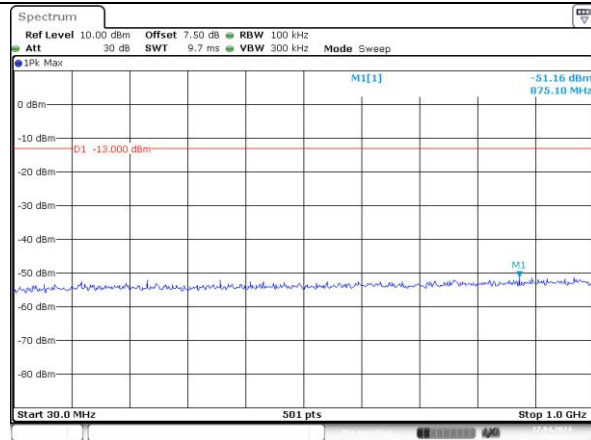


Spurious Emissions at Antenna Terminal

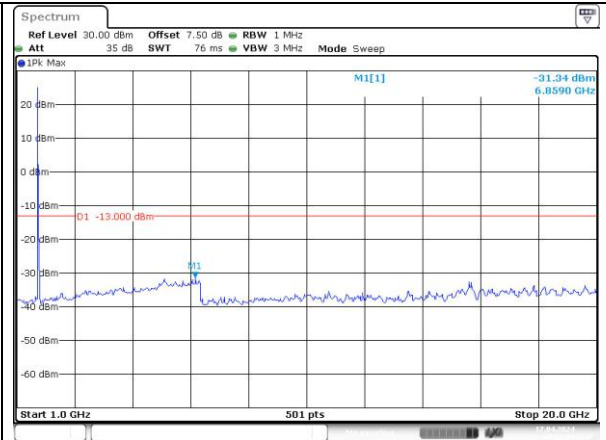
Channel

10MHz Bandwidth QPSK

Lowest

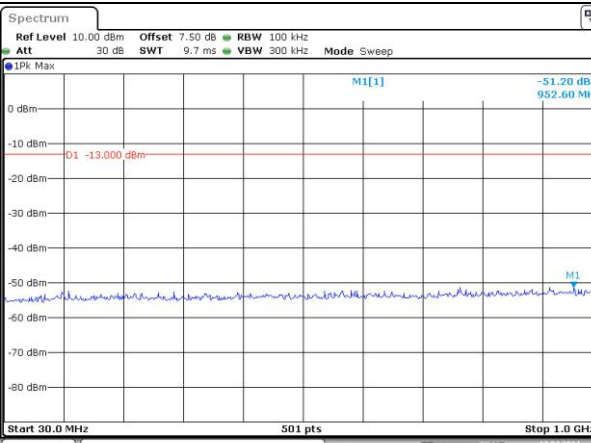


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:52:33

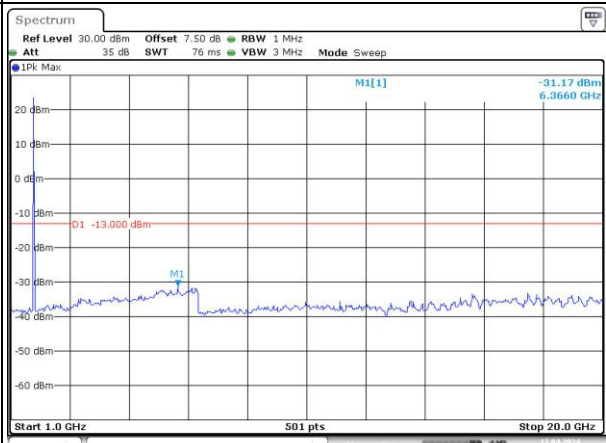


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:52:59

Middle

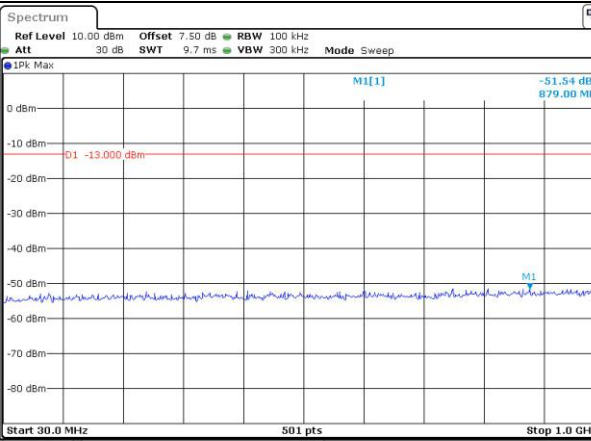


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Date: 17.APR.2024 23:53:24

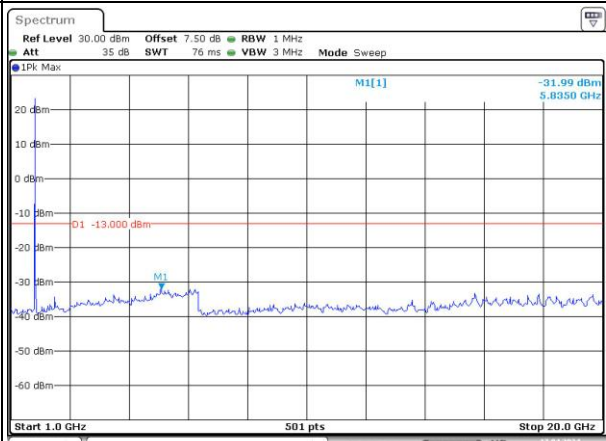


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:53:53

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:54:27



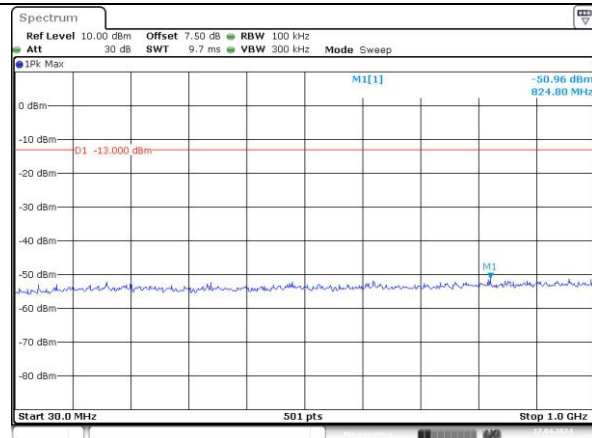
ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:54:46

Spurious Emissions at Antenna Terminal

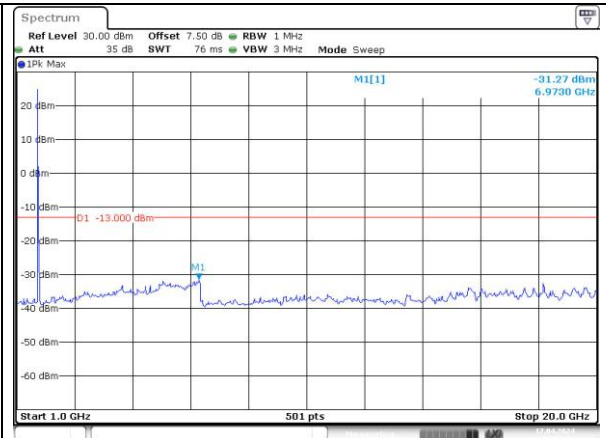
Channel

15MHz Bandwidth QPSK

Lowest

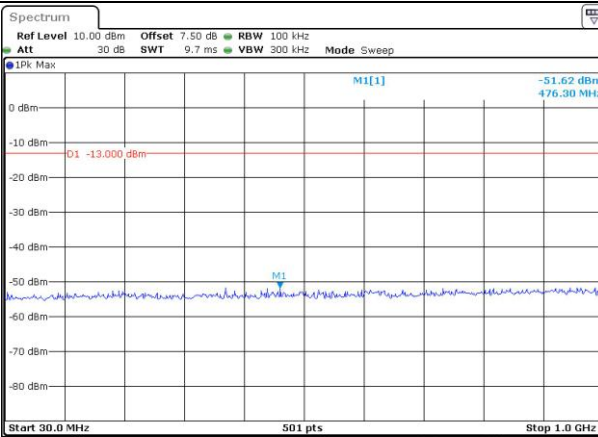


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Date: 17.APR.2024 23:55:37

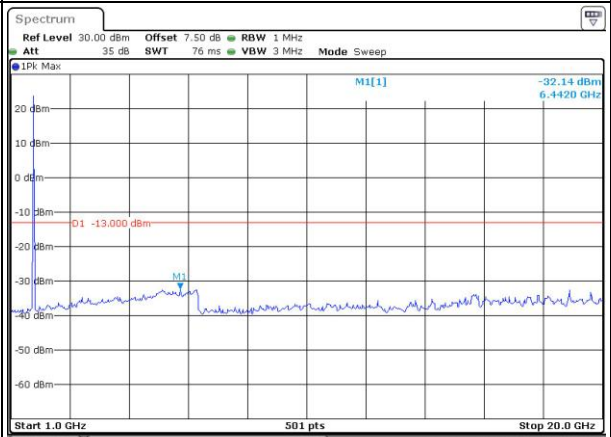


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:56:02

Middle

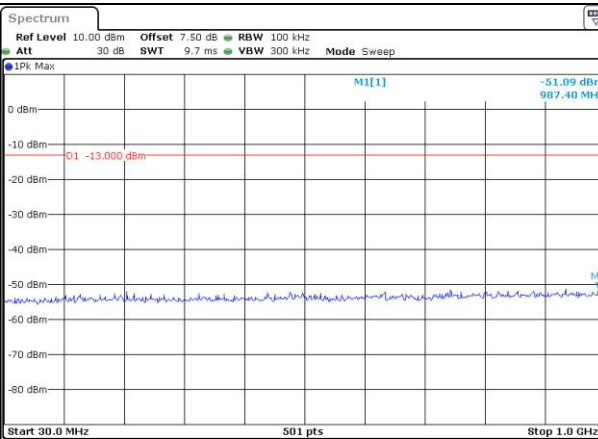


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:56:34

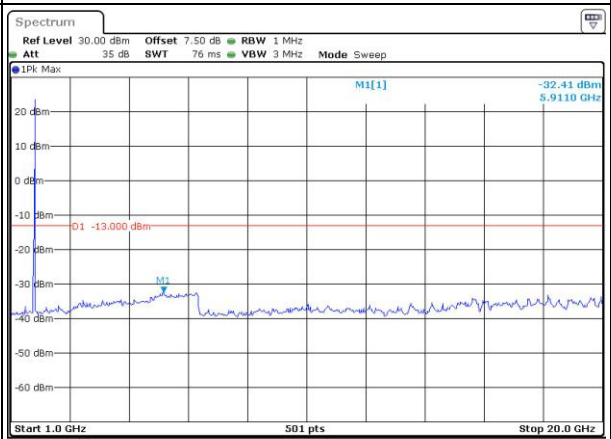


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:56:53

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:57:21



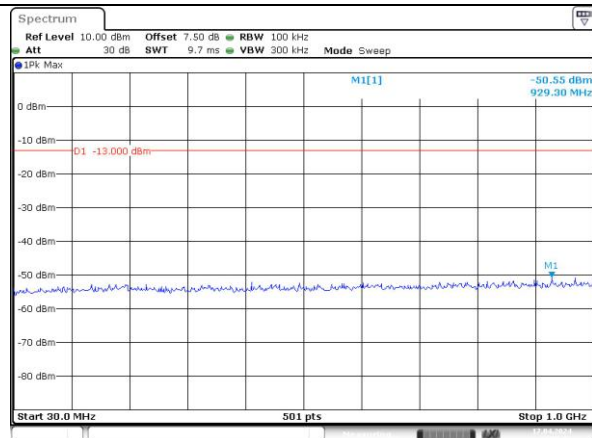
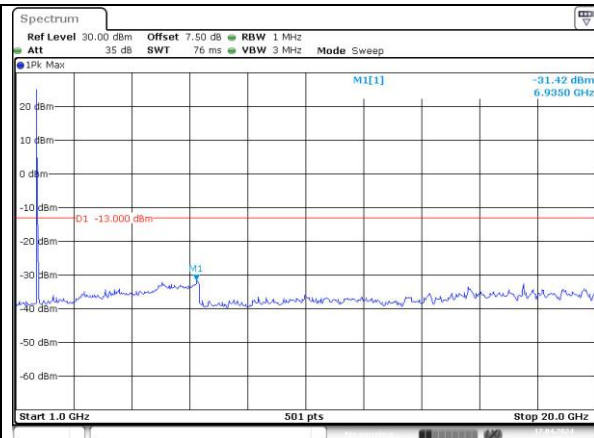
ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:57:43

Spurious Emissions at Antenna Terminal

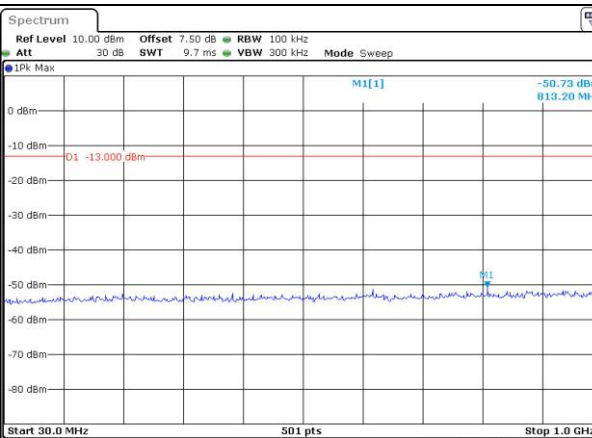
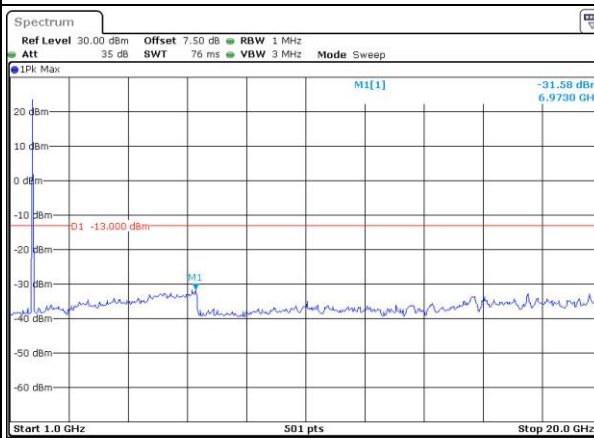
Channel

20MHz Bandwidth QPSK

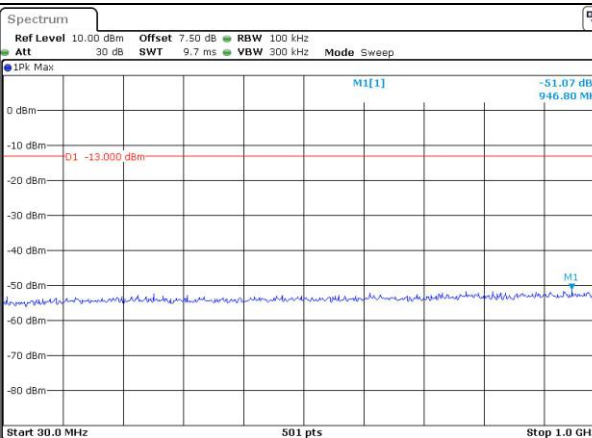
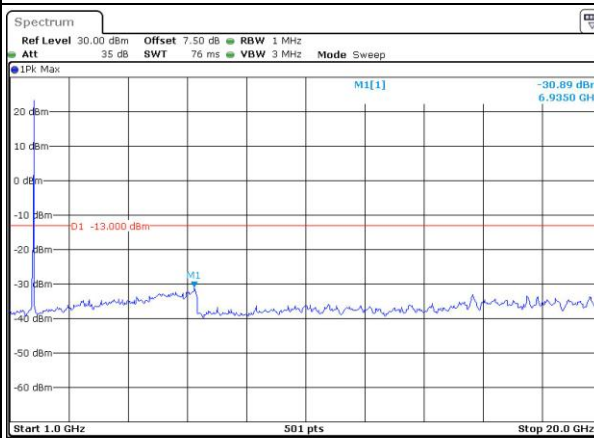
Lowest

ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:58:53ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:59:12

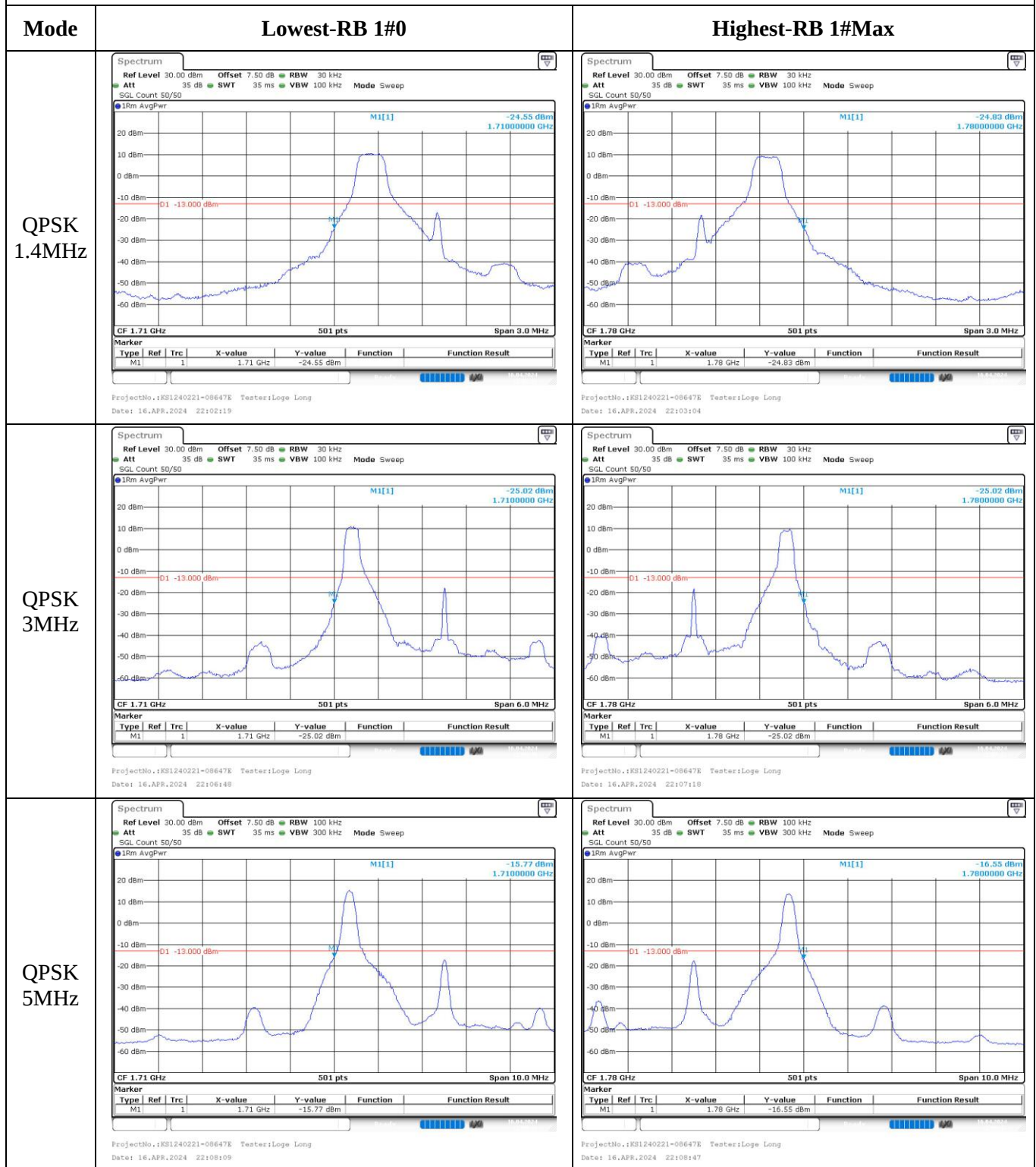
Middle

ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 23:59:44ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:00:09

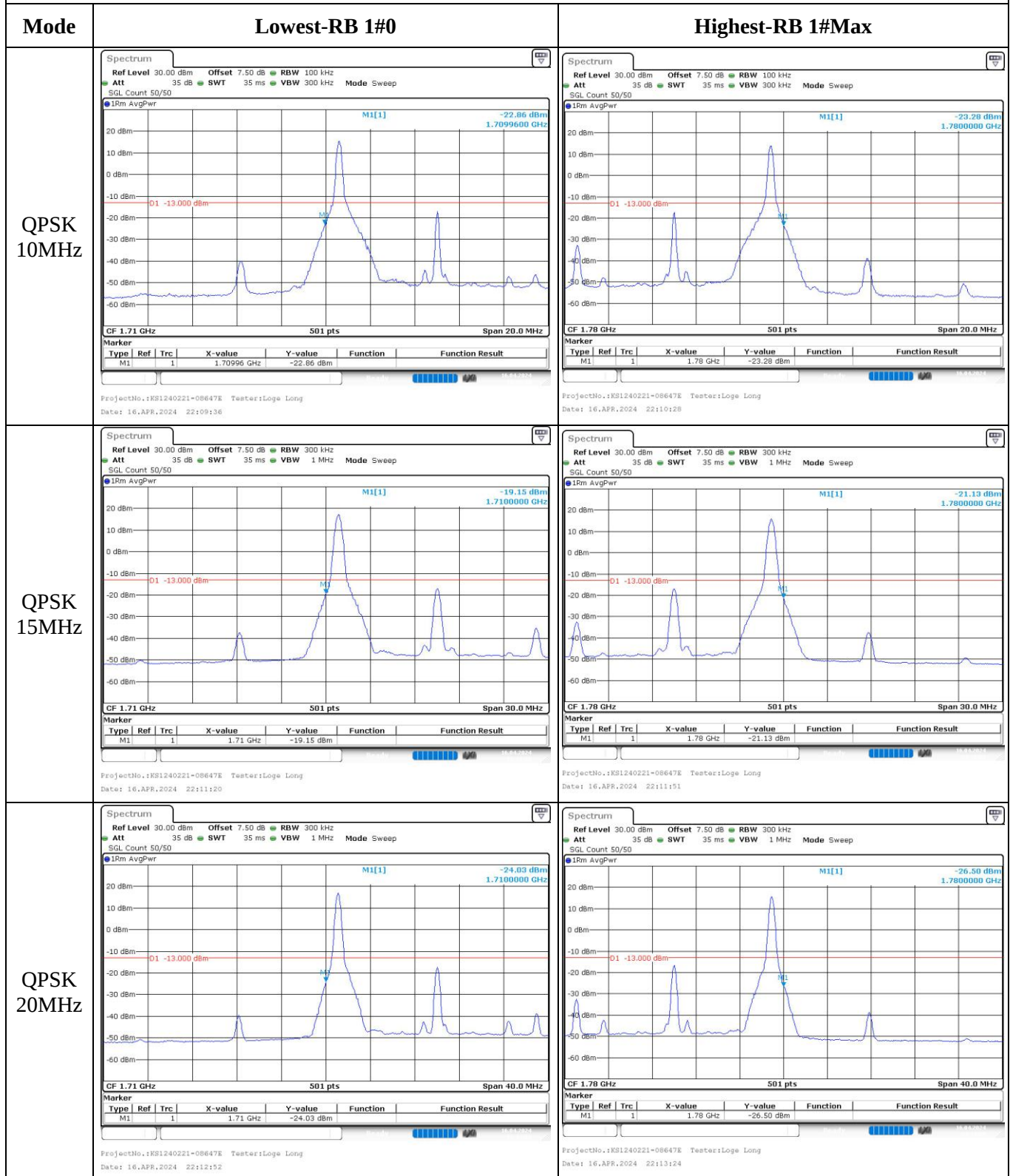
Highest

ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:00:36ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:01:05

Out of band emission, Band Edge



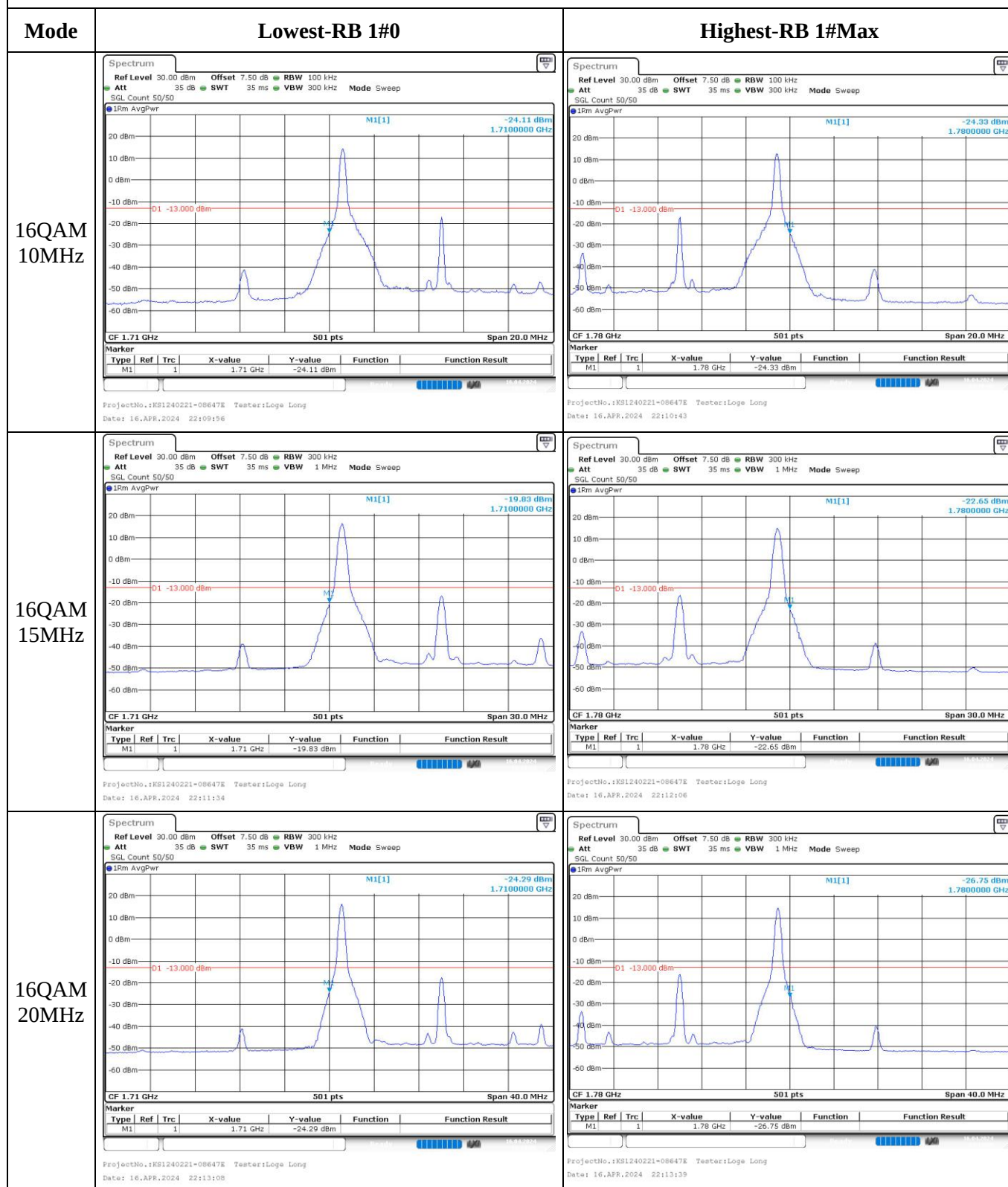
Out of band emission, Band Edge



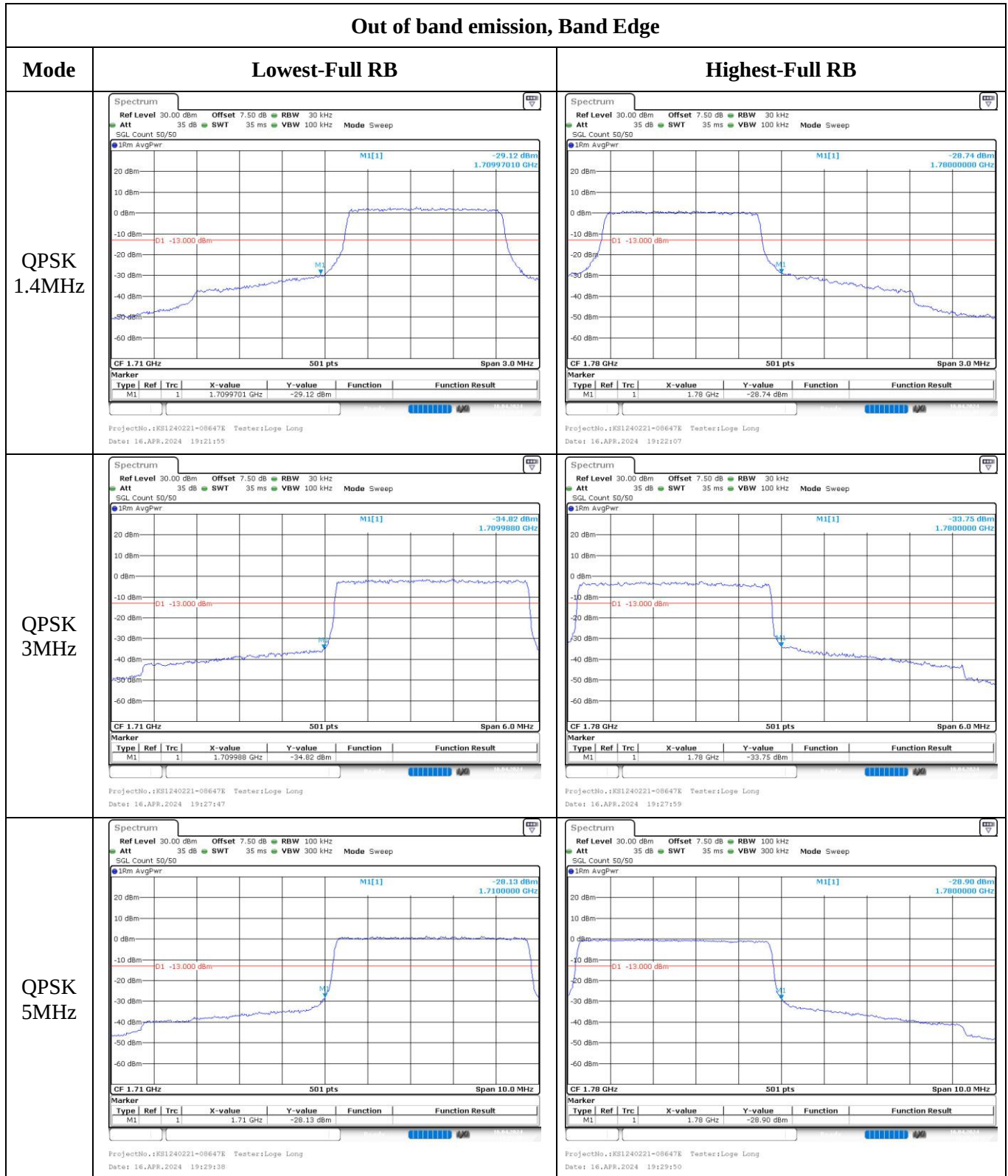
Out of band emission, Band Edge

Mode	Lowest-RB 1#0	Highest-RB 1#Max
16QAM 1.4MHz	ProjectNo.:KS1240221-086478 Testers:Loge Long Date: 16.APR.2024 22:02:46	ProjectNo.:KS1240221-086478 Testers:Loge Long Date: 16.APR.2024 22:03:24
16QAM 3MHz	ProjectNo.:KS1240221-086478 Testers:Loge Long Date: 16.APR.2024 22:10:02	ProjectNo.:KS1240221-086478 Testers:Loge Long Date: 16.APR.2024 22:10:33
16QAM 5MHz	ProjectNo.:KS1240221-086478 Testers:Loge Long Date: 16.APR.2024 22:10:127	ProjectNo.:KS1240221-086478 Testers:Loge Long Date: 16.APR.2024 22:10:01

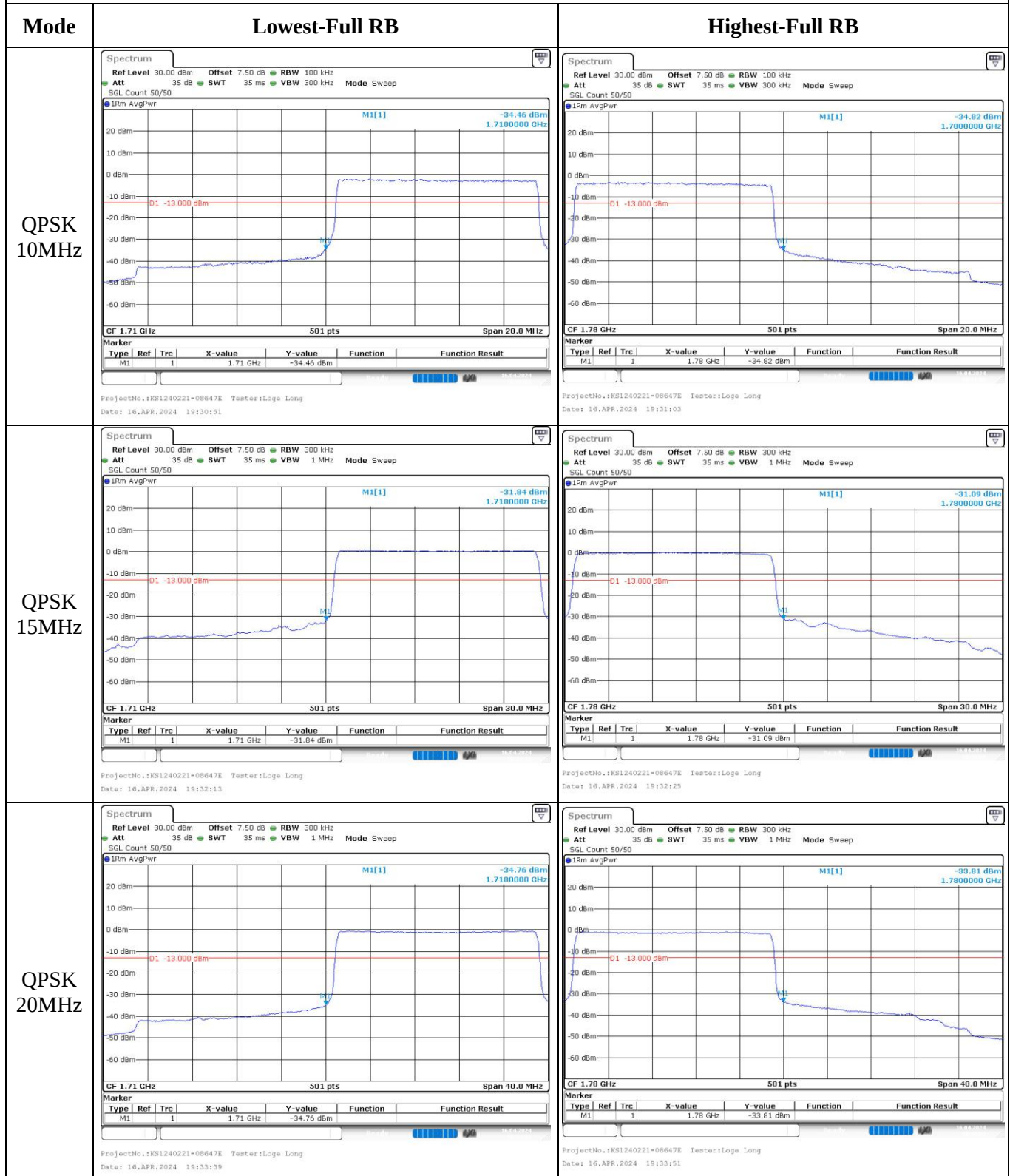
Out of band emission, Band Edge



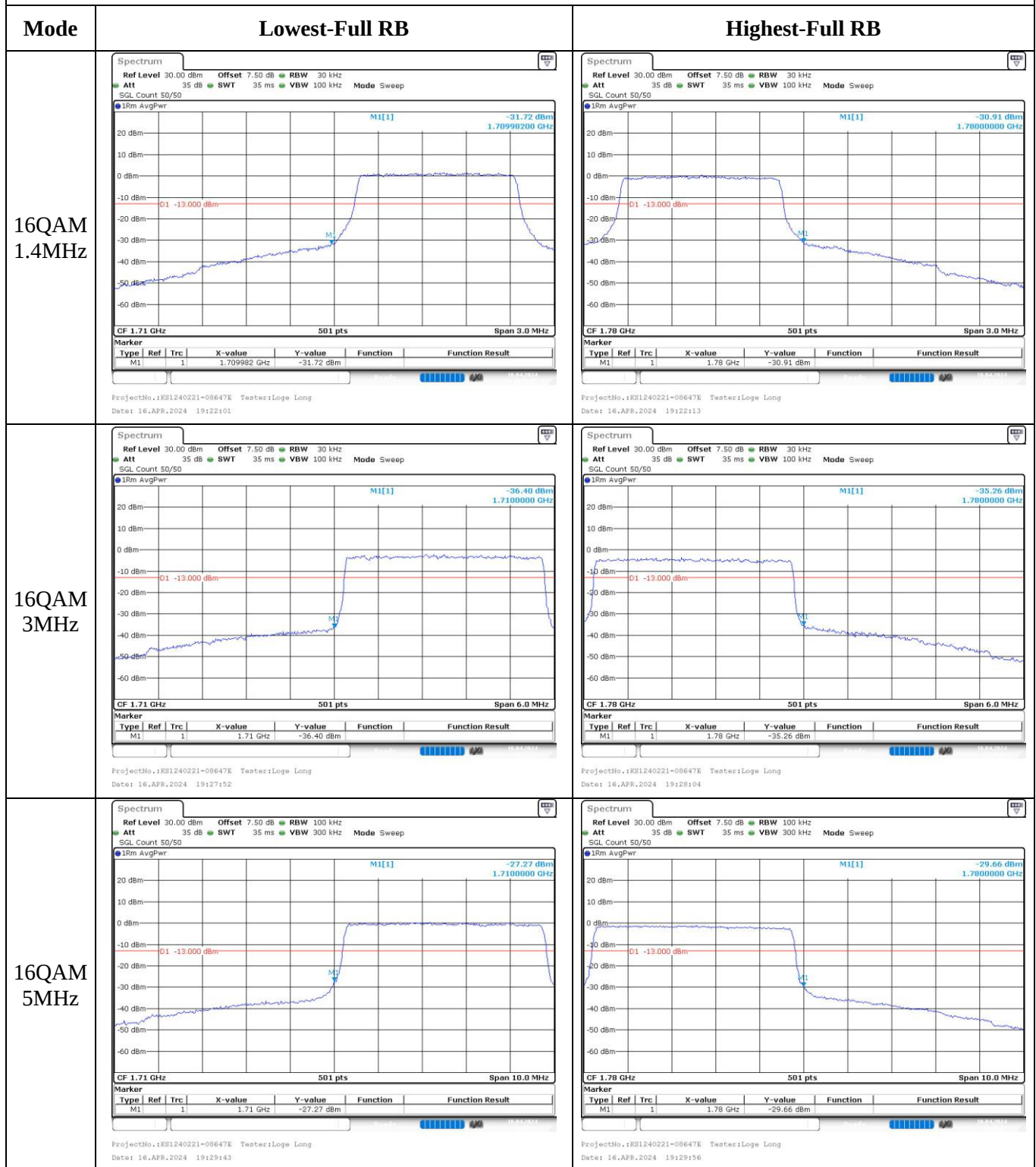
Out of band emission, Band Edge



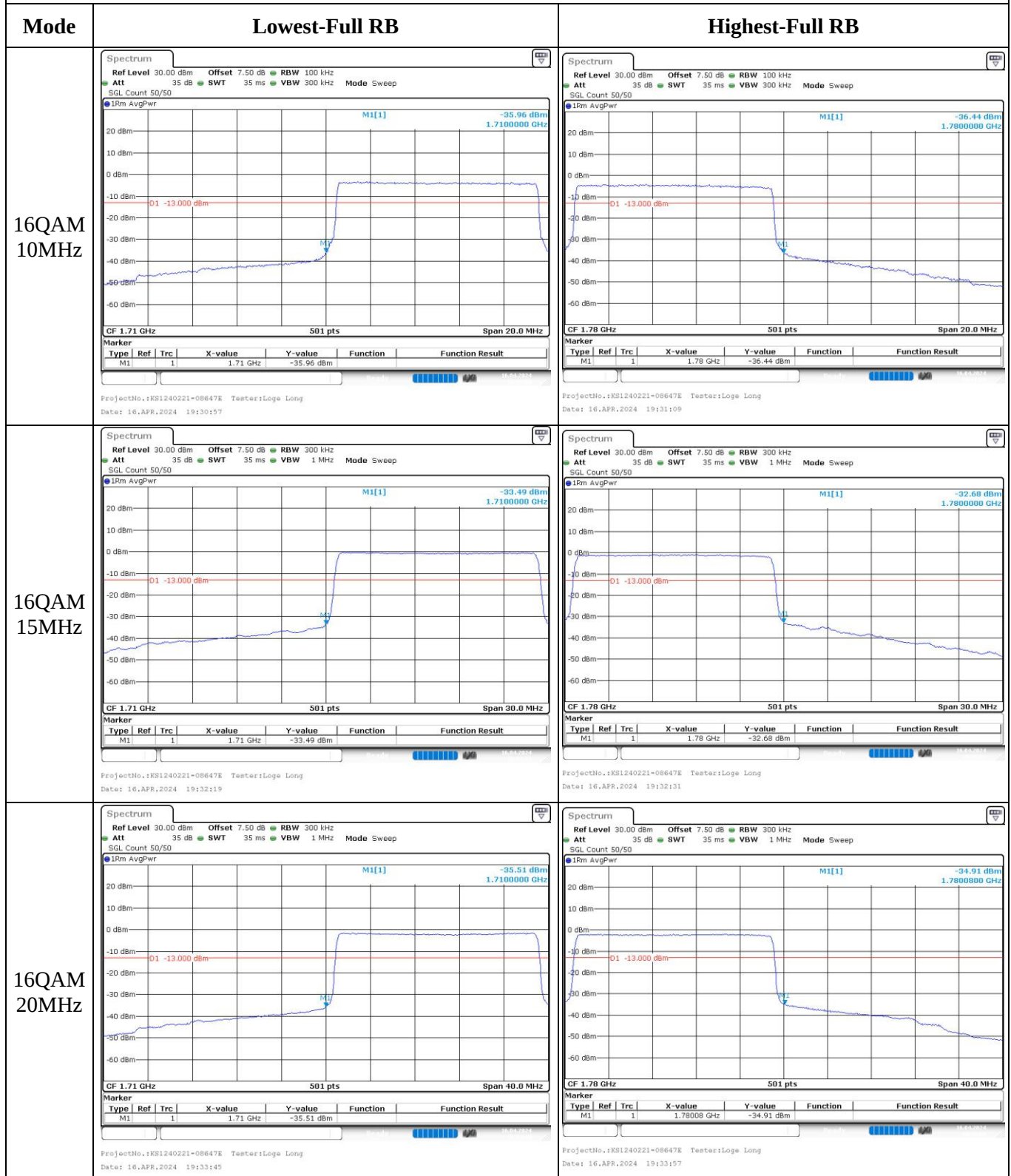
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



5.17 Antenna Port Test Data and Results for LTE Band 71

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)
5MHz	665.5	680.5	695.5
10MHz	668	680.5	693
15MHz	670.5	680.5	690.5
20MHz	673	680.5	688

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	23.34	23.45	23.49	17.58	34.77
	RB1#13	23.46	23.58	23.64		
	RB1#24	23.36	23.46	23.53		
	RB15#0	22.41	22.50	22.61		
	RB15#10	22.57	22.54	22.58		
	RB25#0	22.46	22.50	22.58		
5MHz 16QAM	RB1#0	22.46	22.75	22.79	16.82	34.77
	RB1#13	22.52	22.84	22.88		
	RB1#24	22.43	22.76	22.79		
	RB15#0	21.45	21.52	21.64		
	RB15#10	21.57	21.53	21.54		
	RB25#0	21.45	21.55	21.55		
10MHz QPSK	RB1#0	23.33	23.40	23.45	17.53	34.77
	RB1#25	23.43	23.53	23.59		
	RB1#49	23.34	23.45	23.51		
	RB25#0	22.25	22.57	22.52		
	RB25#25	22.45	22.57	22.44		
	RB50#0	22.41	22.62	22.49		
10MHz 16QAM	RB1#0	22.90	22.55	22.92	17.04	34.77
	RB1#25	22.93	22.75	23.10		
	RB1#49	22.83	22.60	23.07		
	RB25#0	21.27	21.61	21.55		
	RB25#25	21.50	21.63	21.50		
	RB50#0	21.38	21.62	21.50		
15MHz QPSK	RB1#0	23.31	23.34	23.43	17.48	34.77
	RB1#38	23.36	23.45	23.54		
	RB1#74	23.36	23.38	23.49		
	RB36#0	22.33	22.64	22.46		
	RB36#39	22.40	22.69	22.55		
	RB75#0	22.36	22.68	22.52		
15MHz 16QAM	RB1#0	22.84	22.91	22.78	16.99	34.77
	RB1#38	22.93	23.05	22.87		
	RB1#74	22.97	22.96	22.90		
	RB36#0	21.33	21.63	21.42		
	RB36#39	21.38	21.65	21.51		
	RB75#0	21.36	21.69	21.48		
20MHz QPSK	RB1#0	23.18	23.14	23.26	17.57	34.77
	RB1#50	23.61	23.63	23.59		
	RB1#99	23.30	23.27	23.30		

20MHz 16QAM	RB50#0	22.19	22.72	22.33	17.1	34.77
	RB50#50	22.30	22.78	22.55		
	RB100#0	22.31	22.75	22.43		
	RB1#0	22.39	22.75	22.79		
	RB1#50	22.78	23.16	23.16		
	RB1#99	22.48	22.76	22.90		
	RB50#0	21.21	21.77	21.35		
	RB50#50	21.28	21.79	21.54		
	RB100#0	21.32	21.79	21.44		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)G_T(dBd)=G_T(dBi)-2.15**Result:****Pass****Peak-to-average Ratio(PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	4.99	4.75	5.59	13
	RB100#0	4.38	4.46	4.09	13
20MHz 16QAM	RB1#0	6.00	5.74	6.75	13
	RB100#0	5.91	5.88	5.74	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	4.551	4.531	4.551	5.620	5.180	5.180
5MHz 16QAM	4.531	4.531	4.511	5.200	5.180	5.140
10MHz QPSK	8.982	8.982	8.942	9.840	9.880	9.920
10MHz 16QAM	8.982	8.982	8.942	9.880	9.960	9.800
15MHz QPSK	13.473	13.593	13.473	15.120	15.300	15.240
15MHz 16QAM	13.473	13.593	13.533	15.120	15.120	15.060
20MHz QPSK	17.964	18.044	17.884	19.840	19.680	19.520
20MHz 16QAM	17.884	18.044	17.964	19.600	19.920	19.600

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	664.031	663.00	697.004	698.00
	-20	3.8	664.049	663.00	697.016	698.00
	-10	3.8	664.031	663.00	697.007	698.00
	0	3.8	664.049	663.00	697.013	698.00
	10	3.8	664.049	663.00	697.007	698.00
	20	3.8	664.058	663.00	697.022	698.00
	30	3.8	664.070	663.00	697.043	698.00
	40	3.8	664.061	663.00	697.037	698.00
	50	3.8	664.082	663.00	697.049	698.00
Frequency Stability vs. Voltage	20	3.4	664.070	663.00	697.046	698.00
	20	4.35	664.079	663.00	697.025	698.00
					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	664.117	663.00	697.019	698.00
	-20	3.8	664.132	663.00	697.010	698.00
	-10	3.8	664.117	663.00	697.019	698.00
	0	3.8	664.132	663.00	697.016	698.00
	10	3.8	664.135	663.00	696.995	698.00
	20	3.8	664.138	663.00	697.022	698.00
	30	3.8	664.153	663.00	697.028	698.00
	40	3.8	664.162	663.00	697.025	698.00
	50	3.8	664.159	663.00	697.049	698.00
Frequency Stability vs. Voltage	20	3.4	664.144	663.00	697.028	698.00
	20	4.35	664.141	663.00	697.034	698.00
					Result:	Pass

Test Plots:

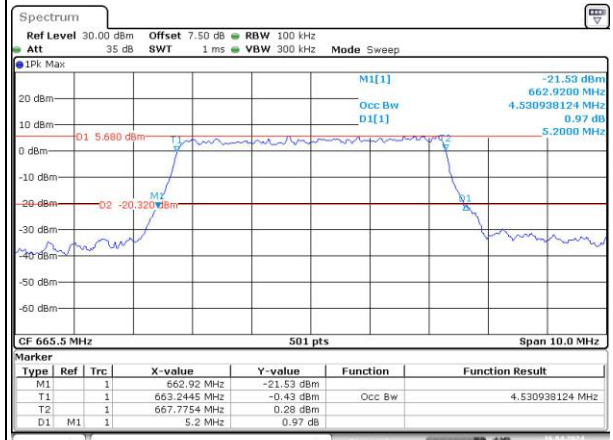
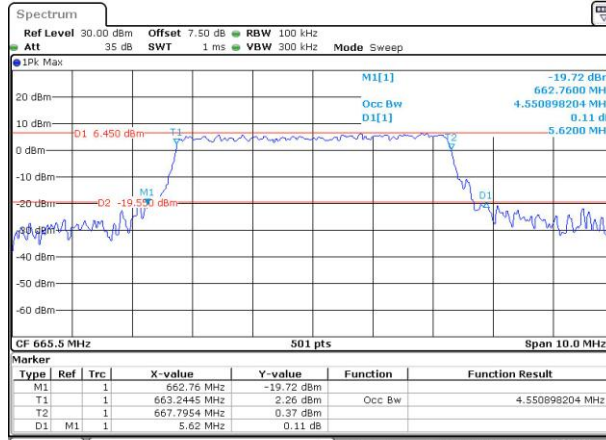
Occupied Bandwidth

Channel

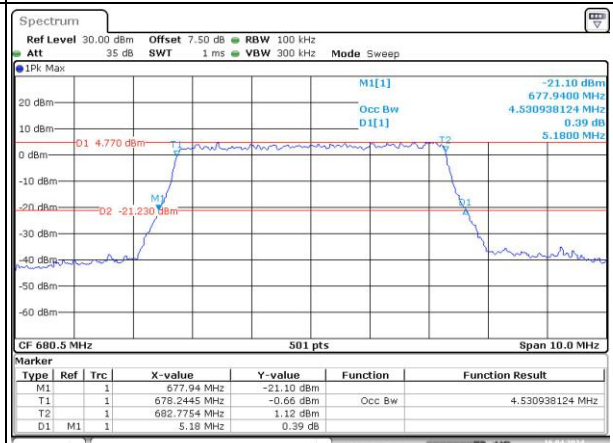
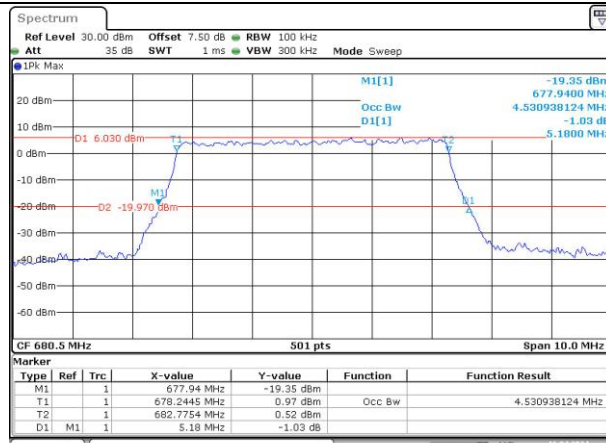
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

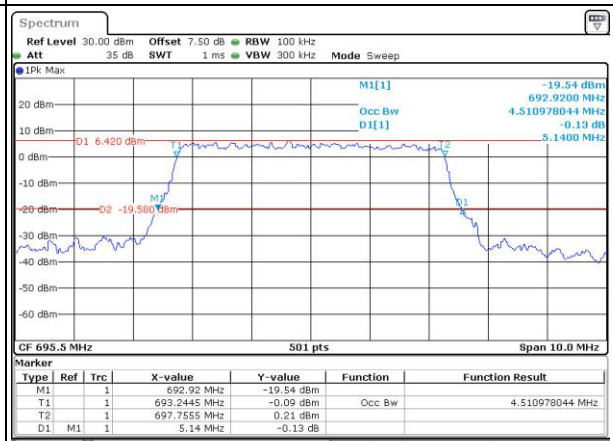
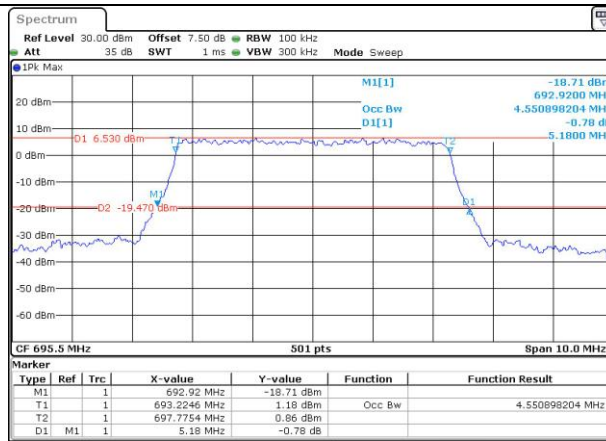
Lowest



Middle



Highest



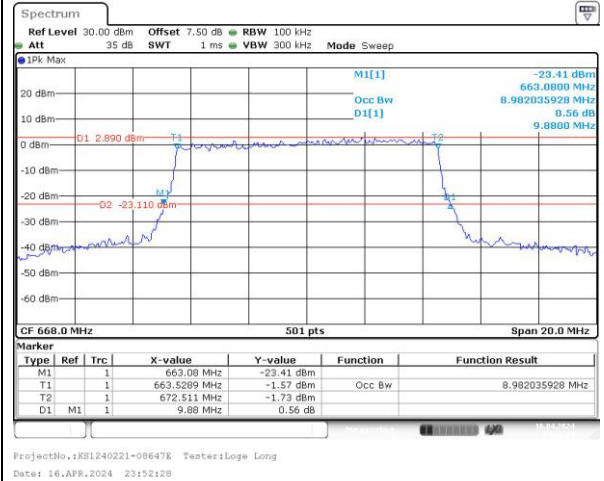
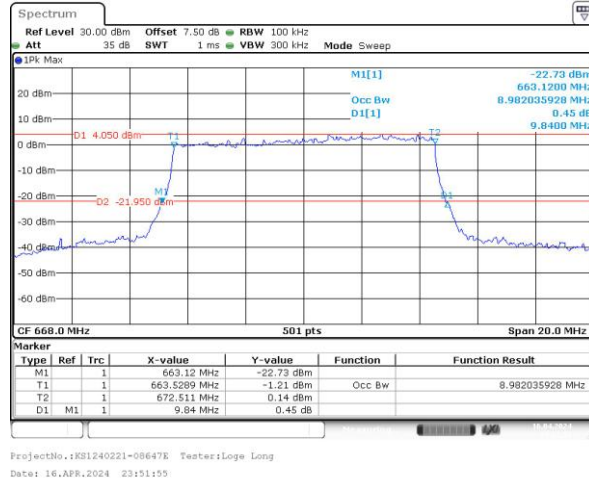
Occupied Bandwidth

Channel

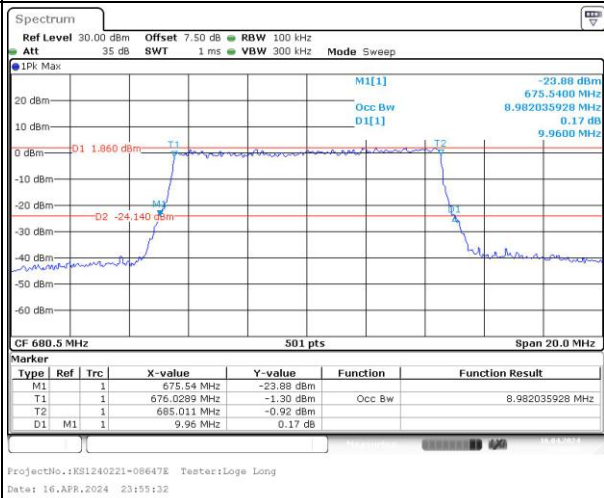
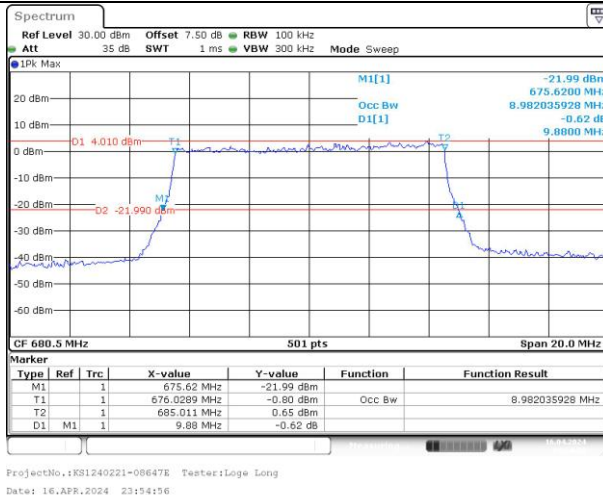
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

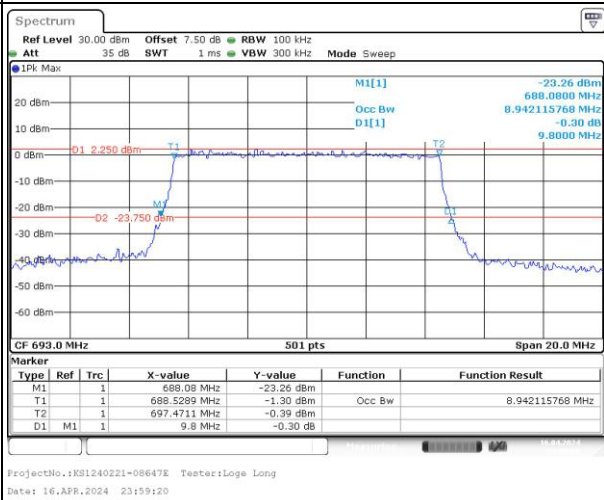
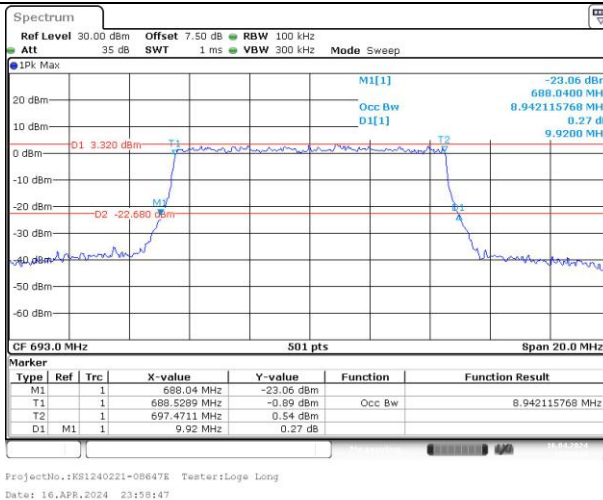
Lowest



Middle



Highest



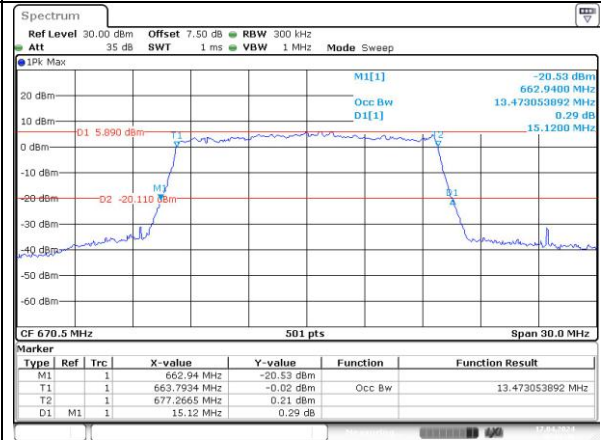
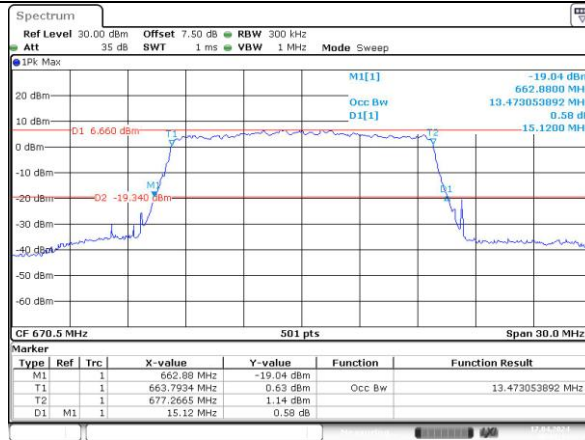
Occupied Bandwidth

Channel

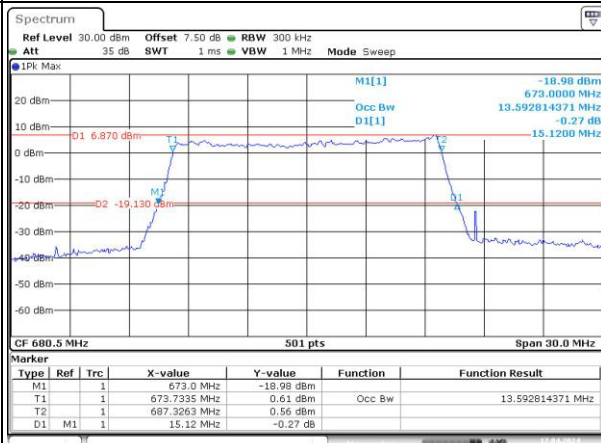
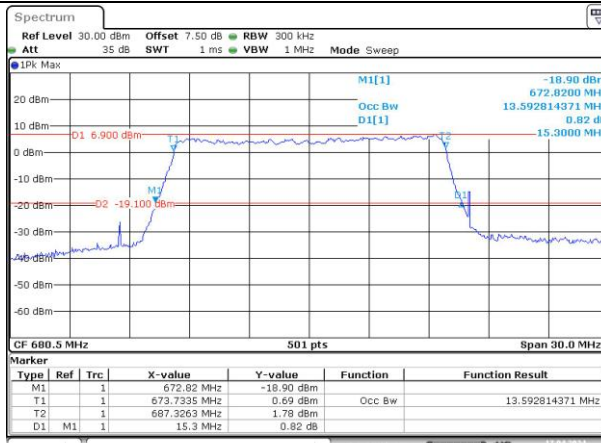
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

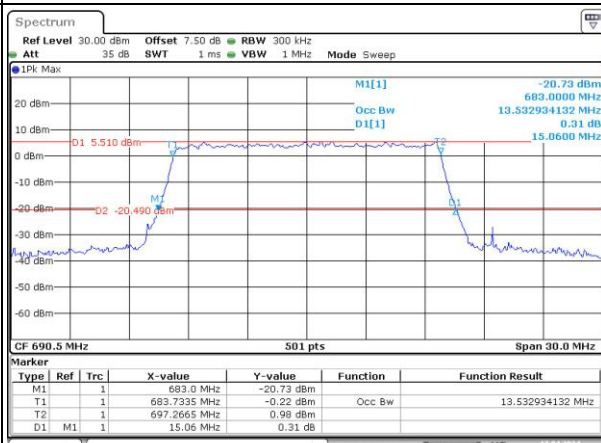
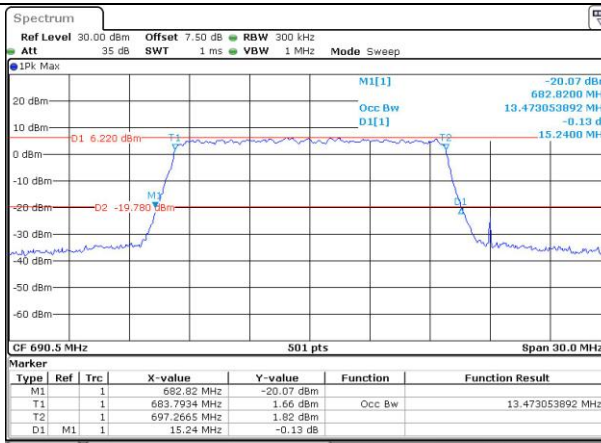
Lowest



Middle



Highest



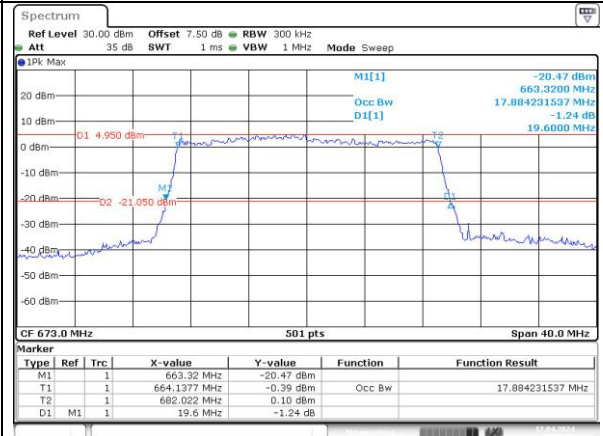
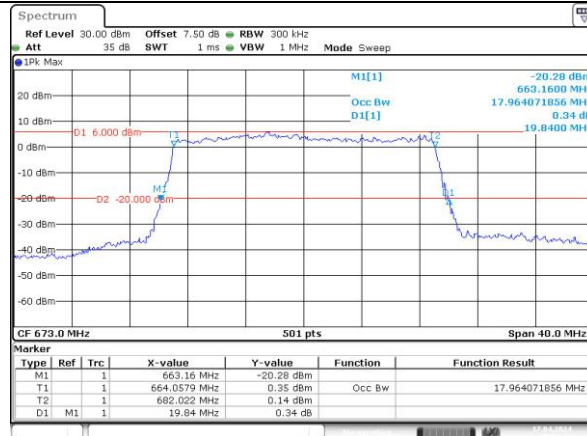
Occupied Bandwidth

Channel

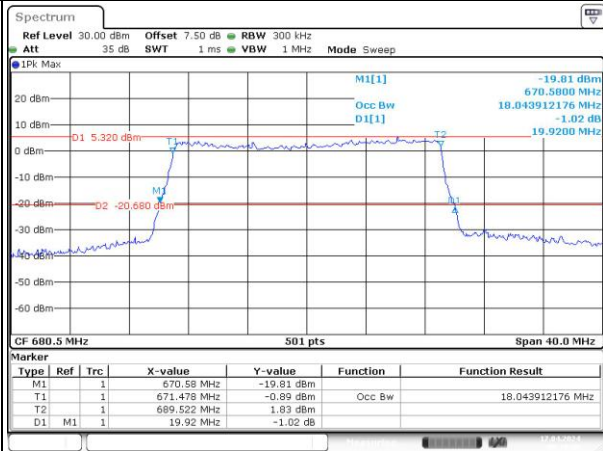
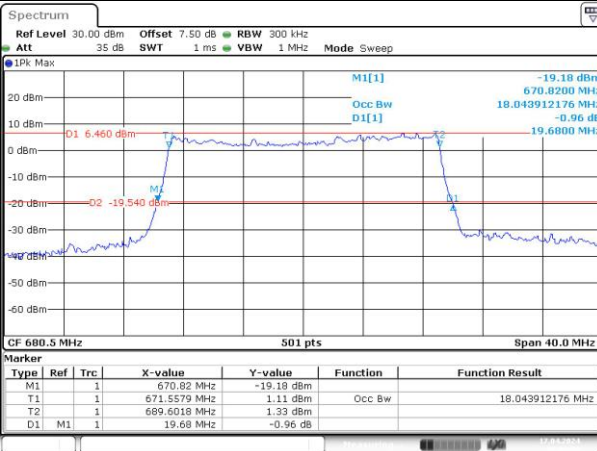
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

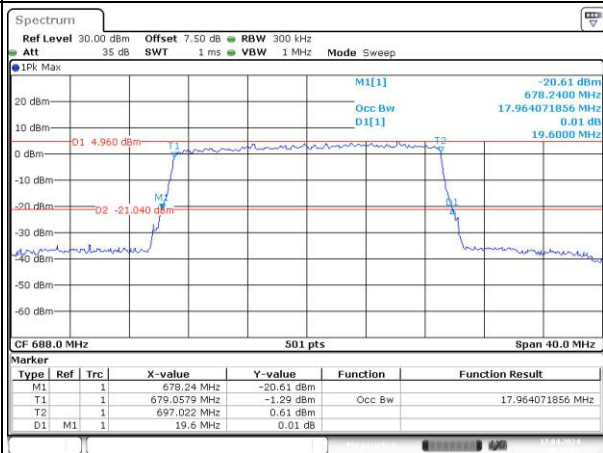
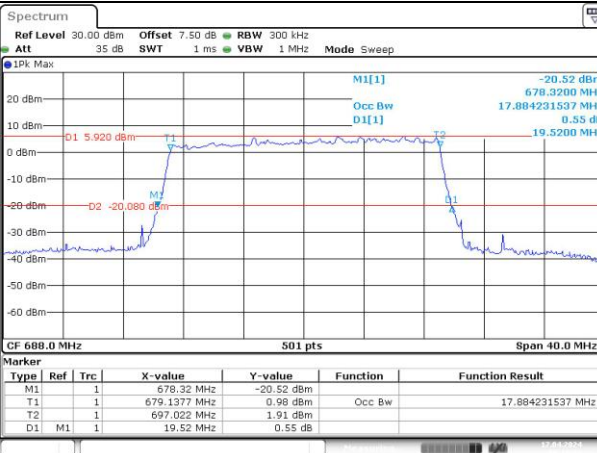
Lowest



Middle



Highest



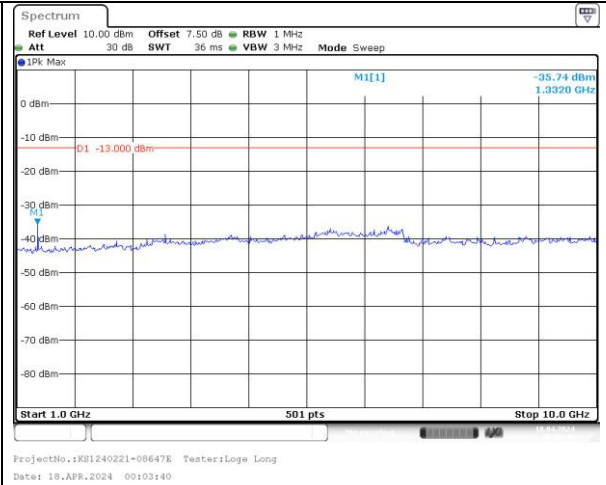
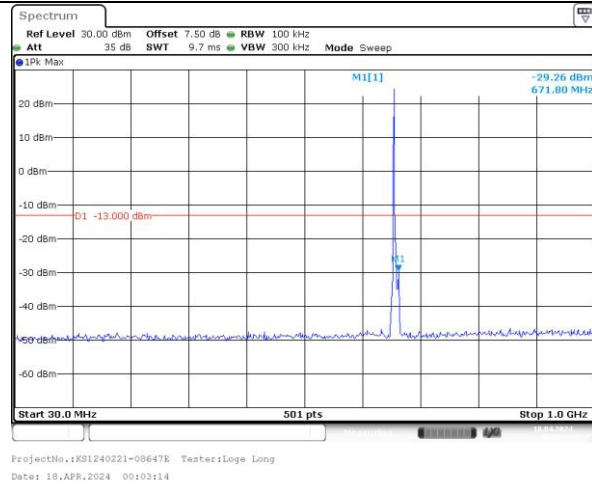
1RB:

Spurious Emissions at Antenna Terminal

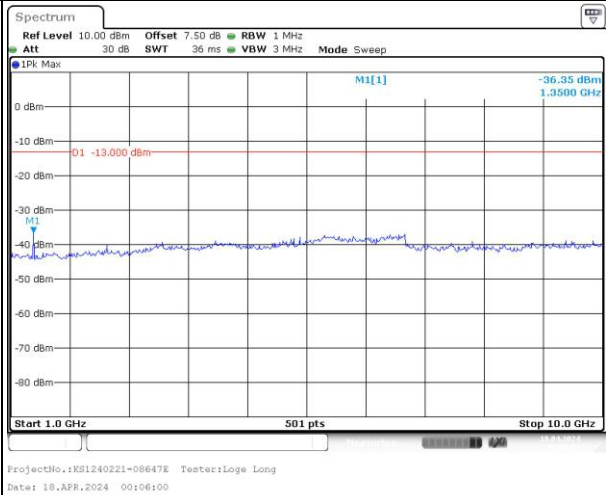
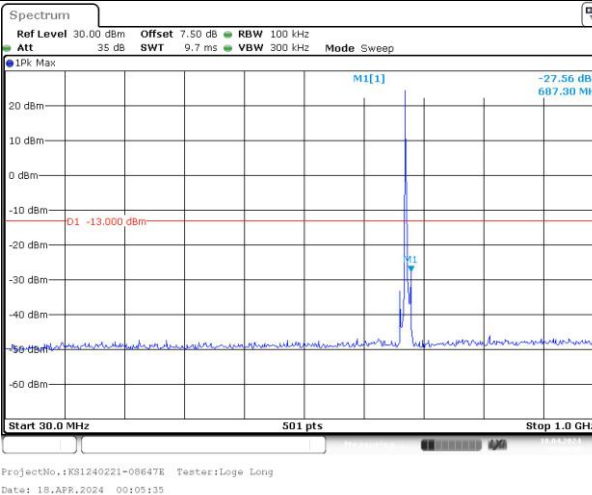
Channel

5MHz Bandwidth QPSK

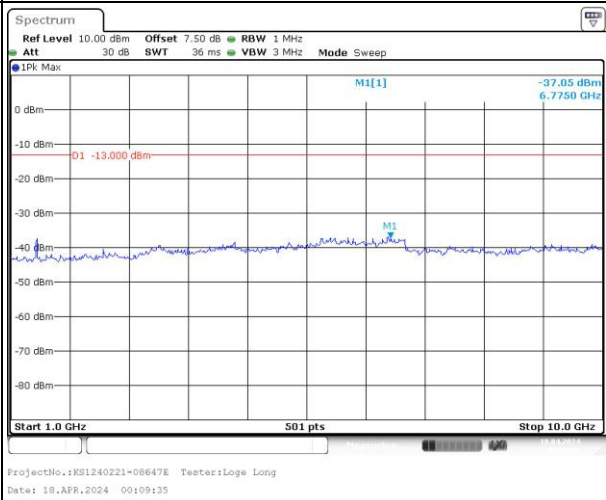
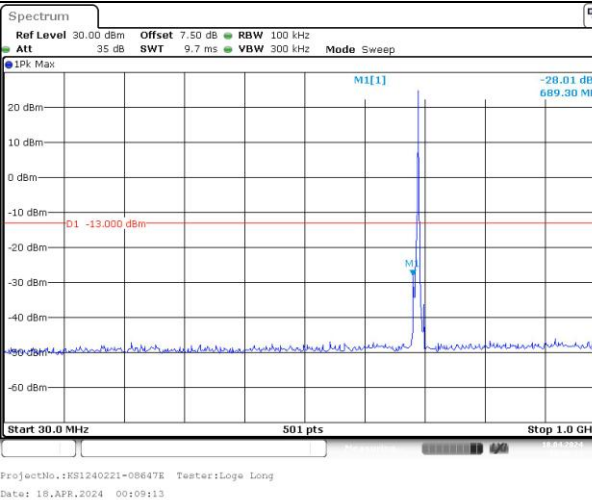
Lowest



Middle



Highest

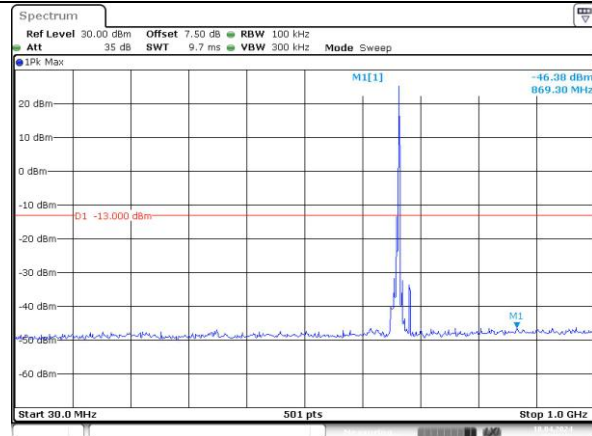


Spurious Emissions at Antenna Terminal

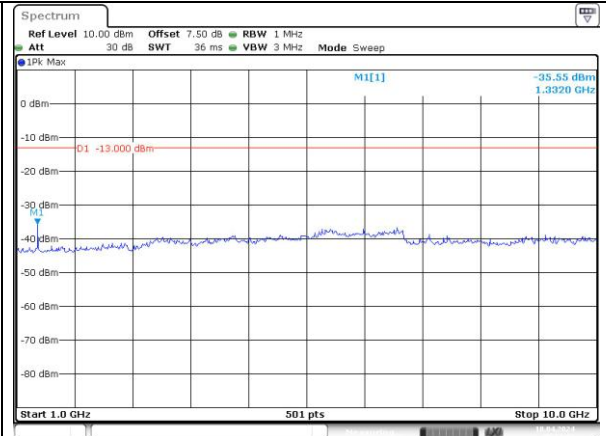
Channel

10MHz Bandwidth QPSK

Lowest

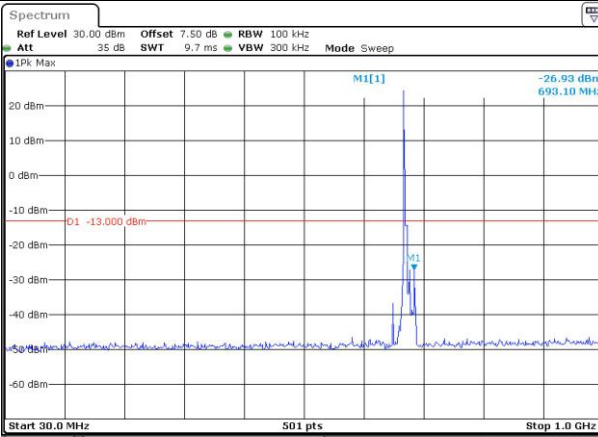


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:15:11

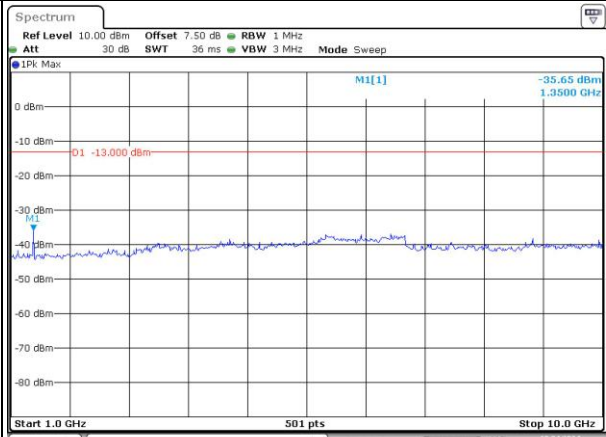


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:12:56

Middle

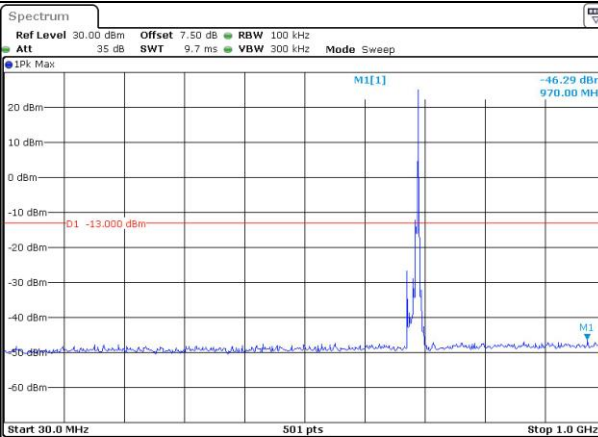


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Date: 18.APR.2024 00:14:26

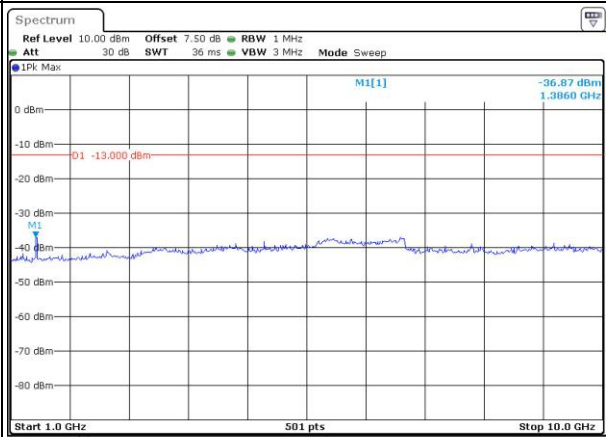


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:14:51

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:15:11



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 18.APR.2024 00:17:20