



Appendix B

RF Test Data for Zigbee(Conducted Measurement)

Product Name: Hub

Test Model: Z220

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu



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B.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	ZIGB	2405	Ant1	1.296	0.5	Pass
NVNT	ZIGB	2440	Ant1	1.398	0.5	Pass
NVNT	ZIGB	2480	Ant1	1.398	0.5	Pass



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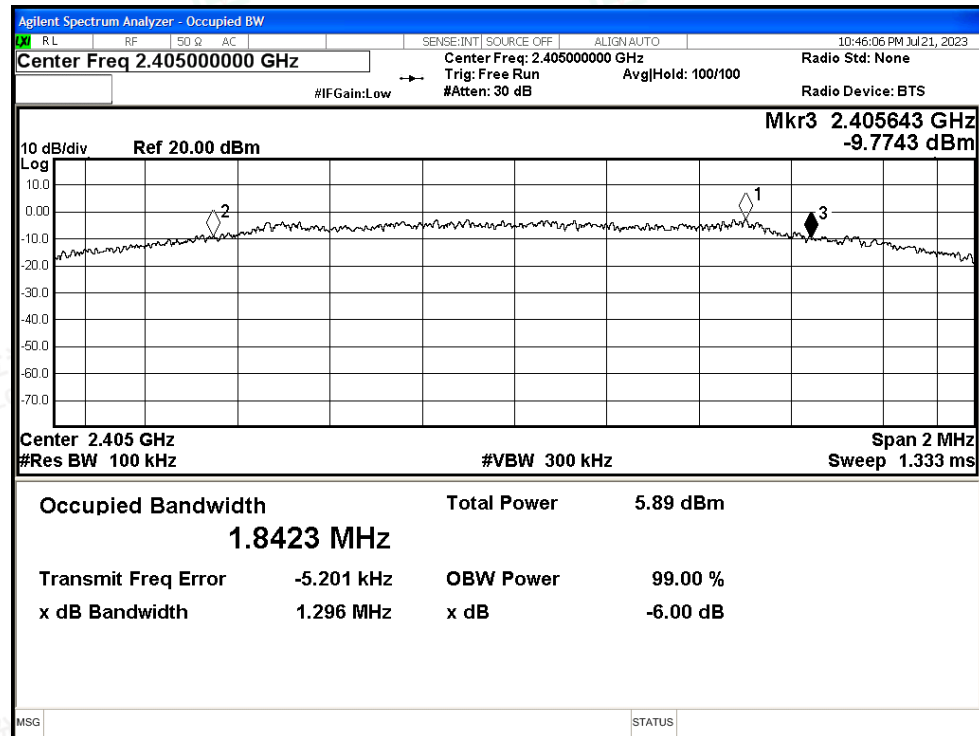
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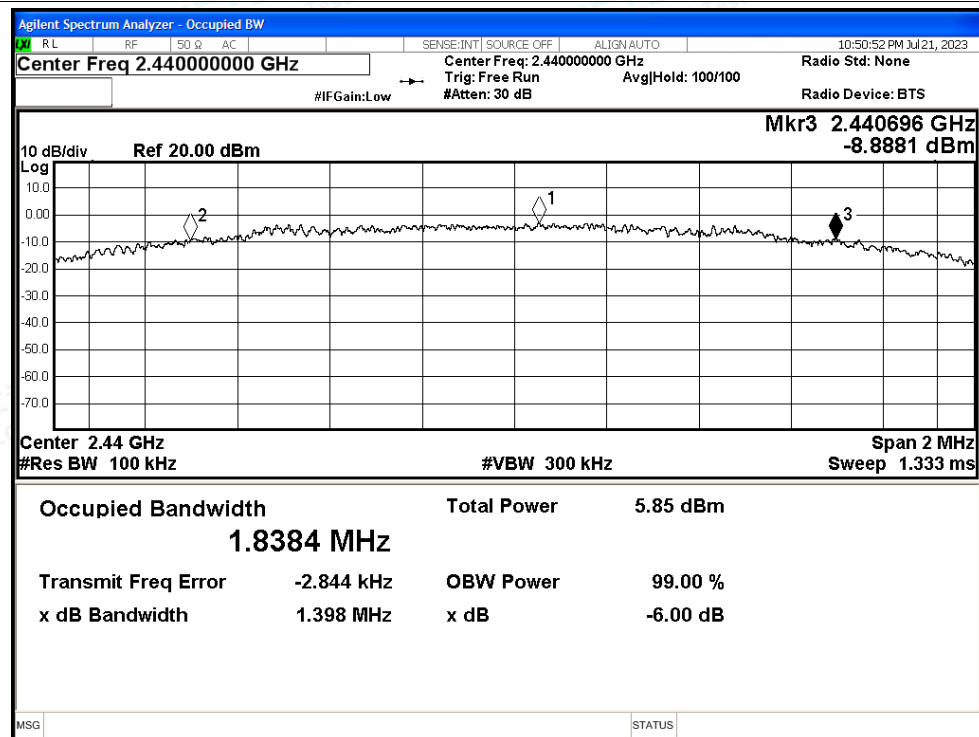


Test Graphs

-6dB Bandwidth NVNT ZIGB 2405MHz Ant1



-6dB Bandwidth NVNT ZIGB 2440MHz Ant1

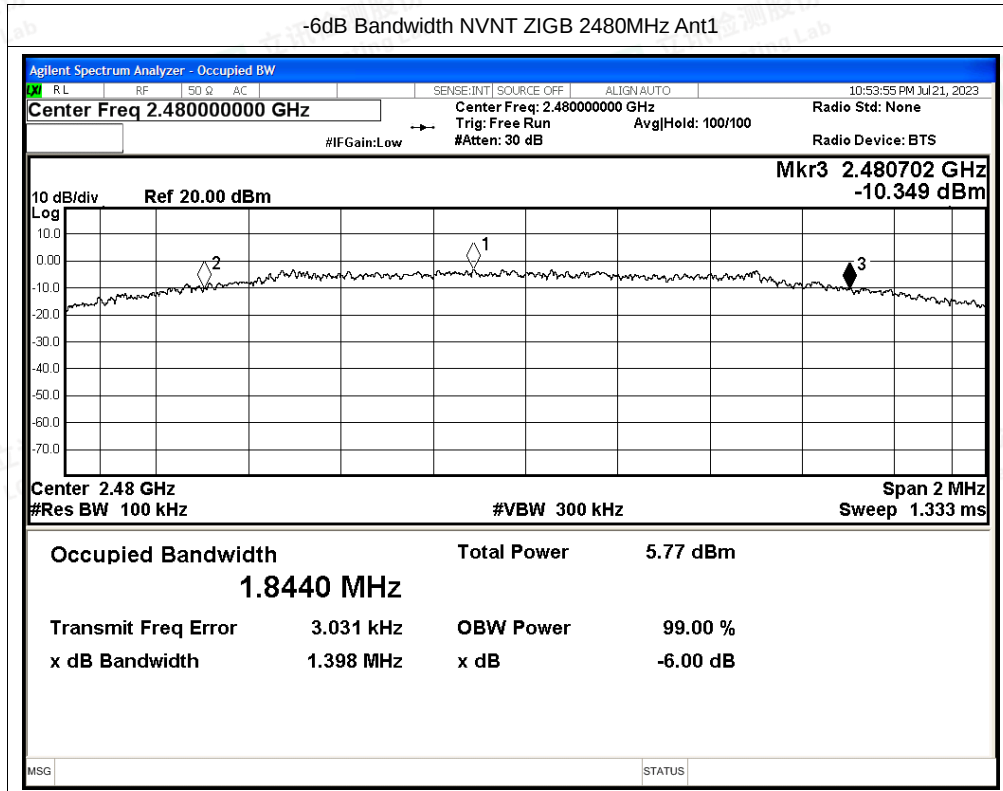


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B.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	ZIGB	2405	Ant1	-0.84	30	Pass
NVNT	ZIGB	2440	Ant1	-0.76	30	Pass
NVNT	ZIGB	2480	Ant1	-0.77	30	Pass



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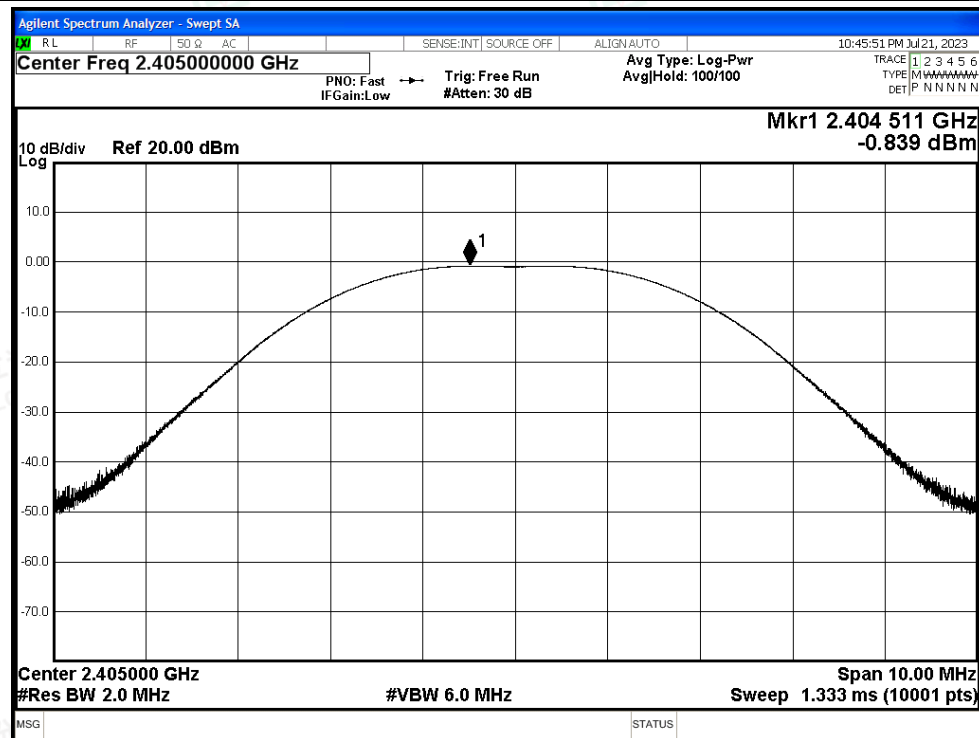
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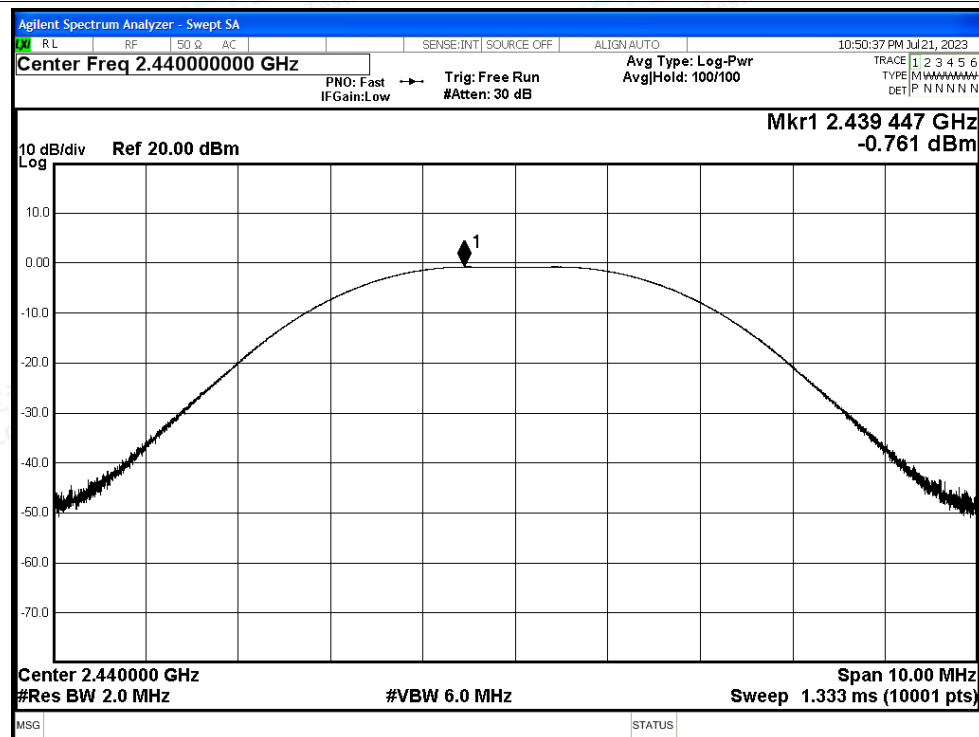


Test Graphs

Power NVNT ZIGB 2405MHz Ant1



Power NVNT ZIGB 2440MHz Ant1

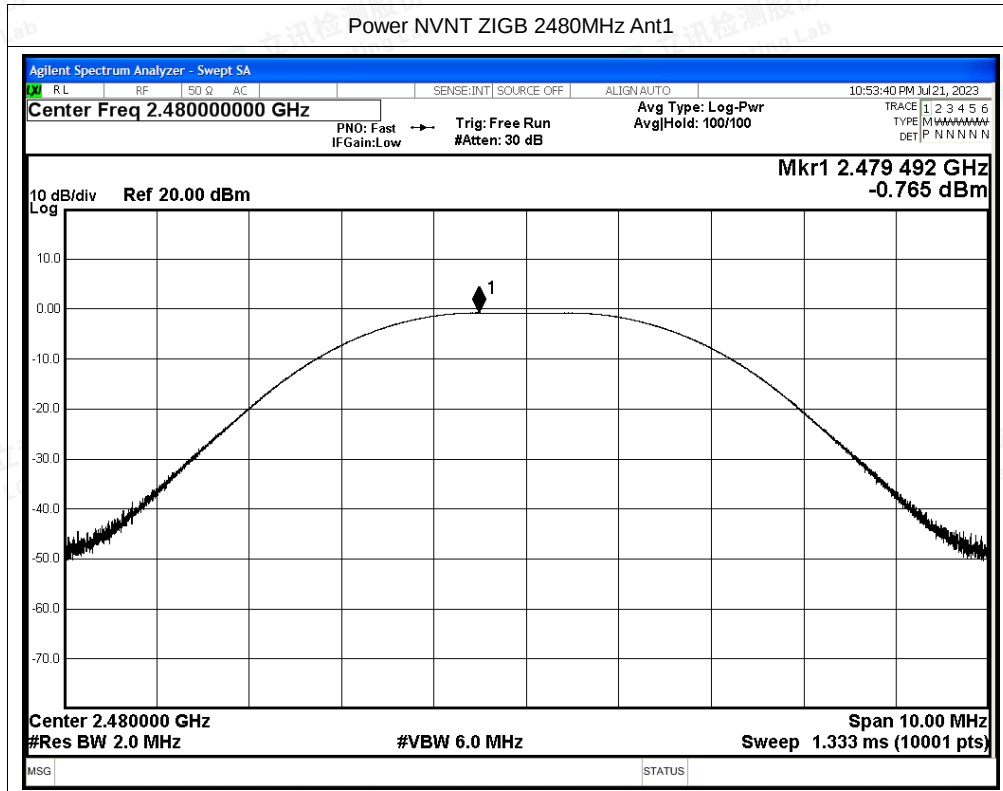


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B.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	ZIGB	2405	Ant1	-13.71	8	Pass
NVNT	ZIGB	2440	Ant1	-13.24	8	Pass
NVNT	ZIGB	2480	Ant1	-13.05	8	Pass



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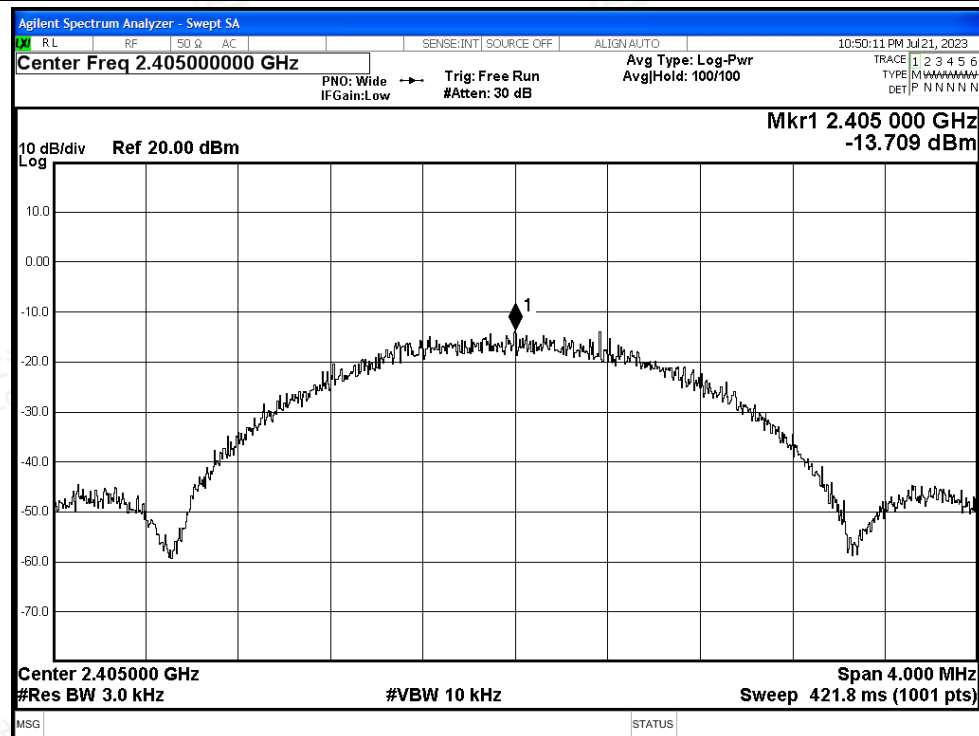
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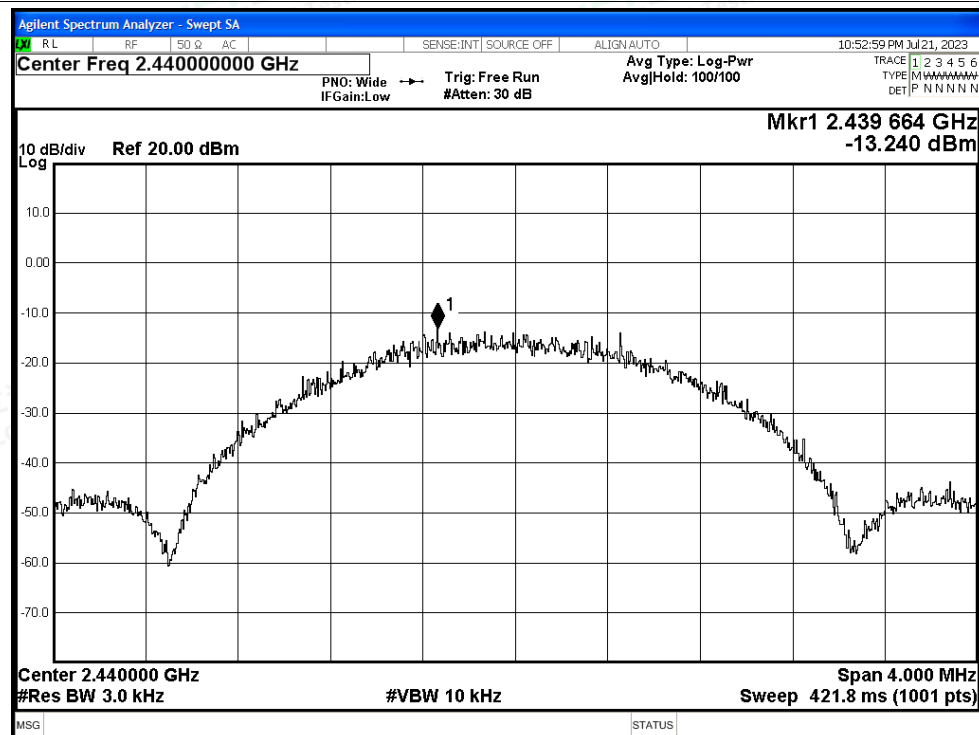


Test Graphs

PSD NVNT ZIGB 2405MHz Ant1



PSD NVNT ZIGB 2440MHz Ant1

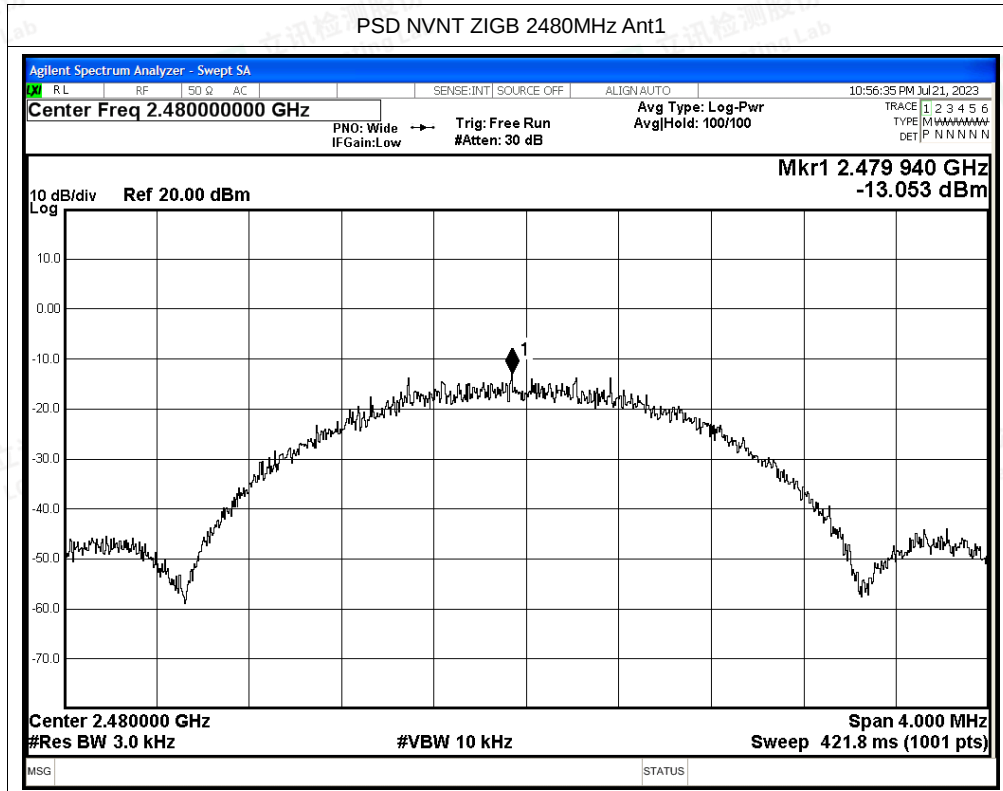


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B.4 Band Edge

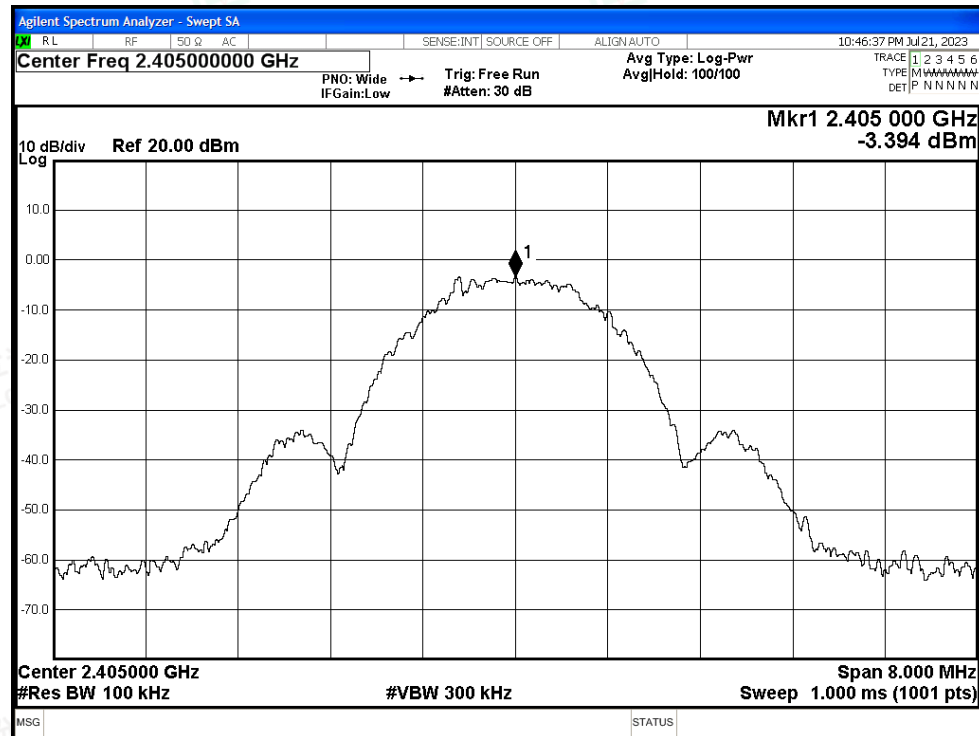
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	ZIGB	2405	Ant1	-55.05	-20	Pass
NVNT	ZIGB	2480	Ant1	-55.24	-20	Pass



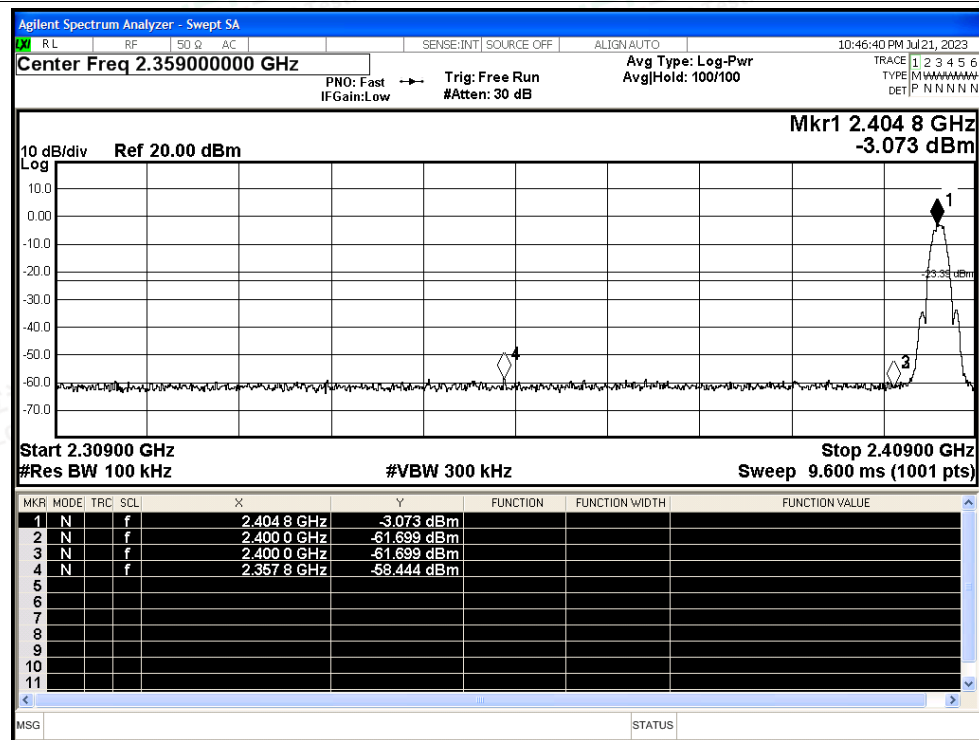


Test Graphs

Band Edge NVNT ZIGB 2405MHz Ant1 Ref



Band Edge NVNT ZIGB 2405MHz Ant1 Emission



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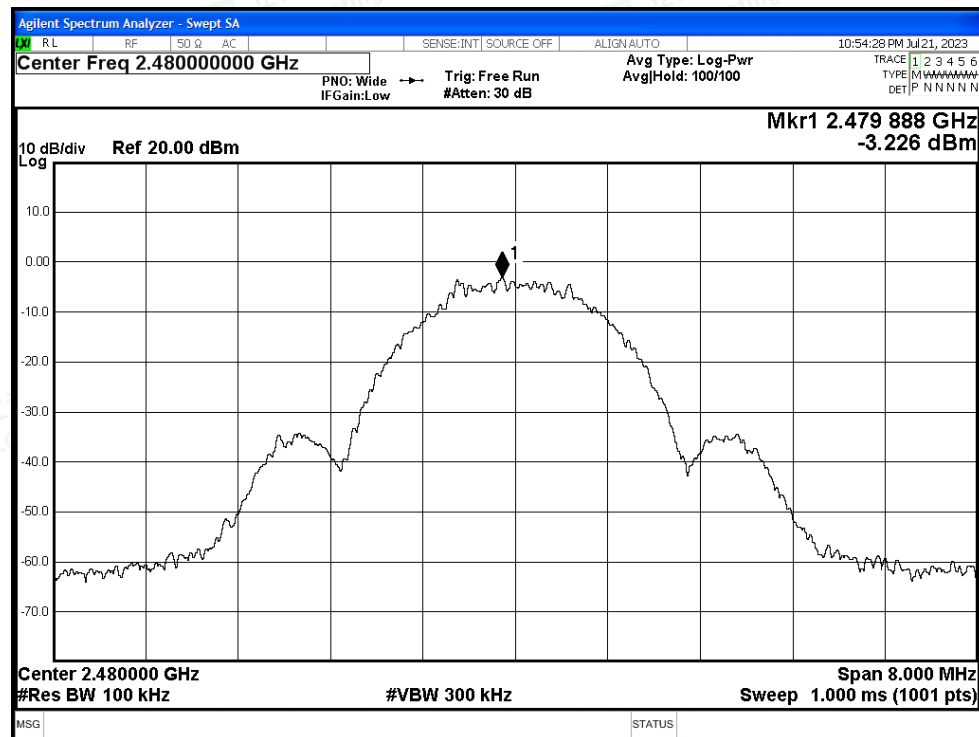
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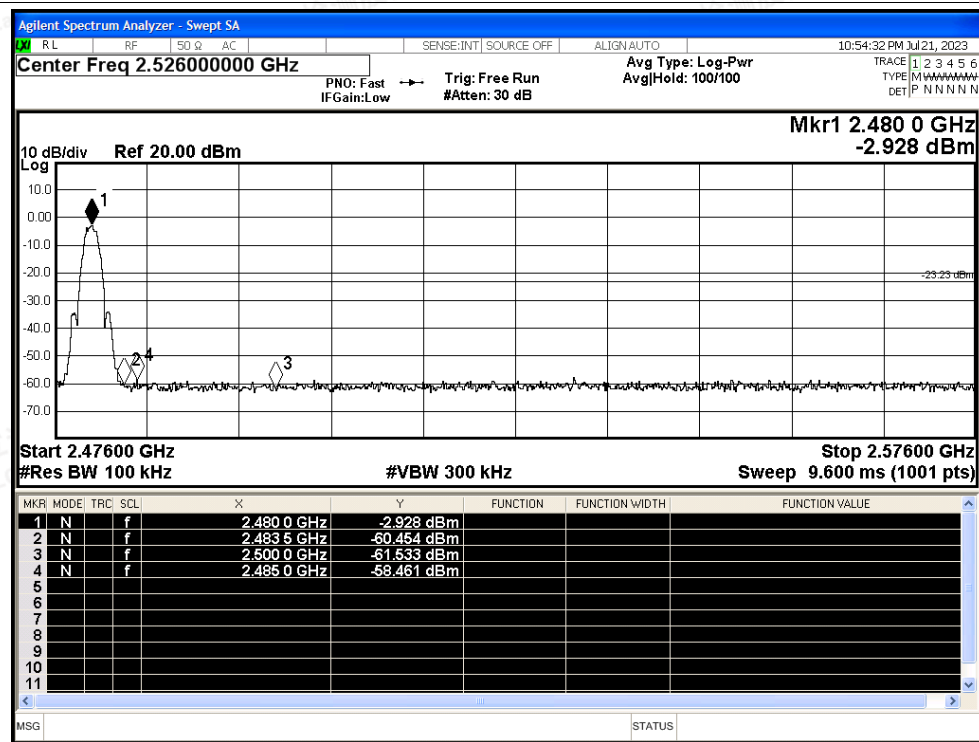
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Band Edge NVNT ZIGB 2480MHz Ant1 Ref



Band Edge NVNT ZIGB 2480MHz Ant1 Emission



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B.5 Conducted RF Spurious Emission

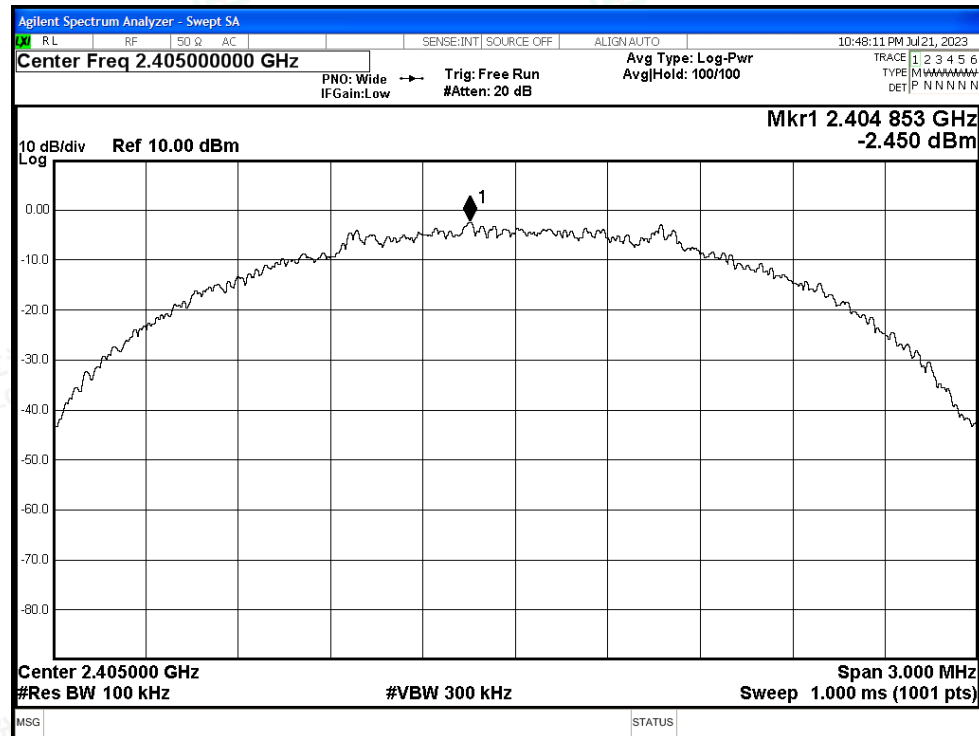
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	ZIGB	2405	Ant1	-55.13	-20	Pass
NVNT	ZIGB	2440	Ant1	-54.52	-20	Pass
NVNT	ZIGB	2480	Ant1	-54.18	-20	Pass



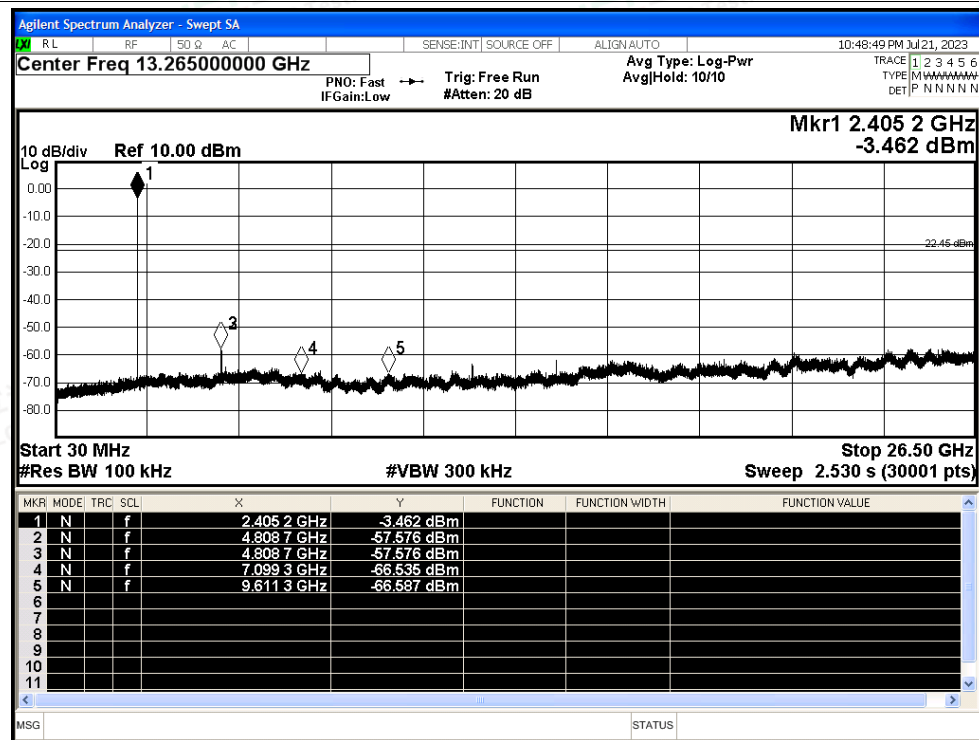


Test Graphs

Tx. Spurious NVNT ZIGB 2405MHz Ant1 Ref



Tx. Spurious NVNT ZIGB 2405MHz Ant1 Emission



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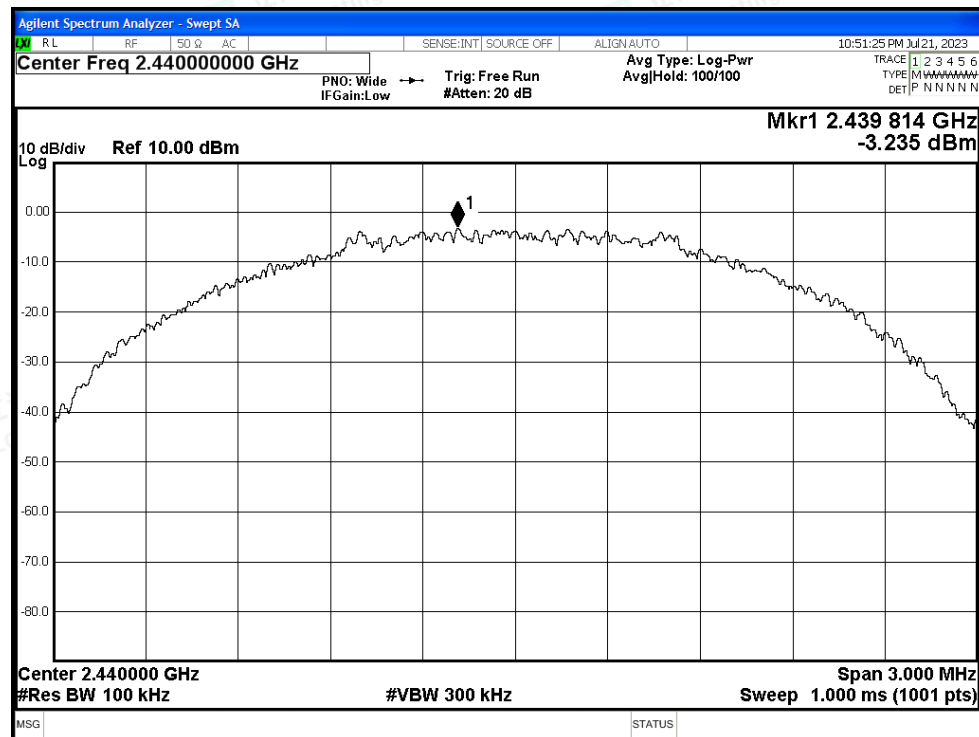
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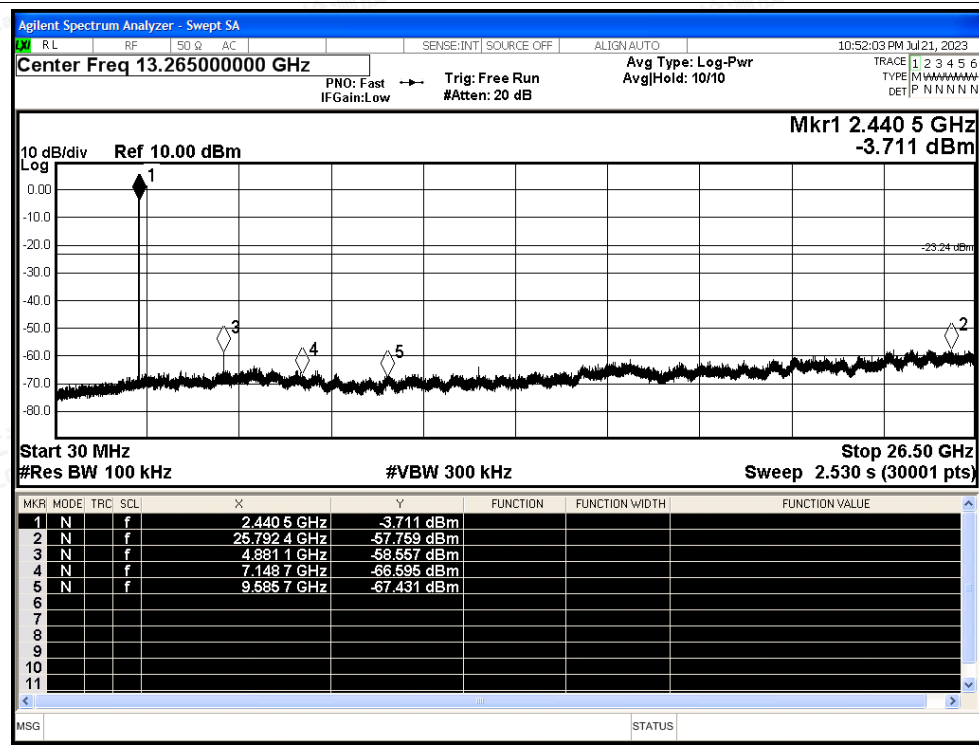
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Tx. Spurious NVNT ZIGB 2440MHz Ant1 Ref



Tx. Spurious NVNT ZIGB 2440MHz Ant1 Emission



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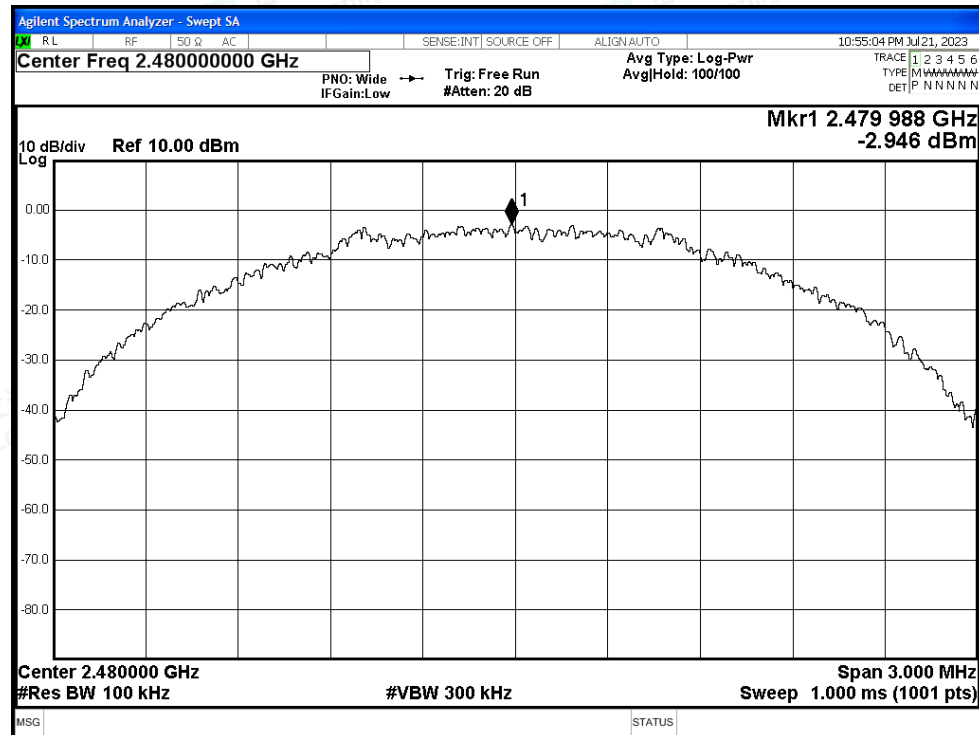
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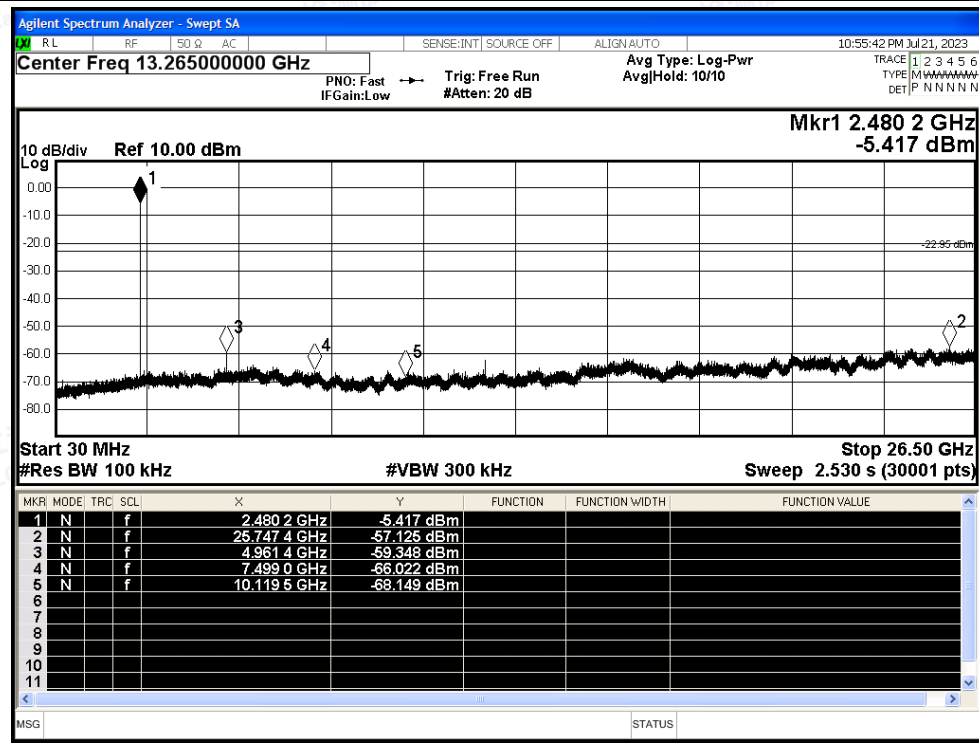
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Tx. Spurious NVNT ZIGB 2480MHz Ant1 Ref



Tx. Spurious NVNT ZIGB 2480MHz Ant1 Emission



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B.6 Duty Cycle

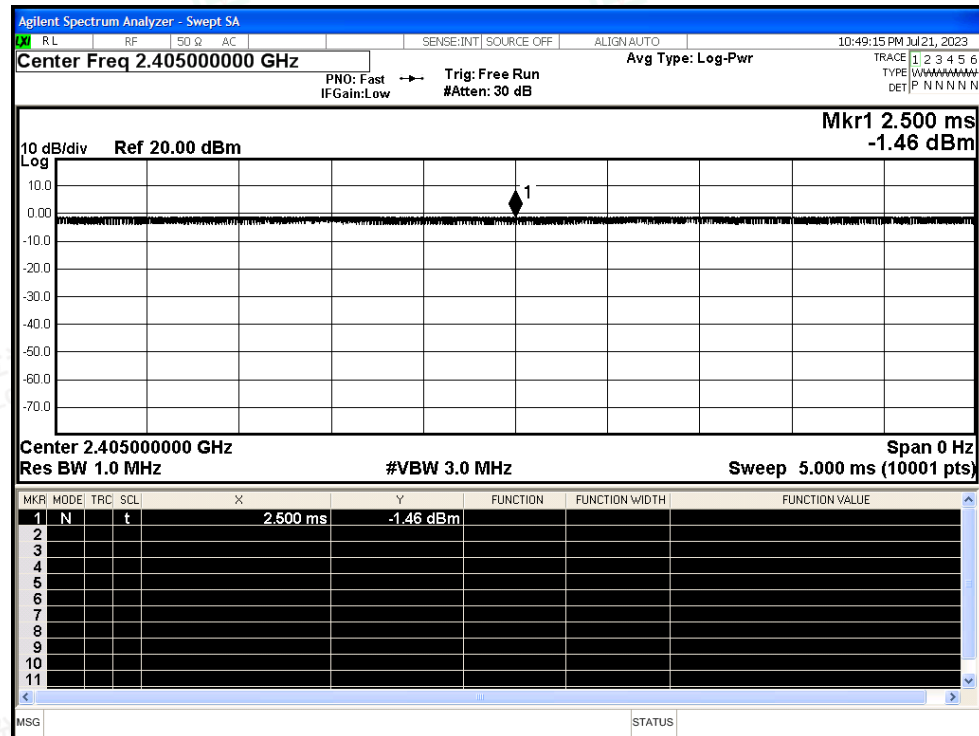
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	ZIGB	2405	Ant1	100	0	0
NVNT	ZIGB	2440	Ant1	100	0	0
NVNT	ZIGB	2480	Ant1	100	0	0



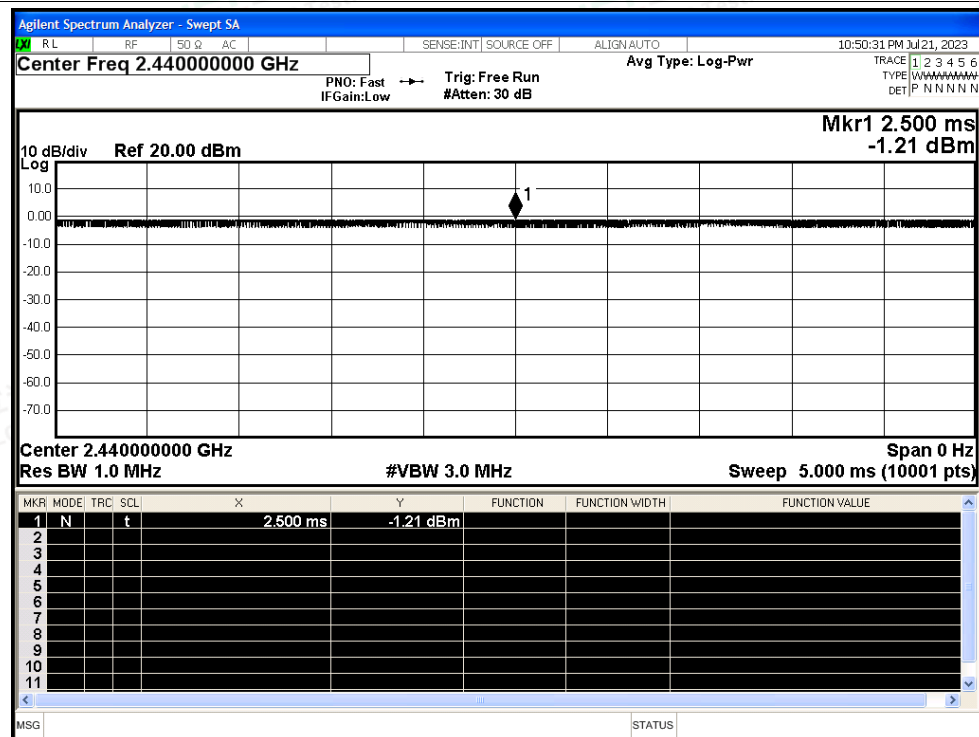


Test Graphs

Duty Cycle NVNT ZIGB 2405MHz Ant1



Duty Cycle NVNT ZIGB 2440MHz Ant1

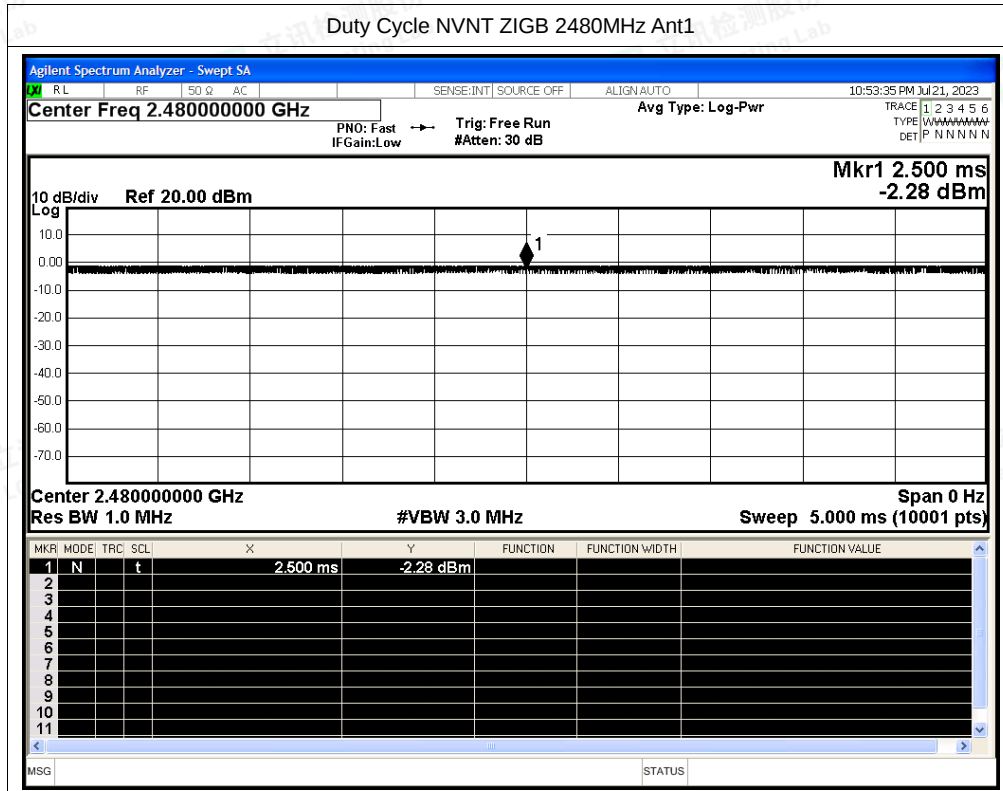


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B.7 Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	ZIGB	2405	Ant1	2310	-51.37	4.67	48.53	Peak	74	Pass
NVNT	ZIGB	2405	Ant1	2310	-62.22	4.67	37.68	Average	54	Pass
NVNT	ZIGB	2405	Ant1	2387.121	-48.6	4.67	51.30	Peak	74	Pass
NVNT	ZIGB	2405	Ant1	2387.616	-61.85	4.67	38.05	Average	54	Pass
NVNT	ZIGB	2405	Ant1	2390	-52.45	4.67	47.45	Peak	74	Pass
NVNT	ZIGB	2405	Ant1	2390	-61.89	4.67	38.01	Average	54	Pass
NVNT	ZIGB	2480	Ant1	2483.5	-48.88	4.67	51.02	Peak	74	Pass
NVNT	ZIGB	2480	Ant1	2483.5	-58.79	4.67	41.11	Average	54	Pass
NVNT	ZIGB	2480	Ant1	2483.584	-48.46	4.67	51.44	Peak	74	Pass
NVNT	ZIGB	2480	Ant1	2483.512	-58.79	4.67	41.11	Average	54	Pass
NVNT	ZIGB	2480	Ant1	2500	-50	4.67	49.90	Peak	74	Pass
NVNT	ZIGB	2480	Ant1	2500	-61.7	4.67	38.20	Average	54	Pass



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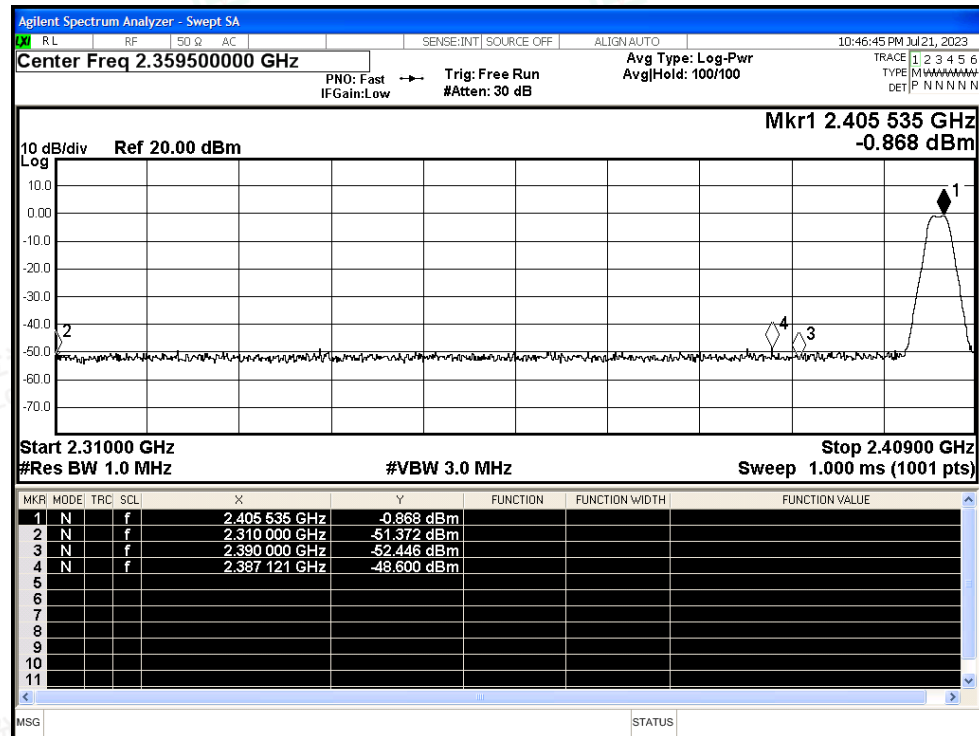
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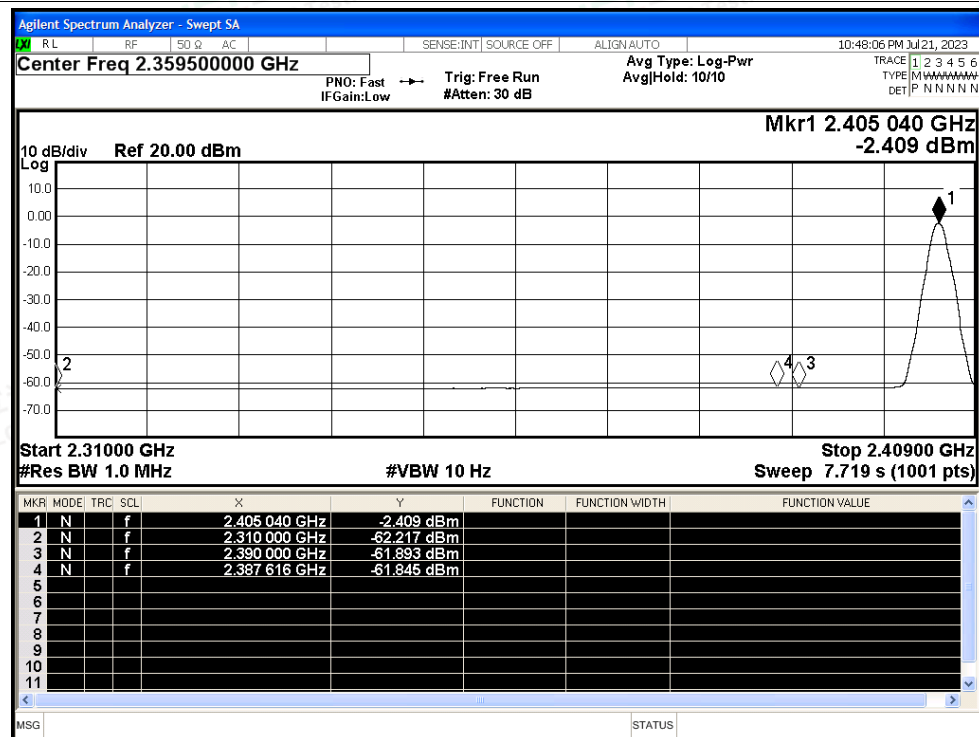


Test Graphs

Restrict Band NVNT ZIGB 2405MHz Ant1 Peak



Restrict Band NVNT ZIGB 2405MHz Ant1 Average



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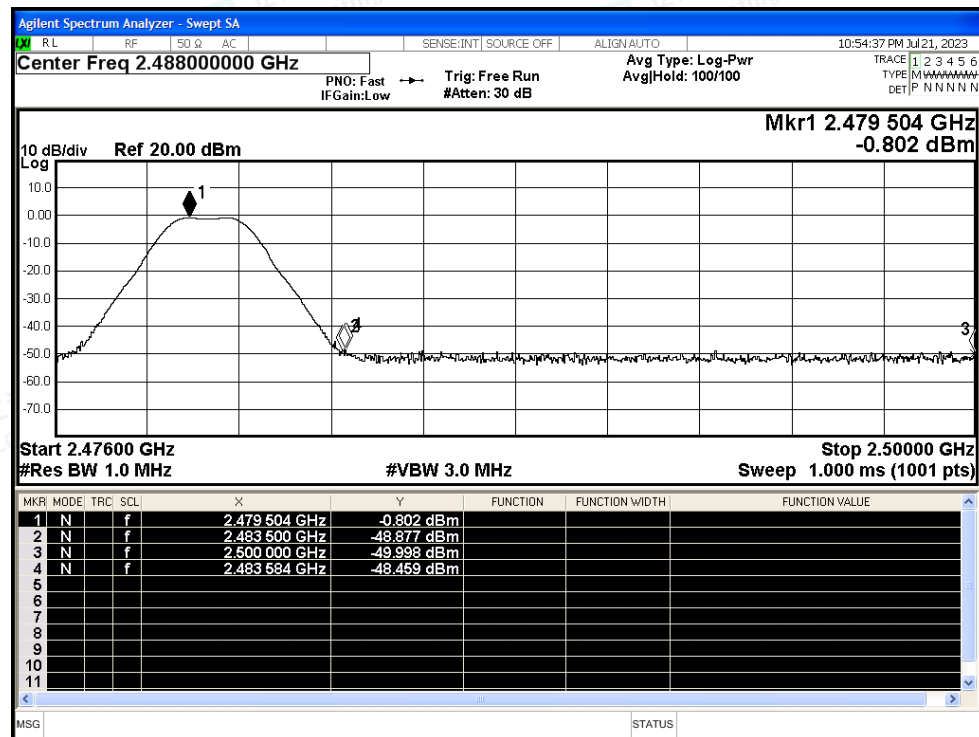
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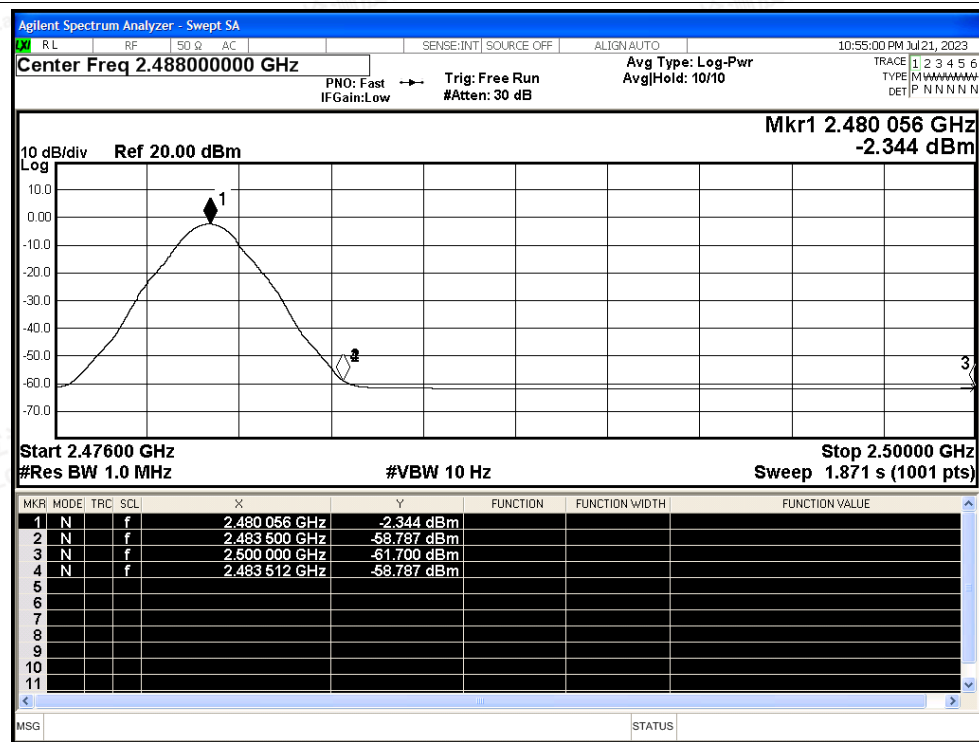
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Restrict Band NVNT ZIGB 2480MHz Ant1 Peak



Restrict Band NVNT ZIGB 2480MHz Ant1 Average



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