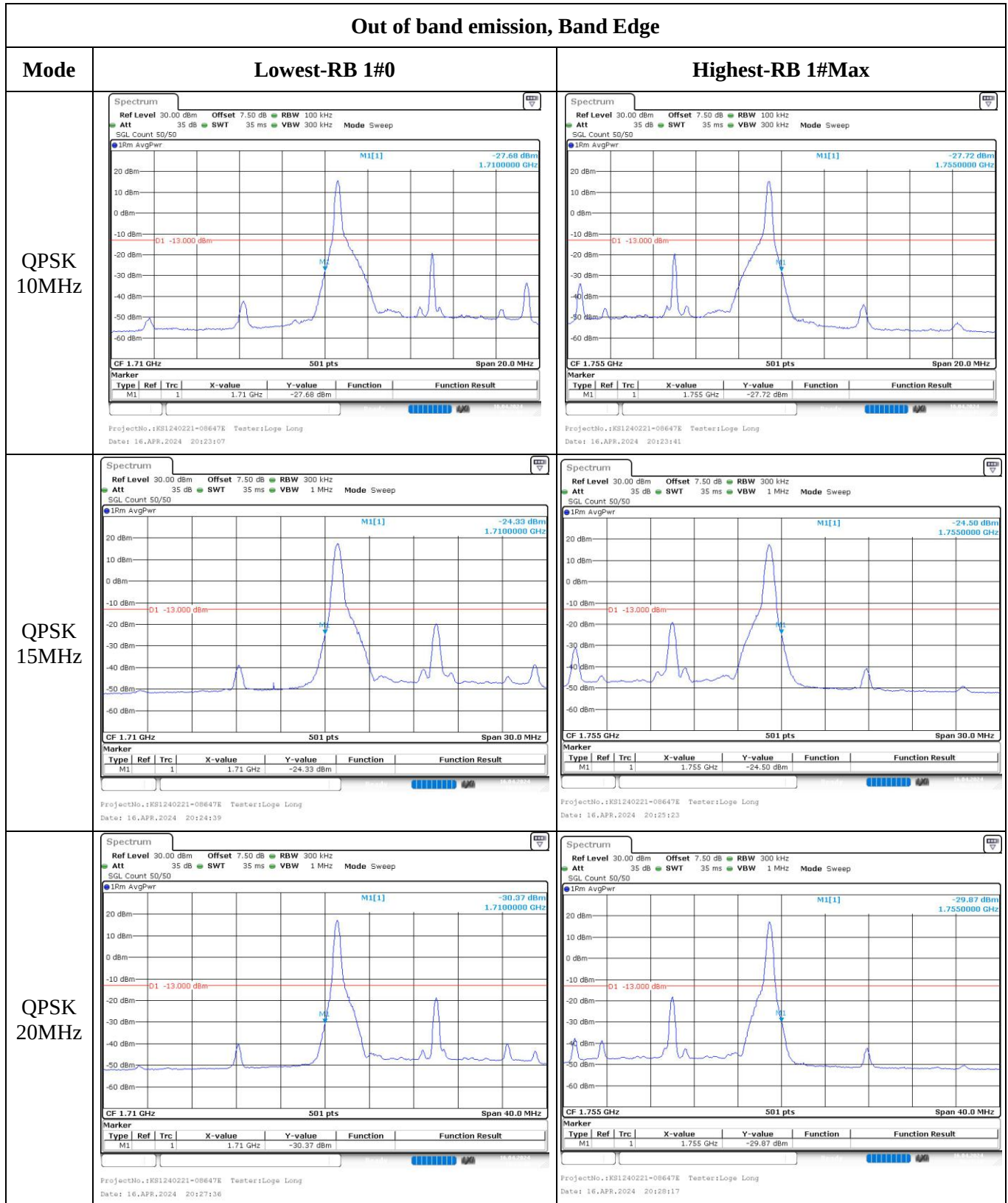
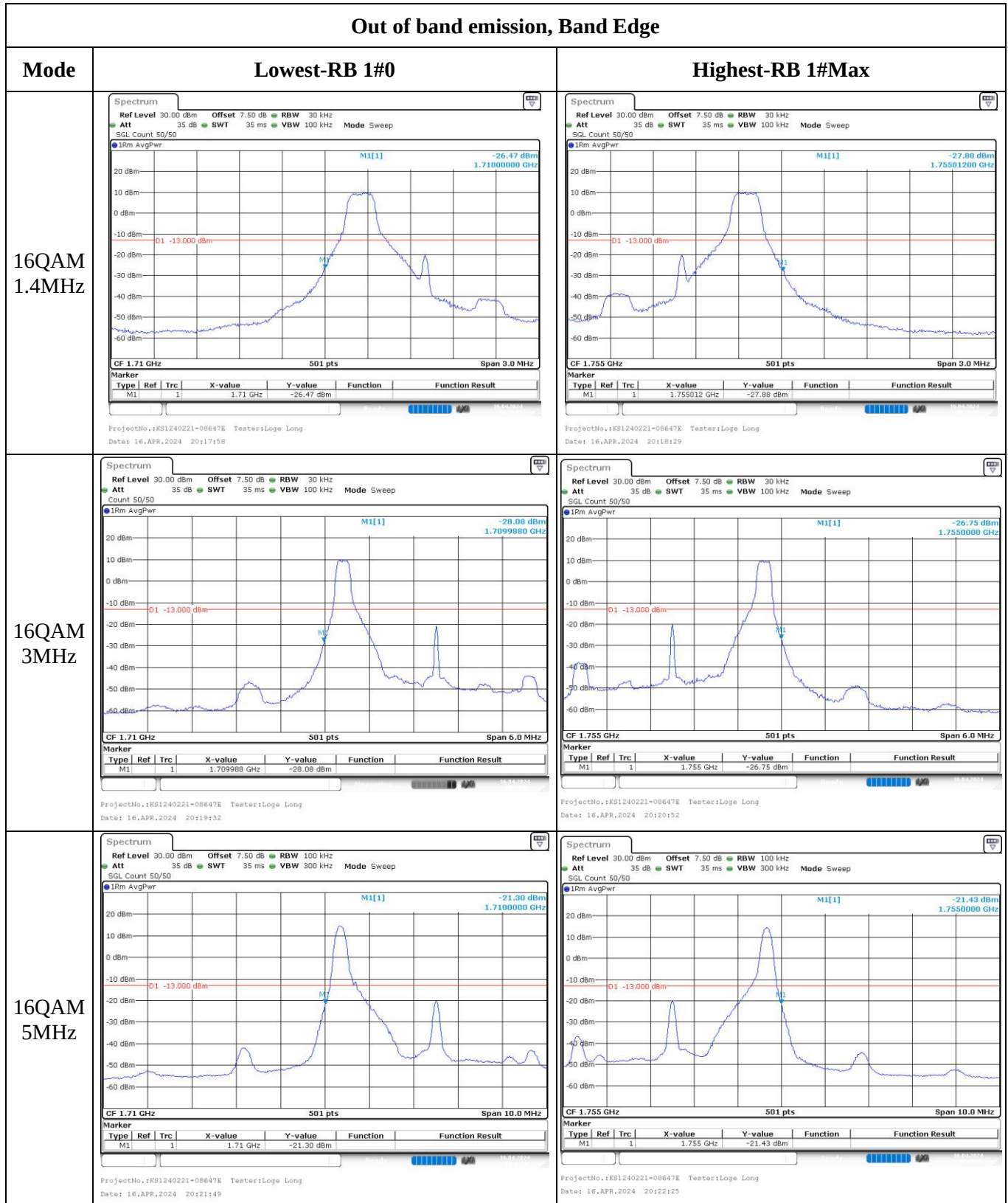


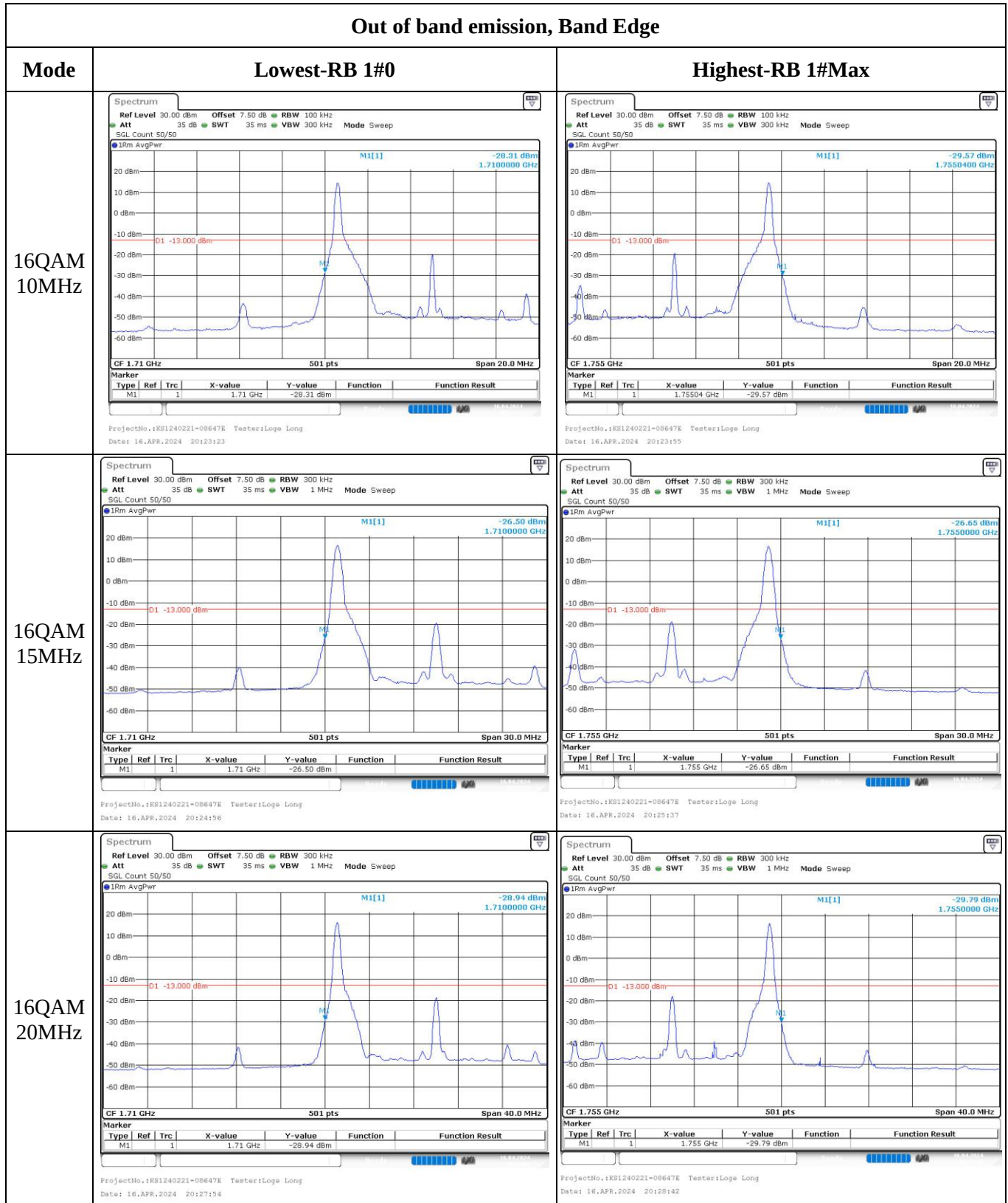
Out of band emission, Band Edge



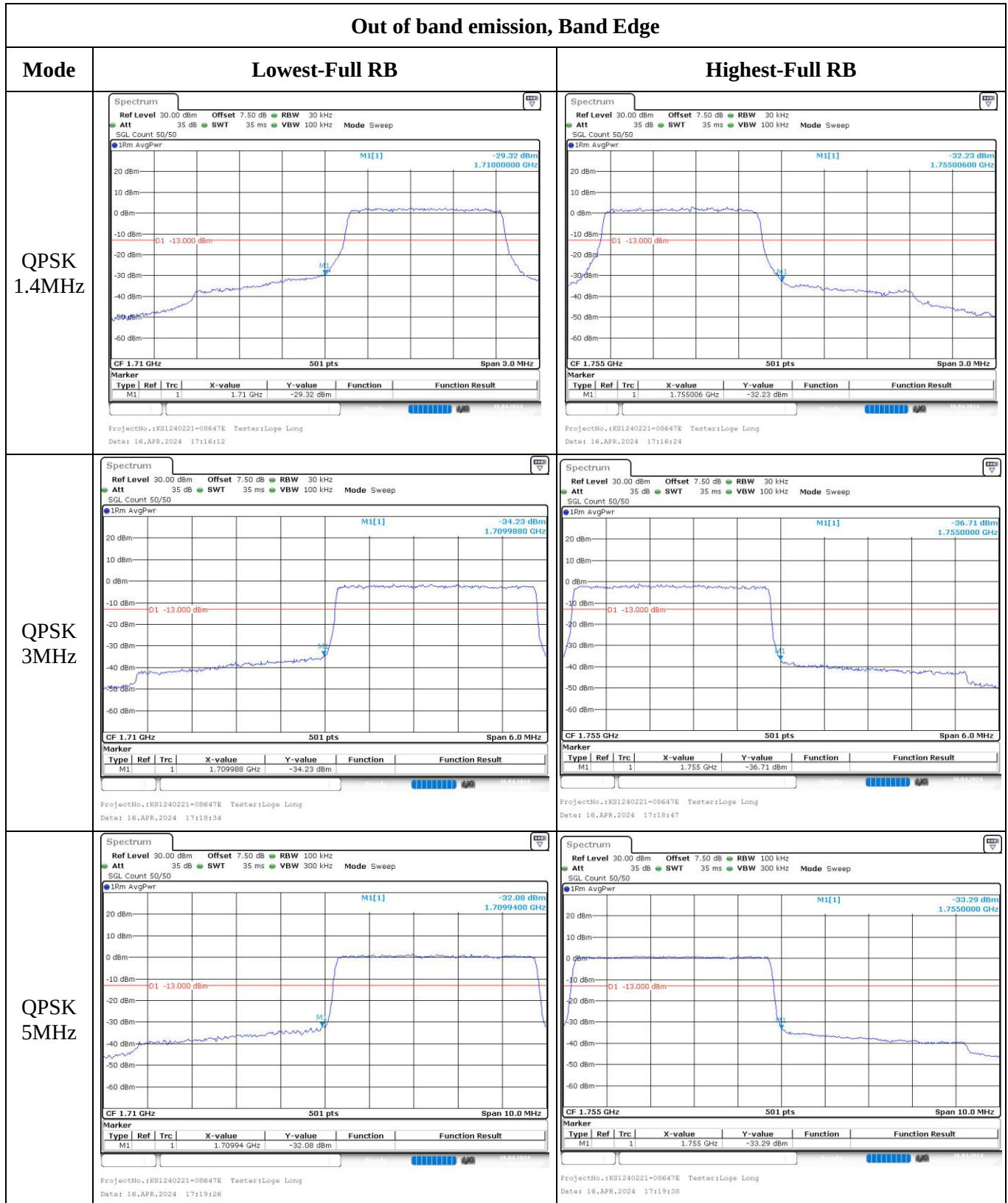
Out of band emission, Band Edge



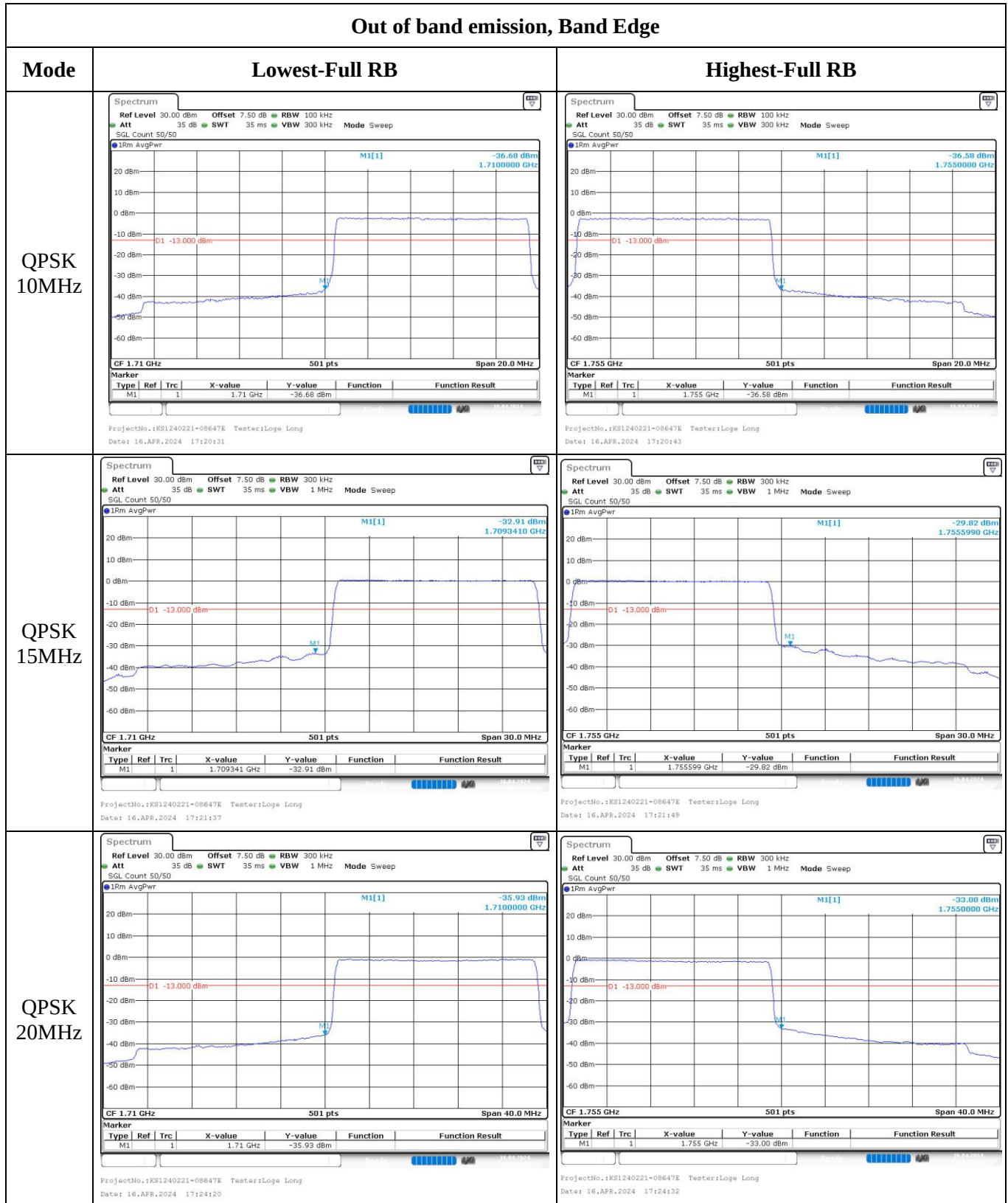
Out of band emission, Band Edge



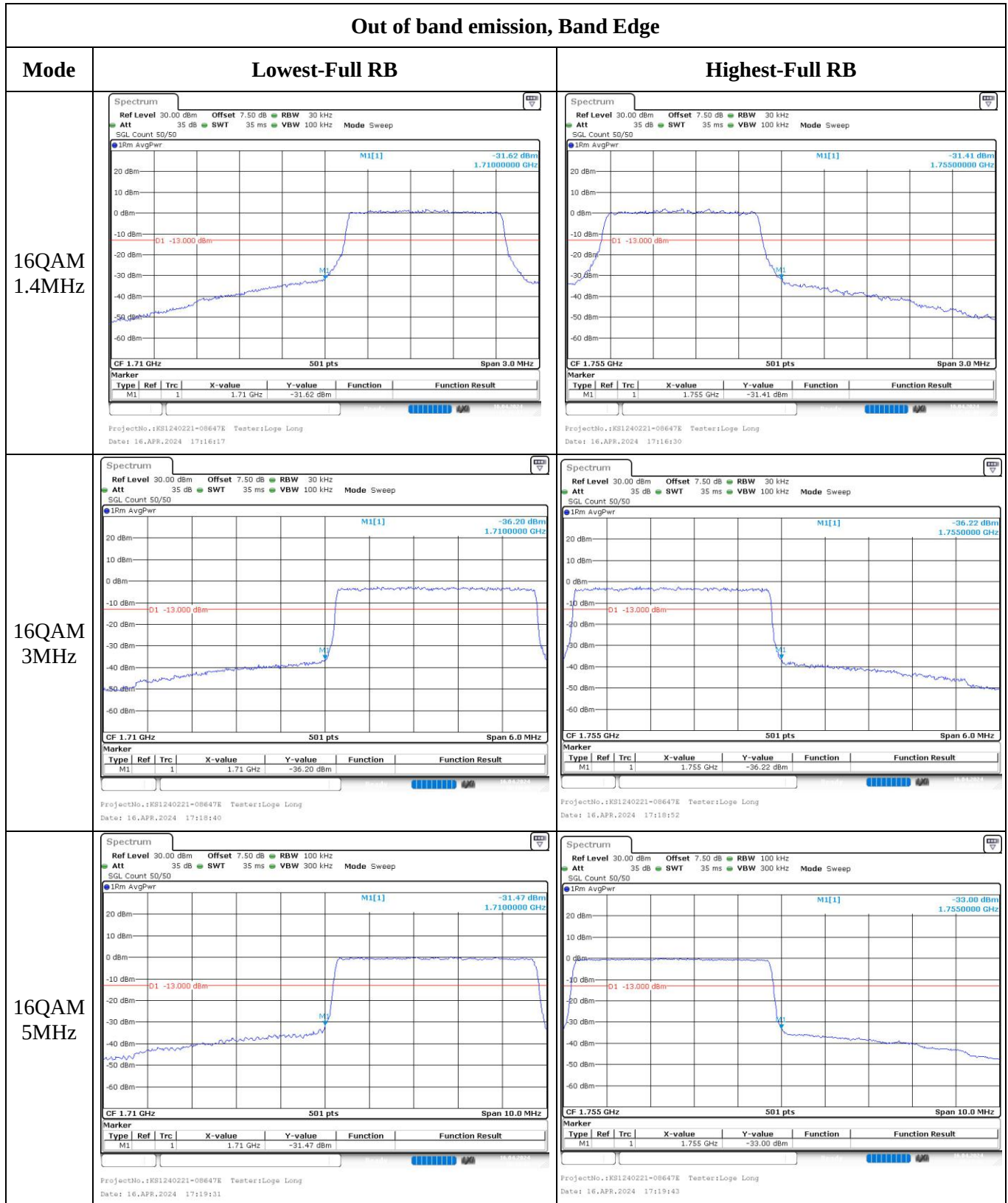
Out of band emission, Band Edge



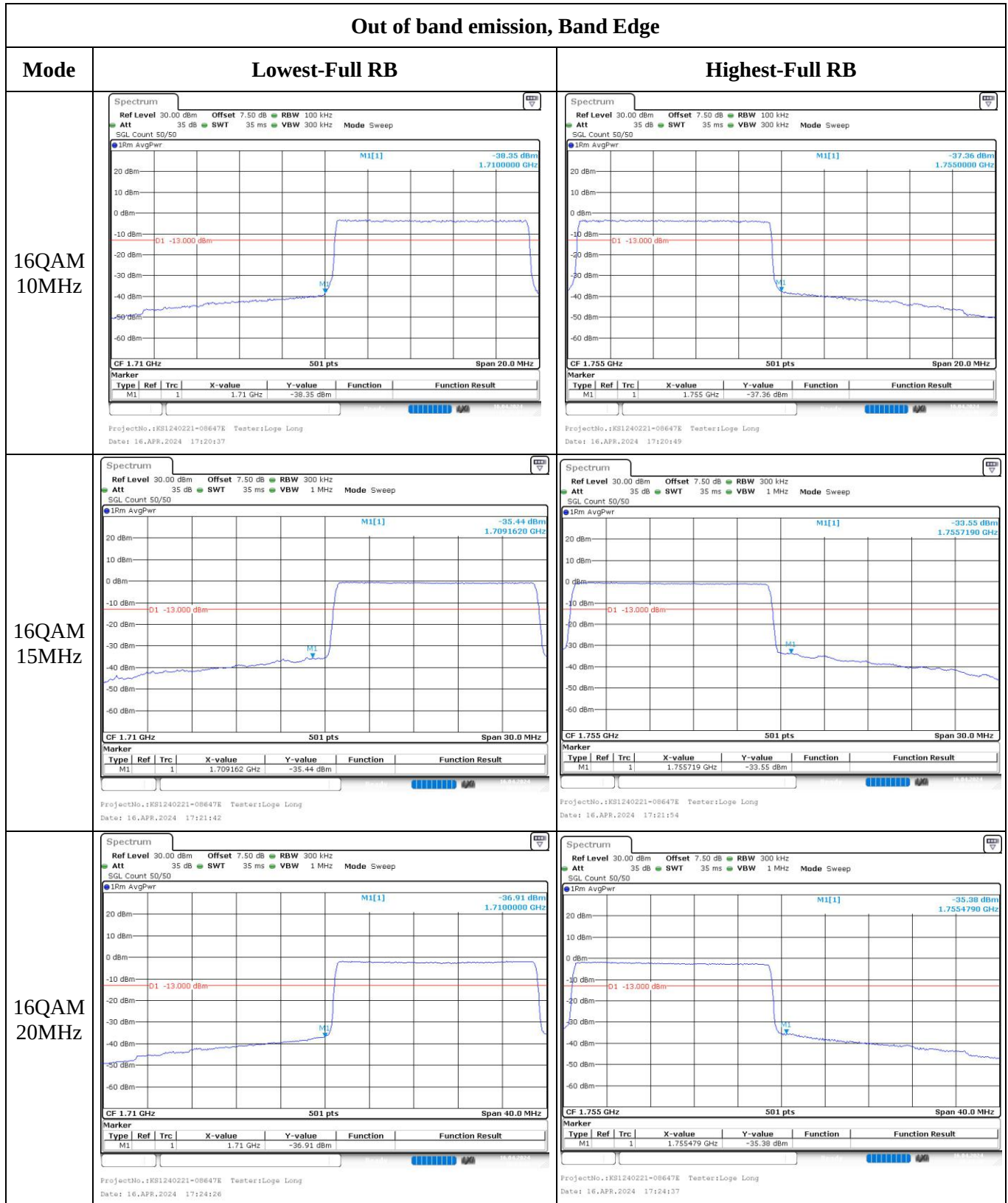
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



5.7 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	2HV7-2	Test Date:	2024/4/16~2024/4/19
Test Site:	RF	Test Mode:	Transmitting
Tester:	Loge Long	Test Result:	Pass

Environmental Conditions:					
Temperature: (°C)	26.4~28.1	Relative Humidity: (%)	46~61	ATM Pressure: (kPa)	100.1~100.5

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
Minl-Clrucits	Coaxial Power Splitters & Combiner	ZFRSC-183-S+	SF448201614	2024/2/25	2025/2/24
R&S	Wideband Radio Communication Tester	CMW500	110479	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
Micro-Coax	Coaxial Cable	UFB205A	323308-024	2024/1/2	2025/1/1
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

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	23.25	23.24	23.24	20.81	38.45
	RB1#3	23.48	23.46	23.39		
	RB1#5	23.28	23.25	23.26		
	RB3#0	23.37	23.35	23.31		
	RB3#3	23.37	23.38	23.50		
	RB6#0	22.33	22.30	22.26		
1.4MHz 16QAM	RB1#0	22.36	22.29	22.24	19.92	38.45
	RB1#3	22.61	22.47	22.43		
	RB1#5	22.42	22.31	22.30		
	RB3#0	22.30	22.48	22.49		
	RB3#3	22.38	22.46	22.54		
	RB6#0	21.39	21.29	21.36		
3MHz QPSK	RB1#0	23.34	23.29	23.26	20.66	38.45
	RB1#8	23.35	23.27	23.27		
	RB1#14	23.32	23.25	23.25		
	RB6#0	22.27	22.28	22.22		
	RB6#9	22.29	22.29	22.29		
	RB15#0	22.31	22.35	22.29		
3MHz 16QAM	RB1#0	22.32	22.94	22.40	20.25	38.45
	RB1#8	22.34	22.88	22.36		
	RB1#14	22.32	22.84	22.45		
	RB6#0	21.25	21.38	21.27		
	RB6#9	21.28	21.38	21.37		
	RB15#0	21.43	21.40	21.29		
5MHz QPSK	RB1#0	23.18	23.22	23.14	20.67	38.45
	RB1#13	23.36	23.31	23.26		
	RB1#24	23.22	23.17	23.19		
	RB15#0	22.36	22.28	22.37		
	RB15#10	22.32	22.38	22.21		
	RB25#0	22.32	22.30	22.23		
5MHz 16QAM	RB1#0	22.47	22.30	22.04	19.94	38.45
	RB1#13	22.63	22.39	22.13		
	RB1#24	22.54	22.27	22.10		
	RB15#0	21.39	21.35	21.42		
	RB15#10	21.31	21.42	21.30		
	RB25#0	21.35	21.38	21.35		
10MHz QPSK	RB1#0	23.28	23.29	23.19	20.8	38.45
	RB1#25	23.48	23.49	23.36		
	RB1#49	23.28	23.24	23.25		

10MHz 16QAM	RB25#0	22.50	22.29	22.33	20.19	38.45
	RB25#25	22.33	22.43	22.18		
	RB50#0	22.41	22.40	22.27		
	RB1#0	22.39	22.30	22.75		
	RB1#25	22.63	22.44	22.88		
	RB1#49	22.45	22.21	22.80		
	RB25#0	21.58	21.45	21.42		
	RB25#25	21.42	21.56	21.27		
	RB50#0	21.47	21.46	21.34		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(dBi)-2.15

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

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	4.12	5.36	4.75	13
	RB50#0	5.33	5.33	5.22	13
10MHz 16QAM	RB1#0	5.10	5.94	5.59	13
	RB50#0	6.20	6.23	6.12	13
				Result:	Pass

FCC §2.1049, §2.905: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	1.096	1.108	1.096	1.308	1.290	1.302
1.4MHz 16QAM	1.090	1.096	1.102	1.284	1.296	1.326
3MHz QPSK	2.683	2.683	2.695	2.904	2.868	2.880
3MHz 16QAM	2.683	2.671	2.683	2.868	2.880	2.880
5MHz QPSK	4.511	4.491	4.511	4.960	4.920	4.960
5MHz 16QAM	4.511	4.511	4.511	4.920	4.960	4.940
10MHz QPSK	8.942	8.942	8.942	9.600	9.640	9.640
10MHz 16QAM	8.942	8.942	8.942	9.640	9.640	9.600

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

FCC §2.1051, §2.917(a):Spurious Emissions at Antenna Terminal**Result:** Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.**FCC §2.1051, §2.917(a):Out of band emission, Band Edge****Result:** Pass, Please refer to the test plots of Out of band emission, Band Edge.

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	3.8	5.03	0.006	2.5
	-20	3.8	9.80	0.012	2.5
	-10	3.8	6.06	0.007	2.5
	0	3.8	-5.50	-0.007	2.5
	10	3.8	-6.97	-0.008	2.5
	20	3.8	-9.58	-0.011	2.5
	30	3.8	-6.62	-0.008	2.5
	40	3.8	-8.73	-0.010	2.5
	50	3.8	-7.05	-0.008	2.5
Frequency Stability vs. Voltage	20	3.4	8.99	0.011	2.5
	20	4.35	-7.17	-0.009	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	3.8	7.54	0.009	2.5
	-20	3.8	-6.94	-0.008	2.5
	-10	3.8	9.33	0.011	2.5
	0	3.8	-8.59	-0.010	2.5
	10	3.8	8.10	0.010	2.5
	20	3.8	-7.40	-0.009	2.5
	30	3.8	6.43	0.008	2.5
	40	3.8	-6.17	-0.007	2.5
	50	3.8	-6.44	-0.008	2.5
Frequency Stability vs. Voltage	20	3.4	6.34	0.008	2.5
	20	4.35	-6.89	-0.008	2.5
				Result:	Pass

Test Plots:

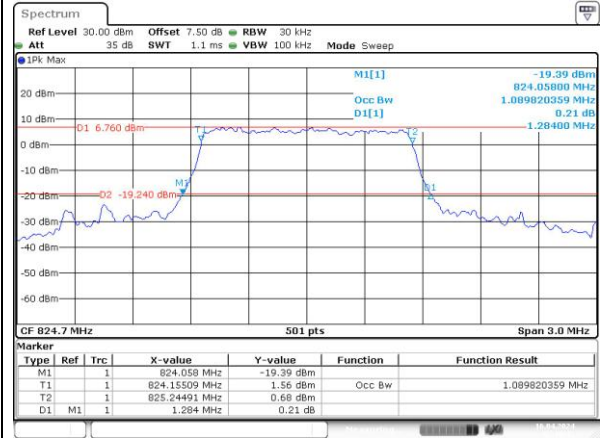
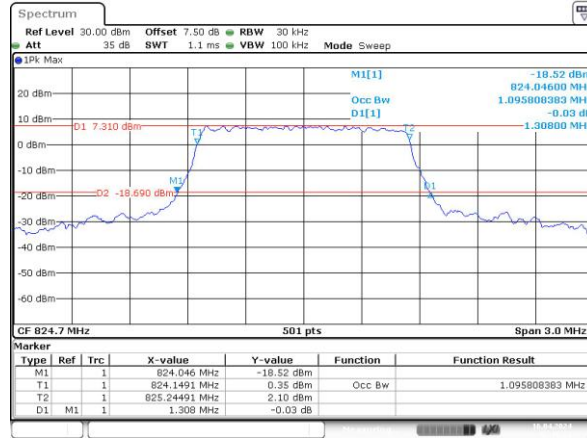
Occupied Bandwidth

Channel

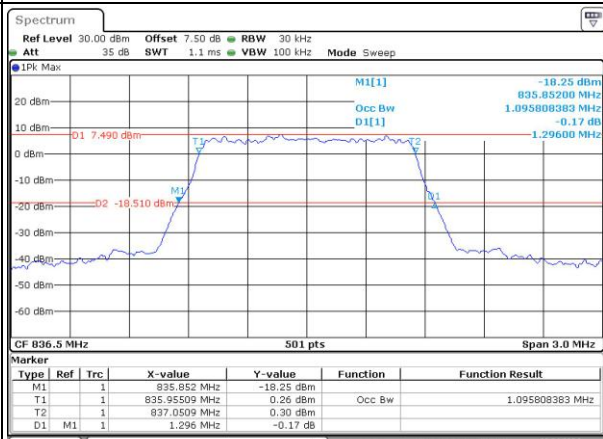
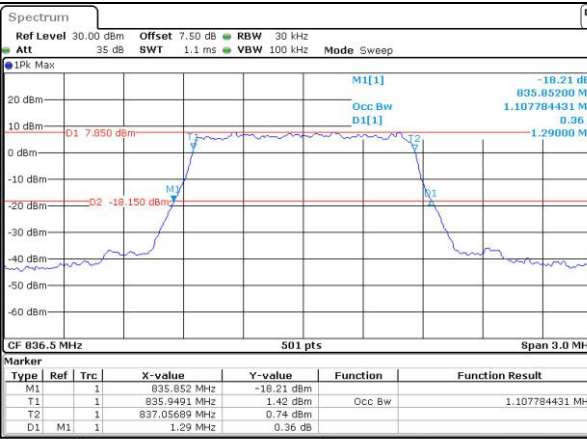
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

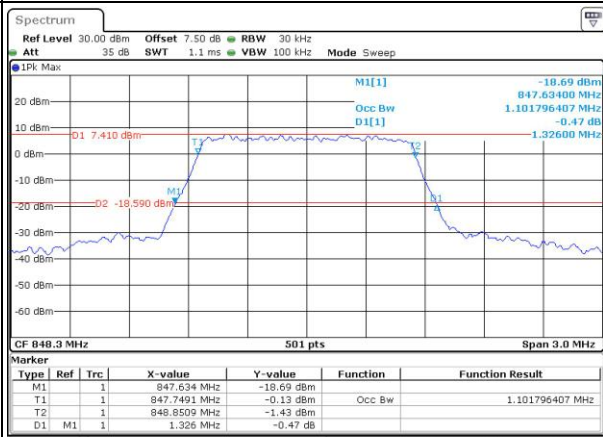
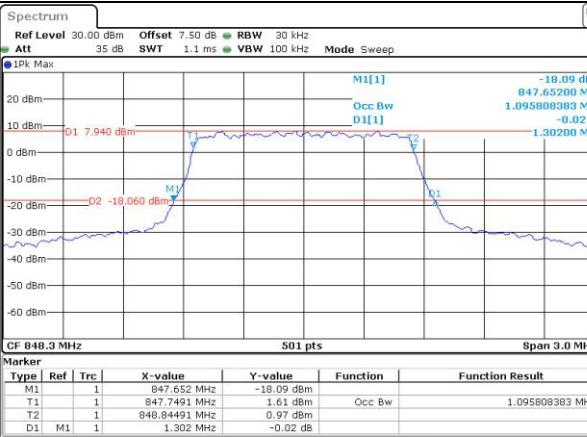
Lowest



Middle



Highest



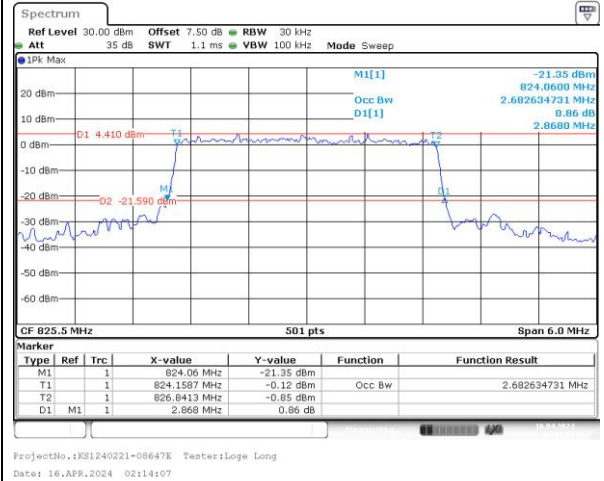
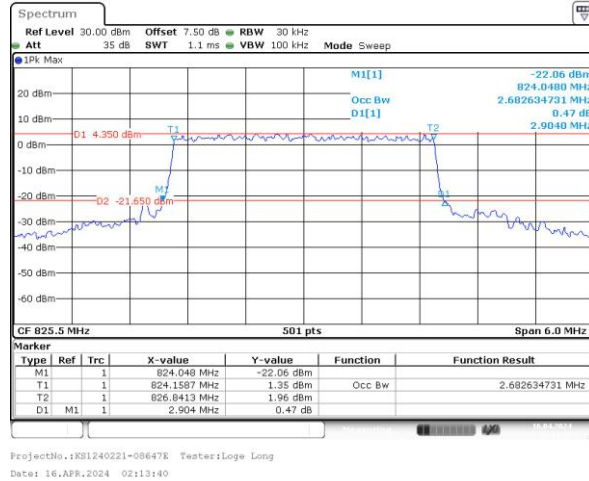
Occupied Bandwidth

Channel

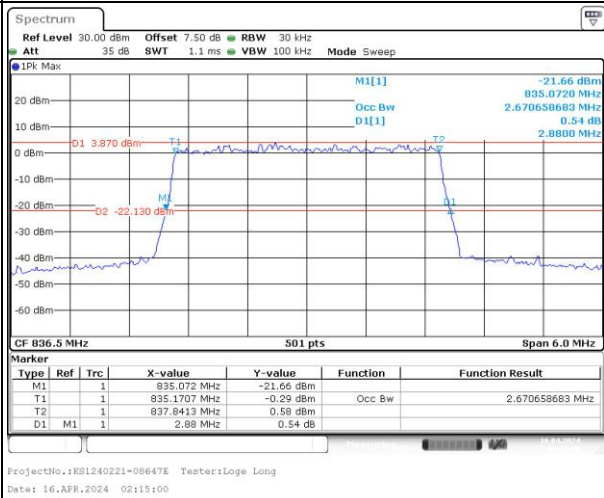
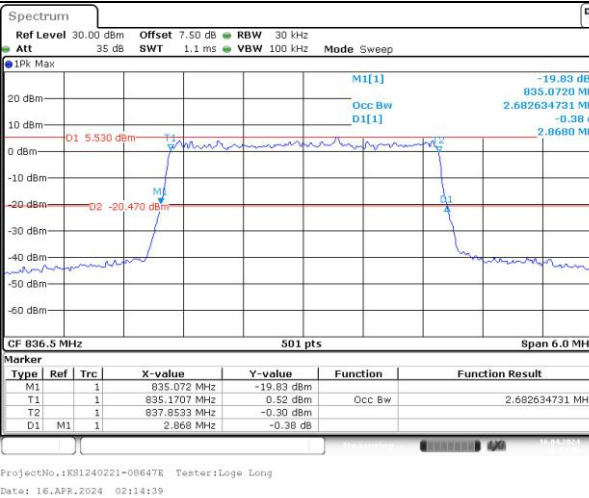
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

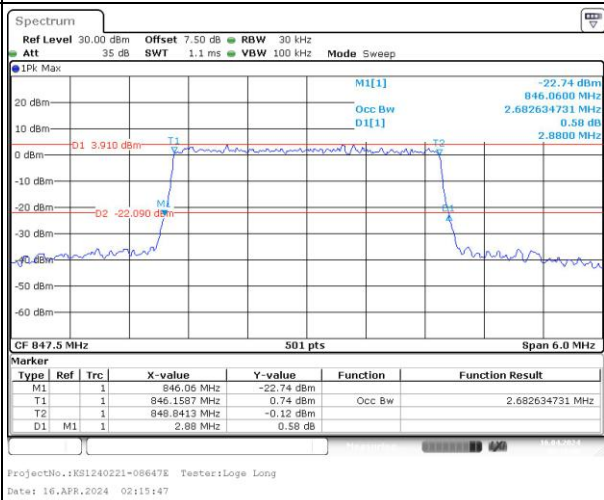
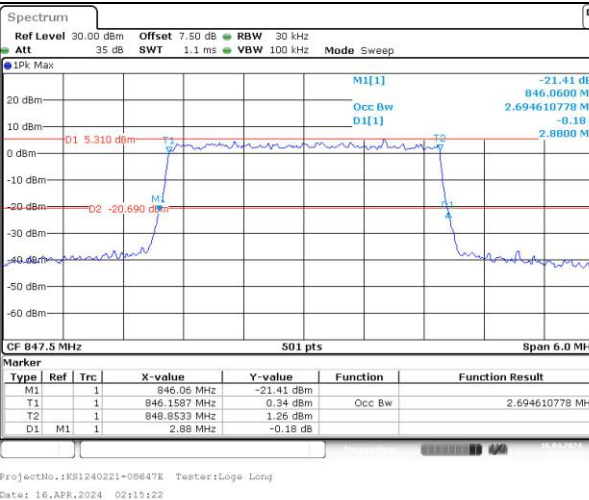
Lowest



Middle



Highest



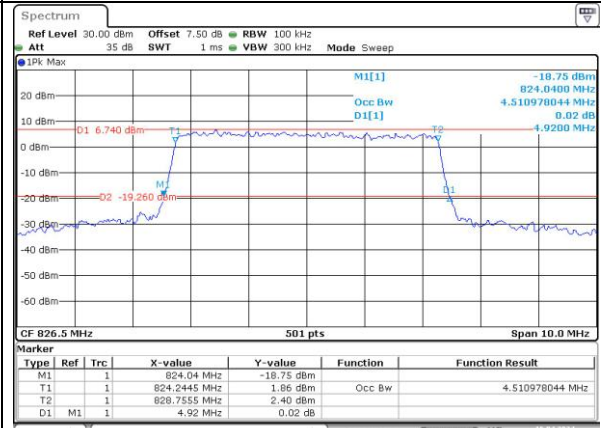
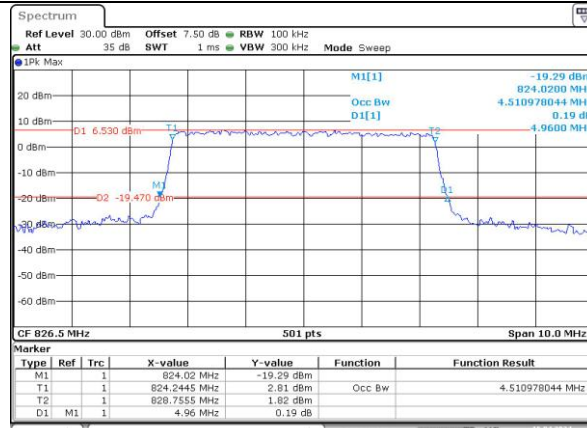
Occupied Bandwidth

Channel

5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

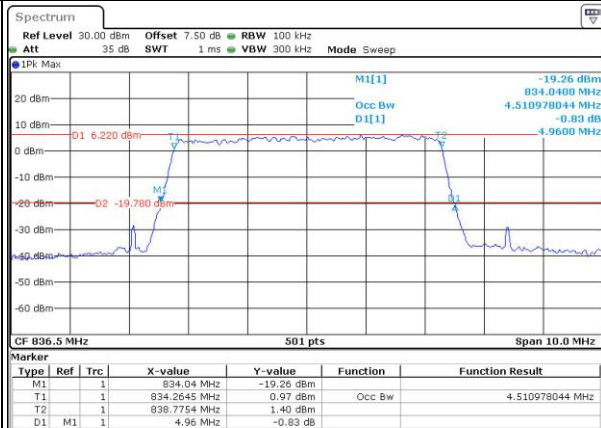
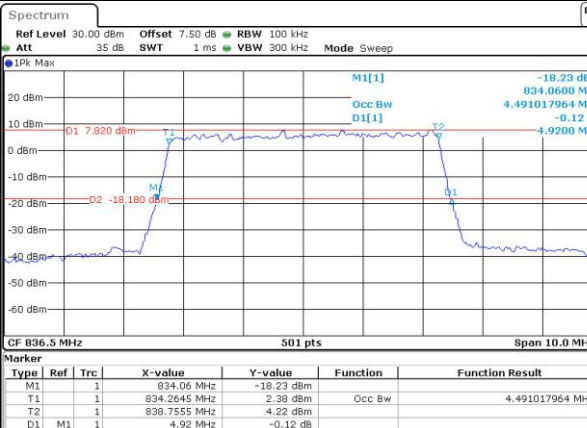
Lowest



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Date: 16.APR.2024 03:59:03

ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 16.APR.2024 03:59:34

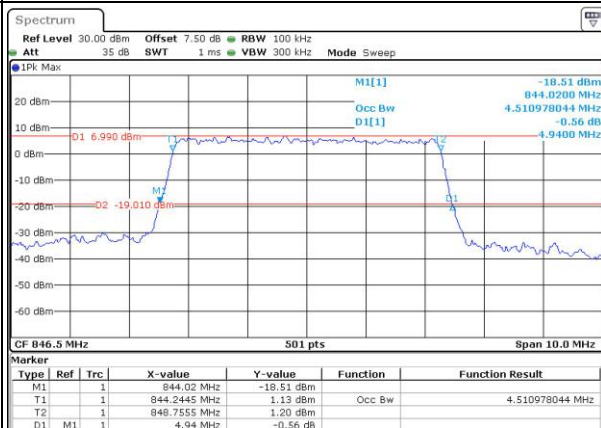
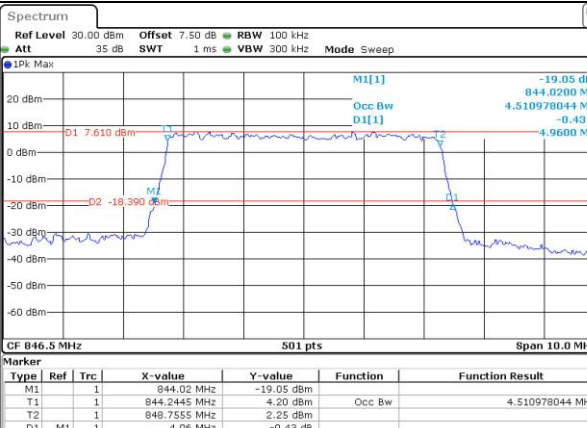
Middle



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 16.APR.2024 04:00:04

ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 16.APR.2024 04:00:32

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 16.APR.2024 04:01:02

ProjectNo.:KS1240221-08647E Tester:Loge Long
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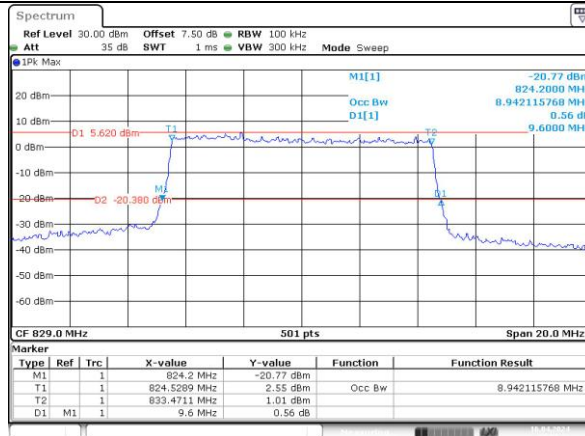
Occupied Bandwidth

Channel

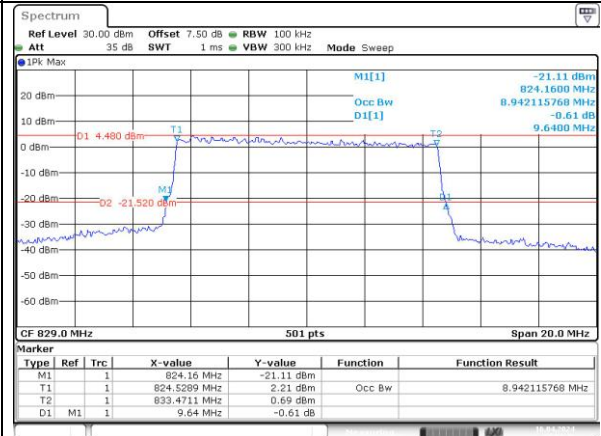
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

Lowest

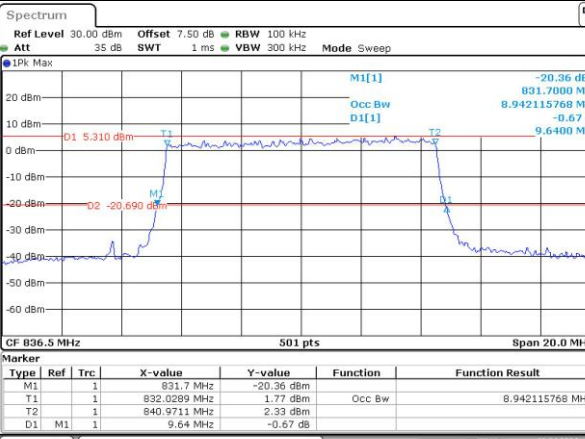


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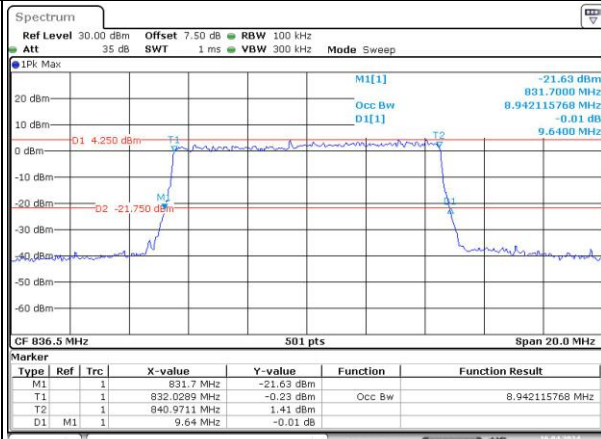


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Middle

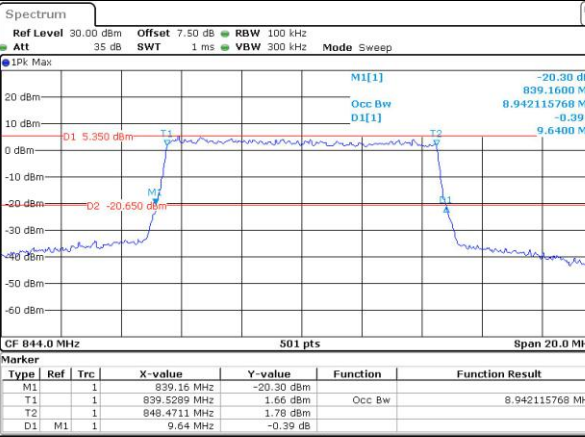


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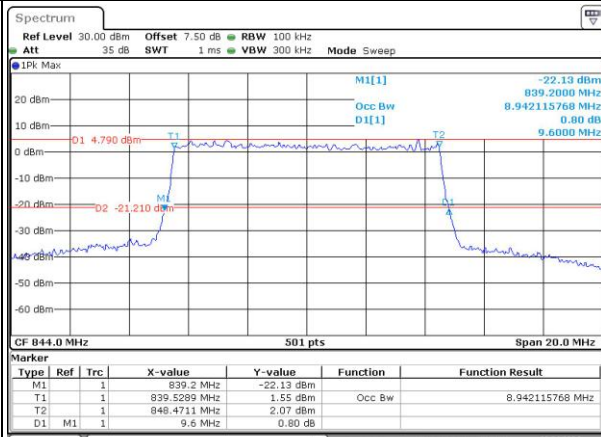


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Highest



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Date: 16.APR.2024 04:06:37



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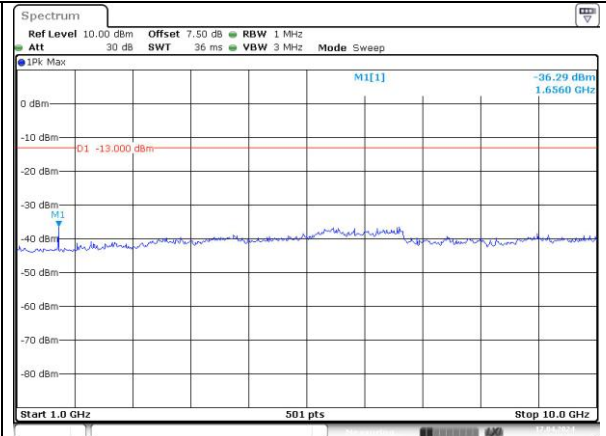
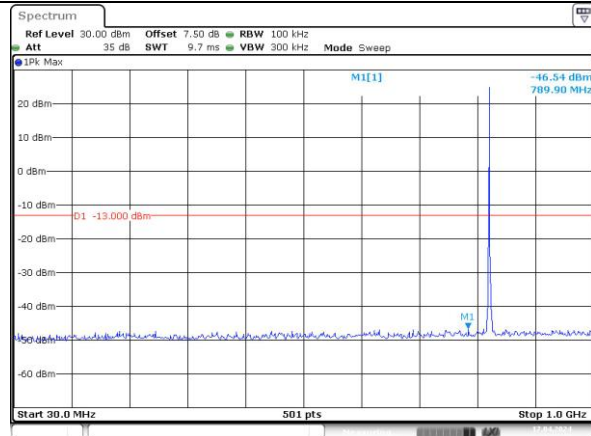
1RB:

Spurious Emissions at Antenna Terminal

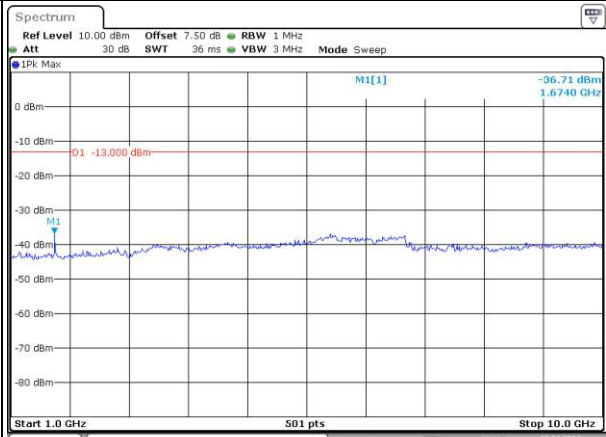
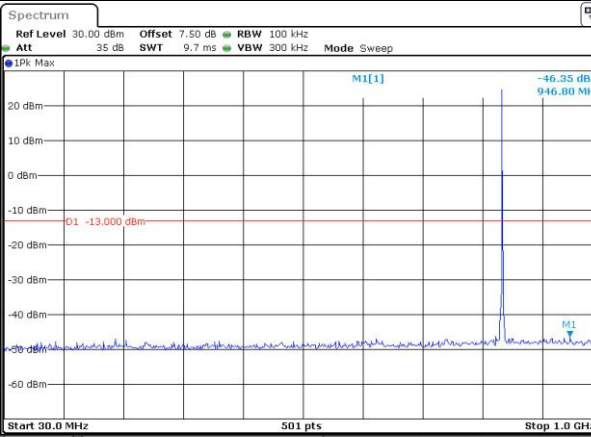
Channel

1.4MHz Bandwidth QPSK

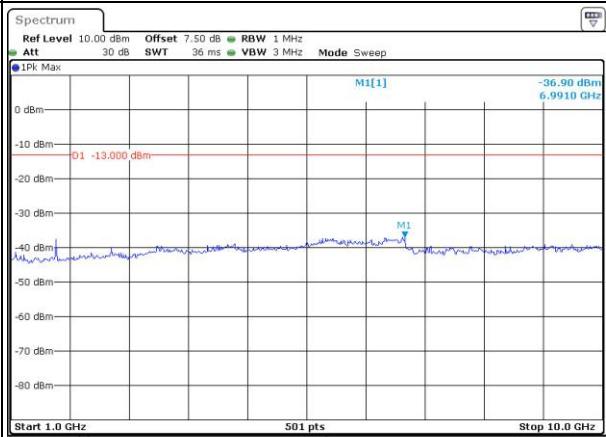
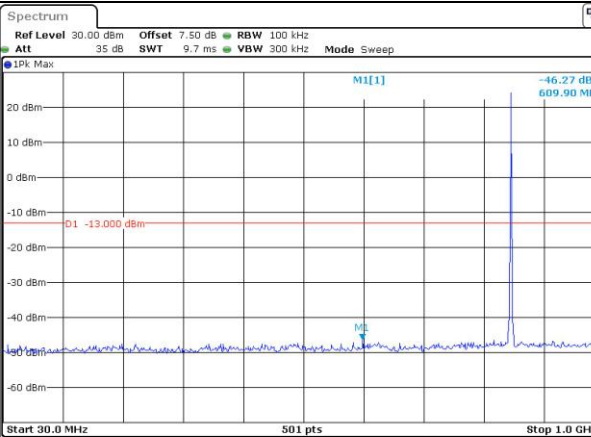
Lowest



Middle



Highest

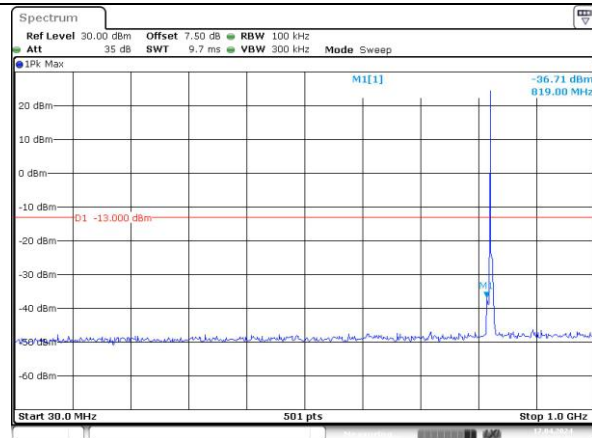


Spurious Emissions at Antenna Terminal

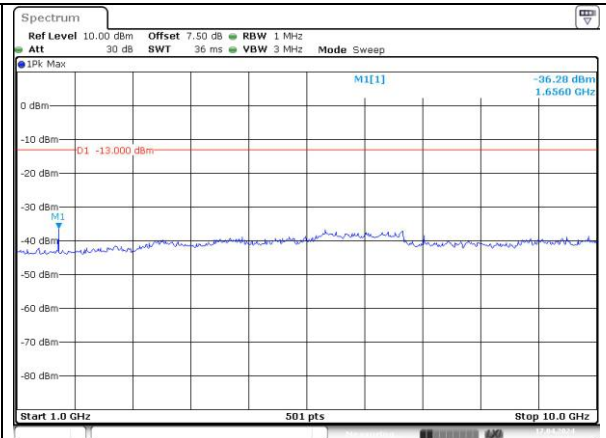
Channel

3MHz Bandwidth QPSK

Lowest

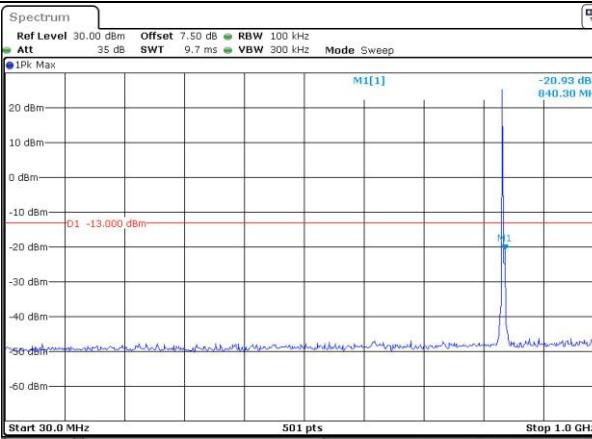


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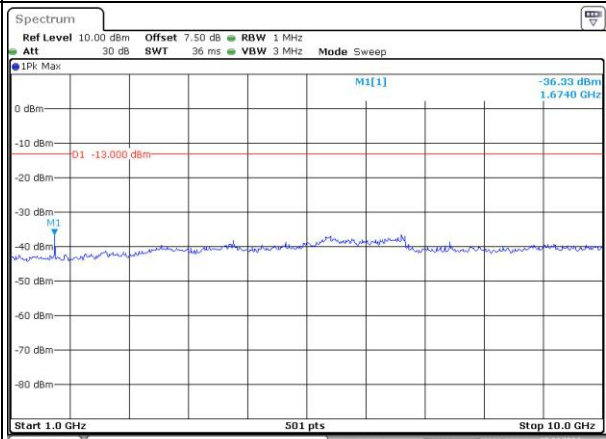


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Middle

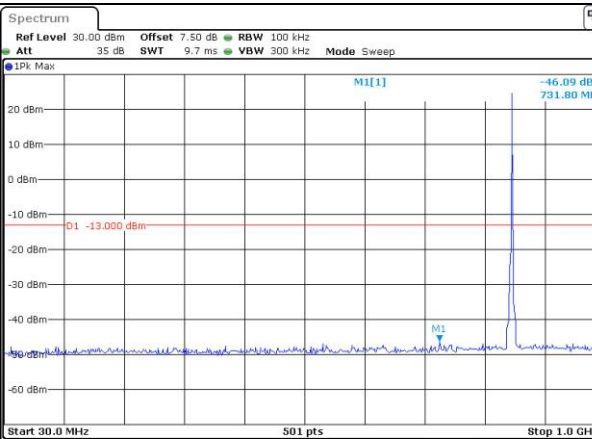


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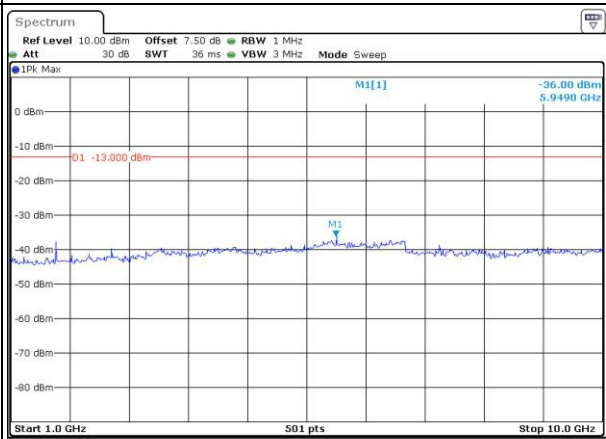


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Highest



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Date: 17.APR.2024 21:30:04



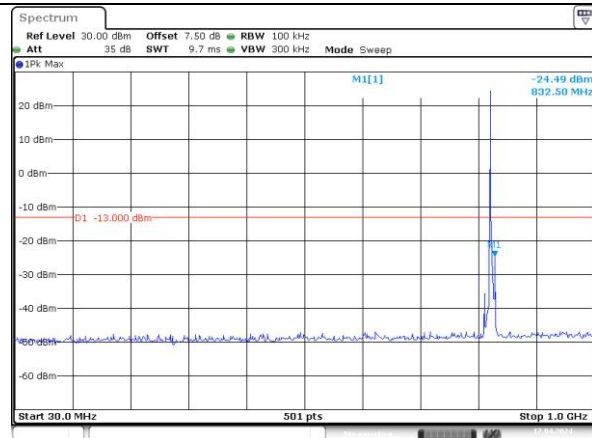
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Spurious Emissions at Antenna Terminal

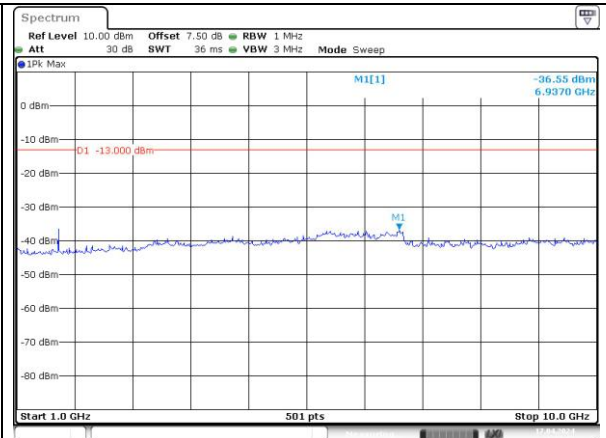
Channel

5MHz Bandwidth QPSK

Lowest

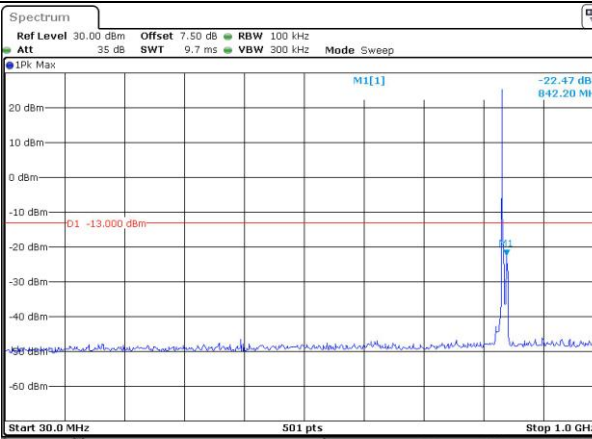


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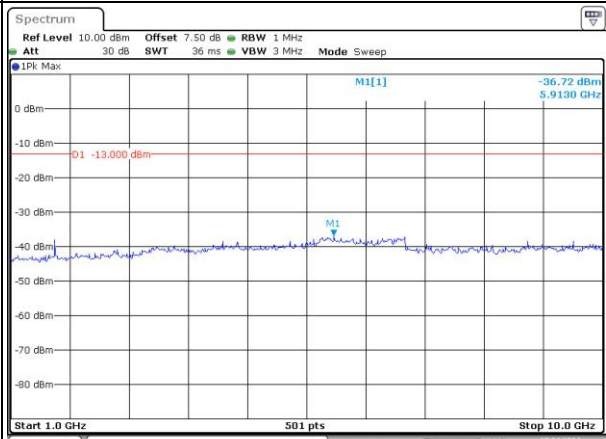


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Middle

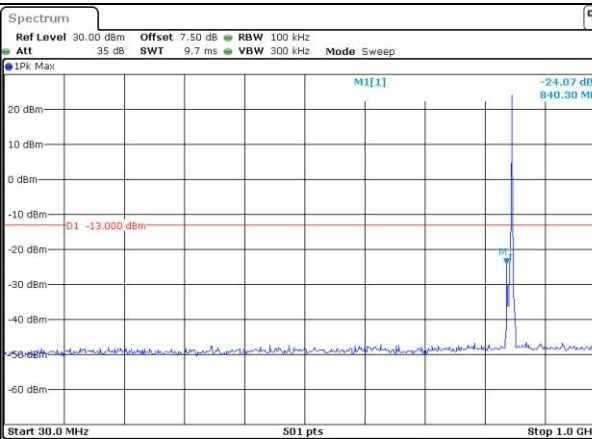


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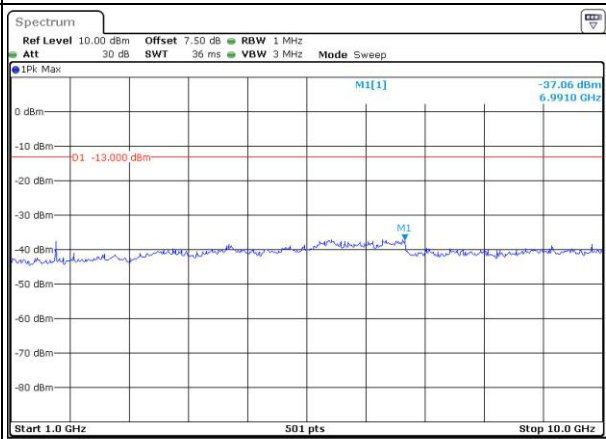


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:33:04

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:33:44



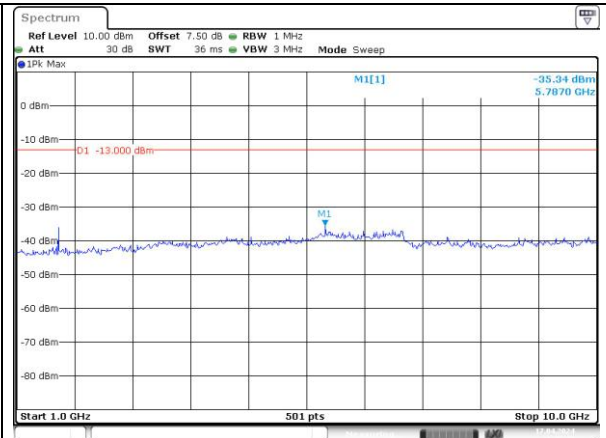
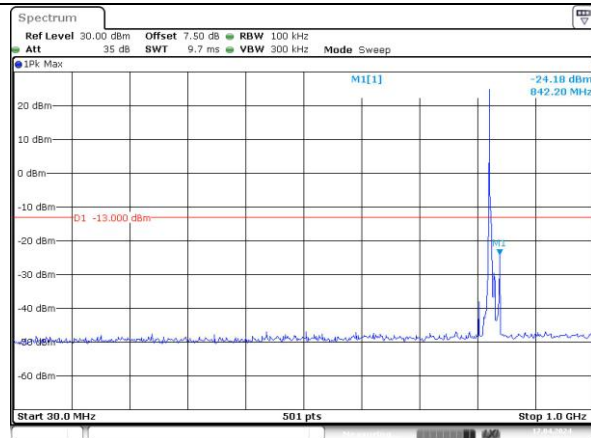
ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:34:03

Spurious Emissions at Antenna Terminal

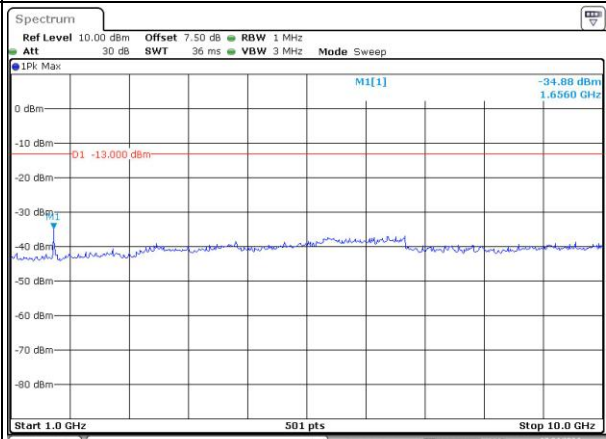
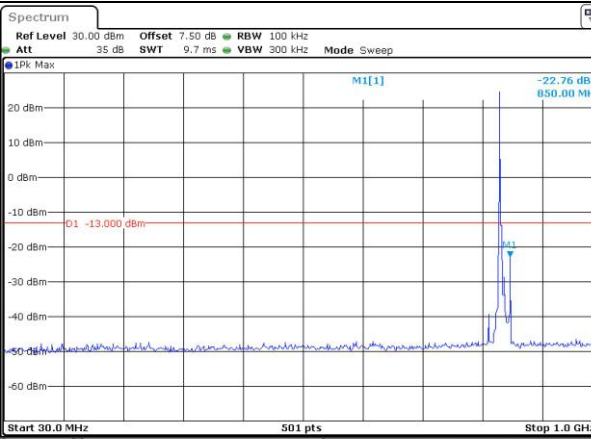
Channel

10MHz Bandwidth QPSK

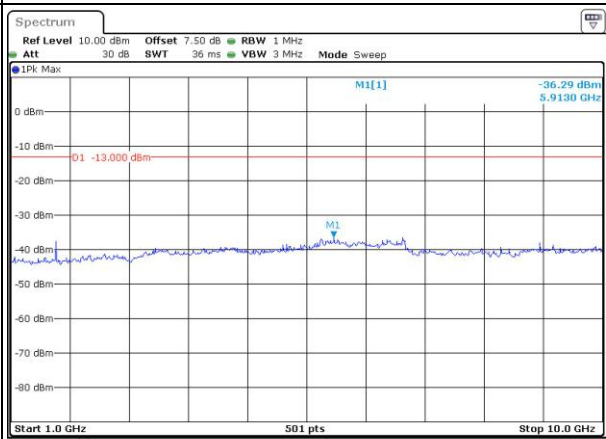
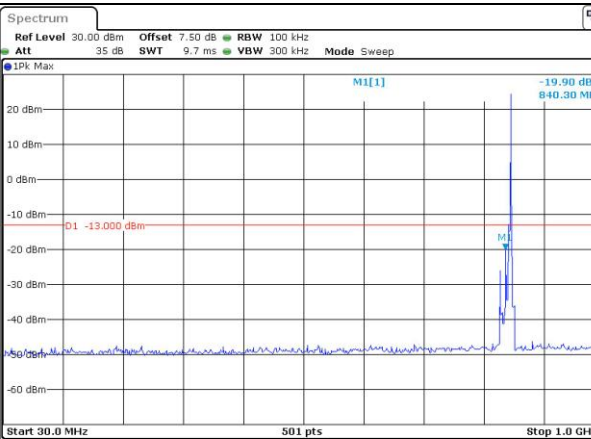
Lowest



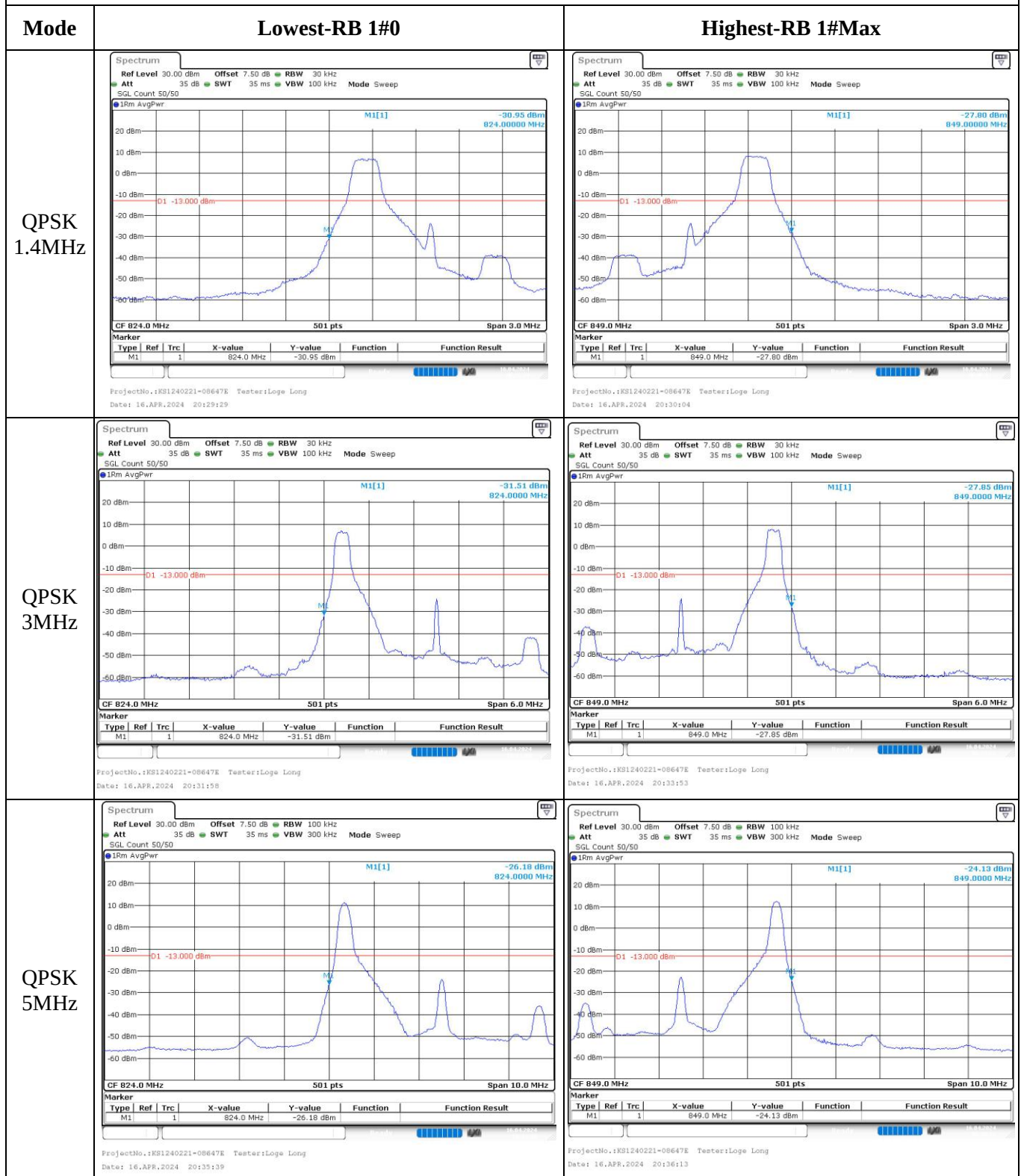
Middle



Highest



Out of band emission, Band Edge



Out of band emission, Band Edge

