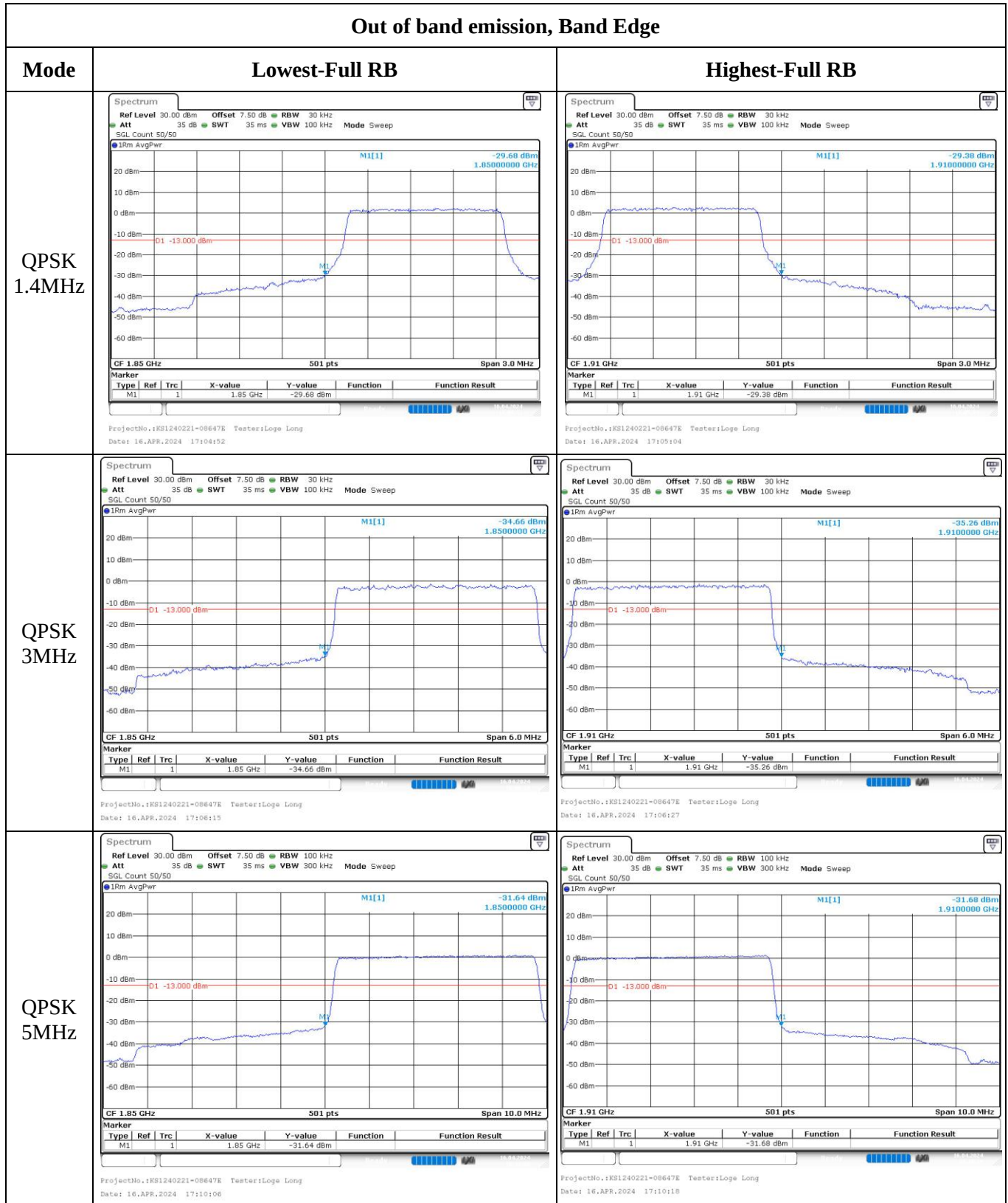
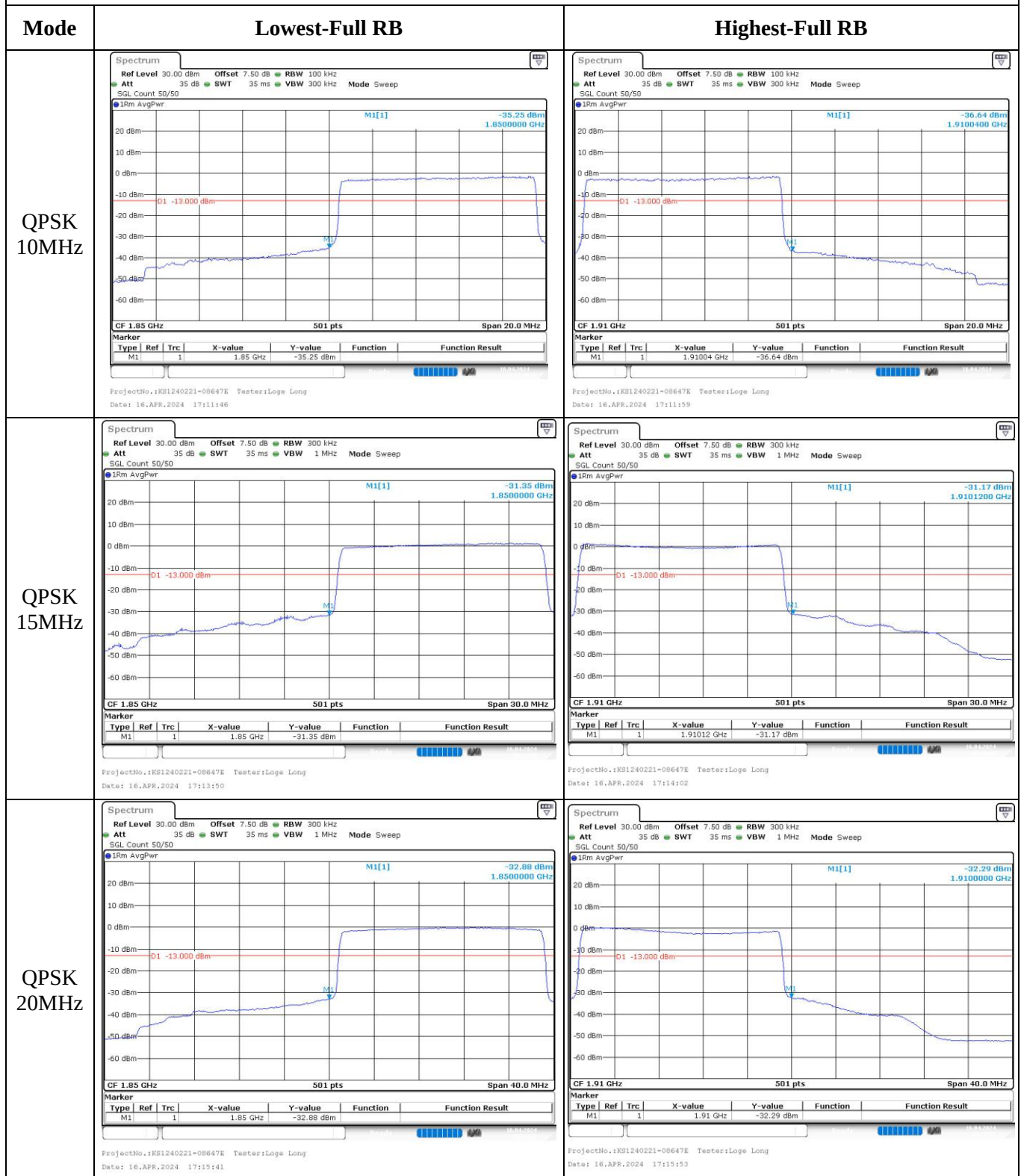


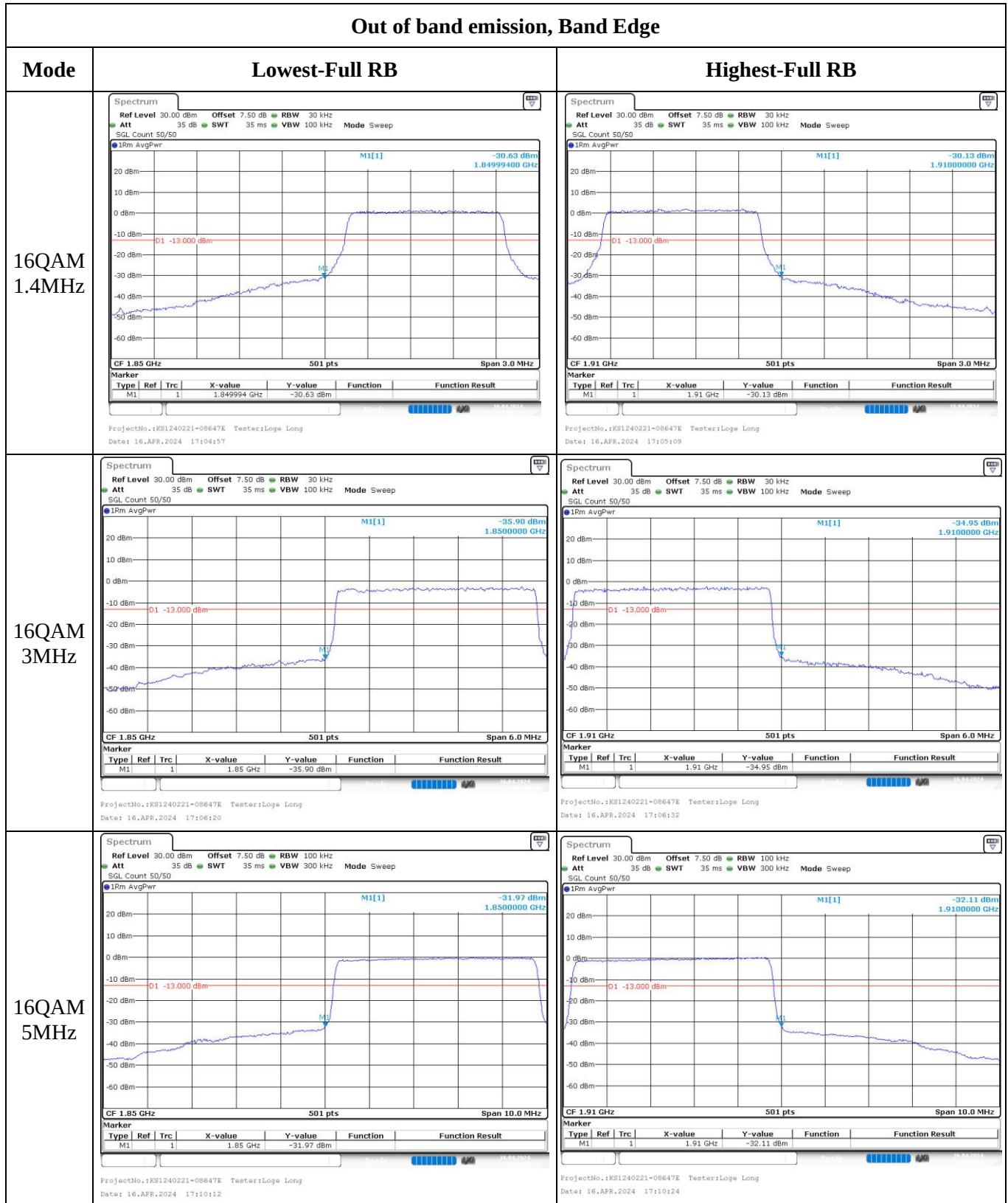
Out of band emission, Band Edge



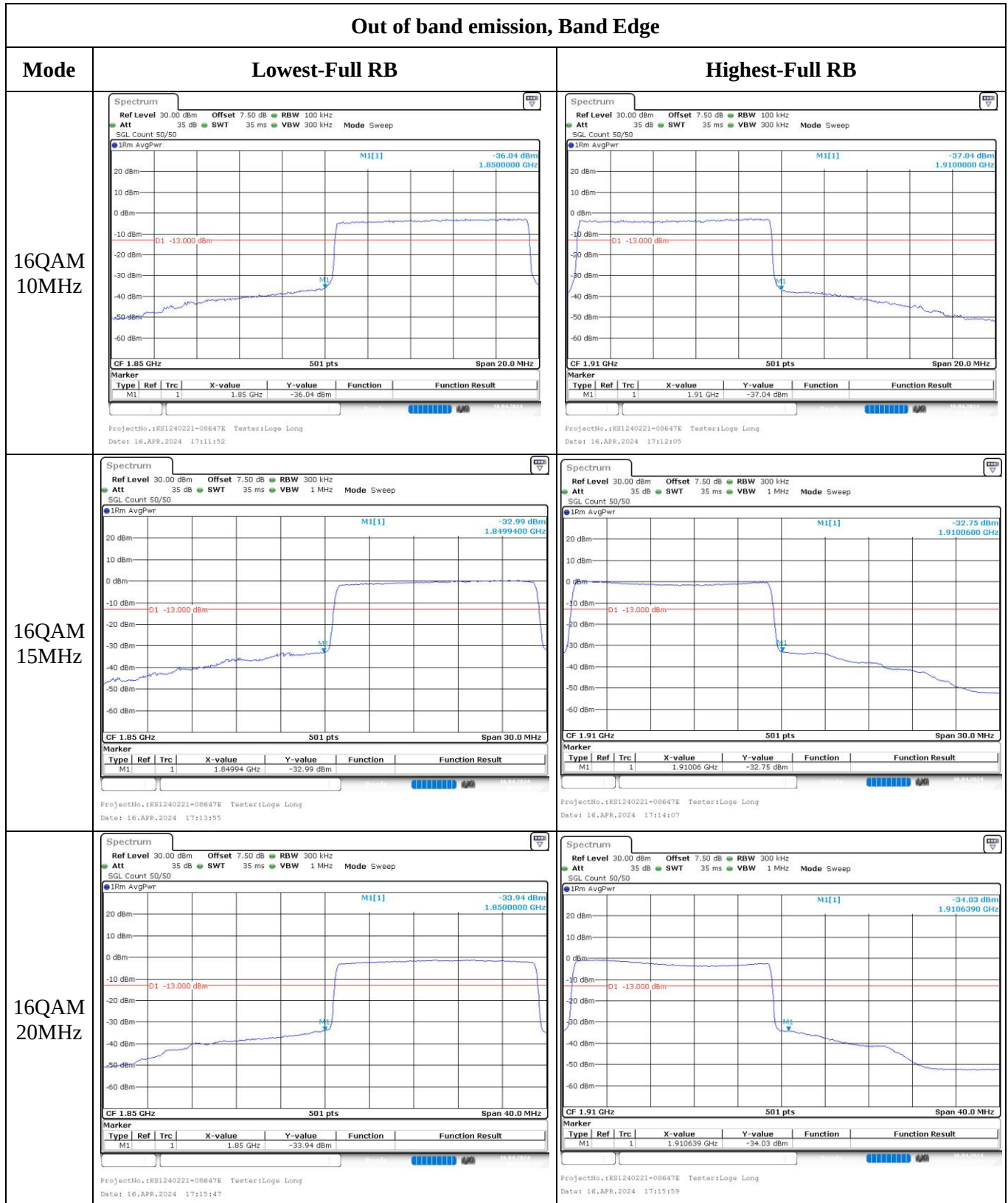
Out of band emission, Band Edge



Out of band emission, Band Edge



Out of band emission, Band Edge



5.6 Antenna Port Test Data and Results for LTE Band 4

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-Clr circuits	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	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

Test Data:**FCC §2.1046; § 27.50(d)(4)****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		
1.4MHz QPSK	RB1#0	22.74	22.36	22.34	24.59	30
	RB1#3	22.87	22.60	22.47		
	RB1#5	22.71	22.39	22.34		
	RB3#0	22.76	22.37	22.47		
	RB3#3	22.73	22.35	22.41		
	RB6#0	21.79	21.45	21.47		
1.4MHz 16QAM	RB1#0	21.77	21.28	21.31	23.68	30
	RB1#3	21.96	21.47	21.48		
	RB1#5	21.76	21.29	21.32		
	RB3#0	21.67	21.40	21.59		
	RB3#3	21.70	21.37	21.53		
	RB6#0	20.75	20.34	20.37		
3MHz QPSK	RB1#0	22.69	20.41	22.45	24.41	30
	RB1#8	22.64	22.35	22.36		
	RB1#14	22.61	22.35	22.28		
	RB6#0	21.63	21.36	21.40		
	RB6#9	21.59	21.36	21.34		
	RB15#0	21.66	21.31	21.38		
3MHz 16QAM	RB1#0	21.67	21.78	21.53	23.5	30
	RB1#8	21.63	21.74	21.45		
	RB1#14	21.55	21.71	21.42		
	RB6#0	20.59	20.38	20.39		
	RB6#9	20.54	20.33	20.38		
	RB15#0	20.71	20.37	20.33		
5MHz QPSK	RB1#0	22.58	22.24	22.21	24.37	30
	RB1#13	22.65	22.30	22.36		
	RB1#24	22.48	22.08	22.15		
	RB15#0	21.61	21.30	21.35		
	RB15#10	21.55	21.26	21.36		
	RB25#0	21.57	21.21	21.29		
5MHz 16QAM	RB1#0	21.81	21.22	21.08	23.62	30
	RB1#13	21.90	21.33	21.17		
	RB1#24	21.75	21.18	21.03		
	RB15#0	20.59	20.29	20.38		
	RB15#10	20.55	20.28	20.33		
	RB25#0	20.55	20.23	20.33		
10MHz QPSK	RB1#0	22.70	22.37	22.41	24.42	30
	RB1#25	22.68	22.51	22.49		
	RB1#49	22.34	22.35	22.32		

	RB25#0	21.46	21.34	21.38		
	RB25#25	21.26	21.27	21.41		
	RB50#0	21.29	21.30	21.37		
10MHz 16QAM	RB1#0	21.33	21.88	21.42	23.6	30
	RB1#25	21.71	21.88	21.63		
	RB1#49	21.52	21.74	21.45		
	RB25#0	20.70	20.40	20.37		
	RB25#25	20.66	20.32	20.45		
	RB50#0	20.62	20.33	20.38		
15MHz QPSK	RB1#0	22.68	22.55	22.41	24.4	30
	RB1#38	22.65	22.45	22.43		
	RB1#74	22.47	22.24	22.27		
	RB36#0	21.76	21.53	21.60		
	RB36#39	21.70	21.49	21.47		
	RB75#0	21.72	21.49	21.51		
15MHz 16QAM	RB1#0	22.15	21.55	21.56	23.92	30
	RB1#38	22.20	21.51	21.66		
	RB1#74	21.85	21.22	21.62		
	RB36#0	20.74	20.52	20.44		
	RB36#39	20.68	20.41	20.35		
	RB75#0	20.72	20.45	20.43		
20MHz QPSK	RB1#0	22.48	22.37	22.24	24.46	30
	RB1#50	22.74	22.56	22.62		
	RB1#99	22.20	22.20	22.25		
	RB50#0	21.65	21.47	21.49		
	RB50#50	21.58	21.29	21.31		
	RB100#0	21.66	21.41	21.47		
20MHz 16QAM	RB1#0	22.02	21.66	21.33	24.01	30
	RB1#50	22.29	21.81	21.68		
	RB1#99	21.70	21.37	21.41		
	RB50#0	20.70	20.45	20.45		
	RB50#50	20.60	20.27	20.33		
	RB100#0	20.70	20.44	20.47		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(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	4.38	4.61	3.54	13
	RB100#0	4.00	3.65	3.57	13
20MHz 16QAM	RB1#0	5.36	5.22	4.43	13
	RB100#0	5.68	5.36	5.25	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
1.4MHz QPSK	1.102	1.108	1.102	1.320	1.320	1.308
1.4MHz 16QAM	1.096	1.096	1.102	1.290	1.290	1.314
3MHz QPSK	2.695	2.695	2.695	2.892	2.880	2.880
3MHz 16QAM	2.683	2.683	2.683	2.880	2.892	2.880
5MHz QPSK	4.491	4.531	4.511	4.900	4.920	5.480
5MHz 16QAM	4.511	4.491	4.531	4.960	4.940	4.960
10MHz QPSK	8.942	8.942	8.942	9.640	9.680	9.640
10MHz 16QAM	8.942	8.942	8.942	9.640	9.680	9.600
15MHz QPSK	13.473	13.473	13.473	14.820	14.760	14.760
15MHz 16QAM	13.473	13.473	13.533	14.760	14.700	14.700
20MHz QPSK	17.964	17.964	17.884	19.520	19.200	19.280
20MHz 16QAM	17.964	17.964	17.964	19.360	19.360	20.240

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	1711.031	1710.00	1753.933	1755
	-20	3.8	1711.052	1710.00	1753.930	1755
	-10	3.8	1711.046	1710.00	1753.924	1755
	0	3.8	1711.031	1710.00	1753.921	1755
	10	3.8	1711.049	1710.00	1753.933	1755
	20	3.8	1711.058	1710.00	1753.942	1755
	30	3.8	1711.064	1710.00	1753.957	1755
	40	3.8	1711.082	1710.00	1753.957	1755
	50	3.8	1711.061	1710.00	1753.951	1755
Frequency Stability vs. Voltage	20	3.4	1711.082	1710.00	1753.945	1755
	20	4.35	1711.061	1710.00	1753.948	1755
					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	1711.043	1710.00	1753.939	1755
	-20	3.8	1711.046	1710.00	1753.924	1755
	-10	3.8	1711.034	1710.00	1753.918	1755
	0	3.8	1711.049	1710.00	1753.921	1755
	10	3.8	1711.040	1710.00	1753.939	1755
	20	3.8	1711.058	1710.00	1753.942	1755
	30	3.8	1711.085	1710.00	1753.945	1755
	40	3.8	1711.064	1710.00	1753.951	1755
	50	3.8	1711.064	1710.00	1753.963	1755
Frequency Stability vs. Voltage	20	3.4	1711.079	1710.00	1753.966	1755
	20	4.35	1711.064	1710.00	1753.954	1755
					Result:	Pass

Test Plots:

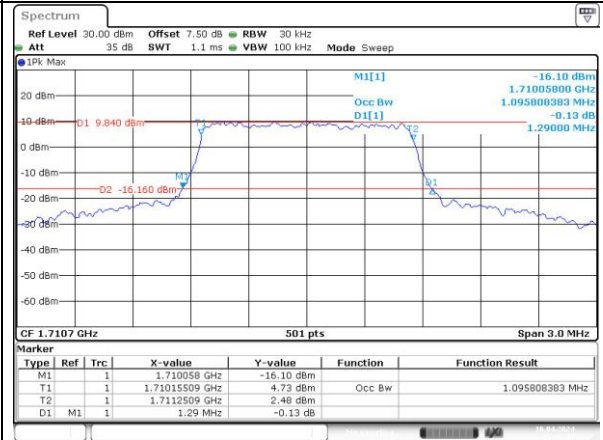
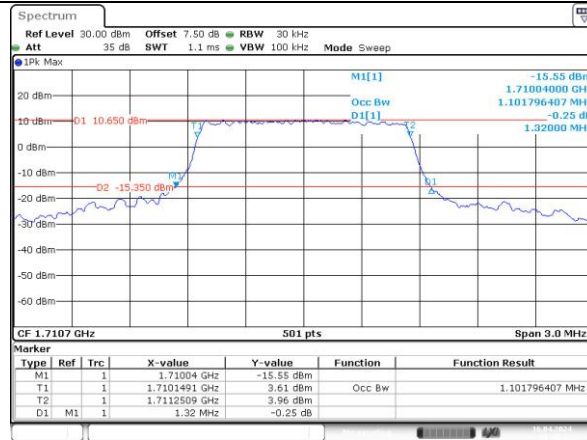
Occupied Bandwidth

Channel

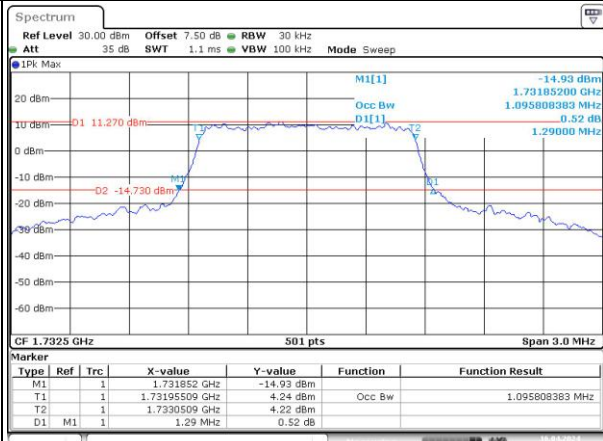
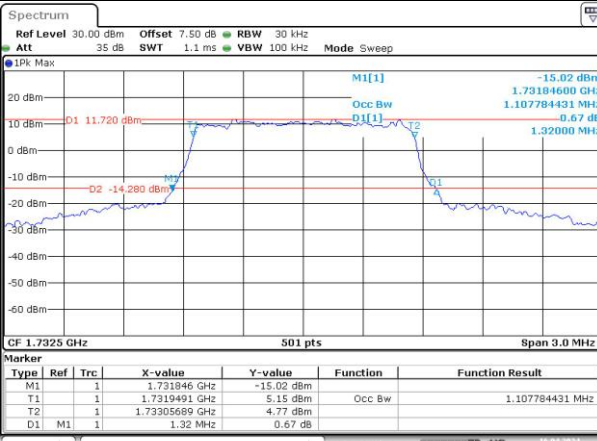
1.4MHz Bandwidth QPSK

1.4MHz Bandwidth 16QAM

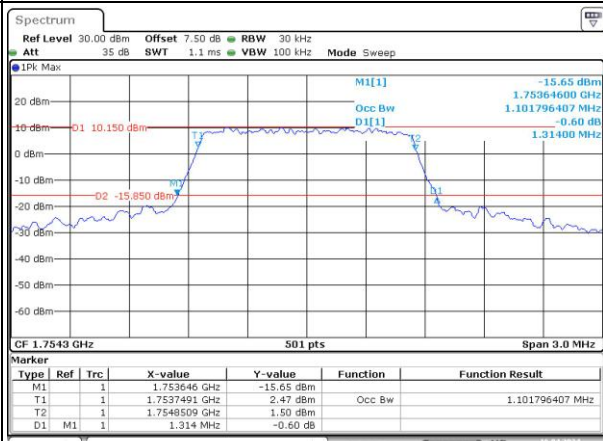
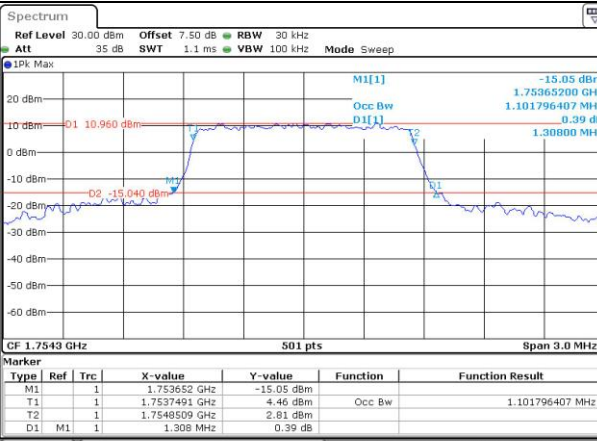
Lowest



Middle



Highest



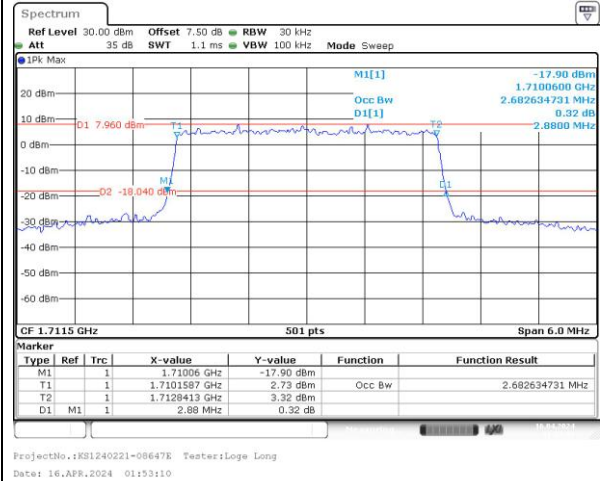
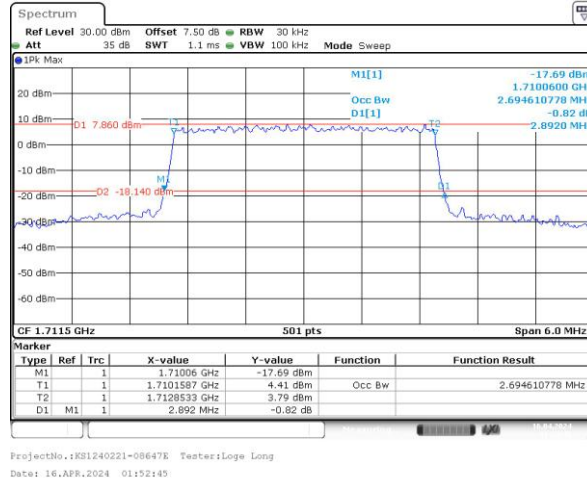
Occupied Bandwidth

Channel

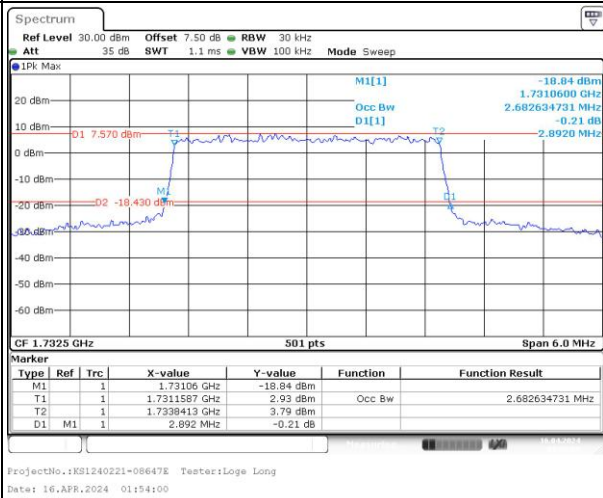
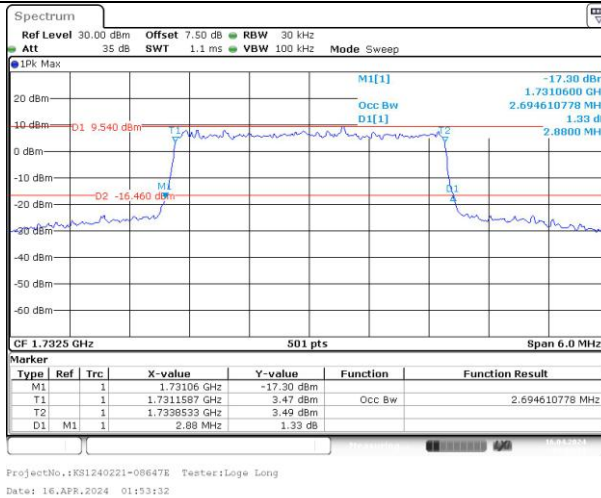
3MHz Bandwidth QPSK

3MHz Bandwidth 16QAM

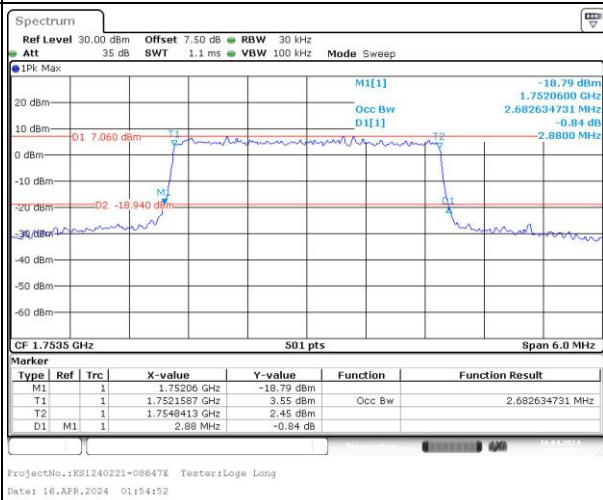
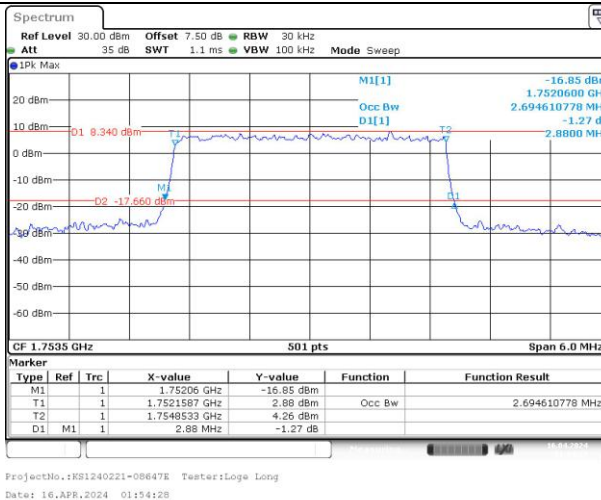
Lowest



Middle



Highest



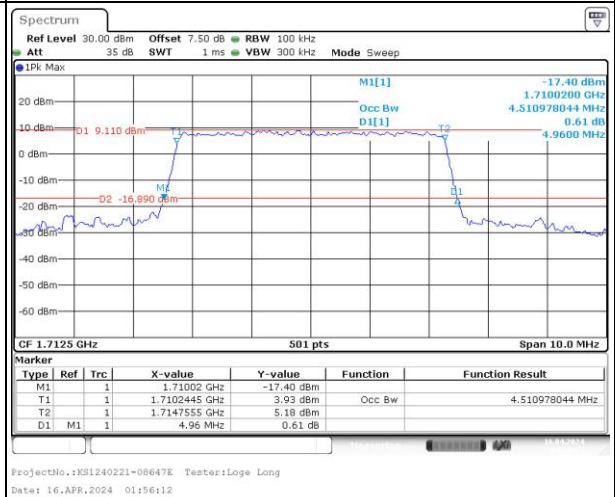
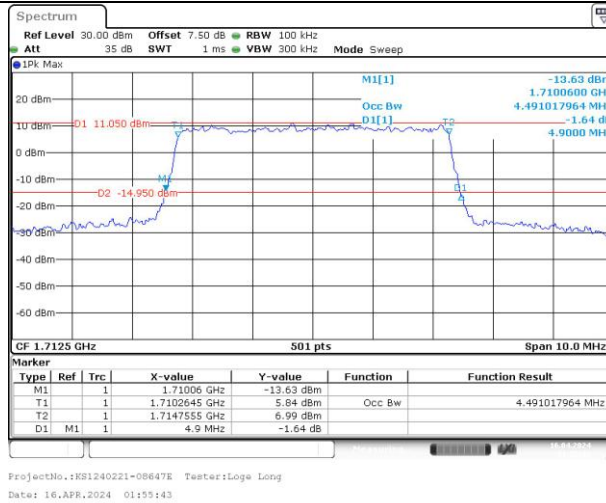
Occupied Bandwidth

Channel

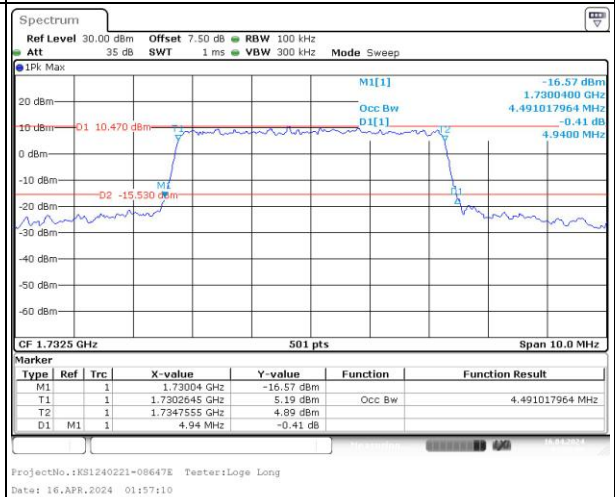
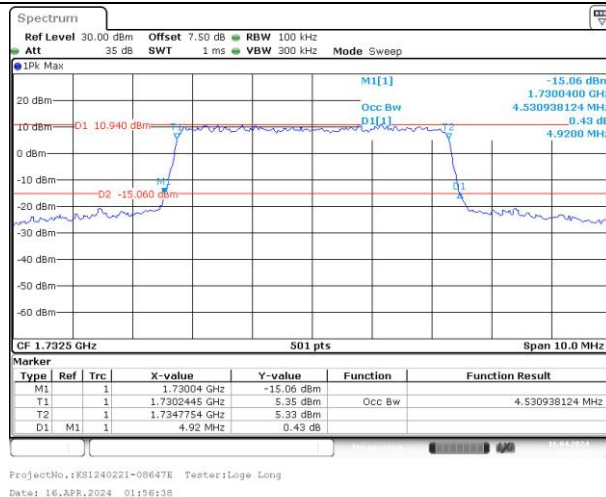
5MHz Bandwidth QPSK

5MHz Bandwidth 16QAM

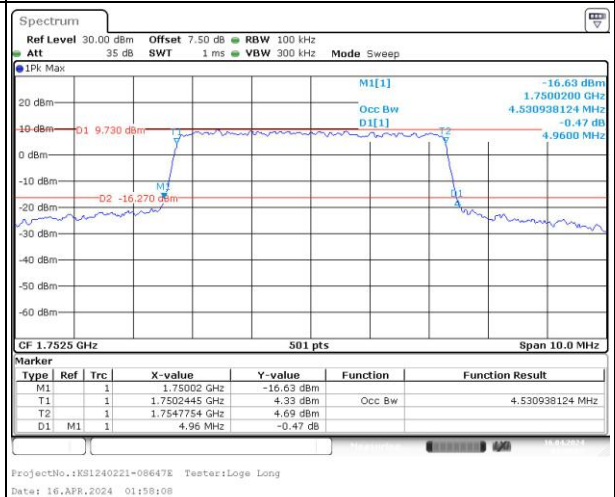
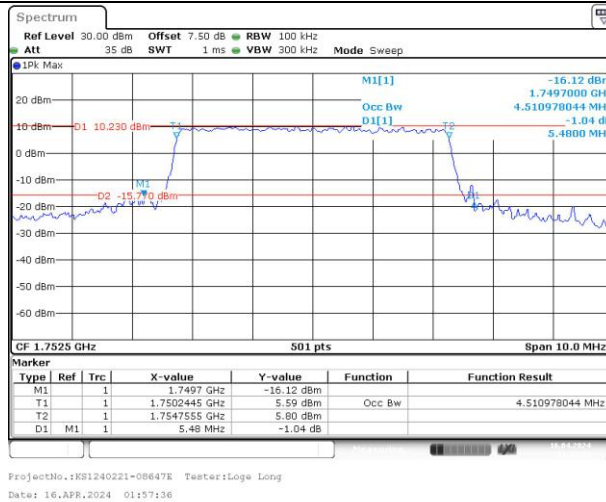
Lowest



Middle



Highest



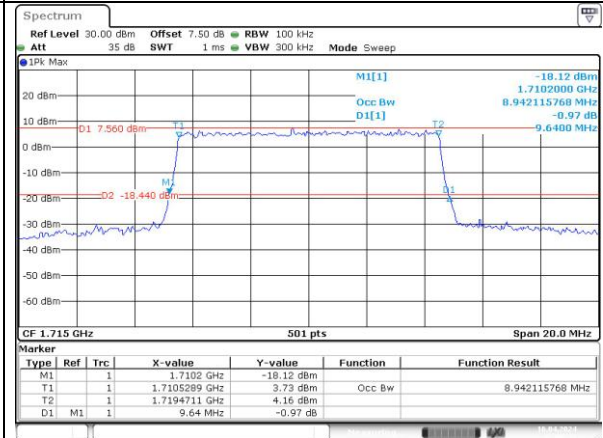
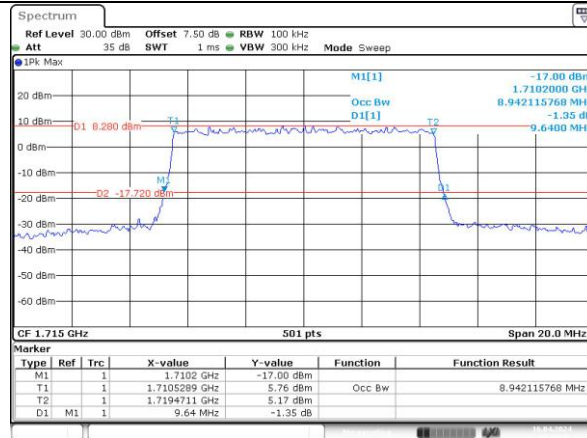
Occupied Bandwidth

Channel

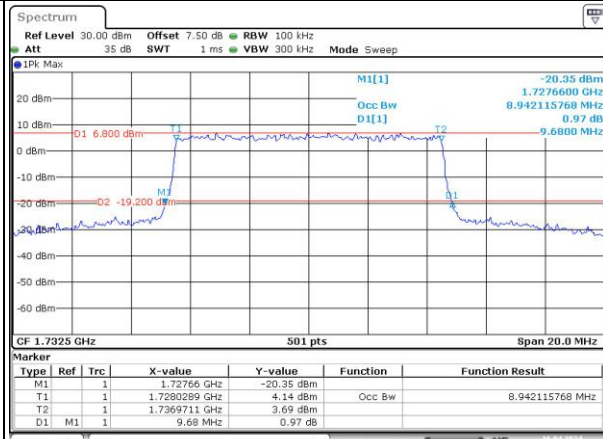
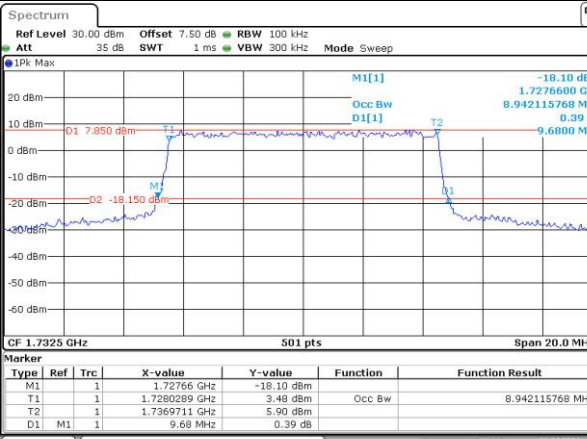
10MHz Bandwidth QPSK

10MHz Bandwidth 16QAM

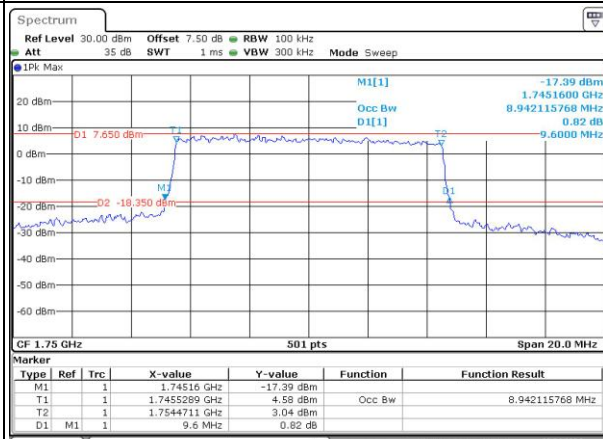
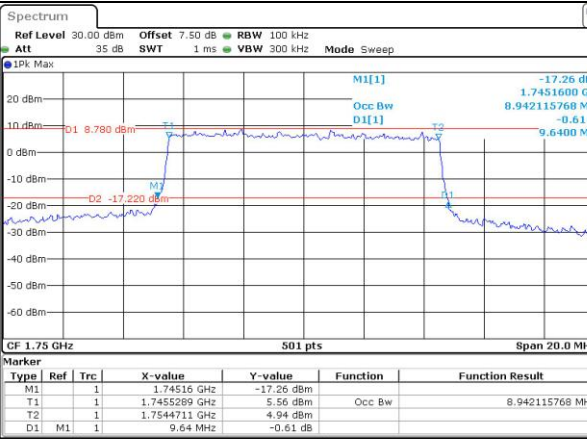
Lowest



Middle



Highest



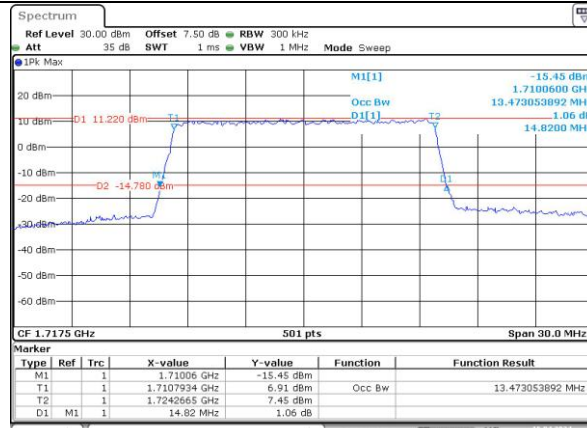
Occupied Bandwidth

Channel

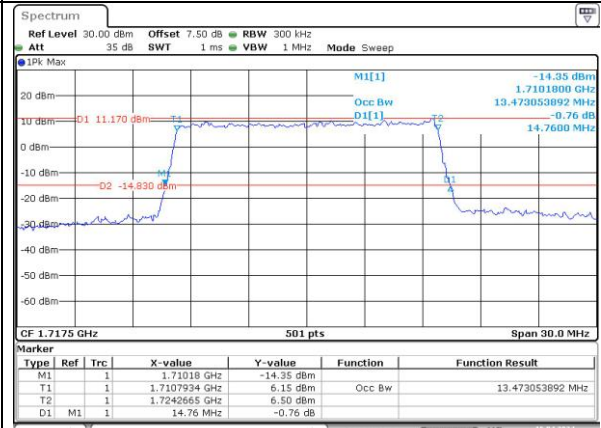
15MHz Bandwidth QPSK

15MHz Bandwidth 16QAM

Lowest

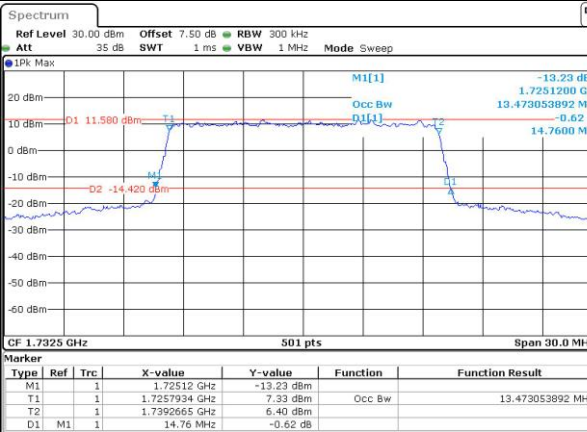


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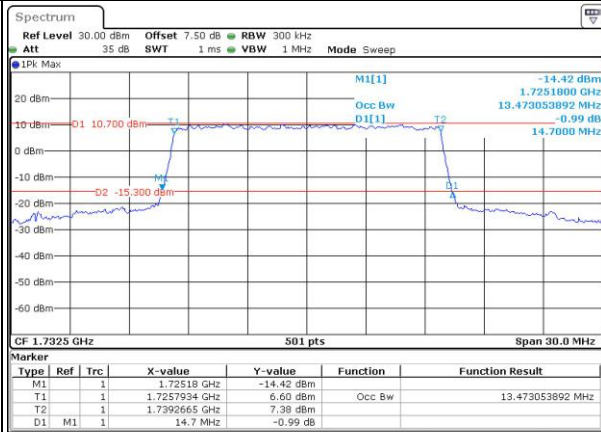


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Date: 16.APR.2024 02:03:148

Middle

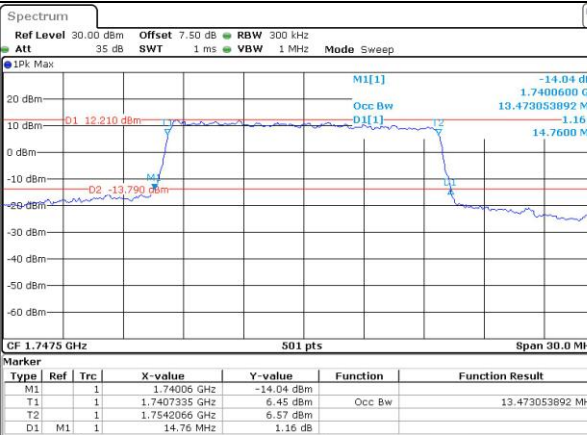


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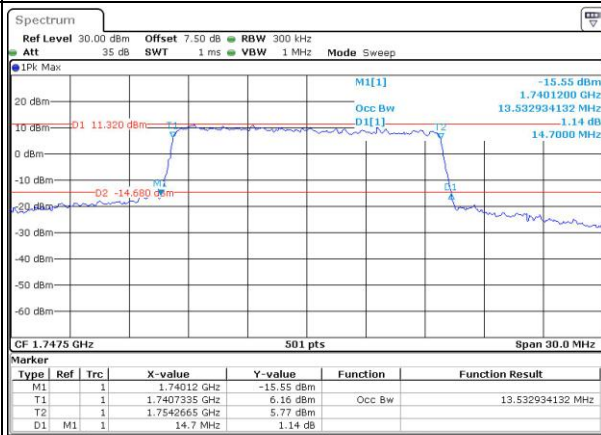


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Date: 16.APR.2024 02:04:152

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 16.APR.2024 02:05:128



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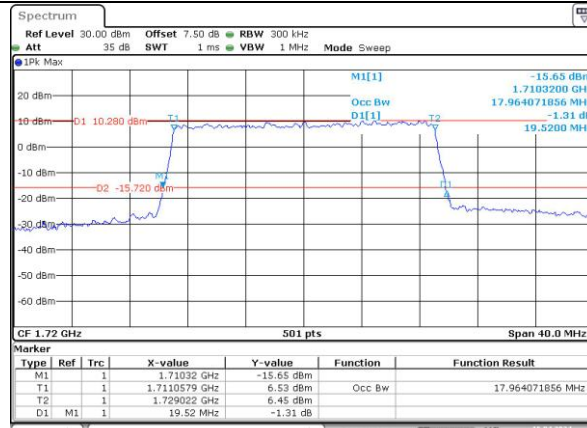
Occupied Bandwidth

Channel

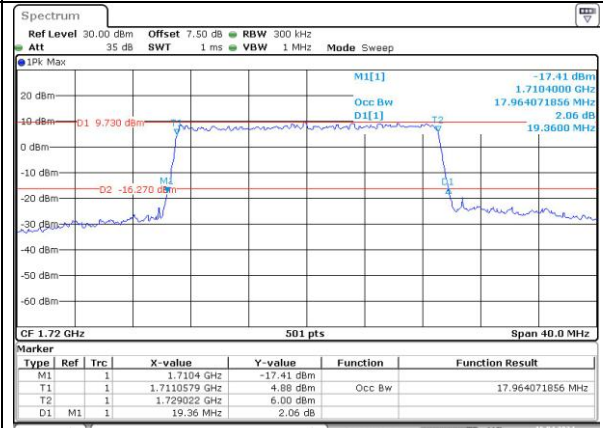
20MHz Bandwidth QPSK

20MHz Bandwidth 16QAM

Lowest

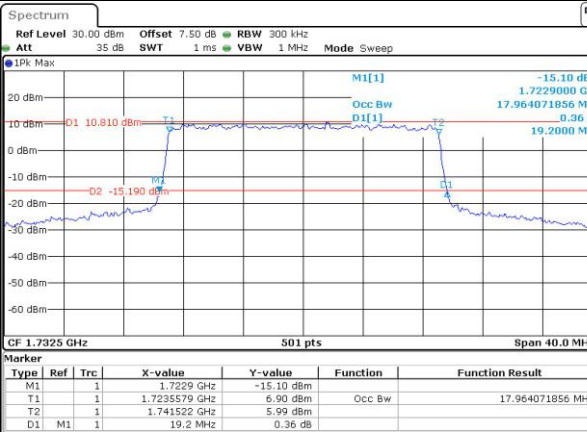


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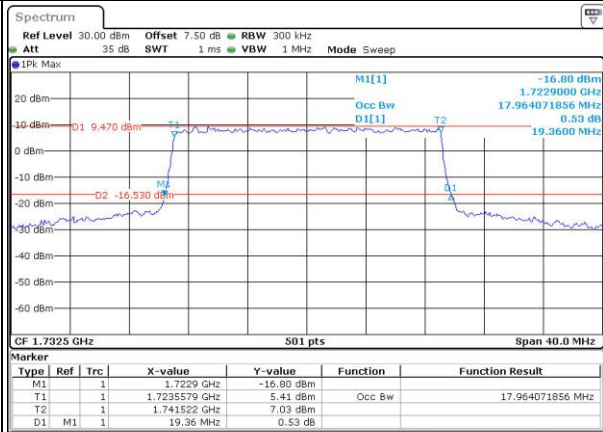


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Date: 16.APR.2024 02:07:140

Middle

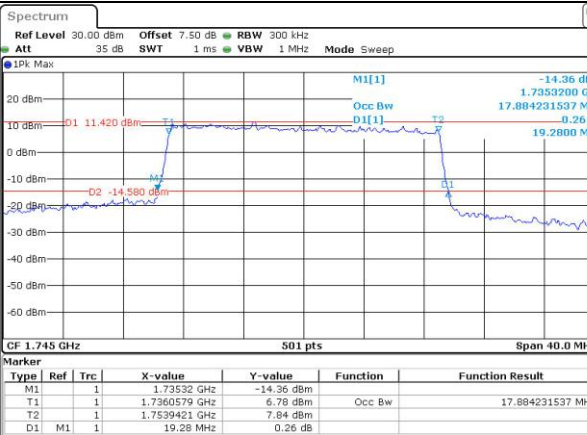


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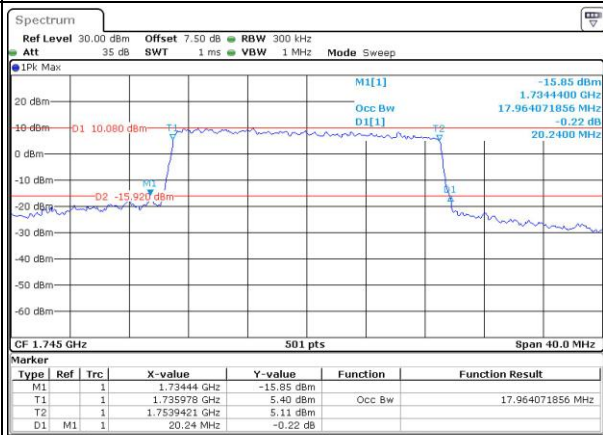


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Highest



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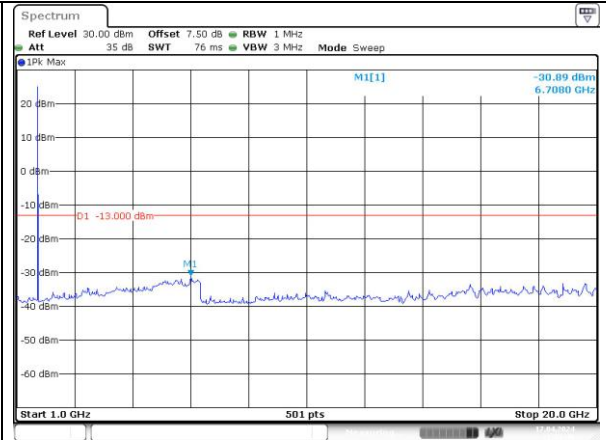
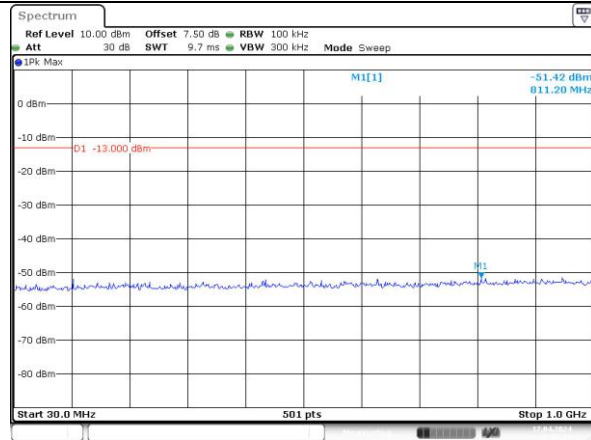
1RB:

Spurious Emissions at Antenna Terminal

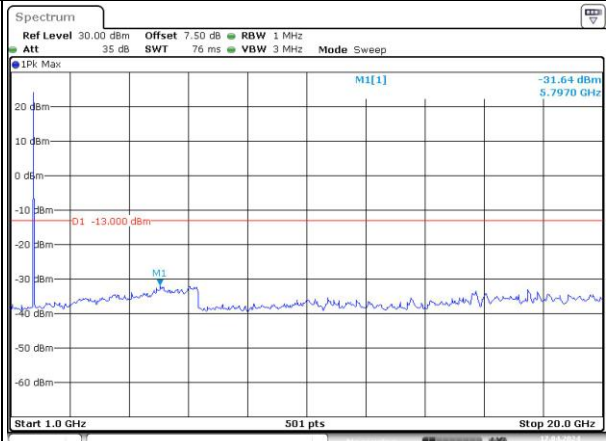
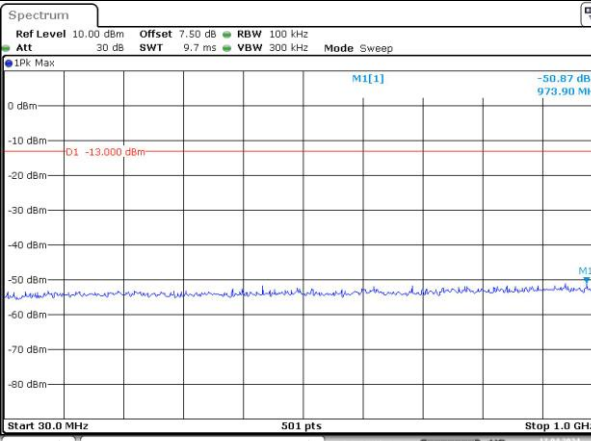
Channel

1.4MHz Bandwidth QPSK

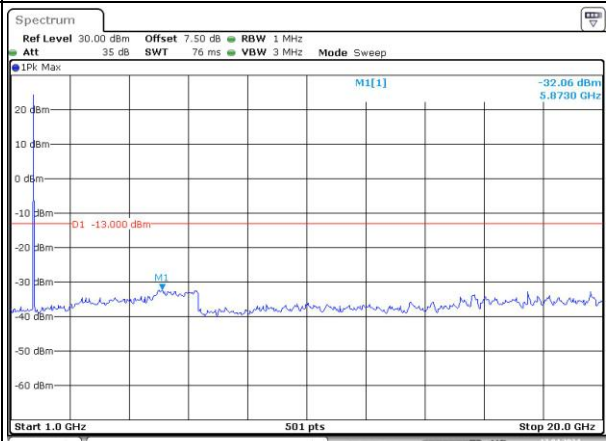
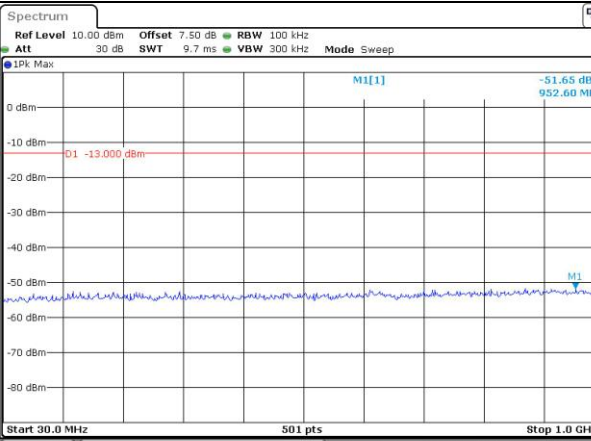
Lowest



Middle



Highest

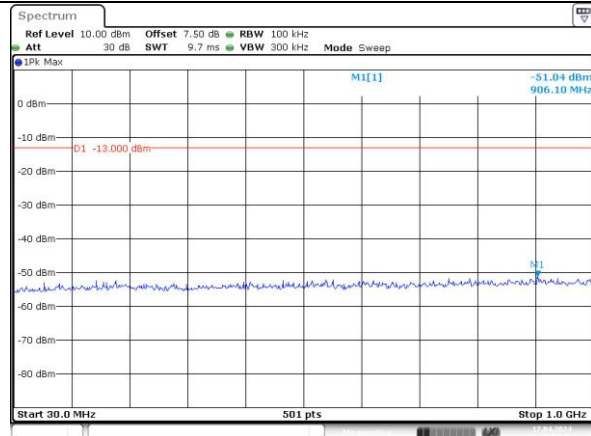


Spurious Emissions at Antenna Terminal

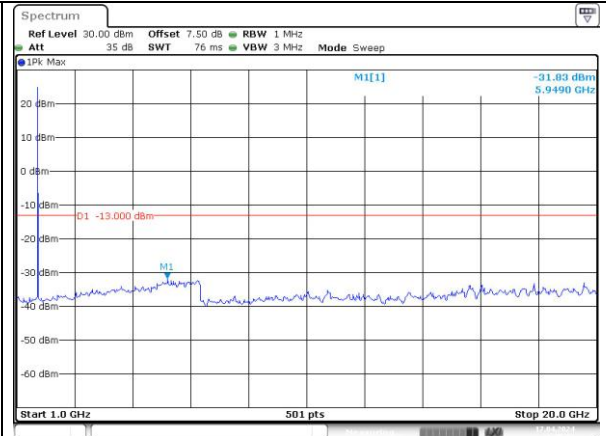
Channel

3MHz Bandwidth QPSK

Lowest

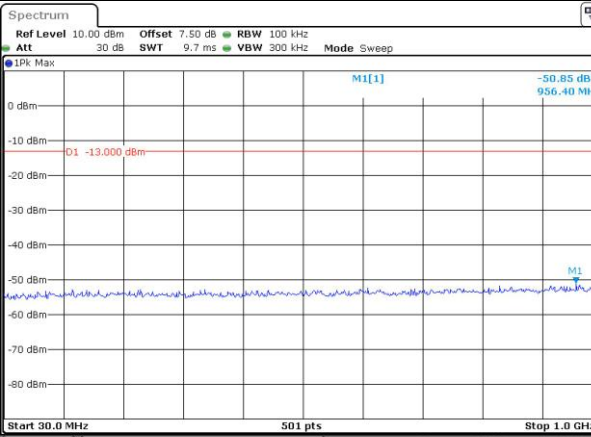


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:04:43

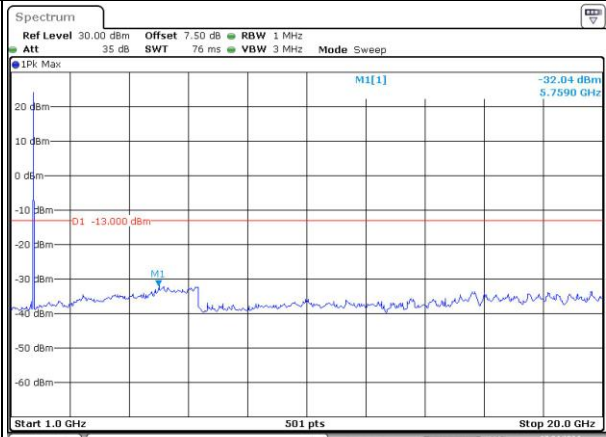


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:05:08

Middle

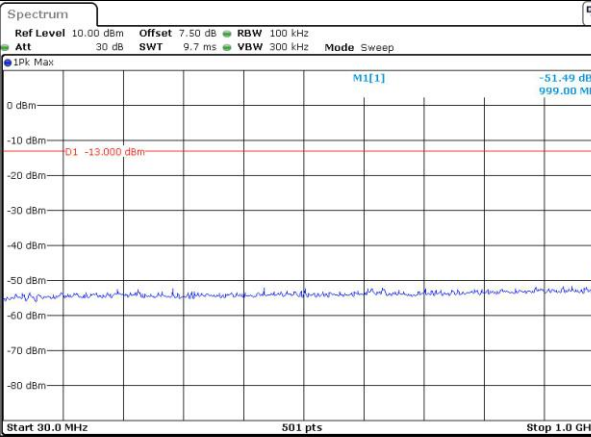


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:05:37

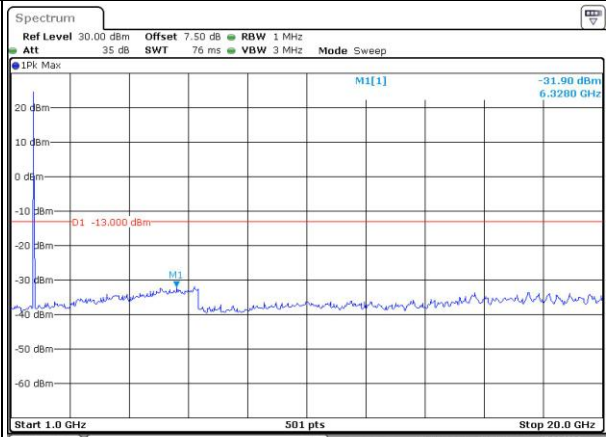


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:06:03

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:06:29



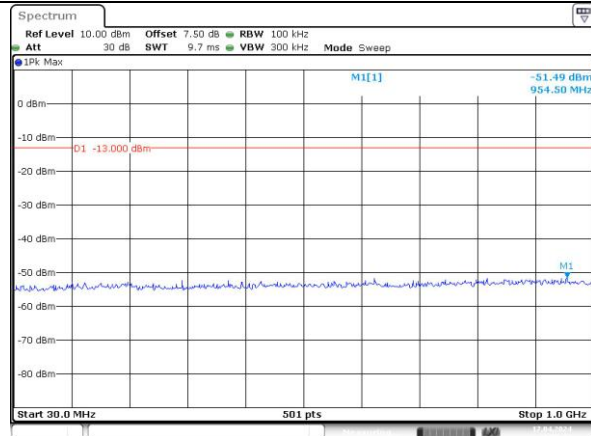
ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:06:57

Spurious Emissions at Antenna Terminal

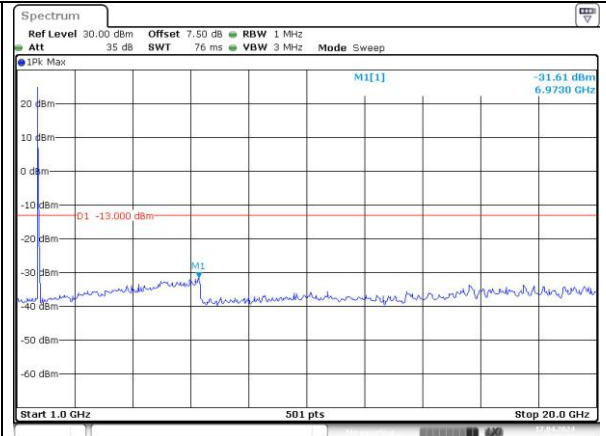
Channel

5MHz Bandwidth QPSK

Lowest

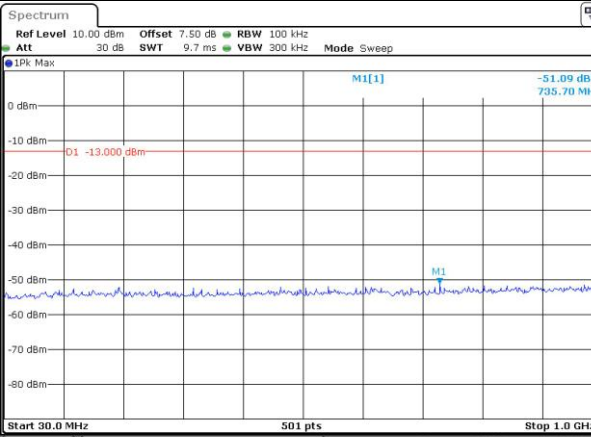


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:08:35

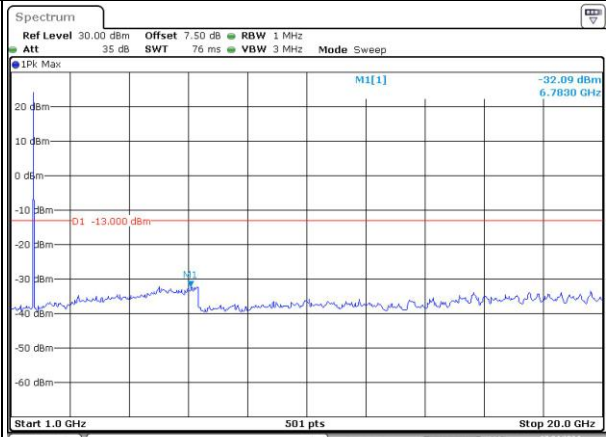


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:08:57

Middle

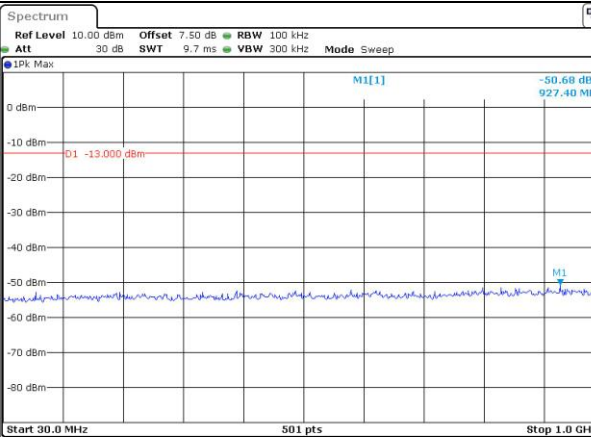


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:09:30

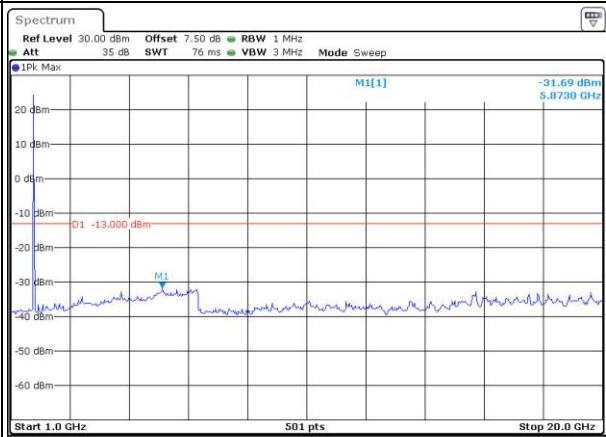


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:09:55

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:10:22



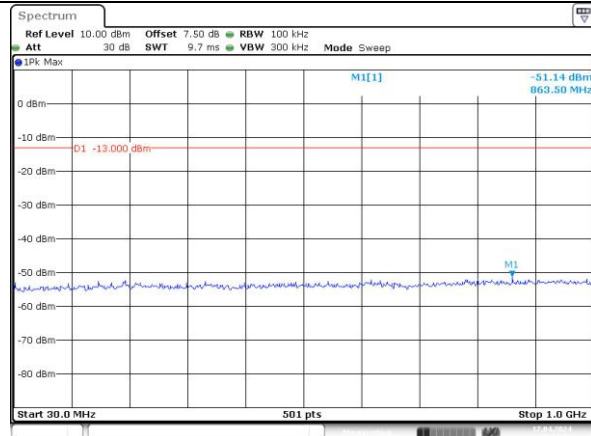
ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:10:50

Spurious Emissions at Antenna Terminal

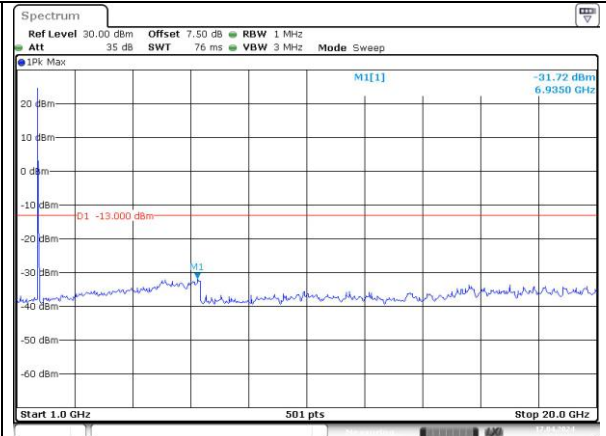
Channel

10MHz Bandwidth QPSK

Lowest

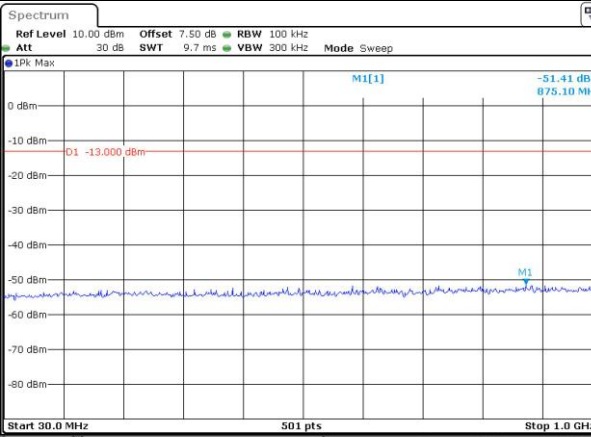


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:11:56

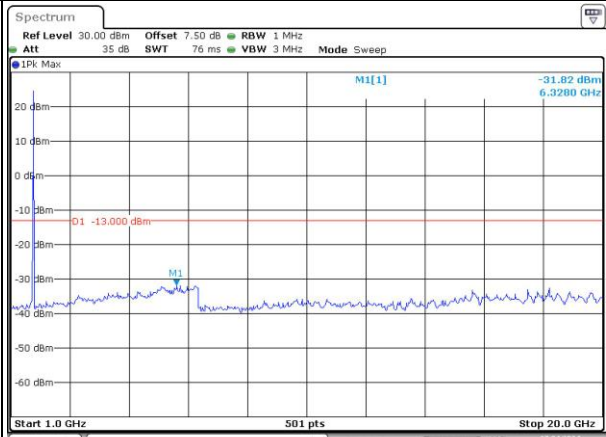


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:12:10

Middle

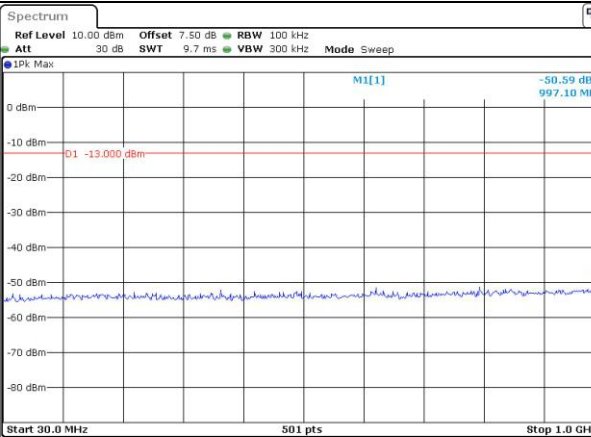


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:12:52

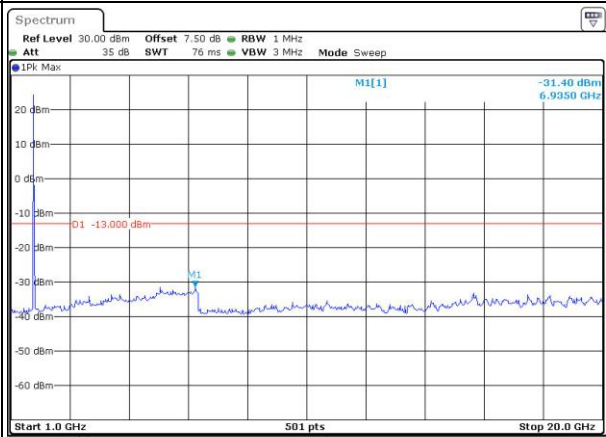


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:13:23

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:13:57



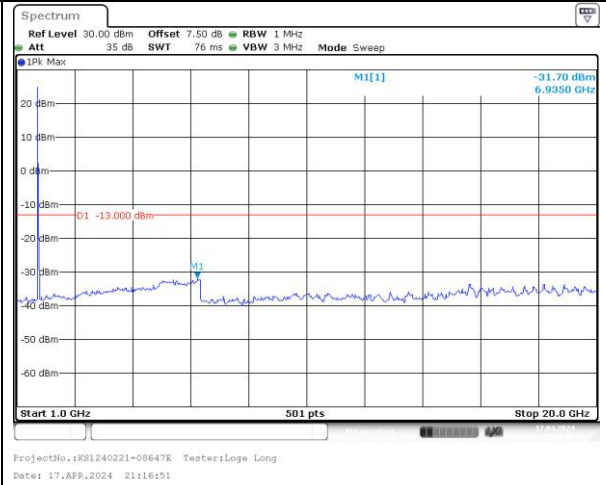
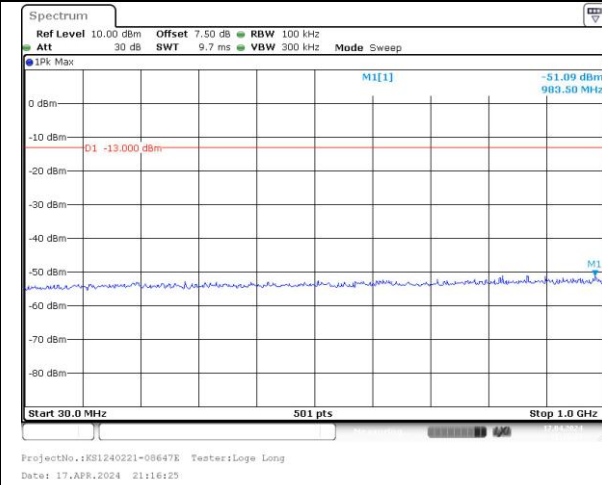
ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:14:22

Spurious Emissions at Antenna Terminal

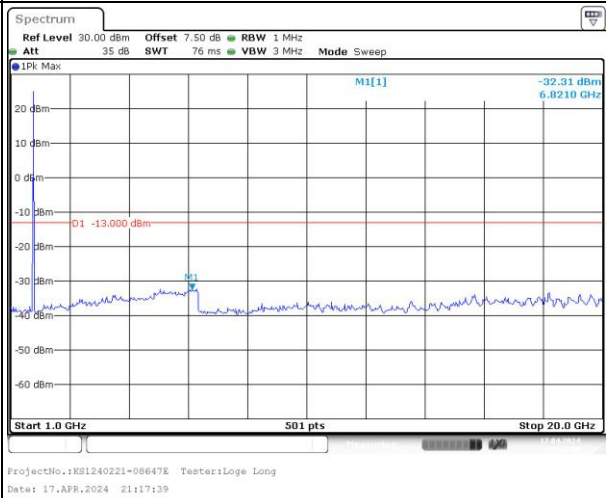
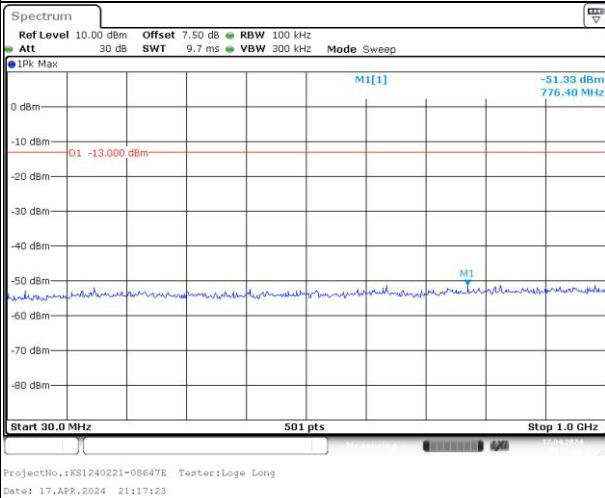
Channel

15MHz Bandwidth QPSK

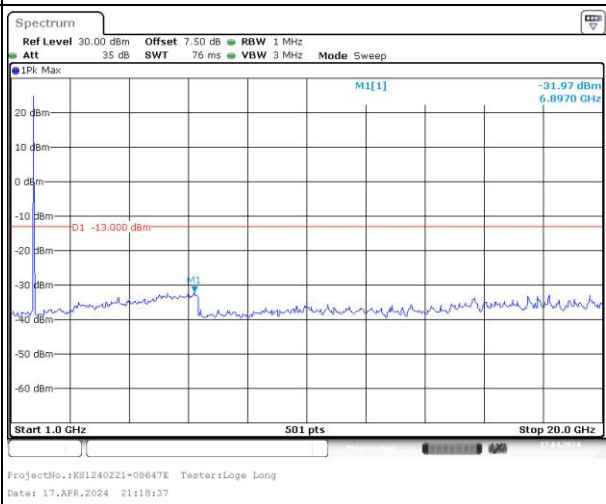
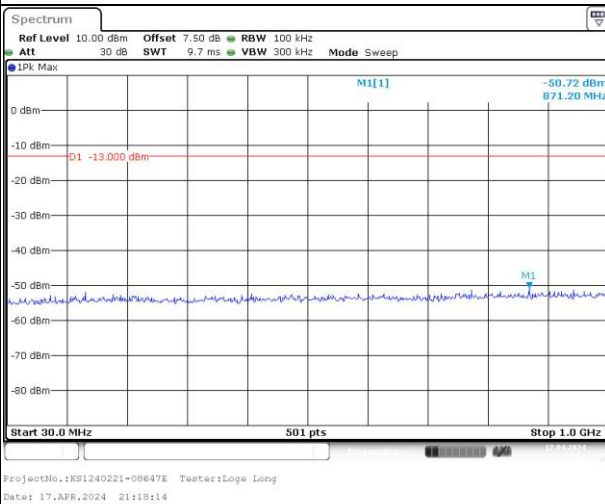
Lowest



Middle



Highest

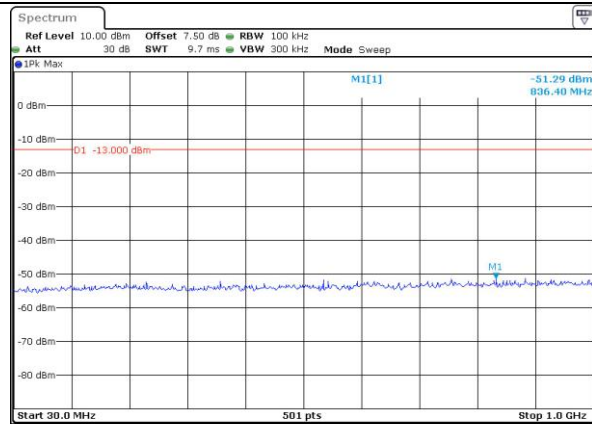


Spurious Emissions at Antenna Terminal

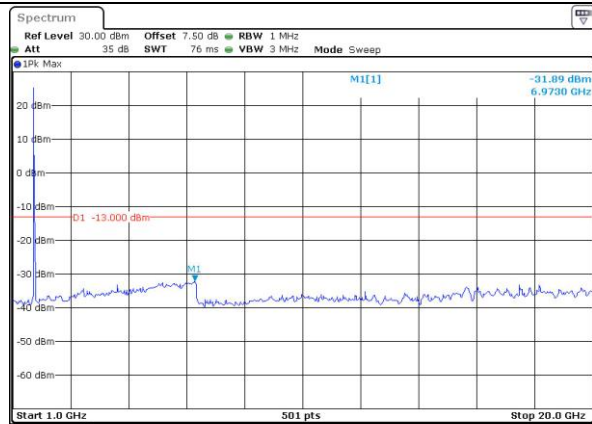
Channel

20MHz Bandwidth QPSK

Lowest

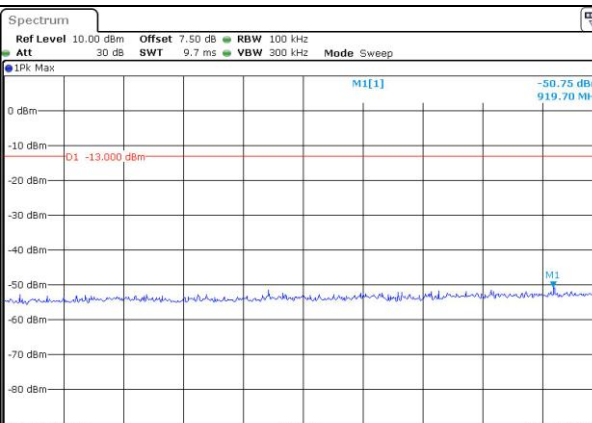


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:20:10

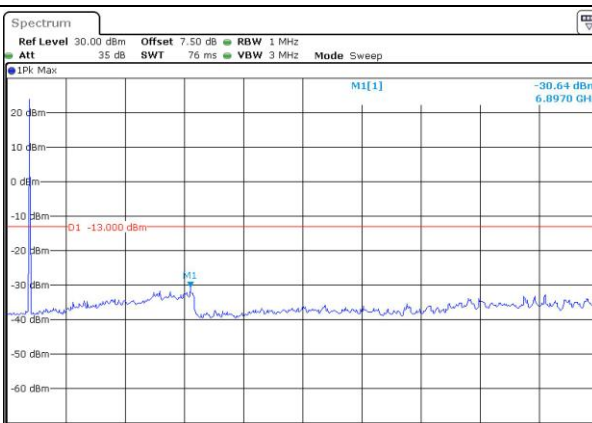


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:20:38

Middle

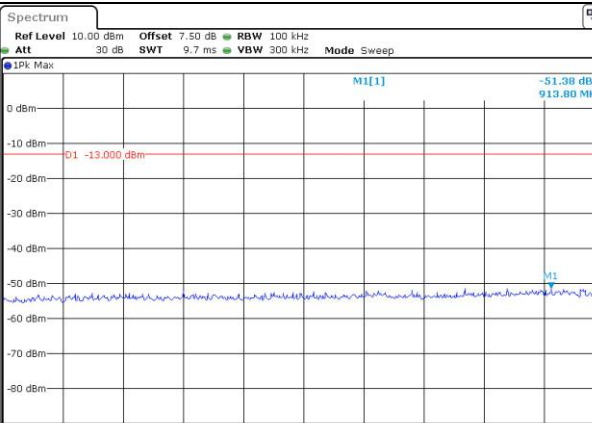


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:21:14

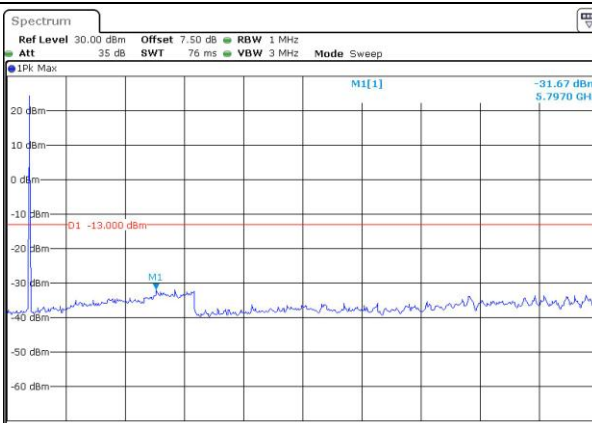


ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:21:42

Highest



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:22:18



ProjectNo.:KS1240221-08647E Tester:Loge Long
Date: 17.APR.2024 21:22:41

Out of band emission, Band Edge

