



Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: 150Mbps usb wifi adapter

Test Model: 8188F mini

Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling.zhu
Supervised by:	Lih





A.1 6dB Bandwidth

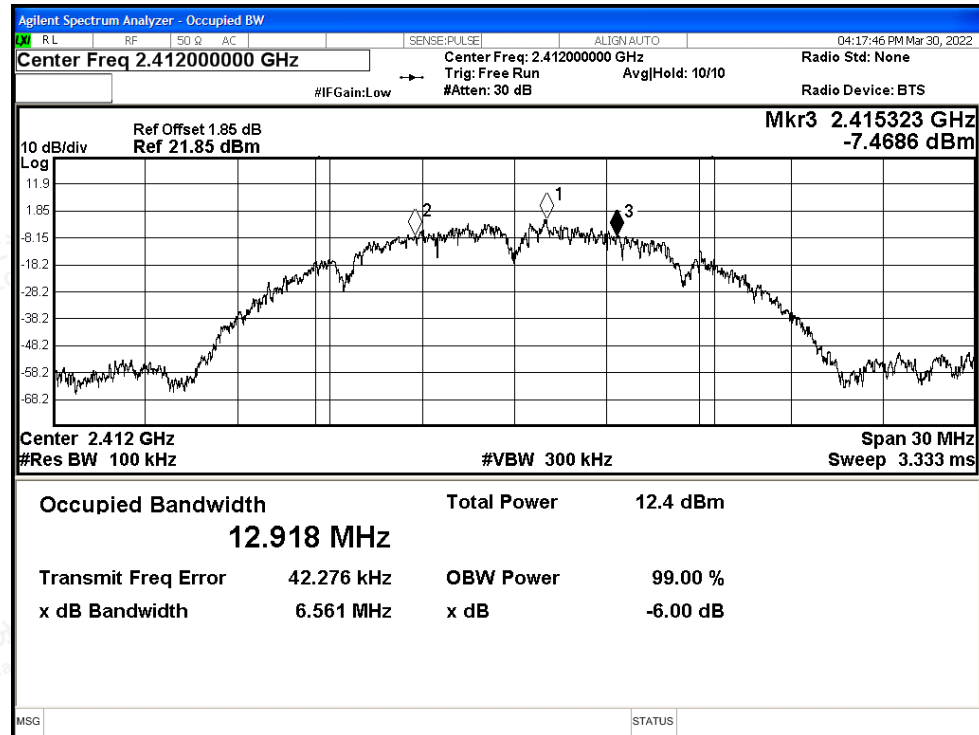
Condition	Mode	Frequency (MHz)	Antenna	6 dB Bandwidth (MHz)	Limit 6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant	6.561	0.5	Pass
NVNT	b	2437	Ant	7.403	0.5	Pass
NVNT	b	2462	Ant	7.996	0.5	Pass
NVNT	g	2412	Ant	16.327	0.5	Pass
NVNT	g	2437	Ant	16.139	0.5	Pass
NVNT	g	2462	Ant	16.384	0.5	Pass
NVNT	n20	2412	Ant	17.584	0.5	Pass
NVNT	n20	2437	Ant	17.182	0.5	Pass
NVNT	n20	2462	Ant	16.967	0.5	Pass
NVNT	n40	2422	Ant	35.676	0.5	Pass
NVNT	n40	2437	Ant	35.265	0.5	Pass
NVNT	n40	2452	Ant	35.164	0.5	Pass



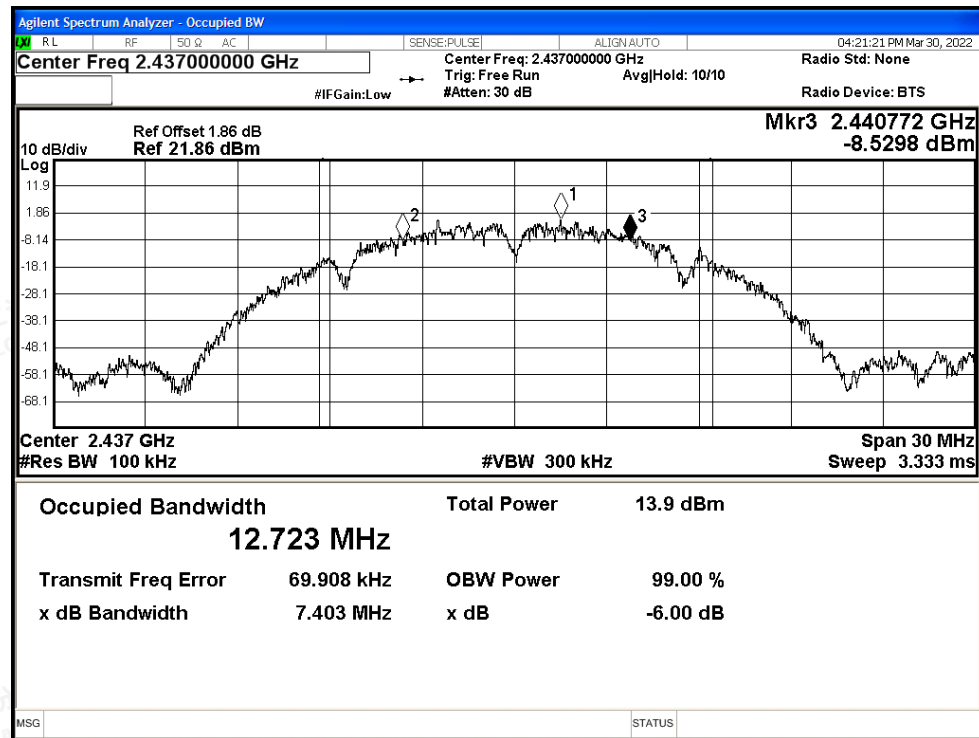


Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant1

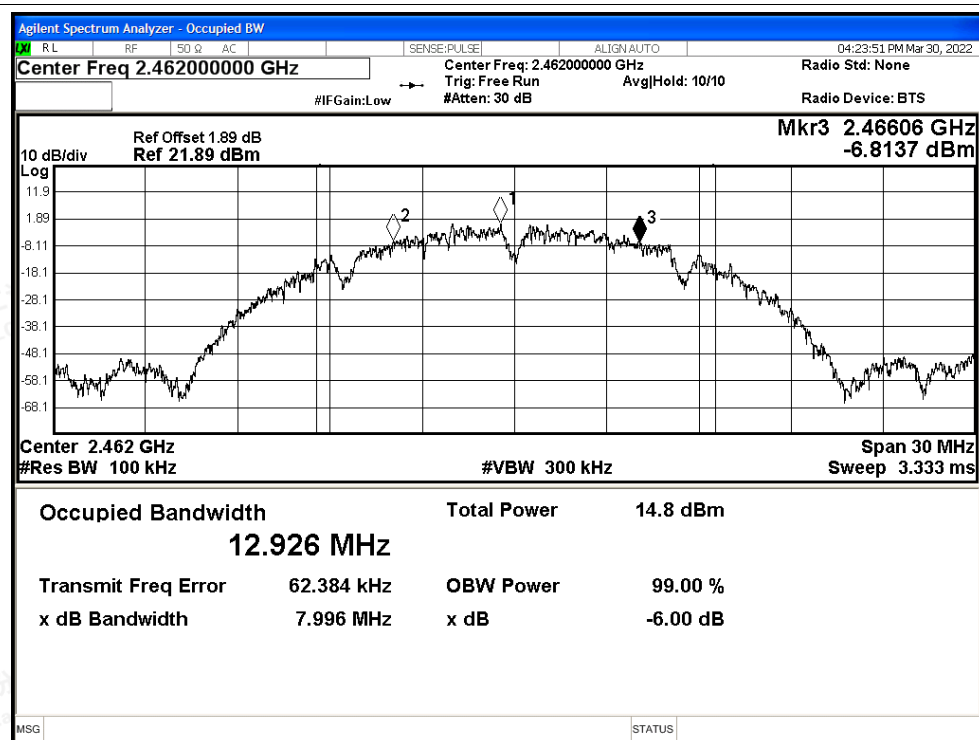


-6dB Bandwidth NVNT b 2437MHz Ant1

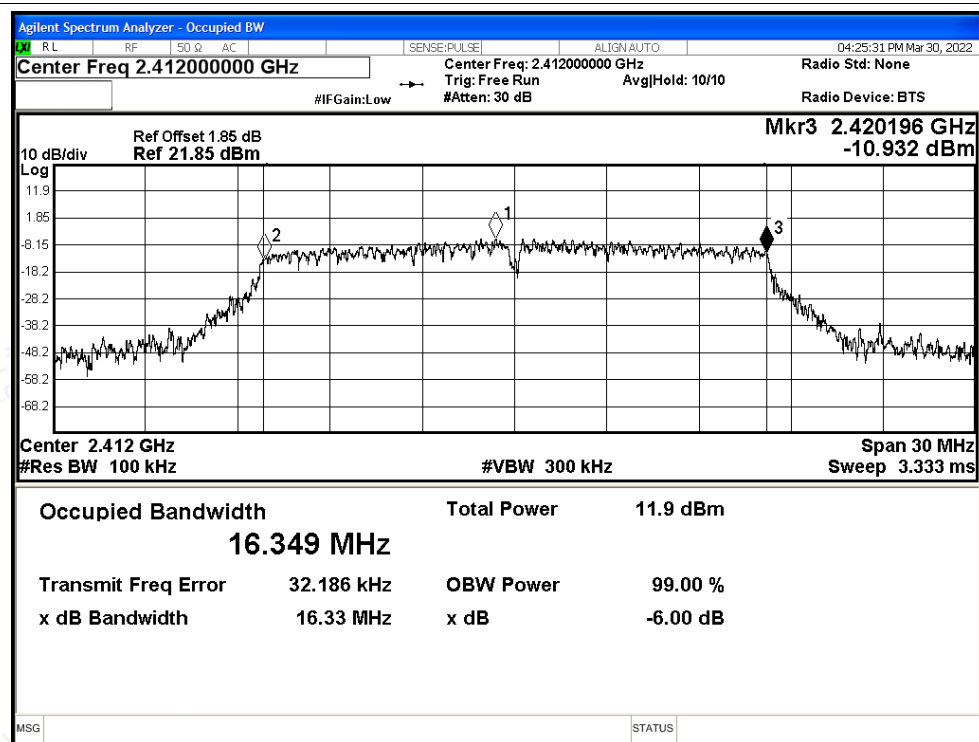




-6dB Bandwidth NVNT b 2462MHz Ant1



-6dB Bandwidth NVNT g 2412MHz Ant1



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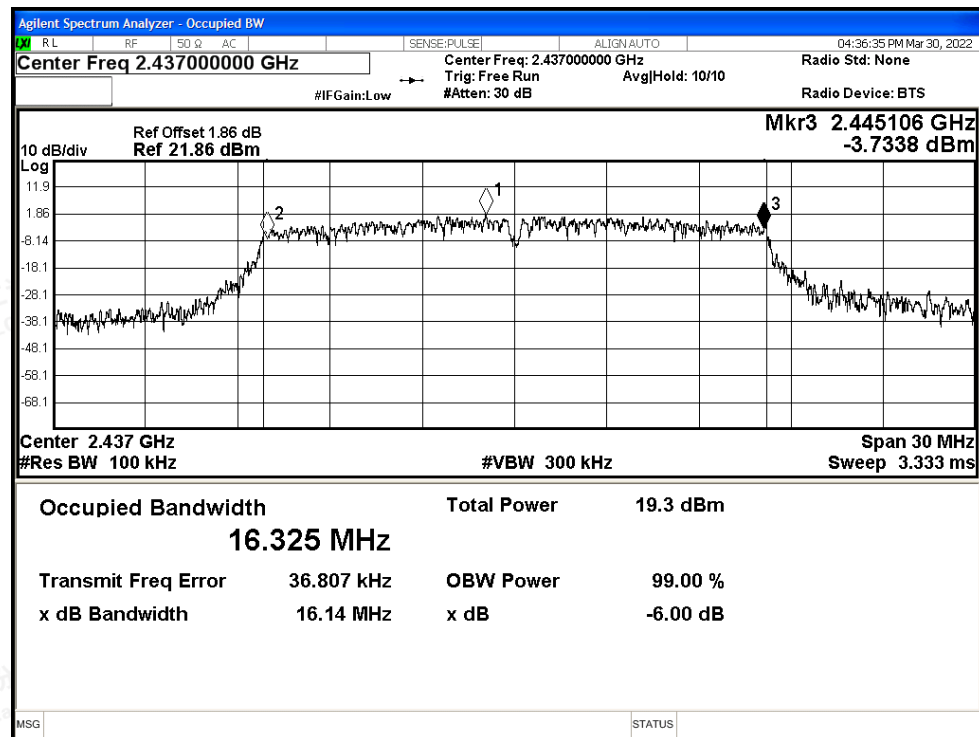
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

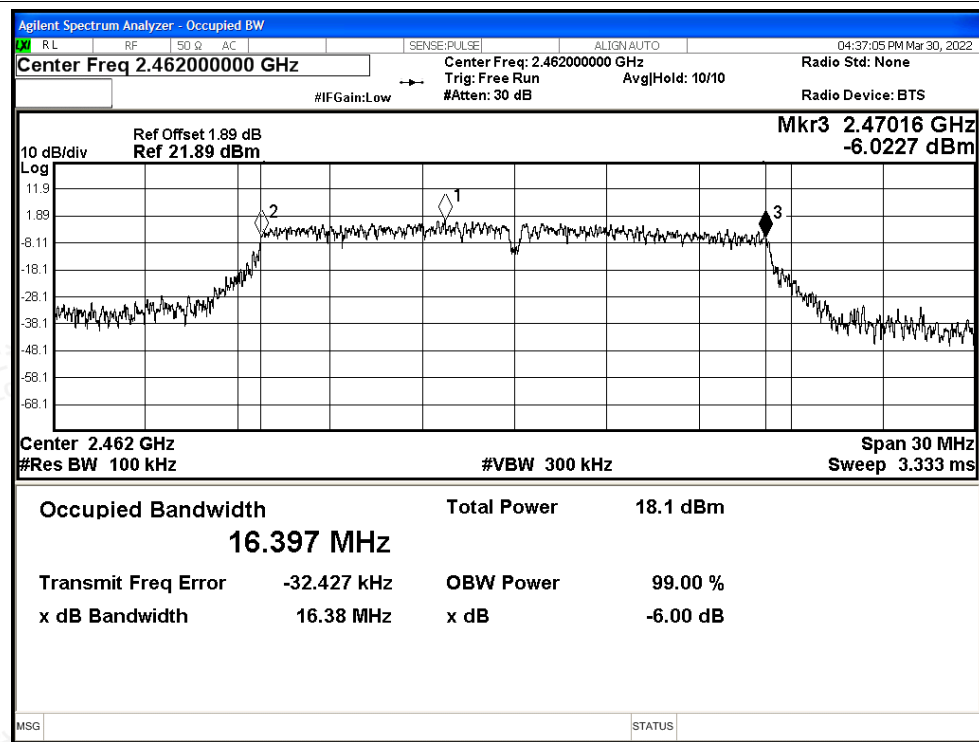
Scan code to check authenticity



-6dB Bandwidth NVNT g 2437MHz Ant1

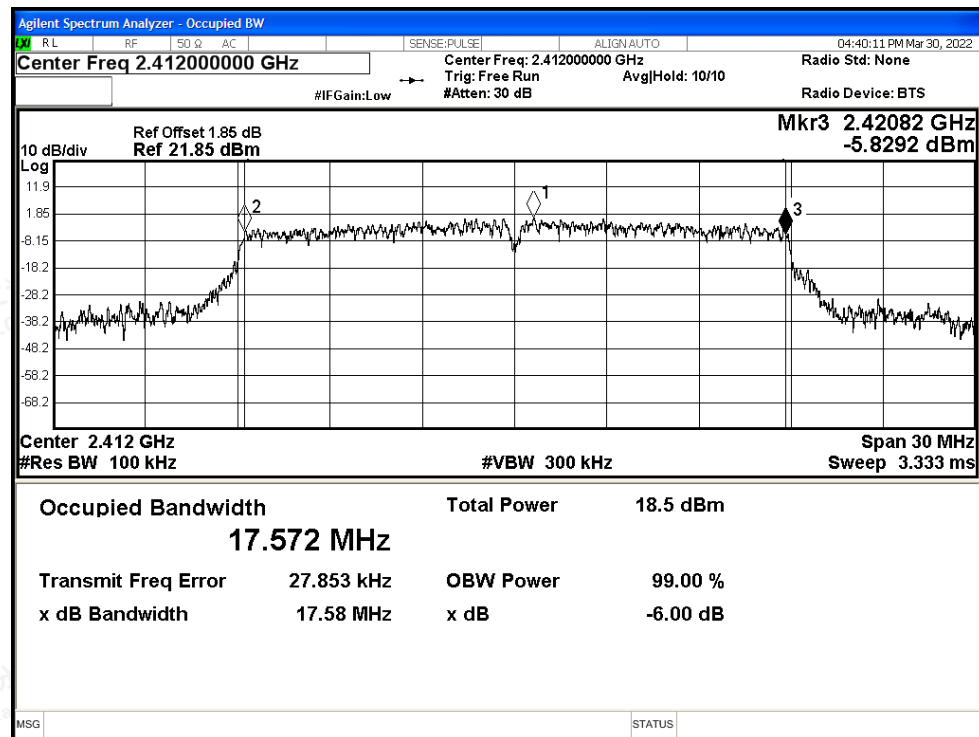


-6dB Bandwidth NVNT g 2462MHz Ant1

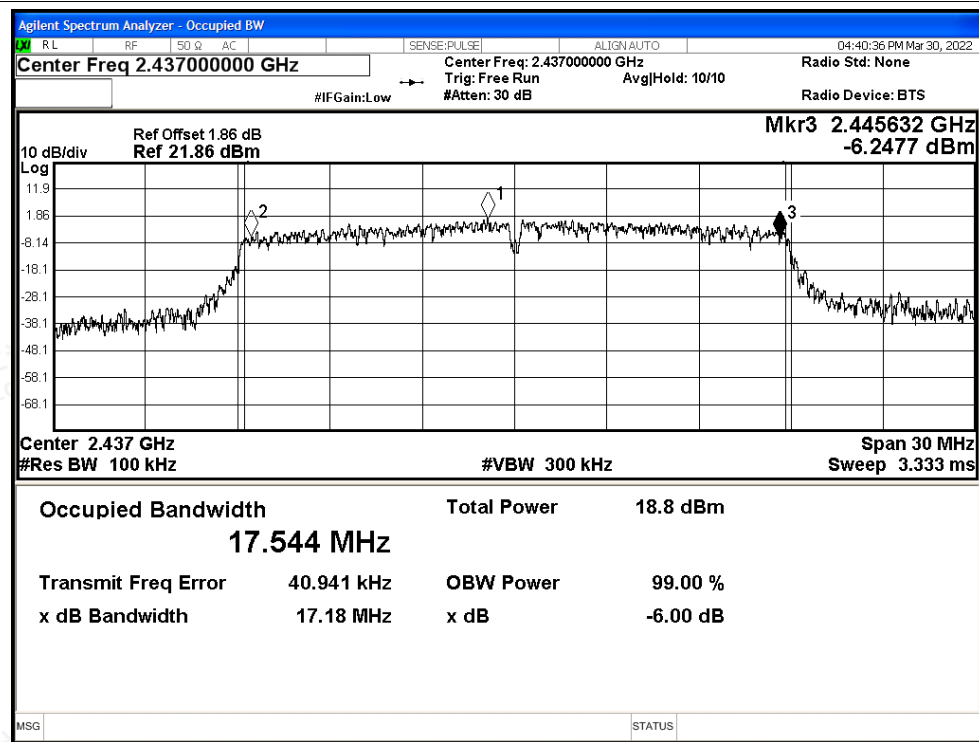




-6dB Bandwidth NVNT n20 2412MHz Ant1

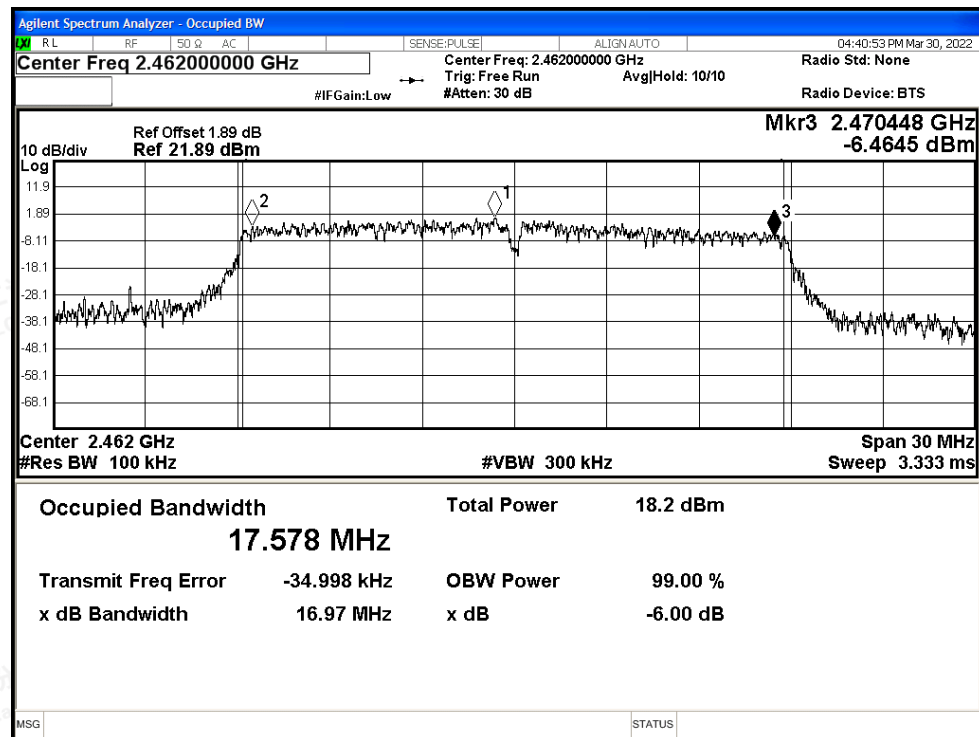


-6dB Bandwidth NVNT n20 2437MHz Ant1

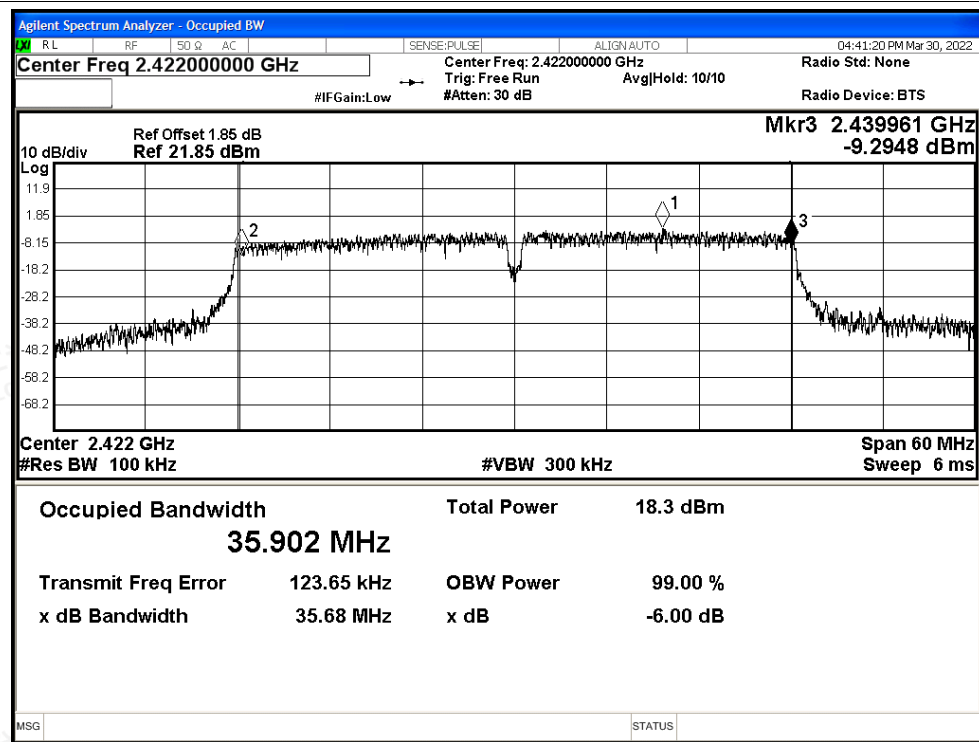




-6dB Bandwidth NVNT n20 2462MHz Ant1

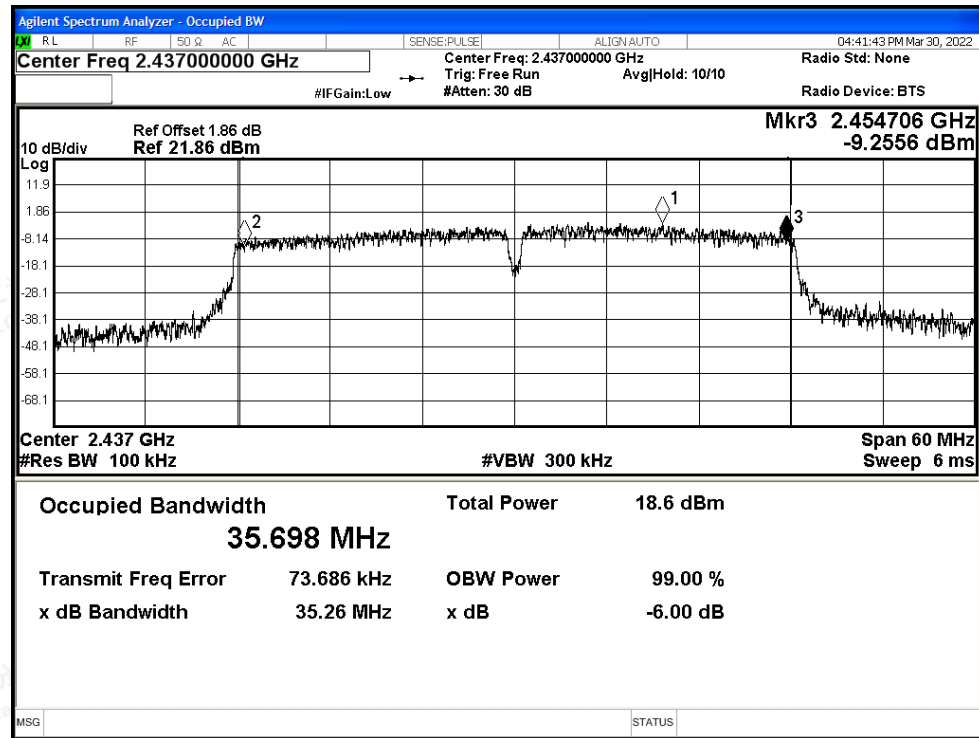


-6dB Bandwidth NVNT n40 2422MHz Ant1

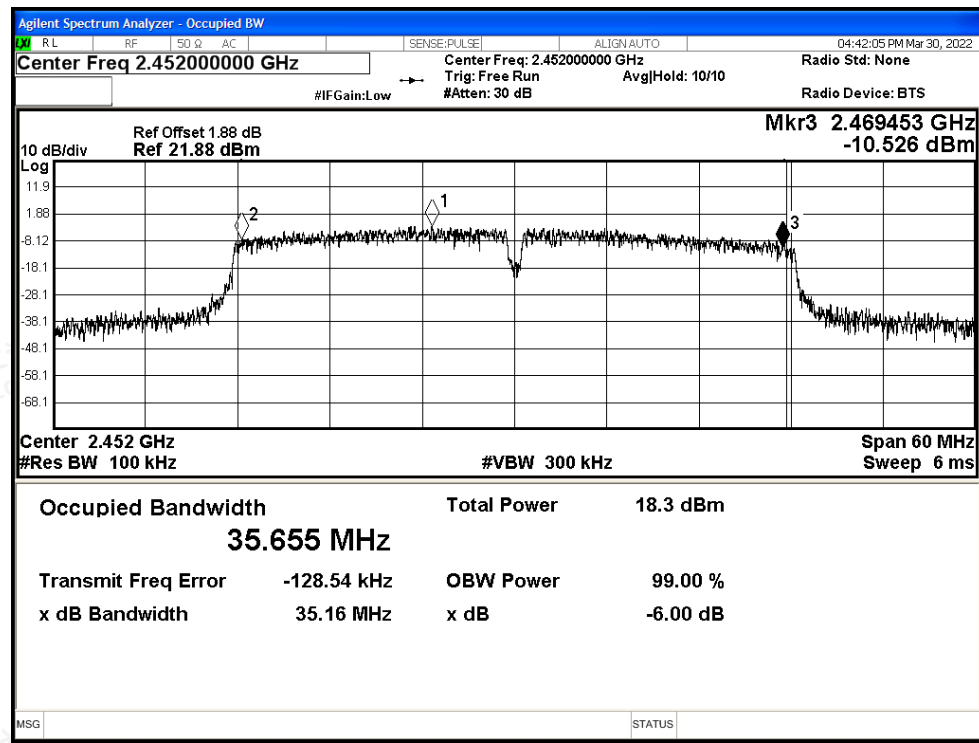




-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1





A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant	13.47	30	Pass
NVNT	b	2437	Ant	13.31	30	Pass
NVNT	b	2462	Ant	12.42	30	Pass
NVNT	g	2412	Ant	13.48	30	Pass
NVNT	g	2437	Ant	13.86	30	Pass
NVNT	g	2462	Ant	12.54	30	Pass
NVNT	n20	2412	Ant	13.47	30	Pass
NVNT	n20	2437	Ant	13.50	30	Pass
NVNT	n20	2462	Ant	13.83	30	Pass
NVNT	n40	2422	Ant	13.46	30	Pass
NVNT	n40	2437	Ant	13.88	30	Pass
NVNT	n40	2452	Ant	13.03	30	Pass





A.3 Maximum Power Spectral Density

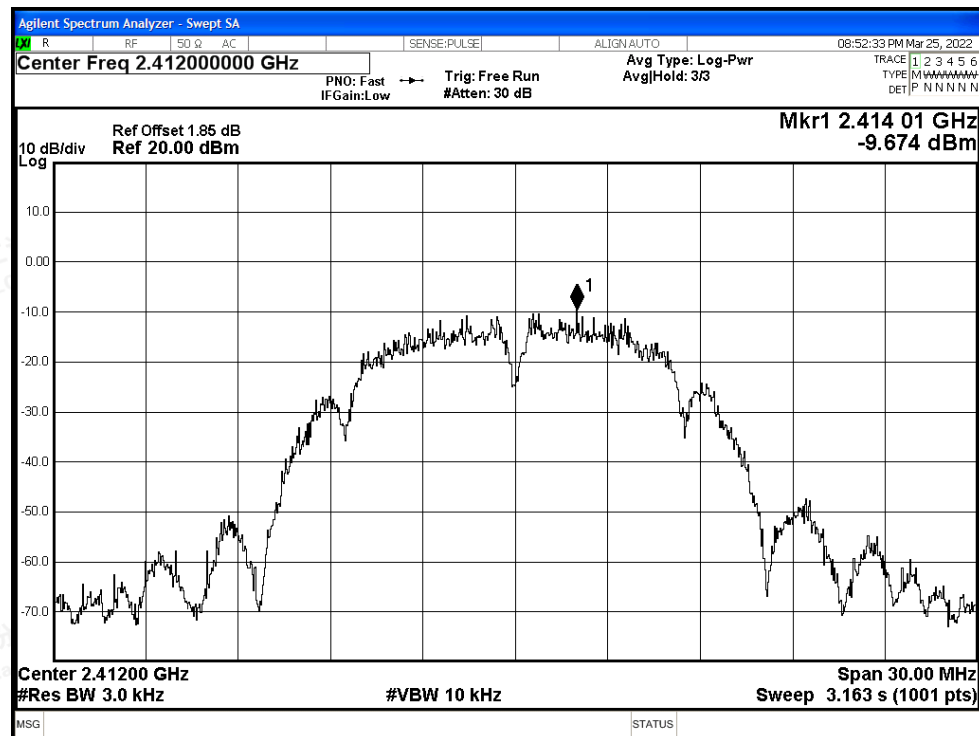
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant	-9.67	0	-9.67	8	Pass
NVNT	b	2437	Ant	-9.51	0	-9.51	8	Pass
NVNT	b	2462	Ant	-12.23	0	-12.23	8	Pass
NVNT	g	2412	Ant	-15.85	0	-15.85	8	Pass
NVNT	g	2437	Ant	-14.58	0	-14.58	8	Pass
NVNT	g	2462	Ant	-14.51	0	-14.51	8	Pass
NVNT	n20	2412	Ant	-15.58	0	-15.58	8	Pass
NVNT	n20	2437	Ant	-13.04	0	-13.04	8	Pass
NVNT	n20	2462	Ant	-16.62	0	-16.62	8	Pass
NVNT	n40	2422	Ant	-17.94	0	-17.94	8	Pass
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NVNT	n40	2452	Ant	-18.83	0	-18.83	8	Pass



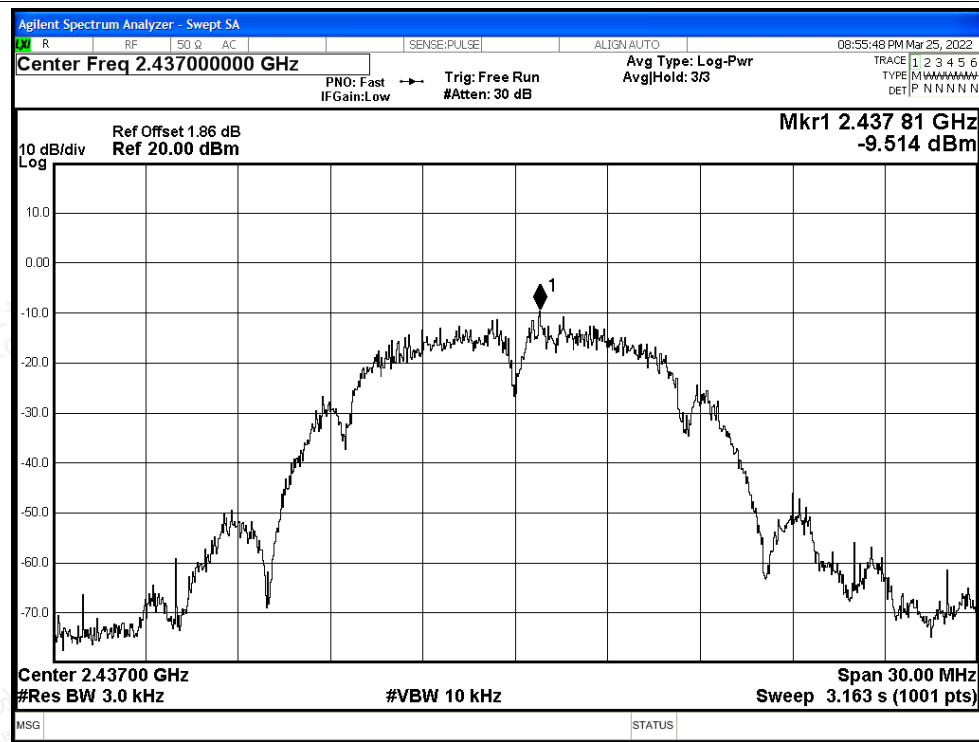


Test Graphs

PSD NVNT b 2412MHz Ant

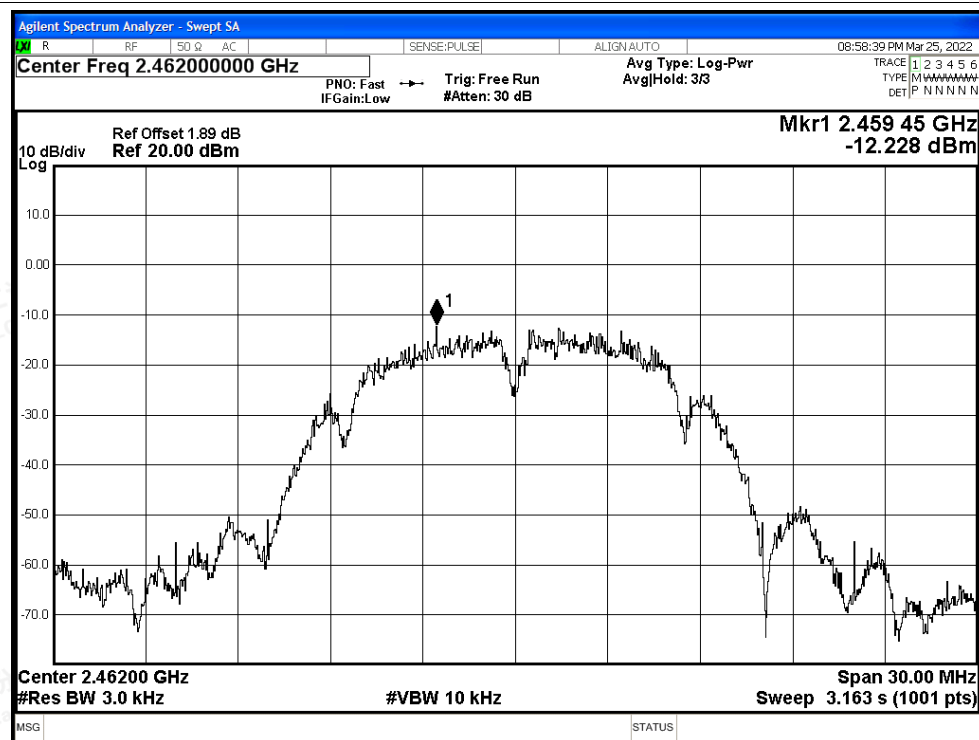


PSD NVNT b 2437MHz Ant

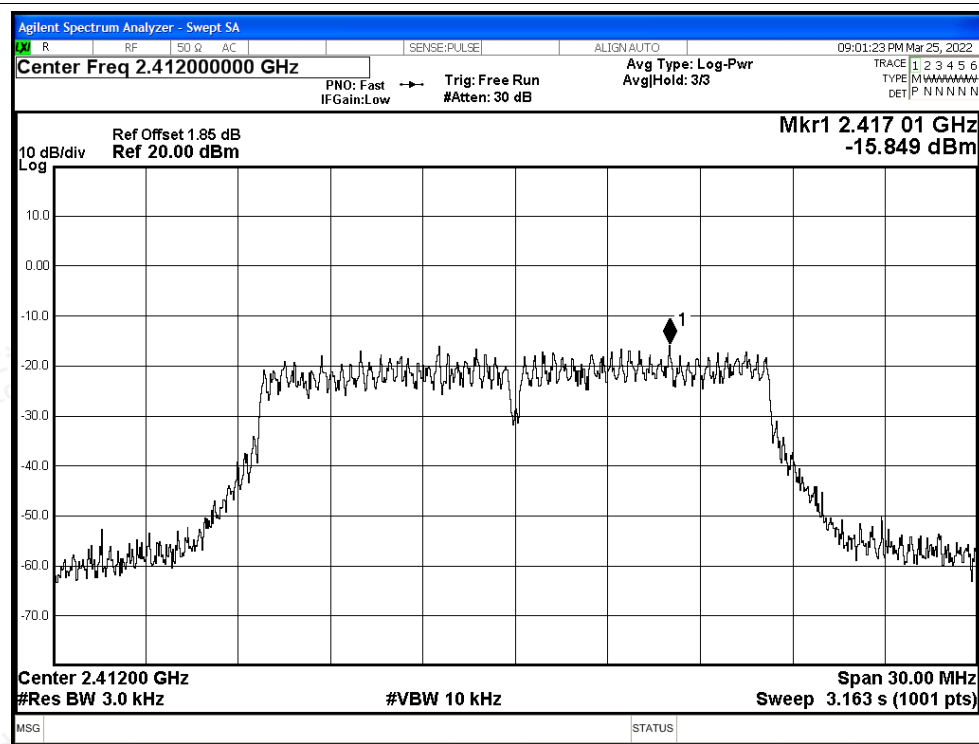


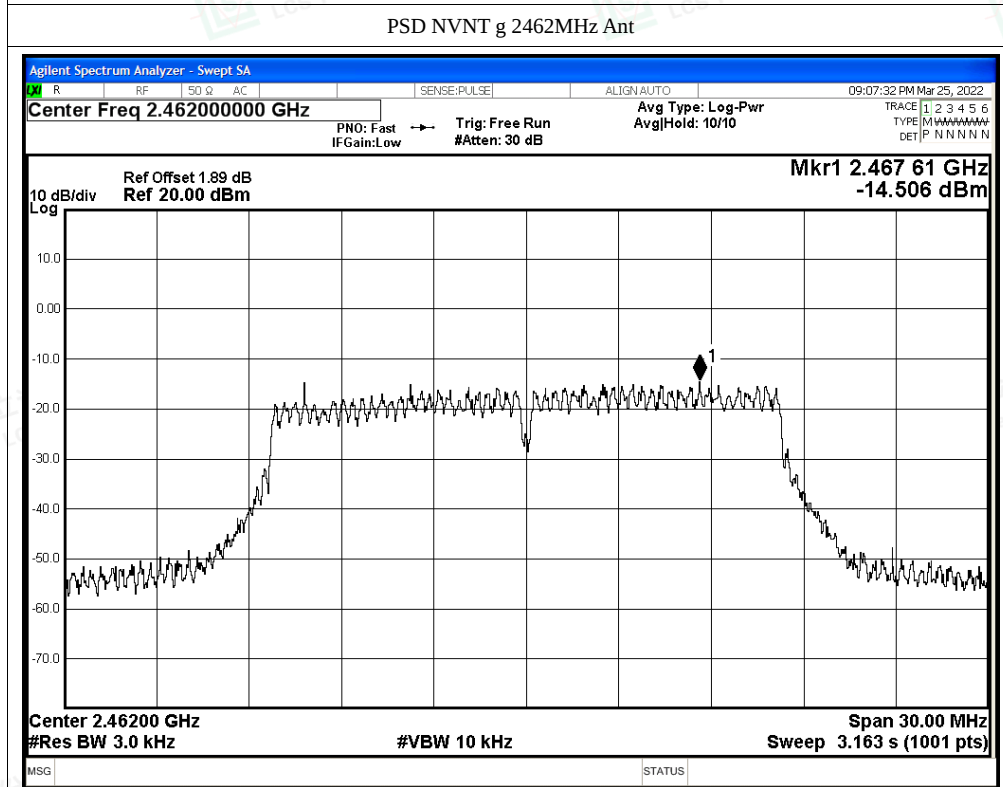
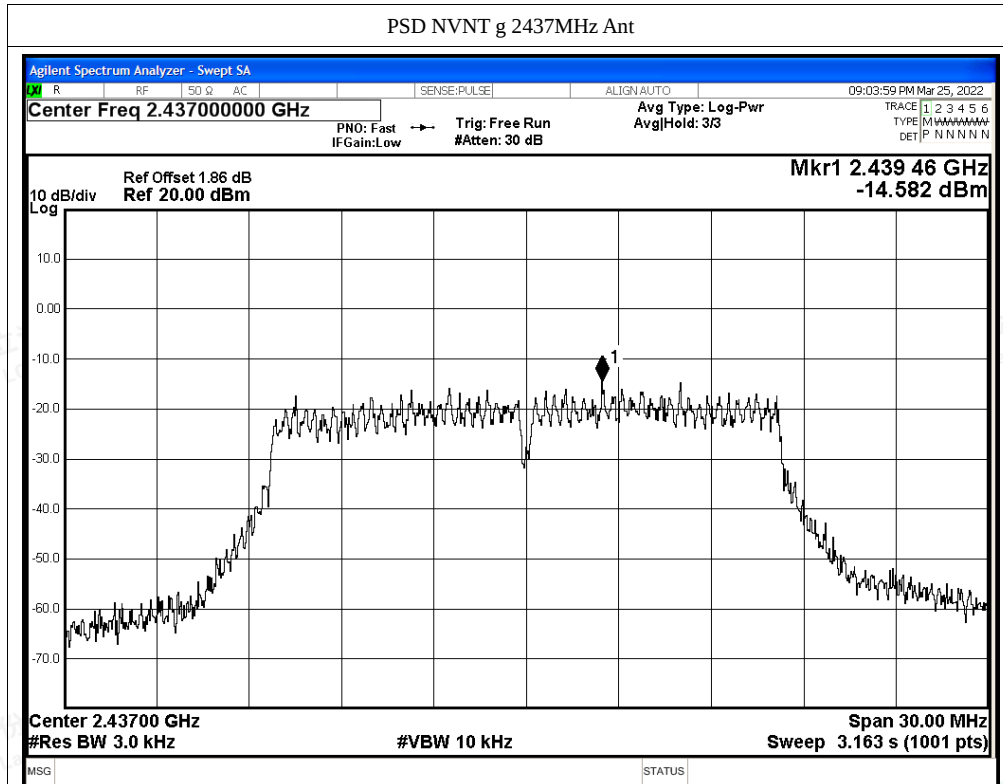


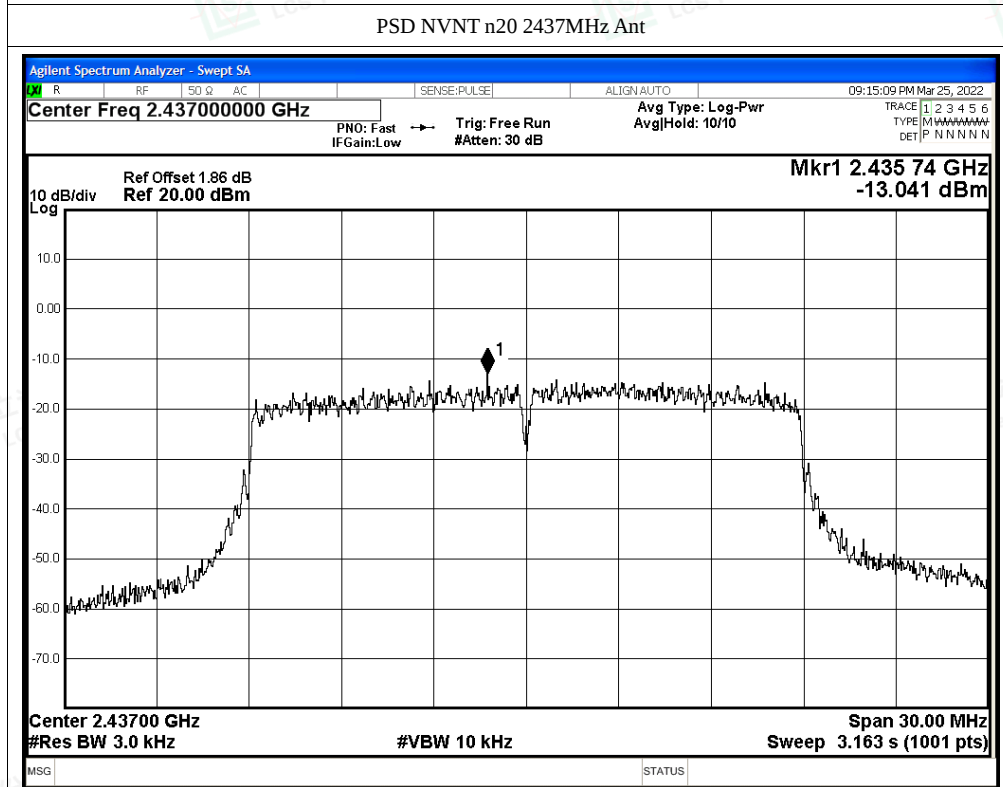
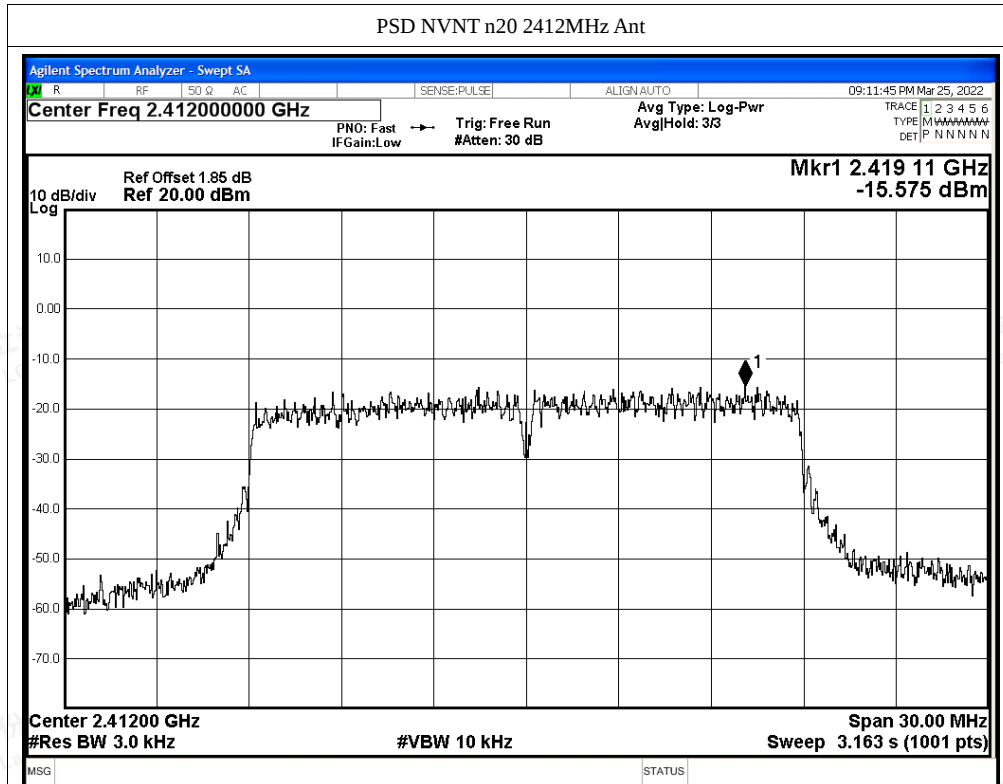
PSD NVNT b 2462MHz Ant

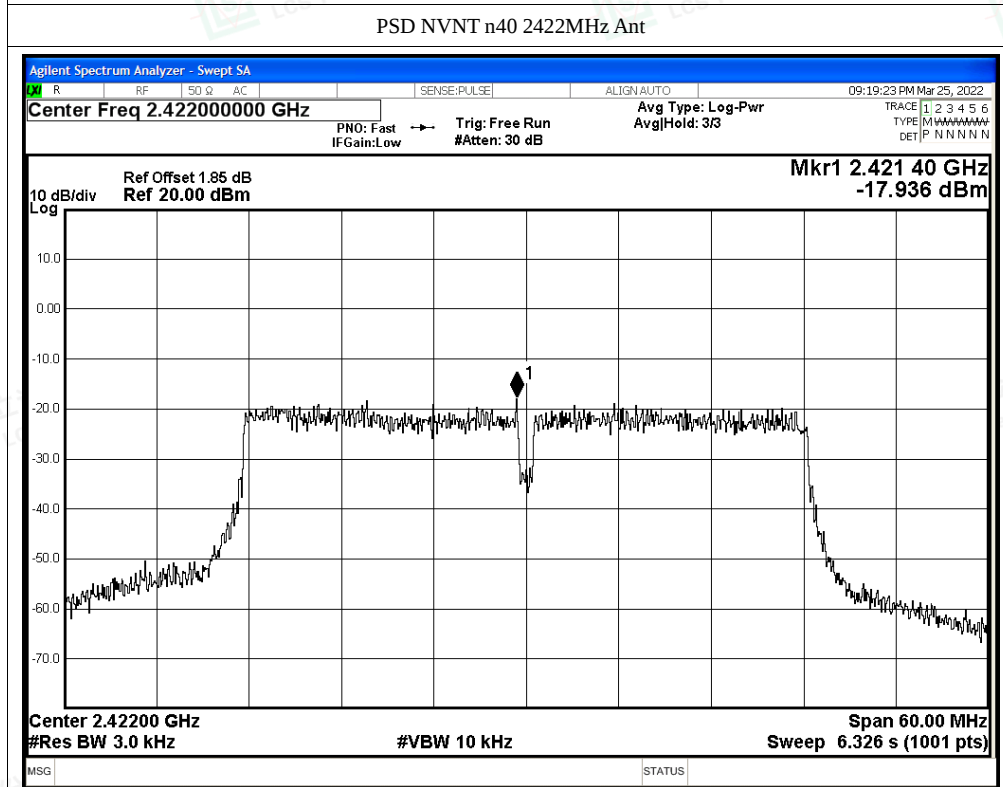
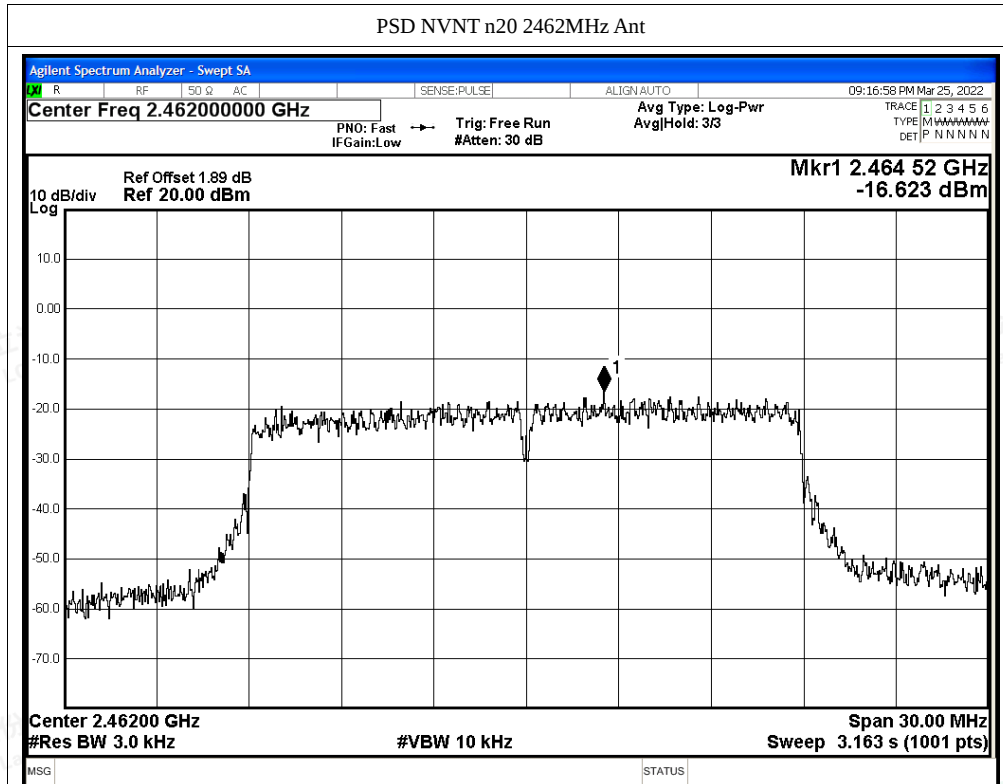


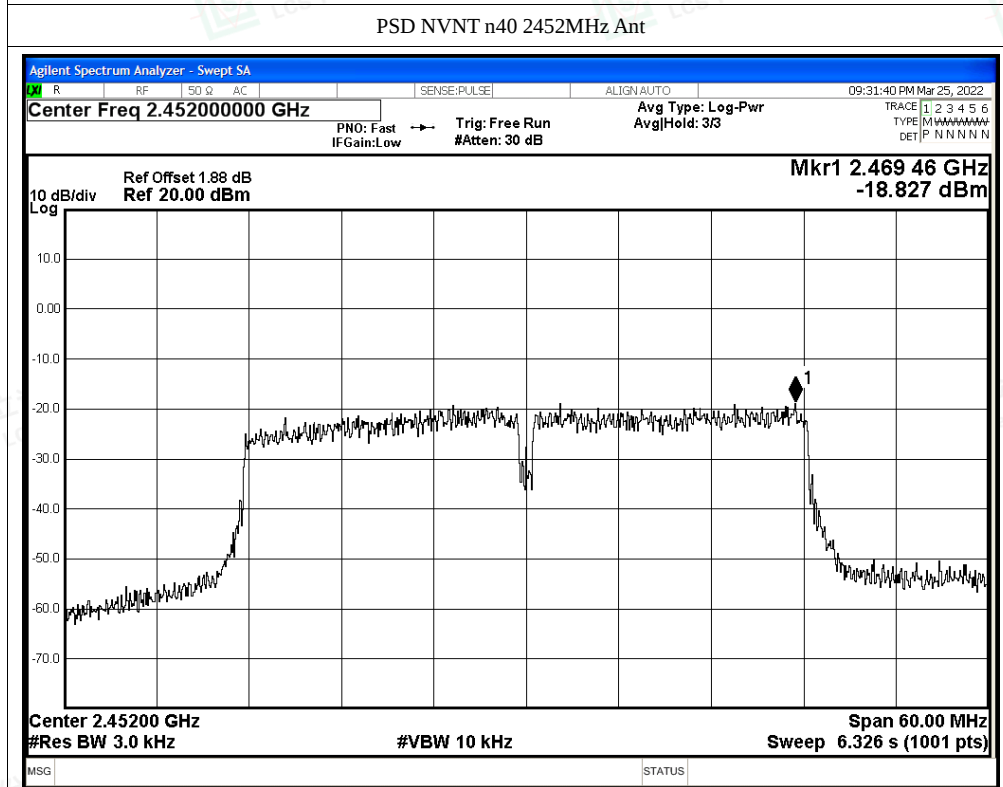
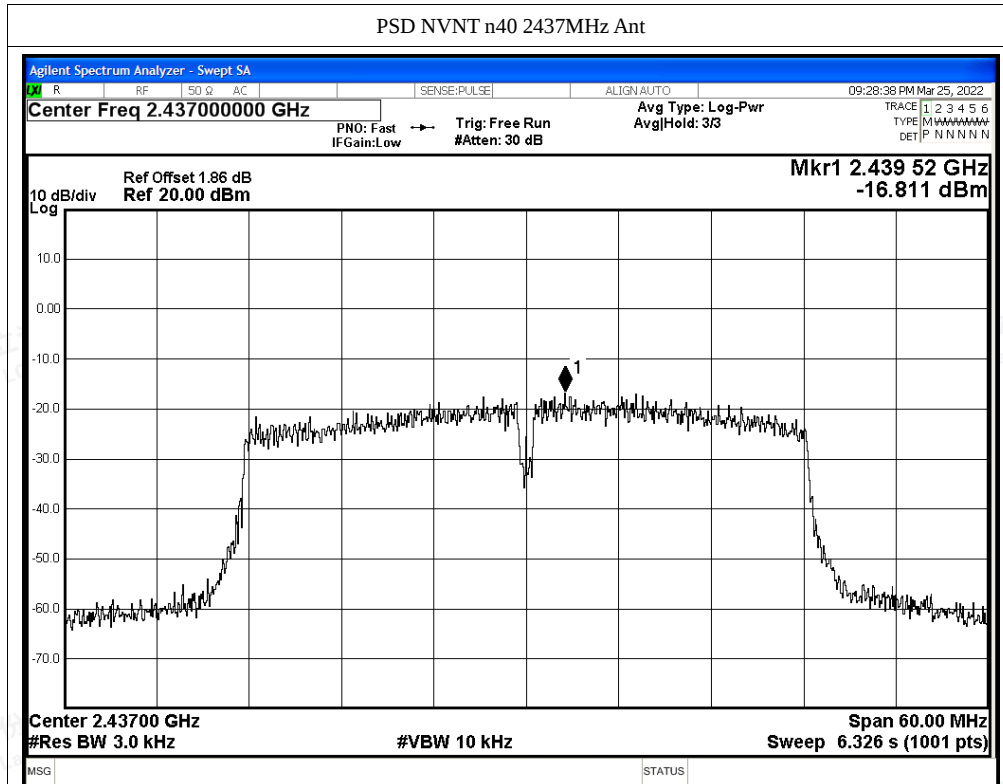
PSD NVNT g 2412MHz Ant













A.4 Band edge measurements

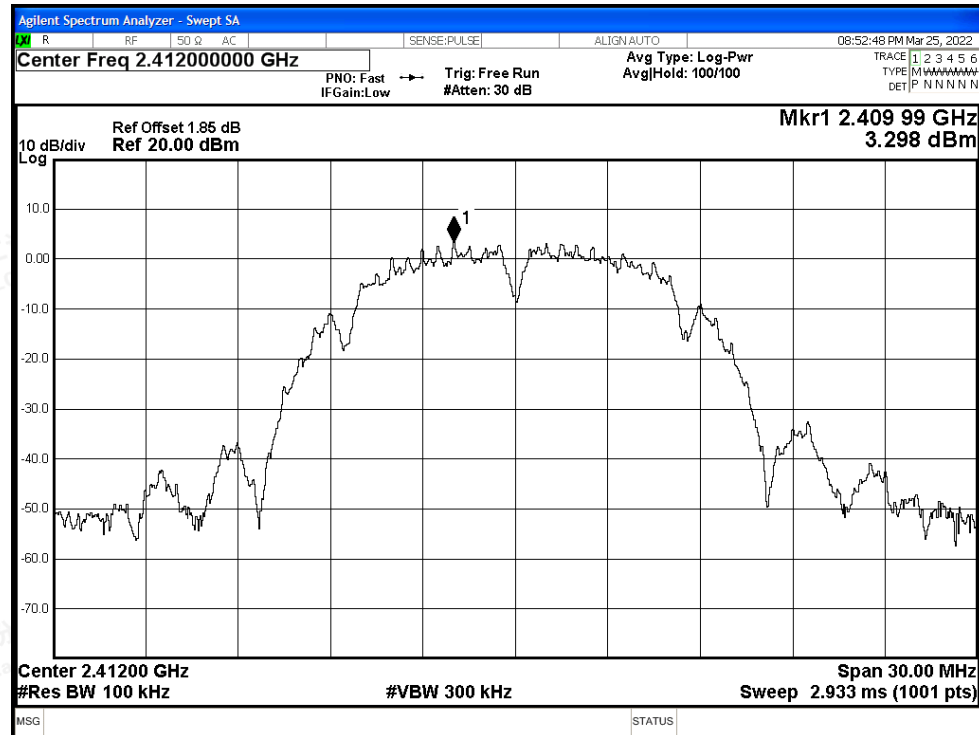
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant	-52.40	-20	Pass
NVNT	b	2462	Ant	-58.00	-20	Pass
NVNT	g	2412	Ant	-35.73	-20	Pass
NVNT	g	2462	Ant	-37.92	-20	Pass
NVNT	n20	2412	Ant	-33.59	-20	Pass
NVNT	n20	2462	Ant	-38.37	-20	Pass
NVNT	n40	2422	Ant	-29.07	-20	Pass
NVNT	n40	2452	Ant	-33.77	-20	Pass



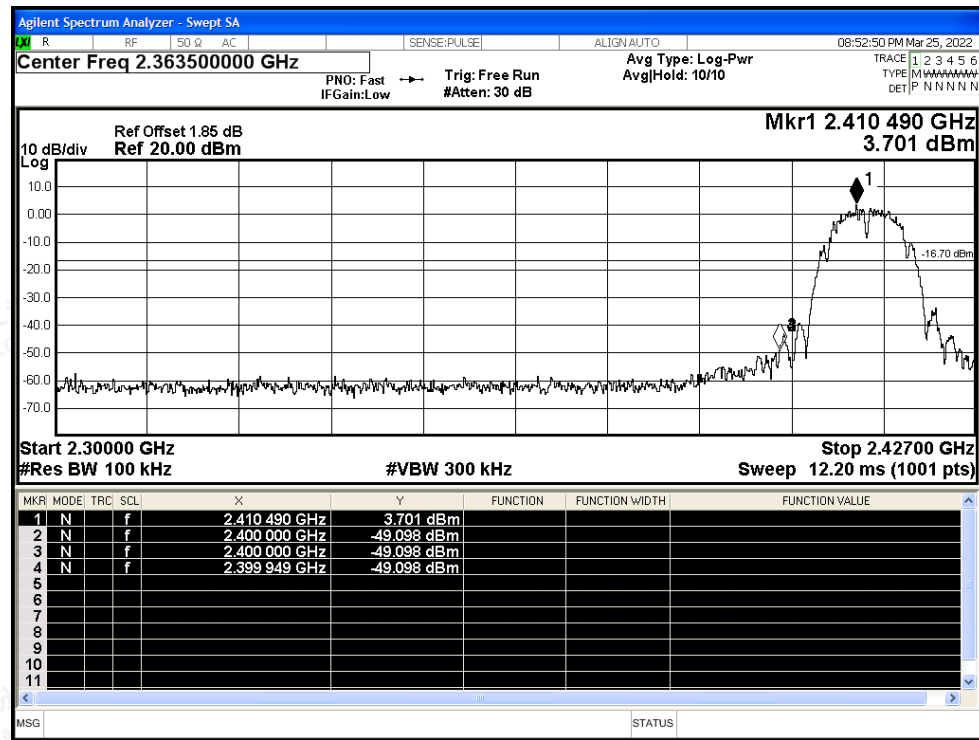


Test Graphs

Band Edge NVNT b 2412MHz Ant Ref

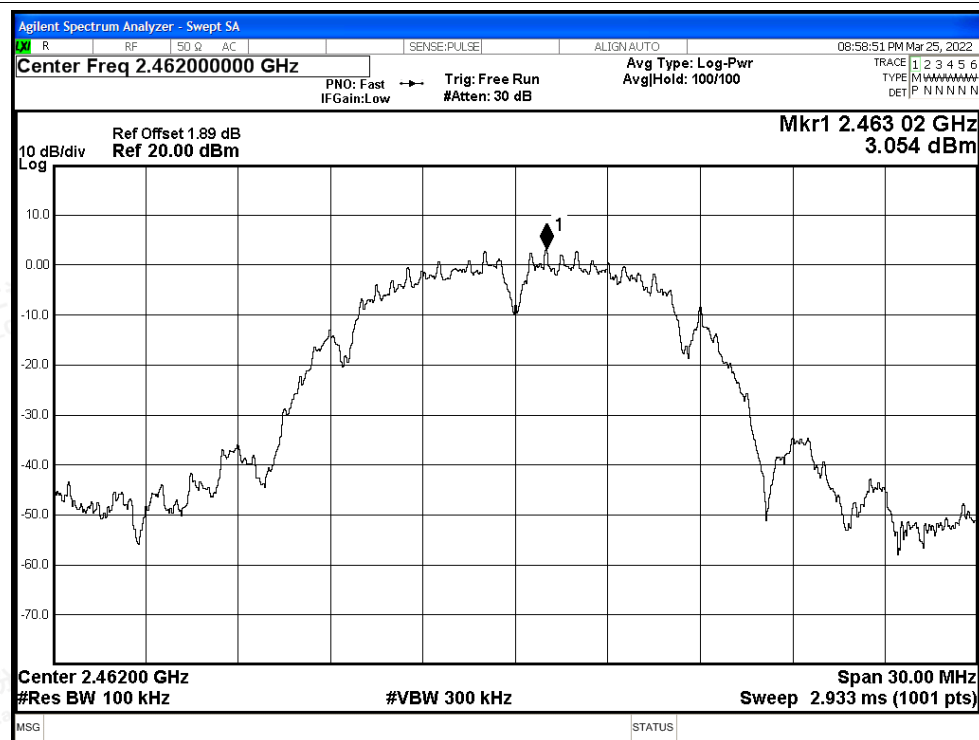


Band Edge NVNT b 2412MHz Ant Emission

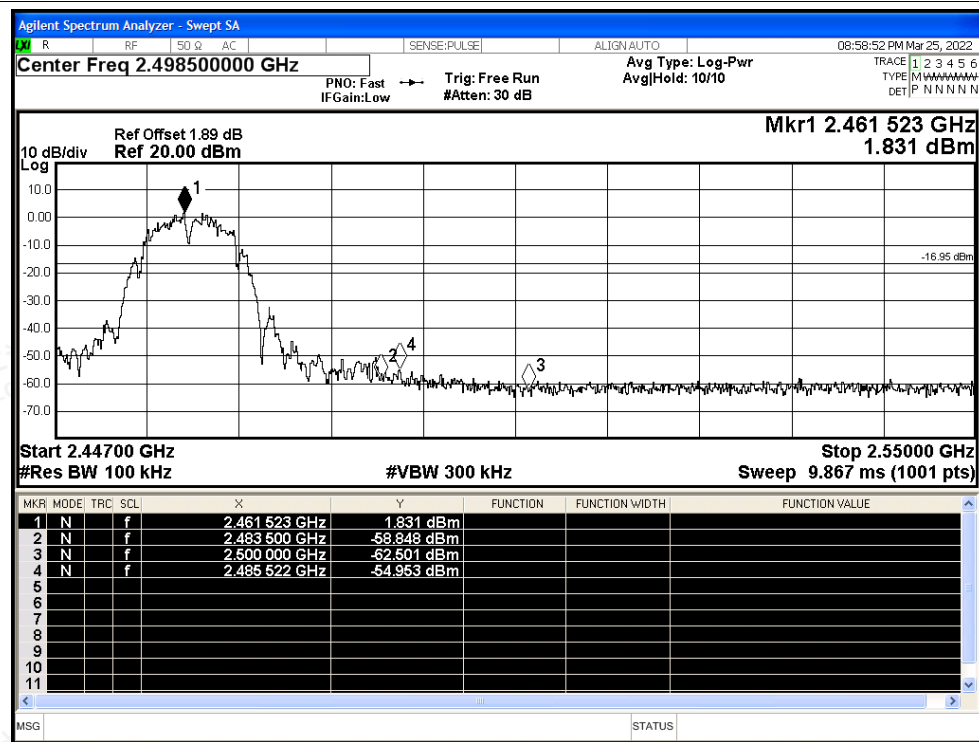




Band Edge NVNT b 2462MHz Ant Ref

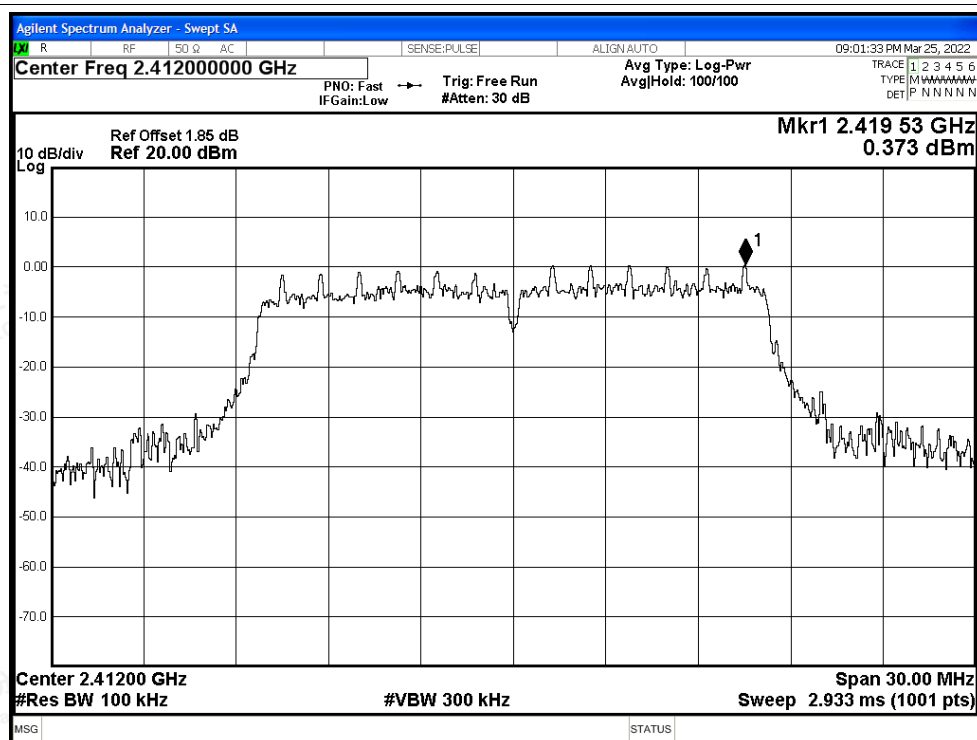


Band Edge NVNT b 2462MHz Ant Emission

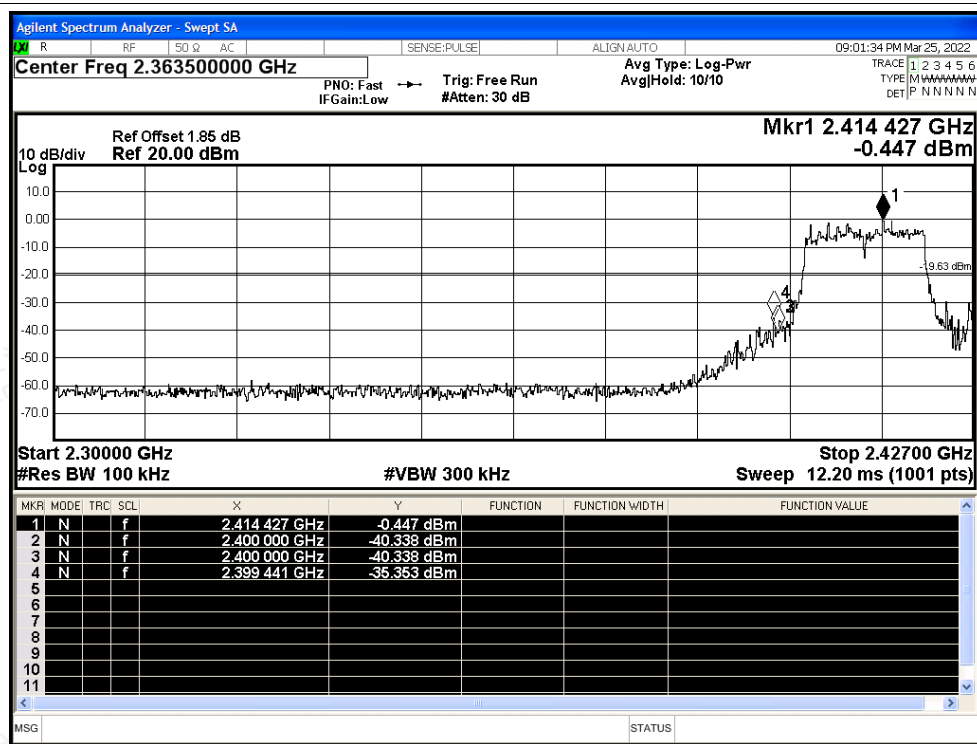




Band Edge NVNT g 2412MHz Ant Ref



Band Edge NVNT g 2412MHz Ant Emission



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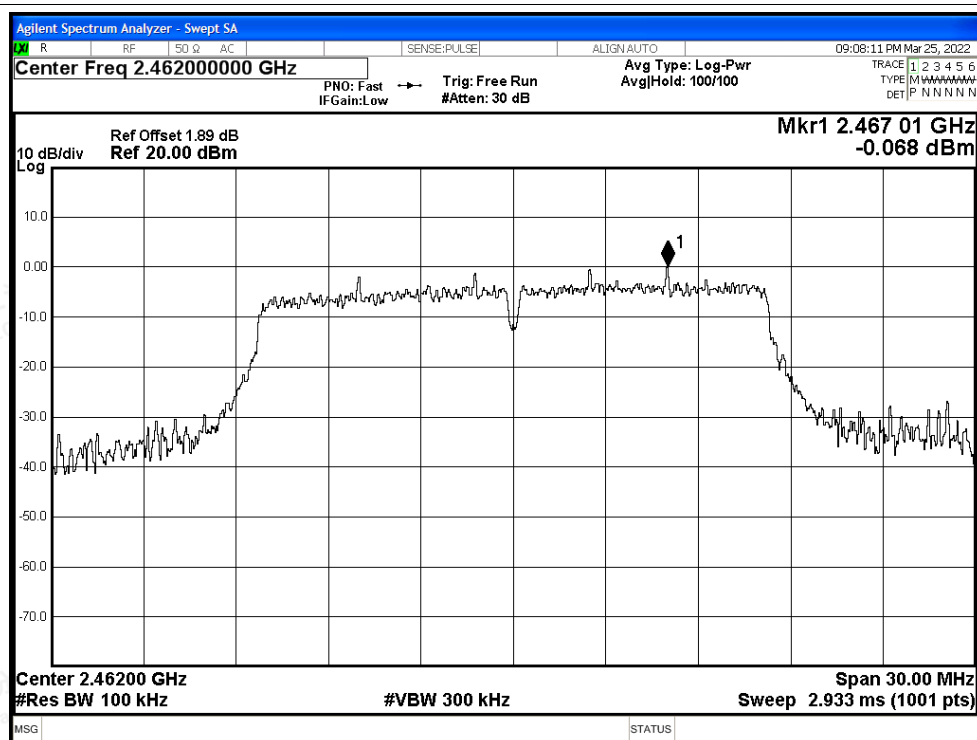
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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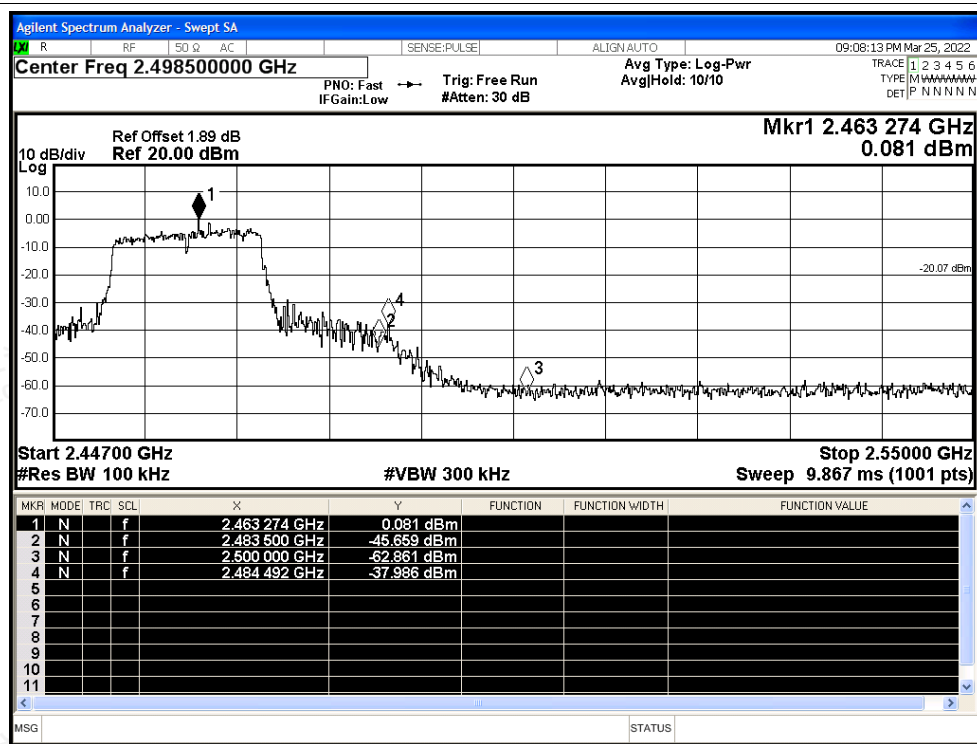
Scan code to check authenticity



Band Edge NVNT g 2462MHz Ant Ref



Band Edge NVNT g 2462MHz Ant Emission



Shenzhen LCS Compliance Testing Laboratory Ltd.

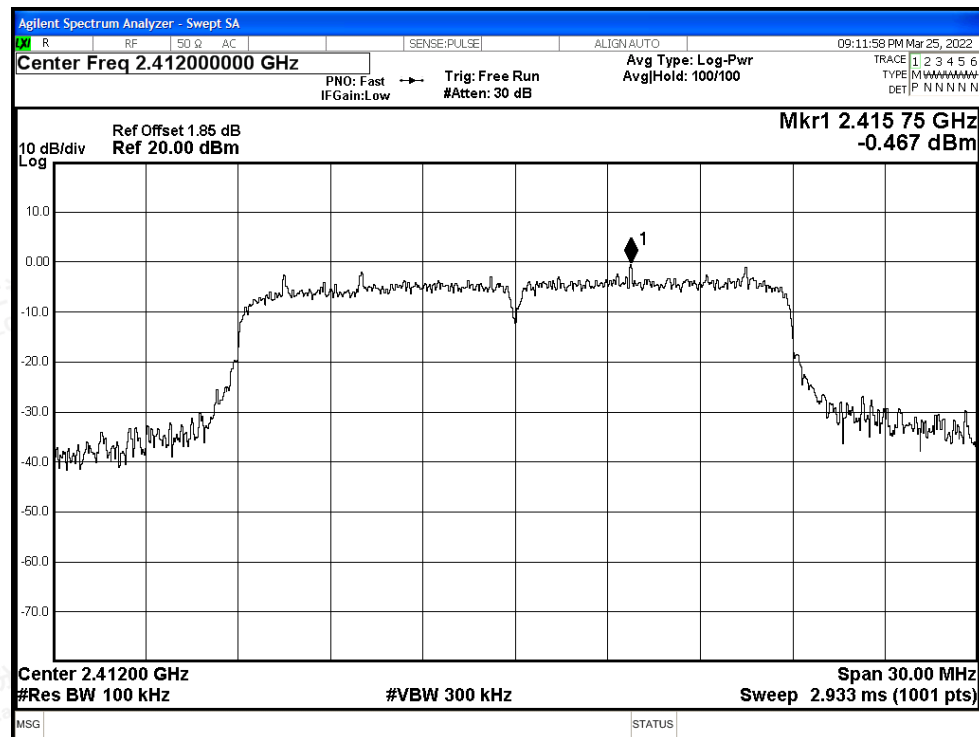
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

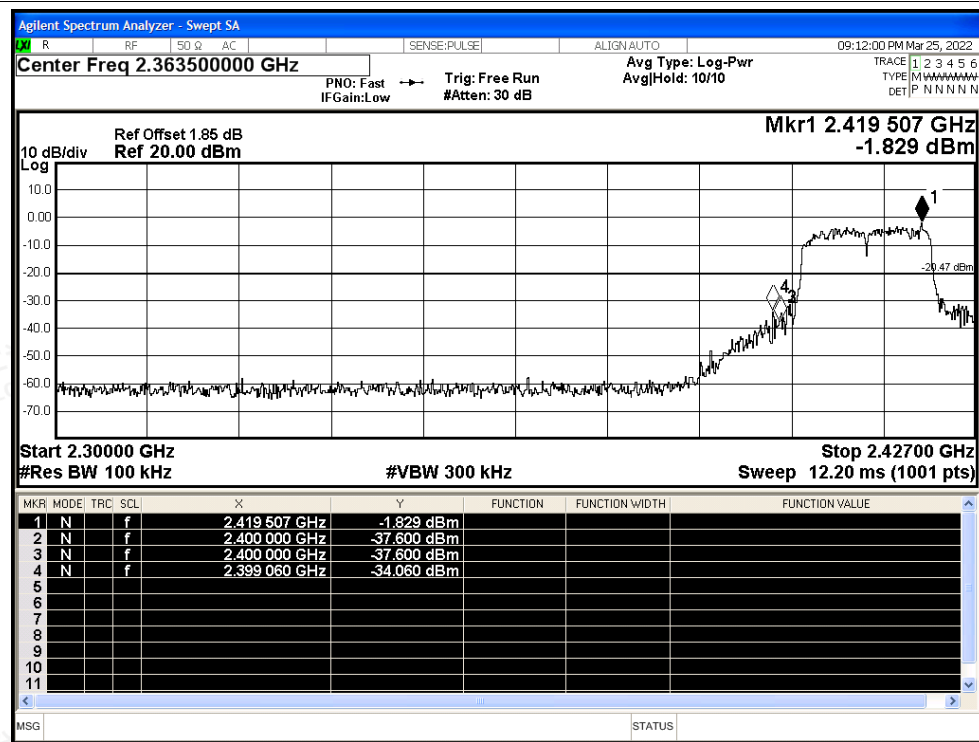
Scan code to check authenticity



Band Edge NVNT n20 2412MHz Ant Ref

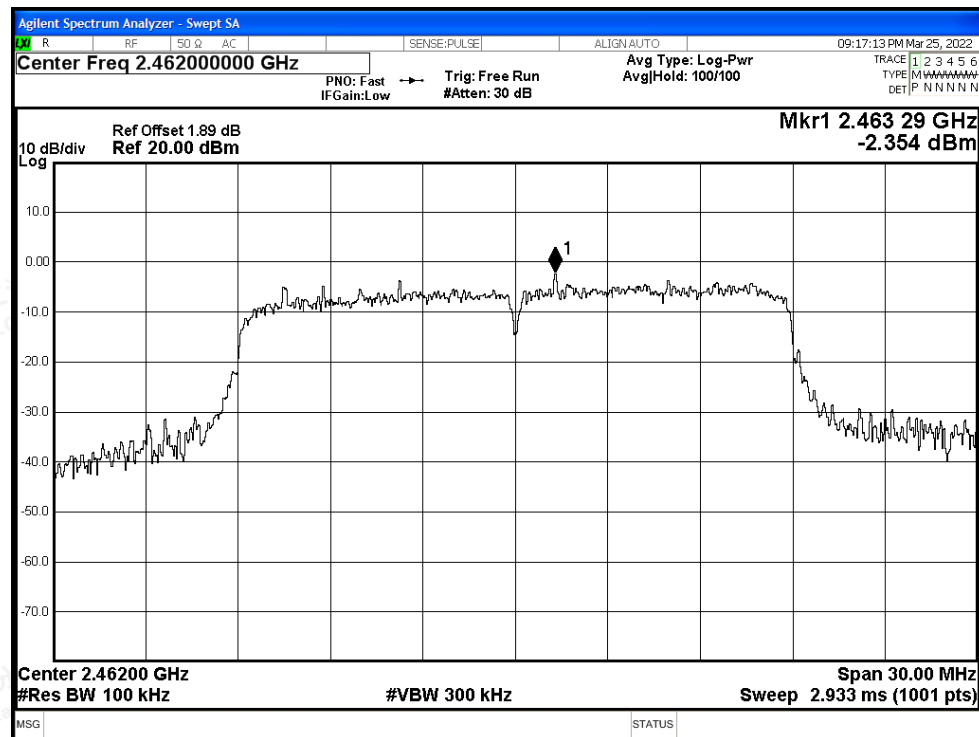


Band Edge NVNT n20 2412MHz Ant Emission

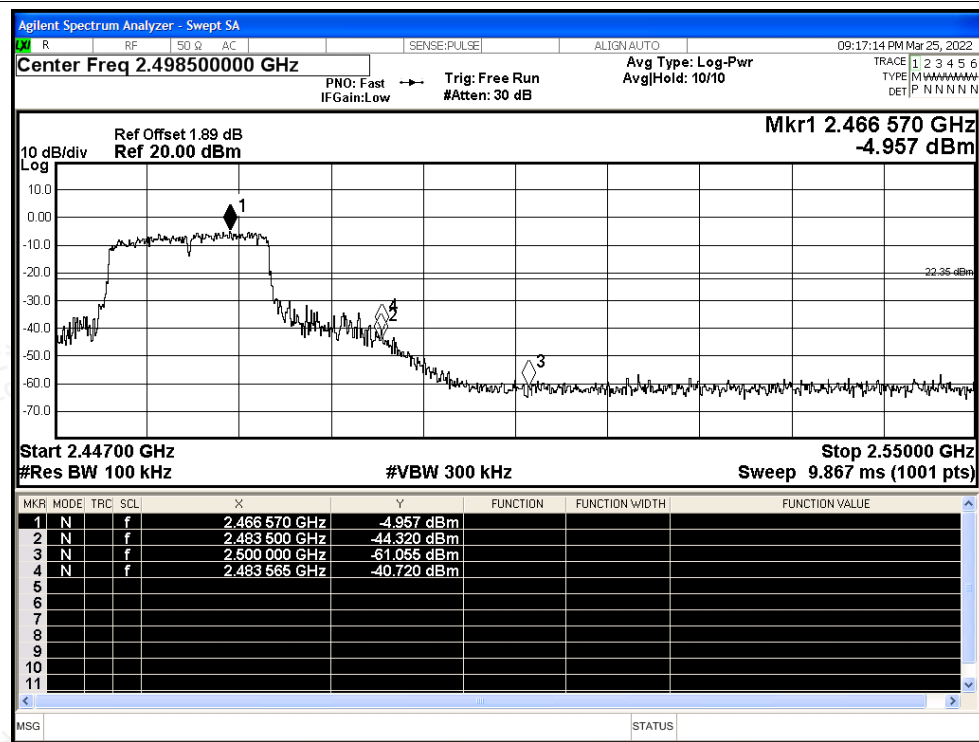




Band Edge NVNT n20 2462MHz Ant Ref

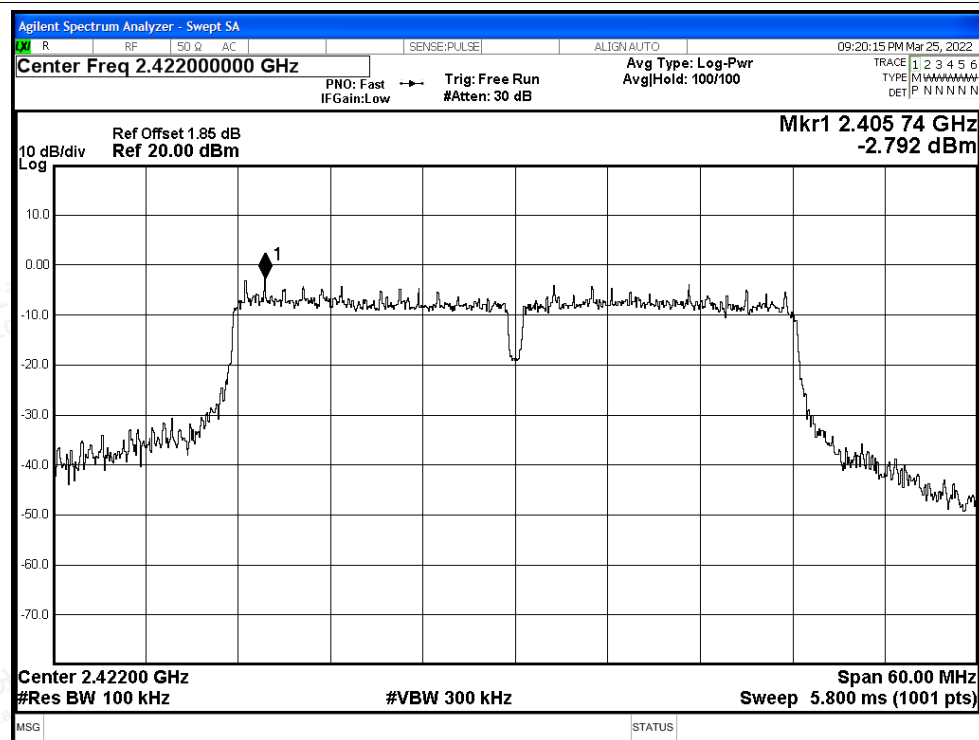


Band Edge NVNT n20 2462MHz Ant Emission

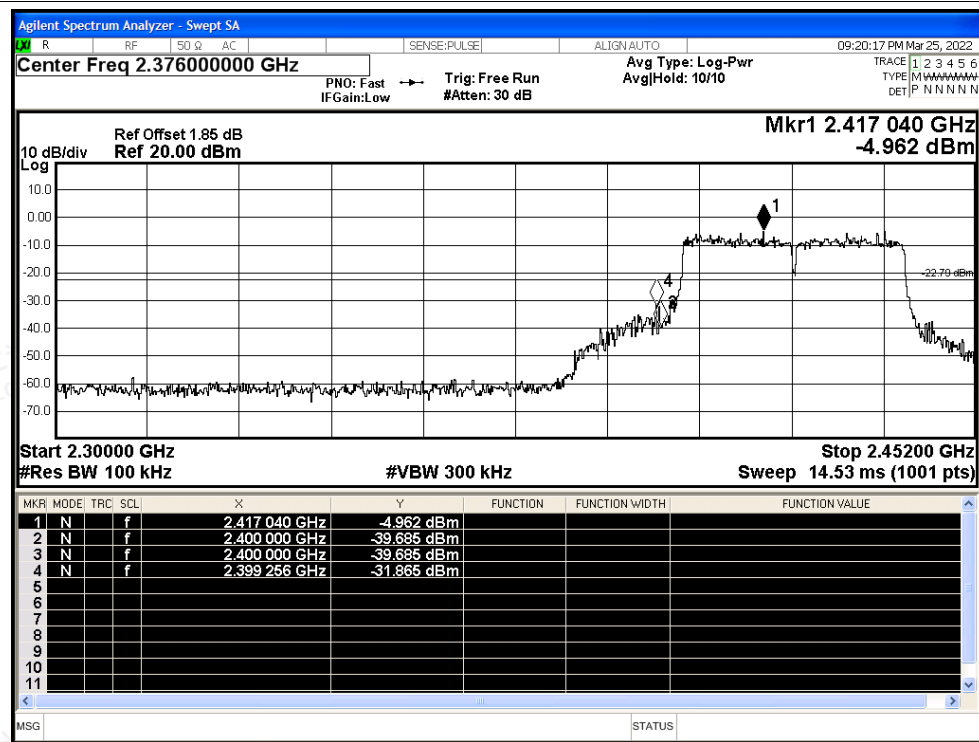




Band Edge NVNT n40 2422MHz Ant Ref

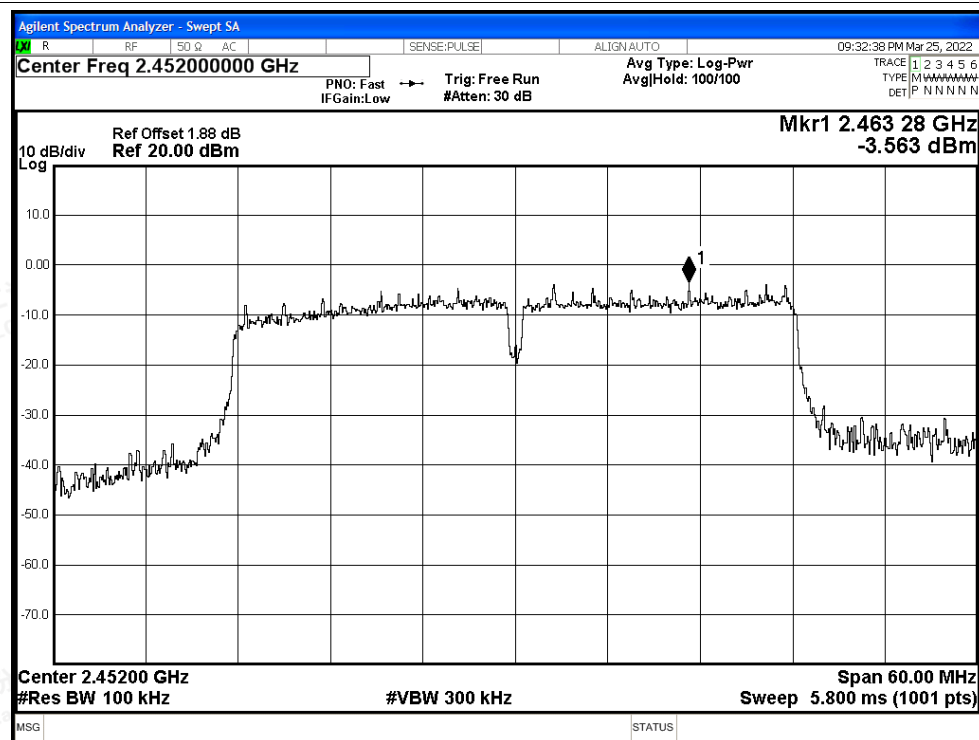


Band Edge NVNT n40 2422MHz Ant Emission

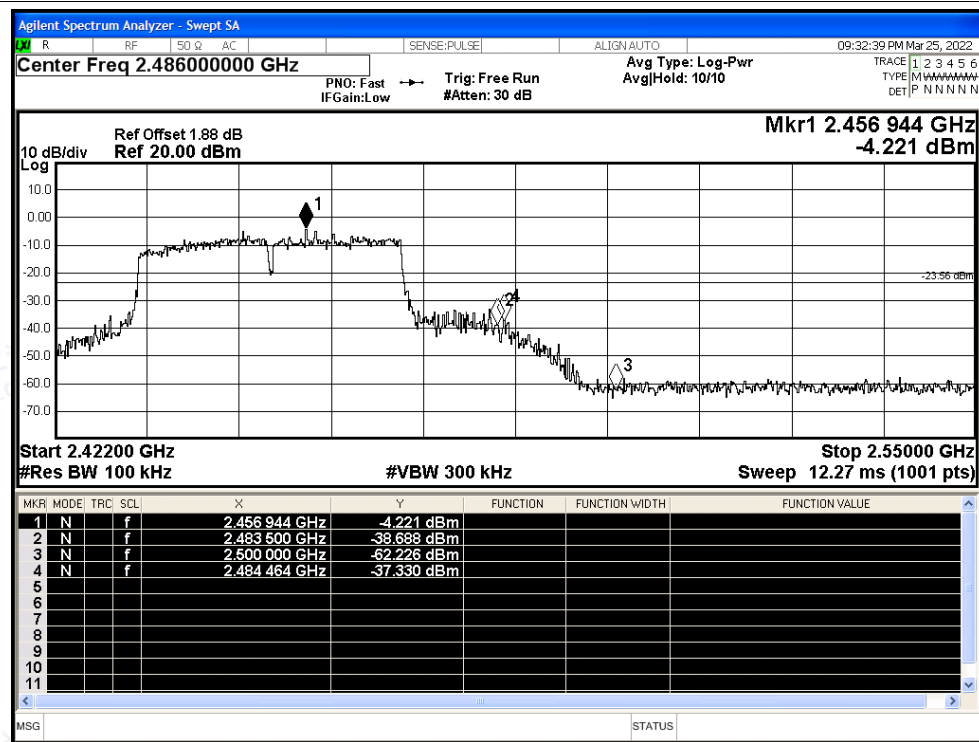




Band Edge NVNT n40 2452MHz Ant Ref



Band Edge NVNT n40 2452MHz Ant Emission





A.5 Conducted Spurious Emission

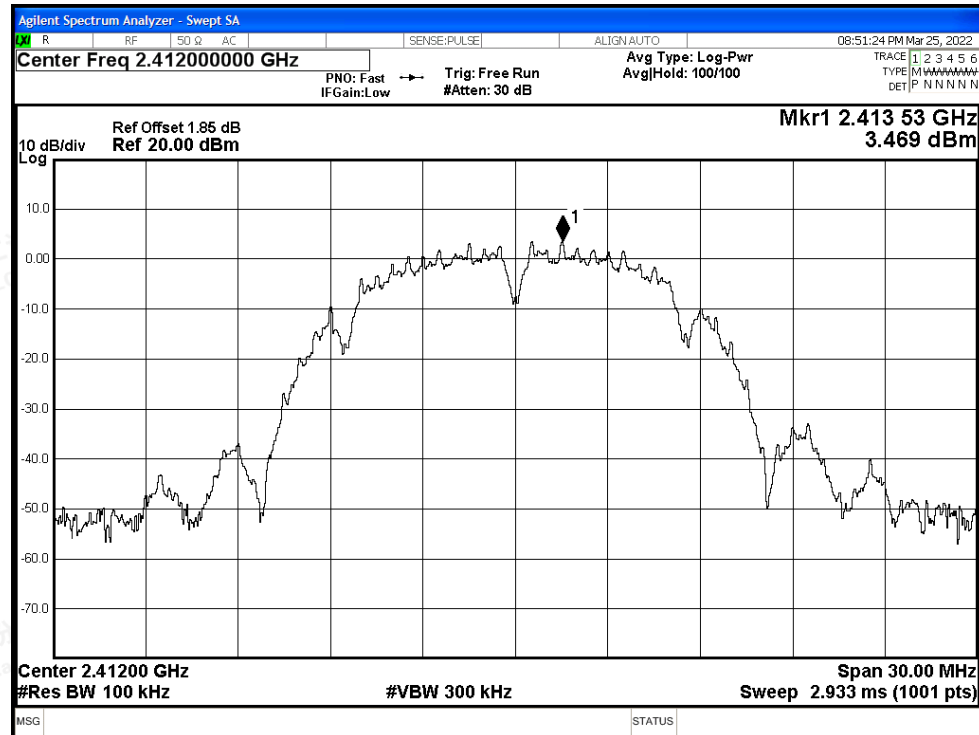
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant	-49.90	-20	Pass
NVNT	b	2437	Ant	-49.53	-20	Pass
NVNT	b	2462	Ant	-48.53	-20	Pass
NVNT	g	2412	Ant	-45.84	-20	Pass
NVNT	g	2437	Ant	-47.09	-20	Pass
NVNT	g	2462	Ant	-45.76	-20	Pass
NVNT	n20	2412	Ant	-45.55	-20	Pass
NVNT	n20	2437	Ant	-47.41	-20	Pass
NVNT	n20	2462	Ant	-43.86	-20	Pass
NVNT	n40	2422	Ant	-43.23	-20	Pass
NVNT	n40	2437	Ant	-45.47	-20	Pass
NVNT	n40	2452	Ant	-42.71	-20	Pass



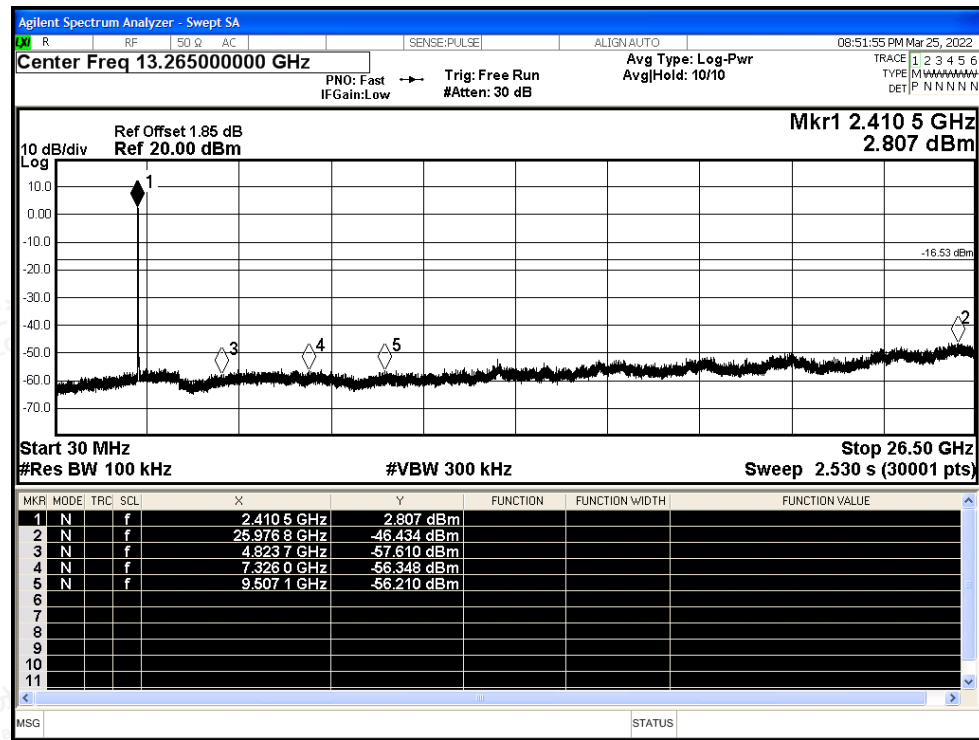


Test Graphs

Tx. Spurious NVNT b 2412MHz Ant Ref

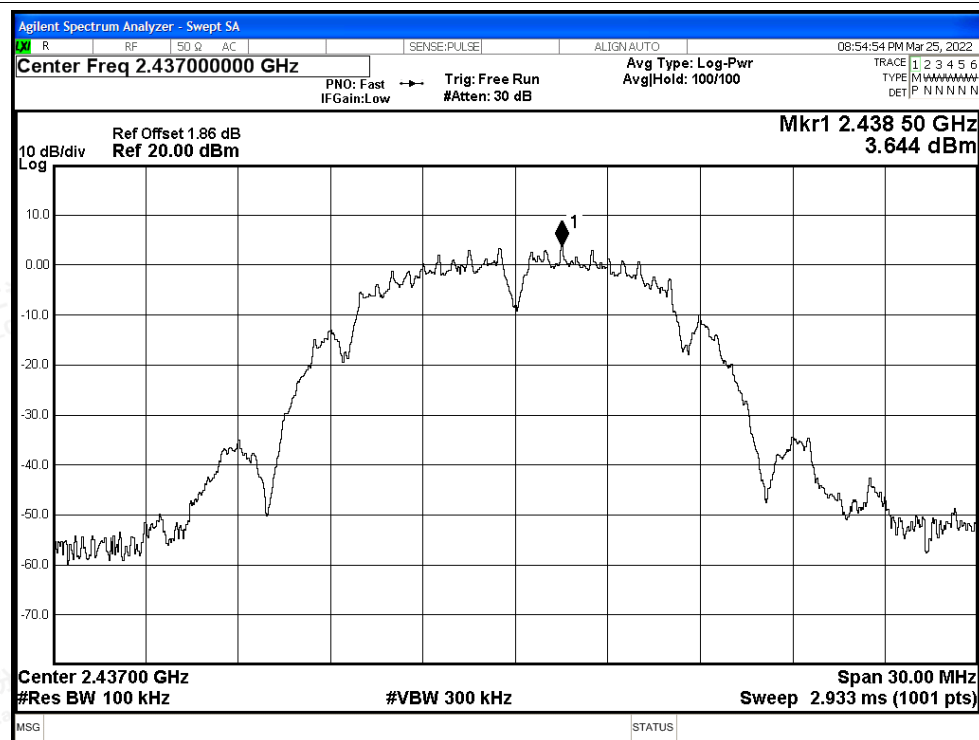


Tx. Spurious NVNT b 2412MHz Ant Emission

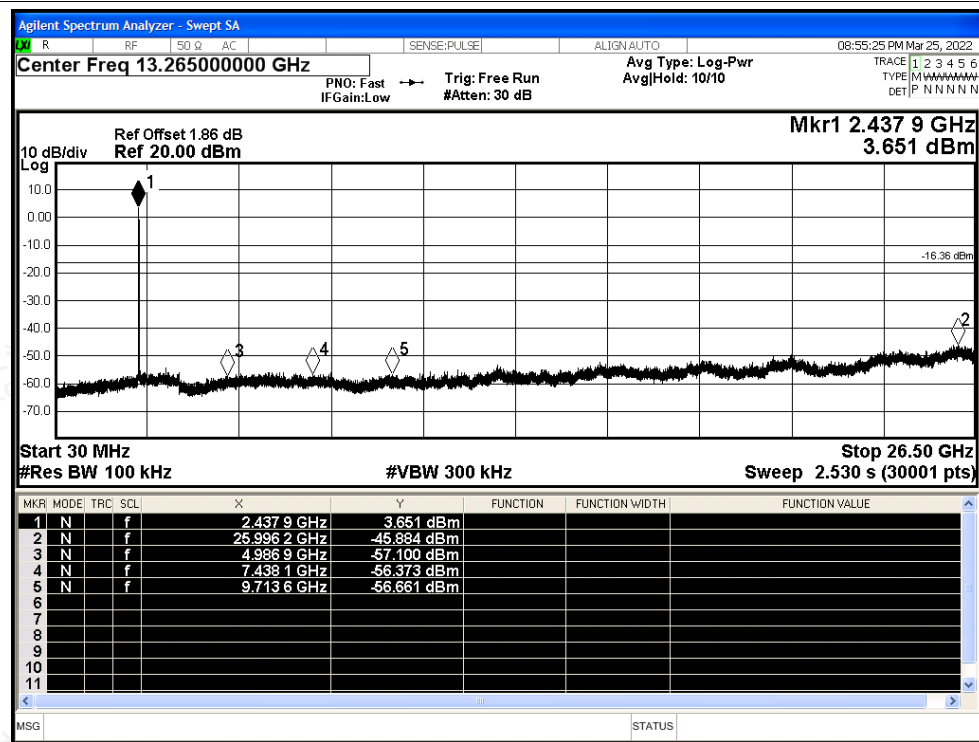




Tx. Spurious NVNT b 2437MHz Ant Ref



Tx. Spurious NVNT b 2437MHz Ant Emission



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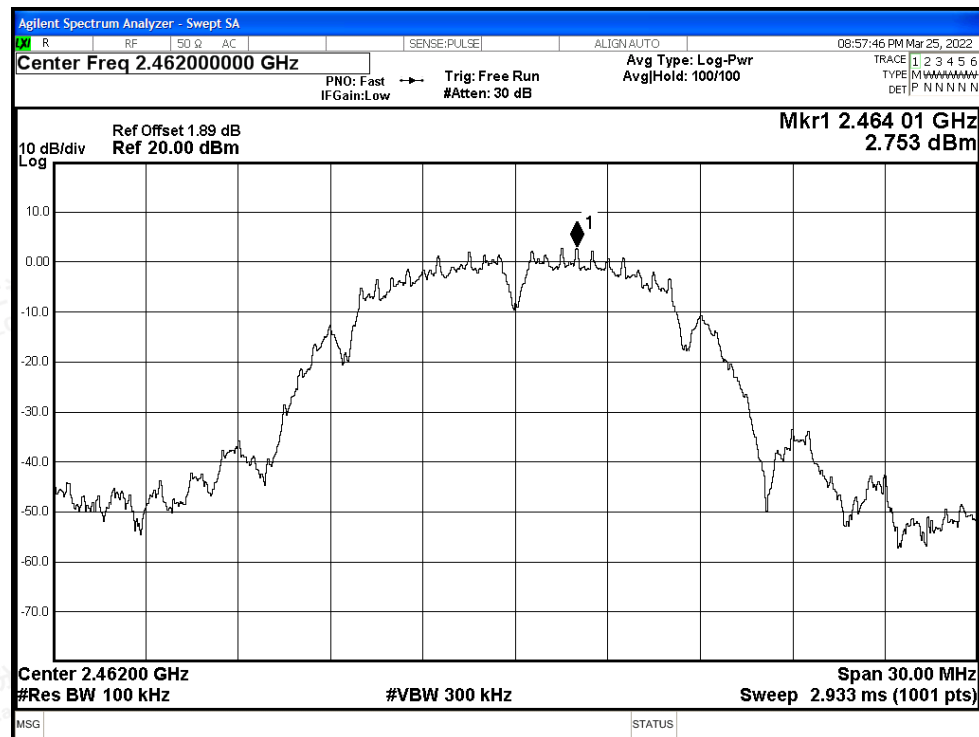
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

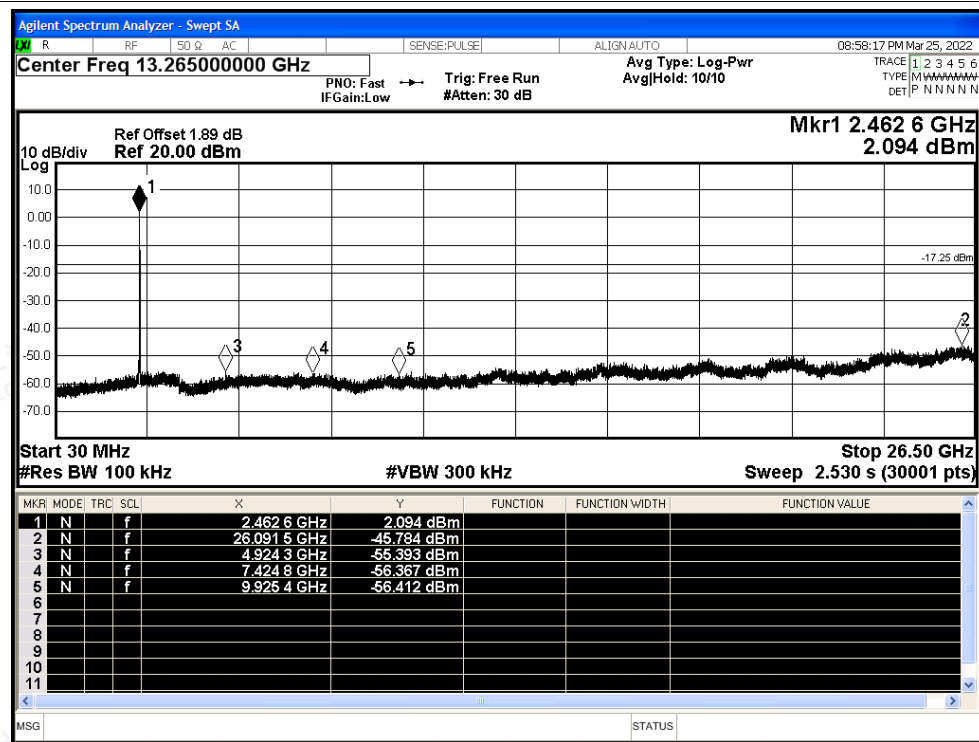
Scan code to check authenticity



Tx. Spurious NVNT b 2462MHz Ant Ref

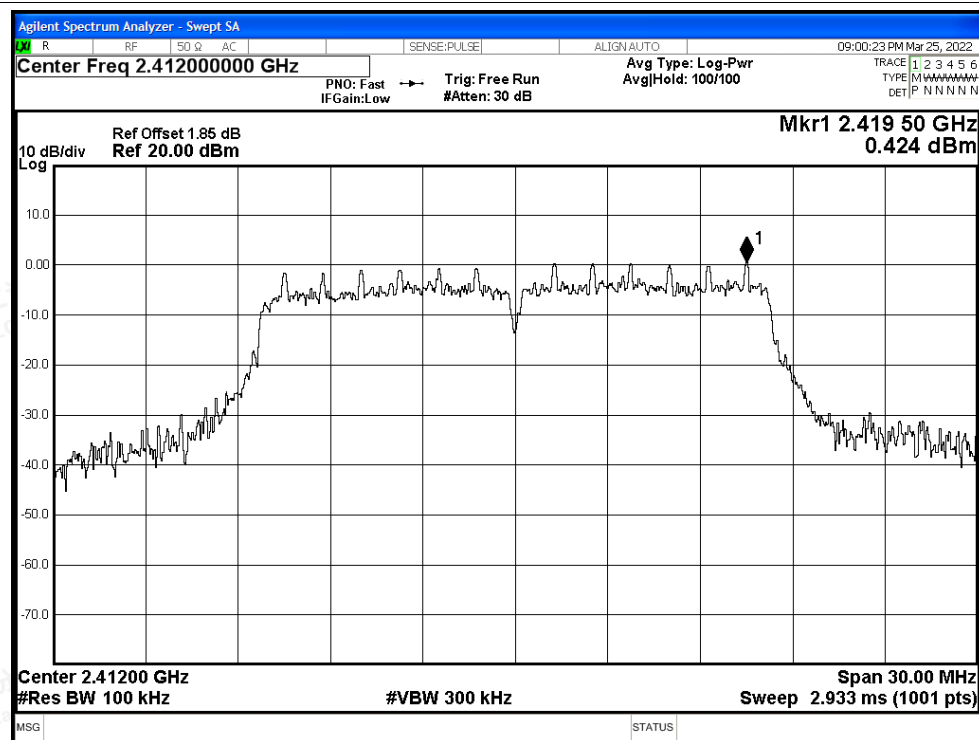


Tx. Spurious NVNT b 2462MHz Ant Emission

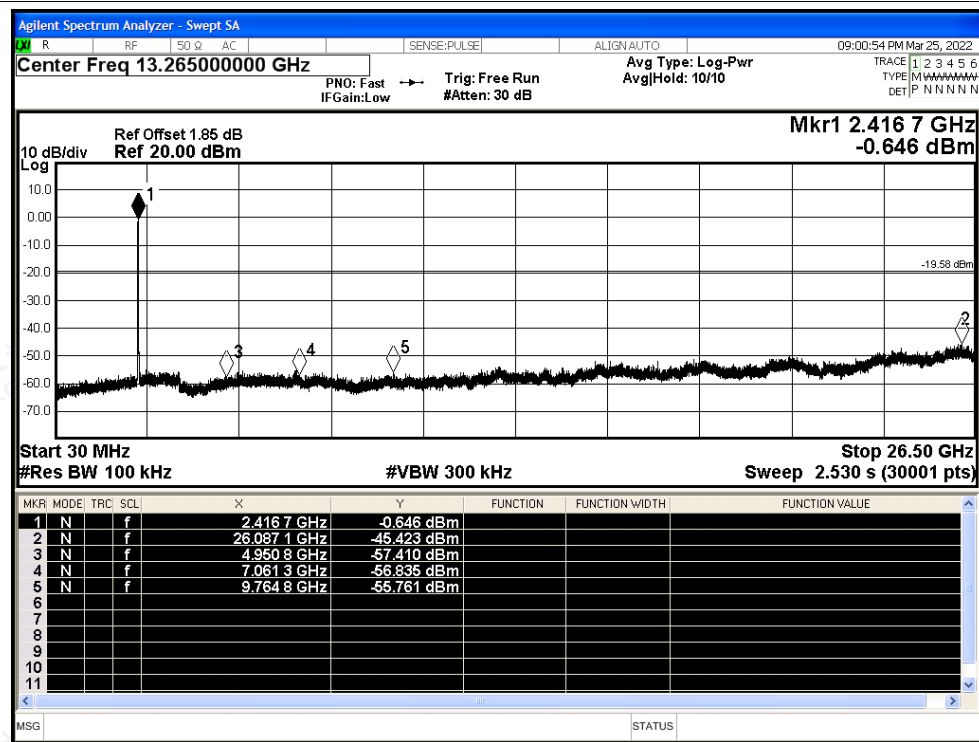




Tx. Spurious NVNT g 2412MHz Ant Ref

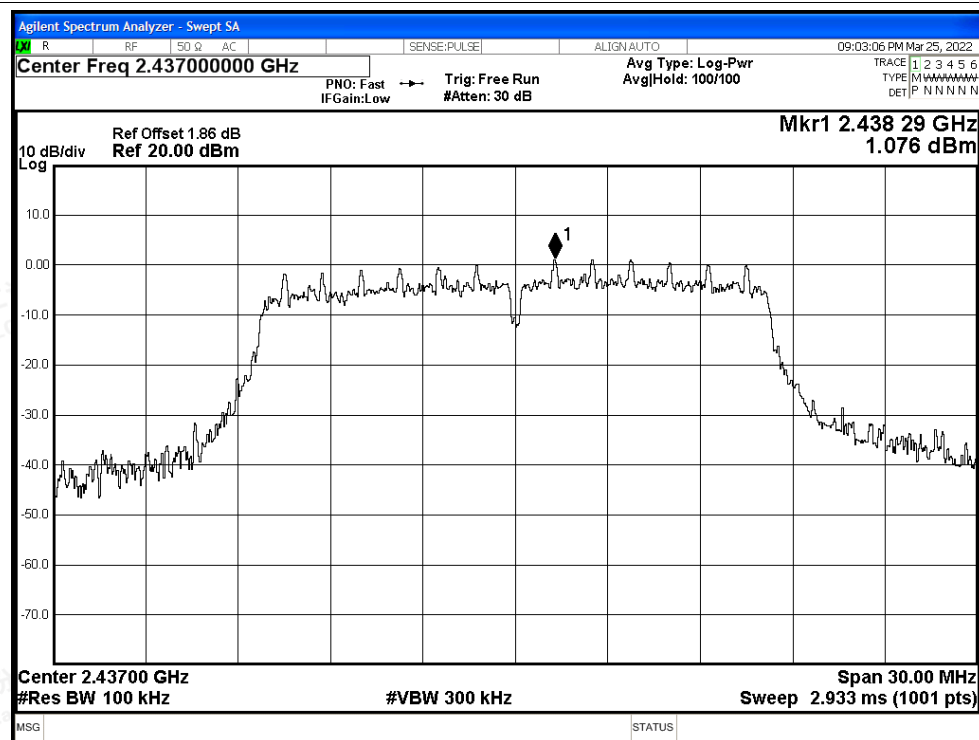


Tx. Spurious NVNT g 2412MHz Ant Emission

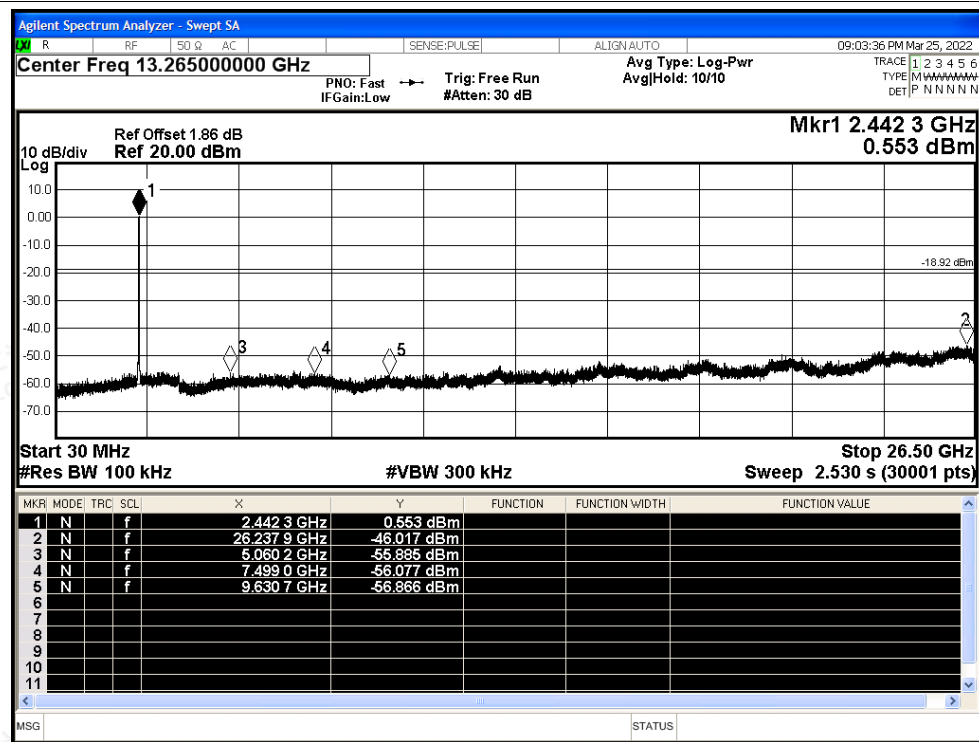




Tx. Spurious NVNT g 2437MHz Ant Ref

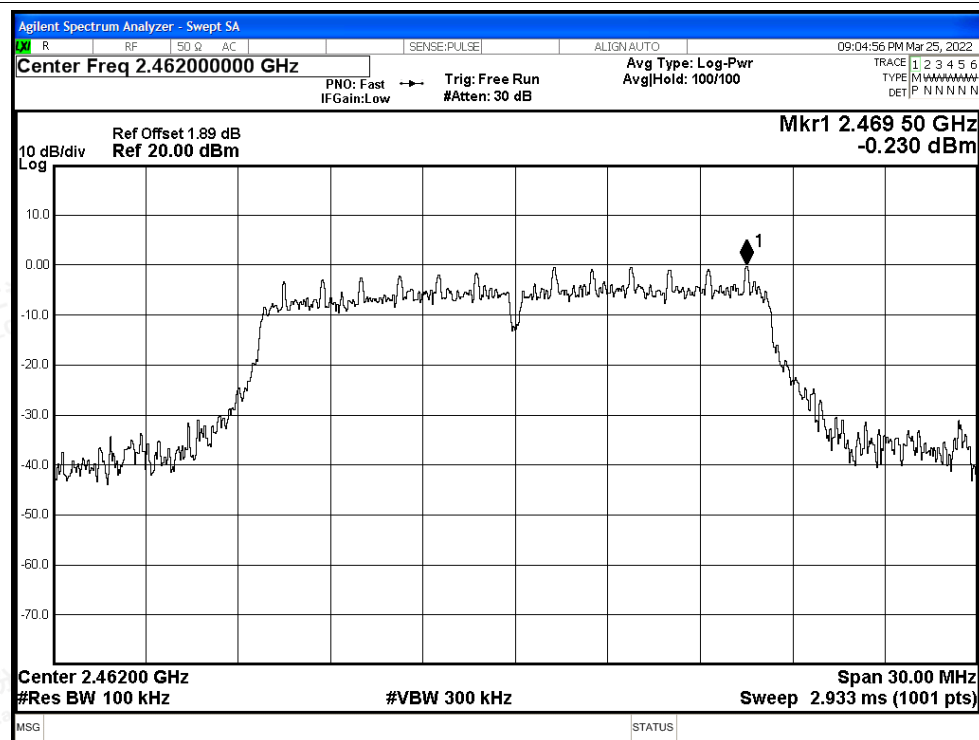


Tx. Spurious NVNT g 2437MHz Ant Emission

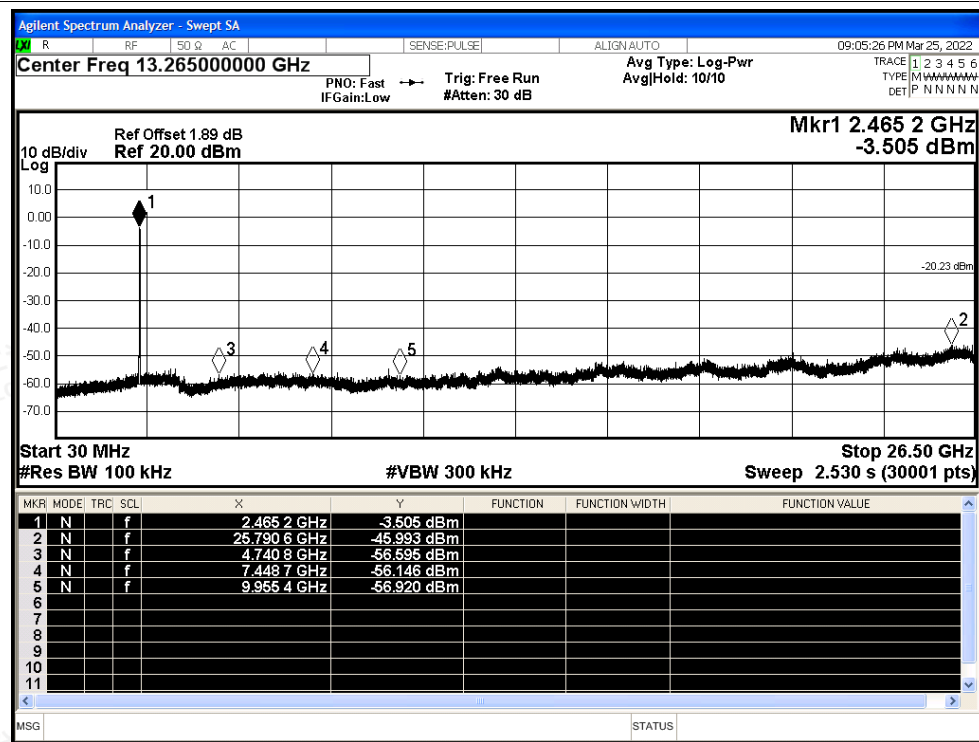




Tx. Spurious NVNT g 2462MHz Ant Ref

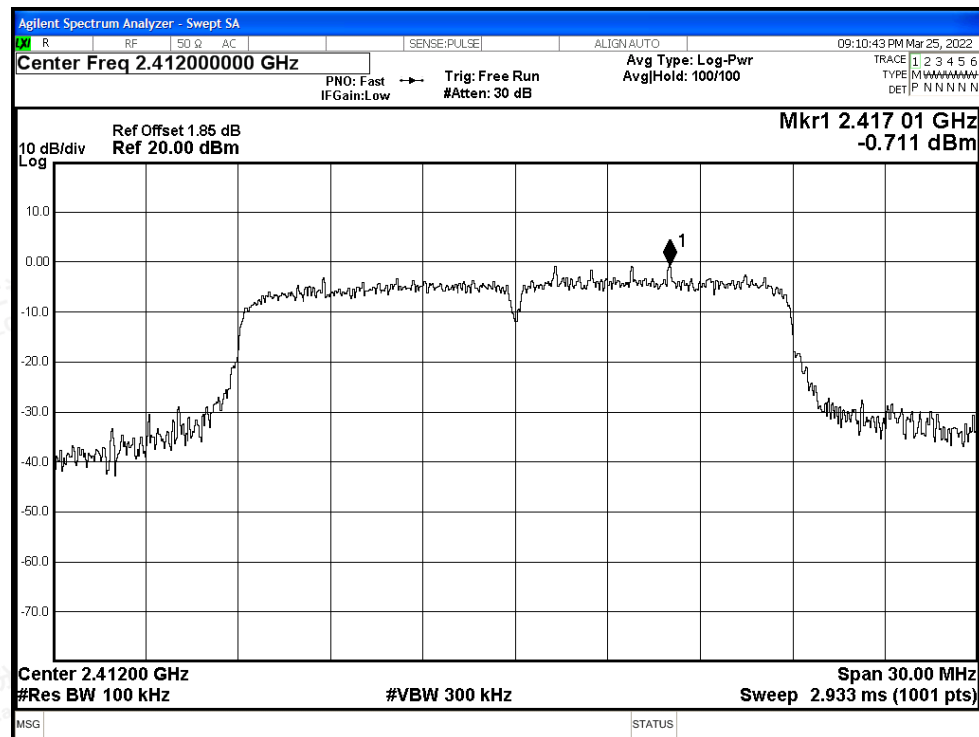


Tx. Spurious NVNT g 2462MHz Ant Emission

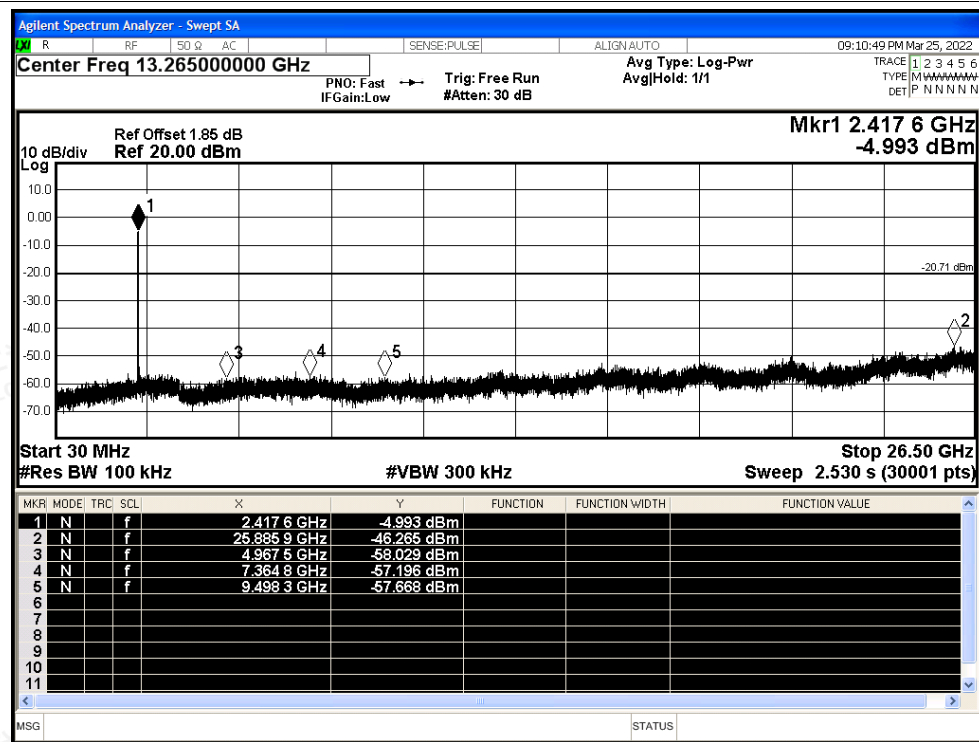




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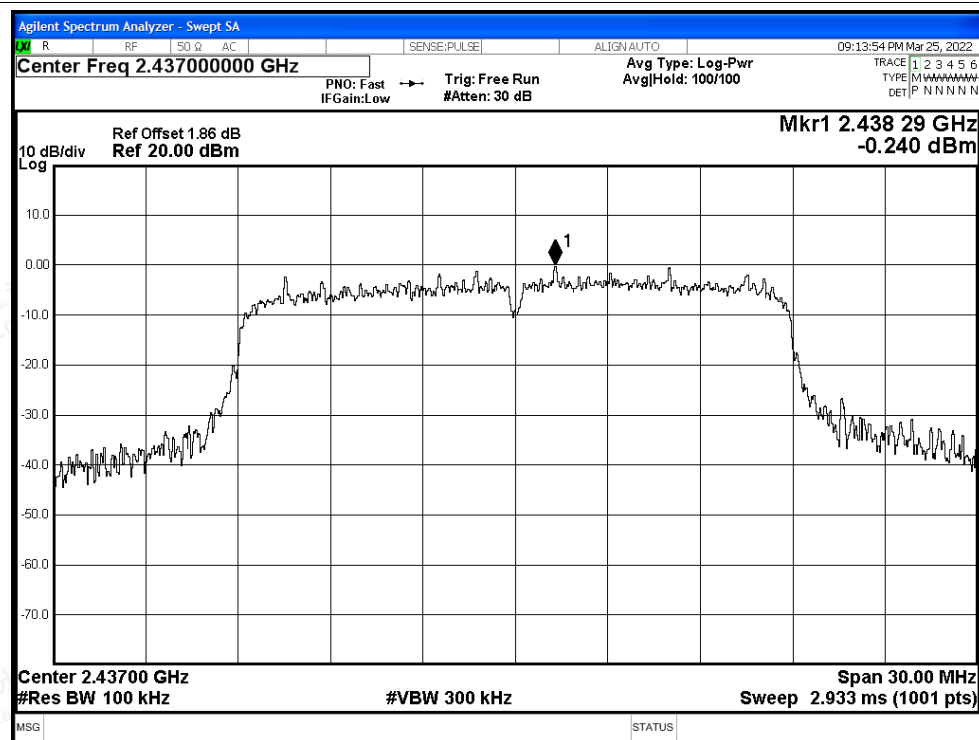


Tx. Spurious NVNT n20 2412MHz Ant Emission

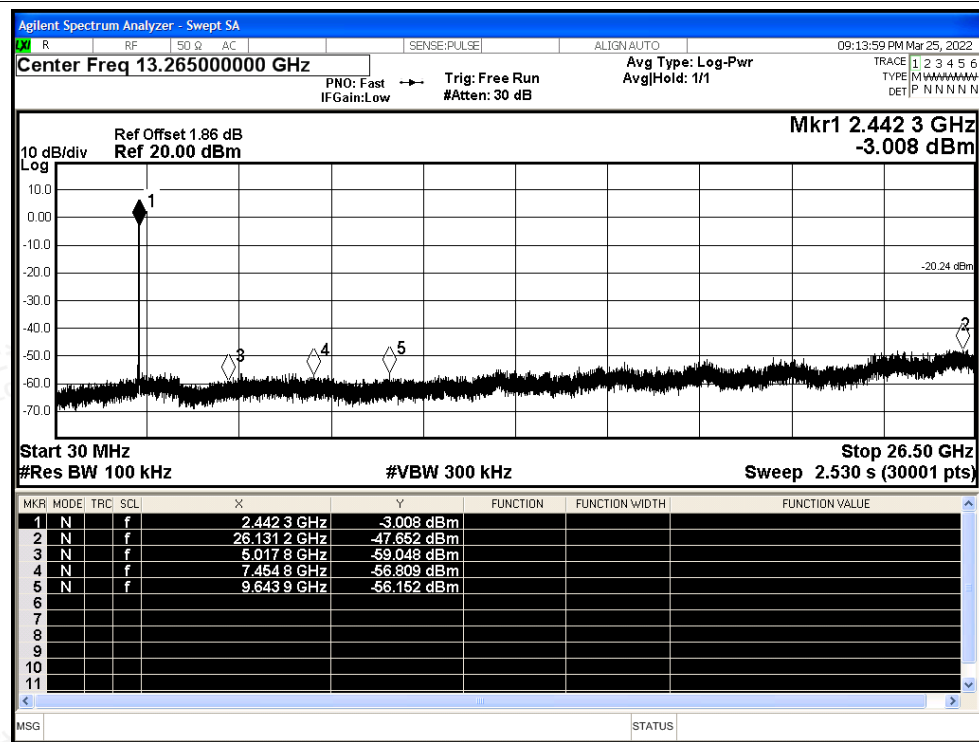




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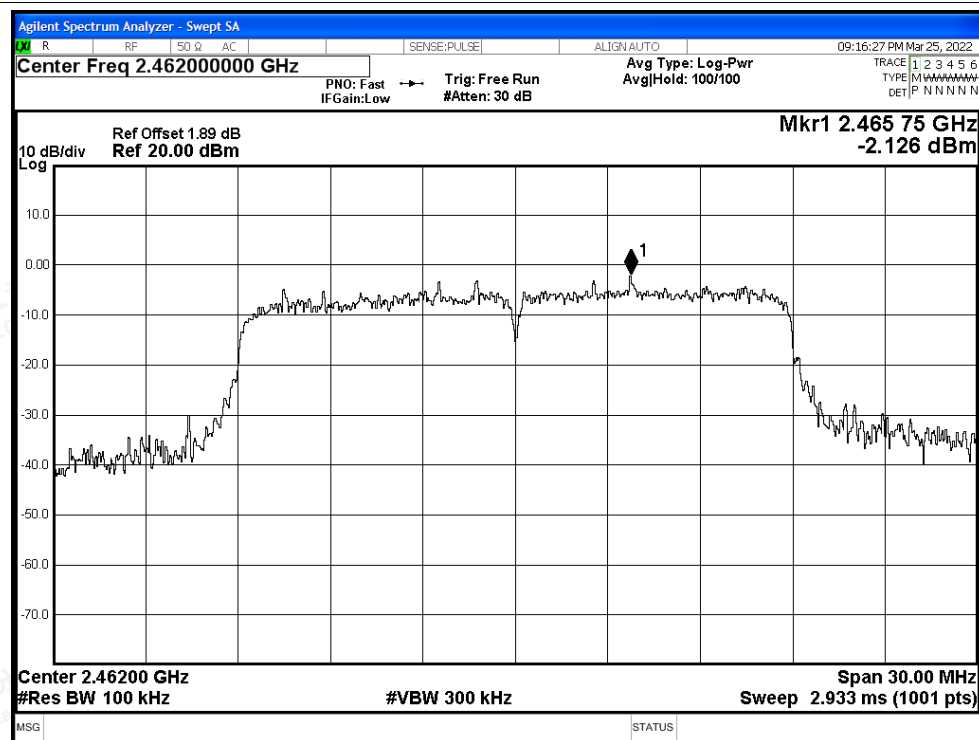


Tx. Spurious NVNT n20 2437MHz Ant Emission

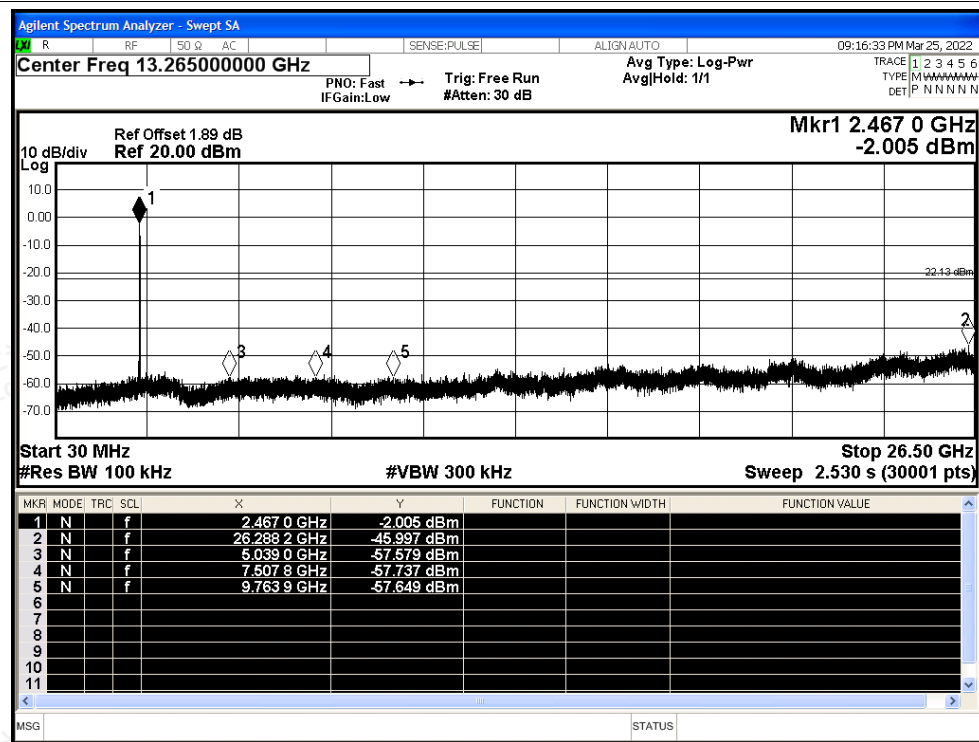




Tx. Spurious NVNT n20 2462MHz Ant Ref

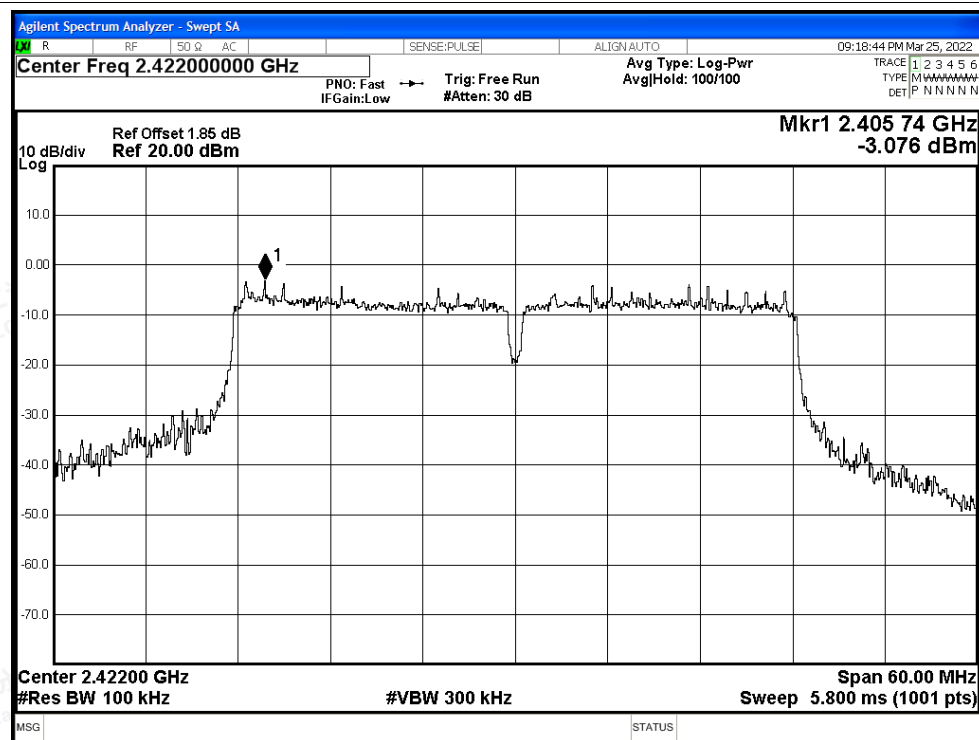


Tx. Spurious NVNT n20 2462MHz Ant Emission

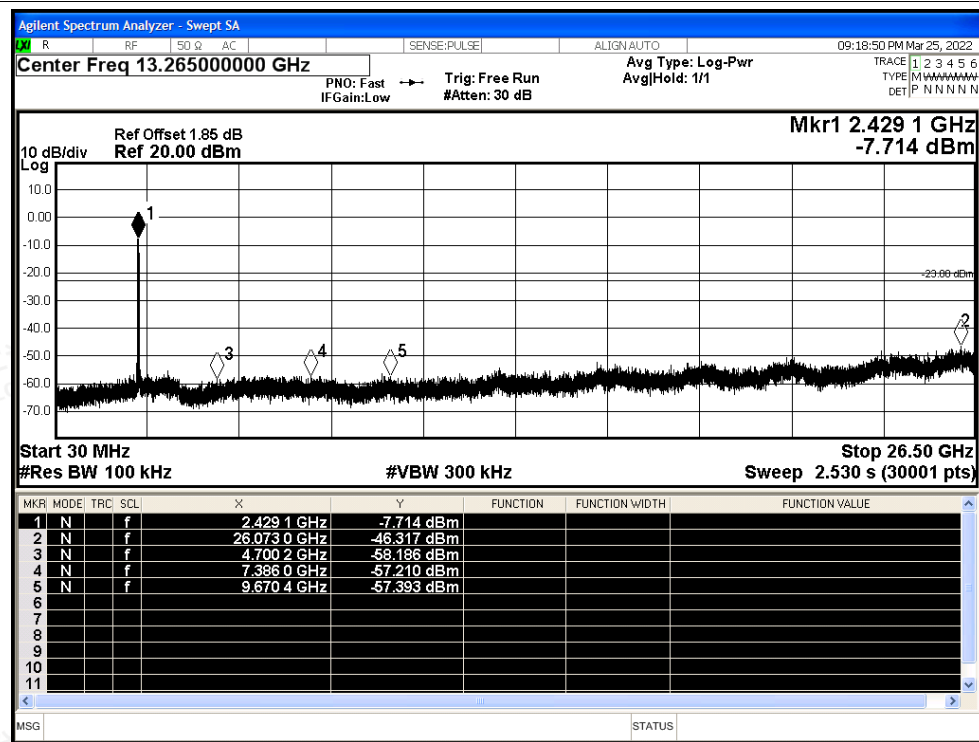




Tx. Spurious NVNT n40 2422MHz Ant Ref

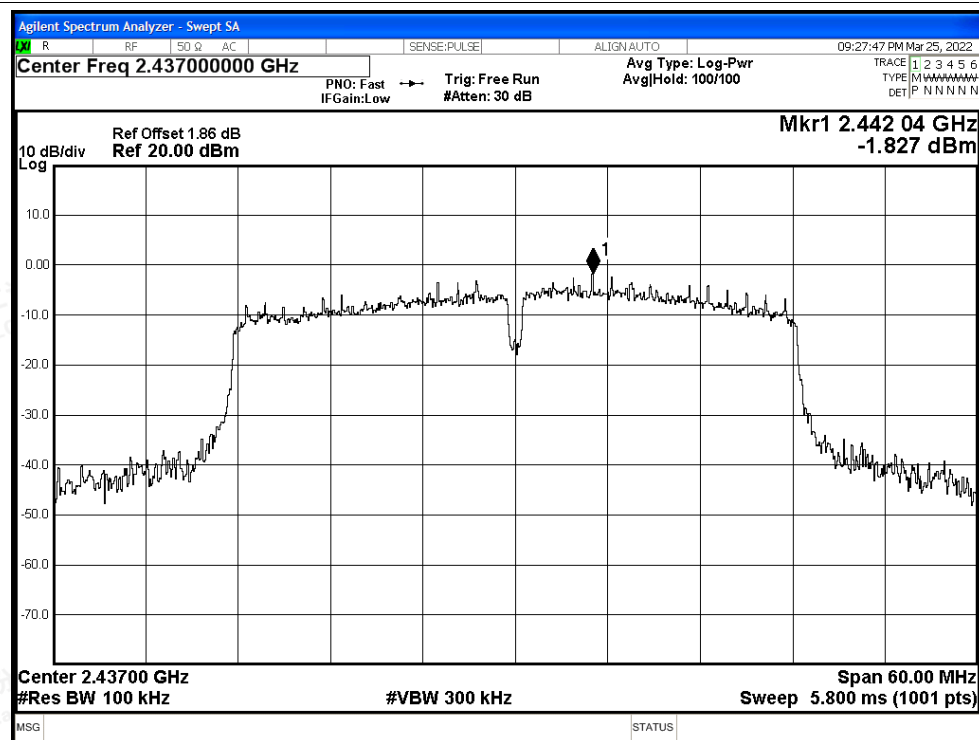


Tx. Spurious NVNT n40 2422MHz Ant Emission

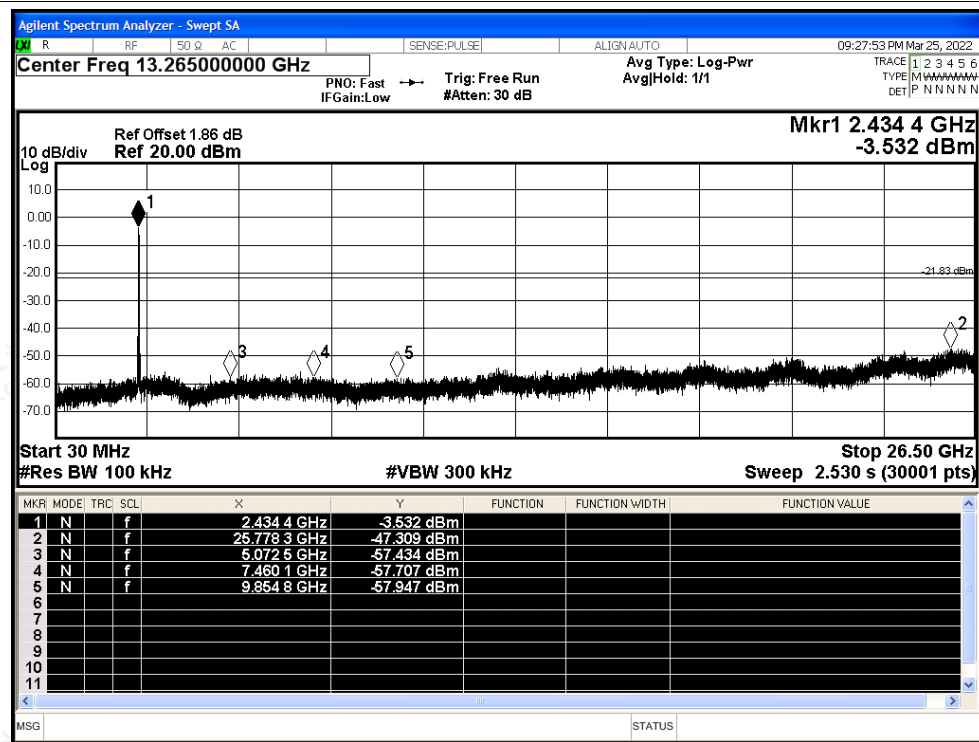




Tx. Spurious NVNT n40 2437MHz Ant Ref

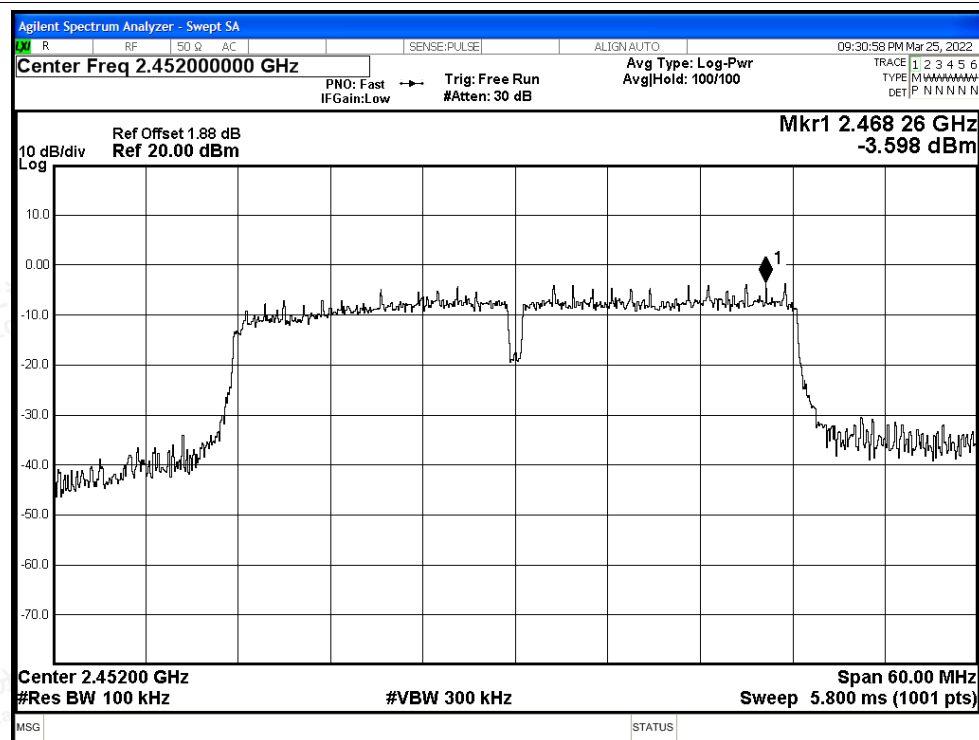


Tx. Spurious NVNT n40 2437MHz Ant Emission

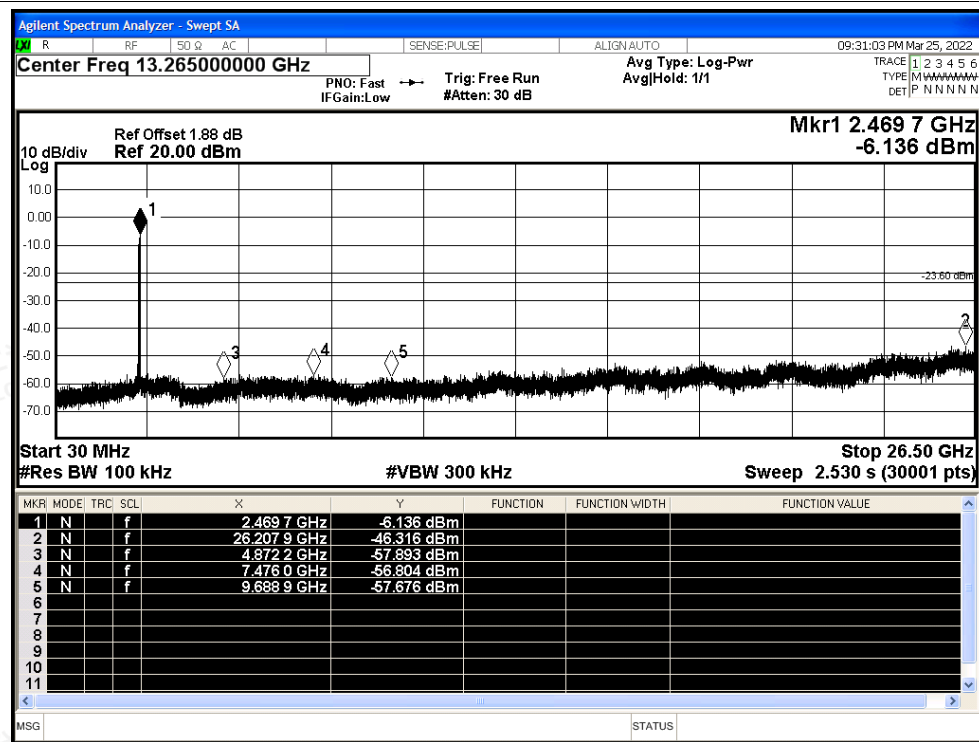




Tx. Spurious NVNT n40 2452MHz Ant Ref



Tx. Spurious NVNT n40 2452MHz Ant Emission





A.6 Duty Cycle

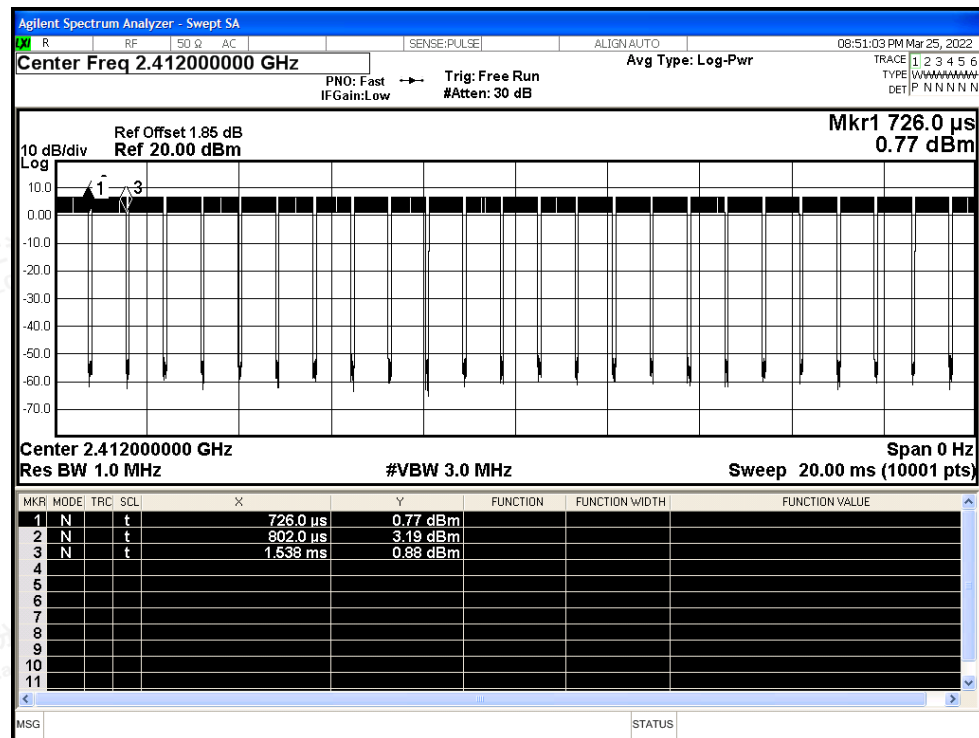
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant	90.64	0.43	1.36
NVNT	b	2437	Ant	90.64	0.43	1.36
NVNT	b	2462	Ant	90.64	0.43	1.36
NVNT	g	2412	Ant	90.18	0.45	0.72
NVNT	g	2437	Ant	90.18	0.45	0.72
NVNT	g	2462	Ant	90.19	0.45	0.72
NVNT	n20	2412	Ant	88.46	0.53	0.85
NVNT	n20	2437	Ant	88.61	0.53	0.85
NVNT	n20	2462	Ant	88.61	0.53	0.85
NVNT	n40	2422	Ant	79.46	1	1.7
NVNT	n40	2437	Ant	79.46	1	1.7
NVNT	n40	2452	Ant	79.46	1	1.7



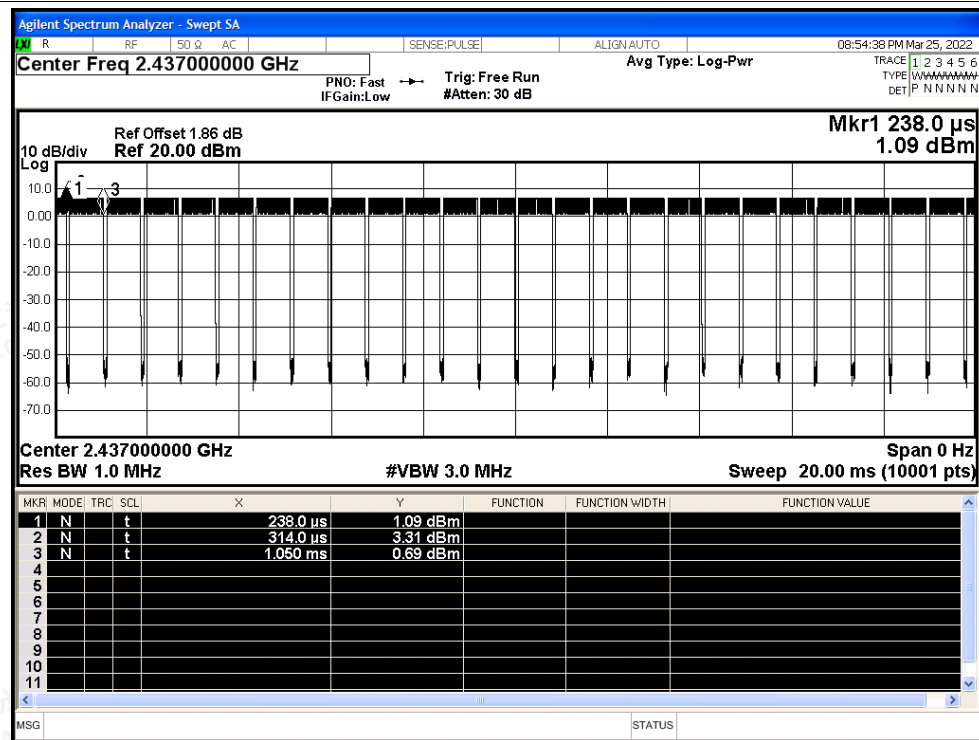


Test Graphs

Duty Cycle NVNT b 2412MHz Ant



Duty Cycle NVNT b 2437MHz Ant



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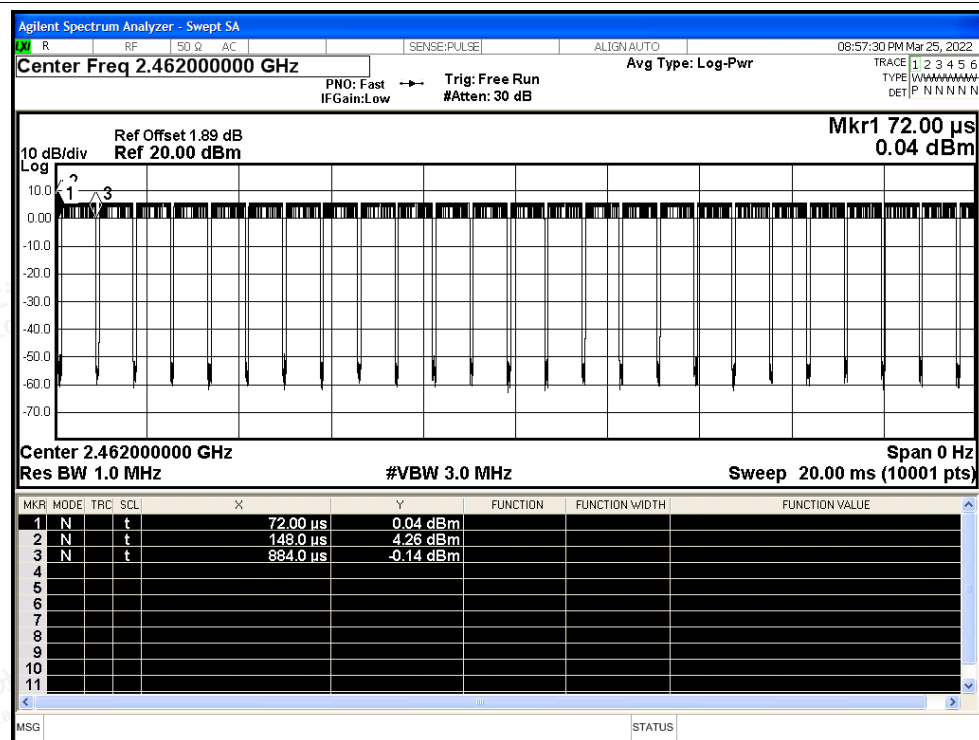
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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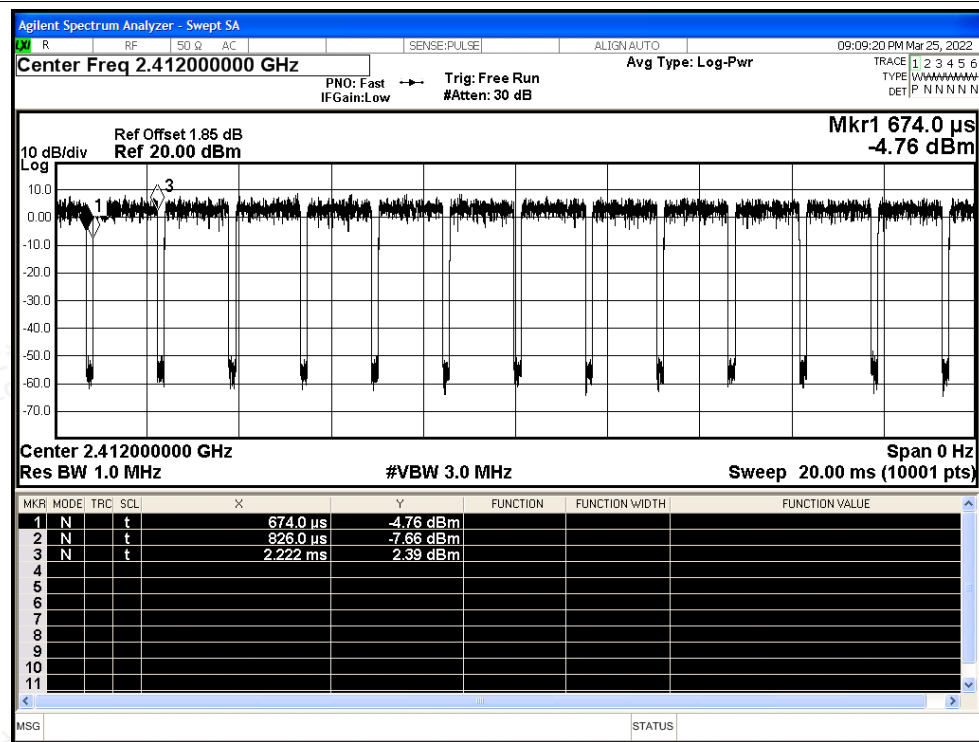
Scan code to check authenticity



Duty Cycle NVNT b 2462MHz Ant

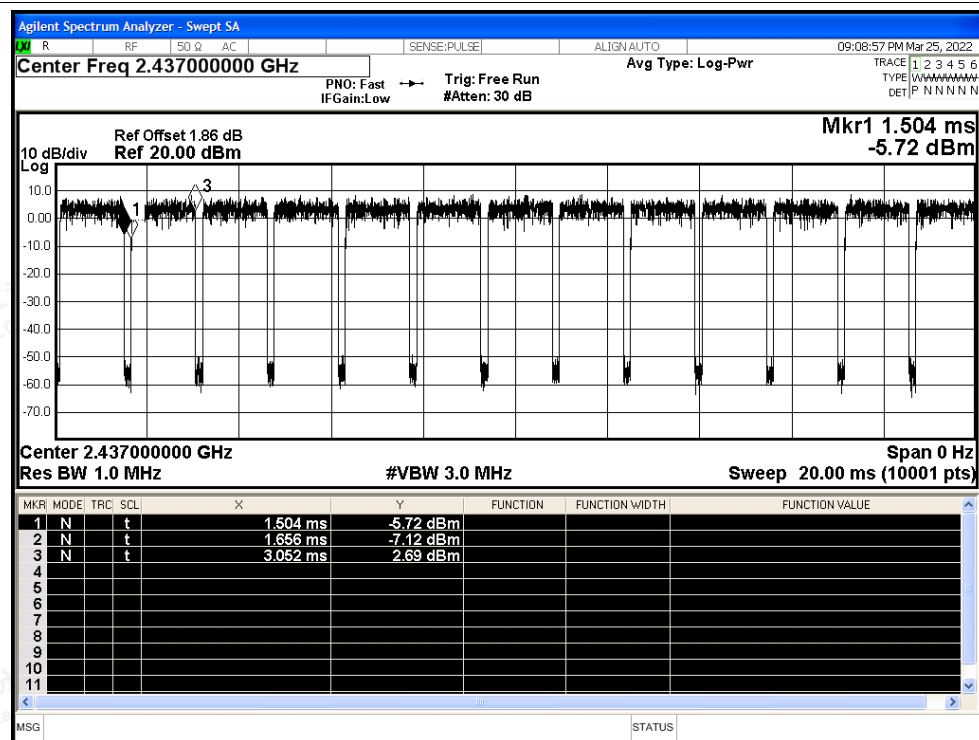


Duty Cycle NVNT g 2412MHz Ant

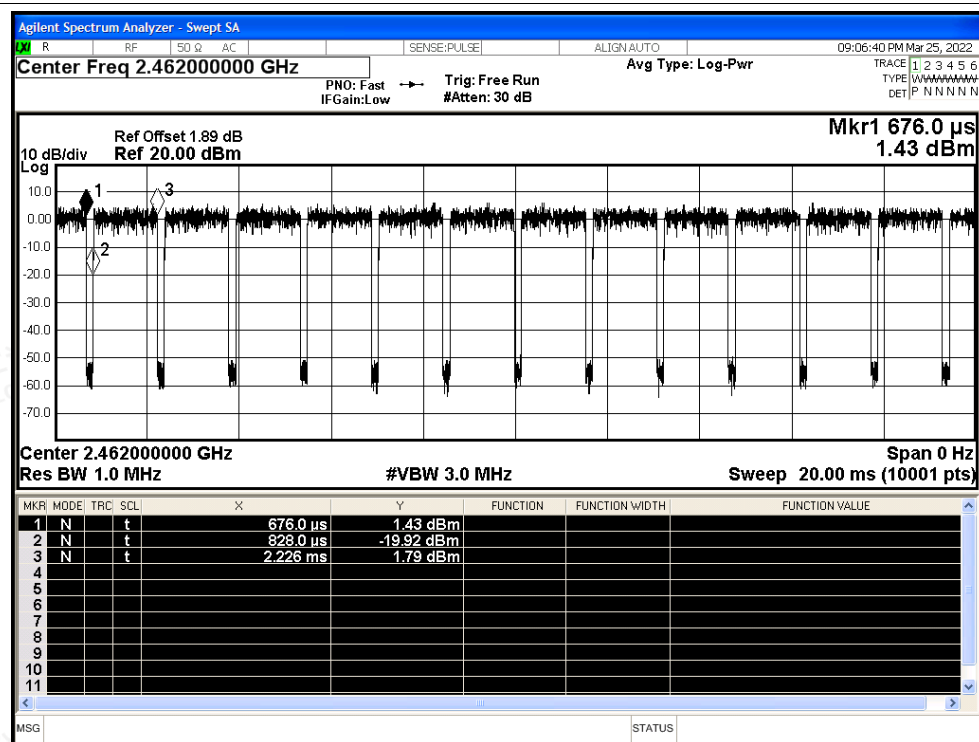




Duty Cycle NVNT g 2437MHz Ant

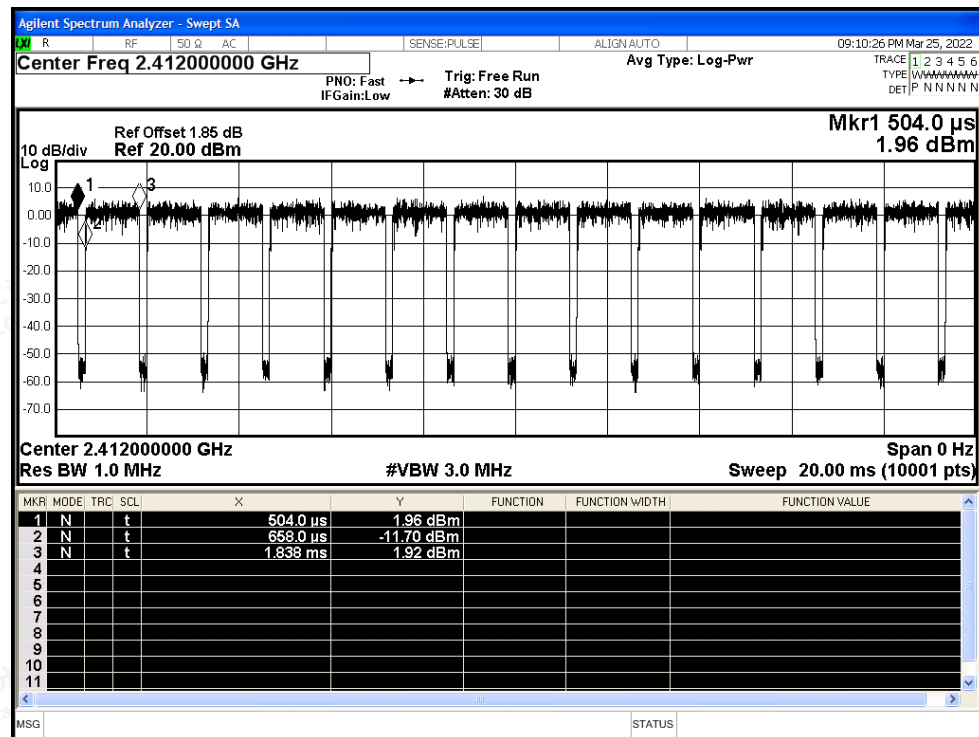


Duty Cycle NVNT g 2462MHz Ant

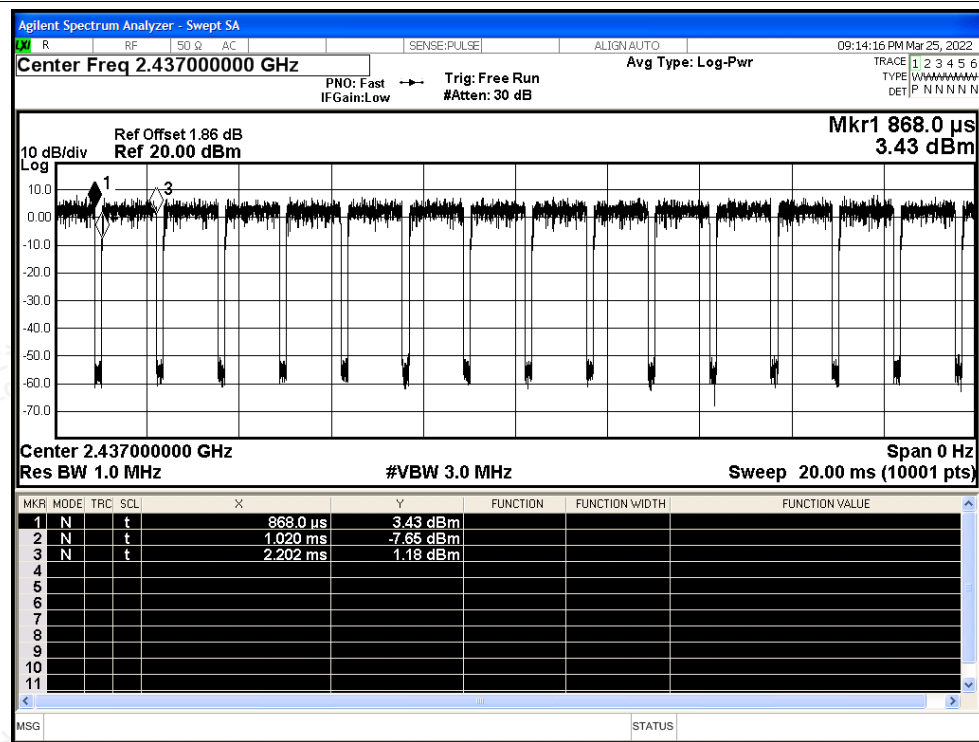




Duty Cycle NVNT n20 2412MHz Ant



Duty Cycle NVNT n20 2437MHz Ant



Shenzhen LCS Compliance Testing Laboratory Ltd.

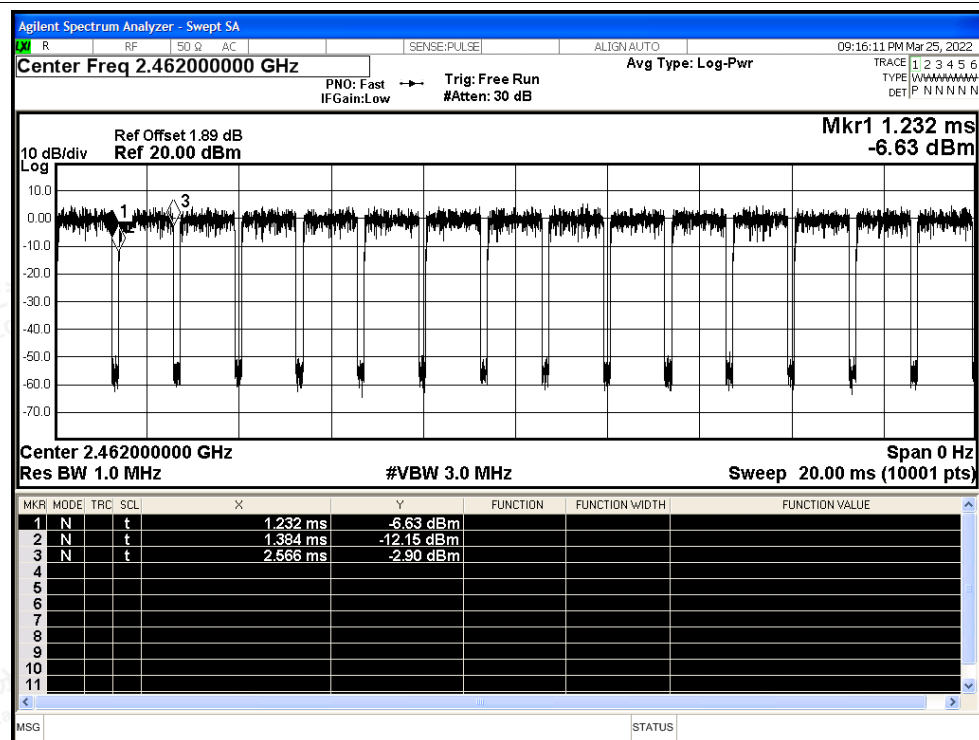
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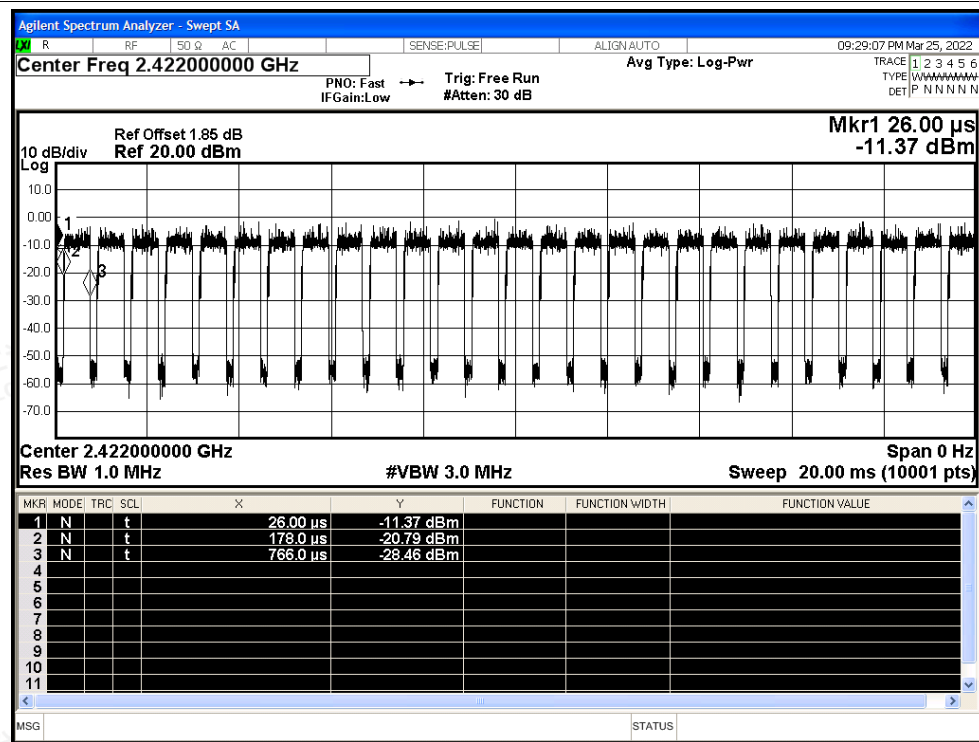
Scan code to check authenticity



Duty Cycle NVNT n20 2462MHz Ant



Duty Cycle NVNT n40 2422MHz Ant



Shenzhen LCS Compliance Testing Laboratory Ltd.

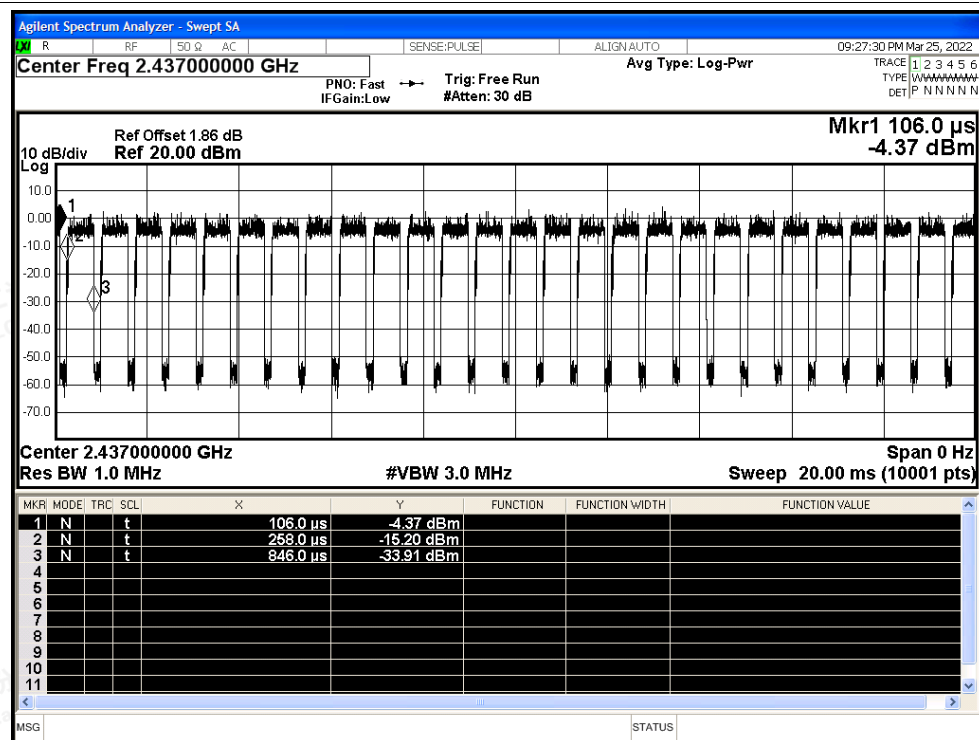
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Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

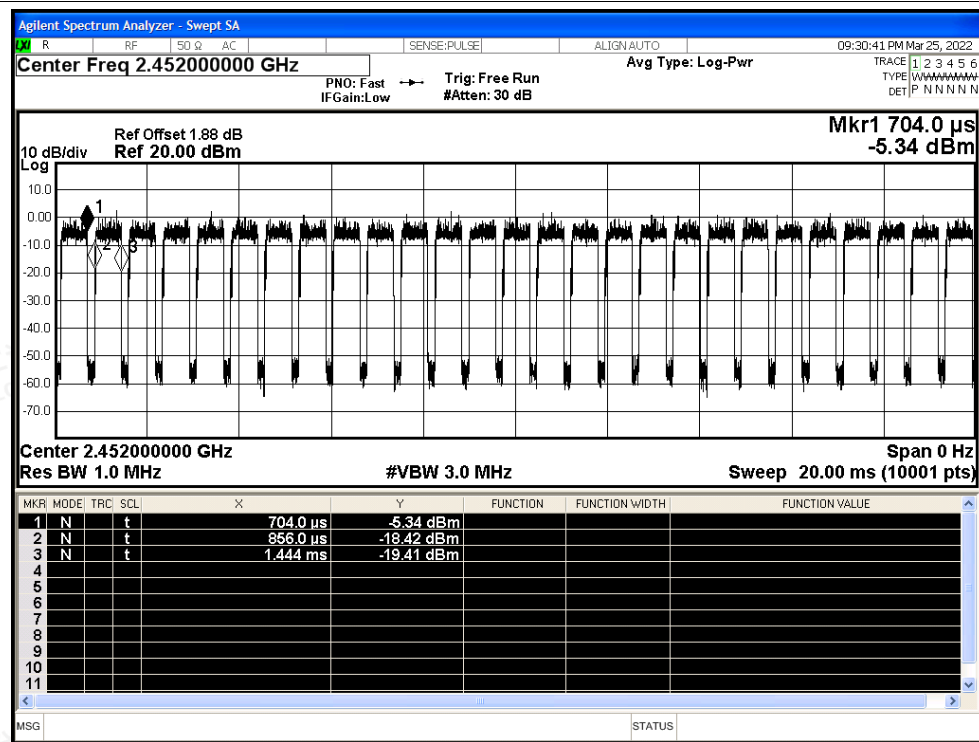
Scan code to check authenticity



Duty Cycle NVNT n40 2437MHz Ant



Duty Cycle NVNT n40 2452MHz Ant





A.7 Emissions in Restricted Bands

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant	2310	-50.46	2.0	46.8	Peak	74	Pass
NVNT	b	2412	Ant	2310	-60.28	2.0	36.98	Average	54	Pass
NVNT	b	2412	Ant	2389.662	-29.74	2.0	67.52	Peak	74	Pass
NVNT	b	2412	Ant	2389.916	-45.23	2.0	52.03	Average	54	Pass
NVNT	b	2412	Ant	2390	-30.21	2.0	67.05	Peak	74	Pass
NVNT	b	2412	Ant	2390	-45.1	2.0	52.16	Average	54	Pass
NVNT	b	2462	Ant	2483.5	-34.33	2.0	62.93	Peak	74	Pass
NVNT	b	2462	Ant	2483.5	-54.98	2.0	42.28	Average	54	Pass
NVNT	b	2462	Ant	2483.565	-34.33	2.0	62.93	Peak	74	Pass
NVNT	b	2462	Ant	2485.11	-54.43	2.0	42.83	Average	54	Pass
NVNT	b	2462	Ant	2500	-48.98	2.0	48.28	Peak	74	Pass
NVNT	b	2462	Ant	2500	-59.36	2.0	37.9	Average	54	Pass
NVNT	g	2412	Ant	2310	-50.93	2.0	46.33	Peak	74	Pass
NVNT	g	2412	Ant	2310	-58.81	2.0	38.45	Average	54	Pass
NVNT	g	2412	Ant	2389.154	-41.59	2.0	55.67	Peak	74	Pass
NVNT	g	2412	Ant	2389.916	-53.27	2.0	43.99	Average	54	Pass
NVNT	g	2412	Ant	2390	-39.73	2.0	57.53	Peak	74	Pass
NVNT	g	2412	Ant	2390	-53.09	2.0	44.17	Average	54	Pass
NVNT	g	2462	Ant	2483.5	-27.66	2.0	69.6	Peak	74	Pass
NVNT	g	2462	Ant	2483.5	-49.54	2.0	47.72	Average	54	Pass
NVNT	g	2462	Ant	2483.771	-25.56	2.0	71.7	Peak	74	Pass
NVNT	g	2462	Ant	2484.801	-49.45	2.0	47.81	Average	54	Pass
NVNT	g	2462	Ant	2500	-50.31	2.0	46.95	Peak	74	Pass
NVNT	g	2462	Ant	2500	-60.05	2.0	37.21	Average	54	Pass
NVNT	n20	2412	Ant	2310	-51.76	2.0	45.5	Peak	74	Pass
NVNT	n20	2412	Ant	2310	-60.4	2.0	36.86	Average	54	Pass
NVNT	n20	2412	Ant	2389.408	-35.33	2.0	61.93	Peak	74	Pass
NVNT	n20	2412	Ant	2389.916	-53.88	2.0	43.38	Average	54	Pass
NVNT	n20	2412	Ant	2390	-40.46	2.0	56.8	Peak	74	Pass
NVNT	n20	2412	Ant	2390	-53.3	2.0	43.96	Average	54	Pass
NVNT	n20	2462	Ant	2483.5	-26.27	2.0	70.99	Peak	74	Pass
NVNT	n20	2462	Ant	2483.5	-49.29	2.0	47.97	Average	54	Pass
NVNT	n20	2462	Ant	2484.08	-24.95	2.0	72.31	Peak	74	Pass
NVNT	n20	2462	Ant	2483.565	-49.29	2.0	47.97	Average	54	Pass
NVNT	n20	2462	Ant	2500	-50.56	2.0	46.7	Peak	74	Pass
NVNT	n20	2462	Ant	2500	-59.79	2.0	37.47	Average	54	Pass
NVNT	n40	2422	Ant	2310	-51.29	2.0	45.97	Peak	74	Pass
NVNT	n40	2422	Ant	2310	-52.77	2.0	44.49	Average	54	Pass
NVNT	n40	2422	Ant	2389.984	-42.37	2.0	54.89	Peak	74	Pass





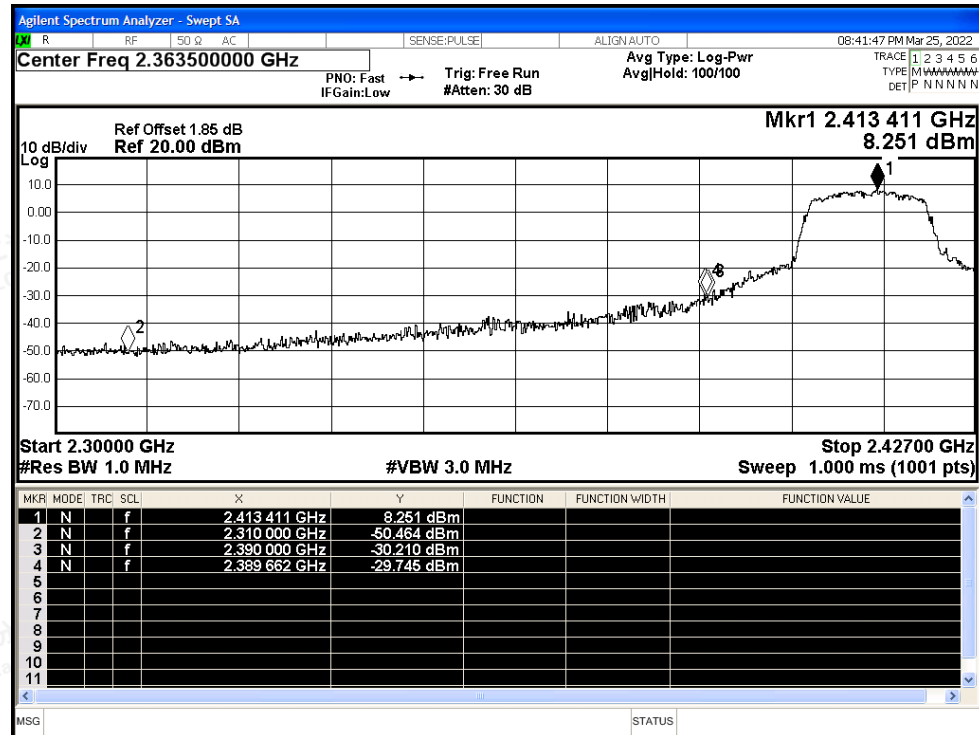
NVNT	n40	2422	Ant	2389.984	-47.94	2.0	49.32	Average	54	Pass
NVNT	n40	2422	Ant	2390	-43.79	2.0	53.47	Peak	74	Pass
NVNT	n40	2422	Ant	2390	-43.86	2.0	53.4	Average	54	Pass
NVNT	n40	2452	Ant	2483.5	-28.84	2.0	68.42	Peak	74	Pass
NVNT	n40	2452	Ant	2483.5	-46.56	2.0	50.7	Average	54	Pass
NVNT	n40	2452	Ant	2485.744	-27.51	2.0	69.75	Peak	74	Pass
NVNT	n40	2452	Ant	2483.696	-46.53	2.0	50.73	Average	54	Pass
NVNT	n40	2452	Ant	2500	-50.99	2.0	46.27	Peak	74	Pass
NVNT	n40	2452	Ant	2500	-59.42	2.0	37.84	Average	54	Pass



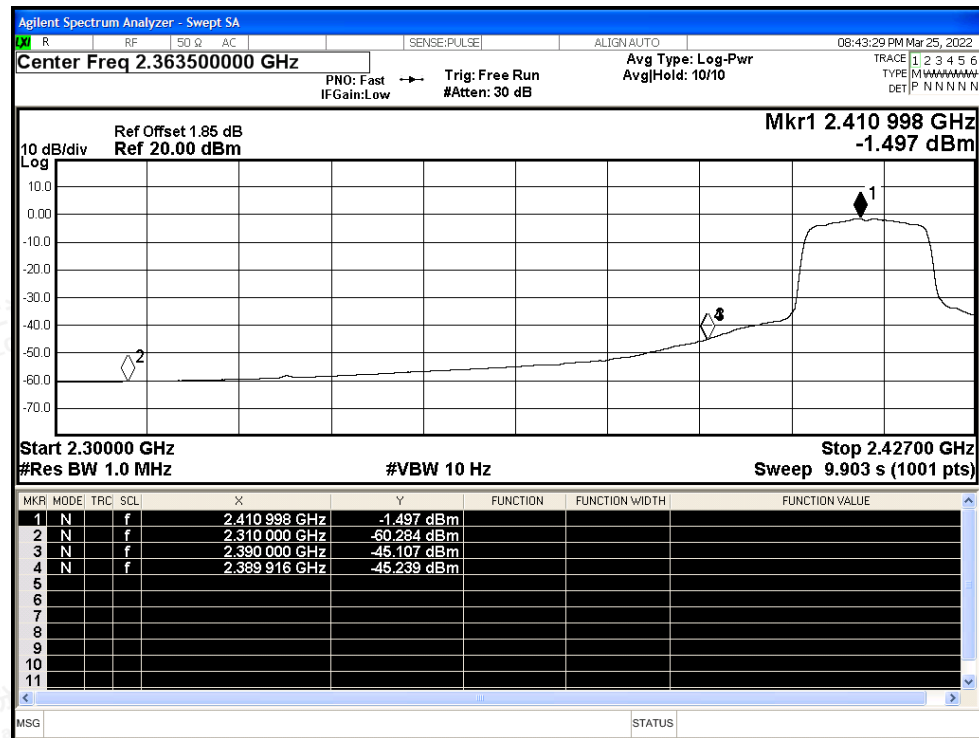


Test Graphs

Restrict Band NVNT b 2412MHz Ant Peak

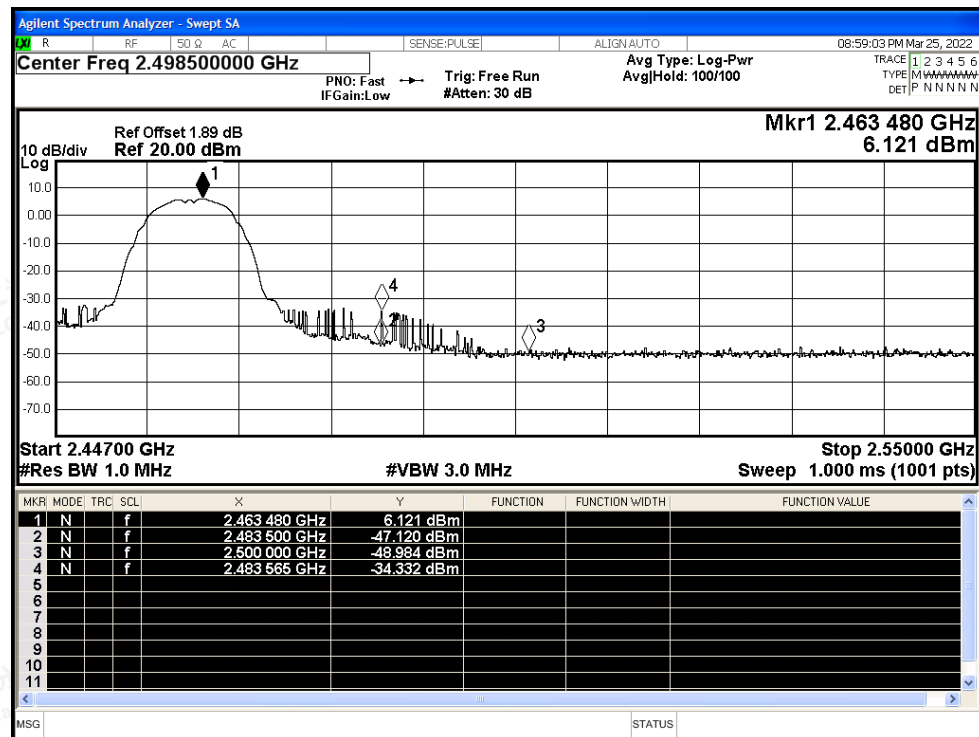


Restrict Band NVNT b 2412MHz Ant Average

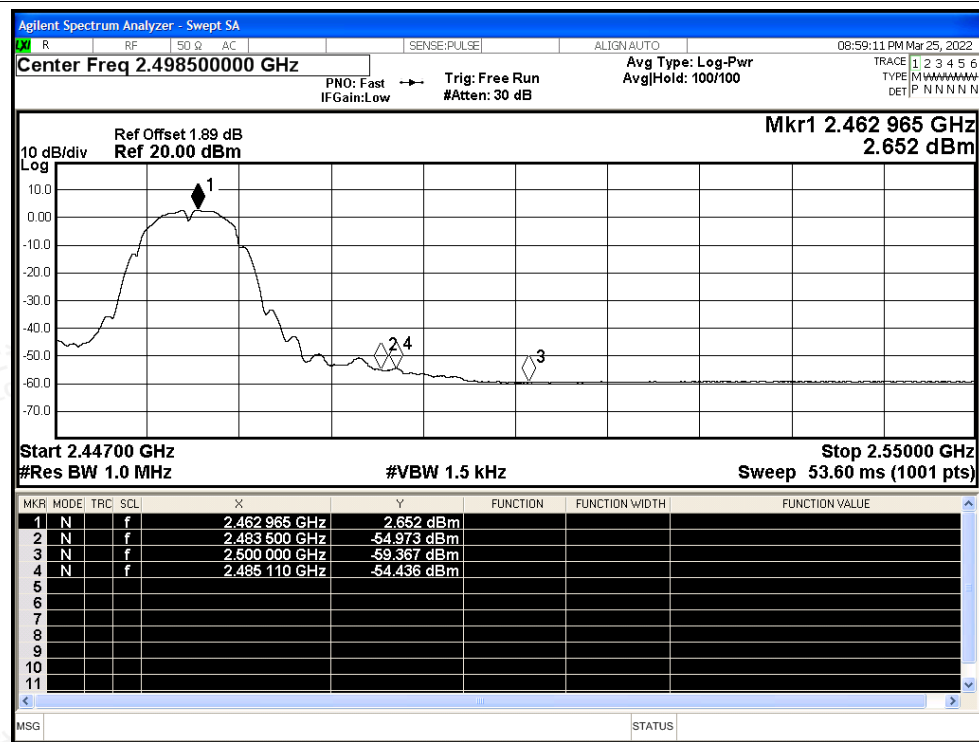




Restrict Band NVNT b 2462MHz Ant Peak



Restrict Band NVNT b 2462MHz Ant Average



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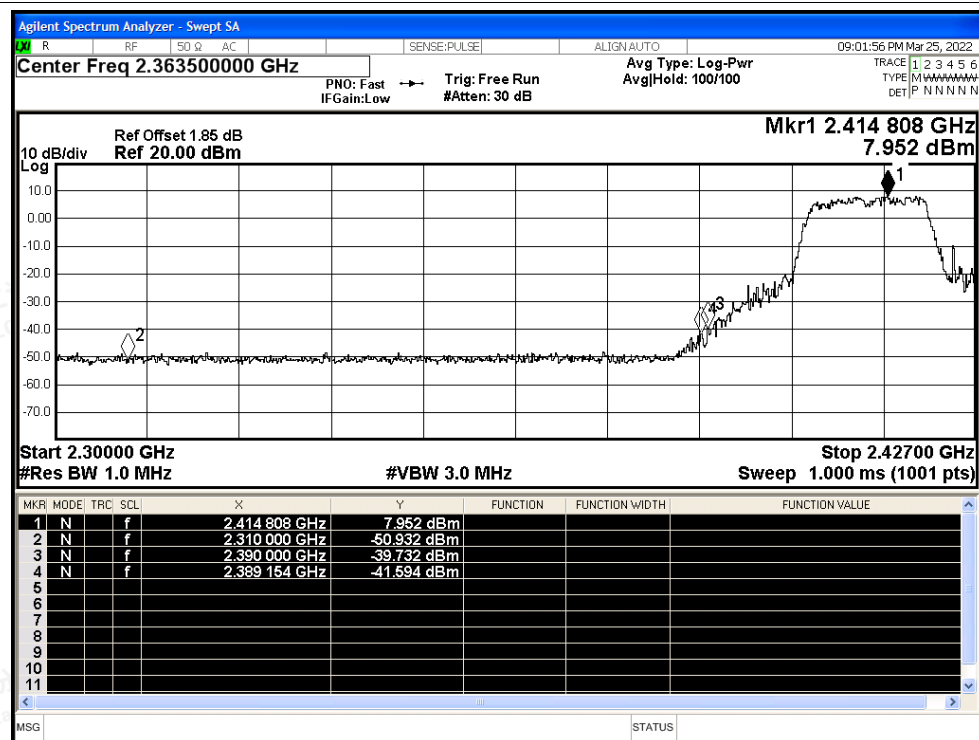
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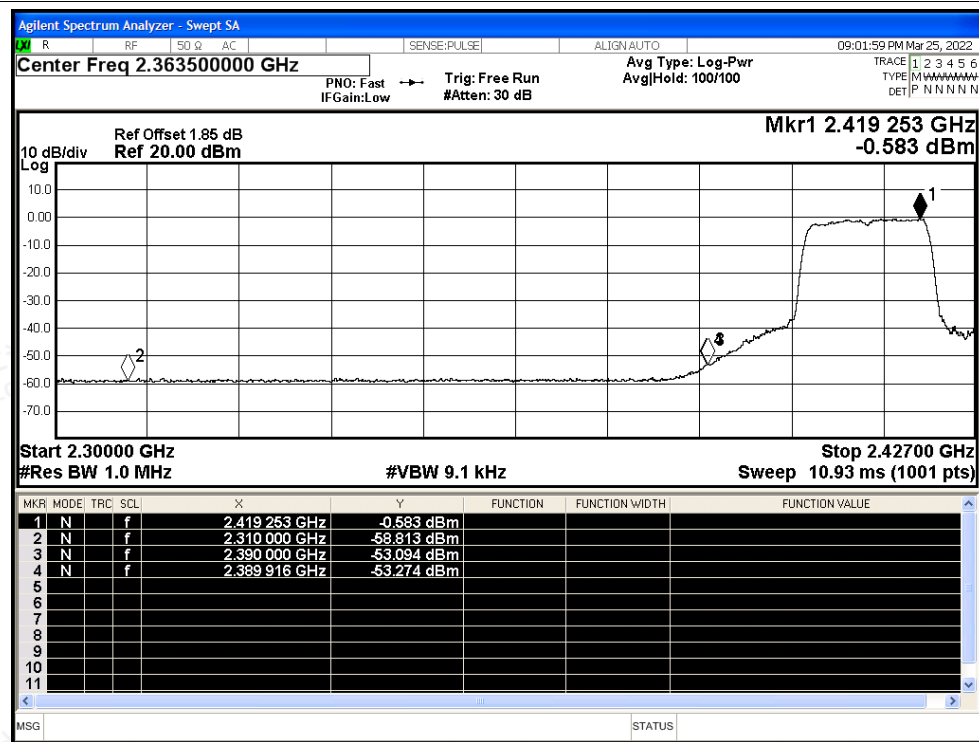
Scan code to check authenticity



Restrict Band NVNT g 2412MHz Ant Peak

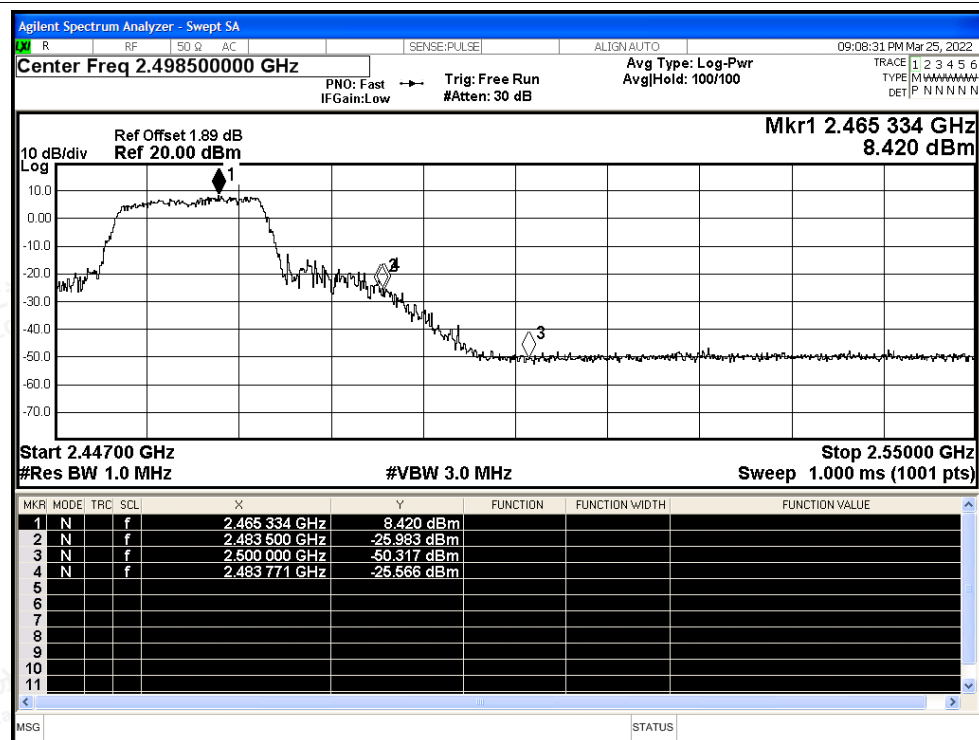


Restrict Band NVNT g 2412MHz Ant Average

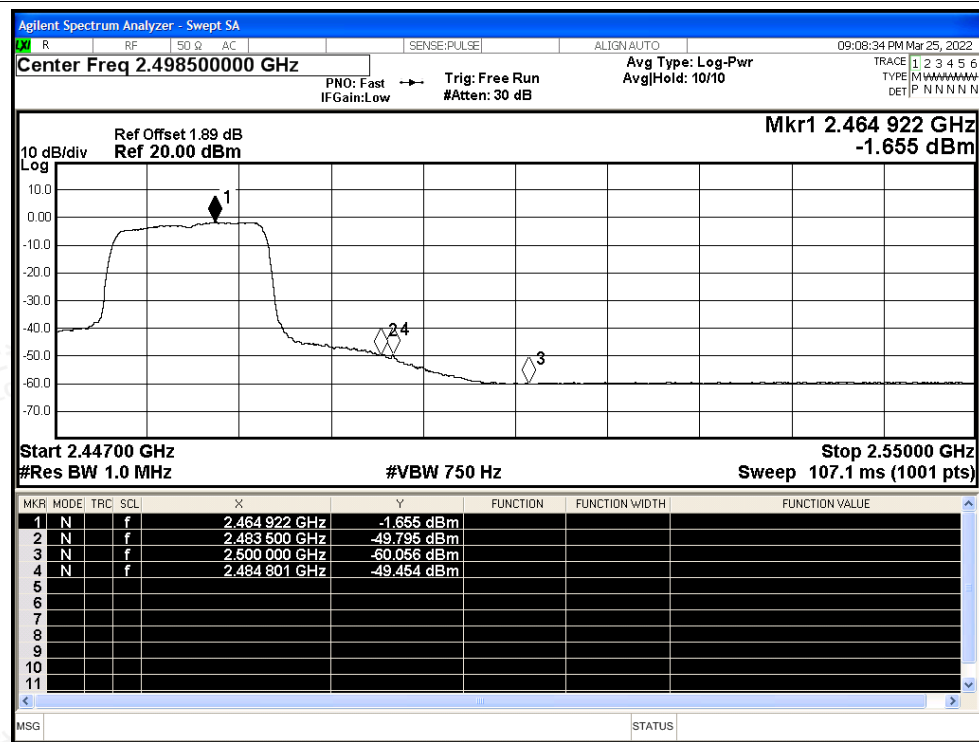




Restrict Band NVNT g 2462MHz Ant Peak



Restrict Band NVNT g 2462MHz Ant Average



Shenzhen LCS Compliance Testing Laboratory Ltd.

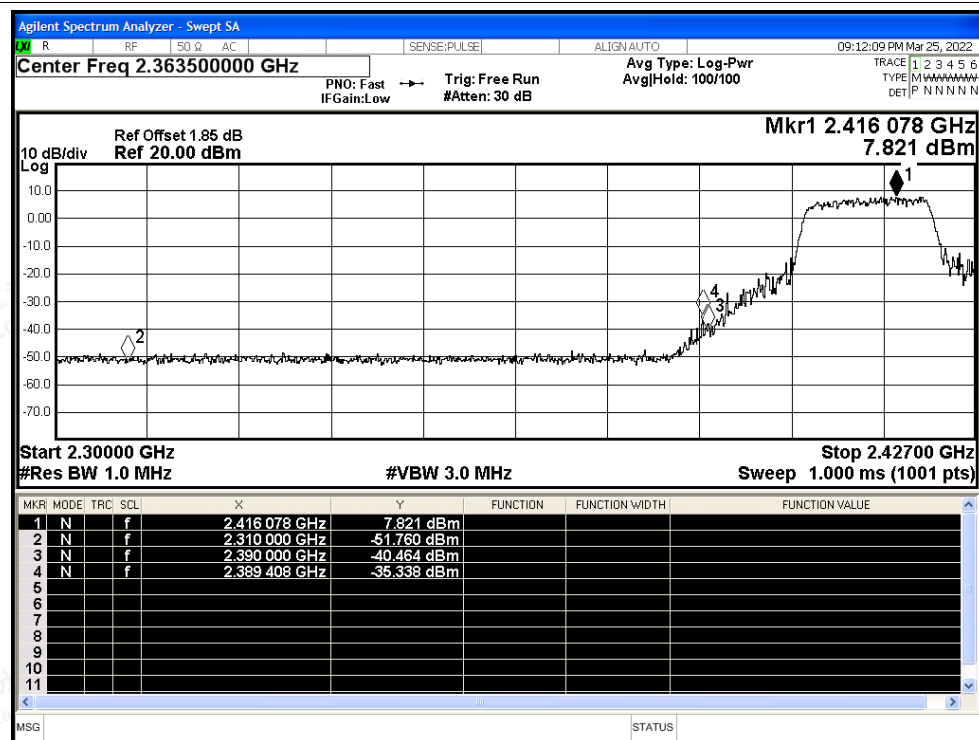
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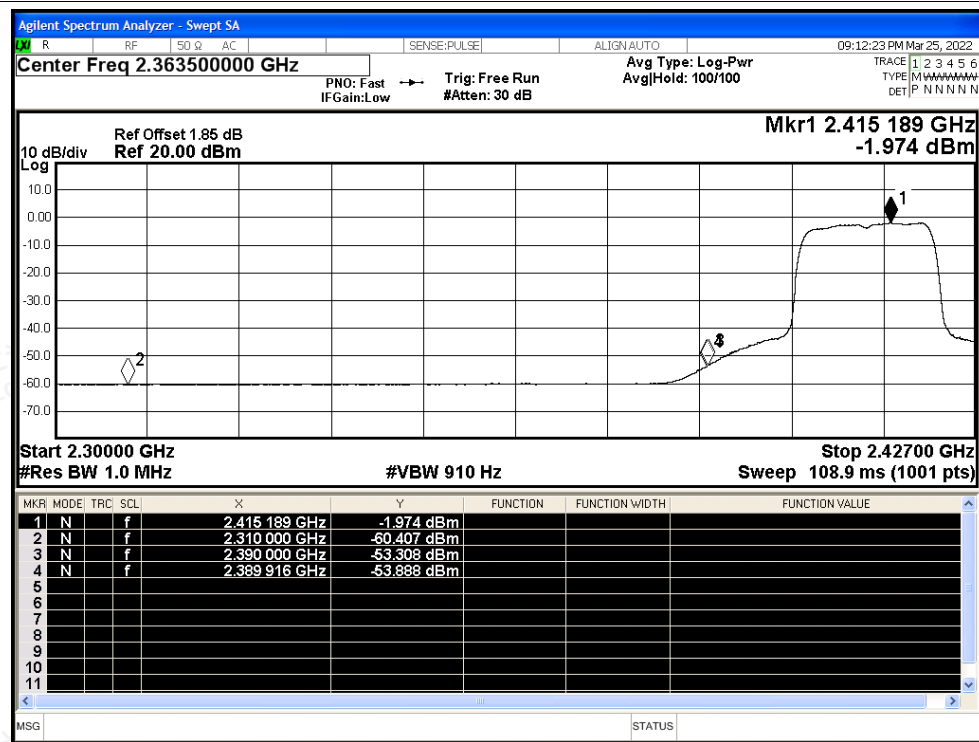
Scan code to check authenticity



Restrict Band NVNT n20 2412MHz Ant Peak

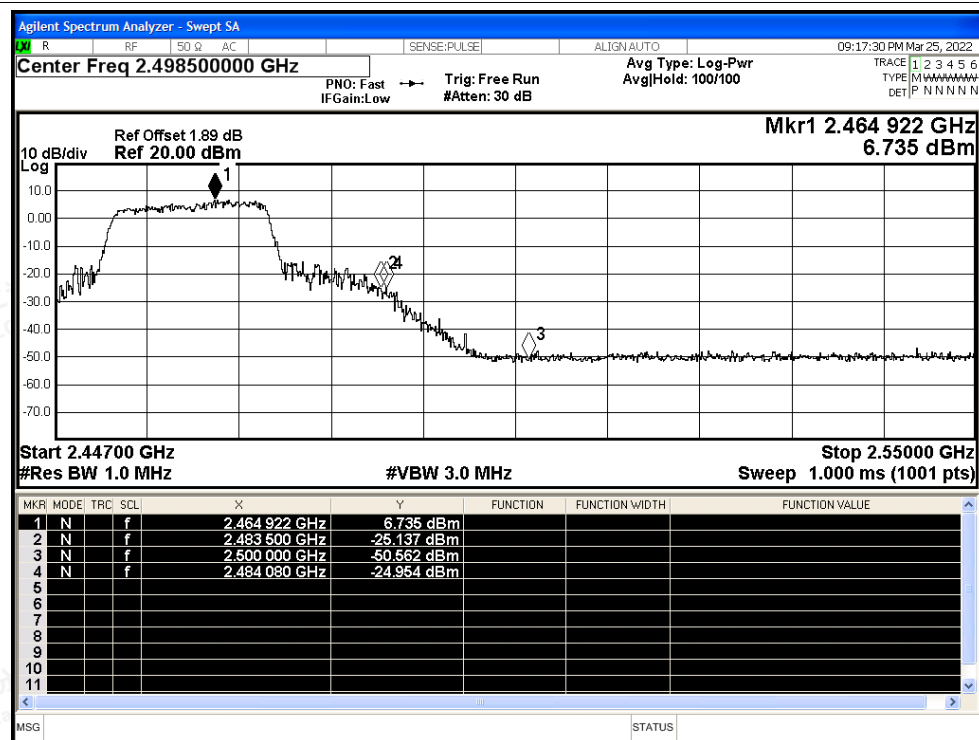


Restrict Band NVNT n20 2412MHz Ant Average

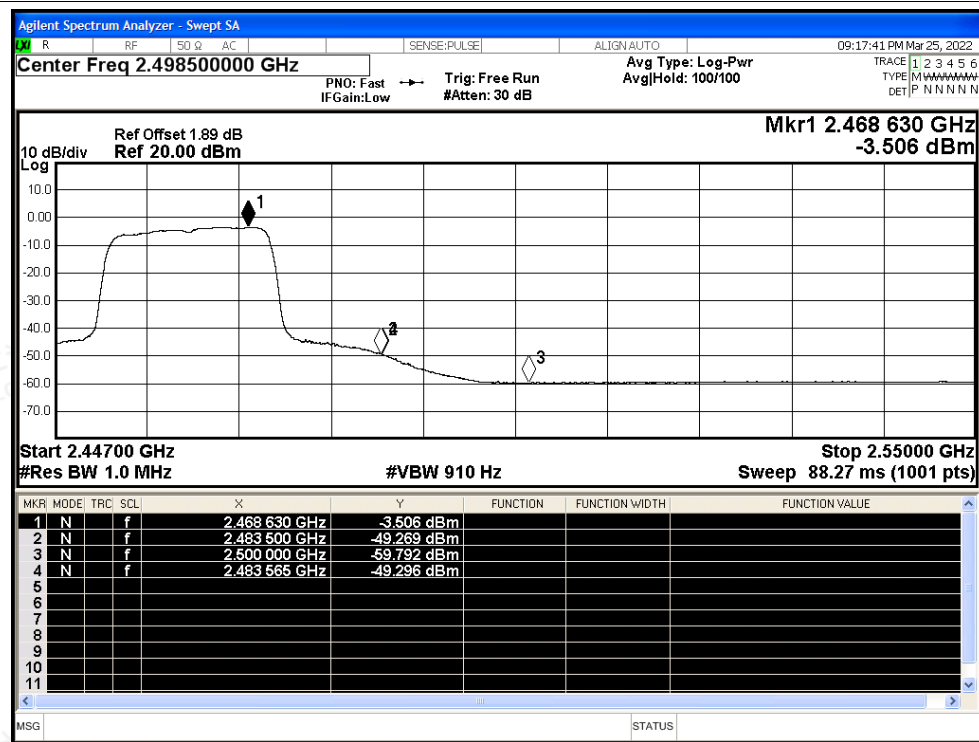




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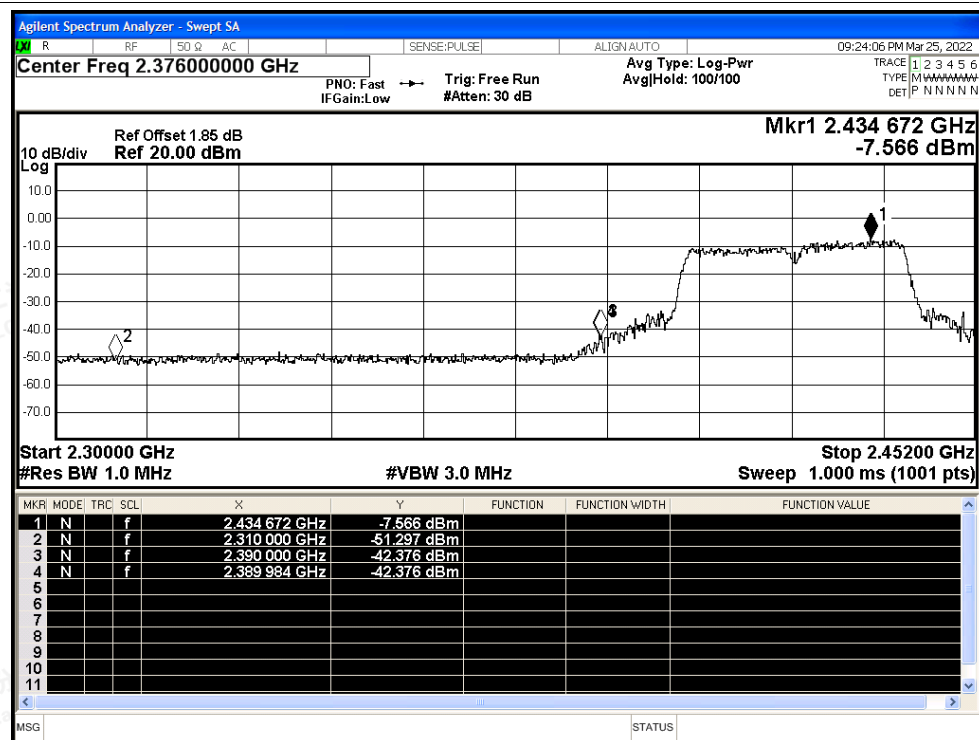


Restrict Band NVNT n20 2462MHz Ant Average

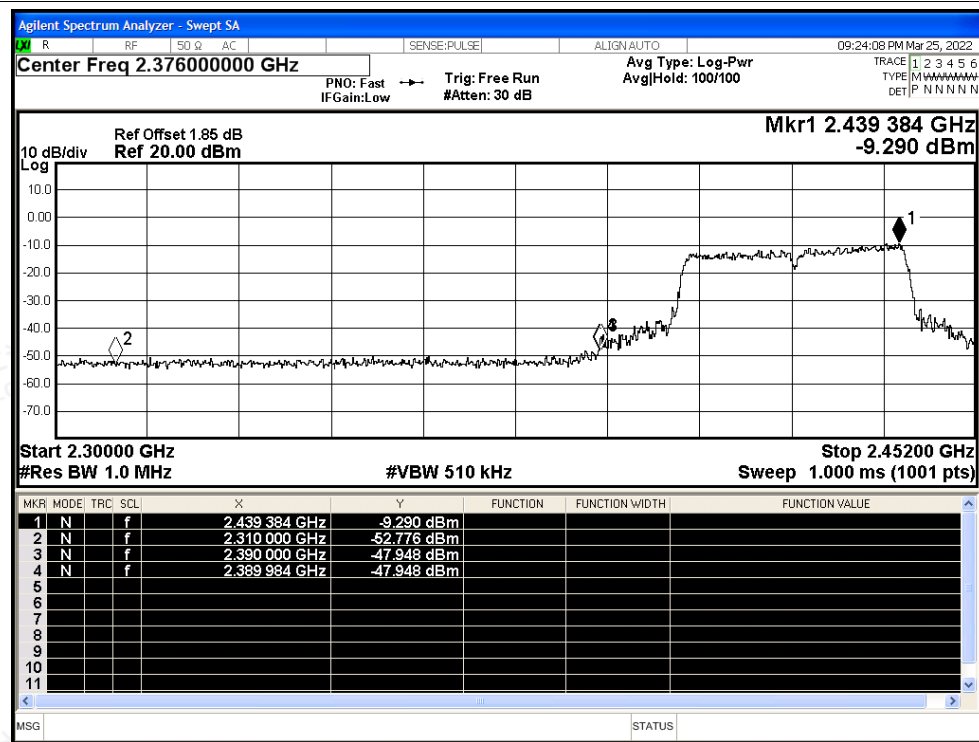




Restrict Band NVNT n40 2422MHz Ant Peak



Restrict Band NVNT n40 2422MHz Ant Average



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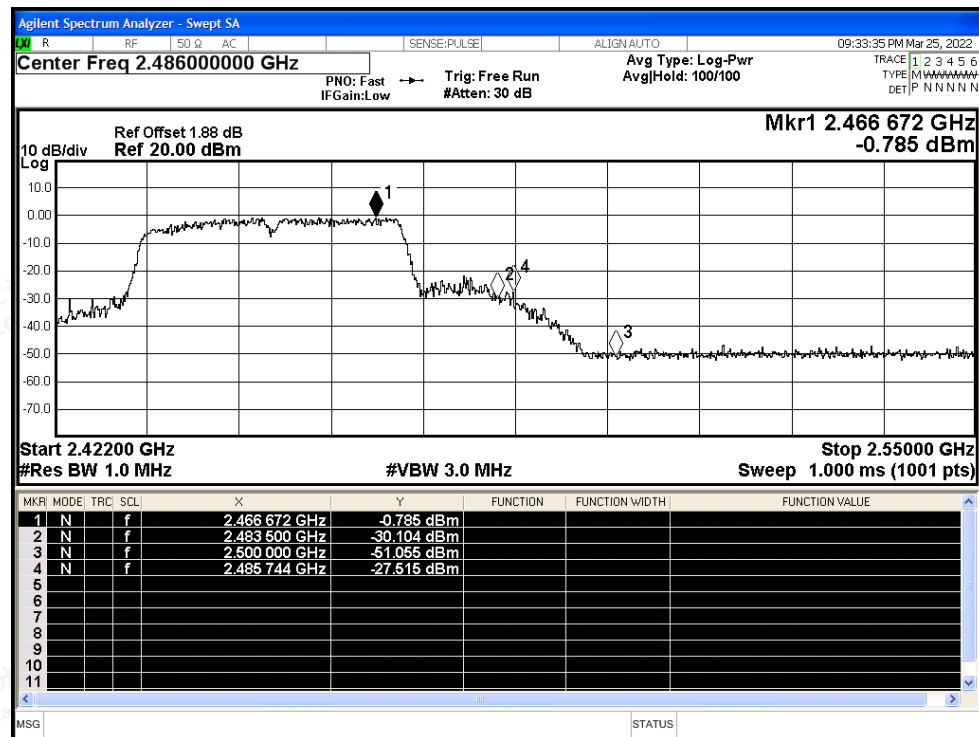
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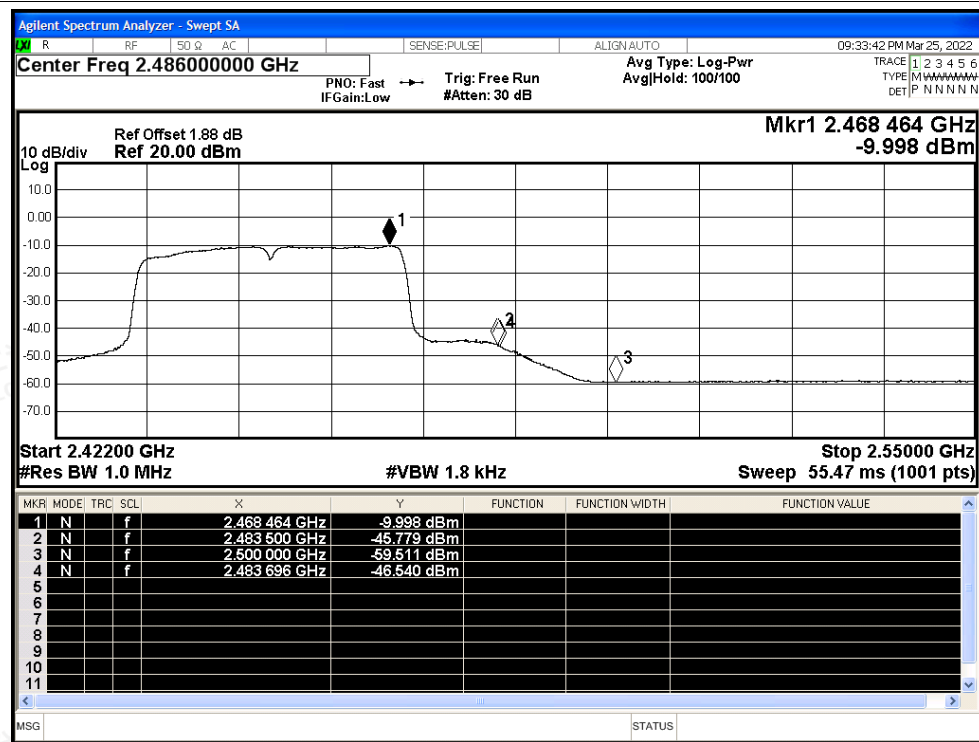
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Restrict Band NVNT n40 2452MHz Ant Peak



Restrict Band NVNT n40 2452MHz Ant Average



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