



Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Formuler Z mini

Test Model: Z mini

Environmental Conditions

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





C.1 -6dB Bandwidth

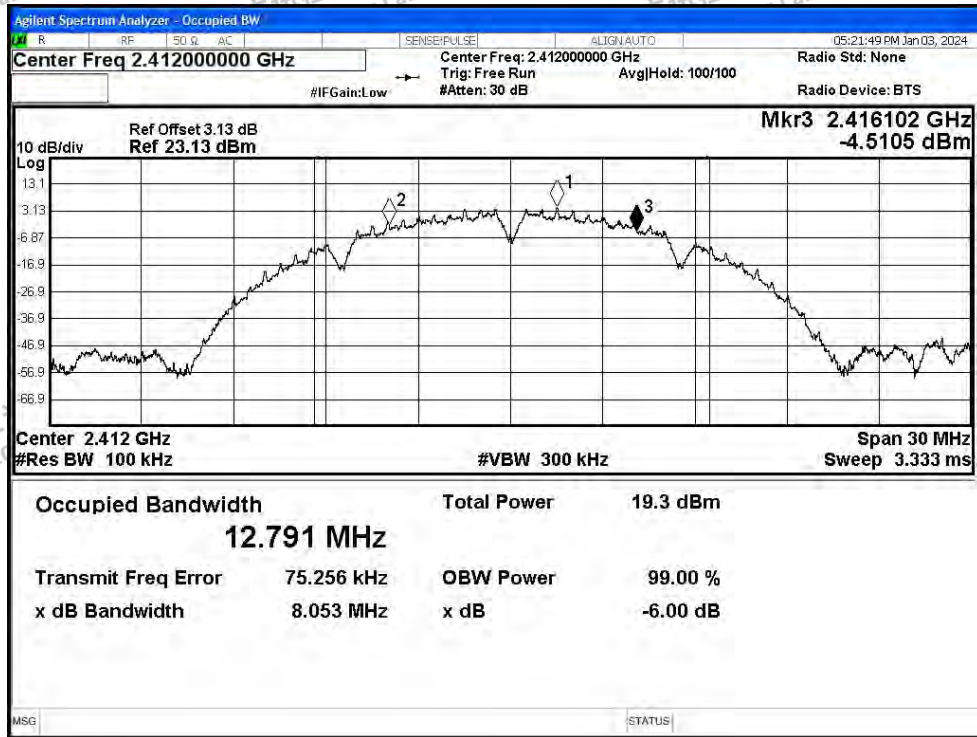
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.053	>=0.5	Pass
NVNT	b	2437	Ant1	7.597	>=0.5	Pass
NVNT	b	2462	Ant1	8.032	>=0.5	Pass
NVNT	g	2412	Ant1	15.294	>=0.5	Pass
NVNT	g	2437	Ant1	15.729	>=0.5	Pass
NVNT	g	2462	Ant1	15.32	>=0.5	Pass
NVNT	n20	2412	Ant1	15.907	>=0.5	Pass
NVNT	n20	2437	Ant1	15.003	>=0.5	Pass
NVNT	n20	2462	Ant1	15.065	>=0.5	Pass
NVNT	n40	2422	Ant1	35.072	>=0.5	Pass
NVNT	n40	2437	Ant1	33.733	>=0.5	Pass
NVNT	n40	2452	Ant1	35.083	>=0.5	Pass





Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1



-6dB Bandwidth NVNT b 2437MHz Ant1

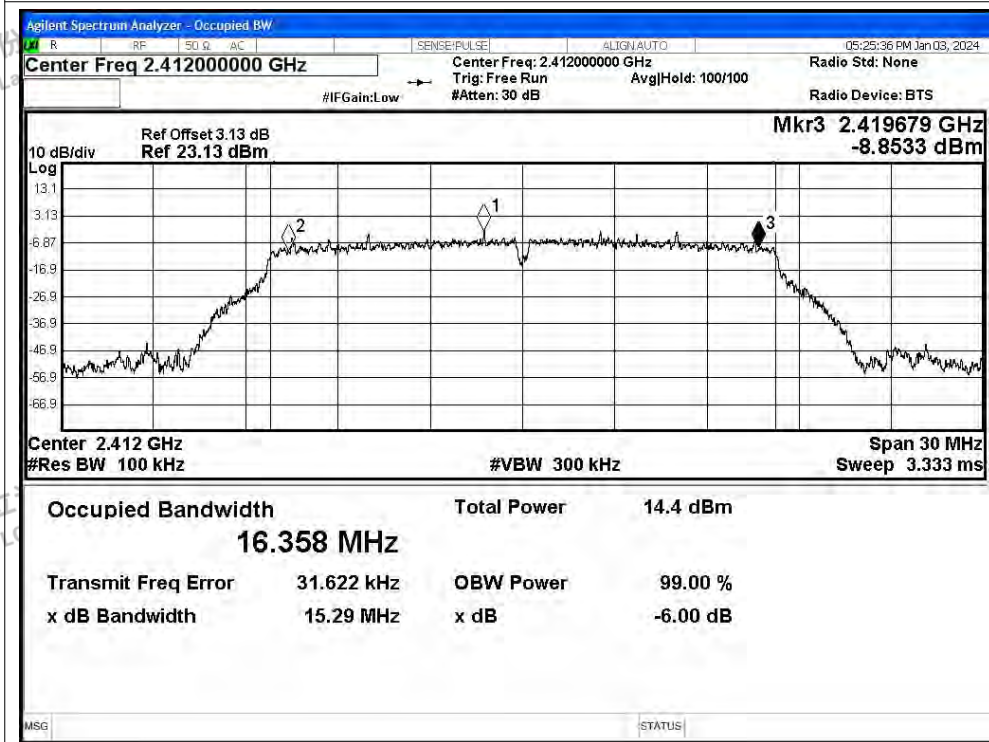




-6dB Bandwidth NVNT b 2462MHz Ant1

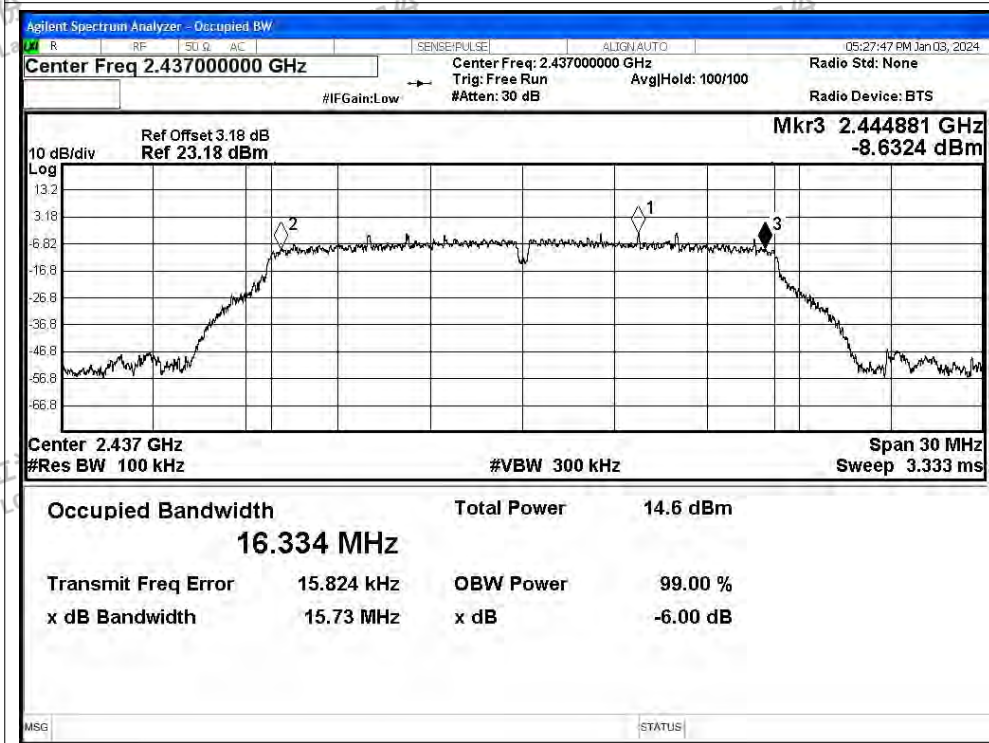


-6dB Bandwidth NVNT g 2412MHz Ant1

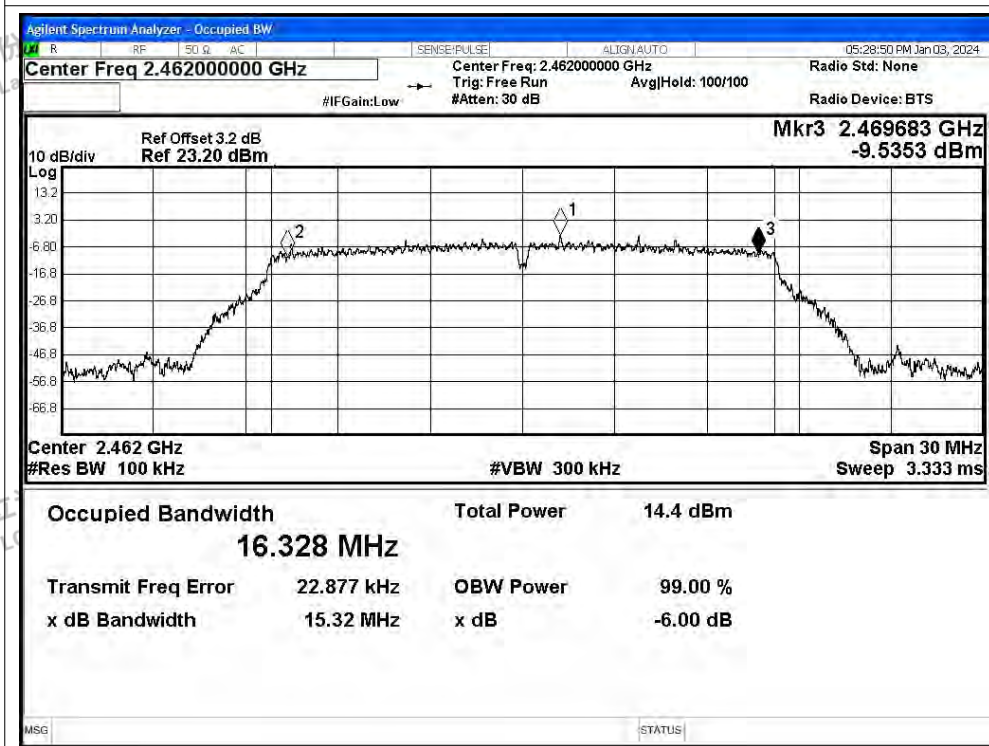




-6dB Bandwidth NVNT g 2437MHz Ant1

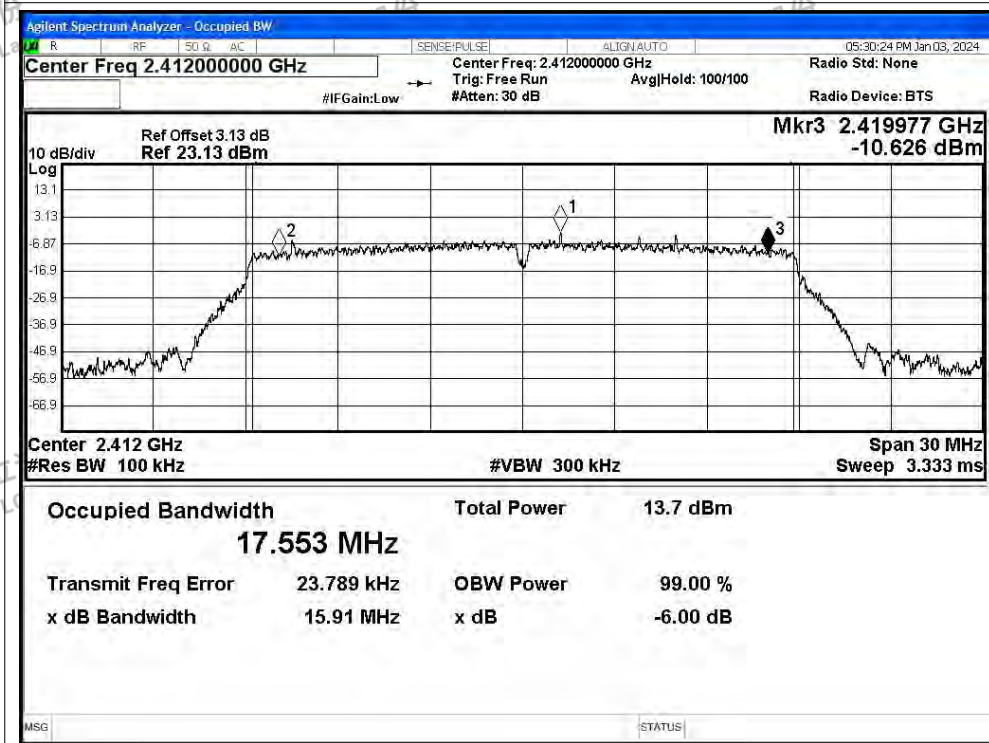


-6dB Bandwidth NVNT g 2462MHz Ant1

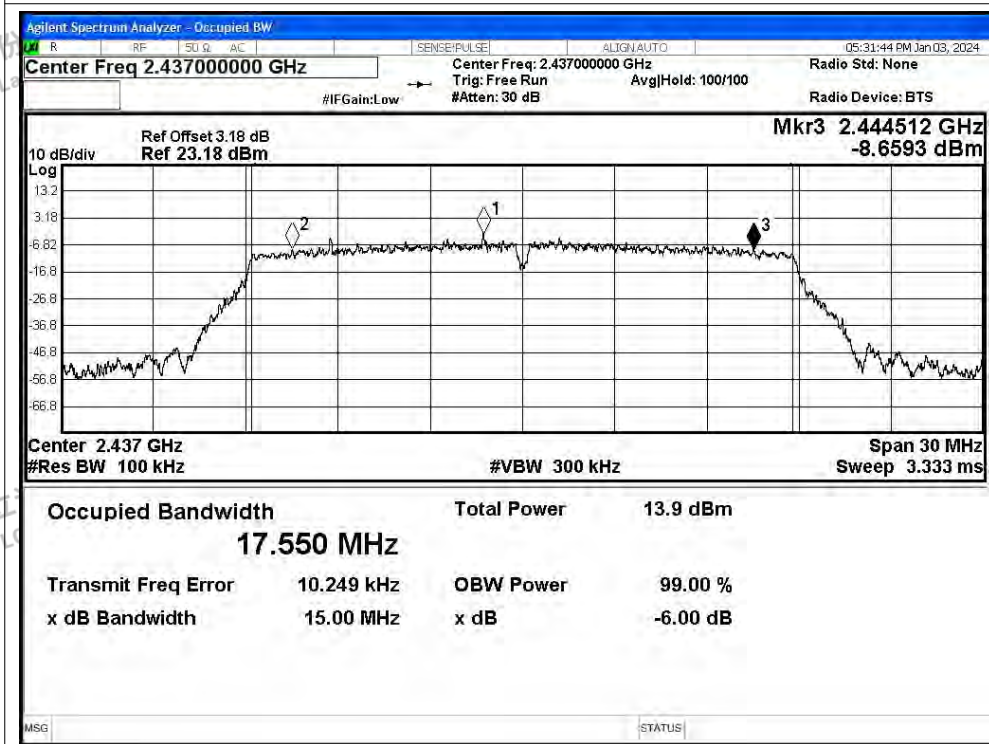




-6dB Bandwidth NVNT n20 2412MHz Ant1

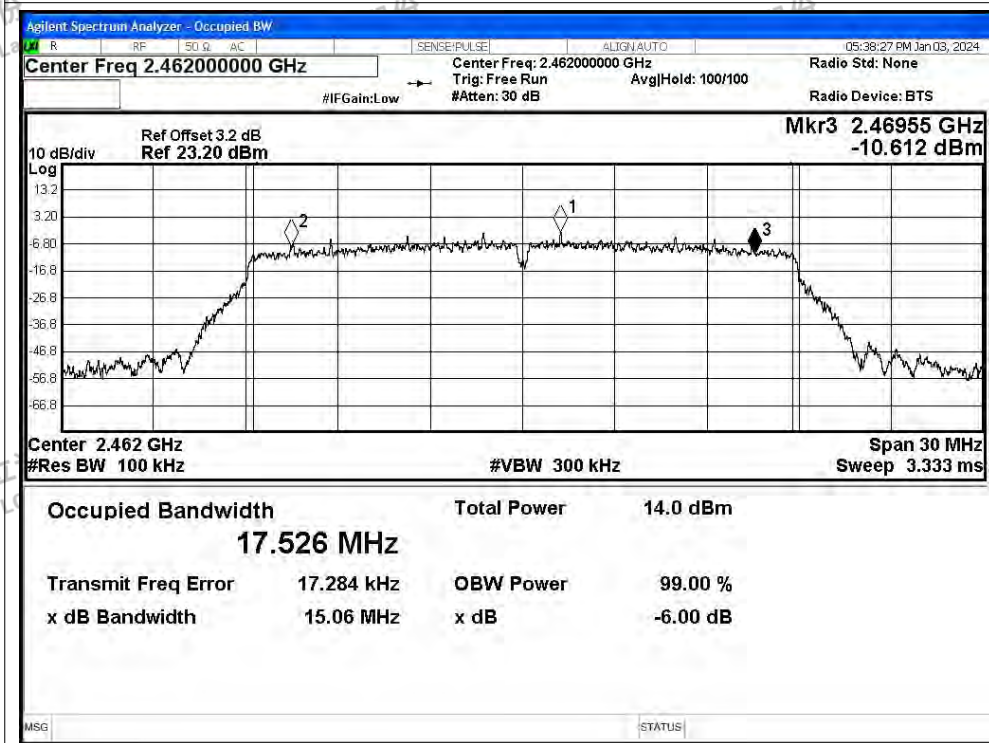


-6dB Bandwidth NVNT n20 2437MHz Ant1





-6dB Bandwidth NVNT n20 2462MHz Ant1

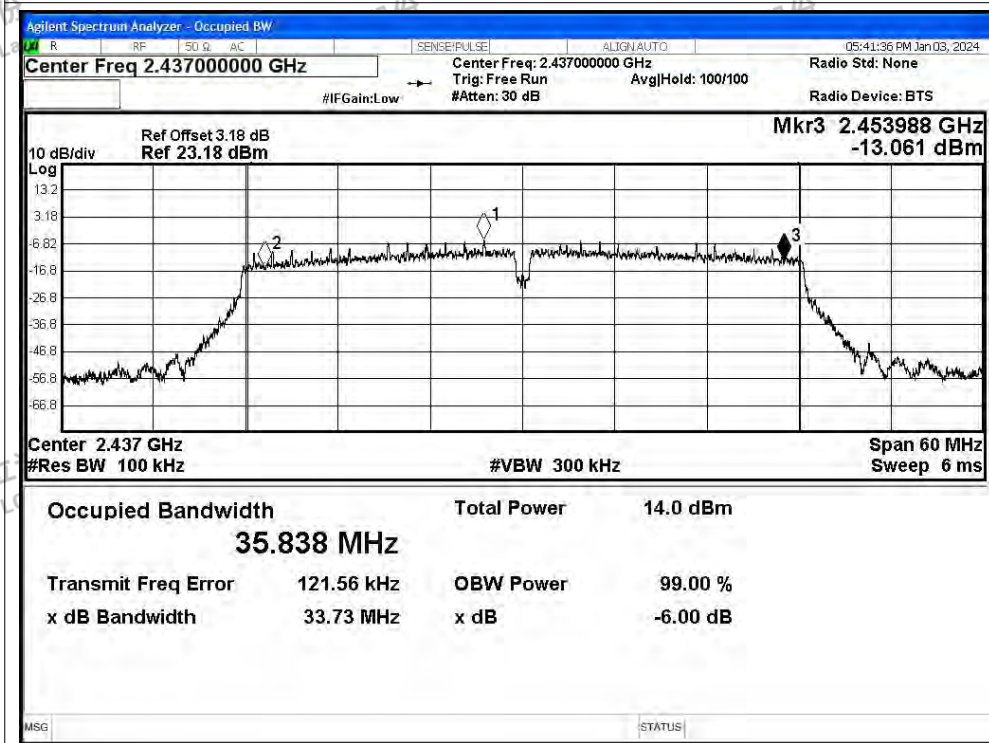


-6dB Bandwidth NVNT n40 2422MHz Ant1





-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1





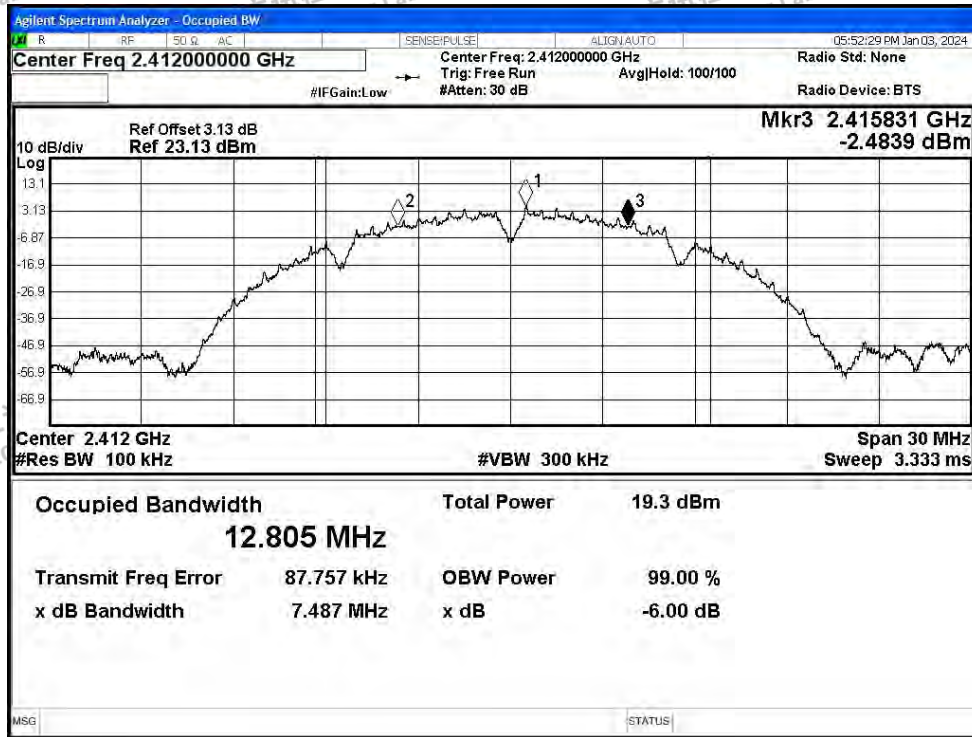
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant2	7.487	>=0.5	Pass
NVNT	b	2437	Ant2	7.089	>=0.5	Pass
NVNT	b	2462	Ant2	7.553	>=0.5	Pass
NVNT	g	2412	Ant2	15.31	>=0.5	Pass
NVNT	g	2437	Ant2	15.113	>=0.5	Pass
NVNT	g	2462	Ant2	15.069	>=0.5	Pass
NVNT	n20	2412	Ant2	15.27	>=0.5	Pass
NVNT	n20	2437	Ant2	15.623	>=0.5	Pass
NVNT	n20	2462	Ant2	14.785	>=0.5	Pass
NVNT	n40	2422	Ant2	33.824	>=0.5	Pass
NVNT	n40	2437	Ant2	35.108	>=0.5	Pass
NVNT	n40	2452	Ant2	35.079	>=0.5	Pass



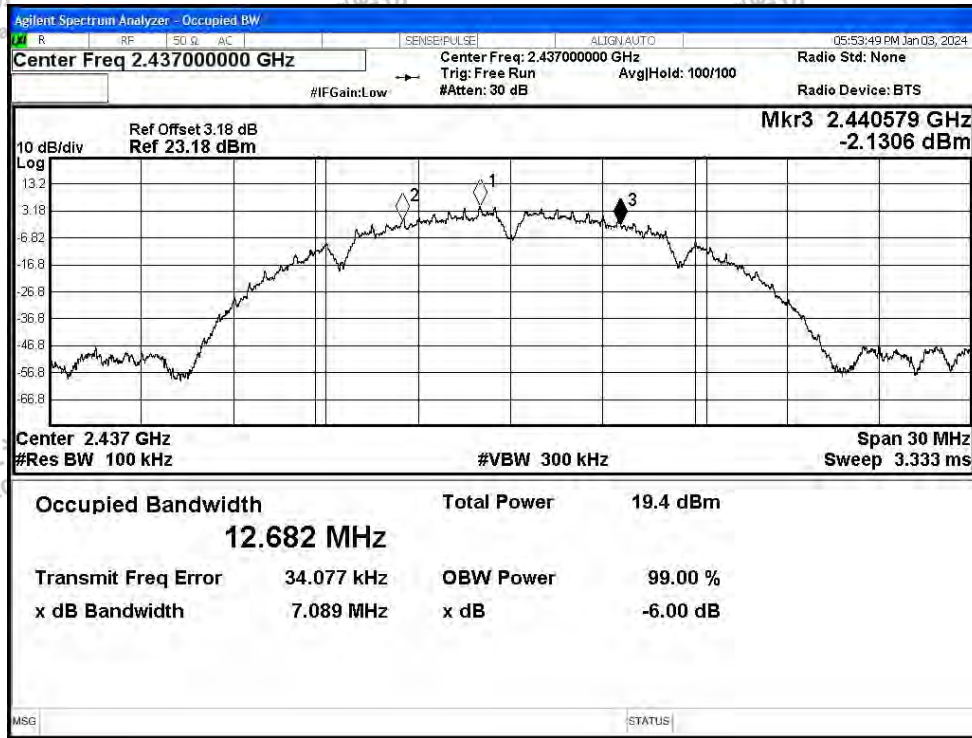


Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant2



-6dB Bandwidth NVNT b 2437MHz Ant2

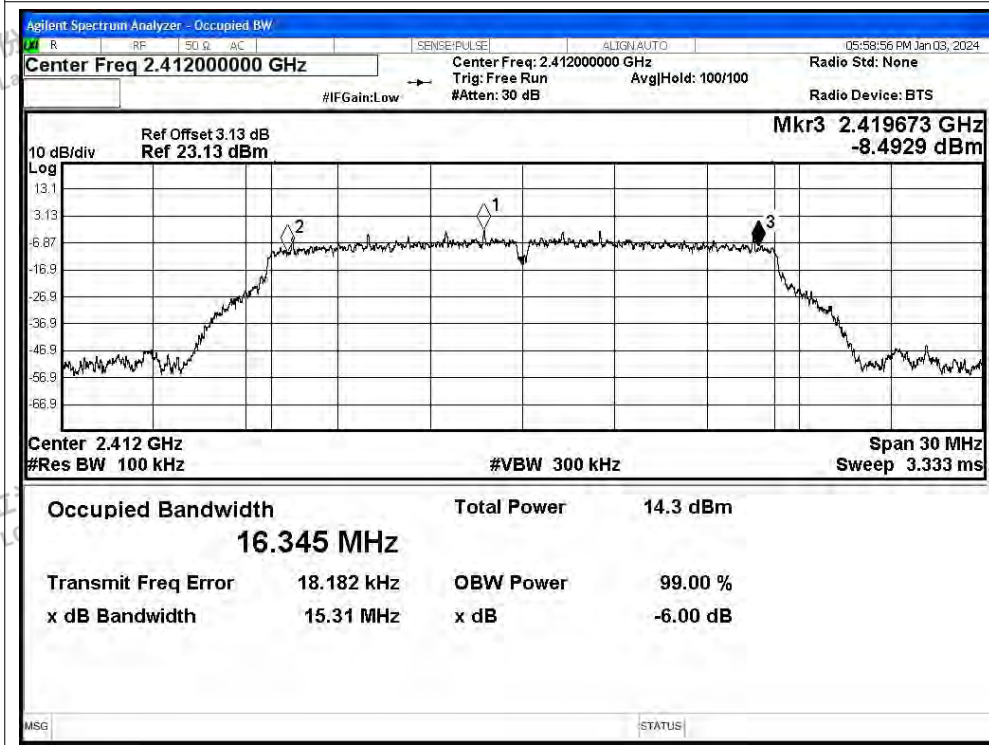




-6dB Bandwidth NVNT b 2462MHz Ant2

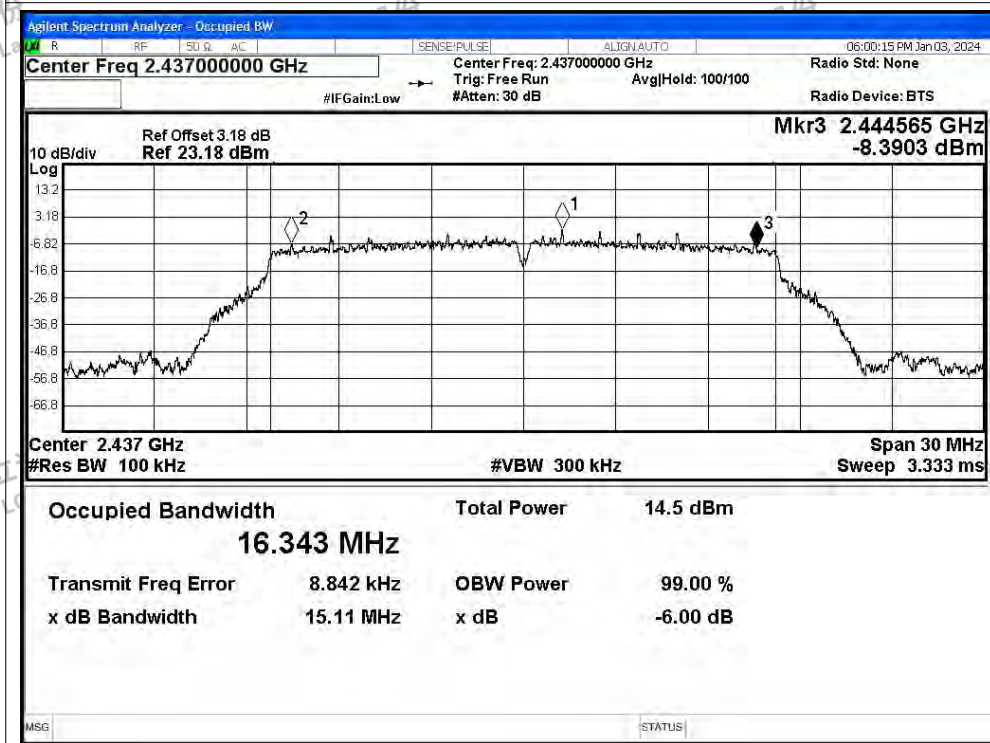


-6dB Bandwidth NVNT g 2412MHz Ant2

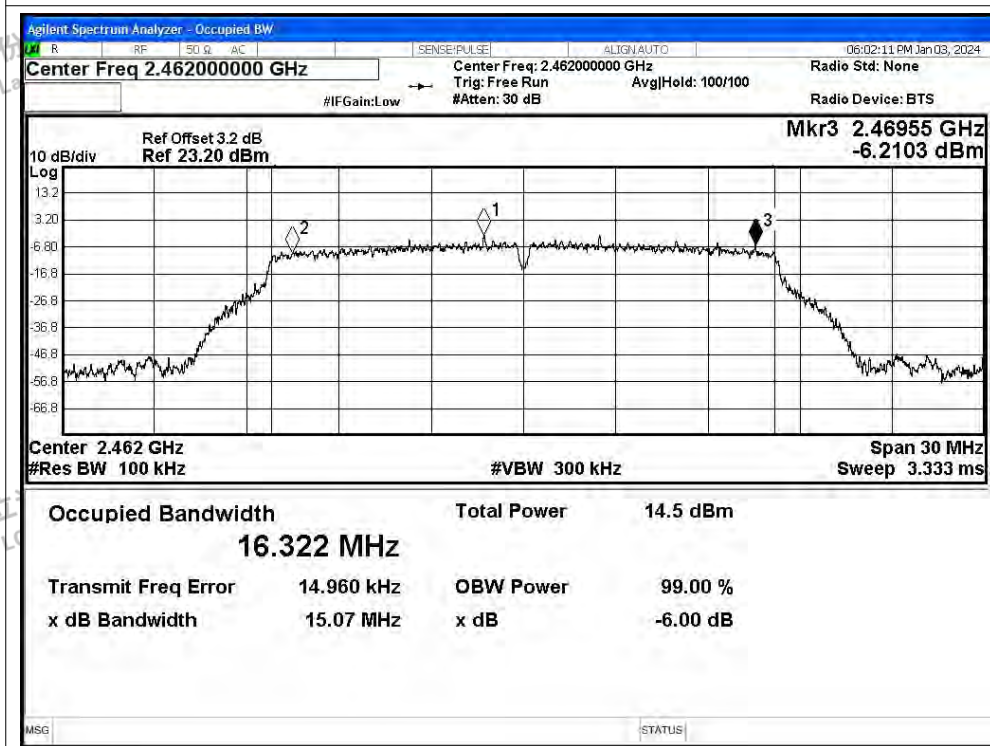




-6dB Bandwidth NVNT g 2437MHz Ant2



-6dB Bandwidth NVNT g 2462MHz Ant2





-6dB Bandwidth NVNT n20 2412MHz Ant2



-6dB Bandwidth NVNT n20 2437MHz Ant2





-6dB Bandwidth NVNT n20 2462MHz Ant2



-6dB Bandwidth NVNT n40 2422MHz Ant2





-6dB Bandwidth NVNT n40 2437MHz Ant2



-6dB Bandwidth NVNT n40 2452MHz Ant2





C.2 Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	14.42	30	Pass
NVNT	b	2437	Ant1	14.56	30	Pass
NVNT	b	2462	Ant1	14.49	30	Pass
NVNT	g	2412	Ant1	13.04	30	Pass
NVNT	g	2437	Ant1	13.29	30	Pass
NVNT	g	2462	Ant1	13.29	30	Pass
NVNT	n20	2412	Ant1	12.48	30	Pass
NVNT	n20	2437	Ant1	12.68	30	Pass
NVNT	n20	2462	Ant1	12.63	30	Pass
NVNT	n40	2422	Ant1	12.44	30	Pass
NVNT	n40	2437	Ant1	12.49	30	Pass
NVNT	n40	2452	Ant1	12.49	30	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant2	14.41	30	Pass
NVNT	b	2437	Ant2	14.31	30	Pass
NVNT	b	2462	Ant2	14.23	30	Pass
NVNT	g	2412	Ant2	13.07	30	Pass
NVNT	g	2437	Ant2	13.27	30	Pass
NVNT	g	2462	Ant2	13.31	30	Pass
NVNT	n20	2412	Ant2	12.43	30	Pass
NVNT	n20	2437	Ant2	12.77	30	Pass
NVNT	n20	2462	Ant2	12.72	30	Pass
NVNT	n40	2422	Ant2	12.38	30	Pass
NVNT	n40	2437	Ant2	12.52	30	Pass
NVNT	n40	2452	Ant2	12.54	30	Pass





MIMO

Condition	Mode	Frequency (MHz)	Total Power (dBm)			Limit (dBm)	Verdict
			Ant1	Ant2	Ant1+Ant2		
NVNT	n20	2412	12.48	12.43	15.47	30	Pass
NVNT	n20	2437	12.68	12.77	15.74	30	Pass
NVNT	n20	2462	12.63	12.72	15.69	30	Pass
NVNT	n40	2422	12.44	12.38	15.42	30	Pass
NVNT	n40	2437	12.49	12.52	15.52	30	Pass
NVNT	n40	2452	12.49	12.54	15.53	30	Pass





C.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-8.68	8	Pass
NVNT	b	2437	Ant1	-9.84	8	Pass
NVNT	b	2462	Ant1	-9.15	8	Pass
NVNT	g	2412	Ant1	-15.34	8	Pass
NVNT	g	2437	Ant1	-15.34	8	Pass
NVNT	g	2462	Ant1	-15	8	Pass
NVNT	n20	2412	Ant1	-16.54	8	Pass
NVNT	n20	2437	Ant1	-16.88	8	Pass
NVNT	n20	2462	Ant1	-17.19	8	Pass
NVNT	n40	2422	Ant1	-19.28	8	Pass
NVNT	n40	2437	Ant1	-19.87	8	Pass
NVNT	n40	2452	Ant1	-19.43	8	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant2	-9.91	8	Pass
NVNT	b	2437	Ant2	-9.55	8	Pass
NVNT	b	2462	Ant2	-8.97	8	Pass
NVNT	g	2412	Ant2	-16.41	8	Pass
NVNT	g	2437	Ant2	-16.29	8	Pass
NVNT	g	2462	Ant2	-16.12	8	Pass
NVNT	n20	2412	Ant2	-16.94	8	Pass
NVNT	n20	2437	Ant2	-16.83	8	Pass
NVNT	n20	2462	Ant2	-16.65	8	Pass
NVNT	n40	2422	Ant2	-19.7	8	Pass
NVNT	n40	2437	Ant2	-19.46	8	Pass
NVNT	n40	2452	Ant2	-19.2	8	Pass

MIMO

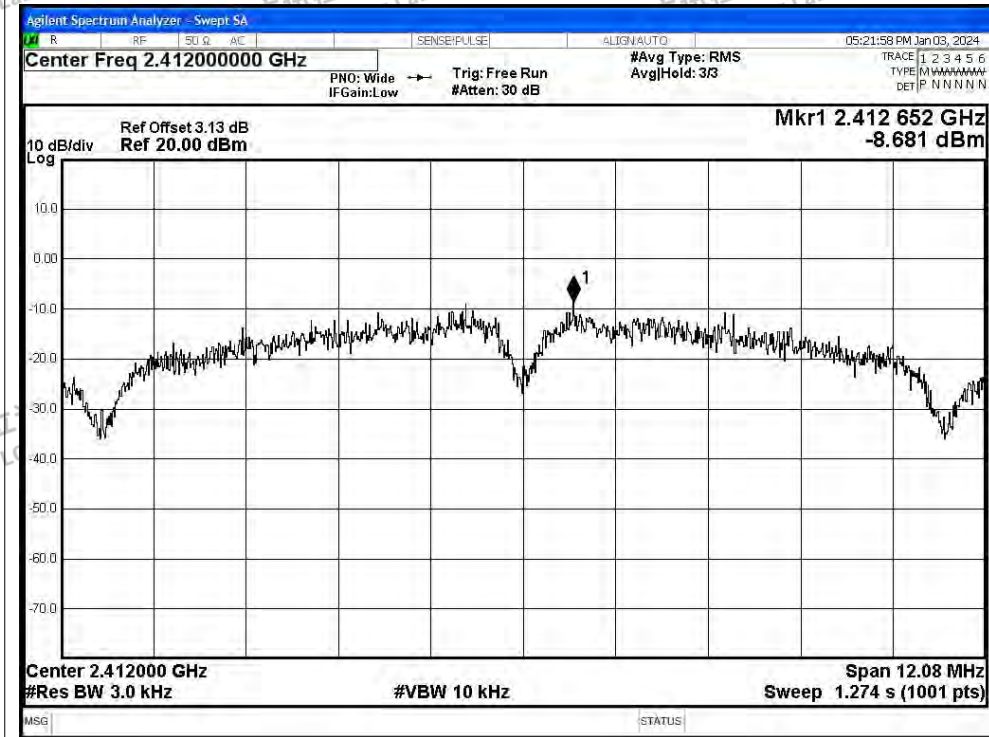
Condition	Mode	Frequency (MHz)	Total PSD (dBm/3kHz)			Limit (dBm)	Verdict
			Ant1	Ant2	Ant1+Ant2		
NVNT	n20	2412	-16.54	-16.94	-13.73	8	Pass
NVNT	n20	2437	-16.88	-16.83	-13.84	8	Pass
NVNT	n20	2462	-17.19	-16.65	-13.90	8	Pass
NVNT	n40	2422	-19.28	-19.7	-16.47	8	Pass
NVNT	n40	2437	-19.87	-19.46	-16.65	8	Pass
NVNT	n40	2452	-19.43	-19.2	-16.30	8	Pass



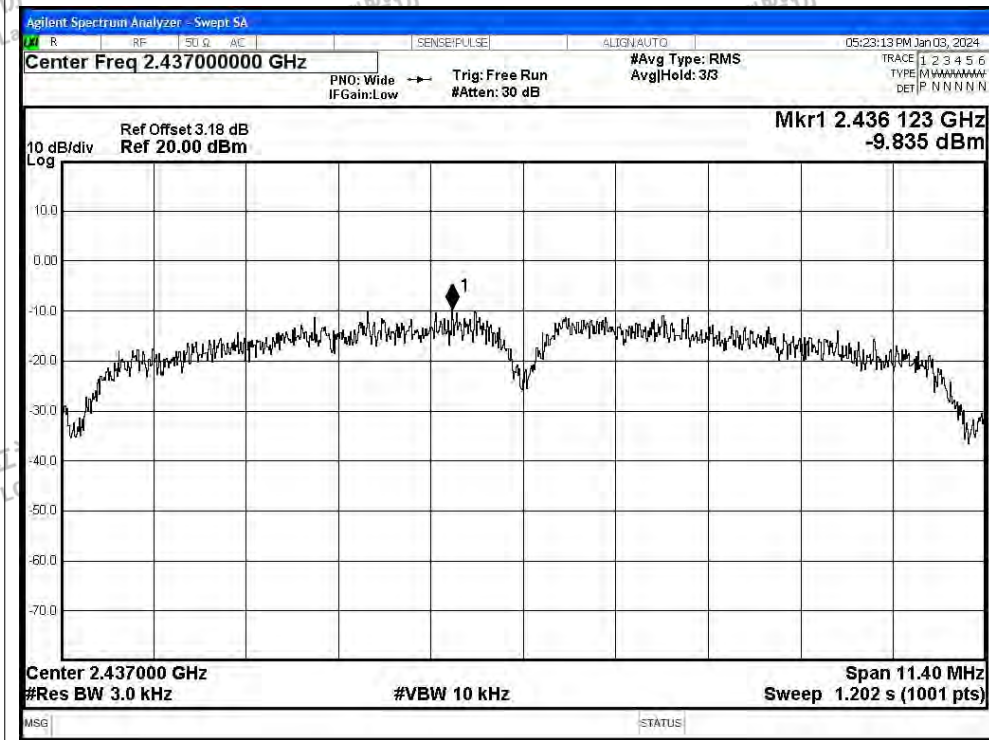


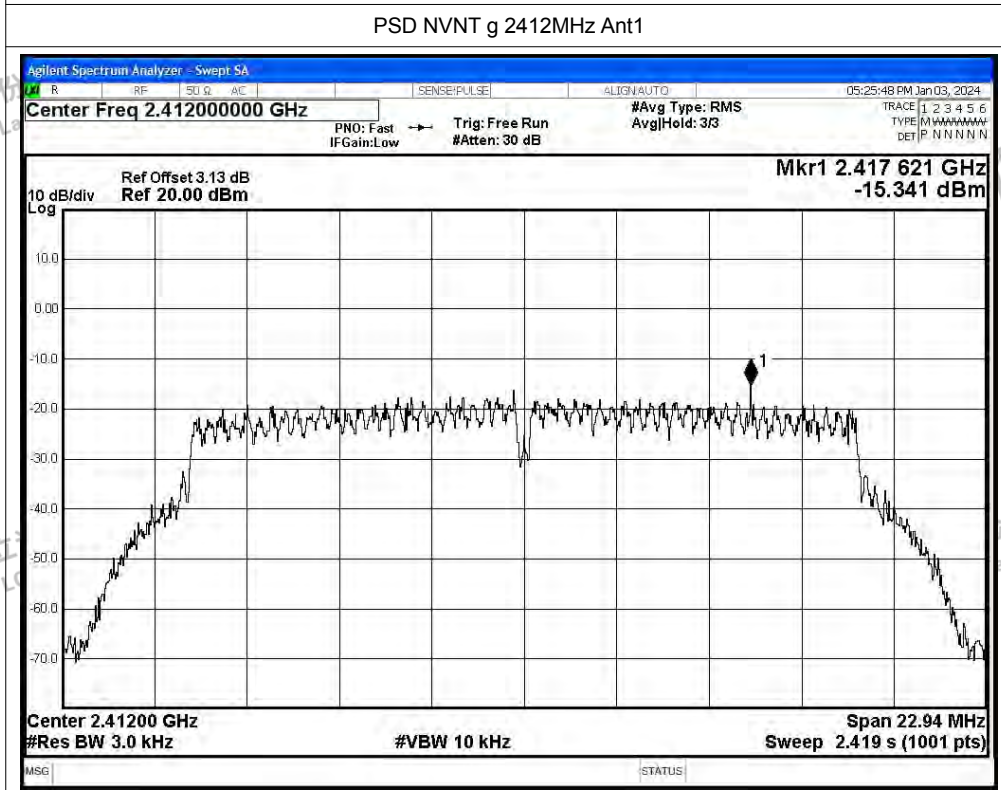
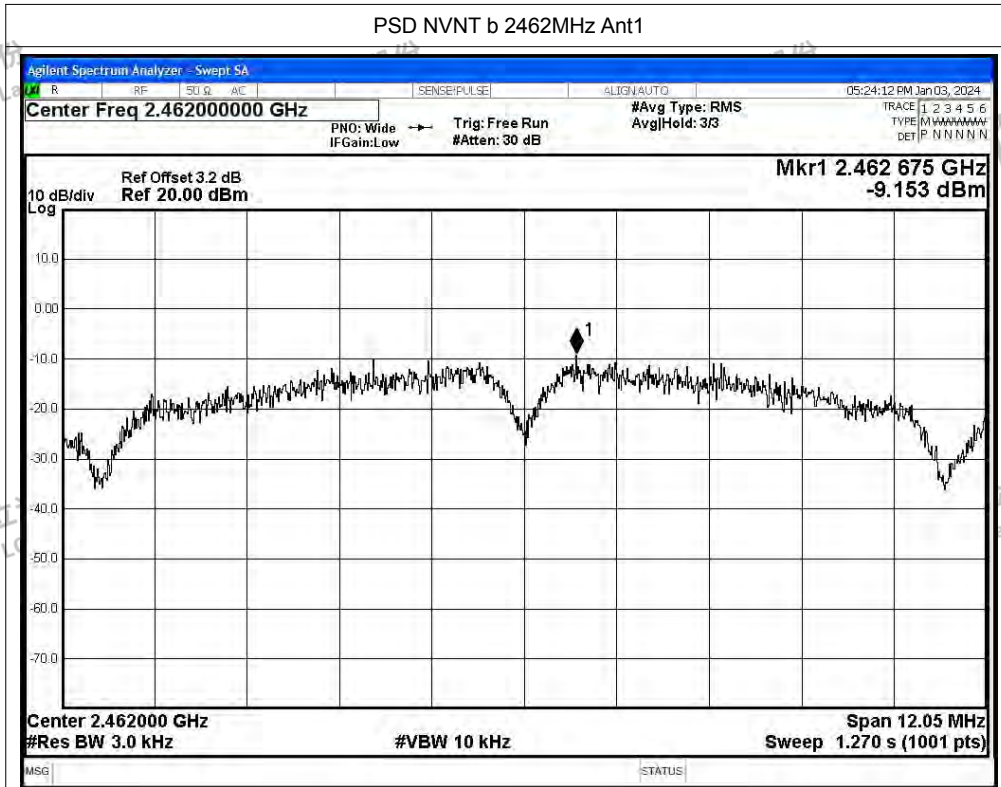
Test Graphs

PSD NVNT b 2412MHz Ant1



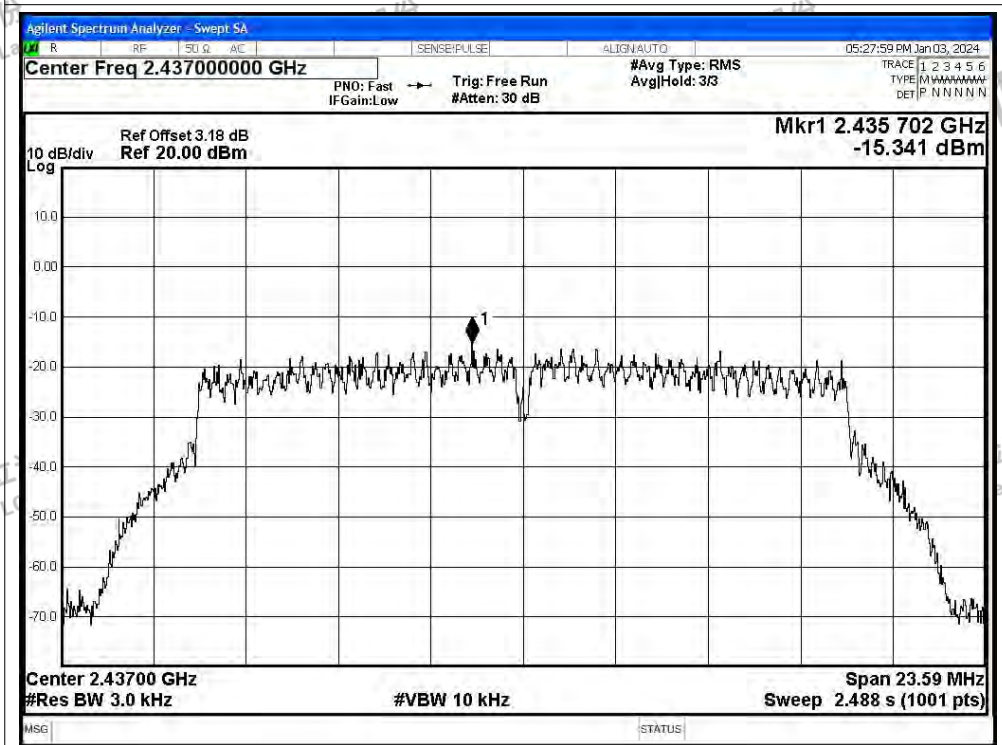
PSD NVNT b 2437MHz Ant1



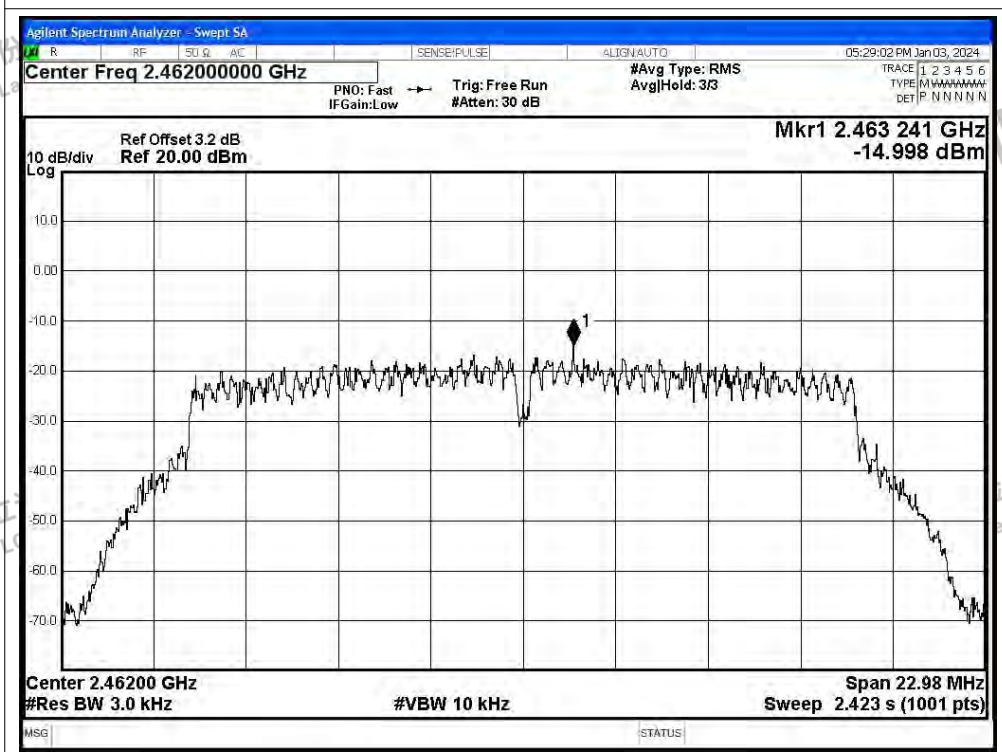


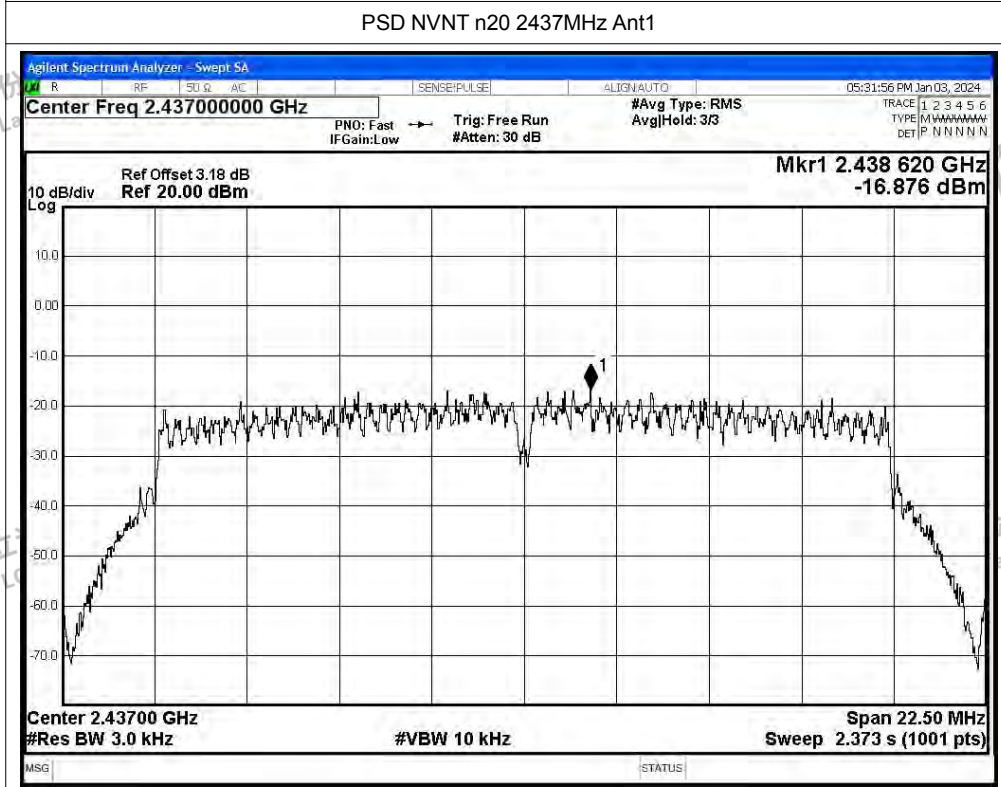
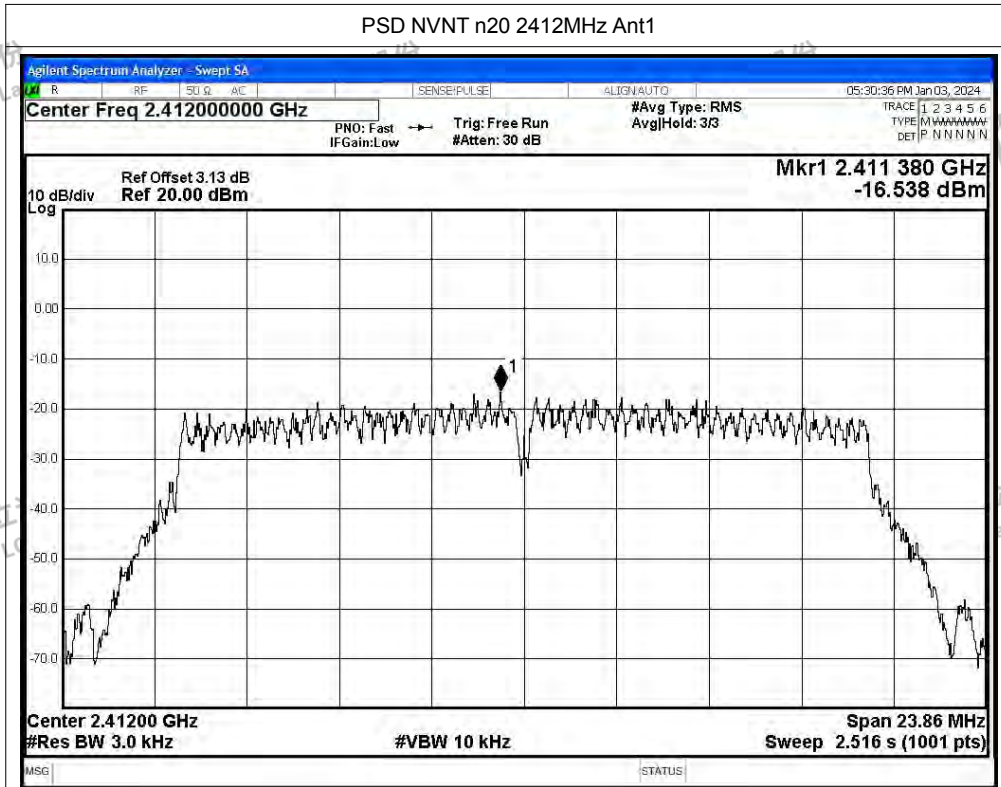


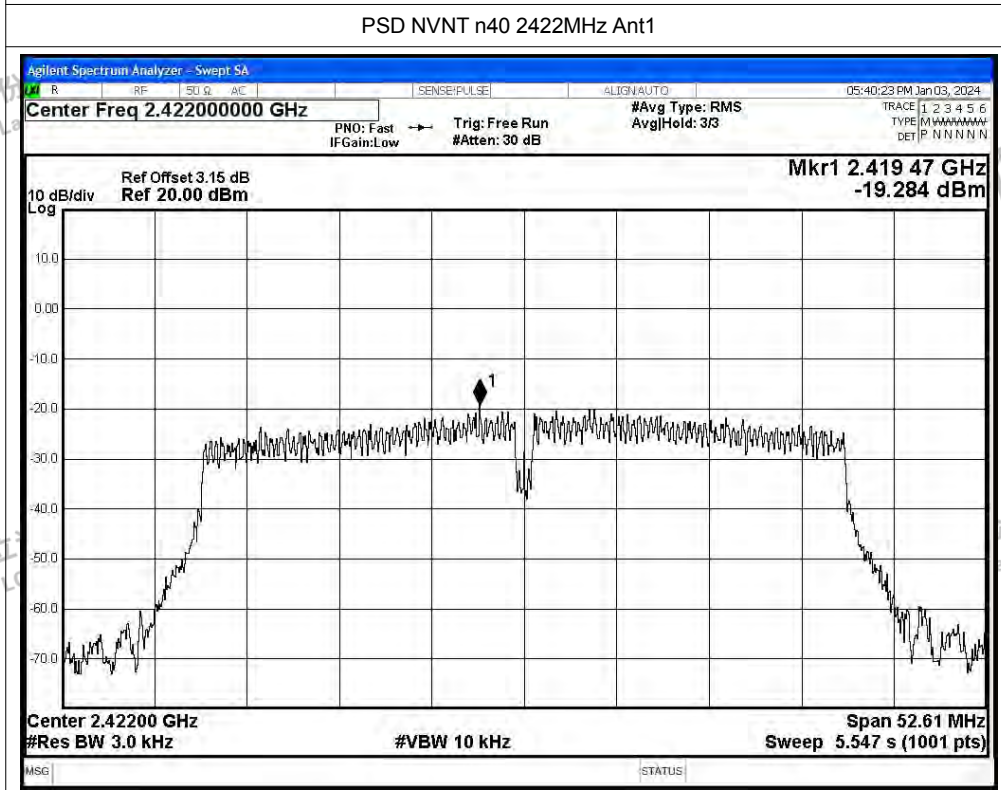
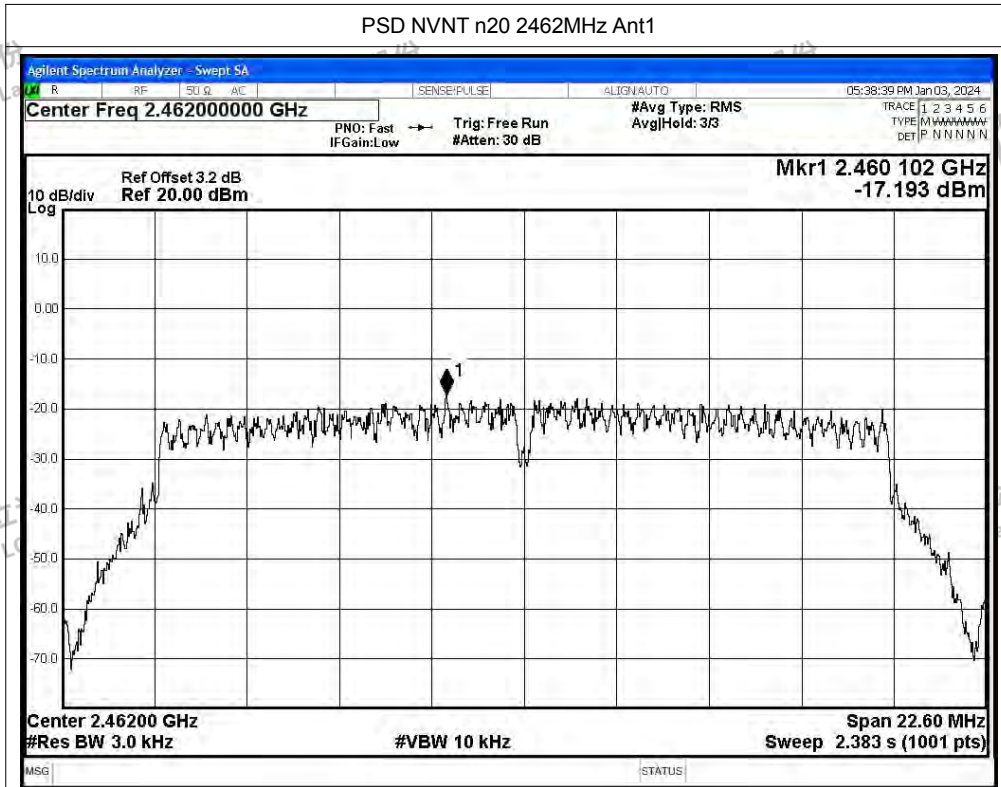
PSD NVNT g 2437MHz Ant1

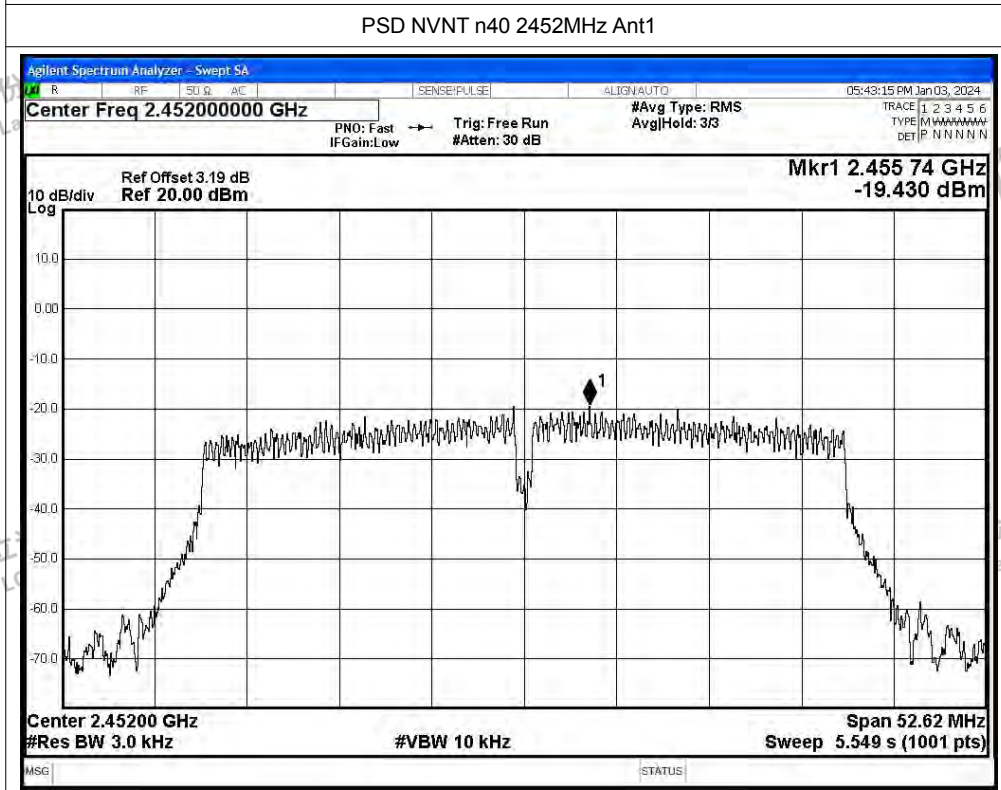
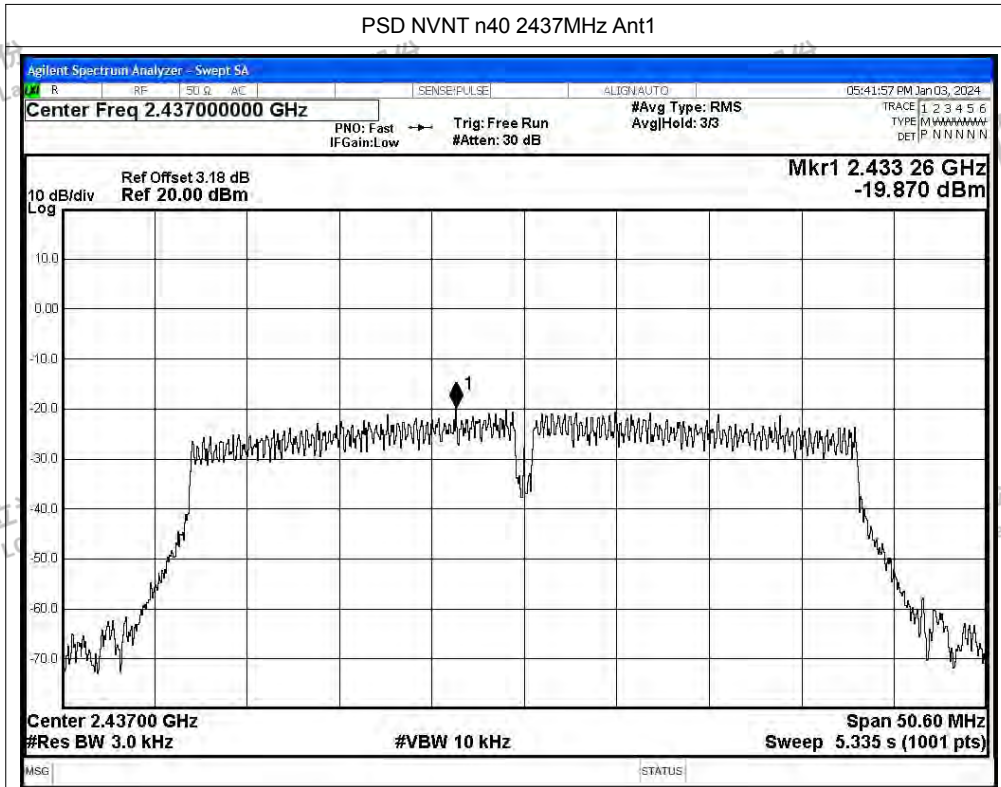


PSD NVNT g 2462MHz Ant1





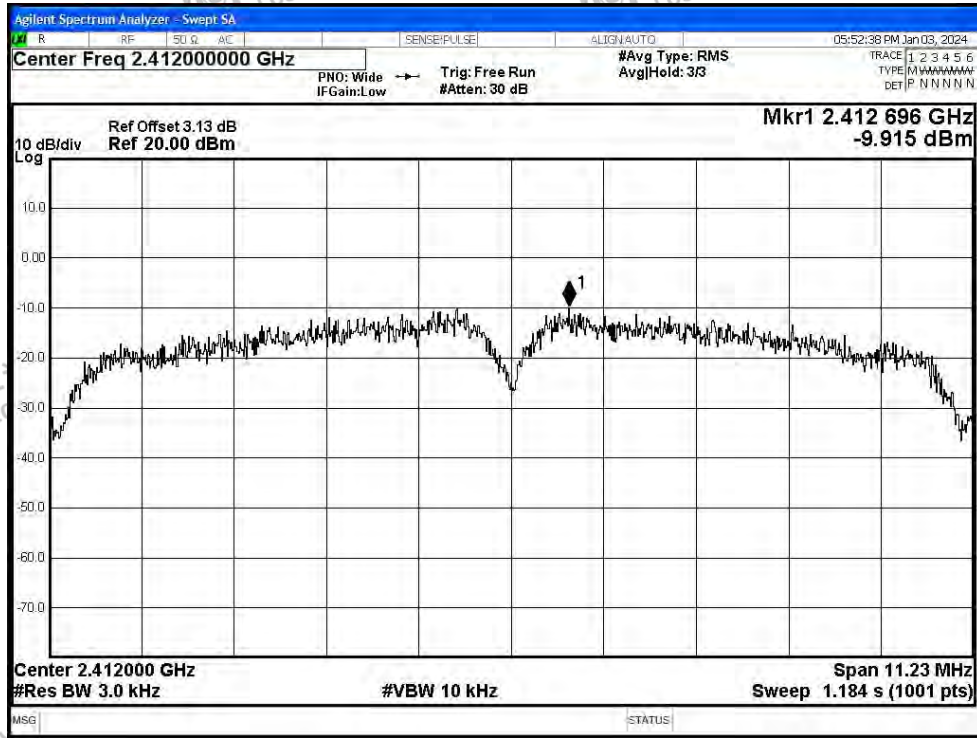




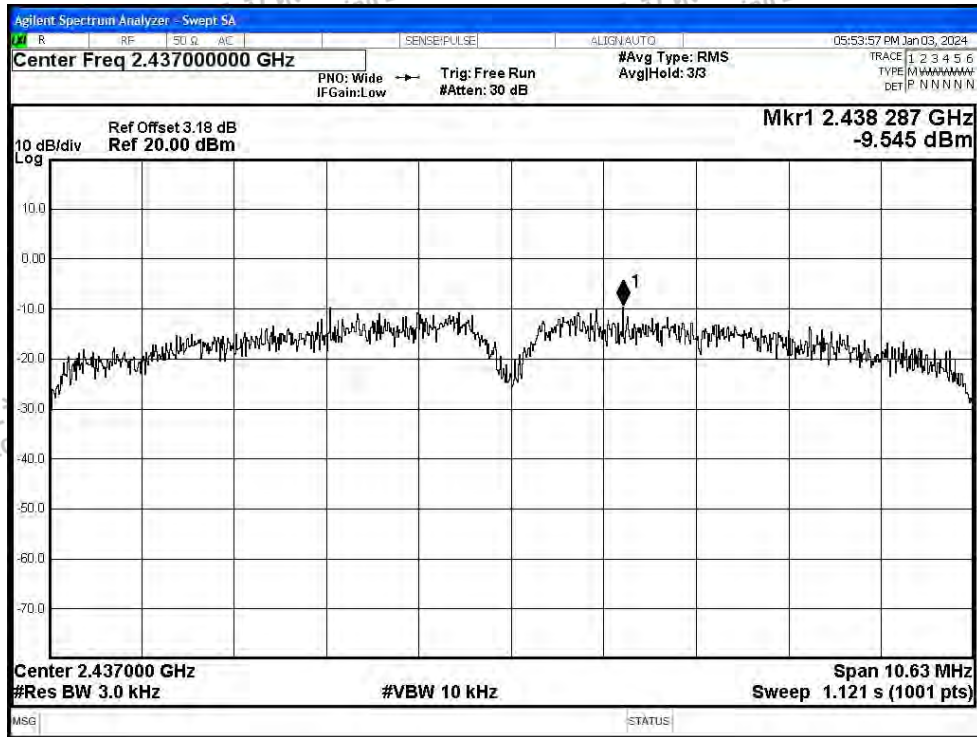


Test Graphs

PSD NVNT b 2412MHz Ant2

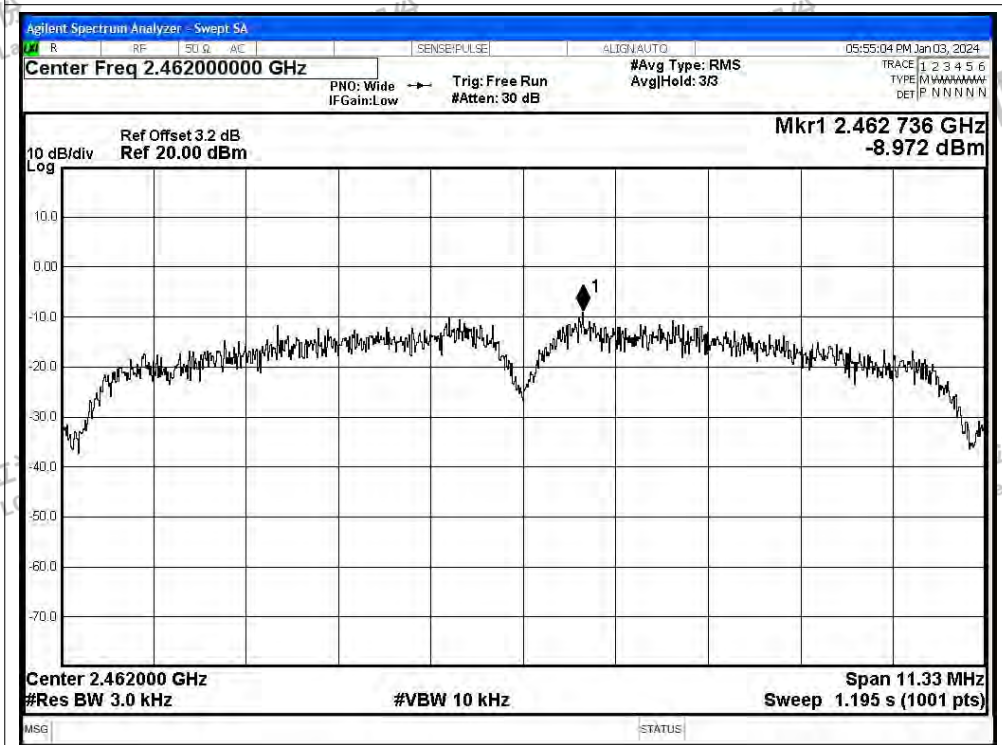


PSD NVNT b 2437MHz Ant2

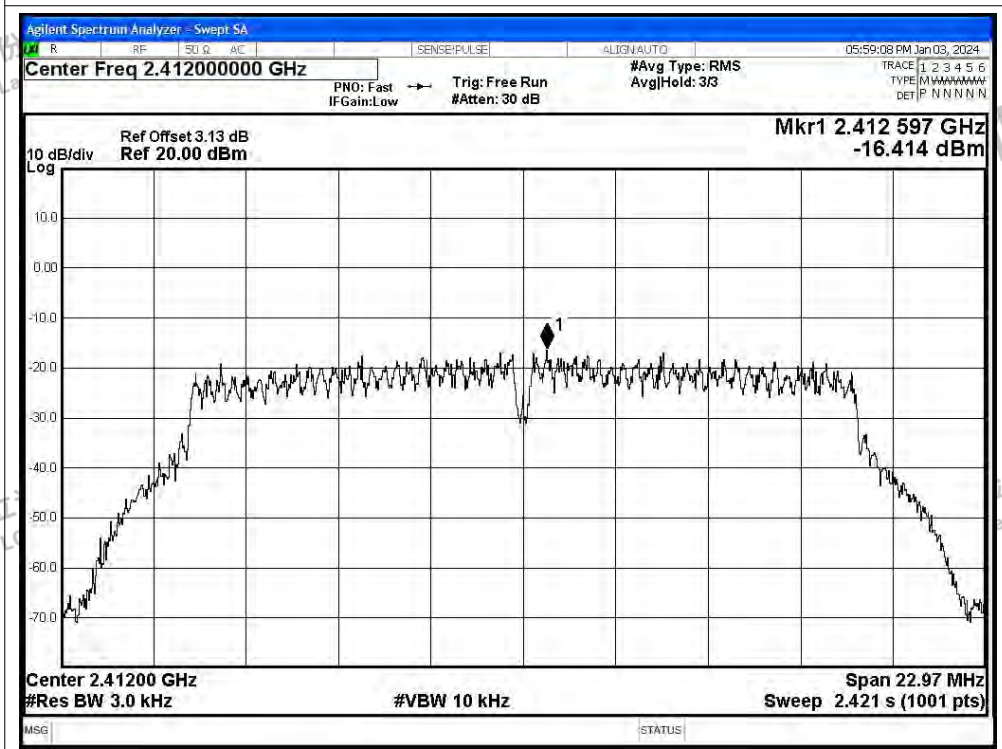




PSD NVNT b 2462MHz Ant2

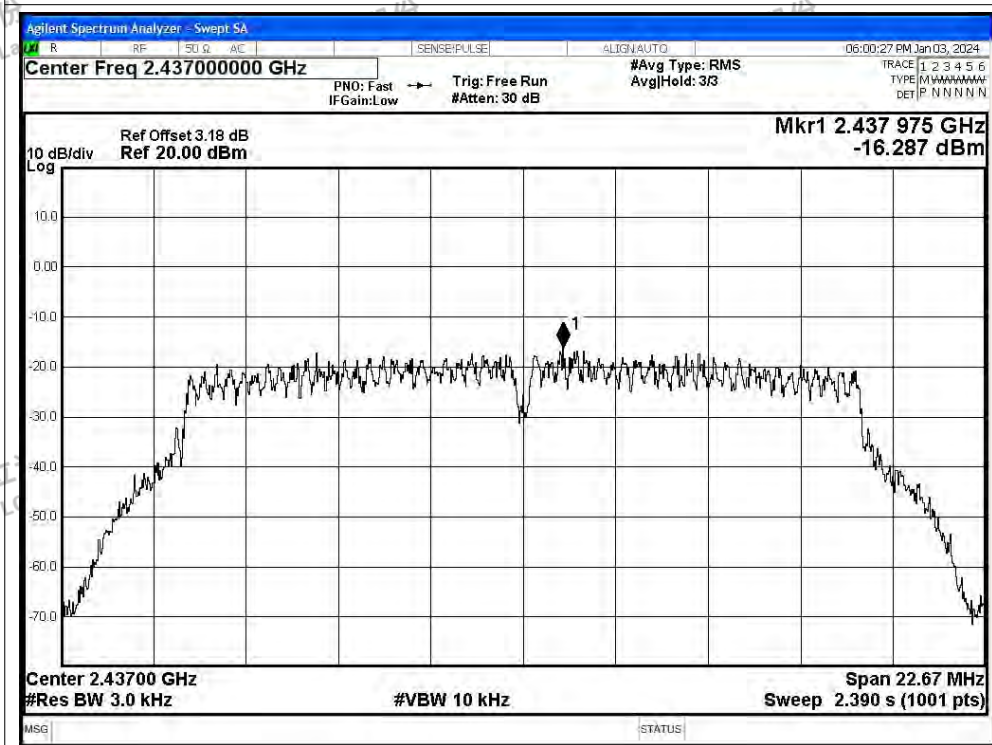


PSD NVNT g 2412MHz Ant2

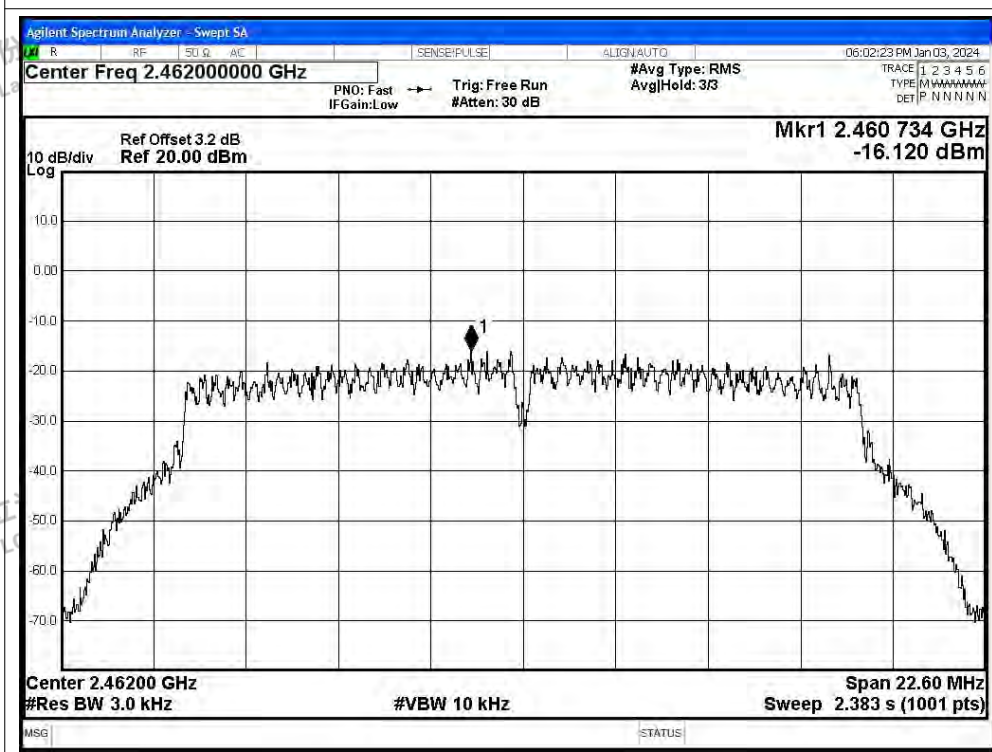


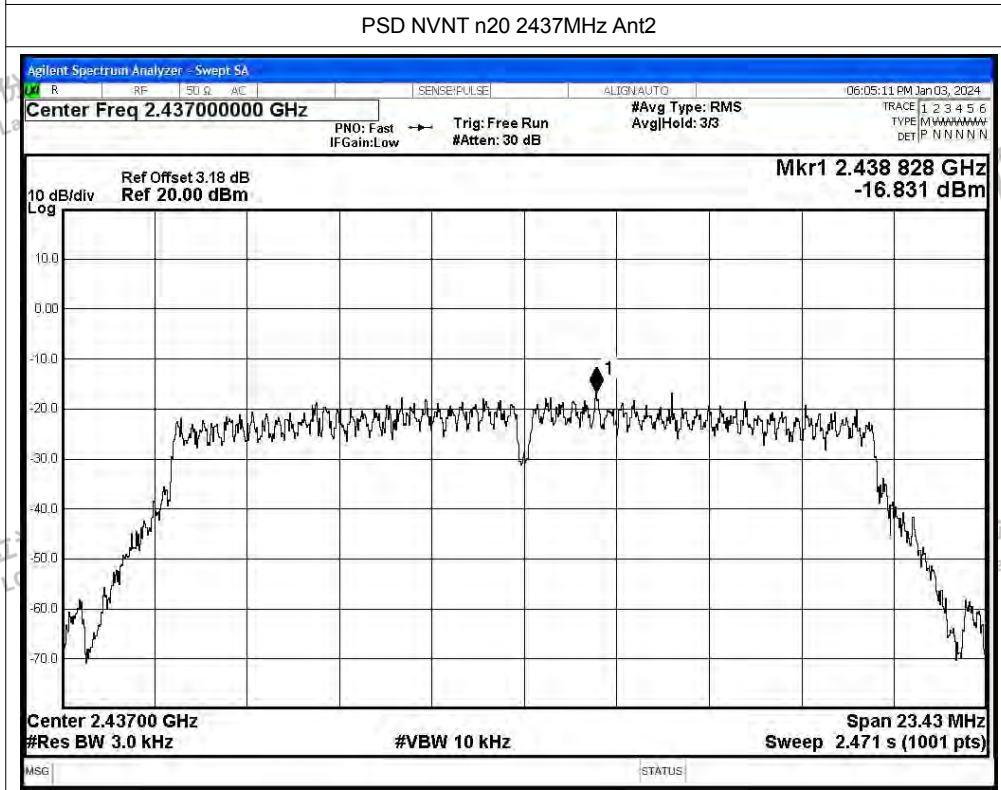
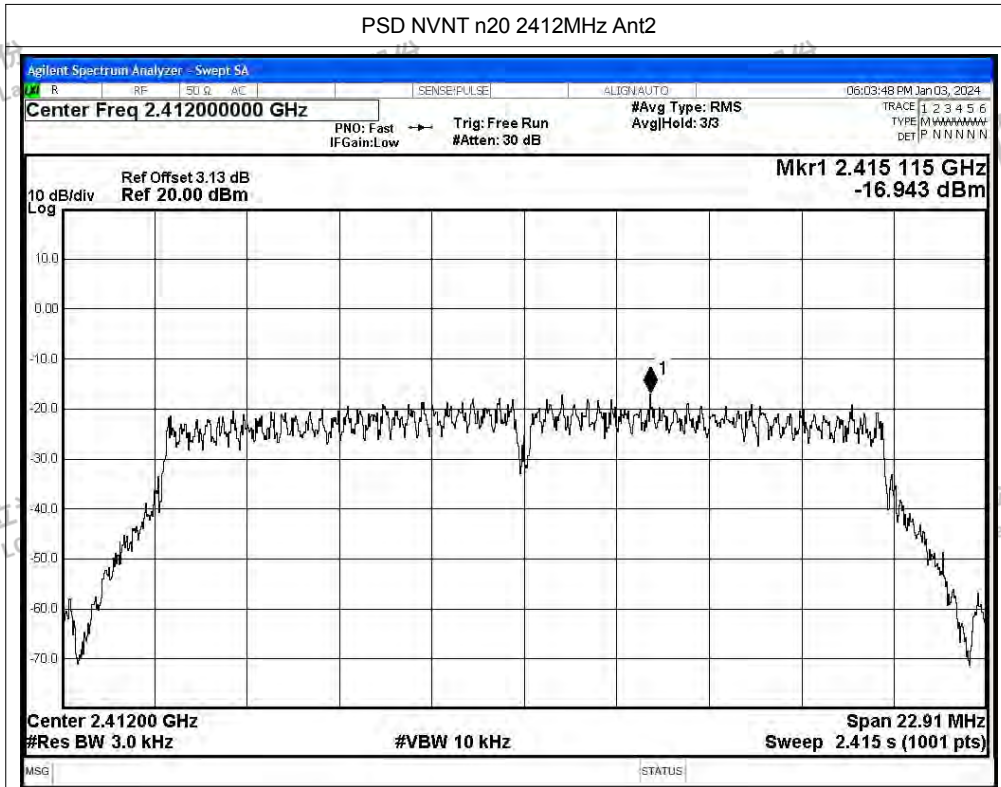


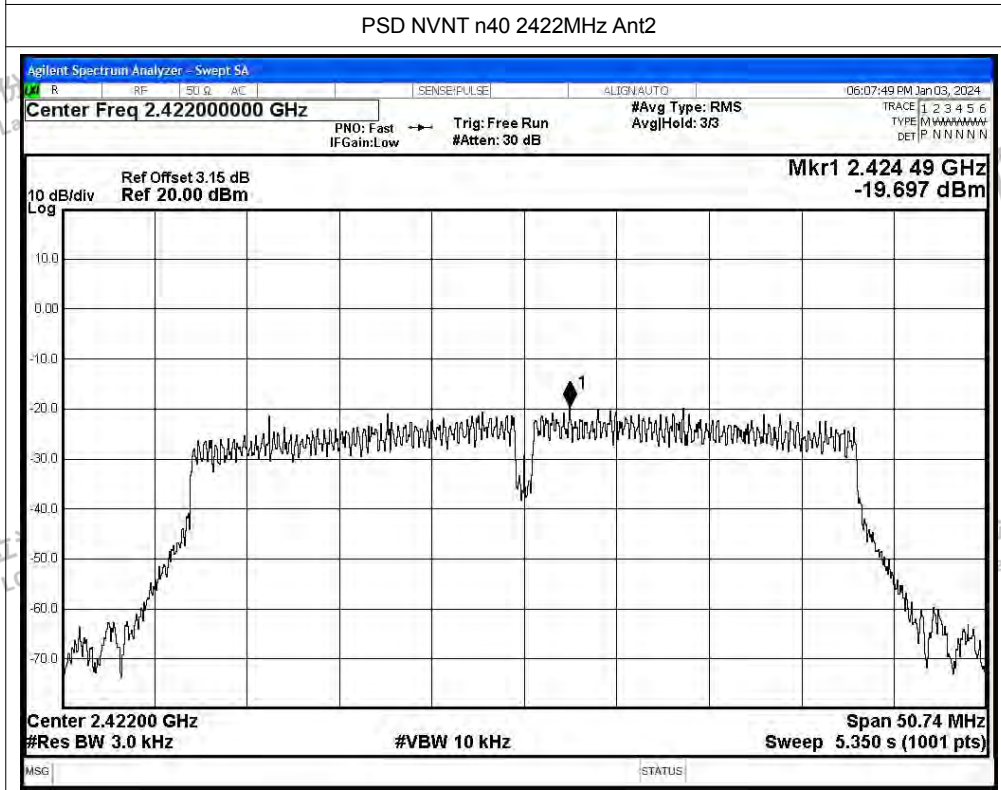
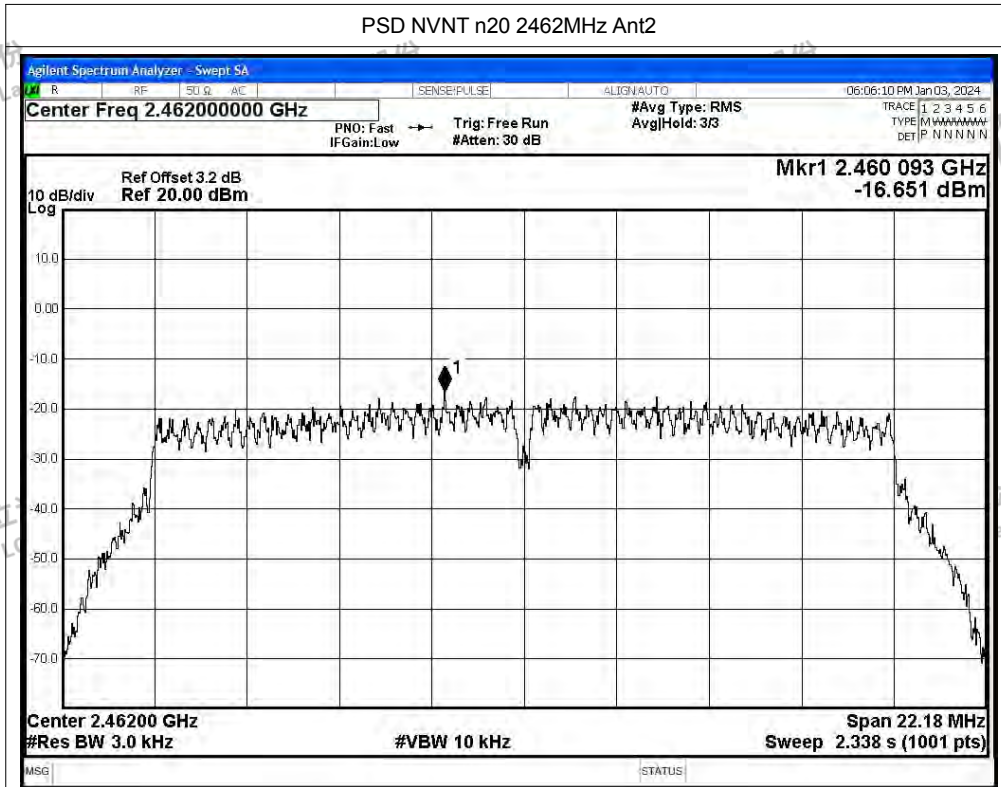
PSD NVNT g 2437MHz Ant2

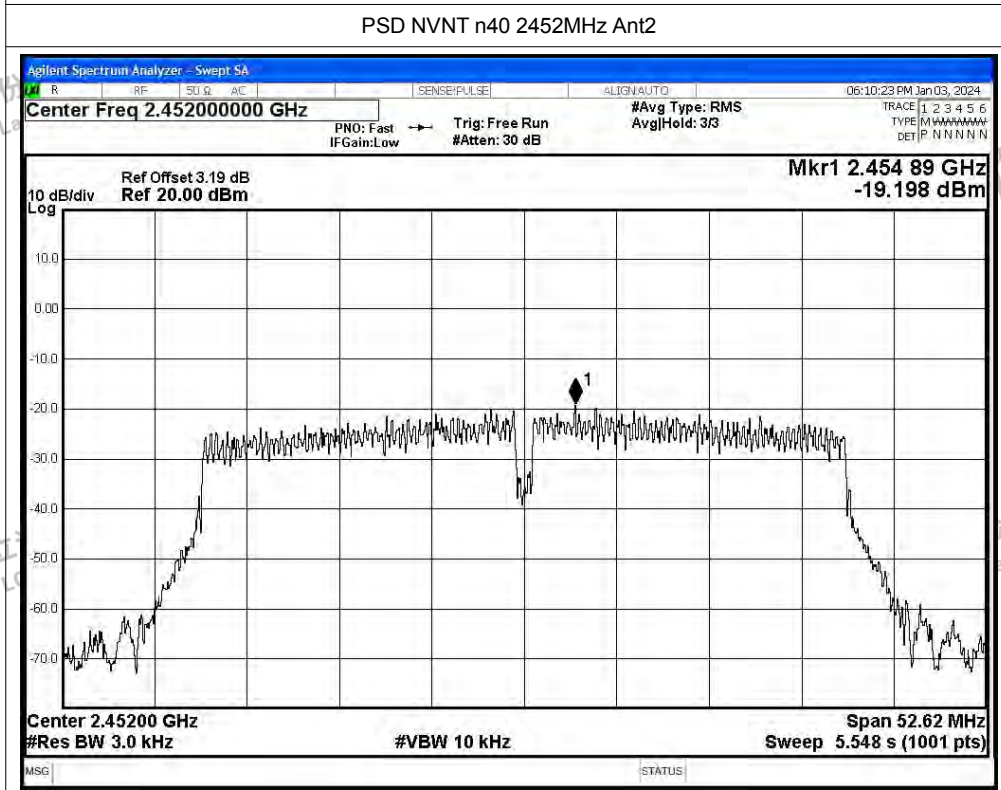
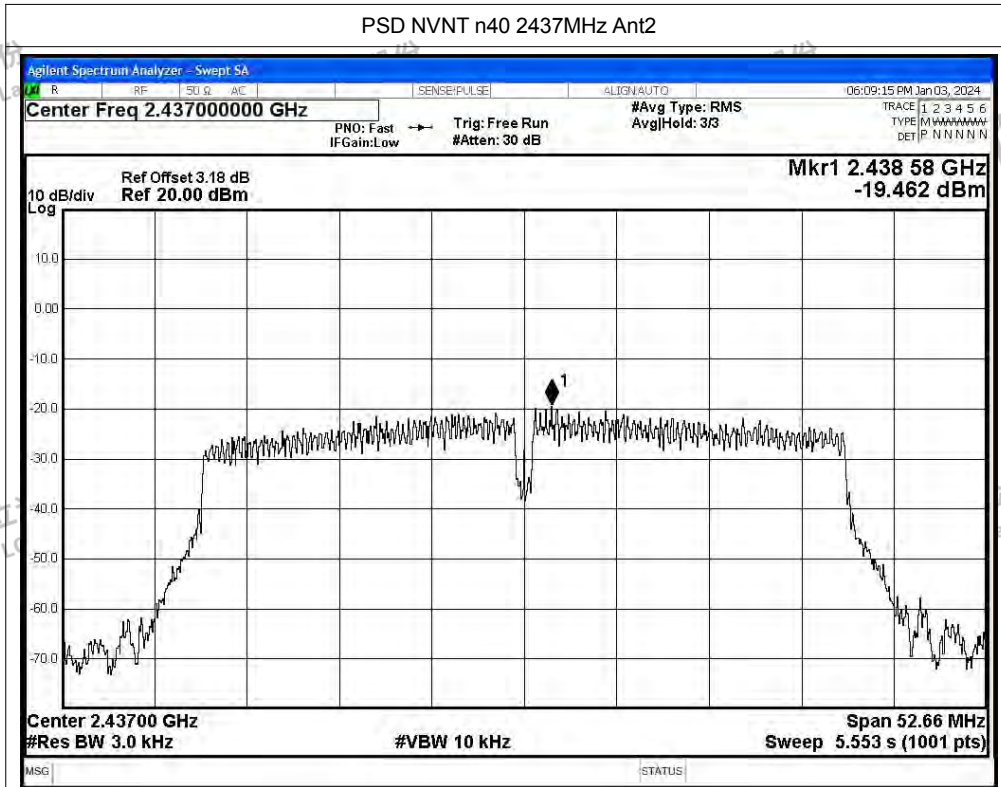


PSD NVNT g 2462MHz Ant2











C.4 Band Edge

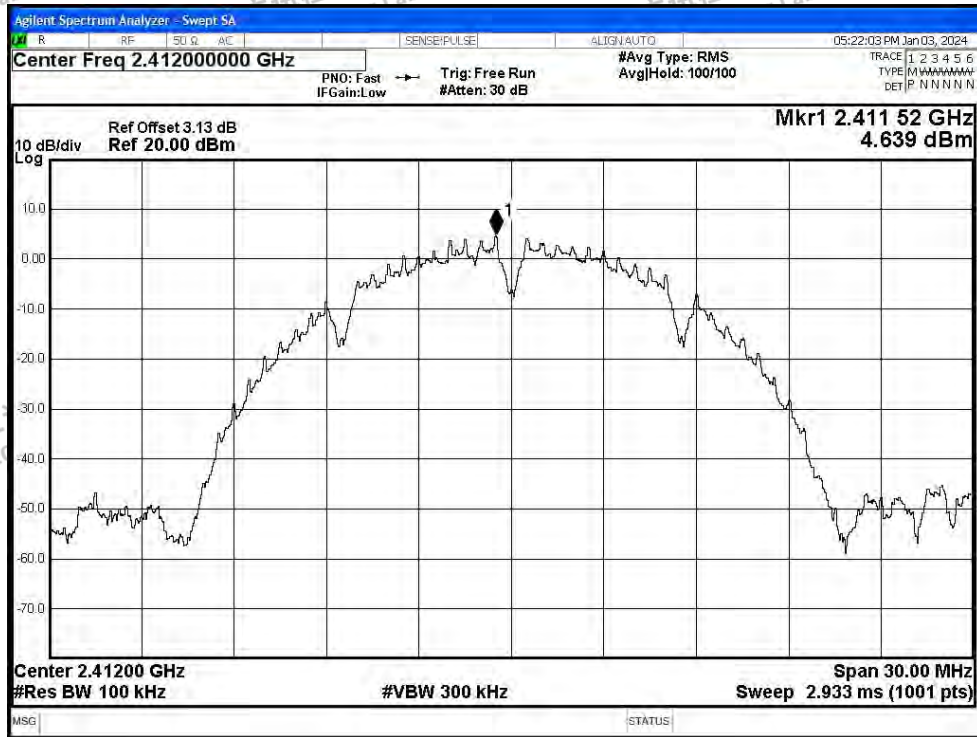
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-52.59	-20	Pass
NVNT	b	2462	Ant1	-58.52	-20	Pass
NVNT	g	2412	Ant1	-42.33	-20	Pass
NVNT	g	2462	Ant1	-51.04	-20	Pass
NVNT	n20	2412	Ant1	-44.63	-20	Pass
NVNT	n20	2462	Ant1	-50.68	-20	Pass
NVNT	n40	2422	Ant1	-39.96	-20	Pass
NVNT	n40	2452	Ant1	-47.88	-20	Pass



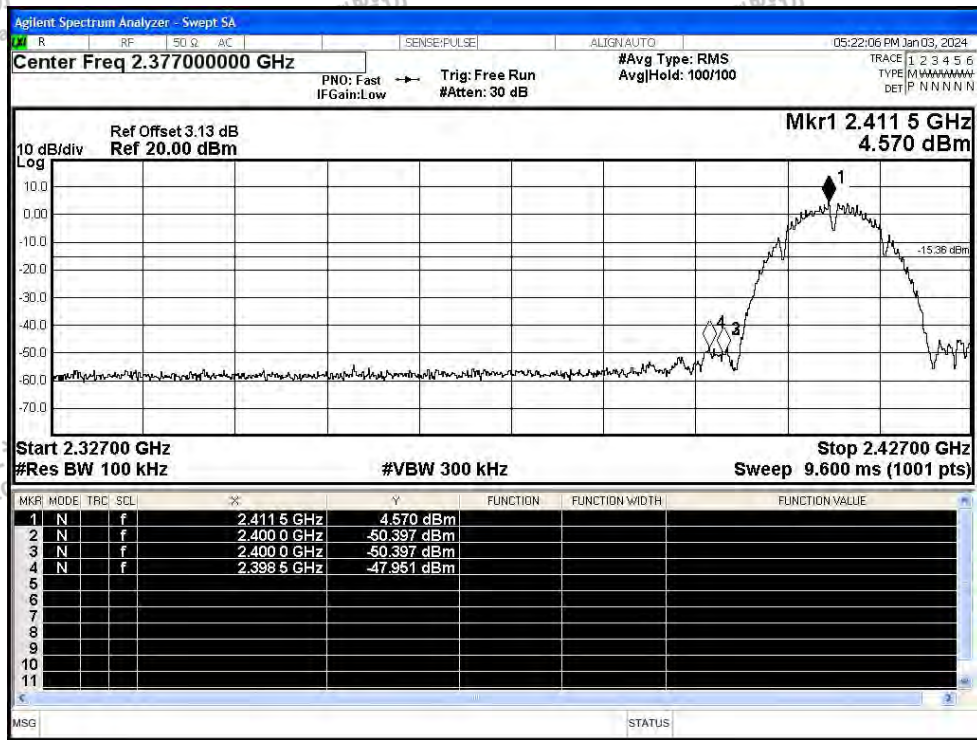


Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref

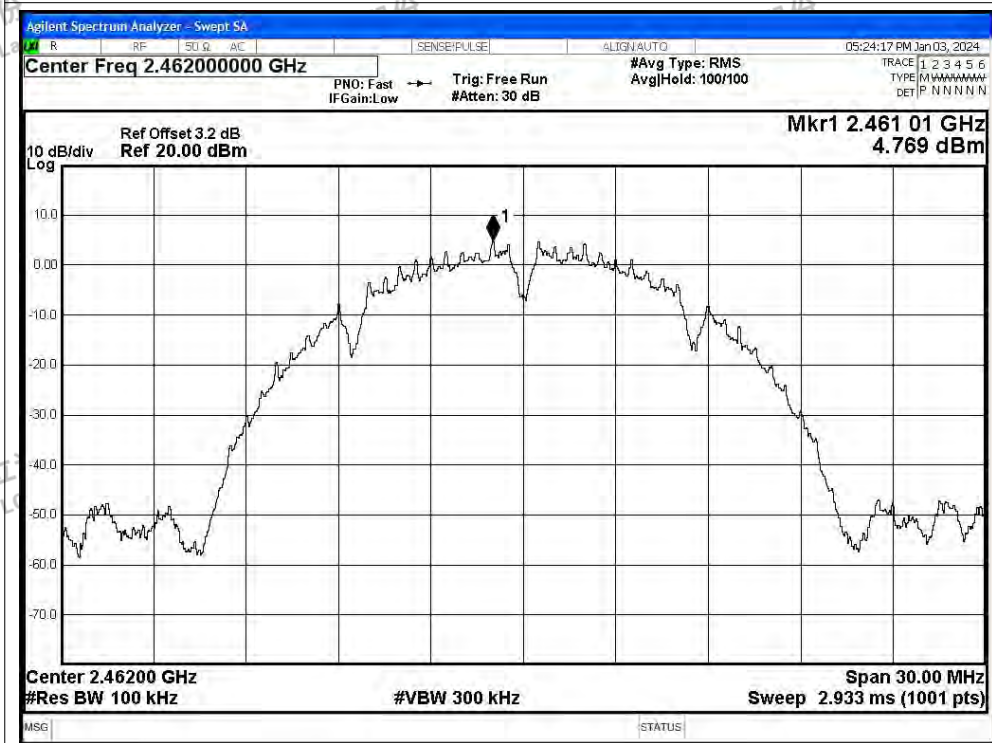


Band Edge NVNT b 2412MHz Ant1 Emission

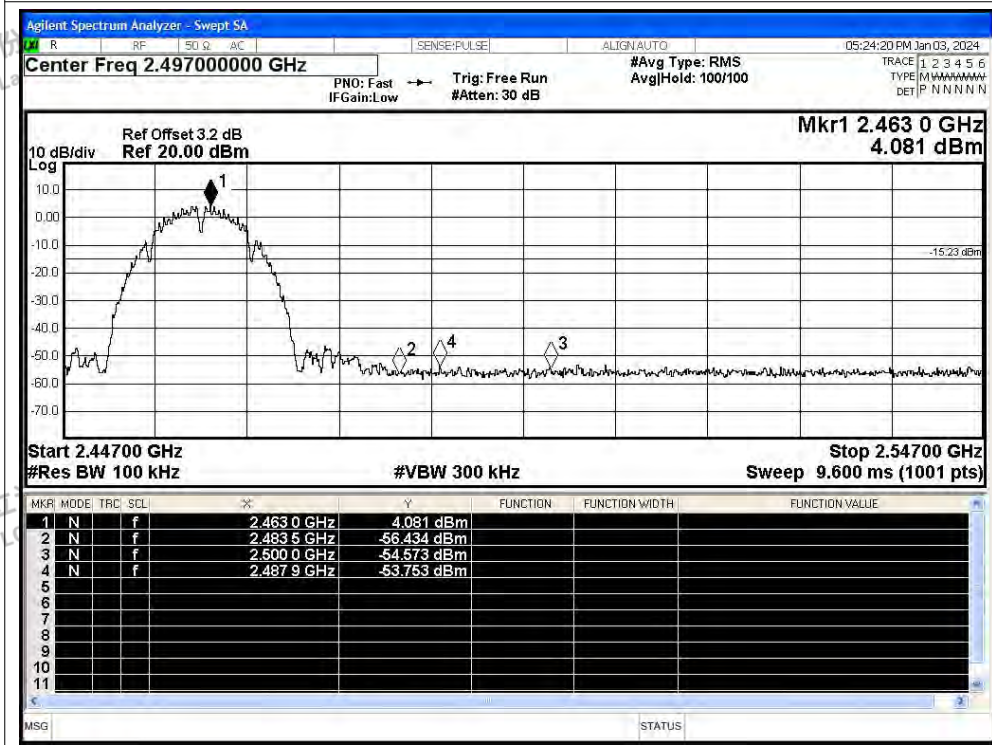




Band Edge NVNT b 2462MHz Ant1 Ref

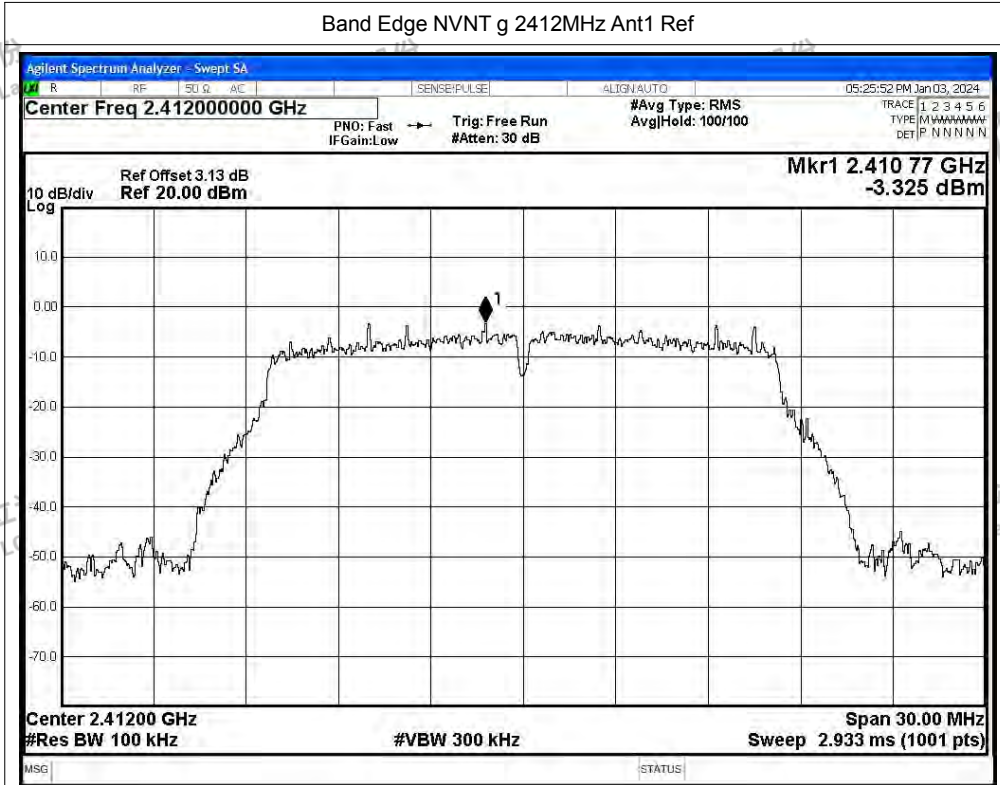


Band Edge NVNT b 2462MHz Ant1 Emission

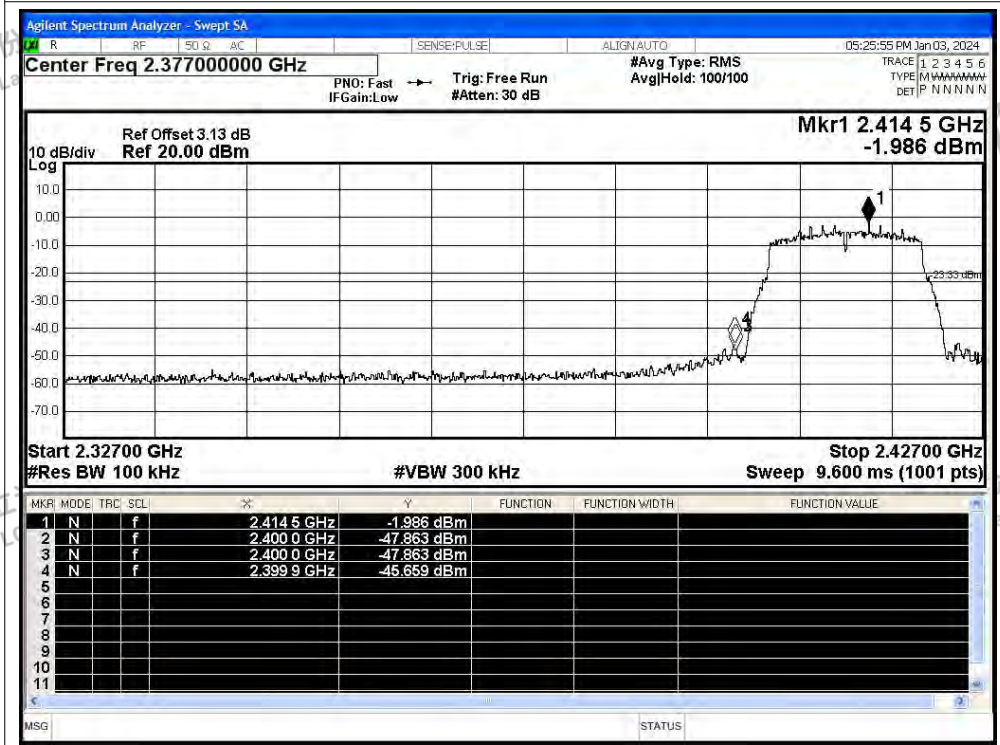




Band Edge NVNT g 2412MHz Ant1 Ref

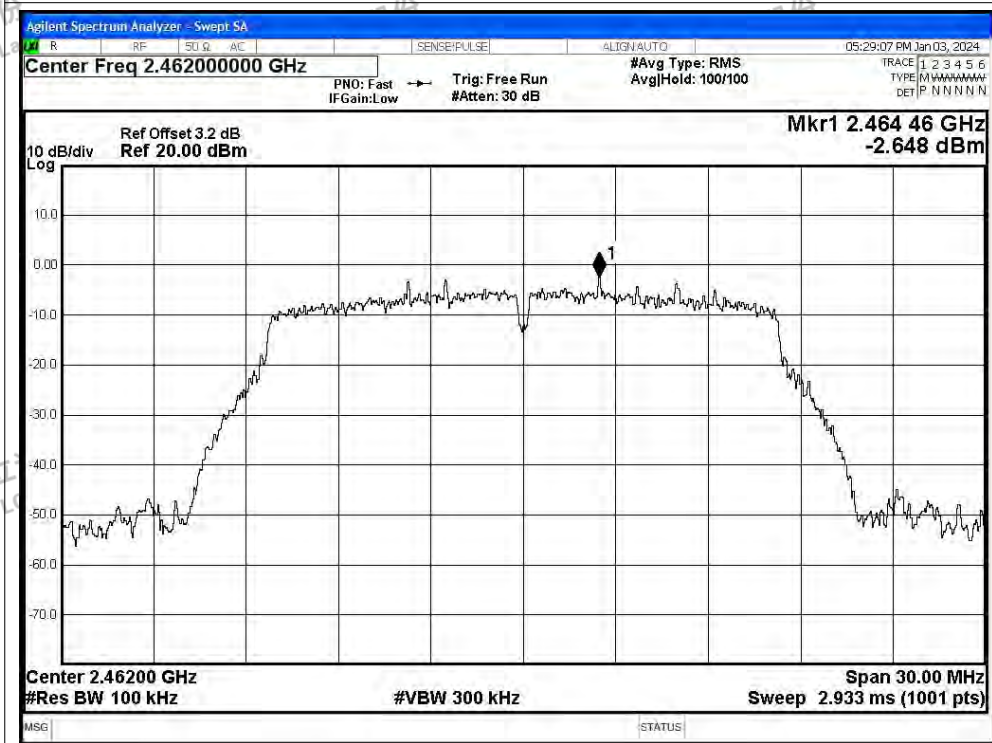


Band Edge NVNT g 2412MHz Ant1 Emission

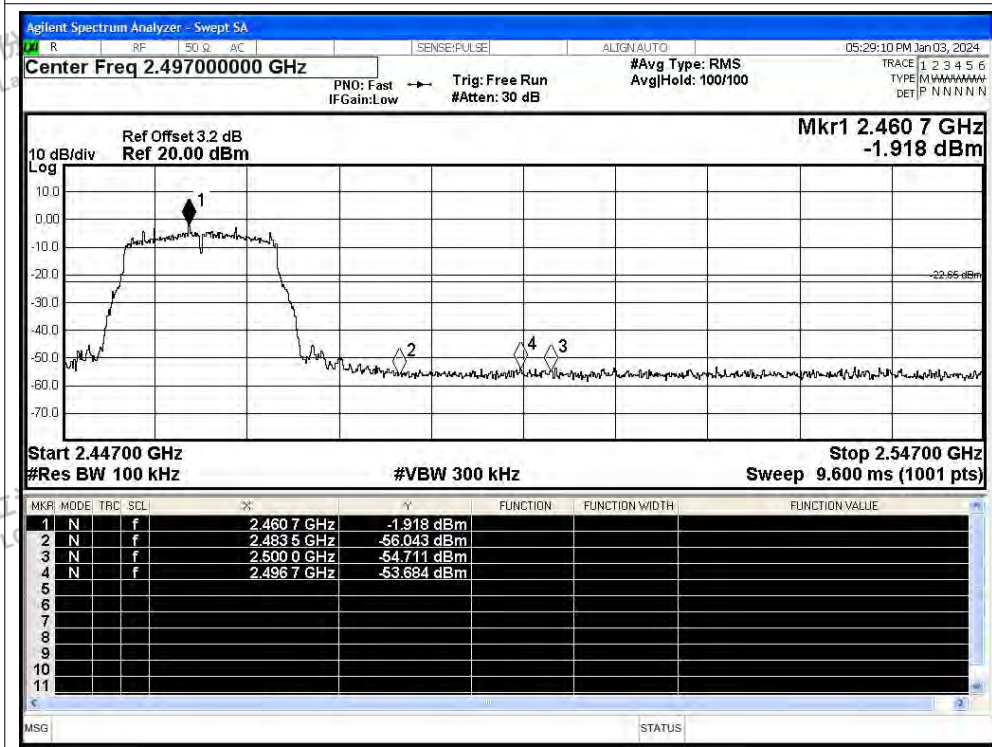




Band Edge NVNT g 2462MHz Ant1 Ref

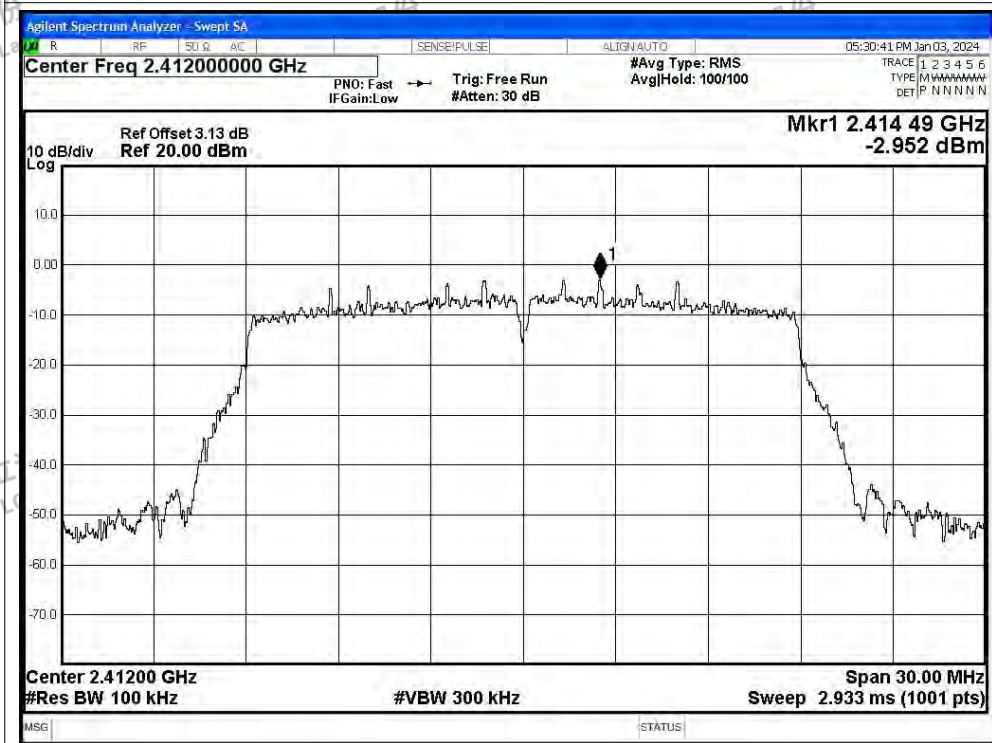


Band Edge NVNT g 2462MHz Ant1 Emission

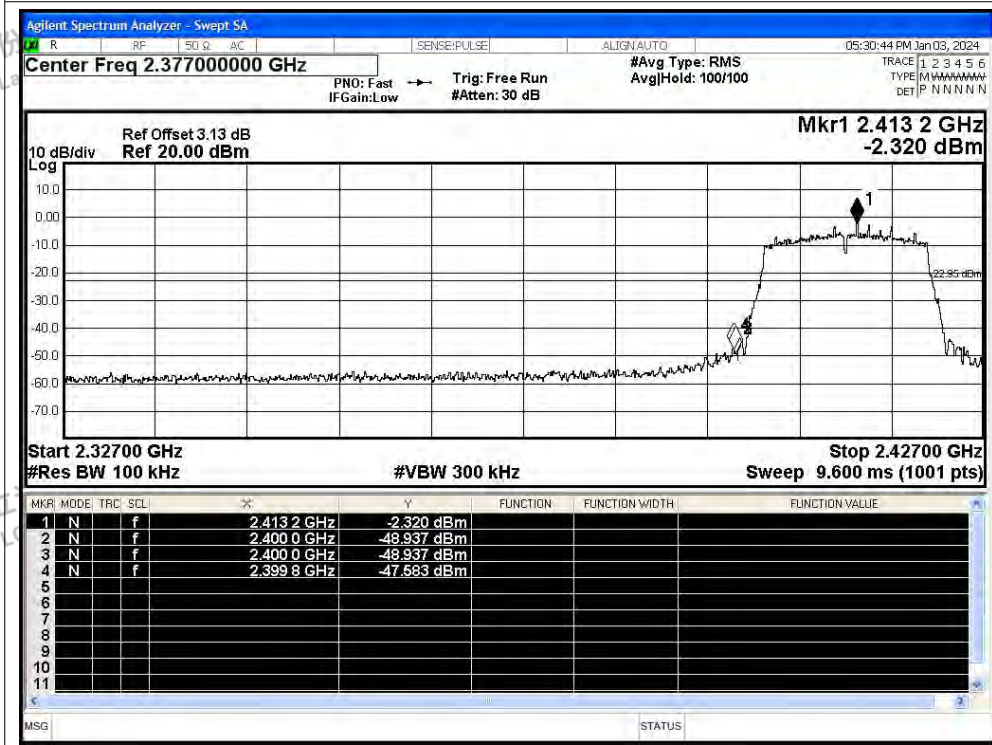




Band Edge NVNT n20 2412MHz Ant1 Ref

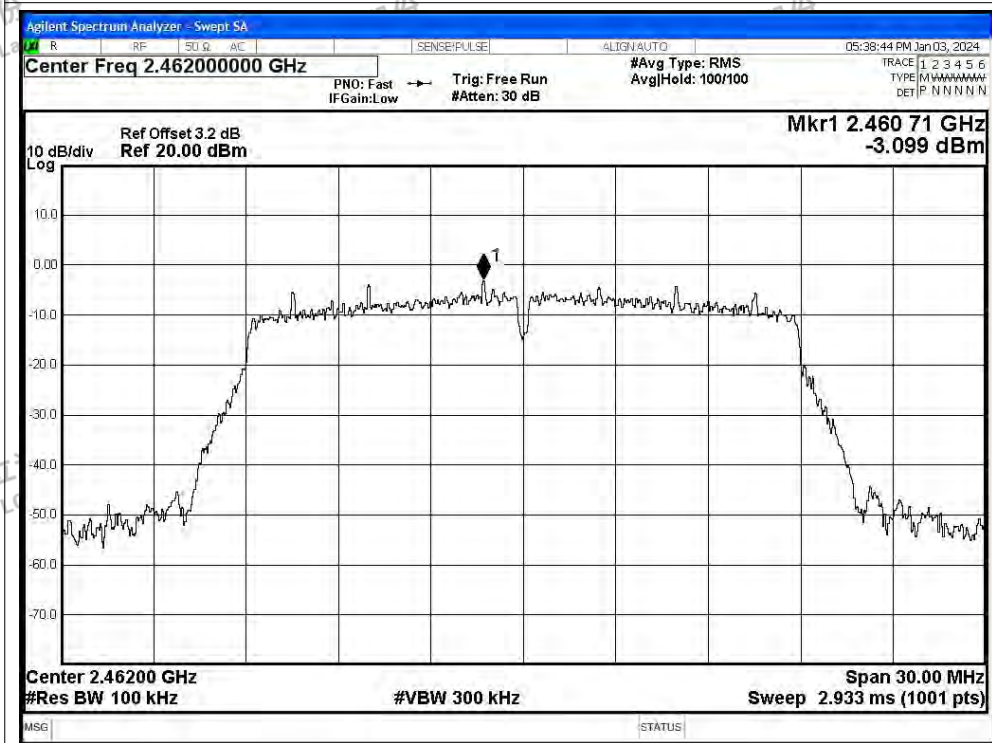


Band Edge NVNT n20 2412MHz Ant1 Emission

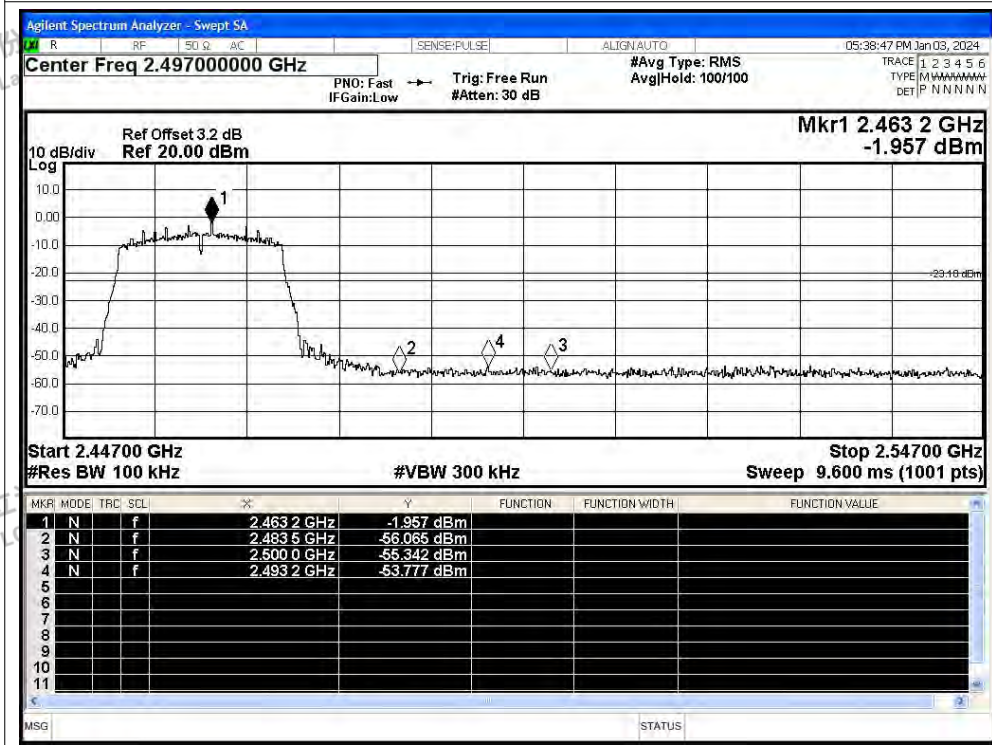




Band Edge NVNT n20 2462MHz Ant1 Ref

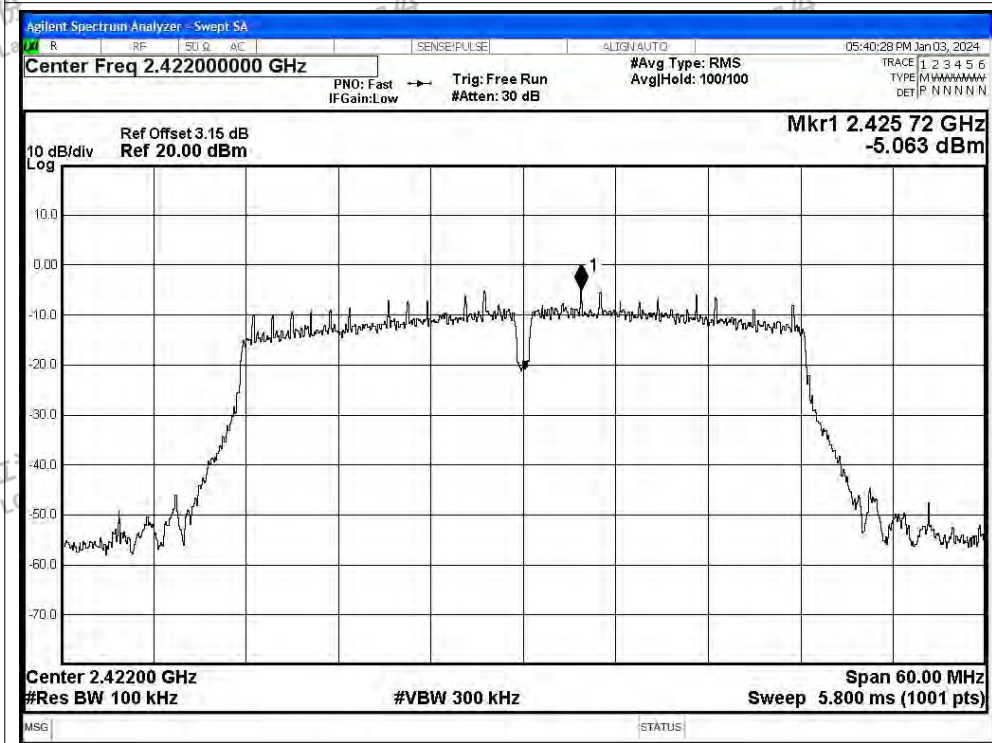


Band Edge NVNT n20 2462MHz Ant1 Emission

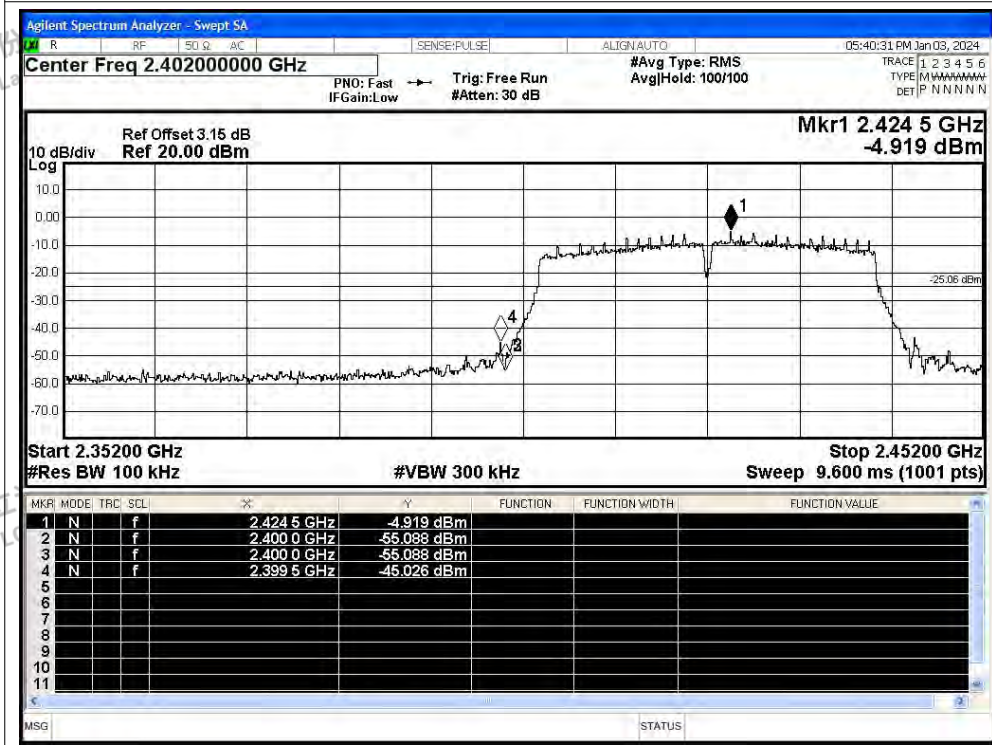




Band Edge NVNT n40 2422MHz Ant1 Ref

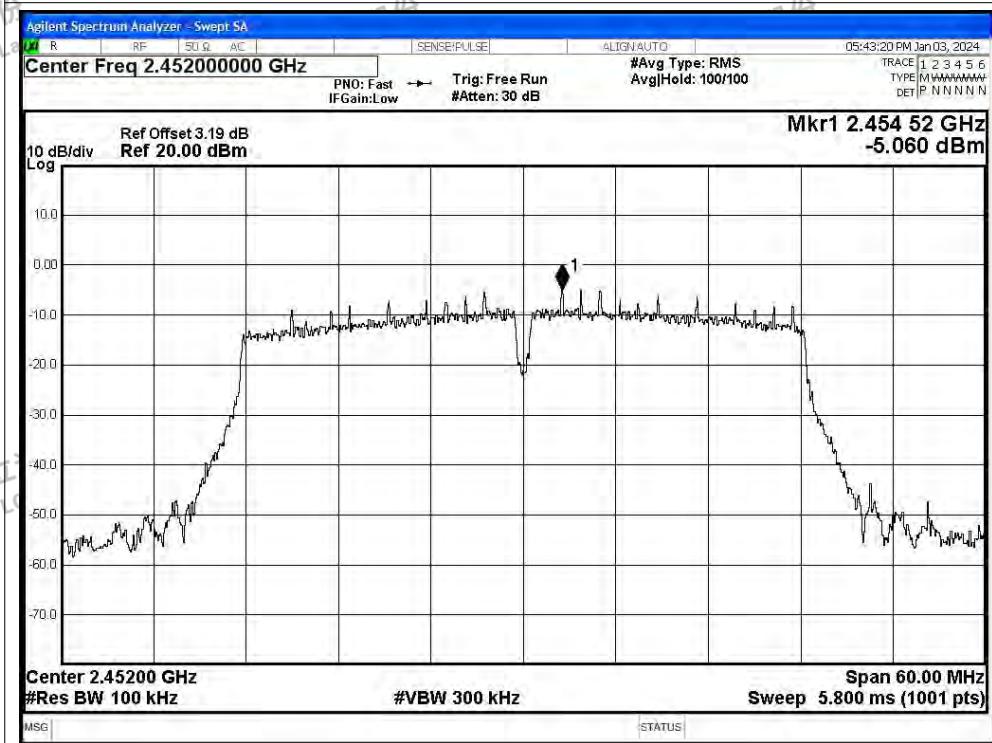


Band Edge NVNT n40 2422MHz Ant1 Emission

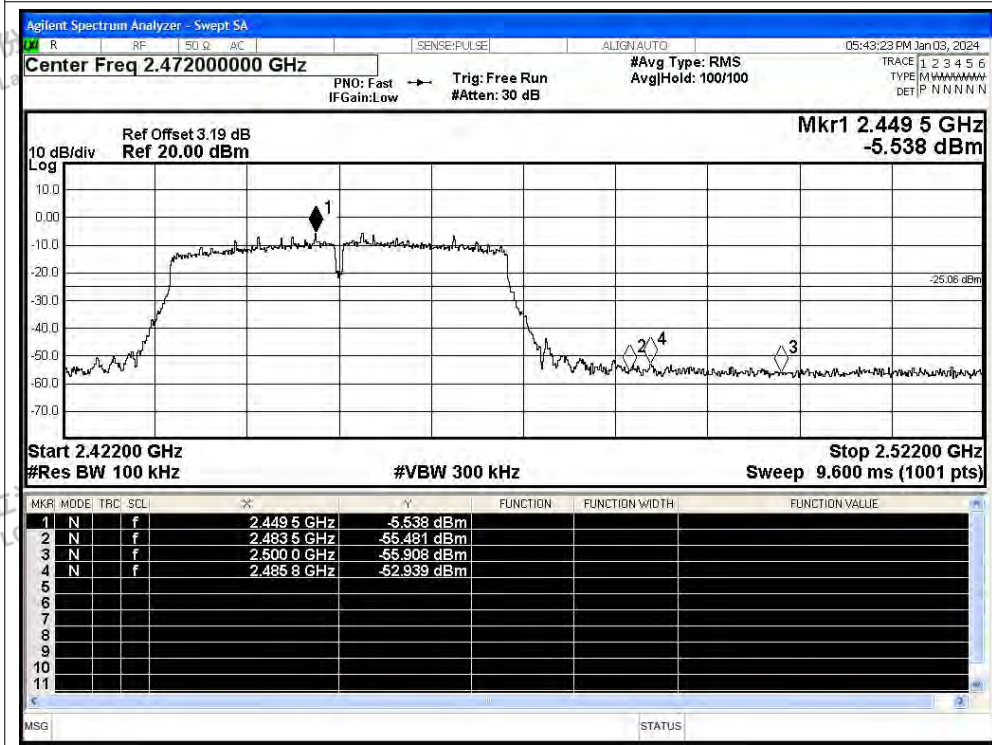




Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission





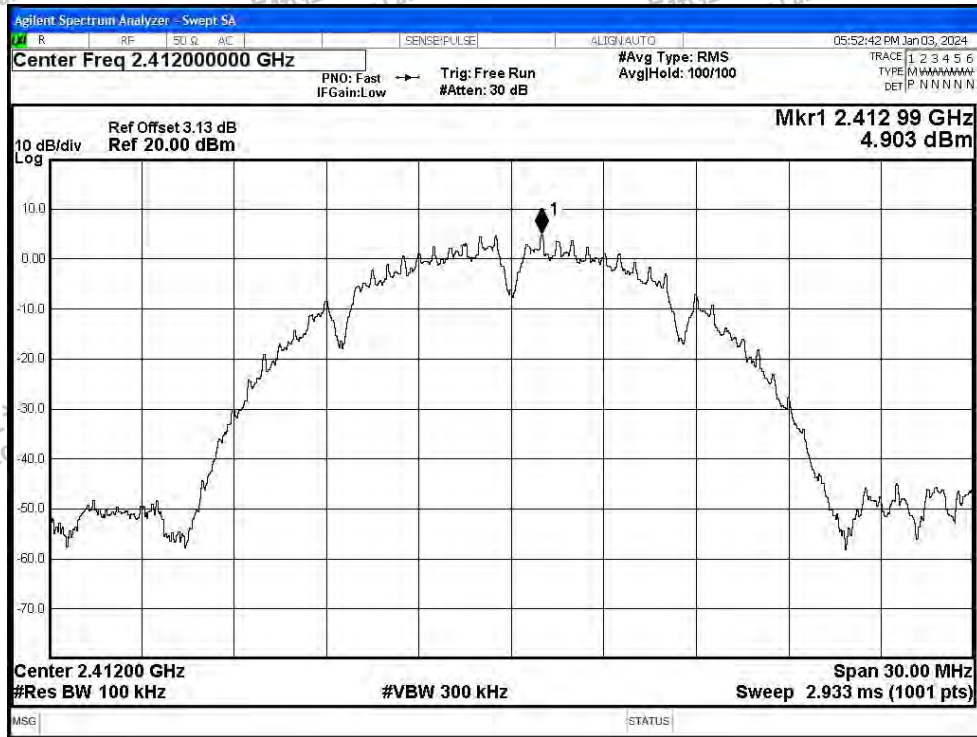
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant2	-53.09	-20	Pass
NVNT	b	2462	Ant2	-58.73	-20	Pass
NVNT	g	2412	Ant2	-44.44	-20	Pass
NVNT	g	2462	Ant2	-51.94	-20	Pass
NVNT	n20	2412	Ant2	-43.78	-20	Pass
NVNT	n20	2462	Ant2	-51.71	-20	Pass
NVNT	n40	2422	Ant2	-40.34	-20	Pass
NVNT	n40	2452	Ant2	-46.07	-20	Pass



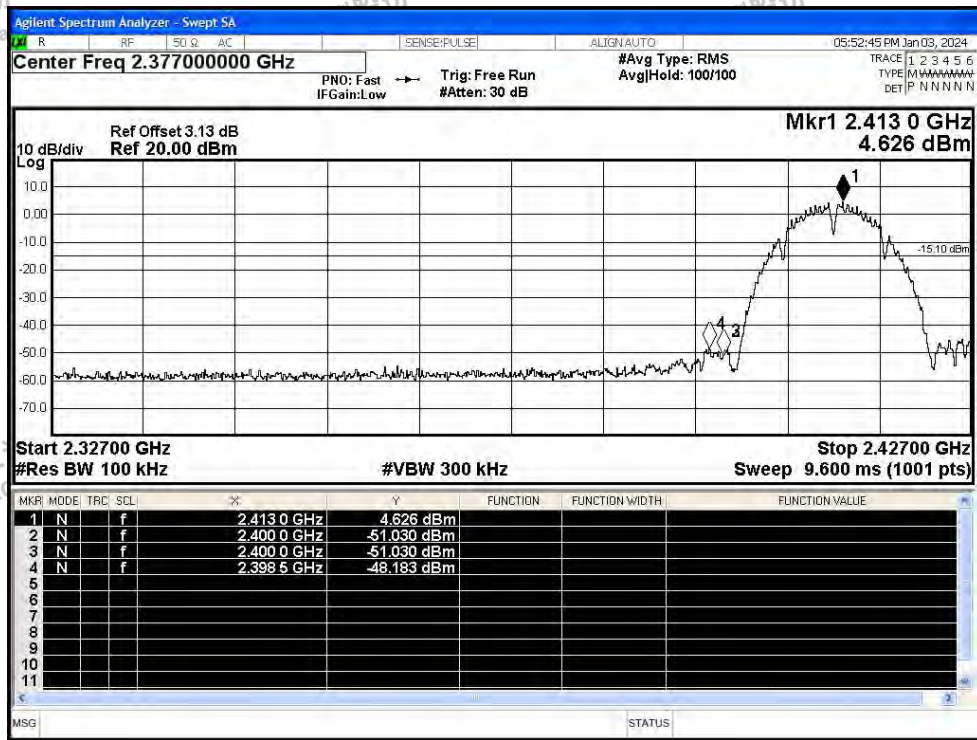


Test Graphs

Band Edge NVNT b 2412MHz Ant2 Ref

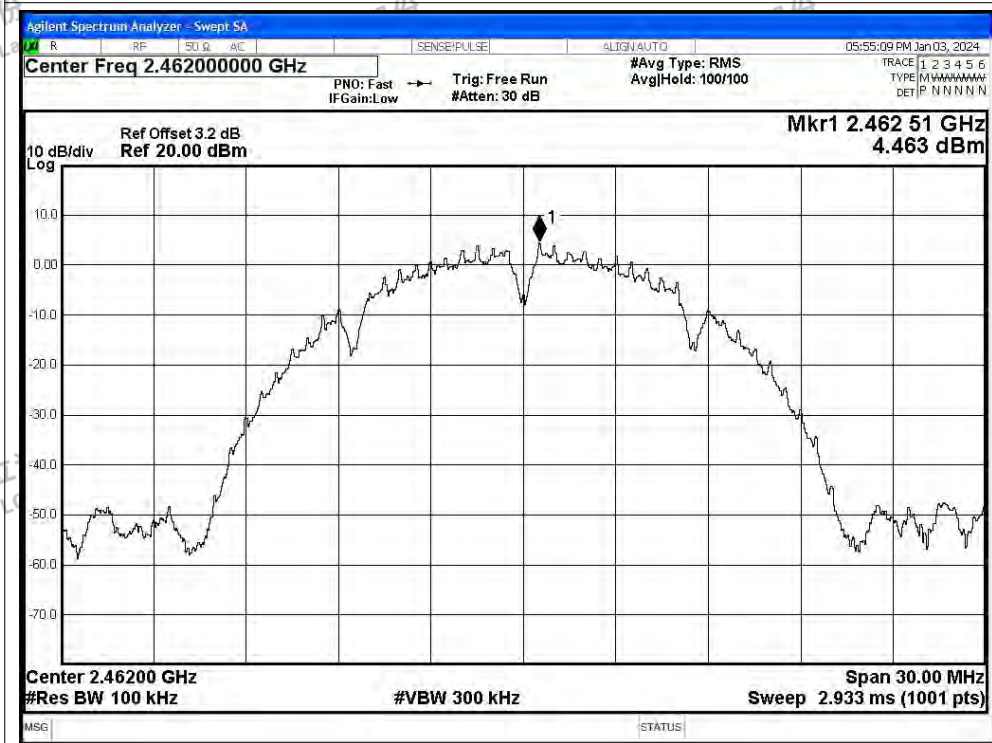


Band Edge NVNT b 2412MHz Ant2 Emission

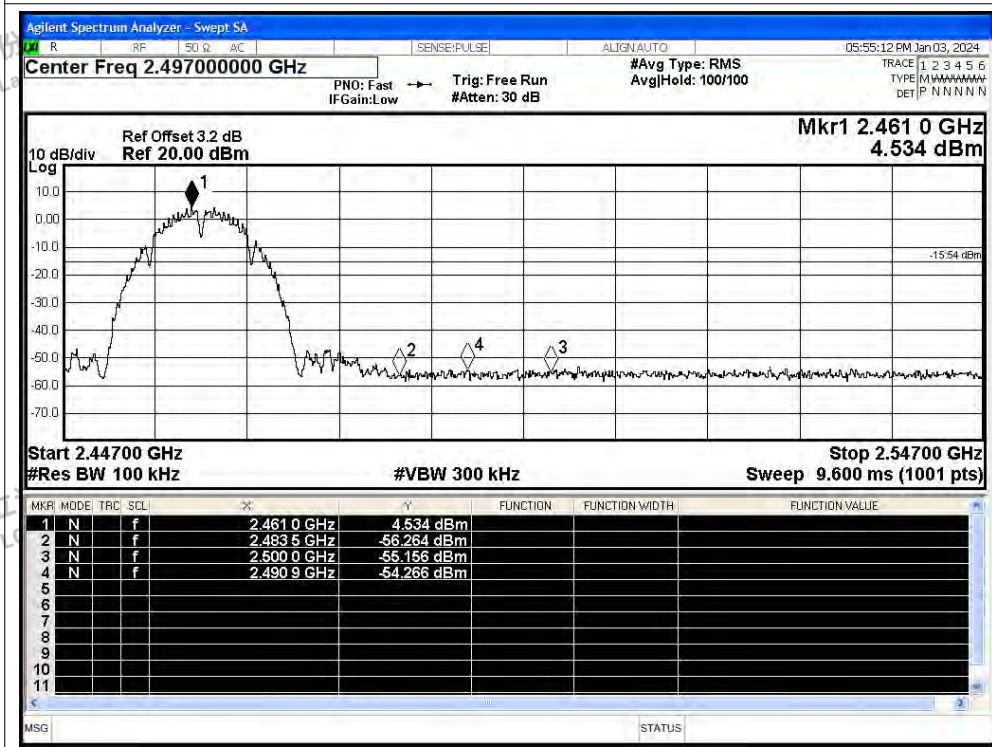




Band Edge NVNT b 2462MHz Ant2 Ref

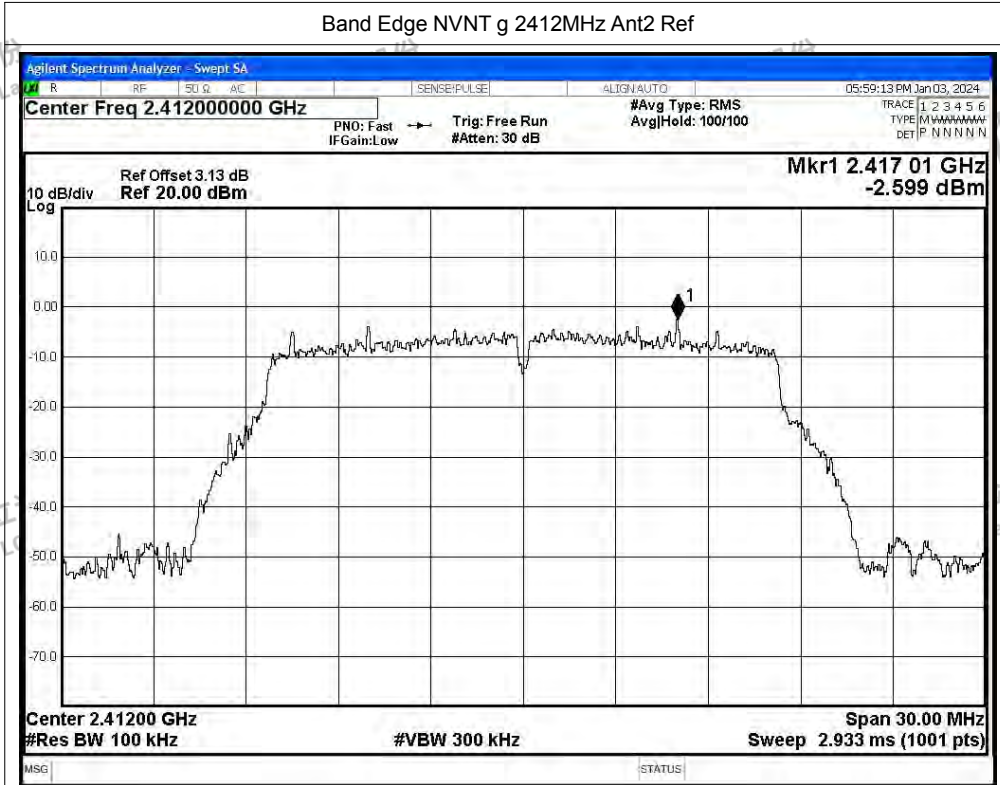


Band Edge NVNT b 2462MHz Ant2 Emission

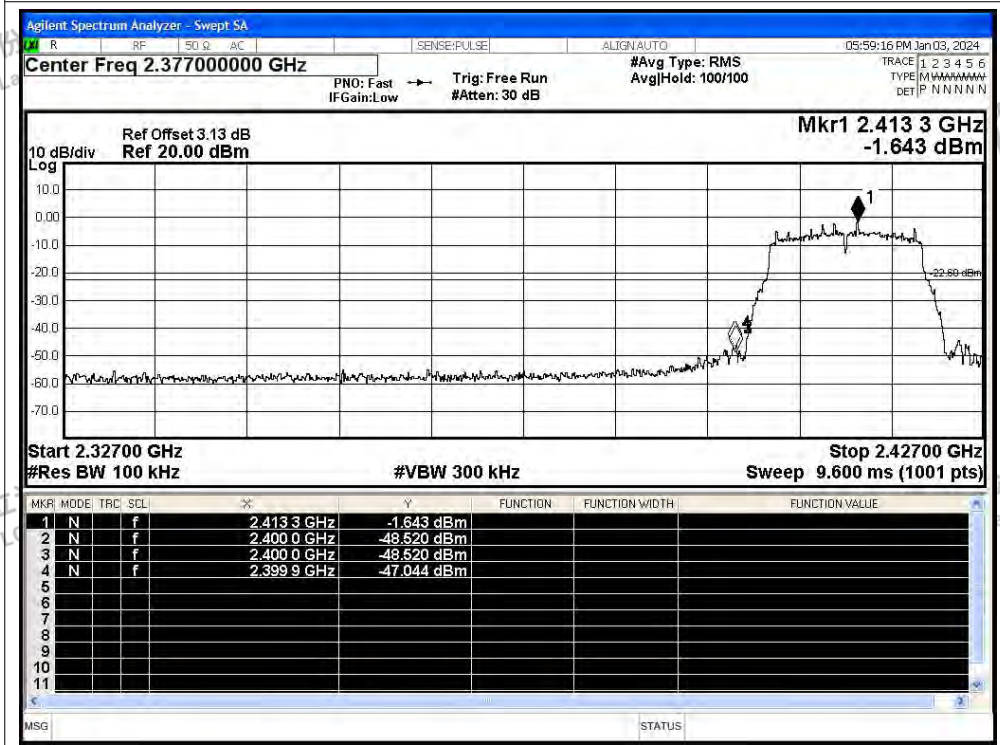




Band Edge NVNT g 2412MHz Ant2 Ref

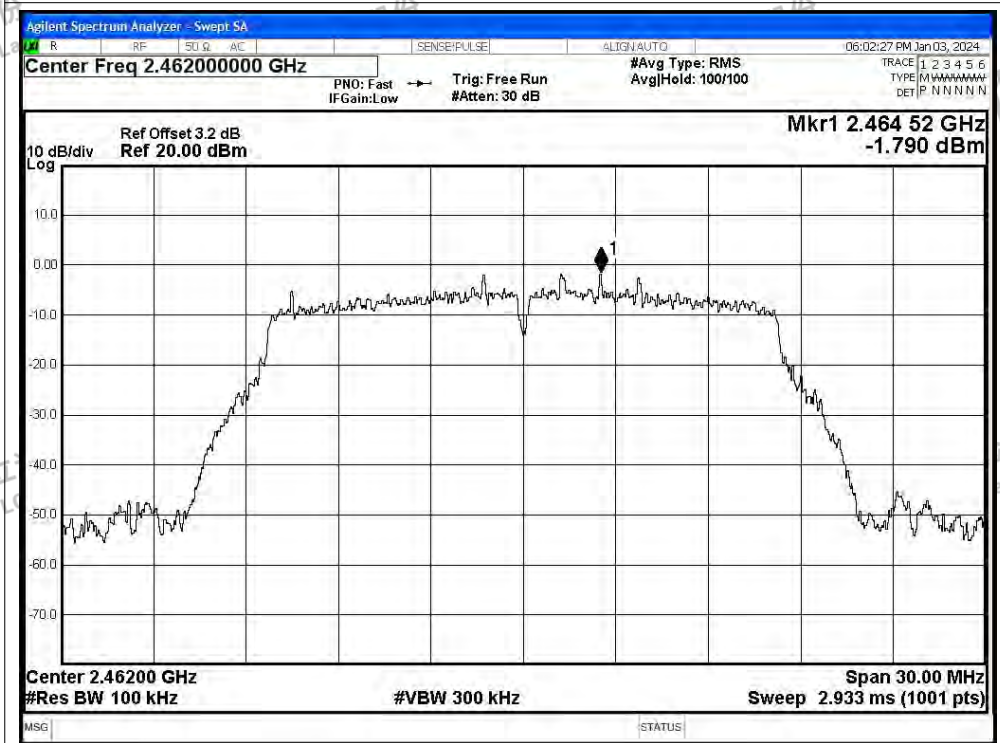


Band Edge NVNT g 2412MHz Ant2 Emission

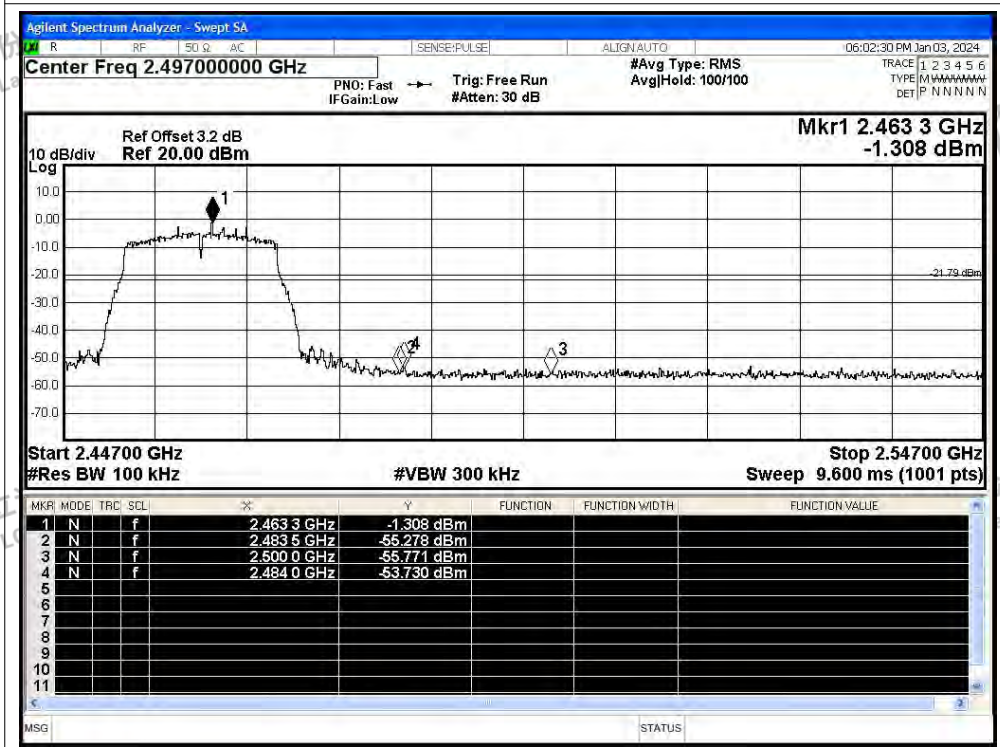




Band Edge NVNT g 2462MHz Ant2 Ref

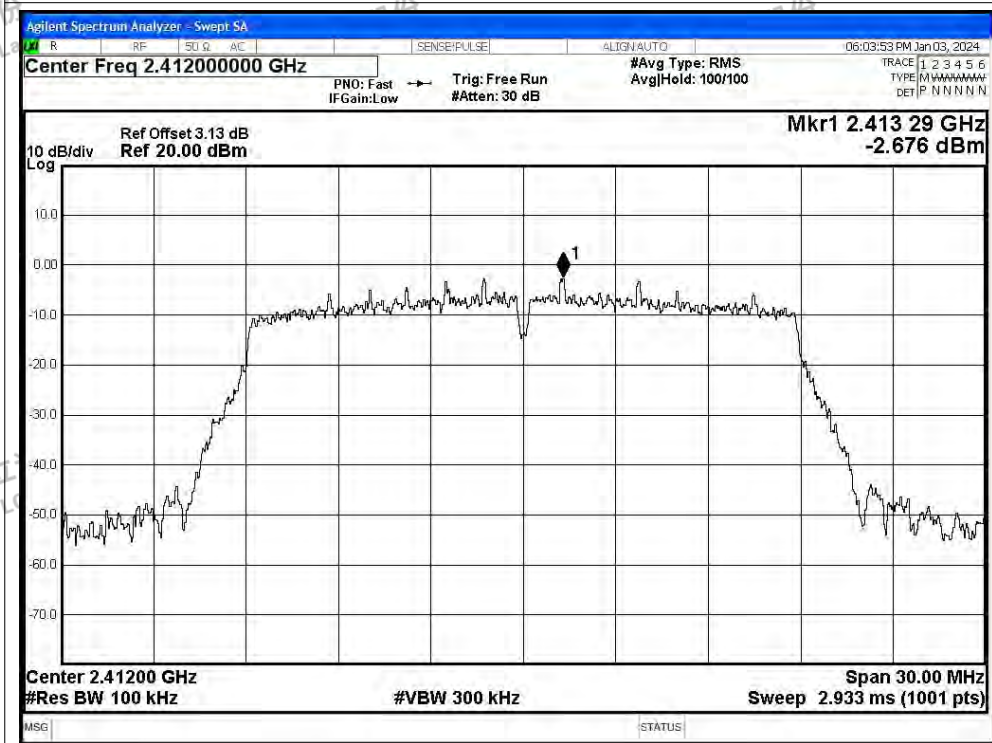


Band Edge NVNT g 2462MHz Ant2 Emission

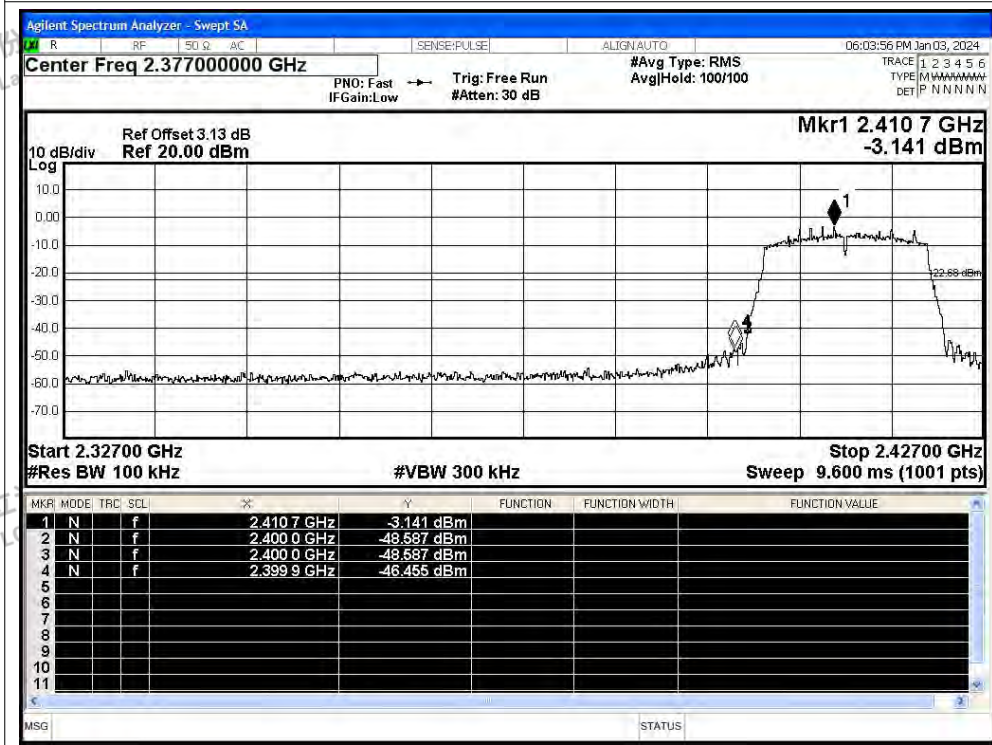




Band Edge NVNT n20 2412MHz Ant2 Ref

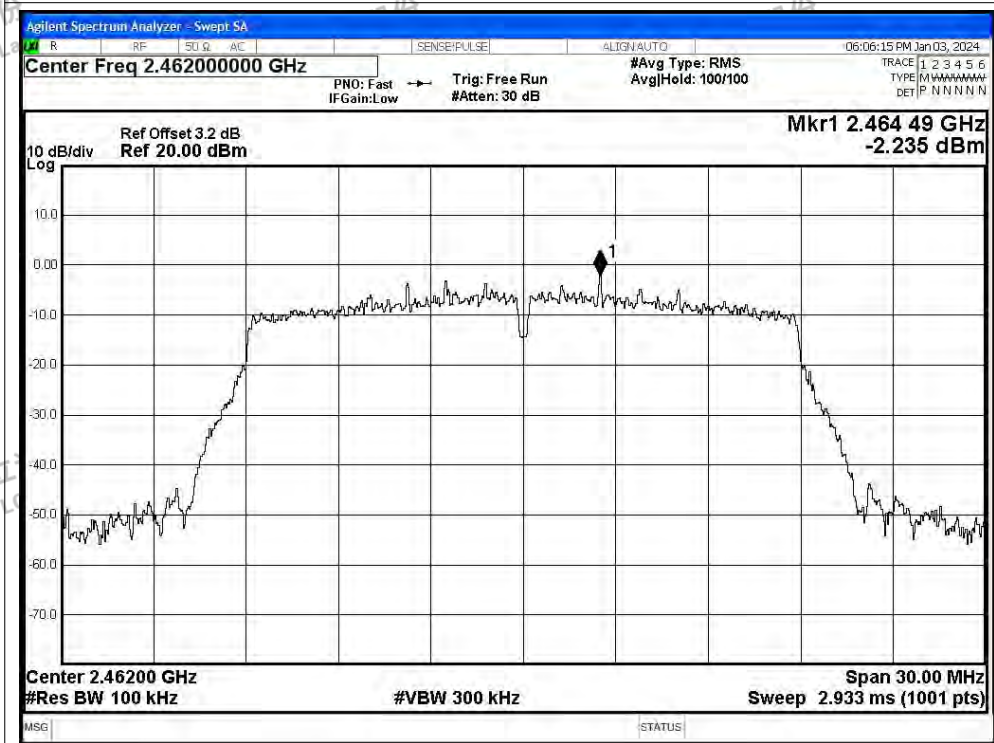


Band Edge NVNT n20 2412MHz Ant2 Emission

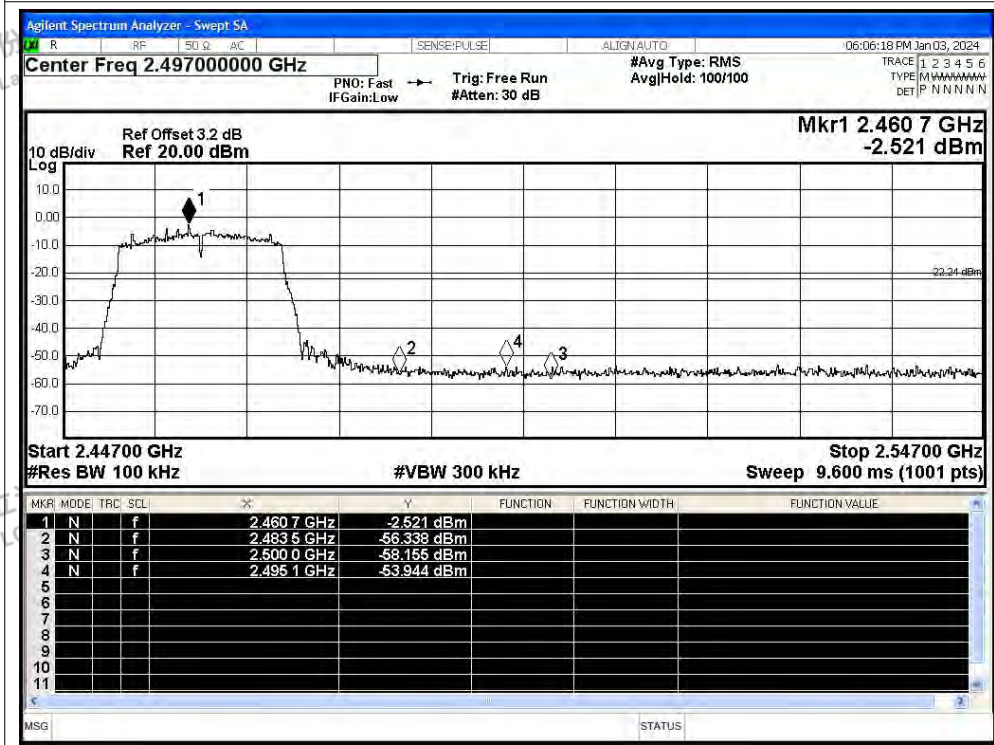




Band Edge NVNT n20 2462MHz Ant2 Ref

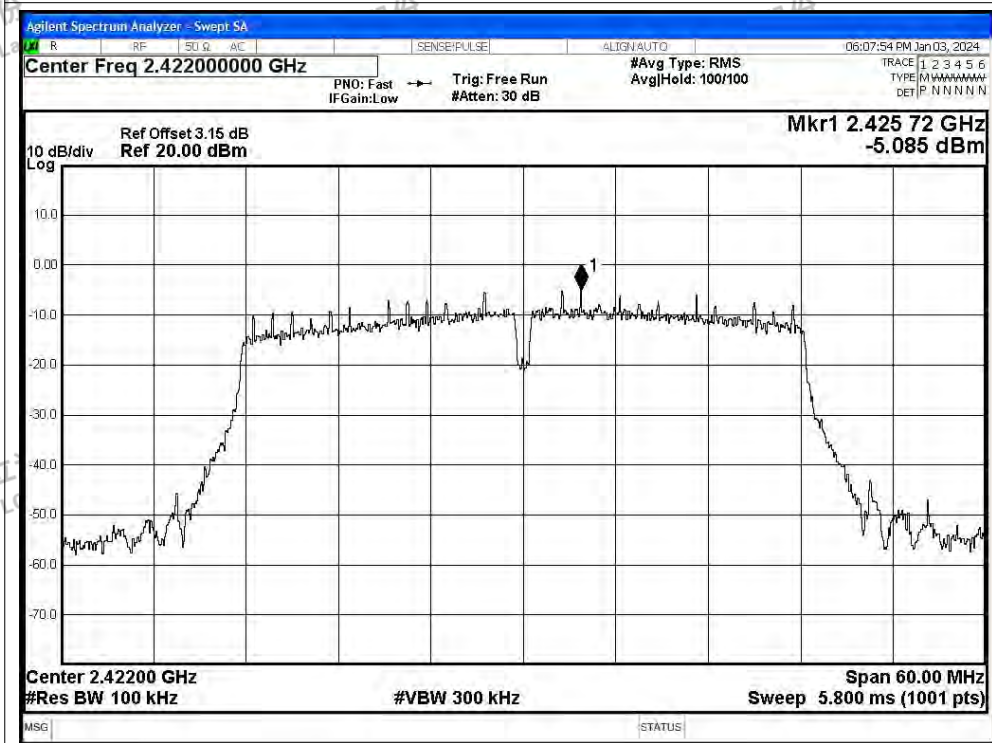


Band Edge NVNT n20 2462MHz Ant2 Emission

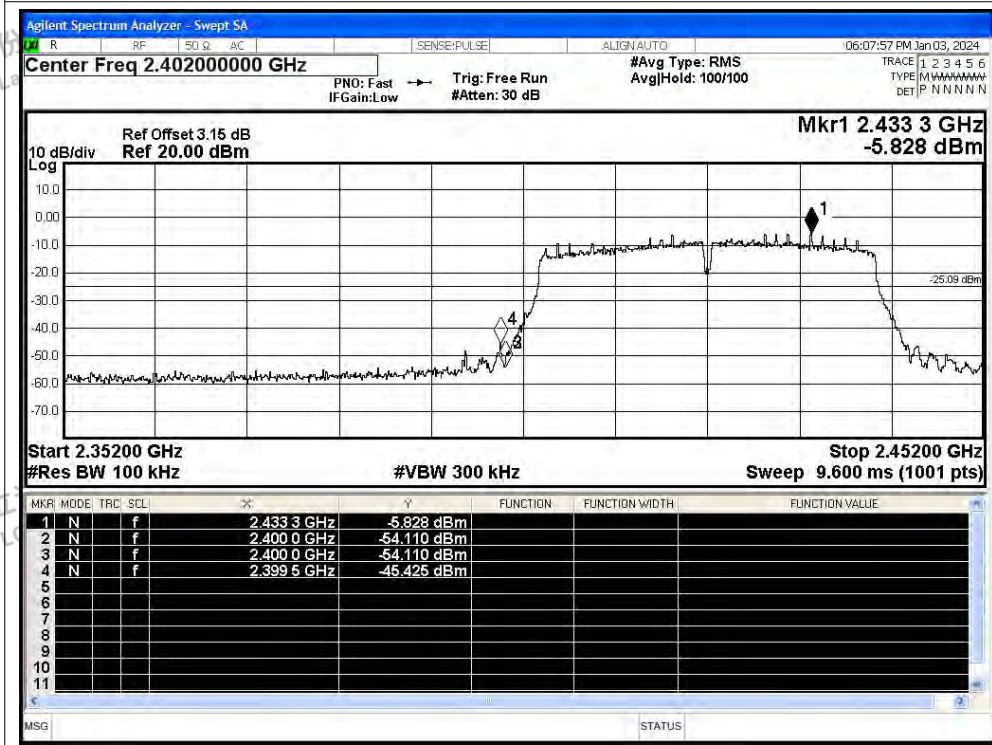




Band Edge NVNT n40 2422MHz Ant2 Ref

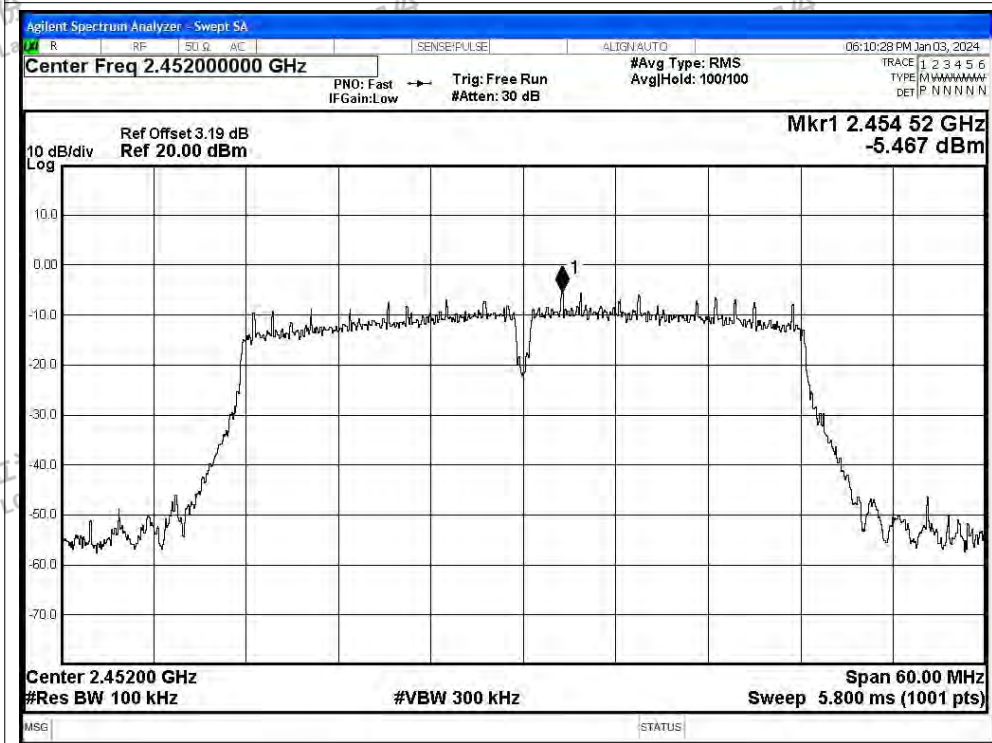


Band Edge NVNT n40 2422MHz Ant2 Emission

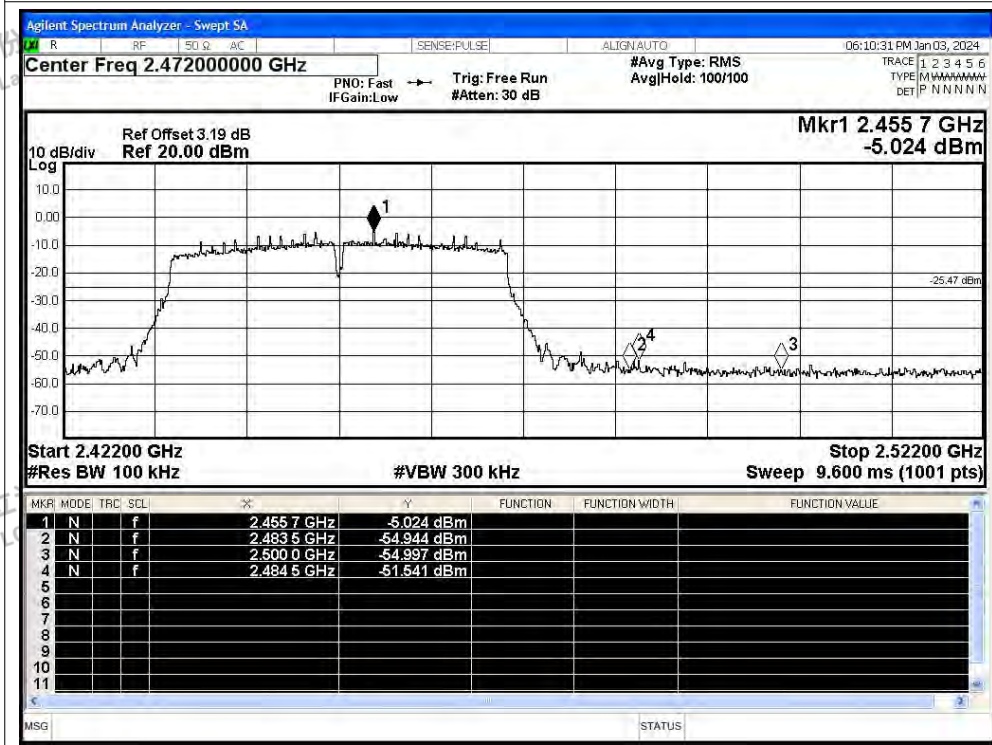




Band Edge NVNT n40 2452MHz Ant2 Ref



Band Edge NVNT n40 2452MHz Ant2 Emission





C.5 Conducted RF Spurious Emission

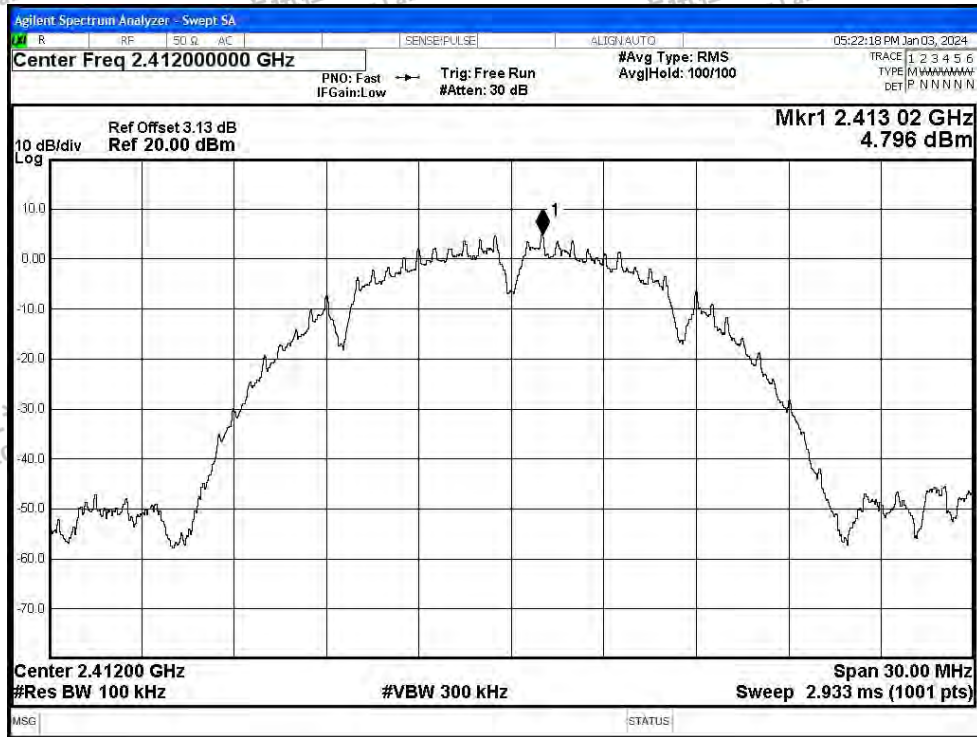
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-50.34	-20	Pass
NVNT	b	2437	Ant1	-49.23	-20	Pass
NVNT	b	2462	Ant1	-48.71	-20	Pass
NVNT	g	2412	Ant1	-41.47	-20	Pass
NVNT	g	2437	Ant1	-42.37	-20	Pass
NVNT	g	2462	Ant1	-43.53	-20	Pass
NVNT	n20	2412	Ant1	-42.38	-20	Pass
NVNT	n20	2437	Ant1	-42.08	-20	Pass
NVNT	n20	2462	Ant1	-43.14	-20	Pass
NVNT	n40	2422	Ant1	-39.84	-20	Pass
NVNT	n40	2437	Ant1	-39.36	-20	Pass
NVNT	n40	2452	Ant1	-40.27	-20	Pass



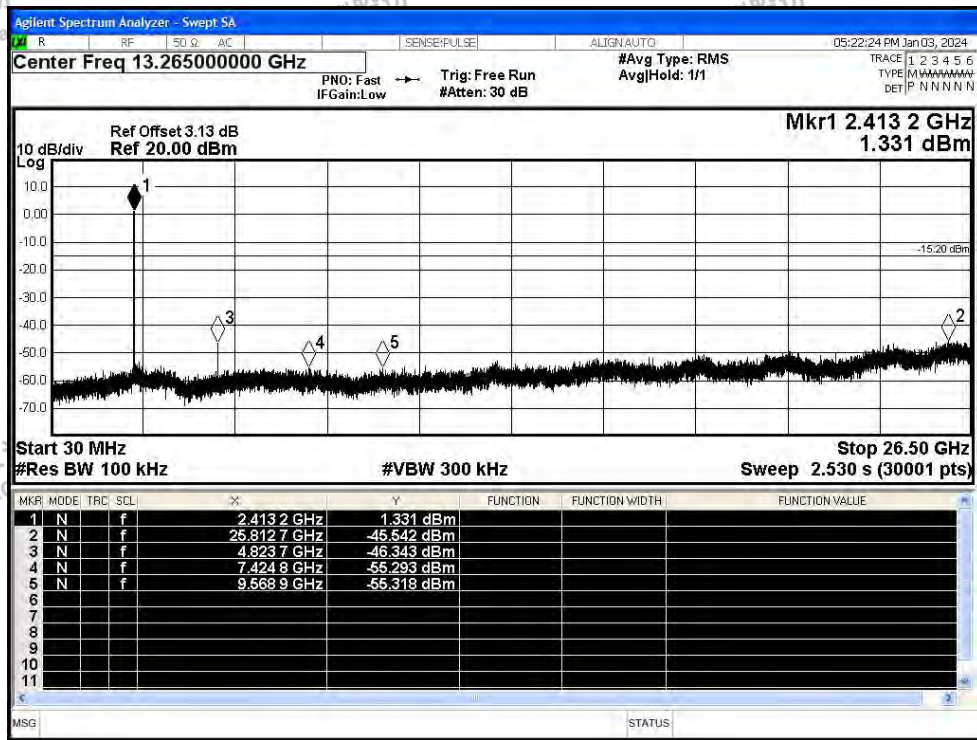


Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission

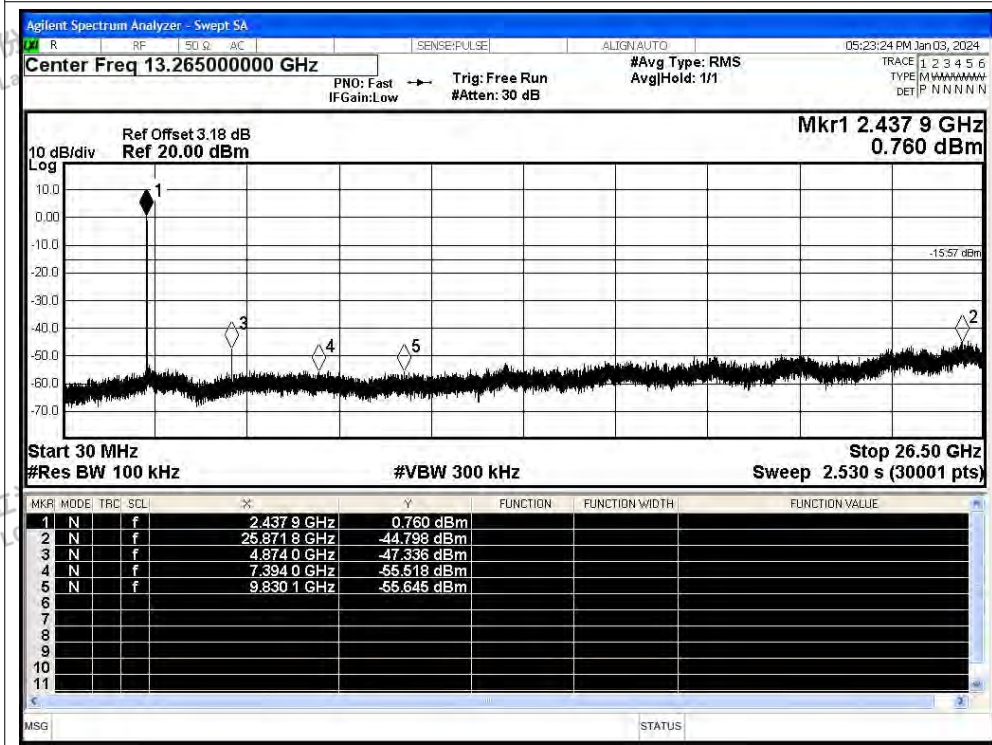




Tx. Spurious NVNT b 2437MHz Ant1 Ref

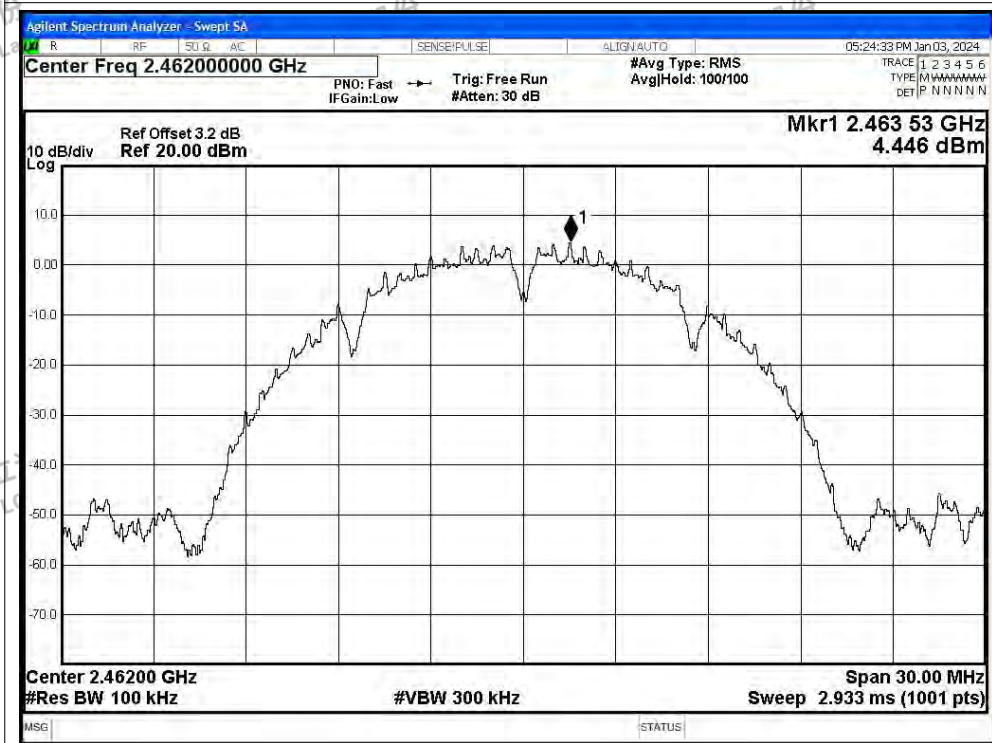


Tx. Spurious NVNT b 2437MHz Ant1 Emission

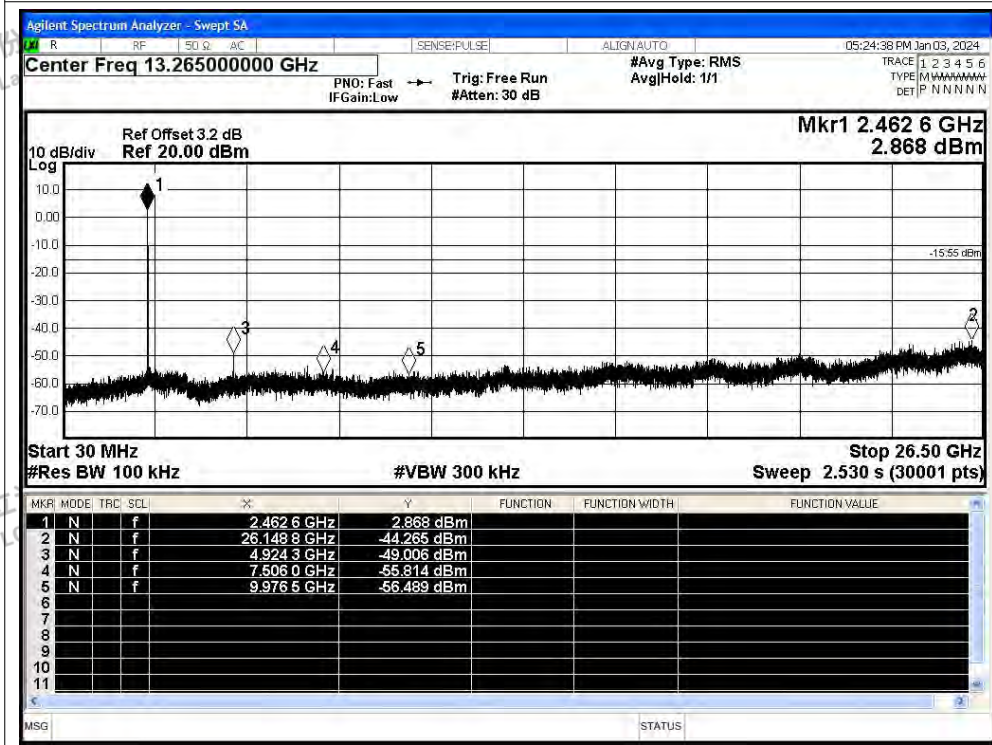




Tx. Spurious NVNT b 2462MHz Ant1 Ref

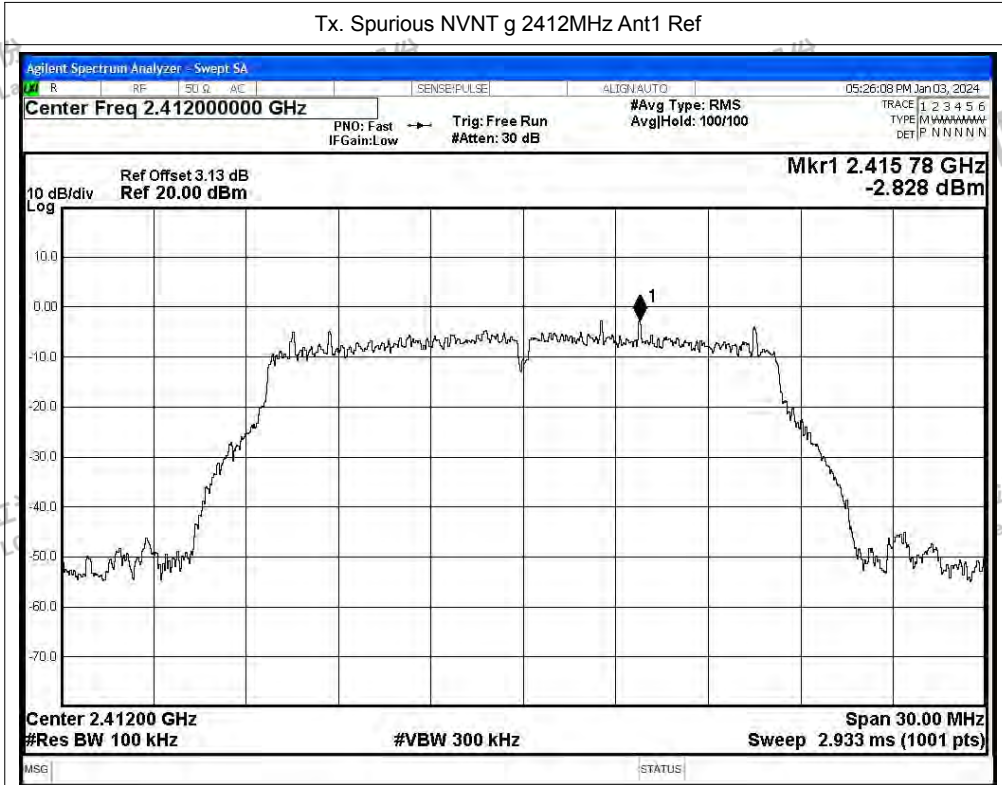


Tx. Spurious NVNT b 2462MHz Ant1 Emission

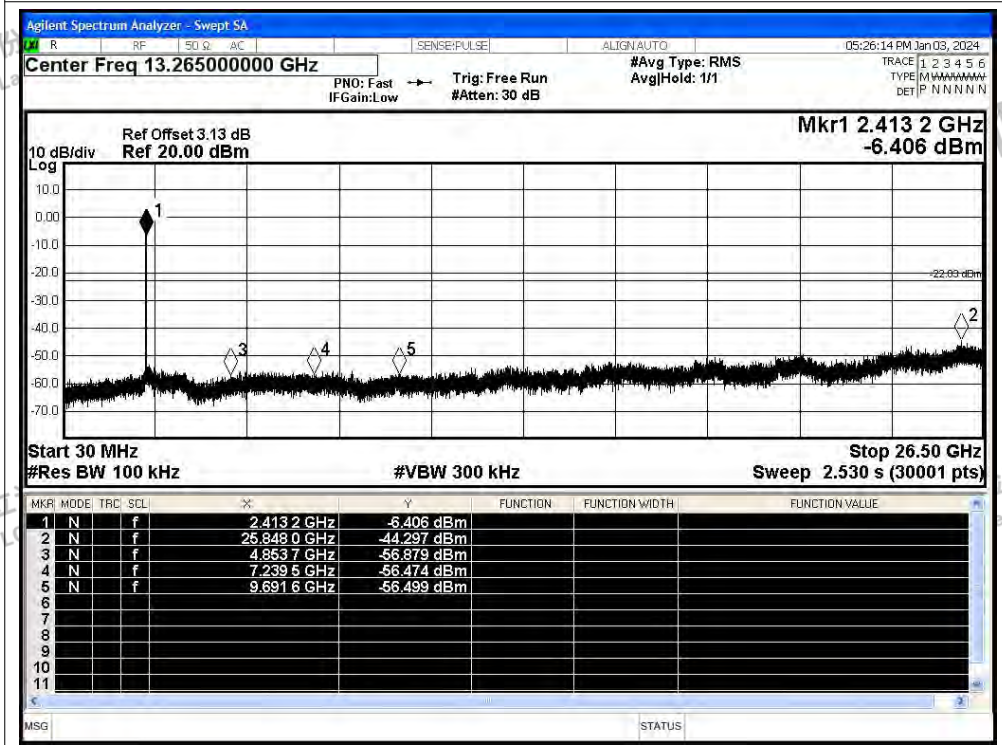




Tx. Spurious NVNT g 2412MHz Ant1 Ref

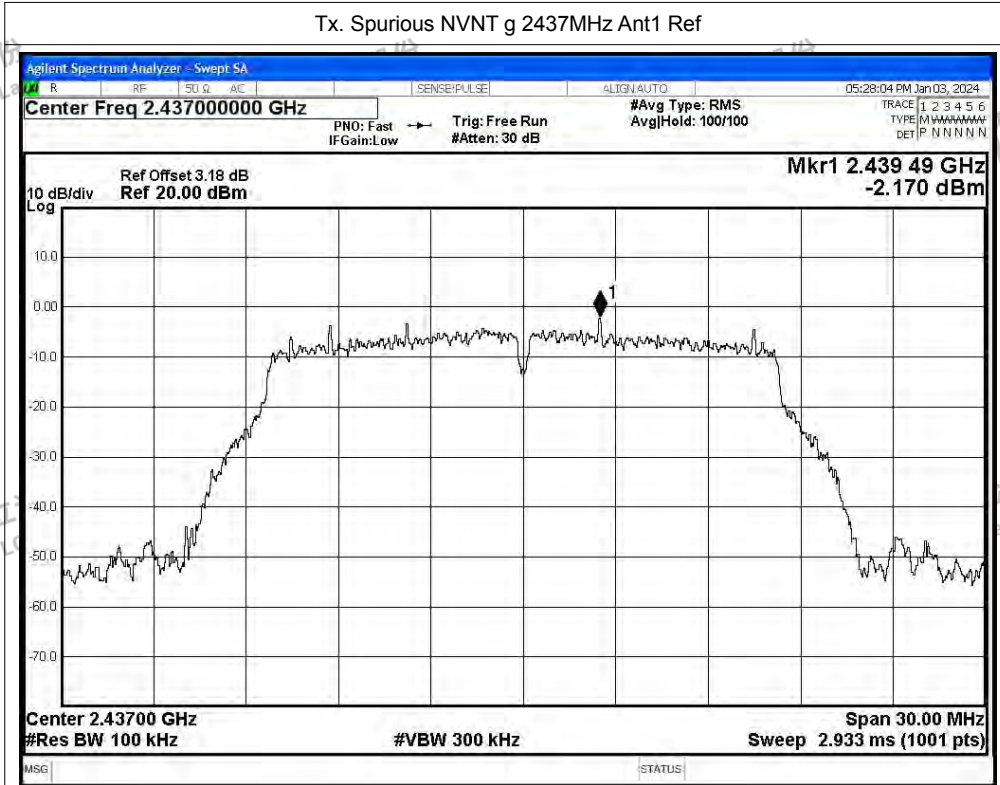


Tx. Spurious NVNT g 2412MHz Ant1 Emission

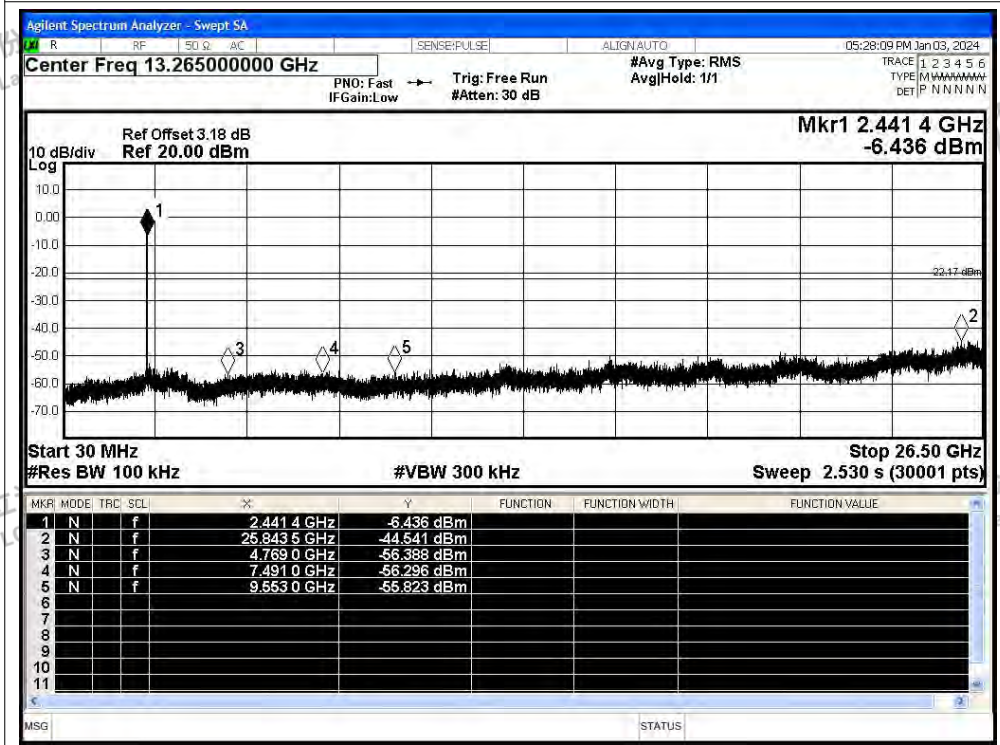




Tx. Spurious NVNT g 2437MHz Ant1 Ref

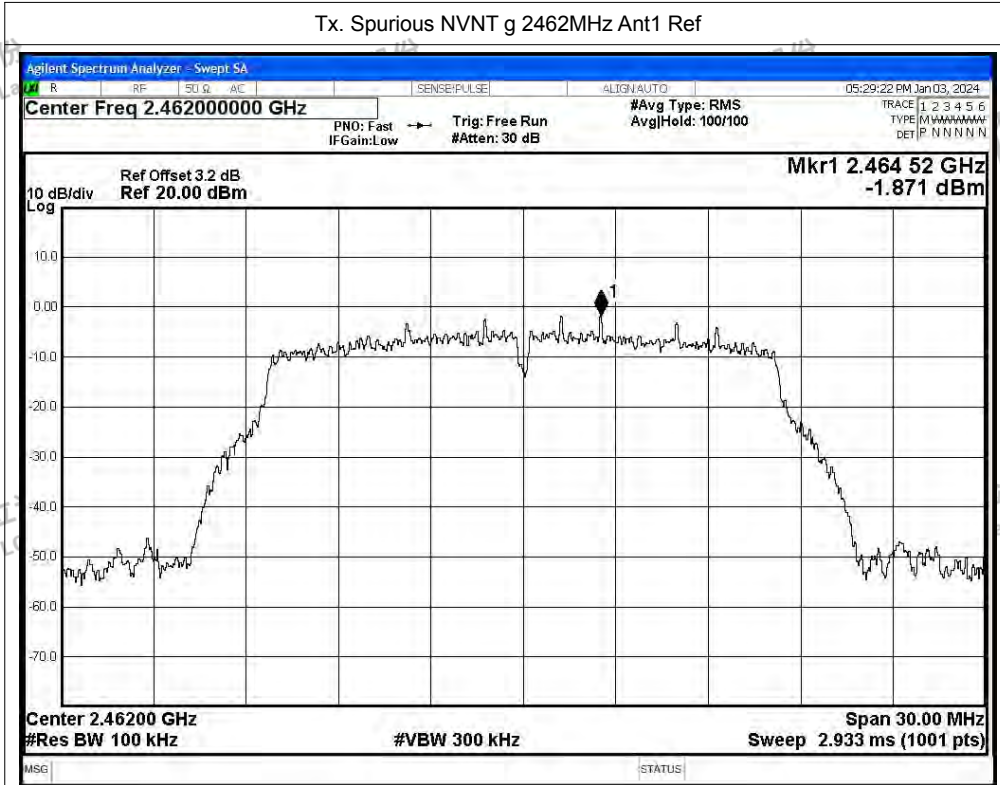


Tx. Spurious NVNT g 2437MHz Ant1 Emission

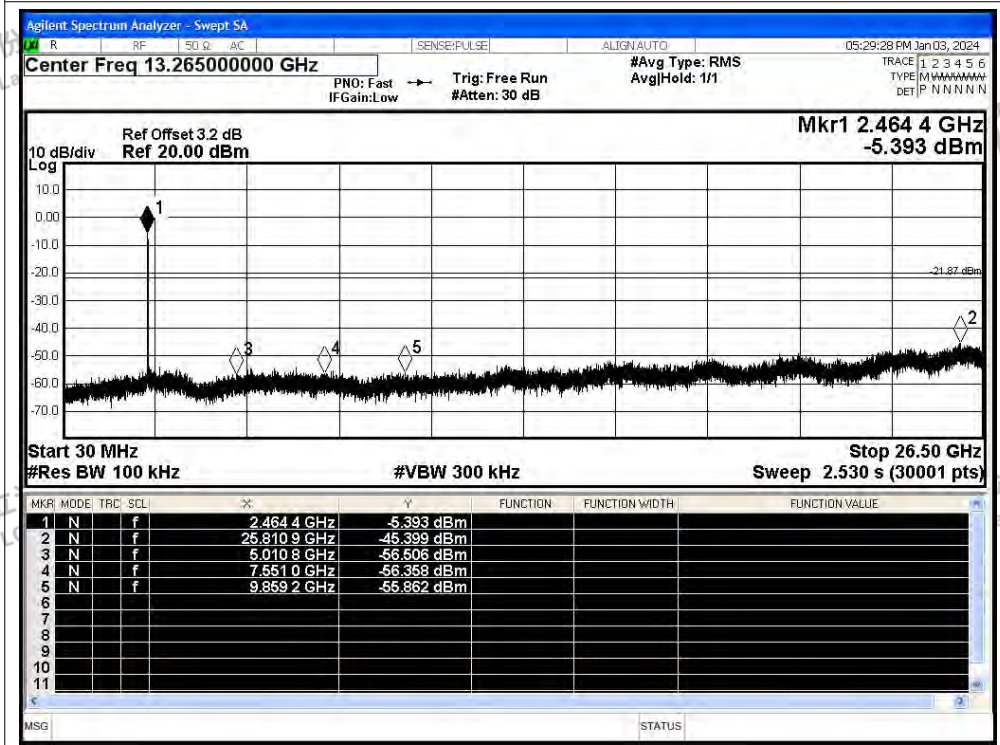




Tx. Spurious NVNT g 2462MHz Ant1 Ref

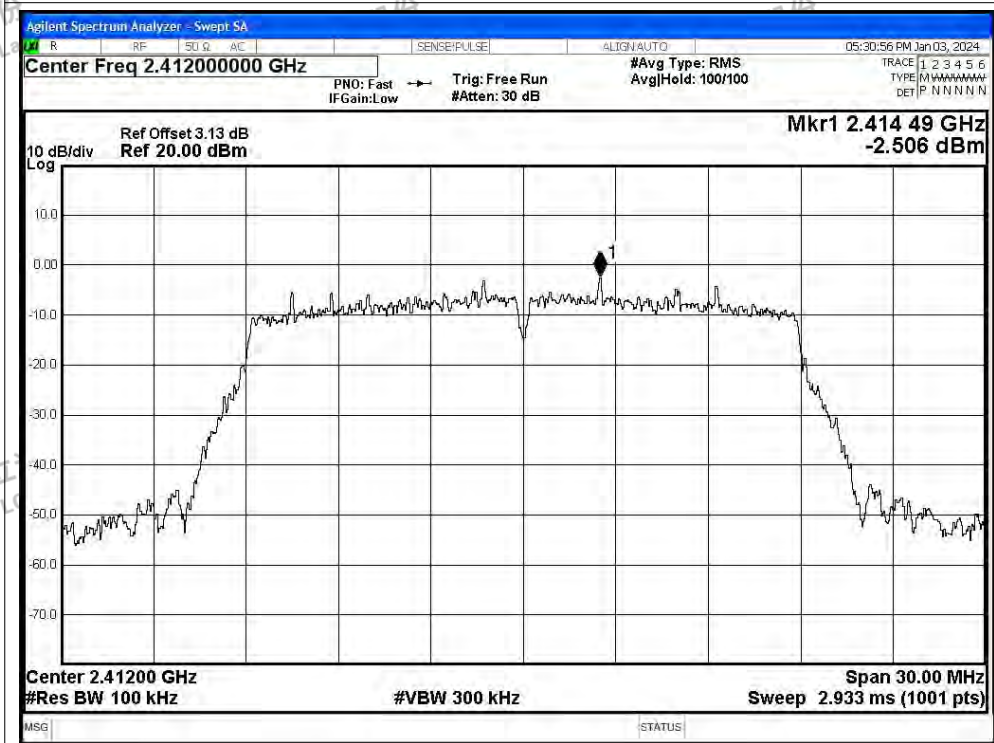


Tx. Spurious NVNT g 2462MHz Ant1 Emission

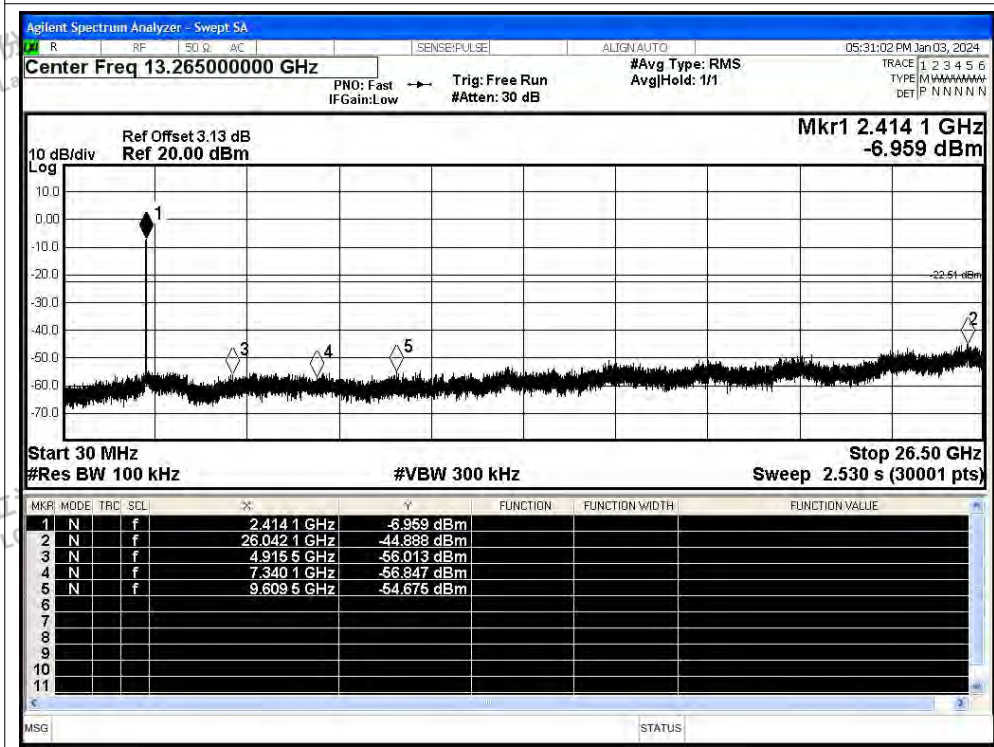




Tx. Spurious NVNT n20 2412MHz Ant1 Ref

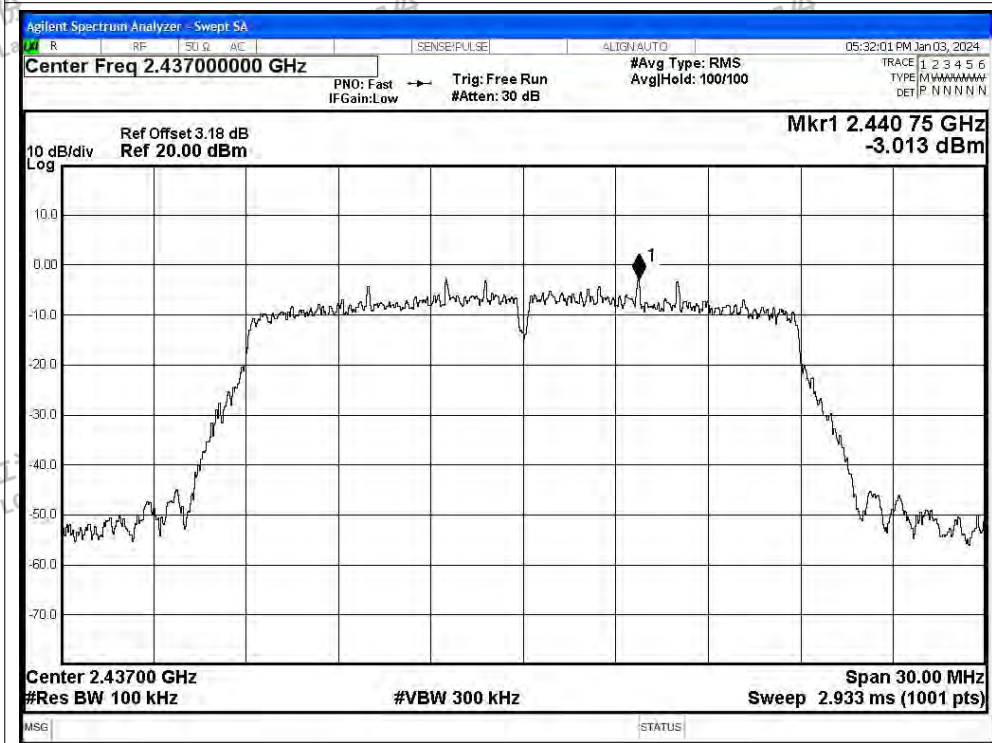


Tx. Spurious NVNT n20 2412MHz Ant1 Emission

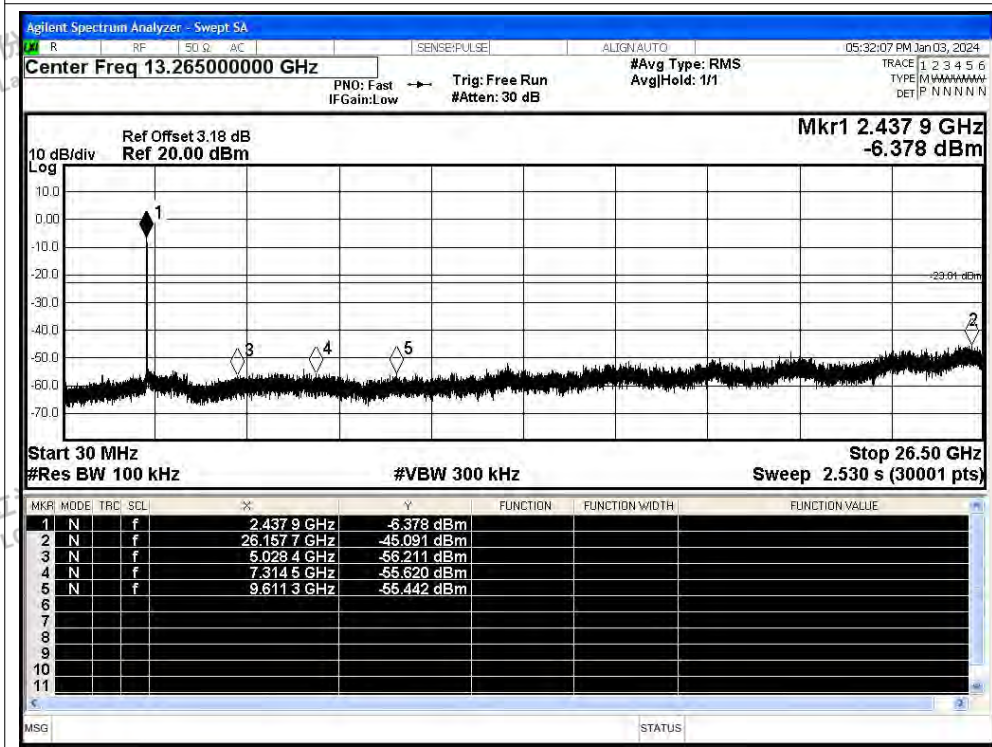




Tx. Spurious NVNT n20 2437MHz Ant1 Ref

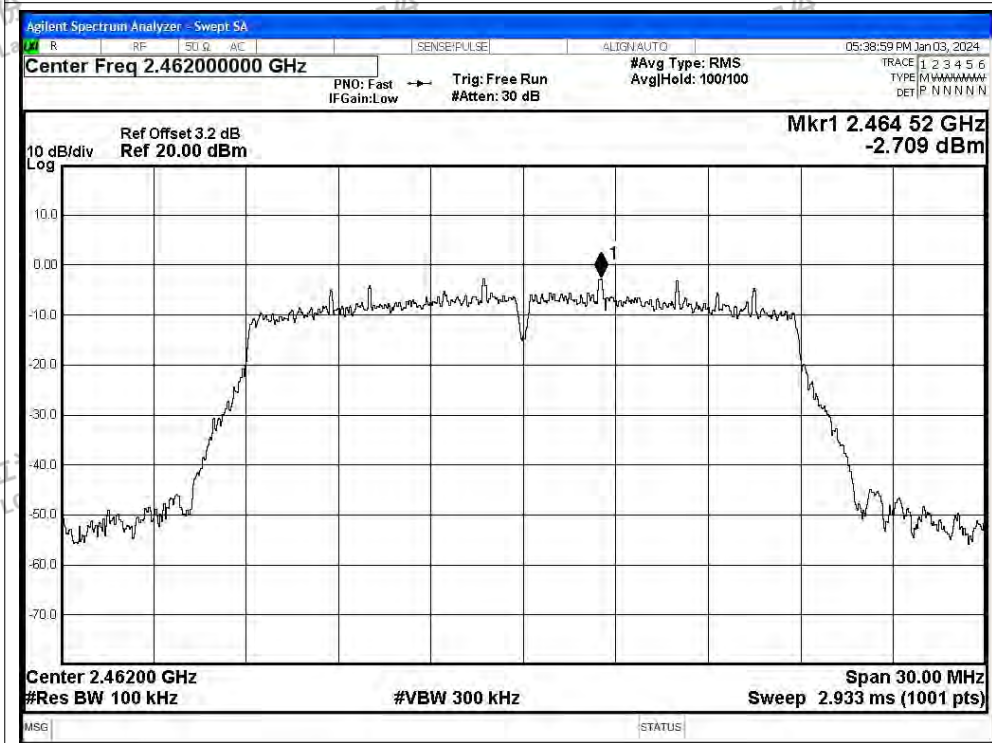


Tx. Spurious NVNT n20 2437MHz Ant1 Emission

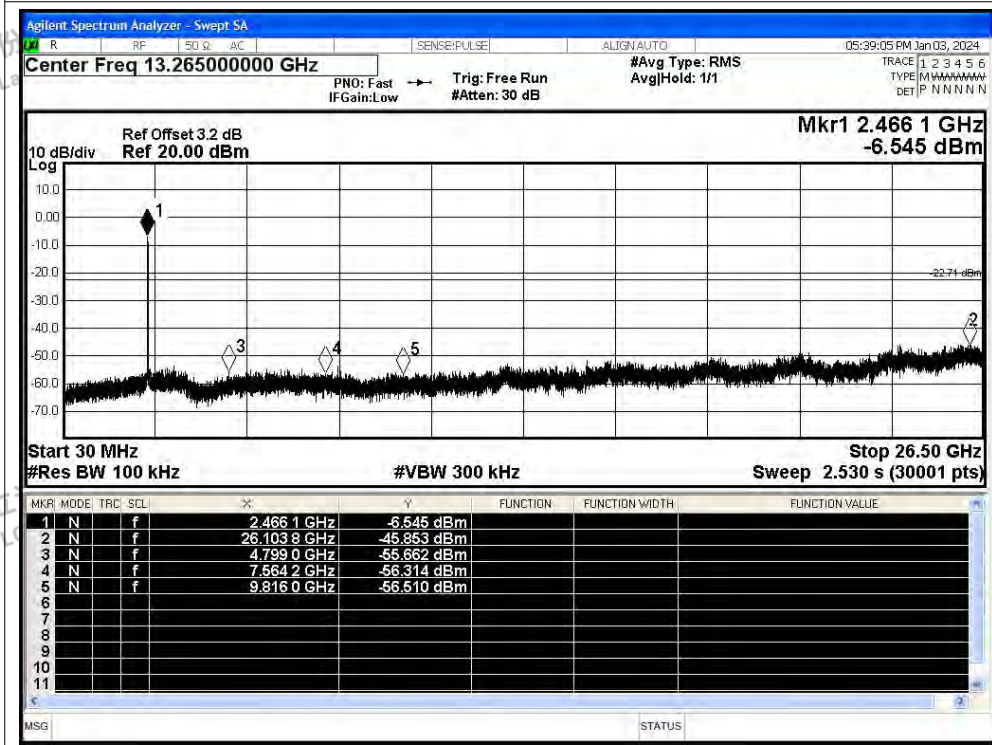




Tx. Spurious NVNT n20 2462MHz Ant1 Ref

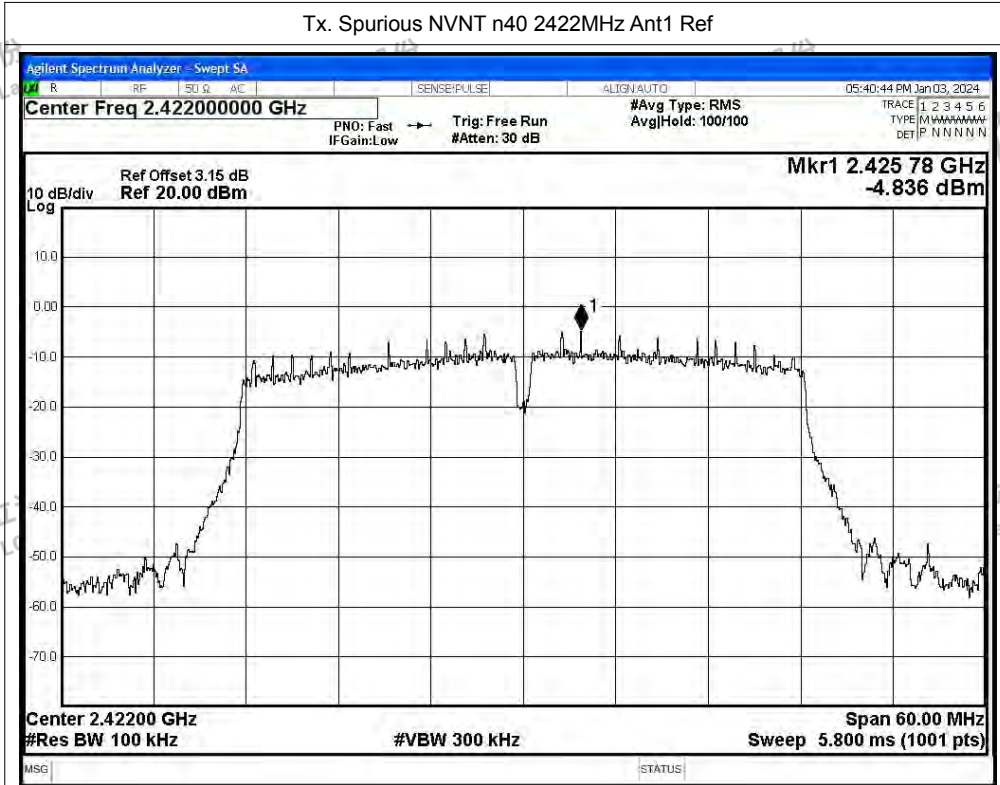


Tx. Spurious NVNT n20 2462MHz Ant1 Emission

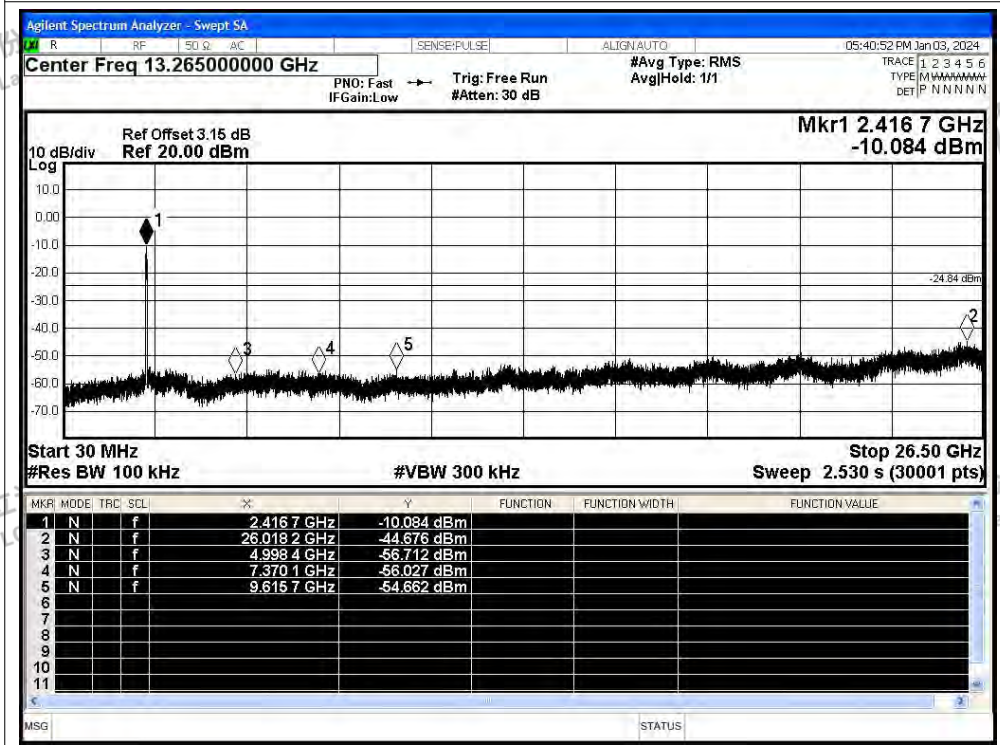




Tx. Spurious NVNT n40 2422MHz Ant1 Ref

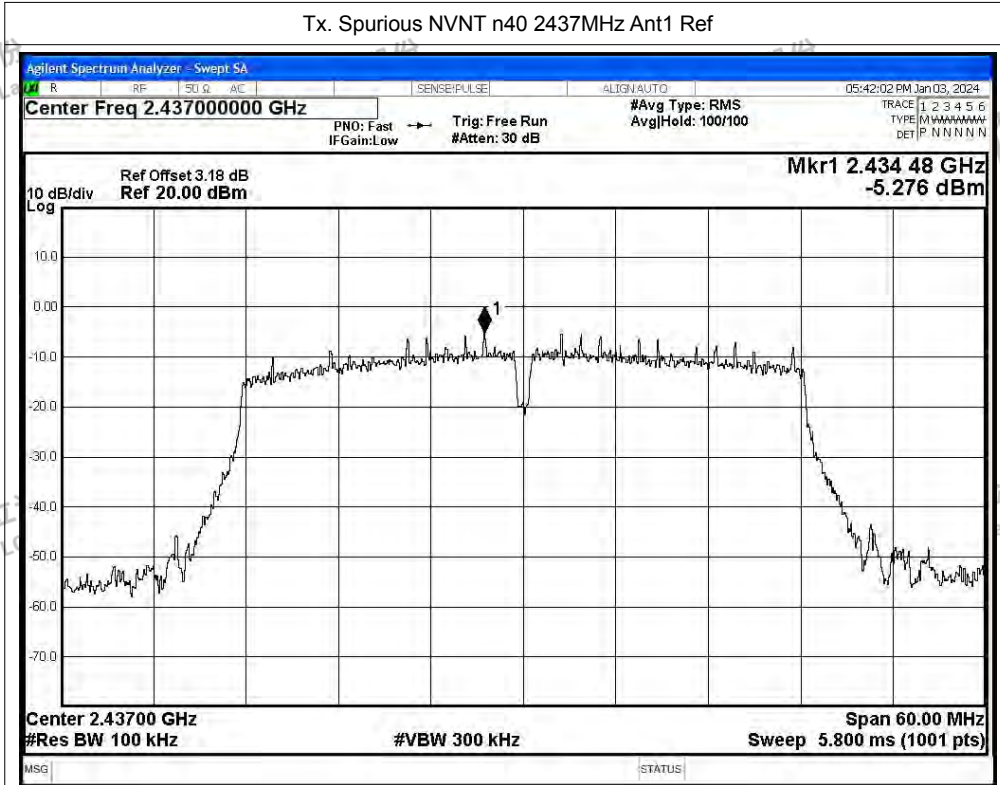


Tx. Spurious NVNT n40 2422MHz Ant1 Emission

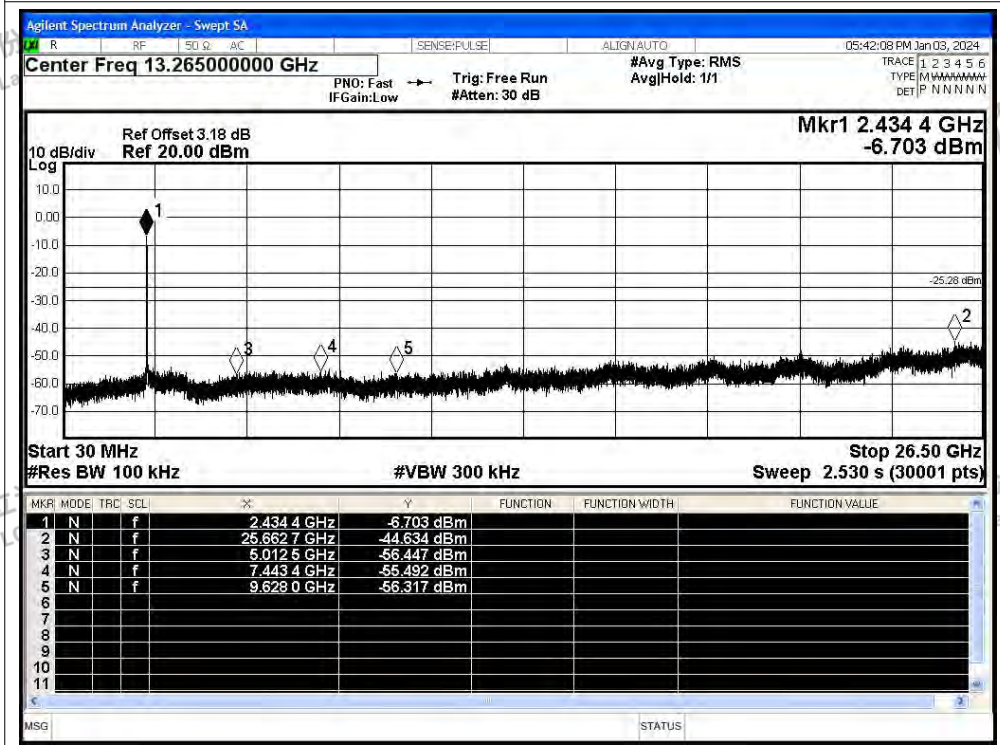




Tx. Spurious NVNT n40 2437MHz Ant1 Ref

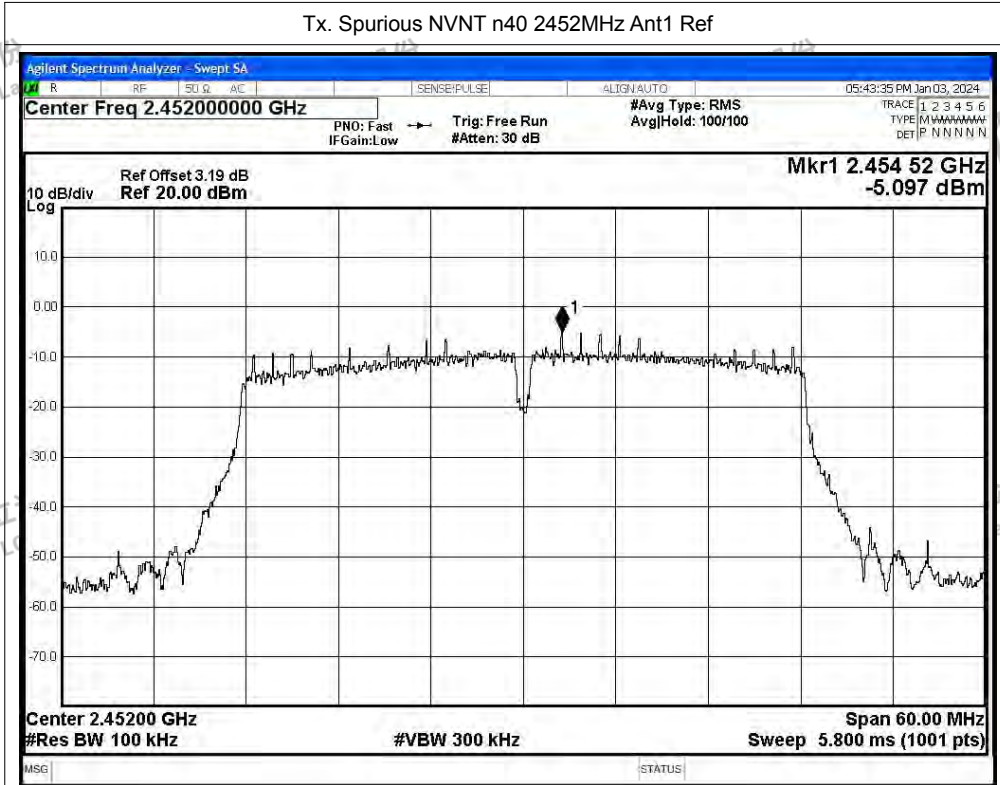


Tx. Spurious NVNT n40 2437MHz Ant1 Emission

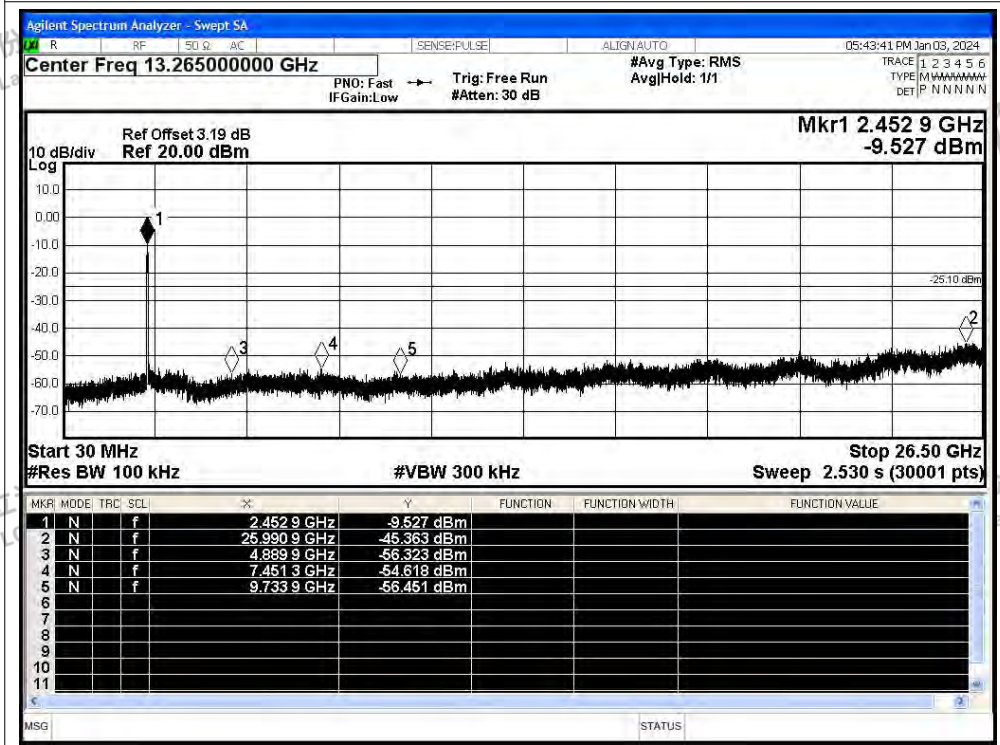




Tx. Spurious NVNT n40 2452MHz Ant1 Ref



Tx. Spurious NVNT n40 2452MHz Ant1 Emission





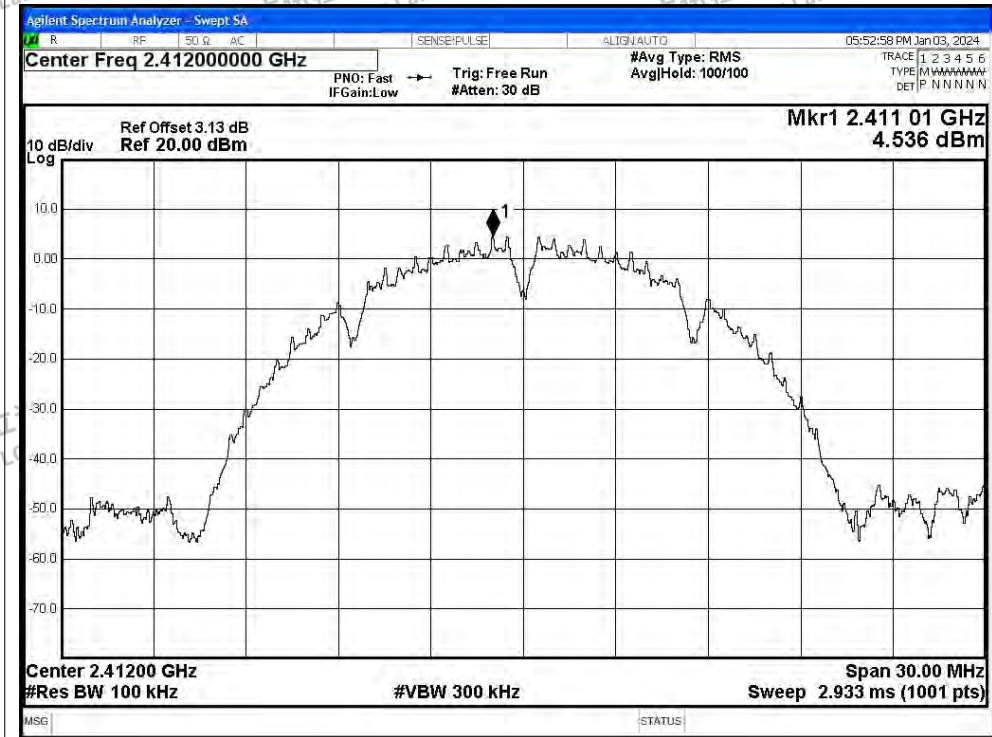
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant2	-48.83	-20	Pass
NVNT	b	2437	Ant2	-49.07	-20	Pass
NVNT	b	2462	Ant2	-50.19	-20	Pass
NVNT	g	2412	Ant2	-42.36	-20	Pass
NVNT	g	2437	Ant2	-42.36	-20	Pass
NVNT	g	2462	Ant2	-42.81	-20	Pass
NVNT	n20	2412	Ant2	-42.84	-20	Pass
NVNT	n20	2437	Ant2	-42.98	-20	Pass
NVNT	n20	2462	Ant2	-43.55	-20	Pass
NVNT	n40	2422	Ant2	-39.88	-20	Pass
NVNT	n40	2437	Ant2	-39.74	-20	Pass
NVNT	n40	2452	Ant2	-39.65	-20	Pass





Test Graphs

Tx. Spurious NVNT b 2412MHz Ant2 Ref



Tx. Spurious NVNT b 2412MHz Ant2 Emission

