



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Hyundai Notebook

Test Model: HT13TA1E01

Environmental Conditions

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





B.1 -6dB Bandwidth

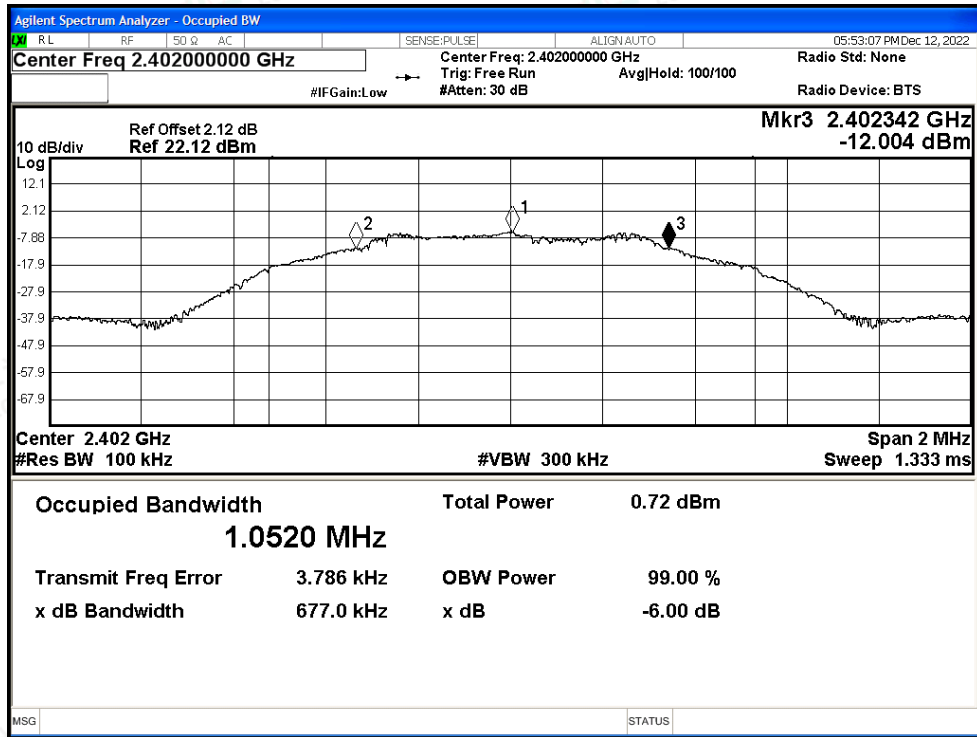
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant0	0.677	≥ 0.5	Pass
NVNT	BLE 1M	2440	Ant0	0.675	≥ 0.5	Pass
NVNT	BLE 1M	2480	Ant0	0.679	≥ 0.5	Pass
NVNT	BLE 2M	2402	Ant0	1.123	≥ 0.5	Pass
NVNT	BLE 2M	2440	Ant0	1.124	≥ 0.5	Pass
NVNT	BLE 2M	2480	Ant0	1.254	≥ 0.5	Pass



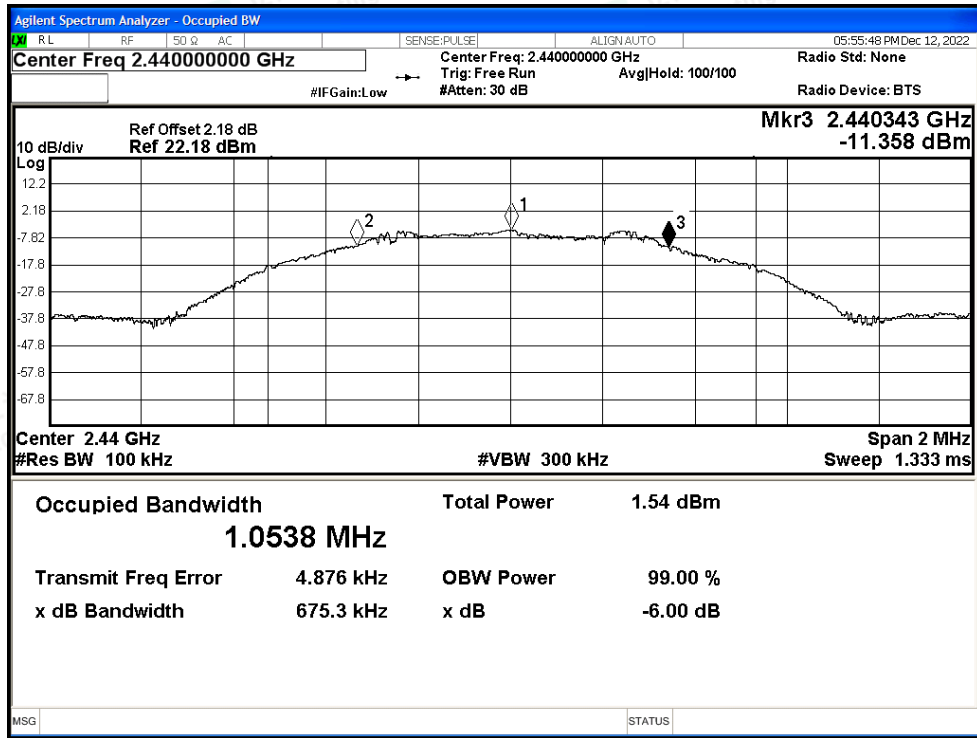


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant0

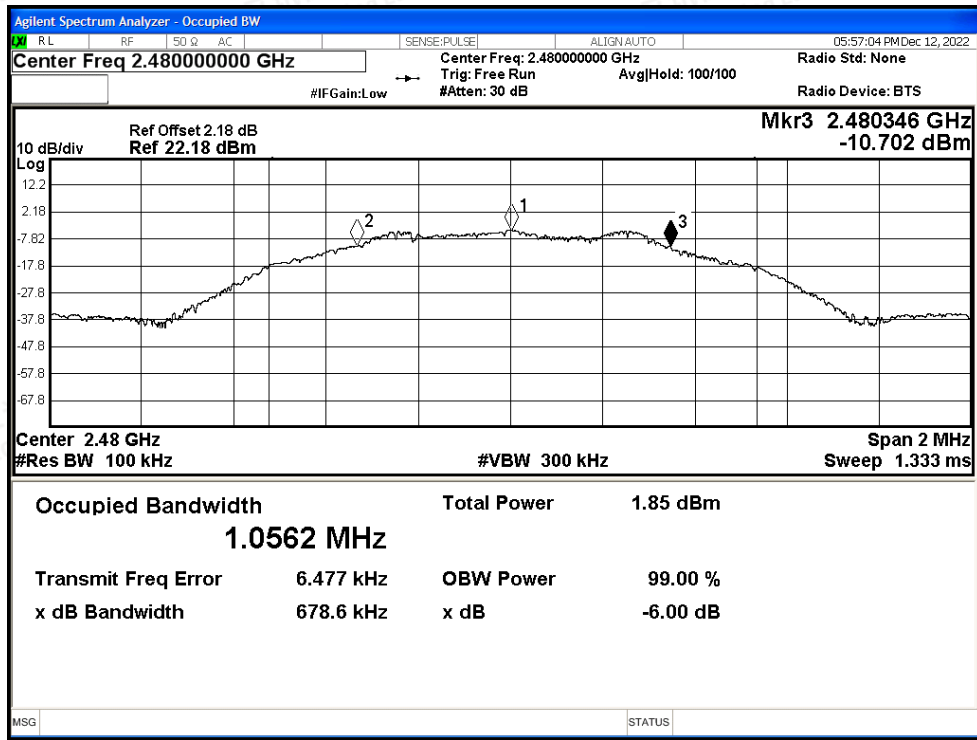


-6dB Bandwidth NVNT BLE 1M 2440MHz Ant0

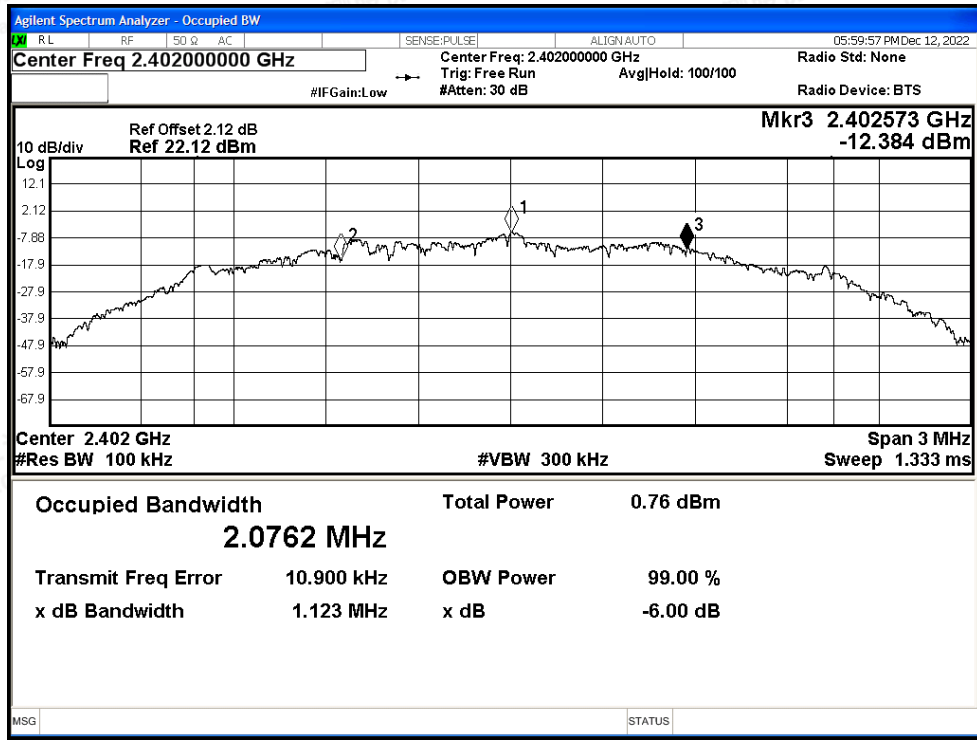




-6dB Bandwidth NVNT BLE 1M 2480MHz Ant0

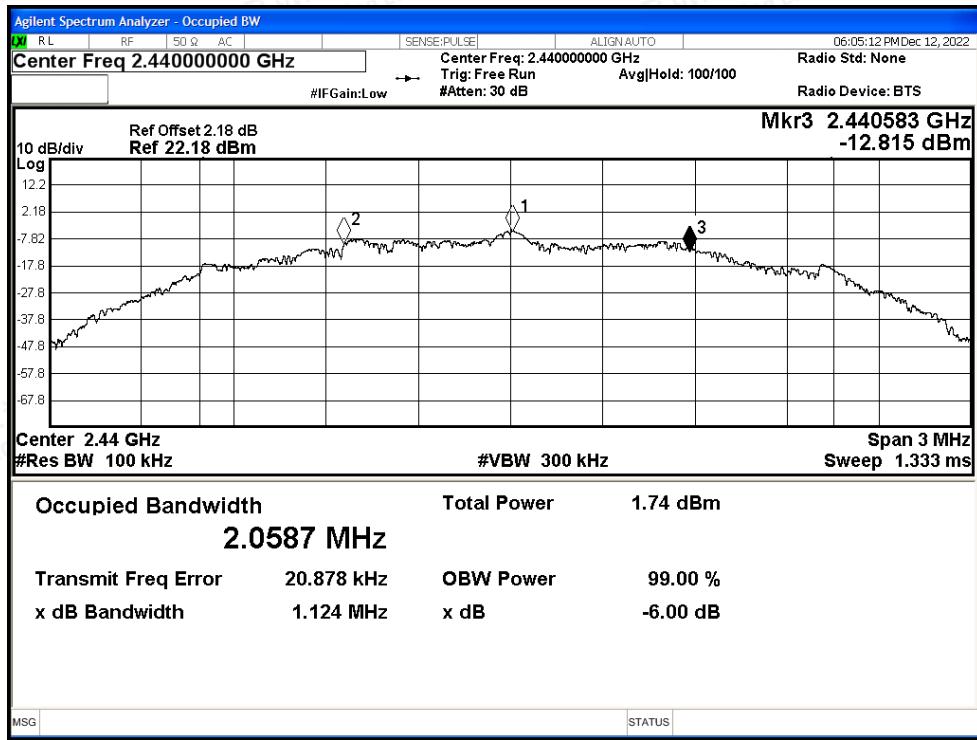


-6dB Bandwidth NVNT BLE 2M 2402MHz Ant0

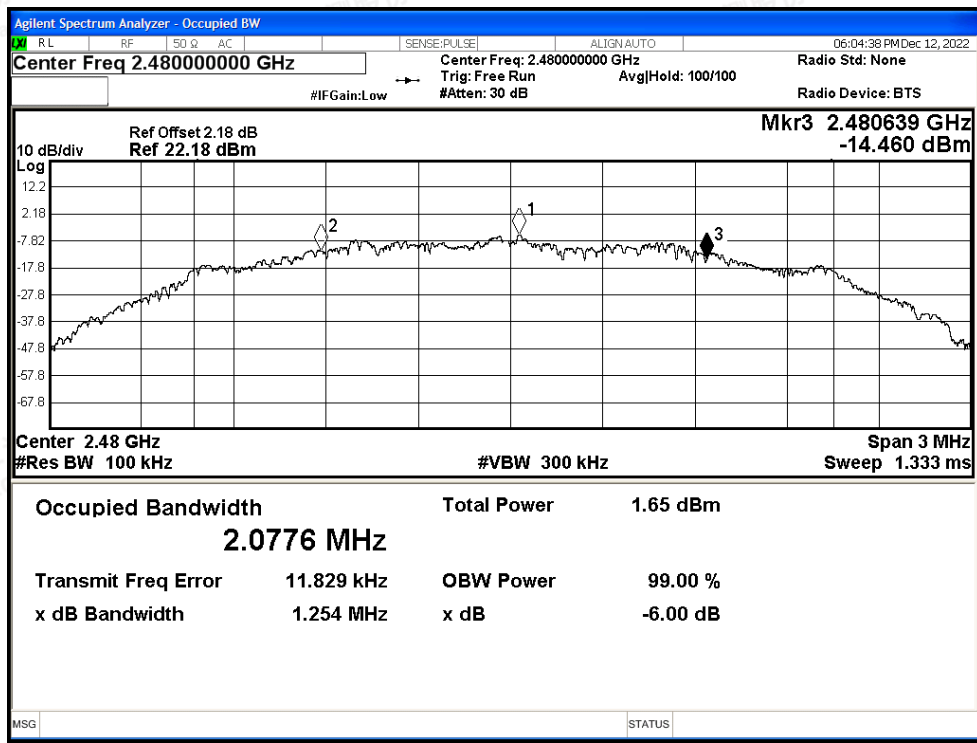




-6dB Bandwidth NVNT BLE 2M 2440MHz Ant0



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant0





B.2 Maximum Conducted Output Power

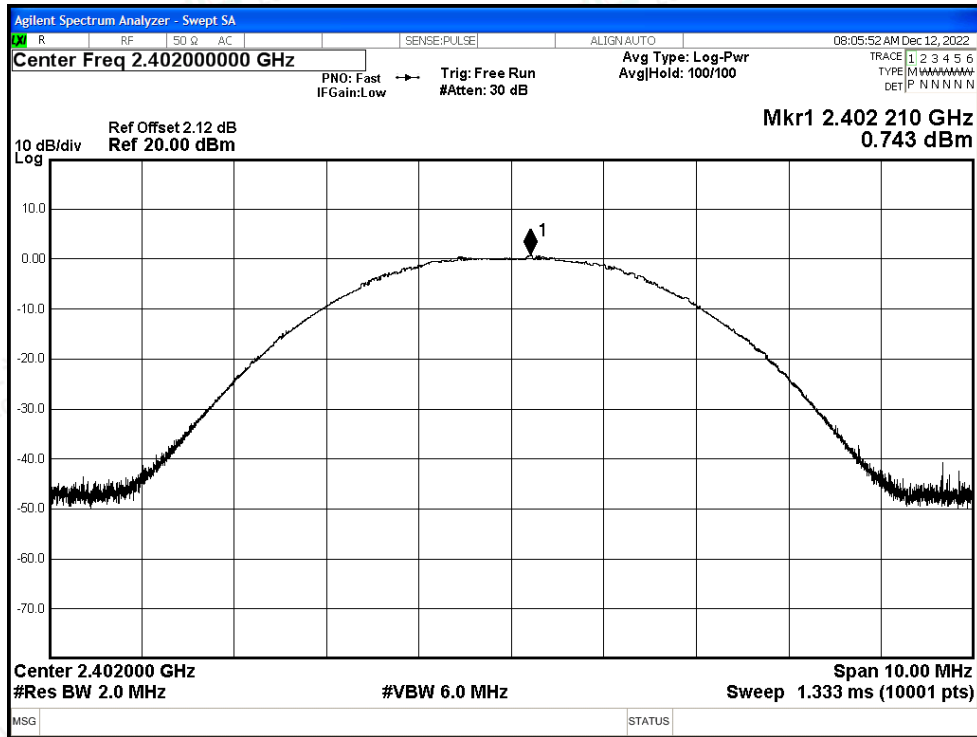
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant0	0.74	30	Pass
NVNT	BLE 1M	2440	Ant0	0.64	30	Pass
NVNT	BLE 1M	2480	Ant0	0.26	30	Pass
NVNT	BLE 2M	2402	Ant0	0.21	30	Pass
NVNT	BLE 2M	2440	Ant0	-0.05	30	Pass
NVNT	BLE 2M	2480	Ant0	-0.32	30	Pass



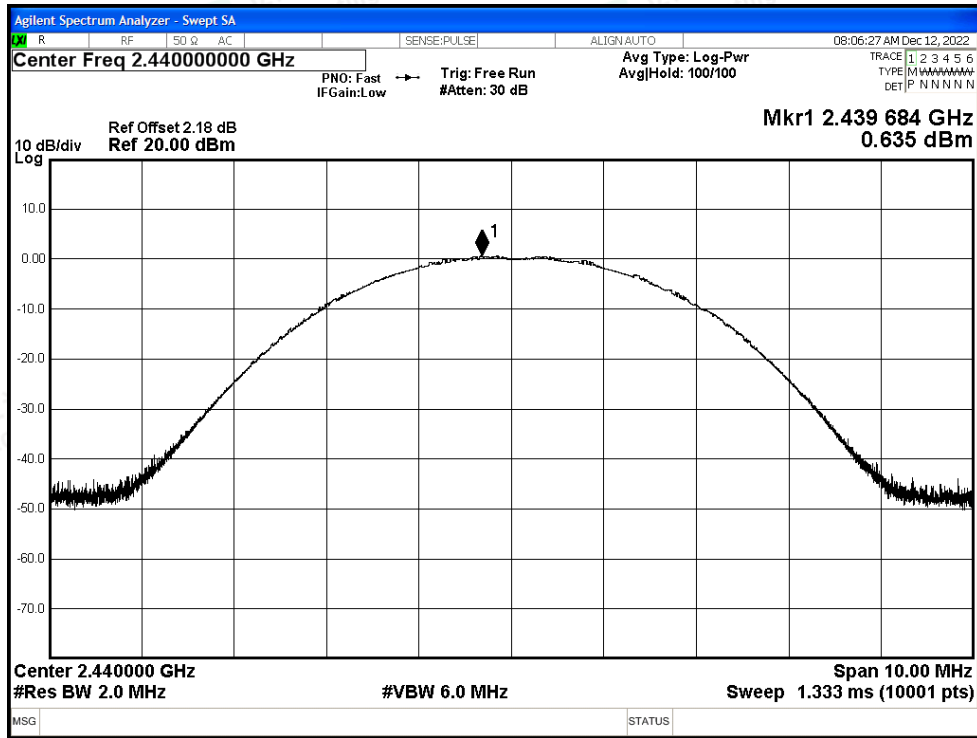


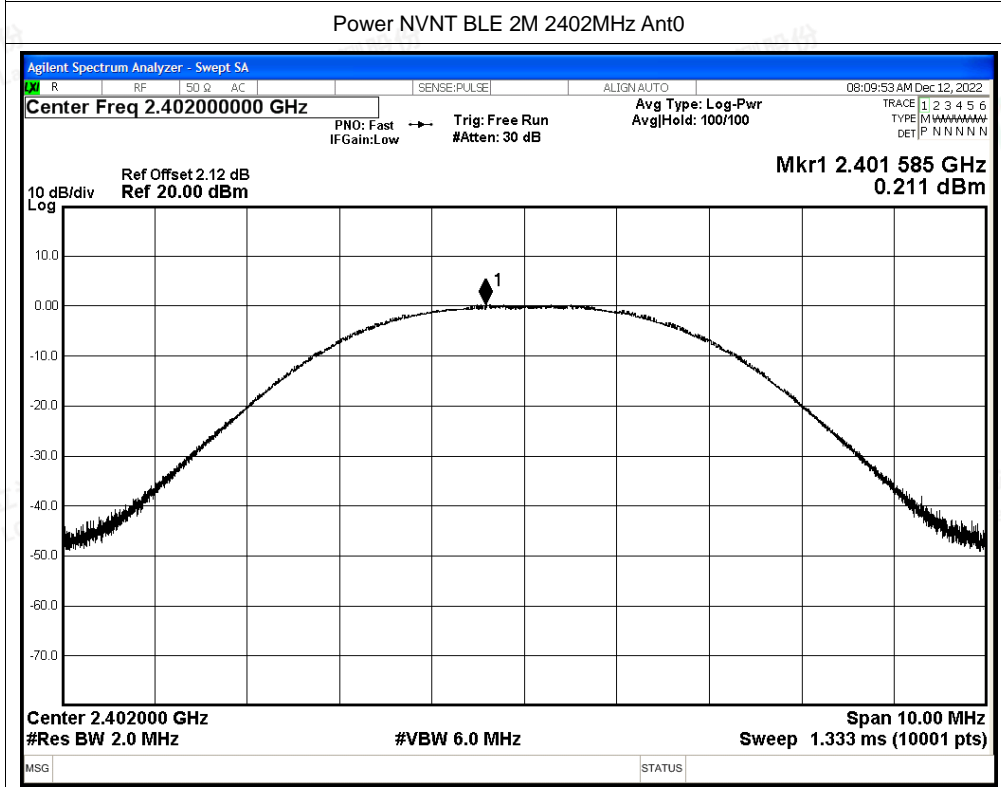
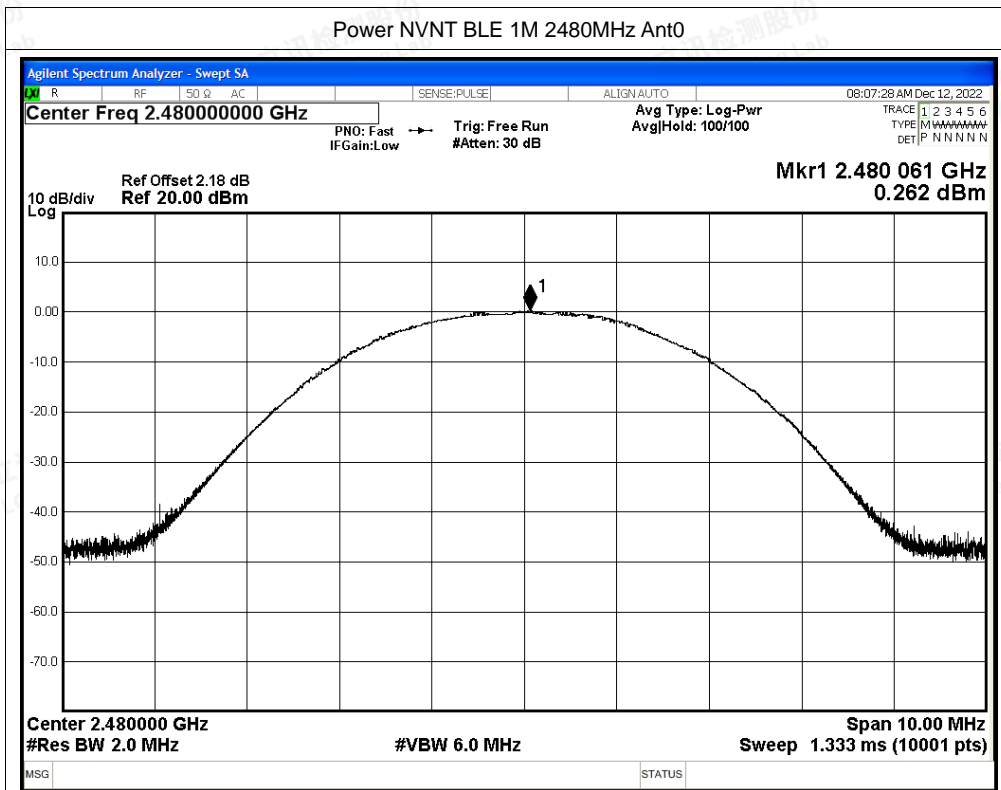
Test Graphs

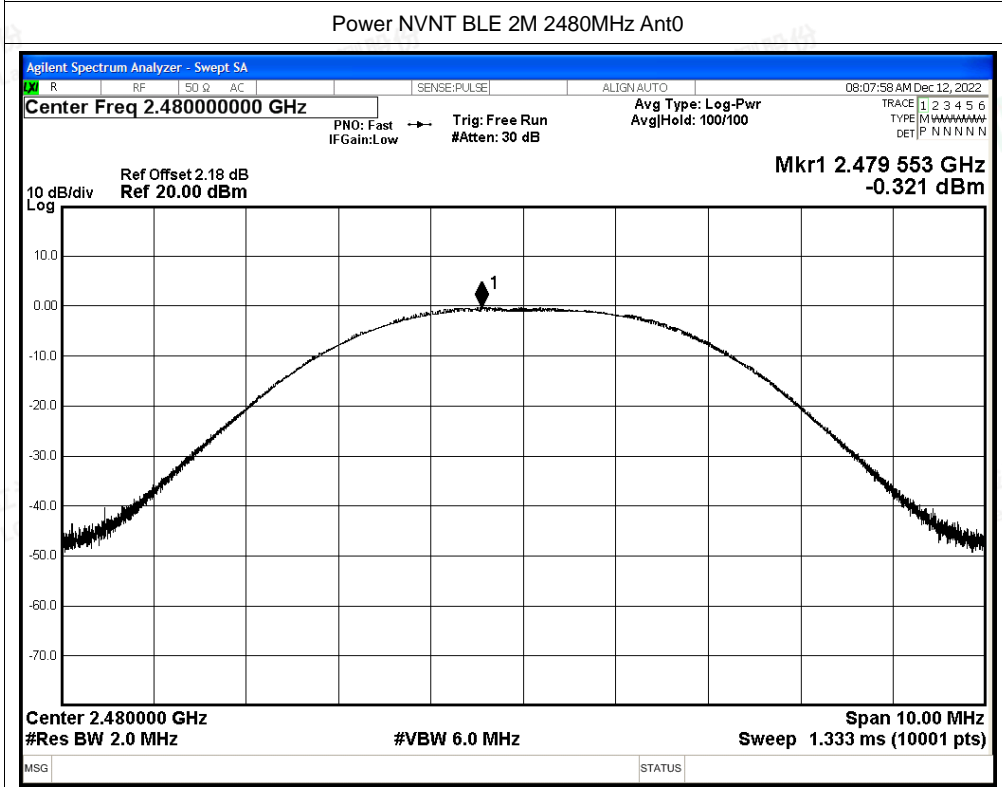
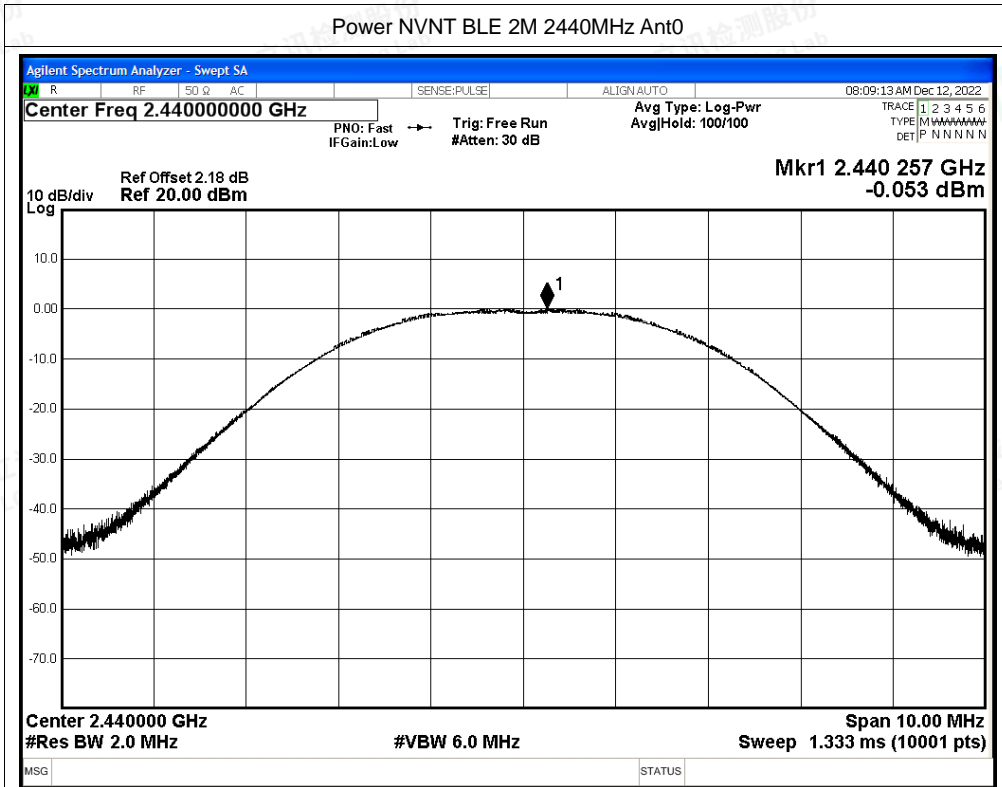
Power NVNT BLE 1M 2402MHz Ant0



Power NVNT BLE 1M 2440MHz Ant0









B.3 Maximum Power Spectral Density Level

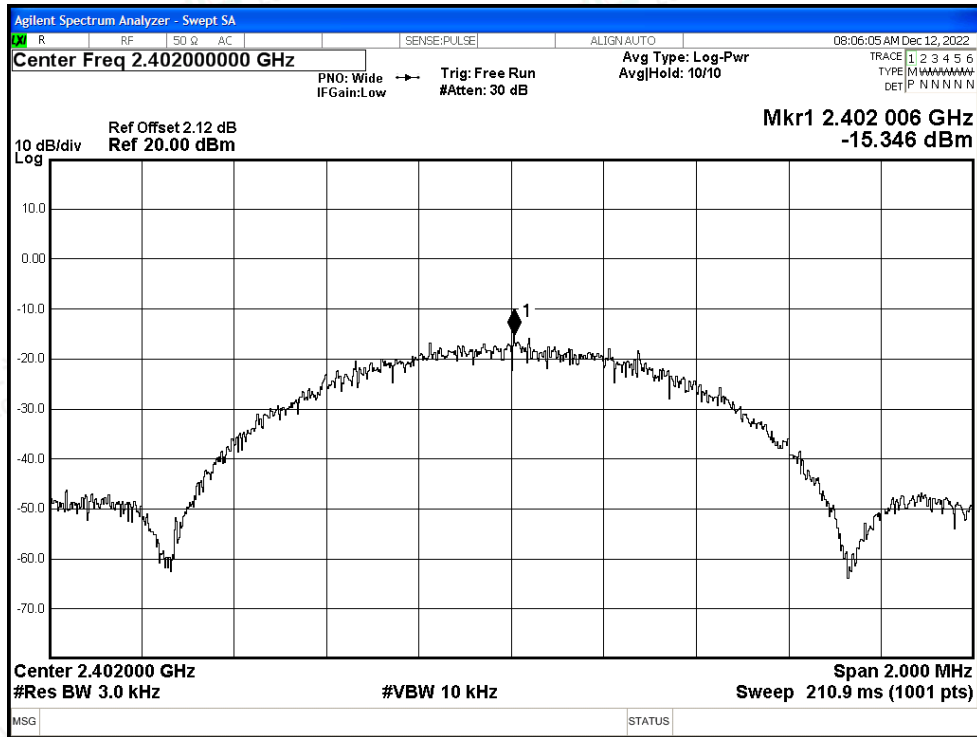
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant0	-15.35	8	Pass
NVNT	BLE 1M	2440	Ant0	-15.69	8	Pass
NVNT	BLE 1M	2480	Ant0	-15.18	8	Pass
NVNT	BLE 2M	2402	Ant0	-19.14	8	Pass
NVNT	BLE 2M	2440	Ant0	-19.88	8	Pass
NVNT	BLE 2M	2480	Ant0	-18.95	8	Pass



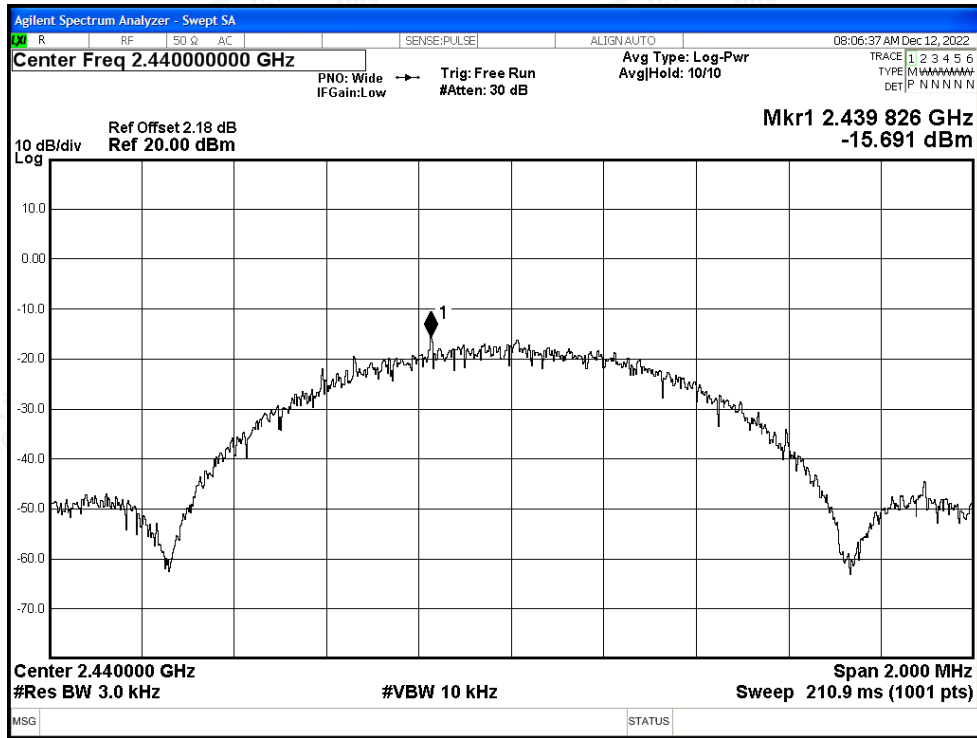


Test Graphs

PSD NVNT BLE 1M 2402MHz Ant0

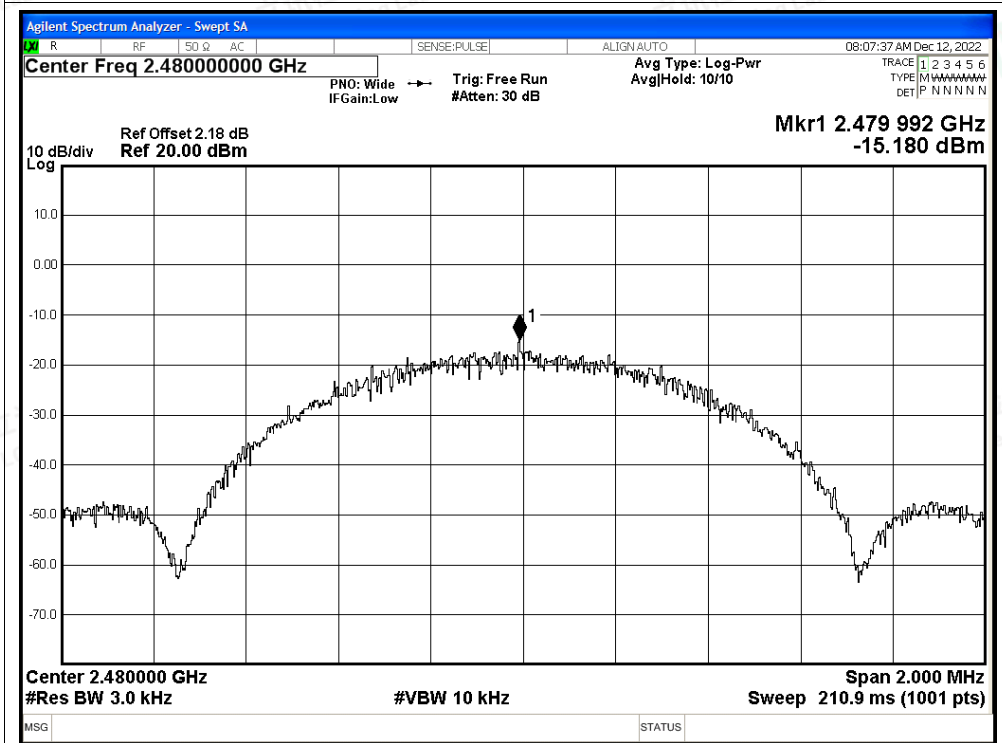


PSD NVNT BLE 1M 2440MHz Ant0

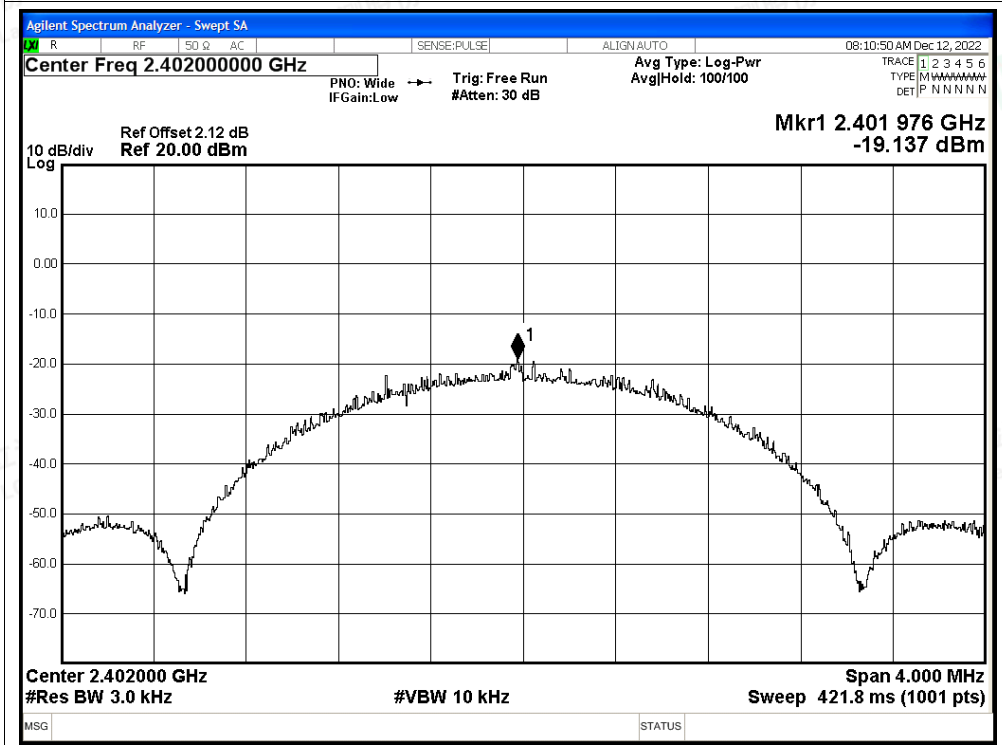




PSD NVNT BLE 1M 2480MHz Ant0

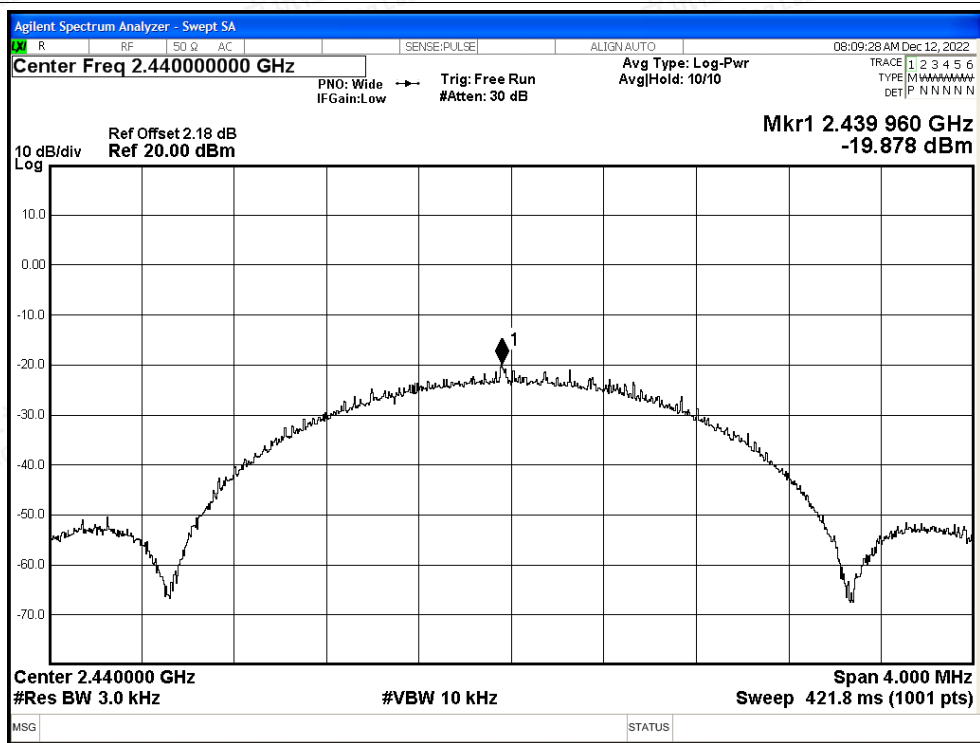


PSD NVNT BLE 2M 2402MHz Ant0

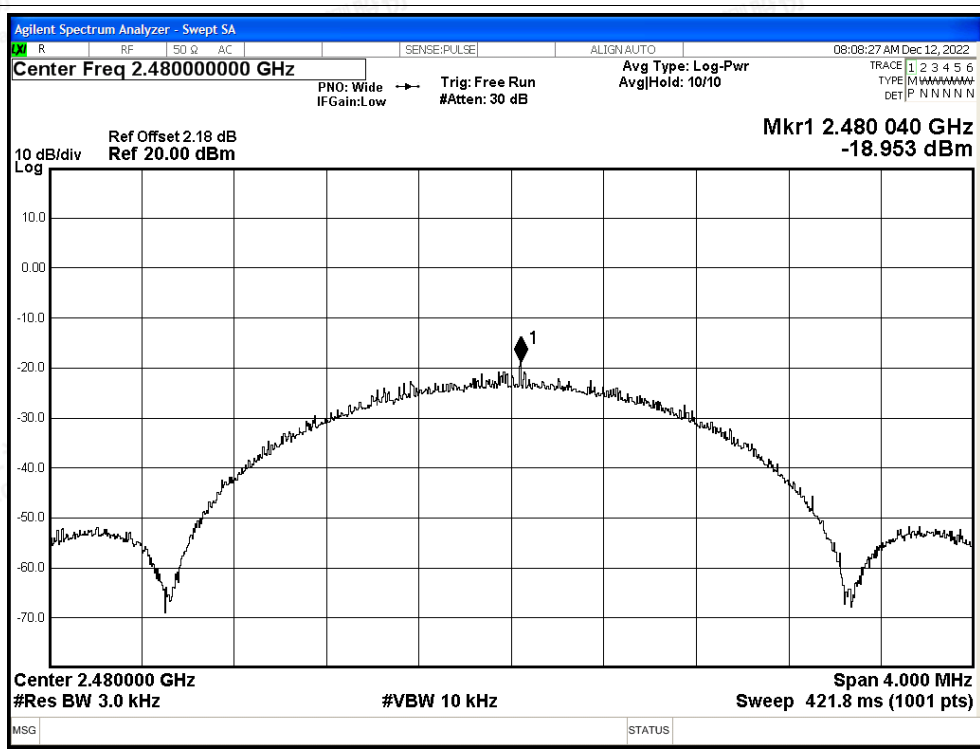




PSD NVNT BLE 2M 2440MHz Ant0



PSD NVNT BLE 2M 2480MHz Ant0





B.4 Band Edge

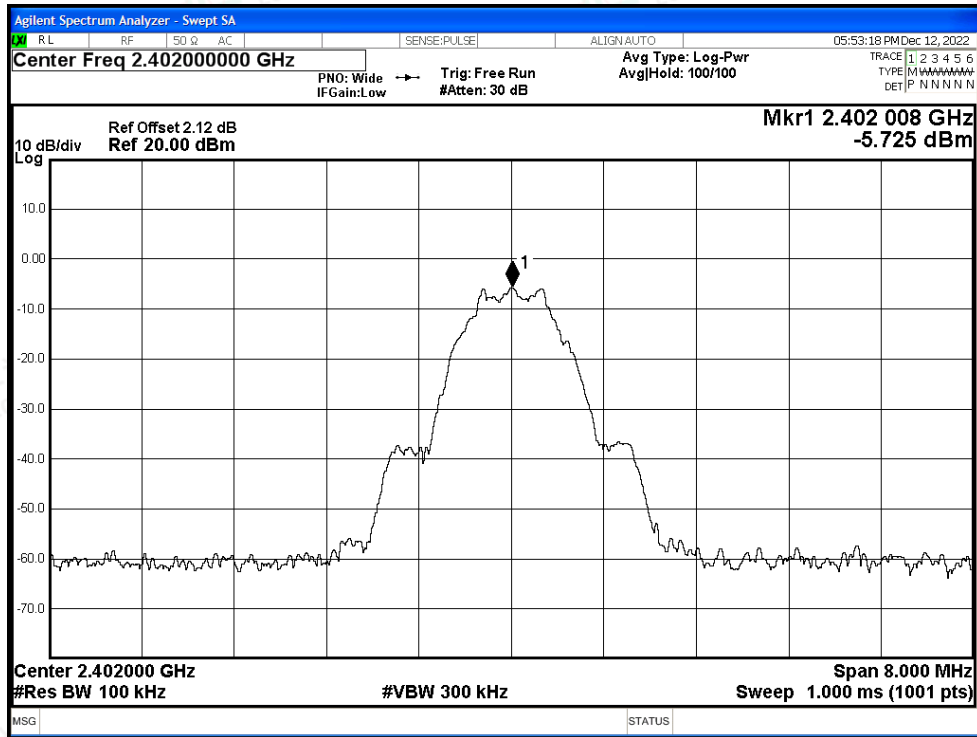
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant0	-51.1	-20	Pass
NVNT	BLE 1M	2480	Ant0	-52.52	-20	Pass
NVNT	BLE 2M	2402	Ant0	-31.44	-20	Pass
NVNT	BLE 2M	2480	Ant0	-49.81	-20	Pass



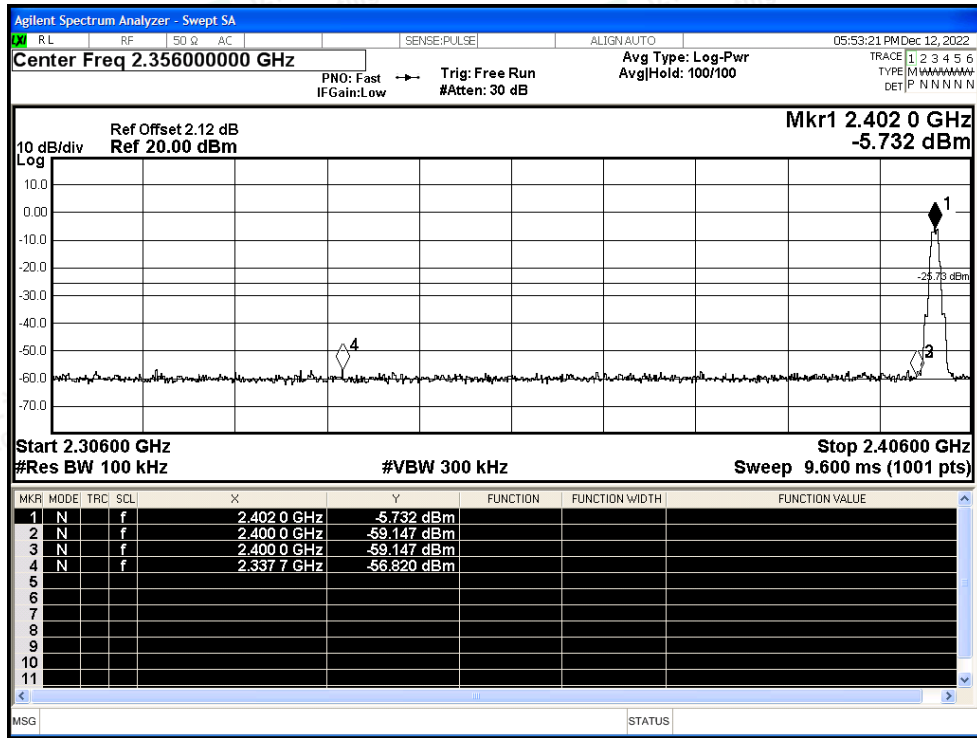


Test Graphs

Band Edge NVNT BLE 1M 2402MHz Ant0 Ref

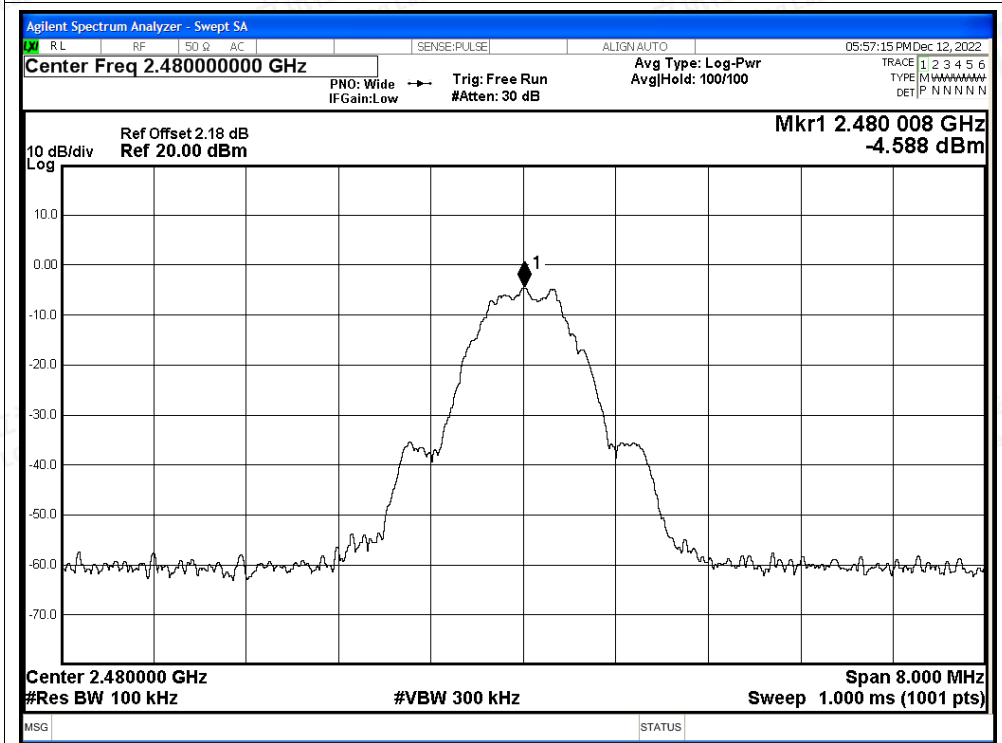


Band Edge NVNT BLE 1M 2402MHz Ant0 Emission

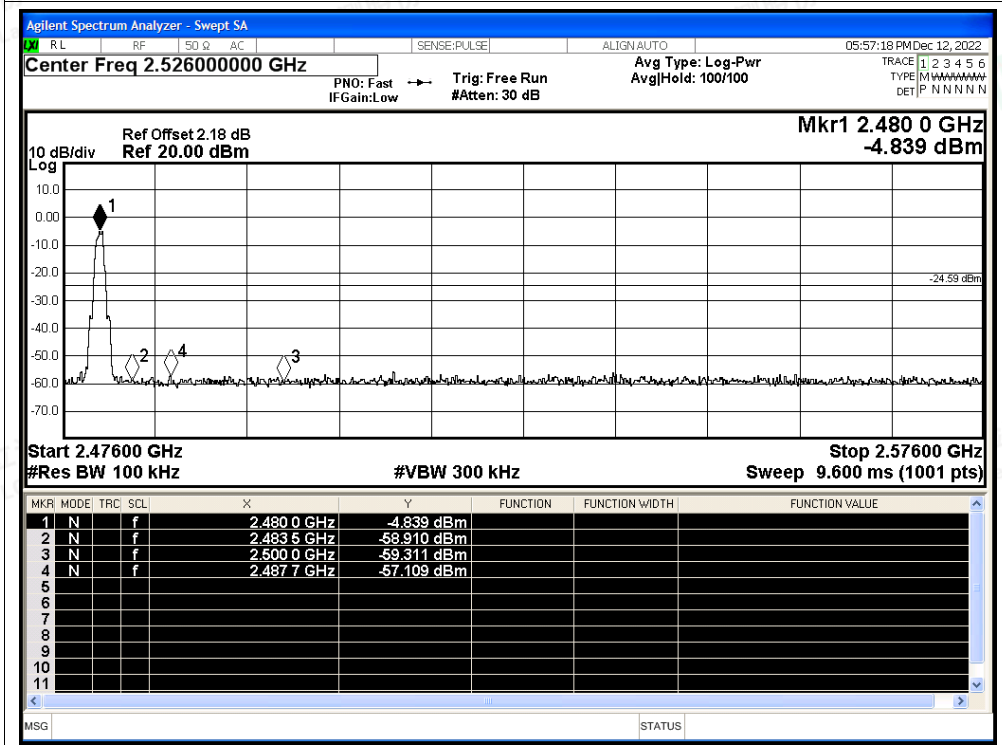




Band Edge NVNT BLE 1M 2480MHz Ant0 Ref

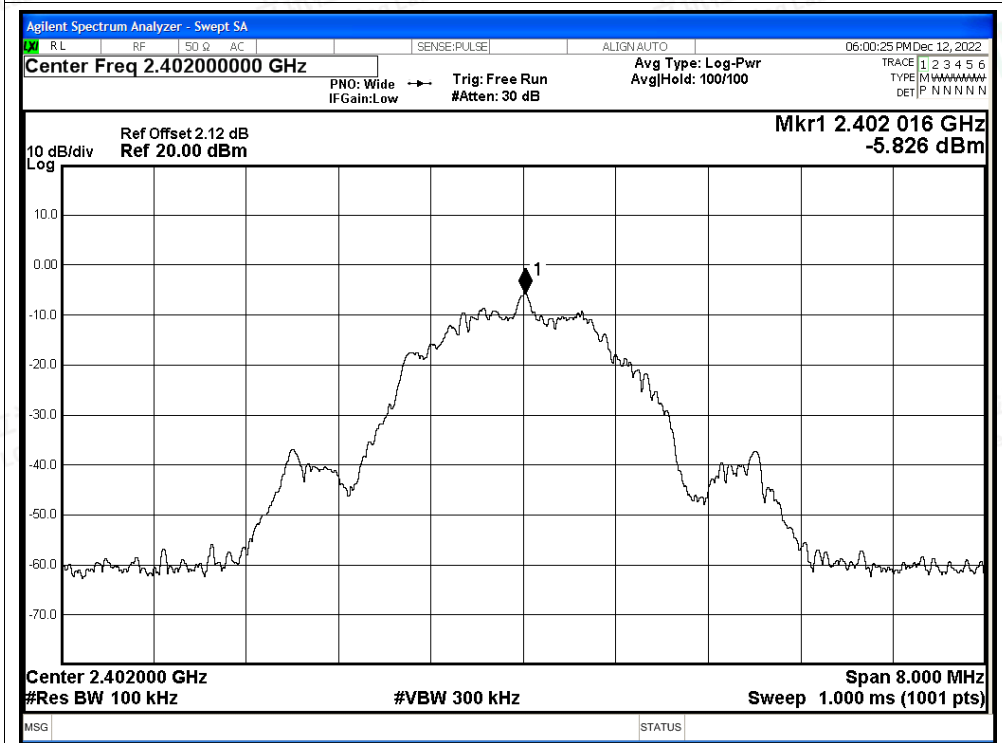


Band Edge NVNT BLE 1M 2480MHz Ant0 Emission

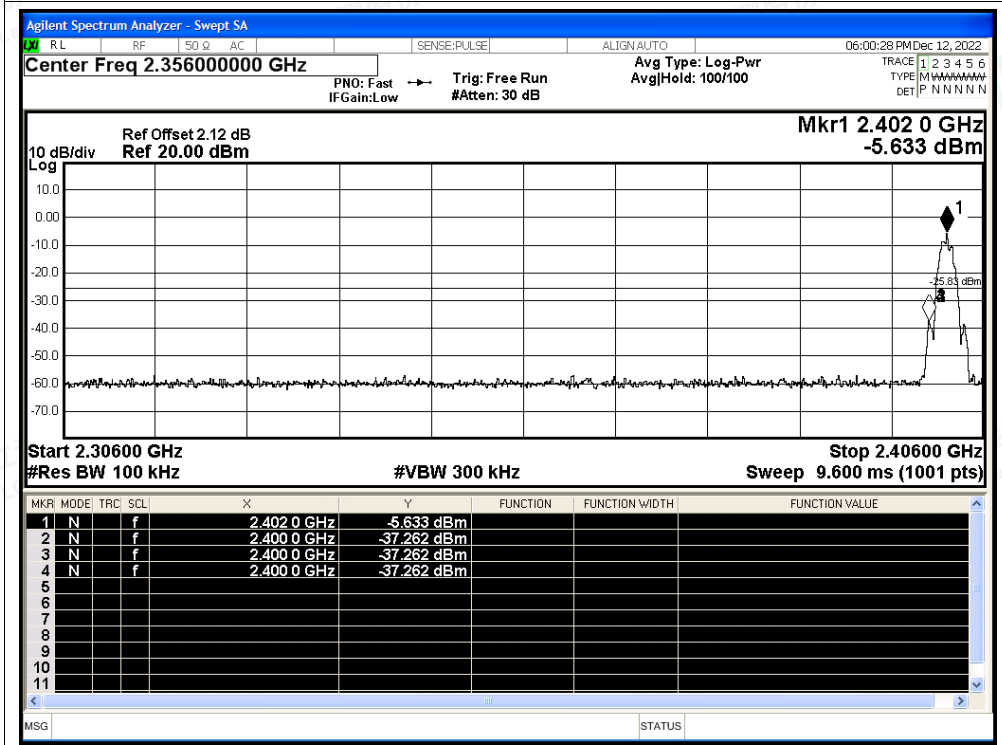




Band Edge NVNT BLE 2M 2402MHz Ant0 Ref

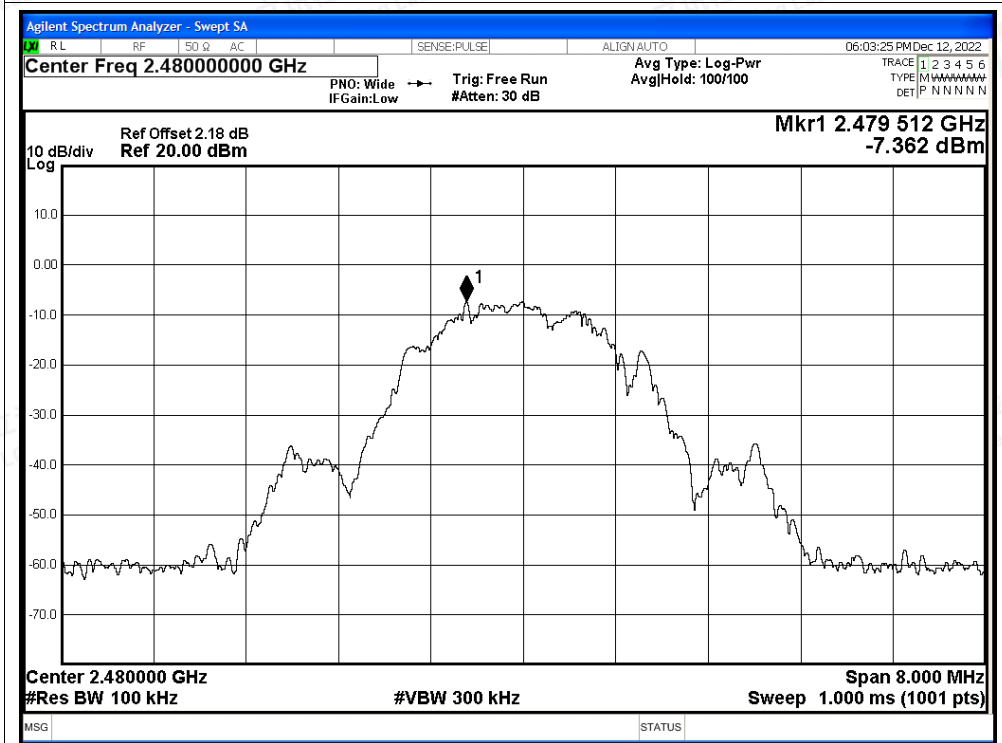


Band Edge NVNT BLE 2M 2402MHz Ant0 Emission

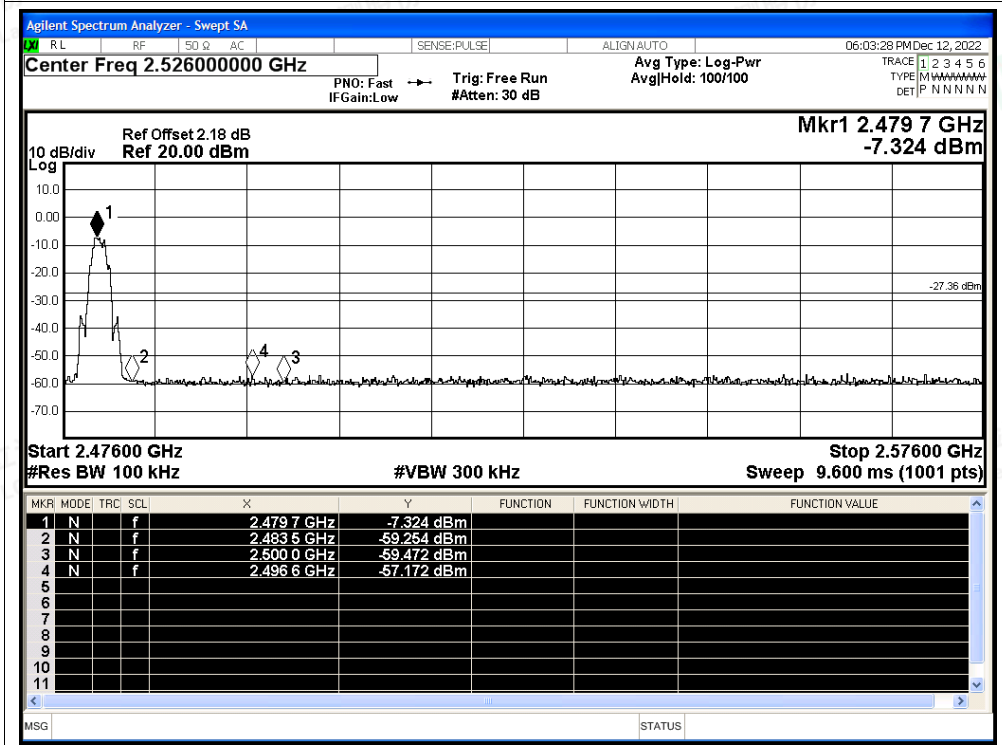




Band Edge NVNT BLE 2M 2480MHz Ant0 Ref



Band Edge NVNT BLE 2M 2480MHz Ant0 Emission





B.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant0	-48.76	-20	Pass
NVNT	BLE 1M	2440	Ant0	-49.51	-20	Pass
NVNT	BLE 1M	2480	Ant0	-50.33	-20	Pass
NVNT	BLE 2M	2402	Ant0	-49.38	-20	Pass
NVNT	BLE 2M	2440	Ant0	-50.27	-20	Pass
NVNT	BLE 2M	2480	Ant0	-50.87	-20	Pass

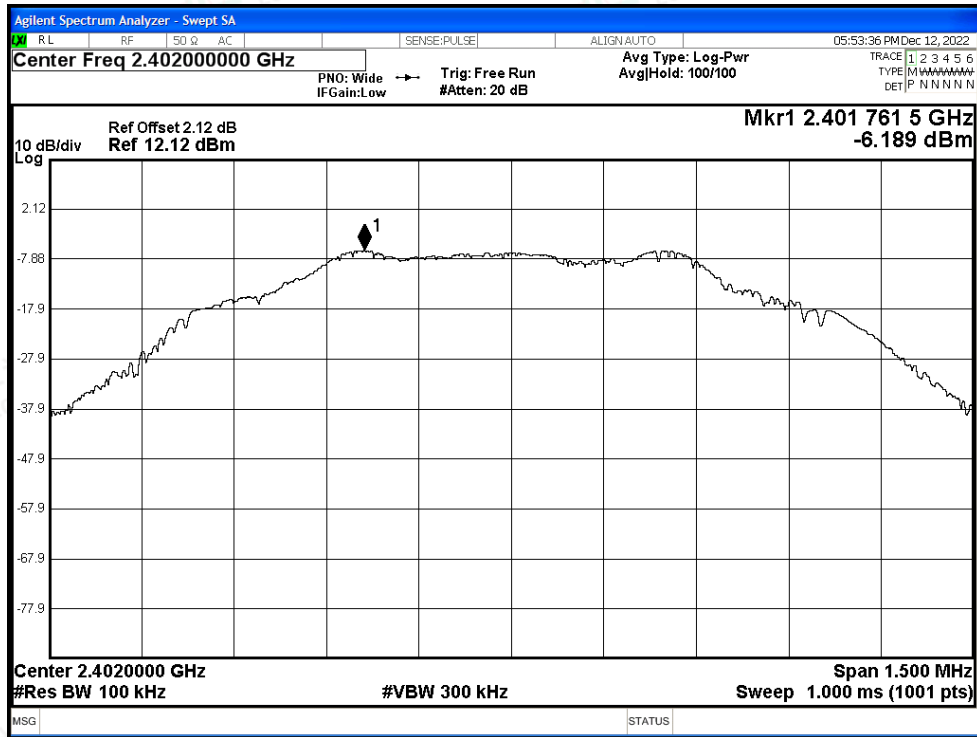


Shenzhen LCS Compliance Testing Laboratory Ltd.
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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

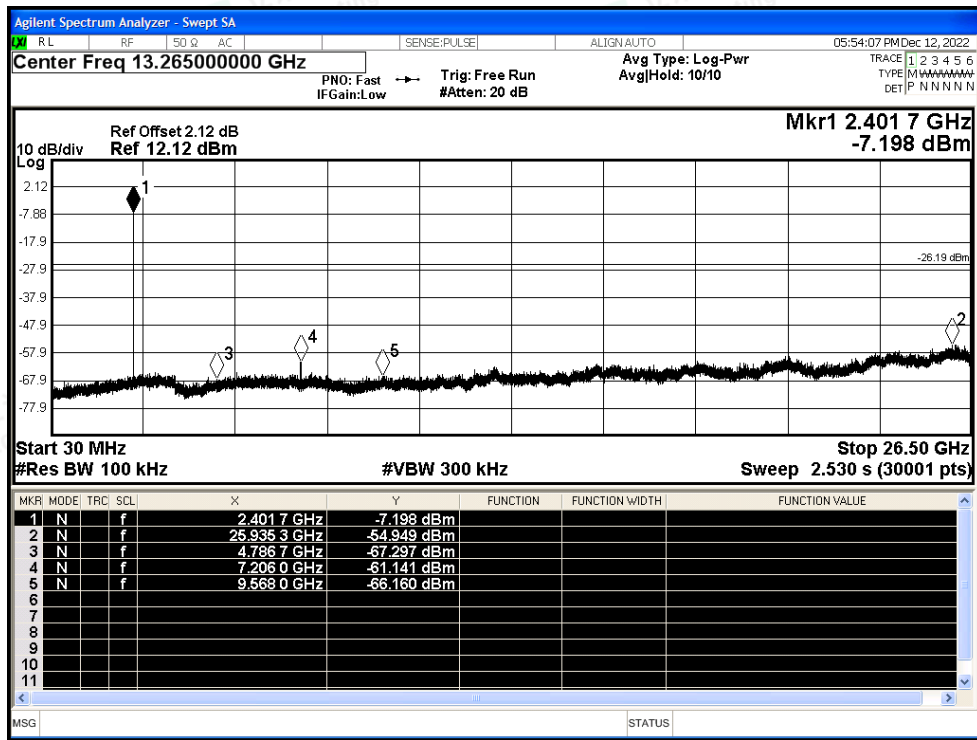


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant0 Ref

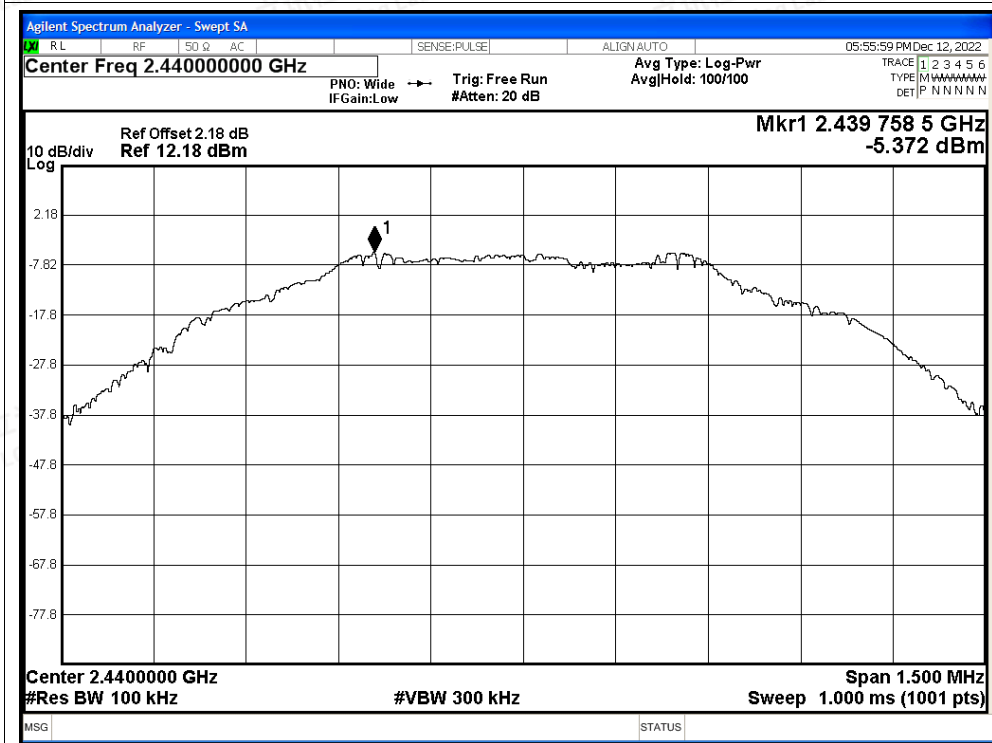


Tx. Spurious NVNT BLE 1M 2402MHz Ant0 Emission

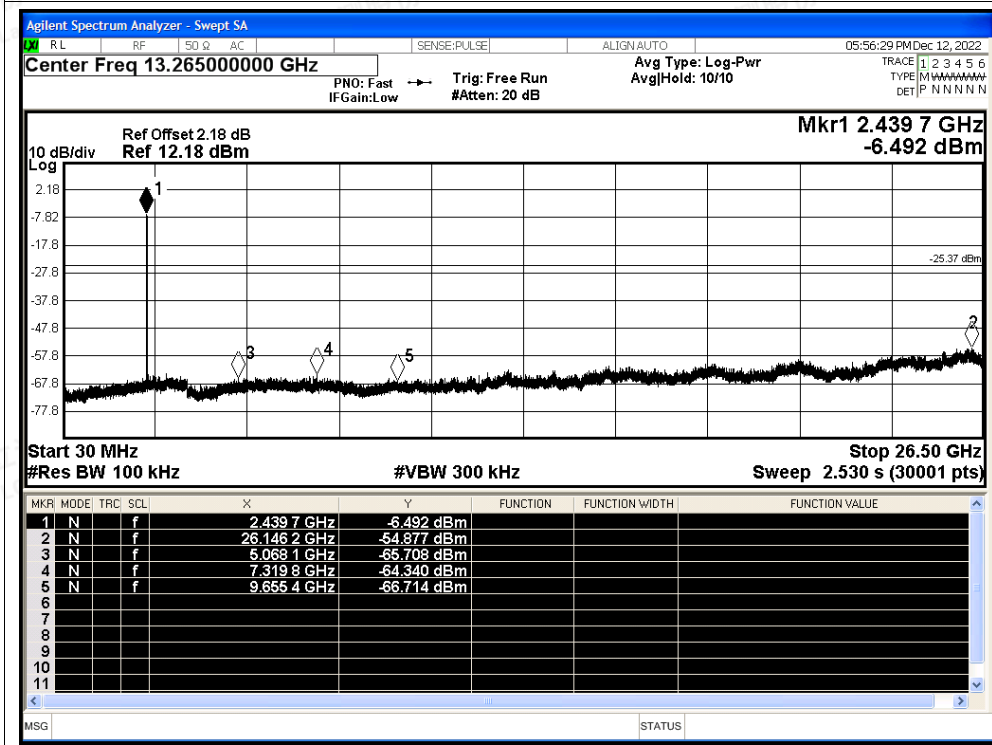




Tx. Spurious NVNT BLE 1M 2440MHz Ant0 Ref

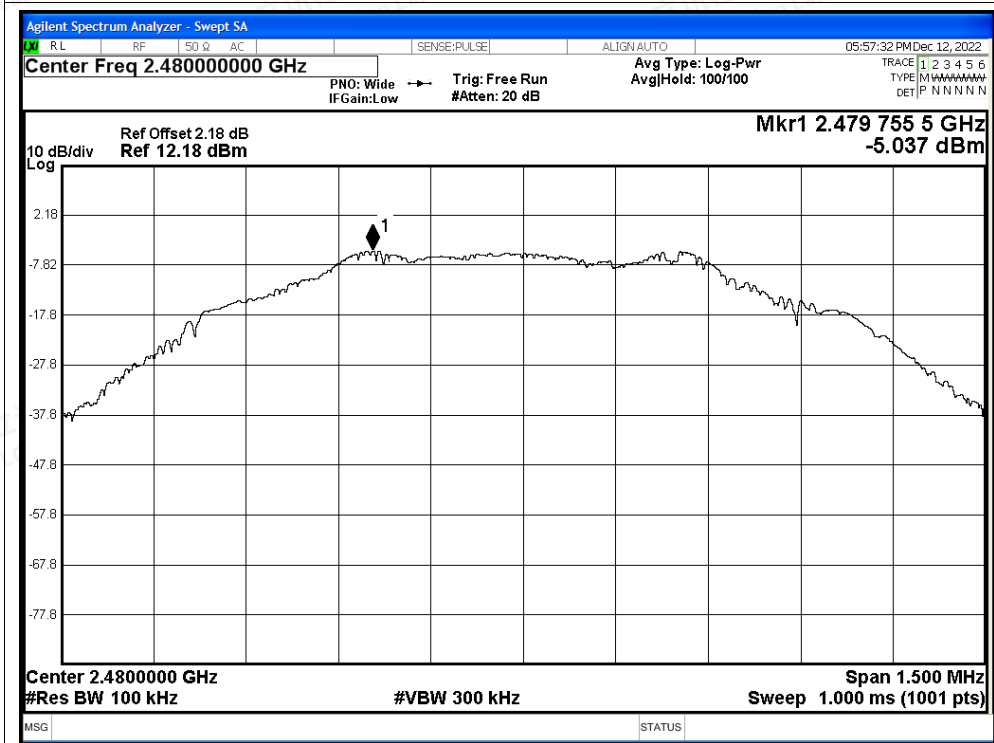


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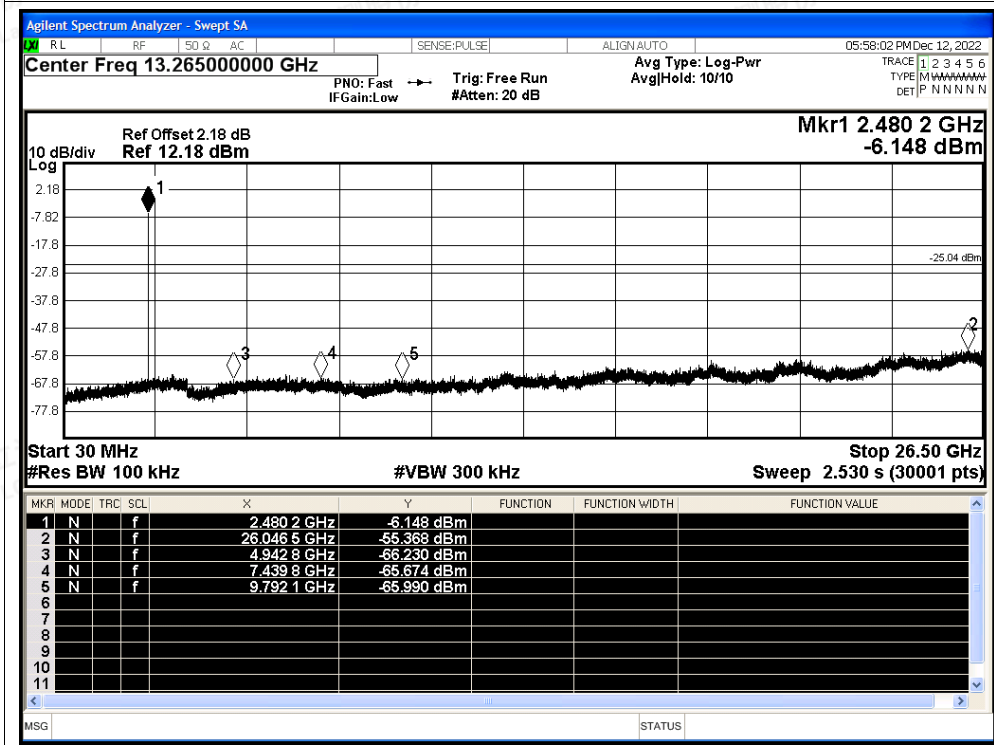




Tx. Spurious NVNT BLE 1M 2480MHz Ant0 Ref

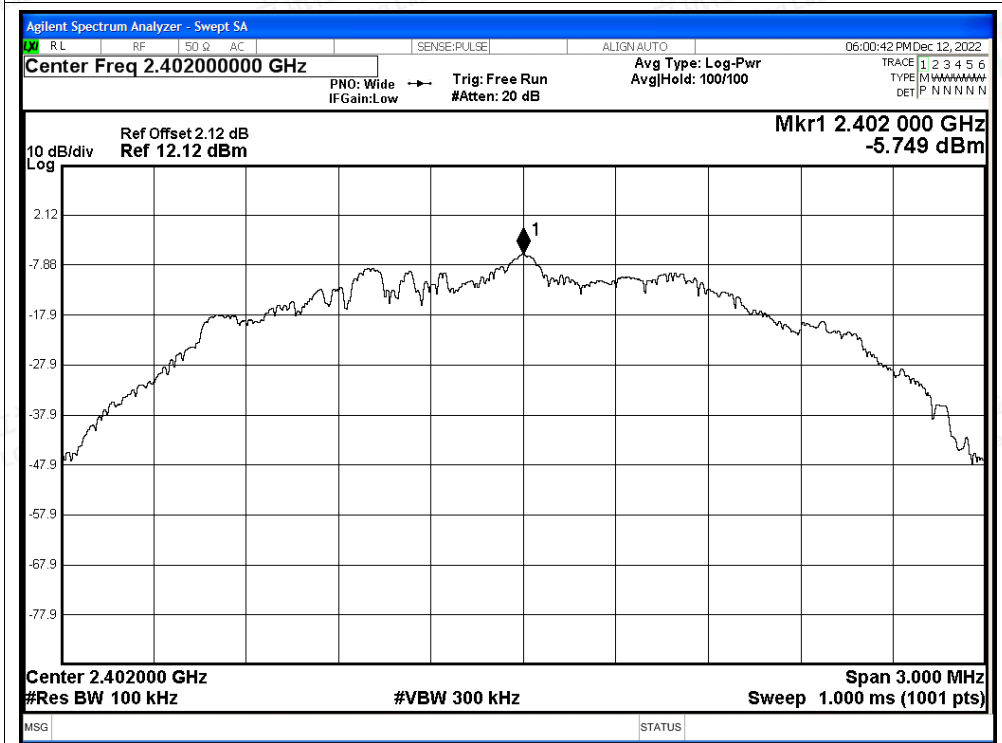


Tx. Spurious NVNT BLE 1M 2480MHz Ant0 Emission

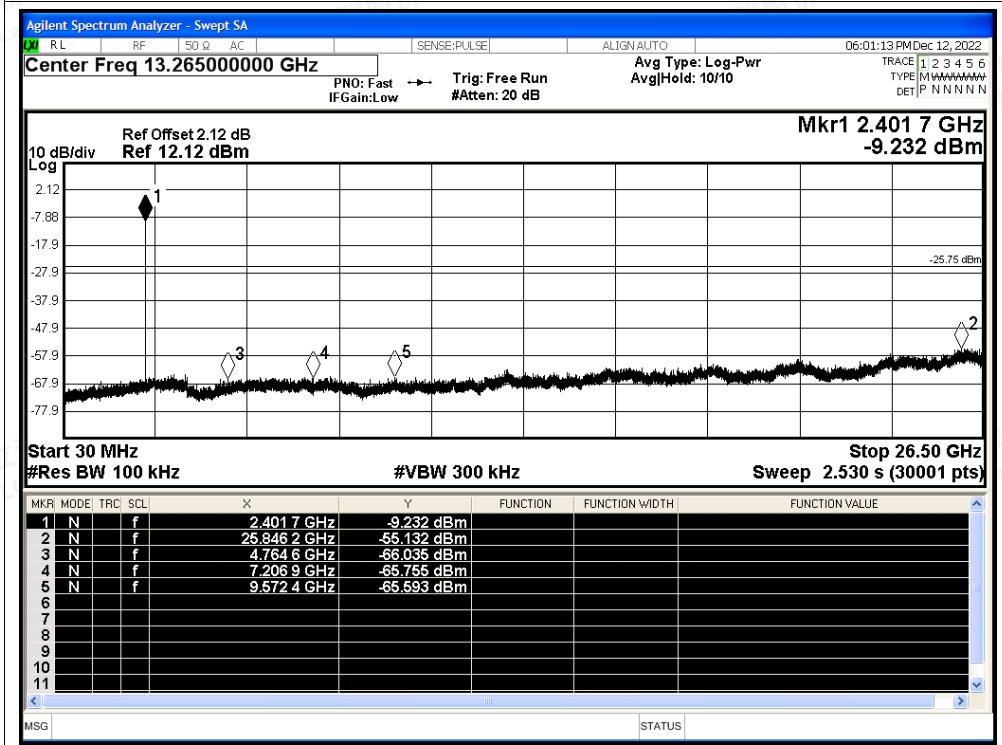




Tx. Spurious NVNT BLE 2M 2402MHz Ant0 Ref

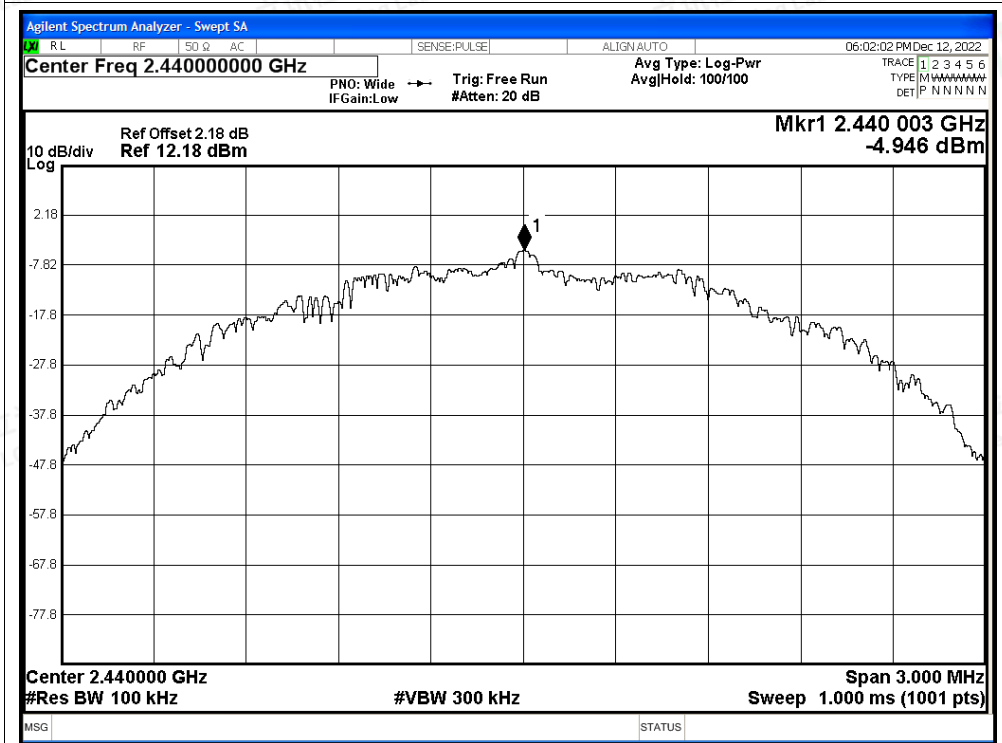


Tx. Spurious NVNT BLE 2M 2402MHz Ant0 Emission

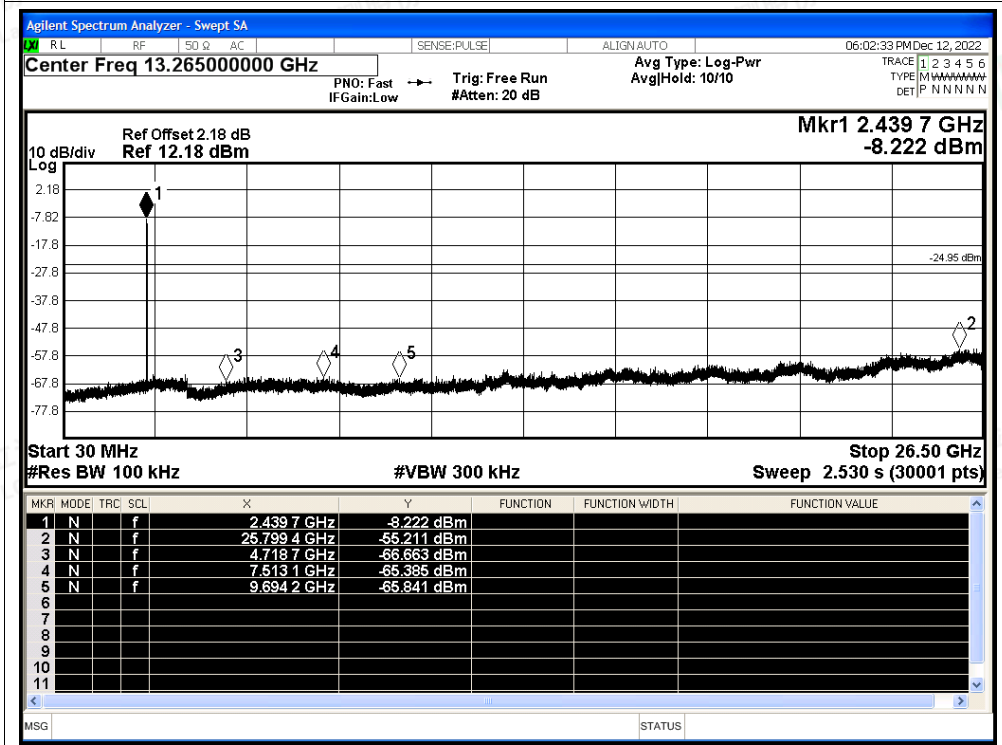




Tx. Spurious NVNT BLE 2M 2440MHz Ant0 Ref

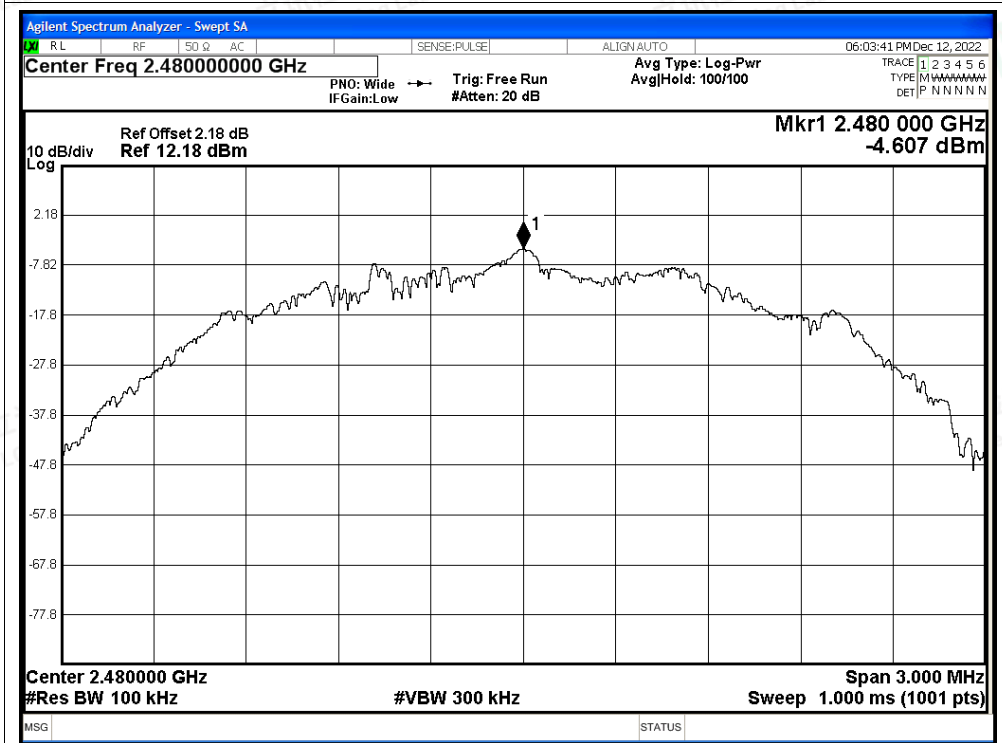


Tx. Spurious NVNT BLE 2M 2440MHz Ant0 Emission

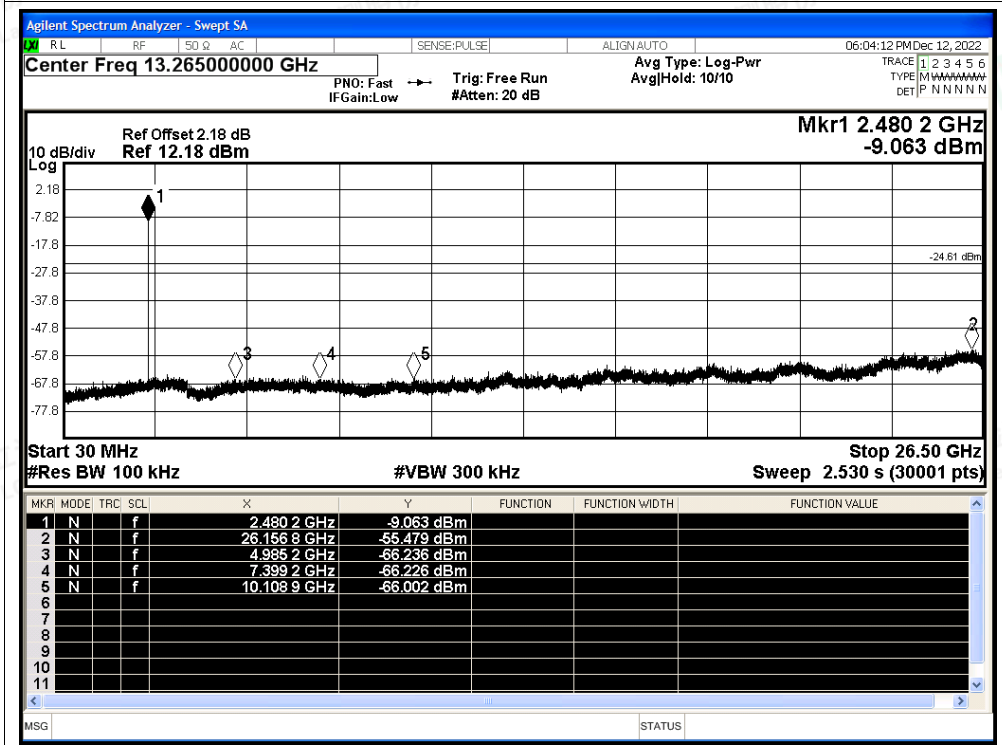




Tx. Spurious NVNT BLE 2M 2480MHz Ant0 Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant0 Emission





B.6 Duty Cycle

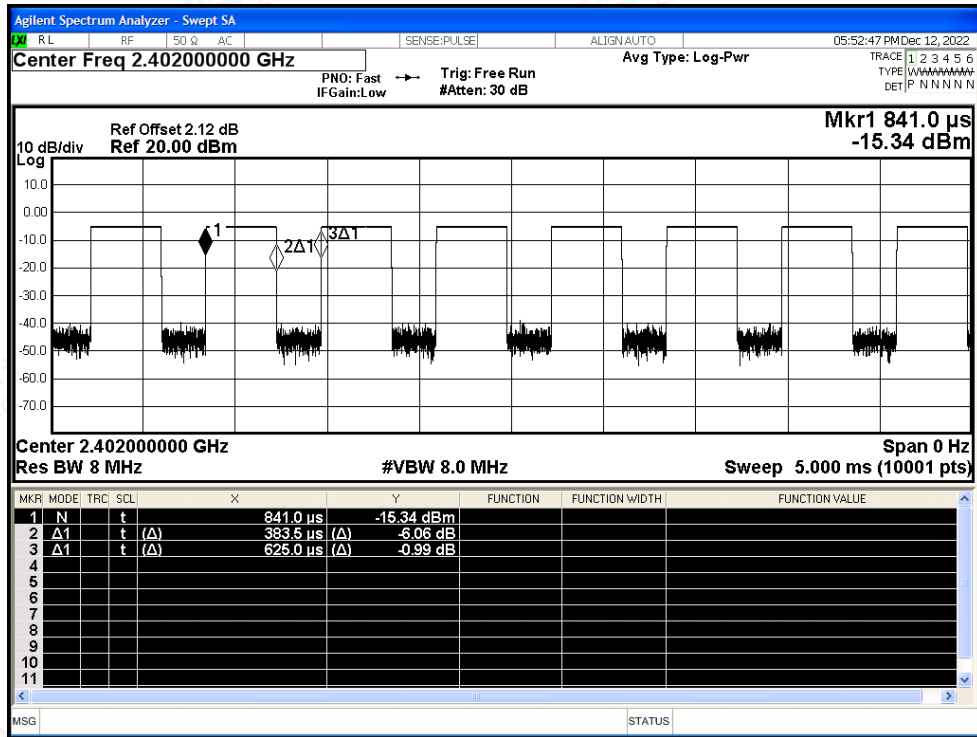
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant0	61.36	2.12	2.61
NVNT	BLE 1M	2440	Ant0	61.36	2.12	2.61
NVNT	BLE 1M	2480	Ant0	61.36	2.12	2.61
NVNT	BLE 2M	2402	Ant0	31.92	4.96	5.01
NVNT	BLE 2M	2440	Ant0	31.92	4.96	5.01
NVNT	BLE 2M	2480	Ant0	31.97	4.95	5



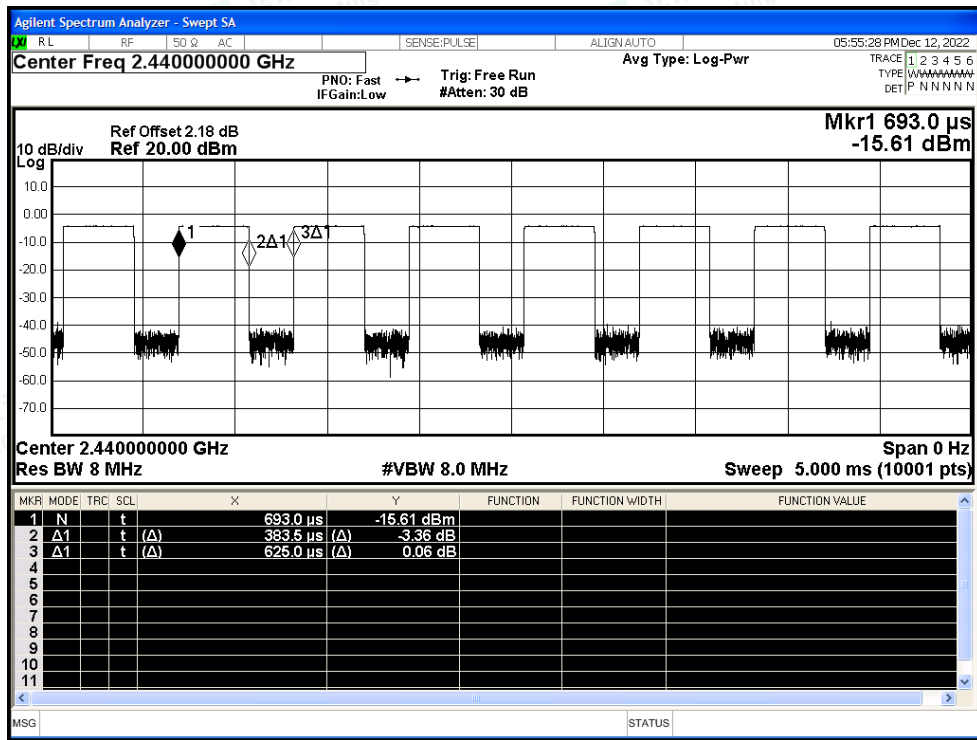


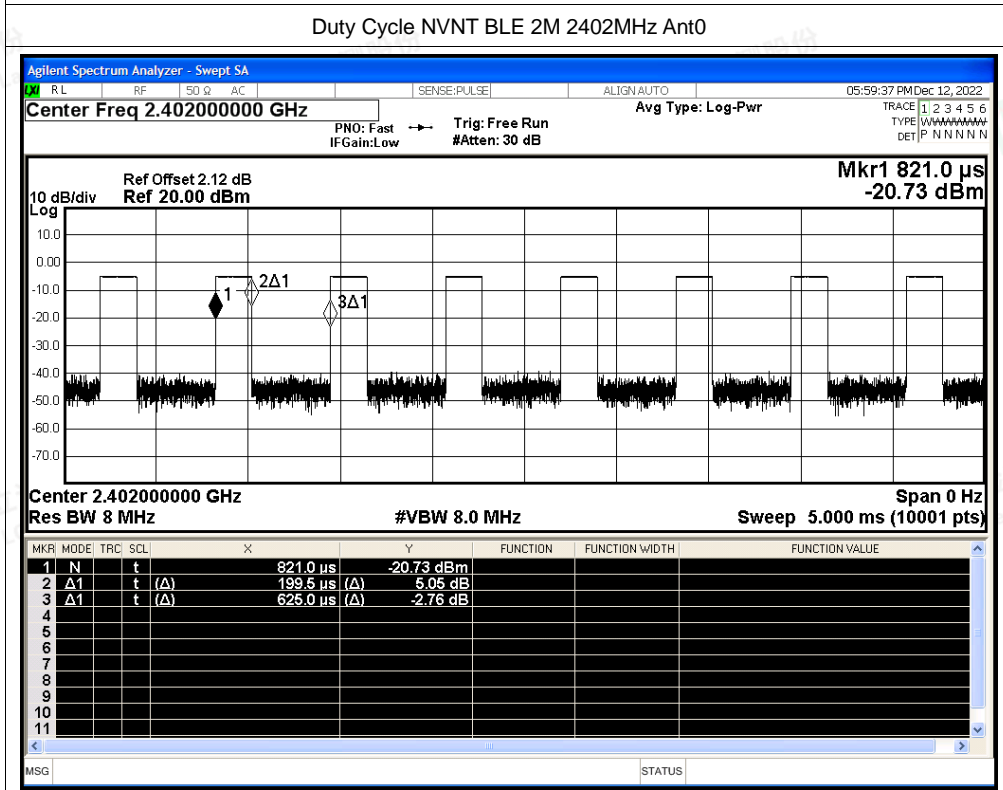
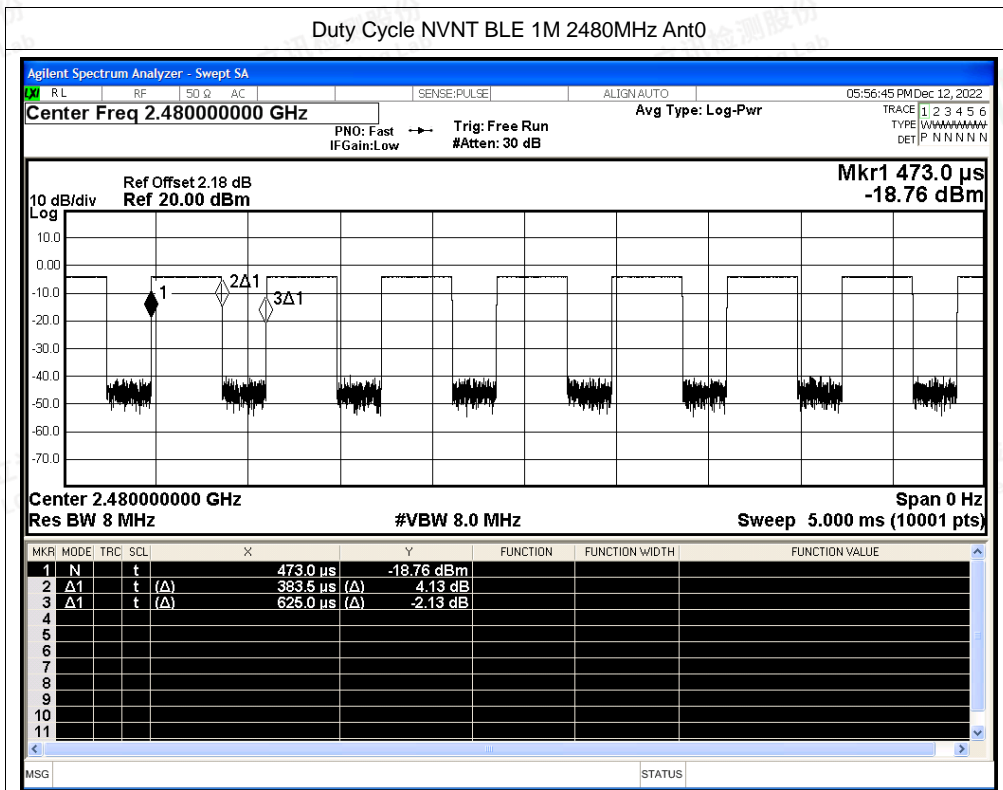
Test Graphs

Duty Cycle NVNT BLE 1M 2402MHz Ant0



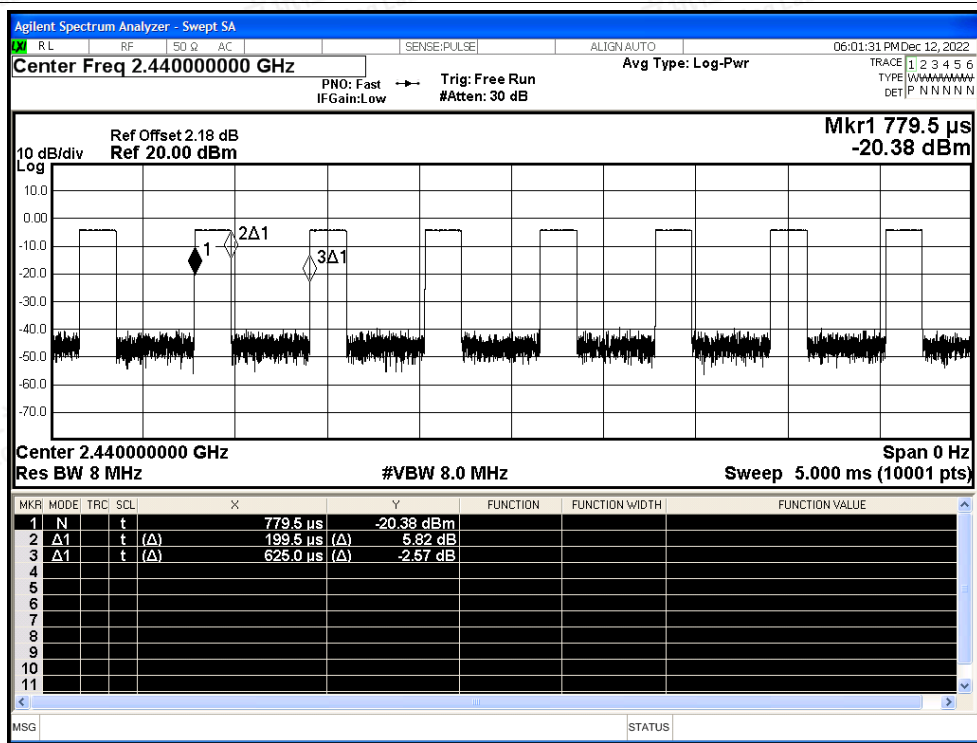
Duty Cycle NVNT BLE 1M 2440MHz Ant0



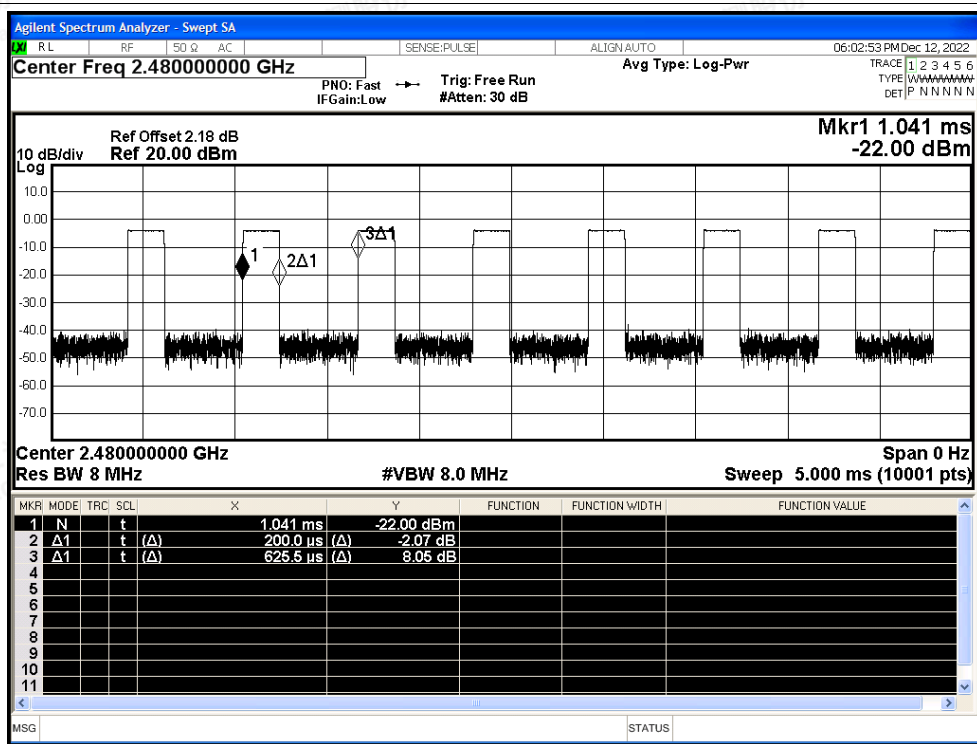




Duty Cycle NVNT BLE 2M 2440MHz Ant0



Duty Cycle NVNT BLE 2M 2480MHz Ant0





B.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	BLE 1M	2402	Ant0	2310	-50.52	2.45	47.19	Peak	74	Pass
NVNT	BLE 1M	2402	Ant0	2310	-59.59	2.45	38.12	Average	54	Pass
NVNT	BLE 1M	2402	Ant0	2369.04	-47.35	2.45	50.36	Peak	74	Pass
NVNT	BLE 1M	2402	Ant0	2362.224	-58.75	2.45	38.96	Average	54	Pass
NVNT	BLE 1M	2402	Ant0	2390	-49.13	2.45	48.58	Peak	74	Pass
NVNT	BLE 1M	2402	Ant0	2390	-59.19	2.45	38.52	Average	54	Pass
NVNT	BLE 1M	2480	Ant0	2483.5	-49.94	2.45	47.77	Peak	74	Pass
NVNT	BLE 1M	2480	Ant0	2483.5	-58.98	2.45	38.73	Average	54	Pass
NVNT	BLE 1M	2480	Ant0	2496.856	-46.27	2.45	51.44	Peak	74	Pass
NVNT	BLE 1M	2480	Ant0	2498.2	-58.41	2.45	39.30	Average	54	Pass
NVNT	BLE 1M	2480	Ant0	2500	-49.86	2.45	47.85	Peak	74	Pass
NVNT	BLE 1M	2480	Ant0	2500	-58.85	2.45	38.86	Average	54	Pass
NVNT	BLE 2M	2402	Ant0	2310	-51.12	2.45	46.59	Peak	74	Pass
NVNT	BLE 2M	2402	Ant0	2310	-58.94	2.45	38.77	Average	54	Pass
NVNT	BLE 2M	2402	Ant0	2382.672	-47.51	2.45	50.20	Peak	74	Pass
NVNT	BLE 2M	2402	Ant0	2354.544	-58.09	2.45	39.62	Average	54	Pass
NVNT	BLE 2M	2402	Ant0	2390	-49.83	2.45	47.88	Peak	74	Pass
NVNT	BLE 2M	2402	Ant0	2390	-58.64	2.45	39.07	Average	54	Pass
NVNT	BLE 2M	2480	Ant0	2483.5	-48.81	2.45	48.90	Peak	74	Pass
NVNT	BLE 2M	2480	Ant0	2483.5	-57.92	2.45	39.79	Average	54	Pass
NVNT	BLE 2M	2480	Ant0	2493.808	-46.24	2.45	51.47	Peak	74	Pass
NVNT	BLE 2M	2480	Ant0	2483.512	-57.92	2.45	39.79	Average	54	Pass
NVNT	BLE 2M	2480	Ant0	2500	-49.95	2.45	47.76	Peak	74	Pass
NVNT	BLE 2M	2480	Ant0	2500	-58.41	2.45	39.30	Average	54	Pass



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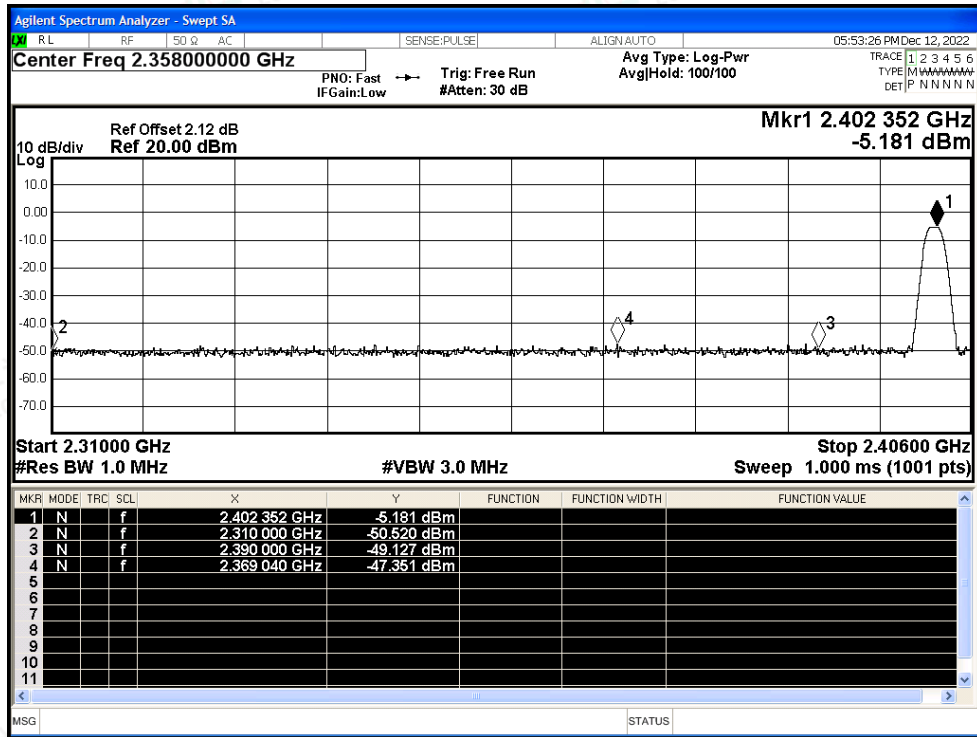
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

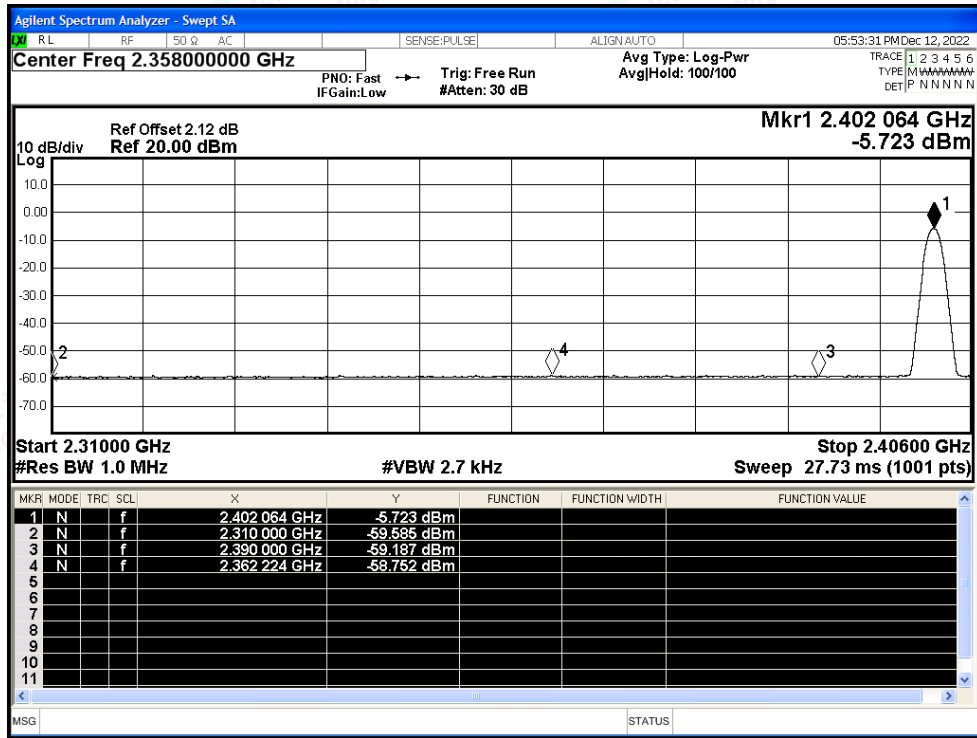


Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant0 Peak

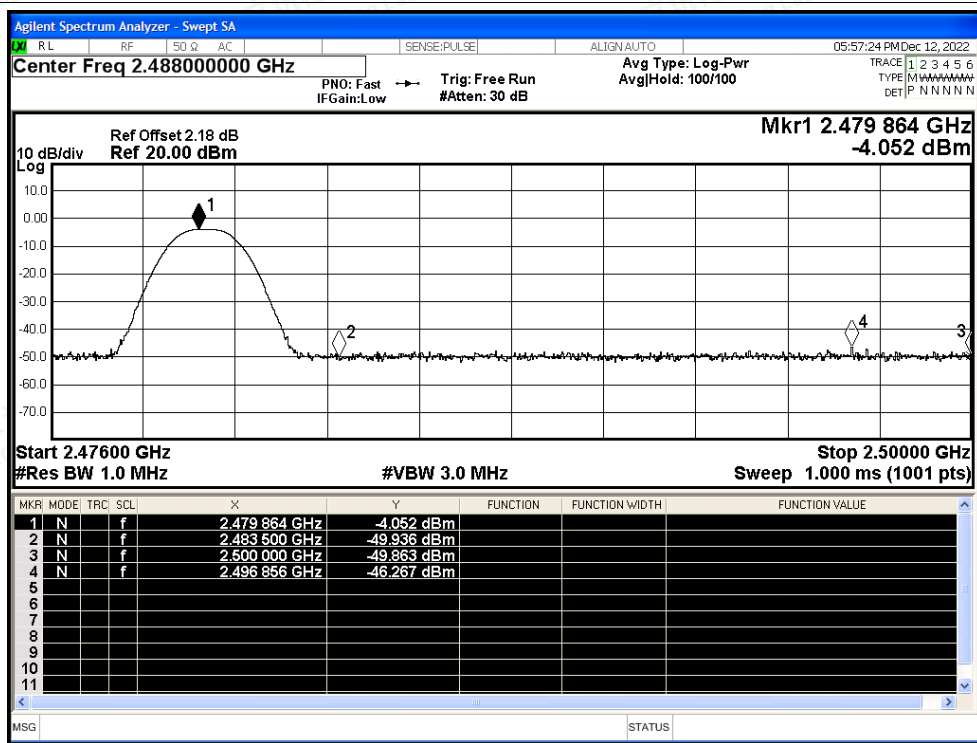


Restrict Band NVNT BLE 1M 2402MHz Ant0 Average

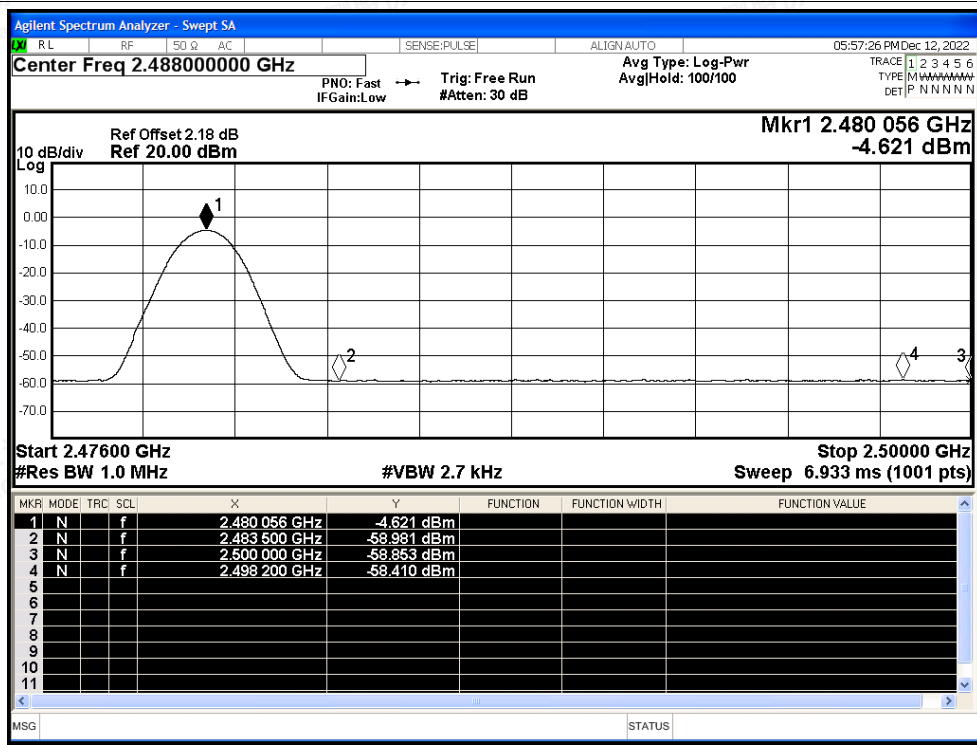




Restrict Band NVNT BLE 1M 2480MHz Ant0 Peak

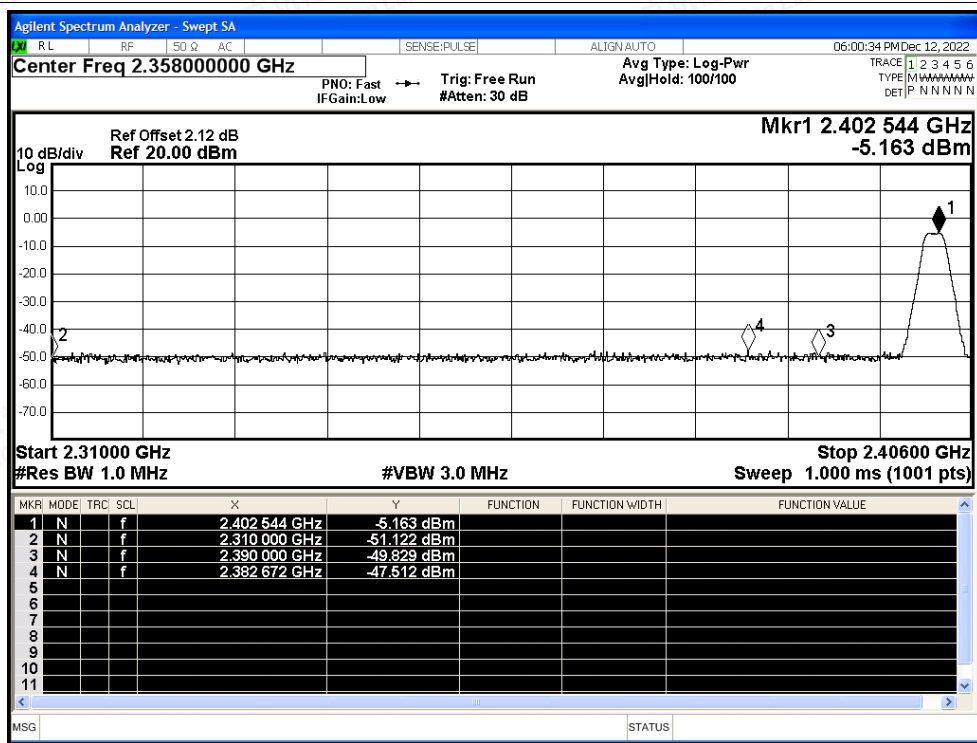


Restrict Band NVNT BLE 1M 2480MHz Ant0 Average

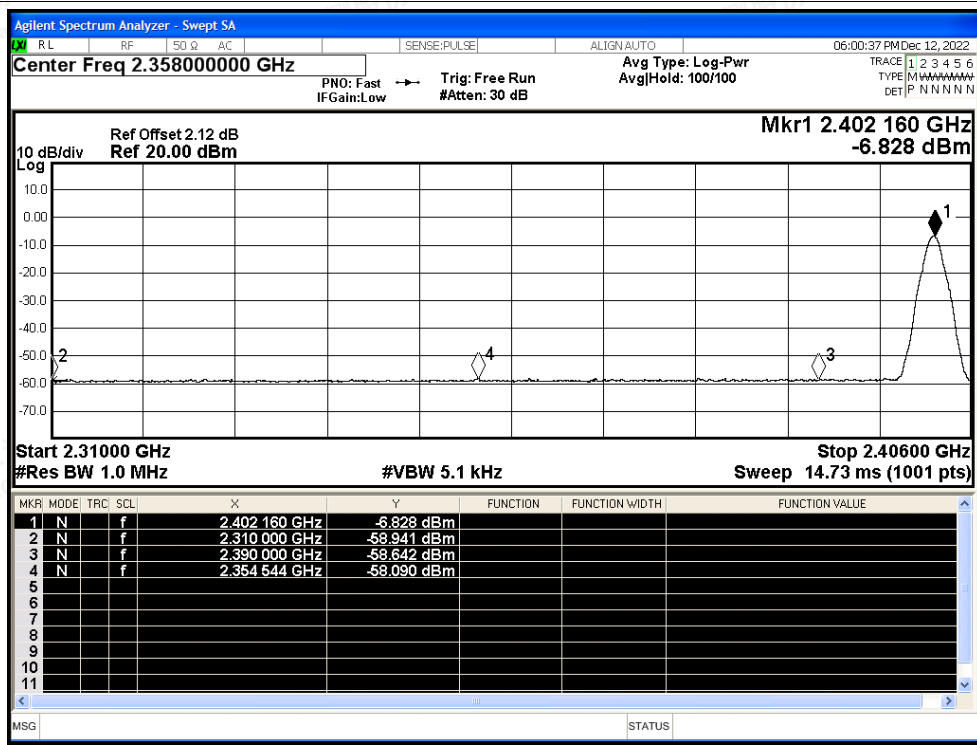




Restrict Band NVNT BLE 2M 2402MHz Ant0 Peak

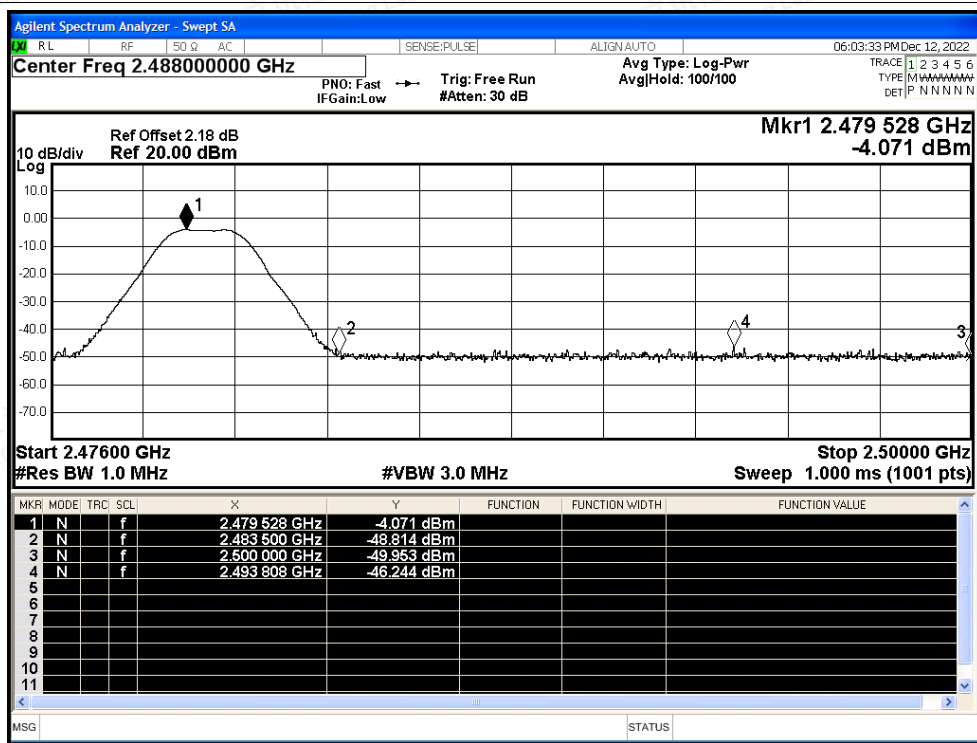


Restrict Band NVNT BLE 2M 2402MHz Ant0 Average





Restrict Band NVNT BLE 2M 2480MHz Ant0 Peak



Restrict Band NVNT BLE 2M 2480MHz Ant0 Average

