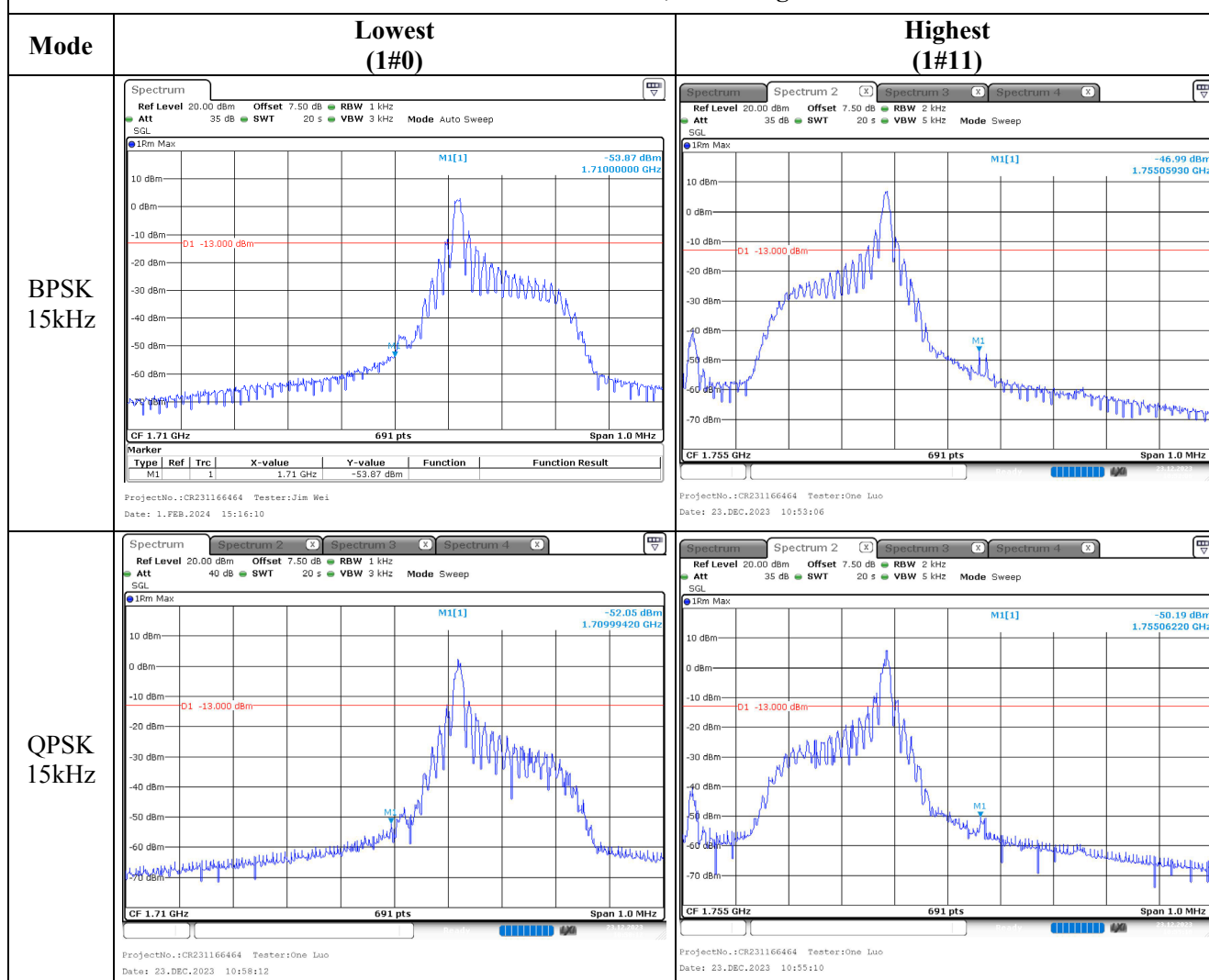
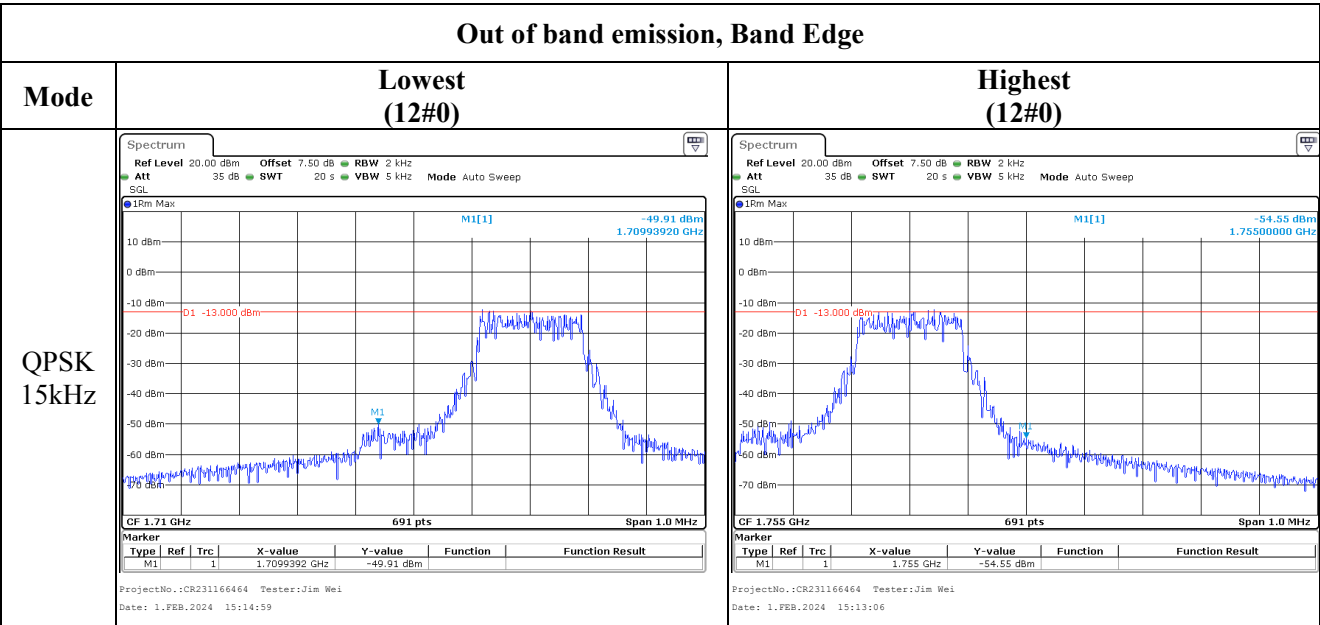


Out of band emission, Band Edge



Out of band emission, Band Edge



4.3 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	2DHS-3	Test Date:	2023-12-21~2024-2-1
Test Site:	RF	Test Mode:	Transmitting
Tester:	One Luo, Jim Wei	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	17.8~25.3	Relative Humidity: (%)	26~42	ATM Pressure: (kPa)	100.8~102.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2023-07-15	2024-07-14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Functional radio communication tester	CMW290	101742	2023-06-08	2024-06-07
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023-09-29	2024-09-28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2023-07-15	2024-07-14

** 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).*

Test Frequency For Each Mode:

Sub-carrier Spacing	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
3.75kHz	824.2	836.5	848.8
15kHz	824.2	836.5	848.8

Test Data:

FCC§2.1046;§ 22.913:RF Output Power						
Modulation & Sub-carrier Spacing	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
BPSK & 3.75kHz	RB1#0	20.51	19.43	18.47	21.37	38.45
	RB1#47	20.47	19.41	18.46		
BPSK & 15kHz	RB1#0	18.09	20.39	20.19		
	RB1#11	18.05	20.27	20.07		
QPSK & 3.75kHz	RB1#0	20.52	19.48	18.52		
	RB1#47	20.38	19.44	18.46		
QPSK & 15kHz	RB1#0	18.08	20.45	20.34		
	RB1#11	18.03	20.38	20.22		
	RB12#0	18.23	18.38	18.42		
Note: ERP=Conducted Power(dBm) - Lc(dB) + Gr(dBd)						
					Result:	Pass

Peak-to-average Ratio(PAR)						
Modulation	Sub-carrier Spacing (kHz)	Resource Block & RB offset	Peak-to-average Ratio (dB)			Limit (dB)
			Lowest Channel	Middle Channel	Highest Channel	
BPSK	3.75	RB1#0	2.65	2.22	2.46	13
	15	RB1#11	2.45	1.56	2.31	13
QPSK	3.75	RB1#0	2.62	2.65	2.52	13
	15	RB1#0	2.54	2.26	2.26	13
		RB12#0	2.53	2.96	2.25	13
					Result:	Pass

FCC §2.1049, §22.917, §22.905: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
BPSK 3.75K 1#0	0.055	0.056	0.055	0.041	0.043	0.042
QPSK 3.75K 1#0	0.067	0.067	0.064	0.045	0.045	0.045
BPSK 15K 1#0 LOW	0.122	0.120	0.119	0.114	0.120	0.119
QPSK 15K 1#0	0.119	0.117	0.120	0.119	0.133	0.133
QPSK 15K 12#0	0.184	0.184	0.184	0.249	0.255	0.255
Note: The test plots please refer to the Plots of Occupied Bandwidth						

FCC §2.1051, §22.917(a):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, §22.917(a):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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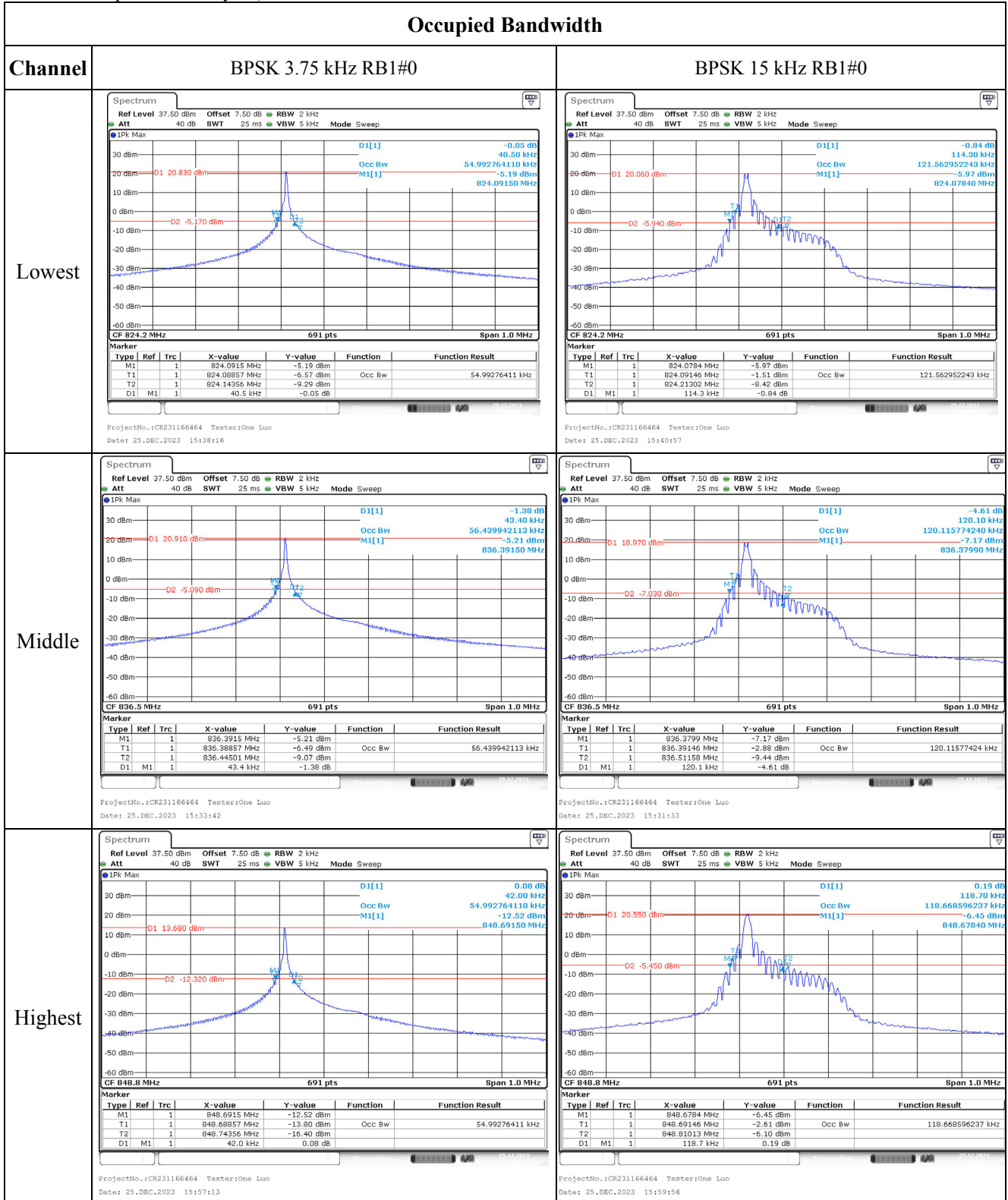
FCC §2.1055, §22.355: Frequency Stability

Test Modulation:	BPSK, 15kHz, RB1#0		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	-6.15	-0.007	2.5
	-20	3.7	-6.95	-0.008	2.5
	-10	3.7	-5.55	-0.007	2.5
	0	3.7	6.05	0.007	2.5
	10	3.7	9.82	0.012	2.5
	20	3.7	5.04	0.006	2.5
	30	3.7	-6.63	-0.008	2.5
	40	3.7	-8.75	-0.010	2.5
	50	3.7	-7.06	-0.008	2.5
Frequency Stability vs. Voltage	20	3.2	8.95	0.011	2.5
	20	4.2	-7.12	-0.009	2.5
				Result:	Pass

Test Modulation:	QPSK, 15kHz , RB12#0		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	-8.82	-0.011	2.5
	-20	3.7	8.12	0.010	2.5
	-10	3.7	-8.54	-0.010	2.5
	0	3.7	9.35	0.011	2.5
	10	3.7	-6.95	-0.008	2.5
	20	3.7	7.56	0.009	2.5
	30	3.7	6.45	0.008	2.5
	40	3.7	-6.18	-0.007	2.5
	50	3.7	-6.46	-0.008	2.5
Frequency Stability vs. Voltage	20	3.2	6.35	0.008	2.5
	20	4.2	-6.85	-0.008	2.5
				Result:	Pass

Test Plots(Note: The 7.5dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

Occupied Bandwidth



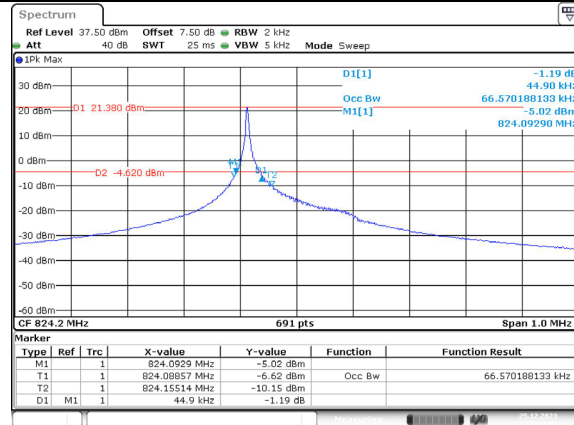
Occupied Bandwidth

Channel

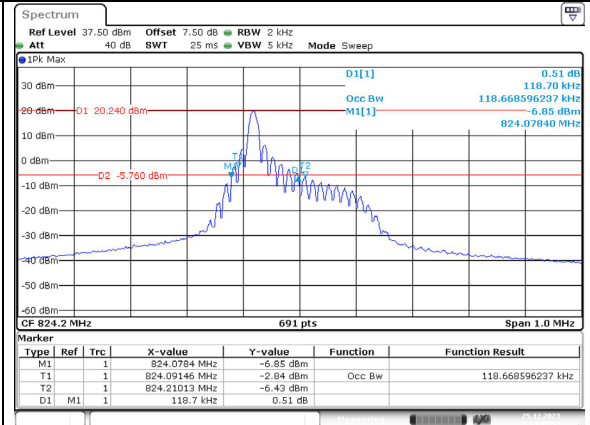
QPSK 3.75 kHz RB1#0

QPSK 15 kHz RB1#0

Lowest

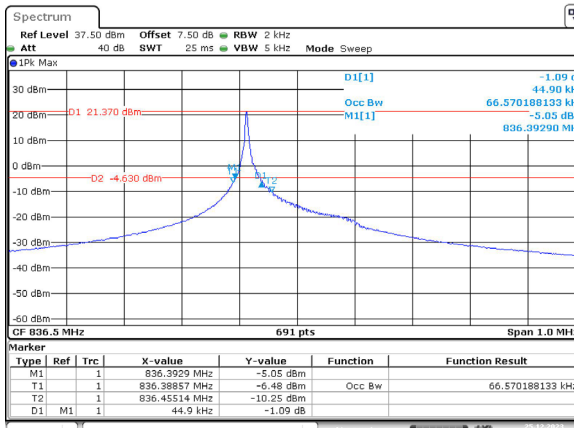


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Date: 25.DEC.2023 15:37:09

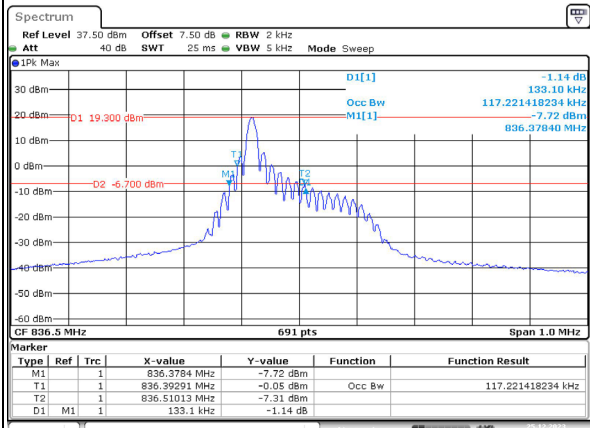


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Date: 25.DEC.2023 15:42:51

Middle

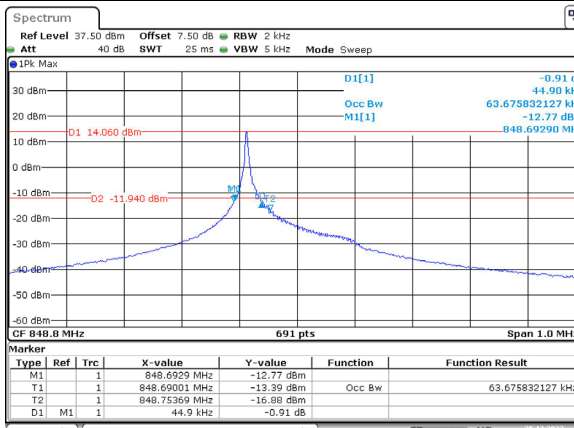


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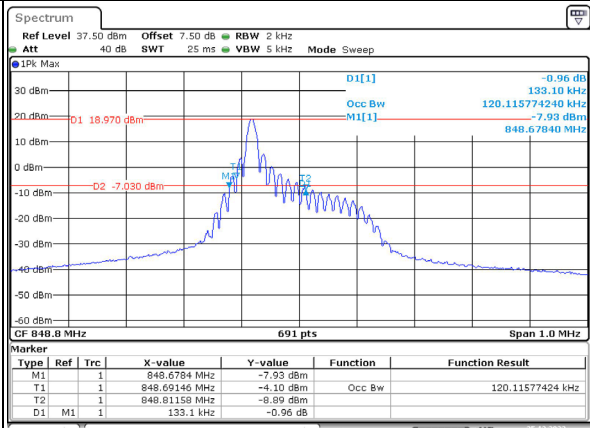


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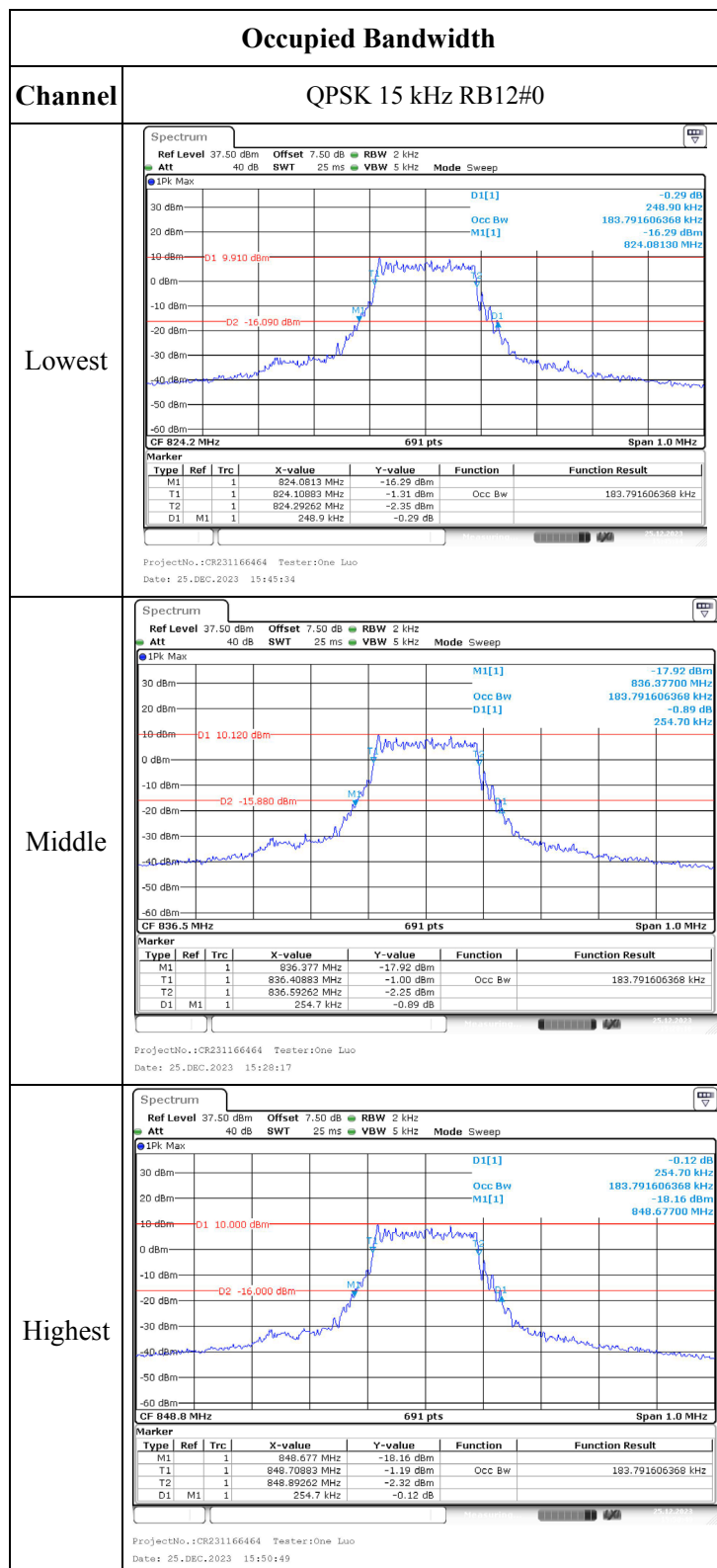
Highest



ProjectNo.:CR231166464 Tester:One Luo
Date: 25.DEC.2023 15:58:07



ProjectNo.:CR231166464 Tester:One Luo
Date: 25.DEC.2023 15:53:01

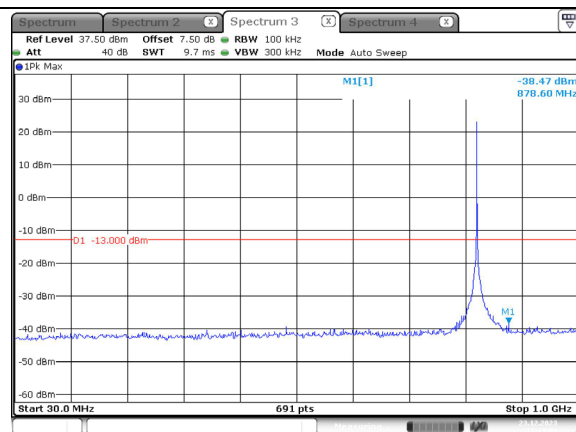


Spurious Emissions at Antenna Terminal

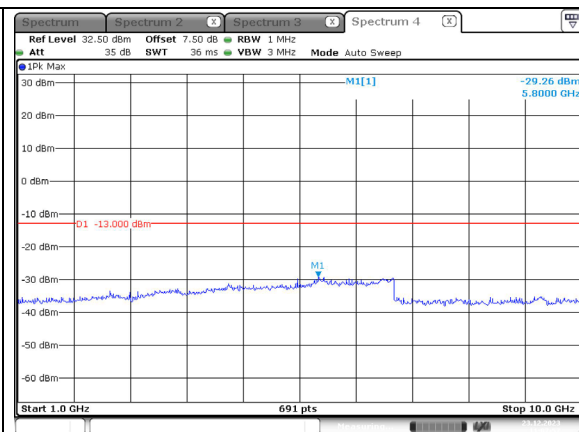
Channel

(Worst: BPSK 3.75K 1#0 was tested)

Lowest

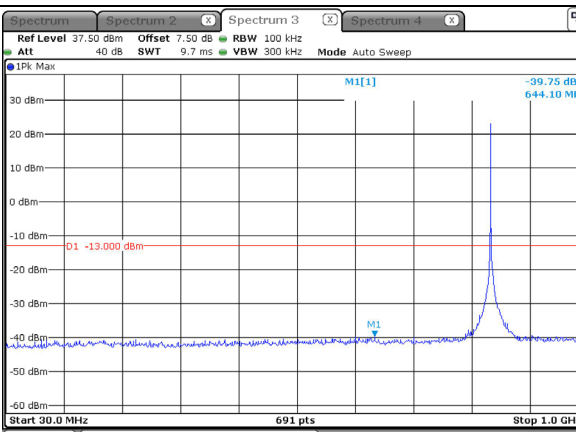


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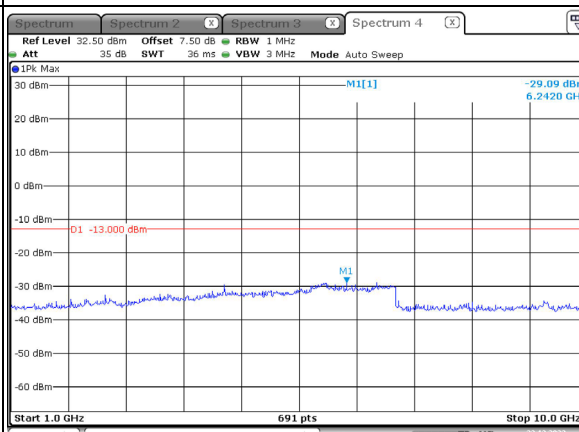


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Middle

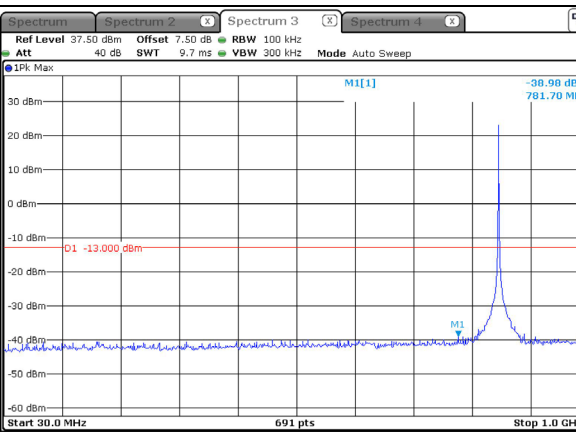


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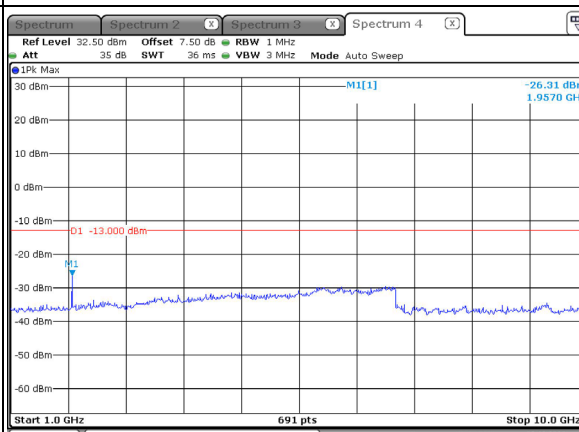


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Date: 23.DEC.2023 11:09:07

Highest



ProjectNo.:CR231166464 Tester:One Luo
Date: 23.DEC.2023 11:18:34



ProjectNo.:CR231166464 Tester:One Luo
Date: 23.DEC.2023 11:09:51

Out of band emission, Band Edge

