



Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Communicator

Test Model: Communicator 3-A

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan



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



C.1 -6dB Bandwidth

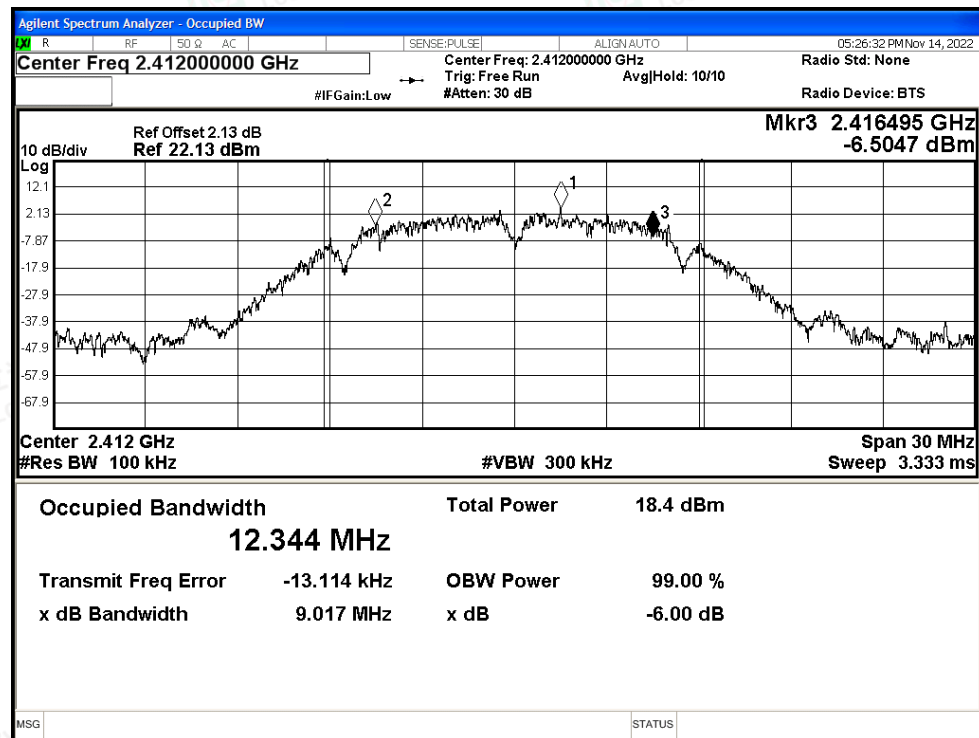
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant	9.017	≥ 0.5	Pass
NVNT	b	2437	Ant	9.075	≥ 0.5	Pass
NVNT	b	2462	Ant	8.581	≥ 0.5	Pass
NVNT	g	2412	Ant	16.342	≥ 0.5	Pass
NVNT	g	2437	Ant	10.548	≥ 0.5	Pass
NVNT	g	2462	Ant	15.651	≥ 0.5	Pass
NVNT	n20	2412	Ant	17.548	≥ 0.5	Pass
NVNT	n20	2437	Ant	17.583	≥ 0.5	Pass
NVNT	n20	2462	Ant	14.147	≥ 0.5	Pass



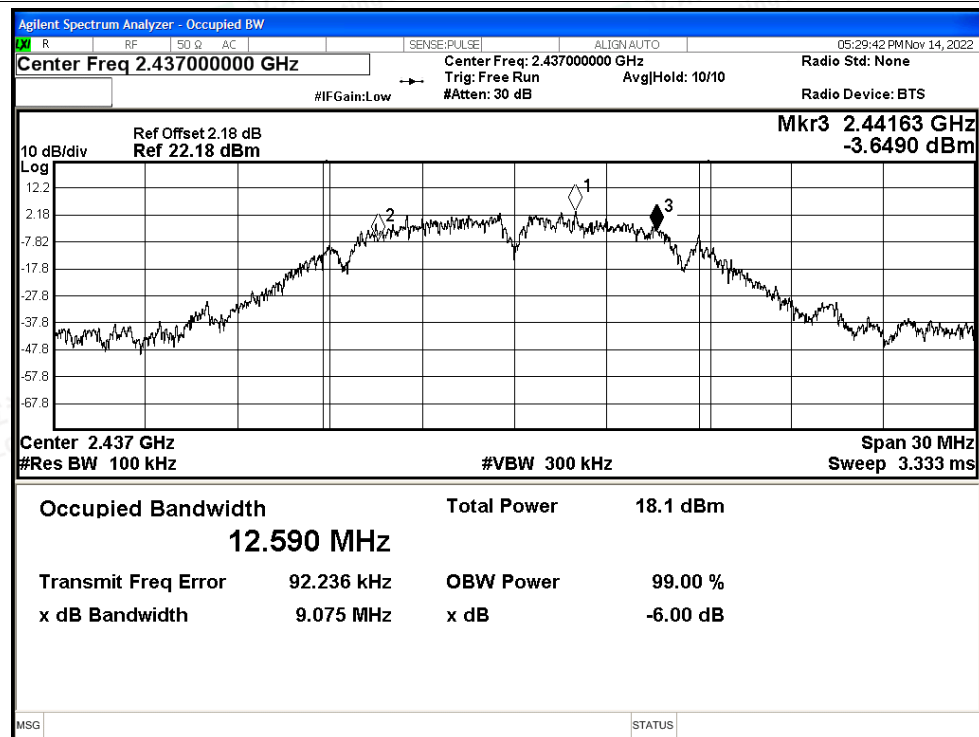


Test Graphs

-6dB Bandwidth NVNT b 2412MHz Ant



-6dB Bandwidth NVNT b 2437MHz Ant

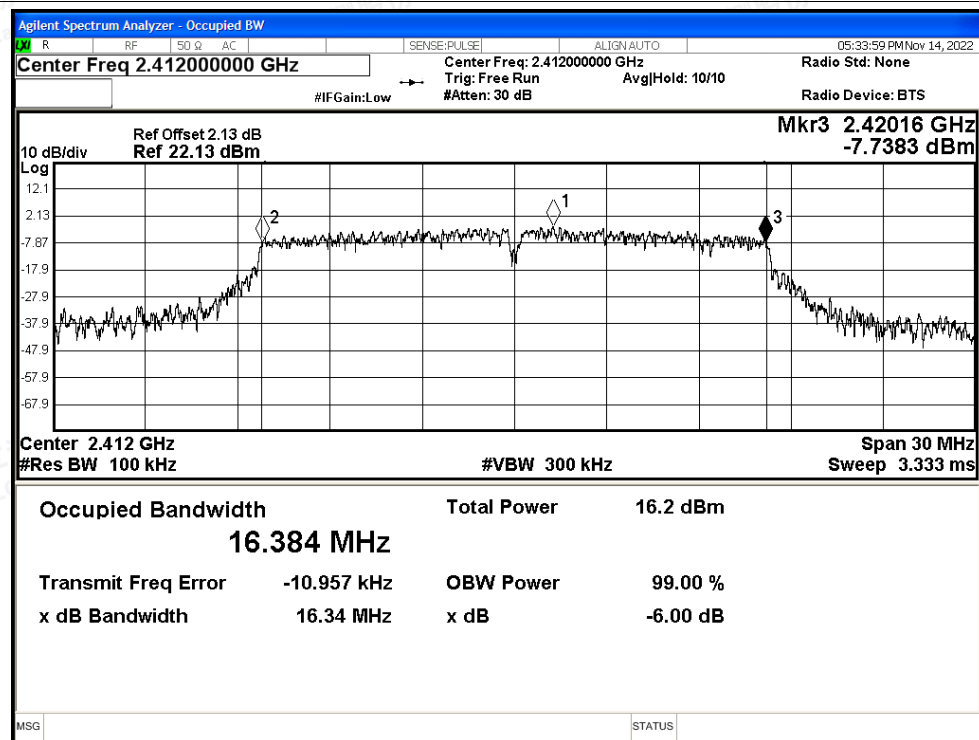




-6dB Bandwidth NVNT b 2462MHz Ant



-6dB Bandwidth NVNT g 2412MHz Ant



Shenzhen LCS Compliance Testing Laboratory Ltd.

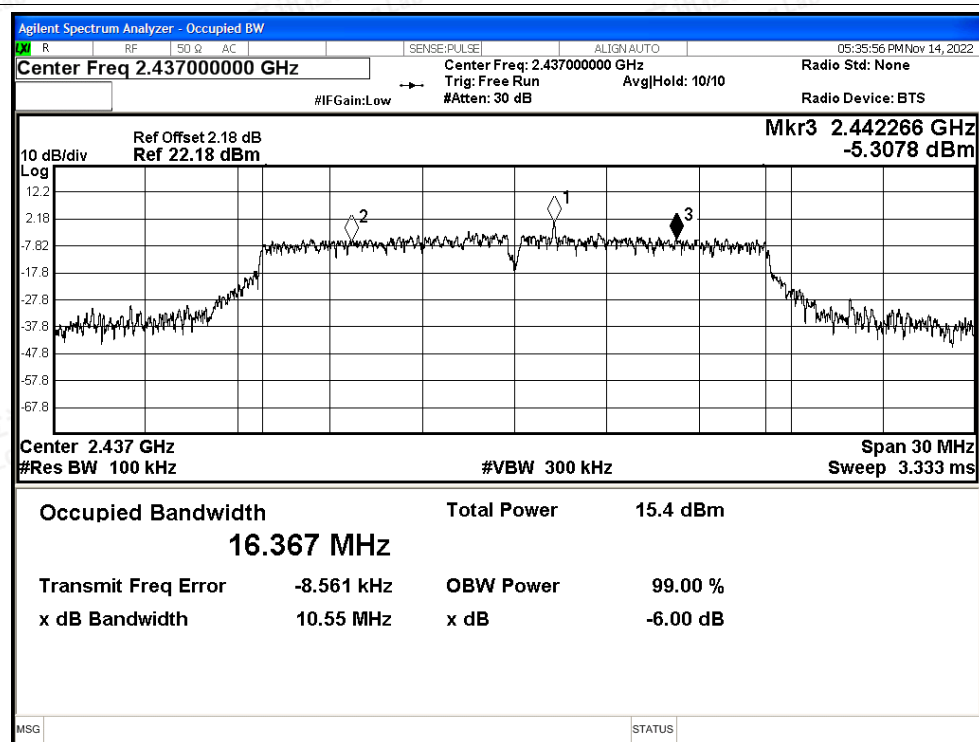
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

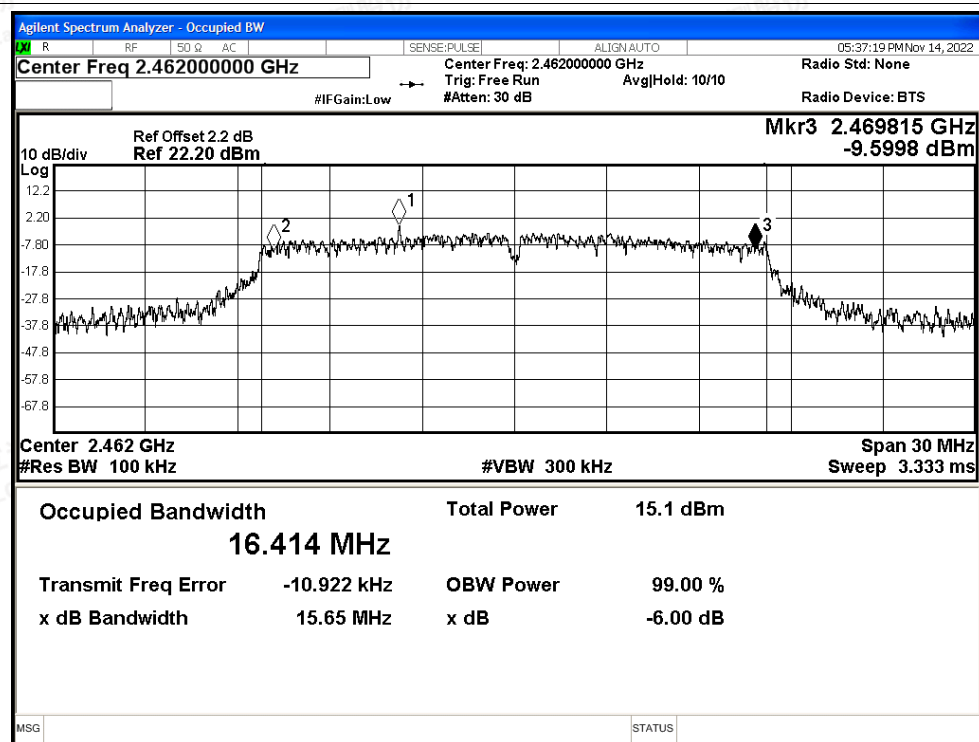
Scan code to check authenticity



-6dB Bandwidth NVNT g 2437MHz Ant

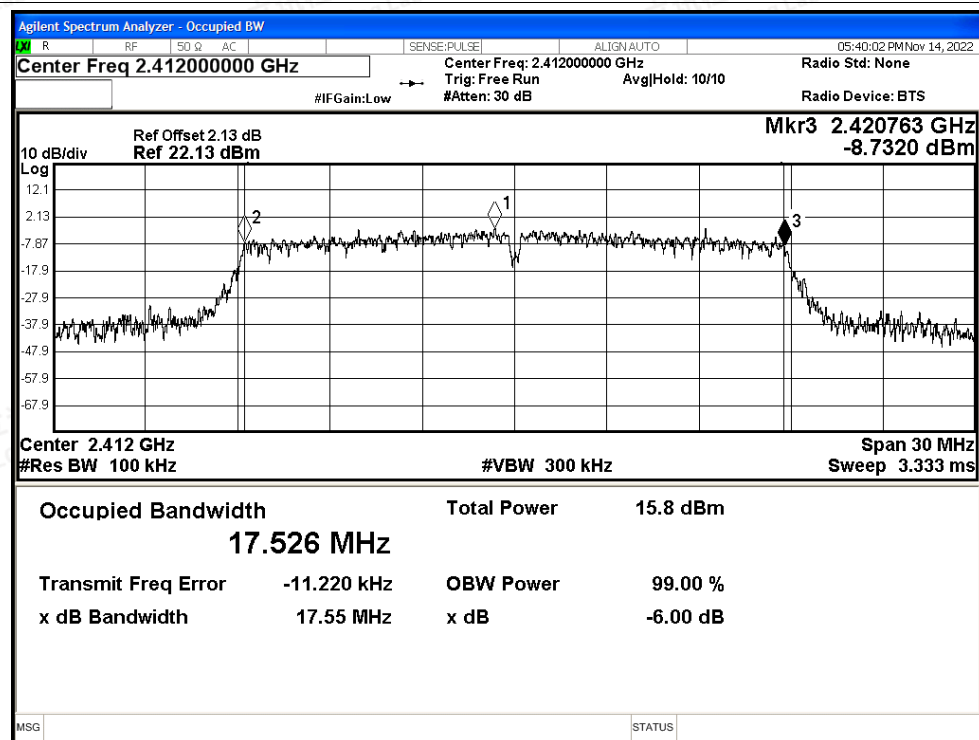


-6dB Bandwidth NVNT g 2462MHz Ant

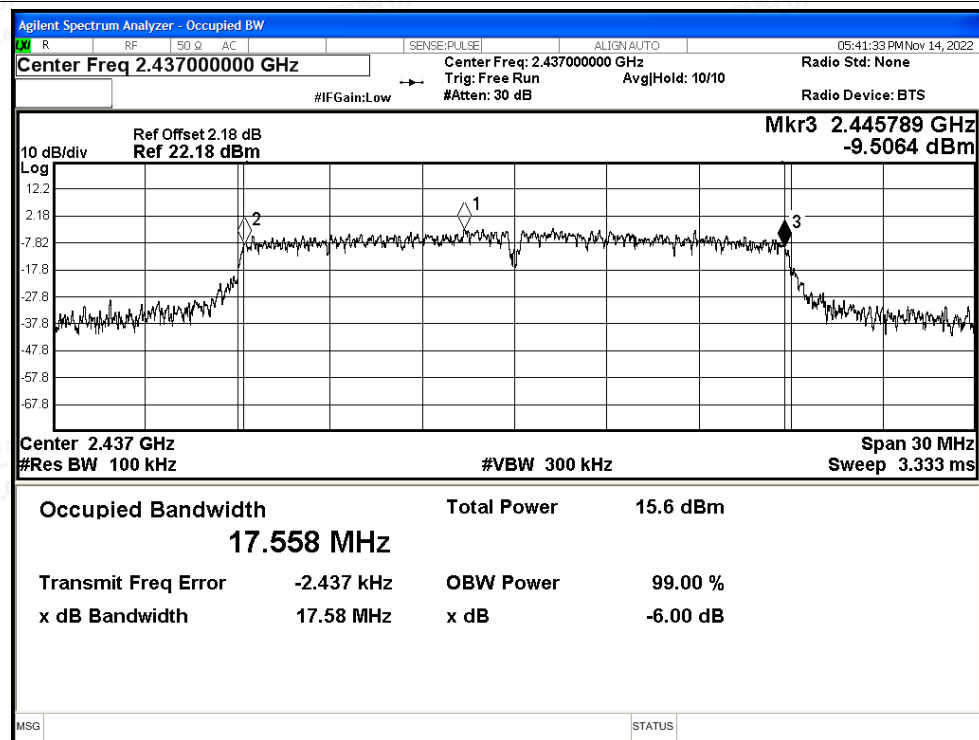


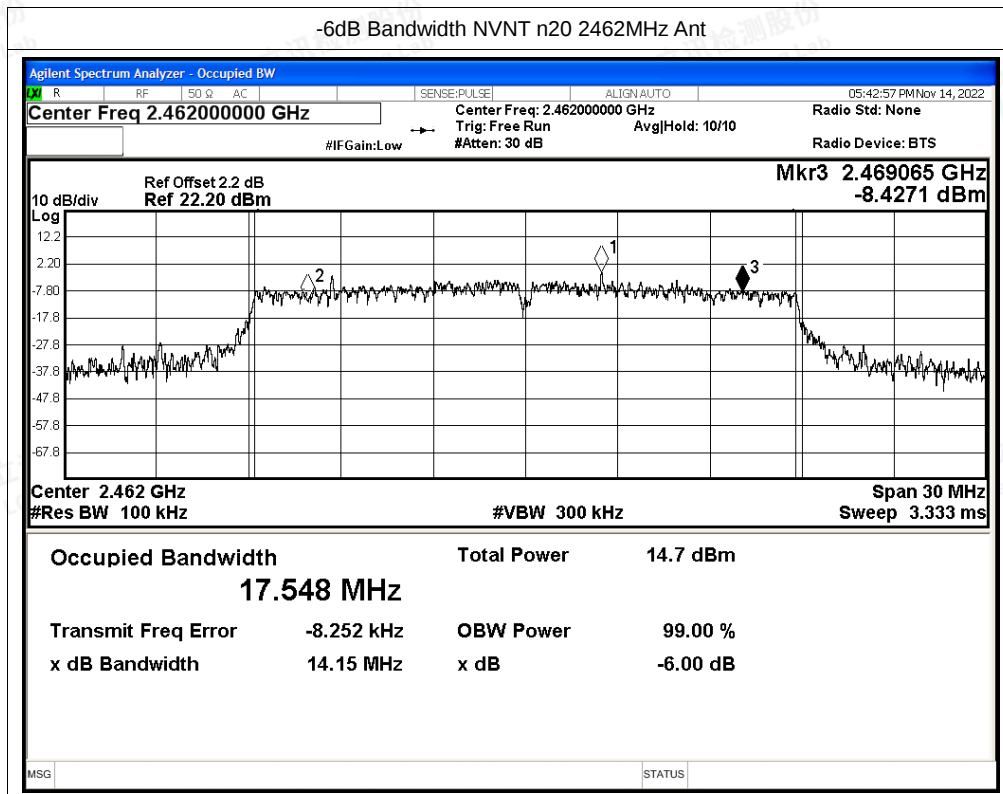


-6dB Bandwidth NVNT n20 2412MHz Ant



-6dB Bandwidth NVNT n20 2437MHz Ant







C.2 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant	12.46
NVNT	b	2437	Ant	12.732
NVNT	b	2462	Ant	12.843
NVNT	g	2412	Ant	16.391
NVNT	g	2437	Ant	16.468
NVNT	g	2462	Ant	16.497
NVNT	n20	2412	Ant	17.567
NVNT	n20	2437	Ant	17.585
NVNT	n20	2462	Ant	17.578



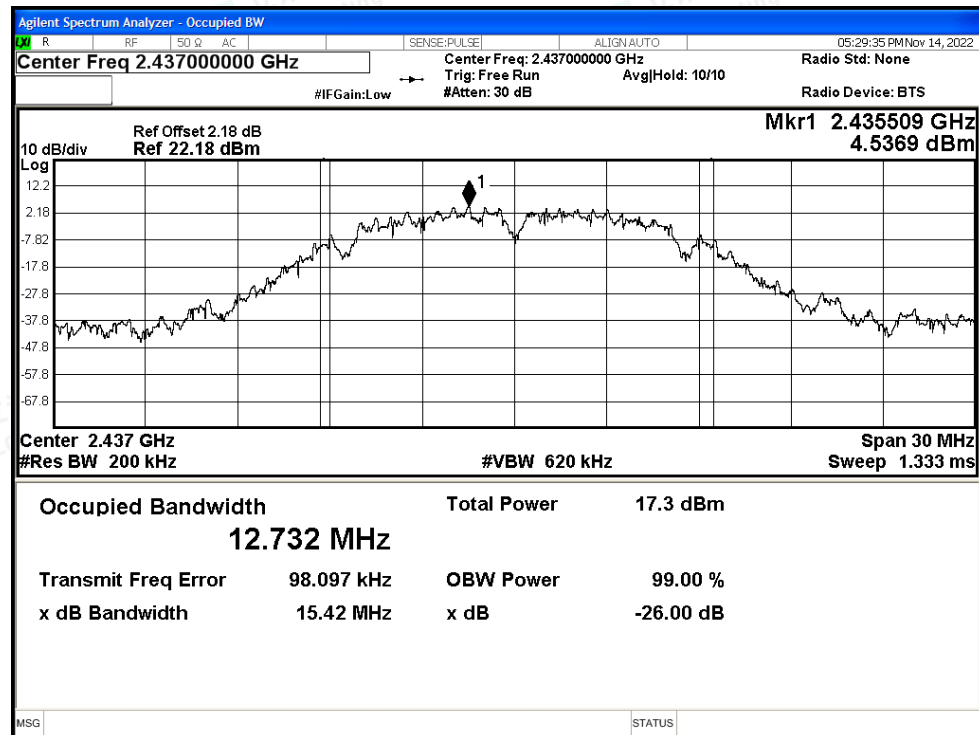


Test Graphs

OBW NVNT b 2412MHz Ant

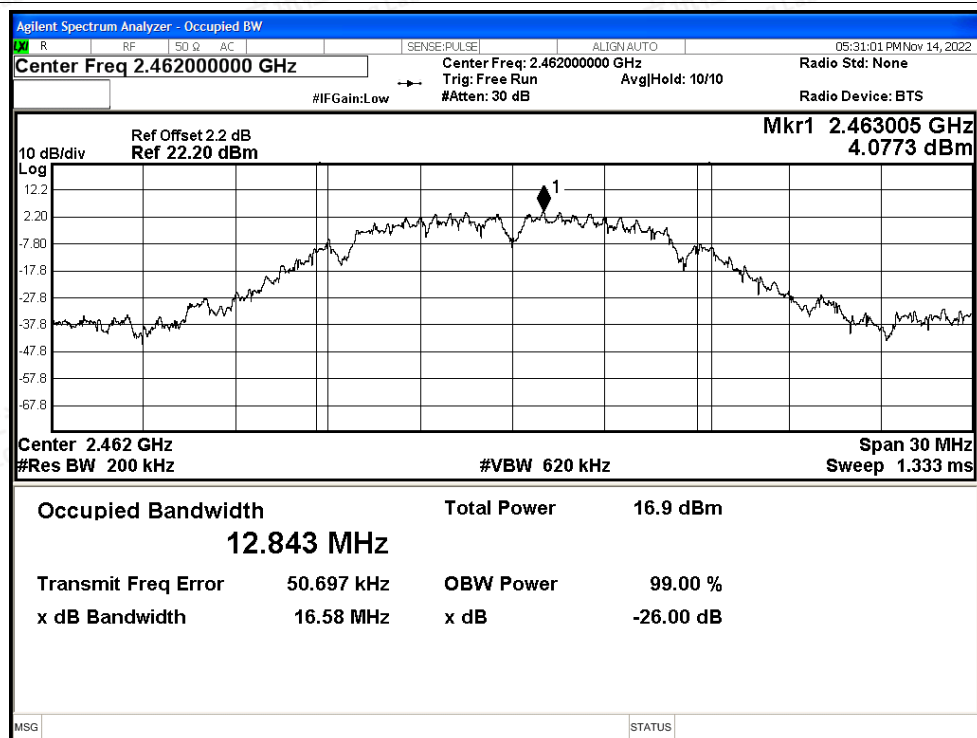


OBW NVNT b 2437MHz Ant

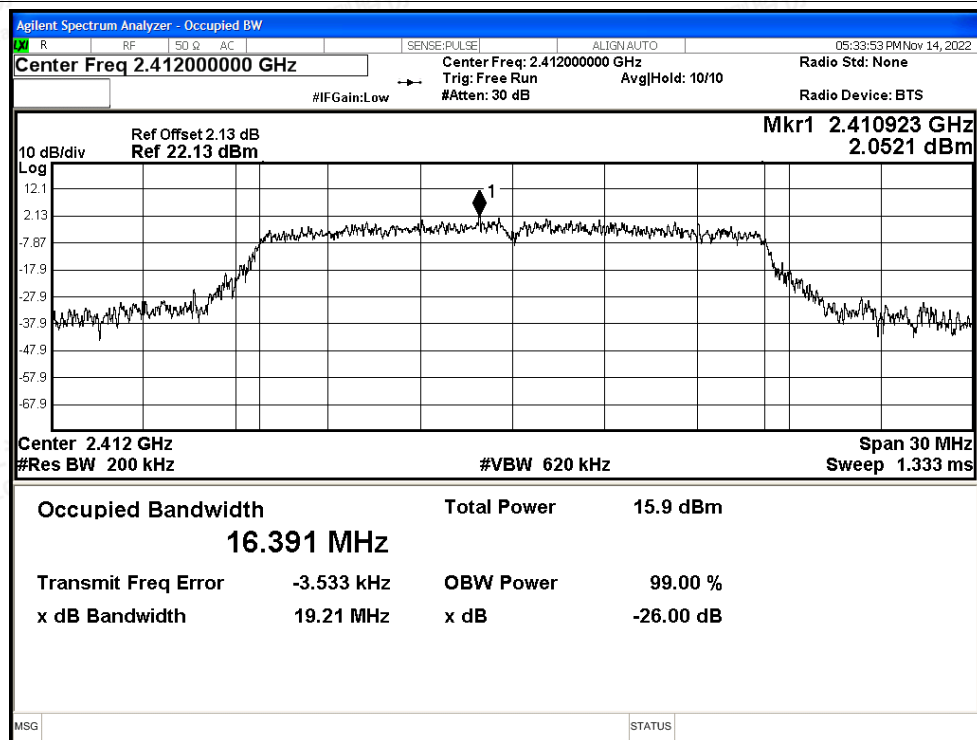




OBW NVNT b 2462MHz Ant



OBW NVNT g 2412MHz Ant



Shenzhen LCS Compliance Testing Laboratory Ltd.

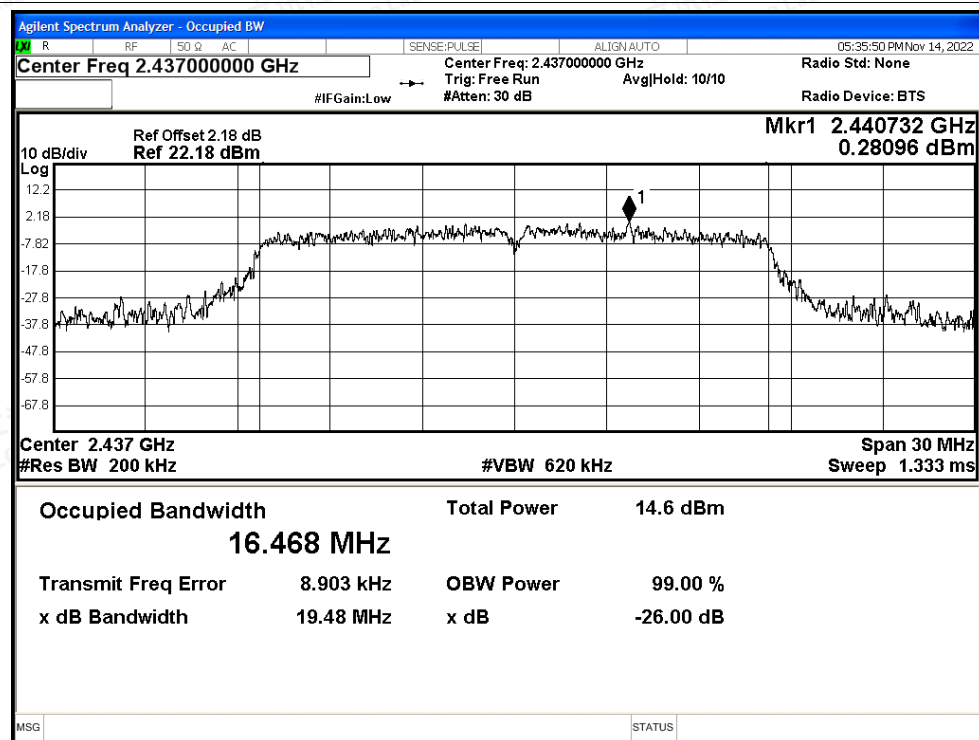
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

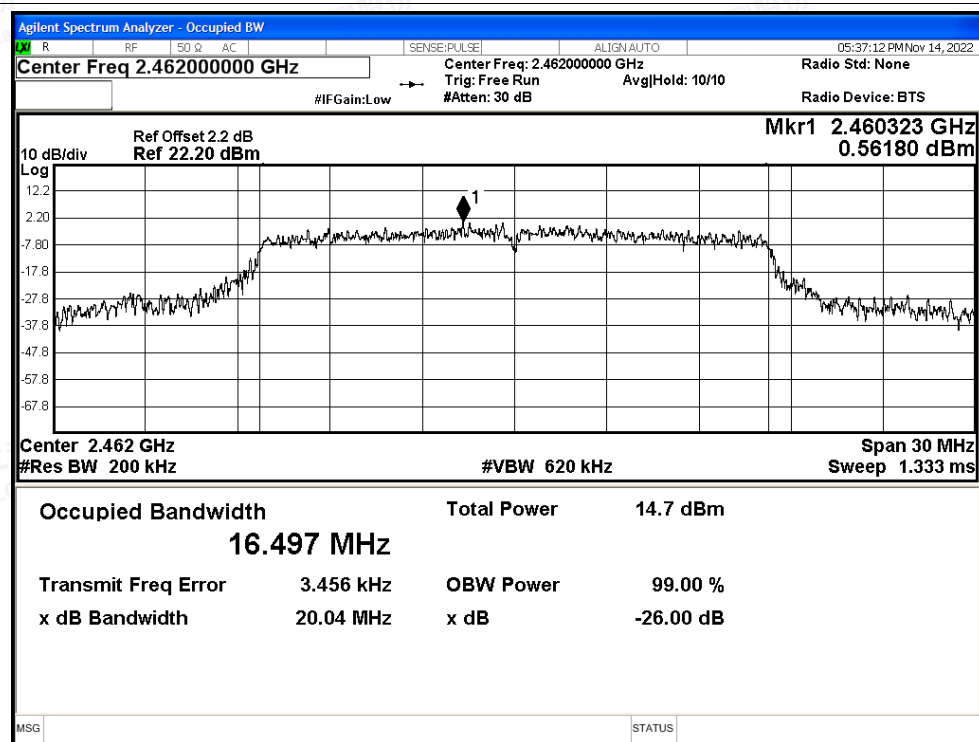
Scan code to check authenticity



OBW NVNT g 2437MHz Ant



OBW NVNT g 2462MHz Ant



Shenzhen LCS Compliance Testing Laboratory Ltd.

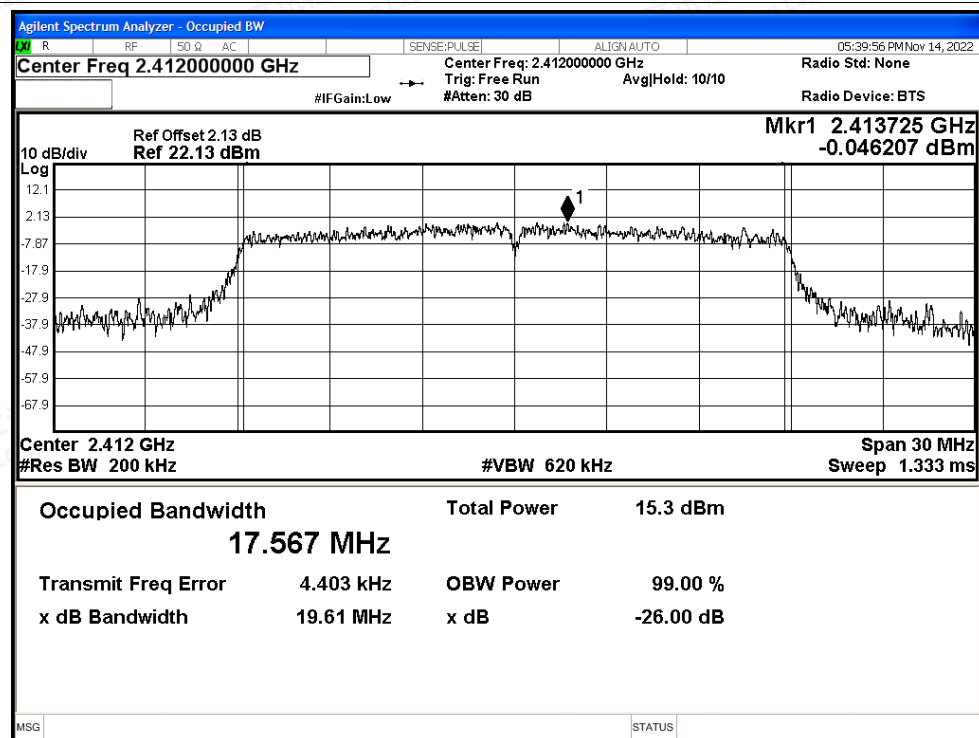
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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

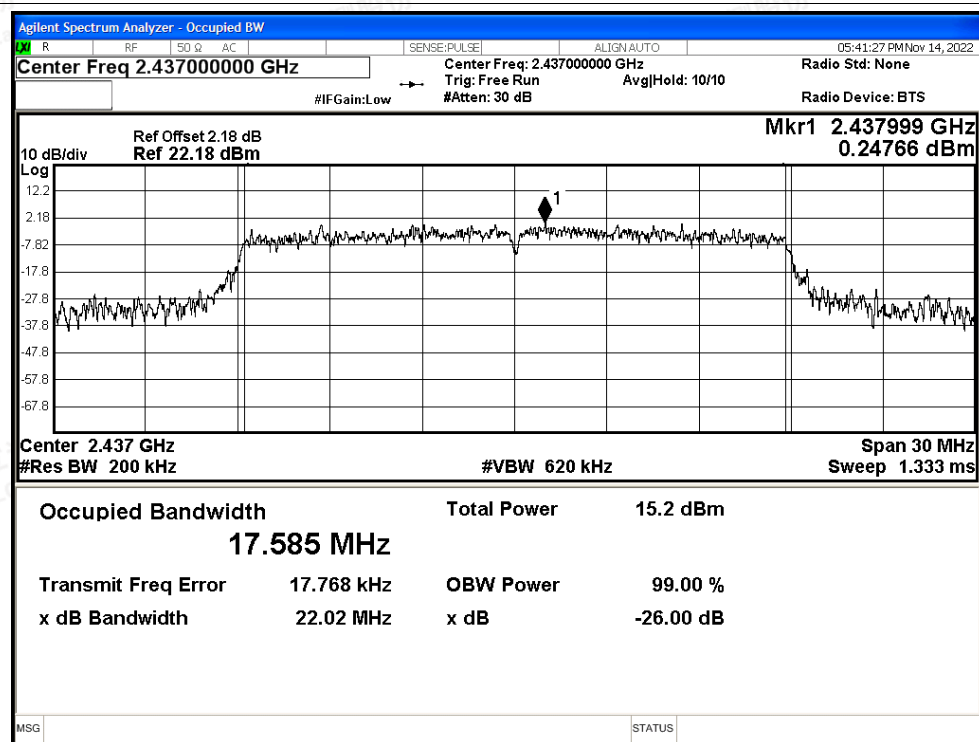
Scan code to check authenticity

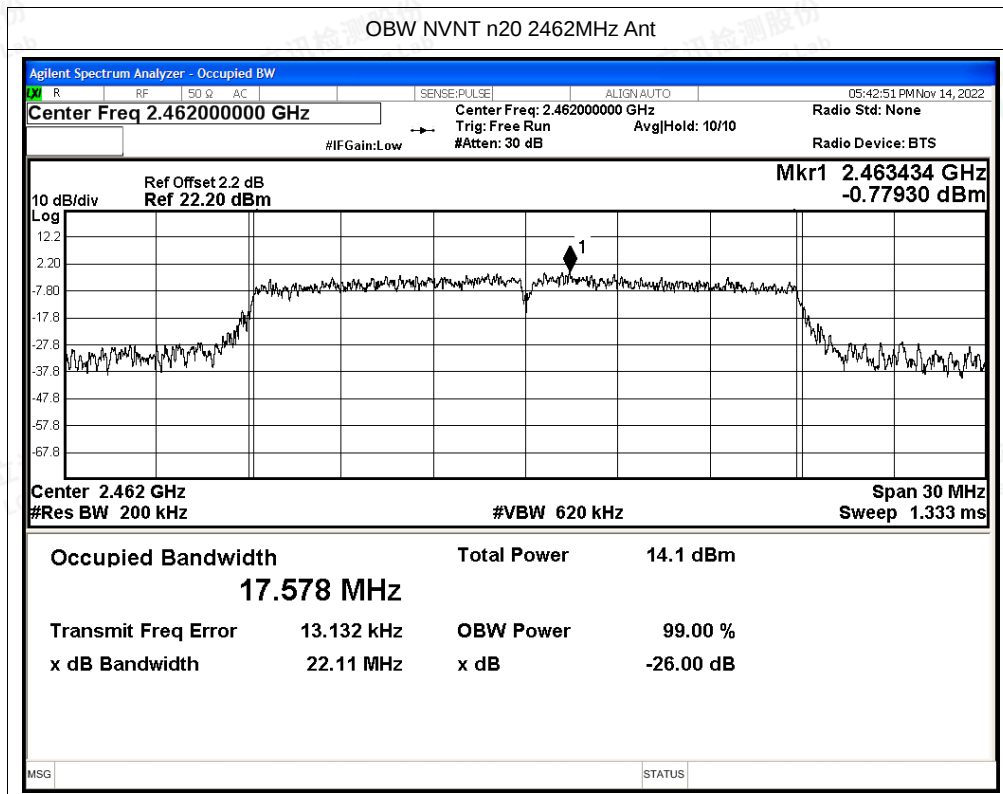


OBW NVNT n20 2412MHz Ant



OBW NVNT n20 2437MHz Ant







C.3 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant	15.17	30	Pass
NVNT	b	2437	Ant	14.59	30	Pass
NVNT	b	2462	Ant	14.09	30	Pass
NVNT	g	2412	Ant	14.91	30	Pass
NVNT	g	2437	Ant	13.7	30	Pass
NVNT	g	2462	Ant	13.87	30	Pass
NVNT	n20	2412	Ant	14.53	30	Pass
NVNT	n20	2437	Ant	14.25	30	Pass
NVNT	n20	2462	Ant	13.22	30	Pass





C.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant	-7.64	8	Pass
NVNT	b	2437	Ant	-9.7	8	Pass
NVNT	b	2462	Ant	-10.7	8	Pass
NVNT	g	2412	Ant	-12.1	8	Pass
NVNT	g	2437	Ant	-13.76	8	Pass
NVNT	g	2462	Ant	-12.84	8	Pass
NVNT	n20	2412	Ant	-13	8	Pass
NVNT	n20	2437	Ant	-13.16	8	Pass
NVNT	n20	2462	Ant	-15.41	8	Pass

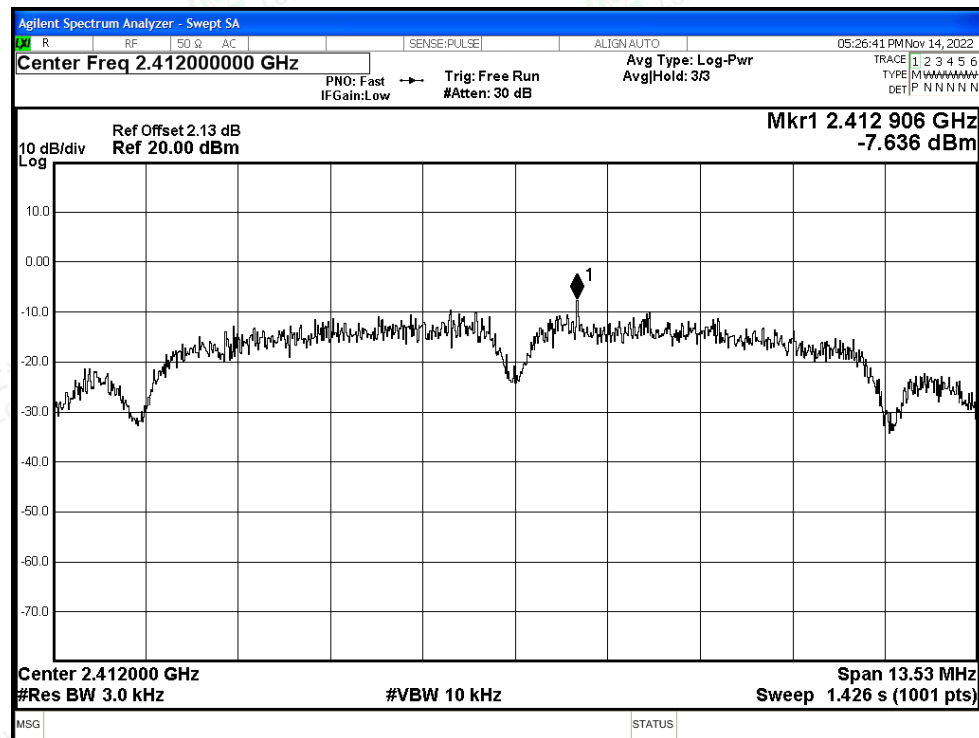


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

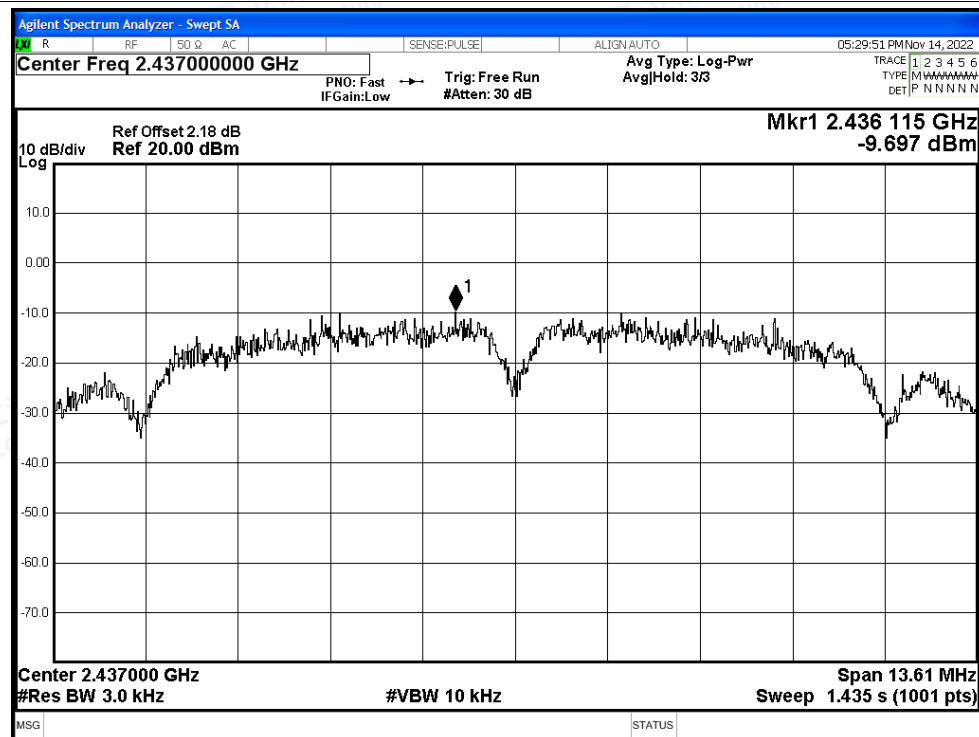


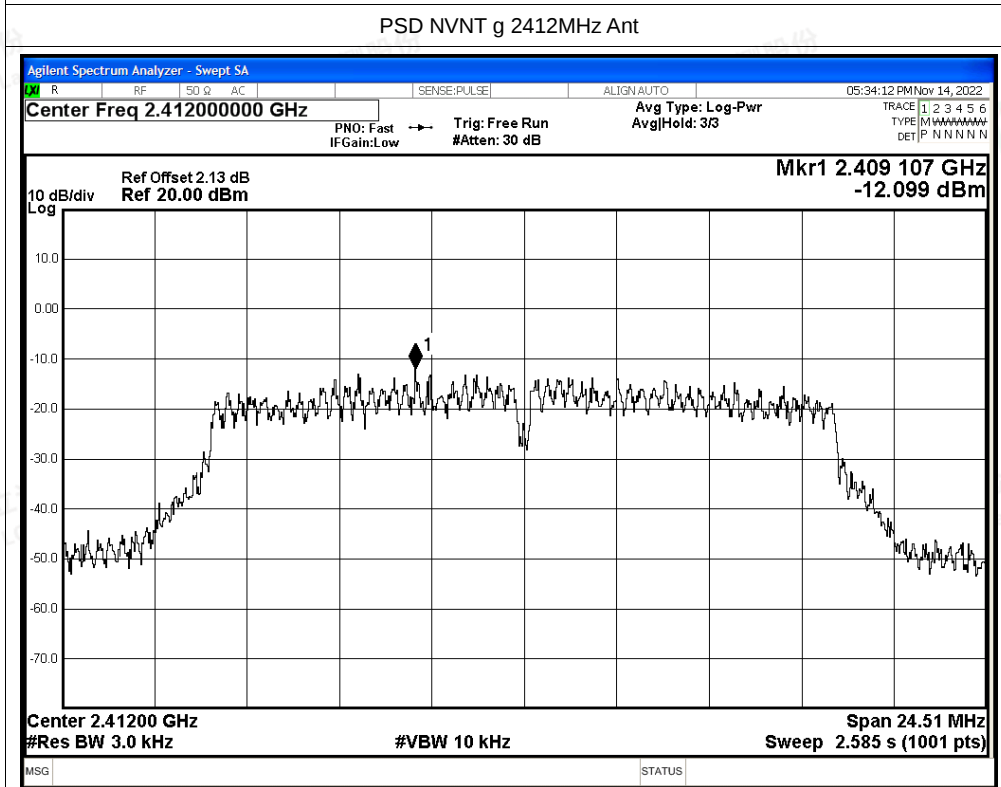
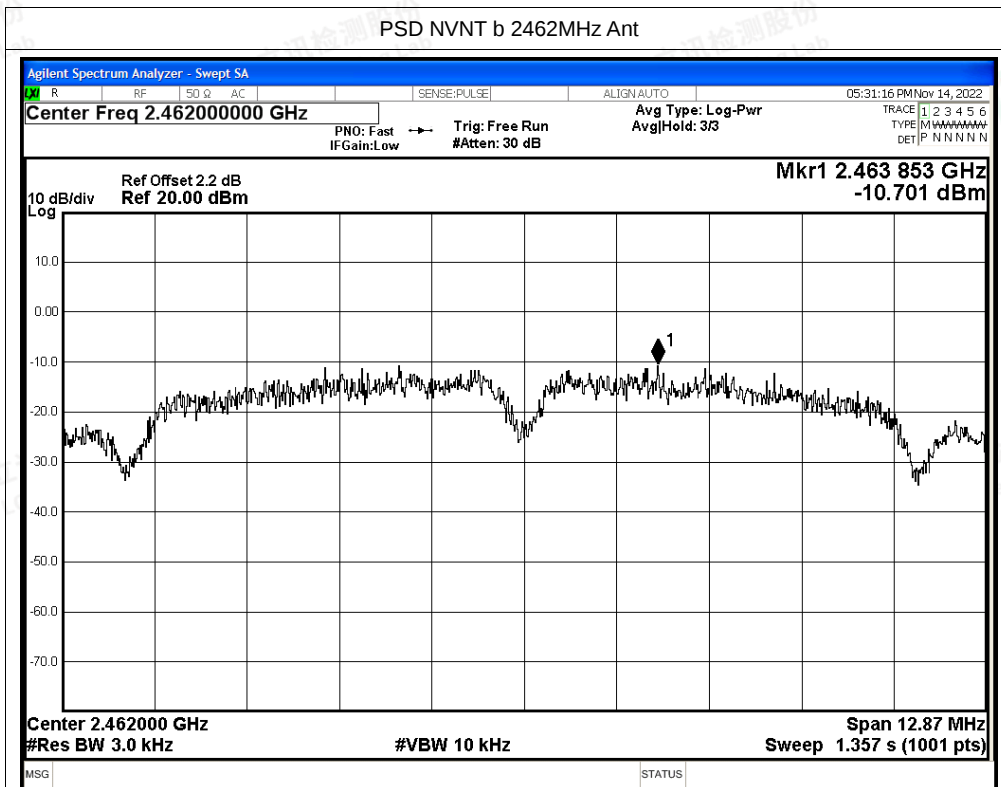
Test Graphs

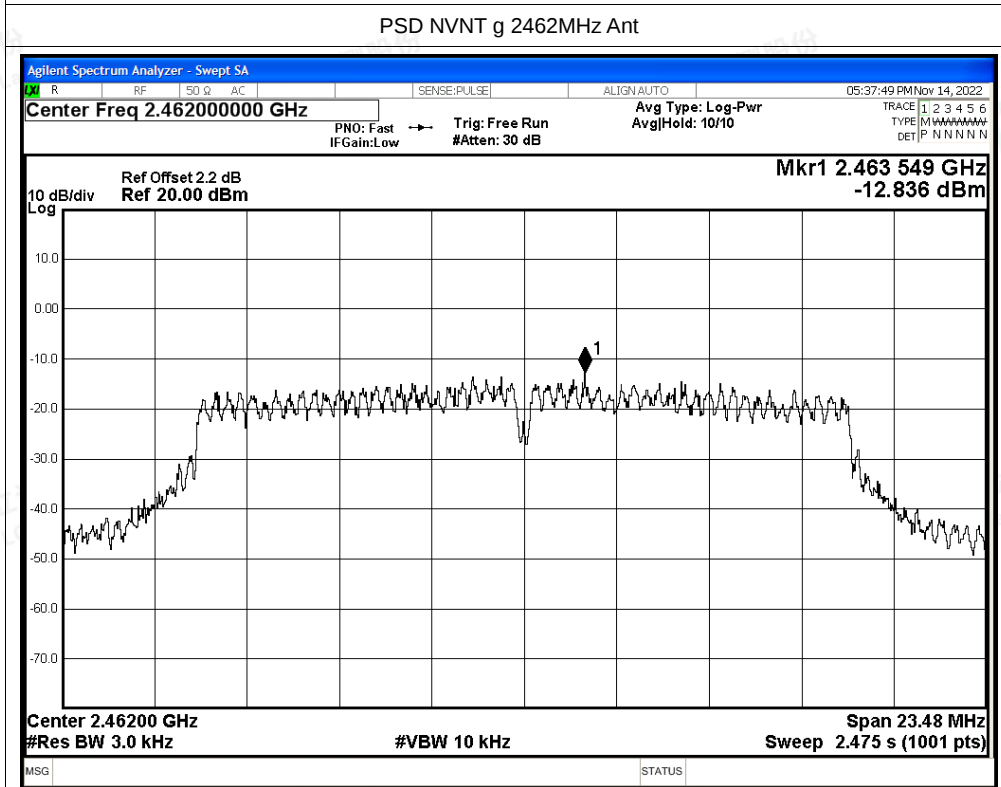
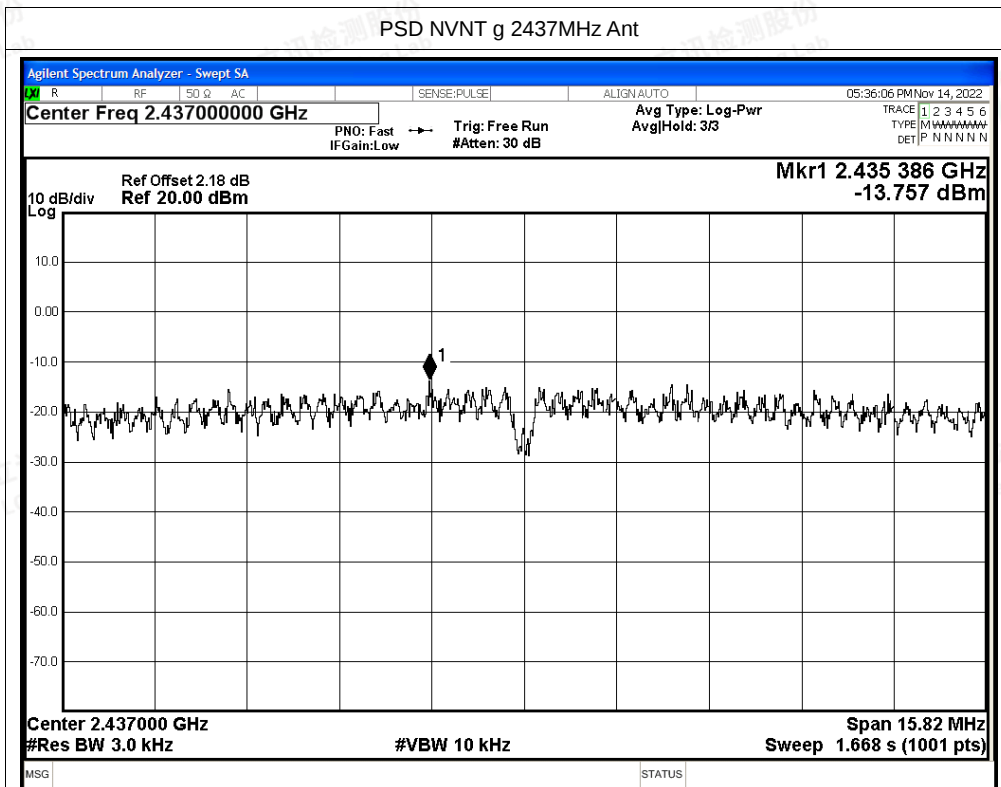
PSD NVNT b 2412MHz Ant

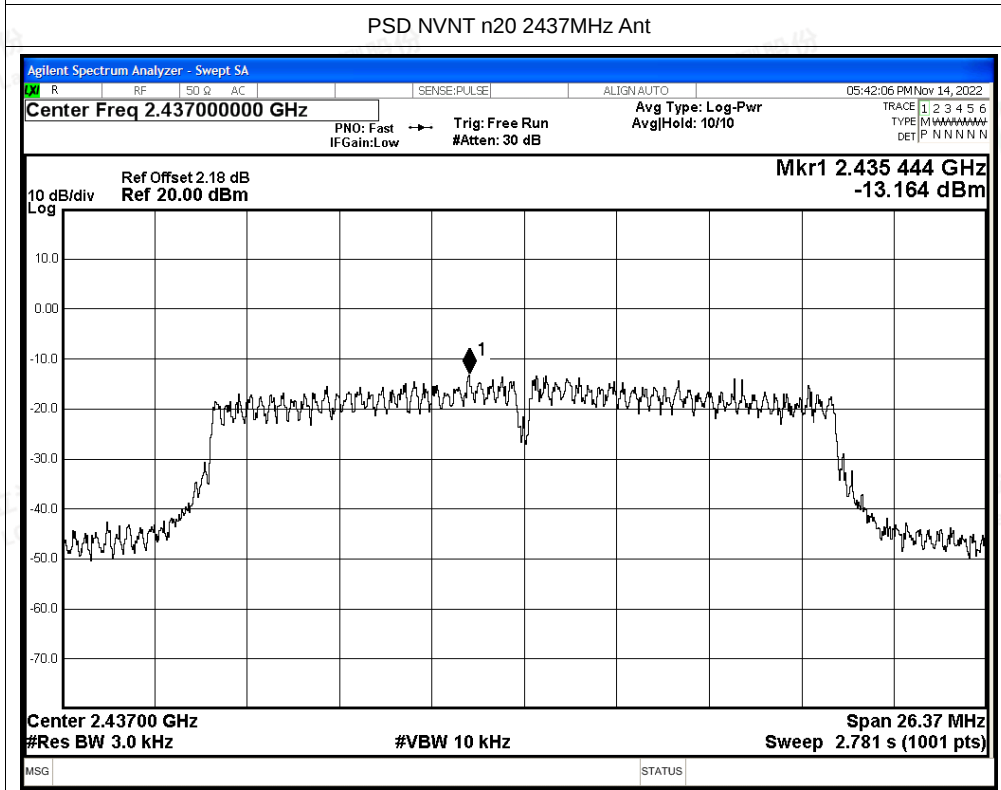
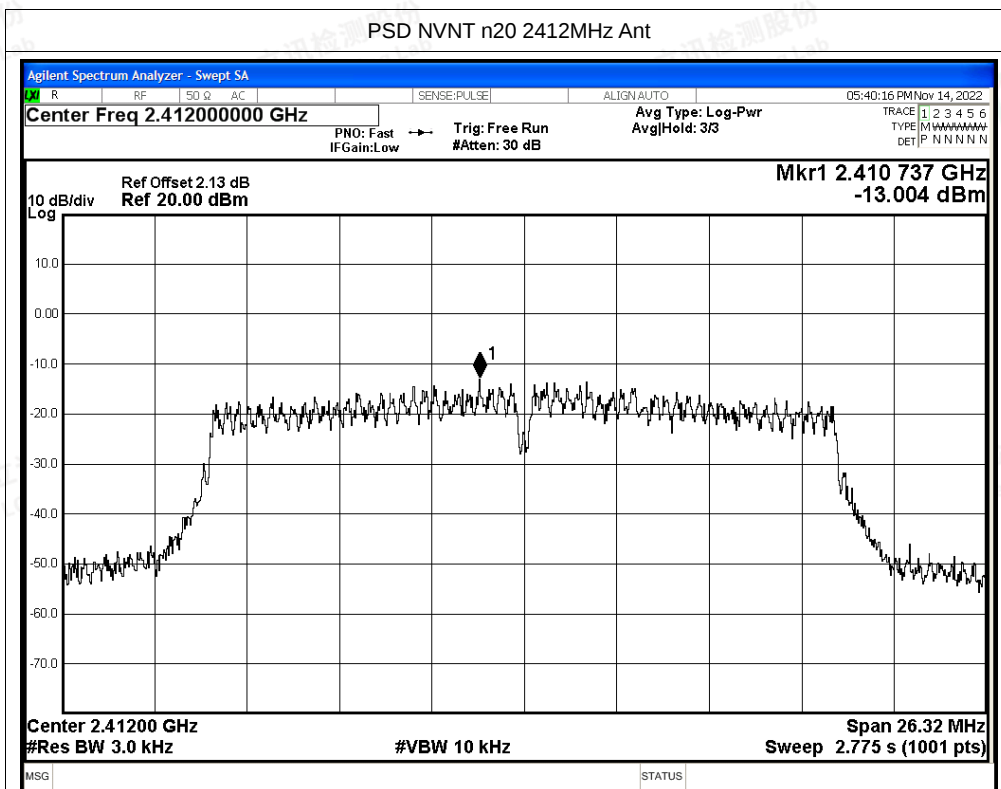


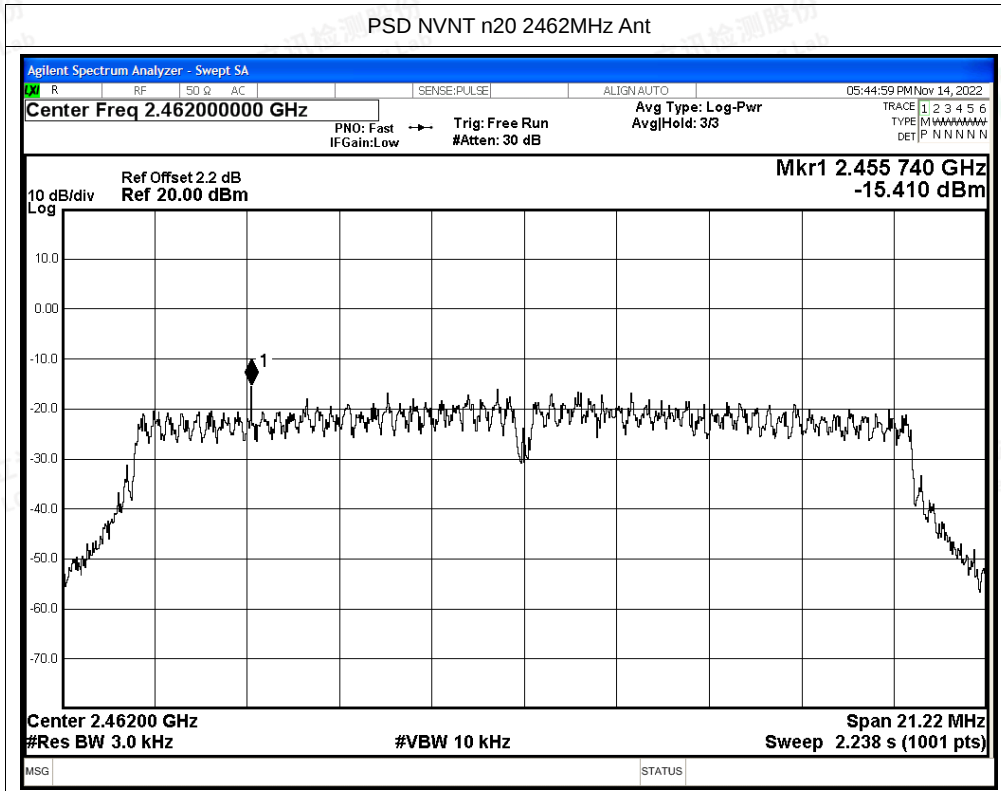
PSD NVNT b 2437MHz Ant













C.5 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant	-43.3	-20	Pass
NVNT	b	2462	Ant	-57.28	-20	Pass
NVNT	g	2412	Ant	-33.12	-20	Pass
NVNT	g	2462	Ant	-44.15	-20	Pass
NVNT	n20	2412	Ant	-35.26	-20	Pass
NVNT	n20	2462	Ant	-41.8	-20	Pass

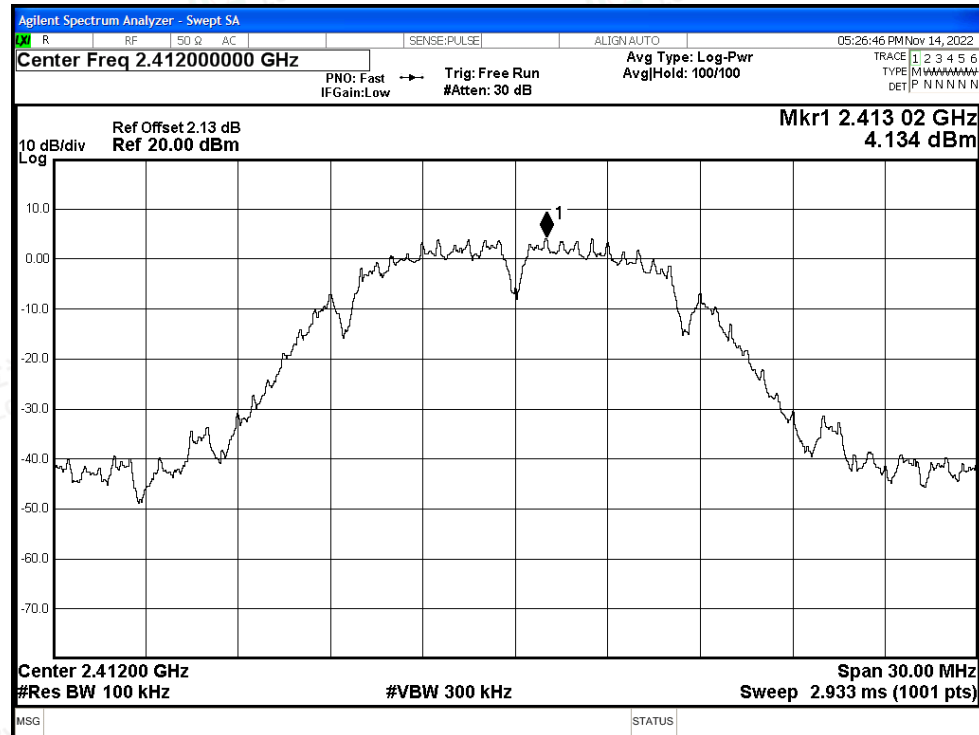


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

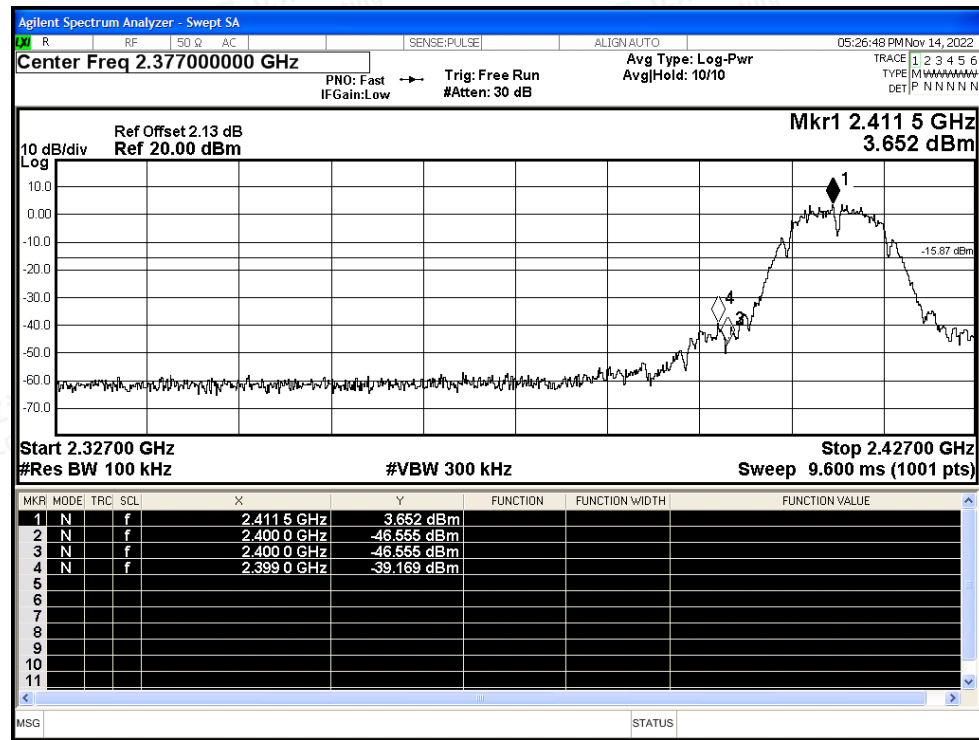


Test Graphs

Band Edge NVNT b 2412MHz Ant Ref

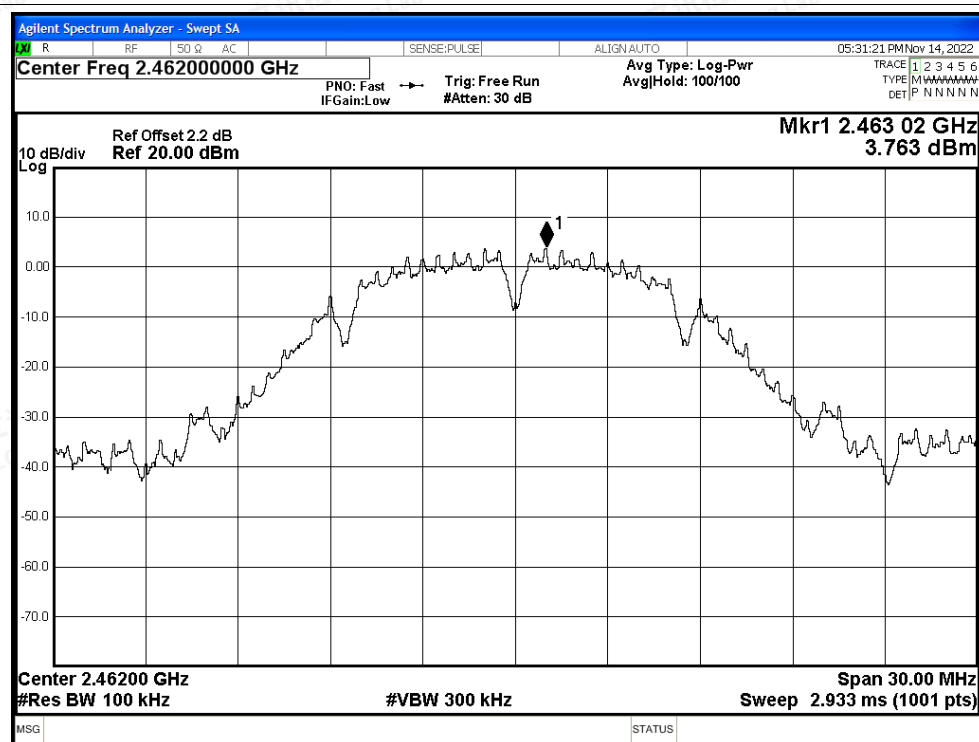


Band Edge NVNT b 2412MHz Ant Emission

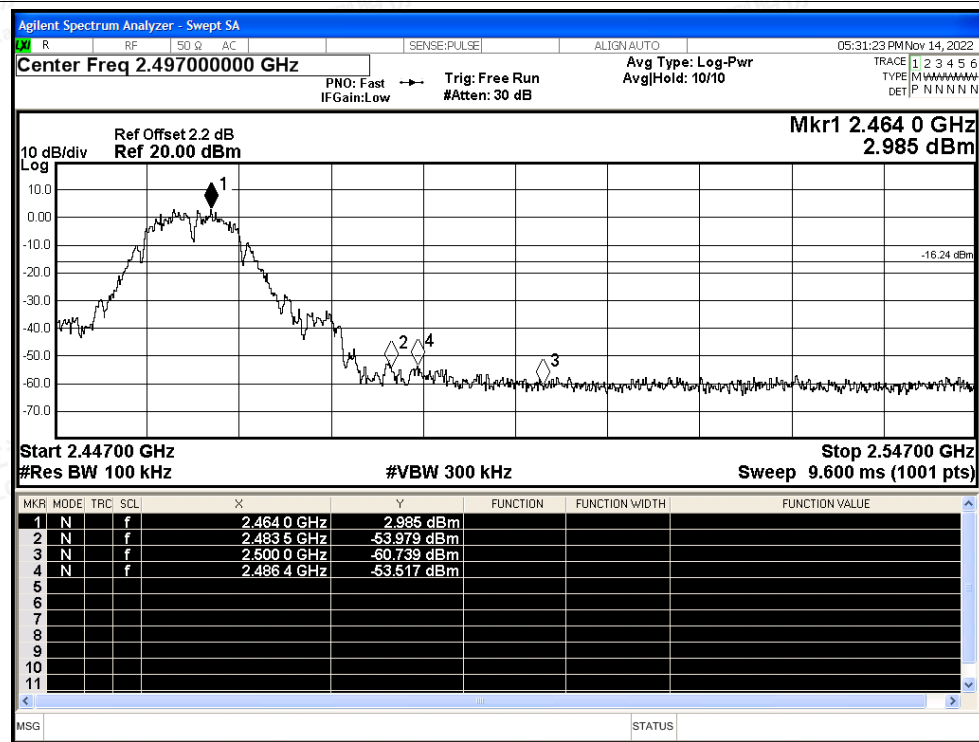




Band Edge NVNT b 2462MHz Ant Ref

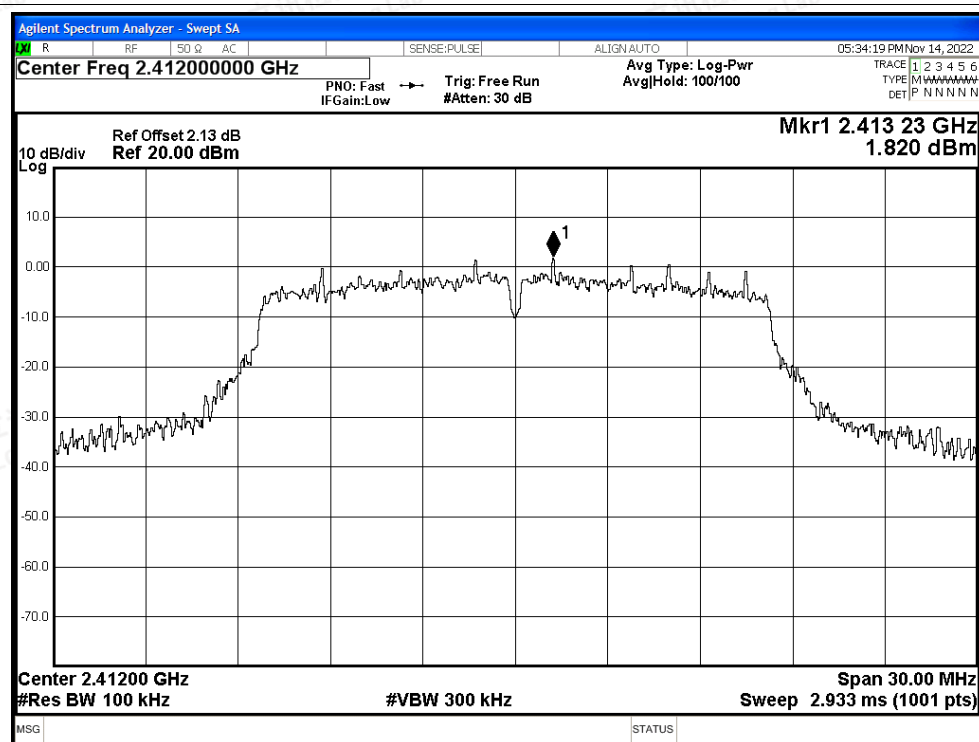


Band Edge NVNT b 2462MHz Ant Emission

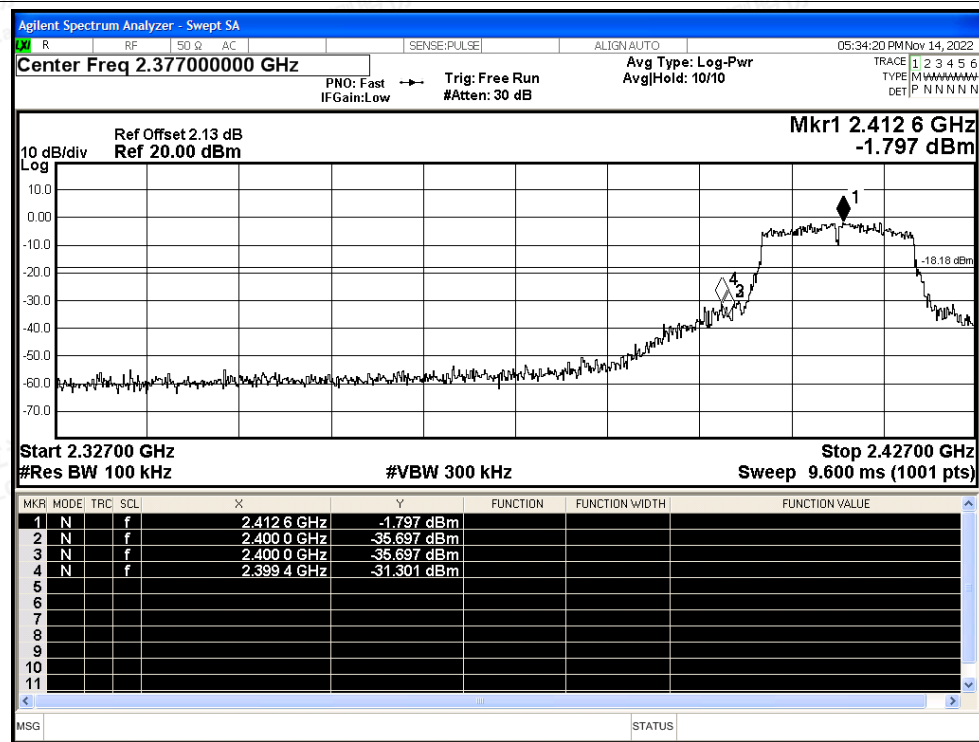




Band Edge NVNT g 2412MHz Ant Ref

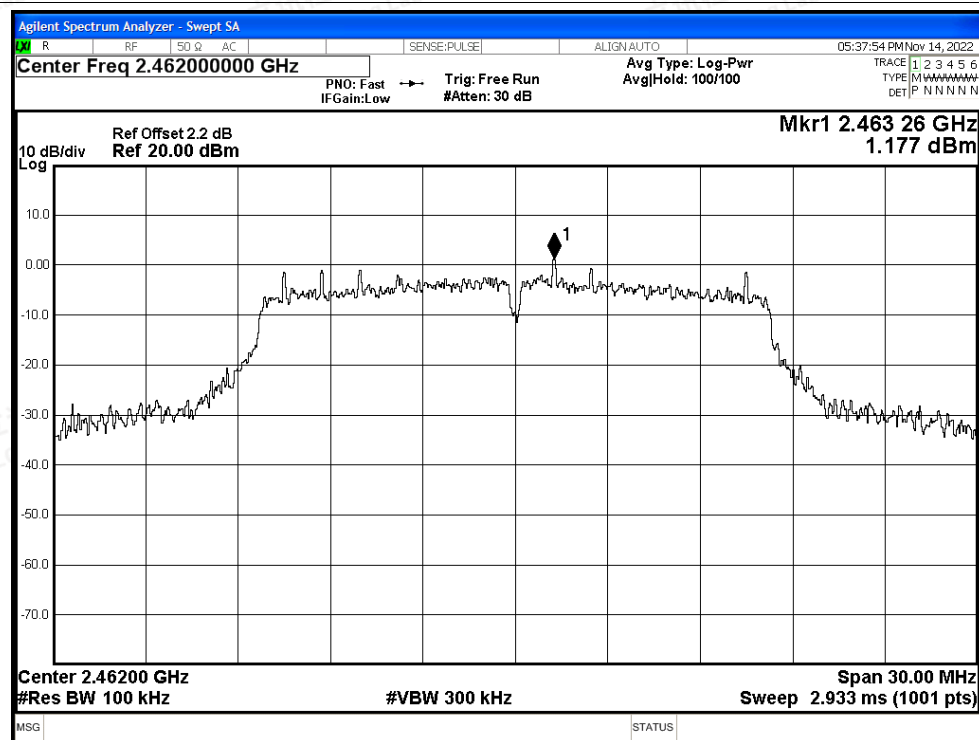


Band Edge NVNT g 2412MHz Ant Emission

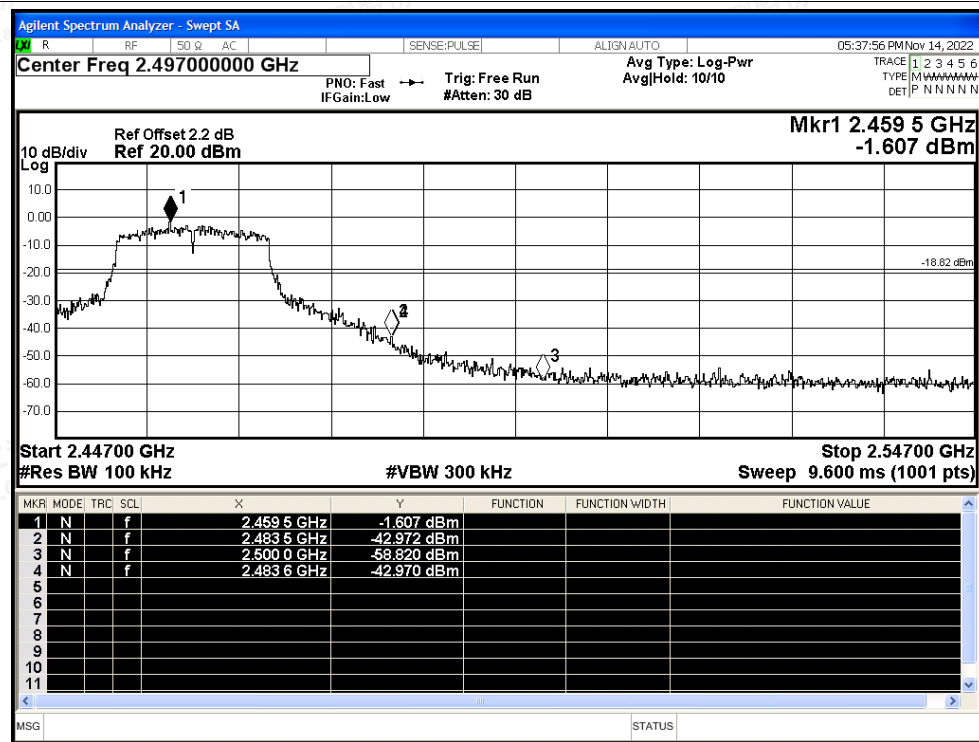




Band Edge NVNT g 2462MHz Ant Ref

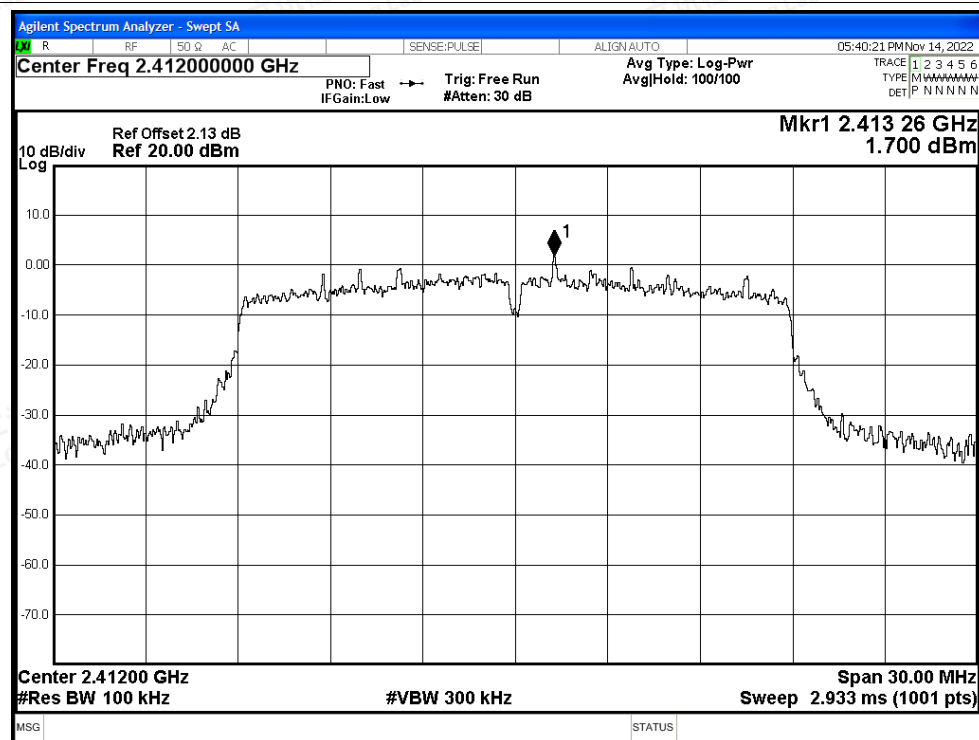


Band Edge NVNT g 2462MHz Ant Emission

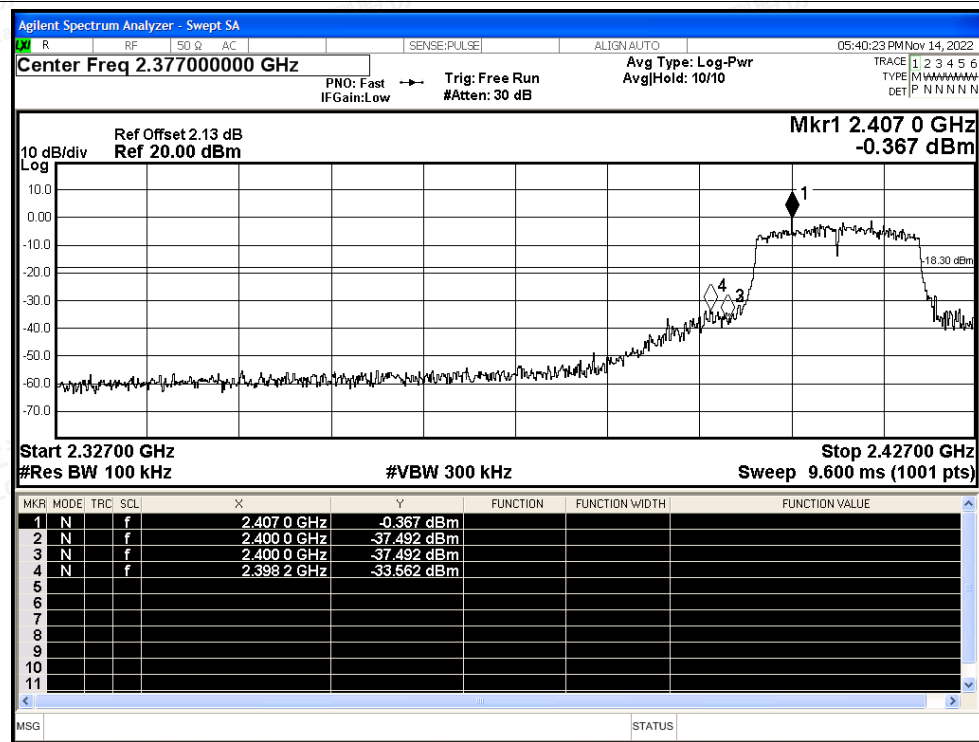




Band Edge NVNT n20 2412MHz Ant Ref

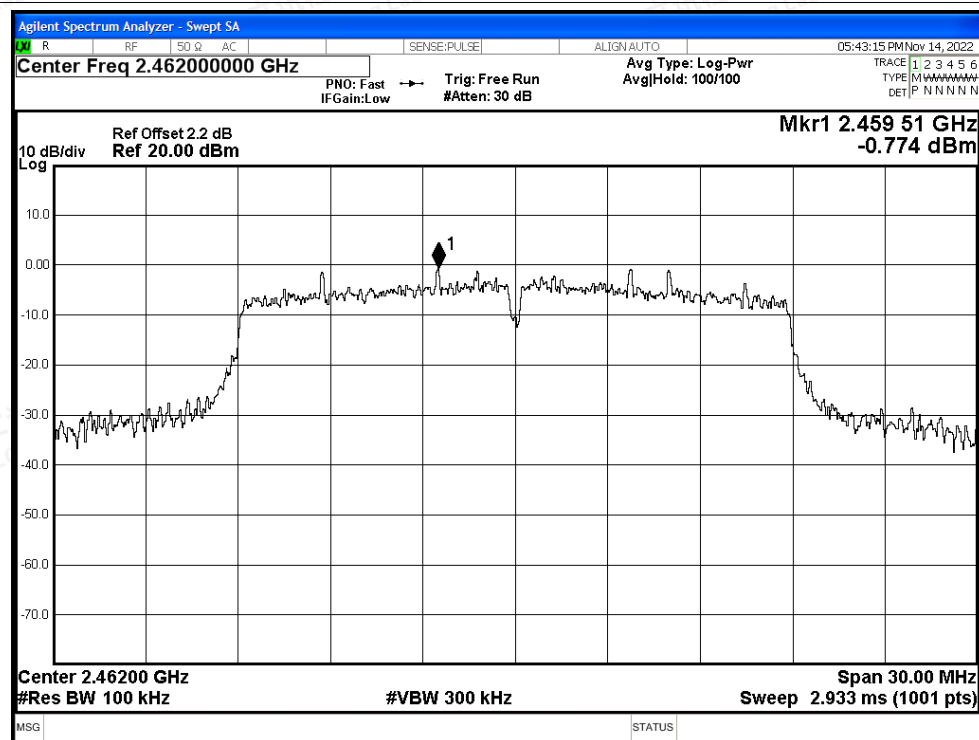


Band Edge NVNT n20 2412MHz Ant Emission

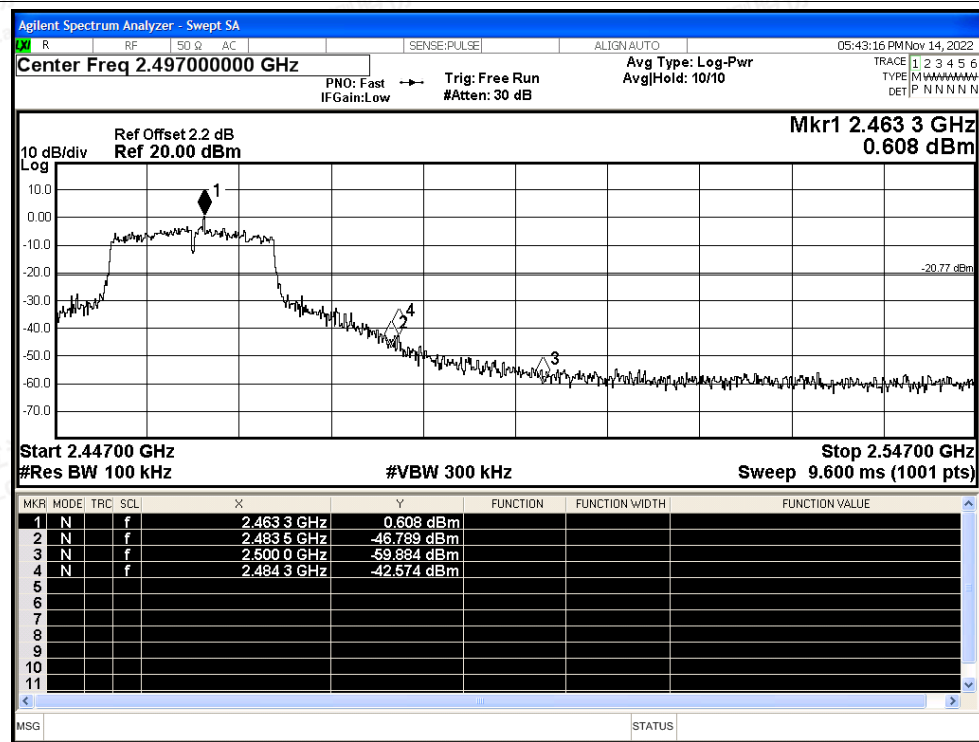




Band Edge NVNT n20 2462MHz Ant Ref



Band Edge NVNT n20 2462MHz Ant Emission





C.6 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant	-50.76	-20	Pass
NVNT	b	2437	Ant	-48.83	-20	Pass
NVNT	b	2462	Ant	-48.93	-20	Pass
NVNT	g	2412	Ant	-46.92	-20	Pass
NVNT	g	2437	Ant	-46.41	-20	Pass
NVNT	g	2462	Ant	-45.07	-20	Pass
NVNT	n20	2412	Ant	-47.83	-20	Pass
NVNT	n20	2437	Ant	-46.76	-20	Pass
NVNT	n20	2462	Ant	-46.21	-20	Pass

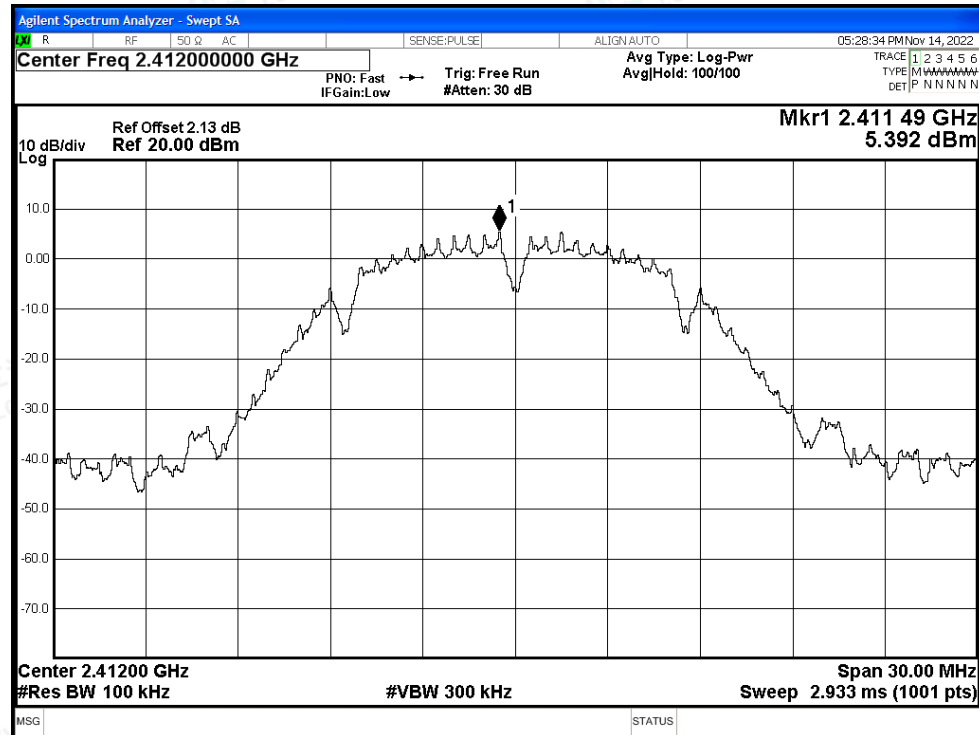


Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

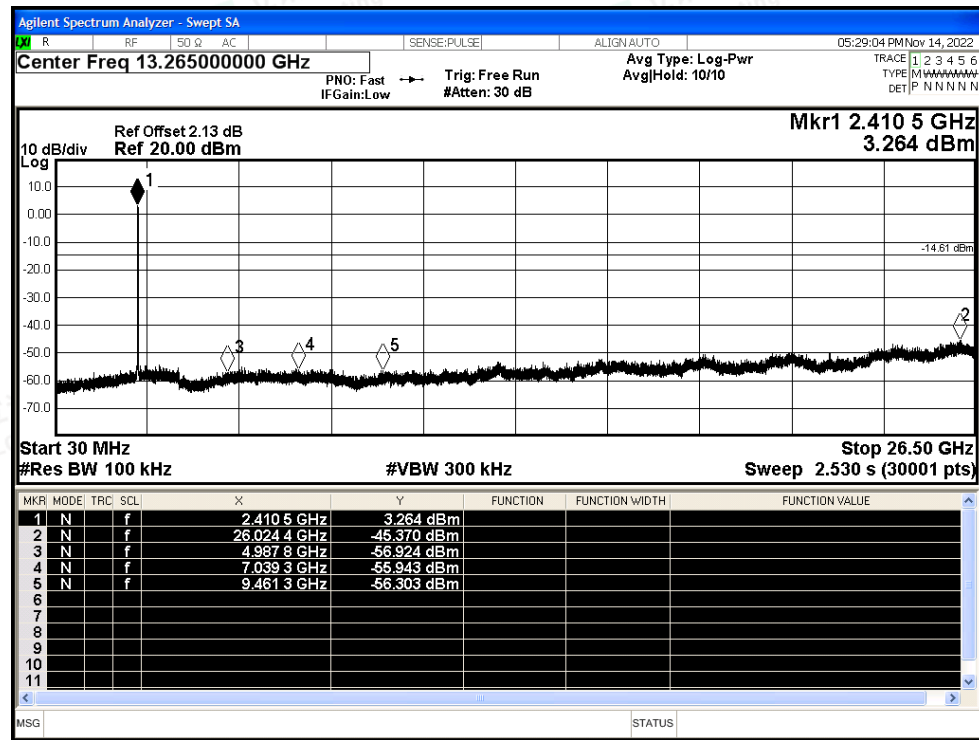


Test Graphs

Tx. Spurious NVNT b 2412MHz Ant Ref

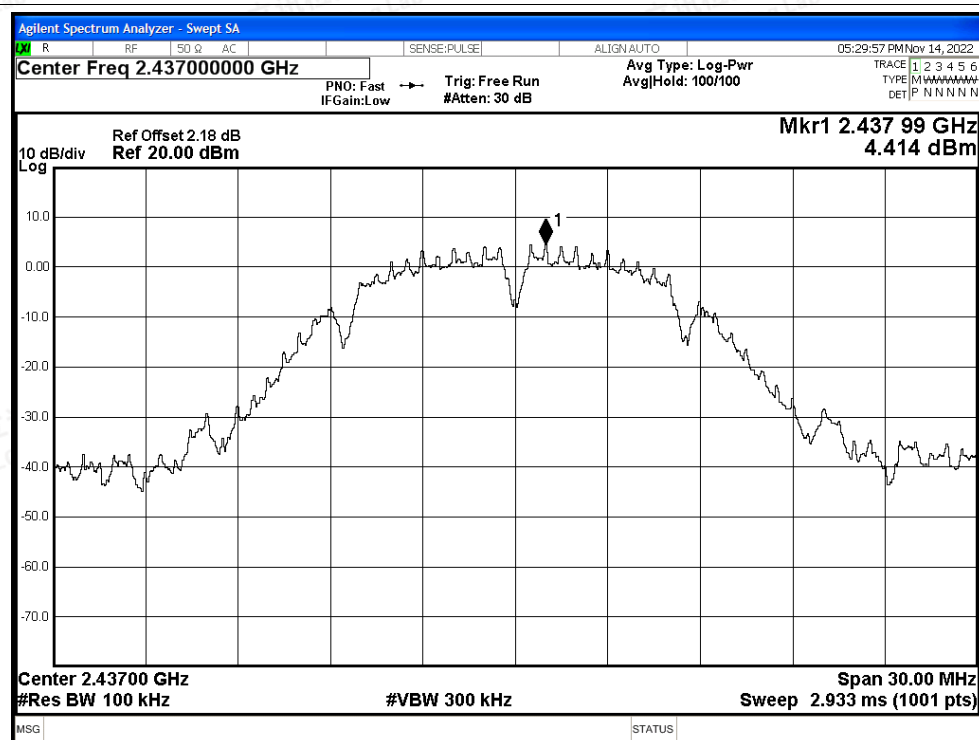


Tx. Spurious NVNT b 2412MHz Ant Emission

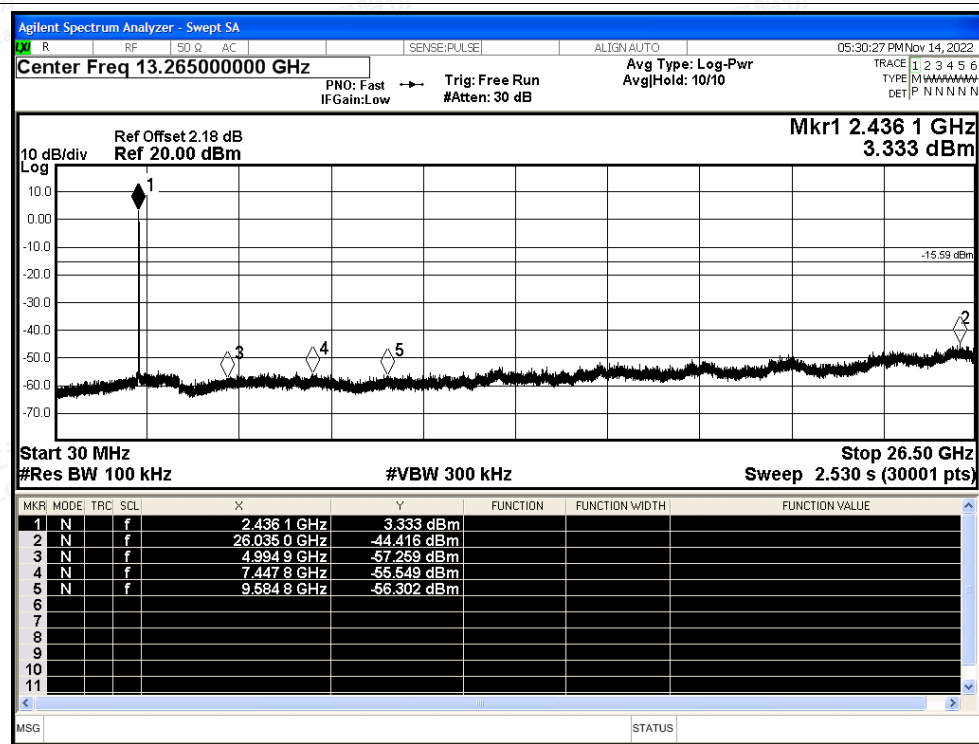




Tx. Spurious NVNT b 2437MHz Ant Ref

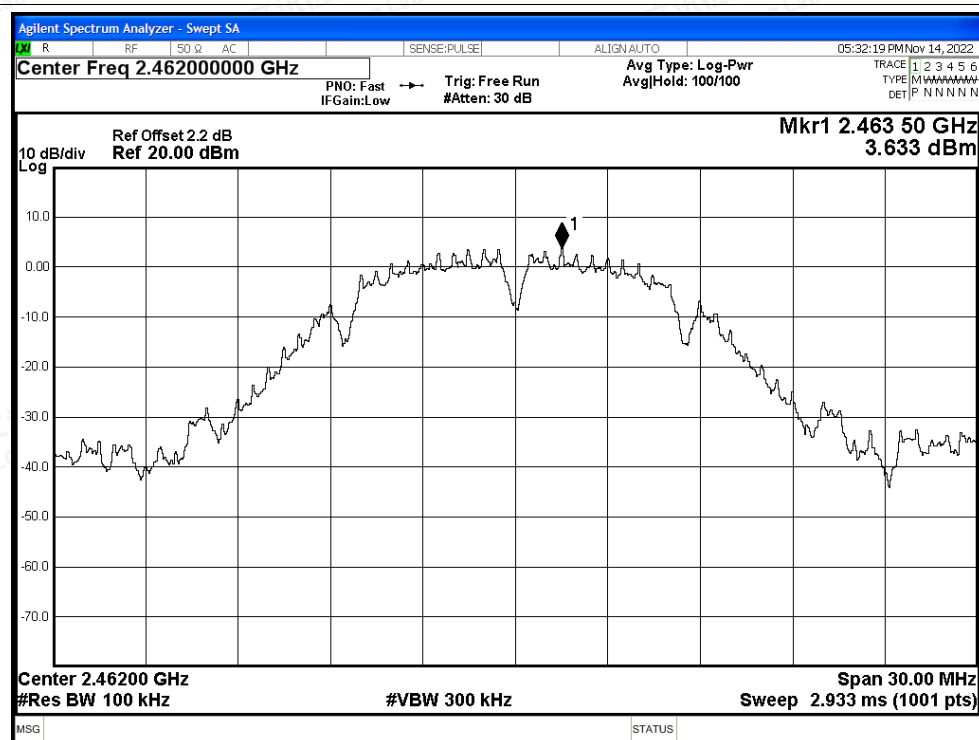


Tx. Spurious NVNT b 2437MHz Ant Emission

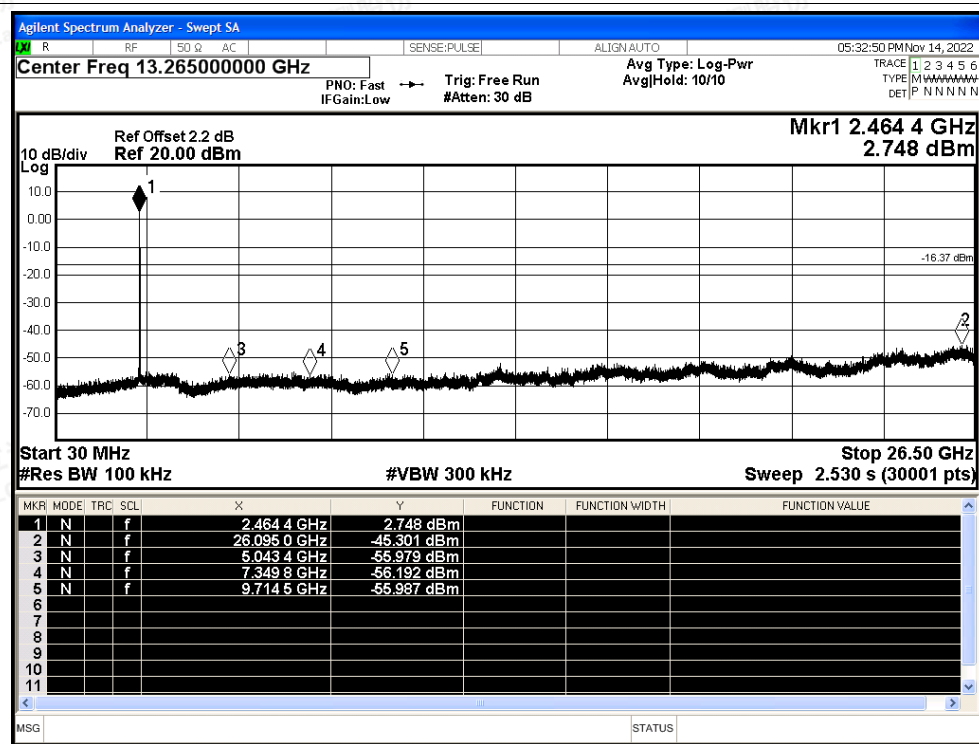




Tx. Spurious NVNT b 2462MHz Ant Ref

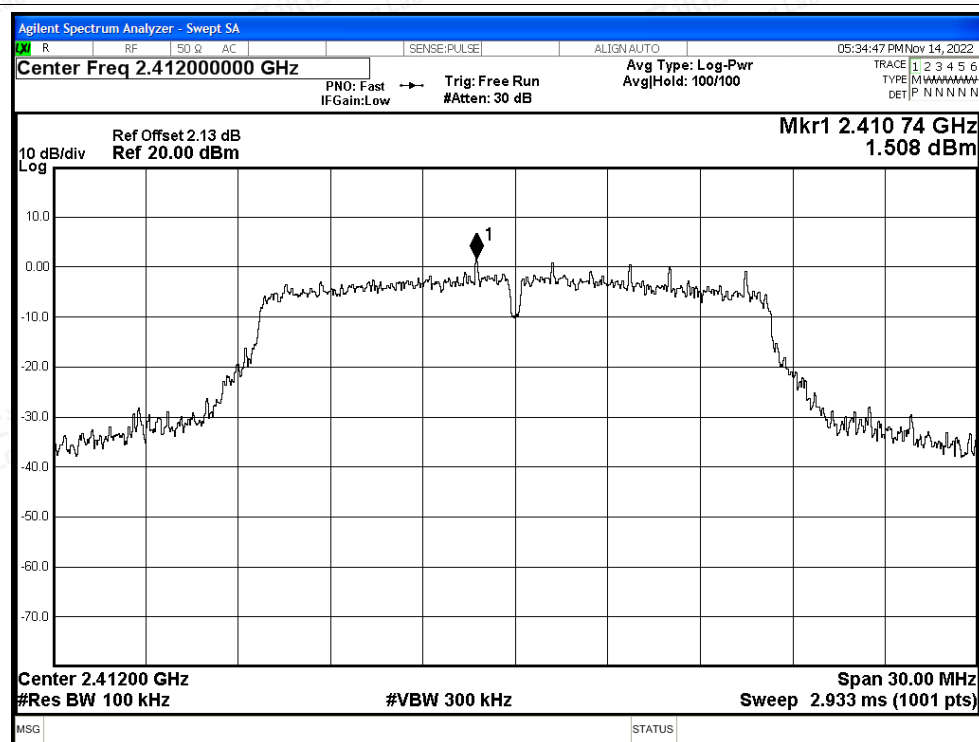


Tx. Spurious NVNT b 2462MHz Ant Emission

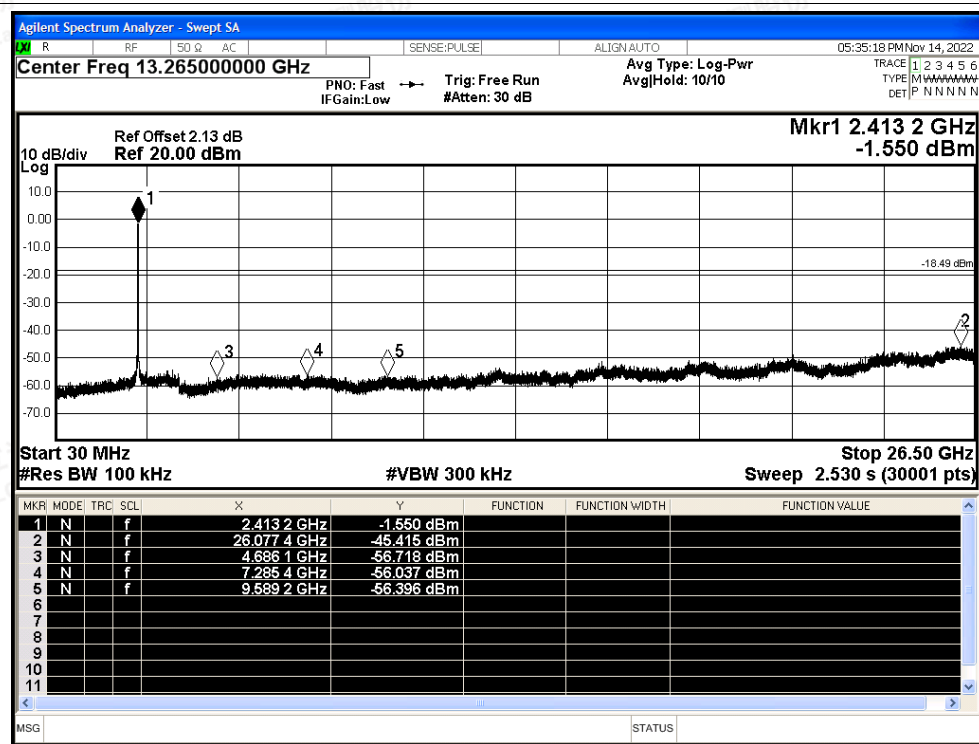




Tx. Spurious NVNT g 2412MHz Ant Ref

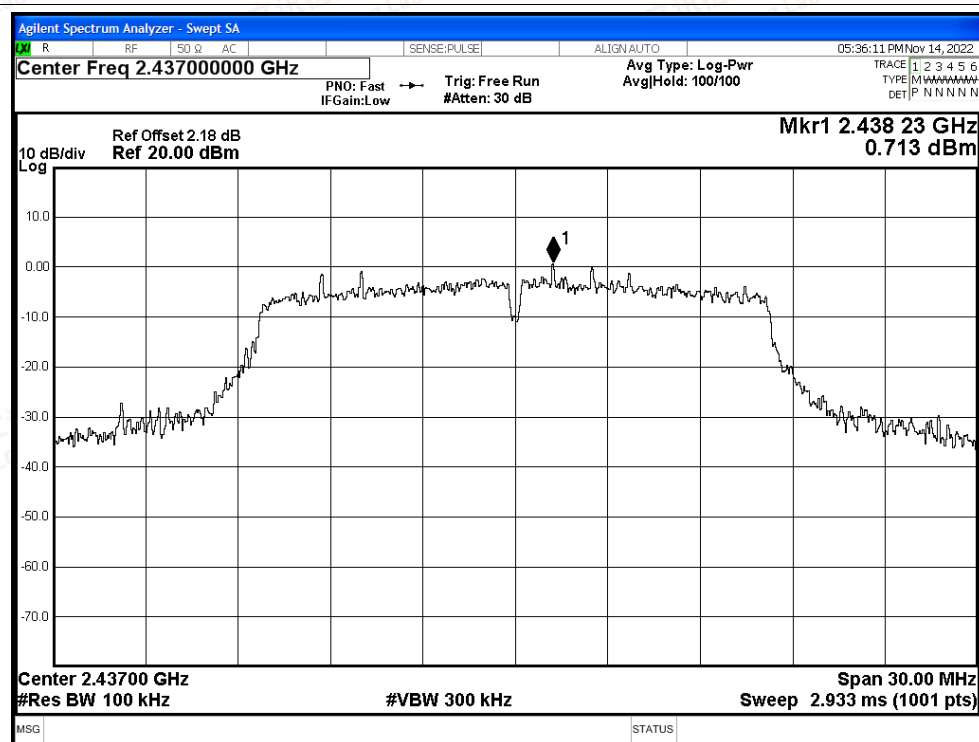


Tx. Spurious NVNT g 2412MHz Ant Emission

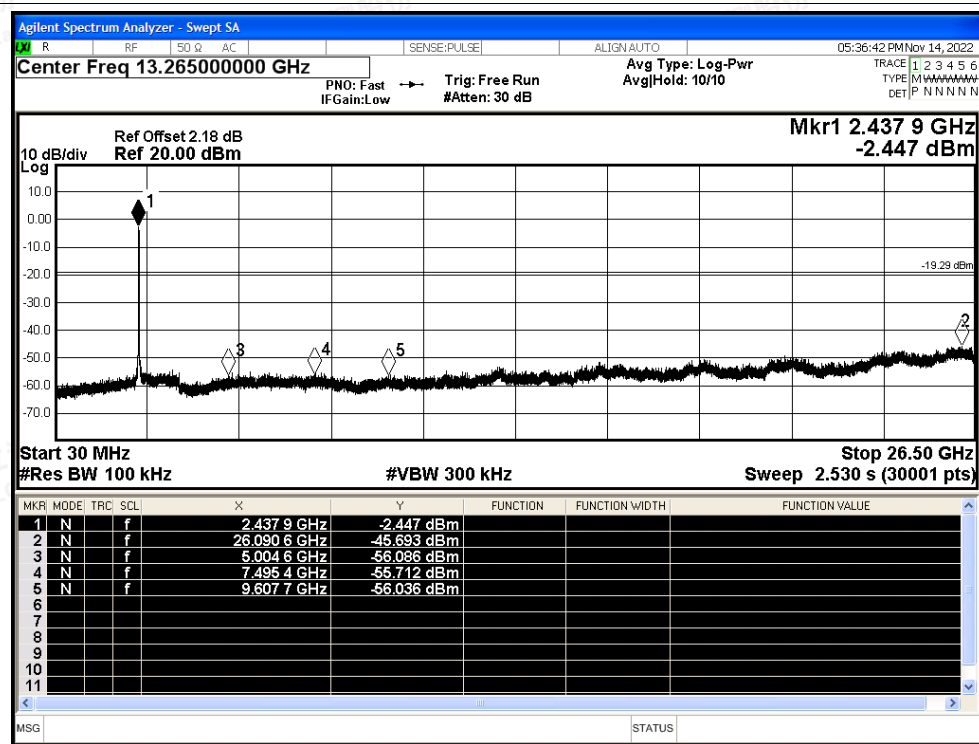




Tx. Spurious NVNT g 2437MHz Ant Ref

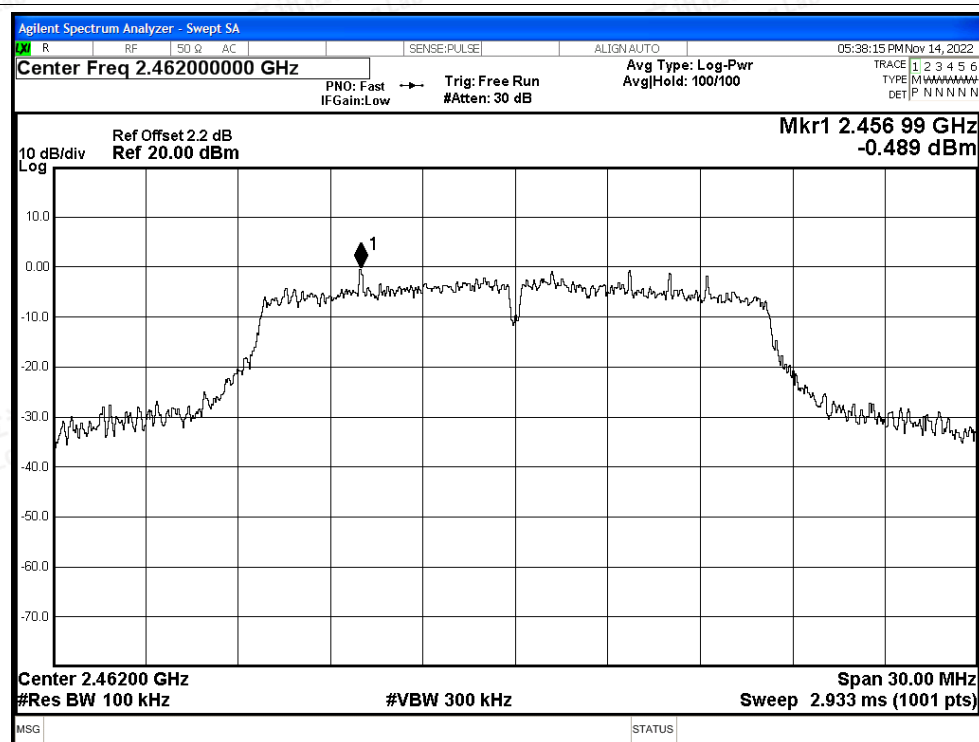


Tx. Spurious NVNT g 2437MHz Ant Emission

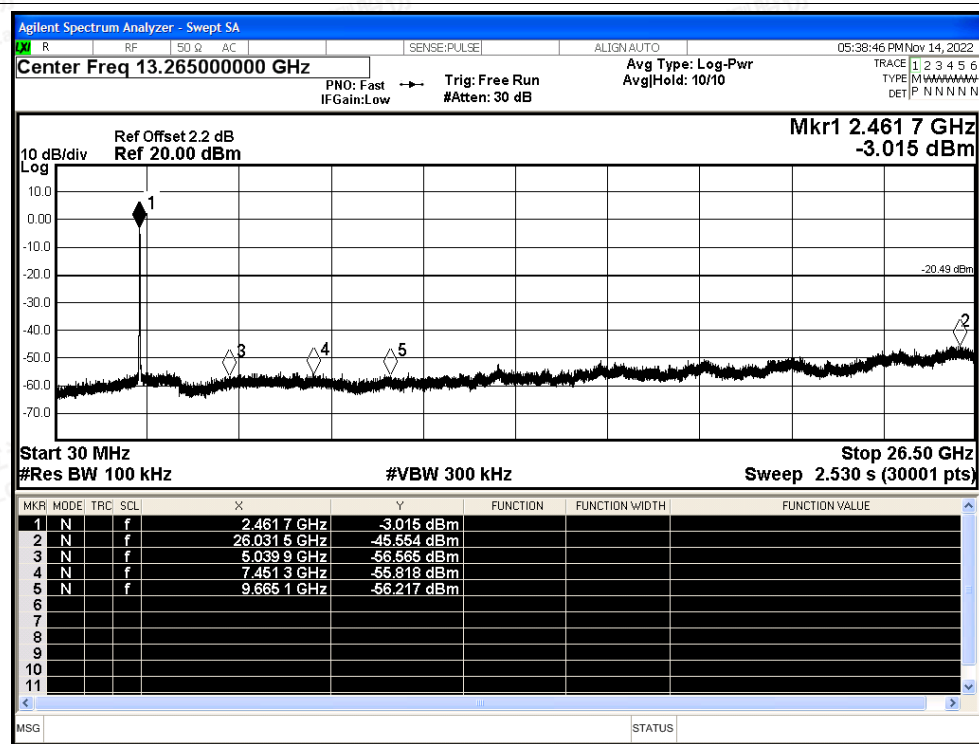




Tx. Spurious NVNT g 2462MHz Ant Ref

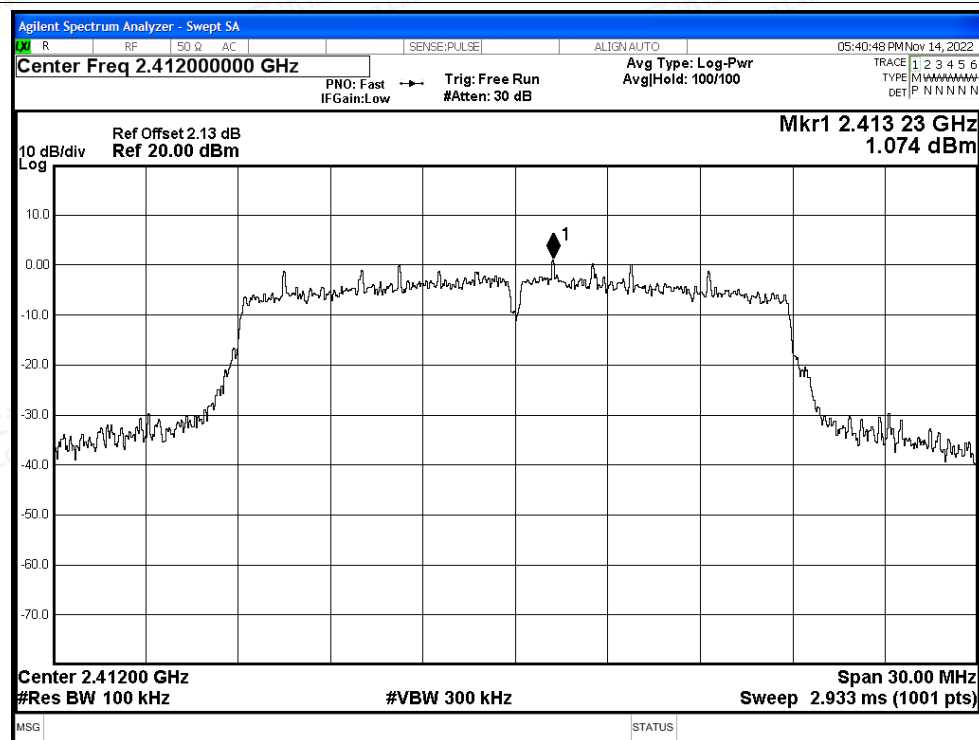


Tx. Spurious NVNT g 2462MHz Ant Emission

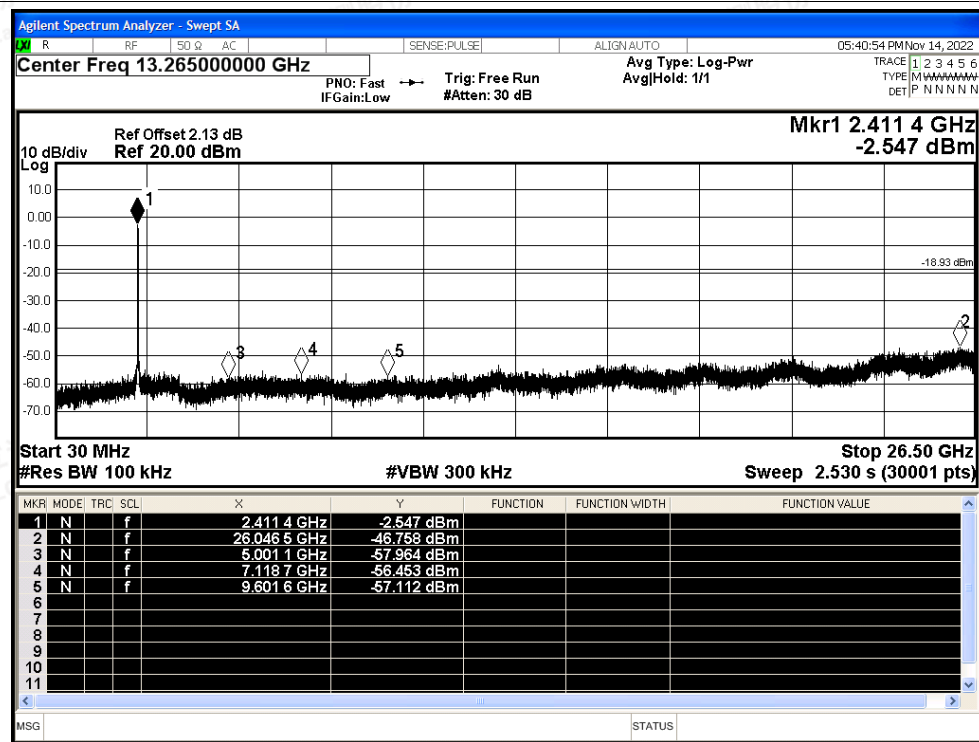




Tx. Spurious NVNT n20 2412MHz Ant Ref

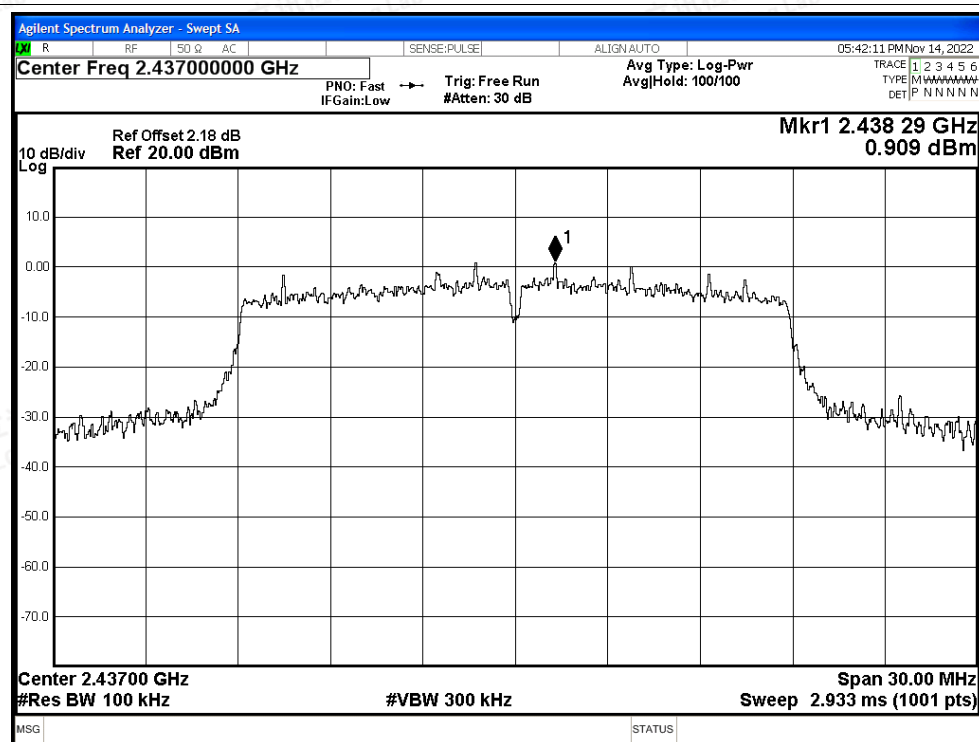


Tx. Spurious NVNT n20 2412MHz Ant Emission

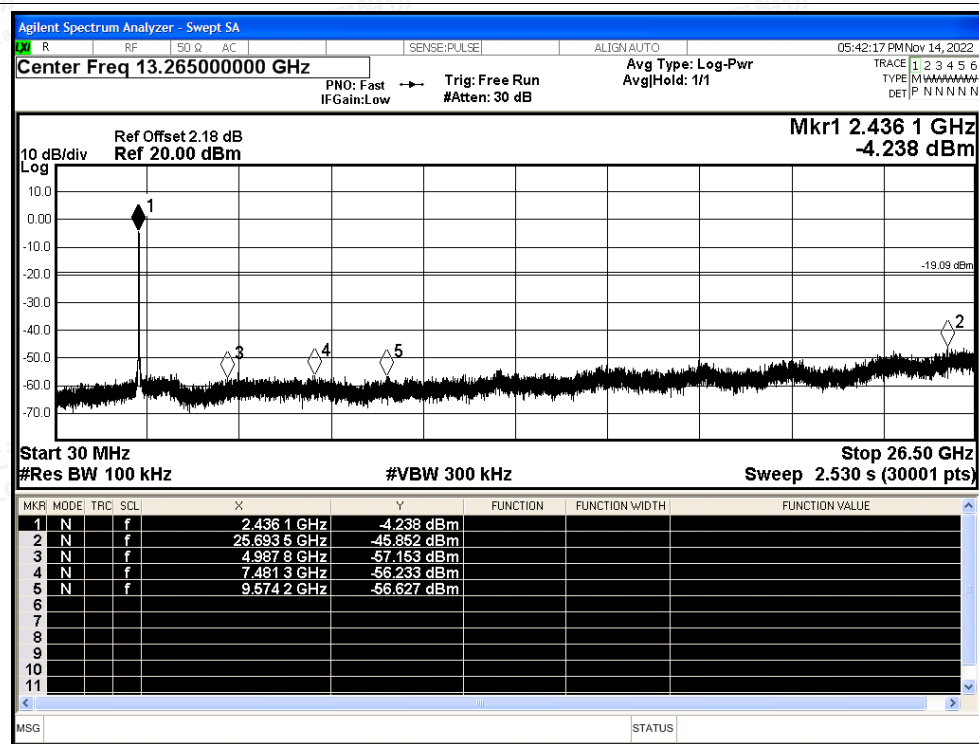




Tx. Spurious NVNT n20 2437MHz Ant Ref

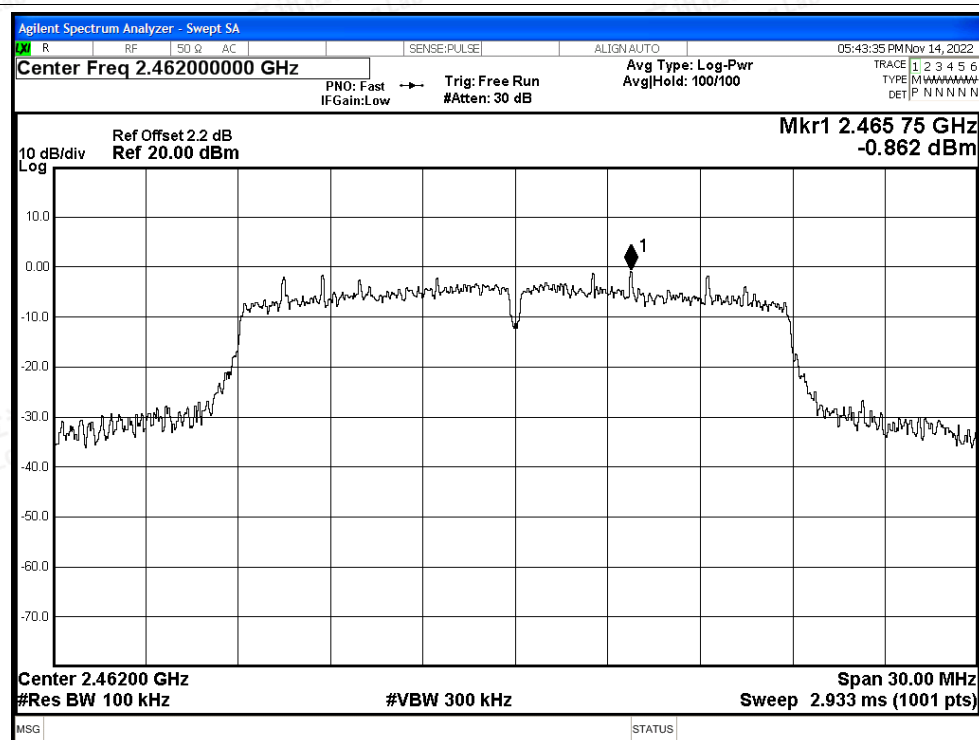


Tx. Spurious NVNT n20 2437MHz Ant Emission

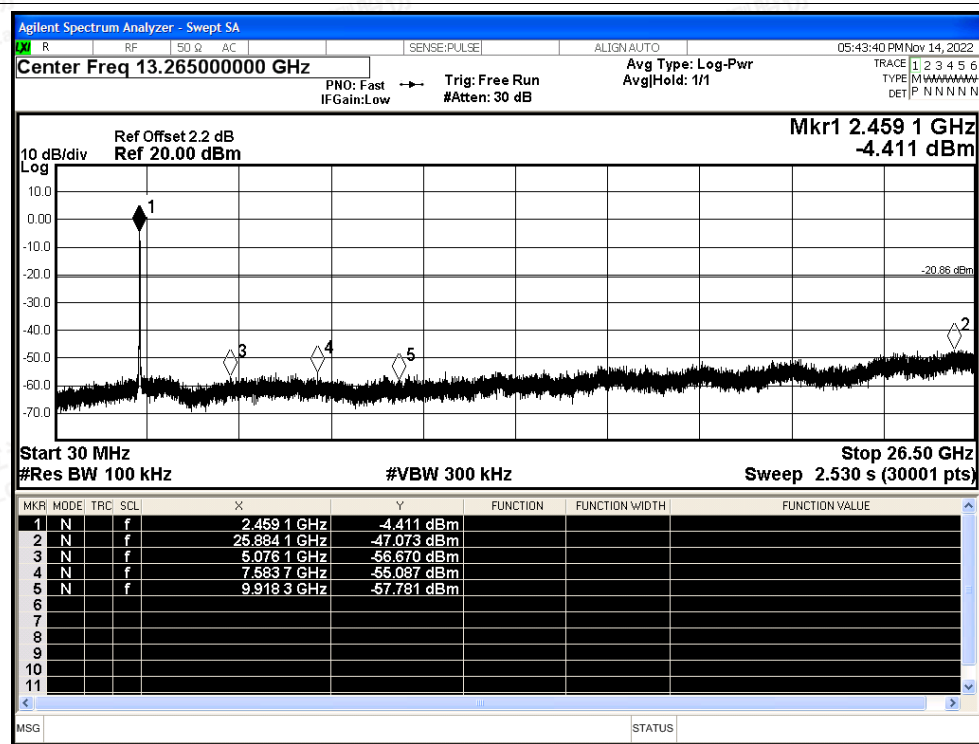




Tx. Spurious NVNT n20 2462MHz Ant Ref



Tx. Spurious NVNT n20 2462MHz Ant Emission





C.7 Duty Cycle

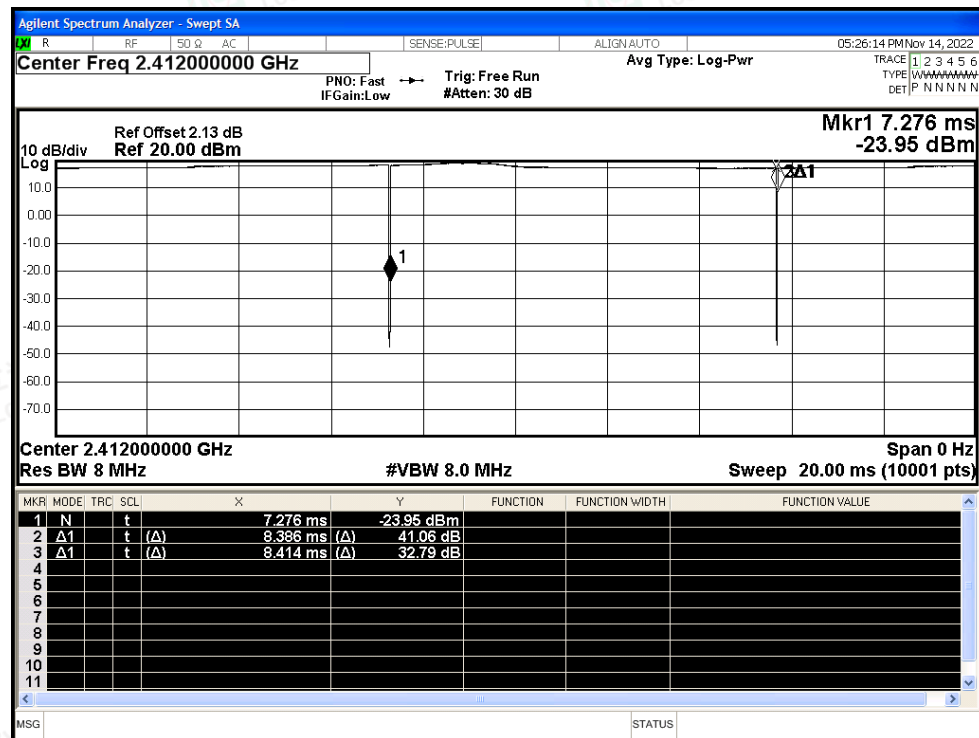
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant	99.67	0	0.01
NVNT	b	2437	Ant	99.67	0	0.01
NVNT	b	2462	Ant	99.67	0	0.01
NVNT	g	2412	Ant	97.76	0.1	0.72
NVNT	g	2437	Ant	97.62	0.1	0.72
NVNT	g	2462	Ant	97.76	0.1	0.72
NVNT	n20	2412	Ant	97.6	0.11	0.77
NVNT	n20	2437	Ant	97.6	0.11	0.77
NVNT	n20	2462	Ant	97.46	0.11	0.77



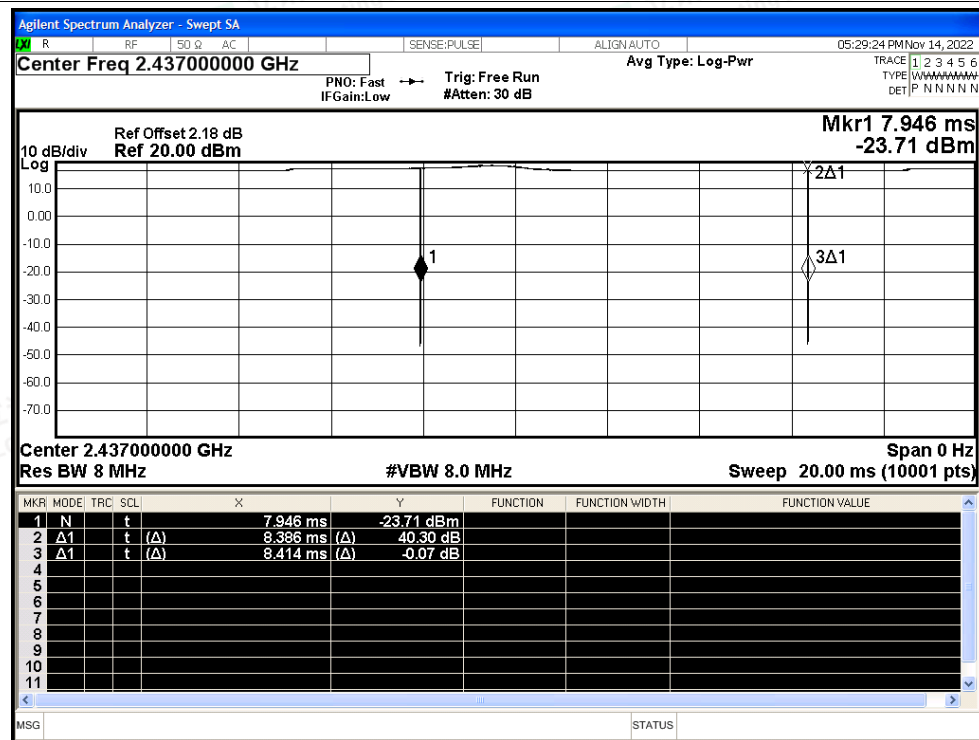


Test Graphs

Duty Cycle NVNT b 2412MHz Ant

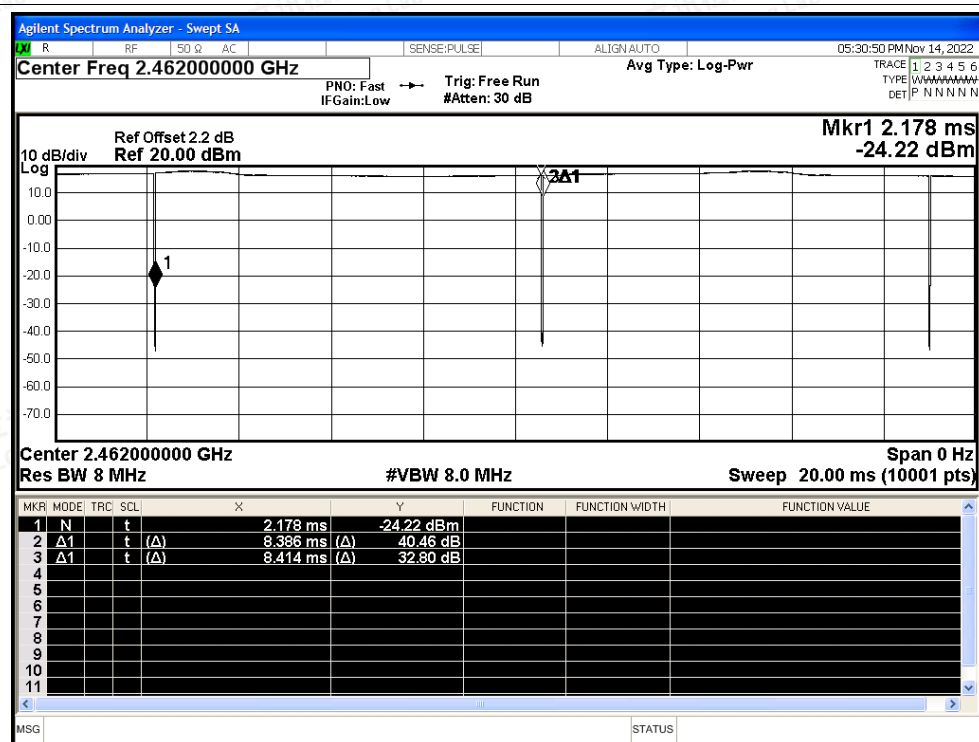


Duty Cycle NVNT b 2437MHz Ant

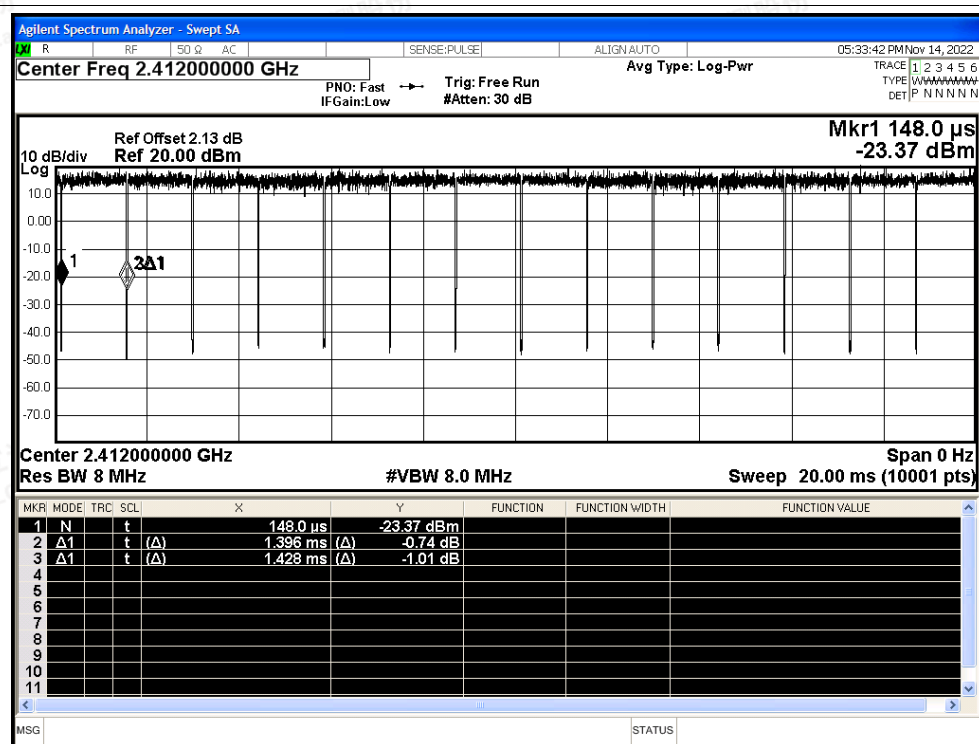




Duty Cycle NVNT b 2462MHz Ant

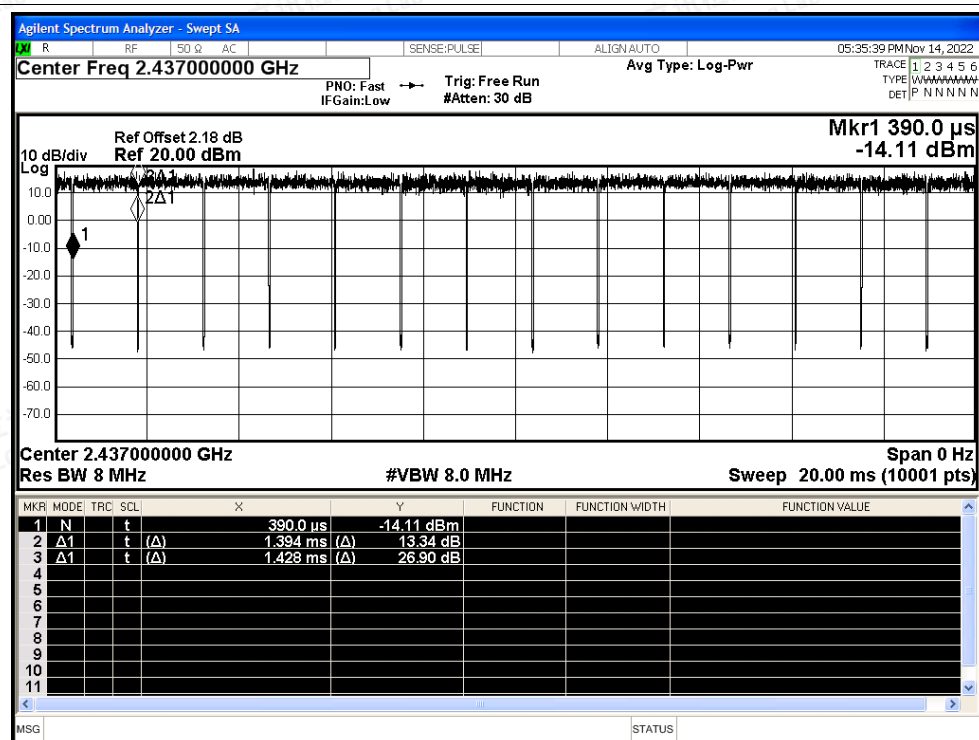


Duty Cycle NVNT g 2412MHz Ant

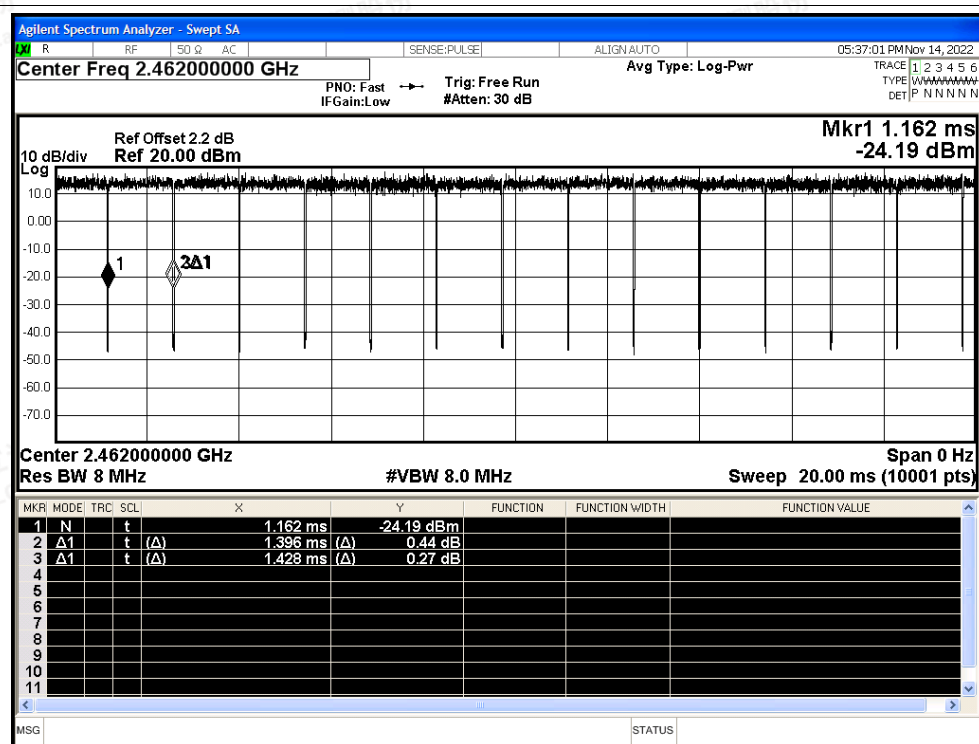




Duty Cycle NVNT g 2437MHz Ant

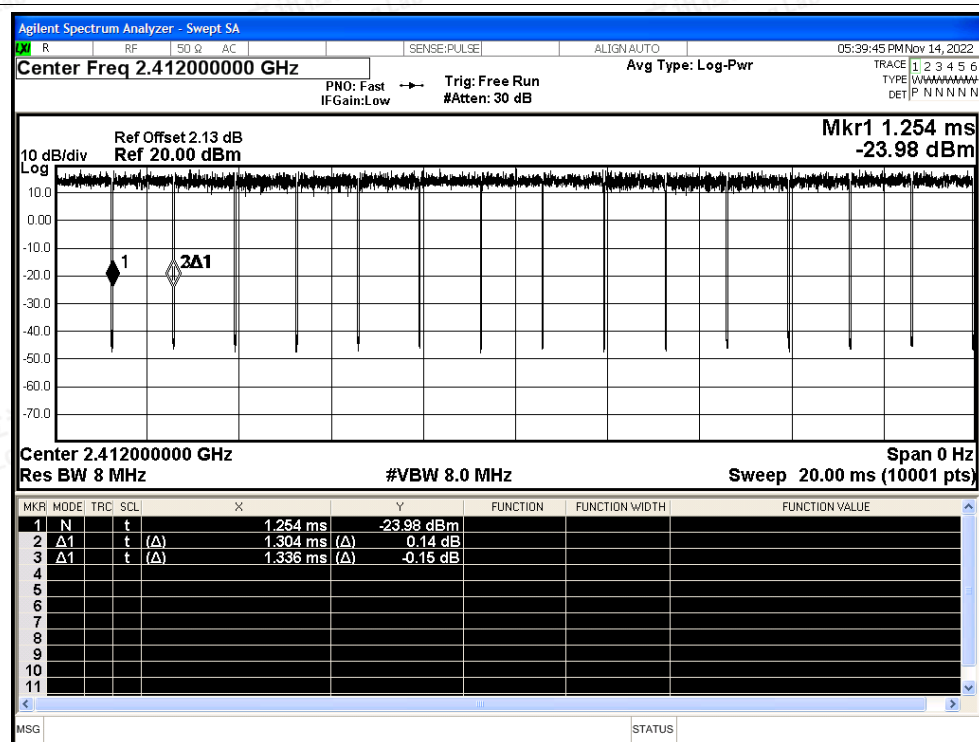


Duty Cycle NVNT g 2462MHz Ant

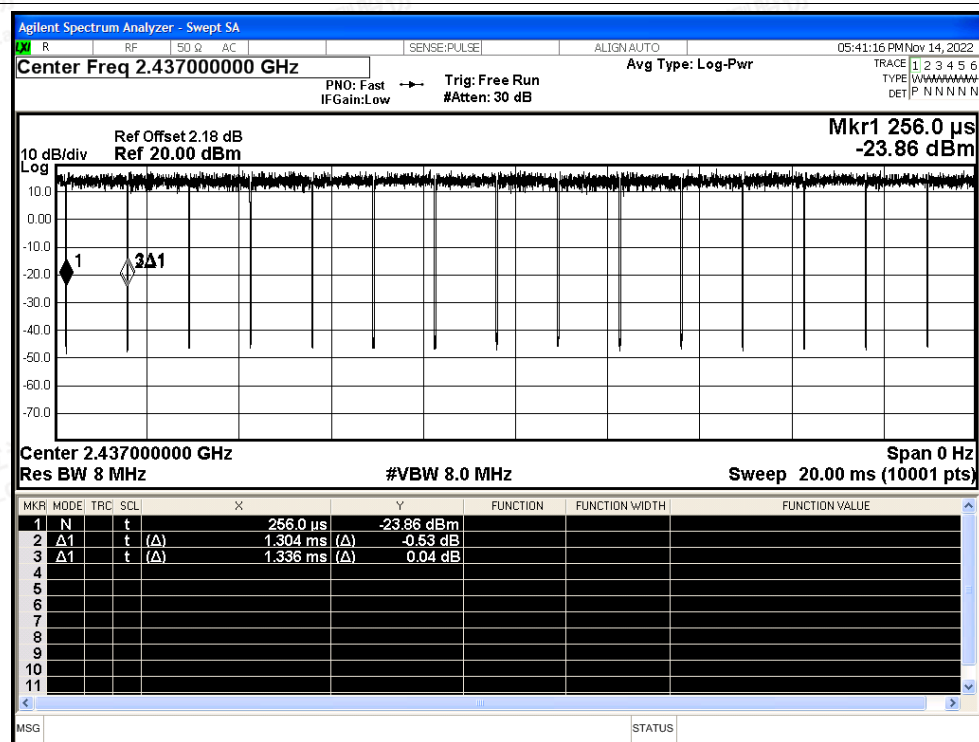


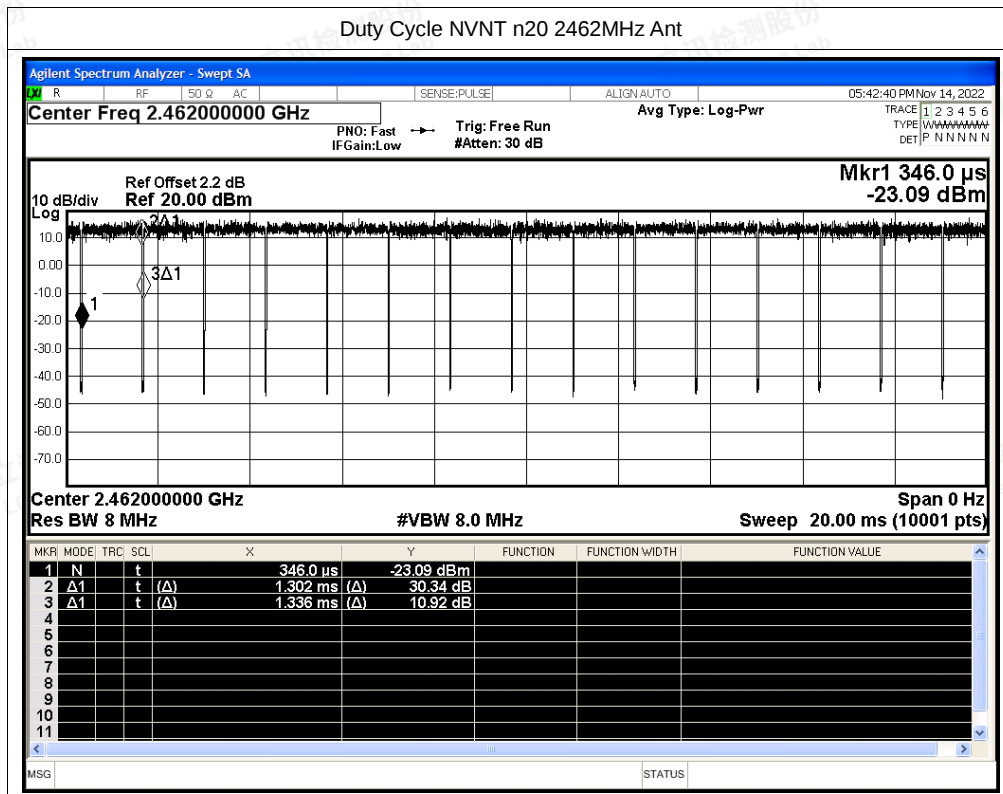


Duty Cycle NVNT n20 2412MHz Ant



Duty Cycle NVNT n20 2437MHz Ant







C.8 Restrict Band

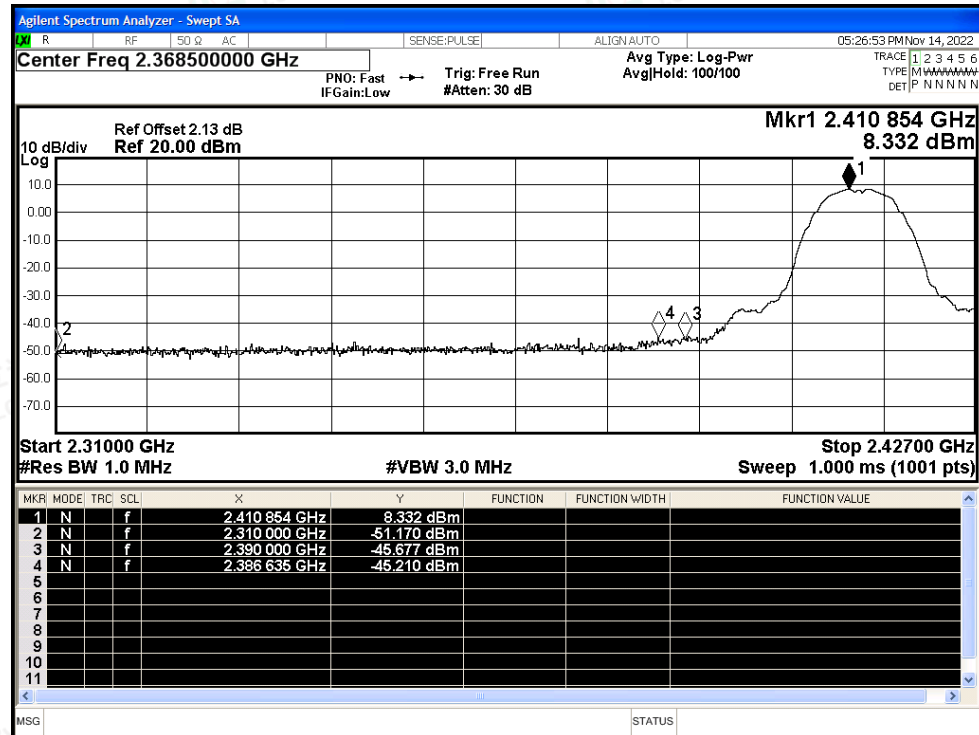
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant	2310	-51.17	3.2	47.26	Peak	74	Pass
NVNT	b	2412	Ant	2310	-60.41	3.2	38.02	Average	54	Pass
NVNT	b	2412	Ant	2386.635	-45.21	3.2	53.22	Peak	74	Pass
NVNT	b	2412	Ant	2386.752	-54.16	3.2	44.27	Average	54	Pass
NVNT	b	2412	Ant	2390	-45.68	3.2	52.75	Peak	74	Pass
NVNT	b	2412	Ant	2390	-54.78	3.2	43.65	Average	54	Pass
NVNT	b	2462	Ant	2483.5	-44.73	3.2	53.70	Peak	74	Pass
NVNT	b	2462	Ant	2483.5	-52.4	3.2	46.03	Average	54	Pass
NVNT	b	2462	Ant	2487.28	-43.74	3.2	54.69	Peak	74	Pass
NVNT	b	2462	Ant	2483.517	-52.4	3.2	46.03	Average	54	Pass
NVNT	b	2462	Ant	2500	-49.68	3.2	48.75	Peak	74	Pass
NVNT	b	2462	Ant	2500	-59.06	3.2	39.37	Average	54	Pass
NVNT	g	2412	Ant	2310	-49.75	3.2	48.68	Peak	74	Pass
NVNT	g	2412	Ant	2310	-59.26	3.2	39.17	Average	54	Pass
NVNT	g	2412	Ant	2387.103	-34.13	3.2	64.30	Peak	74	Pass
NVNT	g	2412	Ant	2389.911	-48.35	3.2	50.08	Average	54	Pass
NVNT	g	2412	Ant	2390	-33.26	3.2	65.17	Peak	74	Pass
NVNT	g	2412	Ant	2390	-48.37	3.2	50.06	Average	54	Pass
NVNT	g	2462	Ant	2483.5	-30.99	3.2	67.44	Peak	74	Pass
NVNT	g	2462	Ant	2483.5	-44.57	3.2	53.86	Average	54	Pass
NVNT	g	2462	Ant	2483.782	-29.96	3.2	68.47	Peak	74	Pass
NVNT	g	2462	Ant	2483.517	-44.57	3.2	53.86	Average	54	Pass
NVNT	g	2462	Ant	2500	-44.87	3.2	53.56	Peak	74	Pass
NVNT	g	2462	Ant	2500	-55.13	3.2	43.30	Average	54	Pass
NVNT	n20	2412	Ant	2310	-51.31	3.2	47.12	Peak	74	Pass
NVNT	n20	2412	Ant	2310	-59.24	3.2	39.19	Average	54	Pass
NVNT	n20	2412	Ant	2389.326	-29.42	3.2	69.01	Peak	74	Pass
NVNT	n20	2412	Ant	2389.911	-47.1	3.2	51.33	Average	54	Pass
NVNT	n20	2412	Ant	2390	-32.88	3.2	65.55	Peak	74	Pass
NVNT	n20	2412	Ant	2390	-47.01	3.2	51.42	Average	54	Pass
NVNT	n20	2462	Ant	2483.5	-30.77	3.2	67.66	Peak	74	Pass
NVNT	n20	2462	Ant	2483.5	-43.9	3.2	53.21	Average	54	Pass
NVNT	n20	2462	Ant	2484.153	-28.32	3.2	70.11	Peak	74	Pass
NVNT	n20	2462	Ant	2483.57	-43.77	3.2	53.66	Average	54	Pass
NVNT	n20	2462	Ant	2500	-45.14	3.2	53.29	Peak	74	Pass
NVNT	n20	2462	Ant	2500	-55.04	3.2	43.39	Average	54	Pass



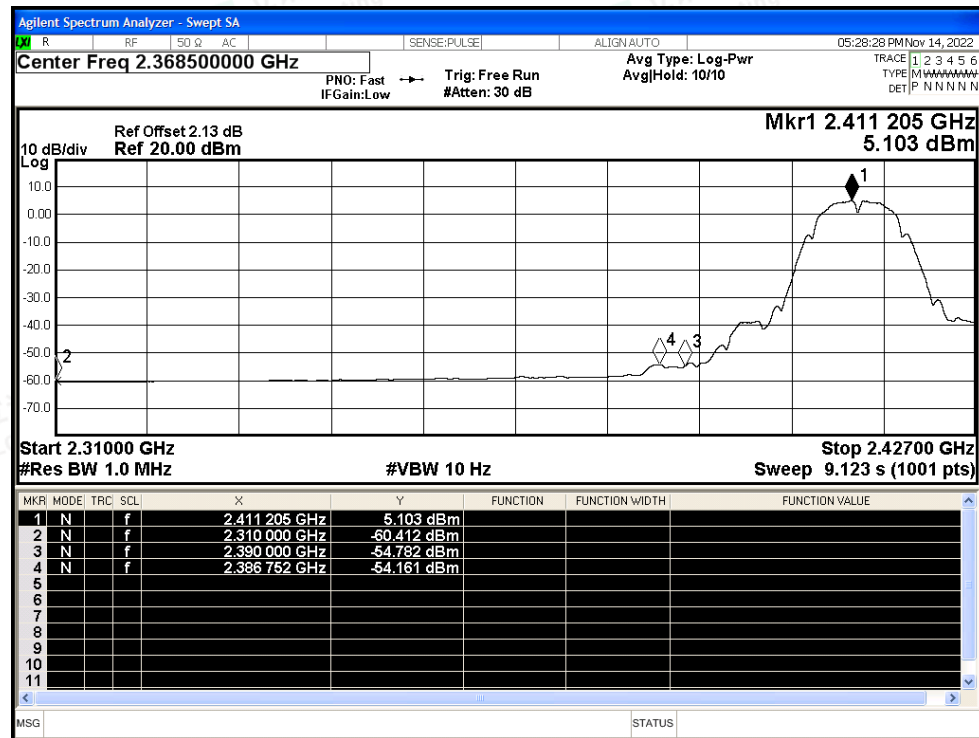


Test Graphs

Restrict Band NVNT b 2412MHz Ant Peak

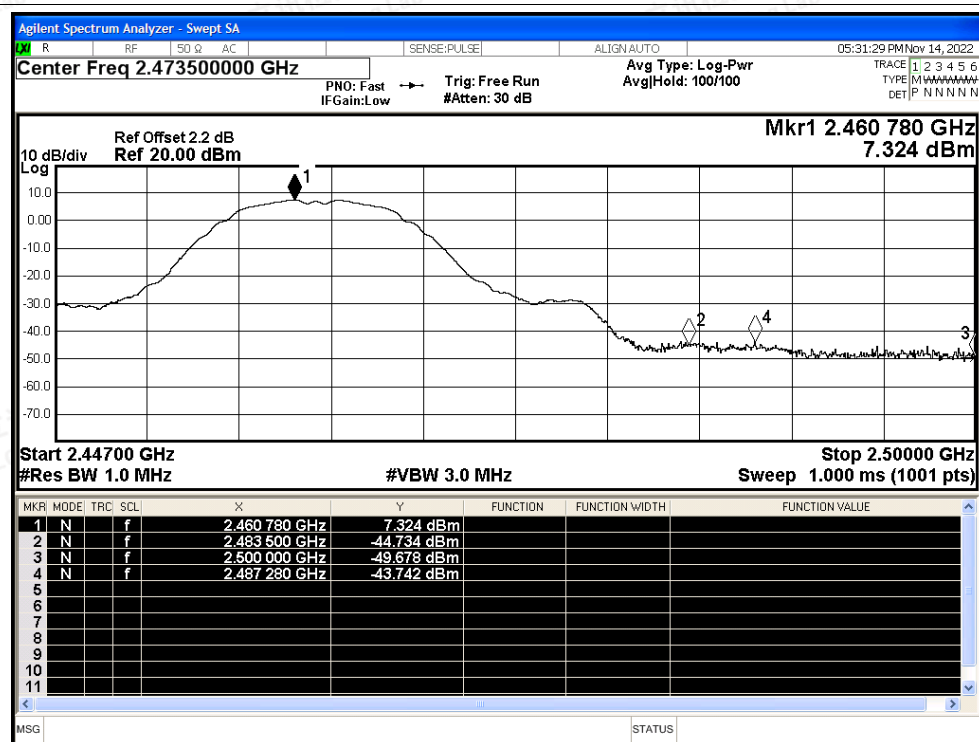


Restrict Band NVNT b 2412MHz Ant Average

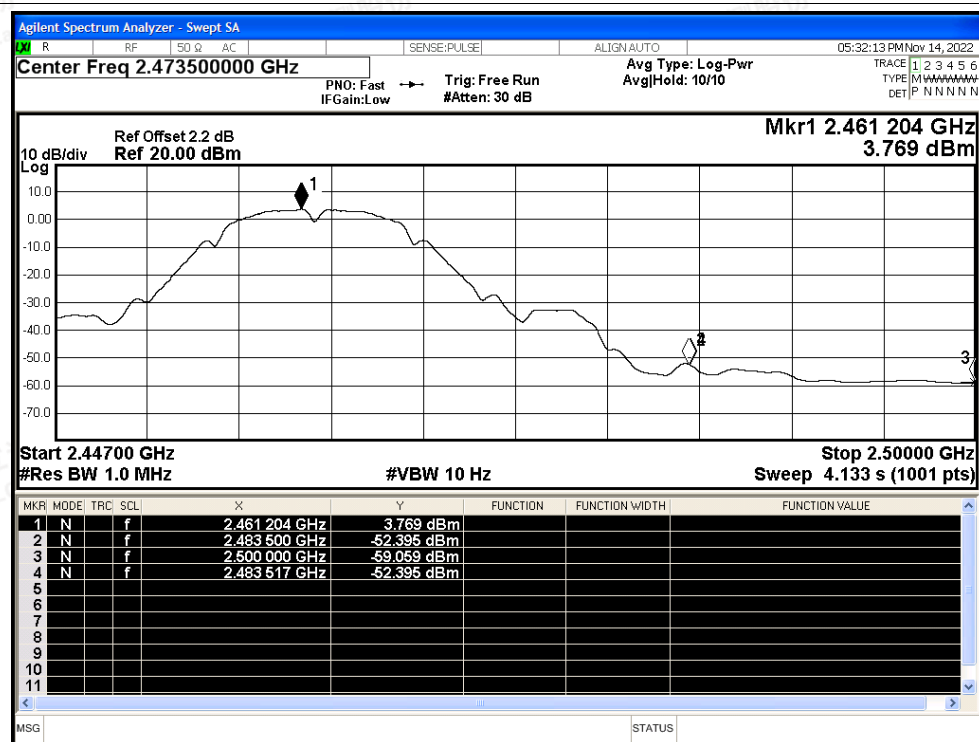




Restrict Band NVNT b 2462MHz Ant Peak

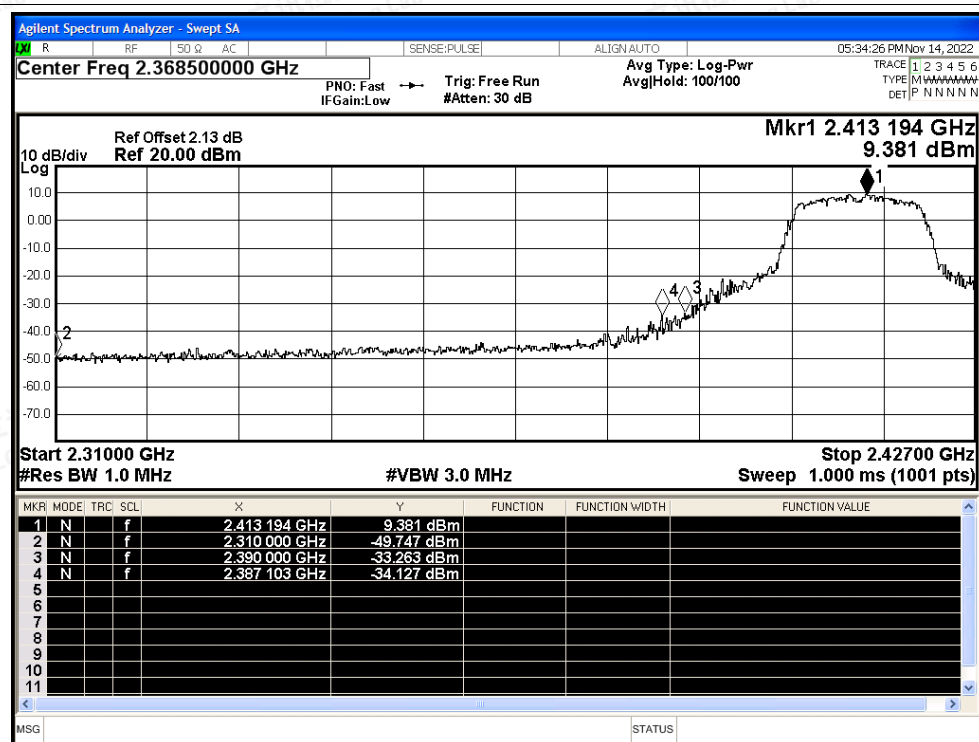


Restrict Band NVNT b 2462MHz Ant Average

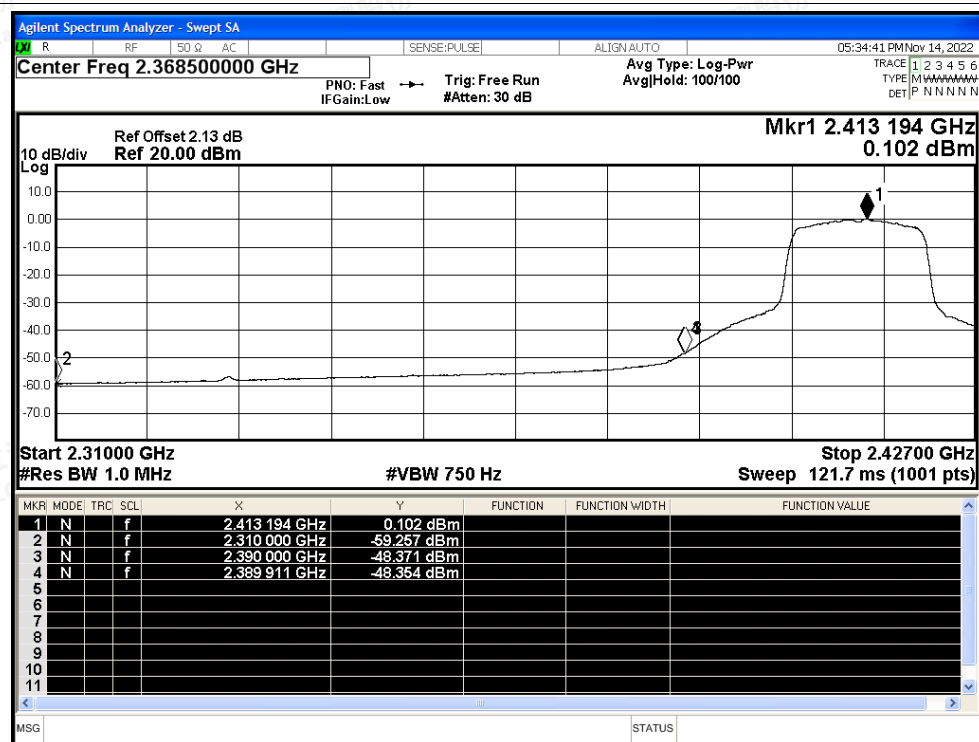




Restrict Band NVNT g 2412MHz Ant Peak

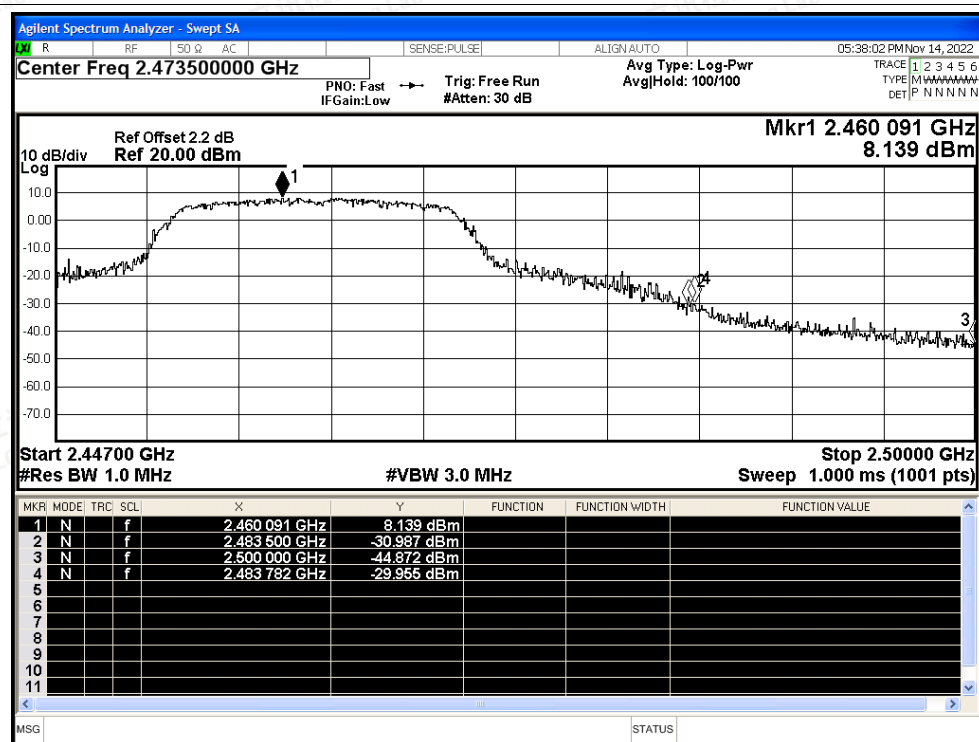


Restrict Band NVNT g 2412MHz Ant Average

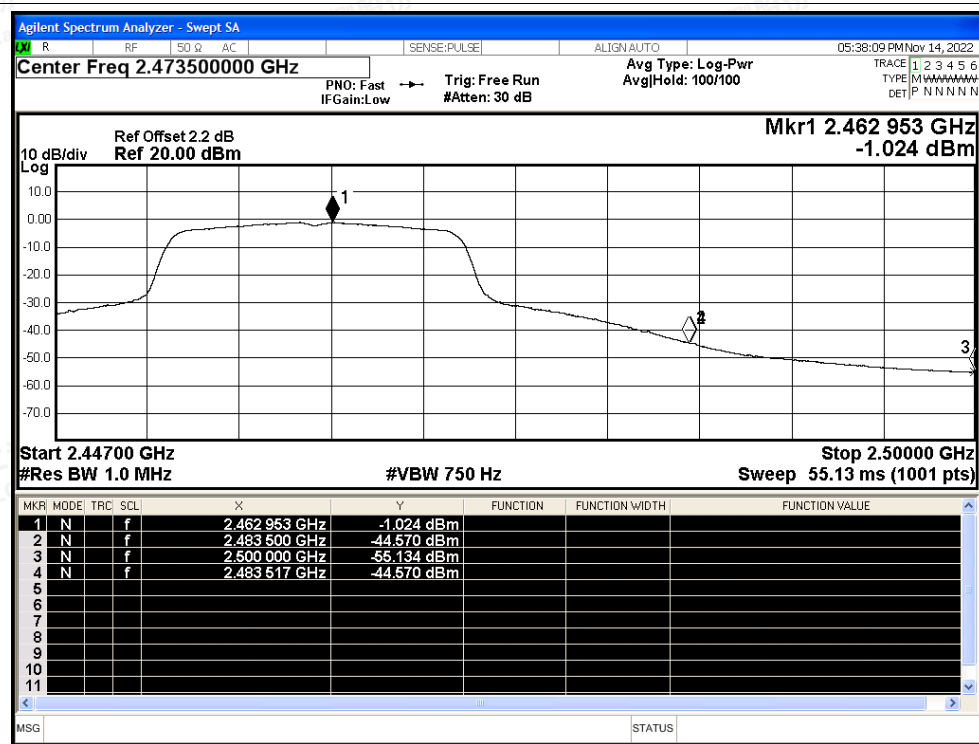




Restrict Band NVNT g 2462MHz Ant Peak

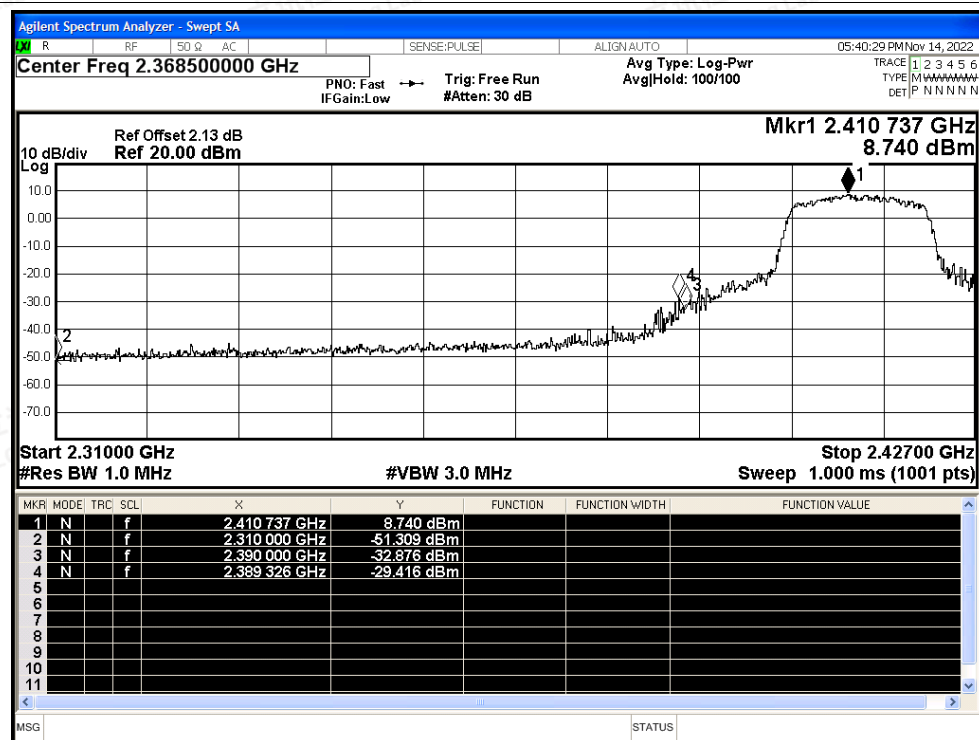


Restrict Band NVNT g 2462MHz Ant Average

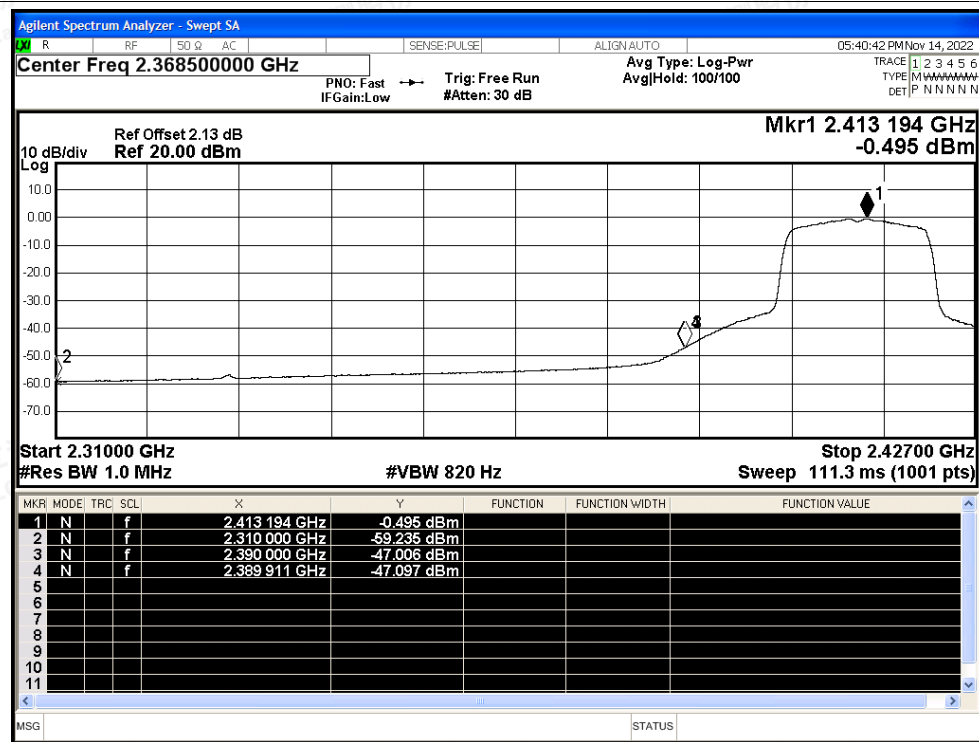




Restrict Band NVNT n20 2412MHz Ant Peak

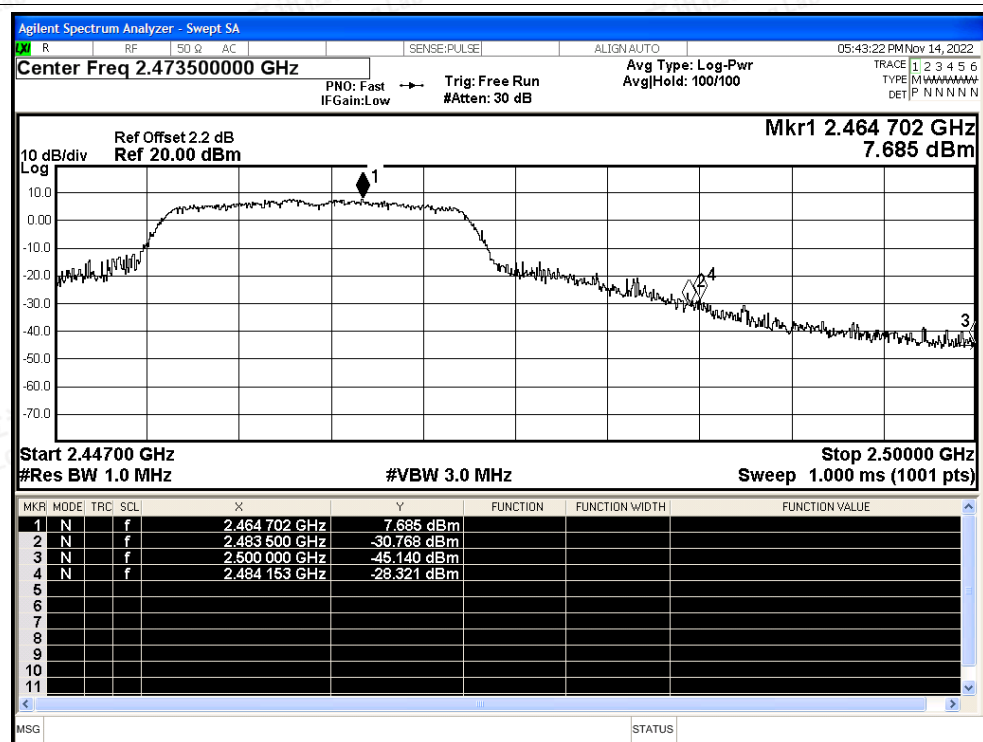


Restrict Band NVNT n20 2412MHz Ant Average





Restrict Band NVNT n20 2462MHz Ant Peak



Restrict Band NVNT n20 2462MHz Ant Average

