

FCC Appendix RF Test Data for ZigBee

FCC ID : ZY8CG700US

Company : Citygrow Energy Systems Limited

EUT : GANG SWITCH MODULE

Model Number : CG700XX-US

Report No. : CTA26092901601

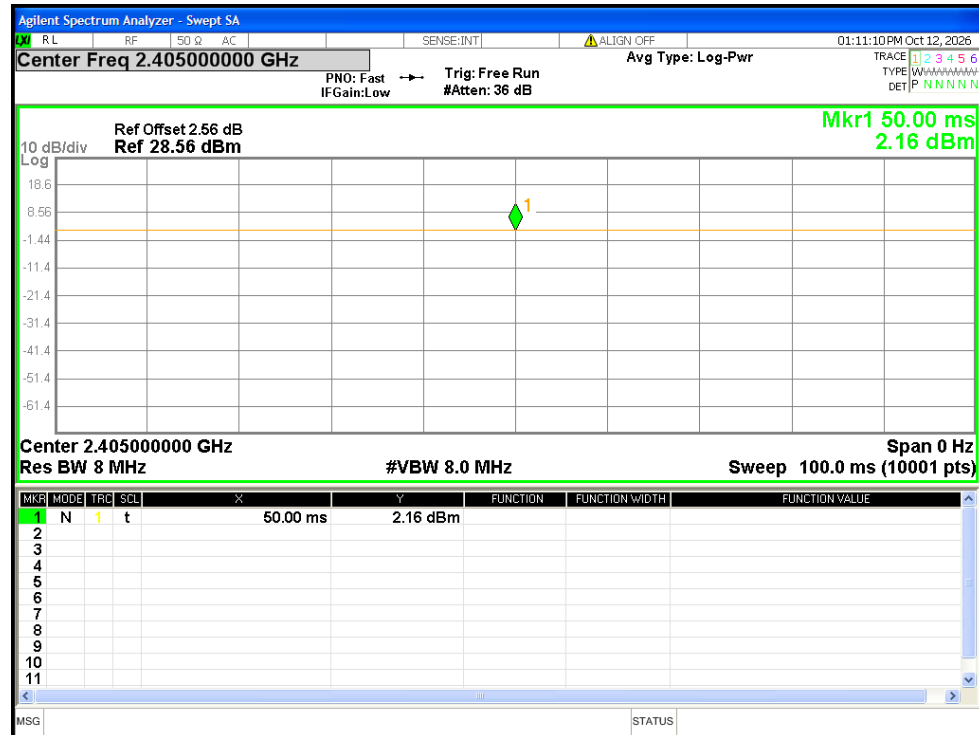
Reviewed By : Eric Wang

Duty Cycle

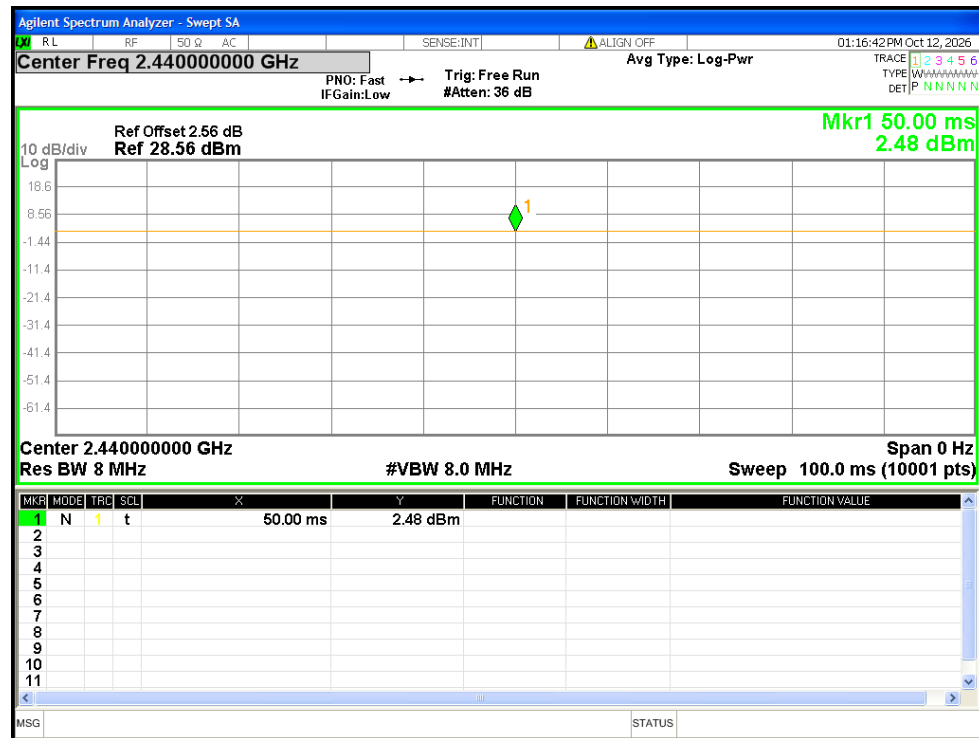
Condition	Mode	Frequency (MHz)	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	Zigbee	2405	100	100	100	0	0.01
NVNT	Zigbee	2440	100	100	100	0	0.01
NVNT	Zigbee	2480	100	100	100	0	0.01

Test Graphs

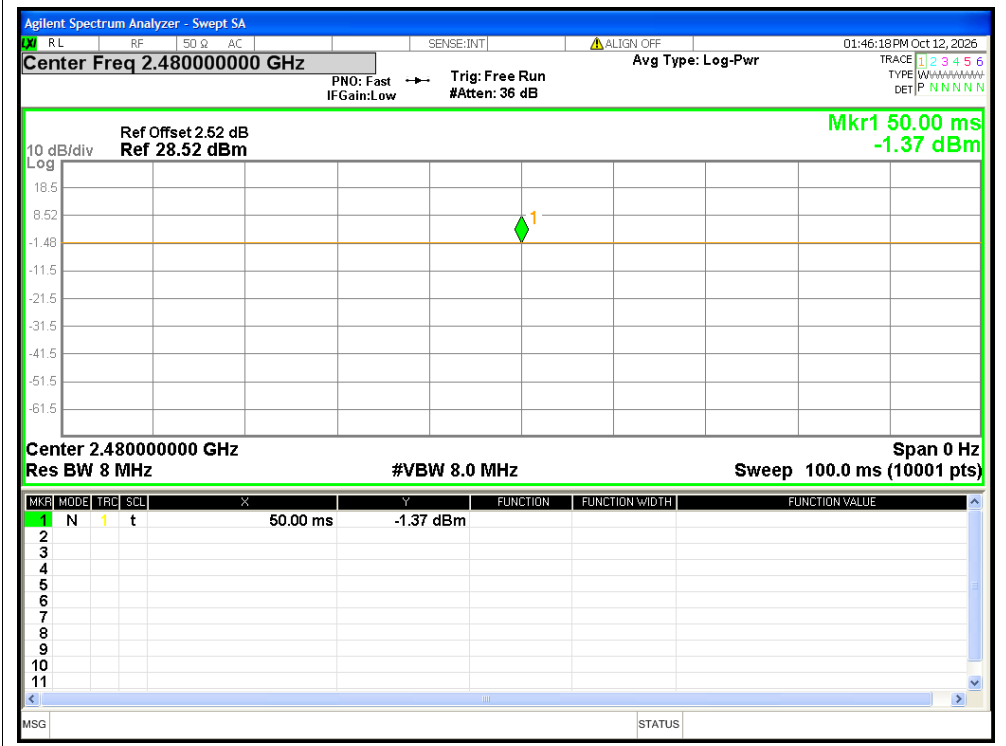
Duty Cycle NVNT Zigbee 2405MHz



Duty Cycle NVNT Zigbee 2440MHz



Duty Cycle NVNT Zigbee 2480MHz



Maximum Peak Conducted Output Power

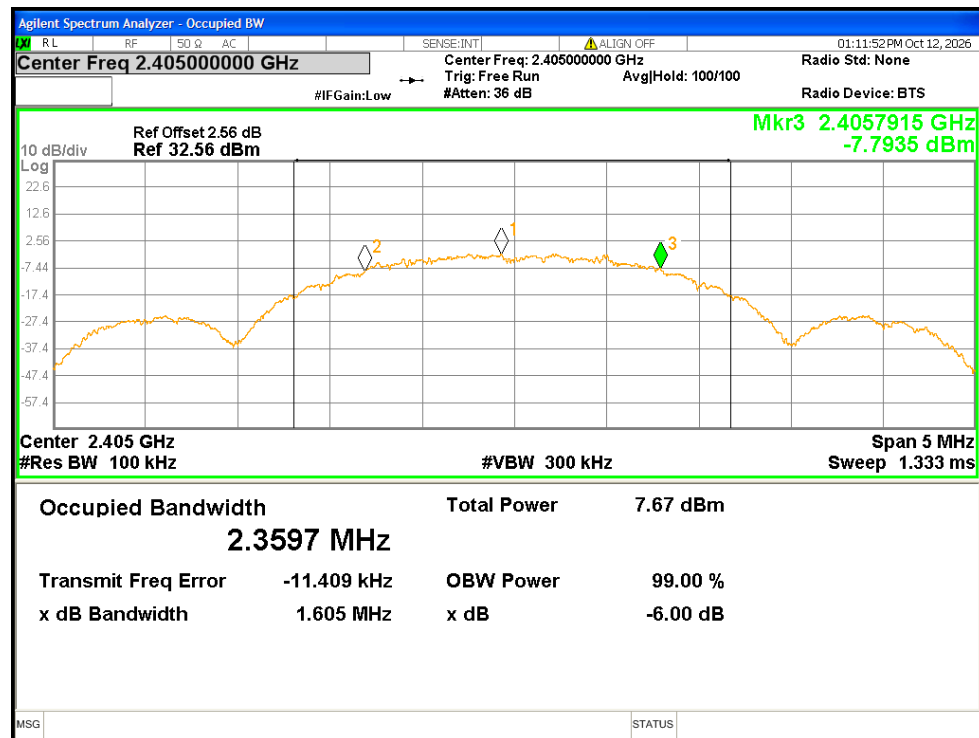
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	Zigbee	2405	2.07	<=30	Pass
NVNT	Zigbee	2440	2.4	<=30	Pass
NVNT	Zigbee	2480	2.59	<=30	Pass

-6dB Bandwidth

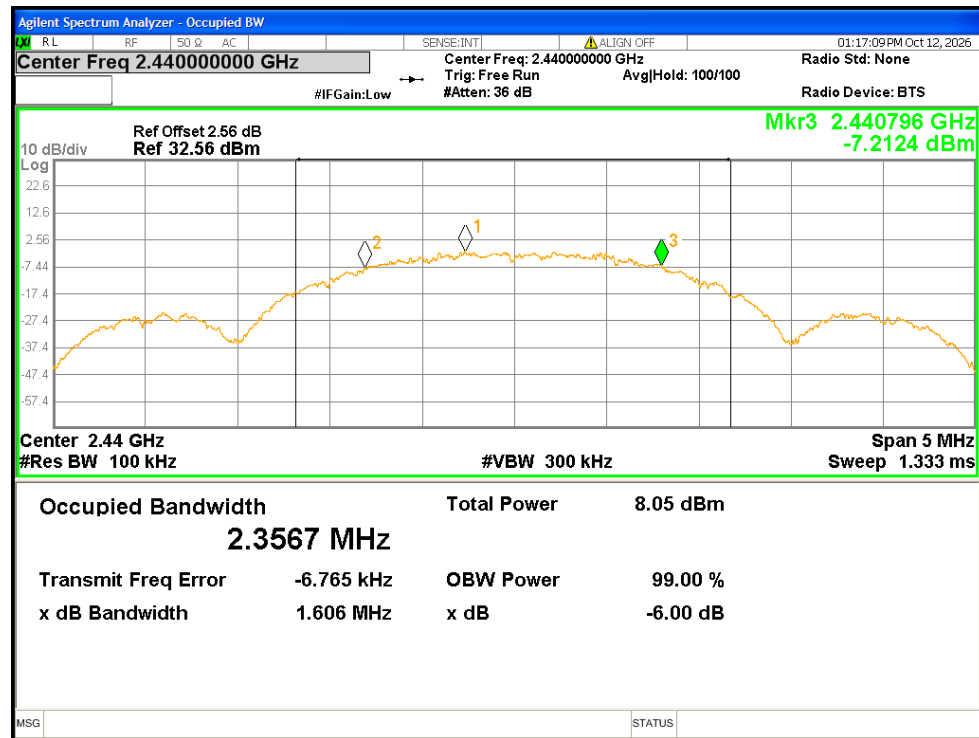
Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	Zigbee	2405	1.605	≥ 0.5	Pass
NVNT	Zigbee	2440	1.606	≥ 0.5	Pass
NVNT	Zigbee	2480	1.604	≥ 0.5	Pass

Test Graphs

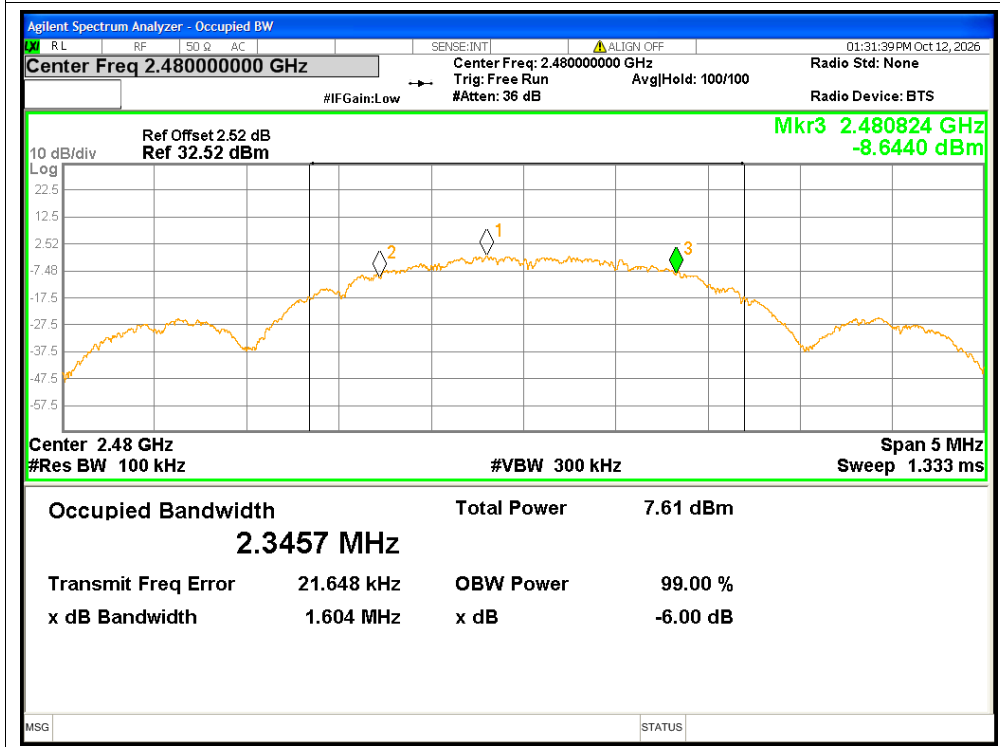
-6dB Bandwidth NVNT Zigbee 2405MHz



-6dB Bandwidth NVNT Zigbee 2440MHz



-6dB Bandwidth NVNT Zigbee 2480MHz

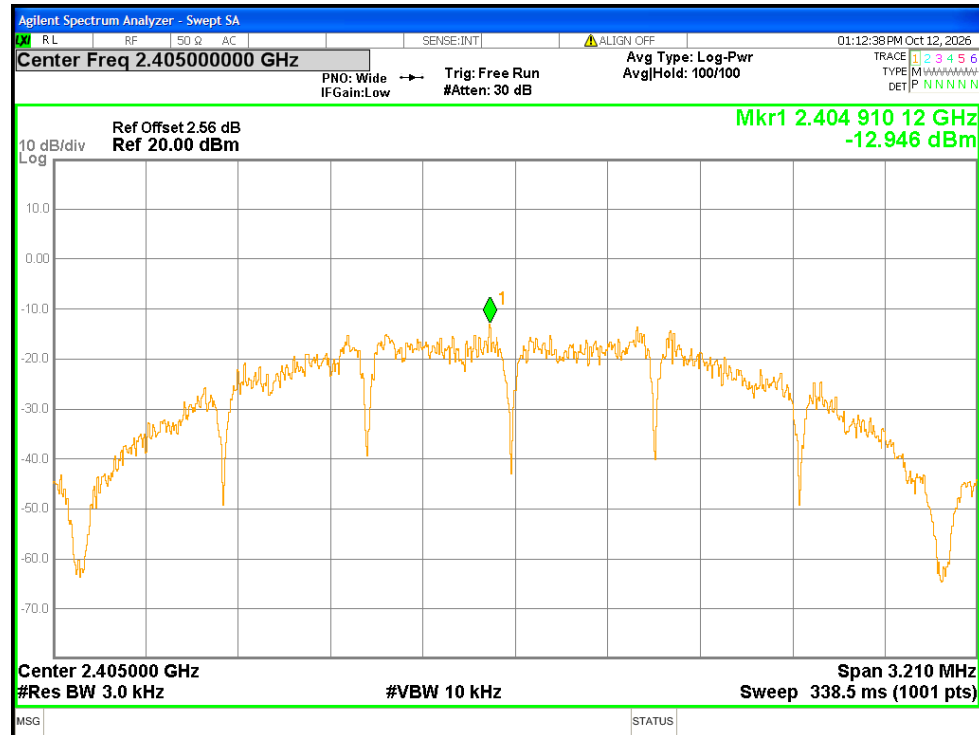


Maximum Power Spectral Density Level

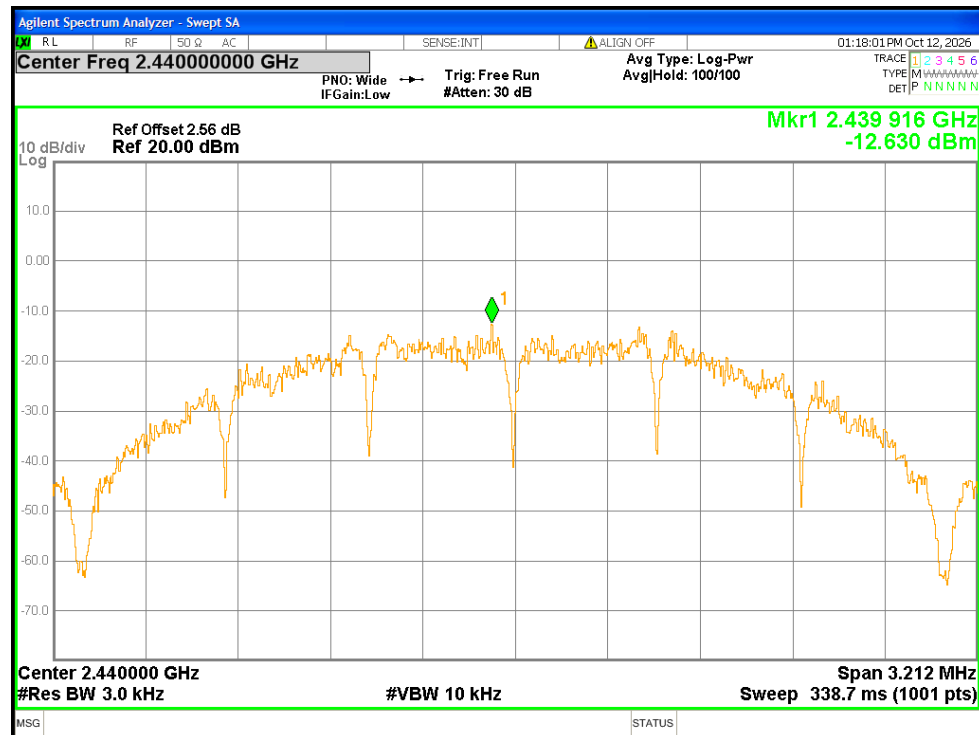
Condition	Mode	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	Zigbee	2405	-12.95	≤ 8	Pass
NVNT	Zigbee	2440	-12.63	≤ 8	Pass
NVNT	Zigbee	2480	-12.31	≤ 8	Pass

Test Graphs

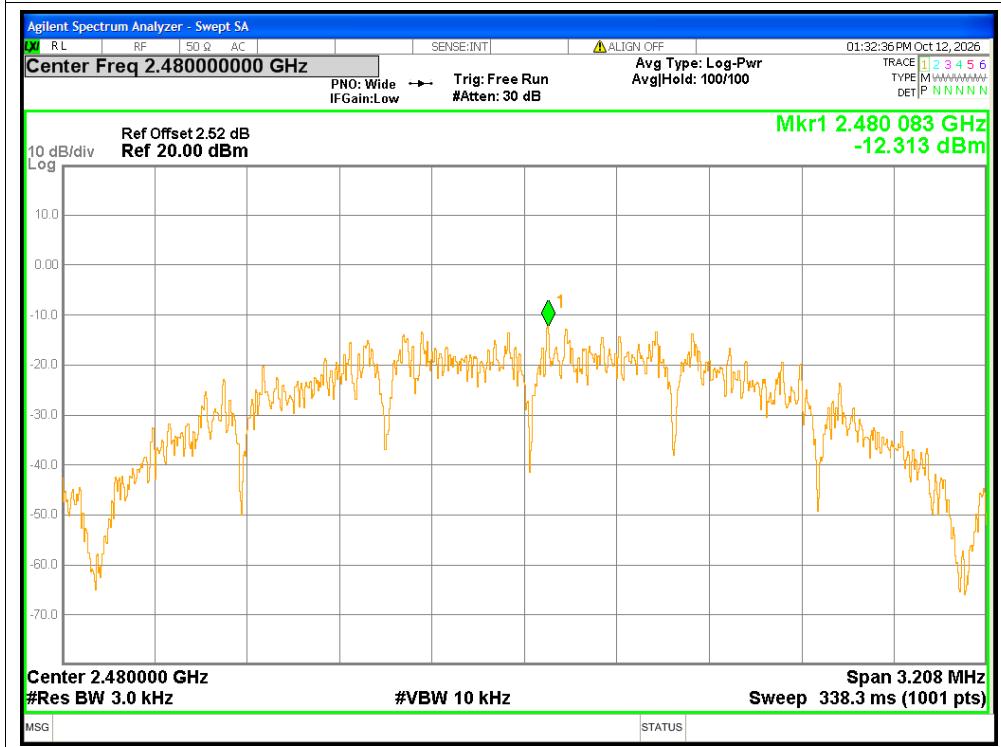
PSD NVNT Zigbee 2405MHz



PSD NVNT Zigbee 2440MHz



PSD NVNT Zigbee 2480MHz

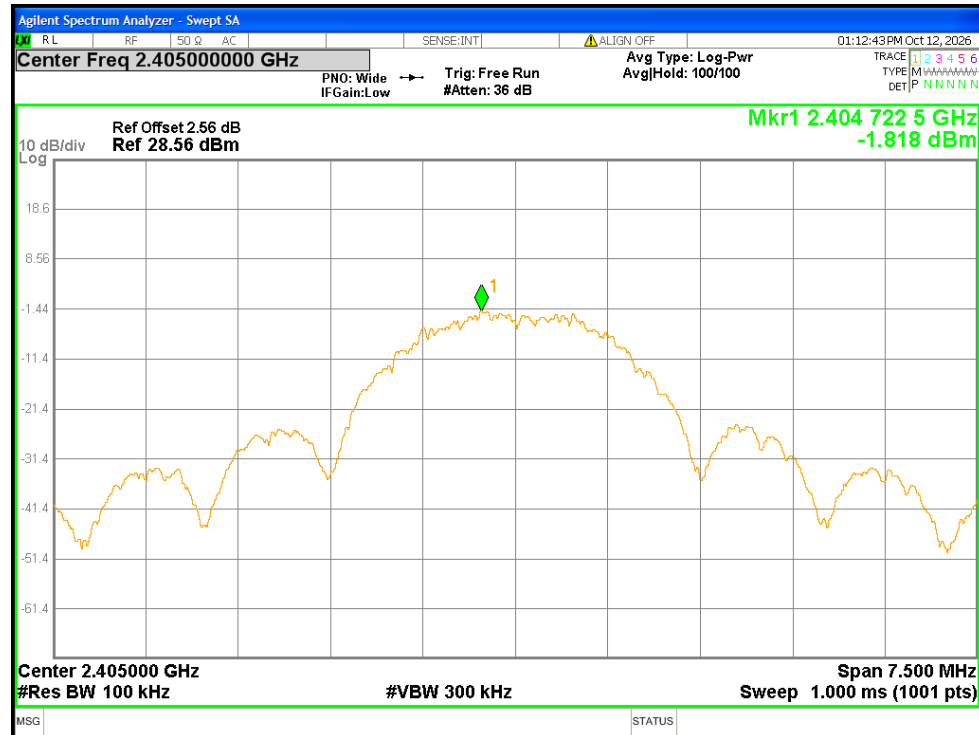


Band Edge

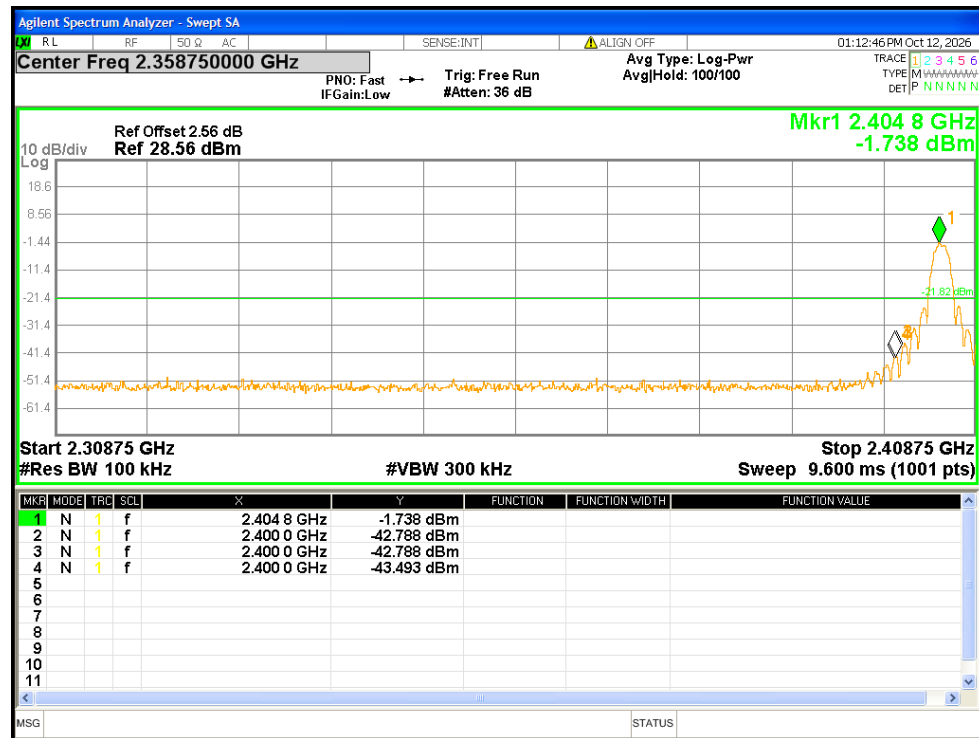
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	Zigbee	2405	-41.67	<=-20	Pass
NVNT	Zigbee	2480	-36.6	<=-20	Pass

Test Graphs

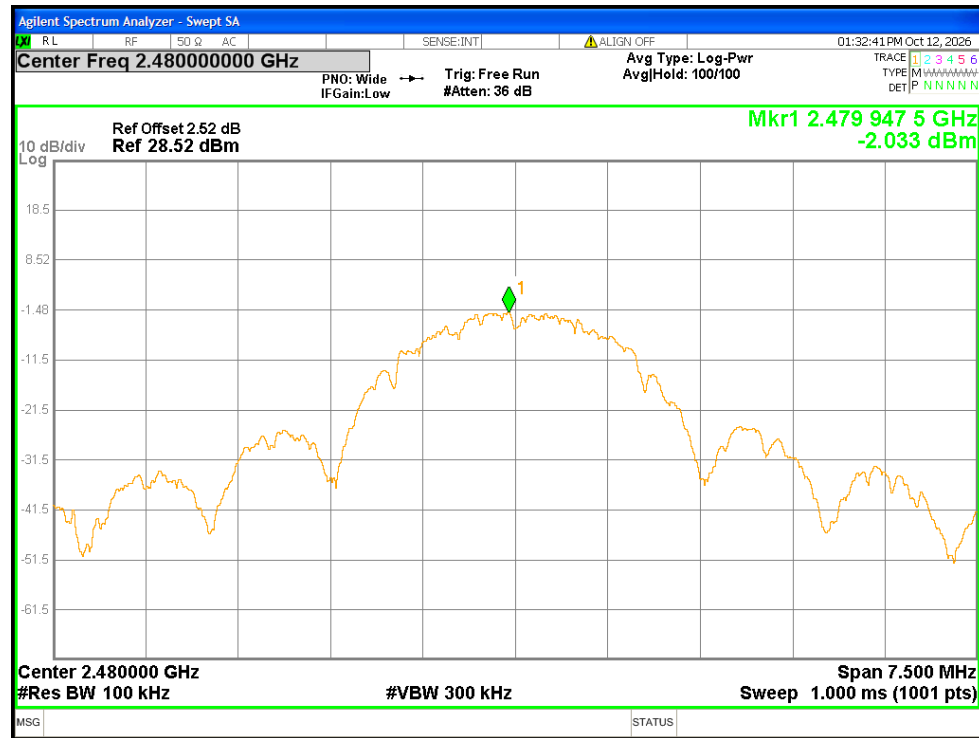
Band Edge NVNT Zigbee 2405MHz Ref



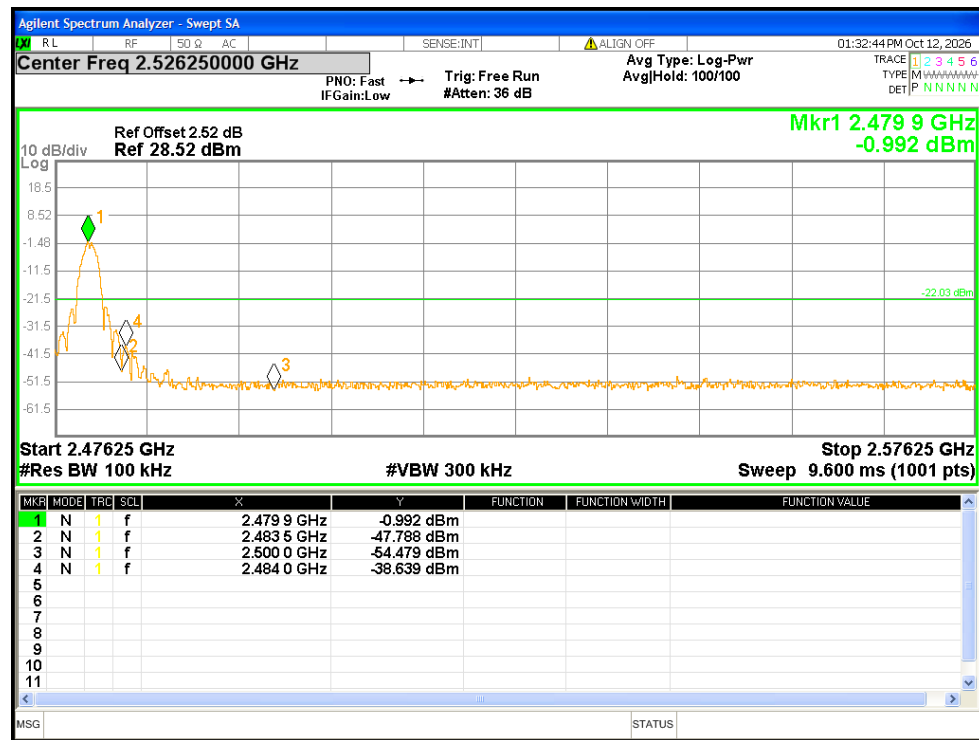
Band Edge NVNT Zigbee 2405MHz Emission



Band Edge NVNT Zigbee 2480MHz Ref



Band Edge NVNT Zigbee 2480MHz Emission

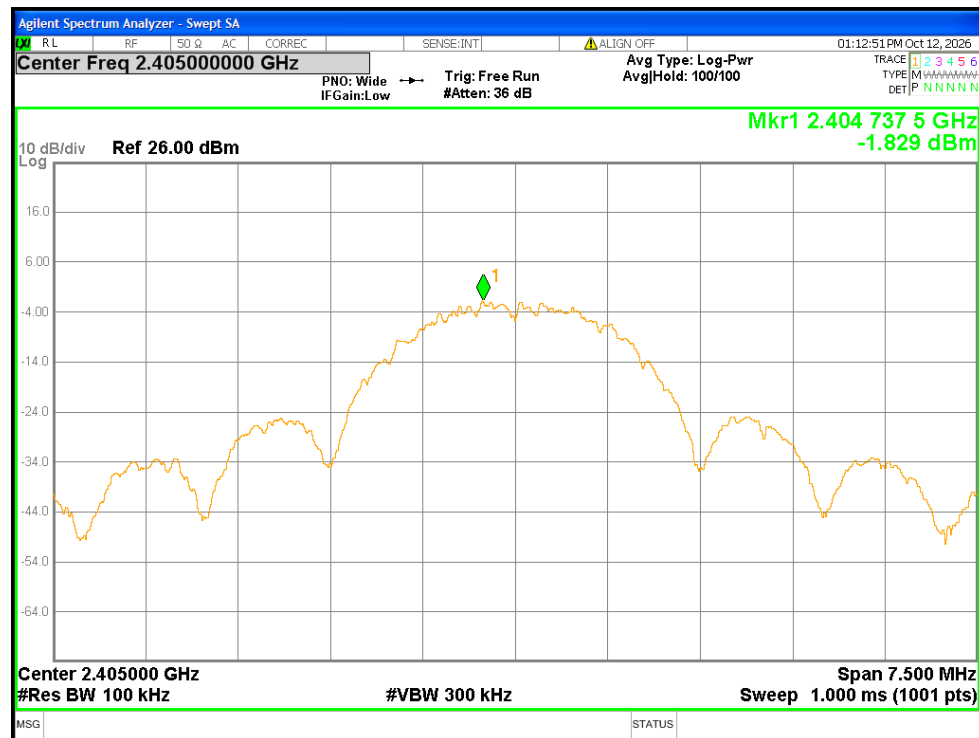


Conducted RF Spurious Emission

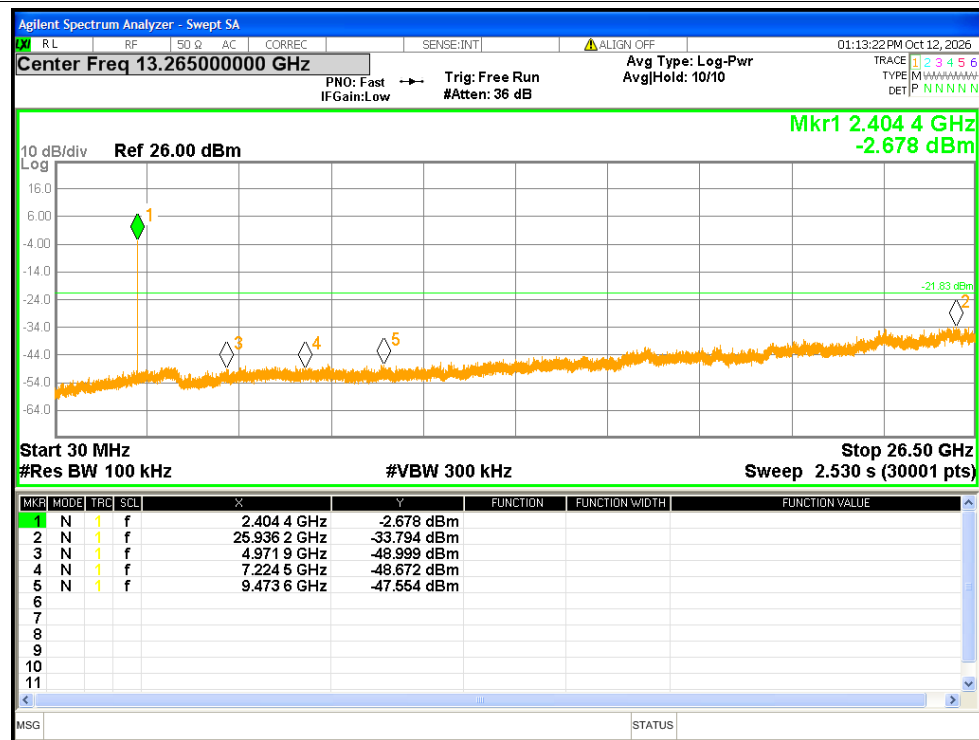
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	Zigbee	2405	-31.96	<=-20	Pass
NVNT	Zigbee	2440	-31.72	<=-20	Pass
NVNT	Zigbee	2480	-32.07	<=-20	Pass

Test Graphs

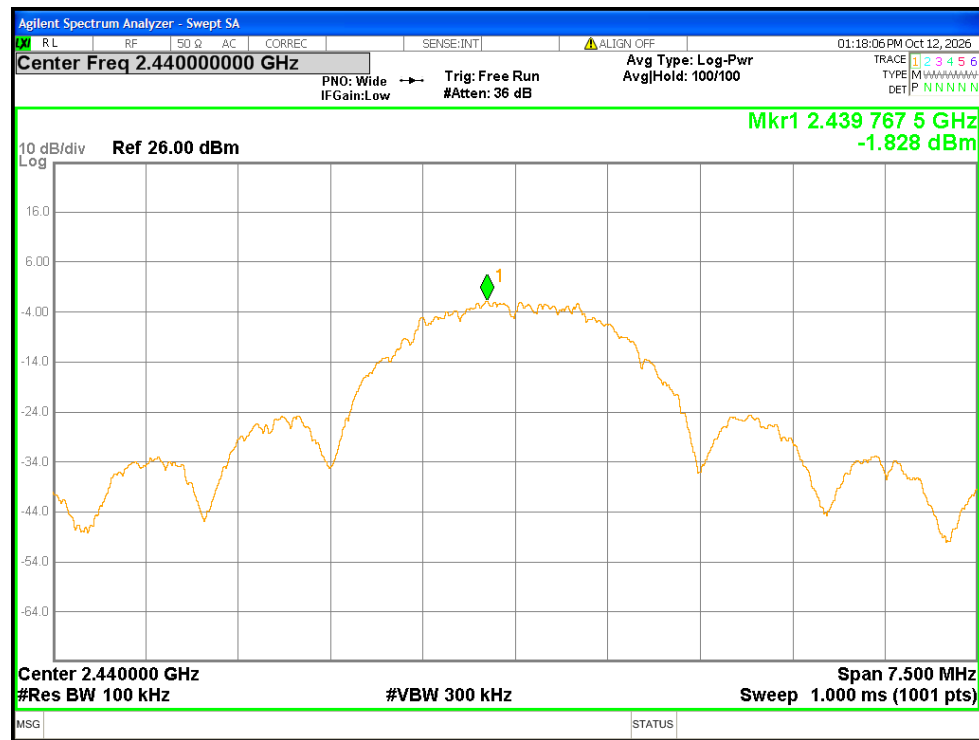
Tx. Spurious NVNT Zigbee 2405MHz Ref



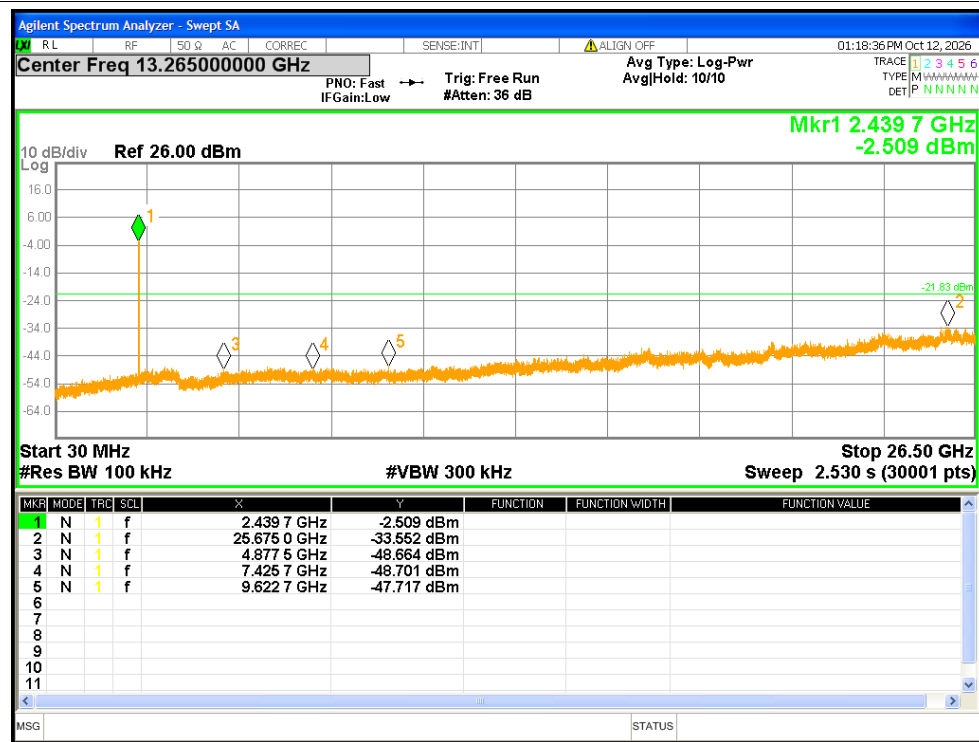
Tx. Spurious NVNT Zigbee 2405MHz Emission



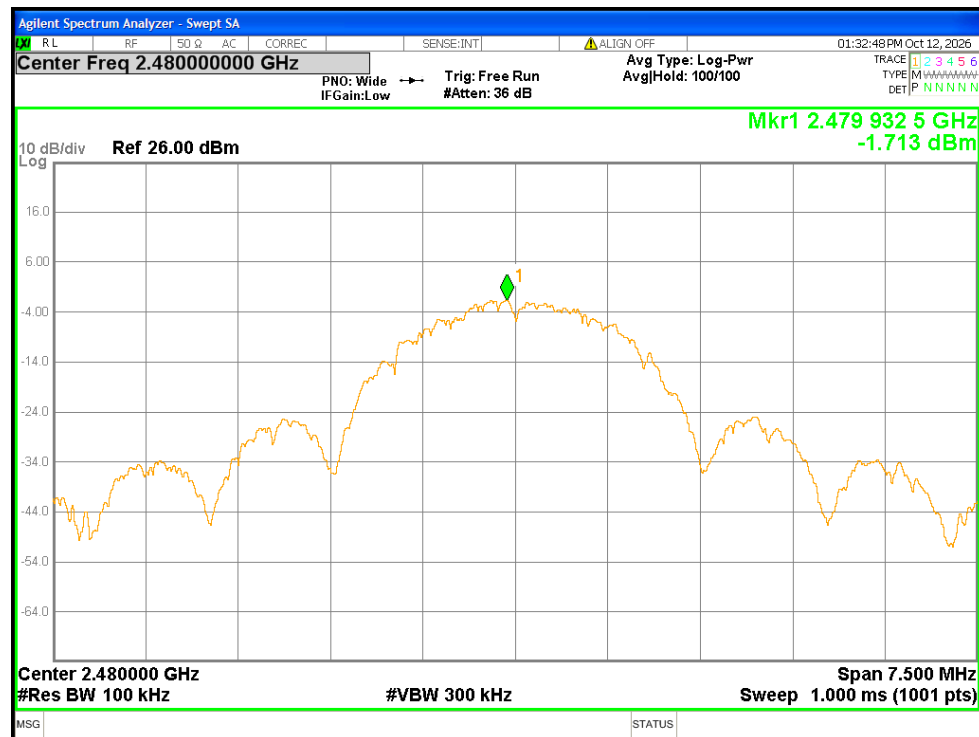
Tx. Spurious NVNT Zigbee 2440MHz Ref



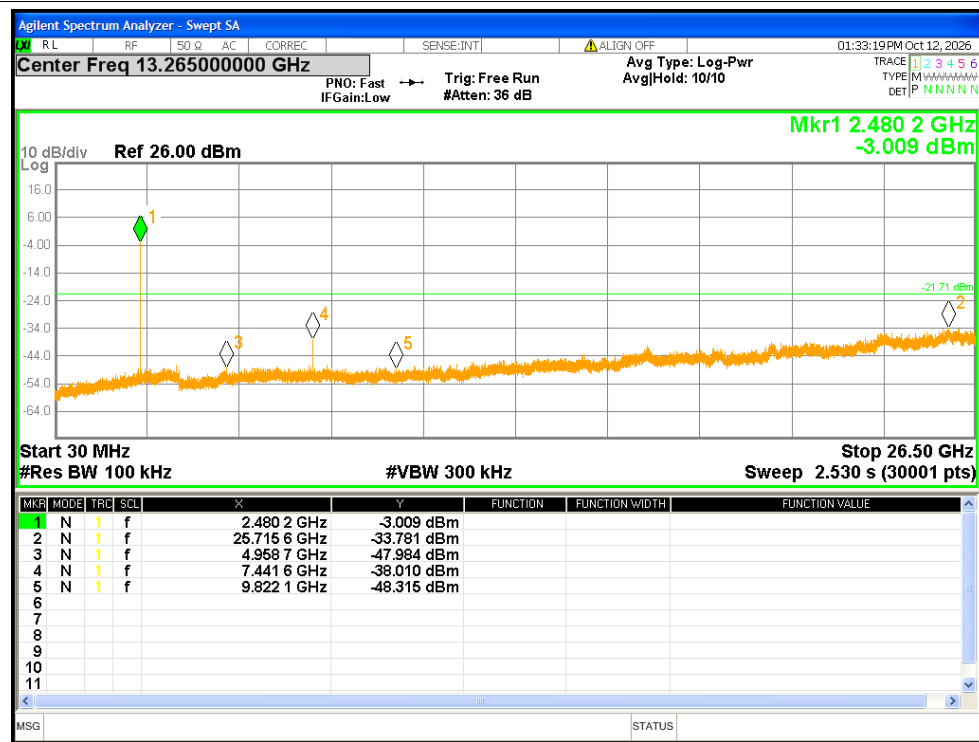
Tx. Spurious NVNT Zigbee 2440MHz Emission



Tx. Spurious NVNT Zigbee 2480MHz Ref



Tx. Spurious NVNT Zigbee 2480MHz Emission

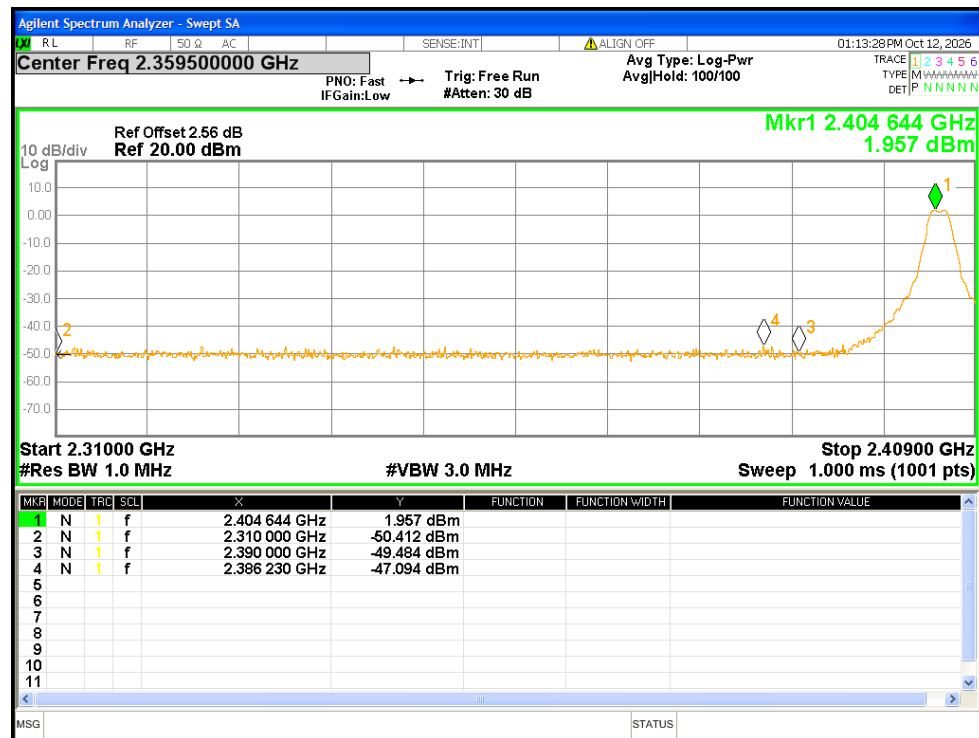


Restrict Band

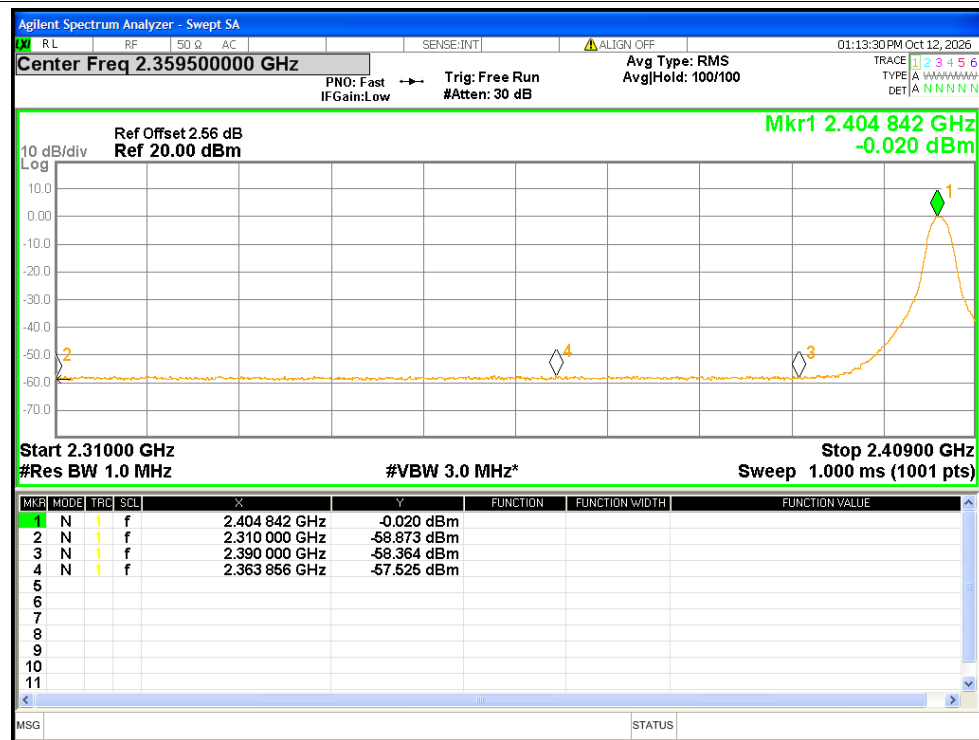
Condition	Mode	Frequency (MHz)	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	Zigbee	2405	2310	-50.41	2	0	46.85	Peak	<=74	Pass
NVNT	Zigbee	2405	2310	-58.87	2	0	38.39	Average	<=54	Pass
NVNT	Zigbee	2405	2386.23	-47.09	2	0	50.17	Peak	<=74	Pass
NVNT	Zigbee	2405	2363.856	-57.52	2	0	39.74	Average	<=54	Pass
NVNT	Zigbee	2405	2390	-50.52	2	0	46.74	Peak	<=74	Pass
NVNT	Zigbee	2405	2390	-58.12	2	0	39.14	Average	<=54	Pass
NVNT	Zigbee	2480	2483.5	-33.05	2	0	64.21	Peak	<=74	Pass
NVNT	Zigbee	2480	2483.5	-43.77	2	0	53.49	Average	<=54	Pass
NVNT	Zigbee	2480	2484.688	-29.7	2	0	67.56	Peak	<=74	Pass
NVNT	Zigbee	2480	2483.536	-43.49	2	0	53.77	Average	<=54	Pass
NVNT	Zigbee	2480	2500	-50.03	2	0	47.23	Peak	<=74	Pass
NVNT	Zigbee	2480	2500	-57.6	2	0	39.66	Average	<=54	Pass

Test Graphs

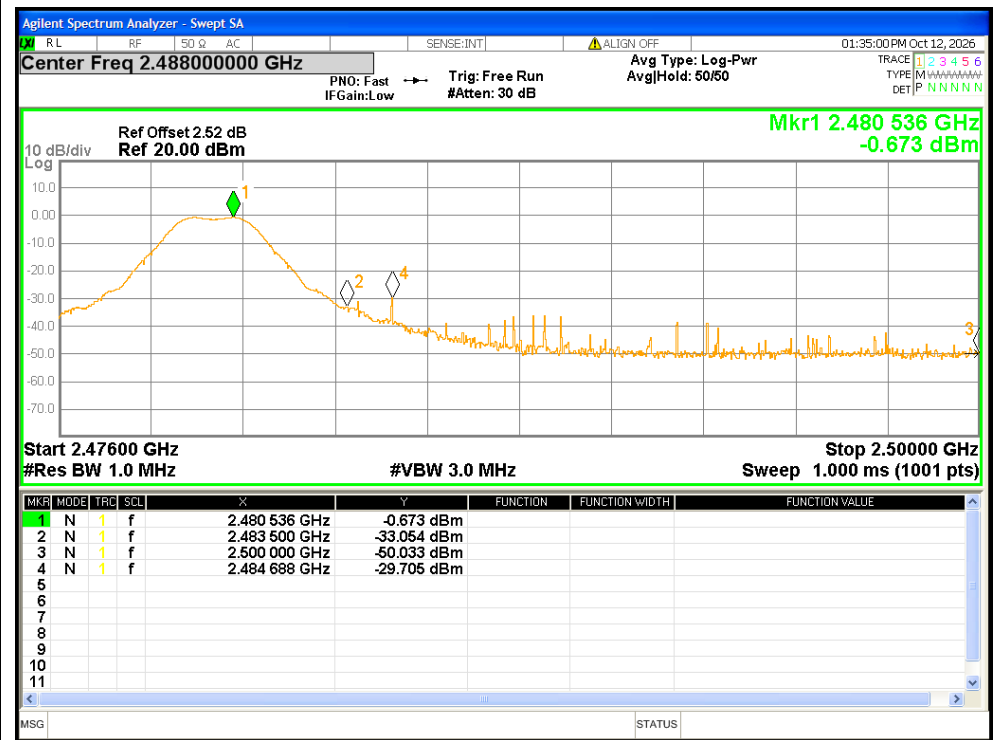
Restrict Band NVNT Zigbee 2405MHz Peak



Restrict Band NVNT Zigbee 2405MHz Average



Restrict Band NVNT Zigbee 2480MHz Peak



Restrict Band NVNT Zigbee 2480MHz Average

