

RF Test Data for 2.4G WiFi (Conducted Measurements)

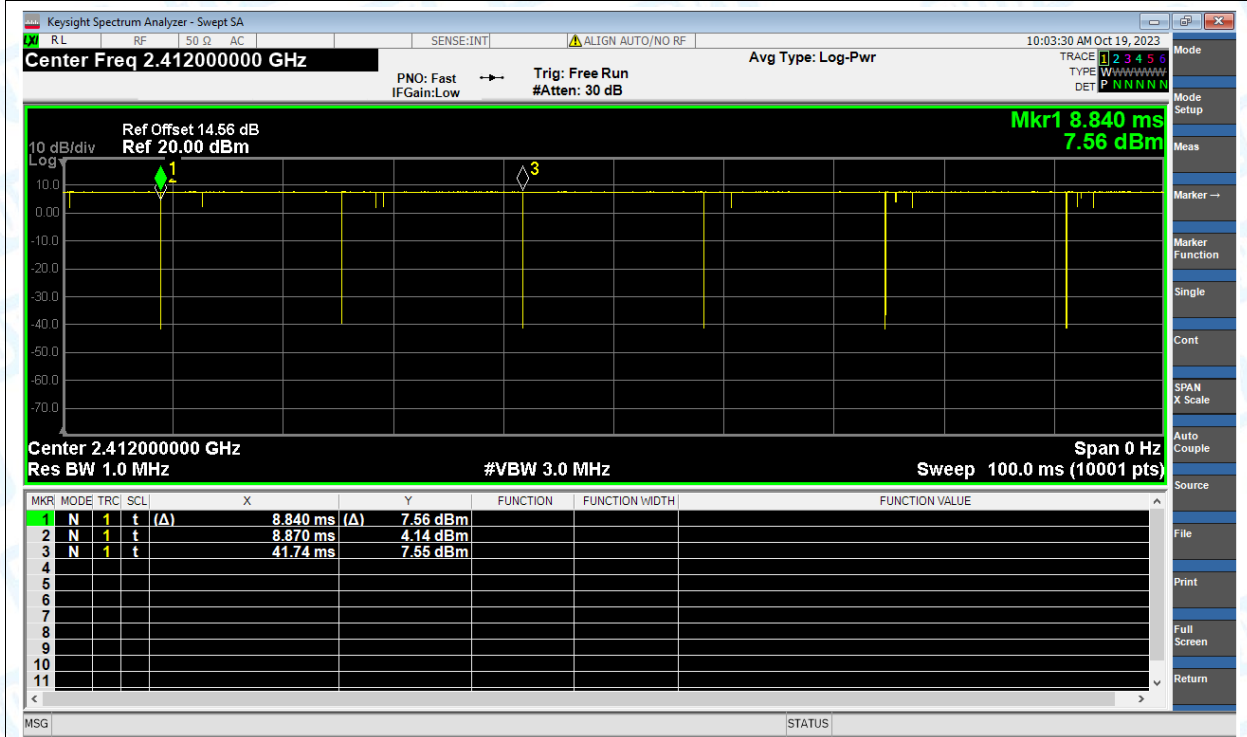
General Description of EUT	
Product Name:	Smart Bird Feeder
Test Model:	TV-XM-Q20-4MP
Sample ID:	HC-C-202307-0307-01-01-2#
Environmental Conditions	
Temperature:	24°C
Relative Humidity:	50%
Test Voltage:	DC 3.7V
Test Engineer:	Liyingsing
Note: For a more detailed features description, please refer to the report TBR-C-202307-0307-1 The report only show the worst case data.	

Duty Cycle

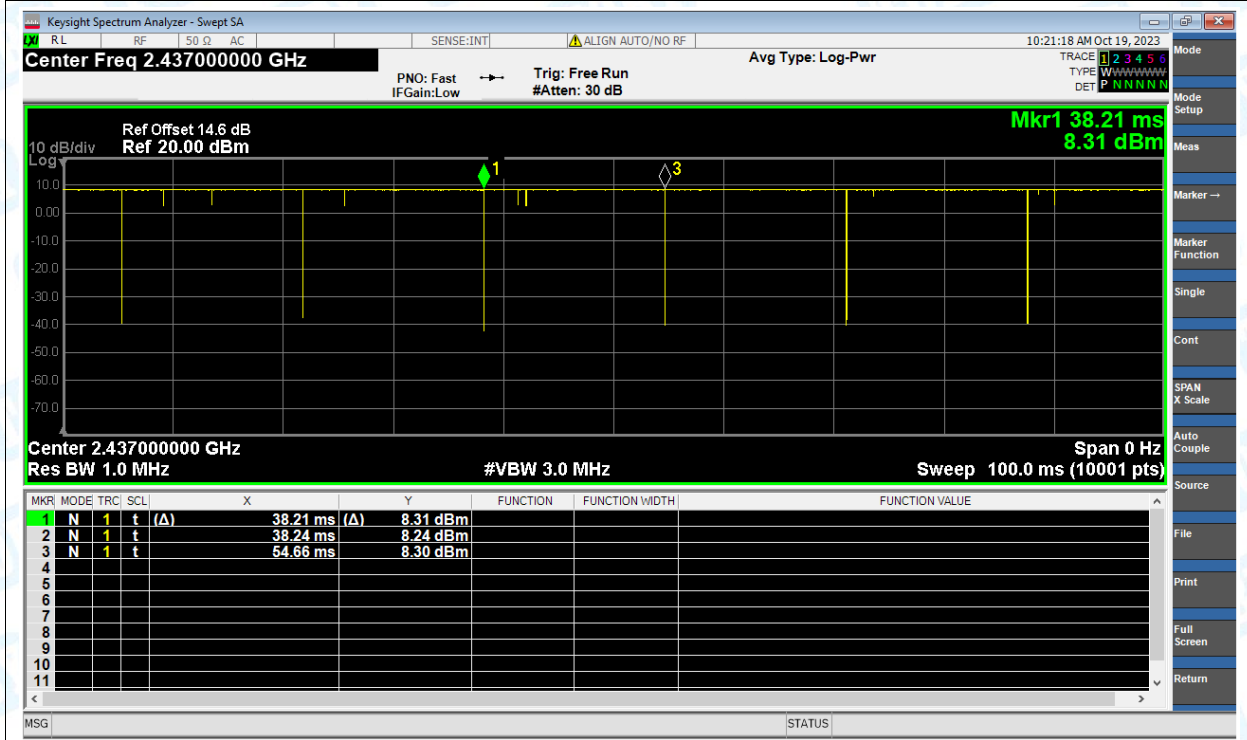
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	99.91	0	0.03
NVNT	b	2437	Ant1	99.82	0.01	0.06
NVNT	b	2462	Ant1	99.91	0	0.03
NVNT	g	2412	Ant1	99.28	0.03	0.36
NVNT	g	2437	Ant1	98.92	0.05	0.36
NVNT	g	2462	Ant1	98.92	0.05	0.36
NVNT	n(HT20)	2412	Ant1	99.22	0.03	0.39
NVNT	n(HT20)	2437	Ant1	99.61	0.02	0.2
NVNT	n(HT20)	2462	Ant1	98.44	0.07	0.4

Test Graphs

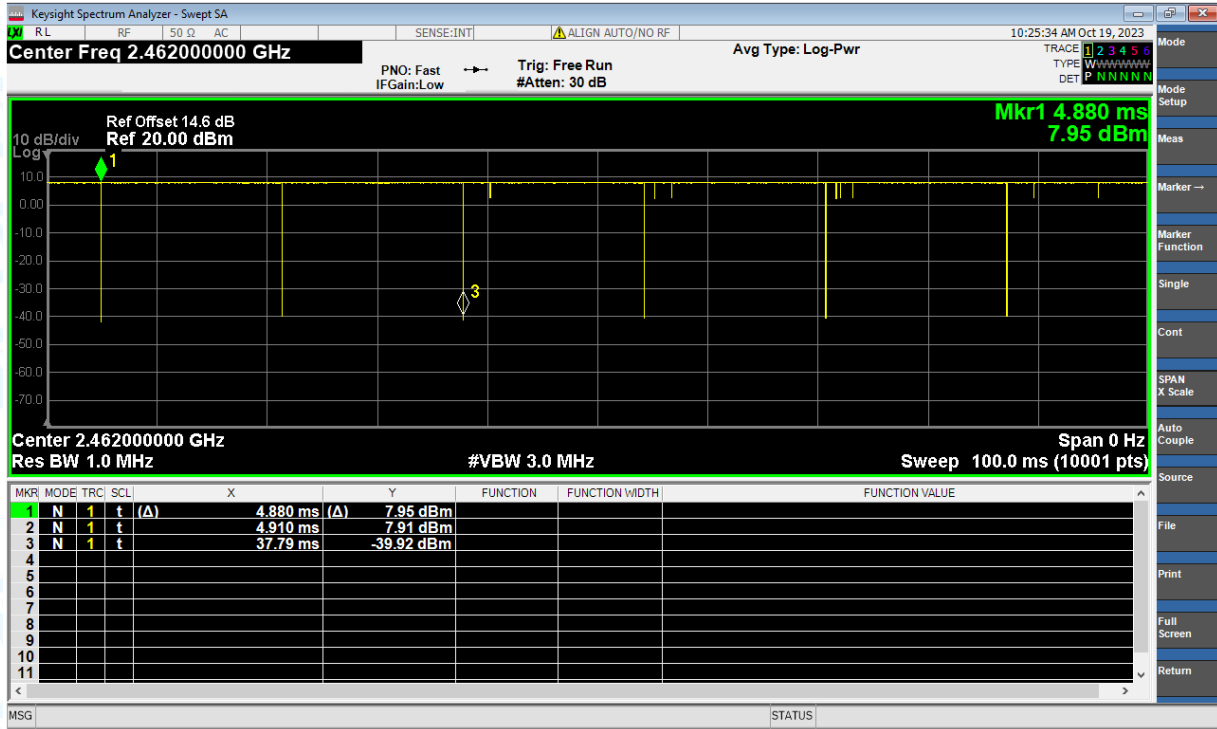
Duty Cycle NVNT b 2412MHz Ant1



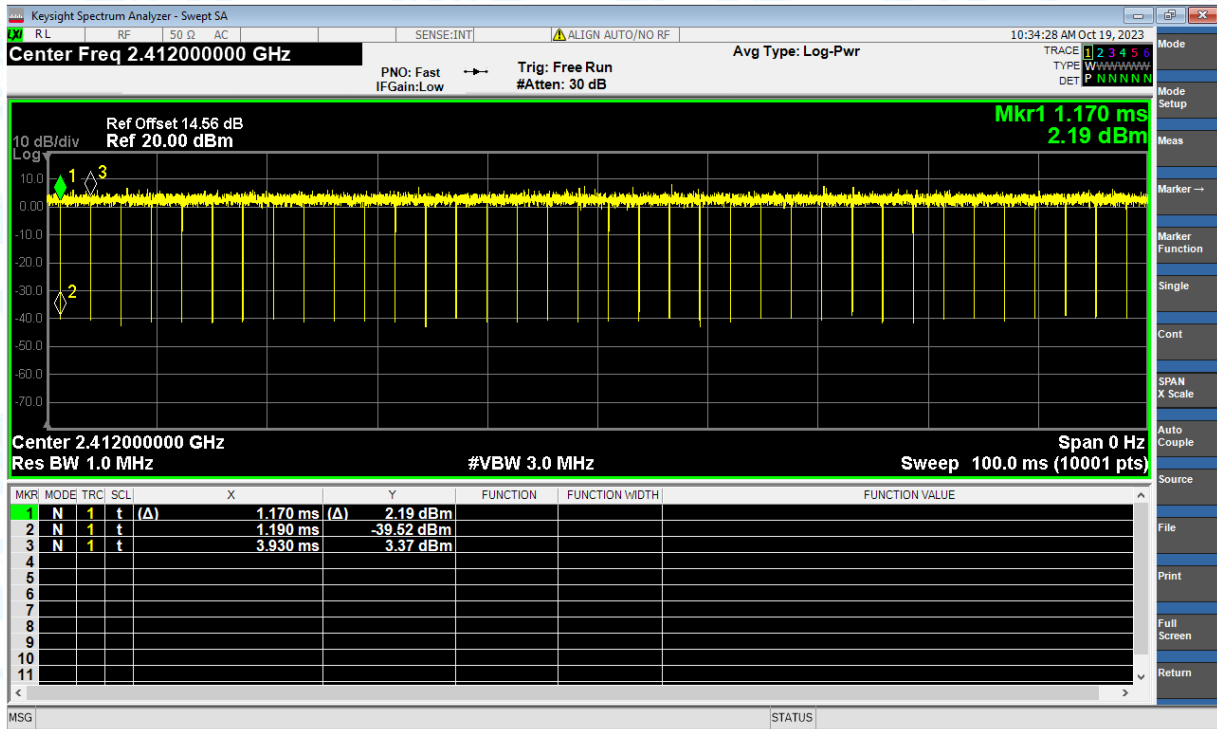
Duty Cycle NVNT b 2437MHz Ant1



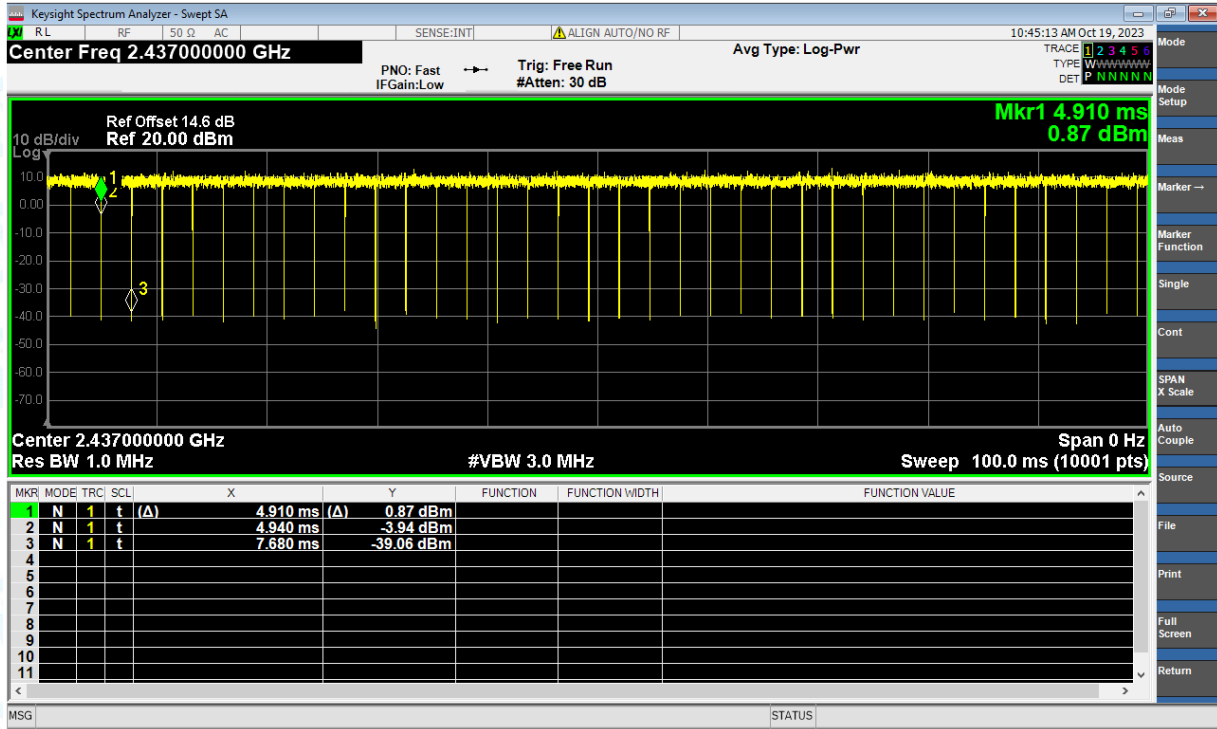
Duty Cycle NVNT b 2462MHz Ant1



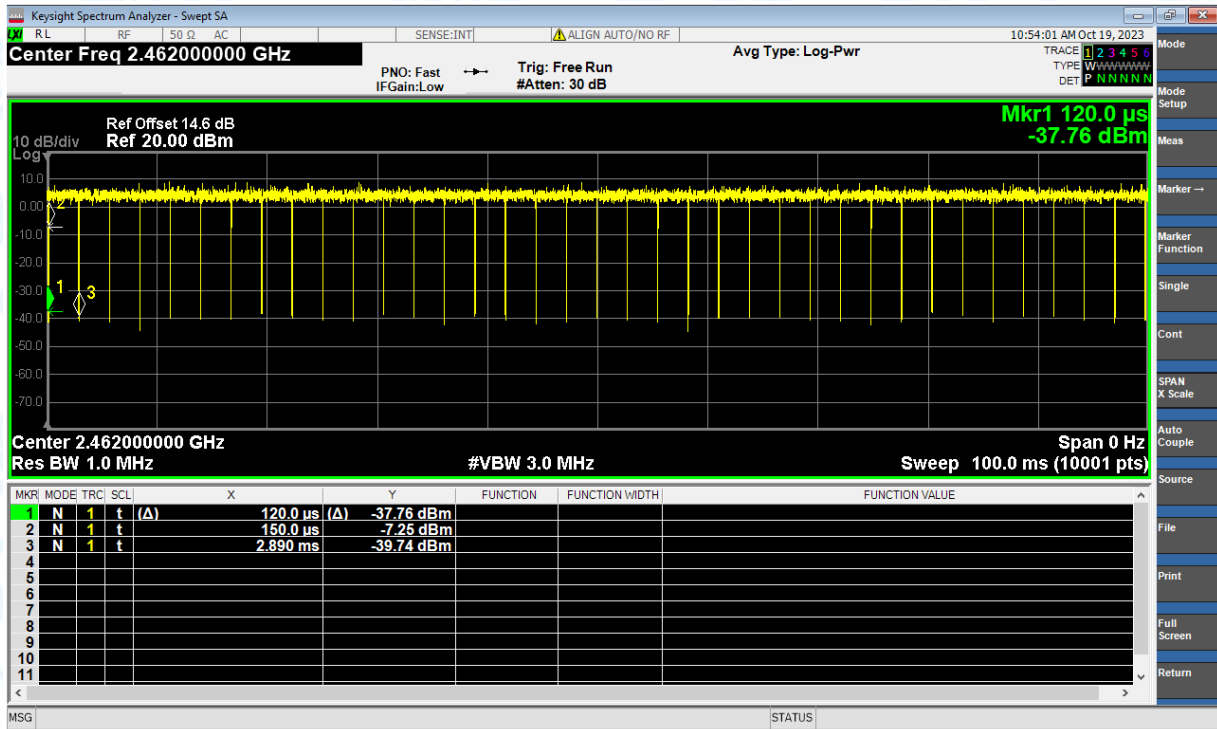
Duty Cycle NVNT g 2412MHz Ant1



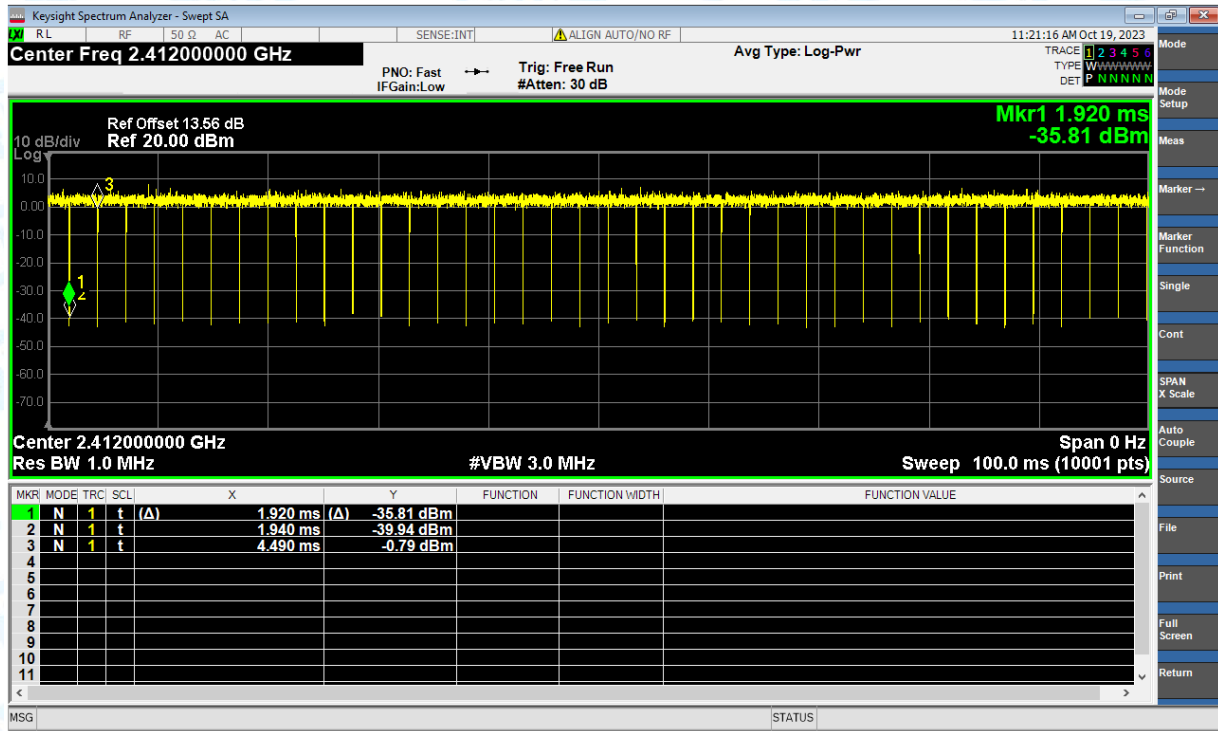
Duty Cycle NVNT g 2437MHz Ant1



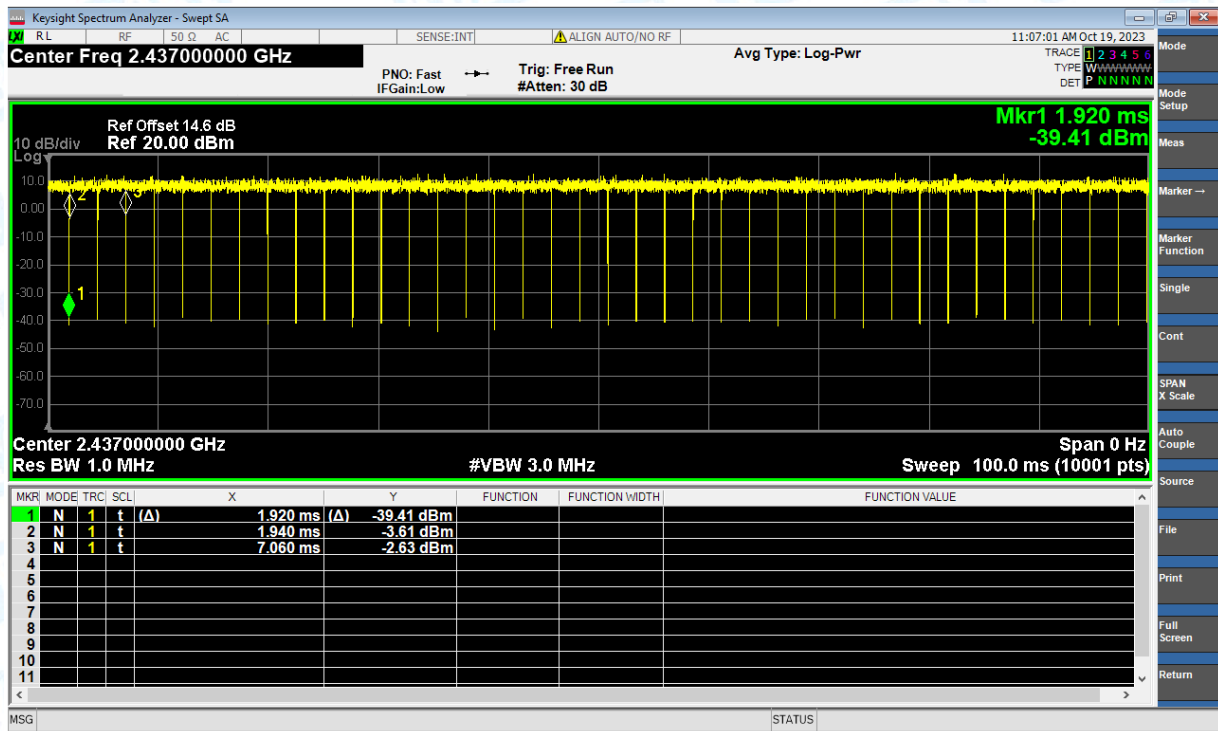
Duty Cycle NVNT g 2462MHz Ant1

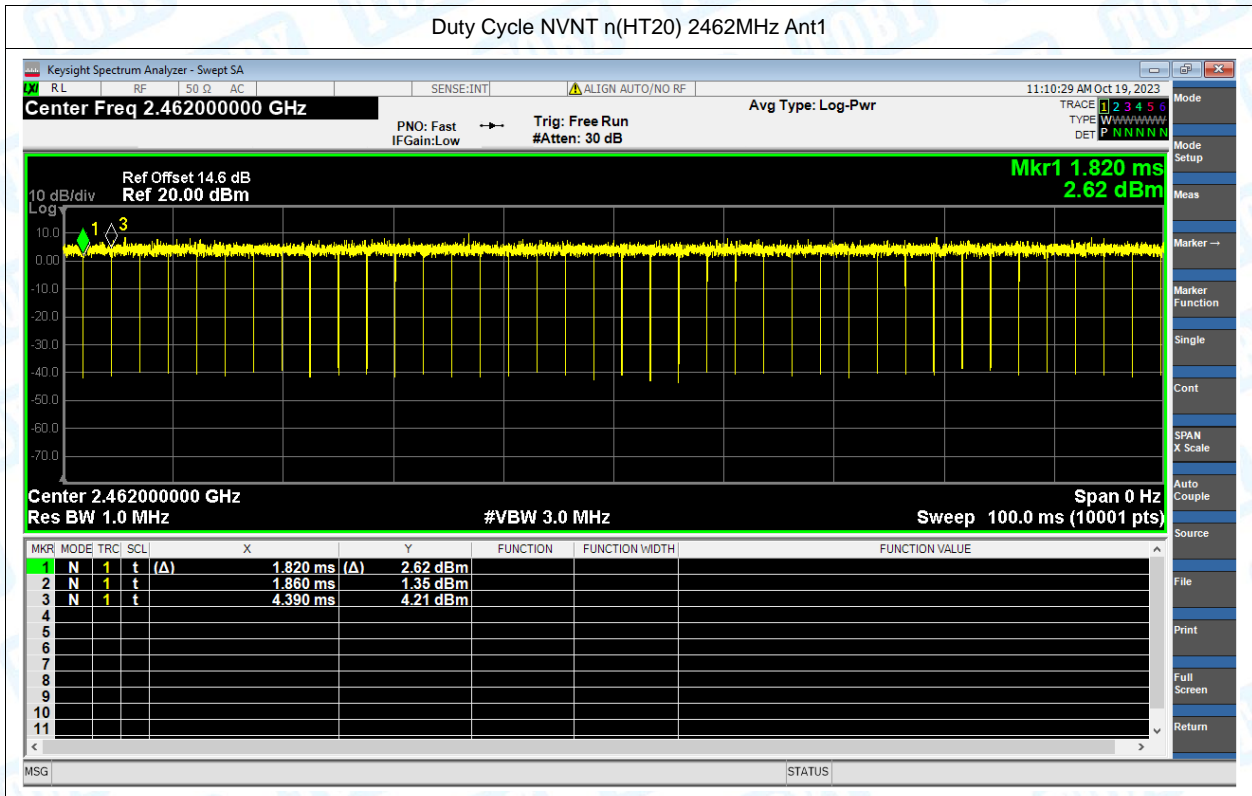


Duty Cycle NVNT n(HT20) 2412MHz Ant1



Duty Cycle NVNT n(HT20) 2437MHz Ant1





Maximum Conducted Output Power

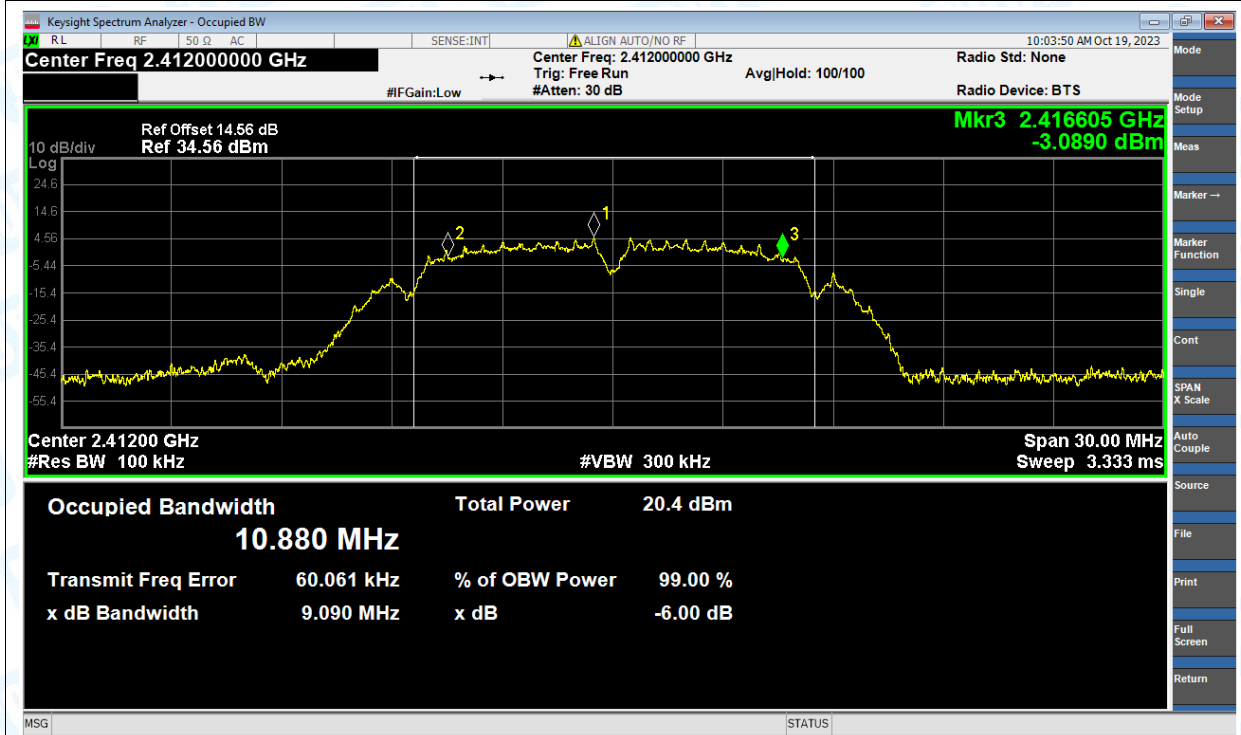
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	13.836	30	Pass
NVNT	b	2437	Ant1	14.489	30	Pass
NVNT	b	2462	Ant1	14.282	30	Pass
NVNT	g	2412	Ant1	10.438	30	Pass
NVNT	g	2437	Ant1	16.23	30	Pass
NVNT	g	2462	Ant1	12.007	30	Pass
NVNT	n(HT20)	2412	Ant1	10.445	30	Pass
NVNT	n(HT20)	2437	Ant1	16.435	30	Pass
NVNT	n(HT20)	2462	Ant1	12.248	30	Pass

-6dB Bandwidth

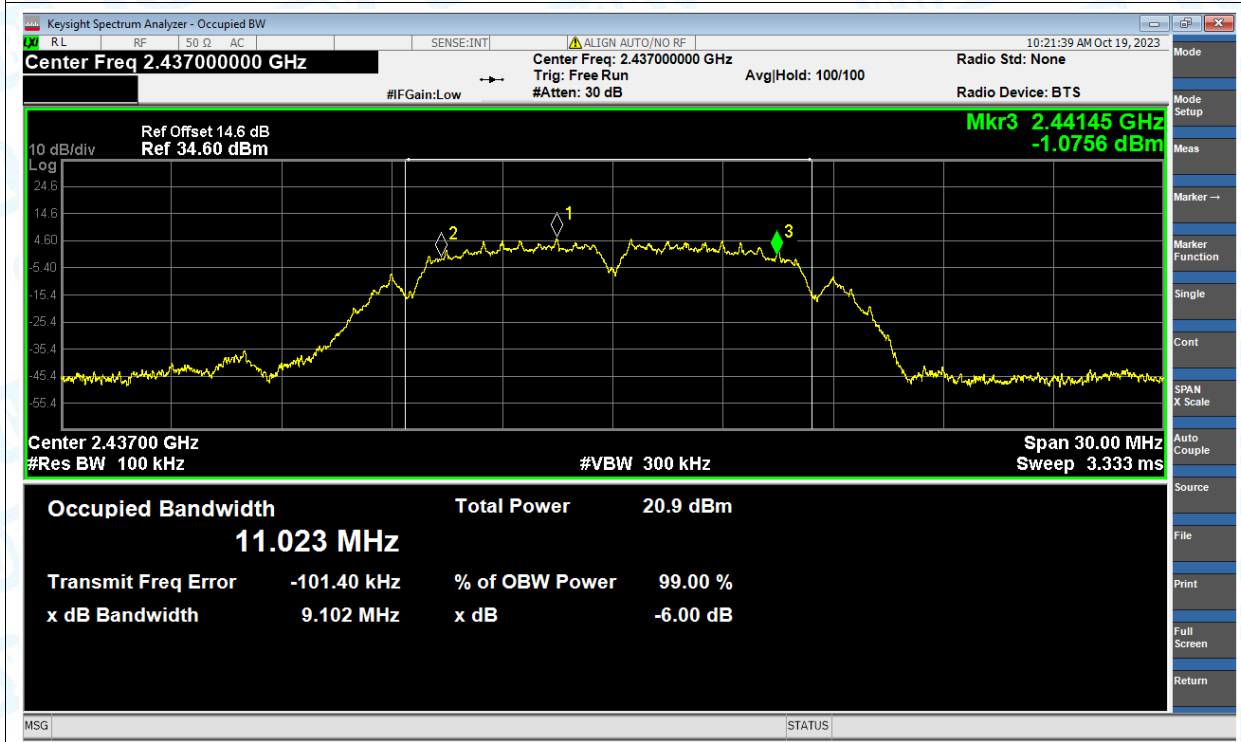
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	9.09	0.5	Pass
NVNT	b	2437	Ant1	9.1	0.5	Pass
NVNT	b	2462	Ant1	9.07	0.5	Pass
NVNT	g	2412	Ant1	16.41	0.5	Pass
NVNT	g	2437	Ant1	16.35	0.5	Pass
NVNT	g	2462	Ant1	16.43	0.5	Pass
NVNT	n(HT20)	2412	Ant1	17.6	0.5	Pass
NVNT	n(HT20)	2437	Ant1	17.6	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.61	0.5	Pass

Test Graphs

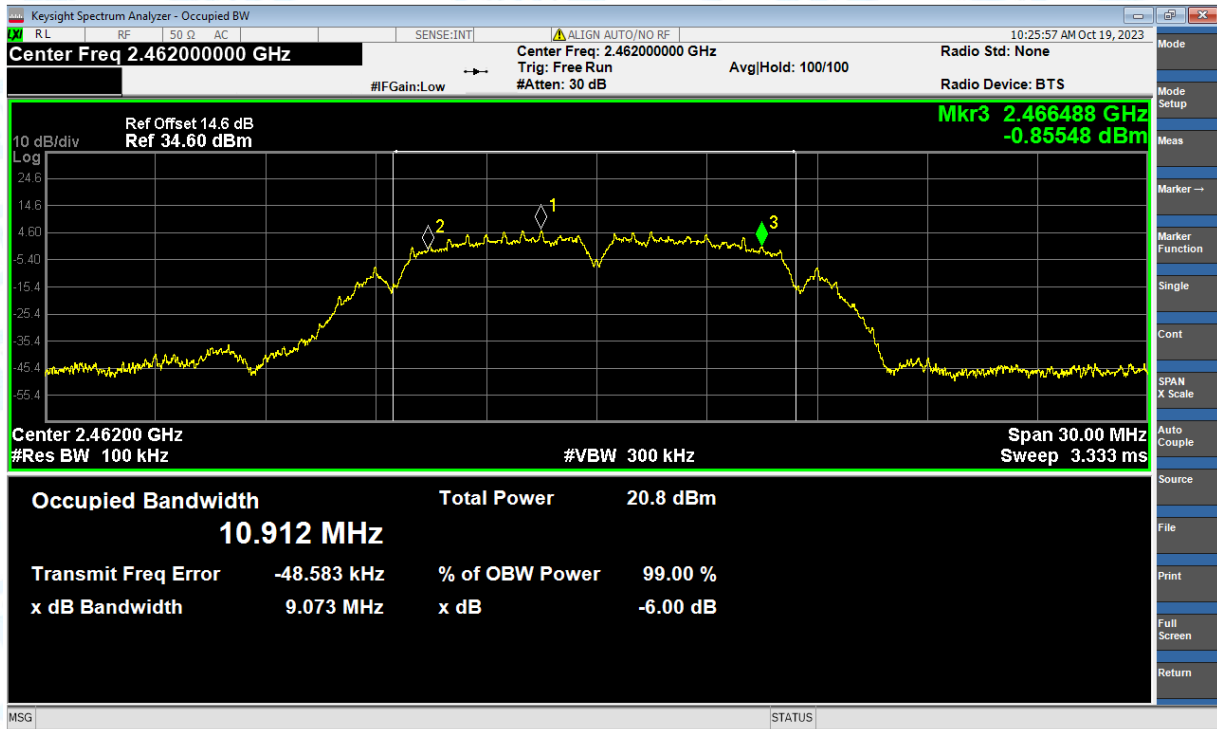
-6dB Bandwidth NVNT b 2412MHz Ant1



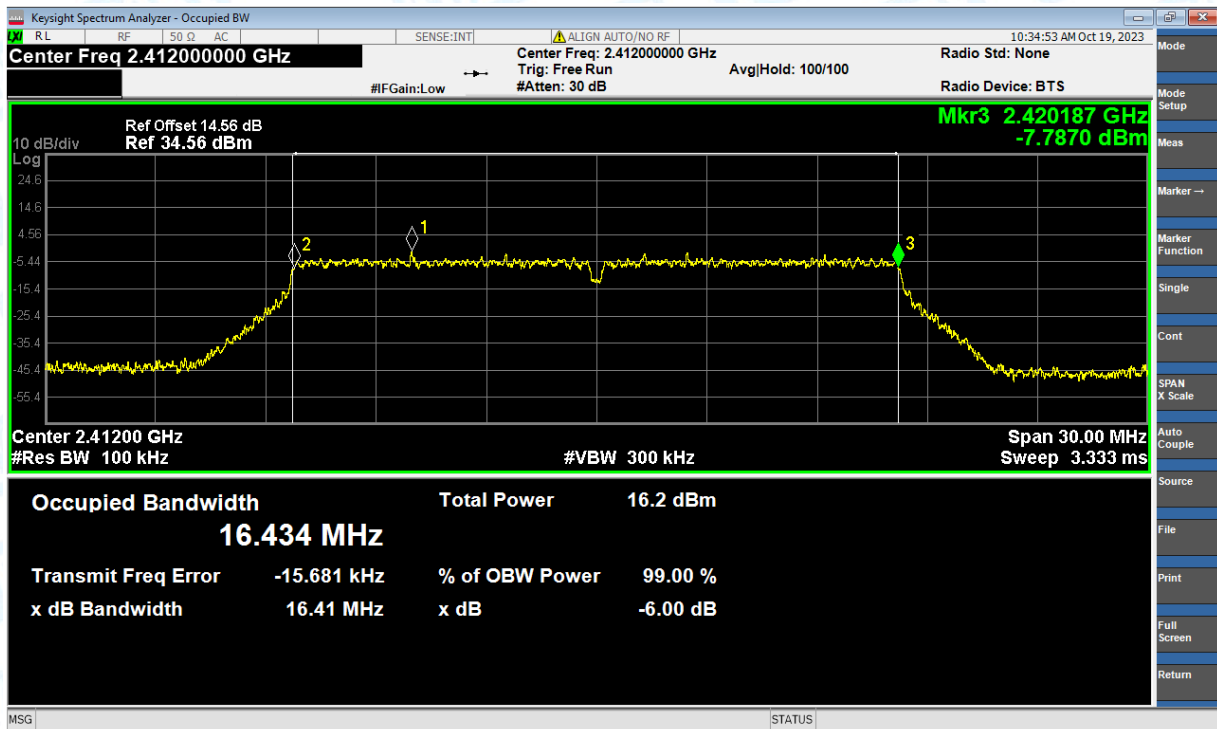
-6dB Bandwidth NVNT b 2437MHz Ant1



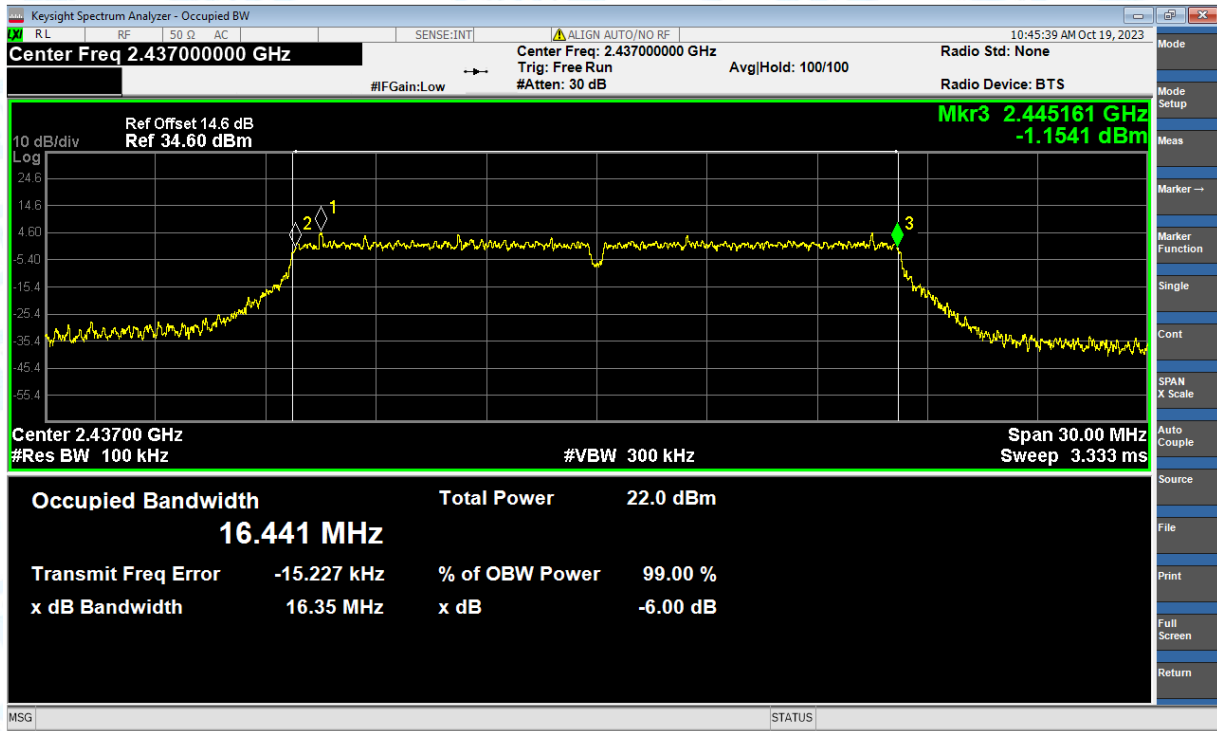
-6dB Bandwidth NVNT b 2462MHz Ant1



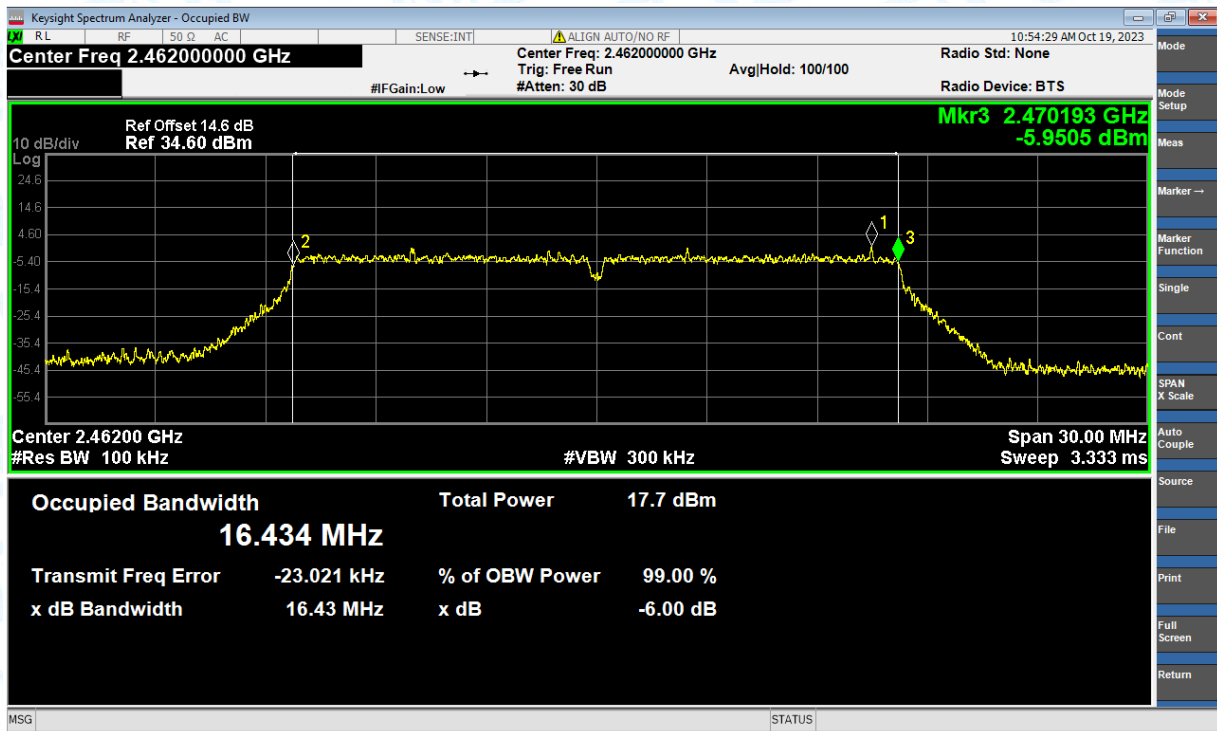
-6dB Bandwidth NVNT g 2412MHz Ant1



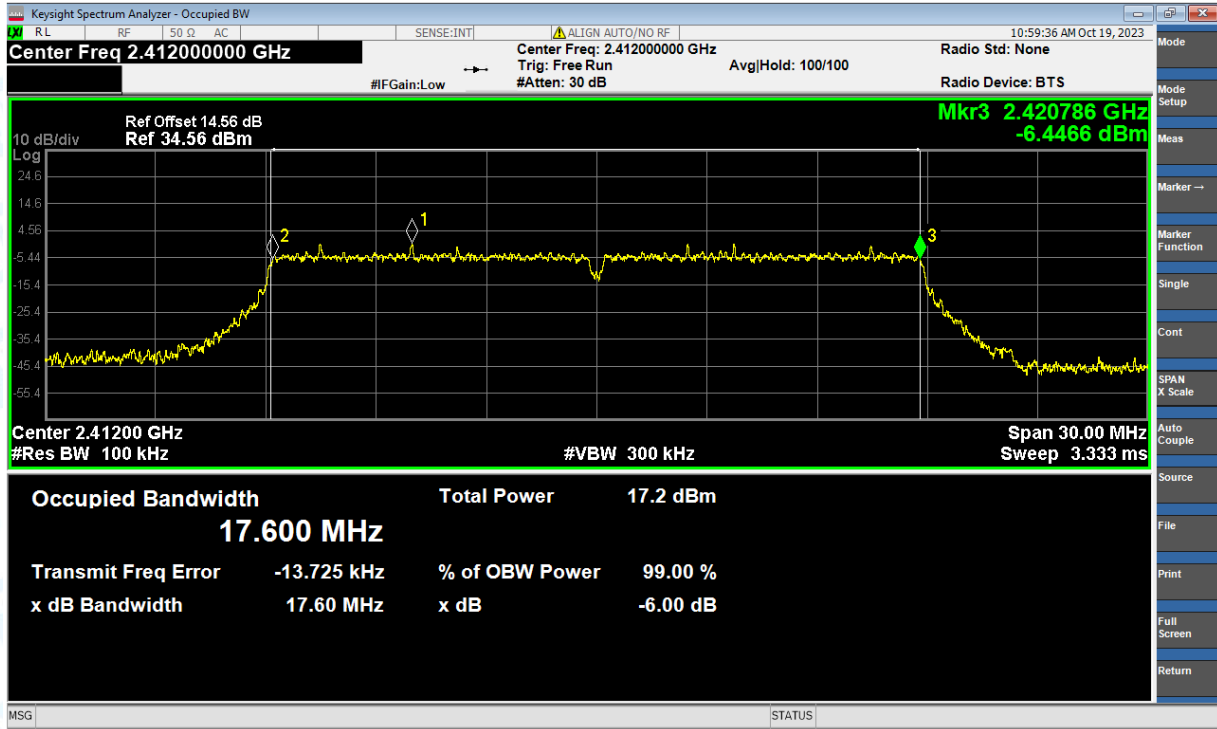
-6dB Bandwidth NVNT g 2437MHz Ant1



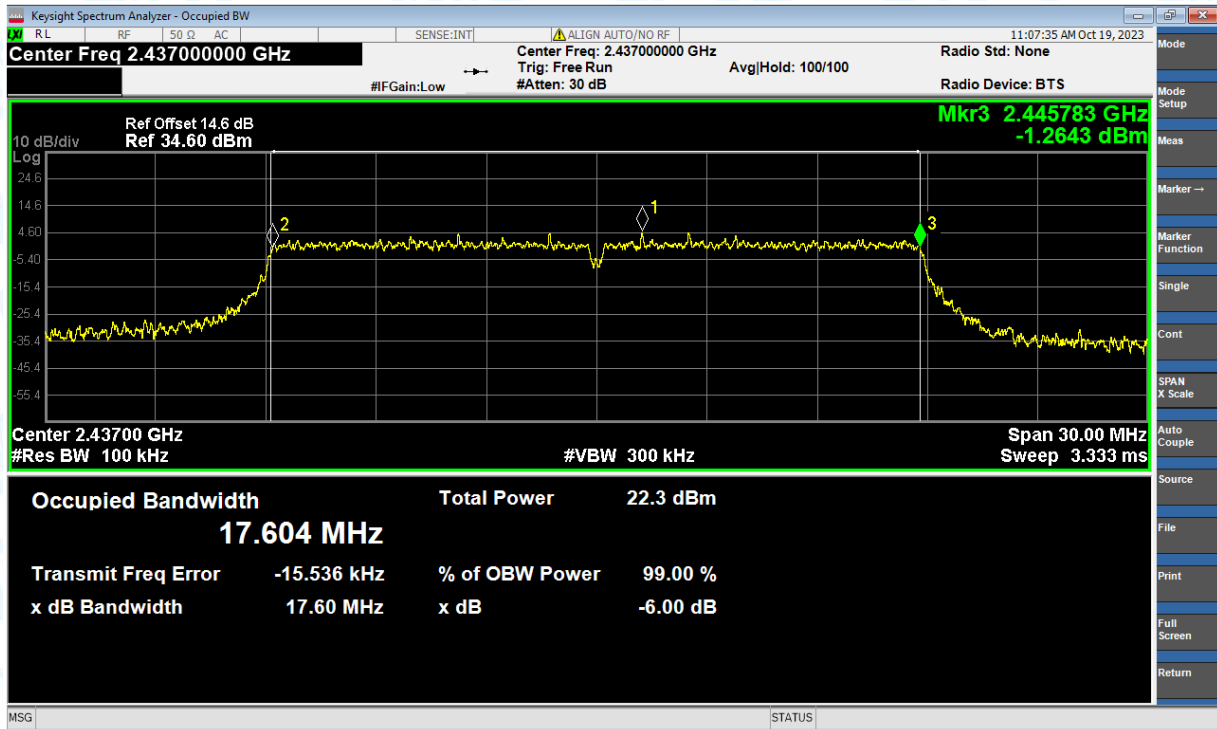
-6dB Bandwidth NVNT g 2462MHz Ant1

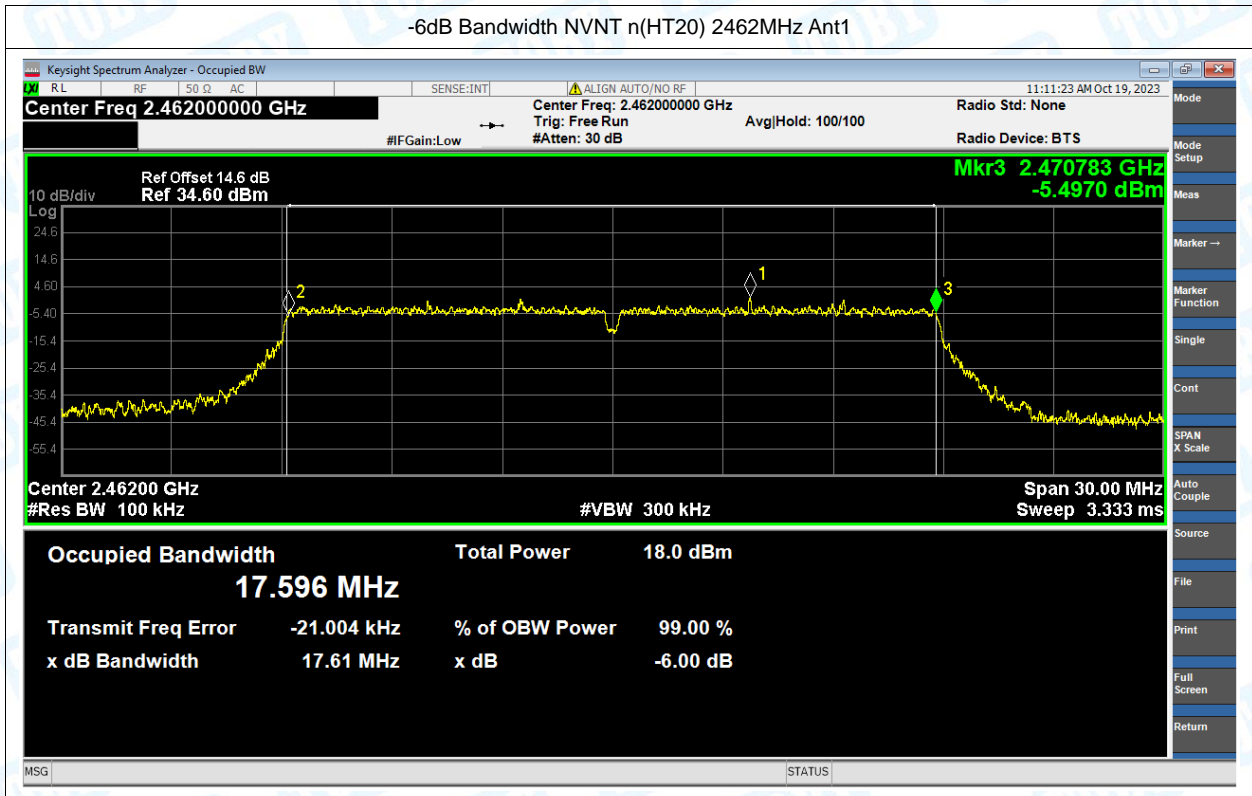


-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



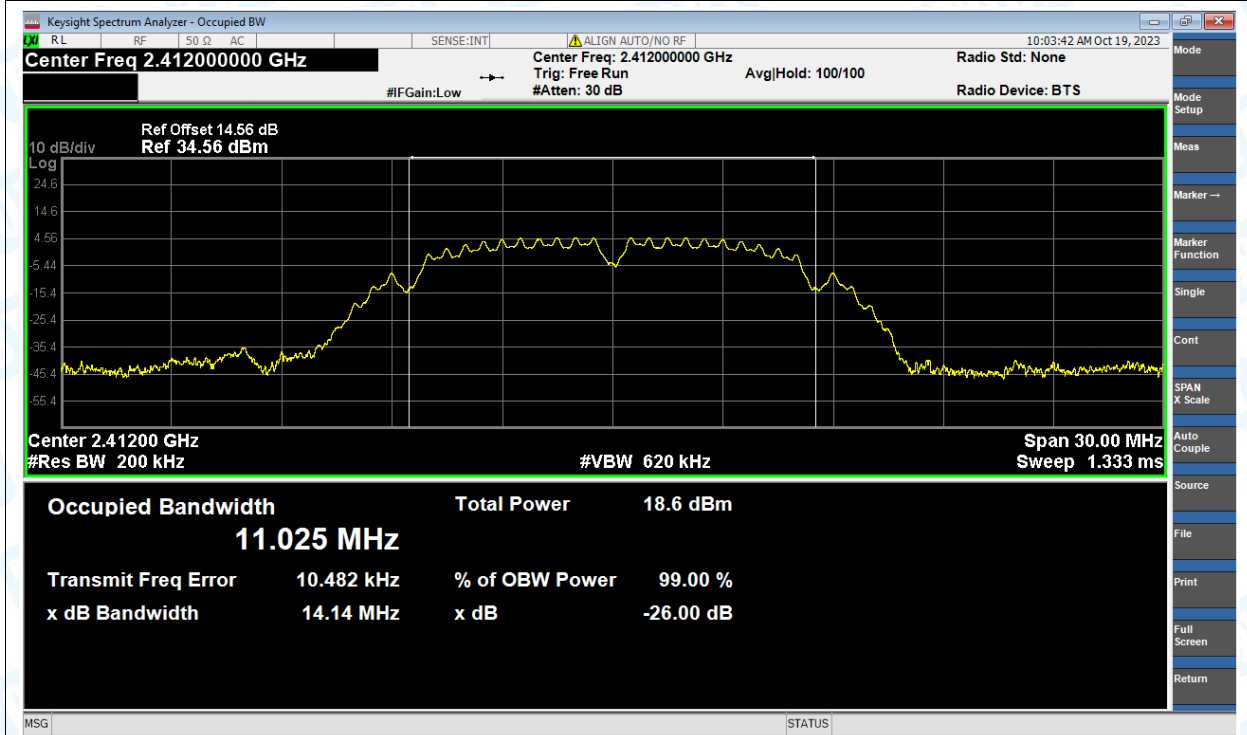


Occupied Channel Bandwidth

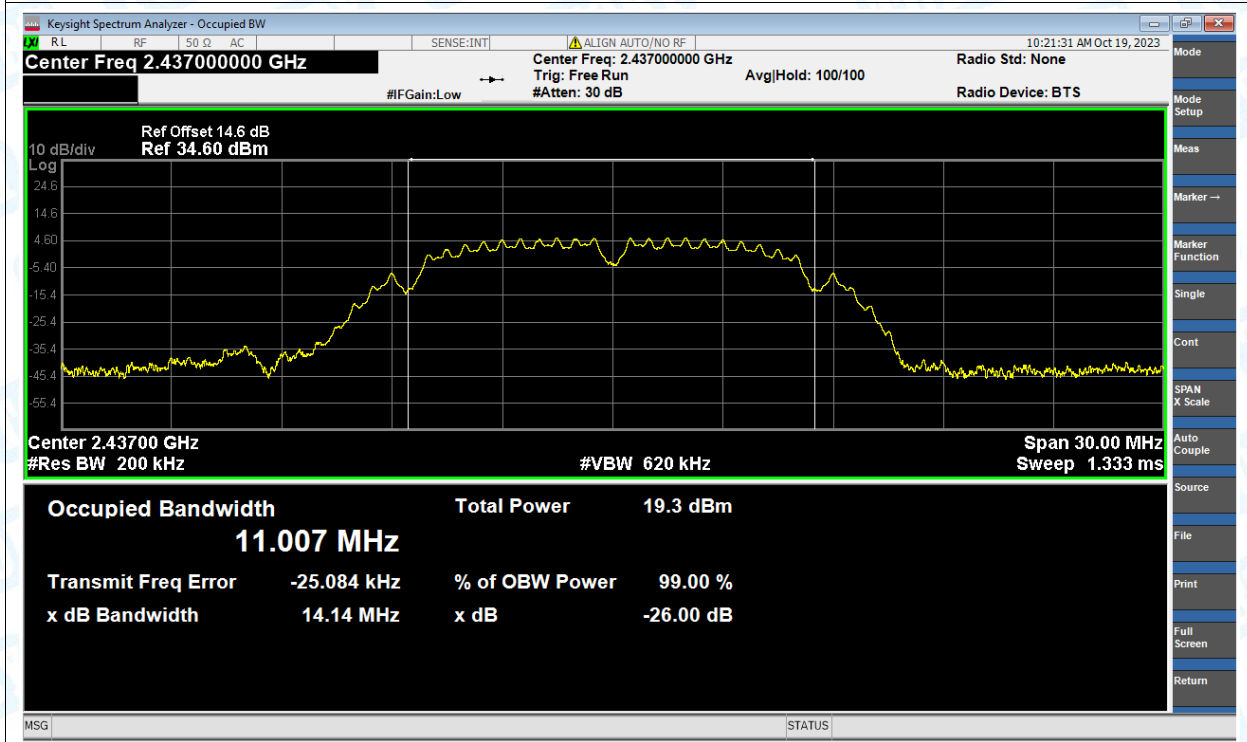
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	11.025
NVNT	b	2437	Ant1	11.007
NVNT	b	2462	Ant1	10.975
NVNT	g	2412	Ant1	16.463
NVNT	g	2437	Ant1	16.505
NVNT	g	2462	Ant1	16.522
NVNT	n(HT20)	2412	Ant1	17.611
NVNT	n(HT20)	2437	Ant1	17.609
NVNT	n(HT20)	2462	Ant1	17.625

Test Graphs

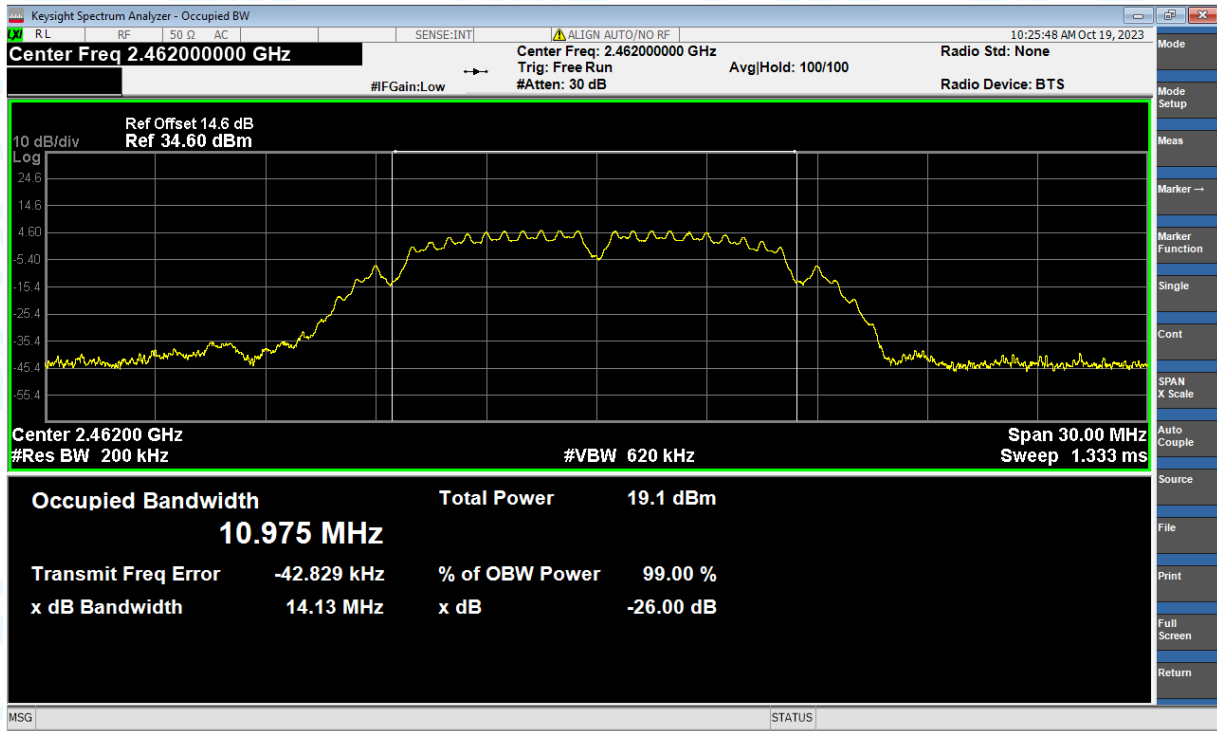
OBV NVNT b 2412MHz Ant1



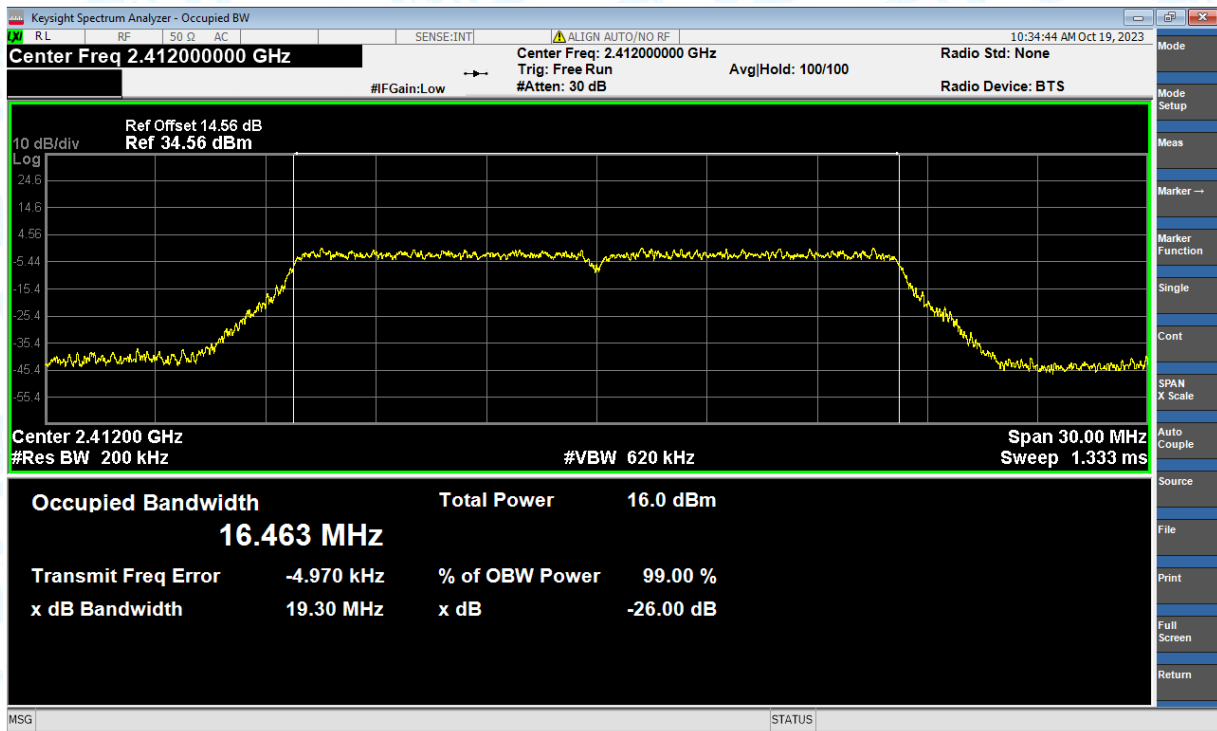
OBV NVNT b 2437MHz Ant1



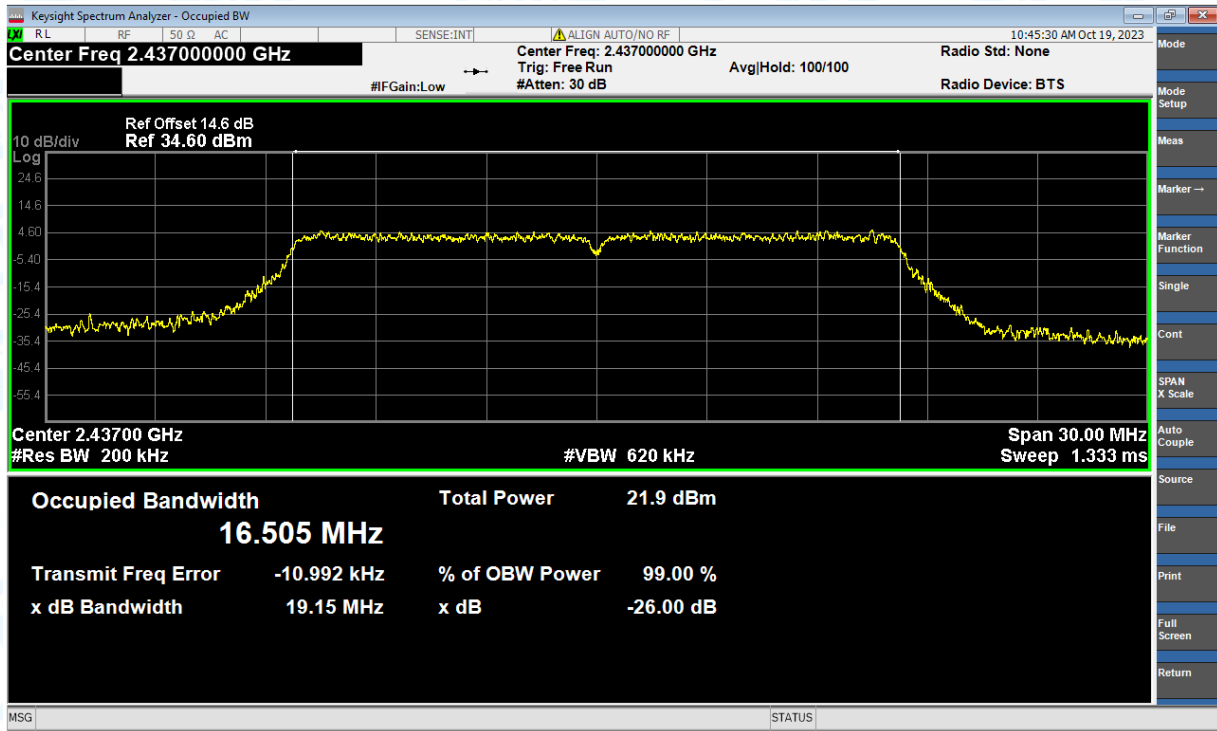
OBW NVNT b 2462MHz Ant1



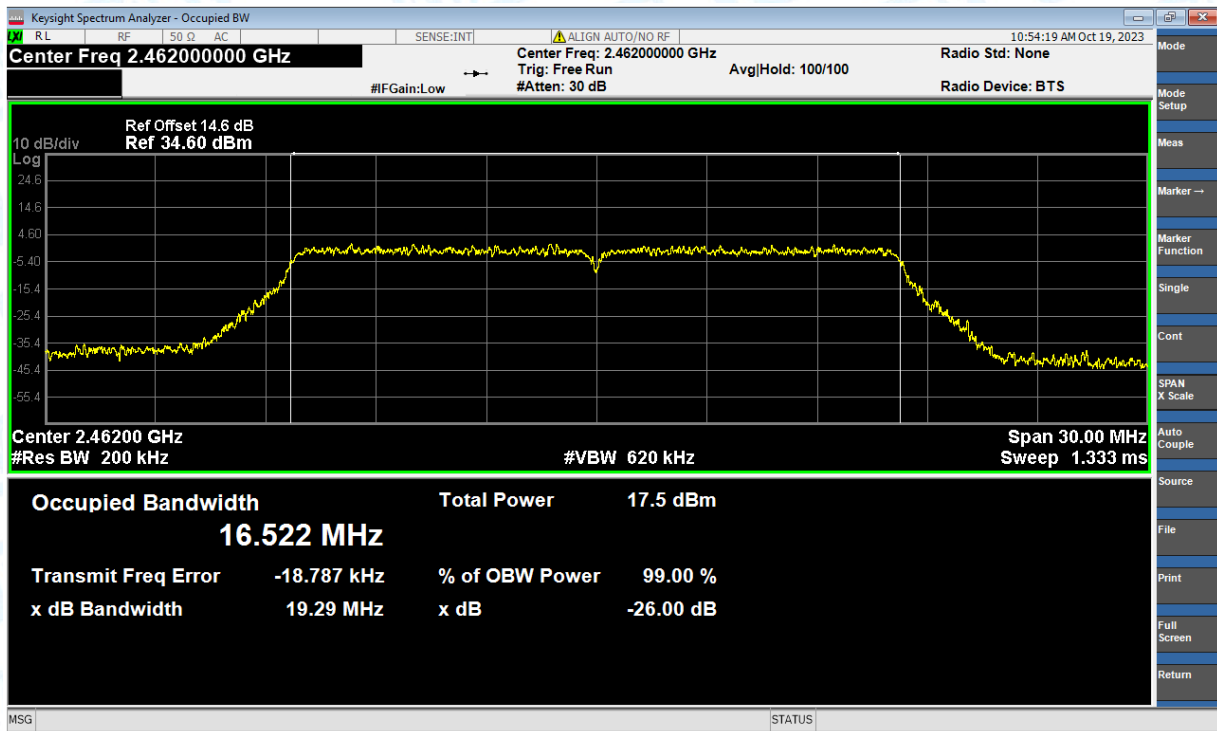
OBW NVNT g 2412MHz Ant1



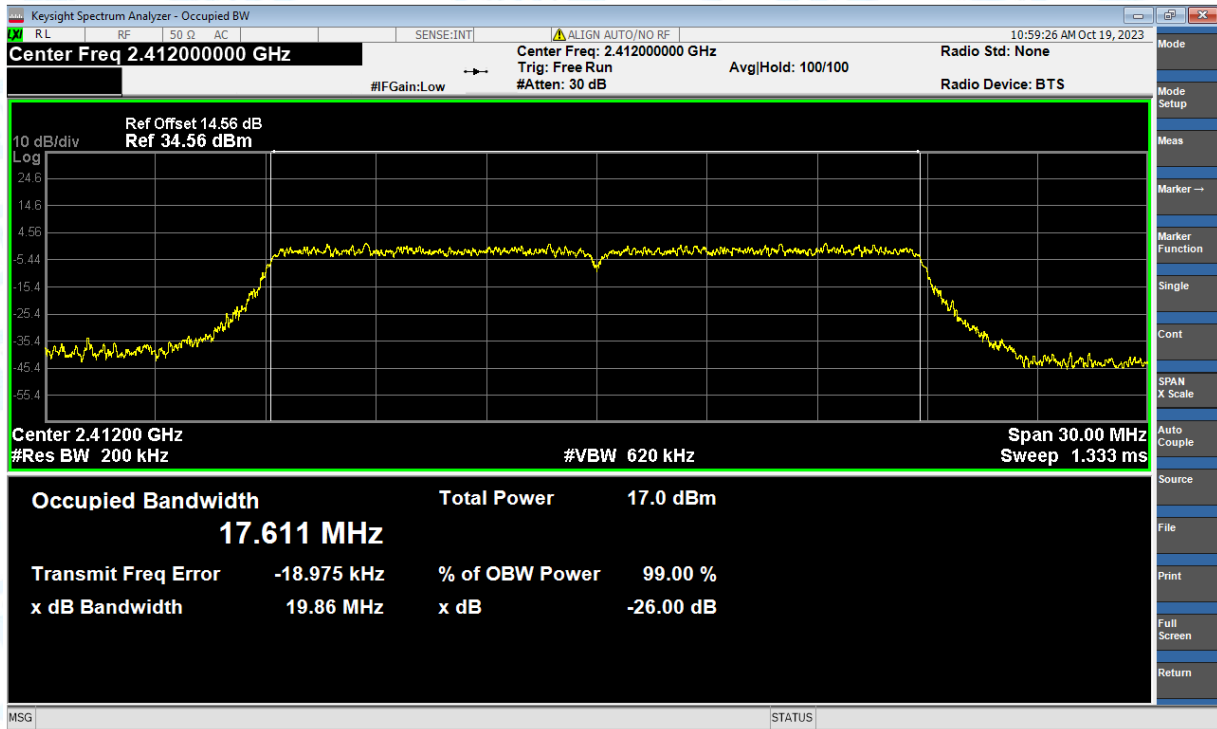
OBW NVNT g 2437MHz Ant1



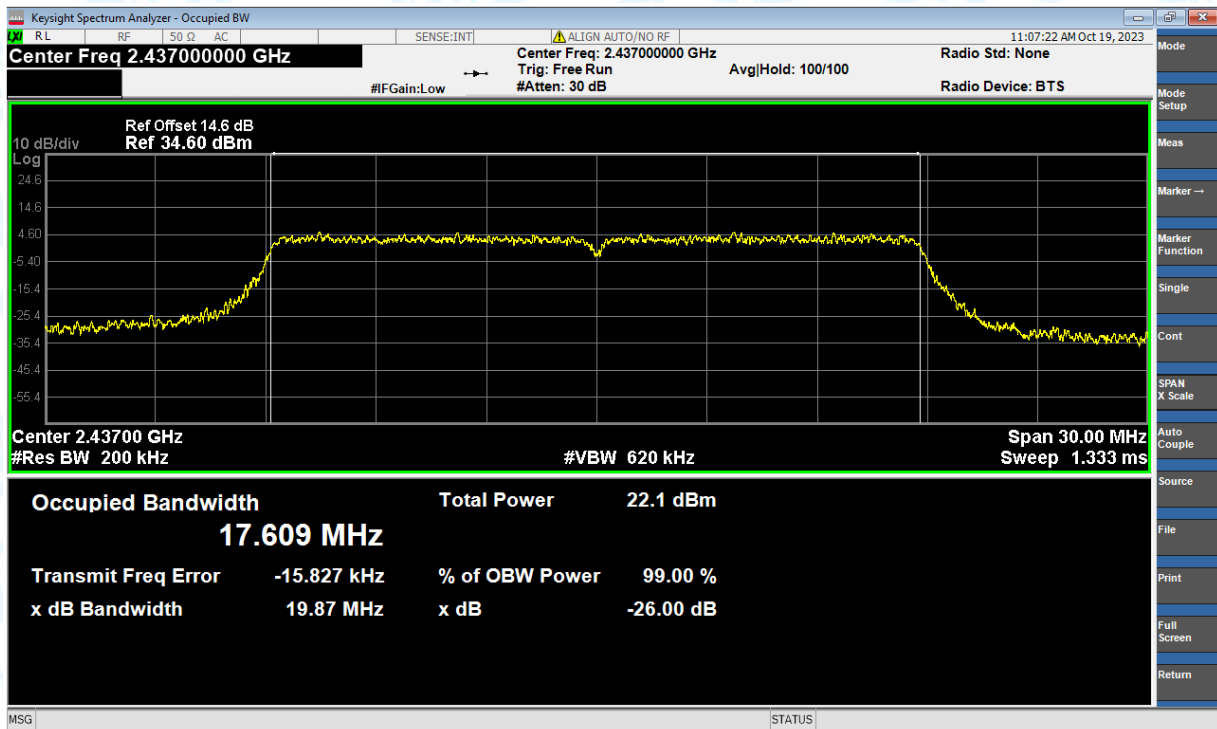
OBW NVNT g 2462MHz Ant1

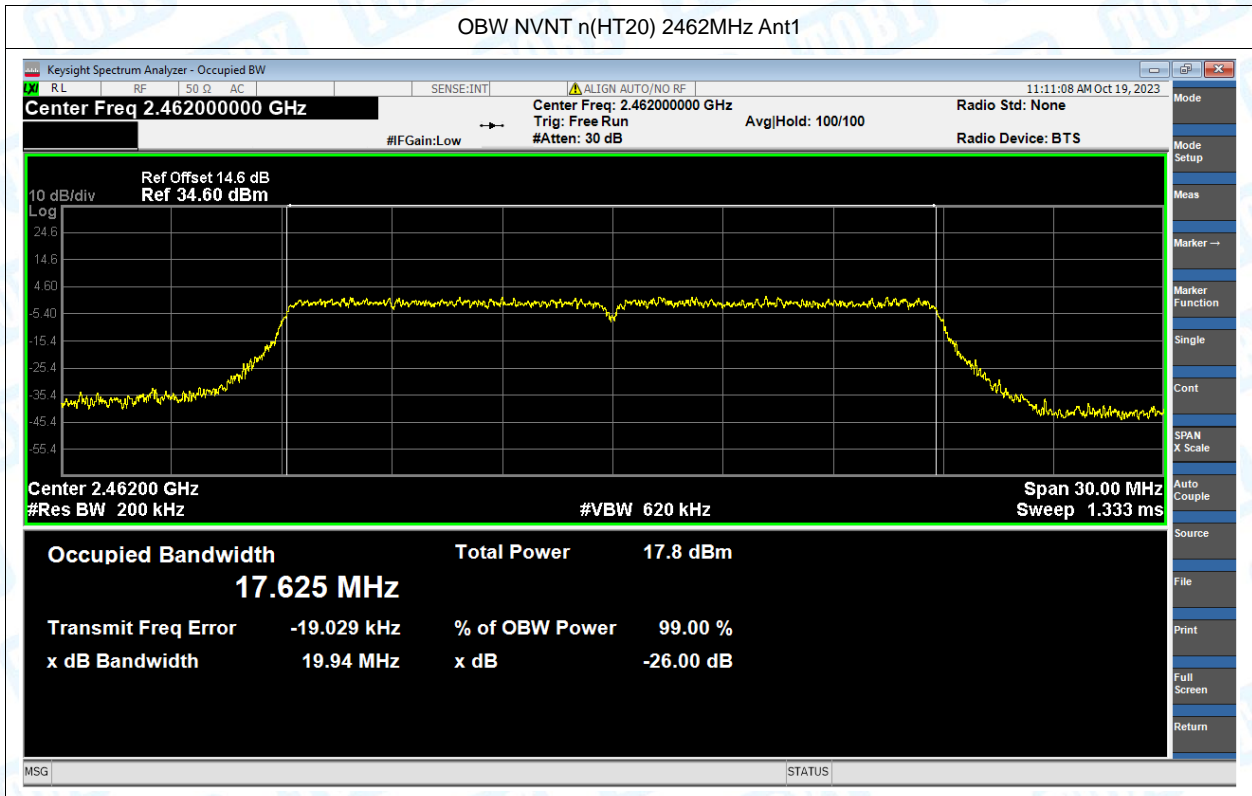


OBW NVNT n(HT20) 2412MHz Ant1



OBW NVNT n(HT20) 2437MHz Ant1



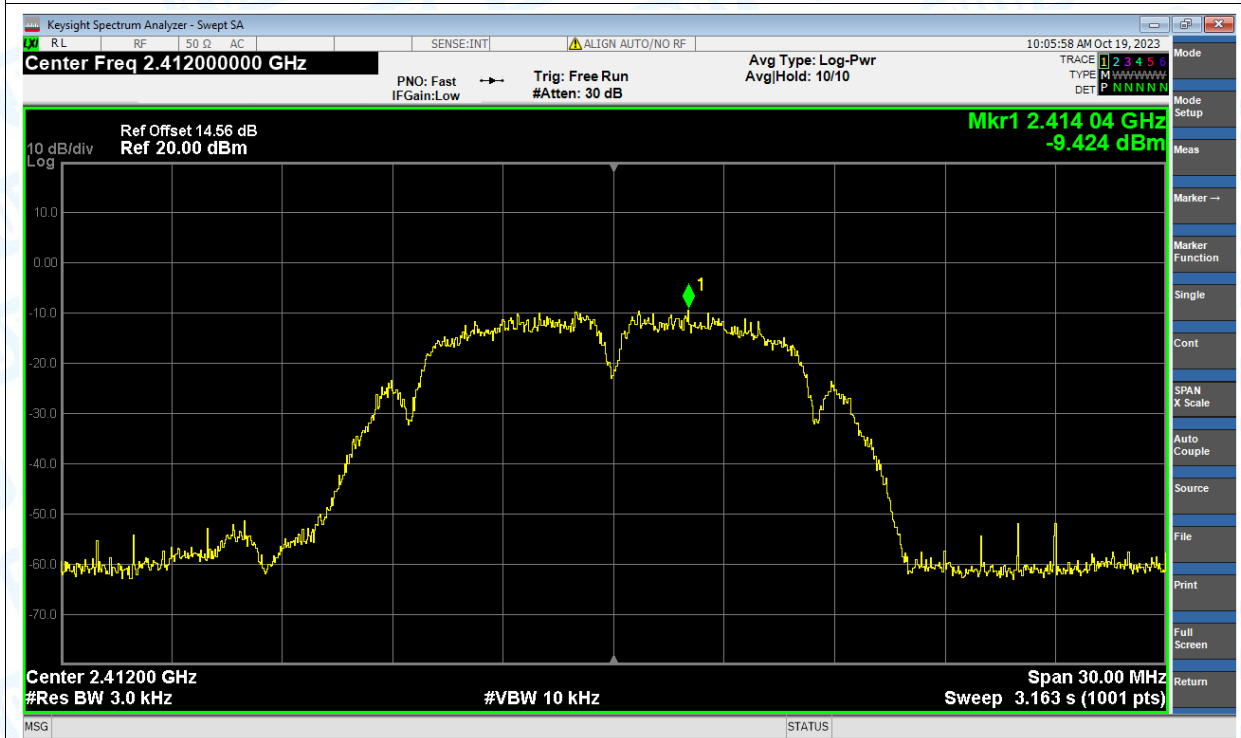


Maximum Power Spectral Density Level

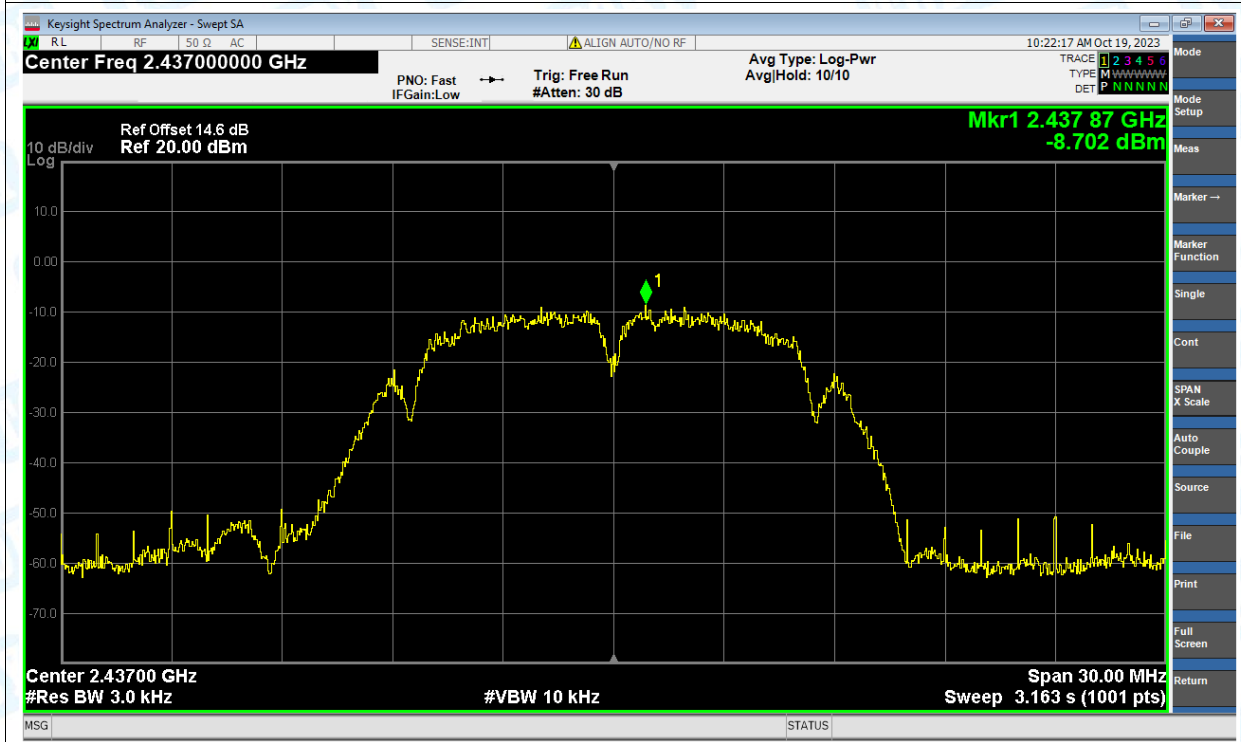
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	-9.424	8	Pass
NVNT	b	2437	Ant1	-8.702	8	Pass
NVNT	b	2462	Ant1	-8.81	8	Pass
NVNT	g	2412	Ant1	-13.413	8	Pass
NVNT	g	2437	Ant1	-7.23	8	Pass
NVNT	g	2462	Ant1	-12.826	8	Pass
NVNT	n(HT20)	2412	Ant1	-13.489	8	Pass
NVNT	n(HT20)	2437	Ant1	-8.62	8	Pass
NVNT	n(HT20)	2462	Ant1	-12.677	8	Pass

Test Graphs

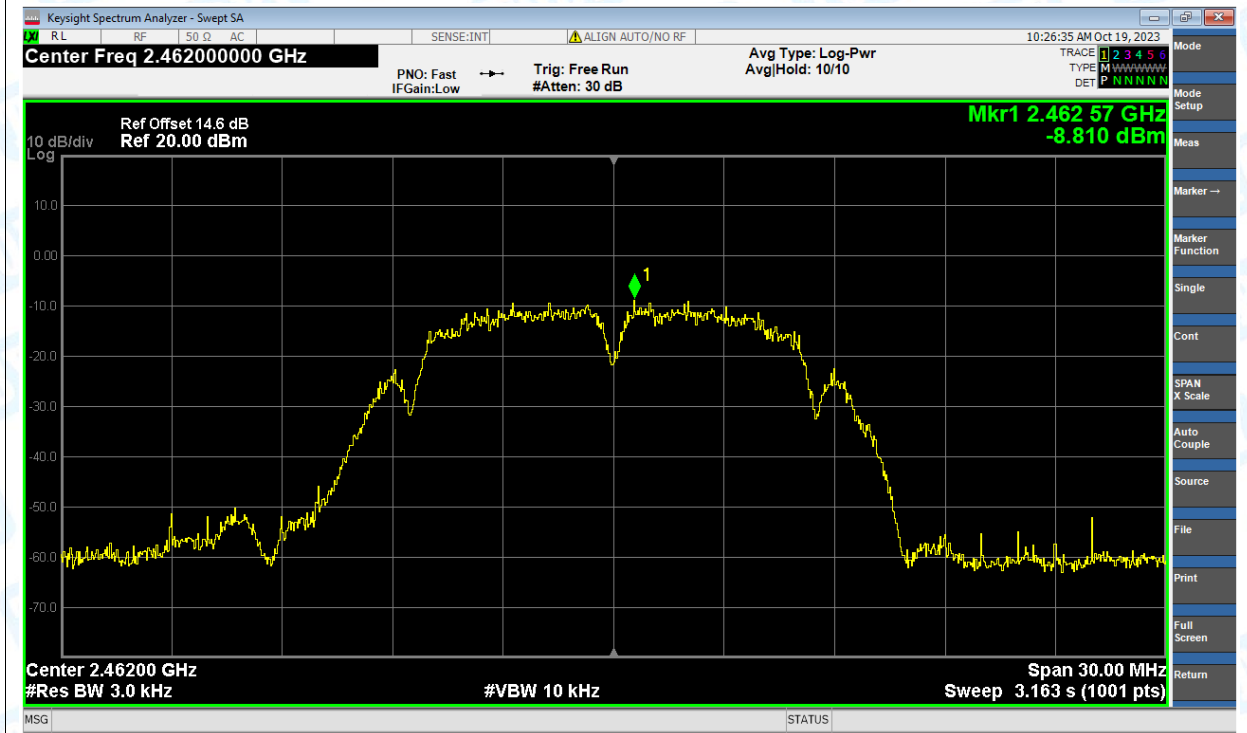
PSD NVNT b 2412MHz Ant1



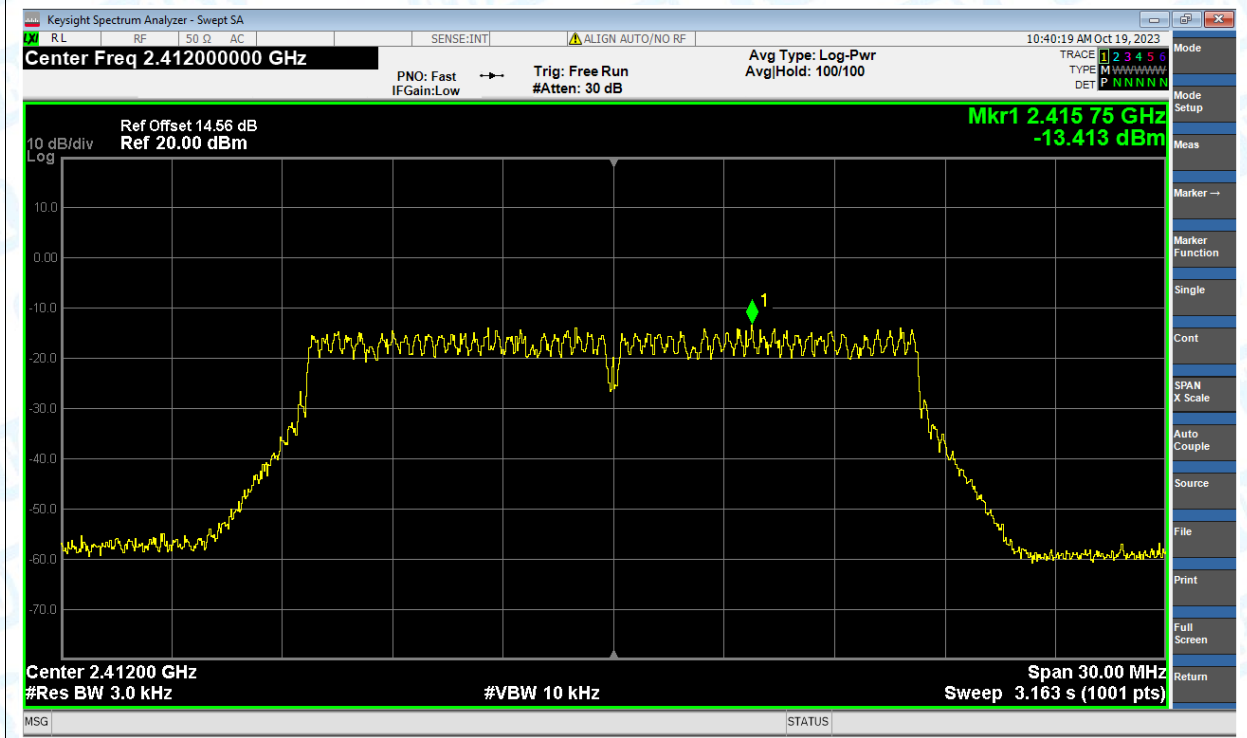
PSD NVNT b 2437MHz Ant1



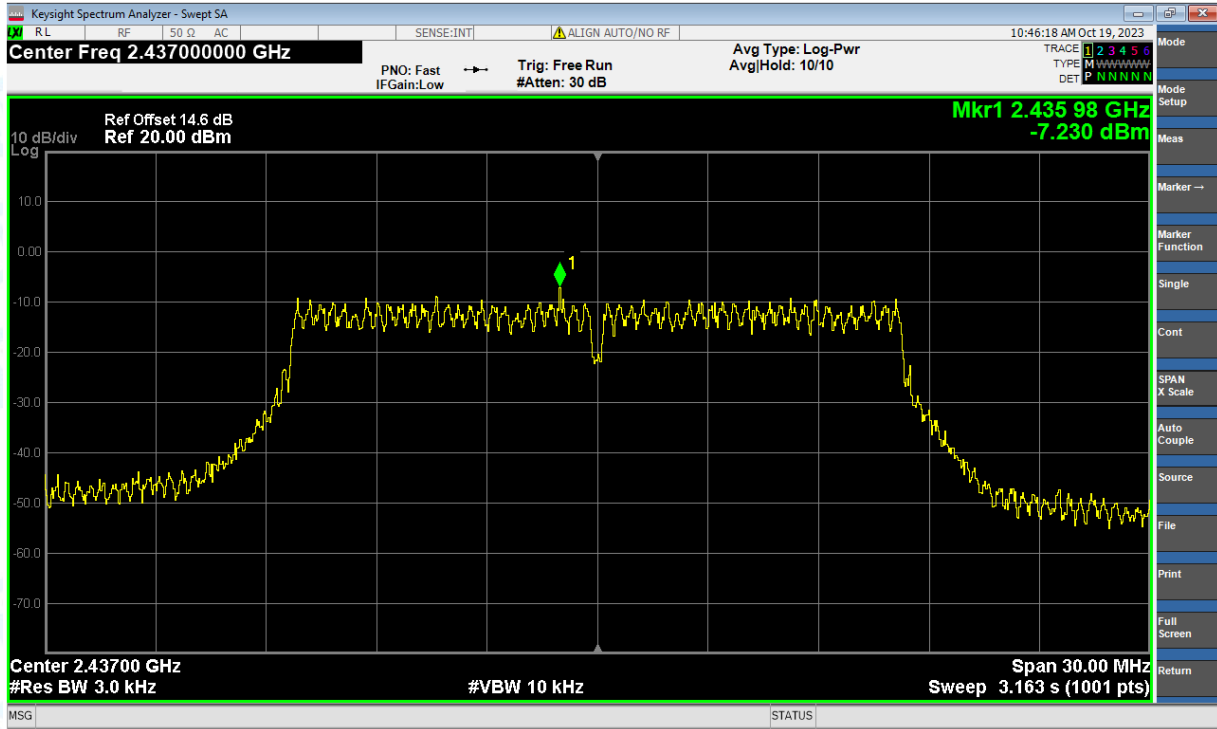
PSD NVNT b 2462MHz Ant1



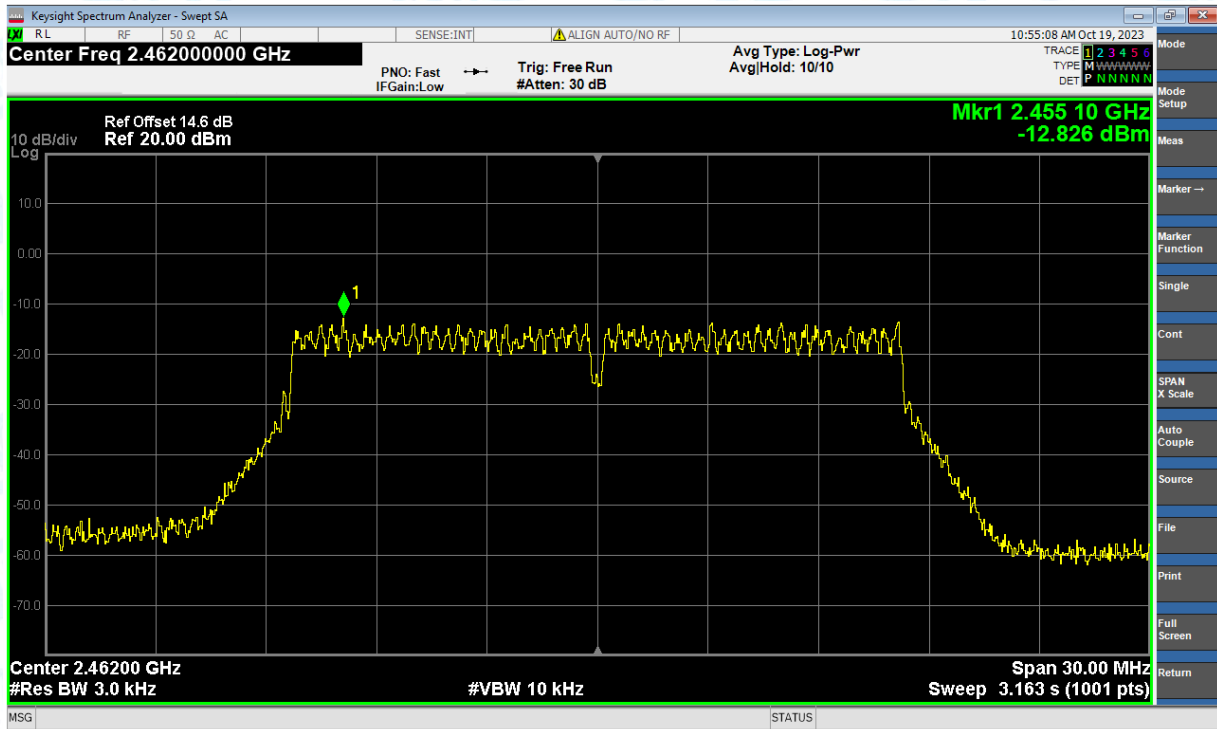
PSD NVNT g 2412MHz Ant1



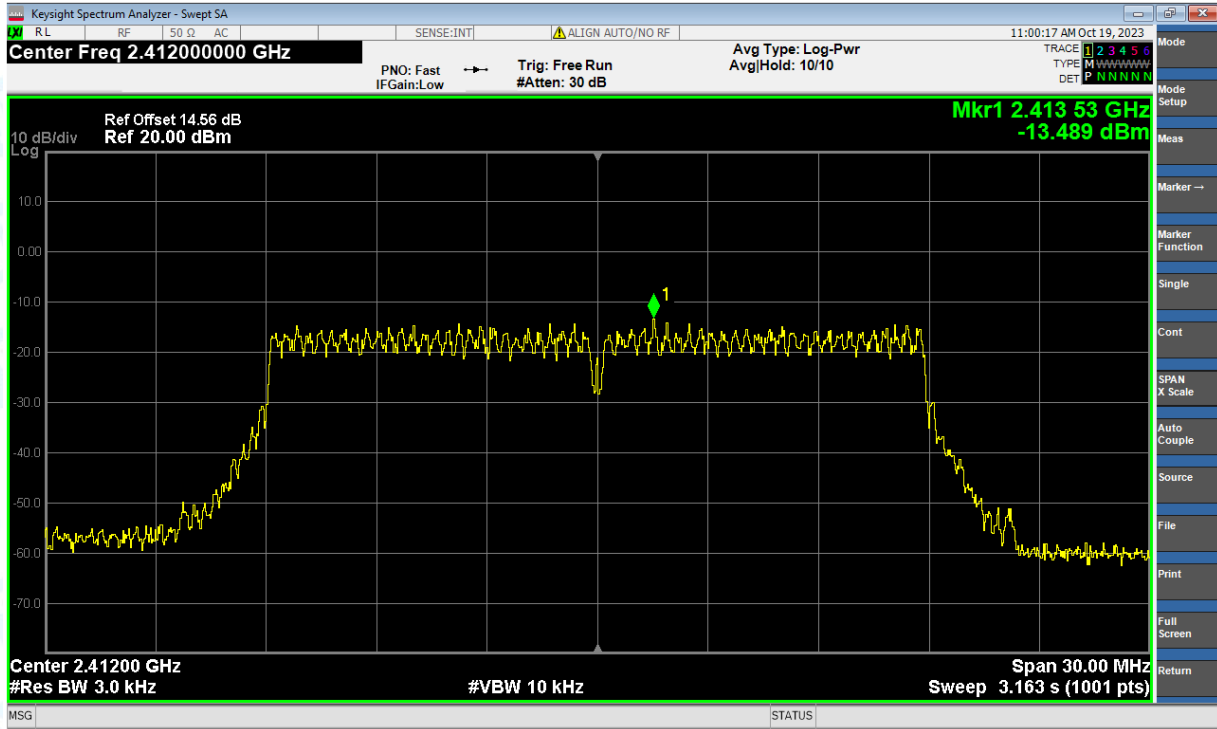
PSD NVNT g 2437MHz Ant1



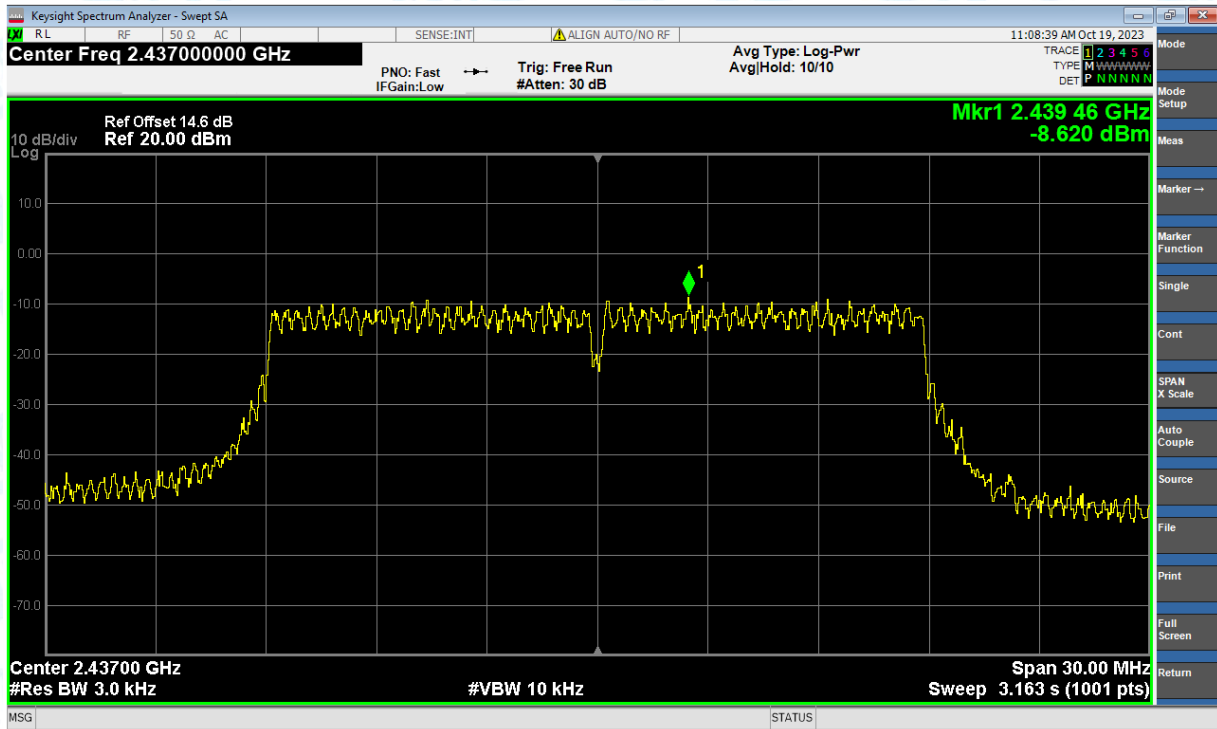
PSD NVNT g 2462MHz Ant1

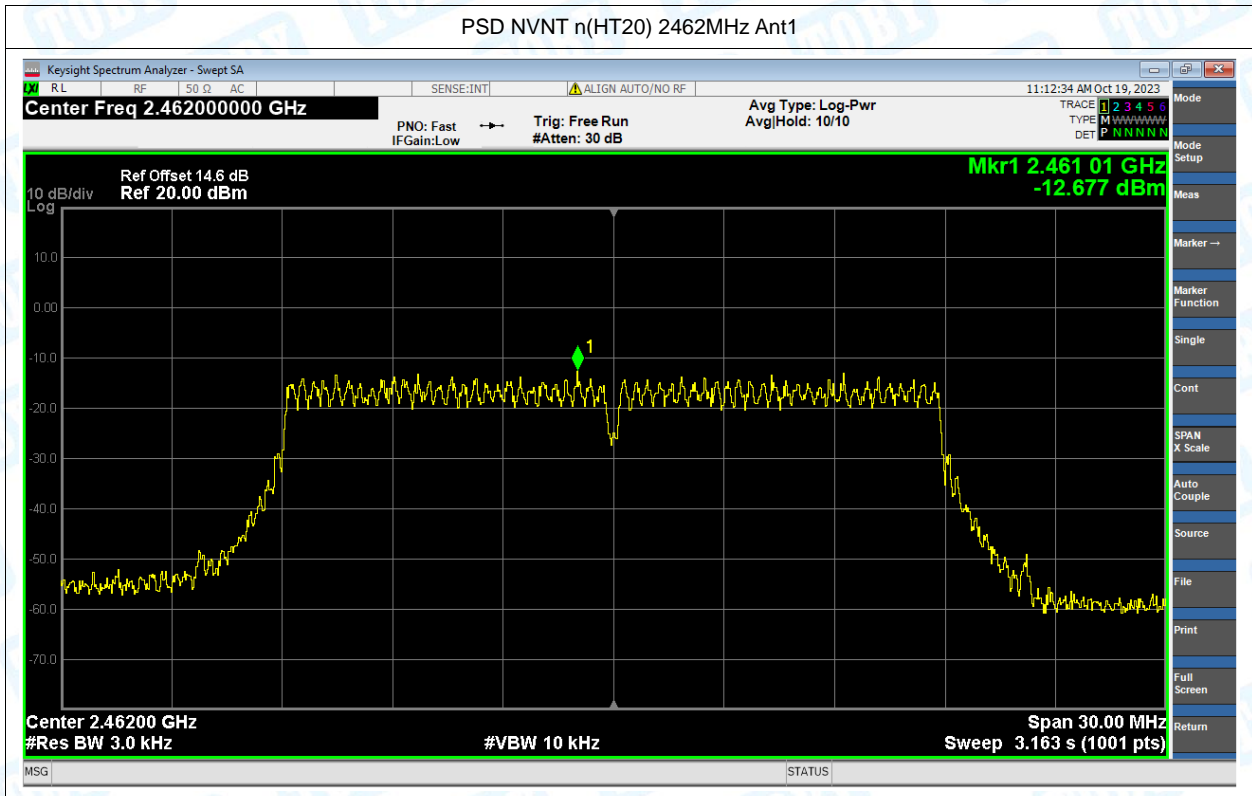


PSD NVNT n(HT20) 2412MHz Ant1



PSD NVNT n(HT20) 2437MHz Ant1



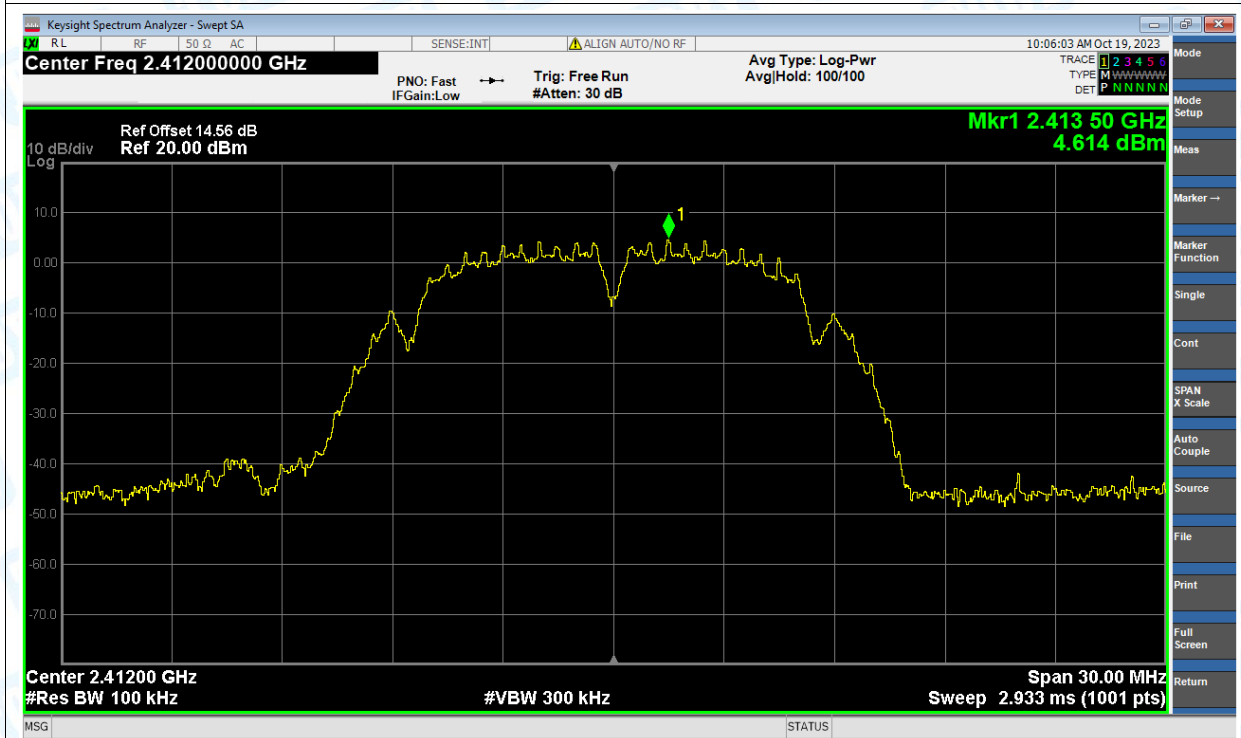


Band Edge

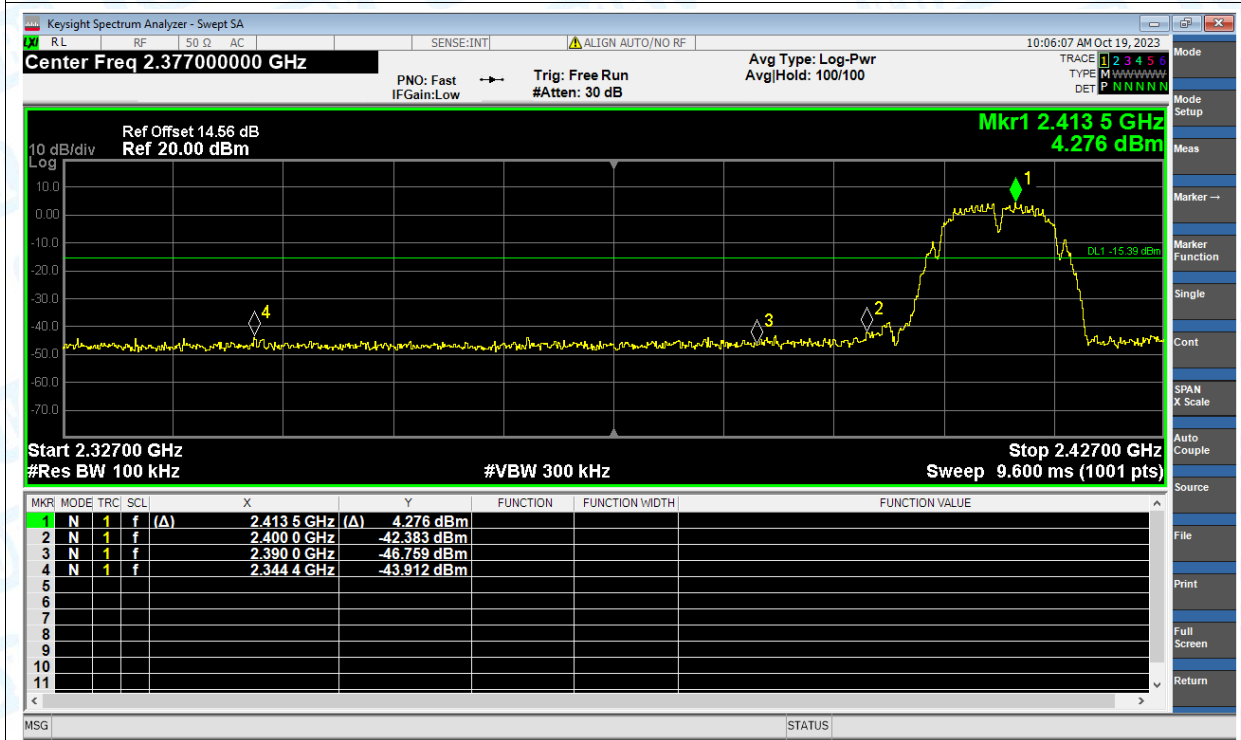
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-48.52	-20	Pass
NVNT	b	2462	Ant1	-49.63	-20	Pass
NVNT	g	2412	Ant1	-42.3	-20	Pass
NVNT	g	2462	Ant1	-43.77	-20	Pass
NVNT	n(HT20)	2412	Ant1	-43.29	-20	Pass
NVNT	n(HT20)	2462	Ant1	-44.52	-20	Pass

Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref



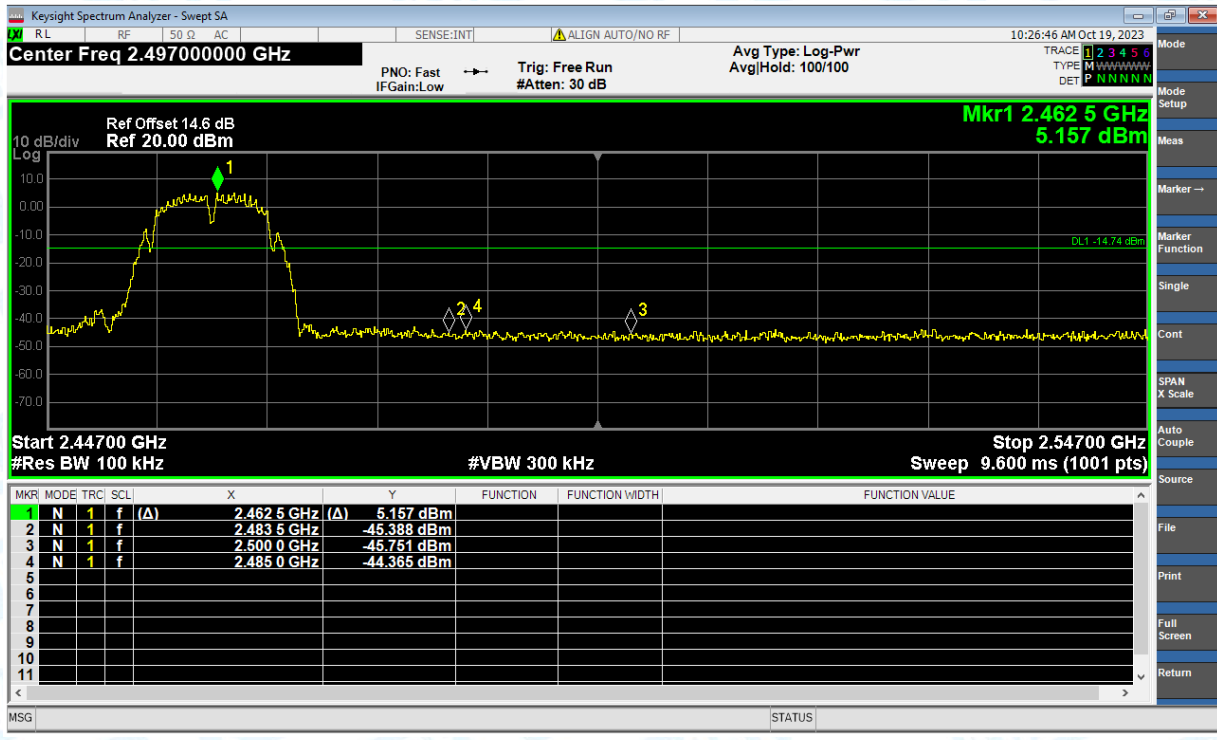
Band Edge NVNT b 2412MHz Ant1 Emission

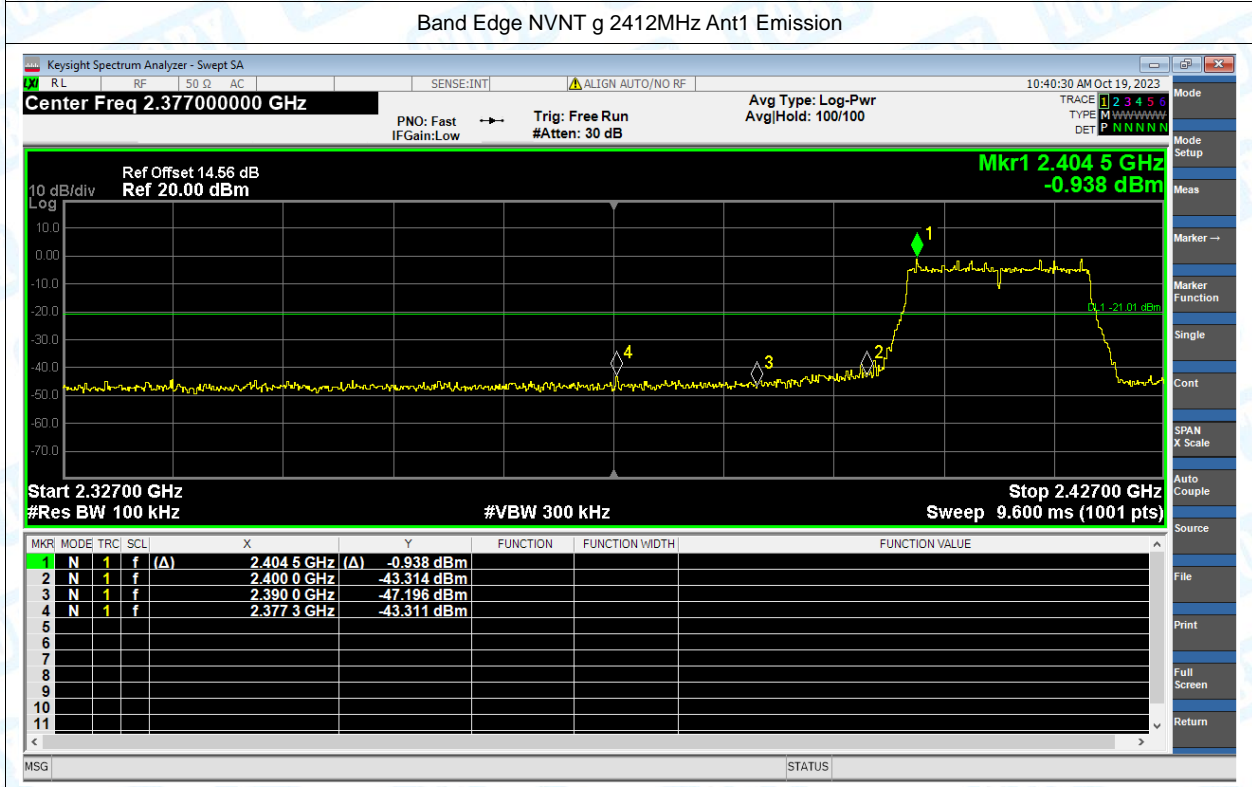
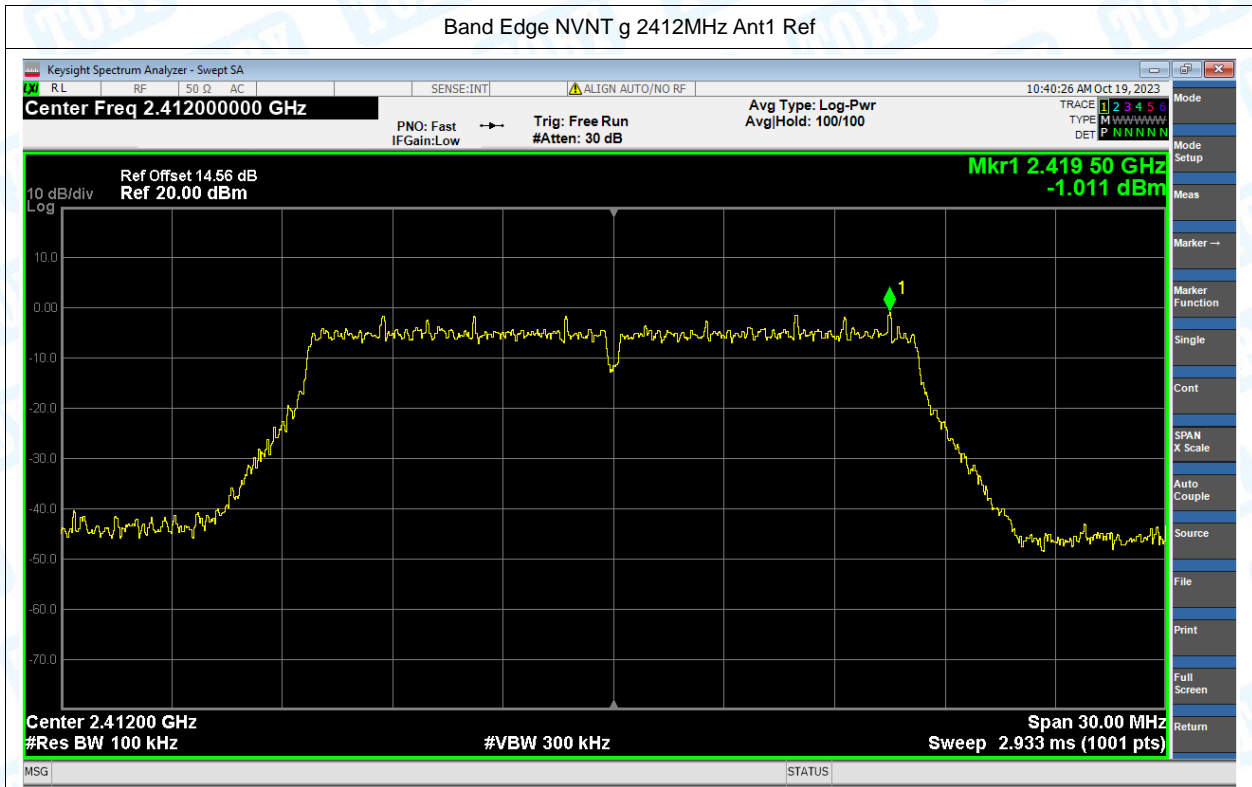


Band Edge NVNT b 2462MHz Ant1 Ref

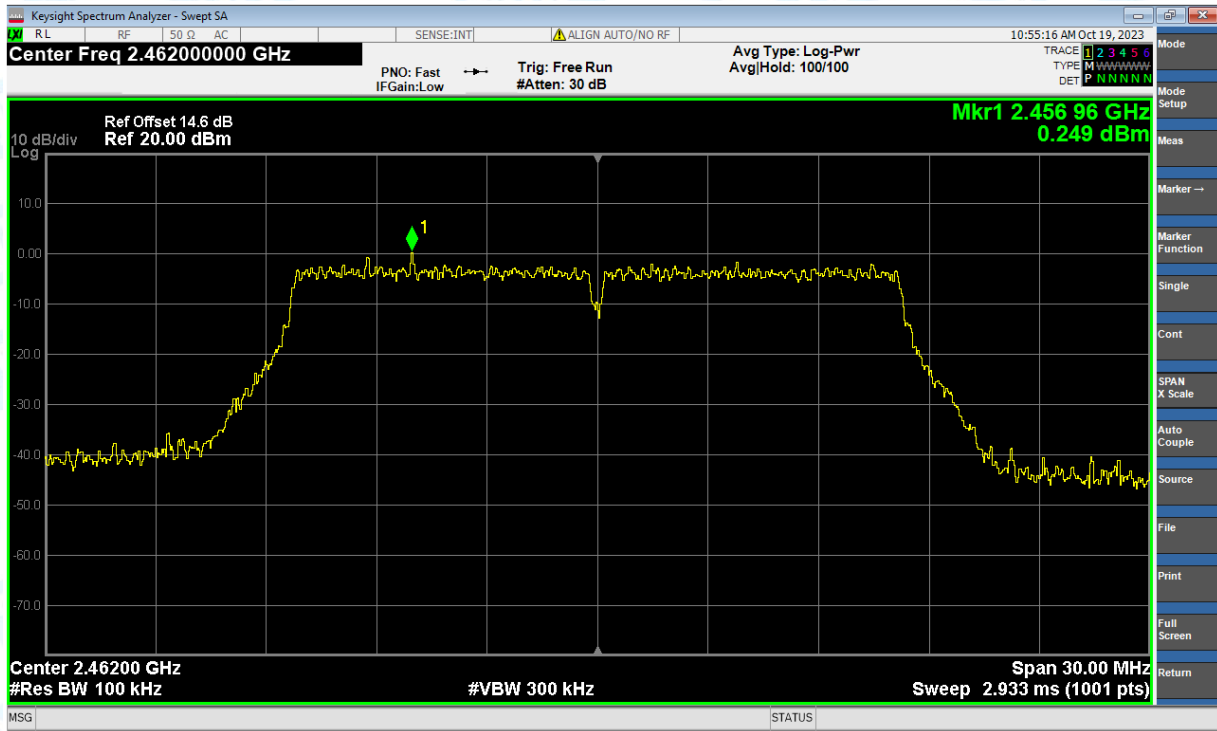


Band Edge NVNT b 2462MHz Ant1 Emission

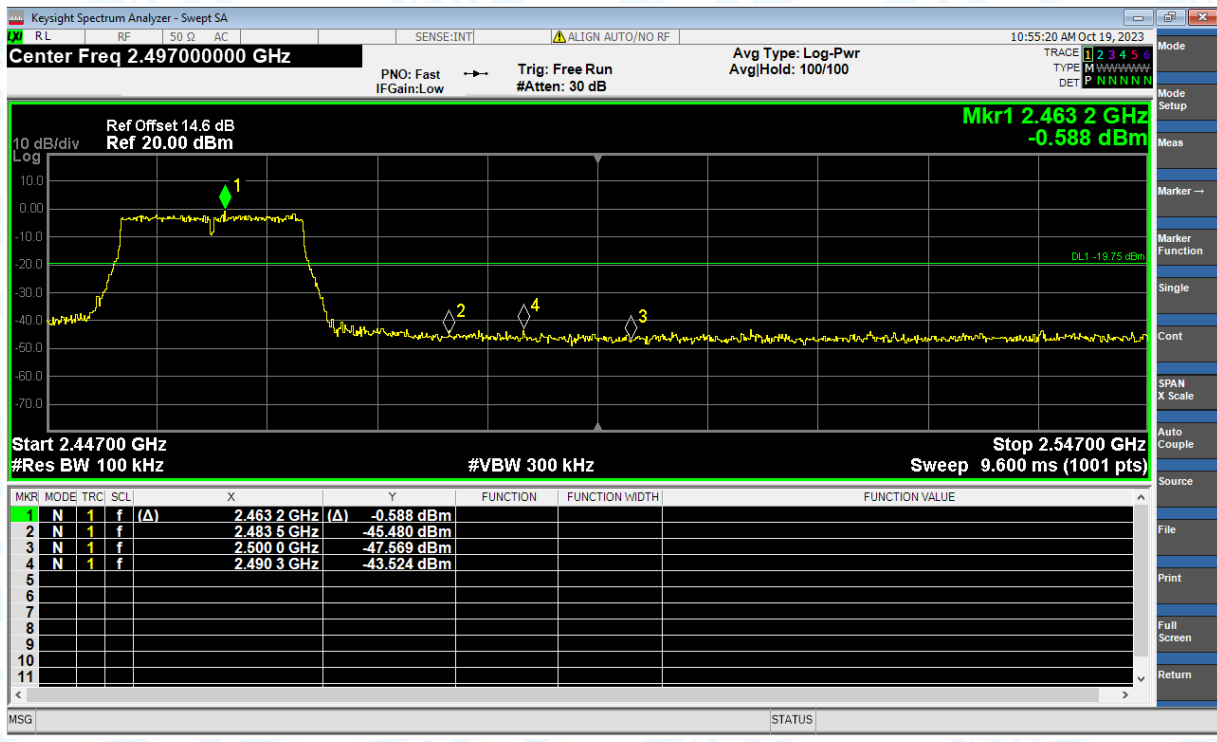




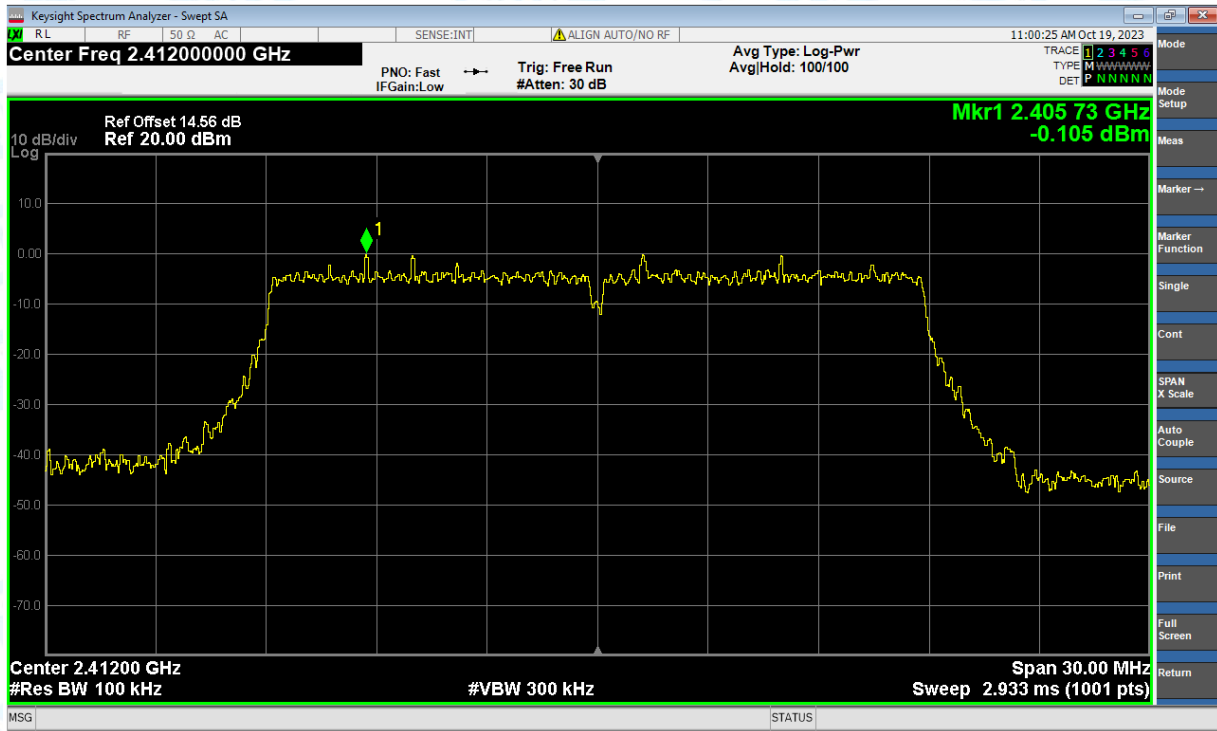
Band Edge NVNT g 2462MHz Ant1 Ref



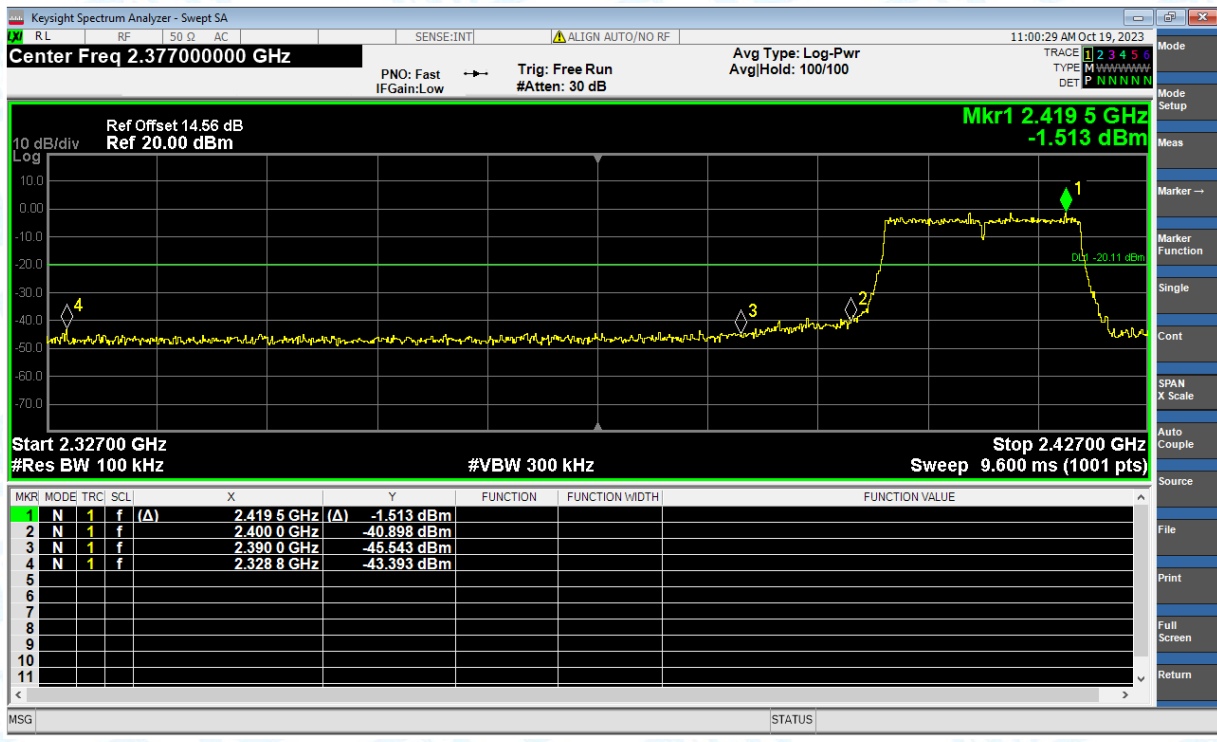
Band Edge NVNT g 2462MHz Ant1 Emission

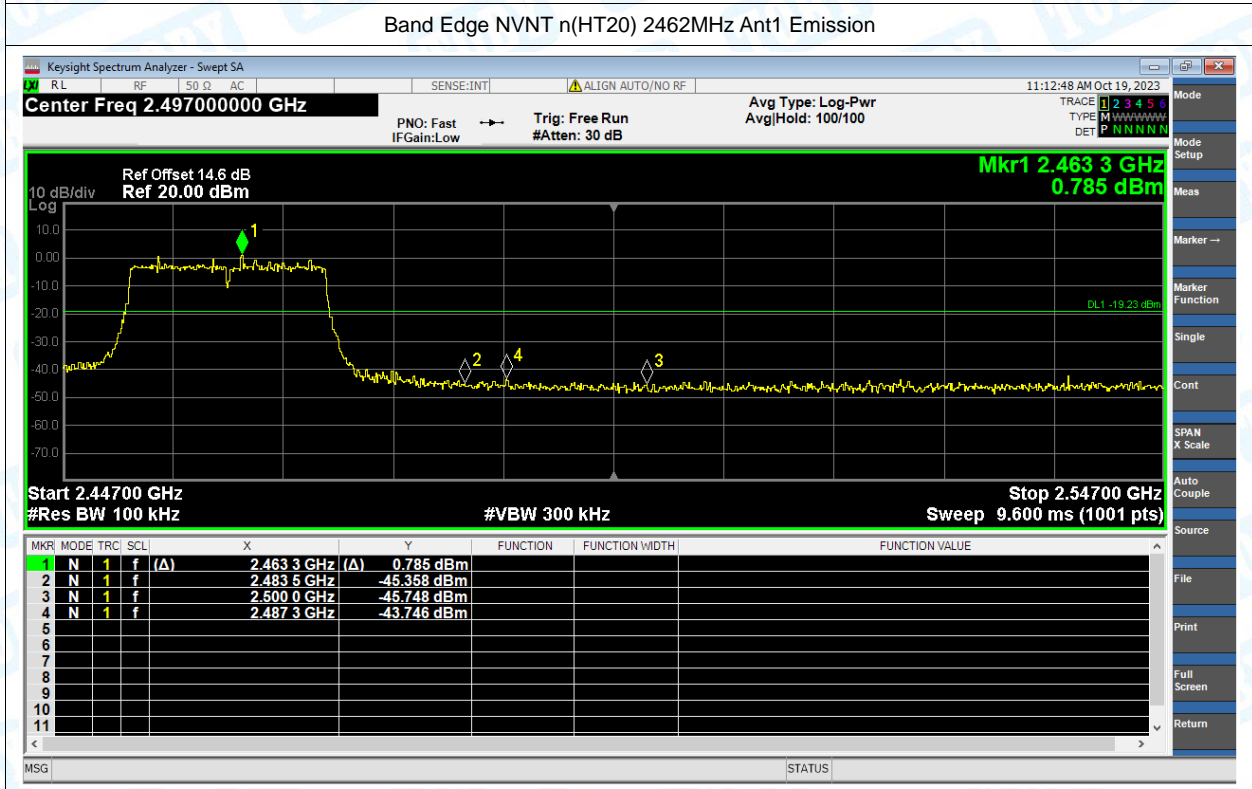
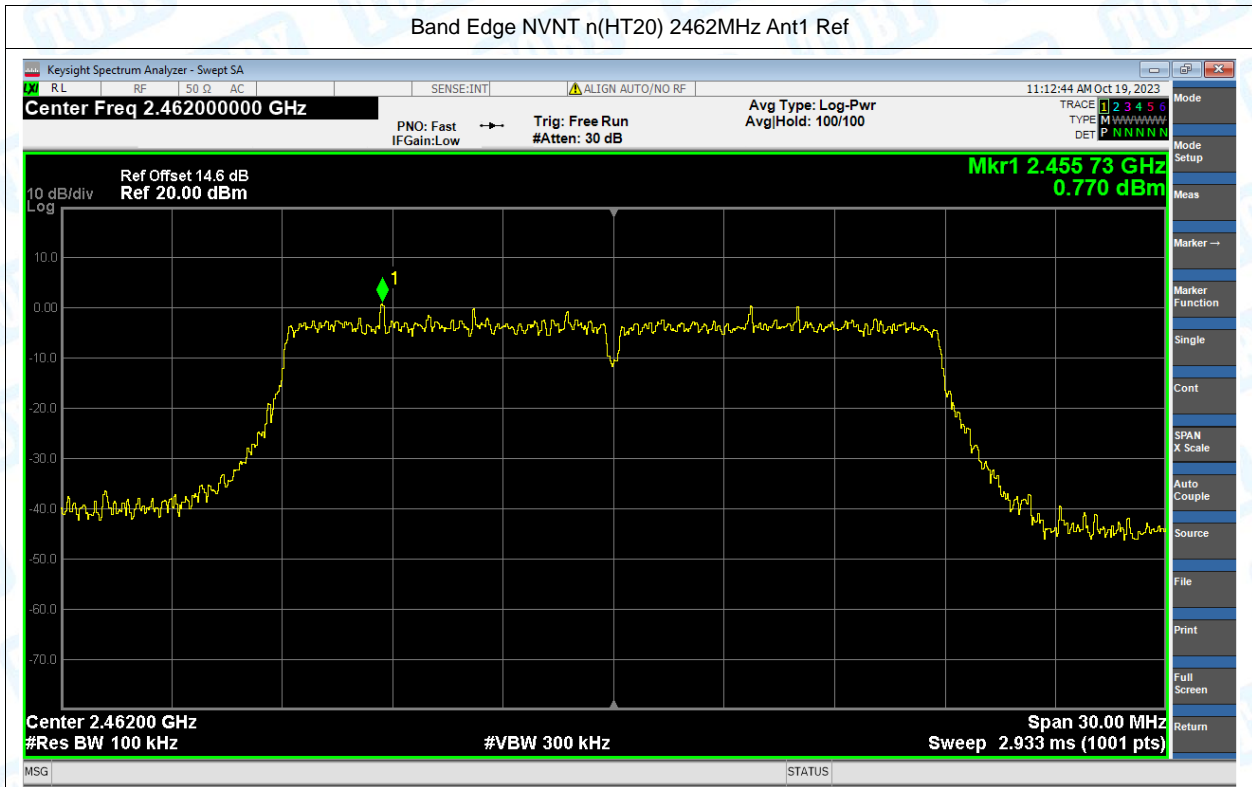


Band Edge NVNT n(HT20) 2412MHz Ant1 Ref



Band Edge NVNT n(HT20) 2412MHz Ant1 Emission



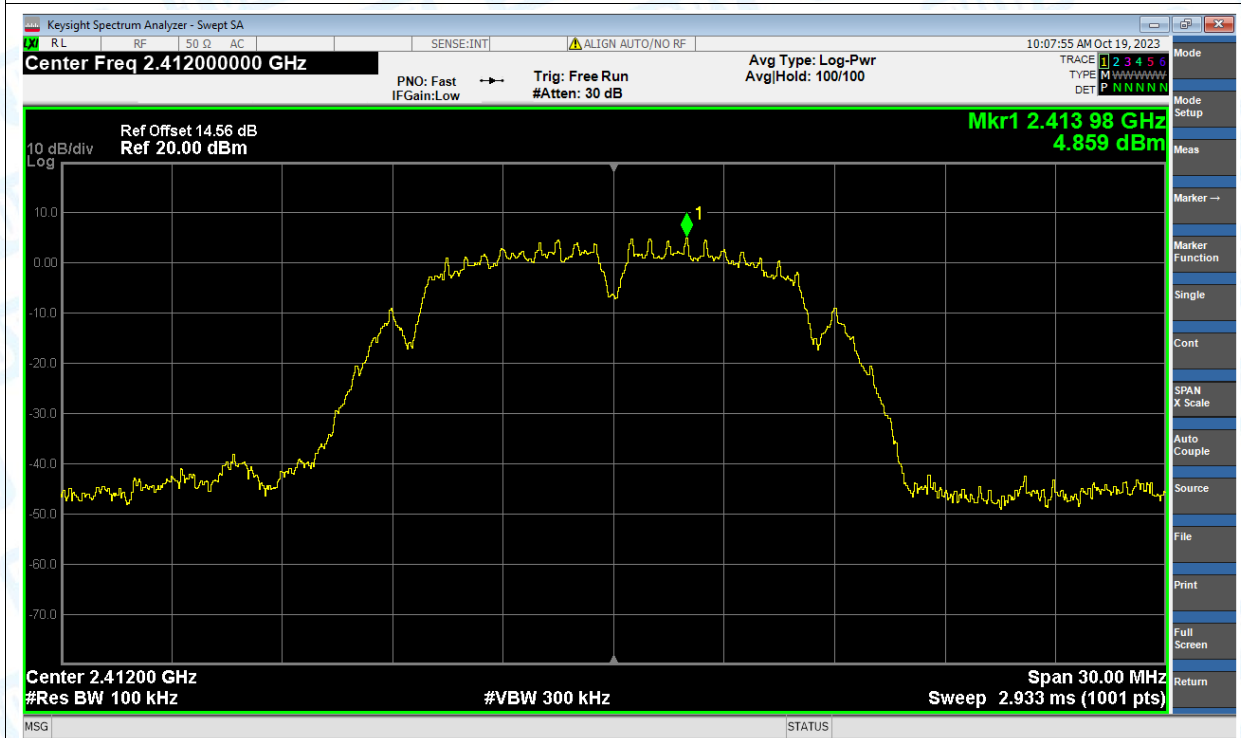


Conducted RF Spurious Emission

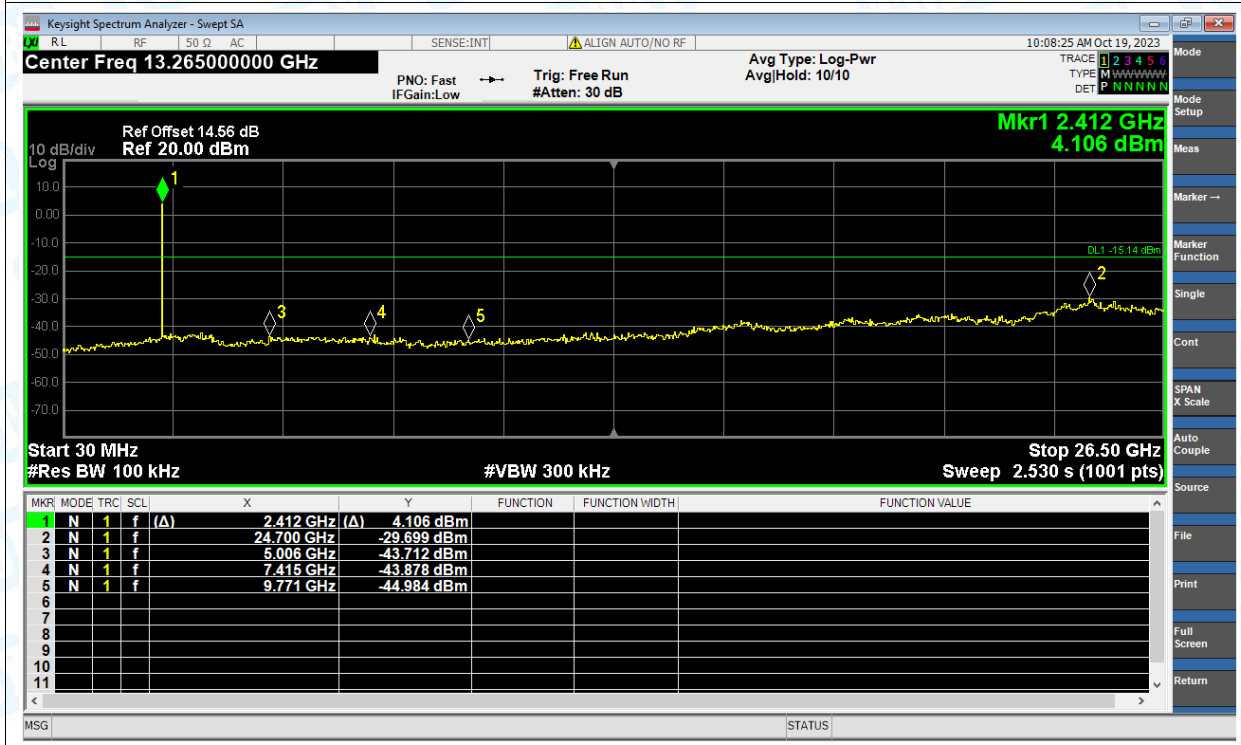
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-34.56	-20	Pass
NVNT	b	2437	Ant1	-36.46	-20	Pass
NVNT	b	2462	Ant1	-35.24	-20	Pass
NVNT	g	2412	Ant1	-29.45	-20	Pass
NVNT	g	2437	Ant1	-34.08	-20	Pass
NVNT	g	2462	Ant1	-30.68	-20	Pass
NVNT	n(HT20)	2412	Ant1	-28.86	-20	Pass
NVNT	n(HT20)	2437	Ant1	-35.09	-20	Pass
NVNT	n(HT20)	2462	Ant1	-30.19	-20	Pass

Test Graphs

Tx. Spurious NVNT b 2412MHz Ant1 Ref



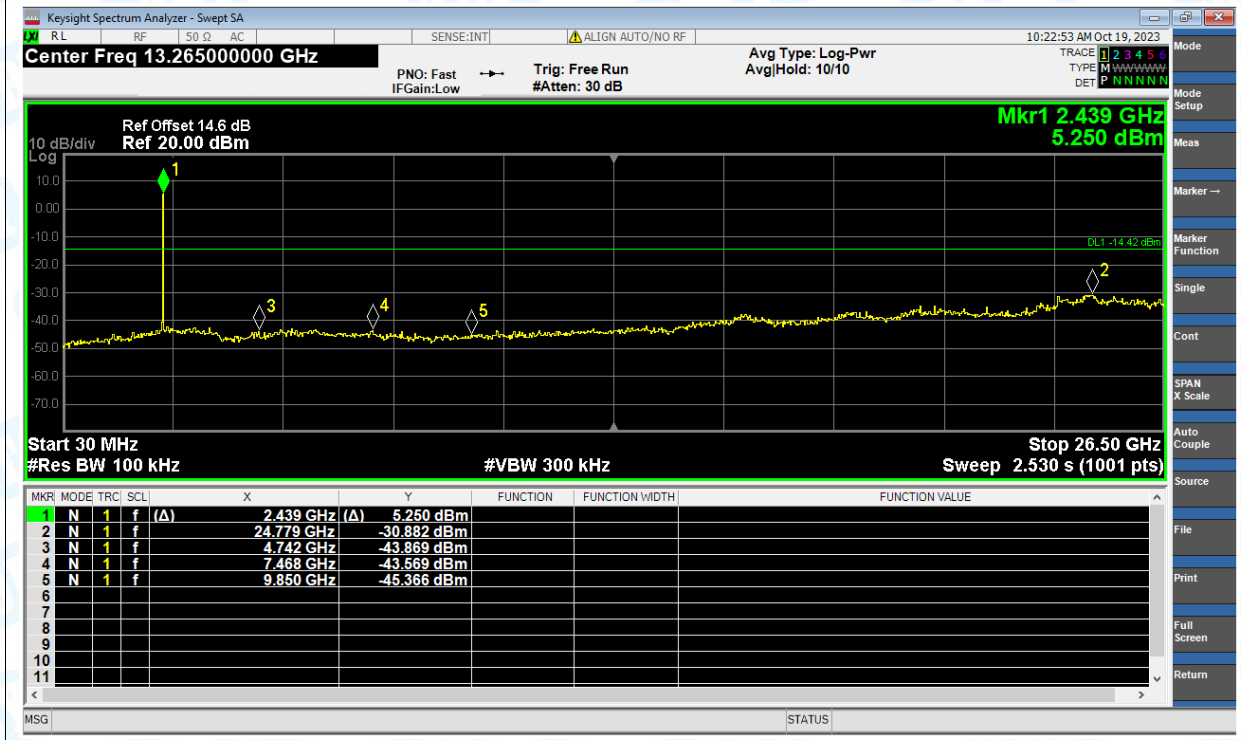
Tx. Spurious NVNT b 2412MHz Ant1 Emission



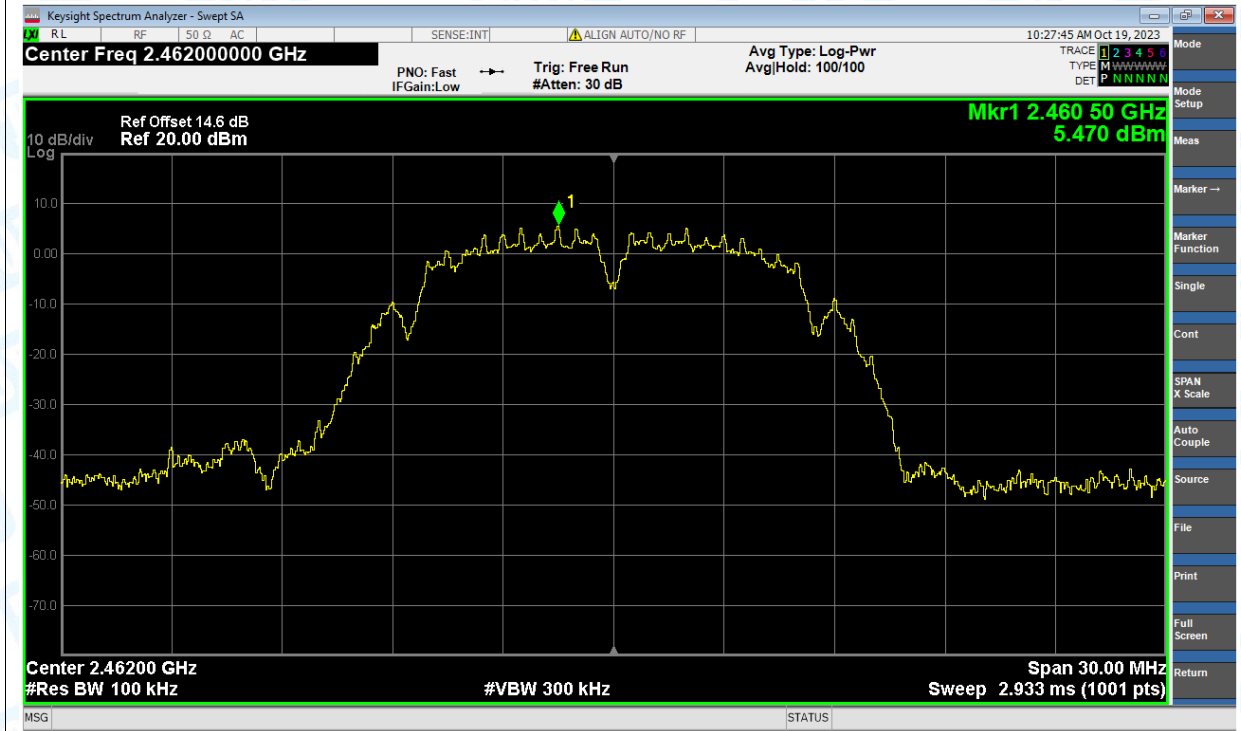
Tx. Spurious NVNT b 2437MHz Ant1 Ref



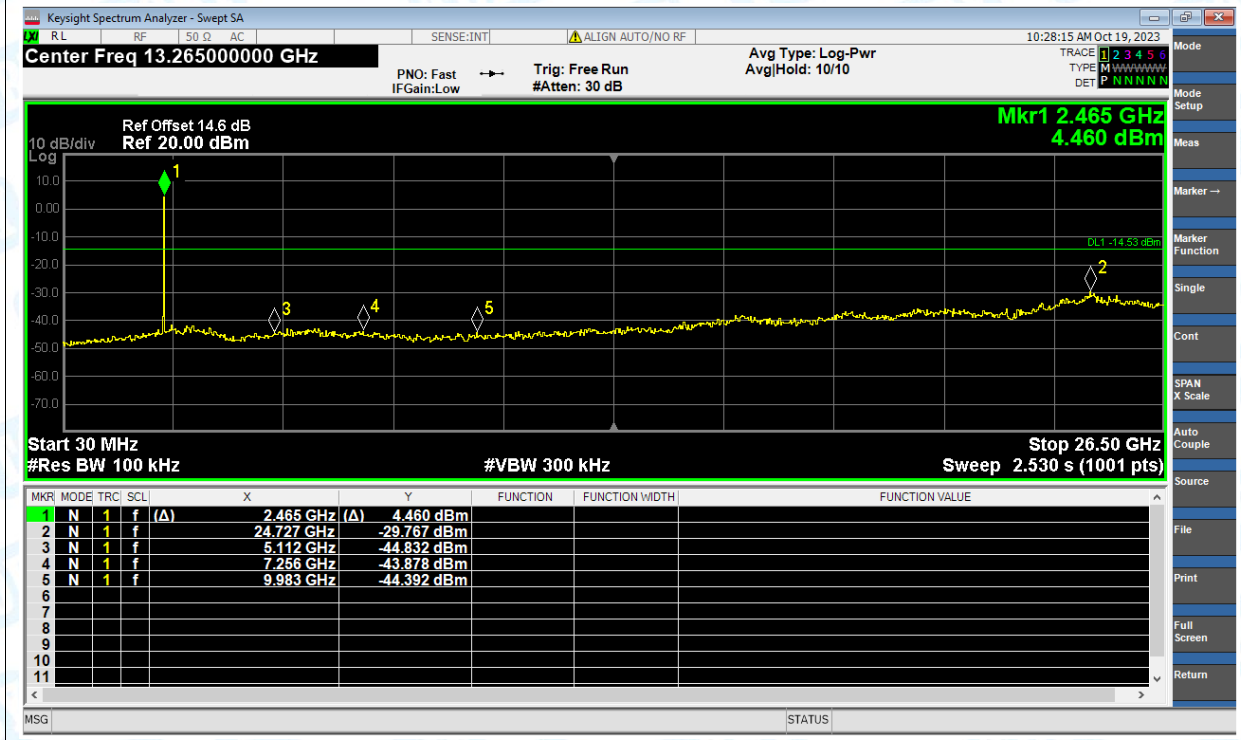
Tx. Spurious NVNT b 2437MHz Ant1 Emission



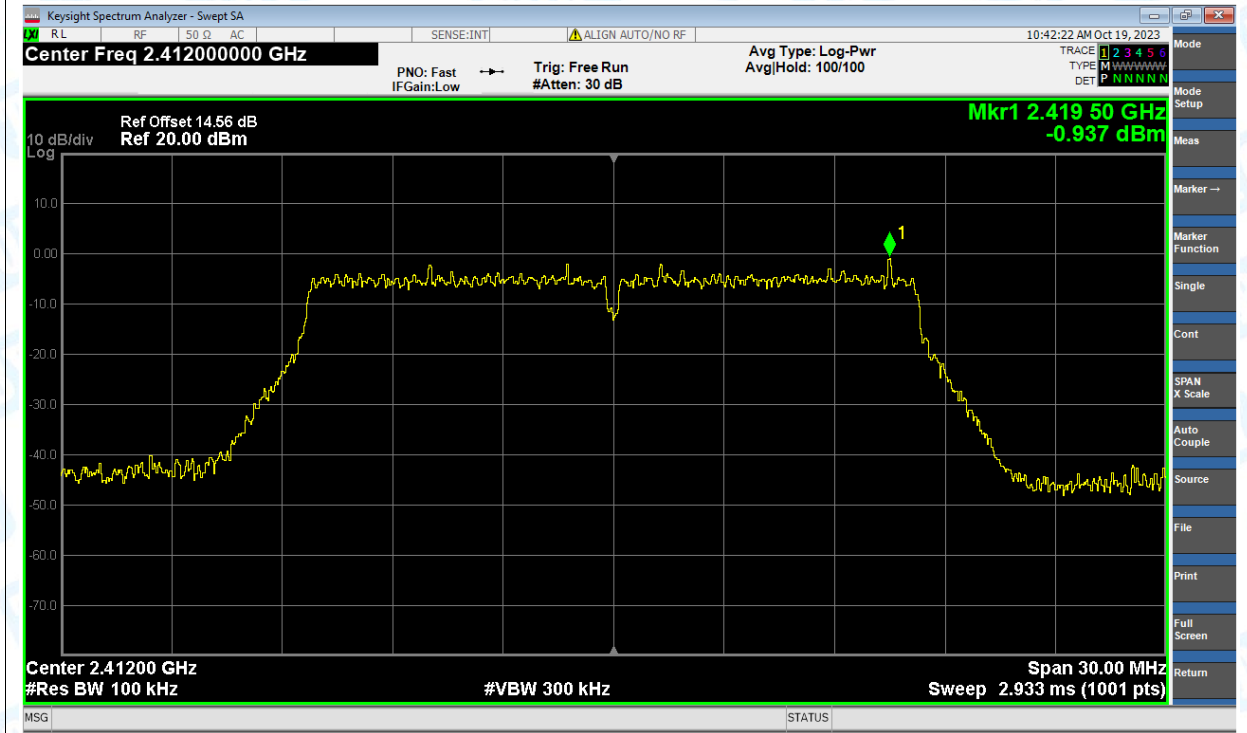
Tx. Spurious NVNT b 2462MHz Ant1 Ref



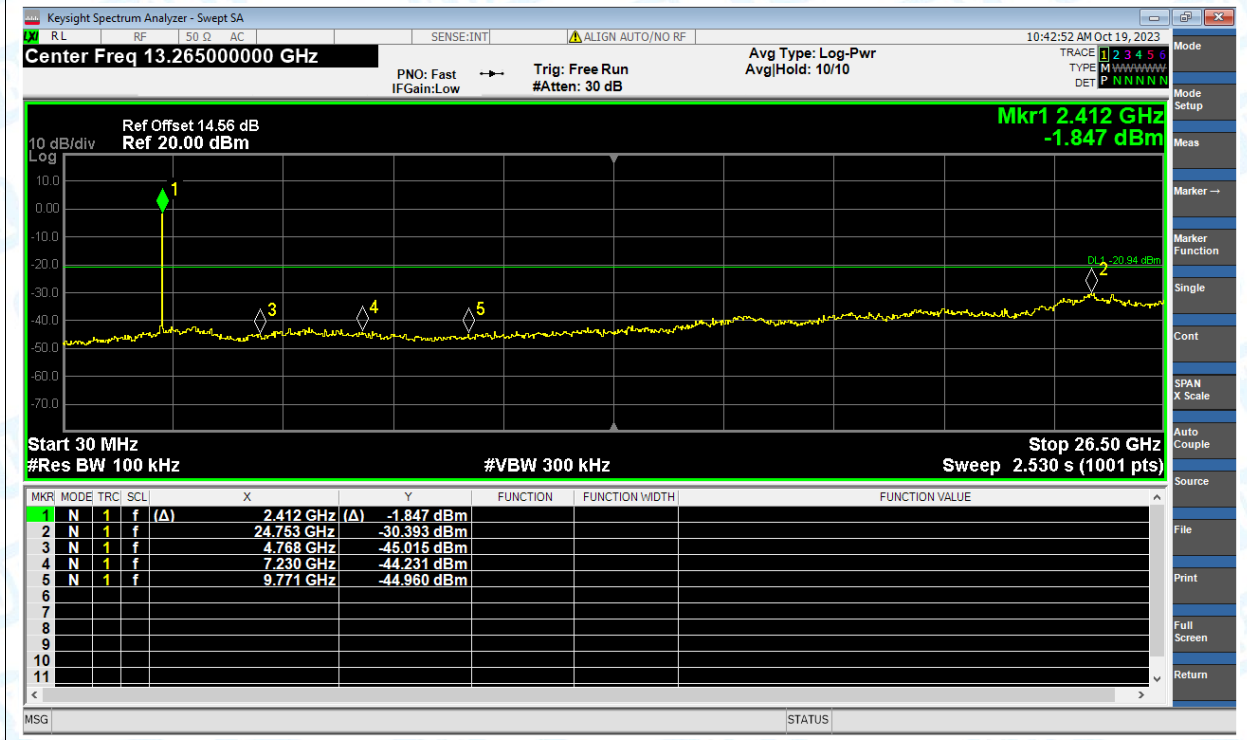
Tx. Spurious NVNT b 2462MHz Ant1 Emission



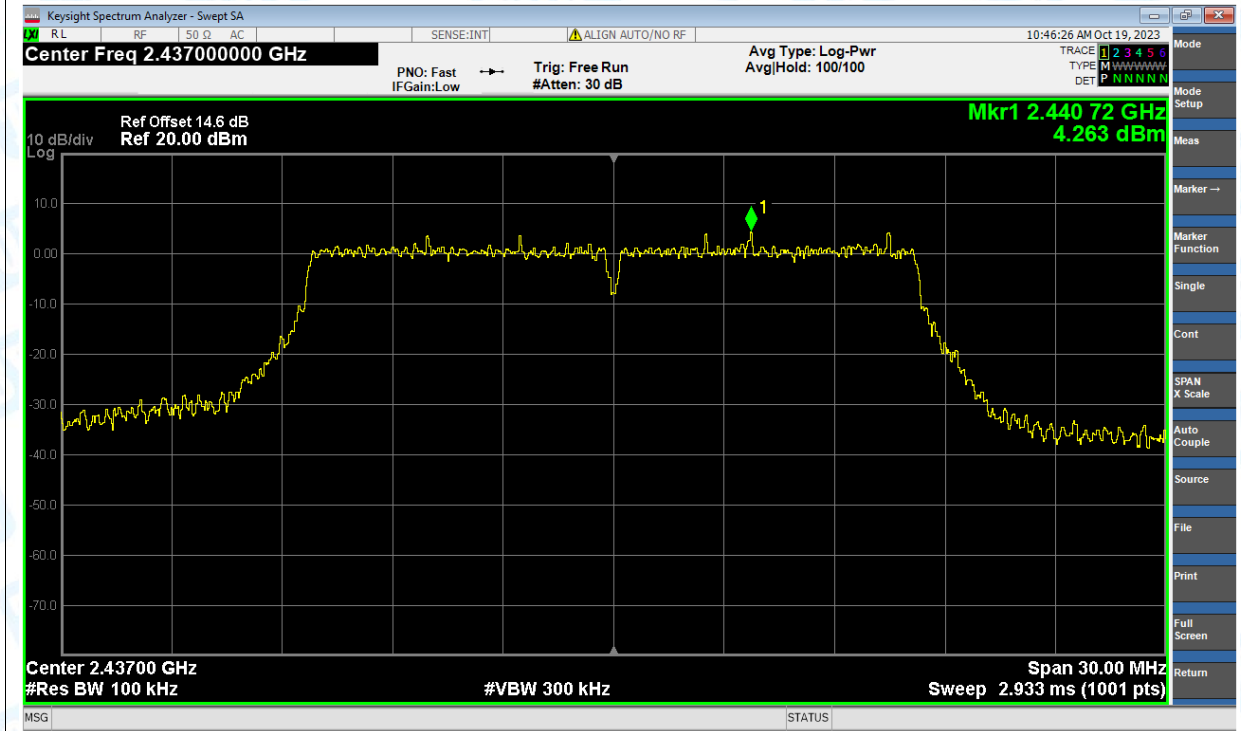
Tx. Spurious NVNT g 2412MHz Ant1 Ref



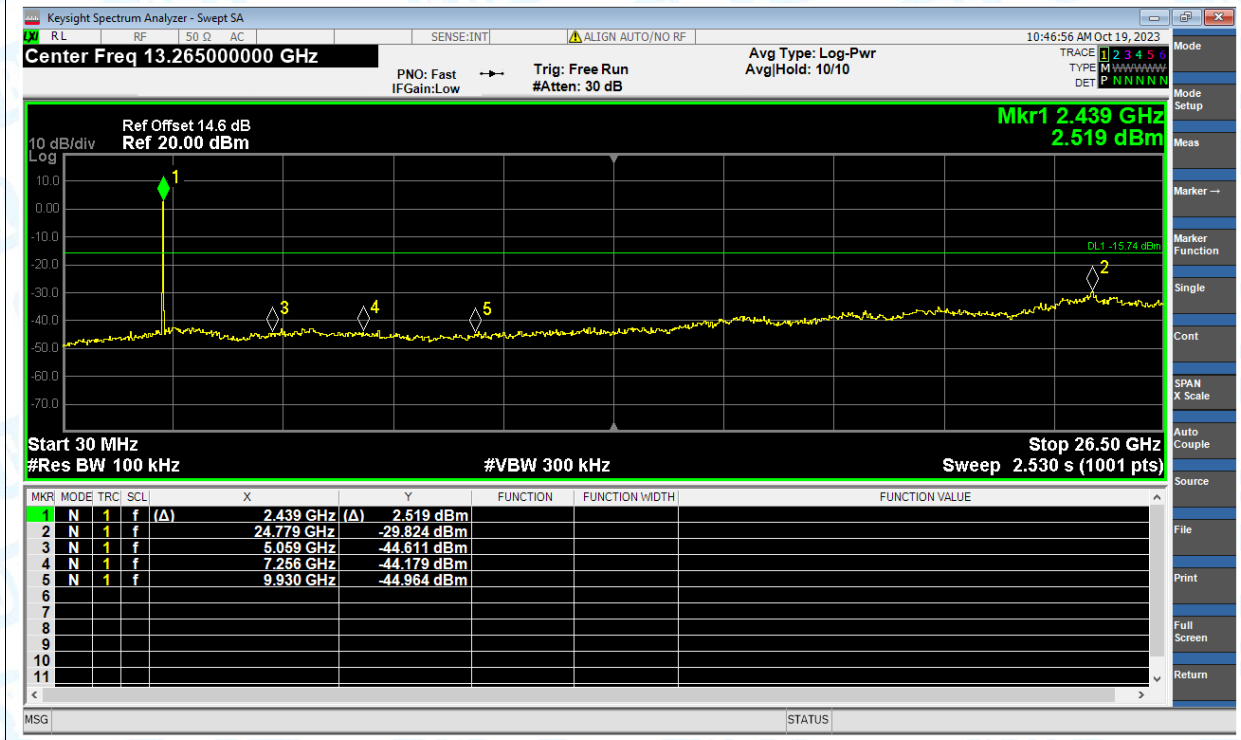
Tx. Spurious NVNT g 2412MHz Ant1 Emission



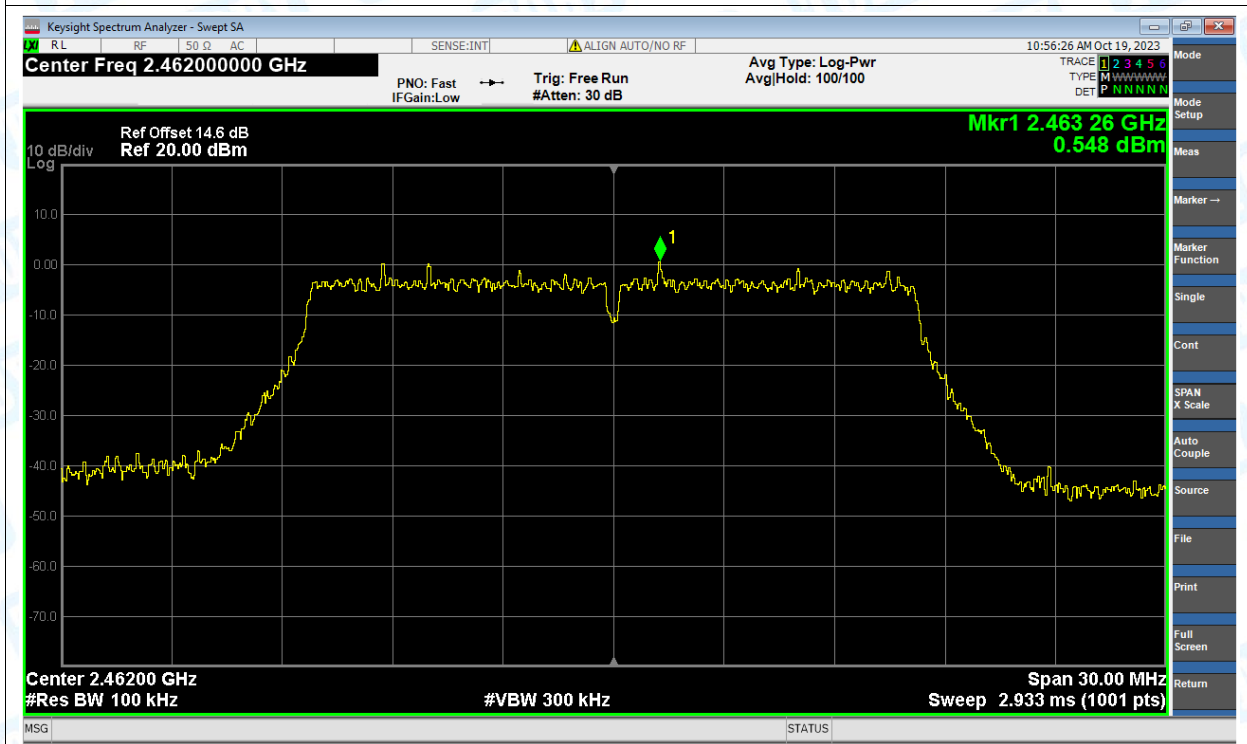
Tx. Spurious NVNT g 2437MHz Ant1 Ref



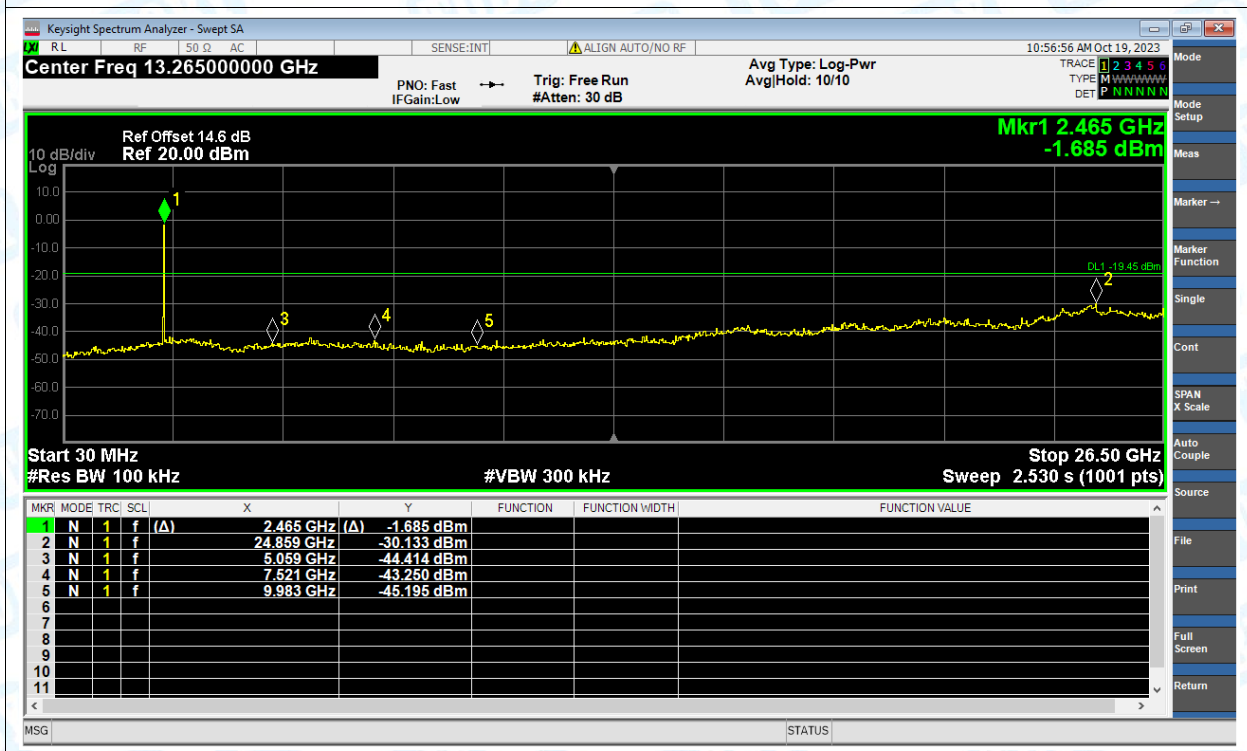
Tx. Spurious NVNT g 2437MHz Ant1 Emission



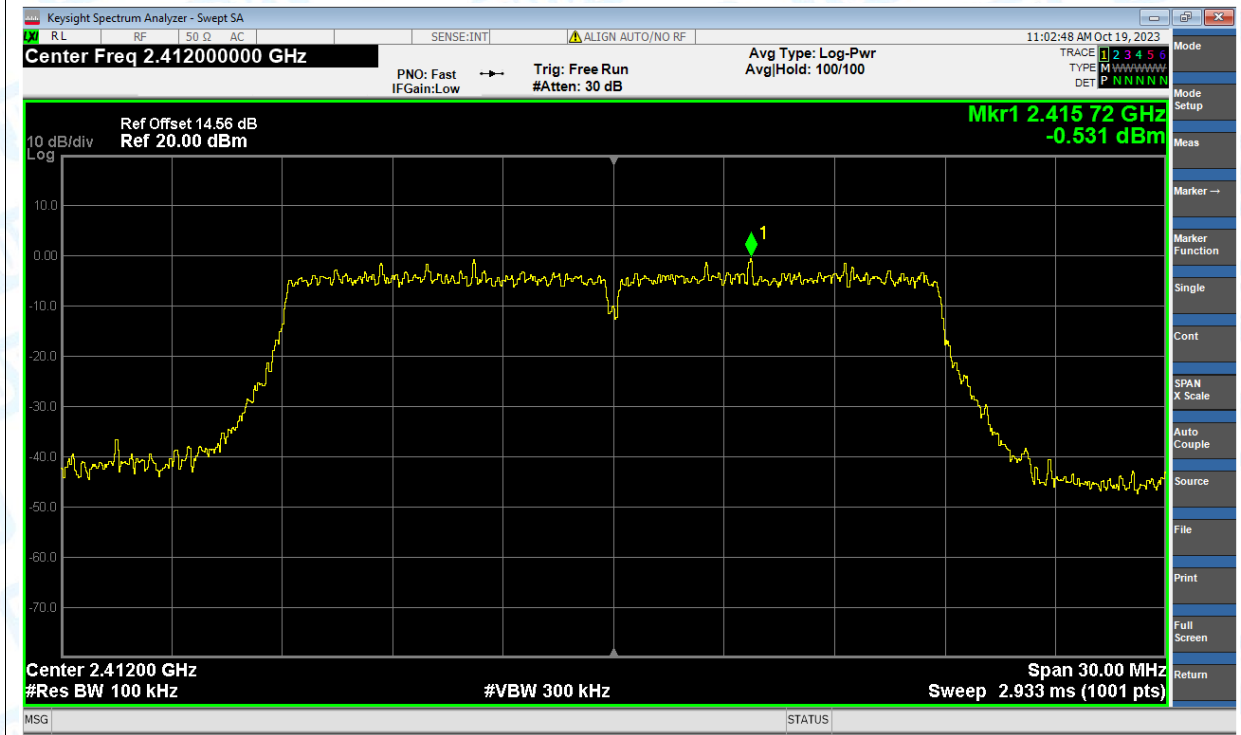
Tx. Spurious NVNT g 2462MHz Ant1 Ref



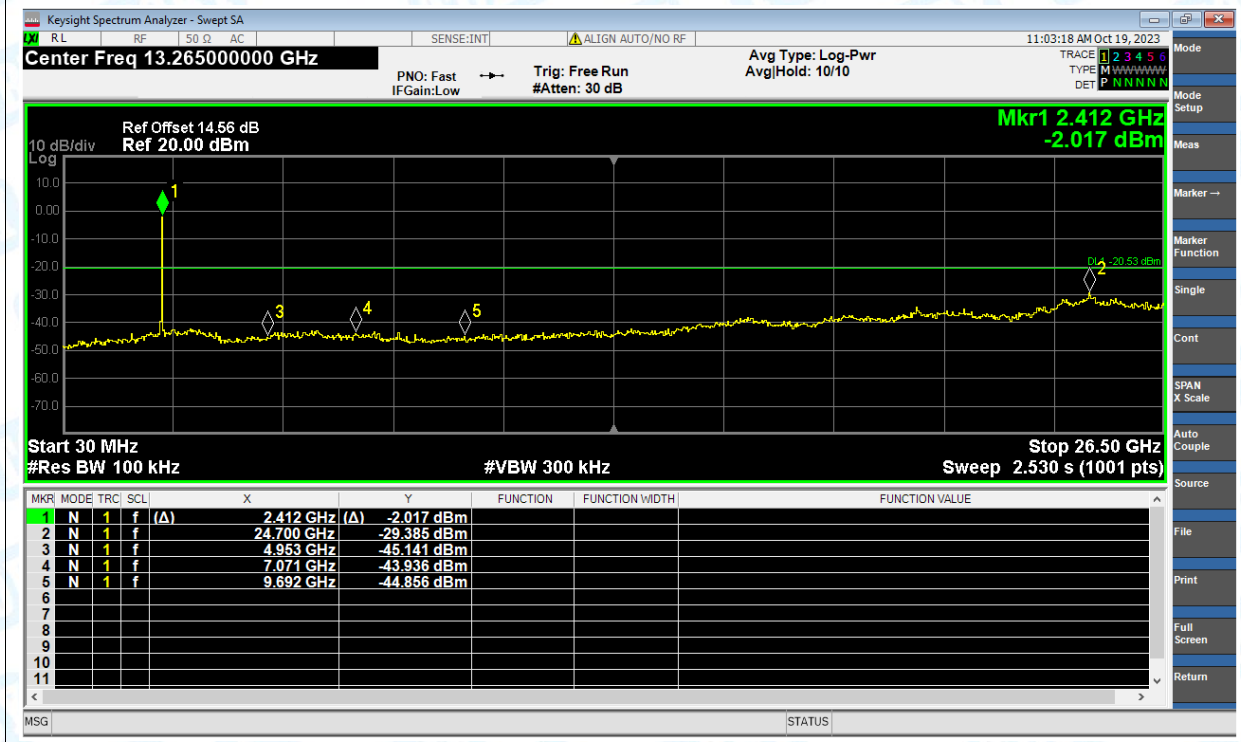
Tx. Spurious NVNT g 2462MHz Ant1 Emission



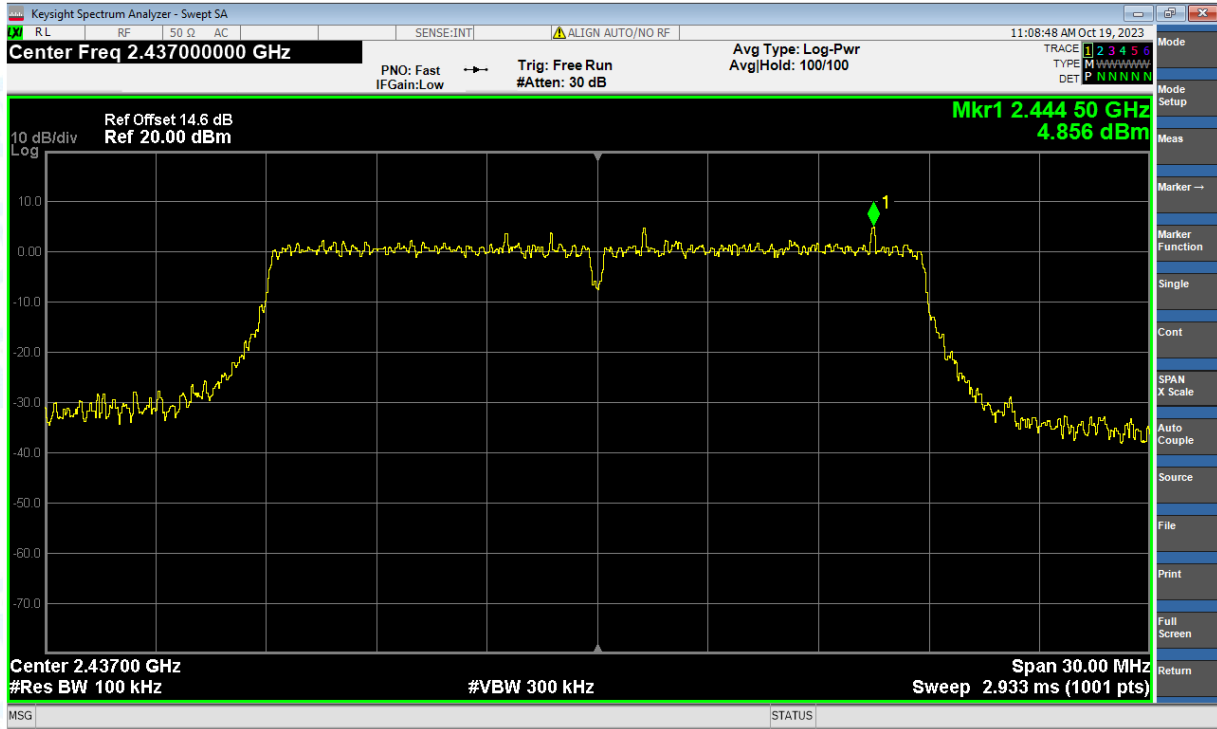
Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Ref



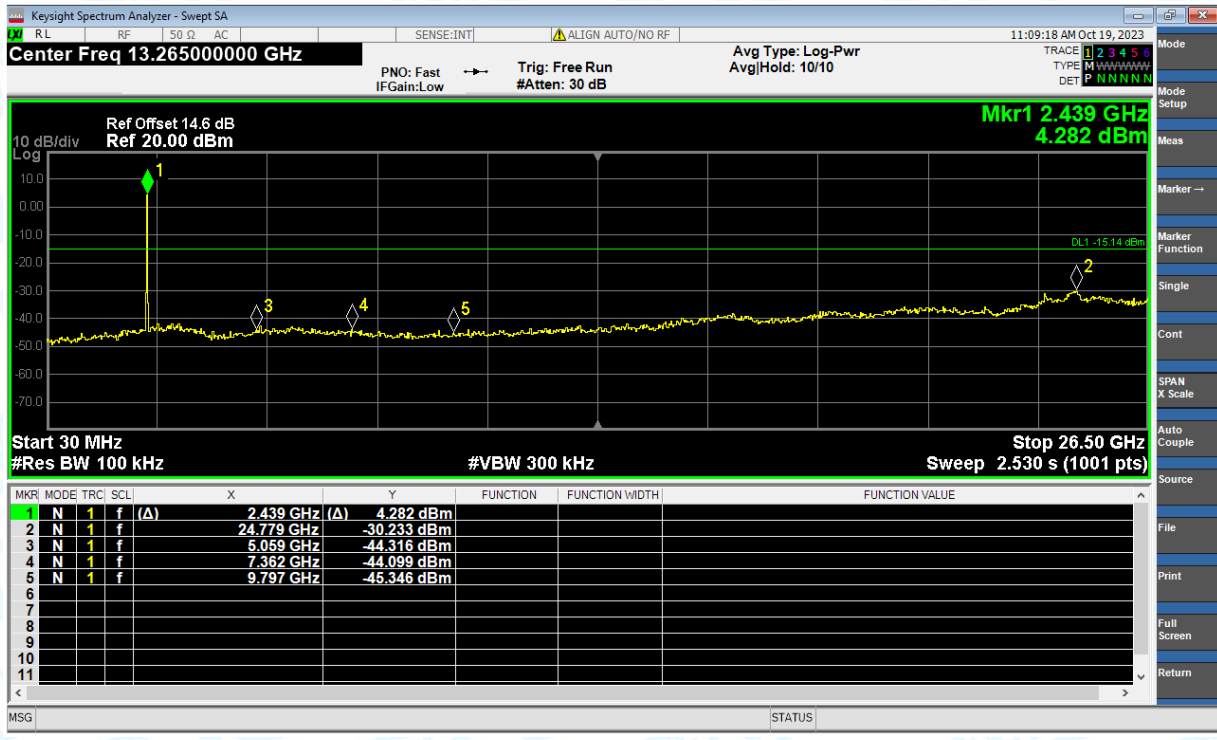
Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Emission



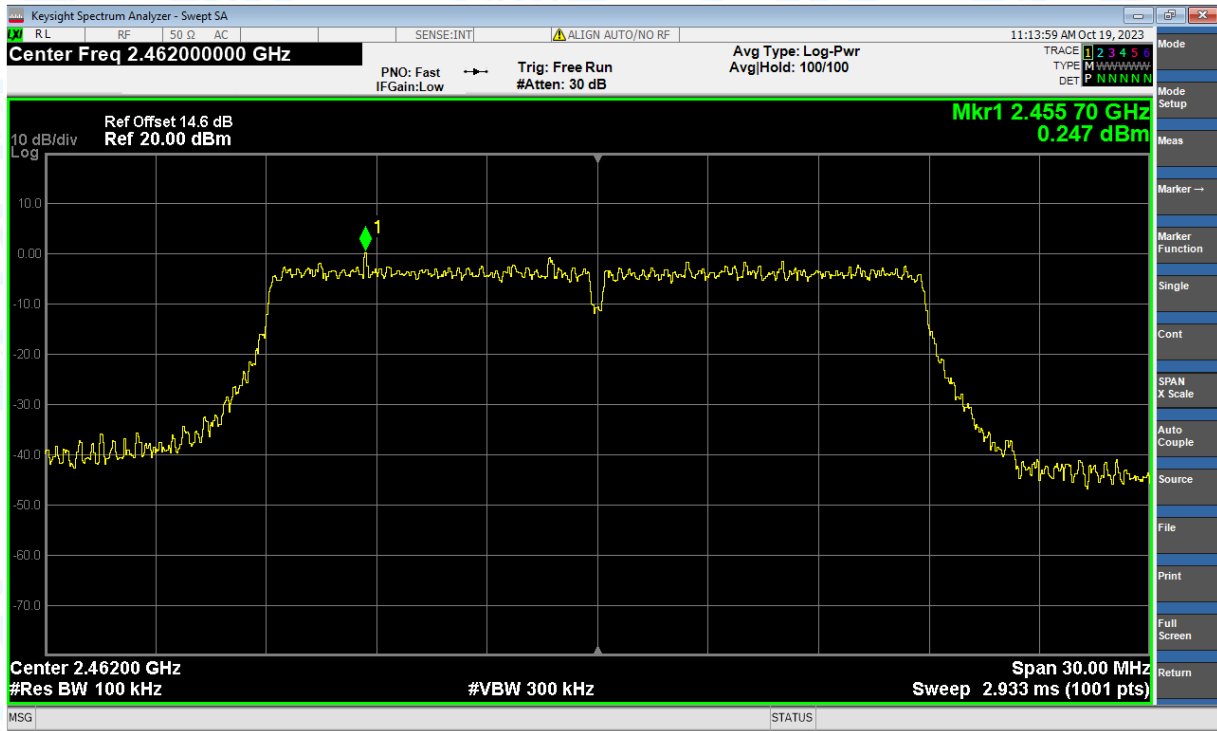
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



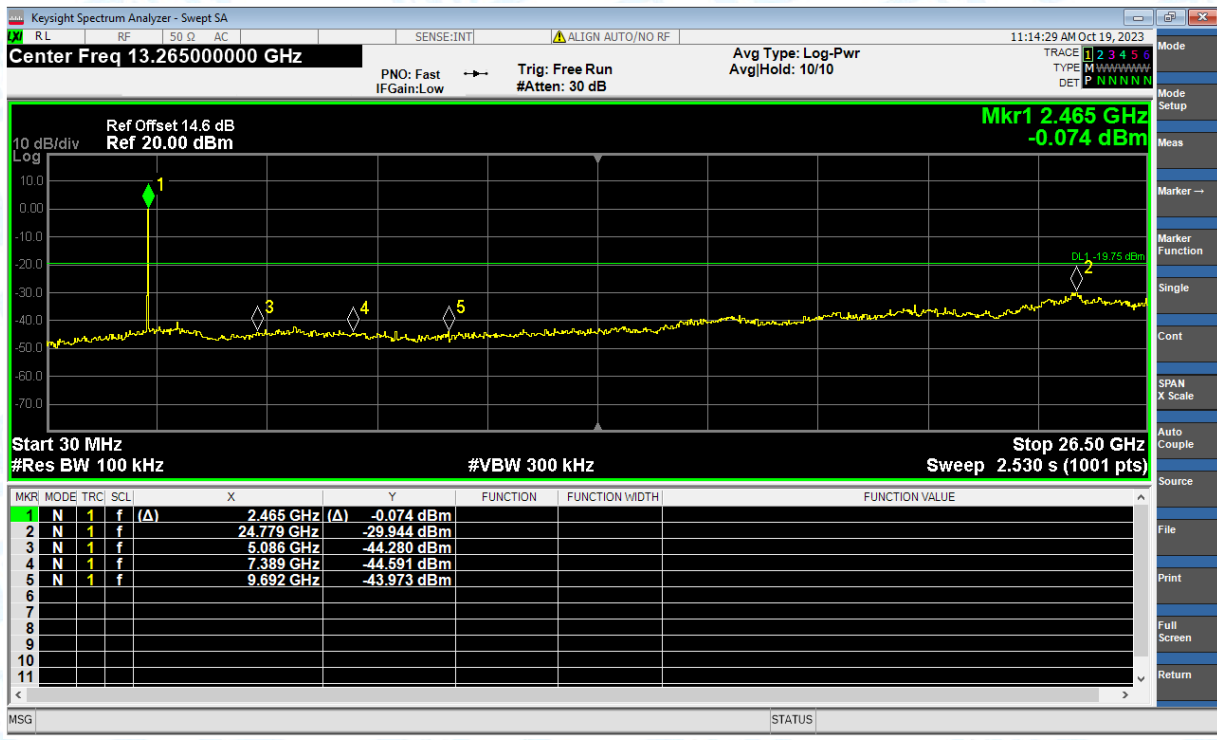
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Emission



Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Ref



Tx. Spurious NVNT n(HT20) 2462MHz Ant1 Emission

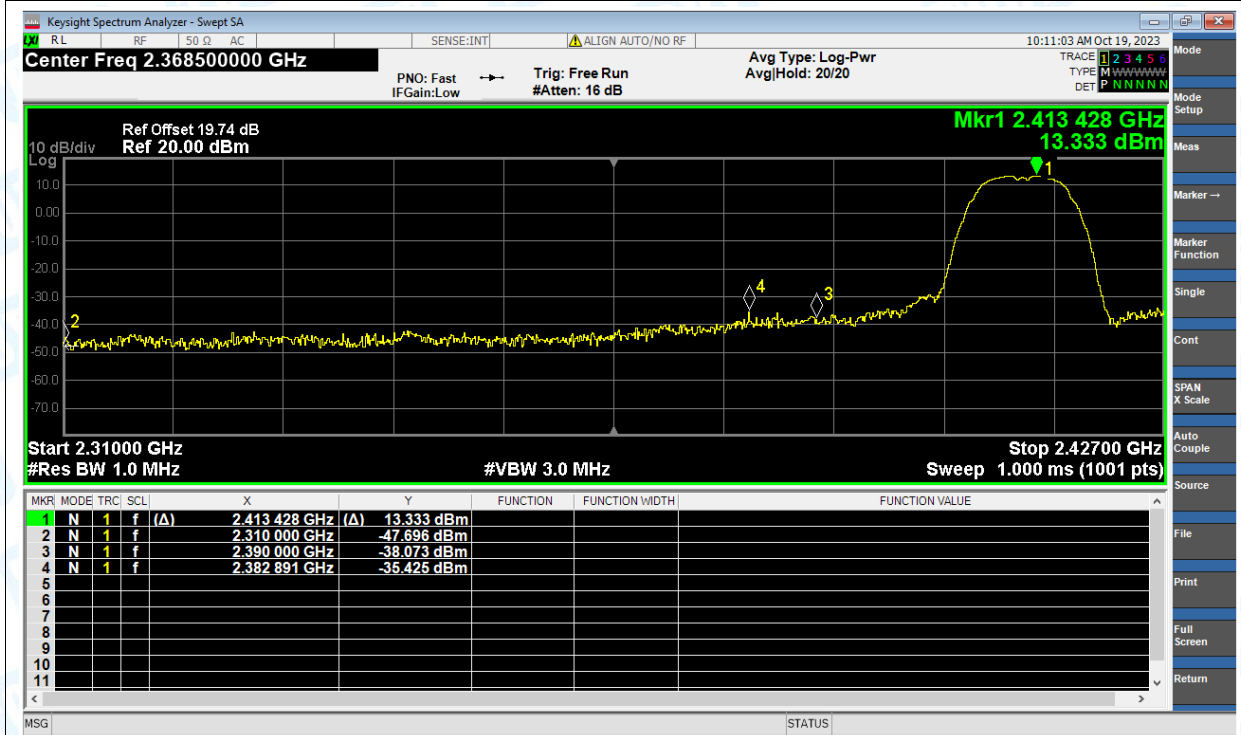


Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	b	2412	Ant1	2310	-47.7	2.6	50.16	Peak	74	Pass
NVNT	b	2412	Ant1	2310	-55.68	2.6	42.18	Average	54	Pass
NVNT	b	2412	Ant1	2382.891	-35.42	2.6	62.44	Peak	74	Pass
NVNT	b	2412	Ant1	2389.209	-47.23	2.6	50.63	Average	54	Pass
NVNT	b	2412	Ant1	2390	-38.07	2.6	59.79	Peak	74	Pass
NVNT	b	2412	Ant1	2390	-47.23	2.6	50.63	Average	54	Pass
NVNT	b	2462	Ant1	2483.5	-37.76	2.6	60.1	Peak	74	Pass
NVNT	b	2462	Ant1	2483.5	-46.56	2.6	51.3	Average	54	Pass
NVNT	b	2462	Ant1	2485.584	-35.44	2.6	62.42	Peak	74	Pass
NVNT	b	2462	Ant1	2483.517	-46.56	2.6	51.3	Average	54	Pass
NVNT	b	2462	Ant1	2500	-40.26	2.6	57.6	Peak	74	Pass
NVNT	b	2462	Ant1	2500	-48.01	2.6	49.85	Average	54	Pass
NVNT	g	2412	Ant1	2310	-45.71	2.6	52.15	Peak	74	Pass
NVNT	g	2412	Ant1	2310	-55.81	2.6	42.05	Average	54	Pass
NVNT	g	2412	Ant1	2389.911	-35.53	2.6	62.33	Peak	74	Pass
NVNT	g	2412	Ant1	2389.911	-46.94	2.6	50.92	Average	54	Pass
NVNT	g	2412	Ant1	2390	-38.33	2.6	59.53	Peak	74	Pass
NVNT	g	2412	Ant1	2390	-46.88	2.6	50.98	Average	54	Pass
NVNT	g	2462	Ant1	2483.5	-37.29	2.6	60.57	Peak	74	Pass
NVNT	g	2462	Ant1	2483.5	-46.99	2.6	50.87	Average	54	Pass
NVNT	g	2462	Ant1	2483.676	-35.64	2.6	62.22	Peak	74	Pass
NVNT	g	2462	Ant1	2483.517	-46.99	2.6	50.87	Average	54	Pass
NVNT	g	2462	Ant1	2500	-42.93	2.6	54.93	Peak	74	Pass
NVNT	g	2462	Ant1	2500	-52.13	2.6	45.73	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2310	-46.97	2.6	50.89	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2310	-57.48	2.6	40.38	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2387.337	-35.26	2.6	62.6	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2389.911	-46.86	2.6	51	Average	54	Pass
NVNT	n(HT20)	2412	Ant1	2390	-35.43	2.6	62.43	Peak	74	Pass
NVNT	n(HT20)	2412	Ant1	2390	-46.77	2.6	51.09	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-39.97	2.6	57.89	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.5	-48.77	2.6	49.09	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2484.365	-35.3	2.6	62.56	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2483.57	-48.76	2.6	49.1	Average	54	Pass
NVNT	n(HT20)	2462	Ant1	2500	-44.46	2.6	53.4	Peak	74	Pass
NVNT	n(HT20)	2462	Ant1	2500	-53.84	2.6	44.02	Average	54	Pass

Test Graphs

Restrict Band NVNT b 2412MHz Ant1 Peak



Restrict Band NVNT b 2412MHz Ant1 Average



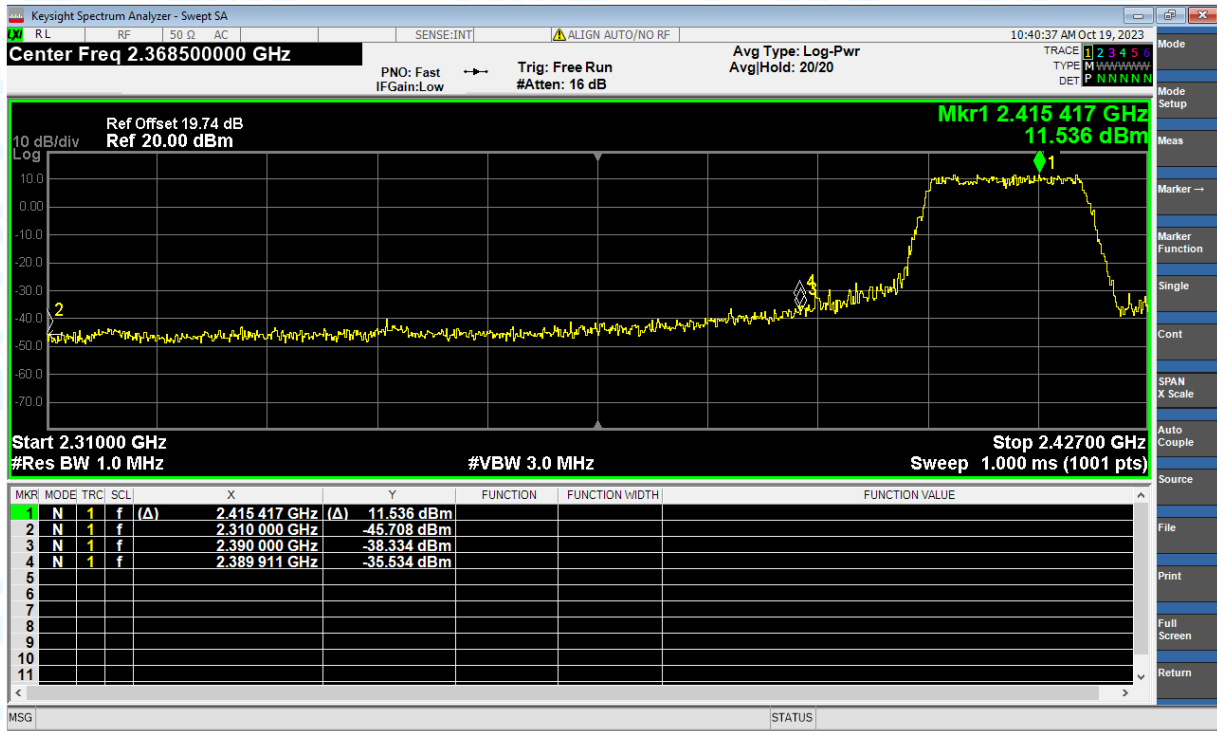
Restrict Band NVNT b 2462MHz Ant1 Peak



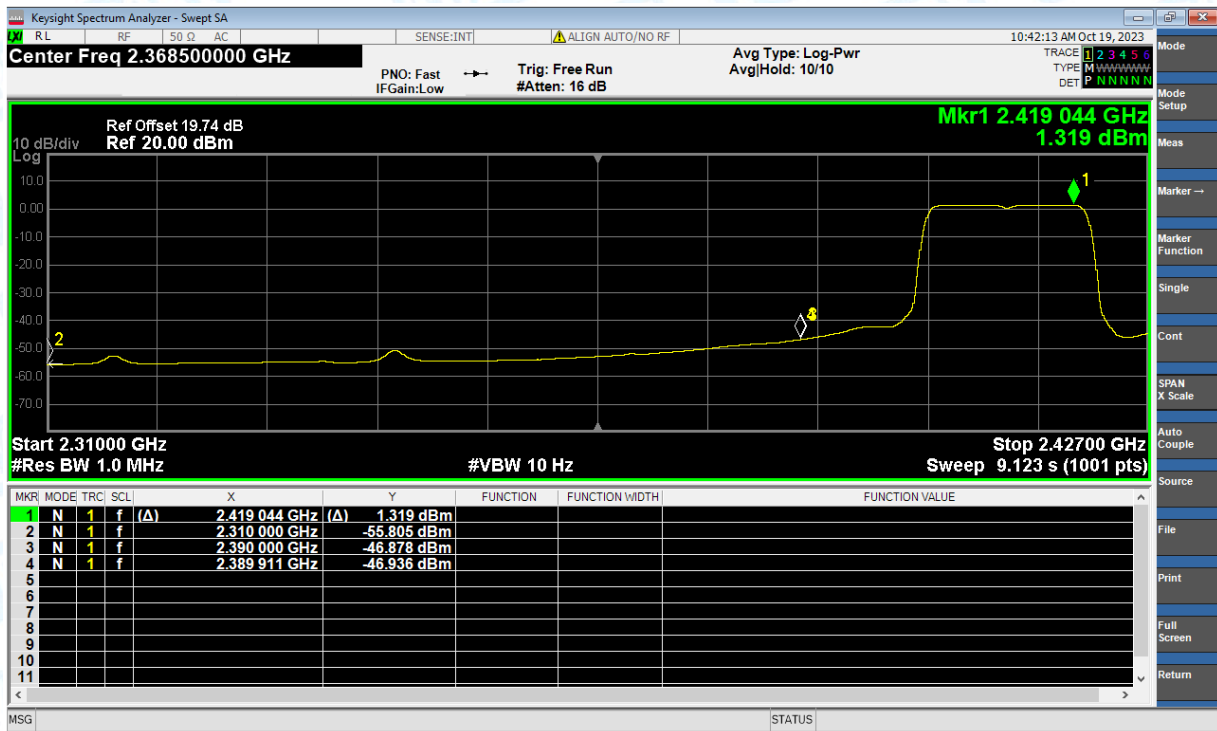
Restrict Band NVNT b 2462MHz Ant1 Average



Restrict Band NVNT g 2412MHz Ant1 Peak



Restrict Band NVNT g 2412MHz Ant1 Average



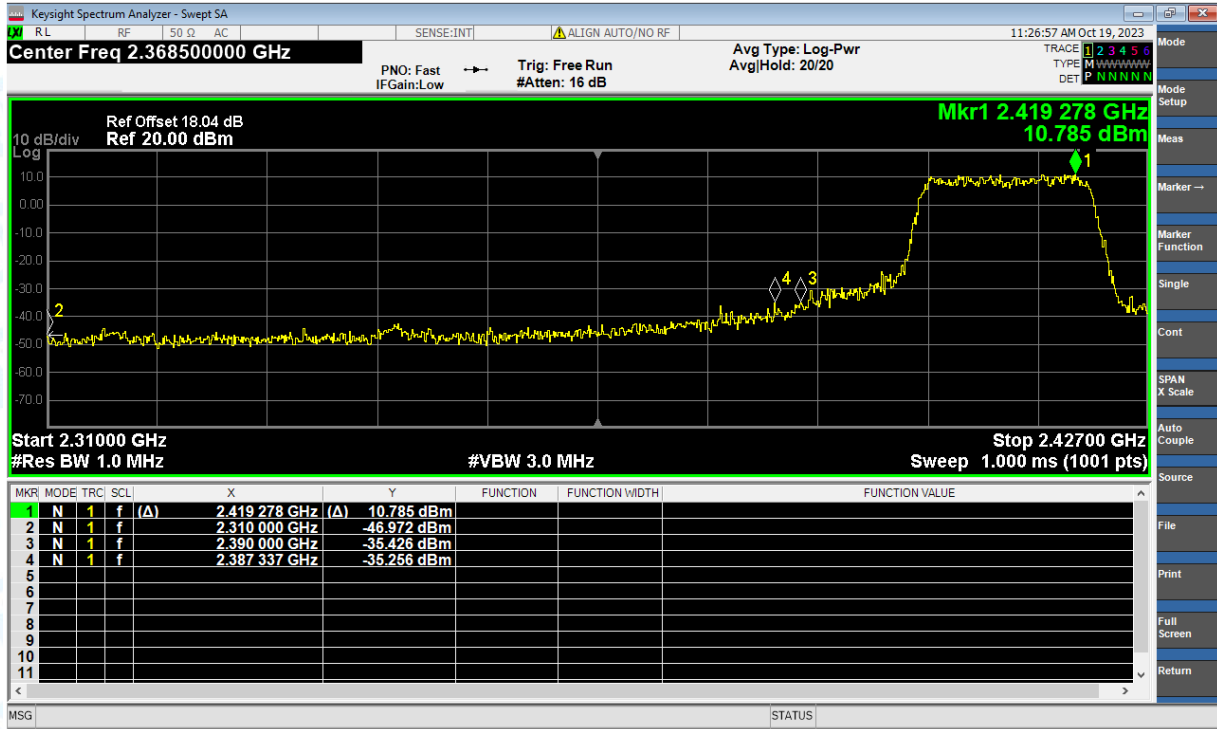
Restrict Band NVNT g 2462MHz Ant1 Peak



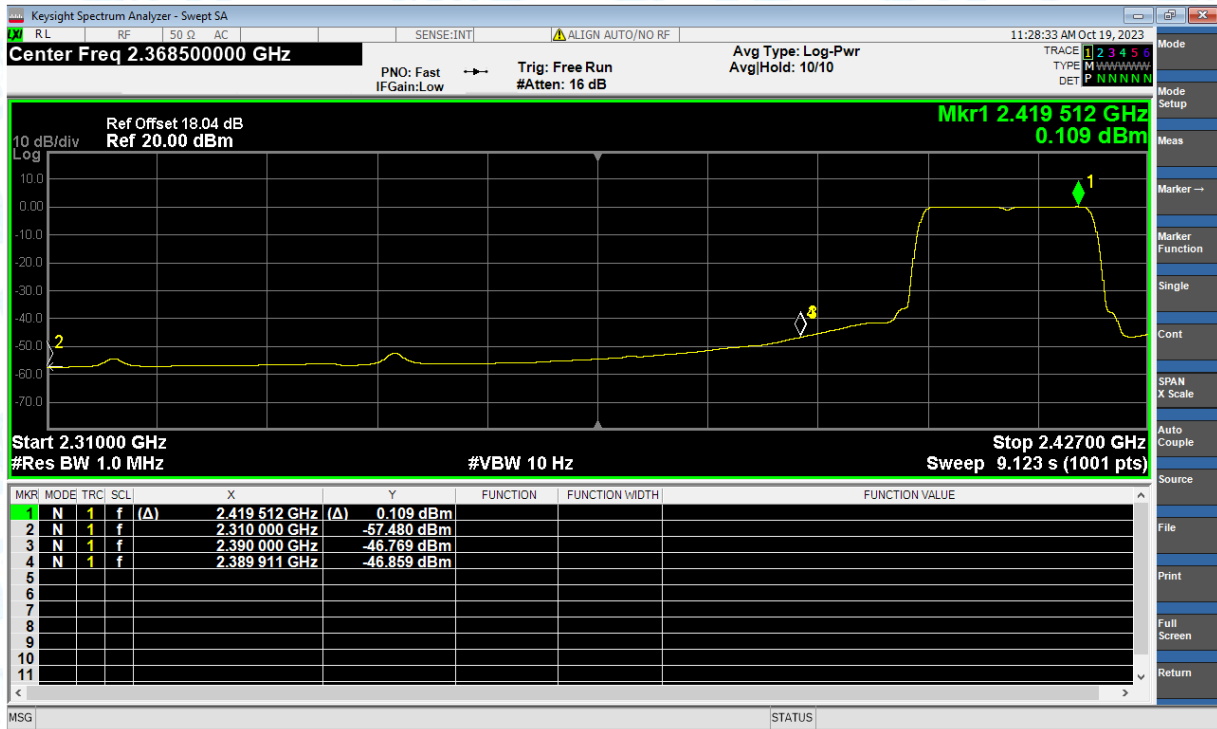
Restrict Band NVNT g 2462MHz Ant1 Average



Restrict Band NVNT n(HT20) 2412MHz Ant1 Peak



Restrict Band NVNT n(HT20) 2412MHz Ant1 Average



Restrict Band NVNT n(HT20) 2462MHz Ant1 Peak



Restrict Band NVNT n(HT20) 2462MHz Ant1 Average

