Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: FAN013, FAN018

Test Model: FAN013

Environmental Conditions

Temperature:	23.1 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Ling Zhu

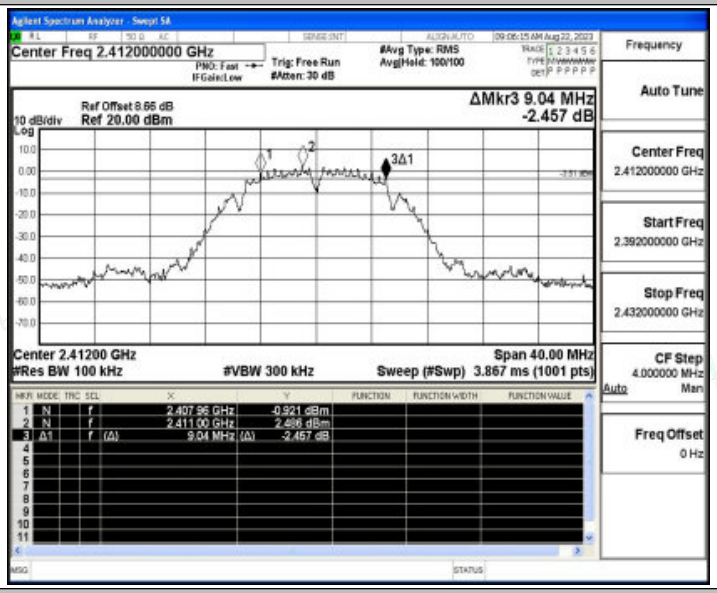
A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.040	2407.960	2417.000	0.5	PASS
		2437	9.560	2432.440	2442.000	0.5	PASS
		2462	9.520	2457.480	2467.000	0.5	PASS
11G	Ant1	2412	13.800	2405.720	2419.520	0.5	PASS
		2437	16.320	2428.840	2445.160	0.5	PASS
		2462	16.400	2453.800	2470.200	0.5	PASS
11N20SISO	Ant1	2412	17.600	2403.200	2420.800	0.5	PASS
		2437	16.840	2428.600	2445.440	0.5	PASS
		2462	17.600	2453.200	2470.800	0.5	PASS
11N40SISO	Ant1	2422	36.080	2404.080	2440.160	0.5	PASS
		2437	35.520	2419.080	2454.600	0.5	PASS
		2452	35.600	2434.240	2469.840	0.5	PASS

Test Graphs

11B_Ant1_2412



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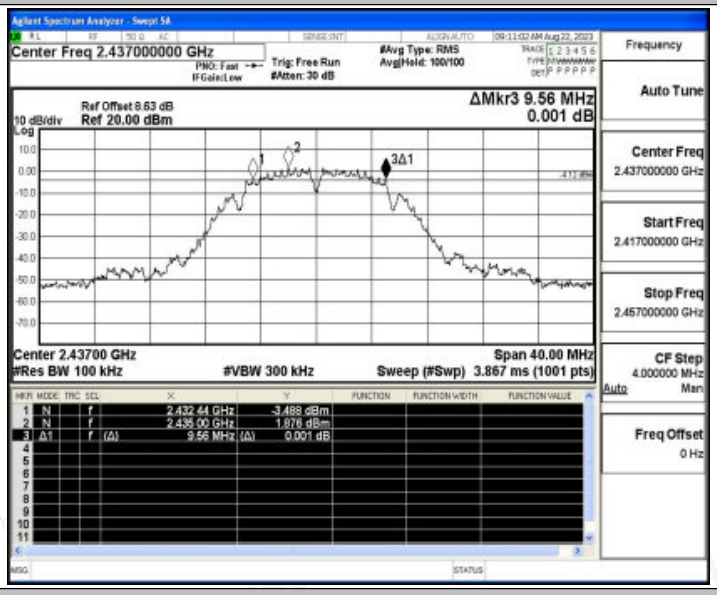

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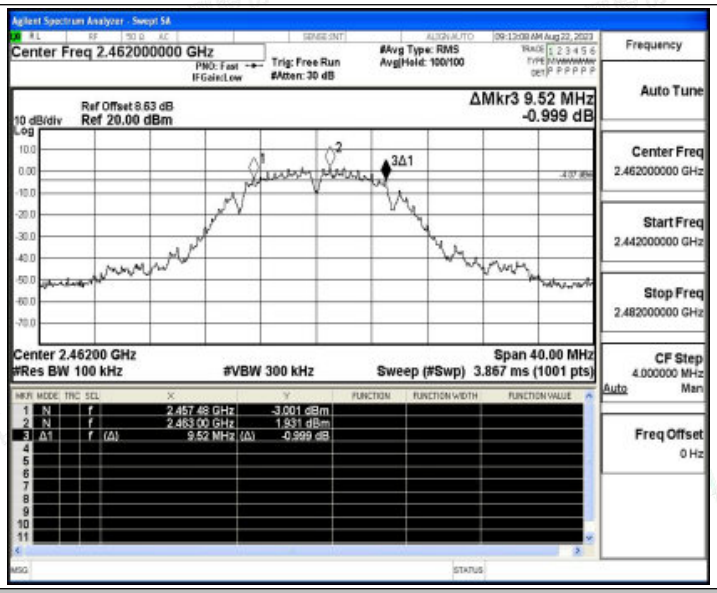
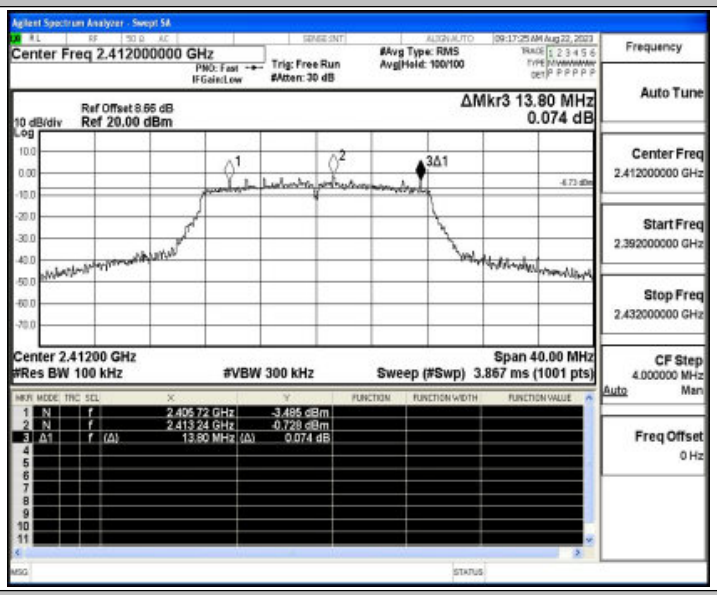


11G_Ant1_2412



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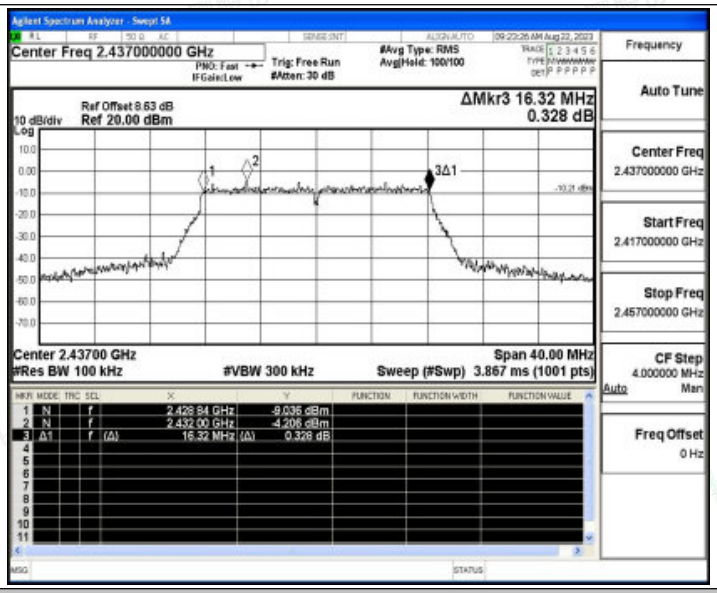
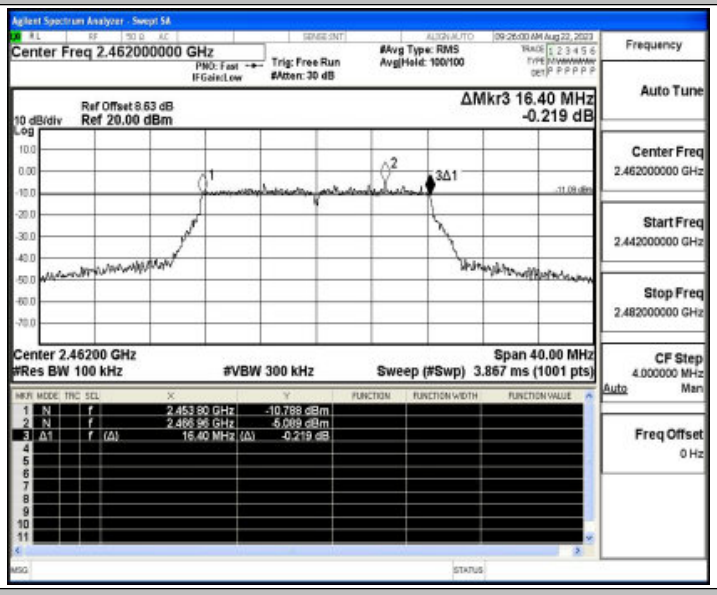
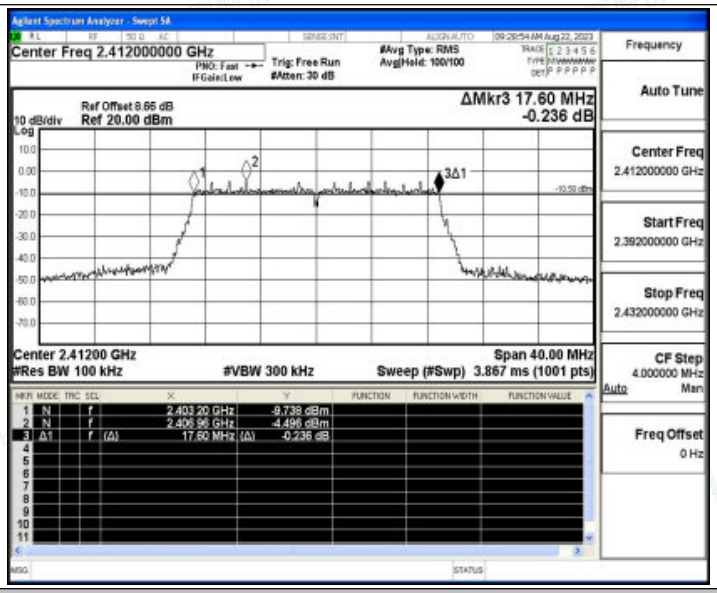


11G_Ant1_2462



11N20SISO_Ant1_2412



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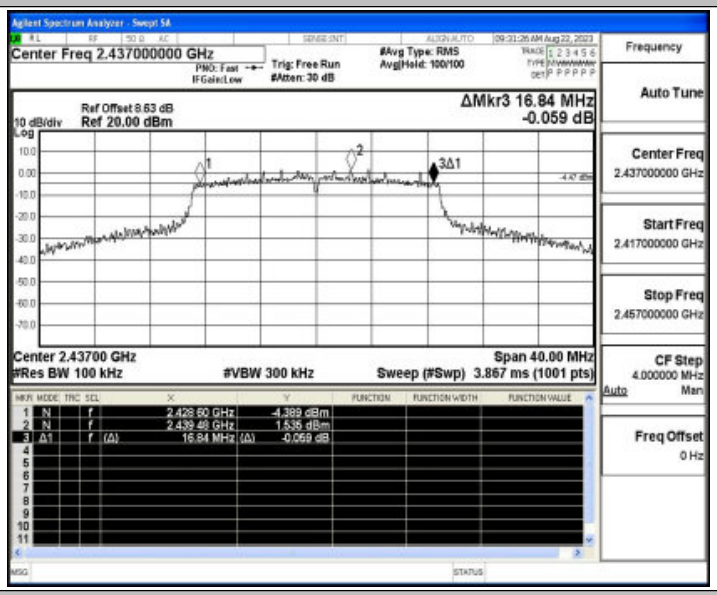

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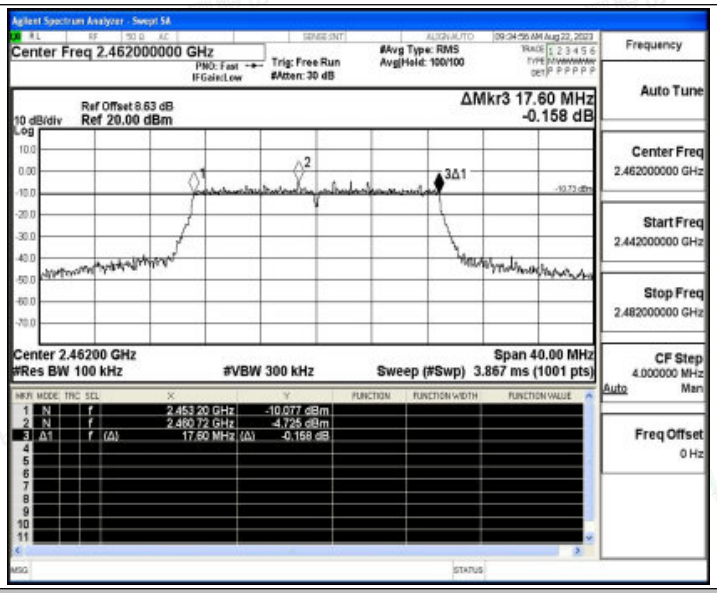
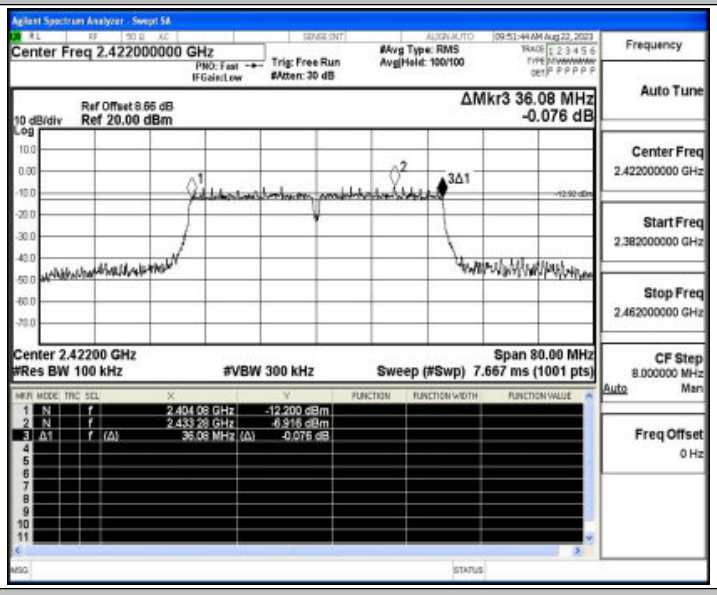


11N40SISO_Ant1_2422



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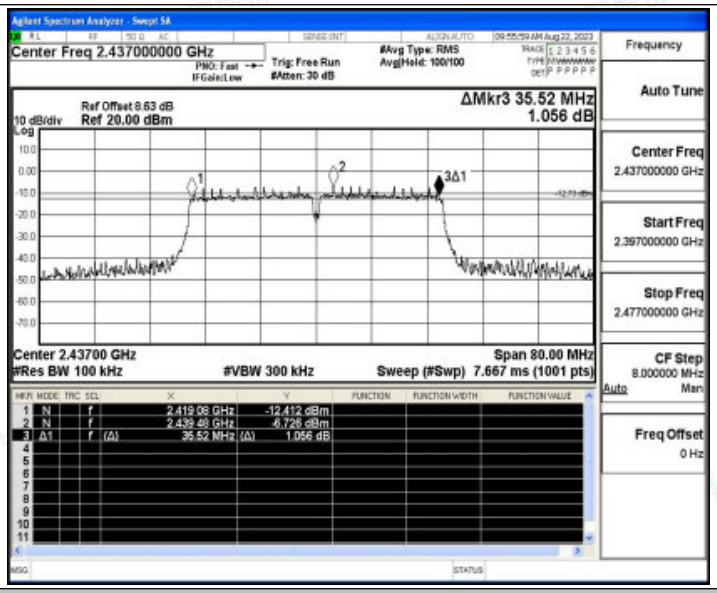
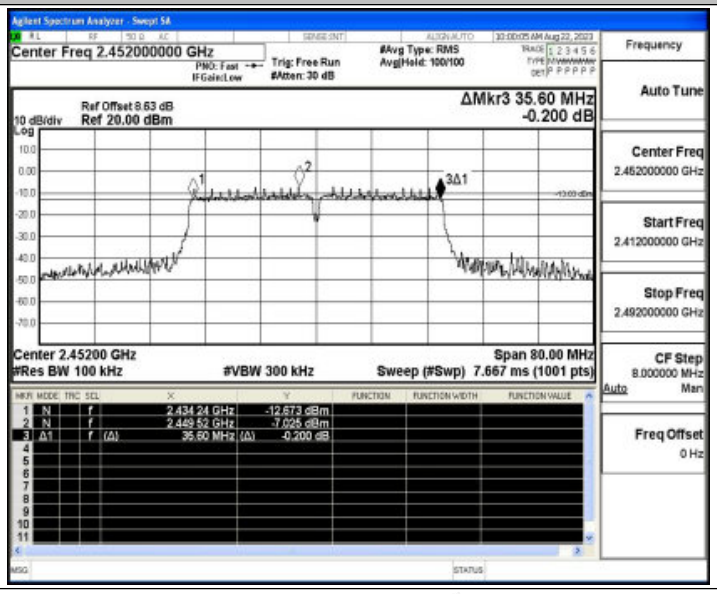


11N40SISO_Ant1_2452



A.2 Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	7.39	≤30.00	PASS
		2437	7.41	≤30.00	PASS
		2462	7.4	≤30.00	PASS
11G	Ant1	2412	7.26	≤30.00	PASS
		2437	7.55	≤30.00	PASS
		2462	7.61	≤30.00	PASS
11N20SISO	Ant1	2412	7	≤30.00	PASS
		2437	7.14	≤30.00	PASS
		2462	7.28	≤30.00	PASS
11N40SISO	Ant1	2422	6.23	≤30.00	PASS
		2437	6.33	≤30.00	PASS
		2452	5.44	≤30.00	PASS

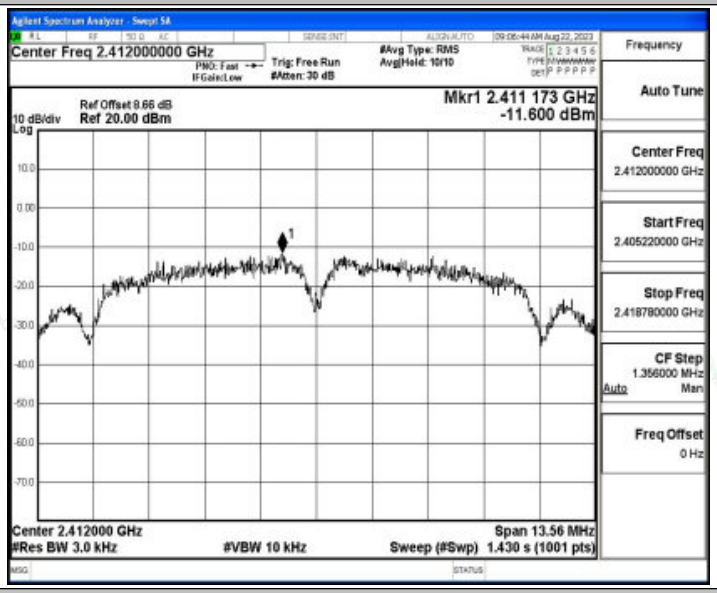
A.3 Maximum power spectral density

Test Result

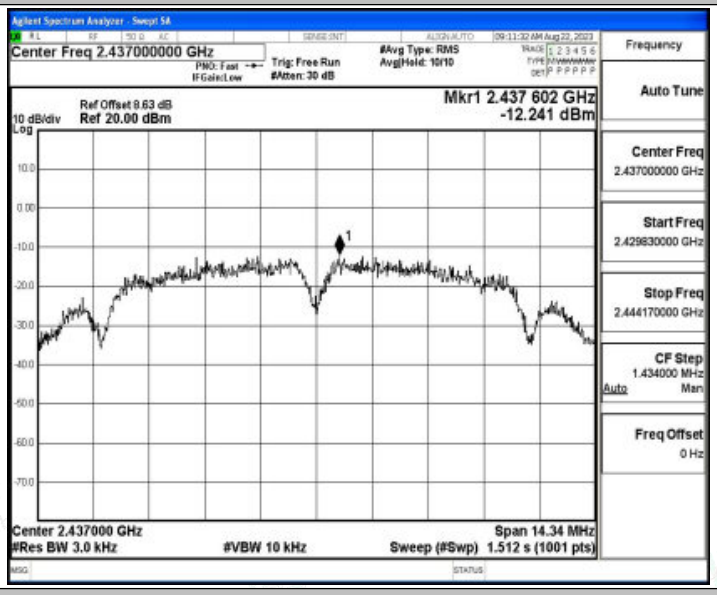
TestMode	Antenna	Freq(MHz)	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-11.6	≤8.00	PASS
		2437	-12.24	≤8.00	PASS
		2462	-11.49	≤8.00	PASS
11G	Ant1	2412	-18.67	≤8.00	PASS
		2437	-16.82	≤8.00	PASS
		2462	-18.06	≤8.00	PASS
11N20SISO	Ant1	2412	-17.32	≤8.00	PASS
		2437	-18.67	≤8.00	PASS
		2462	-18.45	≤8.00	PASS
11N40SISO	Ant1	2422	-21.07	≤8.00	PASS
		2437	-21.05	≤8.00	PASS
		2452	-20.8	≤8.00	PASS

Test Graphs

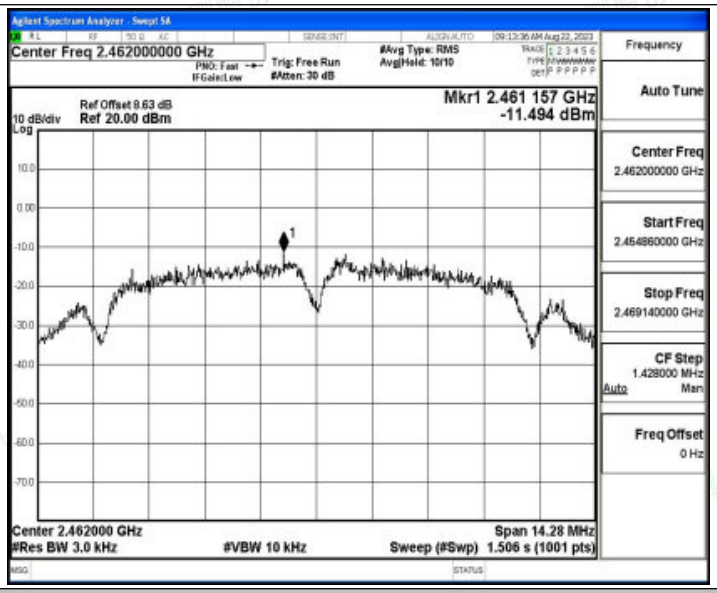
11B_Ant1_2412



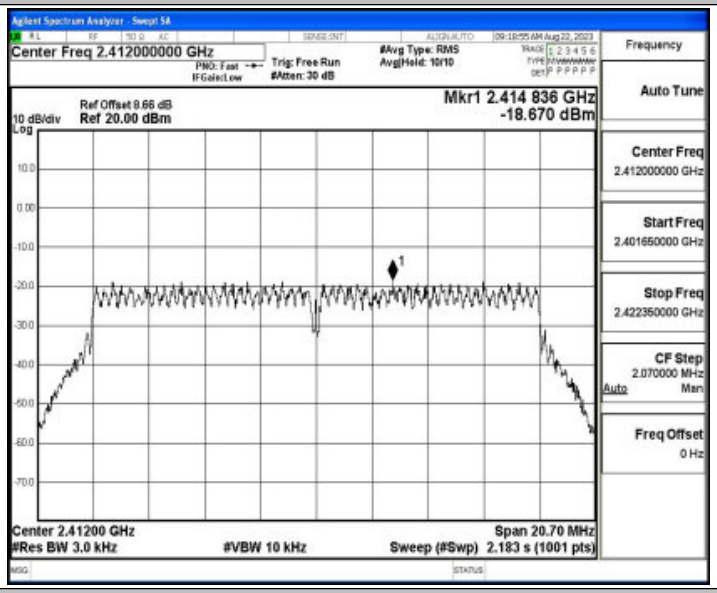
11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



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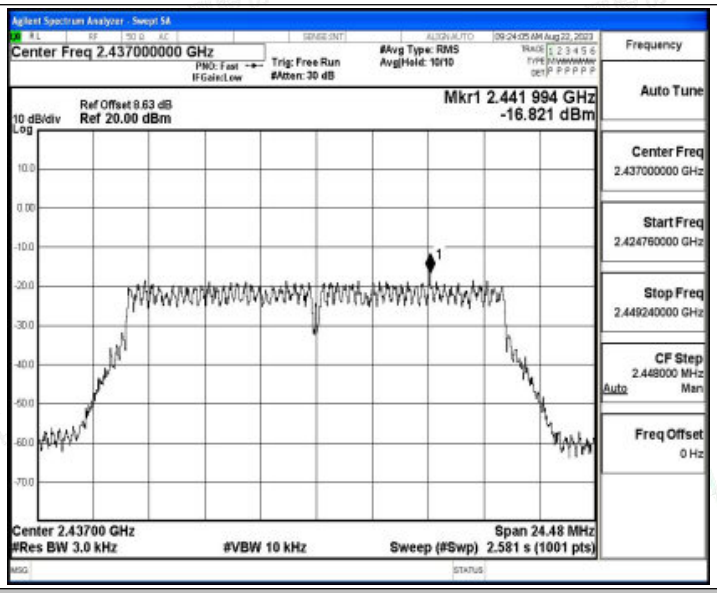

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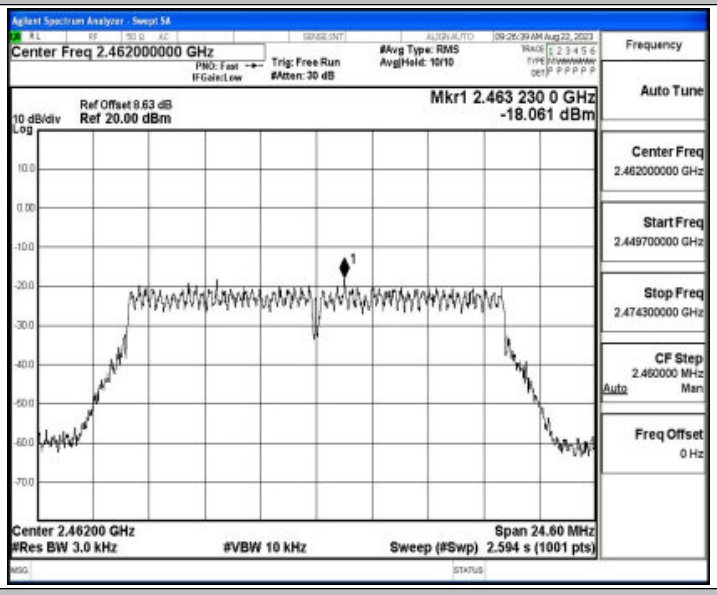
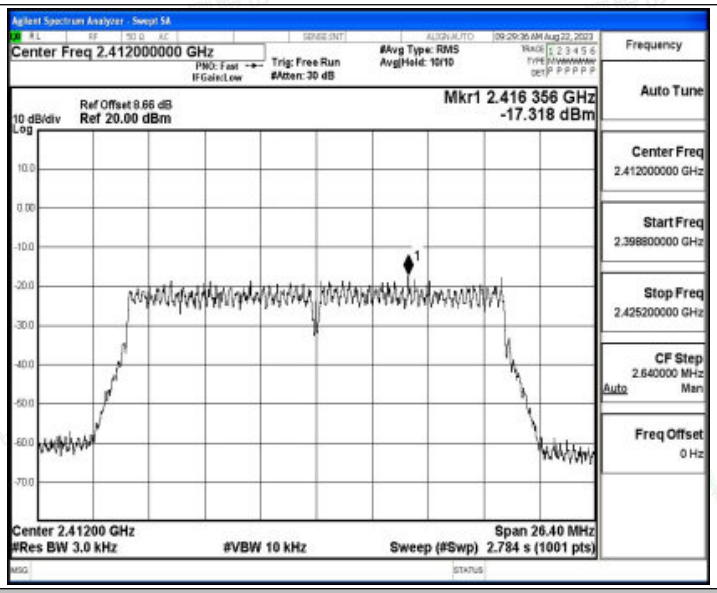


11N20SISO_Ant1_2412



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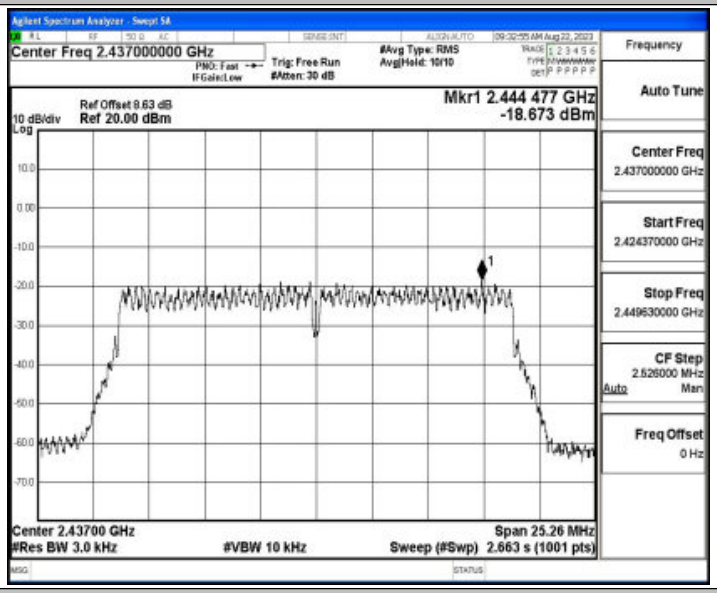

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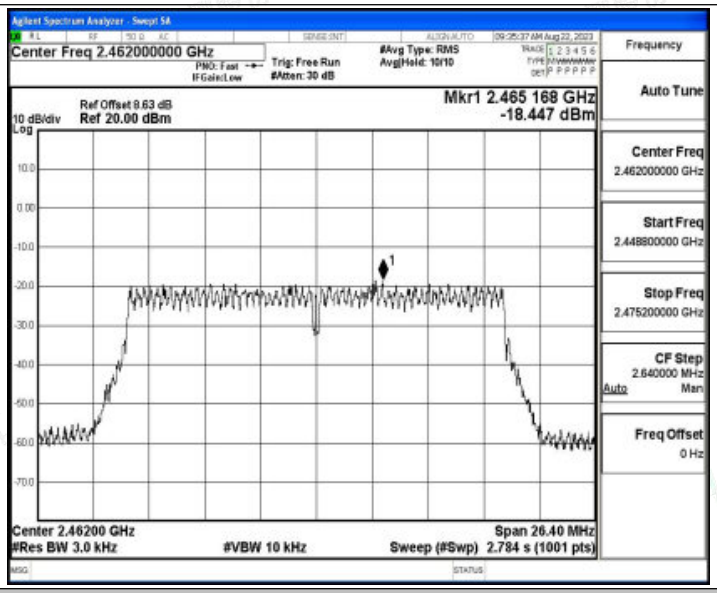
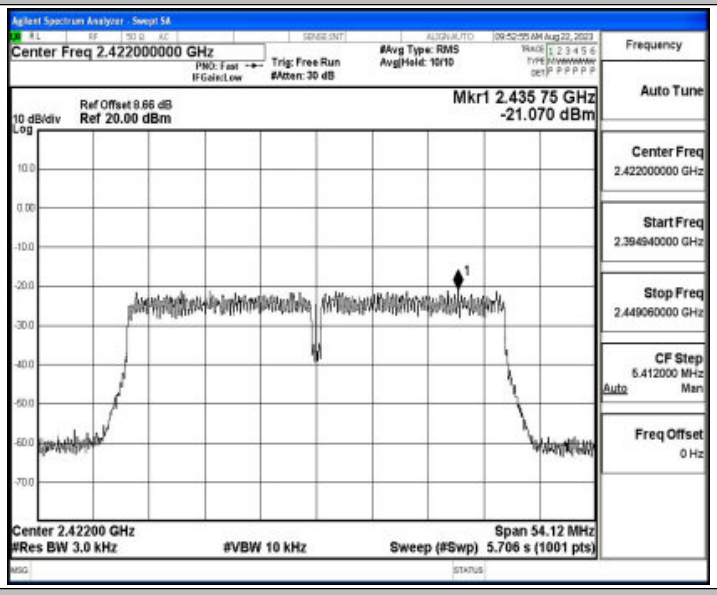
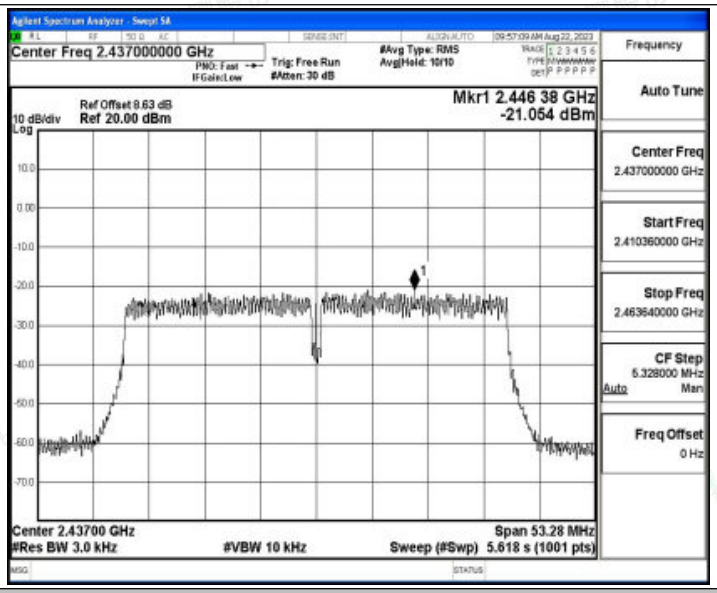


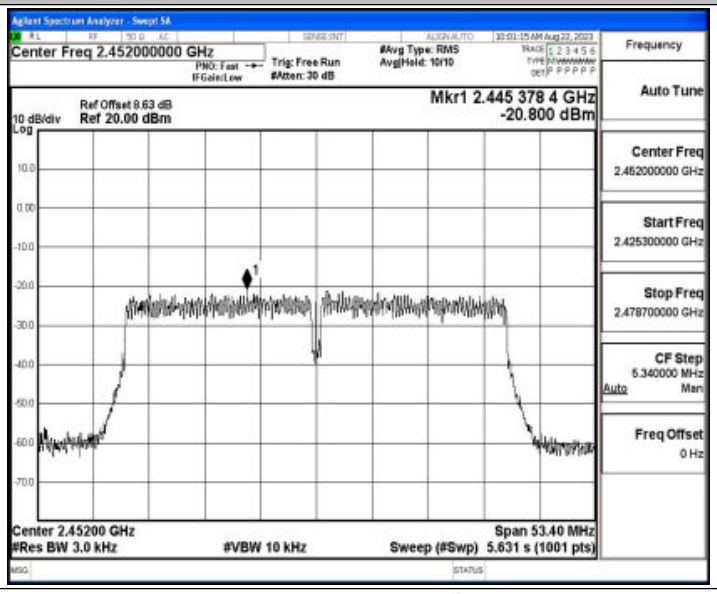
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



A.4 Band edge measurements

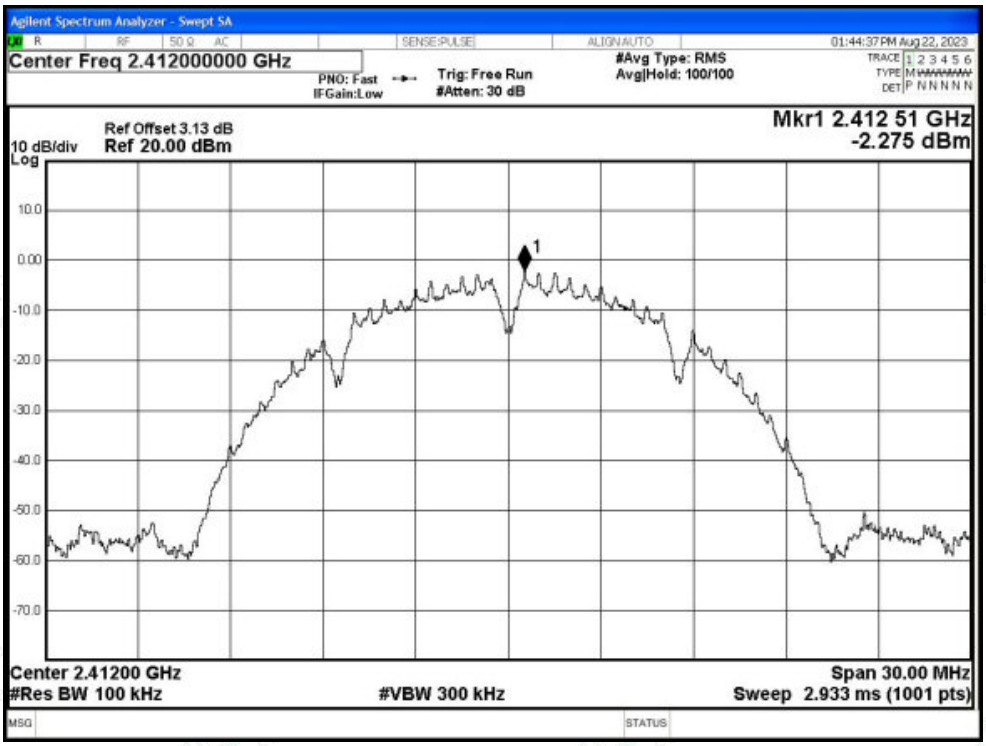
Test Result

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-50.06	-20	Pass
NVNT	b	2462	Ant1	-52.01	-20	Pass
NVNT	g	2412	Ant1	-42.04	-20	Pass
NVNT	g	2462	Ant1	-48.08	-20	Pass
NVNT	n20	2412	Ant1	-44.52	-20	Pass
NVNT	n20	2462	Ant1	-46.81	-20	Pass
NVNT	n40	2422	Ant1	-42.12	-20	Pass
NVNT	n40	2452	Ant1	-38.76	-20	Pass

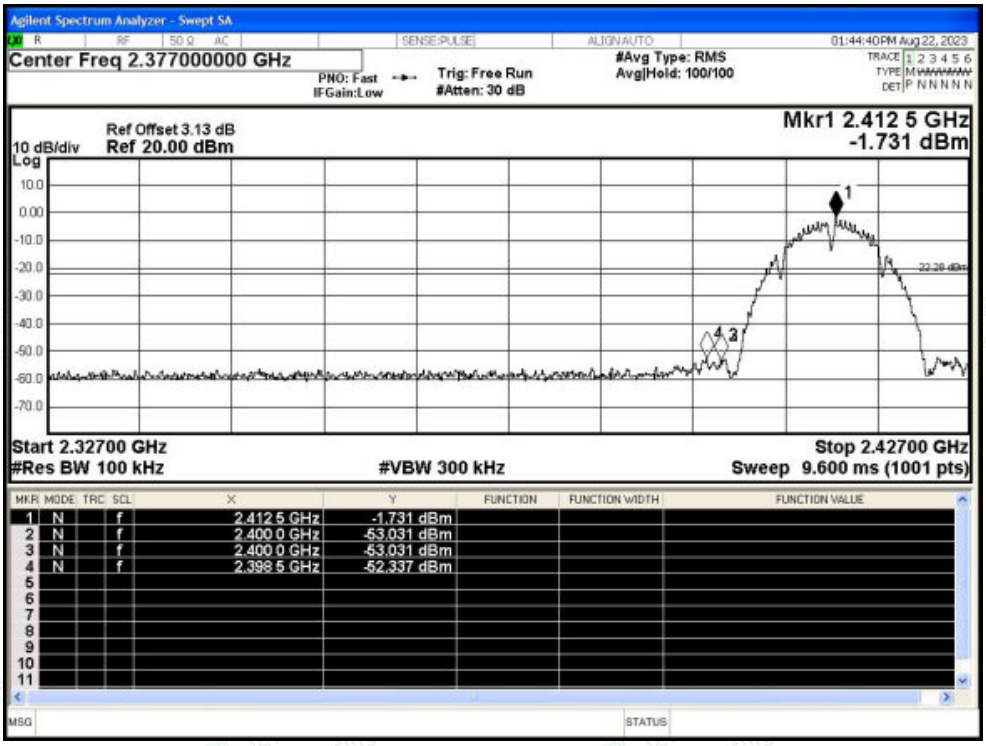
Test Graphs

Test Graphs

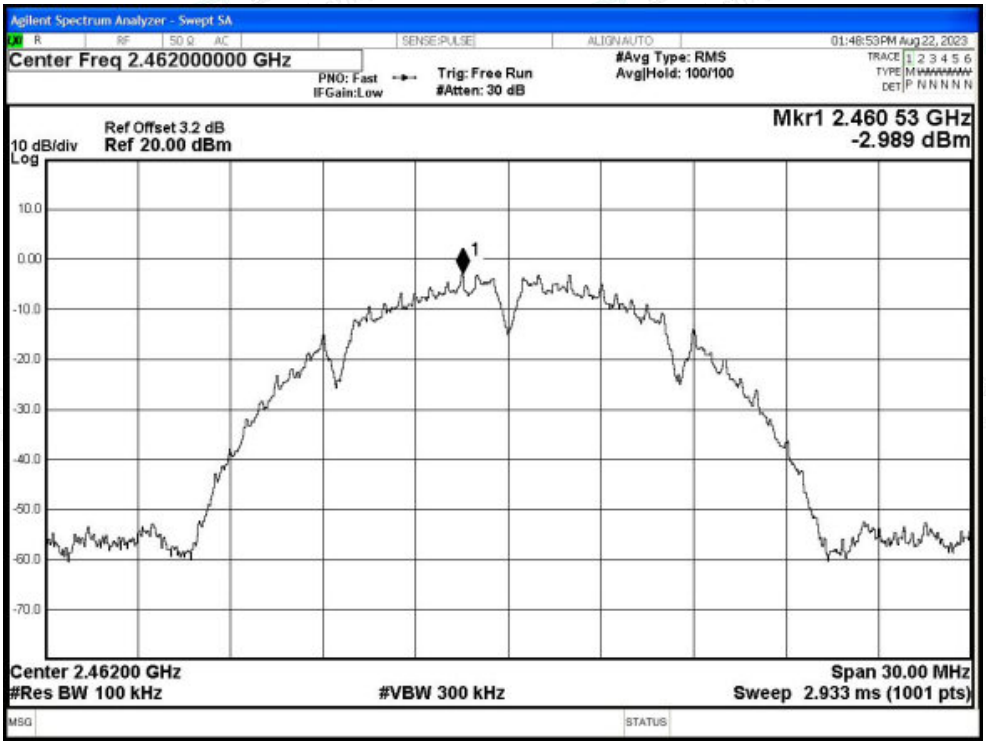
Band Edge NVNT b 2412MHz Ant1 Ref



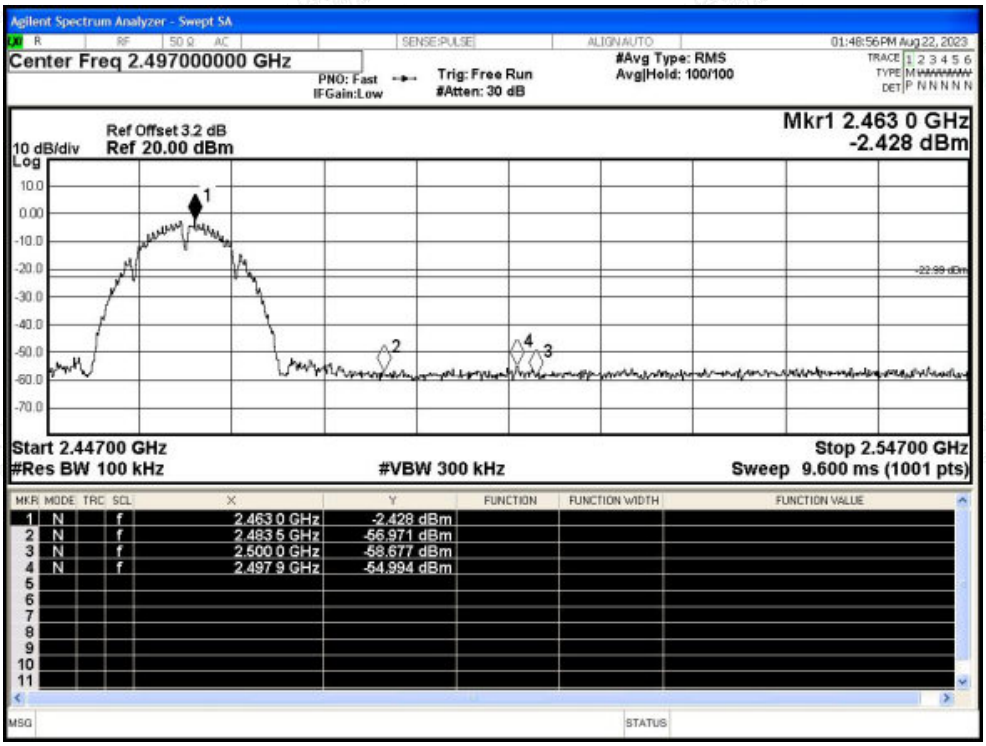
Band Edge NVNT b 2412MHz Ant1 Emission



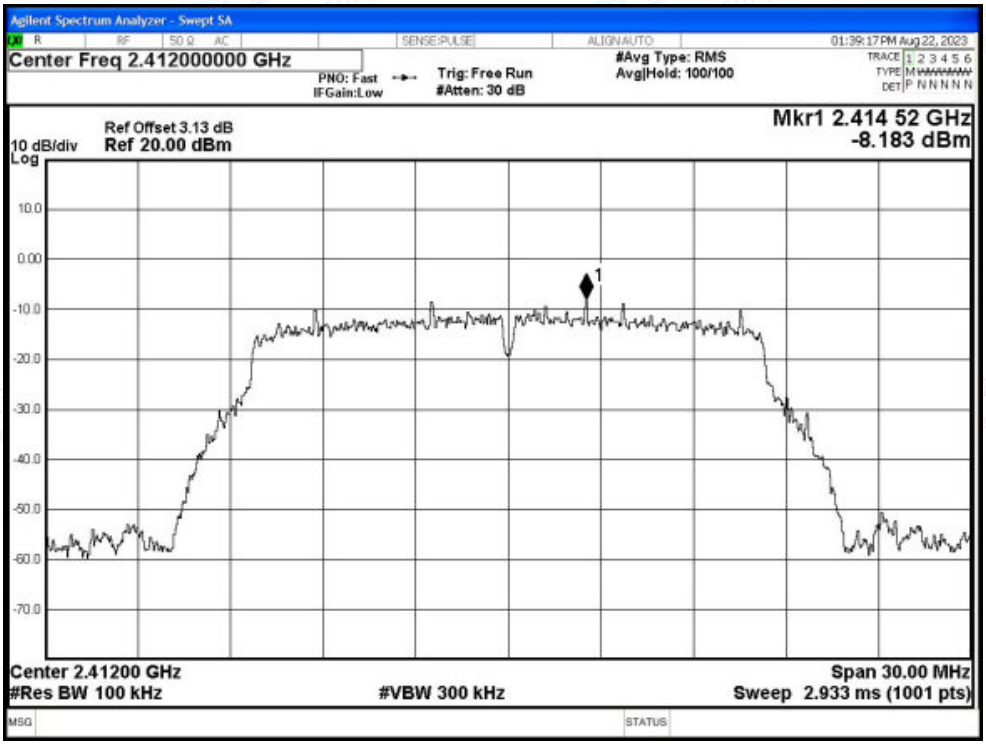
Band Edge NVNT b 2462MHz Ant1 Ref



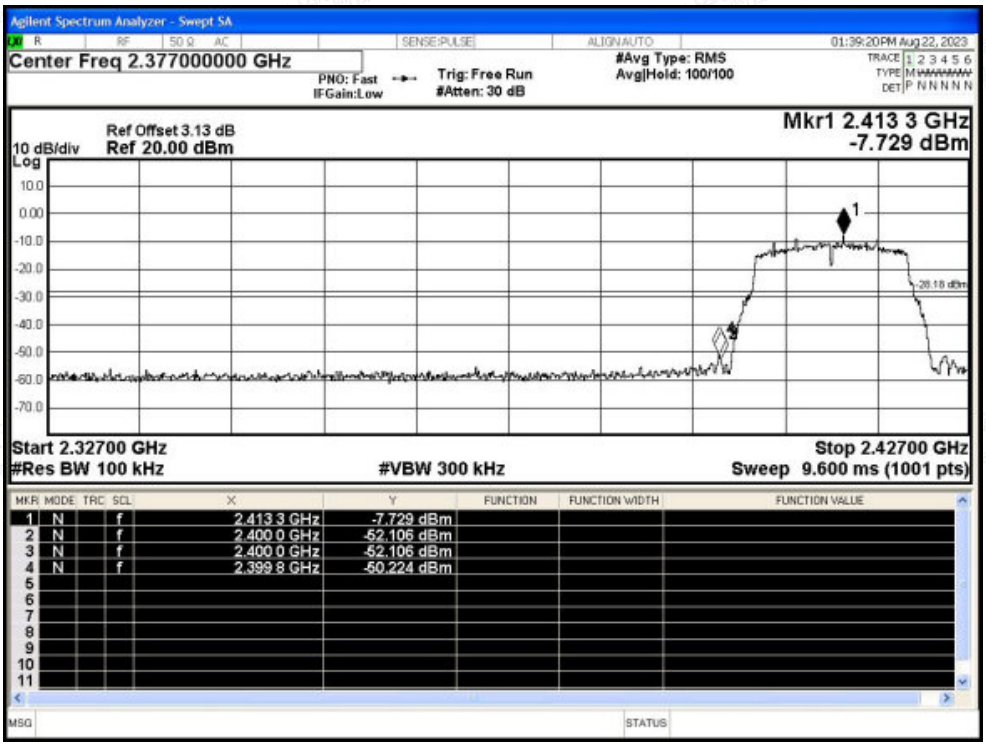
Band Edge NVNT b 2462MHz Ant1 Emission



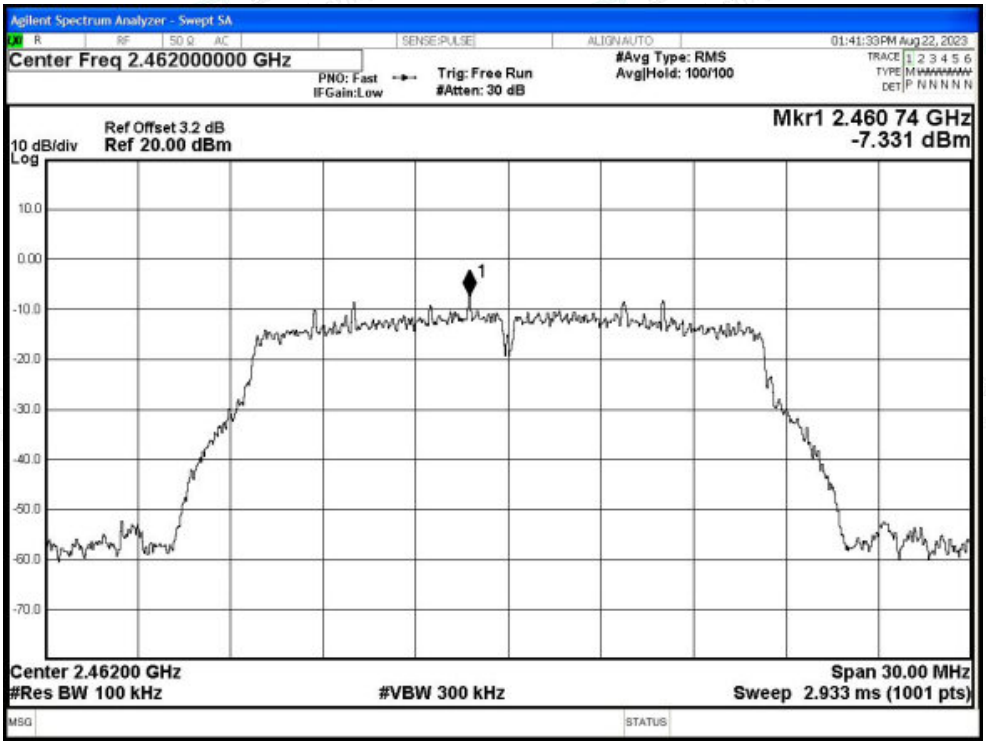
Band Edge NVNT g 2412MHz Ant1 Ref



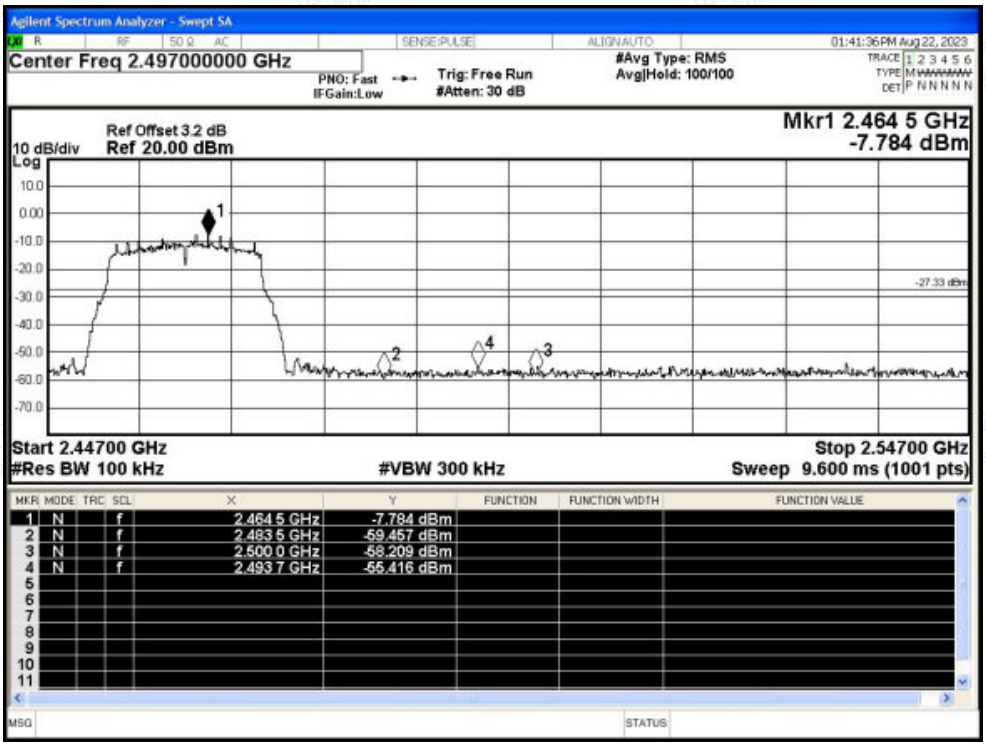
Band Edge NVNT g 2412MHz Ant1 Emission



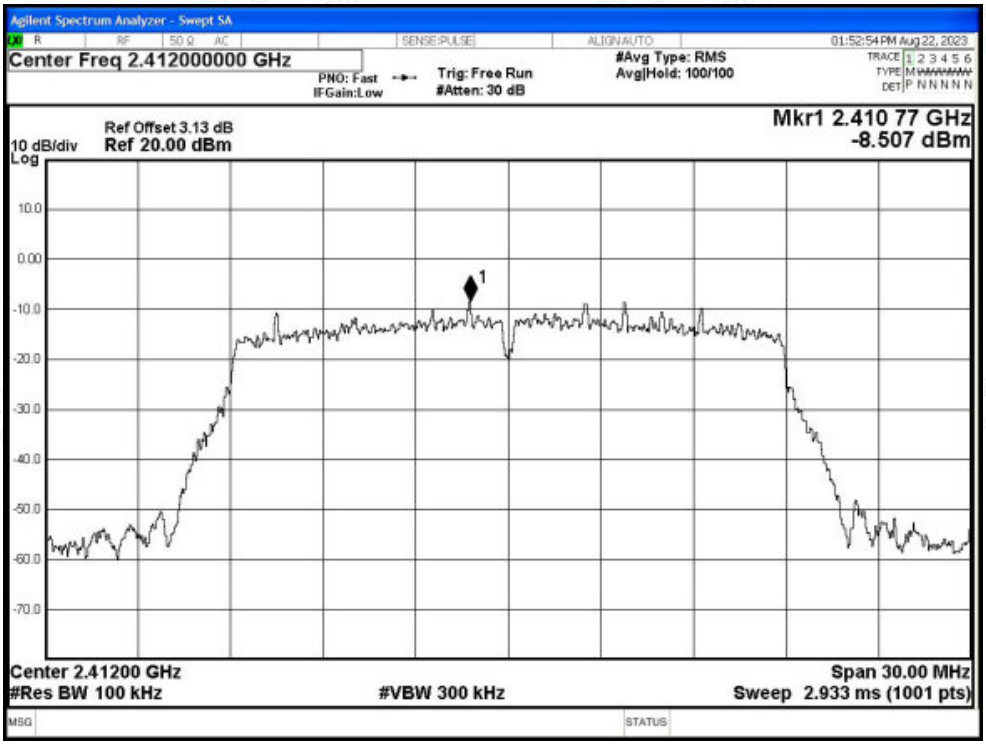
Band Edge NVNT g 2462MHz Ant1 Ref



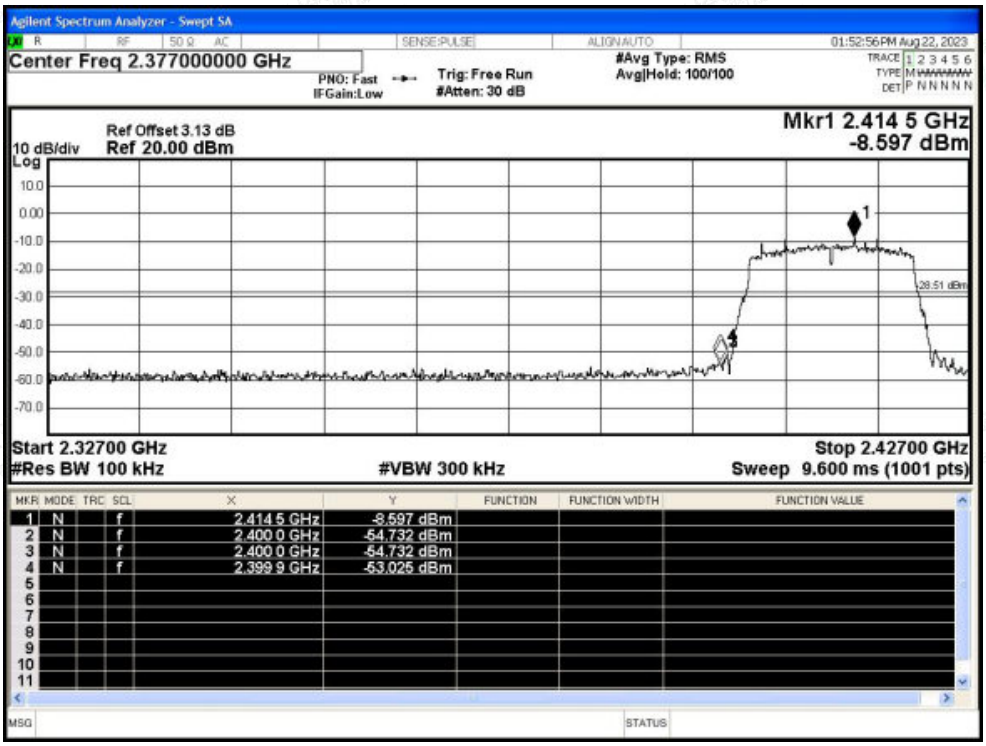
Band Edge NVNT g 2462MHz Ant1 Emission



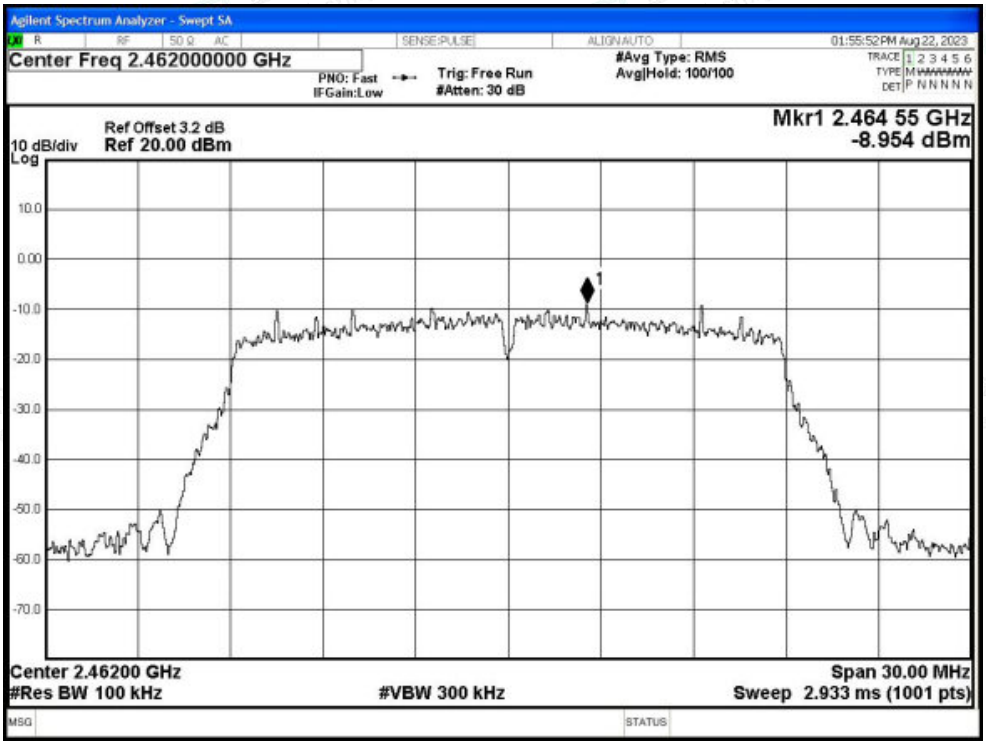
Band Edge NVNT n20 2412MHz Ant1 Ref



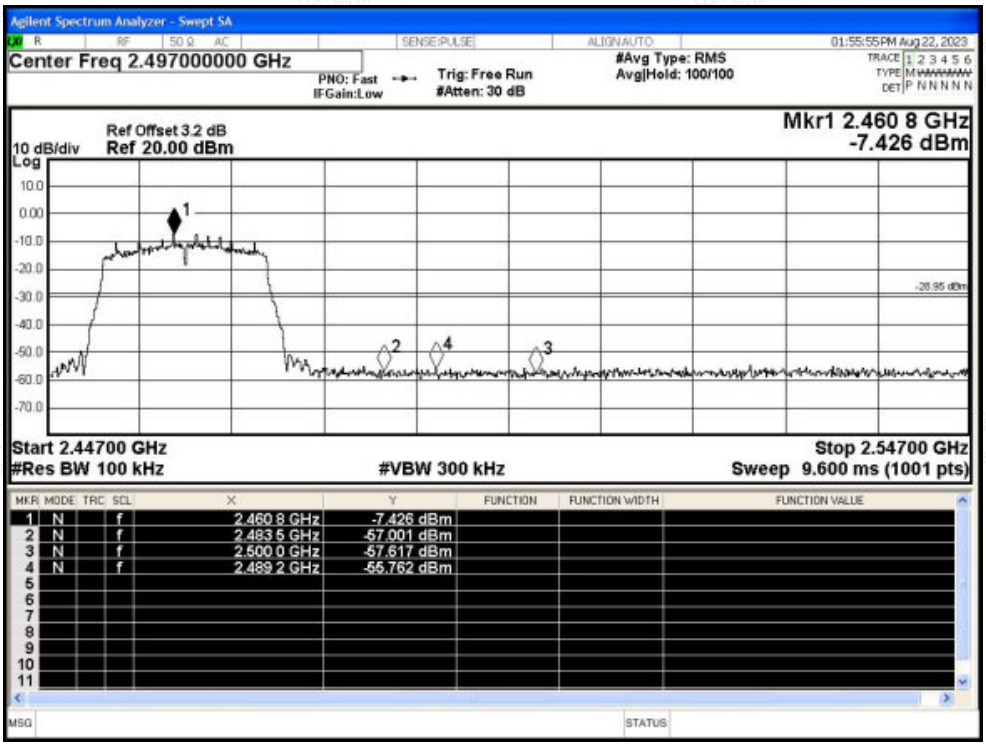
Band Edge NVNT n20 2412MHz Ant1 Emission



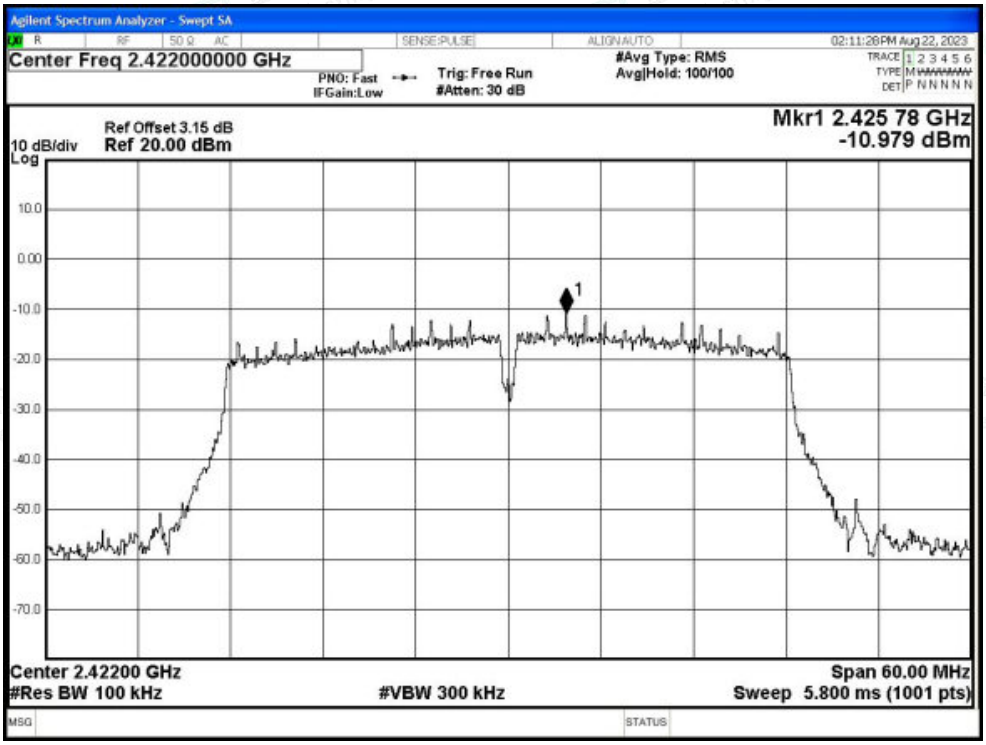
Band Edge NVNT n20 2462MHz Ant1 Ref



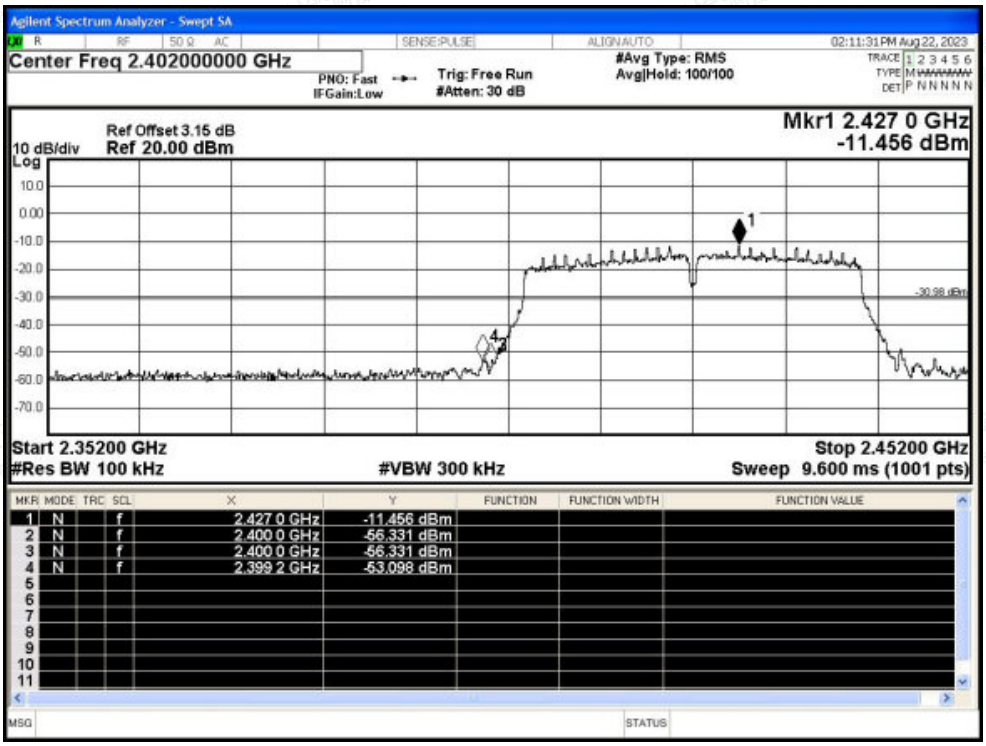
Band Edge NVNT n20 2462MHz Ant1 Emission



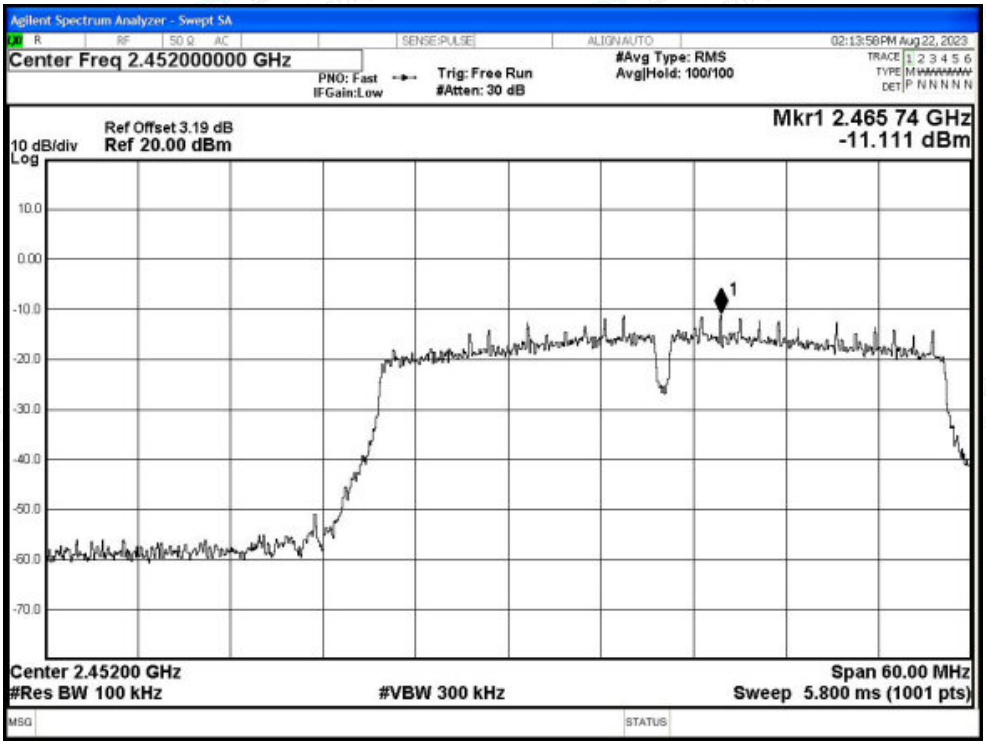
Band Edge NVNT n40 2422MHz Ant1 Ref



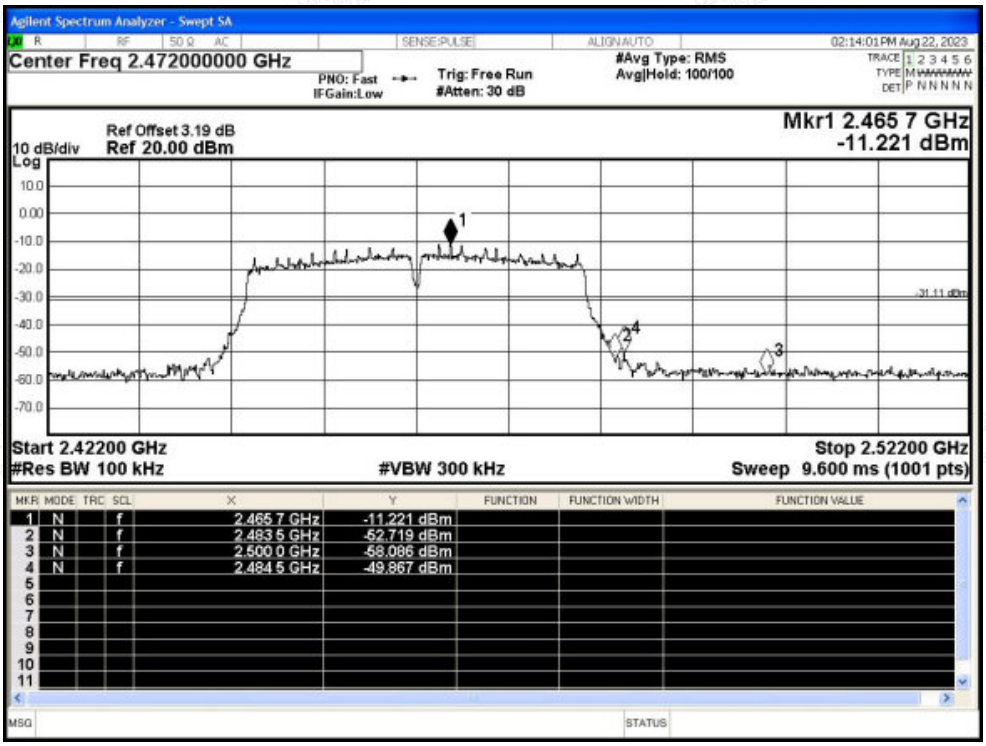
Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission



A.5 Conducted Spurious Emission

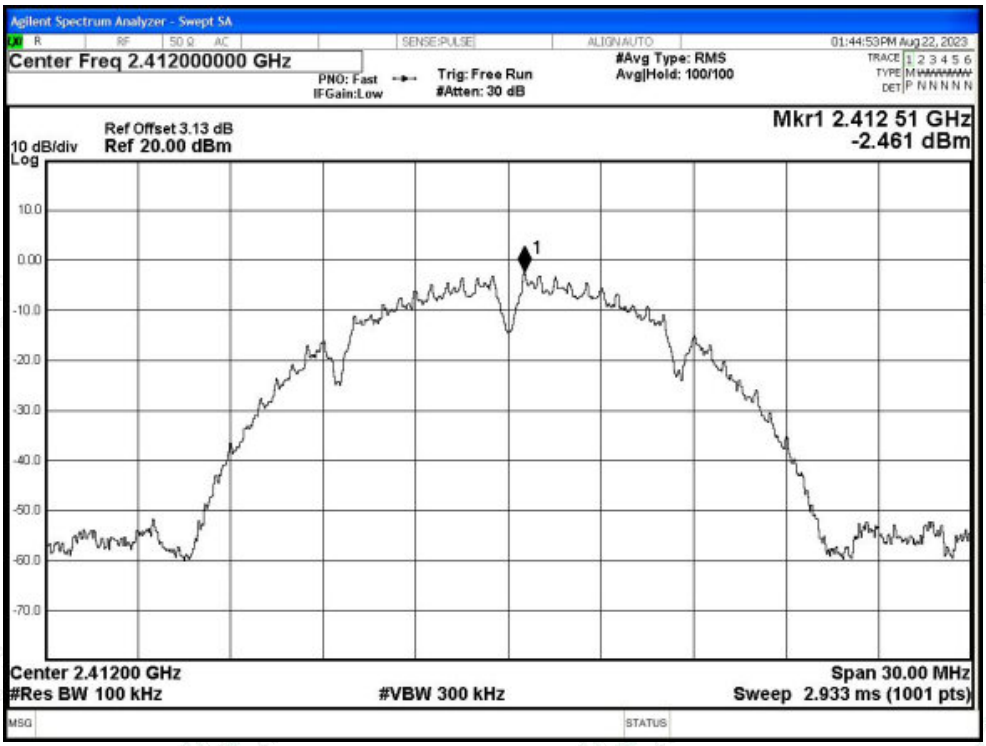
Test Result

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-42.98	-20	Pass
NVNT	b	2437	Ant1	-42.95	-20	Pass
NVNT	b	2462	Ant1	-43.22	-20	Pass
NVNT	g	2412	Ant1	-37.1	-20	Pass
NVNT	g	2437	Ant1	-37.56	-20	Pass
NVNT	g	2462	Ant1	-37.49	-20	Pass
NVNT	n20	2412	Ant1	-35.39	-20	Pass
NVNT	n20	2437	Ant1	-38.07	-20	Pass
NVNT	n20	2462	Ant1	-36.78	-20	Pass
NVNT	n40	2422	Ant1	-33.14	-20	Pass
NVNT	n40	2437	Ant1	-33.63	-20	Pass
NVNT	n40	2452	Ant1	-34.71	-20	Pass

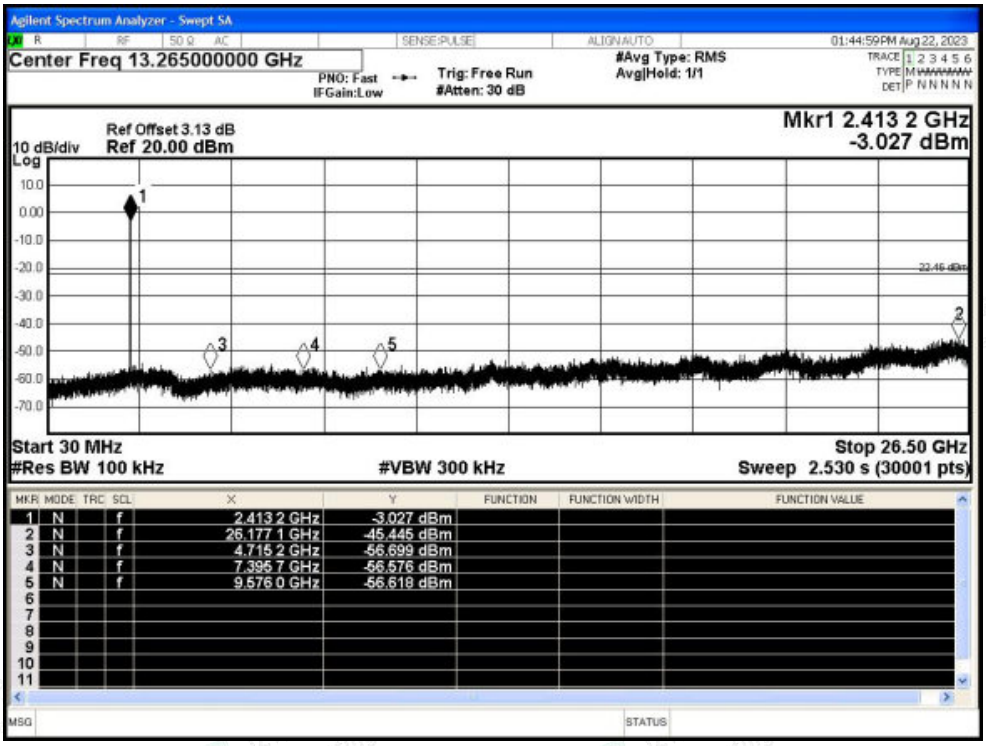
Test Graphs

Test Graphs

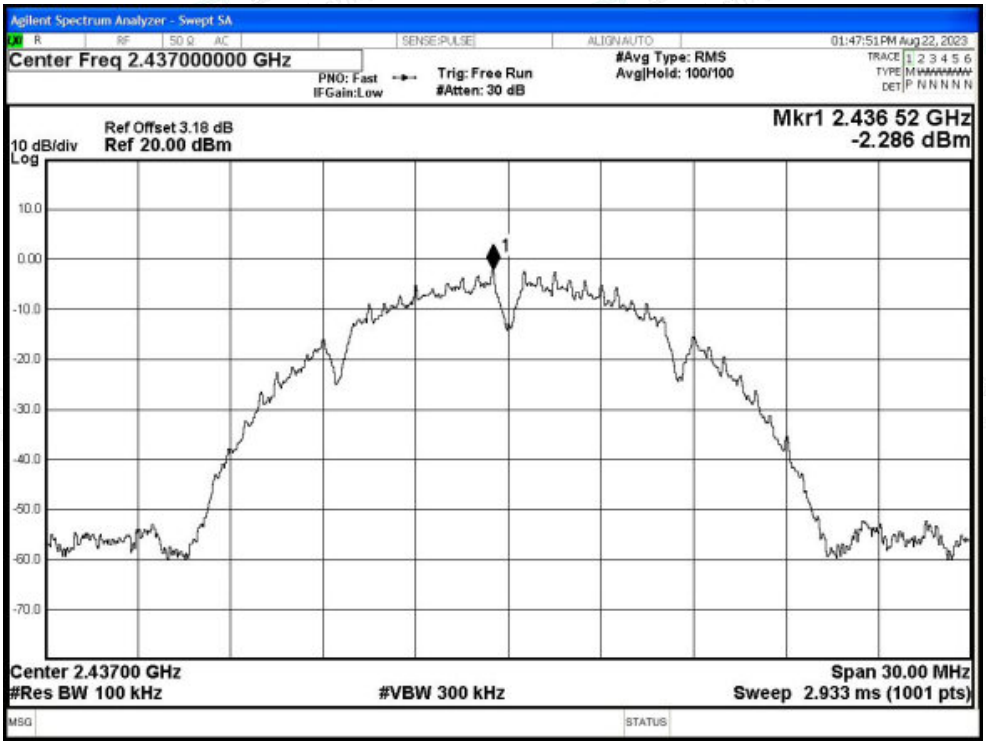
Tx. Spurious NVNT b 2412MHz Ant1 Ref



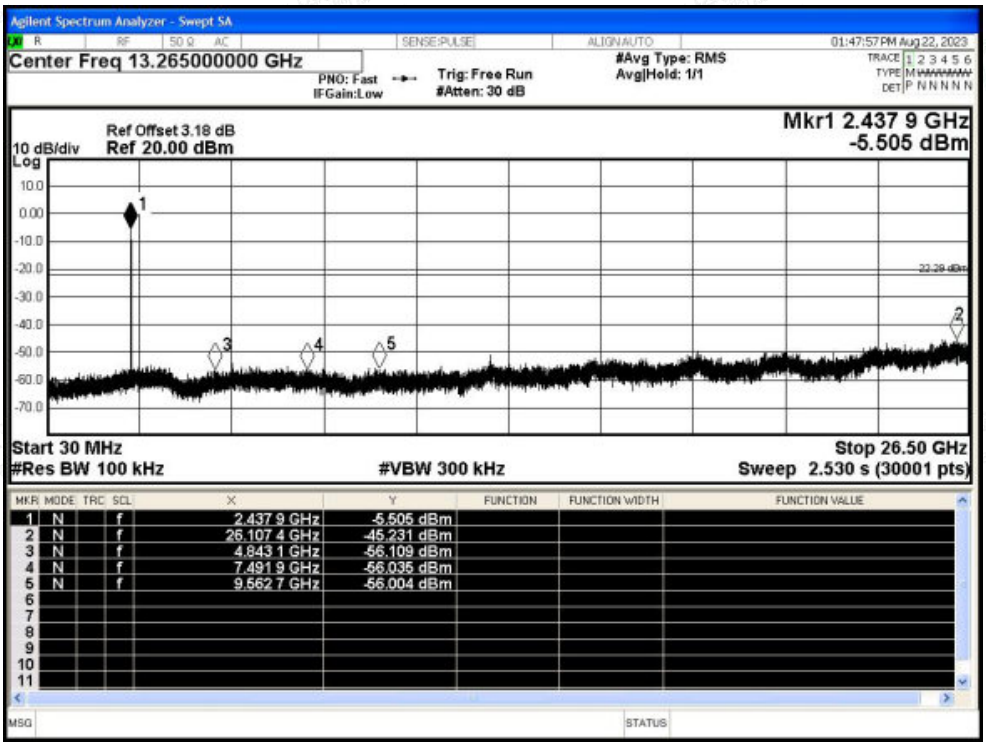
Tx. Spurious NVNT b 2412MHz Ant1 Emission



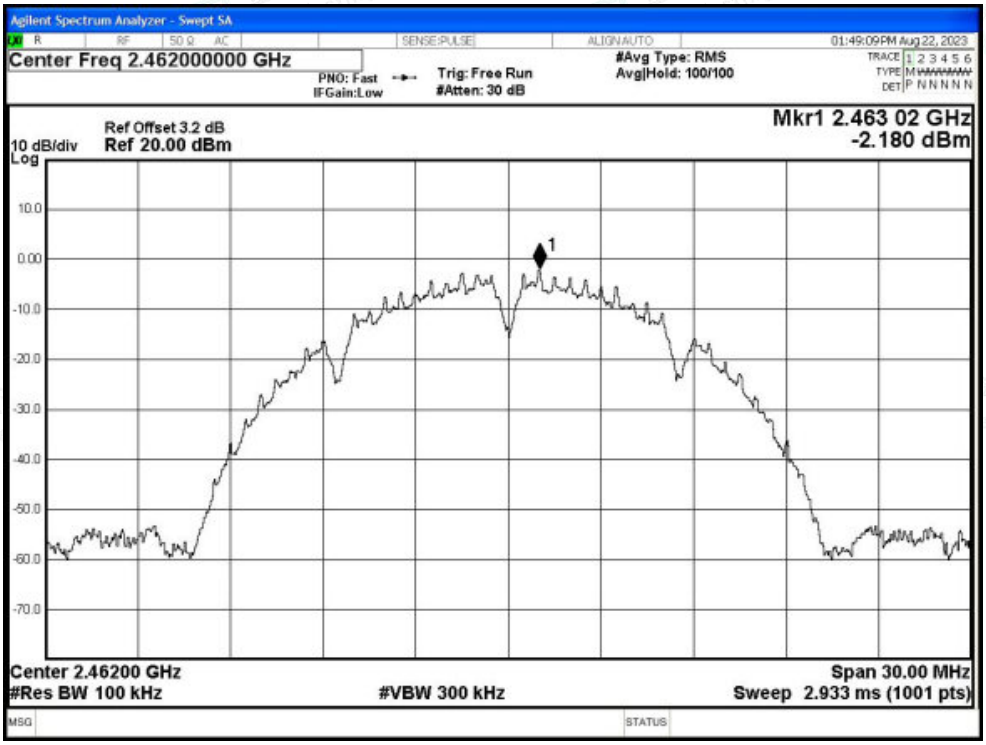
Tx. Spurious NVNT b 2437MHz Ant1 Ref



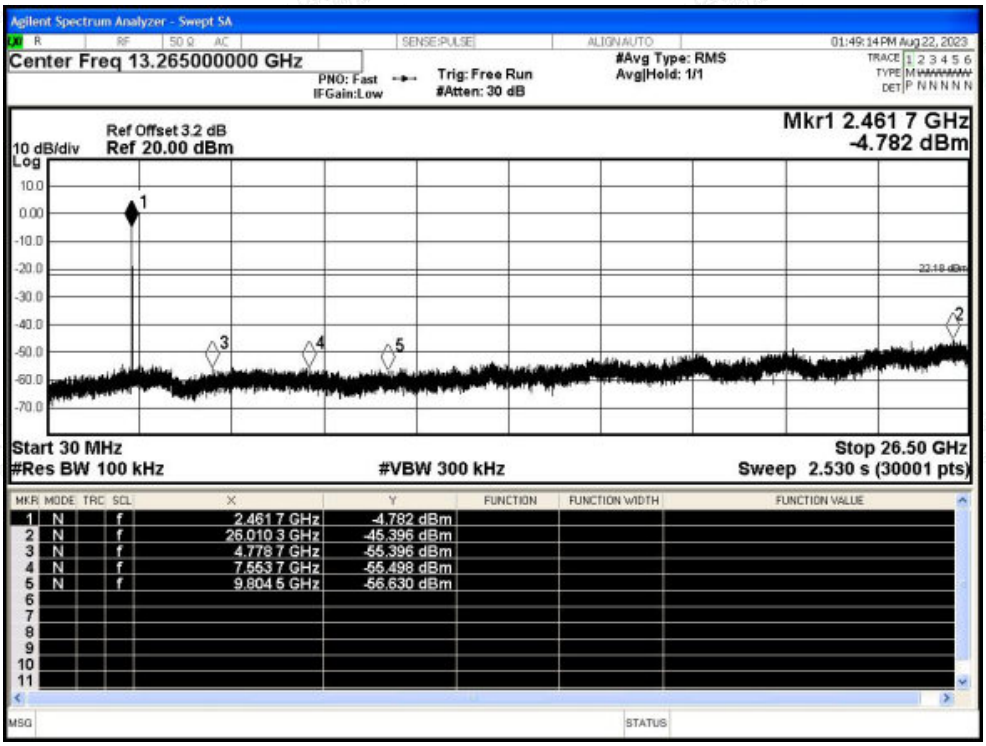
Tx. Spurious NVNT b 2437MHz Ant1 Emission



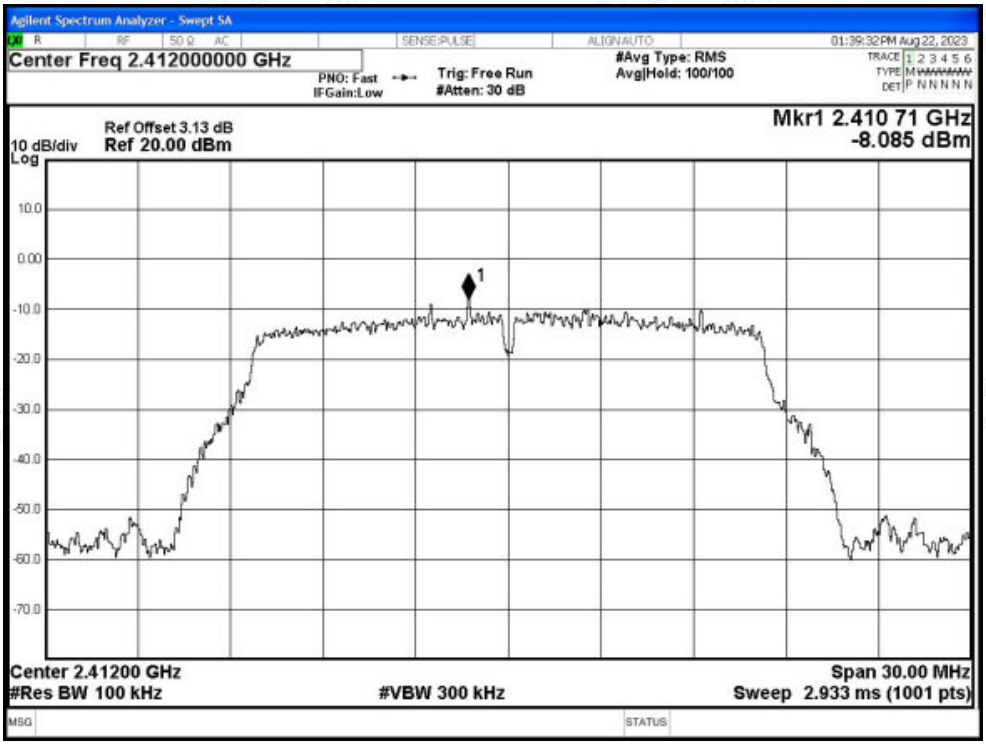
Tx. Spurious NVNT b 2462MHz Ant1 Ref



Tx. Spurious NVNT b 2462MHz Ant1 Emission



Tx. Spurious NVNT g 2412MHz Ant1 Ref



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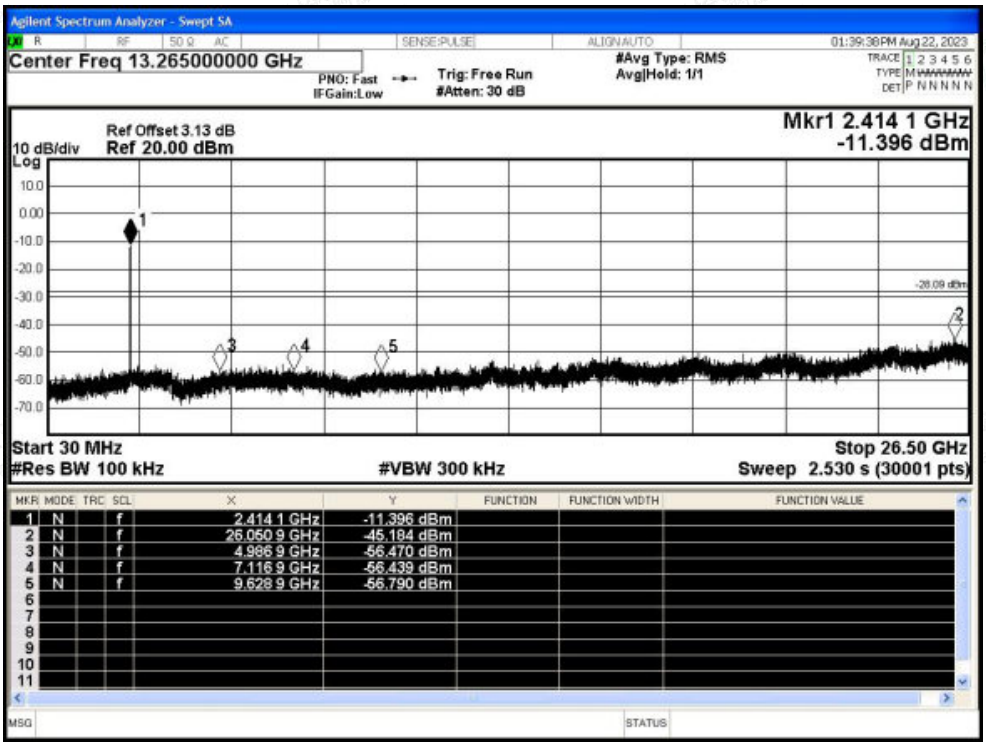

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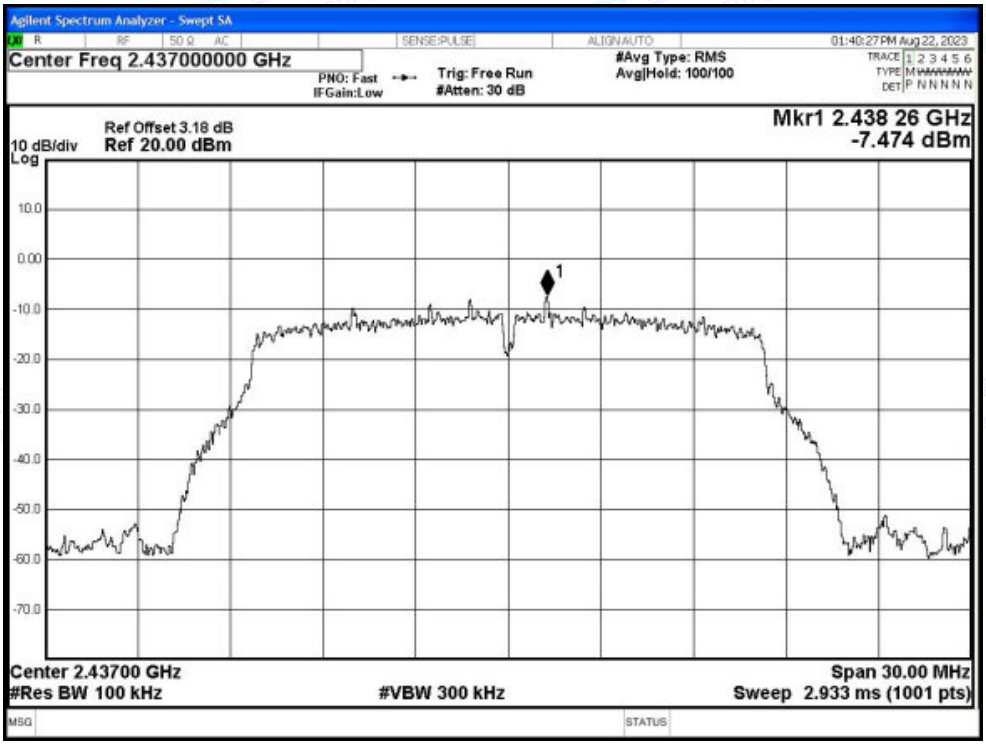
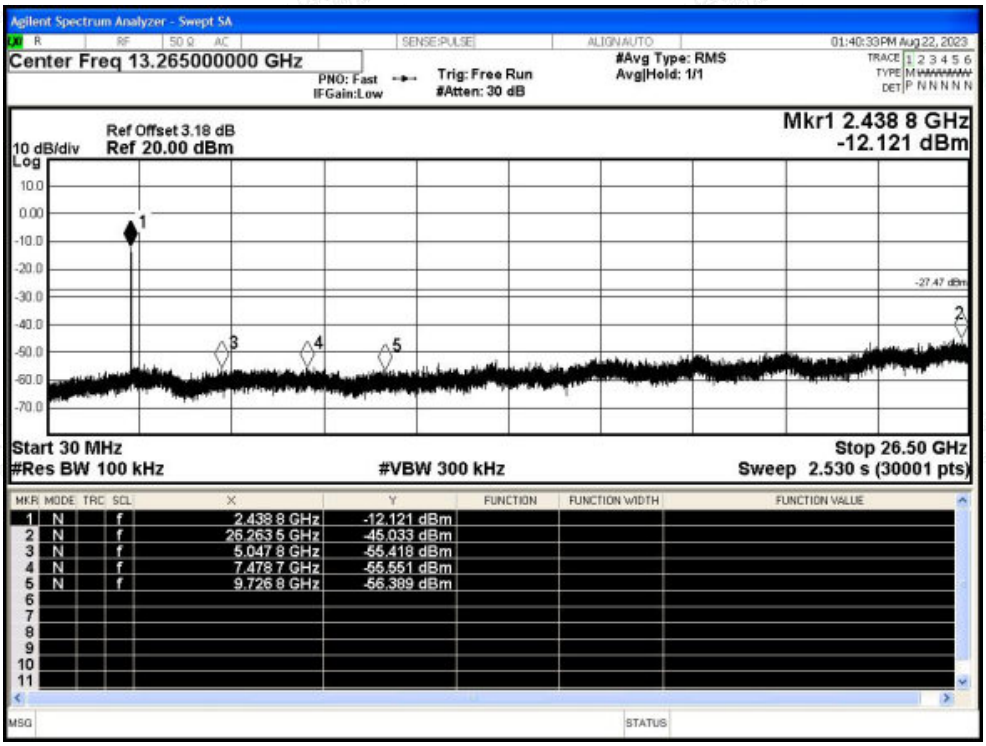
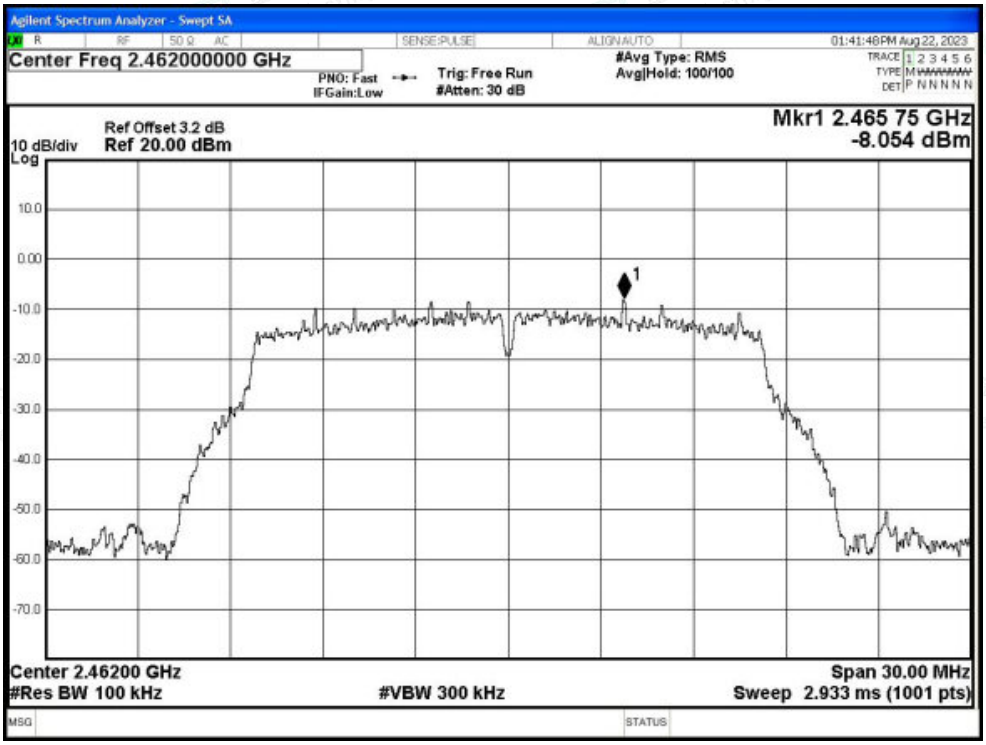


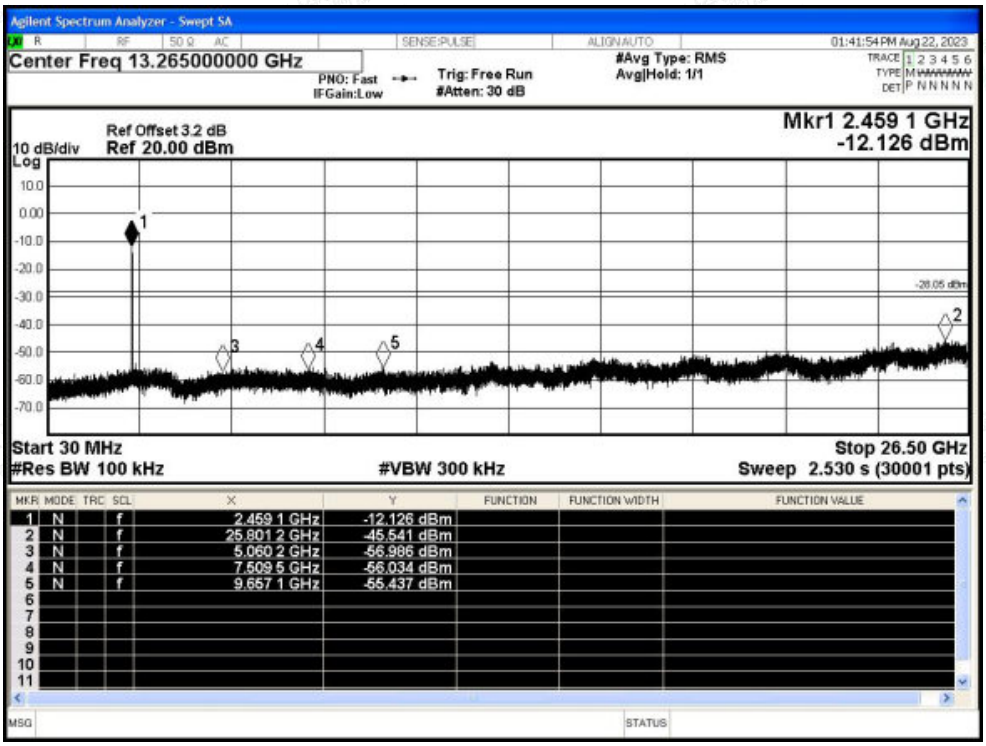
Tx. Spurious NVNT g 2437MHz Ant1 Emission



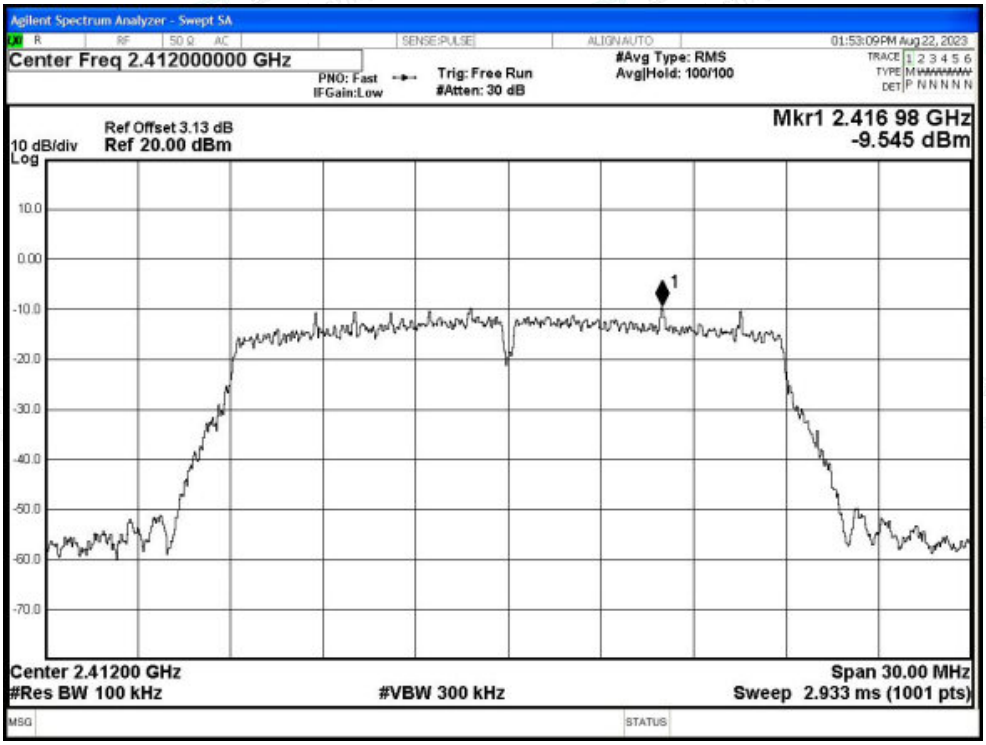
Tx. Spurious NVNT g 2462MHz Ant1 Ref



Tx. Spurious NVNT g 2462MHz Ant1 Emission



Tx. Spurious NVNT n20 2412MHz Ant1 Ref



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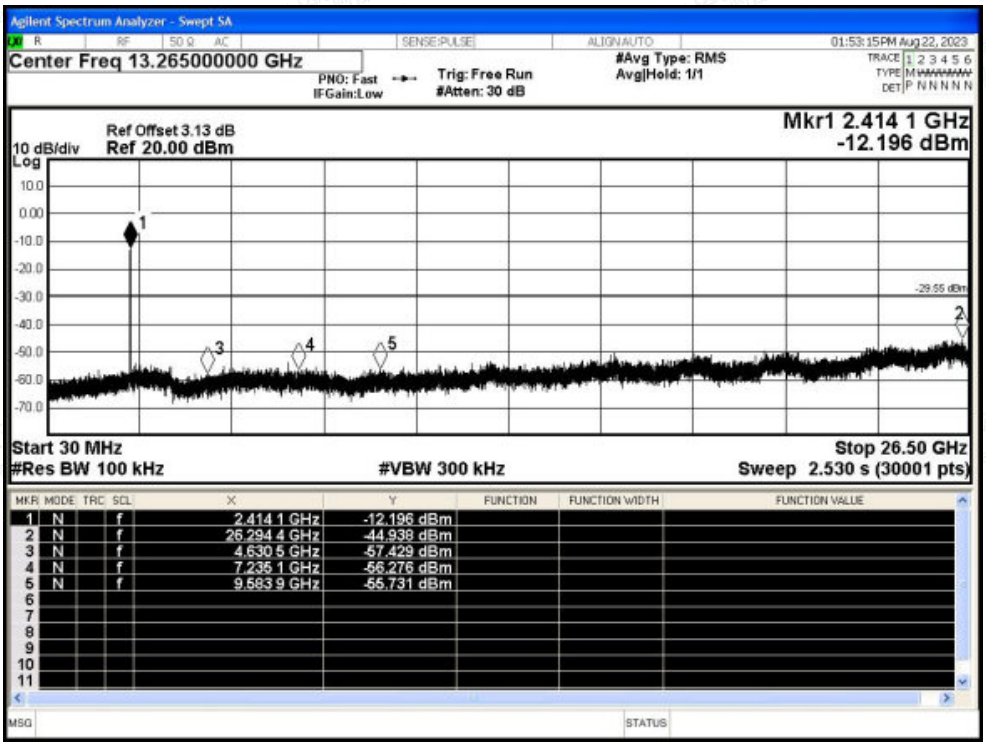

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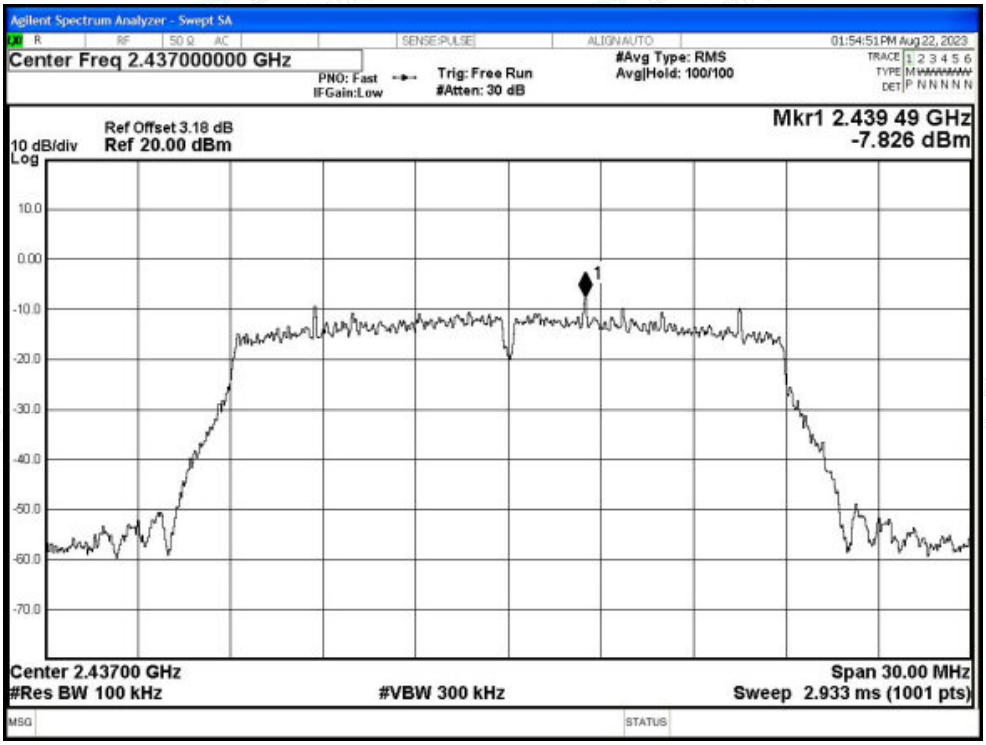
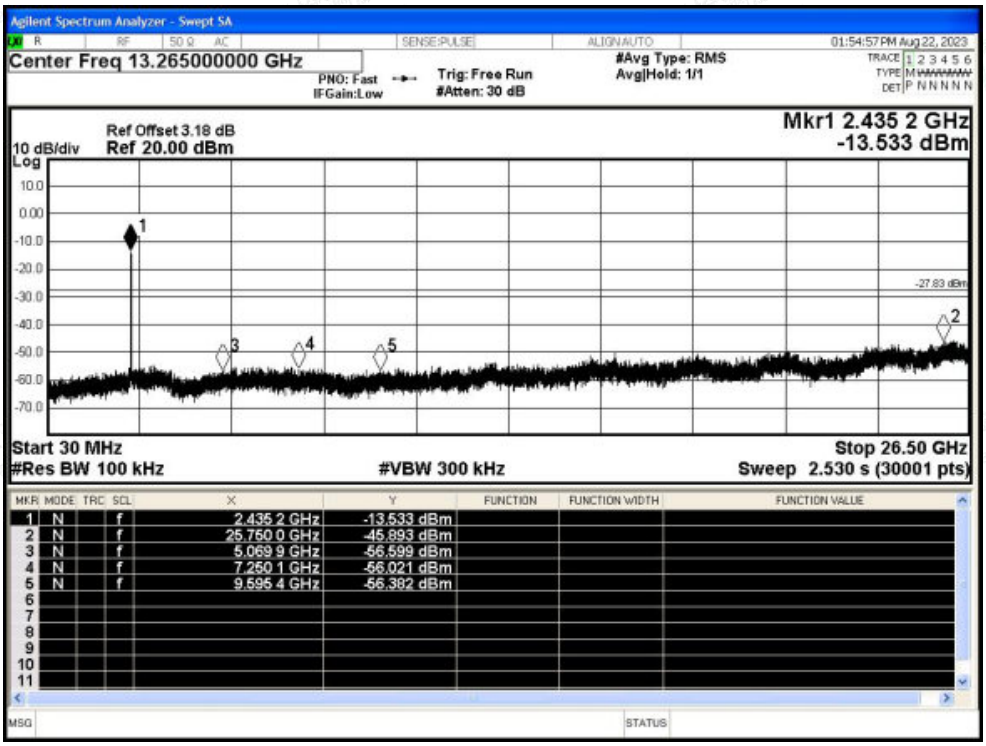
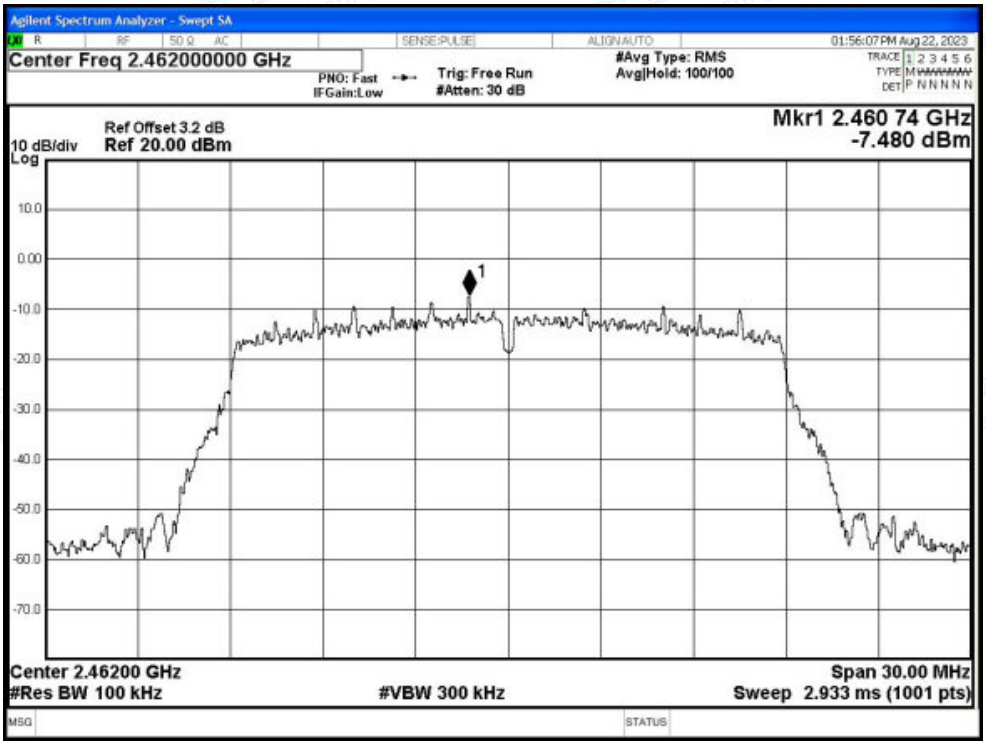


Tx. Spurious NVNT n20 2437MHz Ant1 Emission



Tx. Spurious NVNT n20 2462MHz Ant1 Ref



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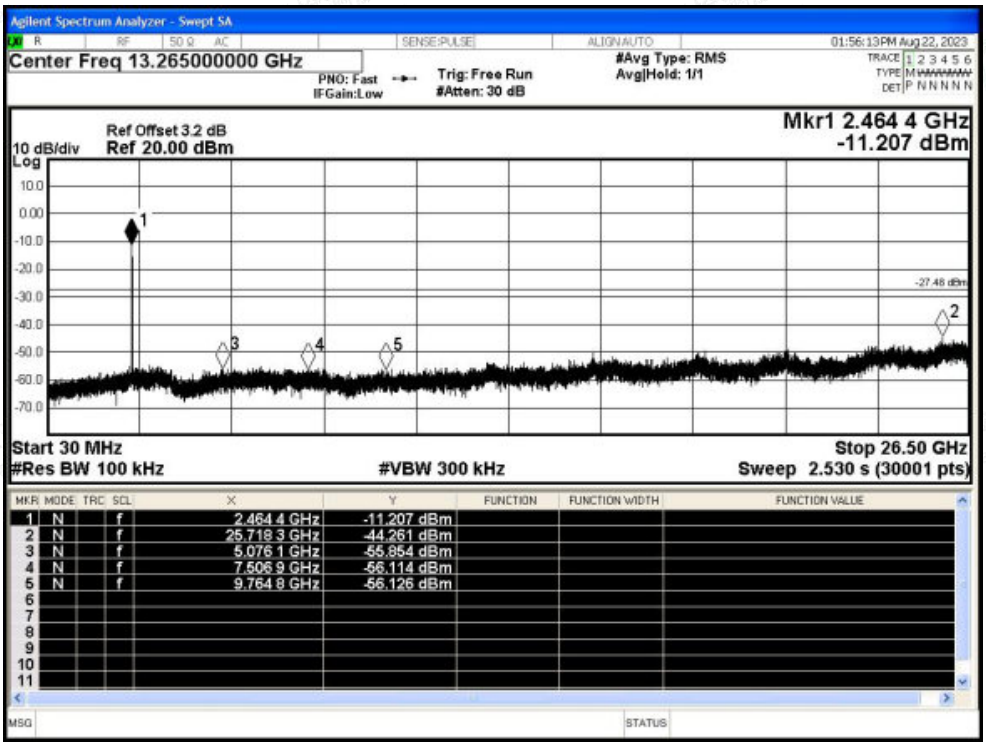
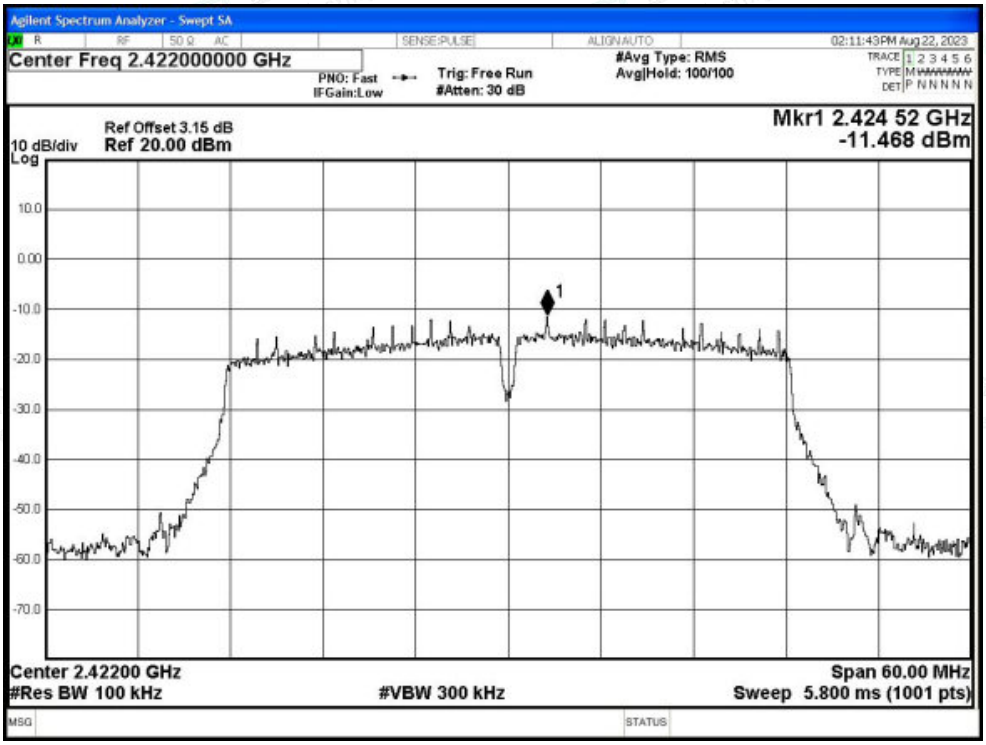


Tx. Spurious NVNT n40 2422MHz Ant1 Ref



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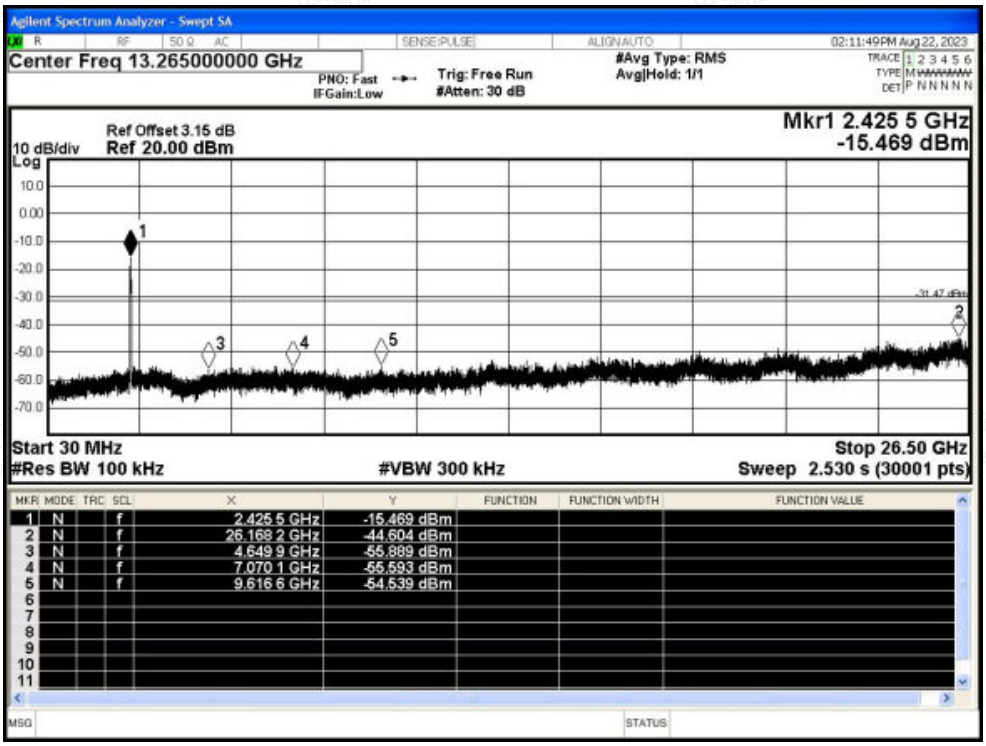
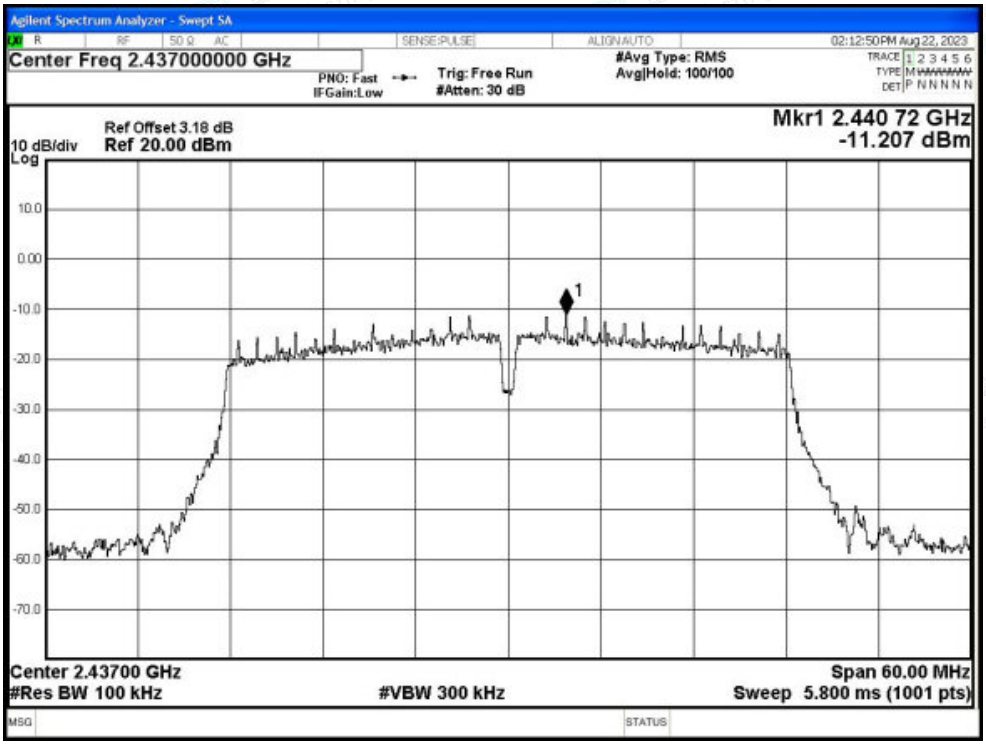
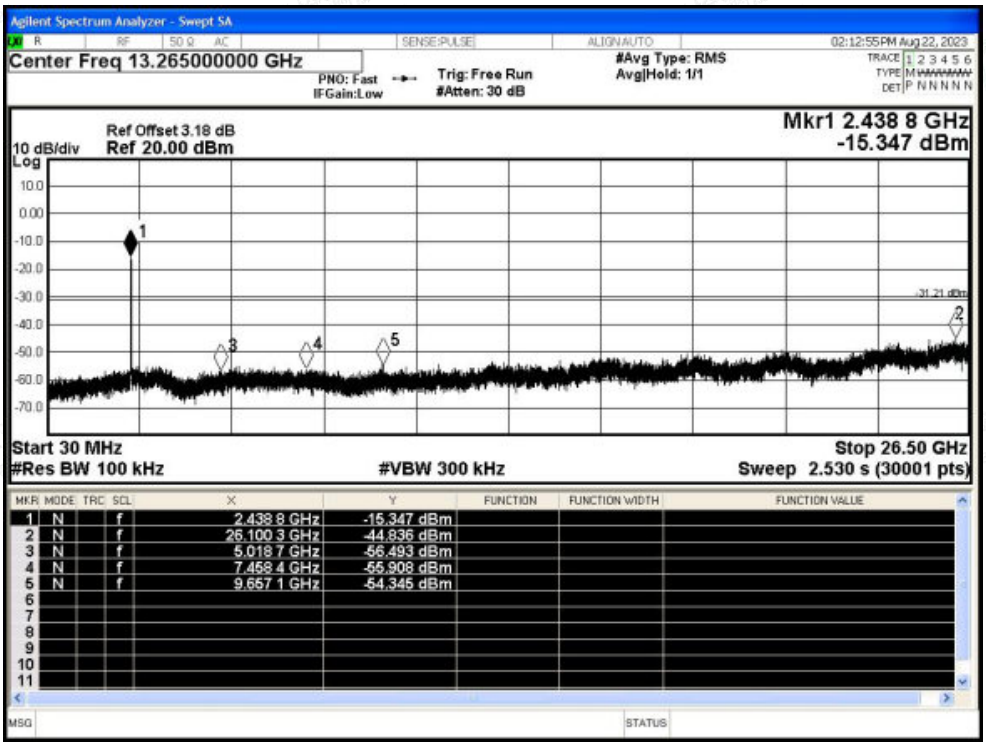


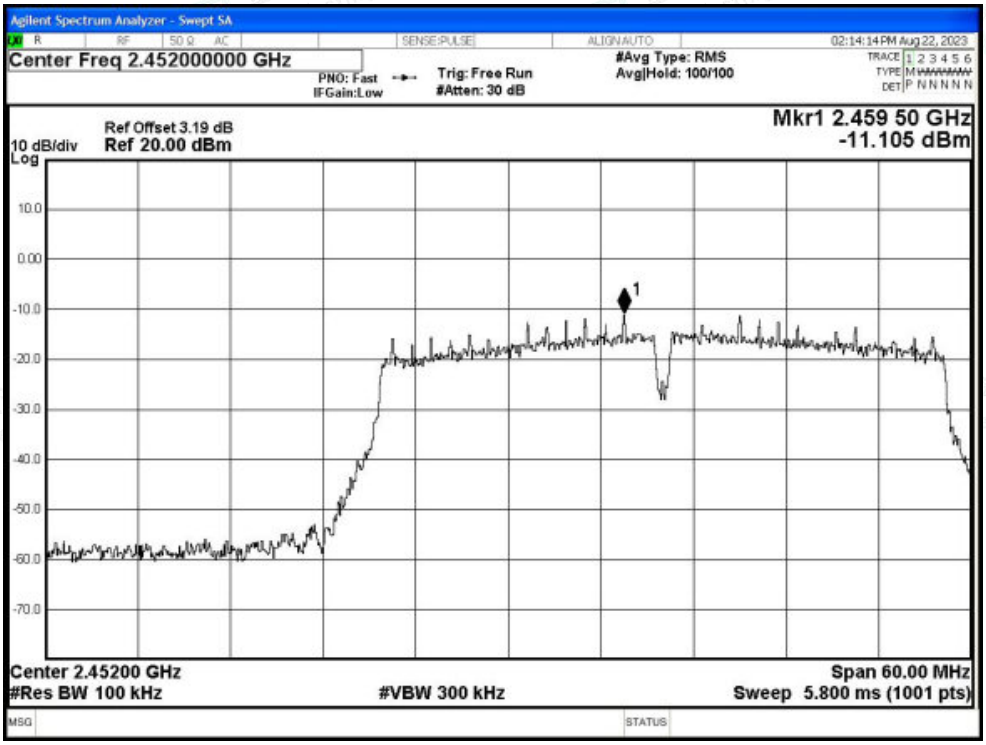
Tx. Spurious NVNT n40 2437MHz Ant1 Ref



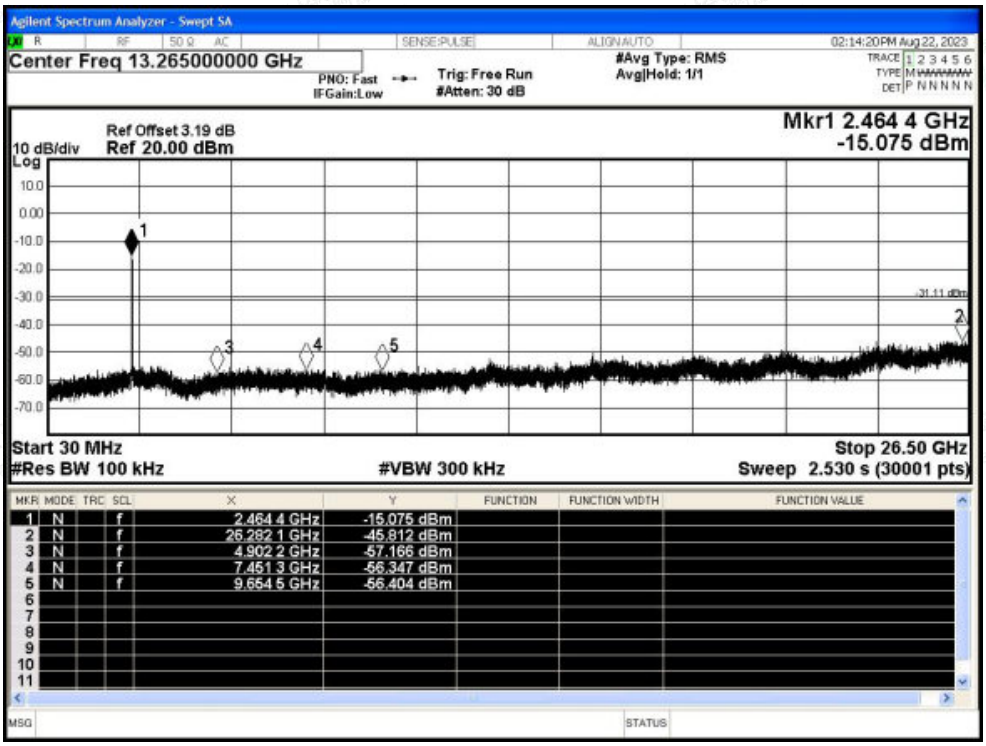
Tx. Spurious NVNT n40 2437MHz Ant1 Emission



Tx. Spurious NVNT n40 2452MHz Ant1 Ref



Tx. Spurious NVNT n40 2452MHz Ant1 Emission



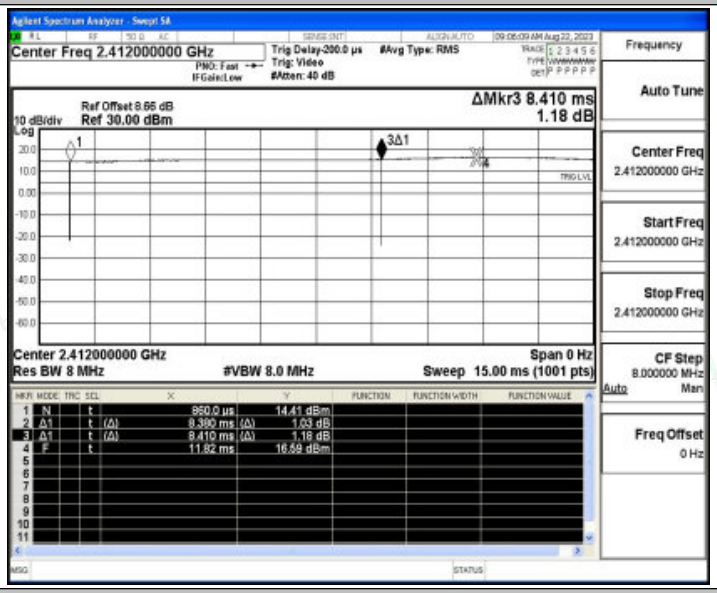
A.6 Duty Cycle

Test Result

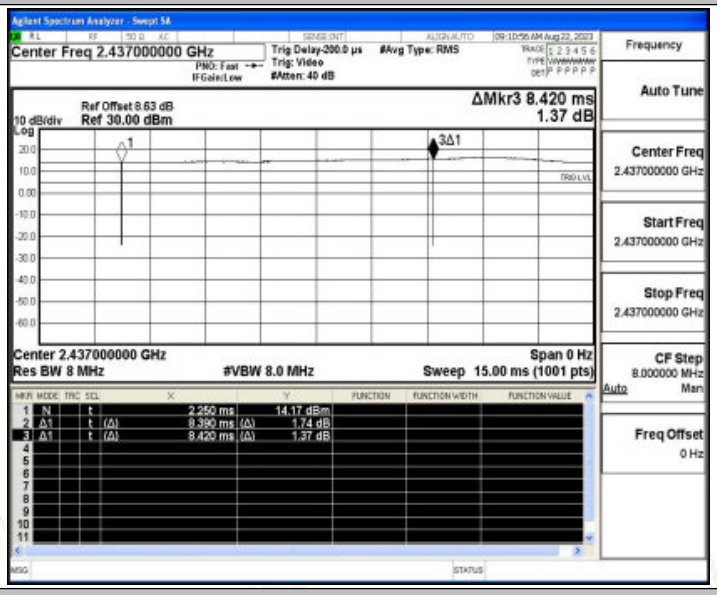
TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	Verdict
11B	Ant1	2412	8.38	8.41	99.64	0.02	PASS
		2437	8.39	8.42	99.64	0.02	PASS
		2462	8.38	8.41	99.64	0.02	PASS
11G	Ant1	2412	1.39	1.43	97.20	0.12	PASS
		2437	1.39	1.43	97.20	0.12	PASS
		2462	1.39	1.43	97.20	0.12	PASS
11N20SISO	Ant1	2412	1.30	1.34	97.01	0.13	PASS
		2437	1.30	1.34	97.01	0.13	PASS
		2462	1.30	1.34	97.01	0.13	PASS
11N40SISO	Ant1	2422	0.64	0.68	94.12	0.26	PASS
		2437	0.64	0.68	94.12	0.26	PASS
		2452	0.64	0.68	94.12	0.26	PASS

Test Graphs

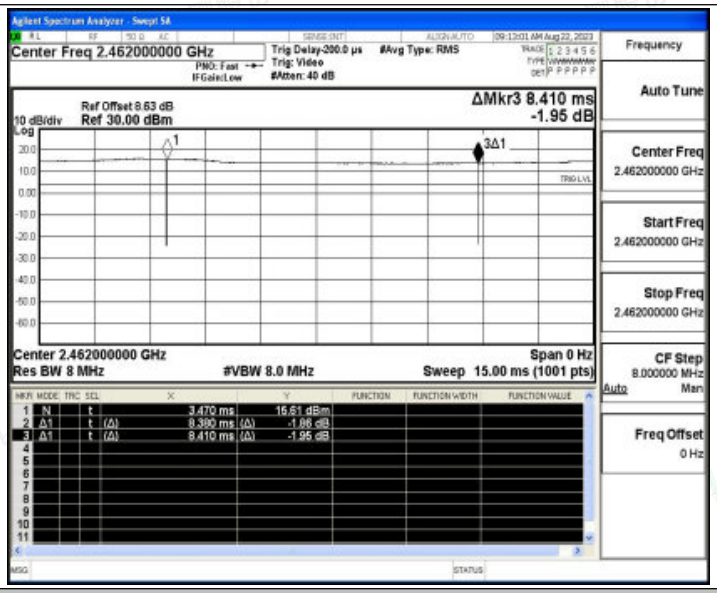
11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



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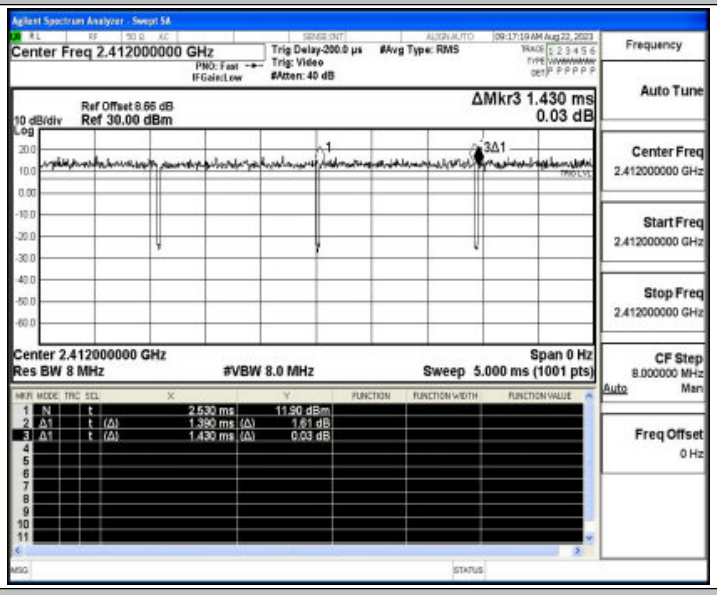
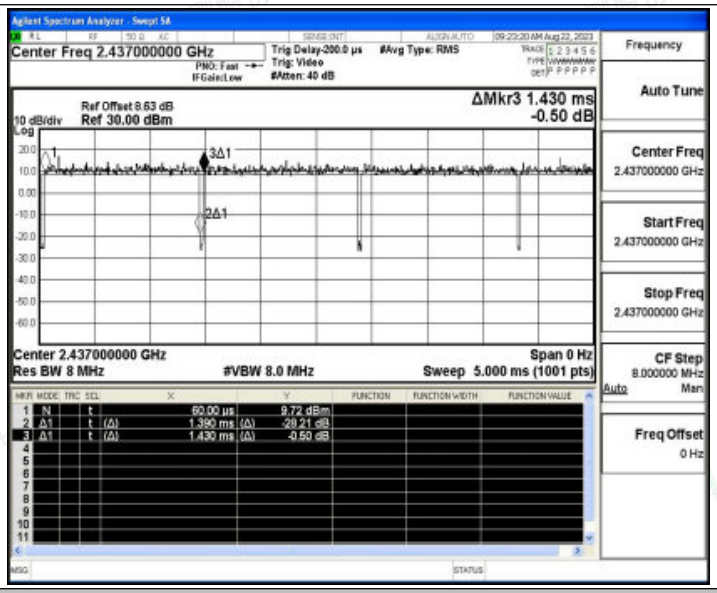
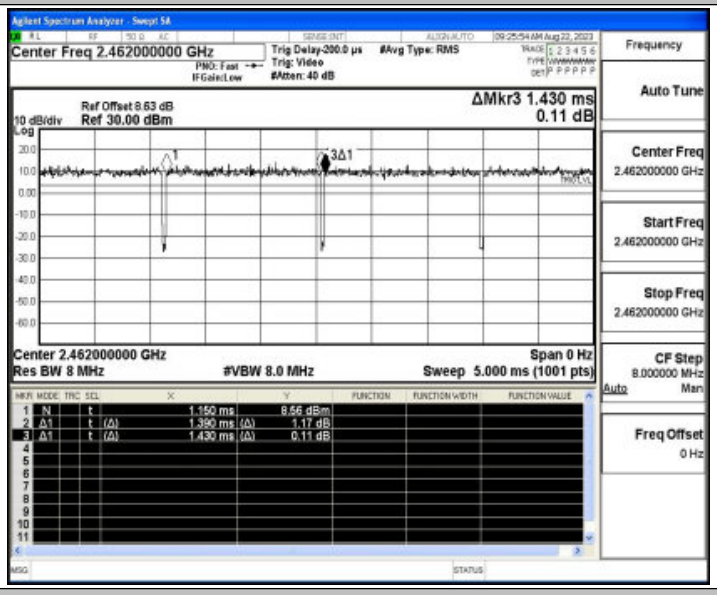


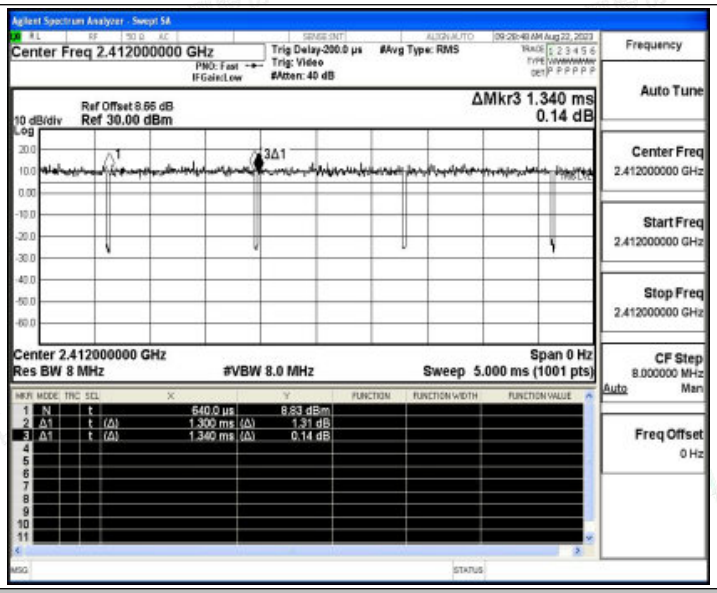
11G_Ant1_2437



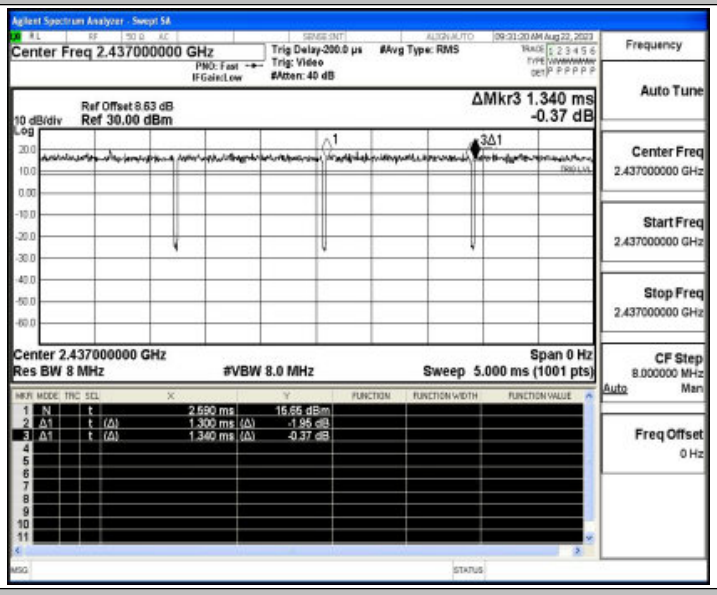
11G_Ant1_2462



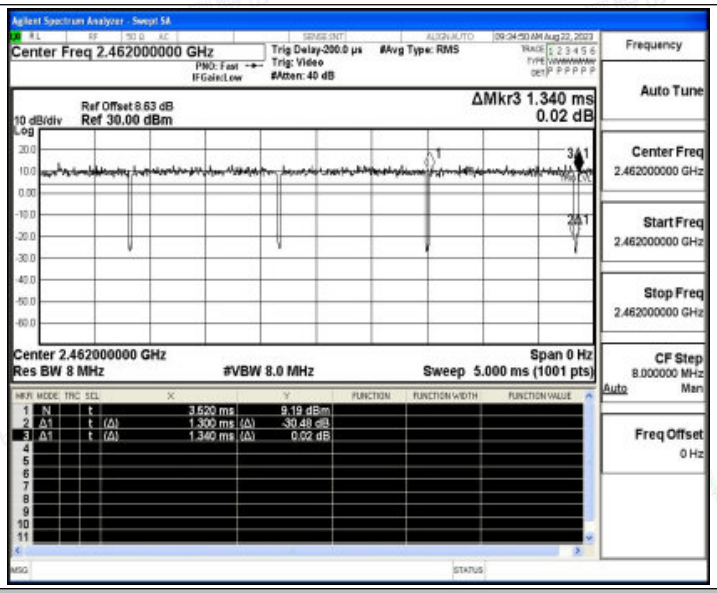
11N20SISO_Ant1_2412



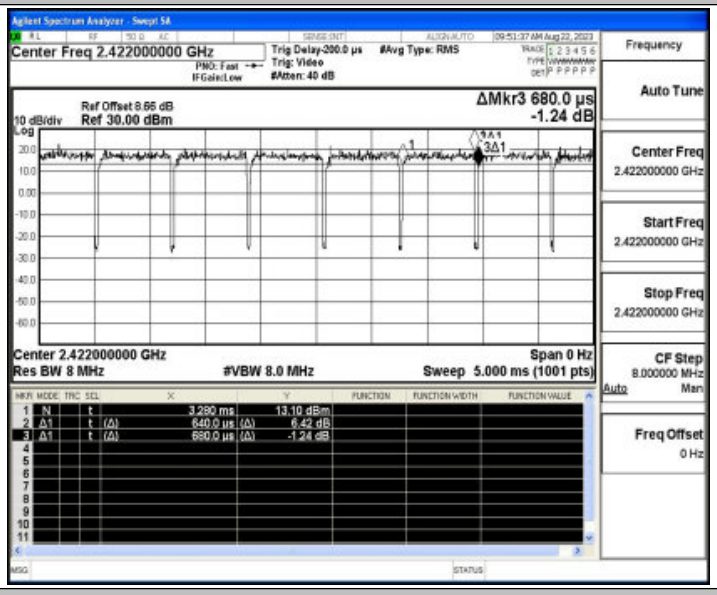
11N20SISO_Ant1_2437



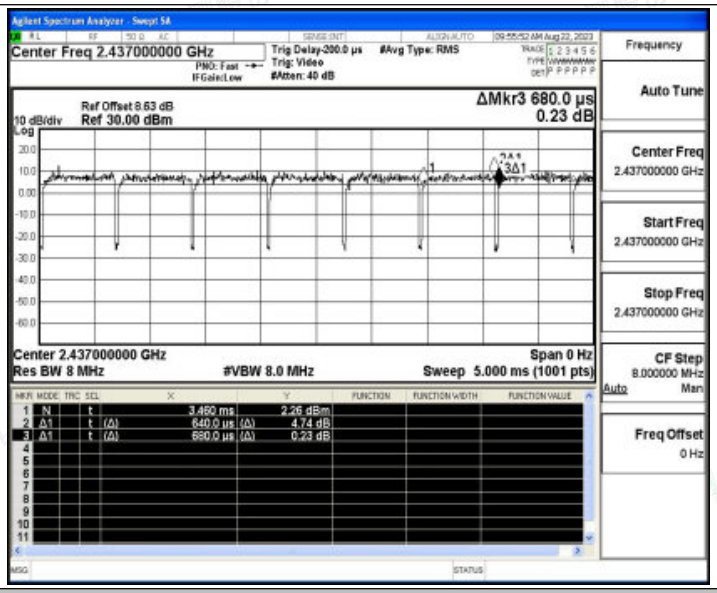
11N20SISO_Ant1_2462



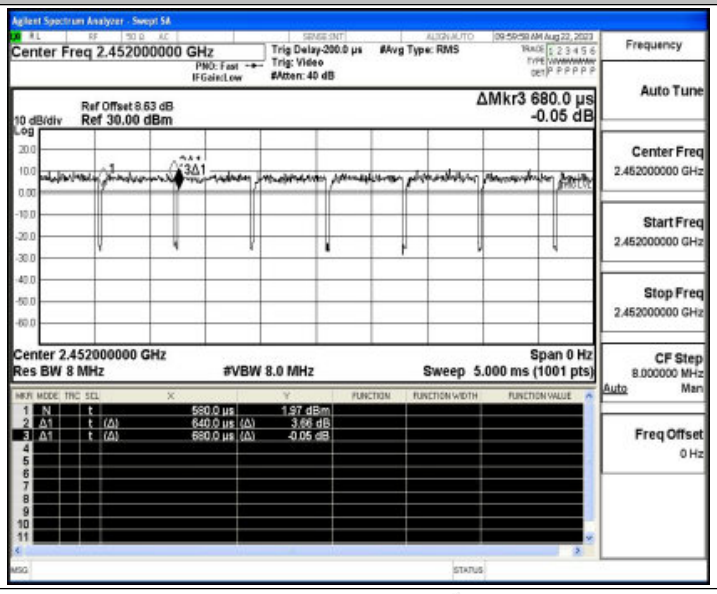
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-48.45	≤-41.20	46.75	≤54	PASS
				AV	2389.960	-47.71	≤-41.20	47.49	≤54	PASS
				AV	2390.000	-47.71	≤-41.20	47.49	≤54	PASS
				Peak	2310.000	-42.72	≤-21.20	52.48	≤74	PASS
				Peak	2382.290	-38.33	≤-21.20	56.87	≤74	PASS
				Peak	2390.000	-41.2	≤-21.20	54.00	≤74	PASS
		High	2462	AV	2483.500	-47.43	≤-41.20	47.77	≤54	PASS
				AV	2486.970	-47.34	≤-41.20	47.86	≤54	PASS
				AV	2500.000	-47.45	≤-41.20	47.75	≤54	PASS
				Peak	2483.500	-42.28	≤-21.20	52.92	≤74	PASS
				Peak	2489.940	-37.04	≤-21.20	58.16	≤74	PASS
				Peak	2500.000	-40.74	≤-21.20	54.46	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-47.86	≤-41.20	47.34	≤54	PASS
				AV	2389.960	-46.08	≤-41.20	49.12	≤54	PASS
				AV	2390.000	-46.08	≤-41.20	49.12	≤54	PASS
				Peak	2310.000	-42.87	≤-21.20	52.33	≤74	PASS
				Peak	2342.640	-37.43	≤-21.20	57.77	≤74	PASS
				Peak	2390.000	-39.65	≤-21.20	55.55	≤74	PASS
		High	2462	AV	2483.500	-45.61	≤-41.20	49.59	≤54	PASS
				AV	2483.890	-45.66	≤-41.20	49.54	≤54	PASS
				AV	2500.000	-46.64	≤-41.20	48.56	≤54	PASS
				Peak	2483.500	-39.16	≤-21.20	56.04	≤74	PASS
				Peak	2483.780	-36.38	≤-21.20	58.82	≤74	PASS
				Peak	2500.000	-40.77	≤-21.20	54.43	≤74	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-47.87	≤-41.20	47.33	≤54	PASS
				AV	2389.960	-45.15	≤-41.20	50.05	≤54	PASS
				AV	2390.000	-45.16	≤-41.20	50.04	≤54	PASS
				Peak	2310.000	-41.53	≤-21.20	53.67	≤74	PASS
				Peak	2389.310	-37.8	≤-21.20	57.40	≤74	PASS
				Peak	2390.000	-38.13	≤-21.20	57.07	≤74	PASS
		High	2462	AV	2483.500	-44.32	≤-41.20	50.88	≤54	PASS
				AV	2483.560	-44.52	≤-41.20	50.68	≤54	PASS
				AV	2500.000	-46.57	≤-41.20	48.63	≤54	PASS
				Peak	2483.500	-33.06	≤-21.20	62.14	≤74	PASS

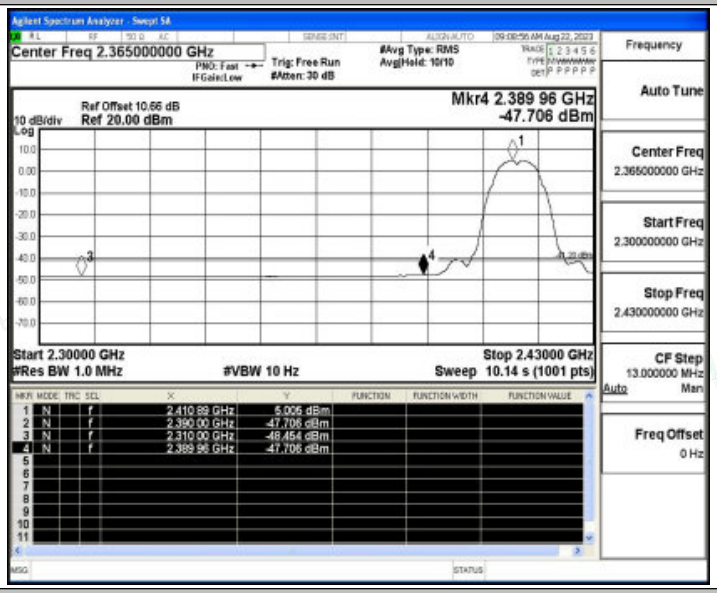
				Peak	2487.410	-34.23	≤-21.20	60.97	≤74	PASS
				Peak	2500.000	-42.37	≤-21.20	52.83	≤74	PASS
11N40SISO	Ant1	Low	2422	AV	2310.000	-47.57	≤-41.20	47.63	≤54	PASS
				AV	2389.570	-41.6	≤-41.20	53.60	≤54	PASS
				AV	2390.000	-41.87	≤-41.20	53.33	≤54	PASS
				Peak	2310.000	-40.51	≤-21.20	54.69	≤74	PASS
				Peak	2385.930	-30.96	≤-21.20	64.24	≤74	PASS
				Peak	2390.000	-36.61	≤-21.20	58.59	≤74	PASS
		High	2452	AV	2483.500	-45.97	≤-41.20	49.23	≤54	PASS
				AV	2484.440	-45.6	≤-41.20	49.60	≤54	PASS
				AV	2500.000	-46.53	≤-41.20	48.67	≤54	PASS
				Peak	2483.500	-39.31	≤-21.20	55.89	≤74	PASS
				Peak	2484.990	-35.19	≤-21.20	60.01	≤74	PASS
				Peak	2500.000	-39.46	≤-21.20	55.74	≤74	PASS

Note:

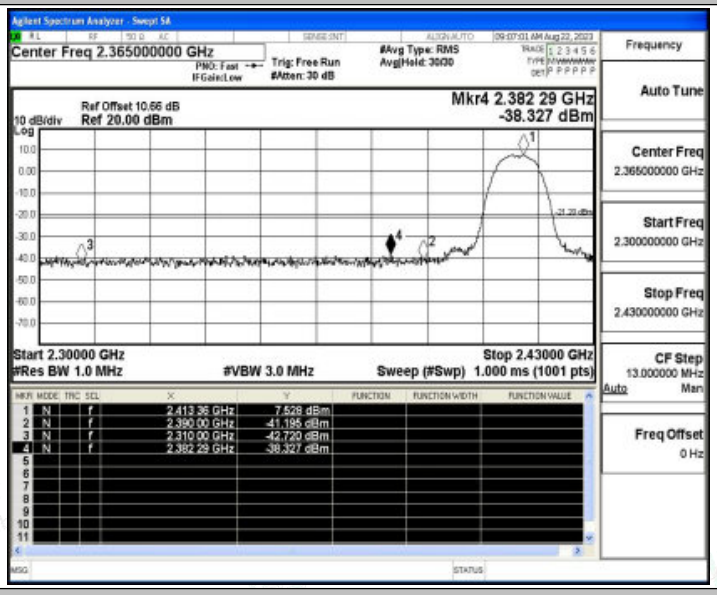
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

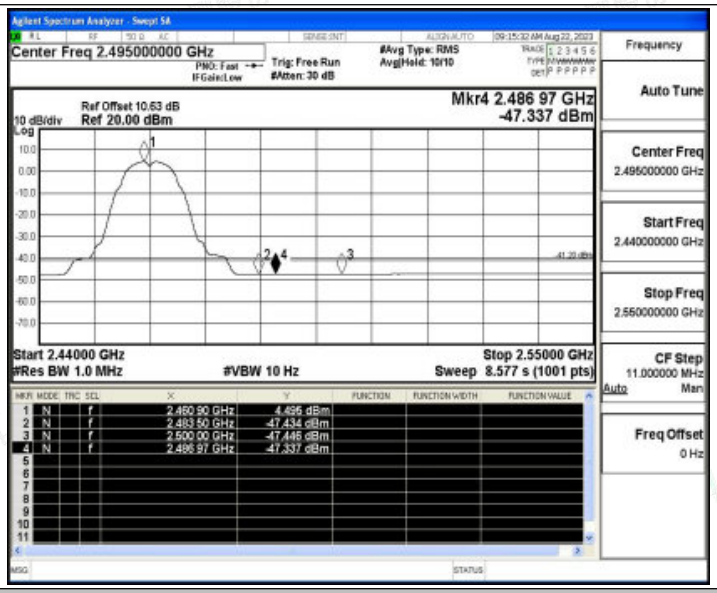
11B_Ant1_Low_2412_AV



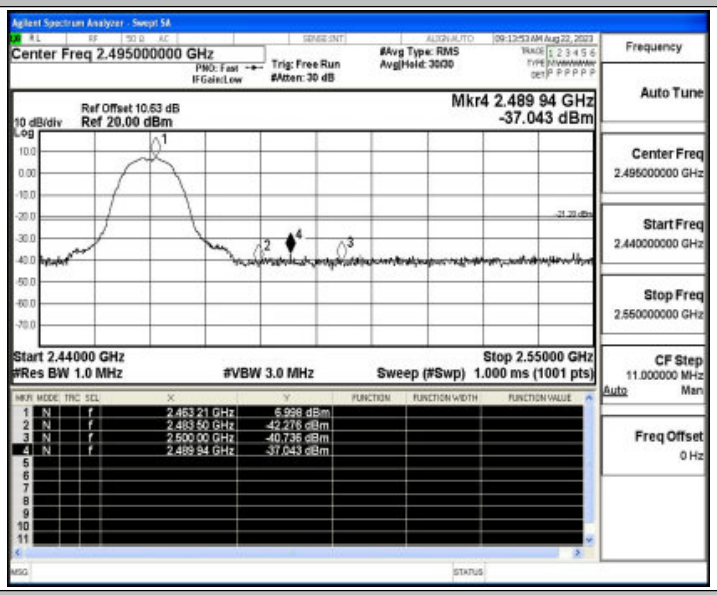
11B_Ant1_Low_2412_Peak



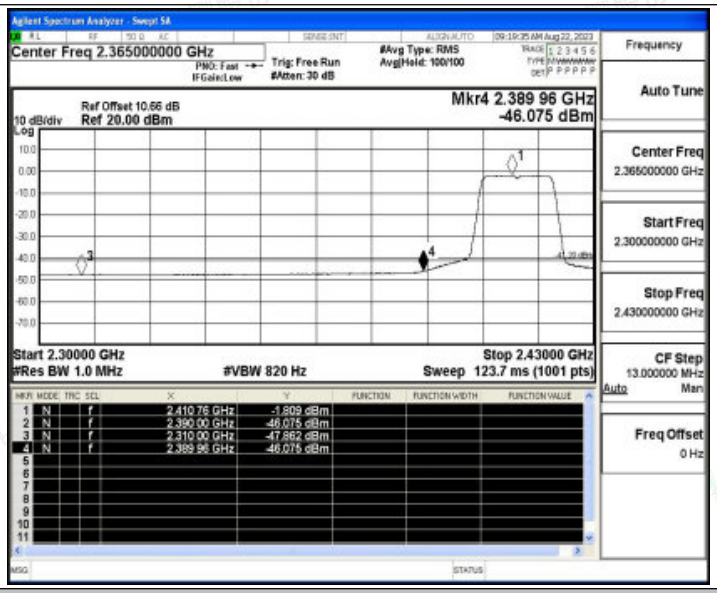
11B_Ant1_High_2462_AV



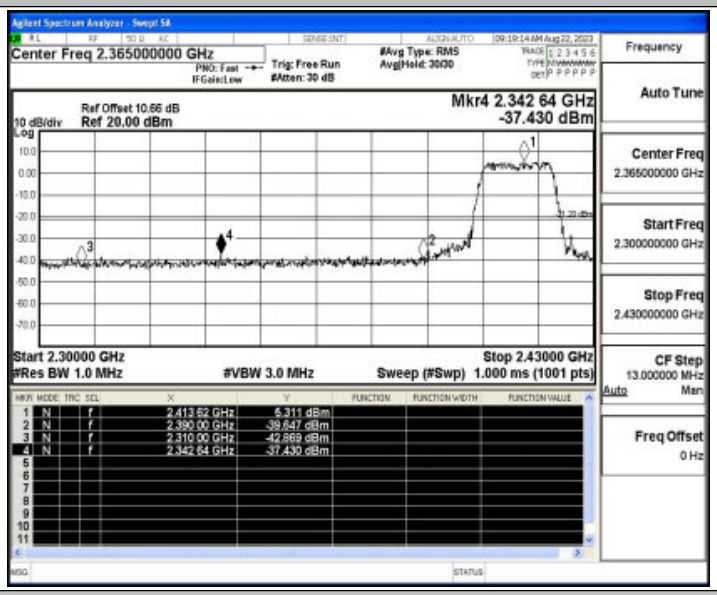
11B_Ant1_High_2462_Peak



11G_Ant1_Low_2412_AV



11G_Ant1_Low_2412_Peak



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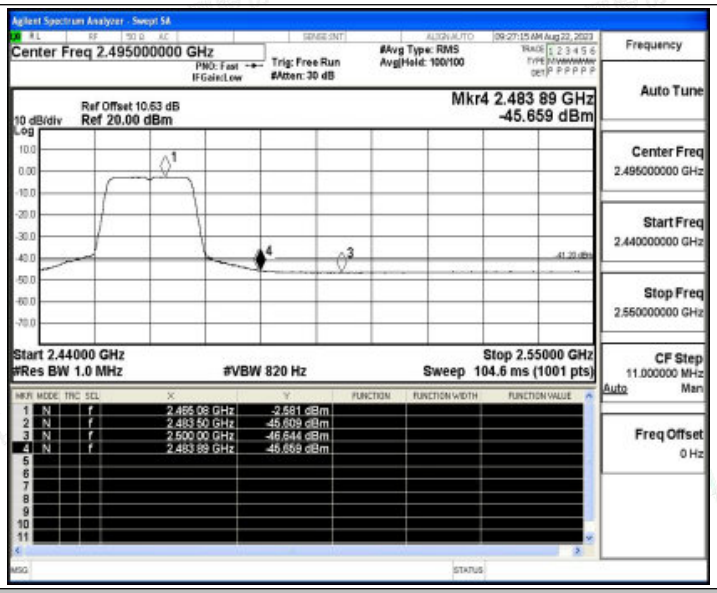

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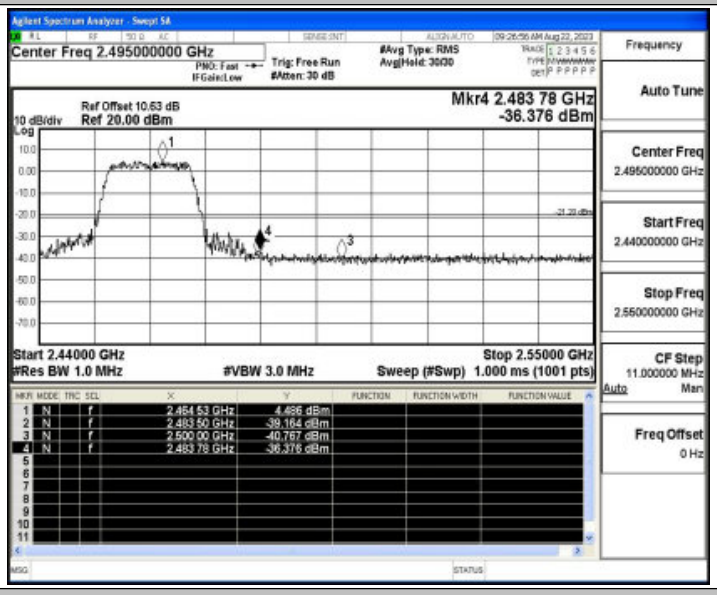

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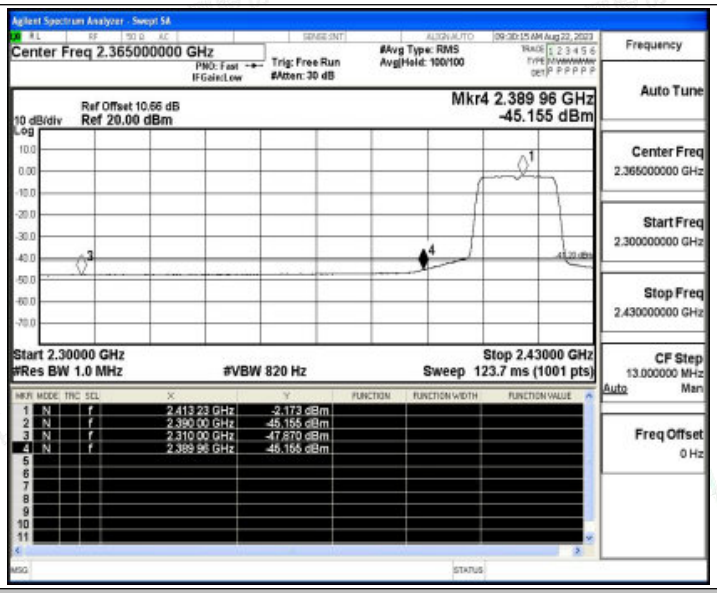

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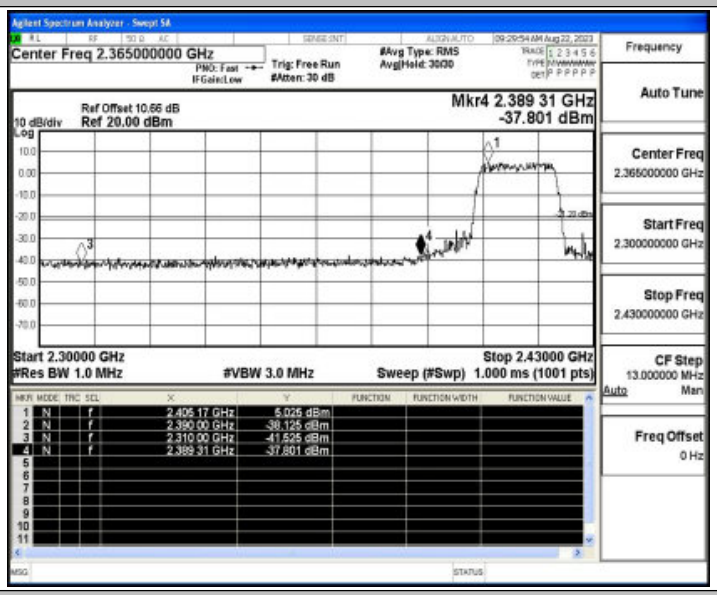
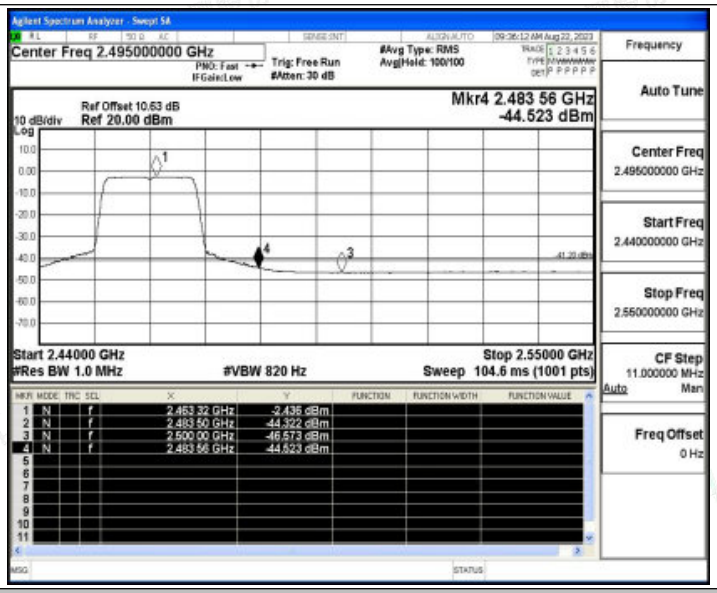
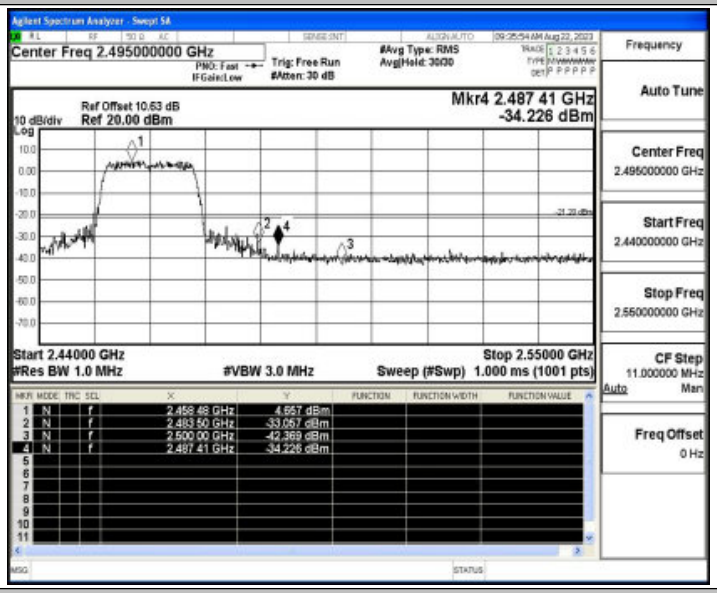


11N20SISO_Ant1_High_2462_AV



11N20SISO_Ant1_High_2462_Peak



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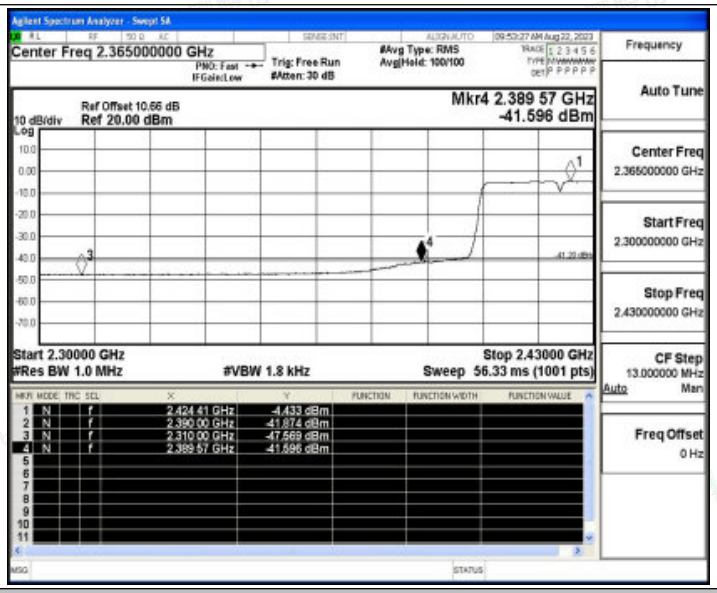
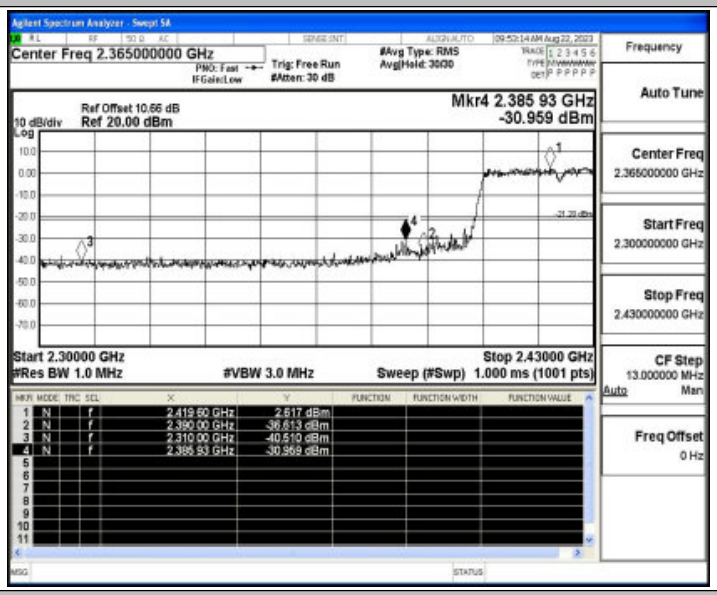


11N40SISO_Ant1_Low_2422_Peak



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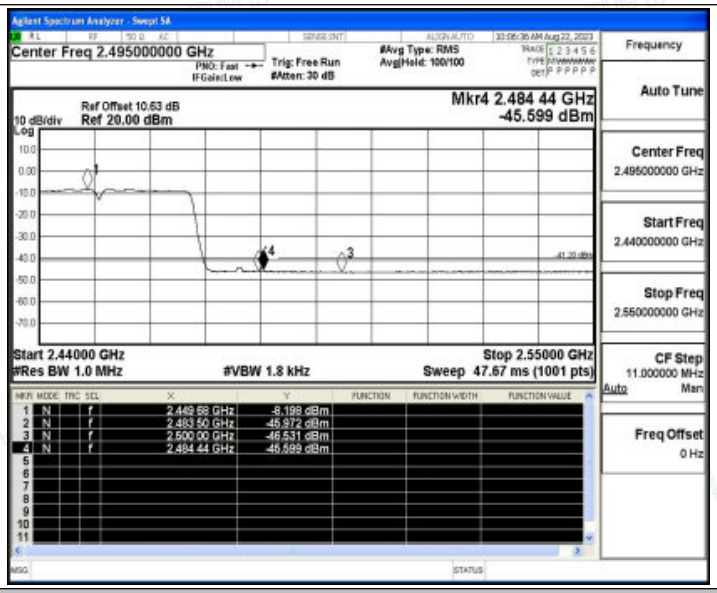
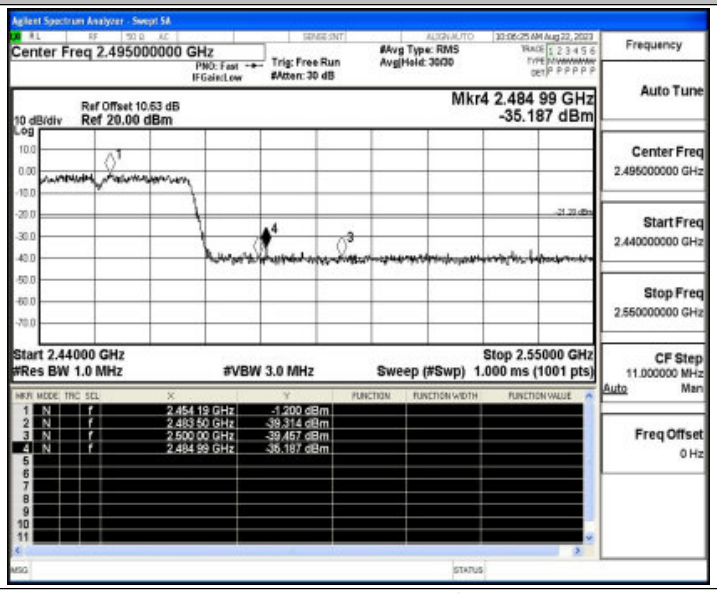
11N40SISO_Ant1_High_2452_Peak