



## Appendix F for BT LE Test Data

**Product Name: Smartphone**

**Test Model: NOTE 40**

### Environmental Conditions

Temperature:	22.2° C
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Ling Zhu



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## F.1 RF Output Power

Condition	Mode	Frequency (MHz)	Antenna	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	3.59	20	Pass
NVNT	BLE 1M	2440	Ant1	2.54	20	Pass
NVNT	BLE 1M	2480	Ant1	2.62	20	Pass
NVNT	BLE 2M	2402	Ant1	3.55	20	Pass
NVNT	BLE 2M	2440	Ant1	2.51	20	Pass
NVNT	BLE 2M	2480	Ant1	2.6	20	Pass

Condition	Mode	Frequency (MHz)	Antenna	Max EIRP (dBm)	Limit (dBm)	Verdict
NVLT	BLE 1M	2402	Ant1	3.57	20	Pass
NVLT	BLE 1M	2440	Ant1	2.53	20	Pass
NVLT	BLE 1M	2480	Ant1	2.61	20	Pass
NVLT	BLE 2M	2402	Ant1	3.53	20	Pass
NVLT	BLE 2M	2440	Ant1	2.50	20	Pass
NVLT	BLE 2M	2480	Ant1	2.58	20	Pass

Condition	Mode	Frequency (MHz)	Antenna	Max EIRP (dBm)	Limit (dBm)	Verdict
NVHT	BLE 1M	2402	Ant1	3.55	20	Pass
NVHT	BLE 1M	2440	Ant1	2.51	20	Pass
NVHT	BLE 1M	2480	Ant1	2.60	20	Pass
NVHT	BLE 2M	2402	Ant1	3.52	20	Pass
NVHT	BLE 2M	2440	Ant1	2.48	20	Pass
NVHT	BLE 2M	2480	Ant1	2.56	20	Pass

\*\*\*Note: 20 bursts had been captured for power measurement.



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## F.2 Power Spectral Density

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	3.54	10	Pass
NVNT	BLE 1M	2440	Ant1	2.49	10	Pass
NVNT	BLE 1M	2480	Ant1	2.57	10	Pass
NVNT	BLE 2M	2402	Ant1	2.38	10	Pass
NVNT	BLE 2M	2440	Ant1	1.34	10	Pass
NVNT	BLE 2M	2480	Ant1	1.43	10	Pass

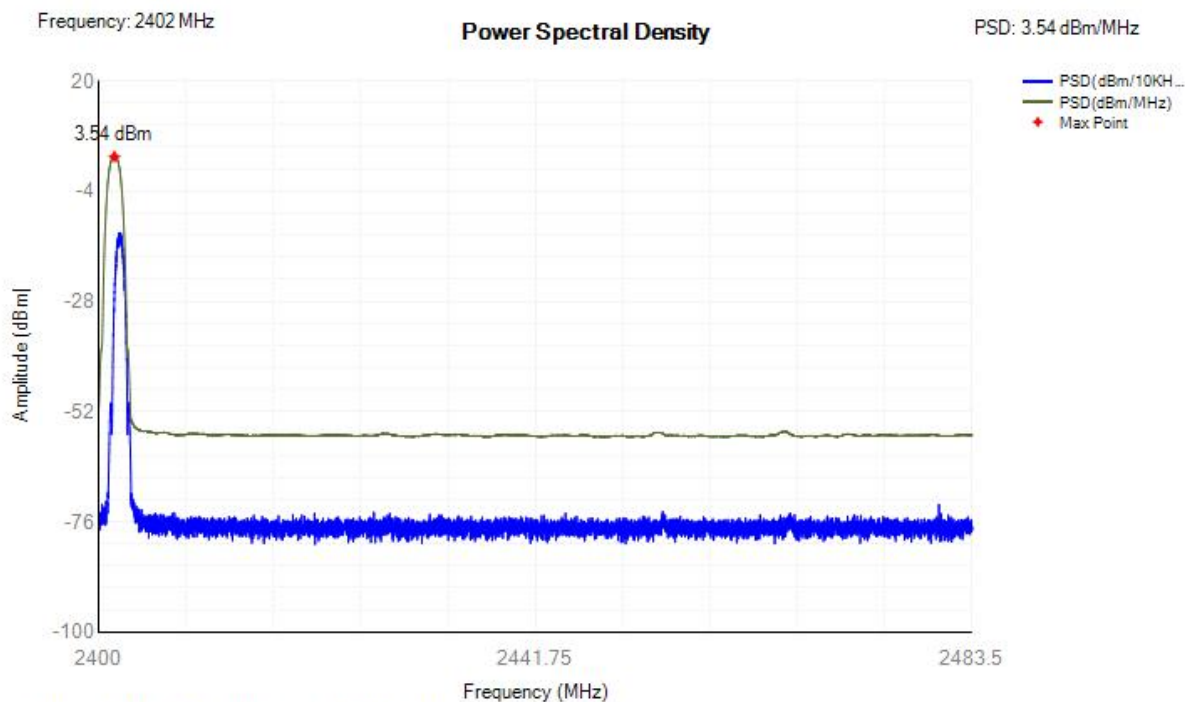


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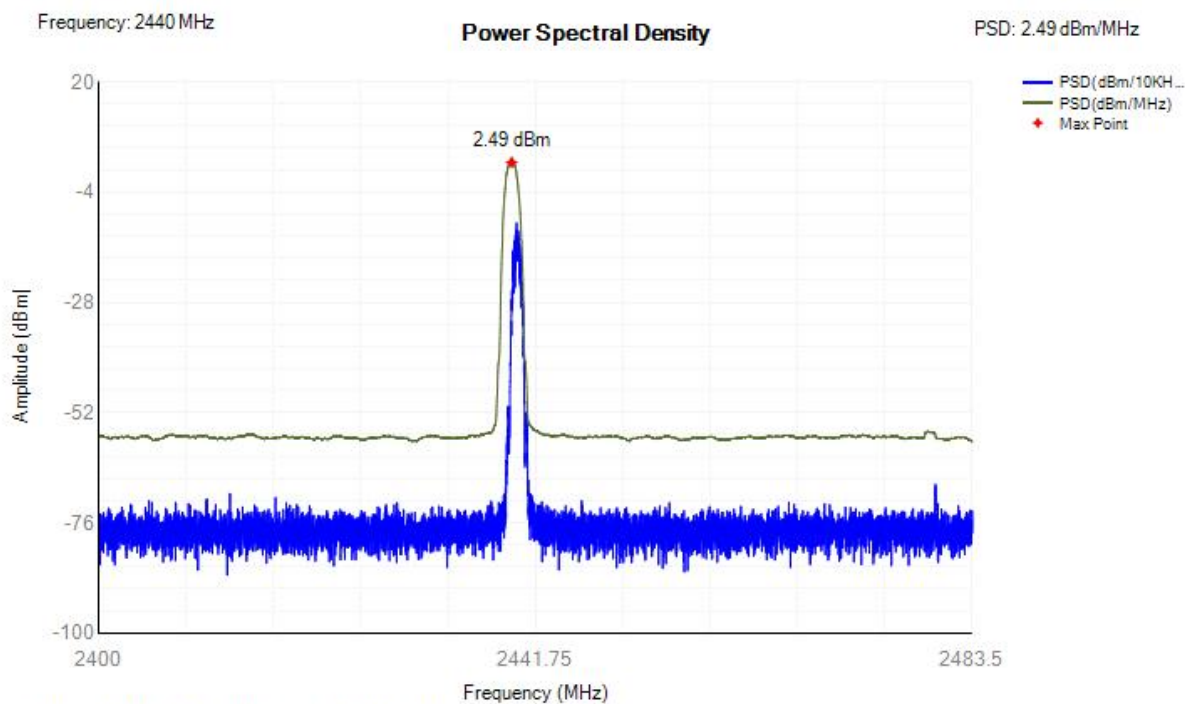


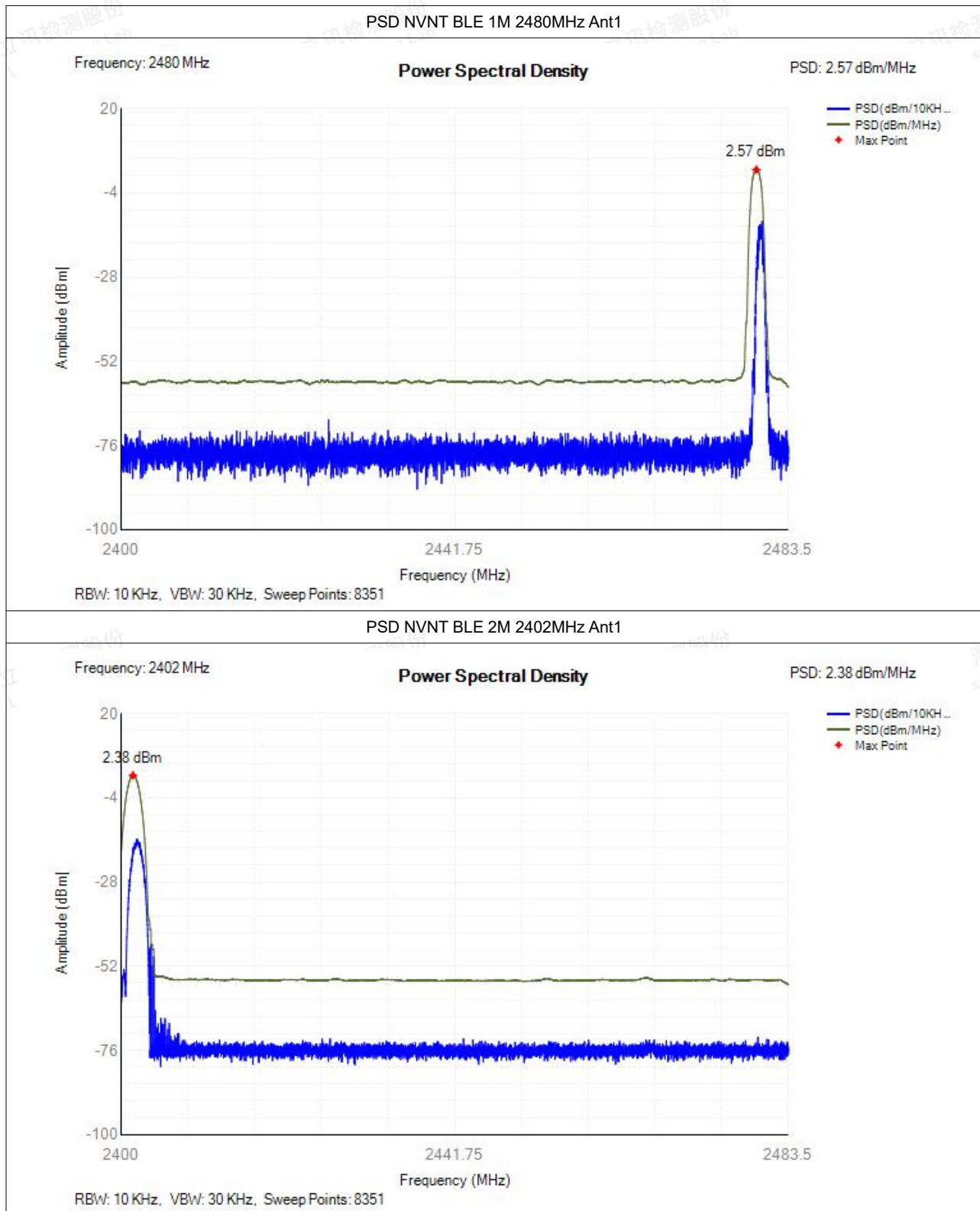
## Test Graphs

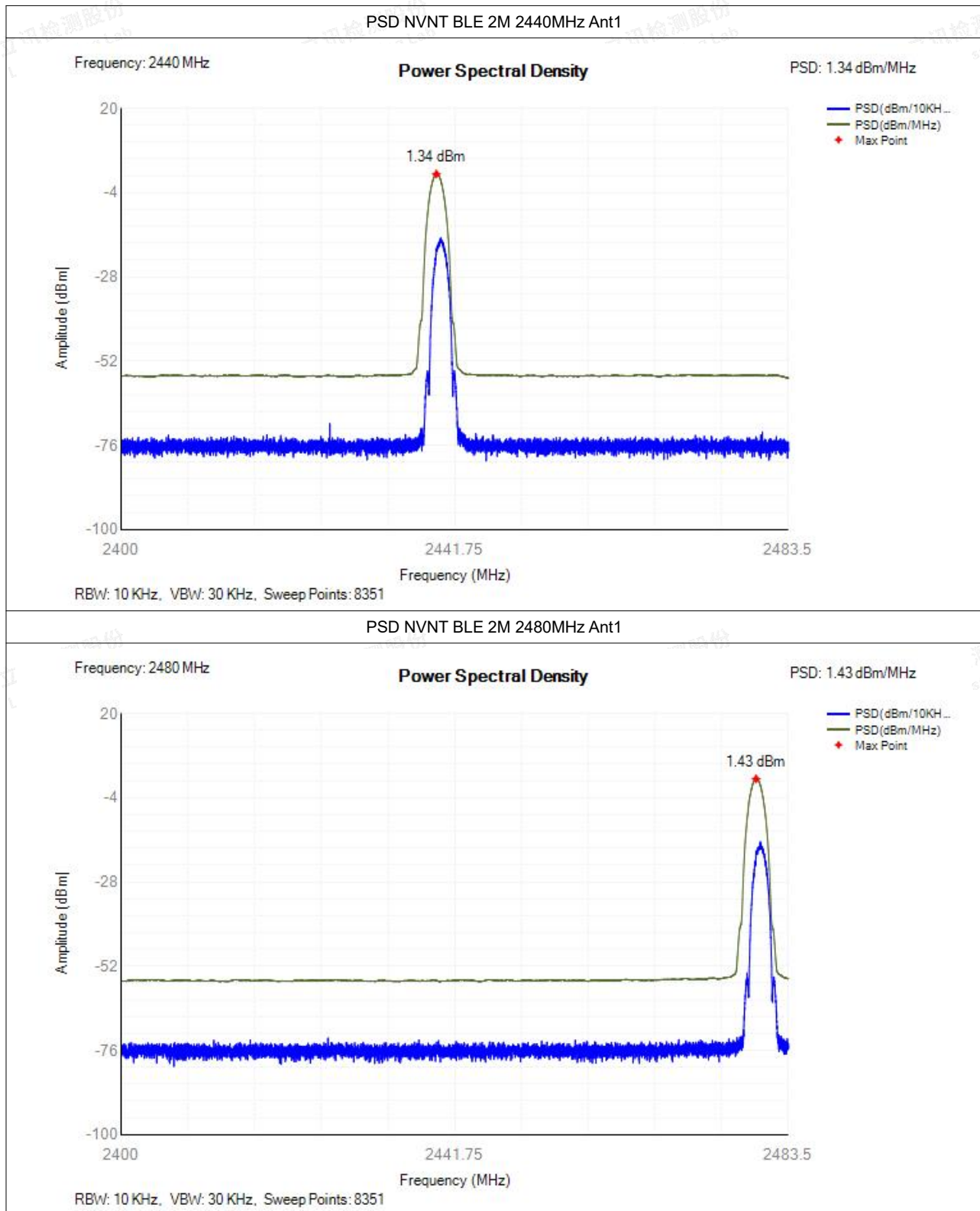
PSD NVNT BLE 1M 2402MHz Ant1



PSD NVNT BLE 1M 2440MHz Ant1











### F.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	2401.998	1.018	2401.489	2402.508	2400 - 2483.5MHz	Pass
NVNT	BLE 1M	2440	Ant1	2440.003	1.031	2439.488	2440.519	2400 - 2483.5MHz	Pass
NVNT	BLE 1M	2480	Ant1	2479.997	1.017	2479.489	2480.506	2400 - 2483.5MHz	Pass
NVNT	BLE 2M	2402	Ant1	2402.001	2.031	2400.985	2403.016	2400 - 2483.5MHz	Pass
NVNT	BLE 2M	2440	Ant1	2440.001	1.972	2439.015	2440.987	2400 - 2483.5MHz	Pass
NVNT	BLE 2M	2480	Ant1	2480.001	2.033	2478.985	2481.017	2400 - 2483.5MHz	Pass

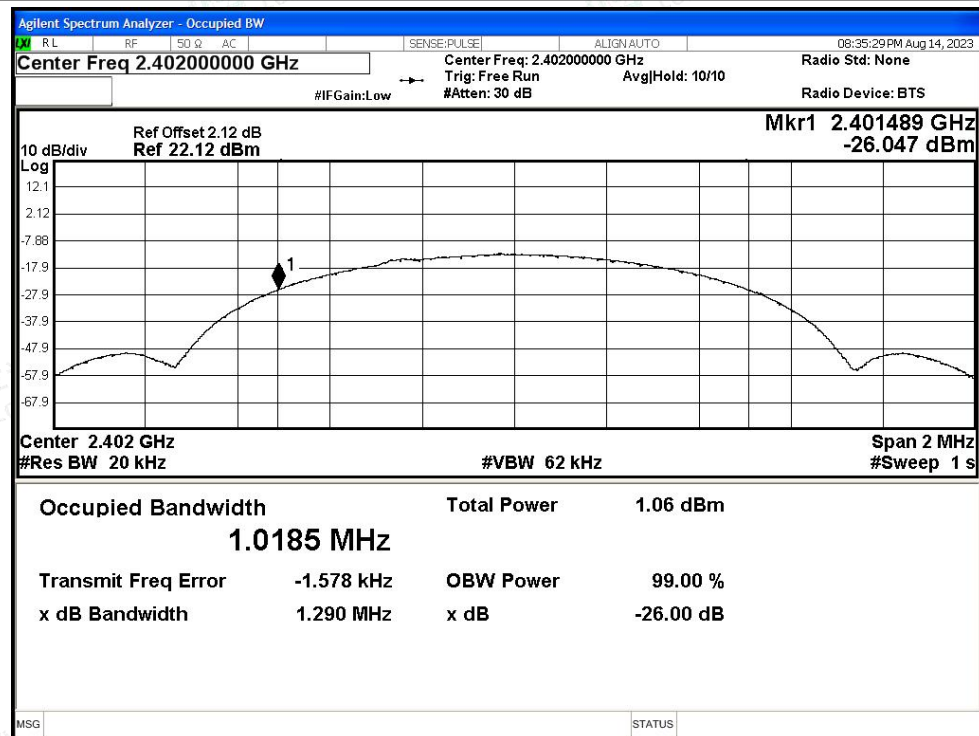


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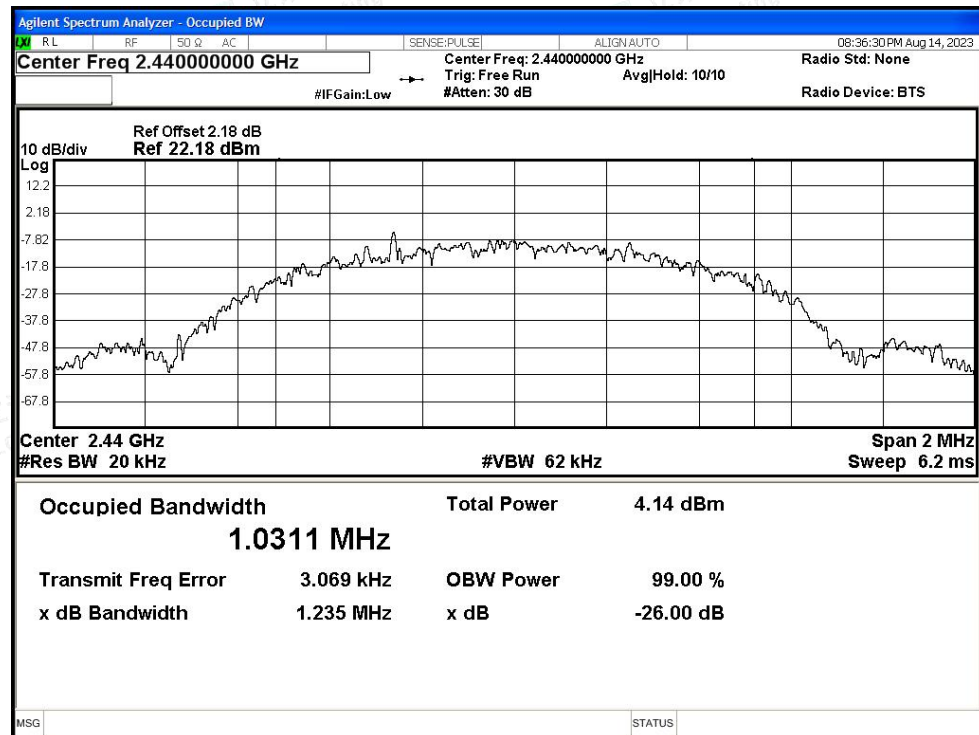


## Test Graphs

## OBW NVNT BLE 1M 2402MHz Ant1



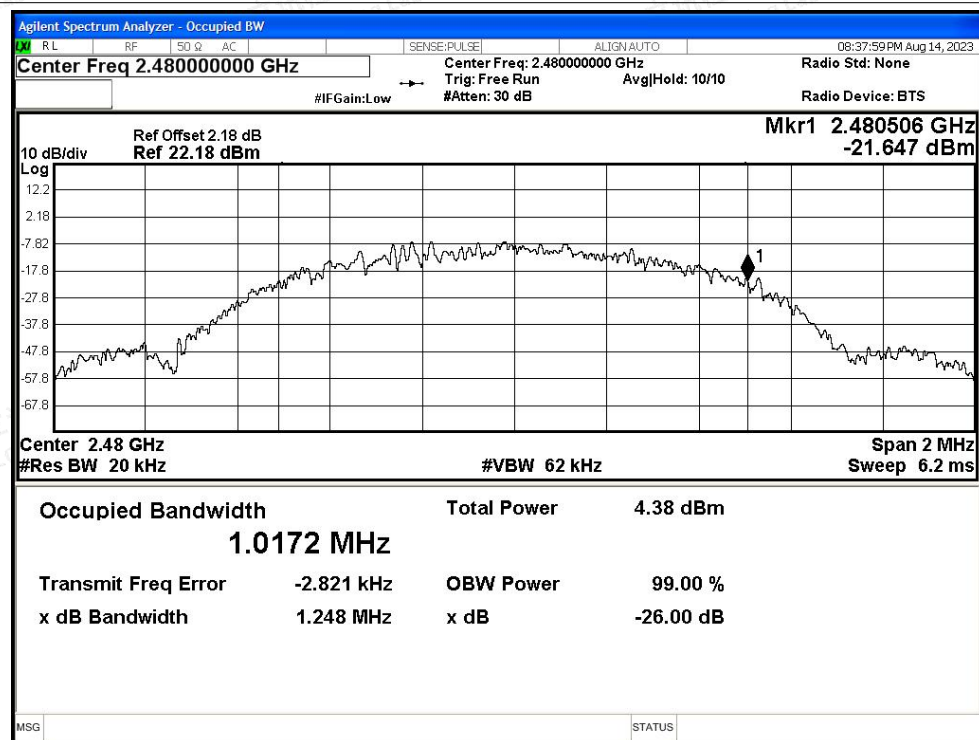
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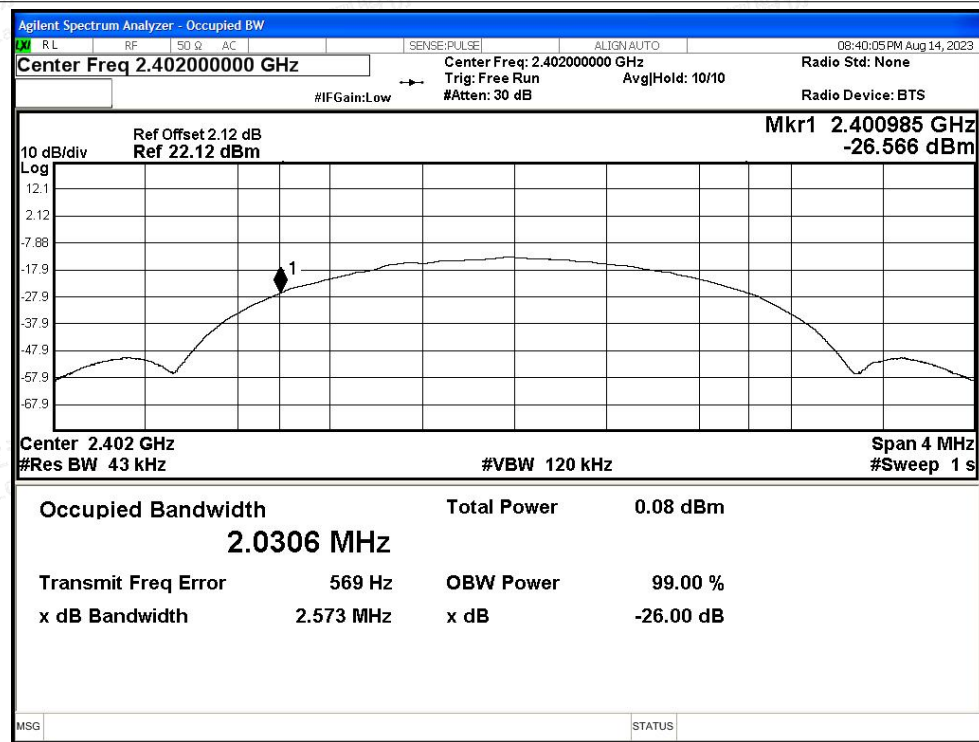




## OBW NVNT BLE 1M 2480MHz Ant1

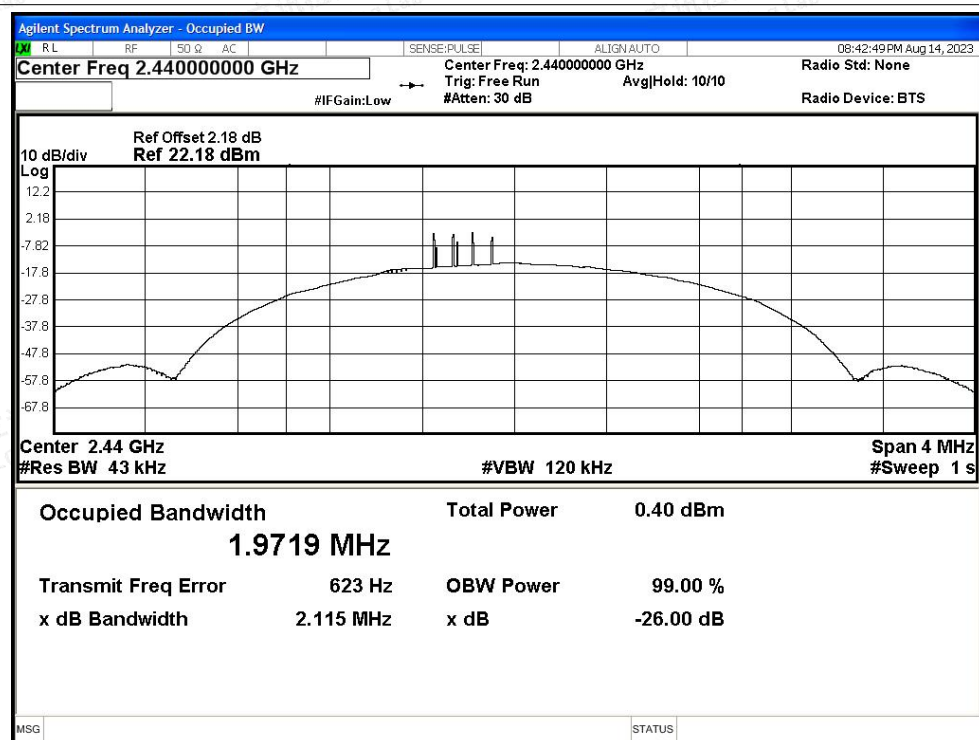


## OBW NVNT BLE 2M 2402MHz Ant1

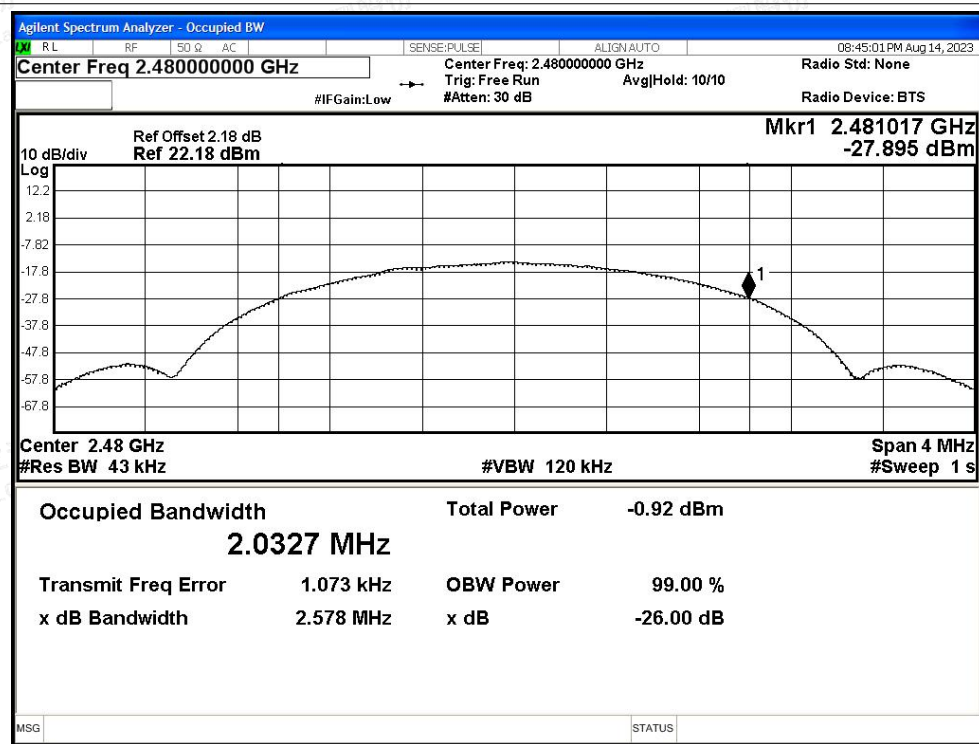




## OBW NVNT BLE 2M 2440MHz Ant1



## OBW NVNT BLE 2M 2480MHz Ant1





## F.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	-55.8	-10	Pass
NVNT	BLE 1M	2402	Ant1	2399.482	-56.3	-10	Pass
NVNT	BLE 1M	2402	Ant1	2398.482	-60.62	-20	Pass
NVNT	BLE 1M	2402	Ant1	2398.464	-60.73	-20	Pass
NVNT	BLE 1M	2480	Ant1	2484	-63.09	-10	Pass
NVNT	BLE 1M	2480	Ant1	2484.017	-63.21	-10	Pass
NVNT	BLE 1M	2480	Ant1	2485.017	-63.94	-20	Pass
NVNT	BLE 1M	2480	Ant1	2485.034	-63.86	-20	Pass
NVNT	BLE 2M	2402	Ant1	2399.5	-38.32	-10	Pass
NVNT	BLE 2M	2402	Ant1	2398.5	-59.9	-10	Pass
NVNT	BLE 2M	2402	Ant1	2398.469	-60.47	-10	Pass
NVNT	BLE 2M	2402	Ant1	2397.469	-63.71	-20	Pass
NVNT	BLE 2M	2402	Ant1	2396.469	-62.37	-20	Pass
NVNT	BLE 2M	2402	Ant1	2396.438	-61.97	-20	Pass
NVNT	BLE 2M	2480	Ant1	2484	-59.45	-10	Pass
NVNT	BLE 2M	2480	Ant1	2485	-60.69	-10	Pass
NVNT	BLE 2M	2480	Ant1	2485.033	-60.68	-10	Pass
NVNT	BLE 2M	2480	Ant1	2486.033	-61.71	-20	Pass
NVNT	BLE 2M	2480	Ant1	2487.033	-62.08	-20	Pass
NVNT	BLE 2M	2480	Ant1	2487.066	-62.5	-20	Pass

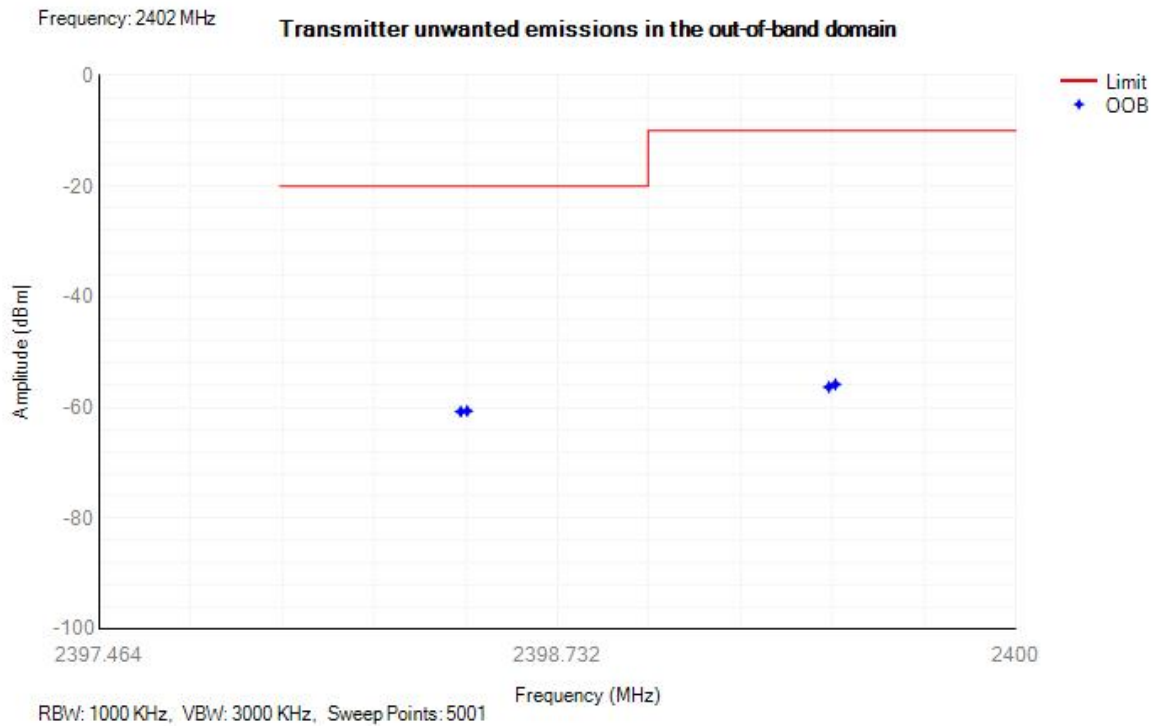


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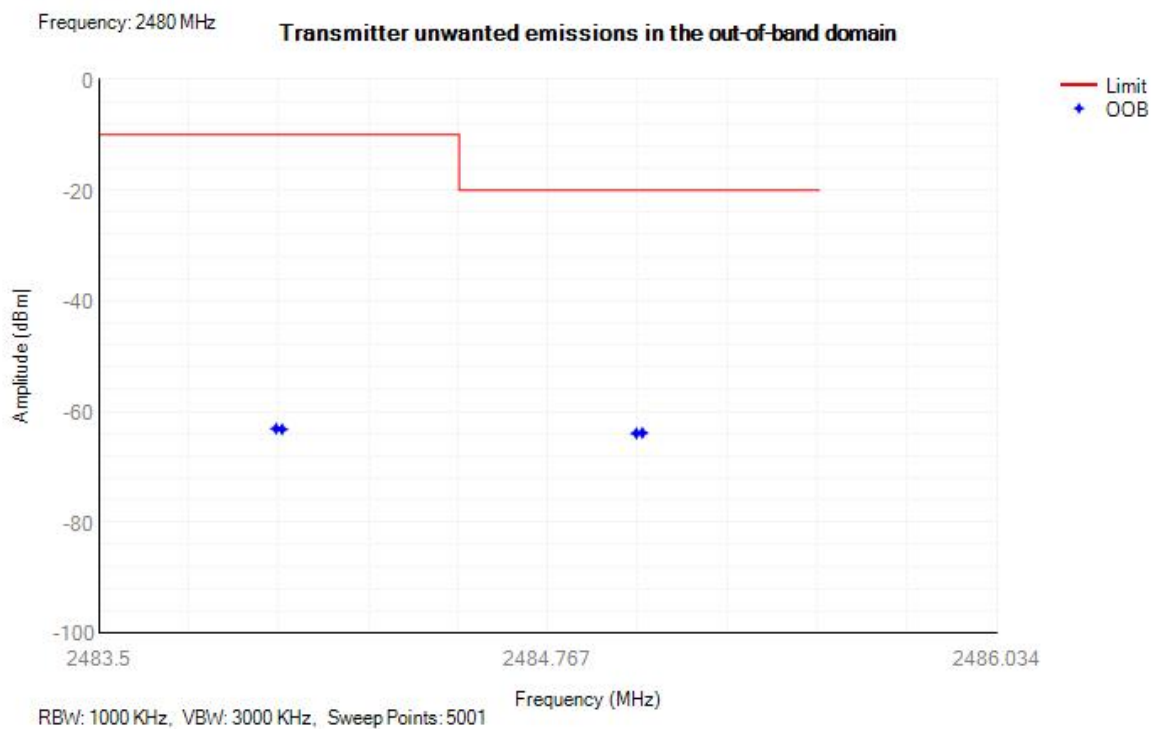


## Test Graphs

Tx. Emissions OOB NVNT BLE 1M 2402MHz Ant1

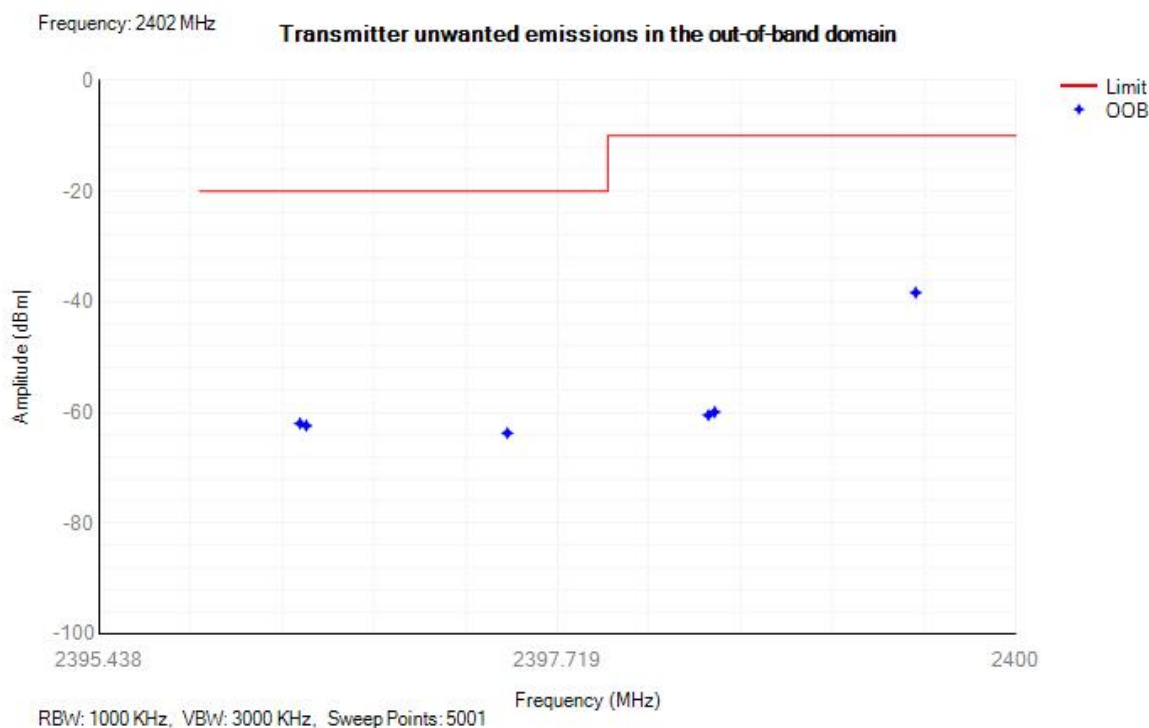


Tx. Emissions OOB NVNT BLE 1M 2480MHz Ant1

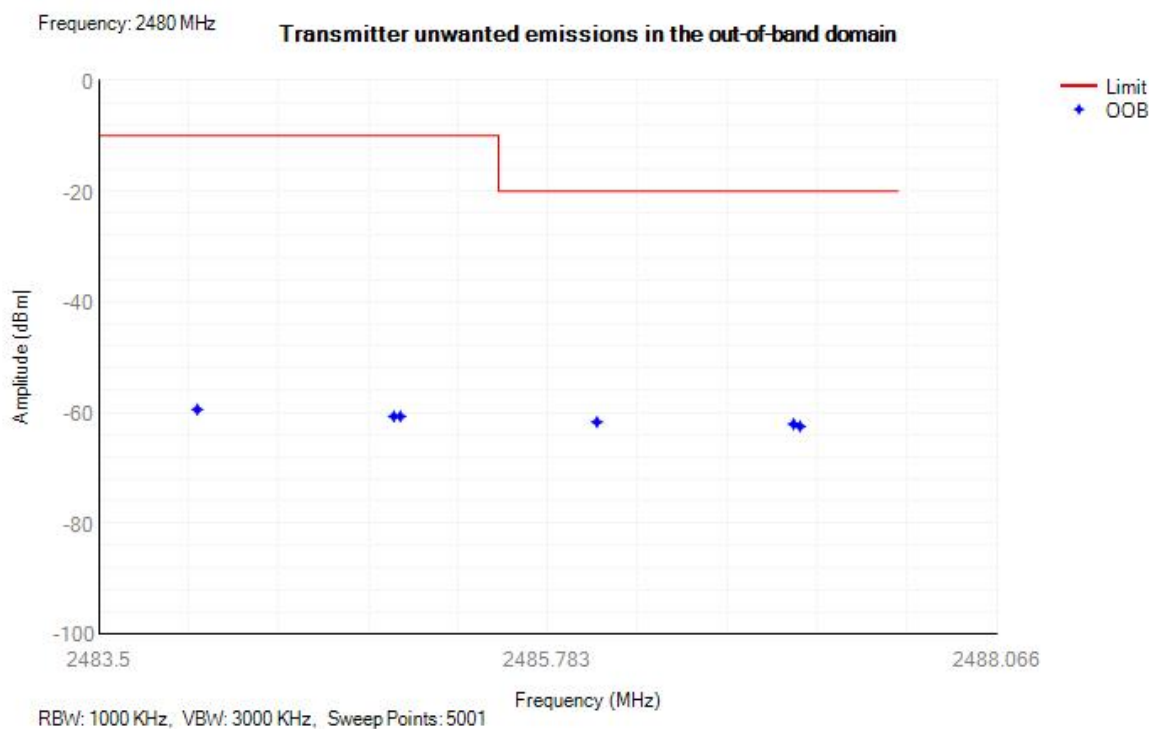




Tx. Emissions OOB NVNT BLE 2M 2402MHz Ant1



Tx. Emissions OOB NVNT BLE 2M 2480MHz Ant1





## F.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	42.90	-74.07	NA	-36	Pass
NVNT	BLE 1M	2402	Ant1	47 -74	69.60	-71.77	NA	-54	Pass
NVNT	BLE 1M	2402	Ant1	74 -87.5	81.50	-72.28	NA	-36	Pass
NVNT	BLE 1M	2402	Ant1	87.5 -118	91.85	-72.05	NA	-54	Pass
NVNT	BLE 1M	2402	Ant1	118 -174	119.35	-71.89	NA	-36	Pass
NVNT	BLE 1M	2402	Ant1	174 -230	224.00	-71.32	NA	-54	Pass
NVNT	BLE 1M	2402	Ant1	230 -470	418.70	-69.28	NA	-36	Pass
NVNT	BLE 1M	2402	Ant1	470 -694	488.00	-70.52	NA	-54	Pass
NVNT	BLE 1M	2402	Ant1	694 -1000	822.15	-69.18	NA	-36	Pass
NVNT	BLE 1M	2402	Ant1	1000 -2398	2393.50	-46.21	NA	-30	Pass
NVNT	BLE 1M	2402	Ant1	2485.5 -12750	12743.50	-51.34	NA	-30	Pass
NVNT	BLE 1M	2480	Ant1	30 -47	30.60	-73.97	NA	-36	Pass
NVNT	BLE 1M	2480	Ant1	47 -74	73.80	-73.07	NA	-54	Pass
NVNT	BLE 1M	2480	Ant1	74 -87.5	75.40	-73.02	NA	-36	Pass
NVNT	BLE 1M	2480	Ant1	87.5 -118	94.70	-72.14	NA	-54	Pass
NVNT	BLE 1M	2480	Ant1	118 -174	125.40	-72.18	NA	-36	Pass
NVNT	BLE 1M	2480	Ant1	174 -230	202.35	-71.48	NA	-54	Pass
NVNT	BLE 1M	2480	Ant1	230 -470	394.60	-69.78	NA	-36	Pass
NVNT	BLE 1M	2480	Ant1	470 -694	662.25	-69.48	NA	-54	Pass
NVNT	BLE 1M	2480	Ant1	694 -1000	908.85	-69.53	NA	-36	Pass
NVNT	BLE 1M	2480	Ant1	1000 -2398	2306.50	-55.82	NA	-30	Pass
NVNT	BLE 1M	2480	Ant1	2485.5 -12750	5227.50	-48.18	NA	-30	Pass
NVNT	BLE 2M	2402	Ant1	30 -47	41.90	-73.66	NA	-36	Pass
NVNT	BLE 2M	2402	Ant1	47 -74	71.15	-72.73	NA	-54	Pass
NVNT	BLE 2M	2402	Ant1	74 -87.5	84.30	-71.24	NA	-36	Pass
NVNT	BLE 2M	2402	Ant1	87.5 -118	94.90	-72.21	NA	-54	Pass
NVNT	BLE 2M	2402	Ant1	118 -174	140.40	-71.33	NA	-36	Pass
NVNT	BLE 2M	2402	Ant1	174 -230	228.90	-71.75	NA	-54	Pass
NVNT	BLE 2M	2402	Ant1	230 -470	415.45	-70.31	NA	-36	Pass
NVNT	BLE 2M	2402	Ant1	470 -694	549.80	-69.62	NA	-54	Pass
NVNT	BLE 2M	2402	Ant1	694 -1000	863.15	-68.41	NA	-36	Pass
NVNT	BLE 2M	2402	Ant1	1000 -2396	2394.50	-44.37	NA	-30	Pass
NVNT	BLE 2M	2402	Ant1	2487.5 -12750	3435.50	-50.64	NA	-30	Pass
NVNT	BLE 2M	2480	Ant1	30 -47	35.50	-74.08	NA	-36	Pass
NVNT	BLE 2M	2480	Ant1	47 -74	63.70	-73.02	NA	-54	Pass
NVNT	BLE 2M	2480	Ant1	74 -87.5	82.45	-72.39	NA	-36	Pass
NVNT	BLE 2M	2480	Ant1	87.5 -118	99.85	-71.51	NA	-54	Pass
NVNT	BLE 2M	2480	Ant1	118 -174	173.65	-71.53	NA	-36	Pass







NVNT	BLE 2M	2480	Ant1	174 -230	184.55	-71.18	NA	-54	Pass
NVNT	BLE 2M	2480	Ant1	230 -470	460.80	-69.77	NA	-36	Pass
NVNT	BLE 2M	2480	Ant1	470 -694	472.60	-69.74	NA	-54	Pass
NVNT	BLE 2M	2480	Ant1	694 -1000	937.75	-66.98	NA	-36	Pass
NVNT	BLE 2M	2480	Ant1	1000 -2396	2067.00	-54.35	NA	-30	Pass
NVNT	BLE 2M	2480	Ant1	2487.5 -12750	5223.00	-39.22	NA	-30	Pass

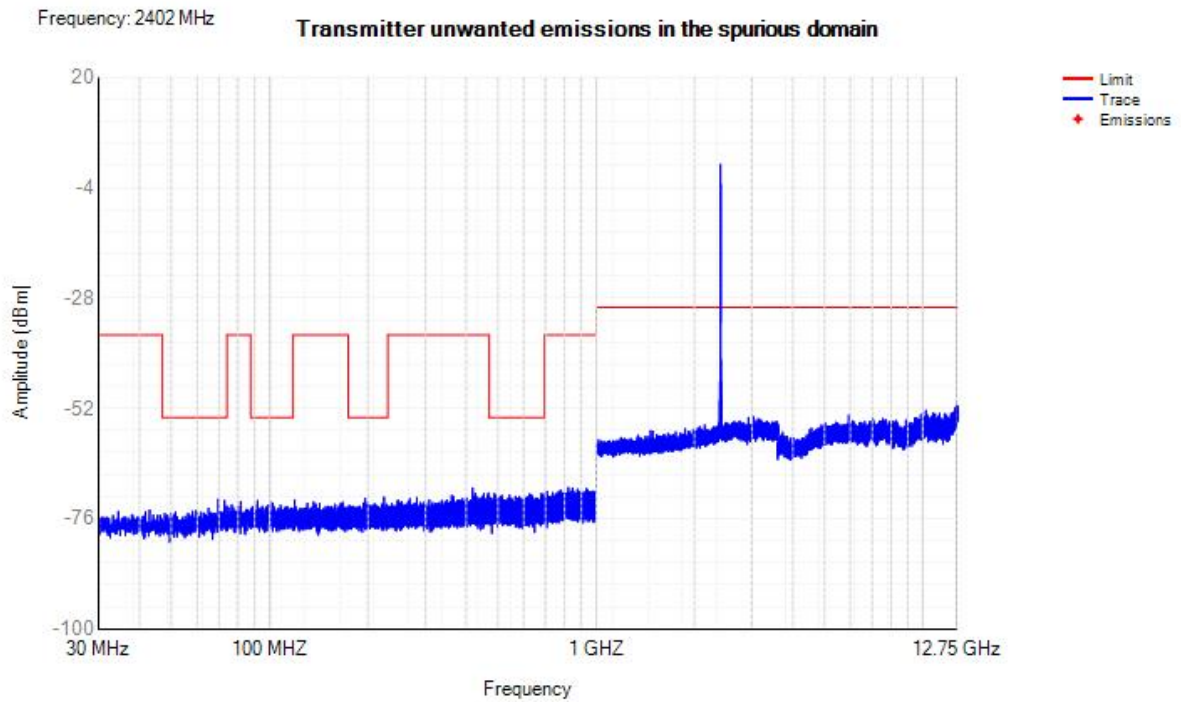


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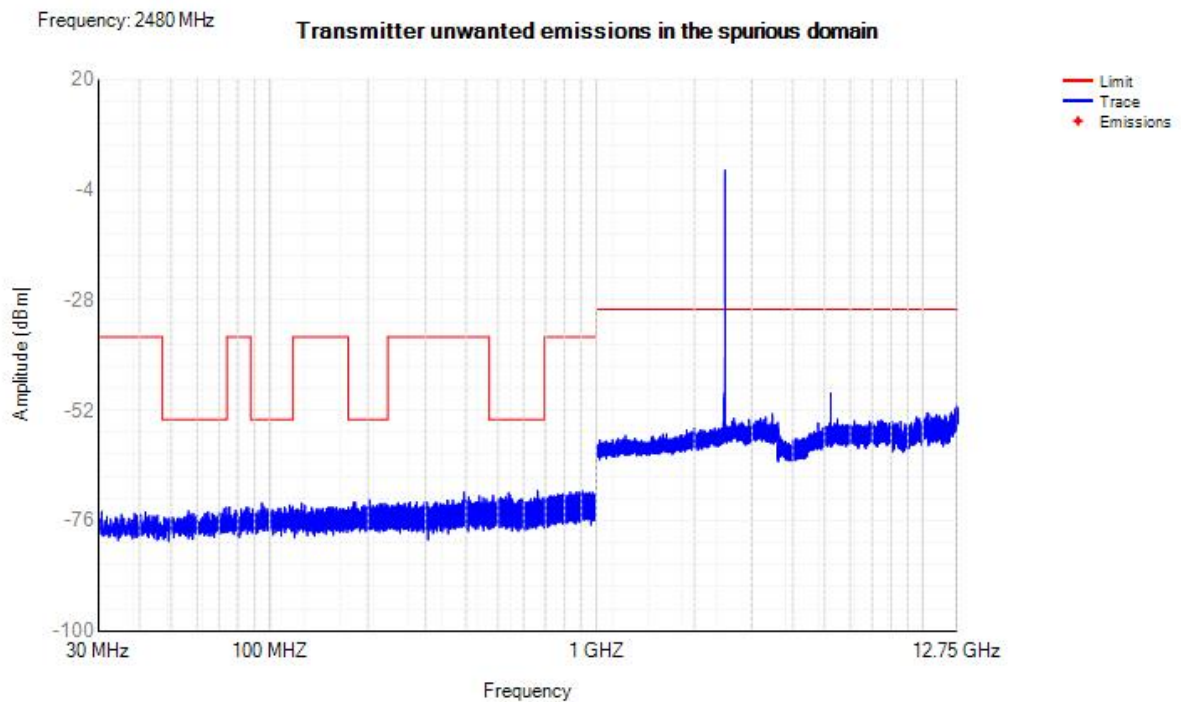


## Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1

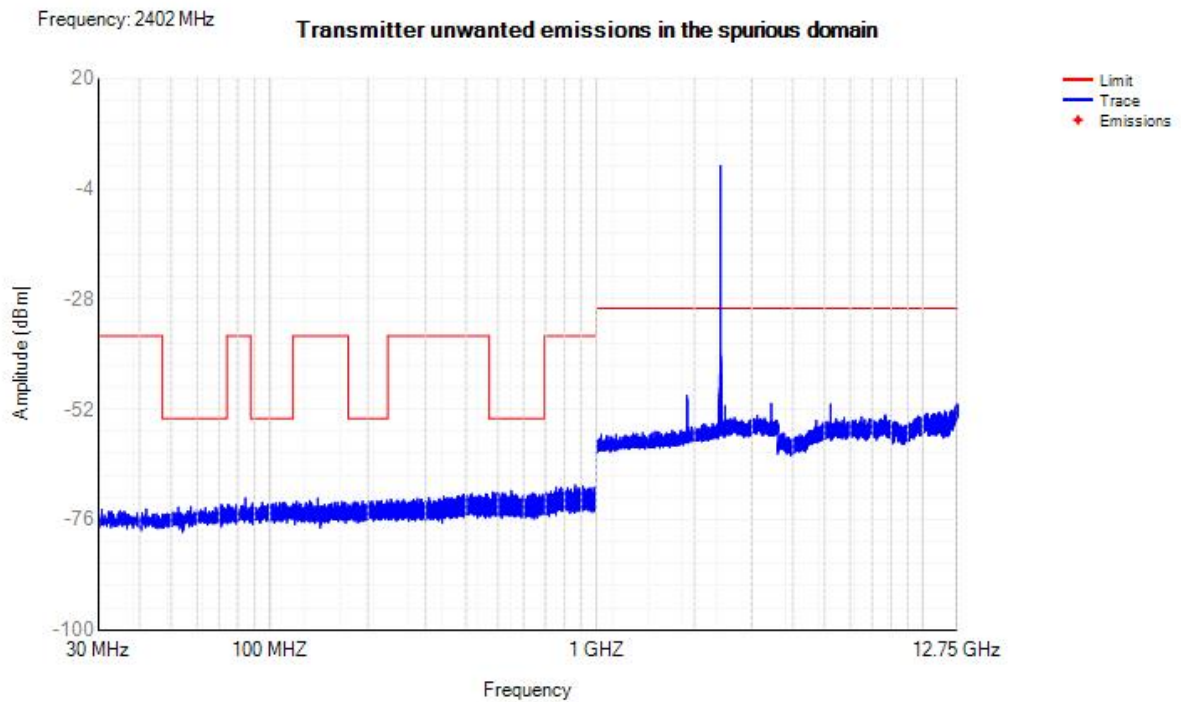


Tx. Spurious NVNT BLE 1M 2480MHz Ant1

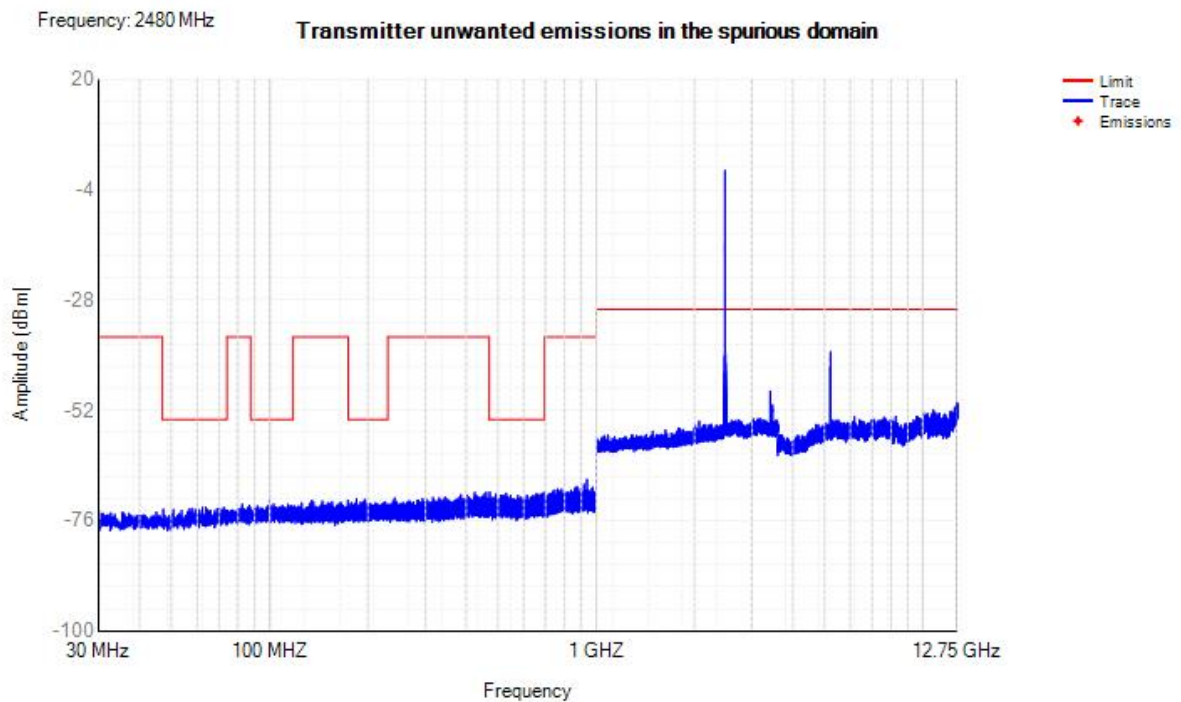




Tx. Spurious NVNT BLE 2M 2402MHz Ant1



Tx. Spurious NVNT BLE 2M 2480MHz Ant1





## F.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	861.95	-79.87	NA	-57	Pass
NVNT	BLE 1M	2402	Ant1	1000 -12750	12637	-63.08	NA	-47	Pass
NVNT	BLE 1M	2480	Ant1	30 -1000	979.65	-79.11	NA	-57	Pass
NVNT	BLE 1M	2480	Ant1	1000 -12750	12734	-61.39	NA	-47	Pass
NVNT	BLE 2M	2402	Ant1	30 -1000	817.3	-82.83	NA	-57	Pass
NVNT	BLE 2M	2402	Ant1	1000 -12750	12598.5	-62.92	NA	-47	Pass
NVNT	BLE 2M	2480	Ant1	30 -1000	822	-79.36	NA	-57	Pass
NVNT	BLE 2M	2480	Ant1	1000 -12750	12748	-62.55	NA	-47	Pass

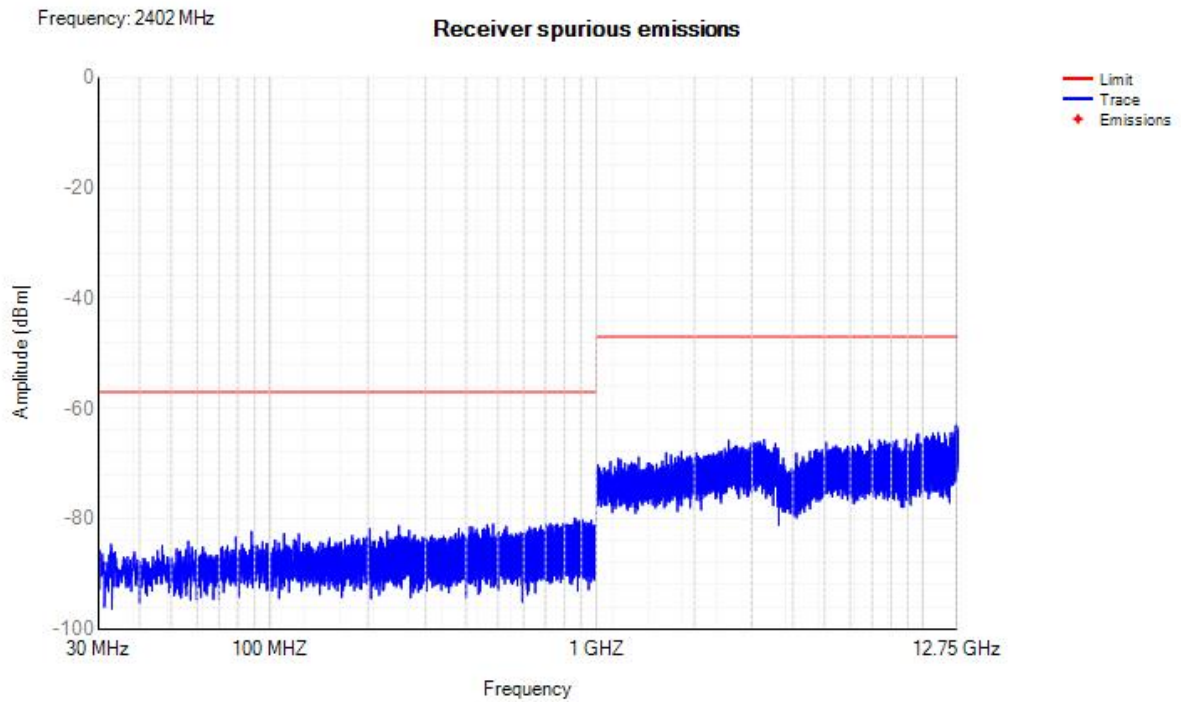


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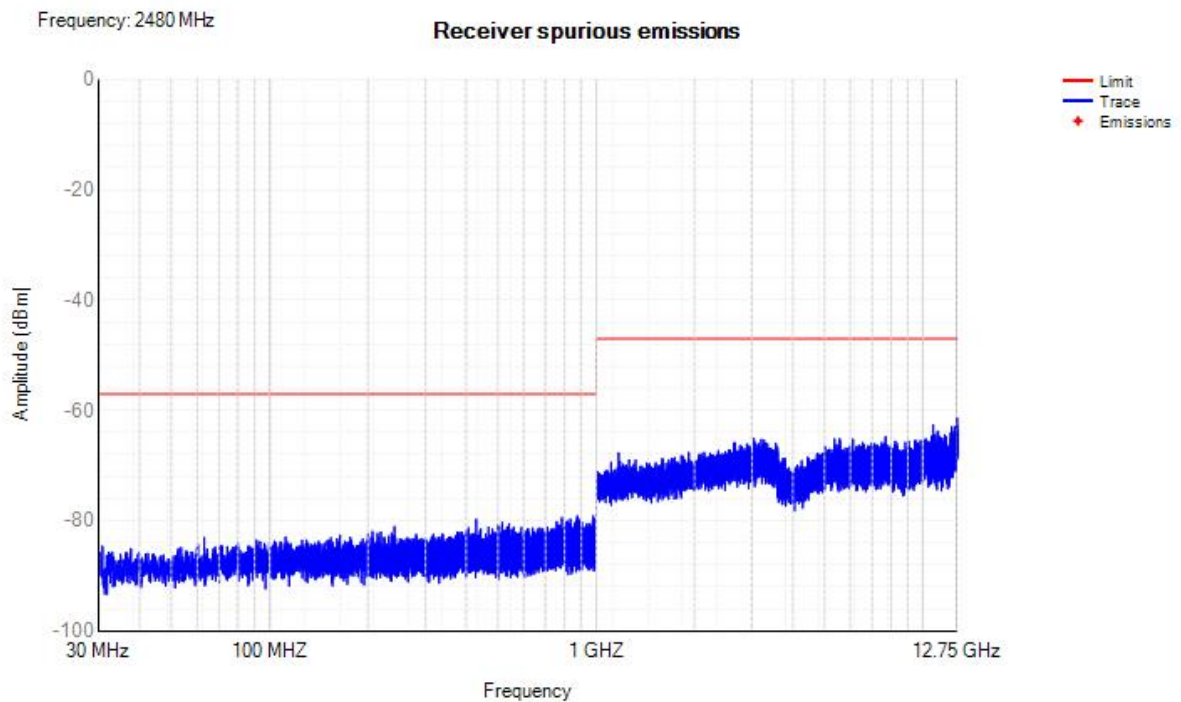


## Test Graphs

Rx. Spurious NVNT BLE 1M 2402MHz Ant1



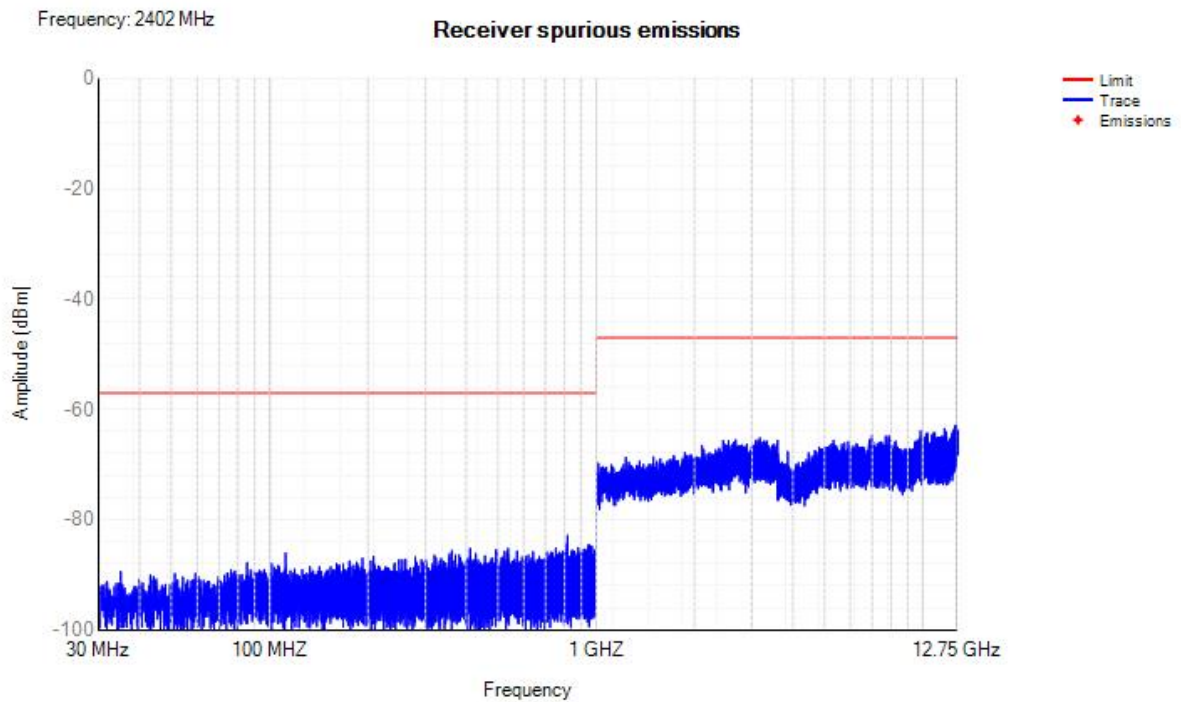
Rx. Spurious NVNT BLE 1M 2480MHz Ant1



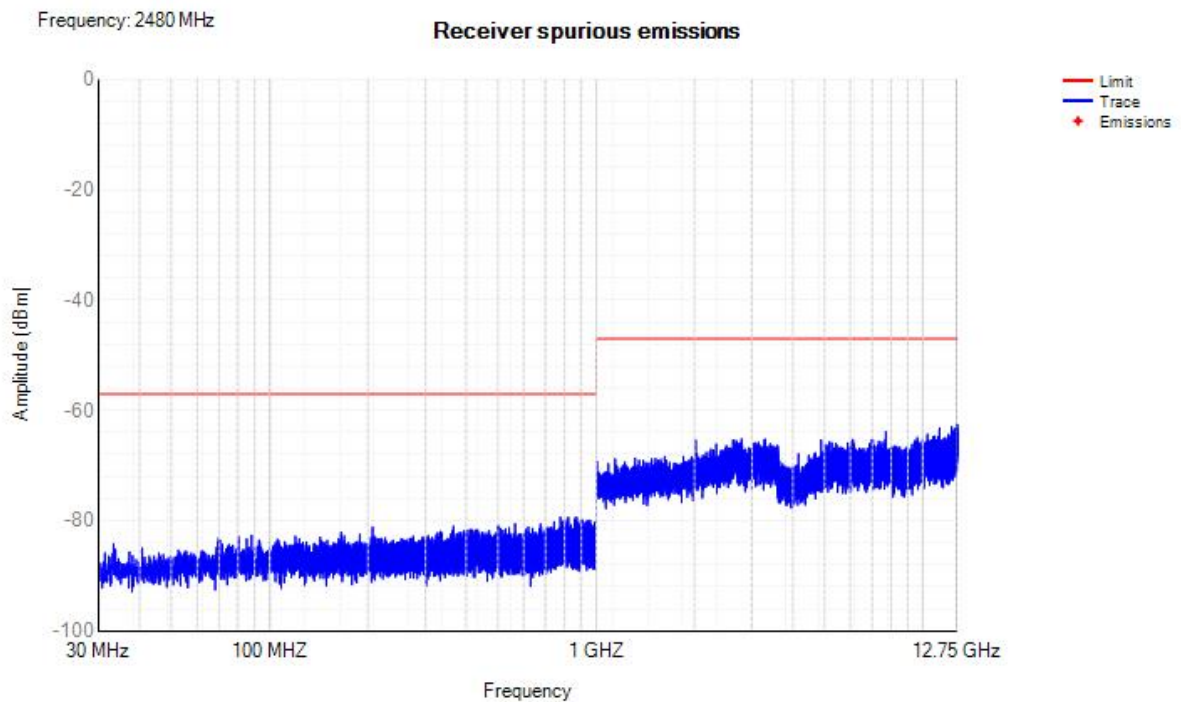




Rx. Spurious NVNT BLE 2M 2402MHz Ant1



Rx. Spurious NVNT BLE 2M 2480MHz Ant1







## F.7 Receiver Blocking

Test Mode	Test Channel (MHz)	Wanted Signal Mean Power from Companion Device (dBm)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)		Type of Blocking Signal	PER(%)		Test Result
				Test Value	Limit		Test Value	Limit	
BLE 1M	2402	-69	2380	-27	≥-34	CW	2.06	10	Pass
			2504	-23	≥-34	CW	2.38	10	Pass
			2300	-25	≥-34	CW	2.34	10	Pass
			2584	-24	≥-34	CW	2.43	10	Pass
	2480	-69	2380	-30	≥-34	CW	1.97	10	Pass
			2504	-24	≥-34	CW	3.75	10	Pass
			2300	-29	≥-34	CW	4.30	10	Pass
			2584	-22	≥-34	CW	1.41	10	Pass
BLE 2M	2402	-69	2380	-21	≥-34	CW	3.14	10	Pass
			2504	-22	≥-34	CW	4.49	10	Pass
			2300	-29	≥-34	CW	1.99	10	Pass
			2584	-26	≥-34	CW	2.74	10	Pass
	2480	-69	2380	-24	≥-34	CW	3.83	10	Pass
			2504	-28	≥-34	CW	4.16	10	Pass
			2300	-23	≥-34	CW	1.84	10	Pass
			2584	-21	≥-34	CW	3.55	10	Pass

