

## Appendix E for BT Test Data

**Product Name: Bluetooth Earphones**

**Test Model: TA1**

### Environmental Conditions

Temperature:	24.8 ° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

## E.1 RF Output Power

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	2.27	20	Pass
NVNT	1-DH5	2441	2.28	20	Pass
NVNT	1-DH5	2480	2.14	20	Pass
NVNT	2-DH5	2402	-0.39	20	Pass
NVNT	2-DH5	2441	-0.35	20	Pass
NVNT	2-DH5	2480	0.16	20	Pass
NVNT	3-DH5	2402	0.33	20	Pass
NVNT	3-DH5	2441	0.55	20	Pass
NVNT	3-DH5	2480	0.76	20	Pass

Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVLT	1-DH5	2402	2.19	20	Pass
NVLT	1-DH5	2441	2.20	20	Pass
NVLT	1-DH5	2480	2.05	20	Pass
NVLT	2-DH5	2402	-0.54	20	Pass
NVLT	2-DH5	2441	-0.47	20	Pass
NVLT	2-DH5	2480	0.02	20	Pass
NVLT	3-DH5	2402	0.16	20	Pass
NVLT	3-DH5	2441	0.37	20	Pass
NVLT	3-DH5	2480	0.55	20	Pass

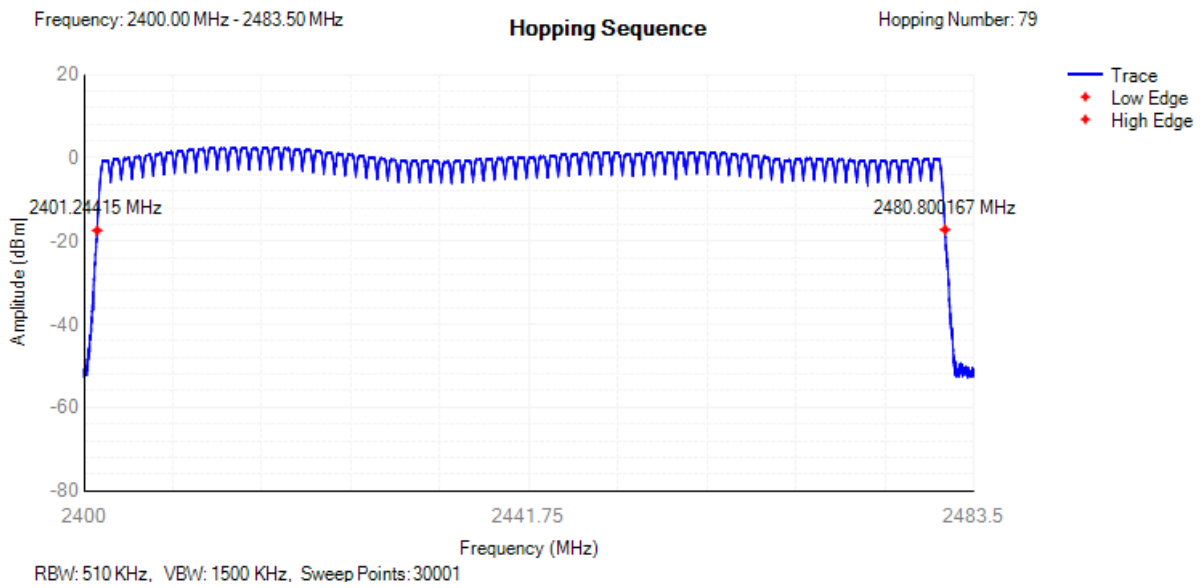
Condition	Mode	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Verdict
NVHT	1-DH5	2402	2.10	20	Pass
NVHT	1-DH5	2441	2.03	20	Pass
NVHT	1-DH5	2480	1.87	20	Pass
NVHT	2-DH5	2402	-0.77	20	Pass
NVHT	2-DH5	2441	-0.59	20	Pass
NVHT	2-DH5	2480	-0.02	20	Pass
NVHT	3-DH5	2402	0.09	20	Pass
NVHT	3-DH5	2441	0.25	20	Pass
NVHT	3-DH5	2480	0.36	20	Pass

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

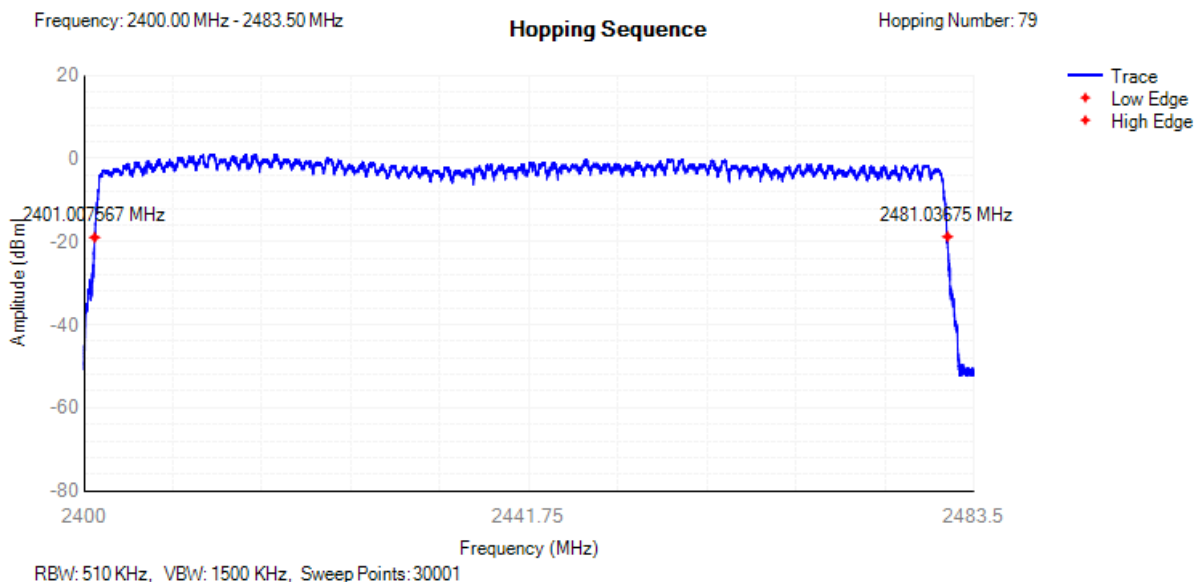
## E.2 Hopping Sequence

Condition	Mode	Hopping Number	Limit	Band Allocation (%)	Limit Band Allocation (%)	Verdict
NVNT	1-DH5	79	15	95.27	70	Pass
NVNT	2-DH5	79	15	95.84	70	Pass
NVNT	3-DH5	79	15	95.79	70	Pass

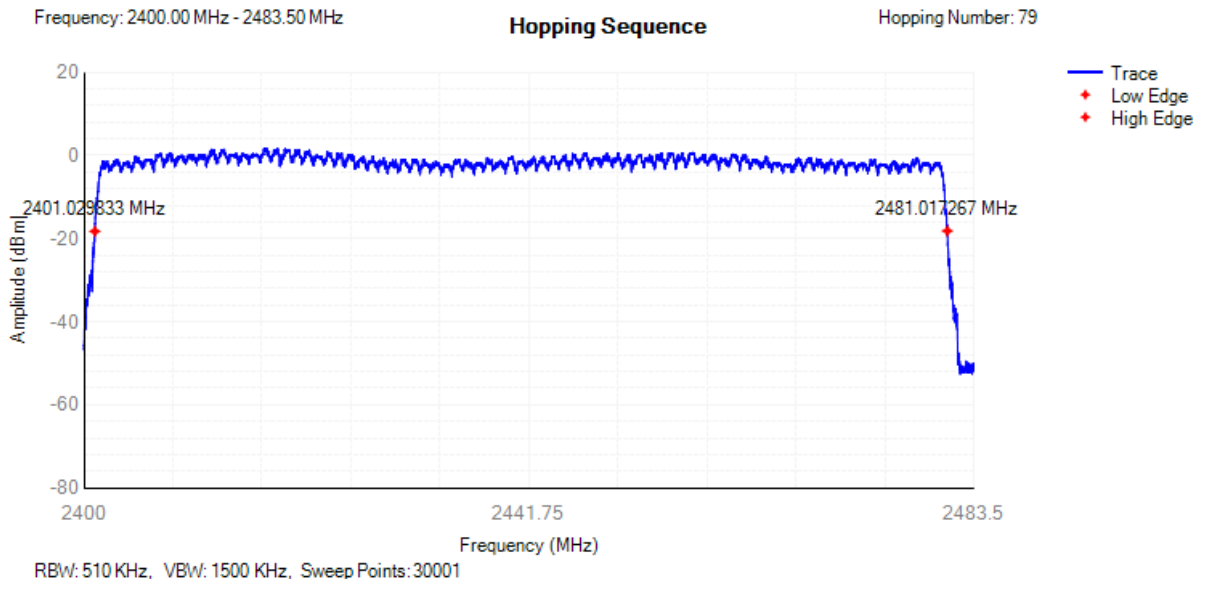
Hopping Seq. NVNT 1-DH5 2402MHz



Hopping Seq. NVNT 2-DH5 2402MHz



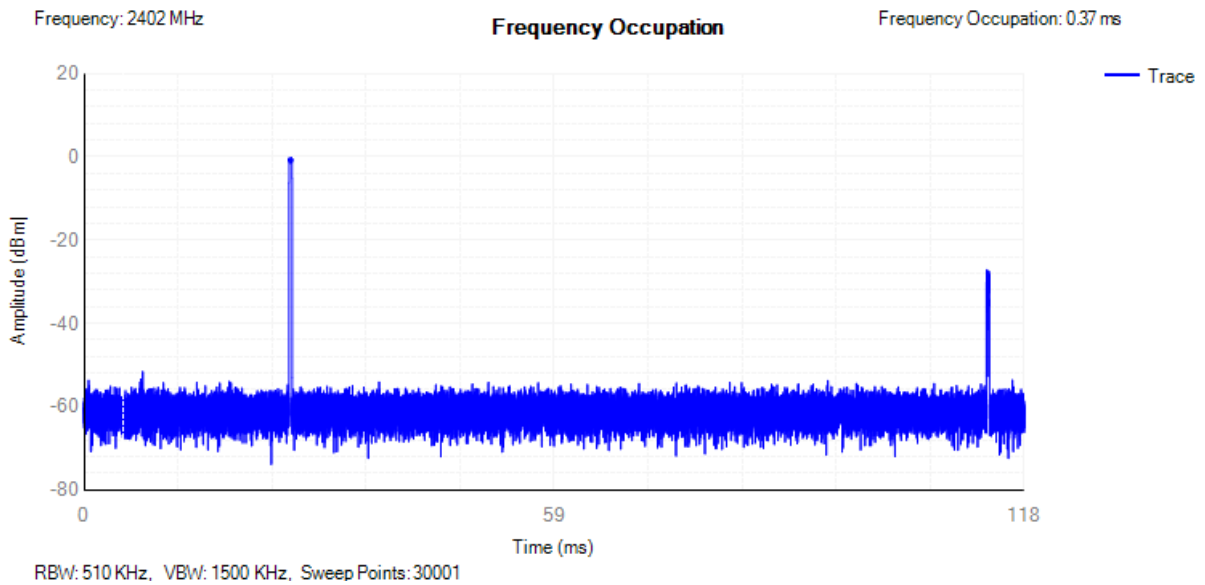
### Hopping Seq. NVNT 3-DH5 2402MHz



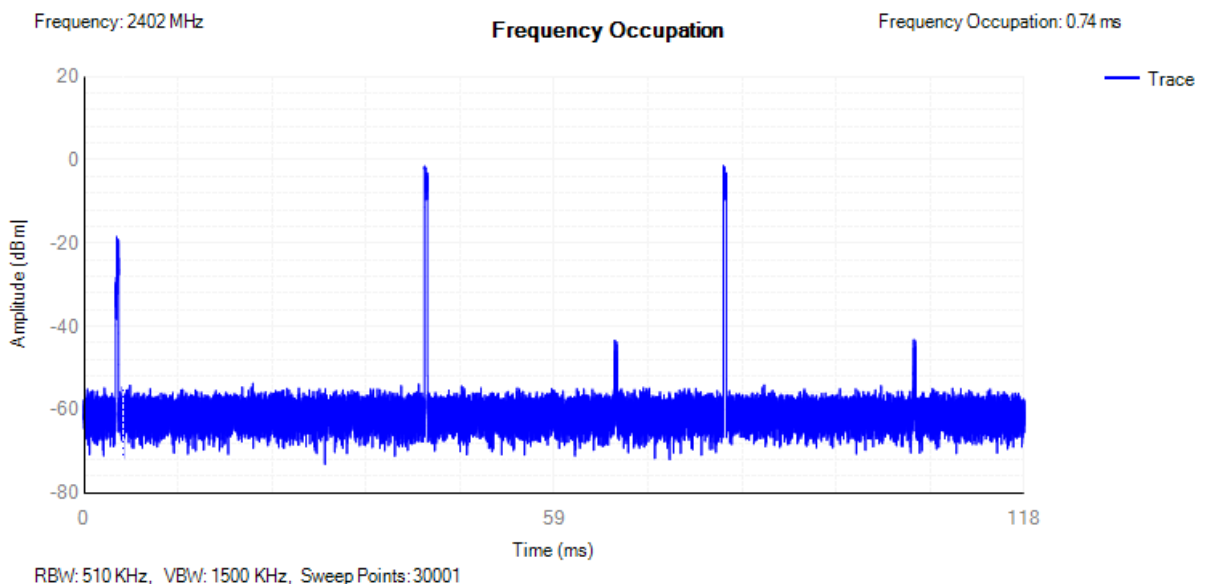
### E.3 Frequency Occupation

Condition	Mode	Frequency (MHz)	Frequency Occupation (ms)	Limit (ms)	Sweep Time (ms)	Burst Number	Verdict
NVNT	1-DH1	2402	0.37	0	116.92	1	Pass
NVNT	2-DH1	2402	0.74	0	116.92	2	Pass
NVNT	3-DH1	2402	1.11	0	116.92	3	Pass

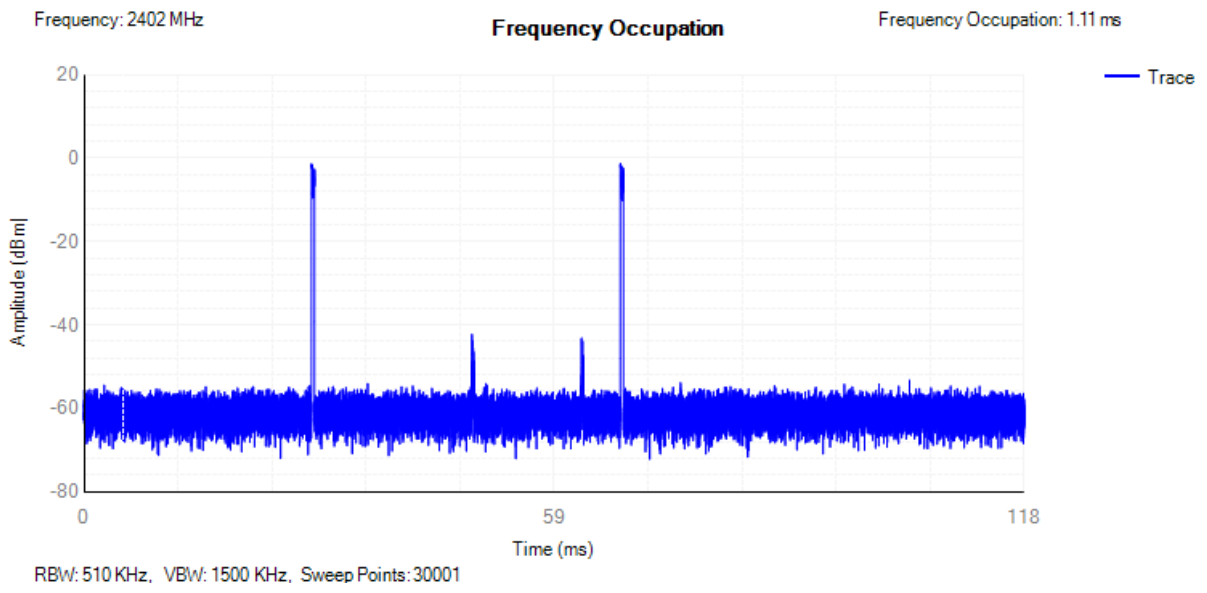
Freq. Occup. NVNT 1-DH1 2402MHz



Freq. Occup. NVNT 2-DH1 2402MHz



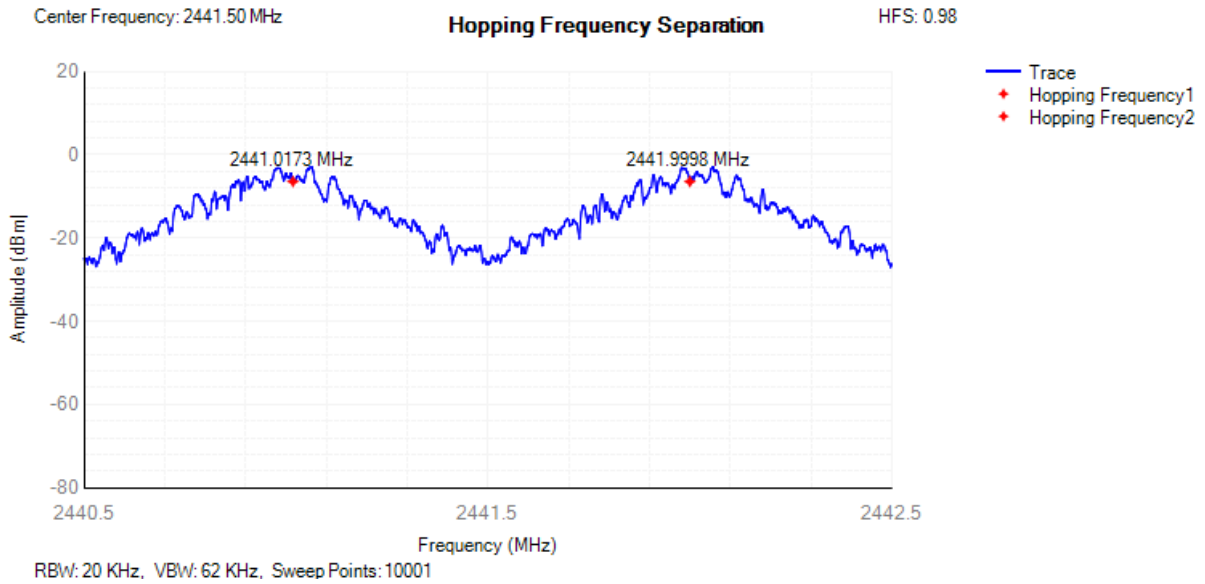
Freq. Occup. NVNT 3-DH1 2402MHz



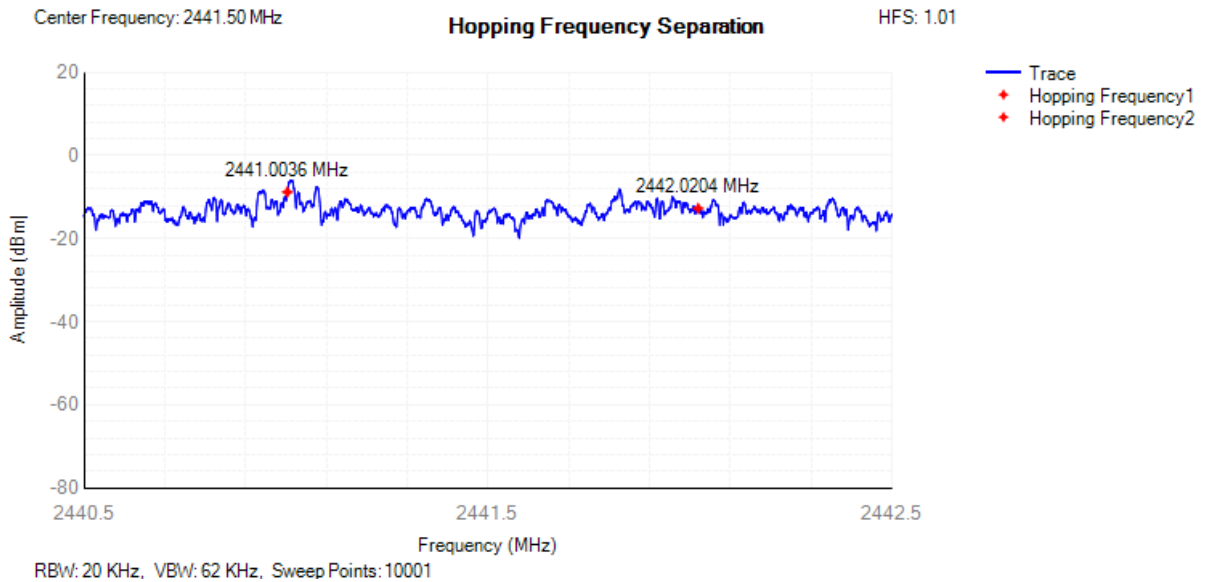
### E.4 Hopping Frequency Separation

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	2441.0173	2441.9998	0.98	0.1	Pass
NVNT	2-DH5	2441.0036	2442.0204	1.01	0.1	Pass
NVNT	3-DH5	2441.0164	2442.2587	1.24	0.1	Pass

HFS NVNT 1-DH5 2441MHz



HFS NVNT 2-DH5 2441MHz

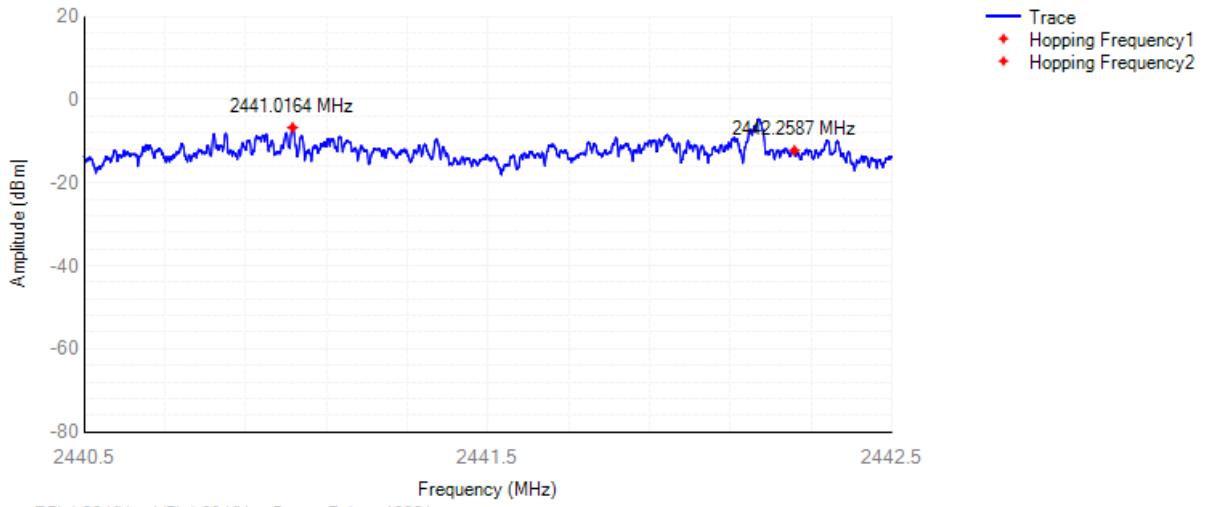


### HFS NVNT 3-DH5 2441MHz

Center Frequency: 2441.50 MHz

#### Hopping Frequency Separation

HFS: 1.24

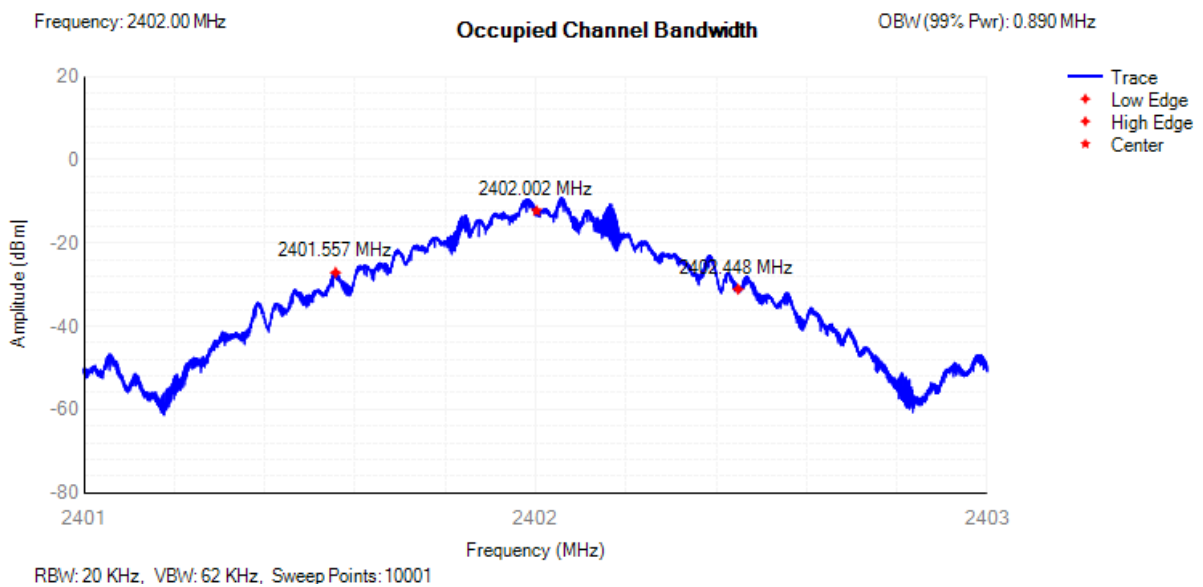




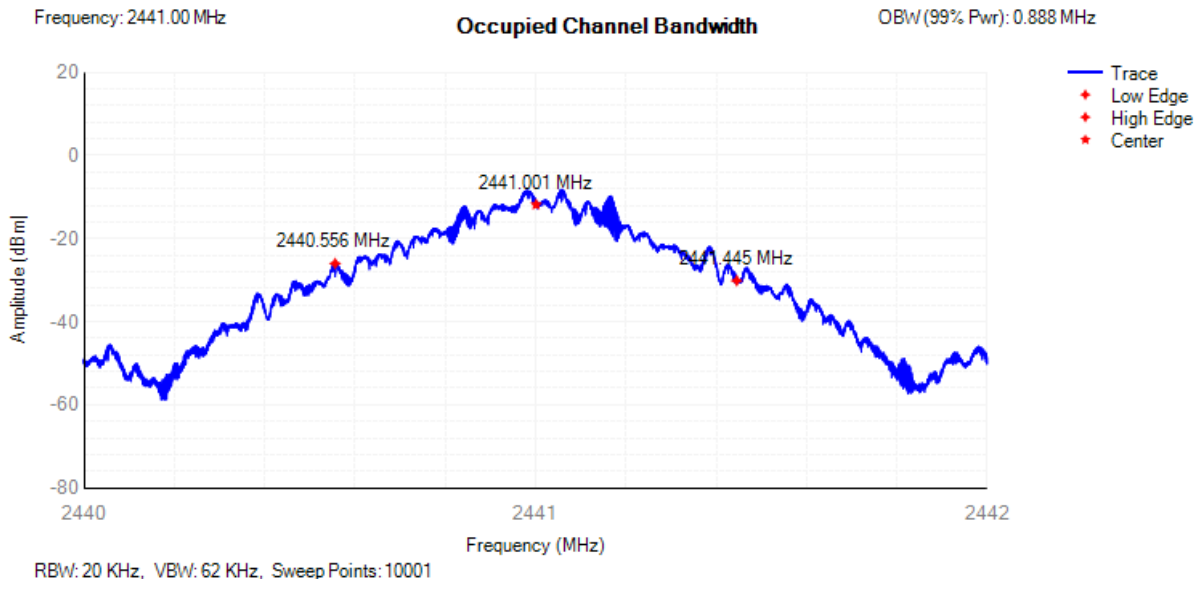
### E.5 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Center Frequency (MHz)	OBW (MHz)	Lower Edge (MHz)	Upper Edge (MHz)	Limit OBW (MHz)	Verdict
NVNT	1-DH5	2402	2402.002	0.89	2401.557	2402.448	2400 - 2483.5MHz	Pass
NVNT	1-DH5	2441	2441.001	0.888	2440.556	2441.445	2400 - 2483.5MHz	Pass
NVNT	1-DH5	2480	2480.001	0.891	2479.555	2480.447	2400 - 2483.5MHz	Pass
NVNT	2-DH5	2402	2402.002	1.189	2401.407	2402.596	2400 - 2483.5MHz	Pass
NVNT	2-DH5	2441	2441	1.187	2440.406	2441.593	2400 - 2483.5MHz	Pass
NVNT	2-DH5	2480	2479.999	1.183	2479.407	2480.591	2400 - 2483.5MHz	Pass
NVNT	3-DH5	2402	2401.995	1.202	2401.394	2402.597	2400 - 2483.5MHz	Pass
NVNT	3-DH5	2441	2440.994	1.2	2440.394	2441.595	2400 - 2483.5MHz	Pass
NVNT	3-DH5	2480	2479.995	1.199	2479.396	2480.595	2400 - 2483.5MHz	Pass

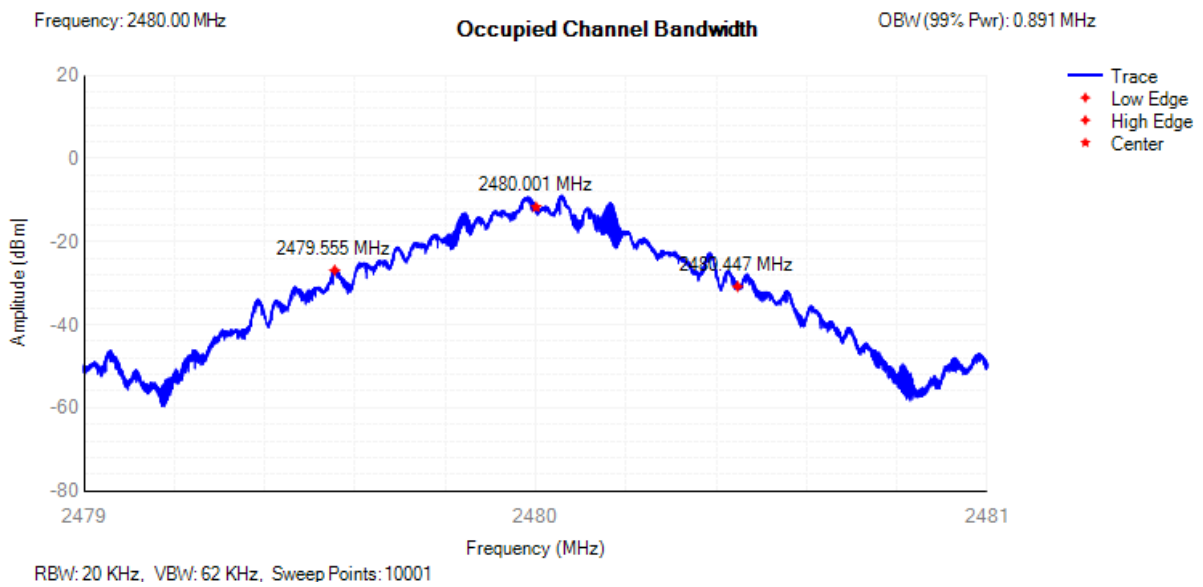
OBW NVNT 1-DH5 2402MHz



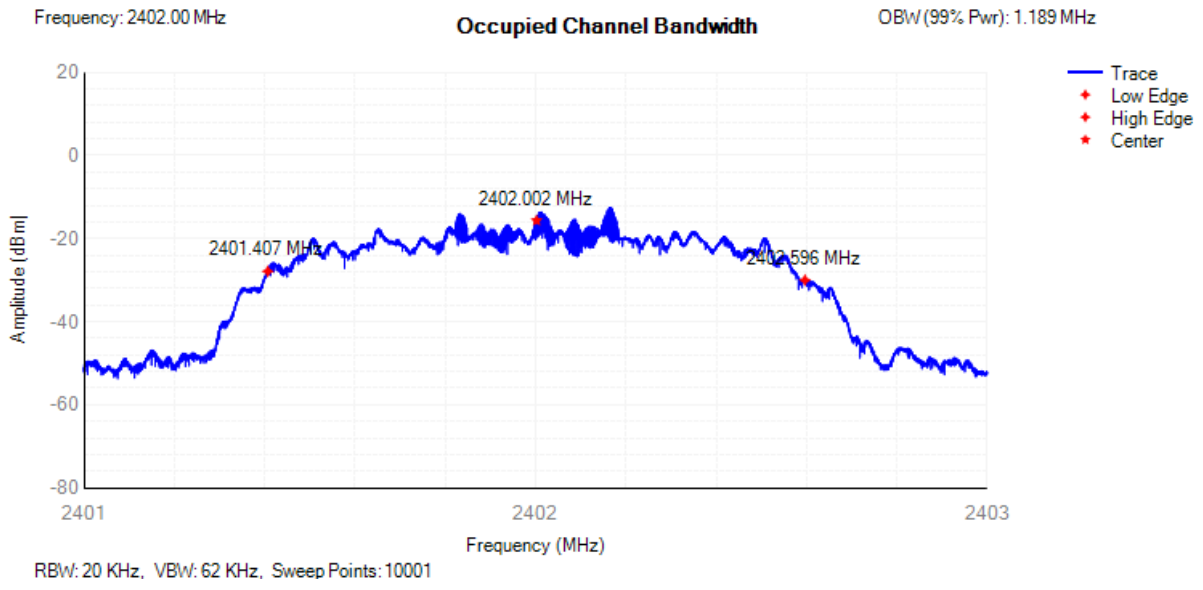
### OBW NVNT 1-DH5 2441MHz



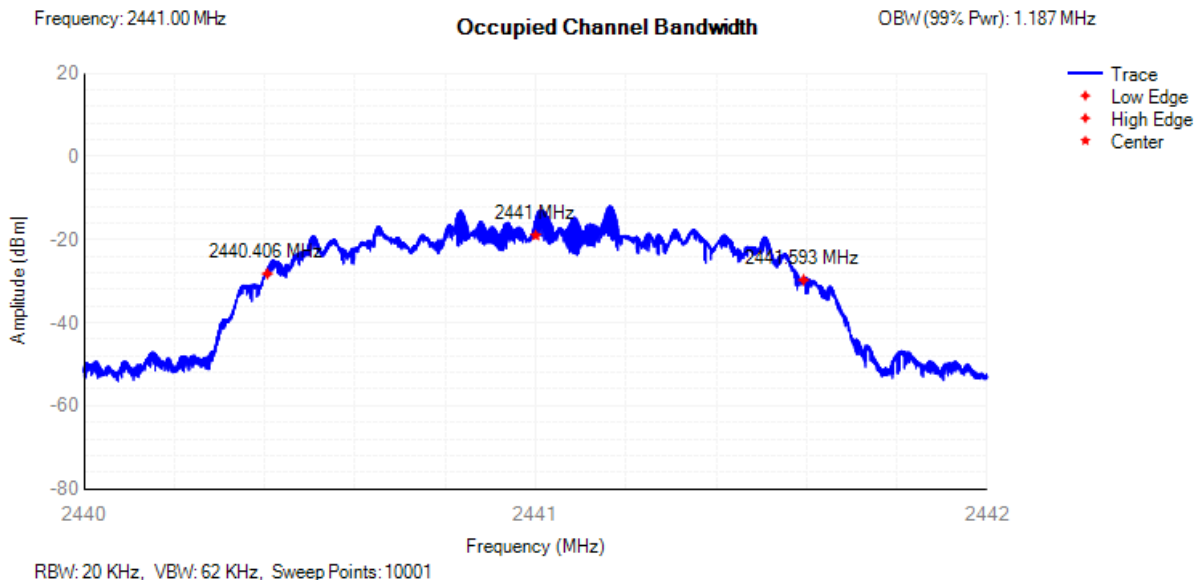
### OBW NVNT 1-DH5 2480MHz



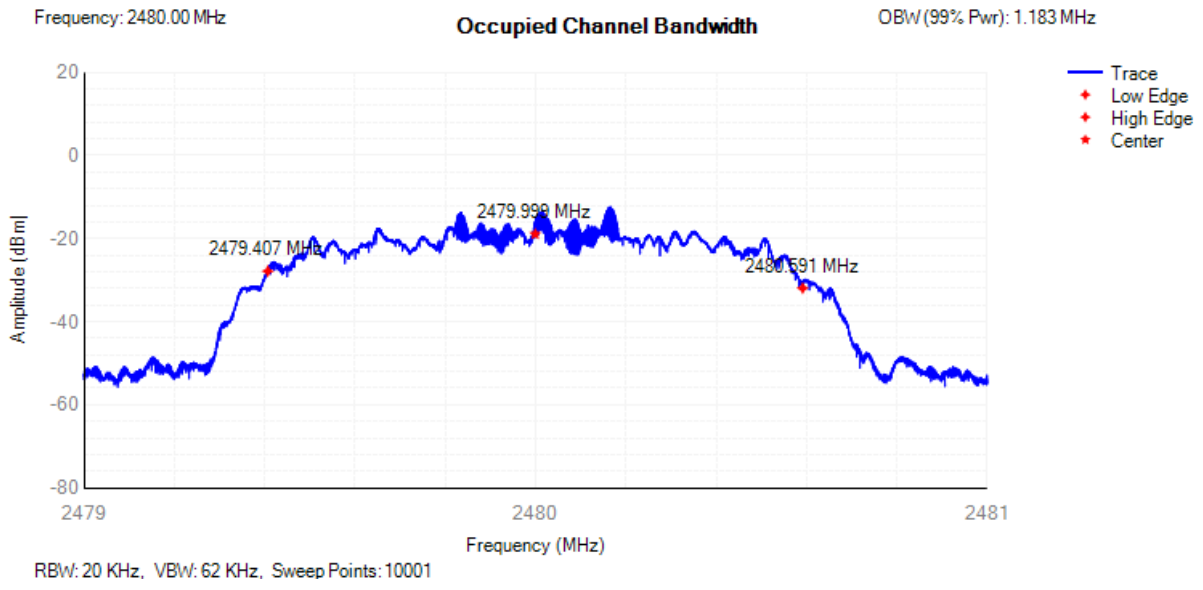
### OBW NVNT 2-DH5 2402MHz



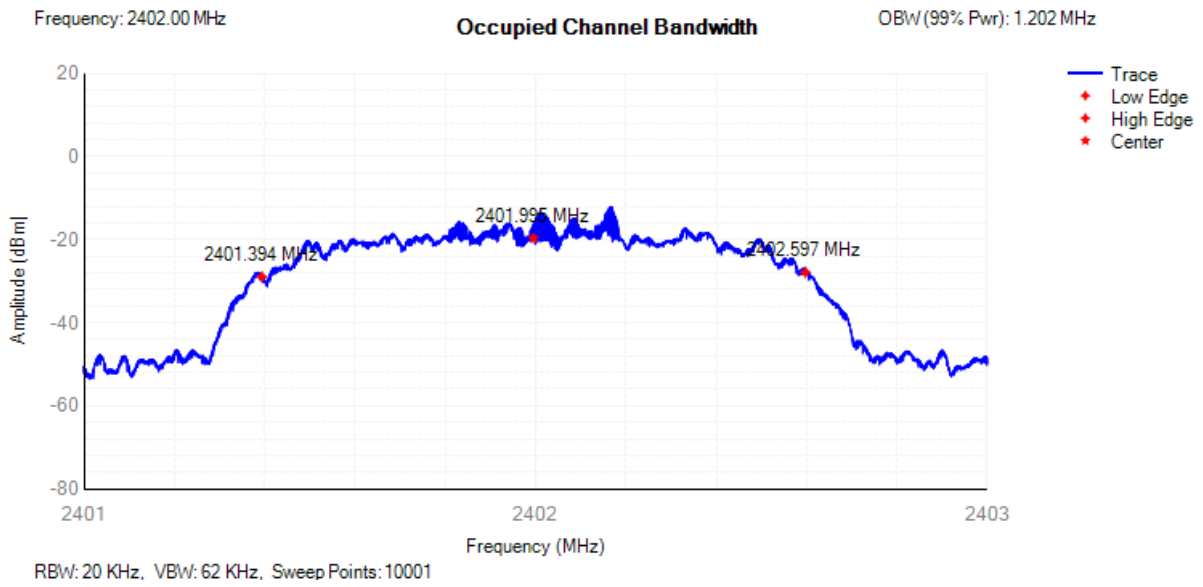
### OBW NVNT 2-DH5 2441MHz



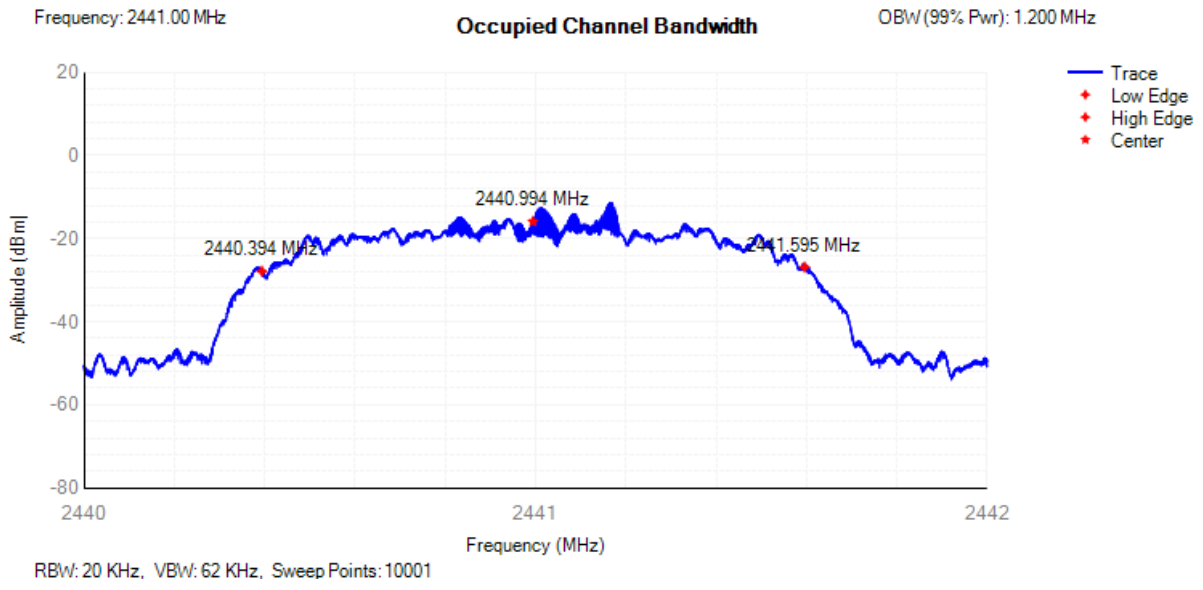
### OBW NVNT 2-DH5 2480MHz



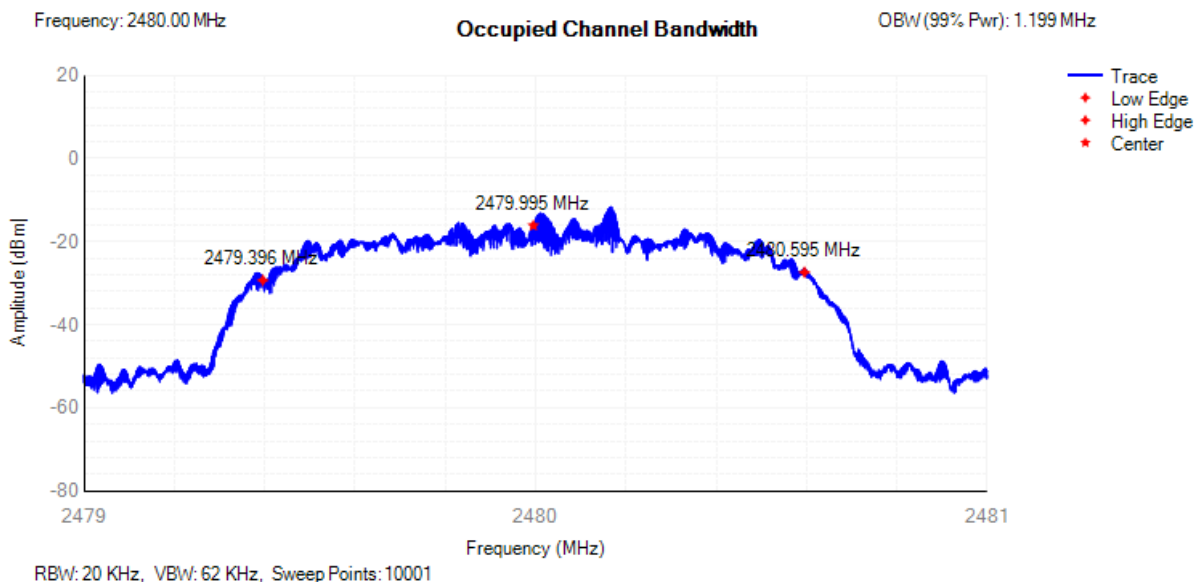
### OBW NVNT 3-DH5 2402MHz



### OBW NVNT 3-DH5 2441MHz



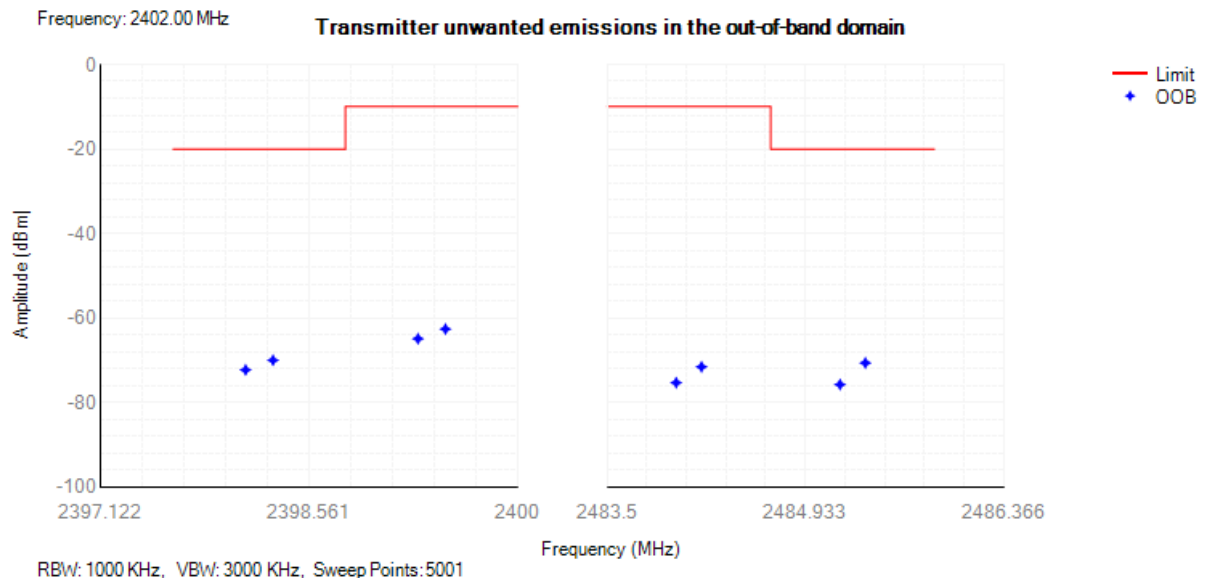
### OBW NVNT 3-DH5 2480MHz



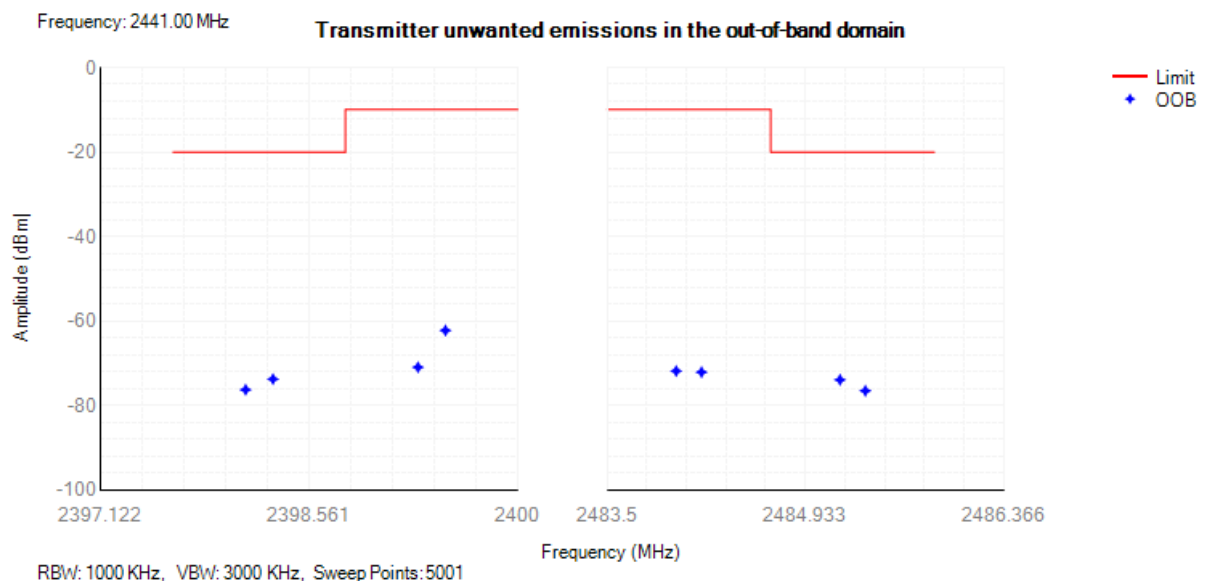
## E.6 Transmitter unwanted emissions in the out-of-band domain

Condition	Mode	Frequency (MHz)	OOB Frequency (MHz)	Level (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	1-DH5	2402	2399.5	-62.6	-10	Pass
NVNT	1-DH5	2402	2399.311	-64.89	-10	Pass
NVNT	1-DH5	2402	2398.311	-69.99	-20	Pass
NVNT	1-DH5	2402	2398.122	-72.27	-20	Pass
NVNT	1-DH5	2402	2484	-75.3	-10	Pass
NVNT	1-DH5	2402	2484.183	-71.55	-10	Pass
NVNT	1-DH5	2402	2485.183	-75.74	-20	Pass
NVNT	1-DH5	2402	2485.366	-70.62	-20	Pass
NVNT	1-DH5	2441	2399.5	-62.23	-10	Pass
NVNT	1-DH5	2441	2399.311	-70.94	-10	Pass
NVNT	1-DH5	2441	2398.311	-73.74	-20	Pass
NVNT	1-DH5	2441	2398.122	-76.25	-20	Pass
NVNT	1-DH5	2441	2484	-71.83	-10	Pass
NVNT	1-DH5	2441	2484.183	-72.09	-10	Pass
NVNT	1-DH5	2441	2485.183	-73.91	-20	Pass
NVNT	1-DH5	2441	2485.366	-76.51	-20	Pass
NVNT	1-DH5	2480	2399.5	-72.54	-10	Pass
NVNT	1-DH5	2480	2399.311	-64.79	-10	Pass
NVNT	1-DH5	2480	2398.311	-70.6	-20	Pass
NVNT	1-DH5	2480	2398.122	-71.14	-20	Pass
NVNT	1-DH5	2480	2484	-75.56	-10	Pass
NVNT	1-DH5	2480	2484.183	-70.63	-10	Pass
NVNT	1-DH5	2480	2485.183	-72.15	-20	Pass
NVNT	1-DH5	2480	2485.366	-75.81	-20	Pass

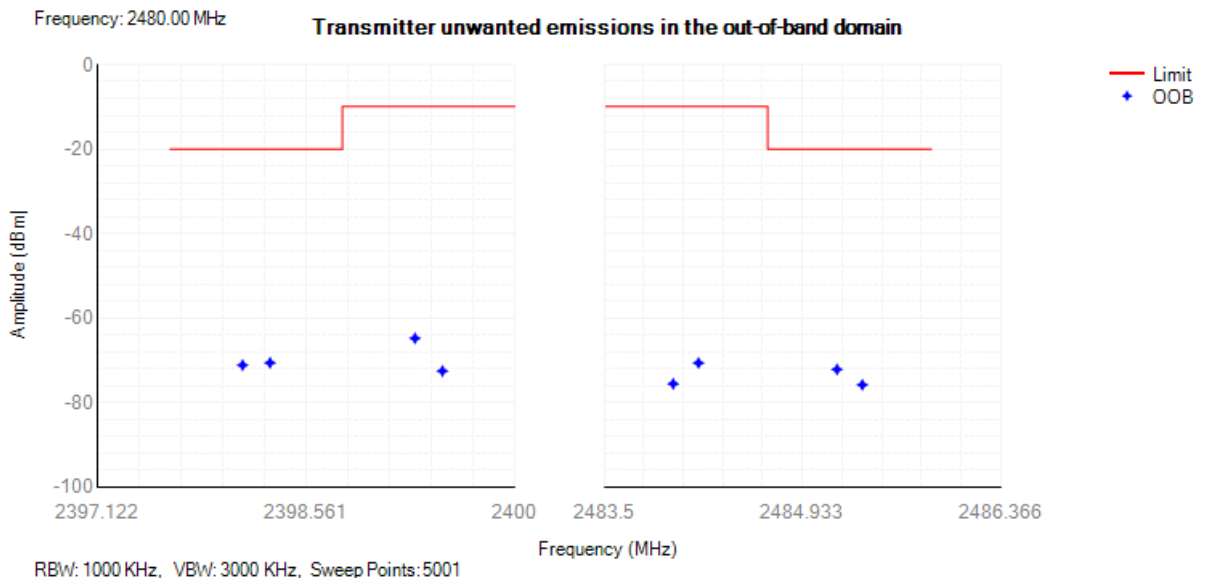
Tx. Emissions OOB NVNT 1-DH5 2402MHz



Tx. Emissions OOB NVNT 1-DH5 2441MHz



Tx. Emissions OOB NVNT 1-DH5 2480MHz

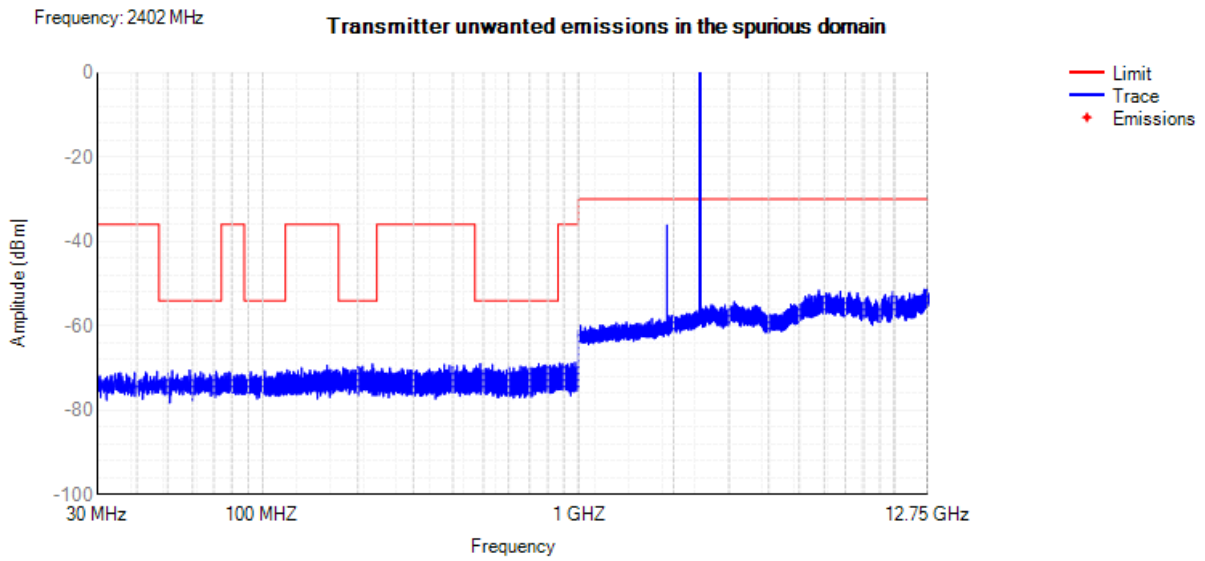




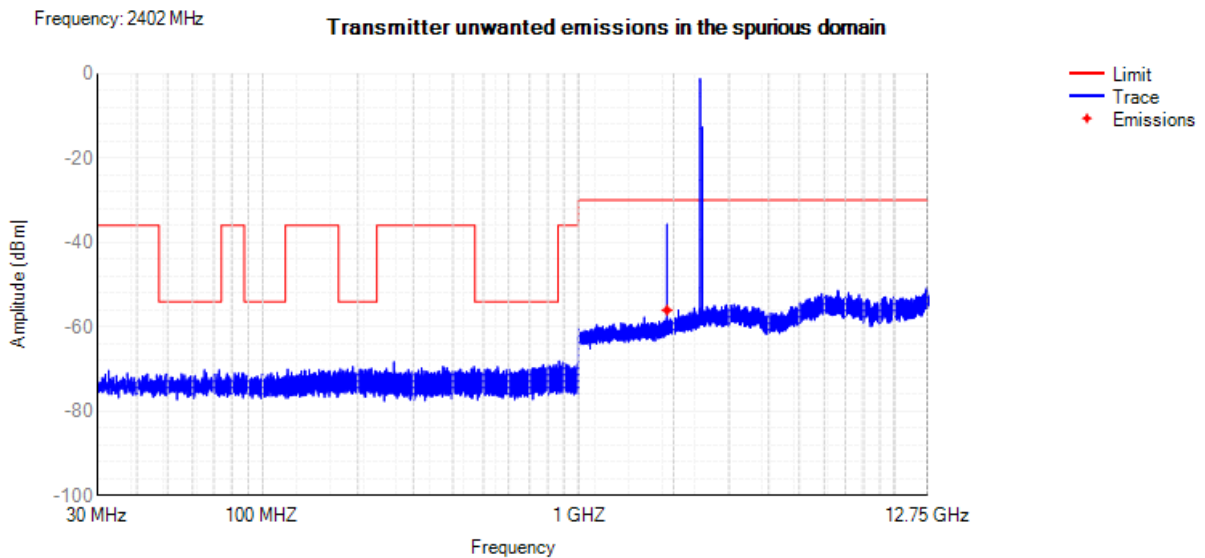
### E.7 Transmitter unwanted emissions in the spurious domain

Condition	Mode	Frequency (MHz)	Range	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
NVNT	2-DH5	2402	1000 MHz -2398 MHz	1906	-56.03	-30	Pass

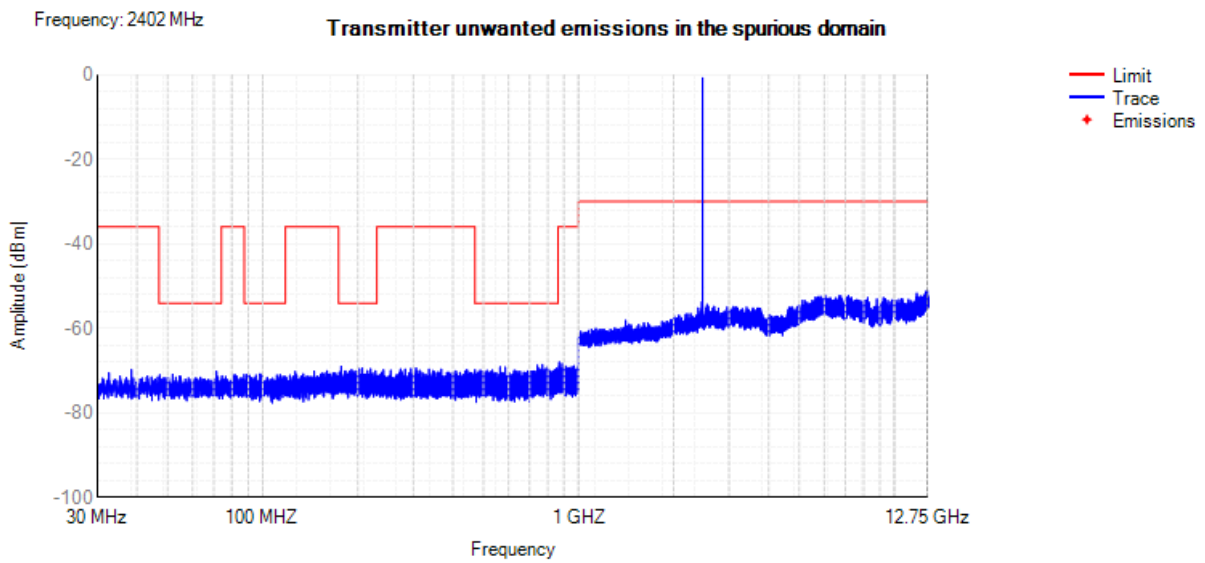
Tx. Spurious NVNT 1-DH5 2402MHz



Tx. Spurious NVNT 2-DH5 2402MHz



Tx. Spurious NVNT 3-DH5 2402MHz



Tx. Spurious NVNT 1-DH5

Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 0 (2402MHz)					
576.08	H	-66.02	-54.00	-12.02	PK
533.90	V	-65.84	-54.00	-11.84	PK
611.34	H	-66.98	-54.00	-12.98	PK
511.92	V	-64.12	-54.00	-10.12	PK
4804.03	H	-43.91	-30.00	-13.91	PK
4804.00	V	-44.67	-30.00	-14.67	PK
7206.00	H	-43.37	-30.00	-13.37	PK
7205.98	V	-43.14	-30.00	-13.14	PK
Channel 78 (2480MHz)					
218.95	H	-67.69	-54.00	-13.69	PK
388.28	V	-47.68	-36.00	-11.68	PK
802.27	H	-67.03	-54.00	-13.03	PK
534.15	V	-64.22	-54.00	-10.22	PK
4959.97	H	-43.66	-30.00	-13.66	PK
4959.99	V	-42.78	-30.00	-12.78	PK
7439.97	H	-42.59	-30.00	-12.59	PK
7439.98	V	-41.22	-30.00	-11.22	PK

## Tx. Spurious NVNT 2-DH5

Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 0 (2402MHz)					
231.92	H	-50.25	-36.00	-14.25	PK
590.64	V	-65.58	-54.00	-11.58	PK
692.41	H	-67.89	-54.00	-13.89	PK
751.29	V	-67.79	-54.00	-13.79	PK
4804.00	H	-43.86	-30.00	-13.86	PK
4804.01	V	-43.29	-30.00	-13.29	PK
7206.01	H	-44.40	-30.00	-14.40	PK
7206.00	V	-40.41	-30.00	-10.41	PK
Channel 78 (2480MHz)					
515.92	H	-64.40	-54.00	-10.40	PK
281.18	V	-49.83	-36.00	-13.83	PK
864.30	H	-48.55	-36.00	-12.55	PK
814.19	V	-64.56	-54.00	-10.56	PK
4960.03	H	-44.64	-30.00	-14.64	PK
4959.98	V	-41.72	-30.00	-11.72	PK
7439.98	H	-41.83	-30.00	-11.83	PK
7440.03	V	-41.77	-30.00	-11.77	PK

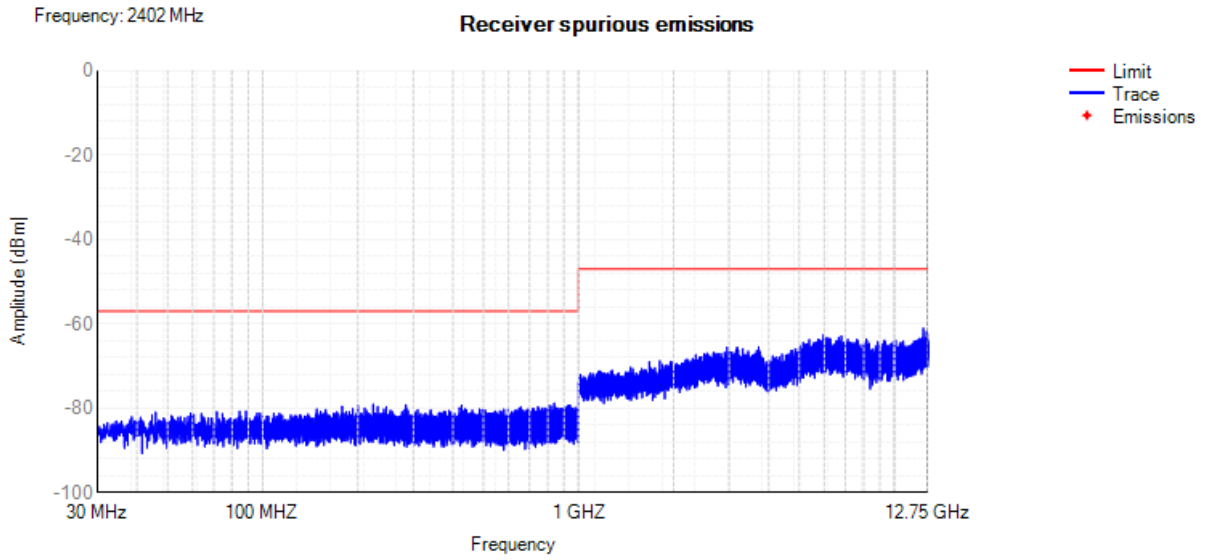
## Tx. Spurious NVNT 3-DH5

Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 0 (2402MHz)					
504.00	H	-65.93	-54.00	-11.93	PK
417.15	V	-50.18	-36.00	-14.18	PK
703.47	H	-67.78	-54.00	-13.78	PK
813.20	V	-68.41	-54.00	-14.41	PK
4804.02	H	-42.52	-30.00	-12.52	PK
4804.01	V	-41.30	-30.00	-11.30	PK
7206.02	H	-43.37	-30.00	-13.37	PK
7206.04	V	-44.68	-30.00	-14.68	PK
Channel 78 (2480MHz)					
200.26	H	-66.33	-54.00	-12.33	PK
541.45	V	-66.50	-54.00	-12.50	PK
619.01	H	-65.12	-54.00	-11.12	PK
865.12	V	-50.51	-36.00	-14.51	PK
4804.01	H	-43.96	-30.00	-13.96	PK
4804.02	V	-43.77	-30.00	-13.77	PK
7206.00	H	-43.51	-30.00	-13.51	PK
7206.02	V	-44.10	-30.00	-14.10	PK

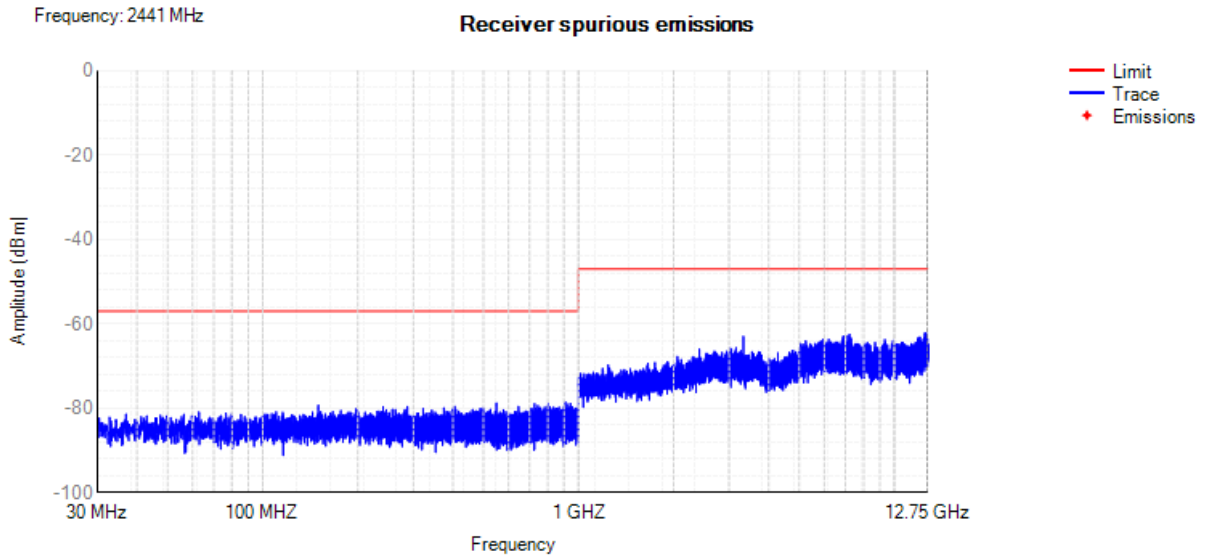
## E.8 Receiver spurious emissions

Condition	Mode	Frequency (MHz)	Range	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
-----------	------	-----------------	-------	-----------------	------------------	-------------	---------

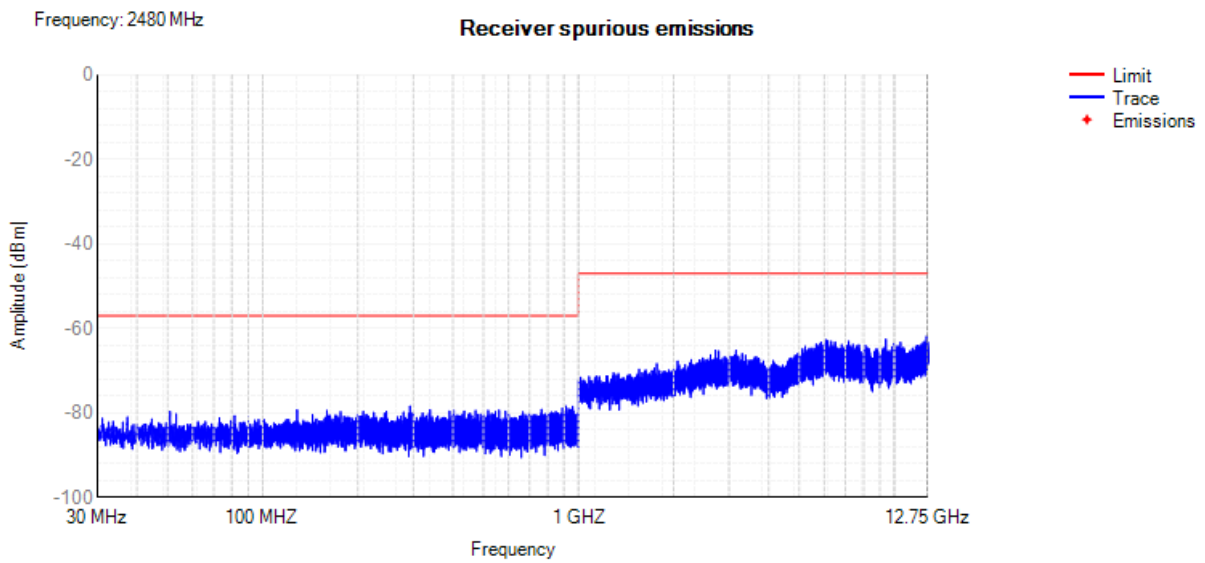
Rx. Spurious NVNT 1-DH5 2402MHz



Rx. Spurious NVNT 1-DH5 2441MHz



Rx. Spurious NVNT 1-DH5 2480MHz



Rx. Spurious NVNT 1-DH5

Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 0 (2402MHz)					
428.71	H	-70.30	-57.00	-13.30	PK
293.16	V	-71.10	-57.00	-14.10	PK
799.09	H	-70.17	-57.00	-13.17	PK
795.38	V	-68.62	-57.00	-11.62	PK
1977.68	H	-57.41	-47.00	-10.41	PK
2848.97	V	-60.74	-47.00	-13.74	PK
3942.21	H	-58.71	-47.00	-11.71	PK
4104.50	V	-58.42	-47.00	-11.42	PK
Channel 78 (2480MHz)					
426.61	H	-69.94	-57.00	-12.94	PK
217.39	V	-70.39	-57.00	-13.39	PK
707.32	H	-70.16	-57.00	-13.16	PK
730.14	V	-69.14	-57.00	-12.14	PK
1750.99	H	-61.17	-47.00	-14.17	PK
2802.29	V	-59.72	-47.00	-12.72	PK
3745.18	H	-60.13	-47.00	-13.13	PK
3989.48	V	-61.16	-47.00	-14.16	PK

## Rx. Spurious NVNT 2-DH5

Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 0 (2402MHz)					
217.53	H	-69.48	-57.00	-12.48	PK
546.21	V	-71.97	-57.00	-14.97	PK
562.68	H	-67.55	-57.00	-10.55	PK
694.06	V	-70.61	-57.00	-13.61	PK
1779.58	H	-57.09	-47.00	-10.09	PK
2453.40	V	-58.24	-47.00	-11.24	PK
4631.98	H	-58.32	-47.00	-11.32	PK
4014.53	V	-60.63	-47.00	-13.63	PK
Channel 78 (2480MHz)					
202.75	H	-68.68	-57.00	-11.68	PK
561.45	V	-68.87	-57.00	-11.87	PK
586.40	H	-68.11	-57.00	-11.11	PK
630.24	V	-67.53	-57.00	-10.53	PK
2839.71	H	-57.28	-47.00	-10.28	PK
1867.73	V	-57.53	-47.00	-10.53	PK
3629.07	H	-59.29	-47.00	-12.29	PK
3879.46	V	-57.73	-47.00	-10.73	PK

## Rx. Spurious NVNT 3-DH5

Frequency (MHz)	Polarization (H/V)	Measure Level (dBm)	Limit (dBm)	Margin (dB)	Detector
Channel 0 (2402MHz)					
456.35	H	-71.23	-57.00	-14.23	PK
210.80	V	-67.39	-57.00	-10.39	PK
880.98	H	-67.00	-57.00	-10.00	PK
782.78	V	-67.63	-57.00	-10.63	PK
2055.35	H	-57.61	-47.00	-10.61	PK
1772.20	V	-58.15	-47.00	-11.15	PK
3297.91	H	-61.68	-47.00	-14.68	PK
4009.87	V	-58.29	-47.00	-11.29	PK
Channel 78 (2480MHz)					
338.39	H	-69.88	-57.00	-12.88	PK
266.40	V	-68.48	-57.00	-11.48	PK
891.56	H	-71.14	-57.00	-14.14	PK
662.58	V	-68.51	-57.00	-11.51	PK
2544.94	H	-61.90	-47.00	-14.90	PK
2152.11	V	-59.76	-47.00	-12.76	PK
4392.94	H	-61.54	-47.00	-14.54	PK
3575.42	V	-61.01	-47.00	-14.01	PK



## E.9 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	
DH1	2402	-70	2380	-28	$\geq -34$	CW	5.96	10	Pass
			2504	-31	$\geq -34$	CW	6.76	10	Pass
			2300	-19	$\geq -34$	CW	6.77	10	Pass
			2584	-17	$\geq -34$	CW	7.00	10	Pass
	2480	-70	2380	-24	$\geq -34$	CW	5.18	10	Pass
			2504	-20	$\geq -34$	CW	5.59	10	Pass
			2300	-20	$\geq -34$	CW	5.13	10	Pass
			2584	-22	$\geq -34$	CW	6.76	10	Pass
2DH1	2402	-68	2380	-19	$\geq -34$	CW	6.45	10	Pass
			2504	-22	$\geq -34$	CW	6.14	10	Pass
			2300	-18	$\geq -34$	CW	5.49	10	Pass
			2584	-29	$\geq -34$	CW	3.80	10	Pass
	2480	-68	2380	-33	$\geq -34$	CW	4.44	10	Pass
			2504	-25	$\geq -34$	CW	4.84	10	Pass
			2300	-18	$\geq -34$	CW	5.48	10	Pass
			2584	-24	$\geq -34$	CW	5.23	10	Pass
3DH1	2402	-68	2380	-29	$\geq -34$	CW	6.26	10	Pass
			2504	-21	$\geq -34$	CW	4.13	10	Pass
			2300	-24	$\geq -34$	CW	5.66	10	Pass
			2584	-22	$\geq -34$	CW	4.57	10	Pass
	2480	-68	2380	-15	$\geq -34$	CW	4.96	10	Pass
			2504	-11	$\geq -34$	CW	3.12	10	Pass
			2300	-23	$\geq -34$	CW	4.15	10	Pass
			2584	-14	$\geq -34$	CW	3.34	10	Pass