



# Appendix C

## RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Hyundai Mini PC

Test Model: HTN4020MPC

### Environmental Conditions

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





### C.1 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.028	>=0.5	Pass
NVNT	b	2437	Ant1	8.101	>=0.5	Pass
NVNT	b	2462	Ant1	8.046	>=0.5	Pass
NVNT	g	2412	Ant1	15.263	>=0.5	Pass
NVNT	g	2437	Ant1	14.169	>=0.5	Pass
NVNT	g	2462	Ant1	13.414	>=0.5	Pass
NVNT	n20	2412	Ant1	13.773	>=0.5	Pass
NVNT	n20	2437	Ant1	13.968	>=0.5	Pass
NVNT	n20	2462	Ant1	16.912	>=0.5	Pass
NVNT	n40	2422	Ant1	34.413	>=0.5	Pass
NVNT	n40	2437	Ant1	27.652	>=0.5	Pass
NVNT	n40	2452	Ant1	34.438	>=0.5	Pass

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant2	7.565	>=0.5	Pass
NVNT	b	2437	Ant2	8.041	>=0.5	Pass
NVNT	b	2462	Ant2	10.039	>=0.5	Pass
NVNT	g	2412	Ant2	15.133	>=0.5	Pass
NVNT	g	2437	Ant2	14.395	>=0.5	Pass
NVNT	g	2462	Ant2	16.341	>=0.5	Pass
NVNT	n20	2412	Ant2	14.218	>=0.5	Pass
NVNT	n20	2437	Ant2	17.046	>=0.5	Pass
NVNT	n20	2462	Ant2	17.288	>=0.5	Pass
NVNT	n40	2422	Ant2	35.04	>=0.5	Pass
NVNT	n40	2437	Ant2	35.108	>=0.5	Pass
NVNT	n40	2452	Ant2	32.604	>=0.5	Pass



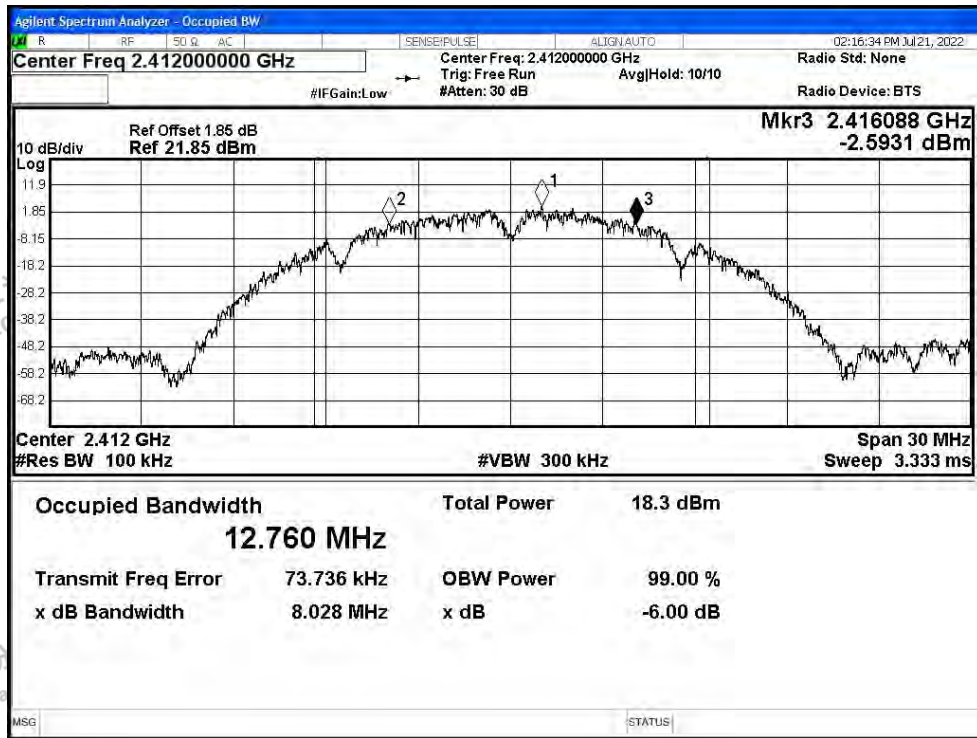
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 Scan code to check authenticity



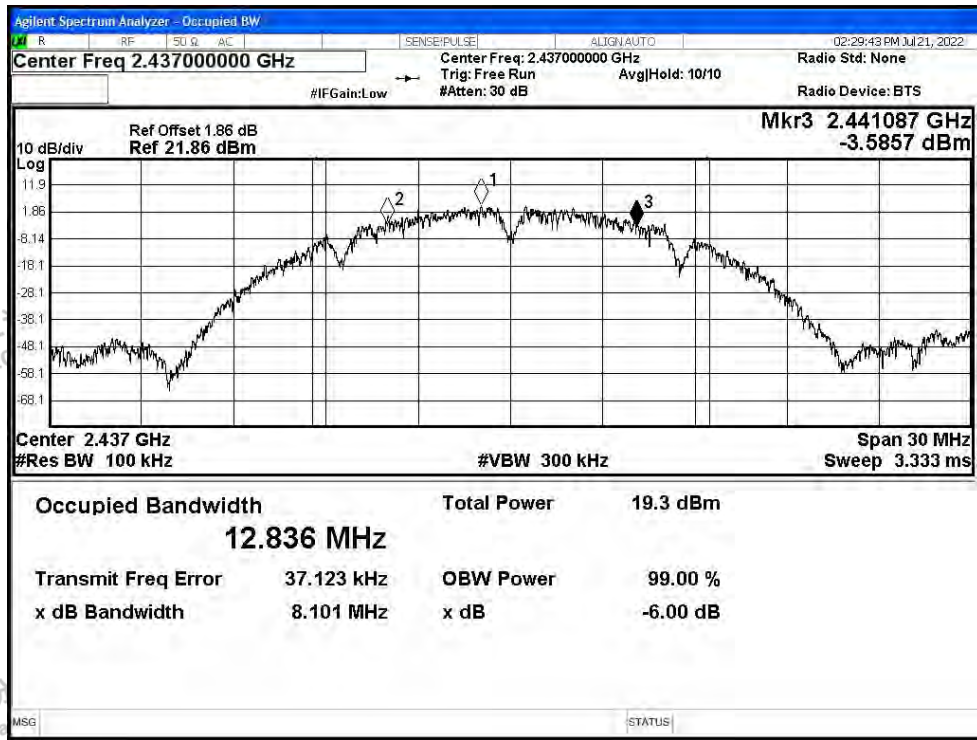
ANT1:

Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1

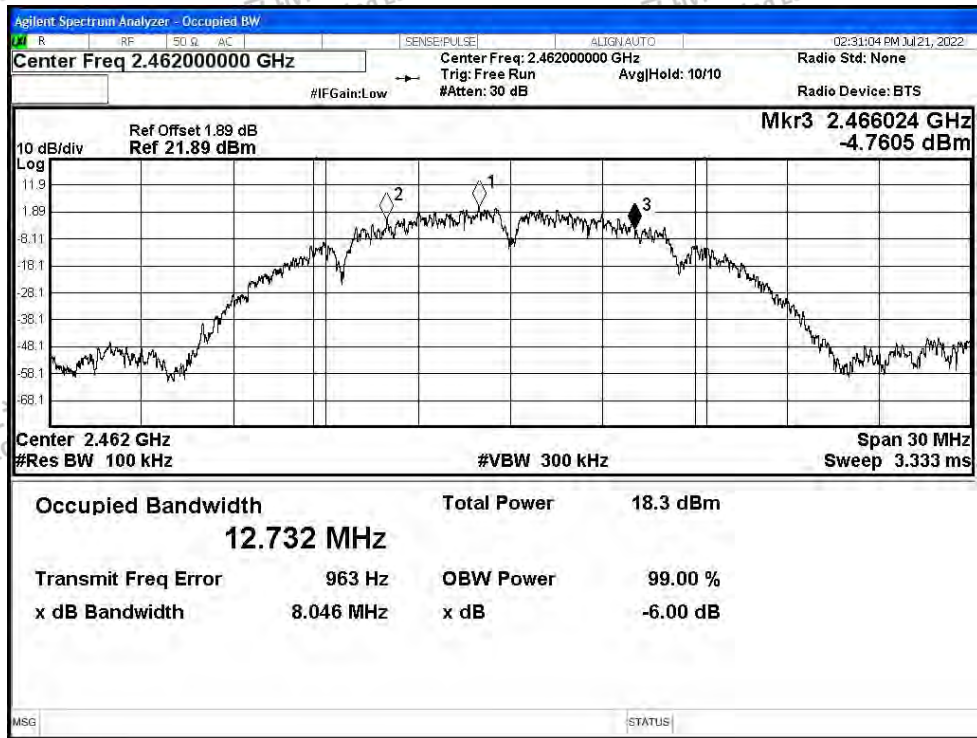


-6dB Bandwidth NVNT b 2437MHz Ant1

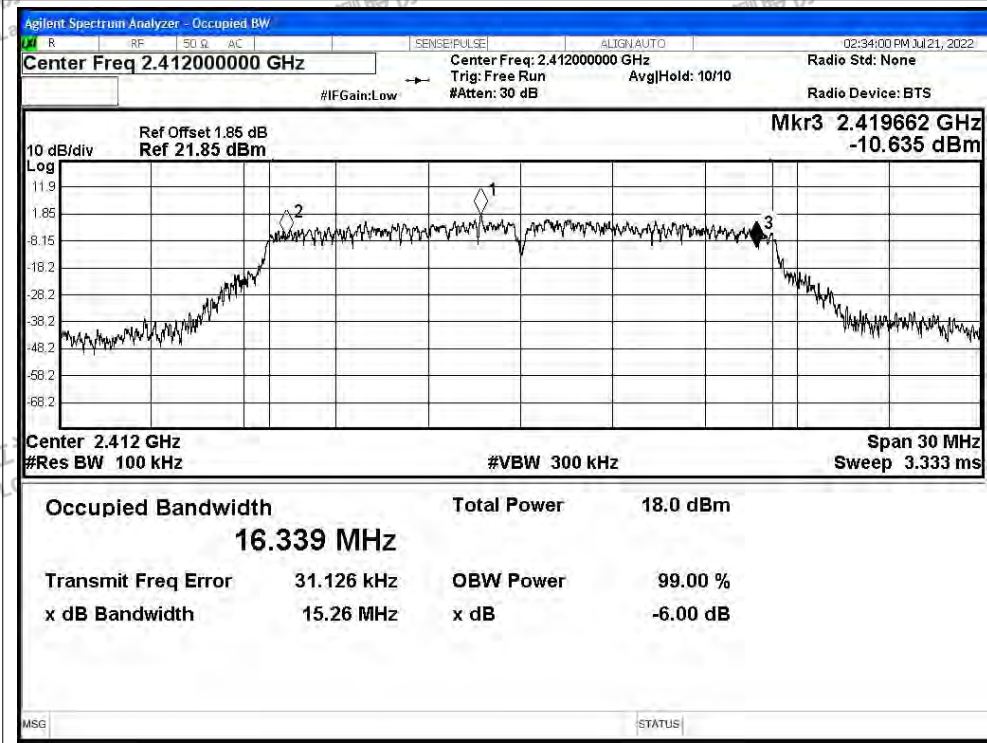




-6dB Bandwidth NVNT b 2462MHz Ant1

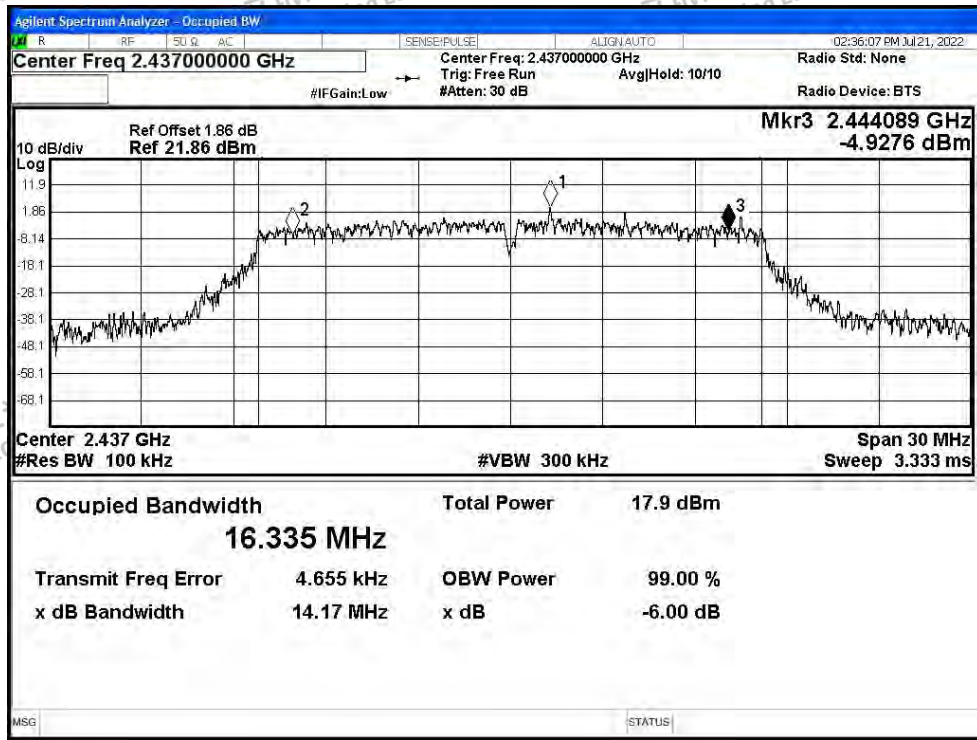


-6dB Bandwidth NVNT g 2412MHz Ant1

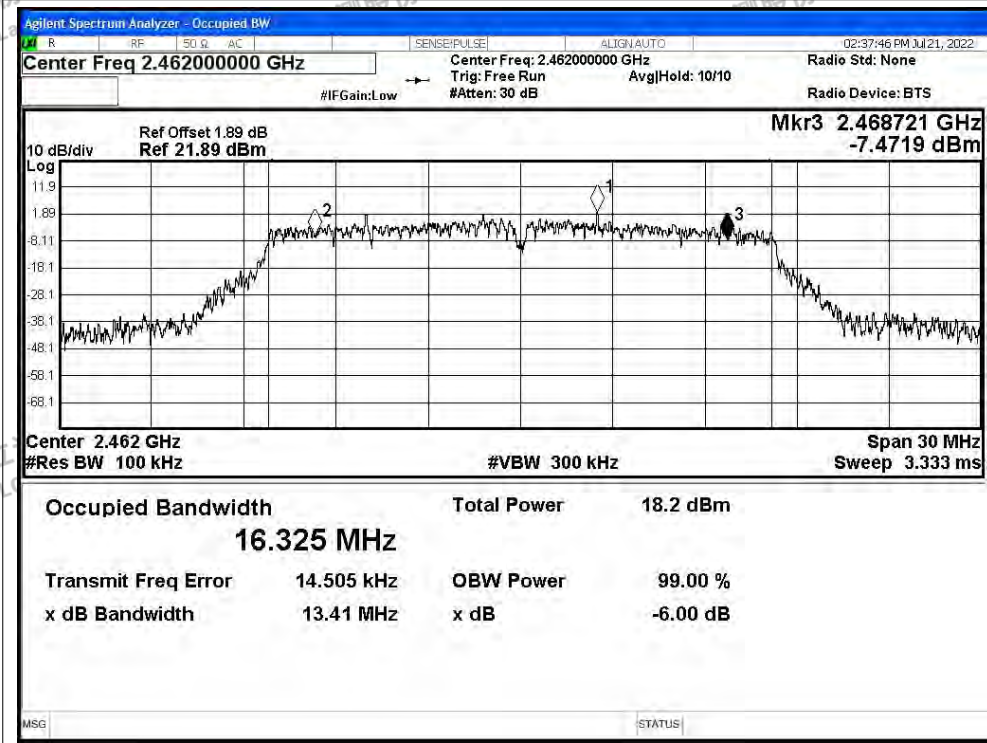




-6dB Bandwidth NVNT g 2437MHz Ant1

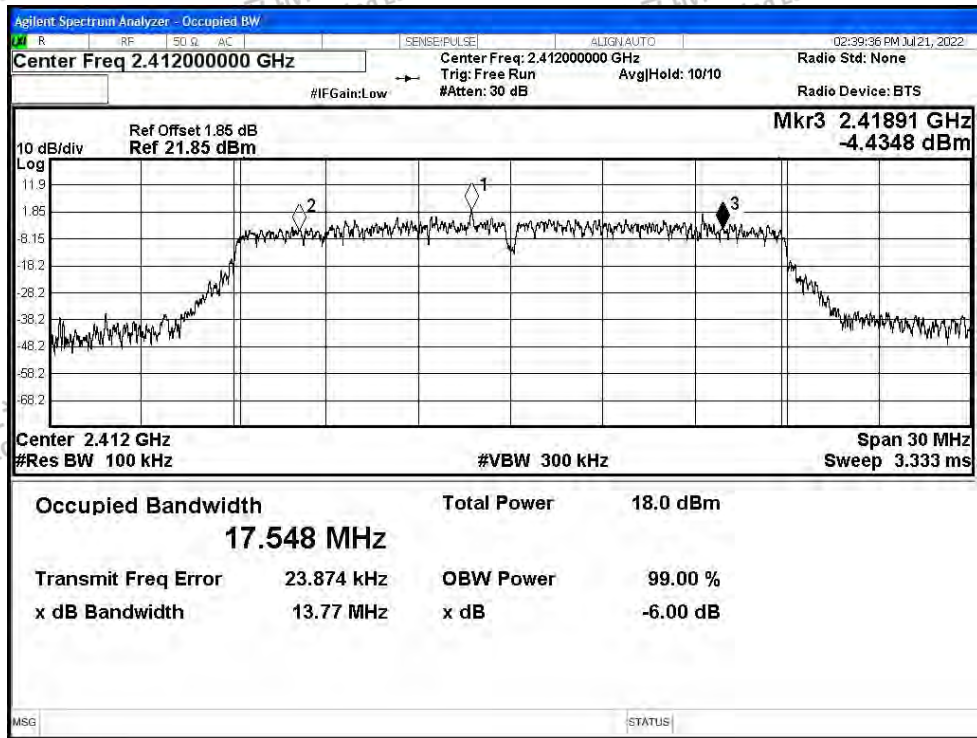


-6dB Bandwidth NVNT g 2462MHz Ant1

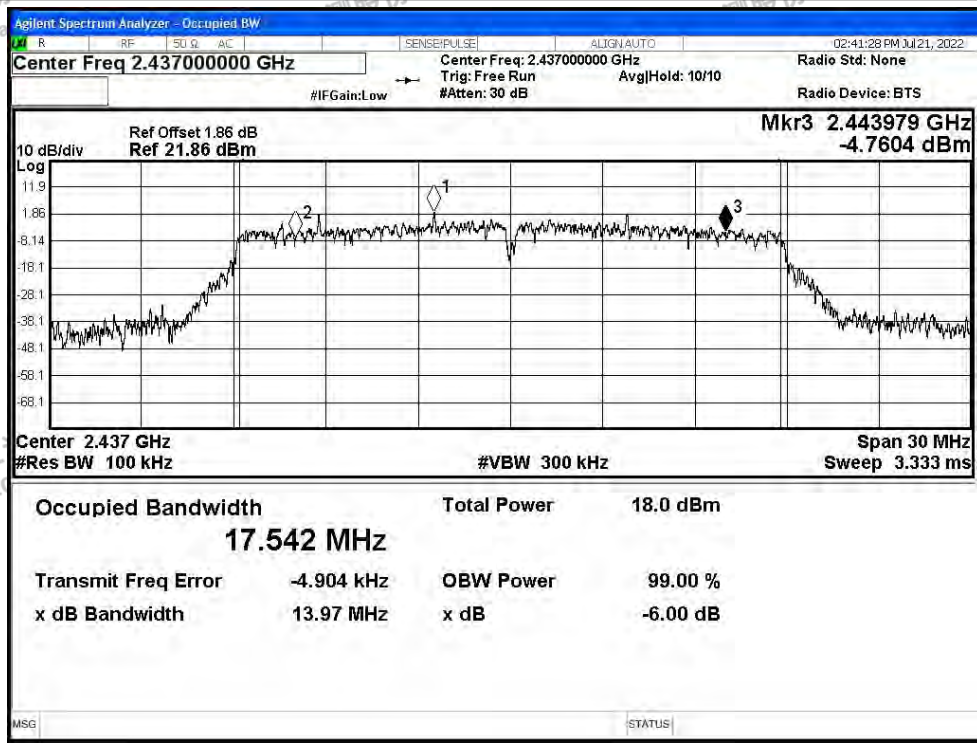




-6dB Bandwidth NVNT n20 2412MHz Ant1

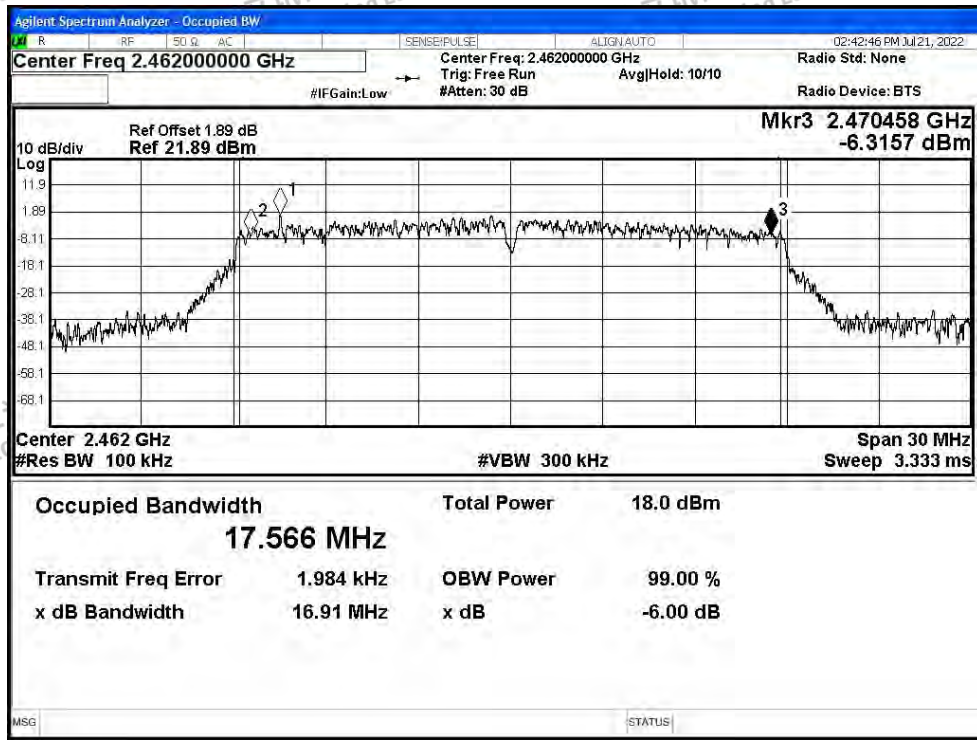


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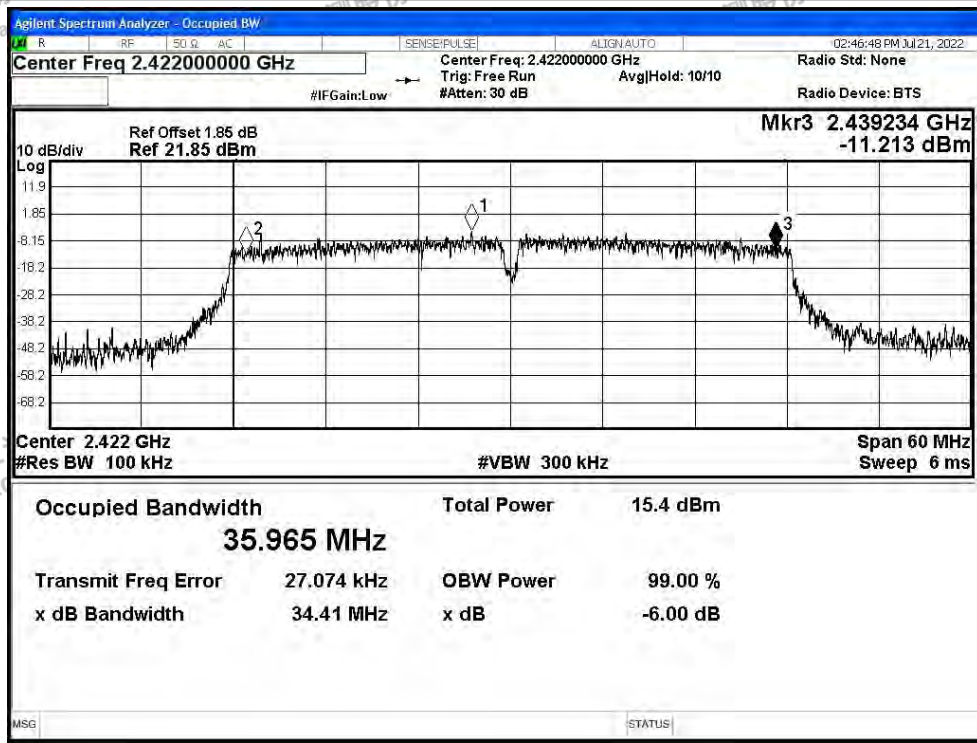




-6dB Bandwidth NVNT n20 2462MHz Ant1

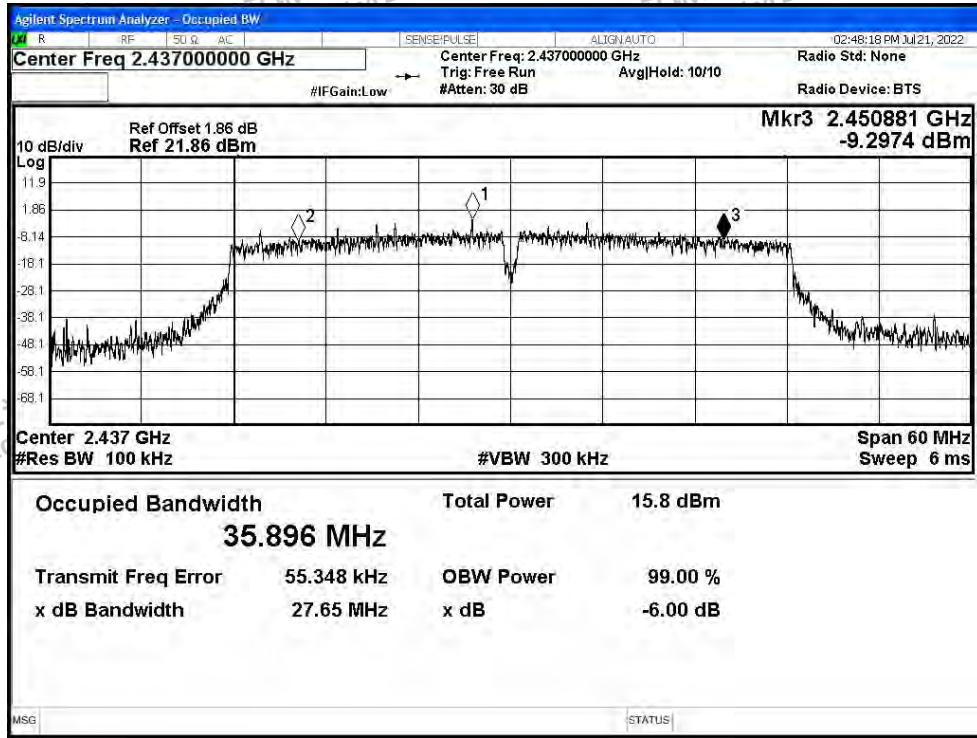


-6dB Bandwidth NVNT n40 2422MHz Ant1

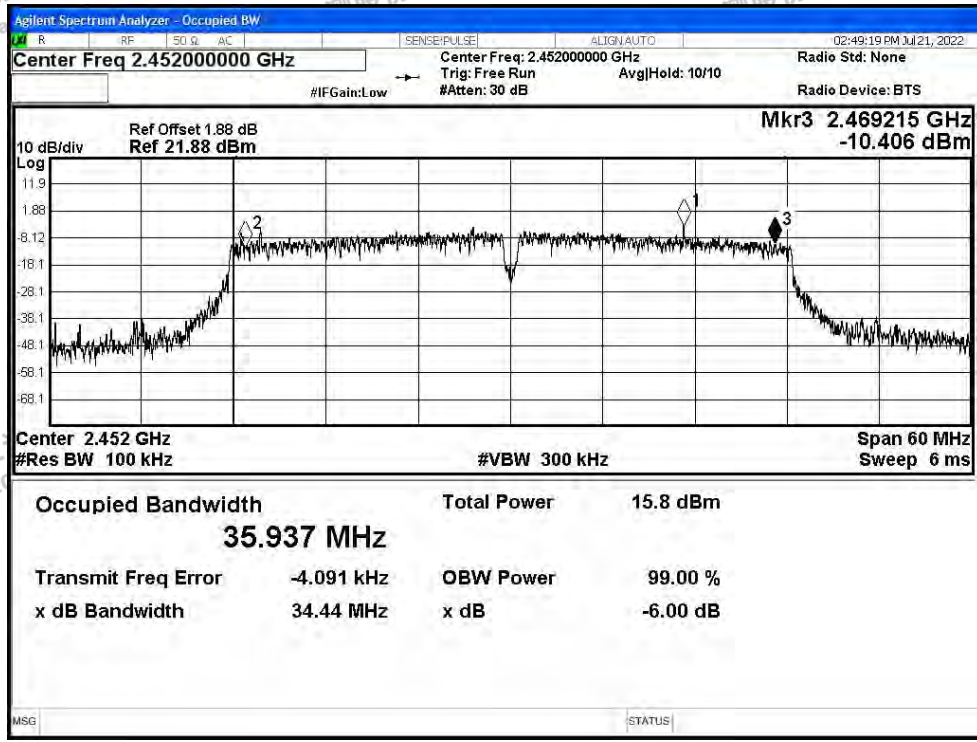




-6dB Bandwidth NVNT n40 2437MHz Ant1



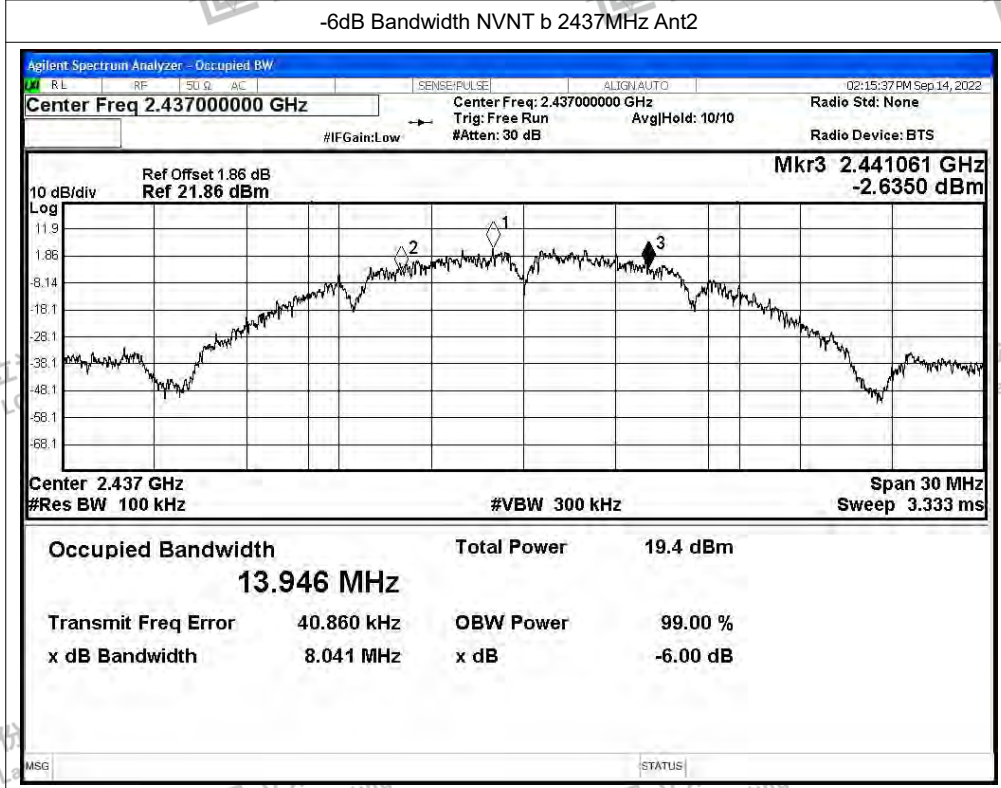
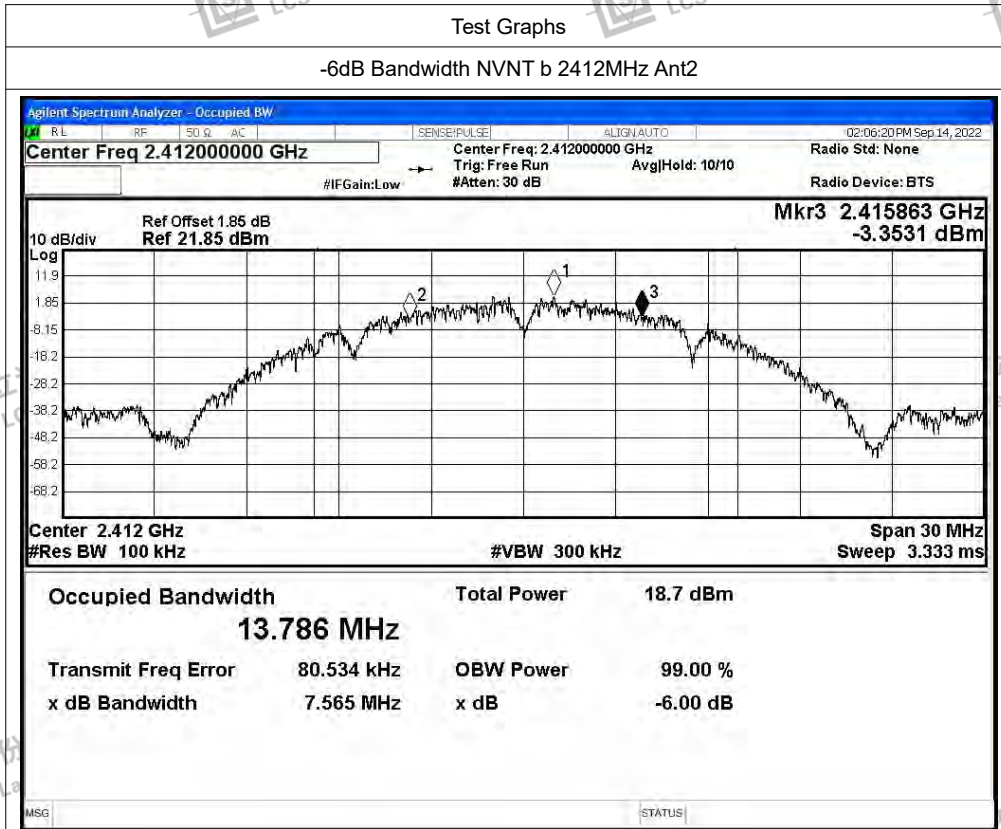
-6dB Bandwidth NVNT n40 2452MHz Ant1





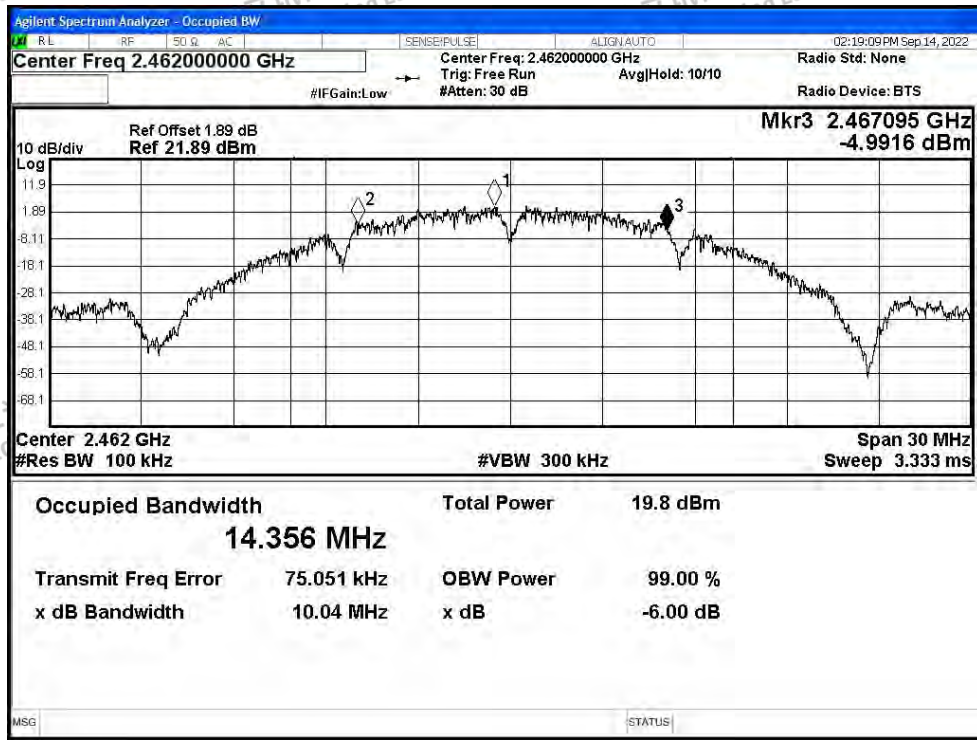


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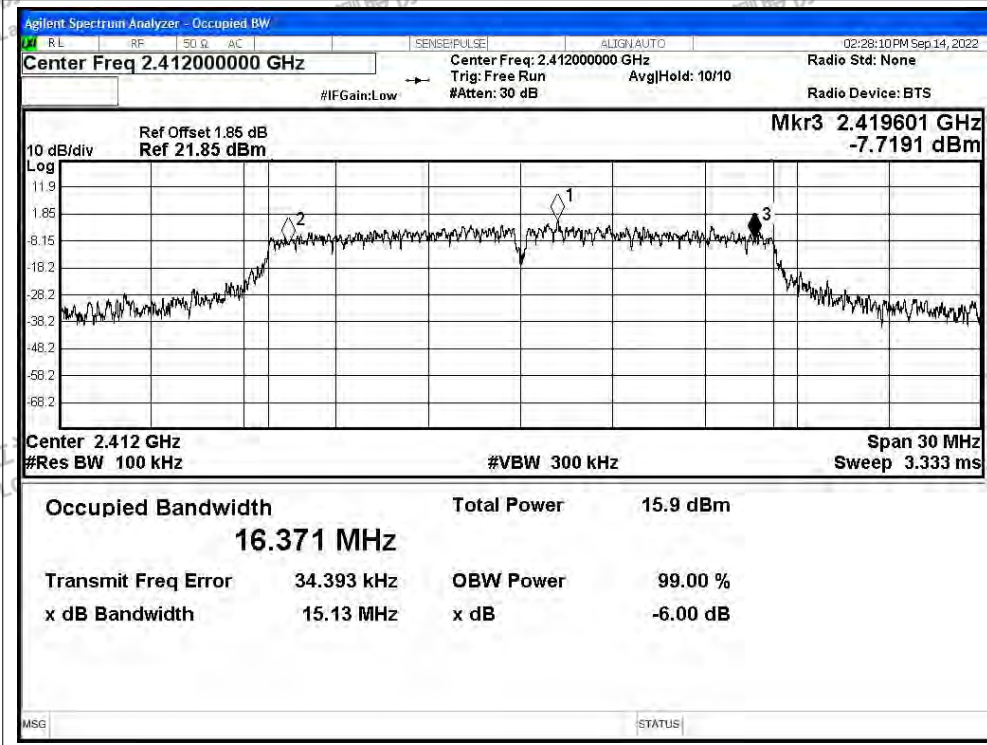




-6dB Bandwidth NVNT b 2462MHz Ant2

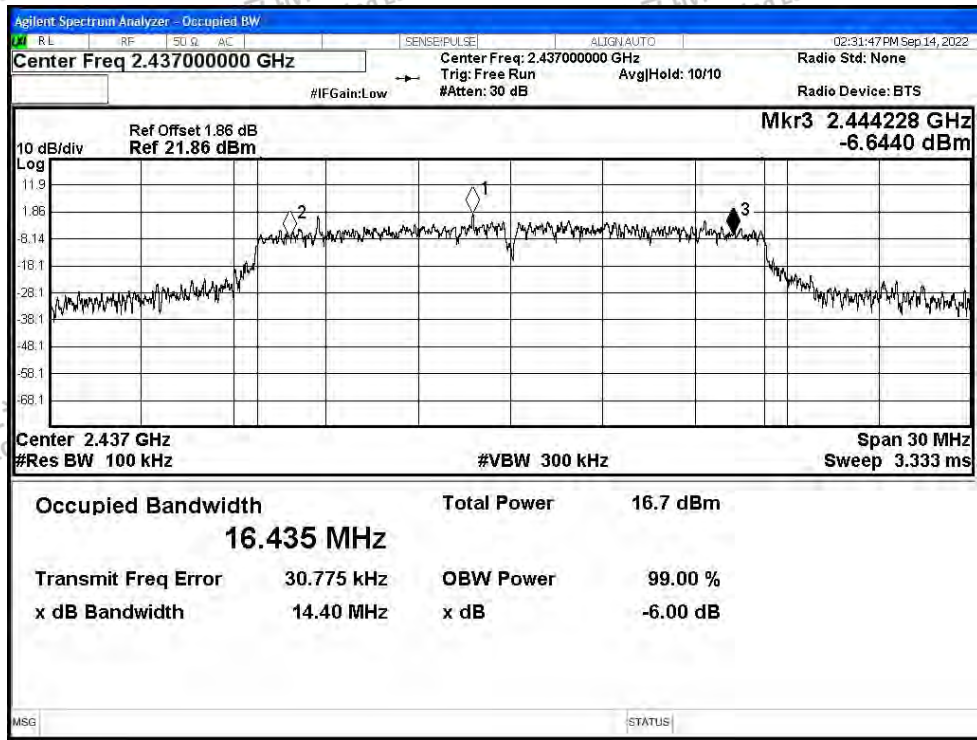


-6dB Bandwidth NVNT g 2412MHz Ant2

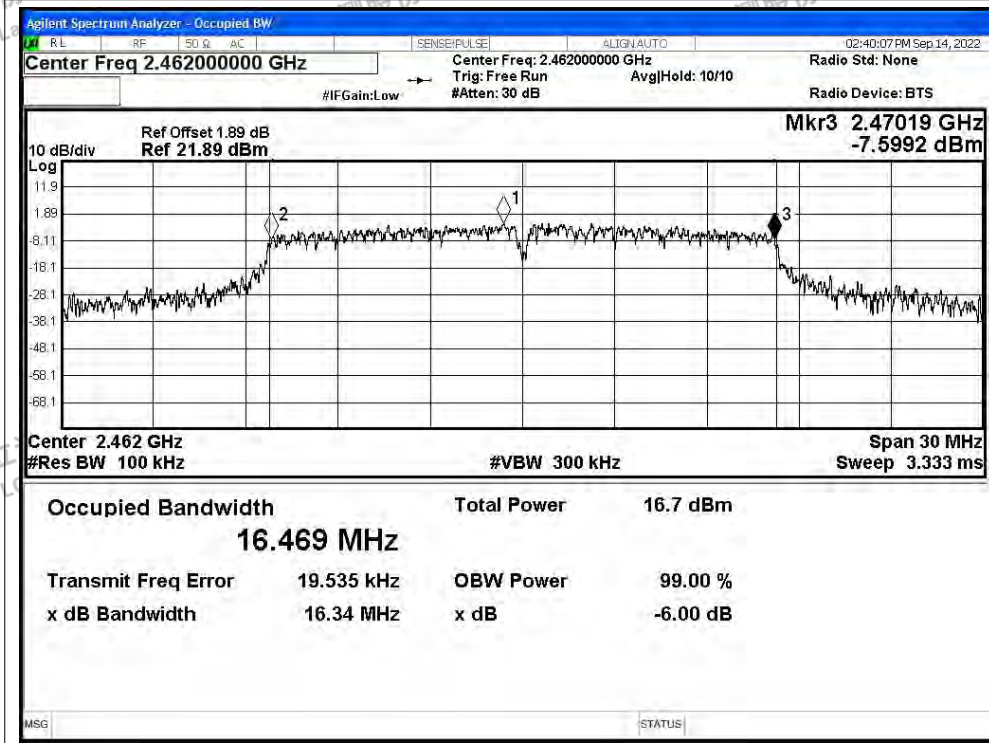




-6dB Bandwidth NVNT g 2437MHz Ant2

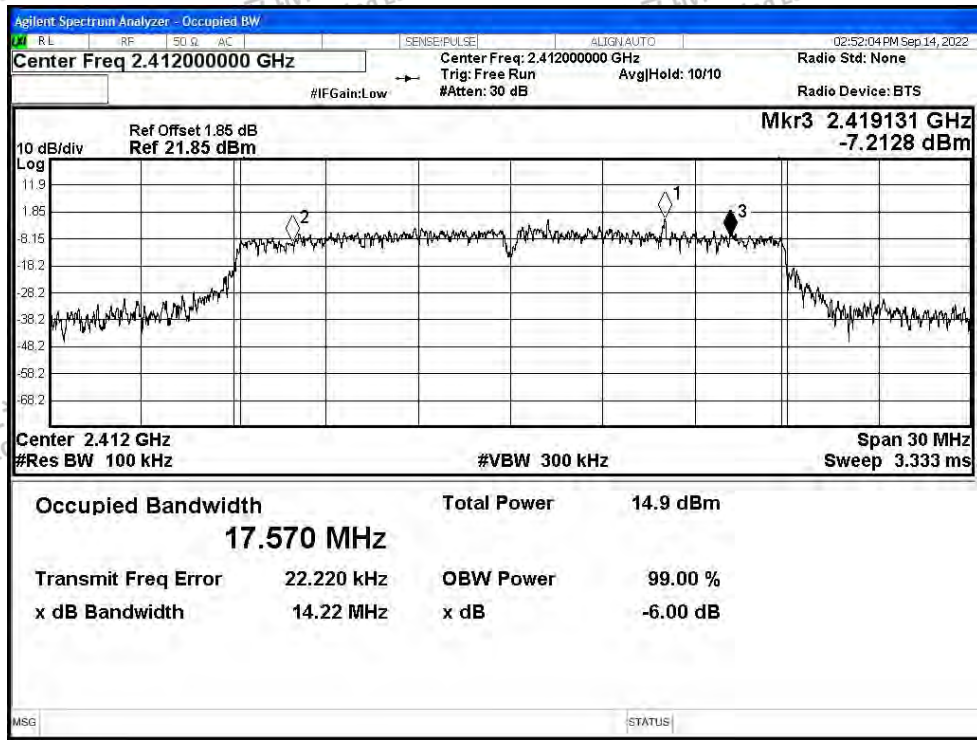


-6dB Bandwidth NVNT g 2462MHz Ant2

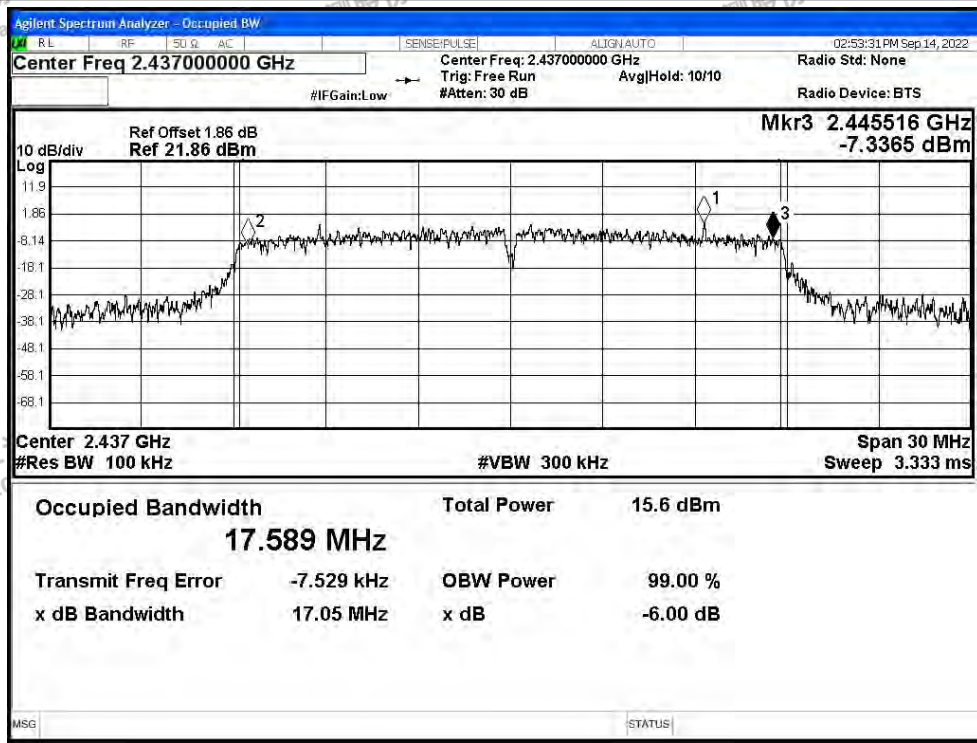




-6dB Bandwidth NVNT n20 2412MHz Ant2

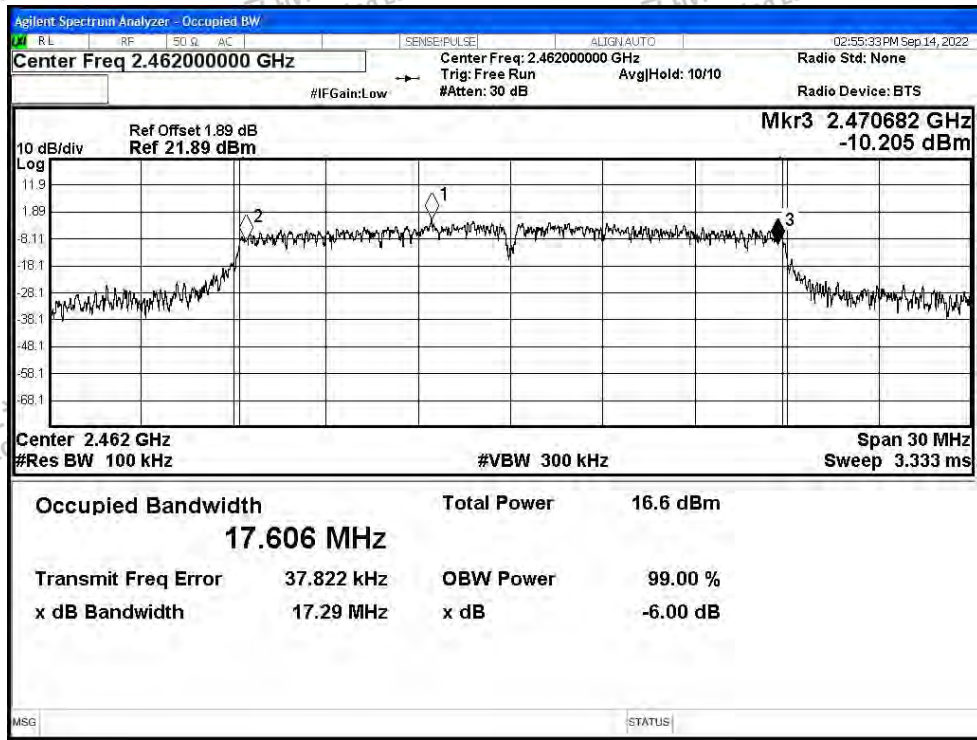


-6dB Bandwidth NVNT n20 2437MHz Ant2

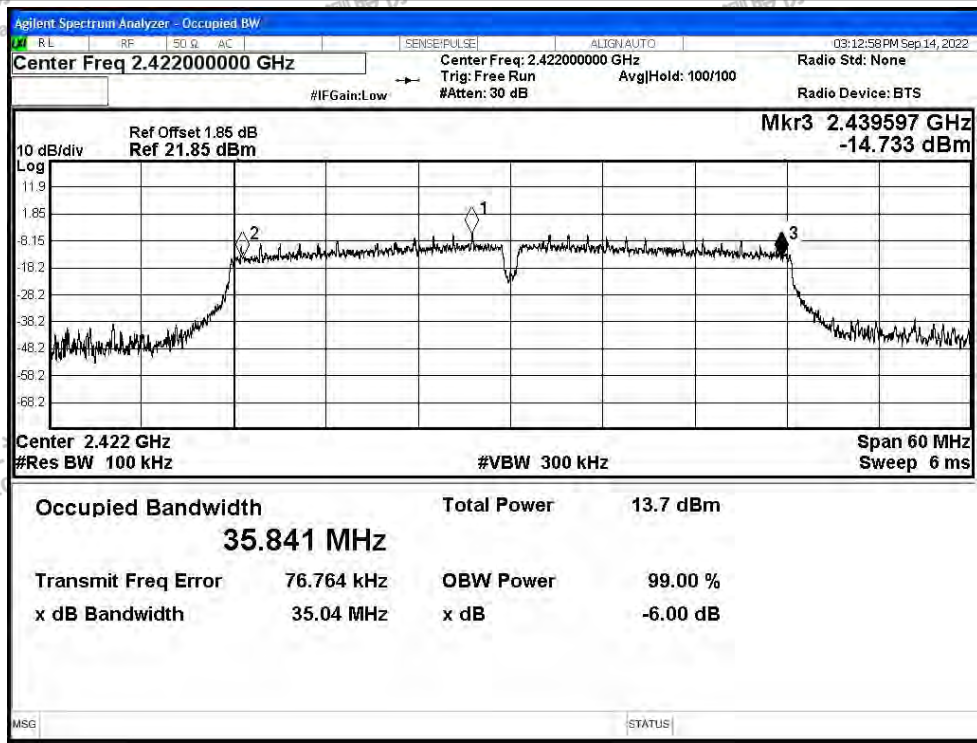




-6dB Bandwidth NVNT n20 2462MHz Ant2

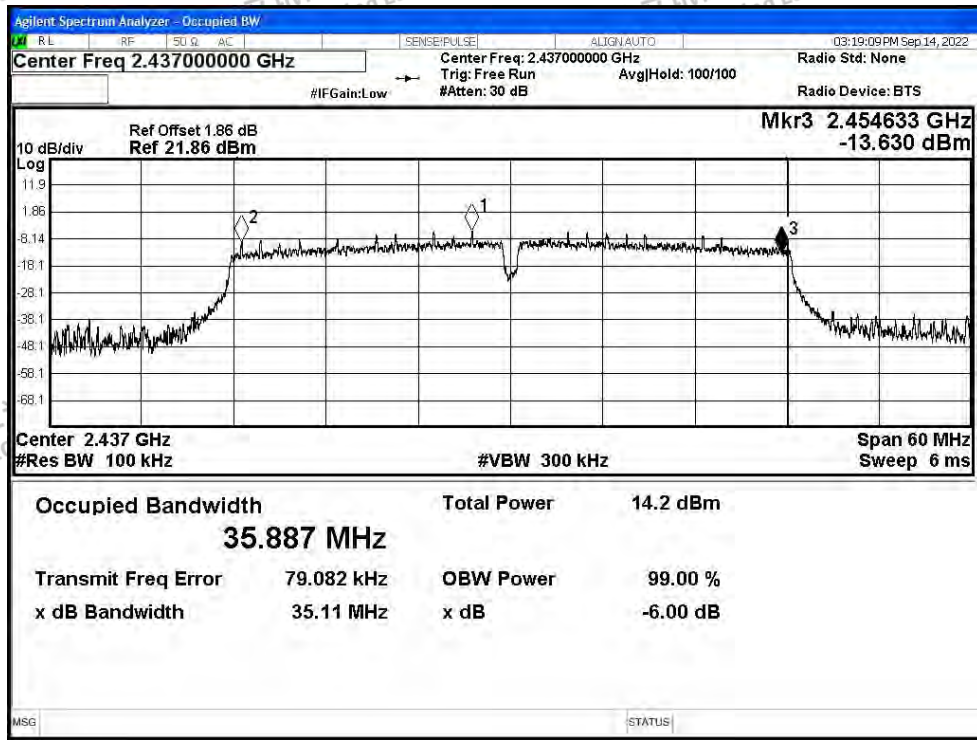


-6dB Bandwidth NVNT n40 2422MHz Ant2

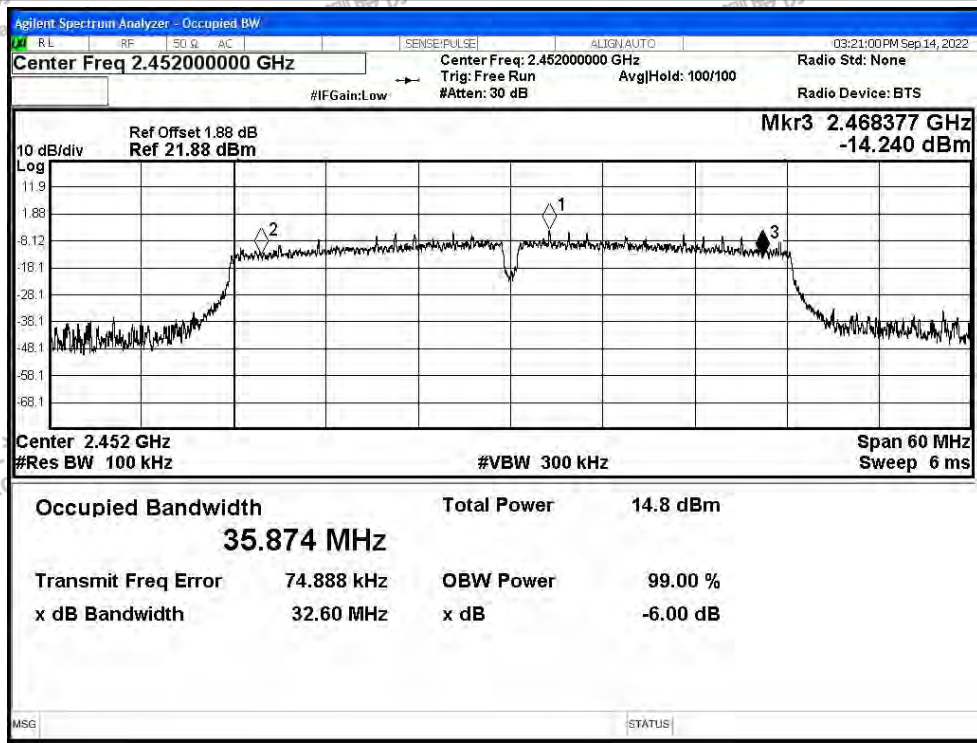




-6dB Bandwidth NVNT n40 2437MHz Ant2



-6dB Bandwidth NVNT n40 2452MHz Ant2





### C.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	15.66	30	Pass
NVNT	b	2437	Ant1	15.90	30	Pass
NVNT	b	2462	Ant1	15.13	30	Pass
NVNT	g	2412	Ant1	14.8	30	Pass
NVNT	g	2437	Ant1	14.45	30	Pass
NVNT	g	2462	Ant1	14.37	30	Pass
NVNT	n20	2412	Ant1	13.81	30	Pass
NVNT	n20	2437	Ant1	14.42	30	Pass
NVNT	n20	2462	Ant1	13.44	30	Pass
NVNT	n40	2422	Ant1	12.97	30	Pass
NVNT	n40	2437	Ant1	12.2	30	Pass
NVNT	n40	2452	Ant1	12.42	30	Pass

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant2	15.11	30	Pass
NVNT	b	2437	Ant2	15.79	30	Pass
NVNT	b	2462	Ant2	15.49	30	Pass
NVNT	g	2412	Ant2	14.59	30	Pass
NVNT	g	2437	Ant2	14.51	30	Pass
NVNT	g	2462	Ant2	14.42	30	Pass
NVNT	n20	2412	Ant2	13.78	30	Pass
NVNT	n20	2437	Ant2	14.34	30	Pass
NVNT	n20	2462	Ant2	13.9	30	Pass
NVNT	n40	2422	Ant2	12.65	30	Pass
NVNT	n40	2437	Ant2	12.7	30	Pass
NVNT	n40	2452	Ant2	12.34	30	Pass

MIMO

Condition	Mode	Frequency (MHz)	Total Power (dBm)			Limit (dBm)	Verdict
			ANT1	ANT2	ANT1+ANT2		
NVNT	n20	2412	13.81	13.78	16.81	30	Pass
NVNT	n20	2437	14.42	14.34	17.39	30	Pass
NVNT	n20	2462	13.44	13.9	16.69	30	Pass
NVNT	n40	2422	12.97	12.65	15.82	30	Pass
NVNT	n40	2437	12.2	12.7	15.47	30	Pass
NVNT	n40	2452	12.42	12.34	15.39	30	Pass



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### C.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-7.35	8	Pass
NVNT	b	2437	Ant1	-6.22	8	Pass
NVNT	b	2462	Ant1	-11.8	8	Pass
NVNT	g	2412	Ant1	-15.04	8	Pass
NVNT	g	2437	Ant1	-15.66	8	Pass
NVNT	g	2462	Ant1	-14.43	8	Pass
NVNT	n20	2412	Ant1	-15.17	8	Pass
NVNT	n20	2437	Ant1	-14.3	8	Pass
NVNT	n20	2462	Ant1	-17.59	8	Pass
NVNT	n40	2422	Ant1	-18.27	8	Pass
NVNT	n40	2437	Ant1	-18.95	8	Pass
NVNT	n40	2452	Ant1	-19.27	8	Pass

Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant2	-13.85	8	Pass
NVNT	b	2437	Ant2	-11.36	8	Pass
NVNT	b	2462	Ant2	-14.26	8	Pass
NVNT	g	2412	Ant2	-14.52	8	Pass
NVNT	g	2437	Ant2	-14.53	8	Pass
NVNT	g	2462	Ant2	-12.24	8	Pass
NVNT	n20	2412	Ant2	-15.47	8	Pass
NVNT	n20	2437	Ant2	-14.47	8	Pass
NVNT	n20	2462	Ant2	-14.38	8	Pass
NVNT	n40	2422	Ant2	-21.29	8	Pass
NVNT	n40	2437	Ant2	-20.9	8	Pass
NVNT	n40	2452	Ant2	-20.57	8	Pass

MIMO

Condition	Mode	Frequency (MHz)	Total PSD (dBm/3kHz)			Limit (dBm)	Verdict
			ANT1	ANT2	ANT1+ANT2		
NVNT	n20	2412	-15.17	-15.47	-12.31	8	Pass
NVNT	n20	2437	-14.3	-14.47	-11.37	8	Pass
NVNT	n20	2462	-17.59	-14.38	-12.68	8	Pass
NVNT	n40	2422	-18.27	-21.29	-16.51	8	Pass
NVNT	n40	2437	-18.95	-20.9	-16.81	8	Pass
NVNT	n40	2452	-19.27	-20.57	-16.86	8	Pass



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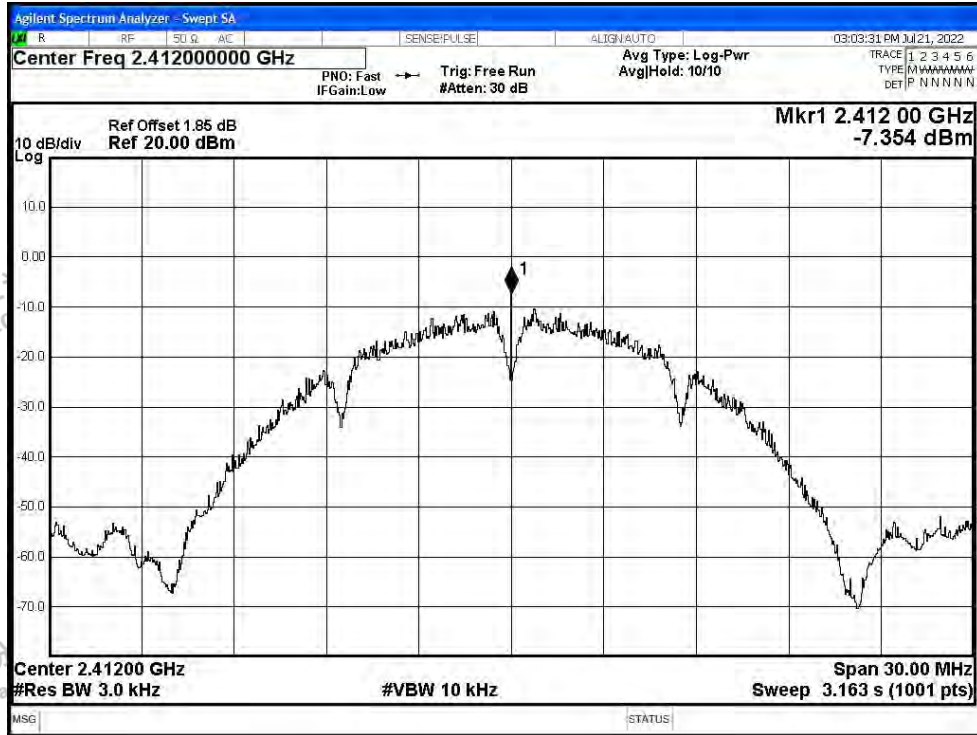




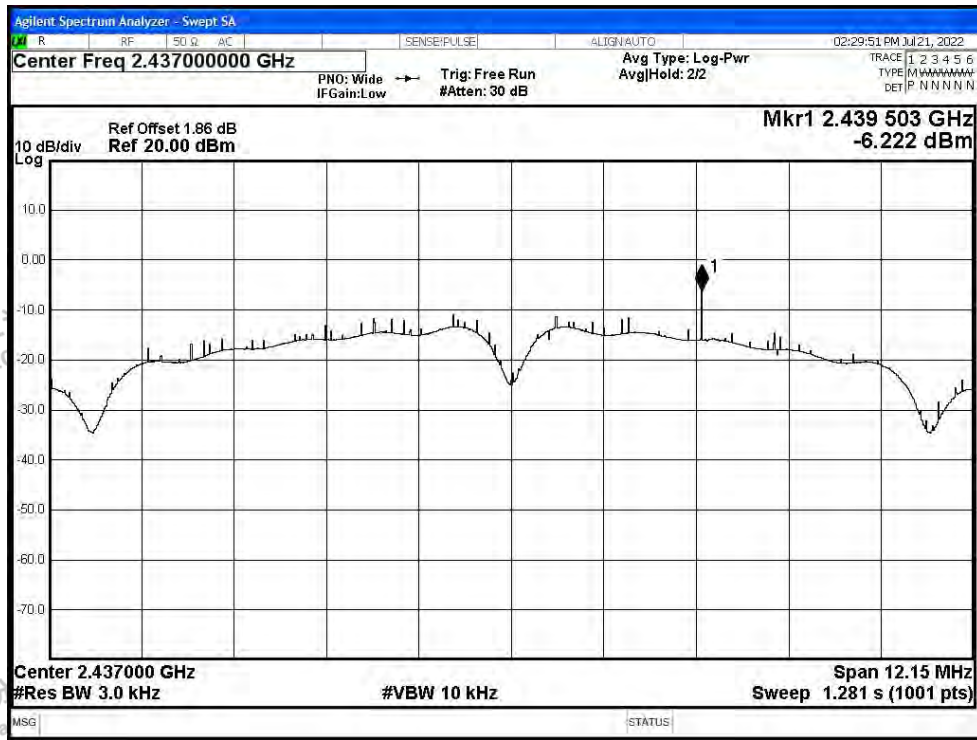
ANT1:

Test Graphs

PSD NVNT b 2412MHz Ant1

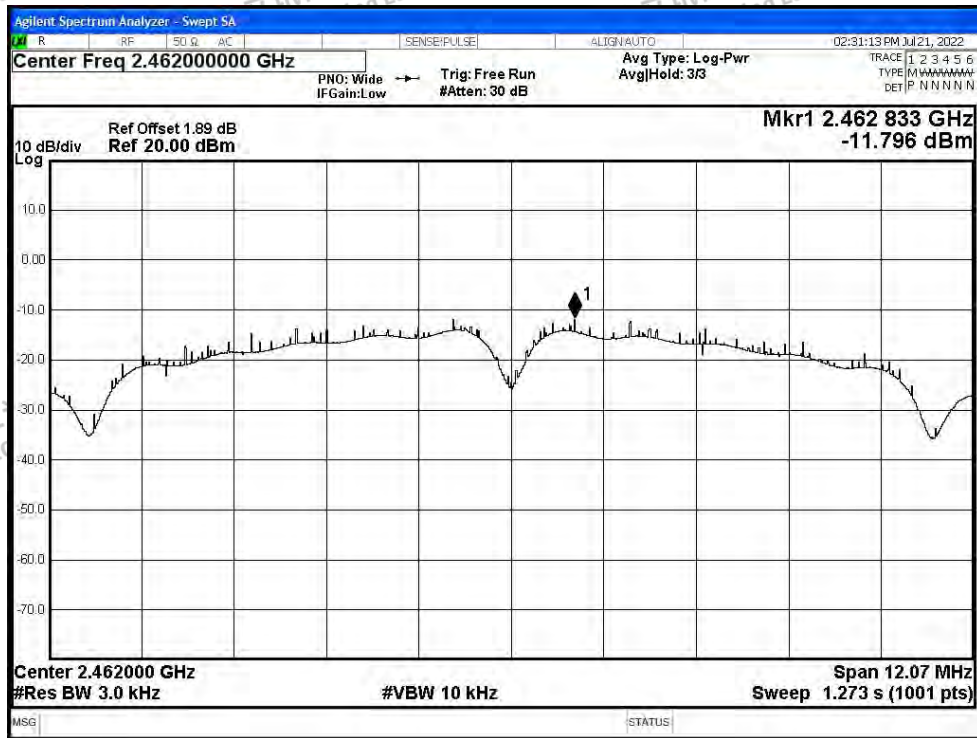


PSD NVNT b 2437MHz Ant1

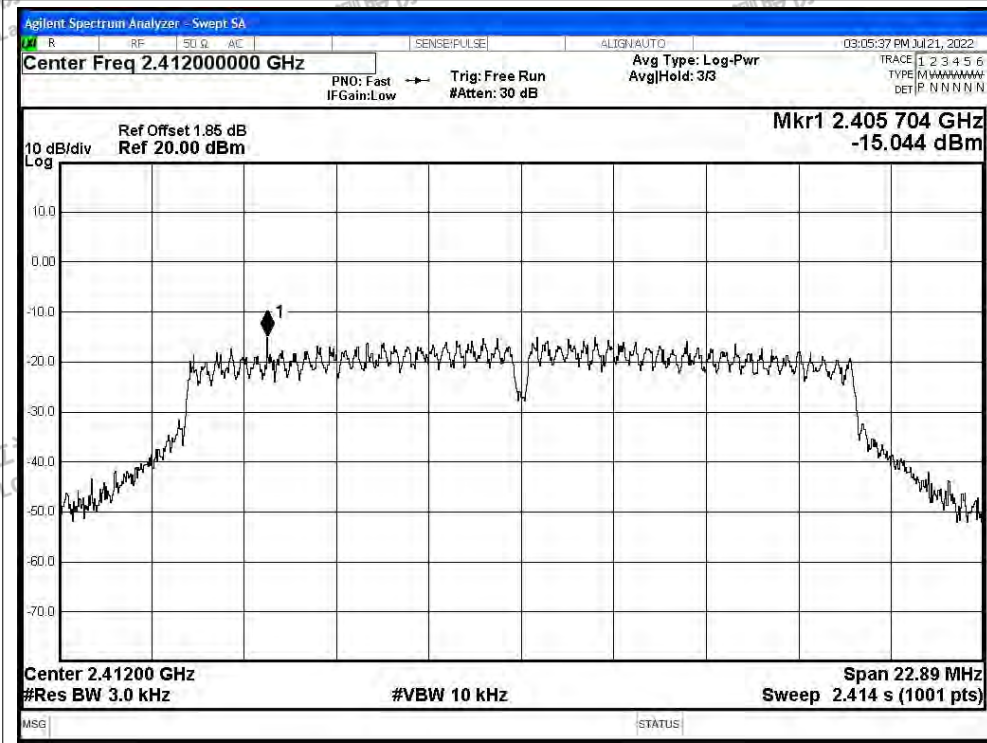




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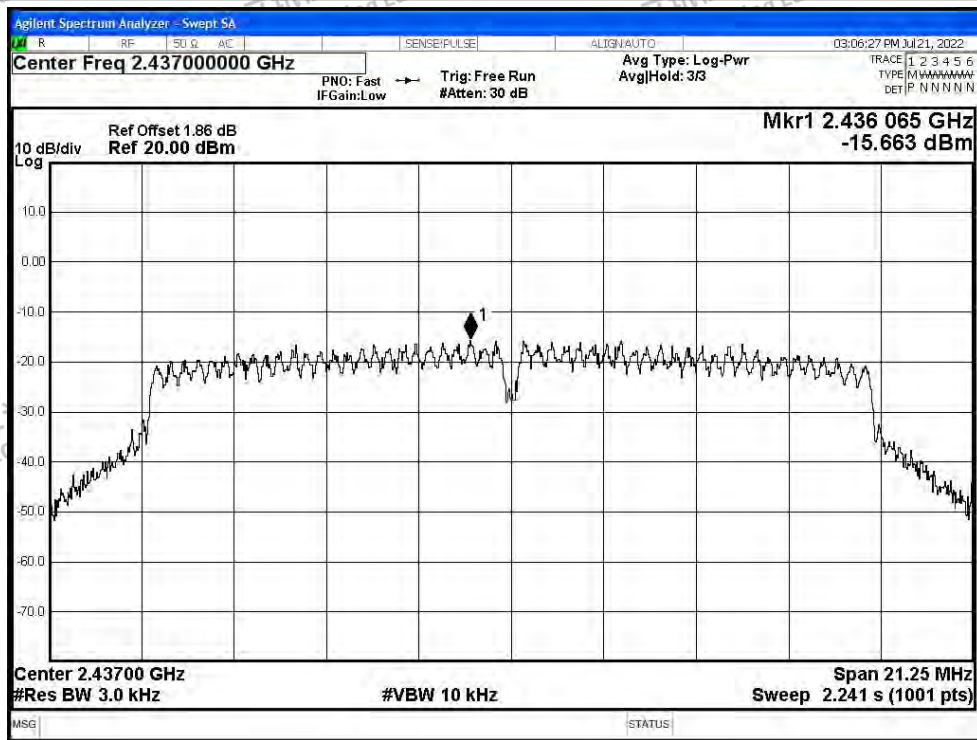


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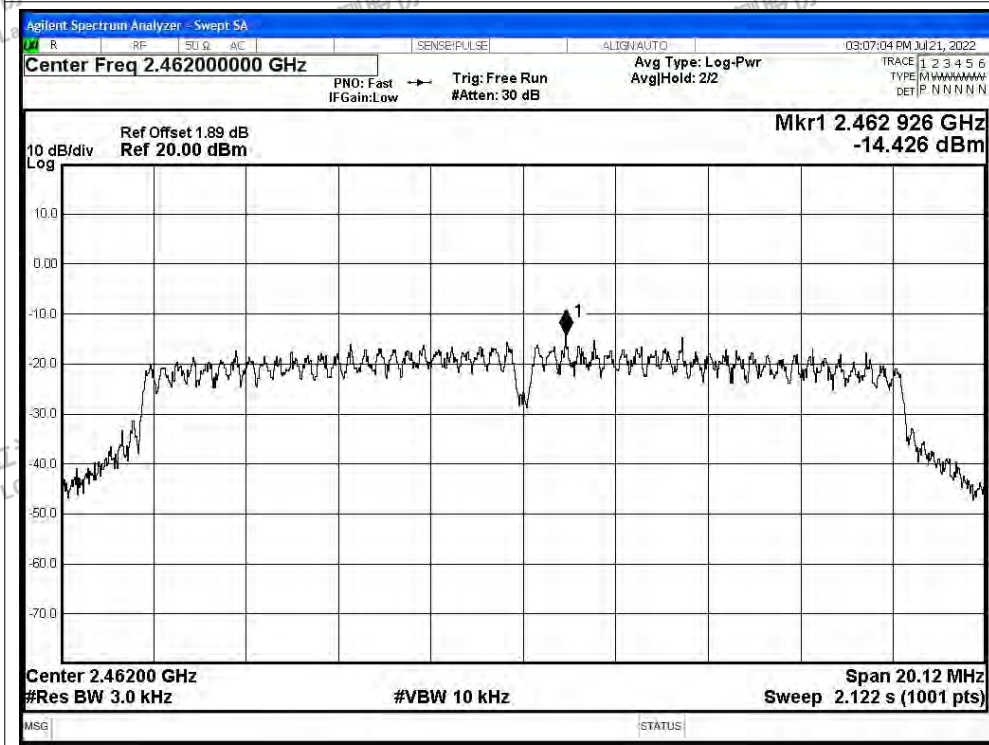




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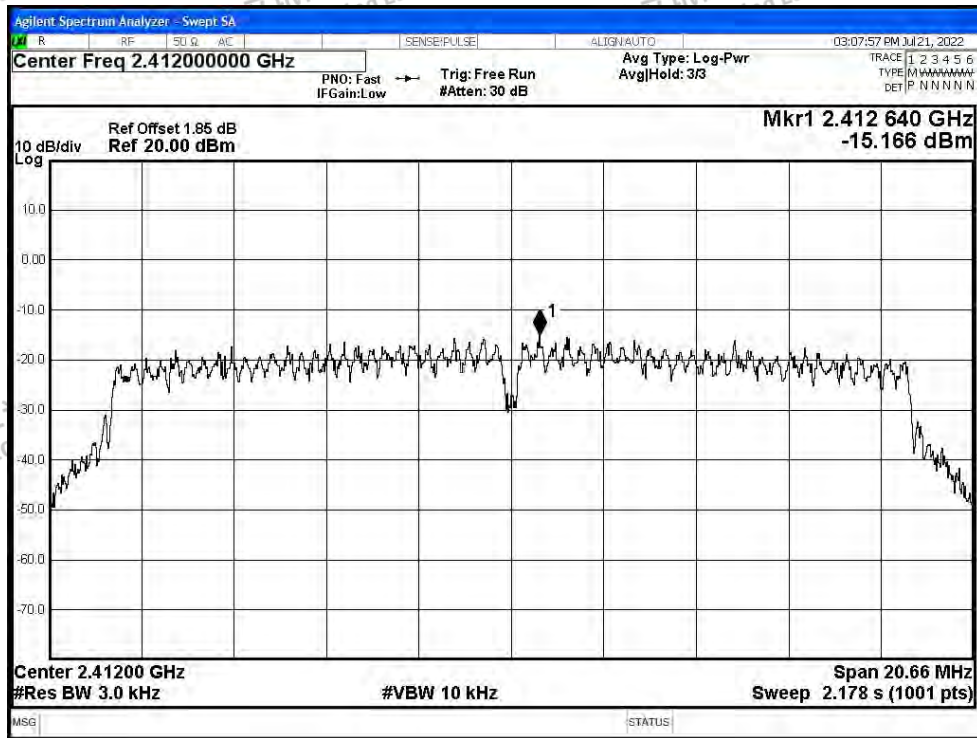


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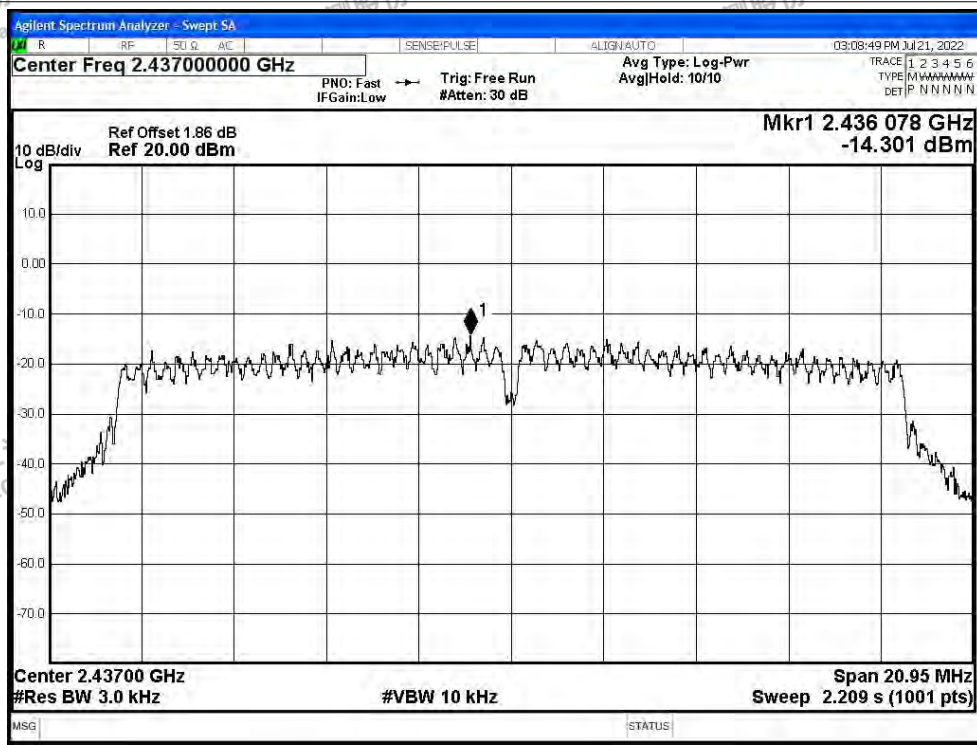




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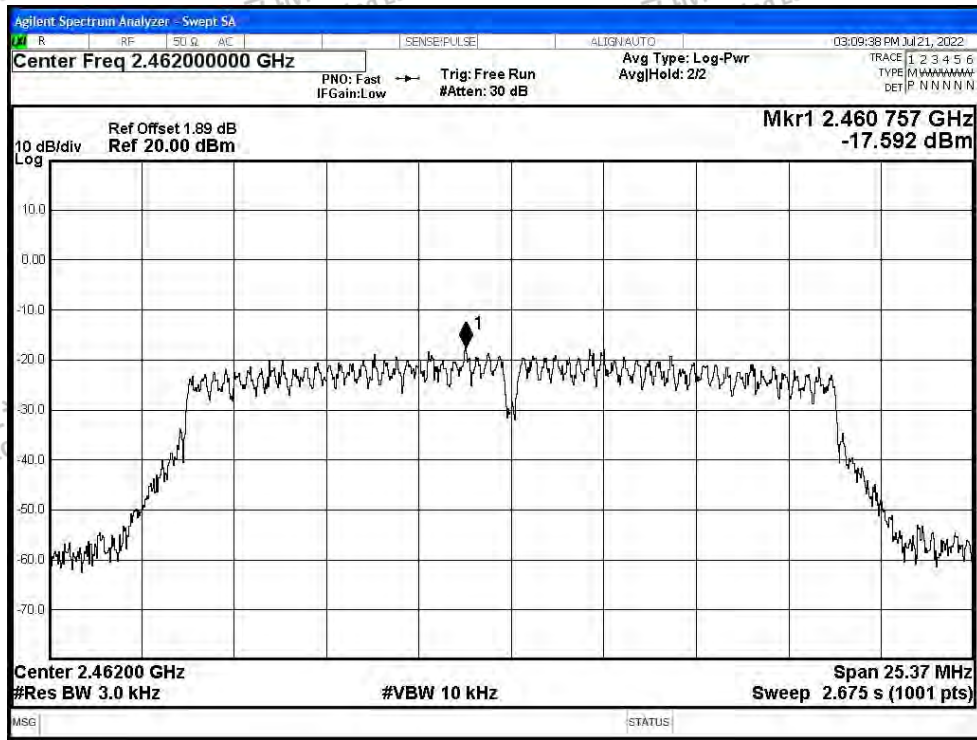


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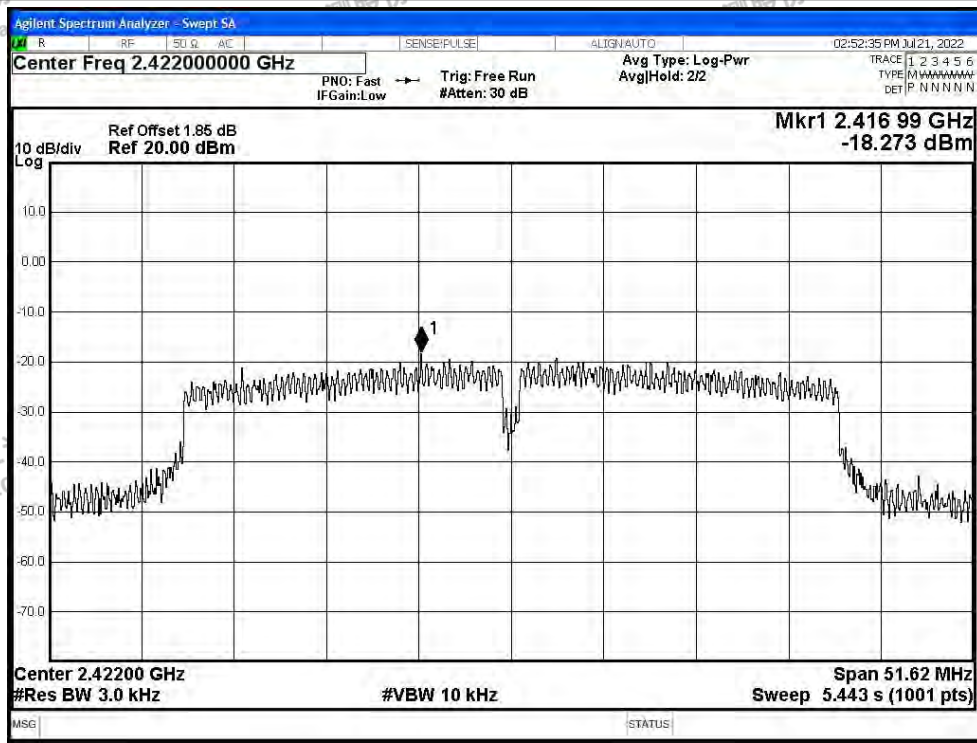




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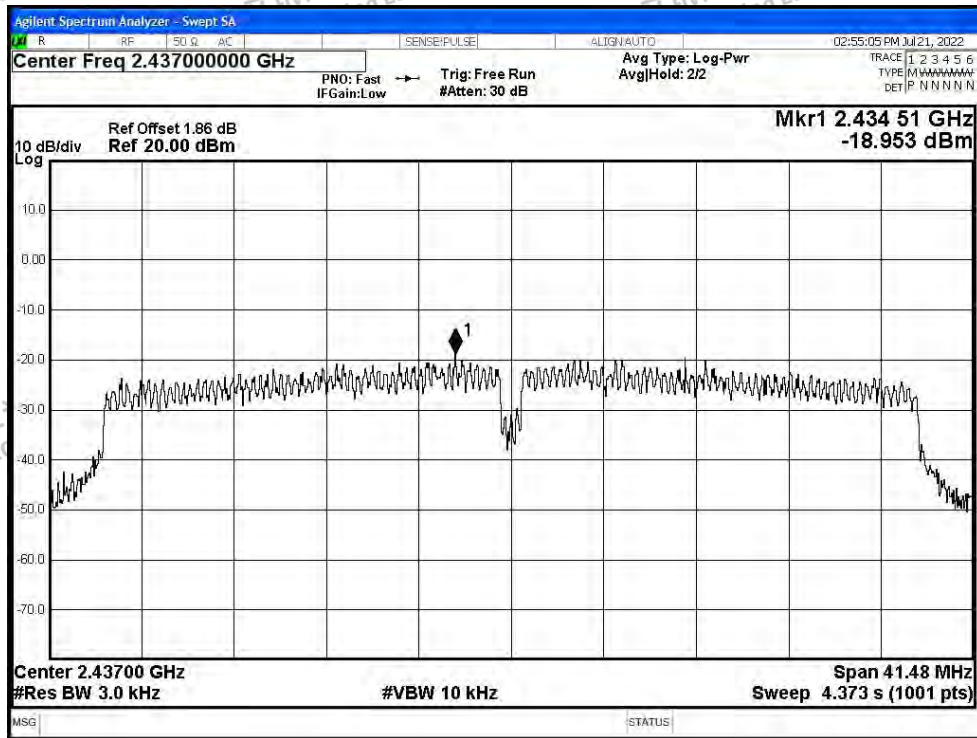


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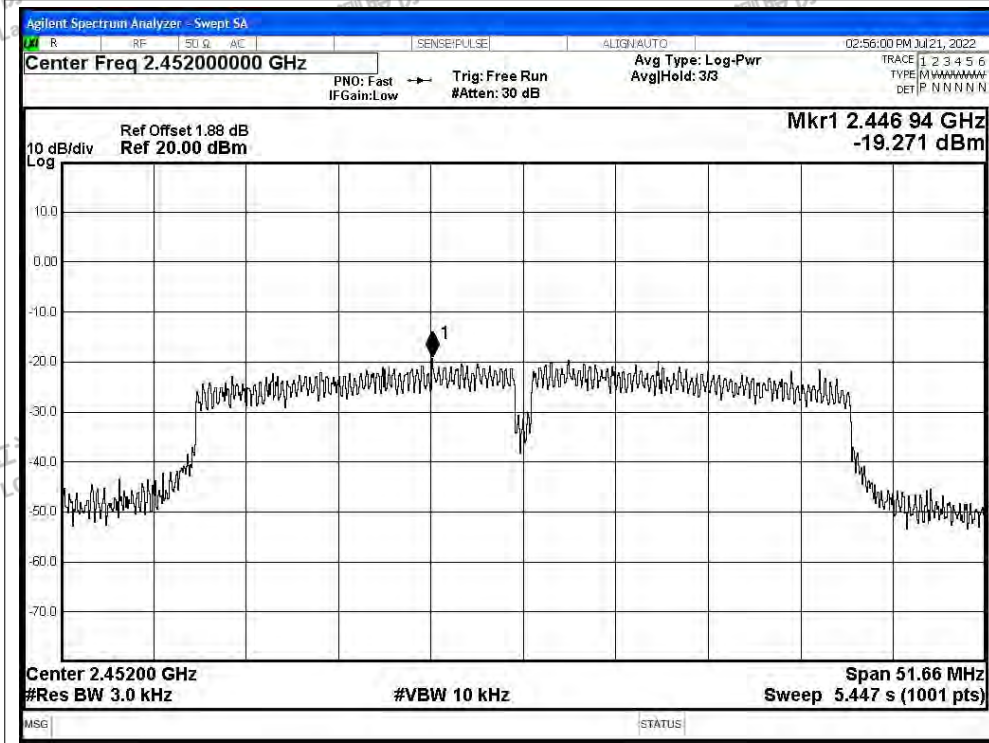




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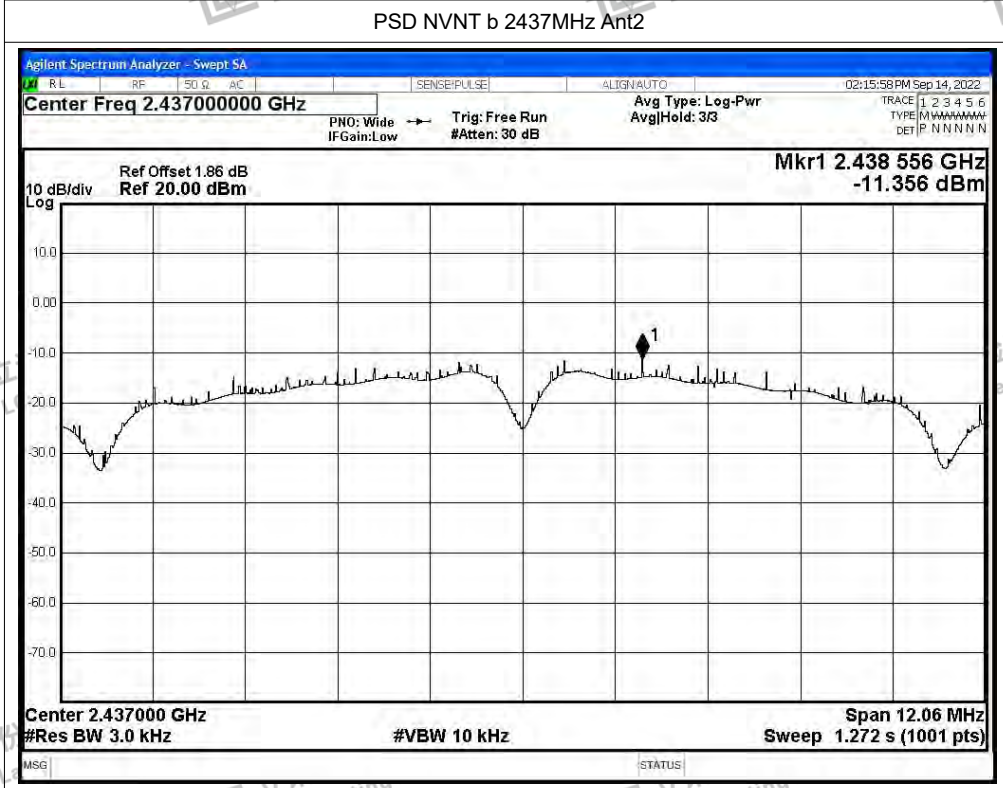


PSD NVNT n40 2452MHz Ant1



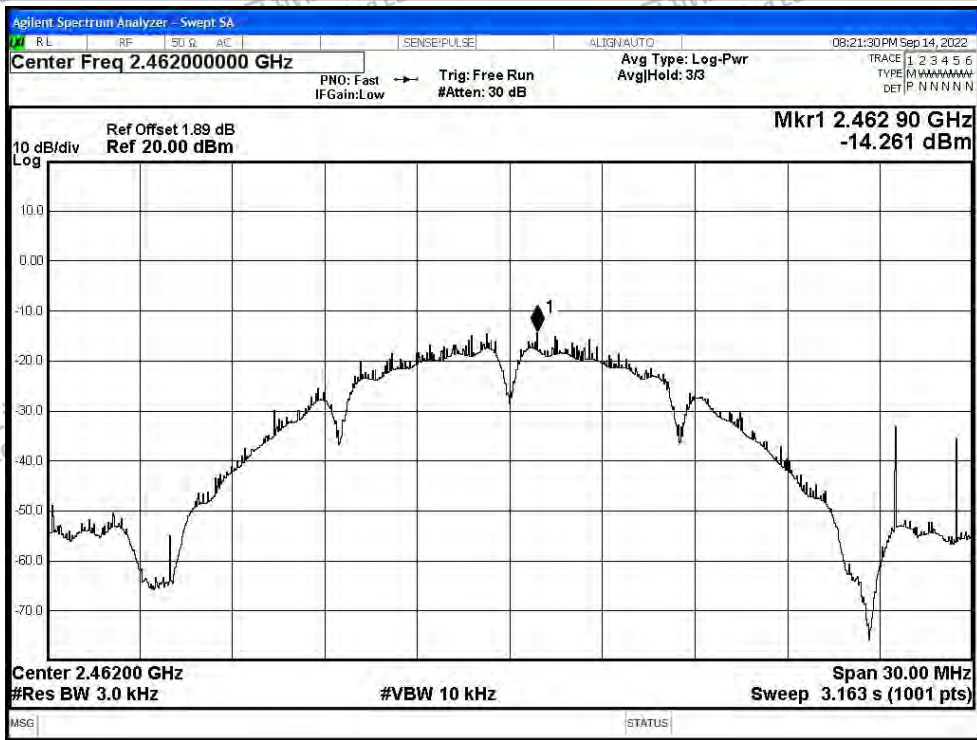


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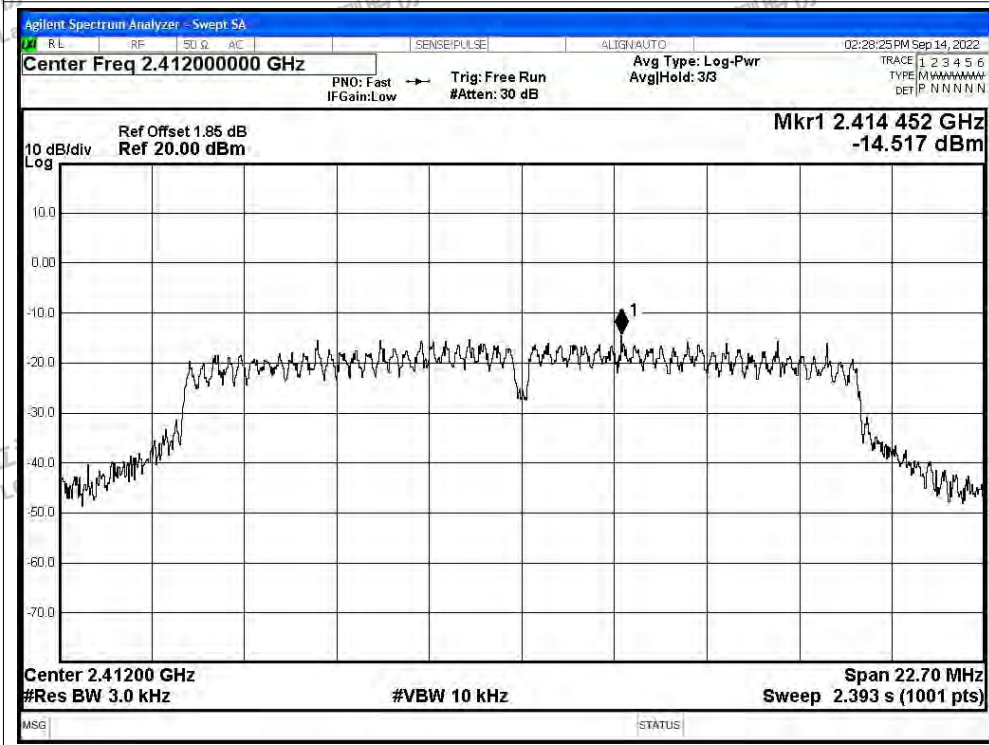




PSD NVNT b 2462MHz Ant2



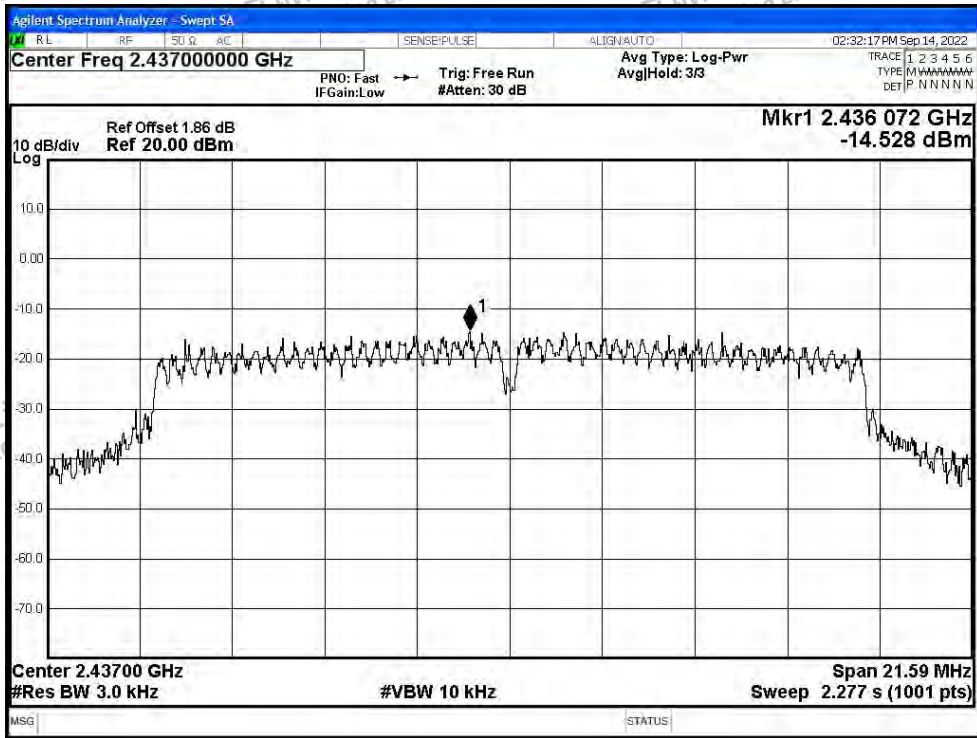
PSD NVNT g 2412MHz Ant2



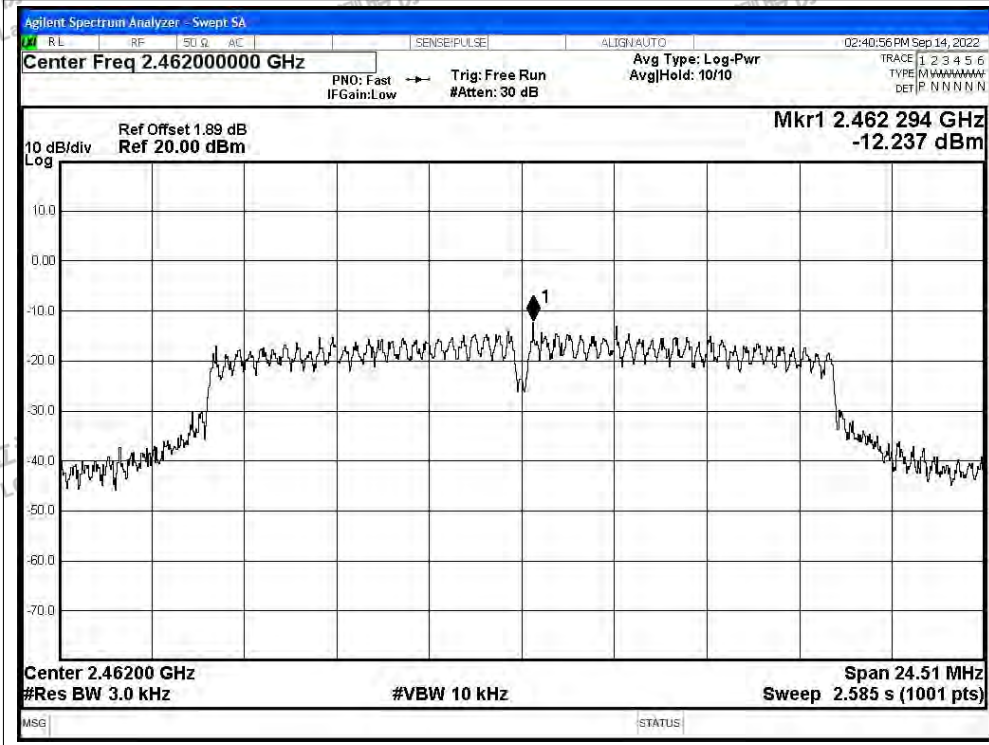




PSD NVNT g 2437MHz Ant2

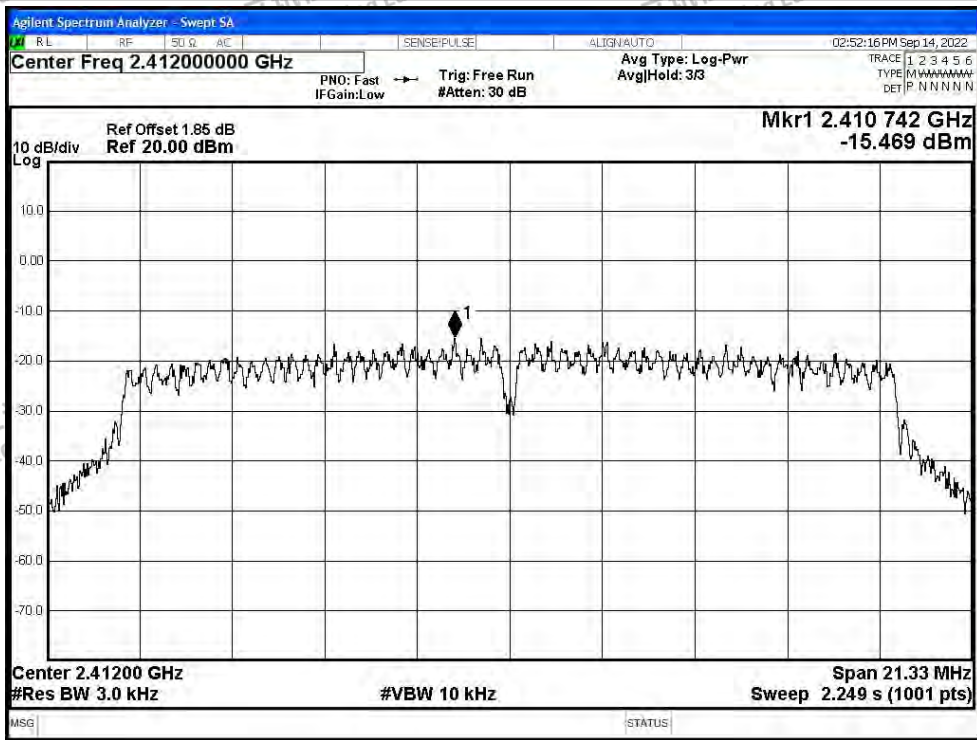


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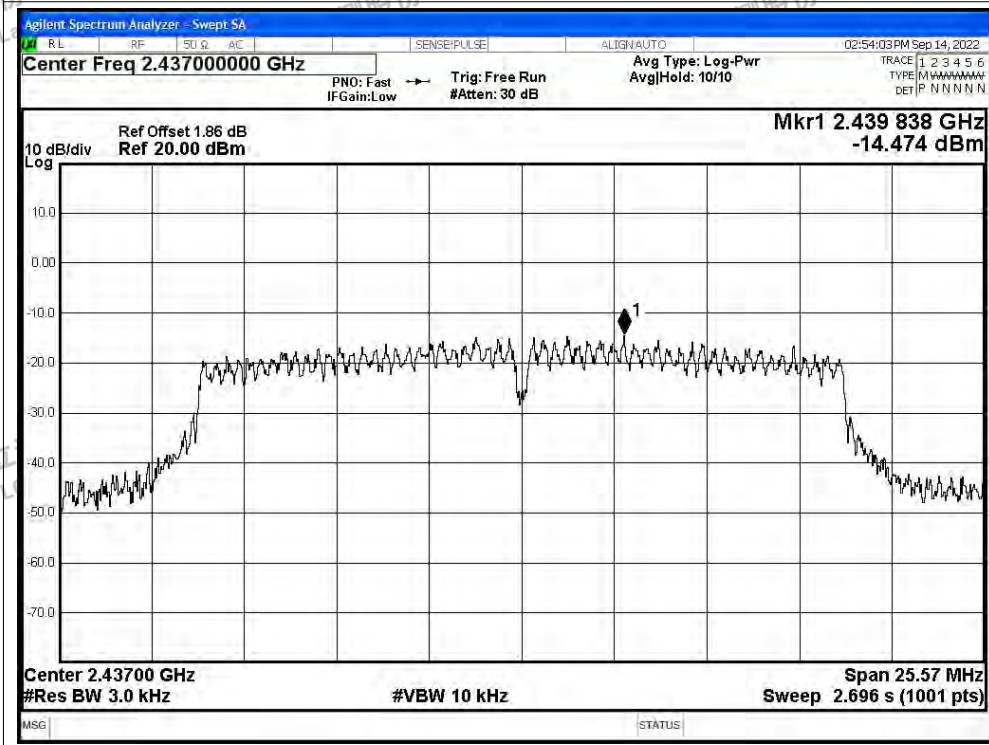




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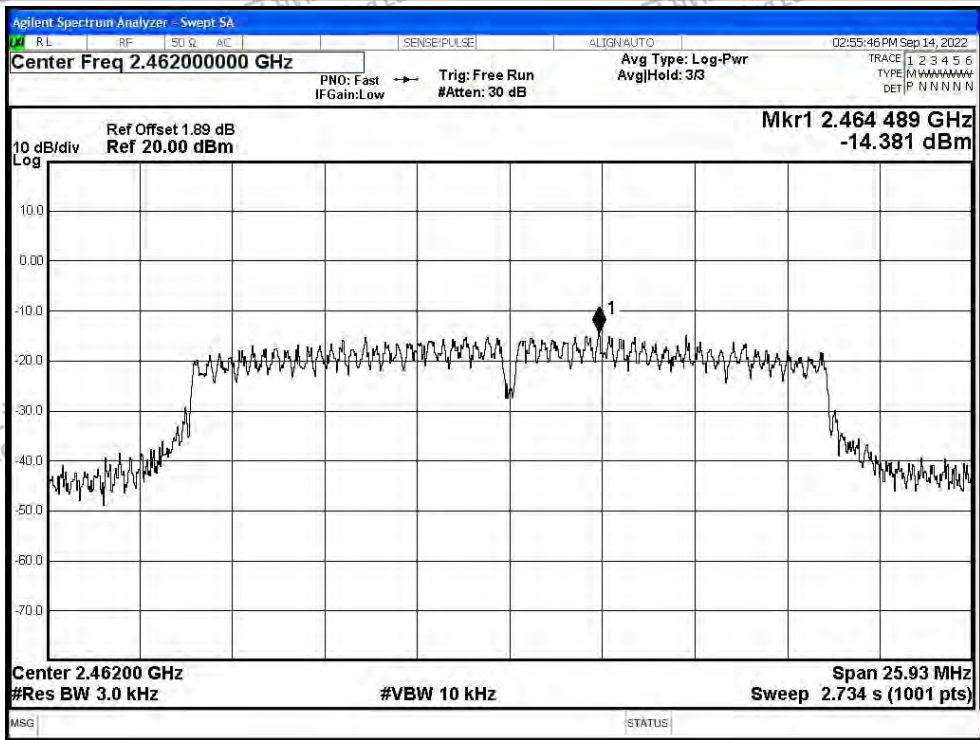


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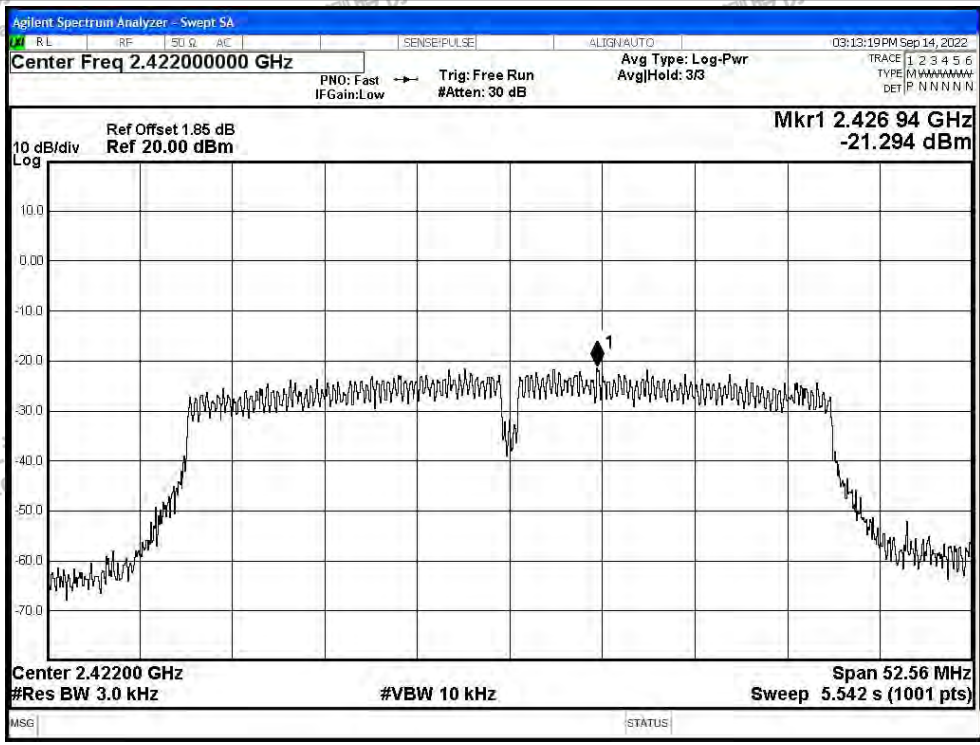




PSD NVNT n20 2462MHz Ant2

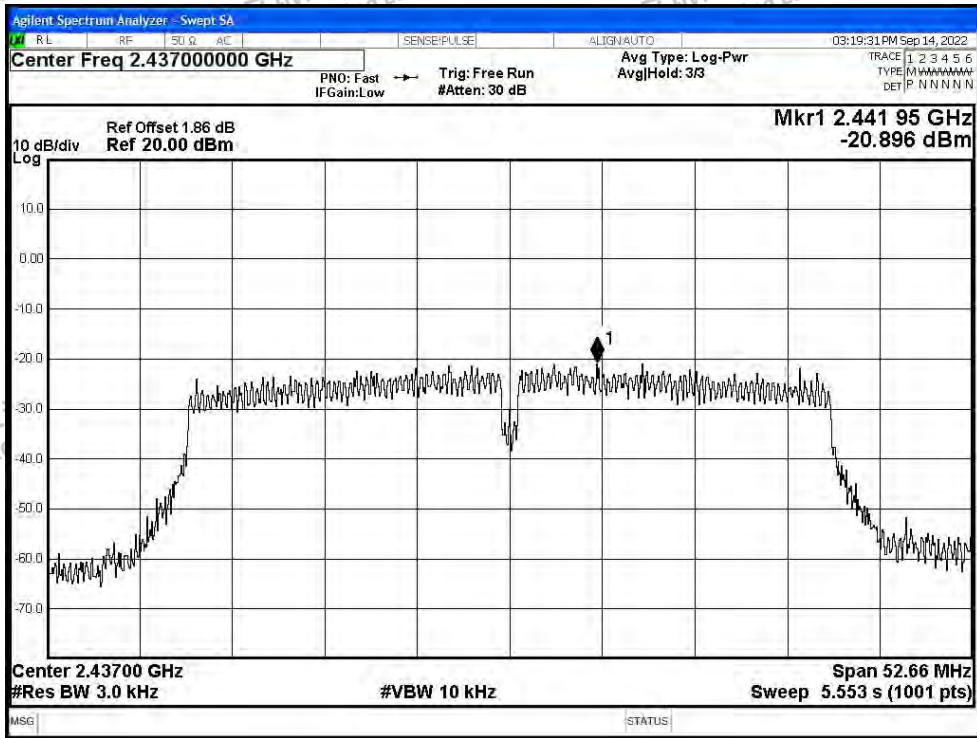


PSD NVNT n40 2422MHz Ant2

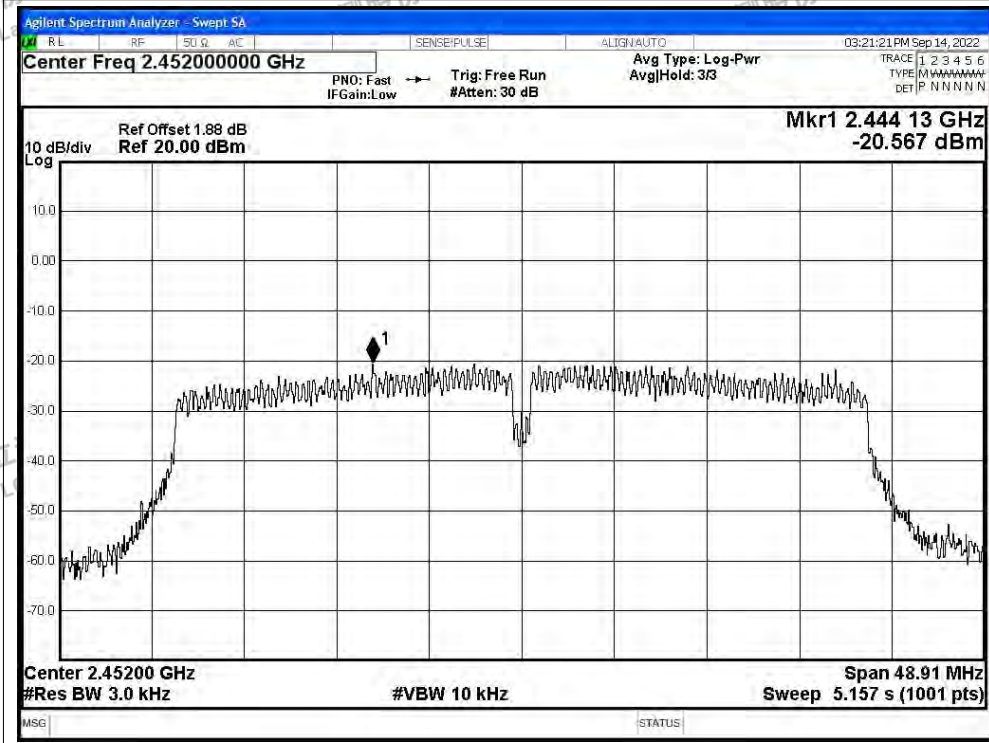




PSD NVNT n40 2437MHz Ant2



PSD NVNT n40 2452MHz Ant2





### C.4 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-51.6	-20	Pass
NVNT	b	2462	Ant1	-62.76	-20	Pass
NVNT	g	2412	Ant1	-38.01	-20	Pass
NVNT	g	2462	Ant1	-48.14	-20	Pass
NVNT	n20	2412	Ant1	-40	-20	Pass
NVNT	n20	2462	Ant1	-49.4	-20	Pass
NVNT	n40	2422	Ant1	-37.62	-20	Pass
NVNT	n40	2452	Ant1	-38.1	-20	Pass

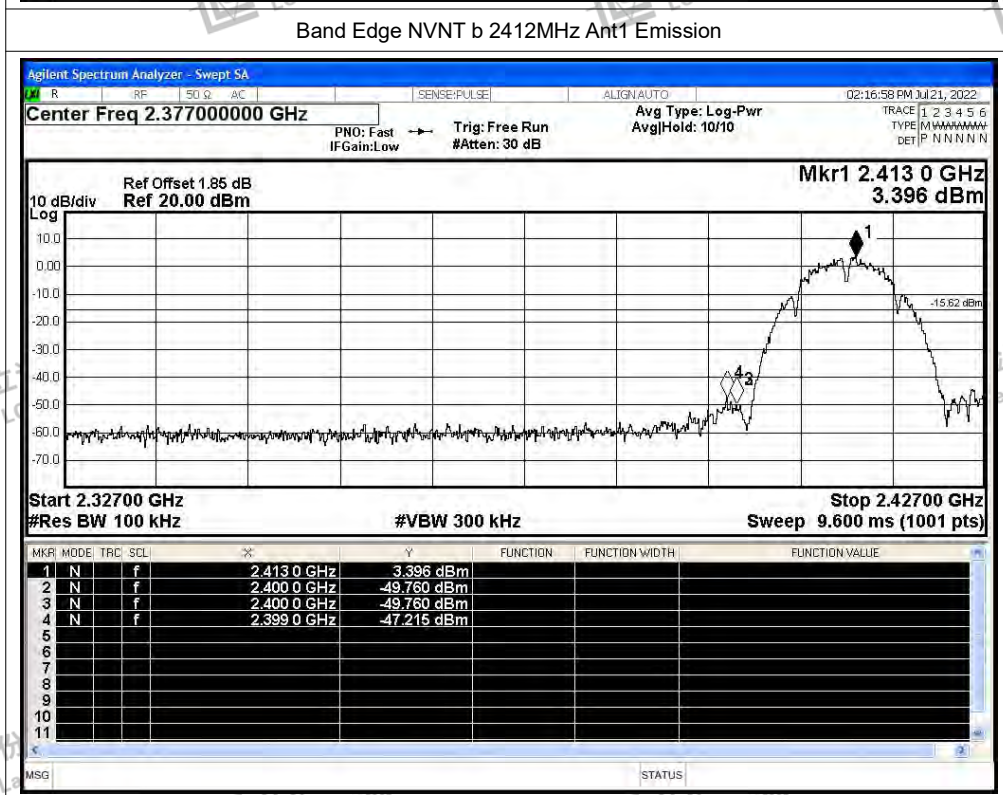
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant2	-42.27	-20	Pass
NVNT	b	2462	Ant2	-44.5	-20	Pass
NVNT	g	2412	Ant2	-28.49	-20	Pass
NVNT	g	2462	Ant2	-38.22	-20	Pass
NVNT	n20	2412	Ant2	-30.74	-20	Pass
NVNT	n20	2462	Ant2	-35.34	-20	Pass
NVNT	n40	2422	Ant2	-33.87	-20	Pass
NVNT	n40	2452	Ant2	-31.86	-20	Pass



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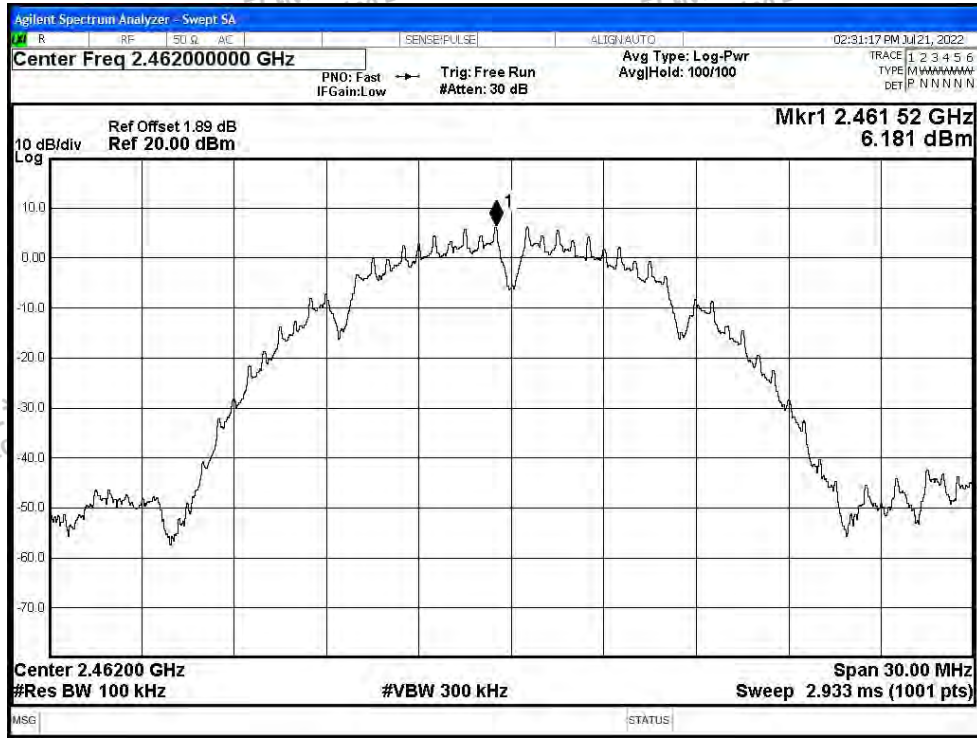


ANT1:

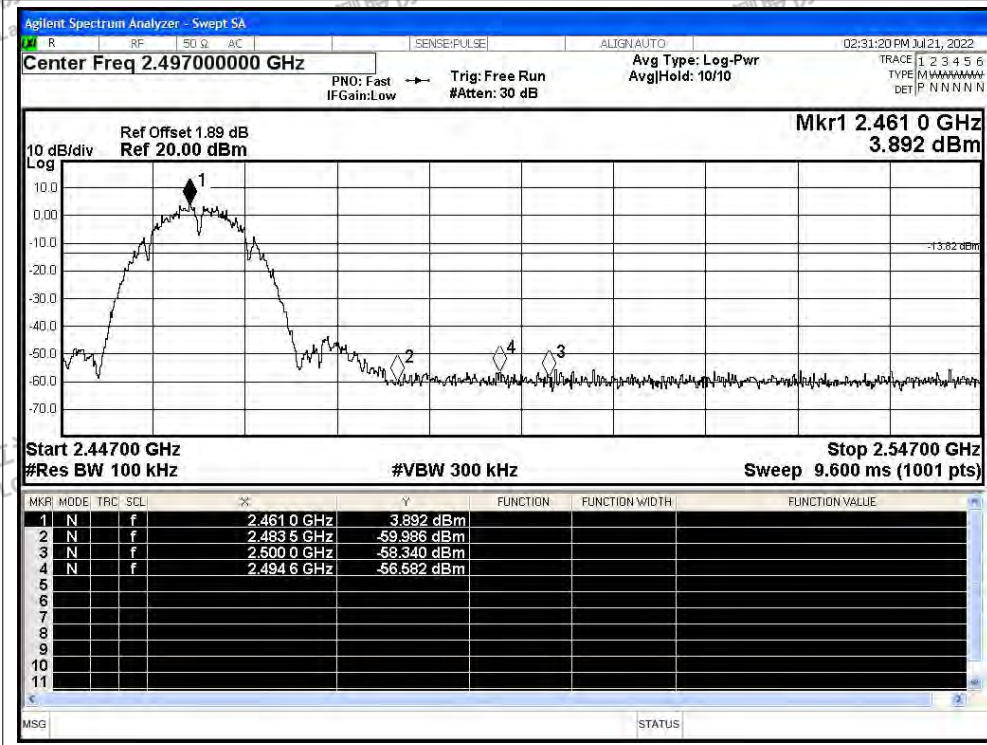




Band Edge NVNT b 2462MHz Ant1 Ref

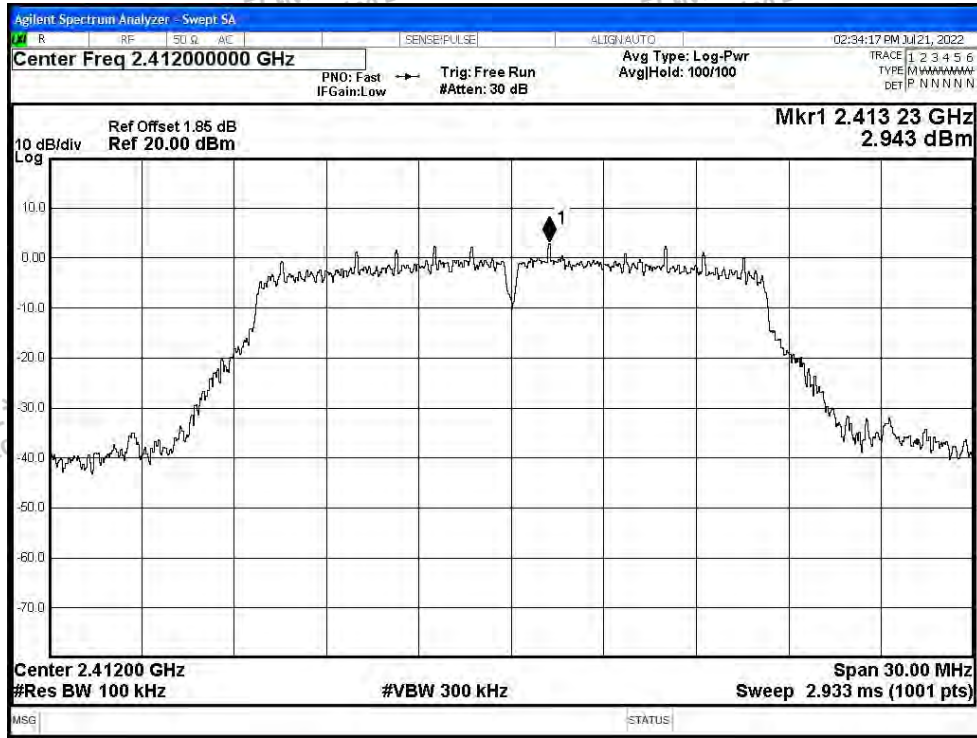


Band Edge NVNT b 2462MHz Ant1 Emission

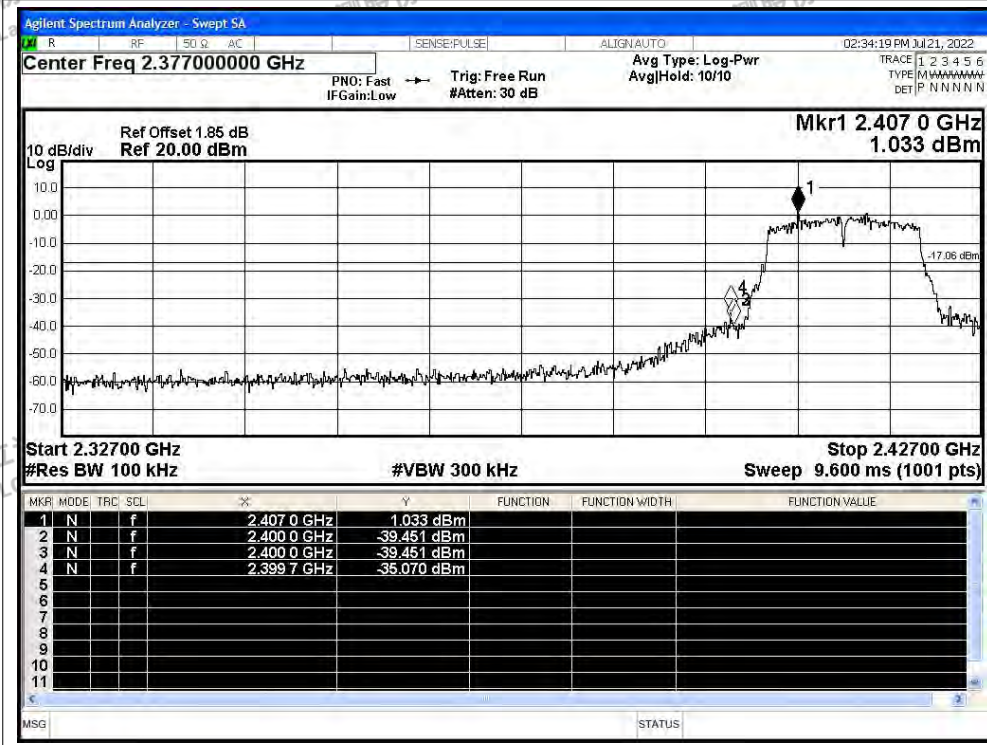




Band Edge NVNT g 2412MHz Ant1 Ref



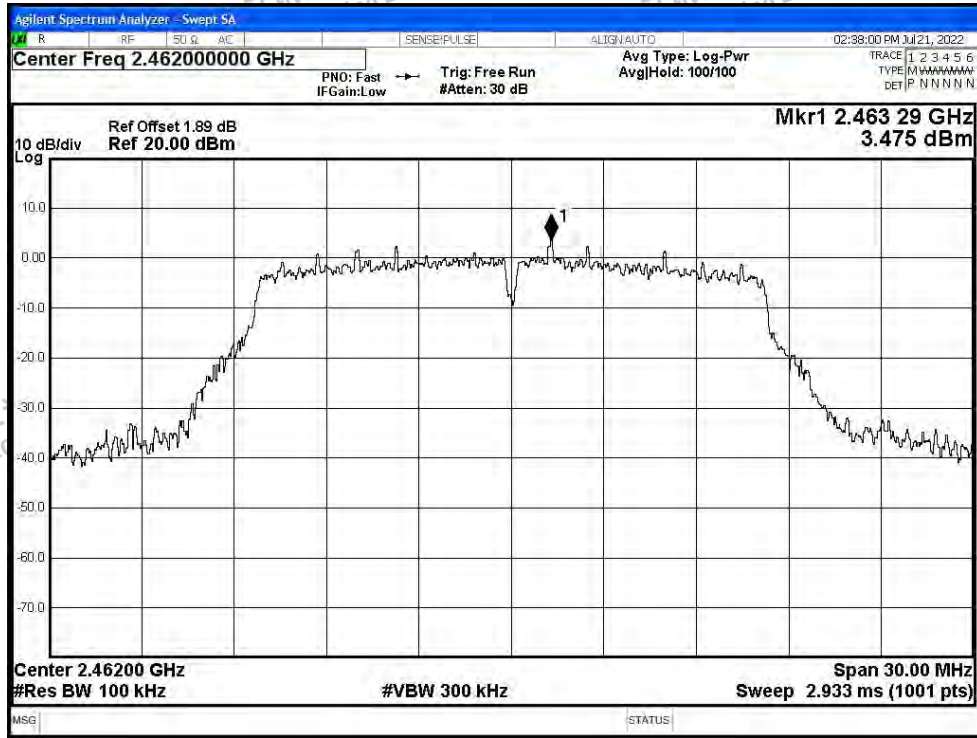
Band Edge NVNT g 2412MHz Ant1 Emission



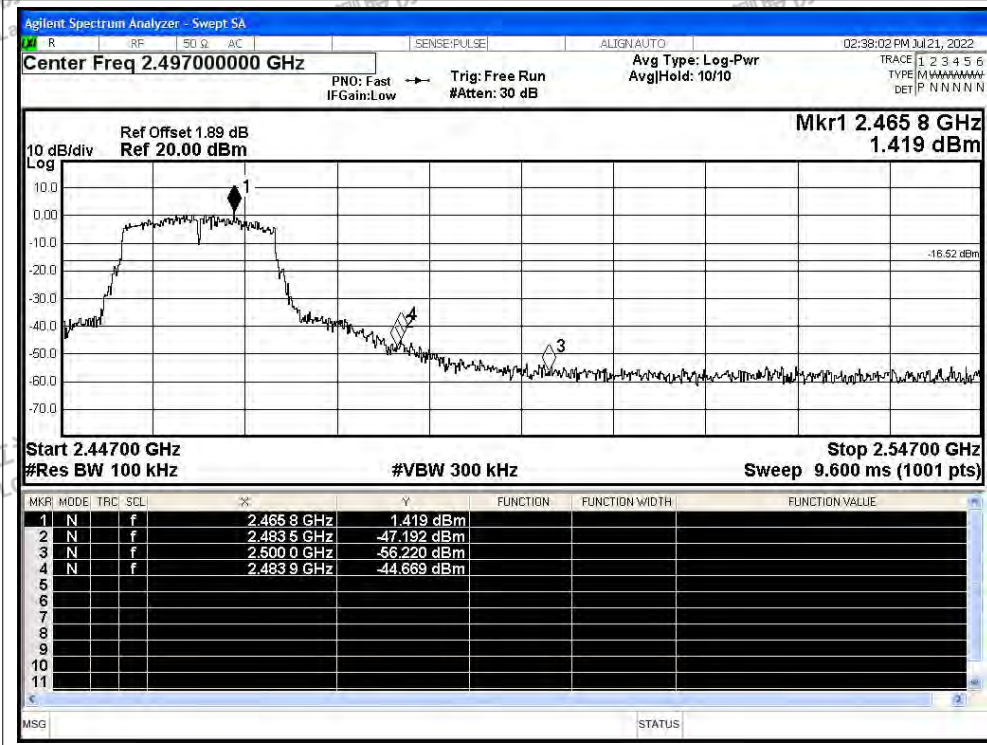




Band Edge NVNT g 2462MHz Ant1 Ref

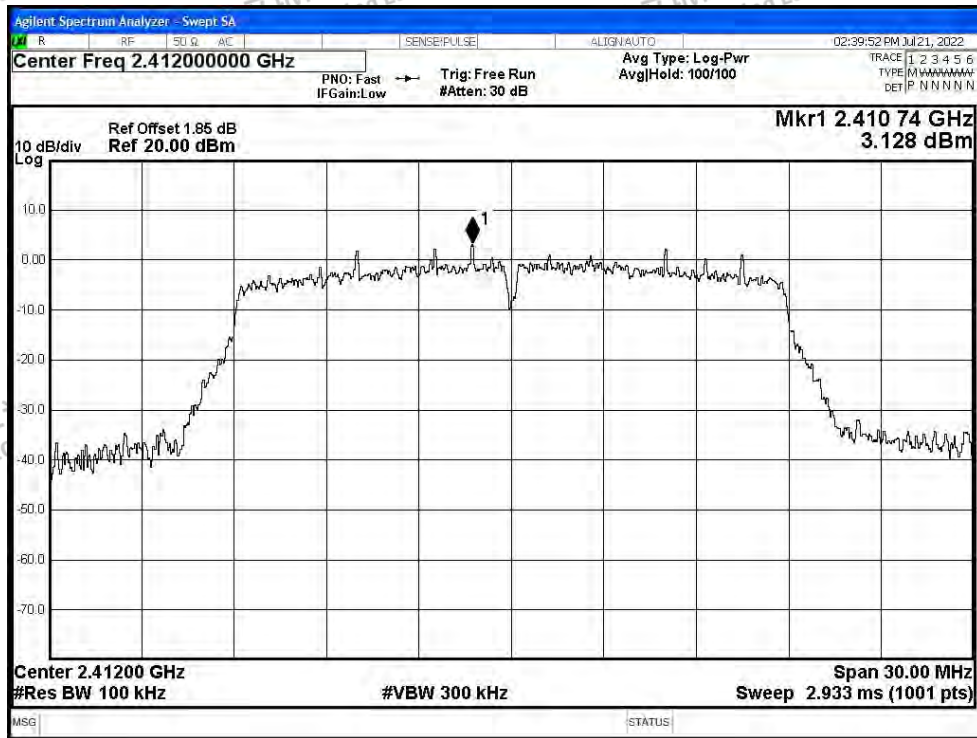


Band Edge NVNT g 2462MHz Ant1 Emission

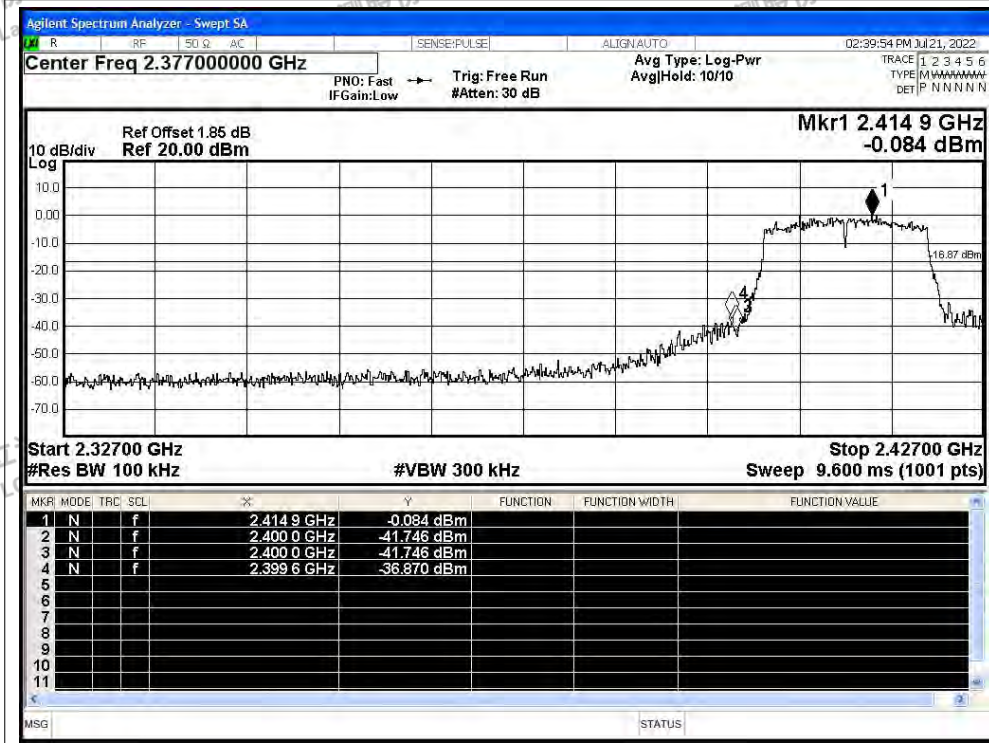




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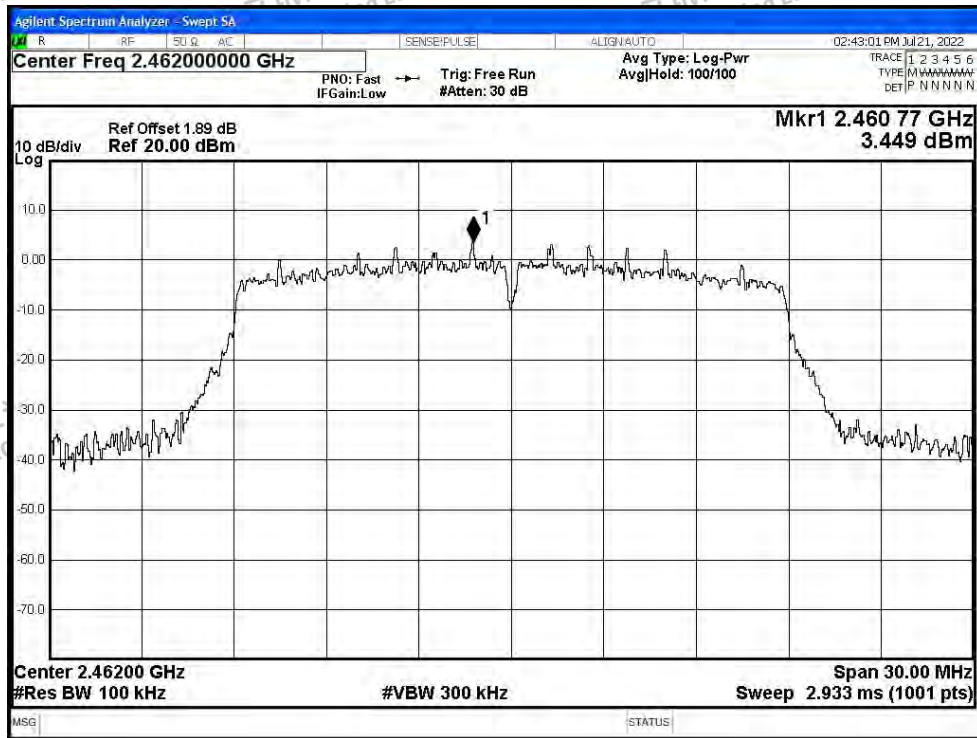


Band Edge NVNT n20 2412MHz Ant1 Emission

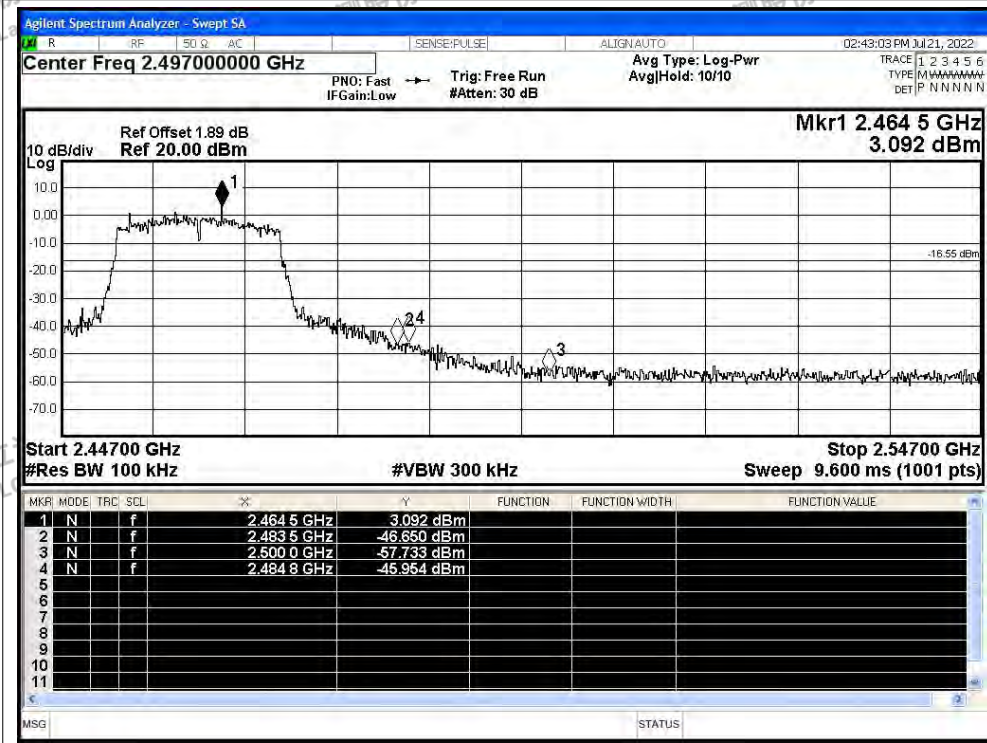




Band Edge NVNT n20 2462MHz Ant1 Ref

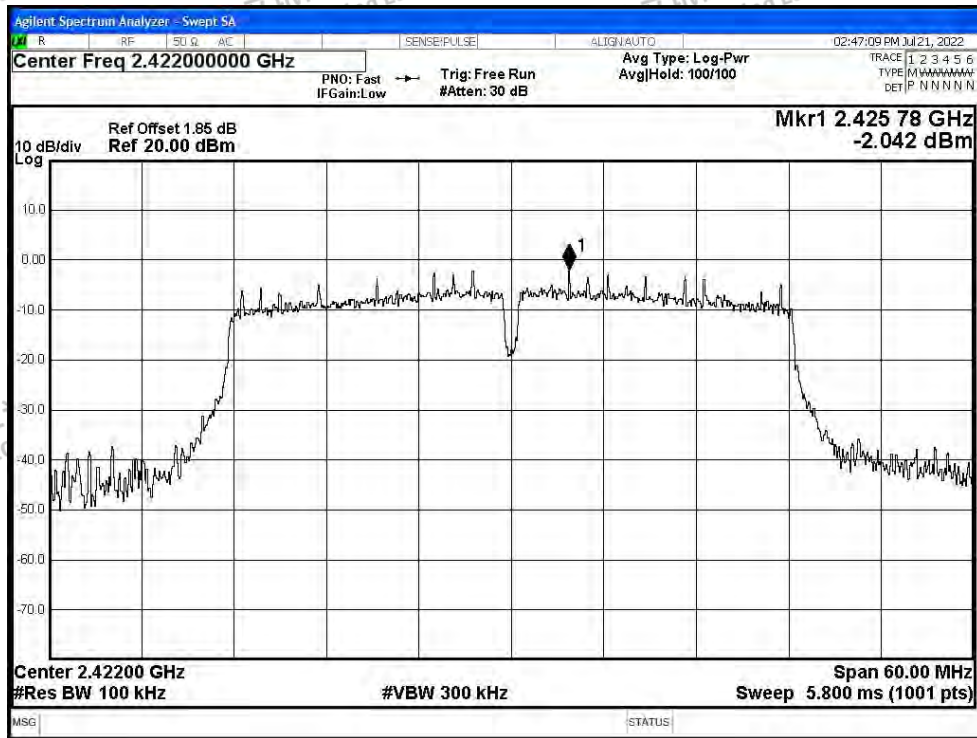


Band Edge NVNT n20 2462MHz Ant1 Emission

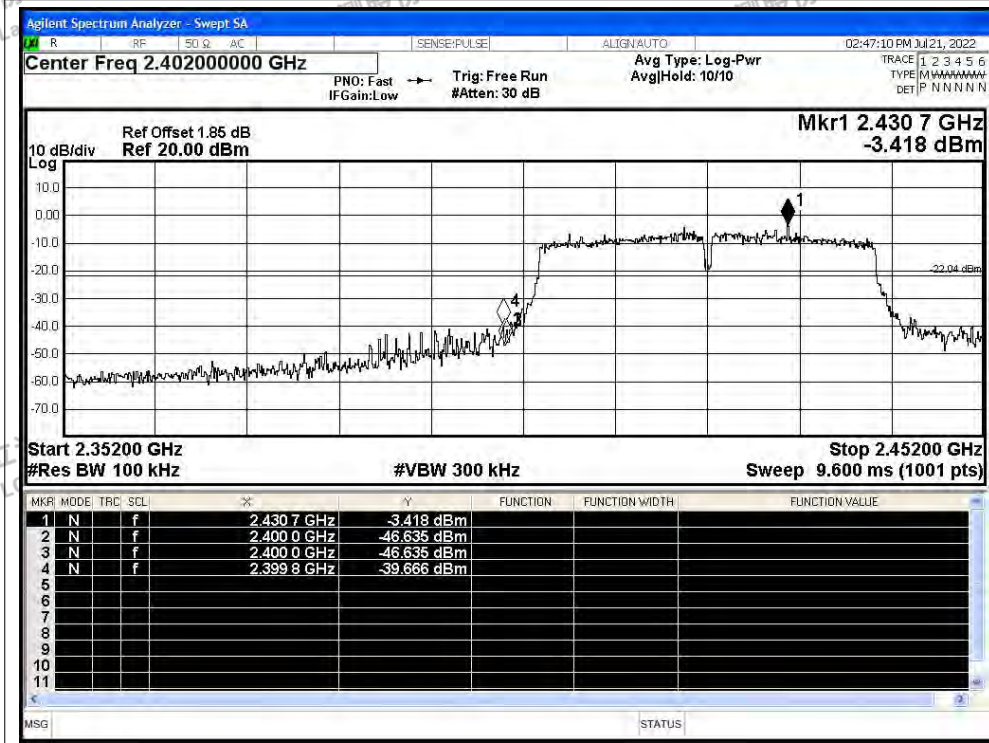




Band Edge NVNT n40 2422MHz Ant1 Ref

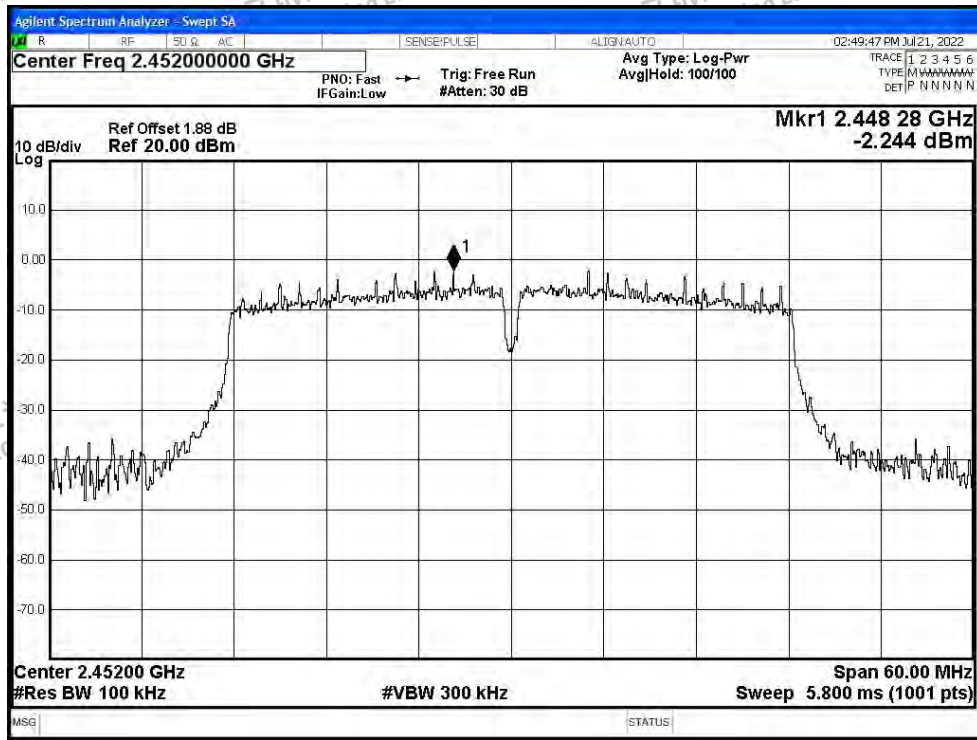


Band Edge NVNT n40 2422MHz Ant1 Emission

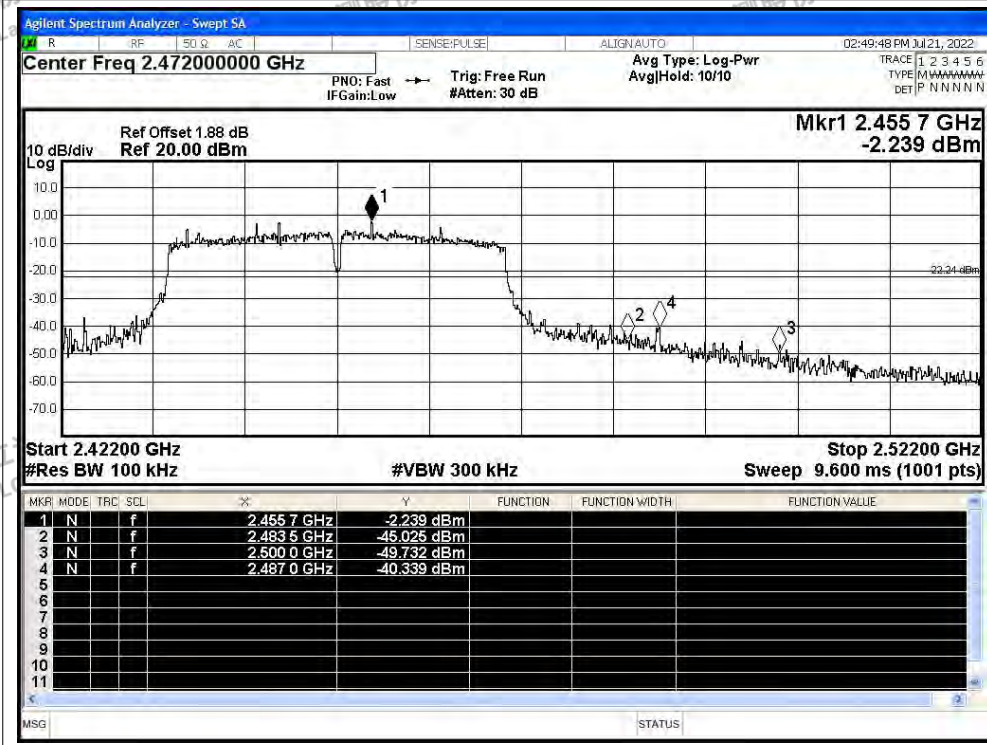




Band Edge NVNT n40 2452MHz Ant1 Ref

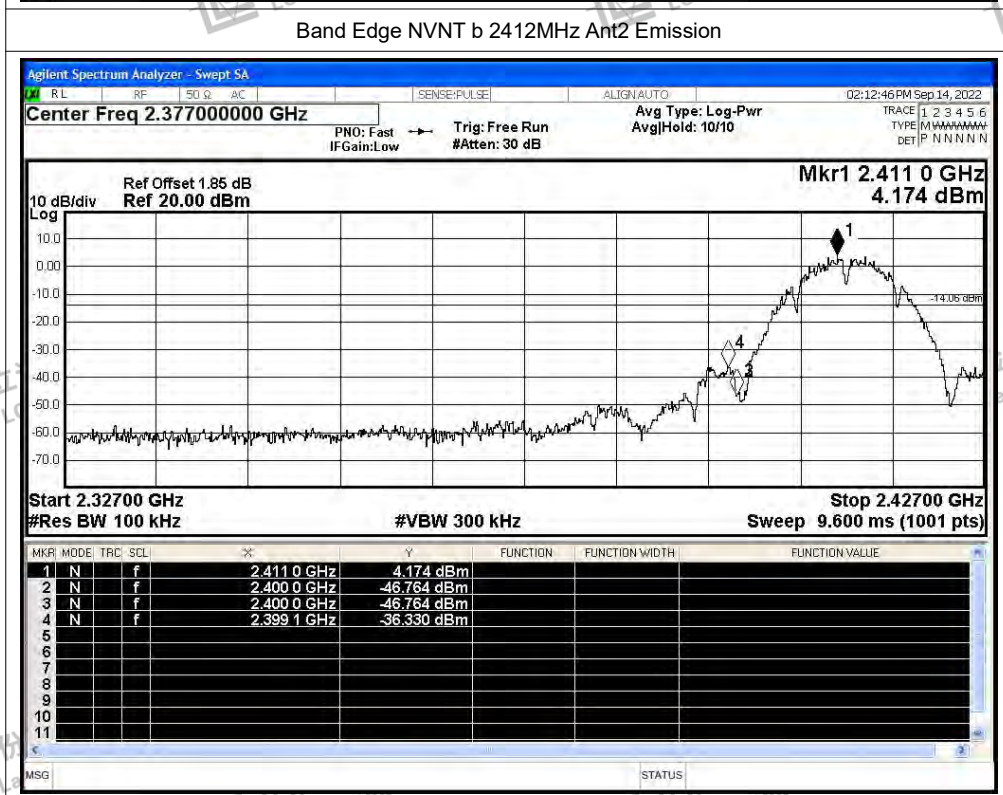
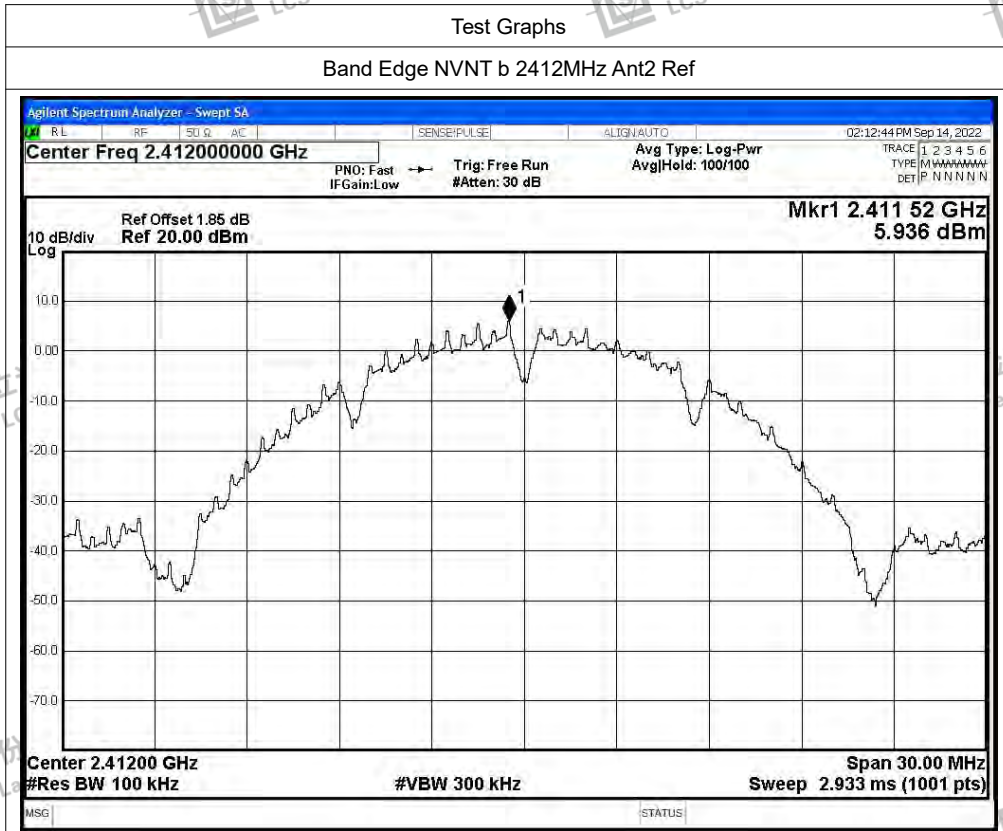


Band Edge NVNT n40 2452MHz Ant1 Emission



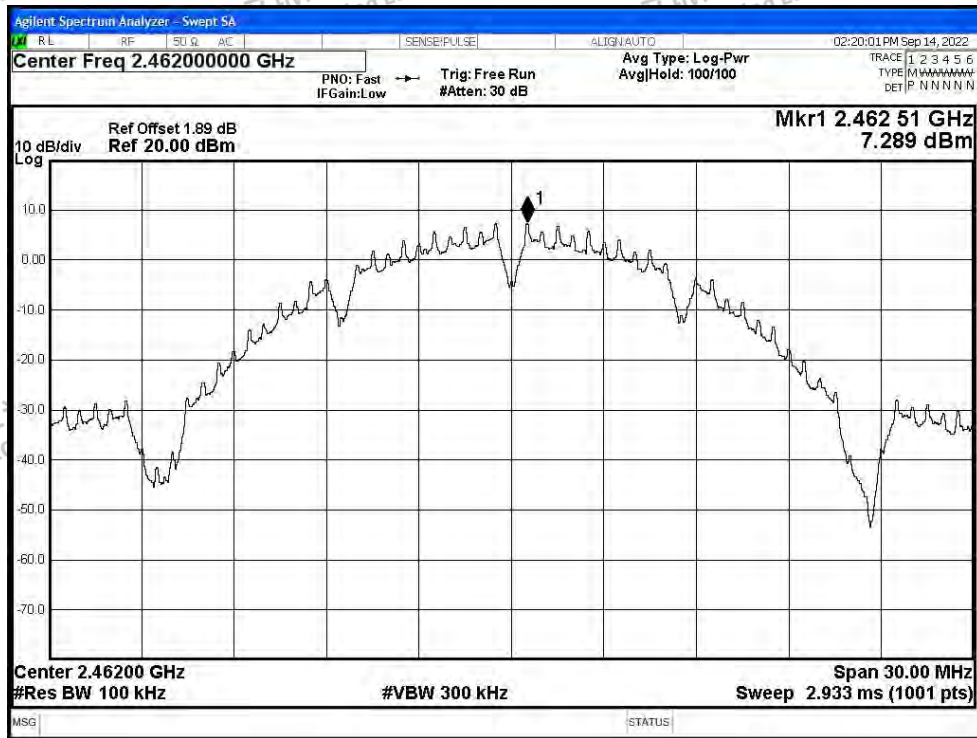


ANT2:

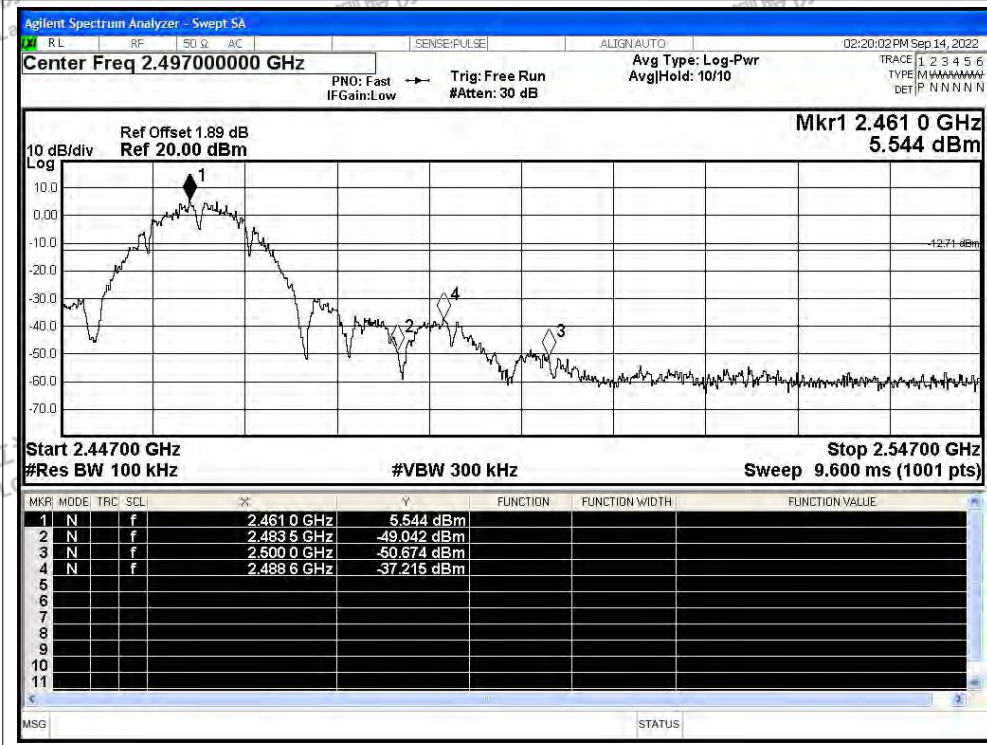




Band Edge NVNT b 2462MHz Ant2 Ref

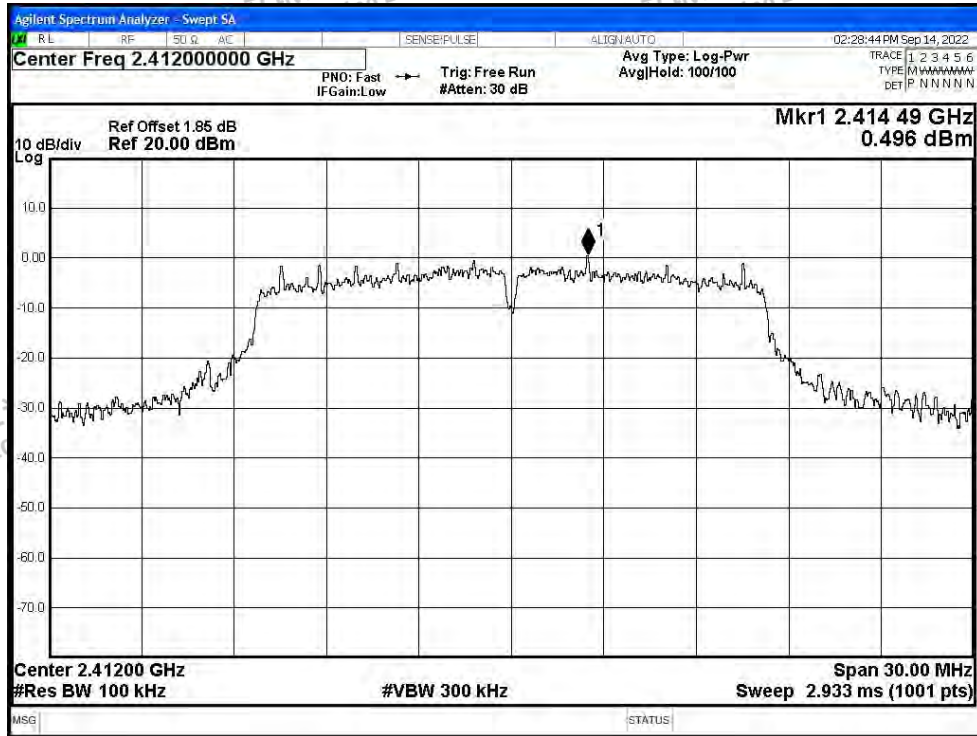


Band Edge NVNT b 2462MHz Ant2 Emission

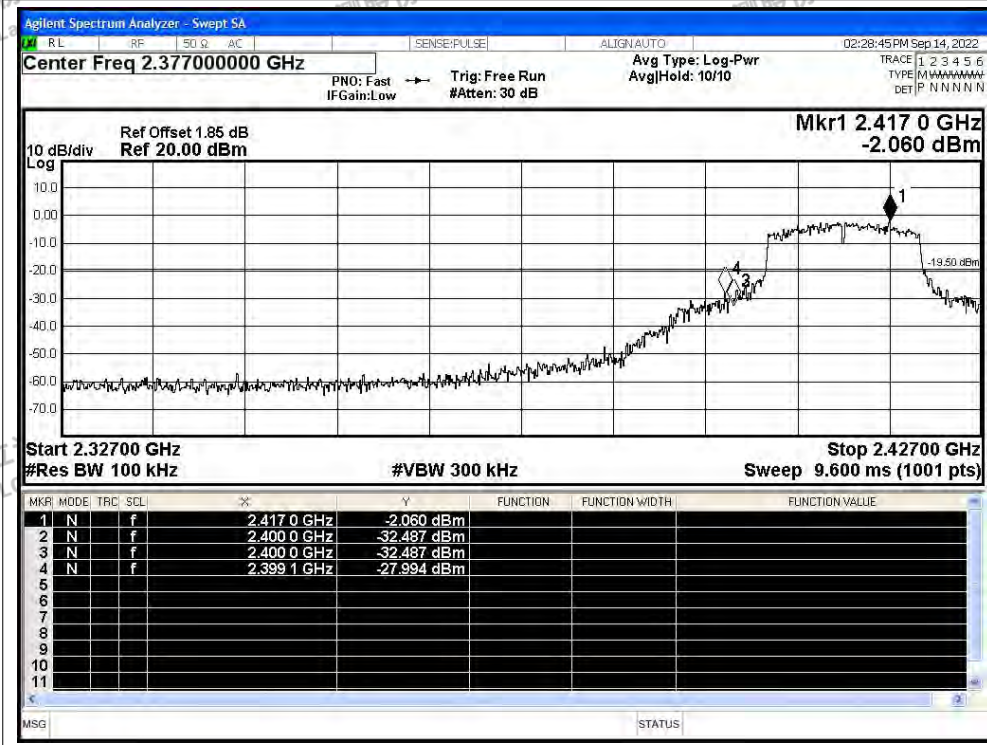




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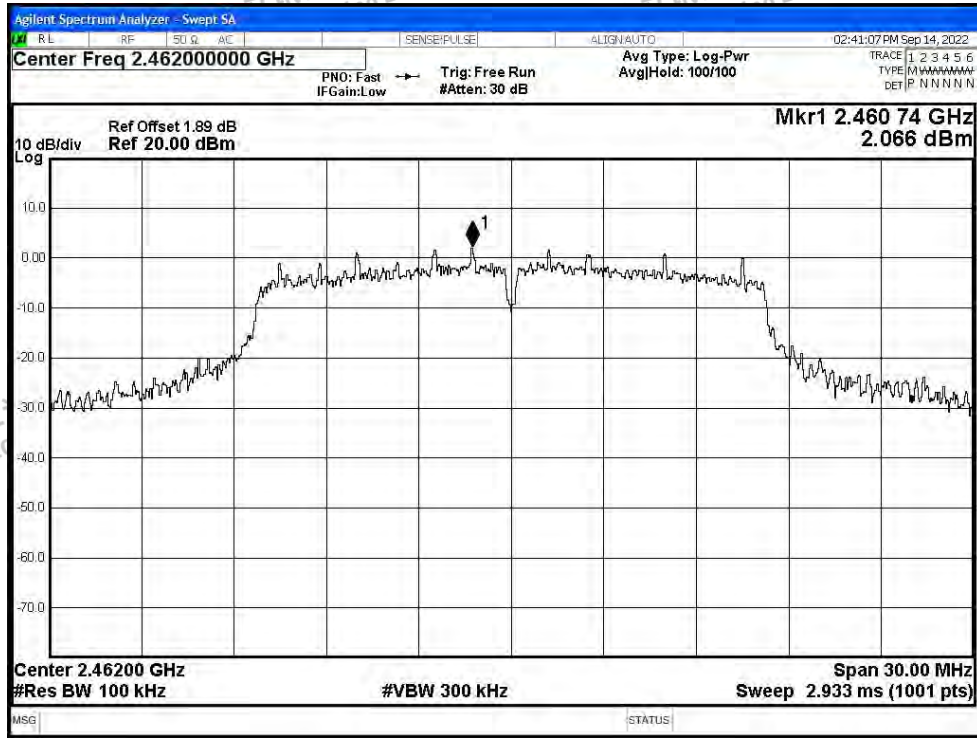
Band Edge NVNT g 2412MHz Ant2 Emission



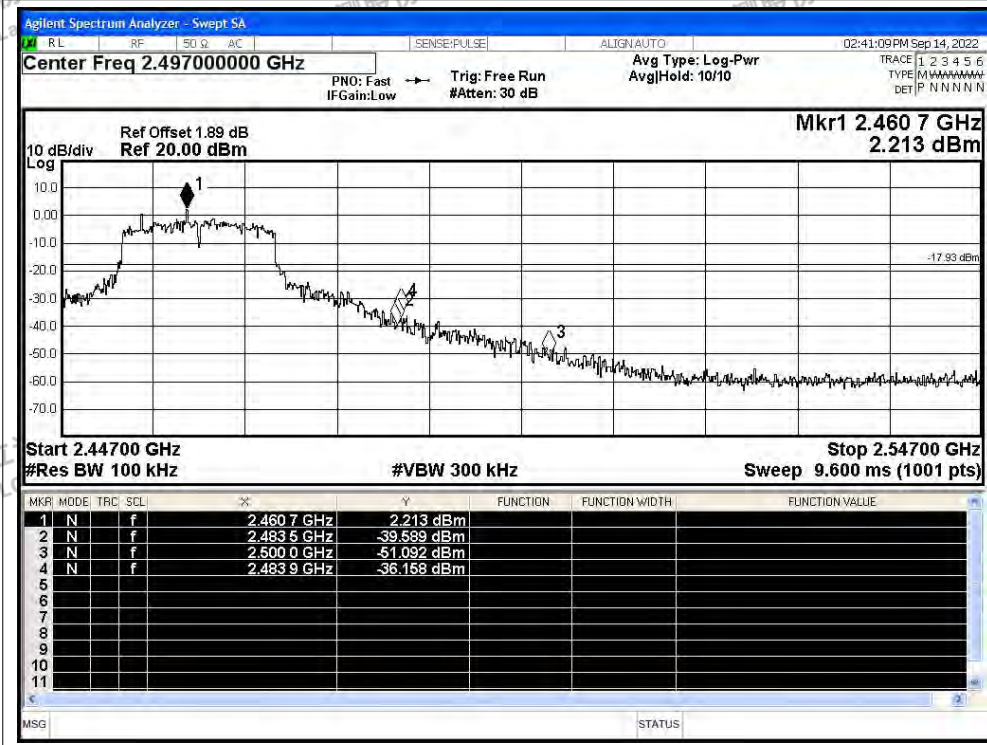




Band Edge NVNT g 2462MHz Ant2 Ref

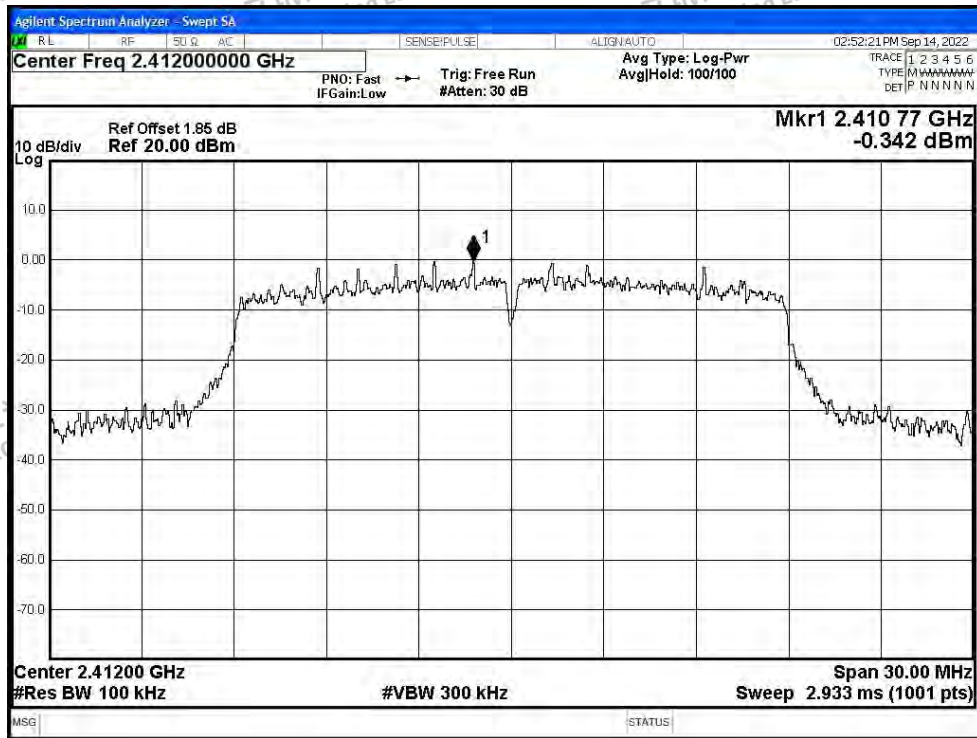


Band Edge NVNT g 2462MHz Ant2 Emission

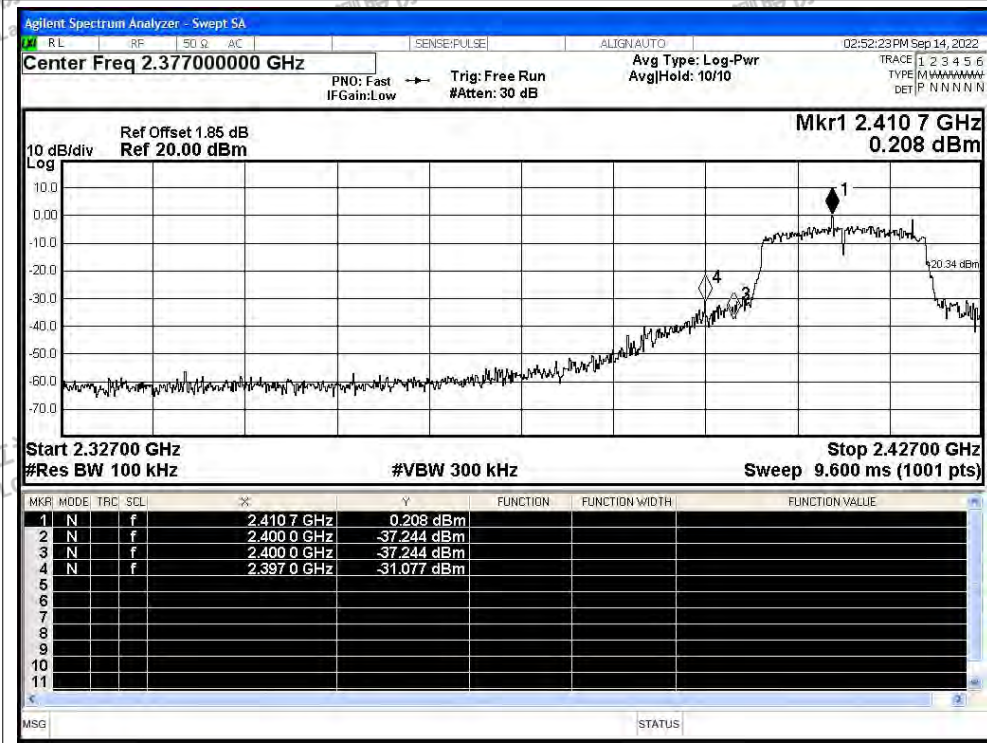




Band Edge NVNT n20 2412MHz Ant2 Ref

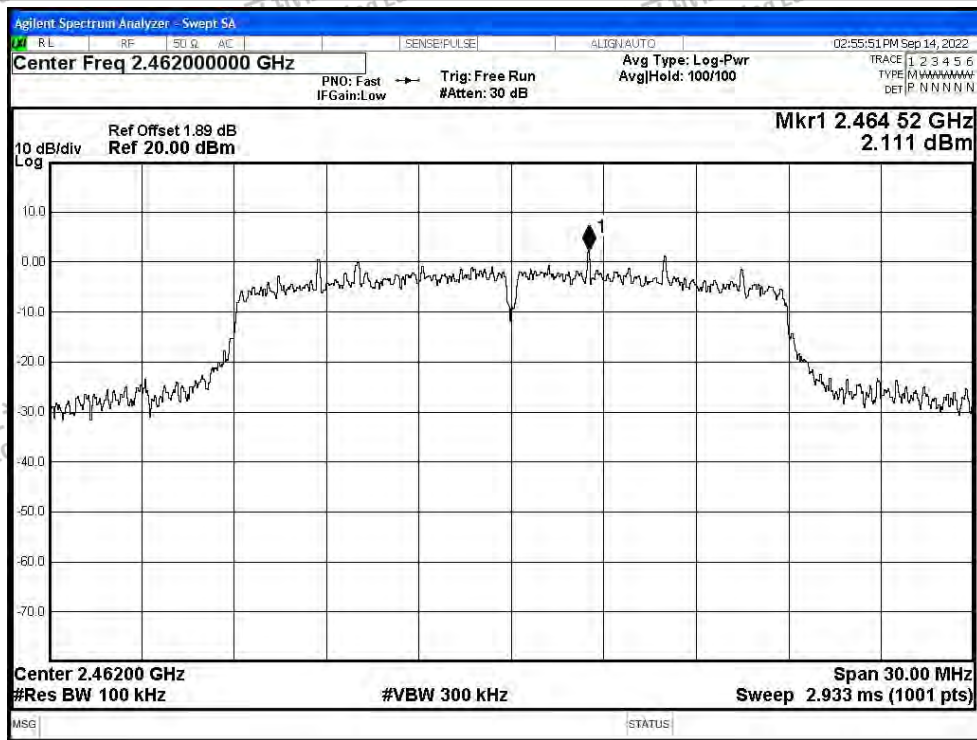


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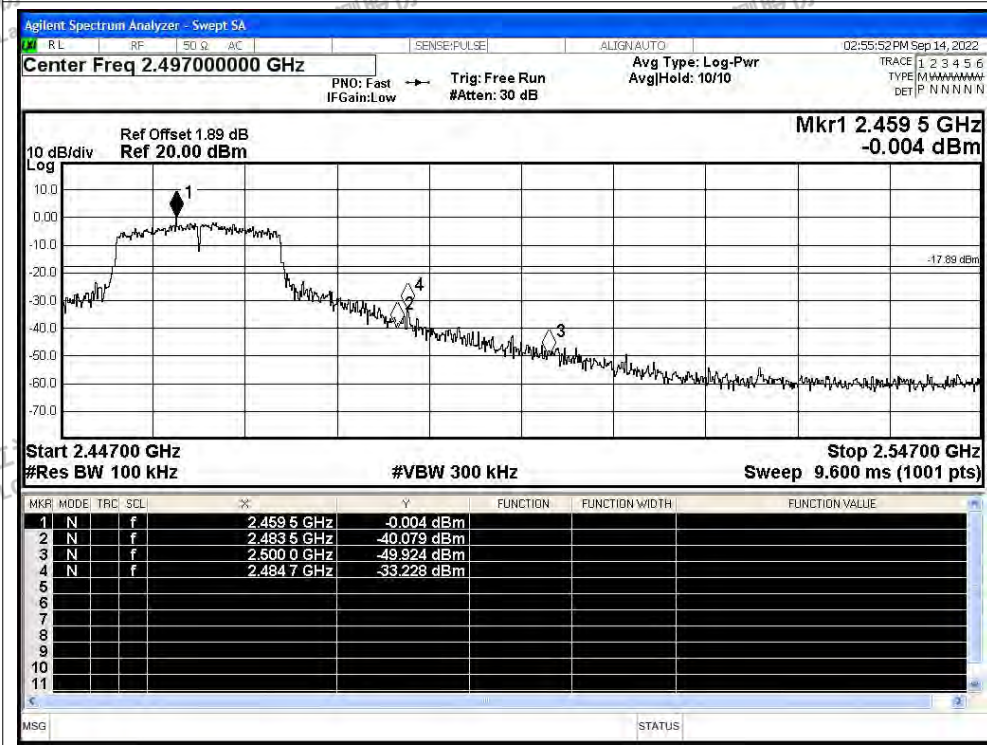




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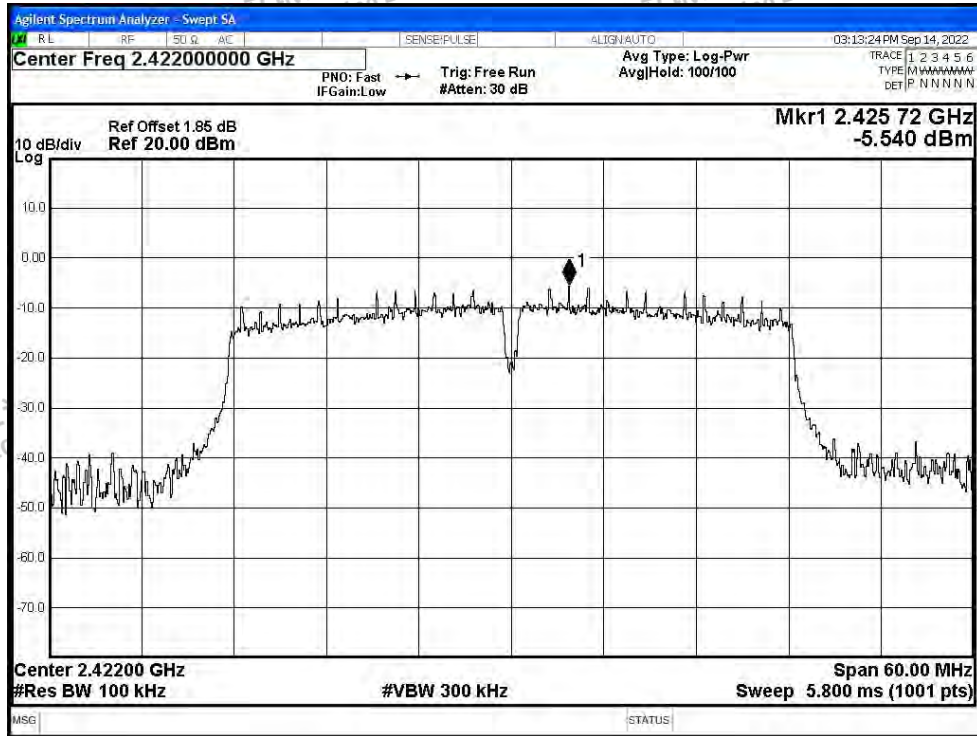


Band Edge NVNT n20 2462MHz Ant2 Emission

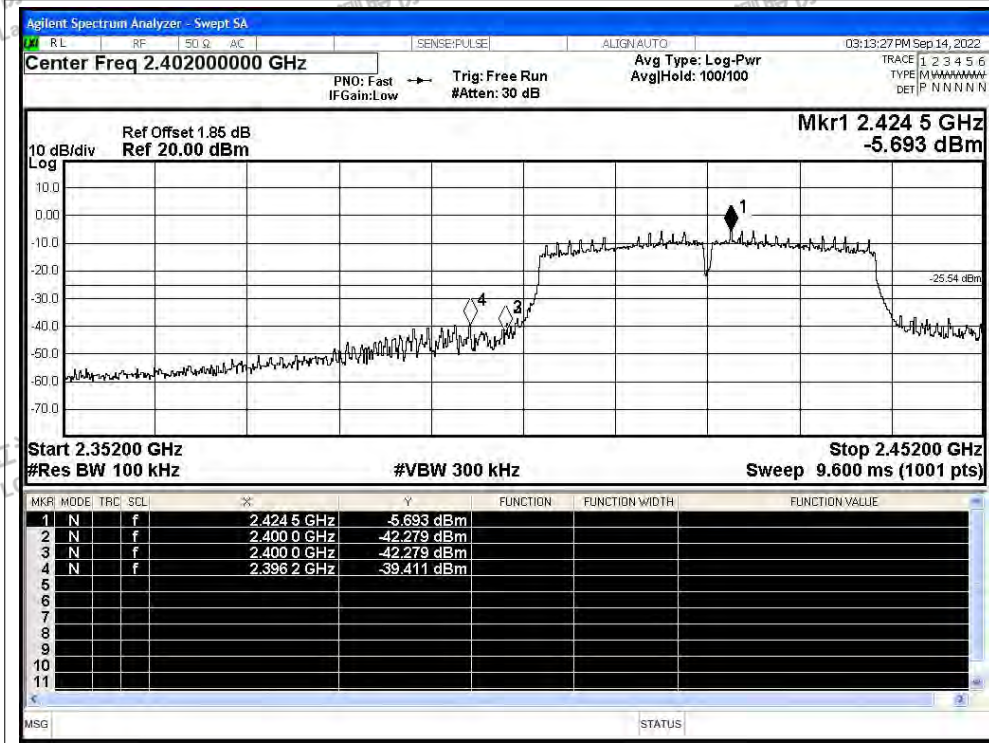




Band Edge NVNT n40 2422MHz Ant2 Ref

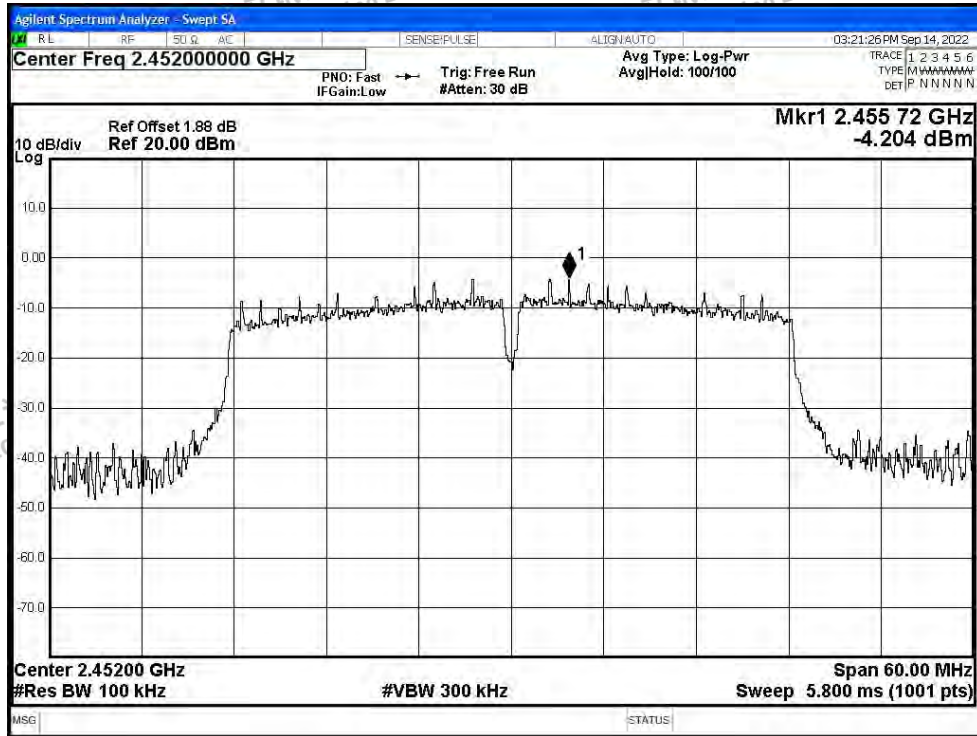


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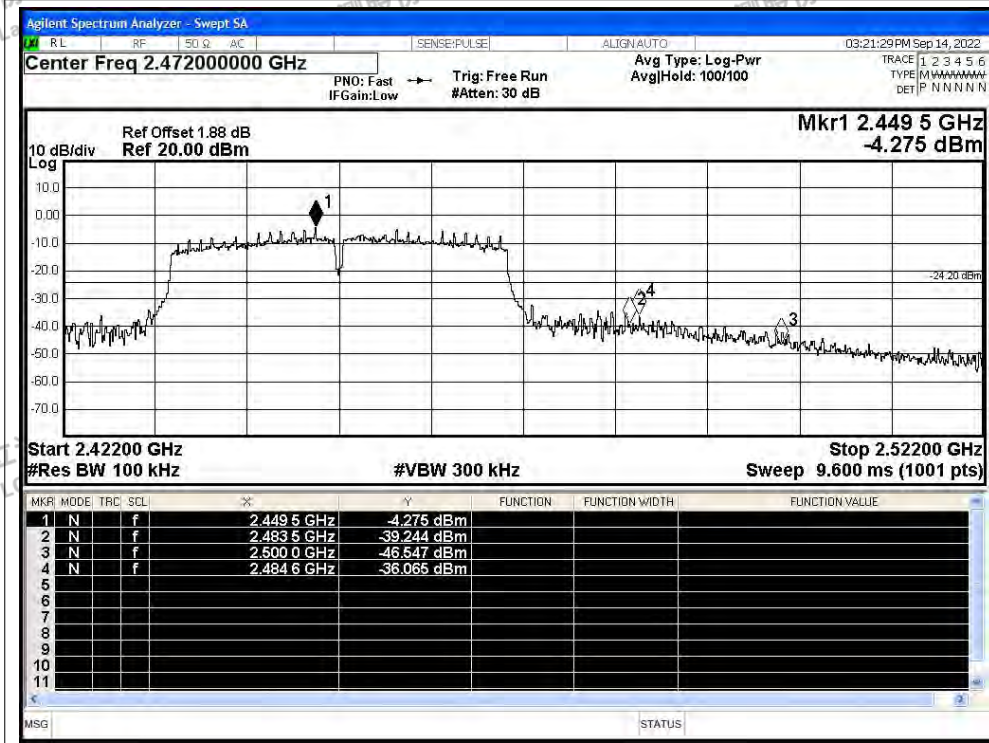




Band Edge NVNT n40 2452MHz Ant2 Ref



Band Edge NVNT n40 2452MHz Ant2 Emission





### C.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-44.58	-20	Pass
NVNT	b	2437	Ant1	-46.13	-20	Pass
NVNT	b	2462	Ant1	-44.69	-20	Pass
NVNT	g	2412	Ant1	-47.29	-20	Pass
NVNT	g	2437	Ant1	-47.65	-20	Pass
NVNT	g	2462	Ant1	-44.67	-20	Pass
NVNT	n20	2412	Ant1	-47.22	-20	Pass
NVNT	n20	2437	Ant1	-49.19	-20	Pass
NVNT	n20	2462	Ant1	-49.93	-20	Pass
NVNT	n40	2422	Ant1	-44.13	-20	Pass
NVNT	n40	2437	Ant1	-45.02	-20	Pass
NVNT	n40	2452	Ant1	-45.14	-20	Pass

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant2	-43.51	-20	Pass
NVNT	b	2437	Ant2	-45.55	-20	Pass
NVNT	b	2462	Ant2	-46.92	-20	Pass
NVNT	g	2412	Ant2	-46.27	-20	Pass
NVNT	g	2437	Ant2	-48.43	-20	Pass
NVNT	g	2462	Ant2	-41.07	-20	Pass
NVNT	n20	2412	Ant2	-47	-20	Pass
NVNT	n20	2437	Ant2	-47.63	-20	Pass
NVNT	n20	2462	Ant2	-47.3	-20	Pass
NVNT	n40	2422	Ant2	-40.15	-20	Pass
NVNT	n40	2437	Ant2	-40.44	-20	Pass
NVNT	n40	2452	Ant2	-40.4	-20	Pass



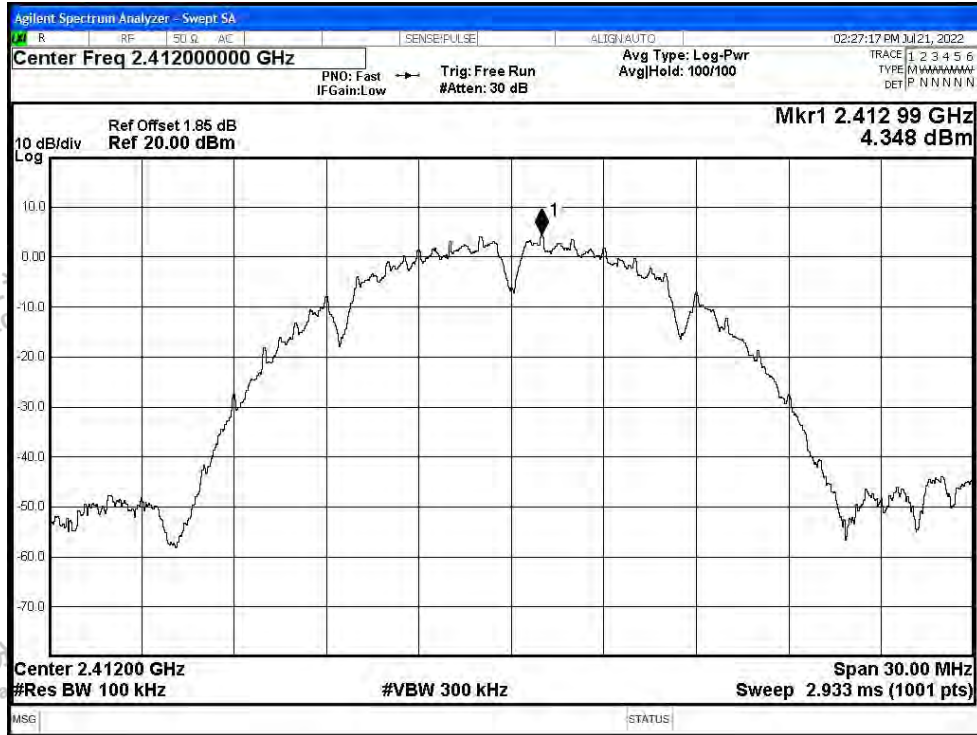
Shenzhen LCS Compliance Testing Laboratory Ltd.  
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China  
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com  
 Scan code to check authenticity



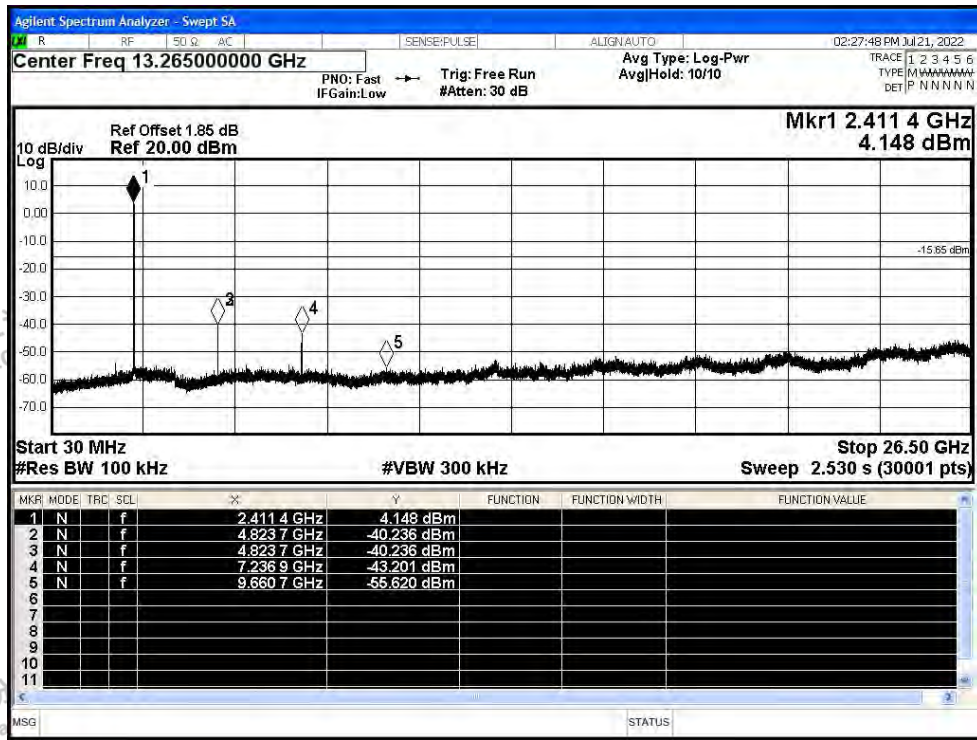
ANT1:

Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref

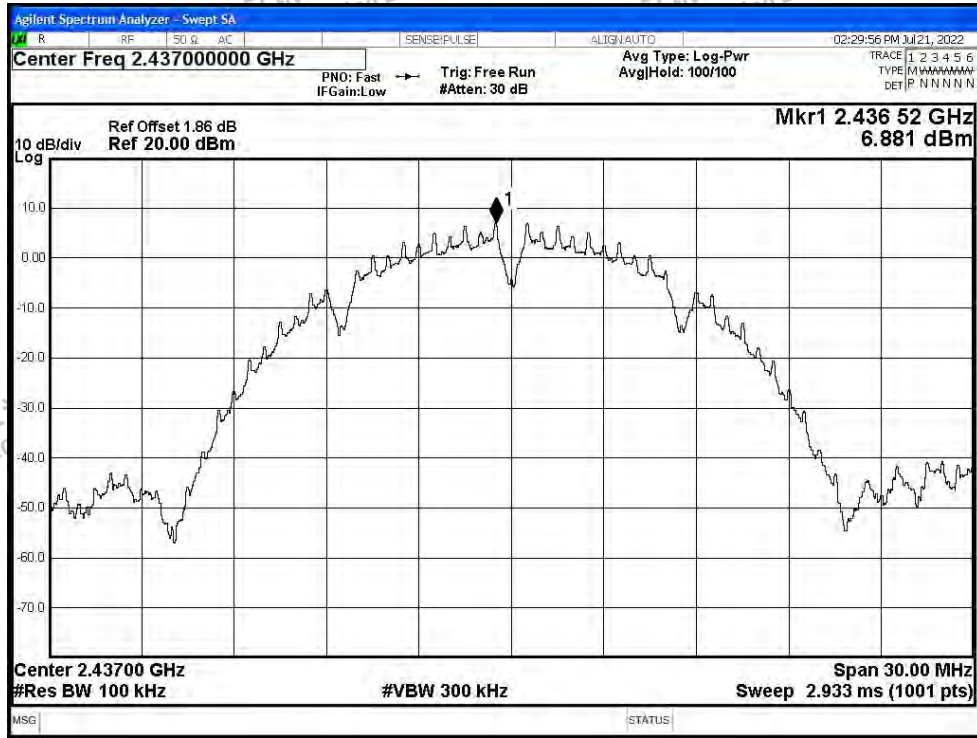


Tx. Spurious NVNT b 2412MHz Ant1 Emission

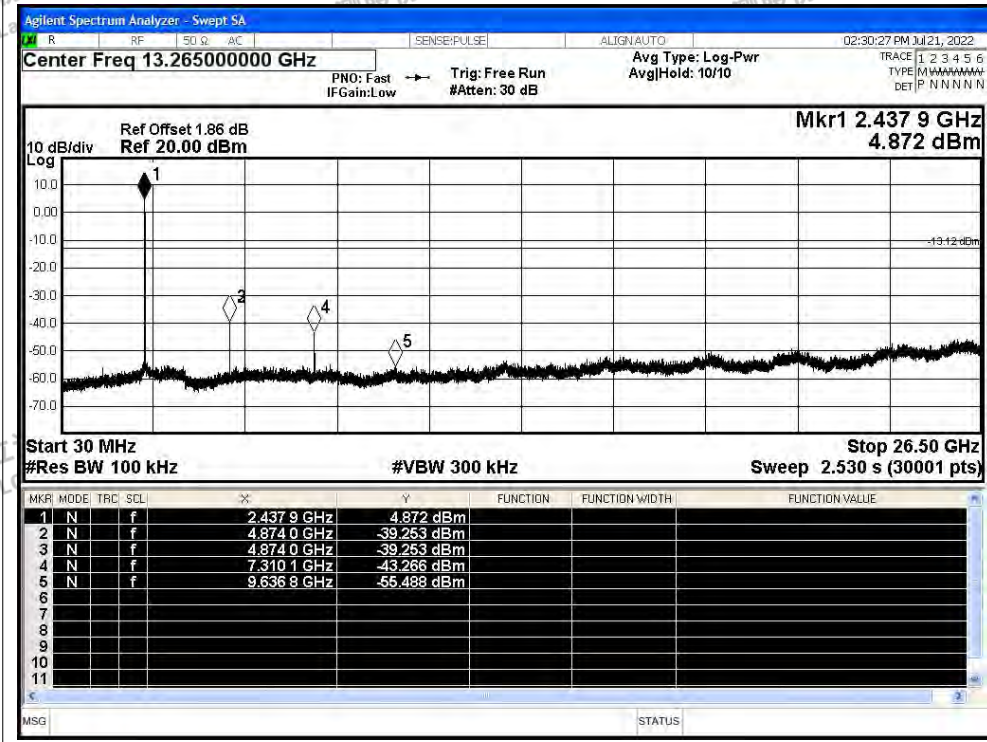




Tx: Spurious NVNT b 2437MHz Ant1 Ref



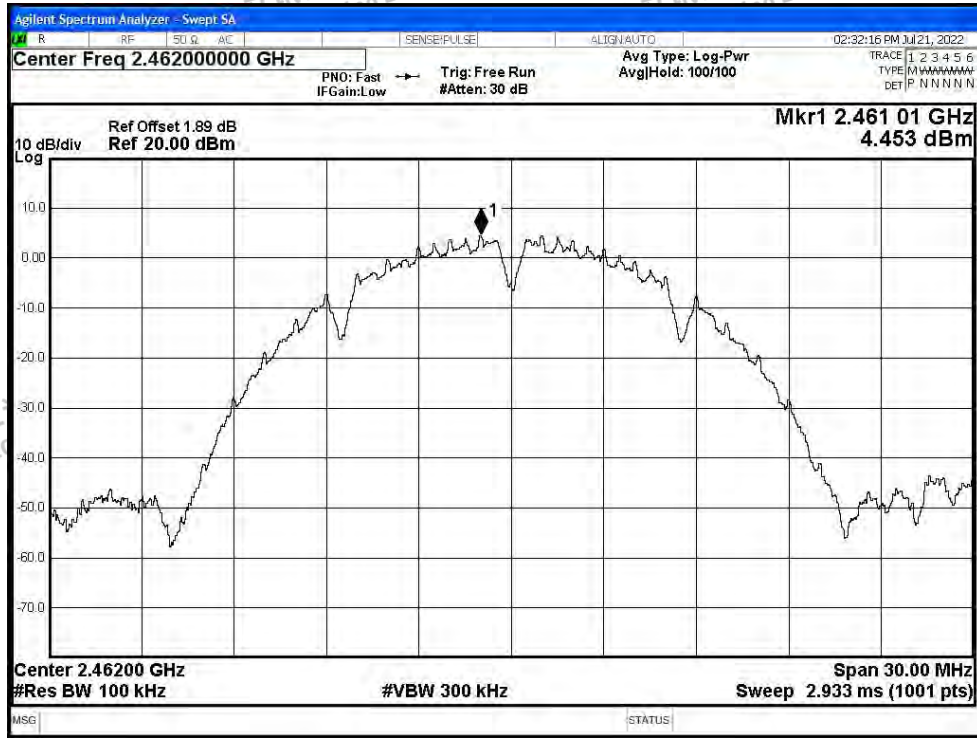
Tx: Spurious NVNT b 2437MHz Ant1 Emission



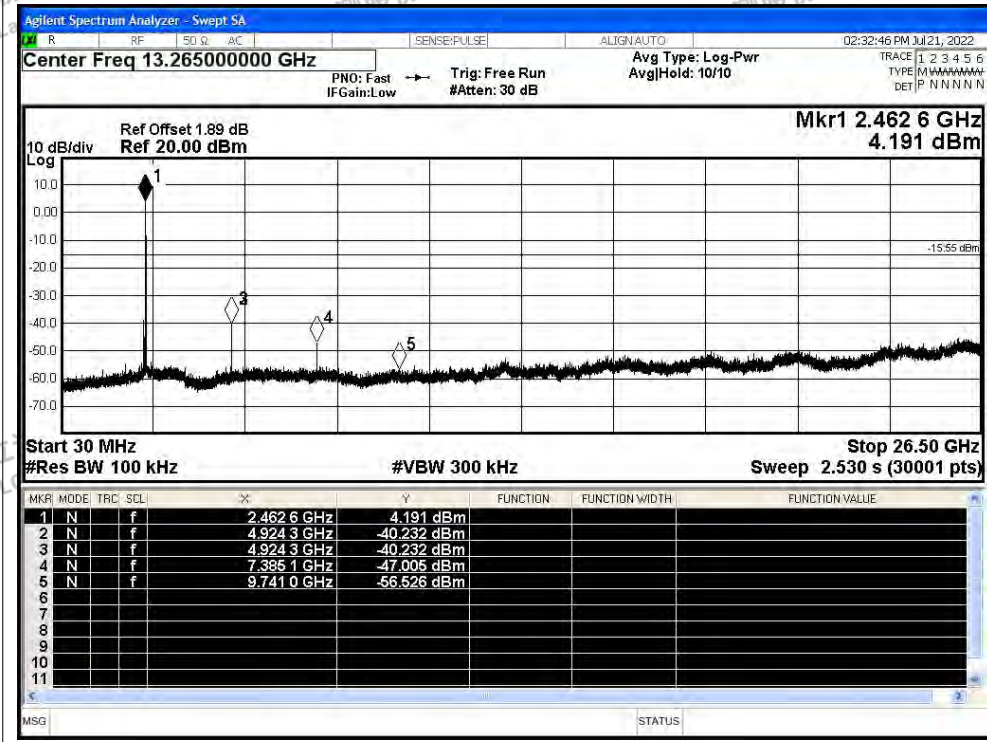




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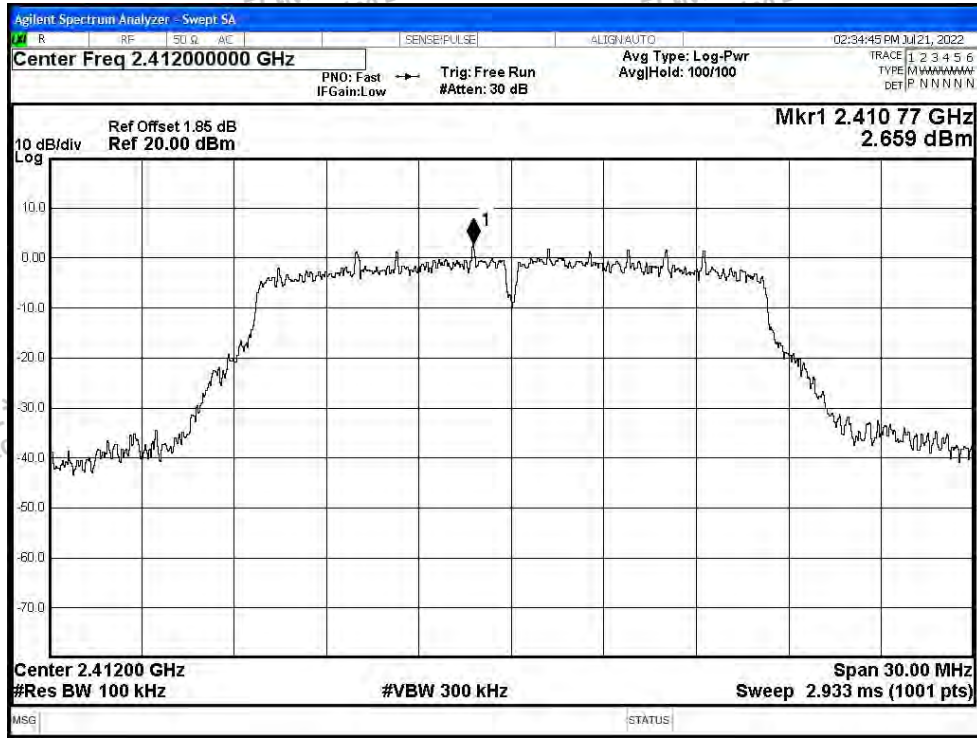


Tx: Spurious NVNT b 2462MHz Ant1 Emission

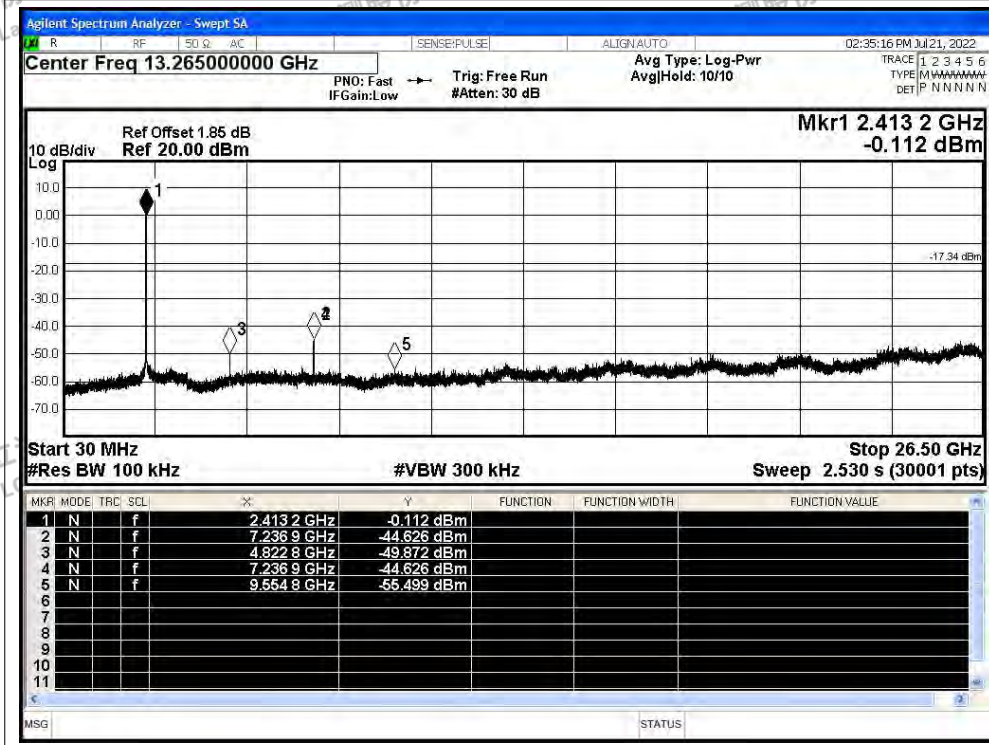




Tx. Spurious NVNT g 2412MHz Ant1 Ref

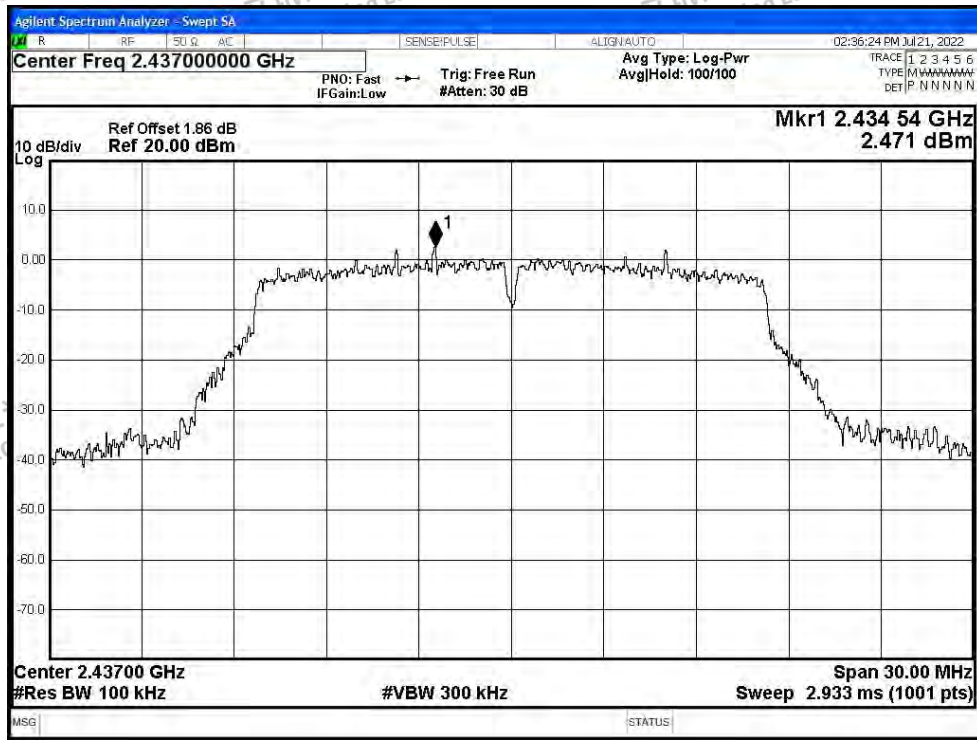


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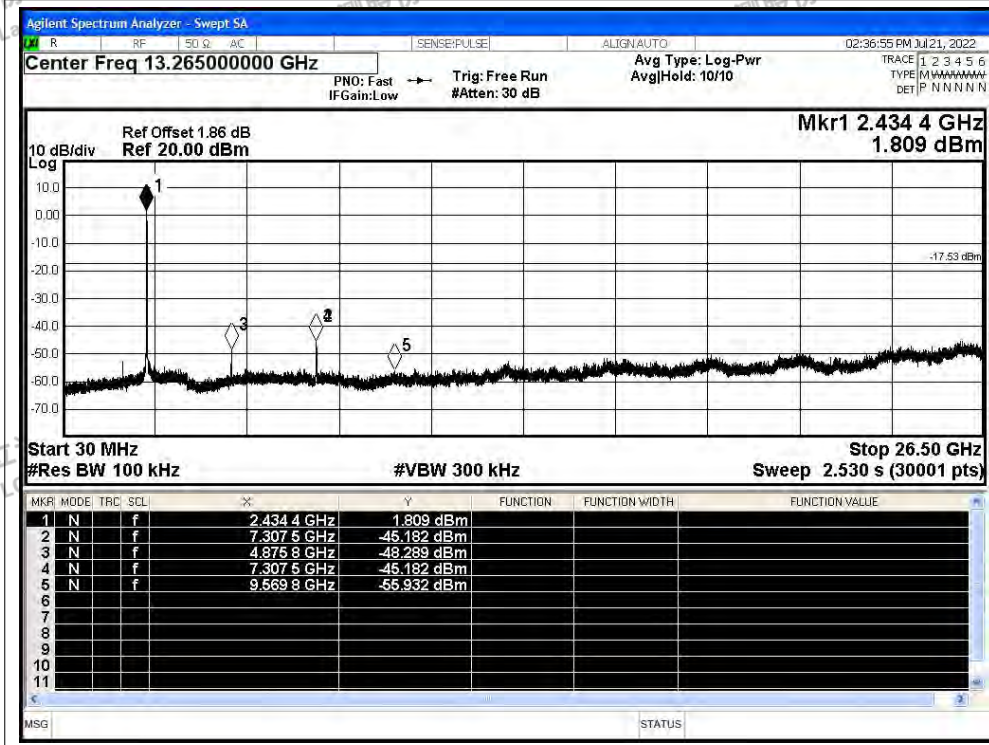




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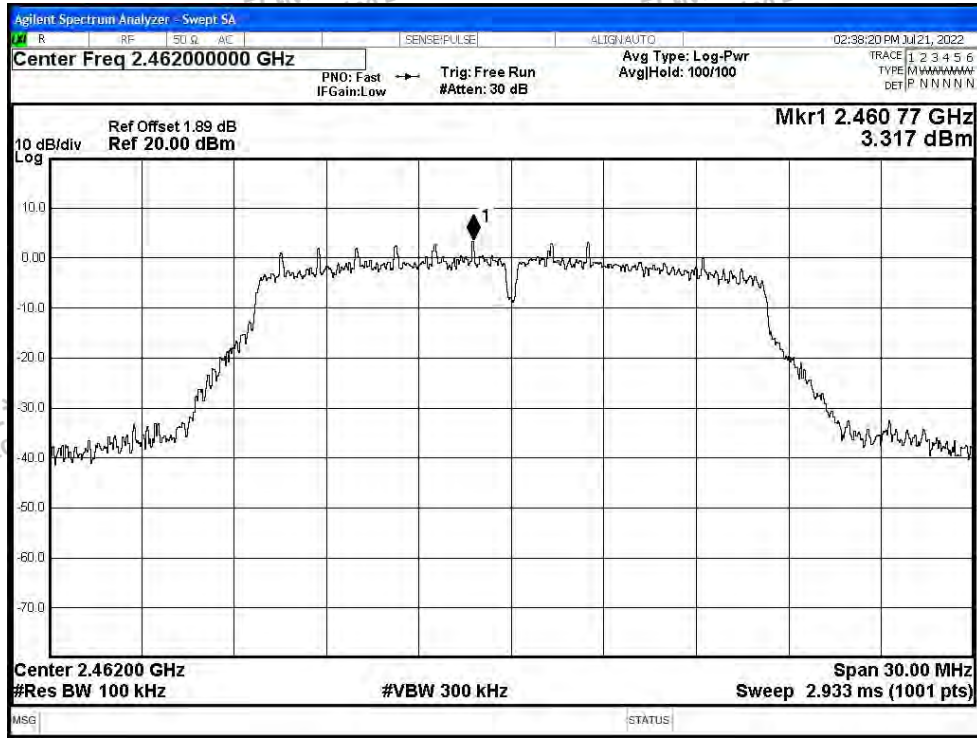


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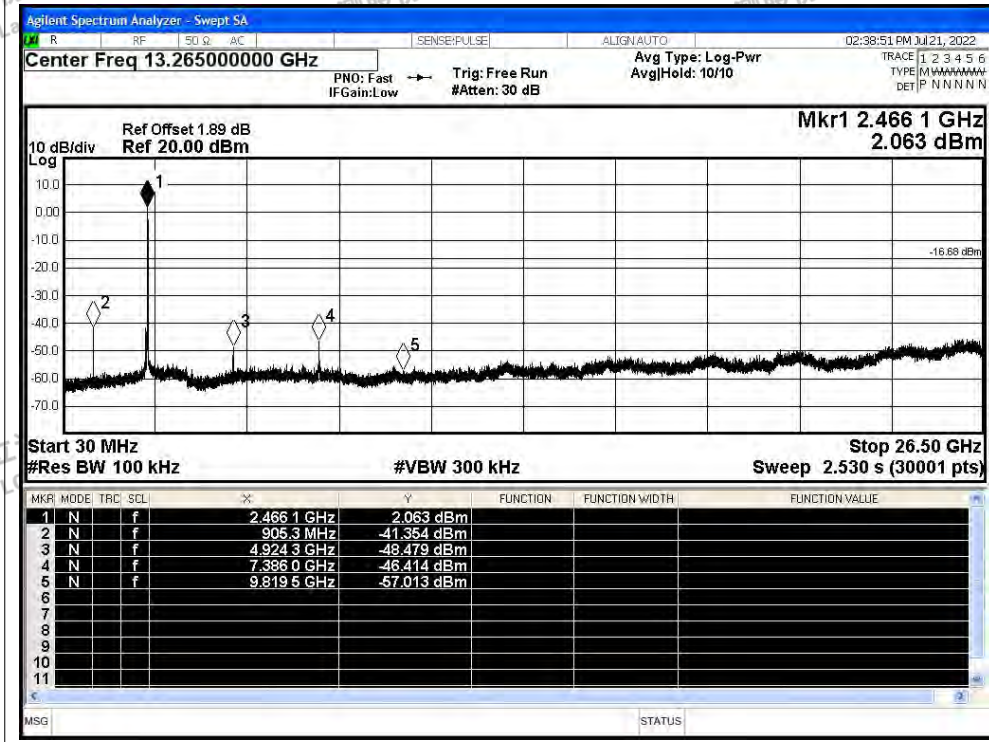




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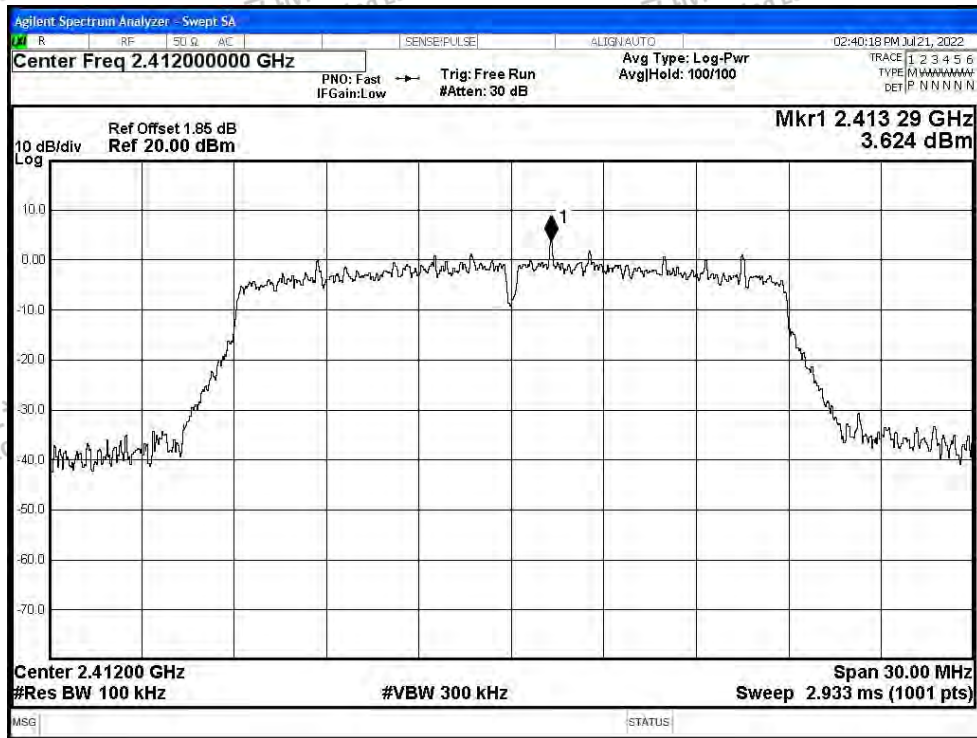


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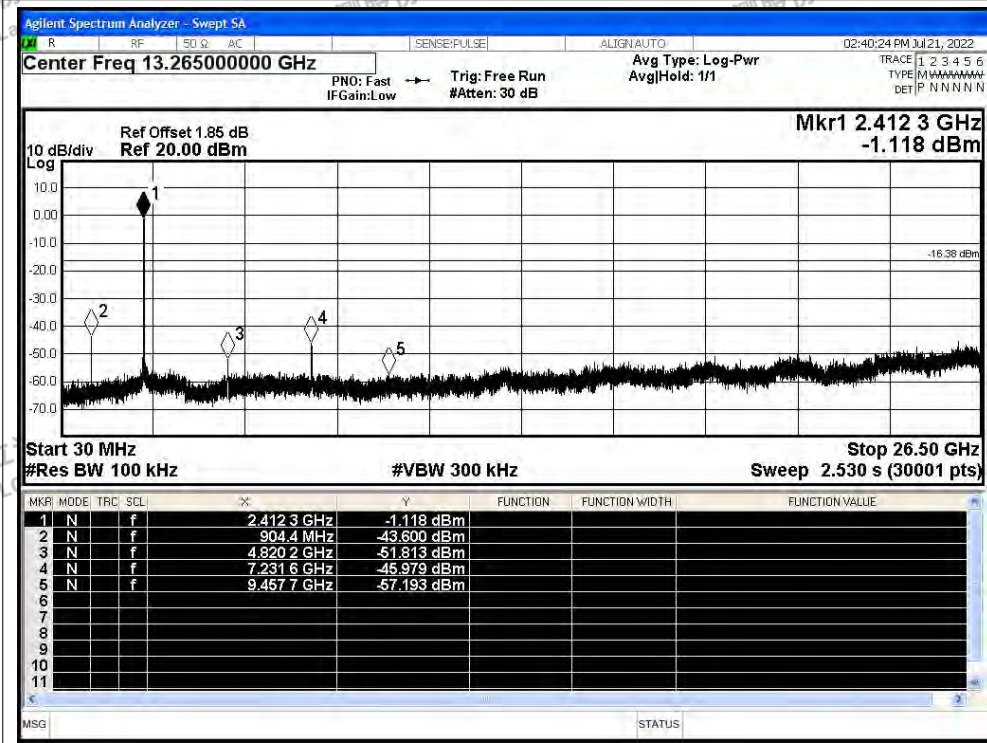




Tx. Spurious NVNT n20 2412MHz Ant1 Ref

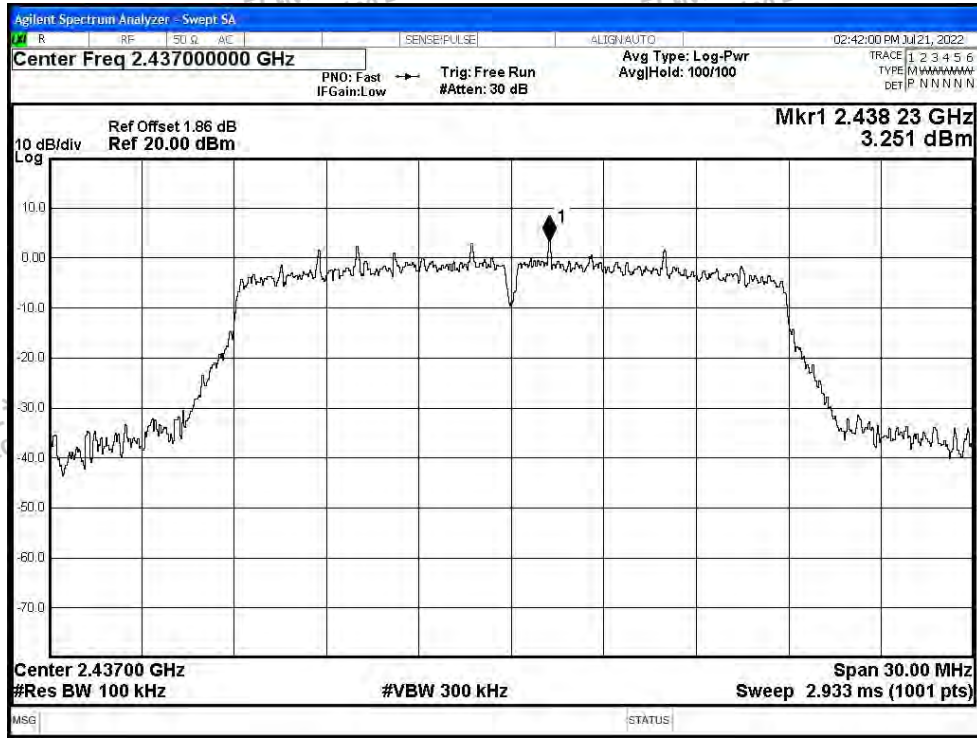


Tx. Spurious NVNT n20 2412MHz Ant1 Emission

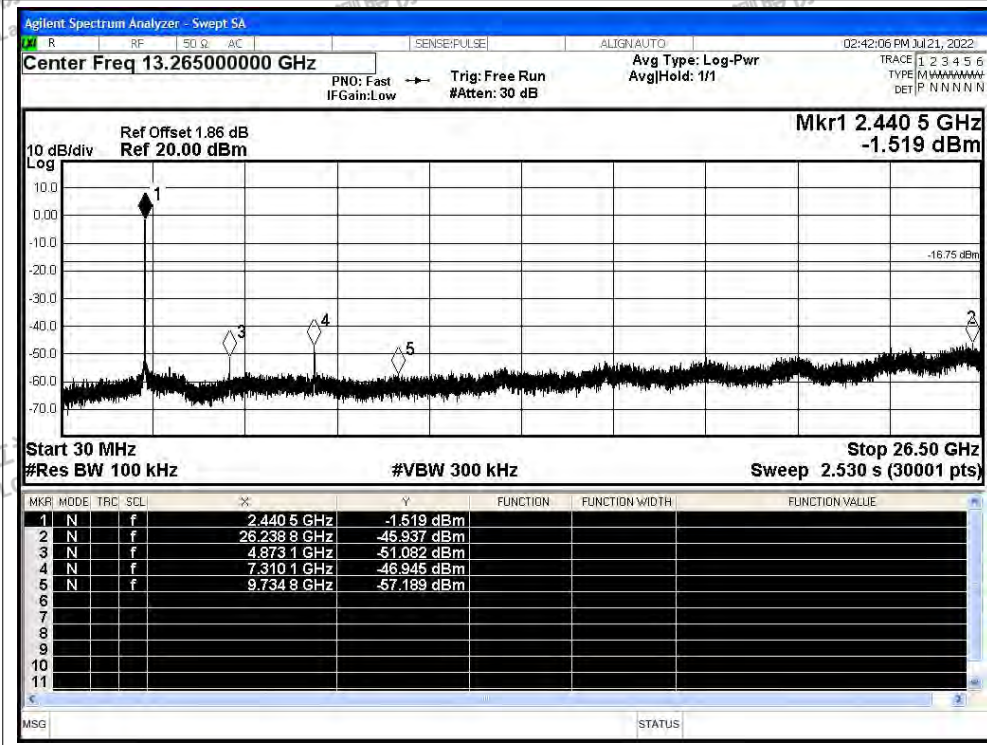




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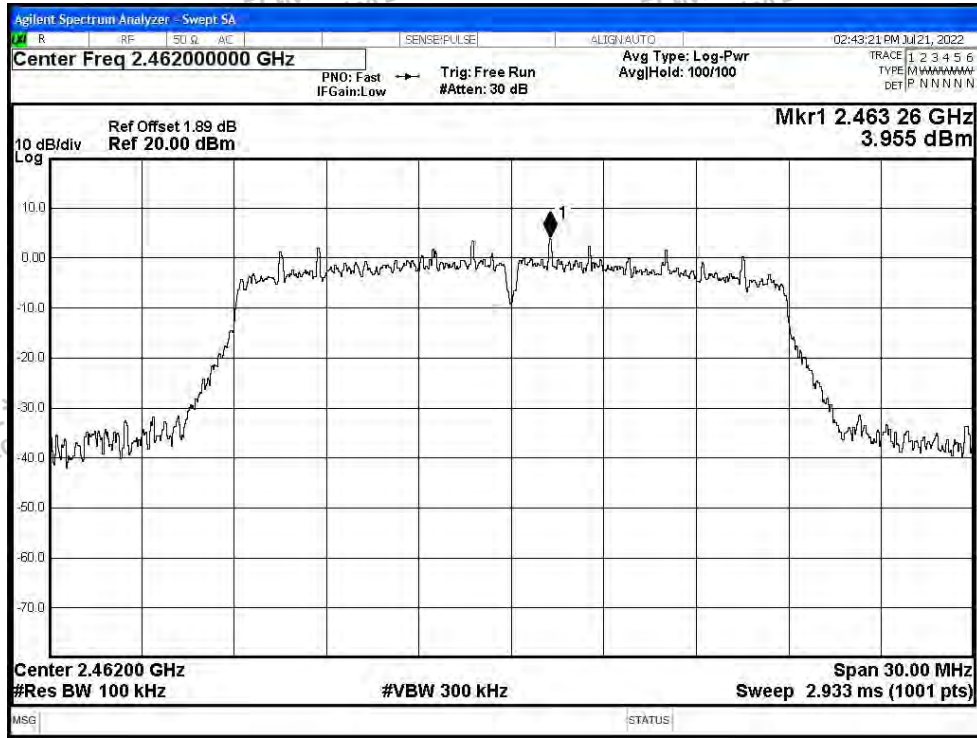


Tx. Spurious NVNT n20 2437MHz Ant1 Emission

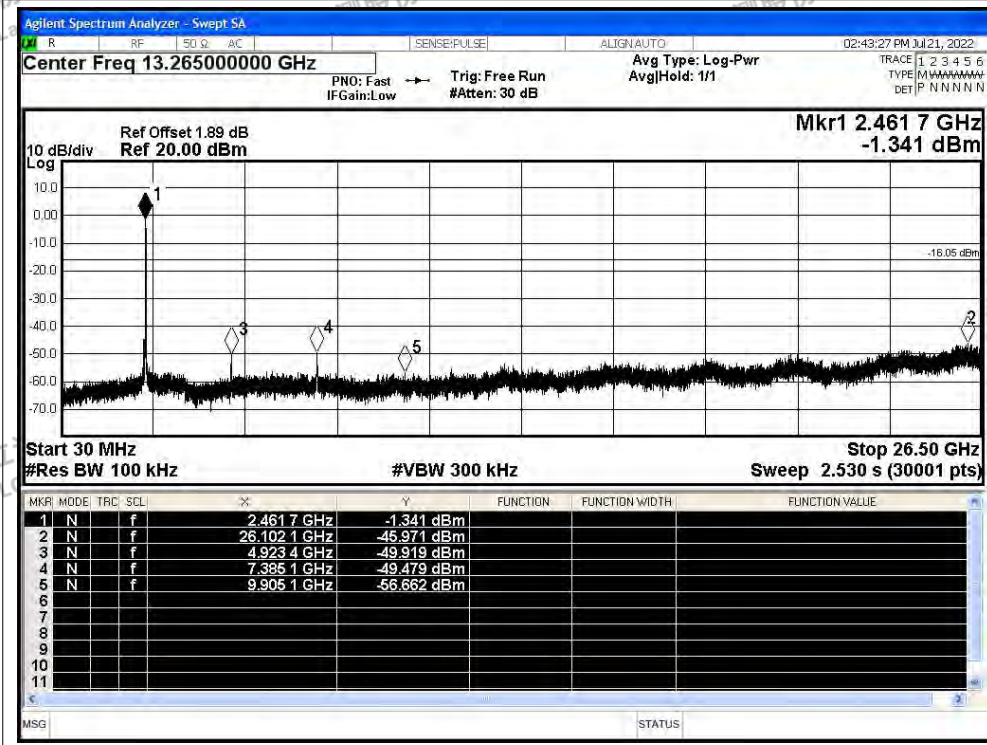




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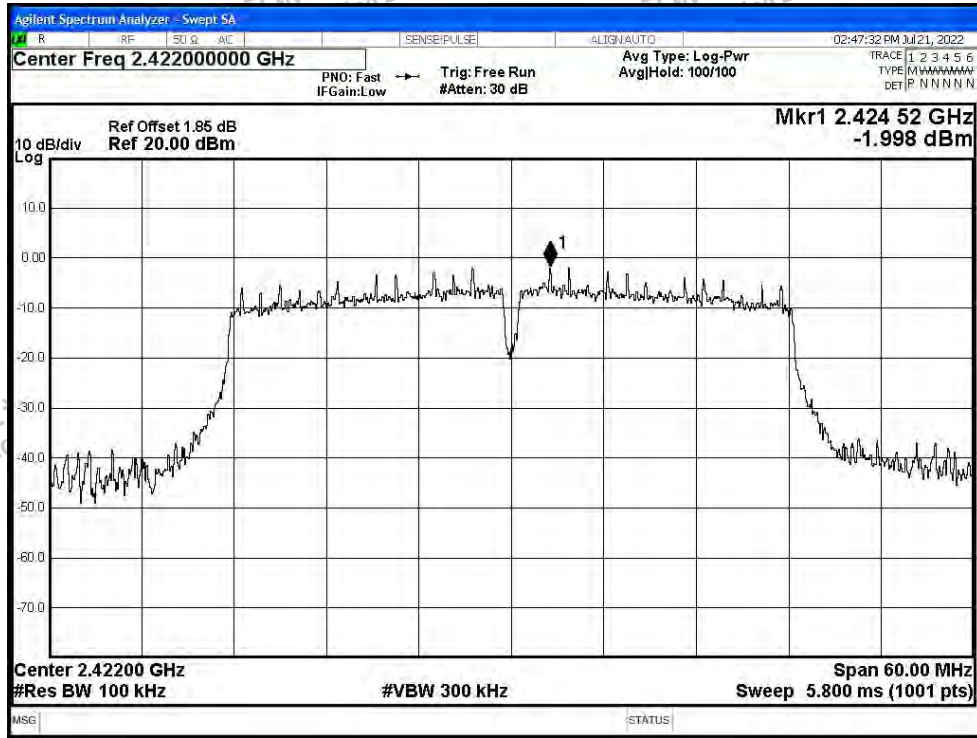


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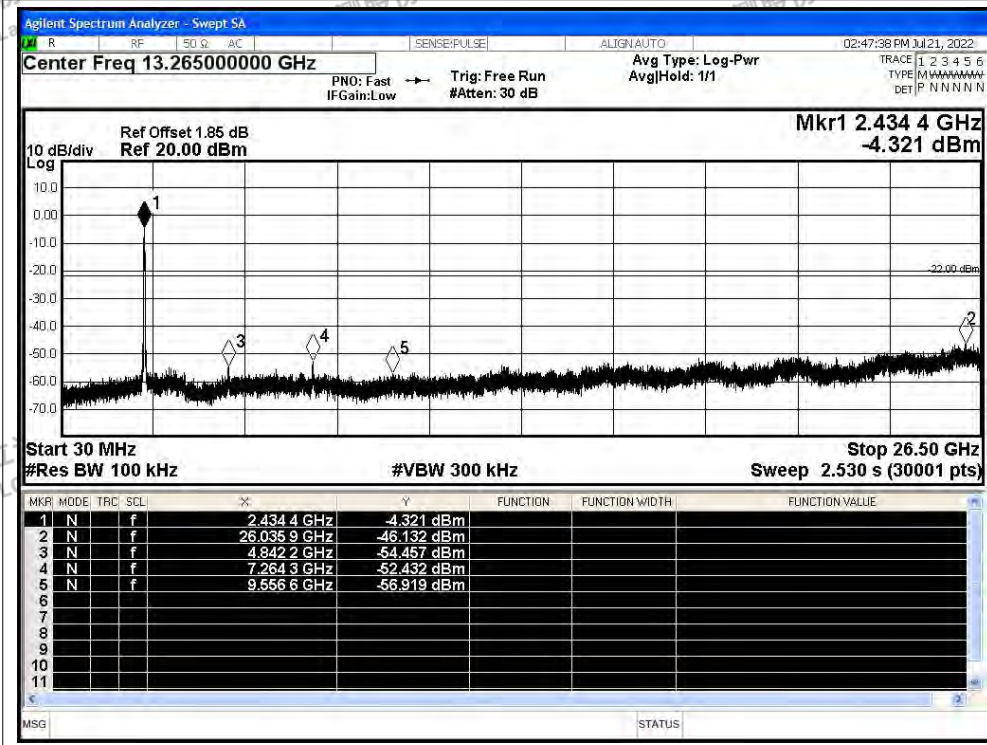




Tx. Spurious NVNT n40 2422MHz Ant1 Ref



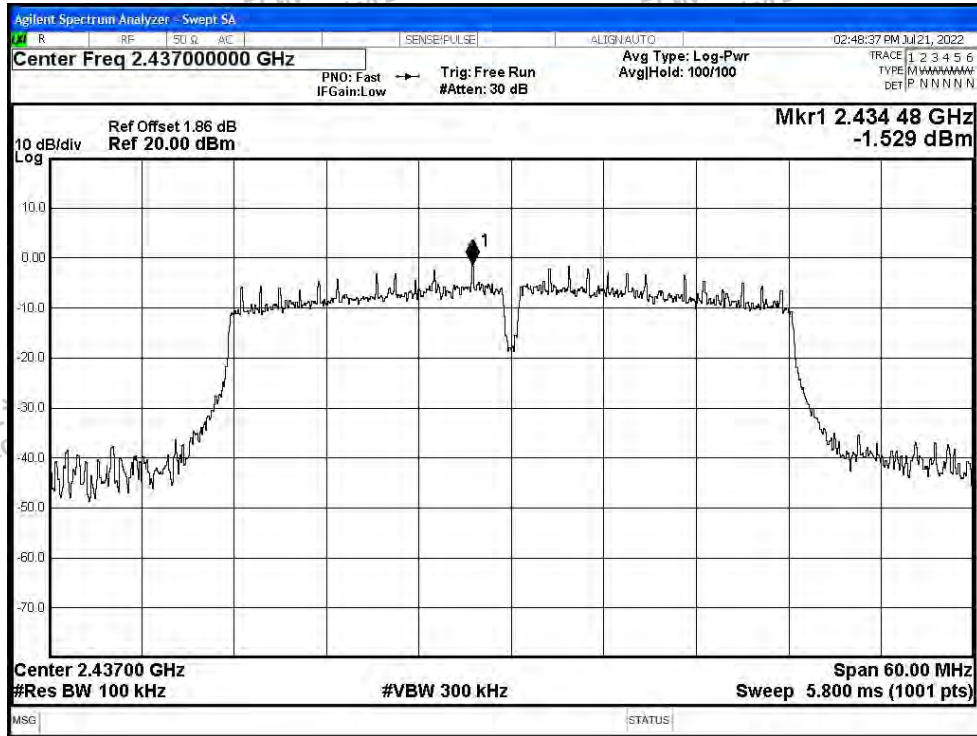
Tx. Spurious NVNT n40 2422MHz Ant1 Emission



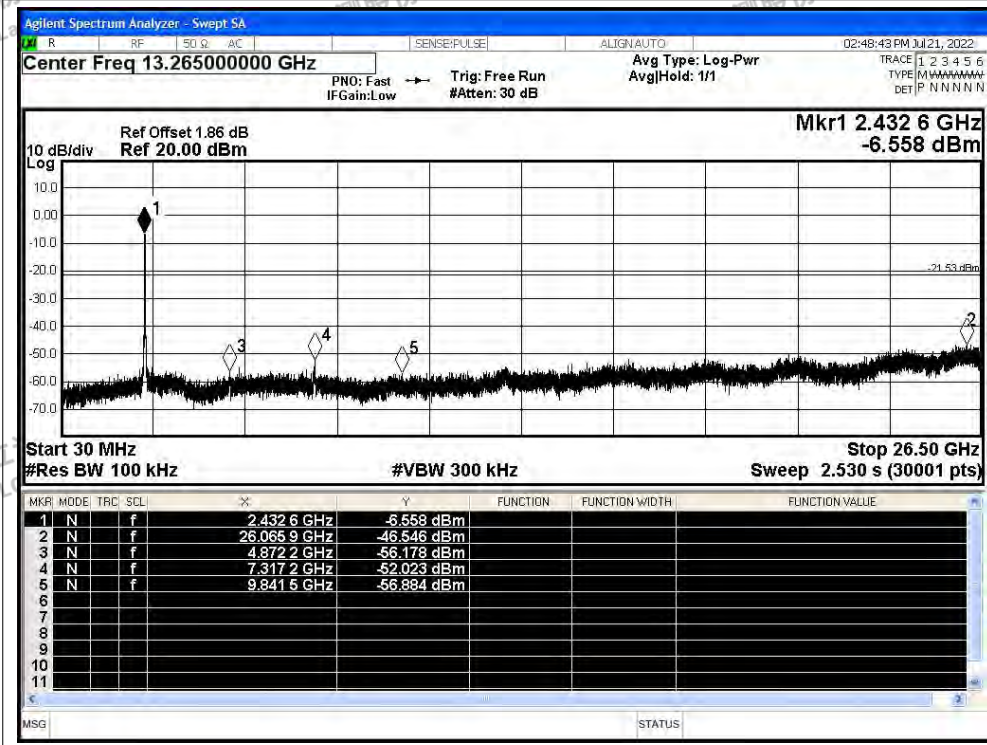




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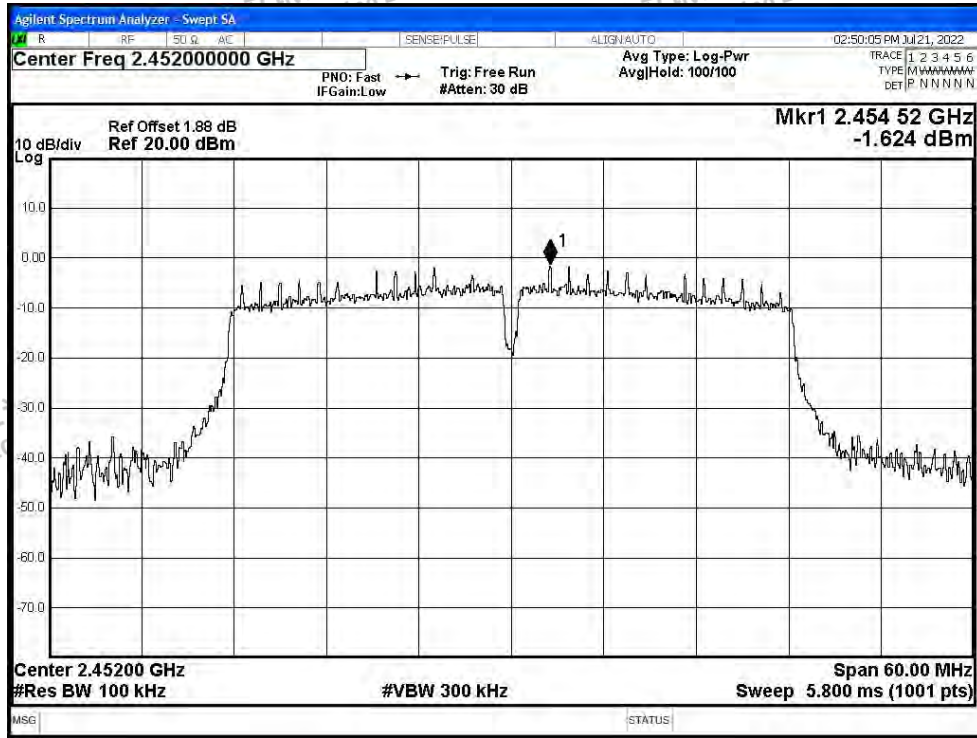


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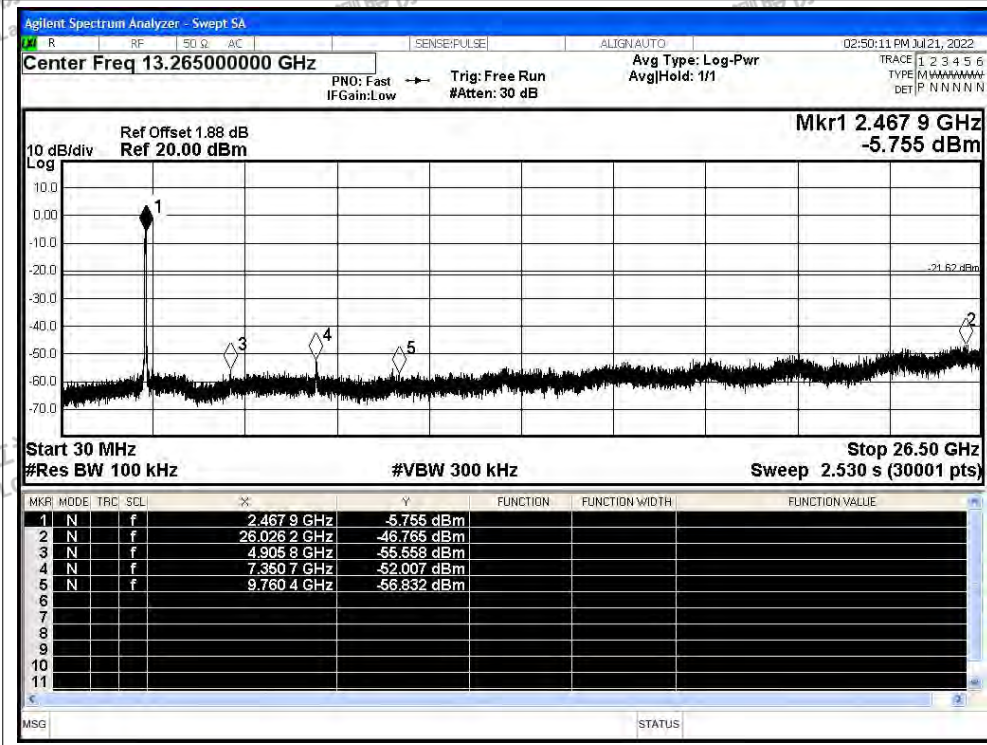




Tx. Spurious NVNT n40 2452MHz Ant1 Ref



Tx. Spurious NVNT n40 2452MHz Ant1 Emission

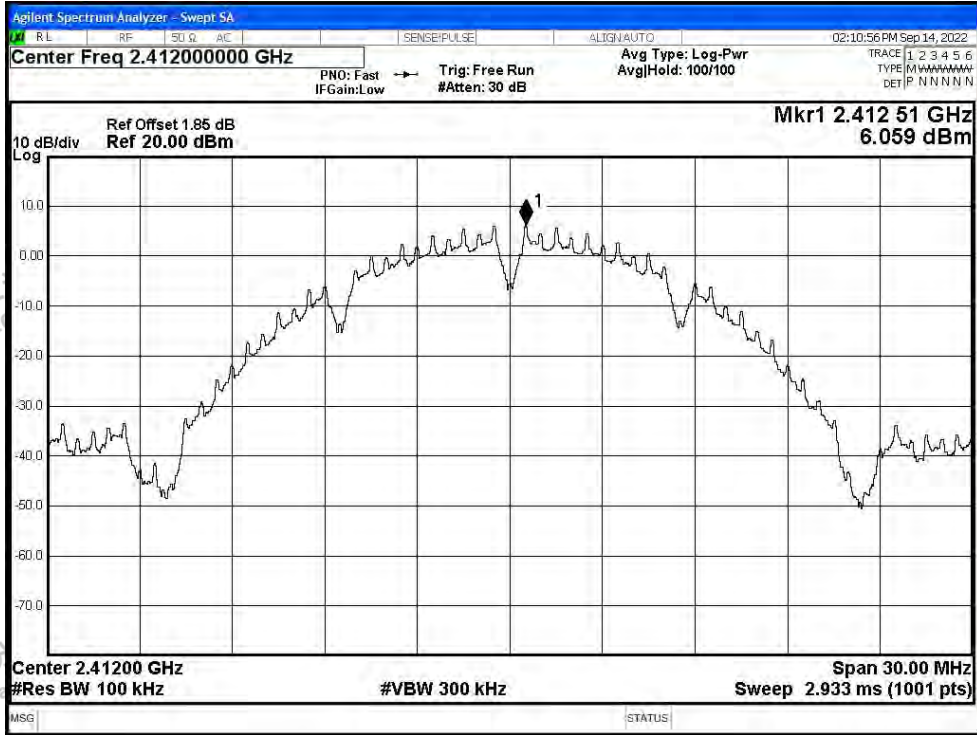




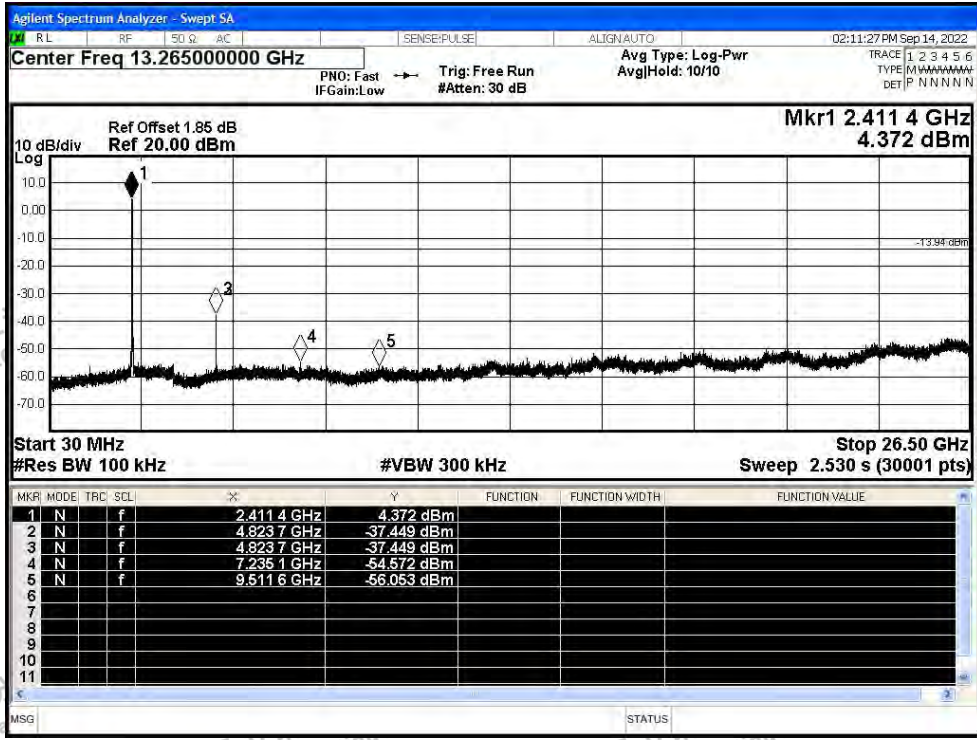
ANT2:

Test Graphs

Tx. Spurious NVNT b 2412MHz Ant2 Ref

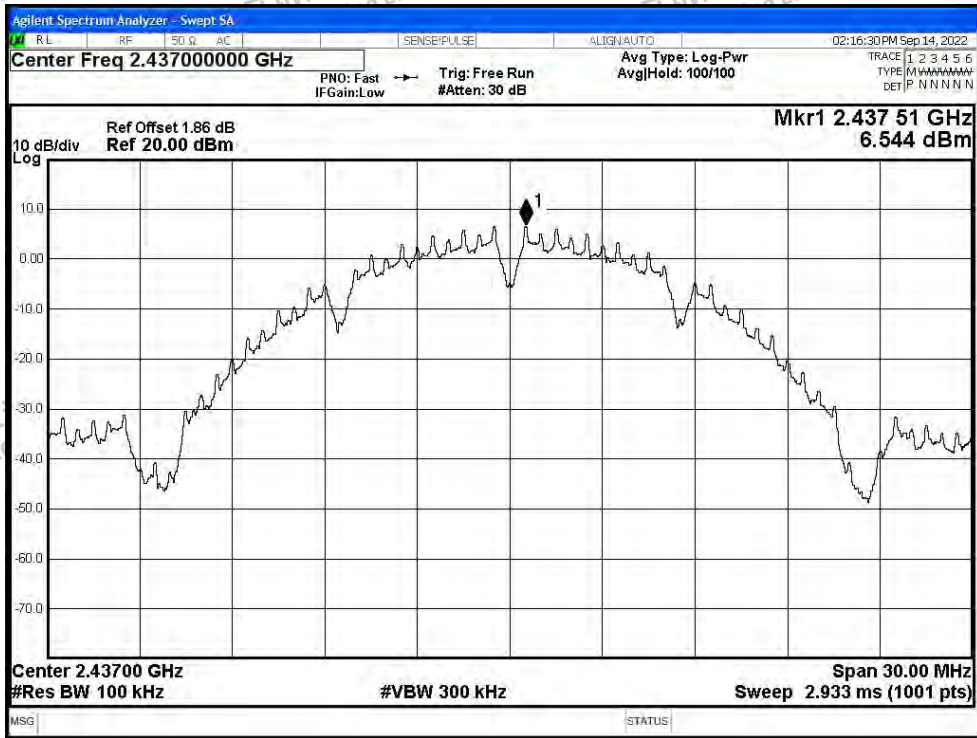


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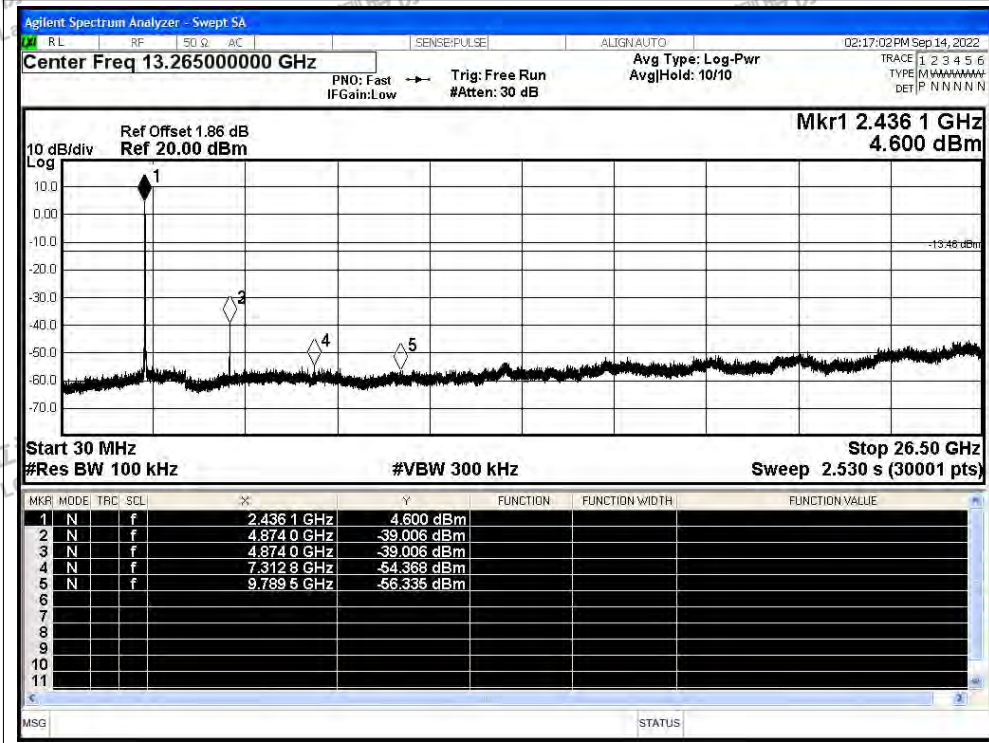




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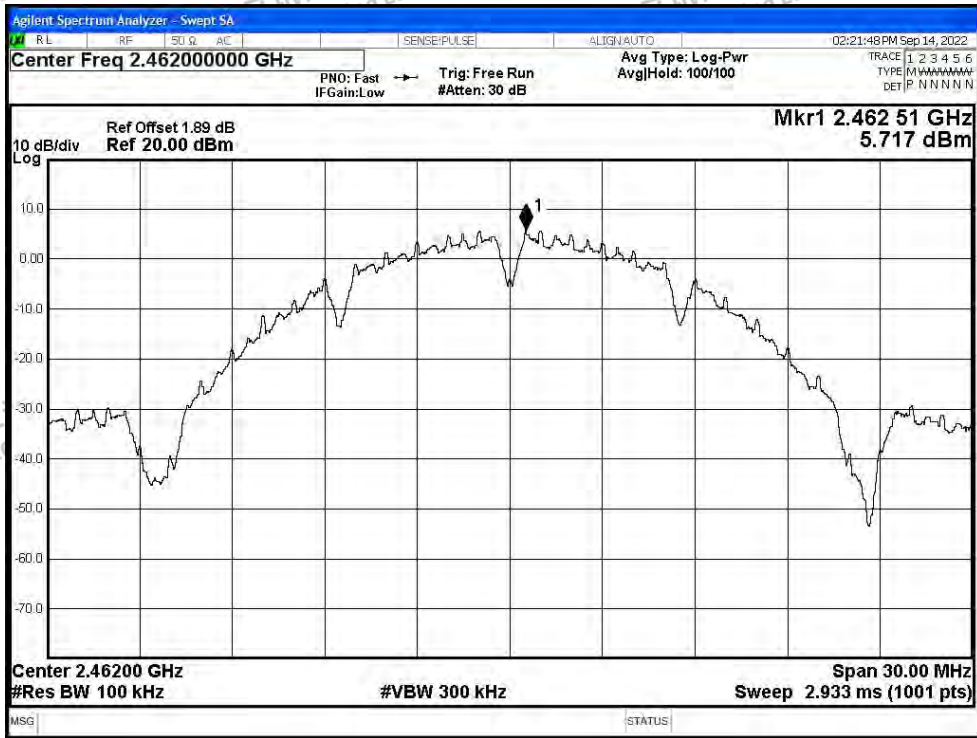


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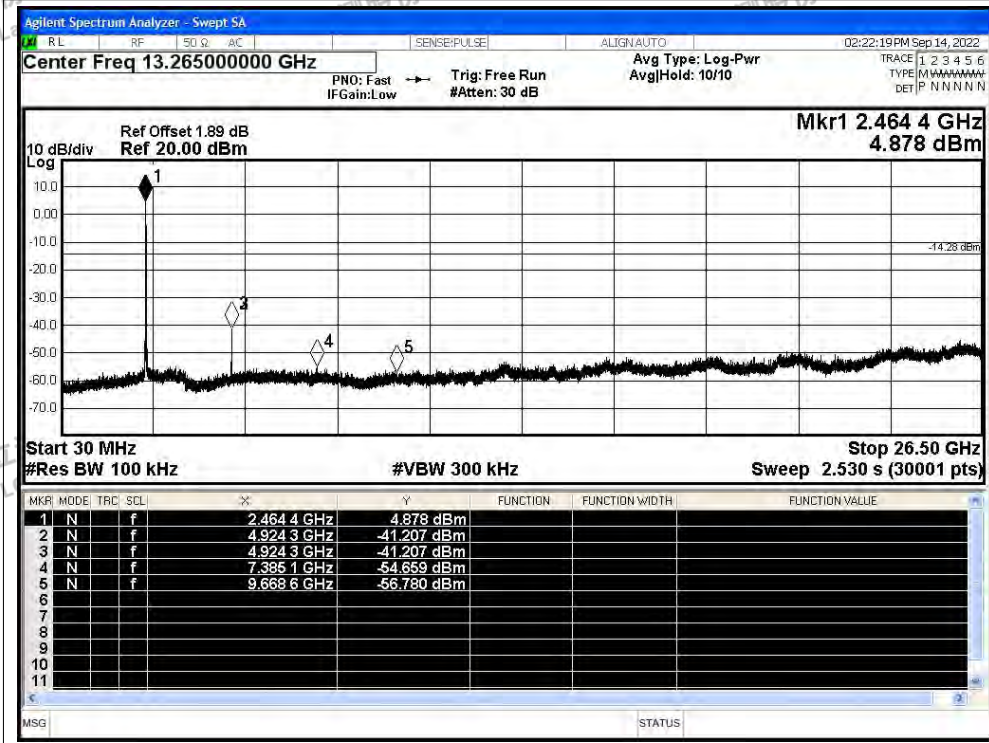




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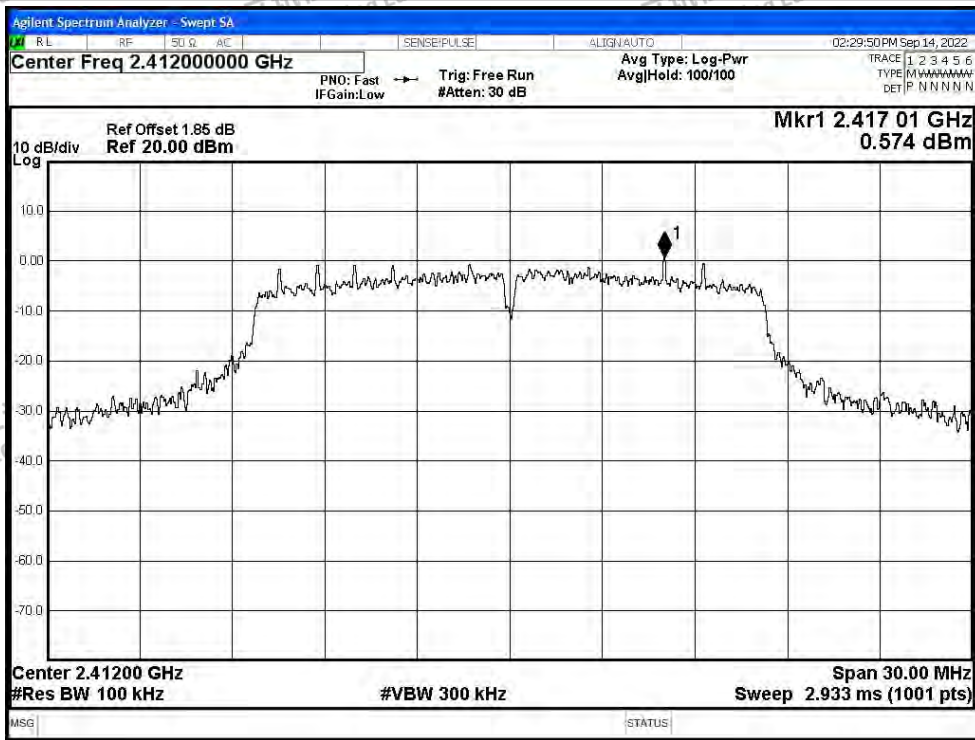


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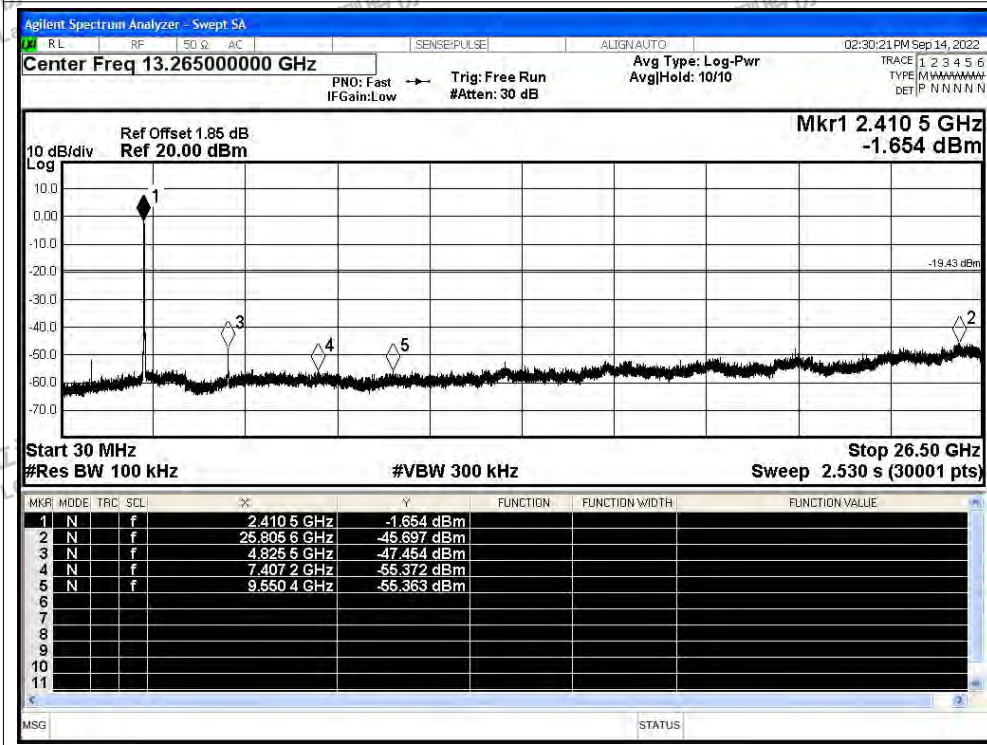




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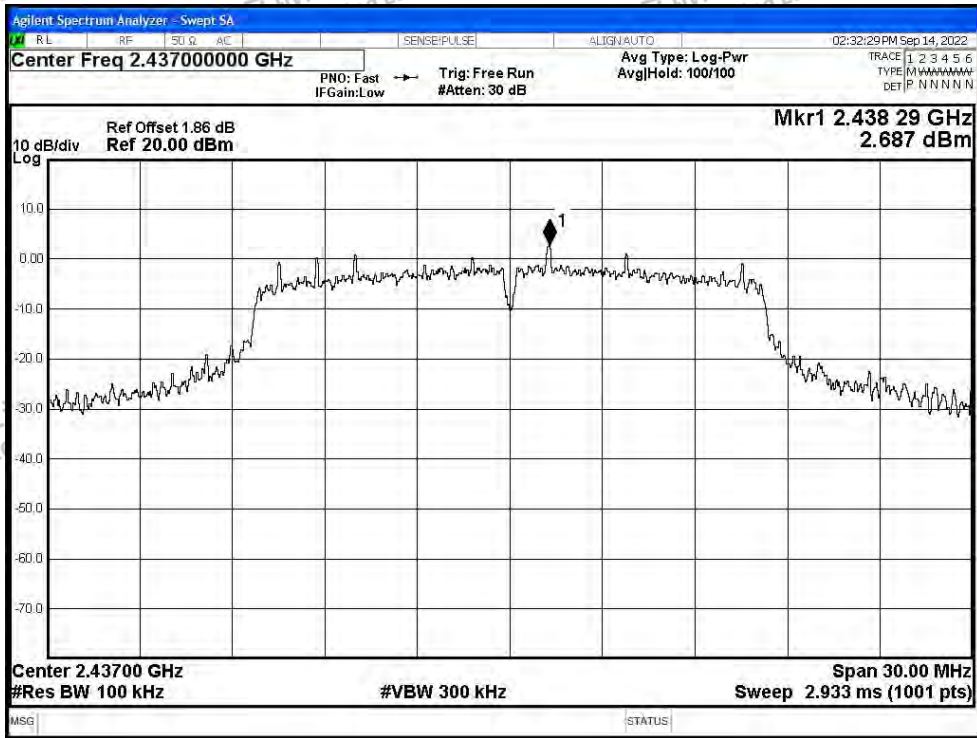


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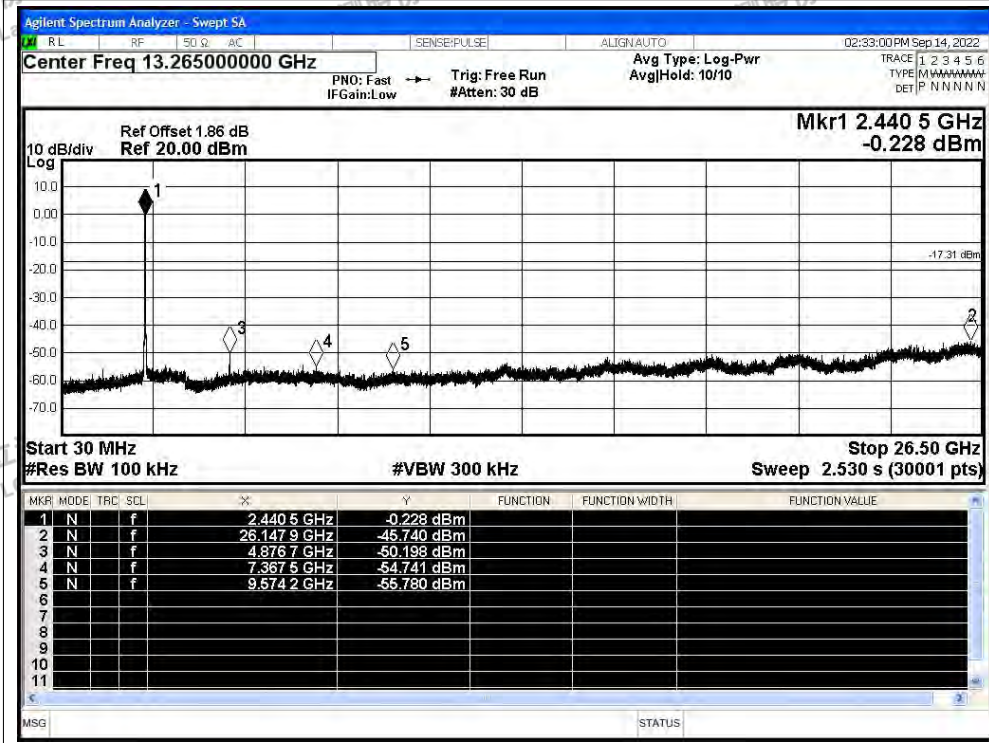




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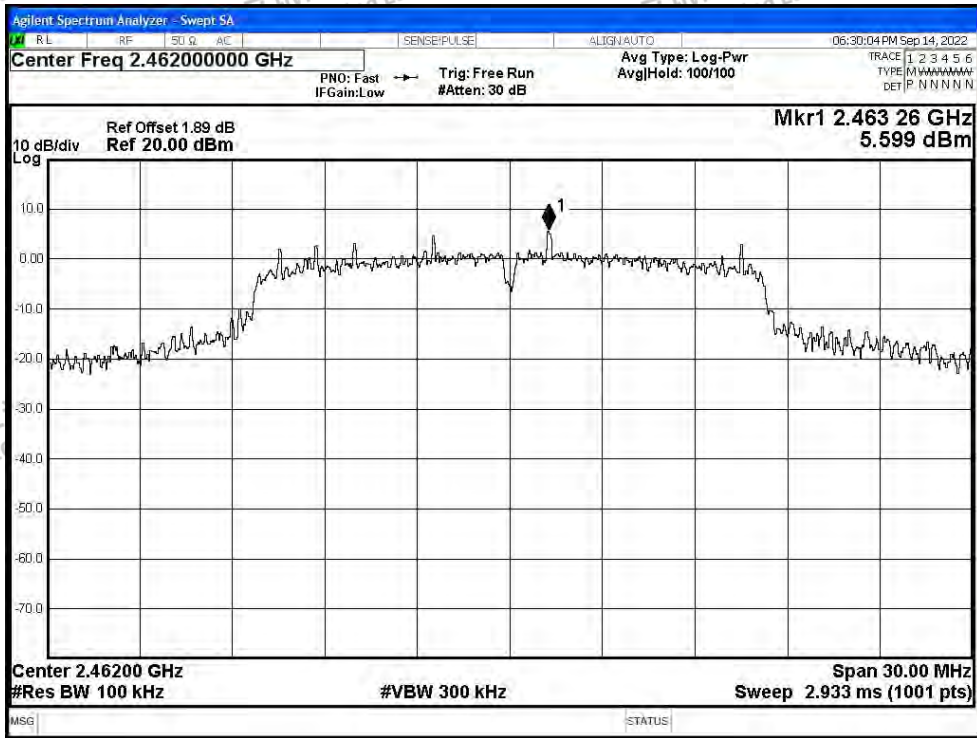


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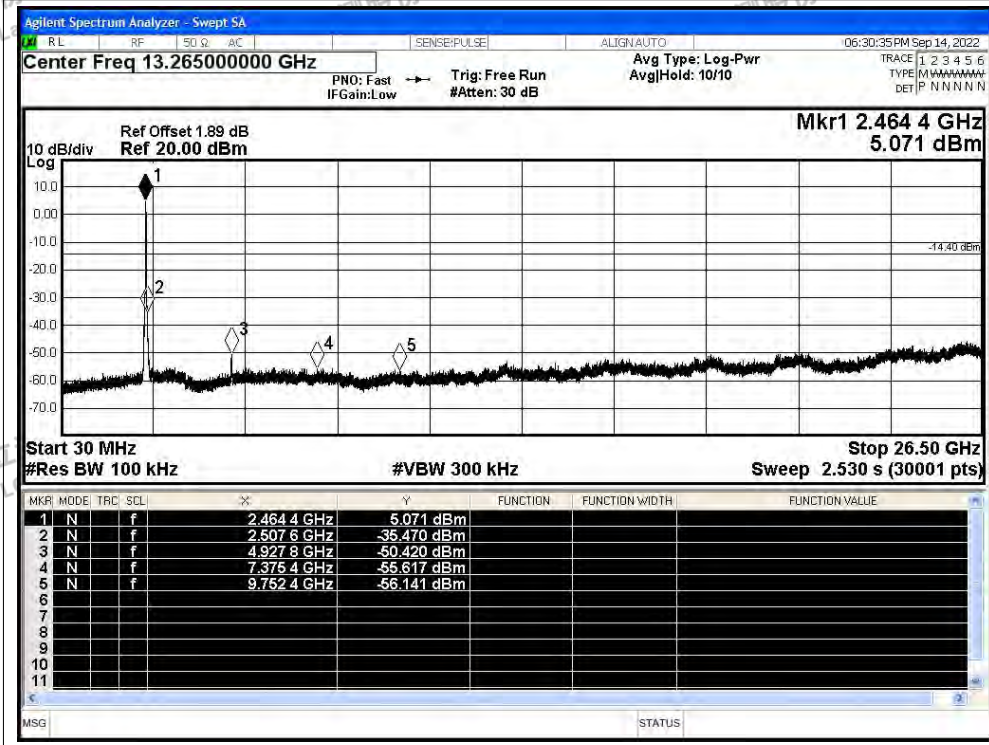




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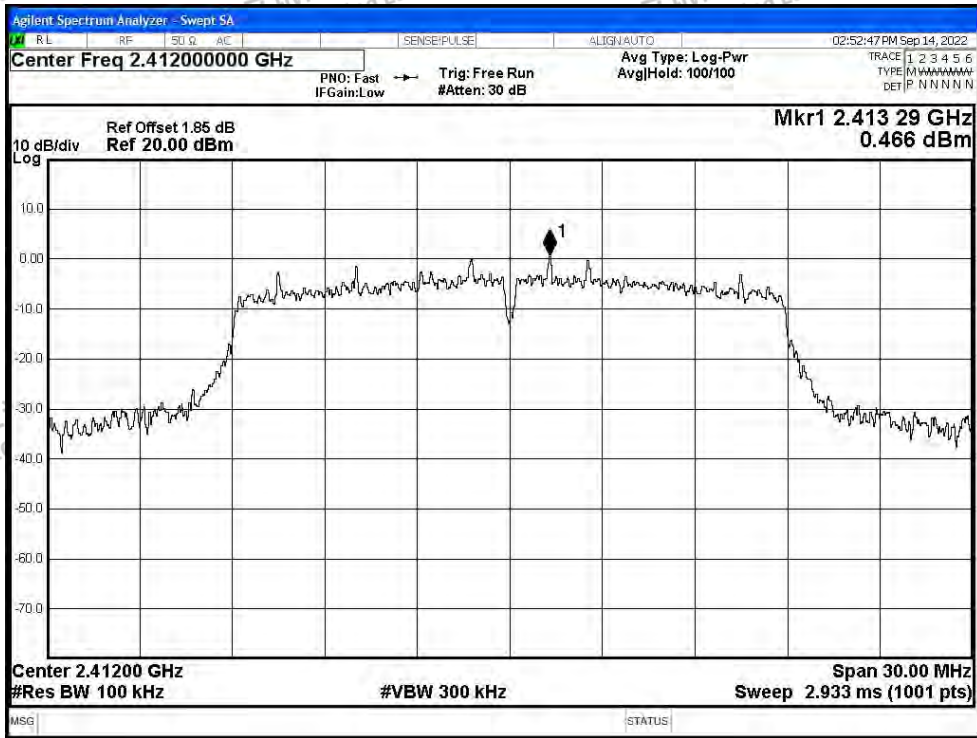
Tx. Spurious NVNT g 2462MHz Ant2 Emission







Tx. Spurious NVNT n20 2412MHz Ant2 Ref



Tx. Spurious NVNT n20 2412MHz Ant2 Emission

