

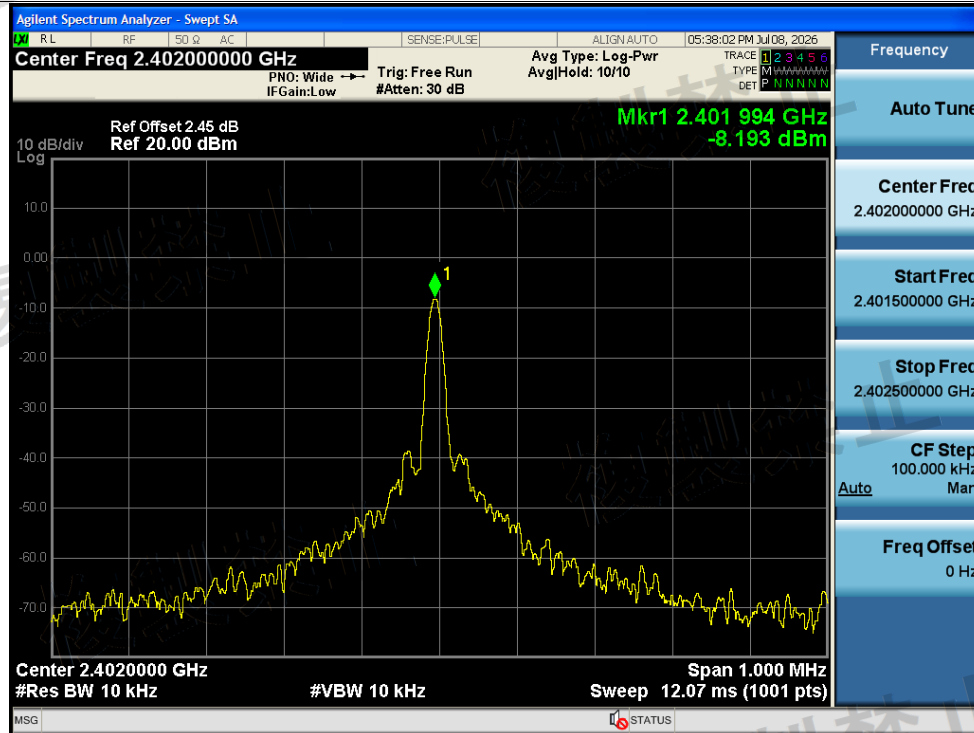
Appendix D_BLE

Frequency Error

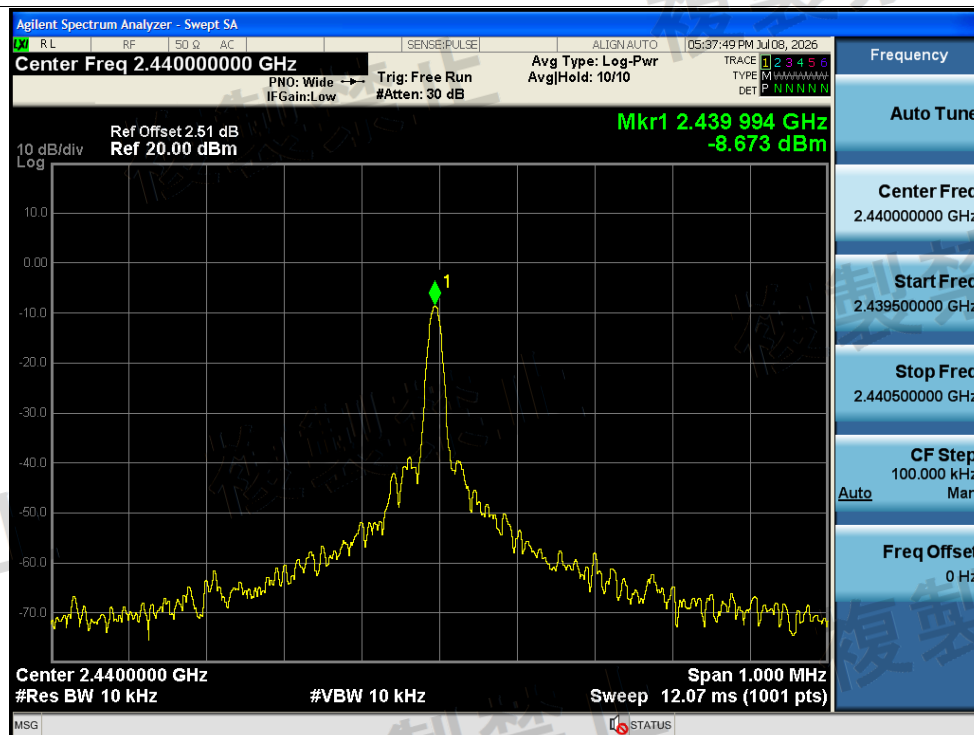
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	BLE 1M	2402	Ant1	2401.994	-6000	-2.5	50	Pass
NVNT	BLE 1M	2440	Ant1	2439.994	-6000	-2.46	50	Pass
NVNT	BLE 1M	2480	Ant1	2479.994	-6000	-2.42	50	Pass

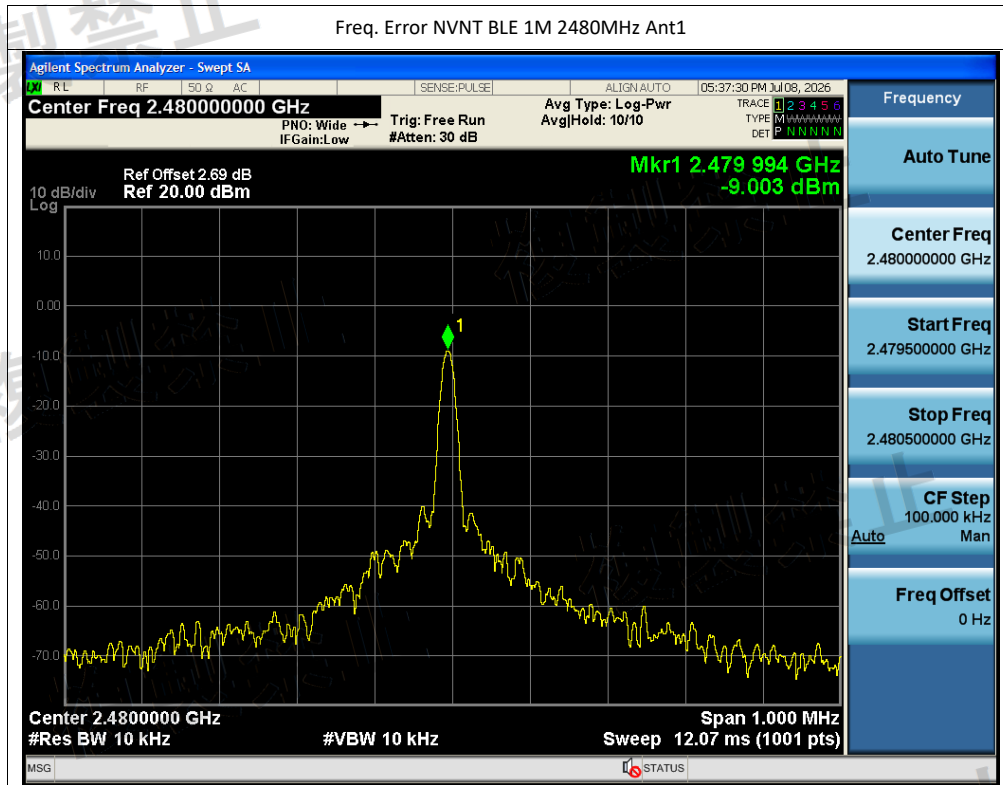
Test Graphs

Freq. Error NVNT BLE 1M 2402MHz Ant1



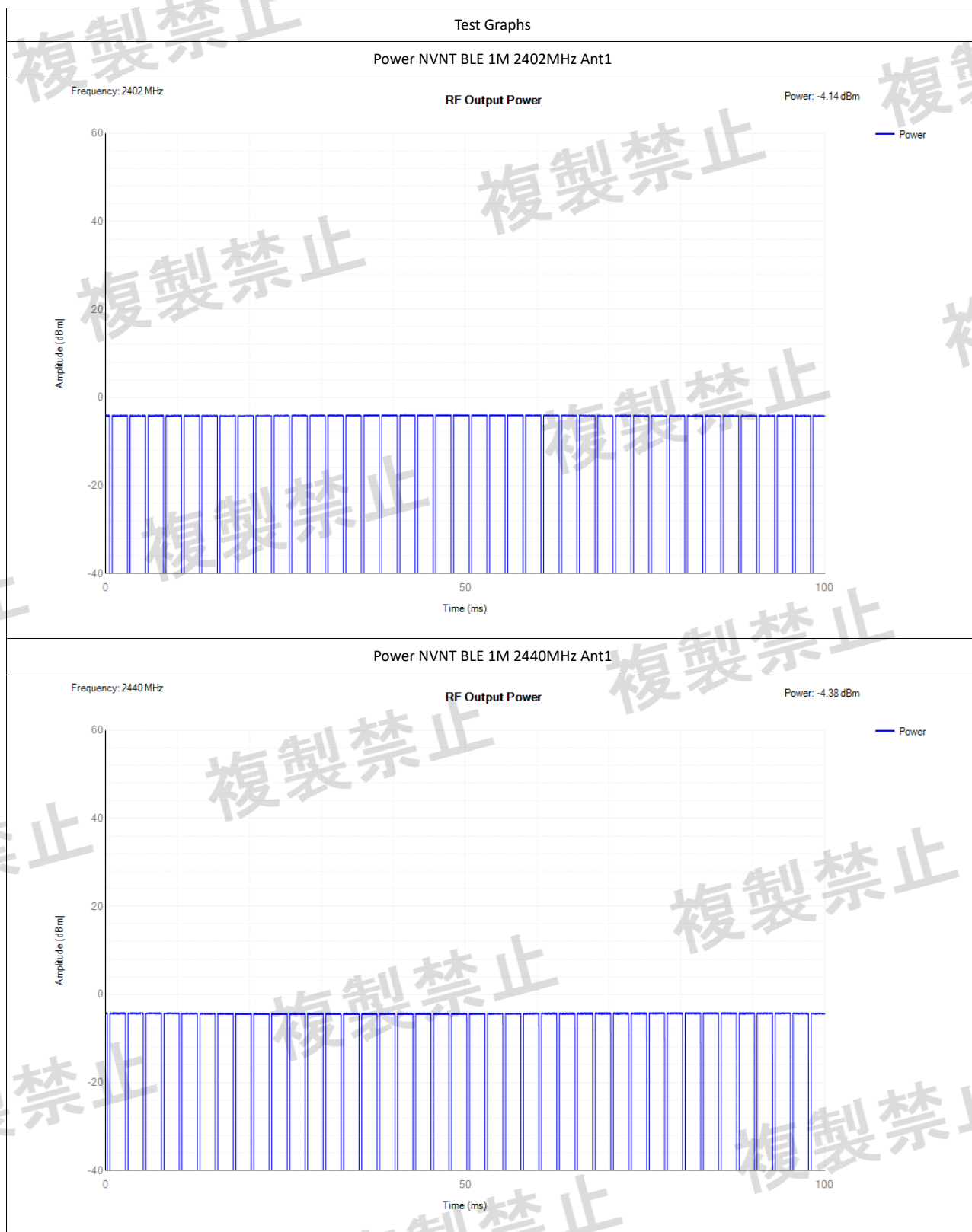
Freq. Error NVNT BLE 1M 2440MHz Ant1

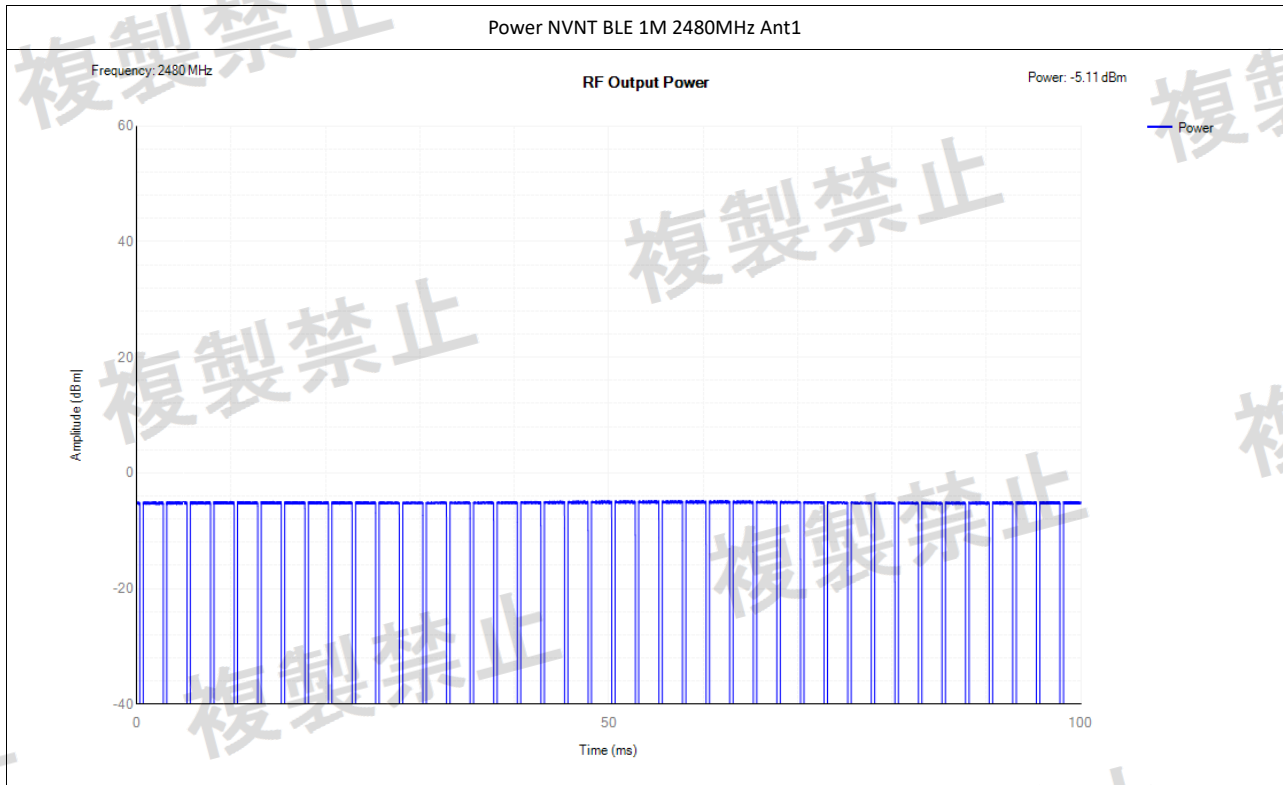




Antenna Power

Condition	Mode	Frequency (MHz)	Antenna	Power (dBm)	Power (mW)	Limit (mW)	Declared Power (mW)	Tolerance (%)	Upper Limit (%)	Verdict
NVNT	BLE 1M	2402	Ant1	-4.14	0.385	10	1	-61.5	20	Pass
NVNT	BLE 1M	2440	Ant1	-4.38	0.365	10	1	-63.5	20	Pass
NVNT	BLE 1M	2480	Ant1	-5.11	0.308	10	1	-69.2	20	Pass





EIRP Power

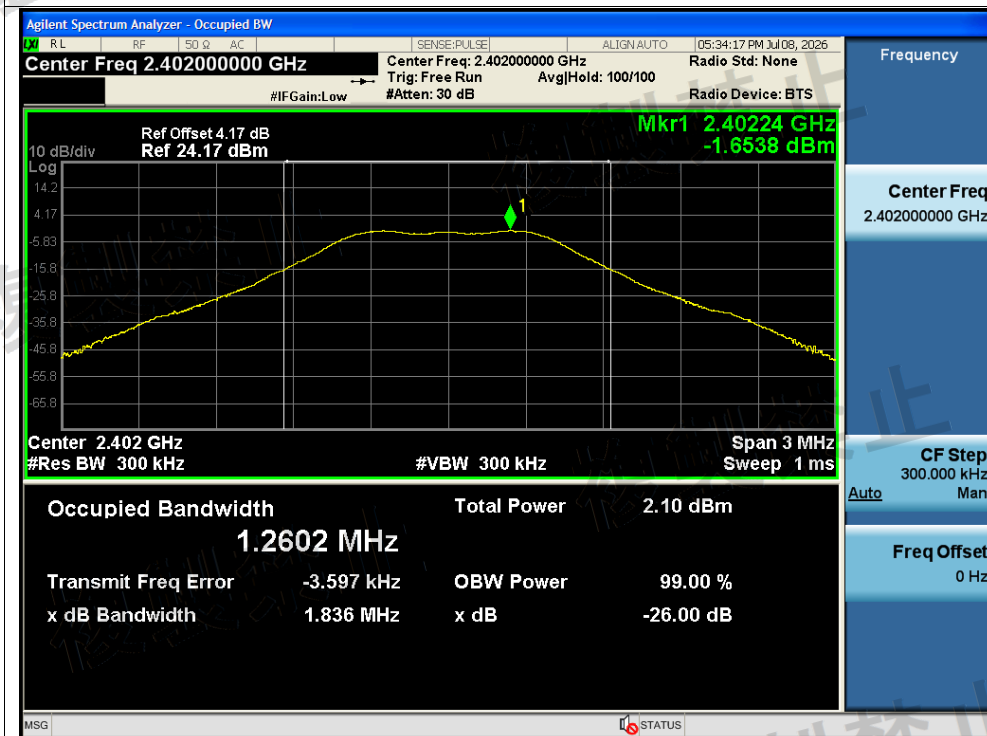
Condition	Mode	Frequency (MHz)	Antenna	Antenna Power (mW)	Antenna Power (dBm)	Gain (dBi)	EIRP Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	0.385	-4.14	1.72	-2.42	12.14	Pass
NVNT	BLE 1M	2440	Ant1	0.365	-4.38	1.72	-2.66	12.14	Pass
NVNT	BLE 1M	2480	Ant1	0.308	-5.11	1.72	-3.39	12.14	Pass

Occupied Channel Bandwidth

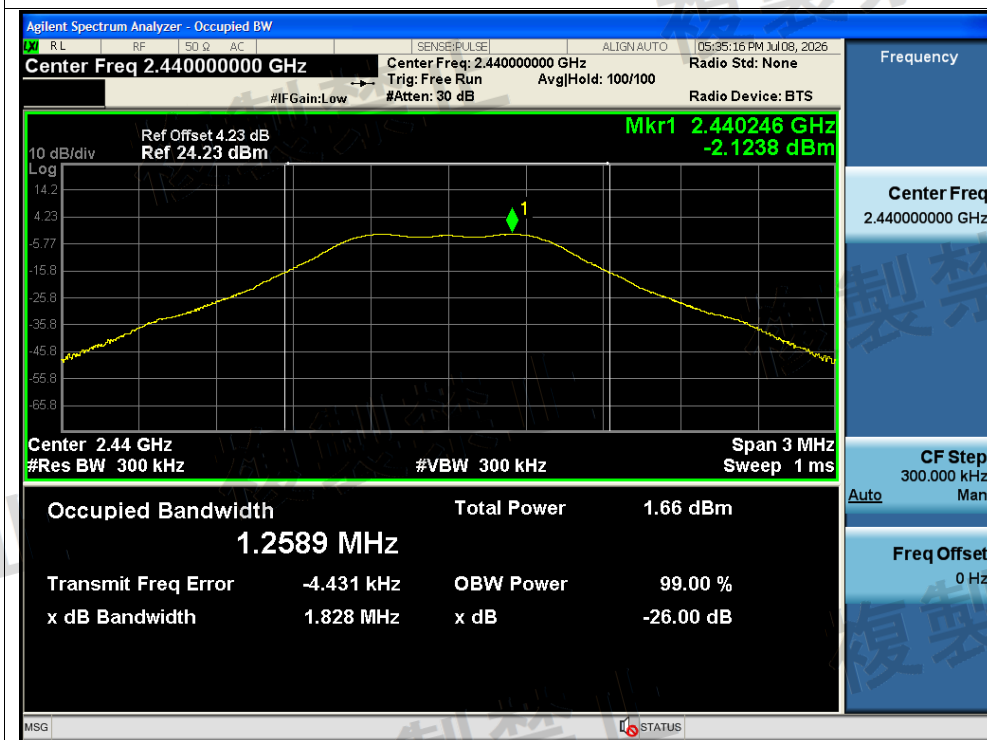
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	Lower Limit (MHz)	Upper Limit (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	1.2602	N/A	26	Pass
NVNT	BLE 1M	2440	Ant1	1.2589	N/A	26	Pass
NVNT	BLE 1M	2480	Ant1	1.2318	N/A	26	Pass

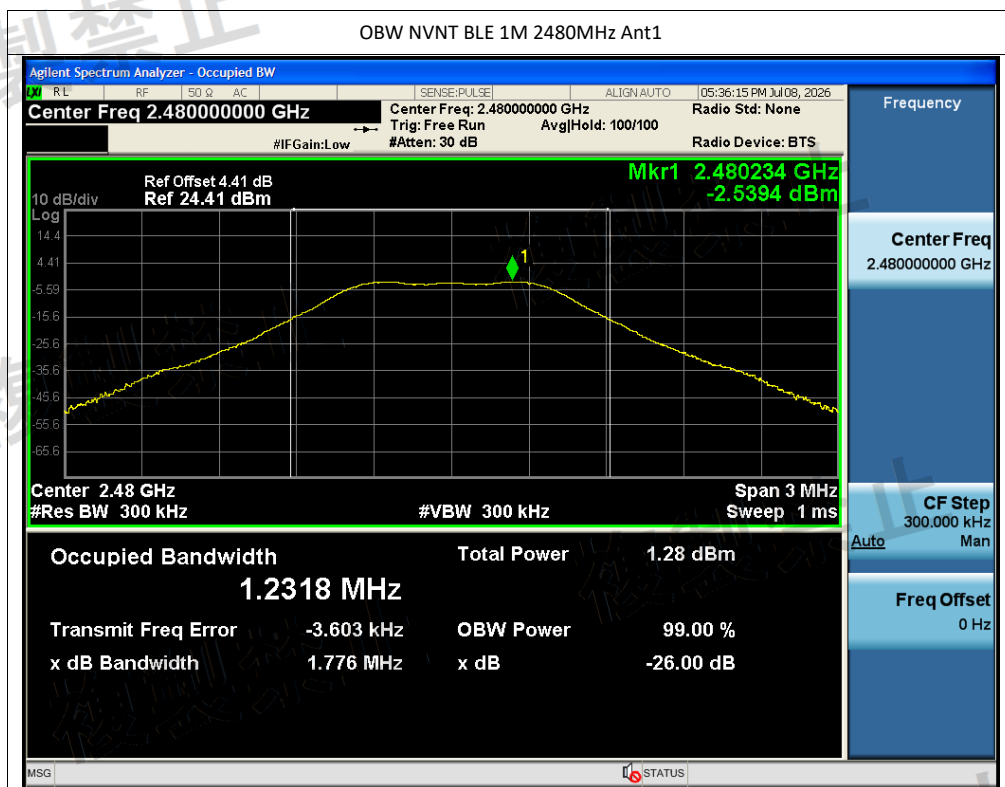
Test Graphs

OBW NVNT BLE 1M 2402MHz Ant1



OBW NVNT BLE 1M 2440MHz Ant1





Spreading Bandwidth

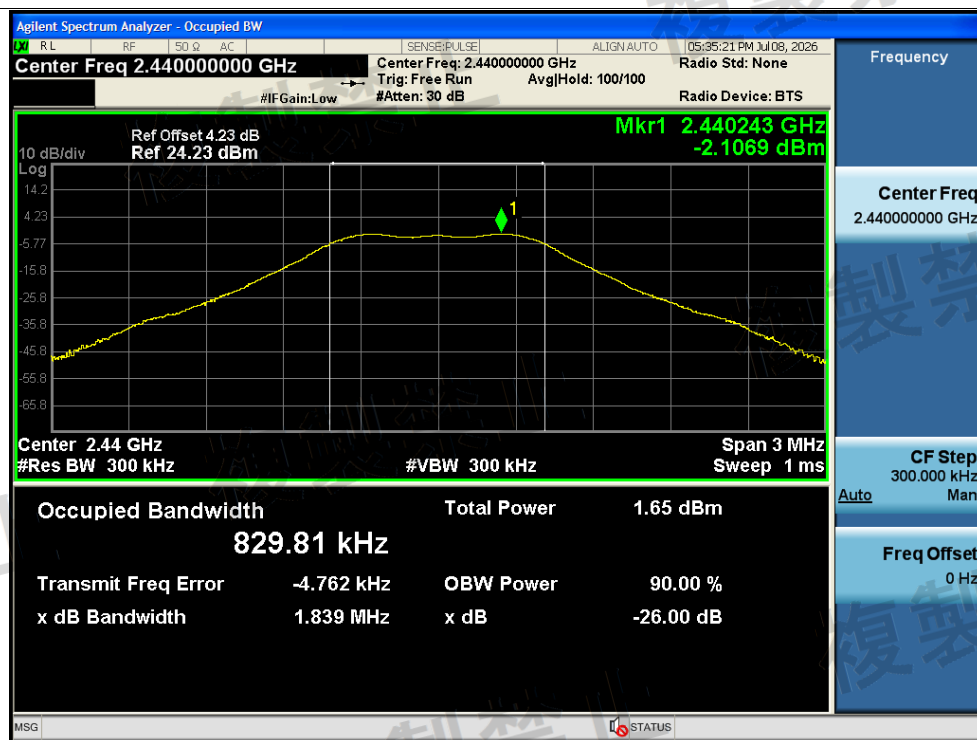
Condition	Mode	Frequency (MHz)	Antenna	90% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	0.82916
NVNT	BLE 1M	2440	Ant1	0.82981
NVNT	BLE 1M	2480	Ant1	0.82425

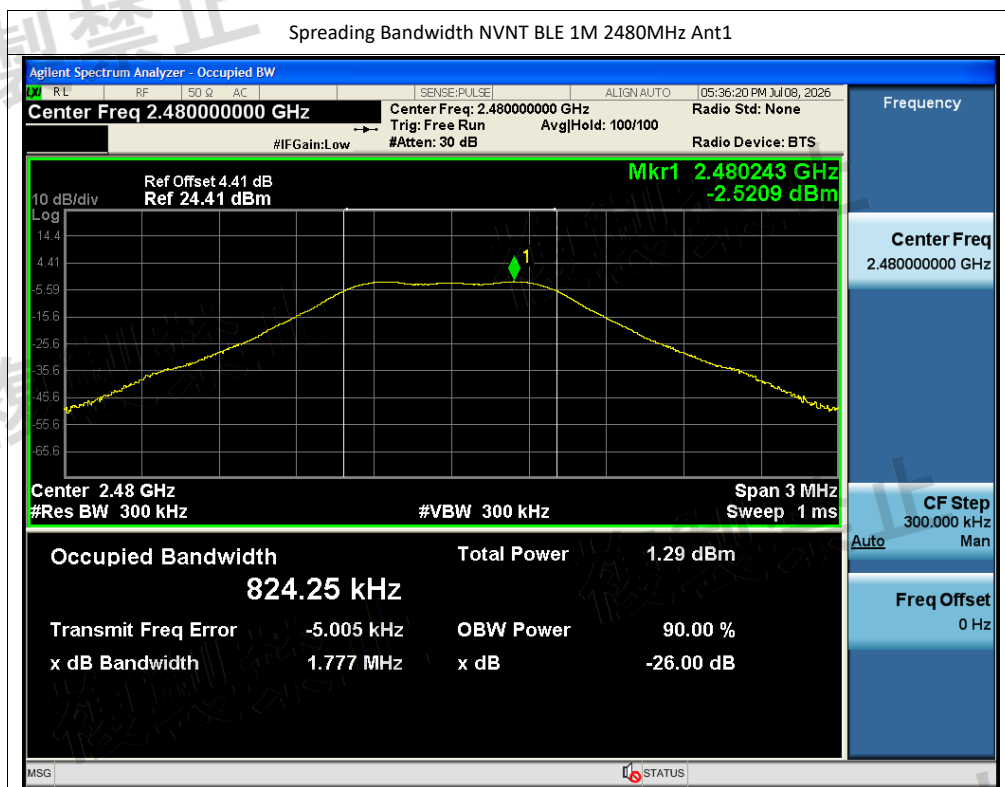
Test Graphs

Spreading Bandwidth NVNT BLE 1M 2402MHz Ant1



Spreading Bandwidth NVNT BLE 1M 2440MHz Ant1



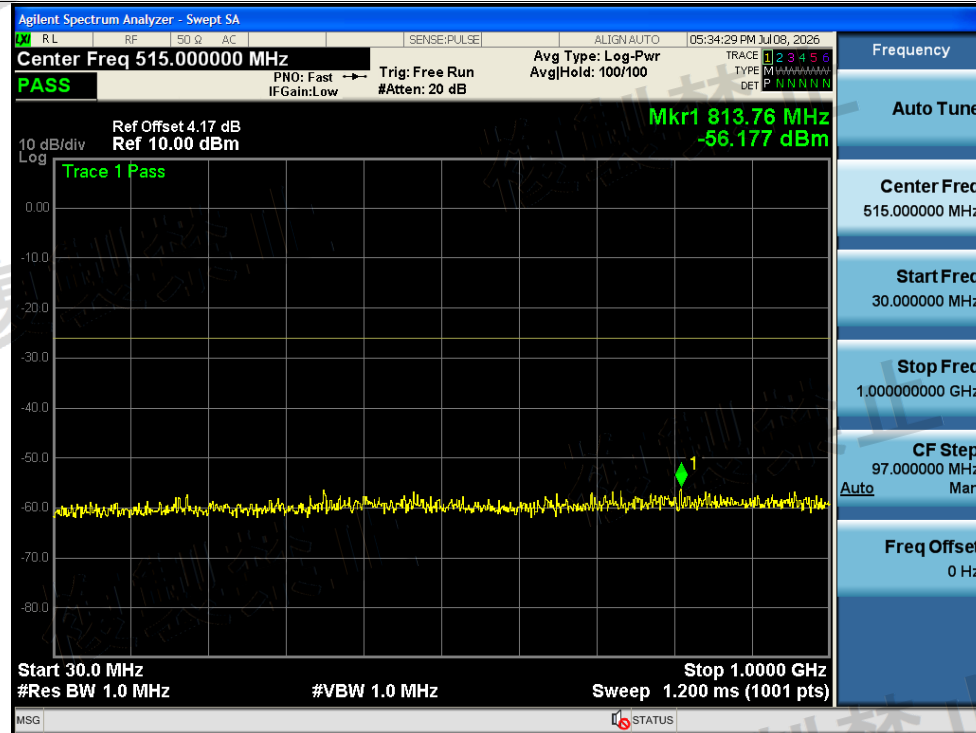


Tx Spurious Emission

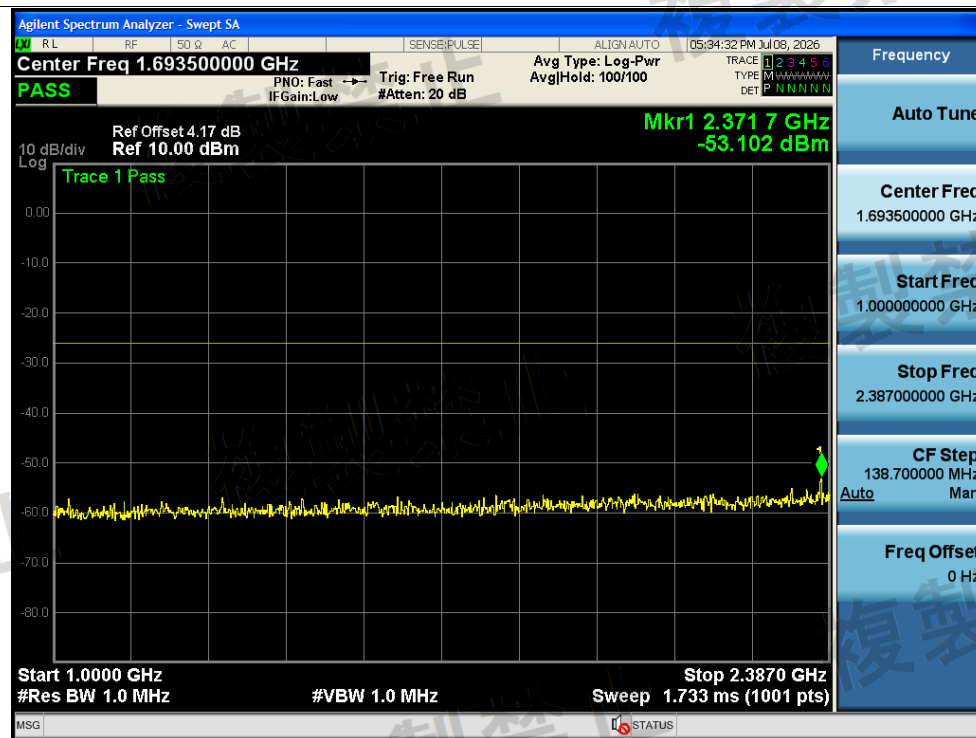
Condition	Mode	Frequency (MHz)	Antenna	Range (MHz)	Emission Frequency (MHz)	Max Peak Value (dBm)	Max RMS Value (dBm)	Max Peak Value (uW)	Max RMS Value (uW)	Limit Start(uW)	Limit Stop (uW)	Verdict
NVNT	BLE 1M	2402	Ant1	30-1000	813.76	-56.17	NA	0.0024	NA	2.5	2.5	Pass
NVNT	BLE 1M	2402	Ant1	1000-2387	2371.74	-53.10	NA	0.0049	NA	2.5	2.5	Pass
NVNT	BLE 1M	2402	Ant1	2387-2400	2400.00	-37.78	NA	0.1667	NA	25	25	Pass
NVNT	BLE 1M	2402	Ant1	2483.5-2496.5	2491.69	-56.07	NA	0.0025	NA	25	25	Pass
NVNT	BLE 1M	2402	Ant1	2496.5-13000	7202.07	-38.26	NA	0.1493	NA	2.5	2.5	Pass
NVNT	BLE 1M	2440	Ant1	30-1000	867.11	-56.21	NA	0.0024	NA	2.5	2.5	Pass
NVNT	BLE 1M	2440	Ant1	1000-2387	2051.35	-55.68	NA	0.0027	NA	2.5	2.5	Pass
NVNT	BLE 1M	2440	Ant1	2387-2400	2387.95	-55.27	NA	0.003	NA	25	25	Pass
NVNT	BLE 1M	2440	Ant1	2483.5-2496.5	2495.94	-55.65	NA	0.0027	NA	25	25	Pass
NVNT	BLE 1M	2440	Ant1	2496.5-13000	7317.61	-38.26	NA	0.1493	NA	2.5	2.5	Pass
NVNT	BLE 1M	2480	Ant1	30-1000	782.72	-55.59	NA	0.0028	NA	2.5	2.5	Pass
NVNT	BLE 1M	2480	Ant1	1000-2387	2269.11	-55.26	NA	0.003	NA	2.5	2.5	Pass
NVNT	BLE 1M	2480	Ant1	2387-2400	2388.12	-55.70	NA	0.0027	NA	25	25	Pass
NVNT	BLE 1M	2480	Ant1	2483.5-2496.5	2484.03	-54.45	NA	0.0036	NA	25	25	Pass
NVNT	BLE 1M	2480	Ant1	2496.5-13000	7443.65	-38.73	NA	0.134	NA	2.5	2.5	Pass

Test Graphs

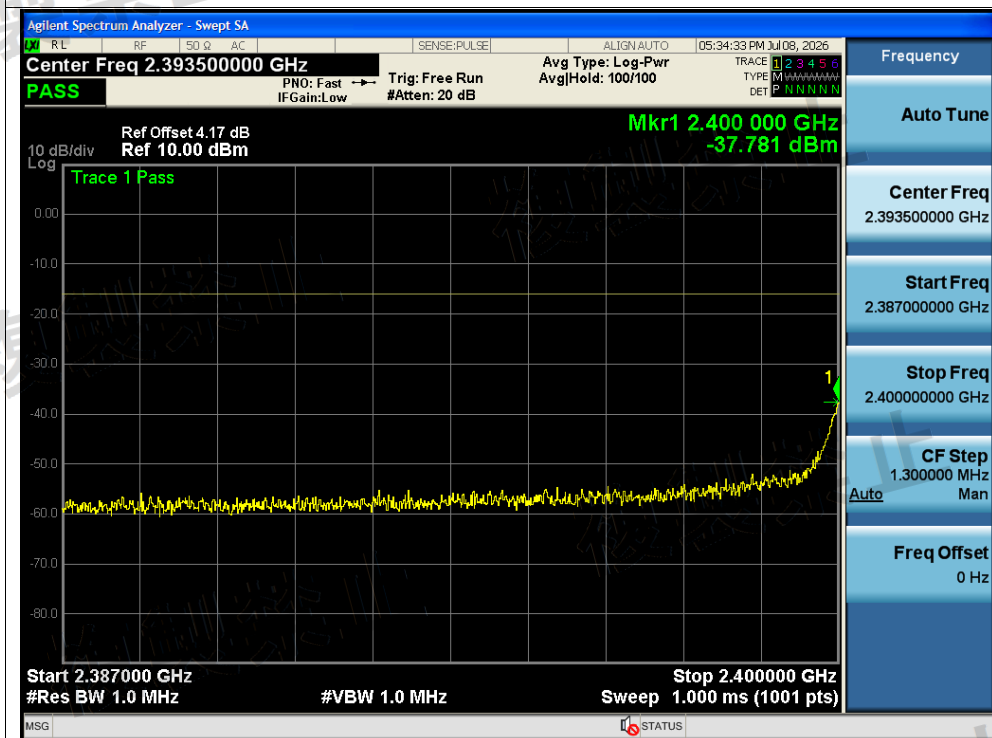
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 30MHz-1000MHz



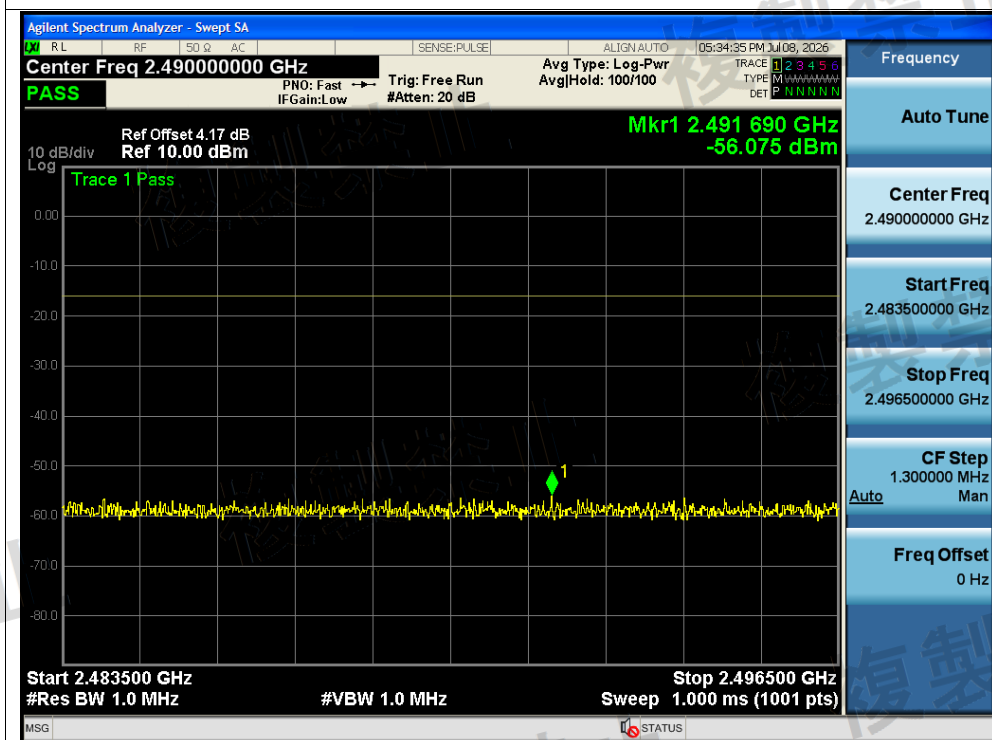
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 1000MHz-2387MHz



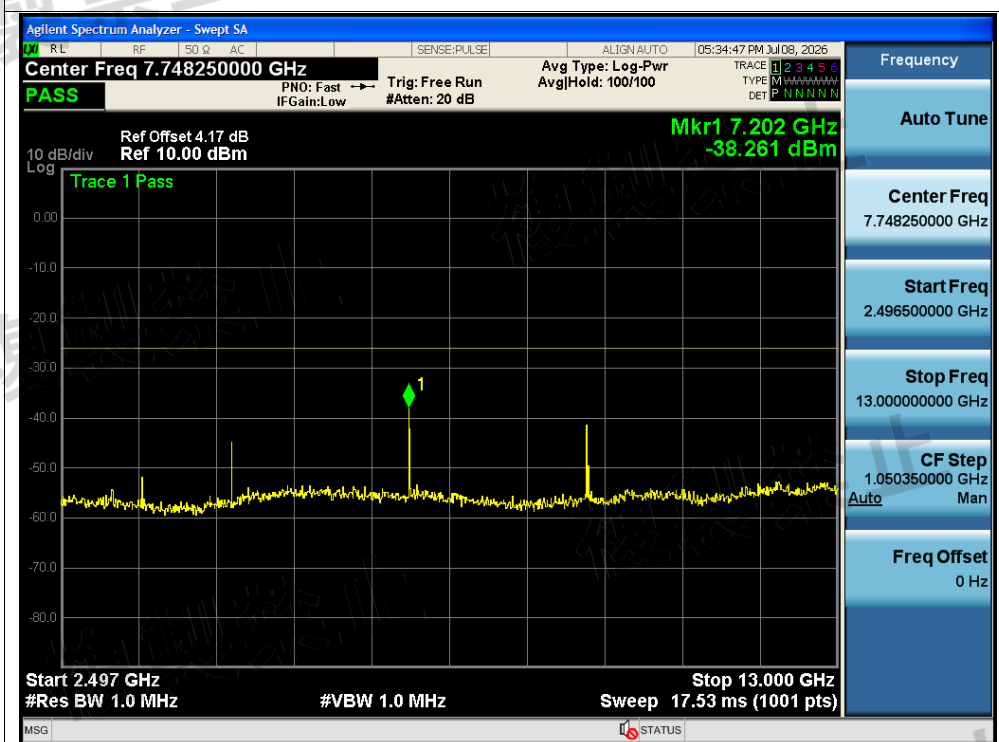
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 2387MHz-2400MHz



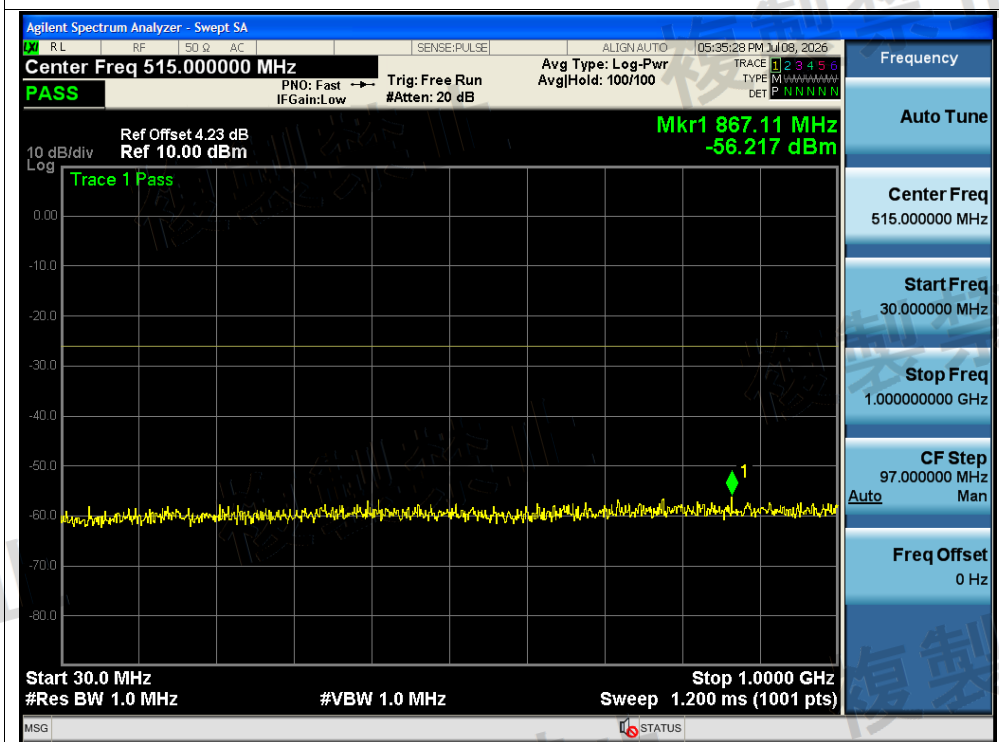
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 2483.5MHz-2496.5MHz



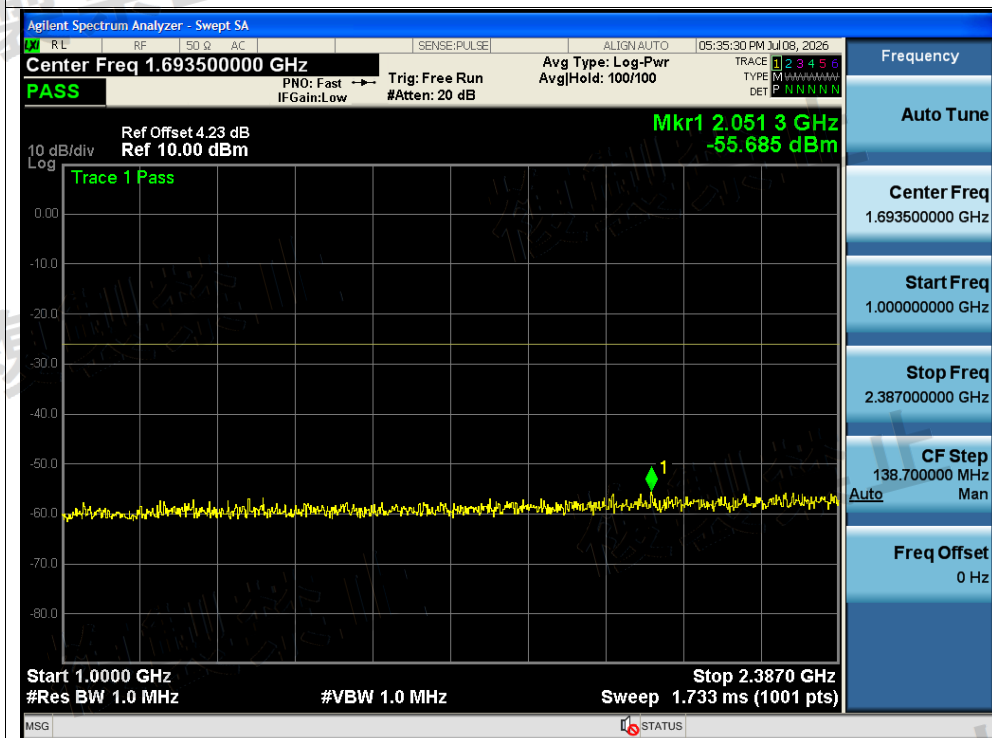
Tx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 2496.5MHz-13000MHz



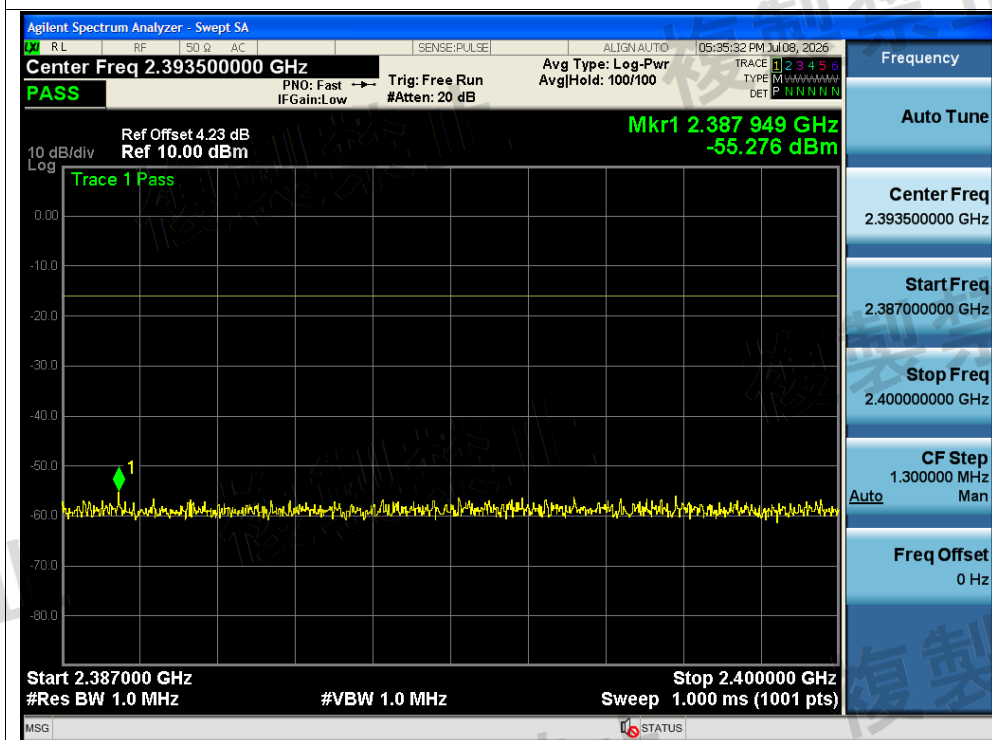
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 30MHz-1000MHz



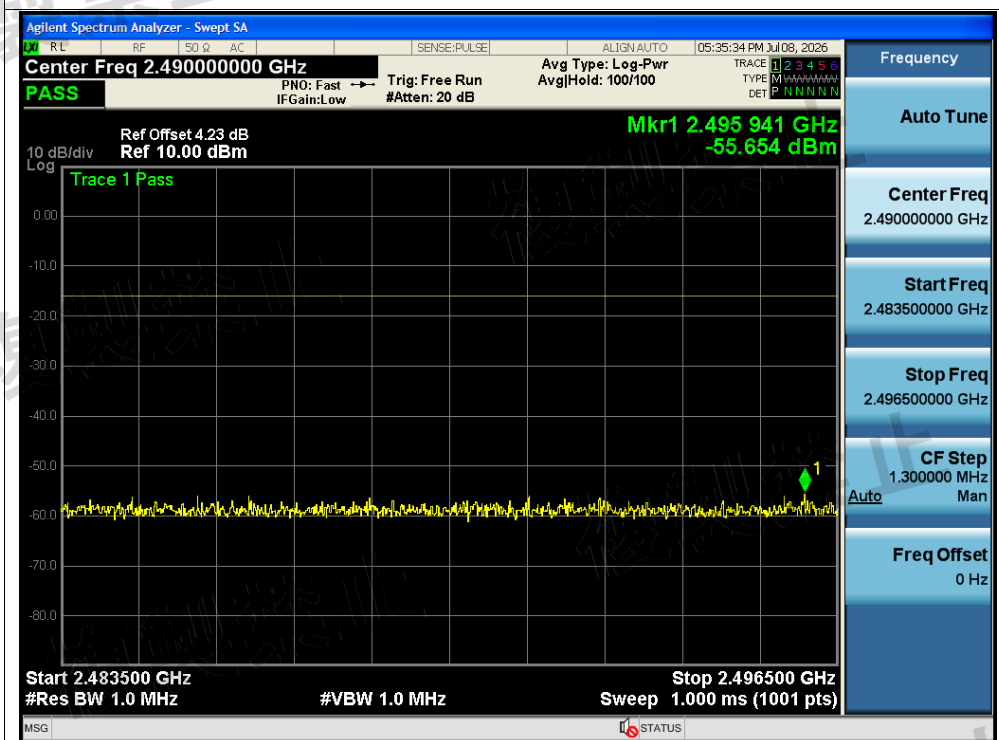
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 1000MHz-2387MHz



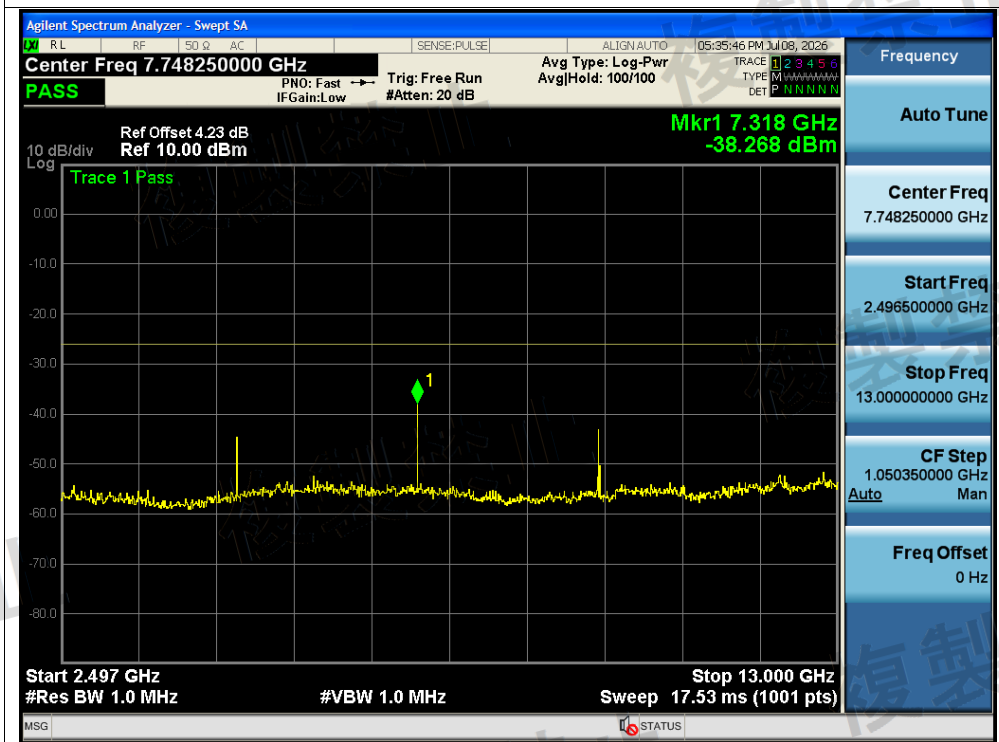
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 2387MHz-2400MHz



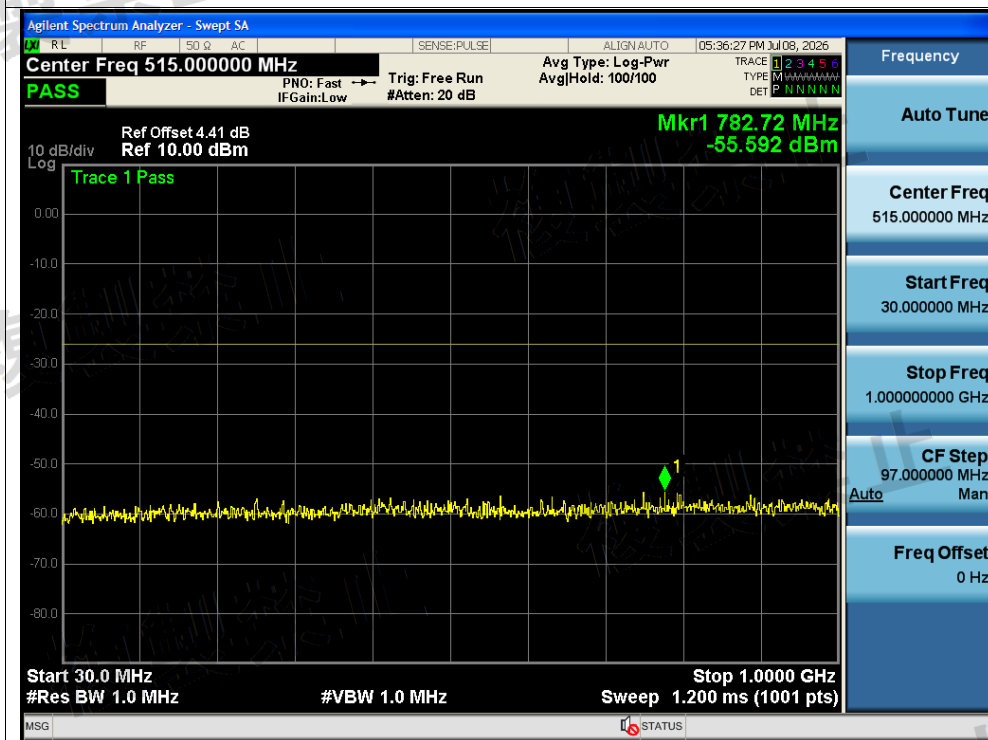
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 2483.5MHz-2496.5MHz



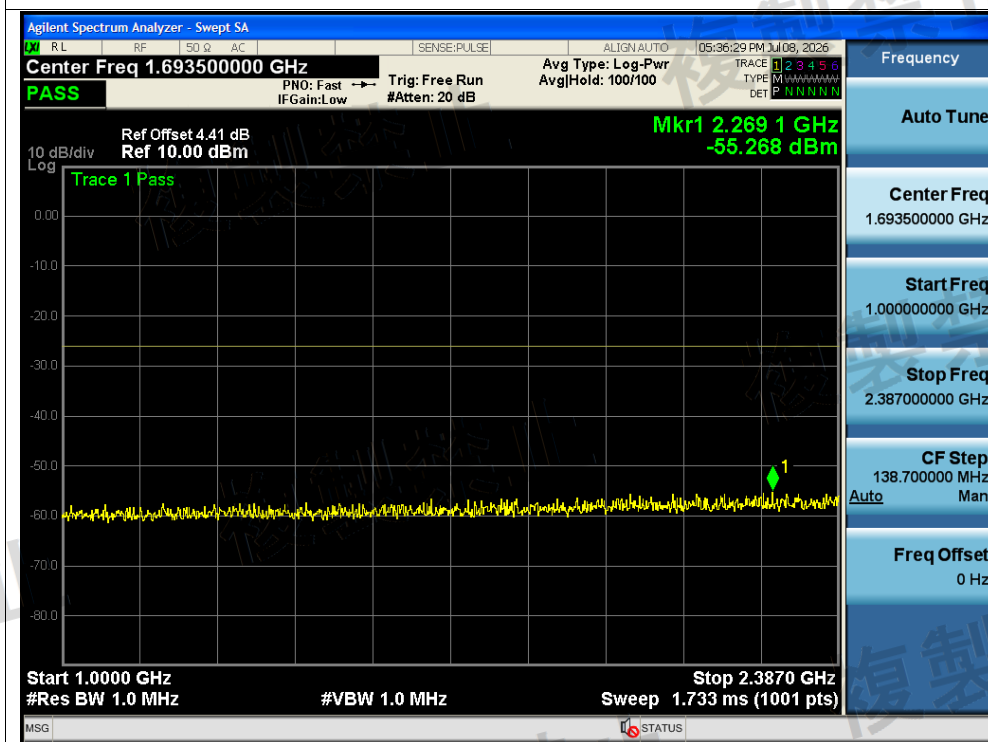
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 2496.5MHz-13000MHz



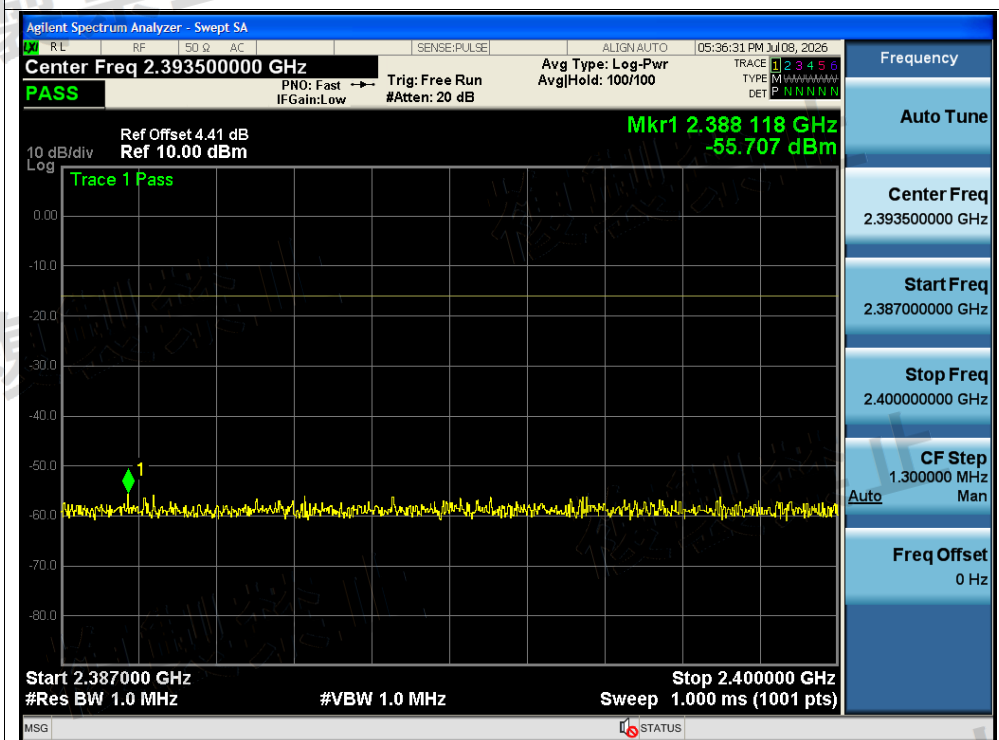
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 30MHz-1000MHz



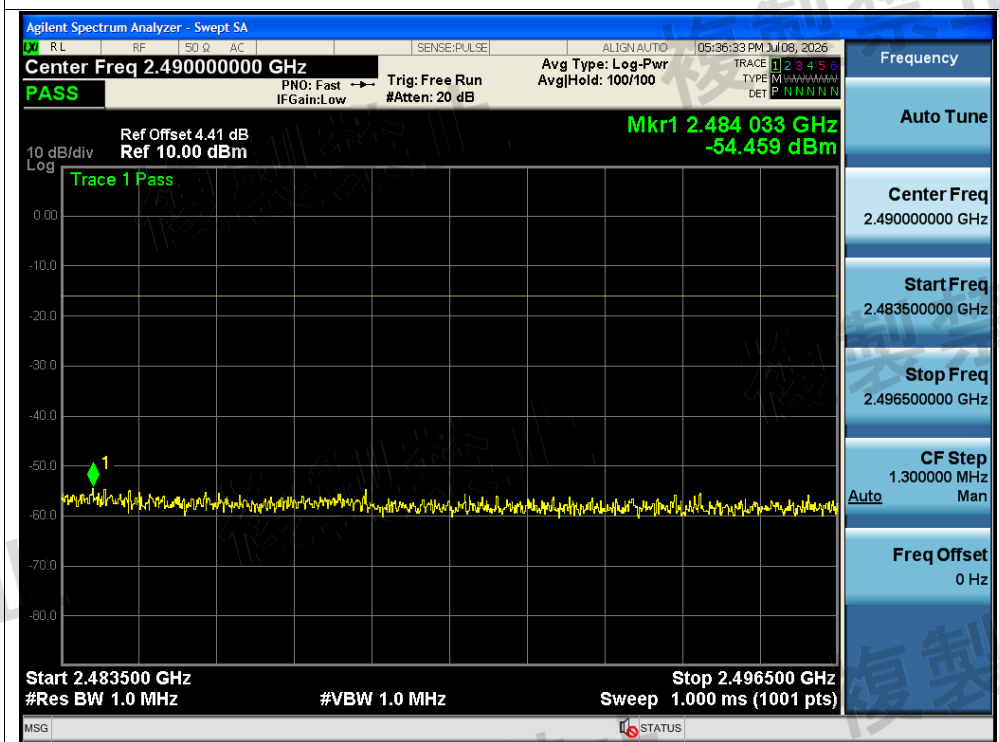
Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 1000MHz-2387MHz

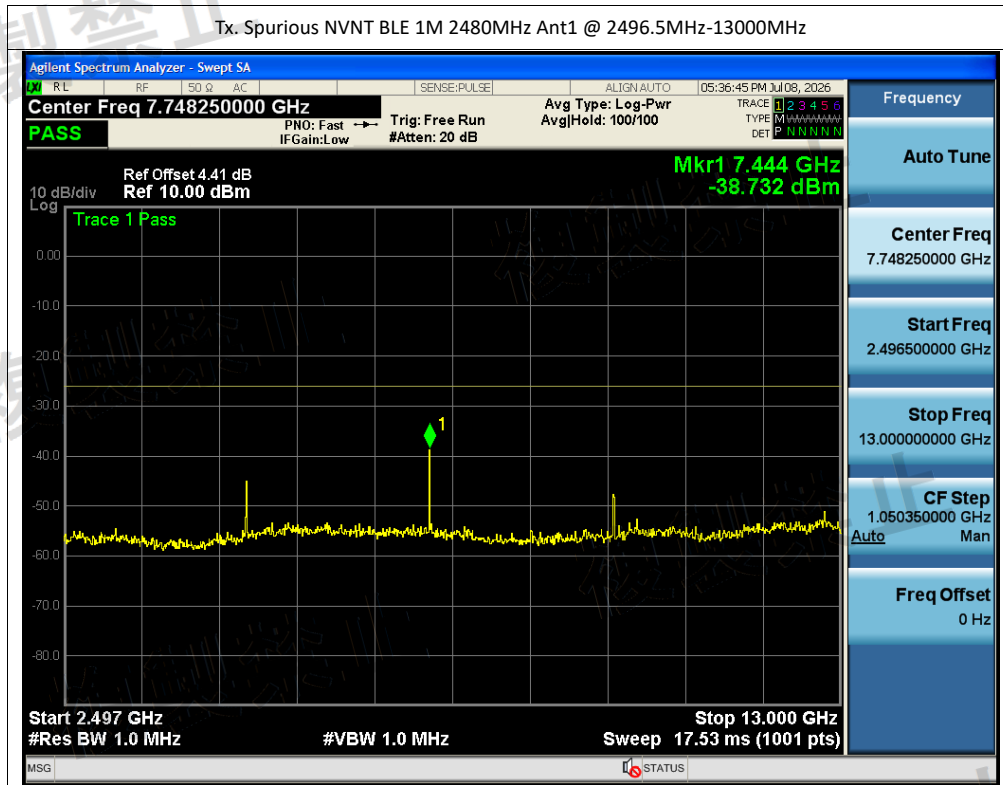


Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 2387MHz-2400MHz



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 2483.5MHz-2496.5MHz



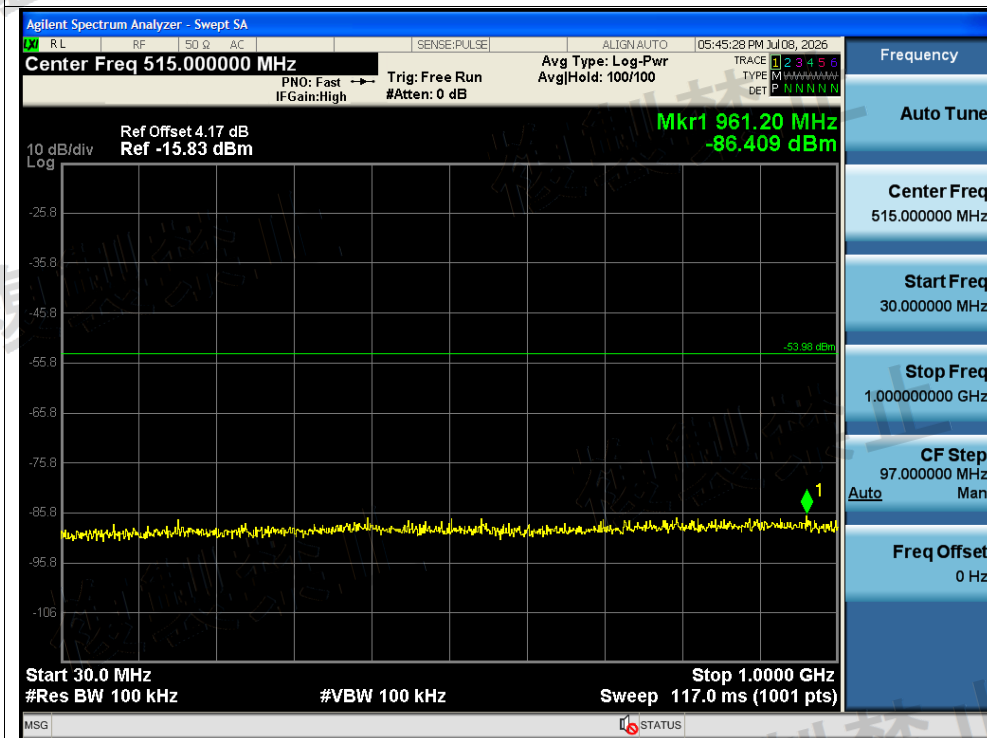


Rx Spurious Emission

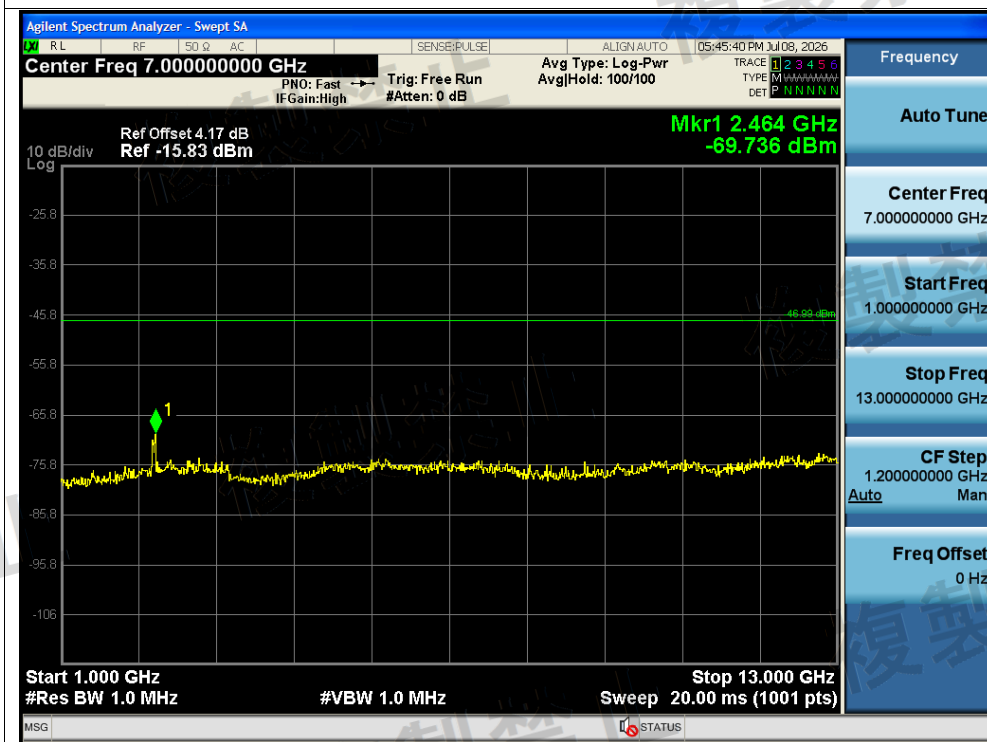
Condition	Mode	Frequency (MHz)	Antenna	Range (MHz)	Emission Frequency (MHz)	Max Peak Value (dBm)	Max RMS Value (dBm)	Max Peak Value (nW)	Max RMS Value (nW)	Limit (nW)	Verdict
NVNT	BLE 1M	2402	Ant1	30-1000	961.20	-86.41	NA	0.0023	NA	4	Pass
NVNT	BLE 1M	2402	Ant1	1000-13000	2464.00	-69.74	NA	0.1062	NA	20	Pass
NVNT	BLE 1M	2440	Ant1	30-1000	928.22	-86.48	NA	0.0022	NA	4	Pass
NVNT	BLE 1M	2440	Ant1	1000-13000	2428.00	-70.67	NA	0.0857	NA	20	Pass
NVNT	BLE 1M	2480	Ant1	30-1000	947.62	-86.00	NA	0.0025	NA	4	Pass
NVNT	BLE 1M	2480	Ant1	1000-13000	12676.00	-73.26	NA	0.0472	NA	20	Pass

Test Graphs

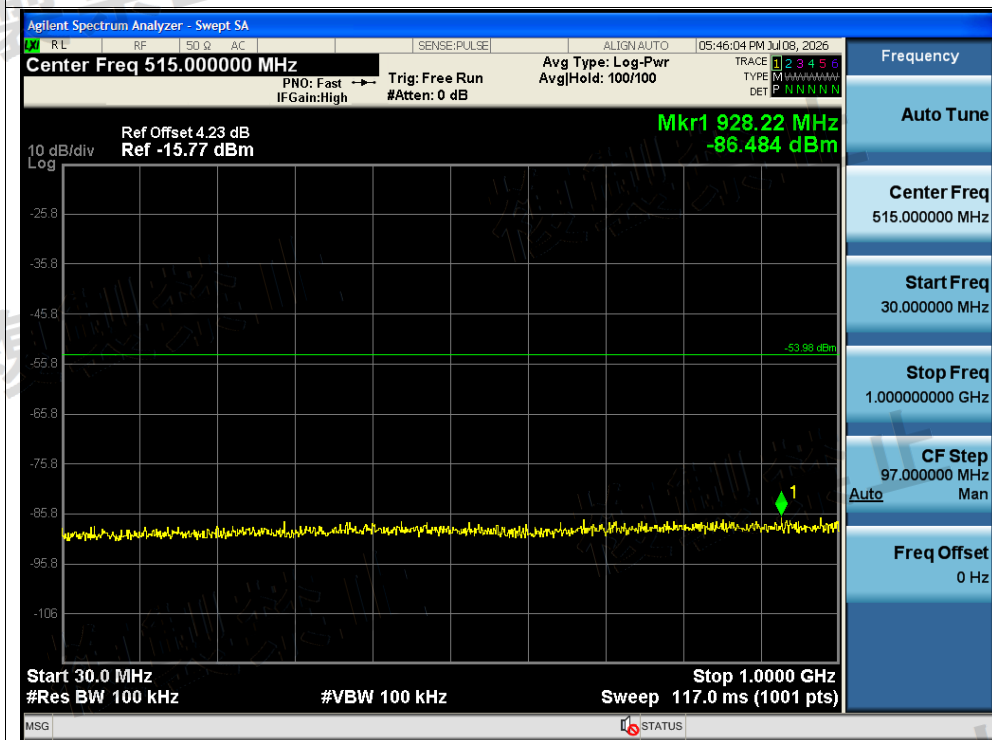
Rx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 30MHz-1000MHz



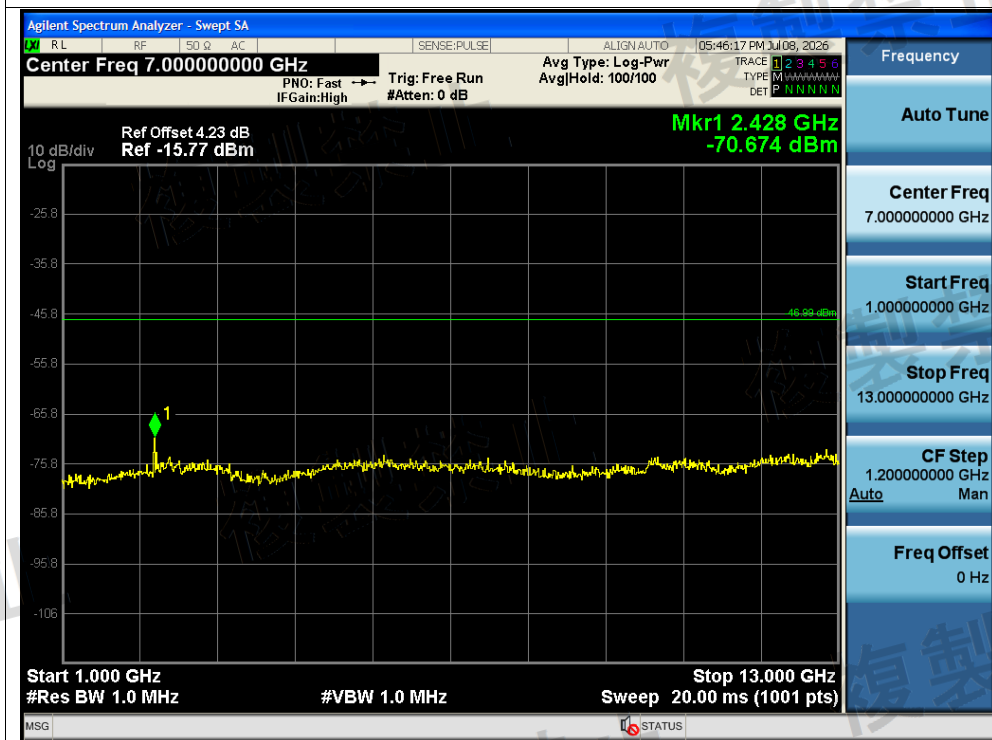
Rx. Spurious NVNT BLE 1M 2402MHz Ant1 @ 1000MHz-13000MHz



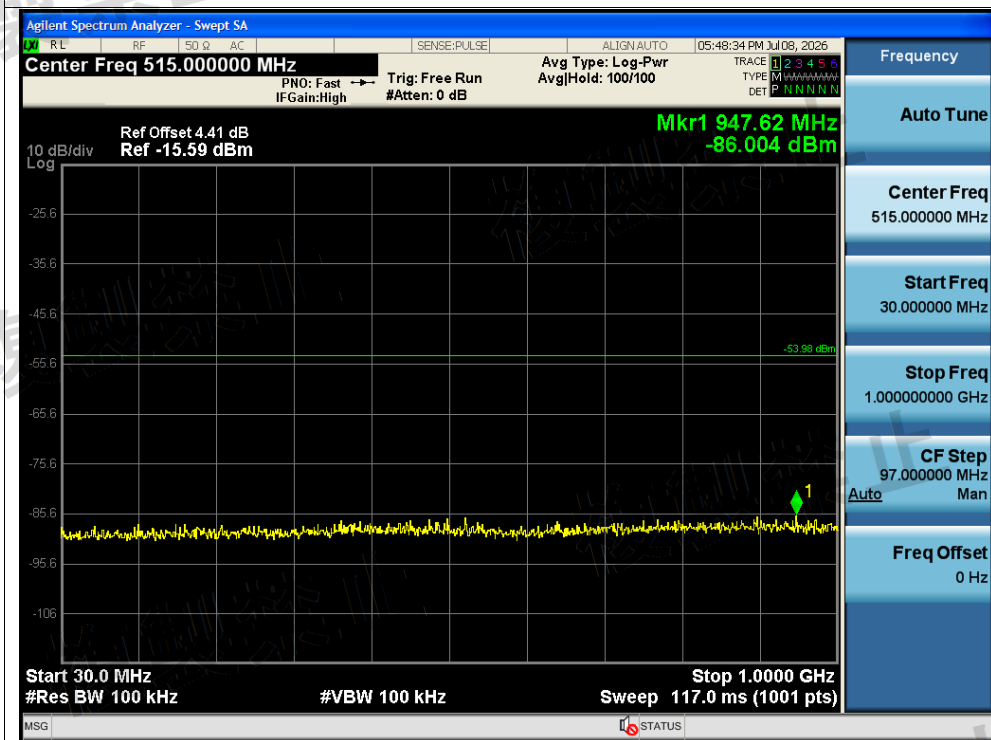
Rx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 30MHz-1000MHz



Rx. Spurious NVNT BLE 1M 2440MHz Ant1 @ 1000MHz-13000MHz



Rx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 30MHz-1000MHz



Rx. Spurious NVNT BLE 1M 2480MHz Ant1 @ 1000MHz-13000MHz

