Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: WIFI Camera

Test Model: WCM-FWIP4L-BS

Environmental Conditions

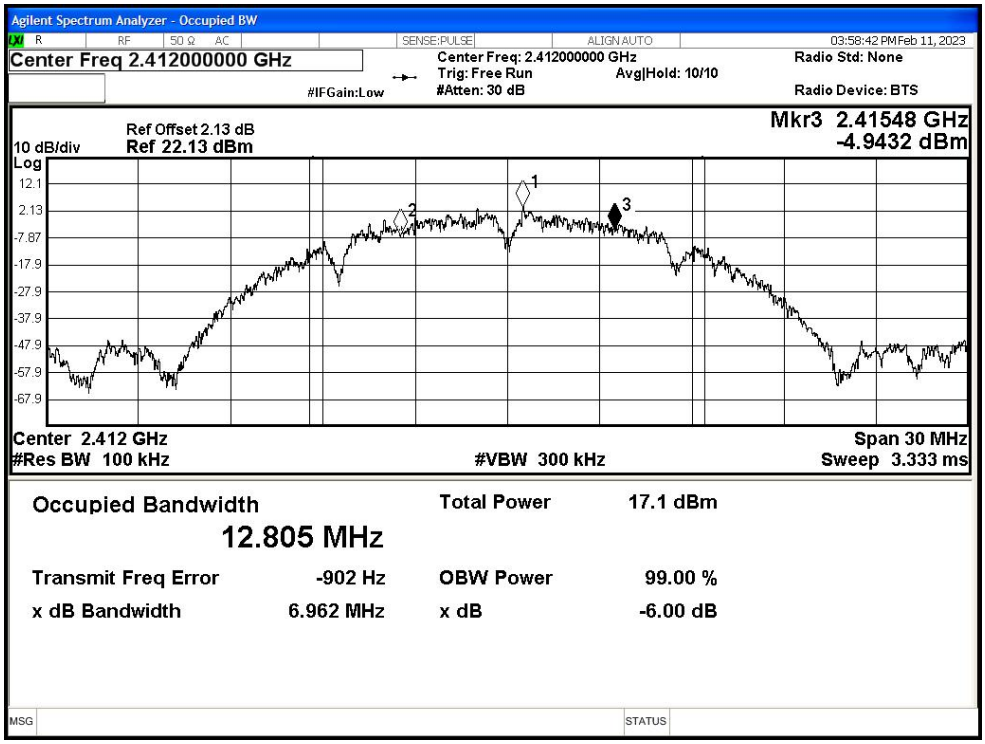
Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Jack Cheng
Supervised by:	Li huan

A.1 -6dB Bandwidth

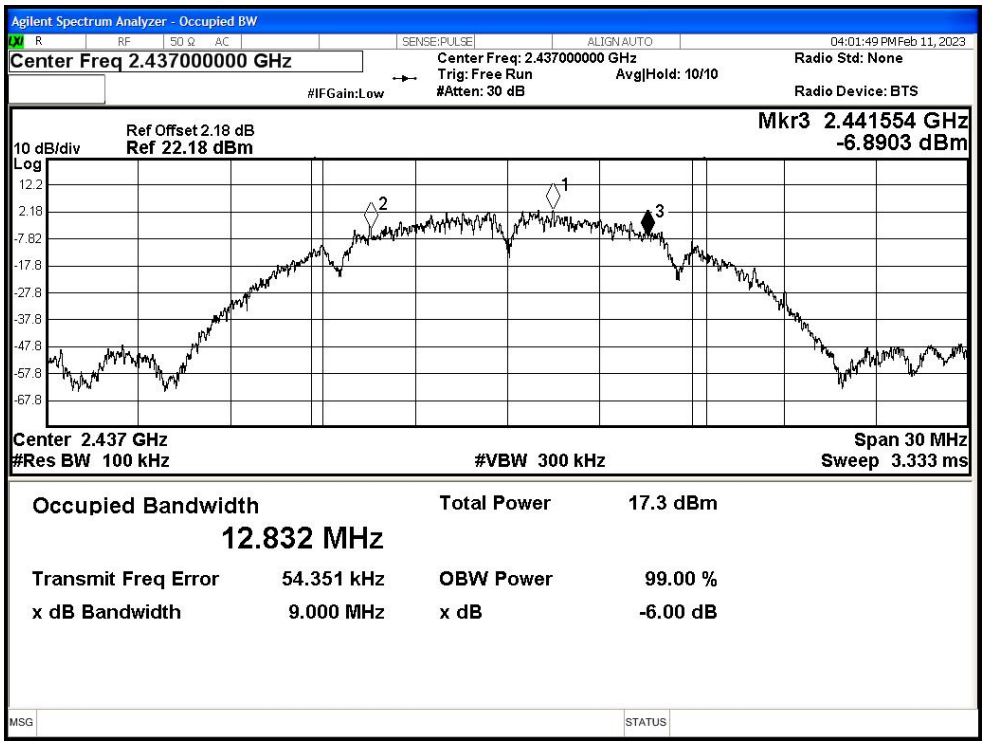
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	6.962	>=0.5	Pass
NVNT	b	2437	Ant1	9	>=0.5	Pass
NVNT	b	2462	Ant1	7.072	>=0.5	Pass
NVNT	g	2412	Ant1	16.085	>=0.5	Pass
NVNT	g	2437	Ant1	15.254	>=0.5	Pass
NVNT	g	2462	Ant1	12.543	>=0.5	Pass
NVNT	n20	2412	Ant1	12.645	>=0.5	Pass
NVNT	n20	2437	Ant1	17.282	>=0.5	Pass
NVNT	n20	2462	Ant1	15.19	>=0.5	Pass
NVNT	n40	2422	Ant1	35.12	>=0.5	Pass
NVNT	n40	2437	Ant1	35.097	>=0.5	Pass
NVNT	n40	2452	Ant1	35.128	>=0.5	Pass

Test Graphs

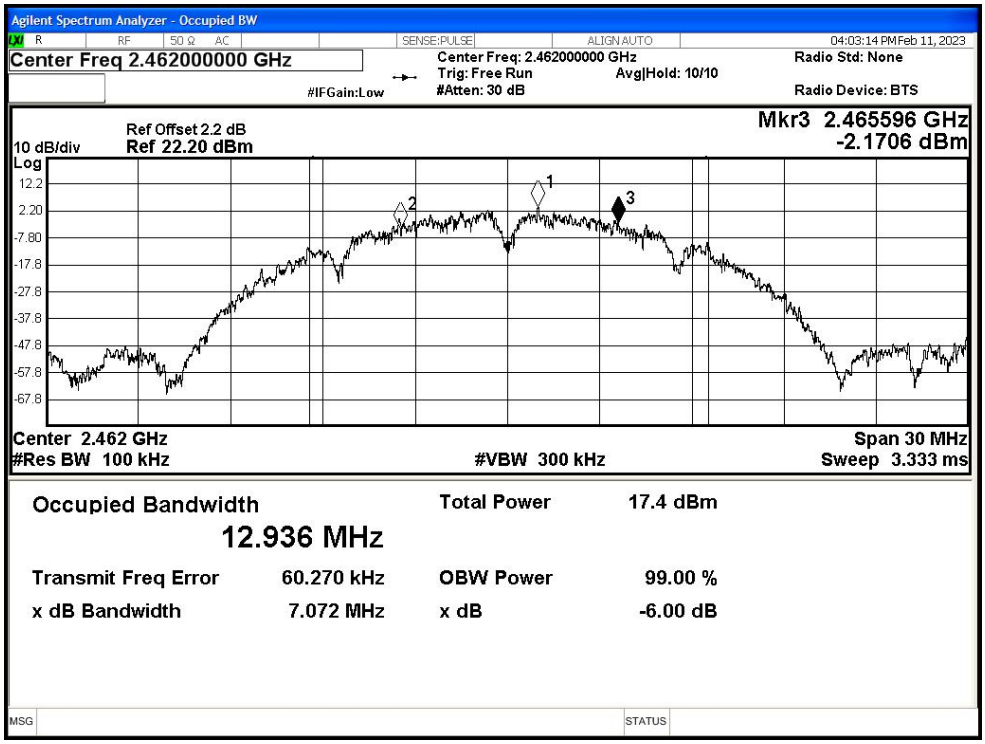
-6dB Bandwidth NVNT b 2412MHz Ant1



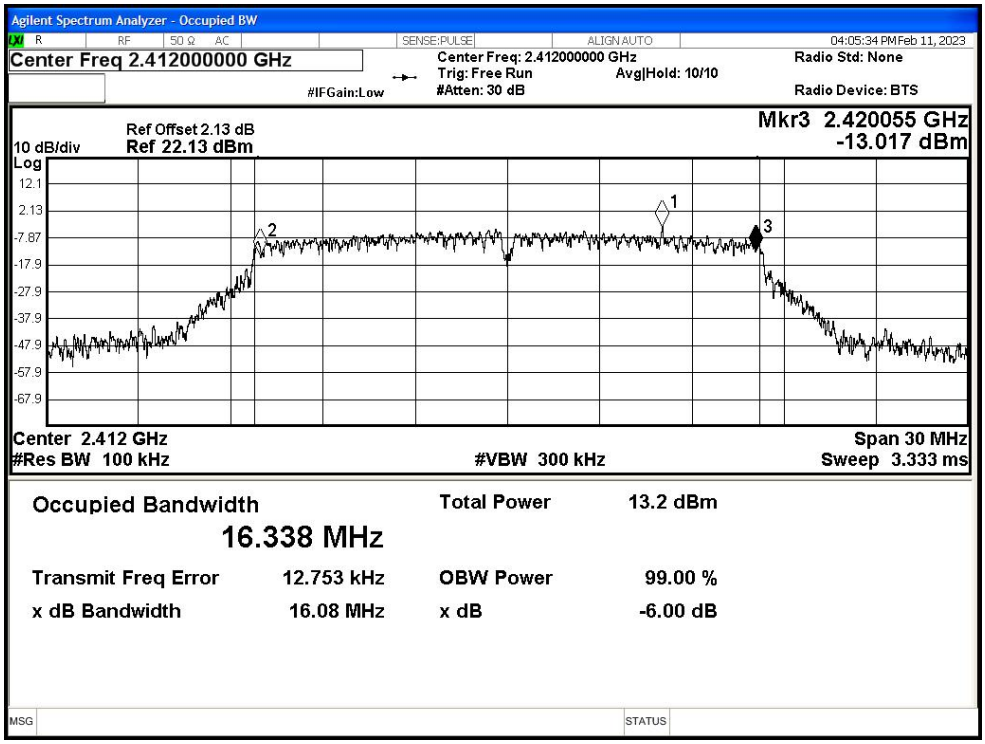
-6dB Bandwidth NVNT b 2437MHz Ant1



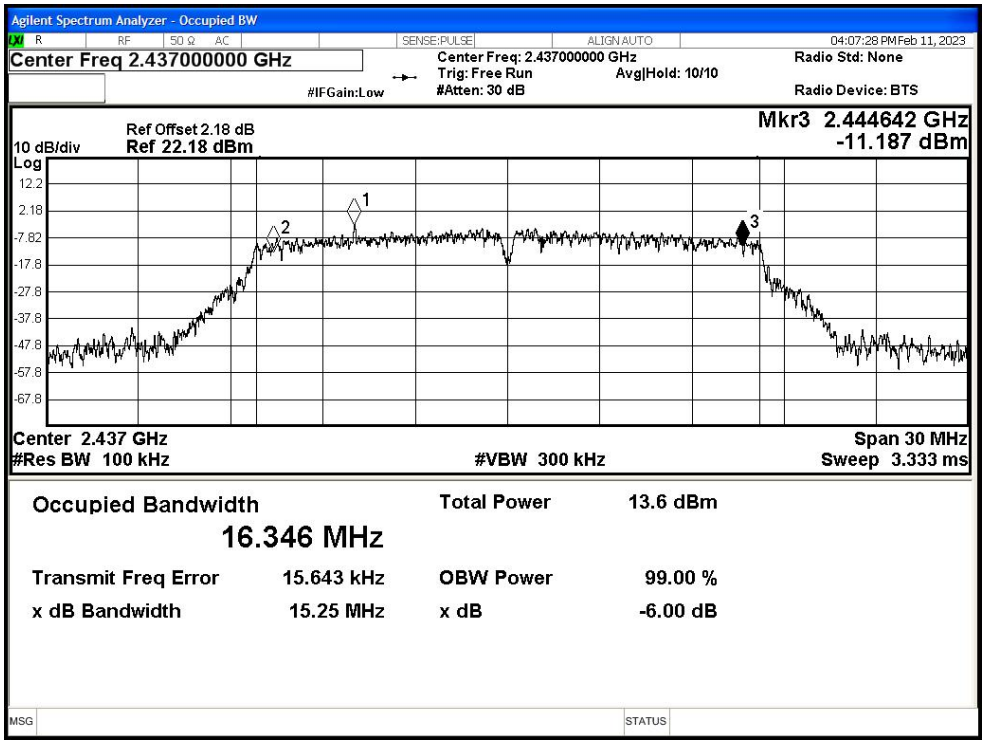
-6dB Bandwidth NVNT b 2462MHz Ant1



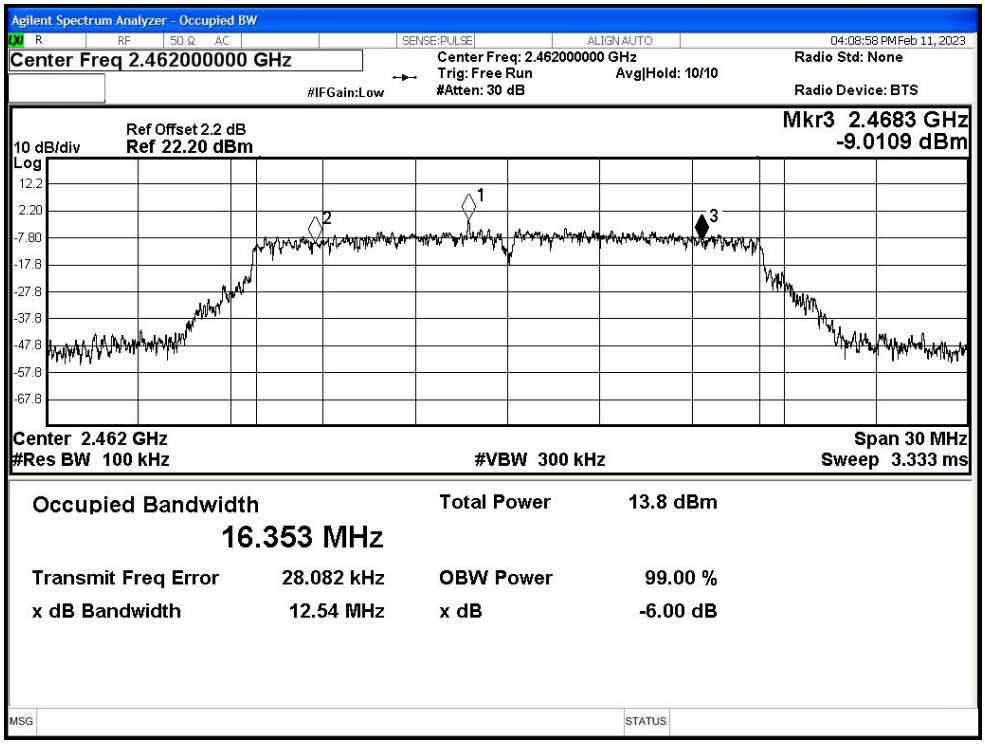
-6dB Bandwidth NVNT g 2412MHz Ant1



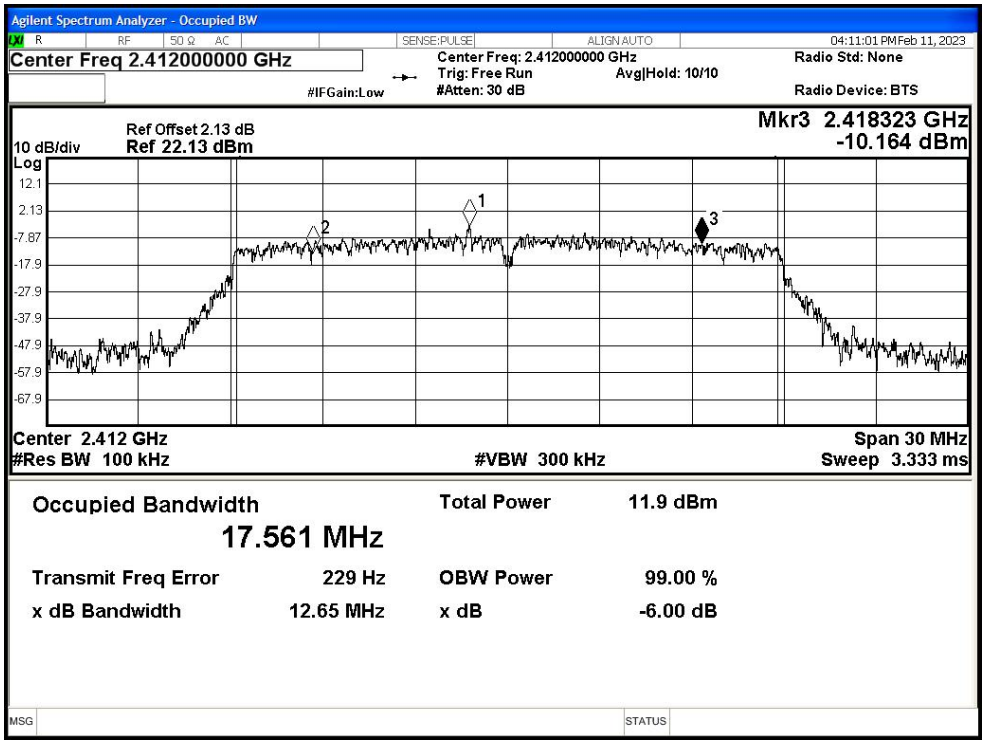
-6dB Bandwidth NVNT g 2437MHz Ant1



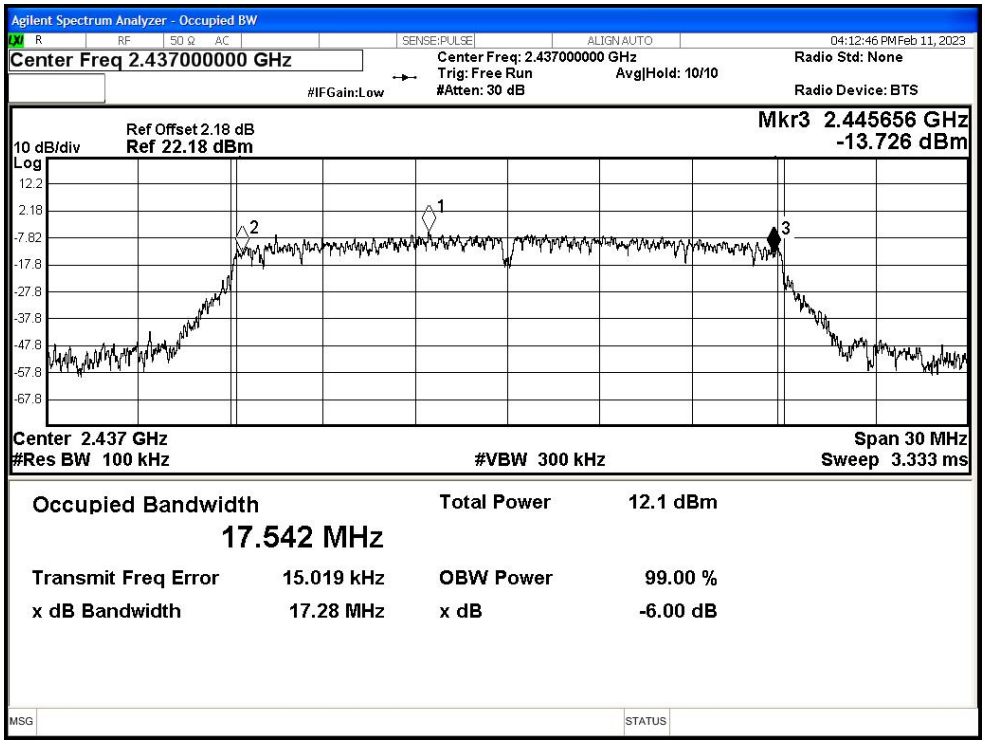
-6dB Bandwidth NVNT g 2462MHz Ant1



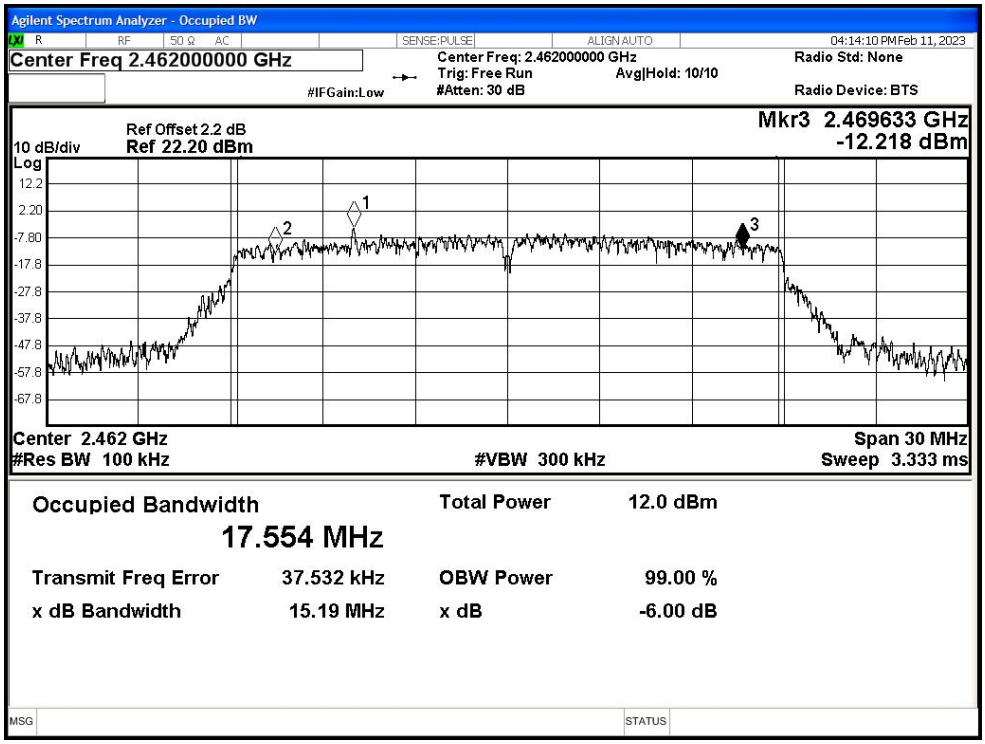
-6dB Bandwidth NVNT n20 2412MHz Ant1



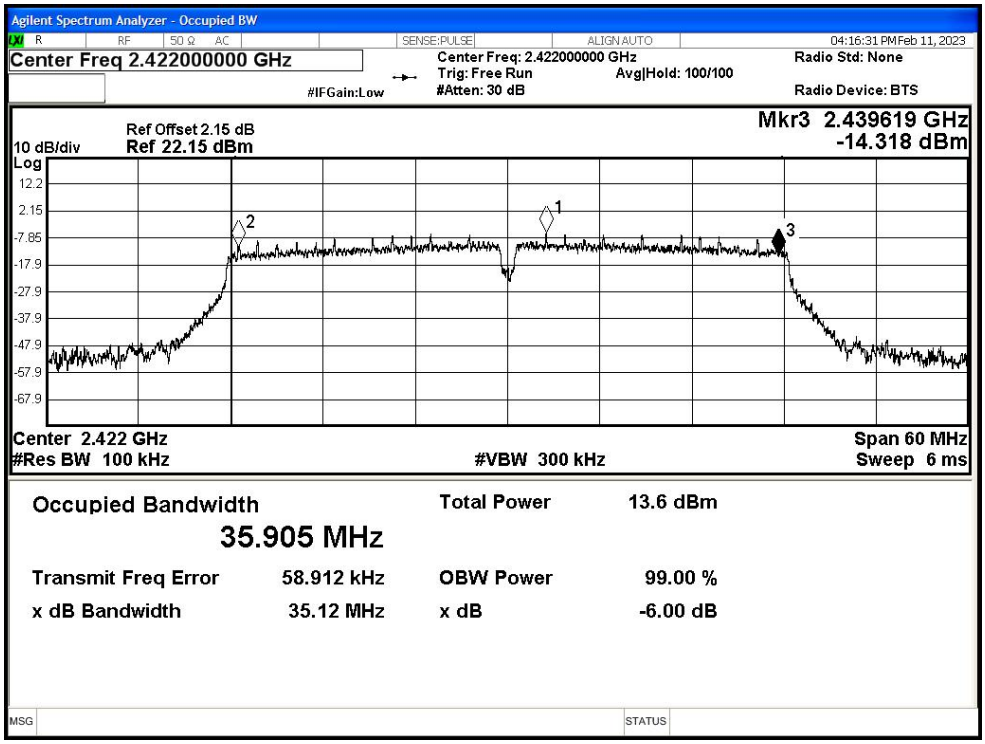
-6dB Bandwidth NVNT n20 2437MHz Ant1



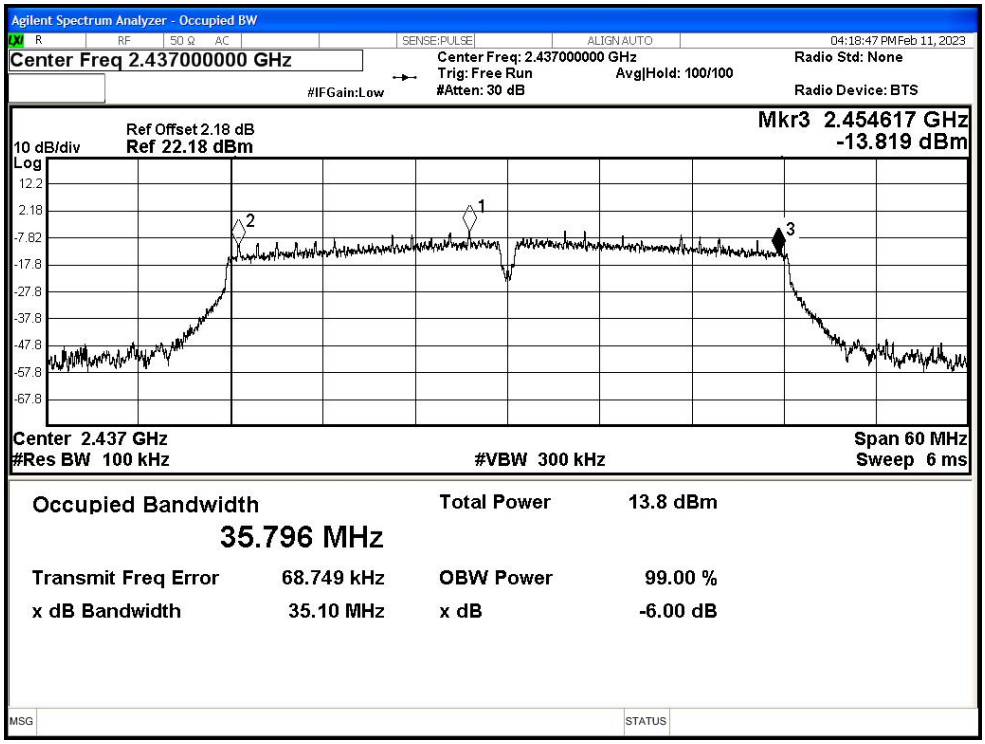
-6dB Bandwidth NVNT n20 2462MHz Ant1



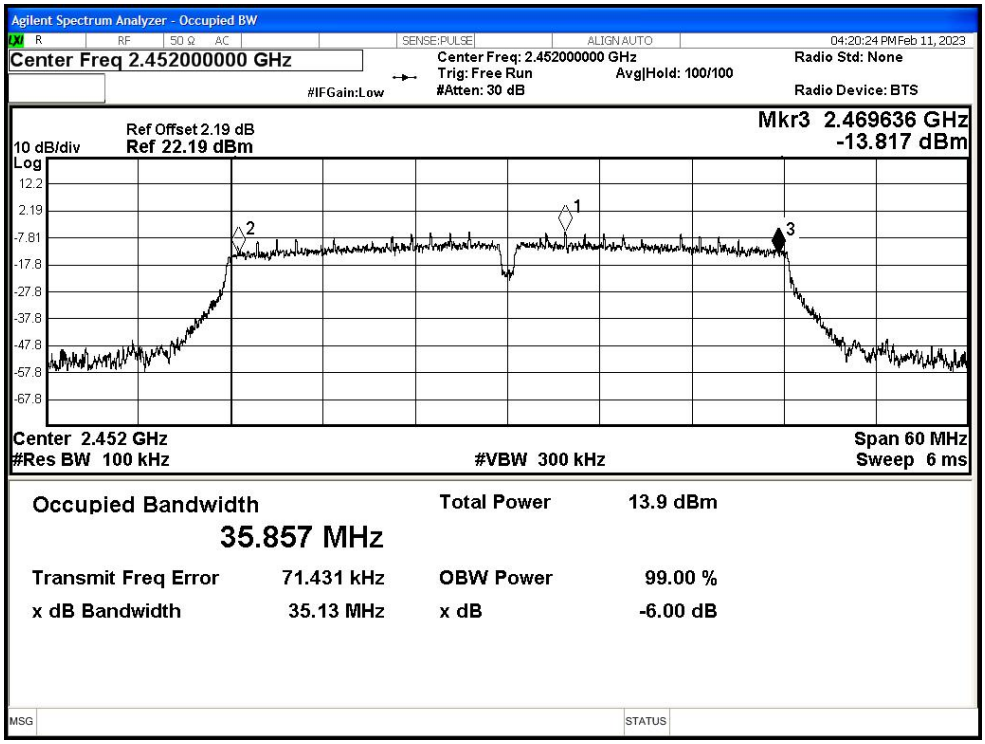
-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1



A.2 Maximum Conducted Output Power

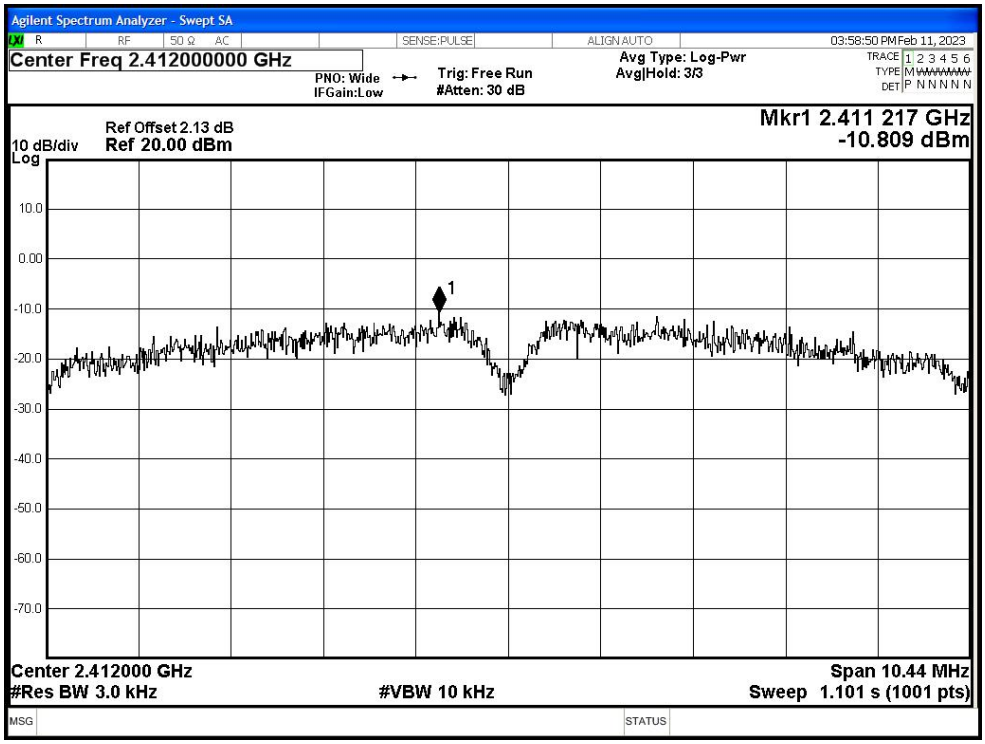
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	13.41	30	Pass
NVNT	b	2437	Ant1	13.95	30	Pass
NVNT	b	2462	Ant1	14.11	30	Pass
NVNT	g	2412	Ant1	11.92	30	Pass
NVNT	g	2437	Ant1	12.38	30	Pass
NVNT	g	2462	Ant1	12.63	30	Pass
NVNT	n20	2412	Ant1	10.48	30	Pass
NVNT	n20	2437	Ant1	10.78	30	Pass
NVNT	n20	2462	Ant1	12.61	30	Pass
NVNT	n40	2422	Ant1	12.05	30	Pass
NVNT	n40	2437	Ant1	12.23	30	Pass
NVNT	n40	2452	Ant1	12.3	30	Pass

A.3 Maximum Power Spectral Density Level

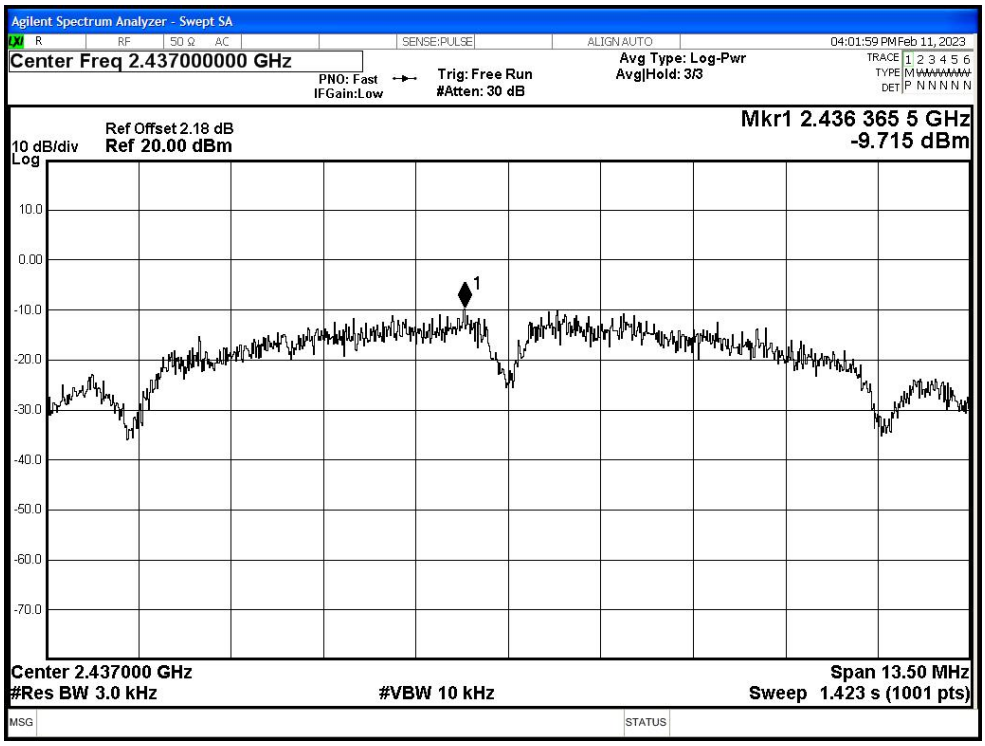
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-10.81	8	Pass
NVNT	b	2437	Ant1	-9.72	8	Pass
NVNT	b	2462	Ant1	-10.7	8	Pass
NVNT	g	2412	Ant1	-15.46	8	Pass
NVNT	g	2437	Ant1	-15.39	8	Pass
NVNT	g	2462	Ant1	-14.21	8	Pass
NVNT	n20	2412	Ant1	-17.14	8	Pass
NVNT	n20	2437	Ant1	-16.99	8	Pass
NVNT	n20	2462	Ant1	-17.35	8	Pass
NVNT	n40	2422	Ant1	-20.68	8	Pass
NVNT	n40	2437	Ant1	-20.32	8	Pass
NVNT	n40	2452	Ant1	-19.66	8	Pass

Test Graphs

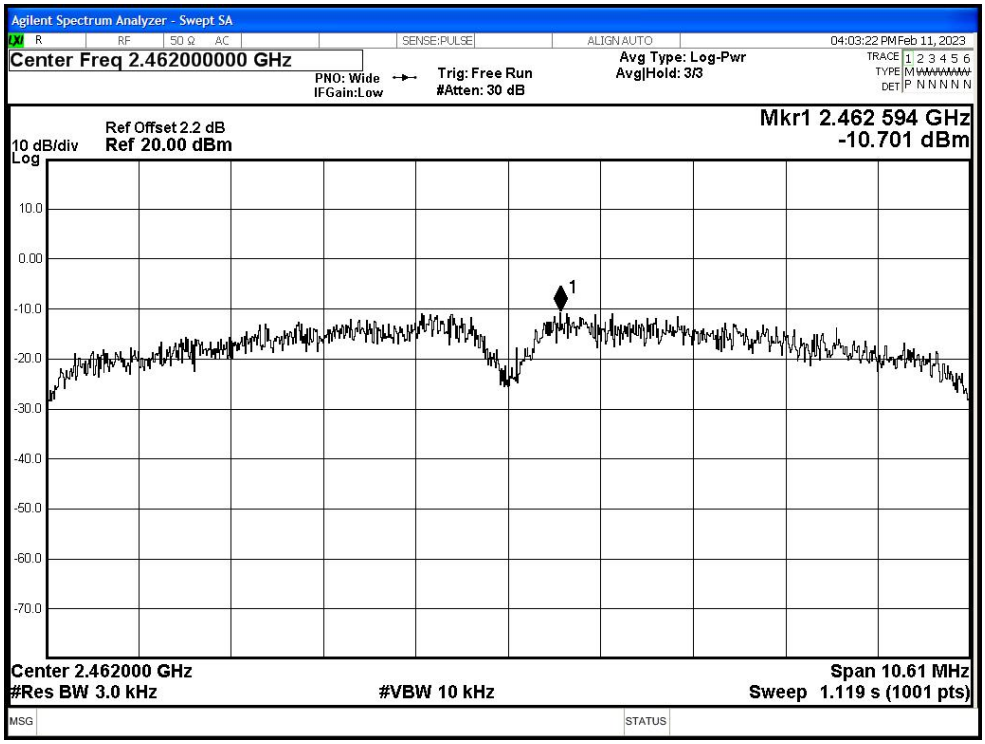
PSD NVNT b 2412MHz Ant1



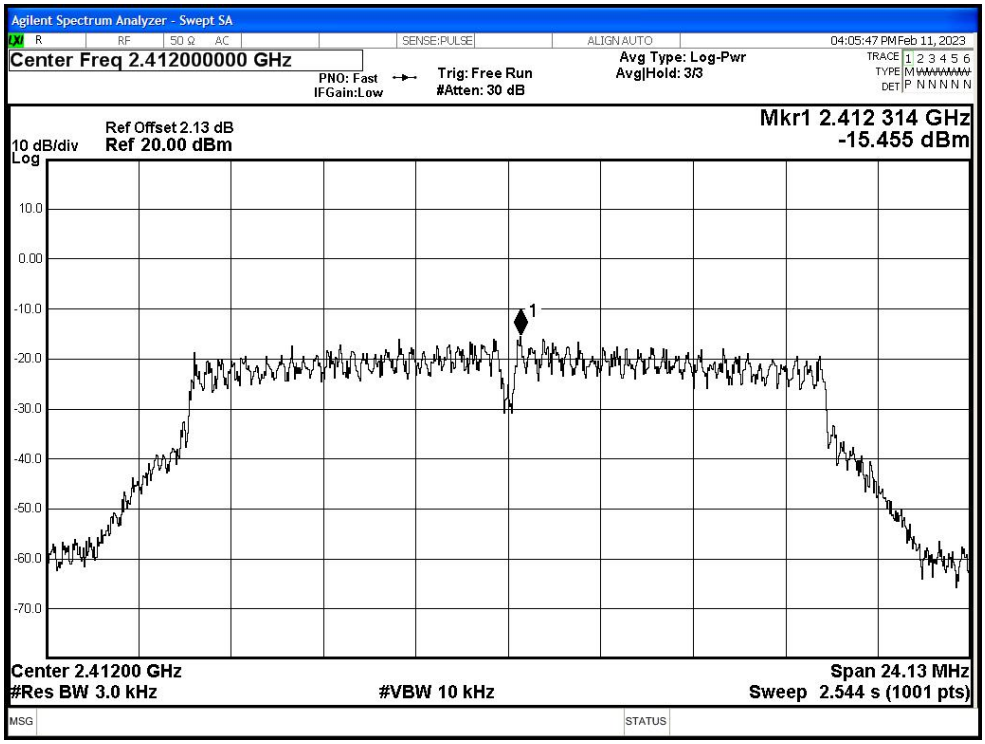
PSD NVNT b 2437MHz Ant1



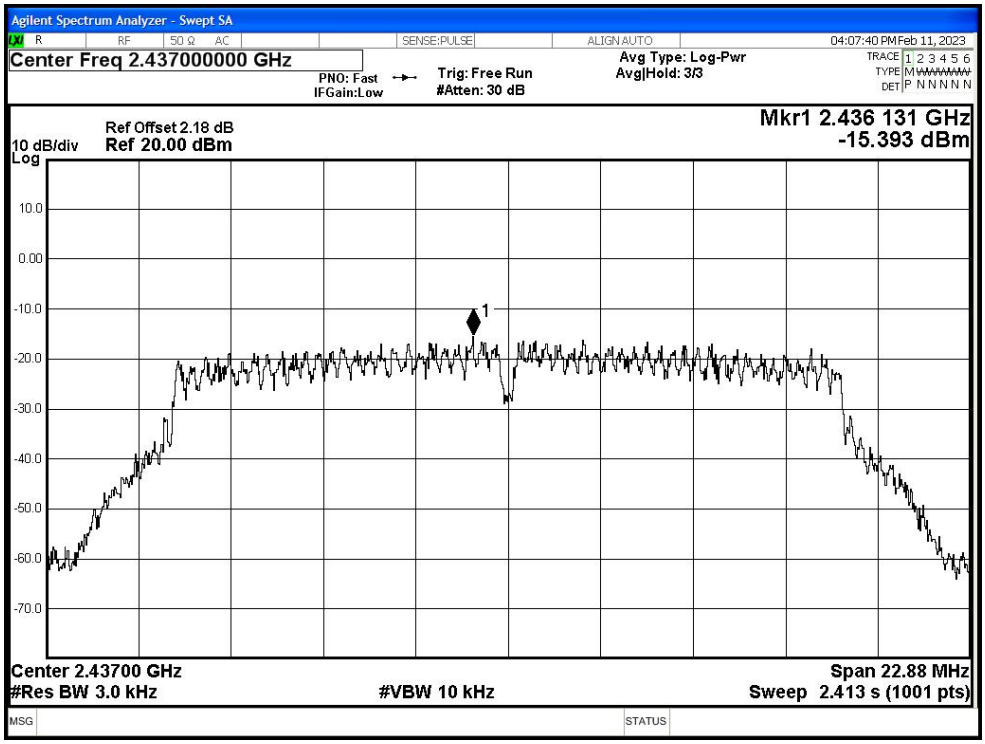
PSD NVNT b 2462MHz Ant1



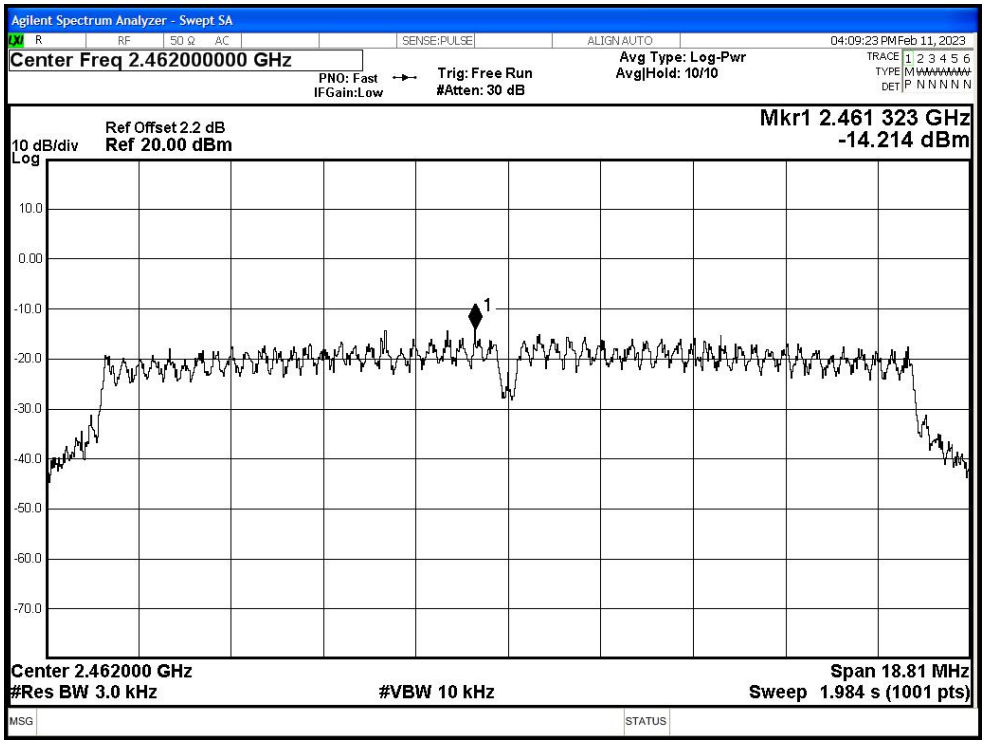
PSD NVNT g 2412MHz Ant1



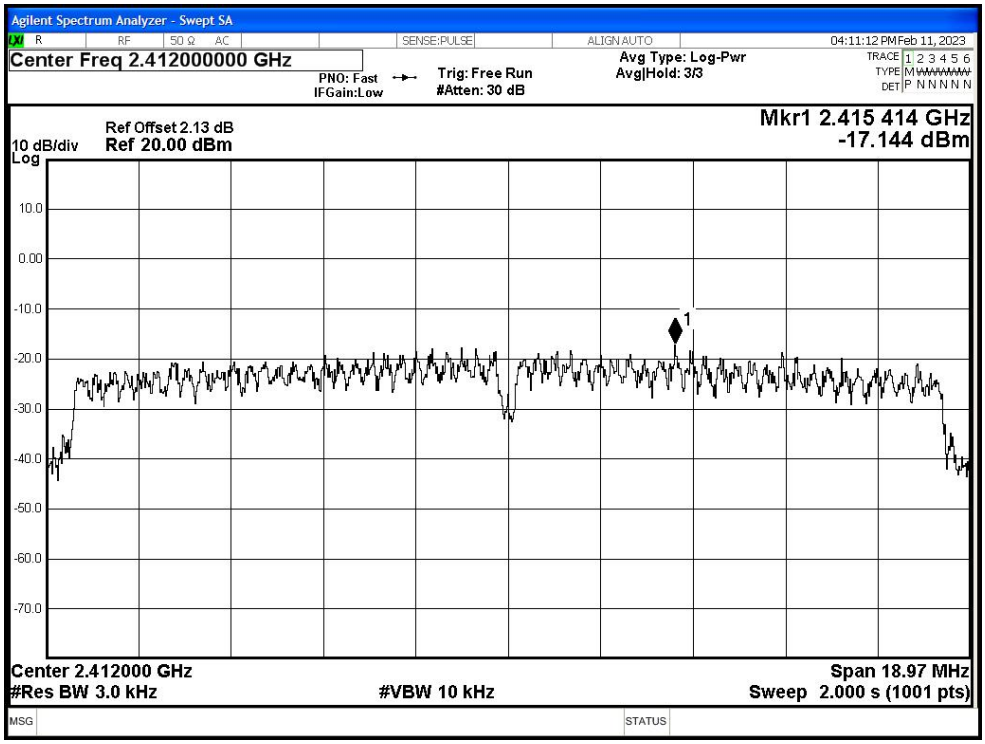
PSD NVNT g 2437MHz Ant1



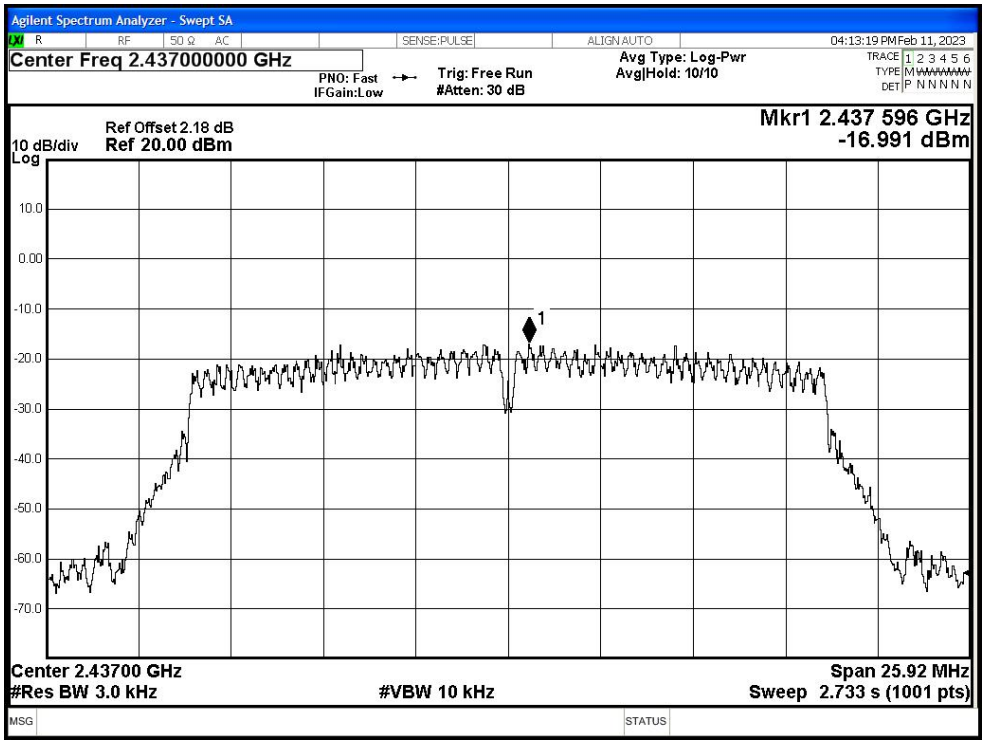
PSD NVNT g 2462MHz Ant1



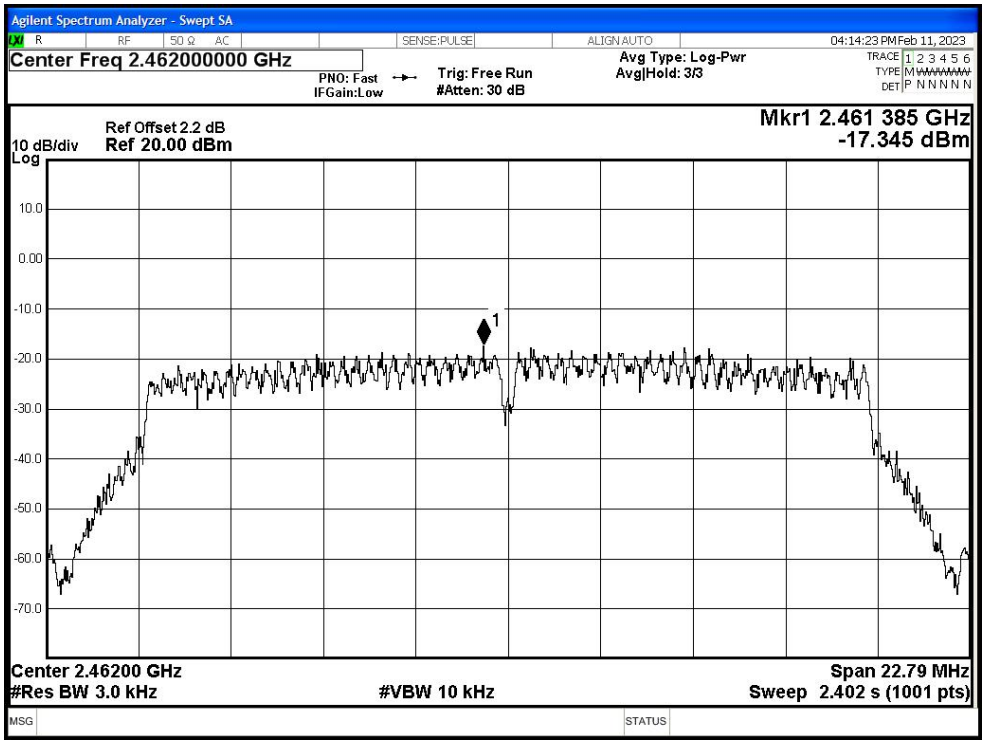
PSD NVNT n20 2412MHz Ant1



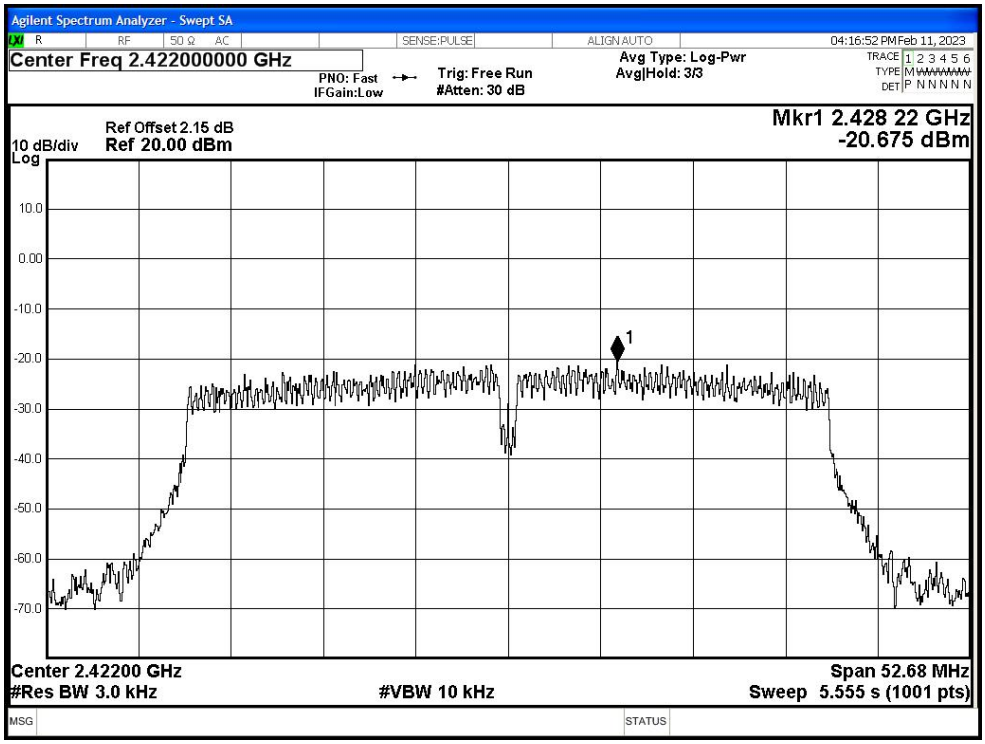
PSD NVNT n20 2437MHz Ant1



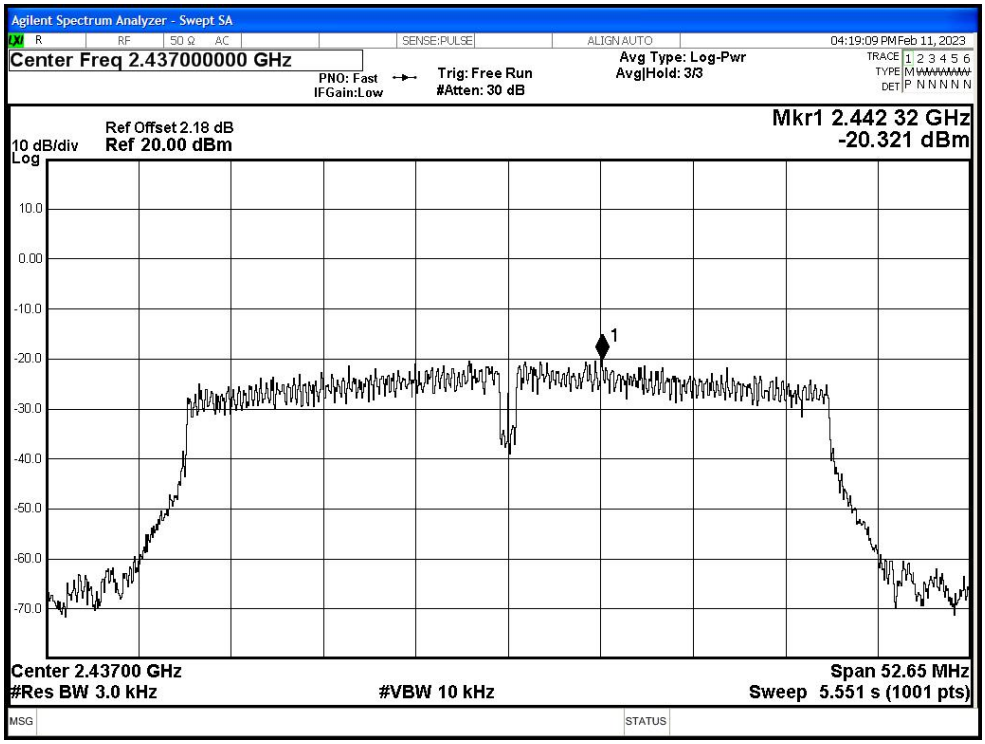
PSD NVNT n20 2462MHz Ant1



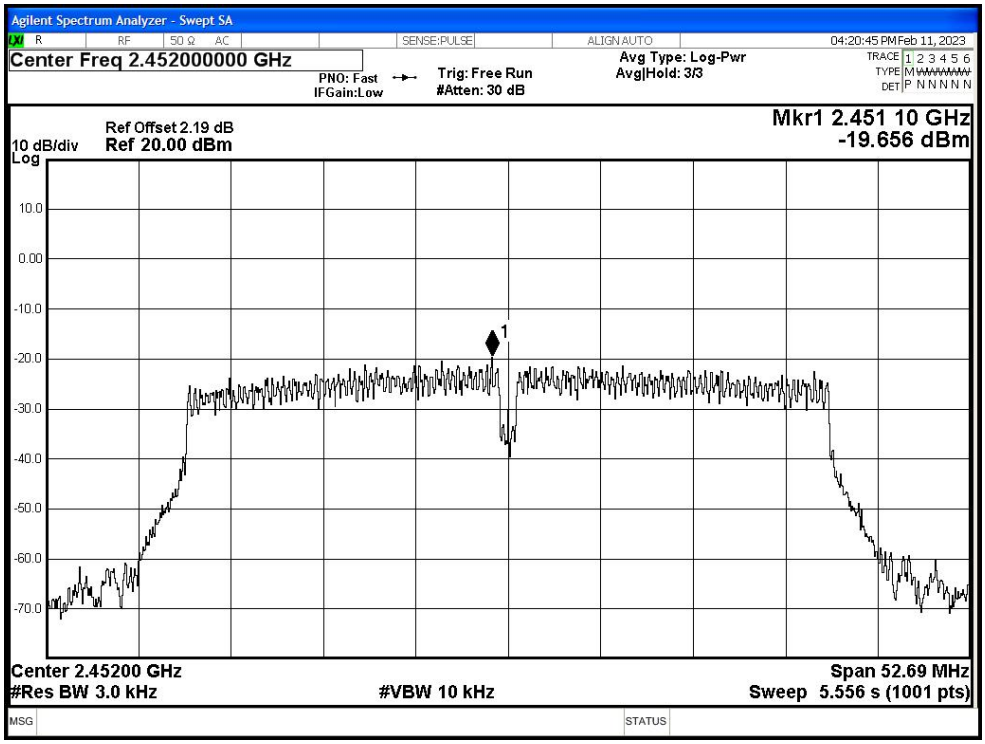
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1



PSD NVNT n40 2452MHz Ant1

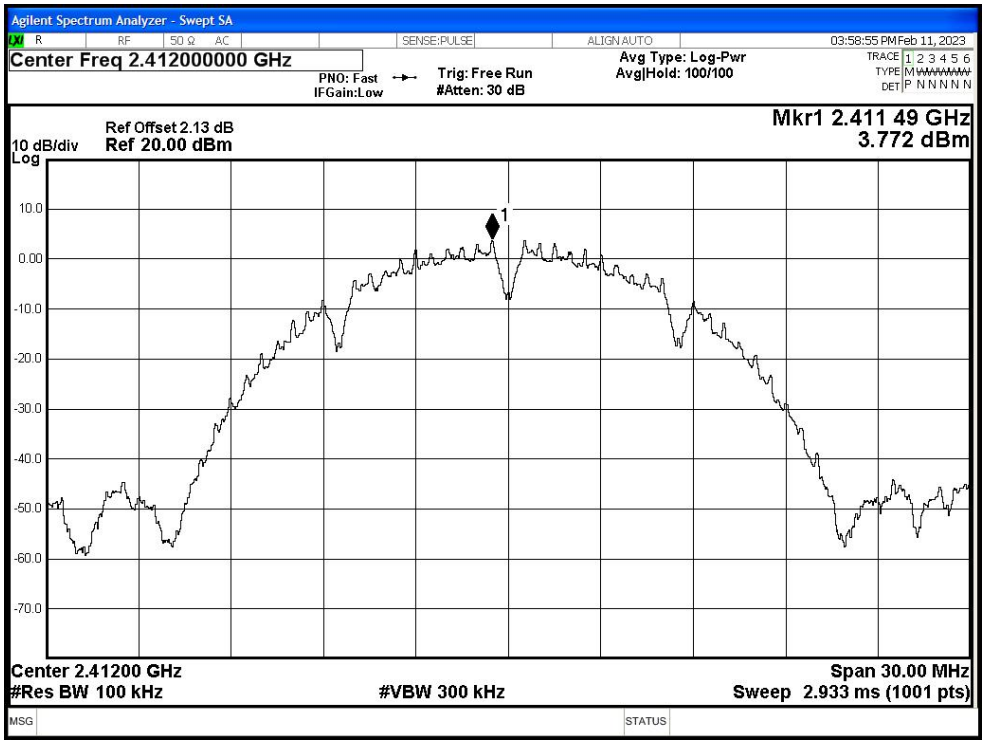


A.4 Band Edge

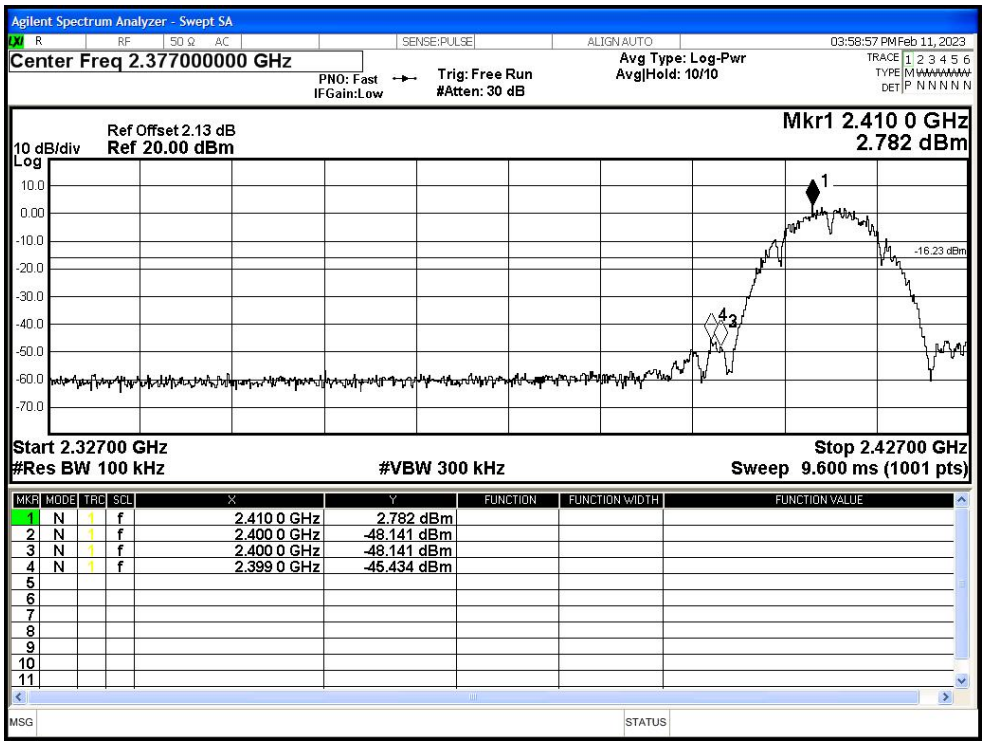
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-49.21	-20	Pass
NVNT	b	2462	Ant1	-59.41	-20	Pass
NVNT	g	2412	Ant1	-37.37	-20	Pass
NVNT	g	2462	Ant1	-52.52	-20	Pass
NVNT	n20	2412	Ant1	-41.04	-20	Pass
NVNT	n20	2462	Ant1	-52.69	-20	Pass
NVNT	n40	2422	Ant1	-40.03	-20	Pass
NVNT	n40	2452	Ant1	-44.03	-20	Pass

Test Graphs

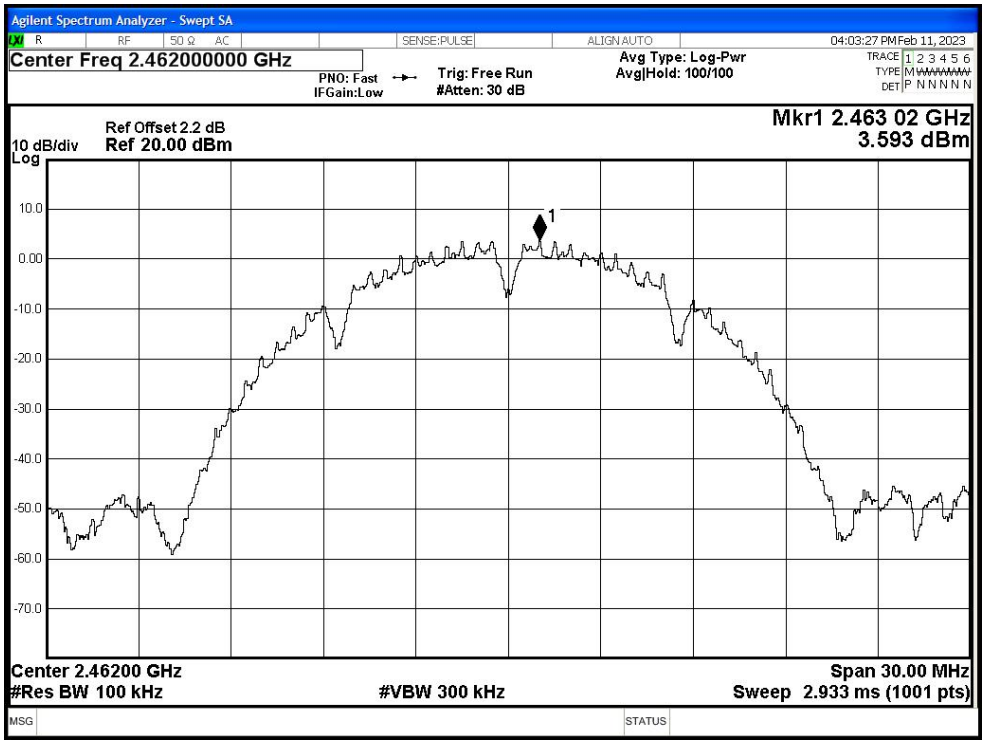
Band Edge NVNT b 2412MHz Ant1 Ref



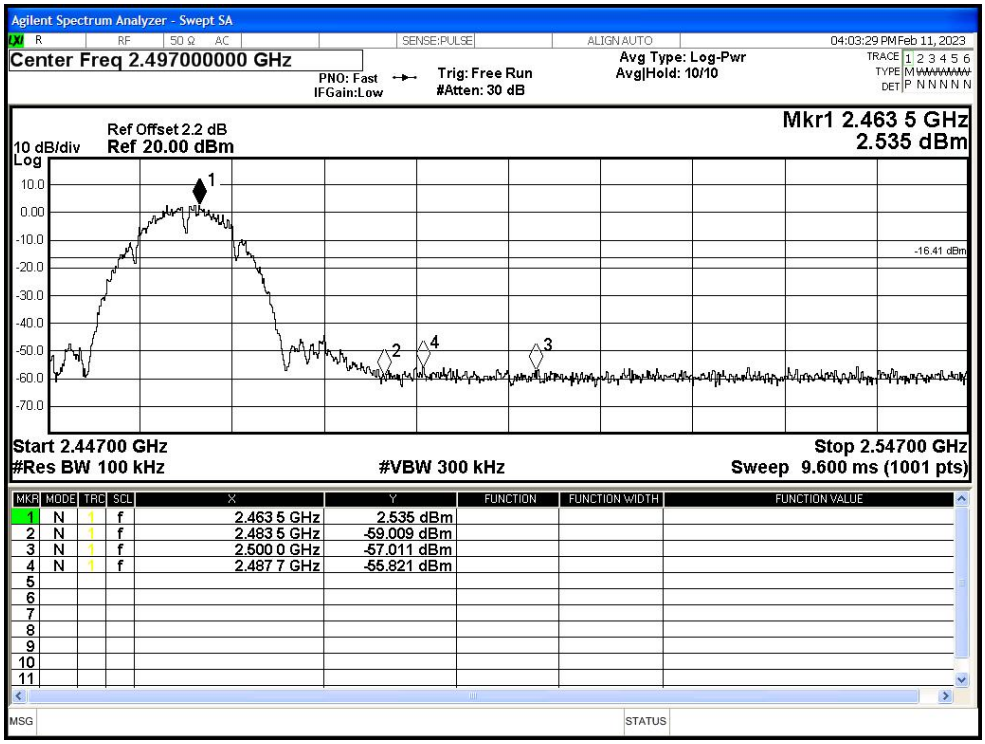
Band Edge NVNT b 2412MHz Ant1 Emission



Band Edge NVNT b 2462MHz Ant1 Ref

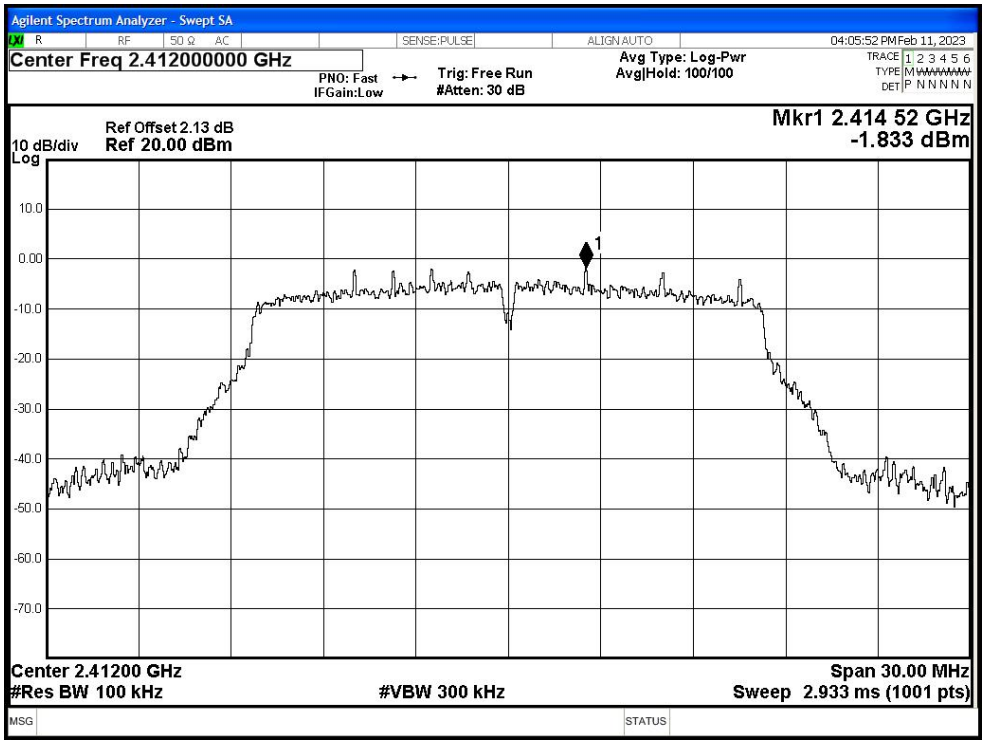


Band Edge NVNT b 2462MHz Ant1 Emission

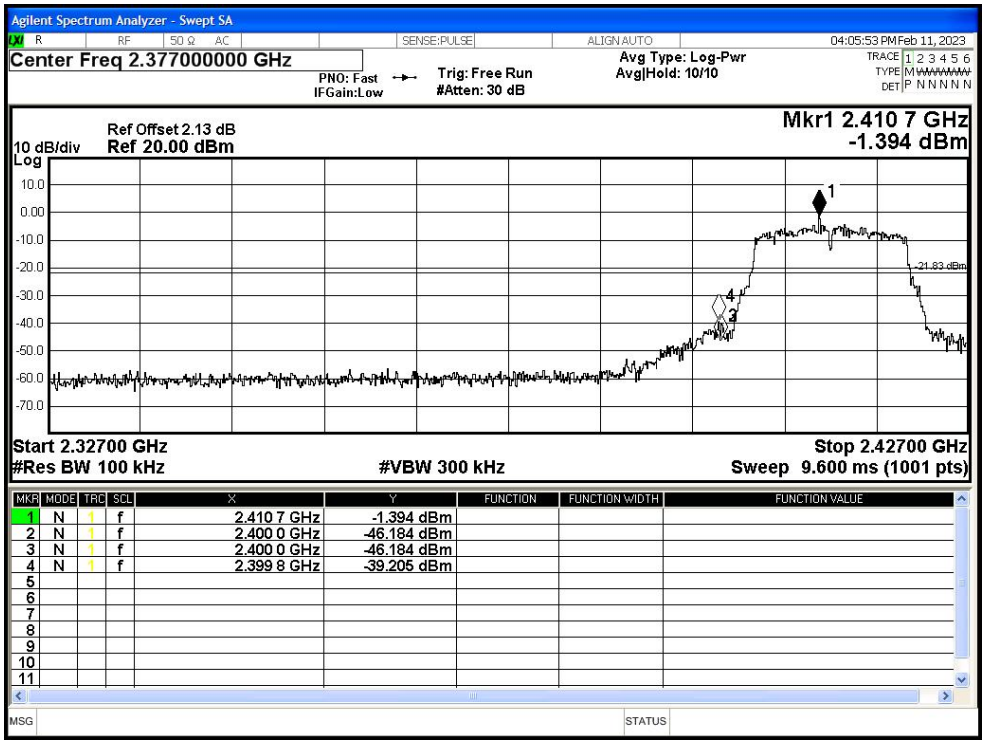


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.463 5 GHz	2.535 dBm			
2	N	1	f	2.483 5 GHz	-59.009 dBm			
3	N	1	f	2.500 0 GHz	-57.011 dBm			
4	N	1	f	2.487 7 GHz	-55.821 dBm			
5								
6								
7								
8								
9								
10								
11								

Band Edge NVNT g 2412MHz Ant1 Ref

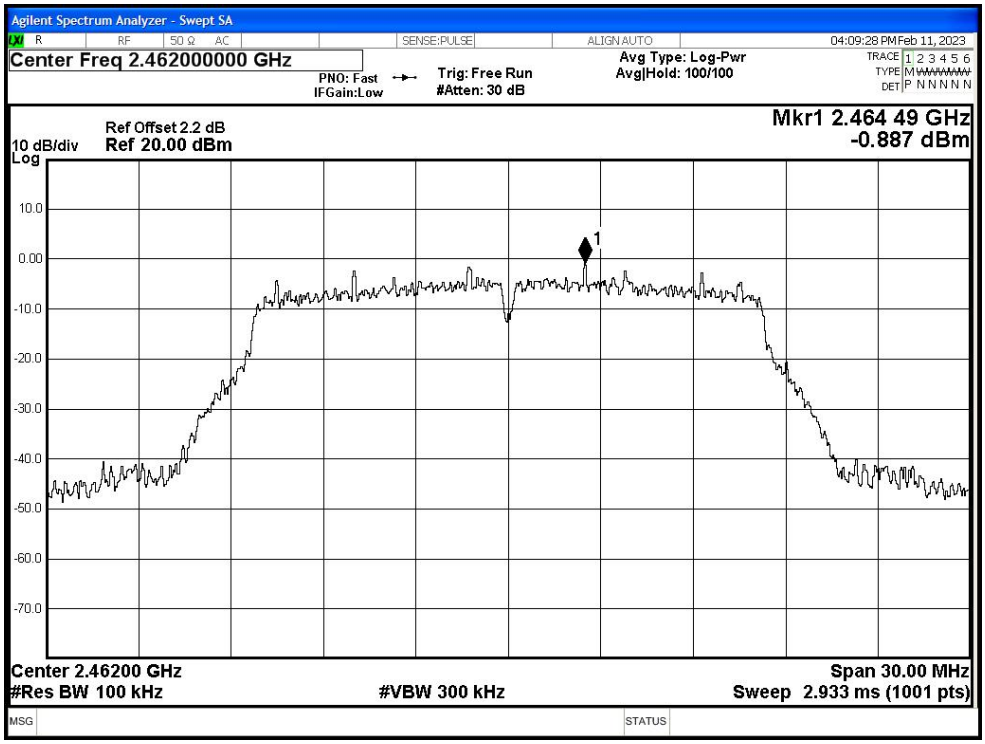


Band Edge NVNT g 2412MHz Ant1 Emission

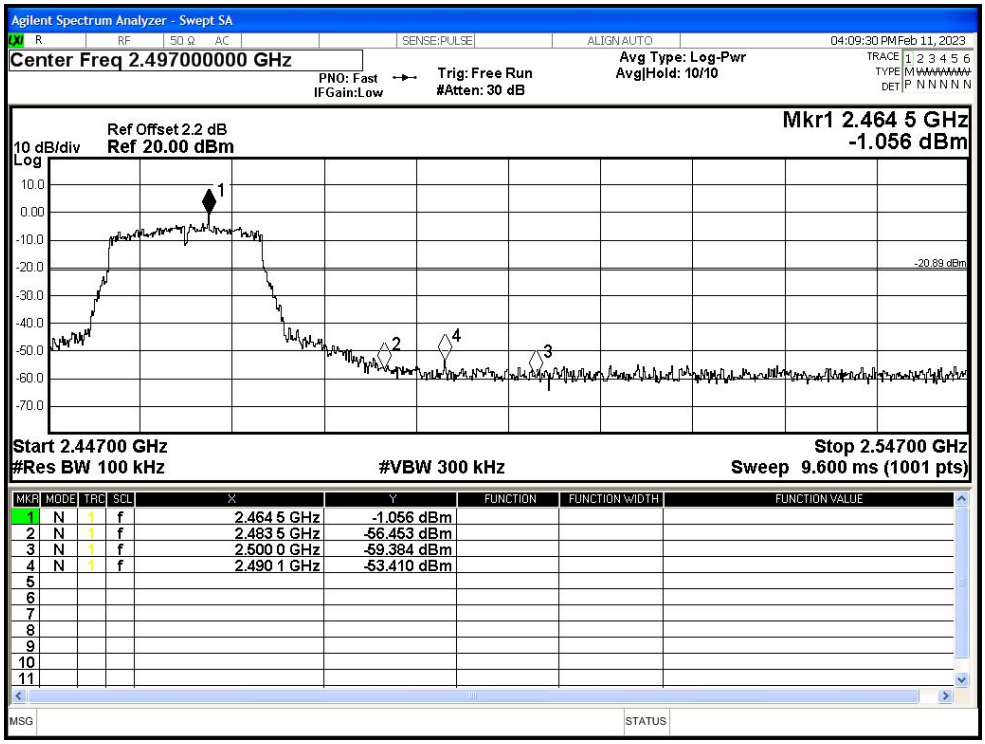


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.410 7 GHz	-1.394 dBm			
2	N	1	f	2.400 0 GHz	-46.184 dBm			
3	N	1	f	2.400 0 GHz	-46.184 dBm			
4	N	1	f	2.399 8 GHz	-39.205 dBm			
5								
6								
7								
8								
9								
10								
11								

Band Edge NVNT g 2462MHz Ant1 Ref

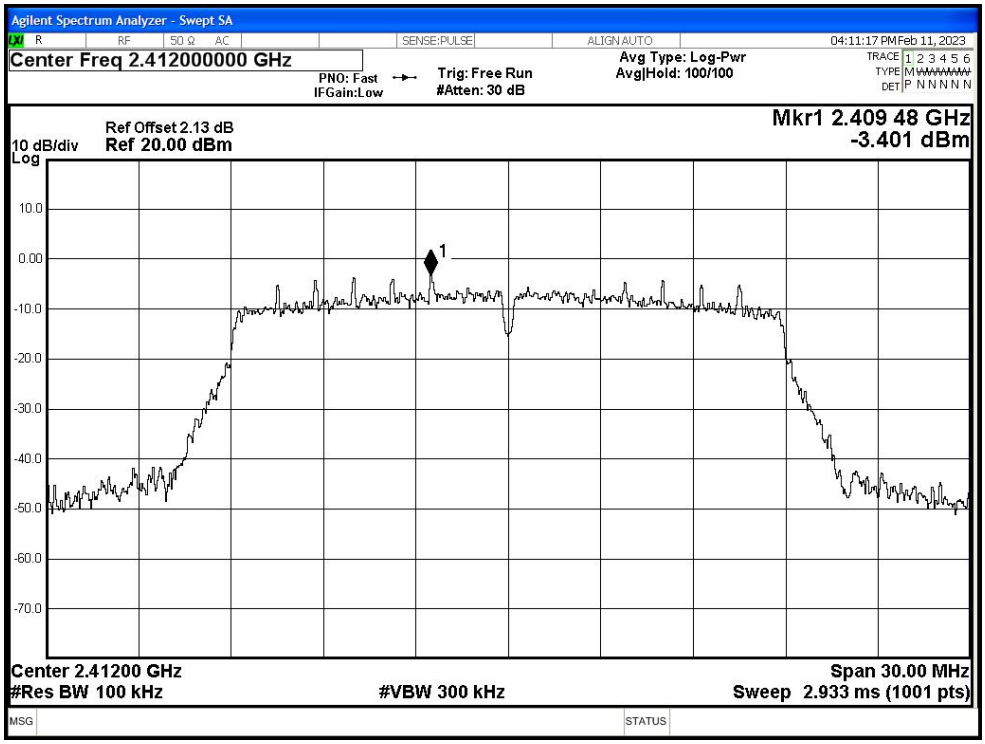


Band Edge NVNT g 2462MHz Ant1 Emission

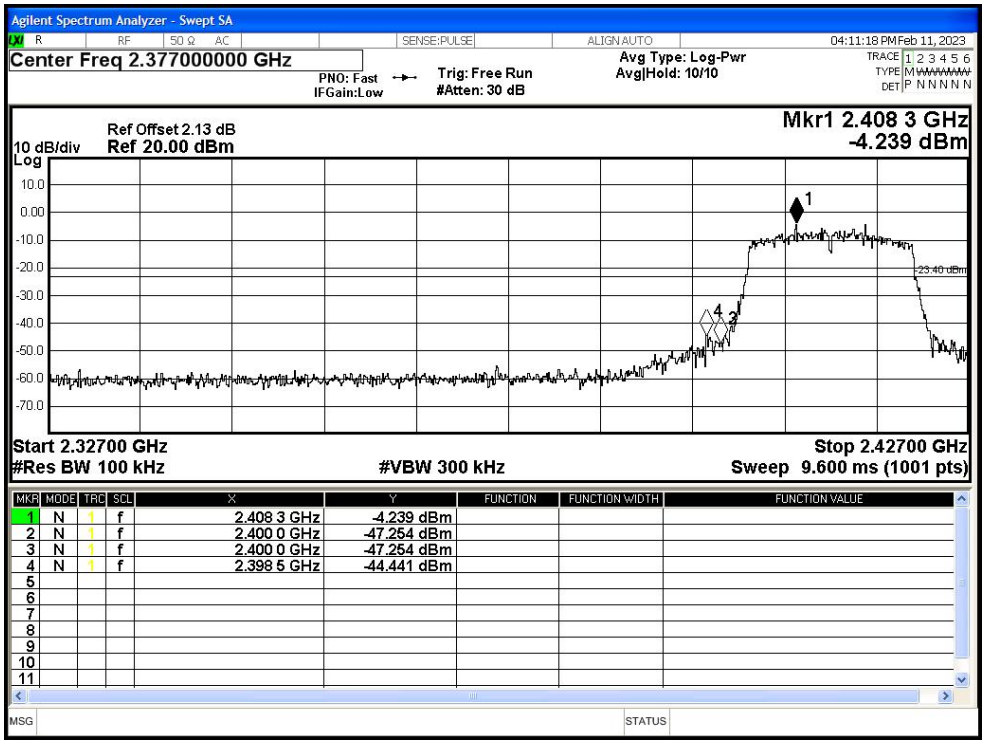


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.464 5 GHz	-1.056 dBm			
2	N	1	f	2.483 5 GHz	-56.453 dBm			
3	N	1	f	2.500 0 GHz	-59.384 dBm			
4	N	1	f	2.490 1 GHz	-53.410 dBm			
5								
6								
7								
8								
9								
10								
11								

Band Edge NVNT n20 2412MHz Ant1 Ref

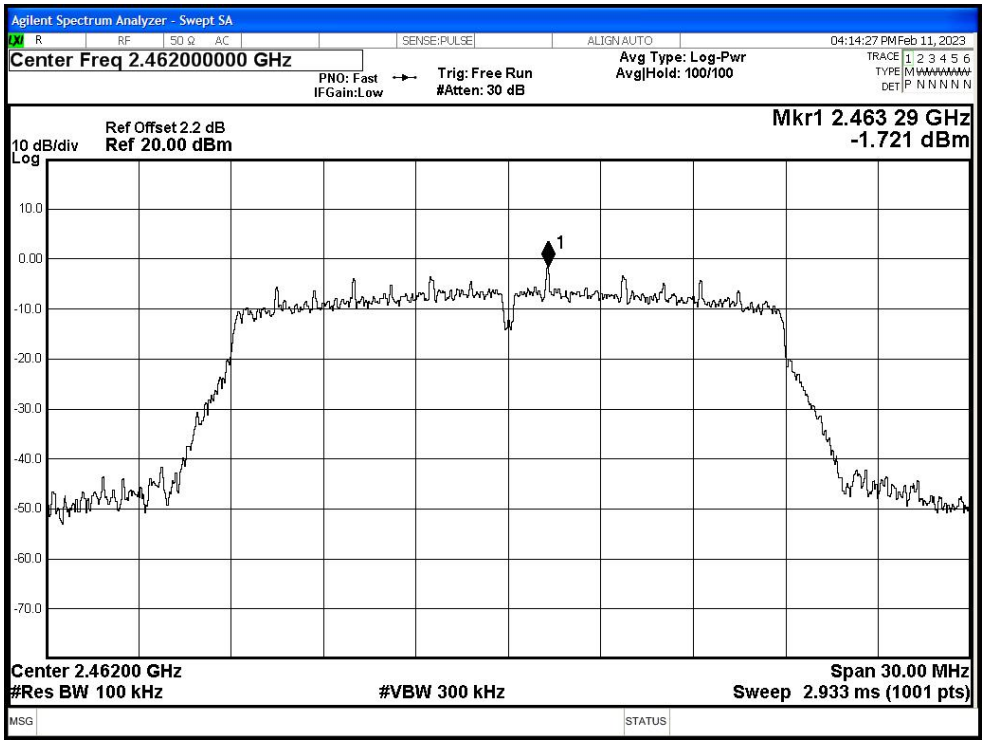


Band Edge NVNT n20 2412MHz Ant1 Emission

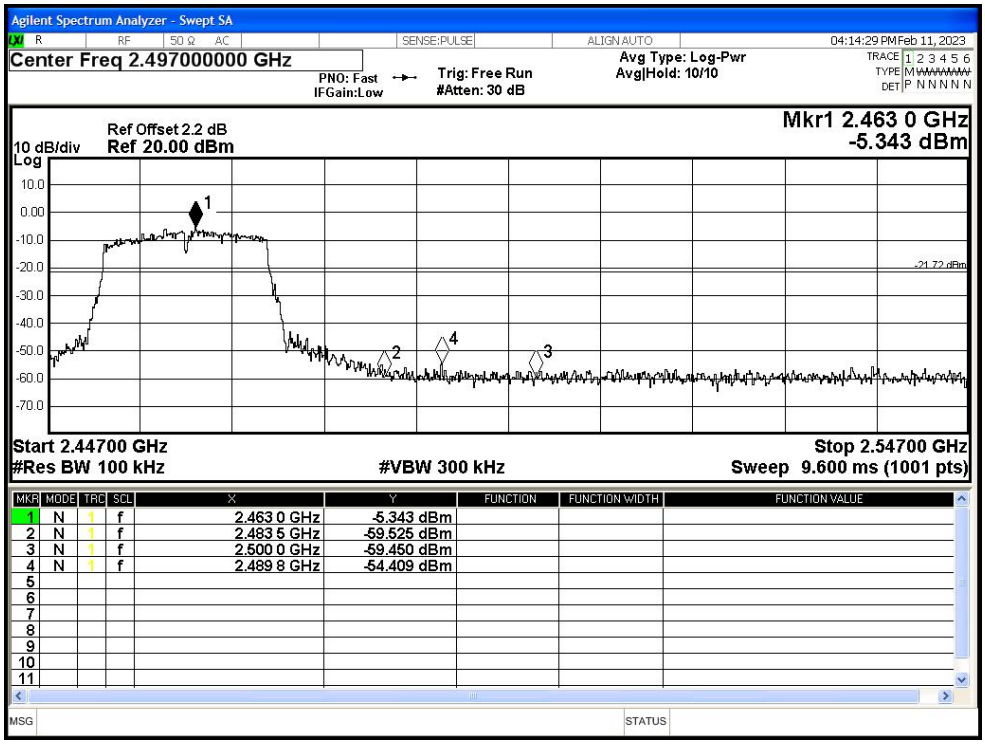


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.408 3 GHz	-4.239 dBm			
2	N	1	f	2.400 0 GHz	-47.254 dBm			
3	N	1	f	2.400 0 GHz	-47.254 dBm			
4	N	1	f	2.398 5 GHz	-44.441 dBm			
5								
6								
7								
8								
9								
10								
11								

Band Edge NVNT n20 2462MHz Ant1 Ref

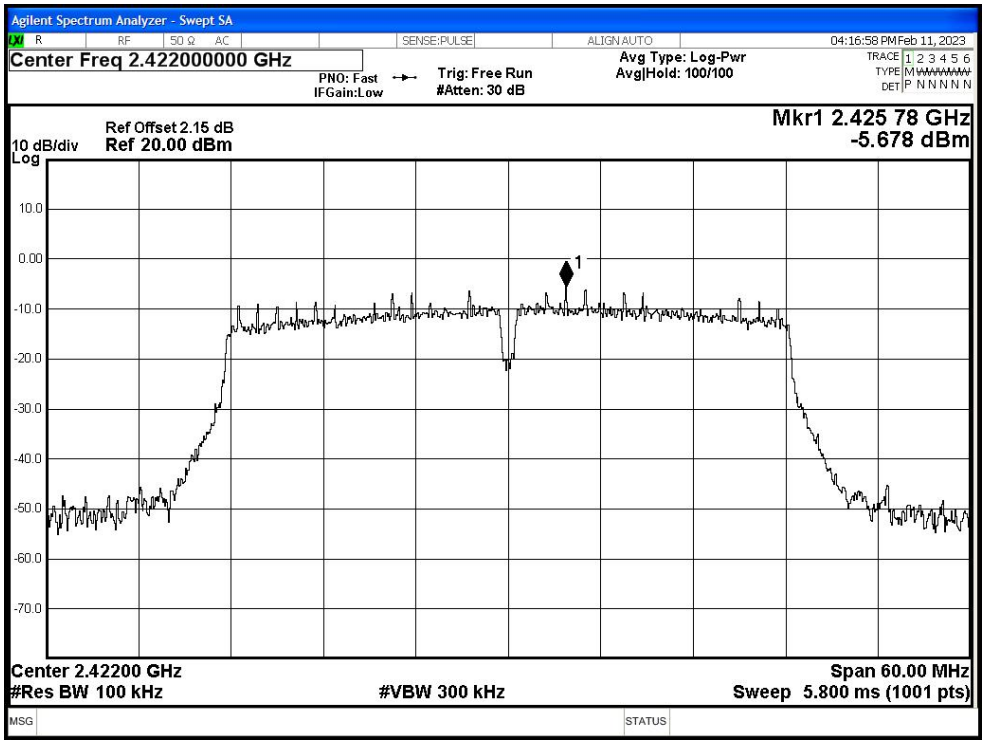


Band Edge NVNT n20 2462MHz Ant1 Emission

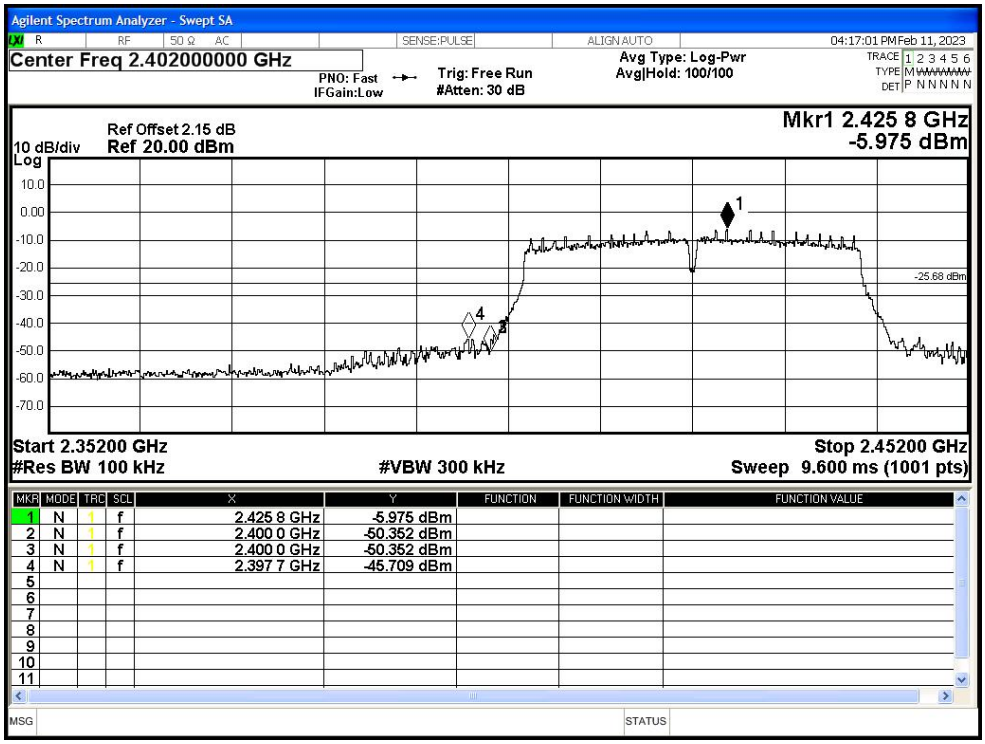


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.463 0 GHz	-5.343 dBm			
2	N	1	f	2.483 5 GHz	-59.525 dBm			
3	N	1	f	2.500 0 GHz	-59.450 dBm			
4	N	1	f	2.489 8 GHz	-54.409 dBm			
5								
6								
7								
8								
9								
10								
11								

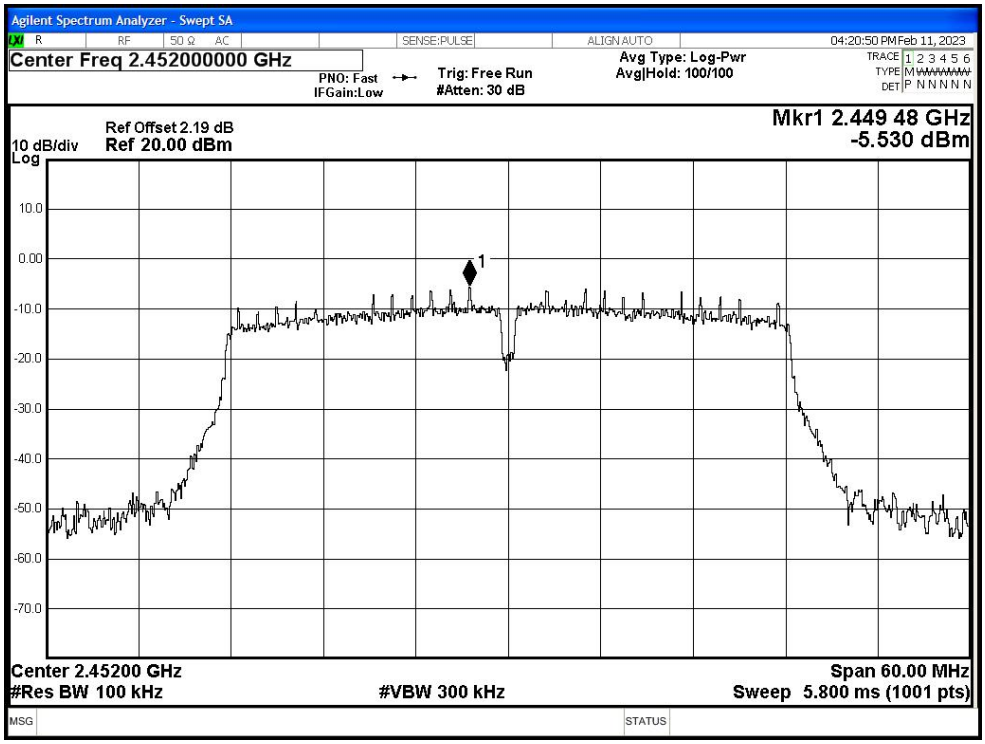
Band Edge NVNT n40 2422MHz Ant1 Ref



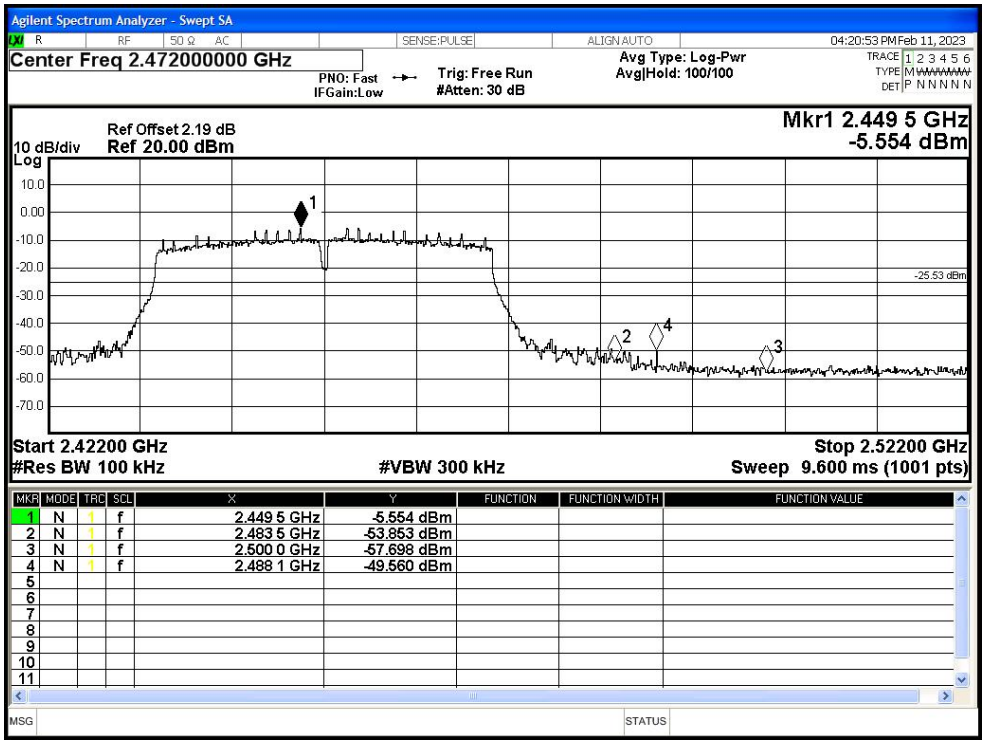
Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



Band Edge NVNT n40 2452MHz Ant1 Emission



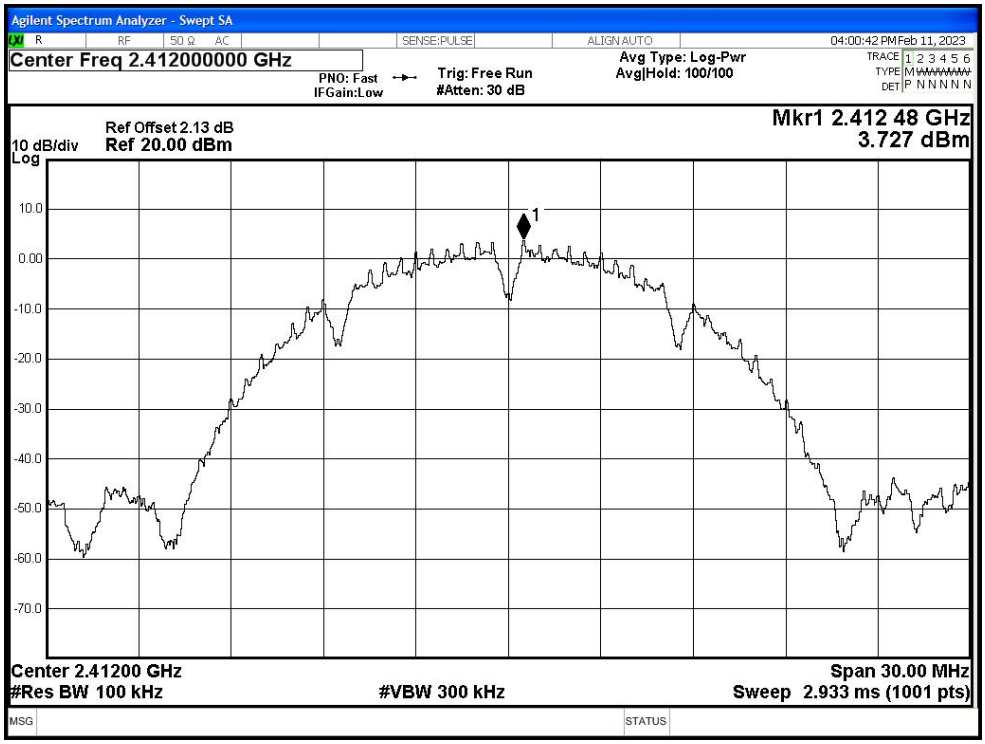
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.449 5 GHz	-5.554 dBm			
2	N	1	f	2.483 5 GHz	-53.853 dBm			
3	N	1	f	2.500 0 GHz	-57.698 dBm			
4	N	1	f	2.488 1 GHz	-49.560 dBm			
5								
6								
7								
8								
9								
10								
11								

A.5 Conducted RF Spurious Emission

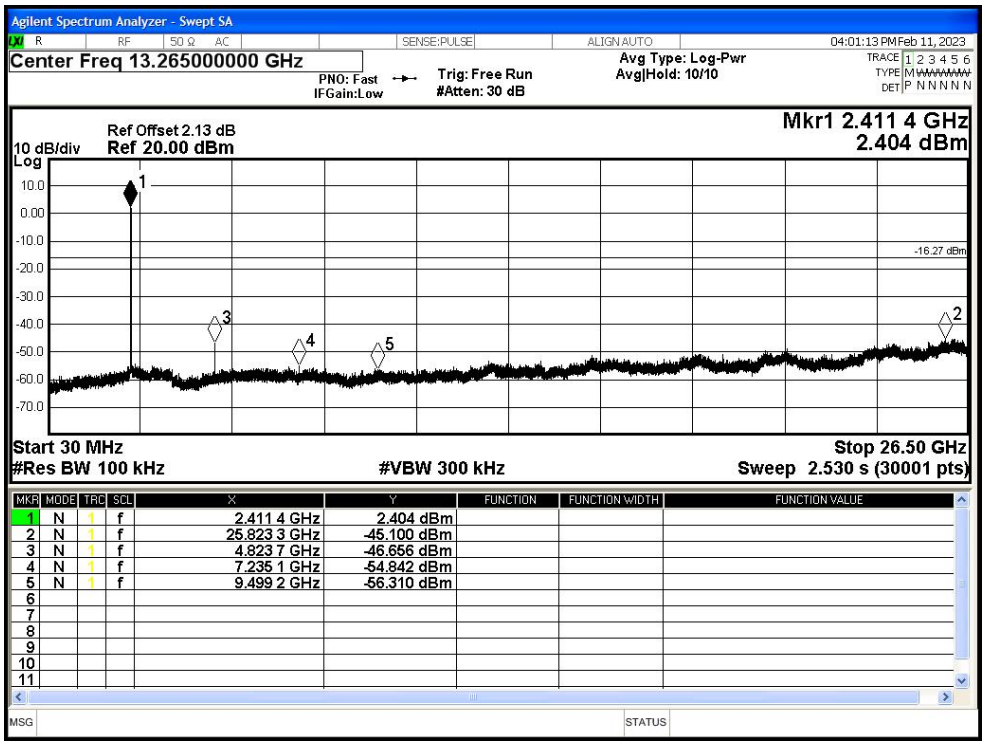
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-48.83	-20	Pass
NVNT	b	2437	Ant1	-49.36	-20	Pass
NVNT	b	2462	Ant1	-48.97	-20	Pass
NVNT	g	2412	Ant1	-44.29	-20	Pass
NVNT	g	2437	Ant1	-45.32	-20	Pass
NVNT	g	2462	Ant1	-44.32	-20	Pass
NVNT	n20	2412	Ant1	-43.05	-20	Pass
NVNT	n20	2437	Ant1	-43.32	-20	Pass
NVNT	n20	2462	Ant1	-43.12	-20	Pass
NVNT	n40	2422	Ant1	-38.38	-20	Pass
NVNT	n40	2437	Ant1	-40.12	-20	Pass
NVNT	n40	2452	Ant1	-39.89	-20	Pass

Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref



Tx. Spurious NVNT b 2412MHz Ant1 Emission



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.411 4 GHz	2.404 dBm			
2	N	1	f	25.823 3 GHz	-45.100 dBm			
3	N	1	f	4.823 7 GHz	-46.656 dBm			
4	N	1	f	7.235 1 GHz	-54.842 dBm			
5	N	1	f	9.499 2 GHz	-56.310 dBm			
6								
7								
8								
9								
10								
11								