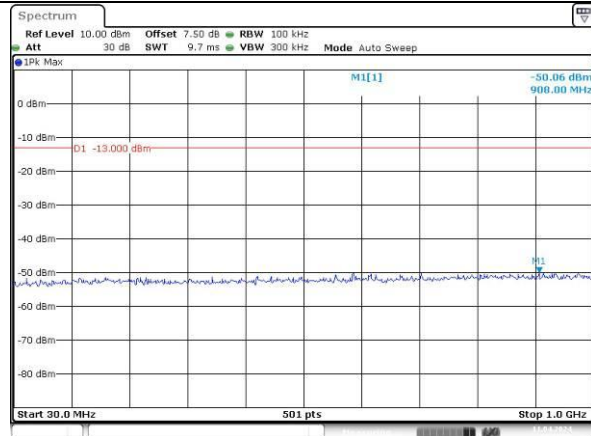


Spurious Emissions at Antenna Terminal

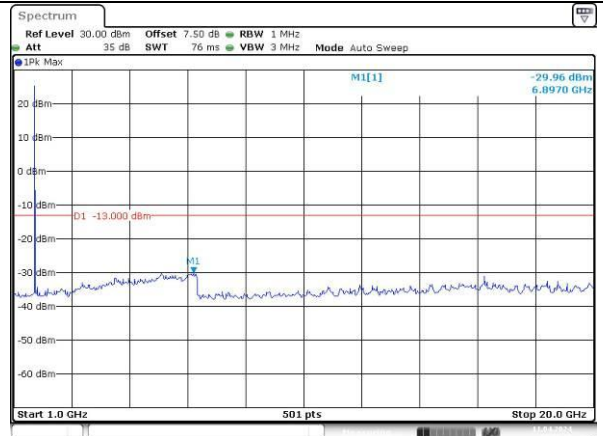
Channel

5MHz Bandwidth QPSK

Lowest

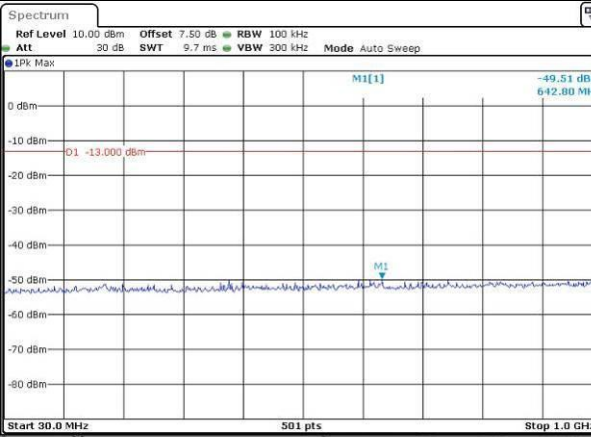


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:37:53

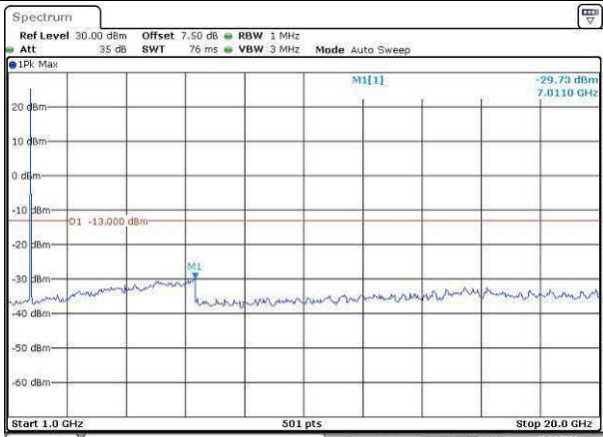


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:38:18

Middle

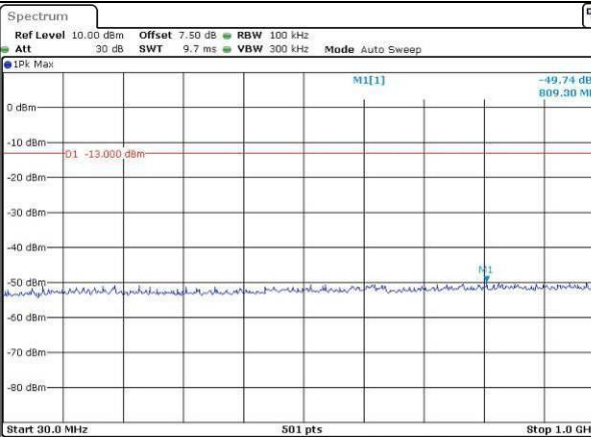


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:39:05

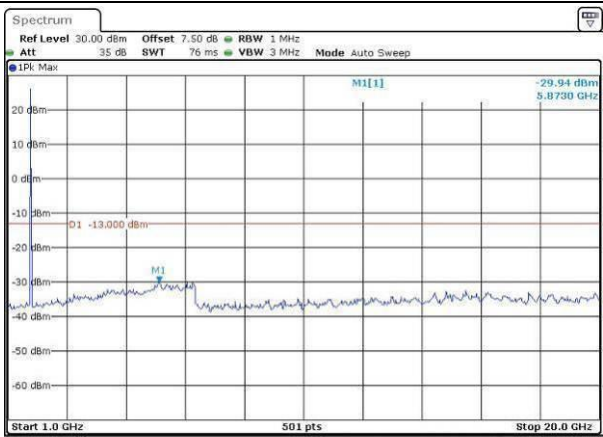


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:39:33

Highest



ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:40:14



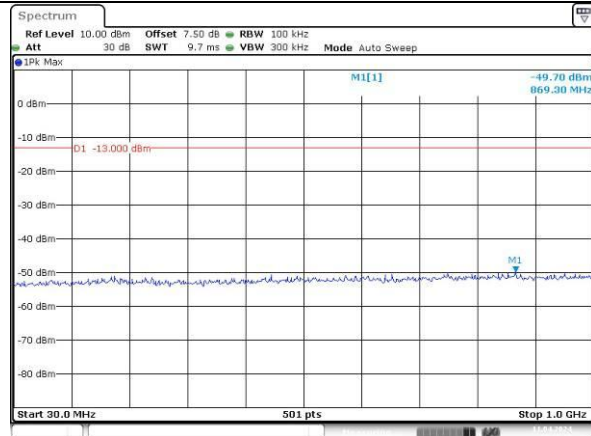
ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:40:33

Spurious Emissions at Antenna Terminal

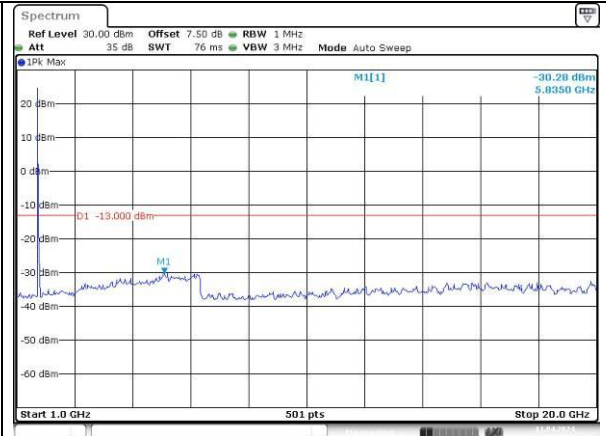
Channel

10MHz Bandwidth QPSK

Lowest

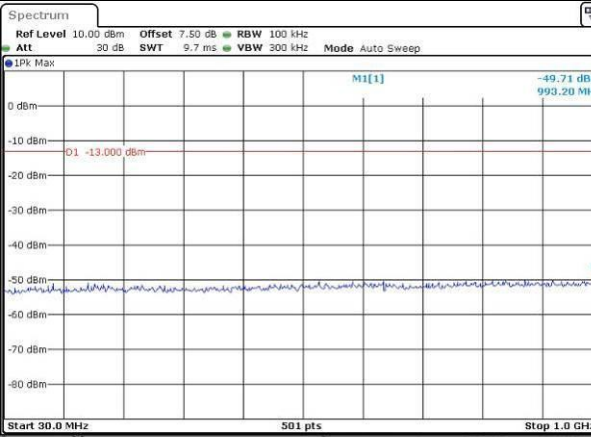


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Date: 11.APR.2024 14:41:10

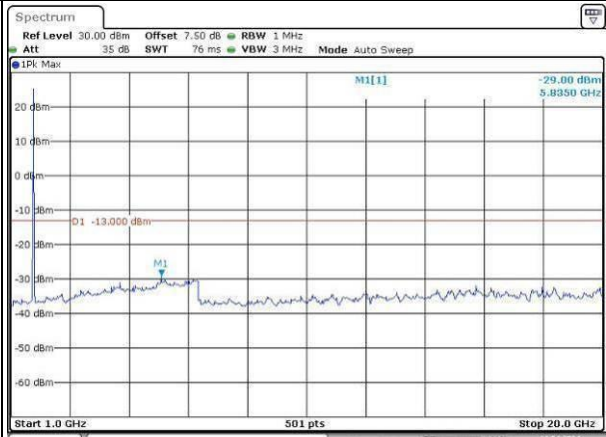


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:41:39

Middle

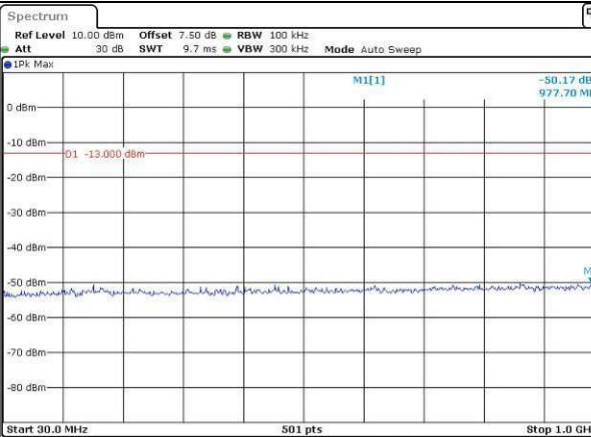


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:42:13

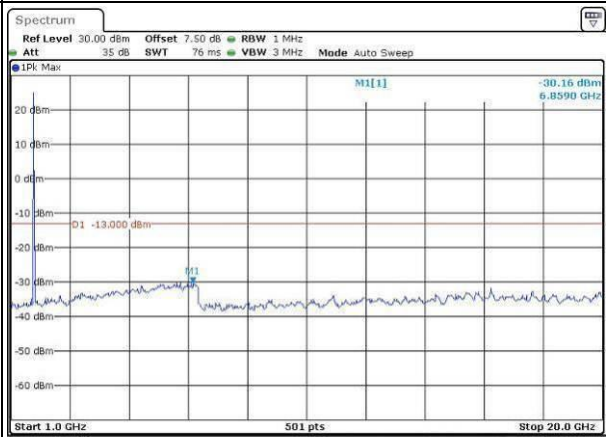


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:42:41

Highest



ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:43:25



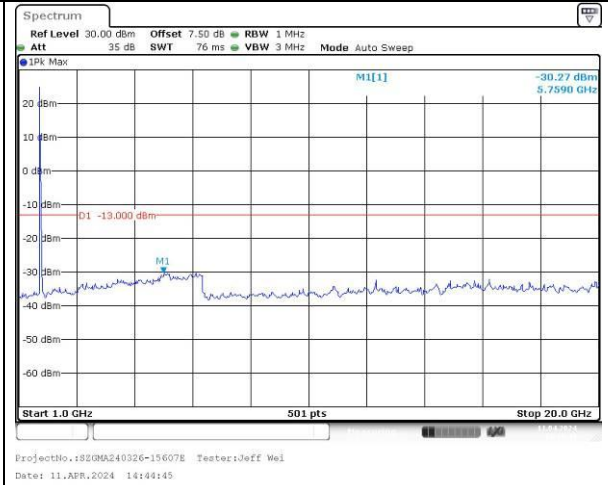
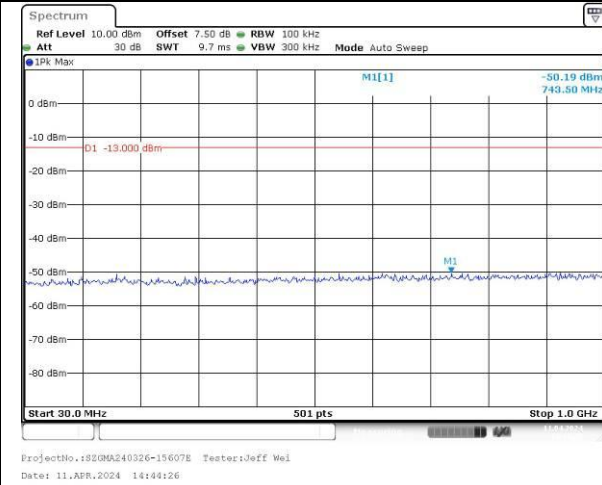
ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 11.APR.2024 14:43:47

Spurious Emissions at Antenna Terminal

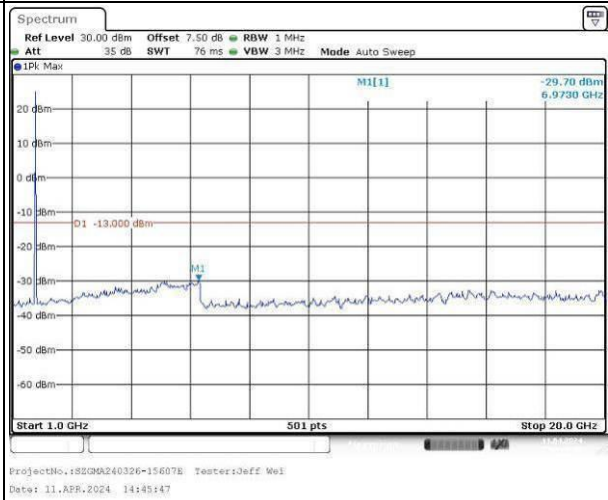
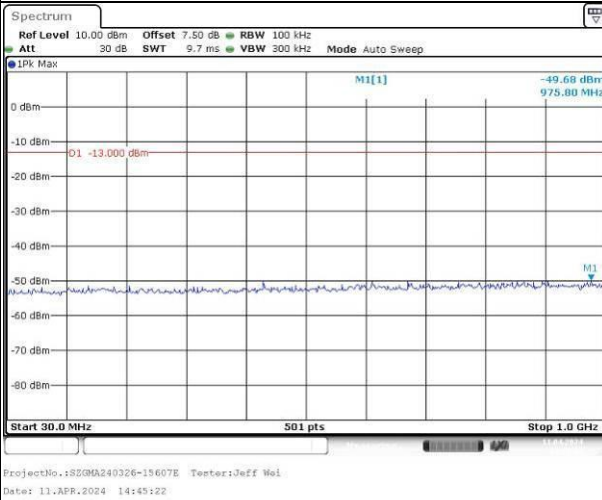
Channel

15MHz Bandwidth QPSK

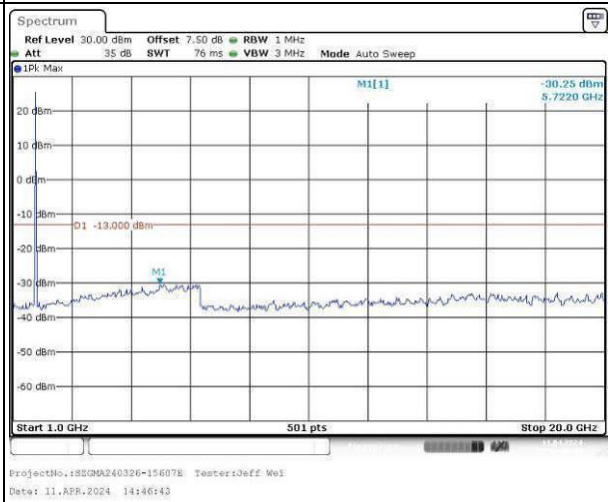
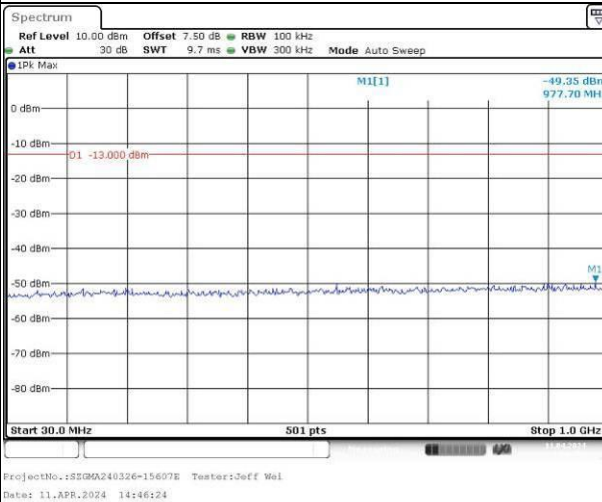
Lowest



Middle



Highest

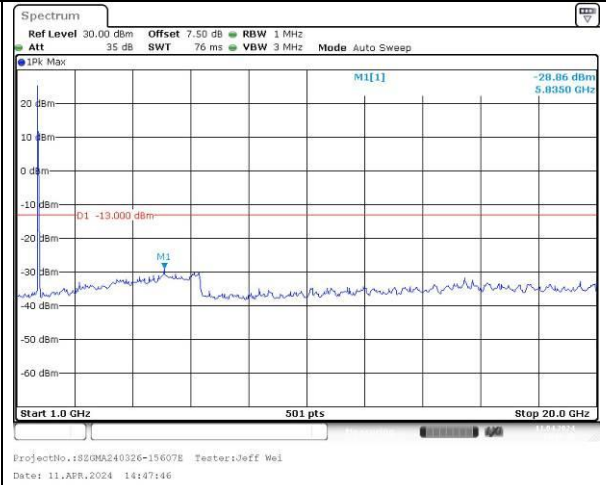
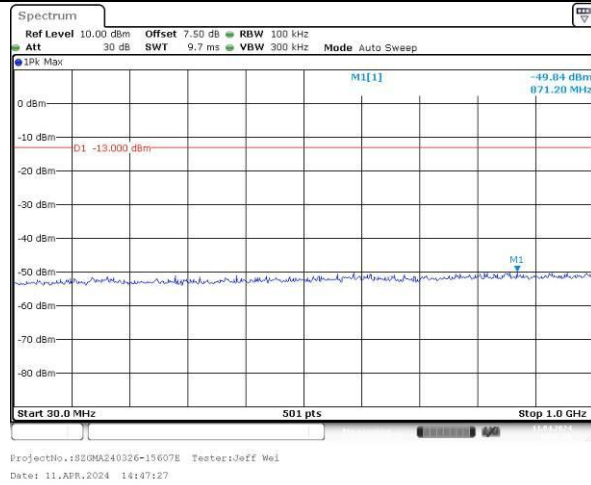


Spurious Emissions at Antenna Terminal

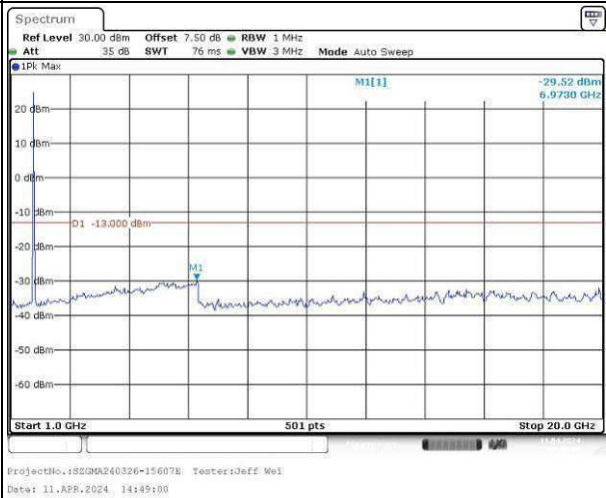
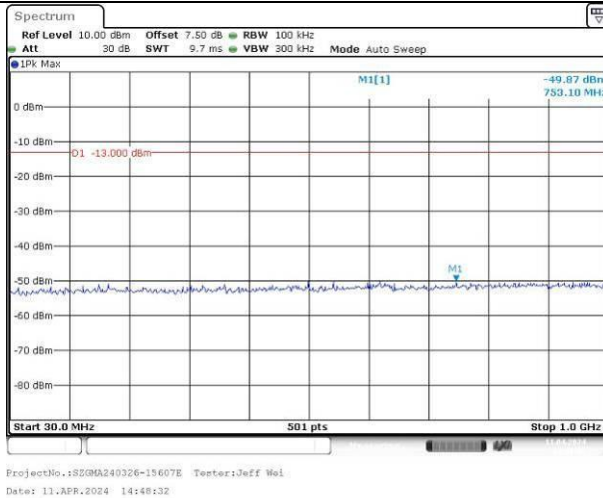
Channel

20MHz Bandwidth QPSK

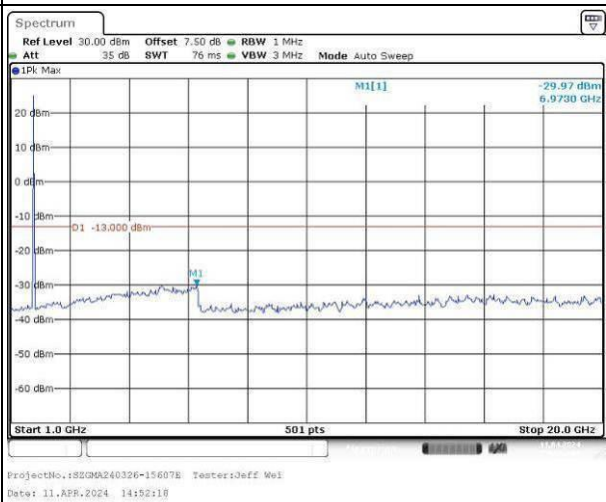
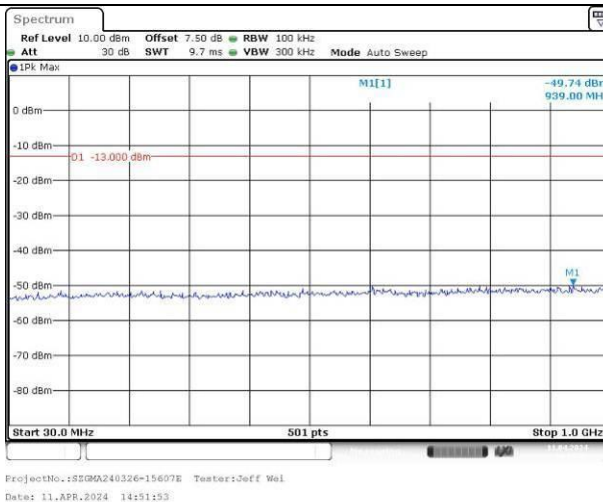
Lowest



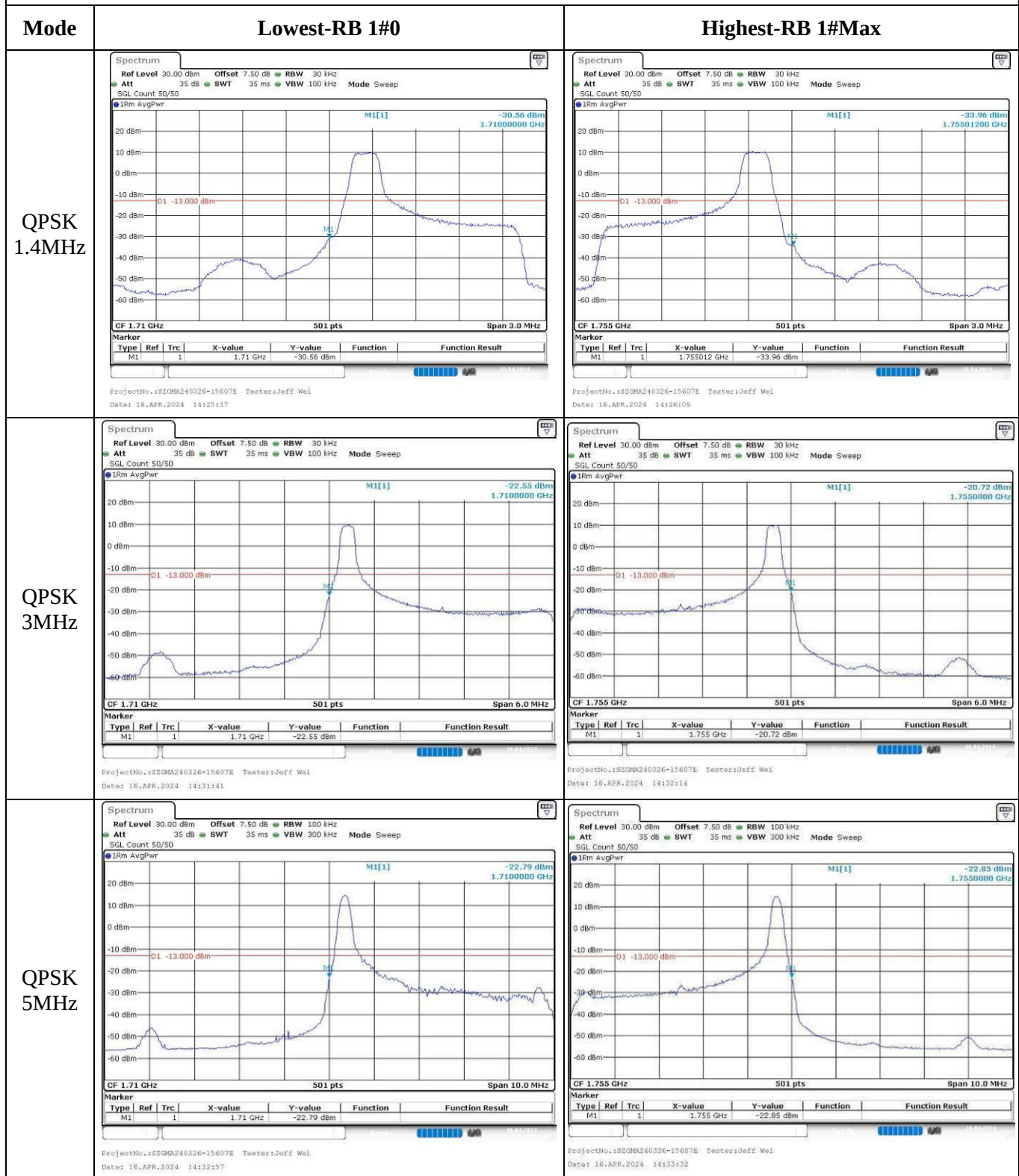
Middle



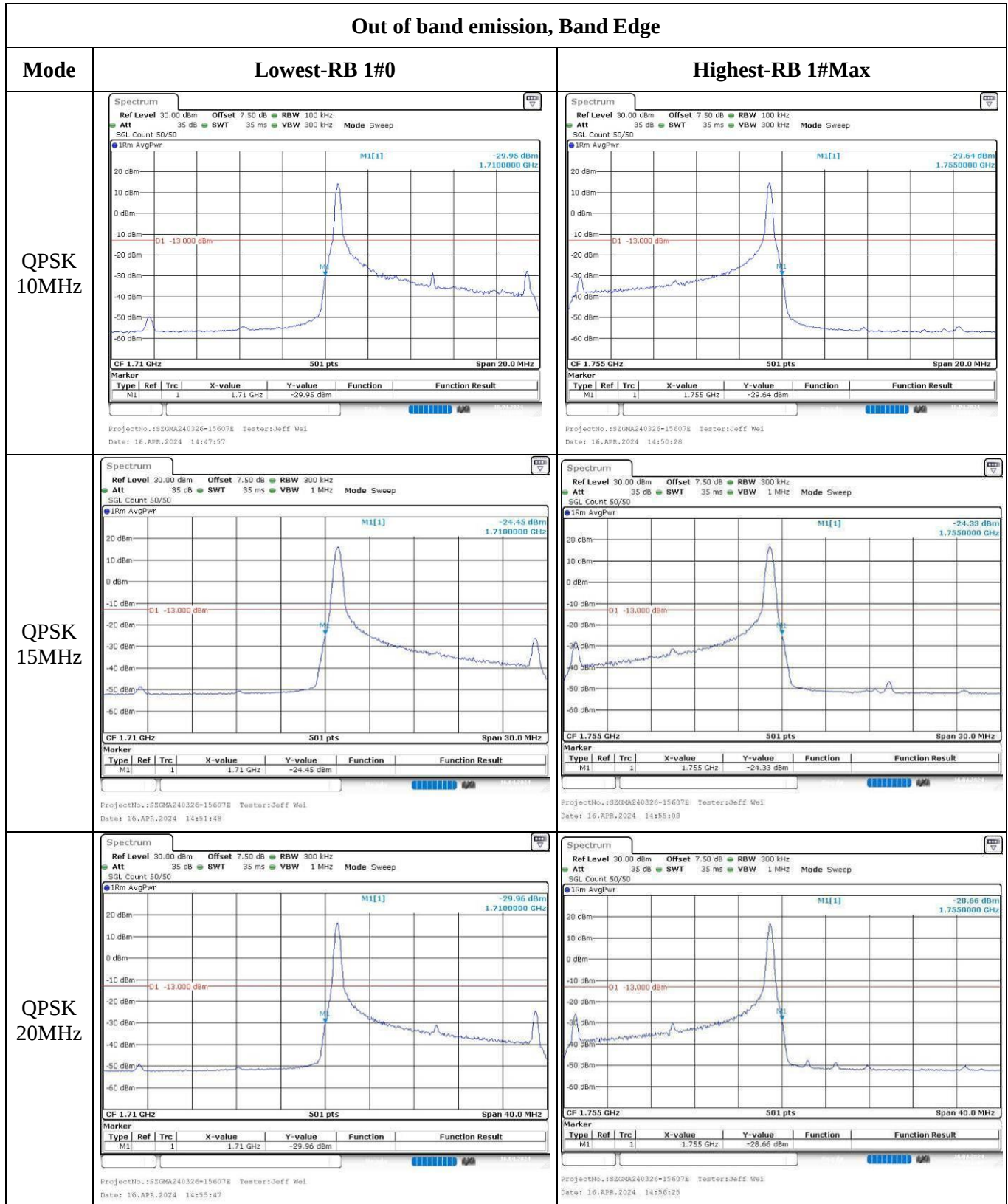
Highest



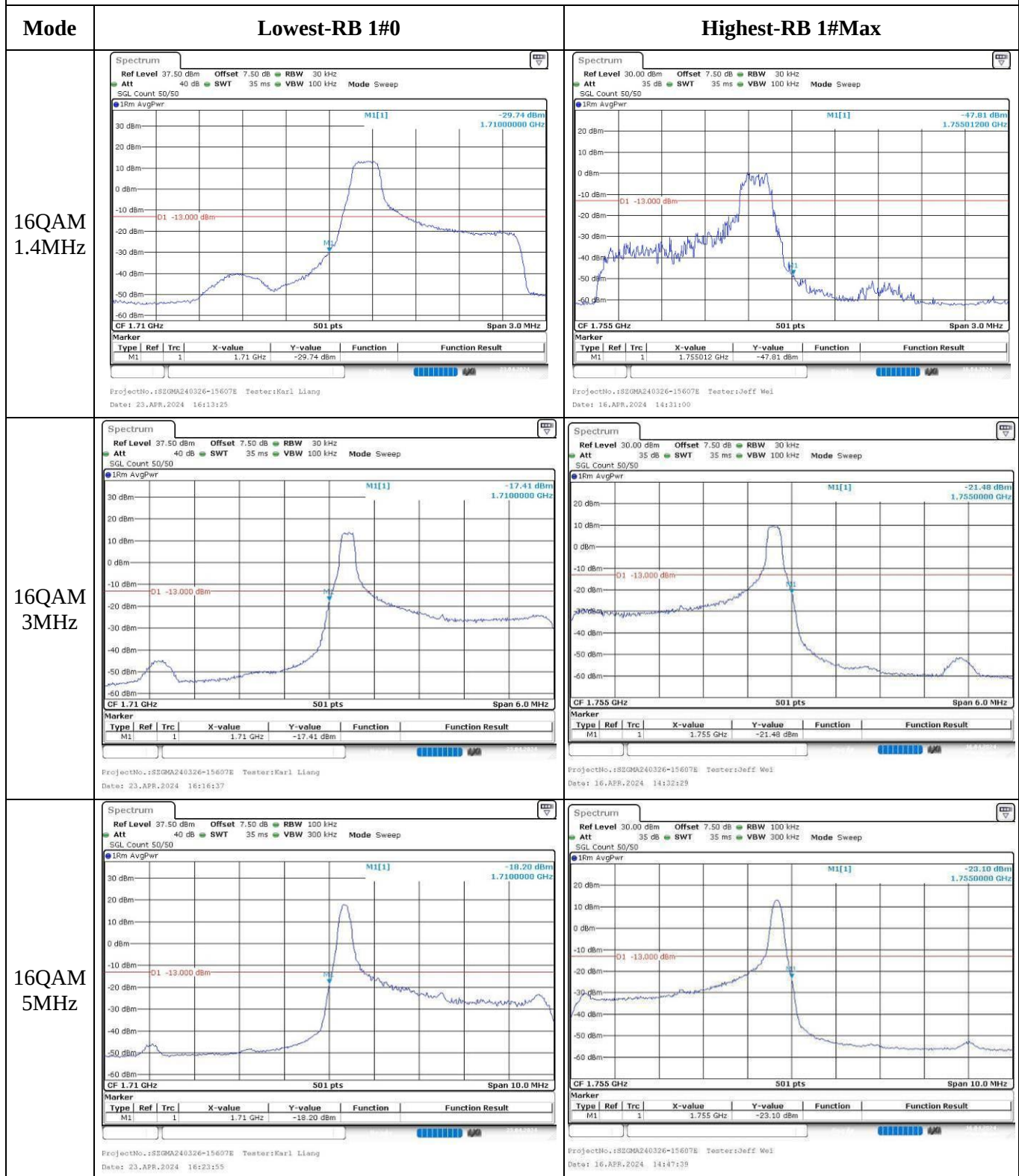
Out of band emission, Band Edge



Out of band emission, Band Edge



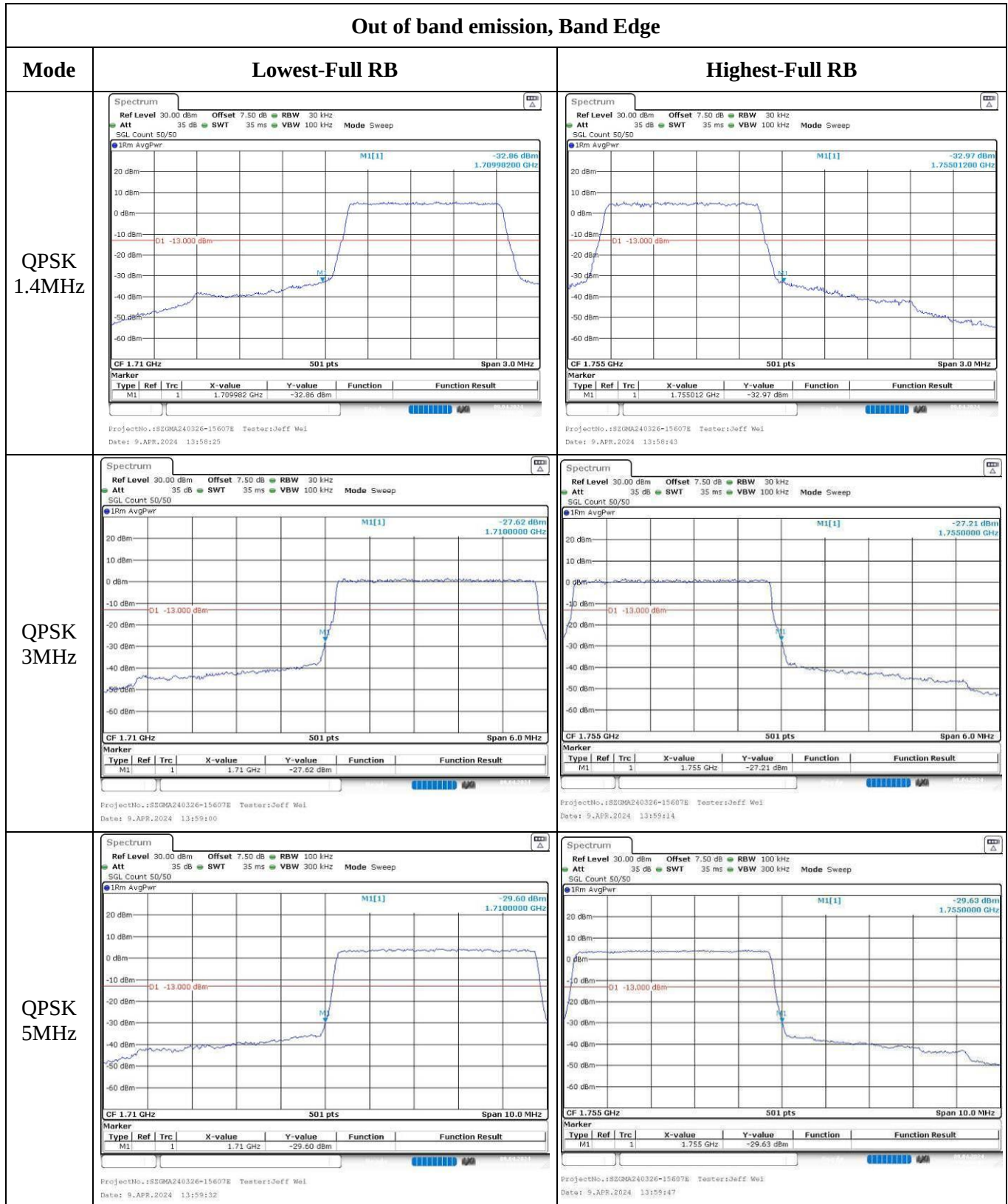
Out of band emission, Band Edge



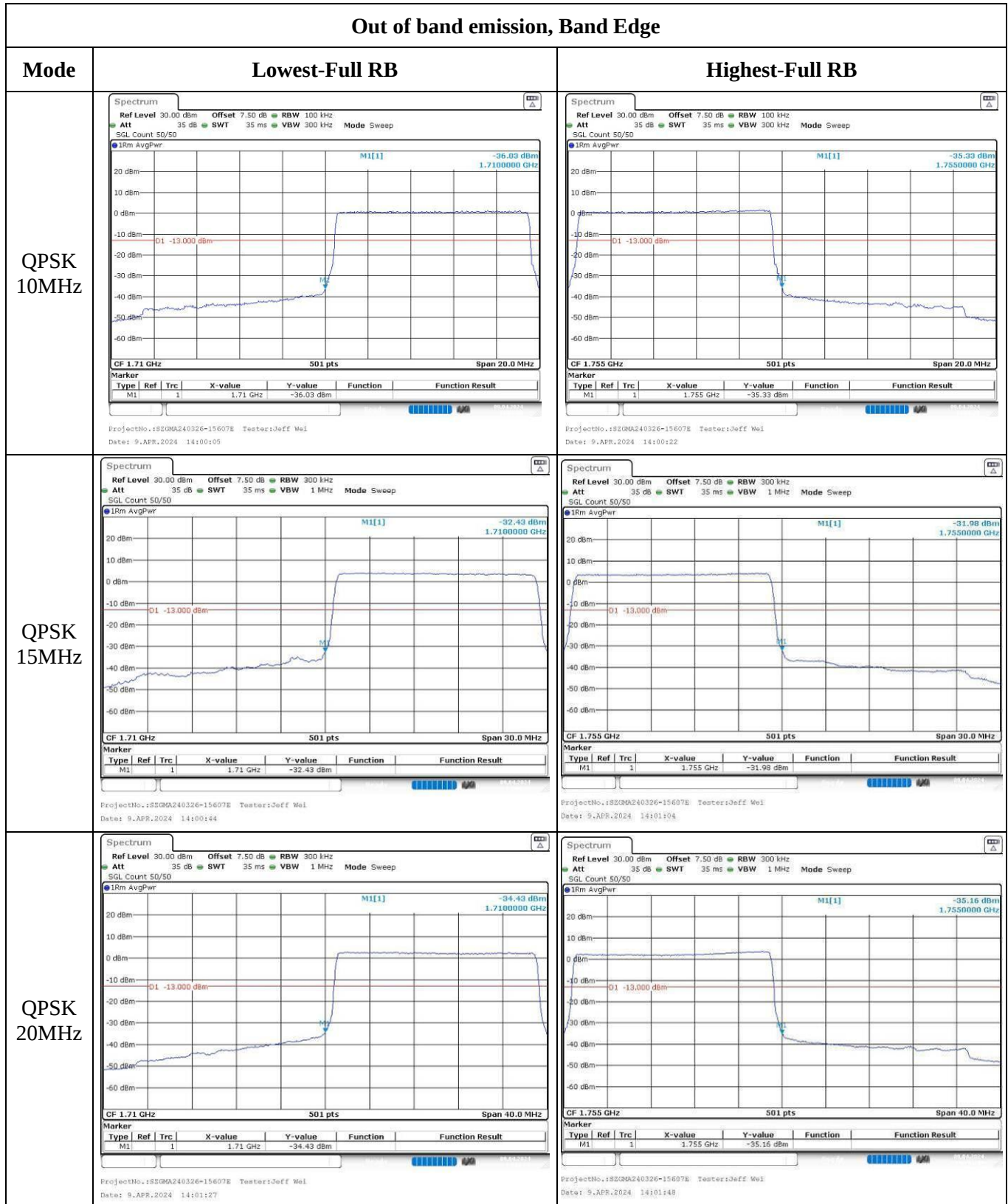
Out of band emission, Band Edge

Mode	Lowest-RB 1#0	Highest-RB 1#Max
16QAM 10MHz		
16QAM 15MHz		
16QAM 20MHz		

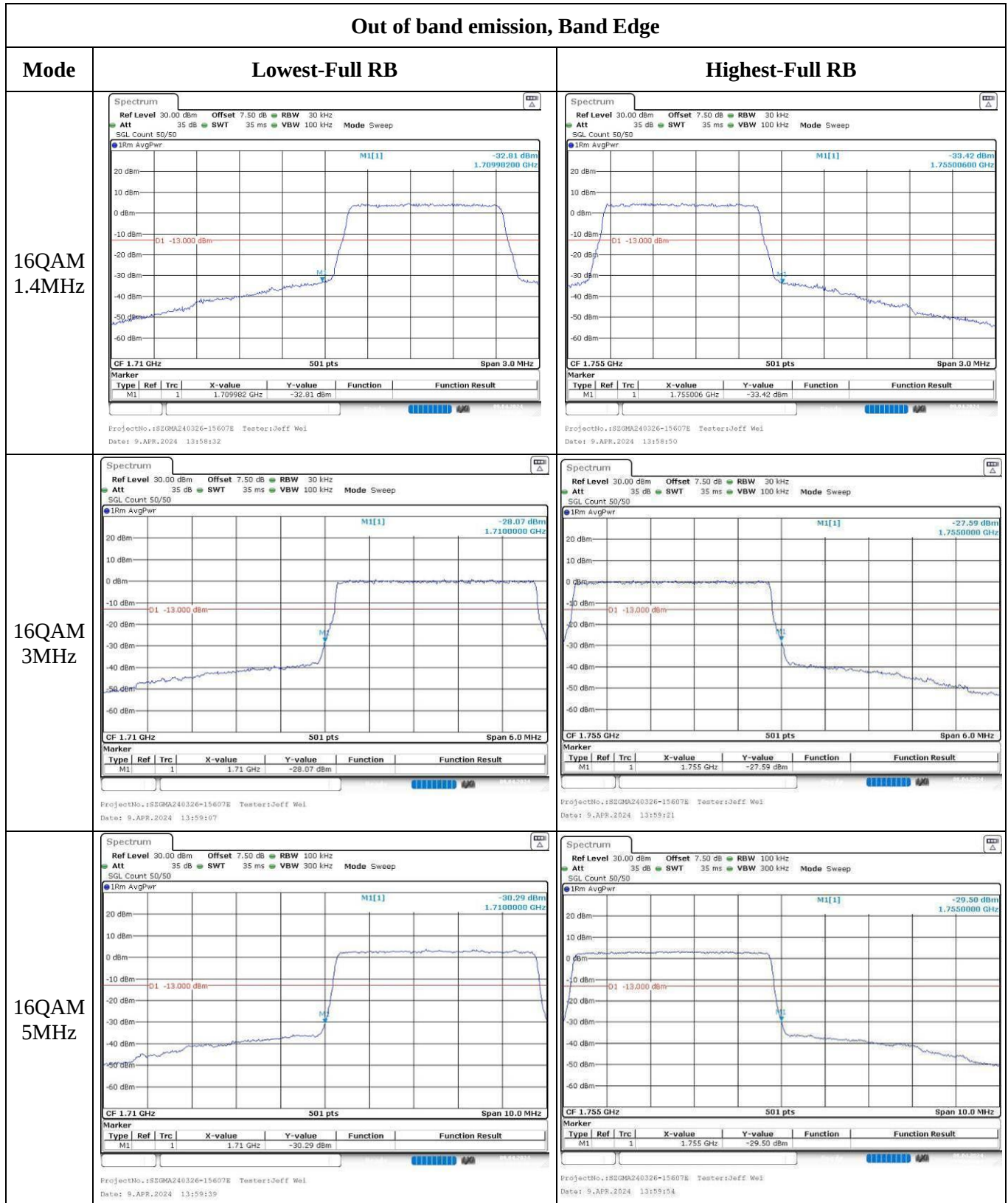
Out of band emission, Band Edge



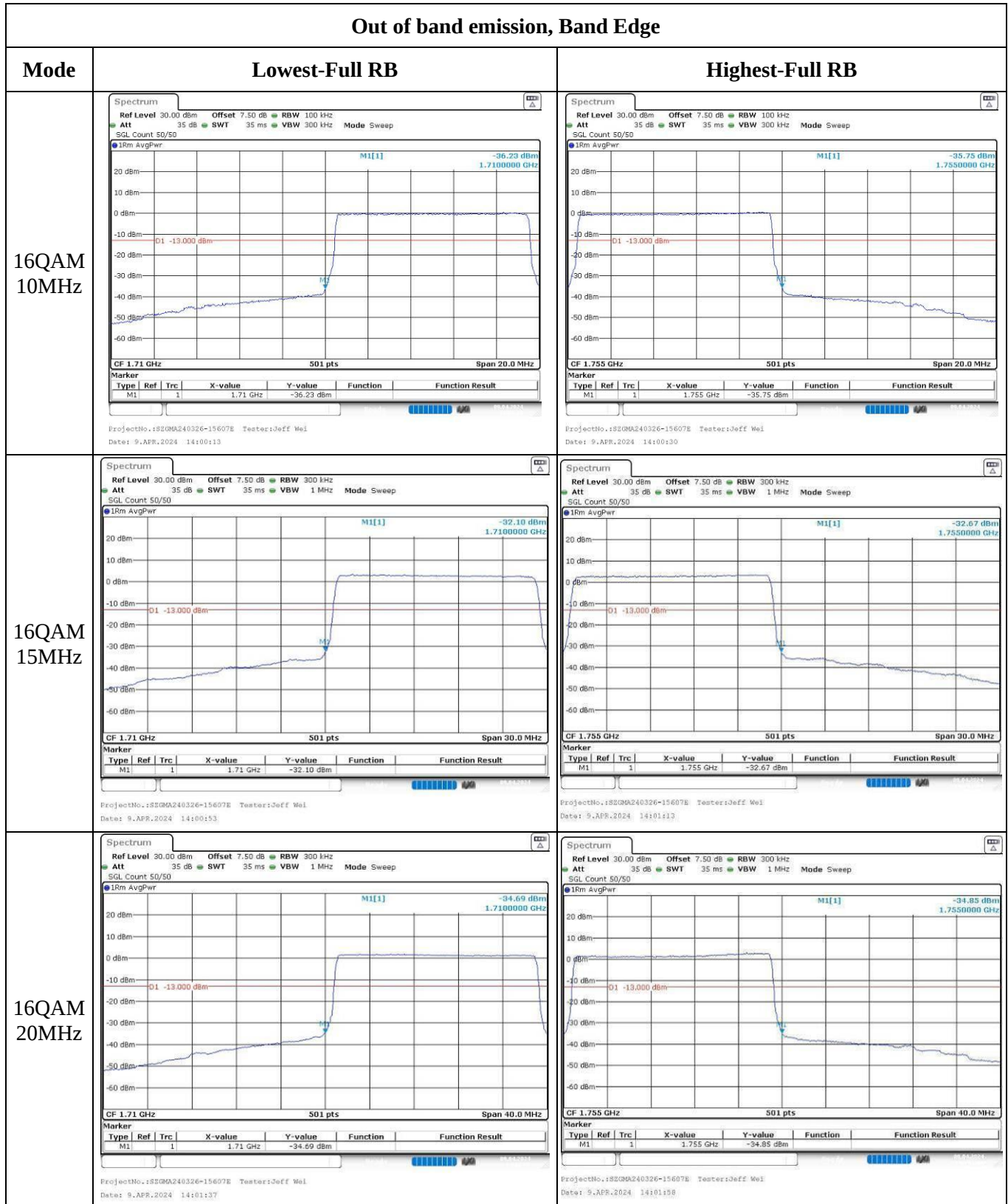
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



5.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	2J4T-2	Test Date:	2024/4/9~2024/4/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jeff Wei, Karl Liang	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	25.1~27.2	Relative Humidity: (%)	49~72	ATM Pressure: (kPa)	100.0~101.2

Test Equipment List and Details:					
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101461	2023/11/27	2024/11/26
Micro-Coax	Coaxial Cable	UFA210A	94089550	2023/9/1	2024/8/31
Minl-Clrcuts	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/2/25	2025/2/24
R&S	Wideband Radio Communication Tester	CMW500	144976	2023/10/18	2024/10/17
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2023/10/18	2024/10/17
All-sun	Clamp Meter	EM305A	8348897	2023/8/3	2024/8/2
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

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

Test Data:**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	21.79	21.74	21.76	20.81	38.45
	RB1#3	21.8	21.75	21.55		
	RB1#5	21.81	21.7	21.83		
	RB3#0	21.79	21.92	21.78		
	RB3#3	21.88	21.88	21.74		
	RB6#0	20.76	20.93	20.73		
1.4MHz 16QAM	RB1#0	21.45	20.53	21.16	20.41	38.45
	RB1#3	21.52	20.58	21.15		
	RB1#5	21.44	20.56	21.2		
	RB3#0	20.74	20.99	20.8		
	RB3#3	20.7	20.96	20.86		
	RB6#0	19.91	20.06	19.97		
3MHz QPSK	RB1#0	21.85	21.75	21.63	20.74	38.45
	RB1#8	21.8	21.76	21.8		
	RB1#14	21.72	21.68	21.69		
	RB6#0	20.78	20.78	20.64		
	RB6#9	20.96	20.9	20.77		
	RB15#0	20.69	20.86	20.66		
3MHz 16QAM	RB1#0	21.5	20.53	21.02	20.49	38.45
	RB1#8	21.5	20.53	21		
	RB1#14	21.6	20.41	21.07		
	RB6#0	19.93	20.03	19.75		
	RB6#9	19.93	20.01	19.73		
	RB15#0	19.82	19.88	19.76		
5MHz QPSK	RB1#0	21.86	21.79	21.82	20.75	38.45
	RB1#13	21.81	21.7	21.69		
	RB1#24	21.79	21.75	21.69		
	RB15#0	20.81	20.94	20.82		
	RB15#10	20.93	20.92	20.61		
	RB25#0	20.86	20.81	20.81		
5MHz 16QAM	RB1#0	20.91	20.56	19.83	19.85	38.45
	RB1#13	20.95	20.45	19.82		
	RB1#24	20.96	20.53	19.85		
	RB15#0	19.76	19.91	19.82		
	RB15#10	19.79	19.88	19.75		
	RB25#0	19.78	19.81	19.83		
10MHz QPSK	RB1#0	21.94	21.81	21.71	20.91	38.45
	RB1#25	21.87	21.79	21.64		
	RB1#49	22.02	21.86	21.65		
	RB25#0	20.82	20.91	20.79		

	RB25#25	20.79	20.82	20.72		
	RB50#0	20.79	20.88	20.84		
10MHz 16QAM	RB1#0	20.9	20.33	21.01	19.93	38.45
	RB1#25	20.97	20.3	20.98		
	RB1#49	21.04	20.27	20.95		
	RB25#0	19.93	20	19.86		
	RB25#25	19.92	20.07	19.74		
	RB50#0	19.93	19.85	19.86		

Note:

ERP= Conducted Power(dBm) - L_c(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	5.59	4.81	5.39	13
	RB50#0	5.25	5.33	5.57	13
10MHz 16QAM	RB1#0	6.58	5.68	6.38	13
	RB50#0	6.2	6.26	6.41	13
				Result:	Pass

Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.102	1.102	1.102	1.254	1.254	1.26
1.4MHz 16QAM	1.09	1.102	1.102	1.254	1.254	1.26
3MHz QPSK	2.695	2.683	2.695	3.012	3.024	2.988
3MHz 16QAM	2.695	2.695	2.695	3	3.024	3.012
5MHz QPSK	4.511	4.511	4.511	5	5	5
5MHz 16QAM	4.531	4.511	4.511	5.02	5	5.02
10MHz QPSK	8.902	8.942	8.942	9.72	9.8	9.8
10MHz 16QAM	8.902	8.982	8.942	9.72	9.8	9.72

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

Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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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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For FCC:**FCC §2.1055, §22.355: Frequency Stability**

Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.7	6.65	0.008	2.5
	-20	3.7	-6.18	-0.007	2.5
	-10	3.7	1.15	0.001	2.5
	0	3.7	-9.79	-0.012	2.5
	10	3.7	5.54	0.007	2.5
	20	3.7	-2.06	-0.002	2.5
	30	3.7	-5.13	-0.006	2.5
	40	3.7	-2.04	-0.002	2.5
Frequency Stability vs. Voltage	50	3.7	4.67	0.006	2.5
	20	3.4	-4.19	-0.005	2.5
	20	4.35	-8.6	-0.010	2.5
Result:				Pass	

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.7	9.25	0.011	2.5
	-20	3.7	9.34	0.011	2.5
	-10	3.7	3.15	0.004	2.5
	0	3.7	9.76	0.012	2.5
	10	3.7	-8.82	-0.011	2.5
	20	3.7	-6.55	-0.008	2.5
	30	3.7	-4.14	-0.005	2.5
	40	3.7	-9.88	-0.012	2.5
Frequency Stability vs. Voltage	50	3.7	-1.71	-0.002	2.5
	20	3.4	9.31	0.011	2.5
	20	4.35	-5.11	-0.006	2.5
Result:				Pass	

For IC:

Frequency Stability						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.7	824.518	824.000	848.453	849.000
	-20	3.7	824.542	824.000	848.450	849.000
	-10	3.7	824.563	824.000	848.453	849.000
	0	3.7	824.554	824.000	848.447	849.000
	10	3.7	824.542	824.000	848.462	849.000
	20	3.7	824.569	824.000	848.471	849.000
	30	3.7	824.593	824.000	848.498	849.000
	40	3.7	824.596	824.000	848.492	849.000
	50	3.7	824.581	824.000	848.474	849.000
Frequency Stability vs. Voltage	20	3.4	824.572	824.000	848.477	849.000
	20	4.35	824.581	824.000	848.486	849.000
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	3.7	824.533	824.000	848.462	849.000
	-20	3.7	824.551	824.000	848.465	849.000
	-10	3.7	824.566	824.000	848.447	849.000
	0	3.7	824.557	824.000	848.468	849.000
	10	3.7	824.548	824.000	848.447	849.000
	20	3.7	824.569	824.000	848.471	849.000
	30	3.7	824.590	824.000	848.486	849.000
	40	3.7	824.584	824.000	848.489	849.000
	50	3.7	824.584	824.000	848.492	849.000
Frequency Stability vs. Voltage	20	3.4	824.587	824.000	848.489	849.000
	20	4.35	824.572	824.000	848.474	849.000
Result:					Pass	

Test Plots

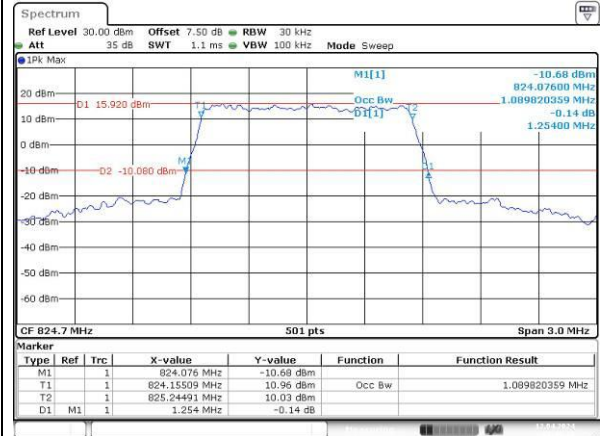
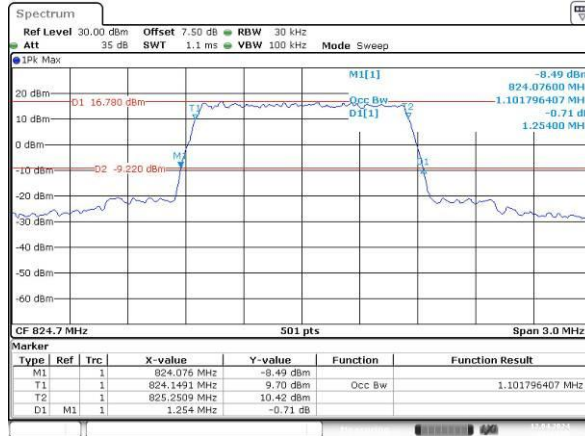
Occupied Bandwidth

Channel

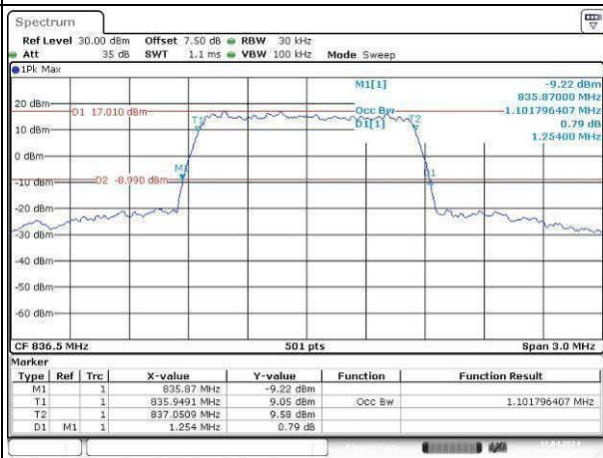
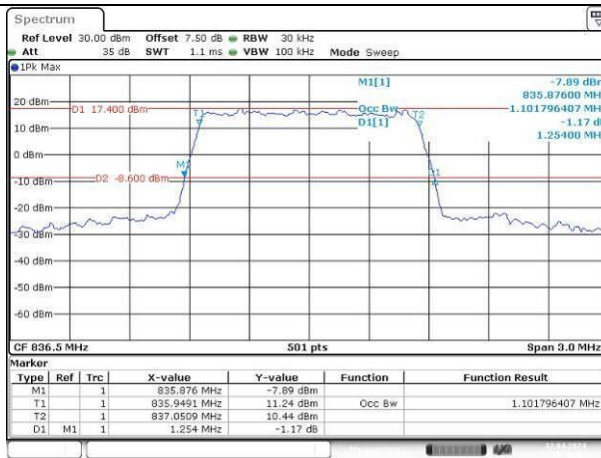
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

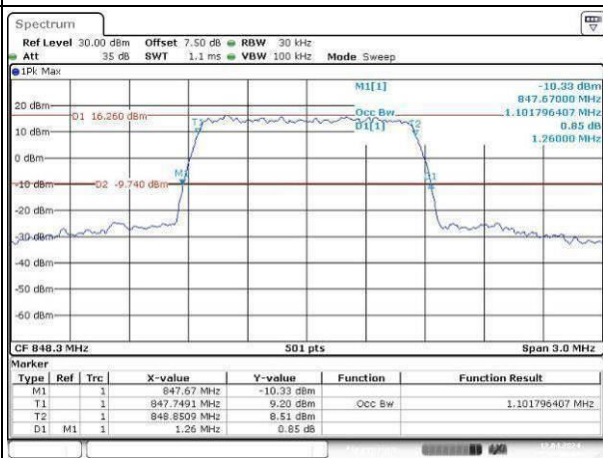
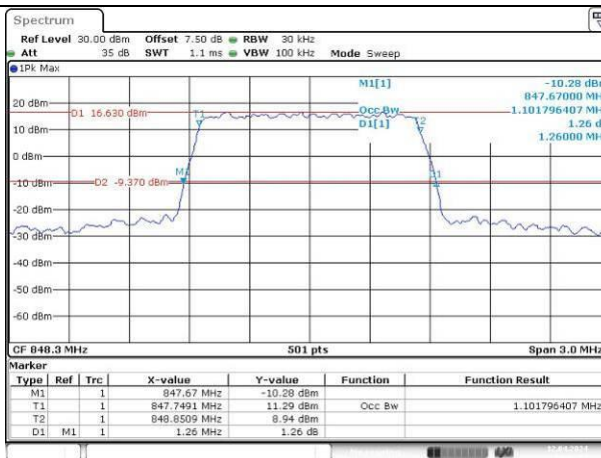
Lowest



Middle



Highest



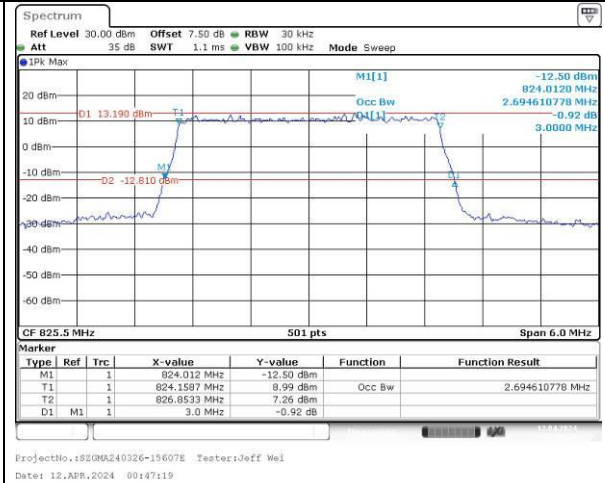
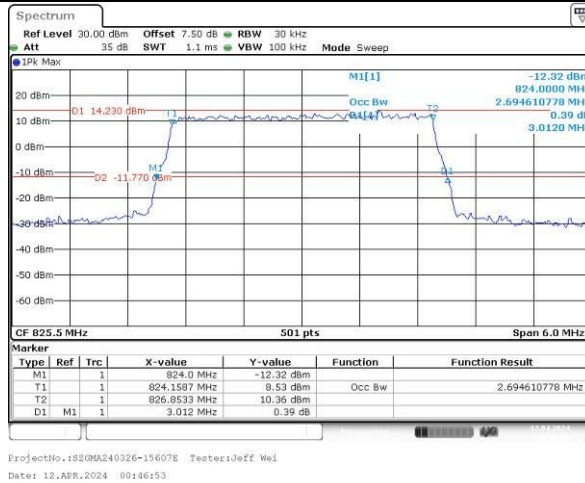
Occupied Bandwidth

Channel

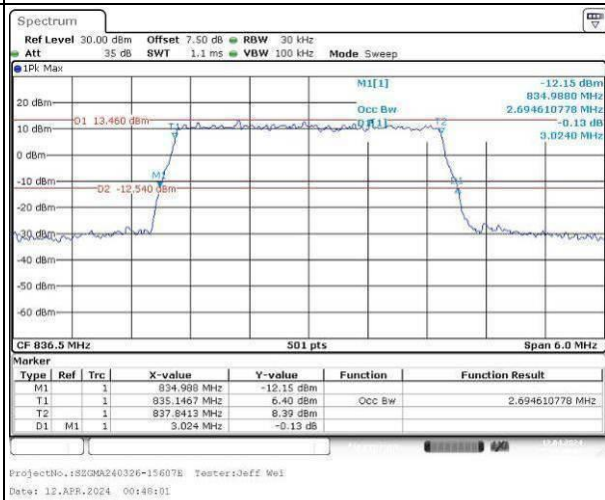
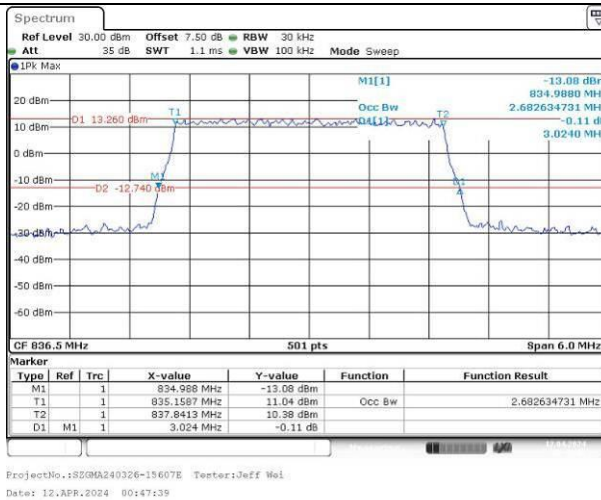
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

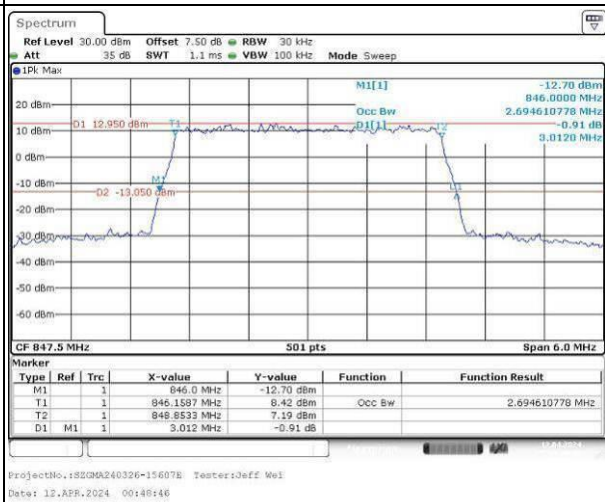
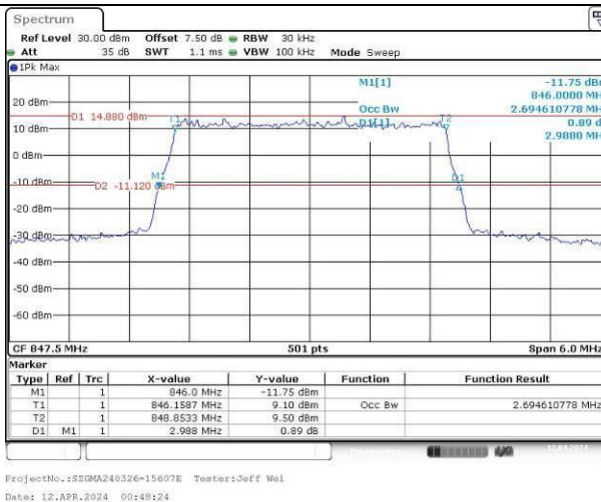
Lowest



Middle



Highest



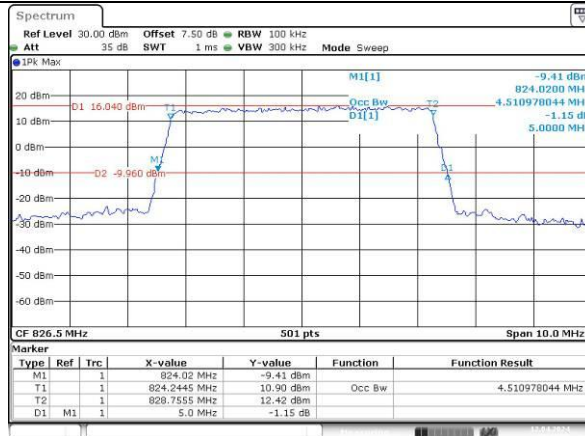
Occupied Bandwidth

Channel

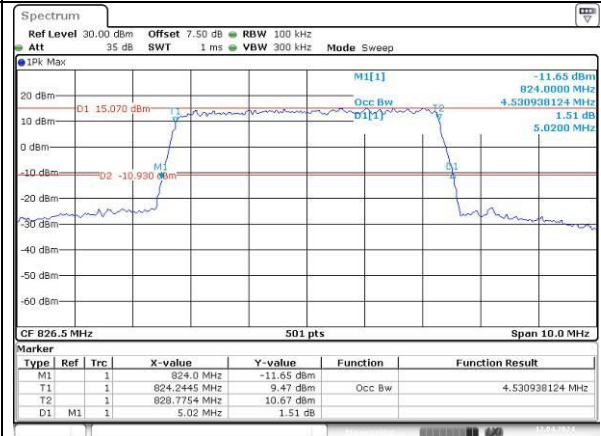
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

Lowest

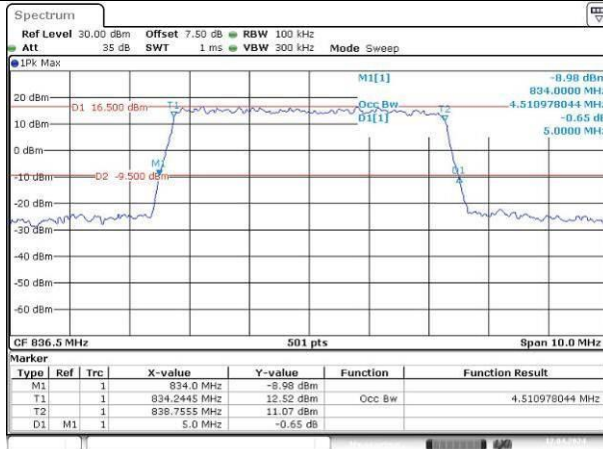


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 12.APR.2024 00:49:09

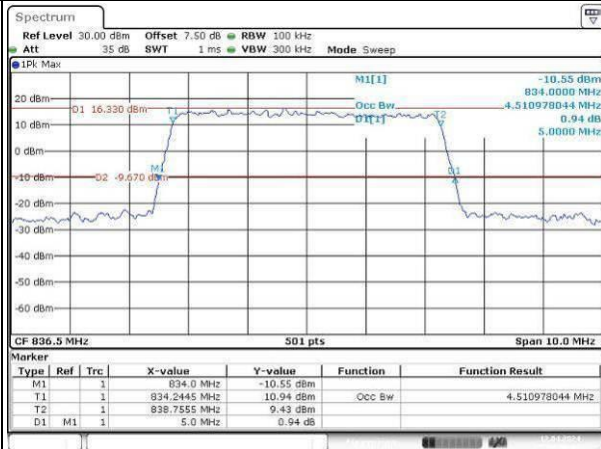


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 12.APR.2024 00:49:31

Middle

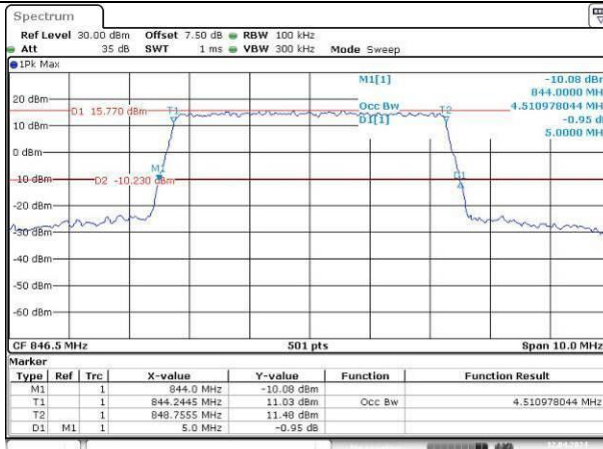


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 12.APR.2024 00:50:09

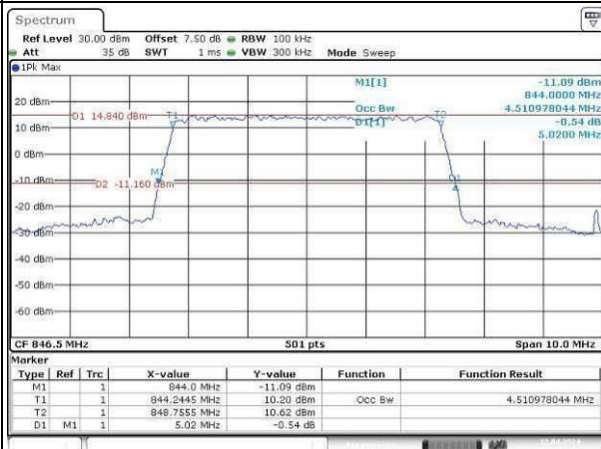


ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 12.APR.2024 00:50:37

Highest



ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 12.APR.2024 00:51:00



ProjectNo.:SZGMA240326-15607E Testers:Jeff Wei
Date: 12.APR.2024 00:51:23

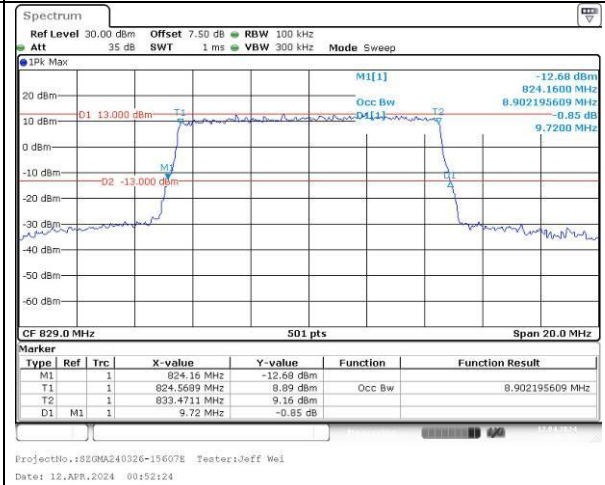
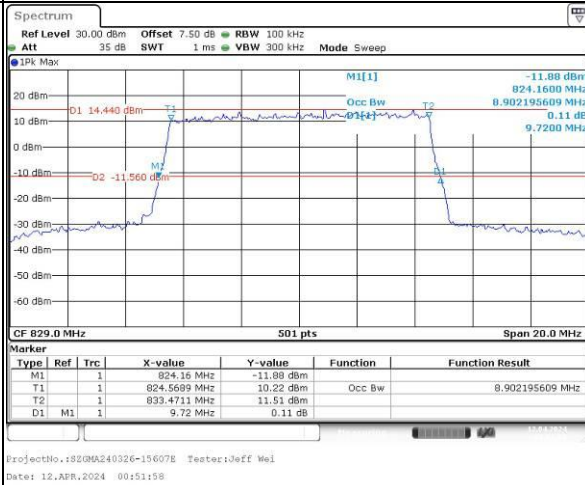
Occupied Bandwidth

Channel

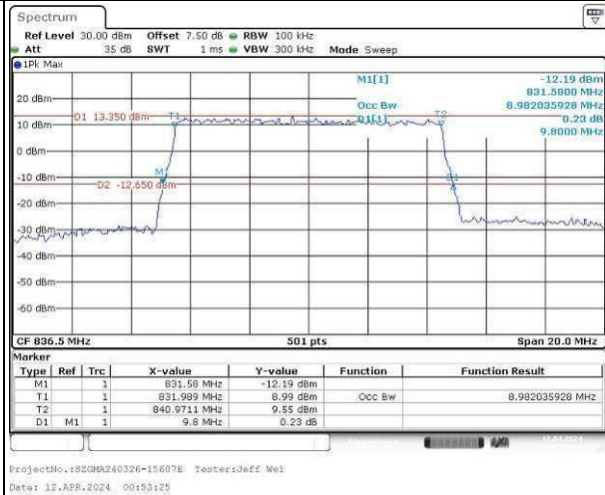
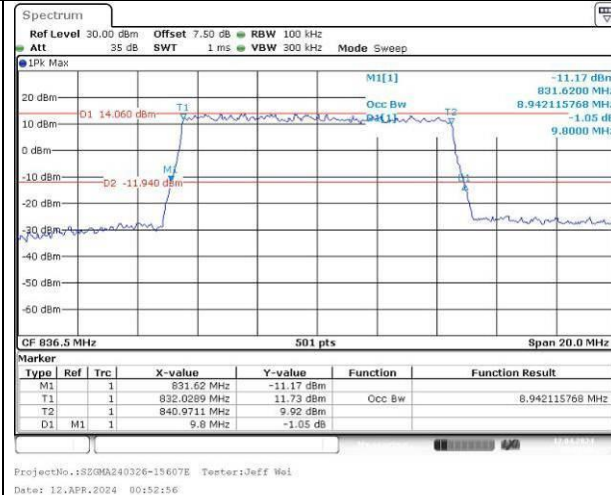
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

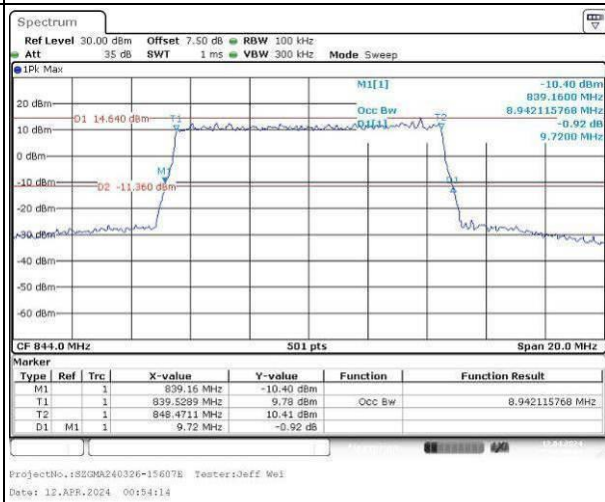
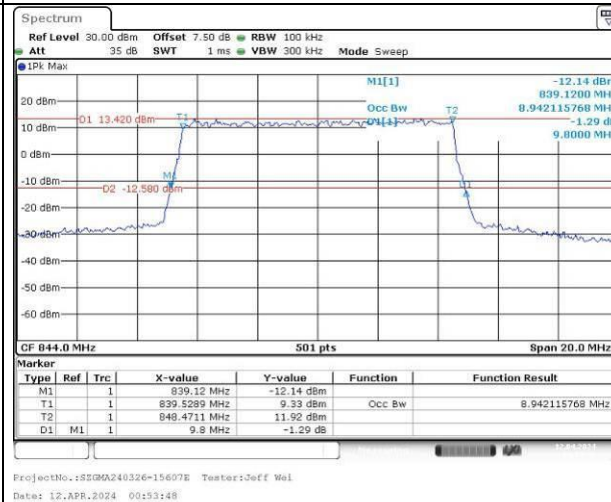
Lowest



Middle



Highest



1RB:

Spurious Emissions at Antenna Terminal

