

RF Test Data for 2.4G WiFi (Conducted Measurements)

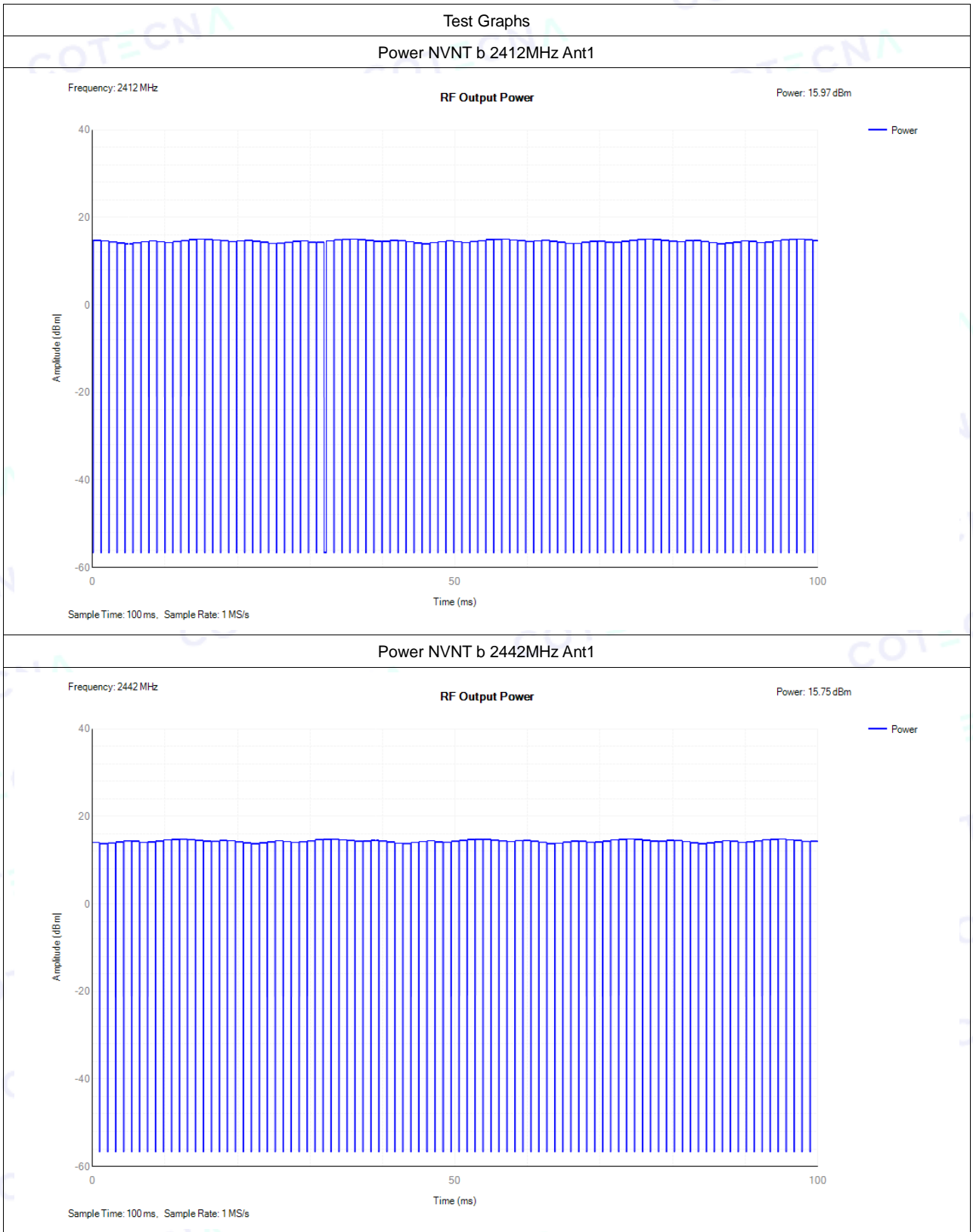
General Description of EUT	
Product Name:	WiFi LoRa 32
Test Model:	HTIT-WBR2H
Test Standards:	ETSI EN 300 328 V2.2.2:2019
Environmental Conditions	
Temperature:	23.8°C
Relative Humidity:	48%
Test Voltage:	DC 5V
Test Engineer:	Lily. zhang
Note: For a more detailed features description, please refer to the report TBR-C-202601-0040-55 The report only show the worst case data.	

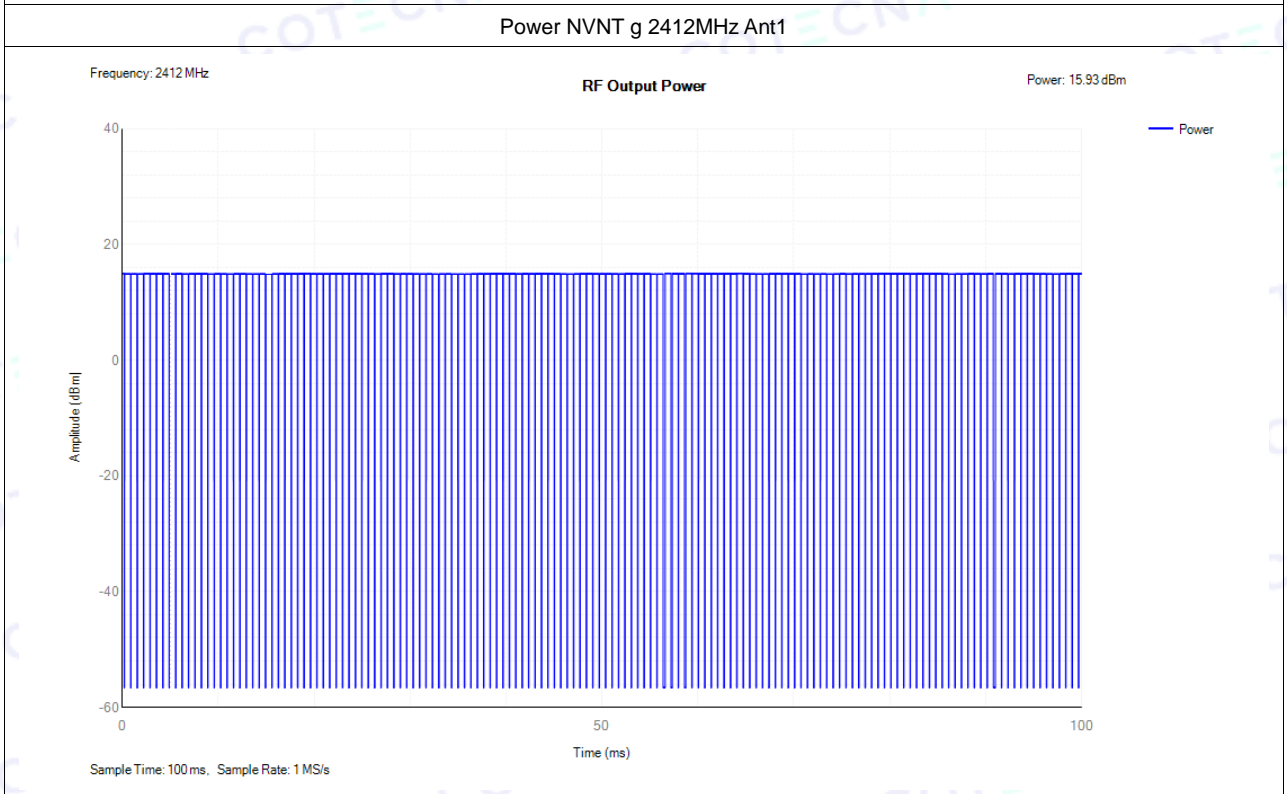
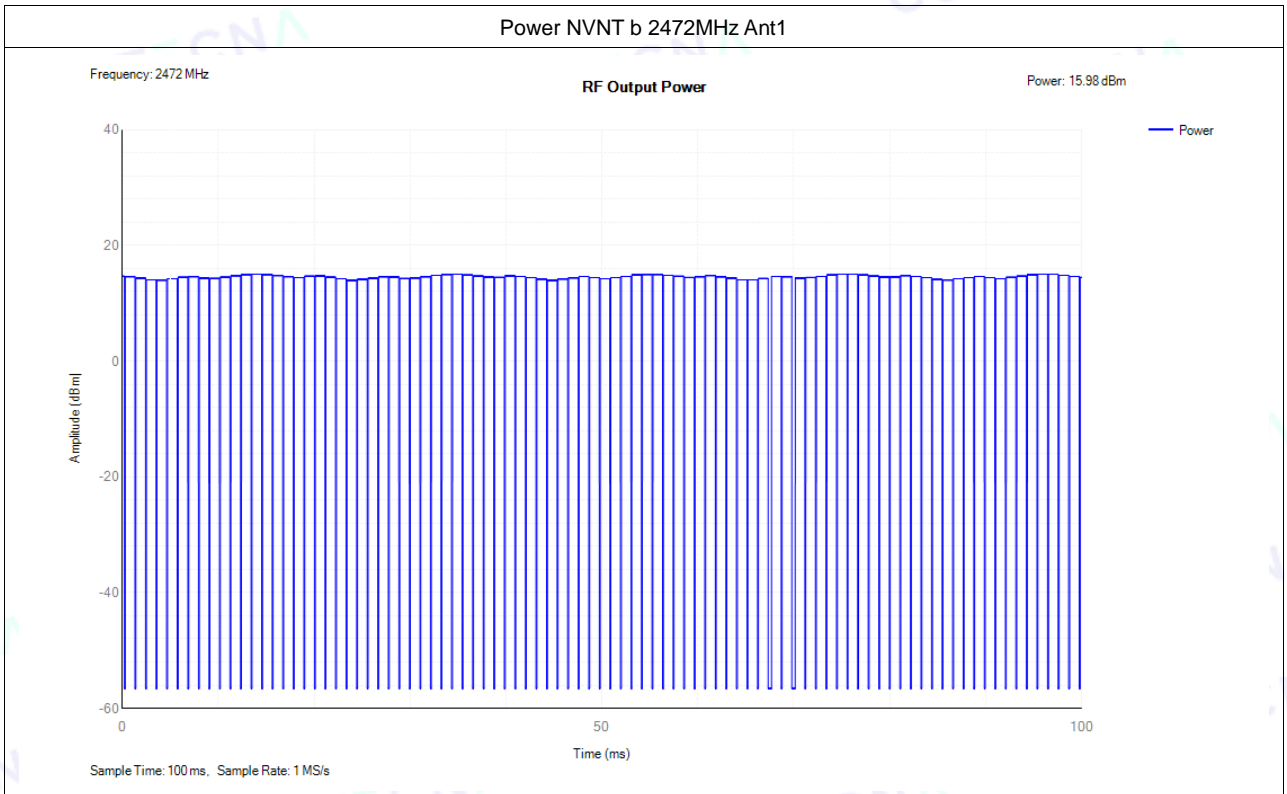
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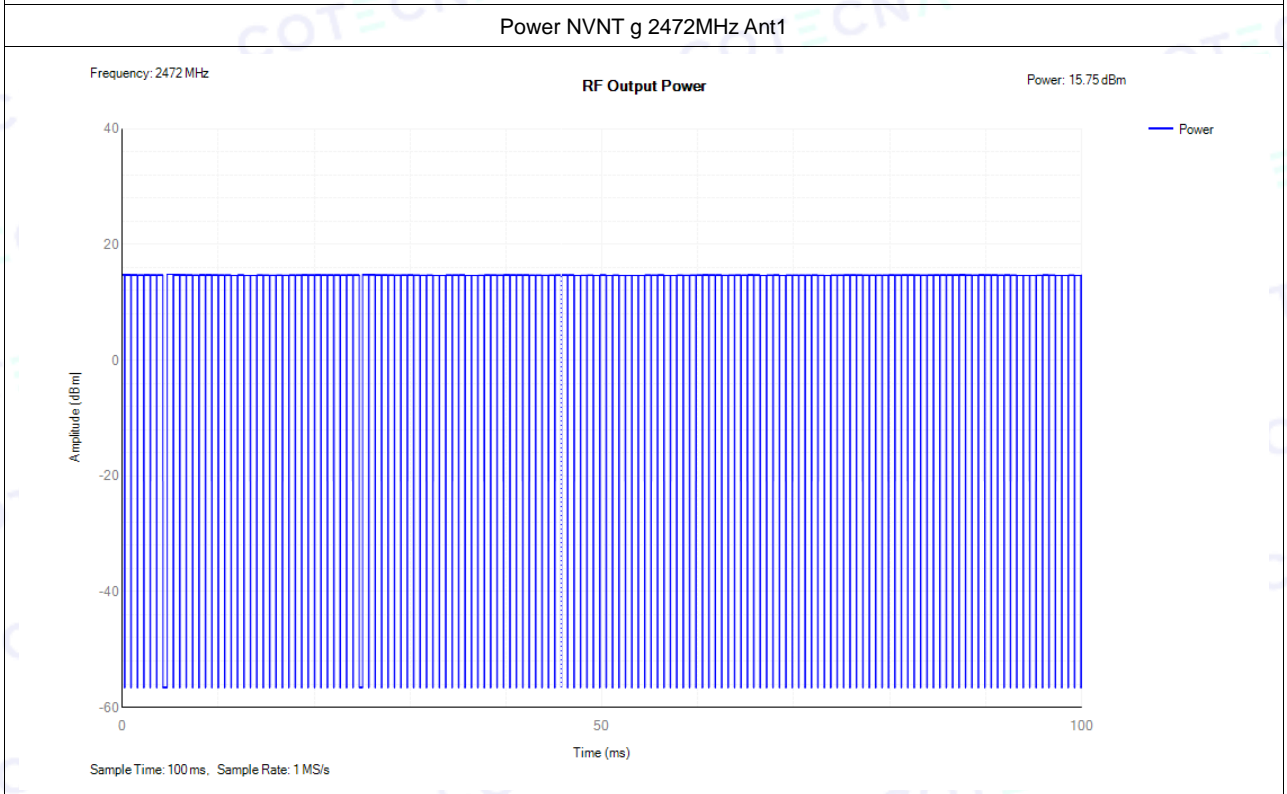
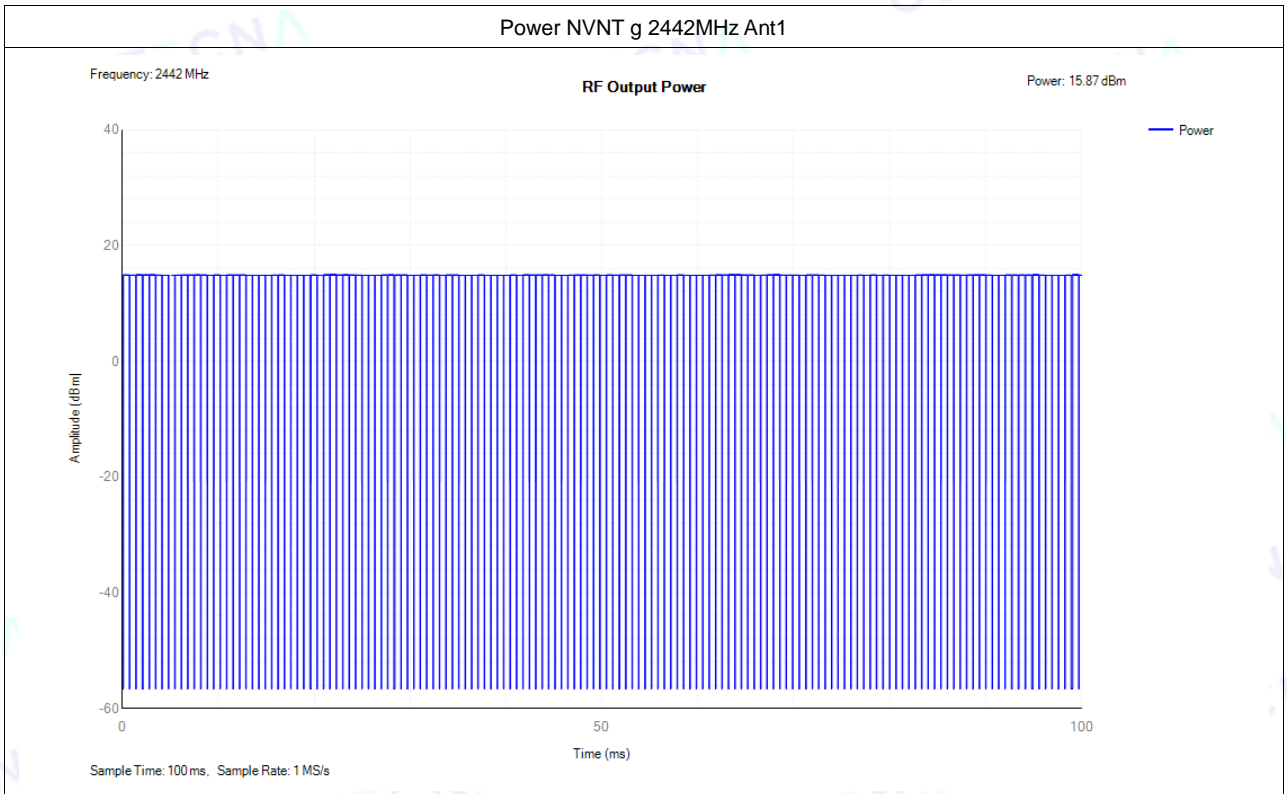
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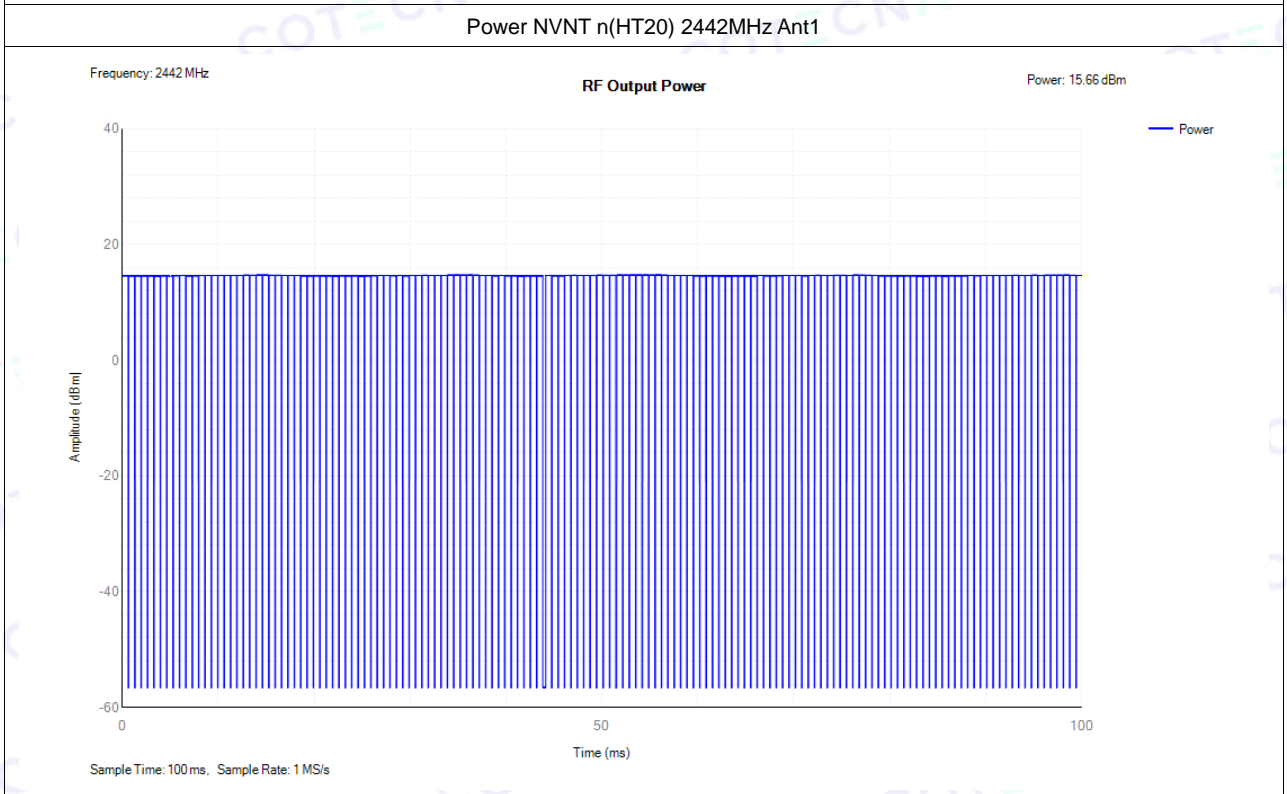
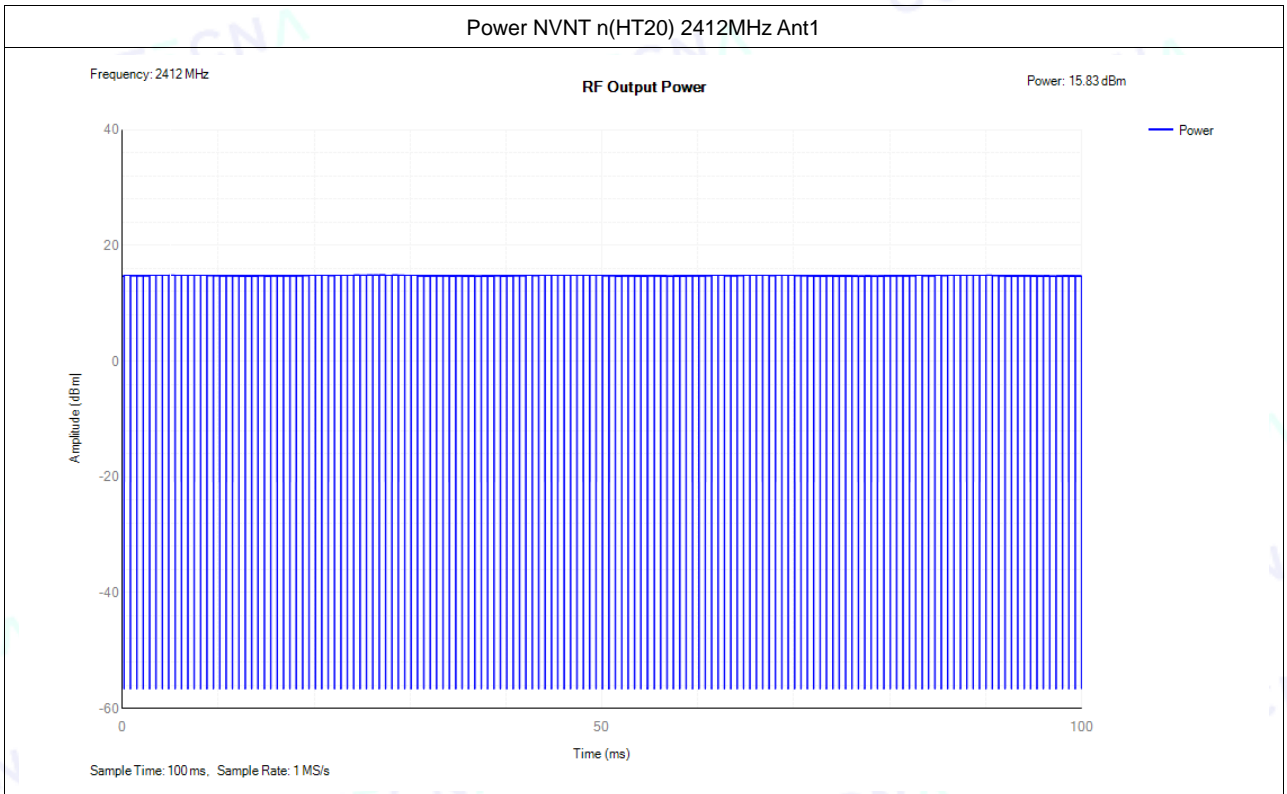
1. RF Output Power

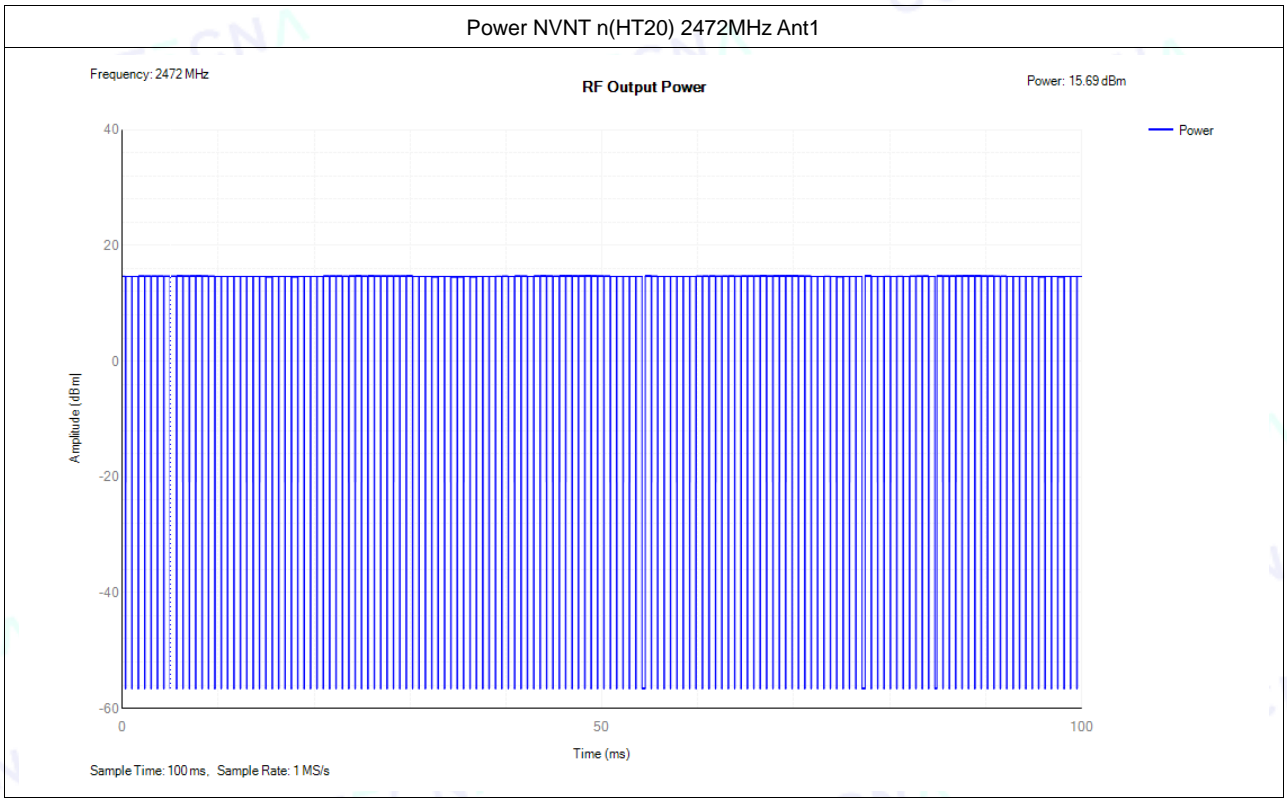
Condition	Mode	Frequency (MHz)	Antenna	Max Burst RMS Power (dBm)	Burst Number	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	15.04	92	15.97	20	Pass
NVNT	b	2442	Ant1	14.82	91	15.75	20	Pass
NVNT	b	2472	Ant1	15.05	92	15.98	20	Pass
NVNT	g	2412	Ant1	15	150	15.93	20	Pass
NVNT	g	2442	Ant1	14.94	150	15.87	20	Pass
NVNT	g	2472	Ant1	14.82	150	15.75	20	Pass
NVNT	n(HT20)	2412	Ant1	14.9	151	15.83	20	Pass
NVNT	n(HT20)	2442	Ant1	14.73	150	15.66	20	Pass
NVNT	n(HT20)	2472	Ant1	14.76	150	15.69	20	Pass





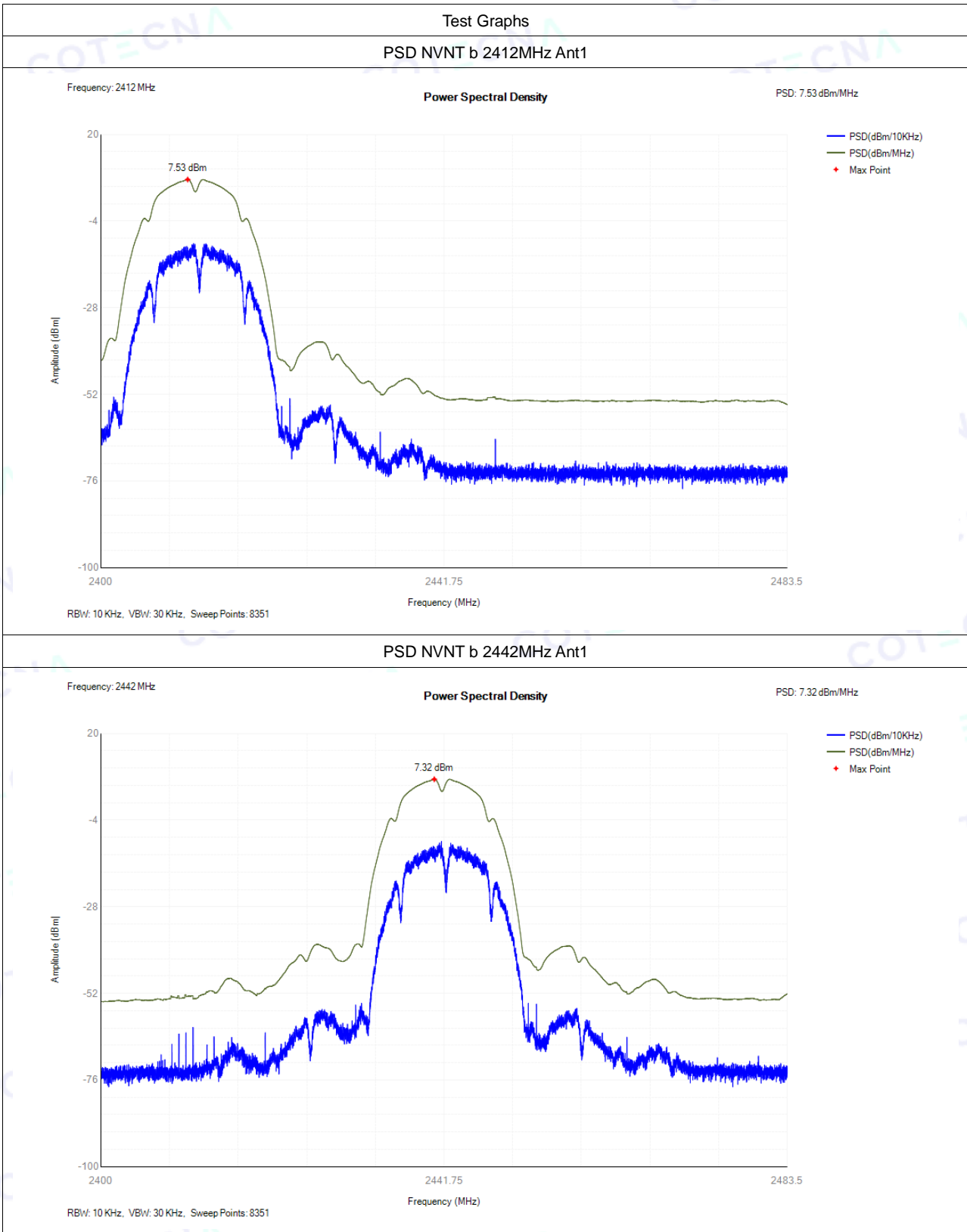


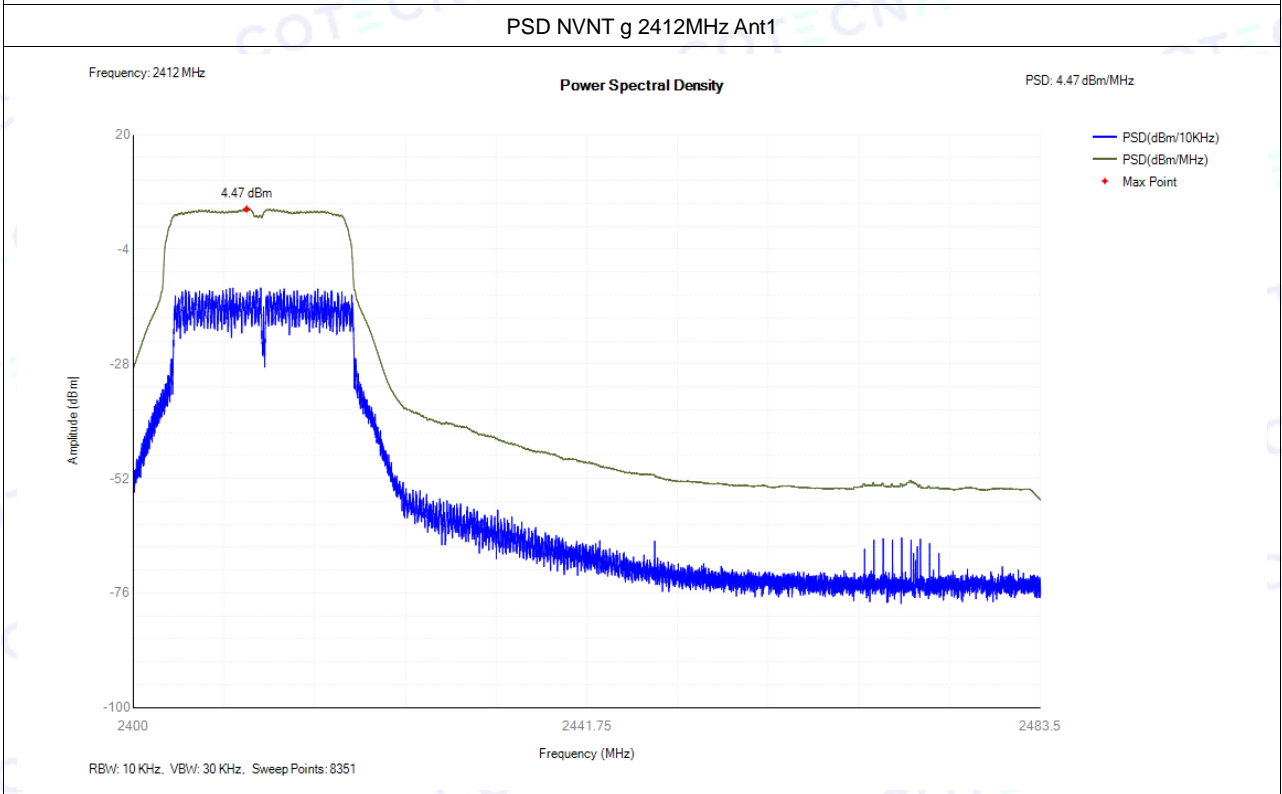
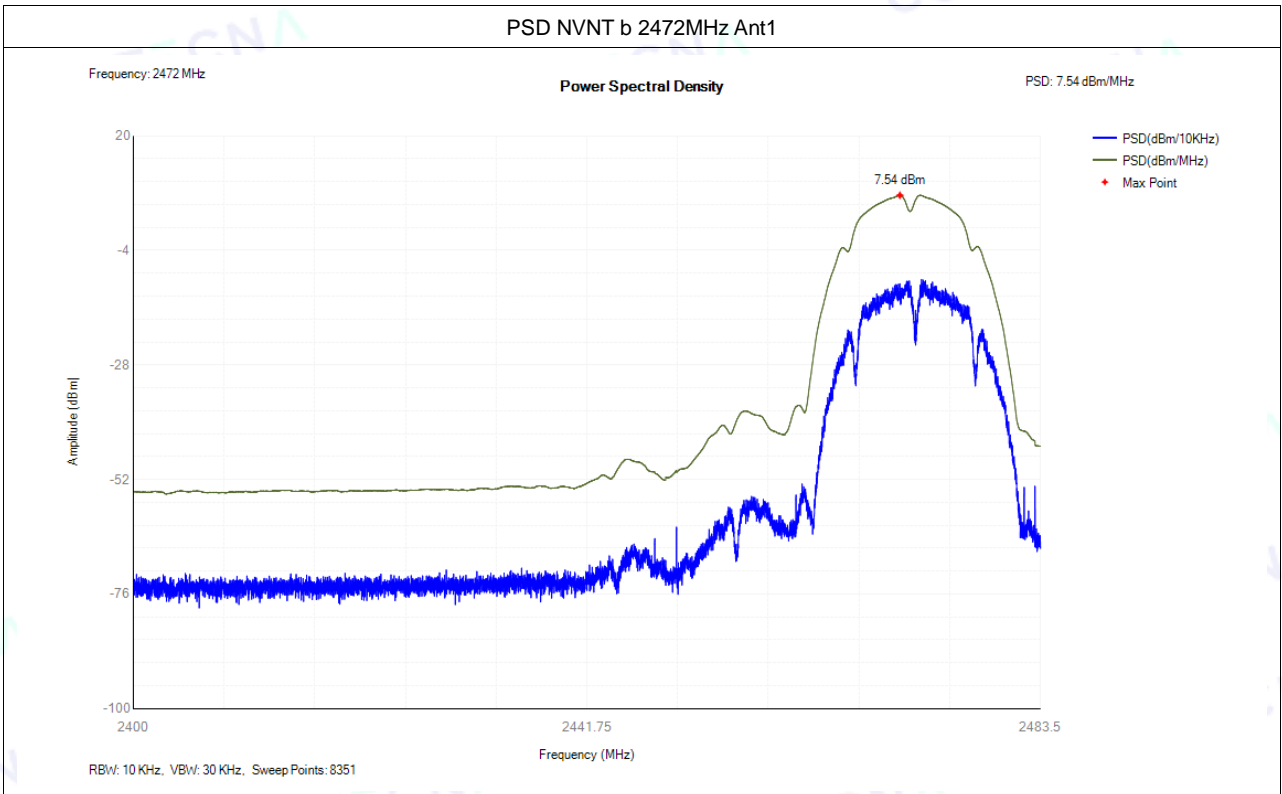


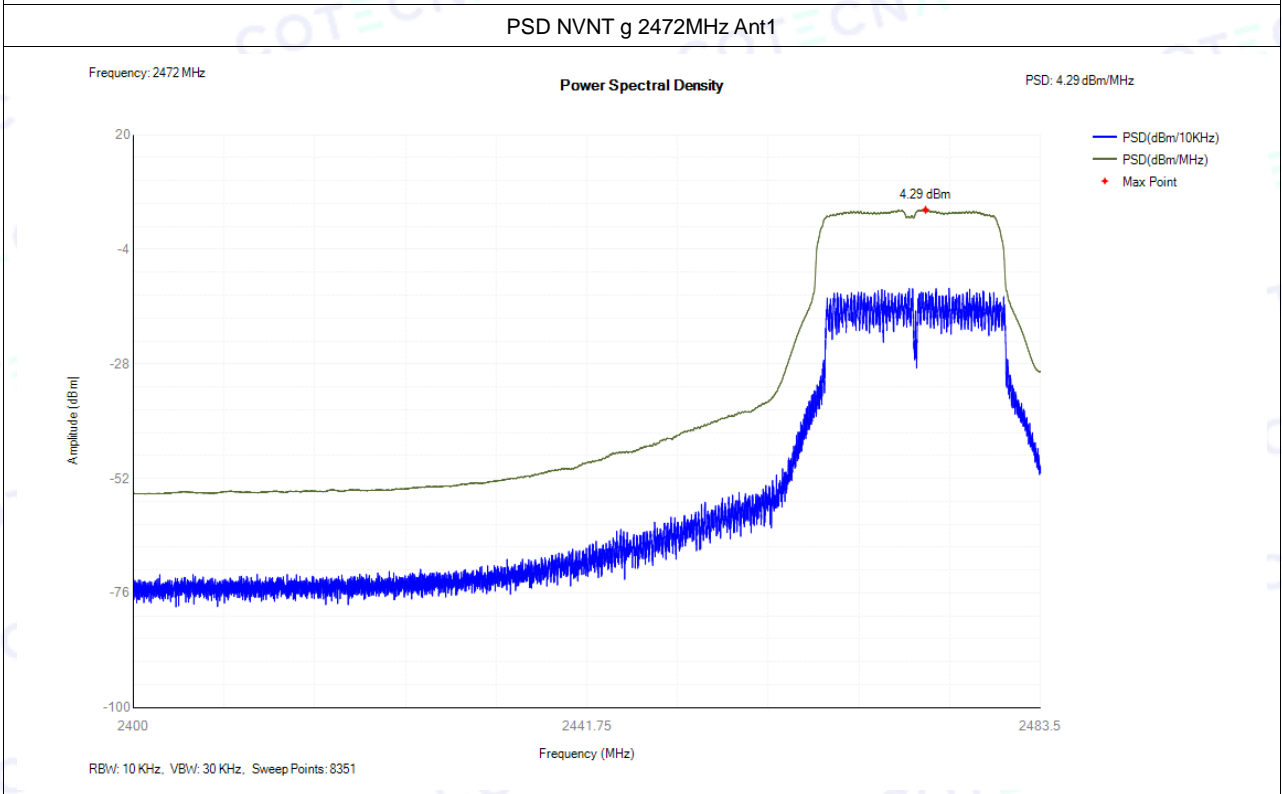
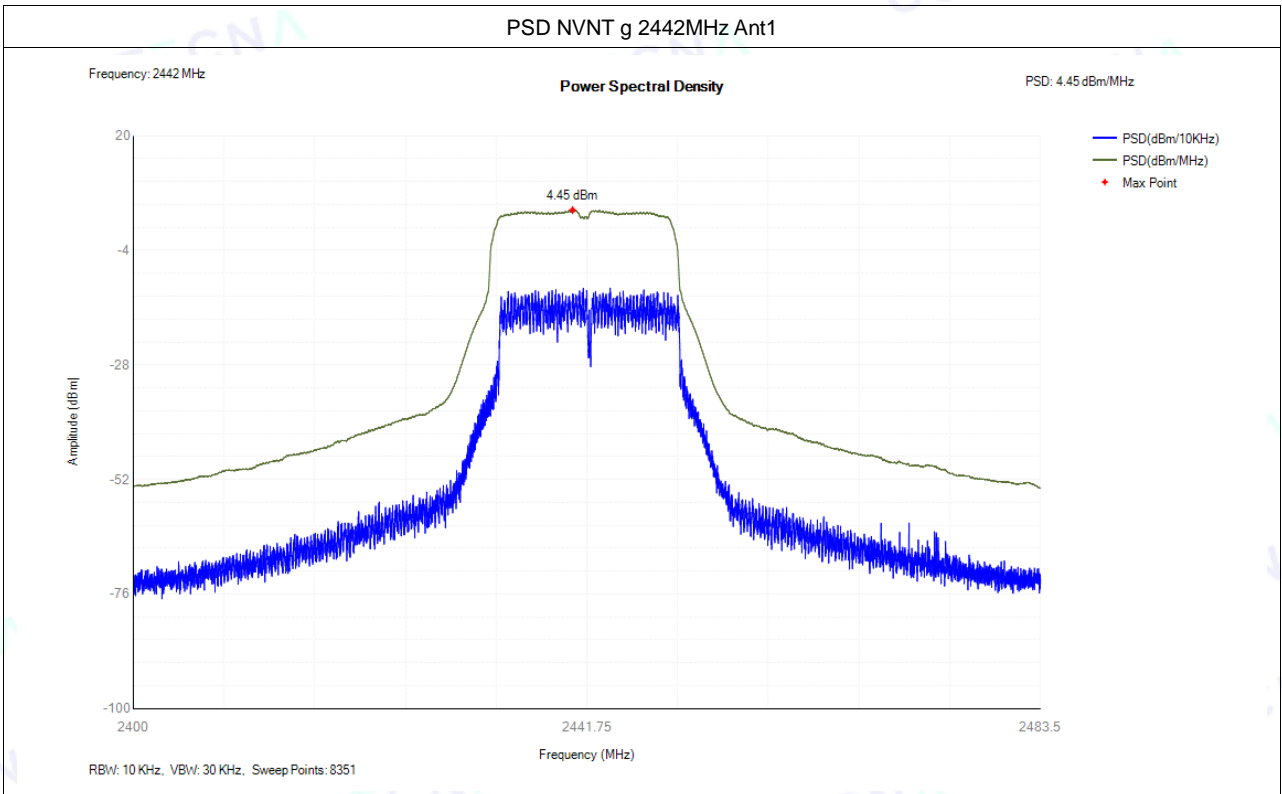


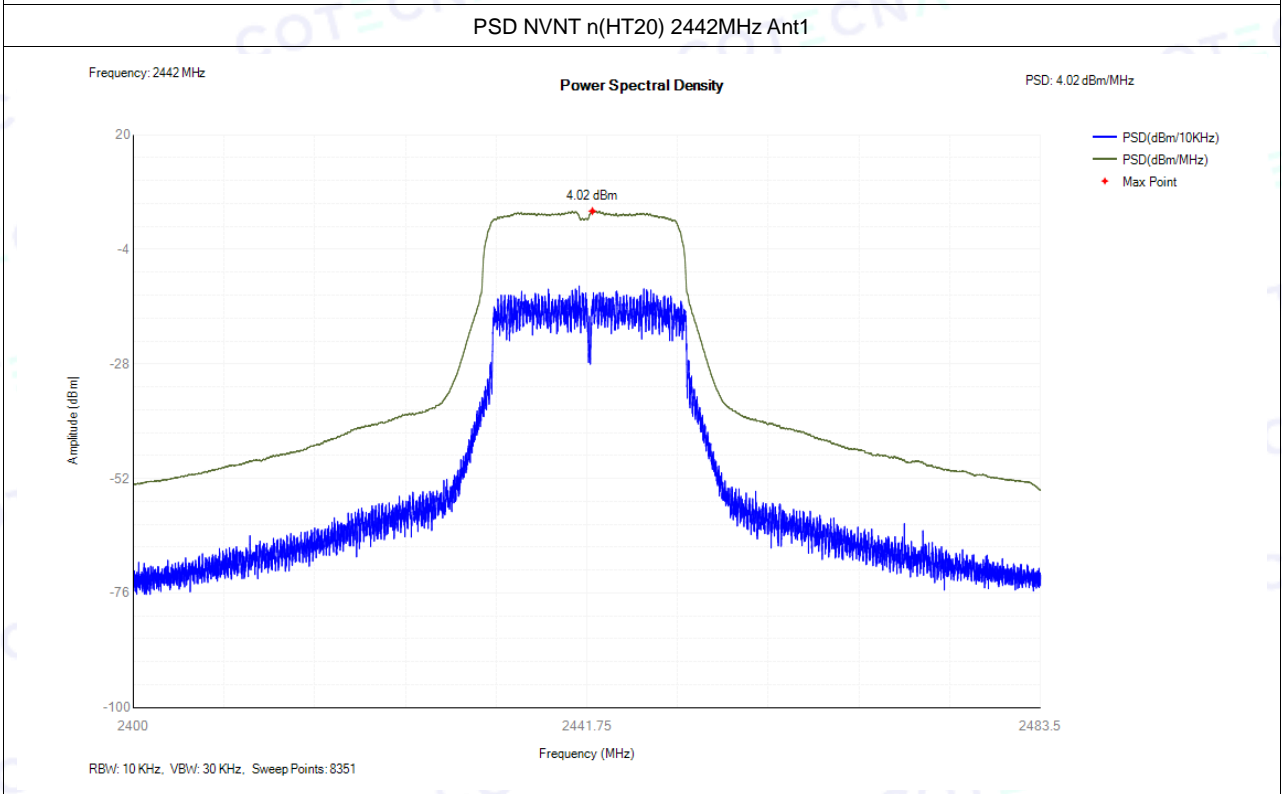
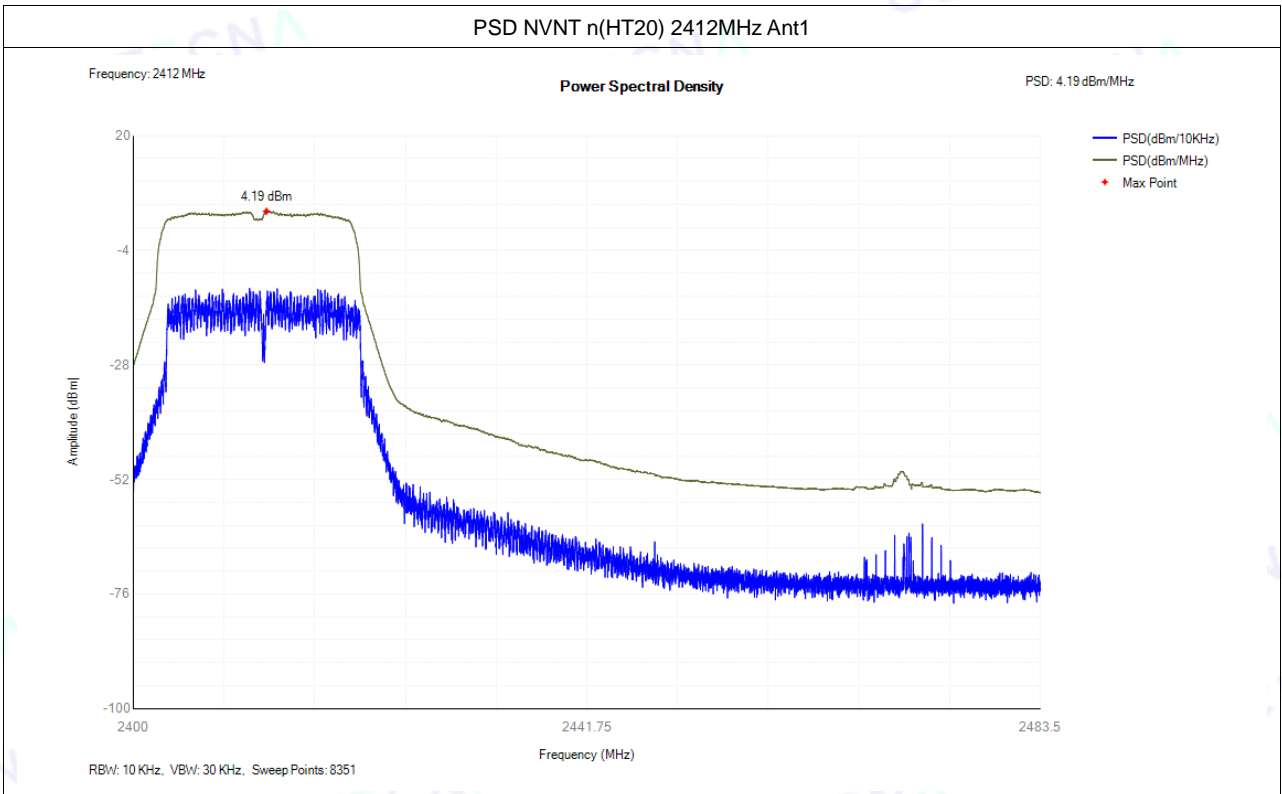
2. Power Spectral Density

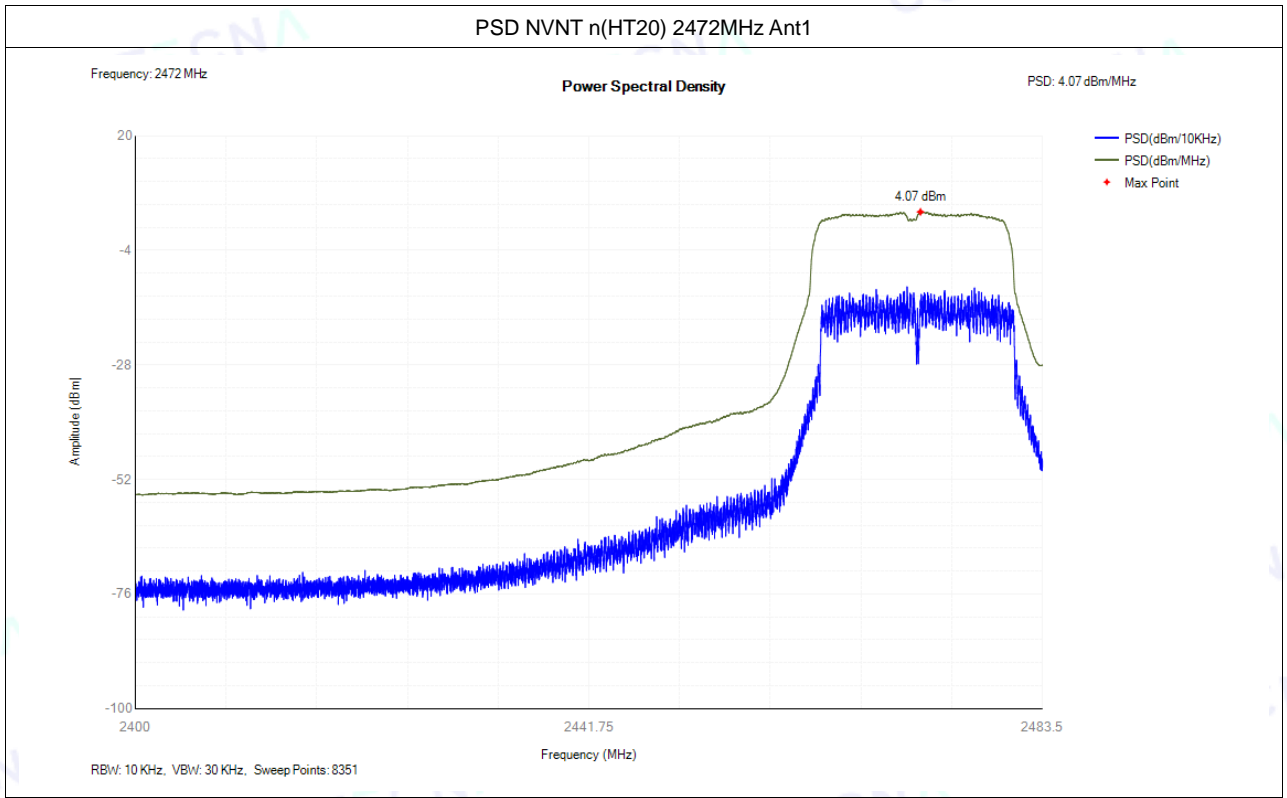
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	b	2412	Ant1	7.53	10	Pass
NVNT	b	2442	Ant1	7.32	10	Pass
NVNT	b	2472	Ant1	7.54	10	Pass
NVNT	g	2412	Ant1	4.47	10	Pass
NVNT	g	2442	Ant1	4.45	10	Pass
NVNT	g	2472	Ant1	4.29	10	Pass
NVNT	n(HT20)	2412	Ant1	4.19	10	Pass
NVNT	n(HT20)	2442	Ant1	4.02	10	Pass
NVNT	n(HT20)	2472	Ant1	4.07	10	Pass





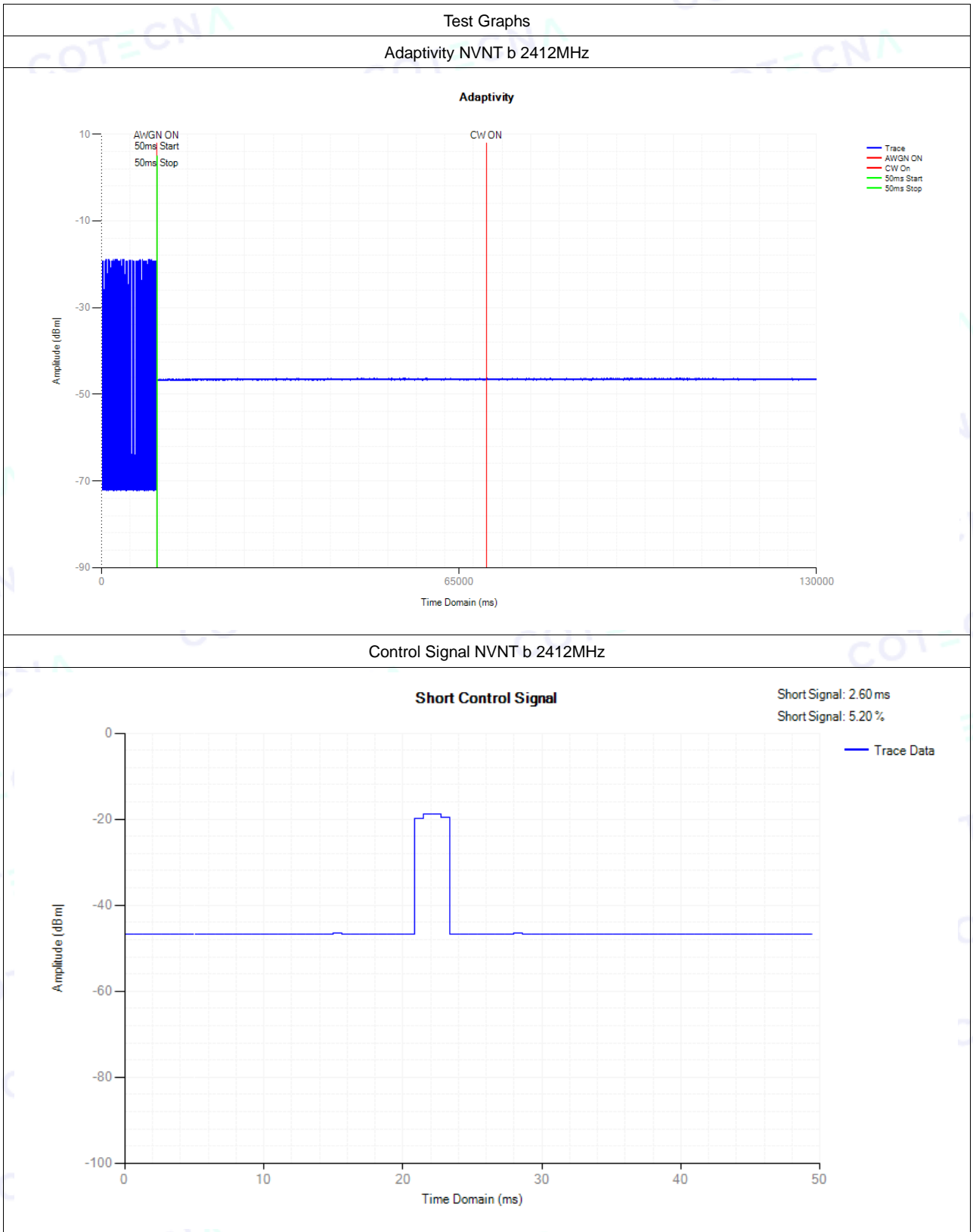


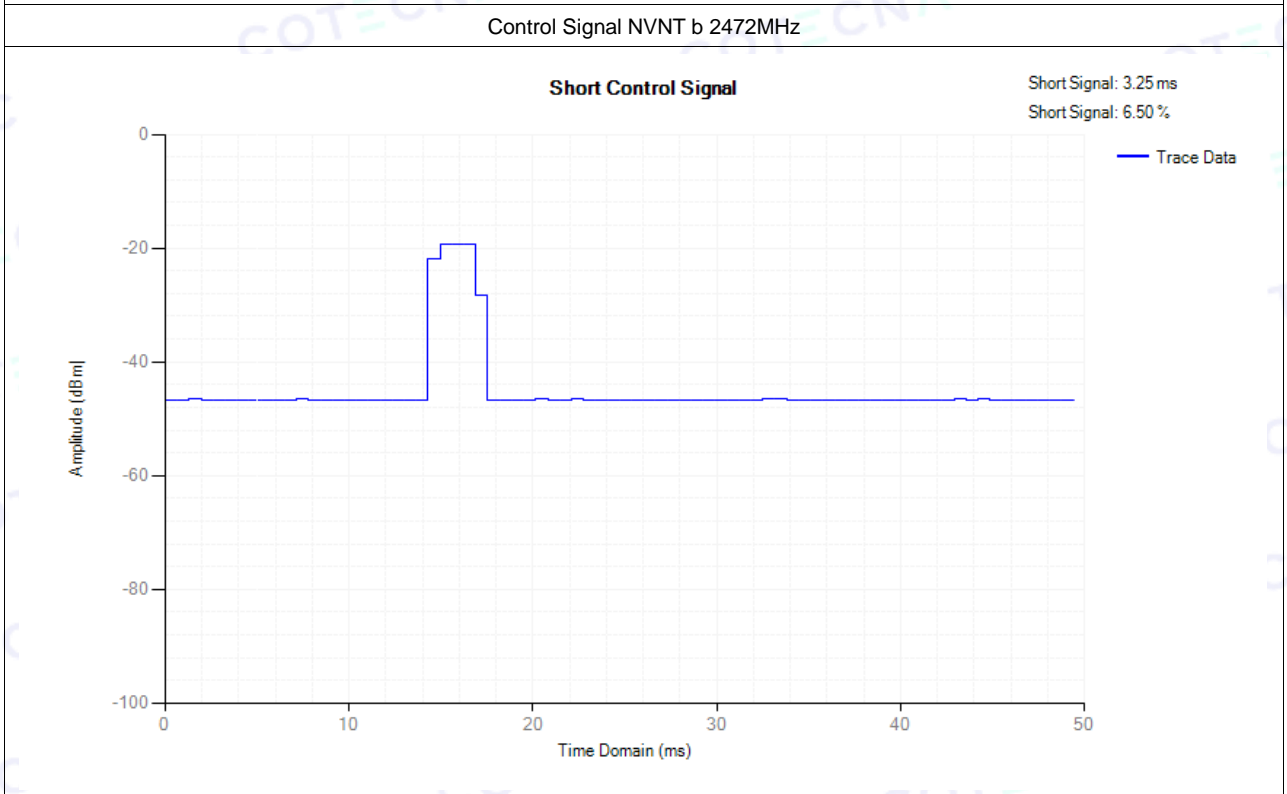
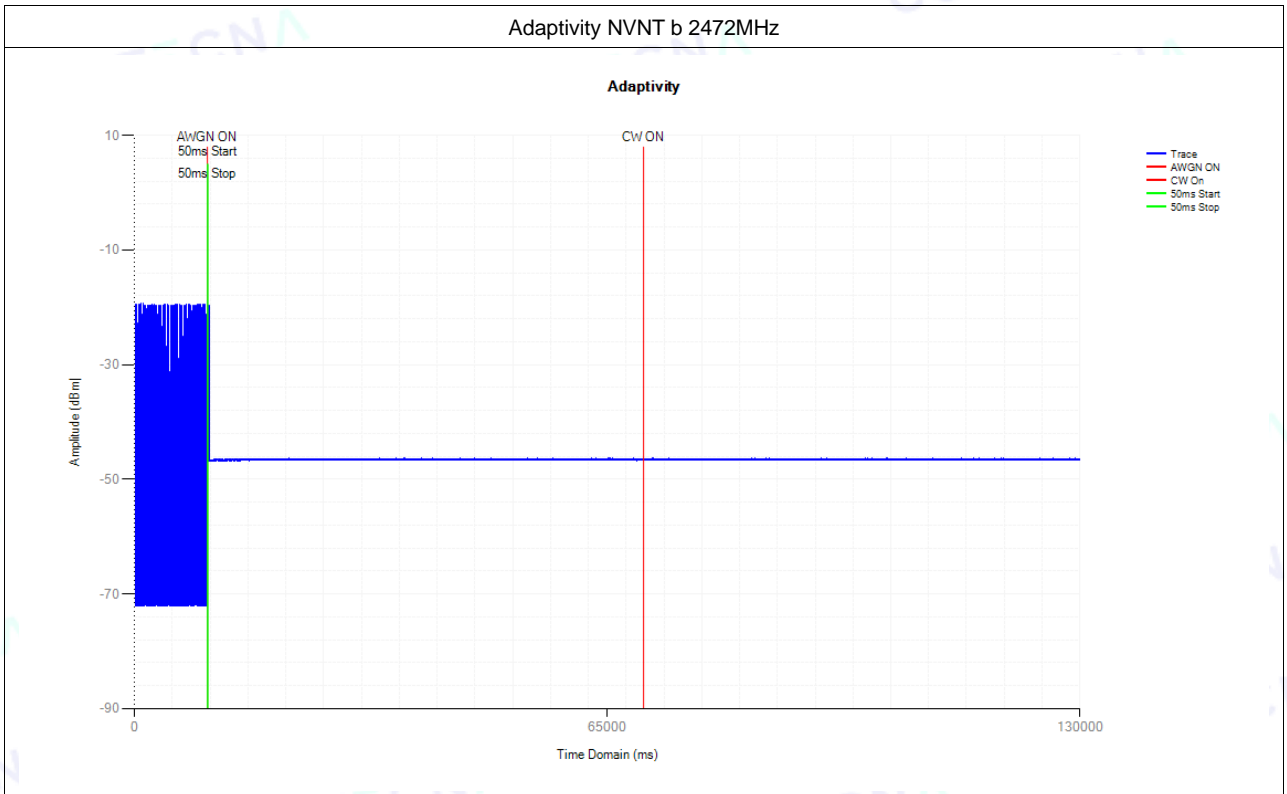




3. Adaptivity

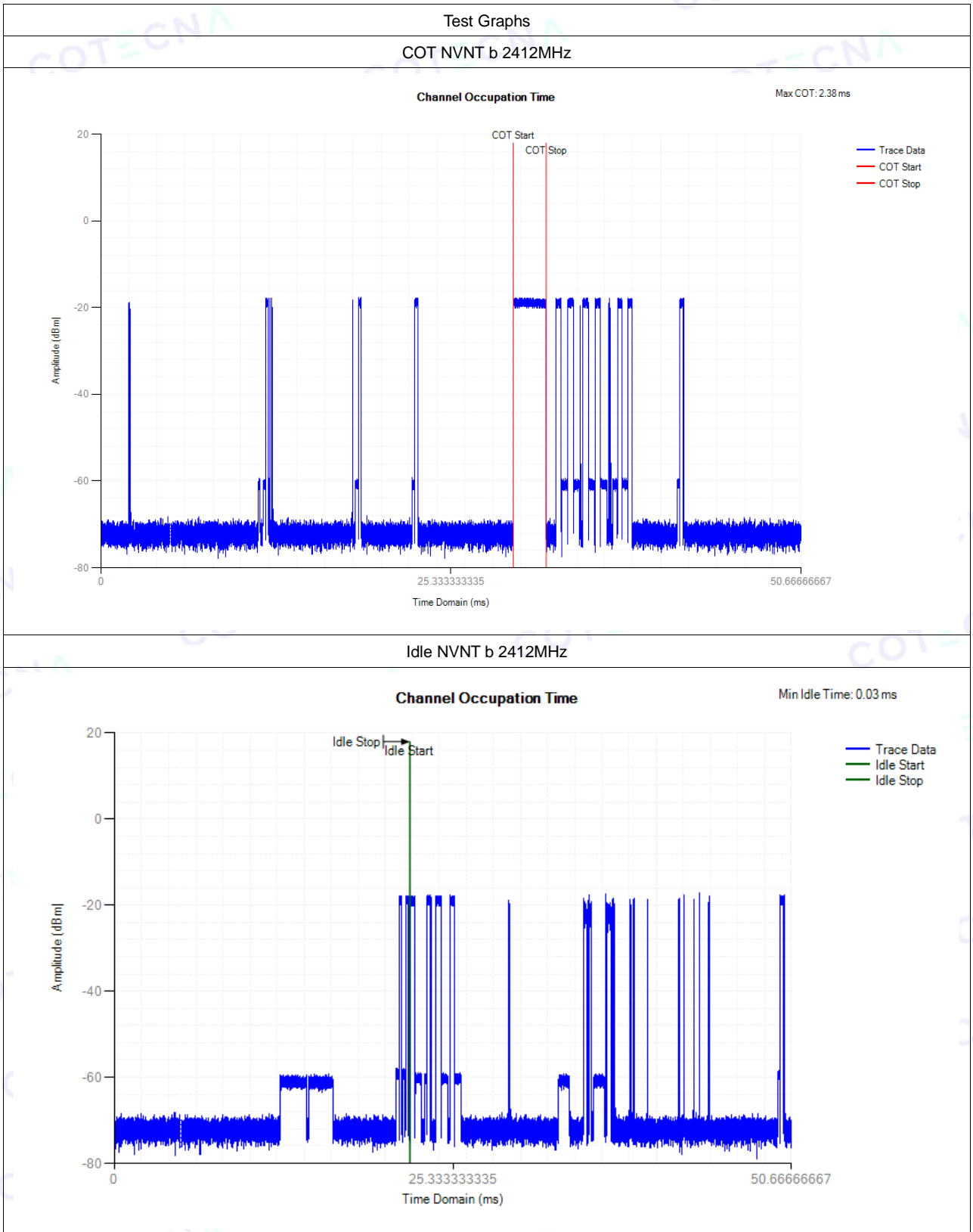
Condition	Mode	Frequency (MHz)	Antenna	AWGN Level (dBm)	CW Level (dBm)	Short Control Width (ms)	Short Control Ratio(%)	Limit (%)	Verdict
NVNT	b	2412	Ant1	-65.97	-35	2.6	5.2	<=10	Pass
NVNT	b	2472	Ant1	-65.98	-35	3.25	6.5	<=10	Pass

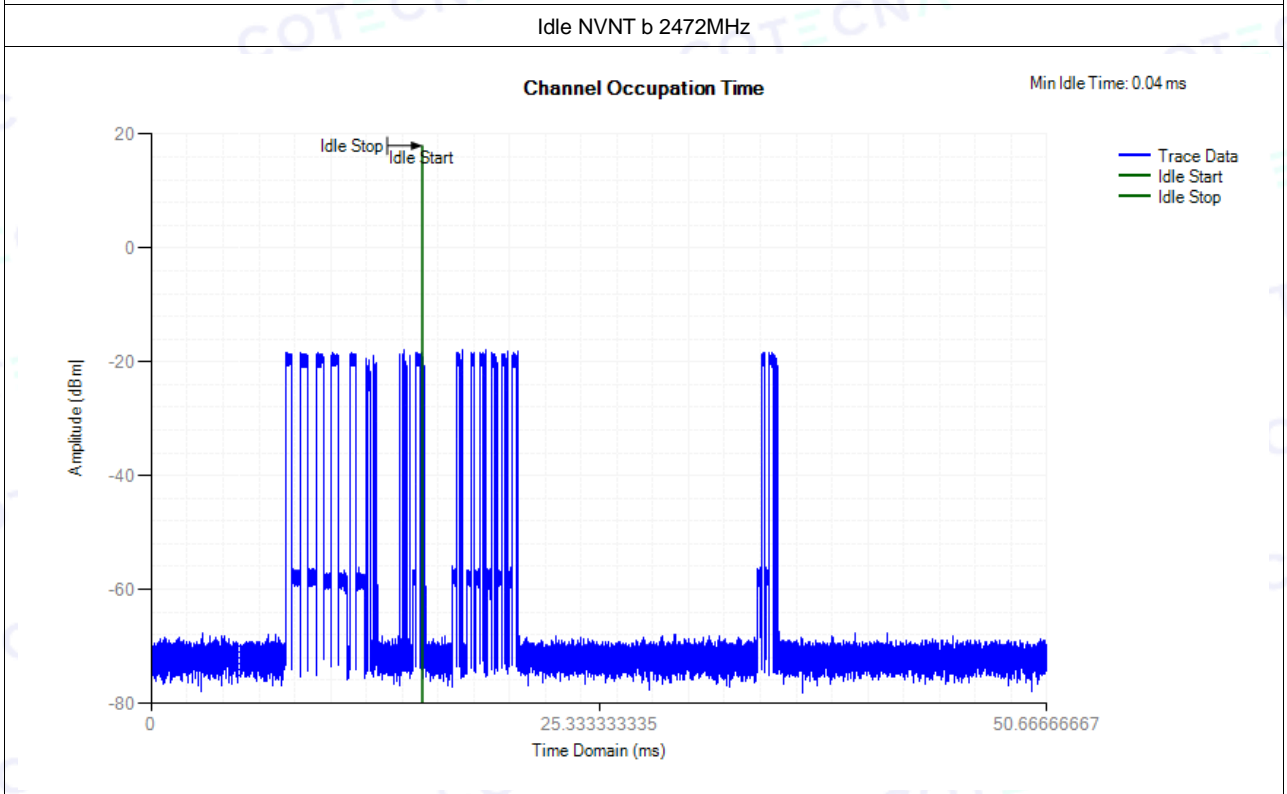
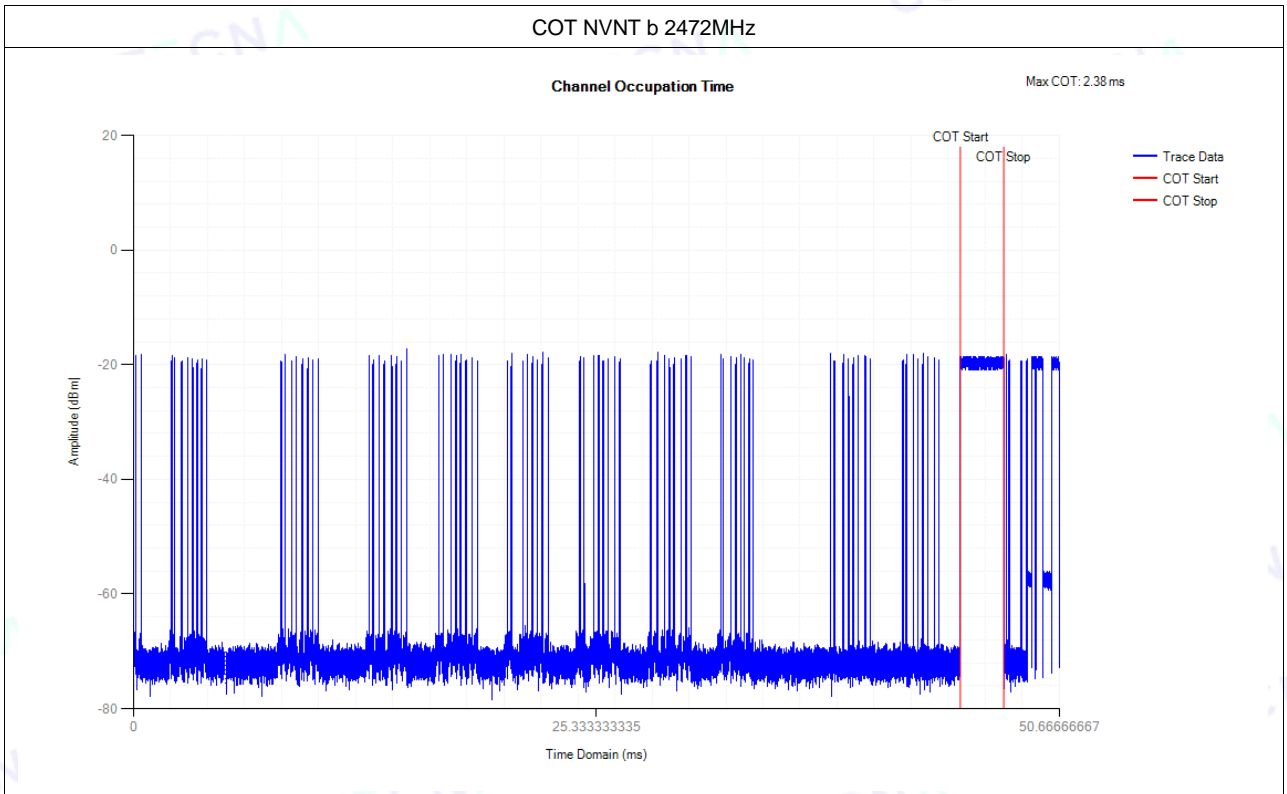




4. Adaptivity COT

Condition	Mode	Frequency (MHz)	Antenna	Max COT (ms)	Limit COT (ms)	Min Idle Time (ms)	Limit Idle Time (ms)	Verdict
NVNT	b	2412	Ant1	2.384	≤ 13	0.025	> 0.018	Pass
NVNT	b	2472	Ant1	2.384	≤ 13	0.043	> 0.018	Pass



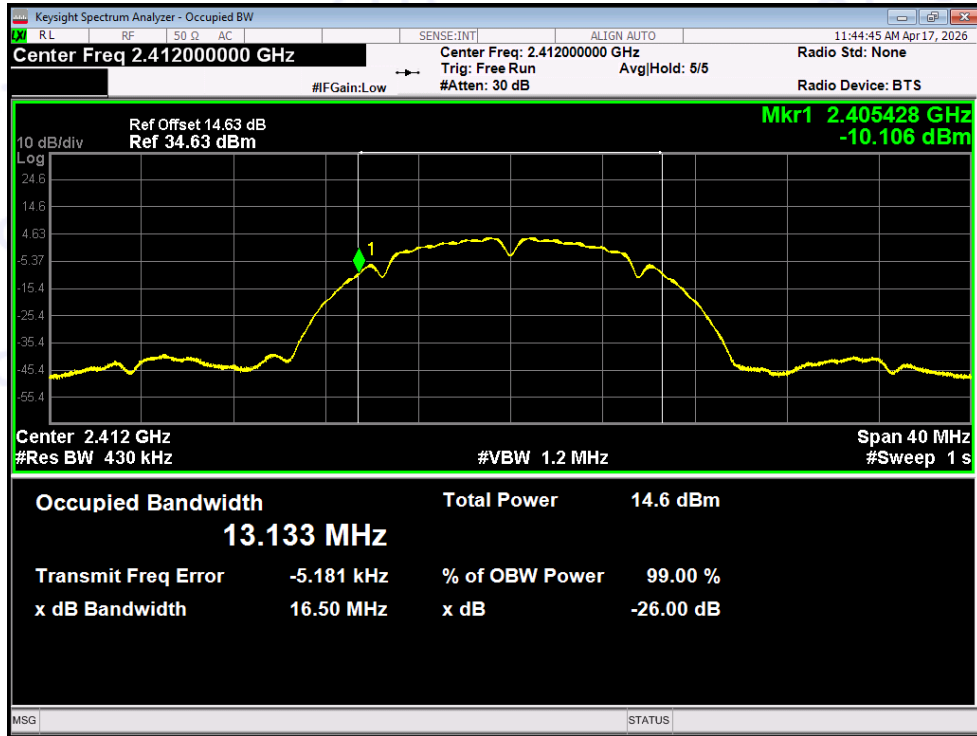


5. Occupied Channel Bandwidth

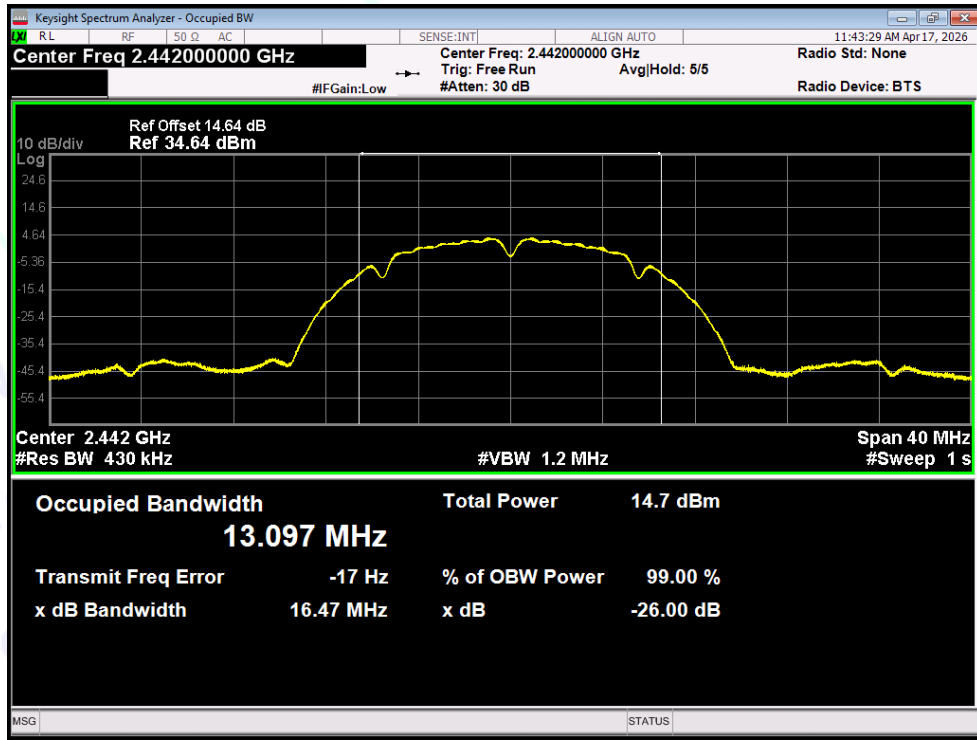
Condition	Mode	Frequency (MHz)	Antenna	Center Frequency (MHz)	OBW (MHz)	Lower Edge (MHz)	Upper Edge (MHz)	Limit OBW (MHz)	Verdict
NVNT	b	2412	Ant1	2411.995	13.133	2405.428	2418.561	2400 - 2483.5MHz	Pass
NVNT	b	2442	Ant1	2442	13.097	2435.451	2448.549	2400 - 2483.5MHz	Pass
NVNT	b	2472	Ant1	2472.015	13.122	2465.454	2478.576	2400 - 2483.5MHz	Pass
NVNT	g	2412	Ant1	2411.999	16.6	2403.699	2420.299	2400 - 2483.5MHz	Pass
NVNT	g	2442	Ant1	2442.001	16.598	2433.701	2450.3	2400 - 2483.5MHz	Pass
NVNT	g	2472	Ant1	2472.007	16.599	2463.708	2480.307	2400 - 2483.5MHz	Pass
NVNT	n(HT20)	2412	Ant1	2411.997	17.81	2403.092	2420.901	2400 - 2483.5MHz	Pass
NVNT	n(HT20)	2442	Ant1	2441.998	17.799	2433.098	2450.898	2400 - 2483.5MHz	Pass
NVNT	n(HT20)	2472	Ant1	2472.004	17.807	2463.101	2480.907	2400 - 2483.5MHz	Pass

Test Graphs

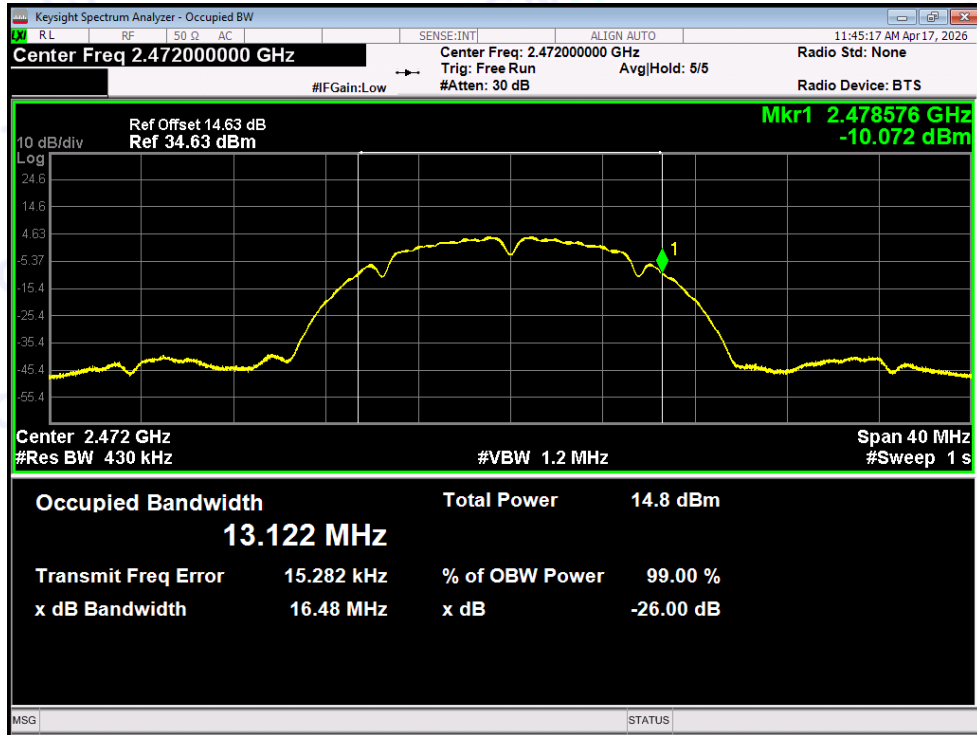
OBW NVNT b 2412MHz Ant1



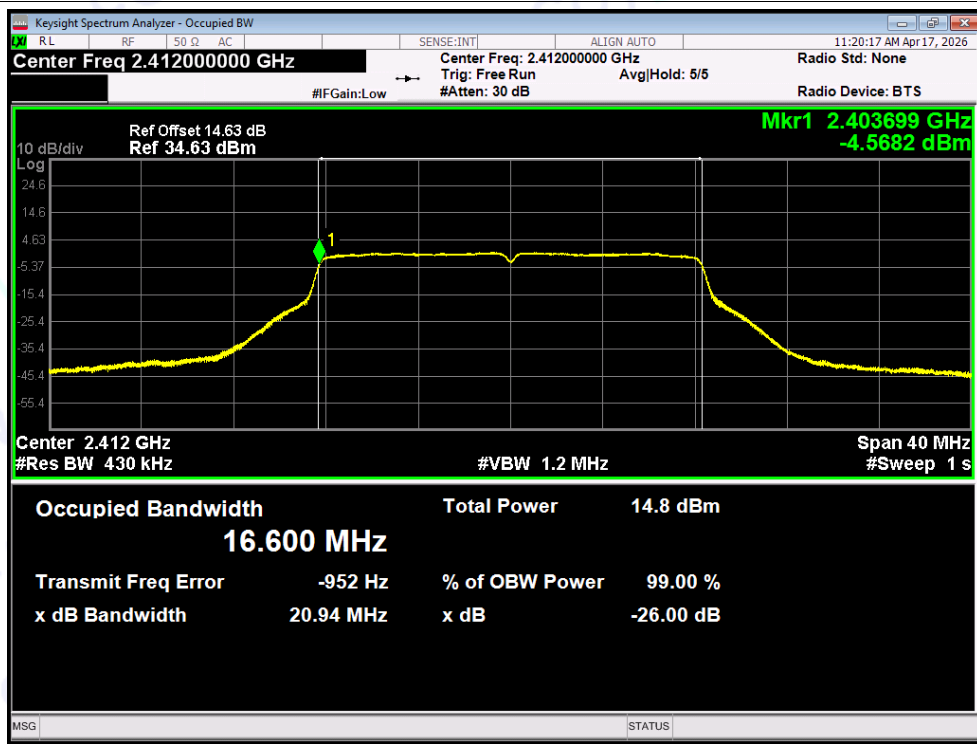
OBW NVNT b 2442MHz Ant1



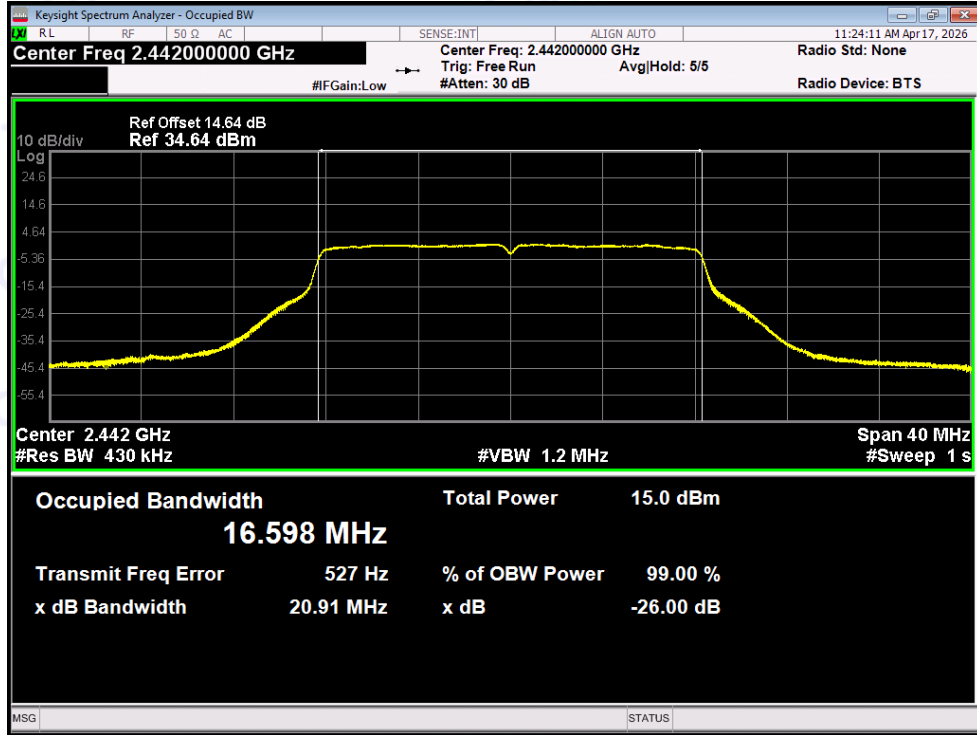
OBW NVNT b 2472MHz Ant1



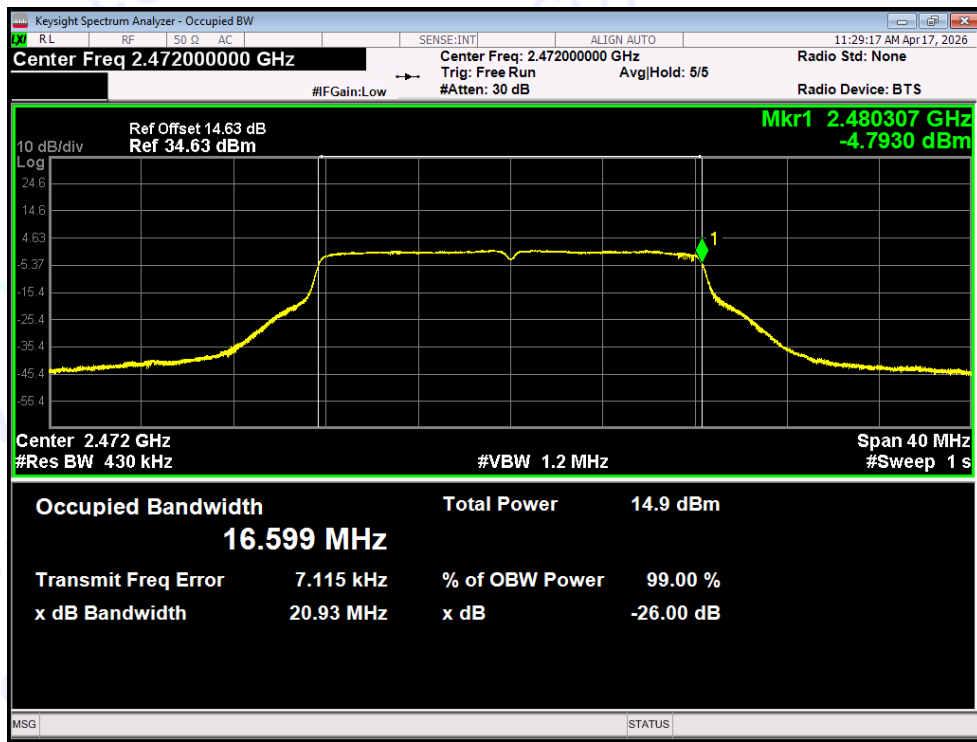
OBW NVNT g 2412MHz Ant1

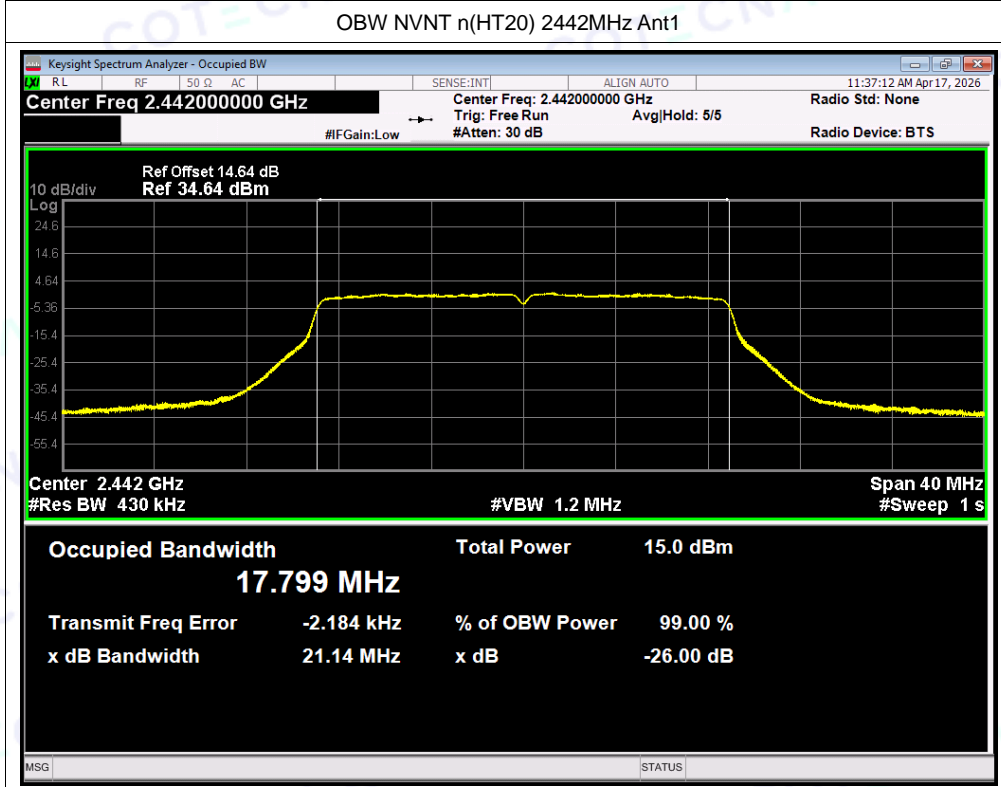
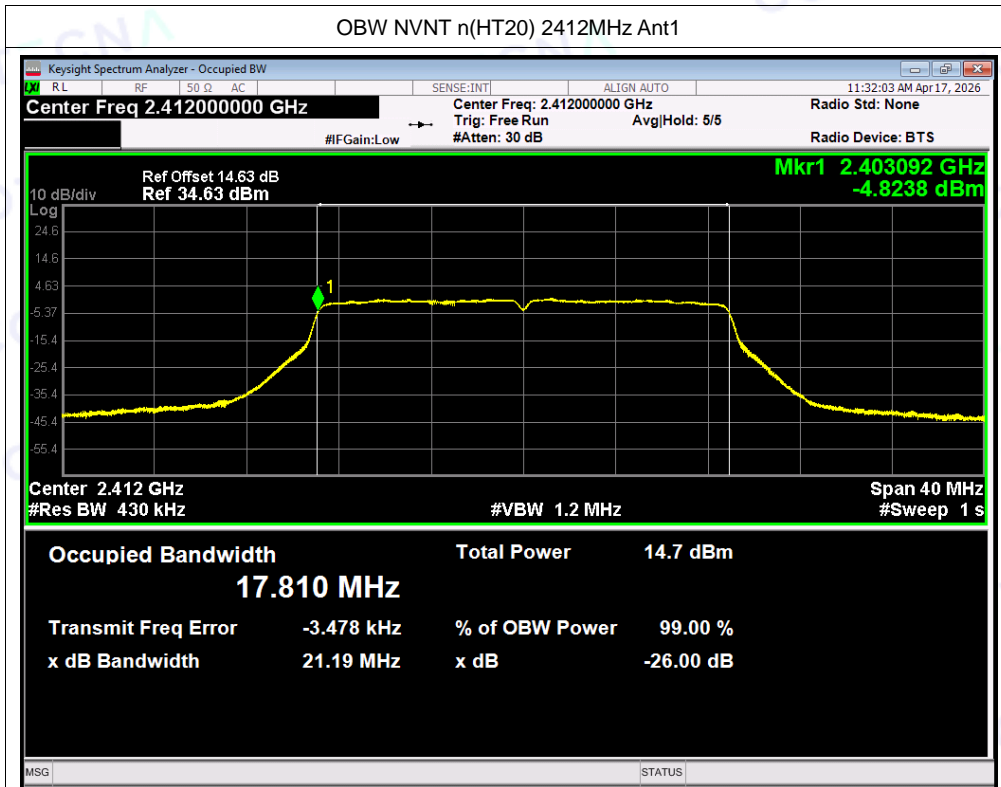


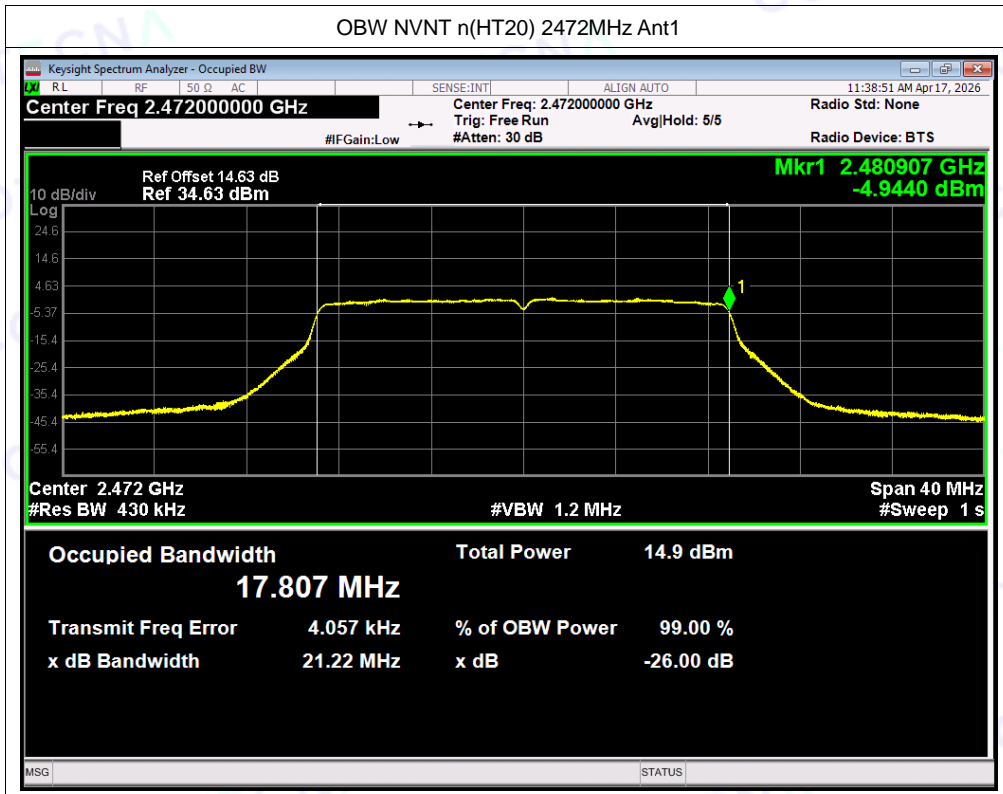
OBW NVNT g 2442MHz Ant1



OBW NVNT g 2472MHz Ant1







6. Transmitter unwanted emissions in the out-of-band domain

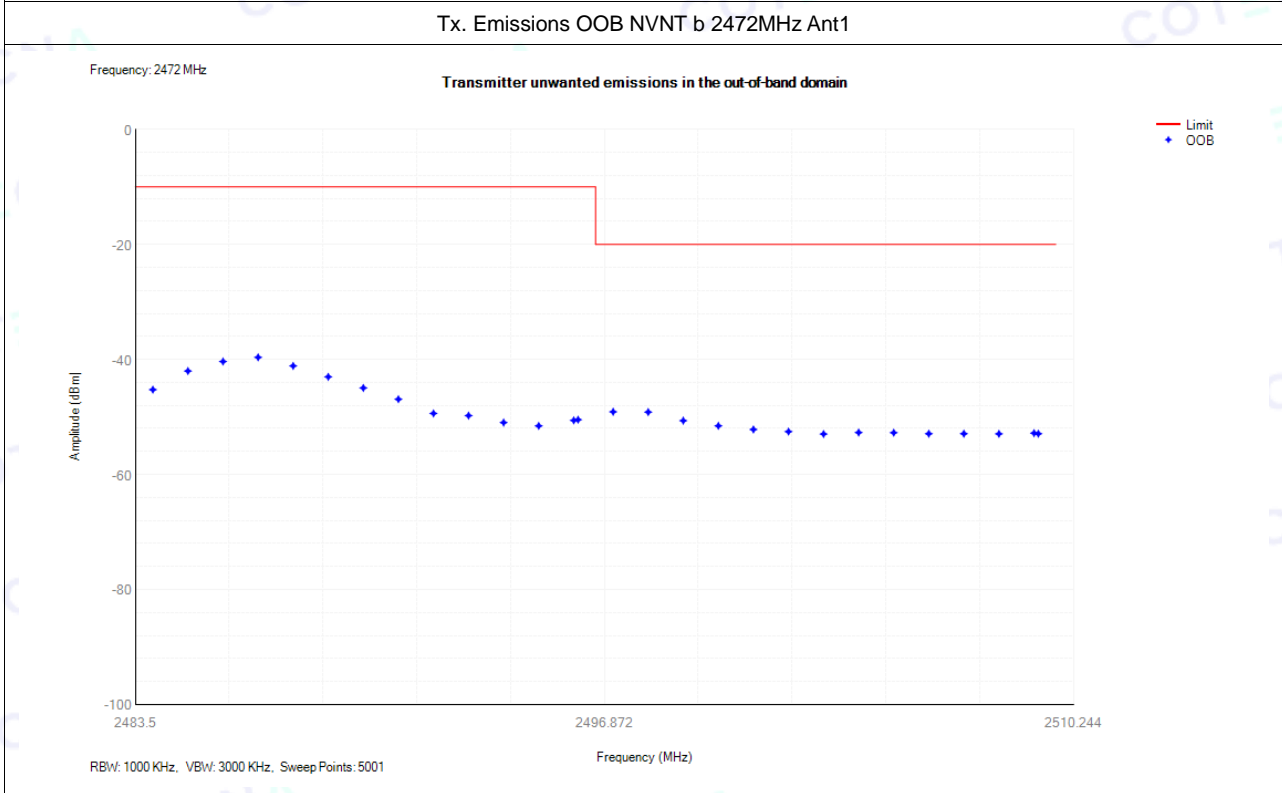
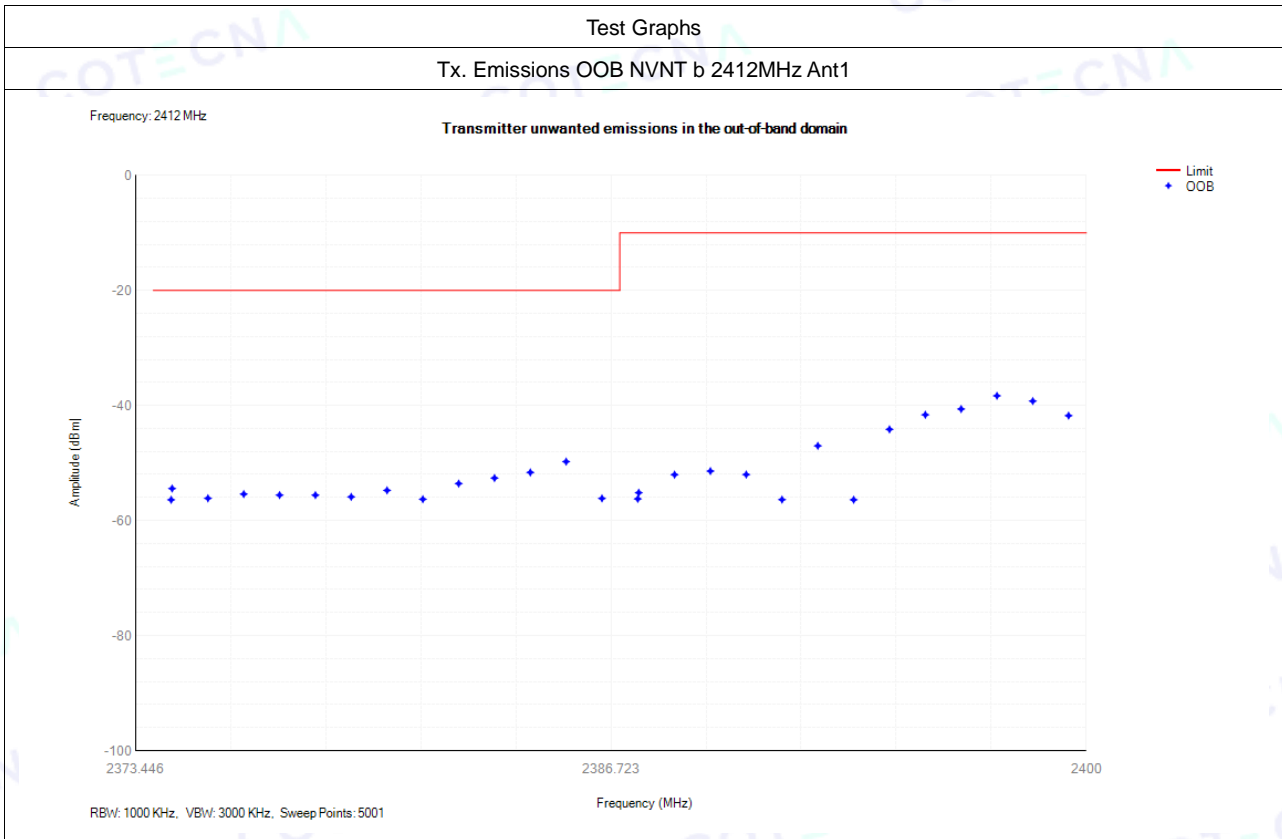
Condition	Mode	Frequency (MHz)	Antenna	OOB Frequency (MHz)	Level (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	b	2412	Ant1	2399.5	-41.76	-10	Pass
NVNT	b	2412	Ant1	2398.5	-39.23	-10	Pass
NVNT	b	2412	Ant1	2397.5	-38.31	-10	Pass
NVNT	b	2412	Ant1	2396.5	-40.61	-10	Pass
NVNT	b	2412	Ant1	2395.5	-41.61	-10	Pass
NVNT	b	2412	Ant1	2394.5	-44.14	-10	Pass
NVNT	b	2412	Ant1	2393.5	-56.38	-10	Pass
NVNT	b	2412	Ant1	2392.5	-47.01	-10	Pass
NVNT	b	2412	Ant1	2391.5	-56.36	-10	Pass
NVNT	b	2412	Ant1	2390.5	-52	-10	Pass
NVNT	b	2412	Ant1	2389.5	-51.4	-10	Pass
NVNT	b	2412	Ant1	2388.5	-52.02	-10	Pass
NVNT	b	2412	Ant1	2387.5	-55.16	-10	Pass
NVNT	b	2412	Ant1	2387.473	-56.23	-10	Pass
NVNT	b	2412	Ant1	2386.473	-56.15	-20	Pass
NVNT	b	2412	Ant1	2385.473	-49.75	-20	Pass
NVNT	b	2412	Ant1	2384.473	-51.63	-20	Pass
NVNT	b	2412	Ant1	2383.473	-52.61	-20	Pass
NVNT	b	2412	Ant1	2382.473	-53.57	-20	Pass
NVNT	b	2412	Ant1	2381.473	-56.29	-20	Pass
NVNT	b	2412	Ant1	2380.473	-54.75	-20	Pass
NVNT	b	2412	Ant1	2379.473	-55.88	-20	Pass
NVNT	b	2412	Ant1	2378.473	-55.58	-20	Pass
NVNT	b	2412	Ant1	2377.473	-55.57	-20	Pass
NVNT	b	2412	Ant1	2376.473	-55.4	-20	Pass
NVNT	b	2412	Ant1	2375.473	-56.13	-20	Pass
NVNT	b	2412	Ant1	2374.473	-54.43	-20	Pass
NVNT	b	2412	Ant1	2374.446	-56.39	-20	Pass
NVNT	b	2472	Ant1	2484	-45.24	-10	Pass
NVNT	b	2472	Ant1	2485	-42	-10	Pass
NVNT	b	2472	Ant1	2486	-40.35	-10	Pass
NVNT	b	2472	Ant1	2487	-39.62	-10	Pass
NVNT	b	2472	Ant1	2488	-41.11	-10	Pass
NVNT	b	2472	Ant1	2489	-43.01	-10	Pass
NVNT	b	2472	Ant1	2490	-44.94	-10	Pass
NVNT	b	2472	Ant1	2491	-46.9	-10	Pass
NVNT	b	2472	Ant1	2492	-49.37	-10	Pass
NVNT	b	2472	Ant1	2493	-49.75	-10	Pass
NVNT	b	2472	Ant1	2494	-50.96	-10	Pass
NVNT	b	2472	Ant1	2495	-51.54	-10	Pass
NVNT	b	2472	Ant1	2496	-50.58	-10	Pass
NVNT	b	2472	Ant1	2496.122	-50.46	-10	Pass
NVNT	b	2472	Ant1	2497.122	-49.09	-20	Pass
NVNT	b	2472	Ant1	2498.122	-49.14	-20	Pass

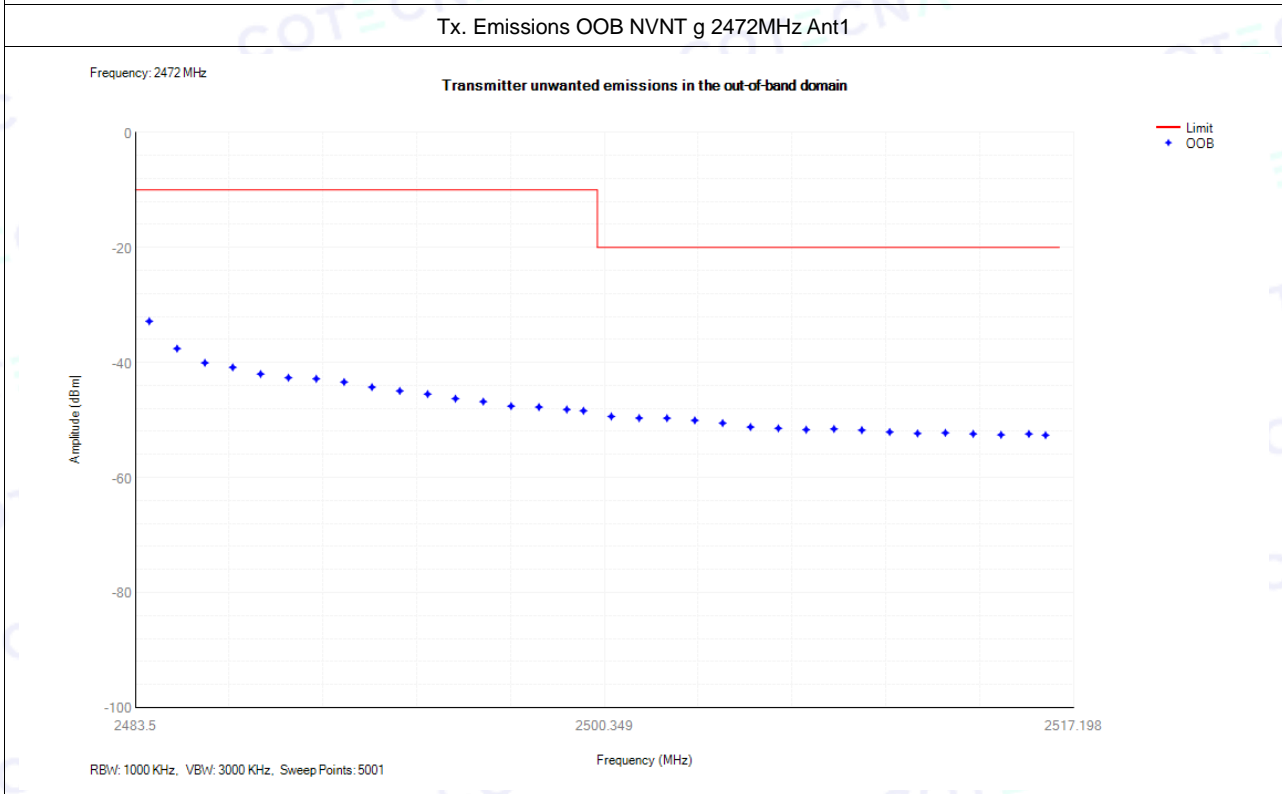
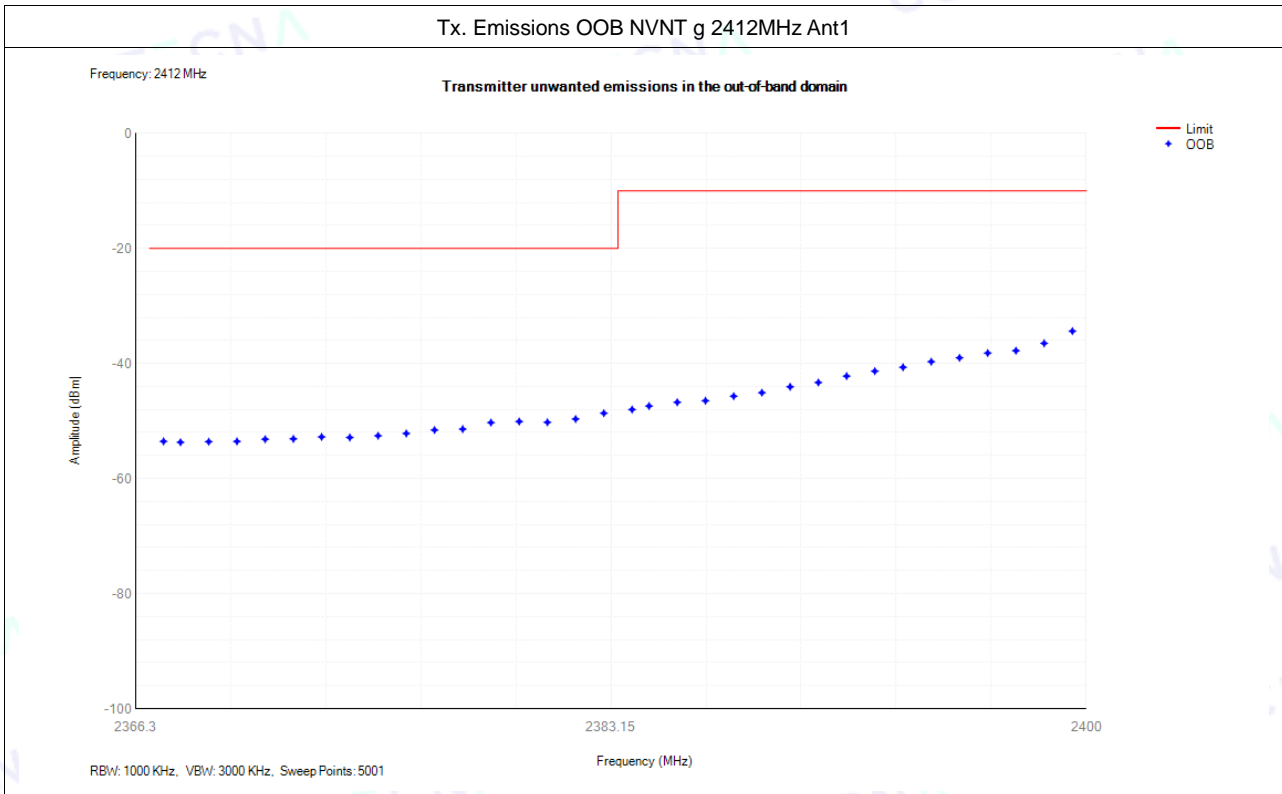
NVNT	b	2472	Ant1	2499.122	-50.63	-20	Pass
NVNT	b	2472	Ant1	2500.122	-51.53	-20	Pass
NVNT	b	2472	Ant1	2501.122	-52.16	-20	Pass
NVNT	b	2472	Ant1	2502.122	-52.53	-20	Pass
NVNT	b	2472	Ant1	2503.122	-52.95	-20	Pass
NVNT	b	2472	Ant1	2504.122	-52.69	-20	Pass
NVNT	b	2472	Ant1	2505.122	-52.72	-20	Pass
NVNT	b	2472	Ant1	2506.122	-52.9	-20	Pass
NVNT	b	2472	Ant1	2507.122	-52.9	-20	Pass
NVNT	b	2472	Ant1	2508.122	-52.92	-20	Pass
NVNT	b	2472	Ant1	2509.122	-52.8	-20	Pass
NVNT	b	2472	Ant1	2509.244	-52.9	-20	Pass
NVNT	g	2412	Ant1	2399.5	-34.37	-10	Pass
NVNT	g	2412	Ant1	2398.5	-36.49	-10	Pass
NVNT	g	2412	Ant1	2397.5	-37.77	-10	Pass
NVNT	g	2412	Ant1	2396.5	-38.19	-10	Pass
NVNT	g	2412	Ant1	2395.5	-39.01	-10	Pass
NVNT	g	2412	Ant1	2394.5	-39.68	-10	Pass
NVNT	g	2412	Ant1	2393.5	-40.65	-10	Pass
NVNT	g	2412	Ant1	2392.5	-41.33	-10	Pass
NVNT	g	2412	Ant1	2391.5	-42.19	-10	Pass
NVNT	g	2412	Ant1	2390.5	-43.3	-10	Pass
NVNT	g	2412	Ant1	2389.5	-44.05	-10	Pass
NVNT	g	2412	Ant1	2388.5	-45.07	-10	Pass
NVNT	g	2412	Ant1	2387.5	-45.68	-10	Pass
NVNT	g	2412	Ant1	2386.5	-46.47	-10	Pass
NVNT	g	2412	Ant1	2385.5	-46.74	-10	Pass
NVNT	g	2412	Ant1	2384.5	-47.39	-10	Pass
NVNT	g	2412	Ant1	2383.9	-48	-10	Pass
NVNT	g	2412	Ant1	2382.9	-48.64	-20	Pass
NVNT	g	2412	Ant1	2381.9	-49.65	-20	Pass
NVNT	g	2412	Ant1	2380.9	-50.22	-20	Pass
NVNT	g	2412	Ant1	2379.9	-50.08	-20	Pass
NVNT	g	2412	Ant1	2378.9	-50.27	-20	Pass
NVNT	g	2412	Ant1	2377.9	-51.4	-20	Pass
NVNT	g	2412	Ant1	2376.9	-51.56	-20	Pass
NVNT	g	2412	Ant1	2375.9	-52.16	-20	Pass
NVNT	g	2412	Ant1	2374.9	-52.56	-20	Pass
NVNT	g	2412	Ant1	2373.9	-52.86	-20	Pass
NVNT	g	2412	Ant1	2372.9	-52.76	-20	Pass
NVNT	g	2412	Ant1	2371.9	-53.1	-20	Pass
NVNT	g	2412	Ant1	2370.9	-53.16	-20	Pass
NVNT	g	2412	Ant1	2369.9	-53.54	-20	Pass
NVNT	g	2412	Ant1	2368.9	-53.59	-20	Pass
NVNT	g	2412	Ant1	2367.9	-53.69	-20	Pass
NVNT	g	2412	Ant1	2367.3	-53.53	-20	Pass
NVNT	g	2472	Ant1	2484	-32.83	-10	Pass

NVNT	g	2472	Ant1	2485	-37.58	-10	Pass
NVNT	g	2472	Ant1	2486	-40.06	-10	Pass
NVNT	g	2472	Ant1	2487	-40.84	-10	Pass
NVNT	g	2472	Ant1	2488	-42	-10	Pass
NVNT	g	2472	Ant1	2489	-42.64	-10	Pass
NVNT	g	2472	Ant1	2490	-42.83	-10	Pass
NVNT	g	2472	Ant1	2491	-43.4	-10	Pass
NVNT	g	2472	Ant1	2492	-44.28	-10	Pass
NVNT	g	2472	Ant1	2493	-44.94	-10	Pass
NVNT	g	2472	Ant1	2494	-45.49	-10	Pass
NVNT	g	2472	Ant1	2495	-46.28	-10	Pass
NVNT	g	2472	Ant1	2496	-46.8	-10	Pass
NVNT	g	2472	Ant1	2497	-47.58	-10	Pass
NVNT	g	2472	Ant1	2498	-47.75	-10	Pass
NVNT	g	2472	Ant1	2499	-48.17	-10	Pass
NVNT	g	2472	Ant1	2499.599	-48.39	-10	Pass
NVNT	g	2472	Ant1	2500.599	-49.38	-20	Pass
NVNT	g	2472	Ant1	2501.599	-49.66	-20	Pass
NVNT	g	2472	Ant1	2502.599	-49.68	-20	Pass
NVNT	g	2472	Ant1	2503.599	-50.06	-20	Pass
NVNT	g	2472	Ant1	2504.599	-50.54	-20	Pass
NVNT	g	2472	Ant1	2505.599	-51.22	-20	Pass
NVNT	g	2472	Ant1	2506.599	-51.44	-20	Pass
NVNT	g	2472	Ant1	2507.599	-51.68	-20	Pass
NVNT	g	2472	Ant1	2508.599	-51.55	-20	Pass
NVNT	g	2472	Ant1	2509.599	-51.76	-20	Pass
NVNT	g	2472	Ant1	2510.599	-52.08	-20	Pass
NVNT	g	2472	Ant1	2511.599	-52.33	-20	Pass
NVNT	g	2472	Ant1	2512.599	-52.23	-20	Pass
NVNT	g	2472	Ant1	2513.599	-52.41	-20	Pass
NVNT	g	2472	Ant1	2514.599	-52.57	-20	Pass
NVNT	g	2472	Ant1	2515.599	-52.42	-20	Pass
NVNT	g	2472	Ant1	2516.198	-52.64	-20	Pass
NVNT	n(HT20)	2412	Ant1	2399.5	-33.65	-10	Pass
NVNT	n(HT20)	2412	Ant1	2398.5	-36.38	-10	Pass
NVNT	n(HT20)	2412	Ant1	2397.5	-37.48	-10	Pass
NVNT	n(HT20)	2412	Ant1	2396.5	-38.08	-10	Pass
NVNT	n(HT20)	2412	Ant1	2395.5	-38.49	-10	Pass
NVNT	n(HT20)	2412	Ant1	2394.5	-39.41	-10	Pass
NVNT	n(HT20)	2412	Ant1	2393.5	-40.11	-10	Pass
NVNT	n(HT20)	2412	Ant1	2392.5	-40.65	-10	Pass
NVNT	n(HT20)	2412	Ant1	2391.5	-41.23	-10	Pass
NVNT	n(HT20)	2412	Ant1	2390.5	-41.99	-10	Pass
NVNT	n(HT20)	2412	Ant1	2389.5	-43.08	-10	Pass
NVNT	n(HT20)	2412	Ant1	2388.5	-43.97	-10	Pass
NVNT	n(HT20)	2412	Ant1	2387.5	-44.96	-10	Pass
NVNT	n(HT20)	2412	Ant1	2386.5	-45.54	-10	Pass

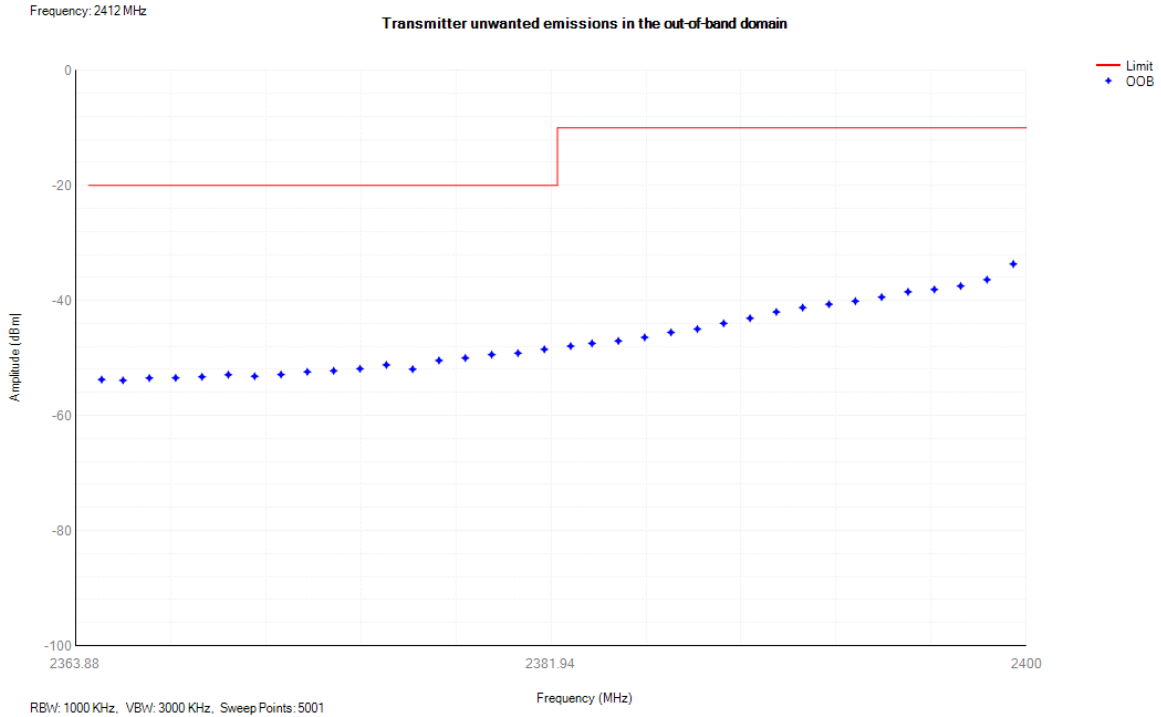
NVNT	n(HT20)	2412	Ant1	2385.5	-46.41	-10	Pass
NVNT	n(HT20)	2412	Ant1	2384.5	-47.03	-10	Pass
NVNT	n(HT20)	2412	Ant1	2383.5	-47.45	-10	Pass
NVNT	n(HT20)	2412	Ant1	2382.69	-47.93	-10	Pass
NVNT	n(HT20)	2412	Ant1	2381.69	-48.49	-20	Pass
NVNT	n(HT20)	2412	Ant1	2380.69	-49.15	-20	Pass
NVNT	n(HT20)	2412	Ant1	2379.69	-49.41	-20	Pass
NVNT	n(HT20)	2412	Ant1	2378.69	-49.99	-20	Pass
NVNT	n(HT20)	2412	Ant1	2377.69	-50.42	-20	Pass
NVNT	n(HT20)	2412	Ant1	2376.69	-51.94	-20	Pass
NVNT	n(HT20)	2412	Ant1	2375.69	-51.19	-20	Pass
NVNT	n(HT20)	2412	Ant1	2374.69	-51.86	-20	Pass
NVNT	n(HT20)	2412	Ant1	2373.69	-52.22	-20	Pass
NVNT	n(HT20)	2412	Ant1	2372.69	-52.4	-20	Pass
NVNT	n(HT20)	2412	Ant1	2371.69	-52.87	-20	Pass
NVNT	n(HT20)	2412	Ant1	2370.69	-53.17	-20	Pass
NVNT	n(HT20)	2412	Ant1	2369.69	-52.9	-20	Pass
NVNT	n(HT20)	2412	Ant1	2368.69	-53.26	-20	Pass
NVNT	n(HT20)	2412	Ant1	2367.69	-53.45	-20	Pass
NVNT	n(HT20)	2412	Ant1	2366.69	-53.47	-20	Pass
NVNT	n(HT20)	2412	Ant1	2365.69	-53.88	-20	Pass
NVNT	n(HT20)	2412	Ant1	2364.88	-53.74	-20	Pass
NVNT	n(HT20)	2472	Ant1	2484	-31.68	-10	Pass
NVNT	n(HT20)	2472	Ant1	2485	-36.71	-10	Pass
NVNT	n(HT20)	2472	Ant1	2486	-38.71	-10	Pass
NVNT	n(HT20)	2472	Ant1	2487	-39.71	-10	Pass
NVNT	n(HT20)	2472	Ant1	2488	-40.49	-10	Pass
NVNT	n(HT20)	2472	Ant1	2489	-40.95	-10	Pass
NVNT	n(HT20)	2472	Ant1	2490	-41.41	-10	Pass
NVNT	n(HT20)	2472	Ant1	2491	-42.13	-10	Pass
NVNT	n(HT20)	2472	Ant1	2492	-42.57	-10	Pass
NVNT	n(HT20)	2472	Ant1	2493	-43.3	-10	Pass
NVNT	n(HT20)	2472	Ant1	2494	-44.1	-10	Pass
NVNT	n(HT20)	2472	Ant1	2495	-44.64	-10	Pass
NVNT	n(HT20)	2472	Ant1	2496	-45.55	-10	Pass
NVNT	n(HT20)	2472	Ant1	2497	-45.92	-10	Pass
NVNT	n(HT20)	2472	Ant1	2498	-46.63	-10	Pass
NVNT	n(HT20)	2472	Ant1	2499	-47.18	-10	Pass
NVNT	n(HT20)	2472	Ant1	2500	-47.58	-10	Pass
NVNT	n(HT20)	2472	Ant1	2500.807	-48.06	-10	Pass
NVNT	n(HT20)	2472	Ant1	2501.807	-48.35	-20	Pass
NVNT	n(HT20)	2472	Ant1	2502.807	-48.61	-20	Pass
NVNT	n(HT20)	2472	Ant1	2503.807	-49.41	-20	Pass
NVNT	n(HT20)	2472	Ant1	2504.807	-49.79	-20	Pass
NVNT	n(HT20)	2472	Ant1	2505.807	-50.07	-20	Pass
NVNT	n(HT20)	2472	Ant1	2506.807	-50.56	-20	Pass
NVNT	n(HT20)	2472	Ant1	2507.807	-50.57	-20	Pass

NVNT	n(HT20)	2472	Ant1	2508.807	-51.19	-20	Pass
NVNT	n(HT20)	2472	Ant1	2509.807	-51.48	-20	Pass
NVNT	n(HT20)	2472	Ant1	2510.807	-51.33	-20	Pass
NVNT	n(HT20)	2472	Ant1	2511.807	-52.01	-20	Pass
NVNT	n(HT20)	2472	Ant1	2512.807	-52.37	-20	Pass
NVNT	n(HT20)	2472	Ant1	2513.807	-52.15	-20	Pass
NVNT	n(HT20)	2472	Ant1	2514.807	-52	-20	Pass
NVNT	n(HT20)	2472	Ant1	2515.807	-52.2	-20	Pass
NVNT	n(HT20)	2472	Ant1	2516.807	-52.45	-20	Pass
NVNT	n(HT20)	2472	Ant1	2517.807	-52.66	-20	Pass
NVNT	n(HT20)	2472	Ant1	2518.614	-52.47	-20	Pass

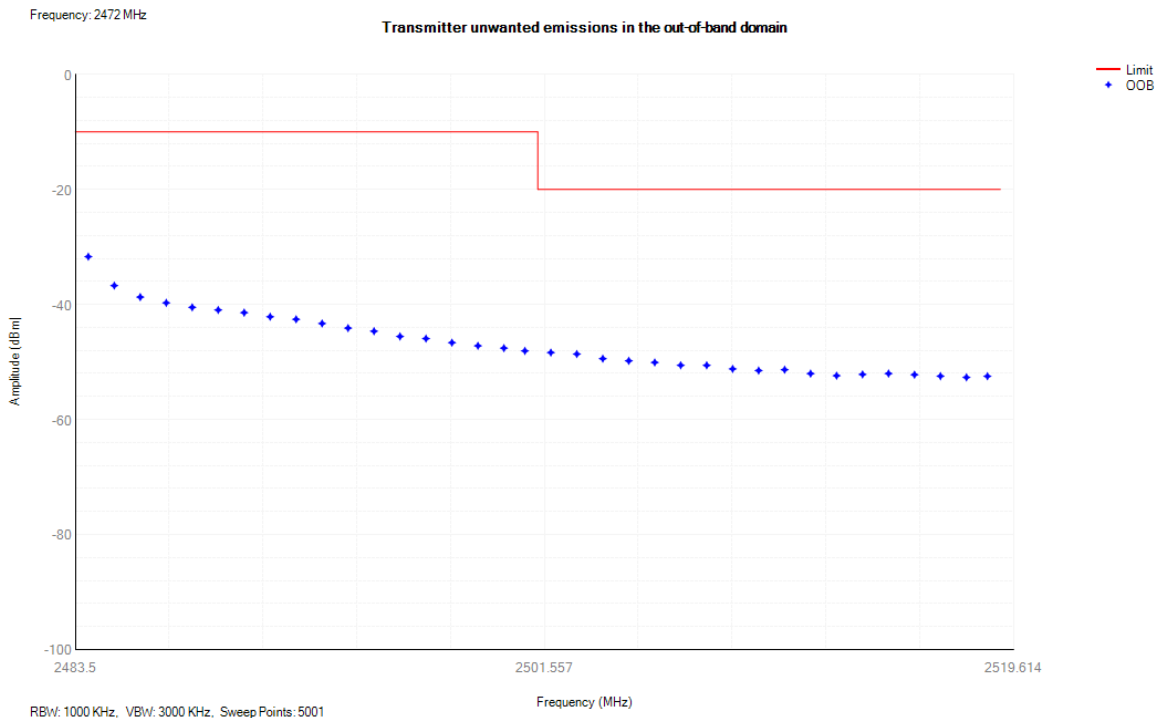




Tx. Emissions OOB NVNT n(HT20) 2412MHz Ant1

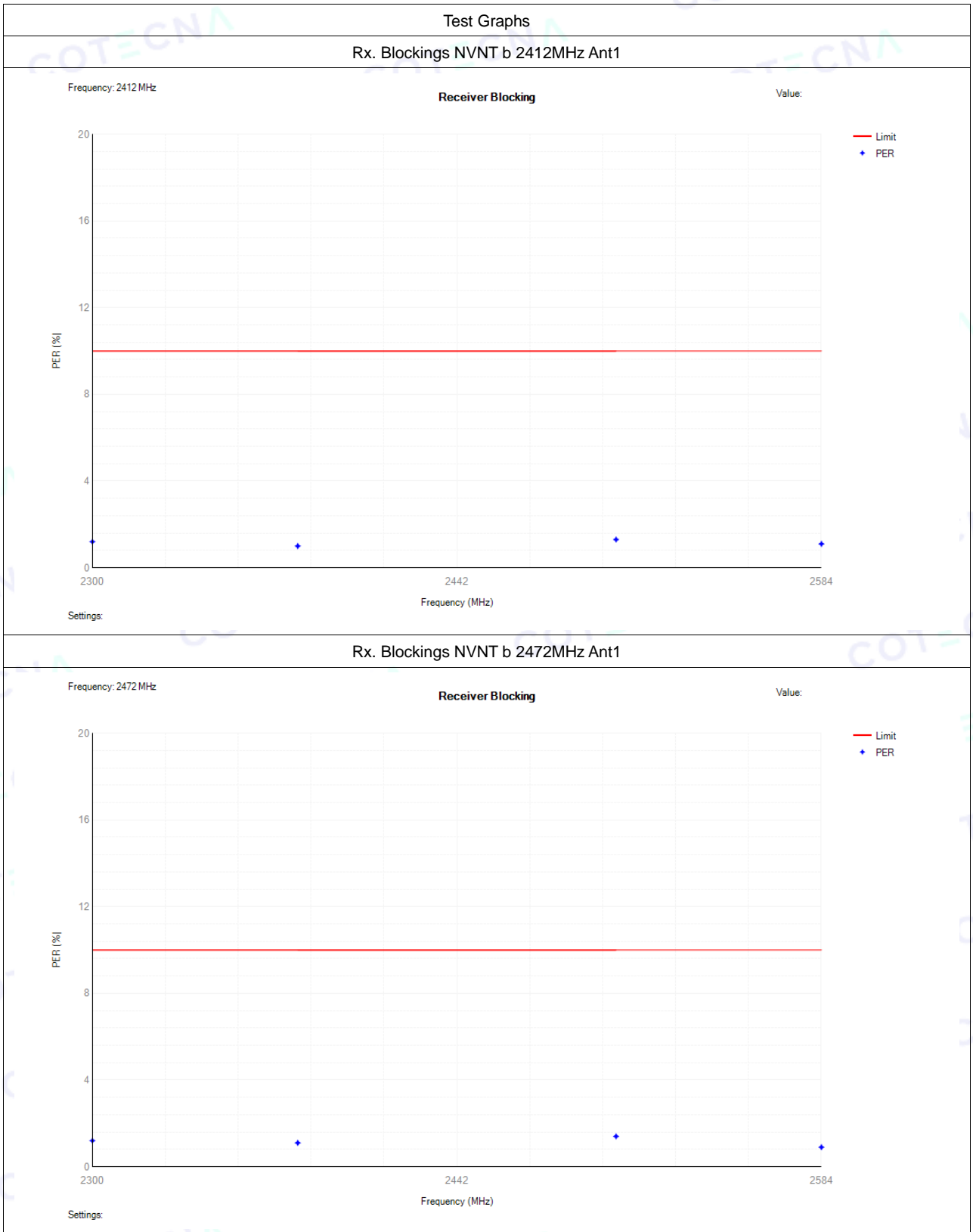


Tx. Emissions OOB NVNT n(HT20) 2472MHz Ant1



7. Receiver Blocking

Condition	Mode	Frequency (MHz)	Antenna	Wanted Power (dBm)	Blocking Frequency (MHz)	Blocking Power (dBm)	PER (%)	Limit (%)	Verdict
NVNT	b	2412	Ant1	-68	2380	-33.07	1	10	Pass
NVNT	b	2412	Ant1	-68	2504	-33.07	1.3	10	Pass
NVNT	b	2412	Ant1	-74	2300	-33.07	1.2	10	Pass
NVNT	b	2412	Ant1	-74	2584	-33.07	1.1	10	Pass
NVNT	b	2472	Ant1	-74	2380	-33.07	1.1	10	Pass
NVNT	b	2472	Ant1	-74	2504	-33.07	1.4	10	Pass
NVNT	b	2472	Ant1	-74	2300	-33.07	1.2	10	Pass
NVNT	b	2472	Ant1	-74	2584	-33.07	0.9	10	Pass



-----END OF THE REPORT-----