Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: Light Controller

Test Model: YX-LS9-D

Environmental Conditions

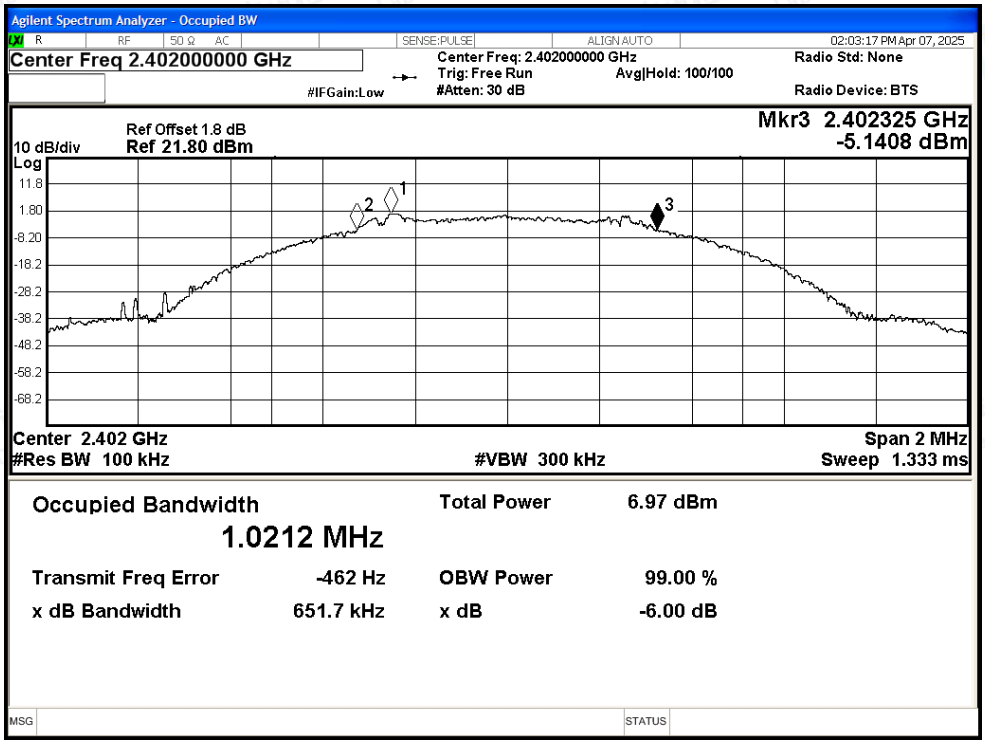
Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen
Supervised by:	Nick Peng

A.1 -6dB Bandwidth

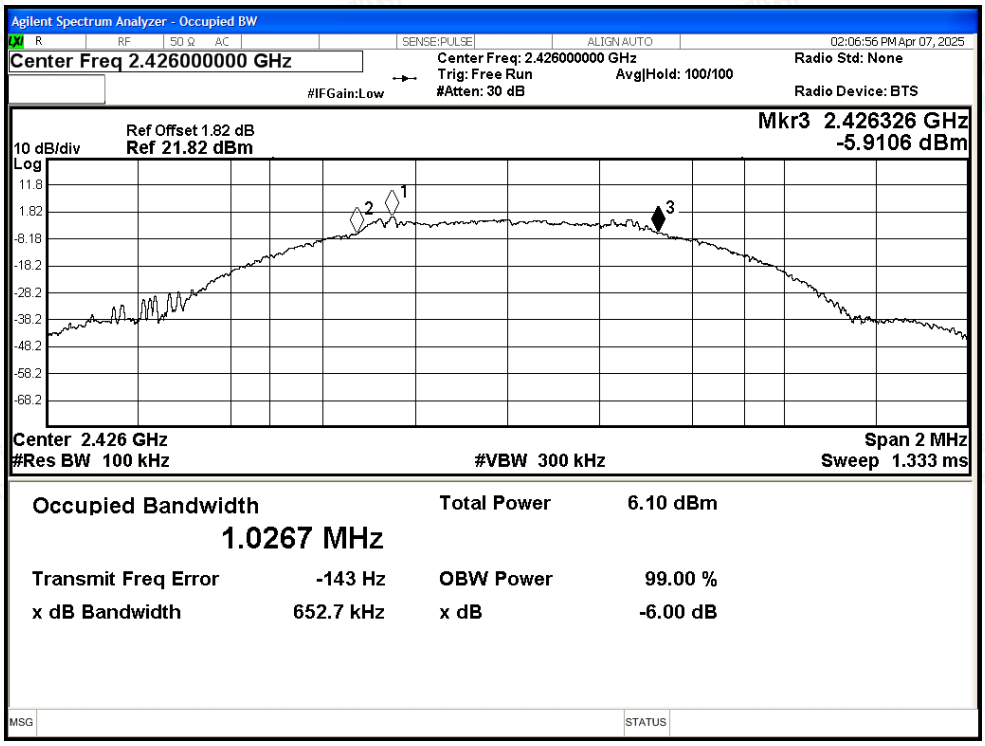
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	2.4G	2402	Ant1	0.652	>=0.5	Pass
NVNT	2.4G	2426	Ant1	0.653	>=0.5	Pass
NVNT	2.4G	2480	Ant1	0.65	>=0.5	Pass

Test Graphs

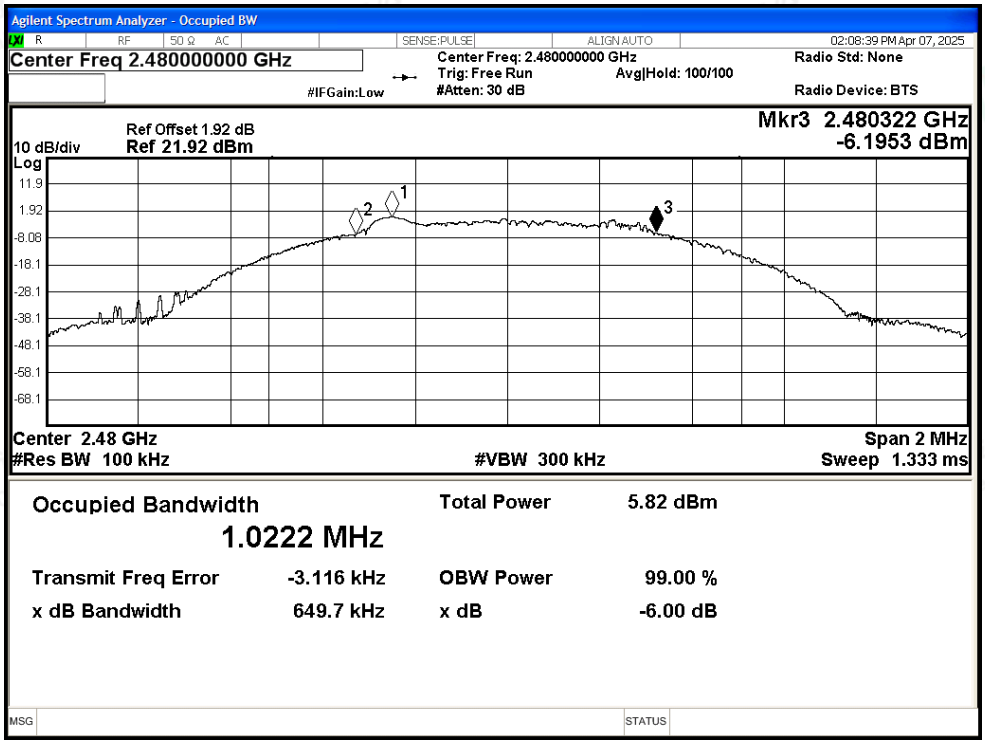
-6dB Bandwidth NVNT 2.4G 2402MHz Ant1



-6dB Bandwidth NVNT 2.4G 2426MHz Ant1



-6dB Bandwidth NVNT 2.4G 2480MHz Ant1

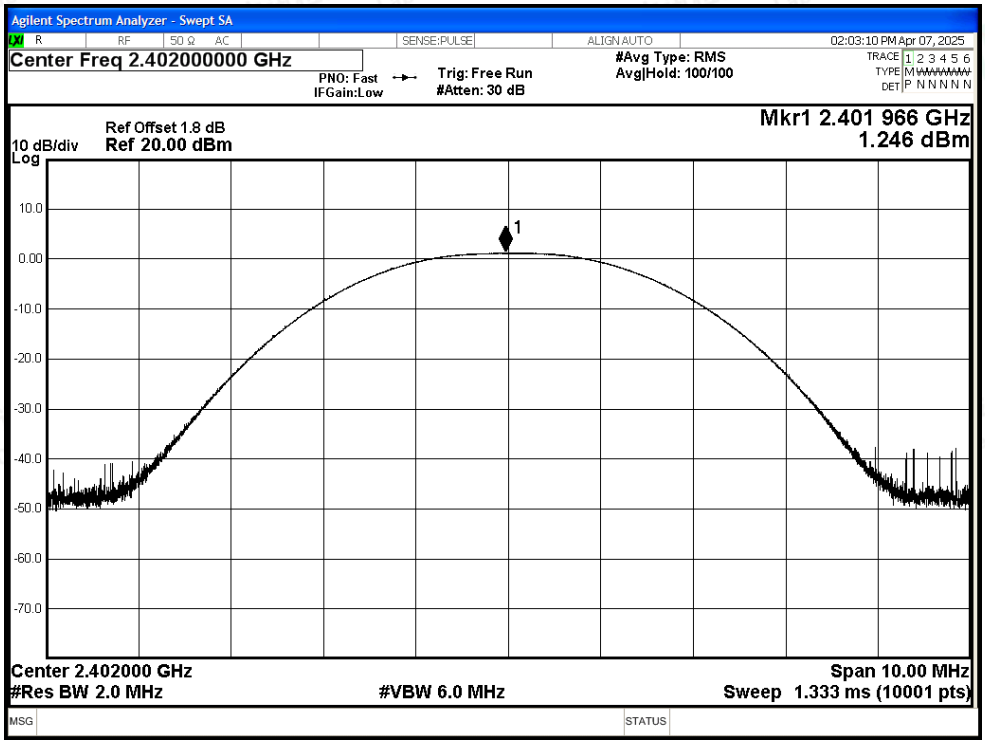


A.2 Maximum Peak Conducted Output Power

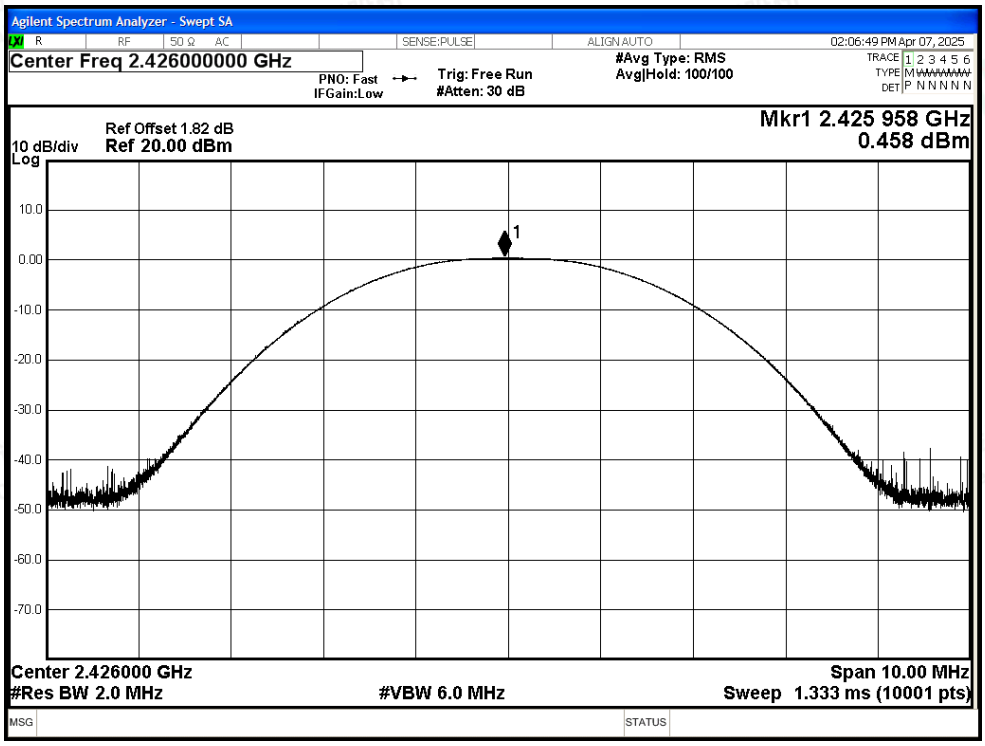
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	2.4G	2402	Ant1	1.25	30	Pass
NVNT	2.4G	2426	Ant1	0.46	30	Pass
NVNT	2.4G	2480	Ant1	0.04	30	Pass

Test Graphs

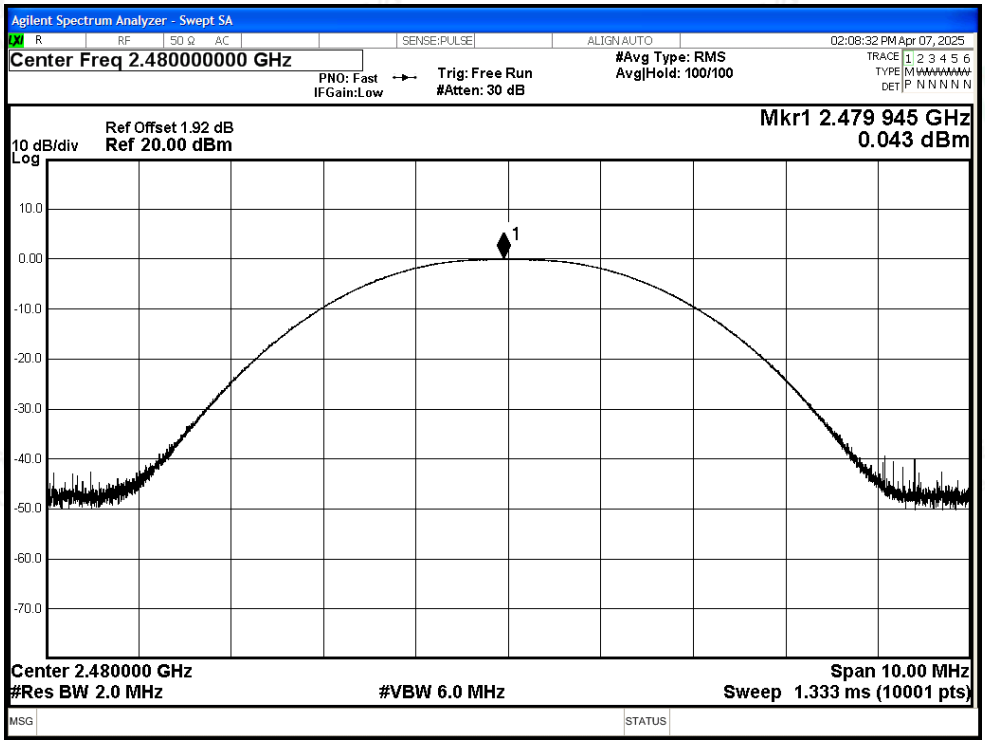
Power NVNT 2.4G 2402MHz Ant1



Power NVNT 2.4G 2426MHz Ant1



Power NVNT 2.4G 2480MHz Ant1

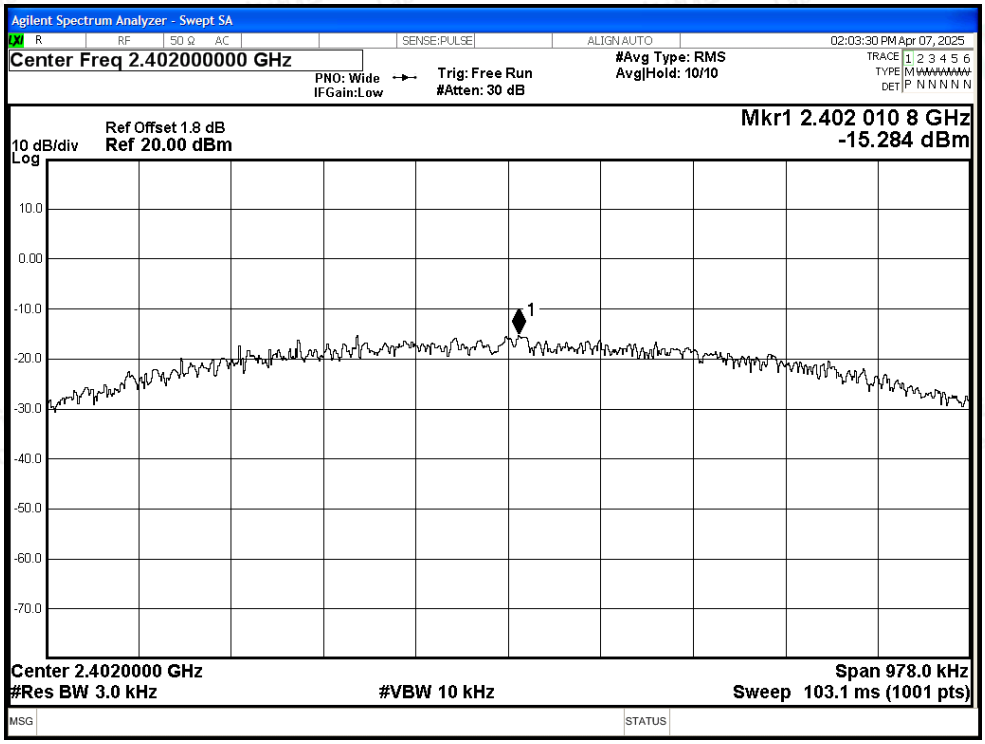


A.3 Maximum Power Spectral Density Level

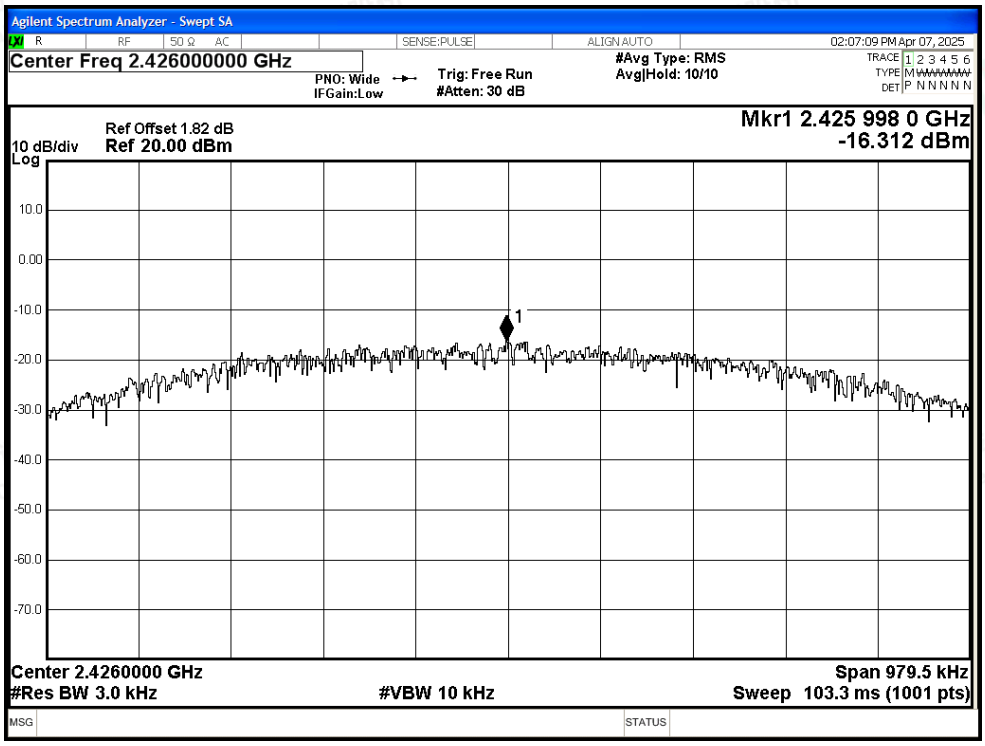
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	2.4G	2402	Ant1	-15.28	8	Pass
NVNT	2.4G	2426	Ant1	-16.31	8	Pass
NVNT	2.4G	2480	Ant1	-16.79	8	Pass

Test Graphs

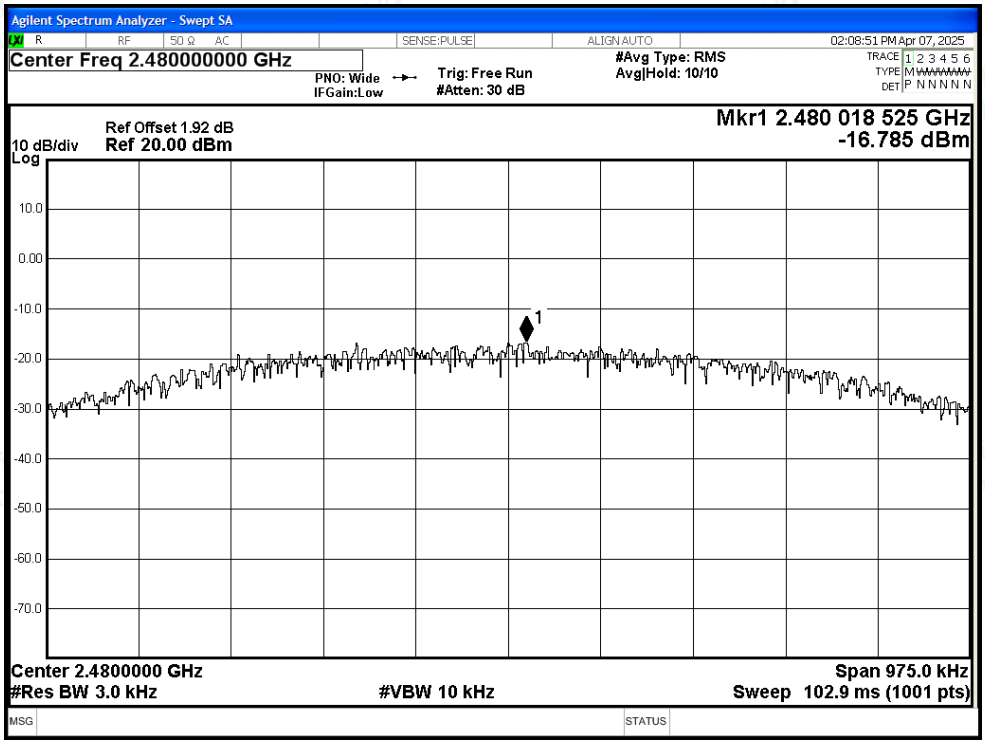
PSD NVNT 2.4G 2402MHz Ant1



PSD NVNT 2.4G 2426MHz Ant1



PSD NVNT 2.4G 2480MHz Ant1

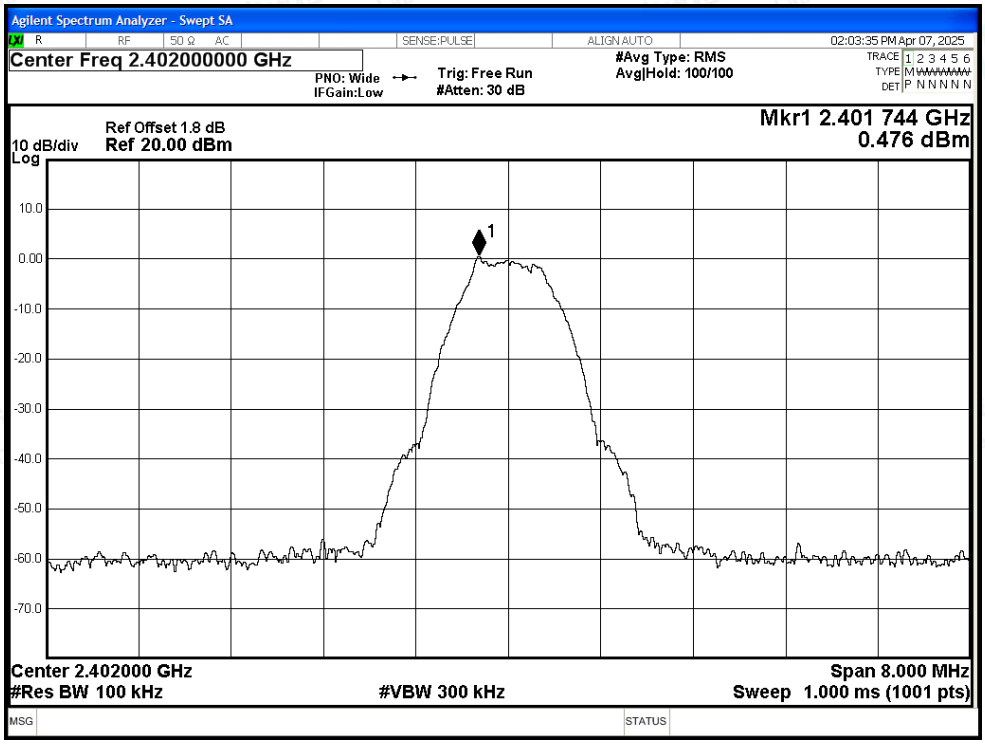


A.4 Band Edge

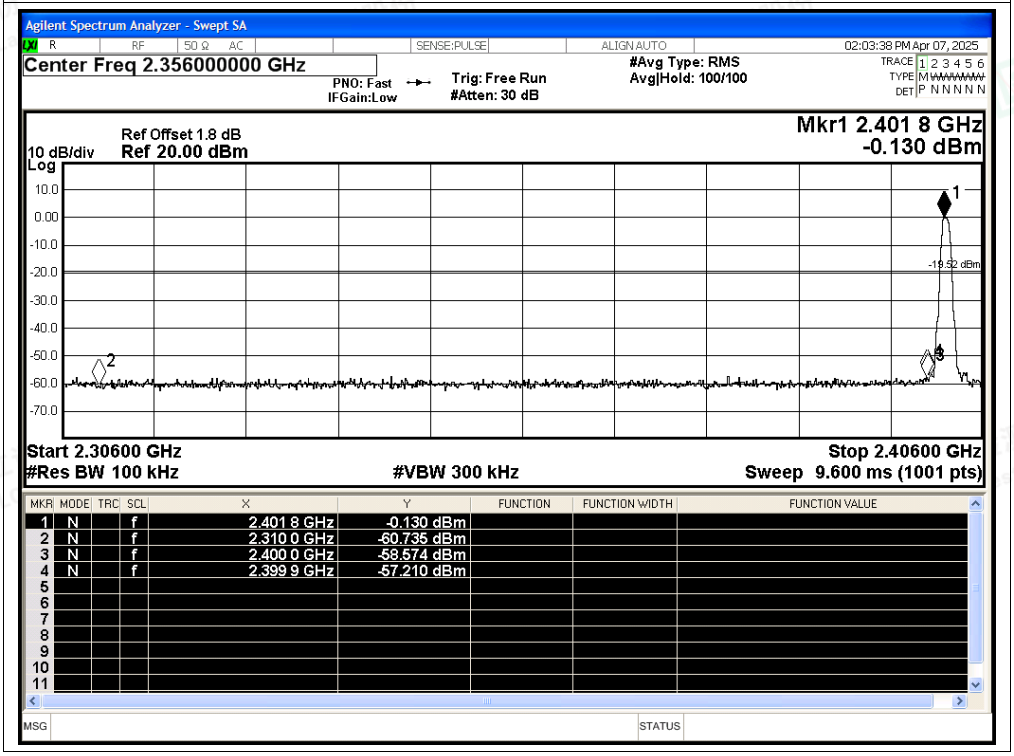
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-57.69	-20	Pass
NVNT	2.4G	2480	Ant1	-56.57	-20	Pass

Test Graphs

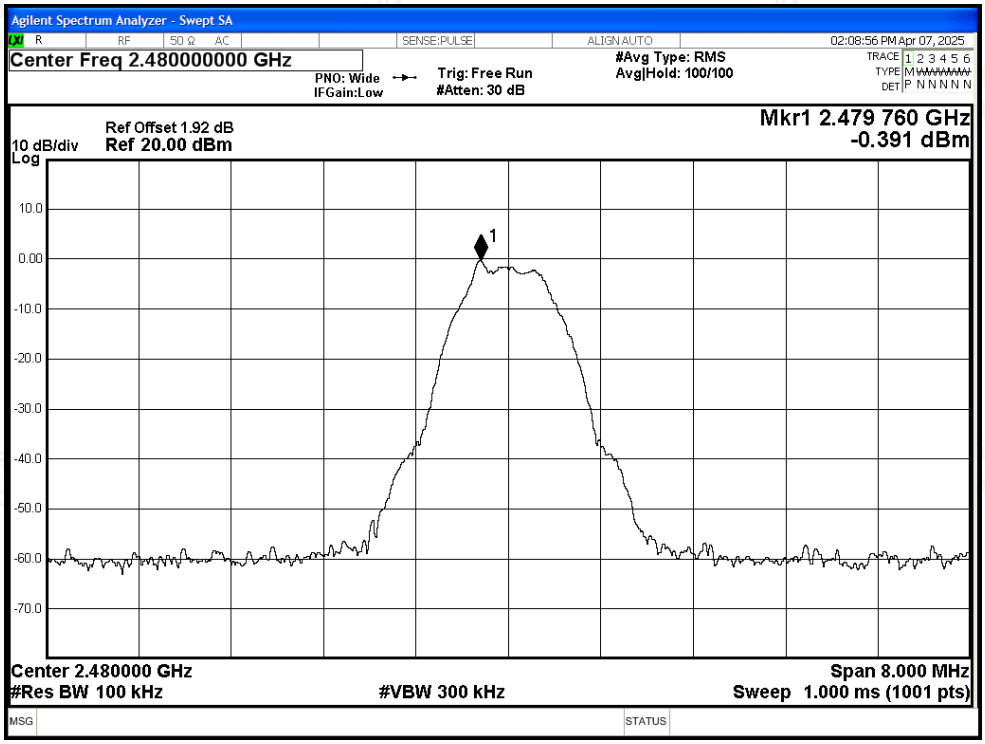
Band Edge NVNT 2.4G 2402MHz Ant1 Ref



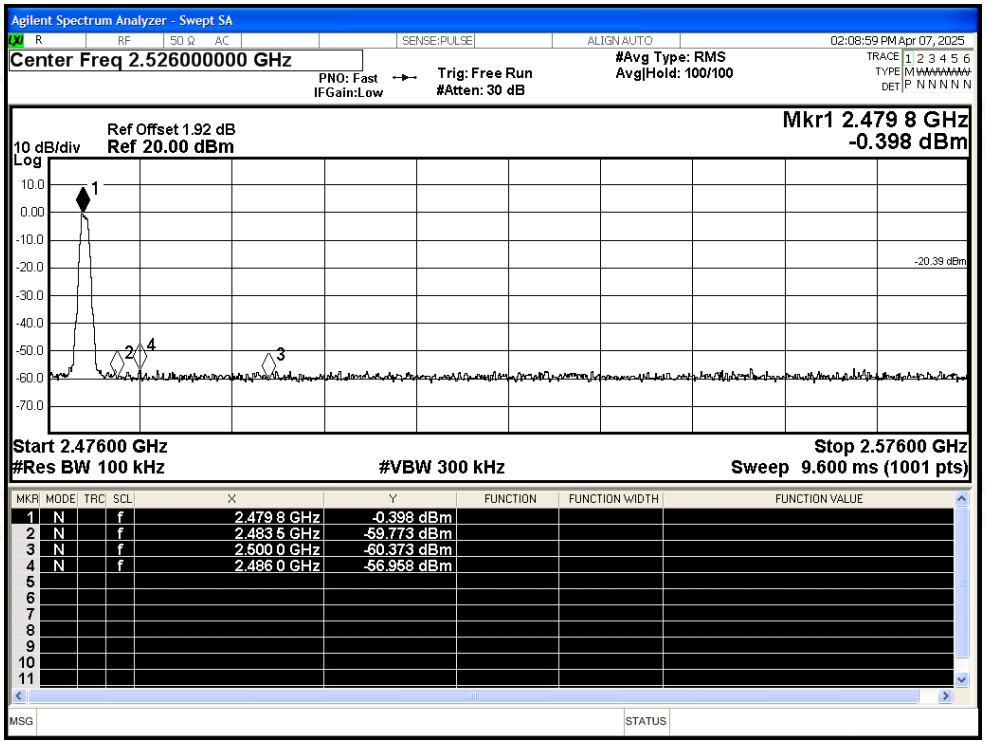
Band Edge NVNT 2.4G 2402MHz Ant1 Emission



Band Edge NVNT 2.4G 2480MHz Ant1 Ref



Band Edge NVNT 2.4G 2480MHz Ant1 Emission

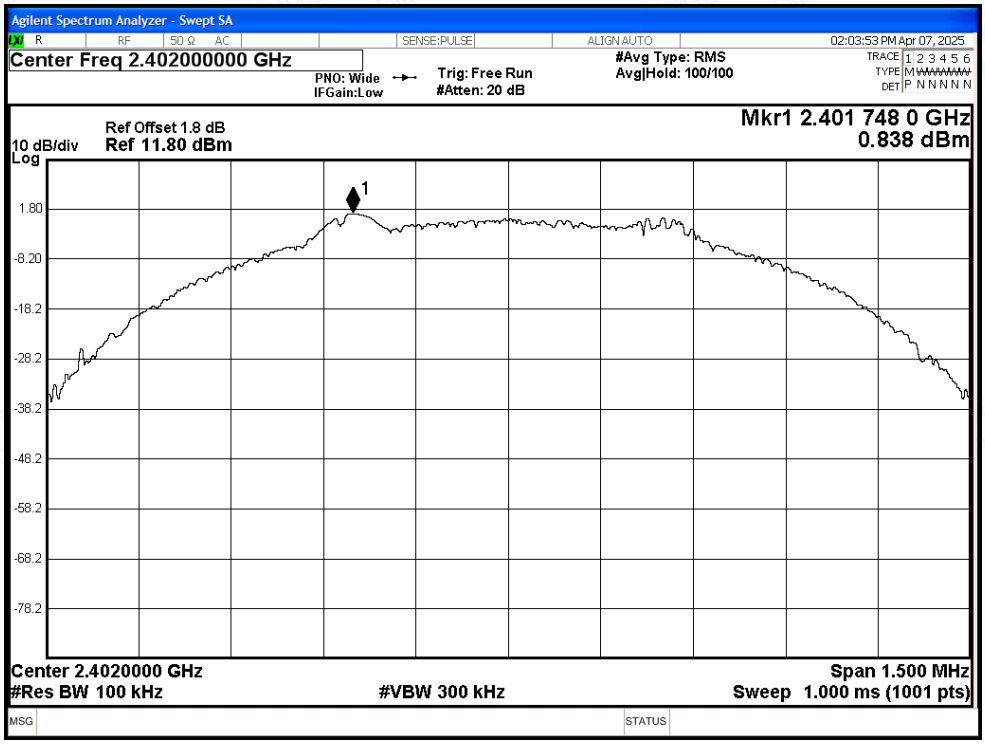


A.5 Conducted RF Spurious Emission

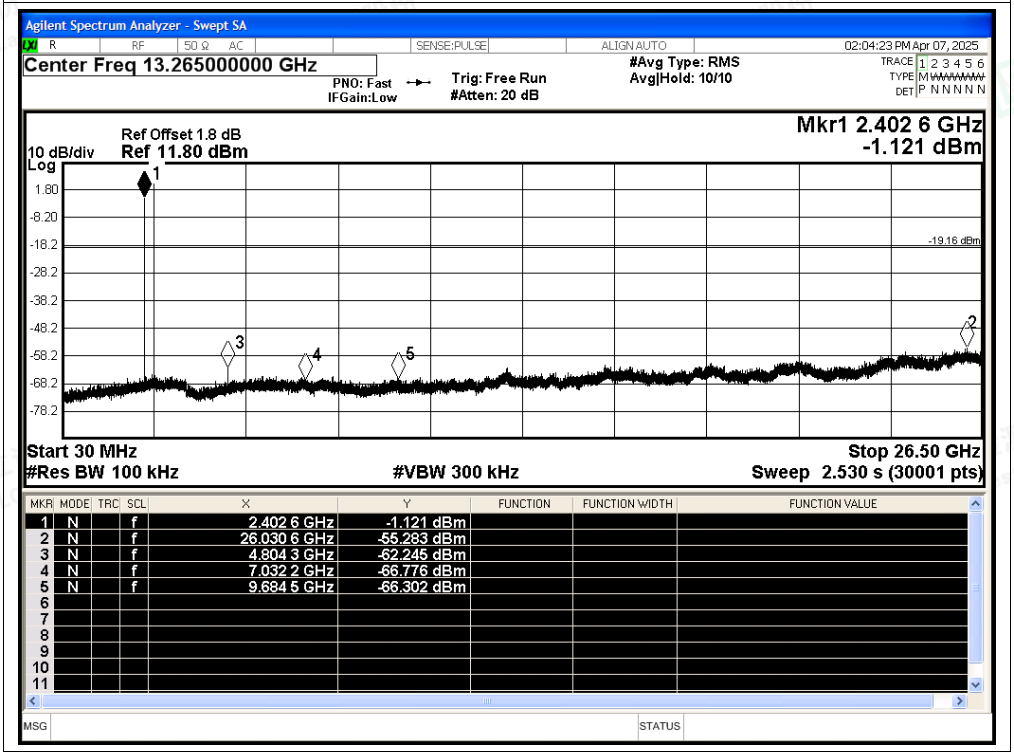
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	2.4G	2402	Ant1	-56.12	-20	Pass
NVNT	2.4G	2426	Ant1	-53.87	-20	Pass
NVNT	2.4G	2480	Ant1	-54.42	-20	Pass

Test Graphs

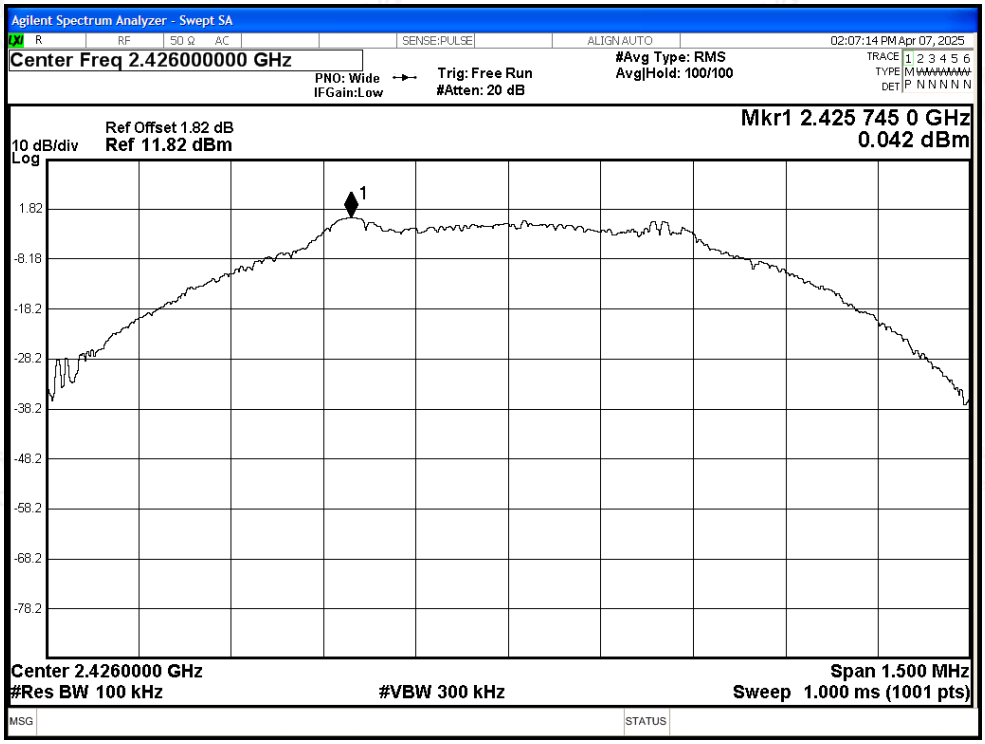
Tx. Spurious NVNT 2.4G 2402MHz Ant1 Ref



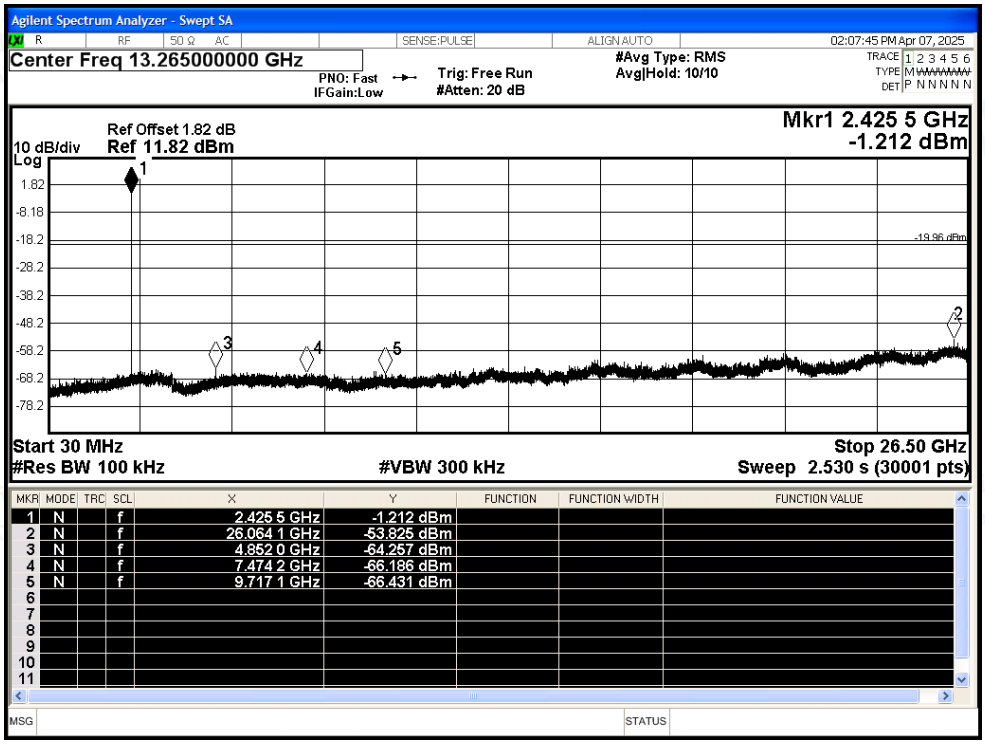
Tx. Spurious NVNT 2.4G 2402MHz Ant1 Emission



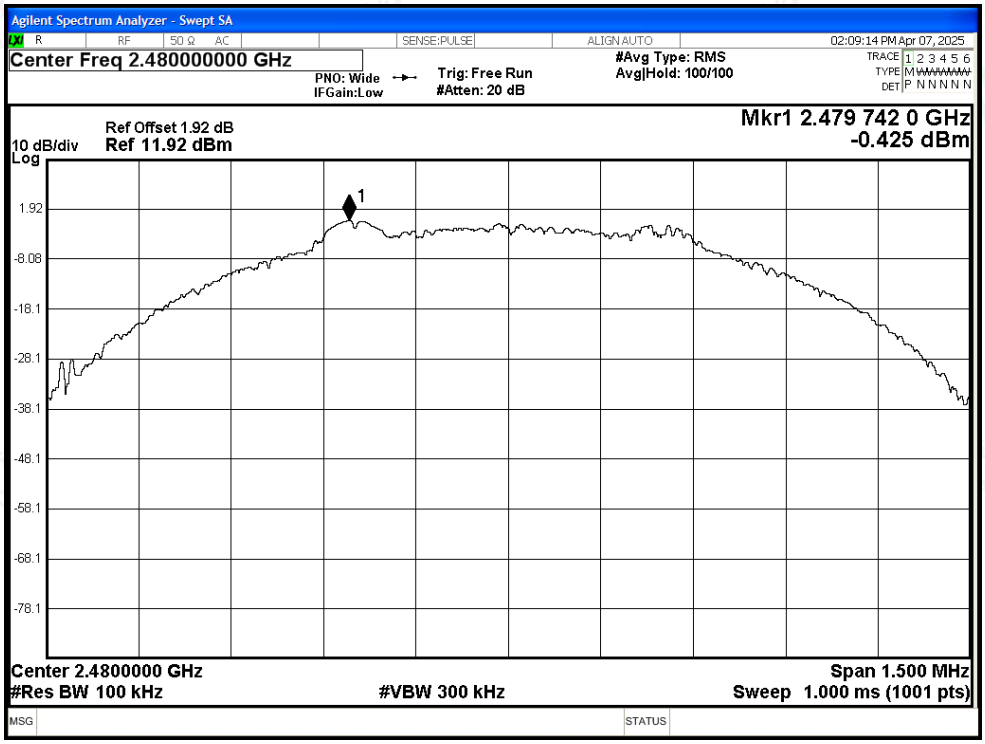
Tx. Spurious NVNT 2.4G 2426MHz Ant1 Ref



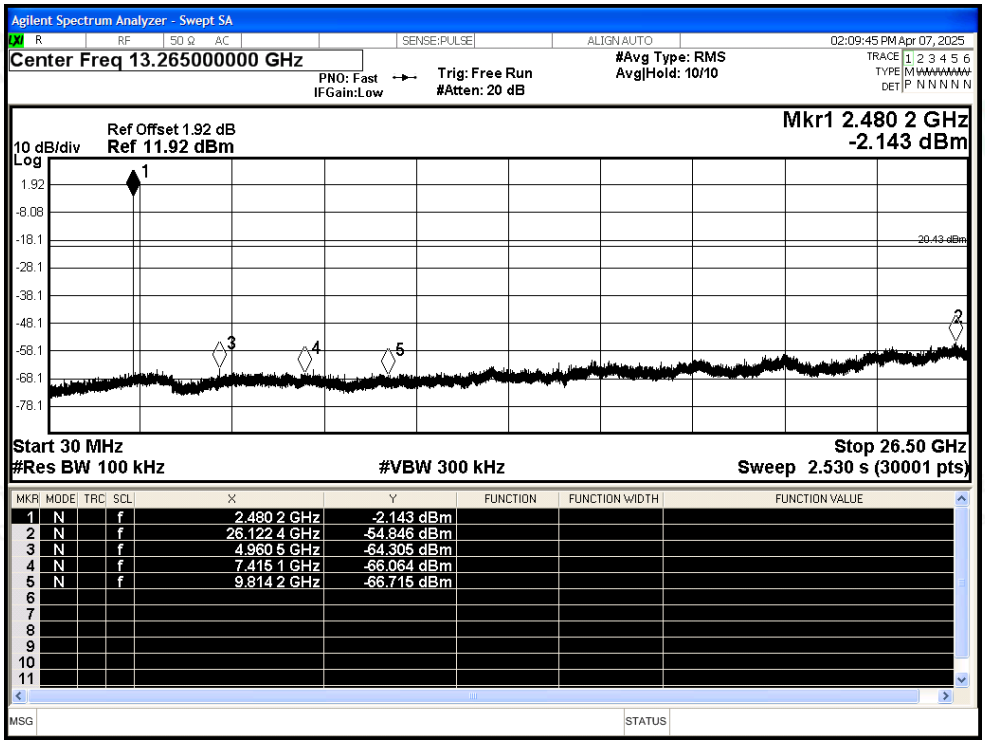
Tx. Spurious NVNT 2.4G 2426MHz Ant1 Emission



Tx. Spurious NVNT 2.4G 2480MHz Ant1 Ref



Tx. Spurious NVNT 2.4G 2480MHz Ant1 Emission



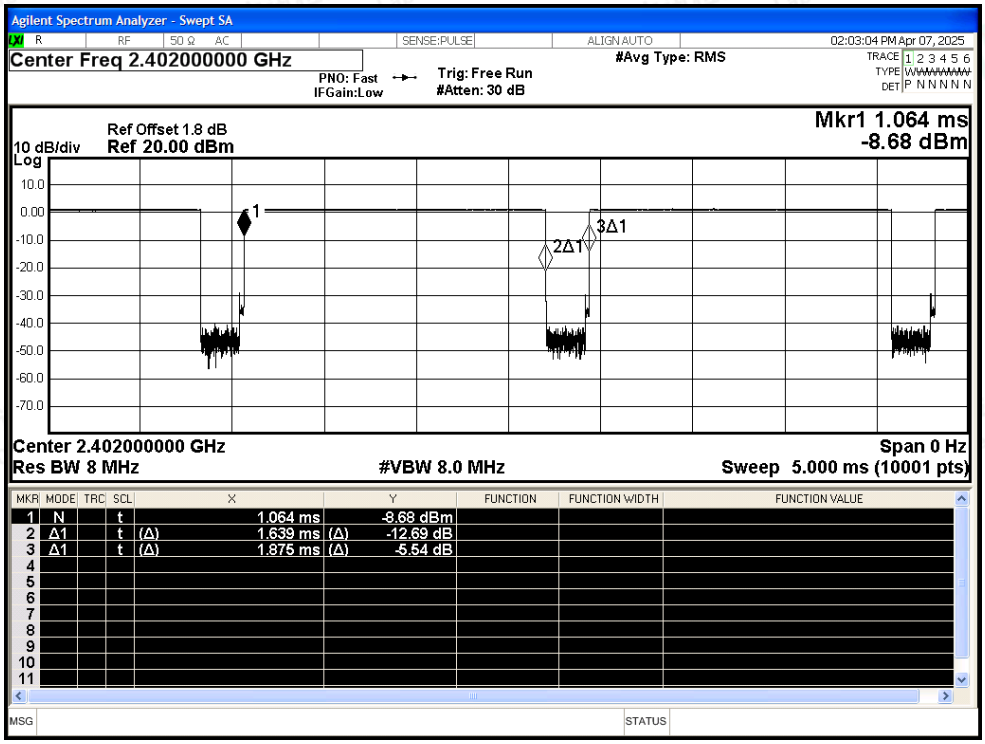
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N		f	2.480 2 GHz	-2.143 dBm			
2	N		f	26.122 4 GHz	-54.846 dBm			
3	N		f	4.960 5 GHz	-64.305 dBm			
4	N		f	7.415 1 GHz	-66.064 dBm			
5	N		f	9.814 2 GHz	-66.715 dBm			
6								
7								
8								
9								
10								
11								

A.6 Duty Cycle

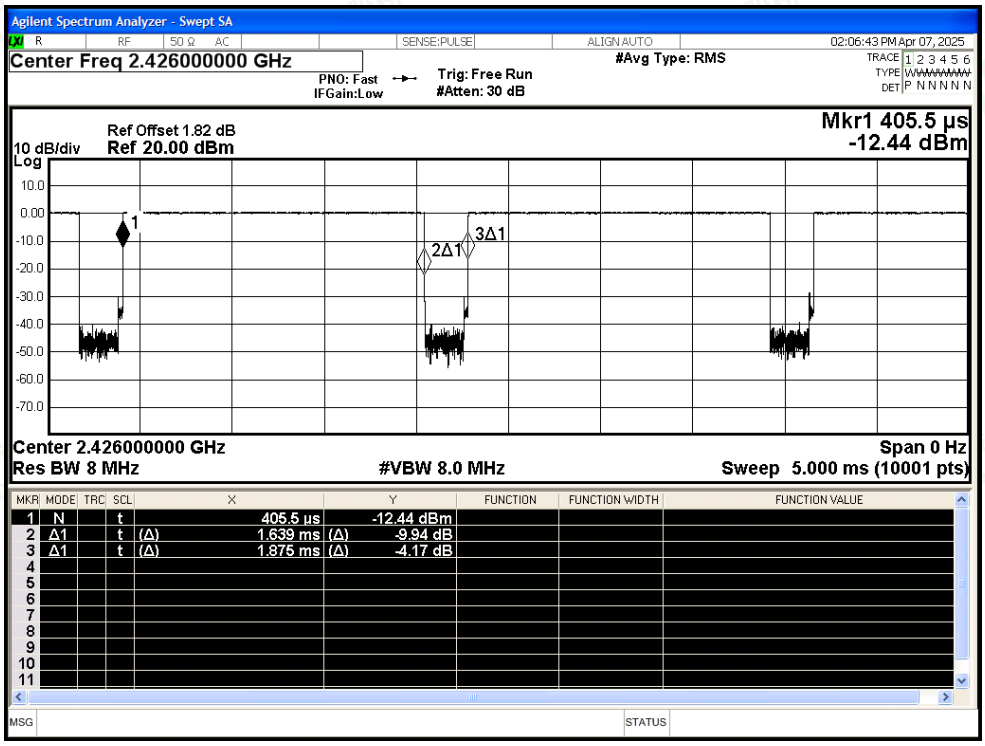
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	2.4G	2402	Ant1	87.39	0.59	0.61
NVNT	2.4G	2426	Ant1	87.39	0.59	0.61
NVNT	2.4G	2480	Ant1	87.39	0.59	0.61

Test Graphs

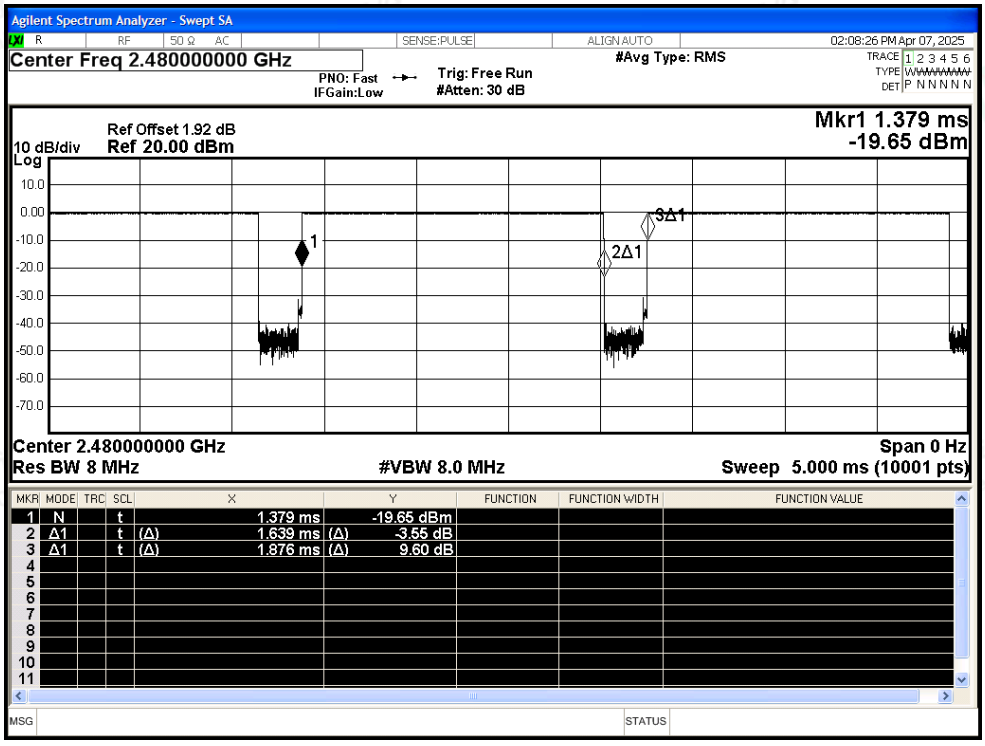
Duty Cycle NVNT 2.4G 2402MHz Ant1



Duty Cycle NVNT 2.4G 2426MHz Ant1



Duty Cycle NVNT 2.4G 2480MHz Ant1

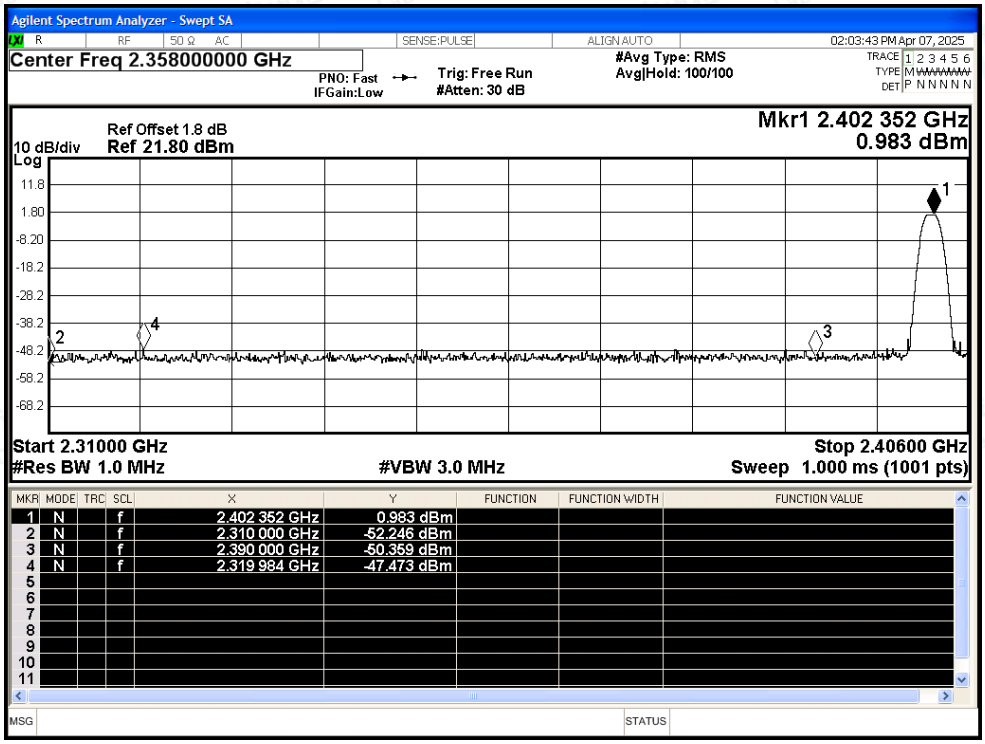


A.7 Restrict Band

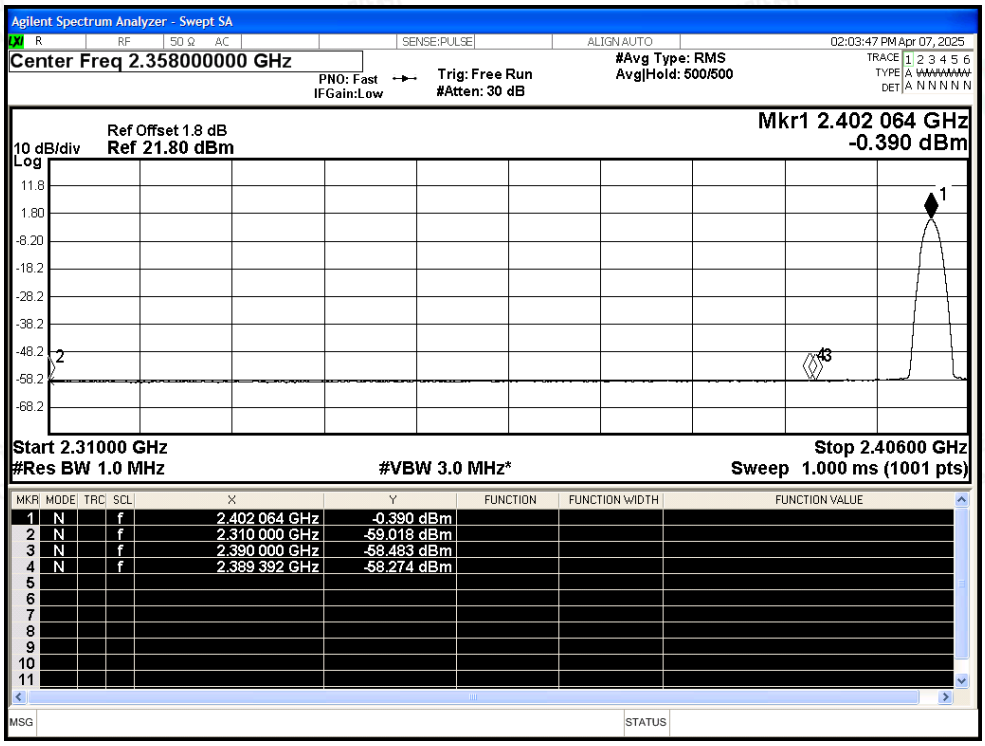
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	2.4G	2402	Ant1	2310	-52.25	2.42	-	45.43	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2310	-59.02	2.42	0.59	39.25	Average	54	Pass
NVNT	2.4G	2402	Ant1	2319.984	-47.47	2.42	-	50.21	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2389.392	-58.27	2.42	0.59	40.00	Average	54	Pass
NVNT	2.4G	2402	Ant1	2390	-50.36	2.42	-	47.32	Peak	74	Pass
NVNT	2.4G	2402	Ant1	2390	-58.48	2.42	0.59	39.79	Average	54	Pass
NVNT	2.4G	2480	Ant1	2483.5	-51.09	2.42	-	46.59	Peak	74	Pass
NVNT	2.4G	2480	Ant1	2483.5	-57.53	2.42	0.59	40.74	Average	54	Pass
NVNT	2.4G	2480	Ant1	2486.536	-44.88	2.42	-	52.80	Peak	74	Pass
NVNT	2.4G	2480	Ant1	2483.512	-57.53	2.42	0.59	40.74	Average	54	Pass
NVNT	2.4G	2480	Ant1	2500	-50.73	2.42	-	46.95	Peak	74	Pass
NVNT	2.4G	2480	Ant1	2500	-58.12	2.42	0.59	40.15	Average	54	Pass

Test Graphs

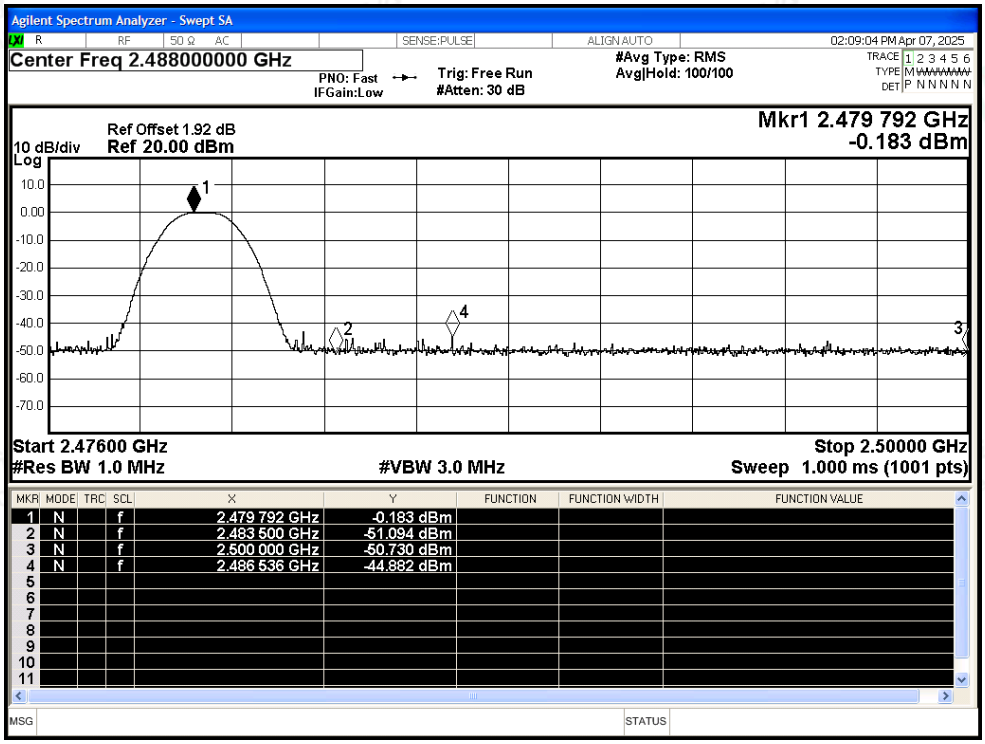
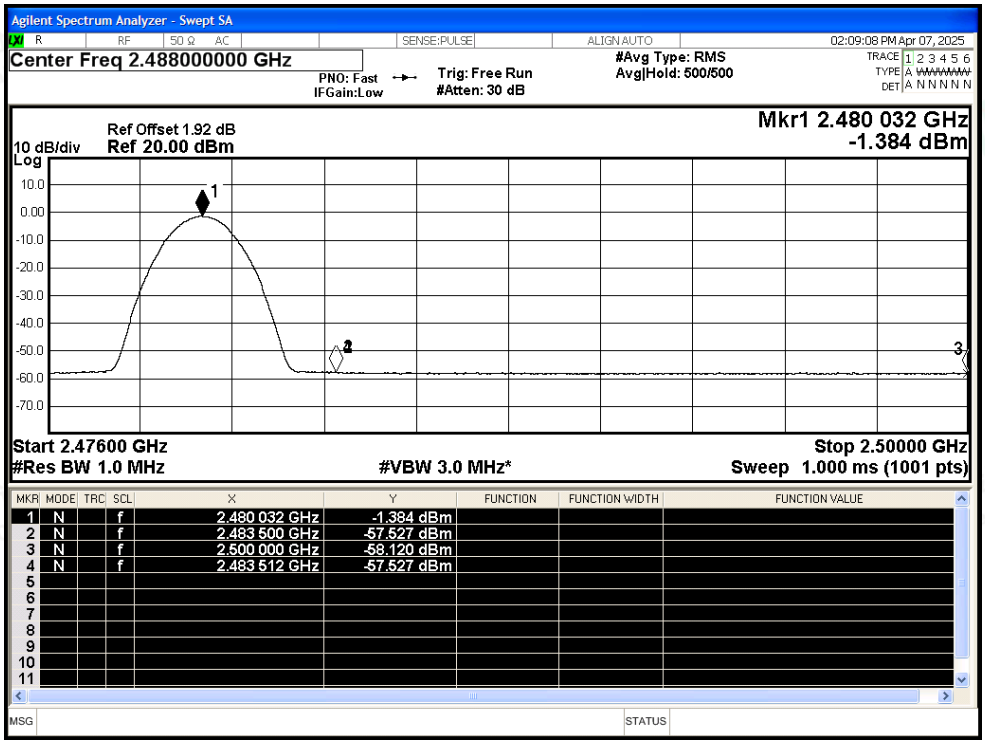
Restrict Band NVNT 2.4G 2402MHz Ant1 Peak



Restrict Band NVNT 2.4G 2402MHz Ant1 Average



Restrict Band NVNT 2.4G 2480MHz Ant1 Peak



Restrict Band NVNT 2.4G 2480MHz Ant1 Average