

Appendix

Test Data for report GZCR250700106507



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch / EMC Laboratory

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1. Effective Radiated Power (ERP) Output Data

1.1 Test Result

Modulation Mode	Channel Separation (kHz)	Test Channel	Conducted Power (dBm)			Gain (dBi)	Maximum ERP (dBm) ^{Note1}			Verdict
			High Power Level	Middle Power Level	Low Power Level		High Power Level	Middle Power Level	Low Power Level	
4FSK	12.5	L	31.76	28.74	25.85	3.0	32.61	29.59	26.70	Pass
	12.5	M	31.82	28.68	25.87	3.0	32.67	29.53	26.72	Pass
	12.5	H	31.79	28.72	25.86	3.0	32.64	29.57	26.71	Pass
	25	L	31.72	28.56	25.85	3.0	32.57	29.41	26.70	Pass
	25	M	31.78	28.59	25.78	3.0	32.63	29.44	26.63	Pass
	25	H	31.77	28.71	25.81	3.0	32.62	29.56	26.66	Pass
GMSK	12.5	L	31.77	28.64	25.81	3.0	32.62	29.49	26.66	Pass
	12.5	M	31.78	28.67	25.73	3.0	32.63	29.52	26.58	Pass
	12.5	H	31.81	28.66	25.86	3.0	32.66	29.51	26.71	Pass
	25	L	31.75	28.61	25.74	3.0	32.60	29.46	26.59	Pass
	25	M	31.79	28.58	25.79	3.0	32.64	29.43	26.64	Pass
	25	H	31.77	28.59	25.85	3.0	32.62	29.44	26.70	Pass

Note1: ERP=Conducted Power + Antenna Gain - 2.15 dB

According to part 90.205 (s), the limit is as below:

Rated high power: 2W (33 dBm)

Rated middle power: 1W (30 dBm)

Rated Low power: 0.5W (27 dBm)



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2. Frequency Stability

2.1 Test Result

Middle Channel, High Power						
Channel Separation (kHz)	Temp. (°C)	Voltage	Freq. Error (Hz)	Freq. vs. Rated (ppm)		Verdict
				Result	Limit	
12.5	20	LV	-1.300	-0.0030	-2.5 to 2.5	Pass
		NV	-2.400	-0.0055	-2.5 to 2.5	Pass
		HV	-4.800	-0.0109	-2.5 to 2.5	Pass
	-30	NV	1.100	0.0025	-2.5 to 2.5	Pass
	-20	NV	2.300	0.0052	-2.5 to 2.5	Pass
	-10	NV	-5.700	-0.0130	-2.5 to 2.5	Pass
	0	NV	-4.900	-0.0111	-2.5 to 2.5	Pass
	10	NV	-2.600	-0.0059	-2.5 to 2.5	Pass
	30	NV	-4.900	-0.0111	-2.5 to 2.5	Pass
	40	NV	-6.700	-0.0152	-2.5 to 2.5	Pass
	50	NV	-7.500	-0.0170	-2.5 to 2.5	Pass
25	20	LV	-1.900	-0.0043	-5 to 5	Pass
		NV	-4.400	-0.0100	-5 to 5	Pass
		HV	-5.200	-0.0118	-5 to 5	Pass
	-30	NV	3.500	0.0080	-5 to 5	Pass
	-20	NV	2.800	0.0064	-5 to 5	Pass
	-10	NV	-4.500	-0.0102	-5 to 5	Pass
	0	NV	-2.300	-0.0052	-5 to 5	Pass
	10	NV	-2.300	-0.0052	-5 to 5	Pass
	30	NV	-1.700	-0.0039	-5 to 5	Pass
	40	NV	-2.900	-0.0066	-5 to 5	Pass
	50	NV	-3.500	-0.0080	-5 to 5	Pass

Note:

- (1) Parts per million (ppm) is obtained as the difference from the reference frequency (in Hz) divided by the reference frequency (in MHz).
- (2) All modes have been tested and only record the worst test result.



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3. Occupied Bandwidth & Emission Mask

3.1 Test Result

Modulation	Channel Separation (kHz)	Test Channel	Power Level	99% Occupied Bandwidth (kHz)	26 dB Occupied Bandwidth (kHz)	Authorized bandwidth (kHz)	Verdict
4FSK	12.5	L	High	4.941	6.160	< 11.25	Pass
	12.5	M	High	5.017	6.081	< 11.25	Pass
	12.5	H	High	5.002	6.195	< 11.25	Pass
	25	L	High	12.053	17.23	< 20	Pass
	25	M	High	12.426	17.55	< 20	Pass
	25	H	High	12.005	16.16	< 20	Pass
GMSK	12.5	L	High	4.935	6.279	< 11.25	Pass
	12.5	M	High	4.967	6.269	< 11.25	Pass
	12.5	H	High	4.908	6.215	< 11.25	Pass
	25	L	High	9.946	11.97	< 20	Pass
	25	M	High	9.992	12.49	< 20	Pass
	25	H	High	9.952	12.38	< 20	Pass

Note:

(1) Only record the worst test result.



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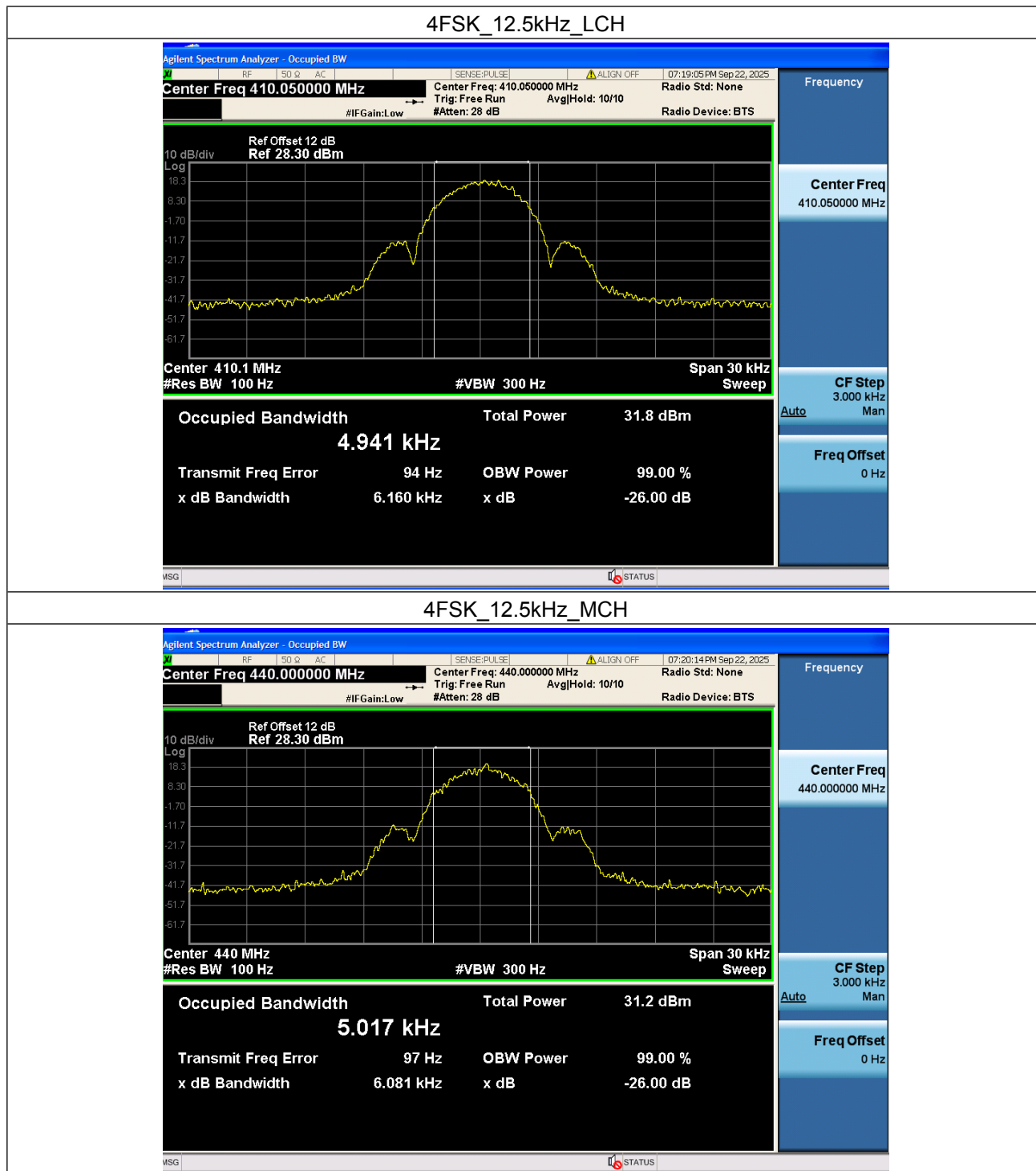
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3.2 Test Graph

3.2.1 OBW & XDB



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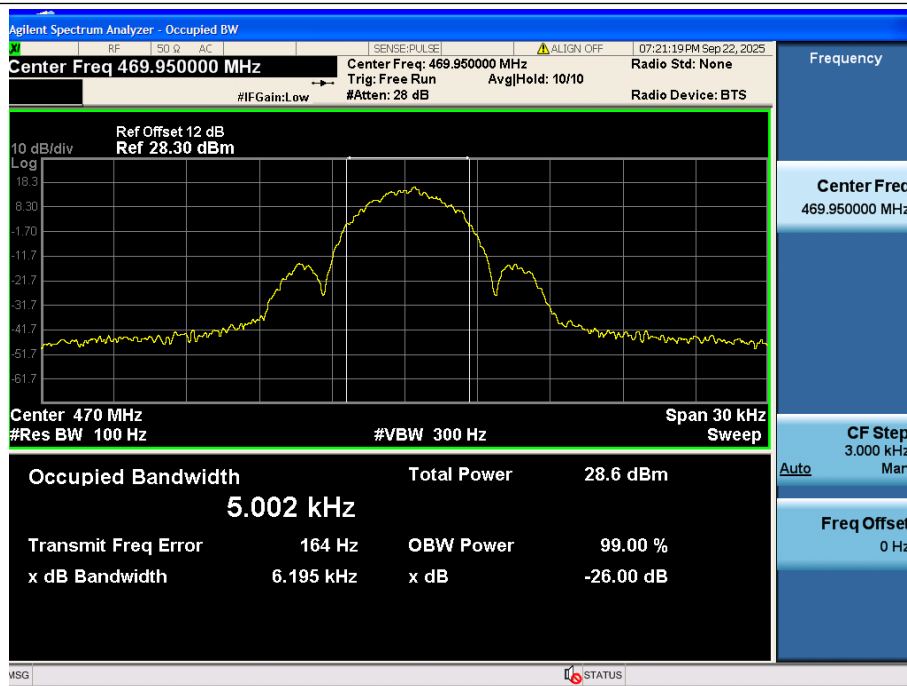
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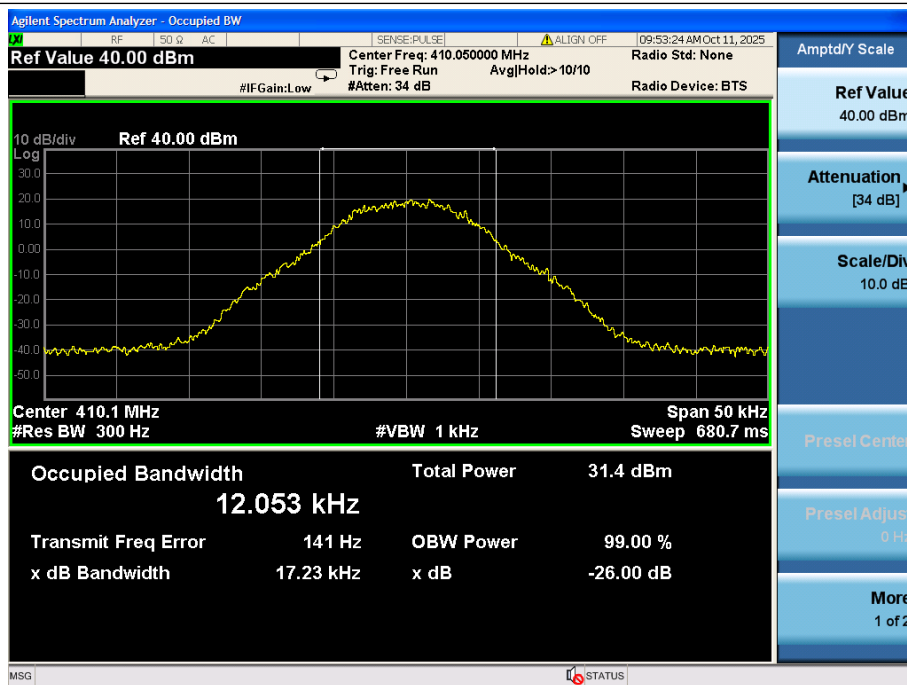
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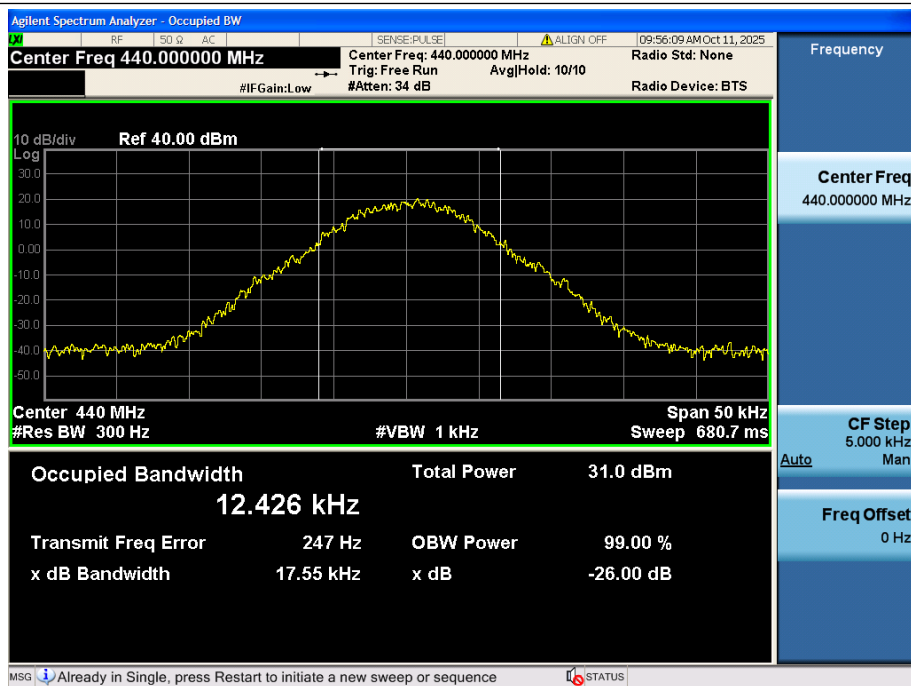
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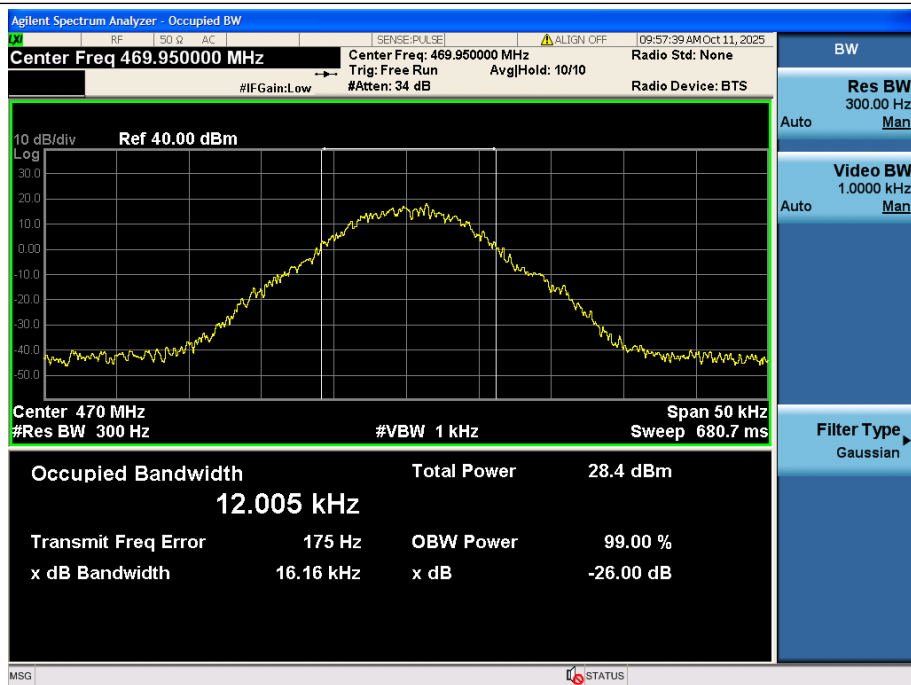
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4FSK_25kHz_MCH



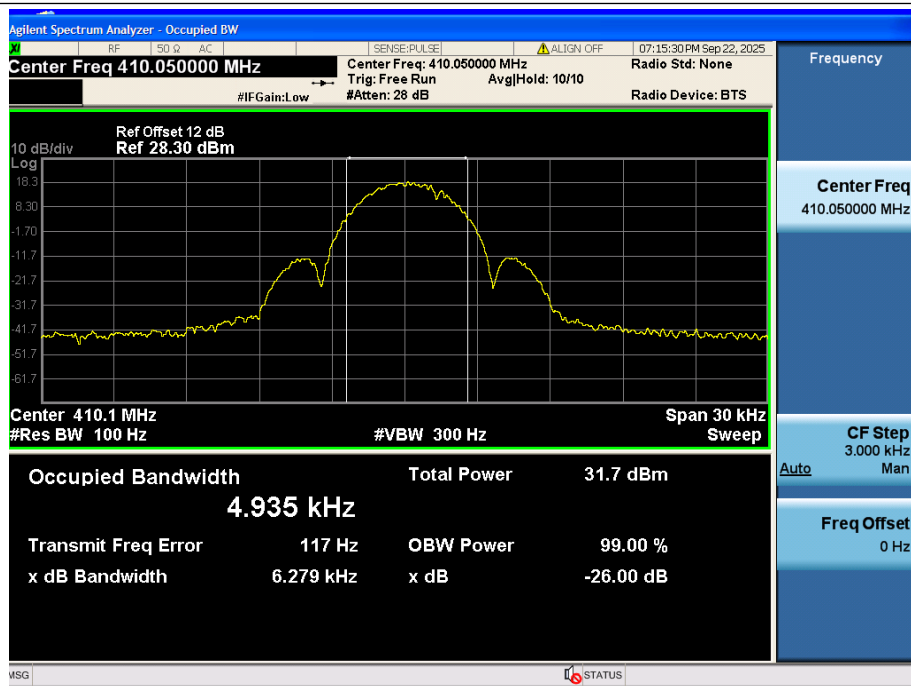
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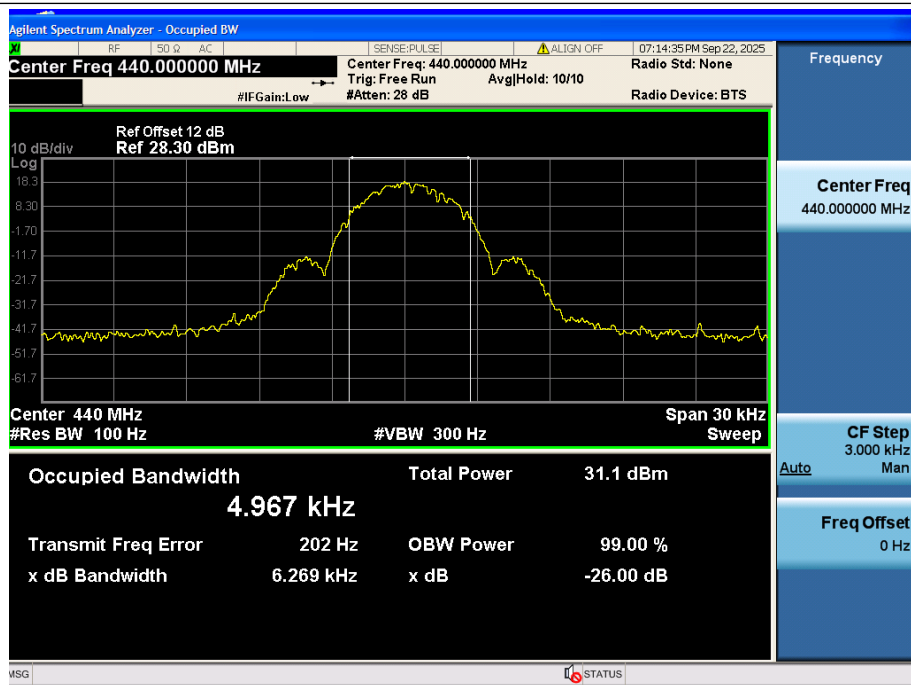
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GMSK_12.5kHz_LCH



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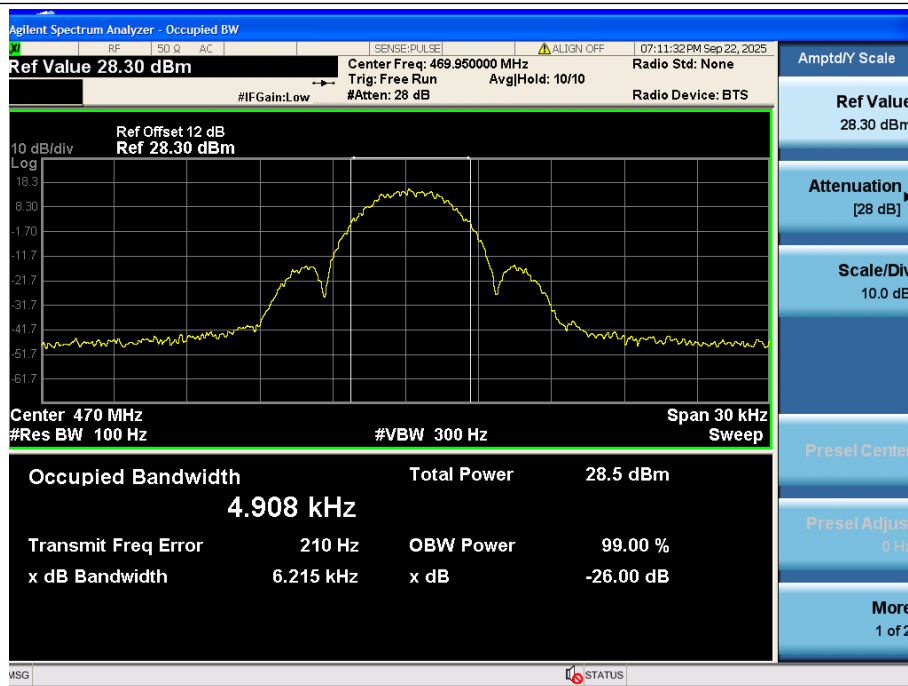
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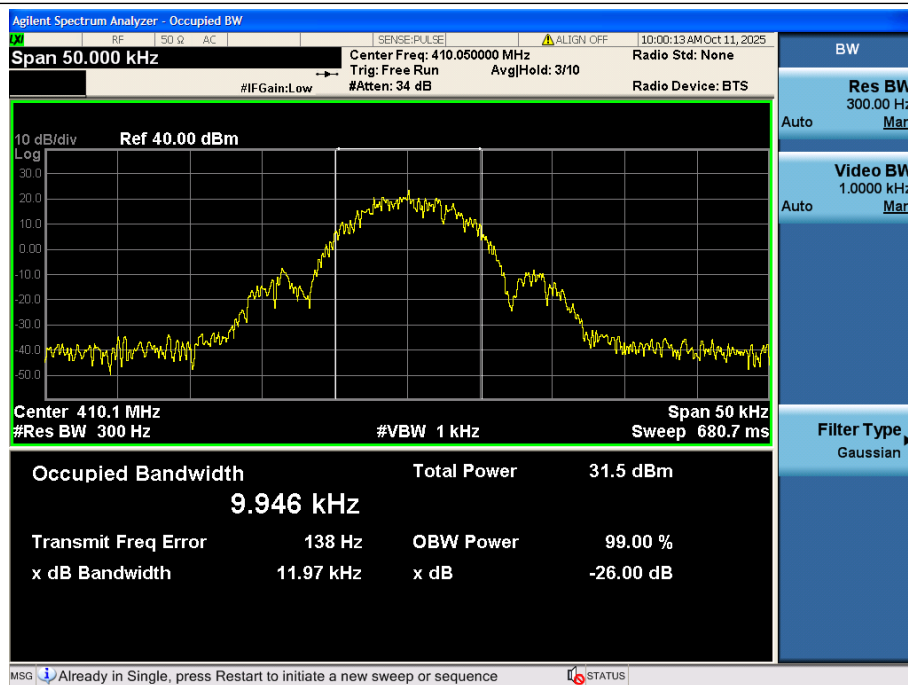
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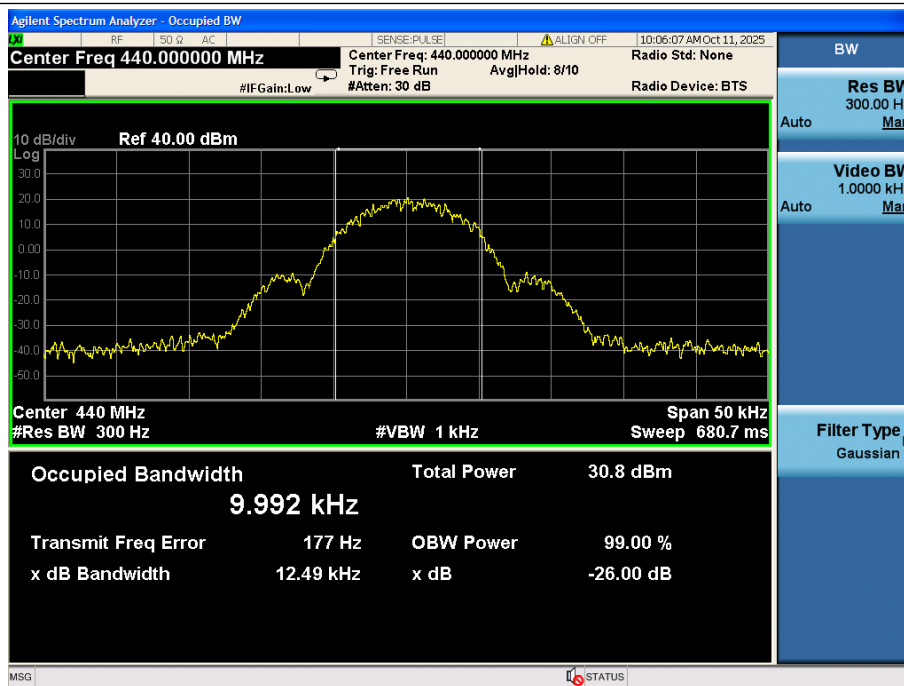
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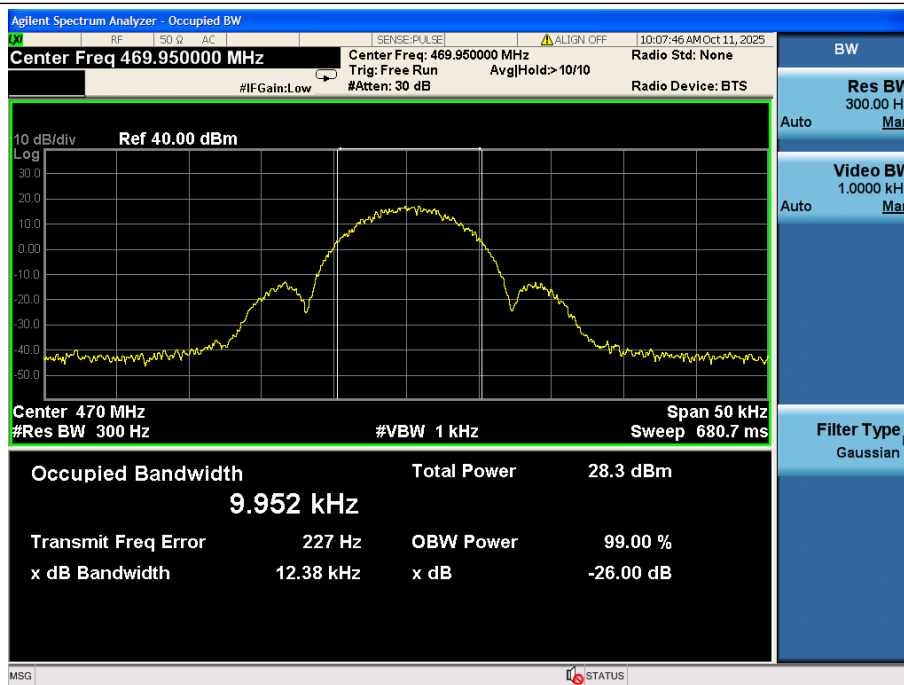
GMSK_25kHz_LCH



GMSK_25kHz_MCH



GMSK_25kHz_HCH



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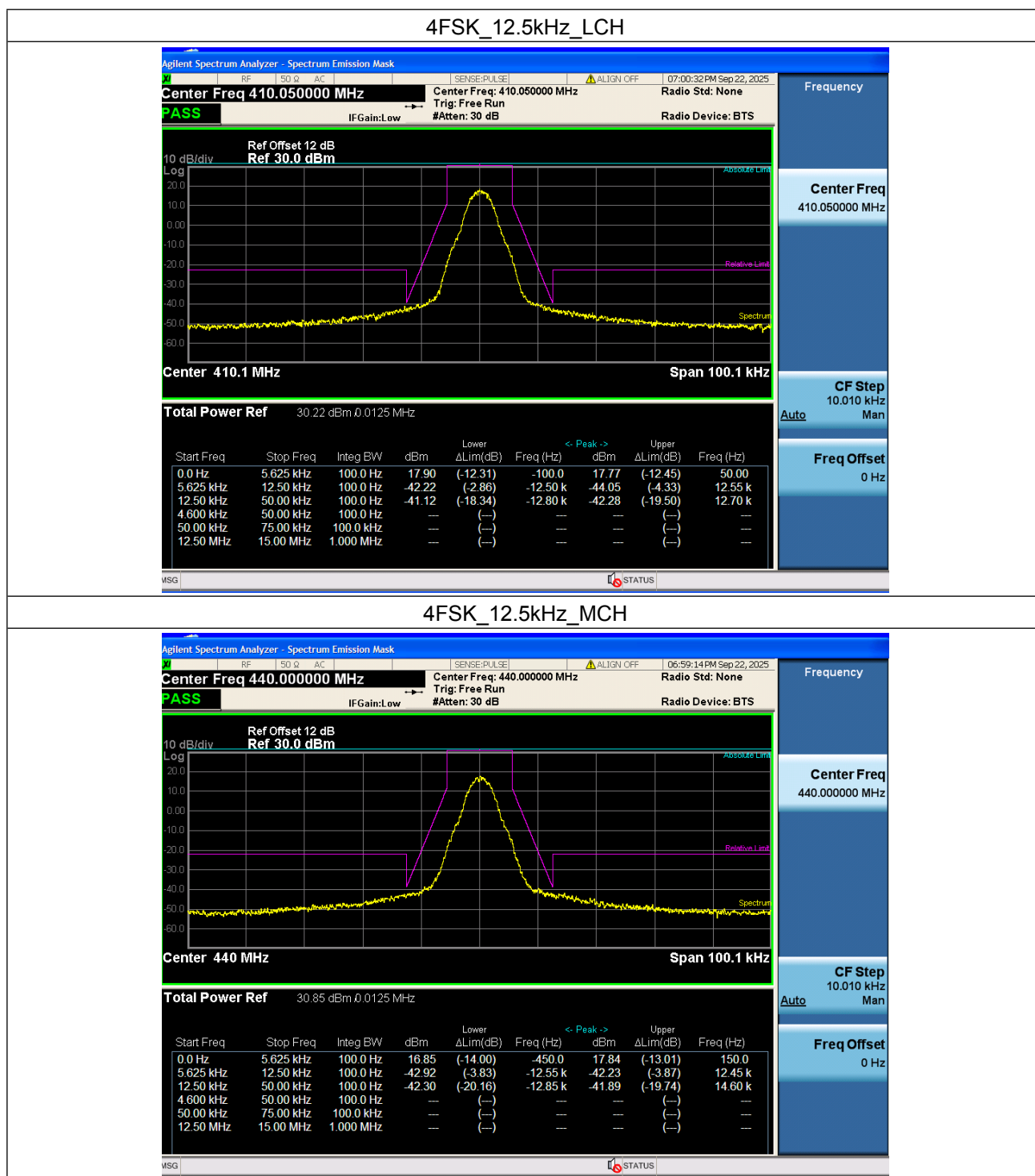
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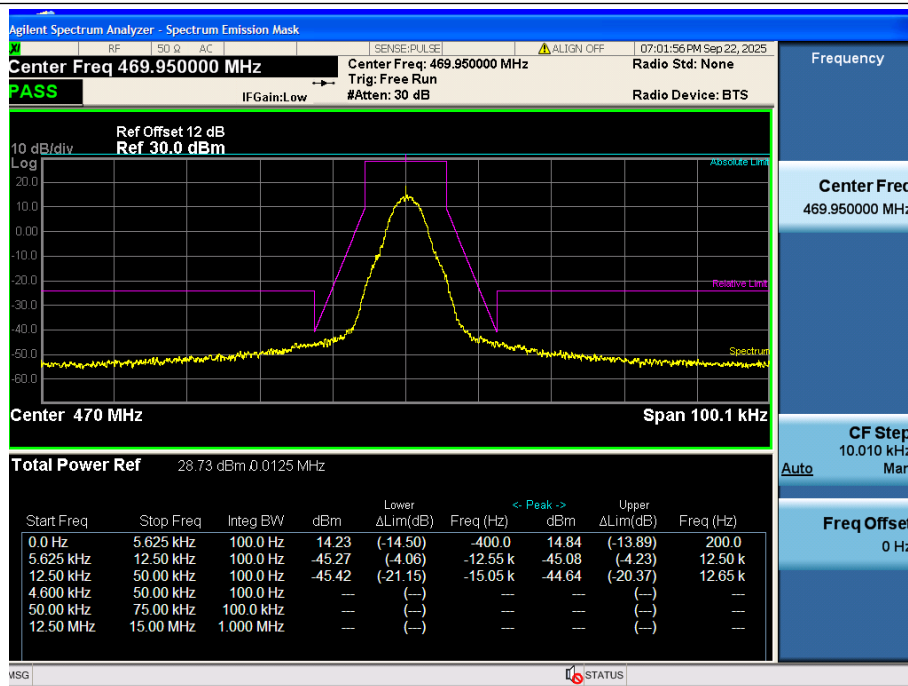
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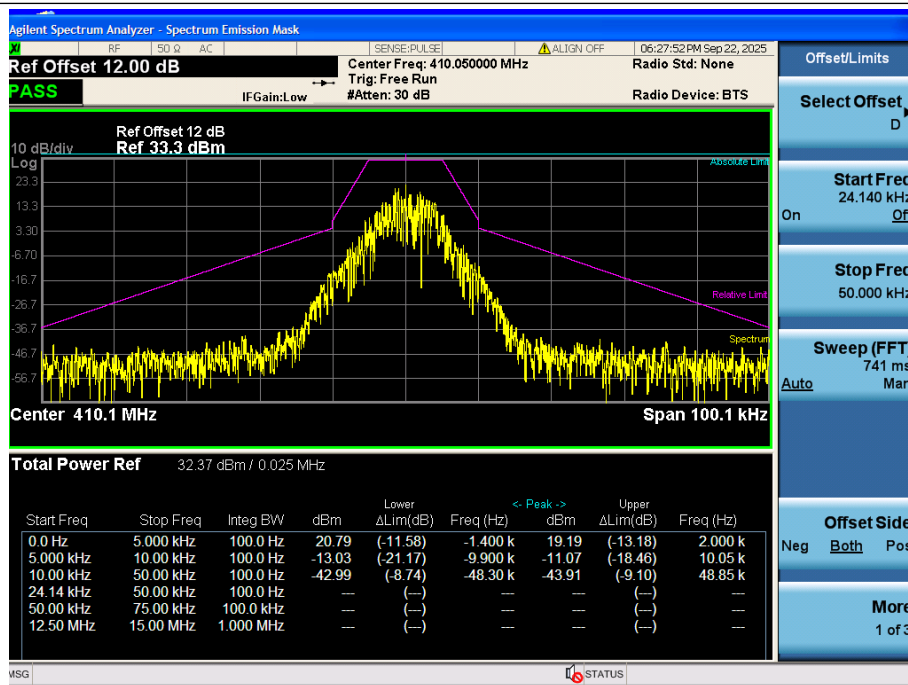
3.2.2 Emission Mask



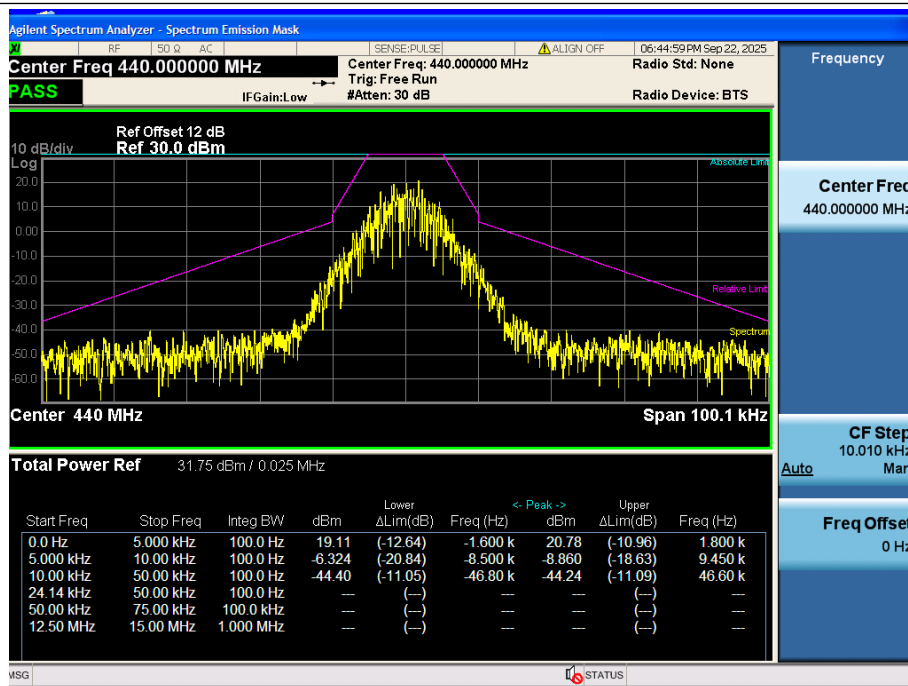
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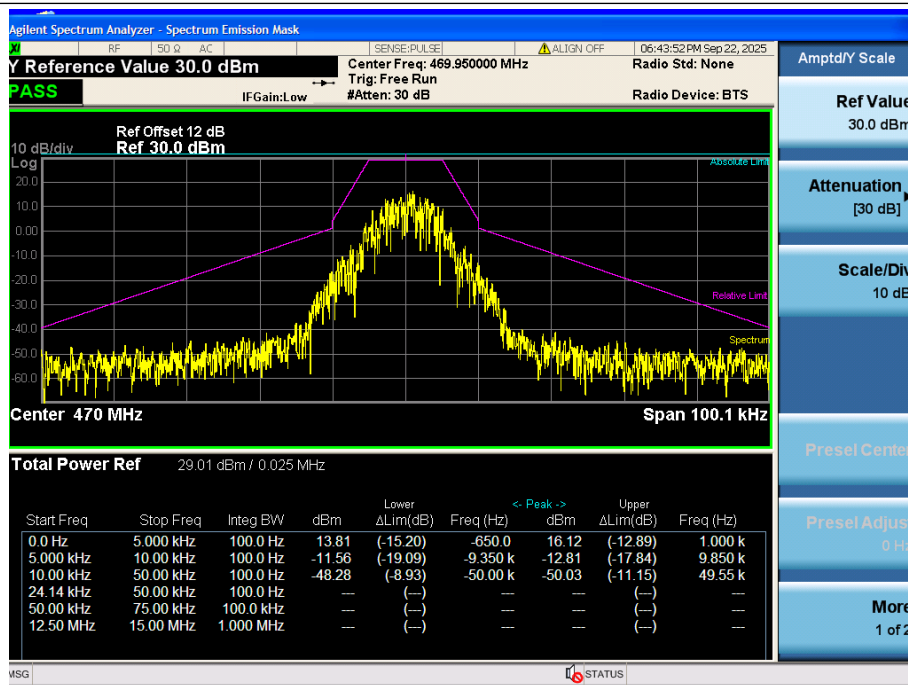
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4FSK_25kHz_MCH



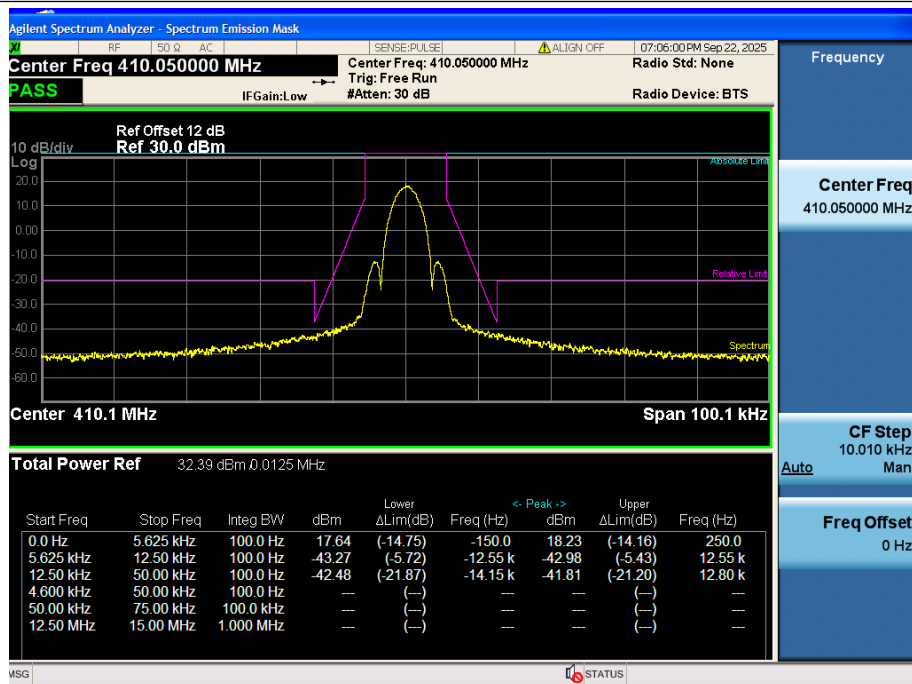
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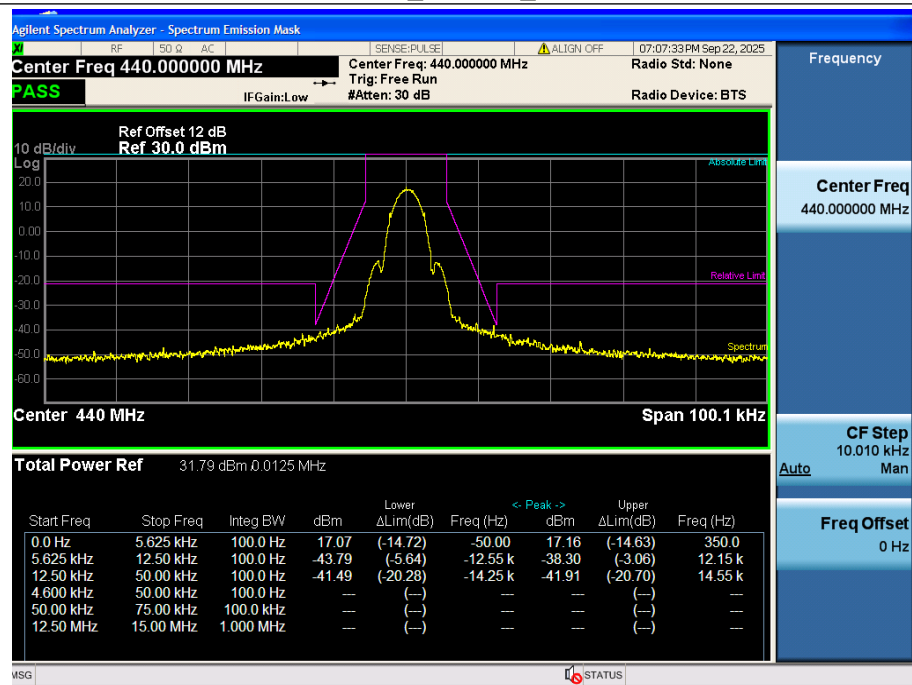
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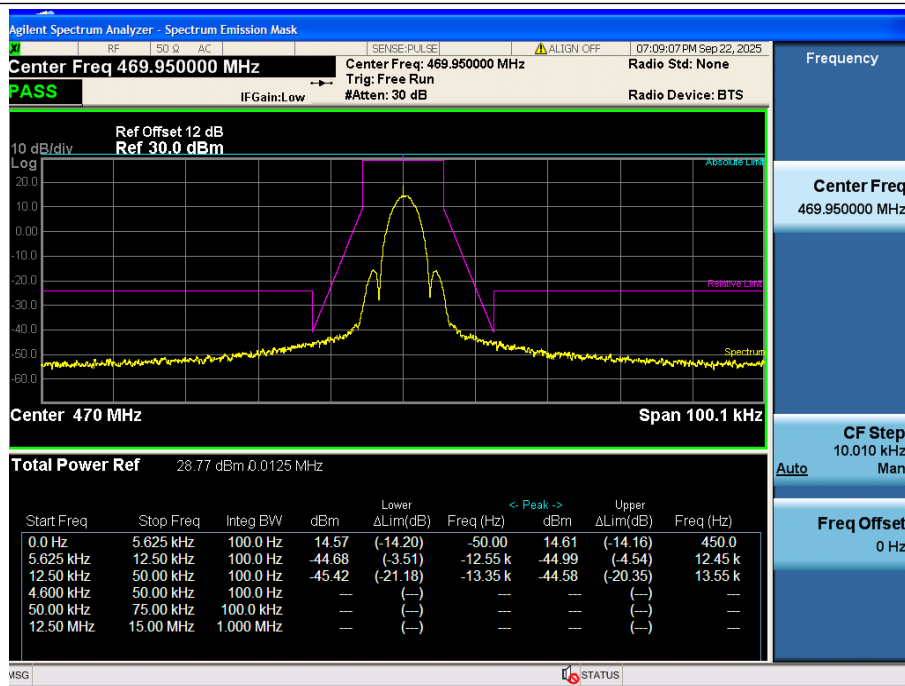
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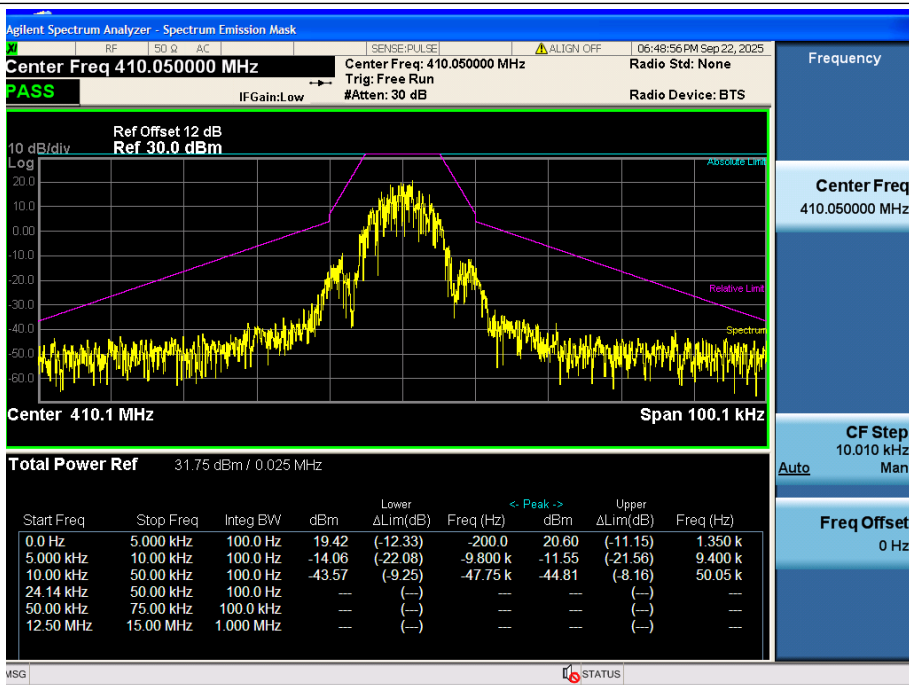
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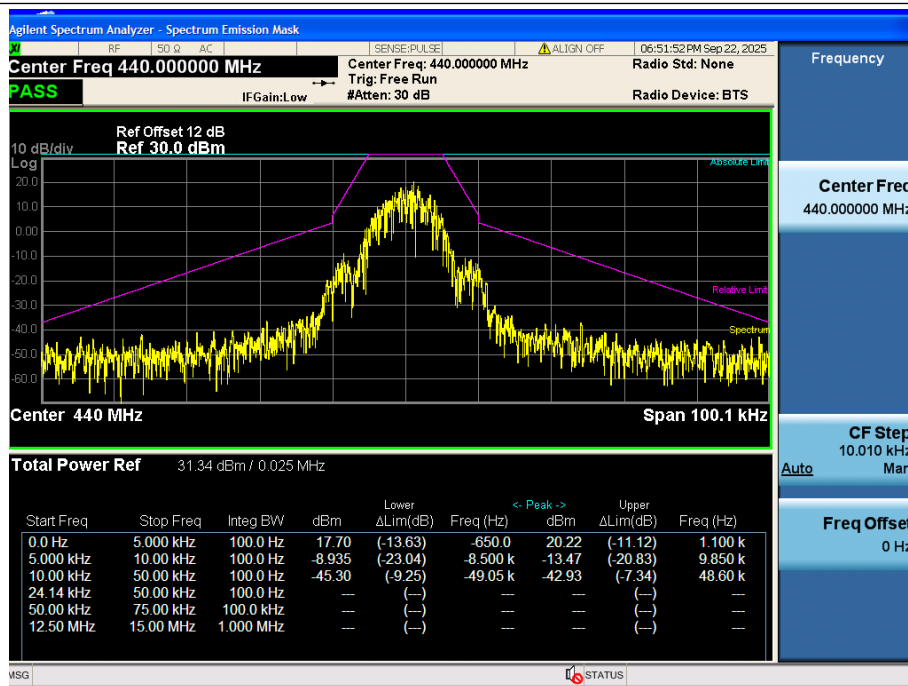
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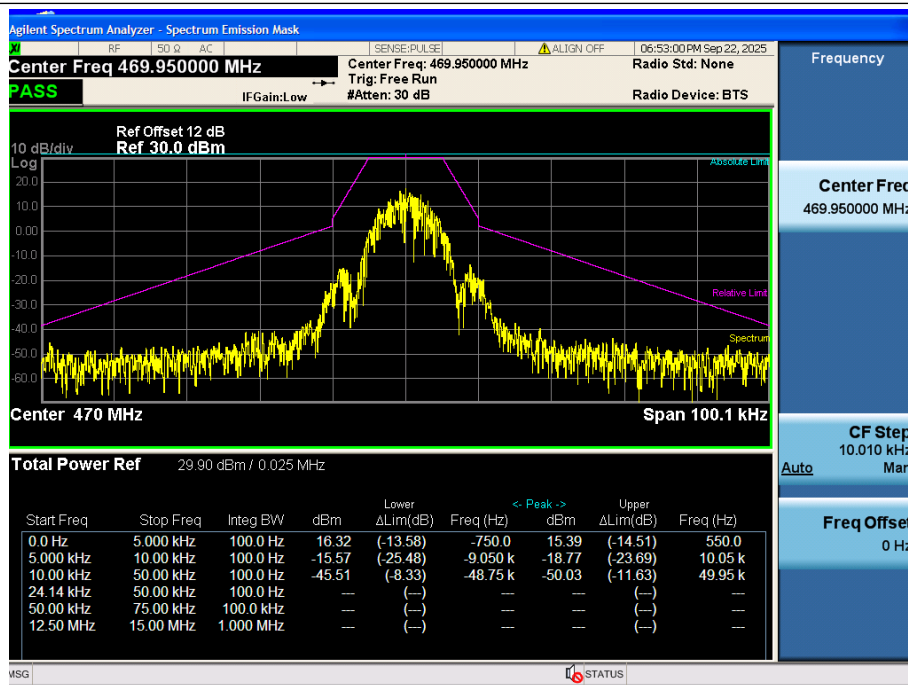
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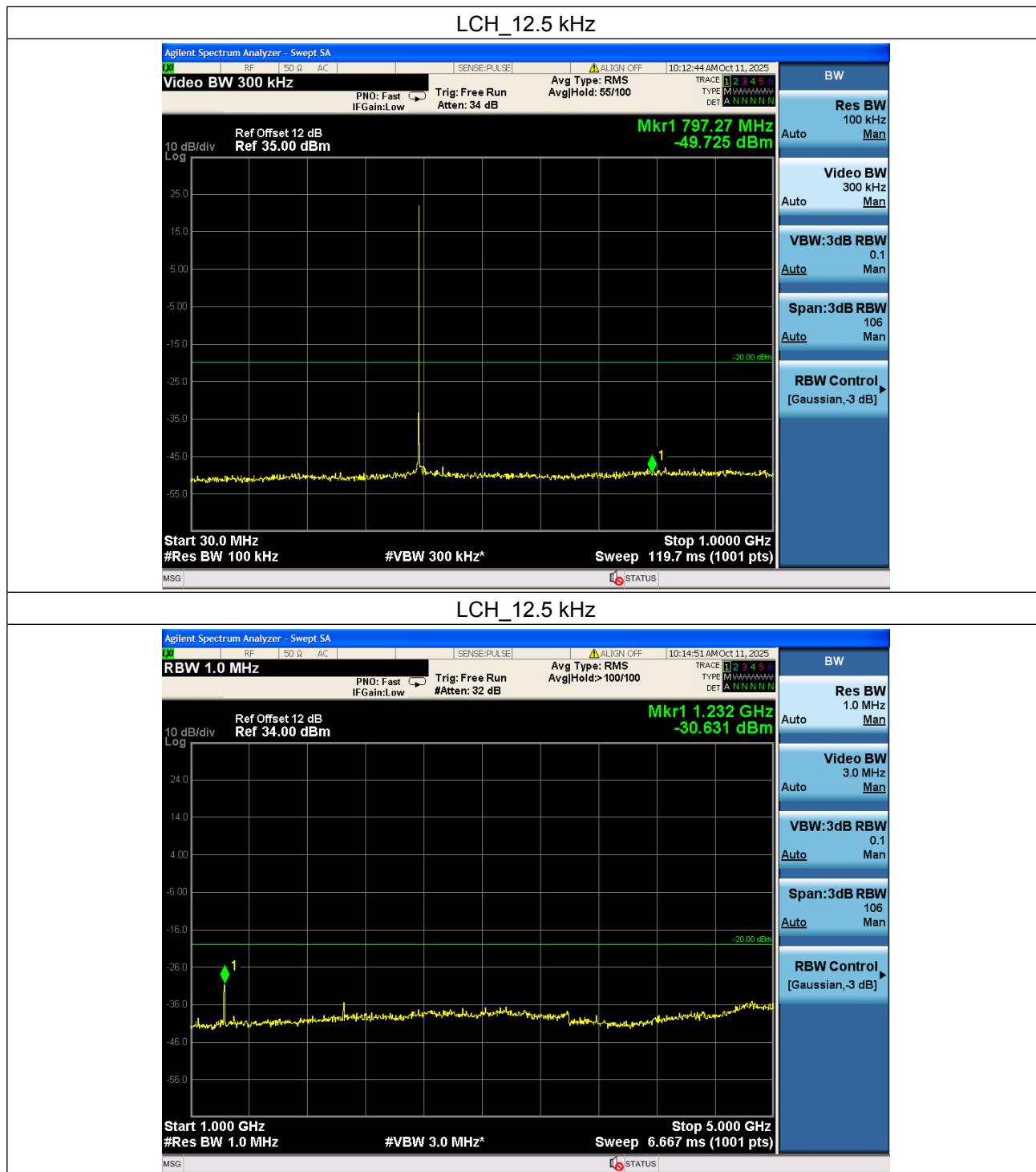


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4. Spurious emissions at antenna terminals

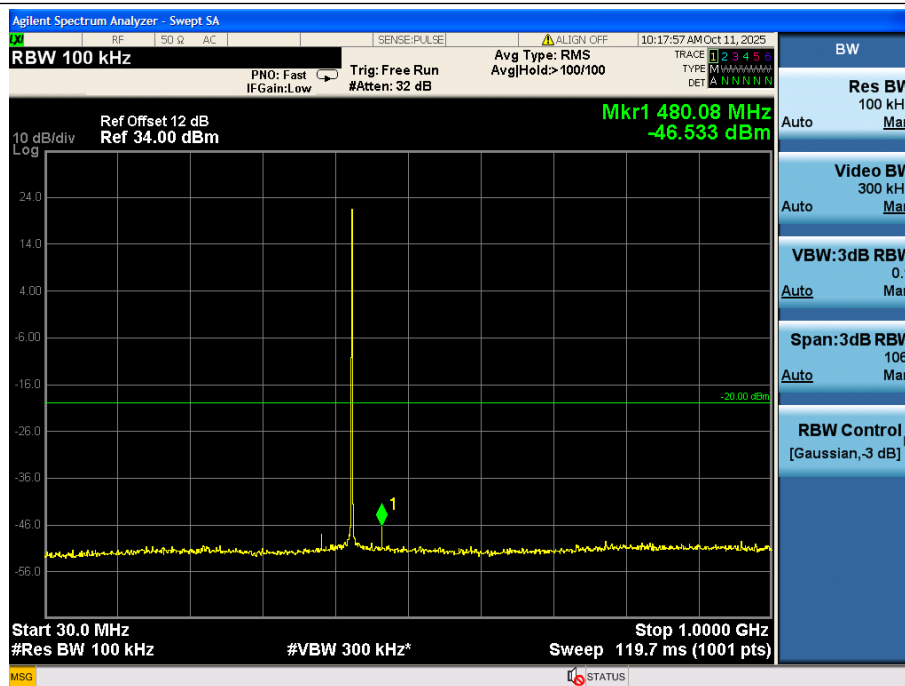
4.1 Test Result



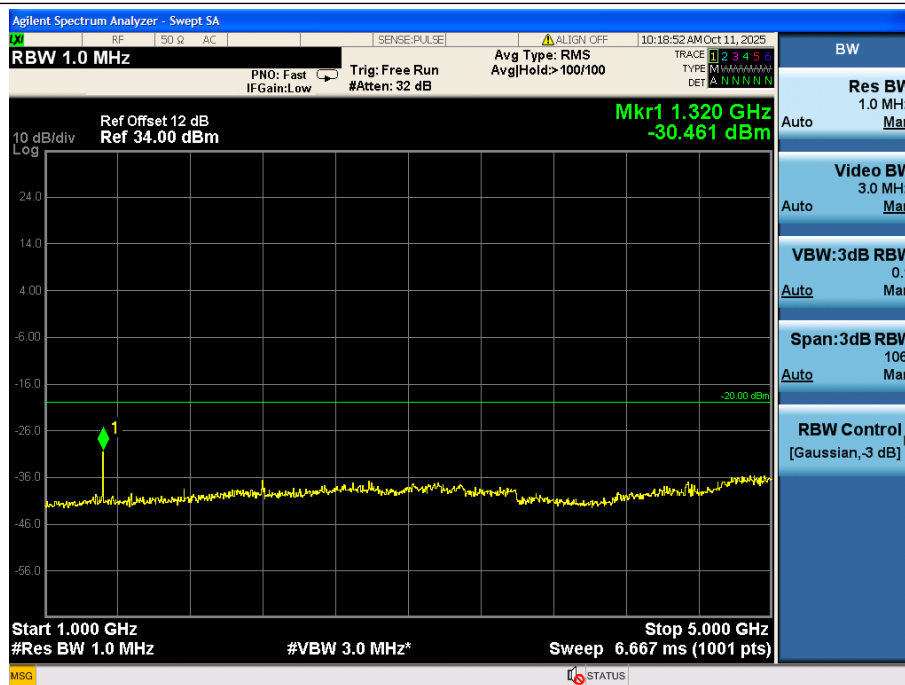
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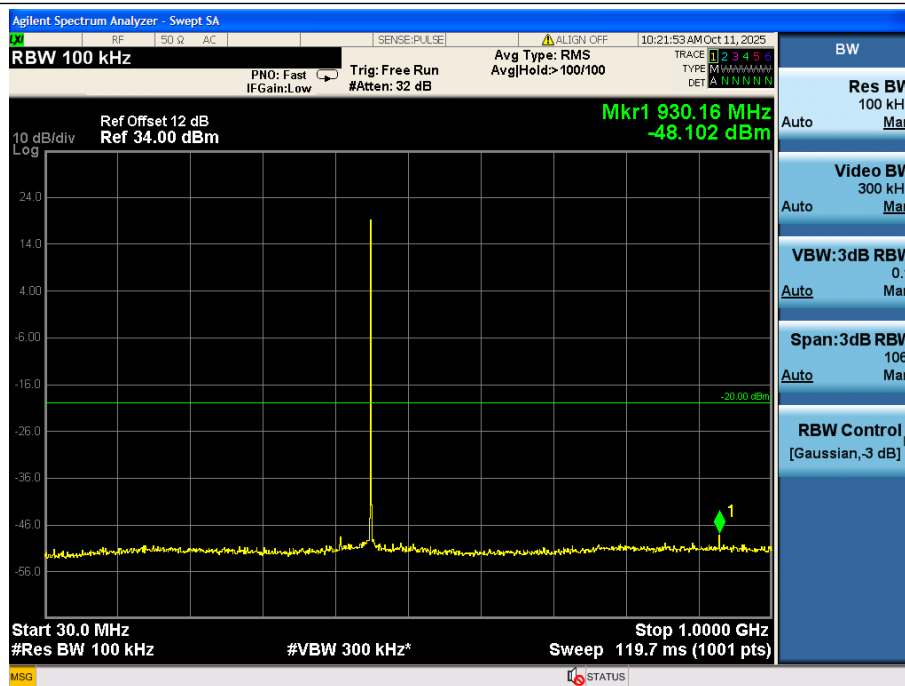
MCH_12.5 kHz



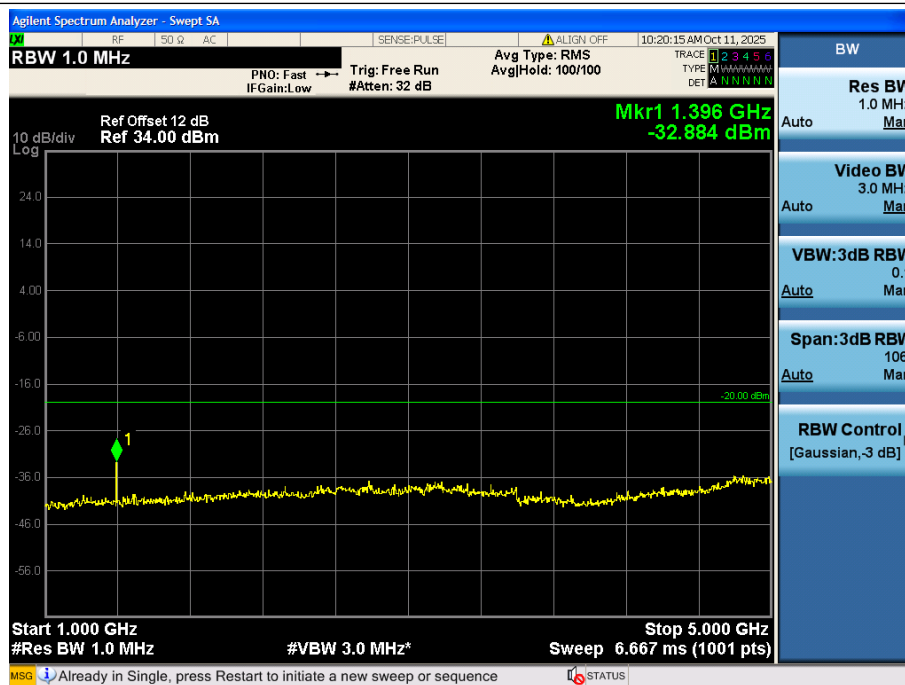
MCH_12.5 kHz



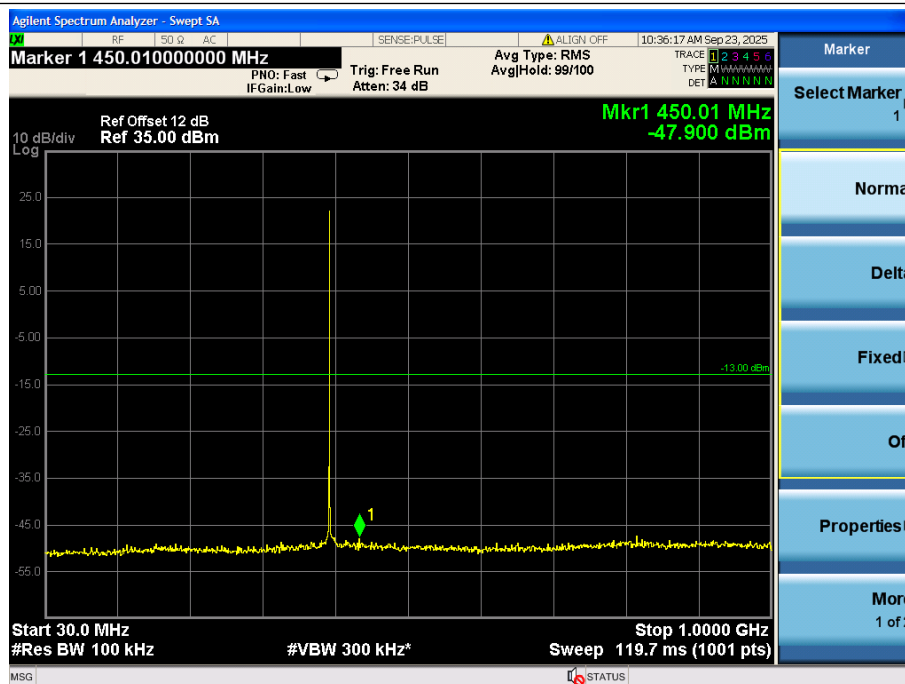
HCH_12.5 kHz



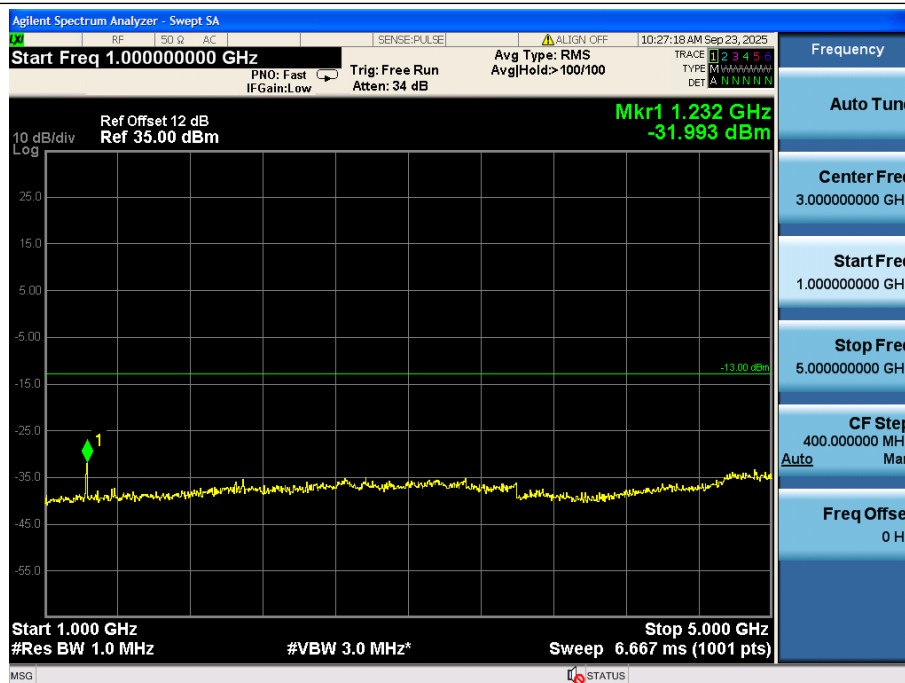
HCH_12.5 kHz



LCH_25 kHz



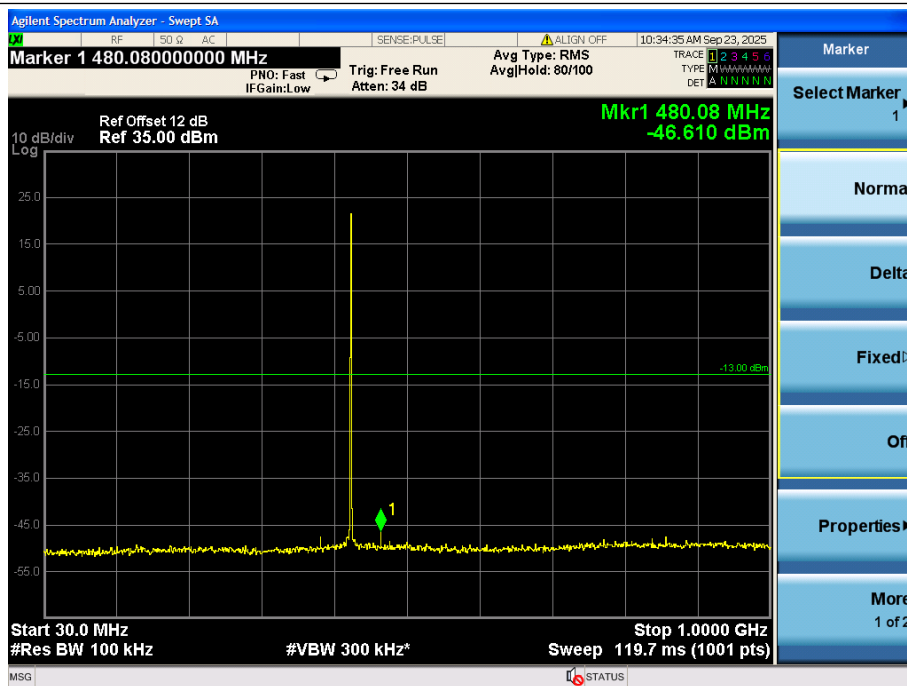
LCH_25 kHz



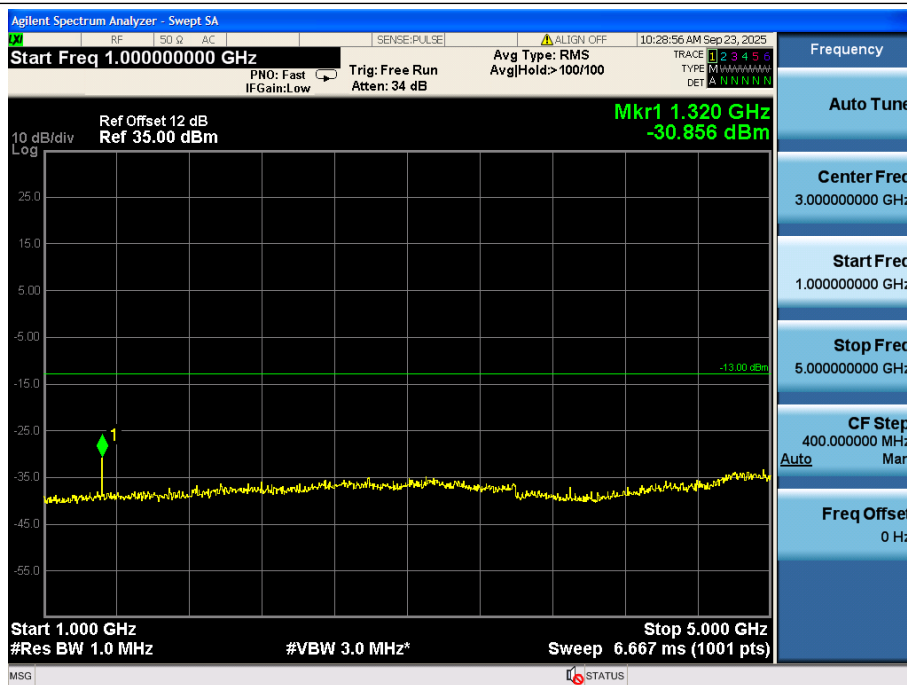
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MCH_25 kHz



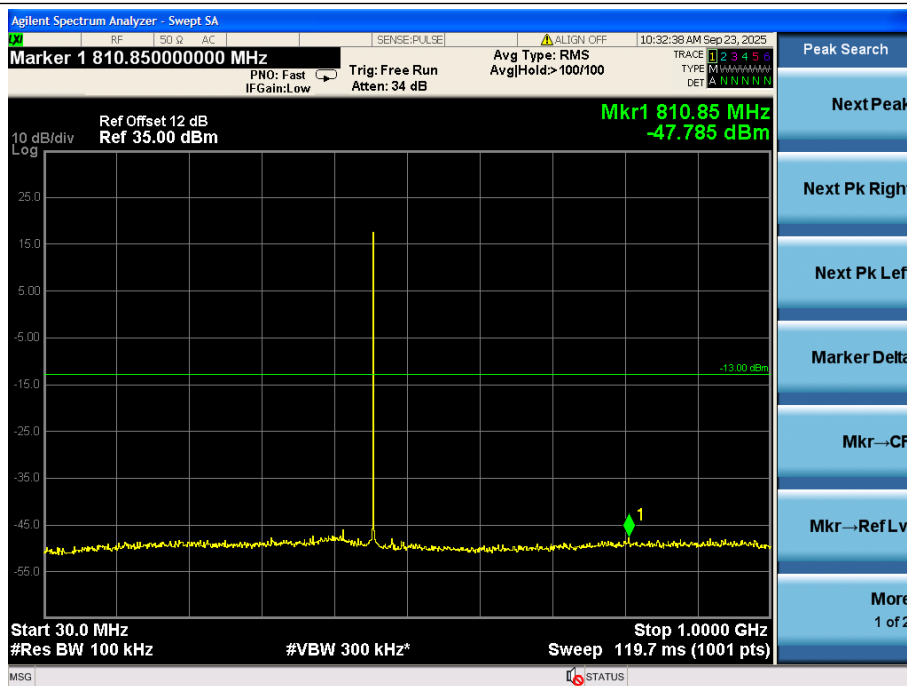
MCH_25 kHz



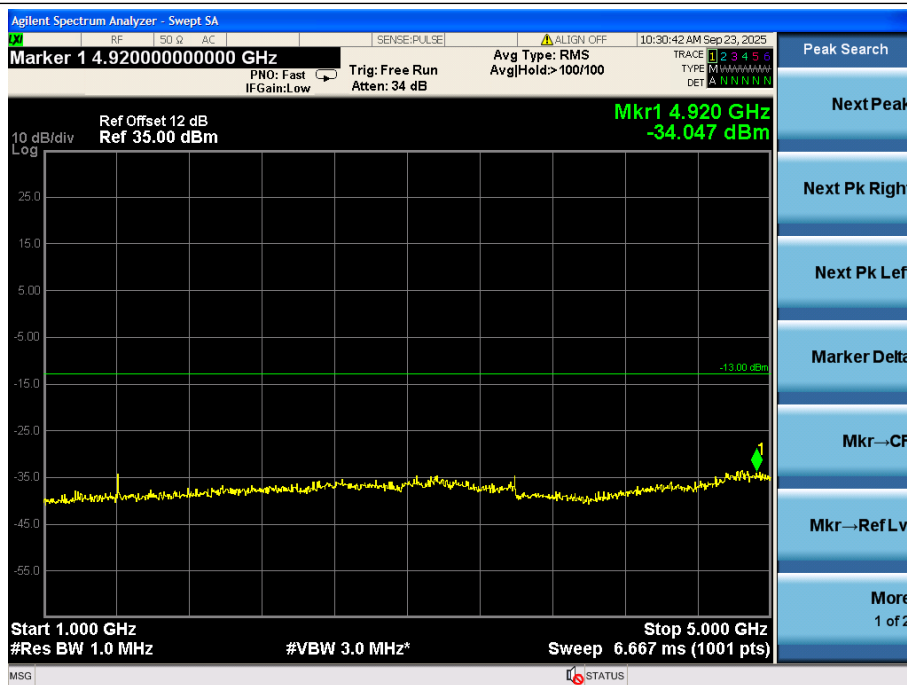
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HCH_25 kHz



HCH_25 kHz



5. Transient Frequency Behavior

5.1 Test Result

Channel Spacing (kHz)	Time Intervals (ms)	Maximum Frequency Difference (kHz)	Result
25	10.0 (t1)	±25.0	Pass
	25.0 (t2)	±12.5	Pass
	10.0 (t3)	±25.0	Pass
12.5	10.0 (t1)	±12.5	Pass
	25.0 (t2)	±6.25	Pass
	10.0 (t3)	±12.5	Pass

- End of the Appendix -