



Appendix A

RF Test Data for BLE (Conducted Measurement)

Product Name: FitBark GPS

Test Model: 7005

Environmental Conditions

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



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

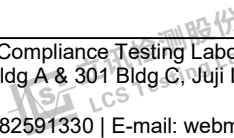


A.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.673	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.668	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.67	0.5	Pass
NVNT	BLE 2M	2402	Ant1	1.242	0.5	Pass
NVNT	BLE 2M	2440	Ant1	1.149	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.17	0.5	Pass



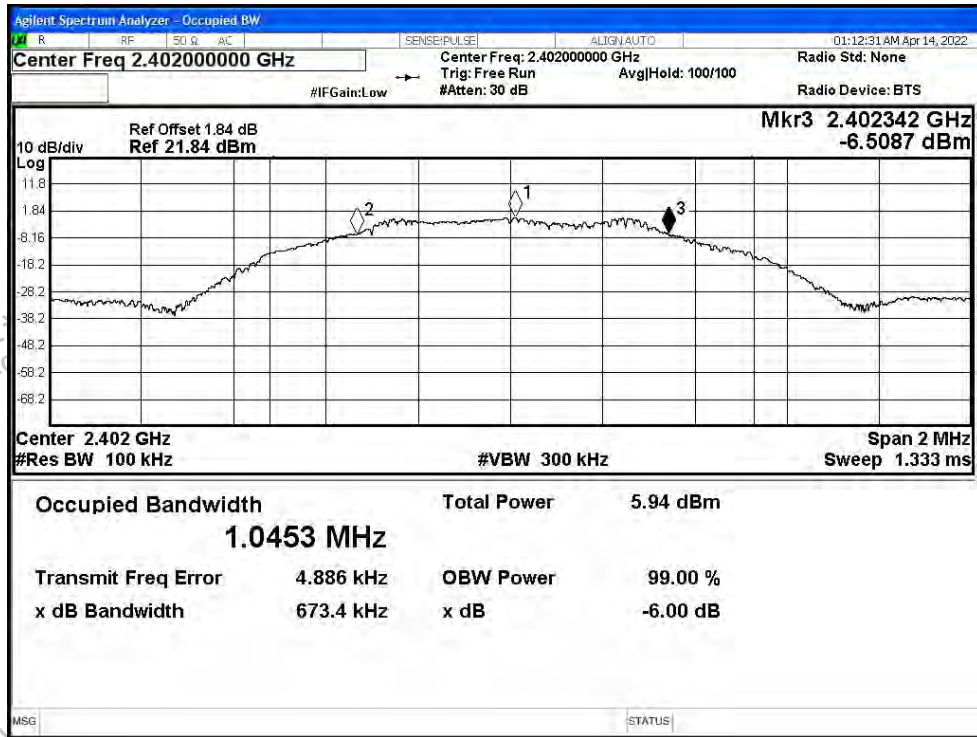
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 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity



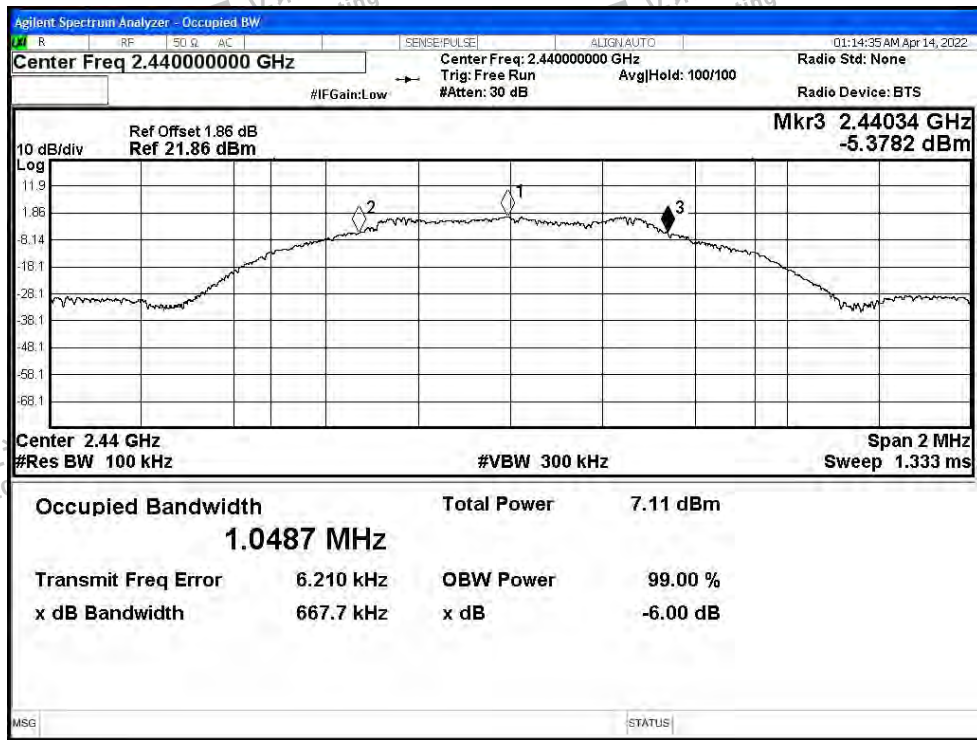


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1

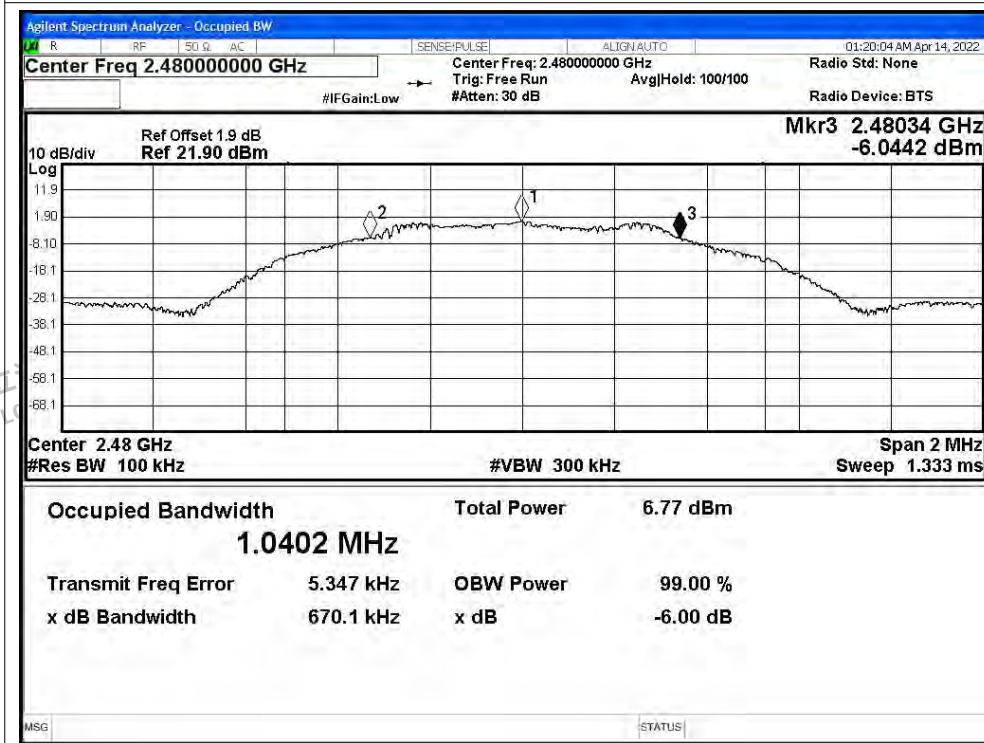


-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

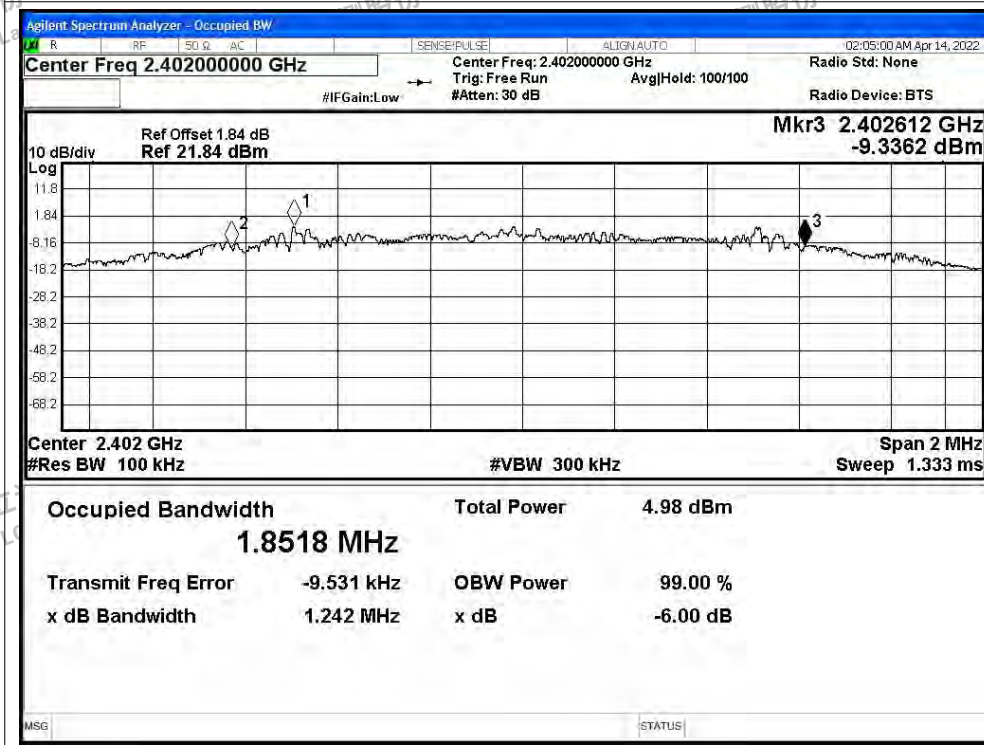




-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1

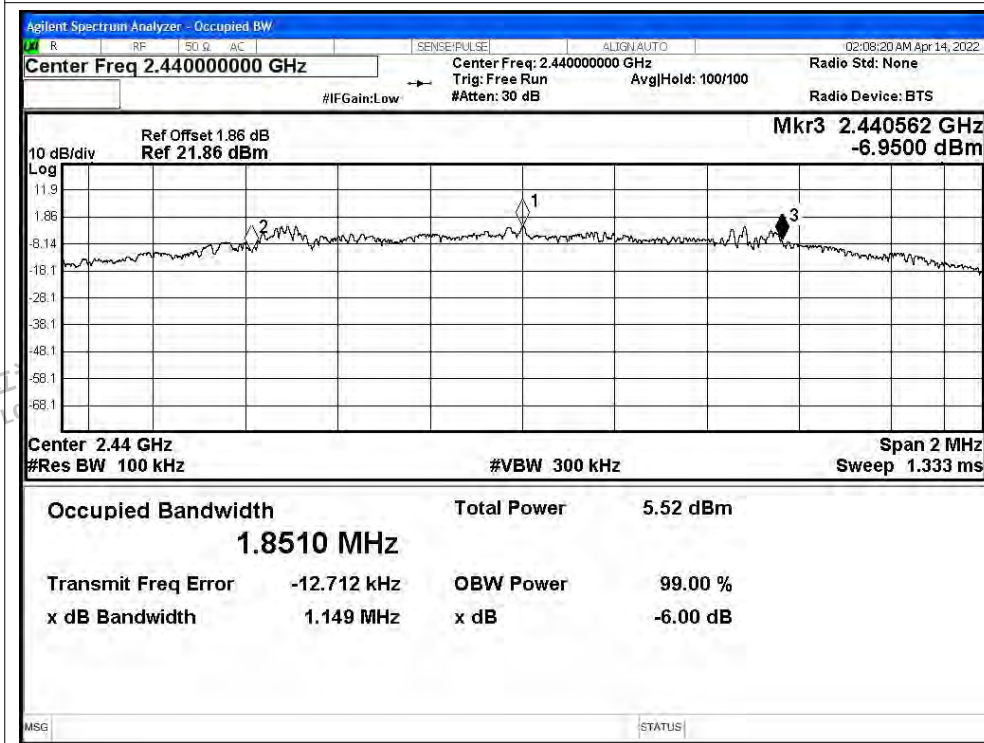


-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1

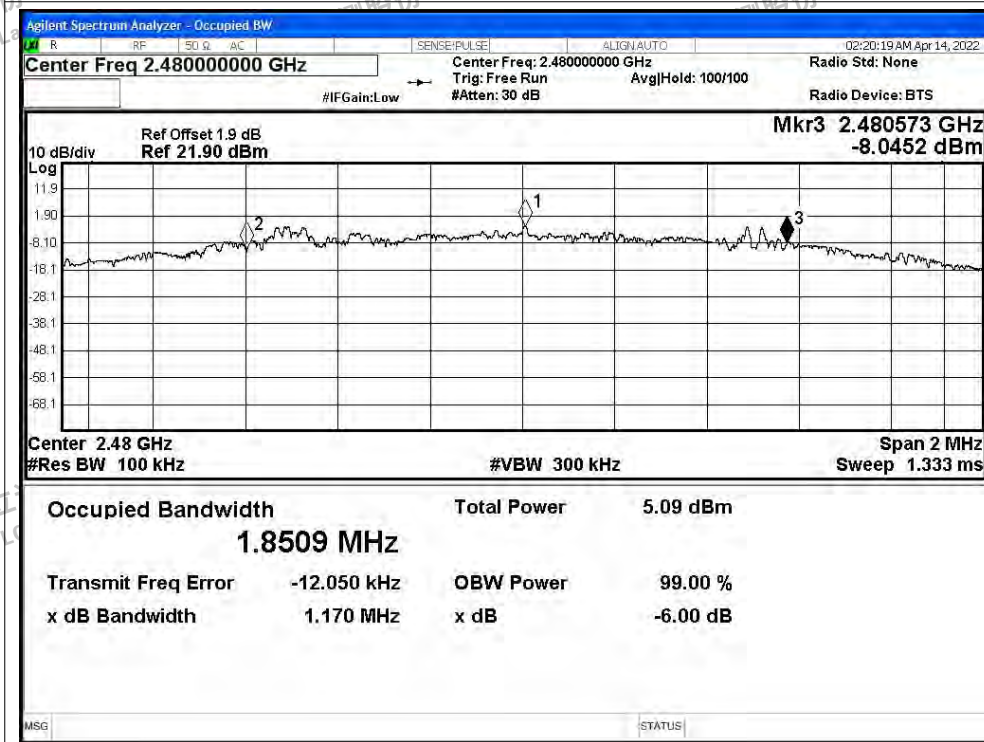




-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant1





A.2 Occupied Channel Bandwidth

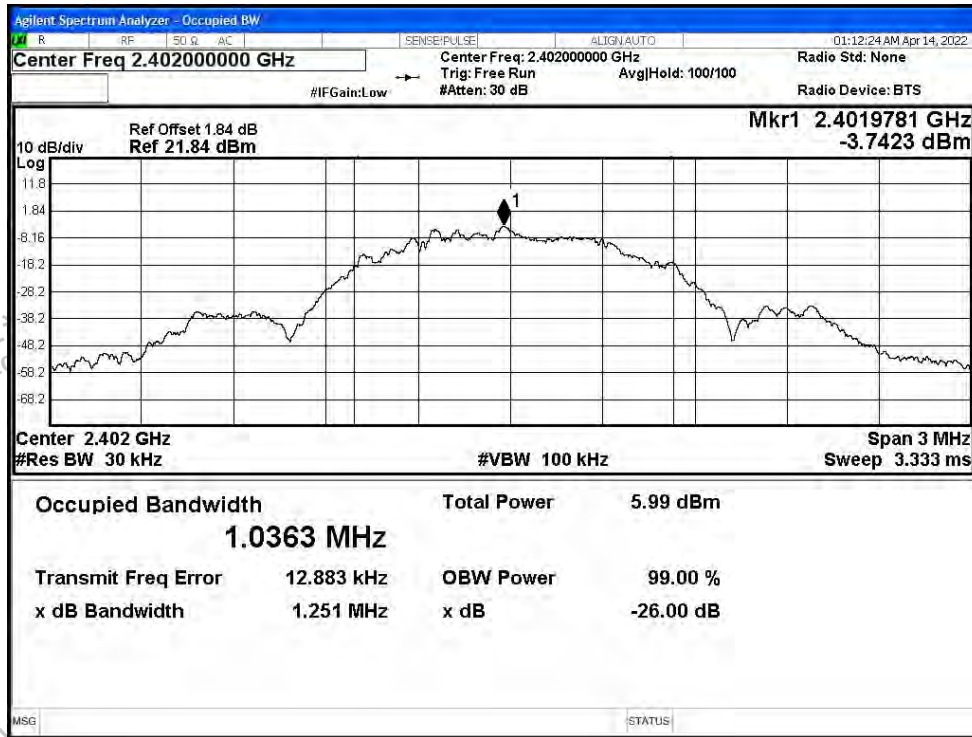
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.036
NVNT	BLE 1M	2440	Ant1	1.033
NVNT	BLE 1M	2480	Ant1	1.033
NVNT	BLE 2M	2402	Ant1	2.047
NVNT	BLE 2M	2440	Ant1	2.064
NVNT	BLE 2M	2480	Ant1	2.051



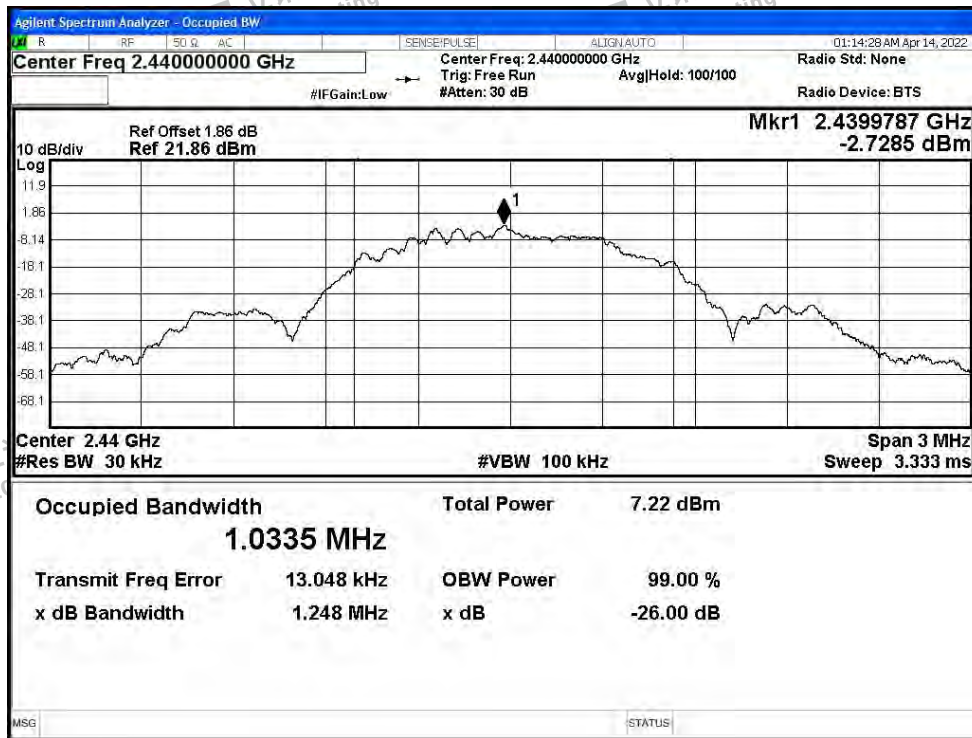


Test Graphs

OBW NVNT BLE 1M 2402MHz Ant1

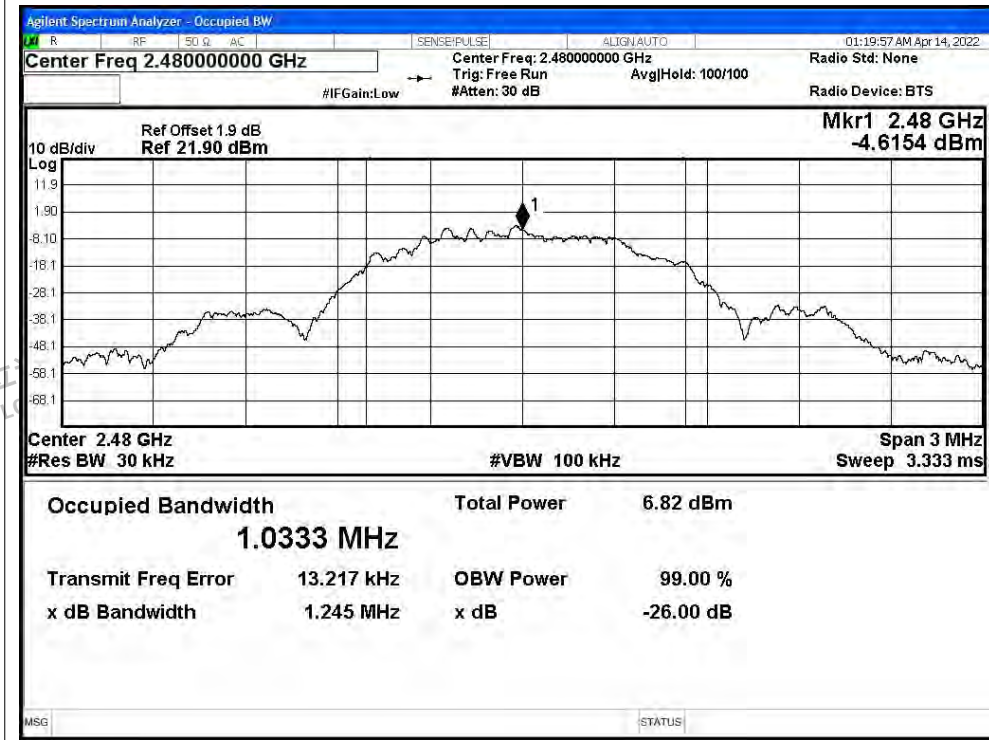


OBW NVNT BLE 1M 2440MHz Ant1

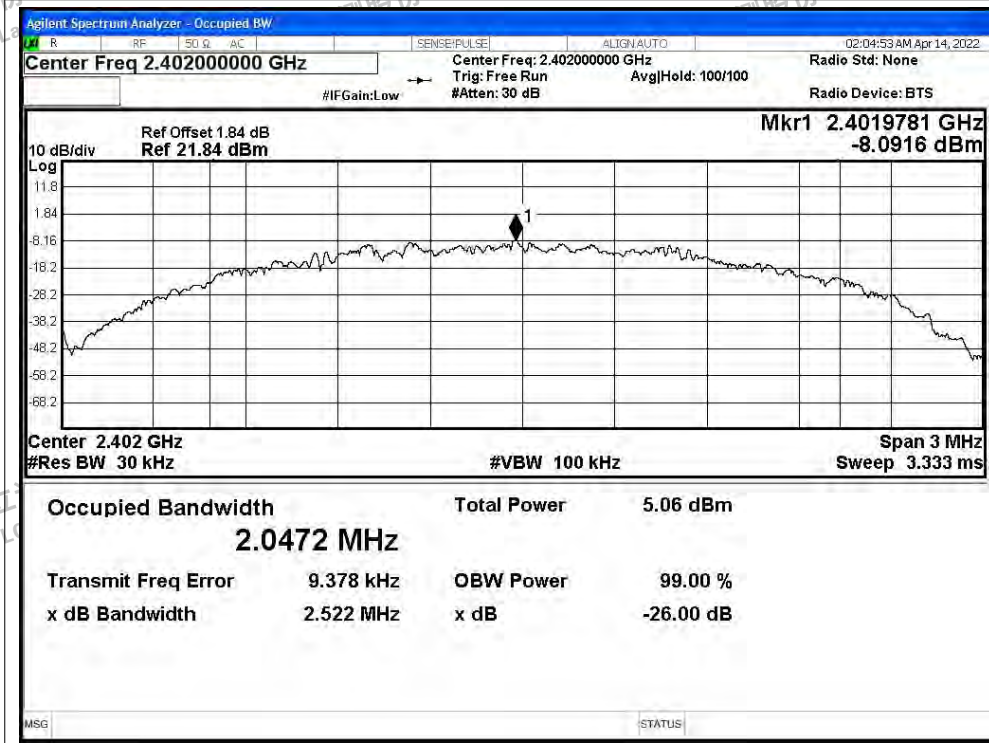




OBW NVNT BLE 1M 2480MHz Ant1

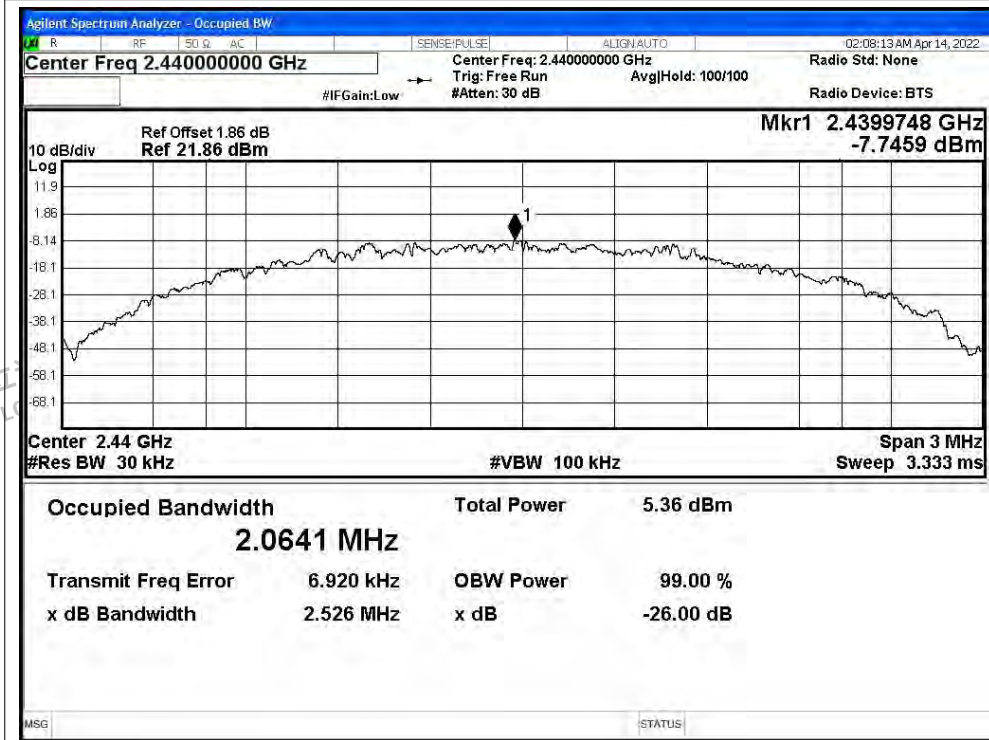


OBW NVNT BLE 2M 2402MHz Ant1

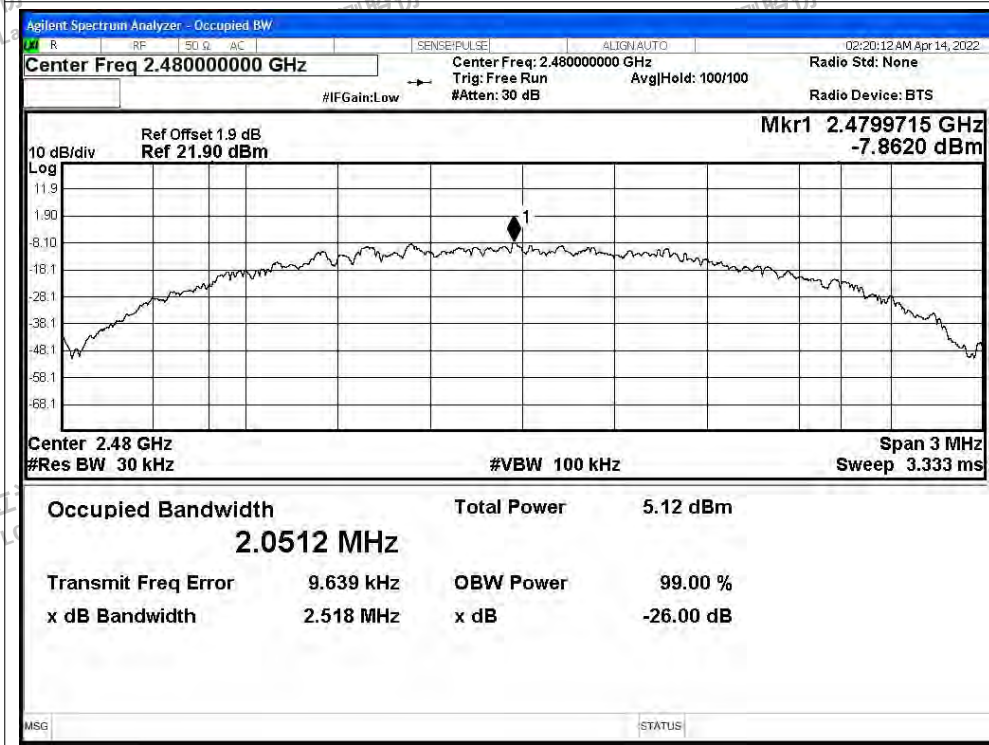




OBW NVNT BLE 2M 2440MHz Ant1



OBW NVNT BLE 2M 2480MHz Ant1





A.3 Maximum Conducted Output Power

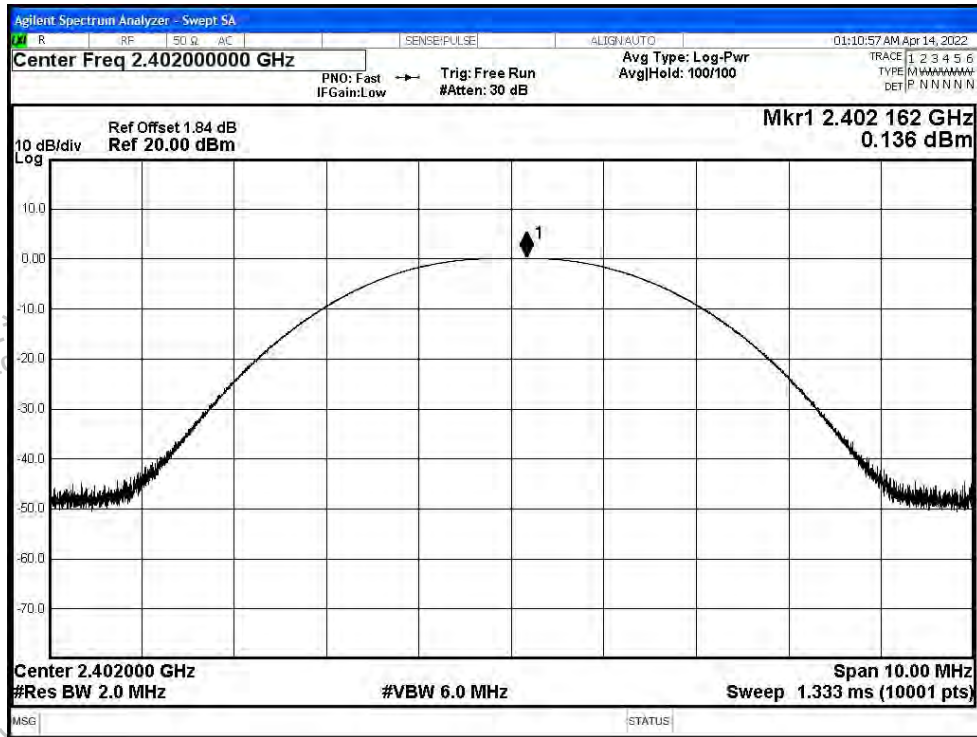
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	0.14	0	0.14	30	Pass
NVNT	BLE 1M	2440	Ant1	1.25	0	1.25	30	Pass
NVNT	BLE 1M	2480	Ant1	0.94	0	0.94	30	Pass
NVNT	BLE 2M	2402	Ant1	-0.8	0	-0.8	30	Pass
NVNT	BLE 2M	2440	Ant1	-0.44	0	-0.44	30	Pass
NVNT	BLE 2M	2480	Ant1	-0.73	0	-0.73	30	Pass



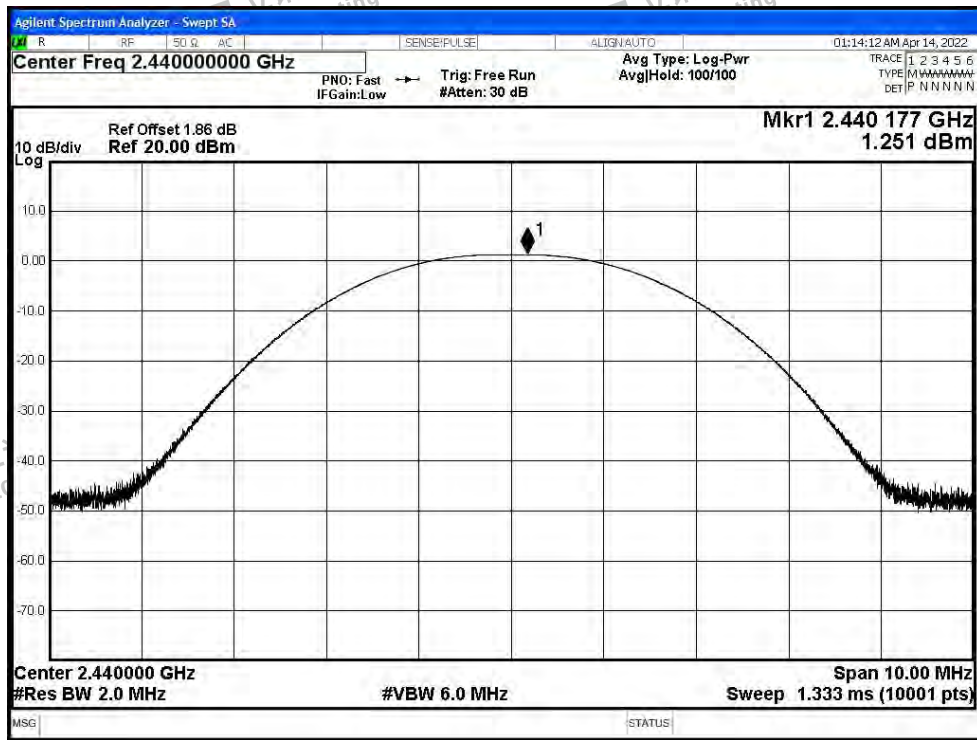


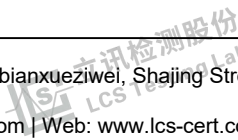
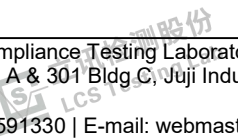
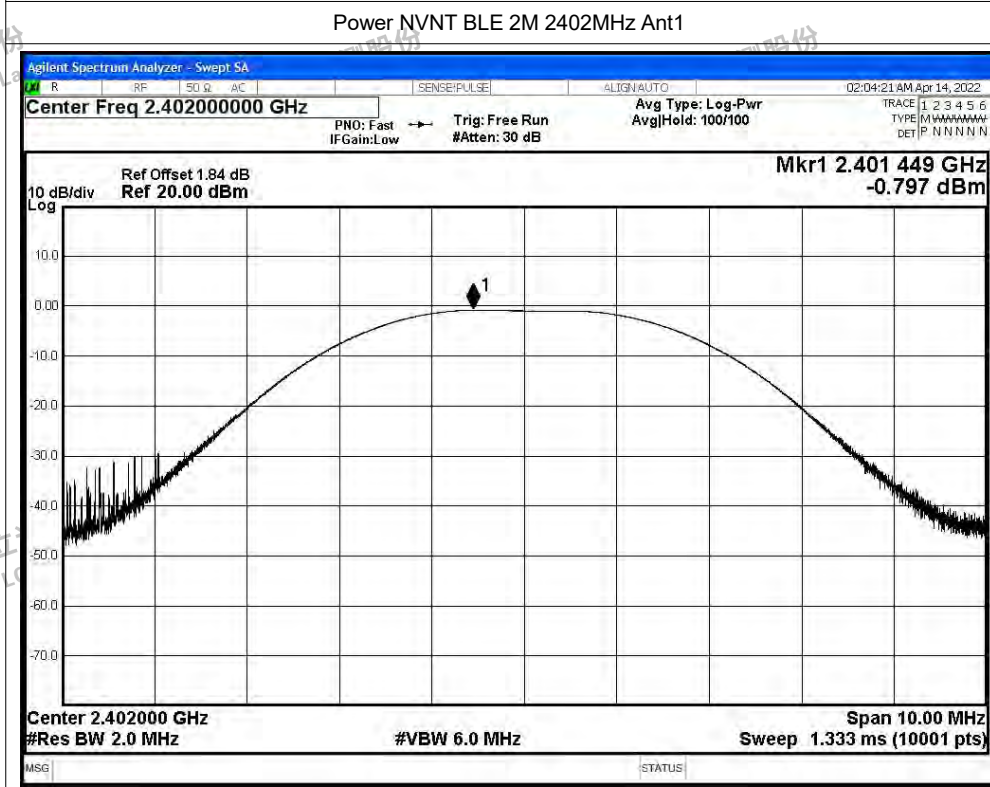
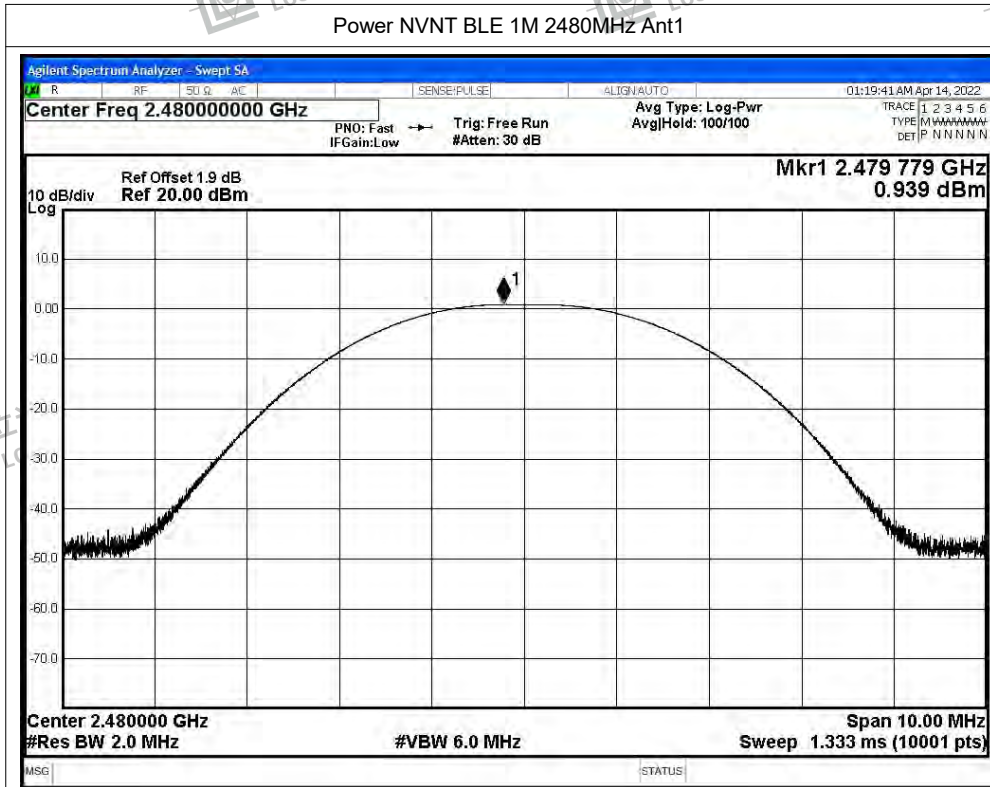
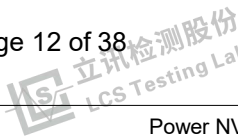
Test Graphs

Power NVNT BLE 1M 2402MHz Ant1



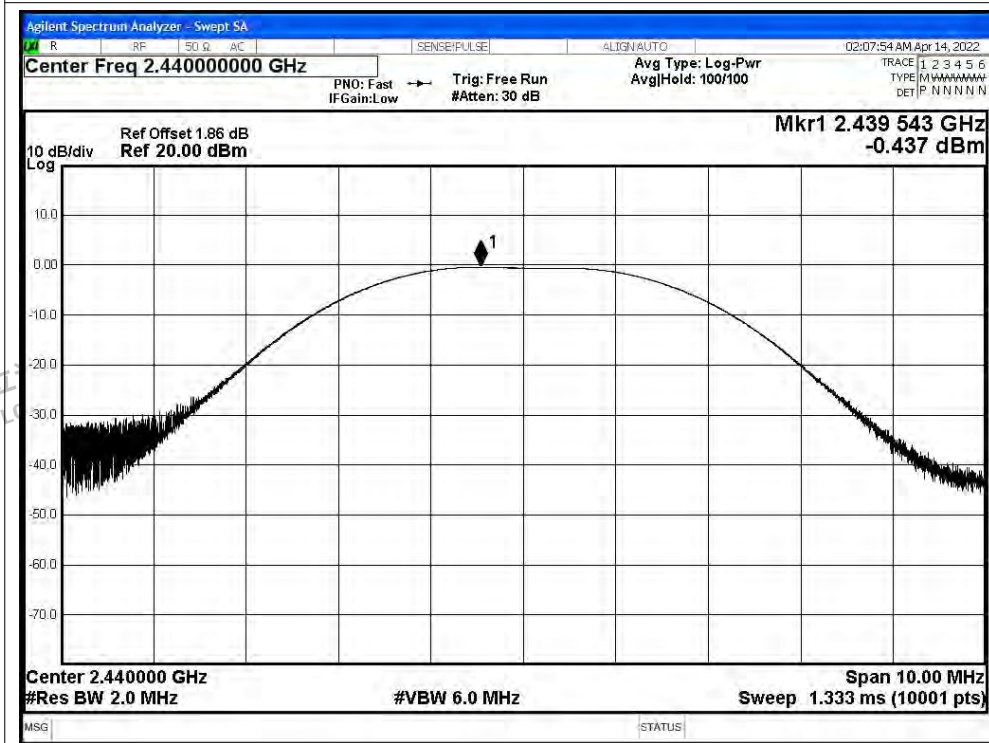
Power NVNT BLE 1M 2440MHz Ant1



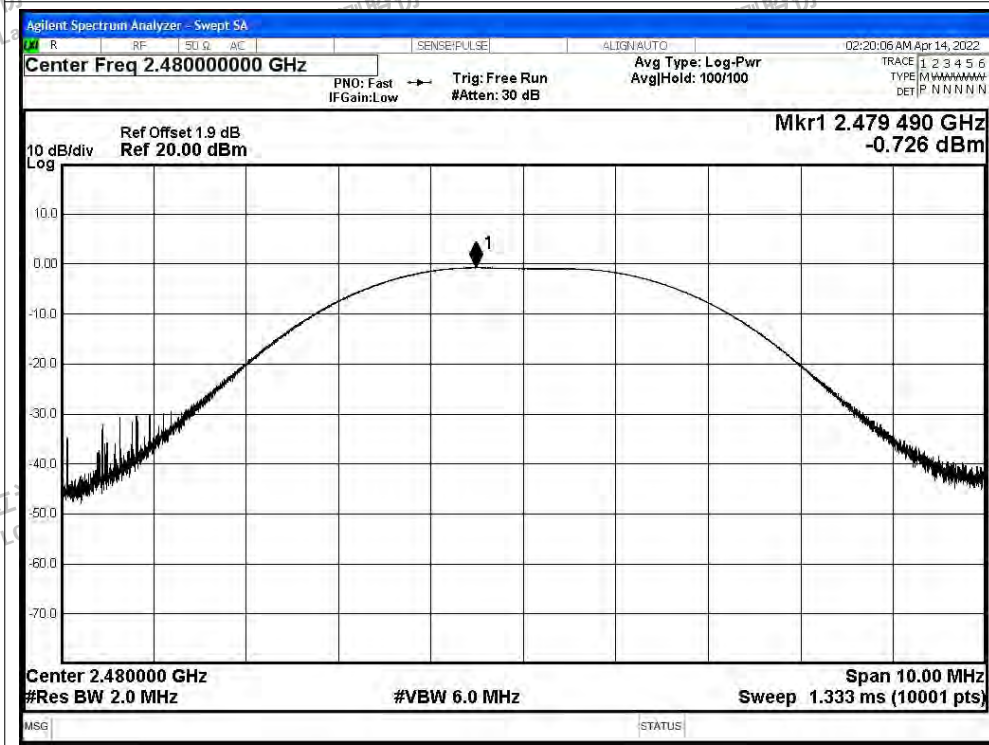


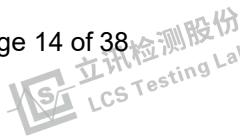


Power NVNT BLE 2M 2440MHz Ant1



Power NVNT BLE 2M 2480MHz Ant1



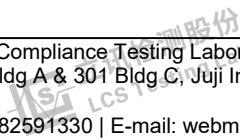


A.4 Maximum Power Spectral Density Level

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	-14.66	0	-14.66	8	Pass
NVNT	BLE 1M	2440	Ant1	-13.49	0	-13.49	8	Pass
NVNT	BLE 1M	2480	Ant1	-13.93	0	-13.93	8	Pass
NVNT	BLE 2M	2402	Ant1	-21.14	0	-21.14	8	Pass
NVNT	BLE 2M	2440	Ant1	-19.59	0	-19.59	8	Pass
NVNT	BLE 2M	2480	Ant1	-20.68	0	-20.68	8	Pass



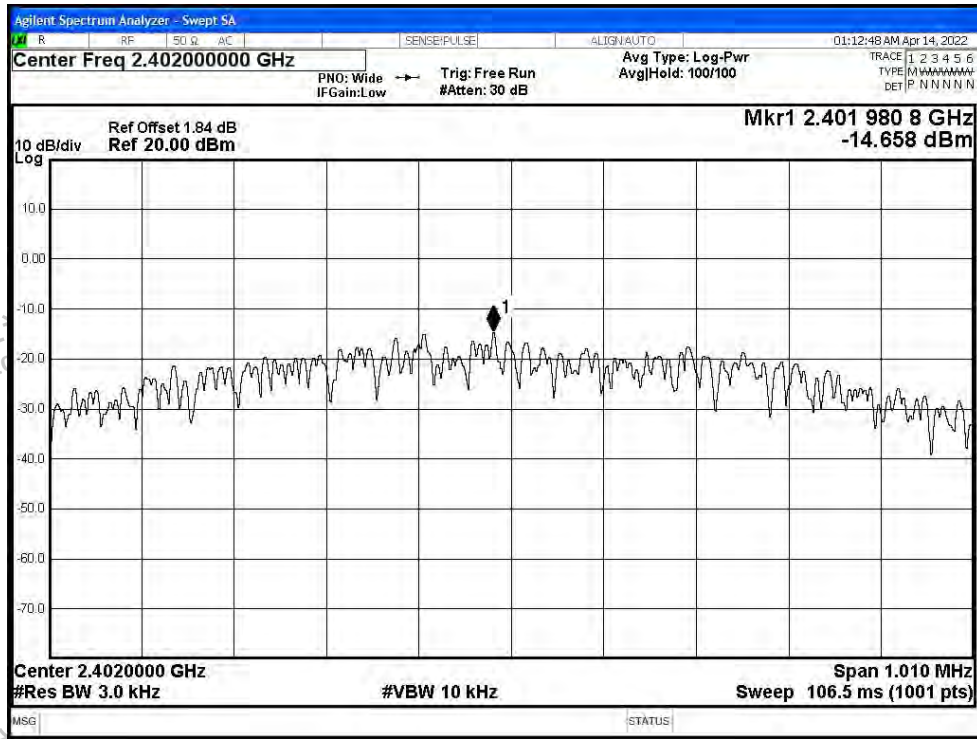
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 Scan code to check authenticity



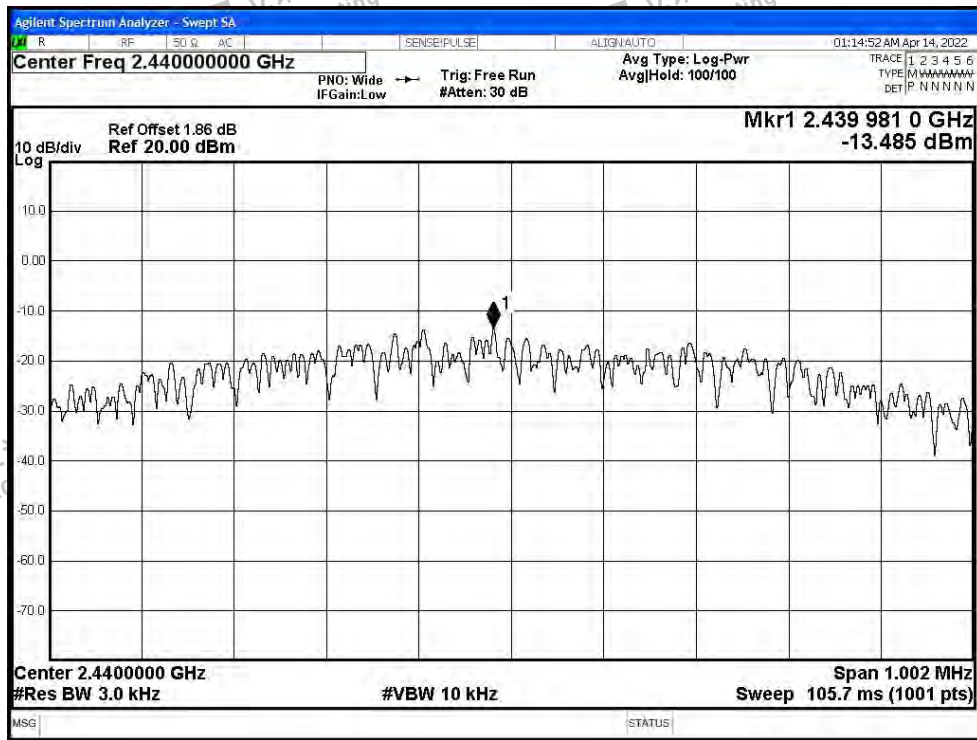


Test Graphs

PSD NVNT BLE 1M 2402MHz Ant1

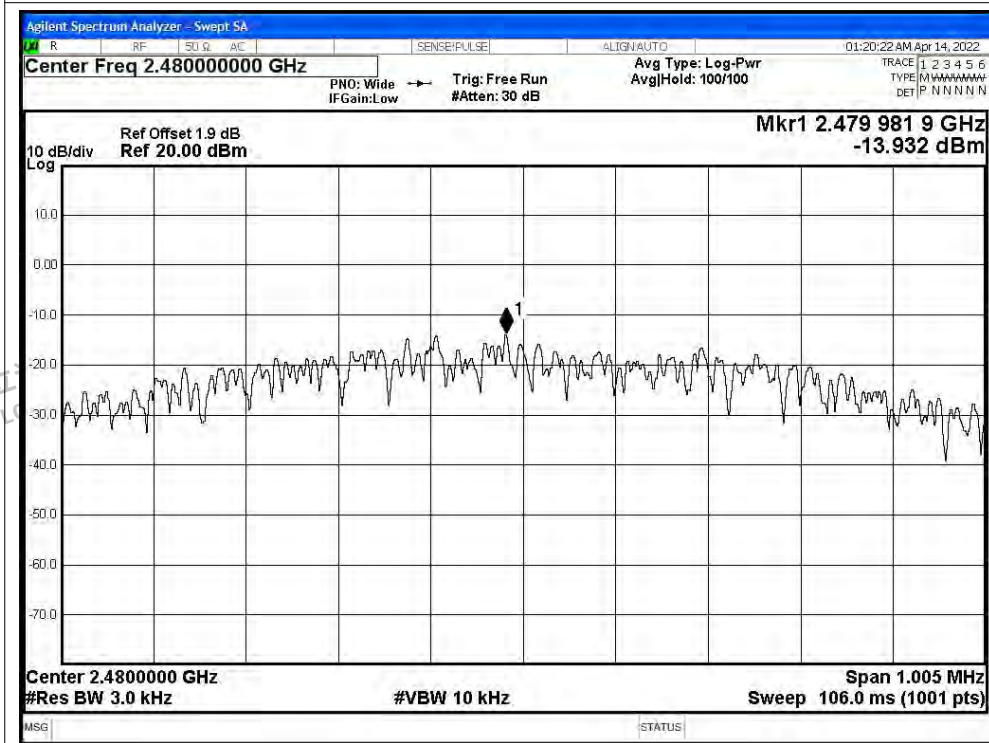


PSD NVNT BLE 1M 2440MHz Ant1

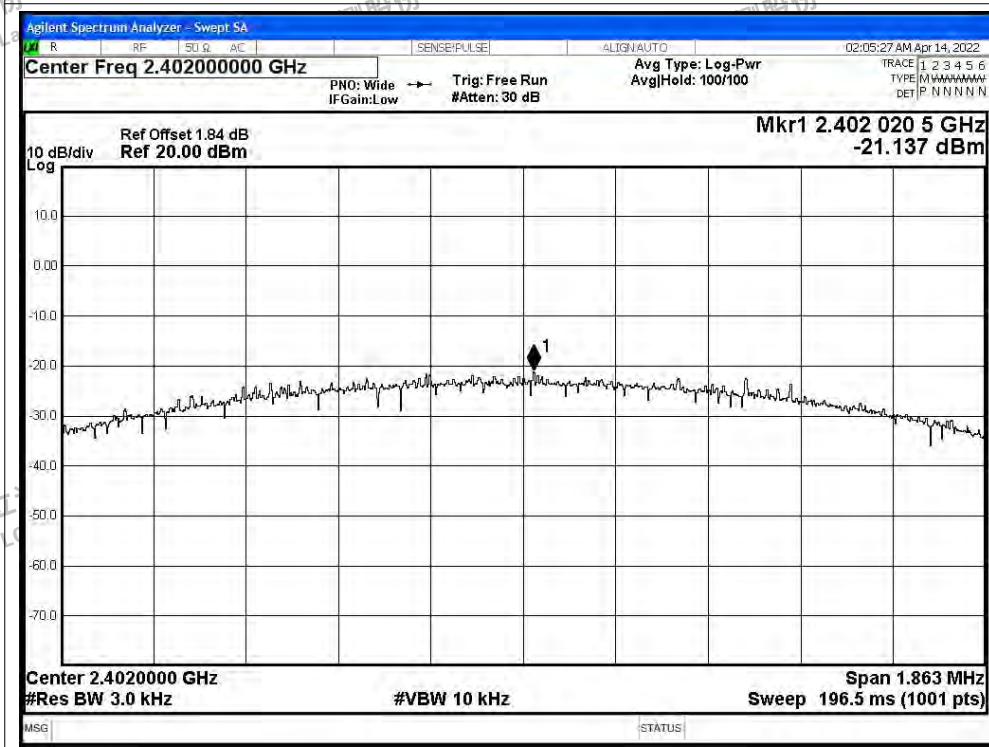




PSD NVNT BLE 1M 2480MHz Ant1

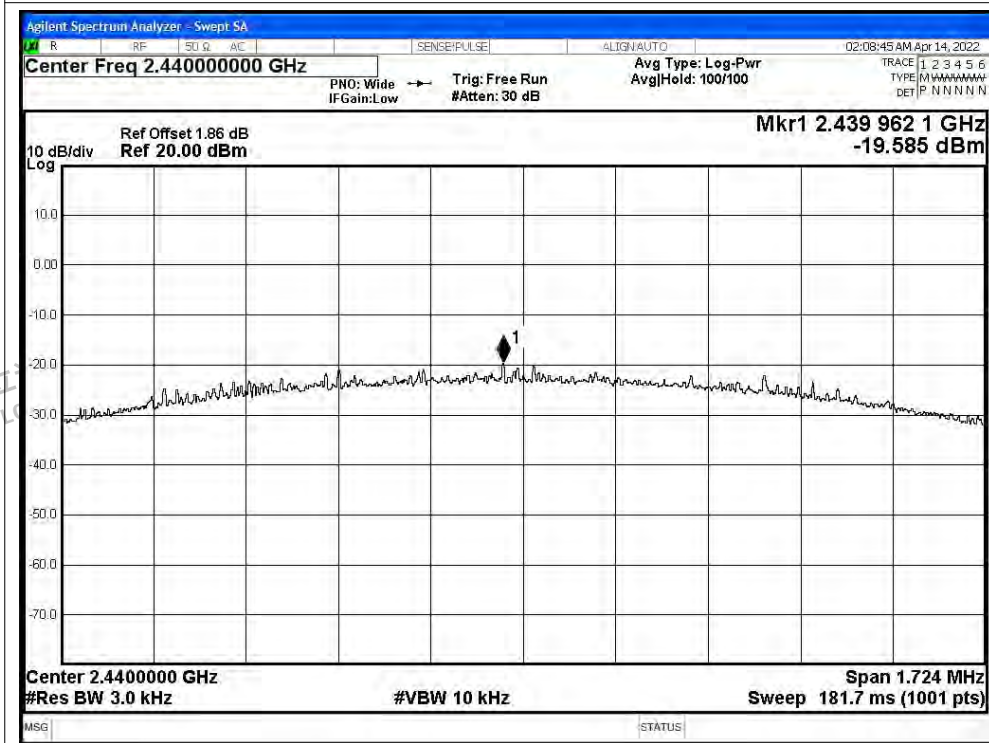


PSD NVNT BLE 2M 2402MHz Ant1

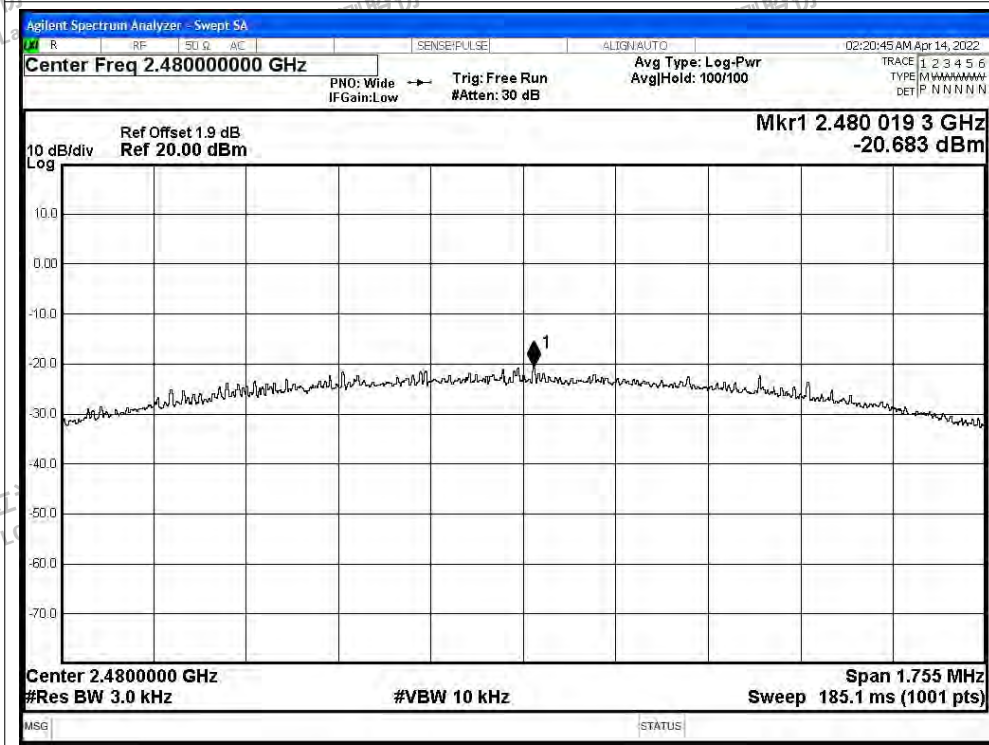




PSD NVNT BLE 2M 2440MHz Ant1



PSD NVNT BLE 2M 2480MHz Ant1



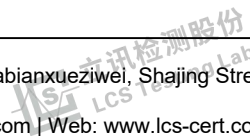
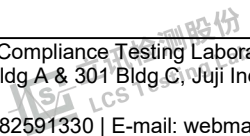


A.5 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-56.53	-20	Pass
NVNT	BLE 1M	2480	Ant1	-57.34	-20	Pass
NVNT	BLE 2M	2402	Ant1	-30.28	-20	Pass
NVNT	BLE 2M	2480	Ant1	-49.01	-20	Pass



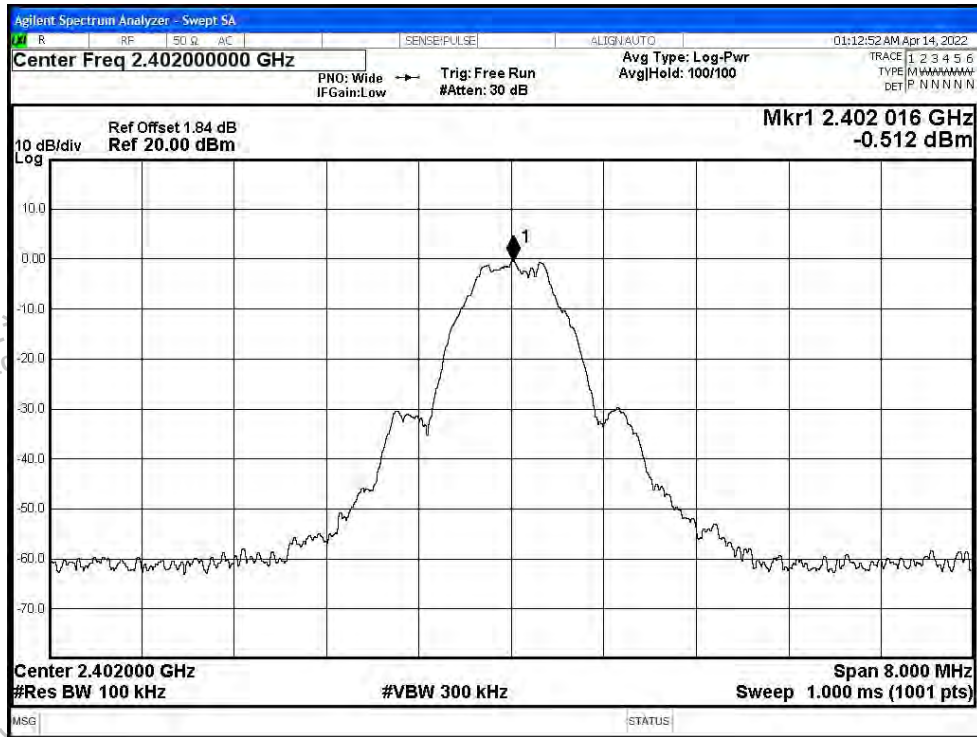
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 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity



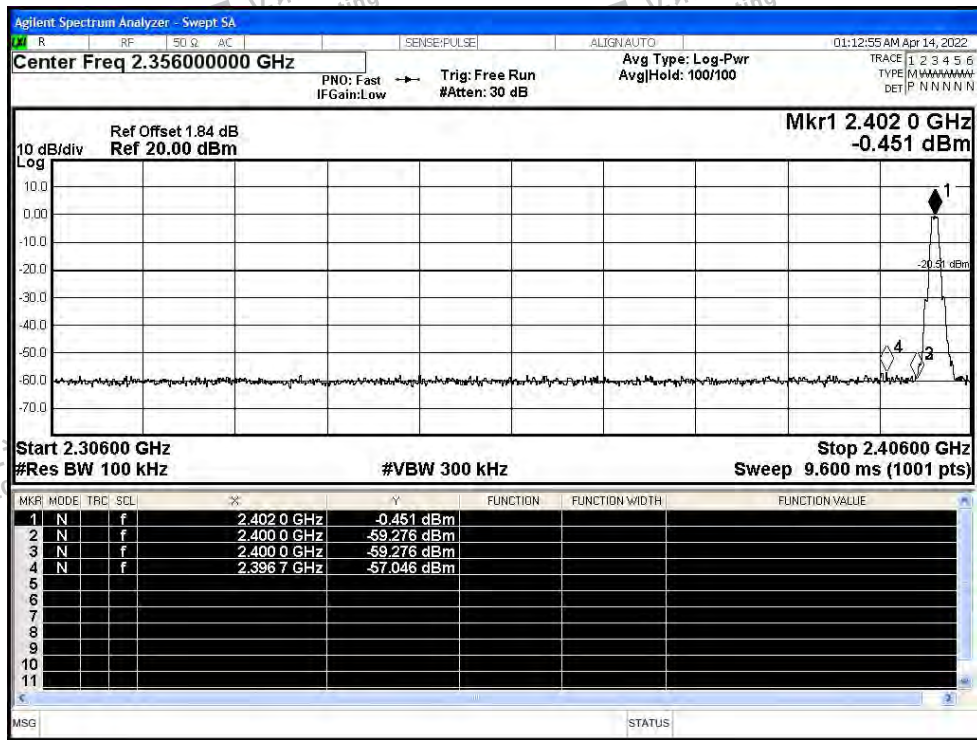


Test Graphs

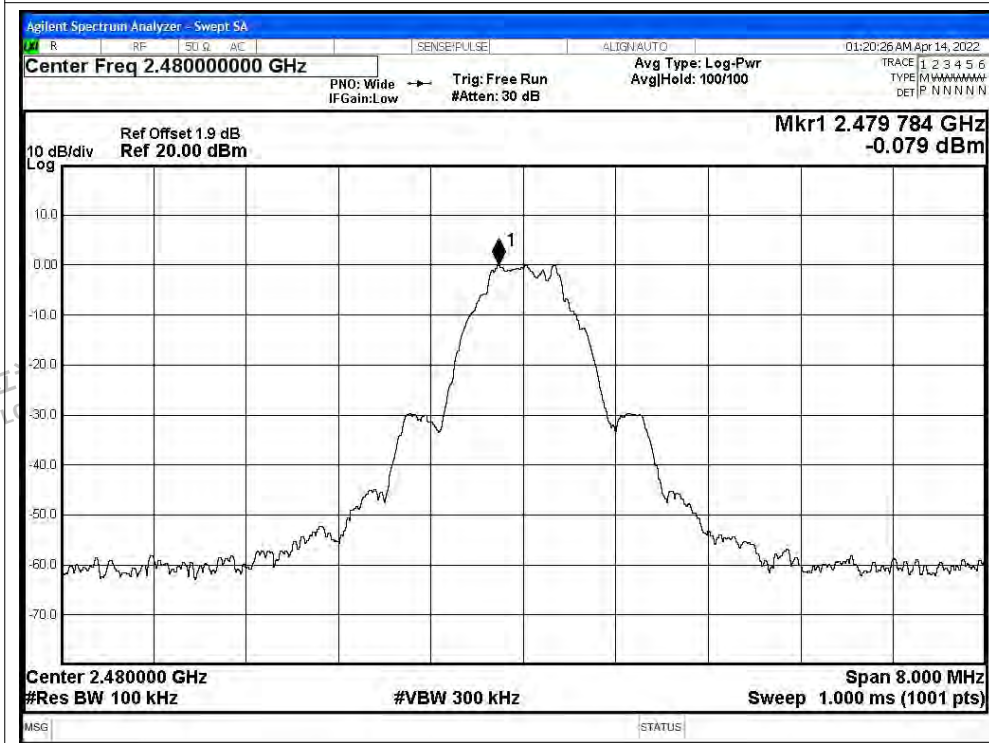
Band Edge NVNT BLE 1M 2402MHz Ant1 Ref



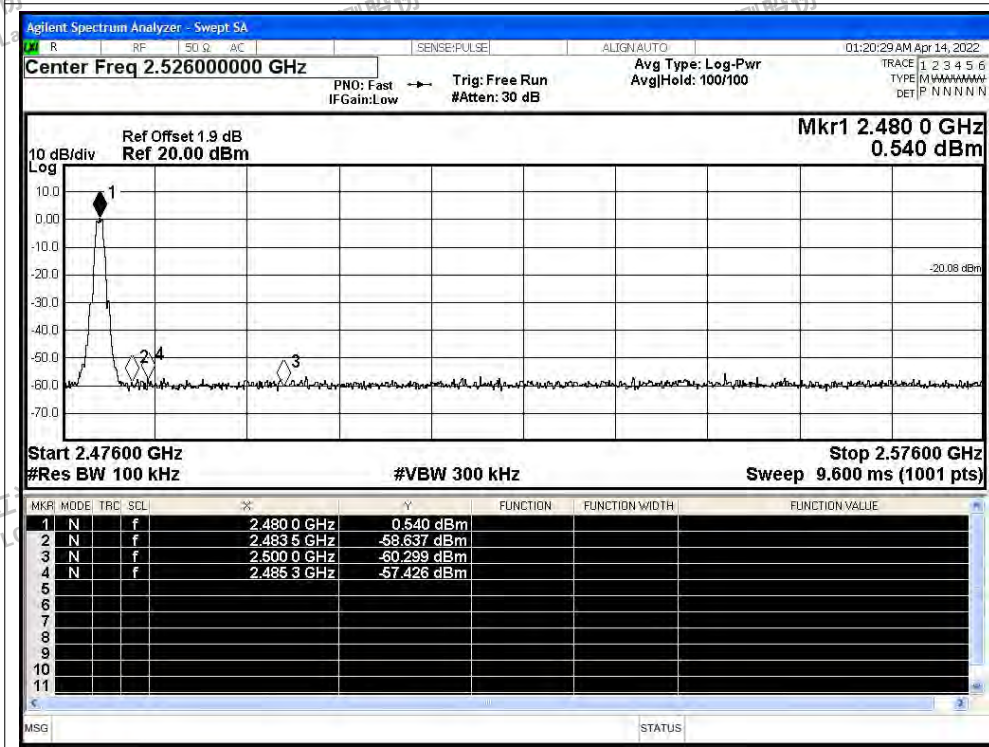
Band Edge NVNT BLE 1M 2402MHz Ant1 Emission



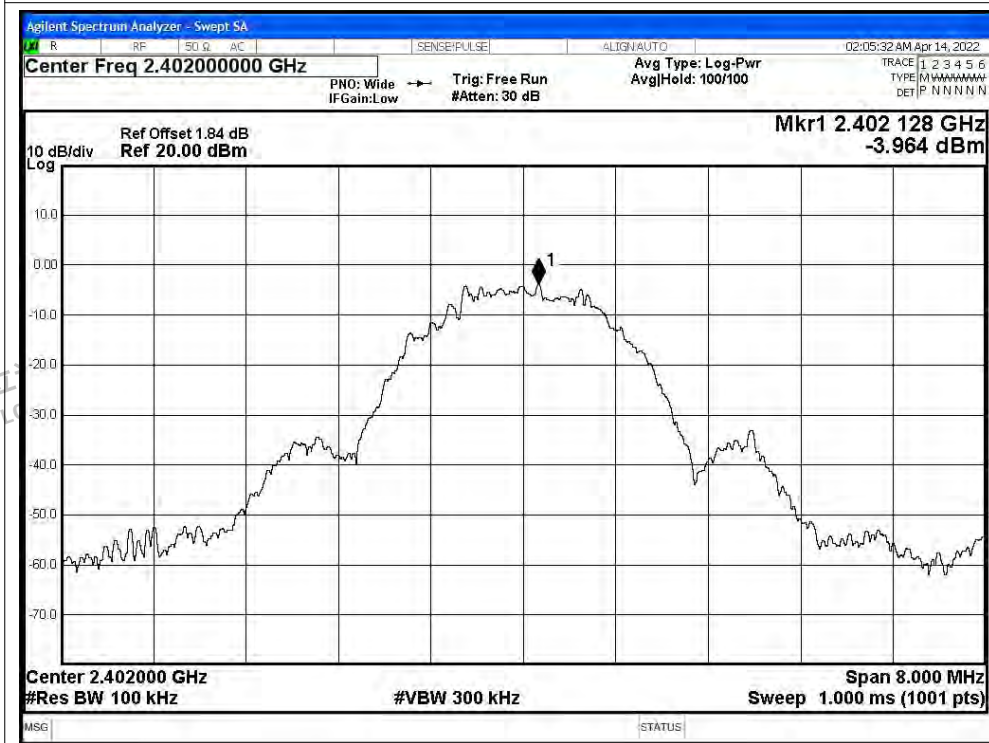
Band Edge NVNT BLE 1M 2480MHz Ant1 Ref



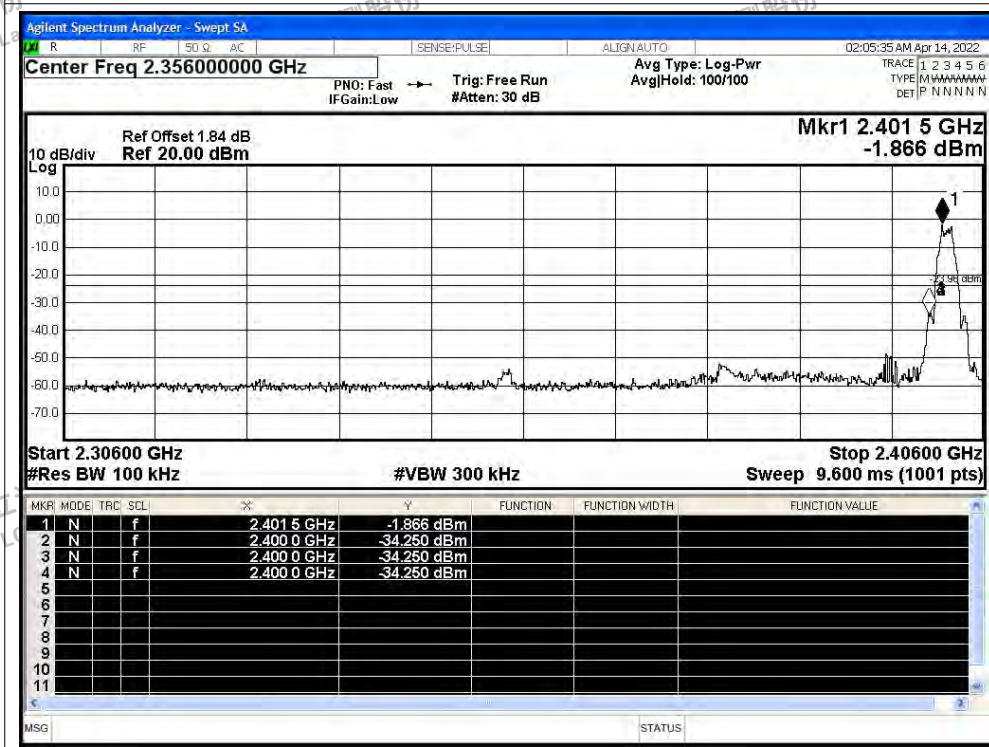
Band Edge NVNT BLE 1M 2480MHz Ant1 Emission



Band Edge NVNT BLE 2M 2402MHz Ant1 Ref

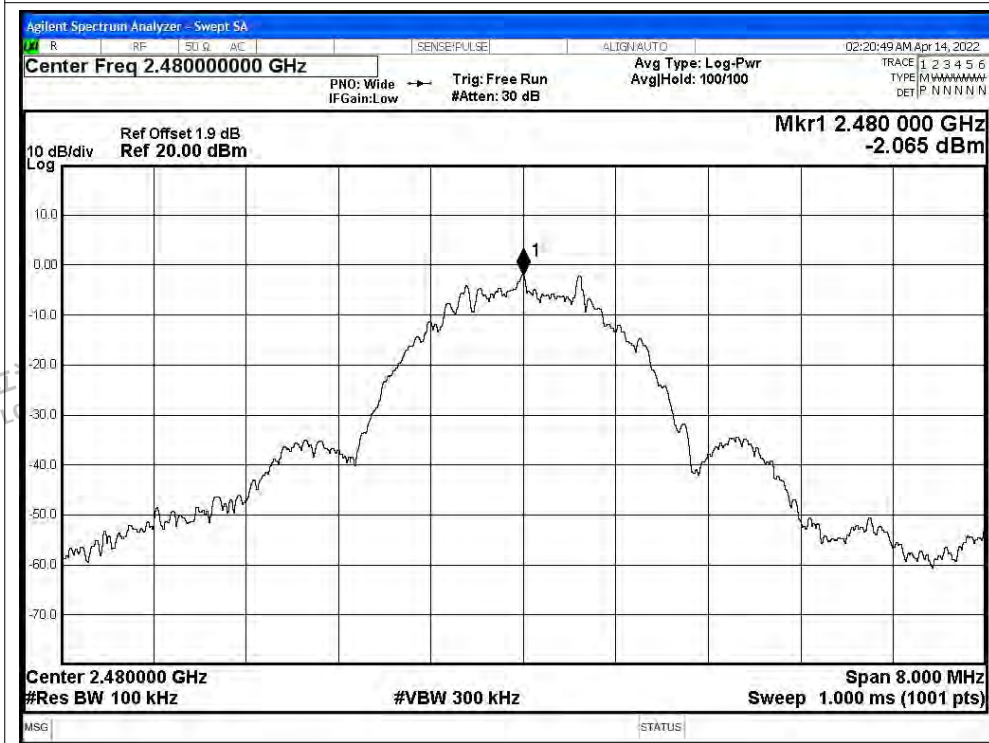


Band Edge NVNT BLE 2M 2402MHz Ant1 Emission

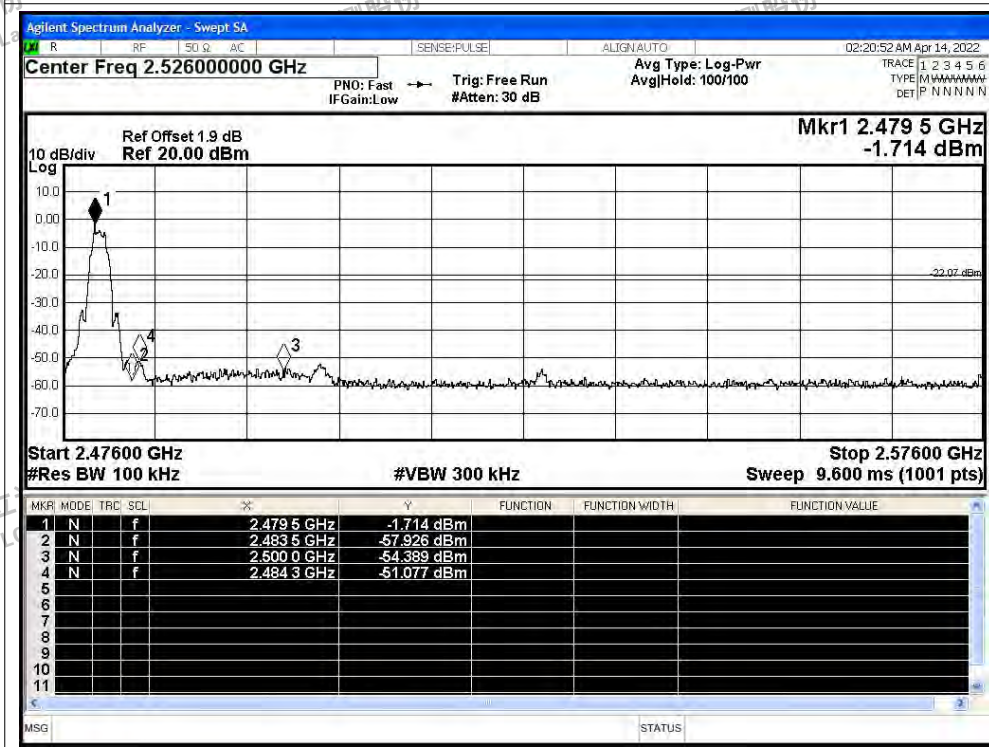




Band Edge NVNT BLE 2M 2480MHz Ant1 Ref



Band Edge NVNT BLE 2M 2480MHz Ant1 Emission





A.6 Conducted RF Spurious Emission

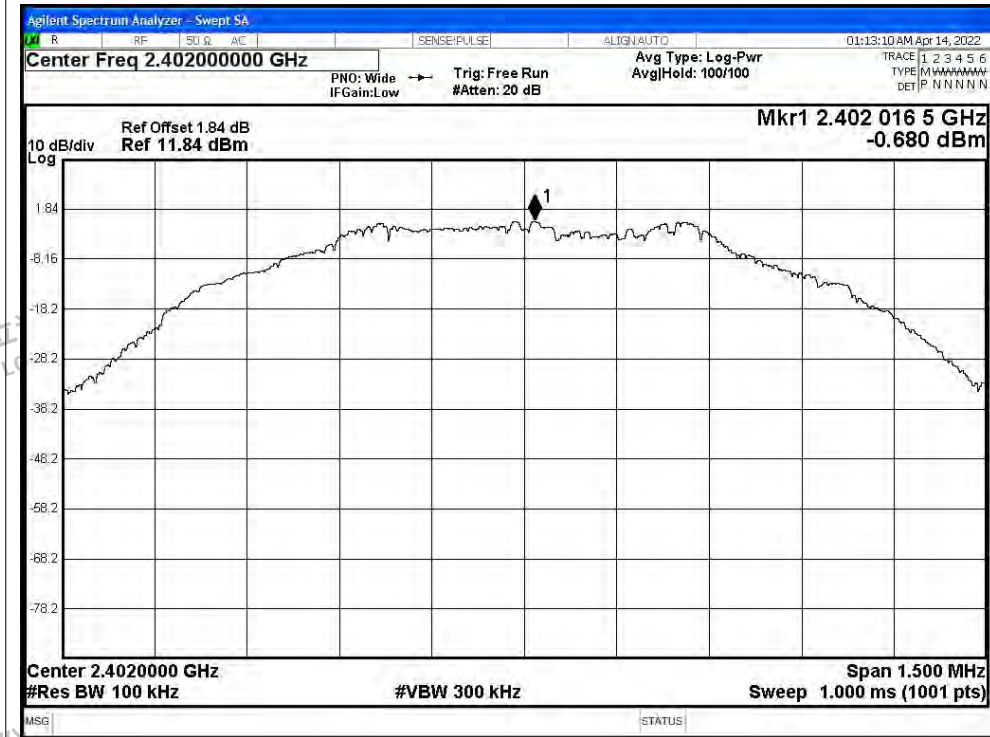
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-54.19	-20	Pass
NVNT	BLE 1M	2440	Ant1	-56.73	-20	Pass
NVNT	BLE 1M	2480	Ant1	-56.19	-20	Pass
NVNT	BLE 2M	2402	Ant1	-46.92	-20	Pass
NVNT	BLE 2M	2440	Ant1	-46.86	-20	Pass
NVNT	BLE 2M	2480	Ant1	-46.95	-20	Pass



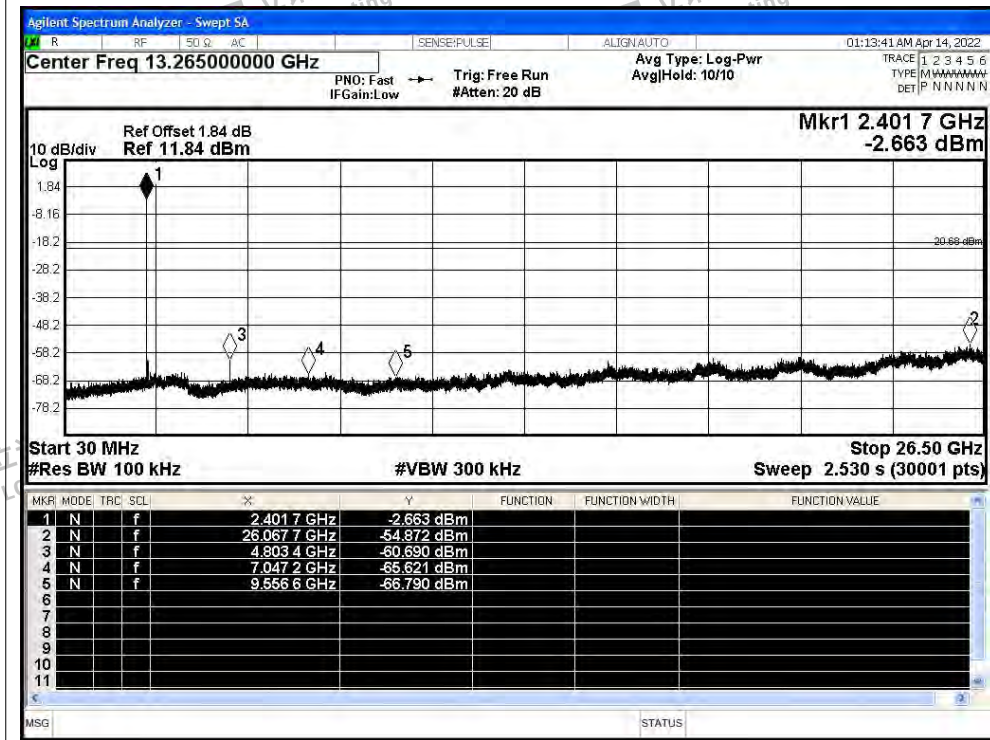


Test Graphs

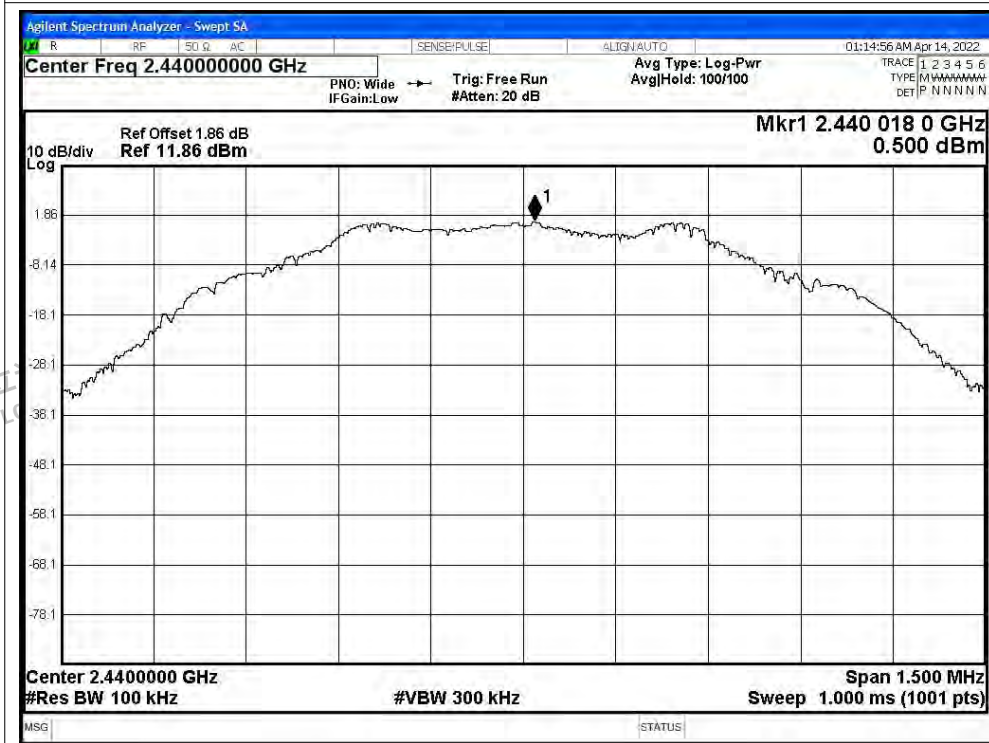
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



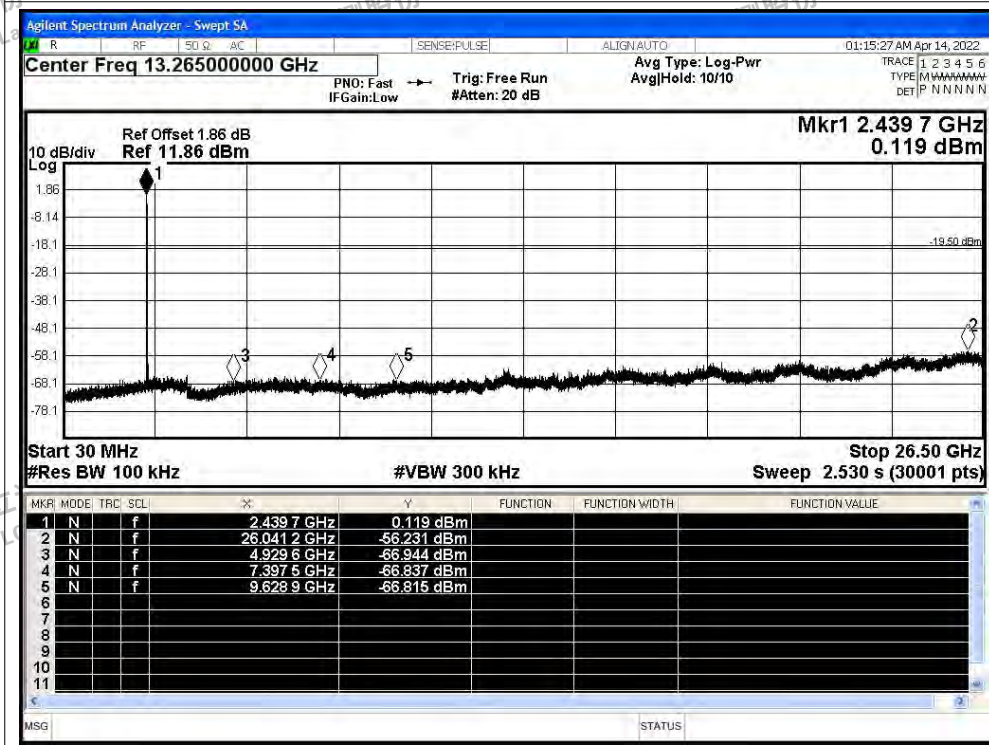
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



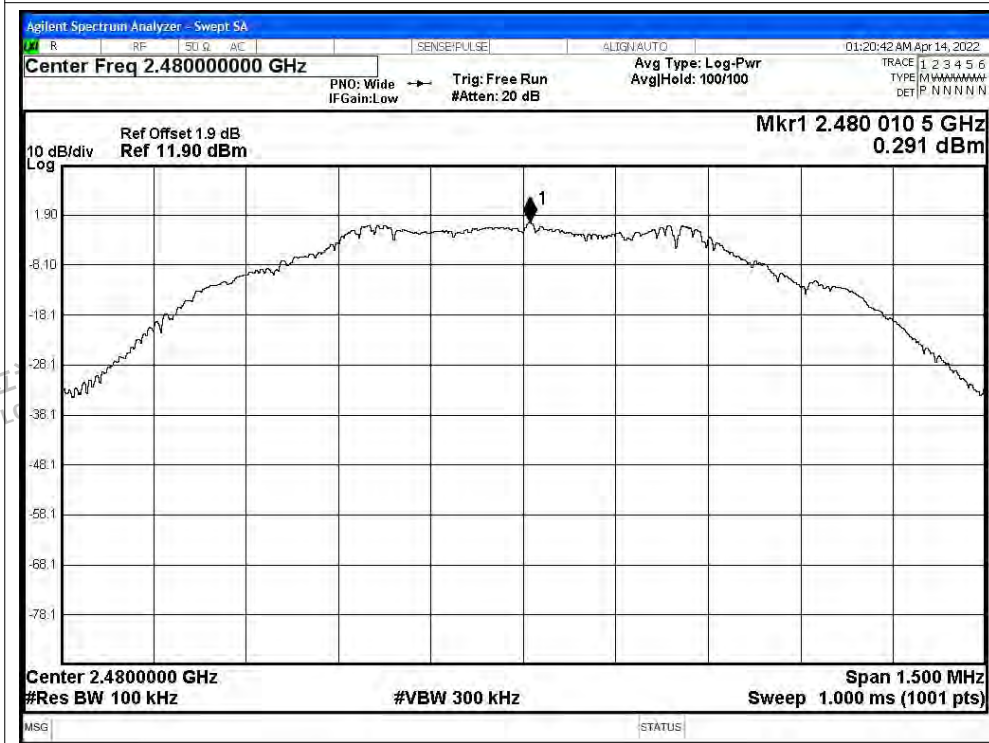
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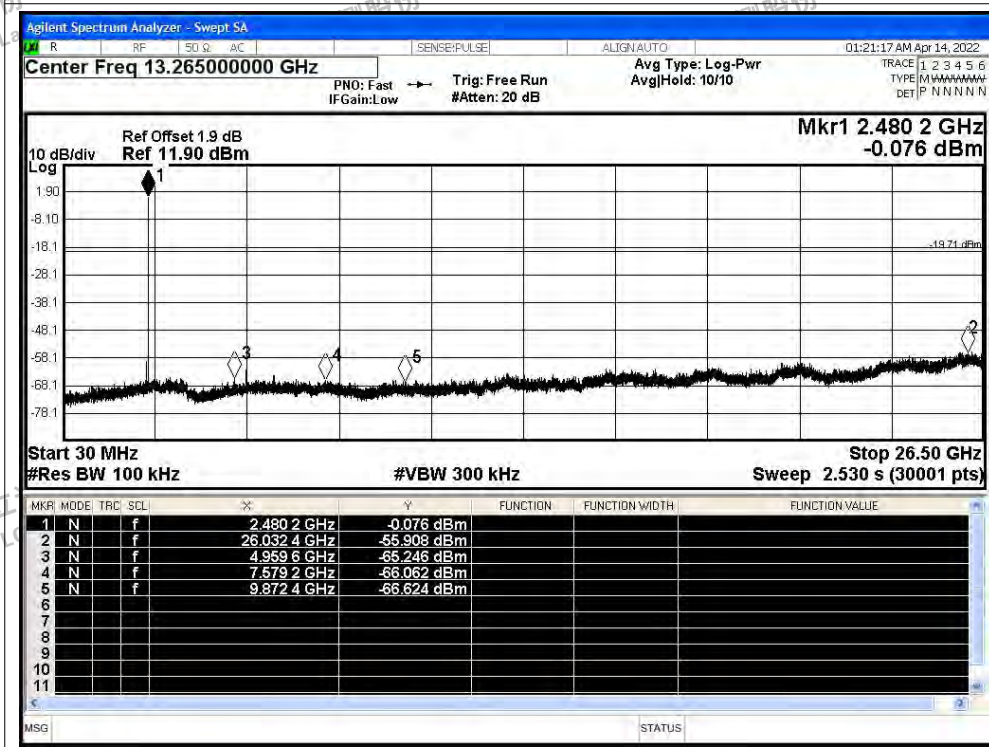
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref

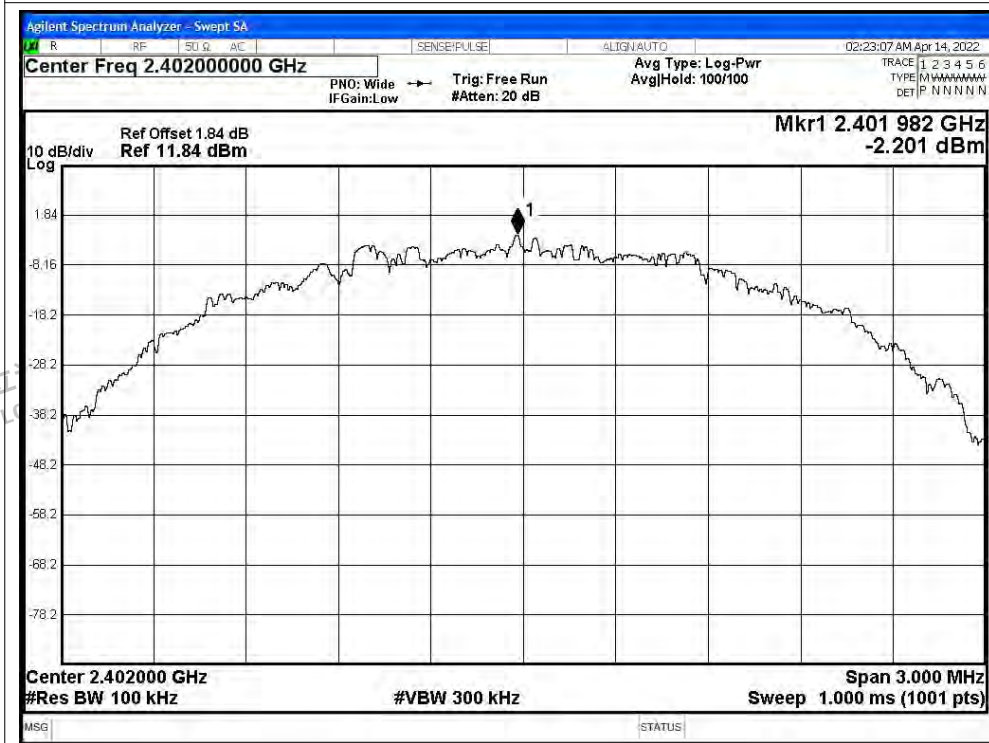


Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission

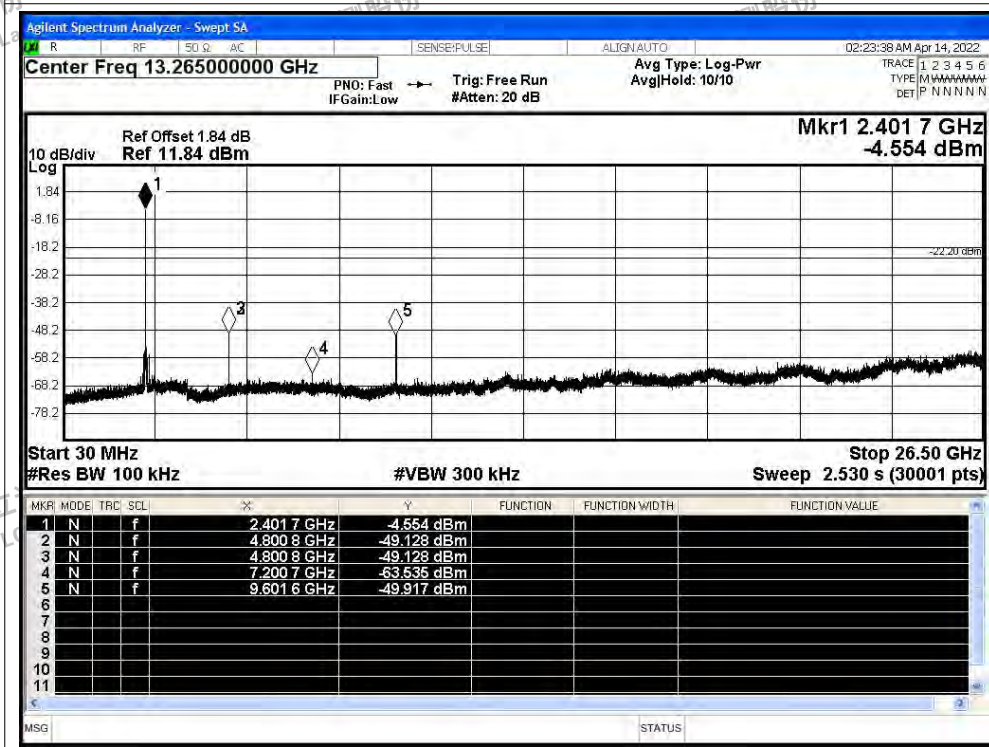




Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref

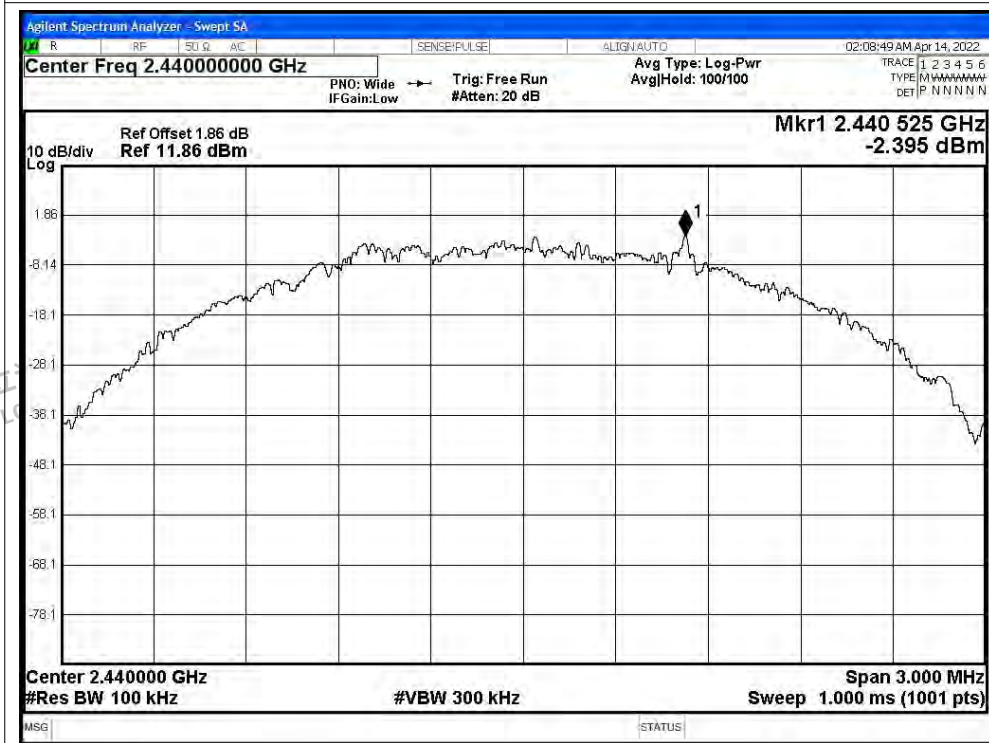


Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission

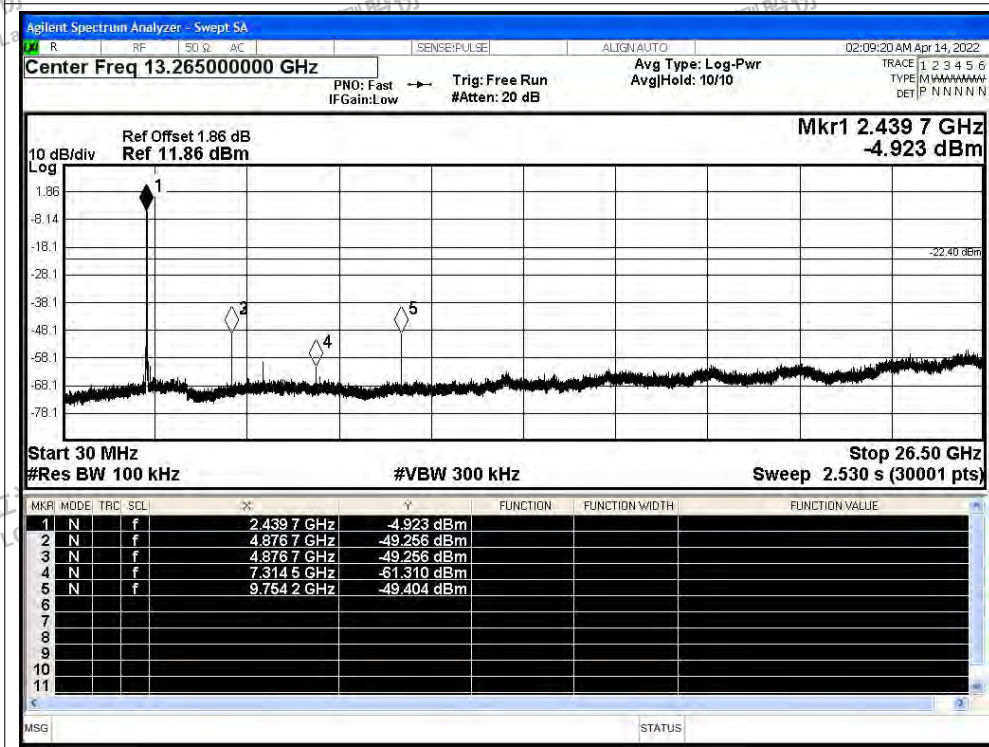




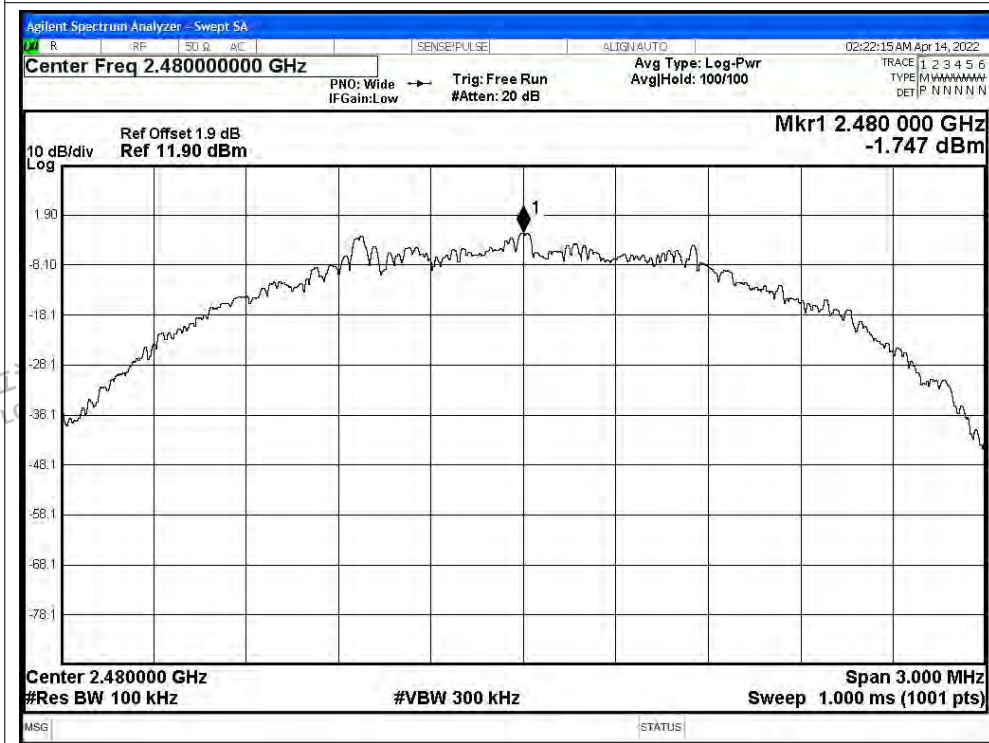
Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref



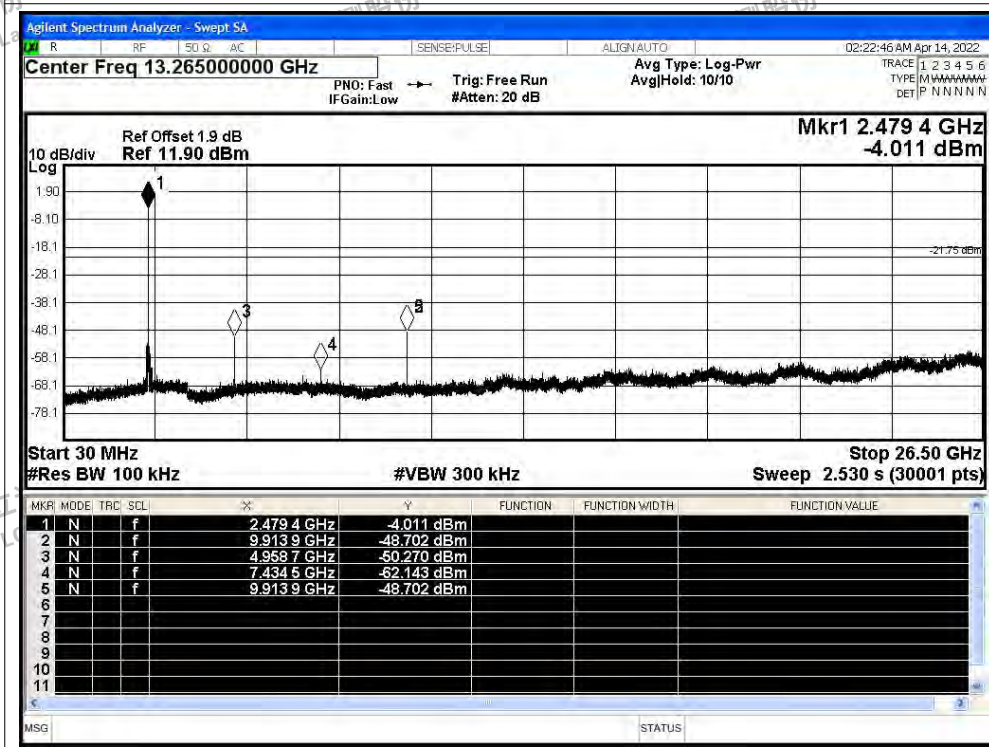
Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission



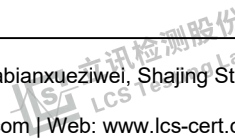
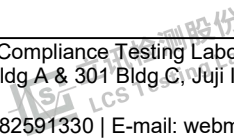


A.7 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	Ant1	61.39	2.12	2.6
NVNT	BLE 1M	2440	Ant1	61.44	2.12	2.6
NVNT	BLE 1M	2480	Ant1	61.44	2.12	2.6
NVNT	BLE 2M	2402	Ant1	43.1	3.66	0
NVNT	BLE 2M	2440	Ant1	43.09	3.66	0.93
NVNT	BLE 2M	2480	Ant1	43.09	3.66	0.93

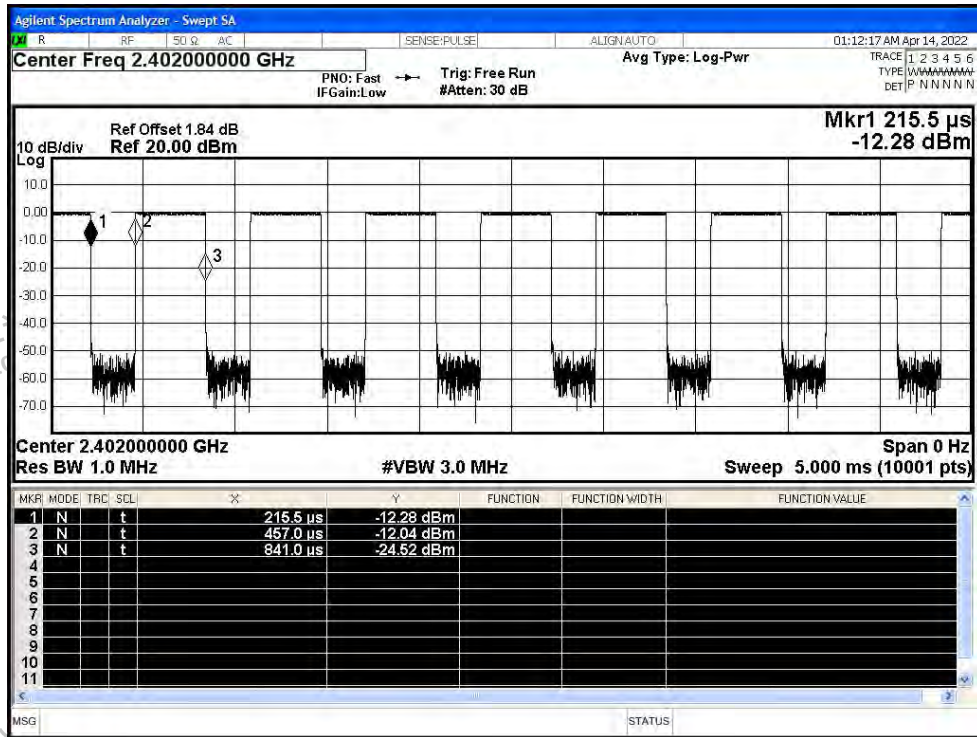


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 Scan code to check authenticity

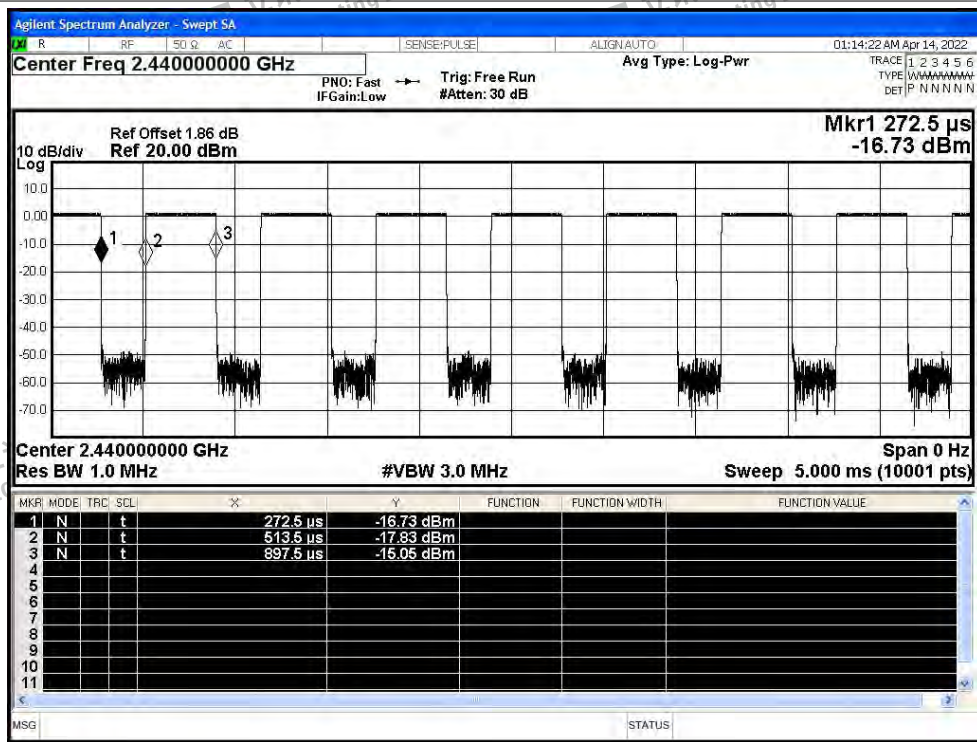


Test Graphs

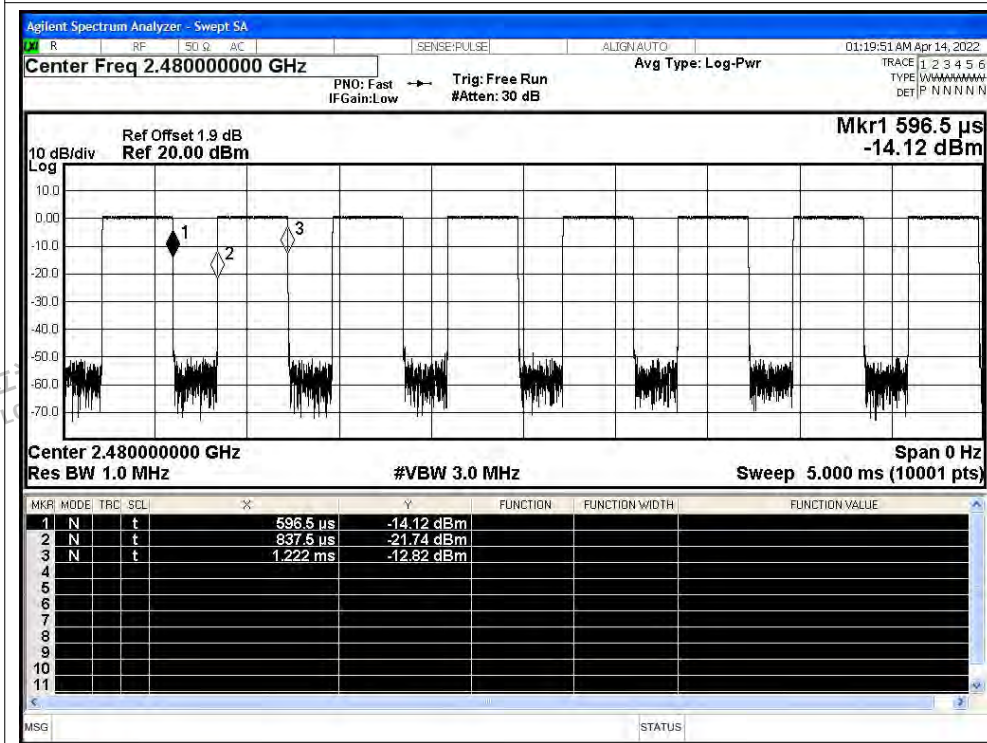
Duty Cycle NVNT BLE 1M 2402MHz Ant1



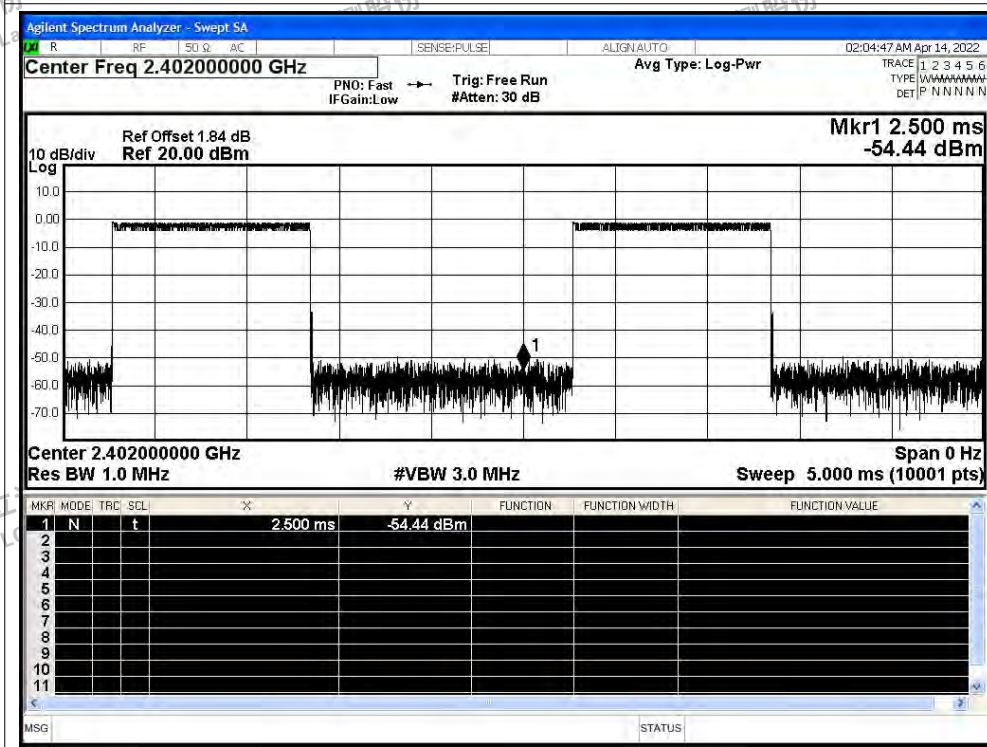
Duty Cycle NVNT BLE 1M 2440MHz Ant1



Duty Cycle NVNT BLE 1M 2480MHz Ant1

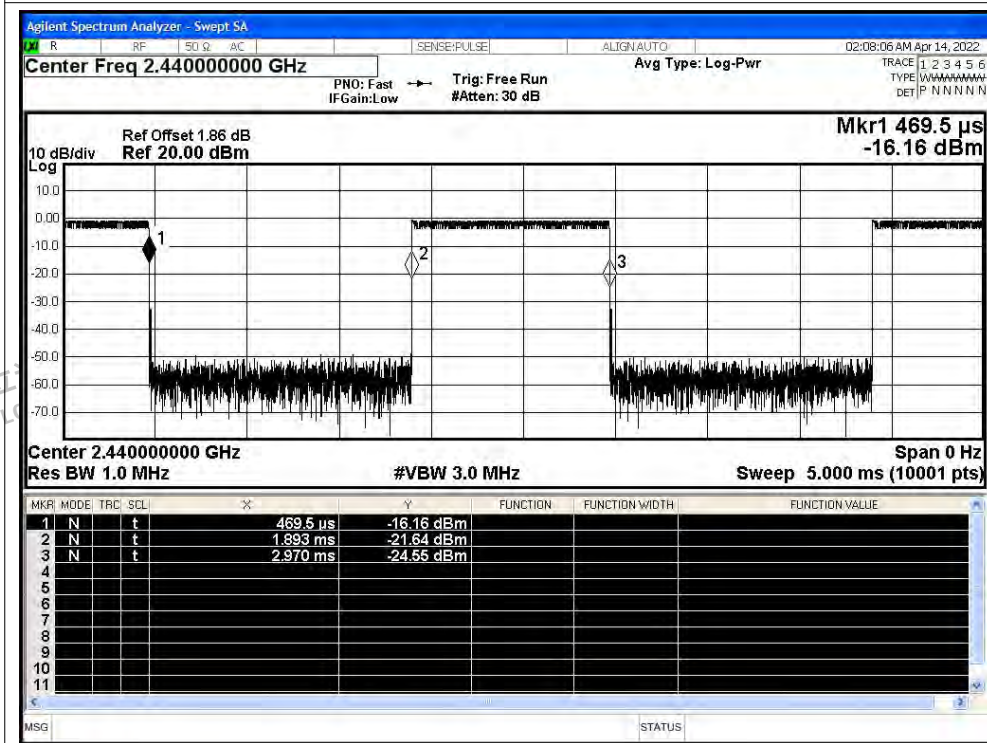


Duty Cycle NVNT BLE 2M 2402MHz Ant1

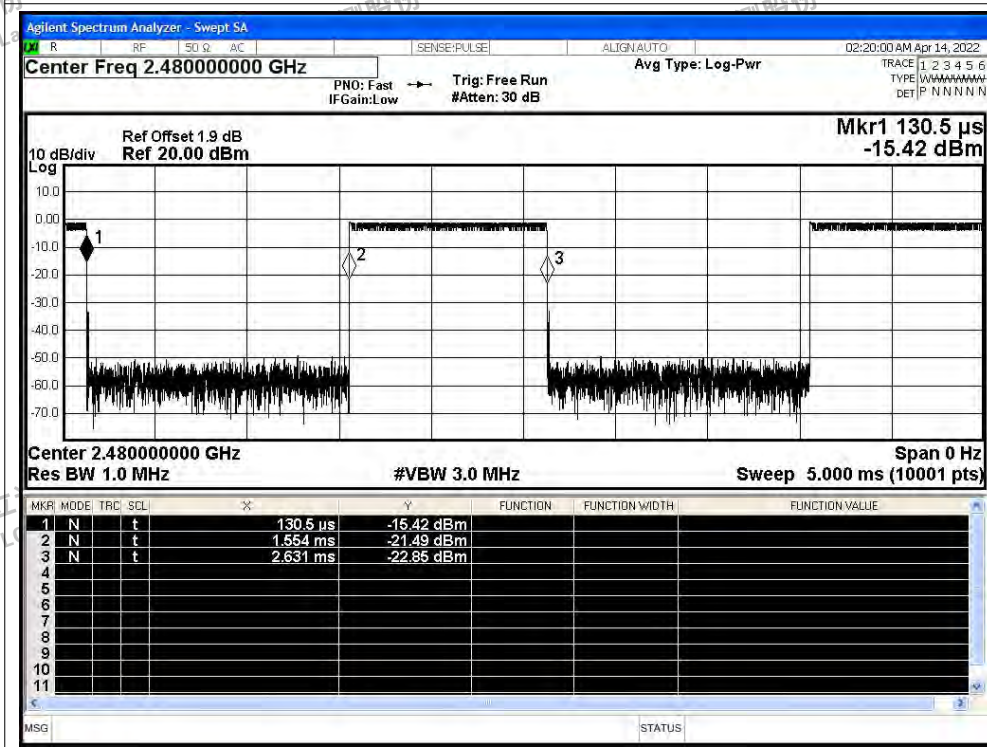




Duty Cycle NVNT BLE 2M 2440MHz Ant1



Duty Cycle NVNT BLE 2M 2480MHz Ant1





A.8 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	Ant1	2310	-51.42	2	45.84	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2310	-59.97	2	37.29	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2324.784	-47.81	2	49.45	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2368.368	-59.12	2	38.14	Average	54	Pass
NVNT	BLE 1M	2402	Ant1	2390	-50.09	2	47.17	Peak	74	Pass
NVNT	BLE 1M	2402	Ant1	2390	-59.49	2	37.77	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-49.55	2	47.71	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2483.5	-59.23	2	38.03	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2486.968	-47.01	2	50.25	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2492.44	-58.57	2	38.69	Average	54	Pass
NVNT	BLE 1M	2480	Ant1	2500	-48.99	2	48.27	Peak	74	Pass
NVNT	BLE 1M	2480	Ant1	2500	-59.43	2	37.83	Average	54	Pass
NVNT	BLE 2M	2402	Ant1	2310	-51.69	2	45.57	Peak	74	Pass
NVNT	BLE 2M	2402	Ant1	2310	-59.66	2	37.6	Average	54	Pass
NVNT	BLE 2M	2402	Ant1	2379.216	-44.47	2	52.79	Peak	74	Pass
NVNT	BLE 2M	2402	Ant1	2378.064	-51.98	2	45.28	Average	54	Pass
NVNT	BLE 2M	2402	Ant1	2390	-47.38	2	49.88	Peak	74	Pass
NVNT	BLE 2M	2402	Ant1	2390	-55.82	2	41.44	Average	54	Pass
NVNT	BLE 2M	2480	Ant1	2483.5	-43.45	2	53.81	Peak	74	Pass
NVNT	BLE 2M	2480	Ant1	2483.5	-52.8	2	44.46	Average	54	Pass
NVNT	BLE 2M	2480	Ant1	2484.28	-42.76	2	54.5	Peak	74	Pass
NVNT	BLE 2M	2480	Ant1	2484.04	-52.29	2	44.97	Average	54	Pass
NVNT	BLE 2M	2480	Ant1	2500	-46.33	2	50.93	Peak	74	Pass
NVNT	BLE 2M	2480	Ant1	2500	-55.25	2	42.01	Average	54	Pass



Shenzhen LCS Compliance Testing Laboratory Ltd.

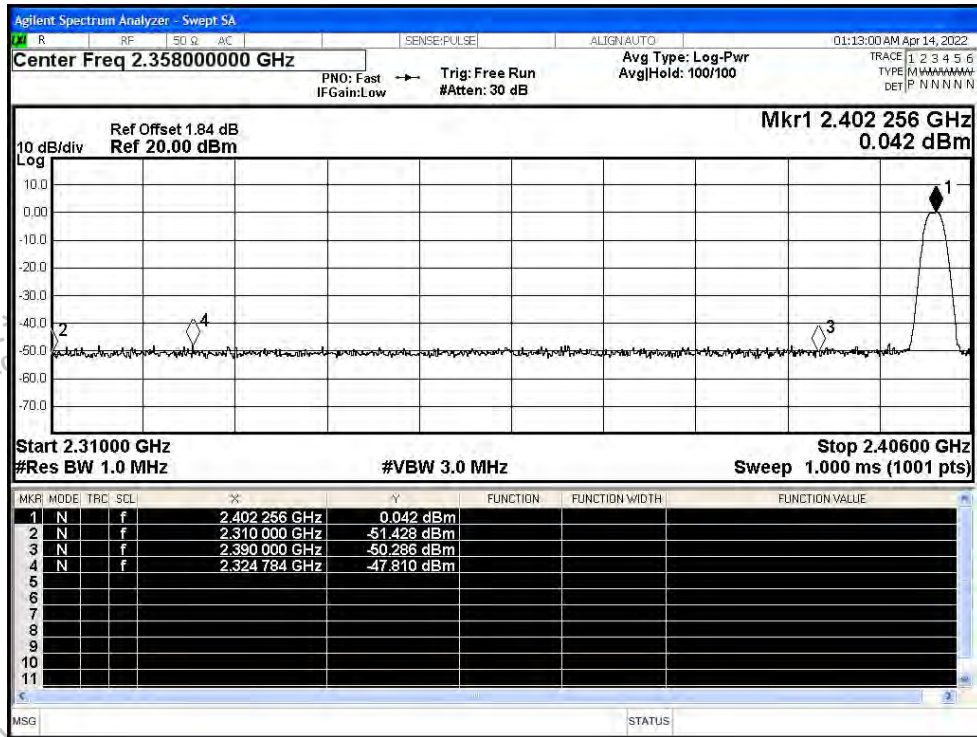
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

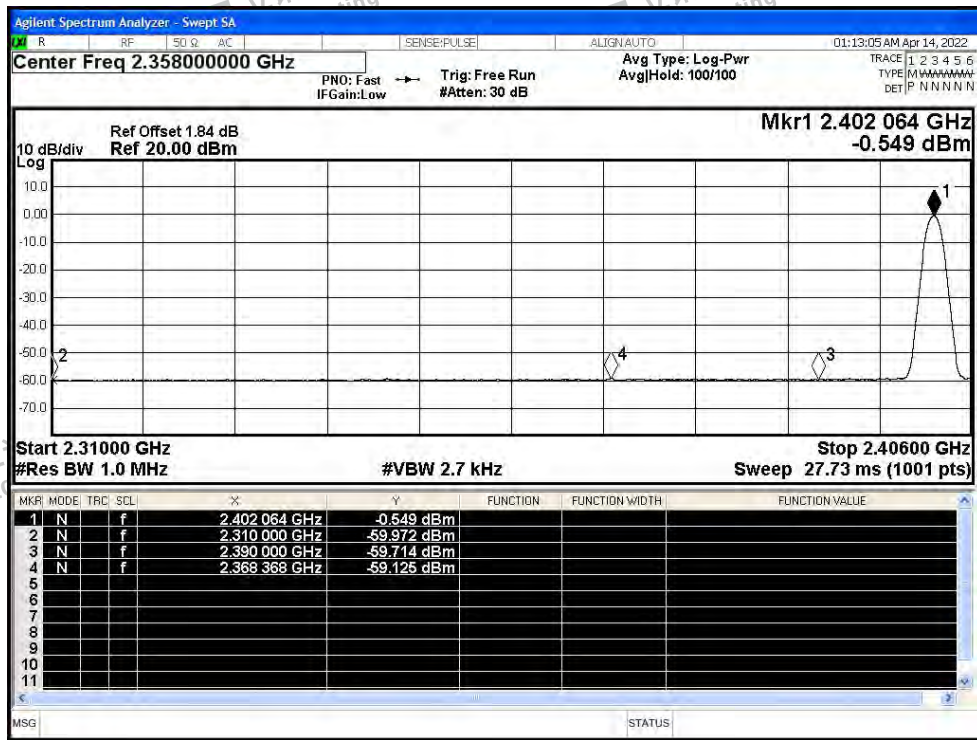
Scan code to check authenticity

Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak

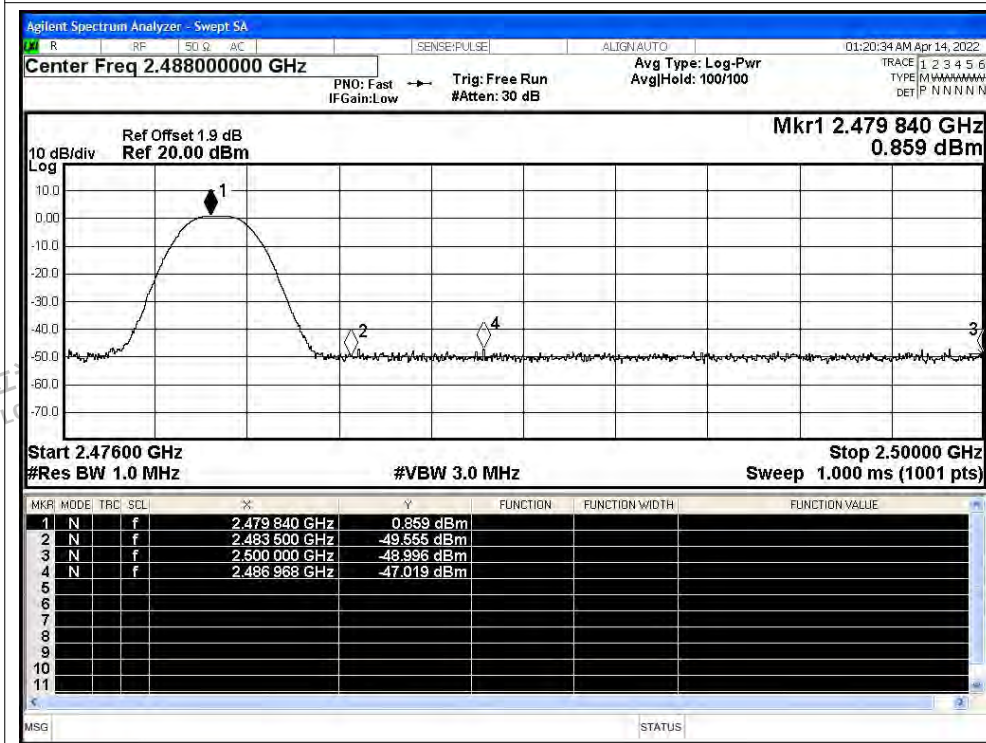


Restrict Band NVNT BLE 1M 2402MHz Ant1 Average

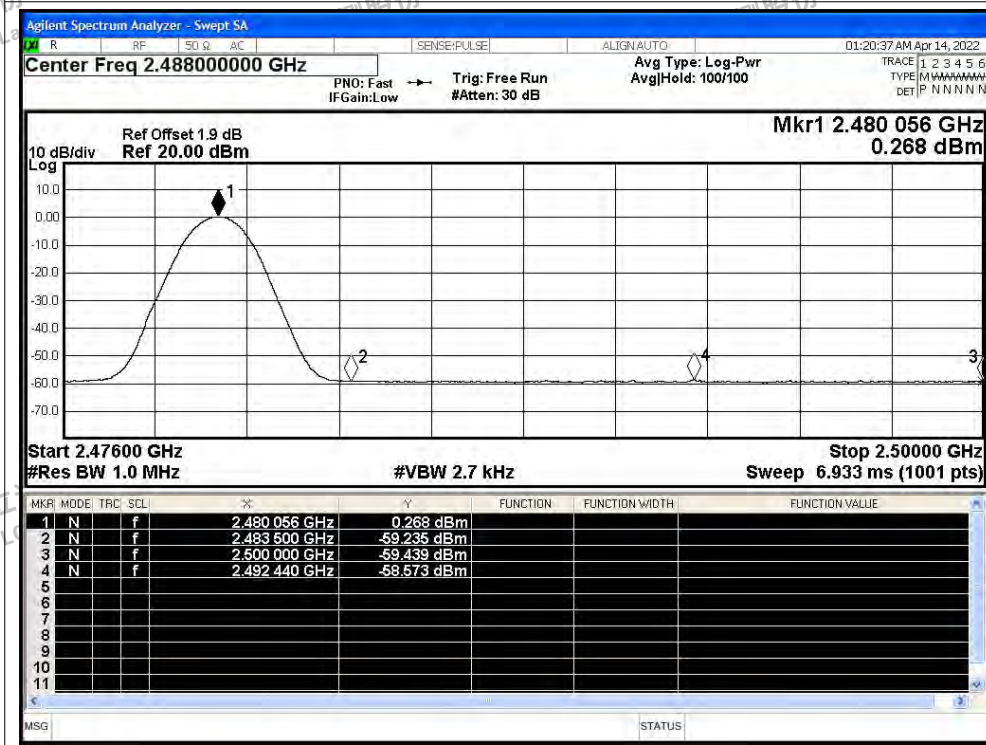




Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak

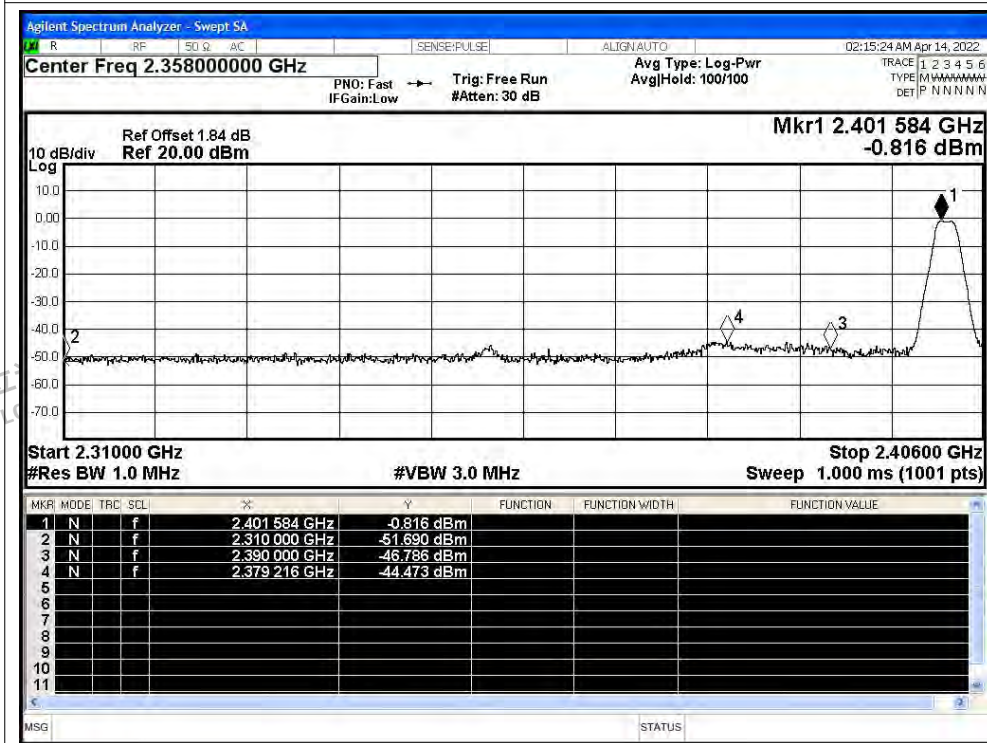


Restrict Band NVNT BLE 1M 2480MHz Ant1 Average

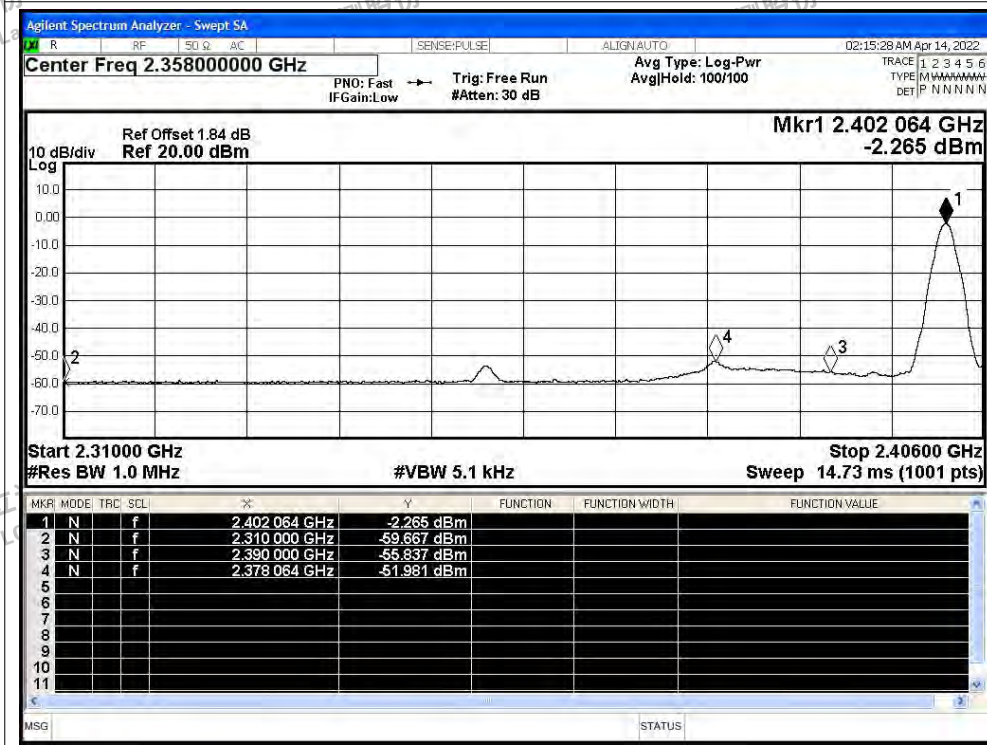




Restrict Band NVNT BLE 2M 2402MHz Ant1 Peak

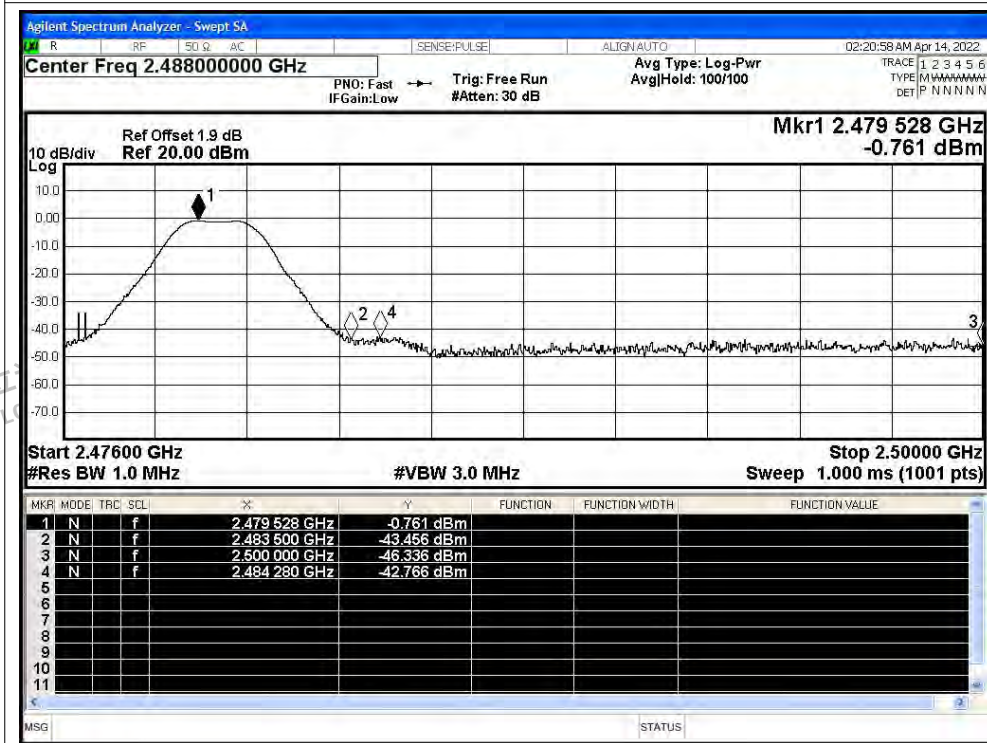


Restrict Band NVNT BLE 2M 2402MHz Ant1 Average





Restrict Band NVNT BLE 2M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2M 2480MHz Ant1 Average

