



Appendix A

RF Test Data for Zigbee (Conducted Measurement)

Product Name: Hydra Alien Pro Car Mounting System

Test Model: HDA-T18-SAA

Environmental Conditions

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



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A.1 -6dB Bandwidth

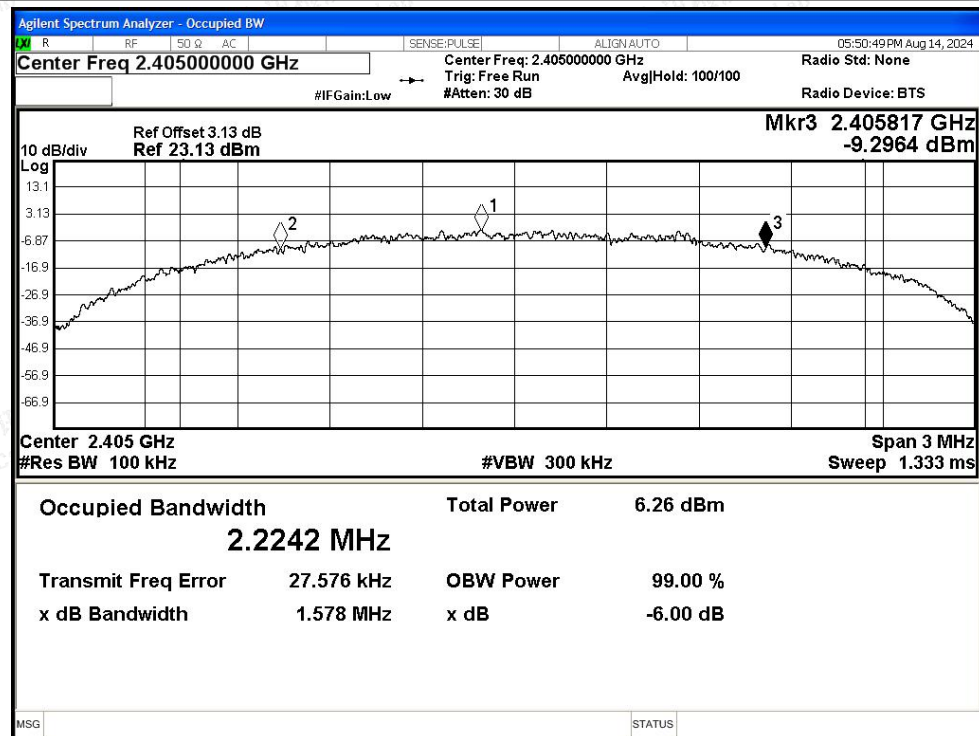
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	ZIGBEE	2405	Ant1	1.578	≥ 0.5	Pass
NVNT	ZIGBEE	2440	Ant1	1.521	≥ 0.5	Pass
NVNT	ZIGBEE	2480	Ant1	1.509	≥ 0.5	Pass



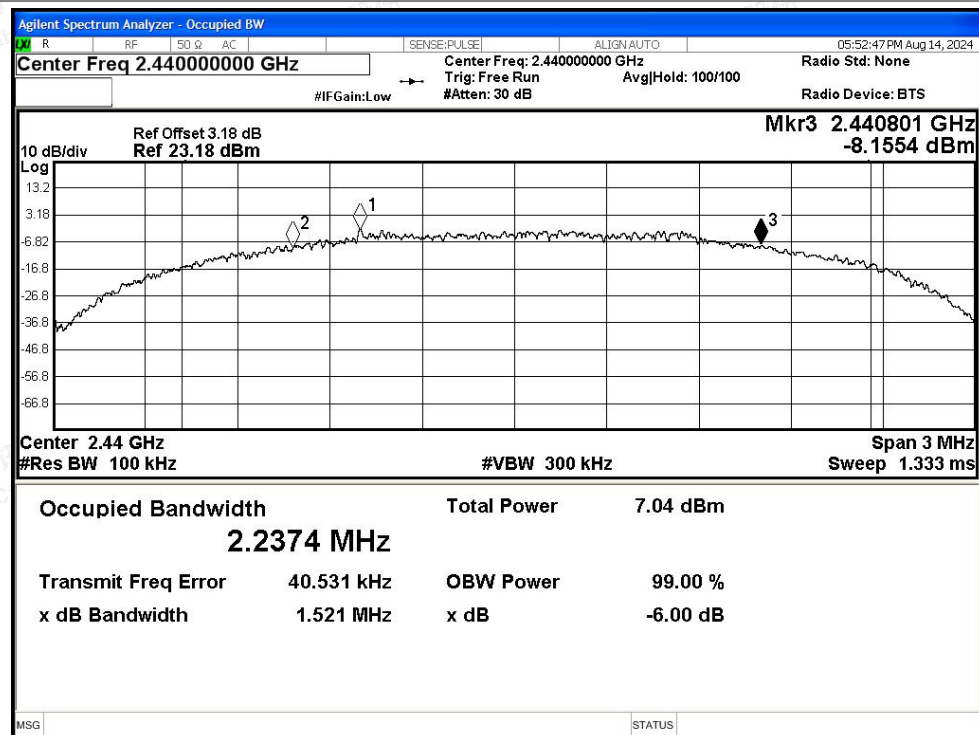


Test Graphs

-6dB Bandwidth NVNT ZIGBEE 2405MHz Ant1



-6dB Bandwidth NVNT ZIGBEE 2440MHz Ant1

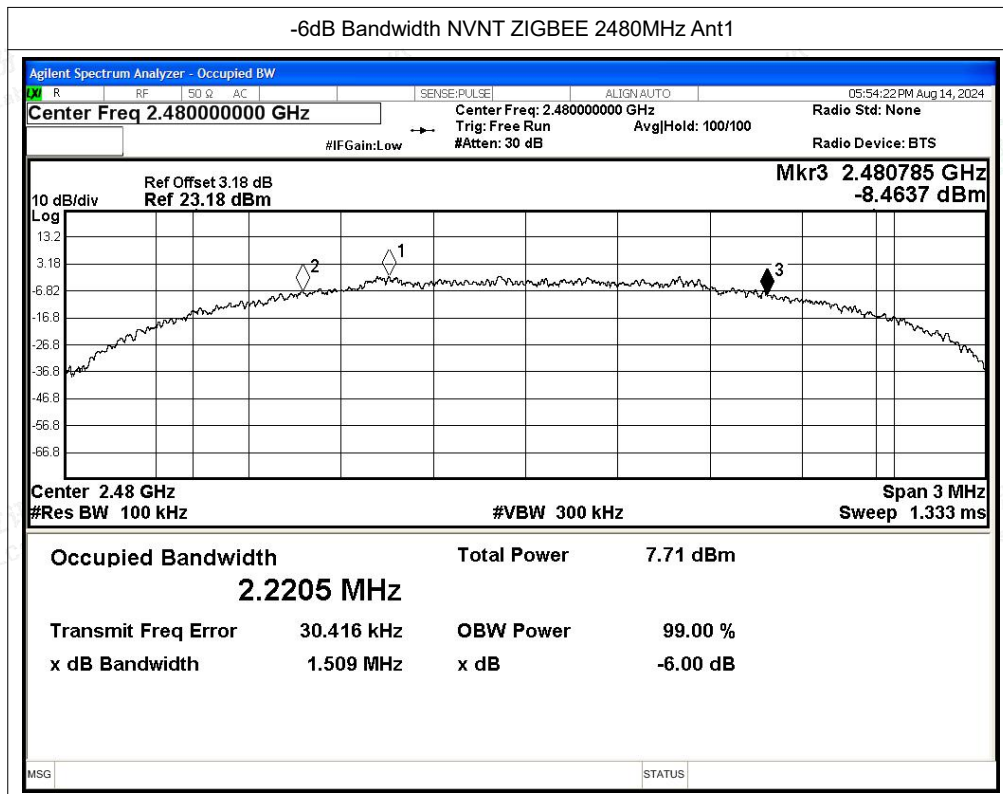


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A.2 Maximum Peak Conducted Output Power

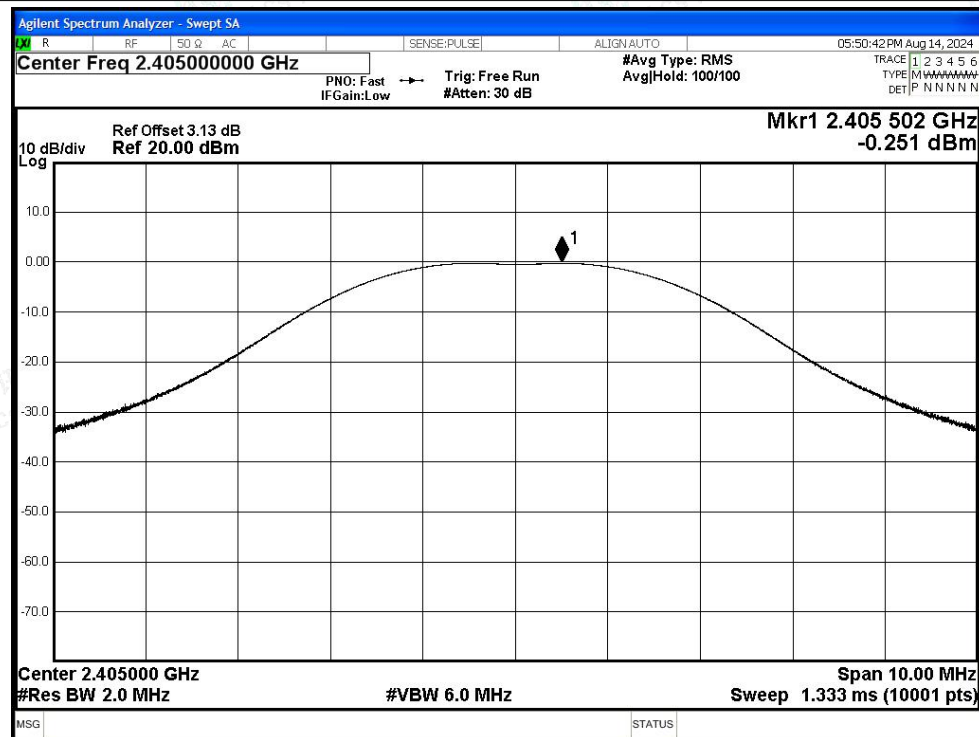
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	ZIGBEE	2405	Ant1	-0.25	30	Pass
NVNT	ZIGBEE	2440	Ant1	0.32	30	Pass
NVNT	ZIGBEE	2480	Ant1	1	30	Pass



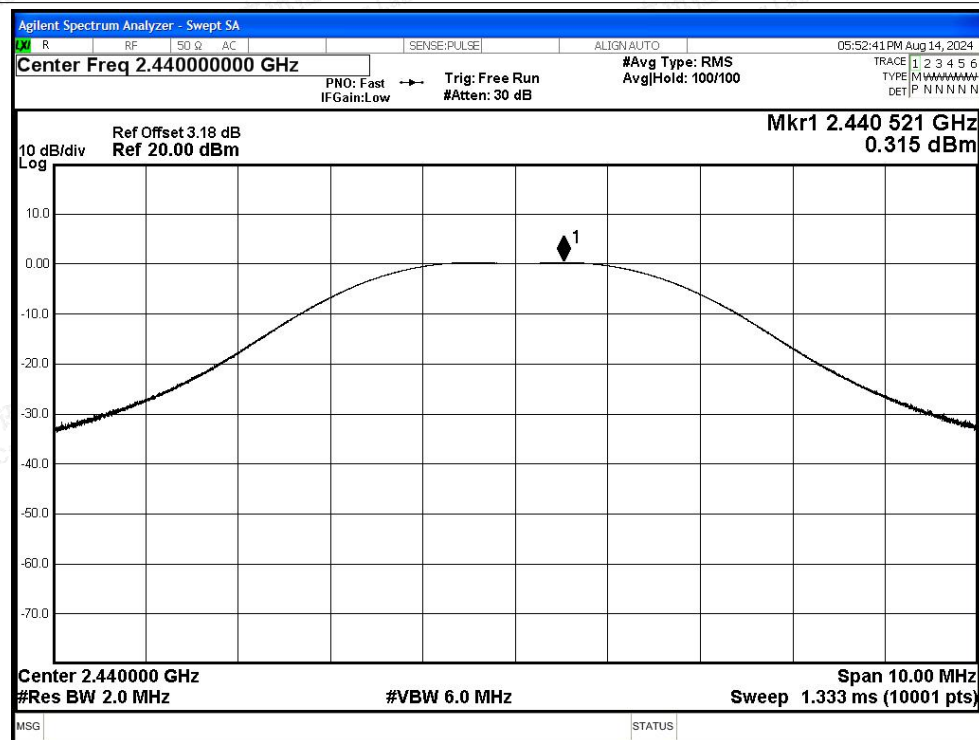


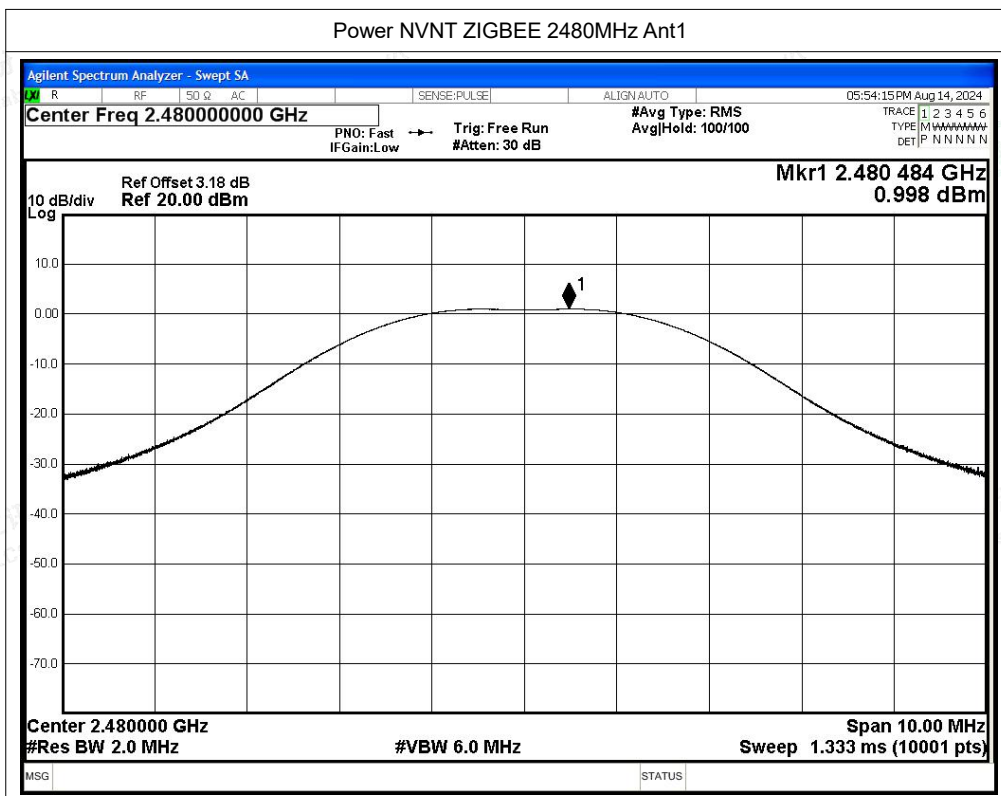
Test Graphs

Power NVNT ZIGBEE 2405MHz Ant1



Power NVNT ZIGBEE 2440MHz Ant1







A.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	ZIGBEE	2405	Ant1	-13.01	8	Pass
NVNT	ZIGBEE	2440	Ant1	-13.19	8	Pass
NVNT	ZIGBEE	2480	Ant1	-11.88	8	Pass

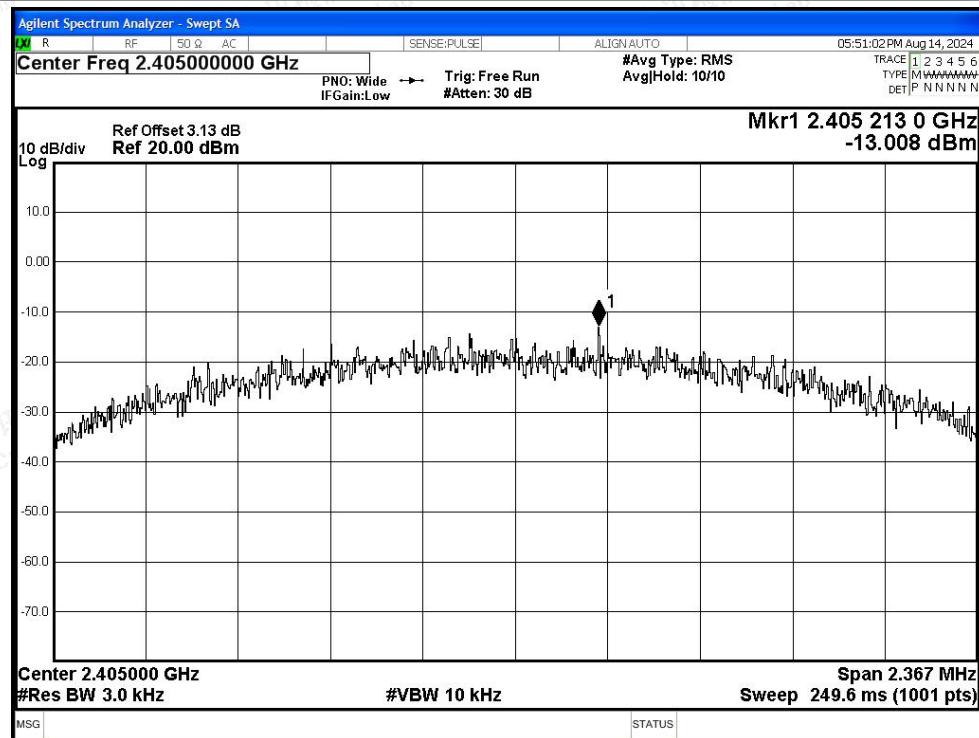


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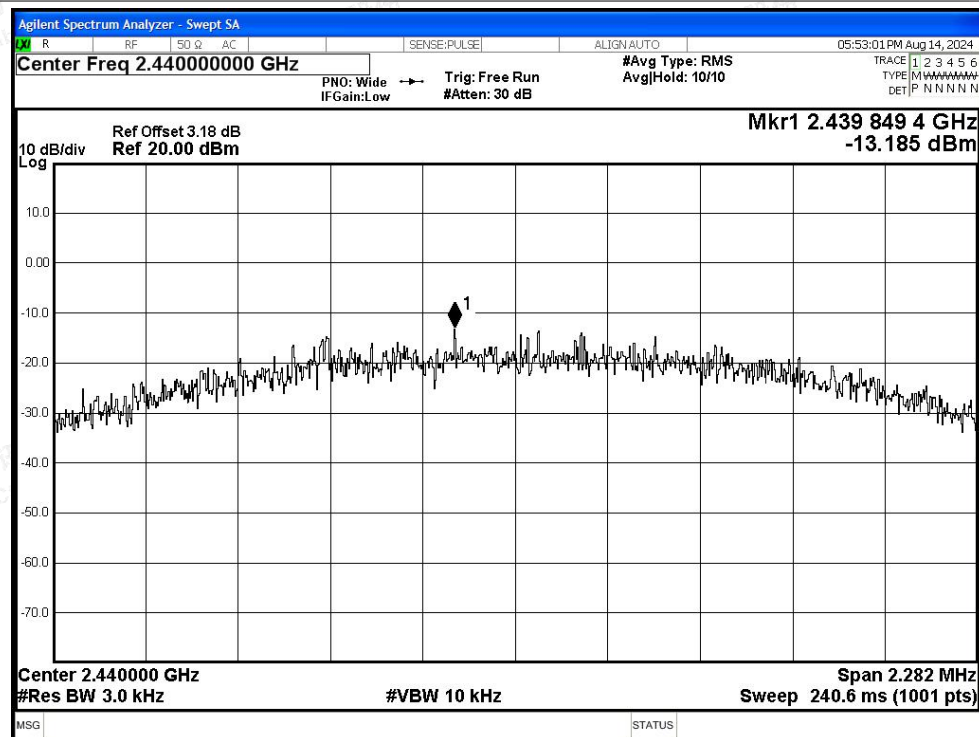


Test Graphs

PSD NVNT ZIGBEE 2405MHz Ant1



PSD NVNT ZIGBEE 2440MHz Ant1

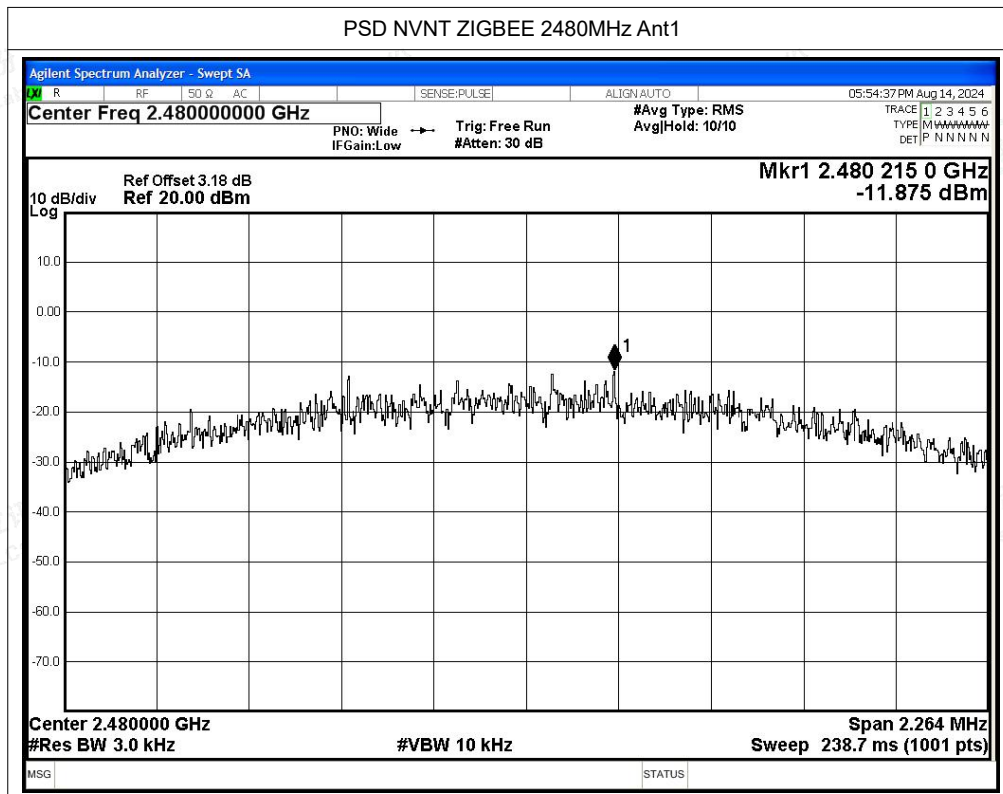


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A.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	ZIGBEE	2405	Ant1	-43.71	-20	Pass
NVNT	ZIGBEE	2480	Ant1	-38.21	-20	Pass

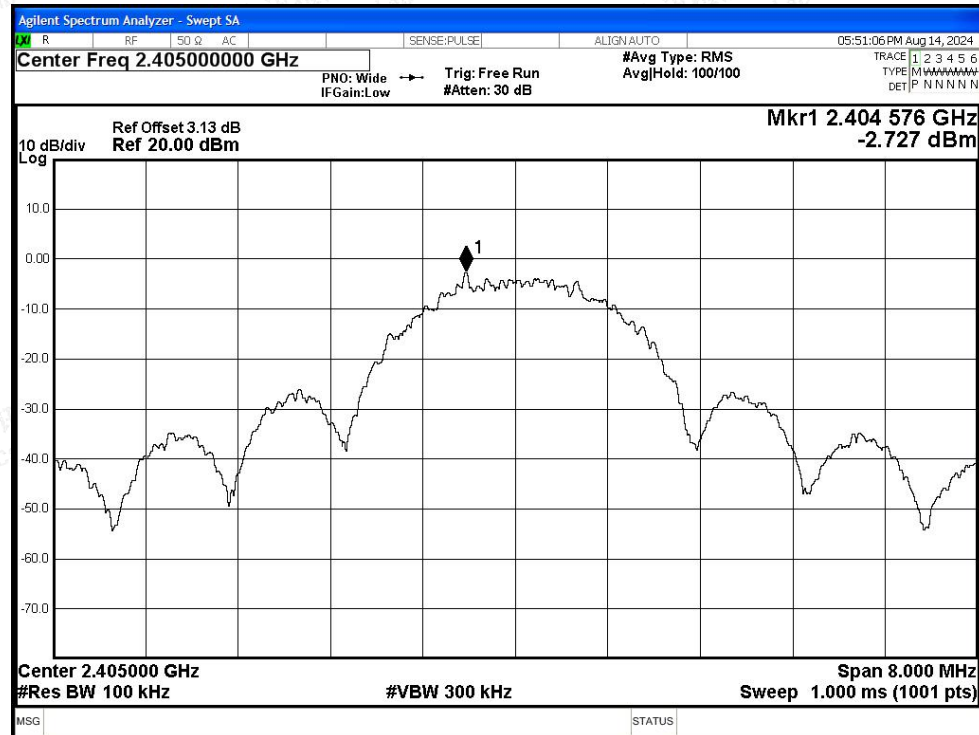


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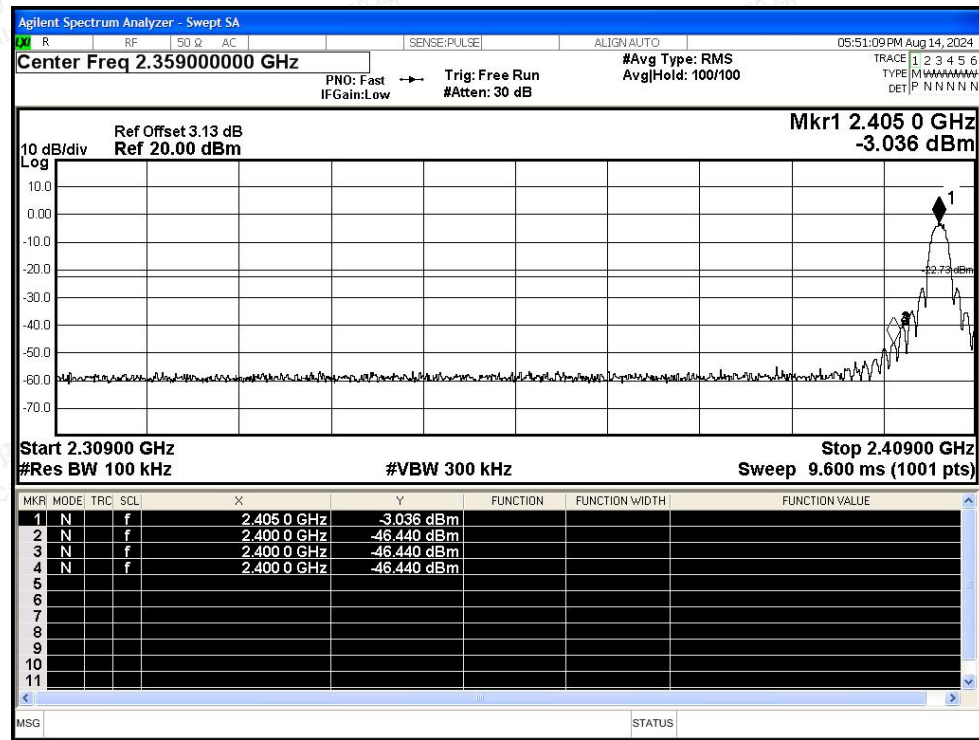


Test Graphs

Band Edge NVNT ZIGBEE 2405MHz Ant1 Ref



Band Edge NVNT ZIGBEE 2405MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

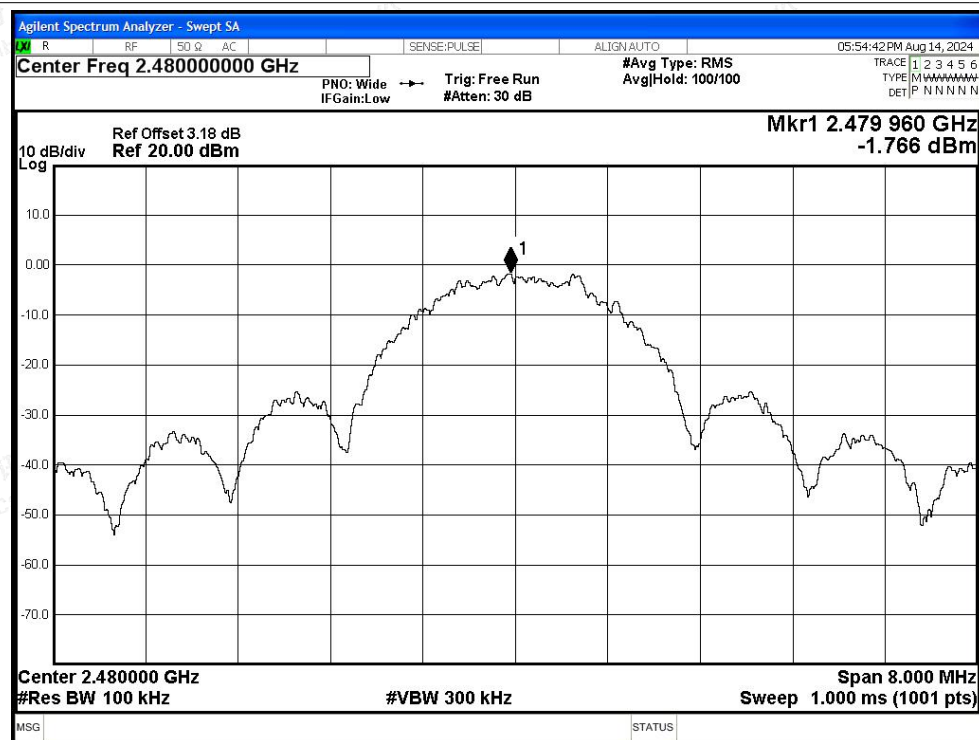
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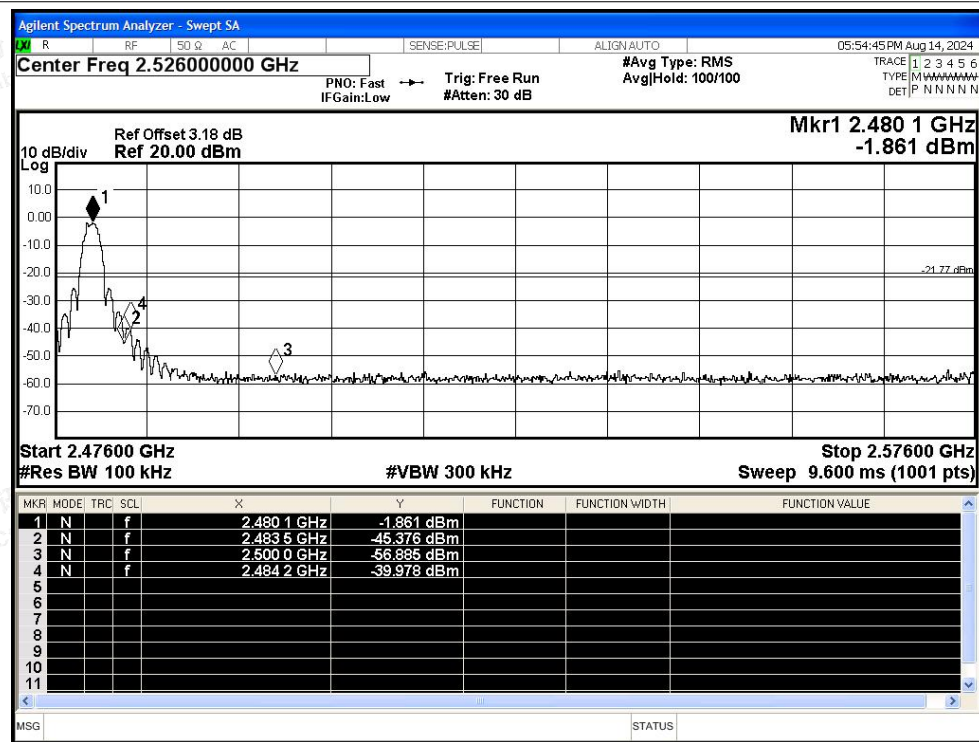
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Band Edge NVNT ZIGBEE 2480MHz Ant1 Ref



Band Edge NVNT ZIGBEE 2480MHz Ant1 Emission



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A.5 Conducted RF Spurious Emission

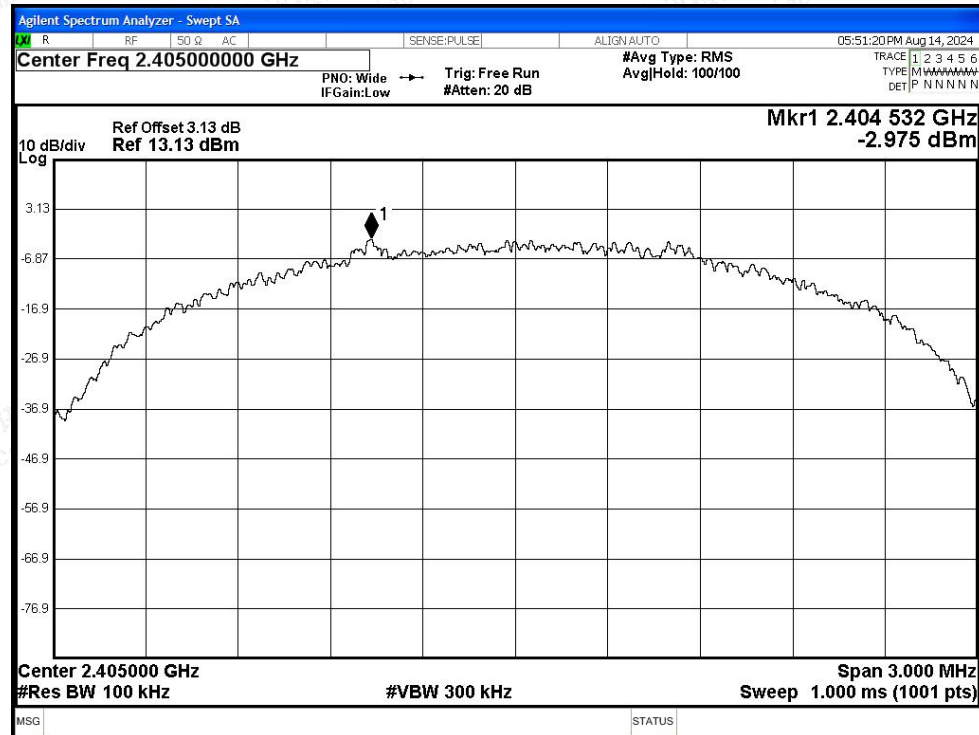
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	ZIGBEE	2405	Ant1	-34.14	-20	Pass
NVNT	ZIGBEE	2440	Ant1	-47.22	-20	Pass
NVNT	ZIGBEE	2480	Ant1	-52.63	-20	Pass



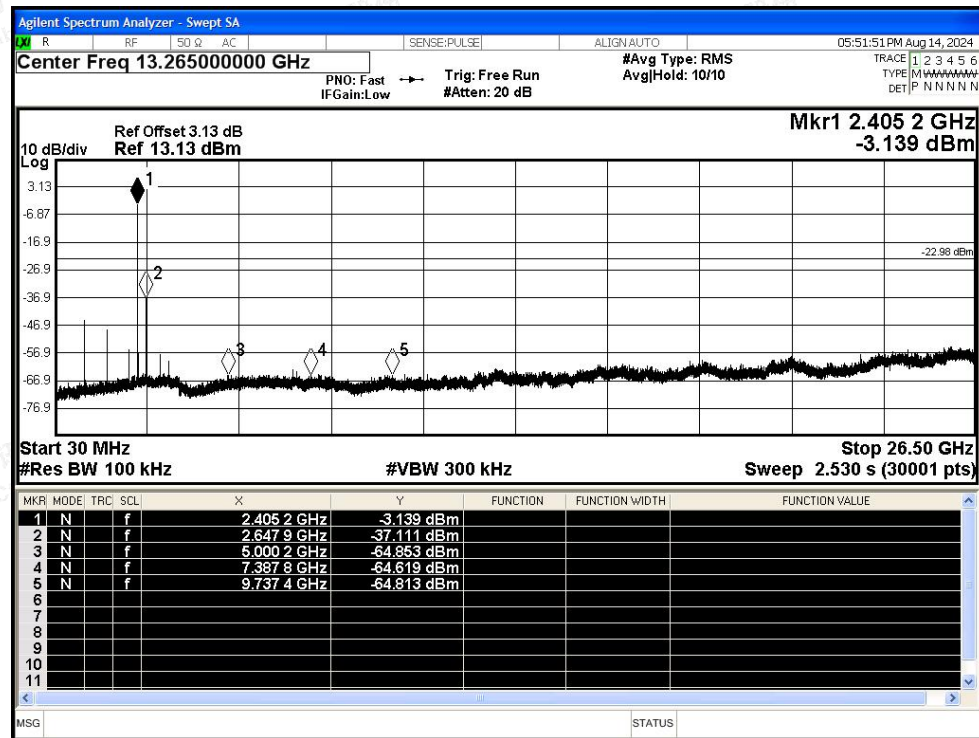


Test Graphs

Tx. Spurious NVNT ZIGBEE 2405MHz Ant1 Ref



Tx. Spurious NVNT ZIGBEE 2405MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

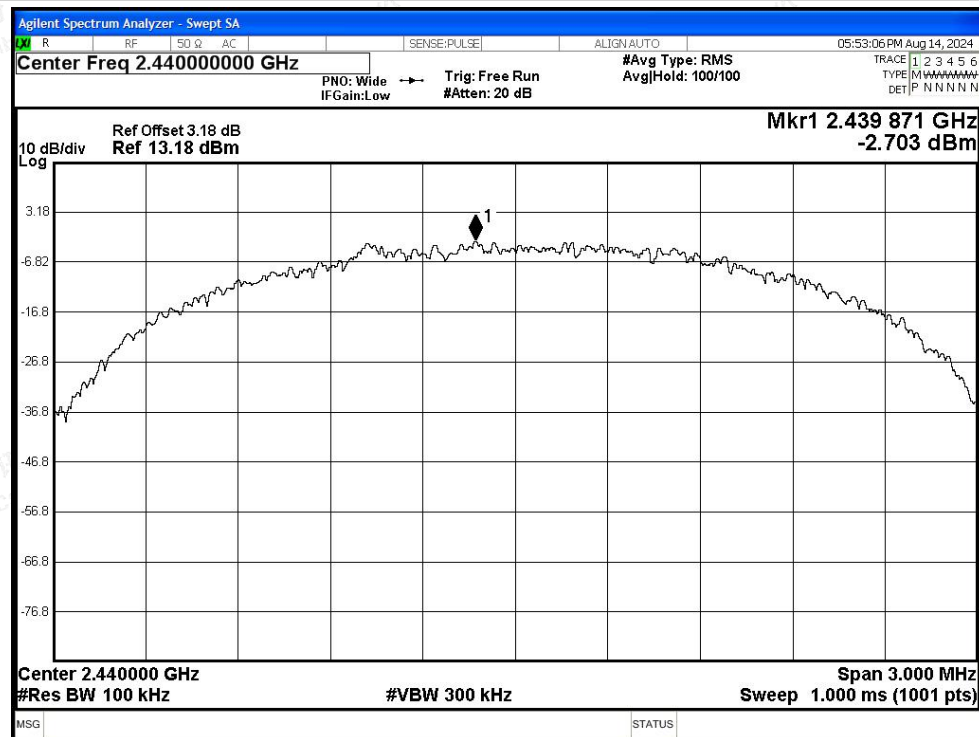
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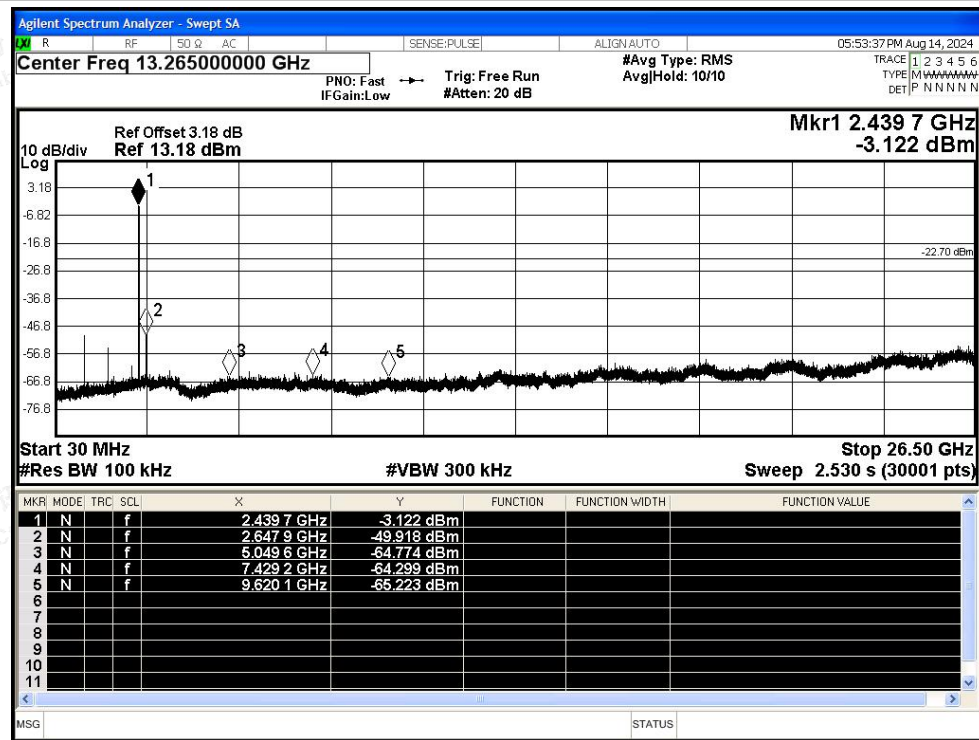
Scan code to check authenticity



Tx. Spurious NVNT ZIGBEE 2440MHz Ant1 Ref



Tx. Spurious NVNT ZIGBEE 2440MHz Ant1 Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

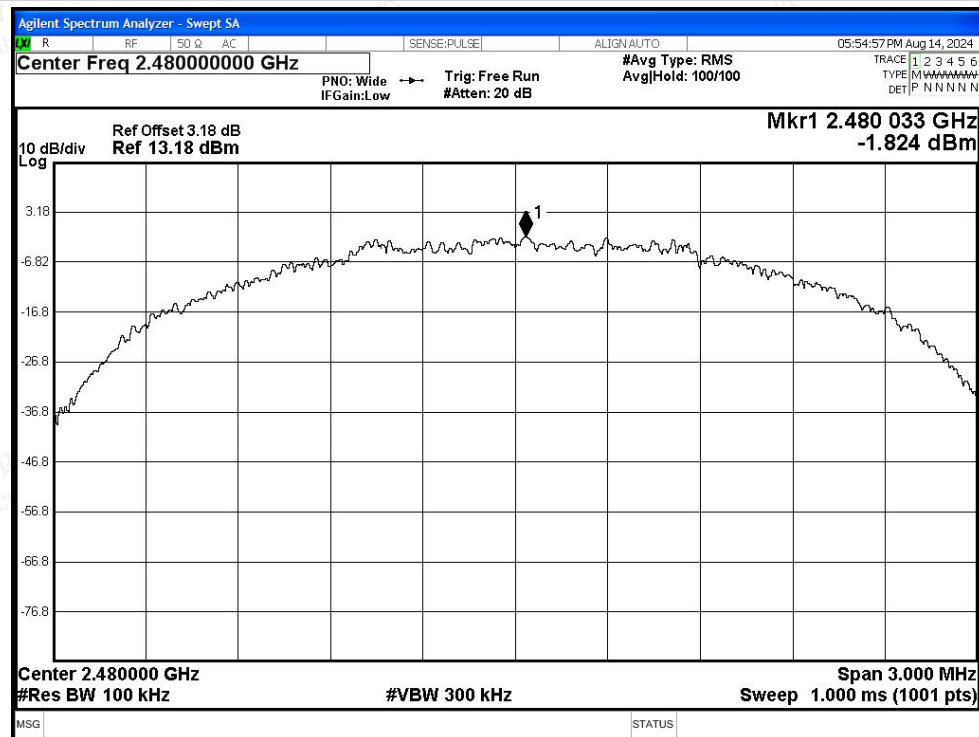
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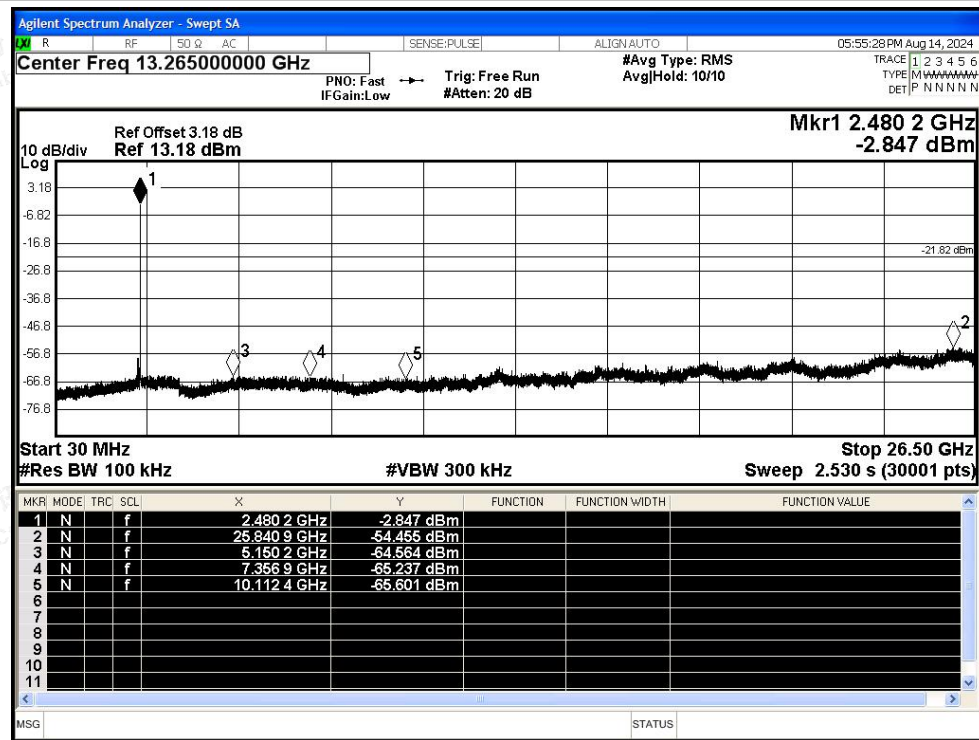
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Tx. Spurious NVNT ZIGBEE 2480MHz Ant1 Ref



Tx. Spurious NVNT ZIGBEE 2480MHz Ant1 Emission



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A.6 Duty Cycle

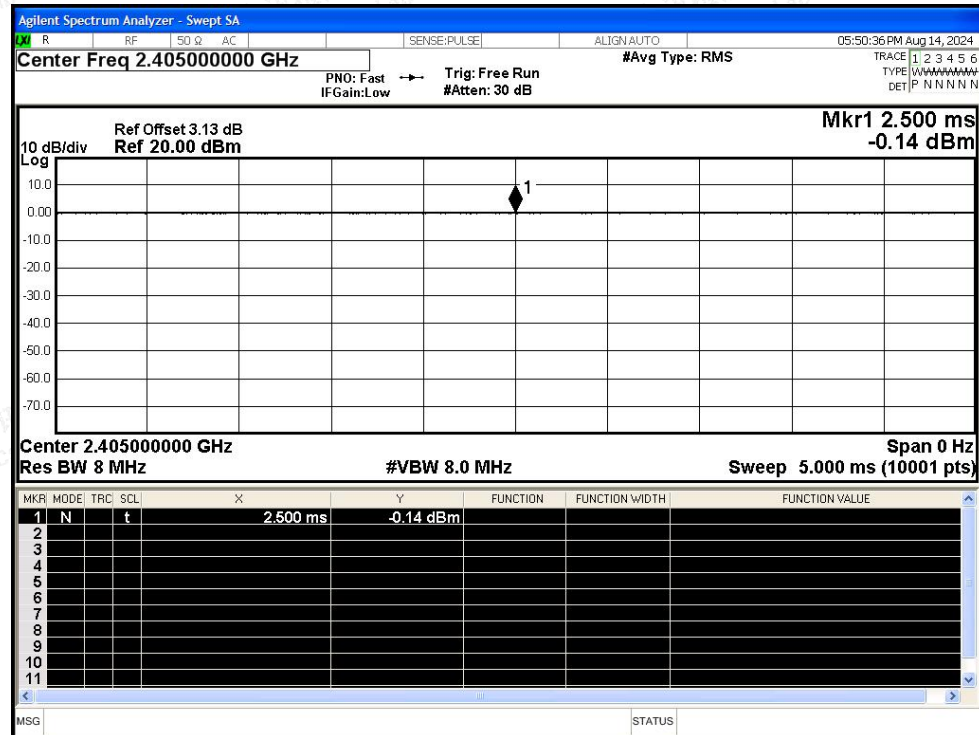
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	ZIGBEE	2405	Ant1	100	0	0
NVNT	ZIGBEE	2440	Ant1	100	0	0
NVNT	ZIGBEE	2480	Ant1	100	0	0



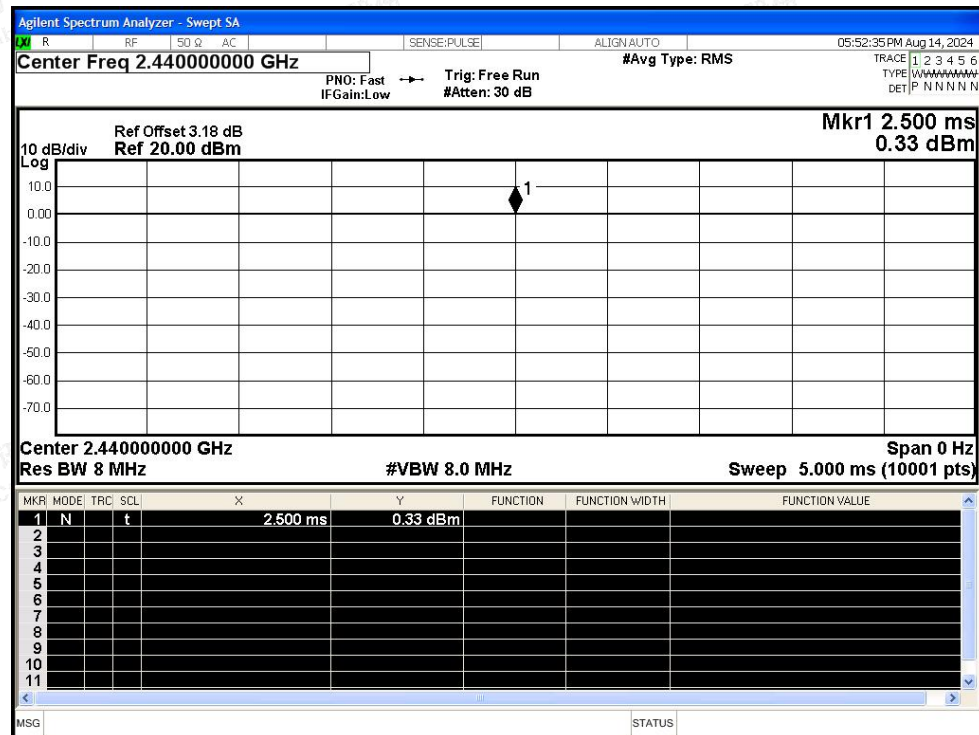


Test Graphs

Duty Cycle NVNT ZIGBEE 2405MHz Ant1



Duty Cycle NVNT ZIGBEE 2440MHz Ant1



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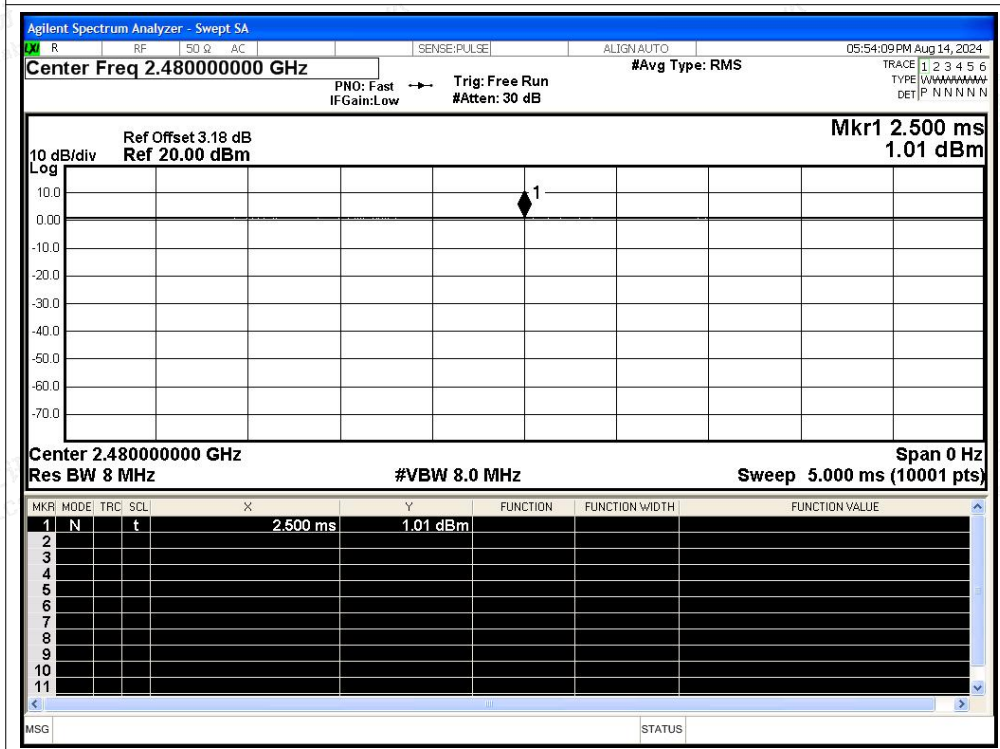
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Duty Cycle NVNT ZIGBEE 2480MHz Ant1



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A.7 Restrict Band

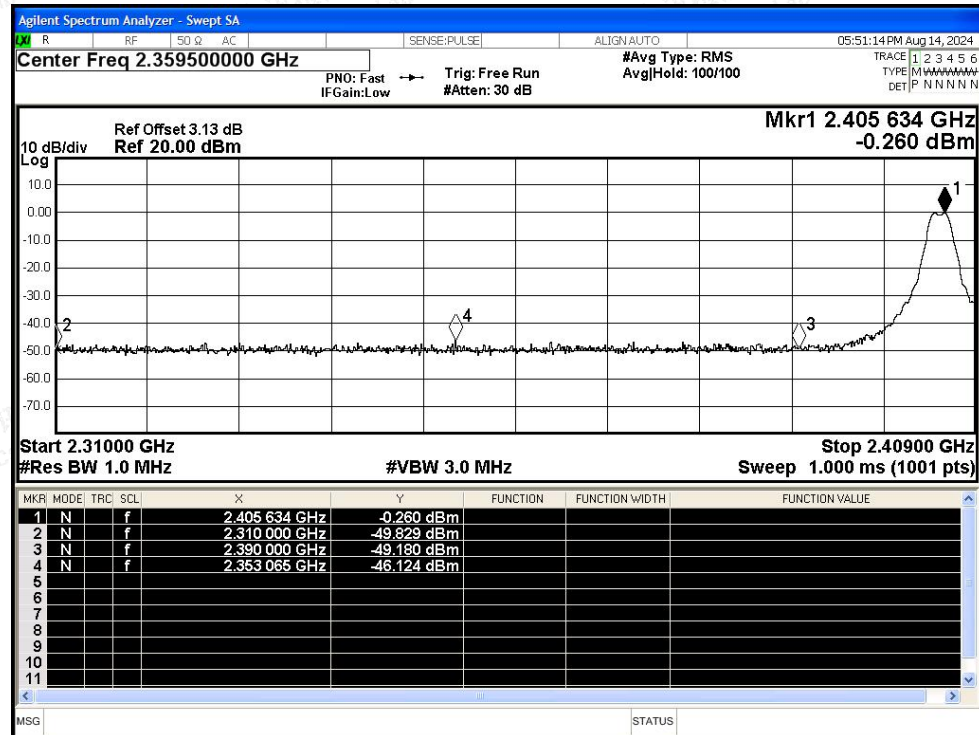
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	ZIGBEE	2405	Ant1	2310	-49.83	2	-	47.43	Peak	74	Pass
NVNT	ZIGBEE	2405	Ant1	2310	-57.67	2	0	39.59	Average	54	Pass
NVNT	ZIGBEE	2405	Ant1	2353.065	-46.12	2	-	51.14	Peak	74	Pass
NVNT	ZIGBEE	2405	Ant1	2367.222	-56.53	2	0	40.73	Average	54	Pass
NVNT	ZIGBEE	2405	Ant1	2390	-49.18	2	-	48.08	Peak	74	Pass
NVNT	ZIGBEE	2405	Ant1	2390	-57.3	2	0	39.96	Average	54	Pass
NVNT	ZIGBEE	2480	Ant1	2483.5	-41.09	2	-	56.17	Peak	74	Pass
NVNT	ZIGBEE	2480	Ant1	2483.5	-47.46	2	0	49.8	Average	54	Pass
NVNT	ZIGBEE	2480	Ant1	2483.824	-40.29	2	-	56.97	Peak	74	Pass
NVNT	ZIGBEE	2480	Ant1	2483.56	-47.29	2	0	49.97	Average	54	Pass
NVNT	ZIGBEE	2480	Ant1	2500	-47.98	2	-	49.28	Peak	74	Pass
NVNT	ZIGBEE	2480	Ant1	2500	-57.03	2	0	40.23	Average	54	Pass



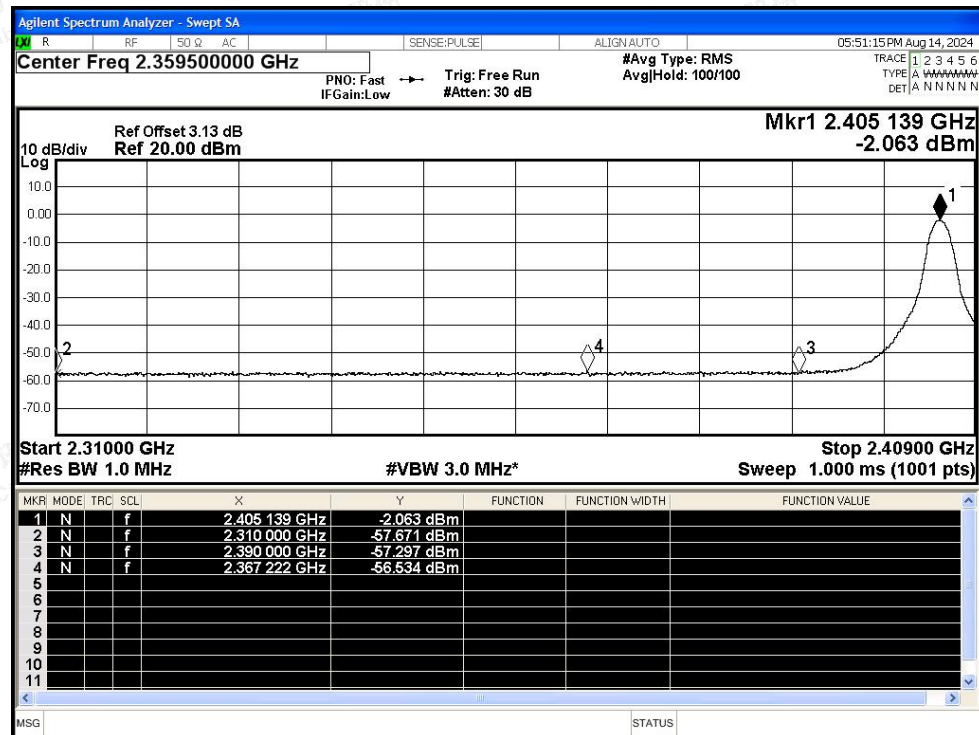


Test Graphs

Restrict Band NVNT ZIGBEE 2405MHz Ant1 Peak



Restrict Band NVNT ZIGBEE 2405MHz Ant1 Average



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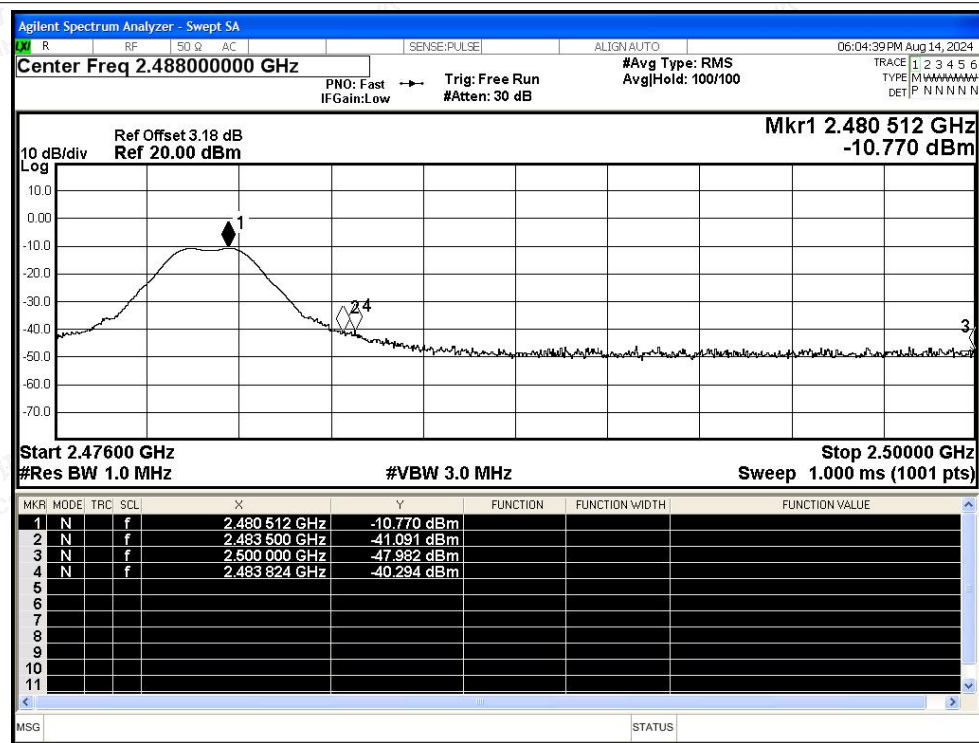
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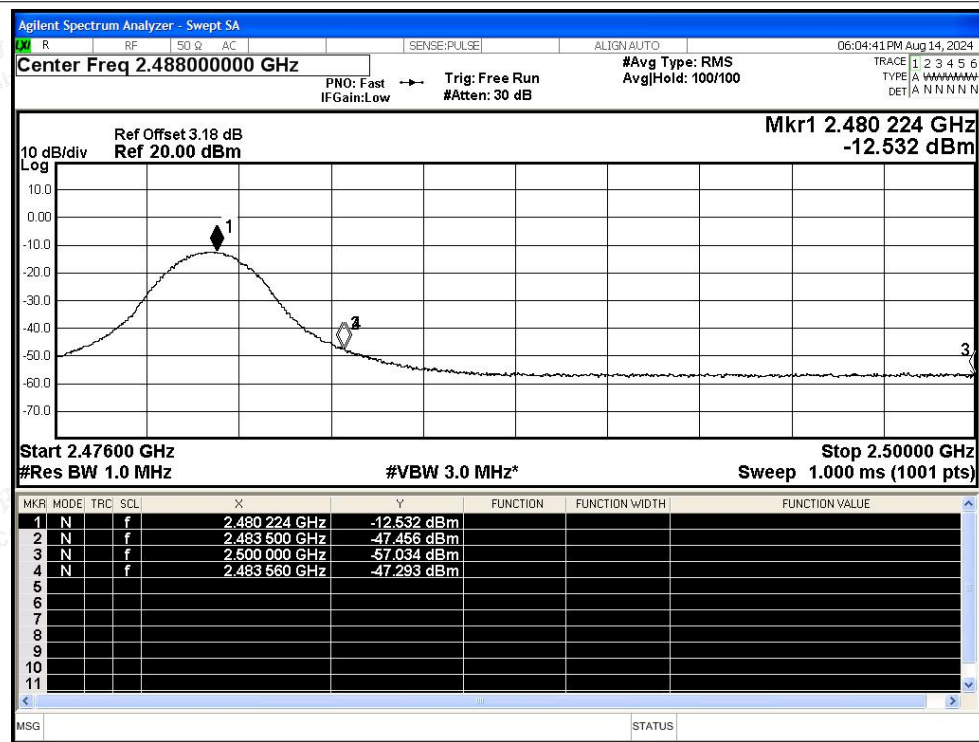
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Restrict Band NVNT ZIGBEE 2480MHz Ant1 Peak



Restrict Band NVNT ZIGBEE 2480MHz Ant1 Average



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