



Appendix C

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Smart Speaker

Test Model: L1

Environmental Conditions

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



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C.1 -6dB Bandwidth

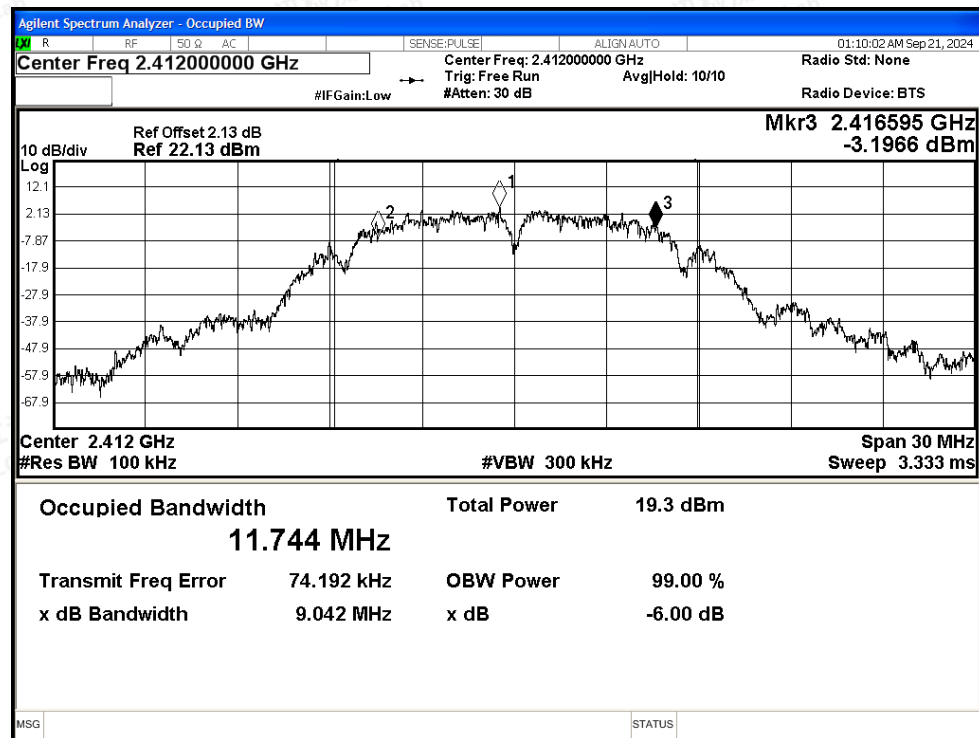
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant2	9.042	≥ 0.5	Pass
NVNT	b	2437	Ant2	8.457	≥ 0.5	Pass
NVNT	b	2462	Ant2	9.122	≥ 0.5	Pass
NVNT	g	2412	Ant2	16.395	≥ 0.5	Pass
NVNT	g	2437	Ant2	16.395	≥ 0.5	Pass
NVNT	g	2462	Ant2	16.3	≥ 0.5	Pass
NVNT	n20	2412	Ant2	17.554	≥ 0.5	Pass
NVNT	n20	2437	Ant2	17.155	≥ 0.5	Pass
NVNT	n20	2462	Ant2	17.14	≥ 0.5	Pass
NVNT	n40	2422	Ant2	35.804	≥ 0.5	Pass
NVNT	n40	2437	Ant2	34.846	≥ 0.5	Pass
NVNT	n40	2452	Ant2	35.049	≥ 0.5	Pass
NVNT	ax20	2412	Ant2	17.341	≥ 0.5	Pass
NVNT	ax20	2437	Ant2	17.018	≥ 0.5	Pass
NVNT	ax20	2462	Ant2	17.125	≥ 0.5	Pass
NVNT	ax40	2422	Ant2	35.367	≥ 0.5	Pass
NVNT	ax40	2437	Ant2	35.722	≥ 0.5	Pass
NVNT	ax40	2452	Ant2	34.797	≥ 0.5	Pass





Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant2



-6dB Bandwidth NVNT b 2437MHz Ant2



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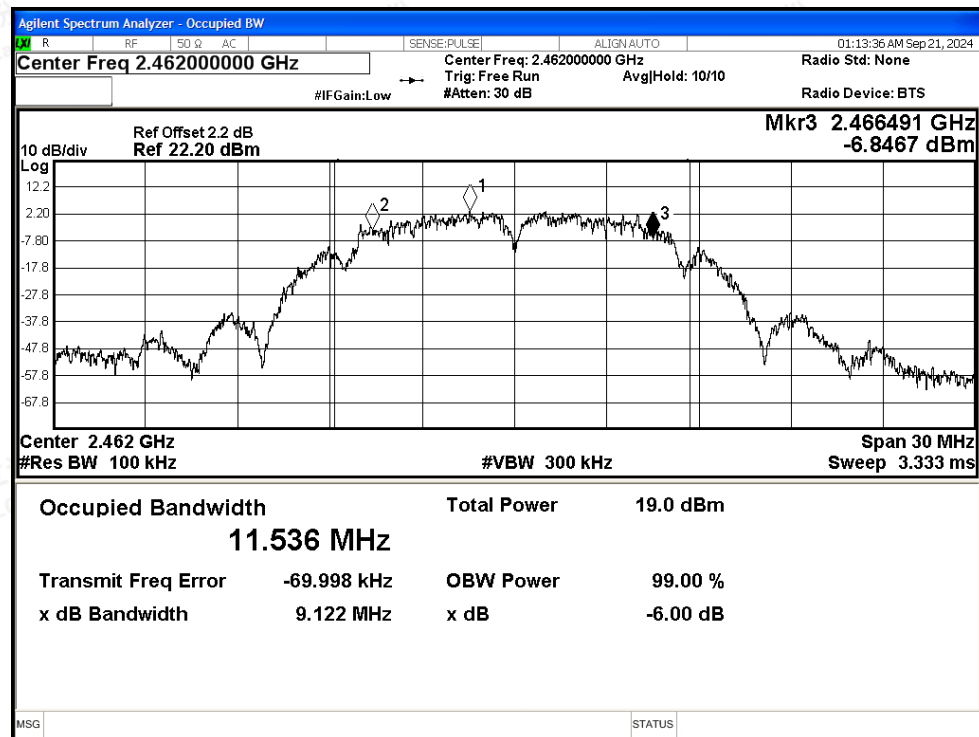
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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

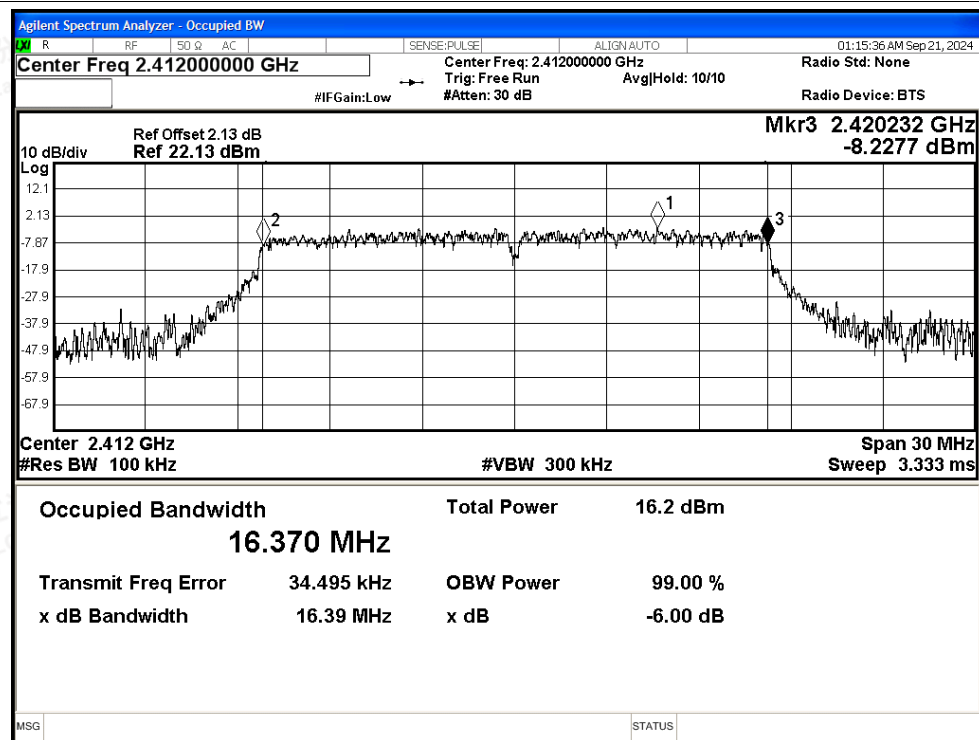
Scan code to check authenticity



-6dB Bandwidth NVNT b 2462MHz Ant2



-6dB Bandwidth NVNT g 2412MHz Ant2



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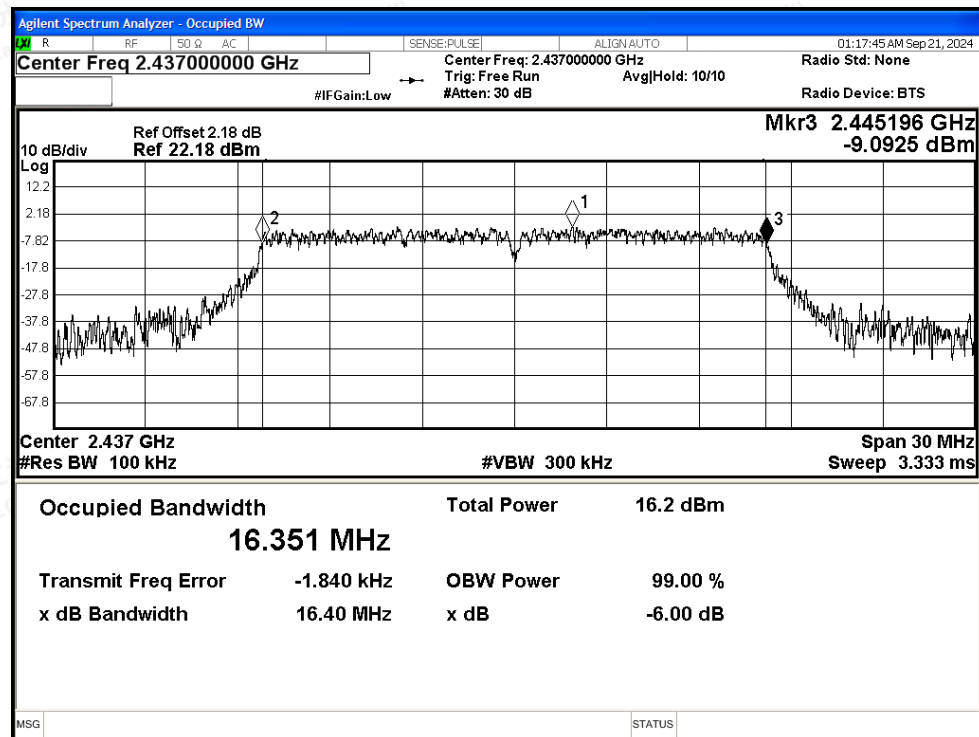
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

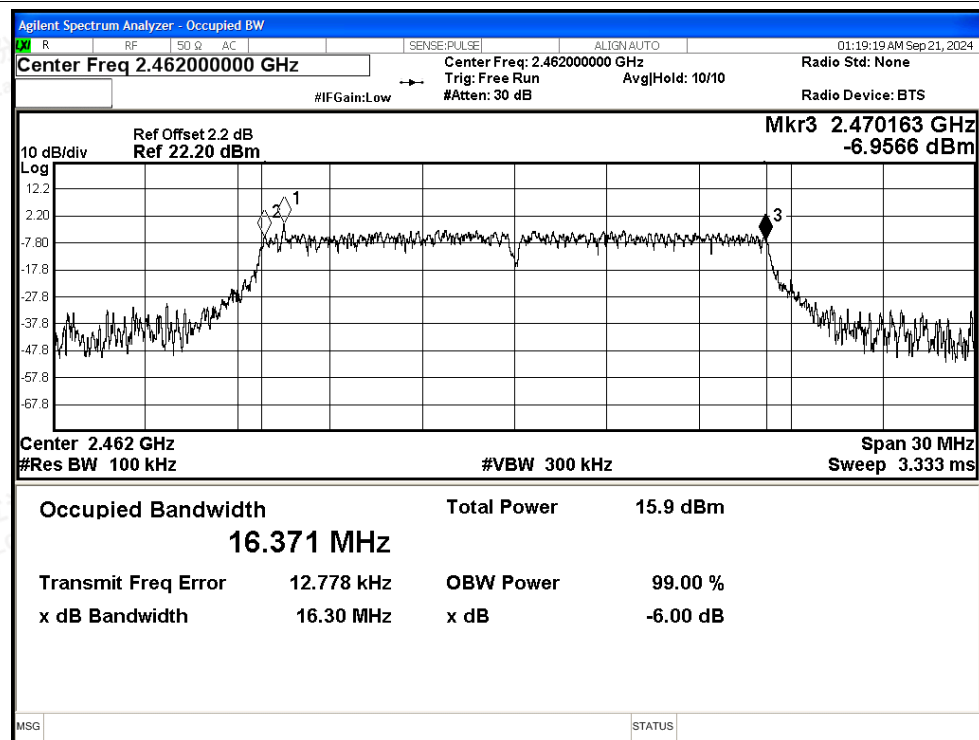
Scan code to check authenticity



-6dB Bandwidth NVNT g 2437MHz Ant2

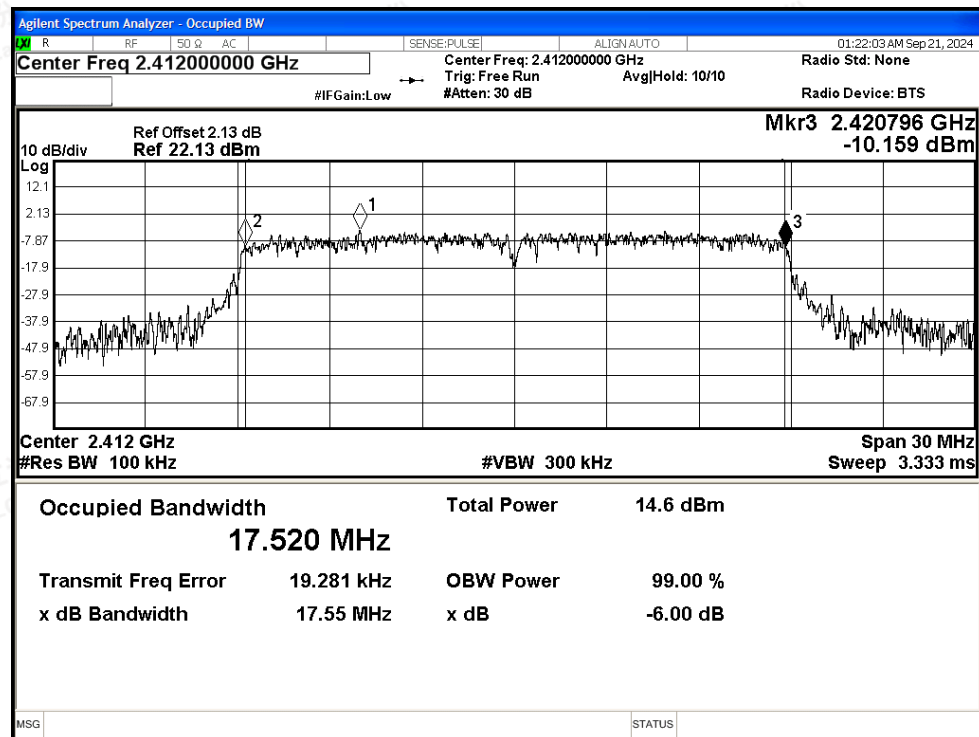


-6dB Bandwidth NVNT g 2462MHz Ant2

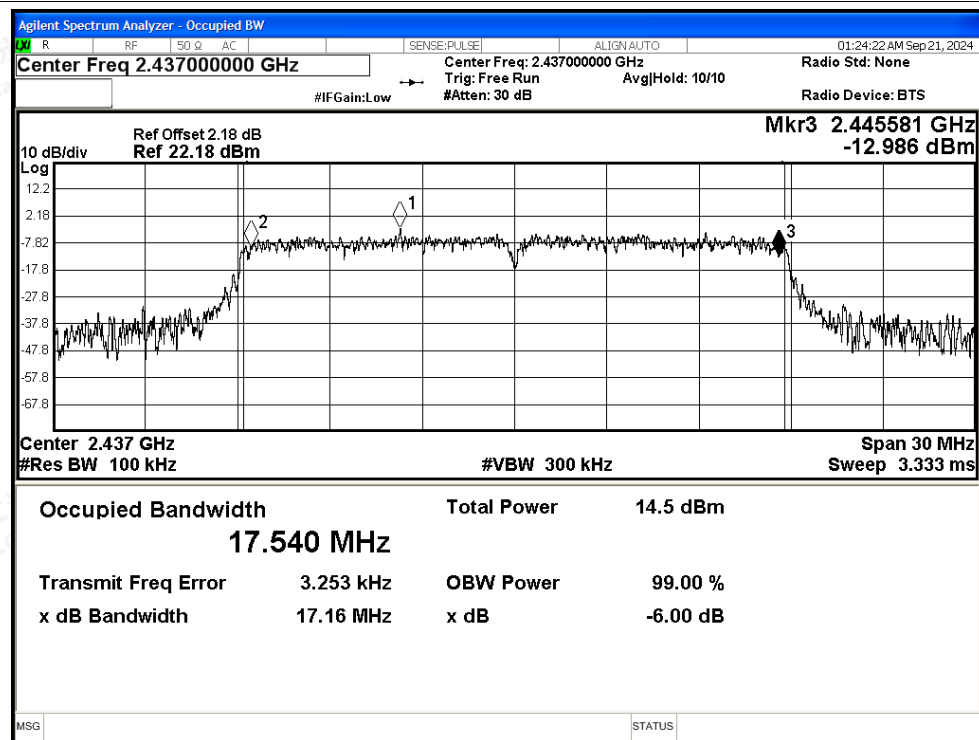




-6dB Bandwidth NVNT n20 2412MHz Ant2



-6dB Bandwidth NVNT n20 2437MHz Ant2



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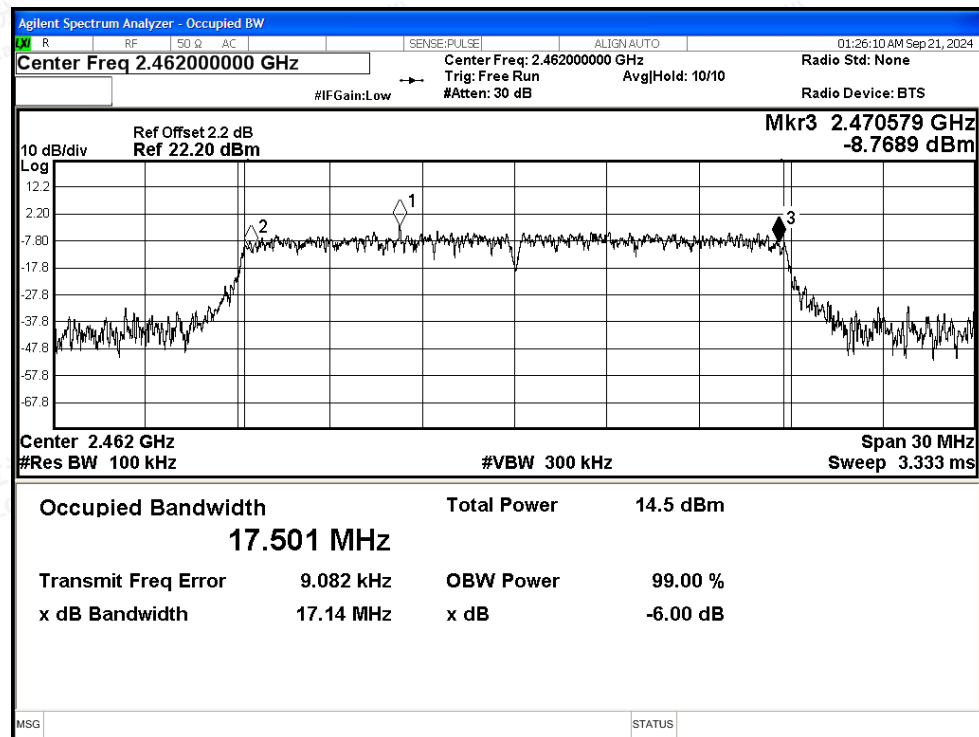
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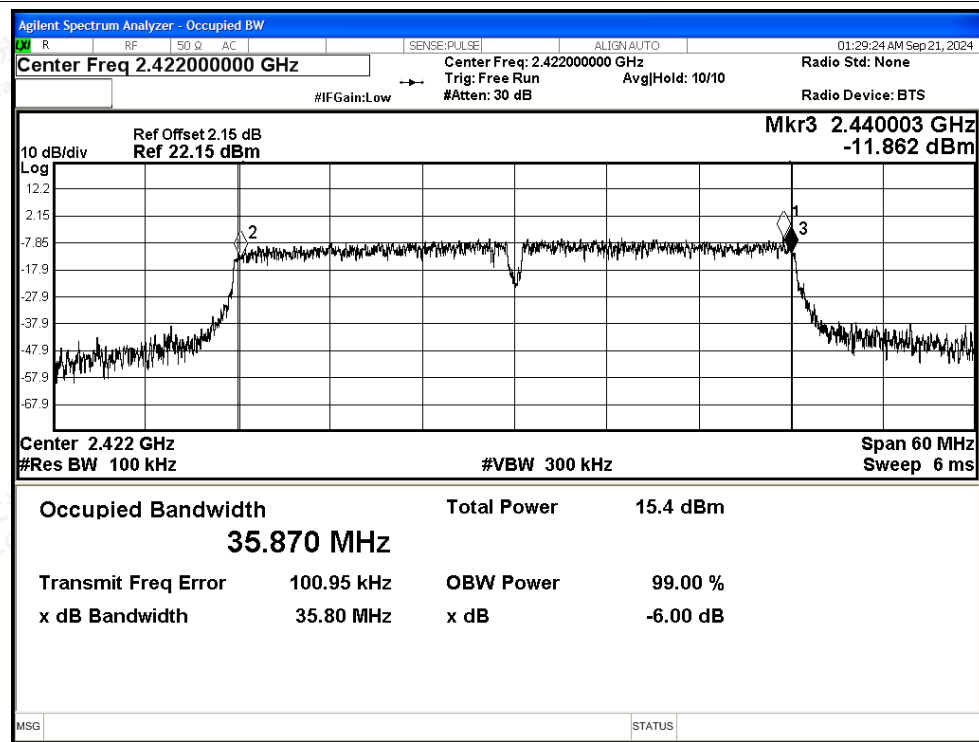
Scan code to check authenticity



-6dB Bandwidth NVNT n20 2462MHz Ant2



-6dB Bandwidth NVNT n40 2422MHz Ant2



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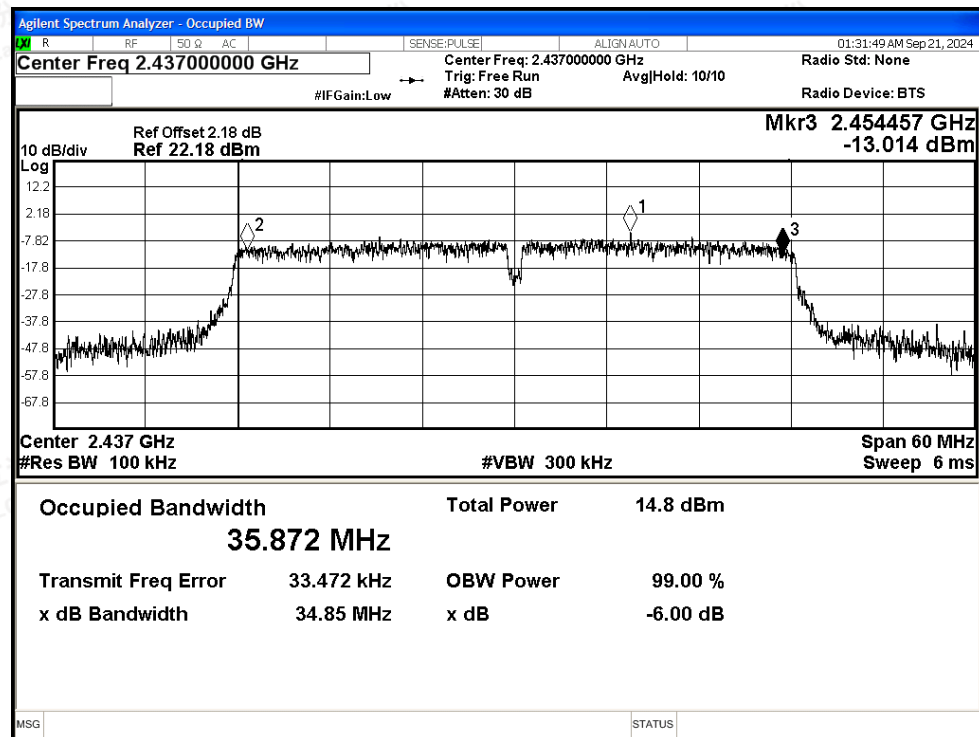
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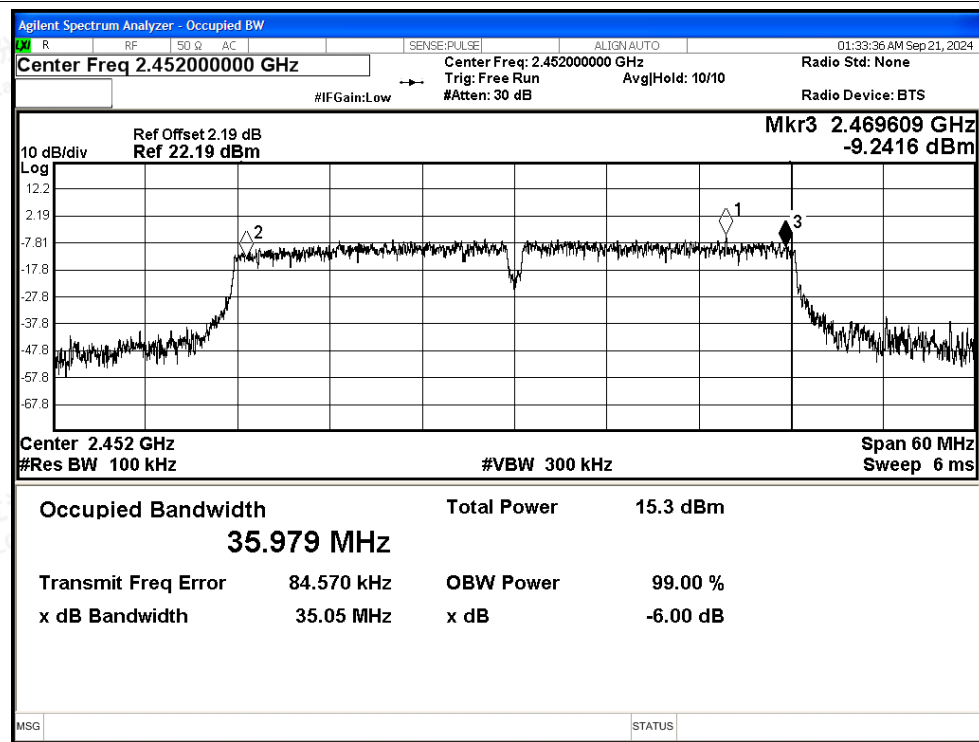
Scan code to check authenticity



-6dB Bandwidth NVNT n40 2437MHz Ant2



-6dB Bandwidth NVNT n40 2452MHz Ant2



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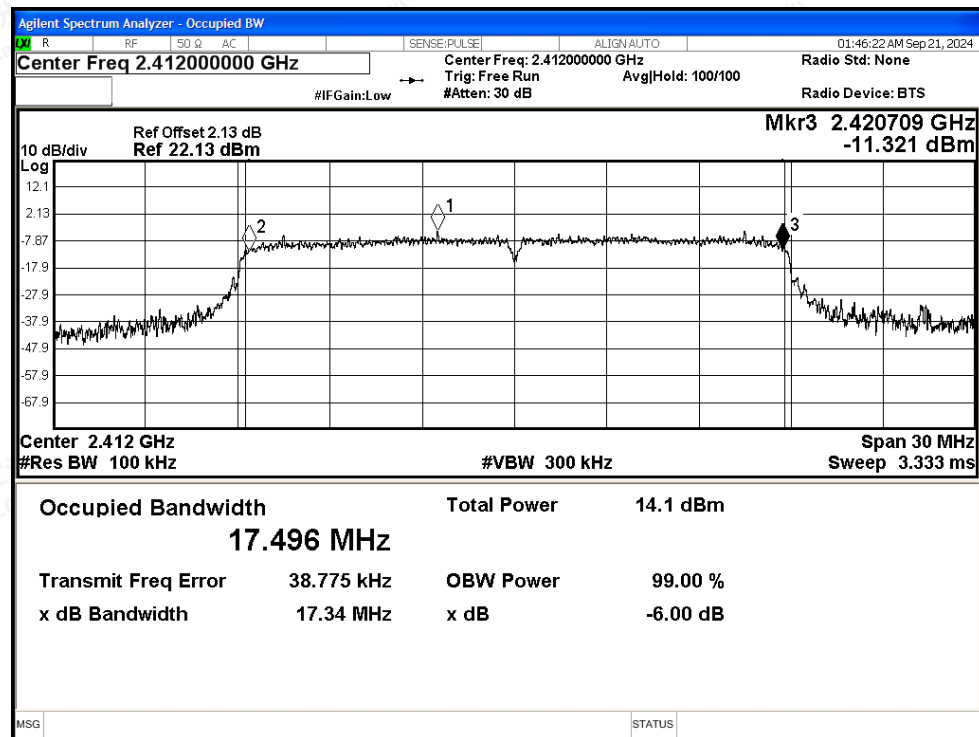
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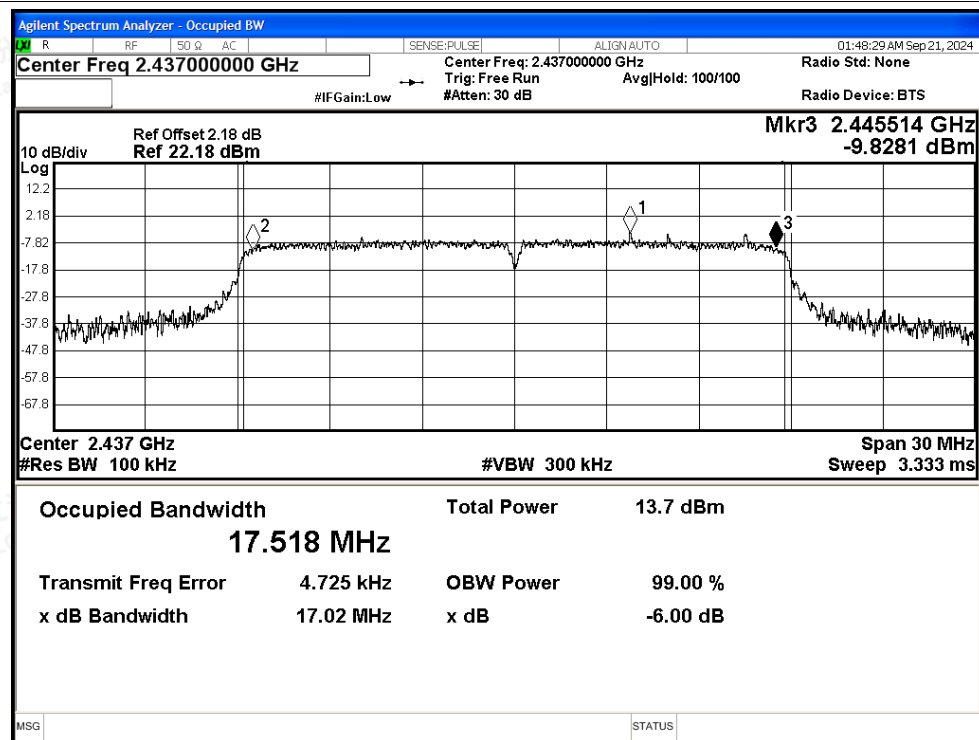
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-6dB Bandwidth NVNT ax20 2412MHz Ant2



-6dB Bandwidth NVNT ax20 2437MHz Ant2



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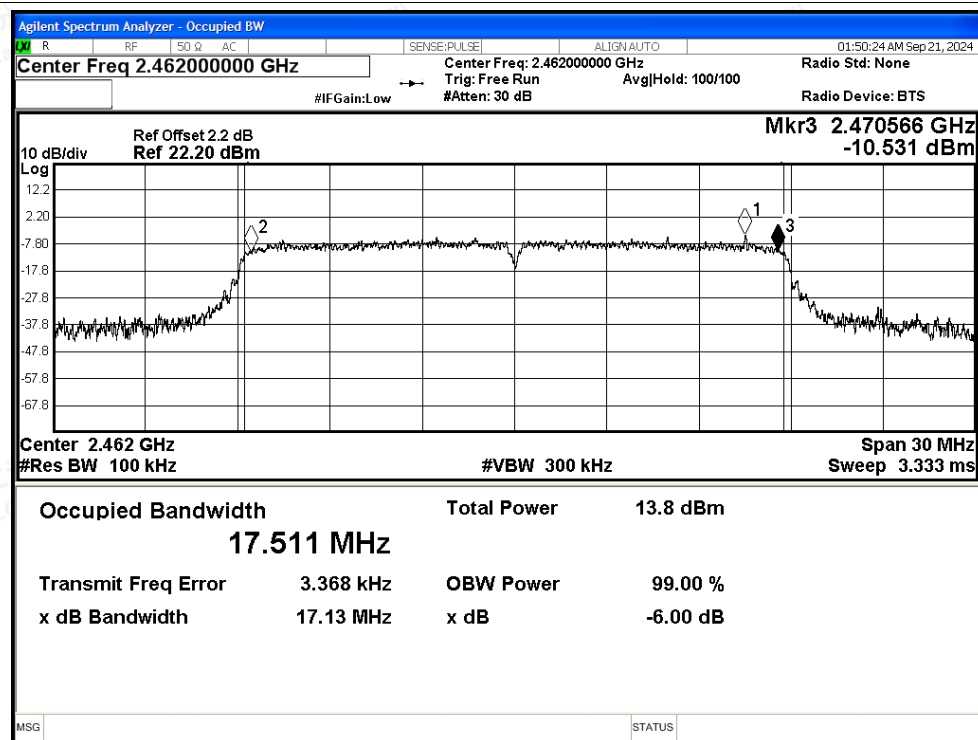
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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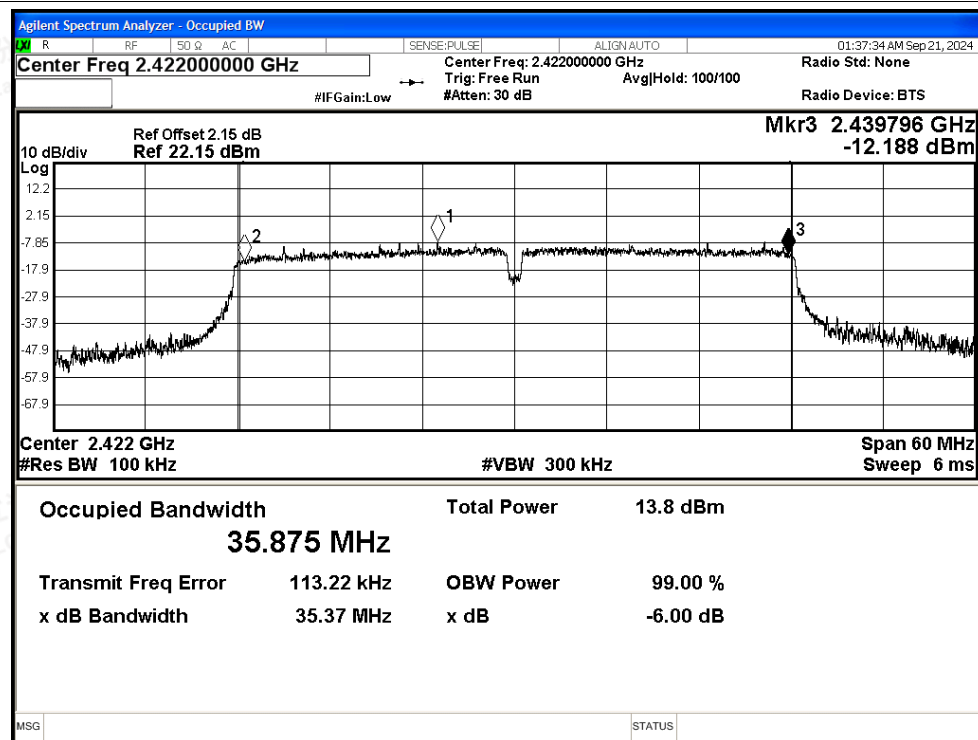
Scan code to check authenticity



-6dB Bandwidth NVNT ax20 2462MHz Ant2



-6dB Bandwidth NVNT ax40 2422MHz Ant2



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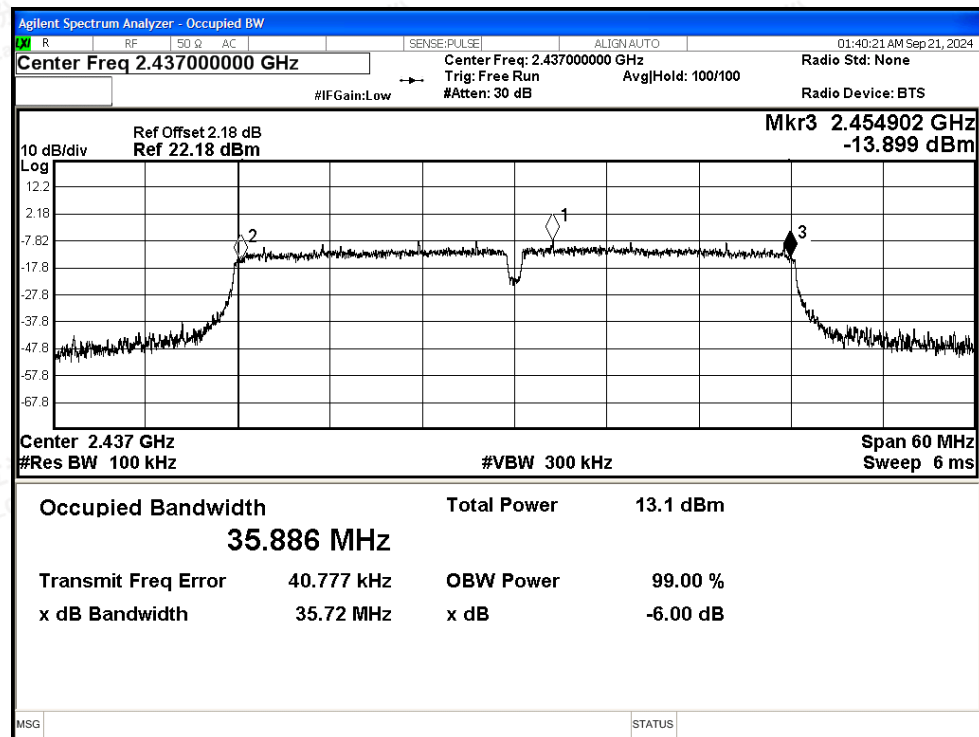
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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

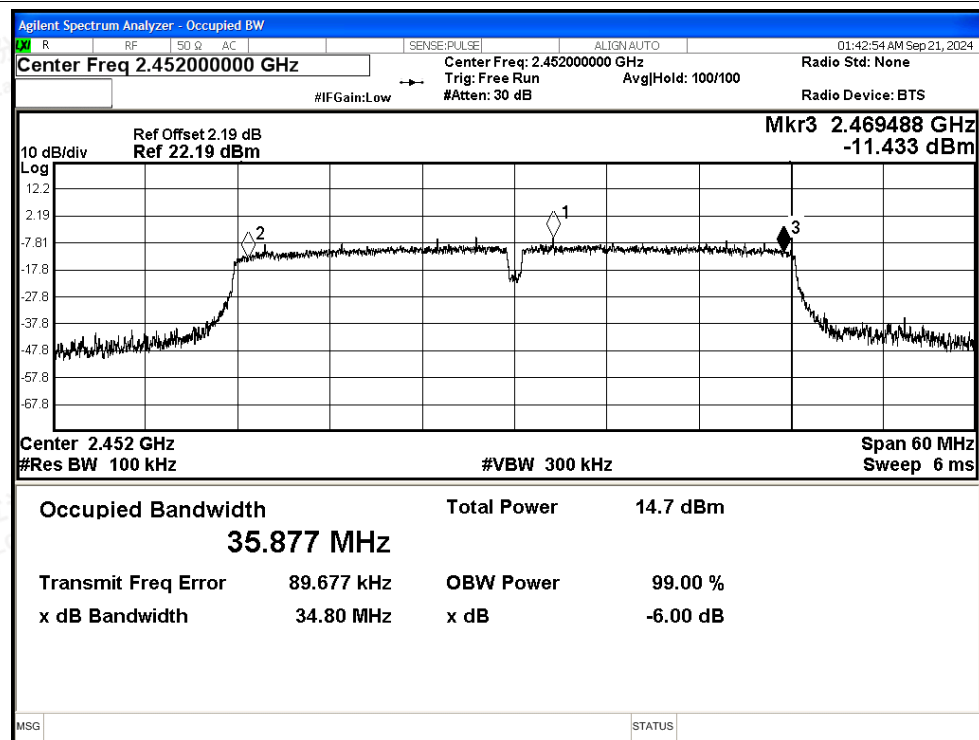
Scan code to check authenticity



-6dB Bandwidth NVNT ax40 2437MHz Ant2



-6dB Bandwidth NVNT ax40 2452MHz Ant2



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C.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant2	15.55	30	Pass
NVNT	b	2437	Ant2	15.85	30	Pass
NVNT	b	2462	Ant2	15.54	30	Pass
NVNT	g	2412	Ant2	14.78	30	Pass
NVNT	g	2437	Ant2	14.92	30	Pass
NVNT	g	2462	Ant2	14.61	30	Pass
NVNT	n20	2412	Ant2	13.05	30	Pass
NVNT	n20	2437	Ant2	13.02	30	Pass
NVNT	n20	2462	Ant2	13.62	30	Pass
NVNT	n40	2422	Ant2	13.70	30	Pass
NVNT	n40	2437	Ant2	13.04	30	Pass
NVNT	n40	2452	Ant2	13.67	30	Pass
NVNT	ax20	2412	Ant2	12.74	30	Pass
NVNT	ax20	2437	Ant2	12.37	30	Pass
NVNT	ax20	2462	Ant2	12.41	30	Pass
NVNT	ax40	2422	Ant2	12.28	30	Pass
NVNT	ax40	2437	Ant2	12.59	30	Pass
NVNT	ax40	2452	Ant2	12.26	30	Pass





C.3 Maximum Power Spectral Density Level

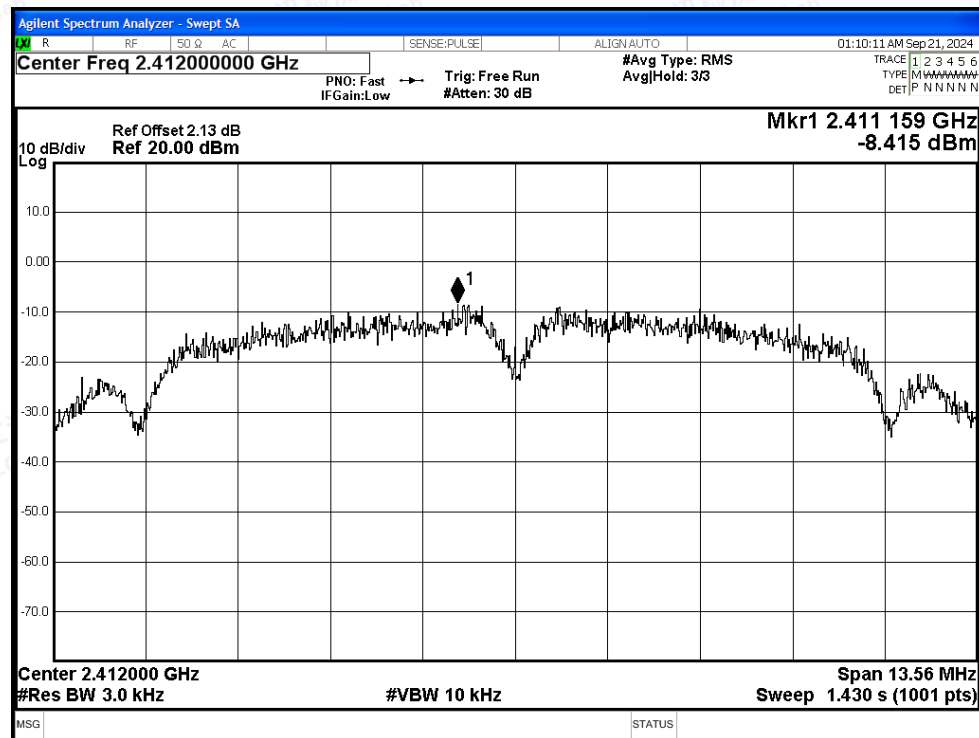
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant2	-8.41	0	-8.41	8	Pass
NVNT	b	2437	Ant2	-8.97	0	-8.97	8	Pass
NVNT	b	2462	Ant2	-7.3	0	-7.3	8	Pass
NVNT	g	2412	Ant2	-14.05	0	-14.05	8	Pass
NVNT	g	2437	Ant2	-13.43	0	-13.43	8	Pass
NVNT	g	2462	Ant2	-14.11	0	-14.11	8	Pass
NVNT	n20	2412	Ant2	-14.64	0	-14.64	8	Pass
NVNT	n20	2437	Ant2	-14.84	0	-14.84	8	Pass
NVNT	n20	2462	Ant2	-15.7	0	-15.7	8	Pass
NVNT	n40	2422	Ant2	-18.46	0	-18.46	8	Pass
NVNT	n40	2437	Ant2	-16.72	0	-16.72	8	Pass
NVNT	n40	2452	Ant2	-18.69	0	-18.69	8	Pass
NVNT	ax20	2412	Ant2	-17.03	0	-17.03	8	Pass
NVNT	ax20	2437	Ant2	-17.38	0	-17.38	8	Pass
NVNT	ax20	2462	Ant2	-17.27	0	-17.27	8	Pass
NVNT	ax40	2422	Ant2	-20.87	0	-20.87	8	Pass
NVNT	ax40	2437	Ant2	-21.14	0	-21.14	8	Pass
NVNT	ax40	2452	Ant2	-19.2	0	-19.2	8	Pass



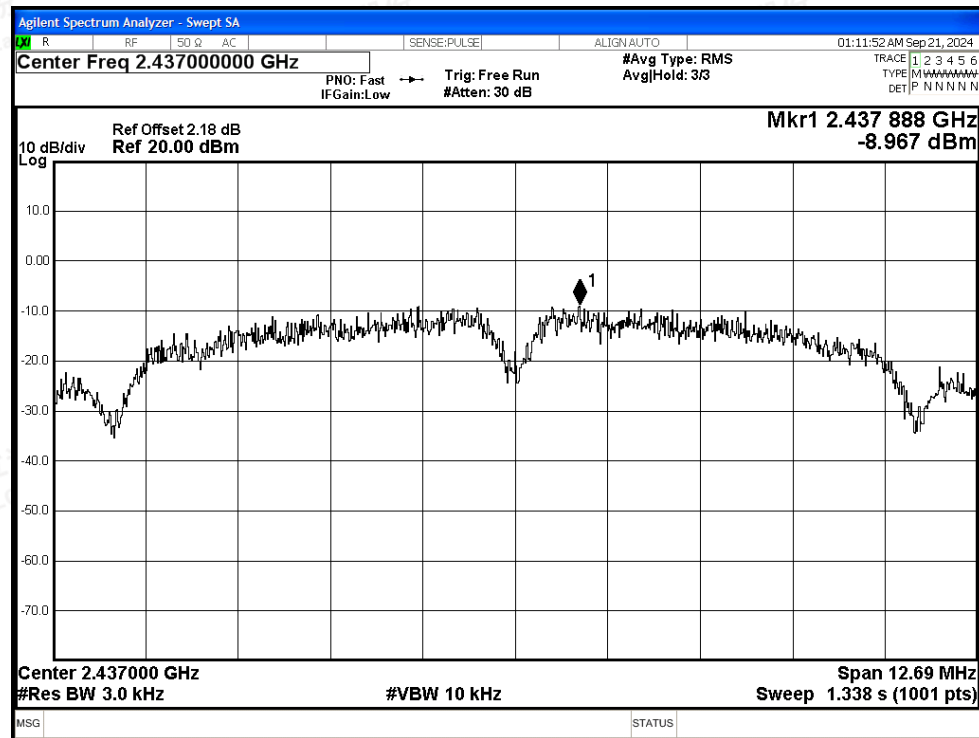


Test Graphs

PSD NVNT b 2412MHz Ant2

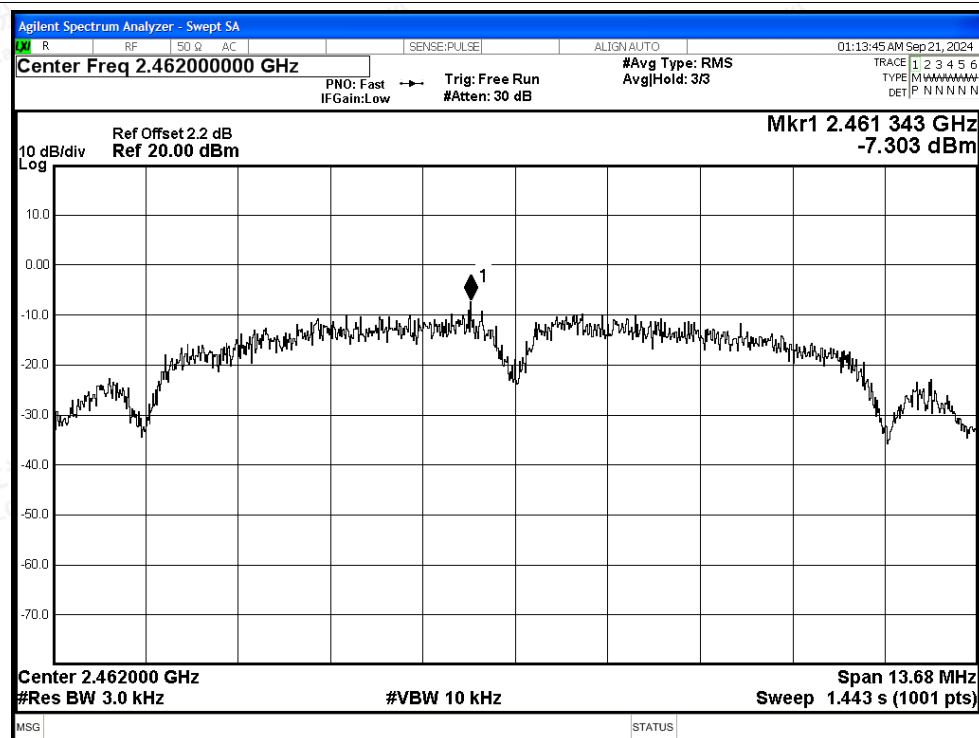


PSD NVNT b 2437MHz Ant2

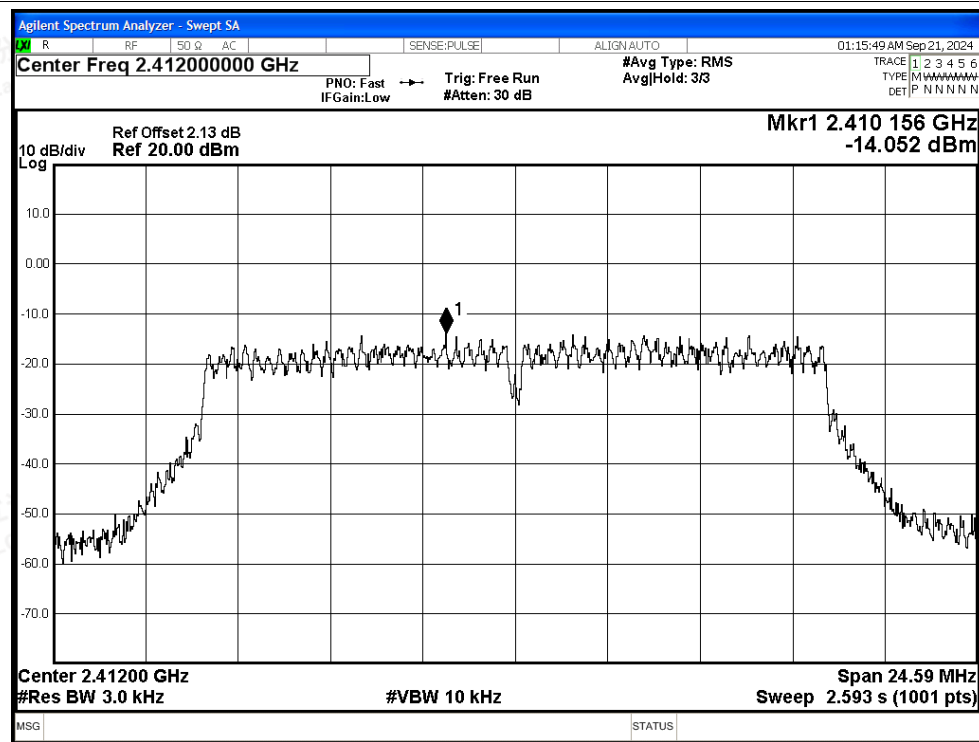




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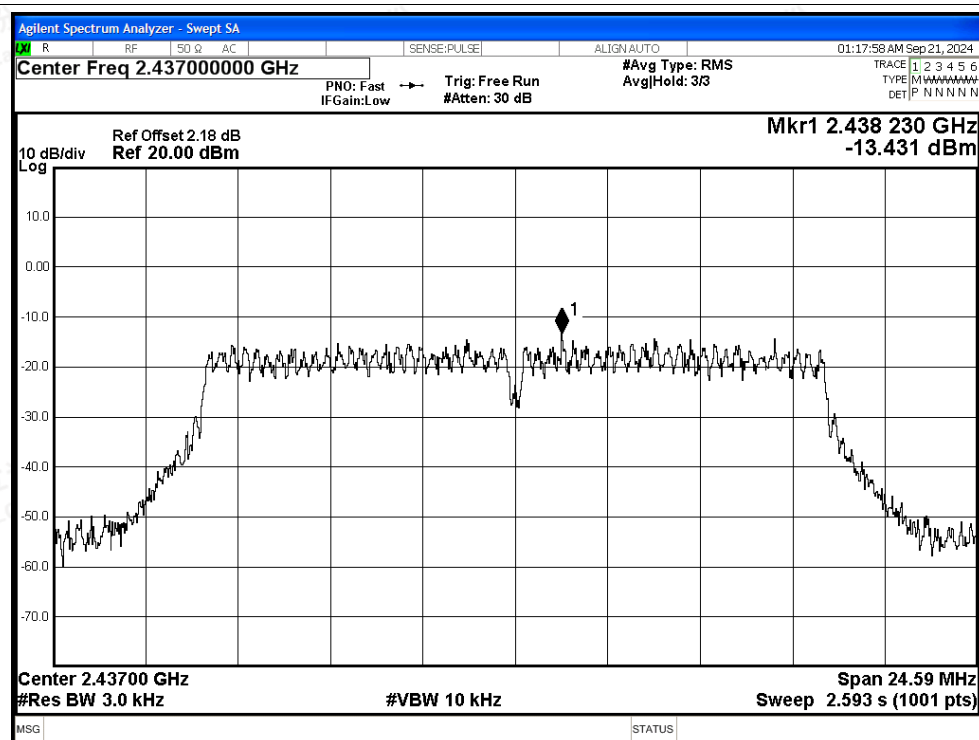


PSD NVNT g 2412MHz Ant2

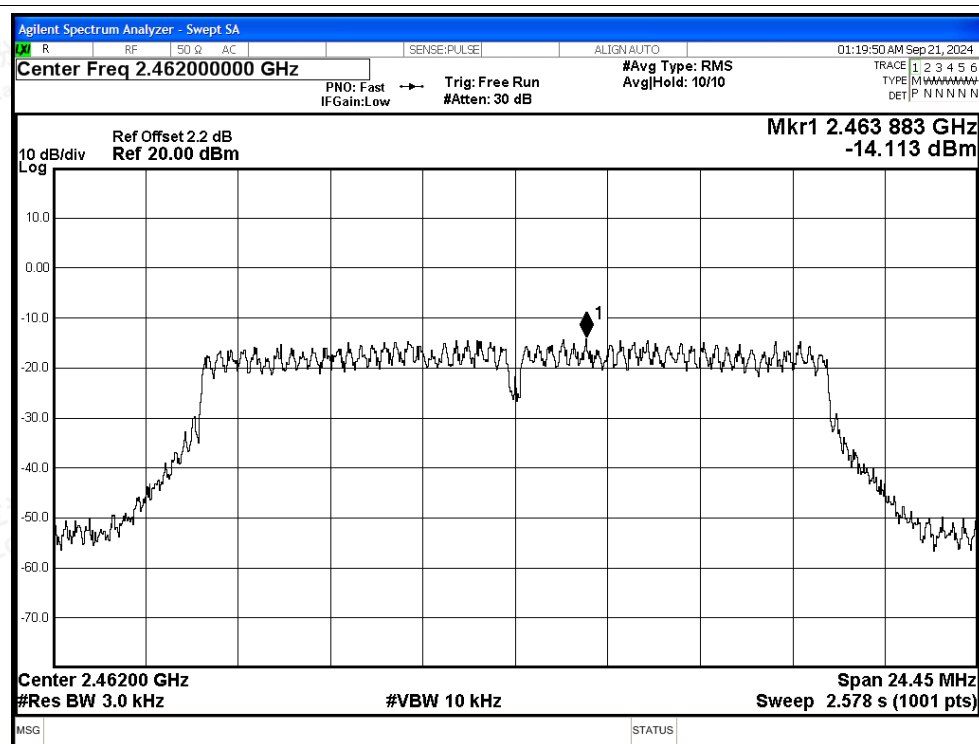


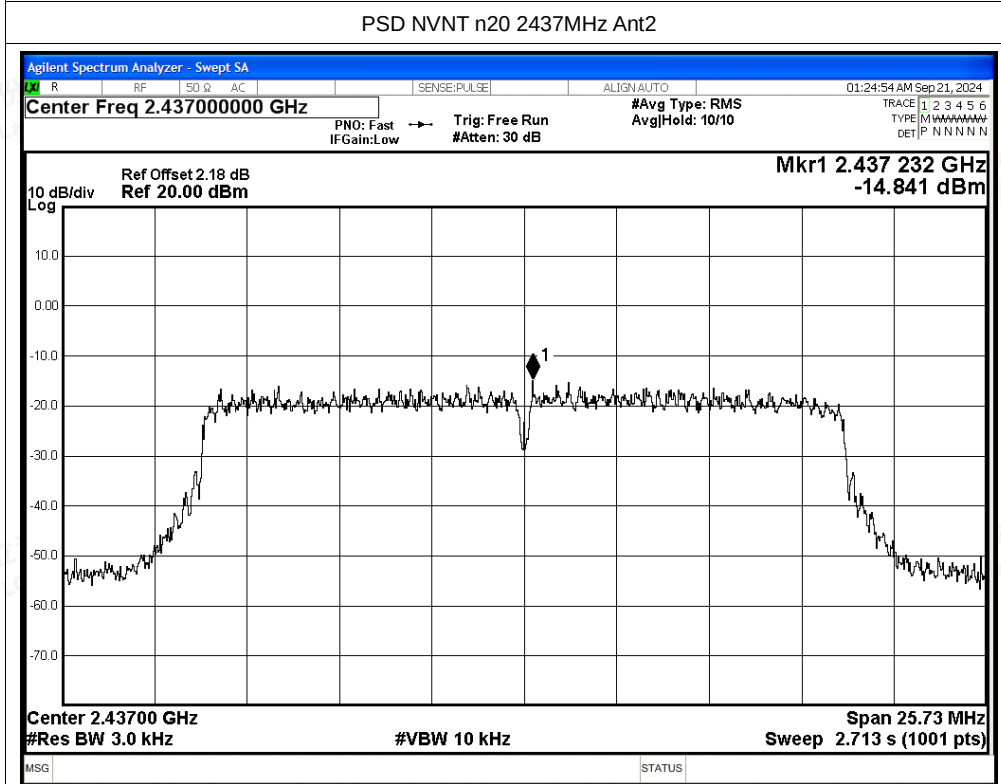
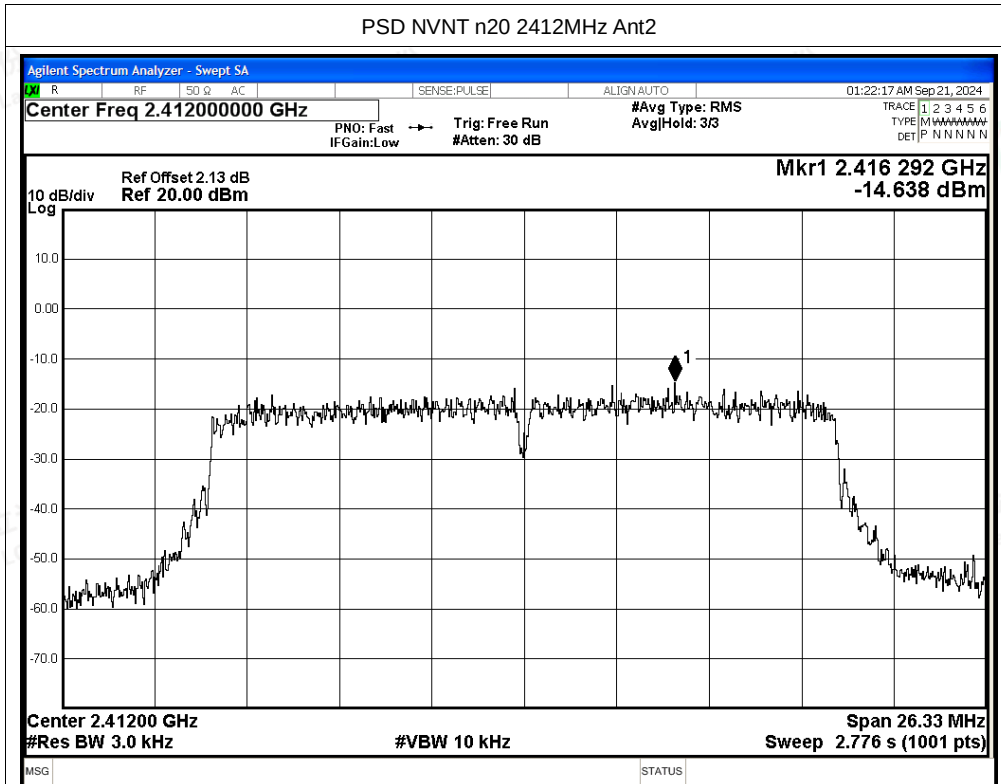


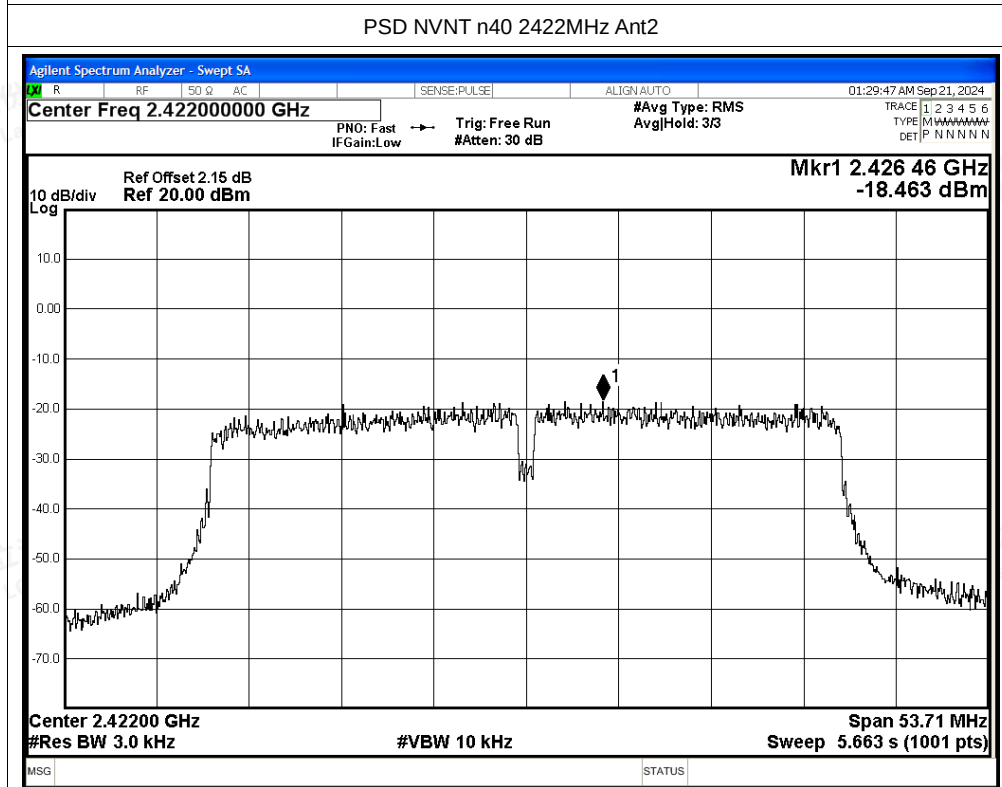
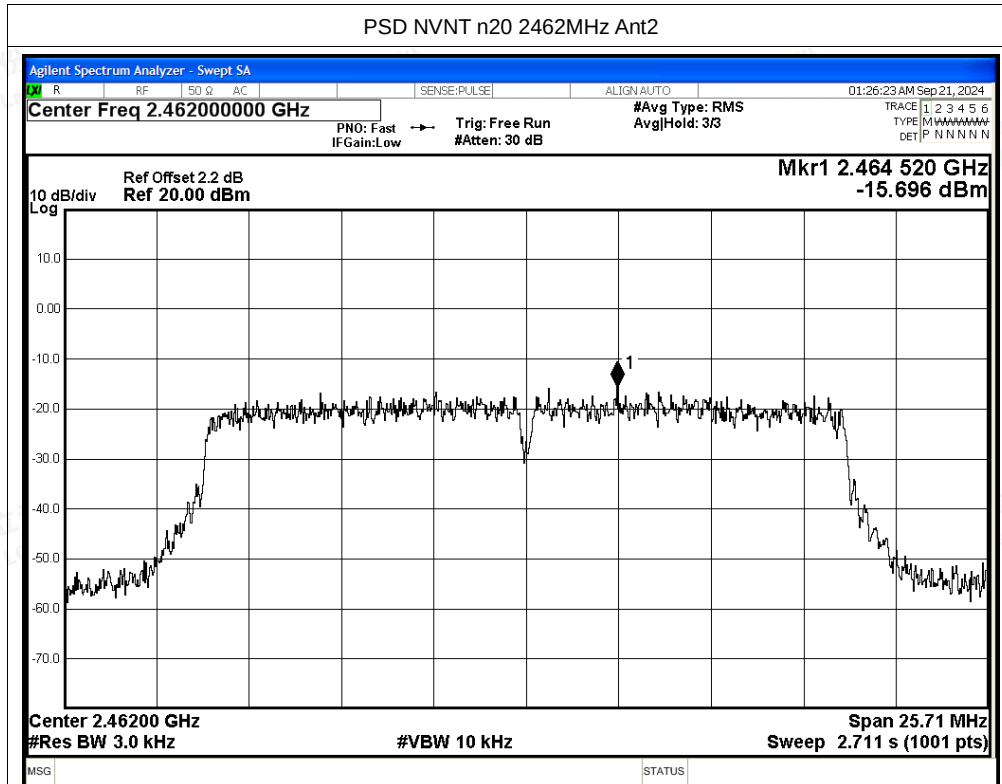
PSD NVNT g 2437MHz Ant2

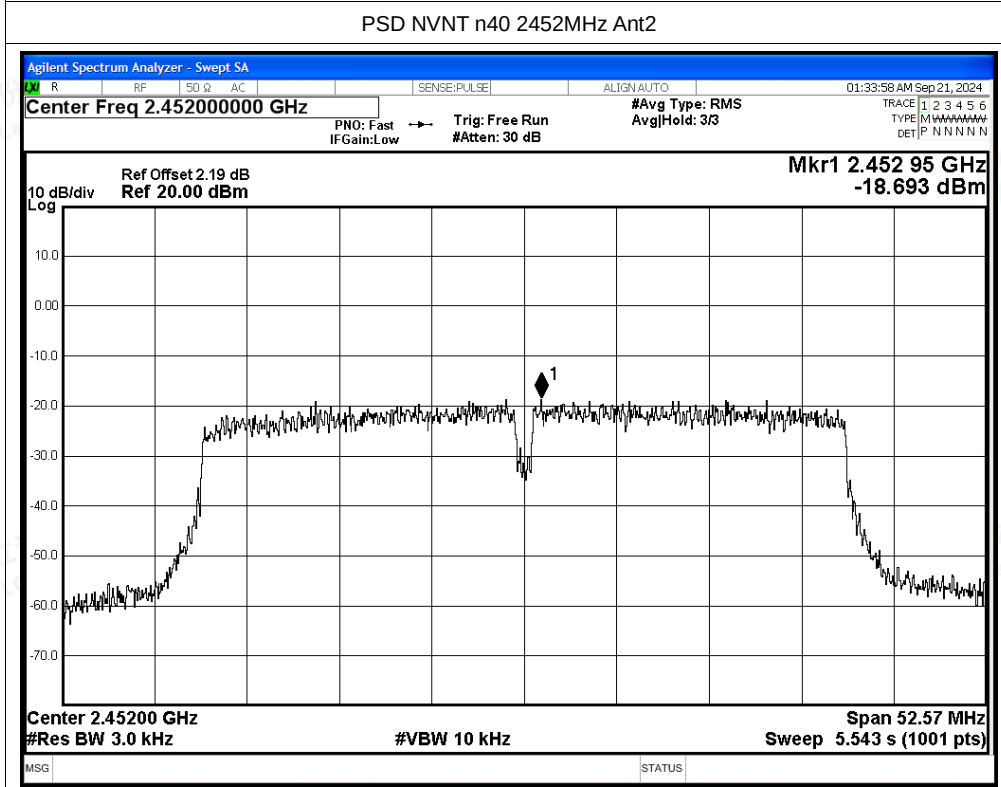
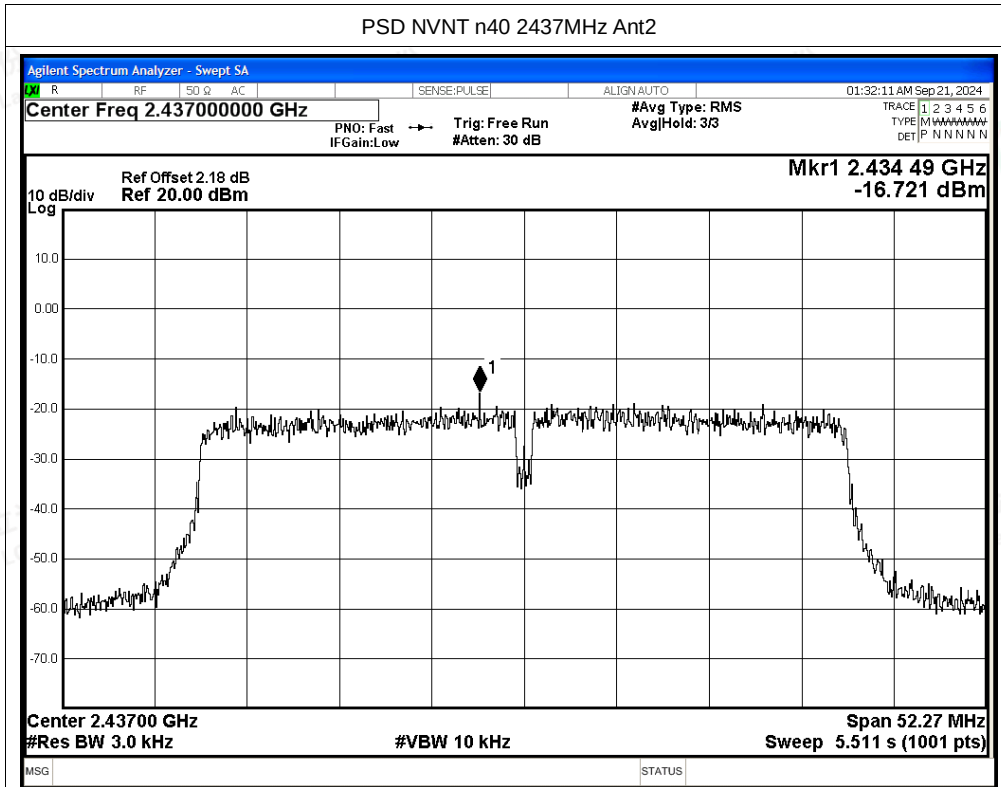


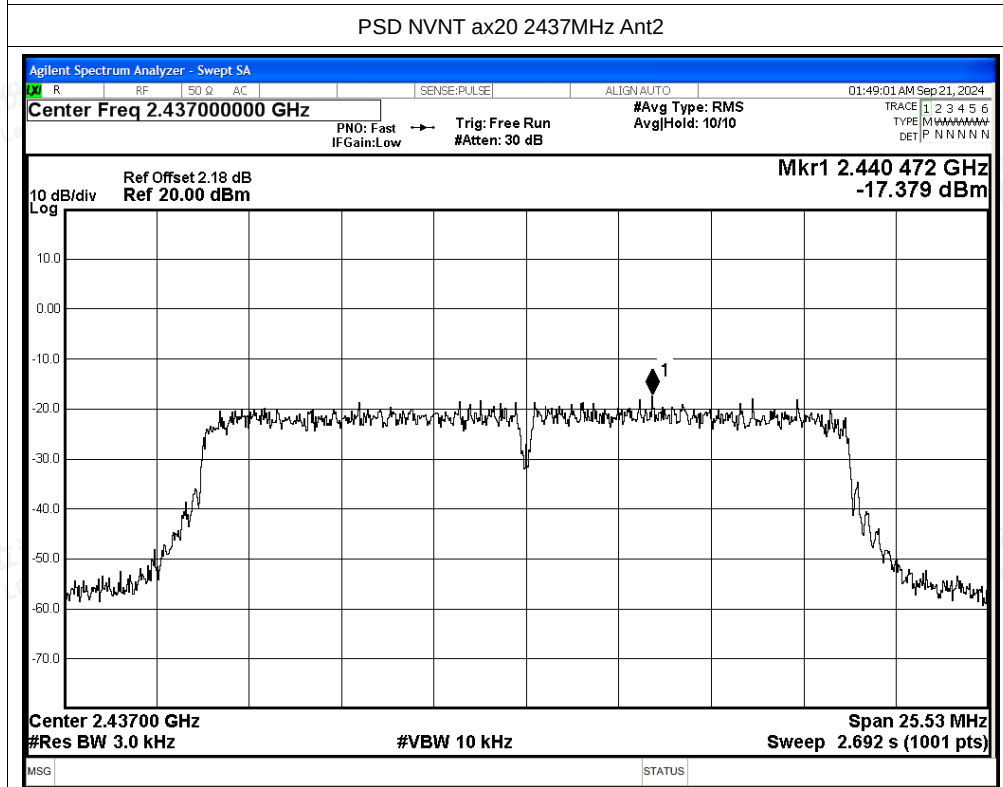
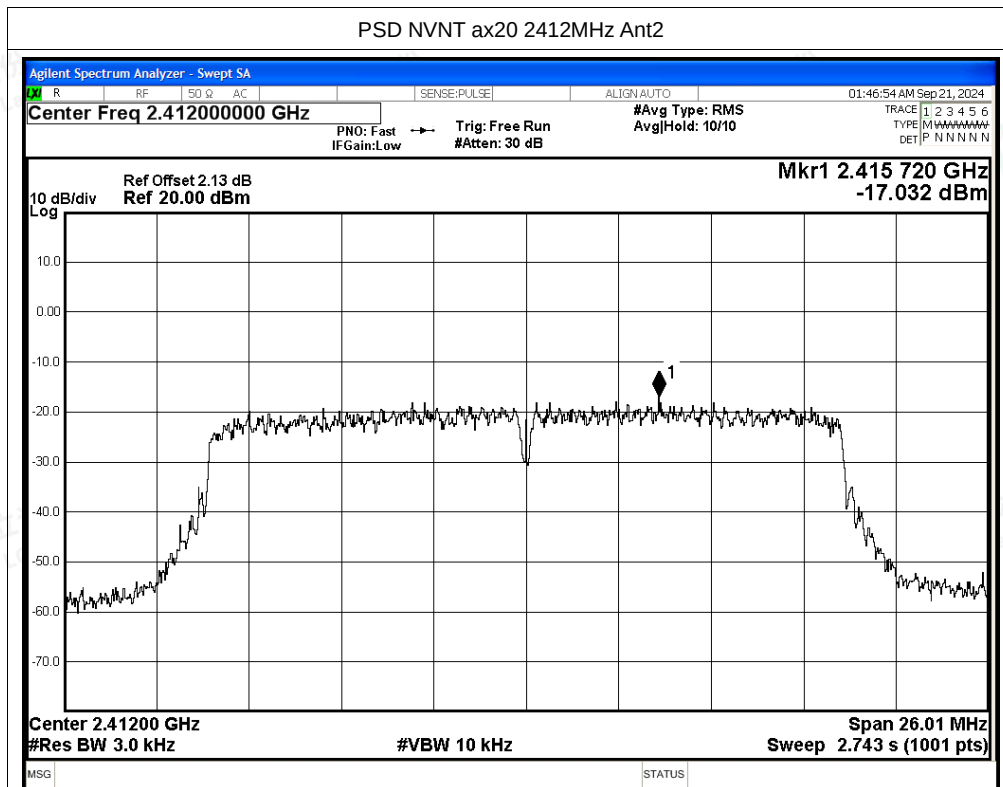
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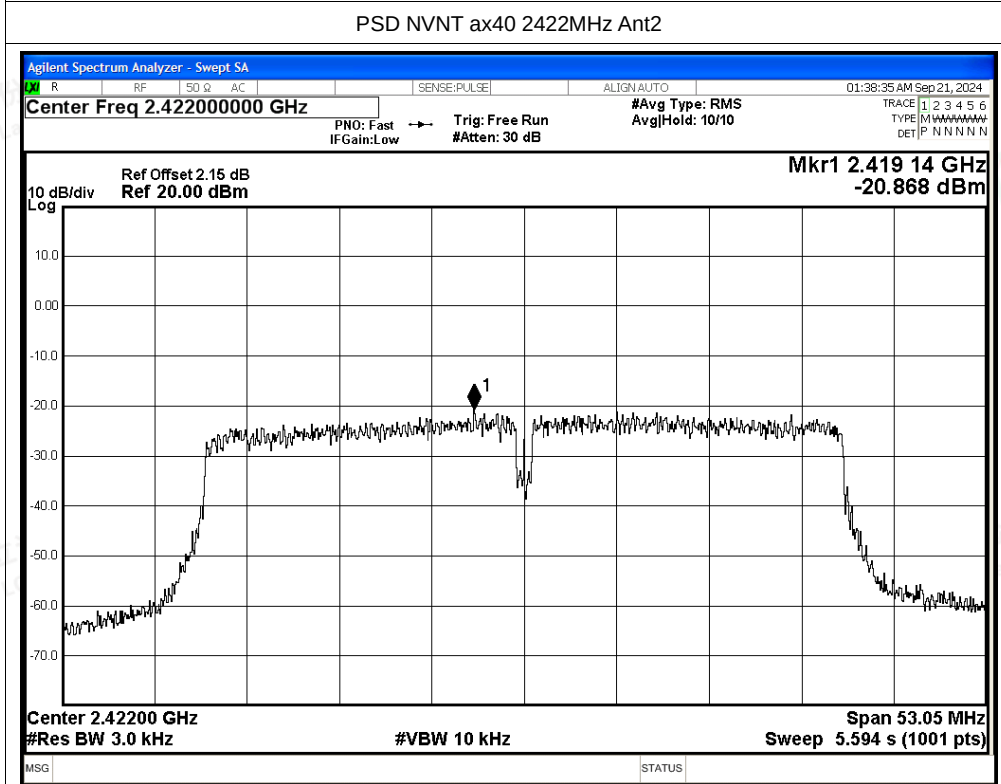
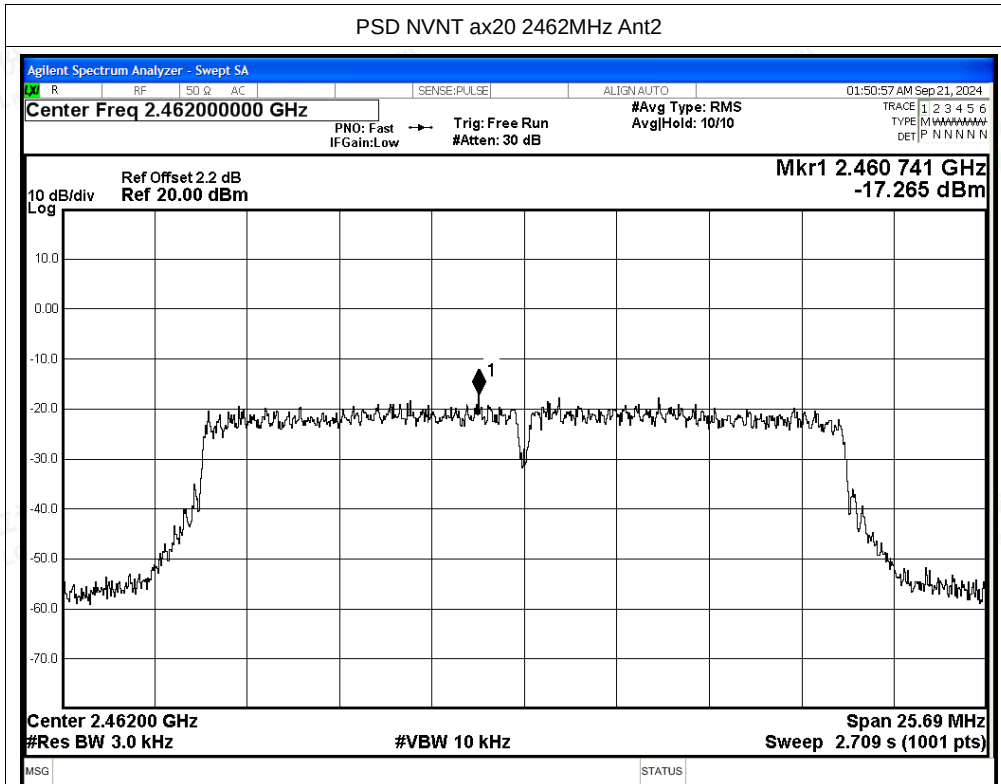






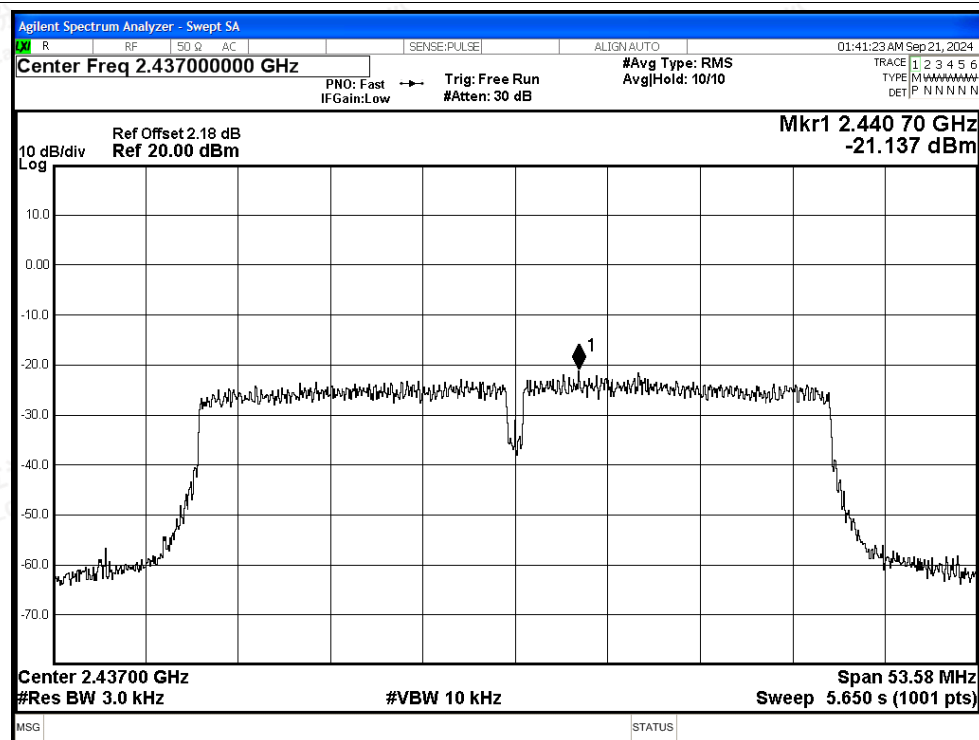




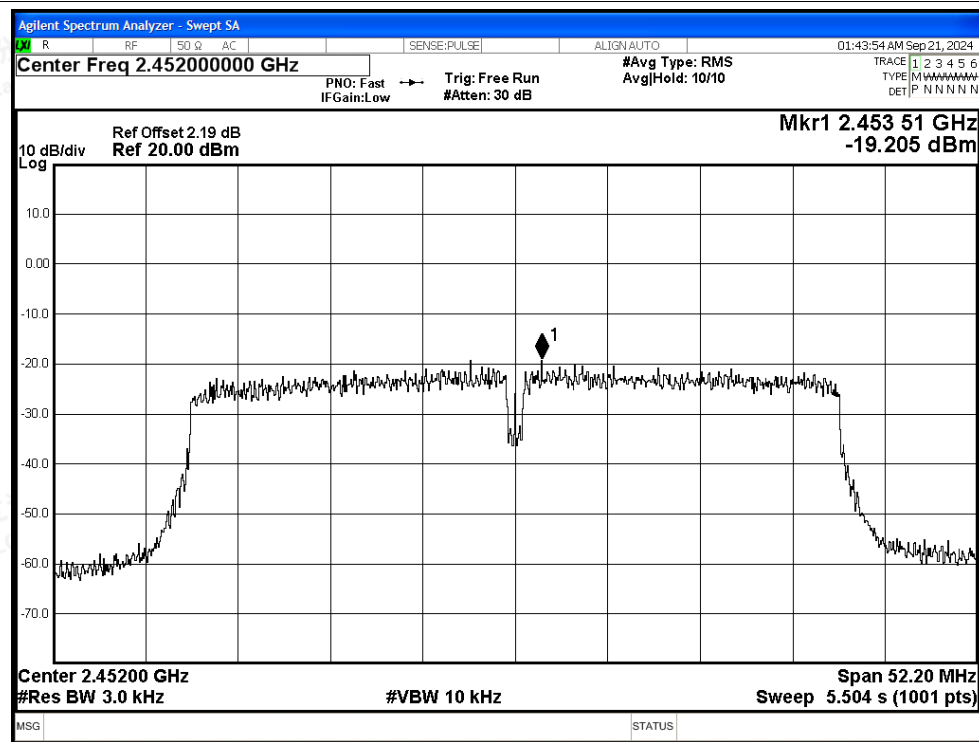




PSD NVNT ax40 2437MHz Ant2



PSD NVNT ax40 2452MHz Ant2





C.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant2	-49.44	-20	Pass
NVNT	b	2462	Ant2	-58.56	-20	Pass
NVNT	g	2412	Ant2	-33.98	-20	Pass
NVNT	g	2462	Ant2	-48.05	-20	Pass
NVNT	n20	2412	Ant2	-34.02	-20	Pass
NVNT	n20	2462	Ant2	-45.78	-20	Pass
NVNT	n40	2422	Ant2	-35.33	-20	Pass
NVNT	n40	2452	Ant2	-39.9	-20	Pass
NVNT	ax20	2412	Ant2	-31.22	-20	Pass
NVNT	ax20	2462	Ant2	-40.2	-20	Pass
NVNT	ax40	2422	Ant2	-35.33	-20	Pass
NVNT	ax40	2452	Ant2	-36.66	-20	Pass



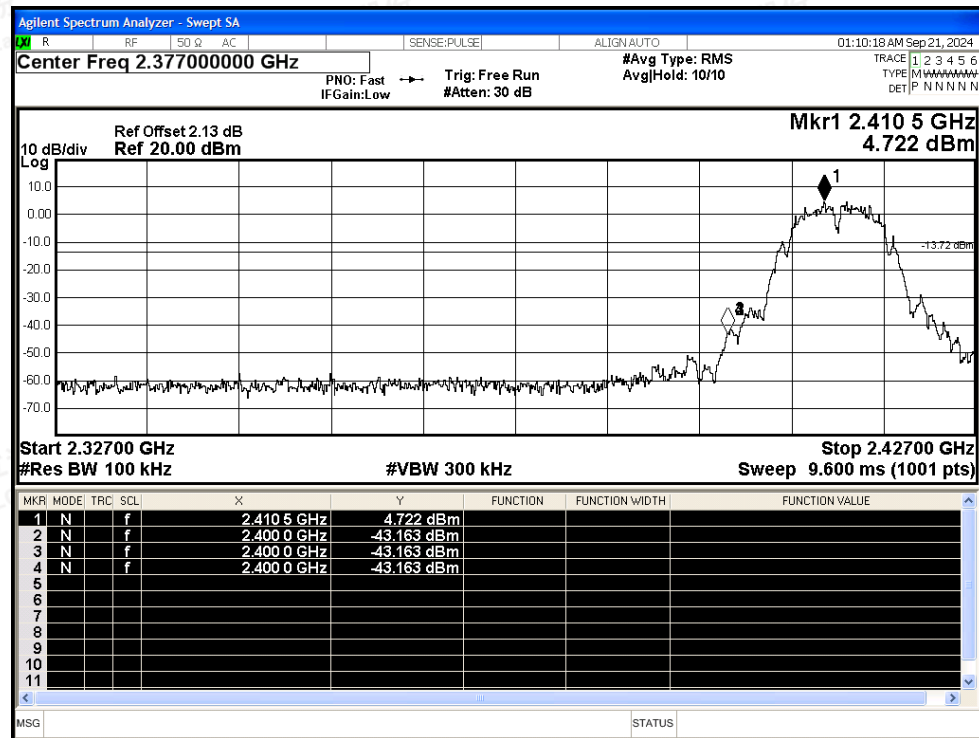


Test Graphs

Band Edge NVNT b 2412MHz Ant2 Ref

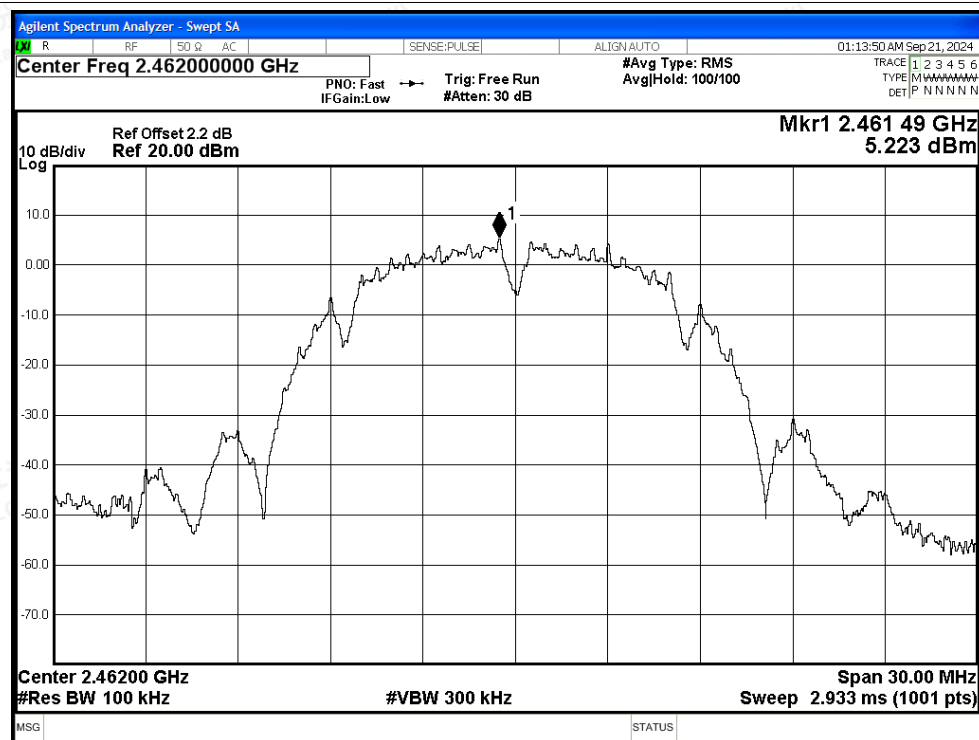


Band Edge NVNT b 2412MHz Ant2 Emission

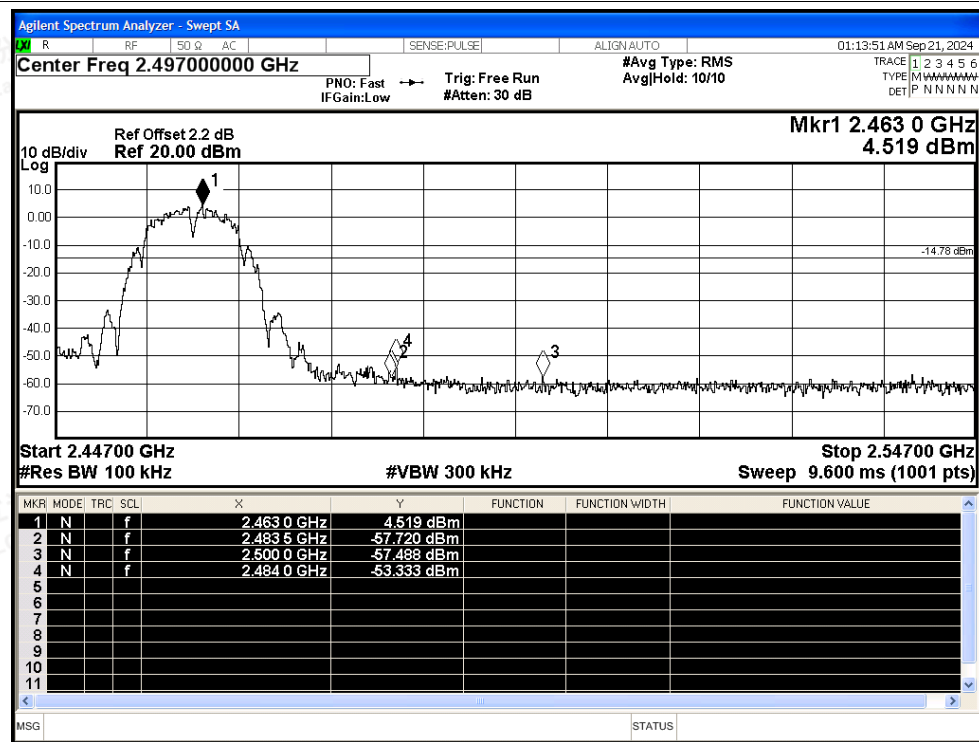




Band Edge NVNT b 2462MHz Ant2 Ref

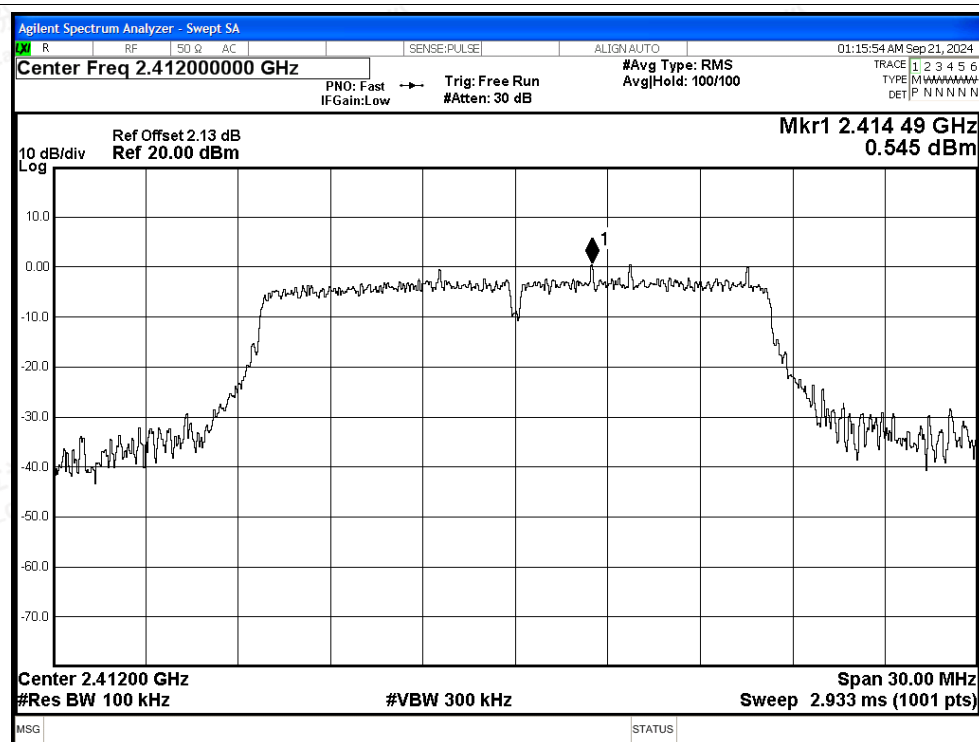


Band Edge NVNT b 2462MHz Ant2 Emission

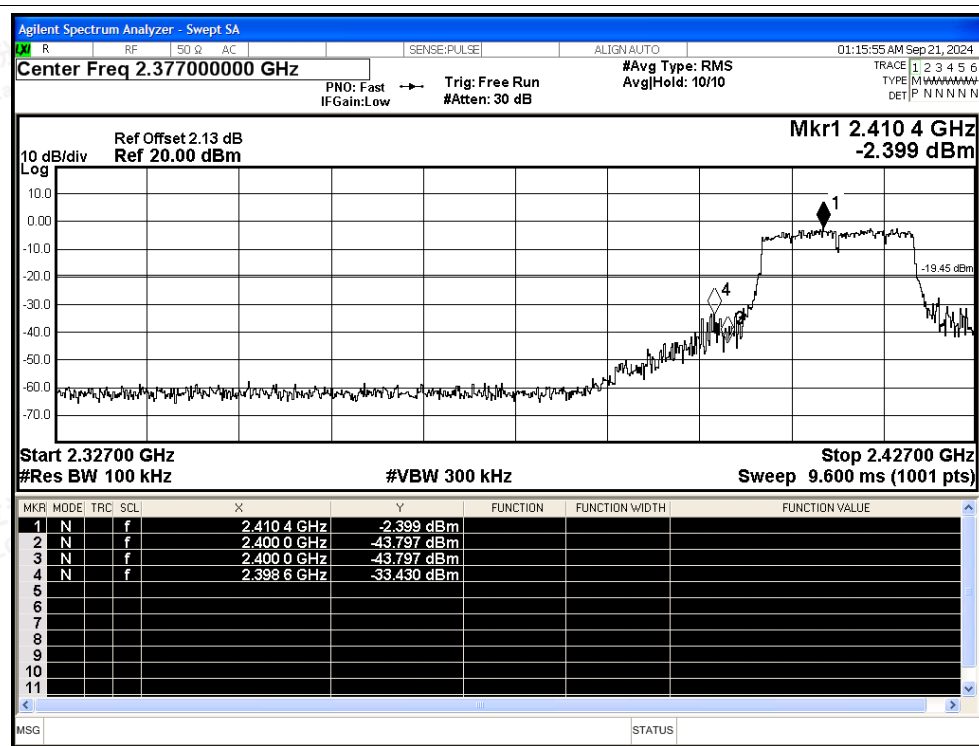




Band Edge NVNT g 2412MHz Ant2 Ref

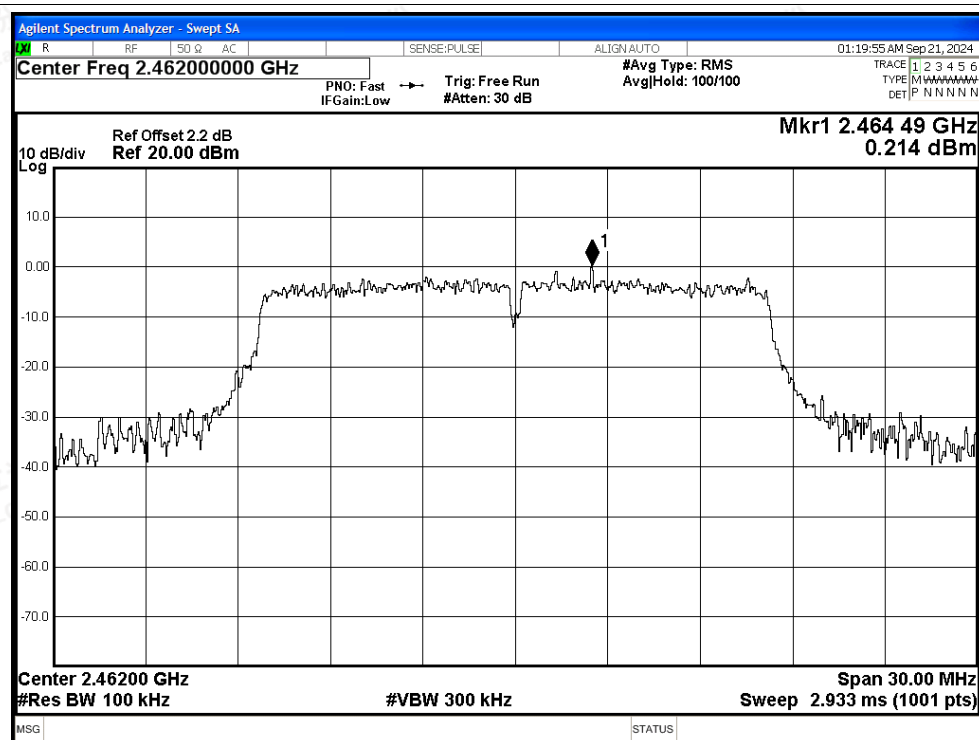


Band Edge NVNT g 2412MHz Ant2 Emission

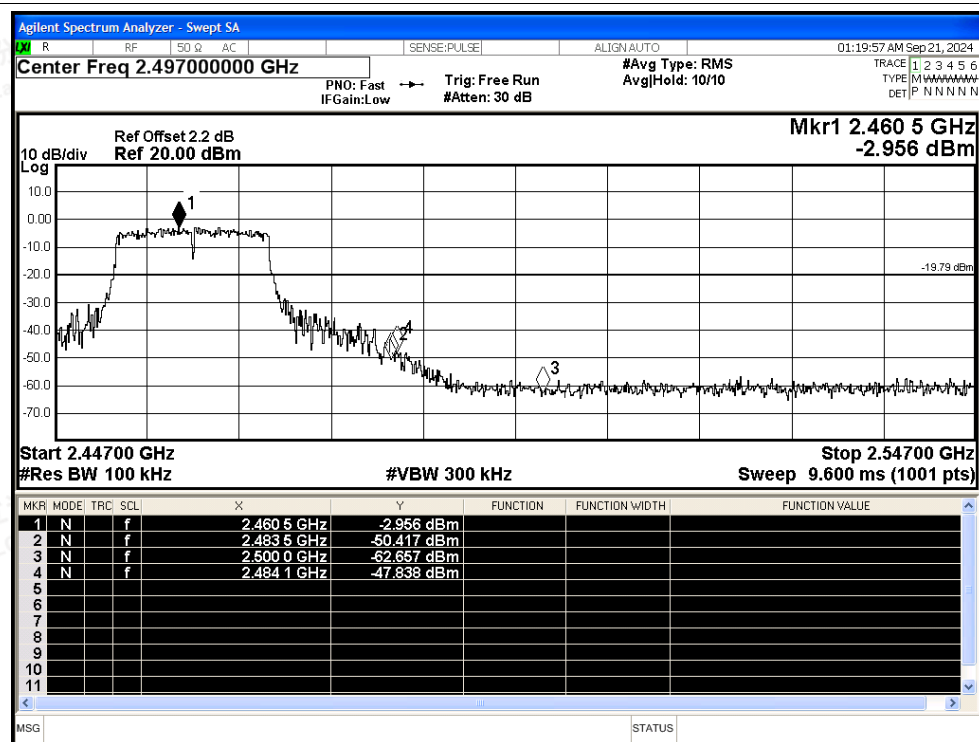




Band Edge NVNT g 2462MHz Ant2 Ref



Band Edge NVNT g 2462MHz Ant2 Emission



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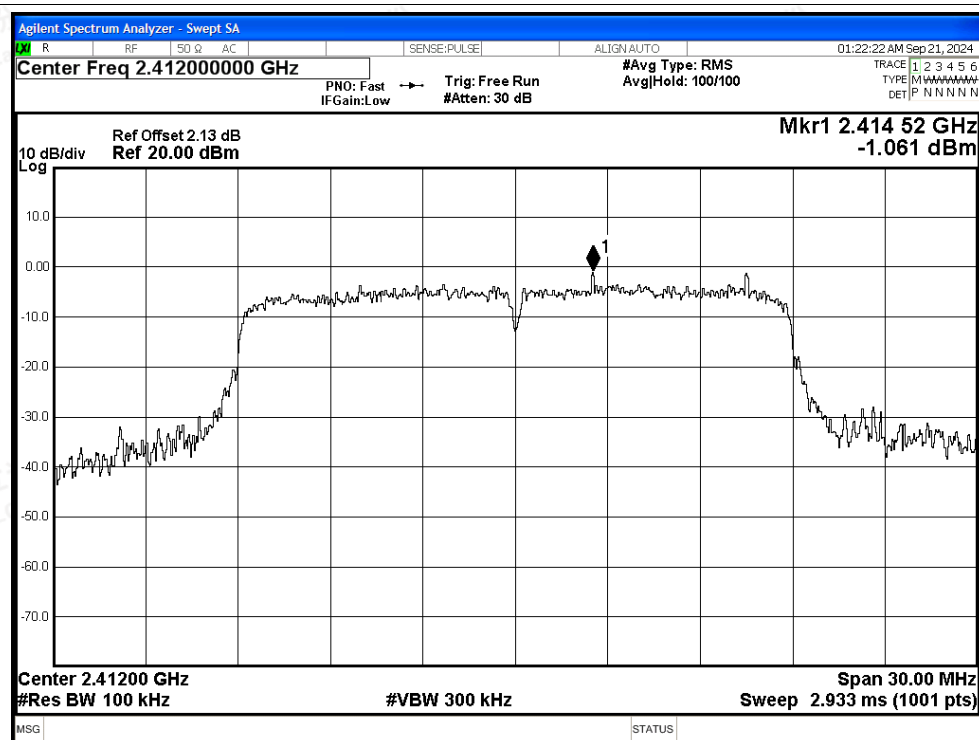
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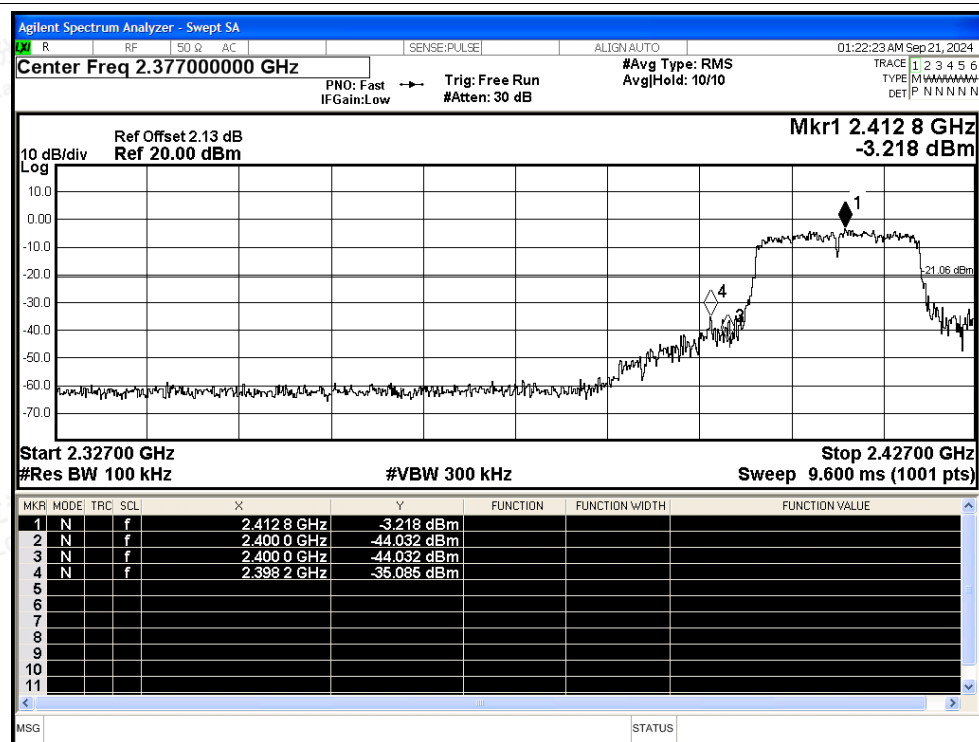
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Band Edge NVNT n20 2412MHz Ant2 Ref

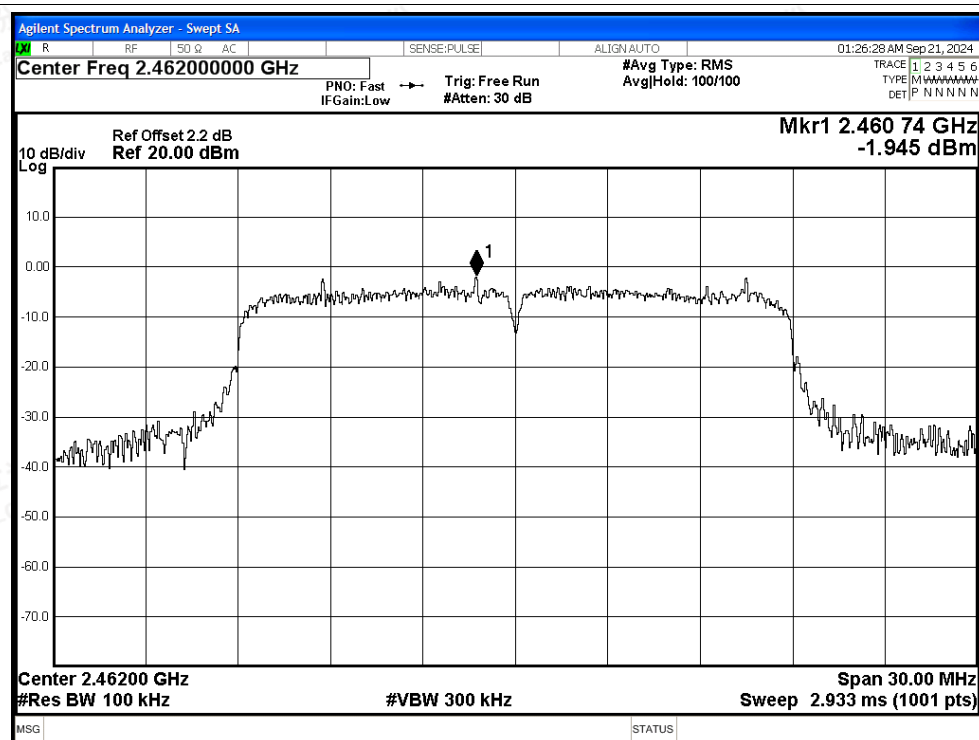


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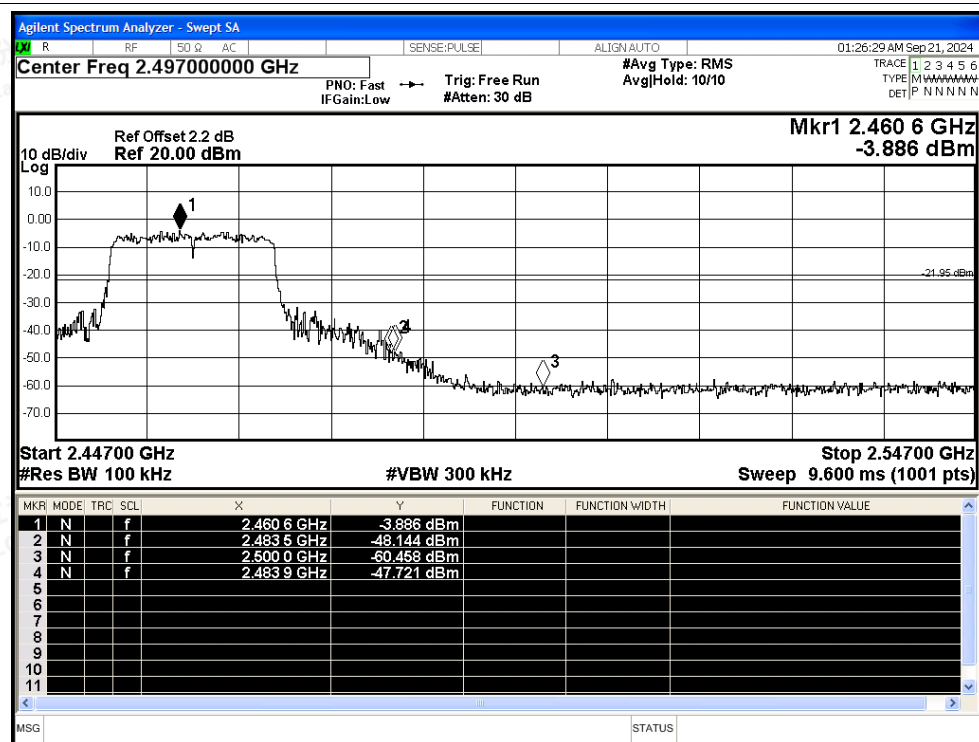




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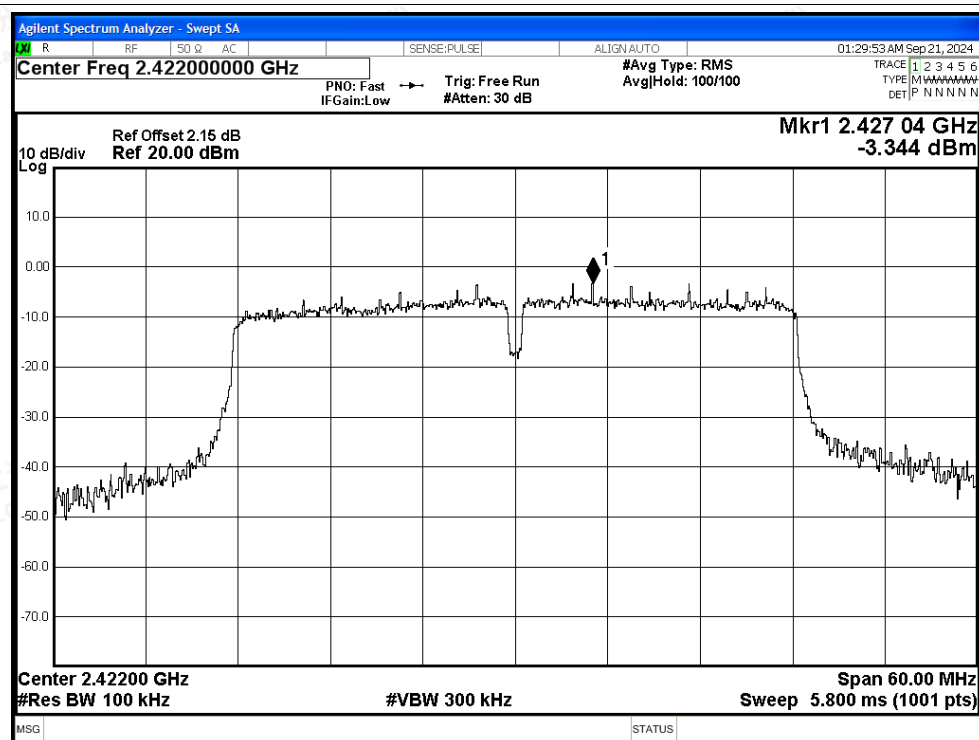


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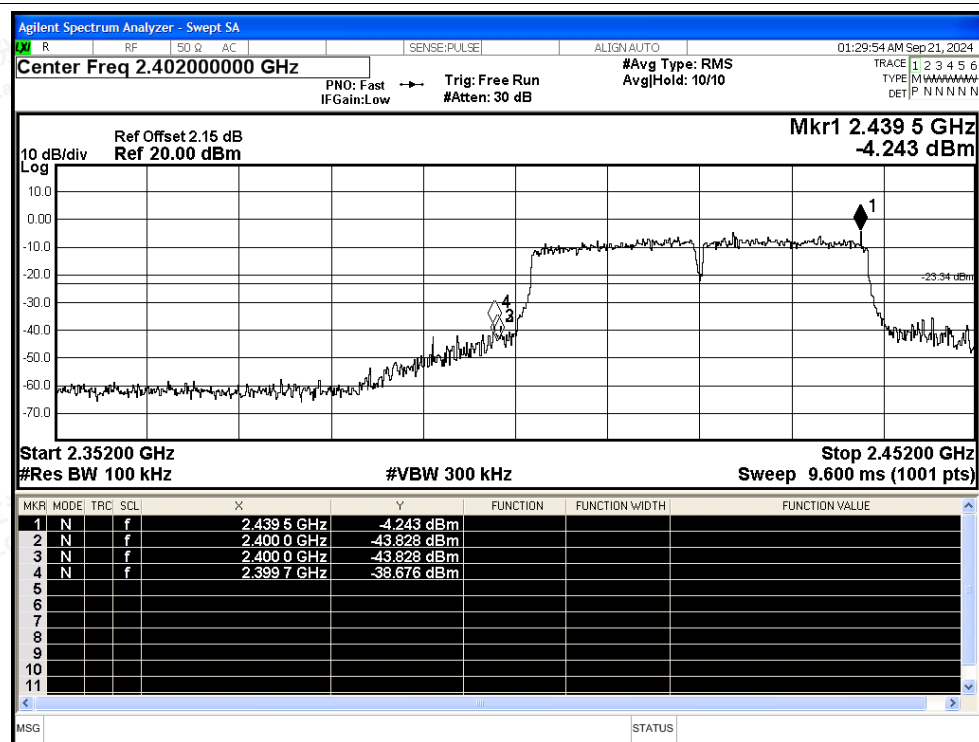




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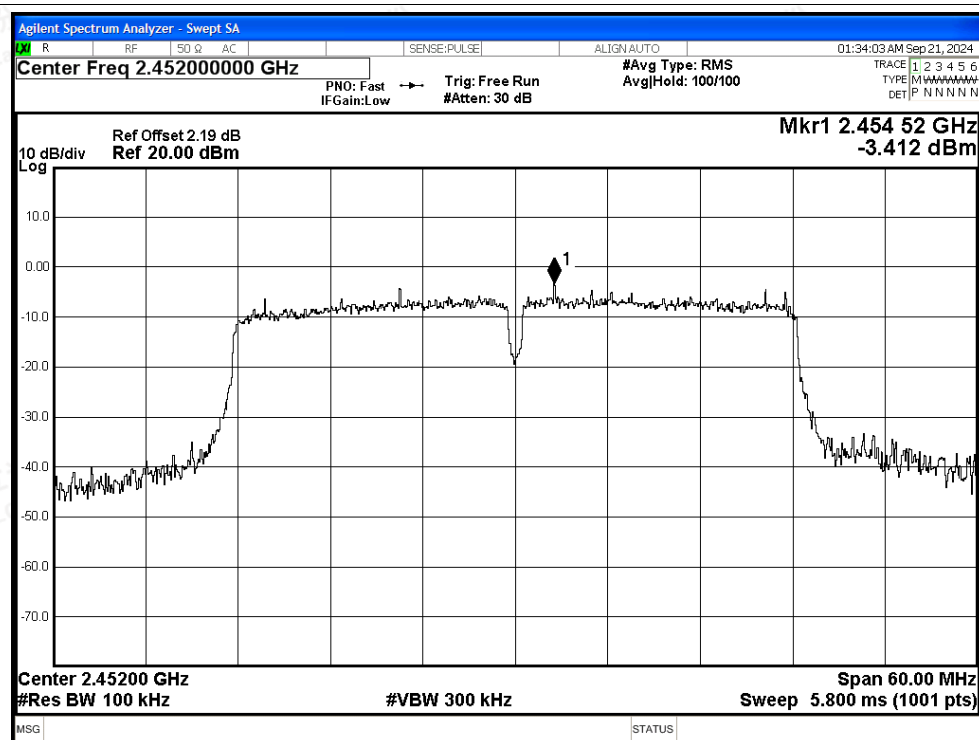


Band Edge NVNT n40 2422MHz Ant2 Emission

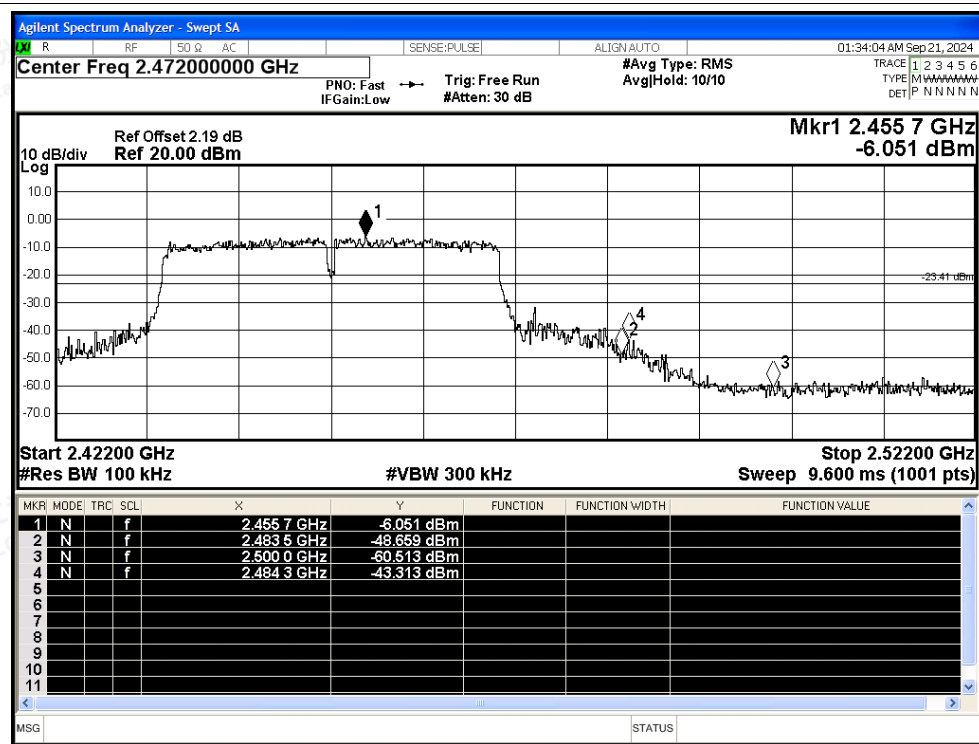


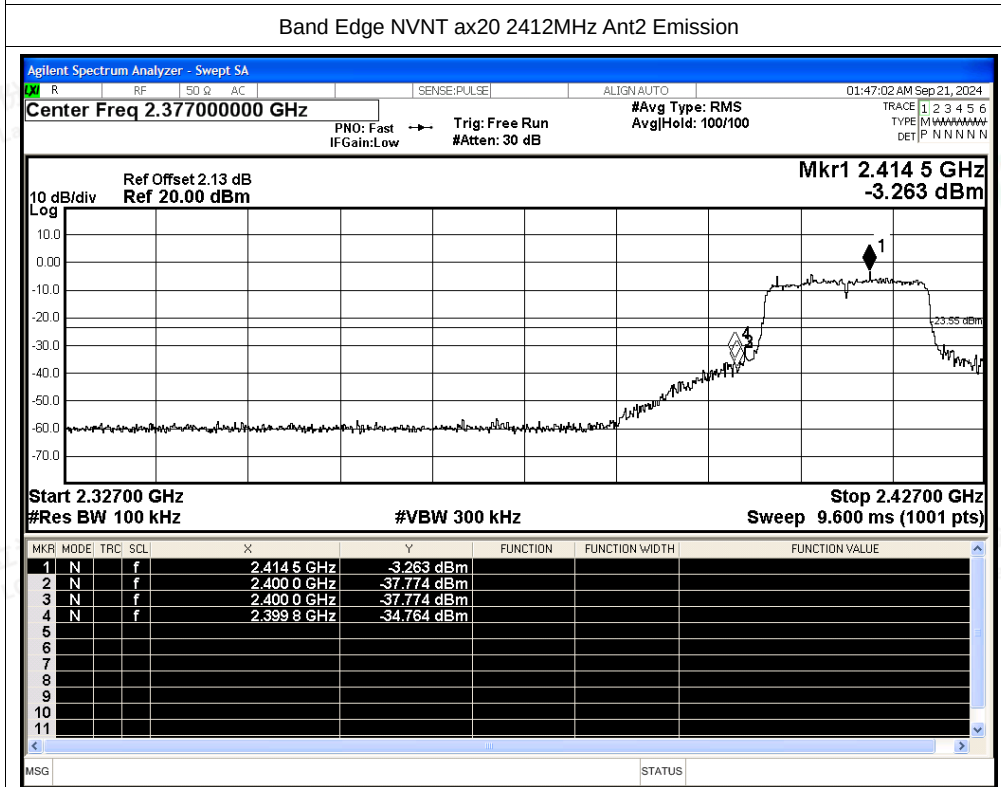
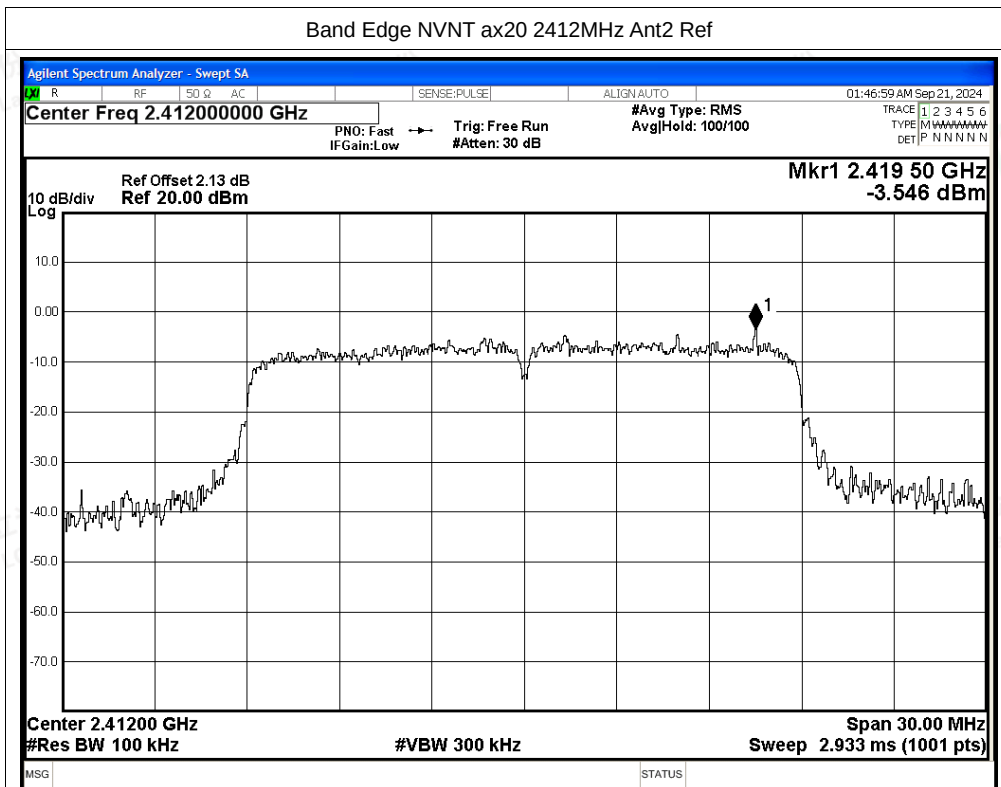


Band Edge NVNT n40 2452MHz Ant2 Ref



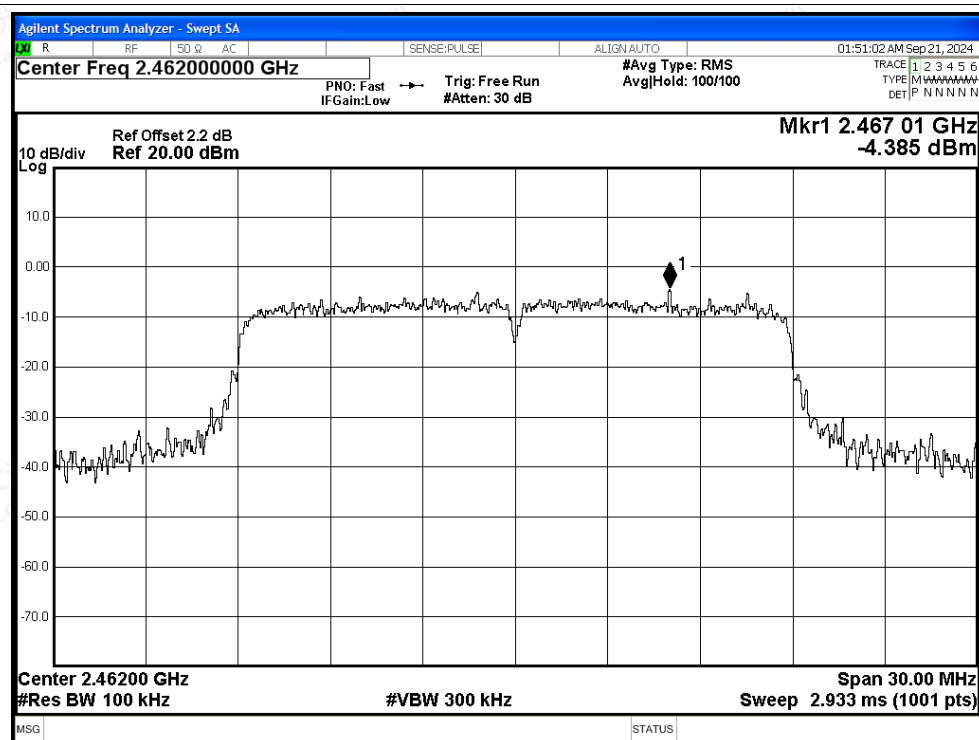
Band Edge NVNT n40 2452MHz Ant2 Emission



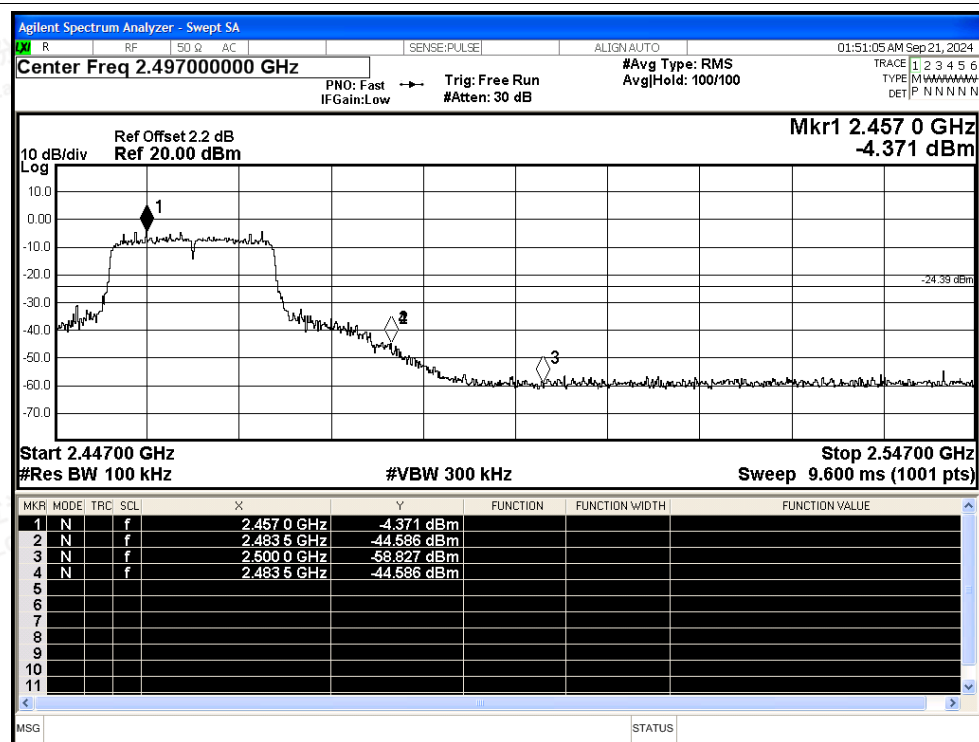




Band Edge NVNT ax20 2462MHz Ant2 Ref

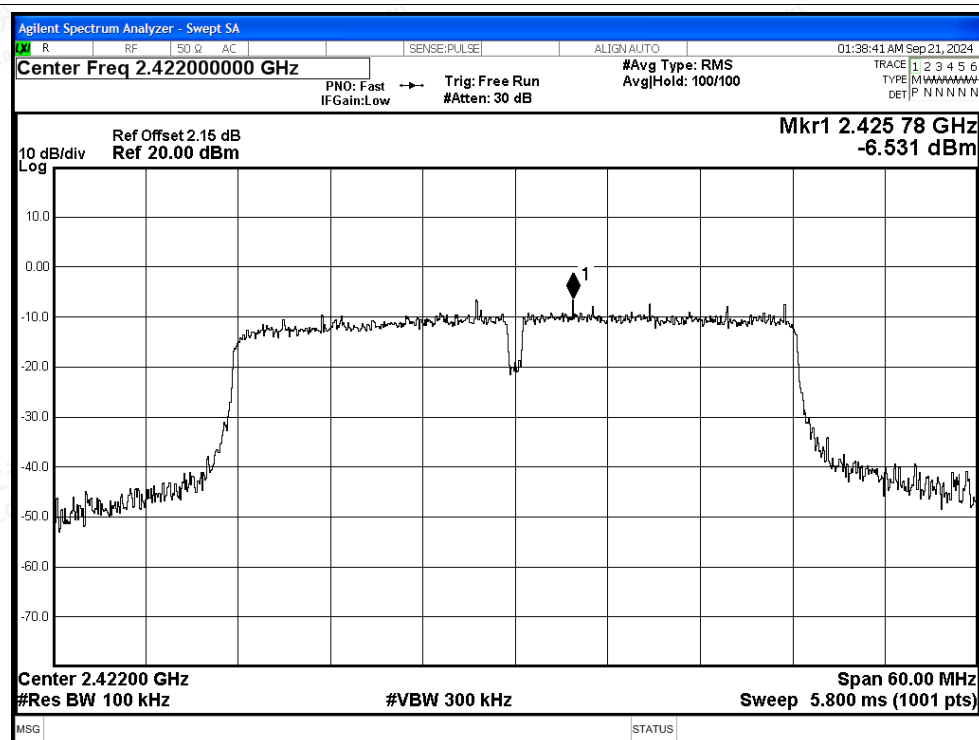


Band Edge NVNT ax20 2462MHz Ant2 Emission

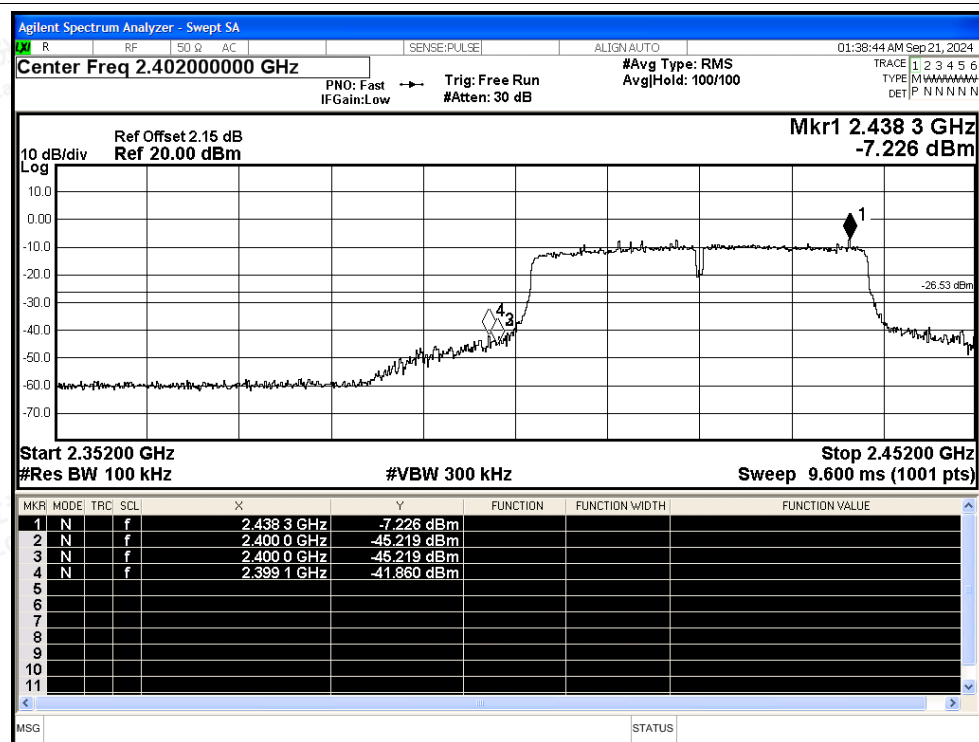


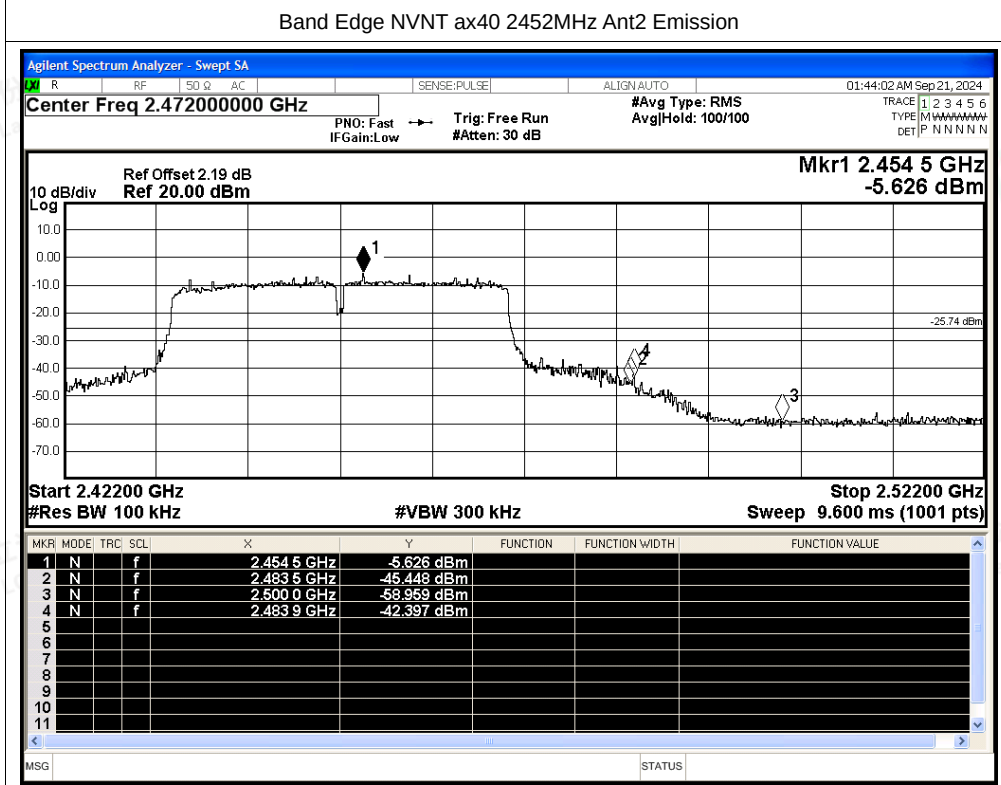
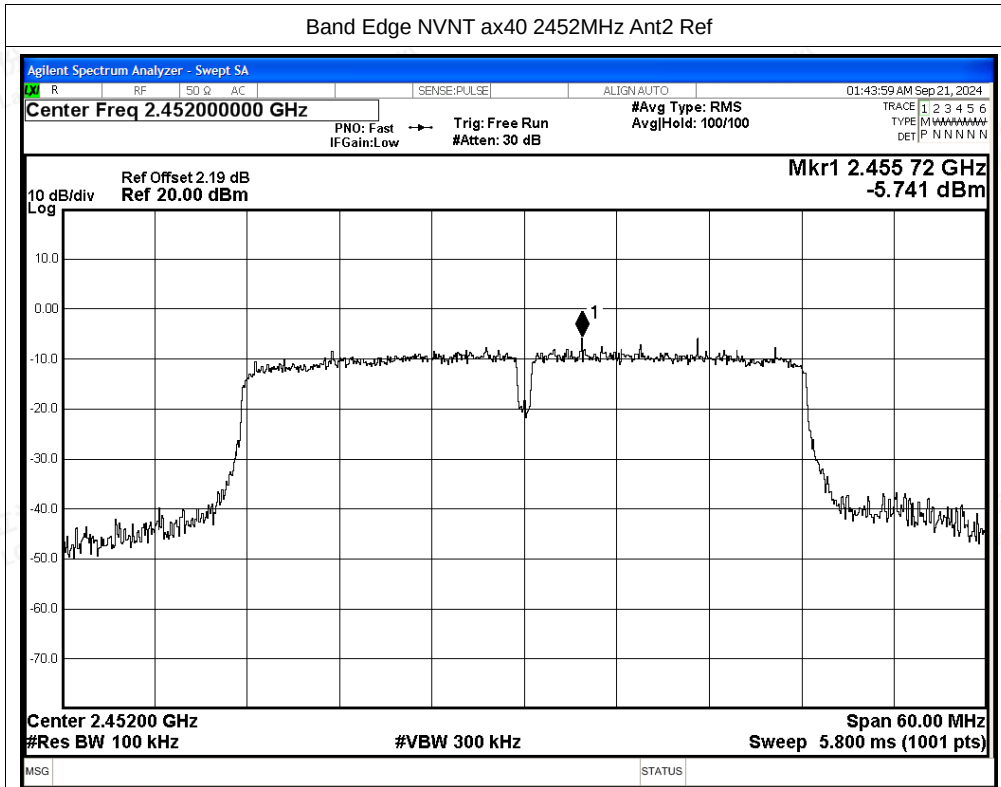


Band Edge NVNT ax40 2422MHz Ant2 Ref



Band Edge NVNT ax40 2422MHz Ant2 Emission







C.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant2	-50.94	-20	Pass
NVNT	b	2437	Ant2	-51.19	-20	Pass
NVNT	b	2462	Ant2	-50.98	-20	Pass
NVNT	g	2412	Ant2	-45.08	-20	Pass
NVNT	g	2437	Ant2	-46.04	-20	Pass
NVNT	g	2462	Ant2	-43.34	-20	Pass
NVNT	n20	2412	Ant2	-44.13	-20	Pass
NVNT	n20	2437	Ant2	-43.1	-20	Pass
NVNT	n20	2462	Ant2	-43.35	-20	Pass
NVNT	n40	2422	Ant2	-41.67	-20	Pass
NVNT	n40	2437	Ant2	-41.19	-20	Pass
NVNT	n40	2452	Ant2	-41.76	-20	Pass
NVNT	ax20	2412	Ant2	-41.89	-20	Pass
NVNT	ax20	2437	Ant2	-41.8	-20	Pass
NVNT	ax20	2462	Ant2	-40.95	-20	Pass
NVNT	ax40	2422	Ant2	-37.99	-20	Pass
NVNT	ax40	2437	Ant2	-37.7	-20	Pass
NVNT	ax40	2452	Ant2	-38.56	-20	Pass



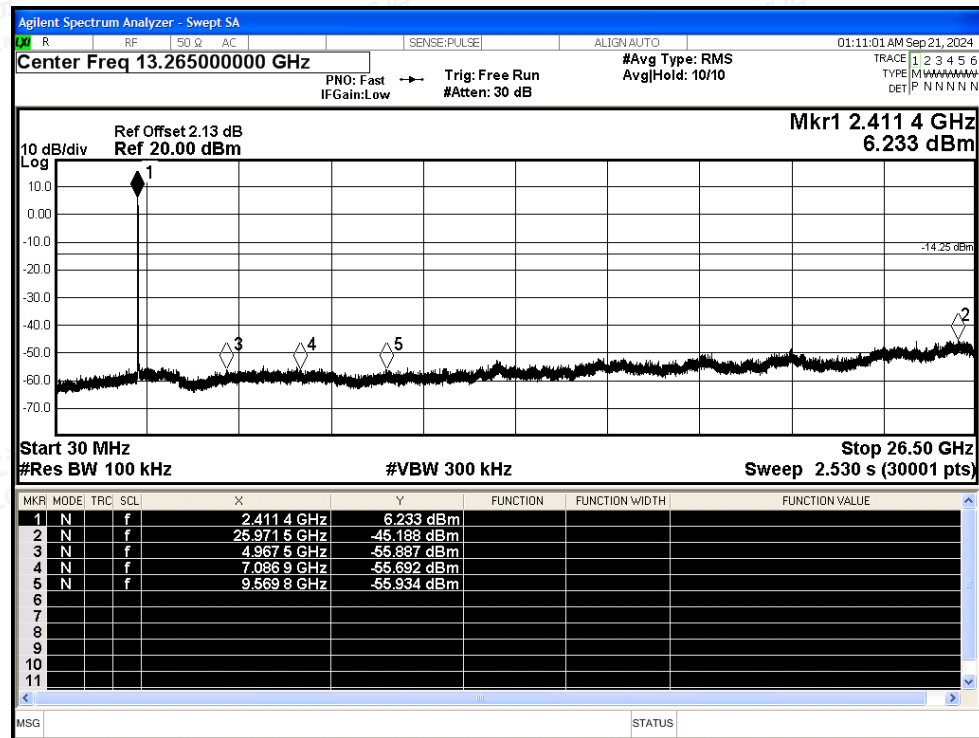


Test Graphs

Tx. Spurious NVNT b 2412MHz Ant2 Ref

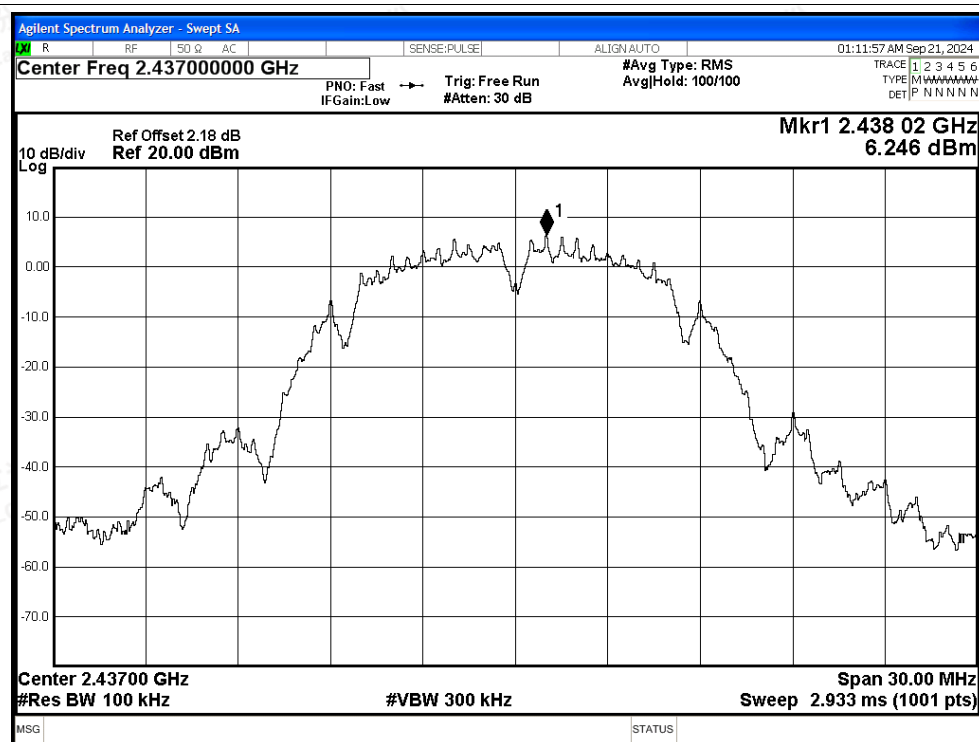


Tx. Spurious NVNT b 2412MHz Ant2 Emission

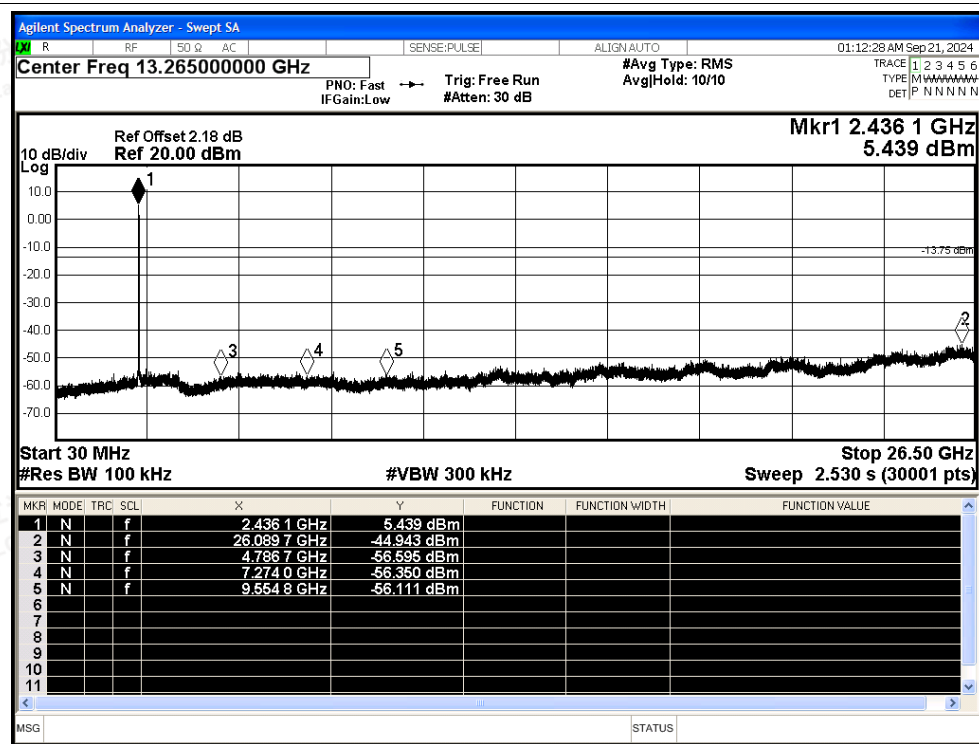




Tx. Spurious NVNT b 2437MHz Ant2 Ref

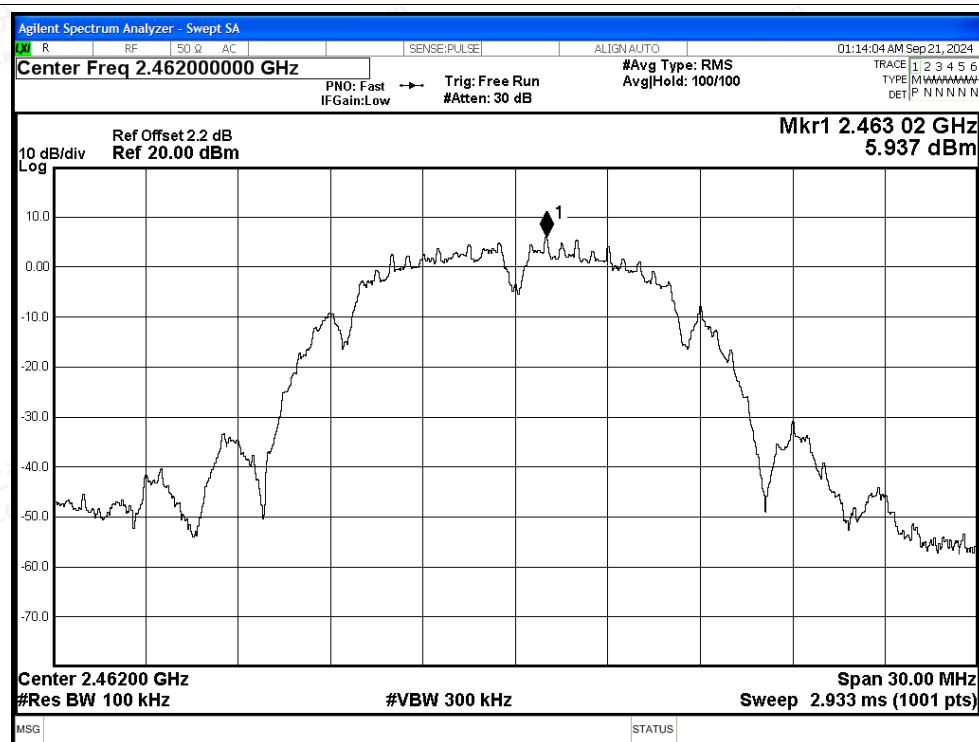


Tx. Spurious NVNT b 2437MHz Ant2 Emission

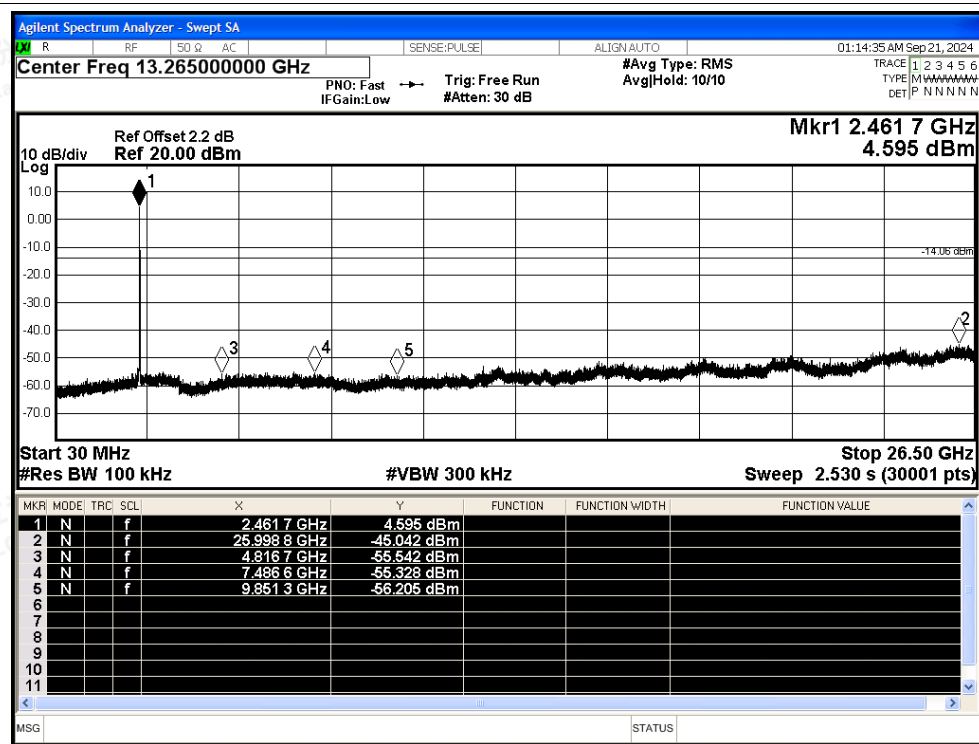




Tx. Spurious NVNT b 2462MHz Ant2 Ref

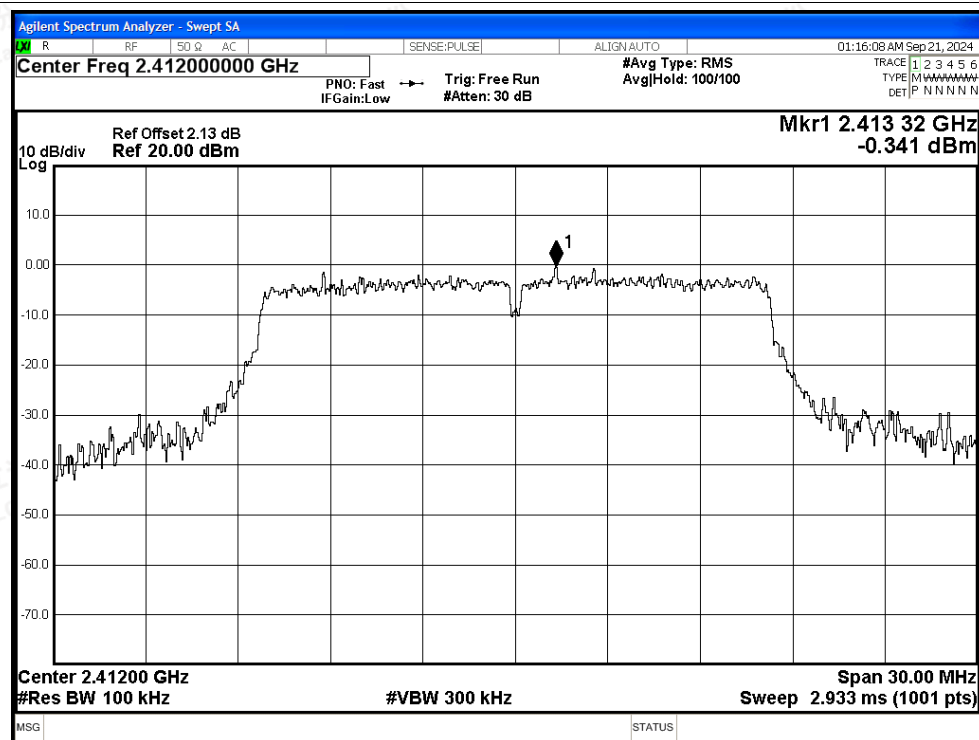


Tx. Spurious NVNT b 2462MHz Ant2 Emission





Tx. Spurious NVNT g 2412MHz Ant2 Ref



Tx. Spurious NVNT g 2412MHz Ant2 Emission

