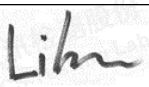
Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Smart switch

Test Model: Shelly Plus 1PM

Environmental Conditions

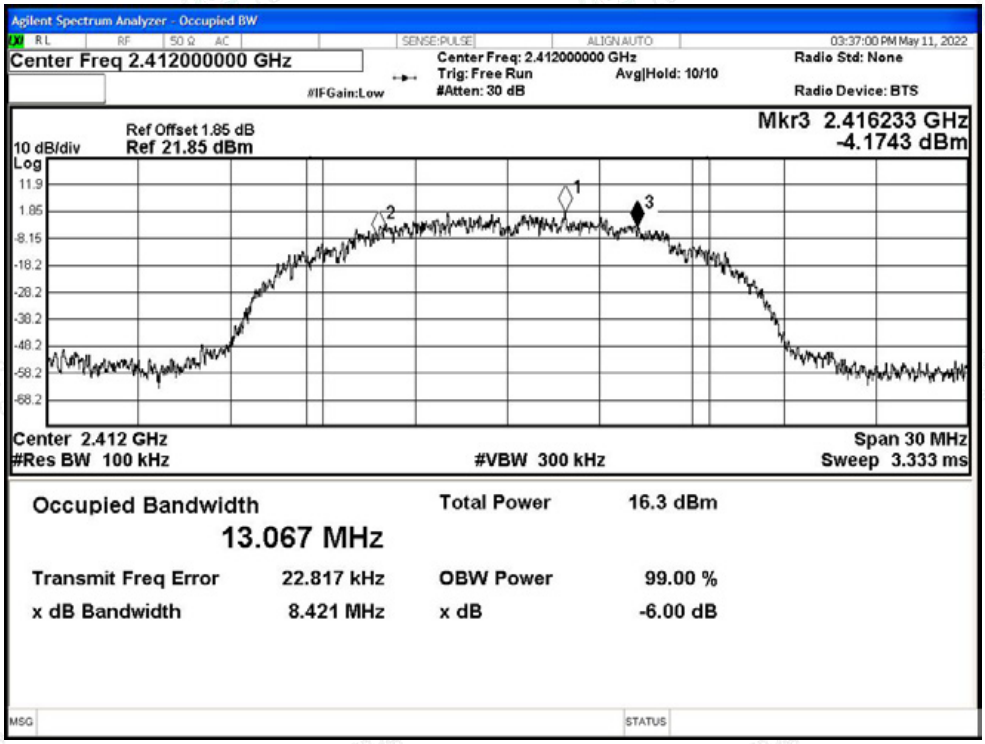
Temperature:	23.5 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	 Bill Zhu
Supervised by:	 Li Huan

C.1 -6dB Bandwidth

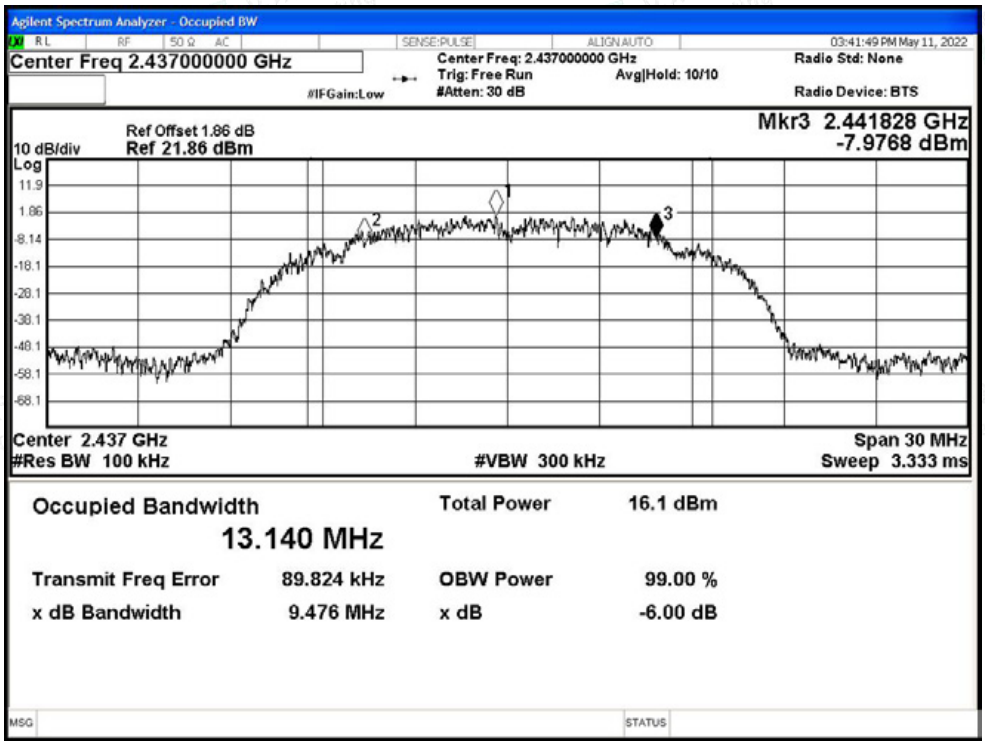
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.421	0.5	Pass
NVNT	b	2437	Ant1	9.476	0.5	Pass
NVNT	b	2462	Ant1	9.433	0.5	Pass
NVNT	g	2412	Ant1	16.34	0.5	Pass
NVNT	g	2437	Ant1	16.379	0.5	Pass
NVNT	g	2462	Ant1	16.392	0.5	Pass
NVNT	n20	2412	Ant1	16.96	0.5	Pass
NVNT	n20	2437	Ant1	16.859	0.5	Pass
NVNT	n20	2462	Ant1	16.611	0.5	Pass
NVNT	n40	2422	Ant1	32.652	0.5	Pass
NVNT	n40	2437	Ant1	33.381	0.5	Pass
NVNT	n40	2452	Ant1	31.305	0.5	Pass

Test Graphs

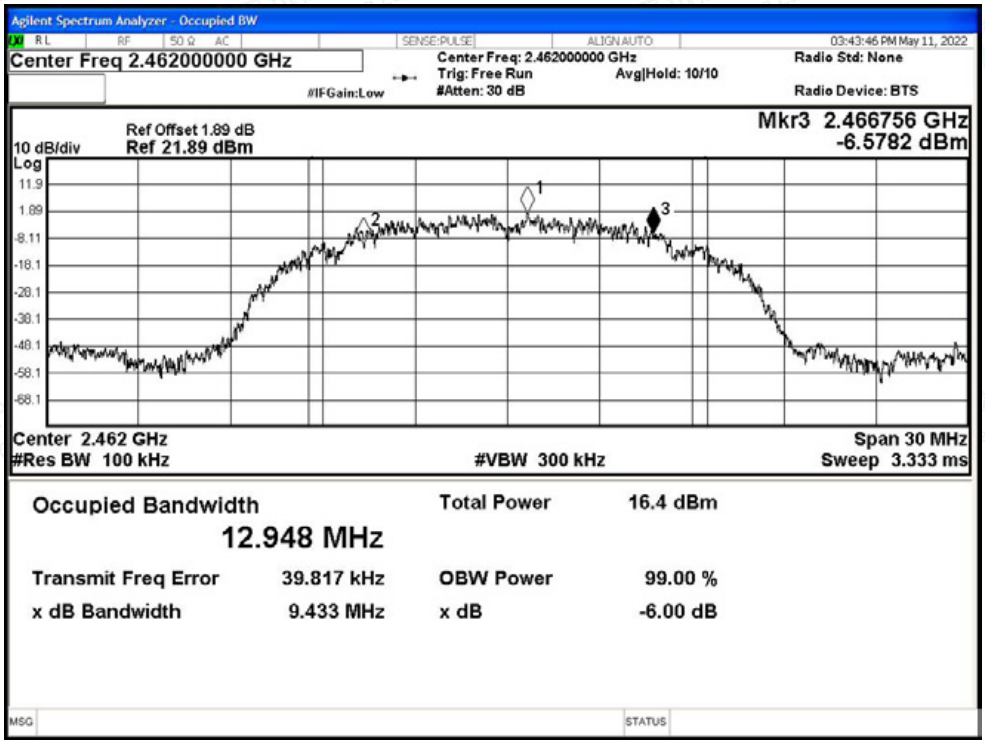
-6dB Bandwidth NVNT b 2412MHz Ant1



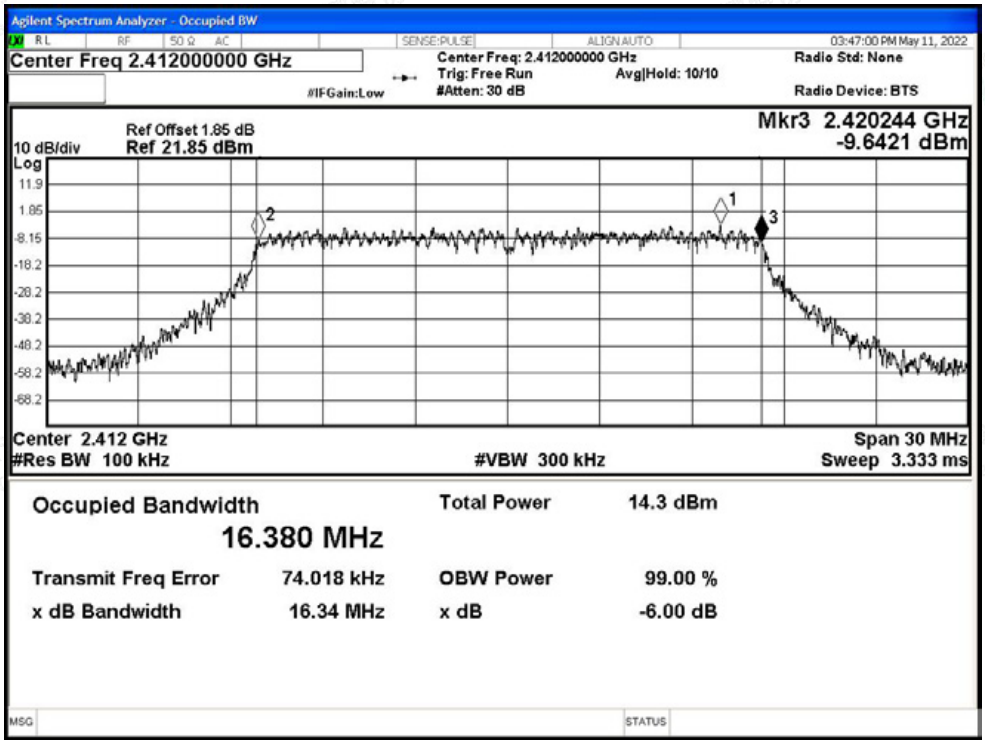
-6dB Bandwidth NVNT b 2437MHz Ant1



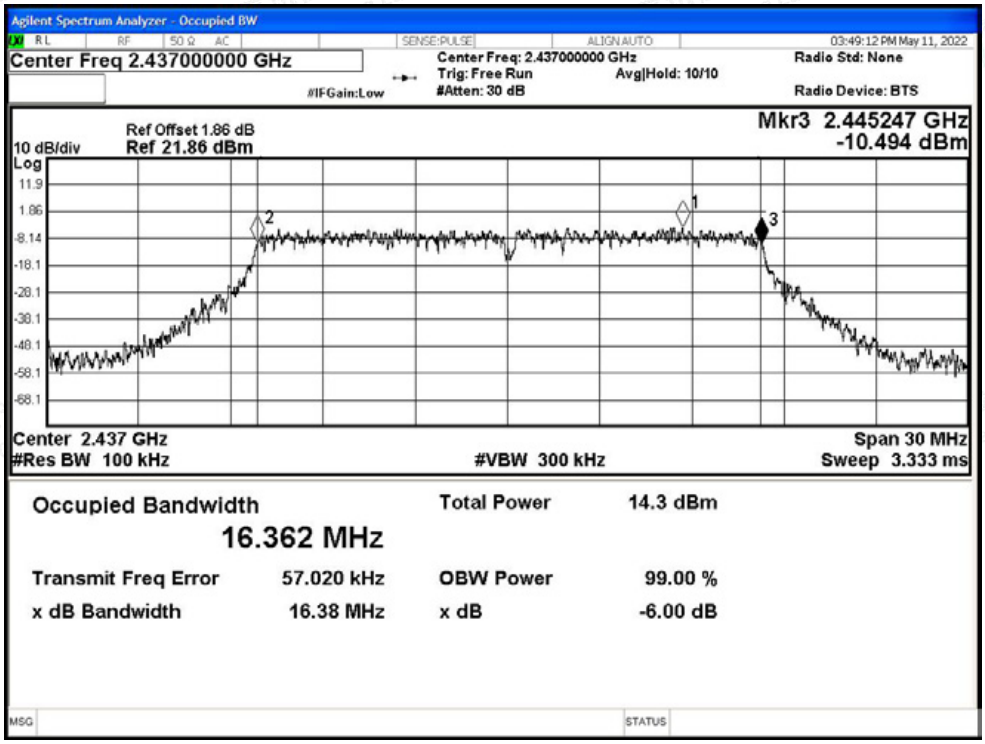
-6dB Bandwidth NVNT b 2462MHz Ant1



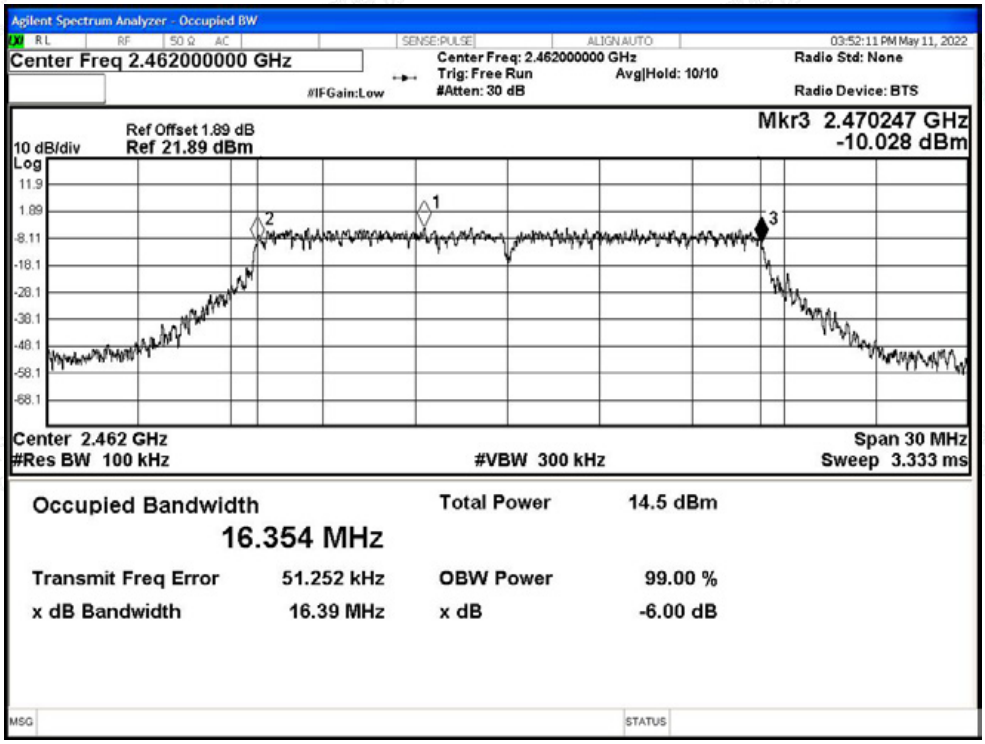
-6dB Bandwidth NVNT g 2412MHz Ant1



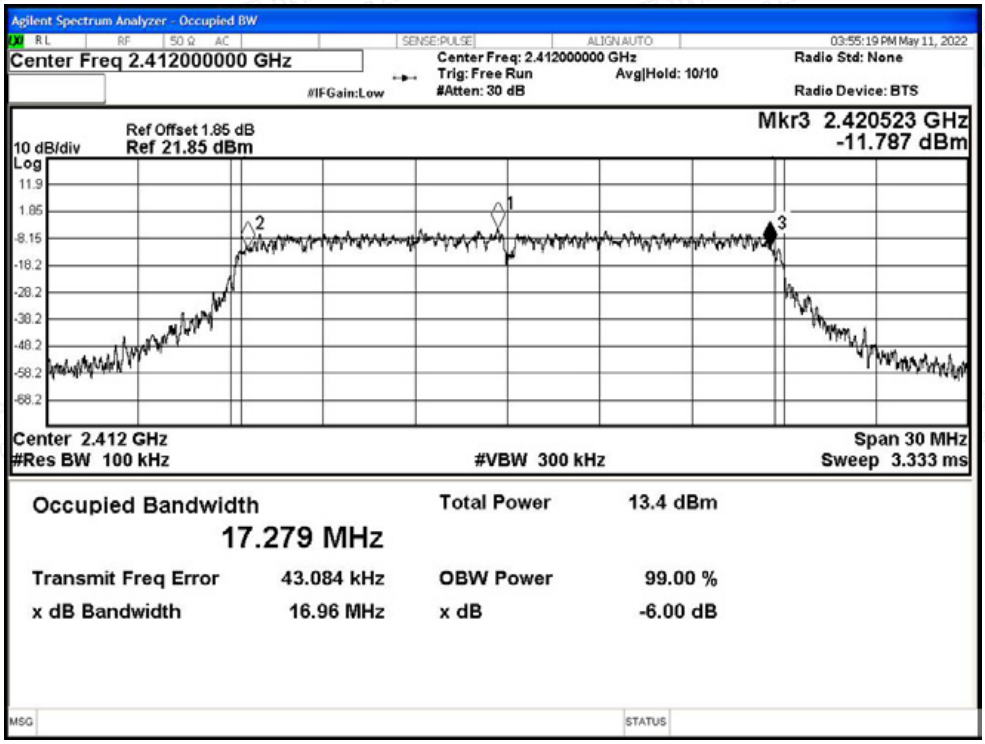
-6dB Bandwidth NVNT g 2437MHz Ant1



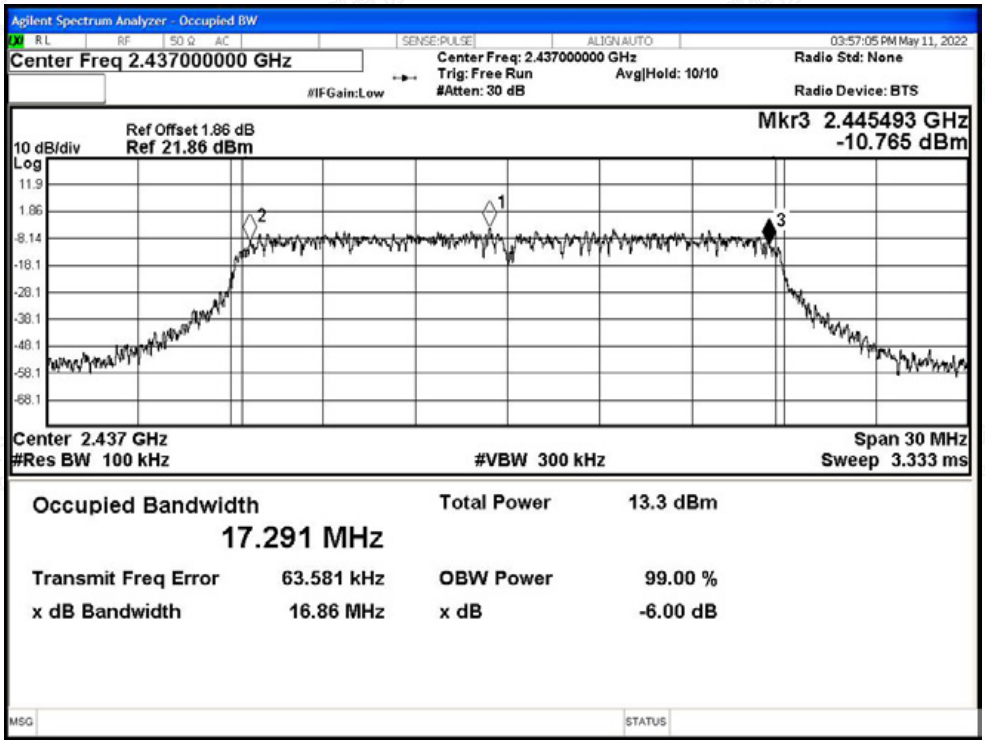
-6dB Bandwidth NVNT g 2462MHz Ant1



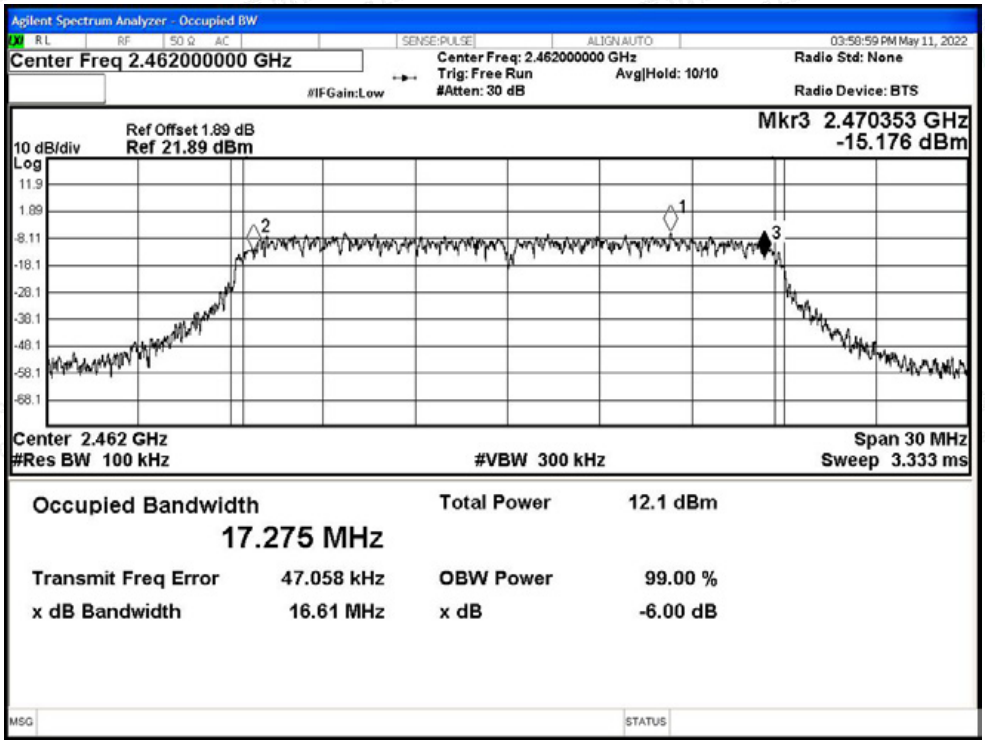
-6dB Bandwidth NVNT n20 2412MHz Ant1



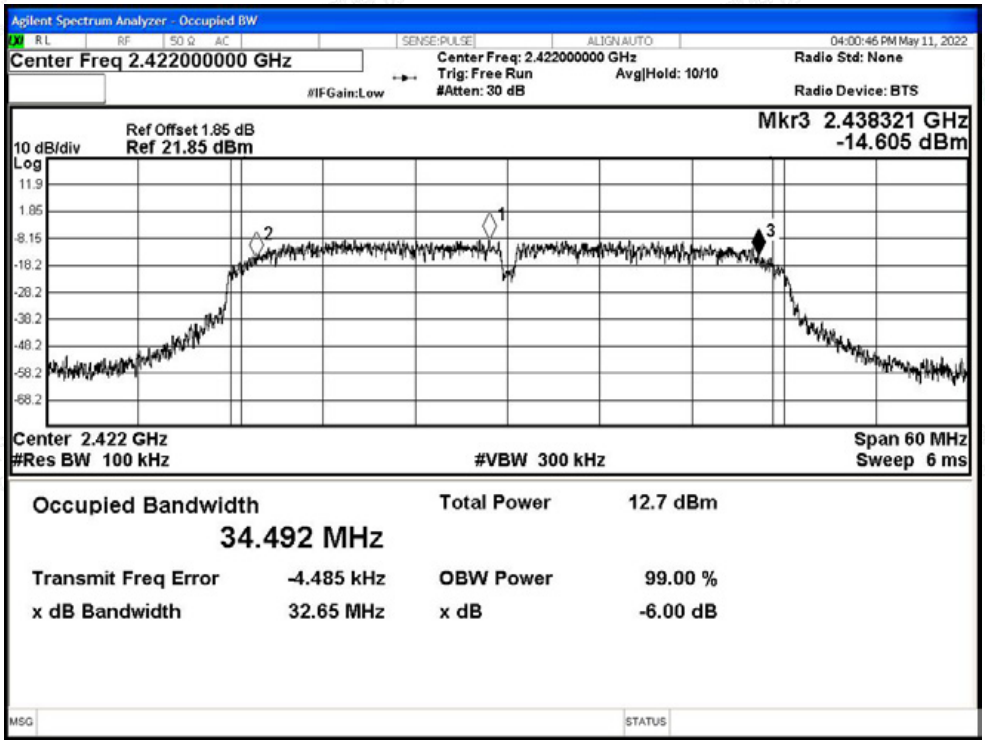
-6dB Bandwidth NVNT n20 2437MHz Ant1



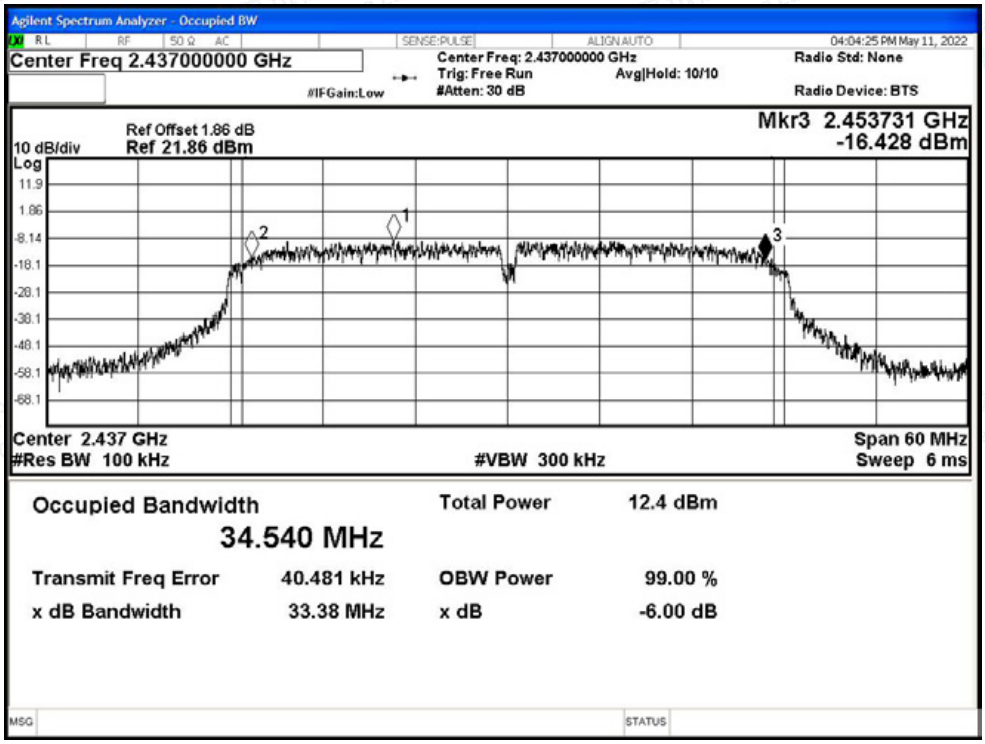
-6dB Bandwidth NVNT n20 2462MHz Ant1



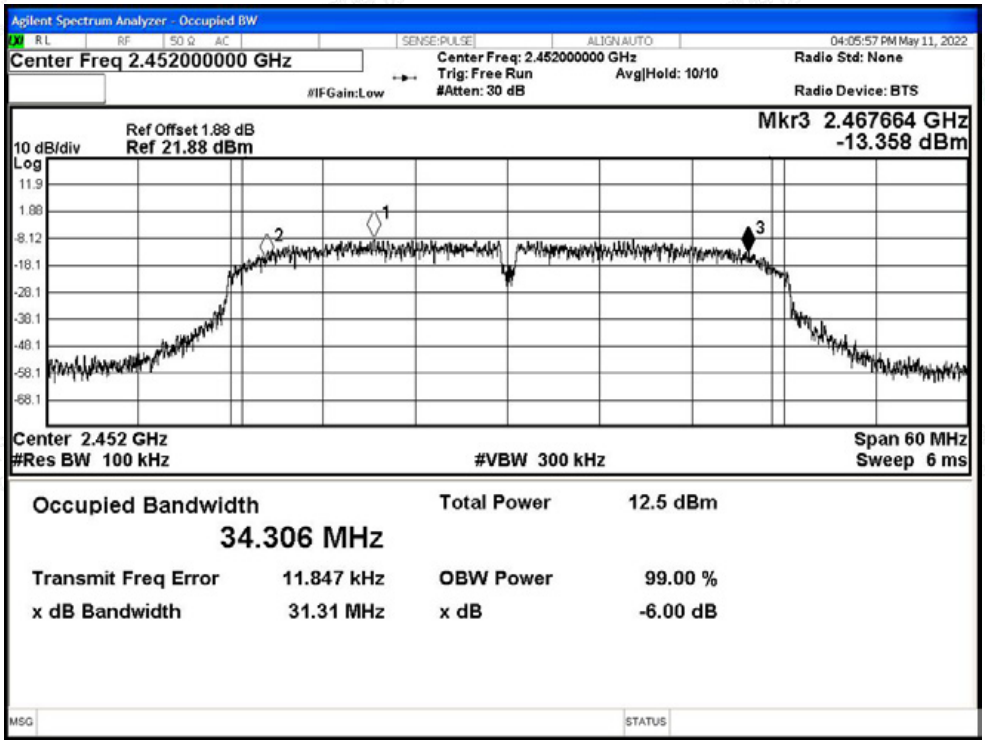
-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1



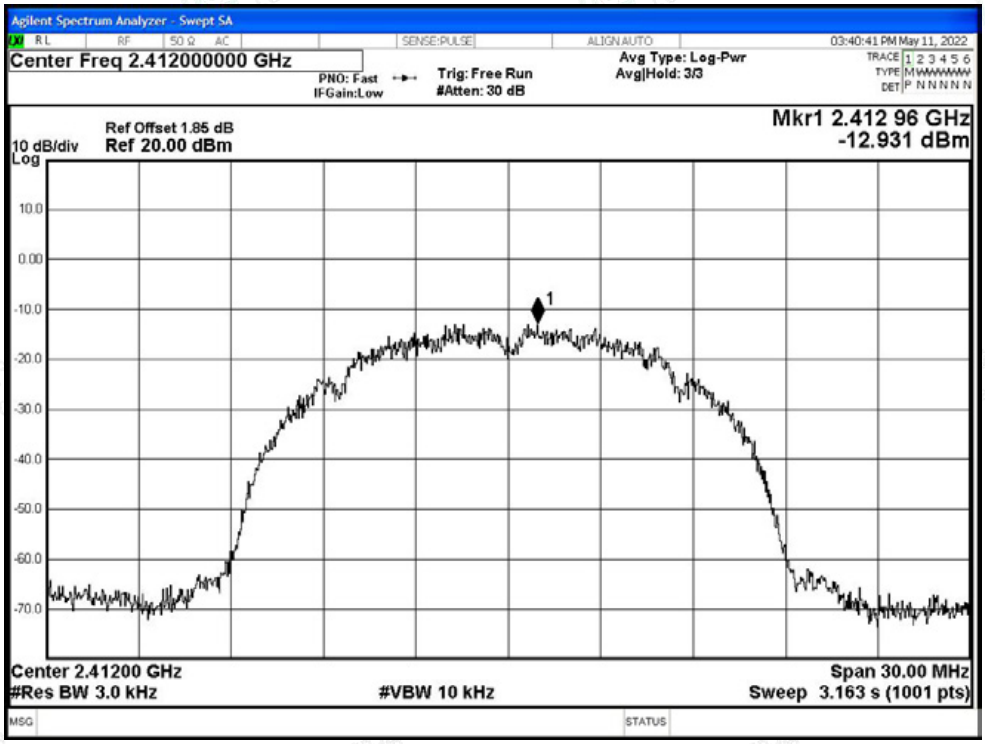
C.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	14.01	30	Pass
NVNT	b	2437	Ant1	14.25	30	Pass
NVNT	b	2462	Ant1	14.39	30	Pass
NVNT	g	2412	Ant1	13.2	30	Pass
NVNT	g	2437	Ant1	13.17	30	Pass
NVNT	g	2462	Ant1	13.41	30	Pass
NVNT	n20	2412	Ant1	12.29	30	Pass
NVNT	n20	2437	Ant1	12.13	30	Pass
NVNT	n20	2462	Ant1	12.58	30	Pass
NVNT	n40	2422	Ant1	11.49	30	Pass
NVNT	n40	2437	Ant1	11.07	30	Pass
NVNT	n40	2452	Ant1	11.18	30	Pass

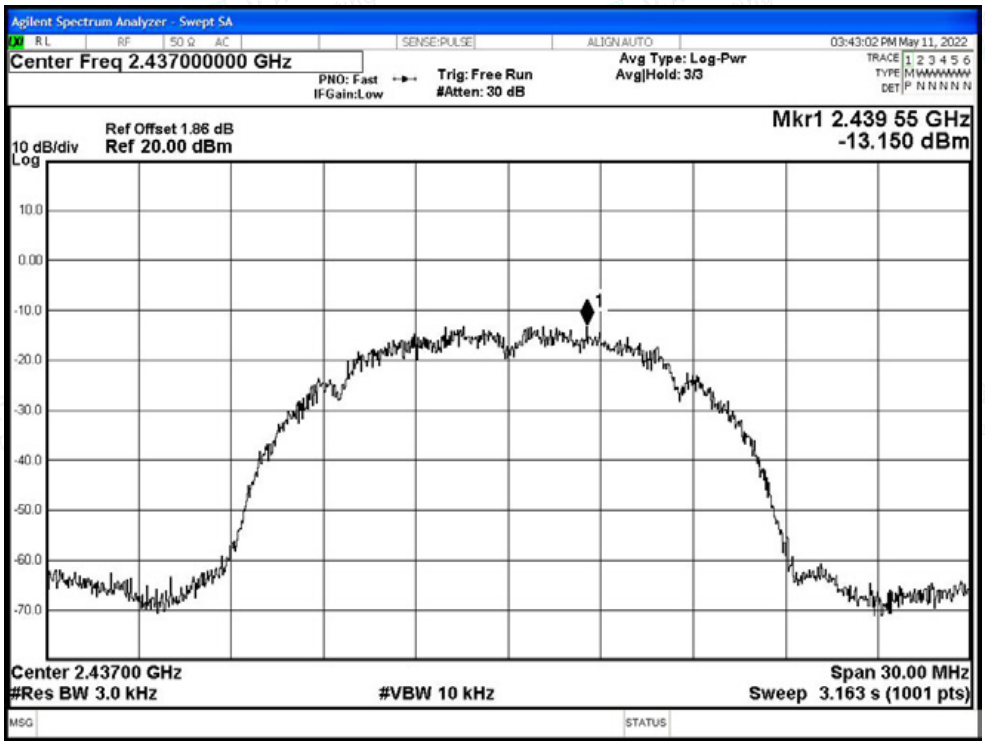
C.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-12.93	8	Pass
NVNT	b	2437	Ant1	-13.15	8	Pass
NVNT	b	2462	Ant1	-12.69	8	Pass
NVNT	g	2412	Ant1	-17.47	8	Pass
NVNT	g	2437	Ant1	-17.45	8	Pass
NVNT	g	2462	Ant1	-17.45	8	Pass
NVNT	n20	2412	Ant1	-18.67	8	Pass
NVNT	n20	2437	Ant1	-18.59	8	Pass
NVNT	n20	2462	Ant1	-20.14	8	Pass
NVNT	n40	2422	Ant1	-21.73	8	Pass
NVNT	n40	2437	Ant1	-22.17	8	Pass
NVNT	n40	2452	Ant1	-21.6	8	Pass

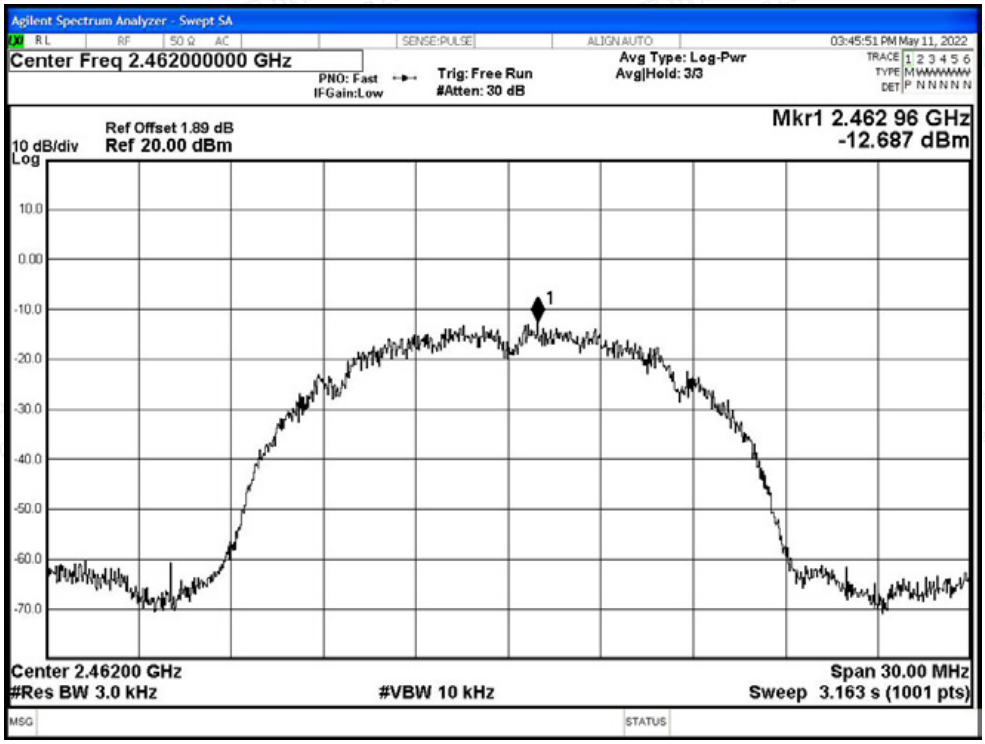
Test Graphs
PSD NVNT b 2412MHz Ant1



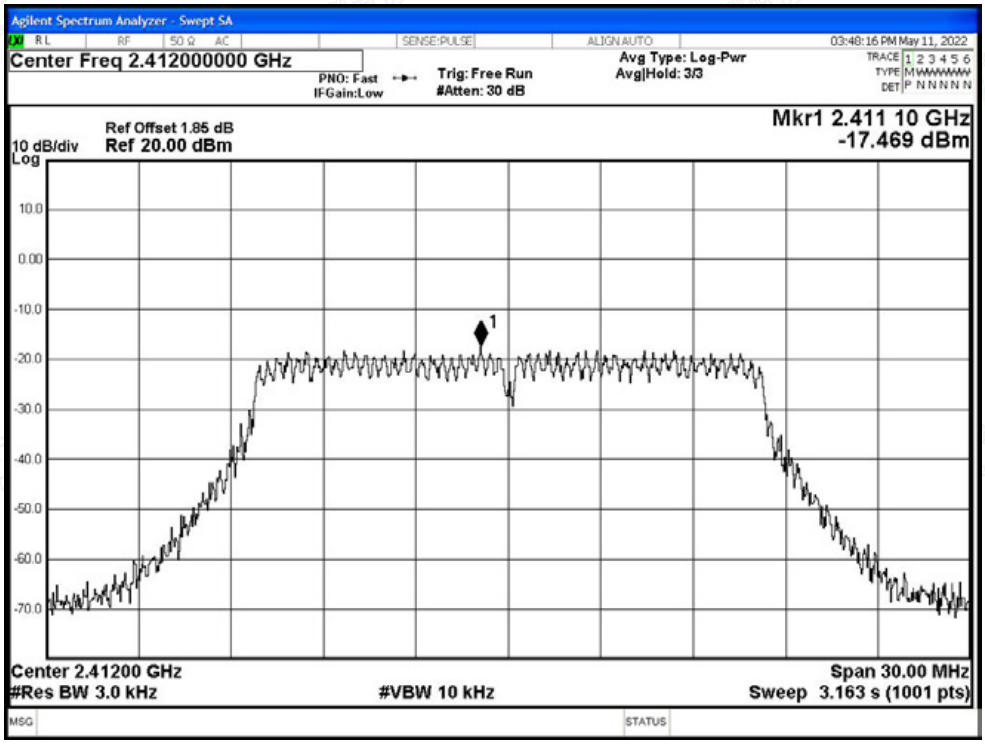
PSD NVNT b 2437MHz Ant1



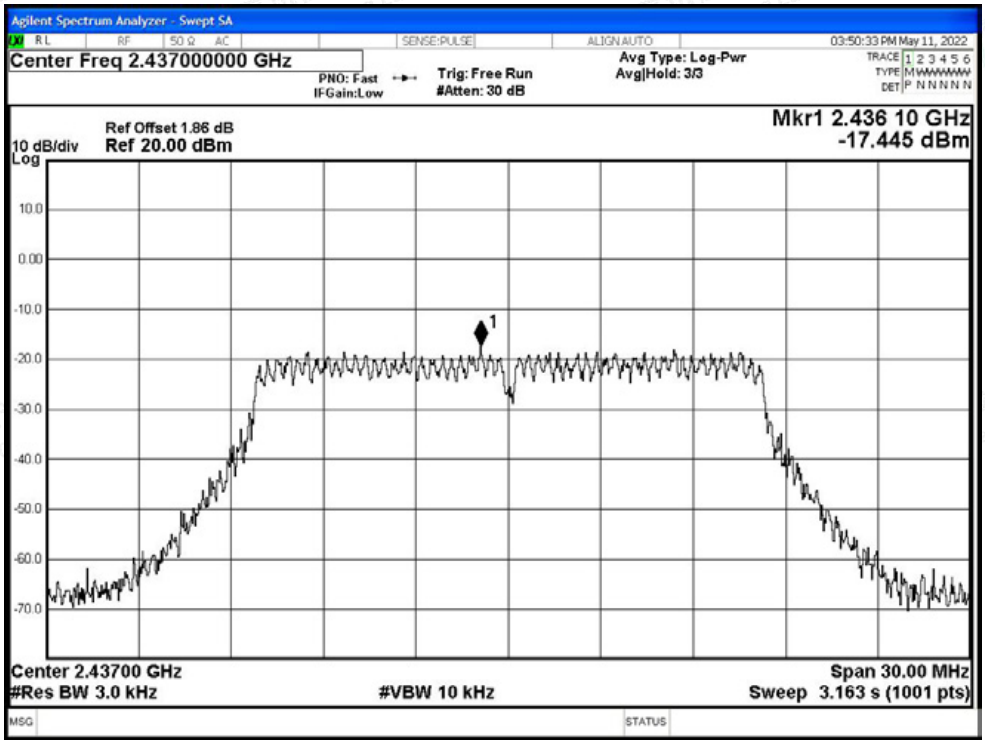
PSD NVNT b 2462MHz Ant1



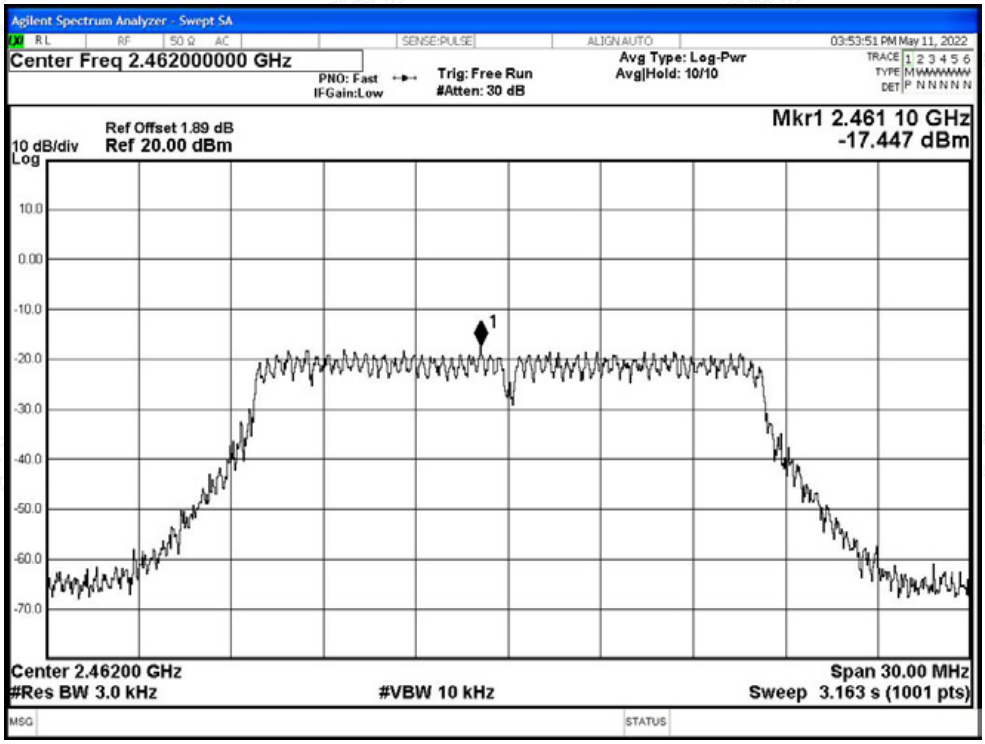
PSD NVNT g 2412MHz Ant1



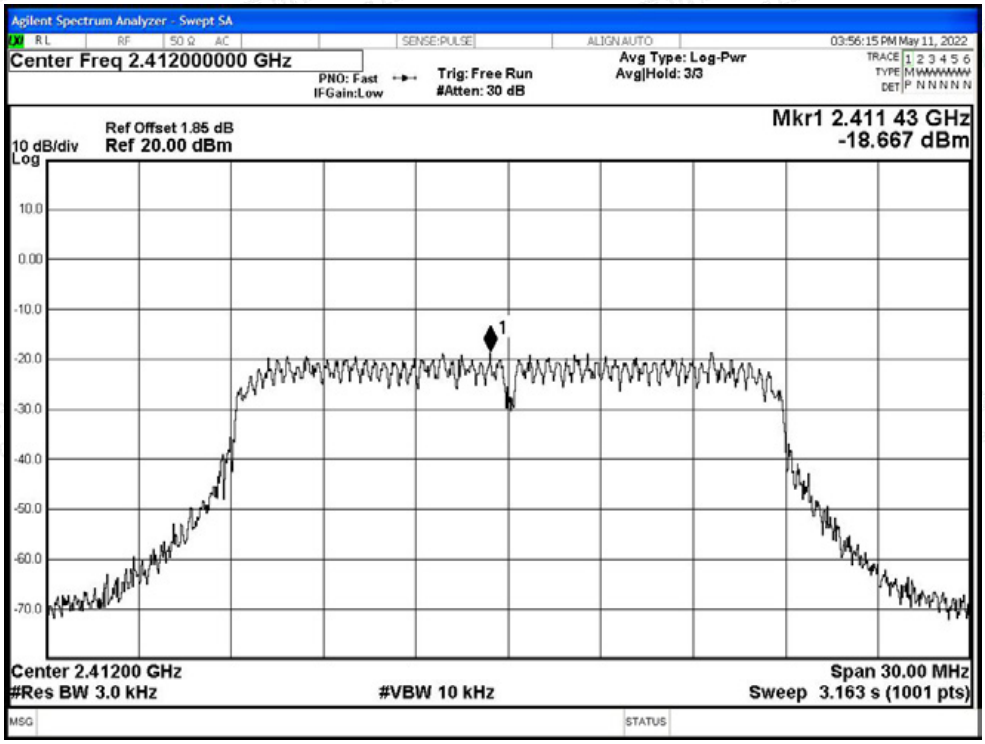
PSD NVNT g 2437MHz Ant1



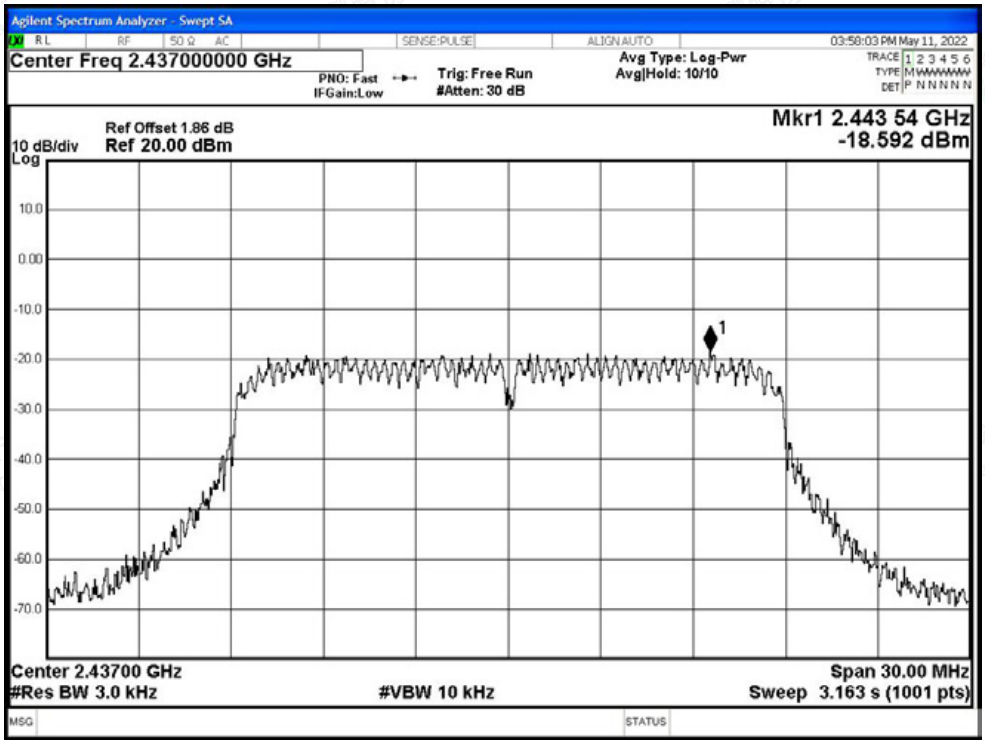
PSD NVNT g 2462MHz Ant1



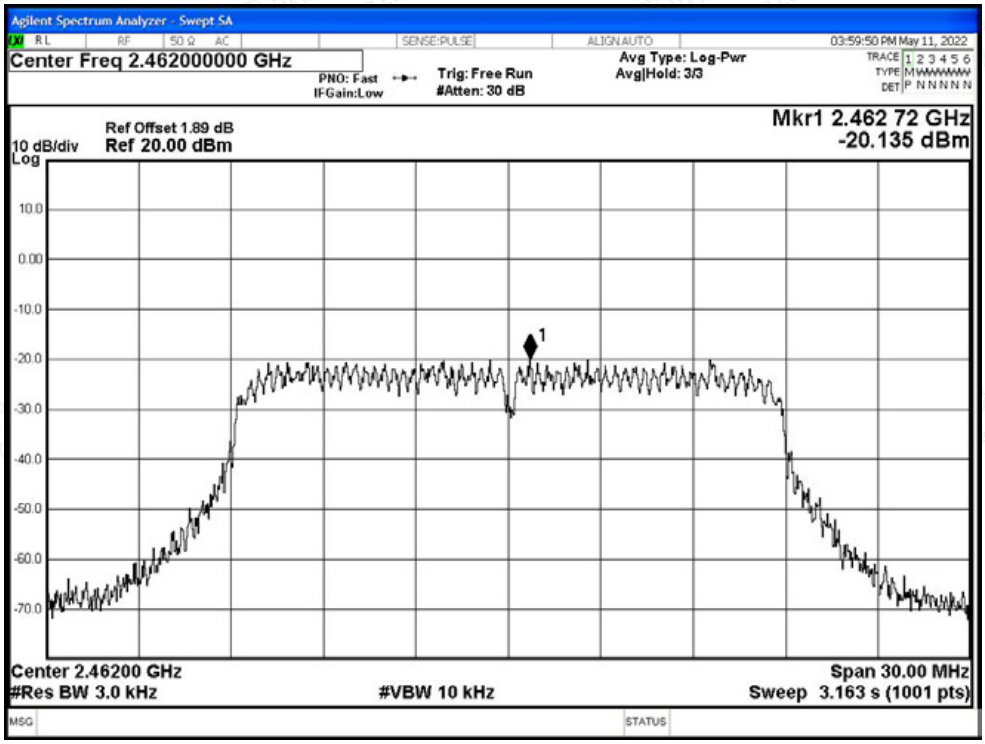
PSD NVNT n20 2412MHz Ant1



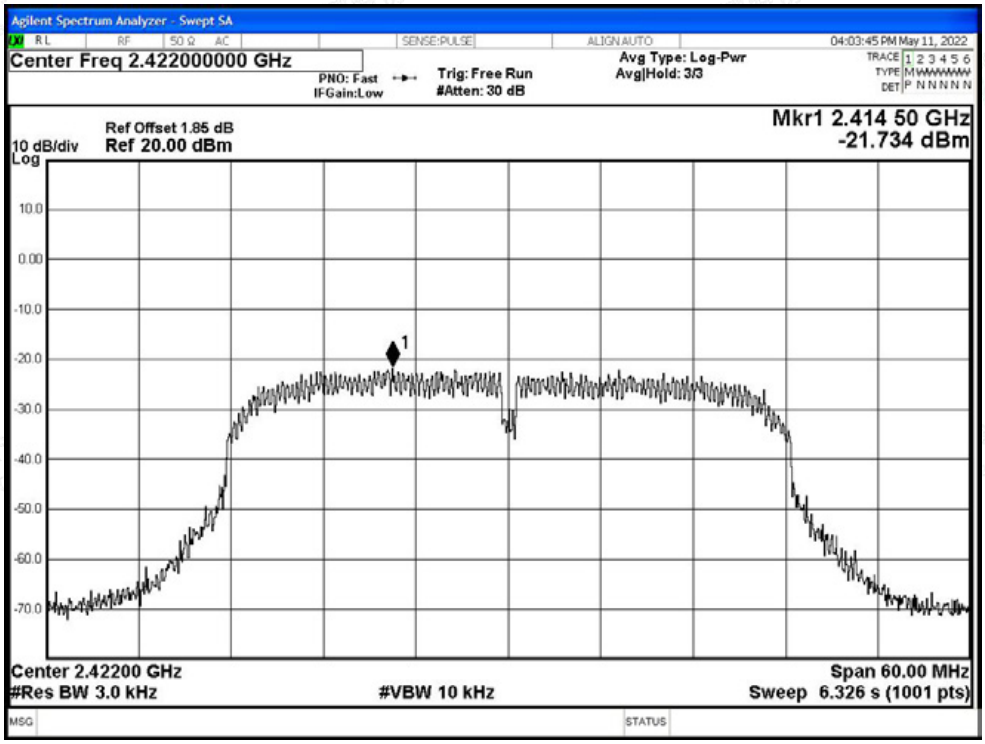
PSD NVNT n20 2437MHz Ant1



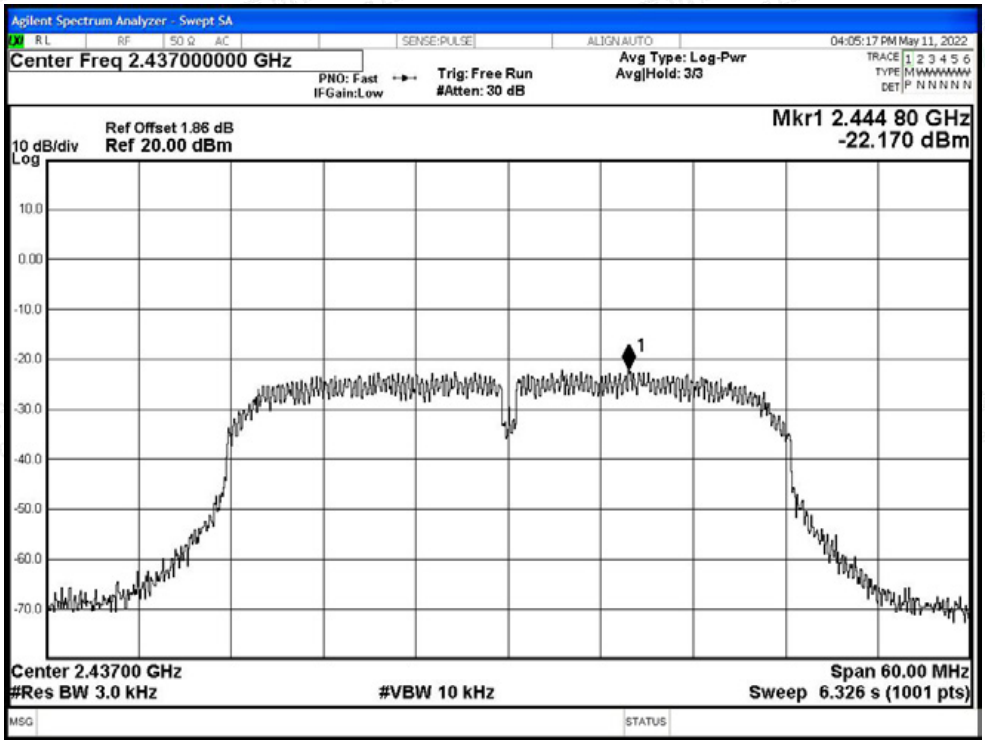
PSD NVNT n20 2462MHz Ant1



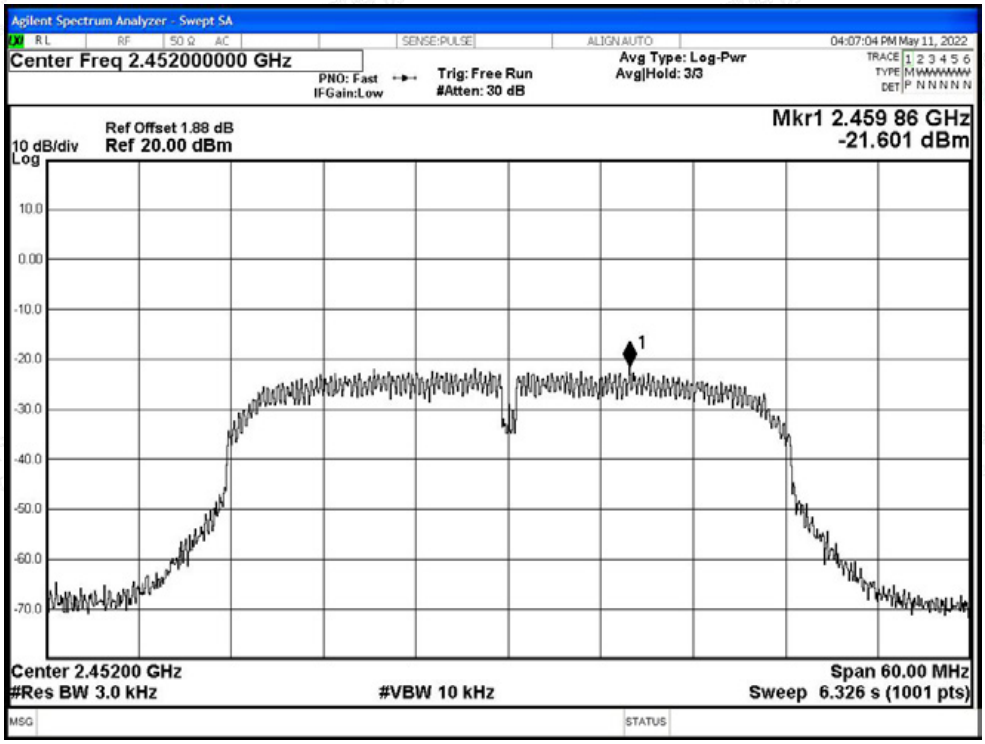
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant1

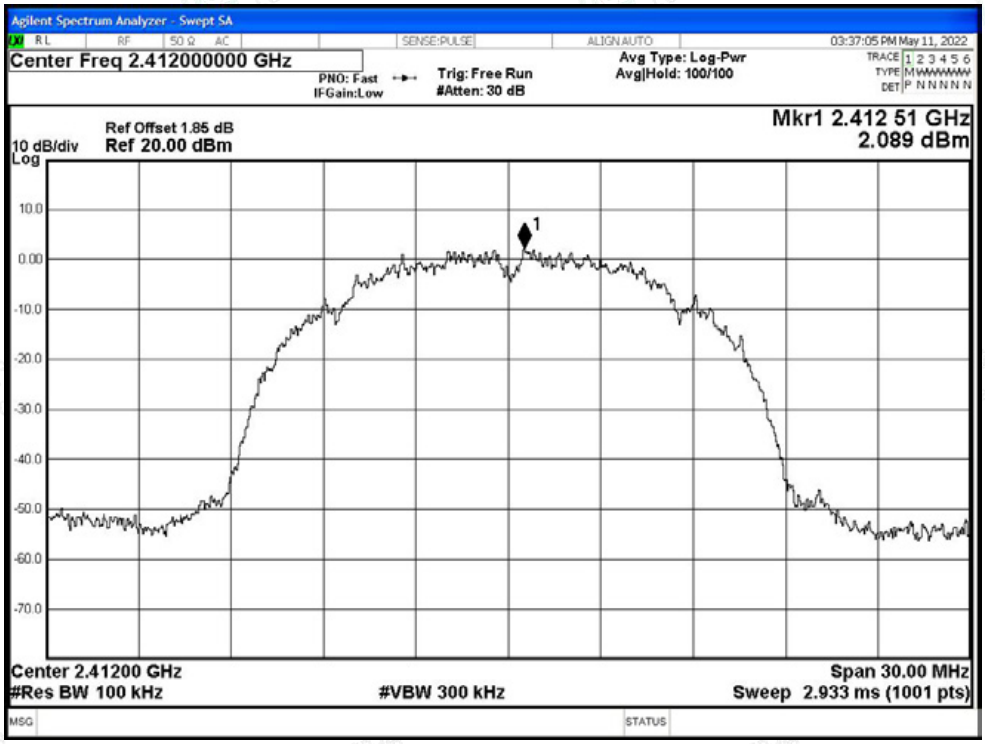


C.4 Band Edge

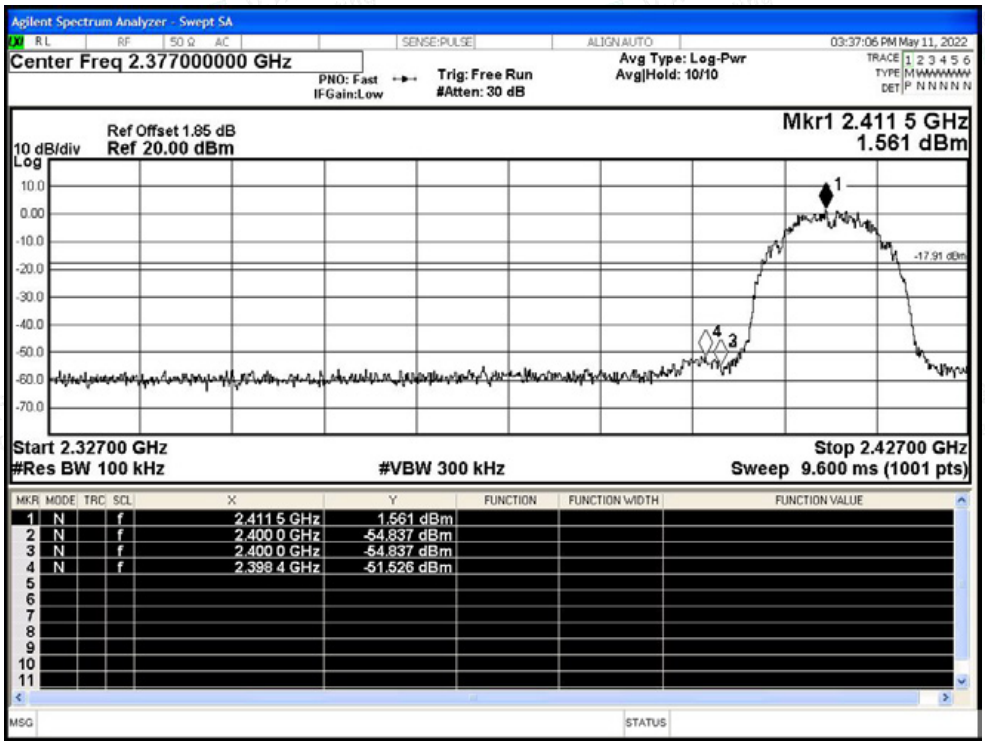
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-53.62	-20	Pass
NVNT	b	2462	Ant1	-58.23	-20	Pass
NVNT	g	2412	Ant1	-45.51	-20	Pass
NVNT	g	2462	Ant1	-50.33	-20	Pass
NVNT	n20	2412	Ant1	-43.69	-20	Pass
NVNT	n20	2462	Ant1	-50.01	-20	Pass
NVNT	n40	2422	Ant1	-40.48	-20	Pass
NVNT	n40	2452	Ant1	-44.99	-20	Pass

Test Graphs

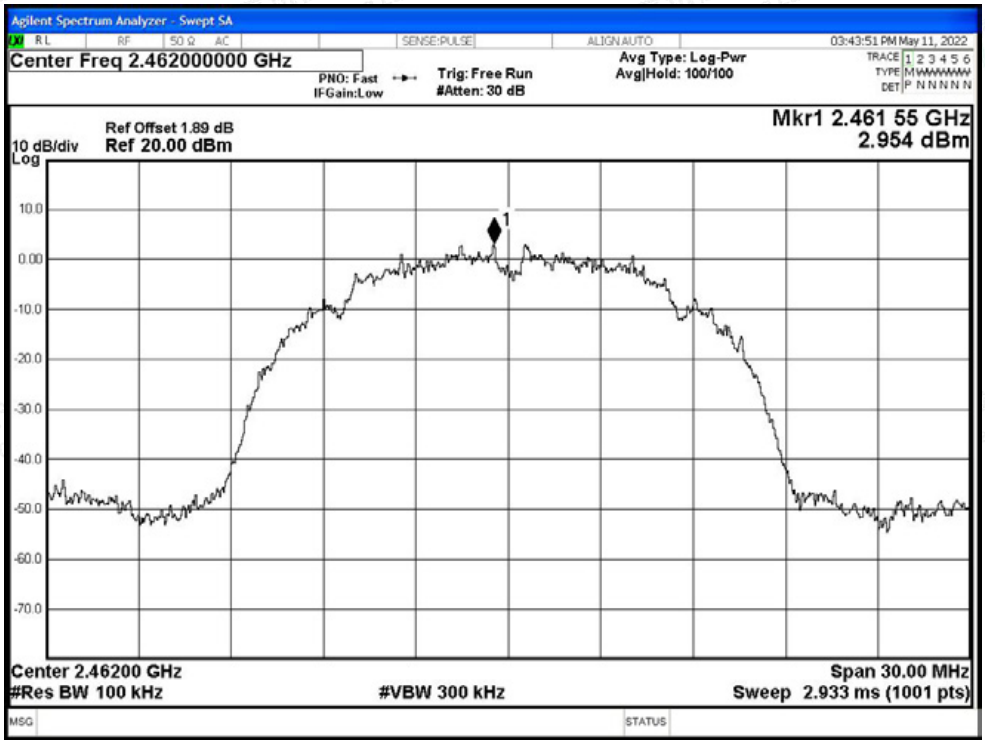
Band Edge NVNT b 2412MHz Ant1 Ref



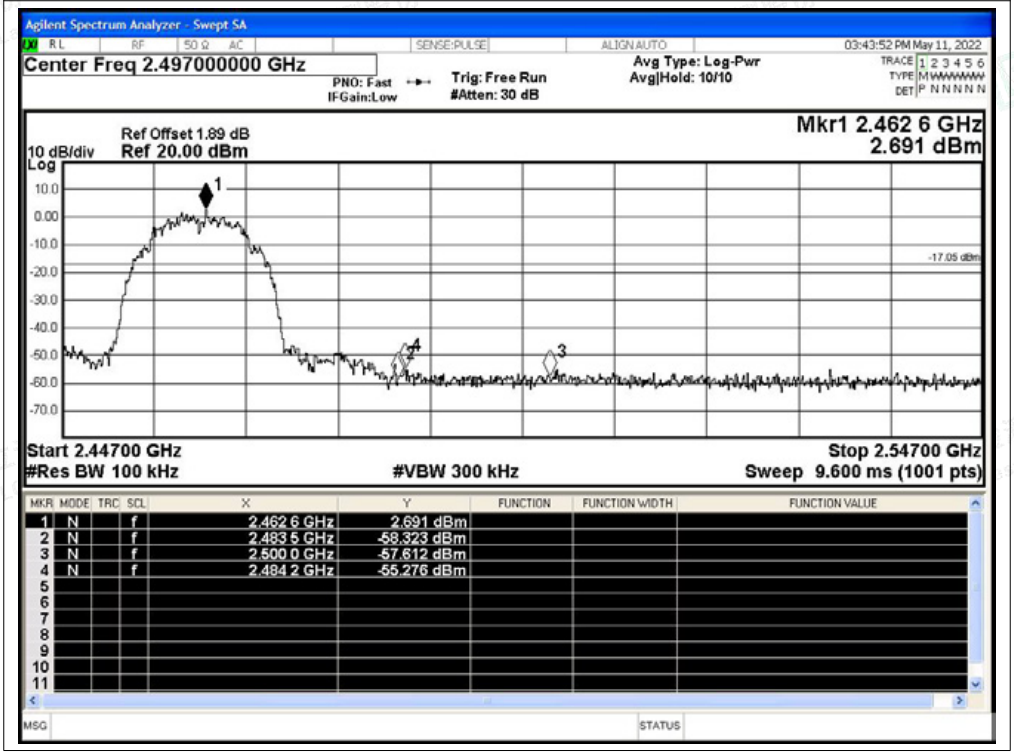
Band Edge NVNT b 2412MHz Ant1 Emission



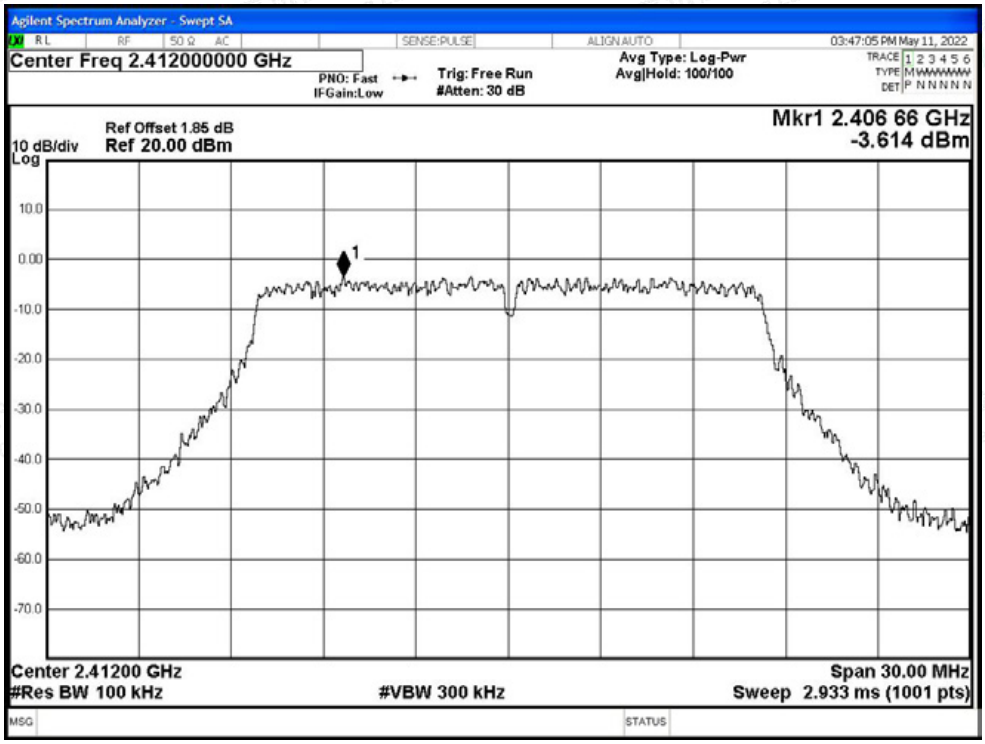
Band Edge NVNT b 2462MHz Ant1 Ref



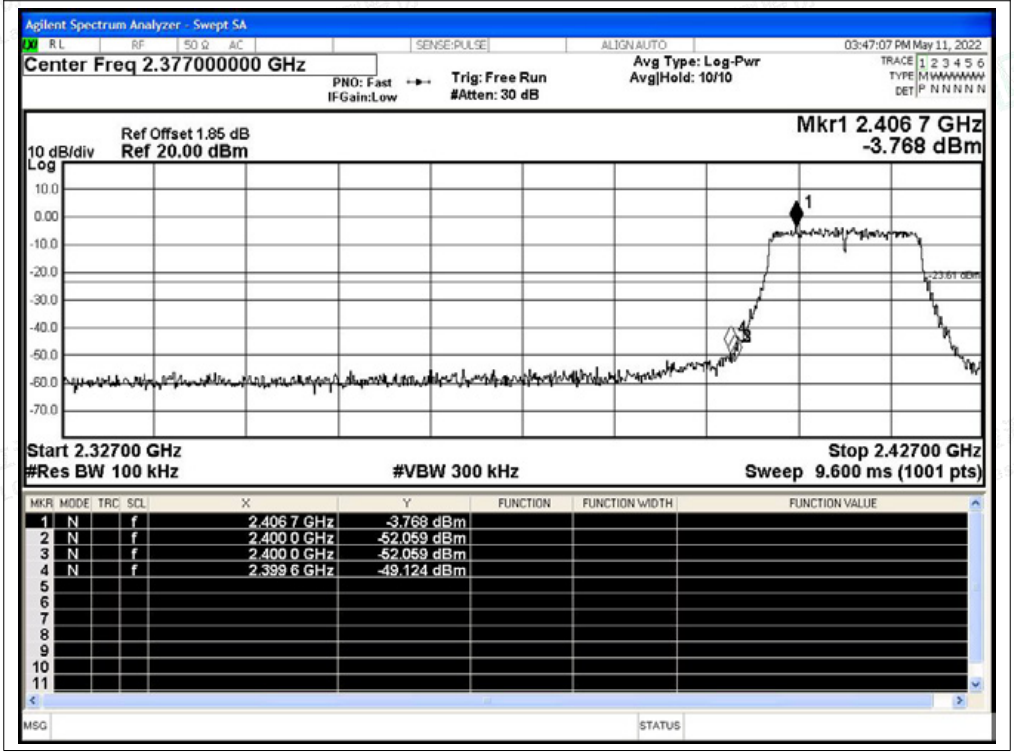
Band Edge NVNT b 2462MHz Ant1 Emission



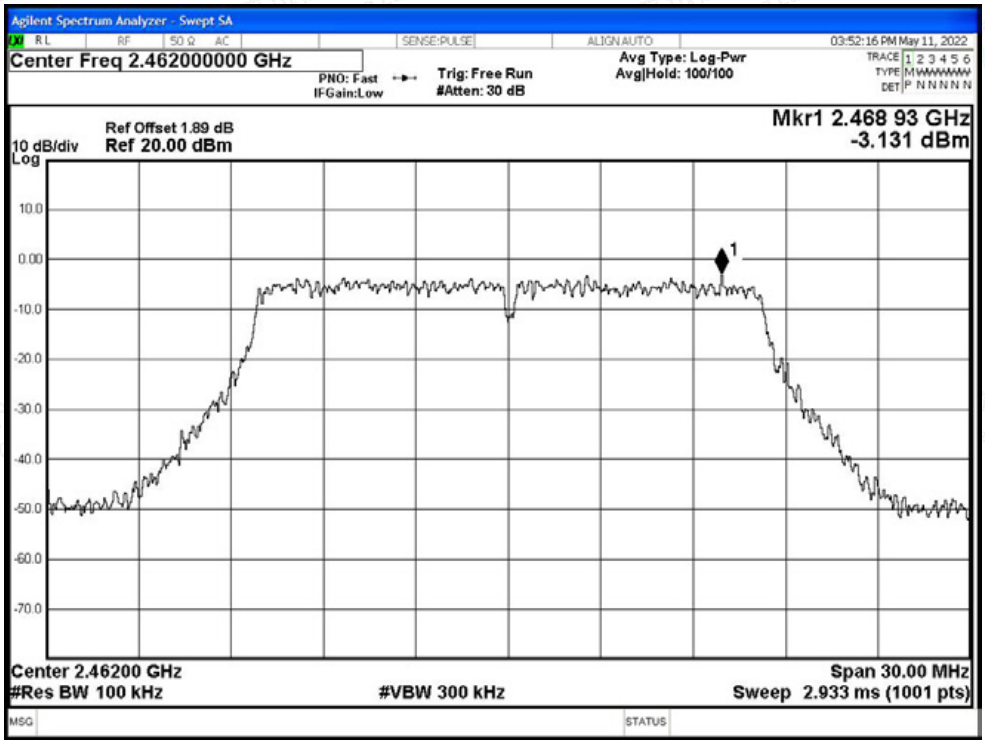
Band Edge NVNT g 2412MHz Ant1 Ref



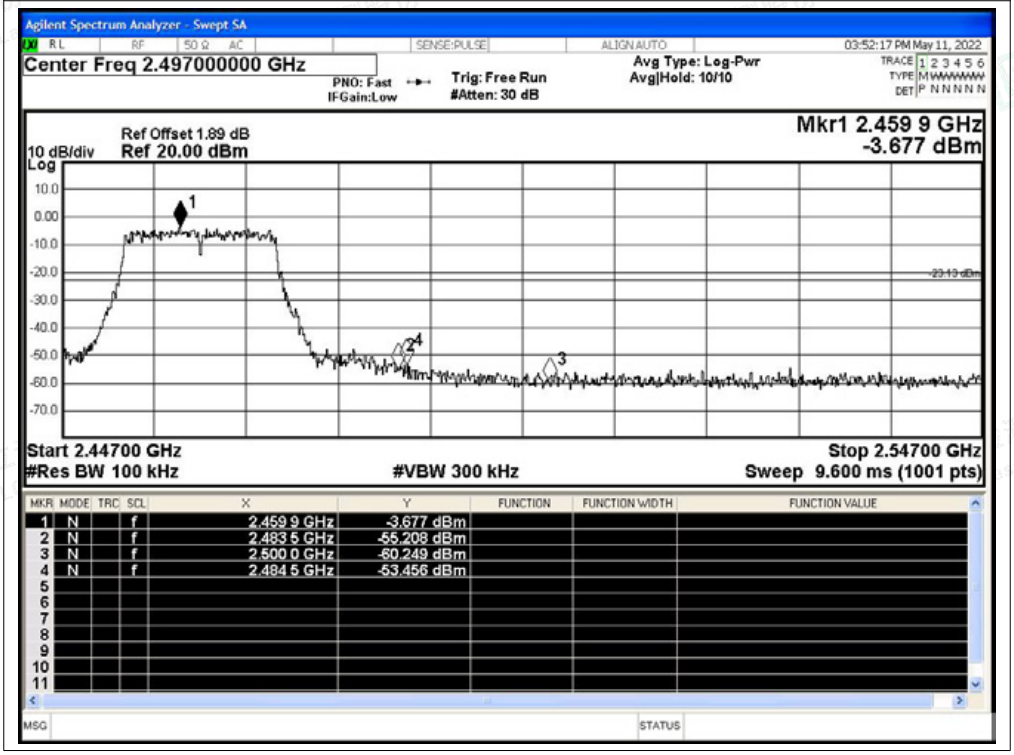
Band Edge NVNT g 2412MHz Ant1 Emission



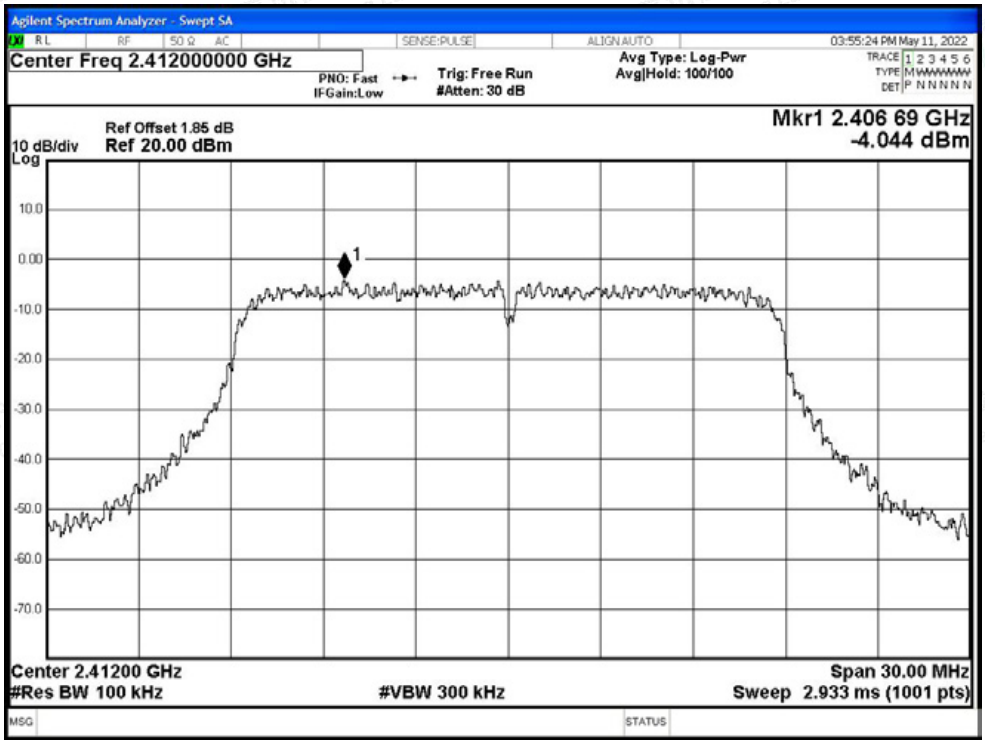
Band Edge NVNT g 2462MHz Ant1 Ref



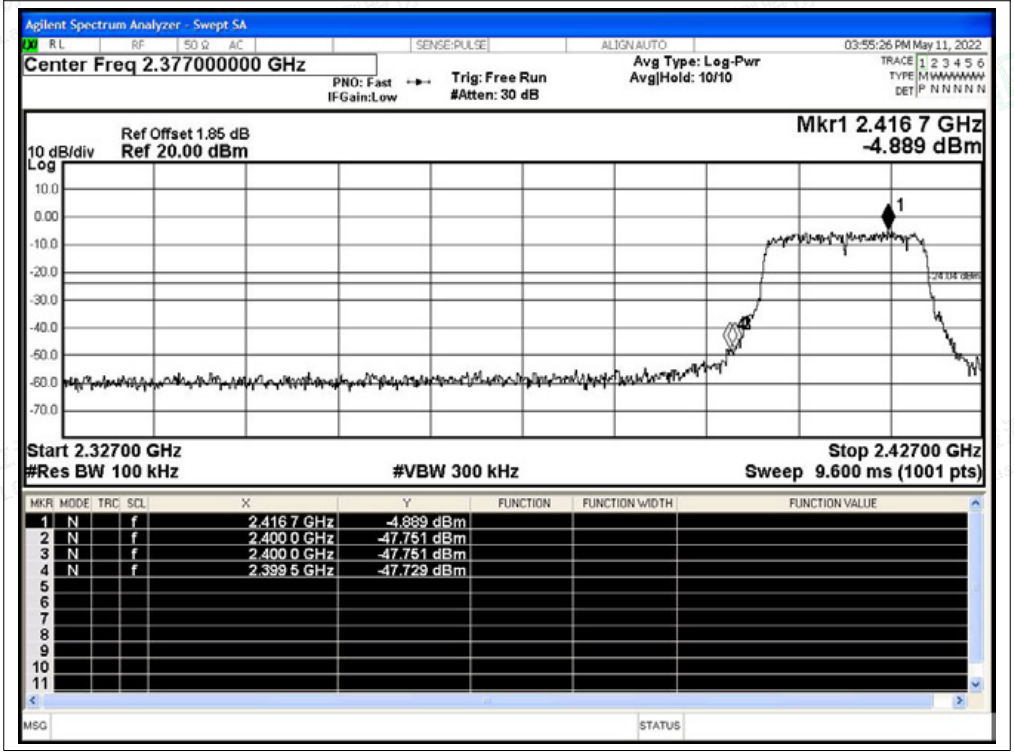
Band Edge NVNT g 2462MHz Ant1 Emission



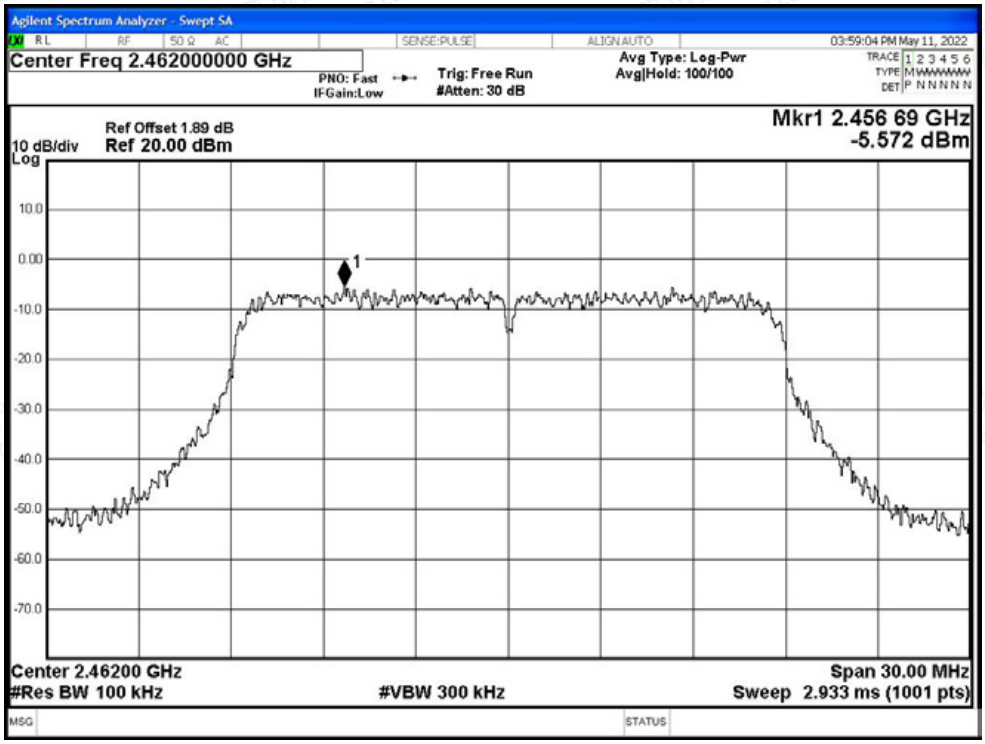
Band Edge NVNT n20 2412MHz Ant1 Ref



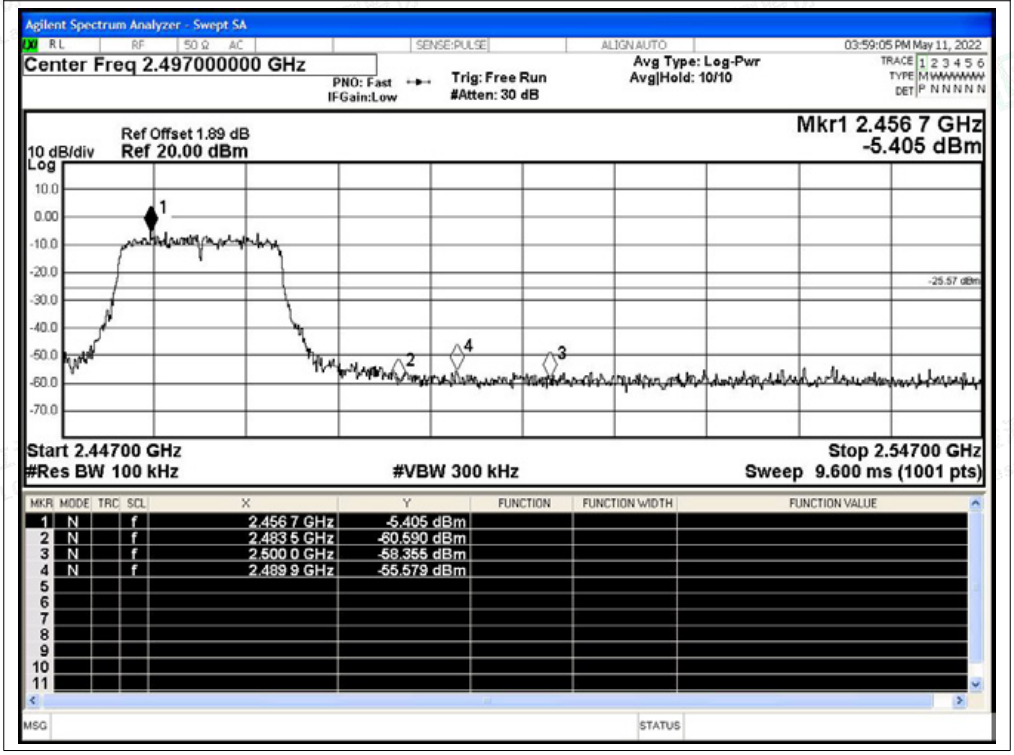
Band Edge NVNT n20 2412MHz Ant1 Emission



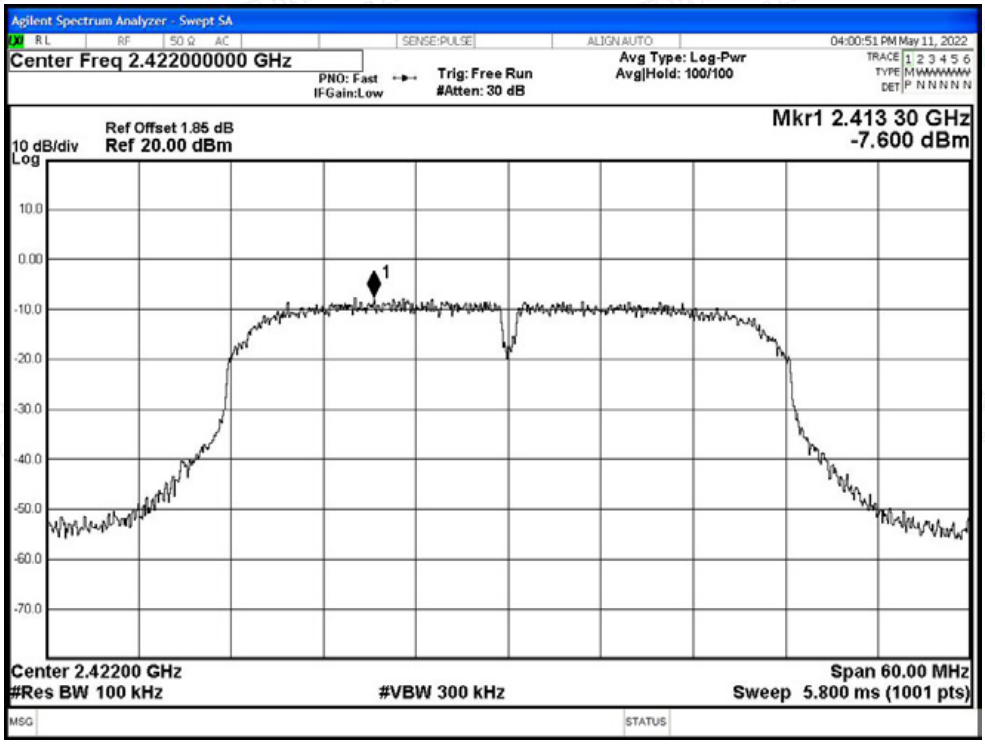
Band Edge NVNT n20 2462MHz Ant1 Ref



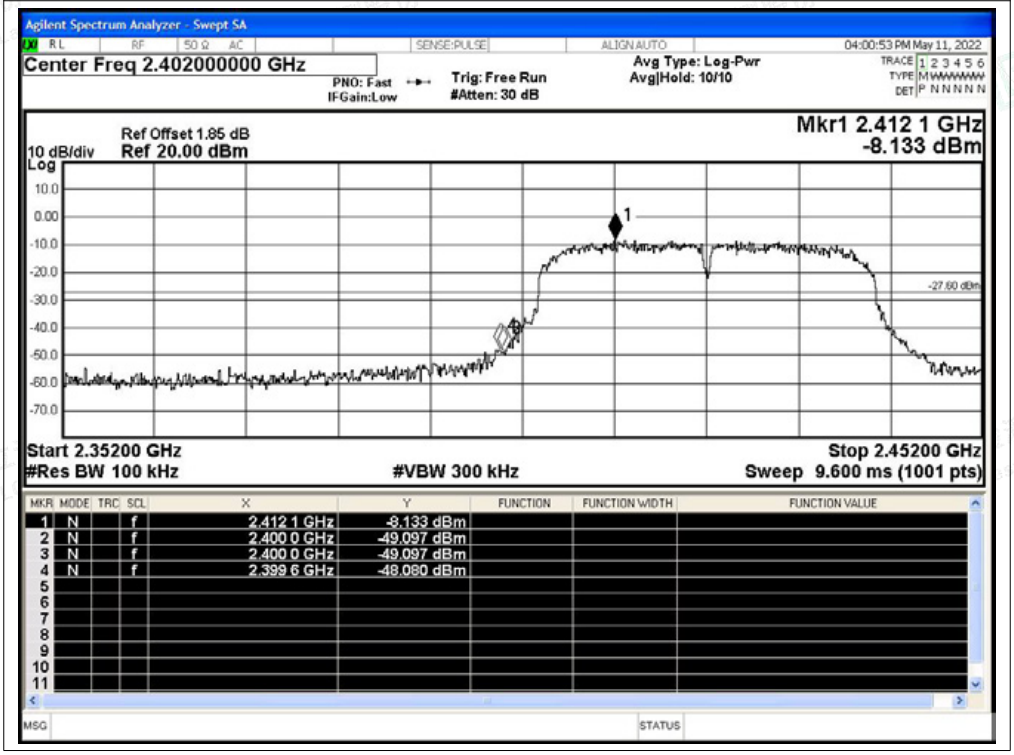
Band Edge NVNT n20 2462MHz Ant1 Emission



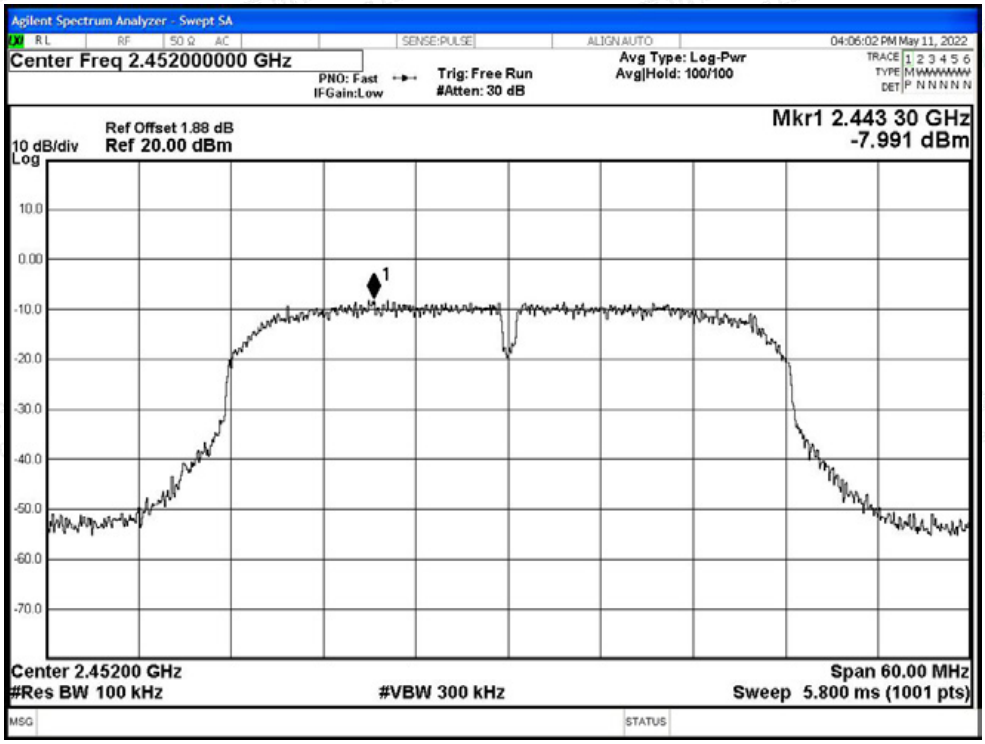
Band Edge NVNT n40 2422MHz Ant1 Ref



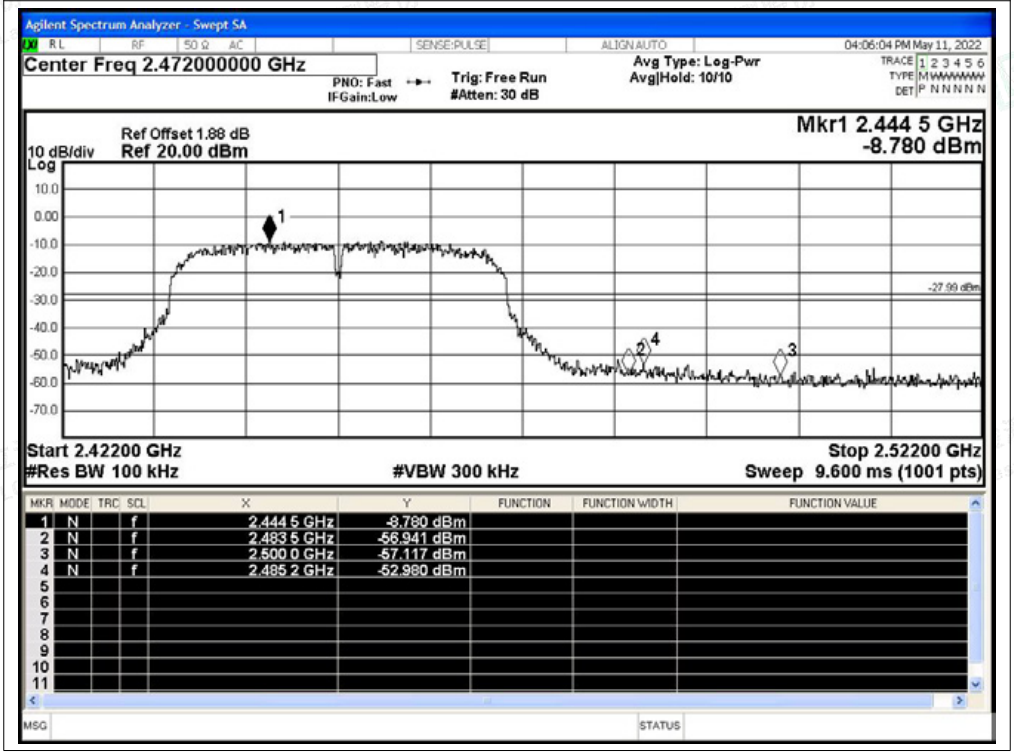
Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission

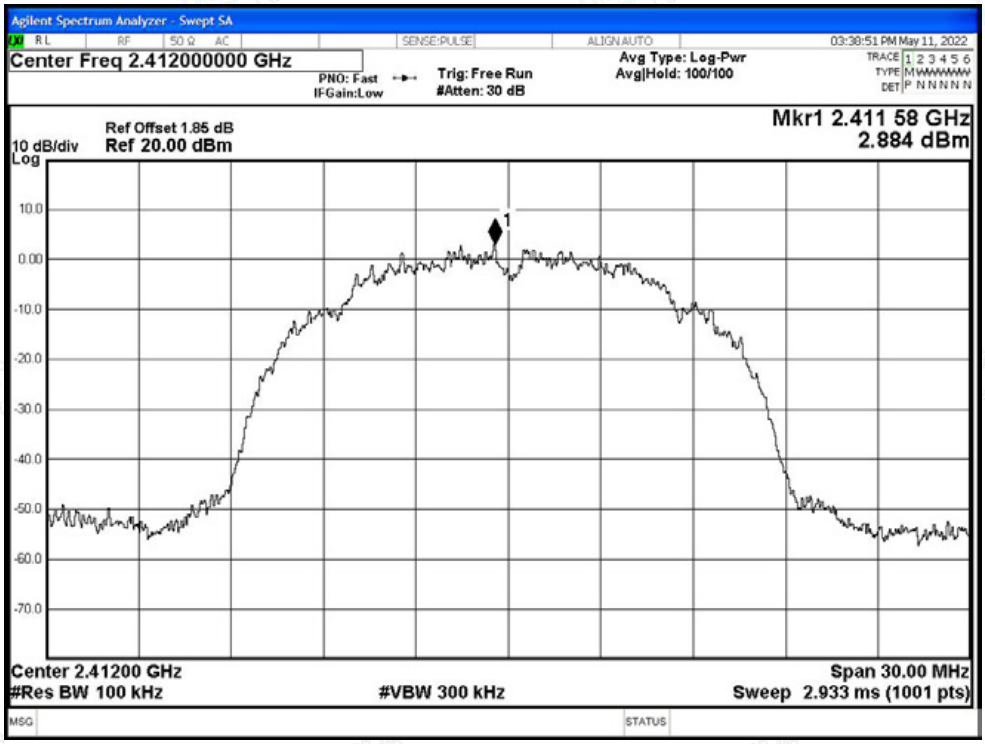


C.5 Conducted RF Spurious Emission

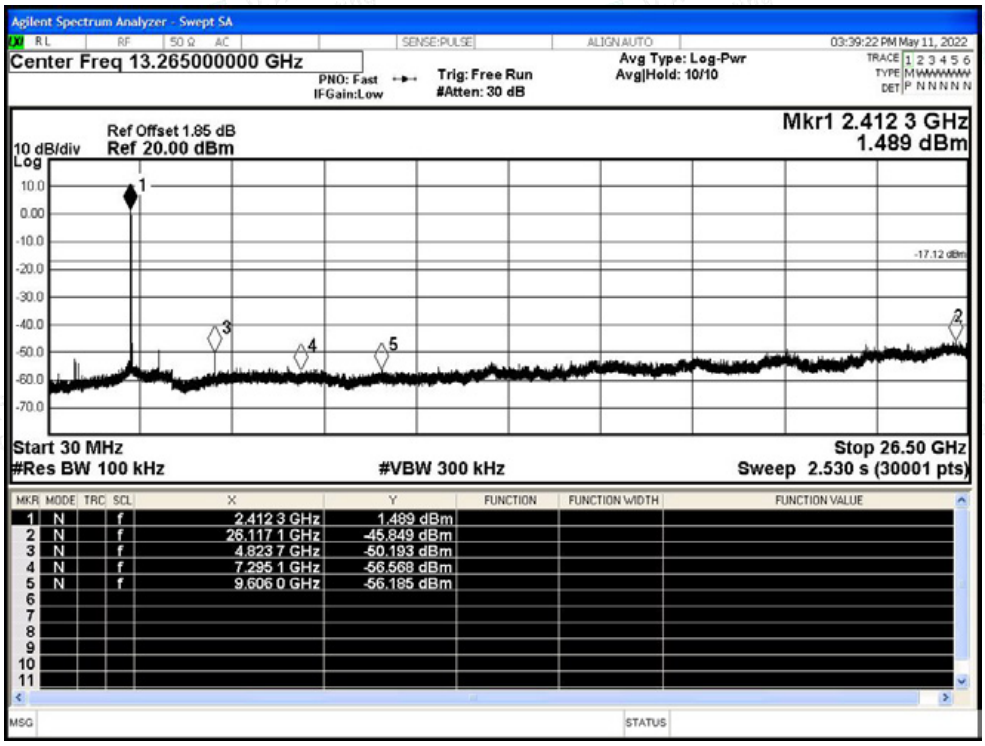
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-48.73	-20	Pass
NVNT	b	2437	Ant1	-47.15	-20	Pass
NVNT	b	2462	Ant1	-48.55	-20	Pass
NVNT	g	2412	Ant1	-41.9	-20	Pass
NVNT	g	2437	Ant1	-41.74	-20	Pass
NVNT	g	2462	Ant1	-42.85	-20	Pass
NVNT	n20	2412	Ant1	-43.47	-20	Pass
NVNT	n20	2437	Ant1	-43.3	-20	Pass
NVNT	n20	2462	Ant1	-41.04	-20	Pass
NVNT	n40	2422	Ant1	-39.09	-20	Pass
NVNT	n40	2437	Ant1	-38.91	-20	Pass
NVNT	n40	2452	Ant1	-38.05	-20	Pass

Test Graphs

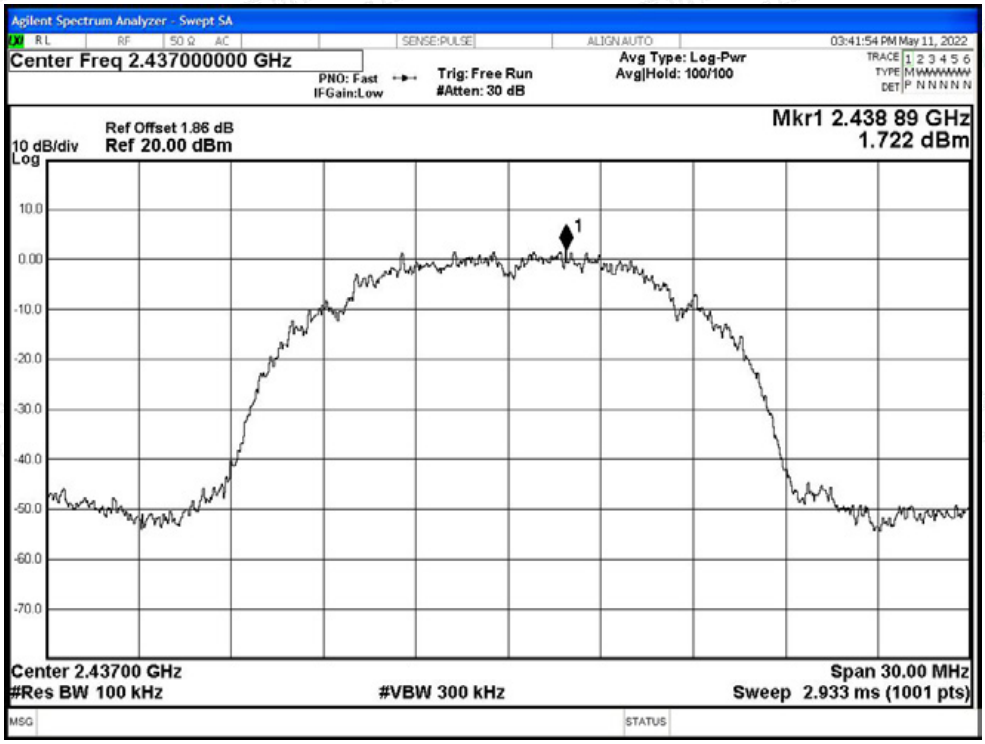
Tx. Spurious NVNT b 2412MHz Ant1 Ref



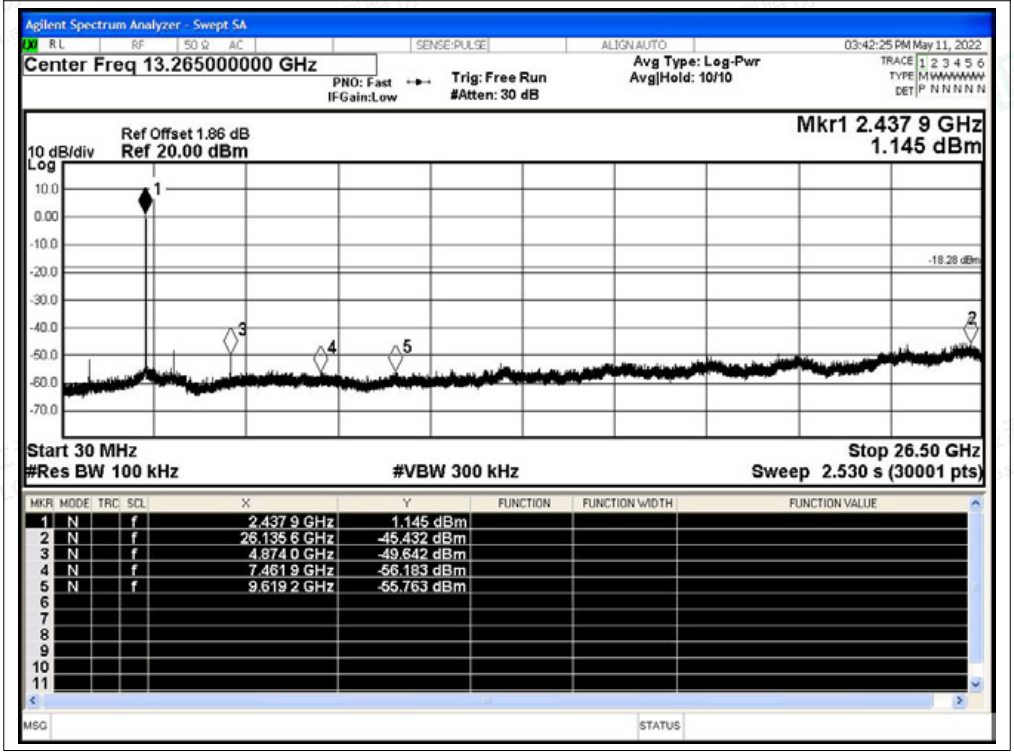
Tx. Spurious NVNT b 2412MHz Ant1 Emission



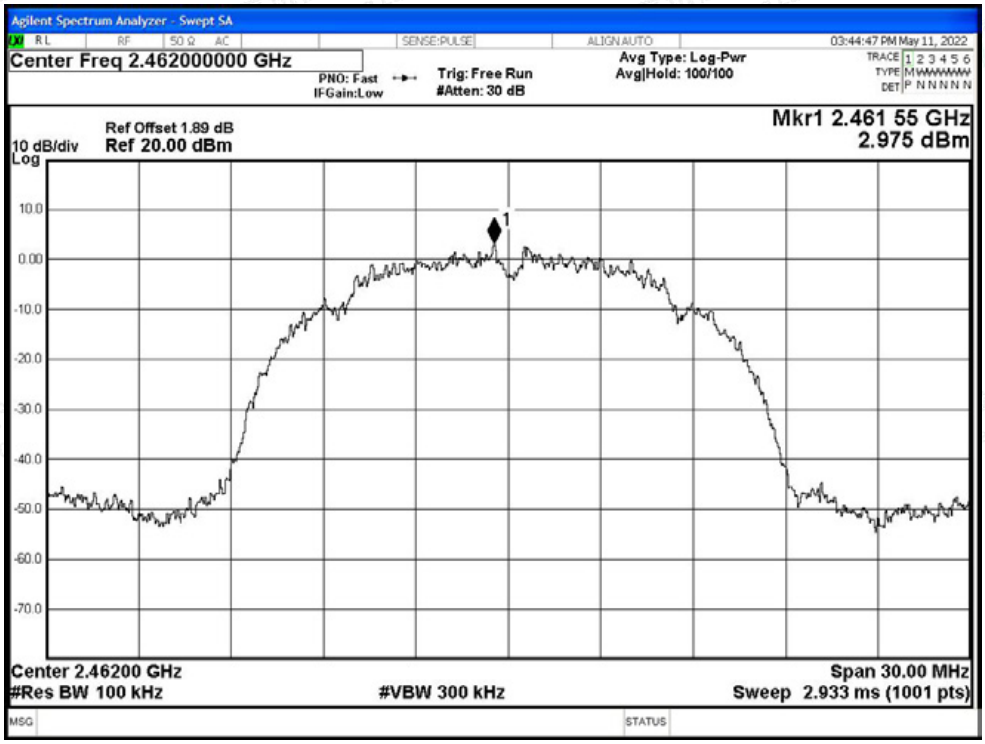
Tx. Spurious NVNT b 2437MHz Ant1 Ref



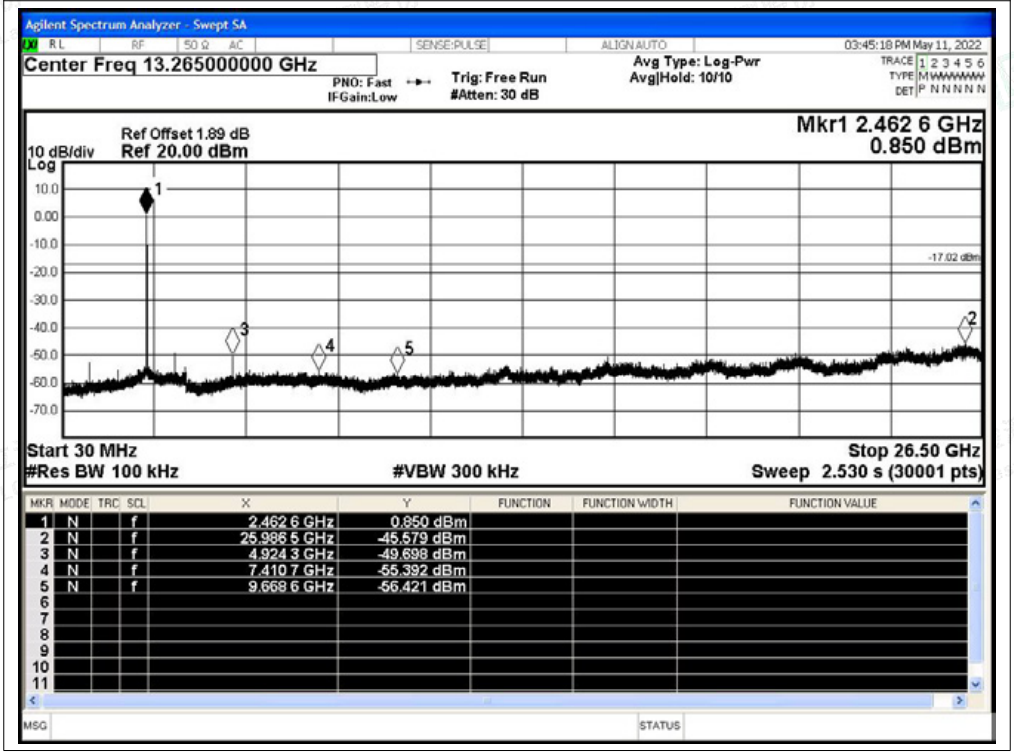
Tx. Spurious NVNT b 2437MHz Ant1 Emission



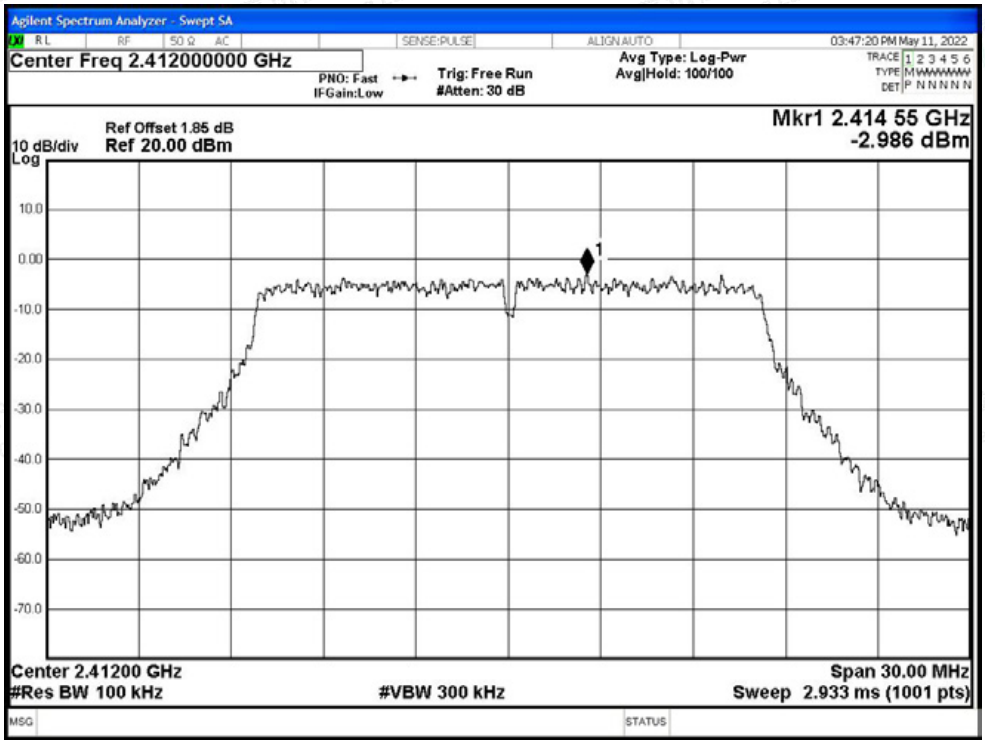
Tx. Spurious NVNT b 2462MHz Ant1 Ref



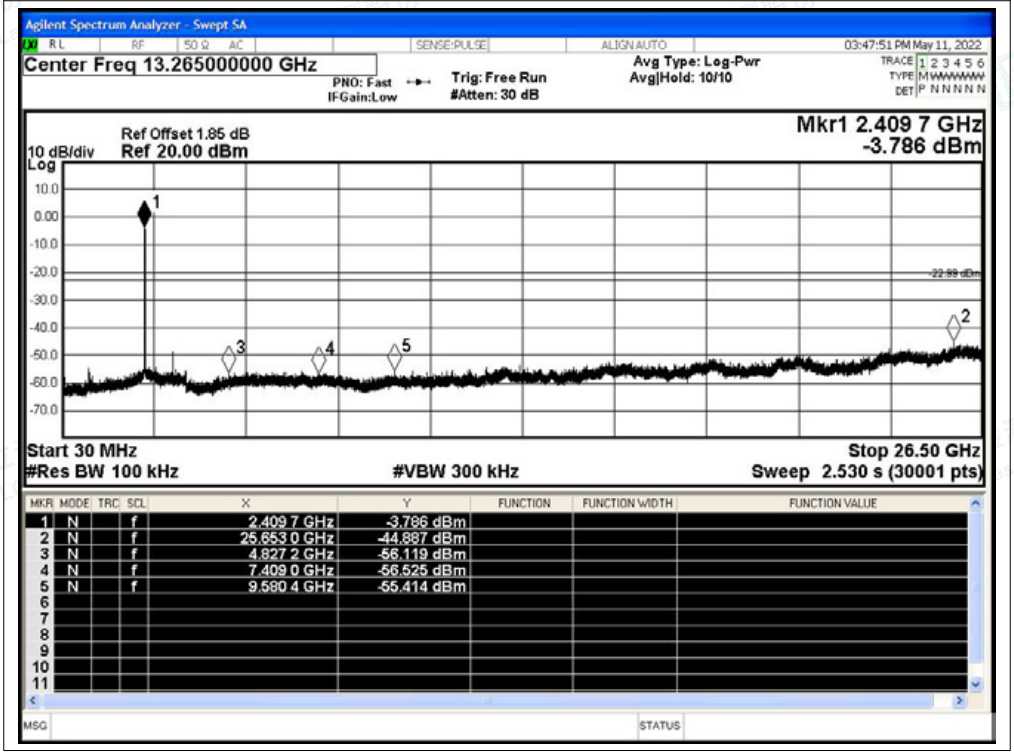
Tx. Spurious NVNT b 2462MHz Ant1 Emission



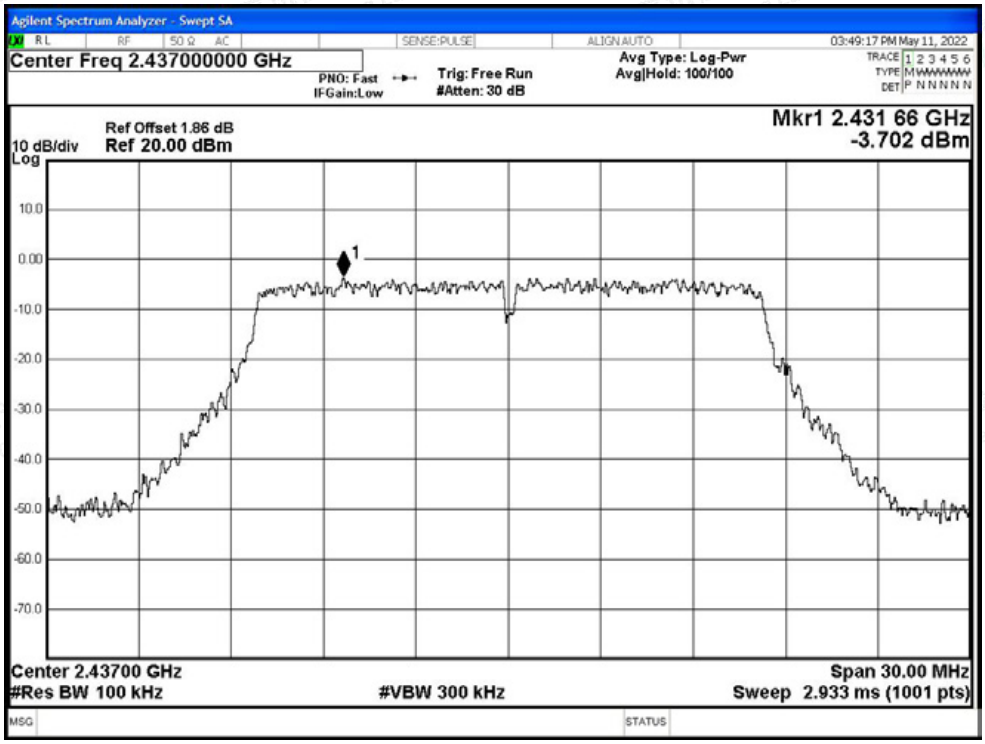
Tx. Spurious NVNT g 2412MHz Ant1 Ref



Tx. Spurious NVNT g 2412MHz Ant1 Emission



Tx. Spurious NVNT g 2437MHz Ant1 Ref



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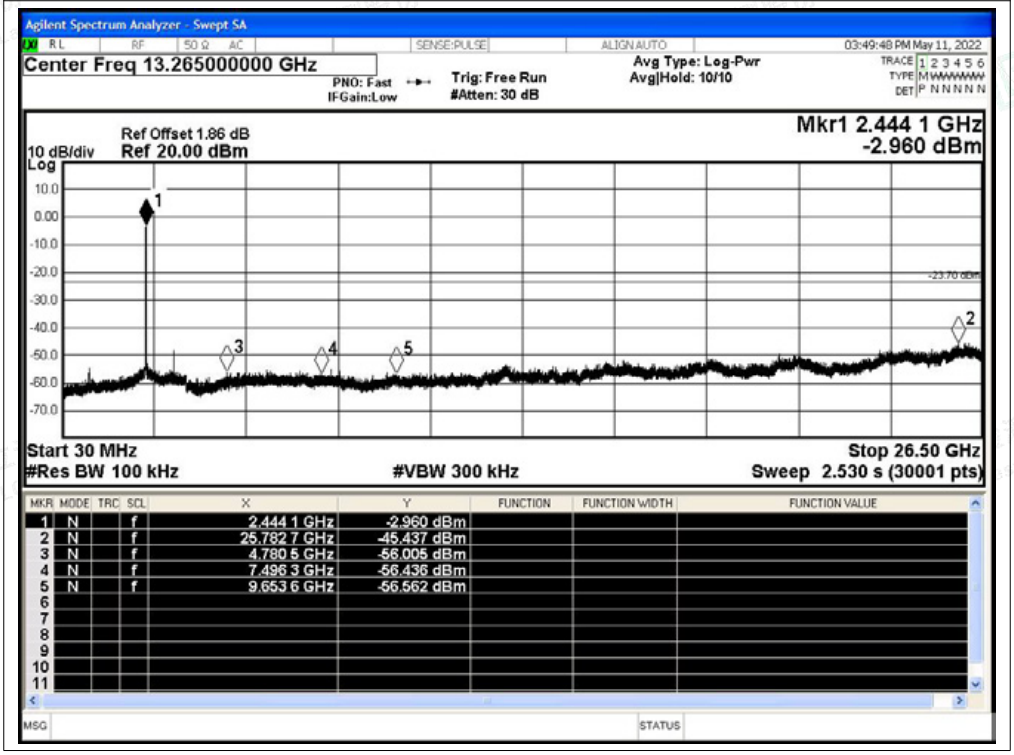
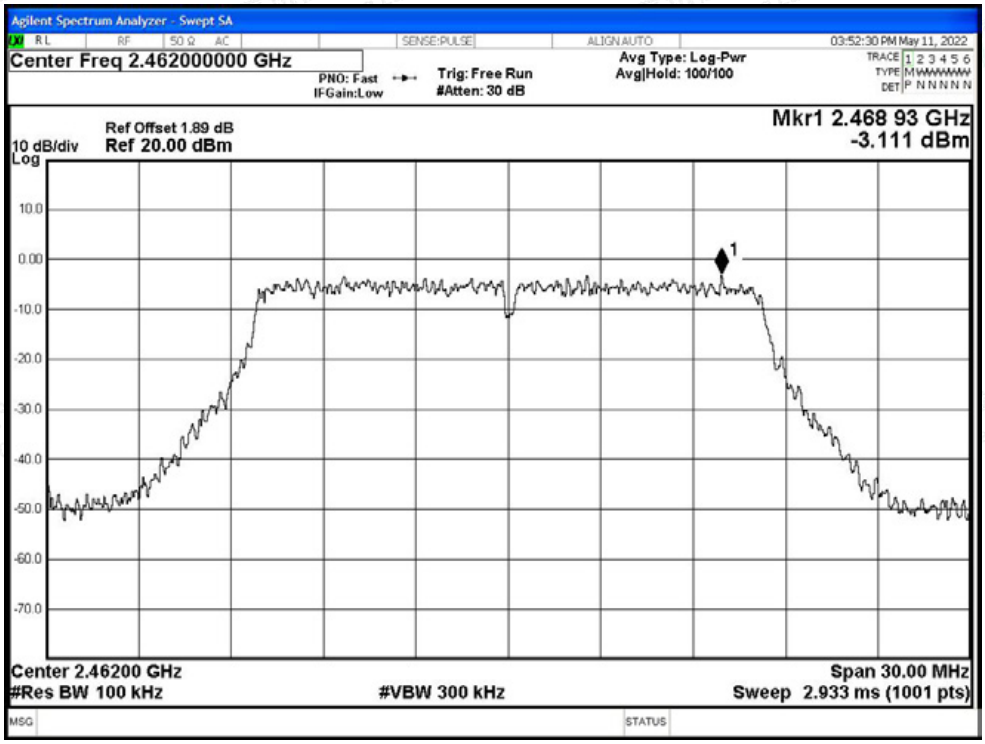


Tx. Spurious NVNT g 2462MHz Ant1 Ref



Tx. Spurious NVNT g 2462MHz Ant1 Emission