

Appendix

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1. Duty Cycle, Tx Sequence, Tx Gap, Medium Utilisation

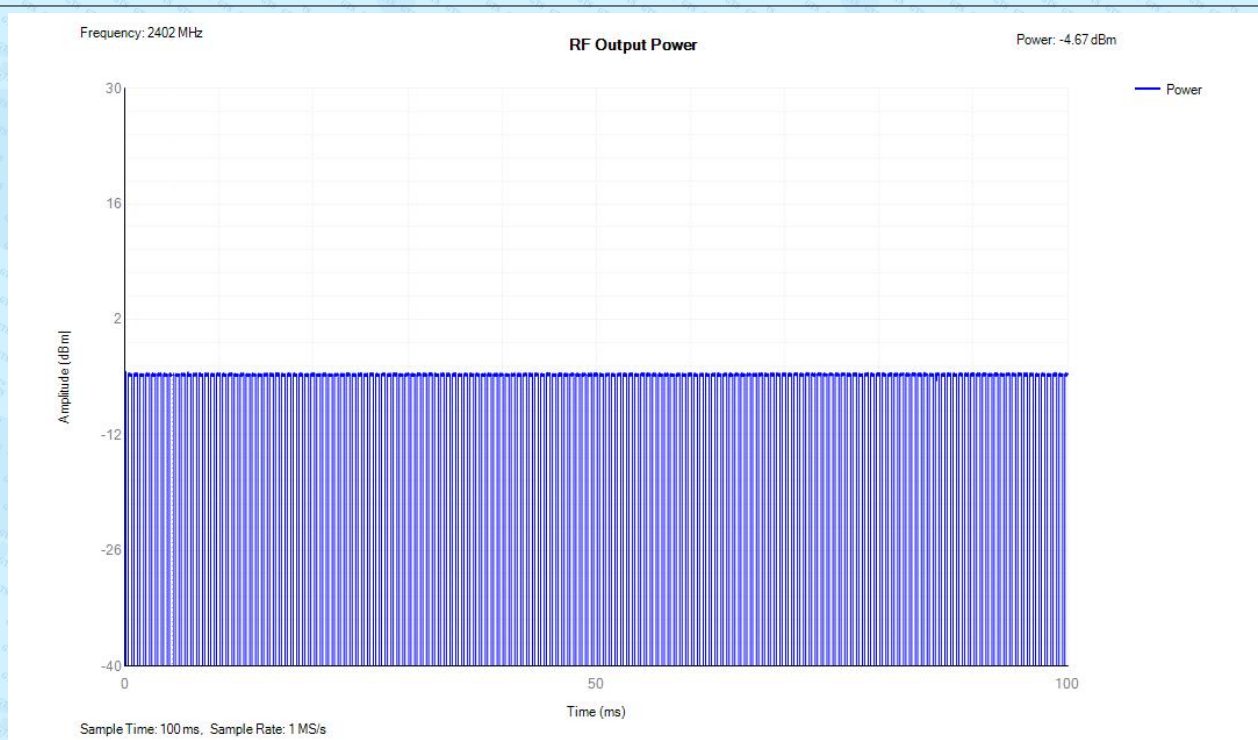
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Tx-sequence (ms)	Tx Gap (ms)	MU (%)
NVNT	BLE 1M	2402	Ant1	62.56	0.39	0.24	0.21
		2440		62.79	0.39	0.23	0.46
		2480		62.72	0.39	0.23	0.29
	BLE 2M	2402		32.96	0.21	0.42	0.11
		2440		33.12	0.21	0.42	0.24
		2480		32.96	0.21	0.42	0.15

1.1 RF Output Power

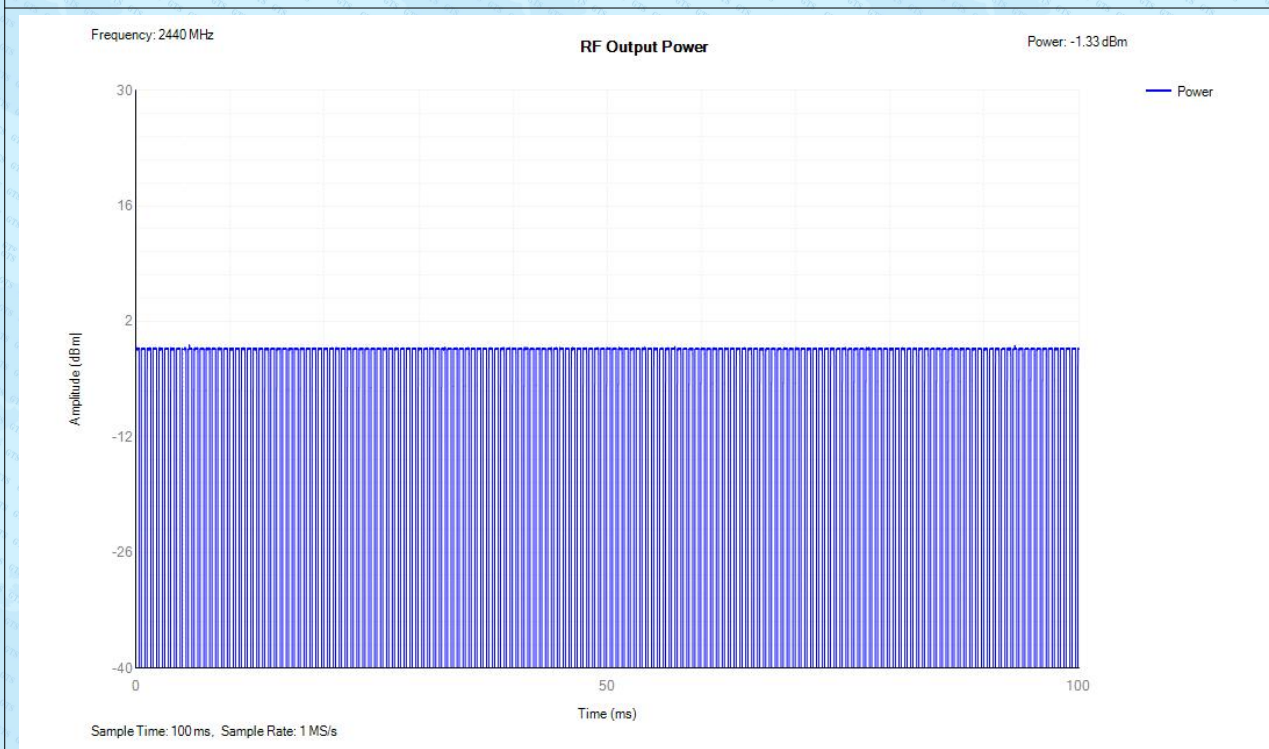
Condition	Mode	Frequency (MHz)	Antenna	Max Burst RMS Power (dBm)	Burst Number	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-4.67	161	-4.67	20	Pass
		2440		-1.33	161	-1.33	20	Pass
		2480		-3.28	161	-3.28	20	Pass
	BLE 2M	2402		-4.68	161	-4.68	20	Pass
		2440		-1.4	160	-1.4	20	Pass
		2480		-3.29	160	-3.29	20	Pass

Test Graphs

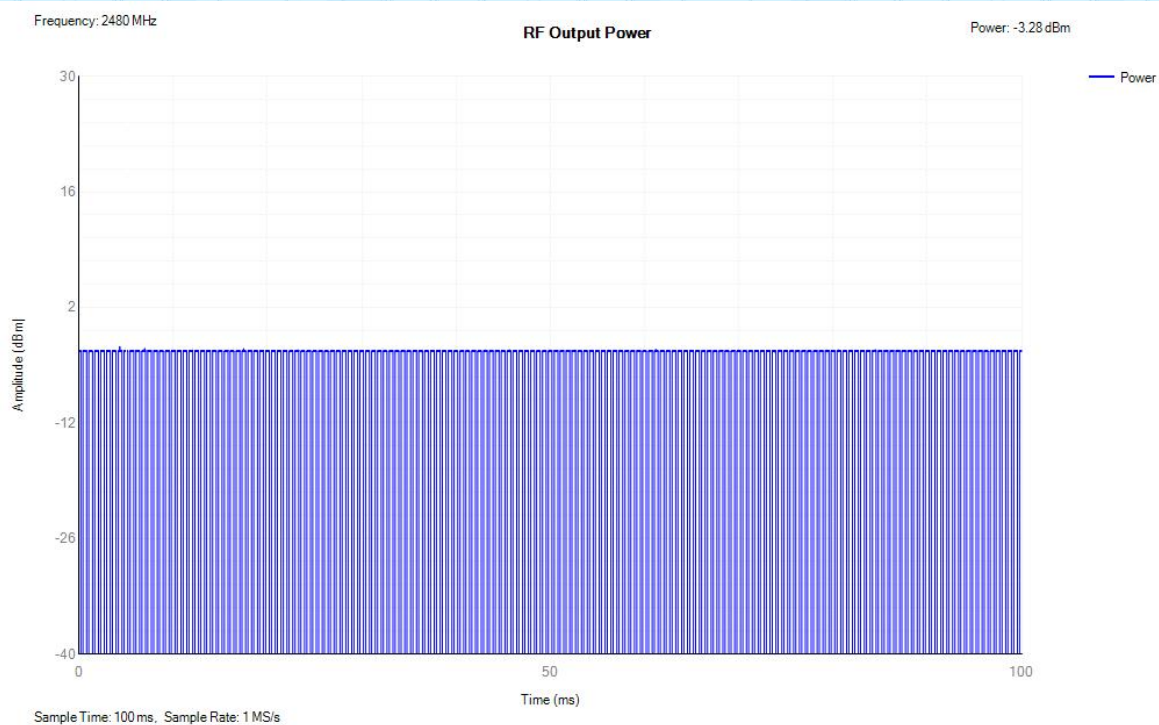
Power NVNT BLE 1M 2402MHz Ant1



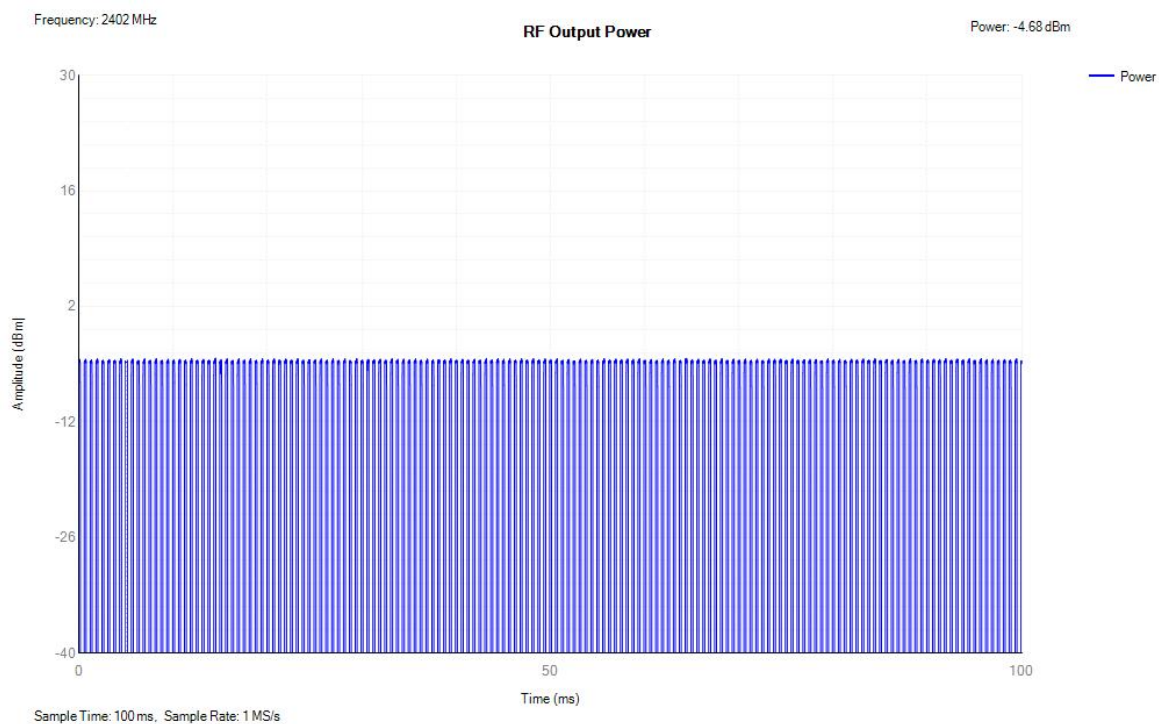
Power NVNT BLE 1M 2440MHz Ant1



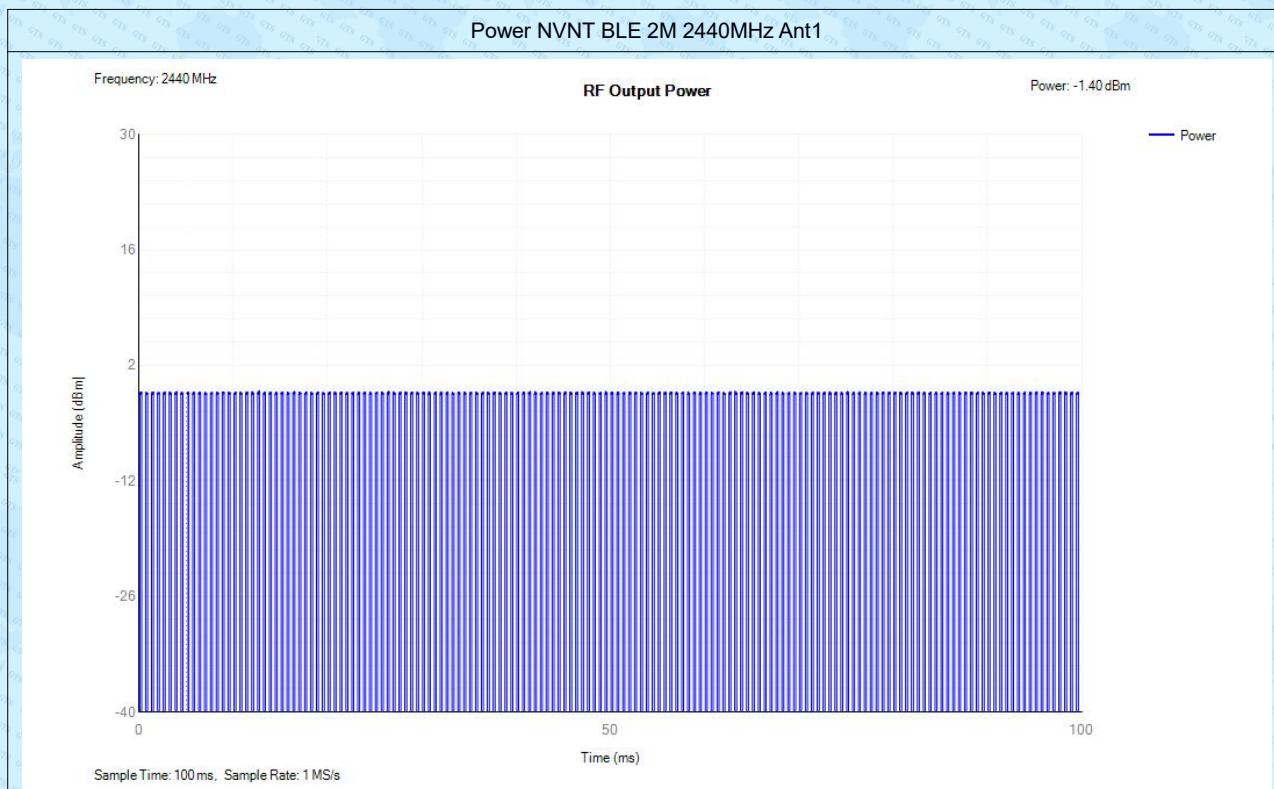
Power NVNT BLE 1M 2480MHz Ant1



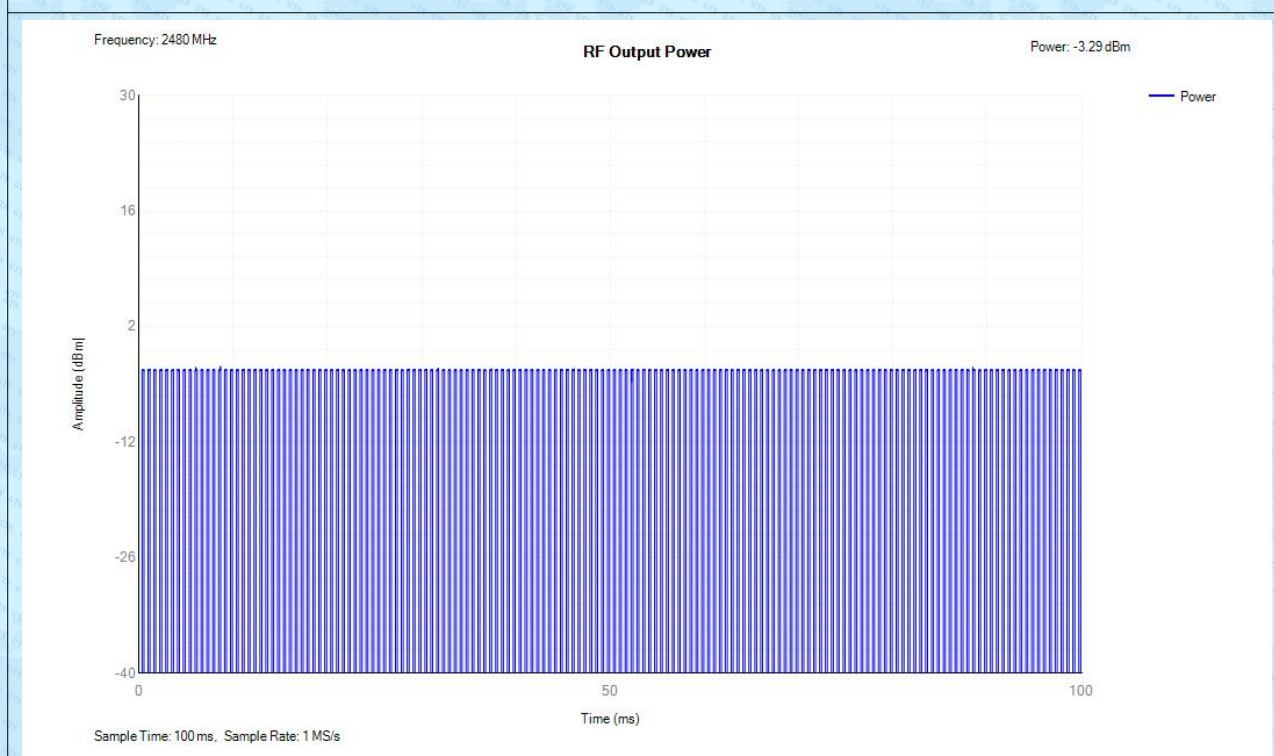
Power NVNT BLE 2M 2402MHz Ant1



Power NVNT BLE 2M 2440MHz Ant1



Power NVNT BLE 2M 2480MHz Ant1

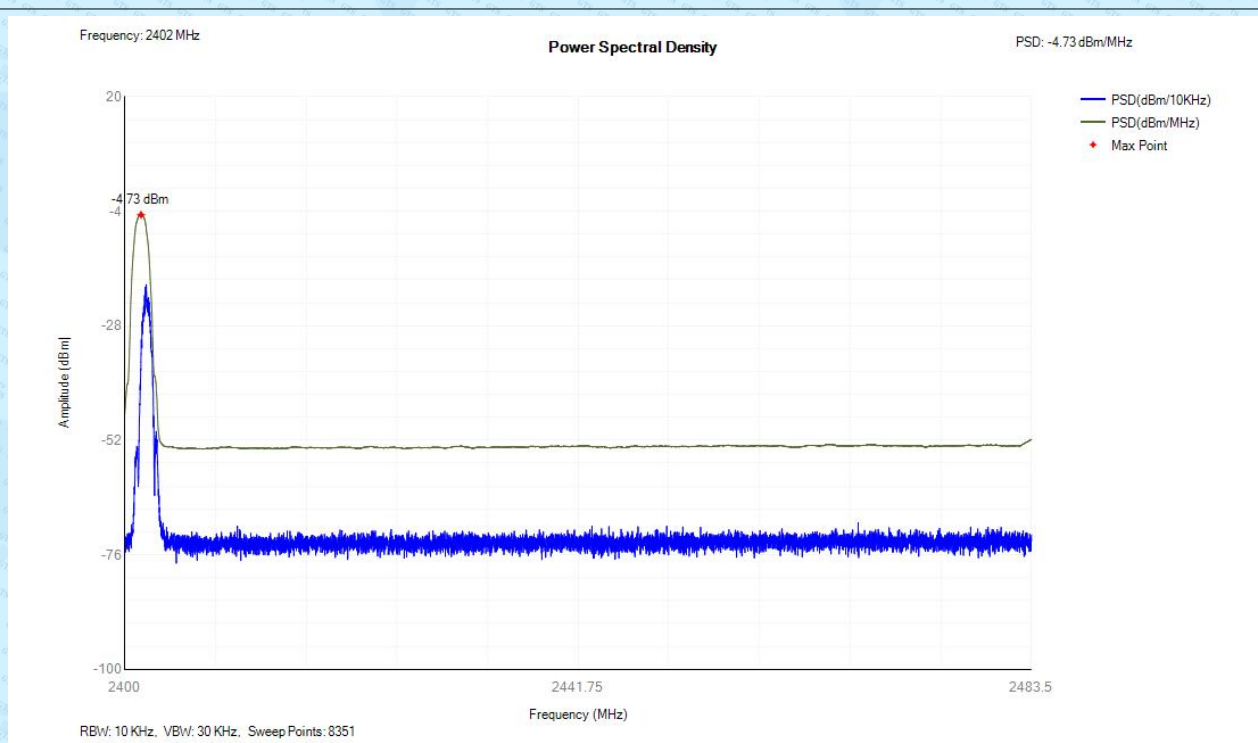


1.2 Power Spectral Density

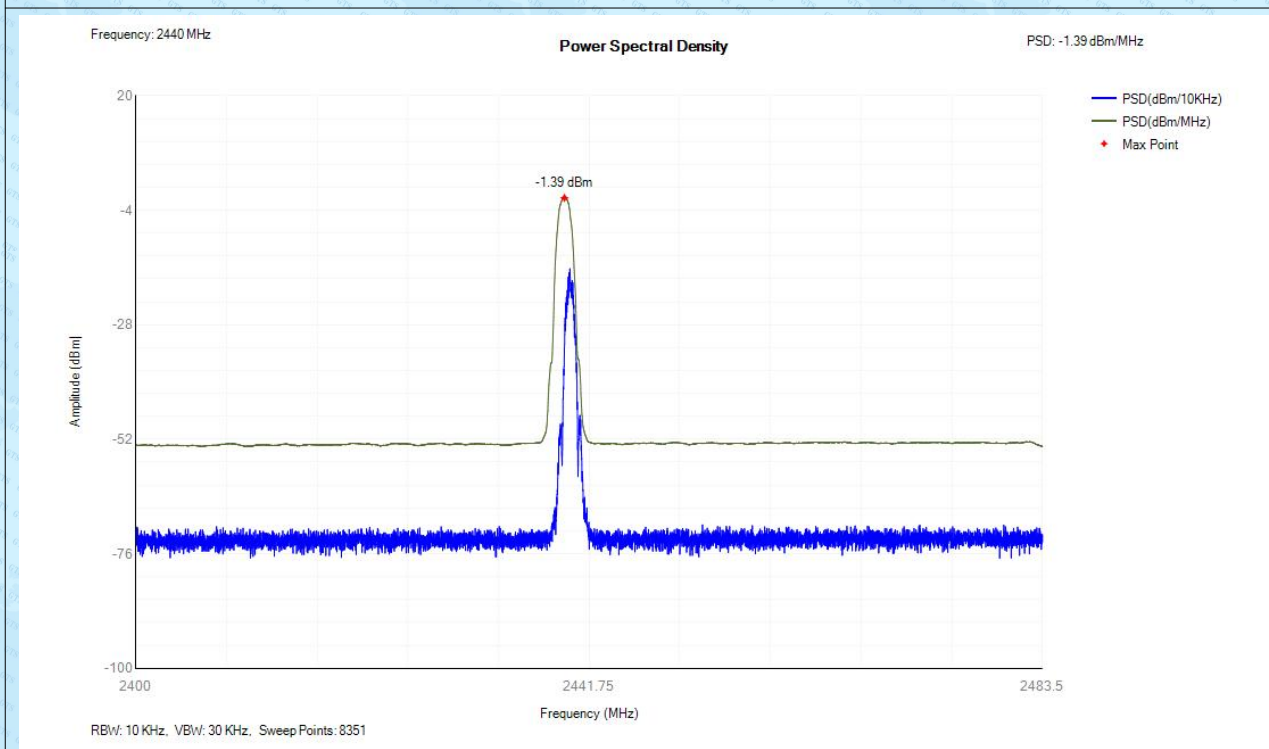
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-4.73	10	Pass
		2440		-1.39	10	Pass
		2480		-3.34	10	Pass
	BLE 2M	2402		-5.85	10	Pass
		2440		-2.56	10	Pass
		2480		-4.48	10	Pass

Test Graphs

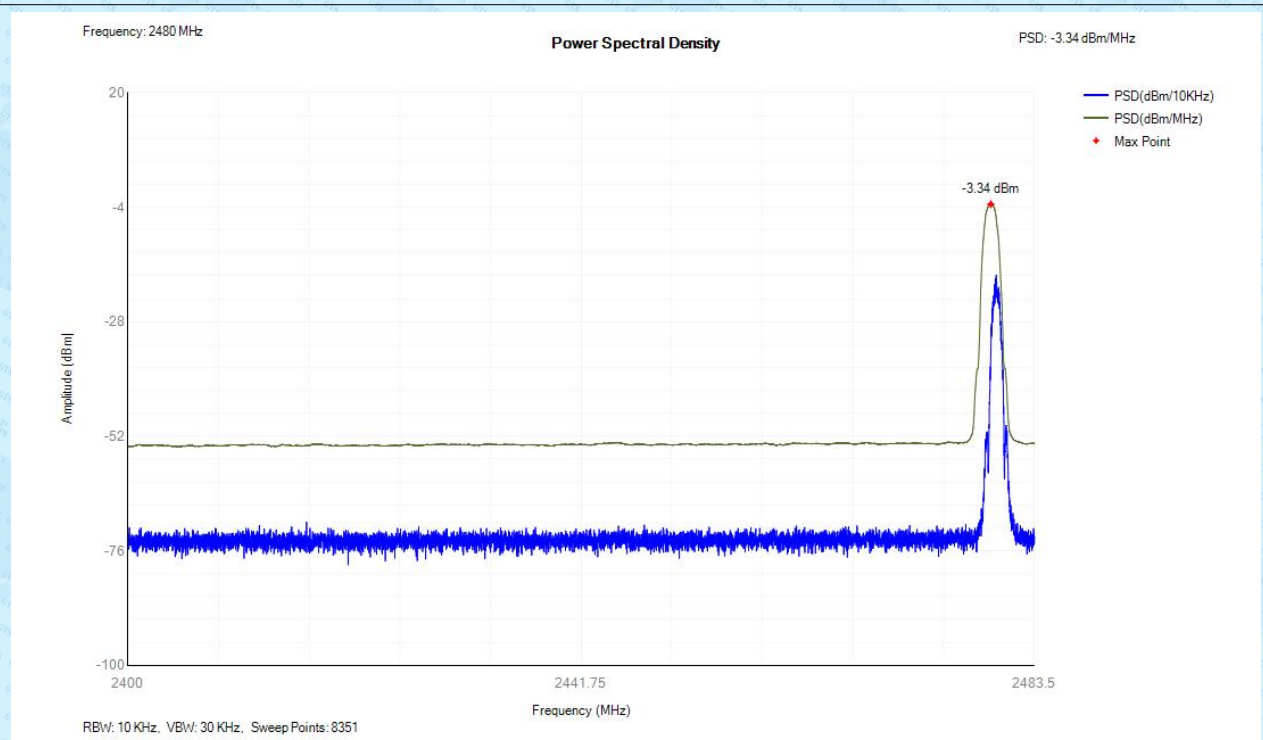
PSD NVNT BLE 1M 2402MHz Ant1



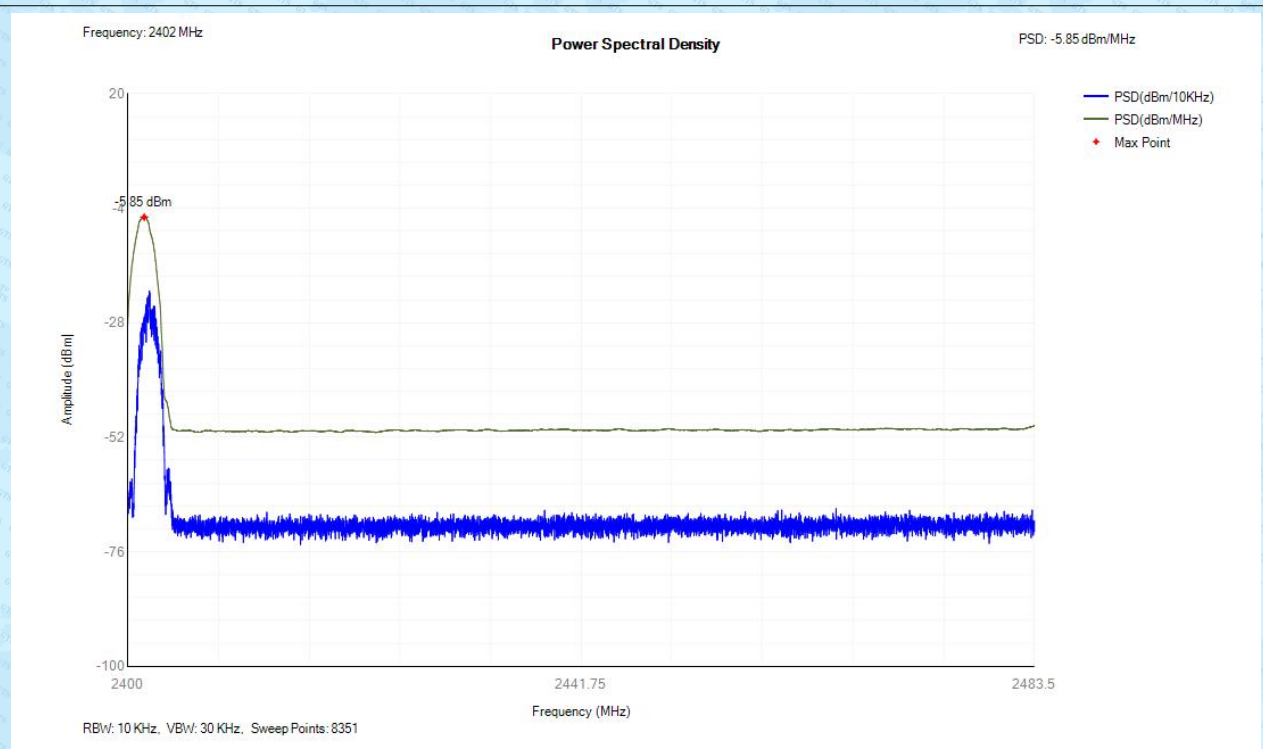
PSD NVNT BLE 1M 2440MHz Ant1



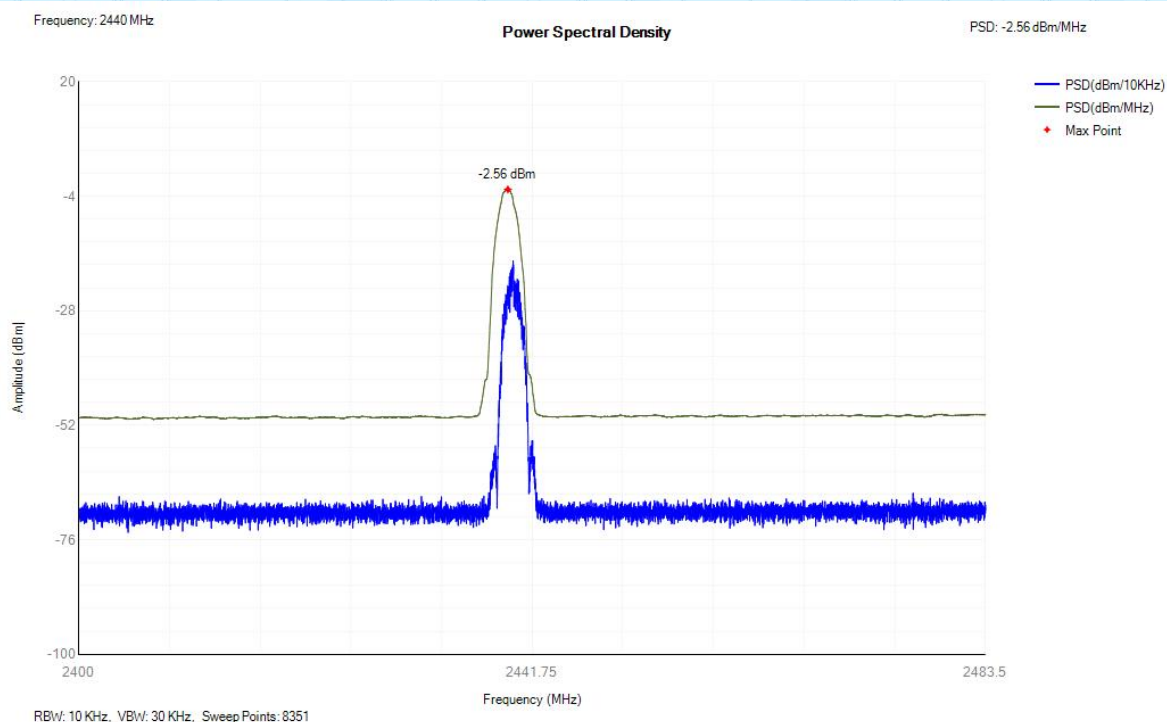
PSD NVNT BLE 1M 2480MHz Ant1



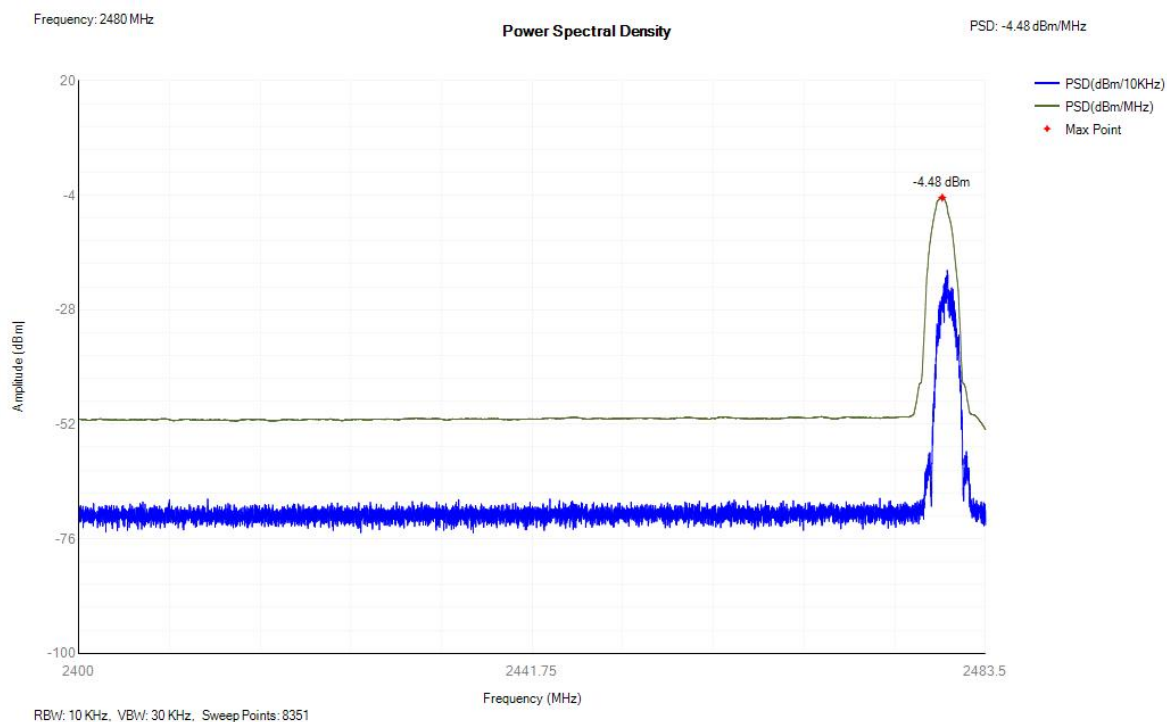
PSD NVNT BLE 2M 2402MHz Ant1



PSD NVNT BLE 2M 2440MHz Ant1



PSD NVNT BLE 2M 2480MHz Ant1

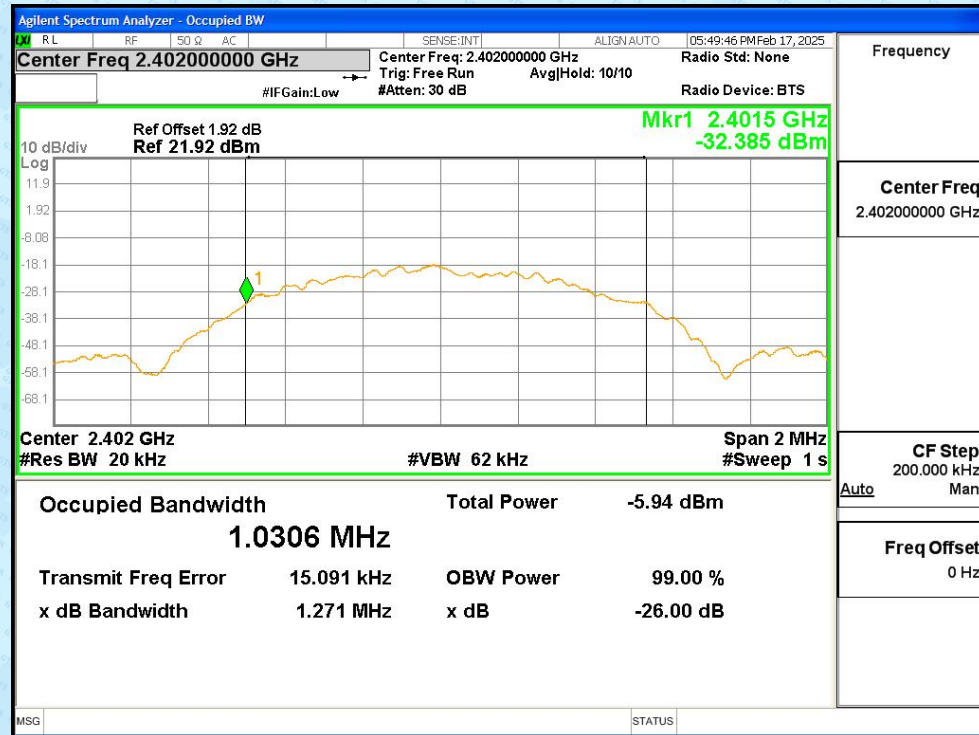


1.3 Occupied Channel Bandwidth

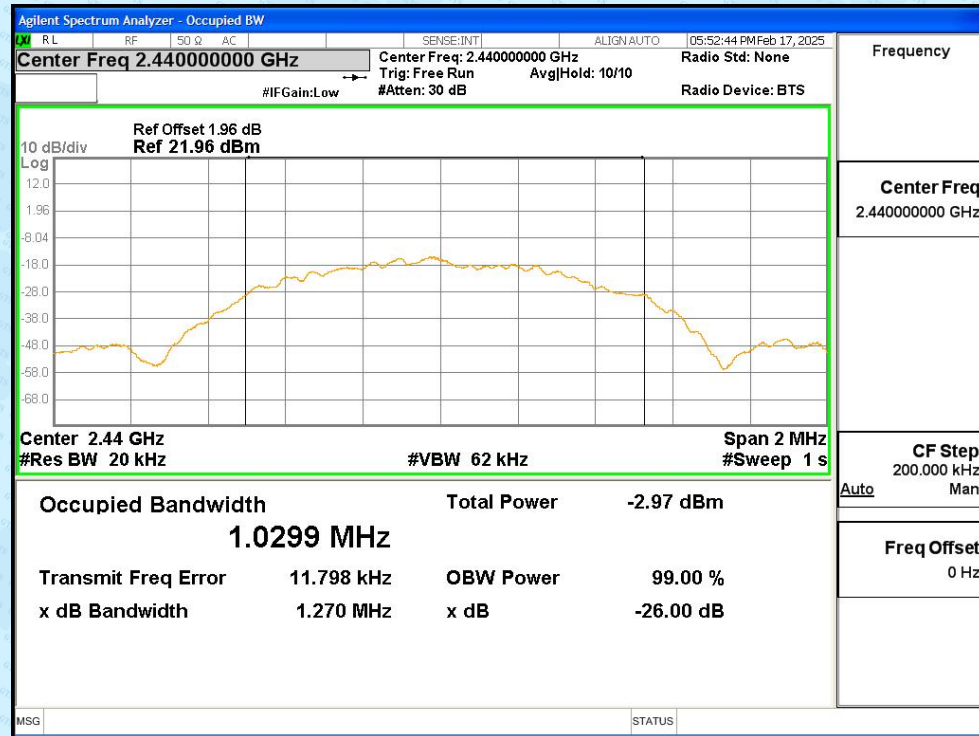
Condition	Mode	Frequency (MHz)	Antenna	Center Frequency (MHz)	OBW (MHz)	Lower Edge (MHz)	Upper Edge (MHz)	Limit OBW (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	2402.015	1.031	2401.5	2402.53	2400 - 2483.5MHz	Pass
		2440		2440.012	1.03	2439.497	2440.527	2400 - 2483.5MHz	Pass
		2480		2480.009	1.034	2479.492	2480.526	2400 - 2483.5MHz	Pass
	BLE 2M	2402		2402.03	2.051	2401.004	2403.055	2400 - 2483.5MHz	Pass
		2440		2440.022	2.048	2438.998	2441.046	2400 - 2483.5MHz	Pass
		2480		2480.015	2.054	2478.988	2481.041	2400 - 2483.5MHz	Pass

Test Graphs

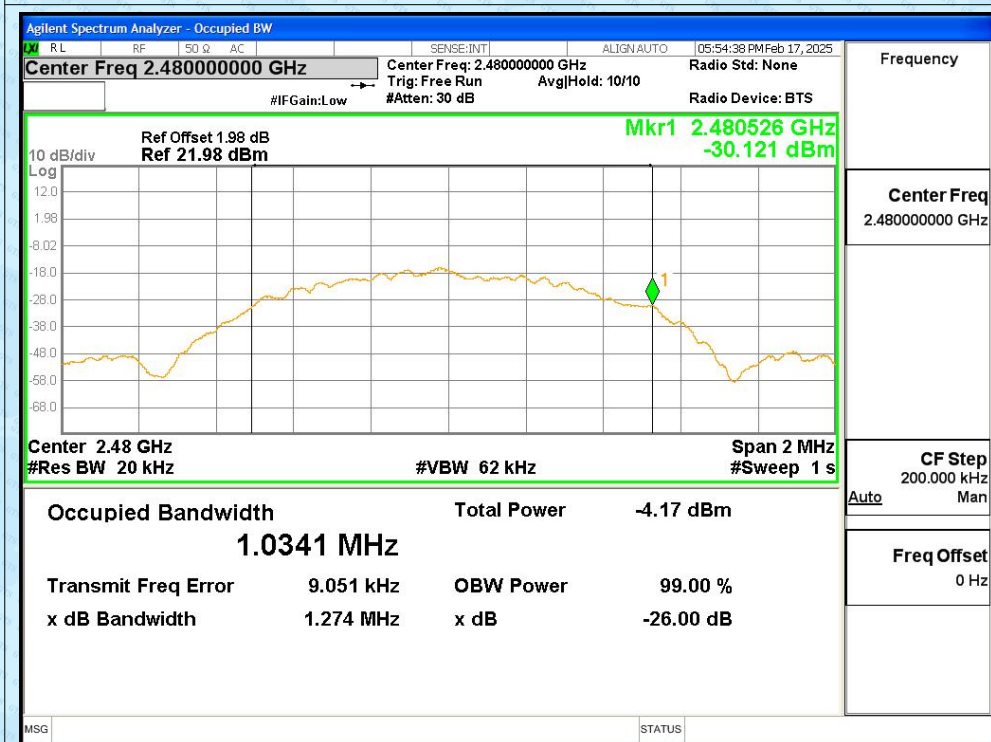
OBW NVNT BLE 1M 2402MHz Ant1



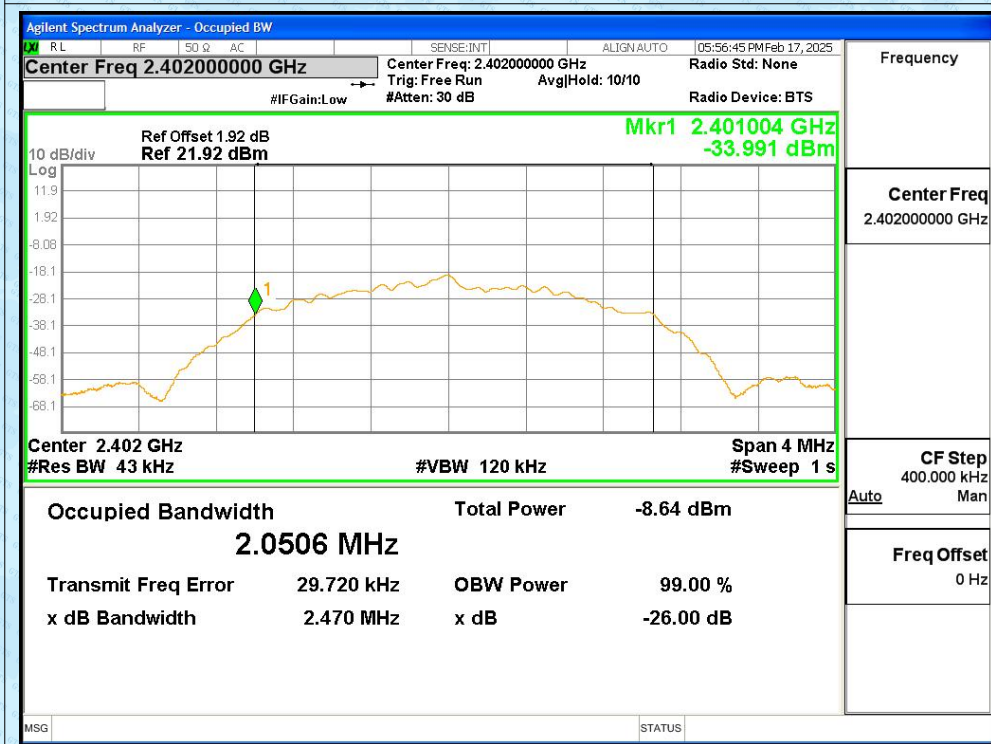
OBW NVNT BLE 1M 2440MHz Ant1



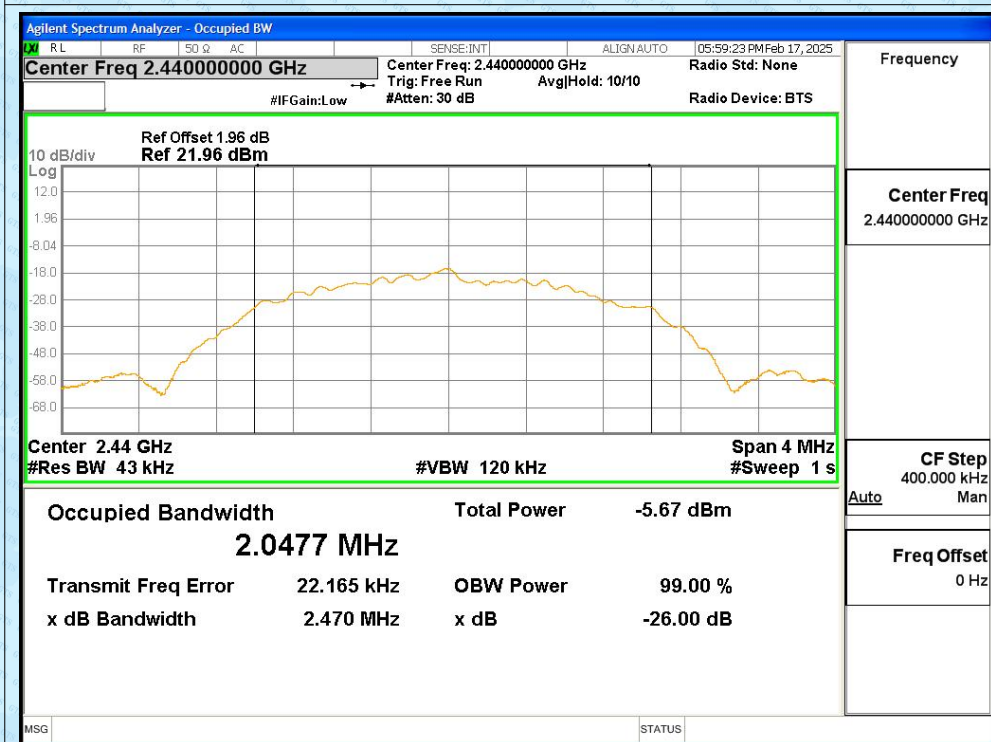
OBW NVNT BLE 1M 2480MHz Ant1



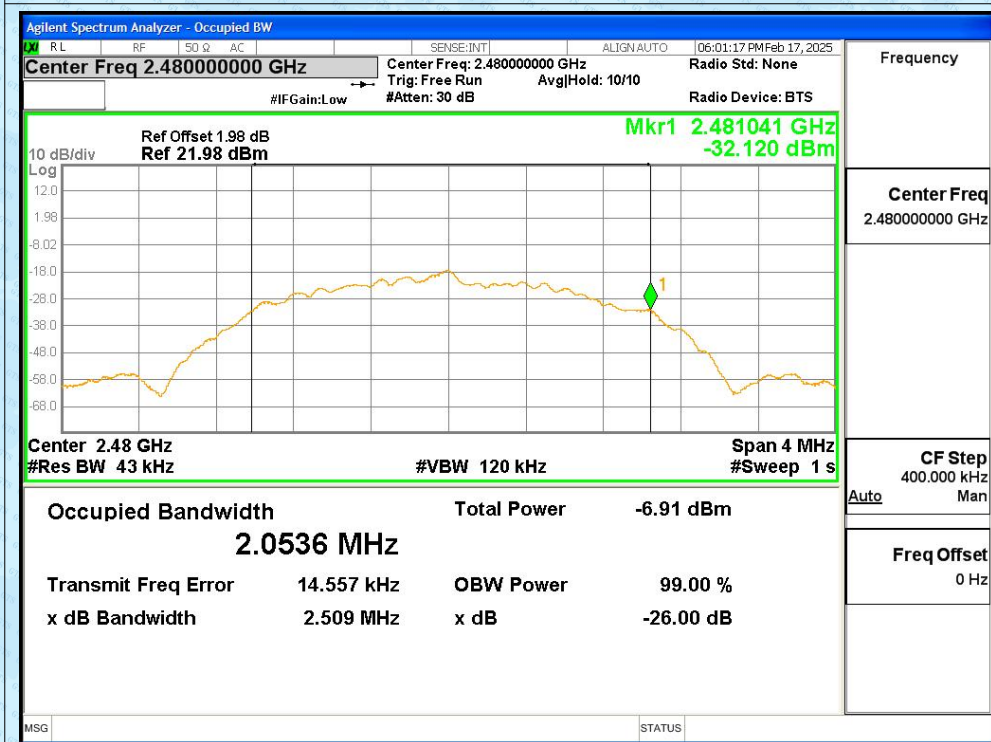
OBW NVNT BLE 2M 2402MHz Ant1



OBW NVNT BLE 2M 2440MHz Ant1



OBW NVNT BLE 2M 2480MHz Ant1

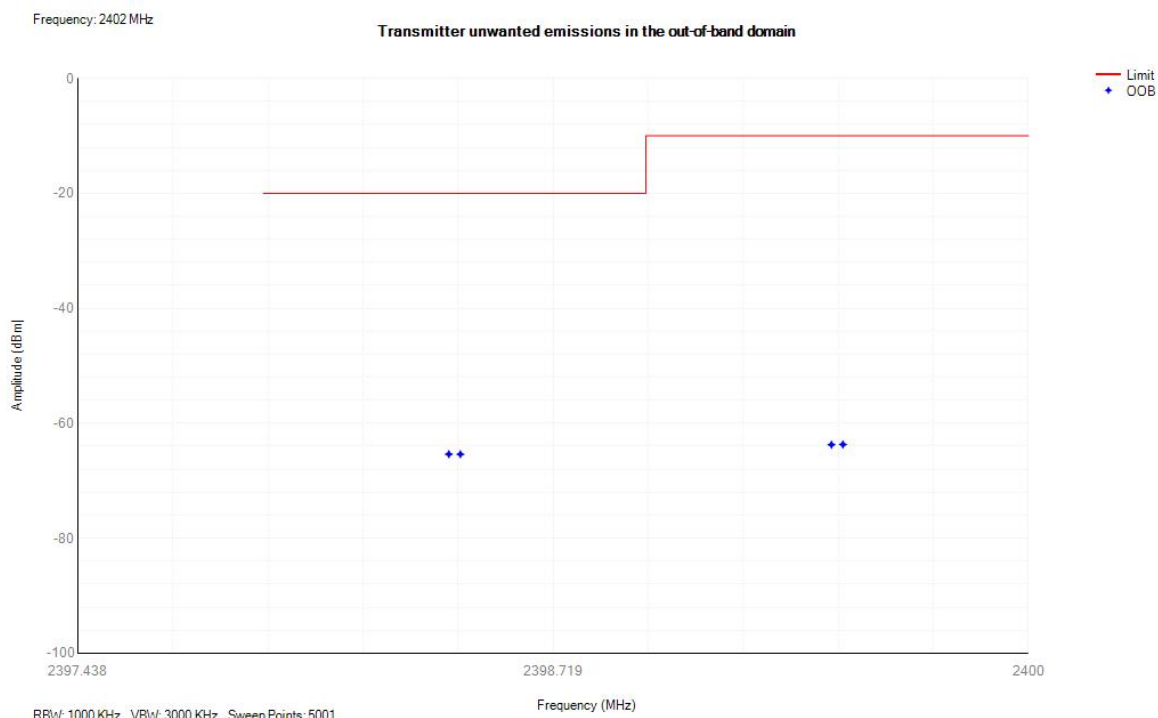


1.4 Transmitter unwanted emissions in the out-of-band domain

Condition	Mode	Frequency (MHz)	Antenna	OOB Frequency (MHz)	Level (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	2399.5	-63.68	-10	Pass
				2399.469	-63.72	-10	Pass
				2398.469	-65.38	-20	Pass
				2398.438	-65.37	-20	Pass
		2480		2484	-65.01	-10	Pass
				2484.034	-64.63	-10	Pass
				2485.034	-65.37	-20	Pass
				2485.068	-65.4	-20	Pass
	BLE 2M	2402		2399.5	-66.06	-10	Pass
				2398.5	-65.61	-10	Pass
				2398.449	-65.26	-10	Pass
				2397.449	-65.92	-20	Pass
				2396.449	-65.68	-20	Pass
				2396.398	-65.65	-20	Pass
		2480		2484	-64.61	-10	Pass
				2485	-65.23	-10	Pass
				2485.054	-65.22	-10	Pass
				2486.054	-64.94	-20	Pass
				2487.054	-64.96	-20	Pass
				2487.108	-65.5	-20	Pass

Test Graphs

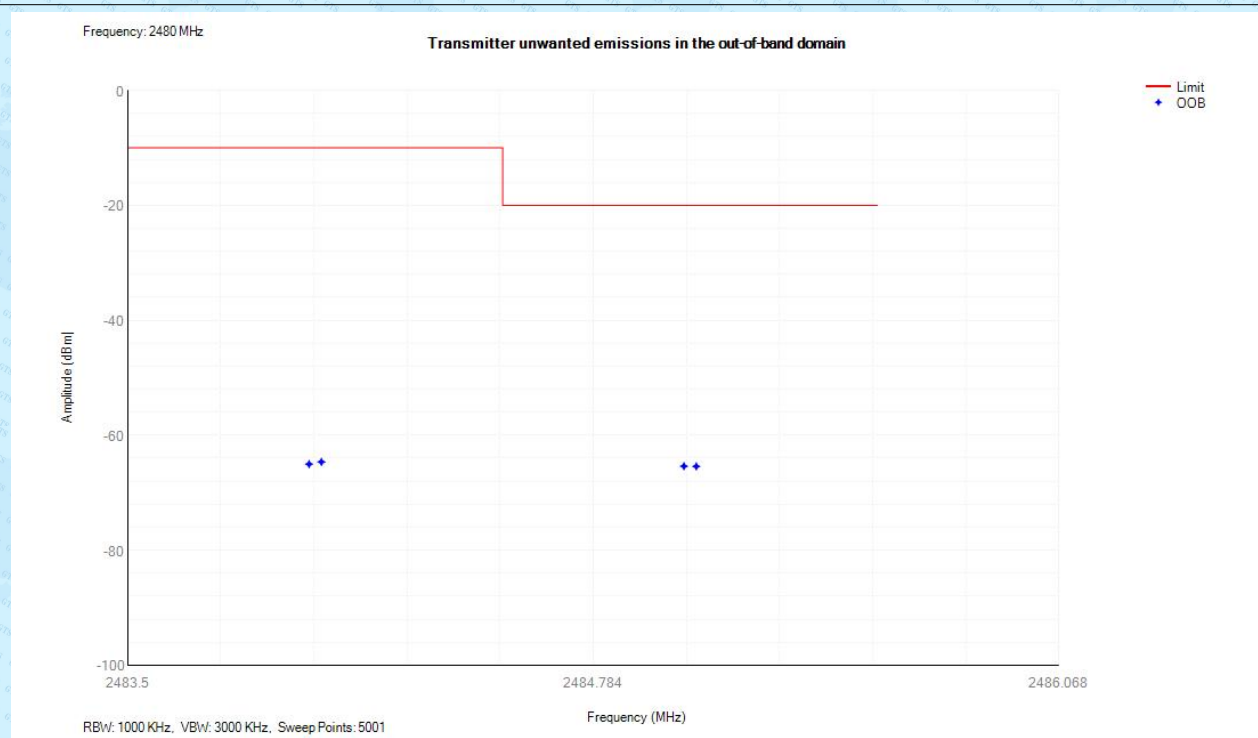
Tx. Emissions OOB NVNT BLE 1M 2402MHz Ant1



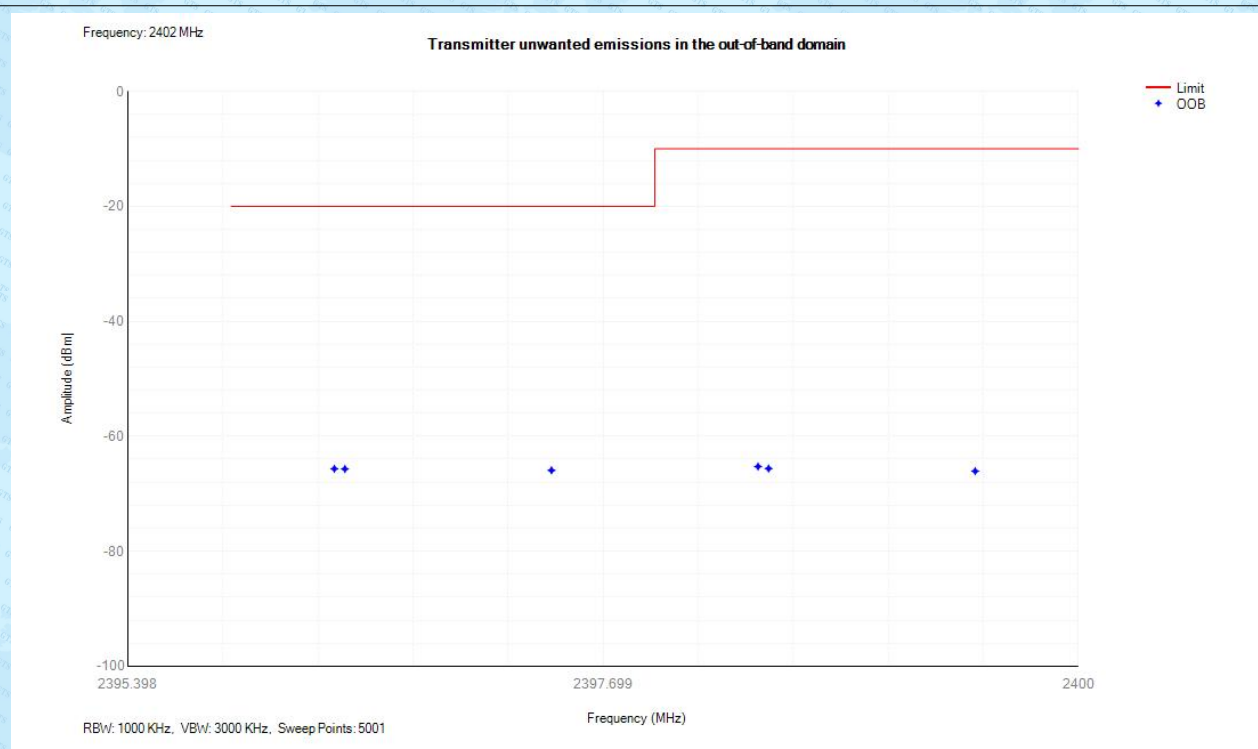
Tx. Emissions OOB NVNT BLE 1M 2440MHz Ant1



Tx. Emissions OOB NVNT BLE 1M 2480MHz Ant1



Tx. Emissions OOB NVNT BLE 2M 2402MHz Ant1



Tx. Emissions OOB NVNT BLE 2M 2440MHz Ant1

Frequency: 2440 MHz

Transmitter unwanted emissions in the out-of-band domain

— Limit
+ OOB

RBW: 1000 KHz, VBW: 3000 KHz, Sweep Points: 5001

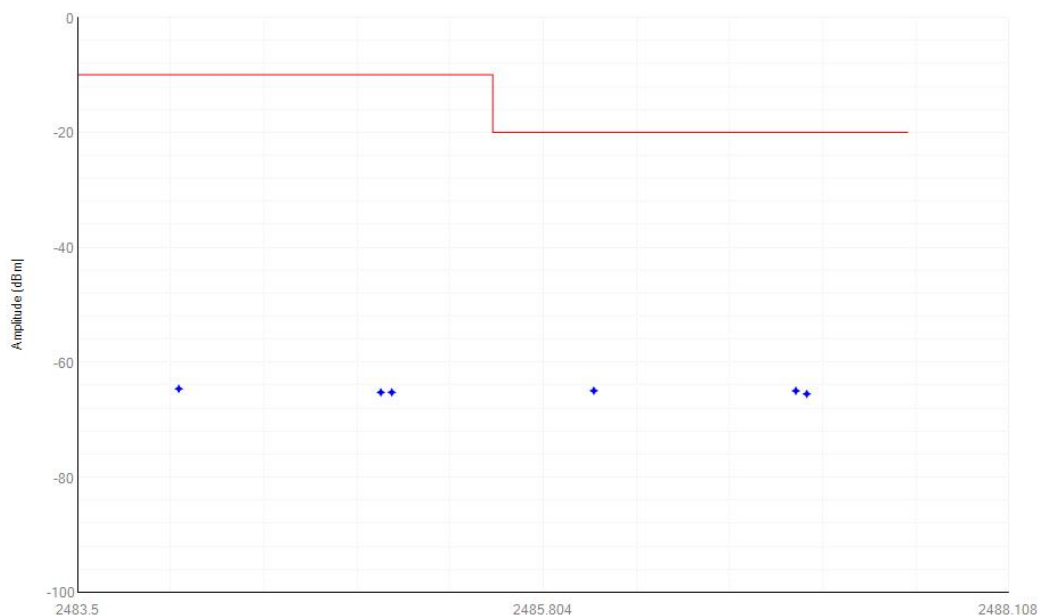
Frequency (MHz)

Tx. Emissions OOB NVNT BLE 2M 2480MHz Ant1

Frequency: 2480 MHz

Transmitter unwanted emissions in the out-of-band domain

— Limit
+ OOB



RBW: 1000 KHz, VBW: 3000 KHz, Sweep Points: 5001

Frequency (MHz)

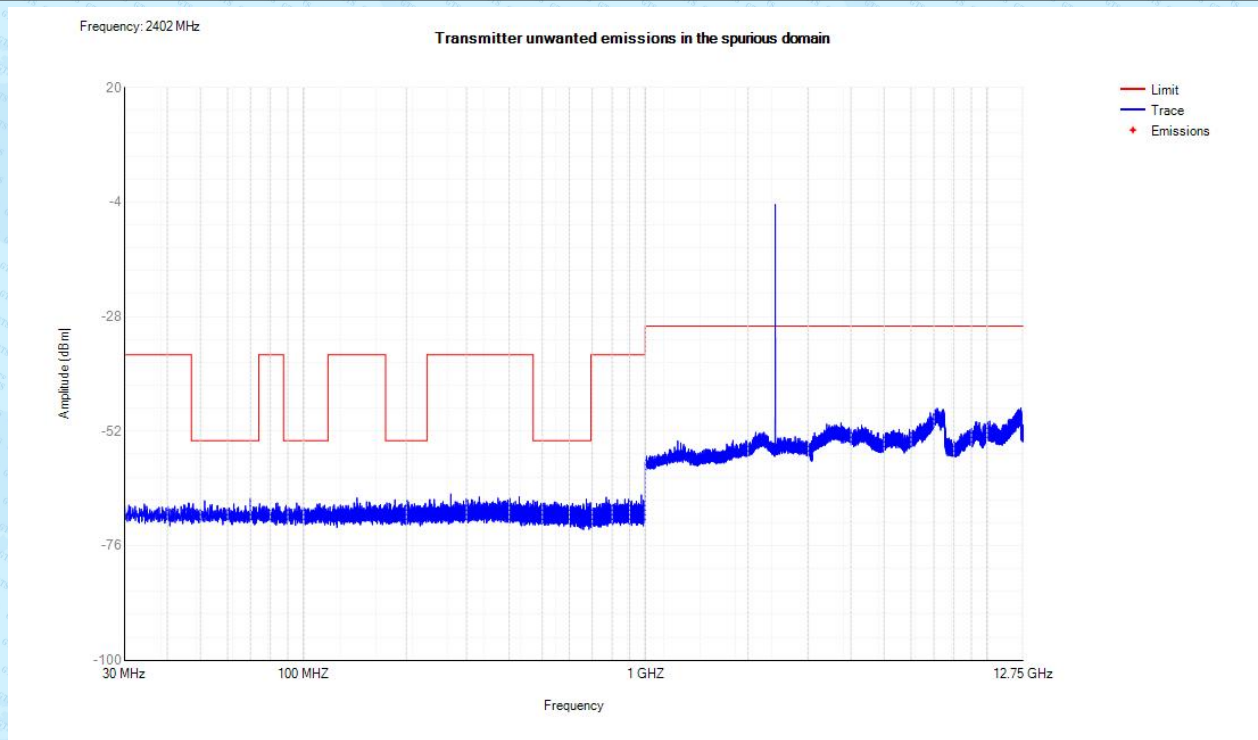
1.5 Transmitter unwanted emissions in the spurious domain

Condition	Mode	Frequency (MHz)	Antenna	Range (MHz)	Spur Freq (MHz)	Peak (dBm)	RMS (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	30 -47	46.15	-67.04	NA	-36	Pass
				47 -74	69.95	-66.06	NA	-54	Pass
				74 -87.5	83.95	-67.01	NA	-36	Pass
				87.5 -118	95.60	-67.05	NA	-54	Pass
				118 -174	143.50	-65.99	NA	-36	Pass
				174 -230	185.30	-66.36	NA	-54	Pass
				230 -470	270.00	-65.15	NA	-36	Pass
				470 -694	672.85	-66.26	NA	-54	Pass
				694 -1000	975.00	-65.37	NA	-36	Pass
				1000 -2398	2106.00	-52.25	NA	-30	Pass
				2485.5 -12750	12569.00	-47.11	NA	-30	Pass
		30 -47		46.25	-66.66	NA	-36	Pass	
		47 -74		57.15	-66.61	NA	-54	Pass	
		74 -87.5		86.45	-66.55	NA	-36	Pass	
		87.5 -118		98.90	-66.64	NA	-54	Pass	
		118 -174		171.15	-66.26	NA	-36	Pass	
		174 -230		183.35	-66.53	NA	-54	Pass	
		230 -470		381.90	-65.50	NA	-36	Pass	
		470 -694		473.25	-66.39	NA	-54	Pass	
		694 -1000		759.75	-65.70	NA	-36	Pass	
		1000 -2398		2111.50	-51.48	NA	-30	Pass	
		2485.5 -12750		7146.50	-46.47	NA	-30	Pass	
	30 -47	33.00		-66.82	NA	-36	Pass		
	47 -74	59.00		-66.98	NA	-54	Pass		
	74 -87.5	76.70		-67.15	NA	-36	Pass		
	87.5 -118	103.45		-67.09	NA	-54	Pass		
	118 -174	126.40		-65.92	NA	-36	Pass		
	174 -230	180.35		-66.24	NA	-54	Pass		
	230 -470	286.25		-65.33	NA	-36	Pass		
	470 -694	674.15		-66.47	NA	-54	Pass		
	694 -1000	919.15		-65.97	NA	-36	Pass		
	1000 -2398	2167.50		-51.87	NA	-30	Pass		
	2485.5 -12750	12595.00		-47.08	NA	-30	Pass		
	30 -47	34.30		-67.15	NA	-36	Pass		
	47 -74	58.55		-66.70	NA	-54	Pass		
	74 -87.5	81.85		-67.44	NA	-36	Pass		
	87.5 -118	90.20		-66.27	NA	-54	Pass		

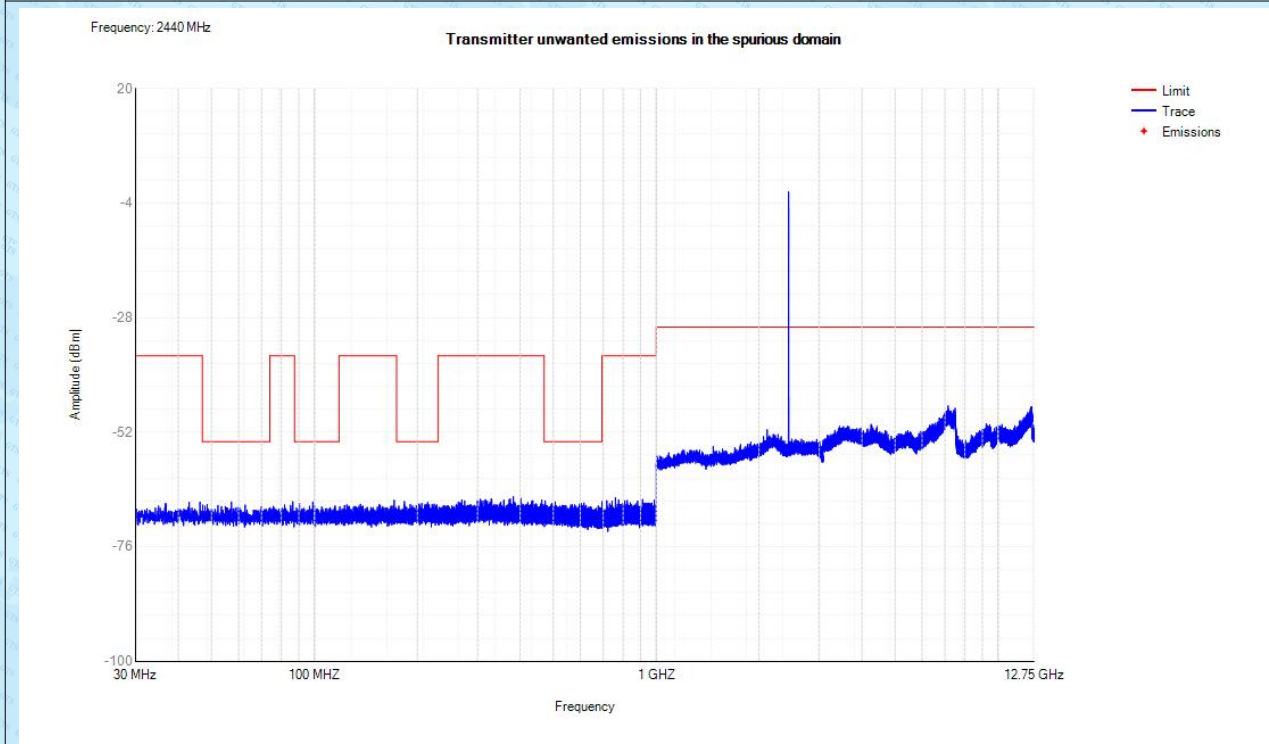
		2440	118 -174	145.65	-65.97	NA	-36	Pass
			174 -230	219.25	-66.50	NA	-54	Pass
			230 -470	270.00	-65.52	NA	-36	Pass
			470 -694	644.60	-65.39	NA	-54	Pass
			694 -1000	932.60	-65.89	NA	-36	Pass
			1000 -2396	2156.00	-52.49	NA	-30	Pass
			2487.5 -12750	7488.00	-46.82	NA	-30	Pass
			30 -47	44.05	-67.36	NA	-36	Pass
			47 -74	64.65	-66.33	NA	-54	Pass
			74 -87.5	74.65	-67.47	NA	-36	Pass
			87.5 -118	92.25	-66.39	NA	-54	Pass
			118 -174	118.55	-66.38	NA	-36	Pass
		2480	174 -230	221.50	-66.57	NA	-54	Pass
			230 -470	371.40	-65.28	NA	-36	Pass
			470 -694	534.75	-66.05	NA	-54	Pass
			694 -1000	869.35	-66.02	NA	-36	Pass
			1000 -2396	2216.00	-52.15	NA	-30	Pass
			2487.5 -12750	7100.50	-46.22	NA	-30	Pass
			30 -47	30.65	-66.90	NA	-36	Pass
			47 -74	49.00	-66.49	NA	-54	Pass
			74 -87.5	78.55	-67.59	NA	-36	Pass
			87.5 -118	91.30	-67.34	NA	-54	Pass
			118 -174	123.00	-66.21	NA	-36	Pass
			174 -230	223.05	-66.01	NA	-54	Pass
			230 -470	270.00	-65.16	NA	-36	Pass
			470 -694	477.35	-65.94	NA	-54	Pass
			694 -1000	893.10	-65.48	NA	-36	Pass
			1000 -2396	2233.50	-51.47	NA	-30	Pass
			2487.5 -12750	7108.50	-46.61	NA	-30	Pass

Test Graphs

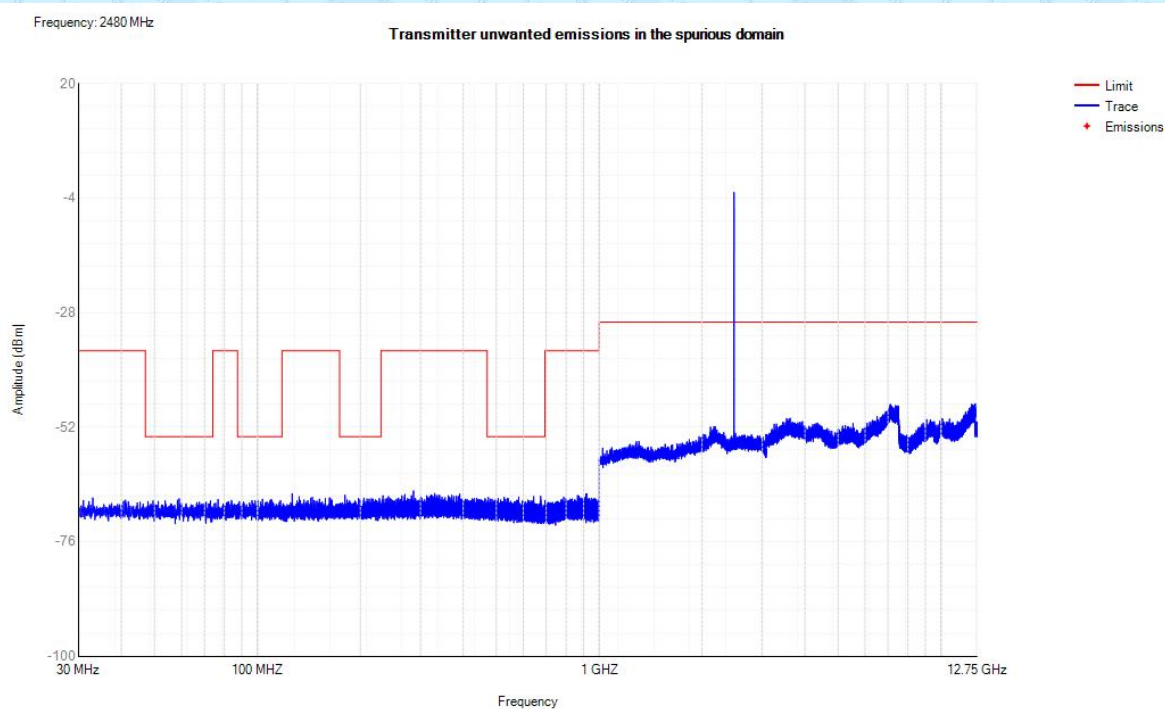
Tx. Spurious NVNT BLE 1M 2402MHz Ant1



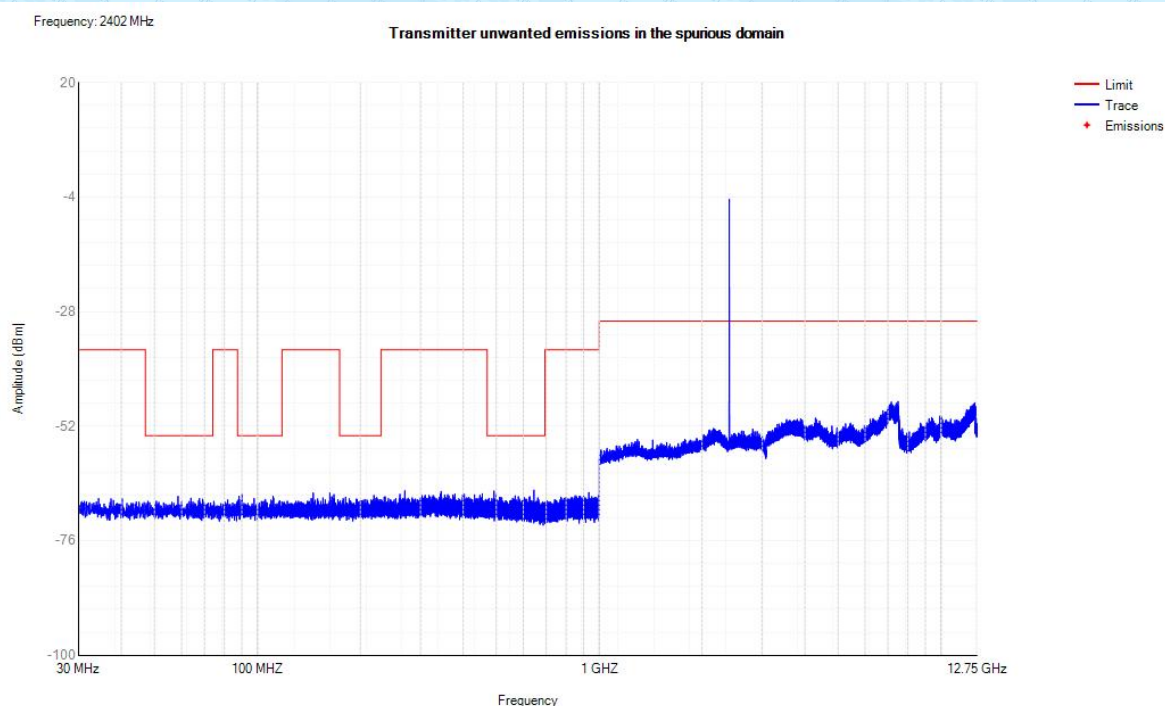
Tx. Spurious NVNT BLE 1M 2440MHz Ant1



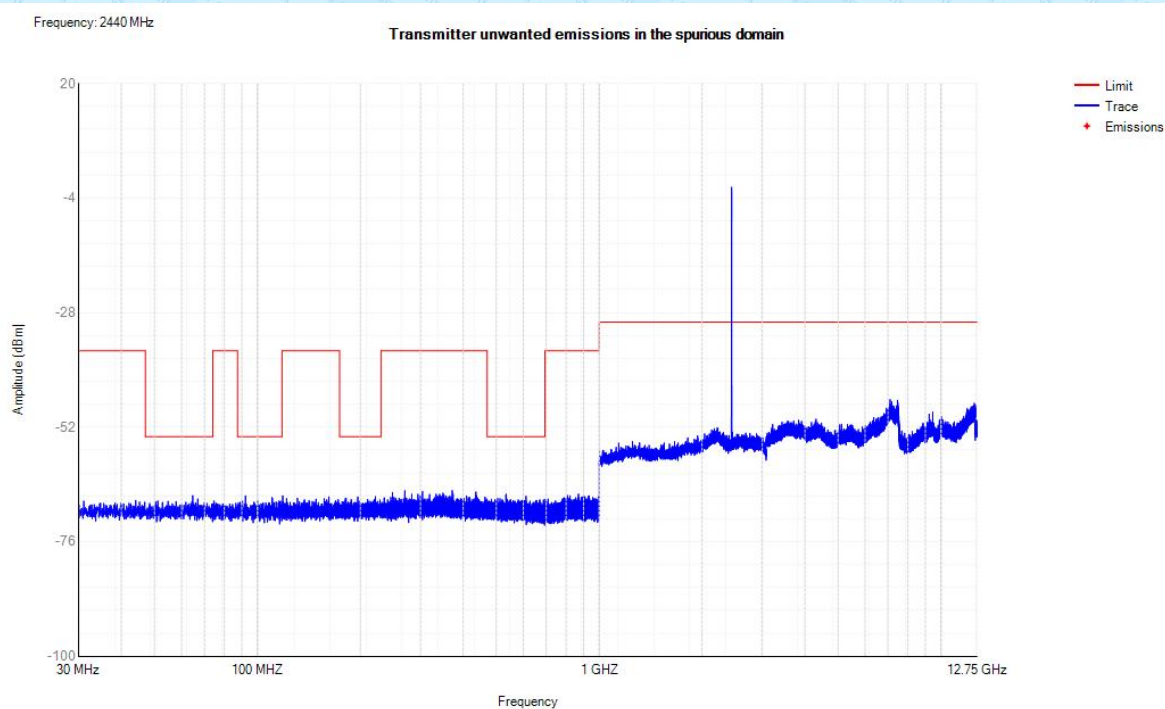
Tx. Spurious NVNT BLE 1M 2480MHz Ant1



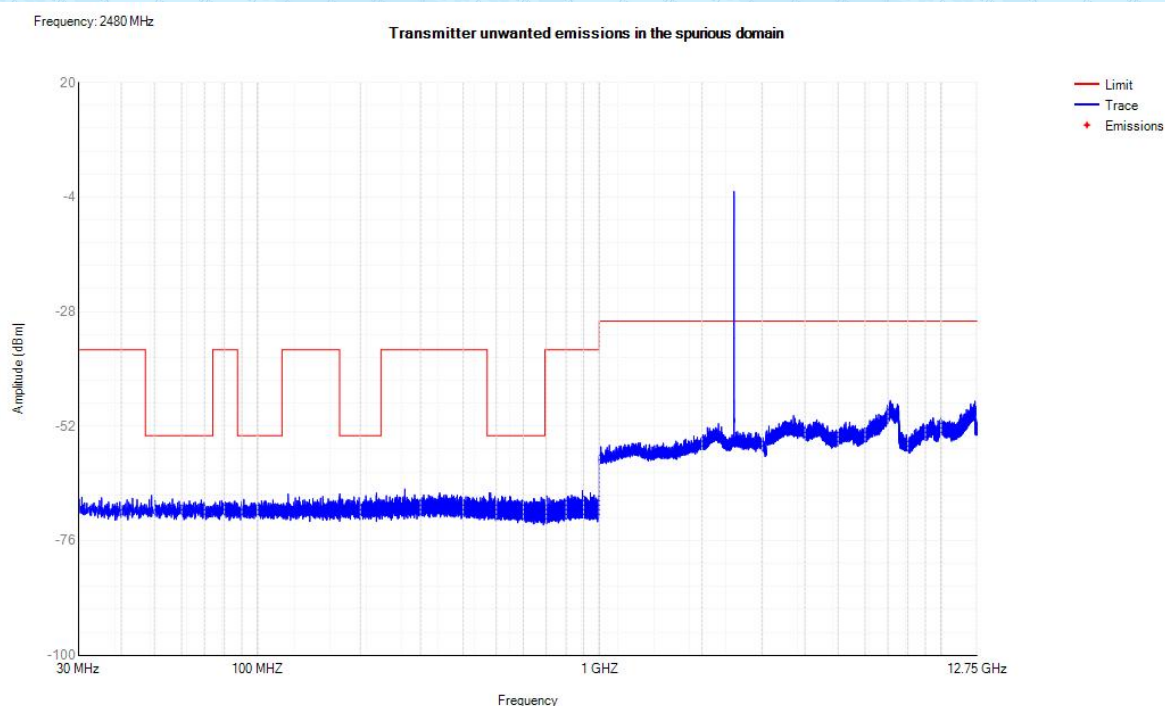
Tx. Spurious NVNT BLE 2M 2402MHz Ant1



Tx. Spurious NVNT BLE 2M 2440MHz Ant1



Tx. Spurious NVNT BLE 2M 2480MHz Ant1

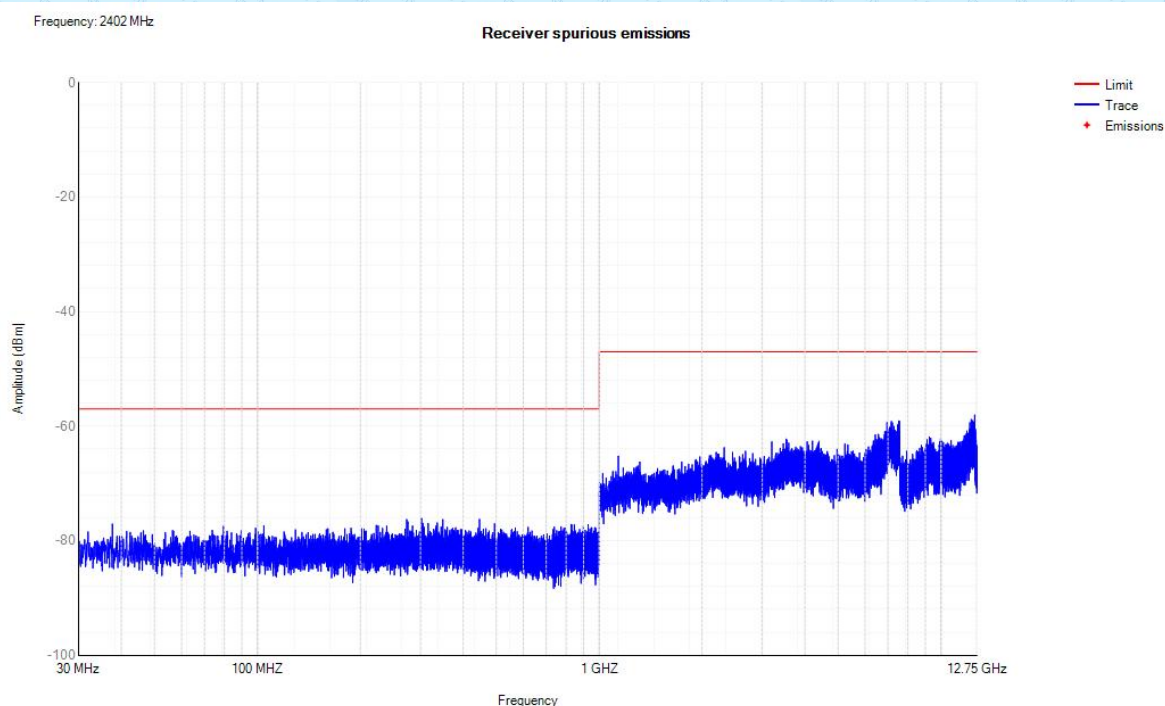


1.6 Receiver spurious emissions

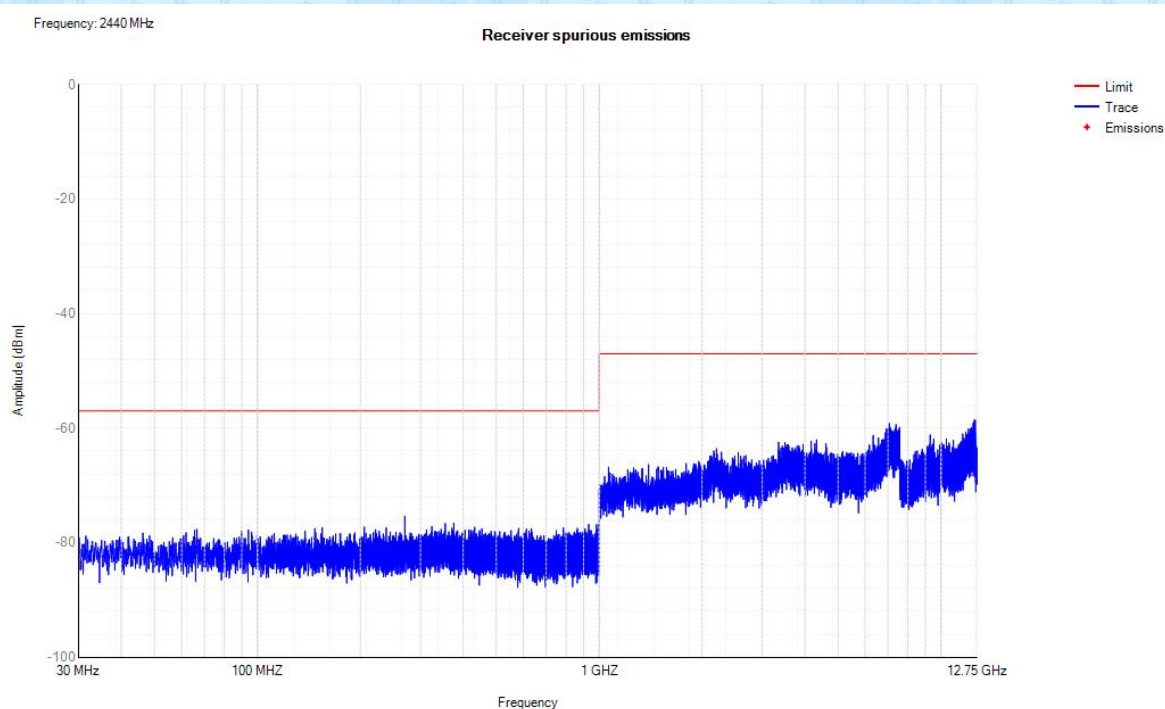
Condition	Mode	Frequency (MHz)	Antenna	Range (MHz)	Spur Freq (MHz)	Peak (dBm)	RMS (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	30 -1000	302.2	-76.11	NA	-57	Pass
				1000 -12750	12555.5	-58.04	NA	-47	Pass
				30 -1000	269.95	-75.36	NA	-57	Pass
		2440		1000 -12750	12533	-58.59	NA	-47	Pass
				30 -1000	91.6	-76.60	NA	-57	Pass
				1000 -12750	12596.5	-59.01	NA	-47	Pass
	BLE 2M	2402		30 -1000	270	-75.21	NA	-57	Pass
				1000 -12750	7496	-58.90	NA	-47	Pass
				30 -1000	807.6	-76.33	NA	-57	Pass
		2440		1000 -12750	12327.5	-58.29	NA	-47	Pass
				30 -1000	283.05	-76.19	NA	-57	Pass
				1000 -12750	7177.5	-58.17	NA	-47	Pass

Test Graphs

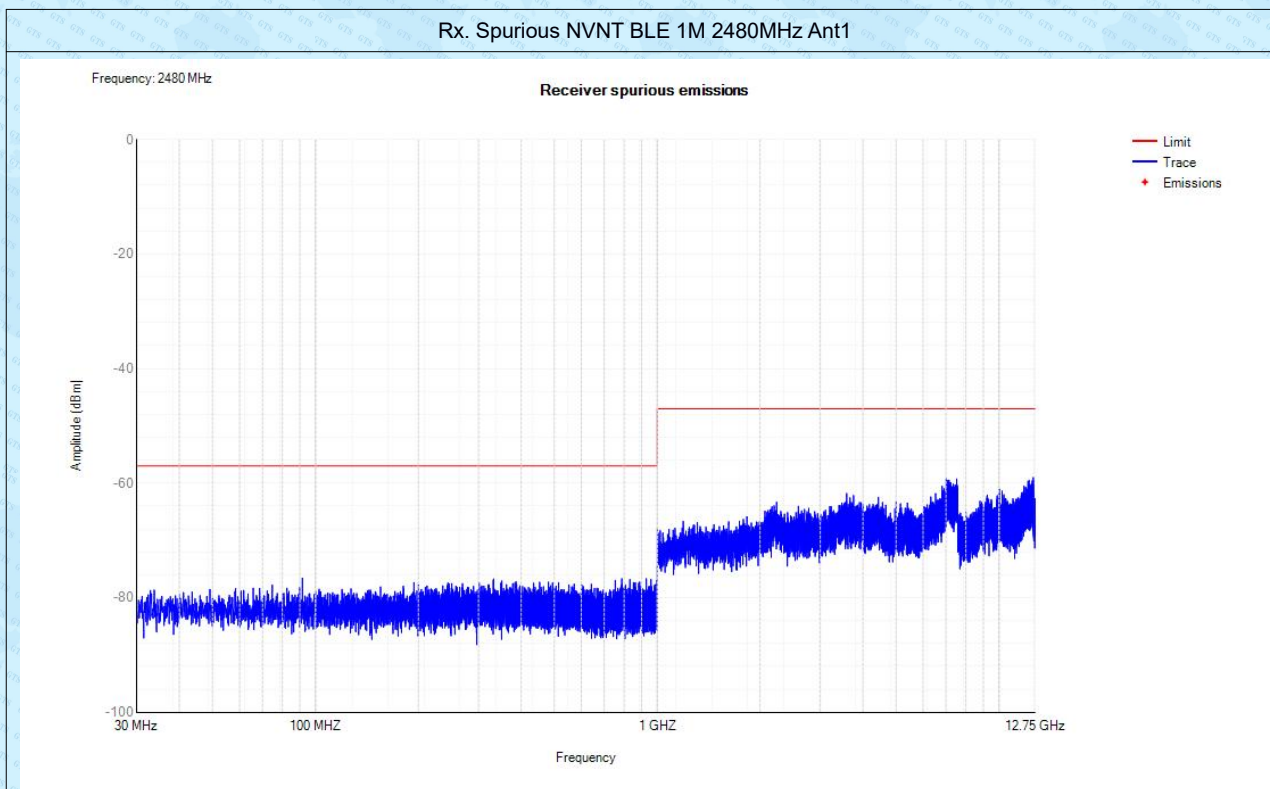
Rx. Spurious NVNT BLE 1M 2402MHz Ant1



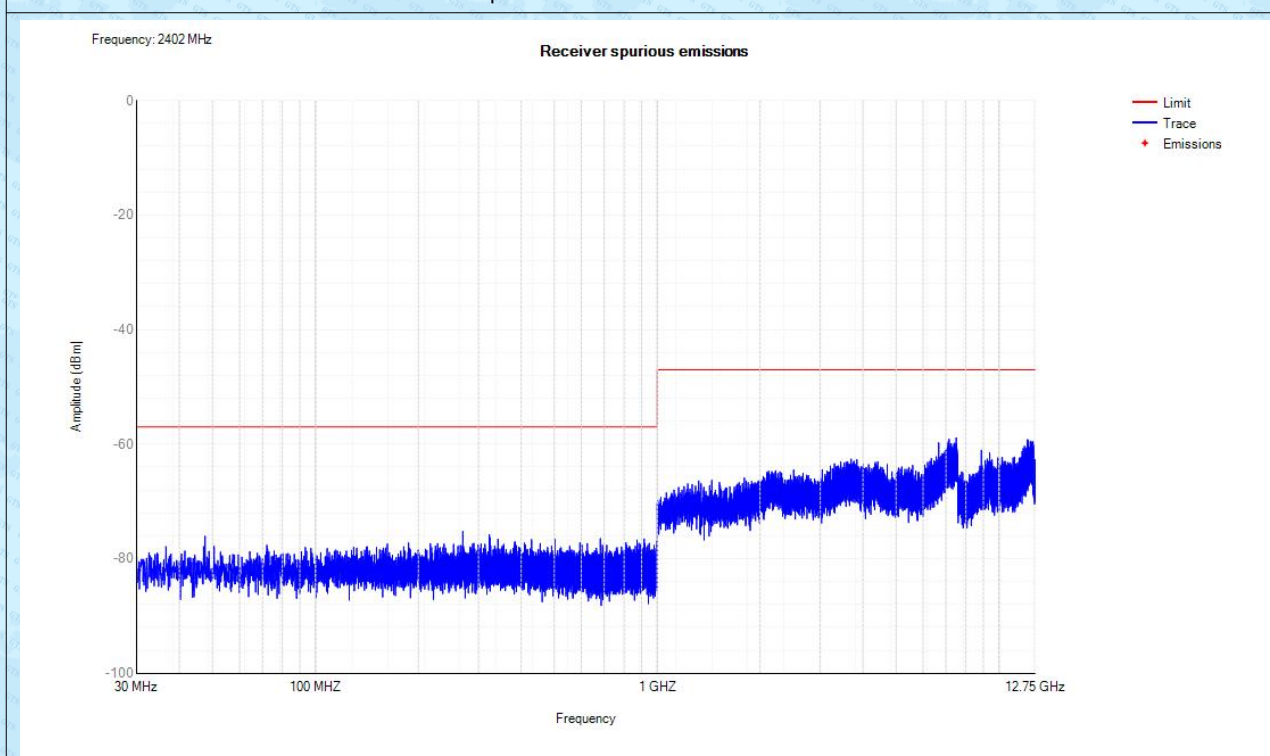
Rx. Spurious NVNT BLE 1M 2440MHz Ant1



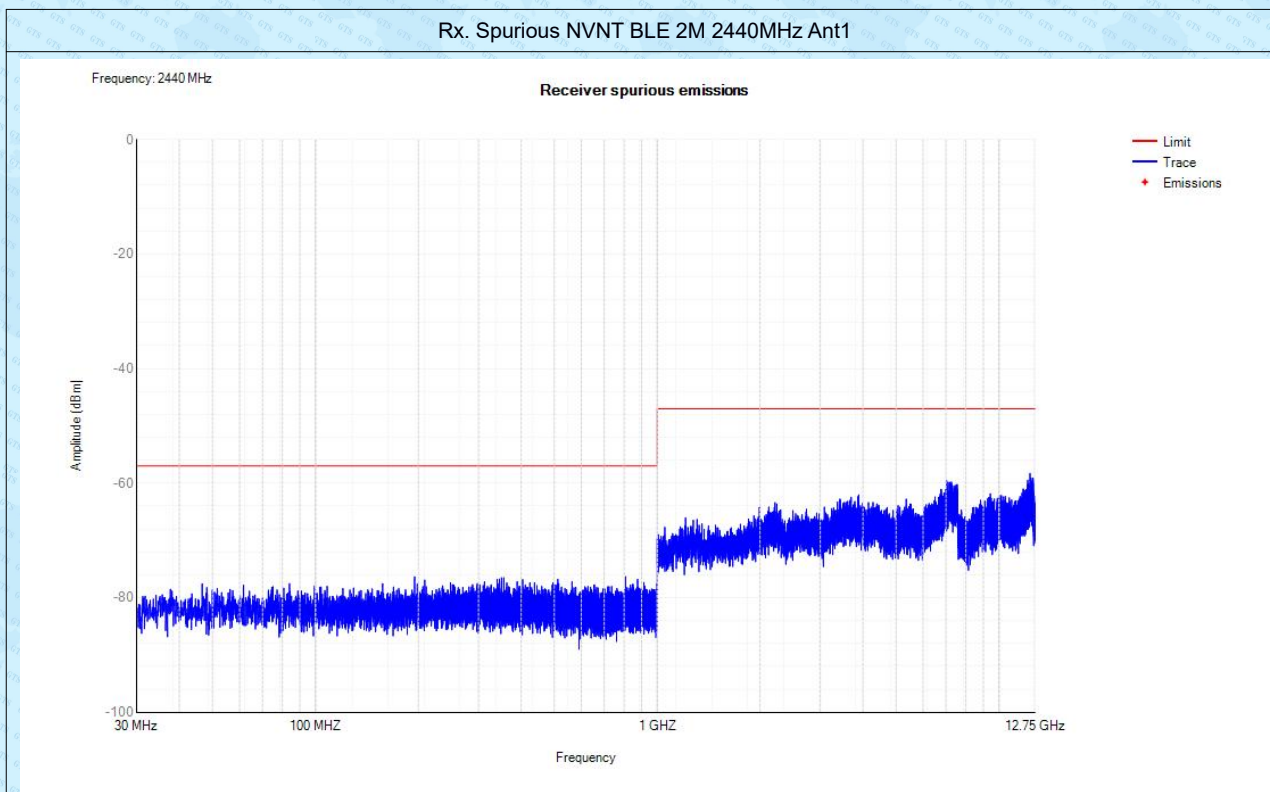
Rx. Spurious NVNT BLE 1M 2480MHz Ant1



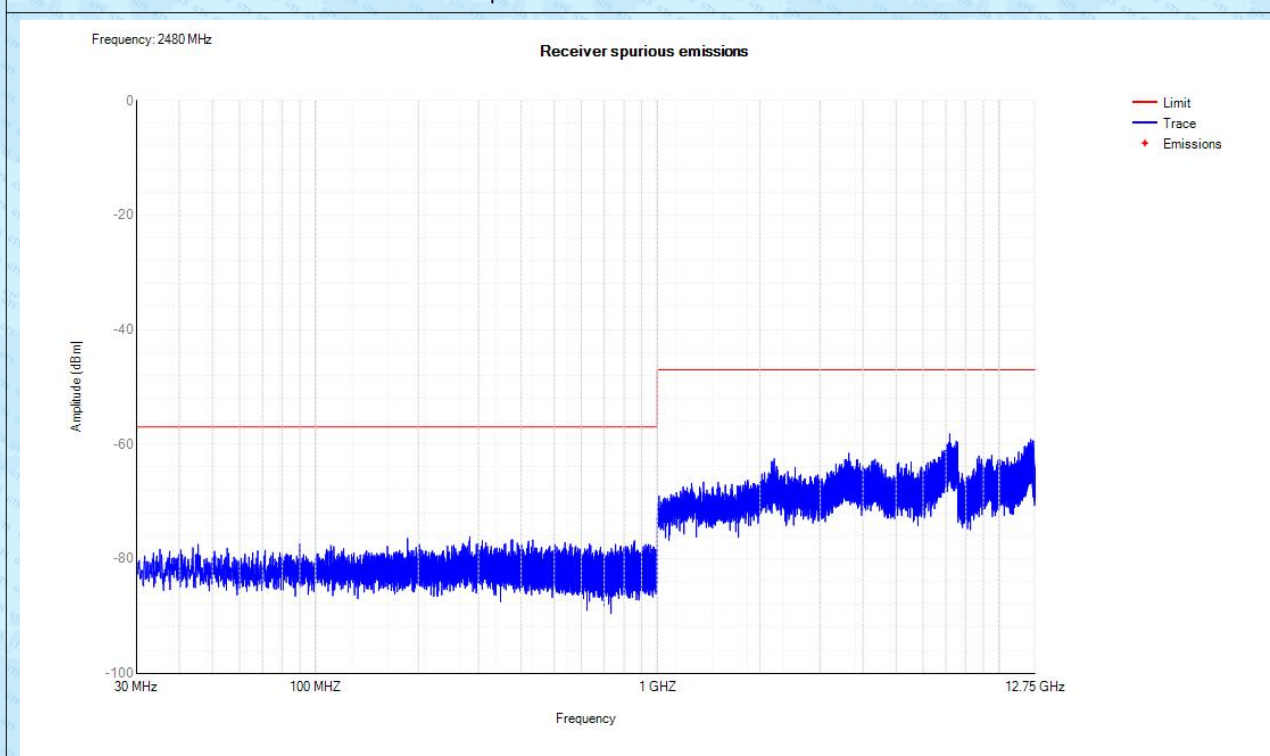
Rx. Spurious NVNT BLE 2M 2402MHz Ant1



Rx. Spurious NVNT BLE 2M 2440MHz Ant1



Rx. Spurious NVNT BLE 2M 2480MHz Ant1

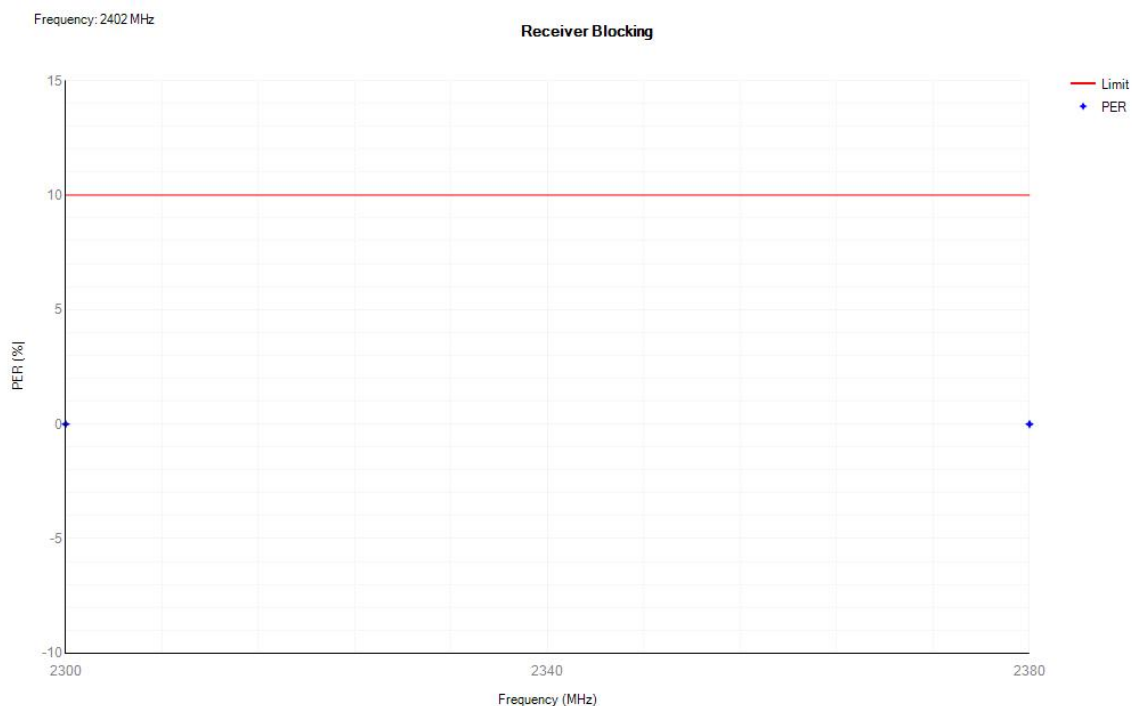


1.7 Receiver Blocking

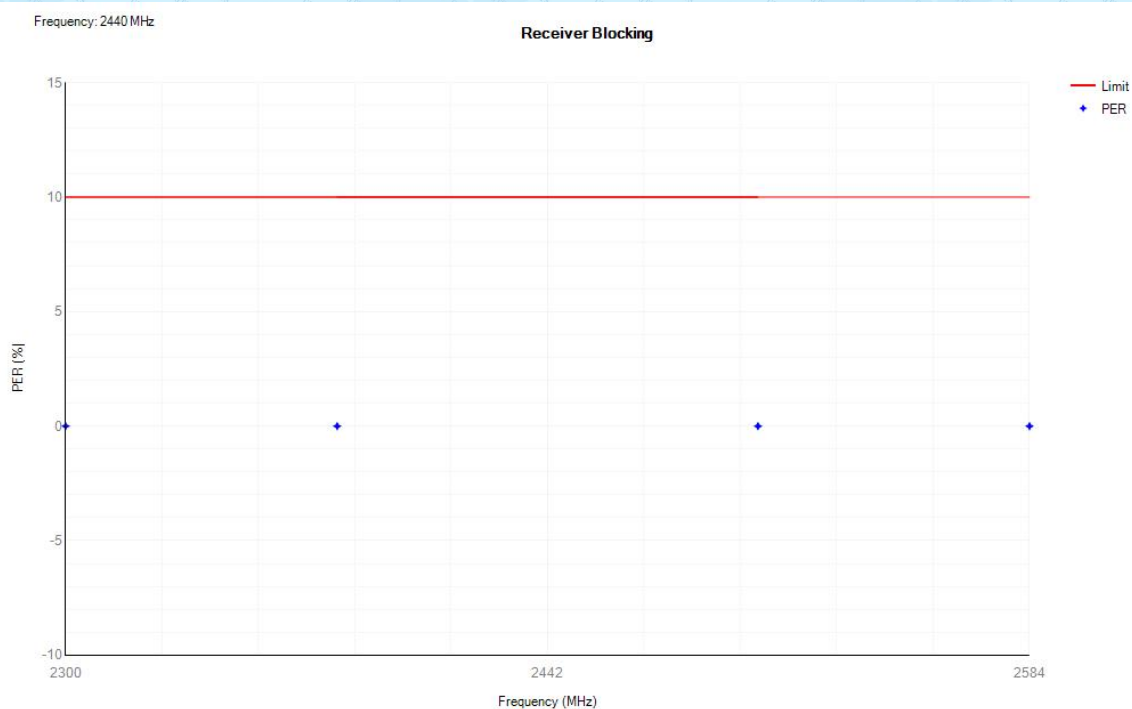
Condition	Mode	Frequency (MHz)	Antenna	Wanted Power (dBm)	Blocking Frequency (MHz)	Blocking Power (dBm)	PER (%)	Limit (%)	Verdict
NVNT	BLE 1M	2402	Ant1	-58.87	2380	-34	0	10	Pass
				-58.87	2300	-34	0	10	Pass
		2440		-58.87	2380	-34	0	10	Pass
				-58.87	2504	-34	0	10	Pass
				-58.87	2300	-34	0	10	Pass
				-58.87	2584	-34	0	10	Pass
				-58.85	2504	-34	0	10	Pass
				-58.85	2584	-34	0	10	Pass
	2480	-55.88		2380	-34	0	10	Pass	
		-55.88		2300	-34	0	10	Pass	
	BLE 2M	2402		-55.89	2380	-34	0	10	Pass
				-55.89	2504	-34	0	10	Pass
		2440		-55.89	2300	-34	0	10	Pass
				-55.89	2584	-34	0	10	Pass
				-55.87	2504	-34	0	10	Pass
				-55.87	2584	-34	0	10	Pass
2480		-55.87	2504	-34	0	10	Pass		
		-55.87	2584	-34	0	10	Pass		

Test Graphs

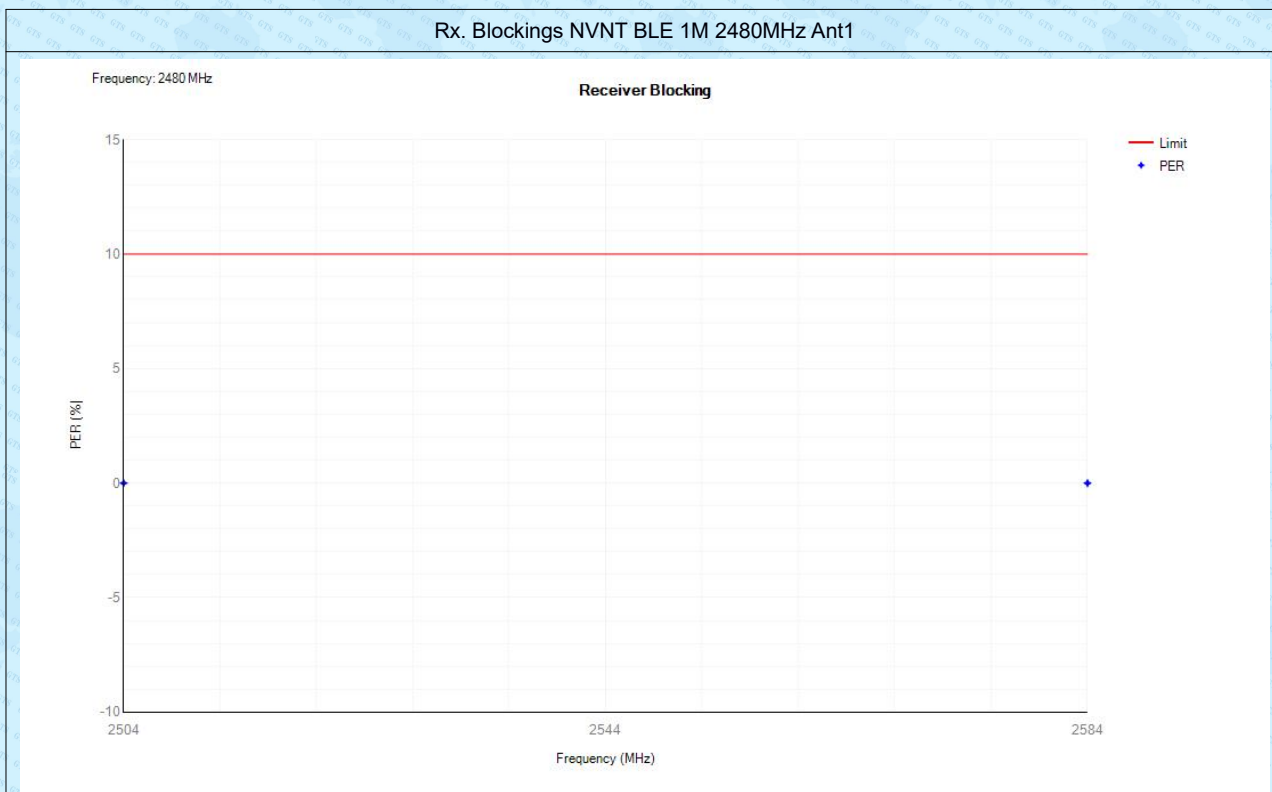
Rx. Blockings NVNT BLE 1M 2402MHz Ant1



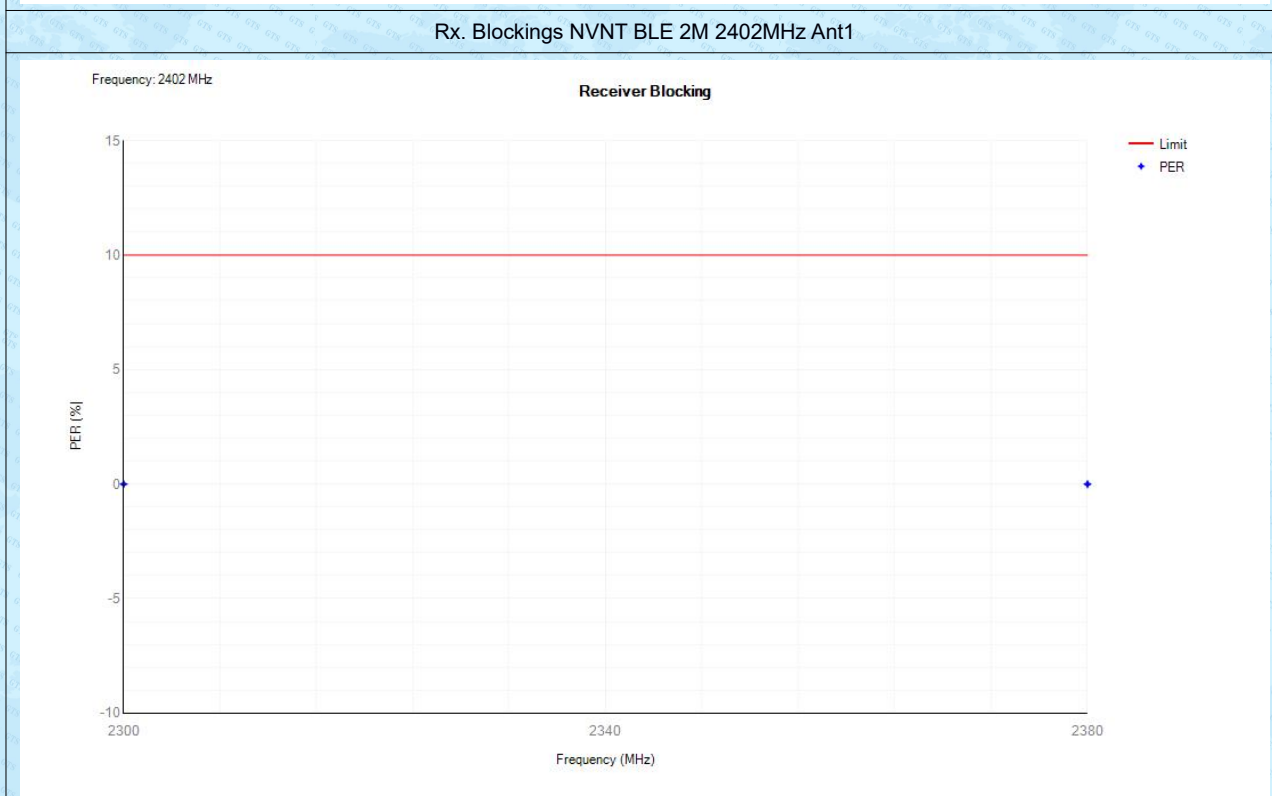
Rx. Blockings NVNT BLE 1M 2440MHz Ant1



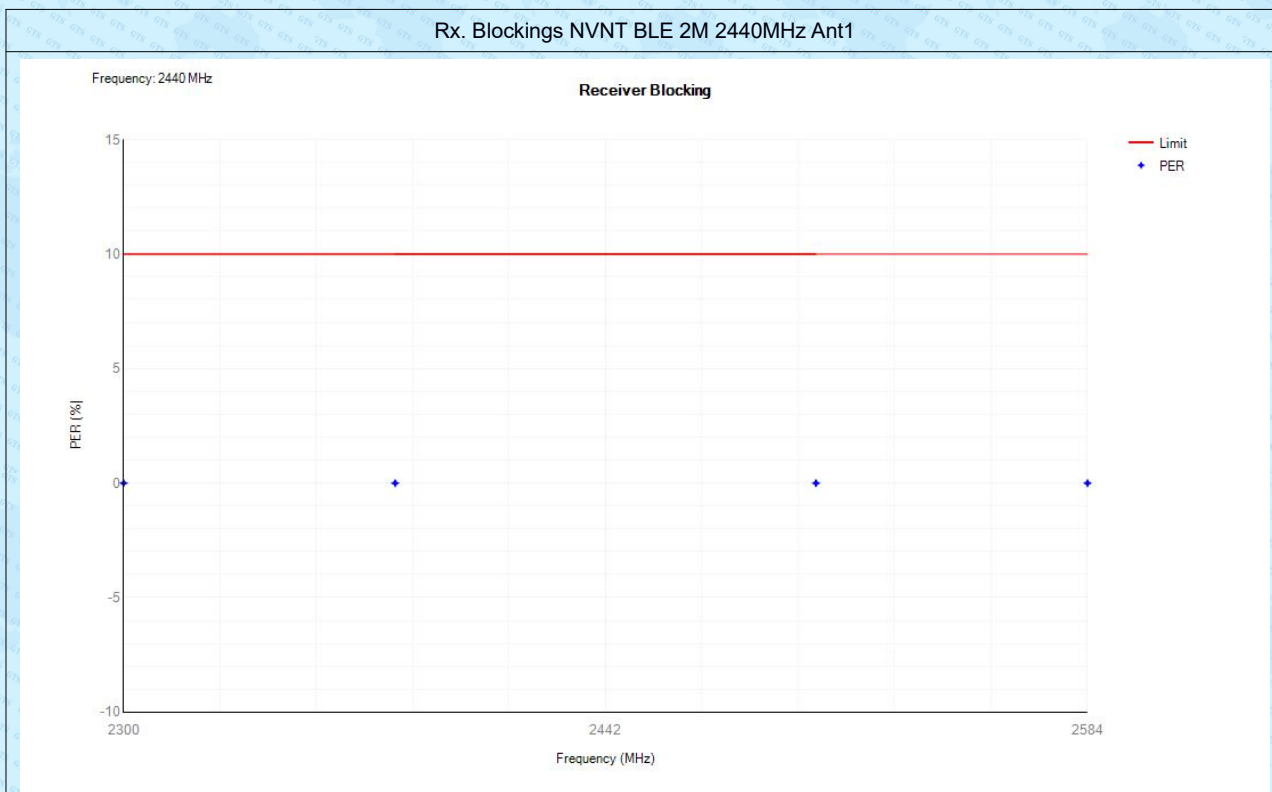
Rx. Blockings NVNT BLE 1M 2480MHz Ant1



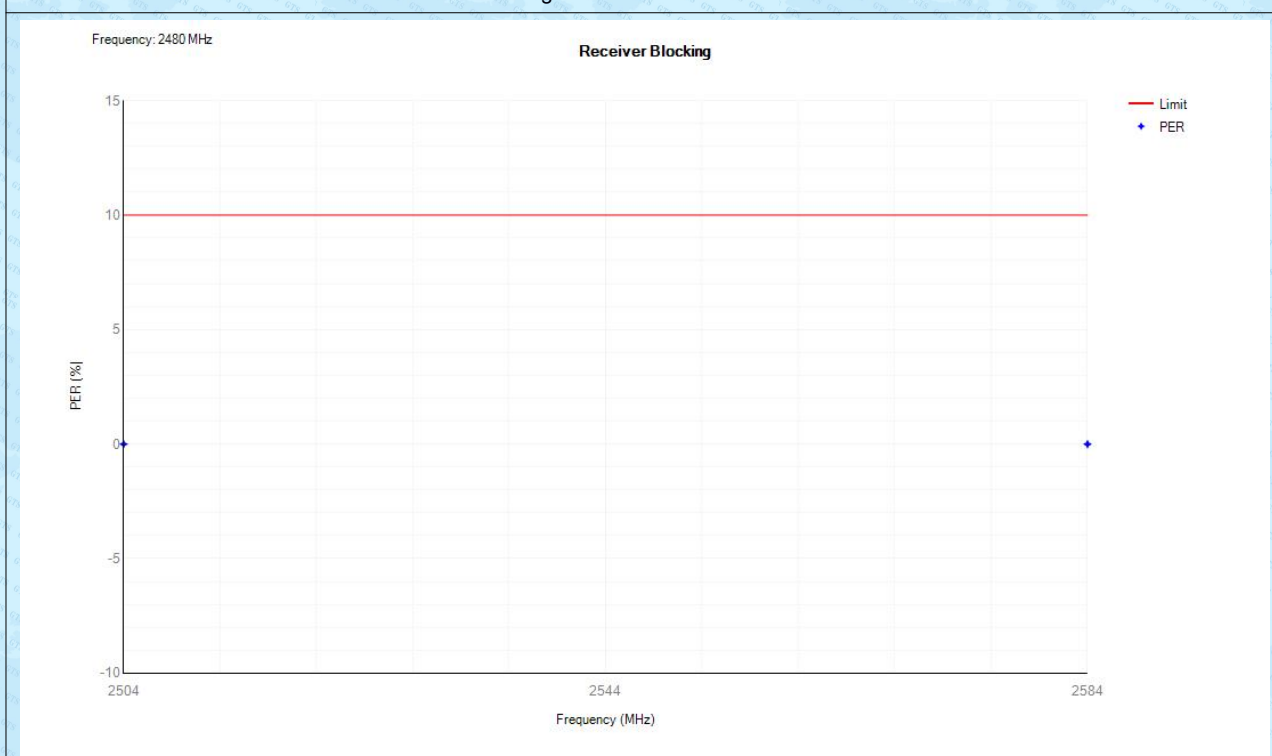
Rx. Blockings NVNT BLE 2M 2402MHz Ant1



Rx. Blockings NVNT BLE 2M 2440MHz Ant1



Rx. Blockings NVNT BLE 2M 2480MHz Ant1



-----End-----