voltage(V_{DC}):			
Lowest:	3.42	Normal:	3.8
		Highest:	4.18

Test Frequency For Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2307.5	2310	2312.5
10MHz	/	2310	/

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	21.92	21.97	22.09	22.25	24
	RB1#13	21.98	22	22.05		
	RB1#24	22.01	22.05	22.12		
	RB15#0	21.77	21.89	21.92		
	RB15#10	21.87	21.93	21.99		
	RB25#0	21.38	21.59	21.6		
5MHz 16QAM	RB1#0	21.51	21.58	21.71	22.08	24
	RB1#13	21.73	21.79	21.91		
	RB1#24	21.7	21.82	21.95		
	RB15#0	21.53	21.82	21.93		
	RB15#10	21.48	21.64	21.72		
	RB25#0	21.16	21.29	21.46		
10MHz QPSK	RB1#0	/	21.86	/	22.12	24
	RB1#25	/	21.99	/		
	RB1#49	/	21.93	/		
	RB25#0	/	21.72	/		
	RB25#25	/	21.86	/		
	RB50#0	/	21.44	/		
10MHz 16QAM	RB1#0	/	21.51	/	21.91	24
	RB1#25	/	21.64	/		
	RB1#49	/	21.78	/		
	RB25#0	/	21.64	/		
	RB25#25	/	21.70	/		
	RB50#0	/	21.34	/		
Note: EIRP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(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	
10MHz QPSK	RB1#0	/	3.28	/	13
	RB50#0	/	5.26	/	13
10MHz 16QAM	RB1#0	/	4.27	/	13
	RB50#0	/	6.29	/	13
				Result:	Pass

Duty Cycle					
Test Modulation	Test Bandwidth	Ton (ms)	Total (ms)	Duty Cycle (%)	Limit (%)
QPSK	5M	3.16	10	31.6	38
	10M	3.32	10.12	32.81	38
16QAM	5M	3.17	10.05	31.54	38
	10M	3.24	10.08	32.14	38
				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	4.491	4.491	4.491	4.91	5.03	5.105
5MHz 16QAM	4.491	4.471	4.491	4.91	5.05	5.105
10MHz QPSK	\	8.942	\	\	9.87	\
10MHz 16QAM	\	8.982	\	\	9.87	\
Note: The test plots please refer to the Plots of Occupied Bandwidth						

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

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

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	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	2305.024	2305.00	2314.833	2315
	-20	3.8	2305.102	2305.00	2314.873	2315
	-10	3.8	2305.112	2305.00	2314.799	2315
	0	3.8	2305.065	2305.00	2314.909	2315
	10	3.8	2305.169	2305.00	2314.769	2315
	20	3.8	2305.089	2305.00	2314.752	2315
	30	3.8	2305.049	2305.00	2314.760	2315
	40	3.8	2305.112	2305.00	2314.844	2315
	50	3.8	2305.125	2305.00	2314.902	2315
Frequency Stability vs. Voltage	20	3.42	2305.039	2305.00	2314.877	2315
	20	4.18	2305.126	2305.00	2314.812	2315
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	2305.051	2305.00	2314.750	2315
	-20	3.8	2305.151	2305.00	2314.920	2315
	-10	3.8	2305.143	2305.00	2314.755	2315
	0	3.8	2305.172	2305.00	2314.938	2315
	10	3.8	2305.059	2305.00	2314.827	2315
	20	3.8	2305.049	2305.00	2314.938	2315
	30	3.8	2305.159	2305.00	2314.792	2315
	40	3.8	2305.081	2305.00	2314.896	2315
	50	3.8	2305.205	2305.00	2314.773	2315
Frequency Stability vs. Voltage	20	3.42	2305.196	2305.00	2314.777	2315
	20	4.18	2305.067	2305.00	2314.786	2315
					Result:	Pass

Test Plots:

Occupied Bandwidth

