



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: Remote Controller

Test Model: Desview

Environmental Conditions

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



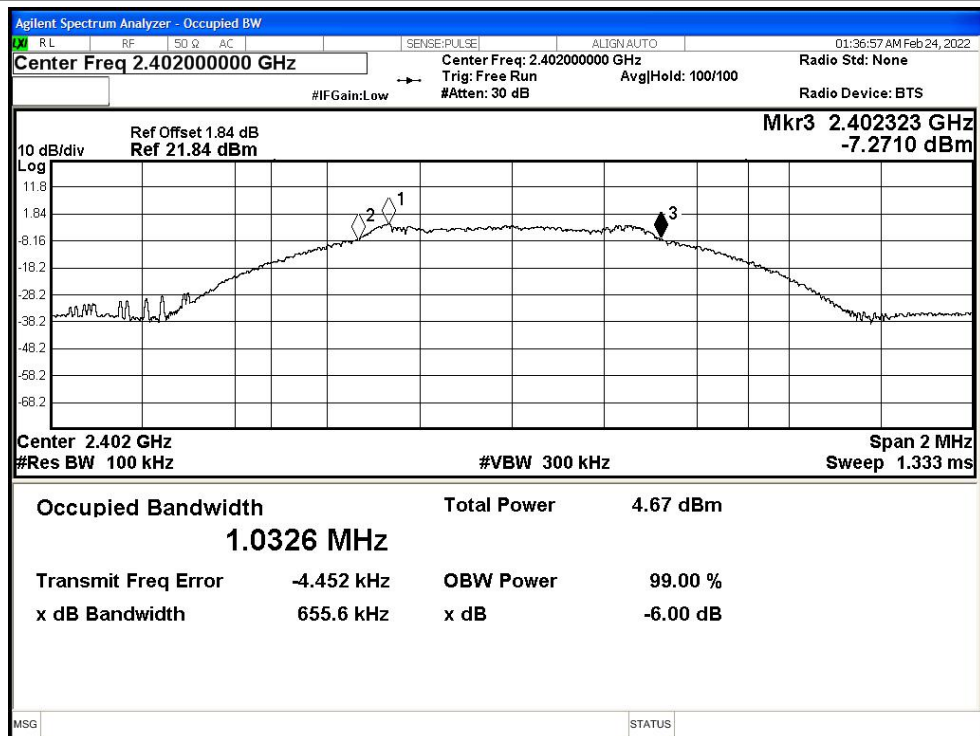
A.1 6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.656	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.665	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.652	0.5	Pass

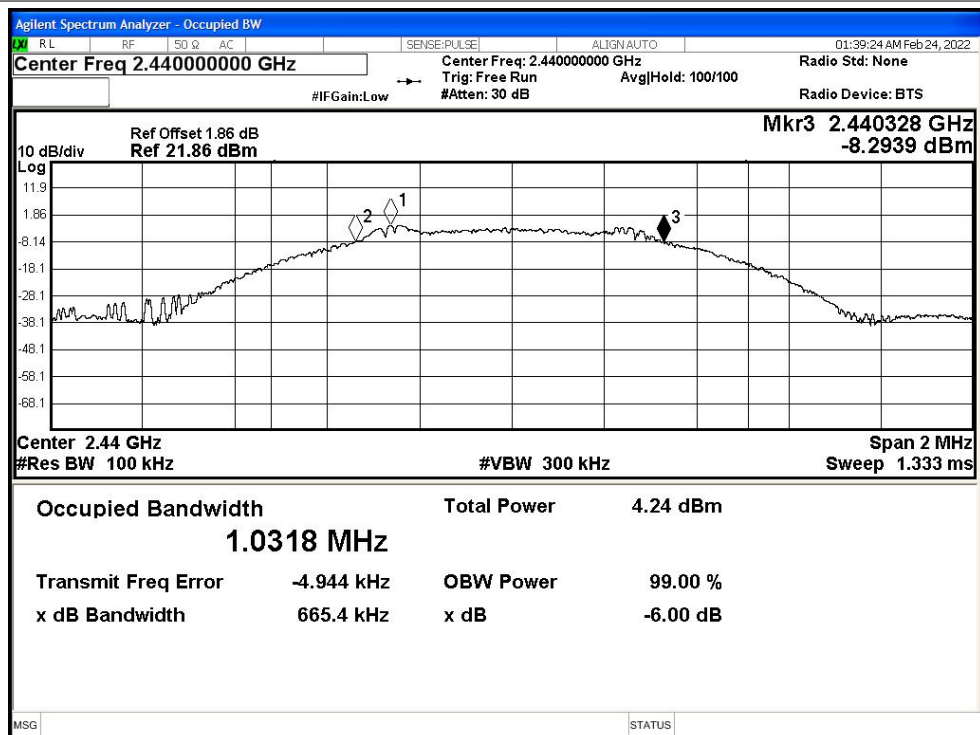


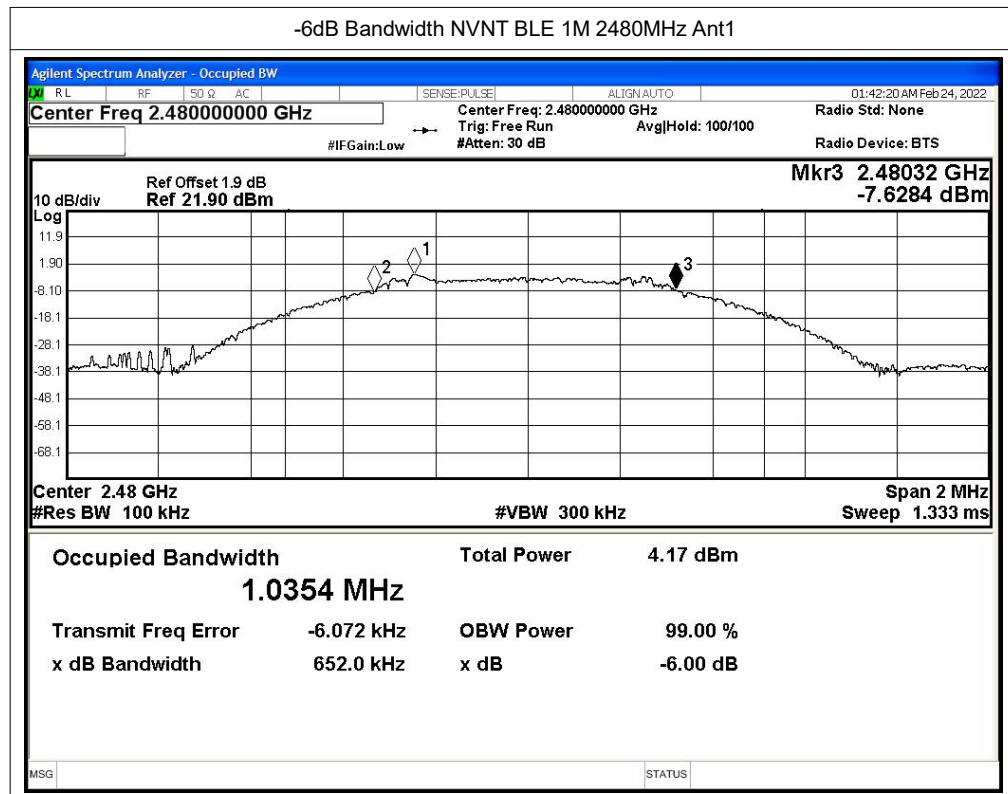
Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1







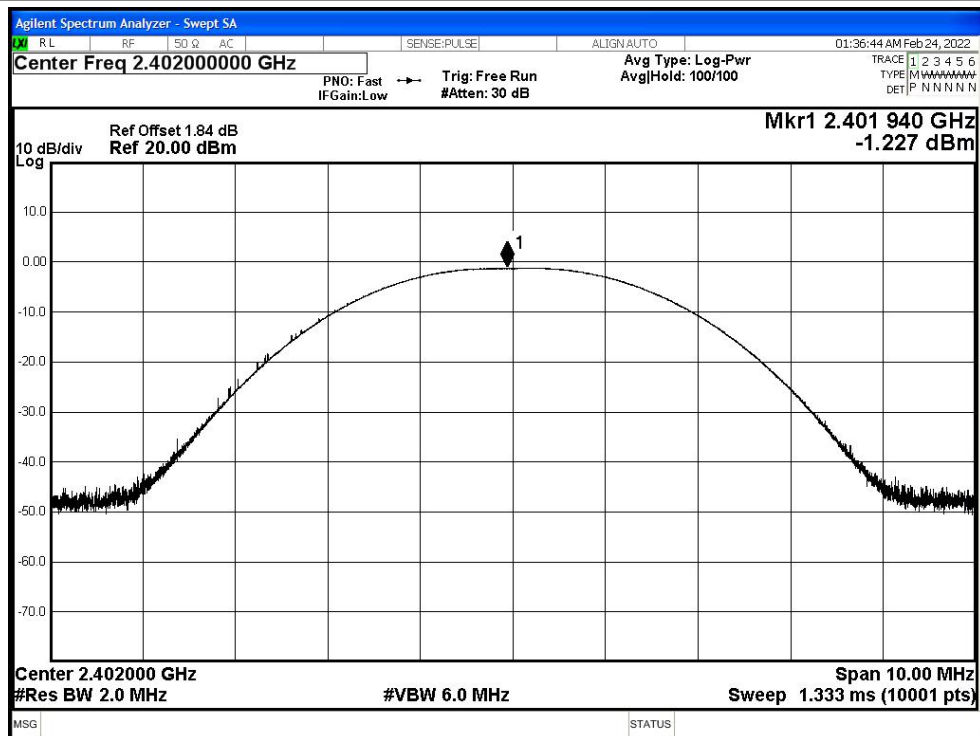
A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-1.23	0	-1.23	30	Pass
NVNT	BLE 1M	2440	Ant1	-1.63	0	-1.63	30	Pass
NVNT	BLE 1M	2480	Ant1	-1.63	0	-1.63	30	Pass

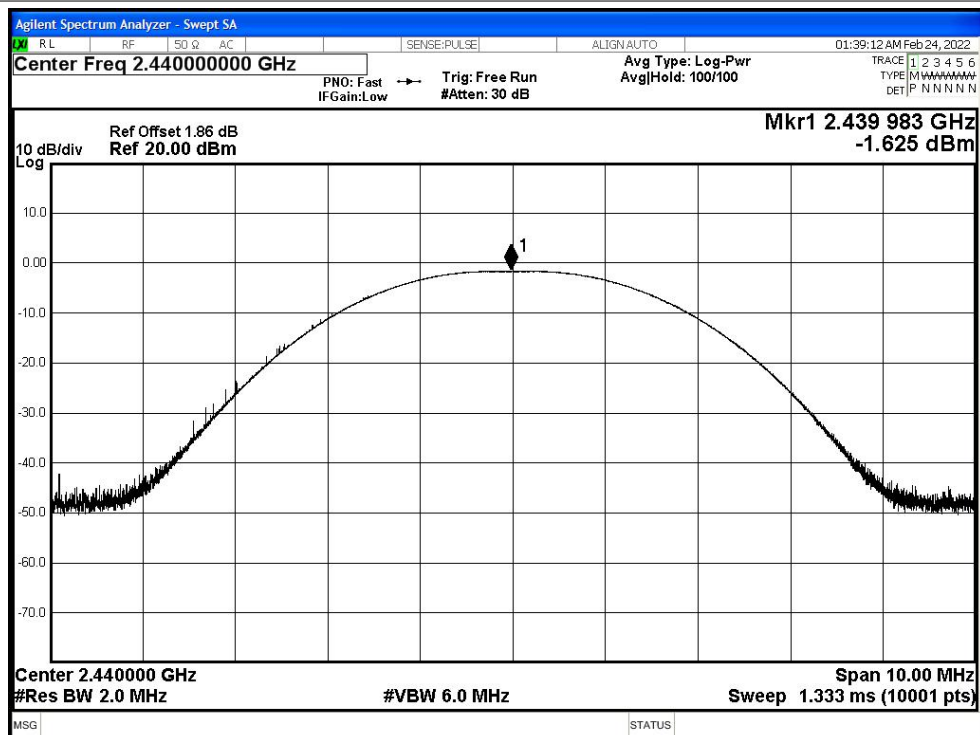


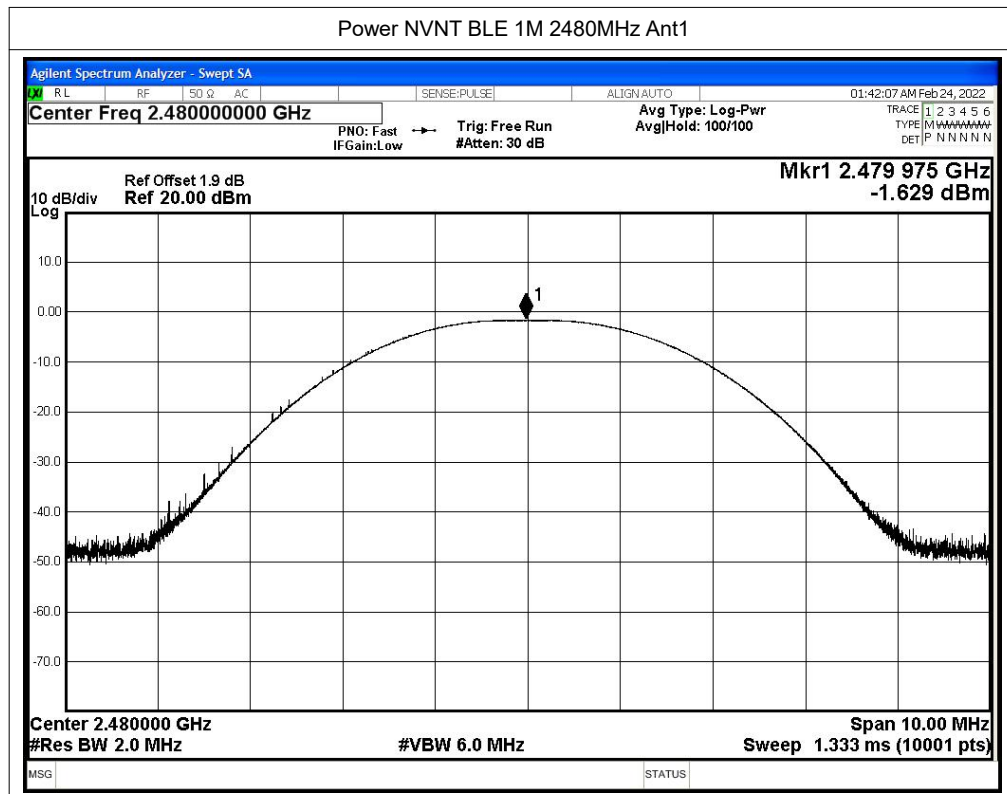
Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



Power NVNT BLE 1M 2440MHz Ant1







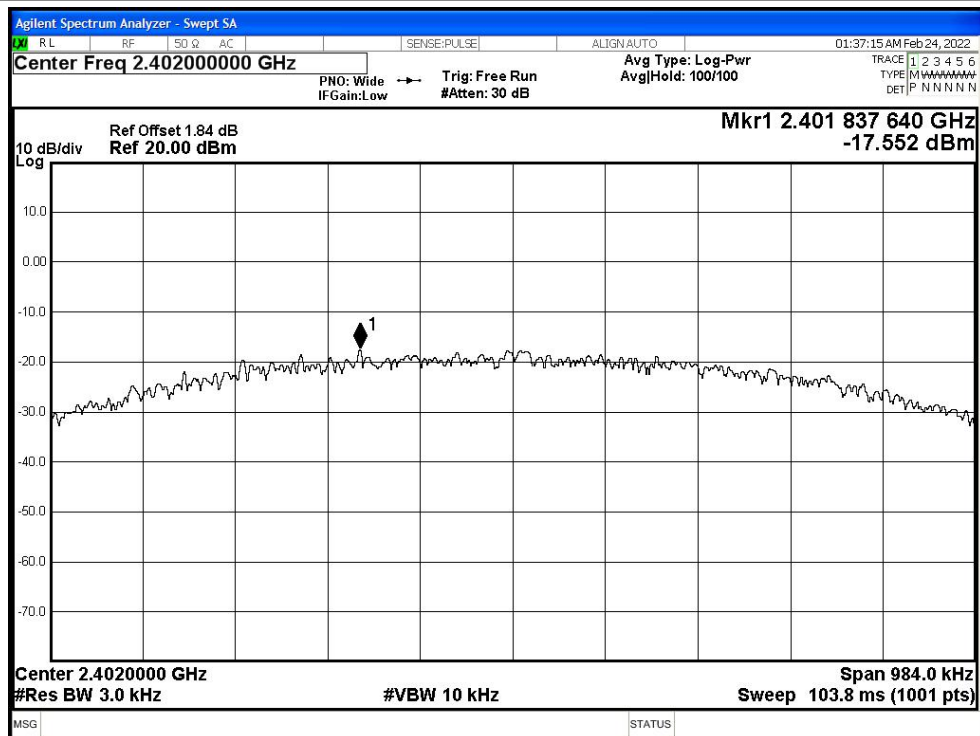
A.3 Power Spectral Density

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-17.55	0	-17.55	8	Pass
NVNT	BLE 1M	2440	Ant1	-17.85	0	-17.85	8	Pass
NVNT	BLE 1M	2480	Ant1	-17.94	0	-17.94	8	Pass

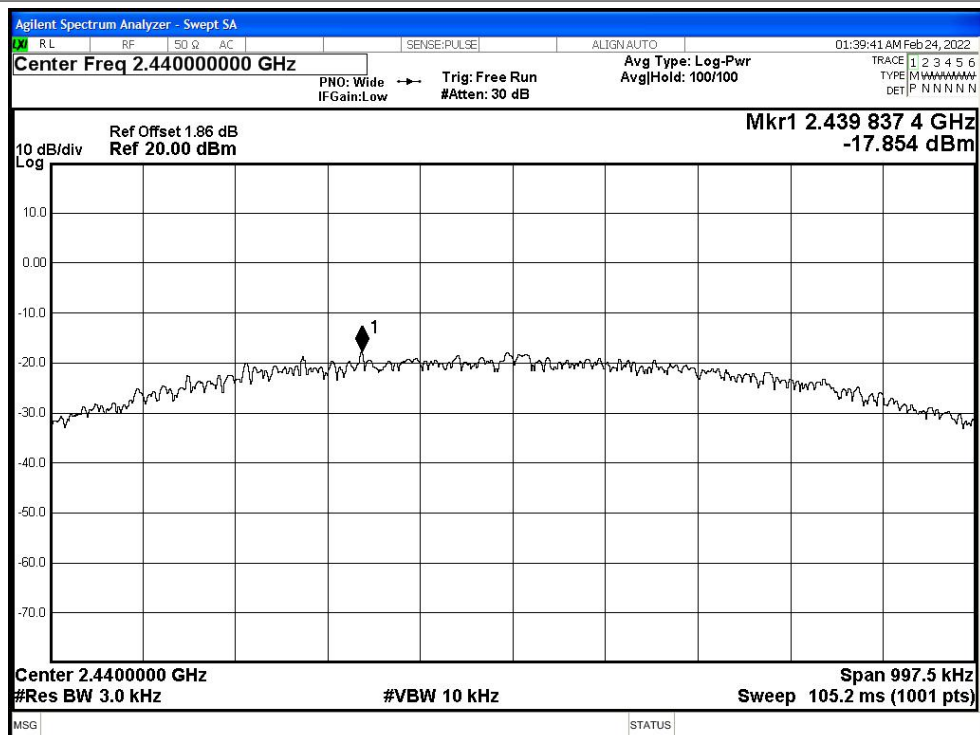


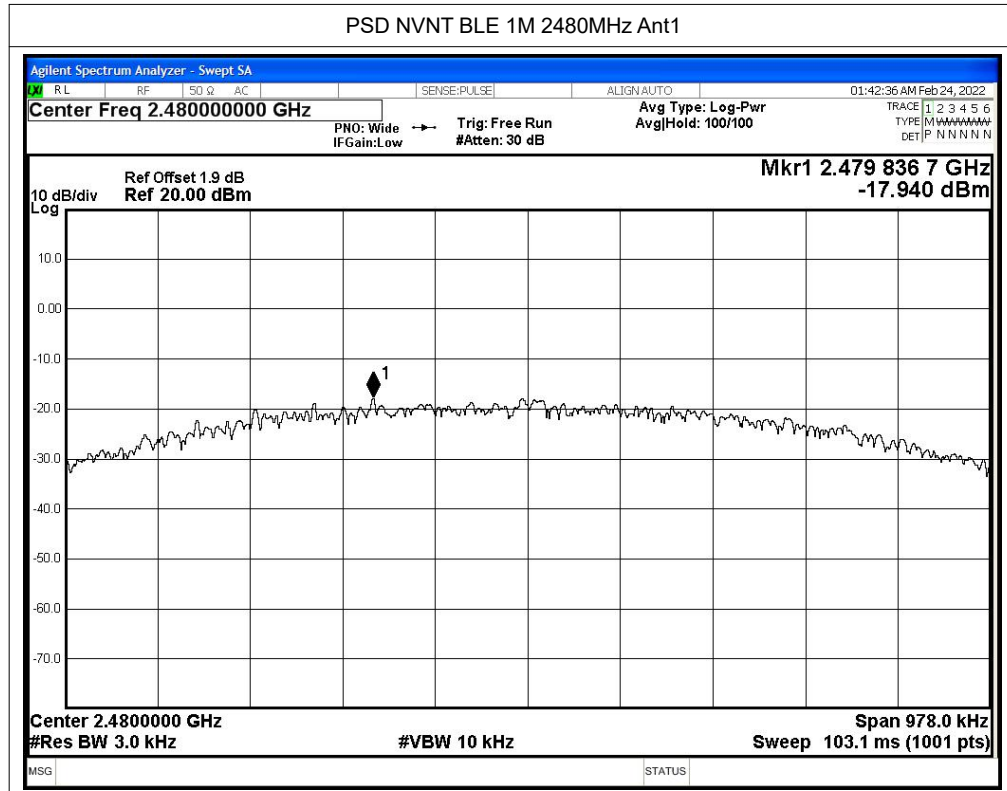
Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1







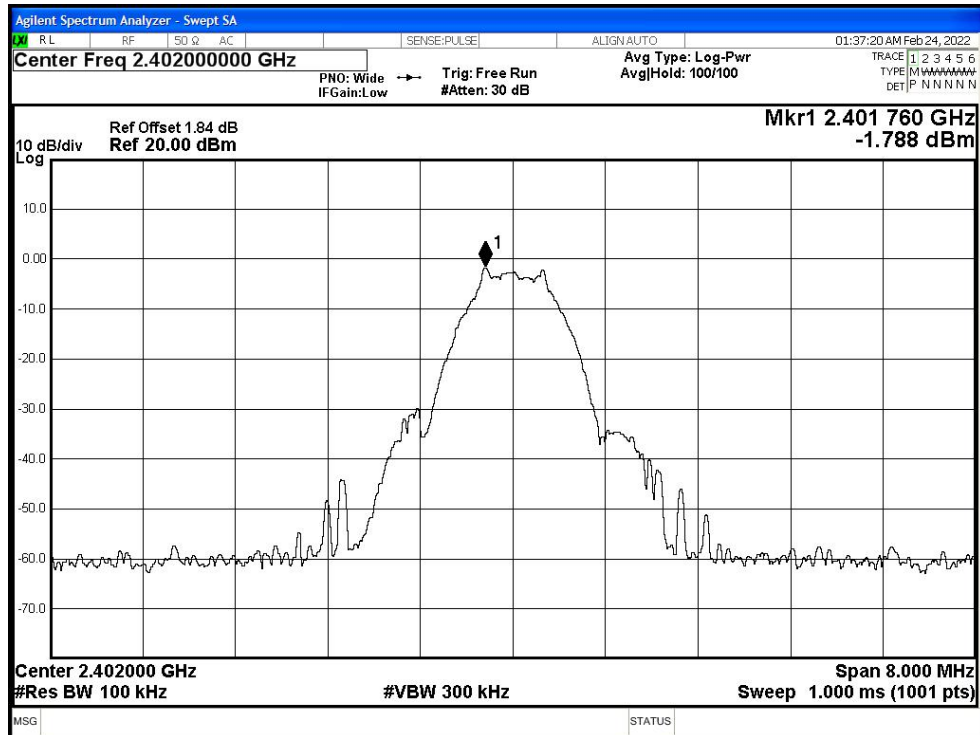
A.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-55.02	-20	Pass
NVNT	BLE 1M	2480	Ant1	-54.36	-20	Pass

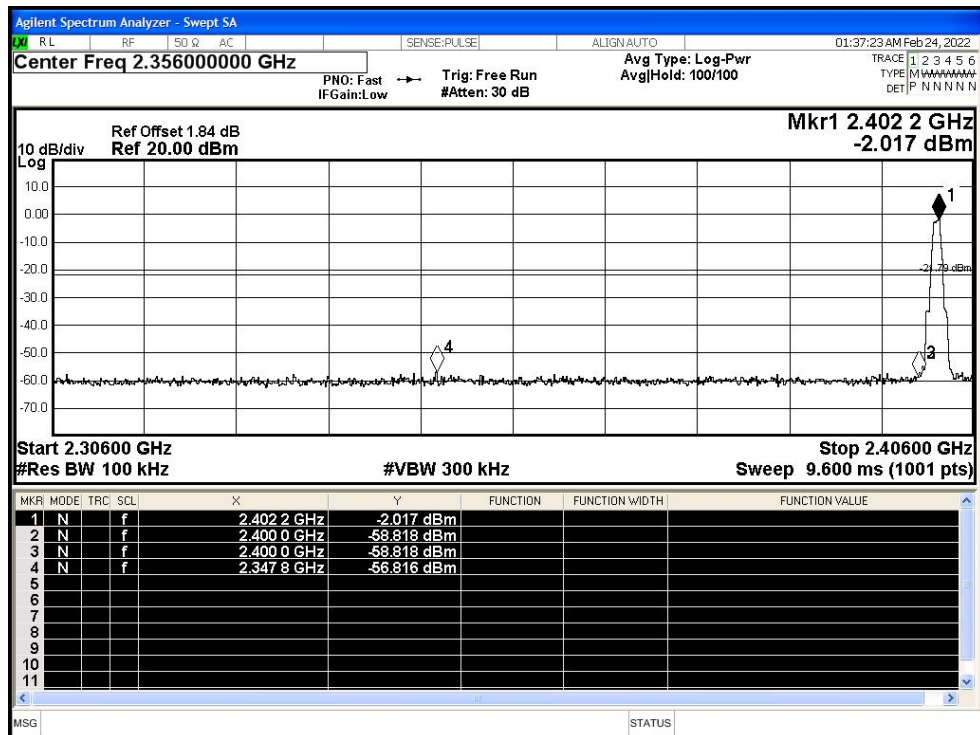


Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant1 Ref

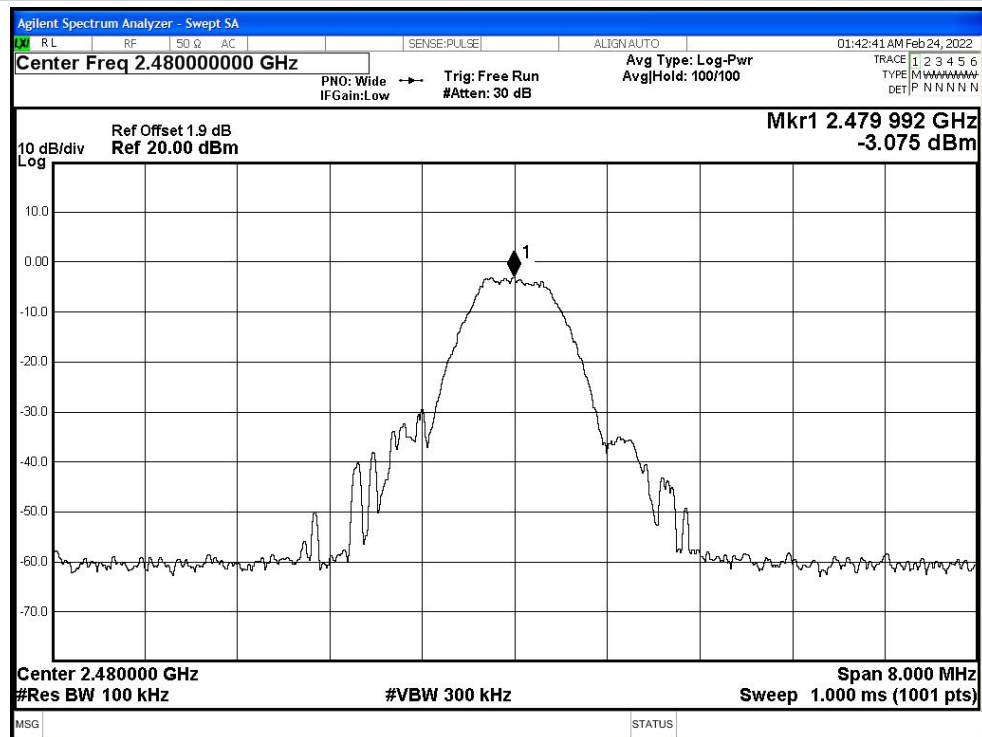


Band Edge NVNT BLE 1M 2402MHz Ant1 Emission

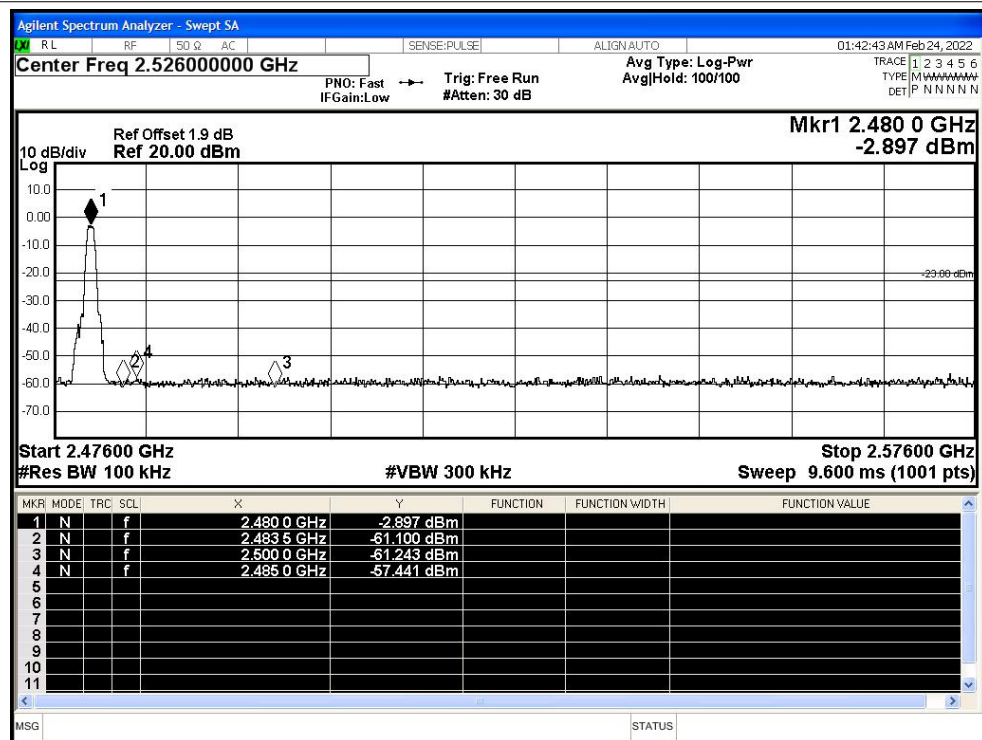




Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



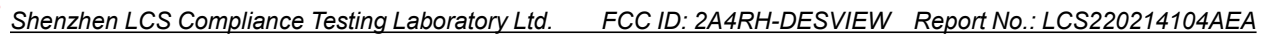
Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



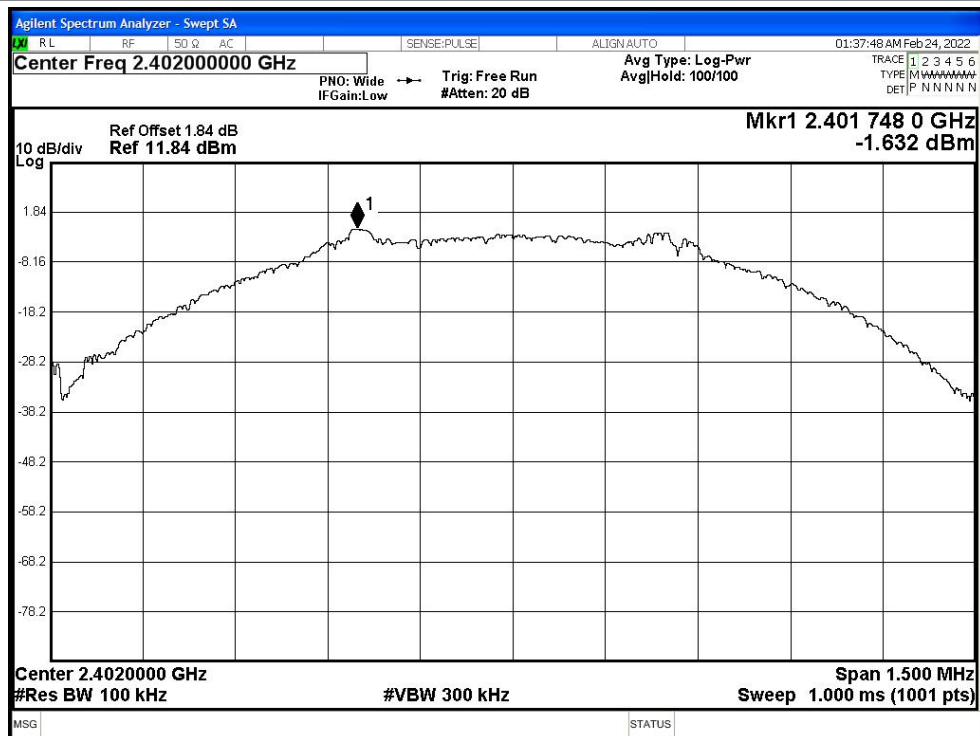


A.5 Conducted RF Spurious Emission

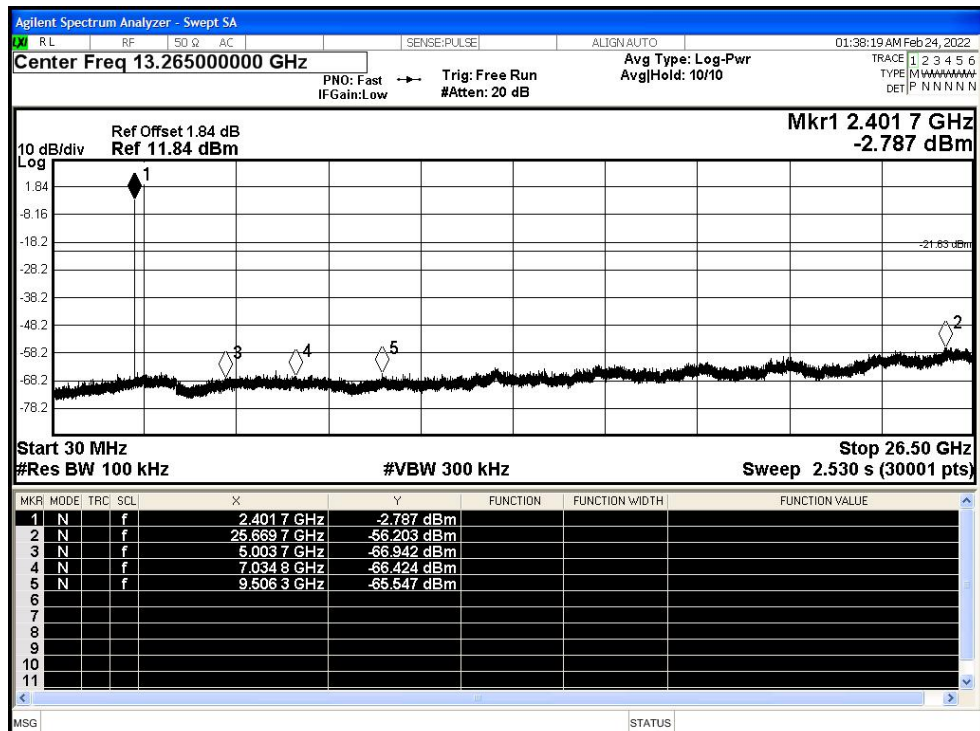
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-54.57	-20	Pass
NVNT	BLE 1M	2440	Ant1	-52.59	-20	Pass
NVNT	BLE 1M	2480	Ant1	-54.26	-20	Pass

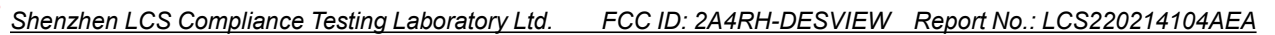


Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission





Agilent Spectrum Analyzer - Swept SA

01:39:45 AM Feb 24, 2022

Center Freq 2.44000000 GHz

PNO: Wide IFGain: Low Trig: Free Run #Atten: 20 dB Avg Type: Log-Pwr AvgHold: 100/100

Ref Offset 1.86 dB Ref 11.86 dBm

Mkr1 2.439 739 0 GHz -1.990 dBm

10 dB/div Log

Center 2.4400000 GHz #Res BW 100 kHz #VBW 300 kHz Span 1.500 MHz Sweep 1.000 ms (1001 pts)

Agilent Spectrum Analyzer - Swept SA

R L RF SQ AC SENSE:PULSE ALIGN:AUTO 01:40:16 AM Feb 24, 2022

Center Freq 13.265000000 GHz

PNO: Fast IF Gain: Low Trig: Free Run #Atten: 20 dB Avg Type: Log-Pwr Avg Hold: 10/10

TRACE 1 2 3 4 5 6
TYPE M W A V N N N
DET P N N N N N

Ref Offset 1.86 dB
Ref 11.86 dBm

Mkr1 2.439 7 GHz
-3.566 dBm

10 dB/div

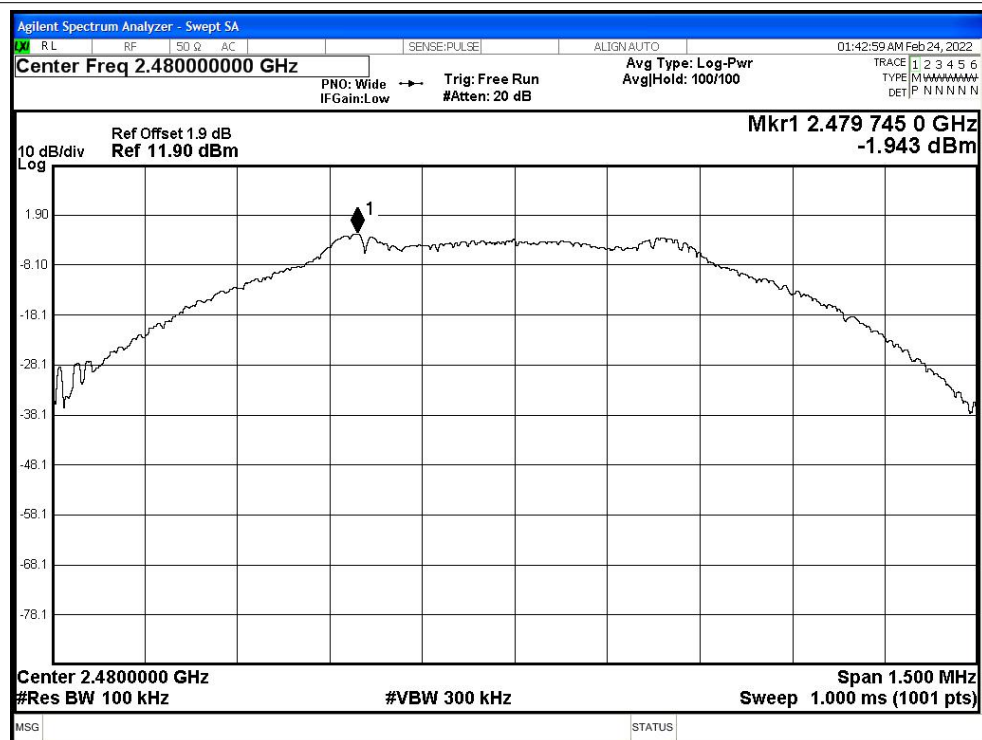
Log

Start 30 MHz Stop 26.50 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.530 s (30001 pts)

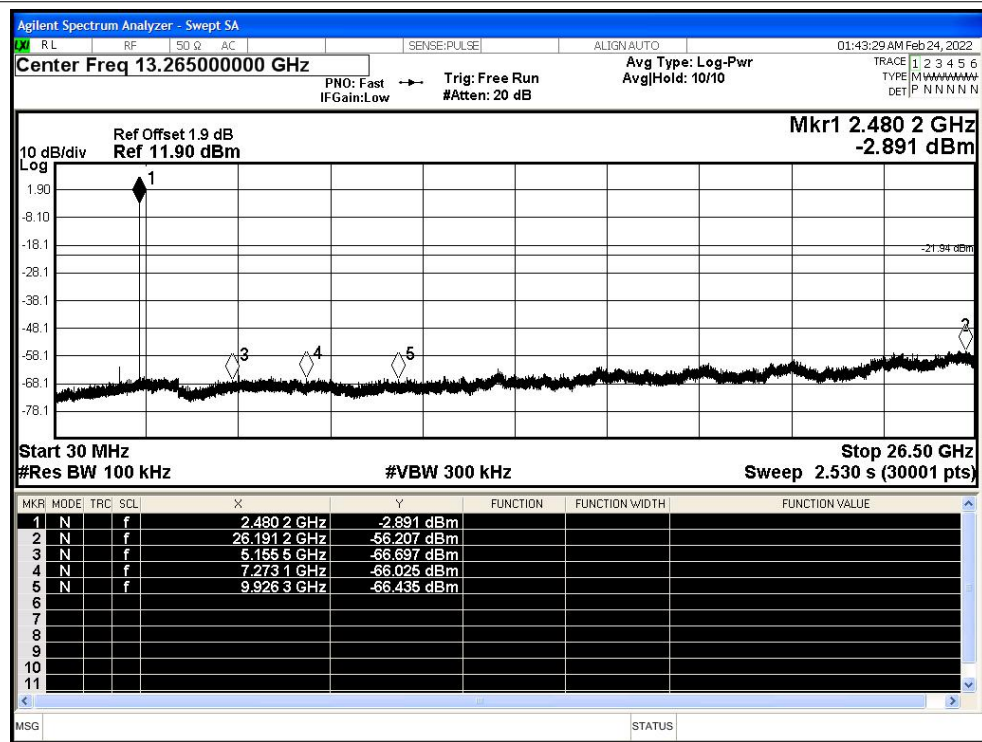
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.439 7 GHz	-3.566 dBm			
2	N	f		26.105 6 GHz	-54.590 dBm			
3	N	f		5.001 9 GHz	-66.567 dBm			
4	N	f		7.409 0 GHz	-65.461 dBm			
5	N	f		9.603 3 GHz	-66.897 dBm			



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



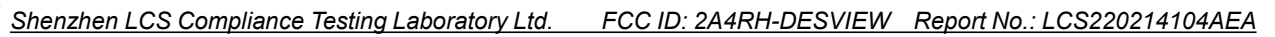
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



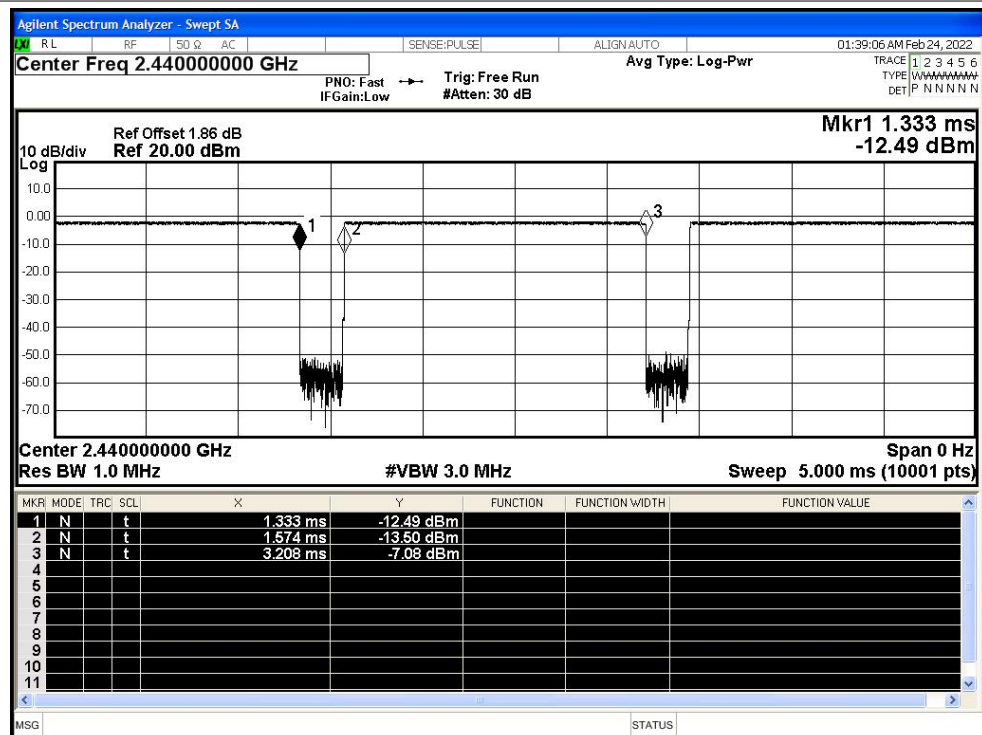


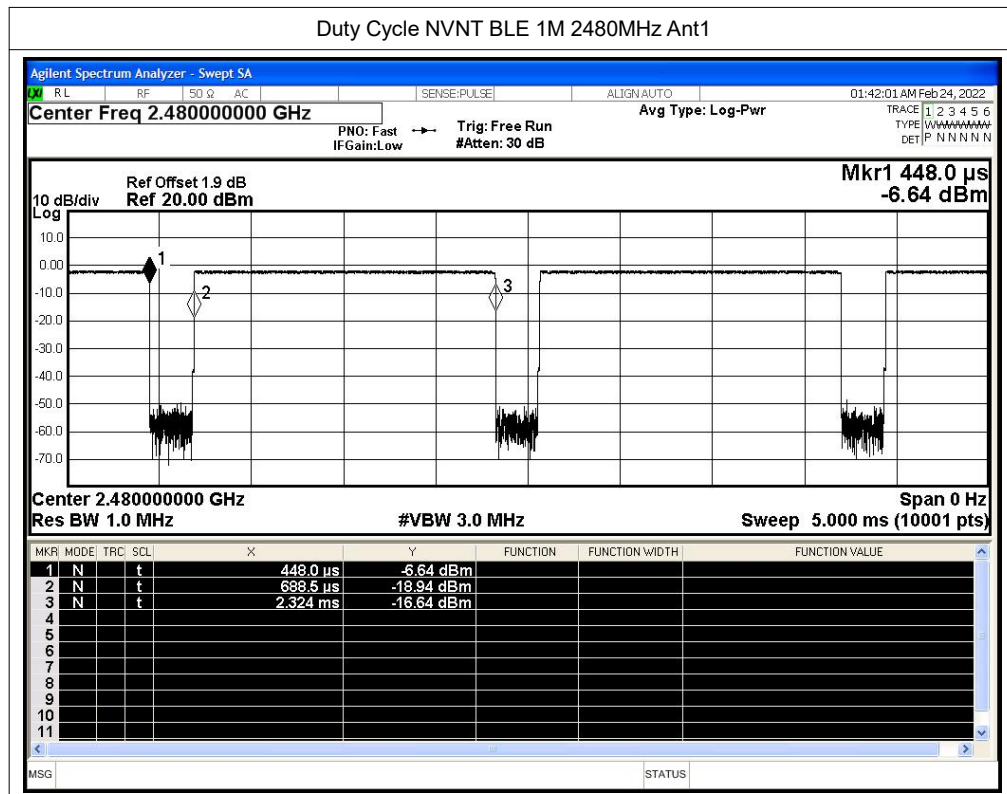
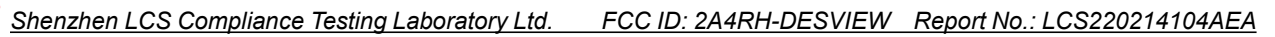
A.6 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant1	87.2	0.59	0.61
NVNT	BLE 1M	2440	Ant1	87.17	0.6	0.61
NVNT	BLE 1M	2480	Ant1	87.18	0.6	0.61



Duty Cycle NVNT BLE 1M 2402MHz Ant1







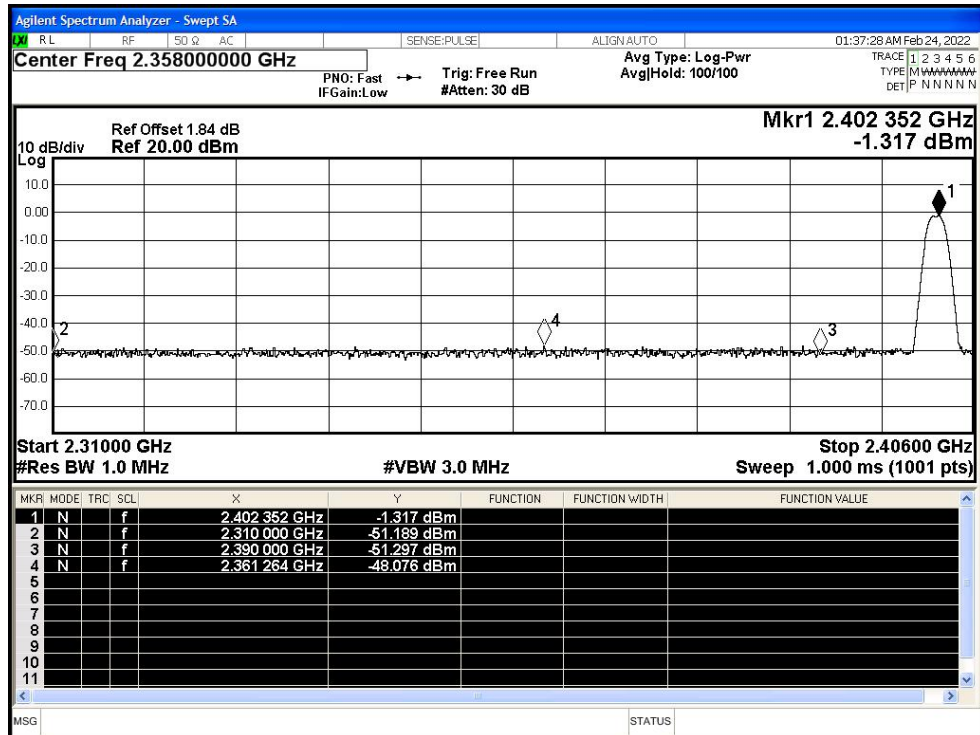
A.7 Emissions in Restricted Bands

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant1	2310	-51.18	2	46.08	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2310	-60.49	2	36.77	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2361.264	-48.07	2	49.19	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2382.288	-59.97	2	37.29	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2390	-49.36	2	47.9	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2390	-59.94	2	37.32	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-50.82	2	46.44	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-59.35	2	37.91	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2499.016	-46.91	2	50.35	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.536	-59.34	2	37.92	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2500	-50.08	2	47.18	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2500	-59.81	2	37.45	Average	54	Pass



Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2402MHz Ant1 Average

