Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: WiFi Extender

Test Model: N300

Environmental Conditions

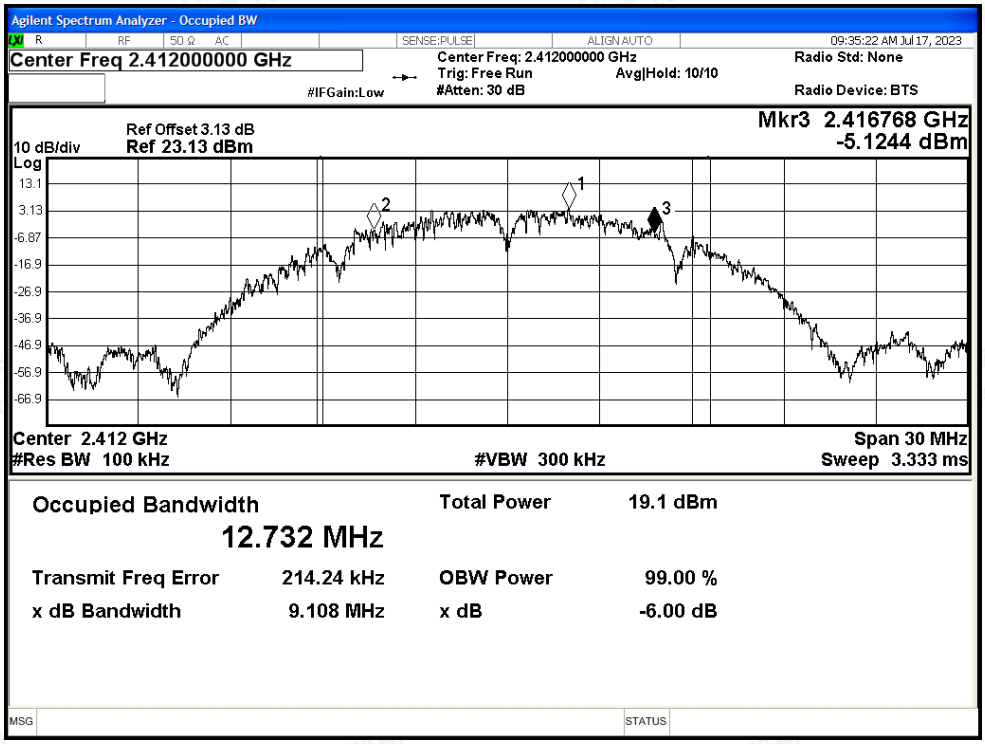
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Joker Hu
Supervised by:	Ling Zhu

A.1 -6dB Bandwidth

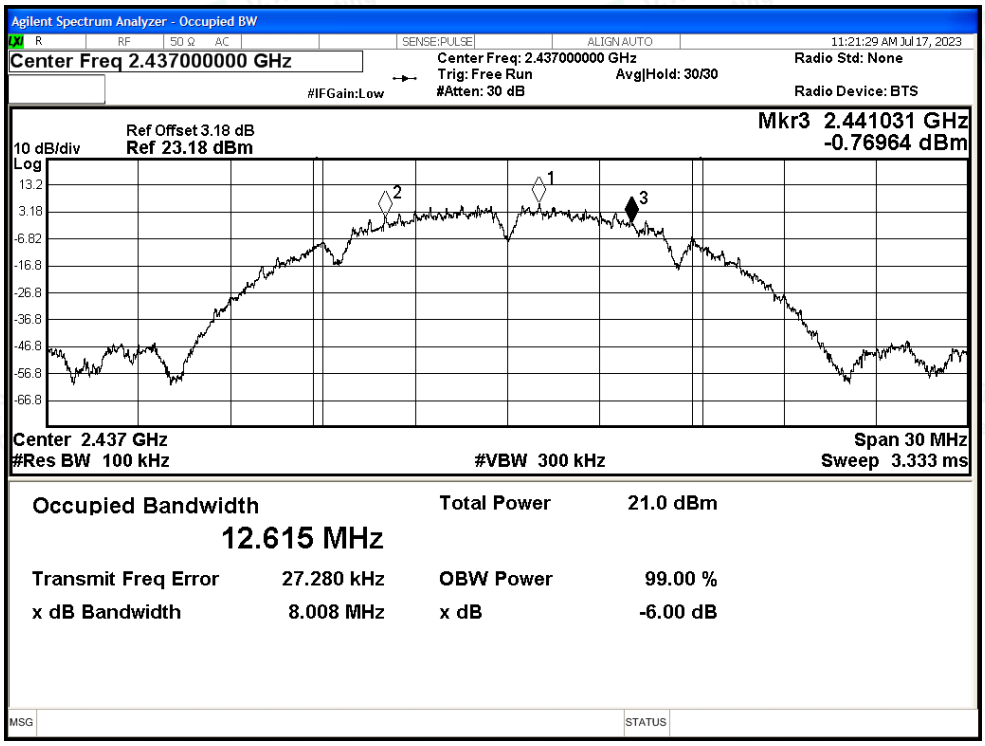
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant0	9.108	>=0.5	Pass
NVNT	b	2437	Ant0	8.008	>=0.5	Pass
NVNT	b	2462	Ant0	7.505	>=0.5	Pass
NVNT	g	2412	Ant0	15.686	>=0.5	Pass
NVNT	g	2437	Ant0	16.281	>=0.5	Pass
NVNT	g	2462	Ant0	12.624	>=0.5	Pass
NVNT	n20	2412	Ant0	15.166	>=0.5	Pass
NVNT	n20	2437	Ant0	14.532	>=0.5	Pass
NVNT	n20	2462	Ant0	16.917	>=0.5	Pass
NVNT	n40	2422	Ant0	32.166	>=0.5	Pass
NVNT	n40	2437	Ant0	27.64	>=0.5	Pass
NVNT	n40	2452	Ant0	30.666	>=0.5	Pass

Test Graphs

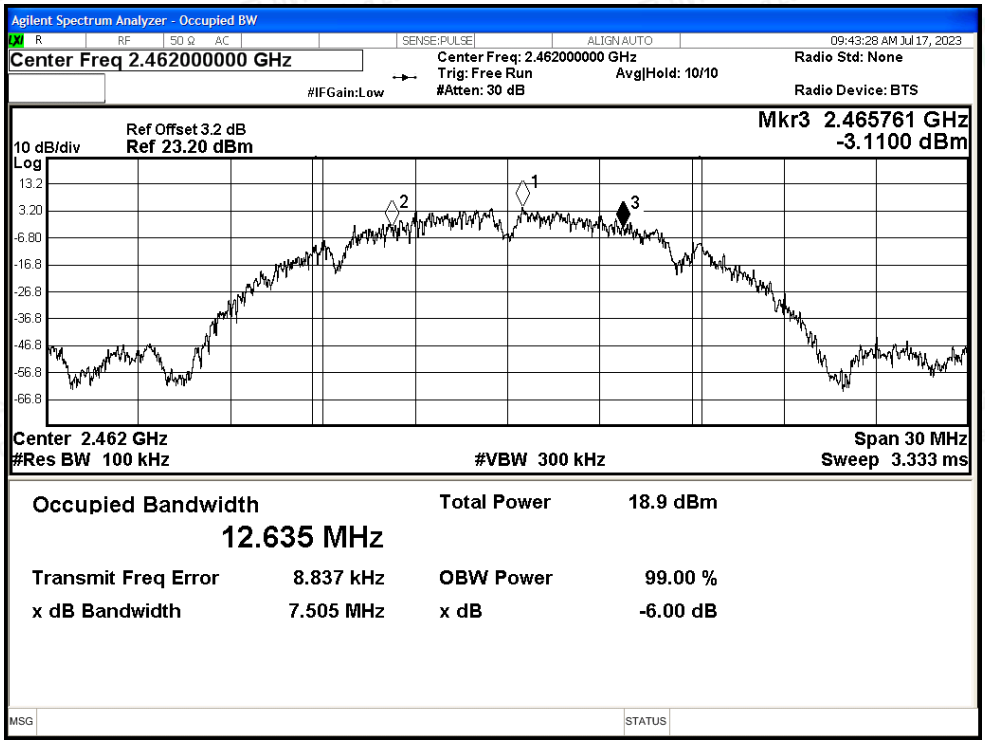
-6dB Bandwidth NVNT b 2412MHz Ant0



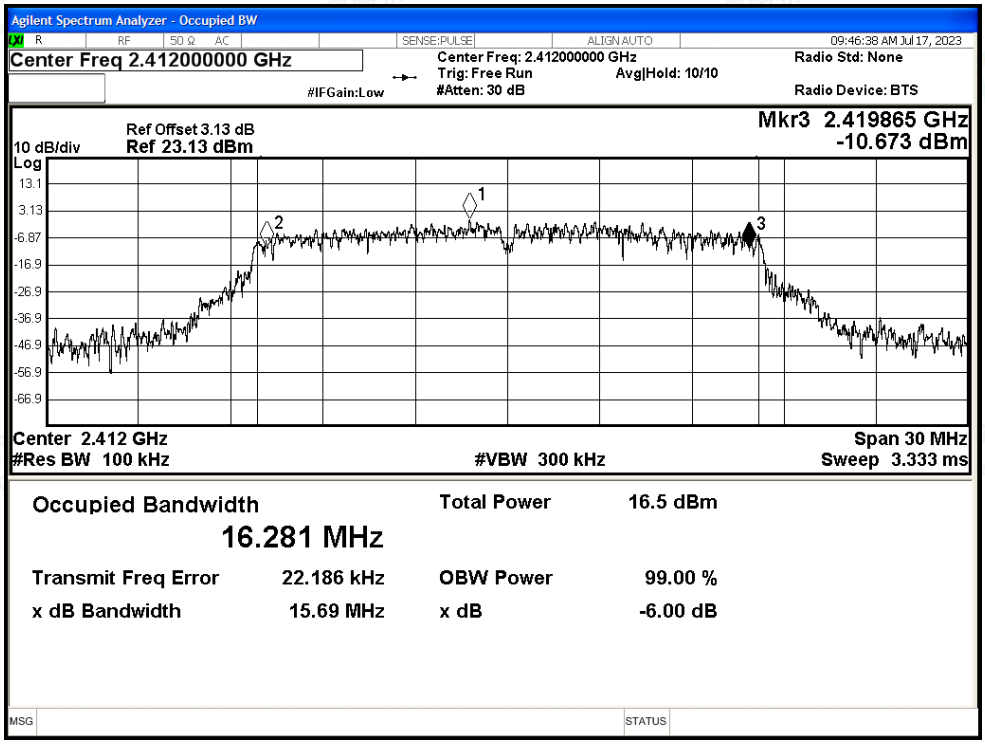
-6dB Bandwidth NVNT b 2437MHz Ant0



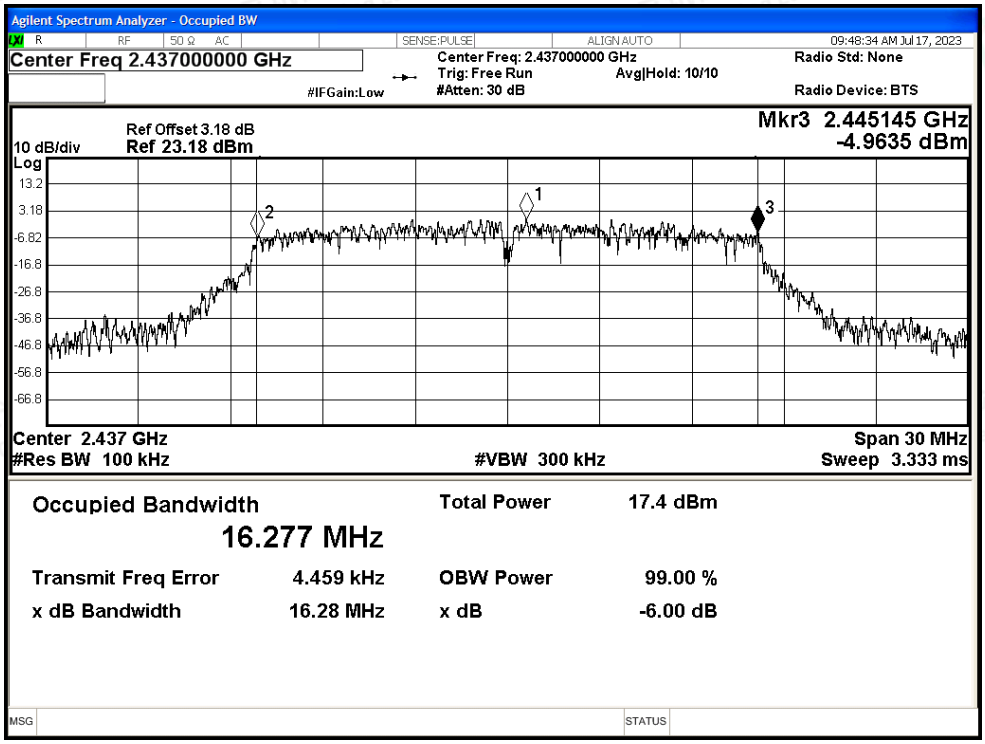
-6dB Bandwidth NVNT b 2462MHz Ant0



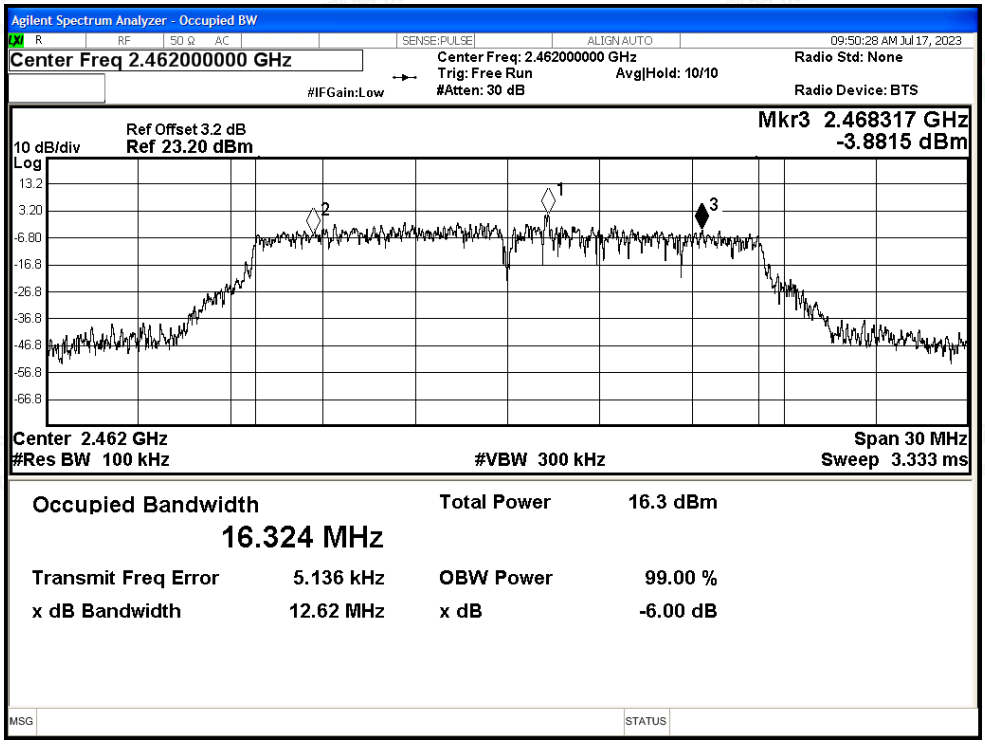
-6dB Bandwidth NVNT g 2412MHz Ant0



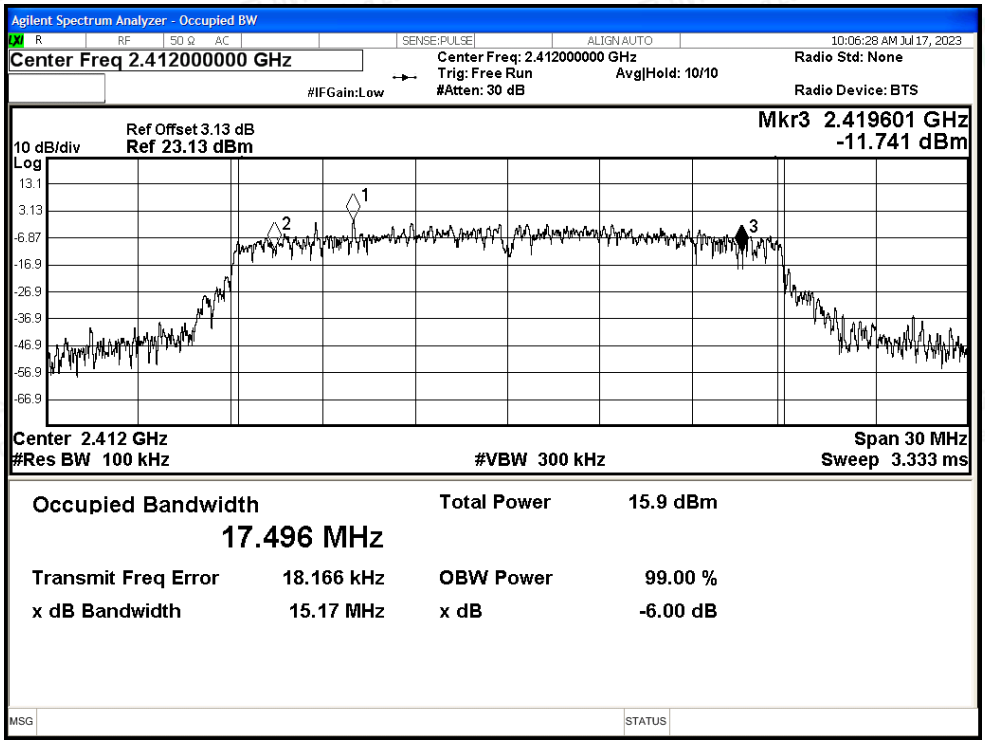
-6dB Bandwidth NVNT g 2437MHz Ant0



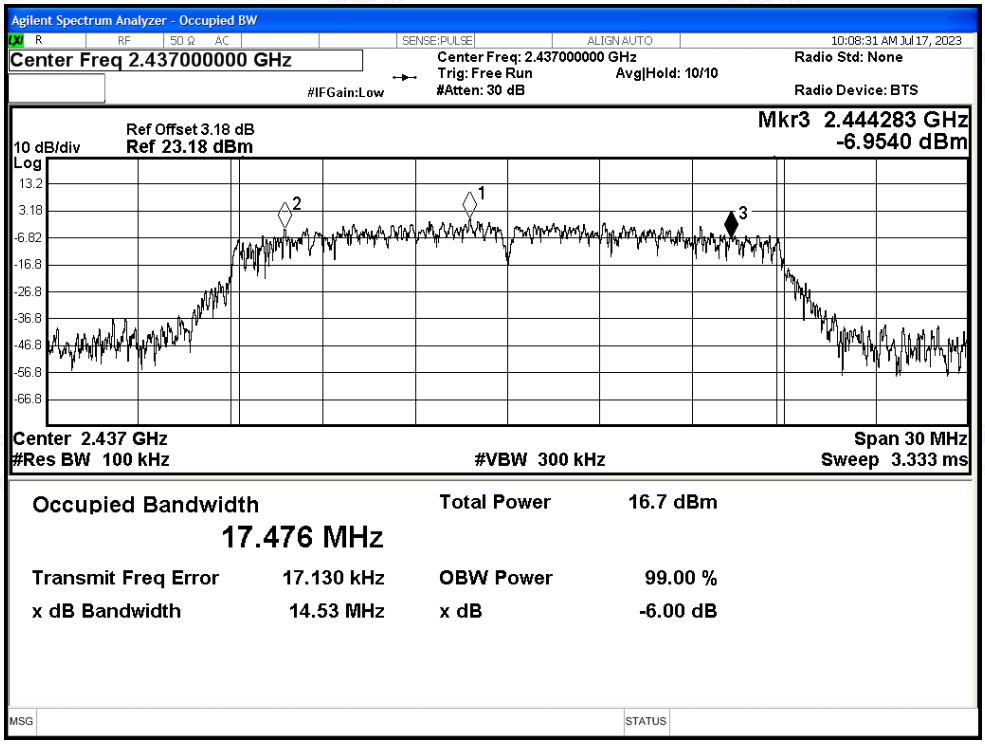
-6dB Bandwidth NVNT g 2462MHz Ant0



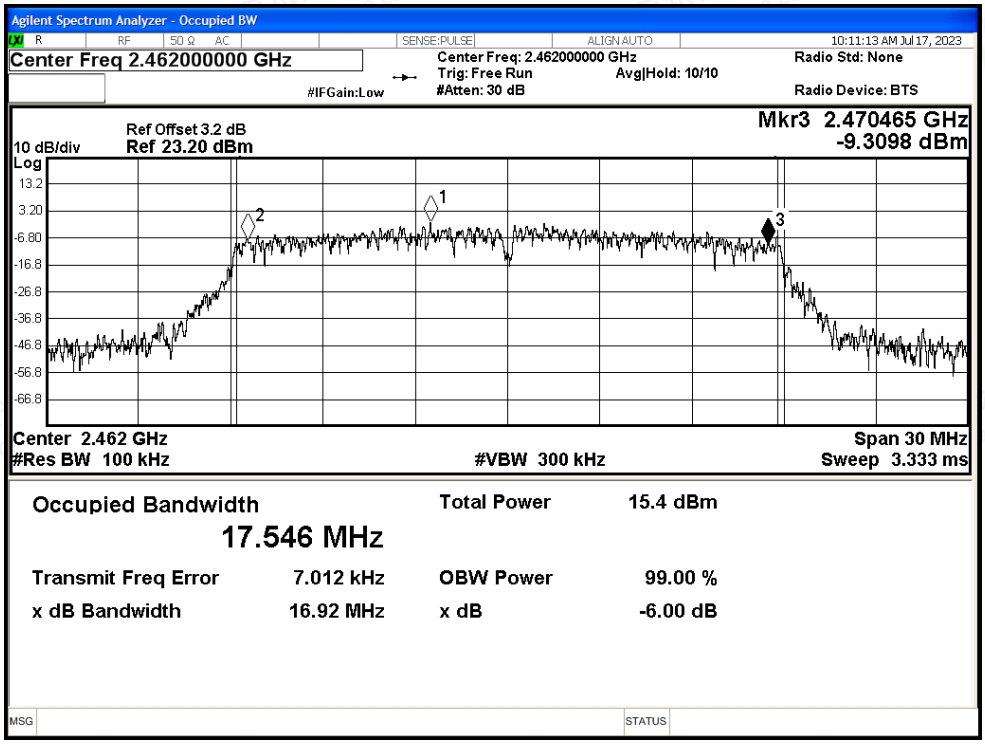
-6dB Bandwidth NVNT n20 2412MHz Ant0



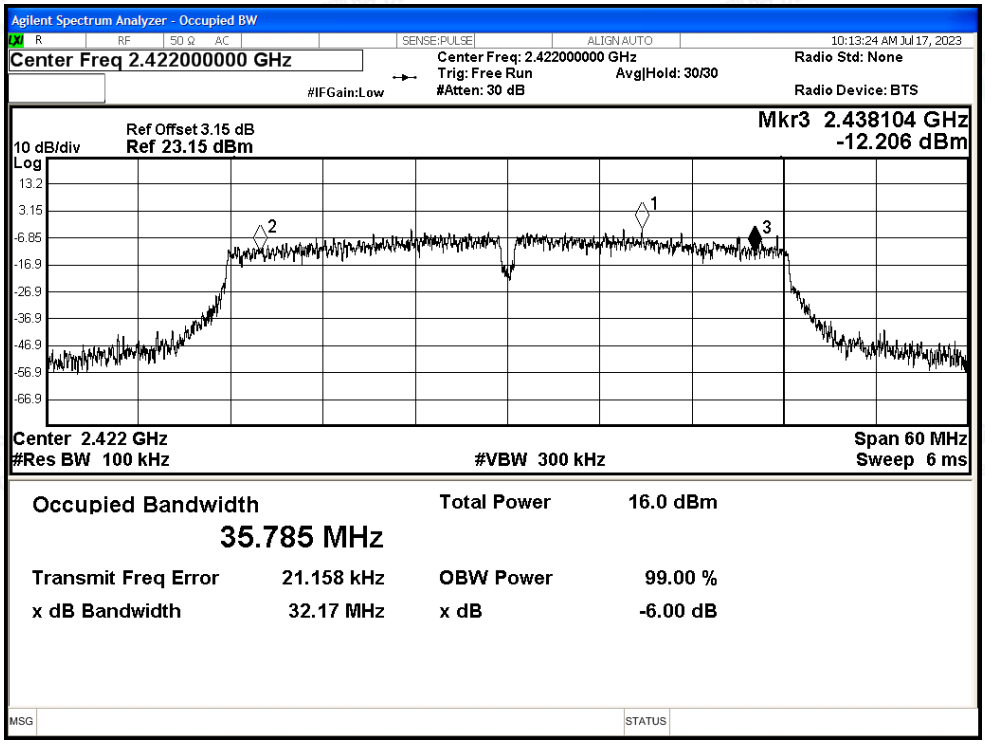
-6dB Bandwidth NVNT n20 2437MHz Ant0



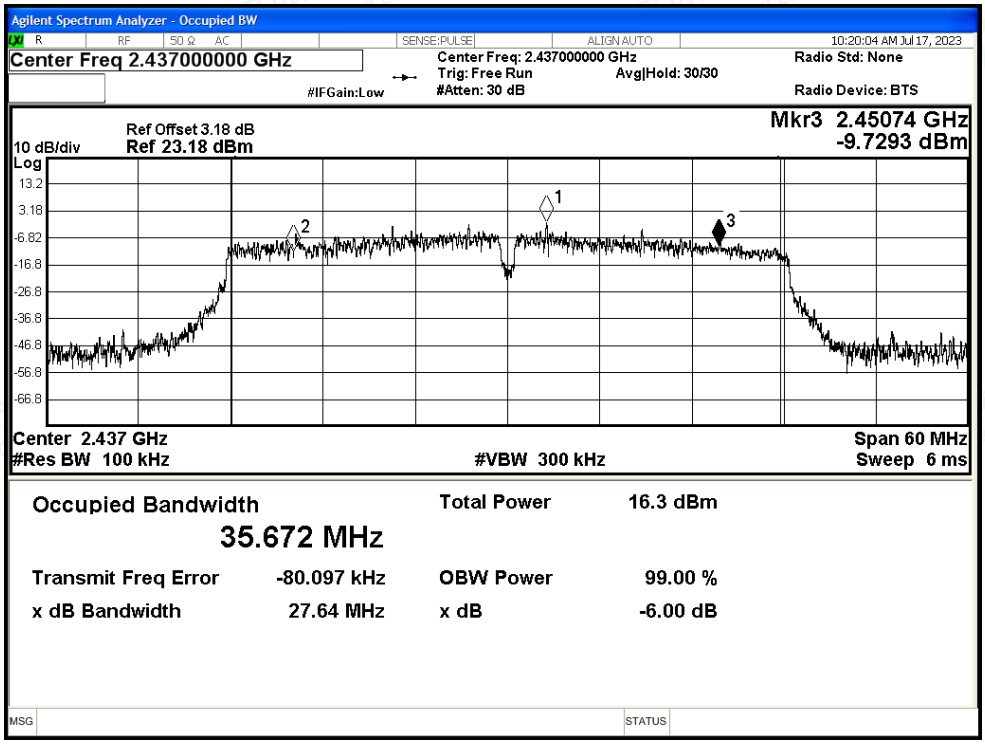
-6dB Bandwidth NVNT n20 2462MHz Ant0



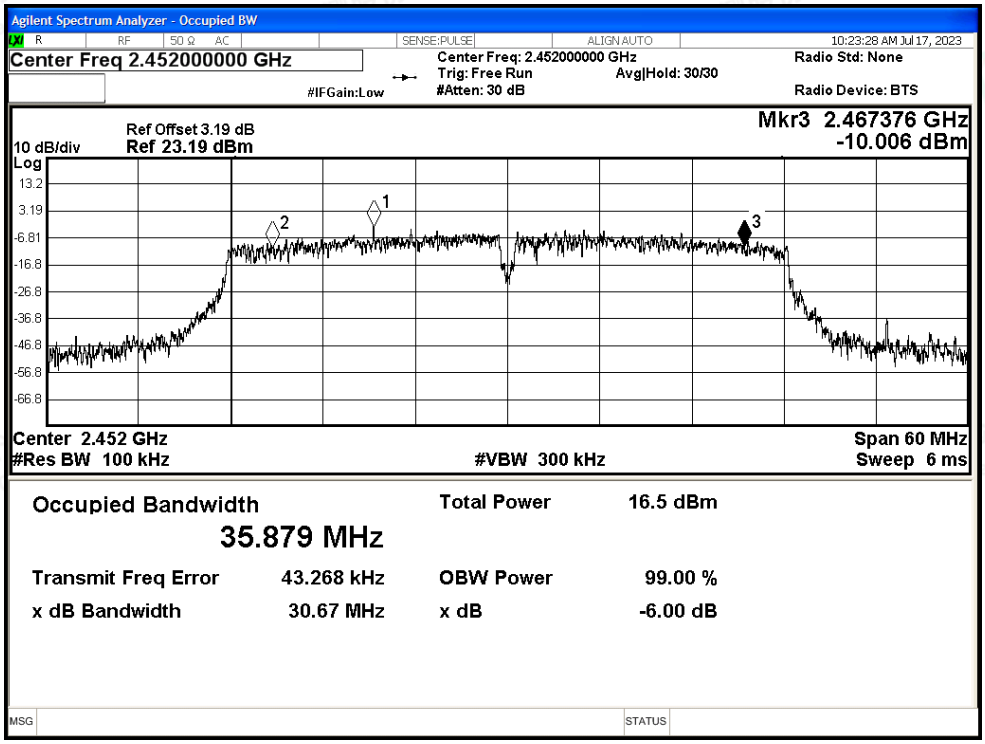
-6dB Bandwidth NVNT n40 2422MHz Ant0



-6dB Bandwidth NVNT n40 2437MHz Ant0



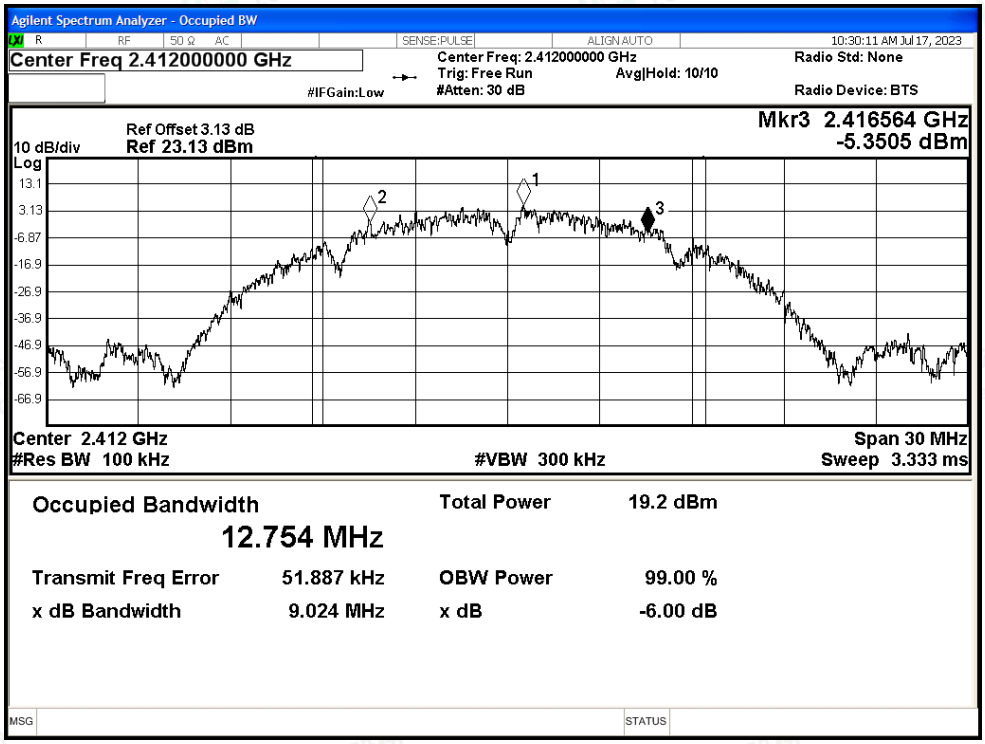
-6dB Bandwidth NVNT n40 2452MHz Ant0



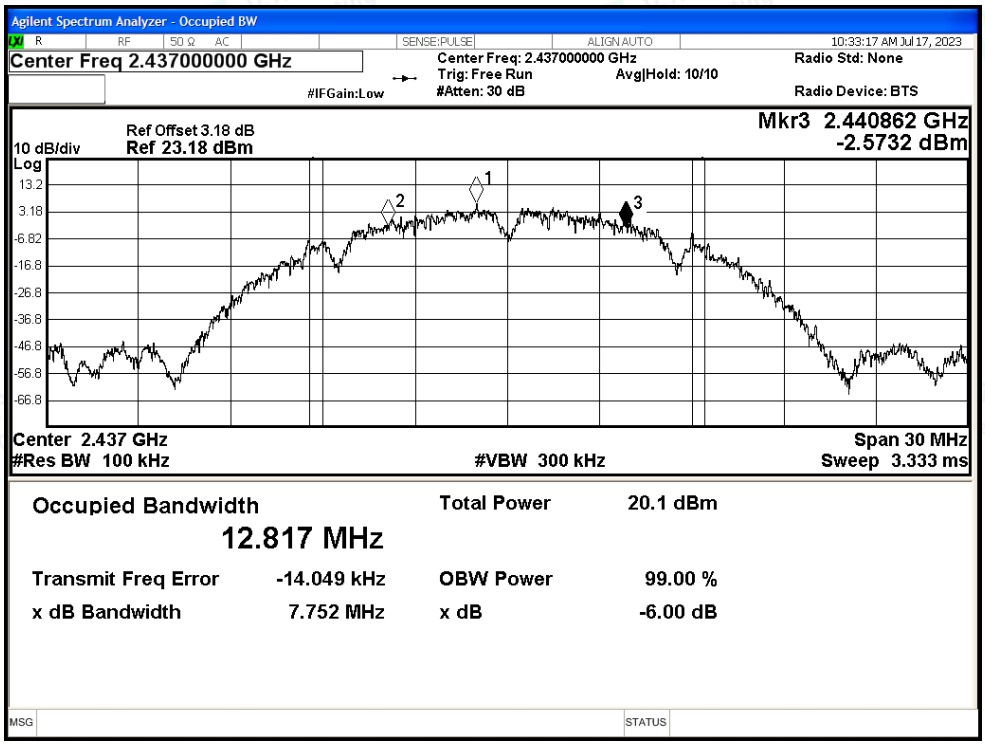
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.024	>=0.5	Pass
NVNT	b	2437	Ant1	7.752	>=0.5	Pass
NVNT	b	2462	Ant1	7.574	>=0.5	Pass
NVNT	g	2412	Ant1	15.709	>=0.5	Pass
NVNT	g	2437	Ant1	16.307	>=0.5	Pass
NVNT	g	2462	Ant1	14.752	>=0.5	Pass
NVNT	n20	2412	Ant1	16.502	>=0.5	Pass
NVNT	n20	2437	Ant1	14.723	>=0.5	Pass
NVNT	n20	2462	Ant1	16.642	>=0.5	Pass
NVNT	n40	2422	Ant1	35.689	>=0.5	Pass
NVNT	n40	2437	Ant1	31.563	>=0.5	Pass
NVNT	n40	2452	Ant1	27.535	>=0.5	Pass

Test Graphs

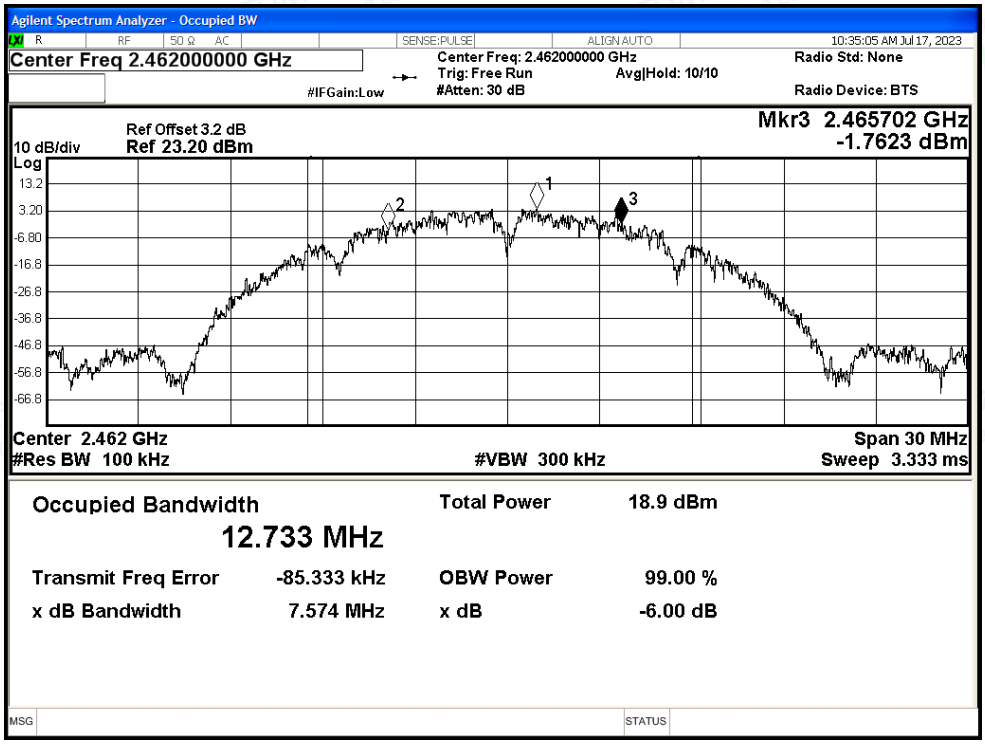
-6dB Bandwidth NVNT b 2412MHz Ant1



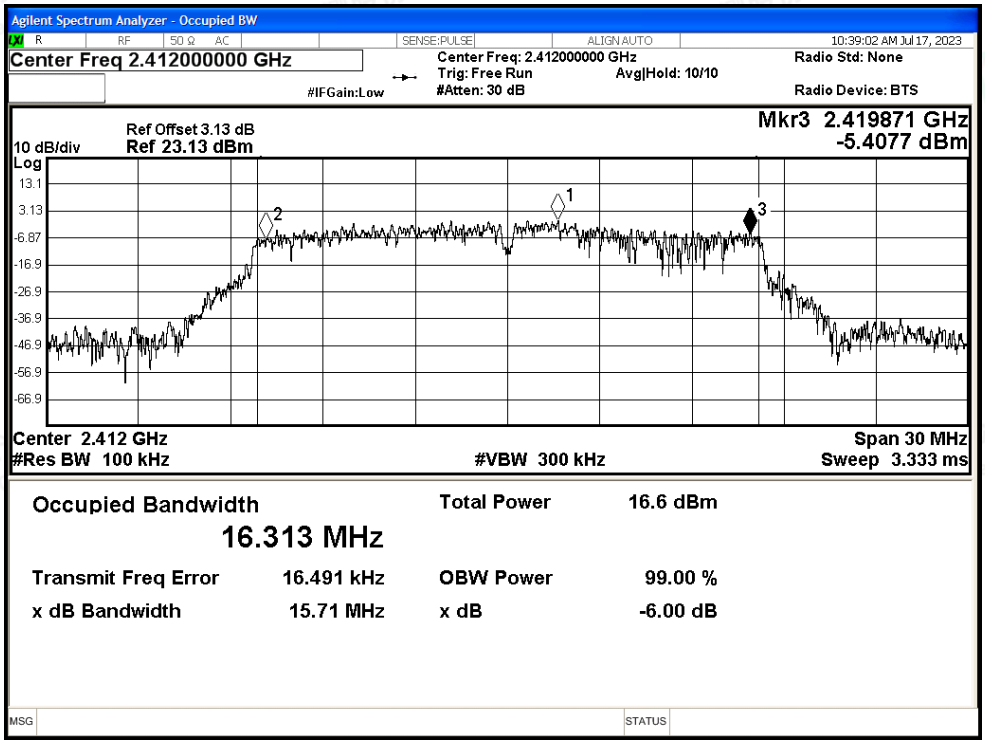
-6dB Bandwidth NVNT b 2437MHz Ant1



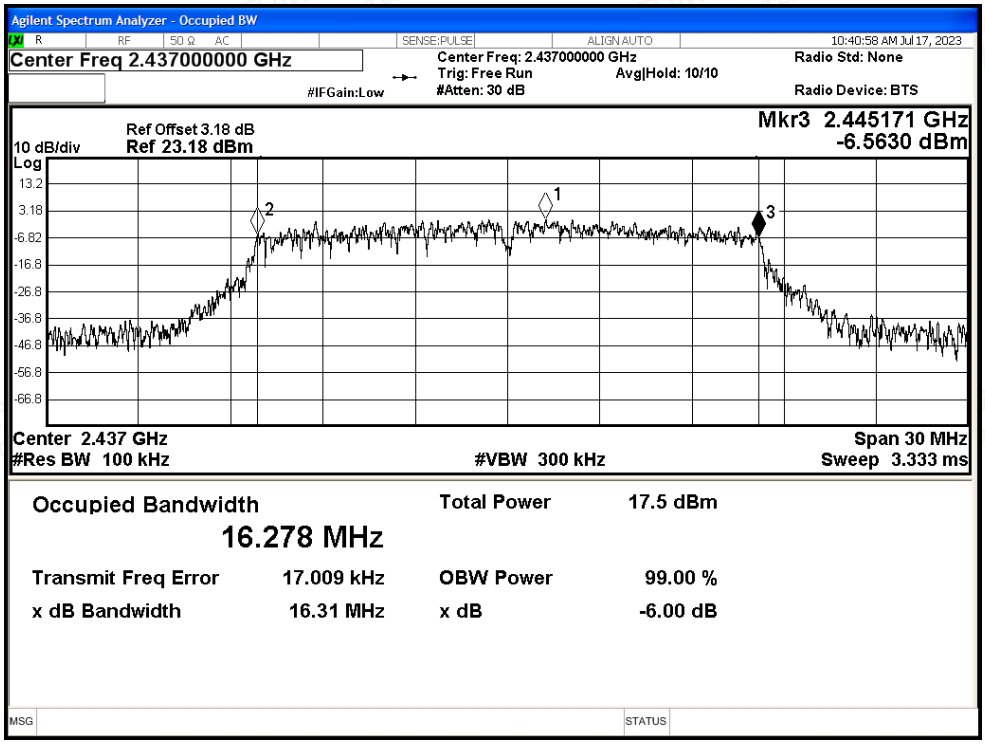
-6dB Bandwidth NVNT b 2462MHz Ant1



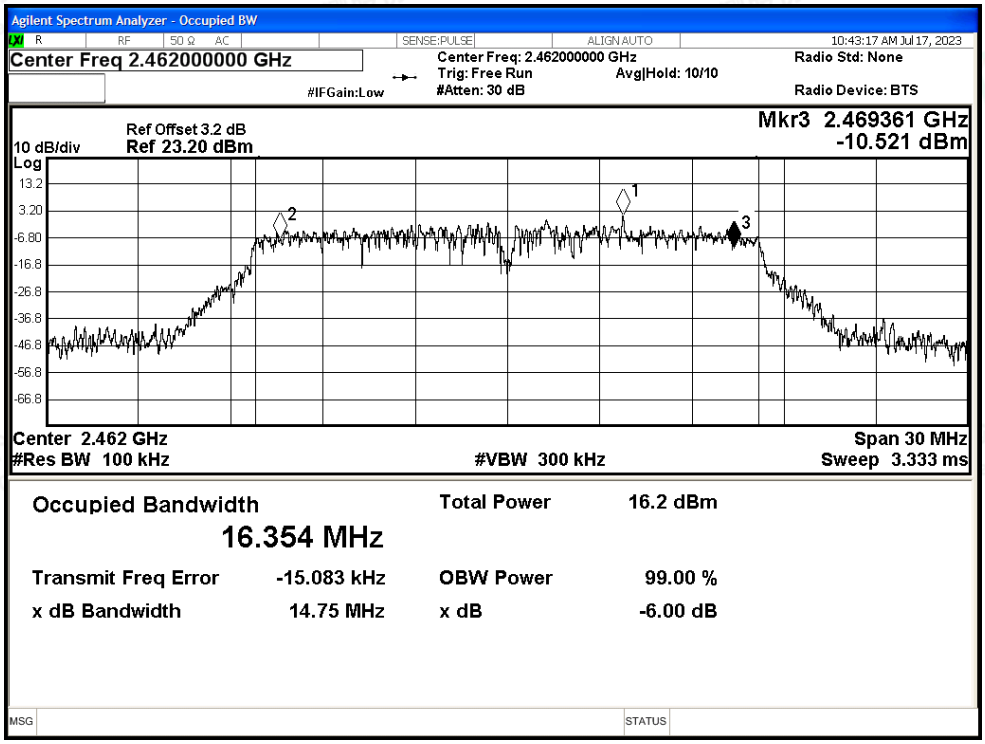
-6dB Bandwidth NVNT g 2412MHz Ant1



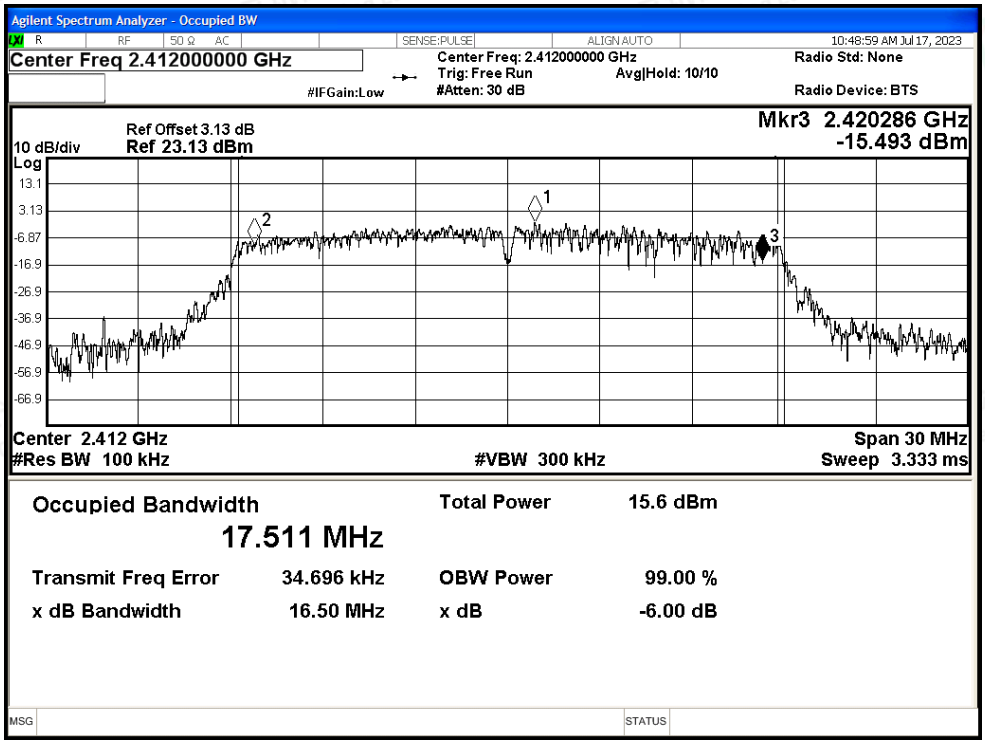
-6dB Bandwidth NVNT g 2437MHz Ant1



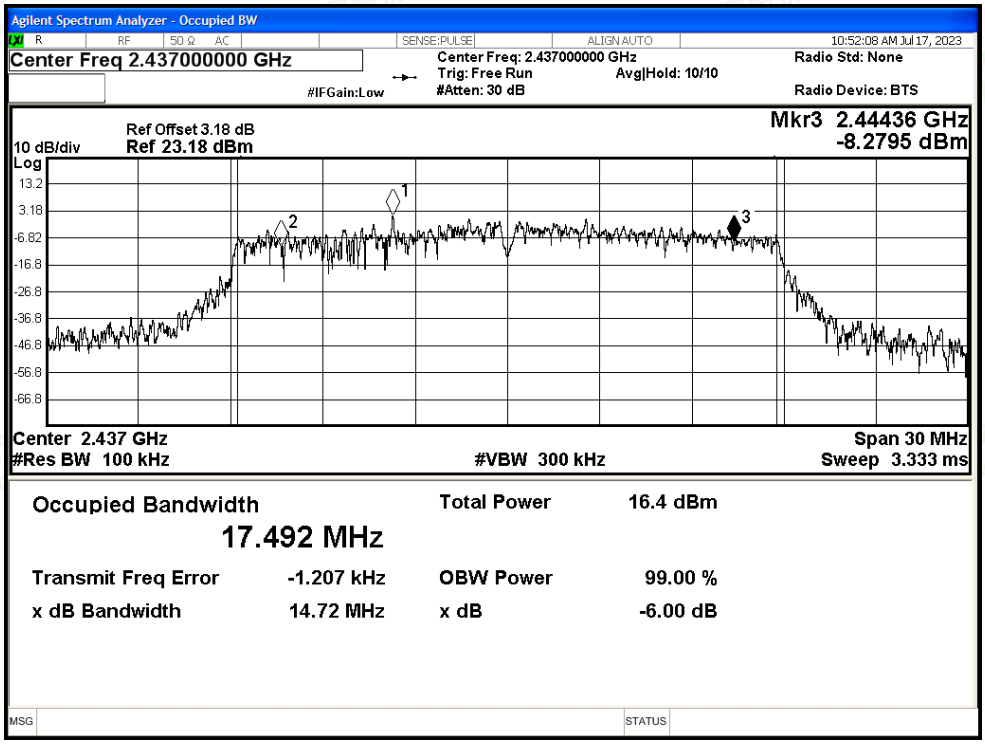
-6dB Bandwidth NVNT g 2462MHz Ant1



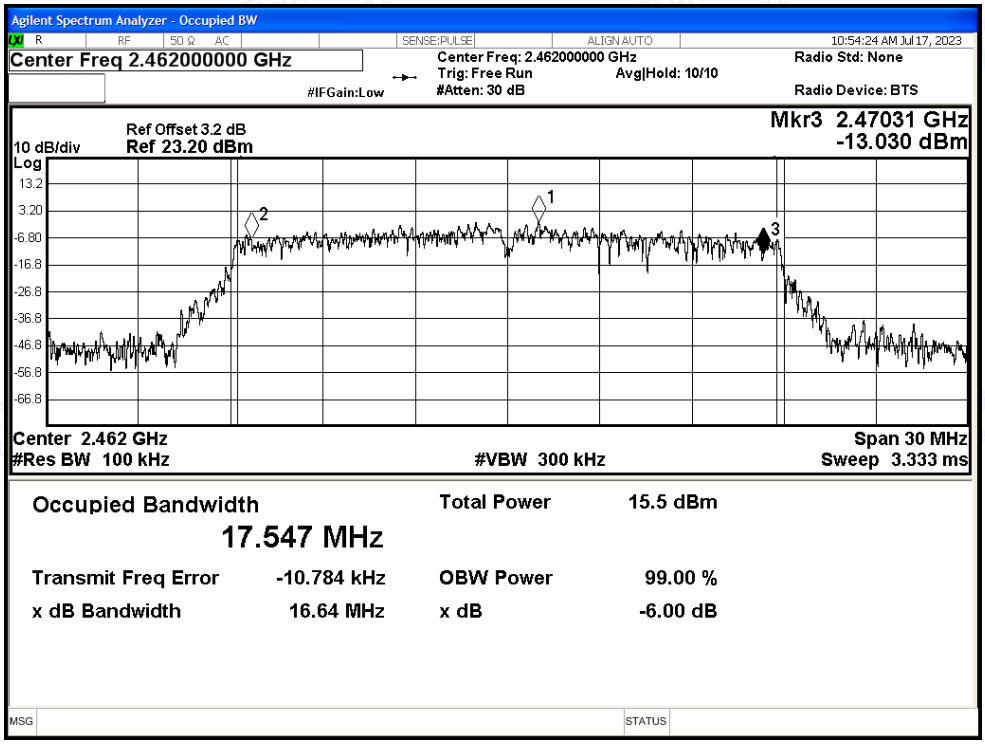
-6dB Bandwidth NVNT n20 2412MHz Ant1



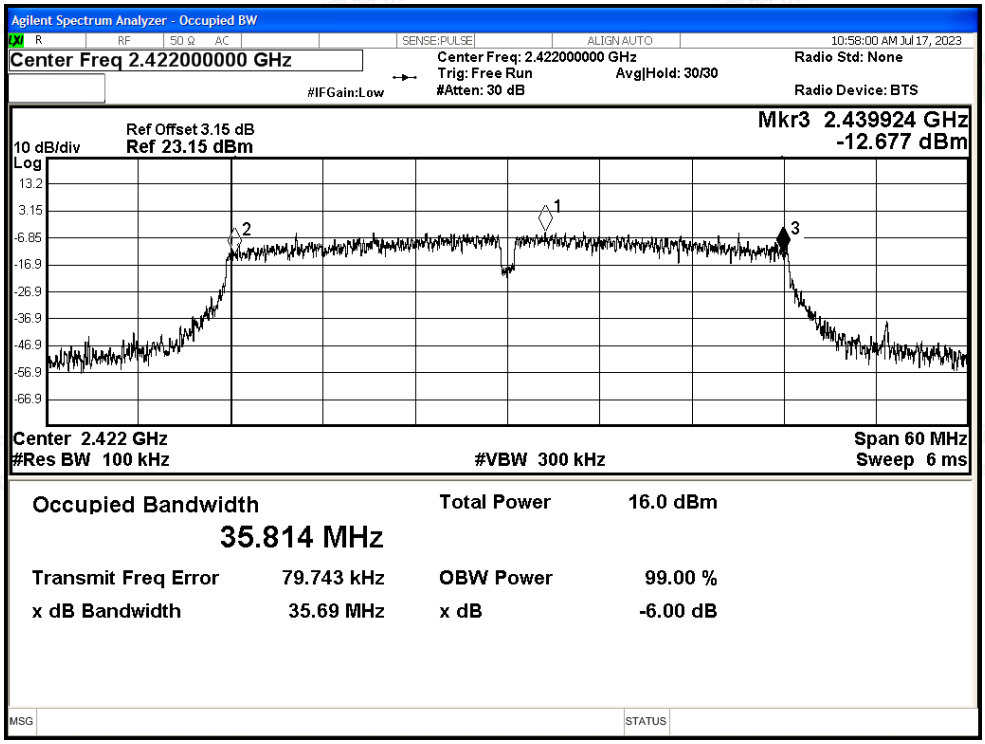
-6dB Bandwidth NVNT n20 2437MHz Ant1



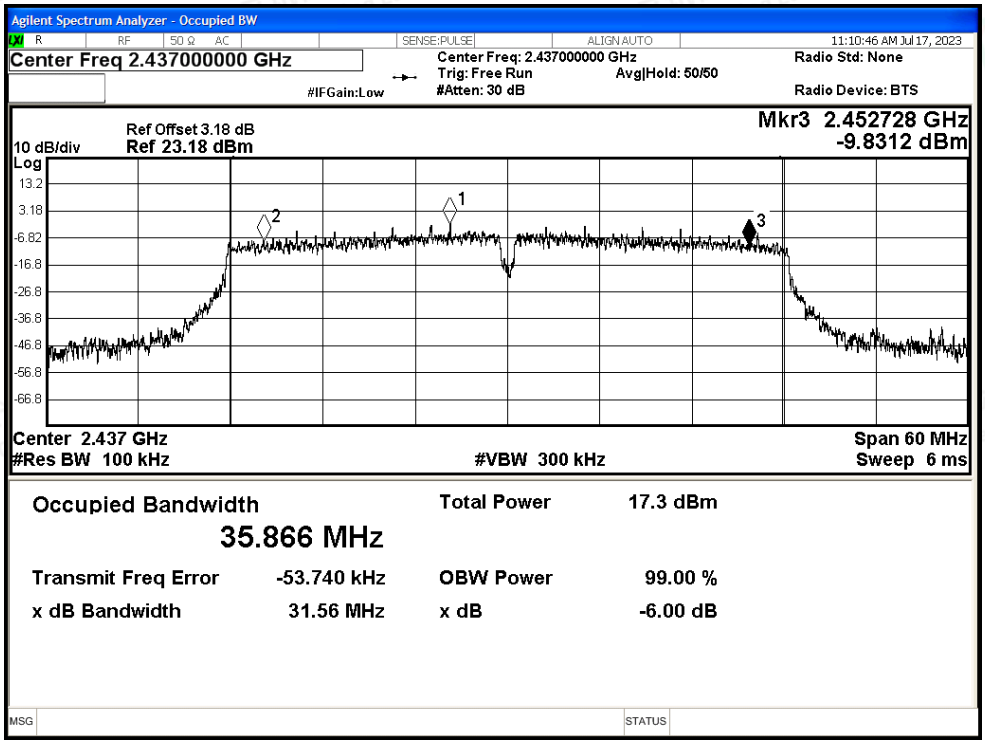
-6dB Bandwidth NVNT n20 2462MHz Ant1



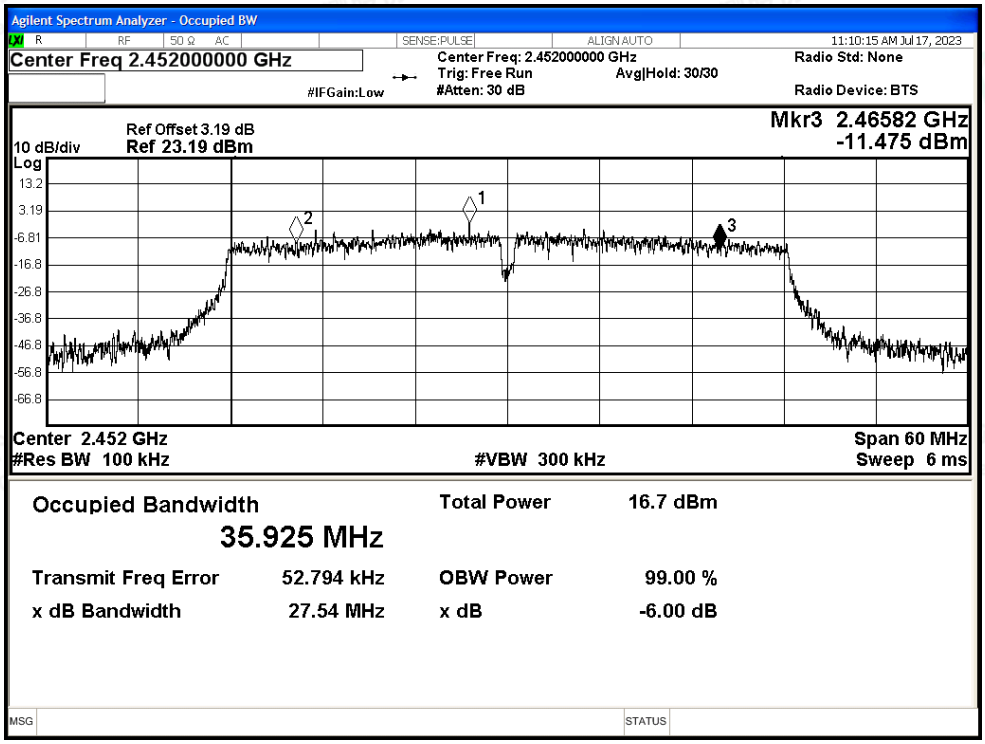
-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1

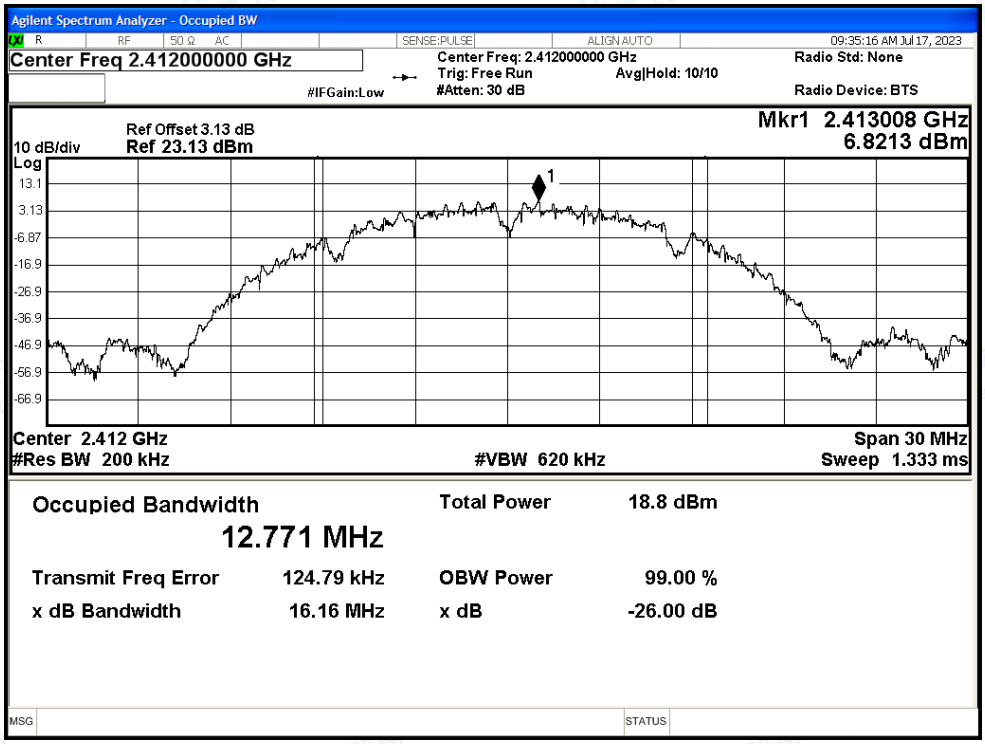


A.2 Occupied Channel Bandwidth

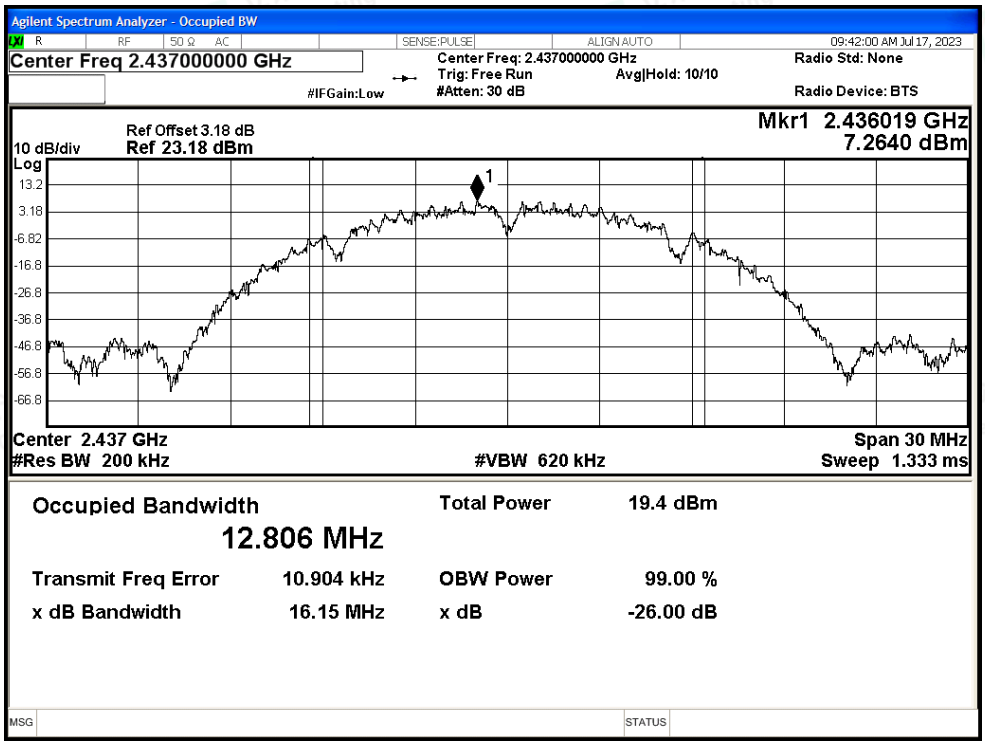
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant0	12.771
NVNT	b	2437	Ant0	12.806
NVNT	b	2462	Ant0	12.621
NVNT	g	2412	Ant0	16.33
NVNT	g	2437	Ant0	16.26
NVNT	g	2462	Ant0	16.337
NVNT	n20	2412	Ant0	17.471
NVNT	n20	2437	Ant0	17.444
NVNT	n20	2462	Ant0	17.532
NVNT	n40	2422	Ant0	35.773
NVNT	n40	2437	Ant0	35.772
NVNT	n40	2452	Ant0	35.932

Test Graphs

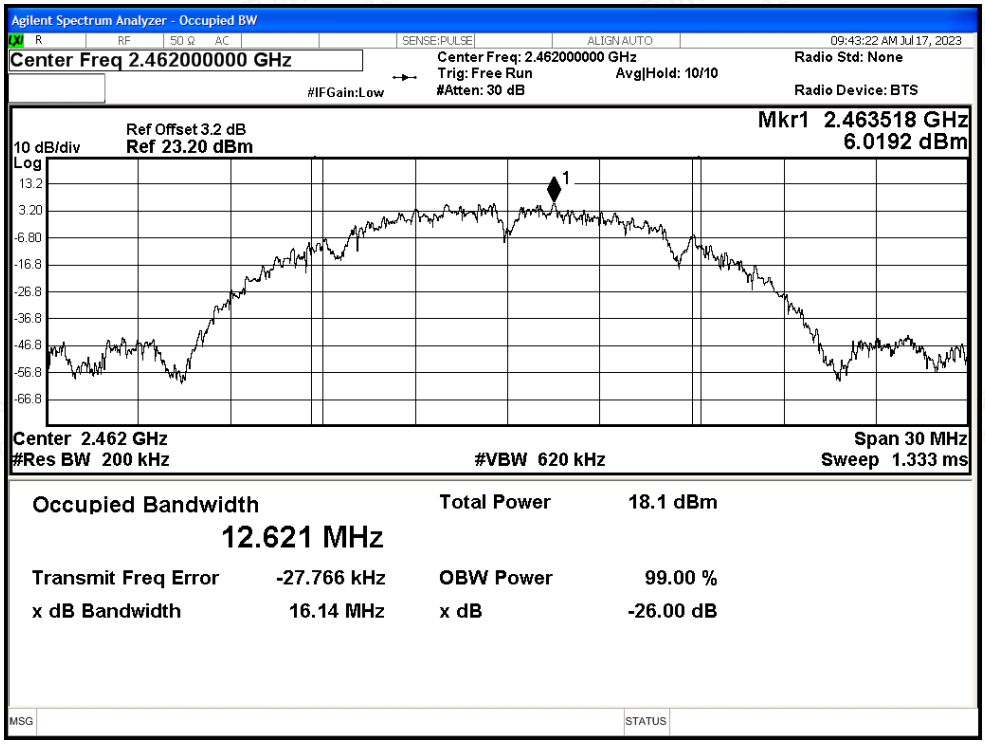
OBW NVNT b 2412MHz Ant0



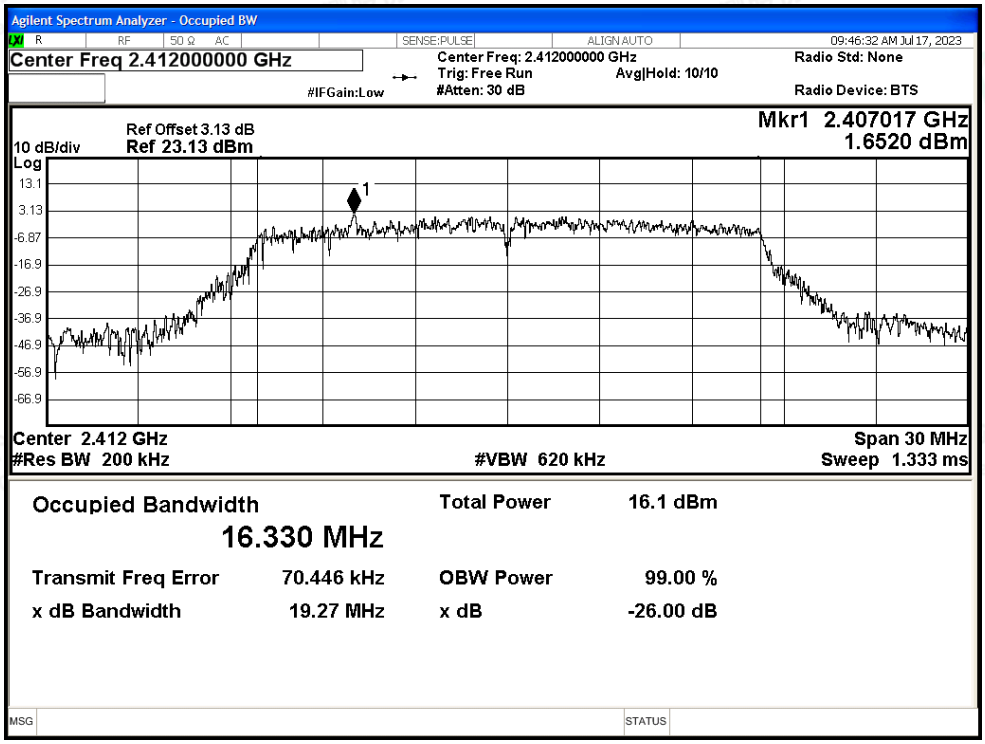
OBW NVNT b 2437MHz Ant0



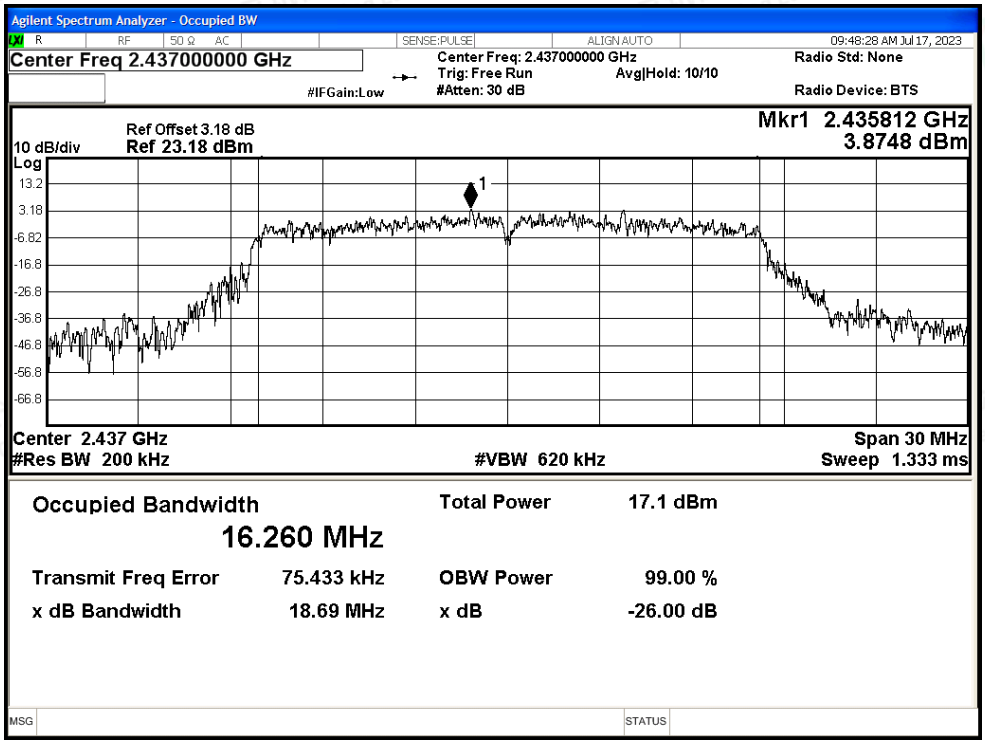
OBW NVNT b 2462MHz Ant0



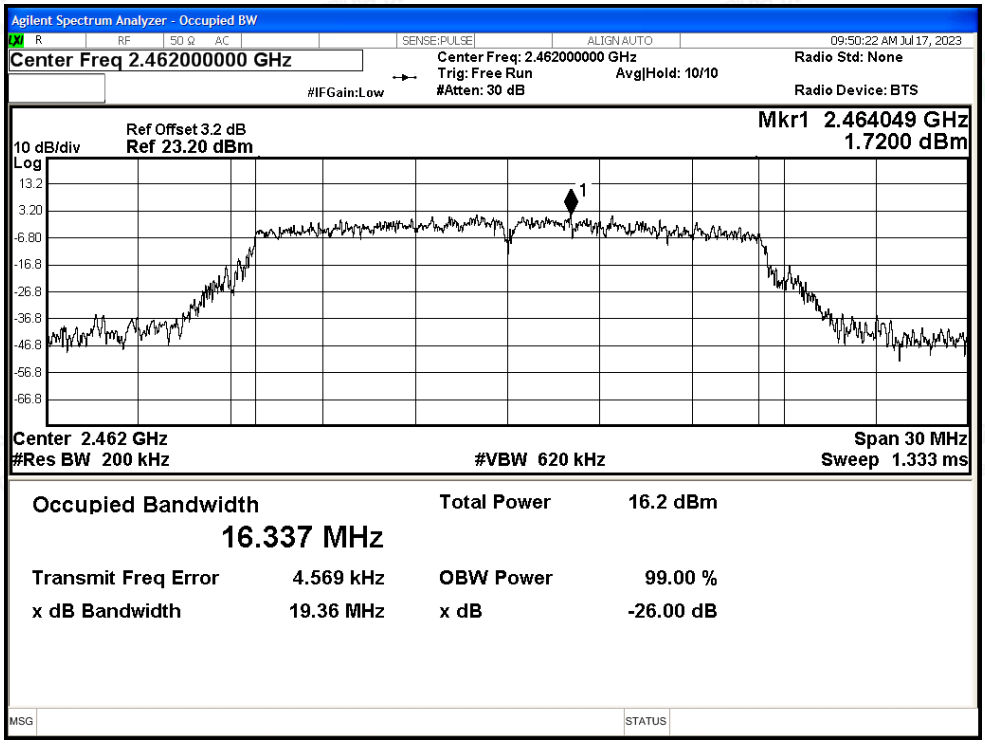
OBW NVNT g 2412MHz Ant0



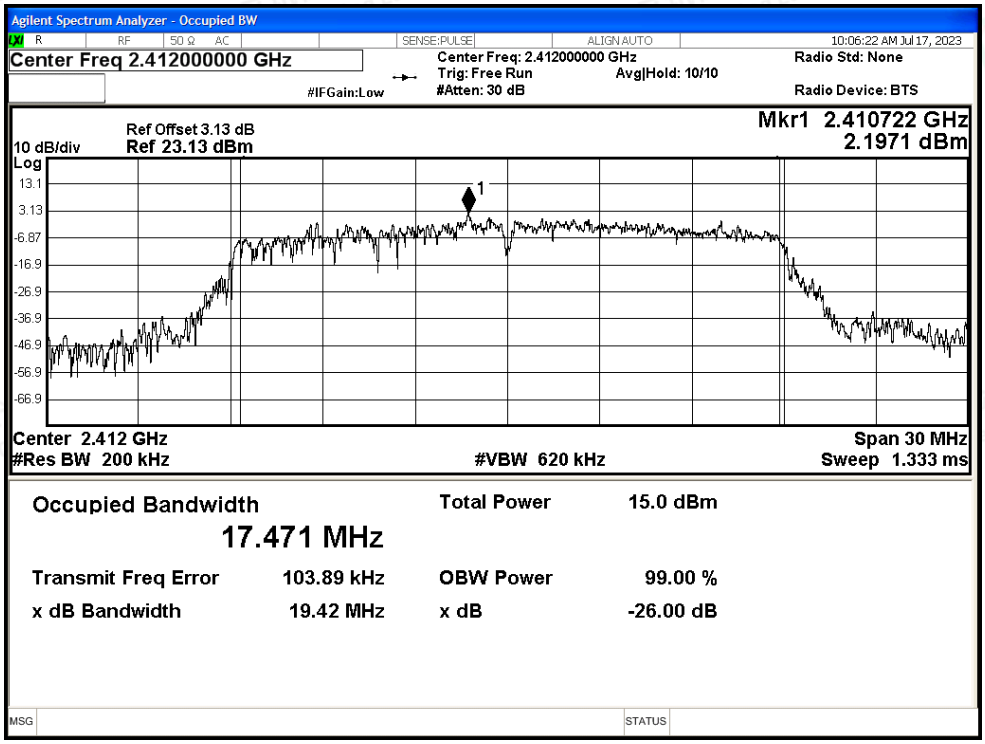
OBW NVNT g 2437MHz Ant0



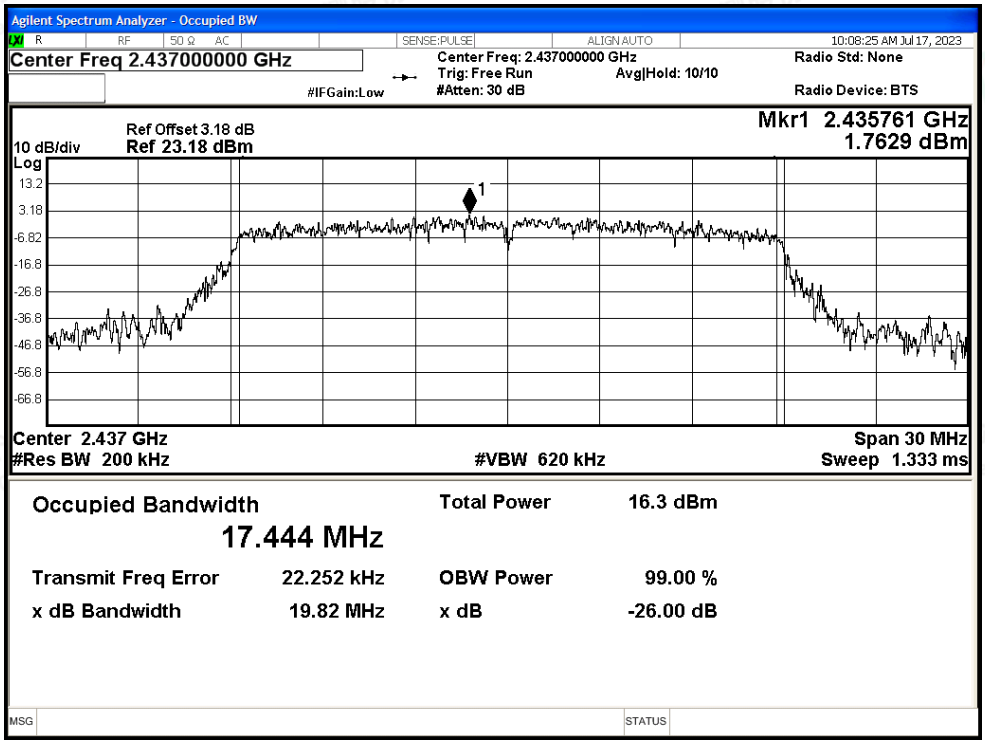
OBW NVNT g 2462MHz Ant0



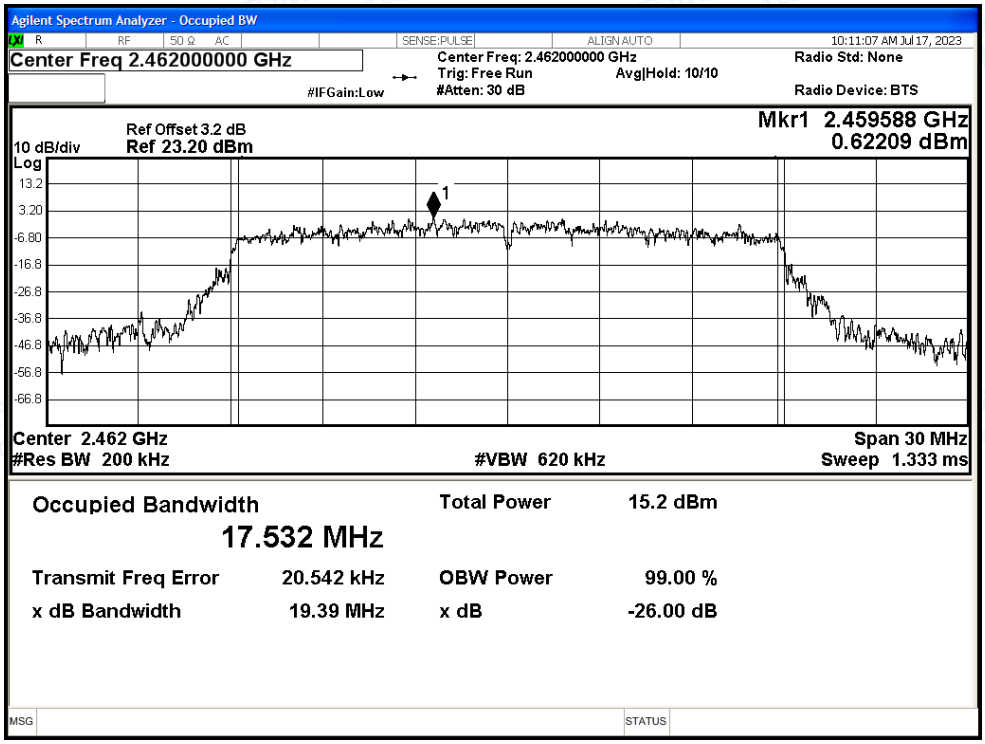
OBW NVNT n20 2412MHz Ant0



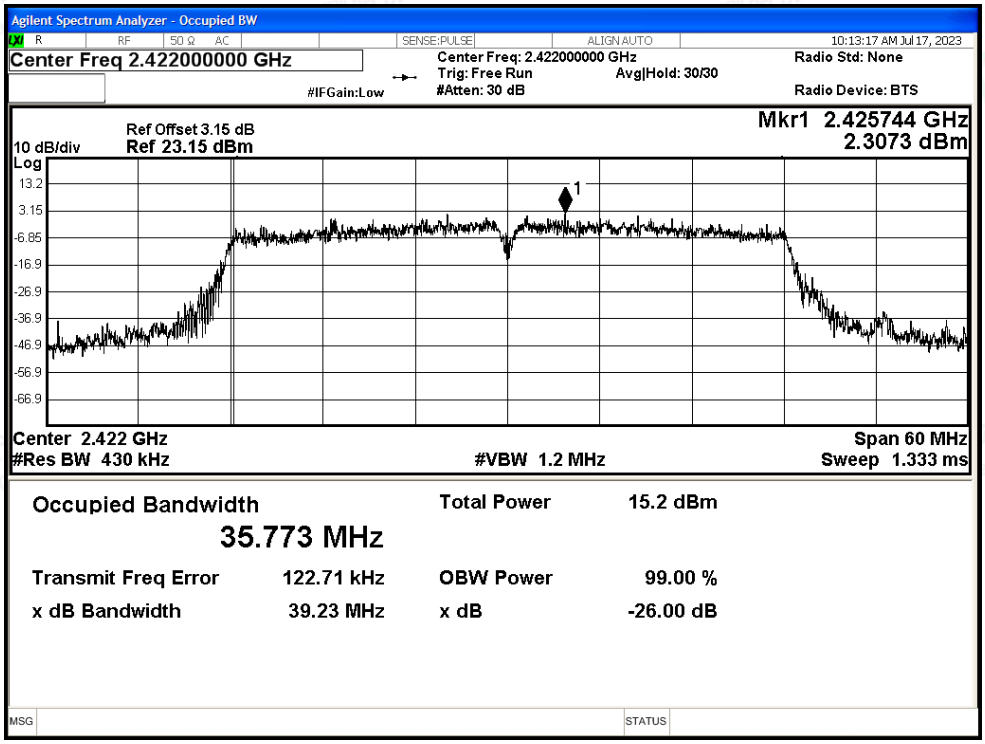
OBW NVNT n20 2437MHz Ant0



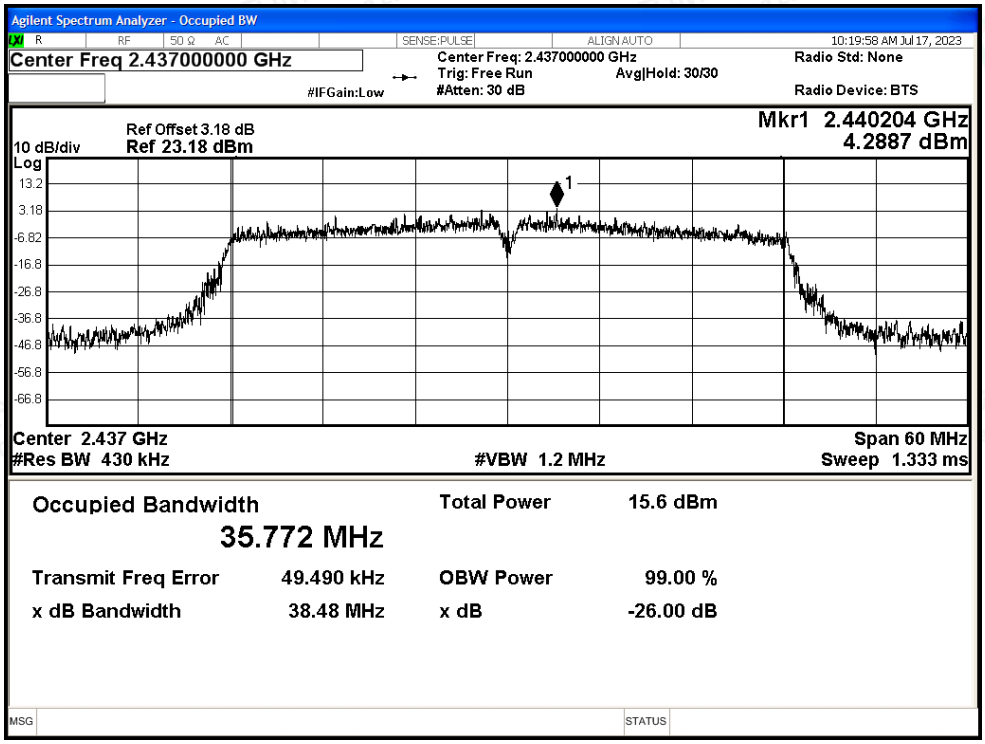
OBW NVNT n20 2462MHz Ant0



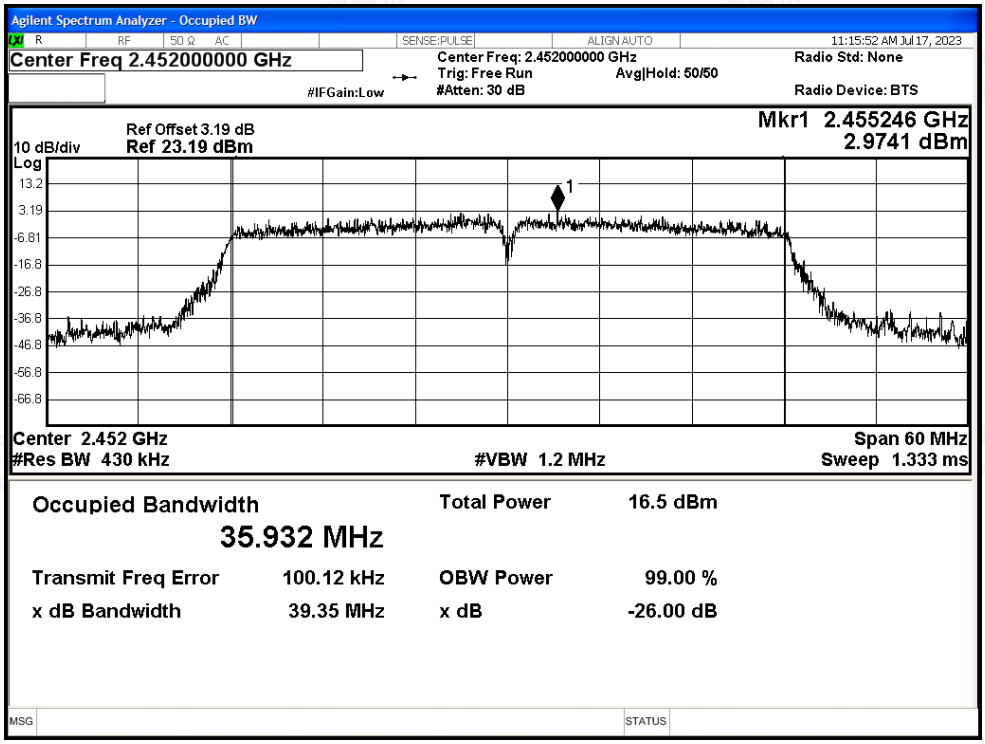
OBW NVNT n40 2422MHz Ant0



OBW NVNT n40 2437MHz Ant0



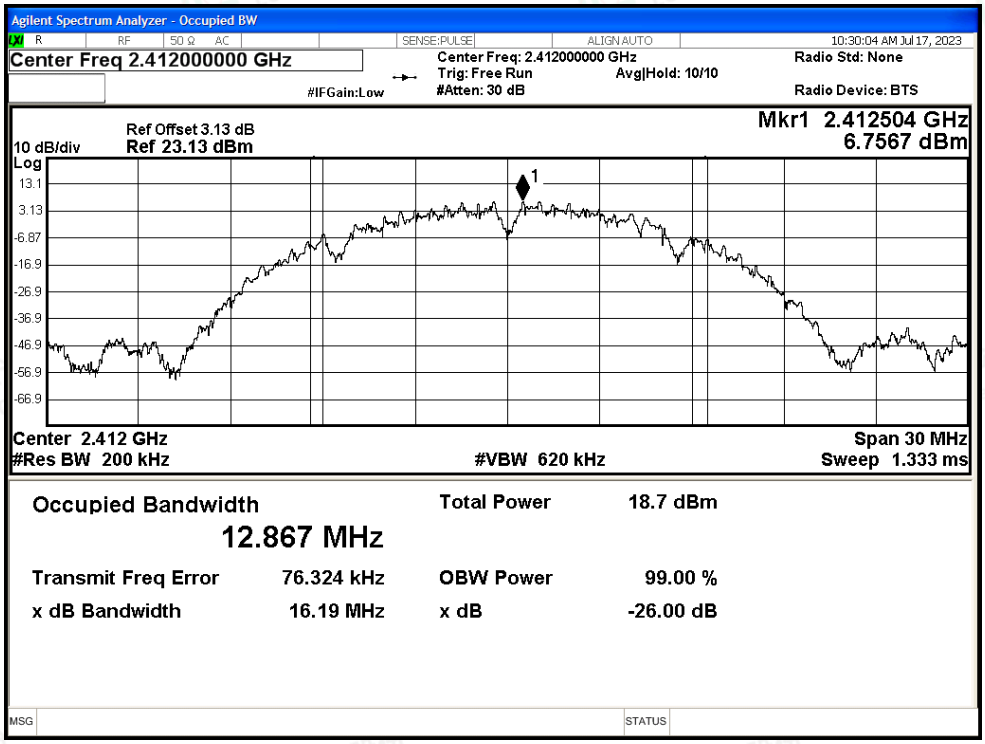
OBW NVNT n40 2452MHz Ant0



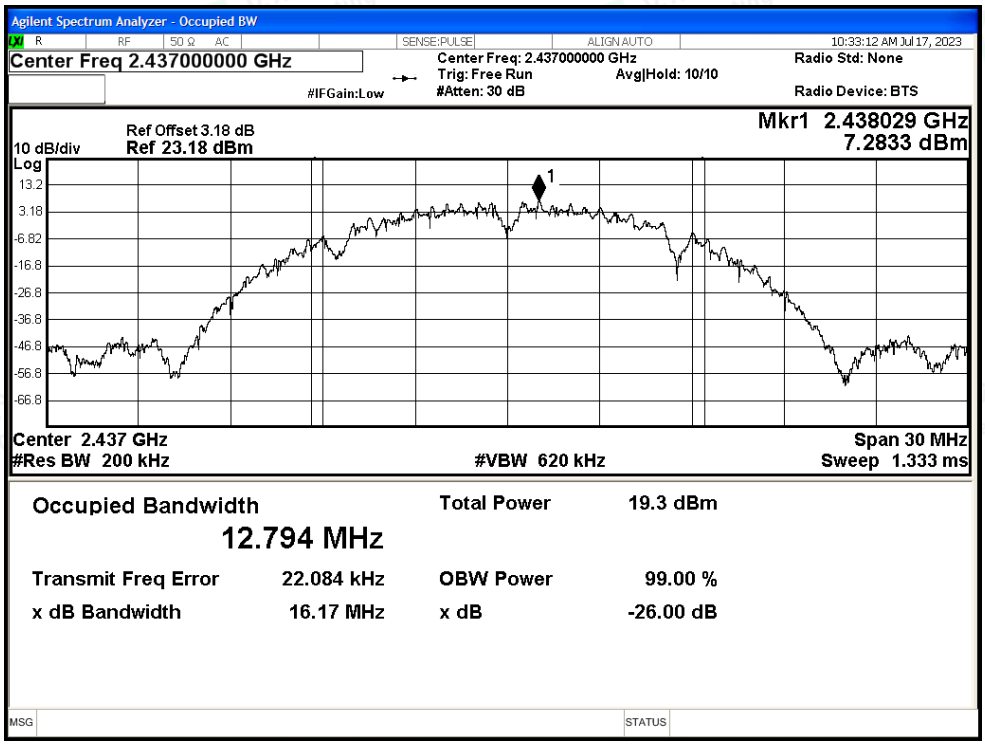
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	12.867
NVNT	b	2437	Ant1	12.794
NVNT	b	2462	Ant1	12.861
NVNT	g	2412	Ant1	16.322
NVNT	g	2437	Ant1	16.316
NVNT	g	2462	Ant1	16.186
NVNT	n20	2412	Ant1	17.494
NVNT	n20	2437	Ant1	17.518
NVNT	n20	2462	Ant1	17.5
NVNT	n40	2422	Ant1	35.798
NVNT	n40	2437	Ant1	35.693
NVNT	n40	2452	Ant1	35.919

Test Graphs

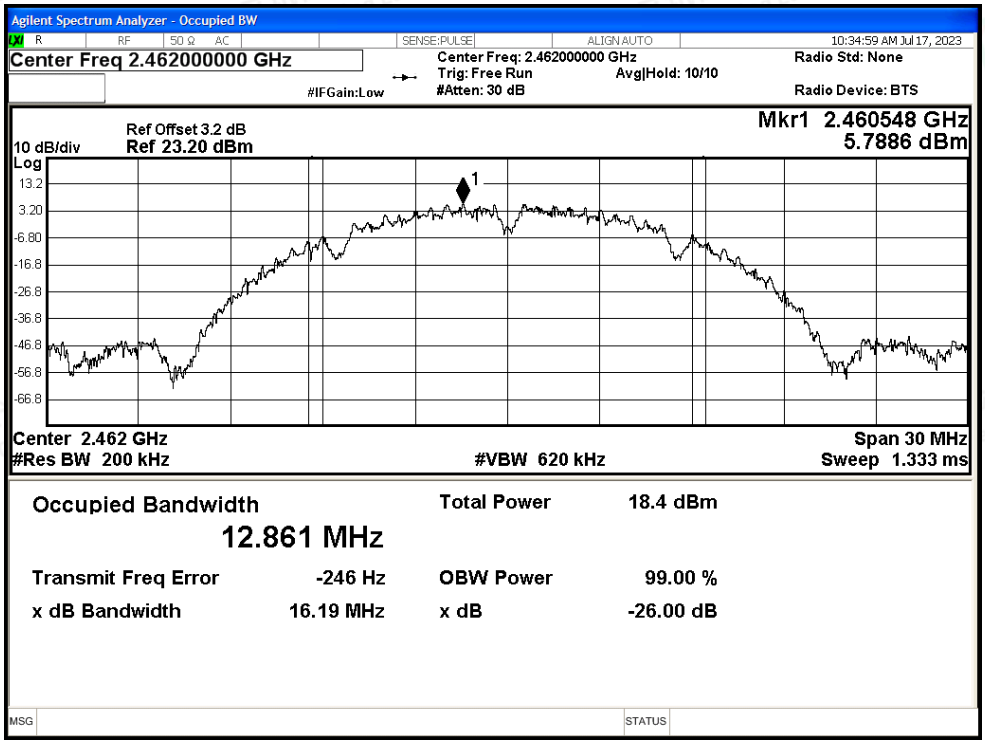
OBW NVNT b 2412MHz Ant1



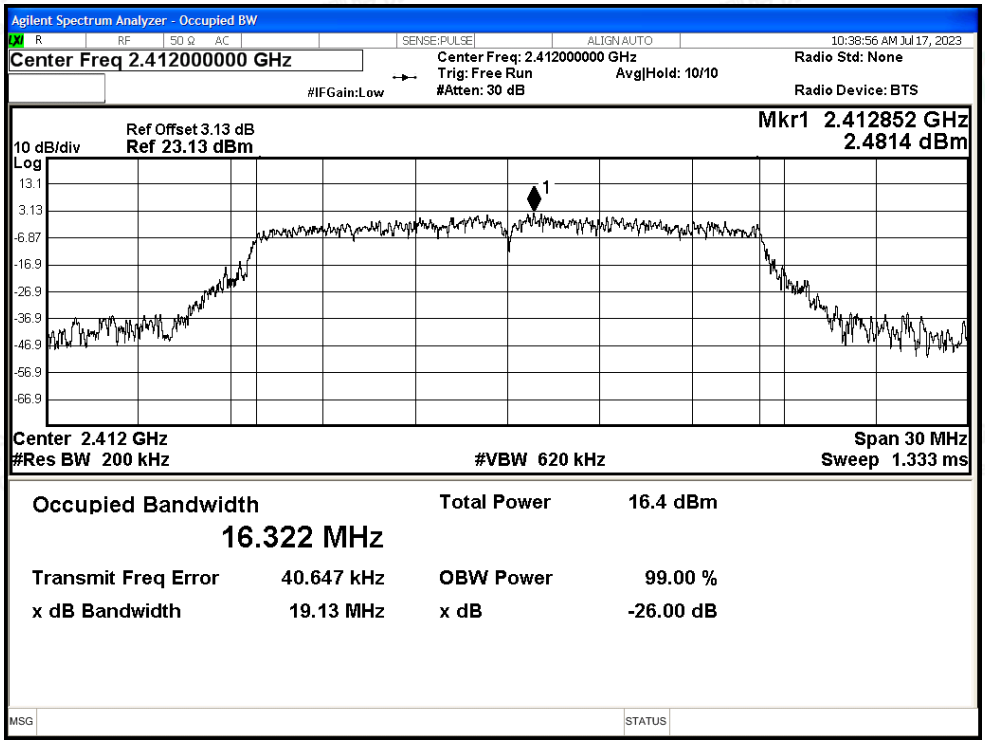
OBW NVNT b 2437MHz Ant1



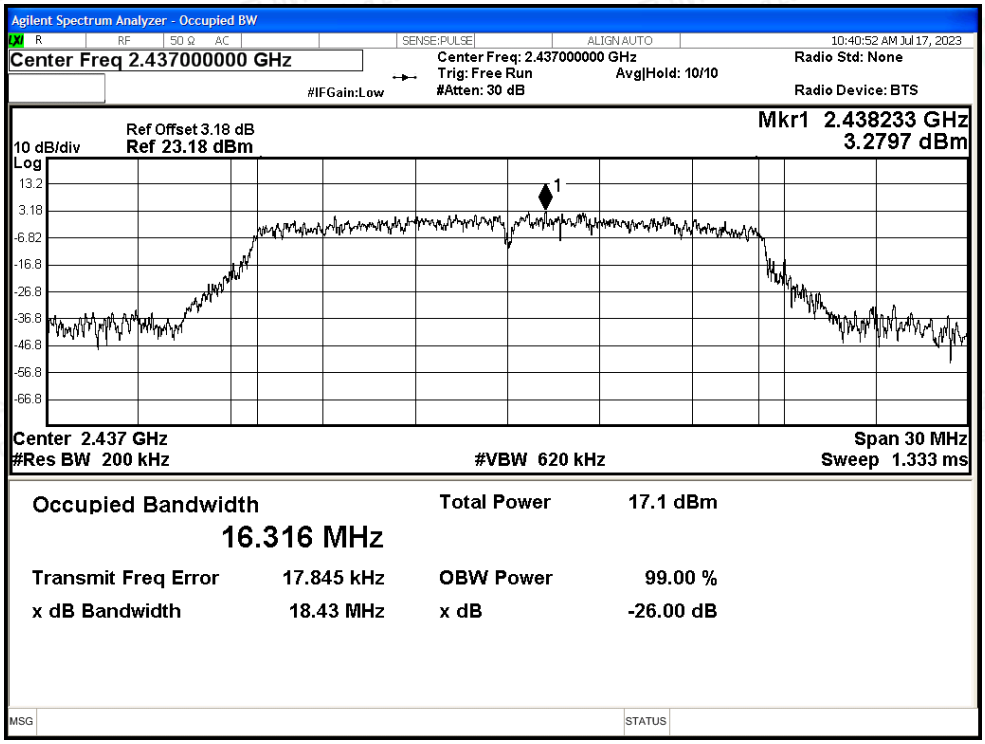
OBW NVNT b 2462MHz Ant1



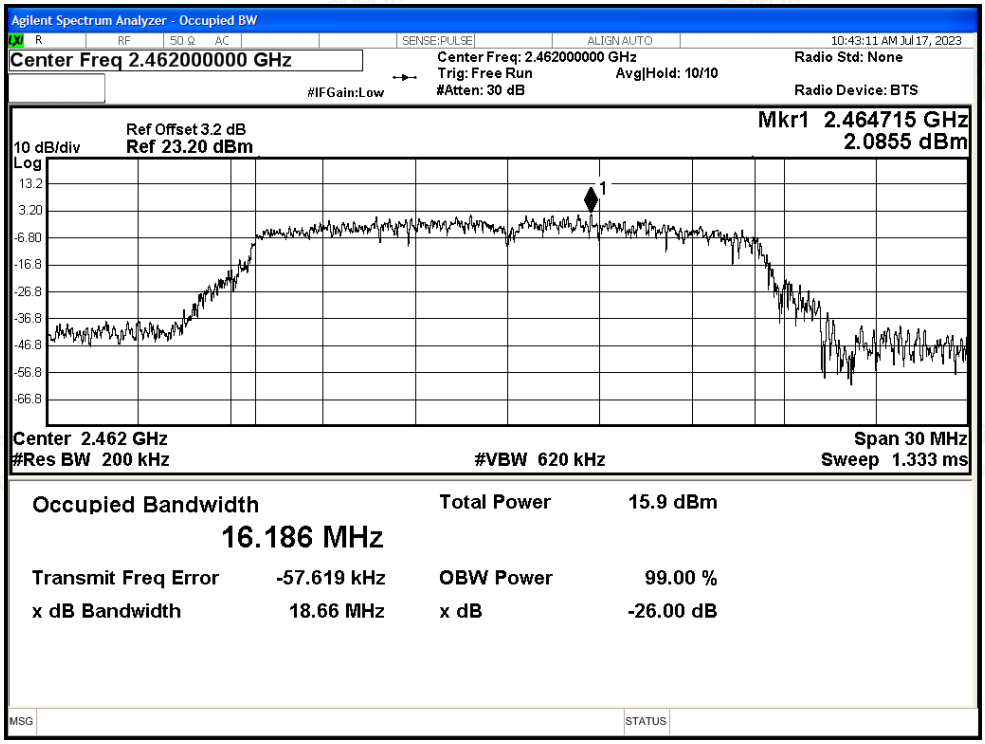
OBW NVNT g 2412MHz Ant1



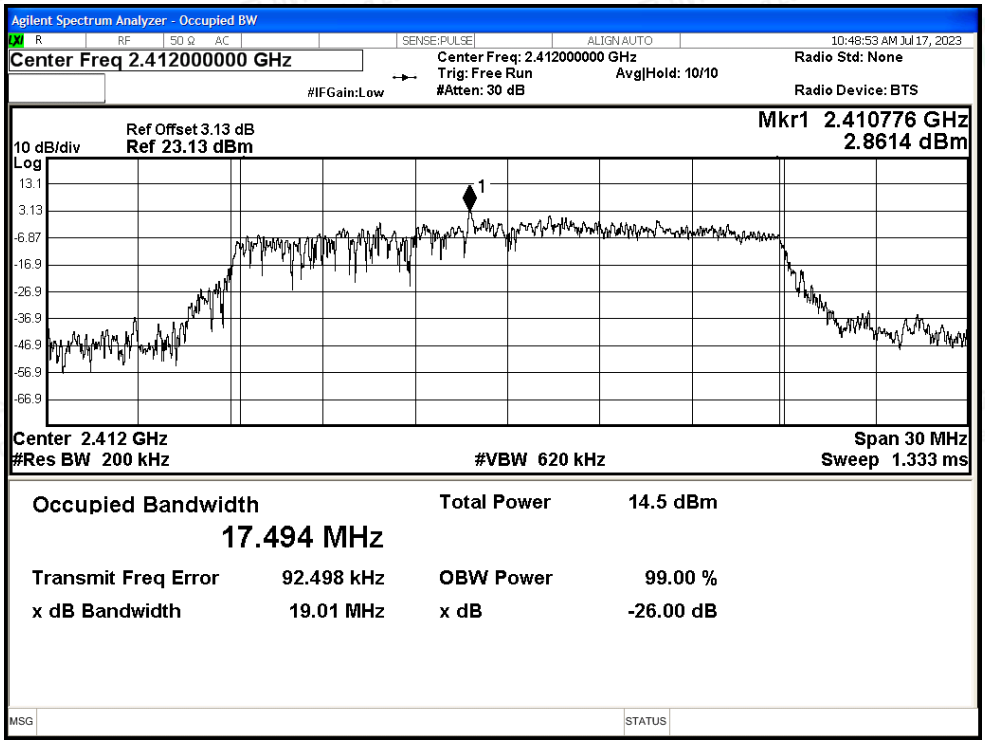
OBW NVNT g 2437MHz Ant1



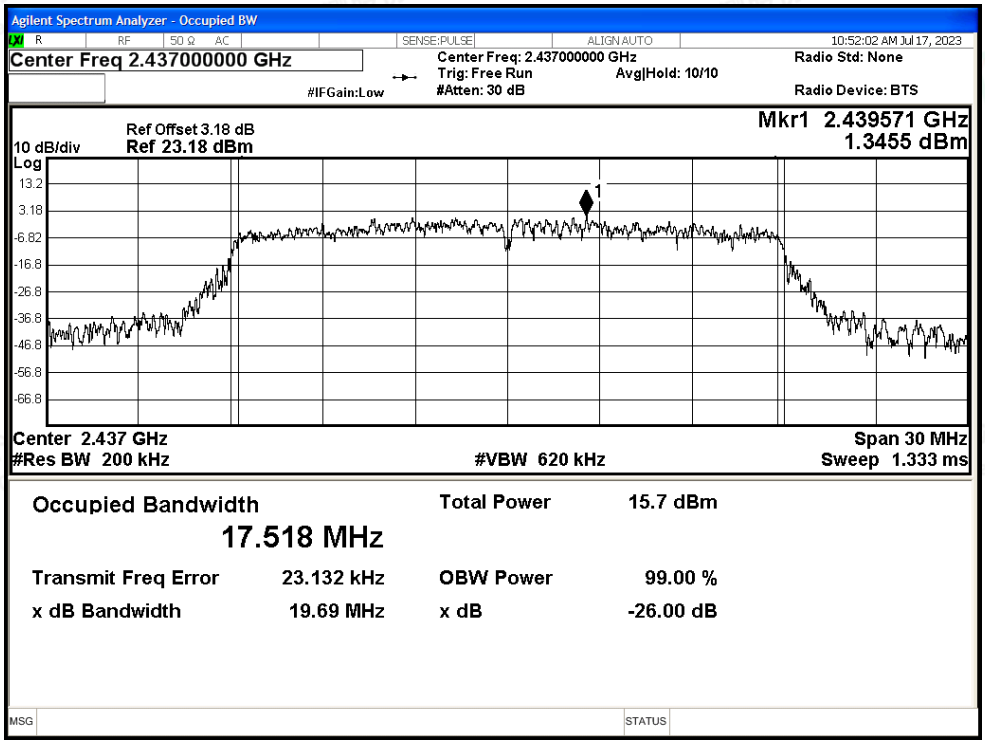
OBW NVNT g 2462MHz Ant1



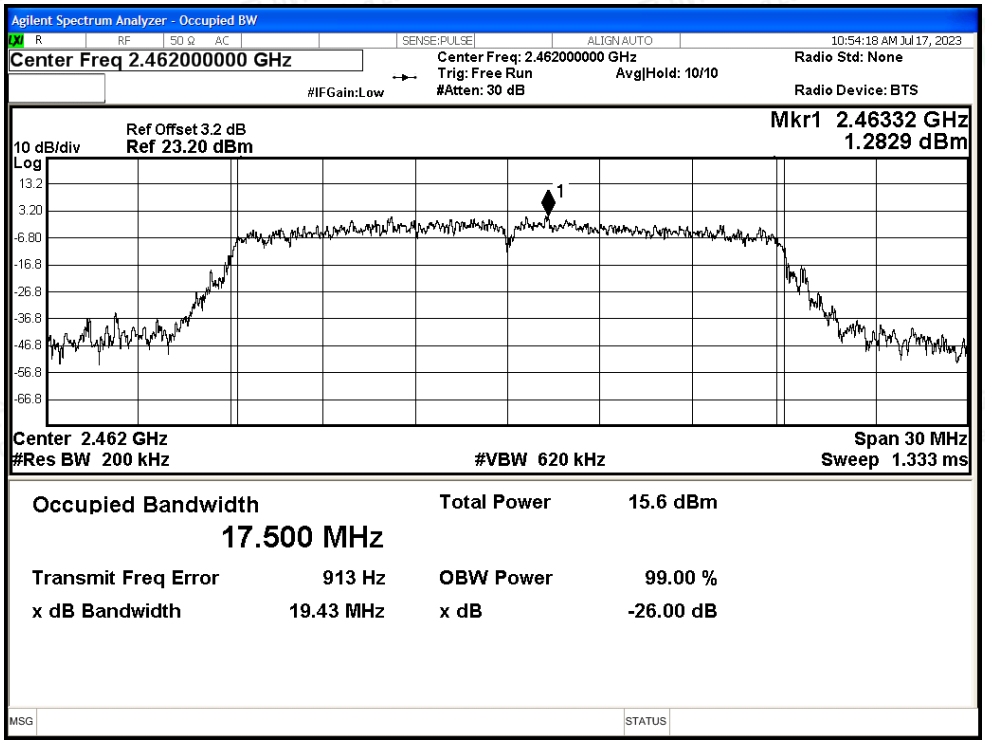
OBW NVNT n20 2412MHz Ant1



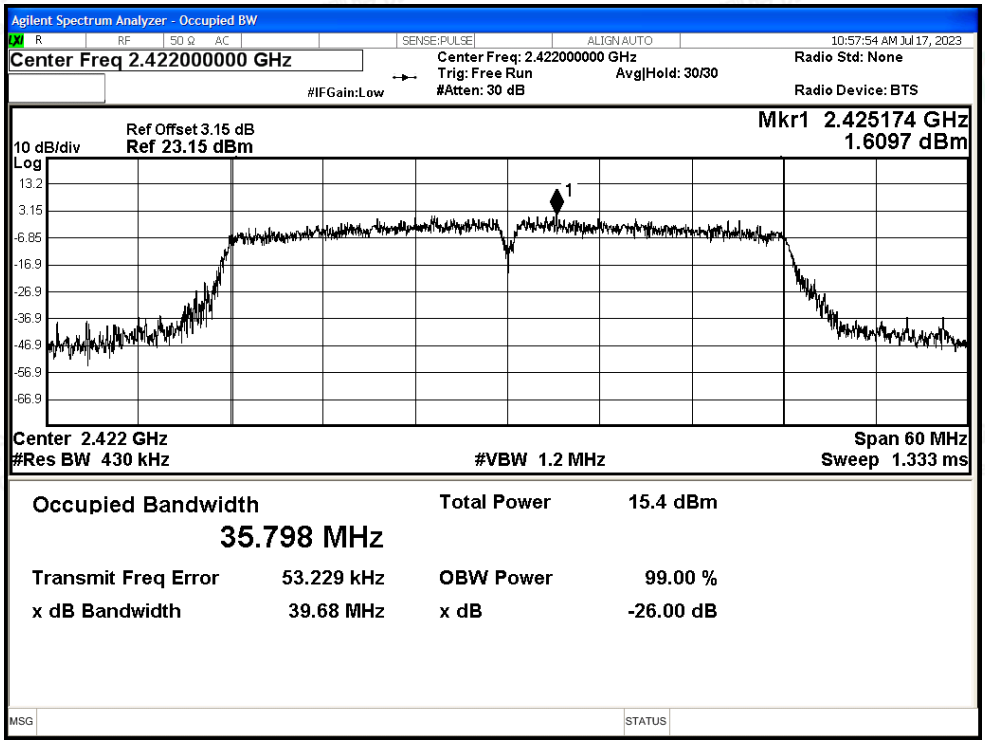
OBW NVNT n20 2437MHz Ant1



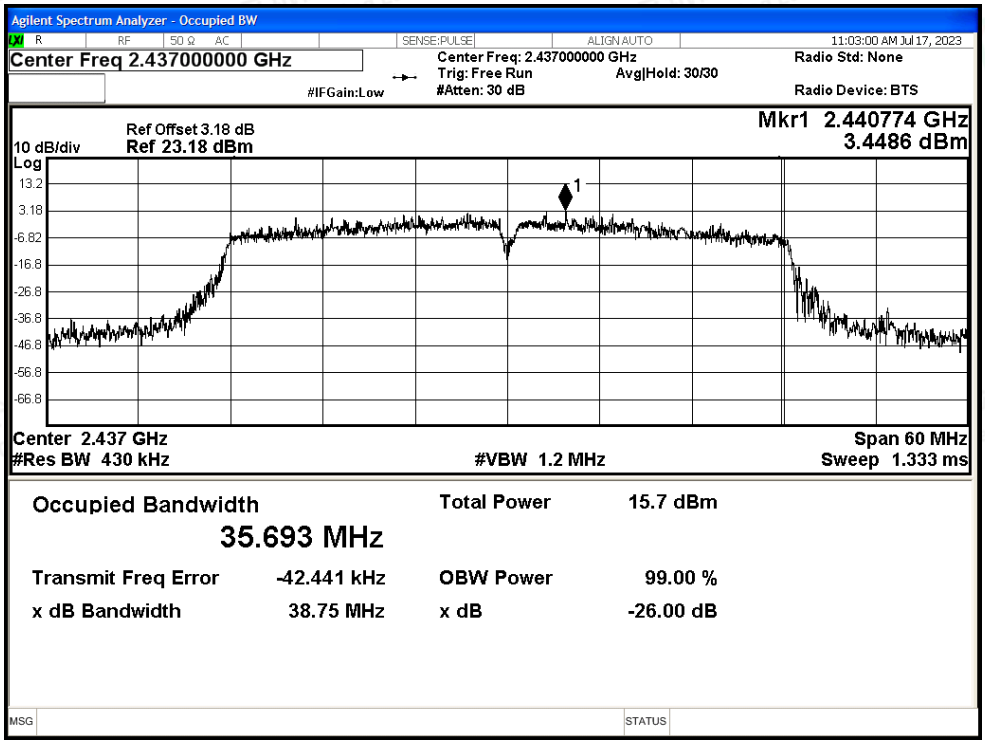
OBW NVNT n20 2462MHz Ant1



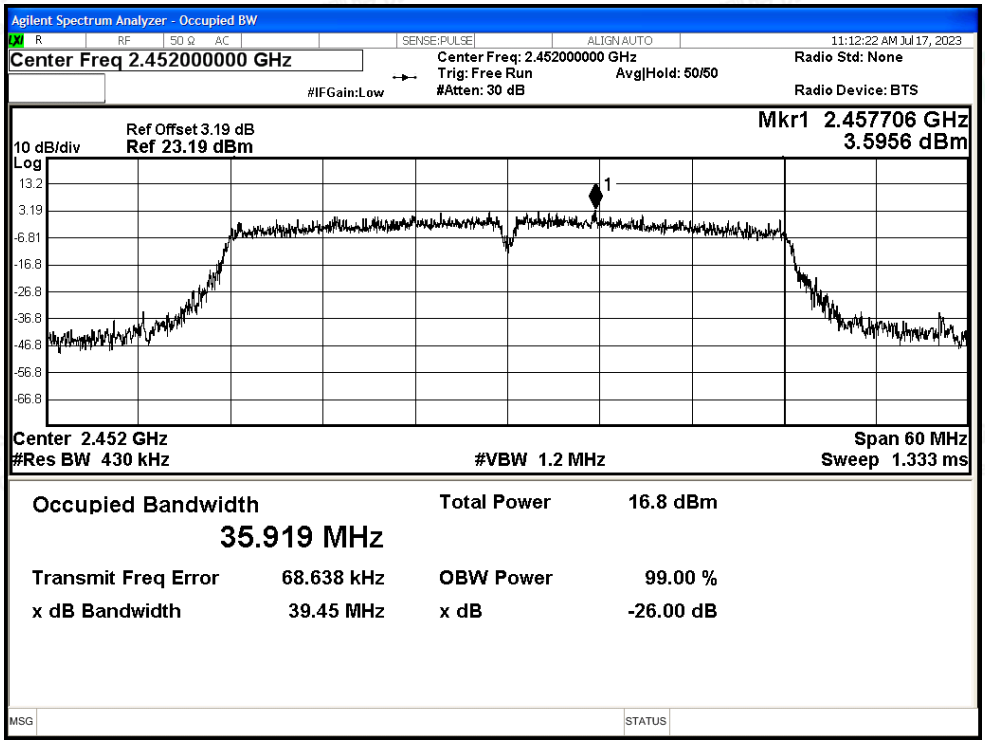
OBW NVNT n40 2422MHz Ant1



OBW NVNT n40 2437MHz Ant1



OBW NVNT n40 2452MHz Ant1



A.3 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant0	16.02	30	Pass
NVNT	b	2437	Ant0	16.64	30	Pass
NVNT	b	2462	Ant0	15.6	30	Pass
NVNT	g	2412	Ant0	15.44	30	Pass
NVNT	g	2437	Ant0	16.69	30	Pass
NVNT	g	2462	Ant0	15.54	30	Pass
NVNT	n20	2412	Ant0	14.49	30	Pass
NVNT	n20	2437	Ant0	15.27	30	Pass
NVNT	n20	2462	Ant0	16.29	30	Pass
NVNT	n40	2422	Ant0	13.61	30	Pass
NVNT	n40	2437	Ant0	13.59	30	Pass
NVNT	n40	2452	Ant0	13.64	30	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	16.02	30	Pass
NVNT	b	2437	Ant1	16.34	30	Pass
NVNT	b	2462	Ant1	15.65	30	Pass
NVNT	g	2412	Ant1	15.87	30	Pass
NVNT	g	2437	Ant1	15.65	30	Pass
NVNT	g	2462	Ant1	15.89	30	Pass
NVNT	n20	2412	Ant1	14.54	30	Pass
NVNT	n20	2437	Ant1	14.9	30	Pass
NVNT	n20	2462	Ant1	16.47	30	Pass
NVNT	n40	2422	Ant1	13.45	30	Pass
NVNT	n40	2437	Ant1	13.55	30	Pass
NVNT	n40	2452	Ant1	13.56	30	Pass

EIRP

TestMode	Antenna	Freq (MHz)	Maximum Peak Output Power [dBm]	Antenna Gain	Report EIRP Power(dBm)	Conducted Limit[dBm]	Verdict
b	Ant0	2412	16.02	3.0	19.02	≤36.00	PASS
		2437	16.64	3.0	19.64	≤36.00	PASS
		2462	15.6	3.0	18.60	≤36.00	PASS
g	Ant0	2412	15.44	3.0	18.44	≤36.00	PASS
		2437	16.69	3.0	19.69	≤36.00	PASS
		2462	15.54	3.0	18.54	≤36.00	PASS
n20	Ant0	2412	14.49	3.0	17.49	≤36.00	PASS
		2437	15.27	3.0	18.27	≤36.00	PASS
		2462	16.29	3.0	19.29	≤36.00	PASS
n40	Ant0	2422	13.61	3.0	16.61	≤36.00	PASS
		2437	13.59	3.0	16.59	≤36.00	PASS
		2452	13.64	3.0	16.64	≤36.00	PASS

TestMode	Antenna	Freq (MHz)	Maximum Peak Output Power [dBm]	Antenna Gain	Report EIRP Power(dBm)	Conducted Limit[dBm]	Verdict
b	Ant1	2412	16.02	3.0	19.02	≤36.00	PASS
		2437	16.34	3.0	19.34	≤36.00	PASS
		2462	15.65	3.0	18.65	≤36.00	PASS
g	Ant1	2412	15.87	3.0	18.87	≤36.00	PASS
		2437	15.65	3.0	18.65	≤36.00	PASS
		2462	15.89	3.0	18.89	≤36.00	PASS
n20	Ant1	2412	14.54	3.0	17.54	≤36.00	PASS
		2437	14.9	3.0	17.90	≤36.00	PASS
		2462	16.47	3.0	19.47	≤36.00	PASS
n40	Ant1	2422	13.45	3.0	16.45	≤36.00	PASS
		2437	13.55	3.0	16.55	≤36.00	PASS
		2452	13.56	3.0	16.56	≤36.00	PASS

MIMO

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)			Limit (dBm)	EIRP (dBm)	Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1				
NVNT	n20	2412	14.49	14.54	17.53	29.99	20.53	36.00	Pass
NVNT	n20	2437	15.27	14.9	18.10	29.99	21.10	36.00	Pass
NVNT	n20	2462	16.29	16.47	19.39	29.99	22.39	36.00	Pass
NVNT	n40	2422	13.61	13.45	16.54	29.99	19.54	36.00	Pass
NVNT	n40	2437	13.59	13.55	16.58	29.99	19.58	36.00	Pass
NVNT	n40	2452	13.64	13.56	16.61	29.99	19.61	36.00	Pass

A.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant0	-7.24	8	Pass
NVNT	b	2437	Ant0	-6.6	8	Pass
NVNT	b	2462	Ant0	-8.63	8	Pass
NVNT	g	2412	Ant0	-11.07	8	Pass
NVNT	g	2437	Ant0	-11.12	8	Pass
NVNT	g	2462	Ant0	-10.77	8	Pass
NVNT	n20	2412	Ant0	-13.5	8	Pass
NVNT	n20	2437	Ant0	-11.21	8	Pass
NVNT	n20	2462	Ant0	-10.97	8	Pass
NVNT	n40	2422	Ant0	-16.68	8	Pass
NVNT	n40	2437	Ant0	-16.08	8	Pass
NVNT	n40	2452	Ant0	-14.26	8	Pass

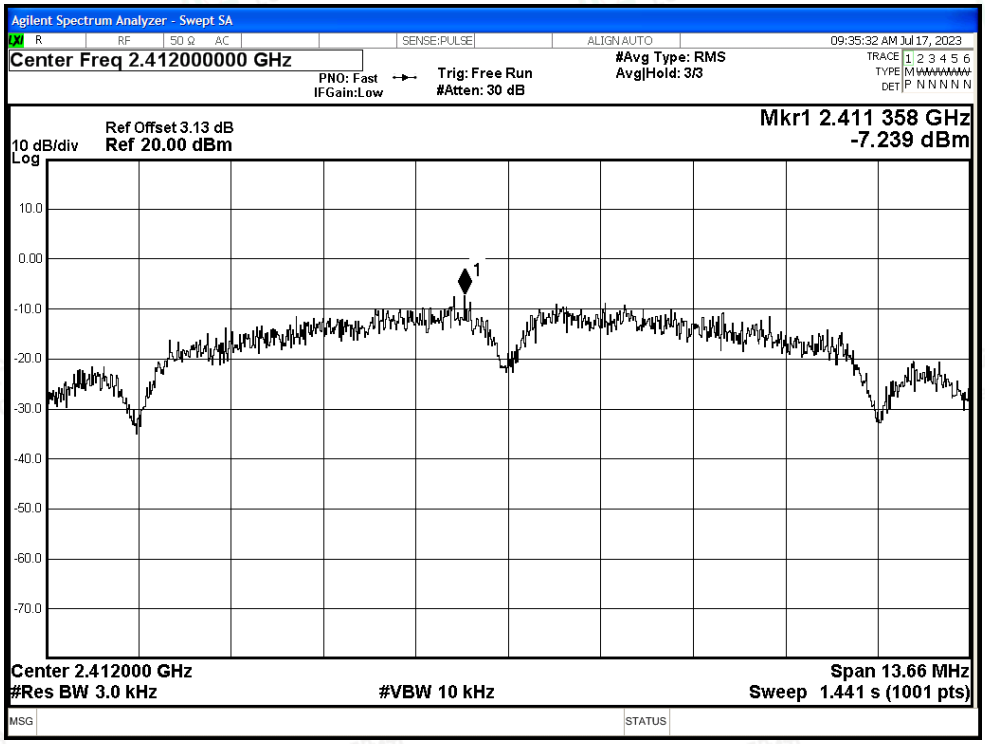
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-7.78	8	Pass
NVNT	b	2437	Ant1	-6.93	8	Pass
NVNT	b	2462	Ant1	-8.45	8	Pass
NVNT	g	2412	Ant1	-11.2	8	Pass
NVNT	g	2437	Ant1	-9.98	8	Pass
NVNT	g	2462	Ant1	-10.89	8	Pass
NVNT	n20	2412	Ant1	-13.62	8	Pass
NVNT	n20	2437	Ant1	-12.15	8	Pass
NVNT	n20	2462	Ant1	-13.14	8	Pass
NVNT	n40	2422	Ant1	-16.75	8	Pass
NVNT	n40	2437	Ant1	-16.55	8	Pass
NVNT	n40	2452	Ant1	-16.2	8	Pass

MIMO

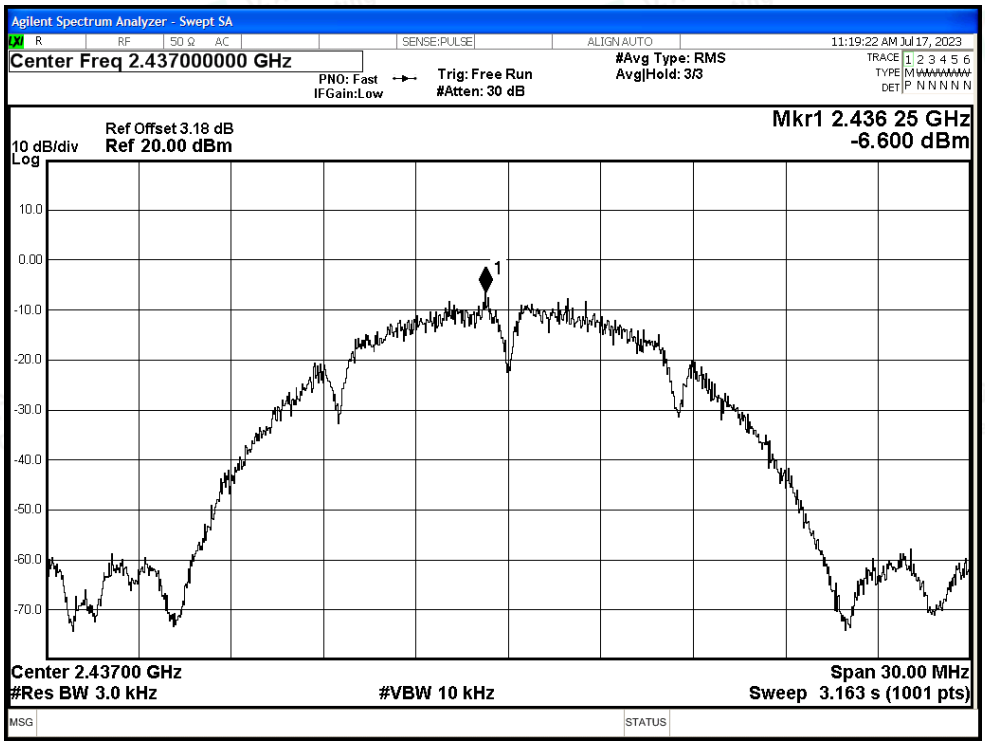
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/3kHz)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
NVNT	n20	2412	-13.5	-13.62	-10.55	7.99	Pass
NVNT	n20	2437	-11.21	-12.15	-8.64	7.99	Pass
NVNT	n20	2462	-10.97	-13.14	-8.91	7.99	Pass
NVNT	n40	2422	-16.68	-16.75	-13.70	7.99	Pass
NVNT	n40	2437	-16.08	-16.55	-13.30	7.99	Pass
NVNT	n40	2452	-14.26	-16.2	-12.11	7.99	Pass

Test Graphs

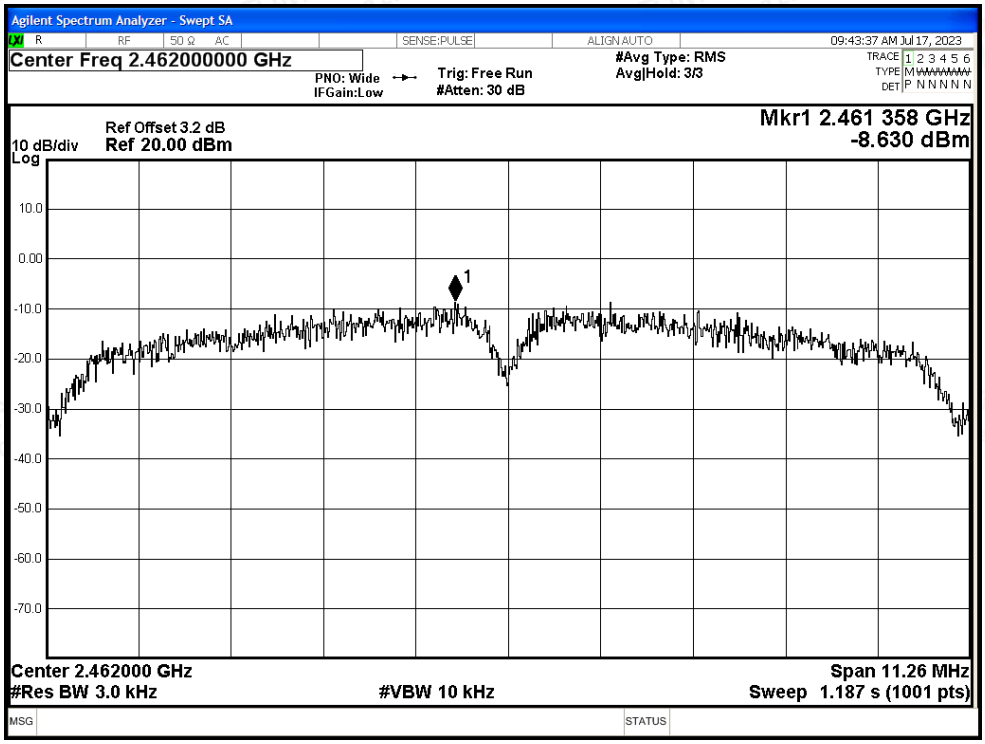
PSD NVNT b 2412MHz Ant0



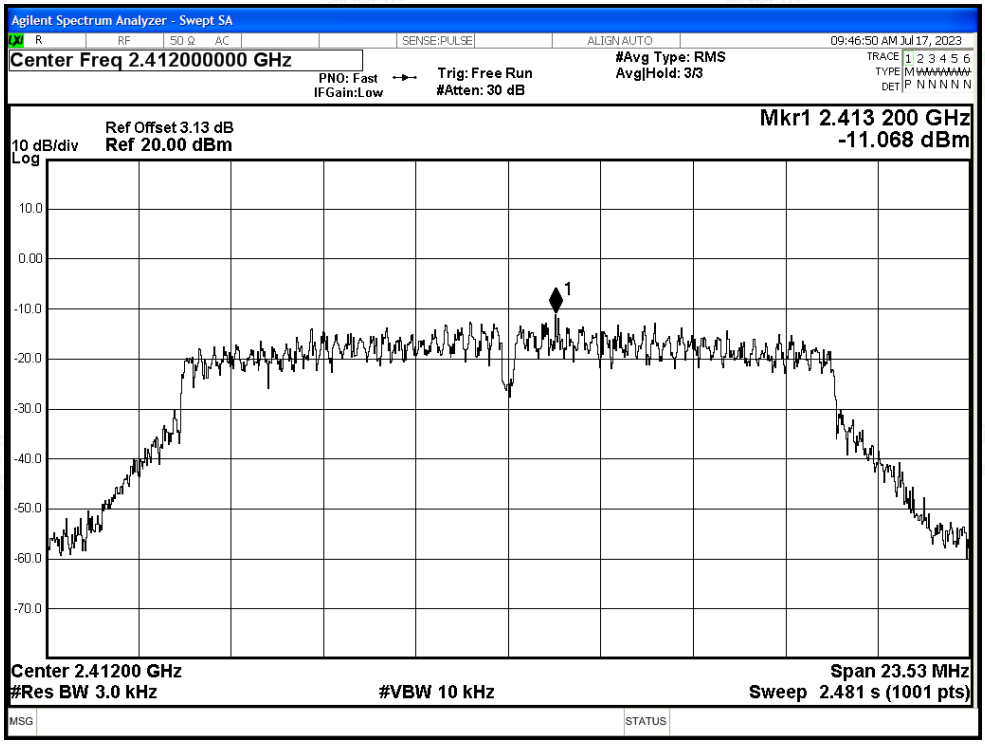
PSD NVNT b 2437MHz Ant0



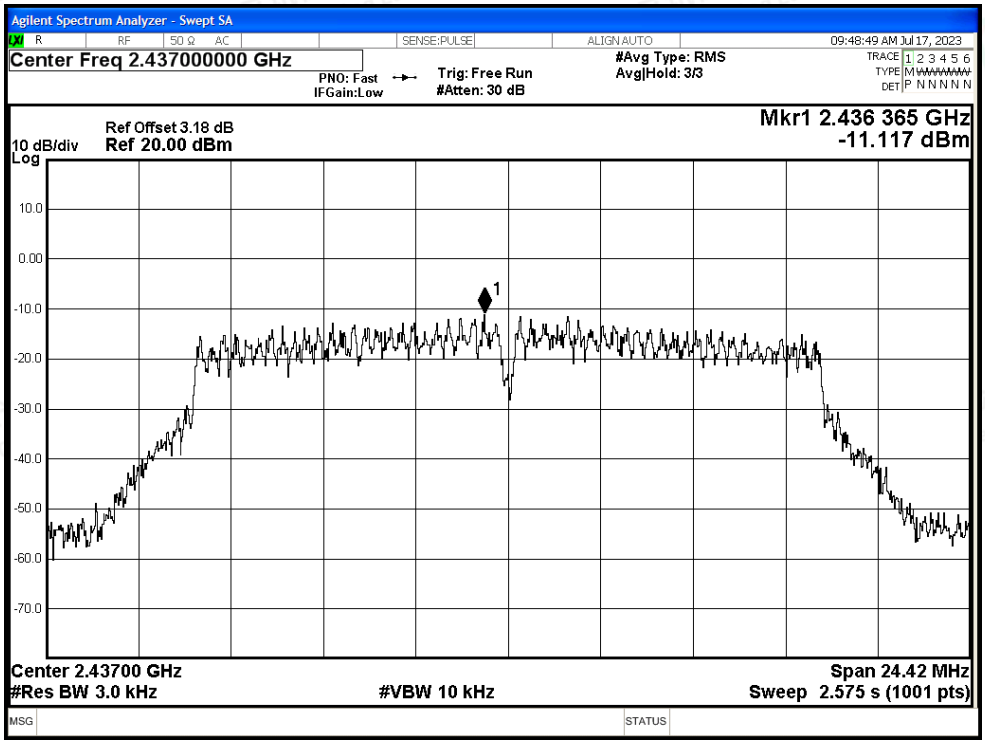
PSD NVNT b 2462MHz Ant0



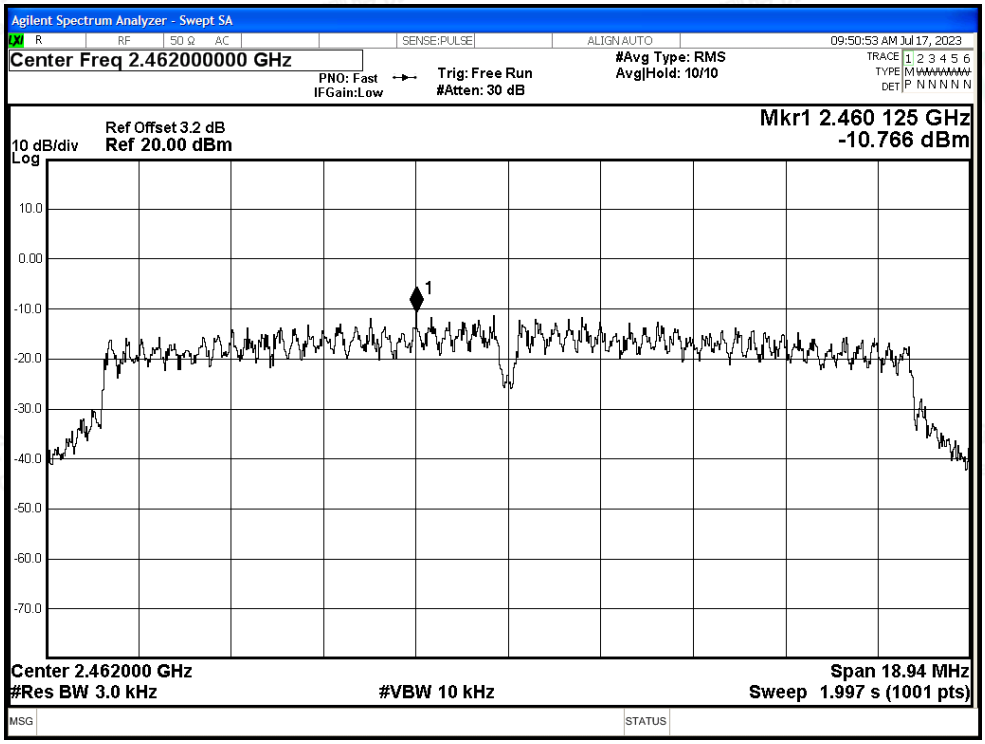
PSD NVNT g 2412MHz Ant0



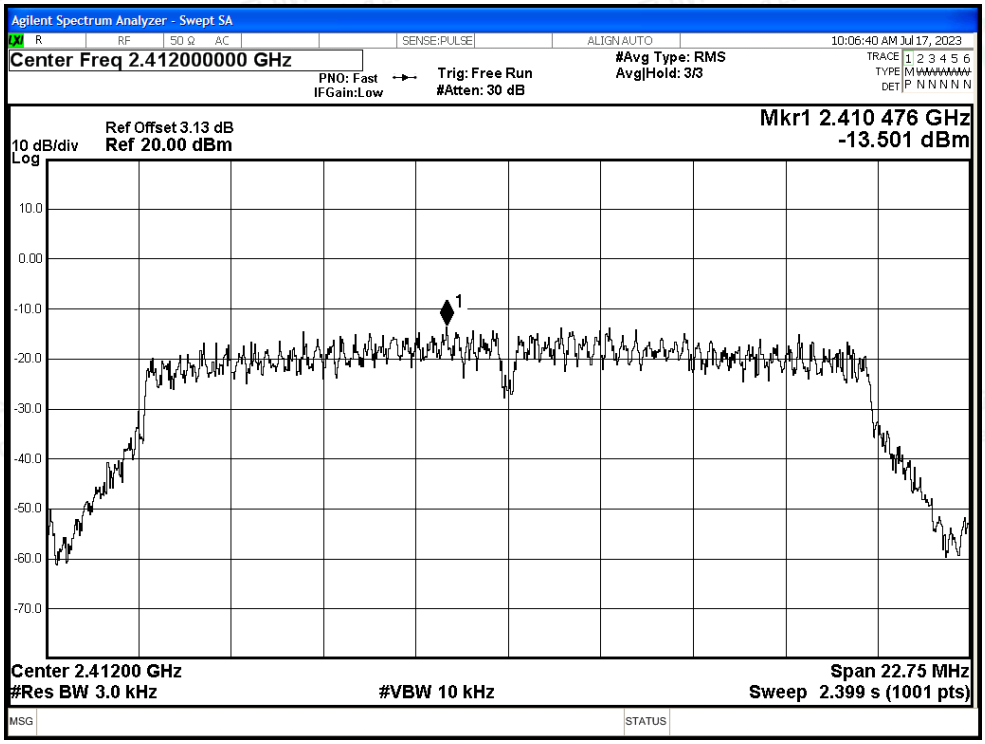
PSD NVNT g 2437MHz Ant0



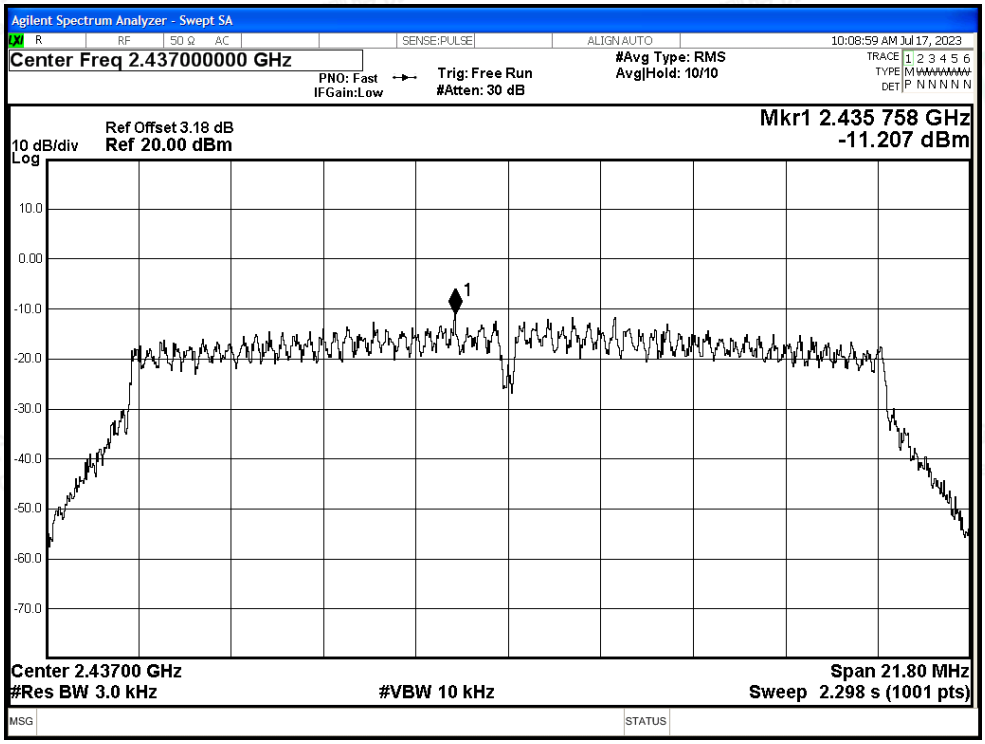
PSD NVNT g 2462MHz Ant0



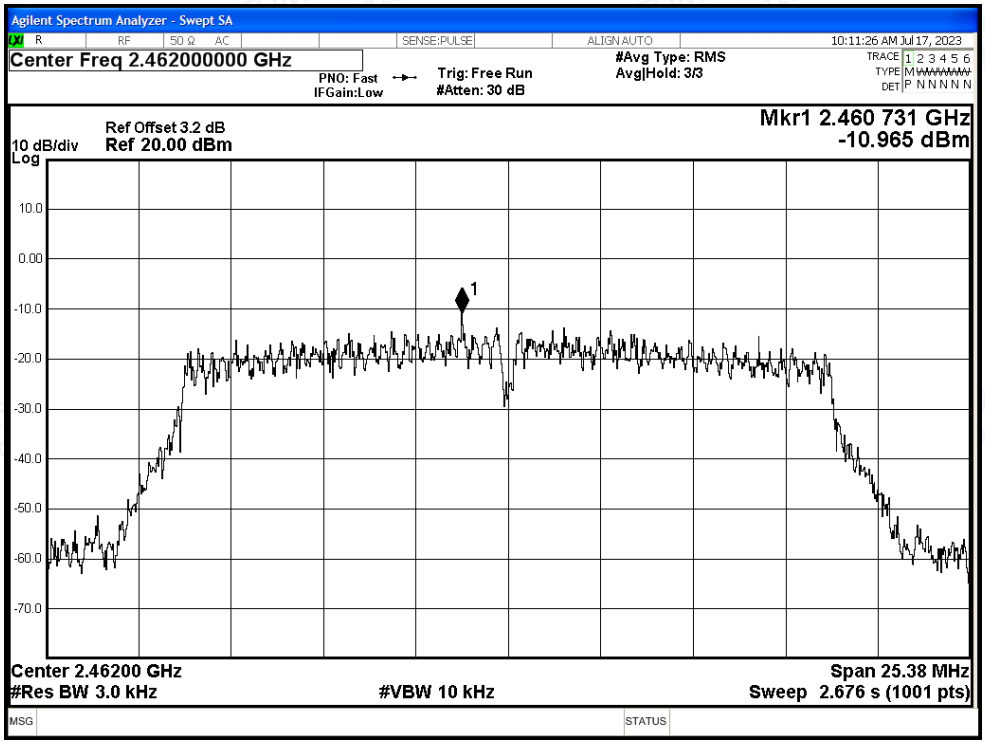
PSD NVNT n20 2412MHz Ant0



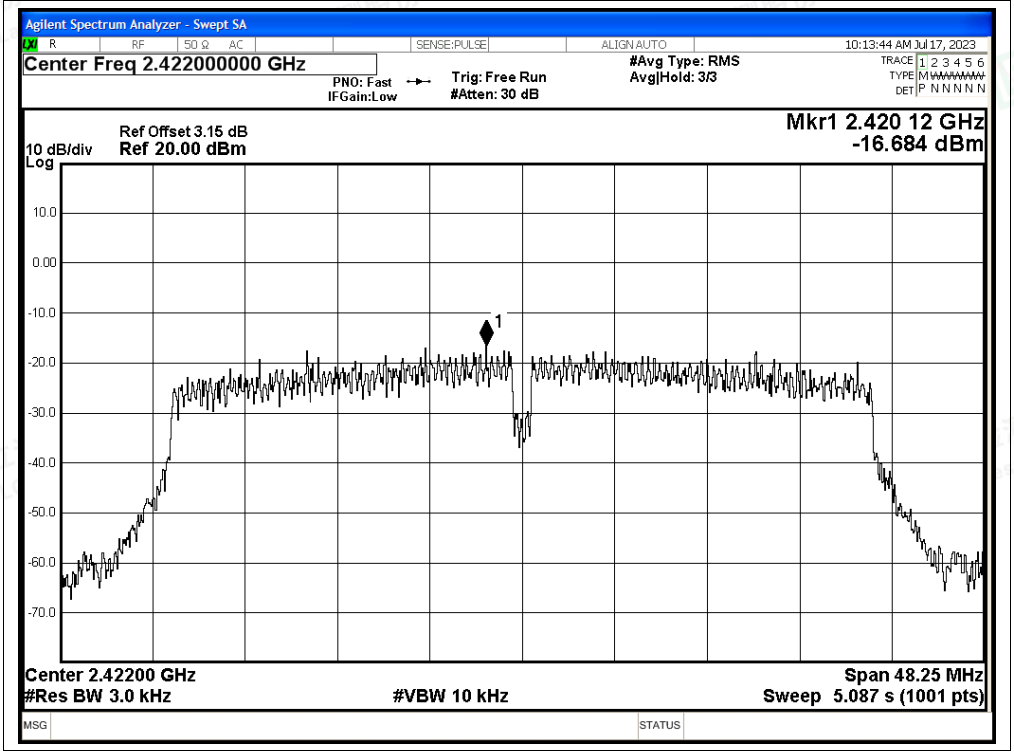
PSD NVNT n20 2437MHz Ant0



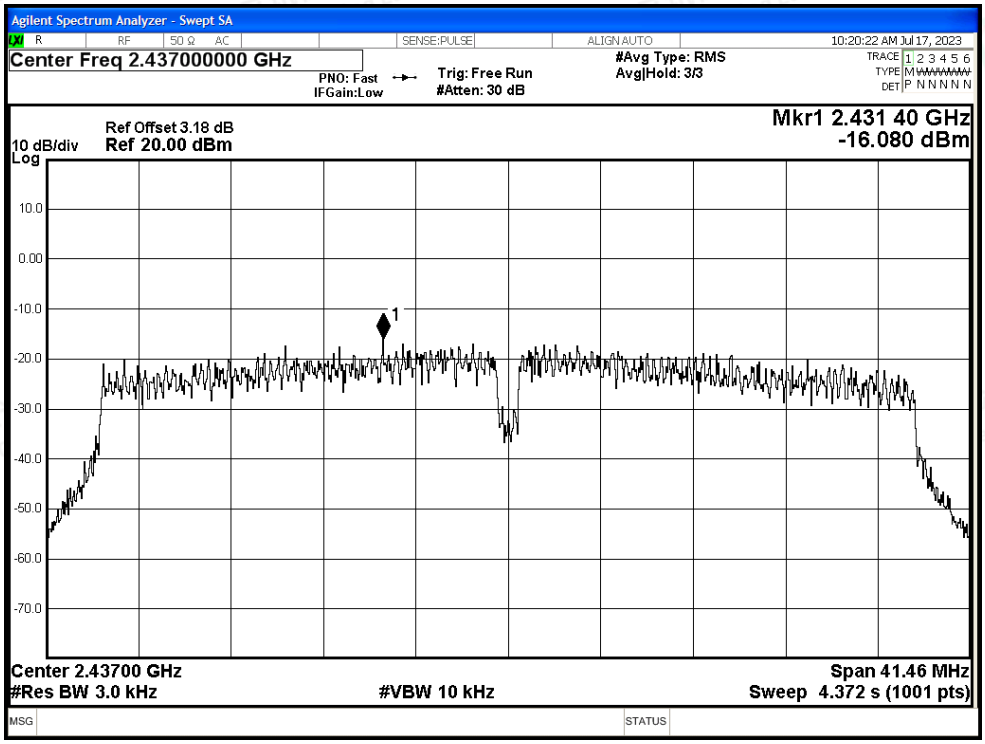
PSD NVNT n20 2462MHz Ant0



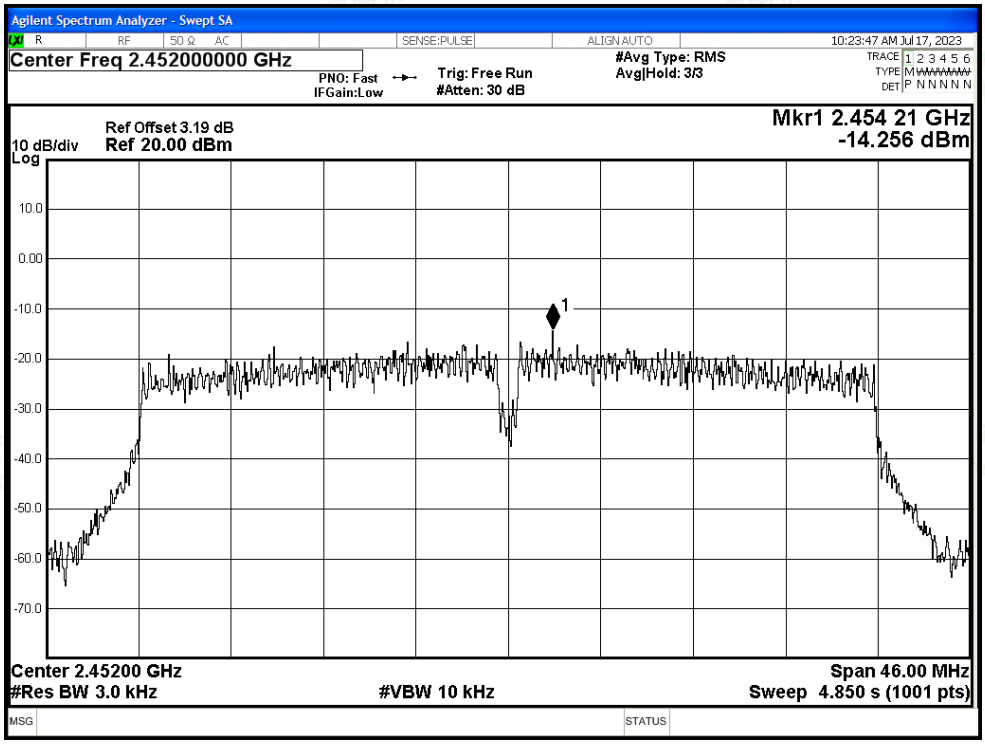
PSD NVNT n40 2422MHz Ant0



PSD NVNT n40 2437MHz Ant0

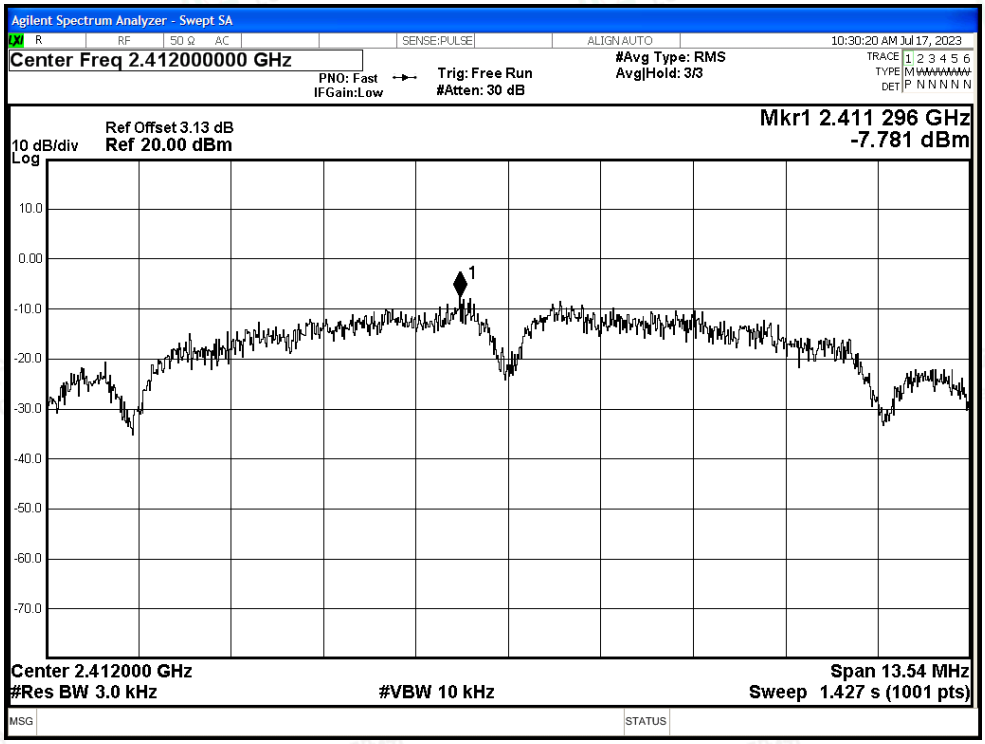


PSD NVNT n40 2452MHz Ant0

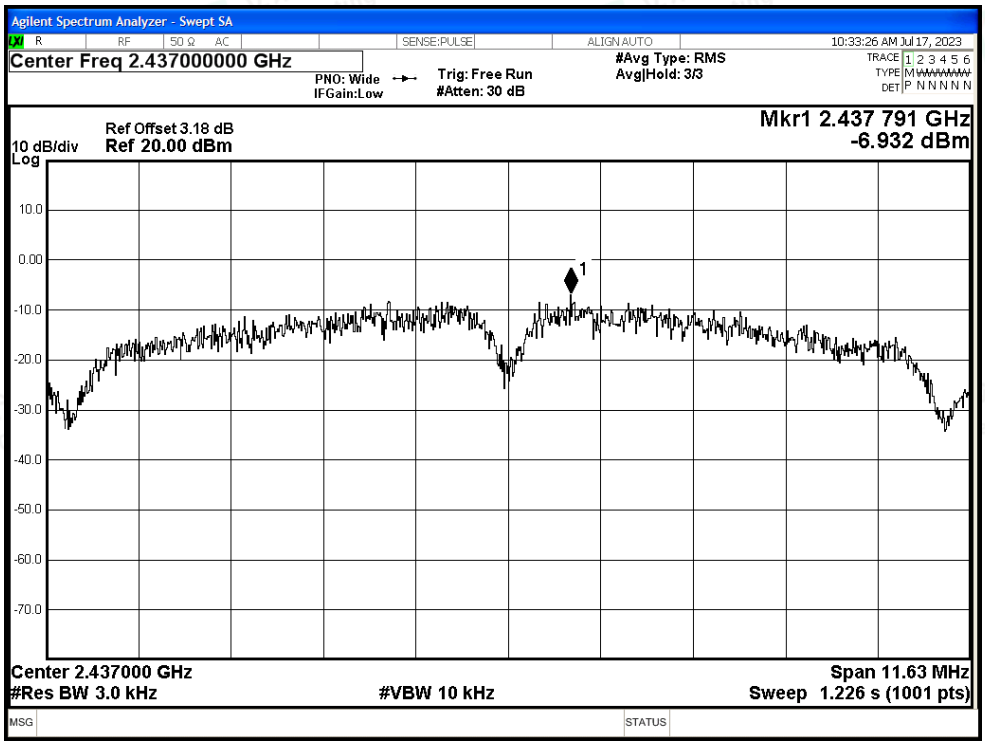


Test Graphs

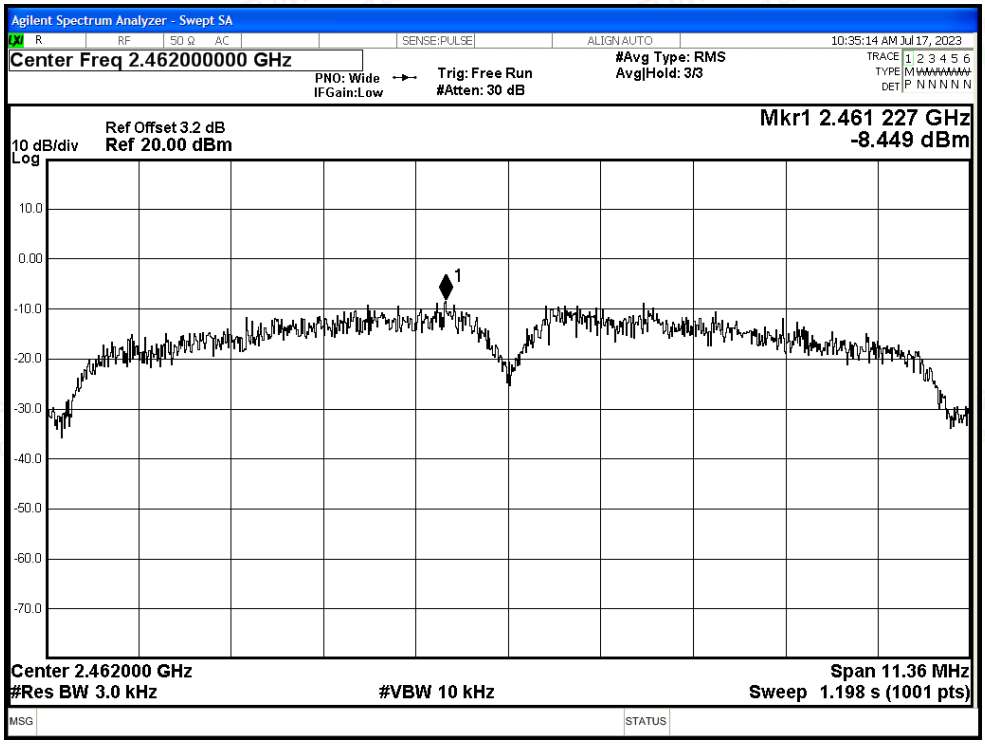
PSD NVNT b 2412MHz Ant1



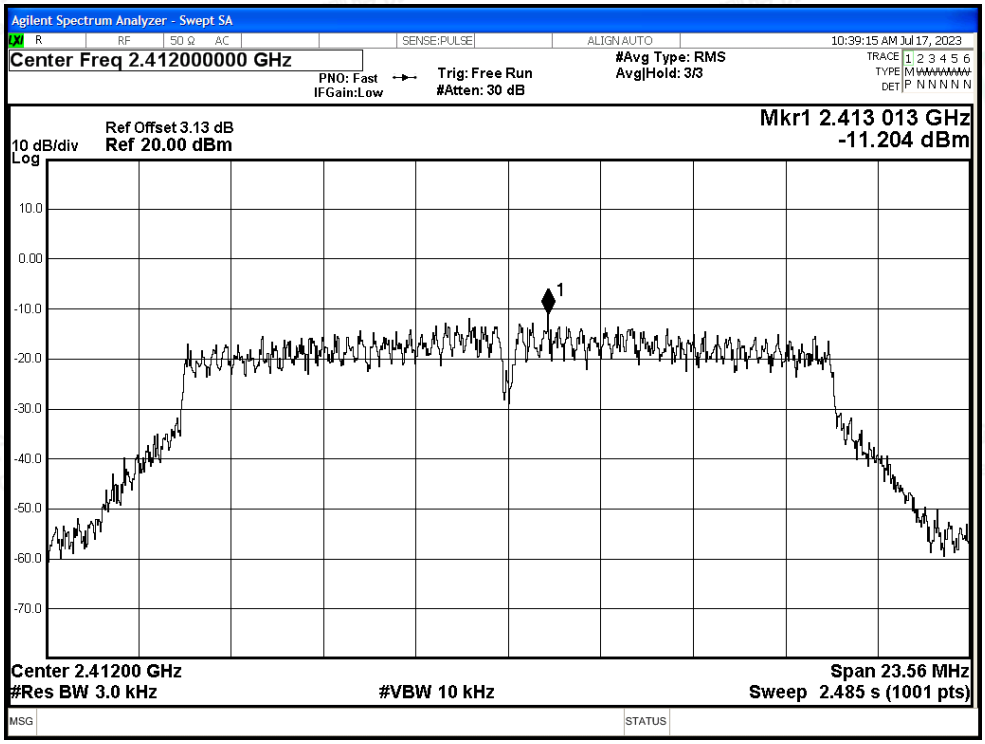
PSD NVNT b 2437MHz Ant1



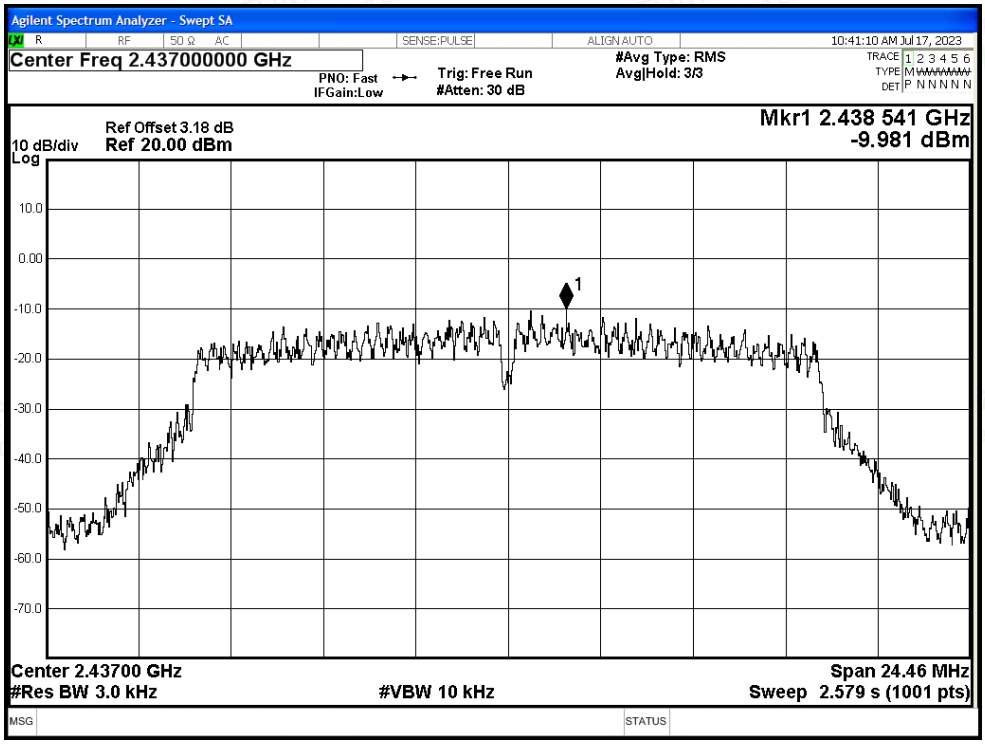
PSD NVNT b 2462MHz Ant1



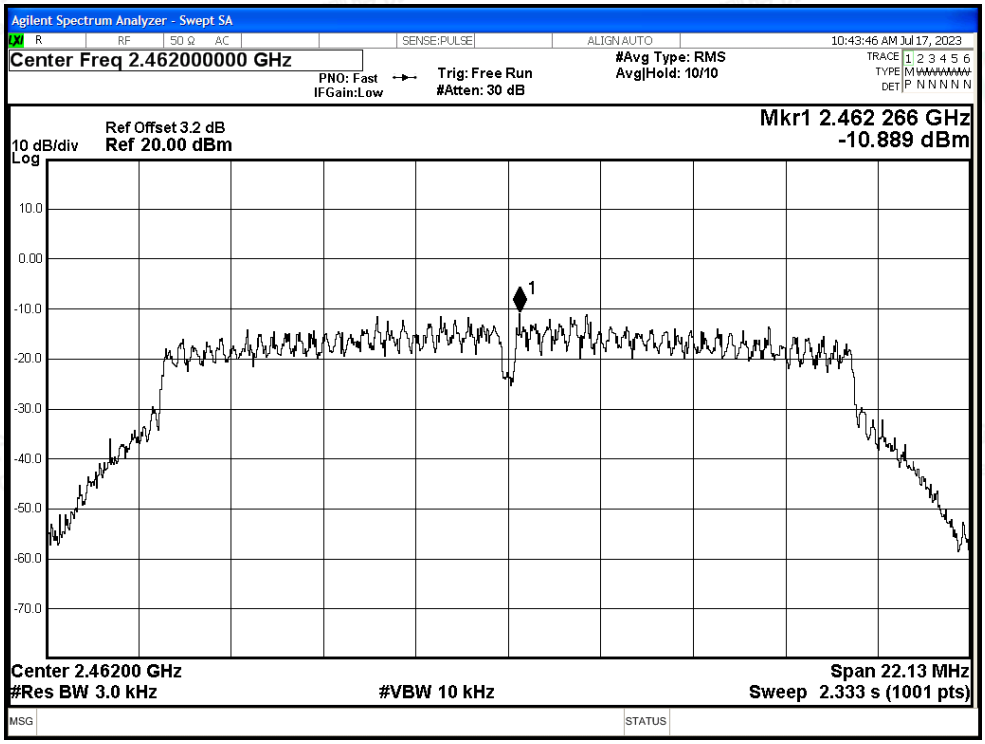
PSD NVNT g 2412MHz Ant1



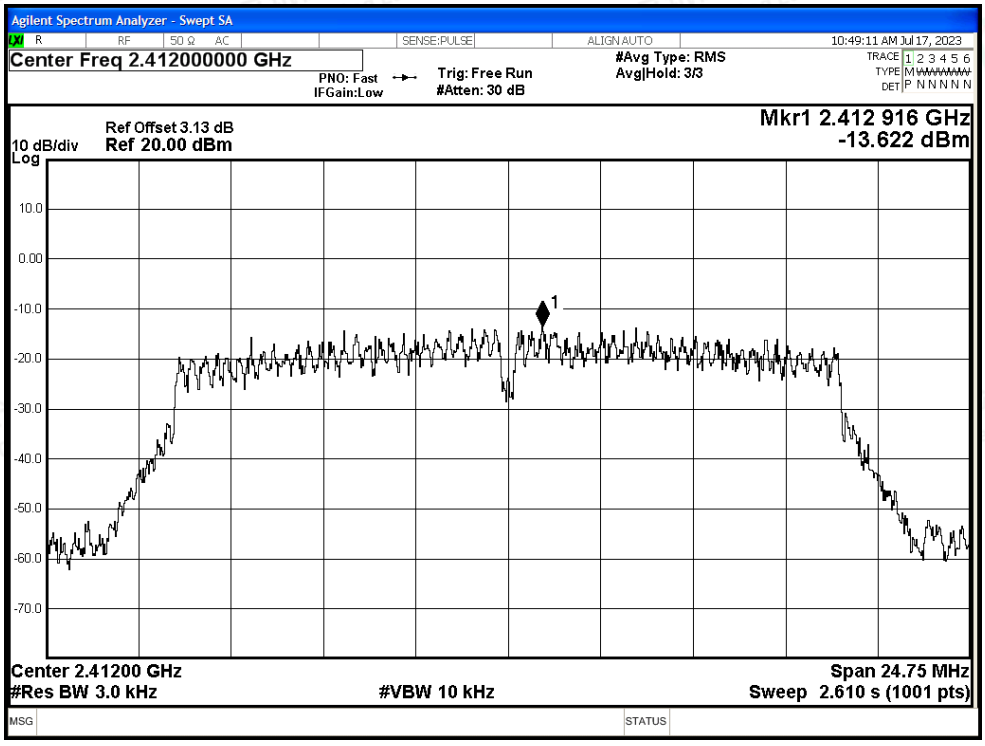
PSD NVNT g 2437MHz Ant1



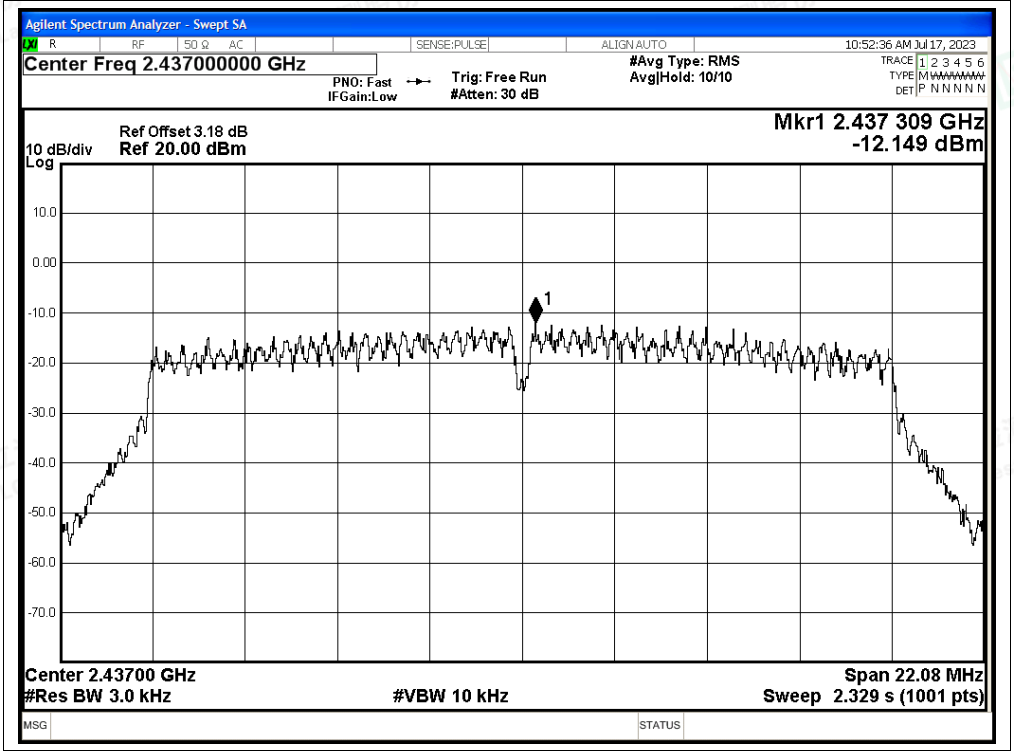
PSD NVNT g 2462MHz Ant1



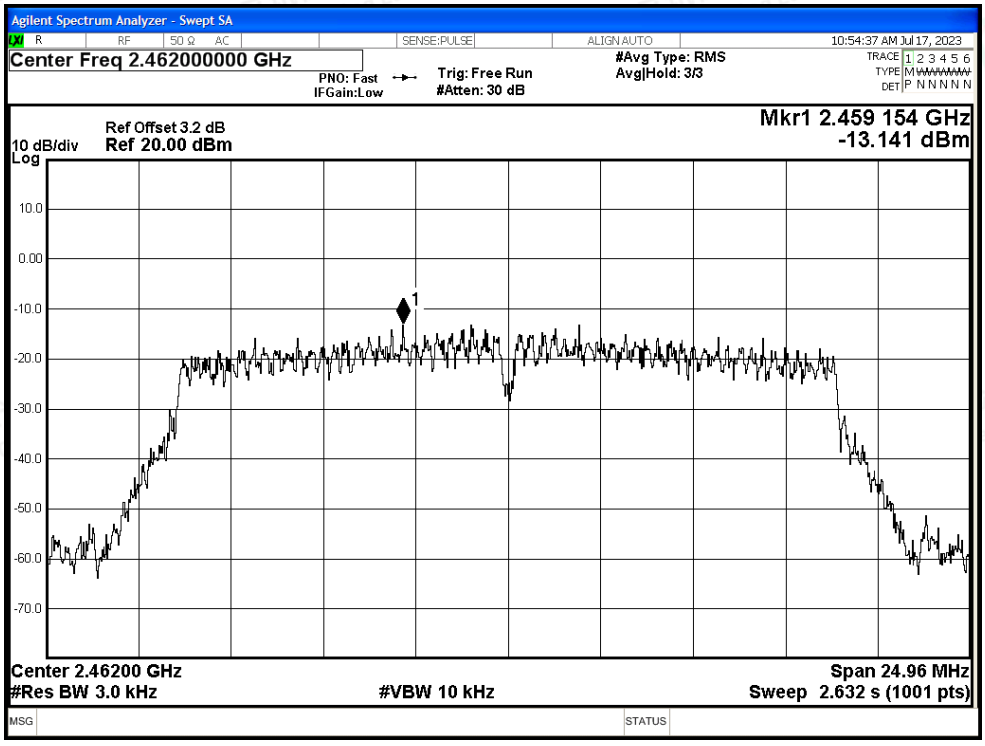
PSD NVNT n20 2412MHz Ant1



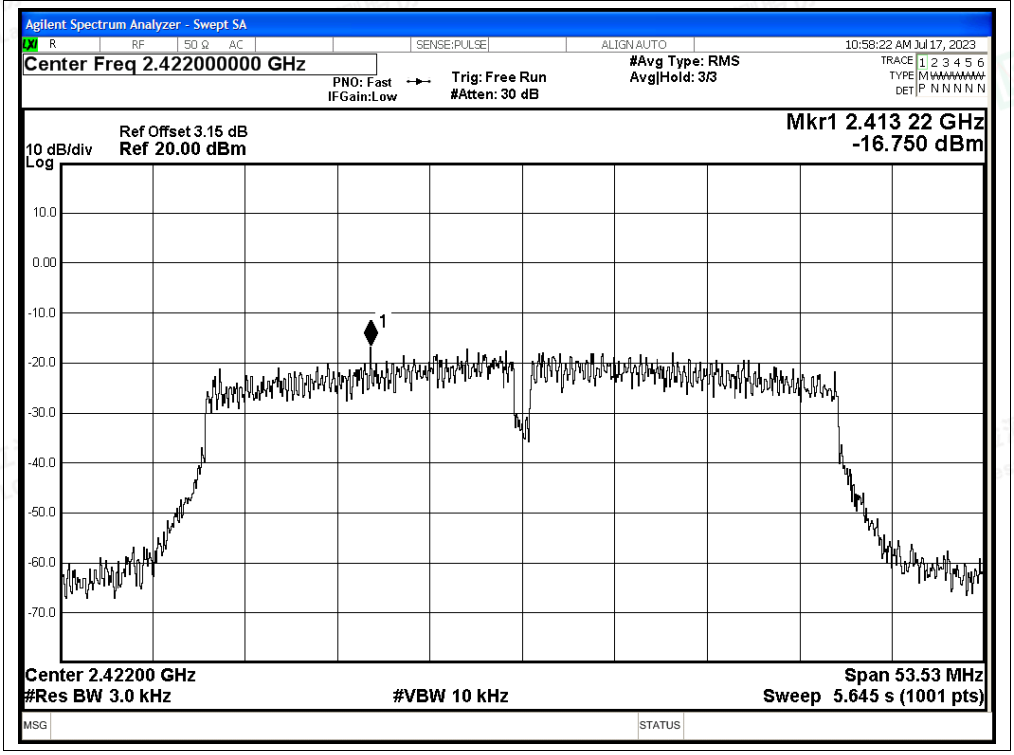
PSD NVNT n20 2437MHz Ant1



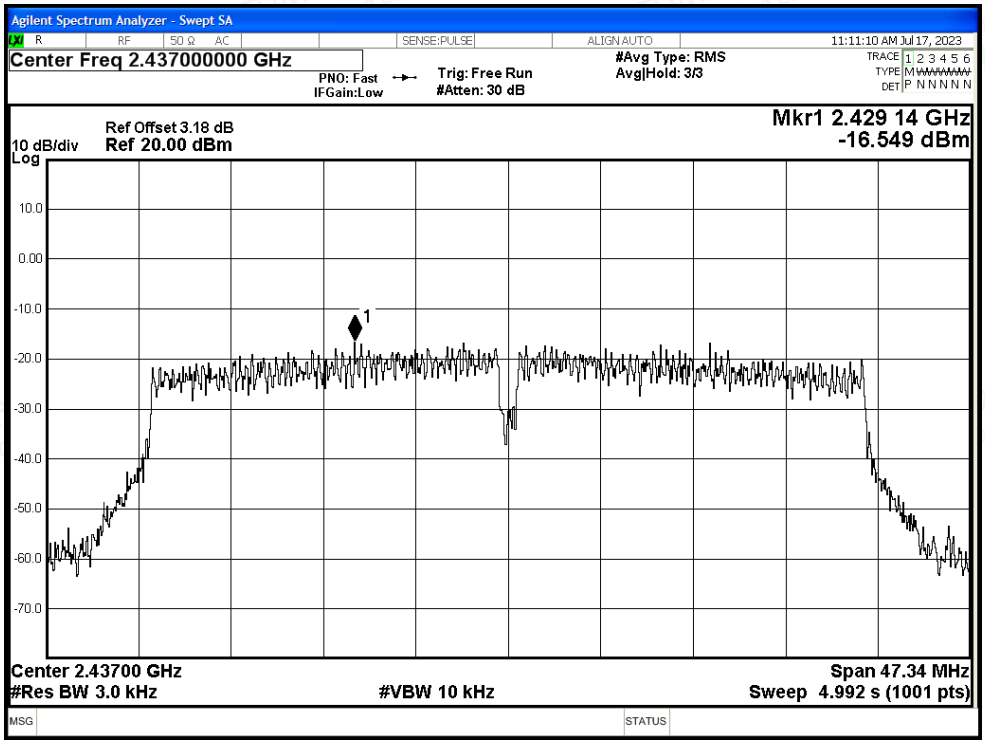
PSD NVNT n20 2462MHz Ant1



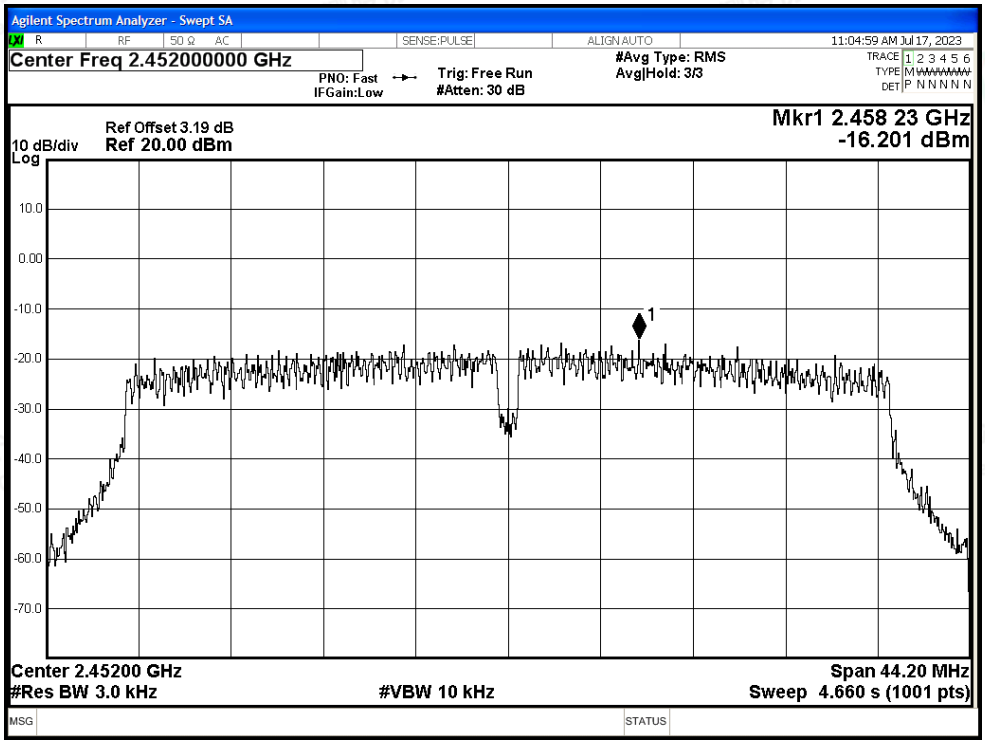
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant1

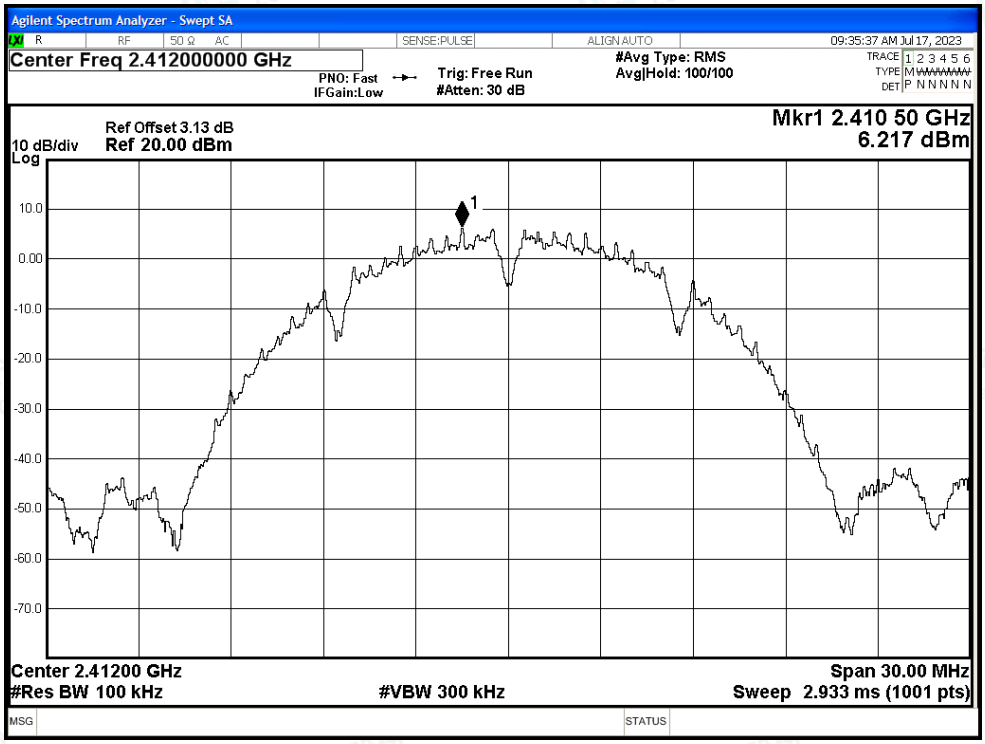


A.5 Band Edge

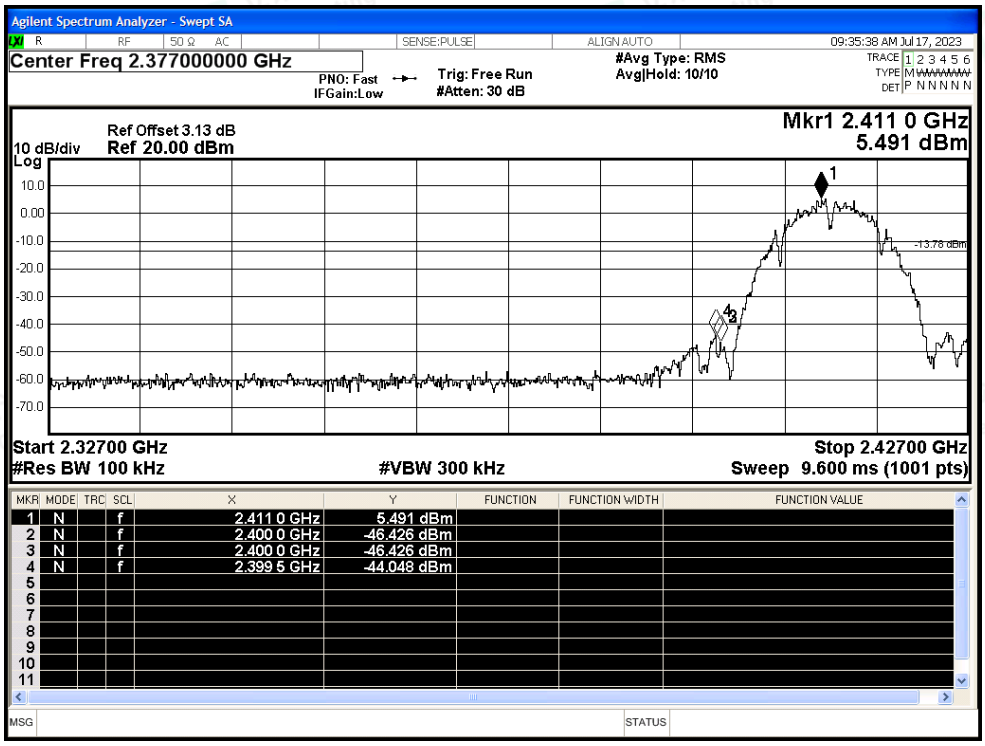
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant0	-50.27	-20	Pass
NVNT	b	2462	Ant0	-62.34	-20	Pass
NVNT	g	2412	Ant0	-41.35	-20	Pass
NVNT	g	2462	Ant0	-55.32	-20	Pass
NVNT	n20	2412	Ant0	-39.49	-20	Pass
NVNT	n20	2462	Ant0	-54.18	-20	Pass
NVNT	n40	2422	Ant0	-43.13	-20	Pass
NVNT	n40	2452	Ant0	-45.68	-20	Pass

Test Graphs

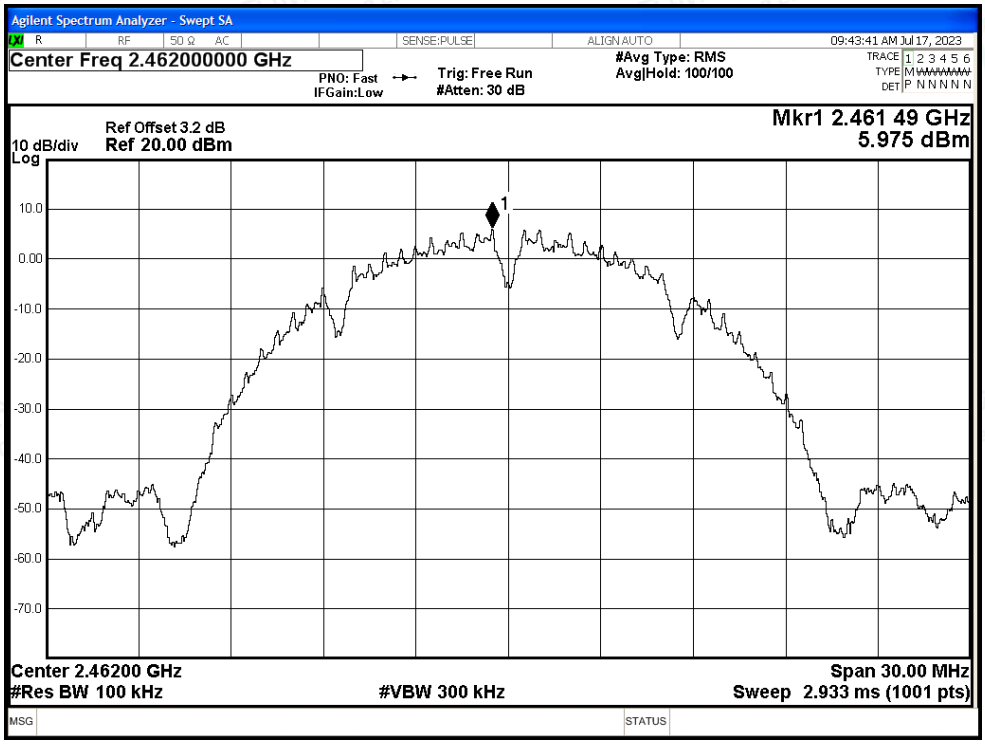
Band Edge NVNT b 2412MHz Ant0 Ref



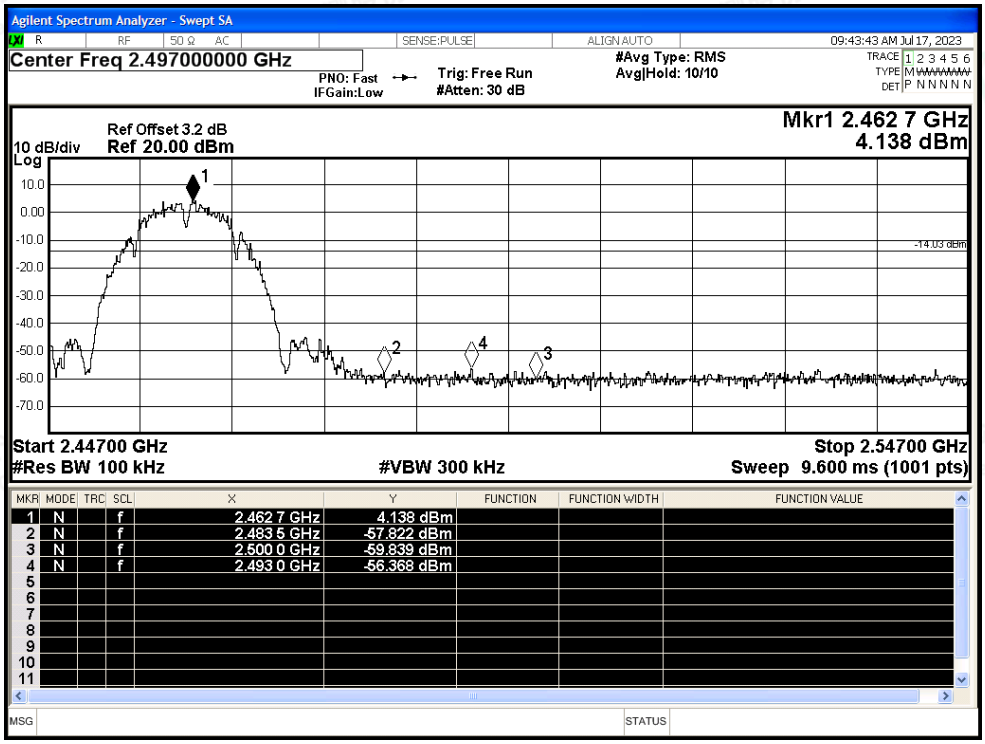
Band Edge NVNT b 2412MHz Ant0 Emission



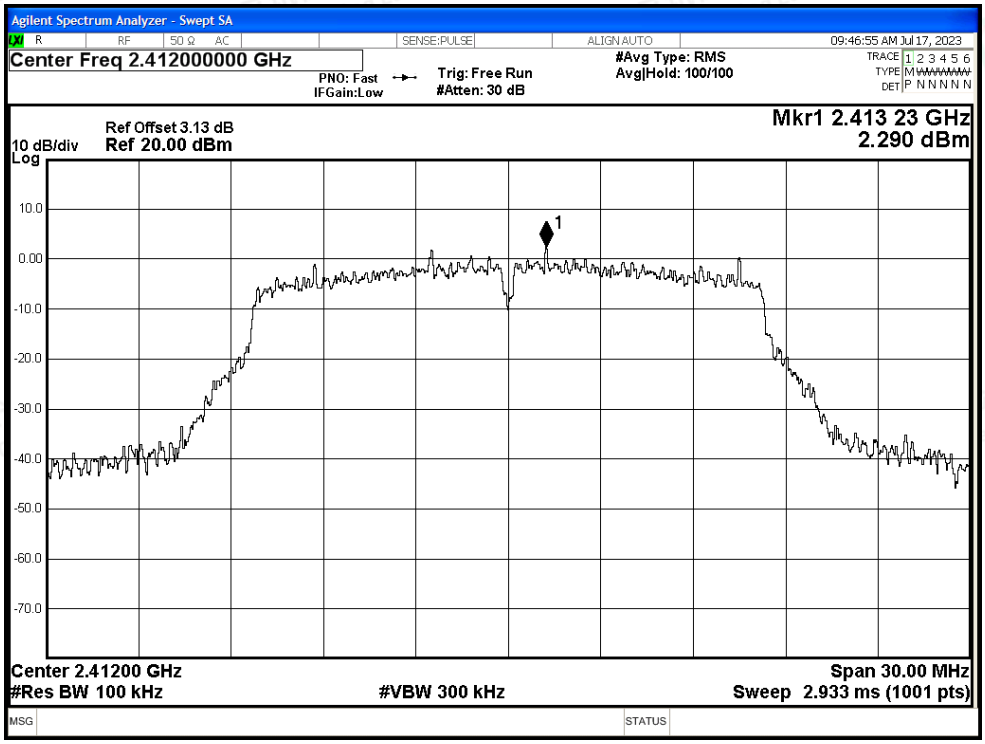
Band Edge NVNT b 2462MHz Ant0 Ref



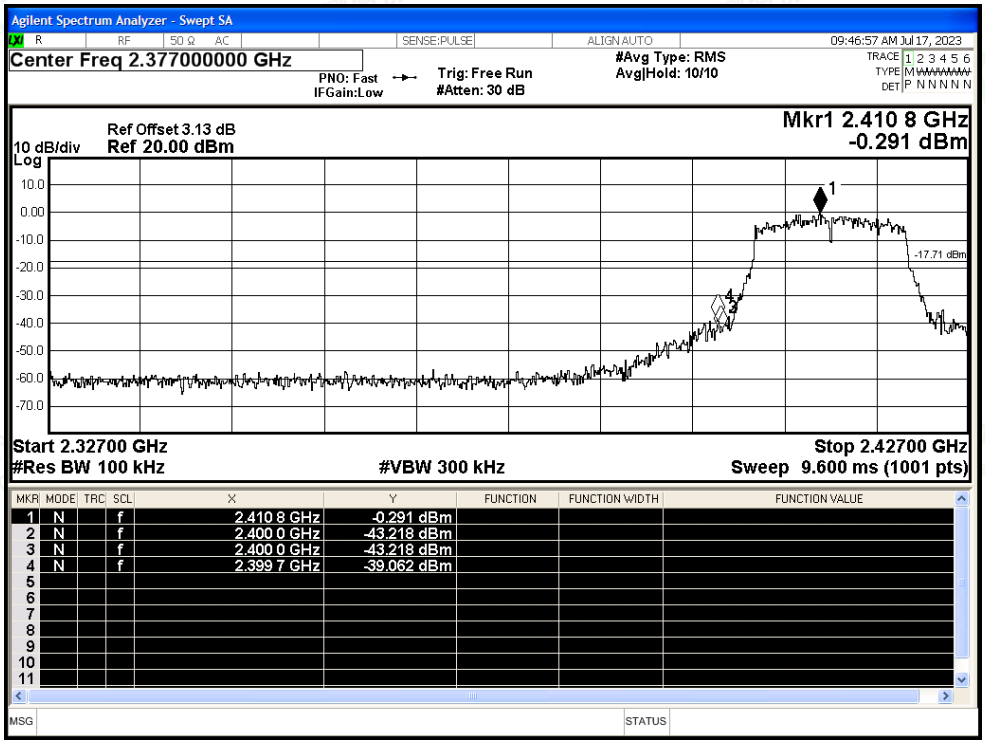
Band Edge NVNT b 2462MHz Ant0 Emission



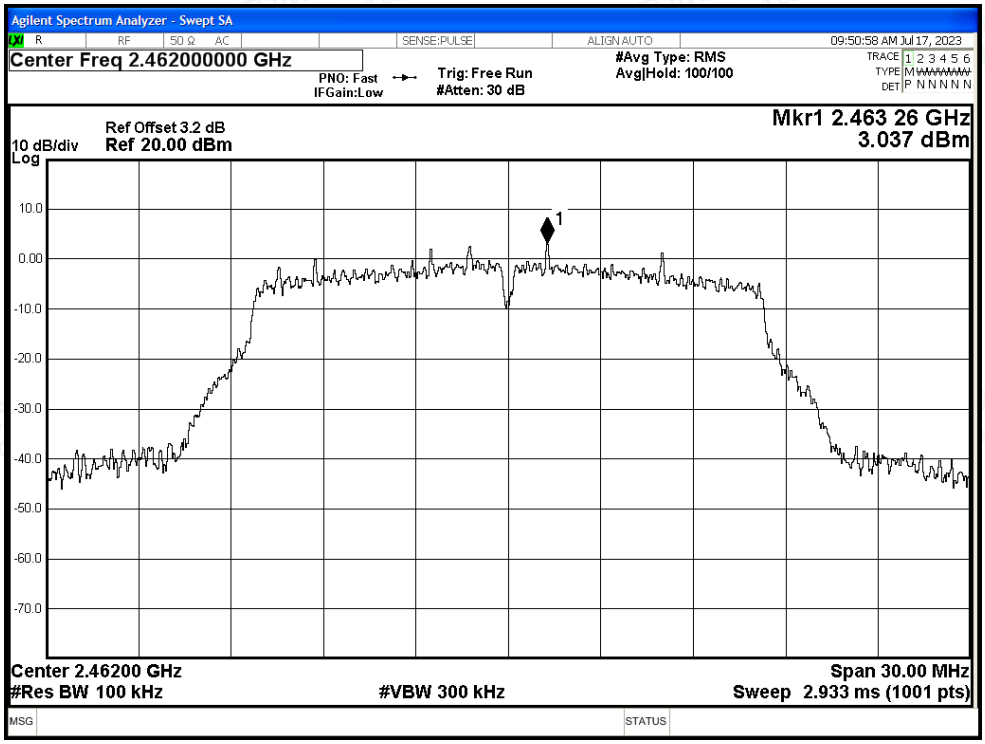
Band Edge NVNT g 2412MHz Ant0 Ref



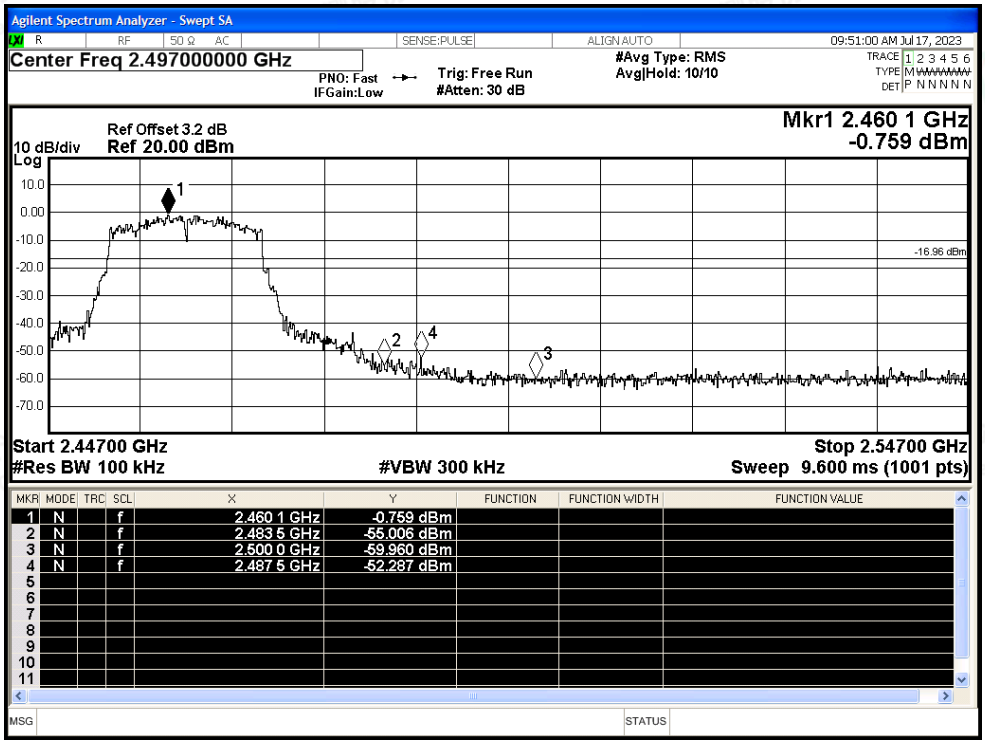
Band Edge NVNT g 2412MHz Ant0 Emission



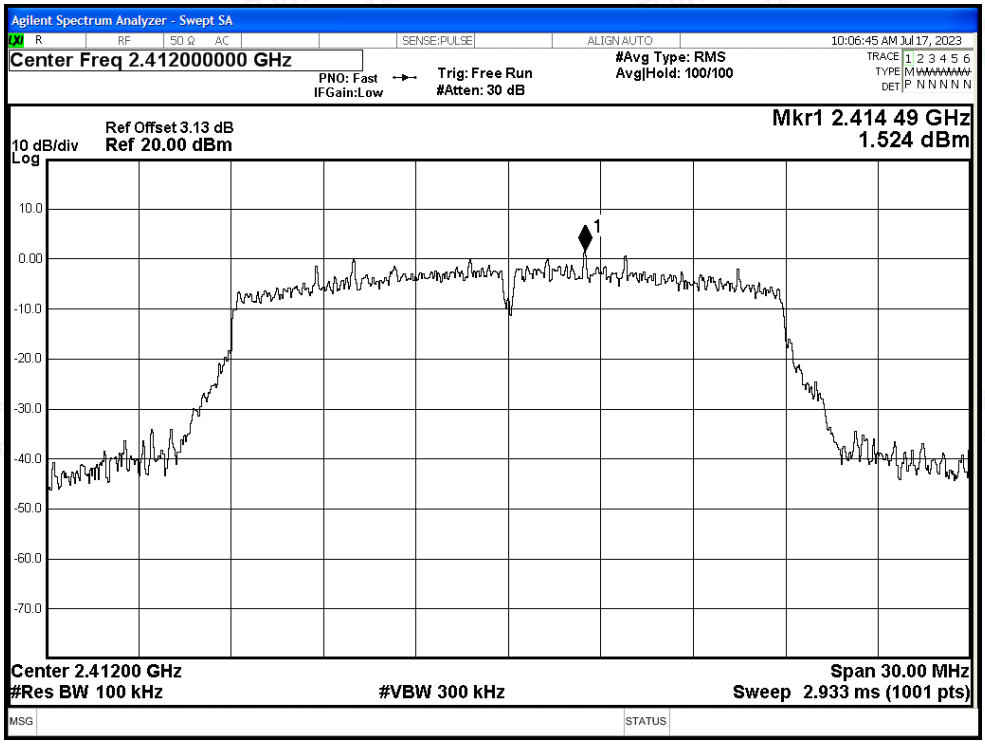
Band Edge NVNT g 2462MHz Ant0 Ref



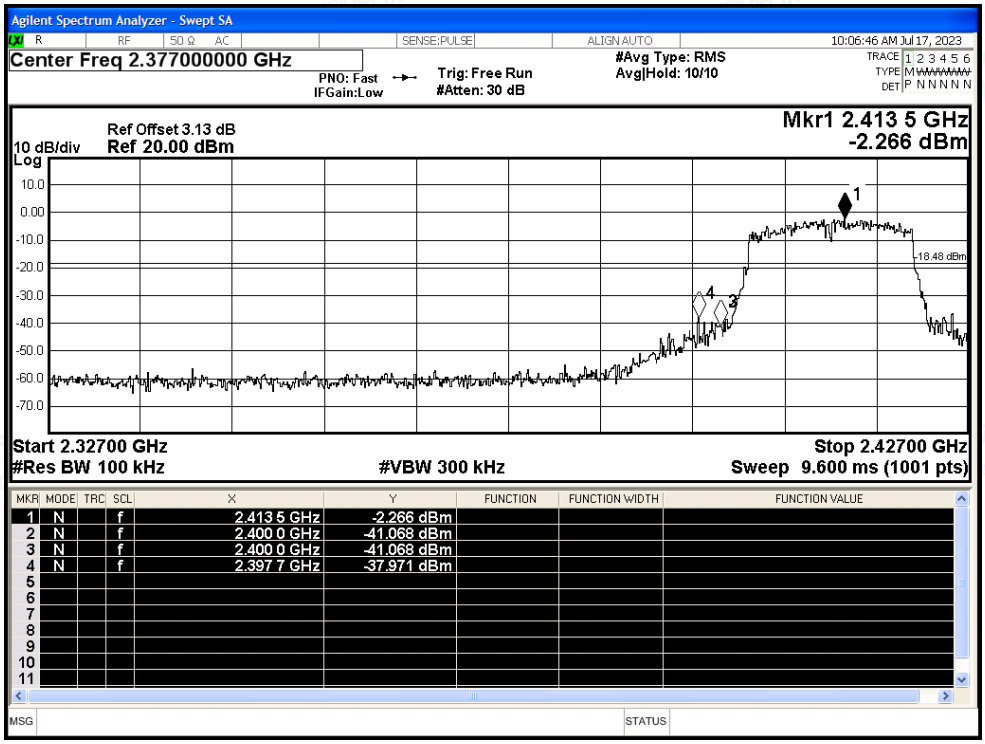
Band Edge NVNT g 2462MHz Ant0 Emission



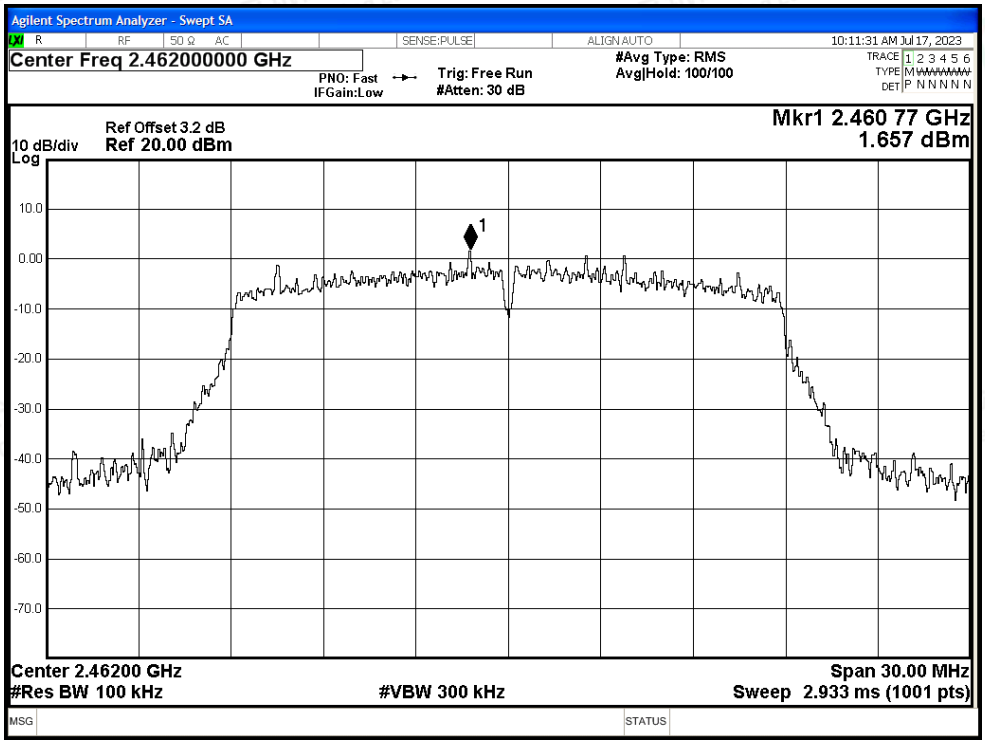
Band Edge NVNT n20 2412MHz Ant0 Ref



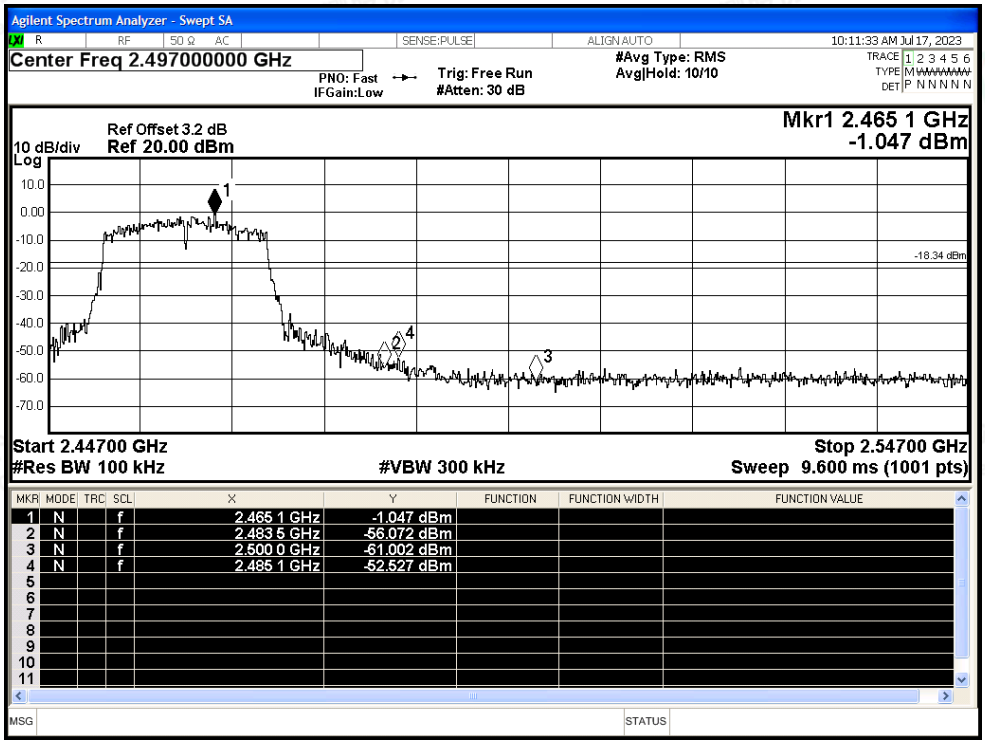
Band Edge NVNT n20 2412MHz Ant0 Emission



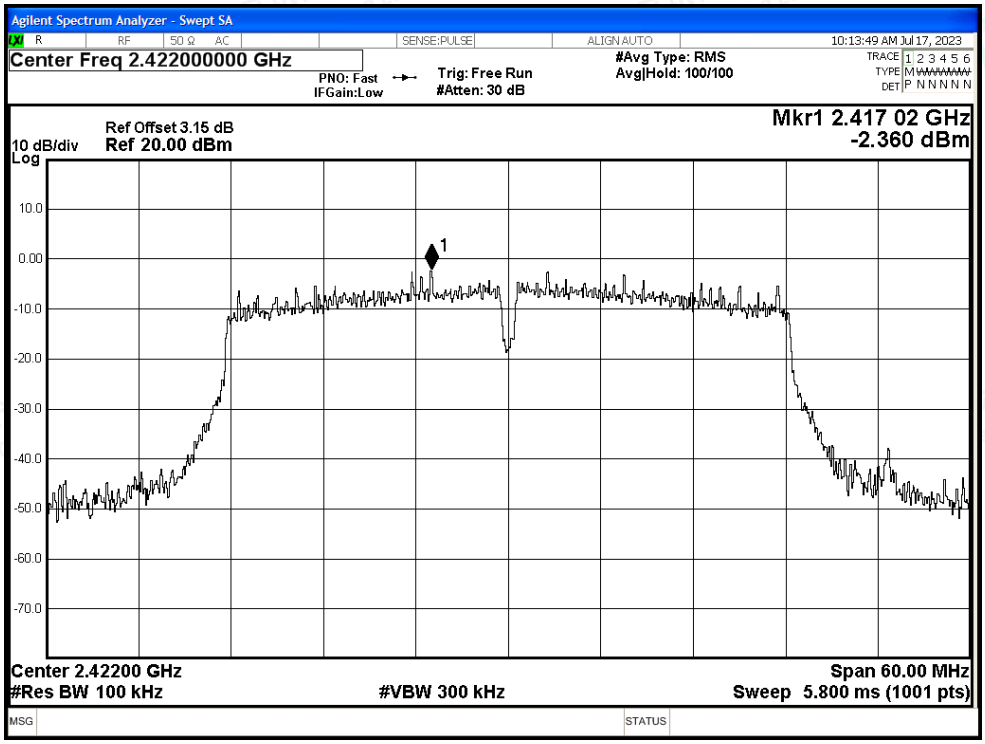
Band Edge NVNT n20 2462MHz Ant0 Ref



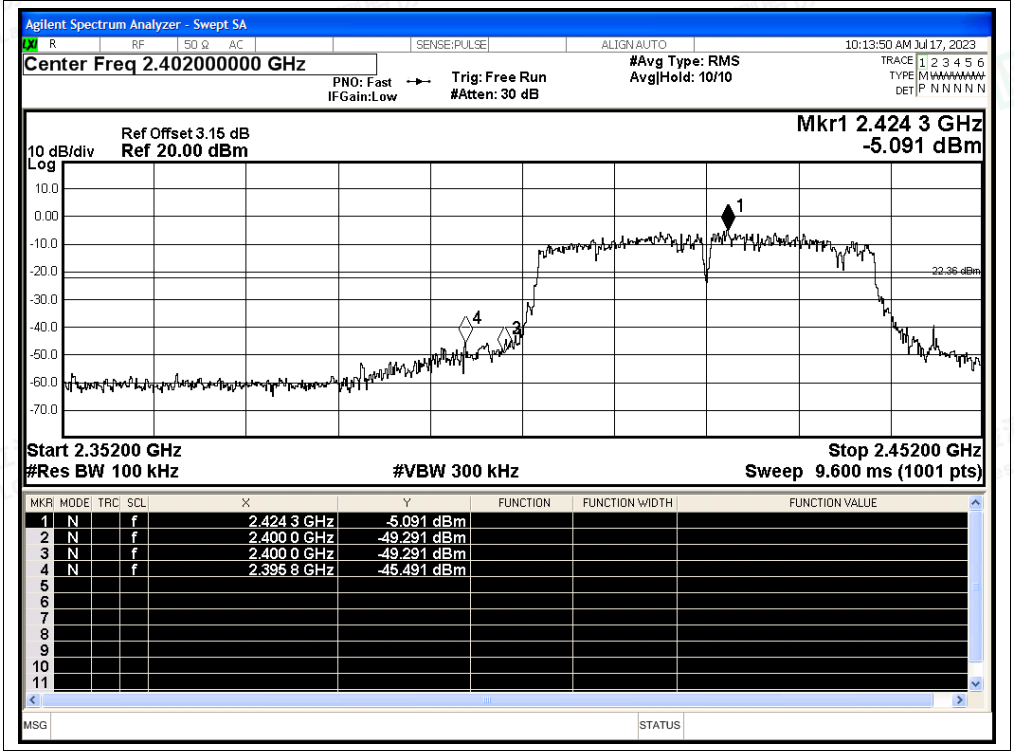
Band Edge NVNT n20 2462MHz Ant0 Emission



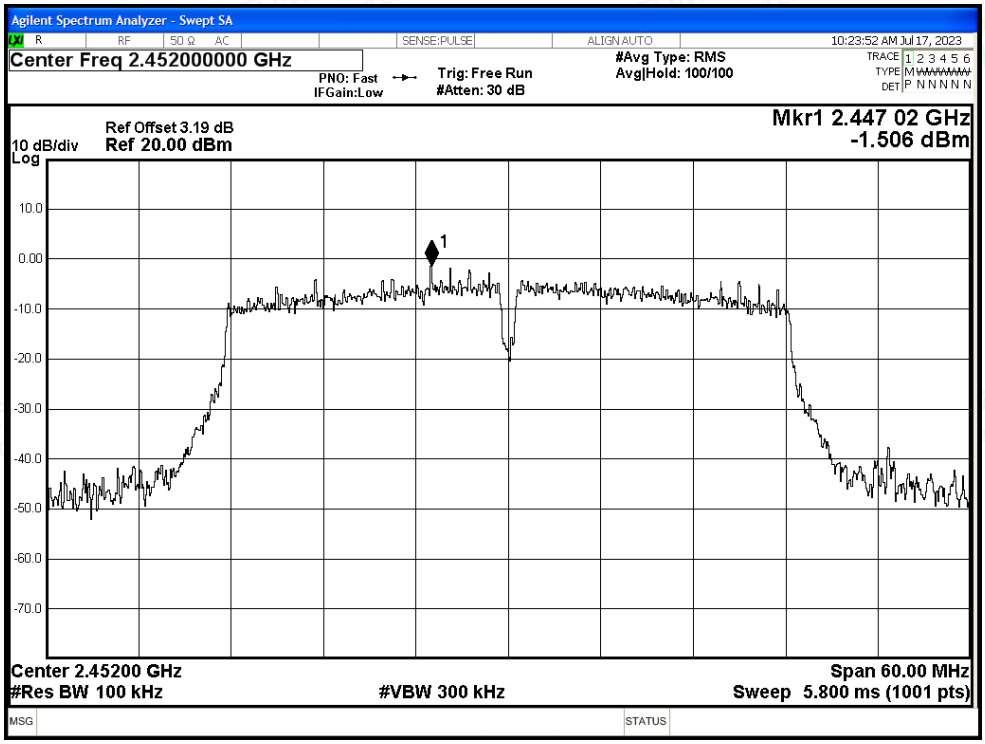
Band Edge NVNT n40 2422MHz Ant0 Ref



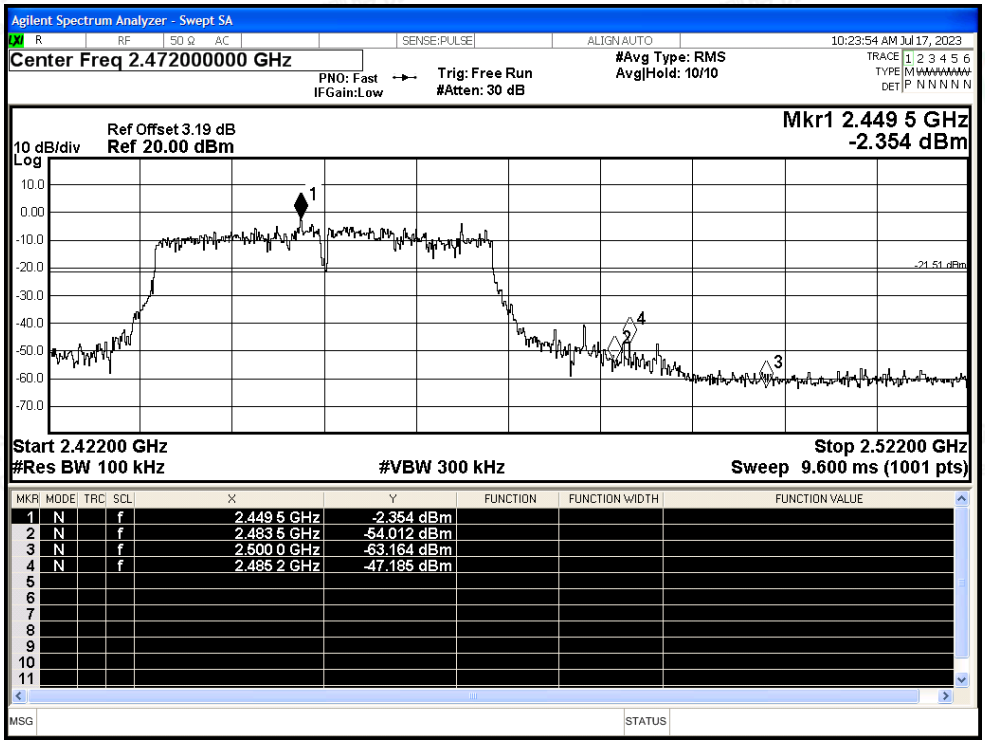
Band Edge NVNT n40 2422MHz Ant0 Emission



Band Edge NVNT n40 2452MHz Ant0 Ref



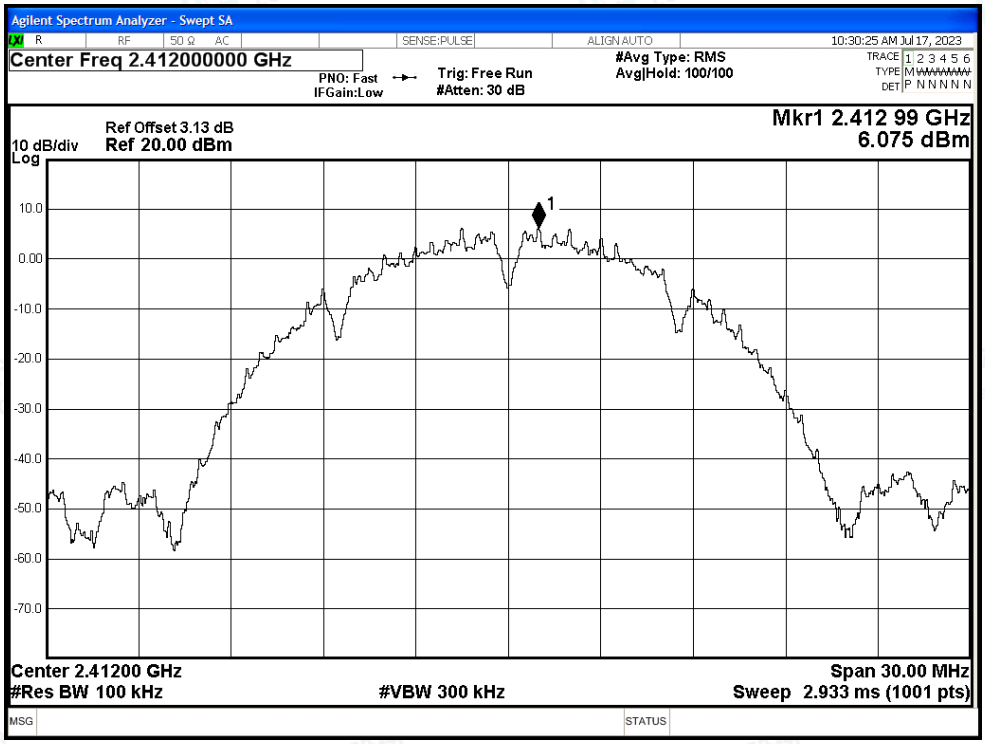
Band Edge NVNT n40 2452MHz Ant0 Emission



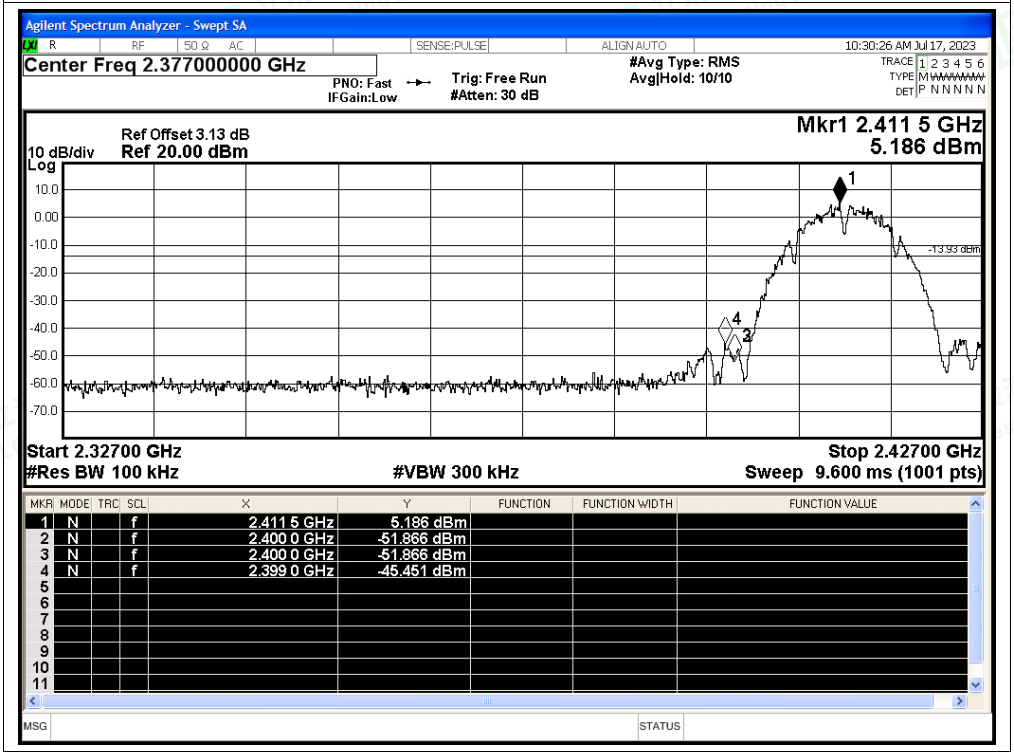
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-51.53	-20	Pass
NVNT	b	2462	Ant1	-62.97	-20	Pass
NVNT	g	2412	Ant1	-38.81	-20	Pass
NVNT	g	2462	Ant1	-52.93	-20	Pass
NVNT	n20	2412	Ant1	-40.52	-20	Pass
NVNT	n20	2462	Ant1	-53.21	-20	Pass
NVNT	n40	2422	Ant1	-42.34	-20	Pass
NVNT	n40	2452	Ant1	-45.13	-20	Pass

Test Graphs

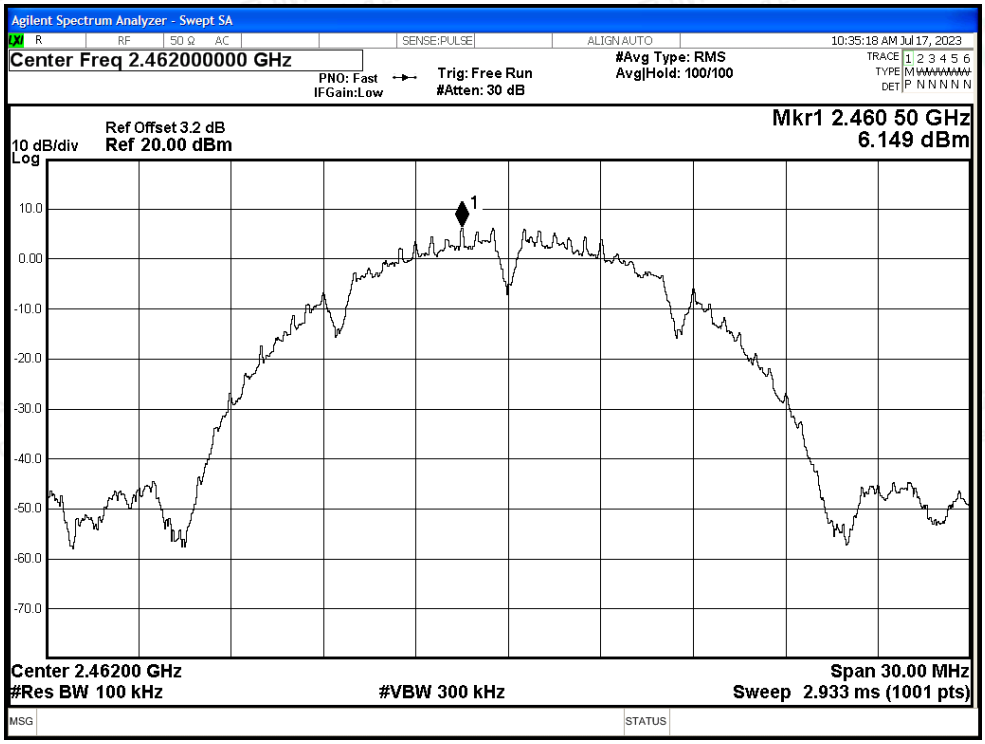
Band Edge NVNT b 2412MHz Ant1 Ref



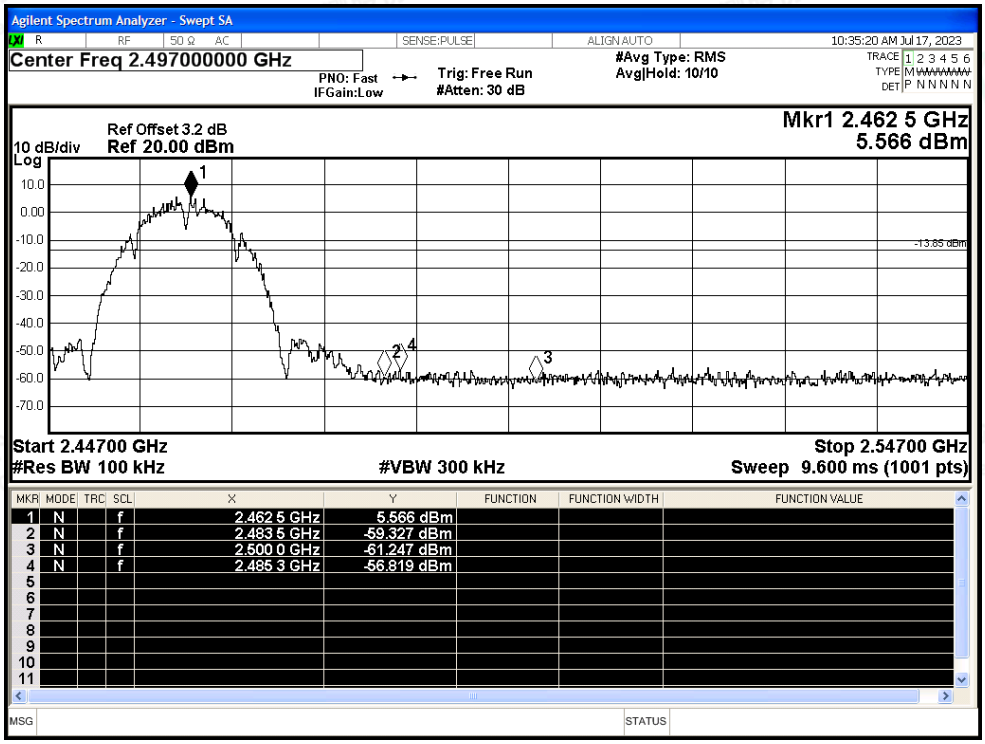
Band Edge NVNT b 2412MHz Ant1 Emission



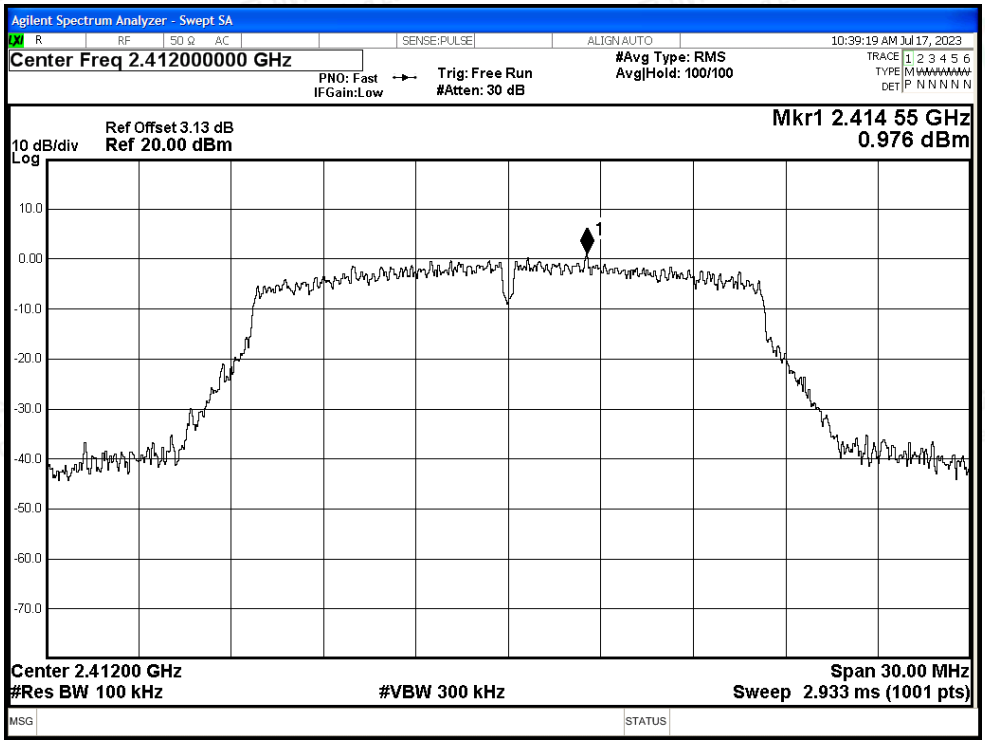
Band Edge NVNT b 2462MHz Ant1 Ref



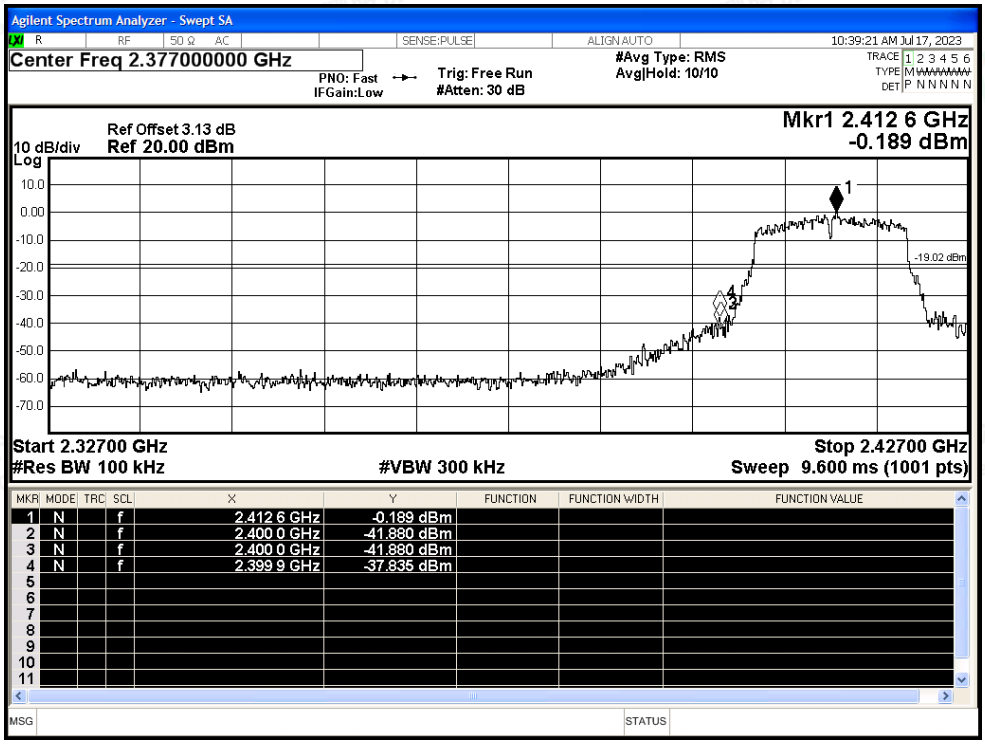
Band Edge NVNT b 2462MHz Ant1 Emission



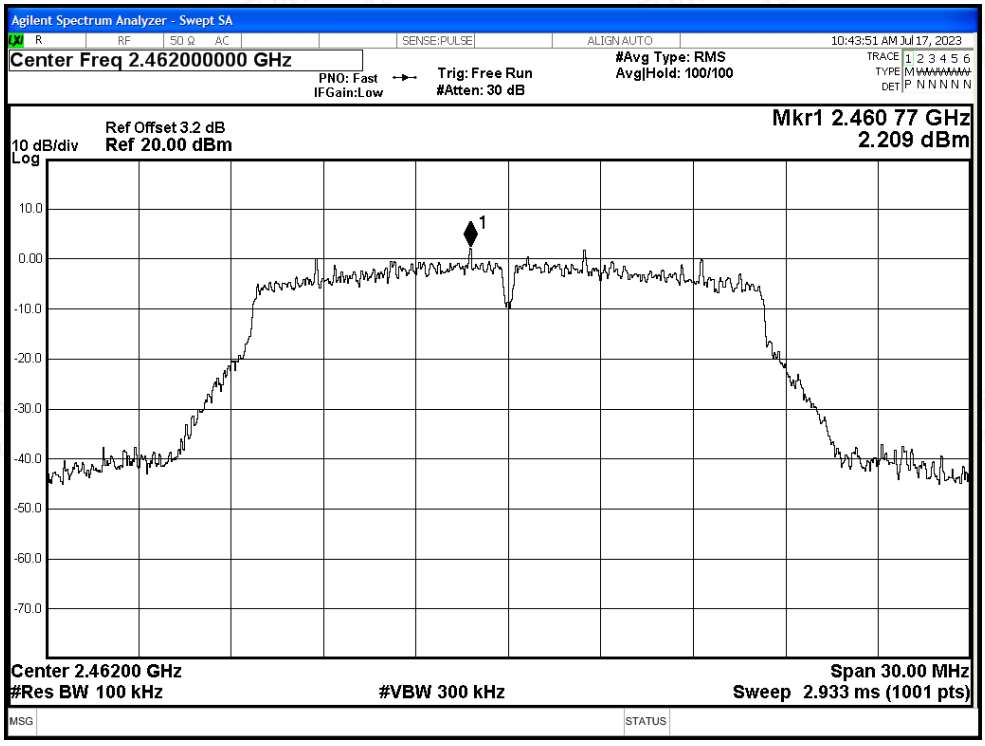
Band Edge NVNT g 2412MHz Ant1 Ref



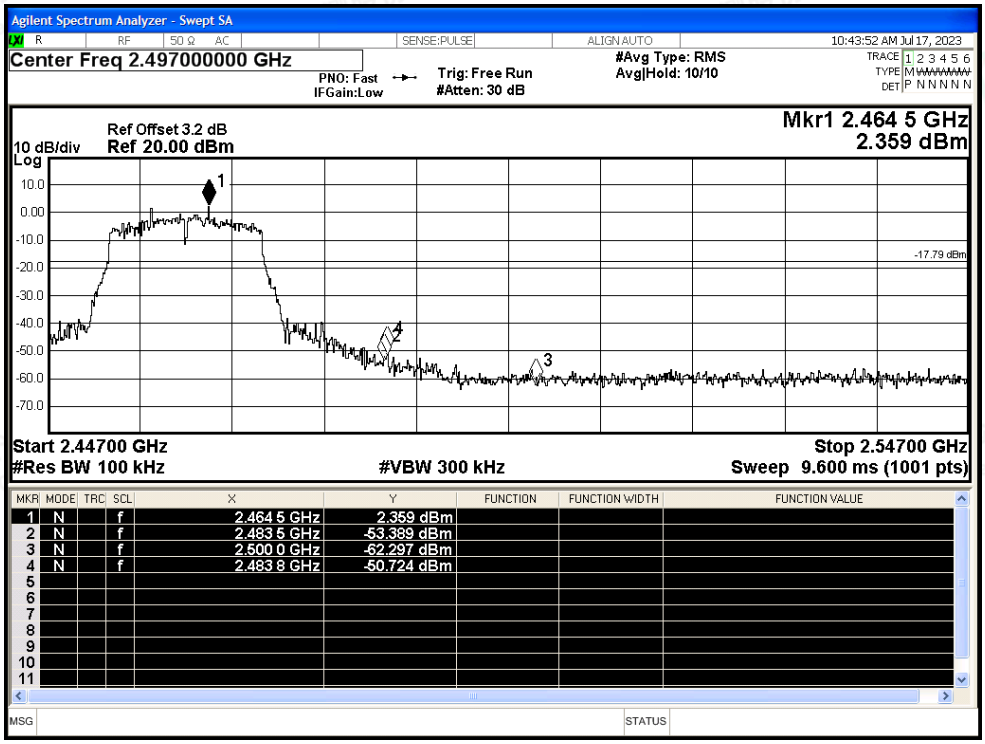
Band Edge NVNT g 2412MHz Ant1 Emission



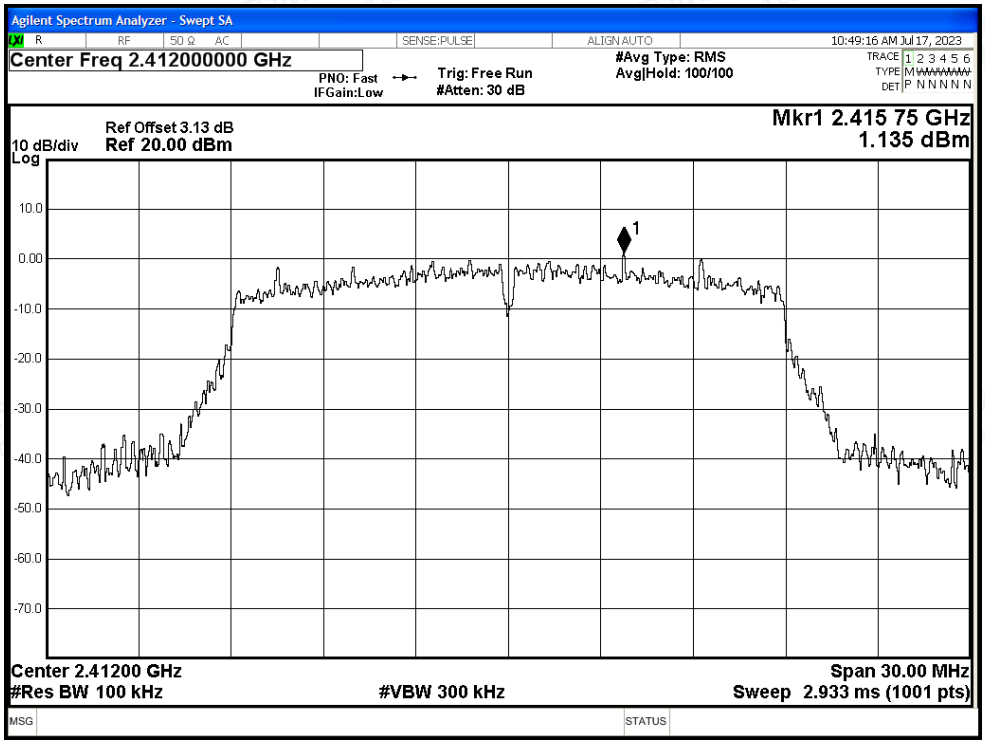
Band Edge NVNT g 2462MHz Ant1 Ref



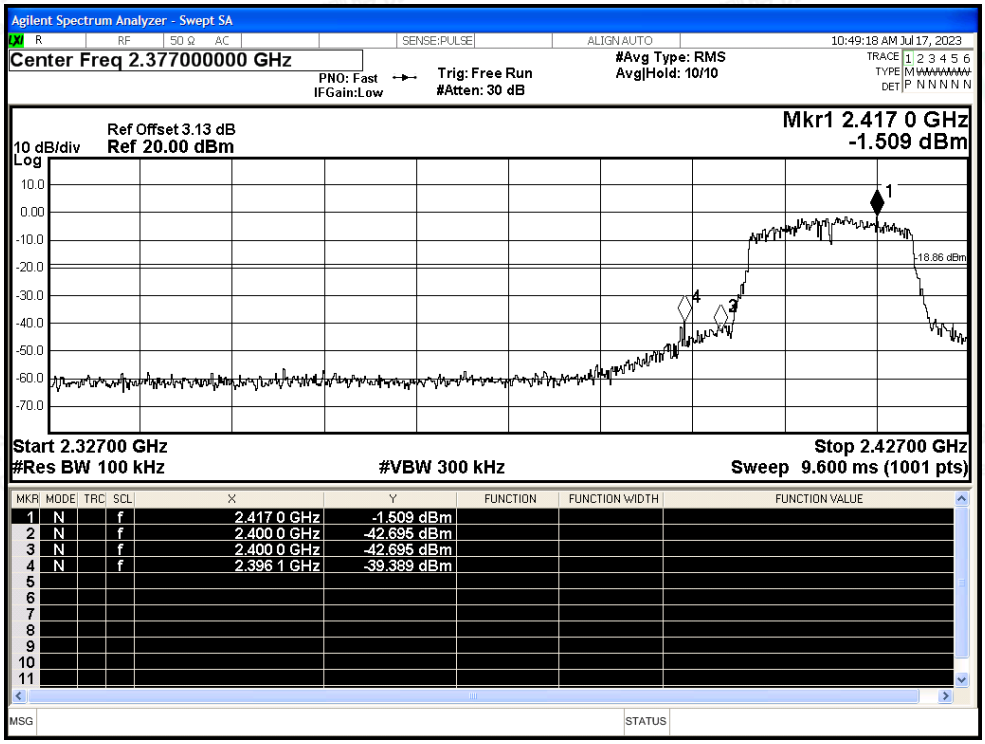
Band Edge NVNT g 2462MHz Ant1 Emission



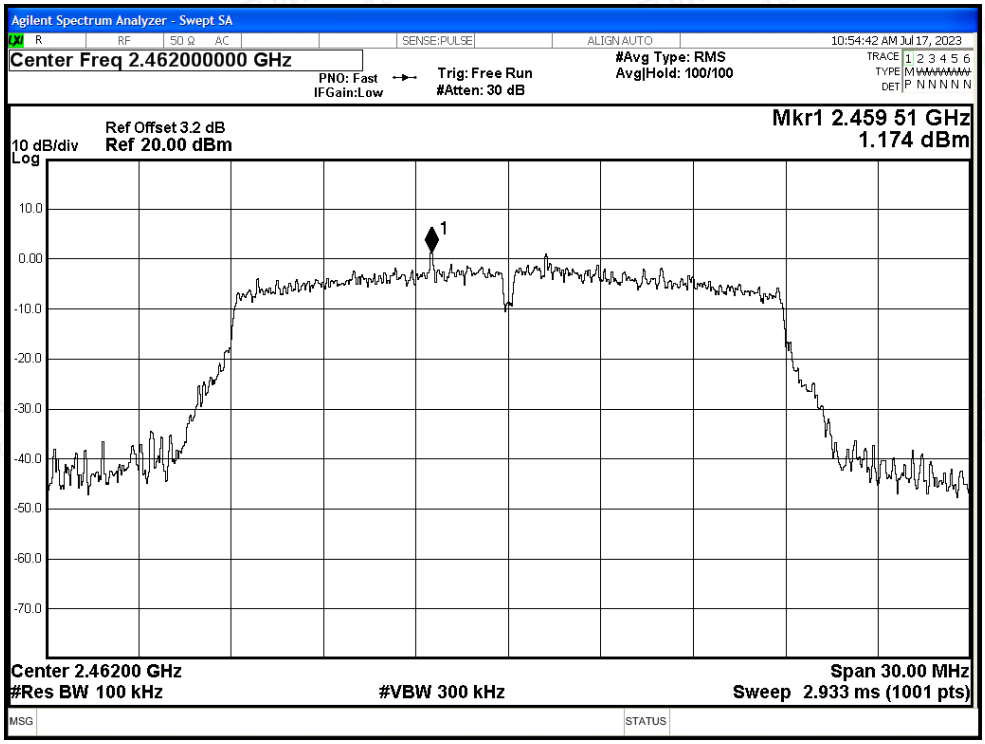
Band Edge NVNT n20 2412MHz Ant1 Ref



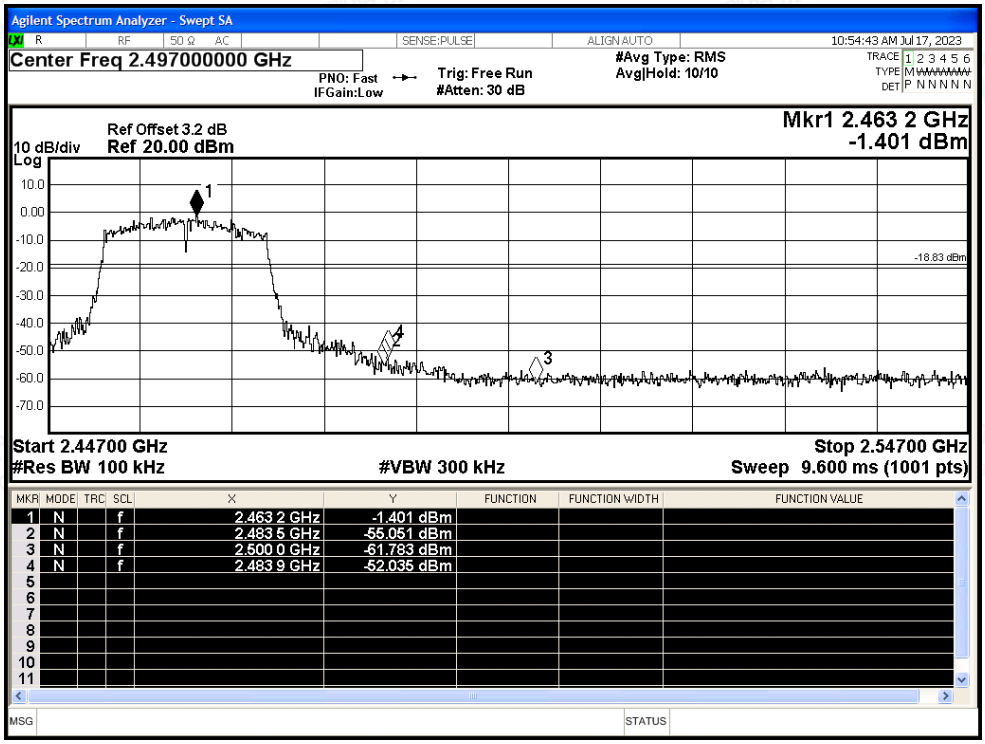
Band Edge NVNT n20 2412MHz Ant1 Emission



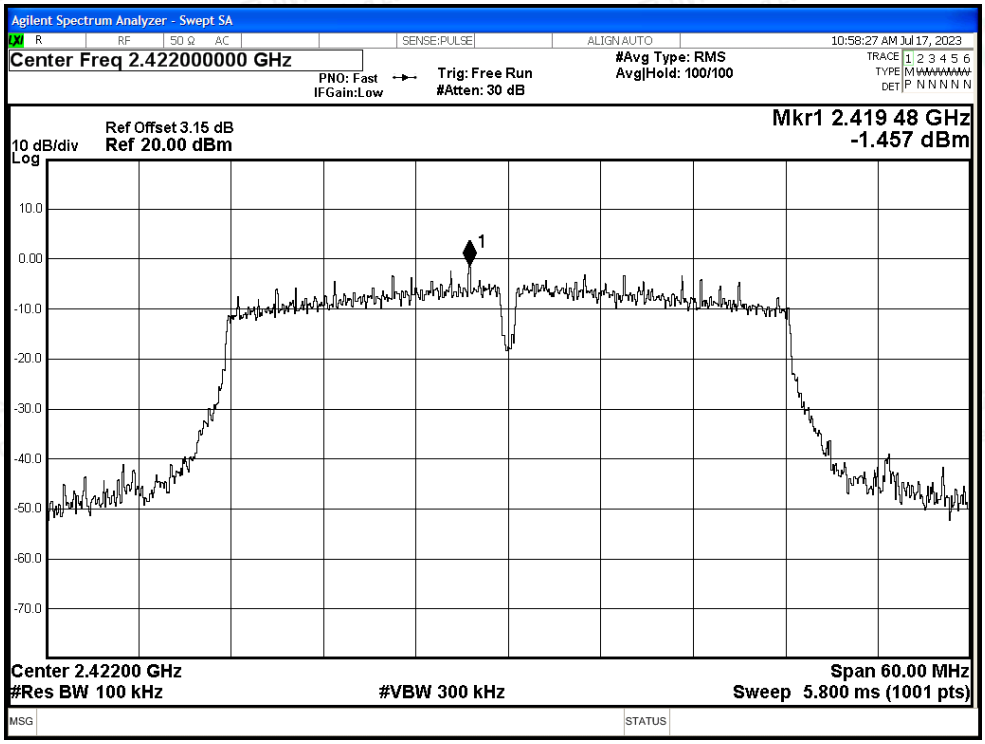
Band Edge NVNT n20 2462MHz Ant1 Ref



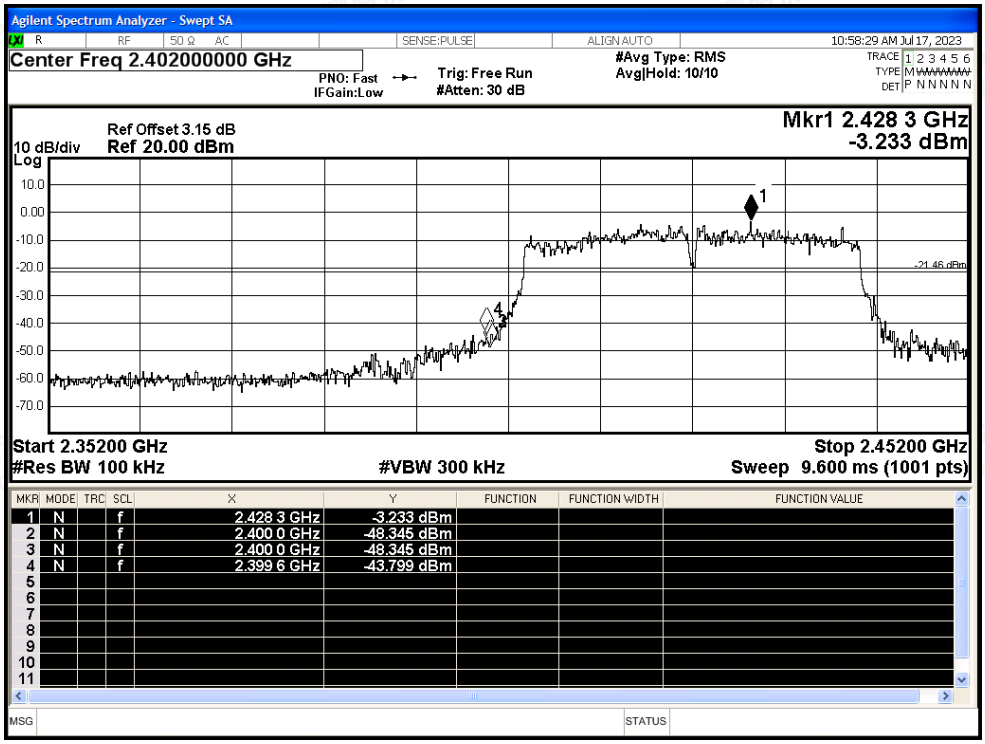
Band Edge NVNT n20 2462MHz Ant1 Emission



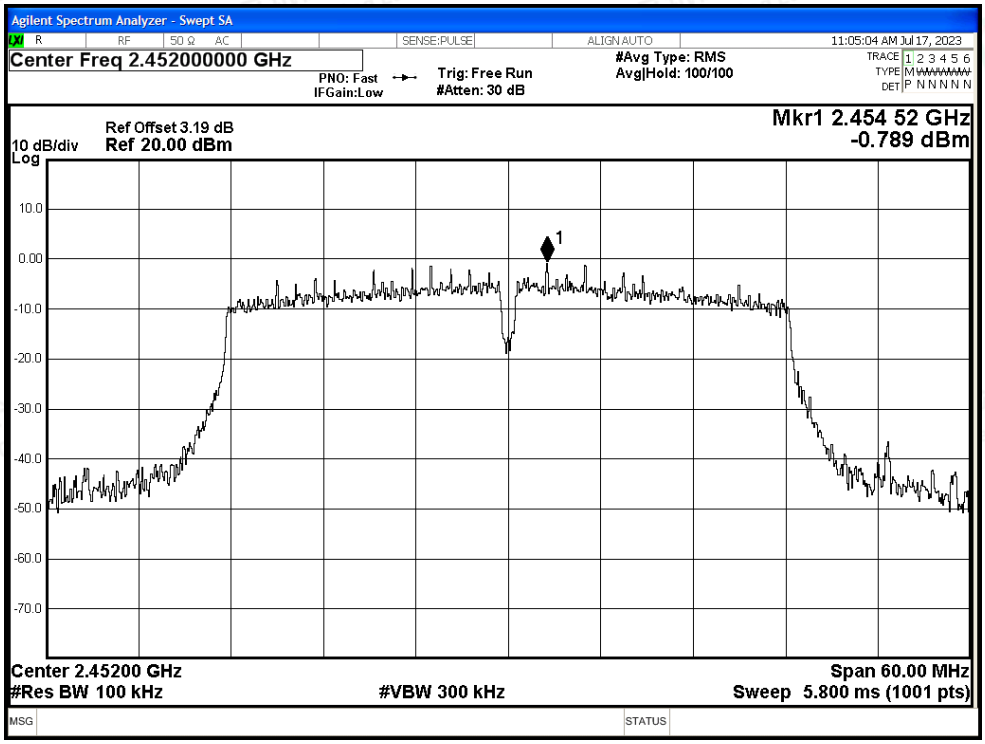
Band Edge NVNT n40 2422MHz Ant1 Ref



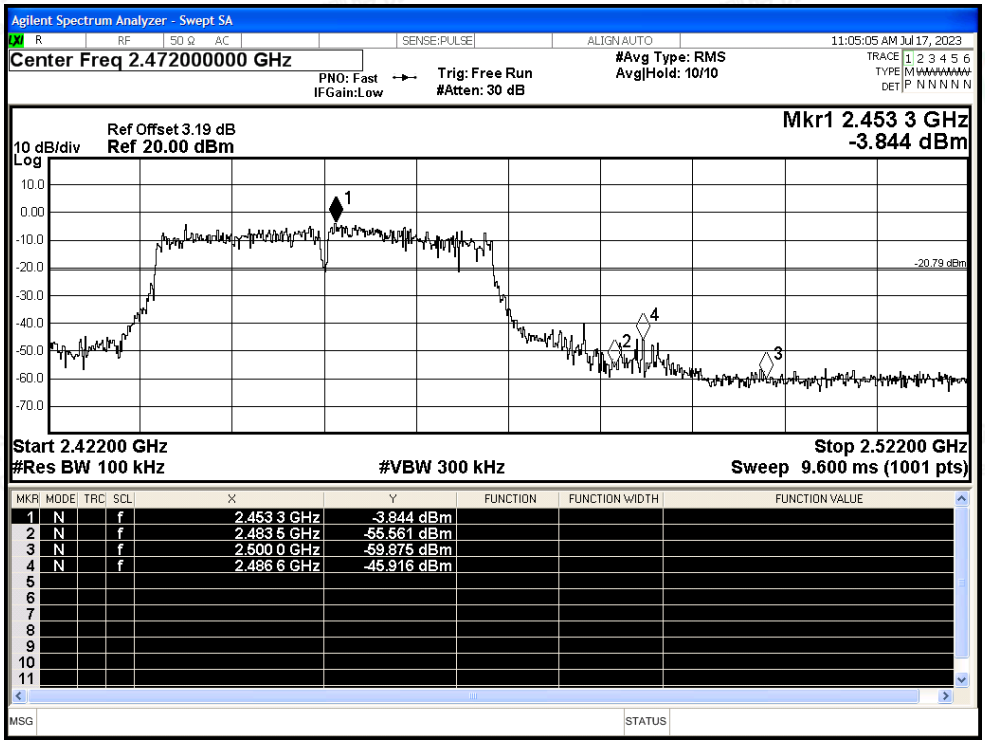
Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission

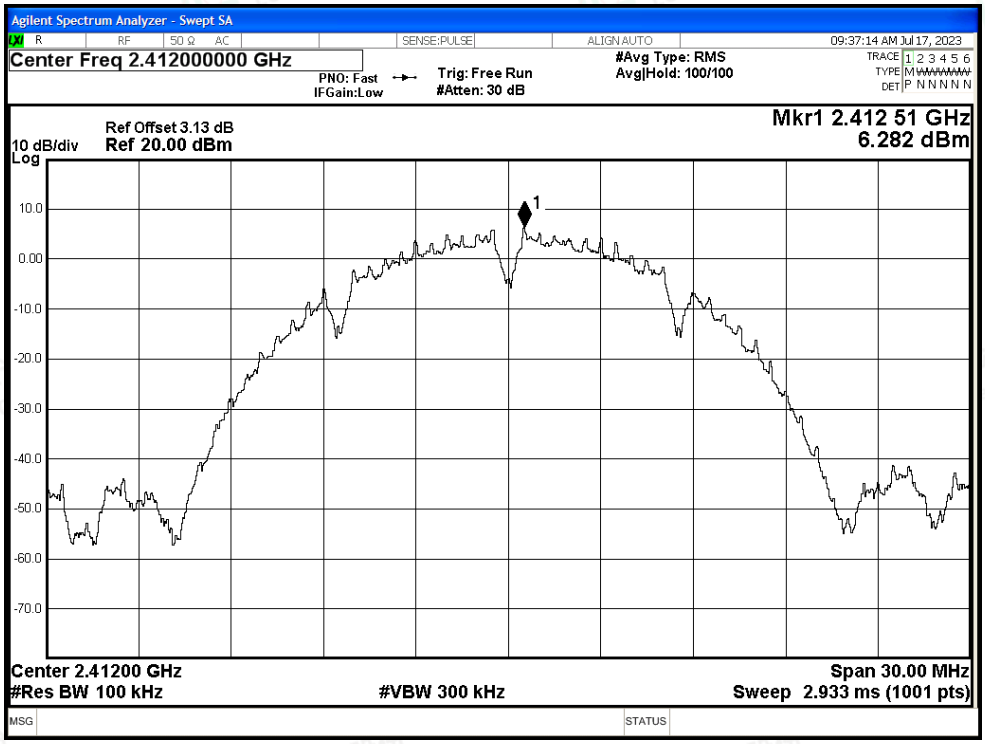


A.6 Conducted RF Spurious Emission

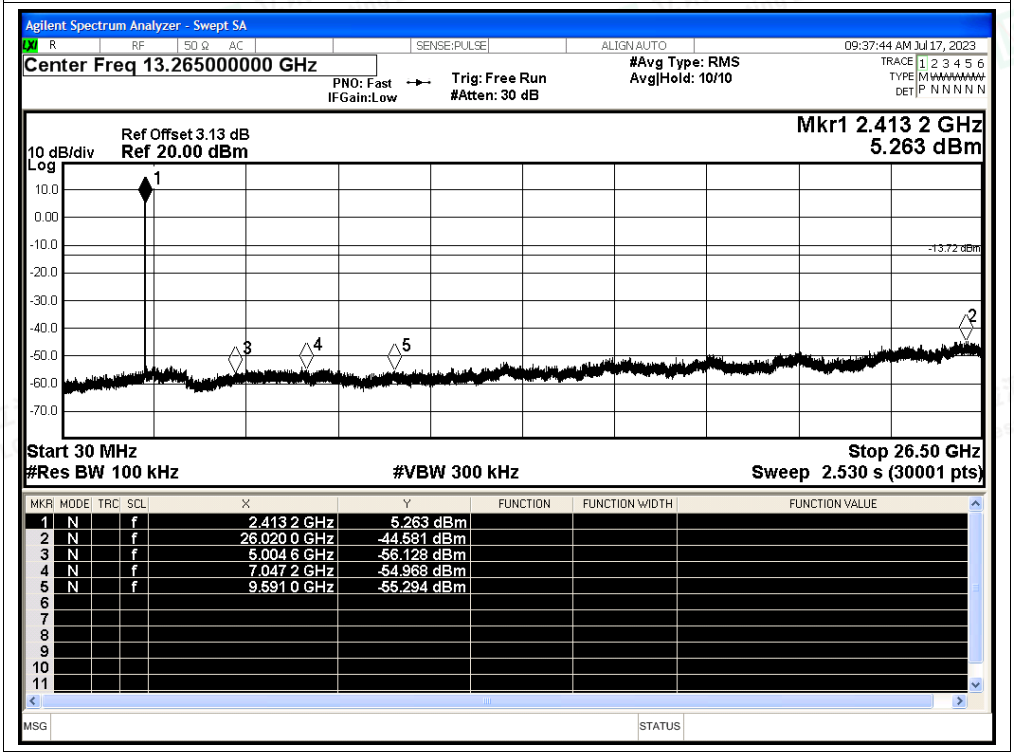
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant0	-50.86	-20	Pass
NVNT	b	2437	Ant0	-50.51	-20	Pass
NVNT	b	2462	Ant0	-50.14	-20	Pass
NVNT	g	2412	Ant0	-43.83	-20	Pass
NVNT	g	2437	Ant0	-48.16	-20	Pass
NVNT	g	2462	Ant0	-46.87	-20	Pass
NVNT	n20	2412	Ant0	-45.1	-20	Pass
NVNT	n20	2437	Ant0	-47.19	-20	Pass
NVNT	n20	2462	Ant0	-45.95	-20	Pass
NVNT	n40	2422	Ant0	-43.33	-20	Pass
NVNT	n40	2437	Ant0	-42.66	-20	Pass
NVNT	n40	2452	Ant0	-42.71	-20	Pass

Test Graphs

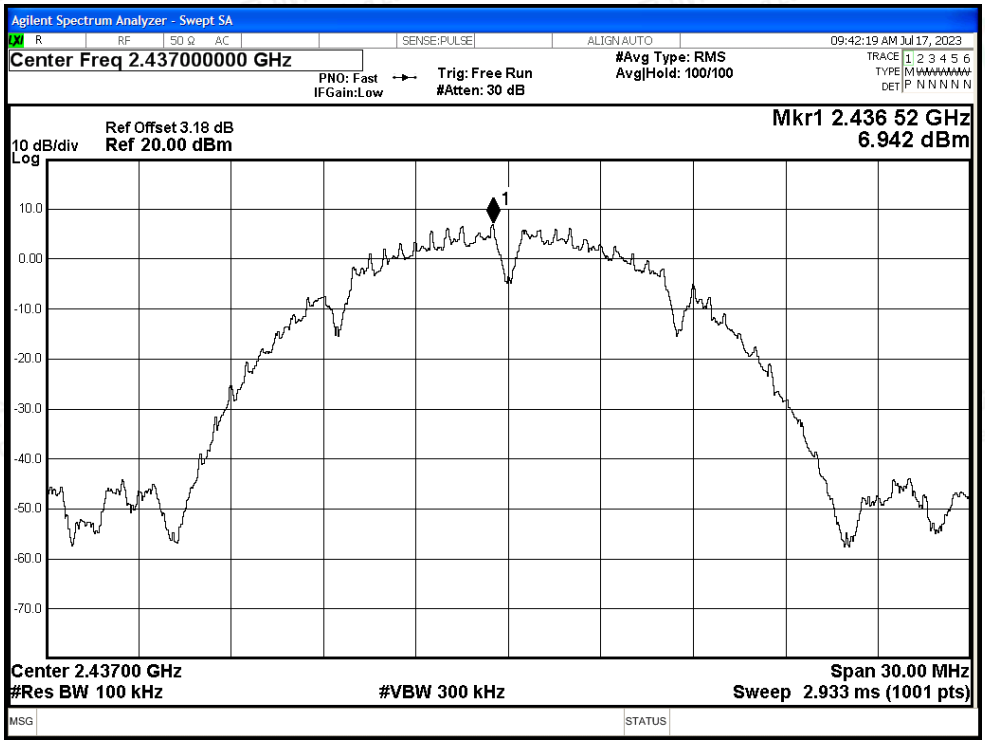
Tx. Spurious NVNT b 2412MHz Ant0 Ref



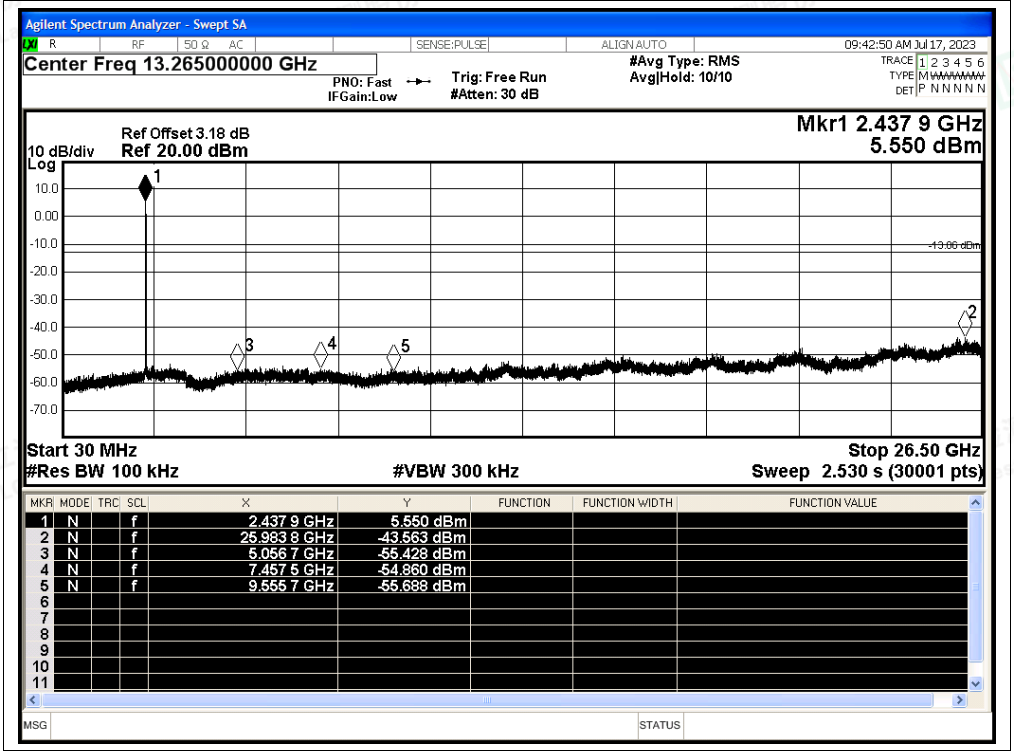
Tx. Spurious NVNT b 2412MHz Ant0 Emission



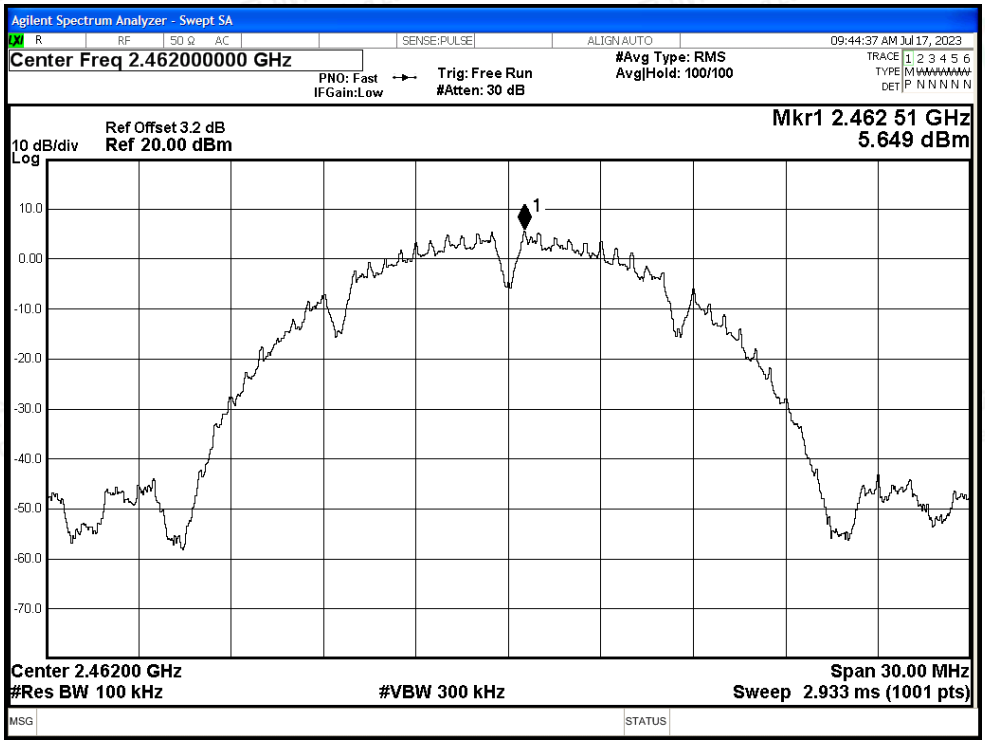
Tx. Spurious NVNT b 2437MHz Ant0 Ref



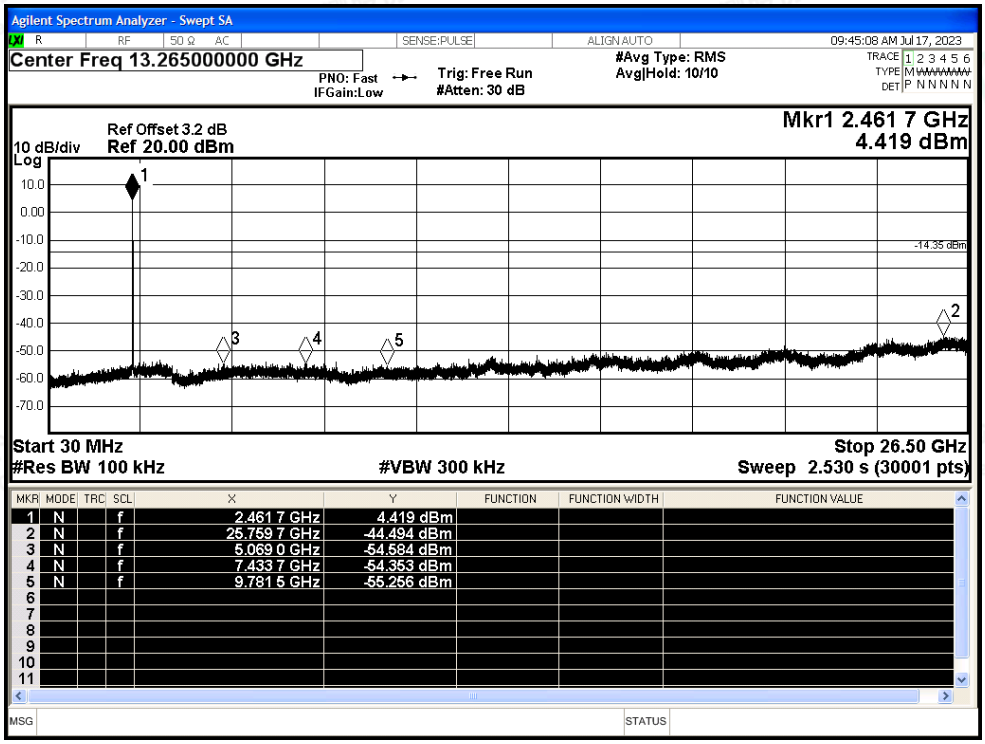
Tx. Spurious NVNT b 2437MHz Ant0 Emission



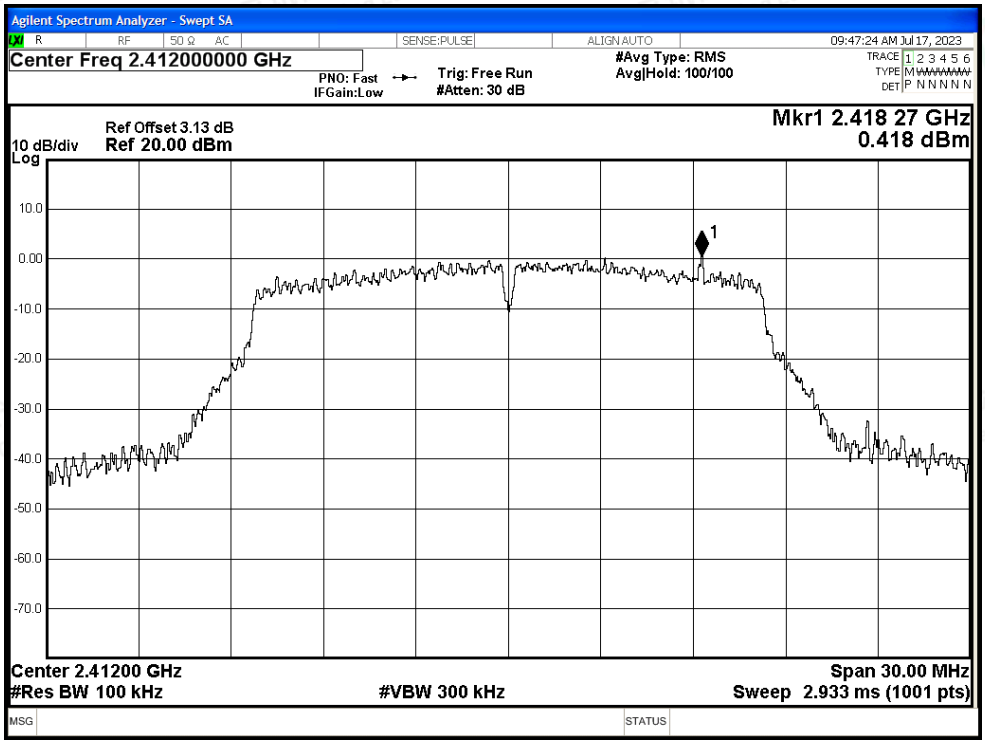
Tx. Spurious NVNT b 2462MHz Ant0 Ref



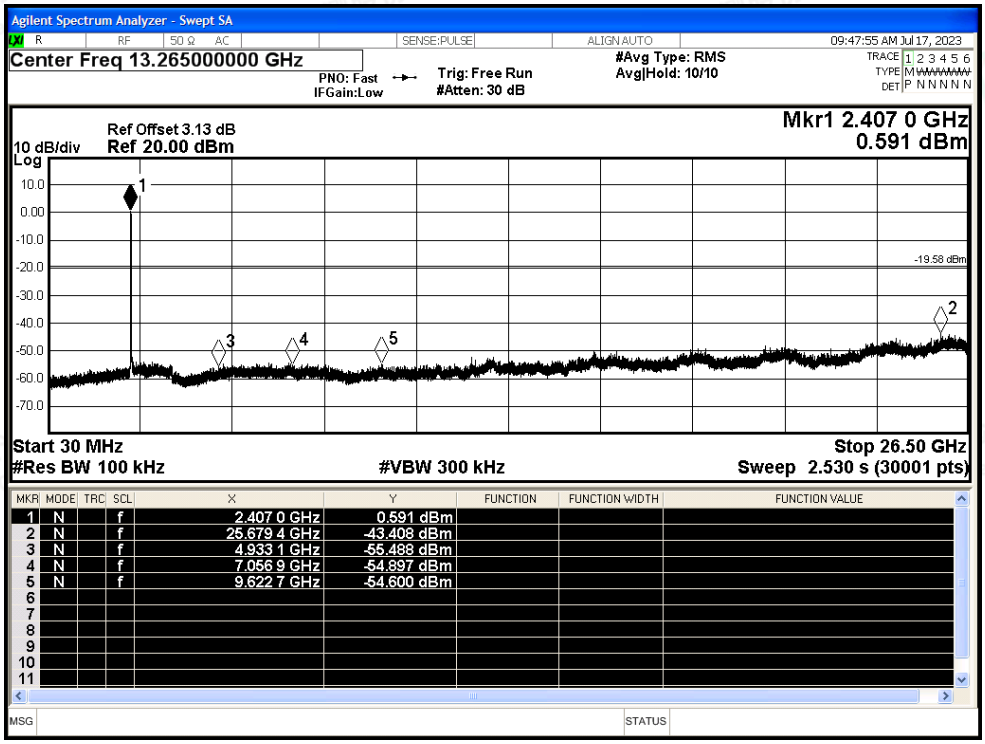
Tx. Spurious NVNT b 2462MHz Ant0 Emission



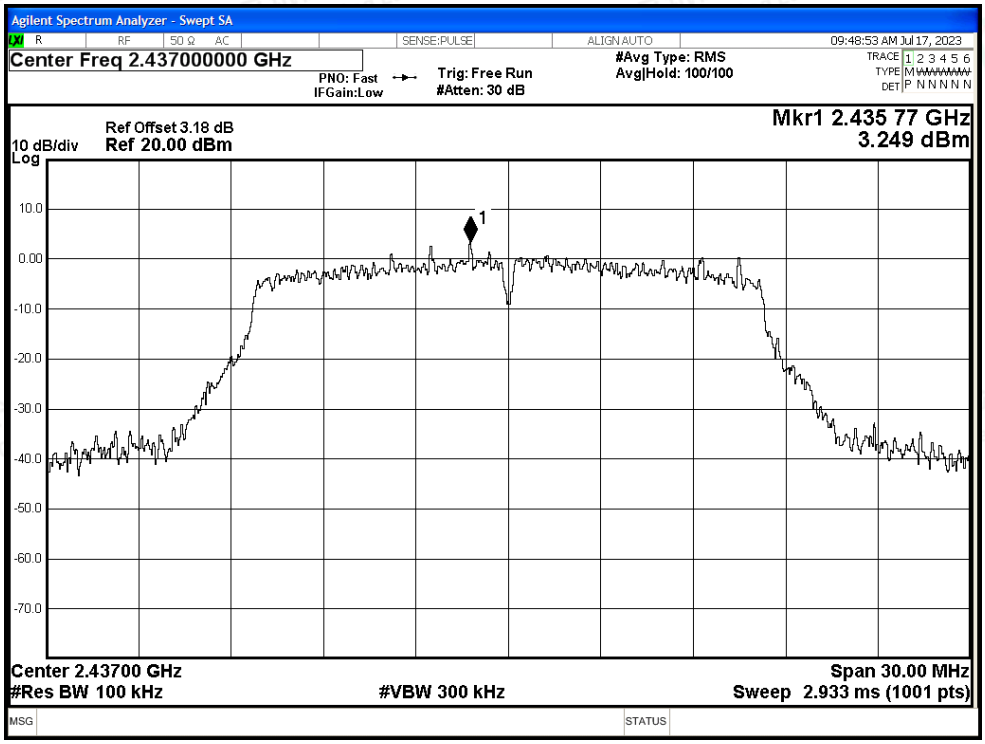
Tx. Spurious NVNT g 2412MHz Ant0 Ref



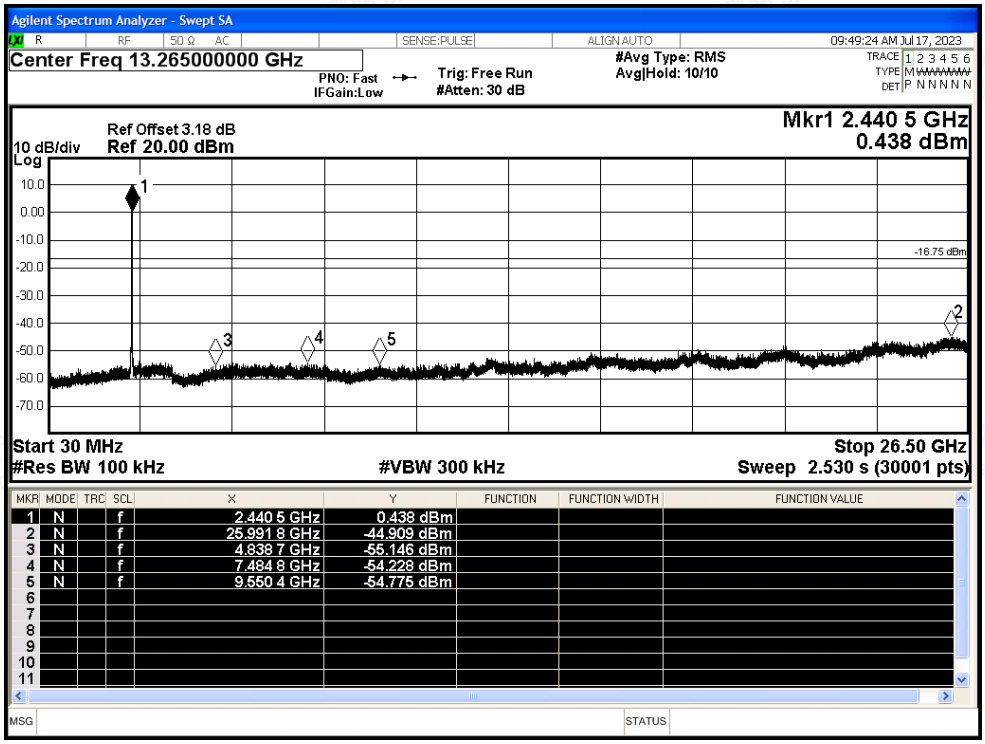
Tx. Spurious NVNT g 2412MHz Ant0 Emission



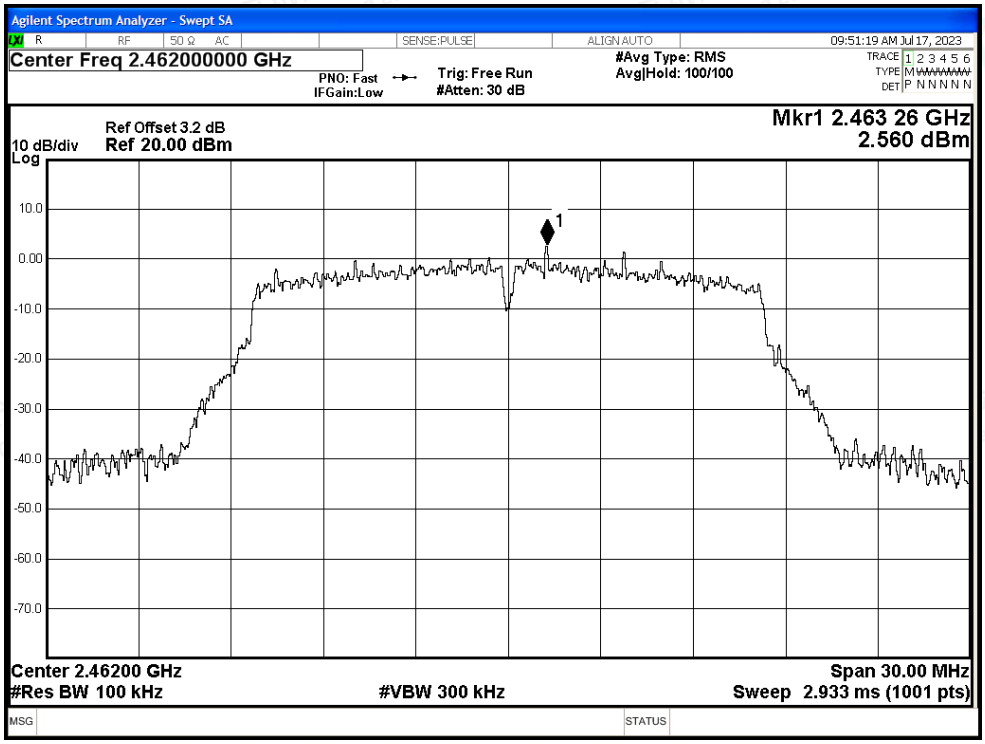
Tx. Spurious NVNT g 2437MHz Ant0 Ref



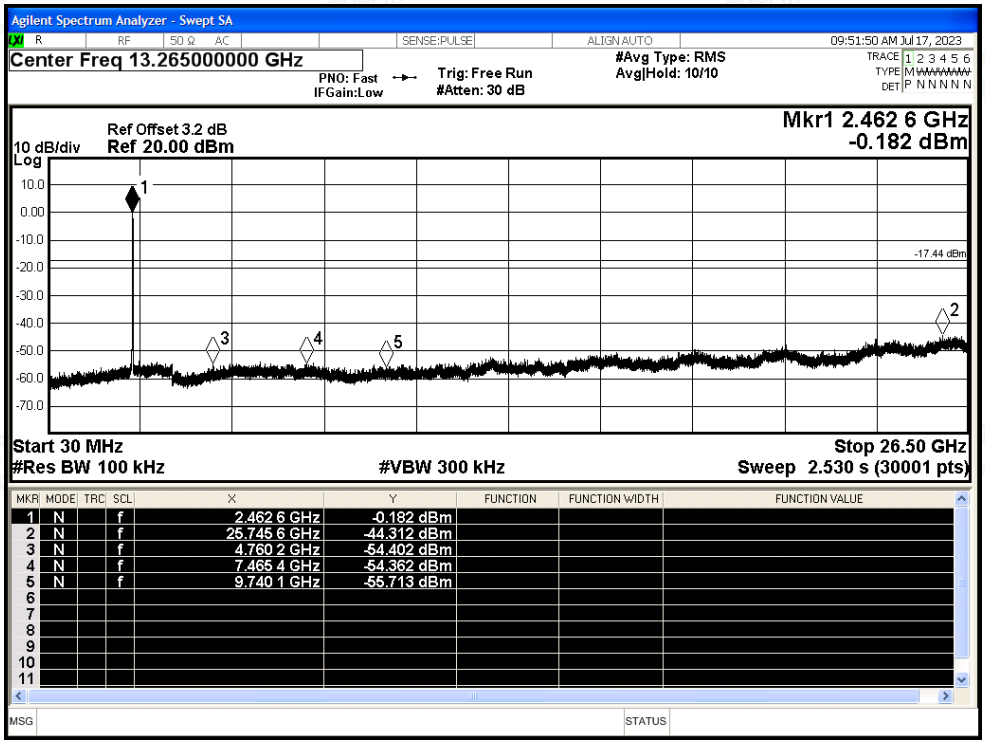
Tx. Spurious NVNT g 2437MHz Ant0 Emission



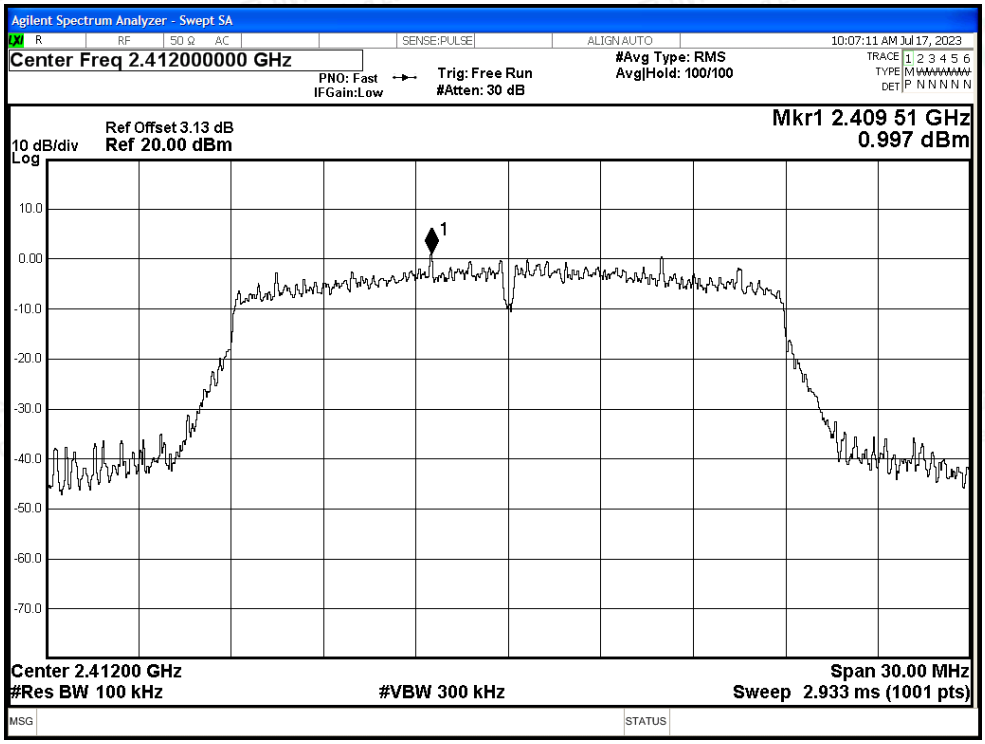
Tx. Spurious NVNT g 2462MHz Ant0 Ref



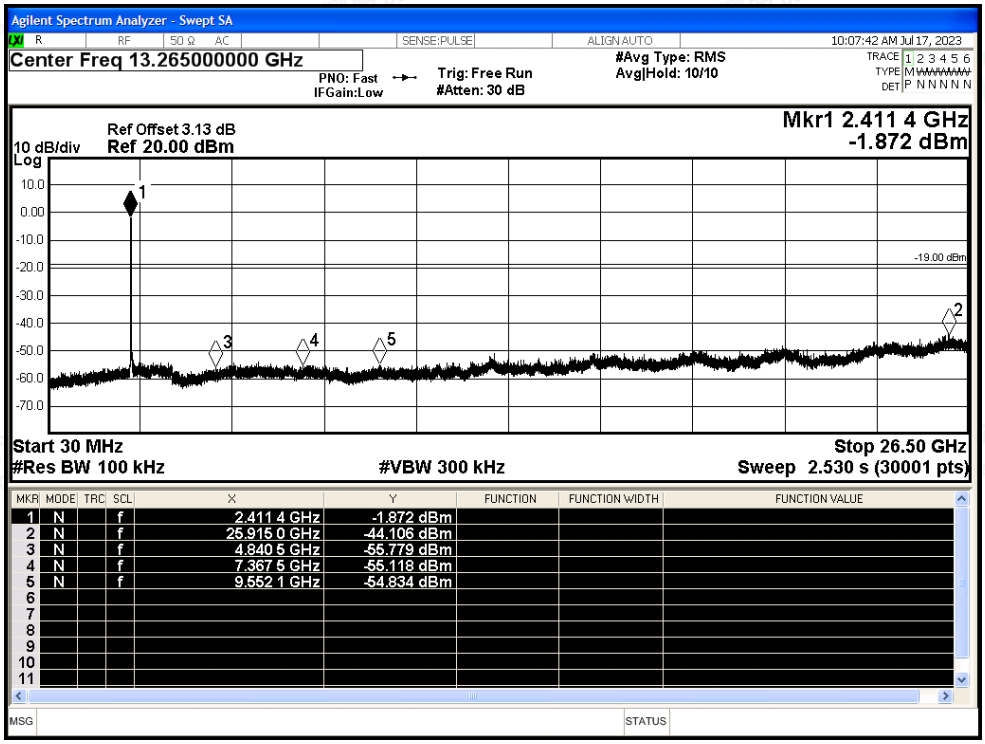
Tx. Spurious NVNT g 2462MHz Ant0 Emission



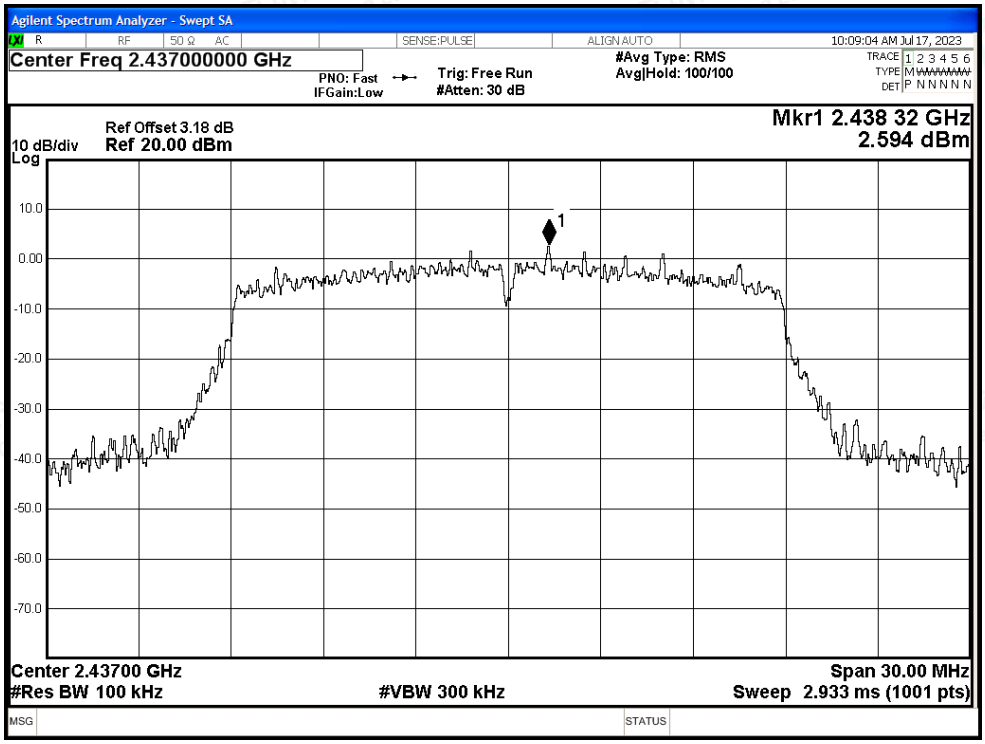
Tx. Spurious NVNT n20 2412MHz Ant0 Ref



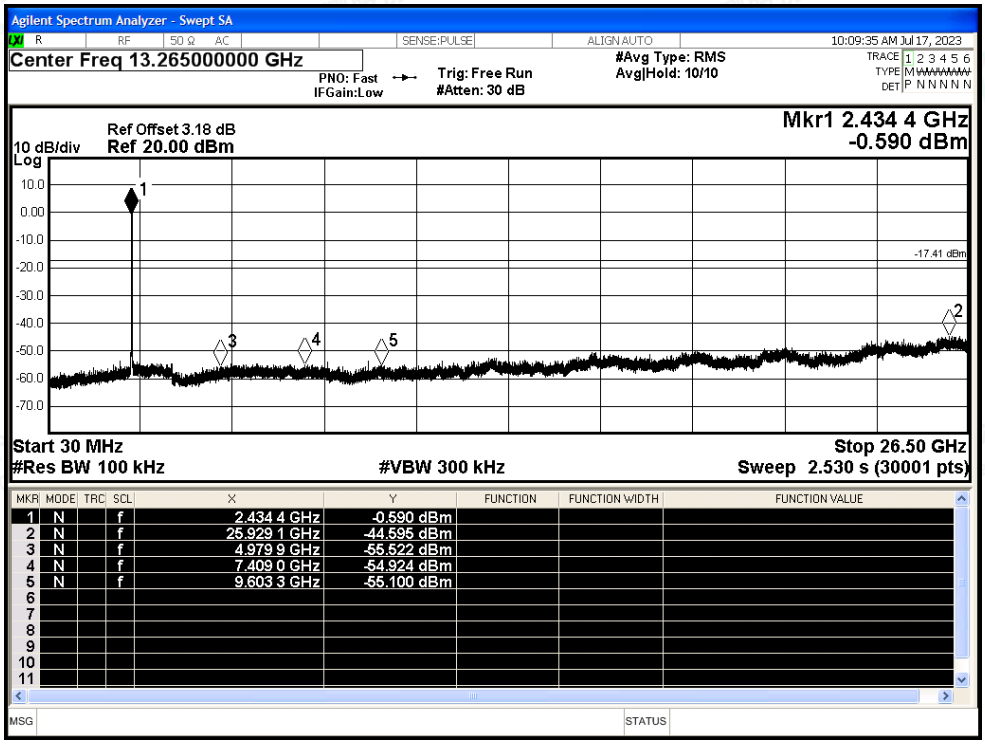
Tx. Spurious NVNT n20 2412MHz Ant0 Emission



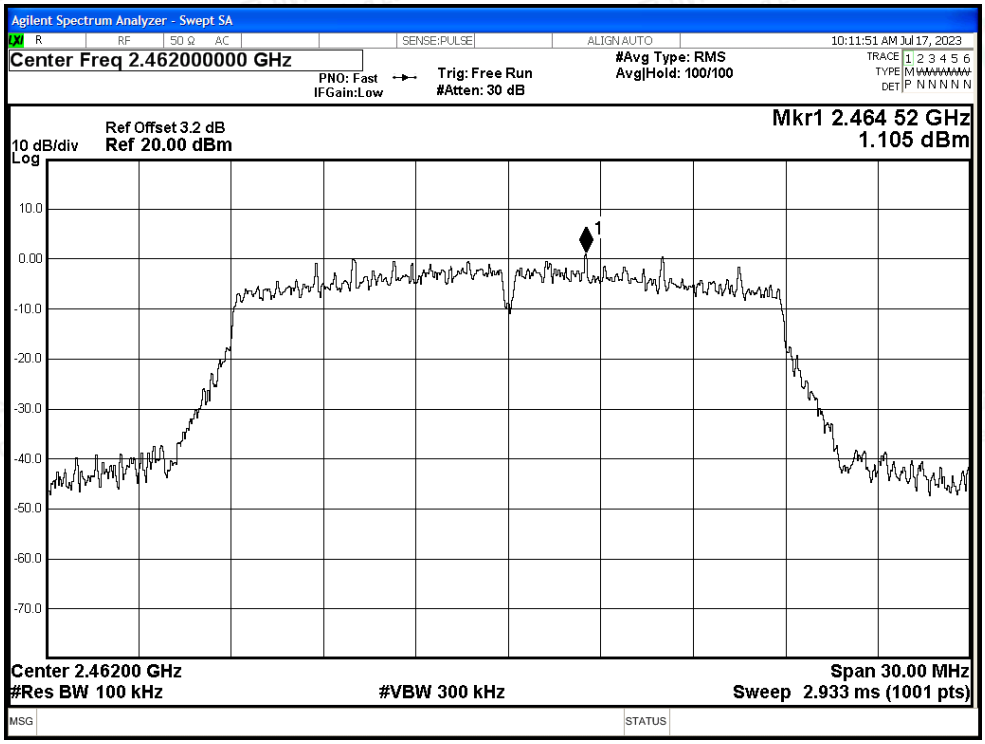
Tx. Spurious NVNT n20 2437MHz Ant0 Ref



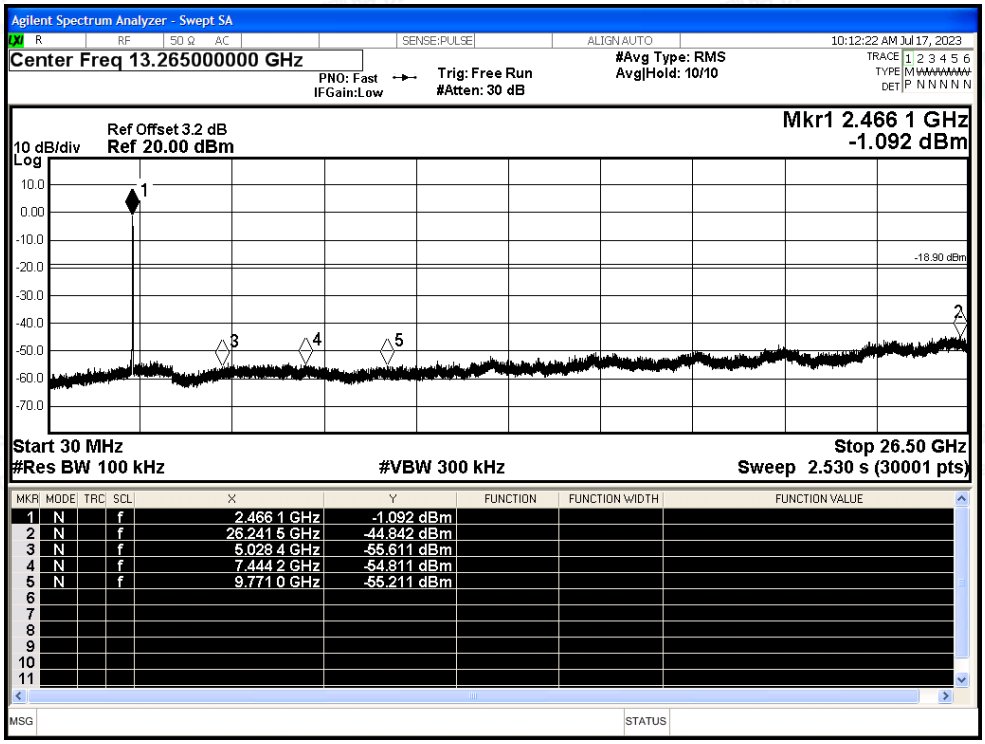
Tx. Spurious NVNT n20 2437MHz Ant0 Emission



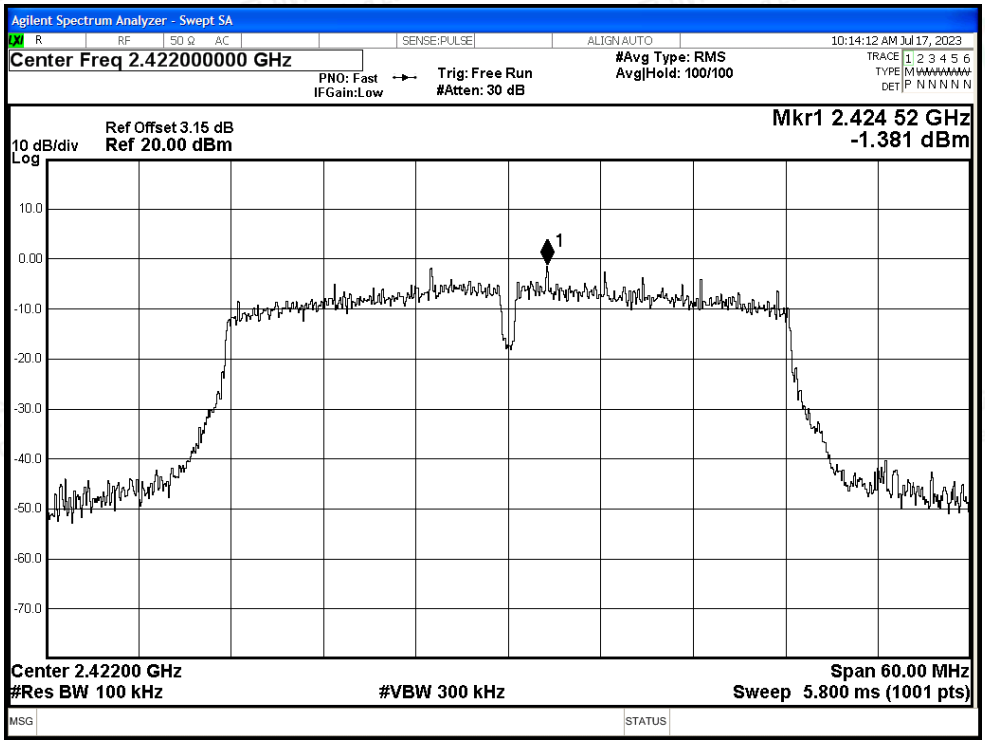
Tx. Spurious NVNT n20 2462MHz Ant0 Ref



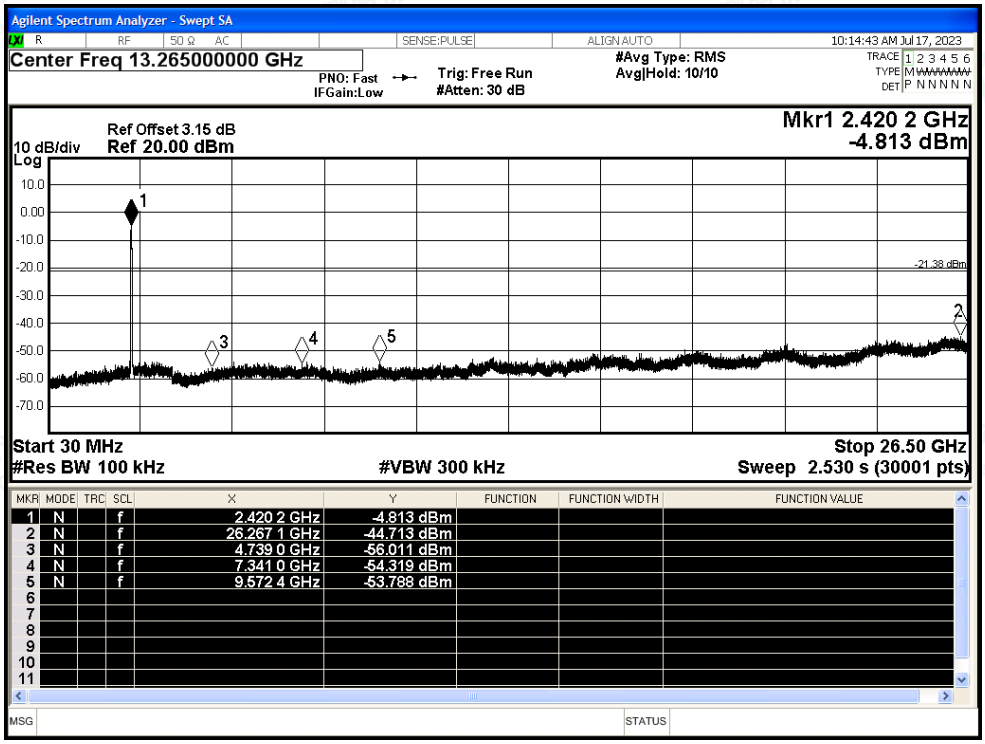
Tx. Spurious NVNT n20 2462MHz Ant0 Emission



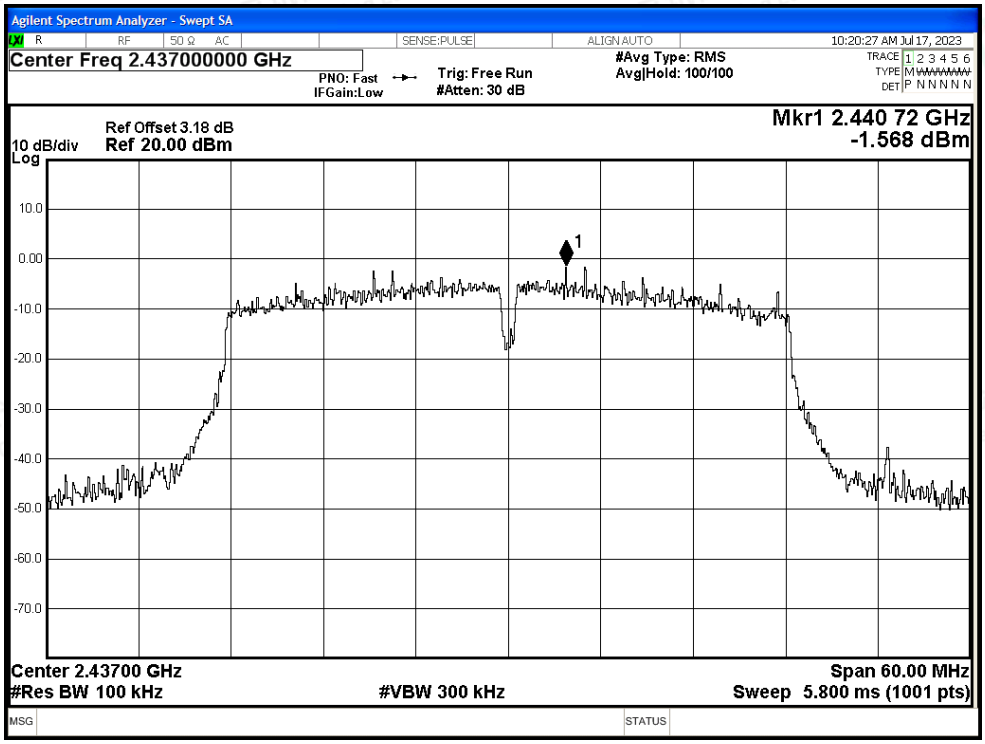
Tx. Spurious NVNT n40 2422MHz Ant0 Ref



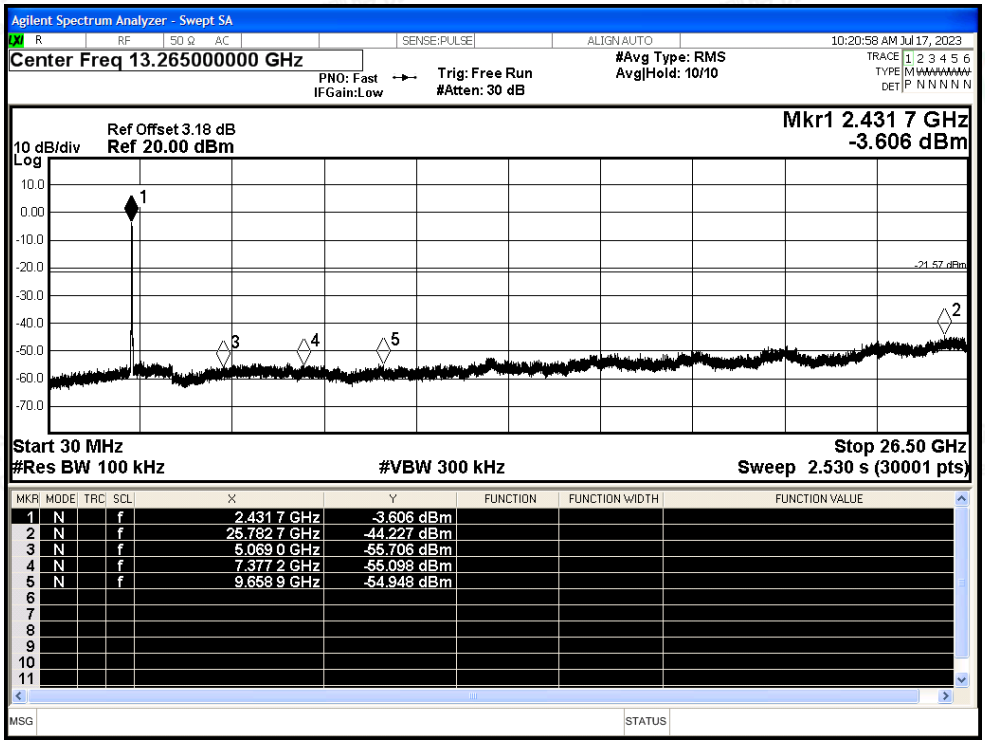
Tx. Spurious NVNT n40 2422MHz Ant0 Emission



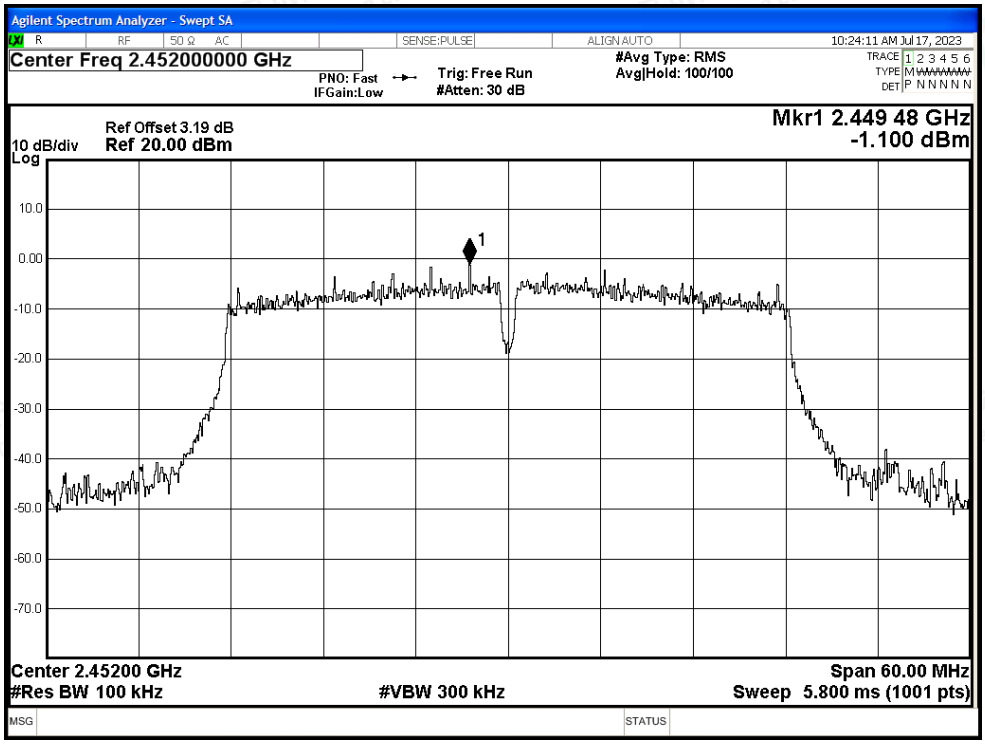
Tx. Spurious NVNT n40 2437MHz Ant0 Ref



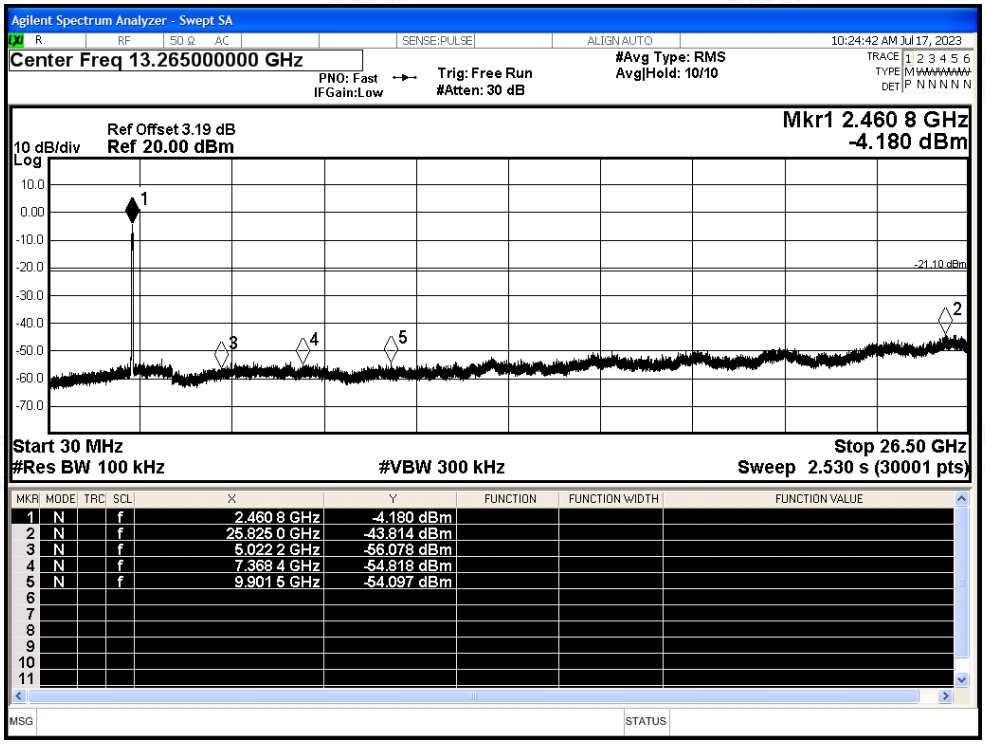
Tx. Spurious NVNT n40 2437MHz Ant0 Emission



Tx. Spurious NVNT n40 2452MHz Ant0 Ref



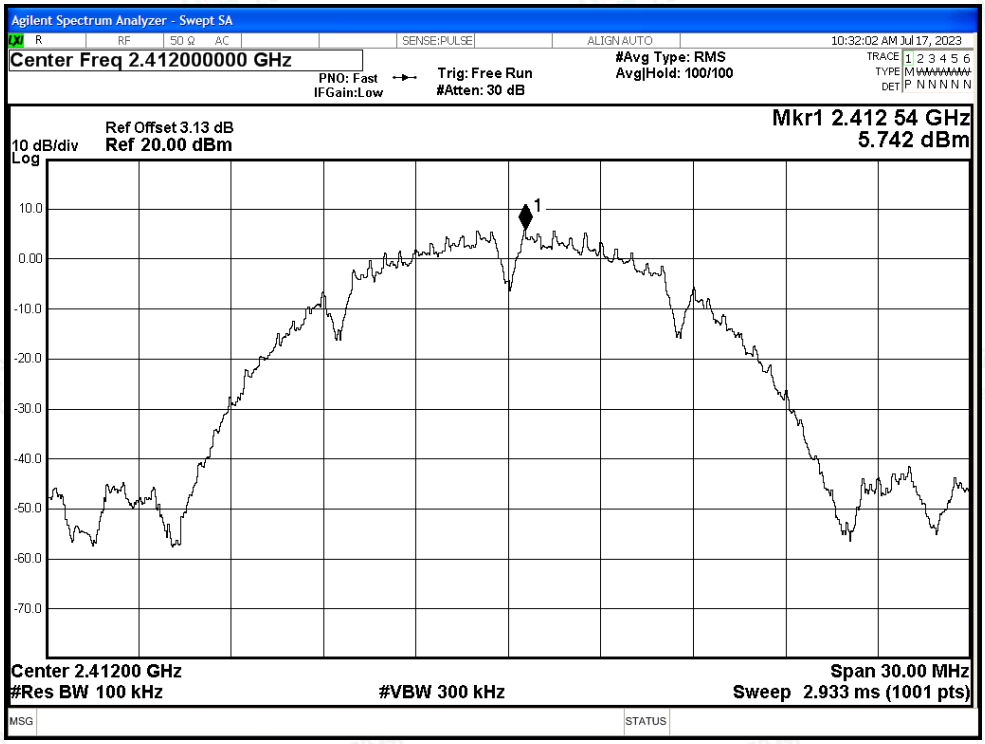
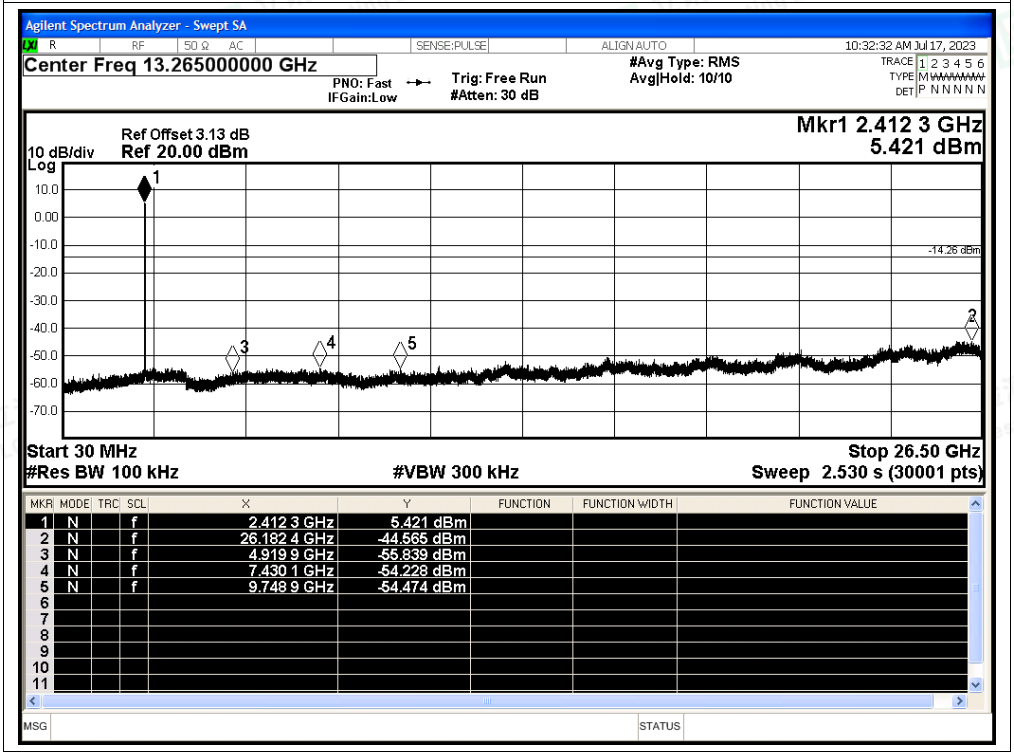
Tx. Spurious NVNT n40 2452MHz Ant0 Emission



Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-50.31	-20	Pass
NVNT	b	2437	Ant1	-51.28	-20	Pass
NVNT	b	2462	Ant1	-50.24	-20	Pass
NVNT	g	2412	Ant1	-46.62	-20	Pass
NVNT	g	2437	Ant1	-46.45	-20	Pass
NVNT	g	2462	Ant1	-46.39	-20	Pass
NVNT	n20	2412	Ant1	-44.29	-20	Pass
NVNT	n20	2437	Ant1	-46.35	-20	Pass
NVNT	n20	2462	Ant1	-45.47	-20	Pass
NVNT	n40	2422	Ant1	-42.53	-20	Pass
NVNT	n40	2437	Ant1	-41.97	-20	Pass
NVNT	n40	2452	Ant1	-42.45	-20	Pass

Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission