

RF Test Data for 2.4G WiFi (Conducted Measurements)

General Description of EUT	
Product Name:	WiFi & BT combo module
Test Model:	EWN-5330SNN1AC
Sample ID:	HC-C-202509-0218-02-01
Environmental Conditions	
Temperature:	25.6℃
Relative Humidity:	48.6%
Test Voltage:	DC 12V
Test Engineer:	Lily zhang
Note: For a more detailed features description, please refer to the report TBR-C-202509-0218-31 The report only show the worst case data.	

Contents

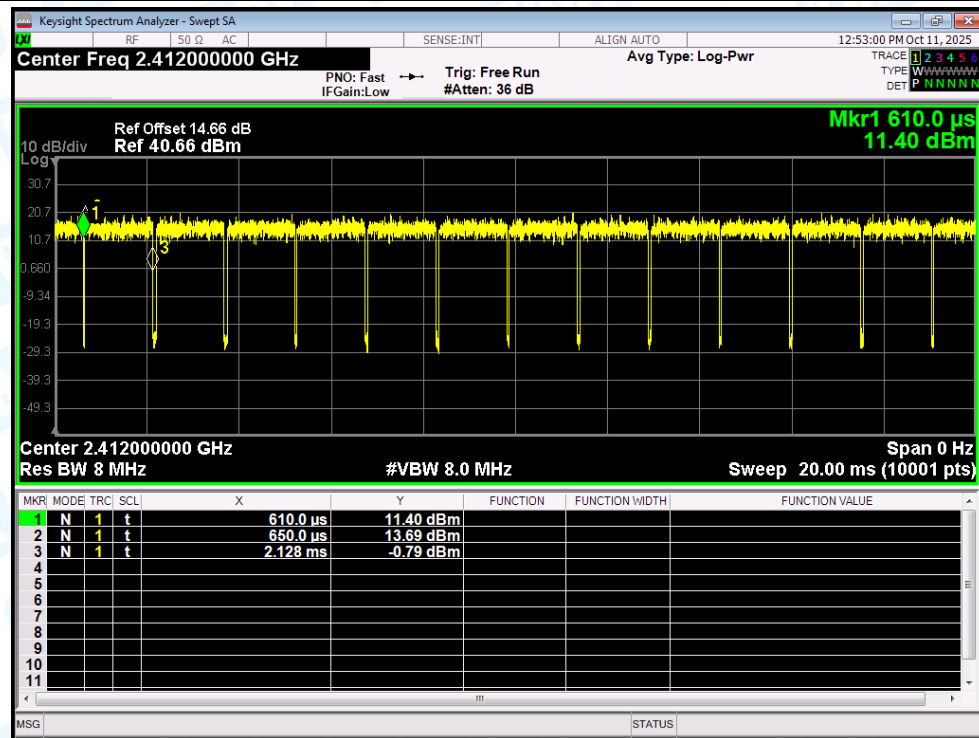
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1. Duty Cycle

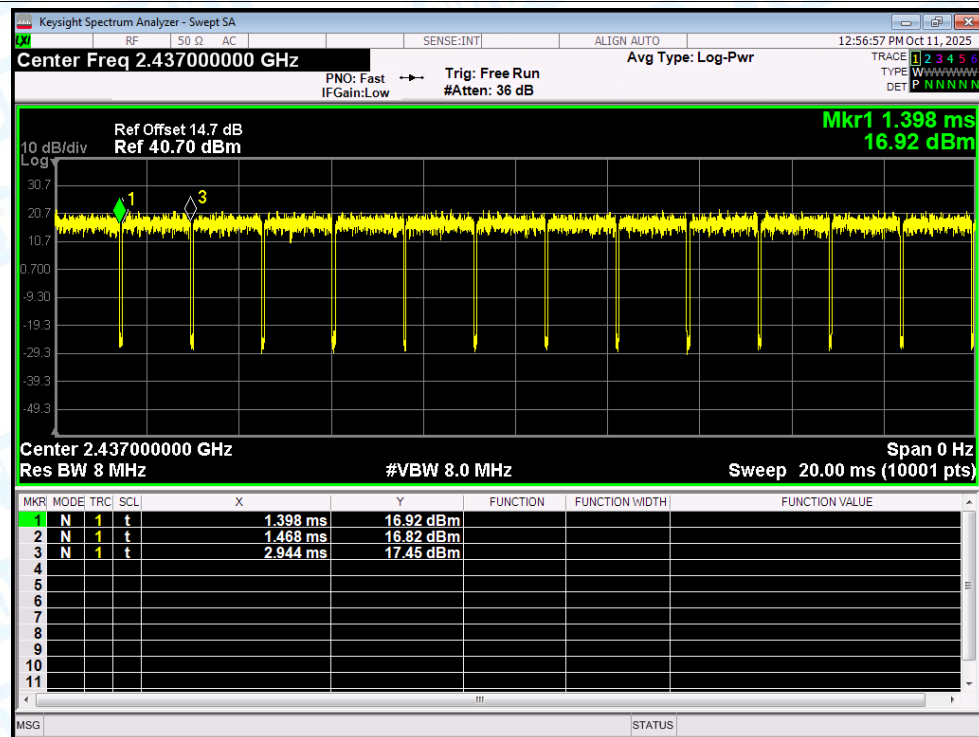
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	ax(VHT20)	2412	Ant1	97.36	0.12	0.68
NVNT	ax(VHT20)	2437	Ant1	95.47	0.2	0.68
NVNT	ax(VHT20)	2462	Ant1	95.6	0.2	0.68
NVNT	b	2412	Ant1	99.29	0.03	0.24
NVNT	b	2437	Ant1	98.78	0.05	0.24
NVNT	b	2462	Ant1	98.04	0.09	0.24
NVNT	g	2412	Ant1	96.14	0.17	0.72
NVNT	g	2437	Ant1	96.41	0.16	0.72
NVNT	g	2462	Ant1	95.49	0.2	0.72
NVNT	n(HT20)	2412	Ant1	97.26	0.12	0.52
NVNT	n(HT20)	2437	Ant1	96.19	0.17	0.52
NVNT	n(HT20)	2462	Ant1	97.17	0.12	0.52
NVNT	n(HT40)	2422	Ant1	93.84	0.28	1.06
NVNT	n(HT40)	2437	Ant1	93.84	0.28	1.06
NVNT	n(HT40)	2452	Ant1	94.79	0.23	1.06

Test Graphs

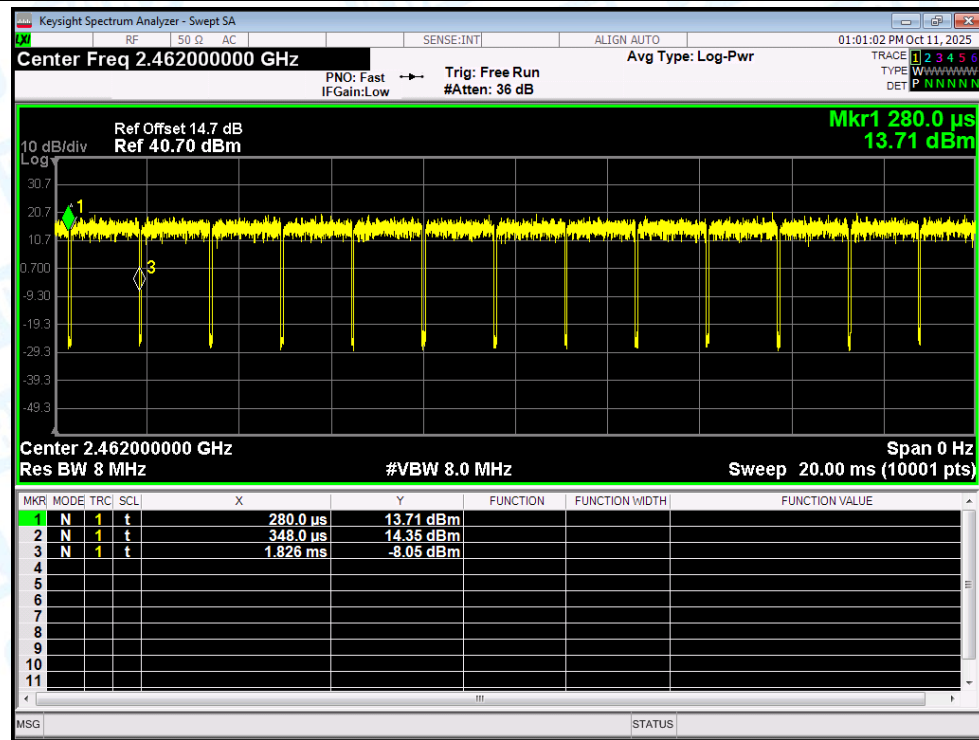
Duty Cycle NVNT ax(VHT20) 2412MHz Ant1



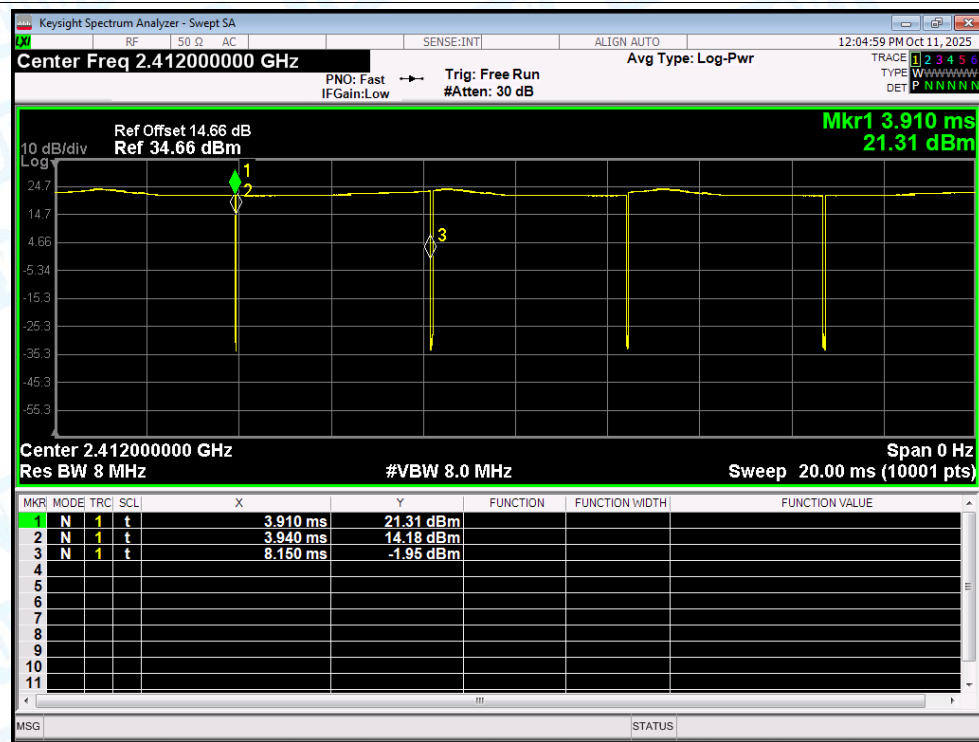
Duty Cycle NVNT ax(VHT20) 2437MHz Ant1



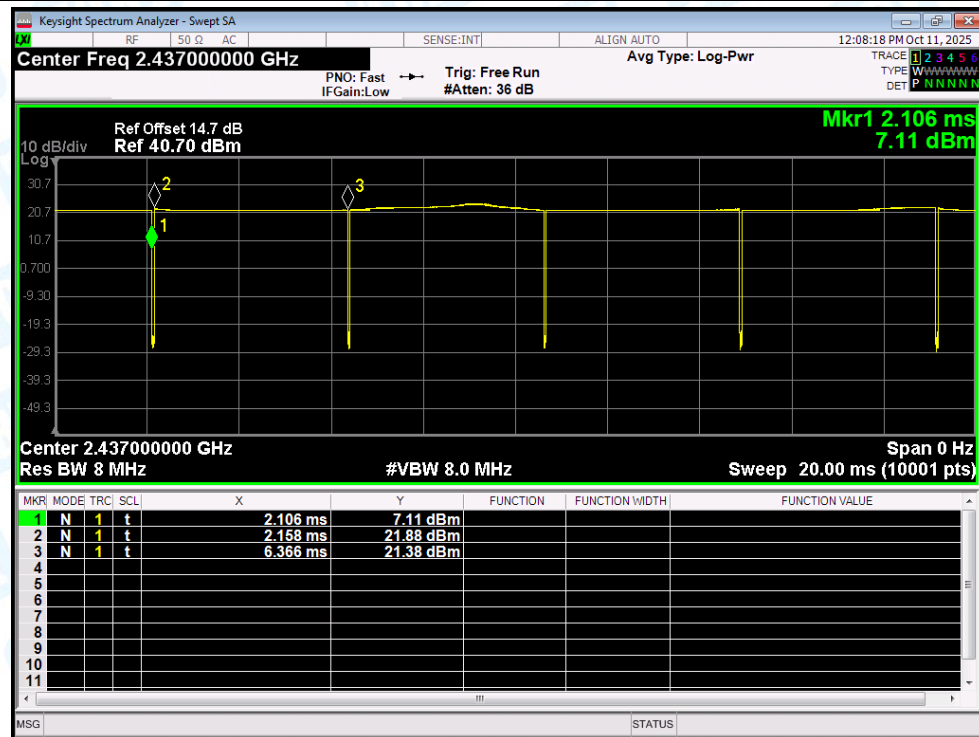
Duty Cycle NVNT ax(VHT20) 2462MHz Ant1



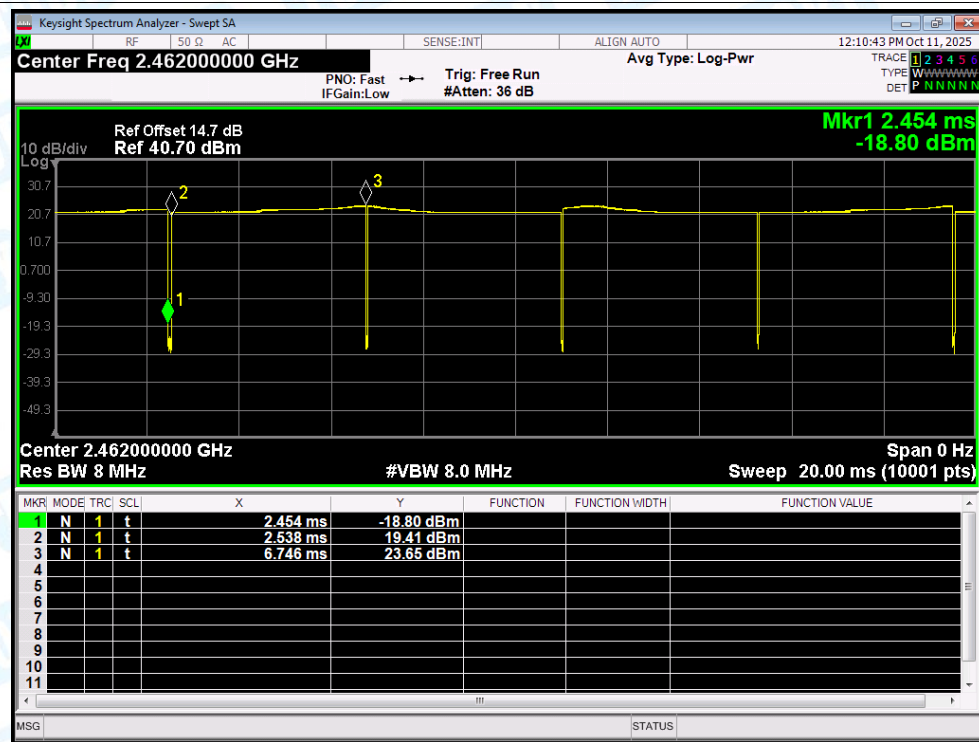
Duty Cycle NVNT b 2412MHz Ant1



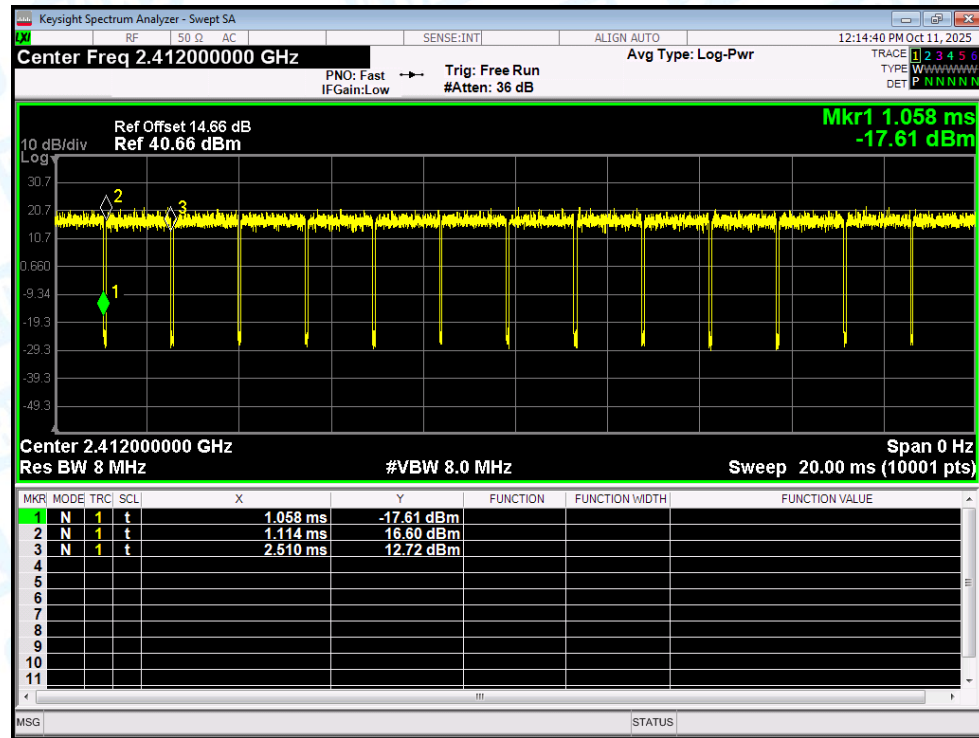
Duty Cycle NVNT b 2437MHz Ant1



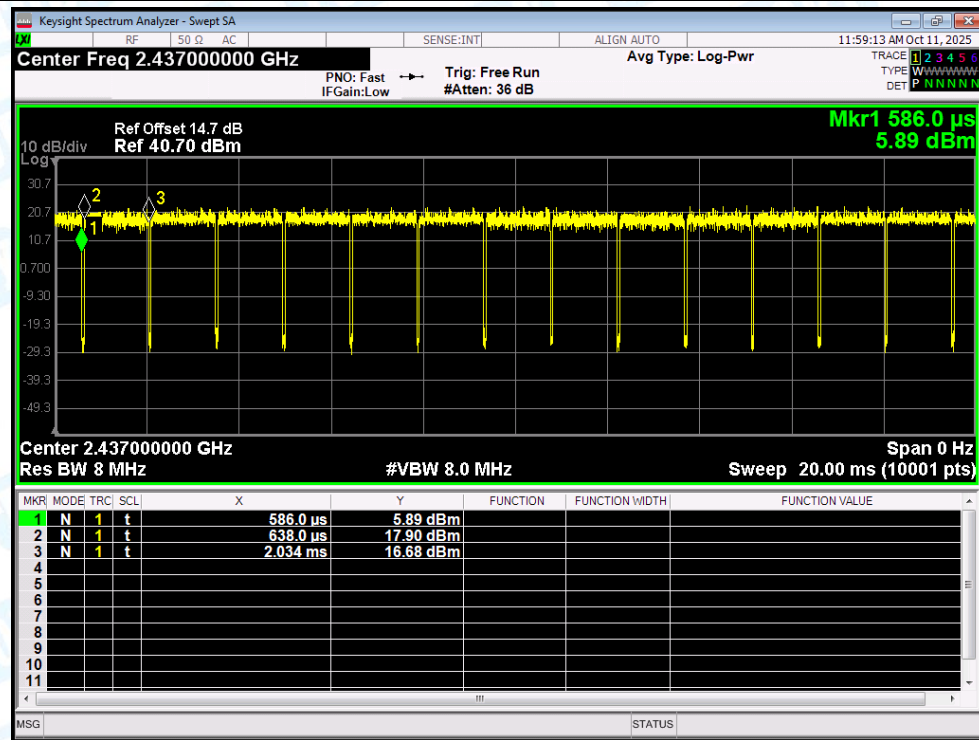
Duty Cycle NVNT b 2462MHz Ant1



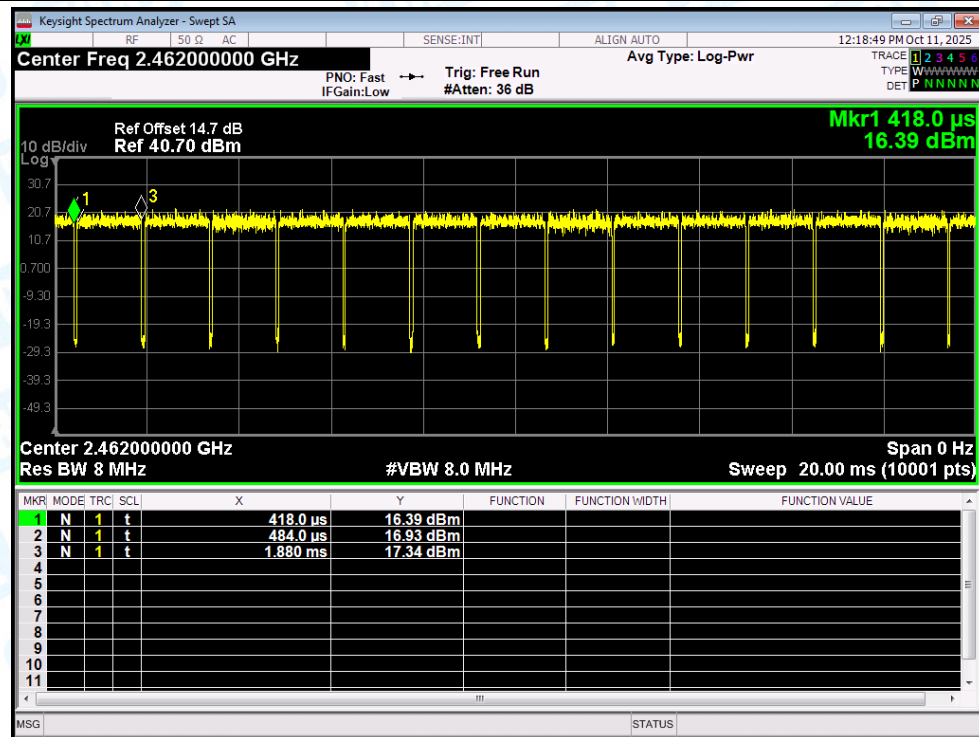
Duty Cycle NVNT g 2412MHz Ant1



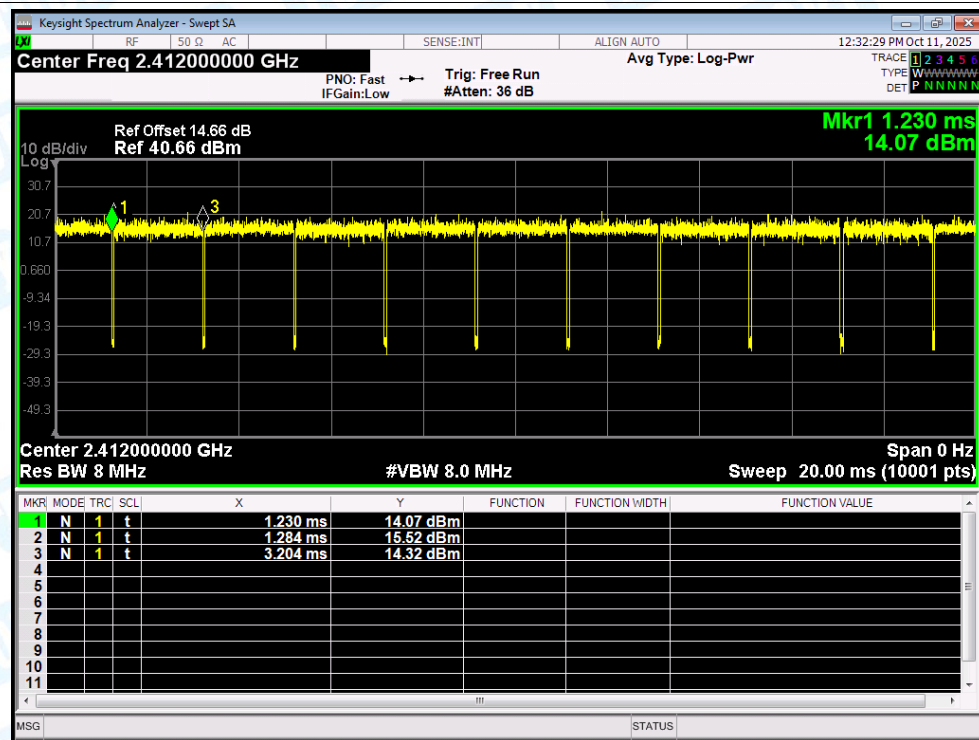
Duty Cycle NVNT g 2437MHz Ant1



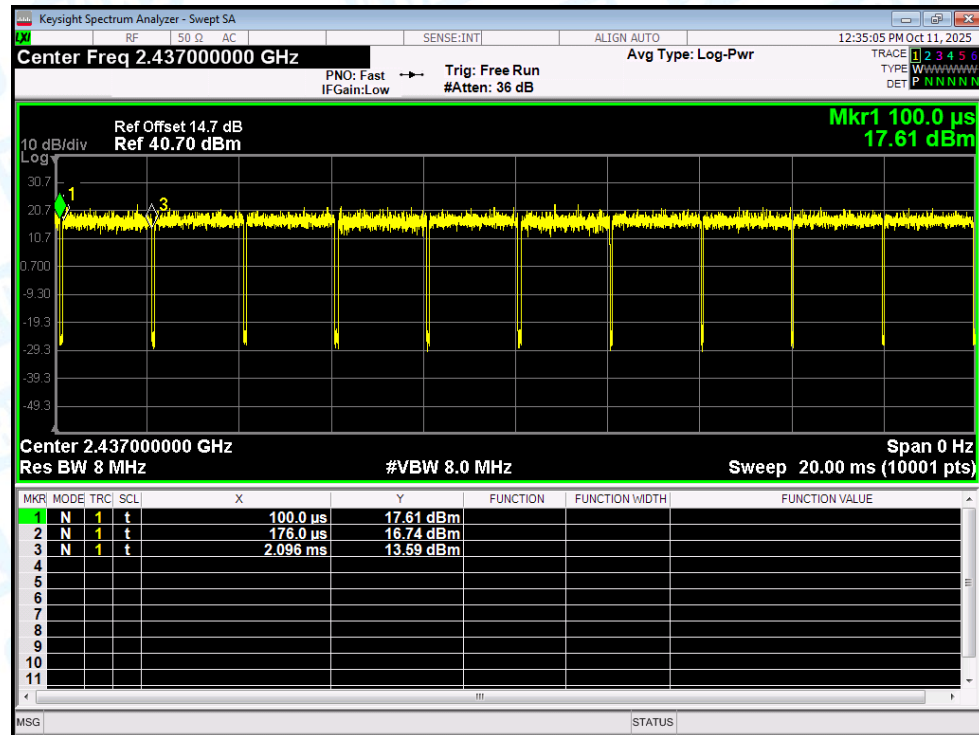
Duty Cycle NVNT g 2462MHz Ant1



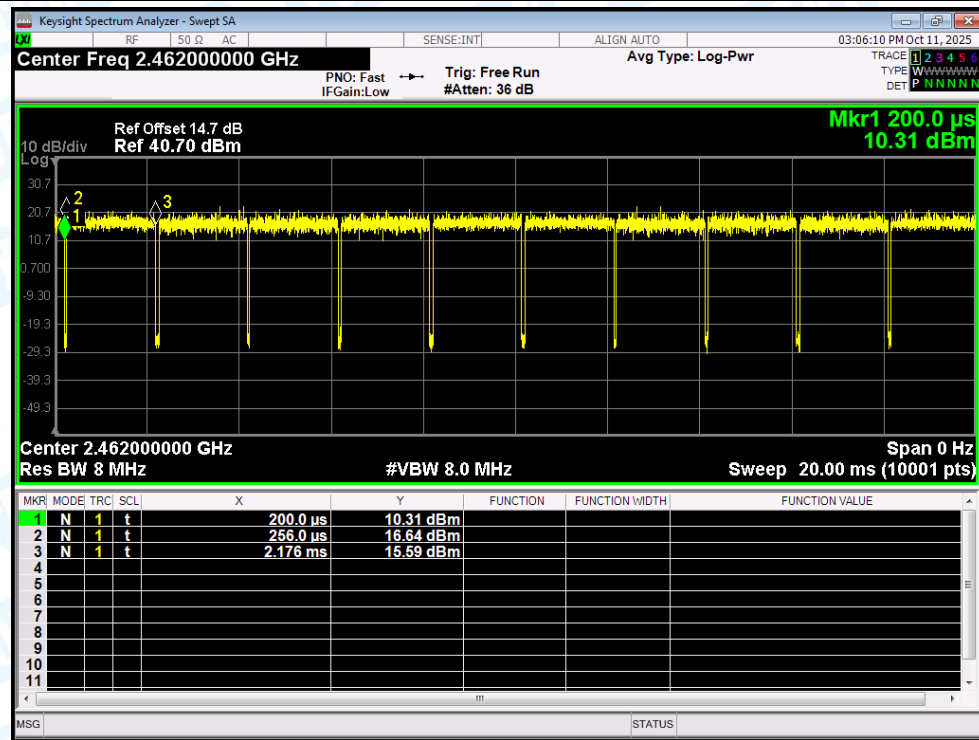
Duty Cycle NVNT n(HT20) 2412MHz Ant1



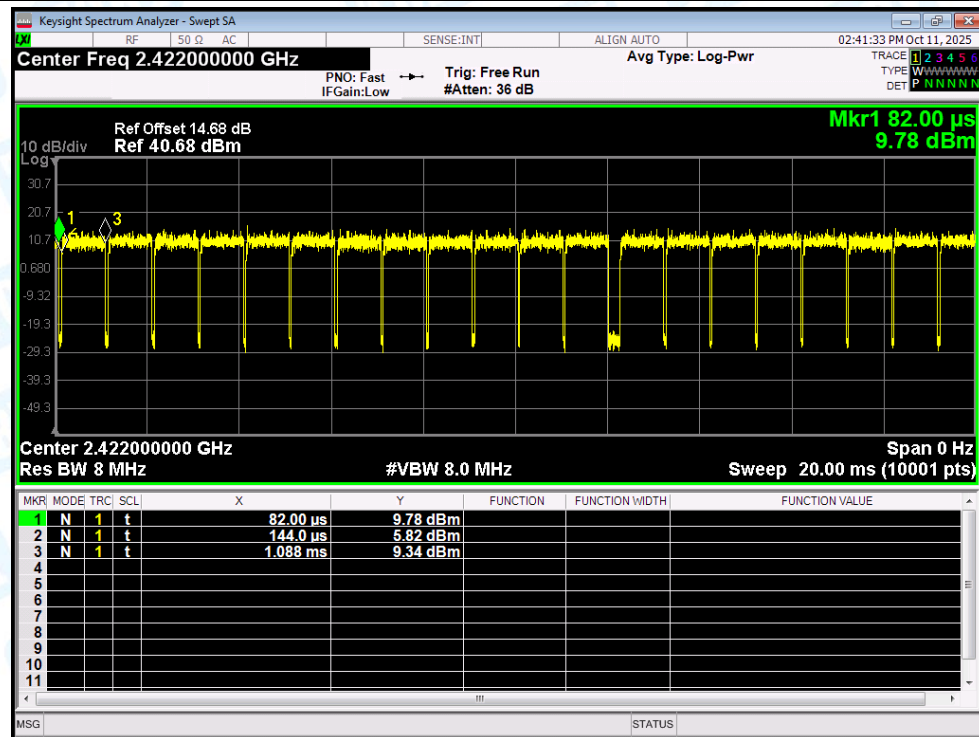
Duty Cycle NVNT n(HT20) 2437MHz Ant1



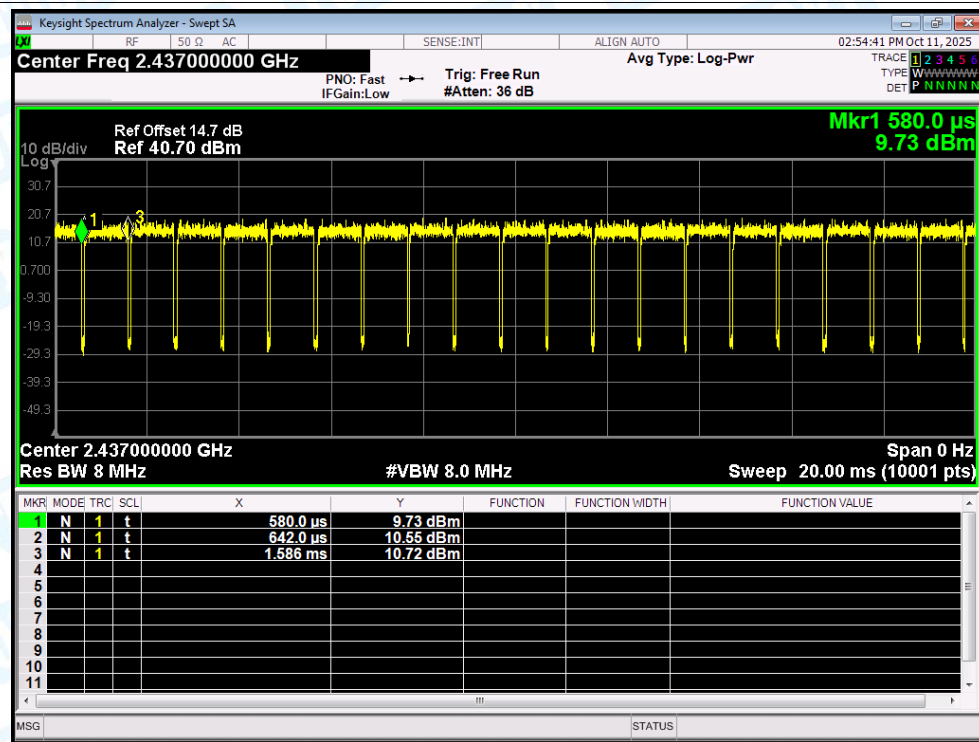
Duty Cycle NVNT n(HT20) 2462MHz Ant1

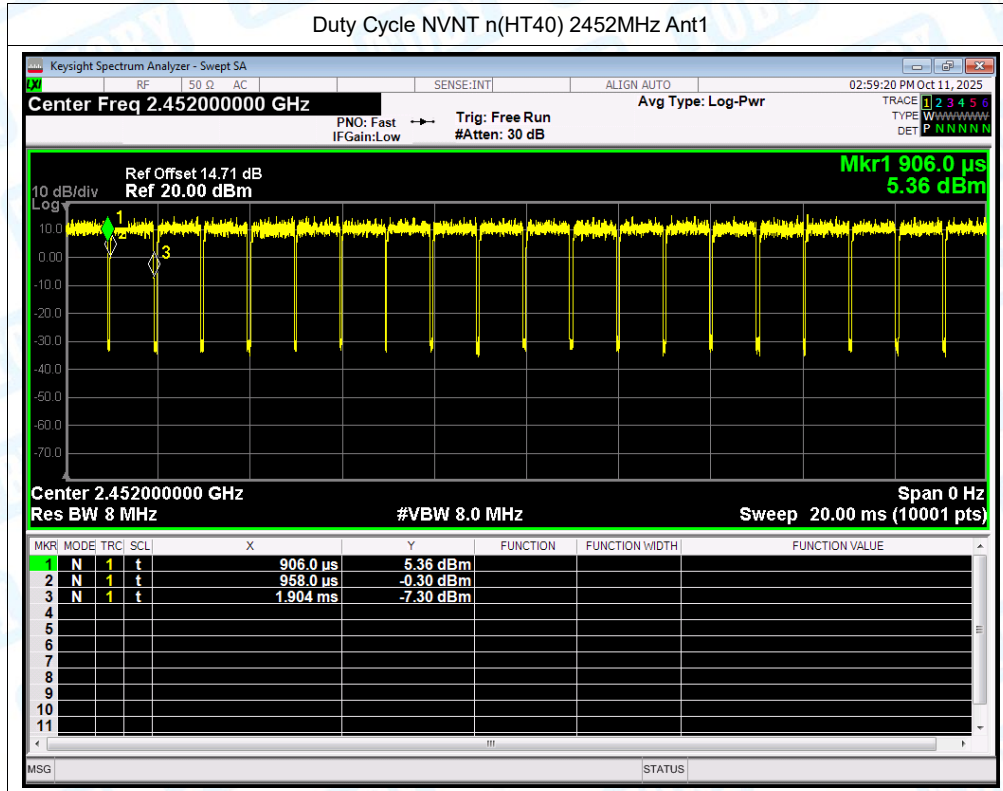


Duty Cycle NVNT n(HT40) 2422MHz Ant1



Duty Cycle NVNT n(HT40) 2437MHz Ant1





2. Maximum Conducted Output Power

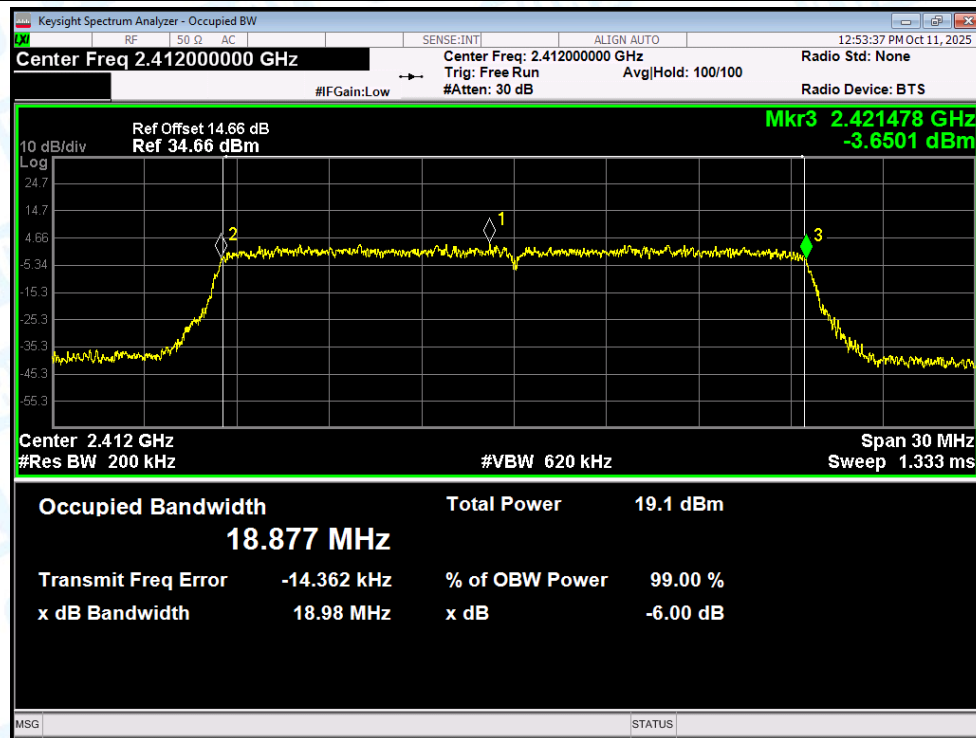
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	ax(VHT20)	2412	Ant1	12.29	30	Pass
NVNT	ax(VHT20)	2437	Ant1	14.63	30	Pass
NVNT	ax(VHT20)	2462	Ant1	12.91	30	Pass
NVNT	b	2412	Ant1	17.84	30	Pass
NVNT	b	2437	Ant1	18	30	Pass
NVNT	b	2462	Ant1	17.88	30	Pass
NVNT	g	2412	Ant1	14.61	30	Pass
NVNT	g	2437	Ant1	15.87	30	Pass
NVNT	g	2462	Ant1	14.83	30	Pass
NVNT	n(HT20)	2412	Ant1	13.23	30	Pass
NVNT	n(HT20)	2437	Ant1	15.8	30	Pass
NVNT	n(HT20)	2462	Ant1	14.18	30	Pass
NVNT	n(HT40)	2422	Ant1	11.16	30	Pass
NVNT	n(HT40)	2437	Ant1	15.64	30	Pass
NVNT	n(HT40)	2452	Ant1	11.03	30	Pass

3. -6dB Bandwidth

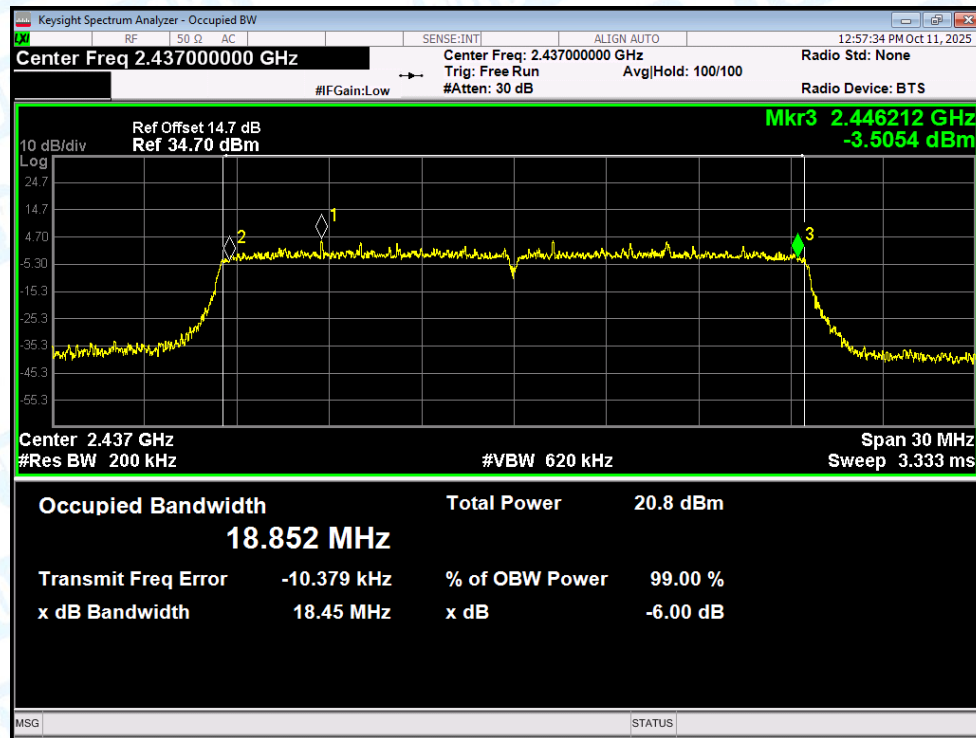
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	ax(VHT20)	2412	Ant1	18.98	0.5	Pass
NVNT	ax(VHT20)	2437	Ant1	18.45	0.5	Pass
NVNT	ax(VHT20)	2462	Ant1	18.53	0.5	Pass
NVNT	b	2412	Ant1	9.86	0.5	Pass
NVNT	b	2437	Ant1	9.89	0.5	Pass
NVNT	b	2462	Ant1	9.86	0.5	Pass
NVNT	g	2412	Ant1	16.48	0.5	Pass
NVNT	g	2437	Ant1	16.42	0.5	Pass
NVNT	g	2462	Ant1	16.41	0.5	Pass
NVNT	n(HT20)	2412	Ant1	17.54	0.5	Pass
NVNT	n(HT20)	2437	Ant1	17.6	0.5	Pass
NVNT	n(HT20)	2462	Ant1	17.6	0.5	Pass
NVNT	n(HT40)	2422	Ant1	35.78	0.5	Pass
NVNT	n(HT40)	2437	Ant1	35.49	0.5	Pass
NVNT	n(HT40)	2452	Ant1	35.91	0.5	Pass

Test Graphs

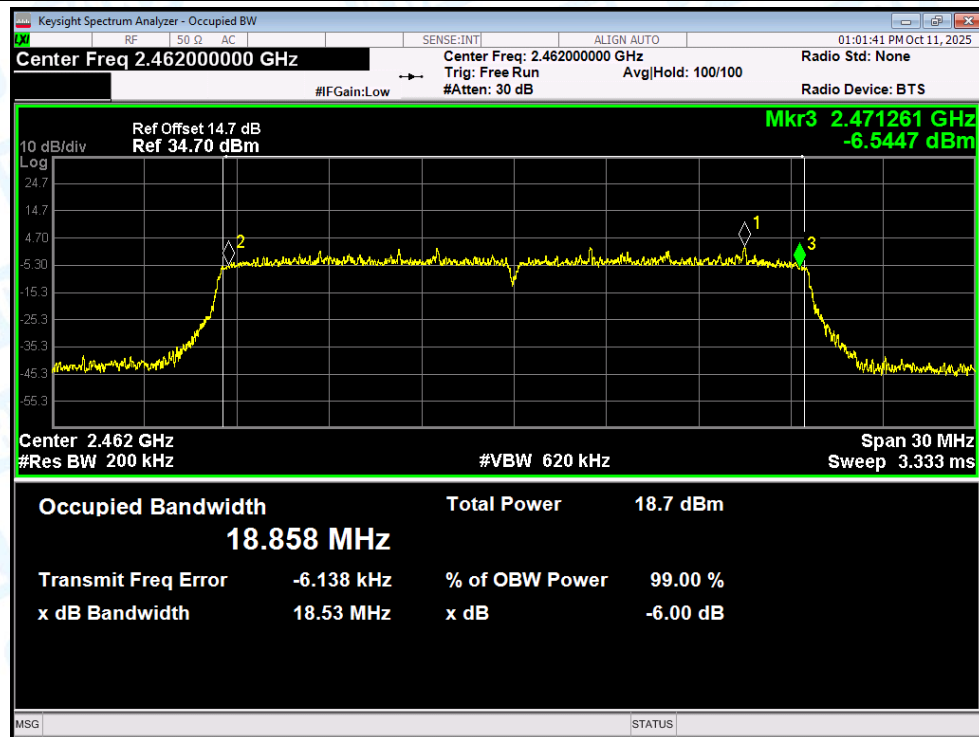
-6dB Bandwidth NVNT ax(VHT20) 2412MHz Ant1



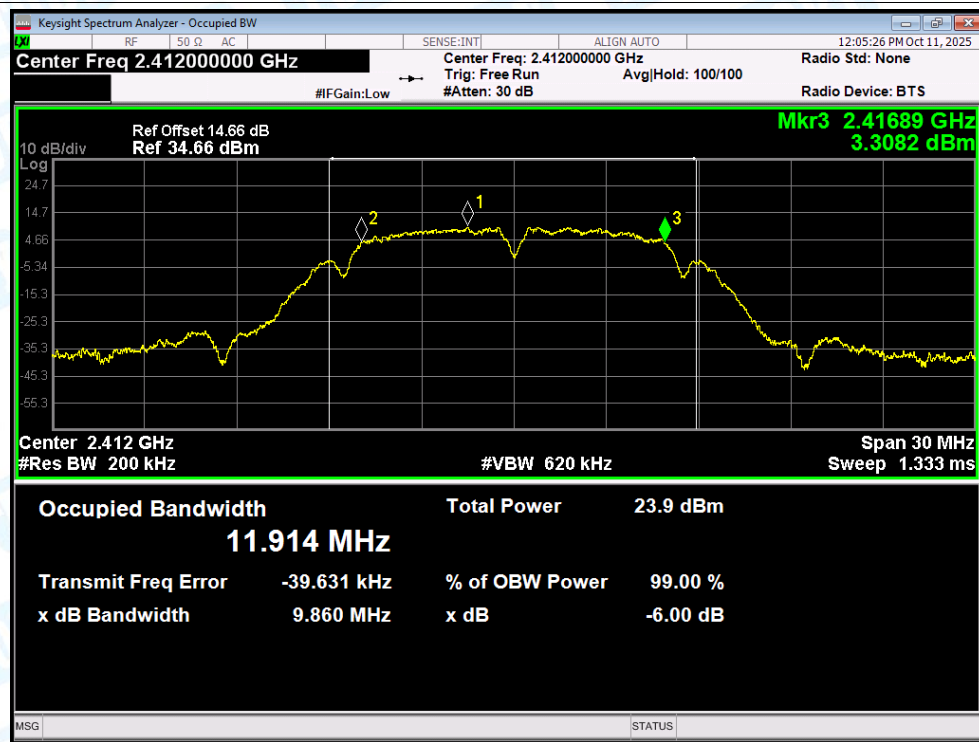
-6dB Bandwidth NVNT ax(VHT20) 2437MHz Ant1



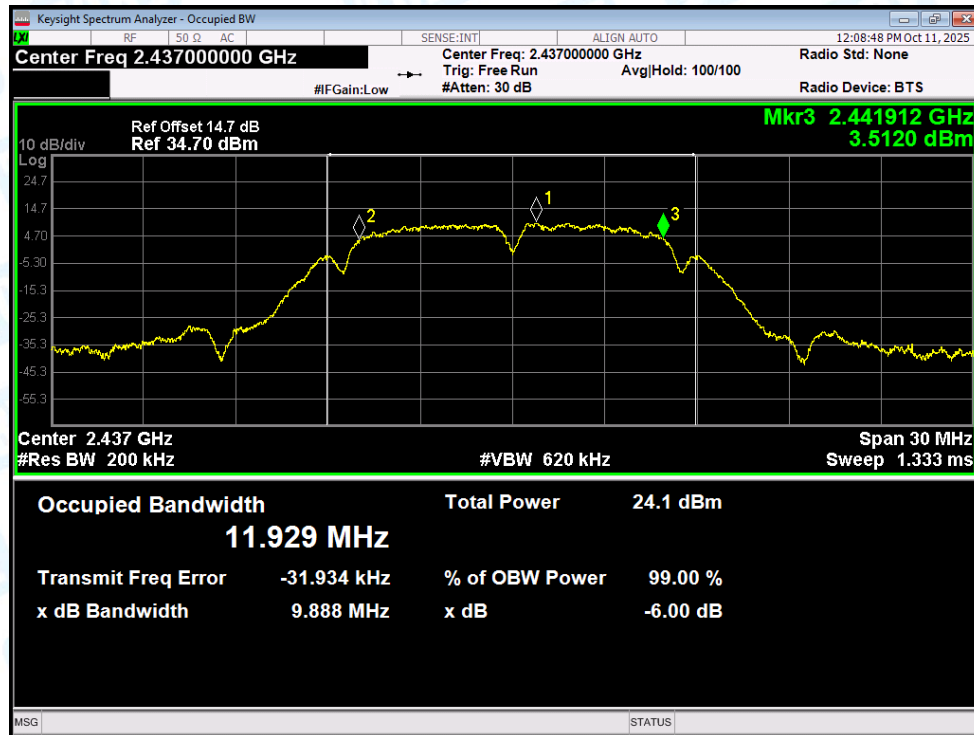
-6dB Bandwidth NVNT ax(VHT20) 2462MHz Ant1



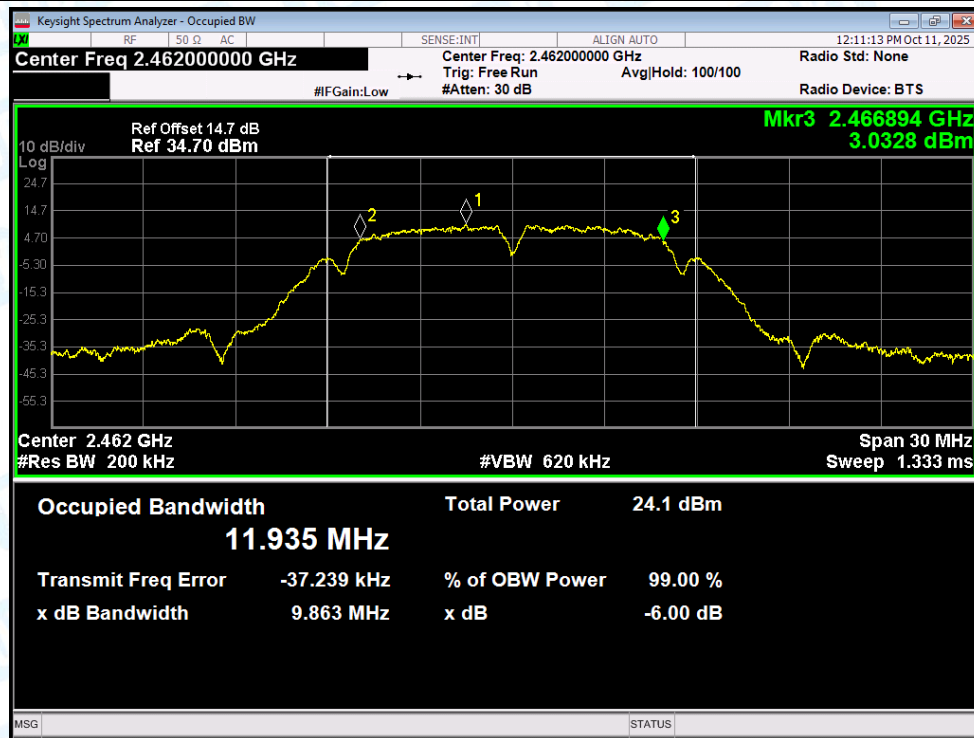
-6dB Bandwidth NVNT b 2412MHz Ant1



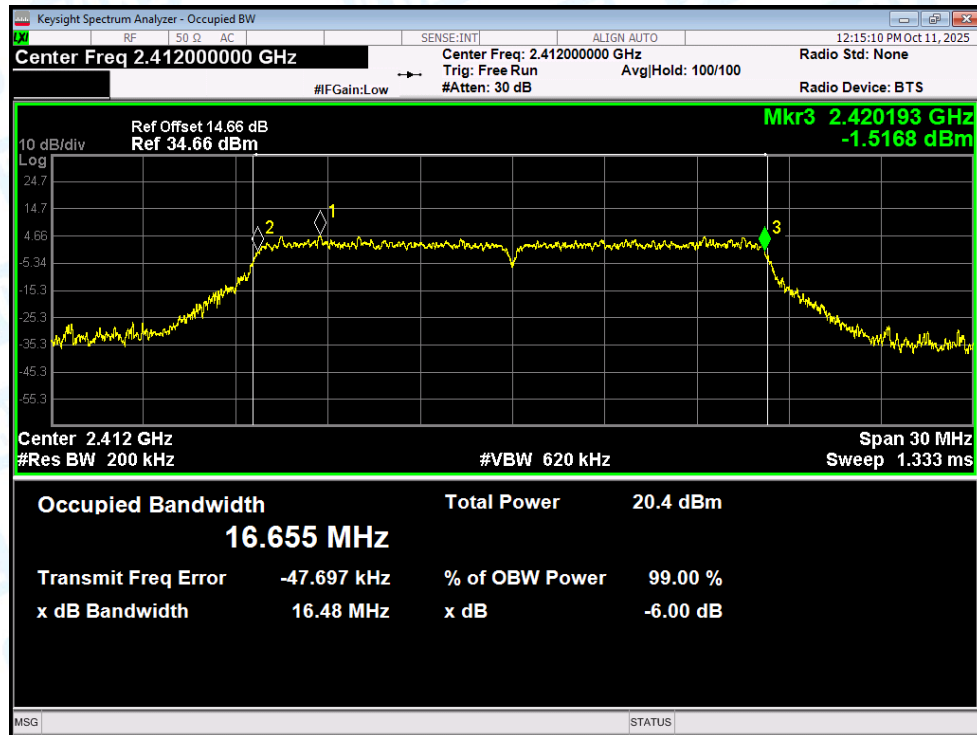
-6dB Bandwidth NVNT b 2437MHz Ant1



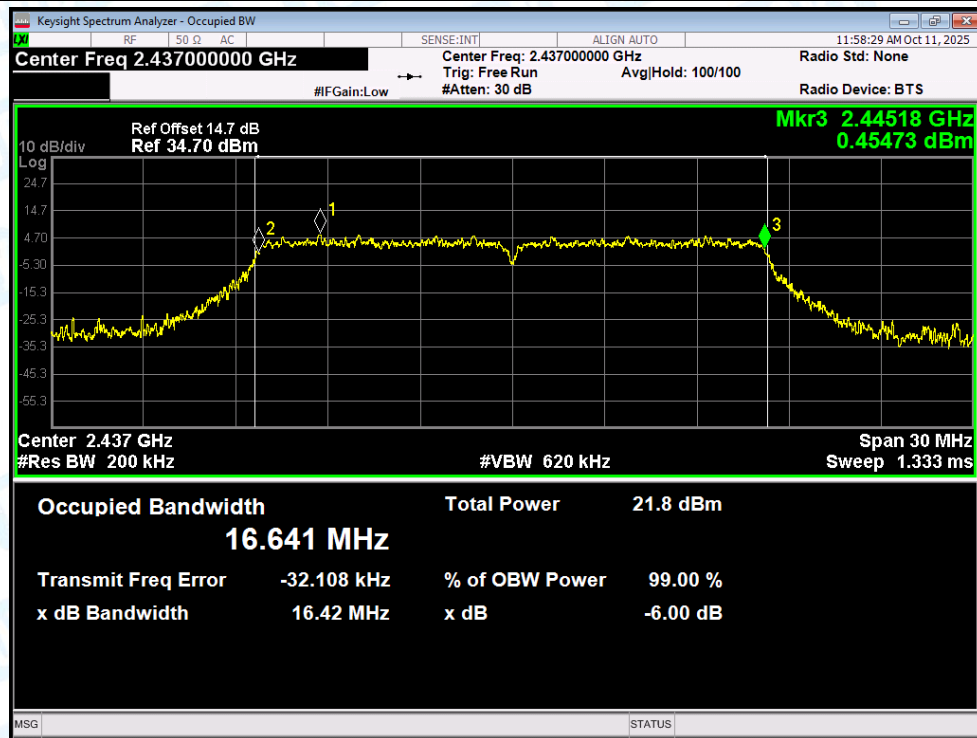
-6dB Bandwidth NVNT b 2462MHz Ant1



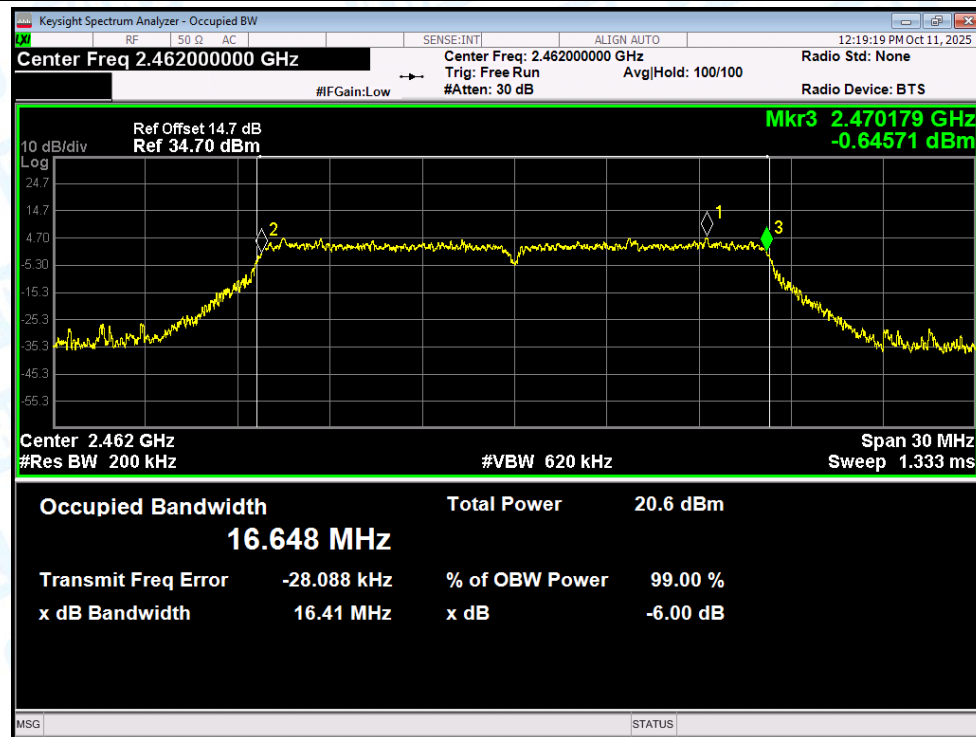
-6dB Bandwidth NVNT g 2412MHz Ant1



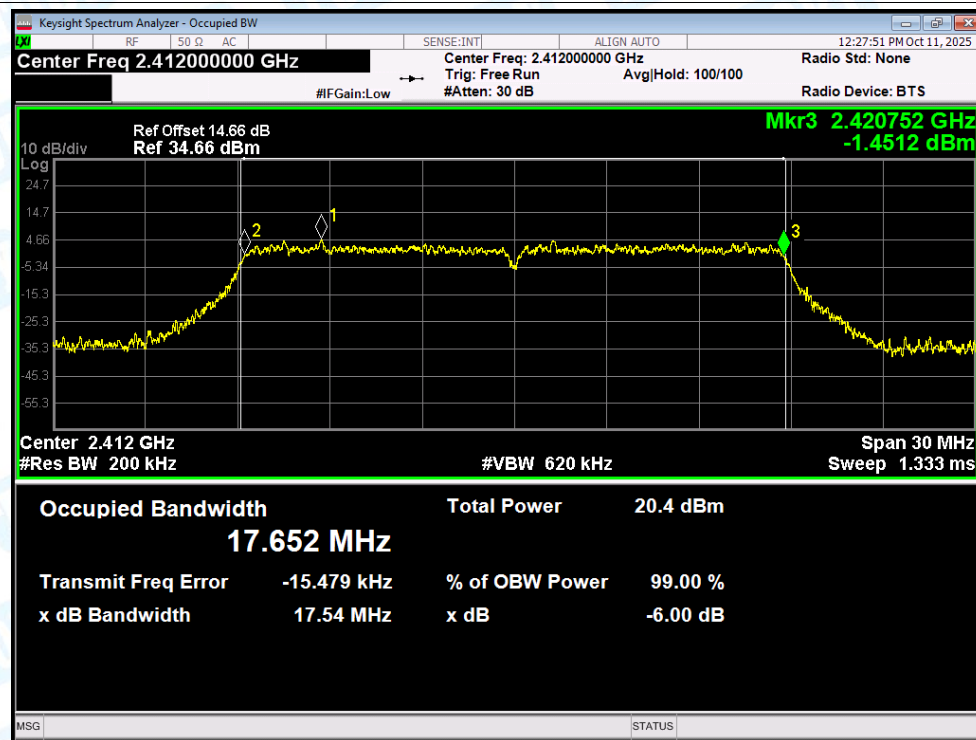
-6dB Bandwidth NVNT g 2437MHz Ant1



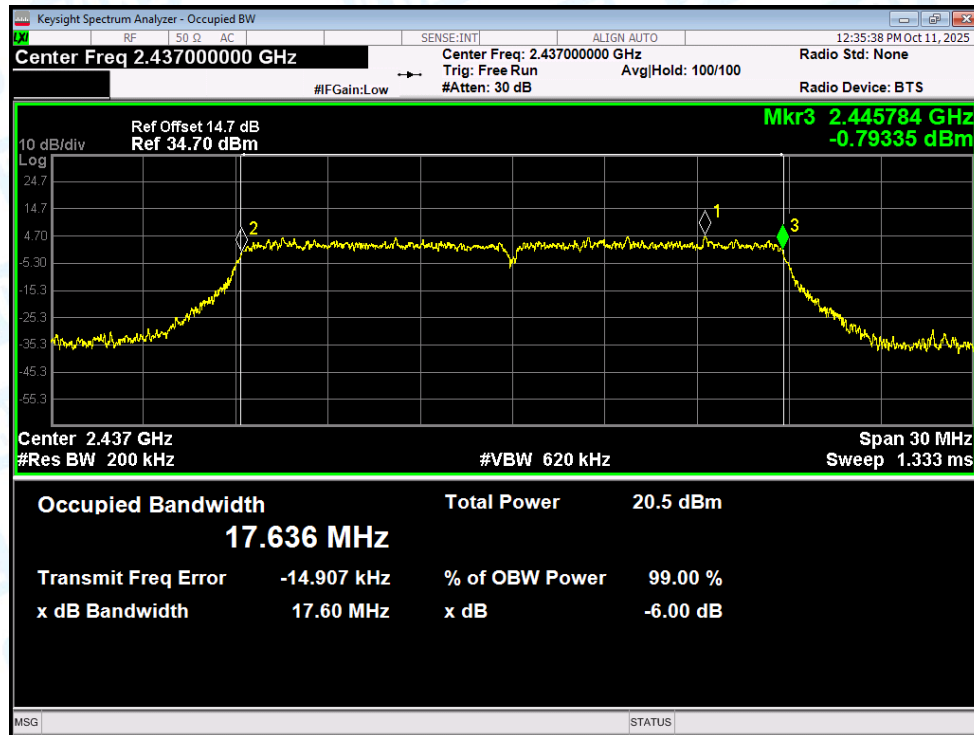
-6dB Bandwidth NVNT g 2462MHz Ant1



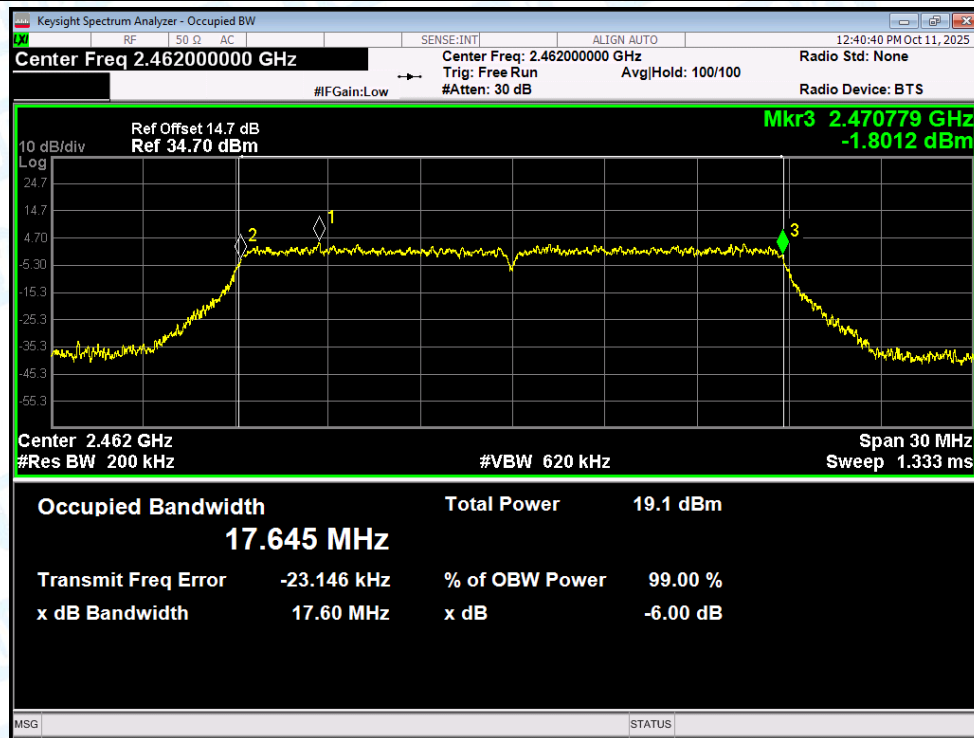
-6dB Bandwidth NVNT n(HT20) 2412MHz Ant1



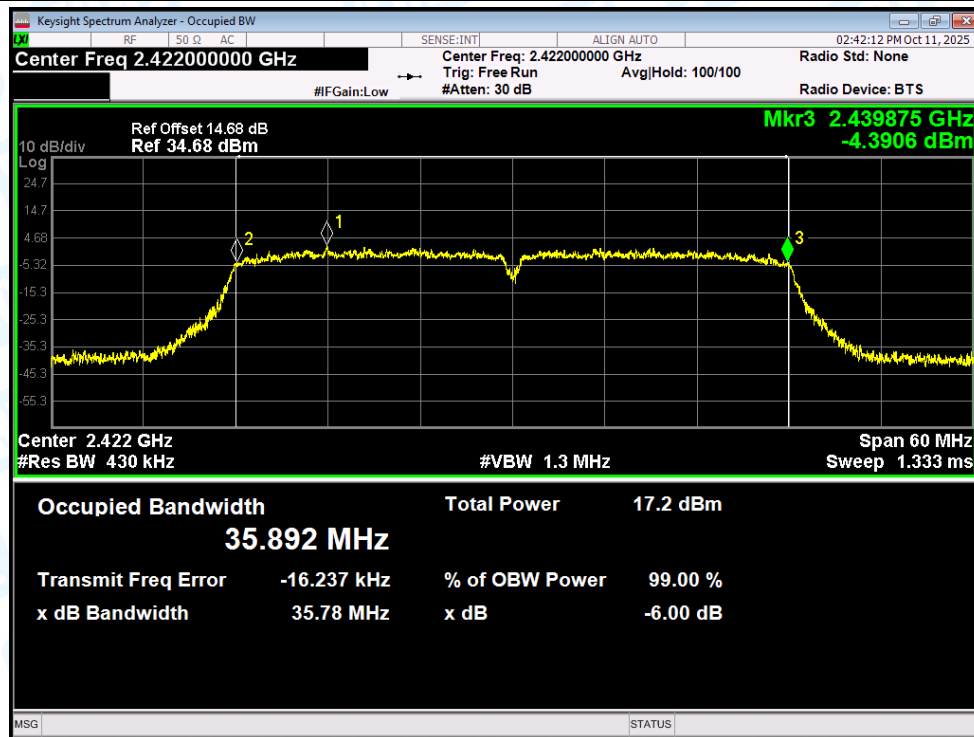
-6dB Bandwidth NVNT n(HT20) 2437MHz Ant1



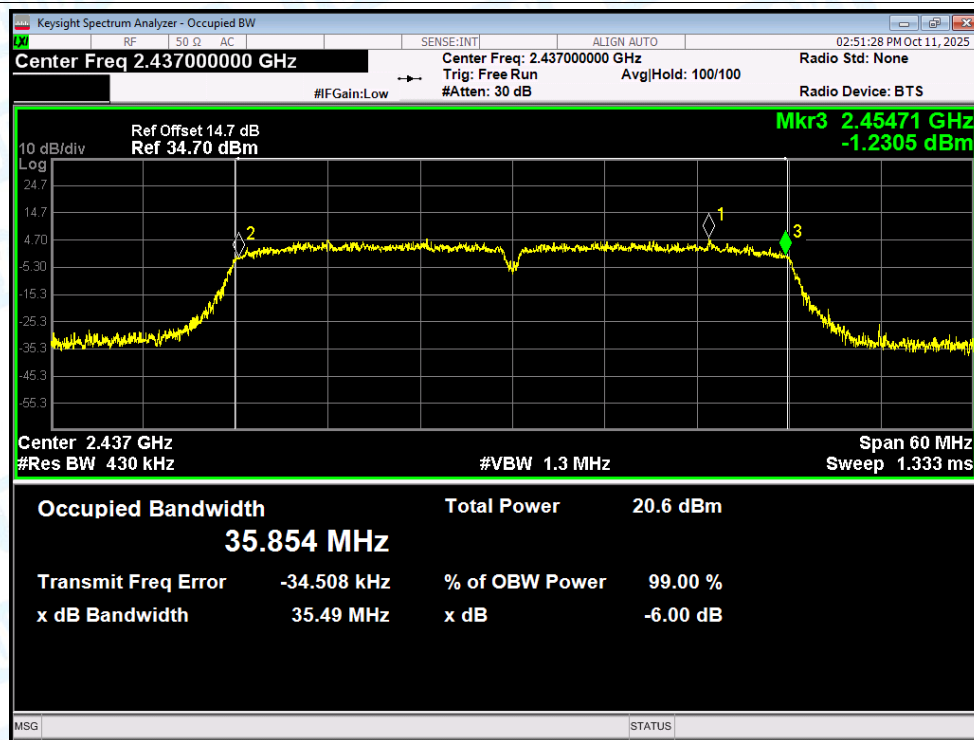
-6dB Bandwidth NVNT n(HT20) 2462MHz Ant1

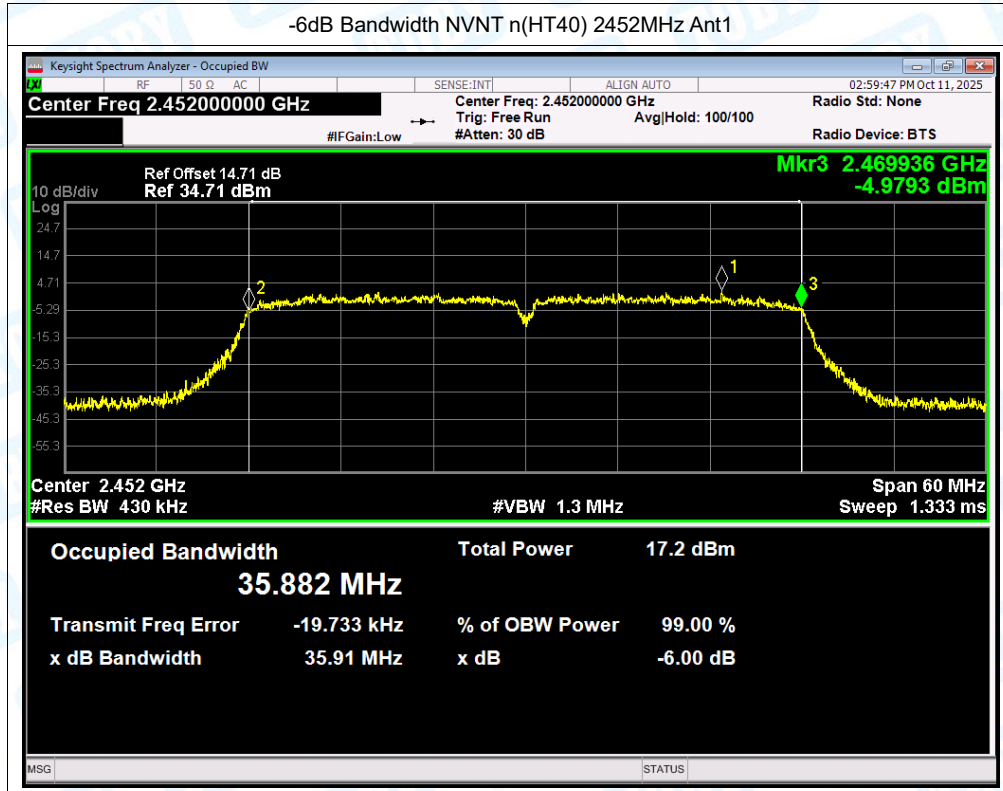


-6dB Bandwidth NVNT n(HT40) 2422MHz Ant1



-6dB Bandwidth NVNT n(HT40) 2437MHz Ant1



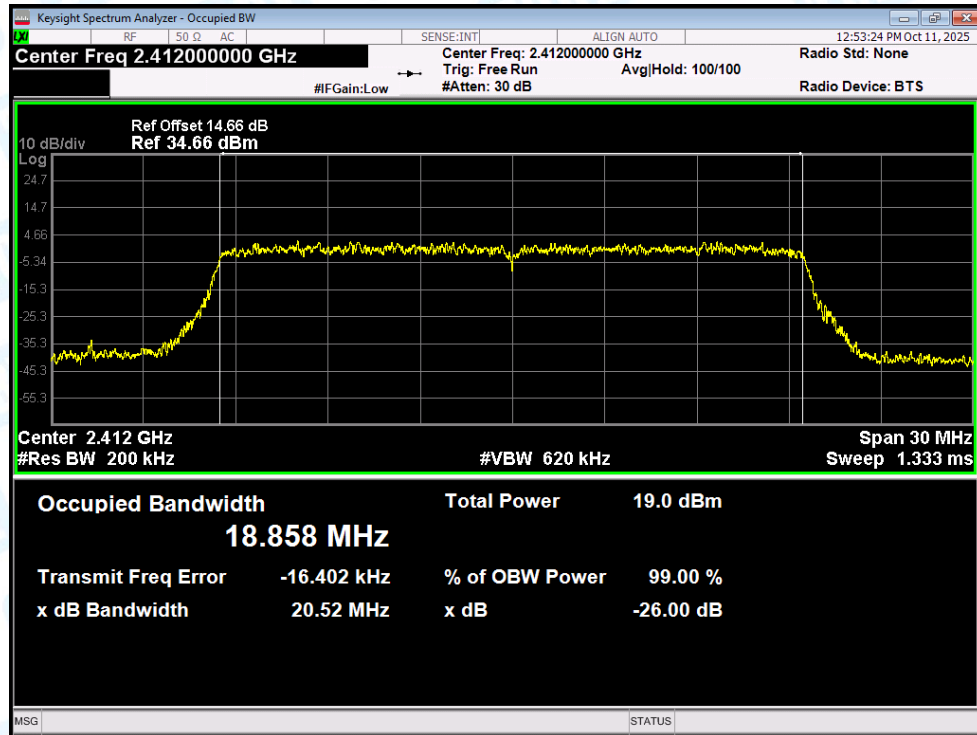


4. Occupied Channel Bandwidth

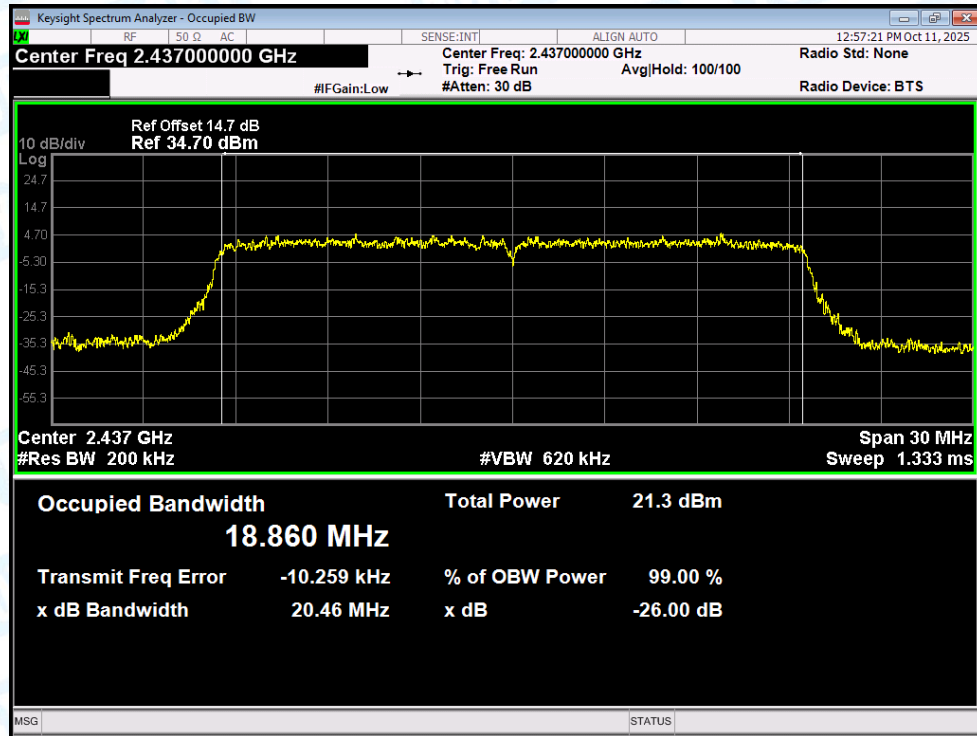
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	ax(VHT20)	2412	Ant1	18.858
NVNT	ax(VHT20)	2437	Ant1	18.86
NVNT	ax(VHT20)	2462	Ant1	18.853
NVNT	b	2412	Ant1	11.901
NVNT	b	2437	Ant1	11.947
NVNT	b	2462	Ant1	11.915
NVNT	g	2412	Ant1	16.637
NVNT	g	2437	Ant1	16.637
NVNT	g	2462	Ant1	16.681
NVNT	n(HT20)	2412	Ant1	17.66
NVNT	n(HT20)	2437	Ant1	17.662
NVNT	n(HT20)	2462	Ant1	17.658
NVNT	n(HT40)	2422	Ant1	35.901
NVNT	n(HT40)	2437	Ant1	35.847
NVNT	n(HT40)	2452	Ant1	35.888

Test Graphs

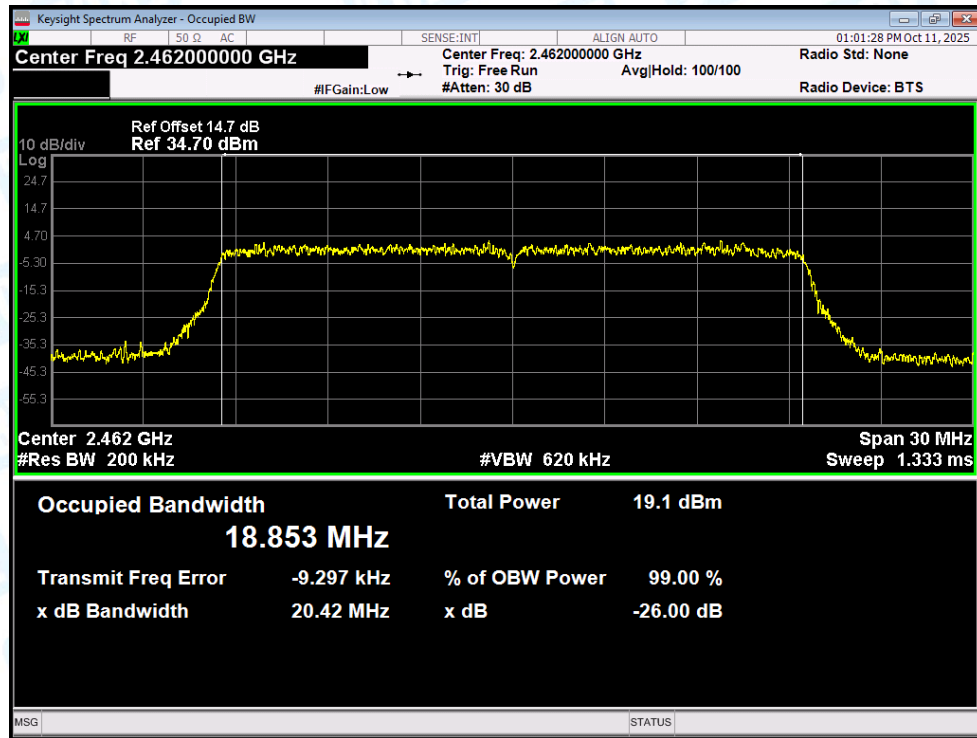
OBW NVNT ax(VHT20) 2412MHz Ant1



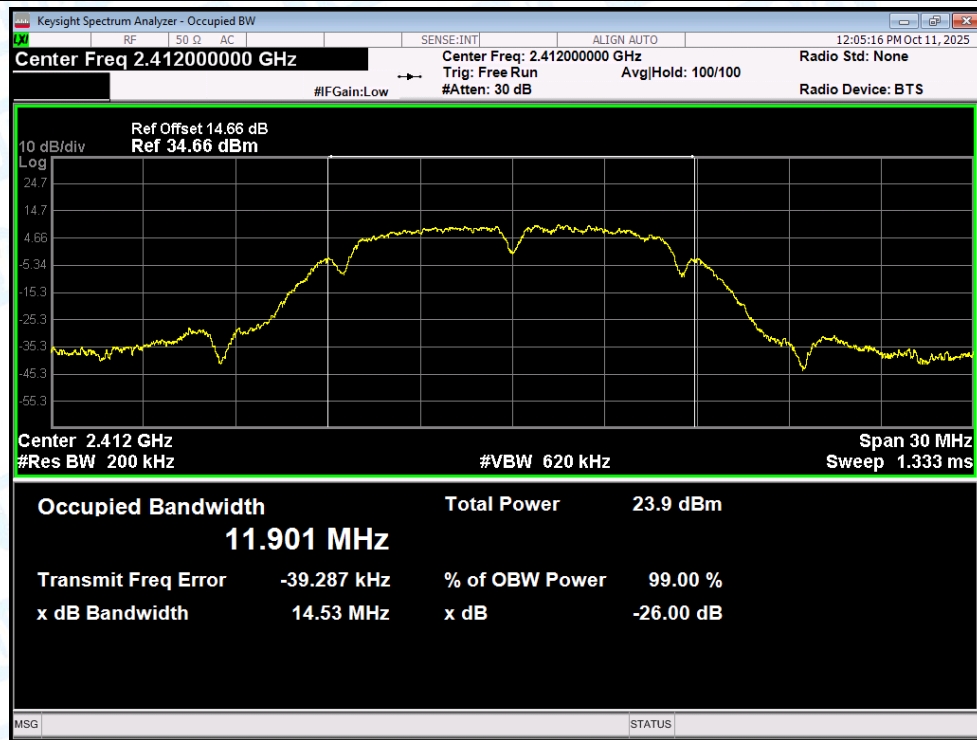
OBW NVNT ax(VHT20) 2437MHz Ant1

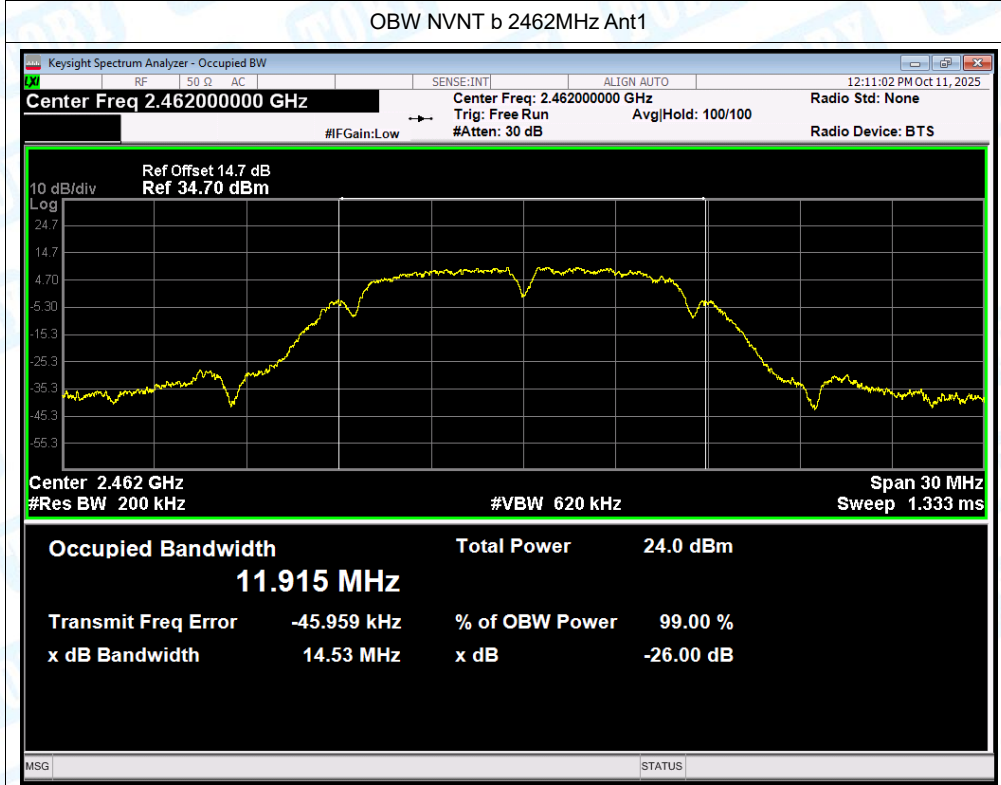
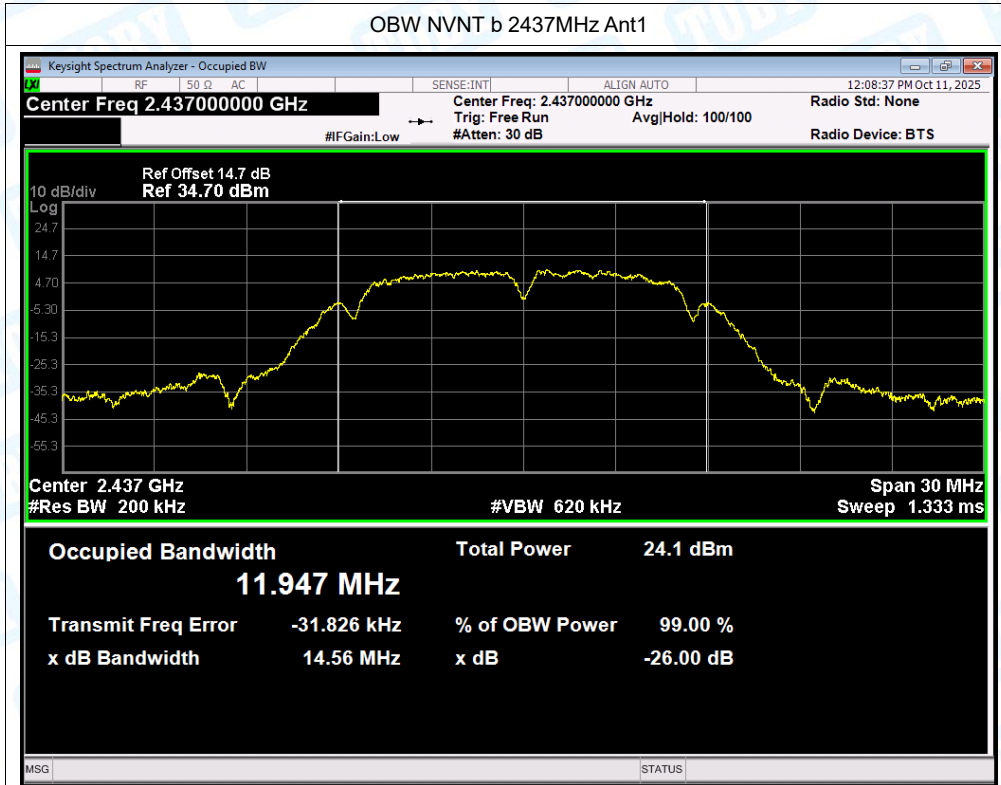


OBW NVNT ax(VHT20) 2462MHz Ant1

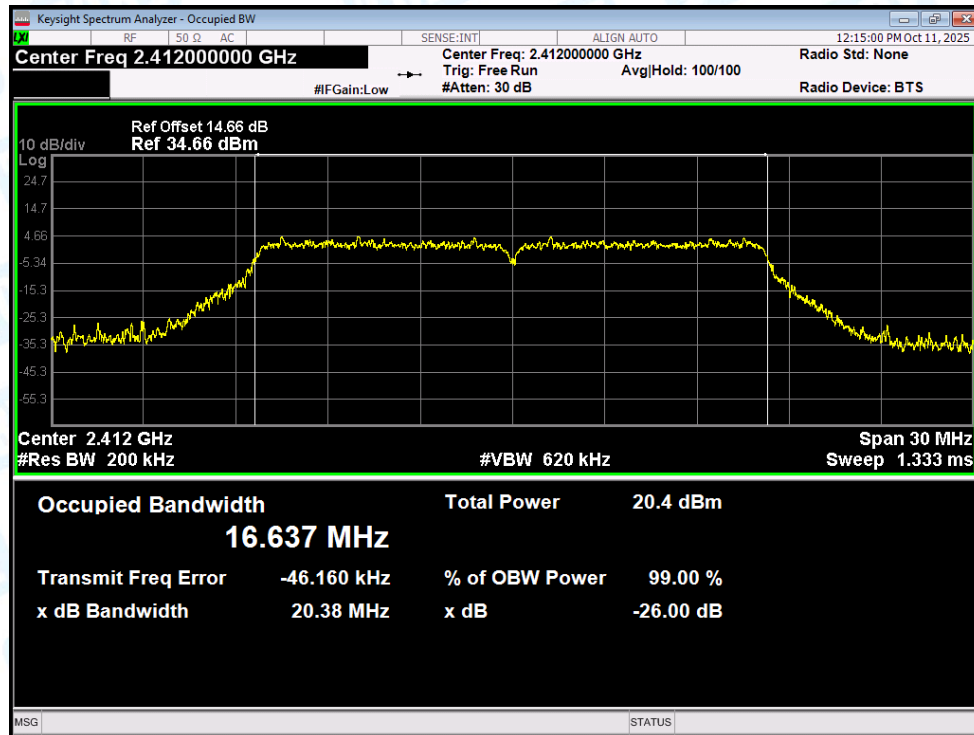


OBW NVNT b 2412MHz Ant1

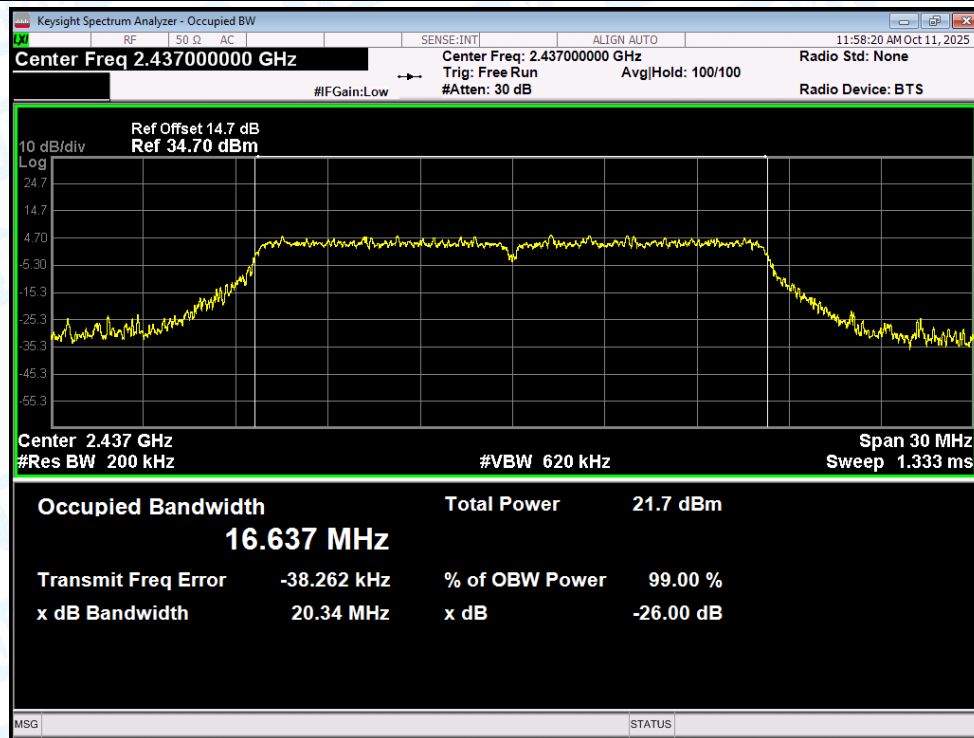


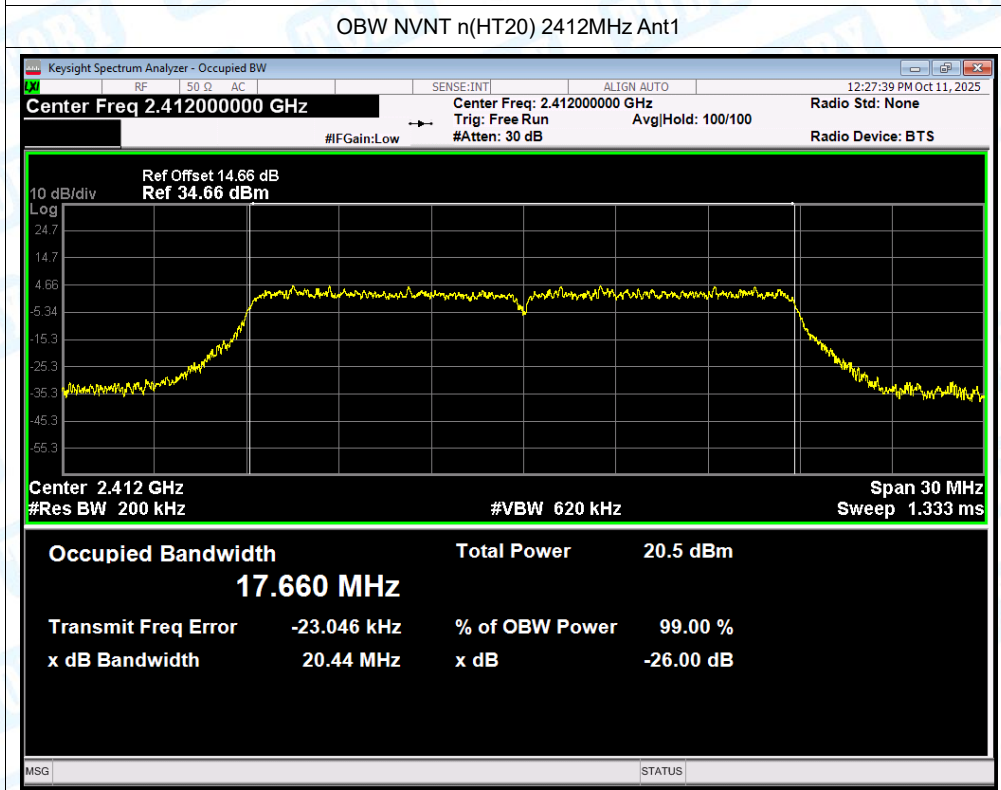
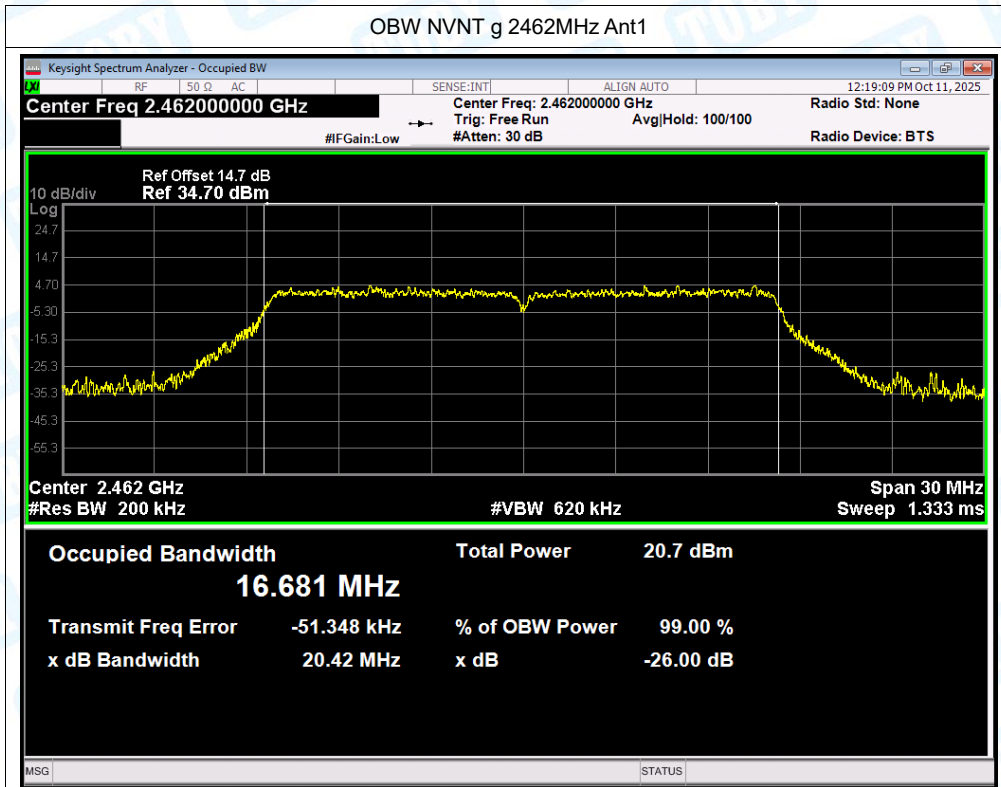


OBW NVNT g 2412MHz Ant1

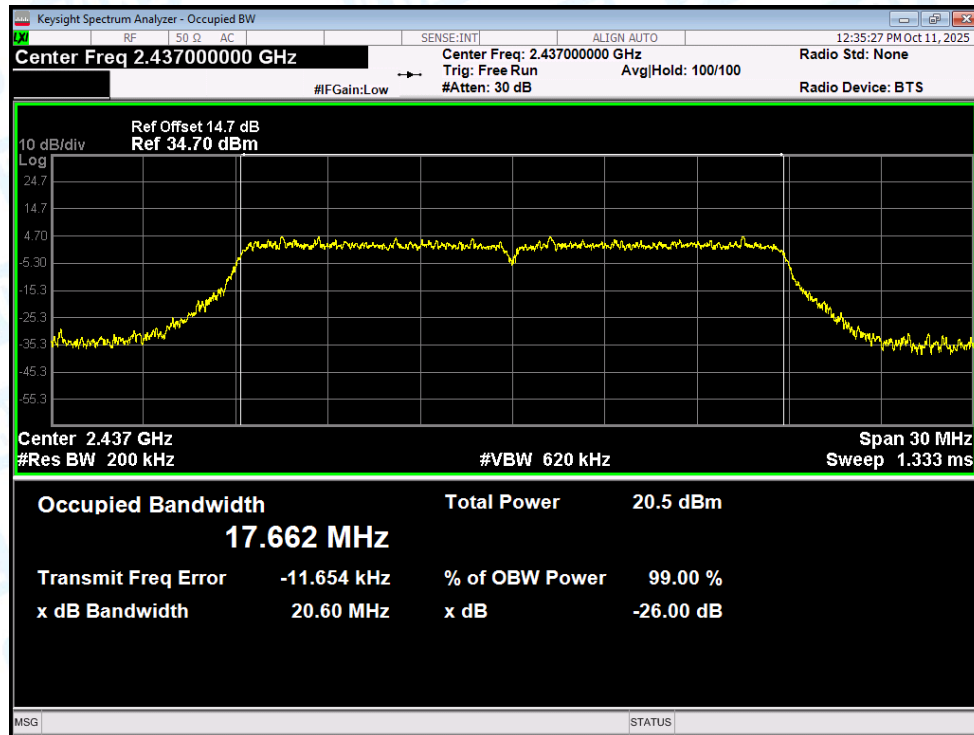


OBW NVNT g 2437MHz Ant1

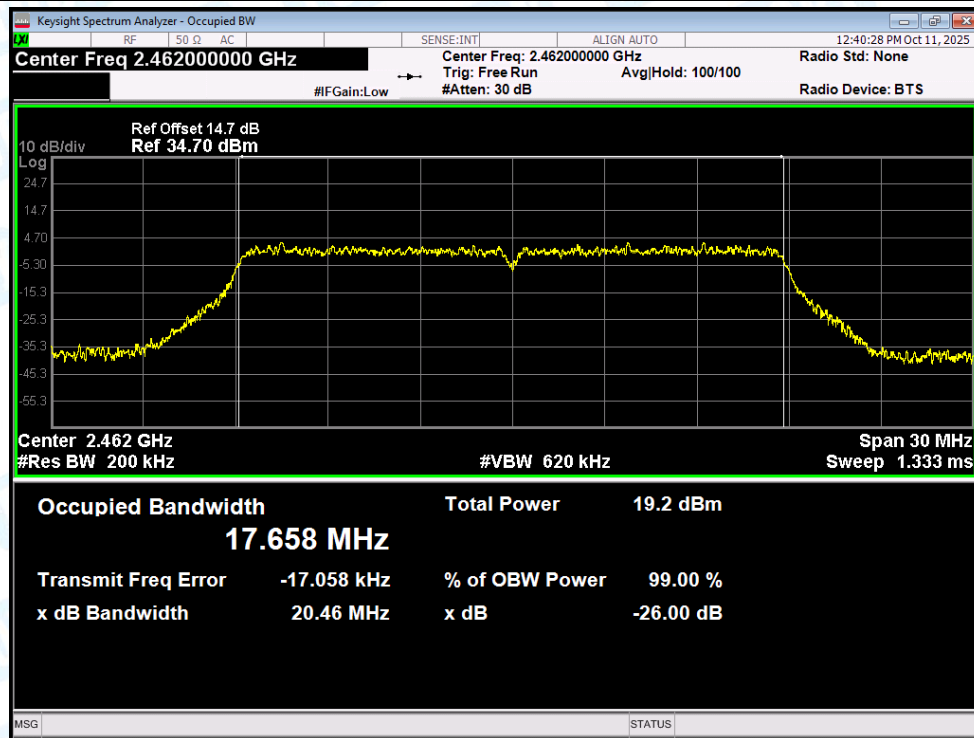




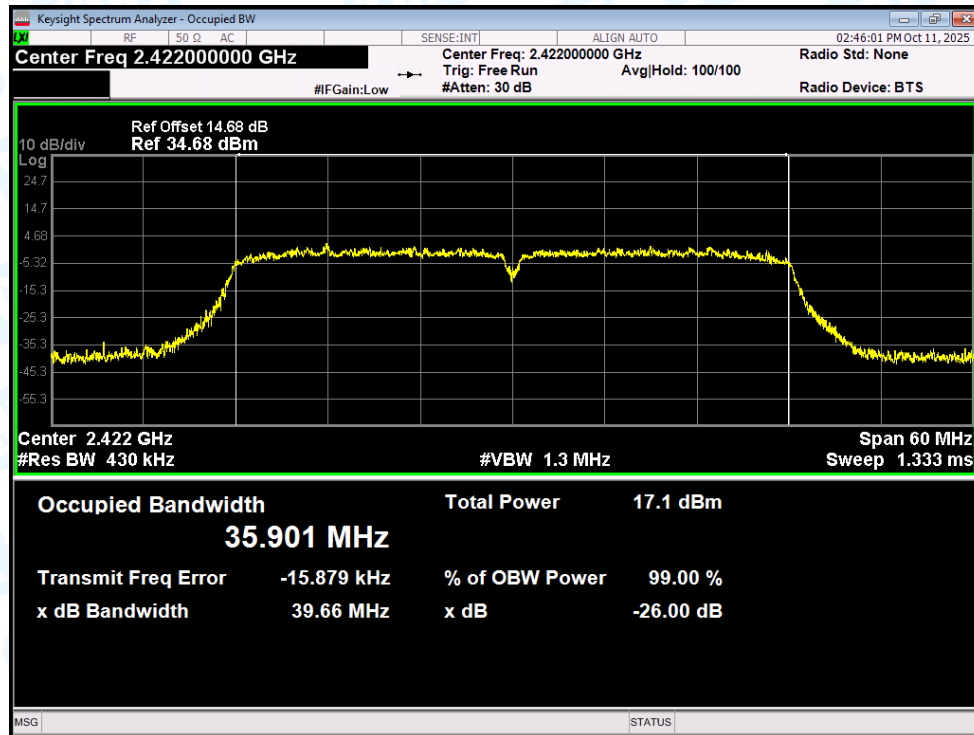
OBW NVNT n(HT20) 2437MHz Ant1



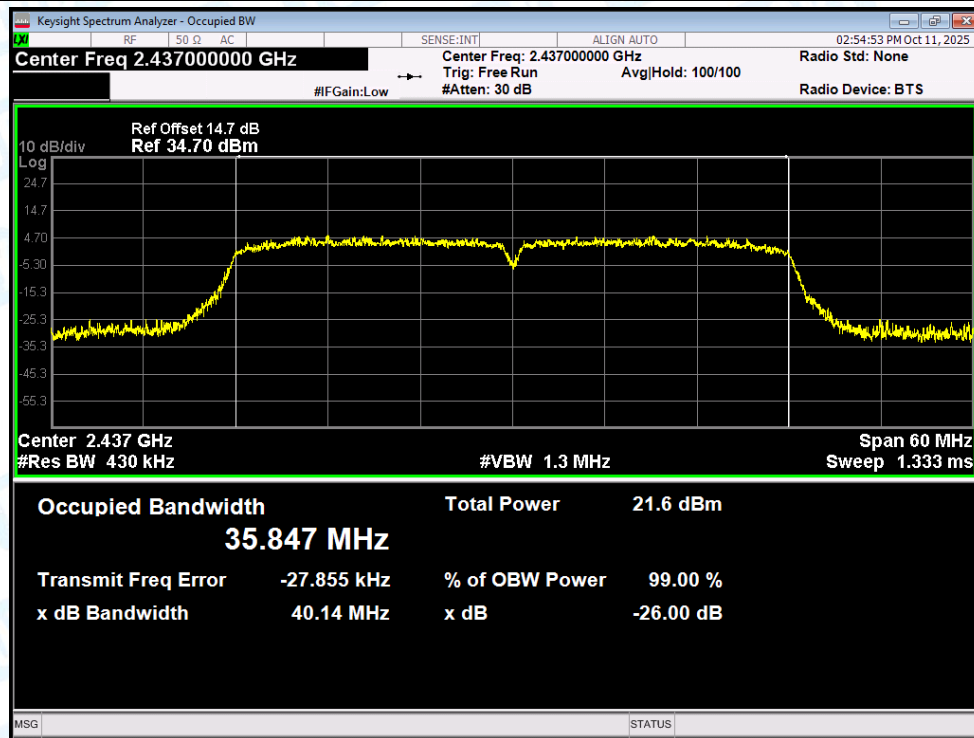
OBW NVNT n(HT20) 2462MHz Ant1

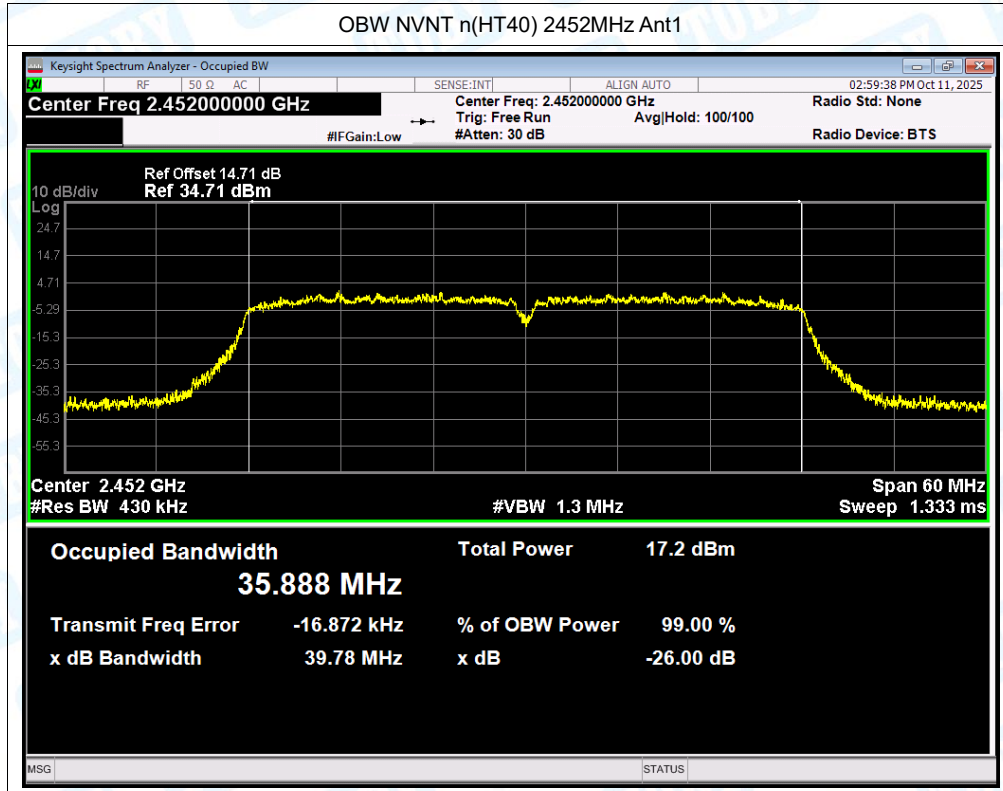


OBW NVNT n(HT40) 2422MHz Ant1



OBW NVNT n(HT40) 2437MHz Ant1



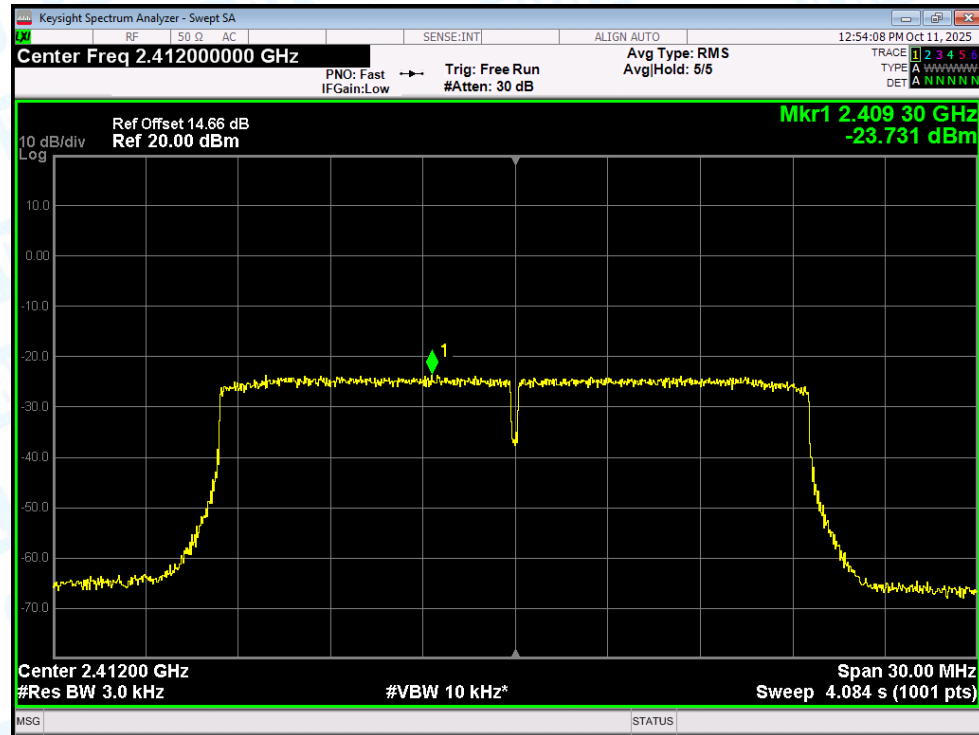


5. Maximum Power Spectral Density Level

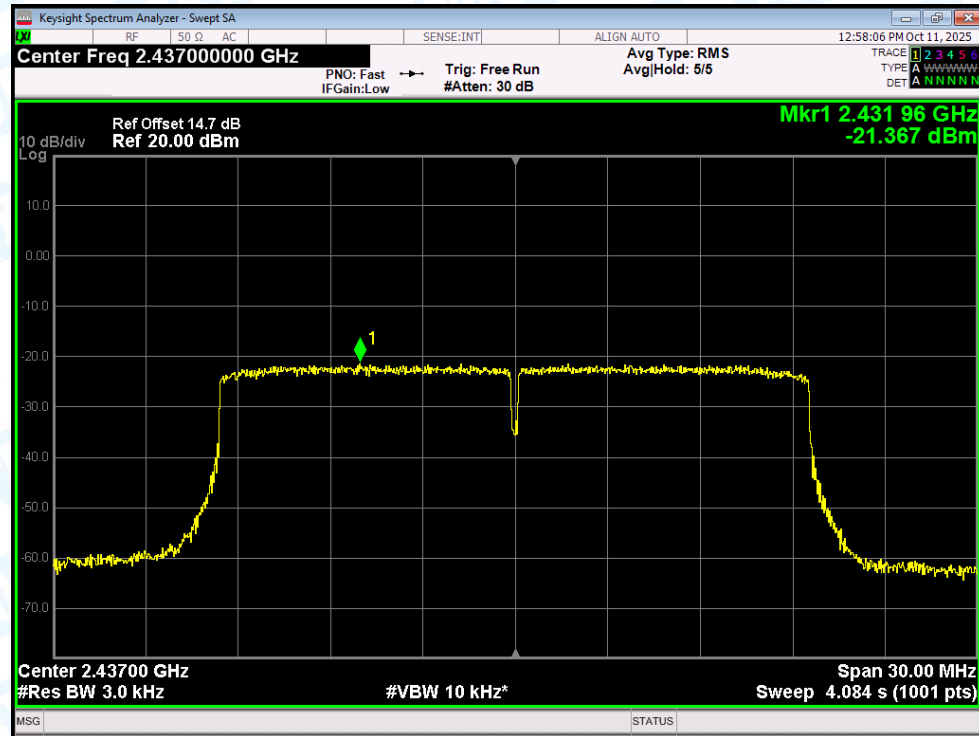
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	ax(VHT20)	2412	Ant1	-23.731	8	Pass
NVNT	ax(VHT20)	2437	Ant1	-21.367	8	Pass
NVNT	ax(VHT20)	2462	Ant1	-23.706	8	Pass
NVNT	b	2412	Ant1	-12.284	8	Pass
NVNT	b	2437	Ant1	-12.111	8	Pass
NVNT	b	2462	Ant1	-12.376	8	Pass
NVNT	g	2412	Ant1	-19.959	8	Pass
NVNT	g	2437	Ant1	-18.888	8	Pass
NVNT	g	2462	Ant1	-19.853	8	Pass
NVNT	n(HT20)	2412	Ant1	-21.334	8	Pass
NVNT	n(HT20)	2437	Ant1	-19.147	8	Pass
NVNT	n(HT20)	2462	Ant1	-20.285	8	Pass
NVNT	n(HT40)	2422	Ant1	-26.461	8	Pass
NVNT	n(HT40)	2437	Ant1	-22.879	8	Pass
NVNT	n(HT40)	2452	Ant1	-26.319	8	Pass

Test Graphs

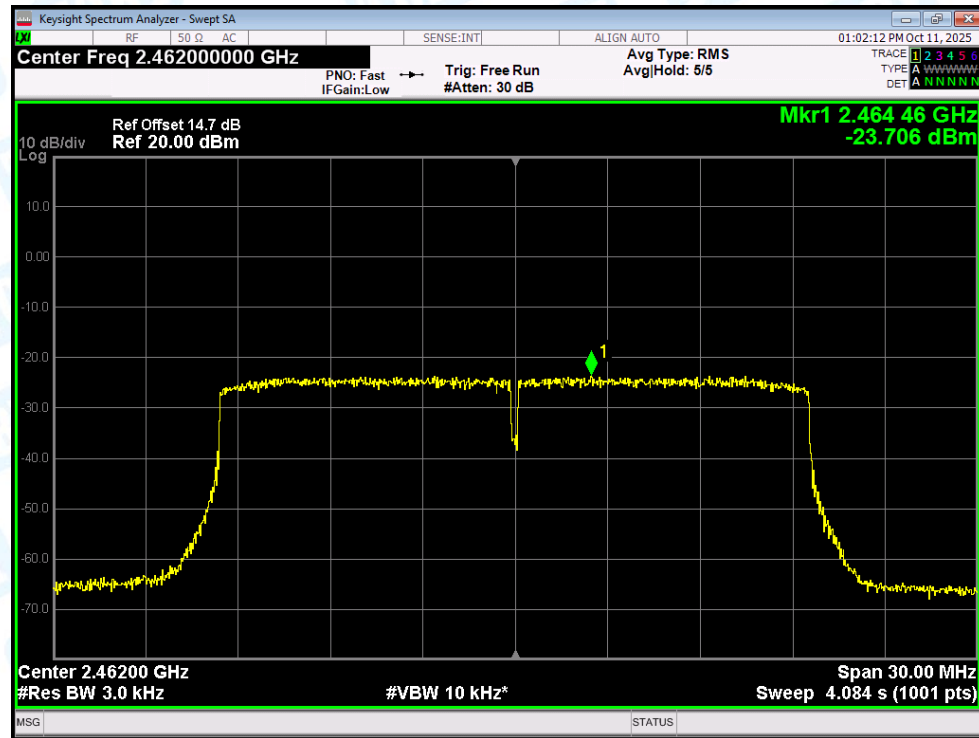
PSD NVNT ax(VHT20) 2412MHz Ant1



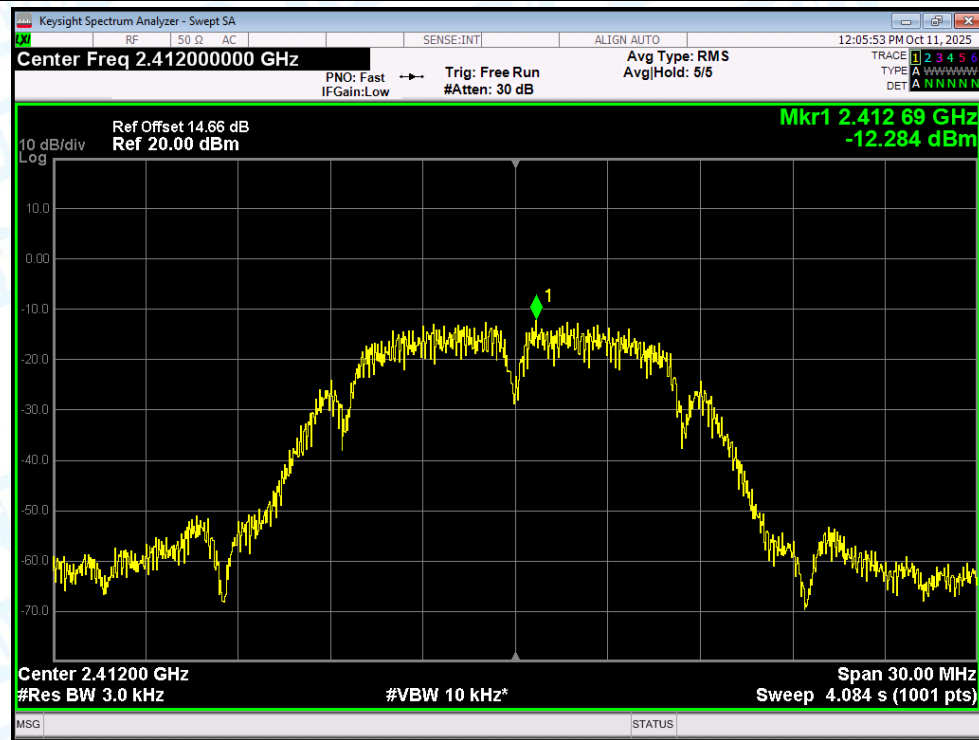
PSD NVNT ax(VHT20) 2437MHz Ant1

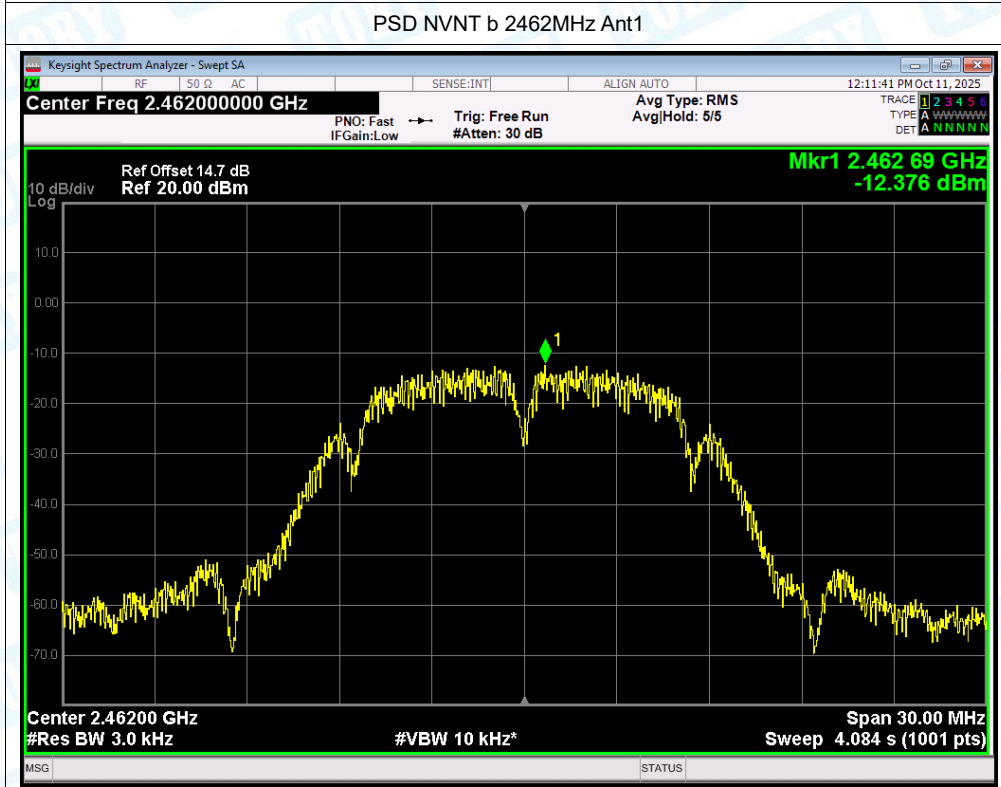
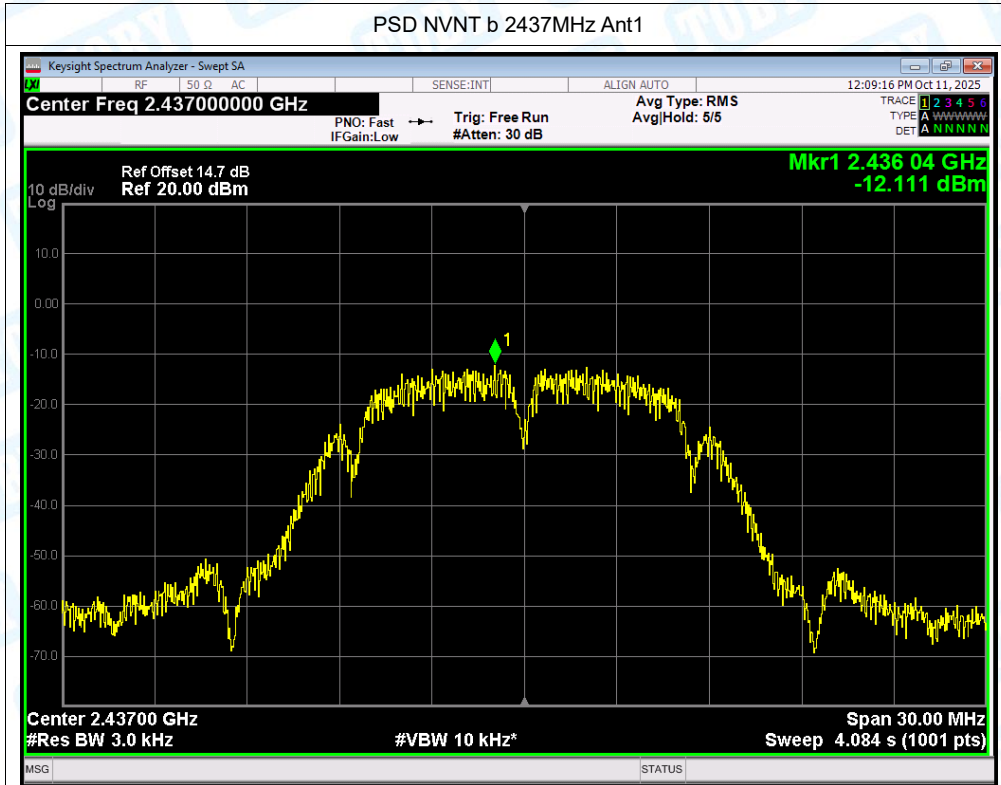


PSD NVNT ax(VHT20) 2462MHz Ant1

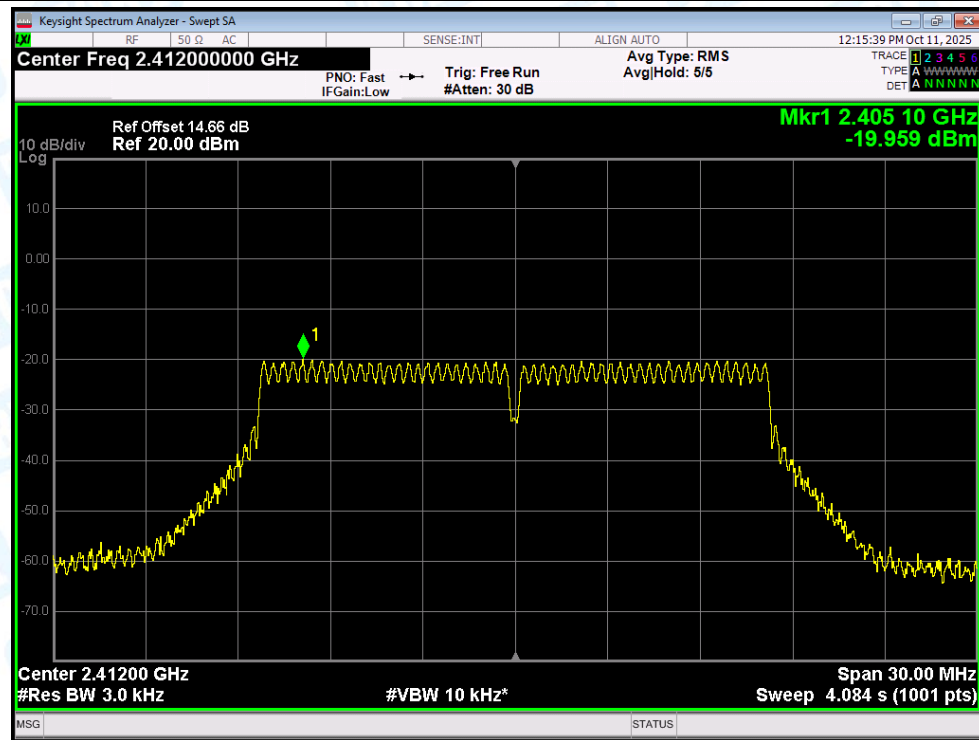


PSD NVNT b 2412MHz Ant1

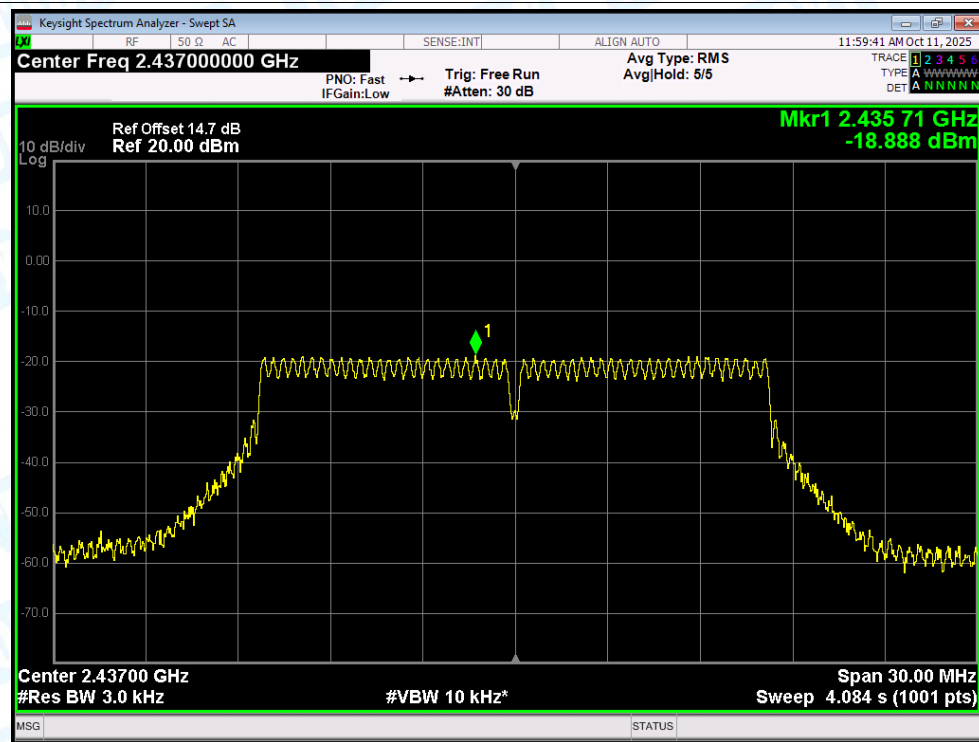


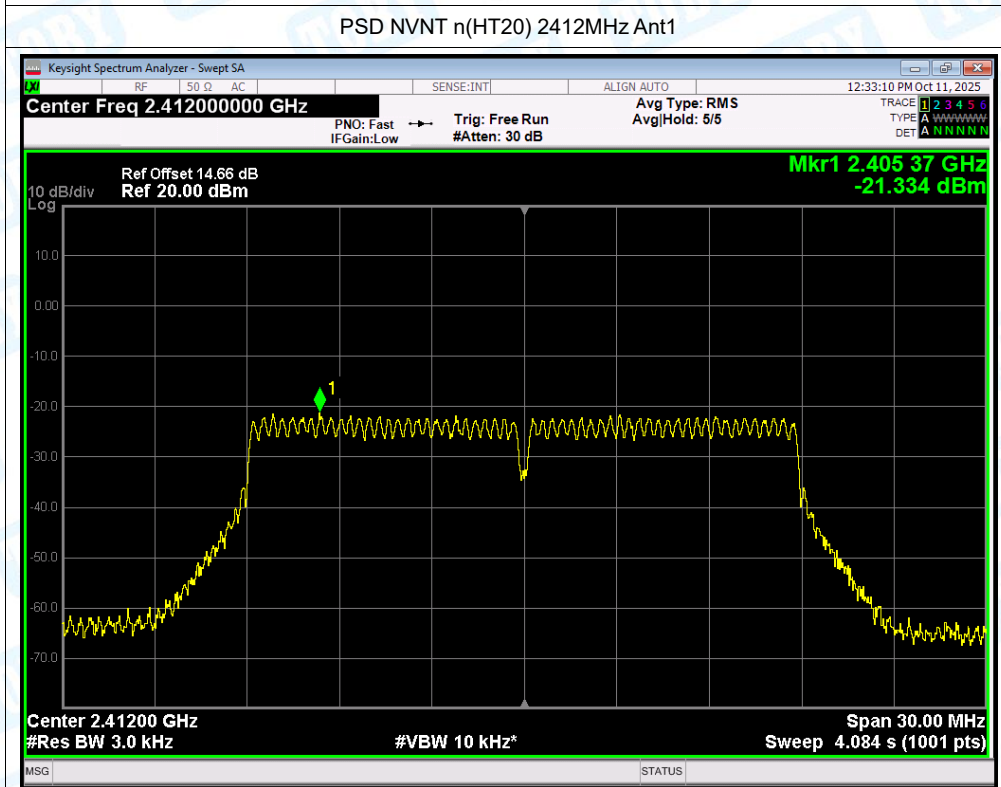
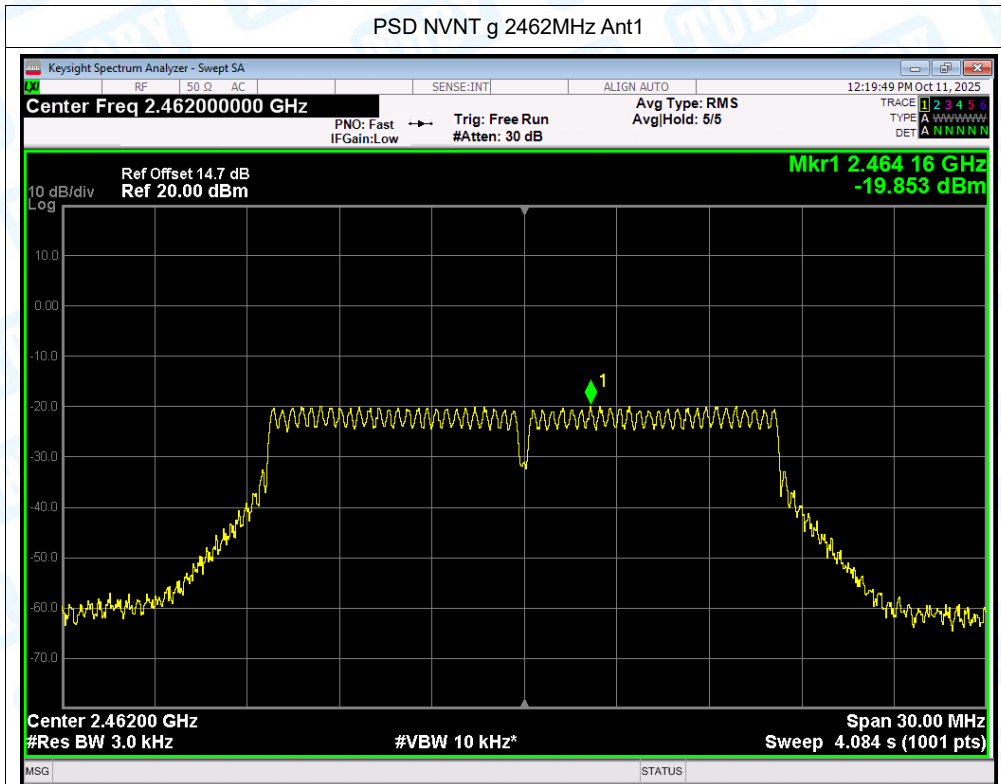


PSD NVNT g 2412MHz Ant1

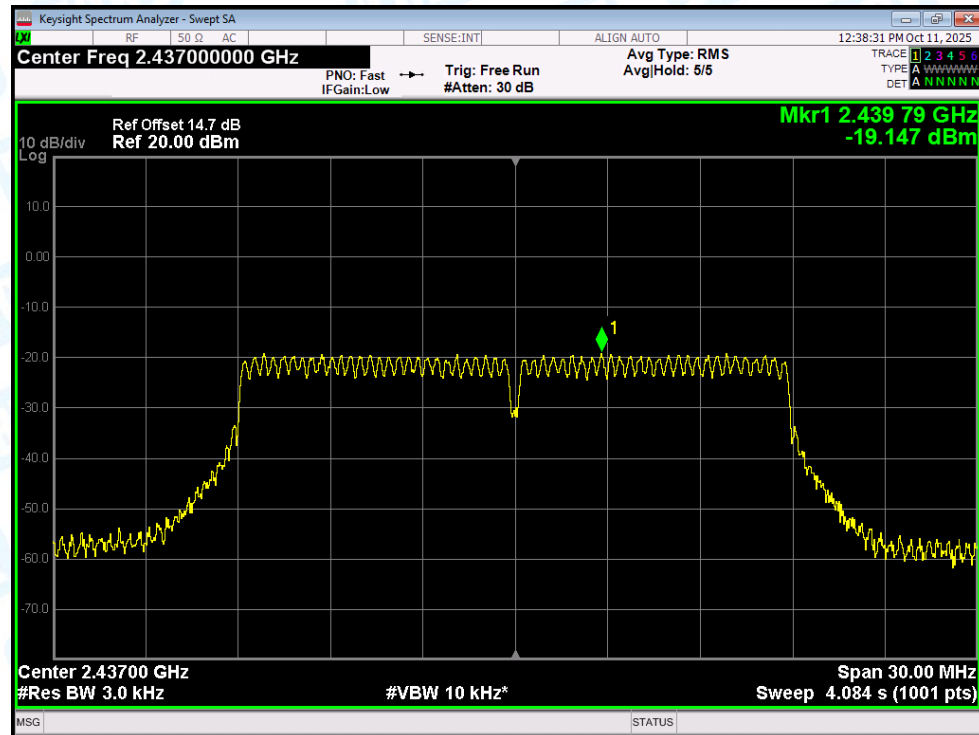


PSD NVNT g 2437MHz Ant1

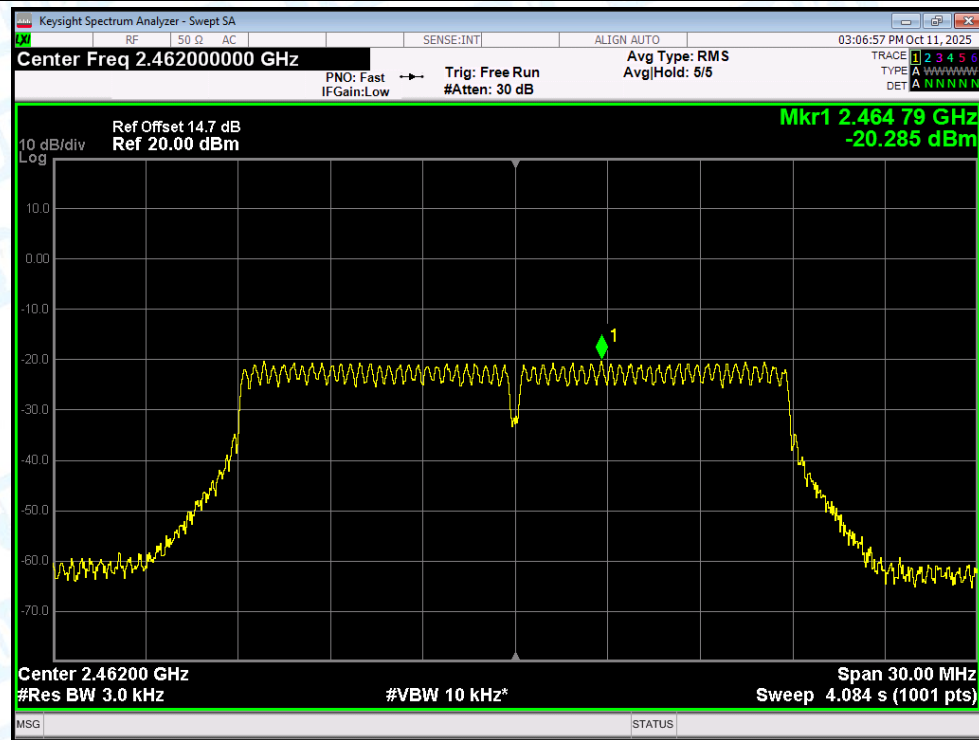




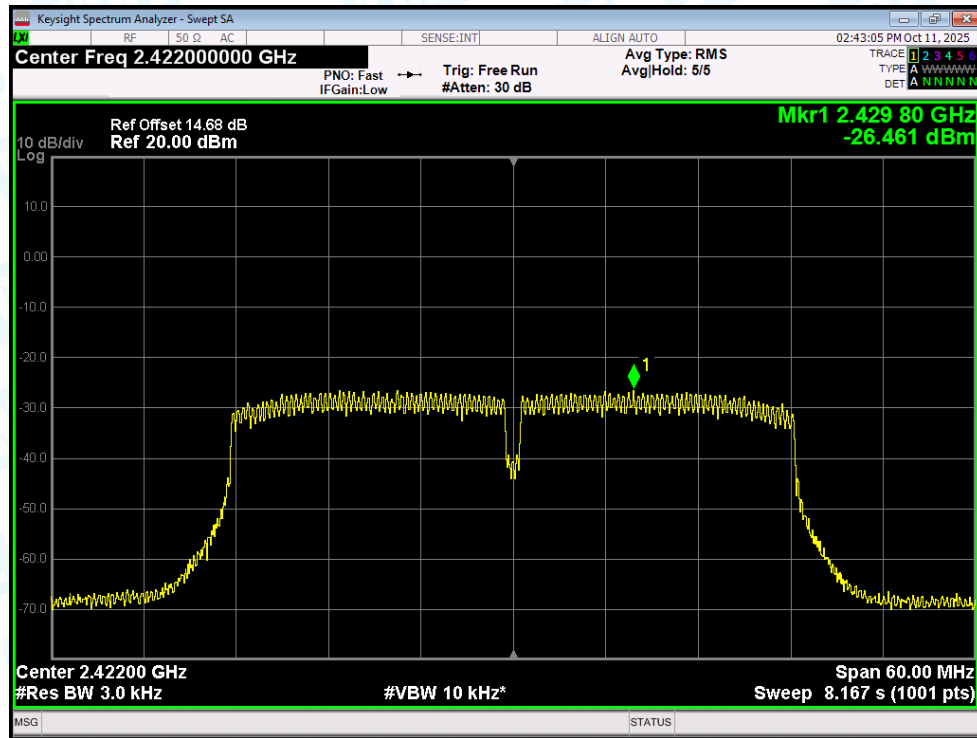
PSD NVNT n(HT20) 2437MHz Ant1



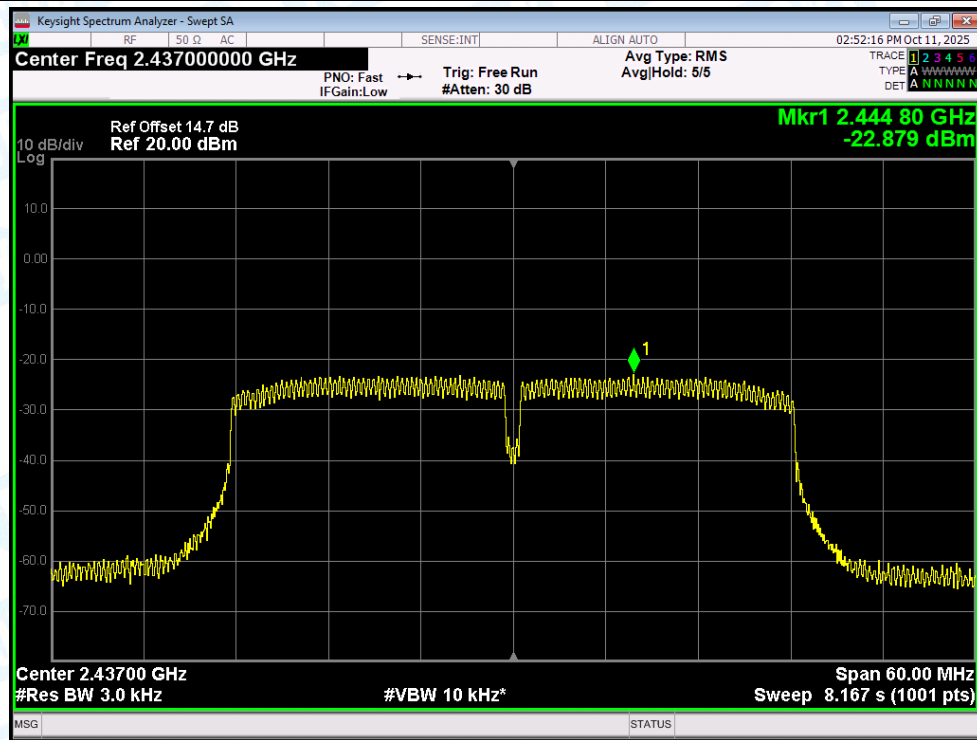
PSD NVNT n(HT20) 2462MHz Ant1

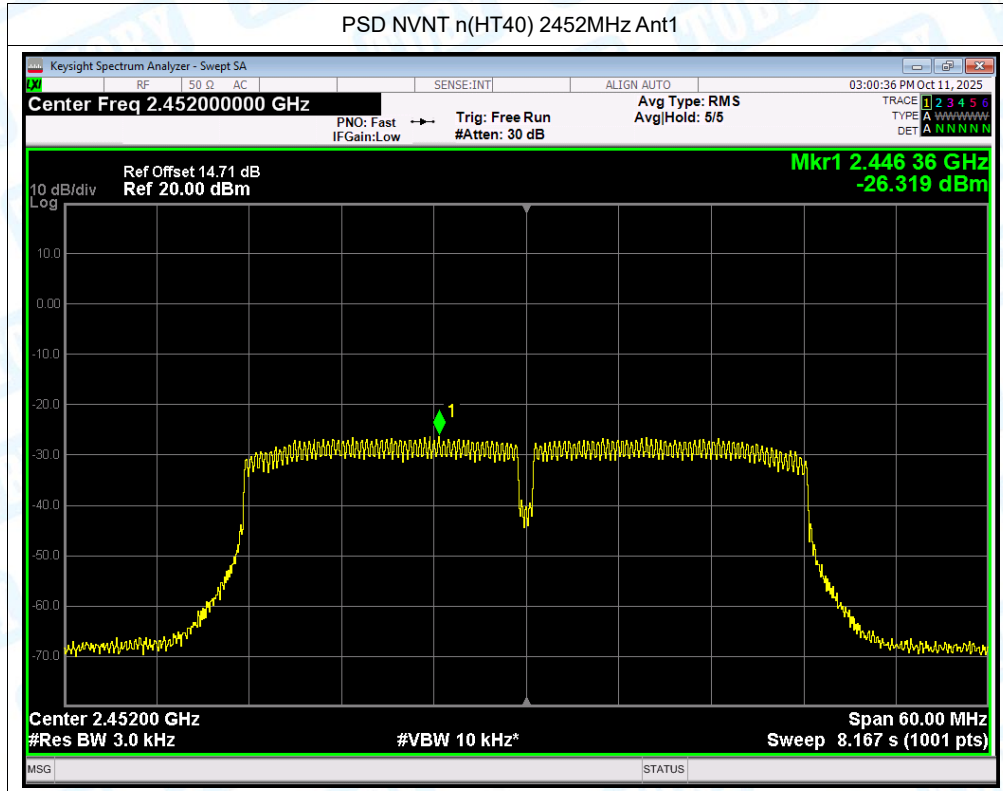


PSD NVNT n(HT40) 2422MHz Ant1



PSD NVNT n(HT40) 2437MHz Ant1



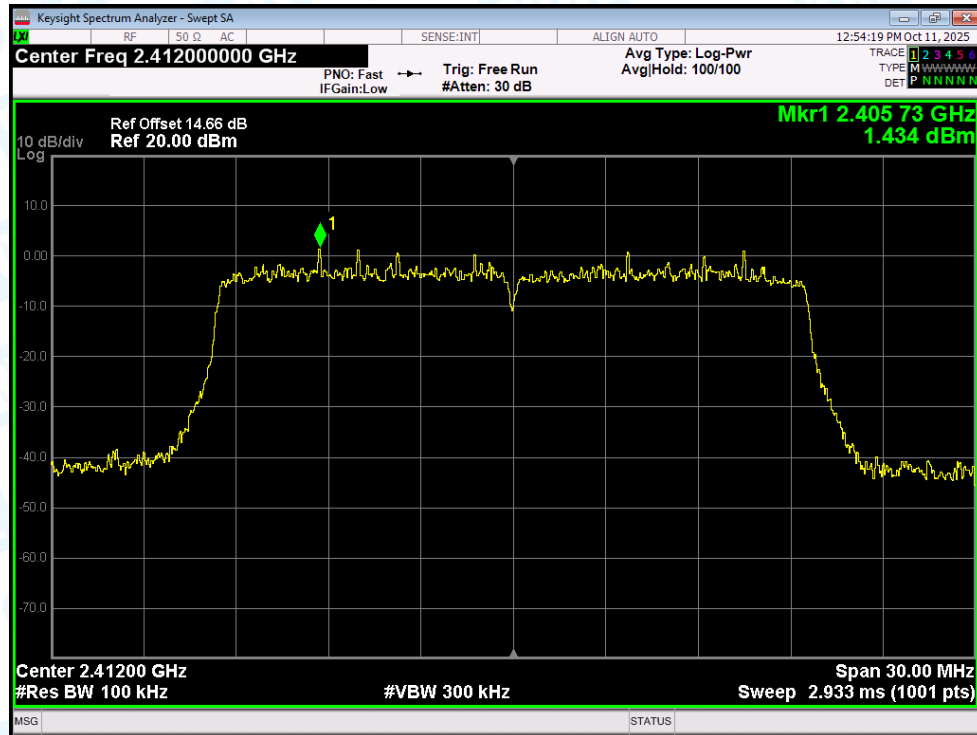


6. Band Edge

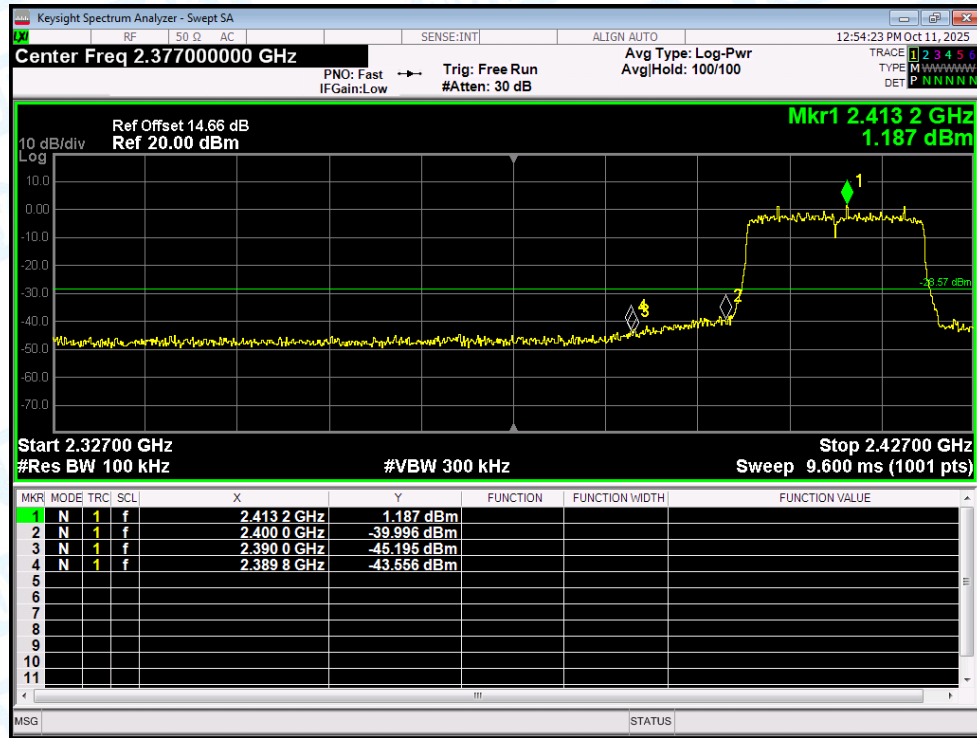
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	ax(VHT20)	2412	Ant1	-44.99	-30	Pass
NVNT	ax(VHT20)	2462	Ant1	-43.56	-30	Pass
NVNT	b	2412	Ant1	-53.69	-30	Pass
NVNT	b	2462	Ant1	-53.88	-30	Pass
NVNT	g	2412	Ant1	-47.46	-30	Pass
NVNT	g	2462	Ant1	-46.28	-30	Pass
NVNT	n(HT20)	2412	Ant1	-44.6	-30	Pass
NVNT	n(HT20)	2462	Ant1	-45.88	-30	Pass
NVNT	n(HT40)	2422	Ant1	-40.74	-30	Pass
NVNT	n(HT40)	2452	Ant1	-40.02	-30	Pass

Test Graphs

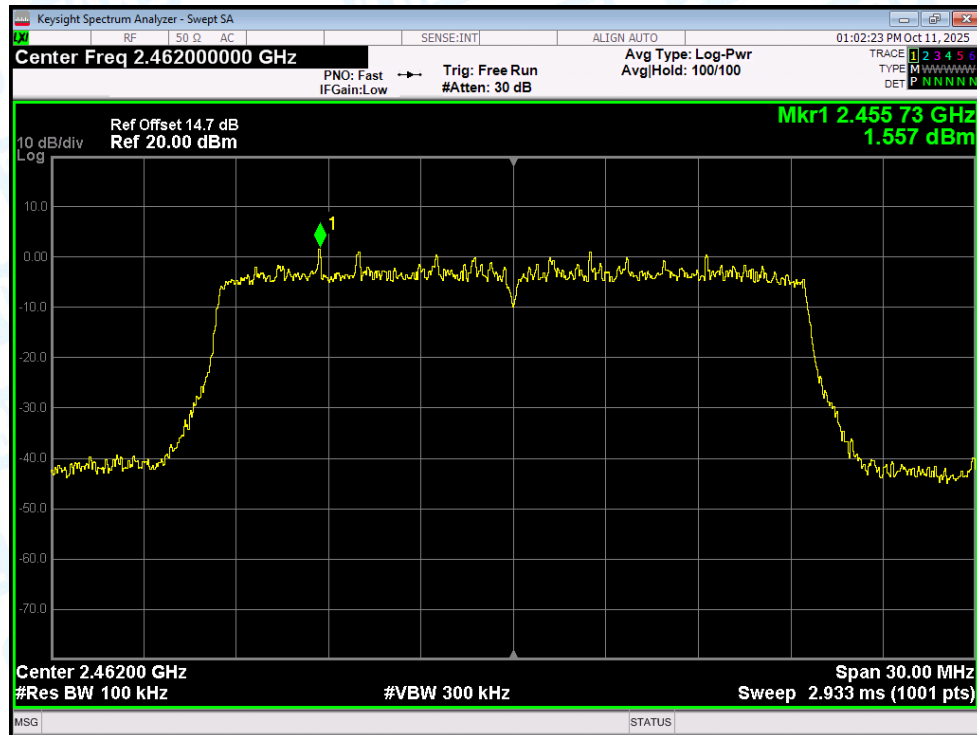
Band Edge NVNT ax(VHT20) 2412MHz Ant1 Ref



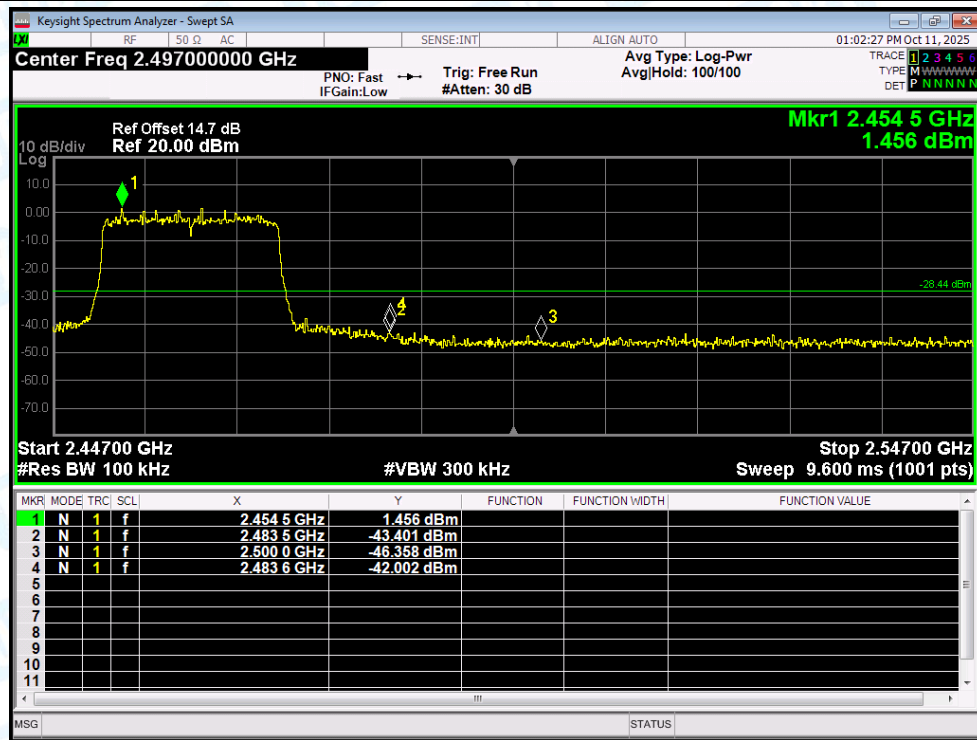
Band Edge NVNT ax(VHT20) 2412MHz Ant1 Emission



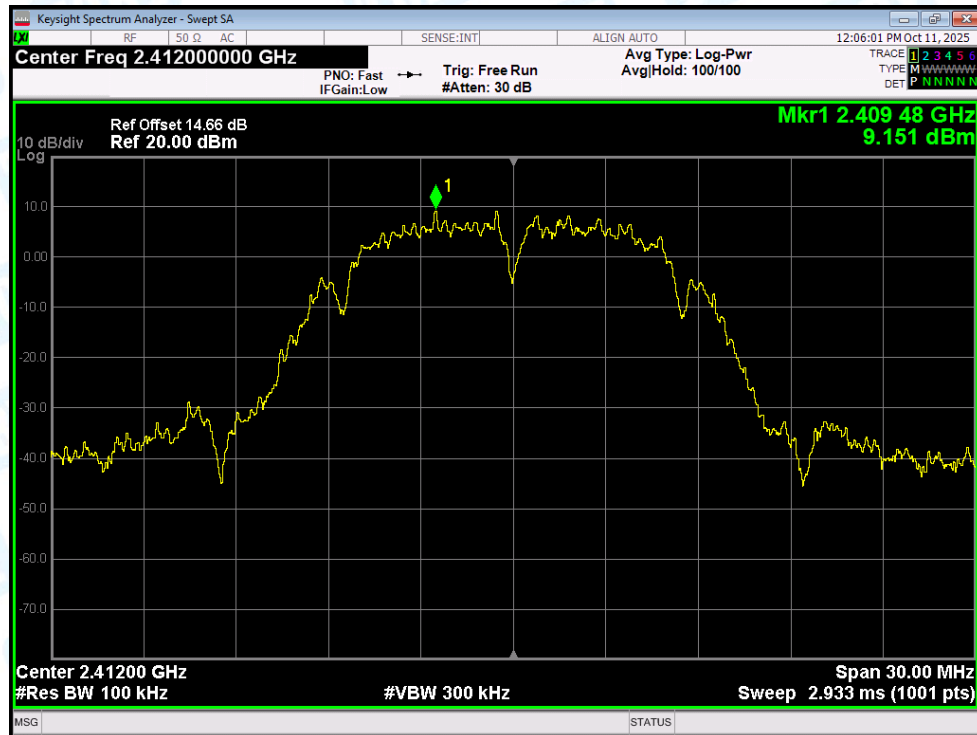
Band Edge NVNT ax(VHT20) 2462MHz Ant1 Ref



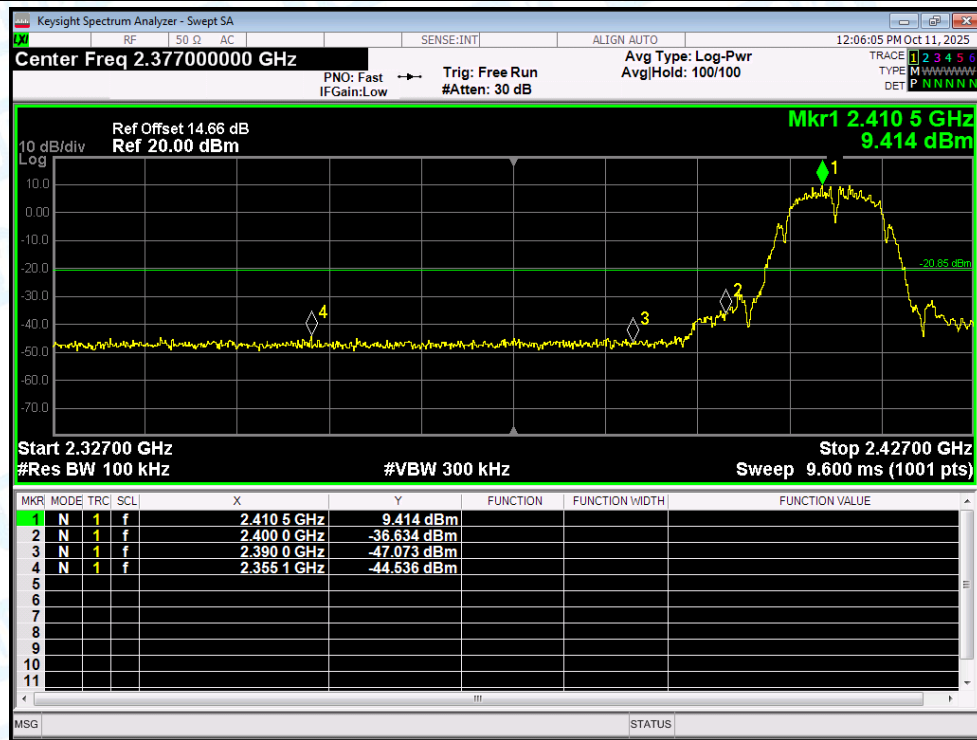
Band Edge NVNT ax(VHT20) 2462MHz Ant1 Emission



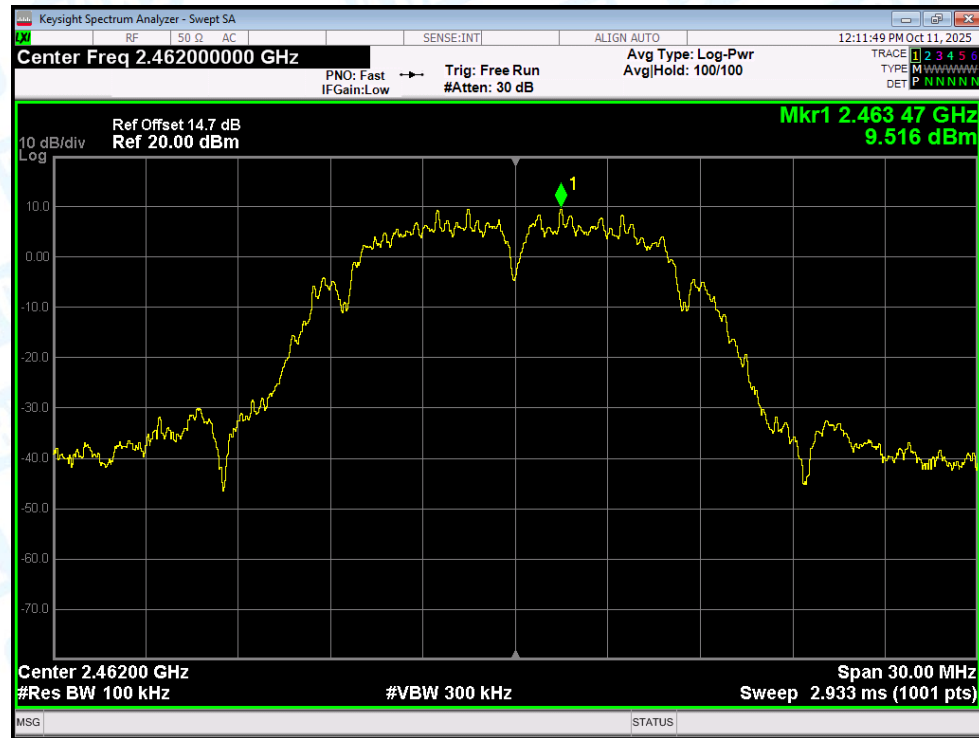
Band Edge NVNT b 2412MHz Ant1 Ref



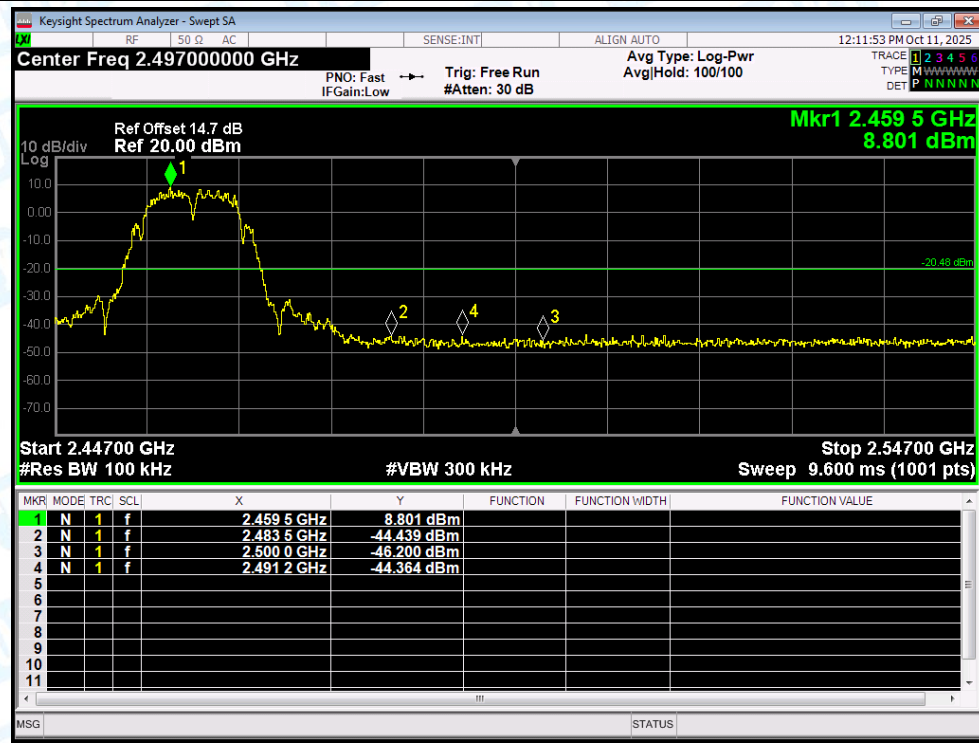
Band Edge NVNT b 2412MHz Ant1 Emission



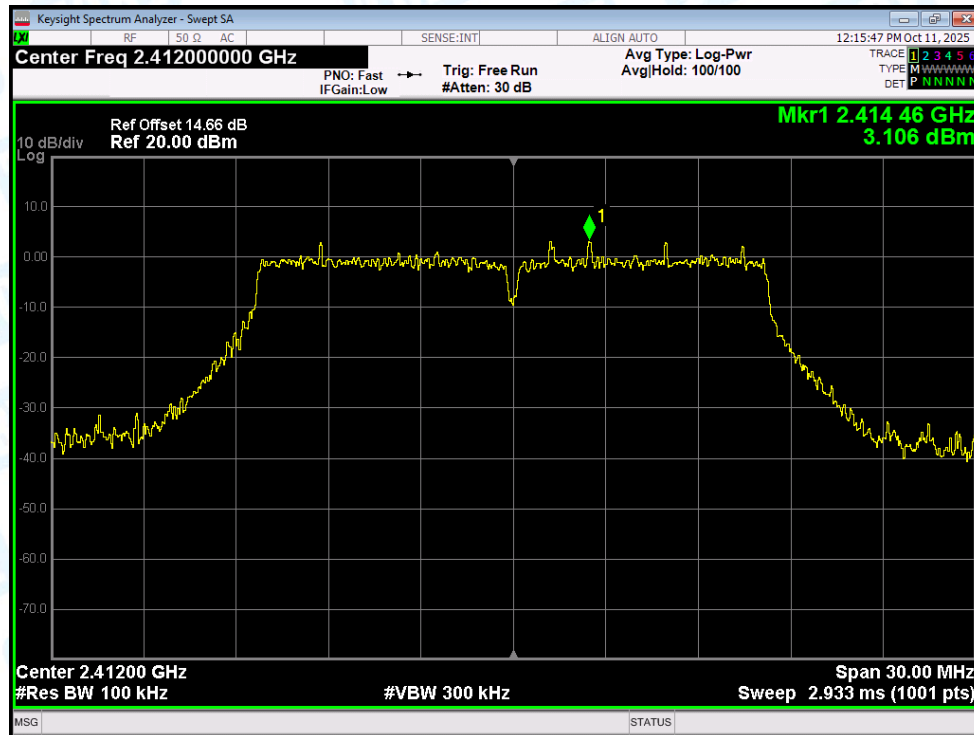
Band Edge NVNT b 2462MHz Ant1 Ref



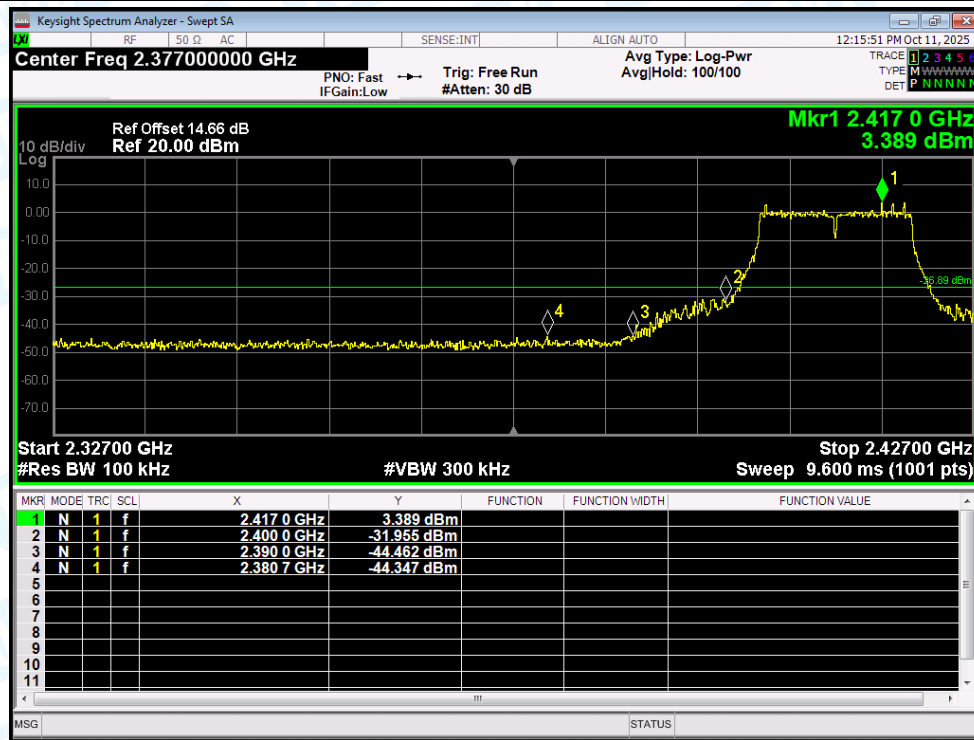
Band Edge NVNT b 2462MHz Ant1 Emission



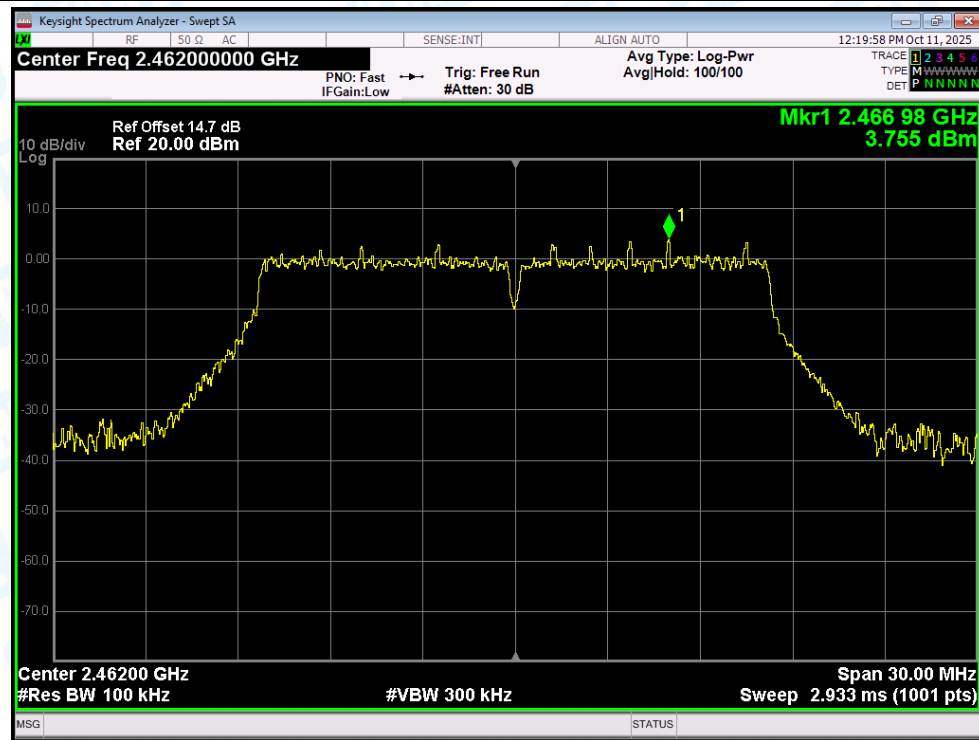
Band Edge NVNT g 2412MHz Ant1 Ref



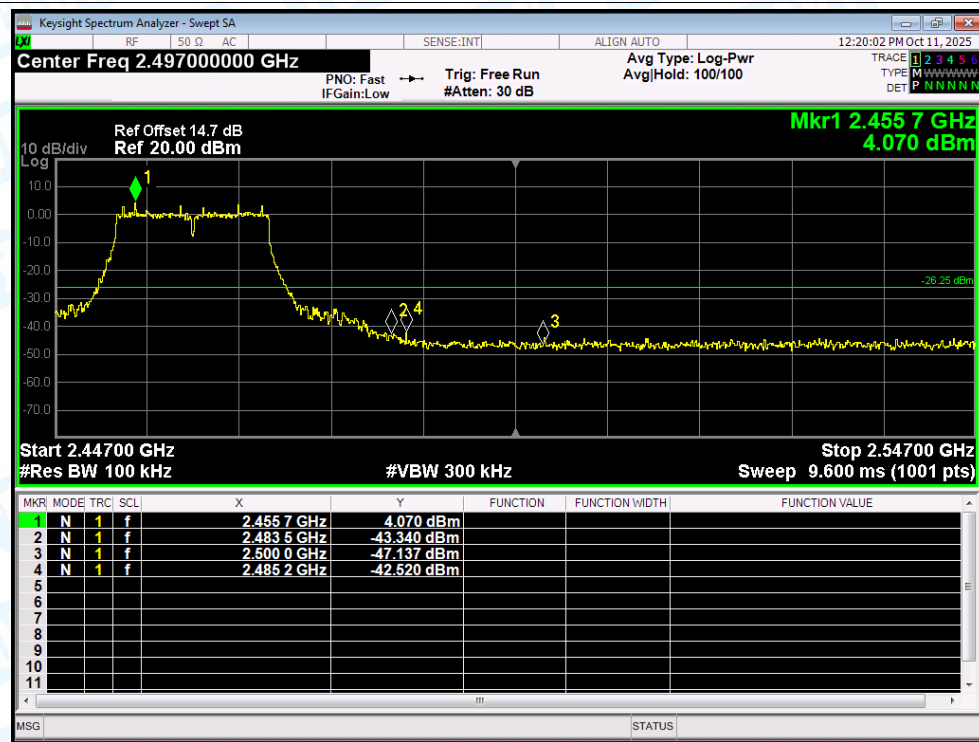
Band Edge NVNT g 2412MHz Ant1 Emission



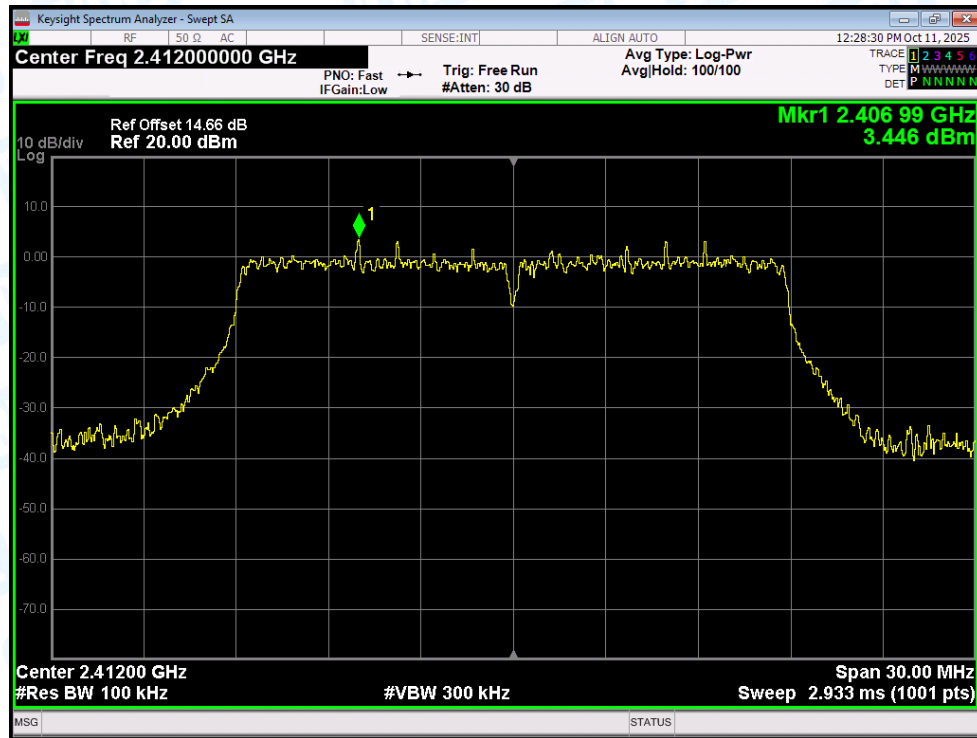
Band Edge NVNT g 2462MHz Ant1 Ref



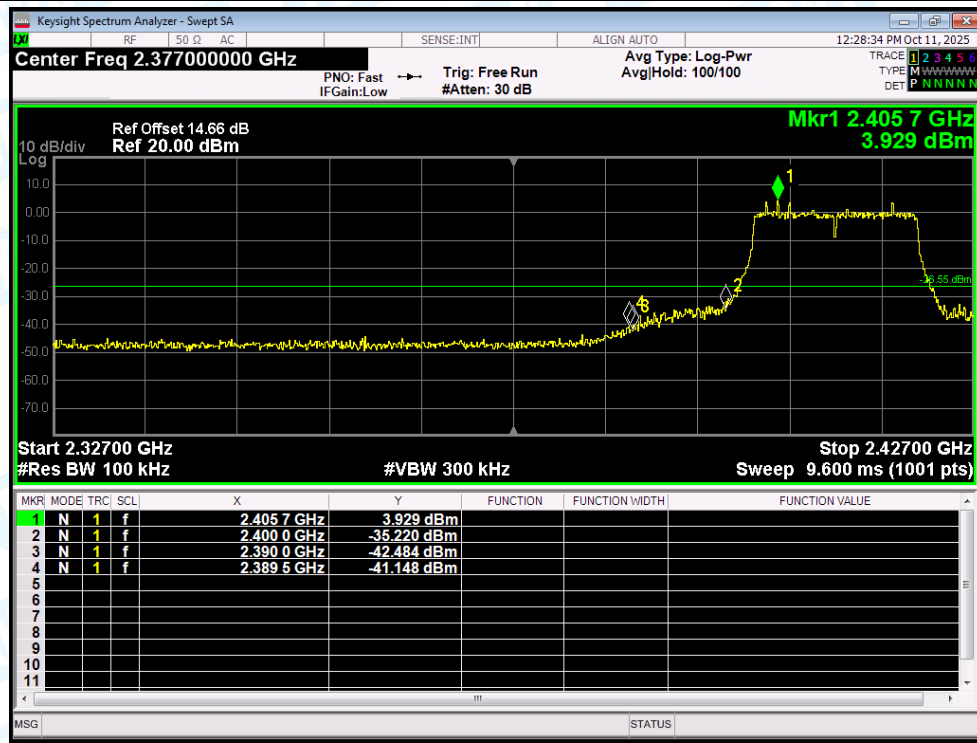
Band Edge NVNT g 2462MHz Ant1 Emission



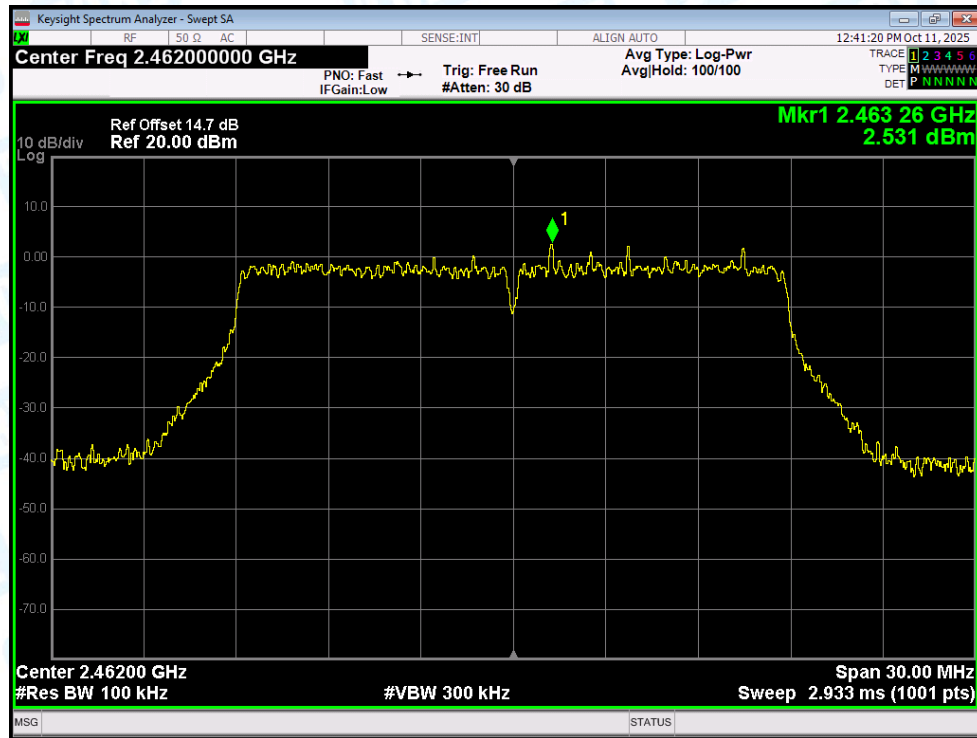
Band Edge NVNT n(HT20) 2412MHz Ant1 Ref



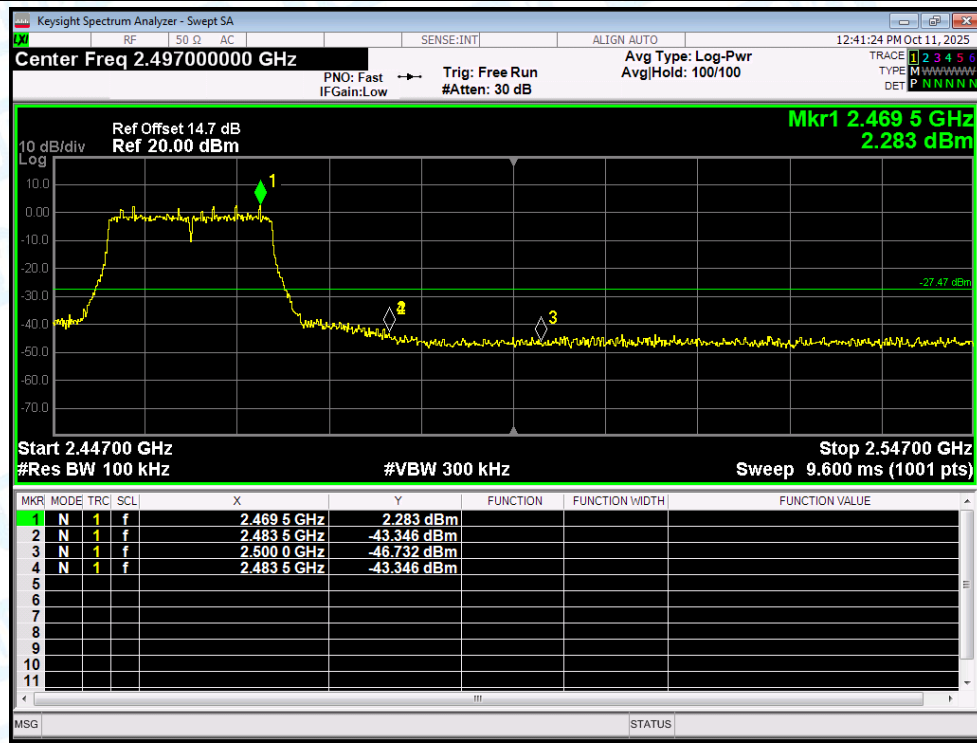
Band Edge NVNT n(HT20) 2412MHz Ant1 Emission



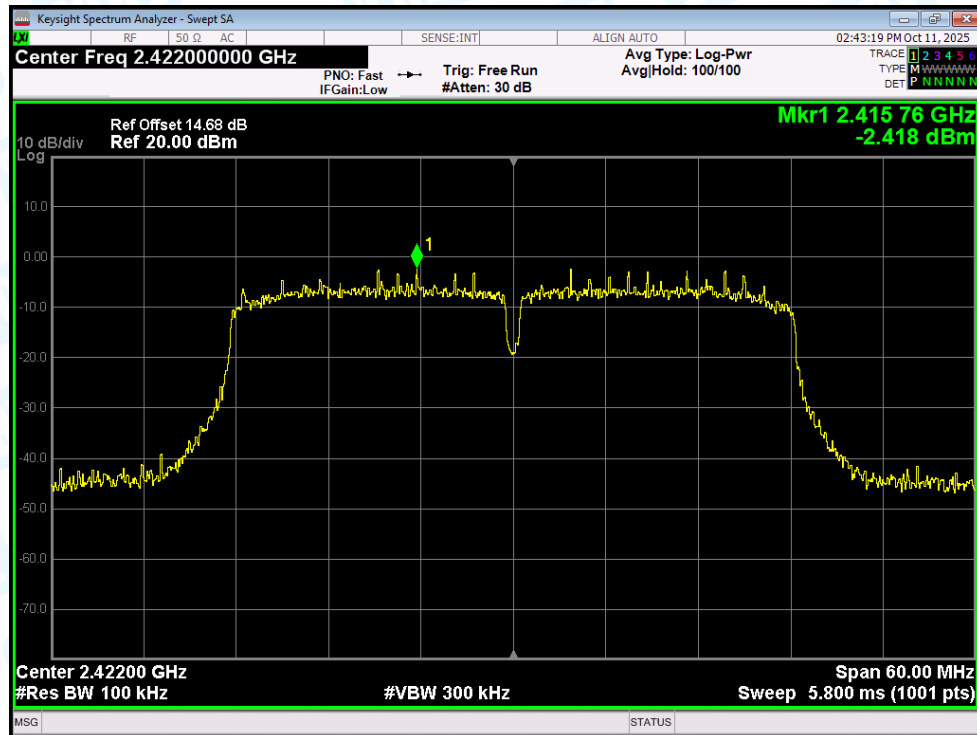
Band Edge NVNT n(HT20) 2462MHz Ant1 Ref



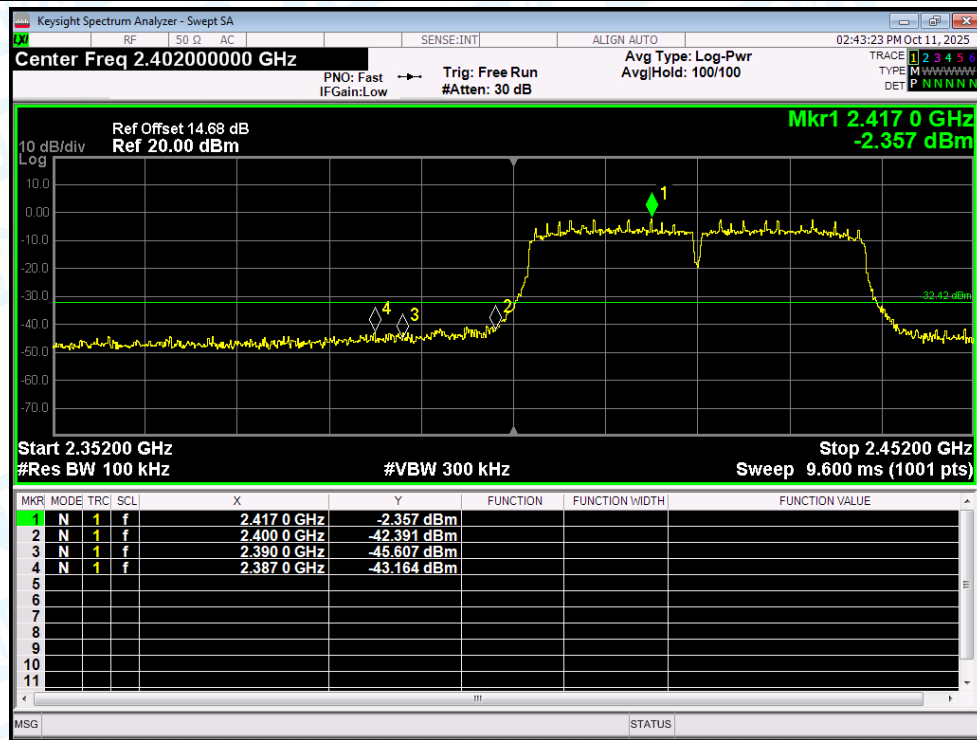
Band Edge NVNT n(HT20) 2462MHz Ant1 Emission



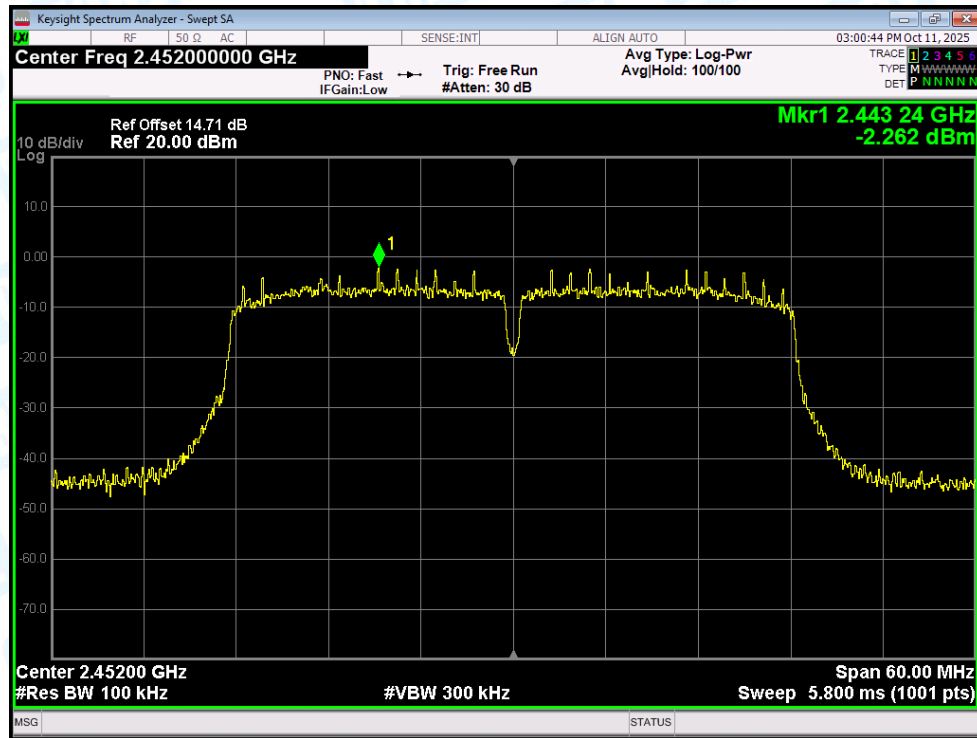
Band Edge NVNT n(HT40) 2422MHz Ant1 Ref



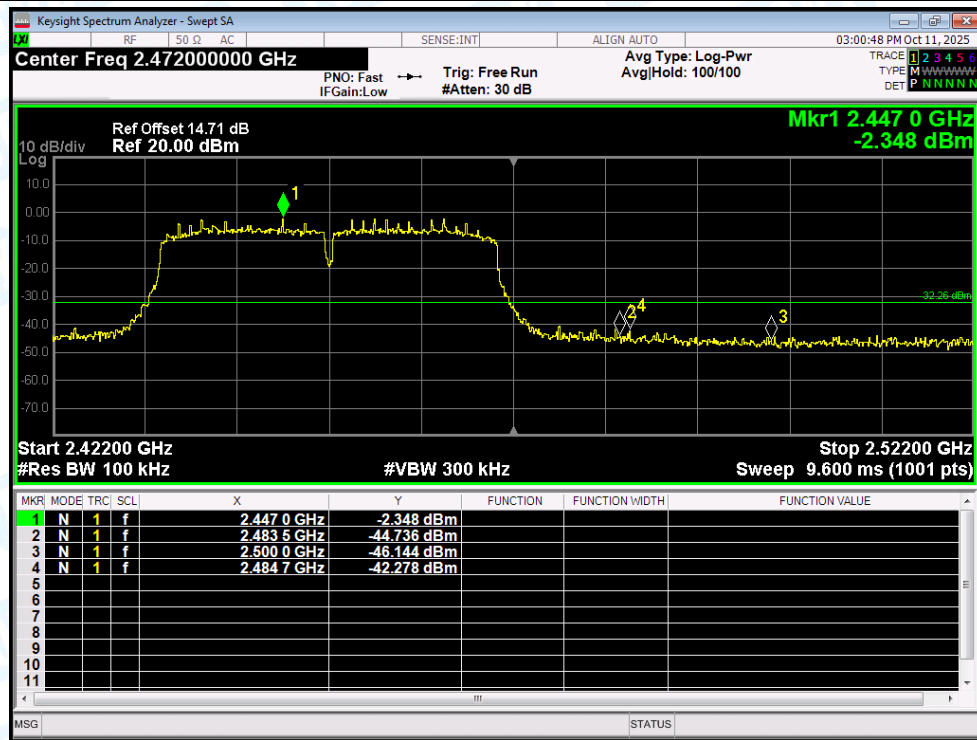
Band Edge NVNT n(HT40) 2422MHz Ant1 Emission



Band Edge NVNT n(HT40) 2452MHz Ant1 Ref



Band Edge NVNT n(HT40) 2452MHz Ant1 Emission

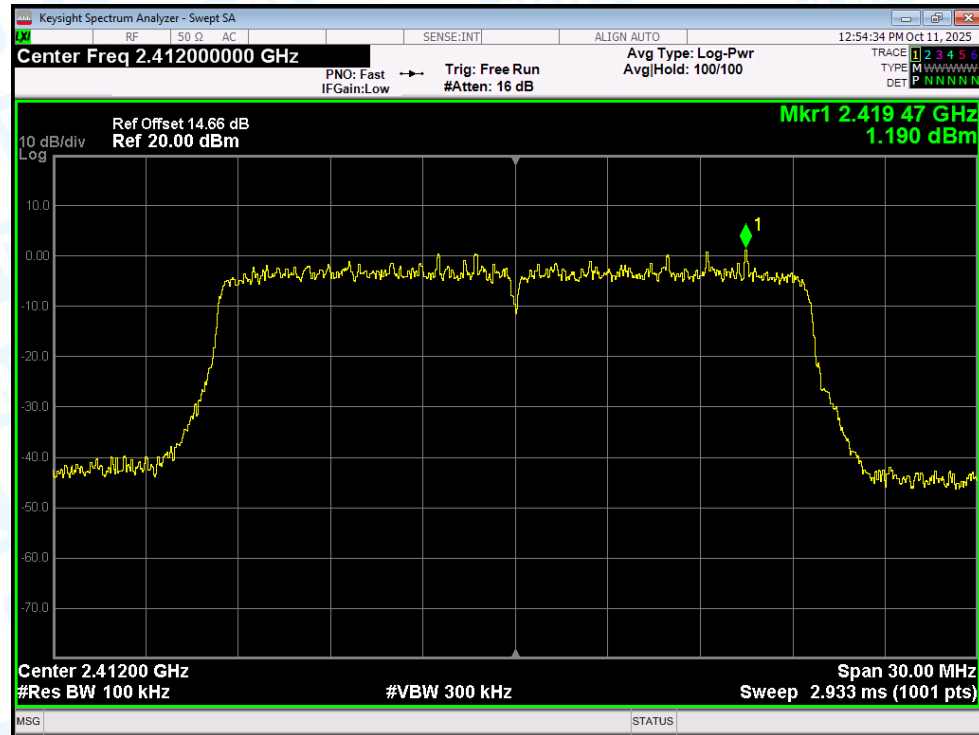


7. Conducted RF Spurious Emission

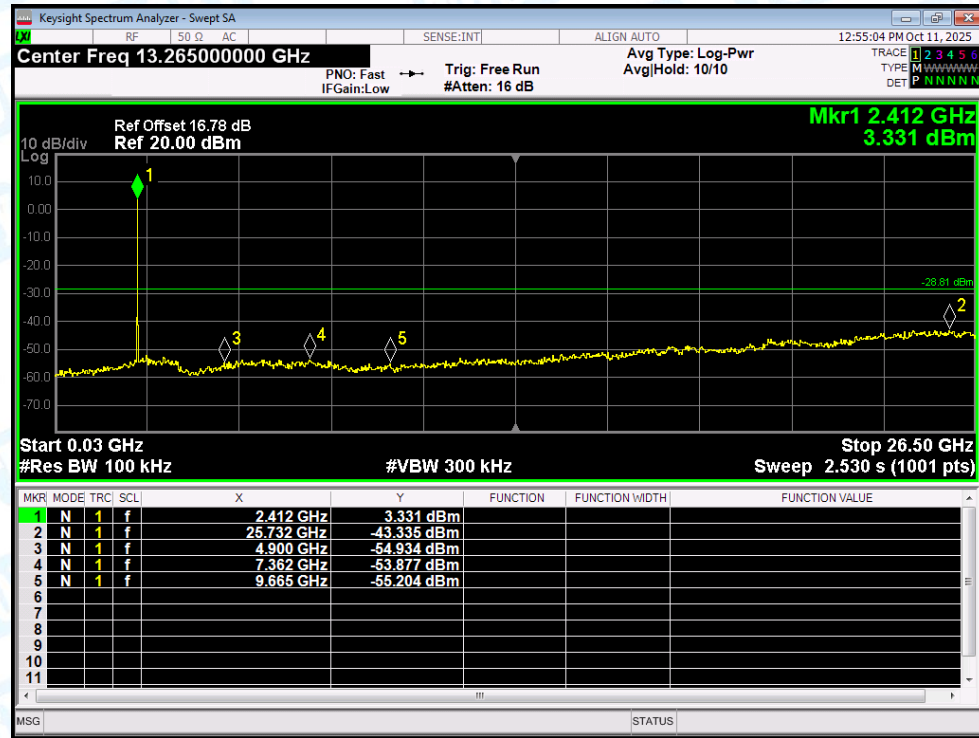
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	ax(VHT20)	2412	Ant1	-44.53	-30	Pass
NVNT	ax(VHT20)	2437	Ant1	-46.24	-30	Pass
NVNT	ax(VHT20)	2462	Ant1	-43.97	-30	Pass
NVNT	b	2412	Ant1	-52.68	-30	Pass
NVNT	b	2437	Ant1	-51.13	-30	Pass
NVNT	b	2462	Ant1	-52.55	-30	Pass
NVNT	g	2412	Ant1	-46.49	-30	Pass
NVNT	g	2437	Ant1	-47.14	-30	Pass
NVNT	g	2462	Ant1	-47.21	-30	Pass
NVNT	n(HT20)	2412	Ant1	-44.47	-30	Pass
NVNT	n(HT20)	2437	Ant1	-47.4	-30	Pass
NVNT	n(HT20)	2462	Ant1	-46.58	-30	Pass
NVNT	n(HT40)	2422	Ant1	-41.24	-30	Pass
NVNT	n(HT40)	2437	Ant1	-44.64	-30	Pass
NVNT	n(HT40)	2452	Ant1	-39.73	-30	Pass

Test Graphs

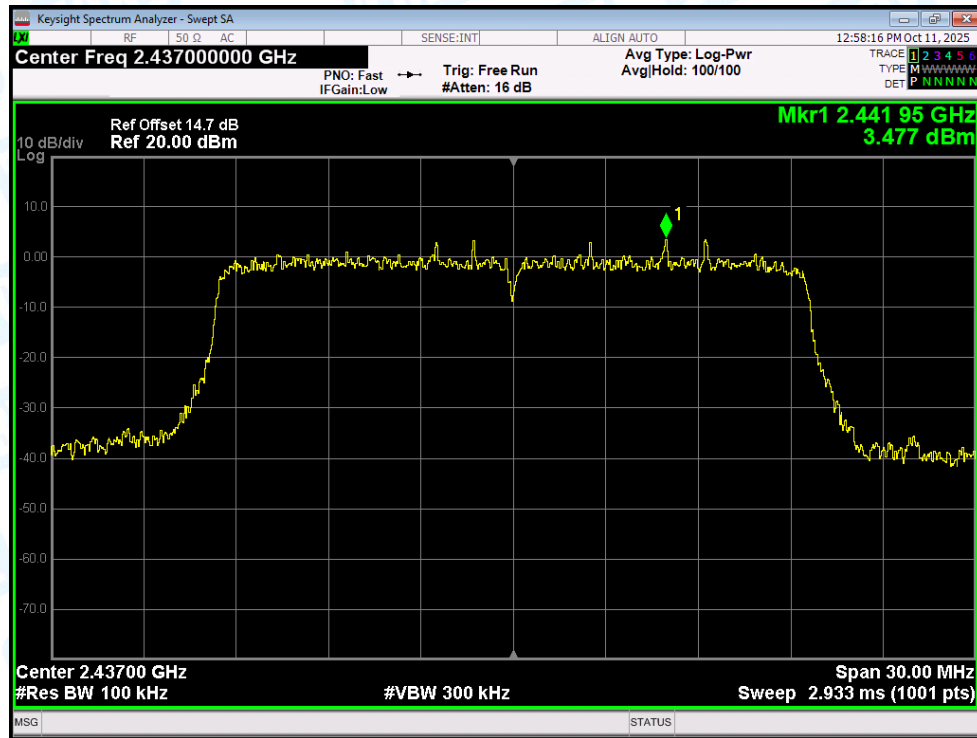
Tx. Spurious NVNT ax(VHT20) 2412MHz Ant1 Ref



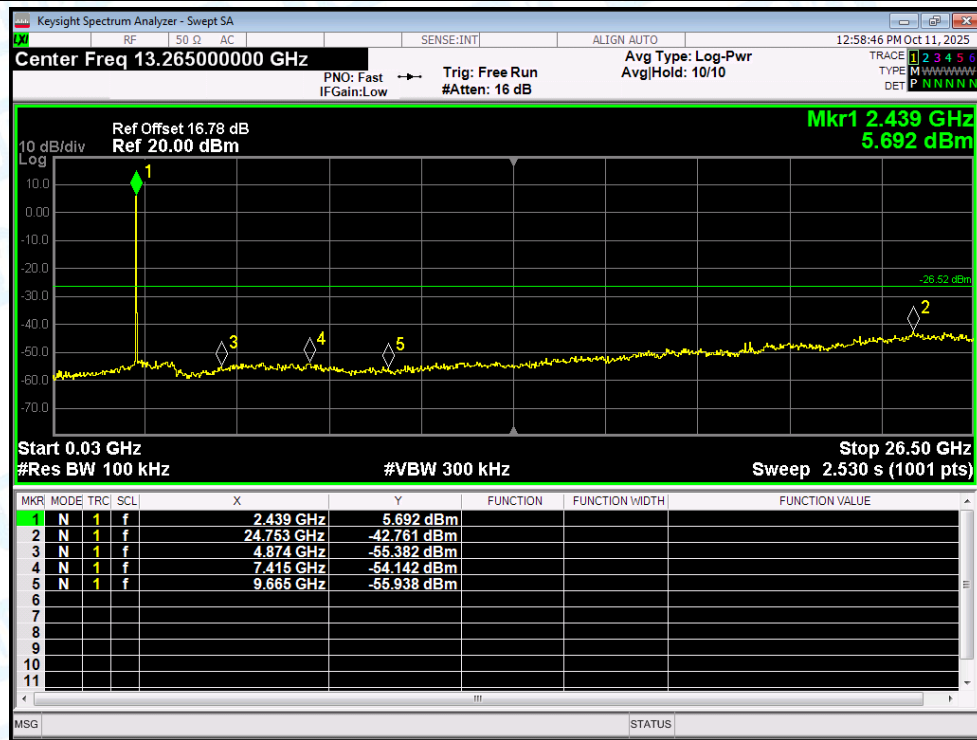
Tx. Spurious NVNT ax(VHT20) 2412MHz Ant1 Emission



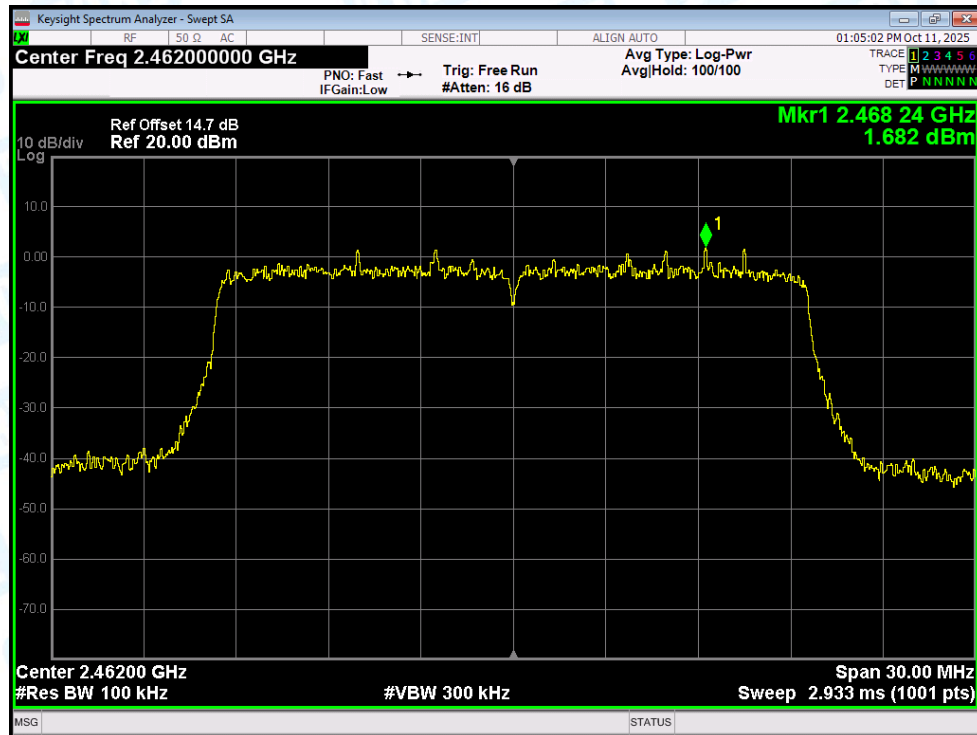
Tx. Spurious NVNT ax(VHT20) 2437MHz Ant1 Ref



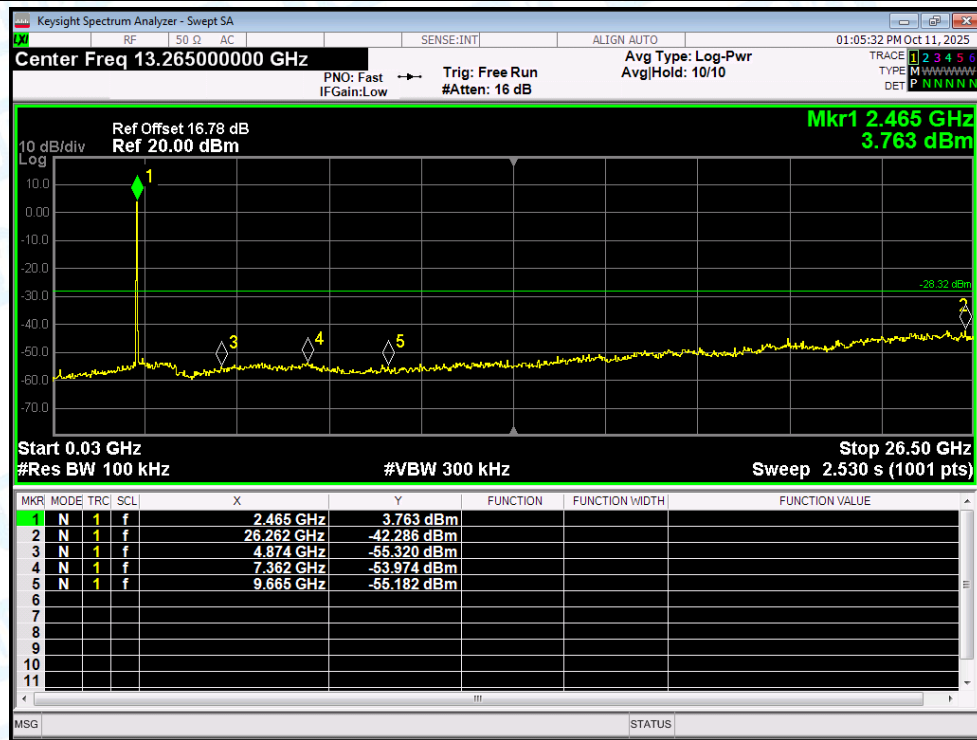
Tx. Spurious NVNT ax(VHT20) 2437MHz Ant1 Emission



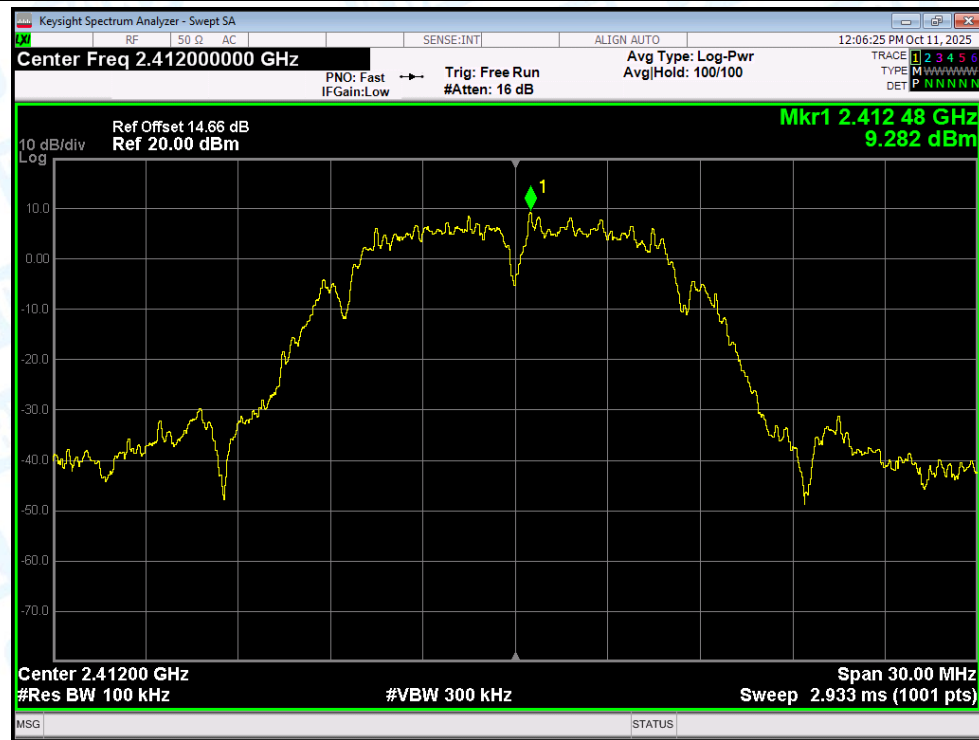
Tx. Spurious NVNT ax(VHT20) 2462MHz Ant1 Ref



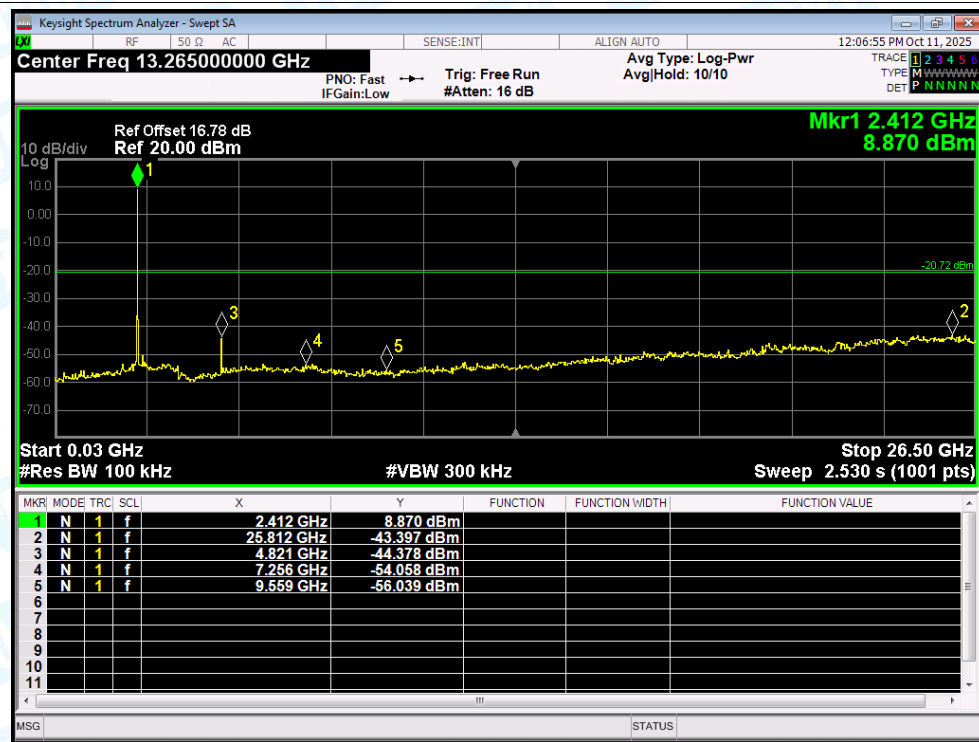
Tx. Spurious NVNT ax(VHT20) 2462MHz Ant1 Emission



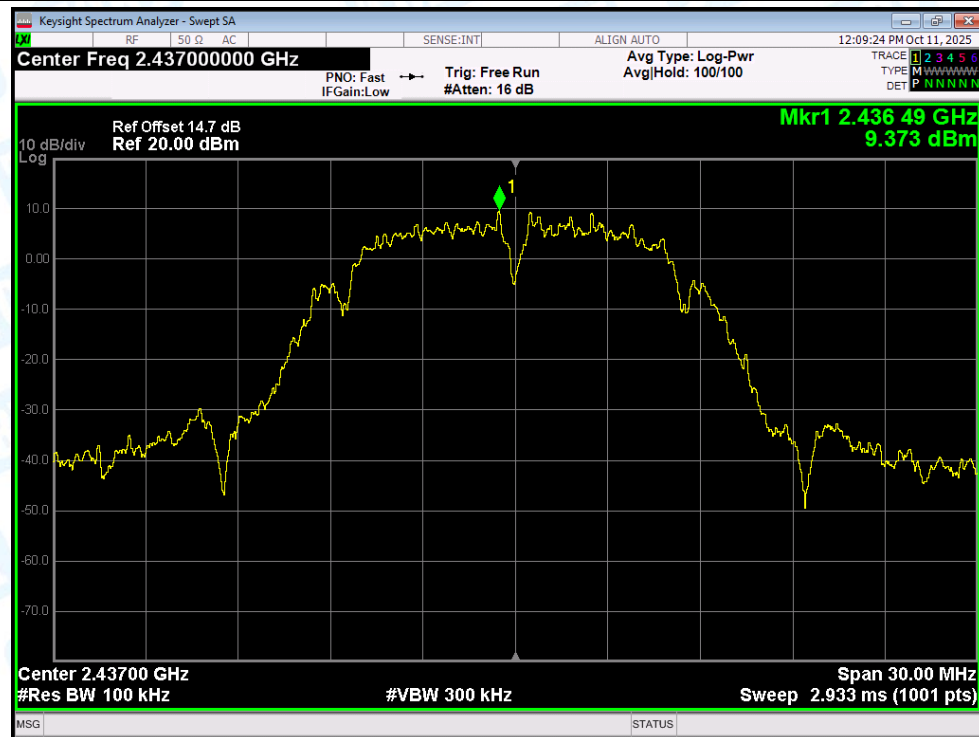
Tx. Spurious NVNT b 2412MHz Ant1 Ref



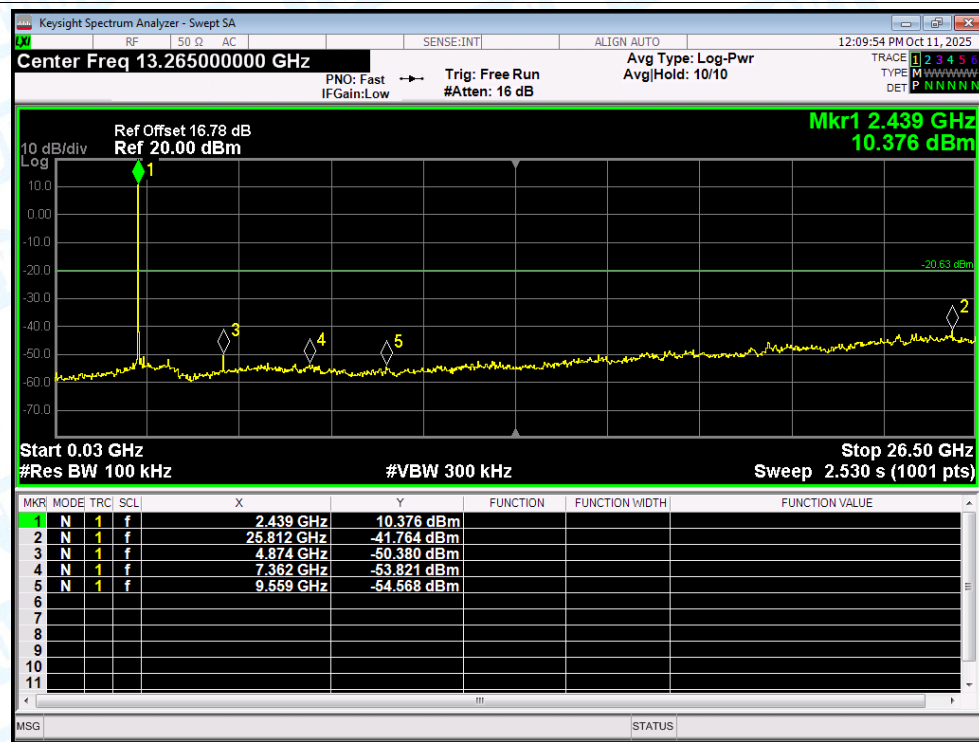
Tx. Spurious NVNT b 2412MHz Ant1 Emission



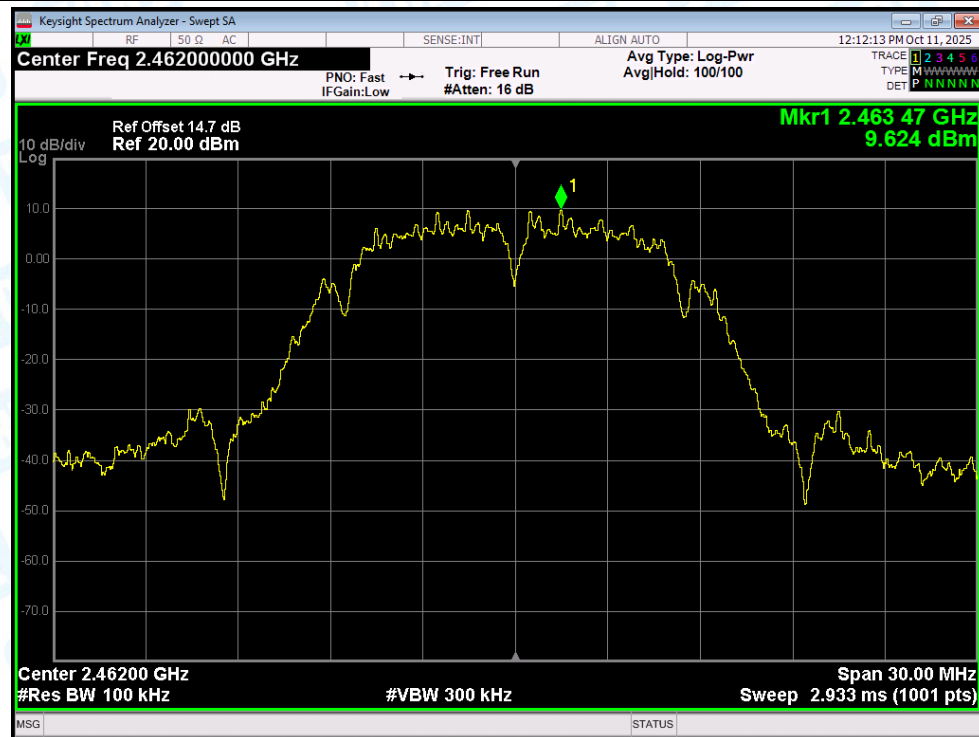
Tx. Spurious NVNT b 2437MHz Ant1 Ref



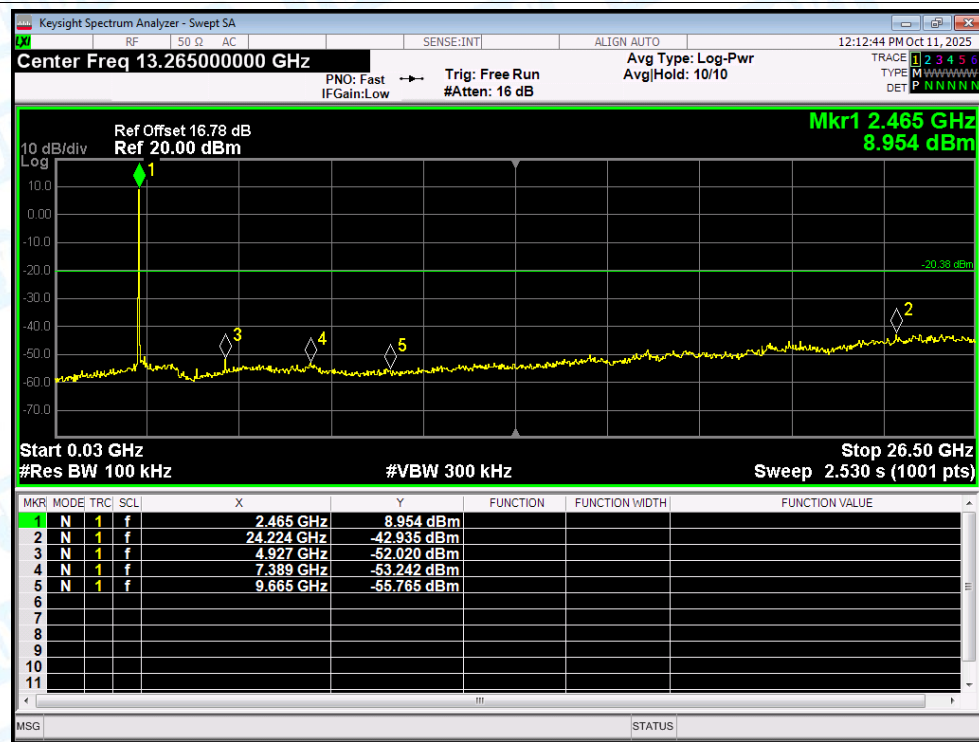
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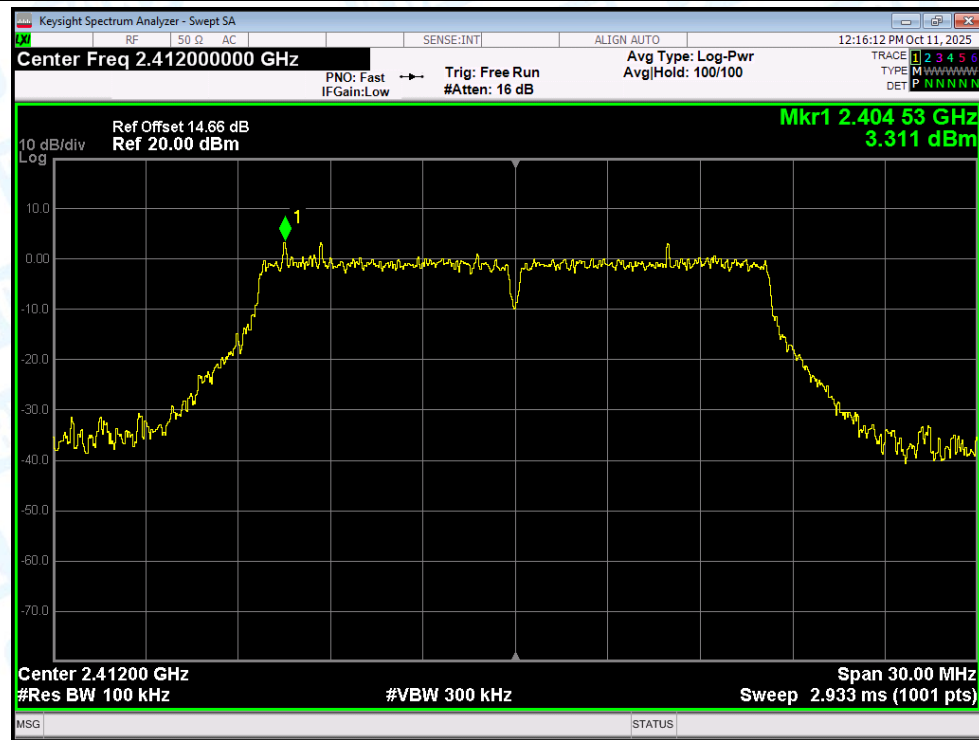
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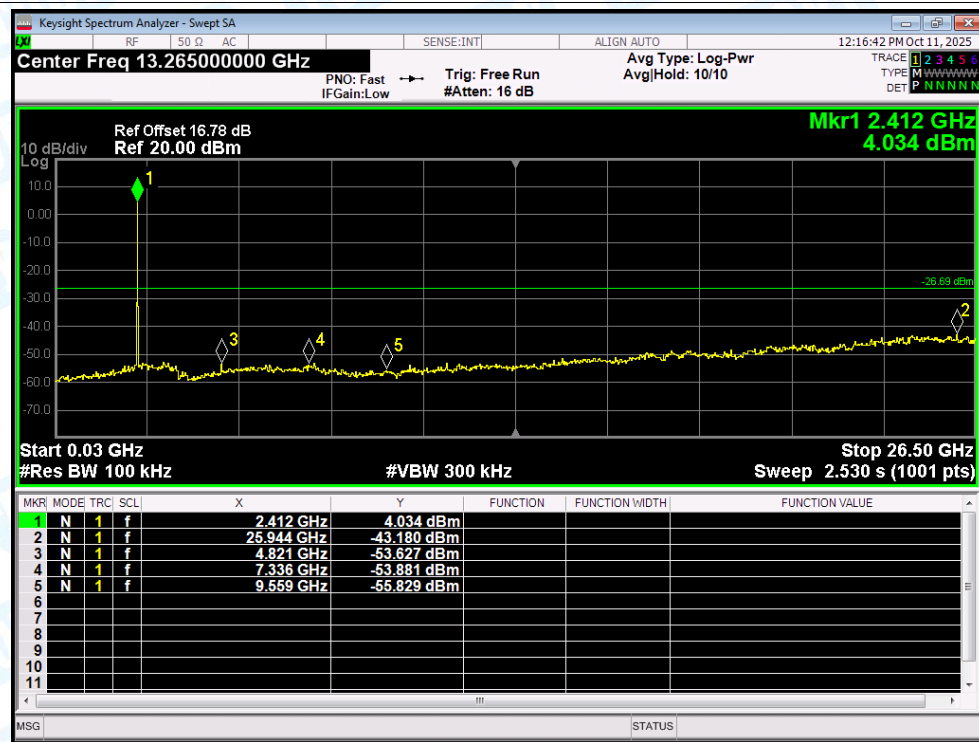
Tx. Spurious NVNT b 2462MHz Ant1 Emission



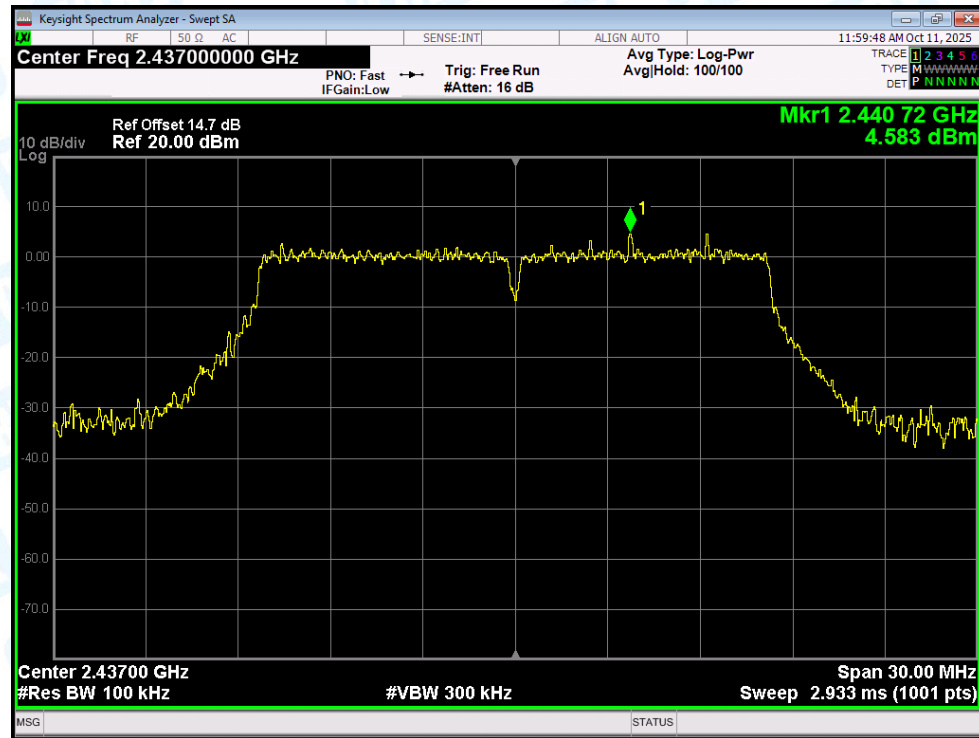
Tx. Spurious NVNT g 2412MHz Ant1 Ref



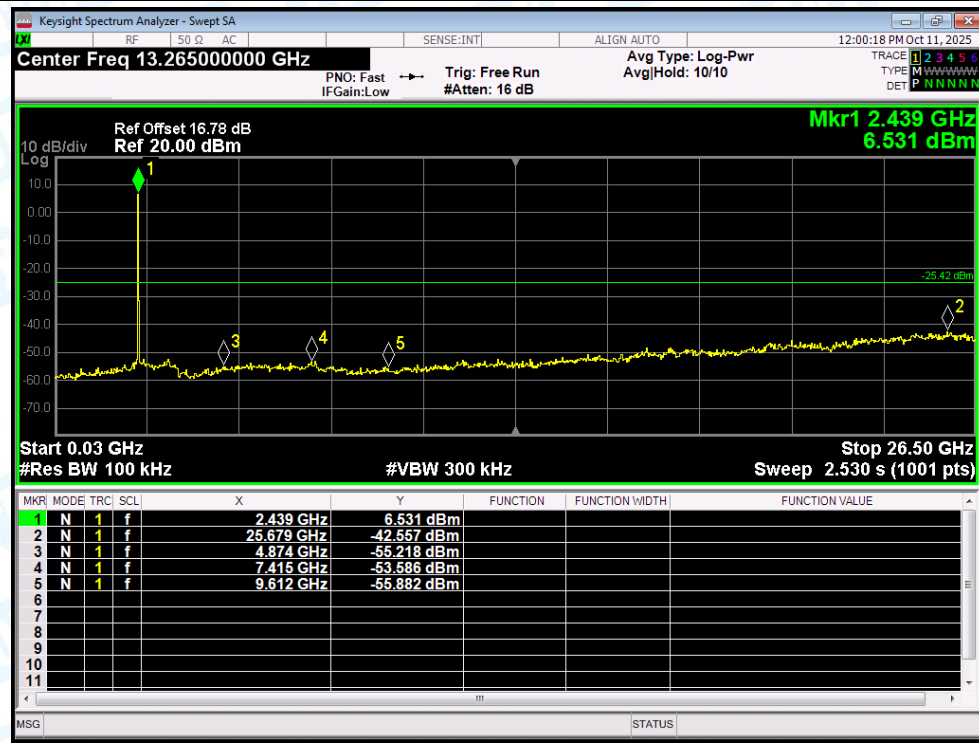
Tx. Spurious NVNT g 2412MHz Ant1 Emission



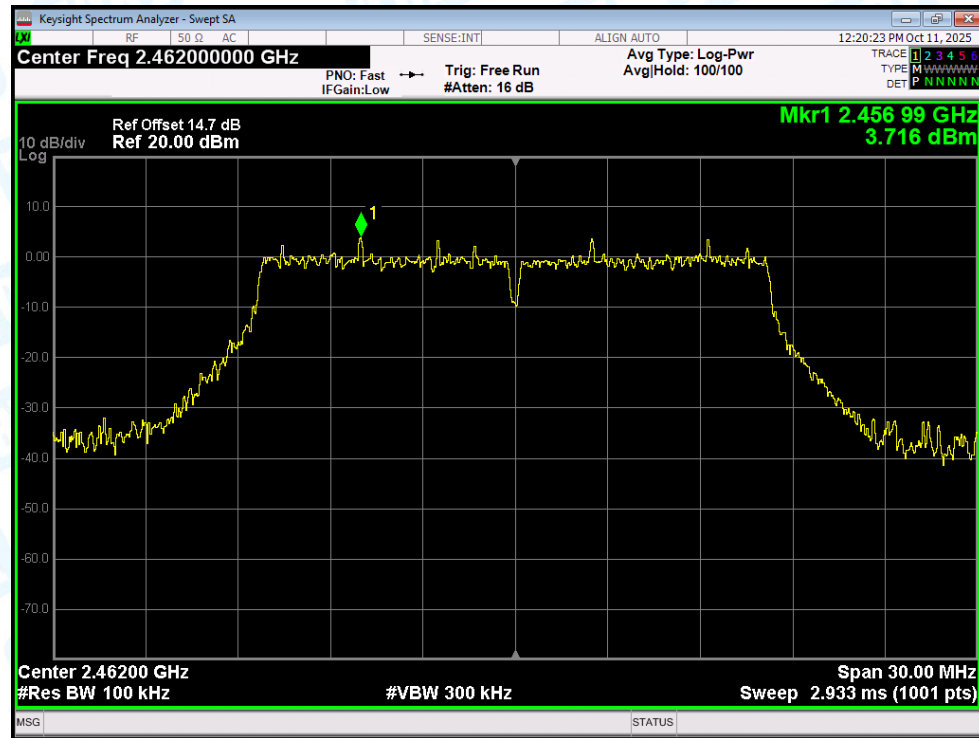
Tx. Spurious NVNT g 2437MHz Ant1 Ref



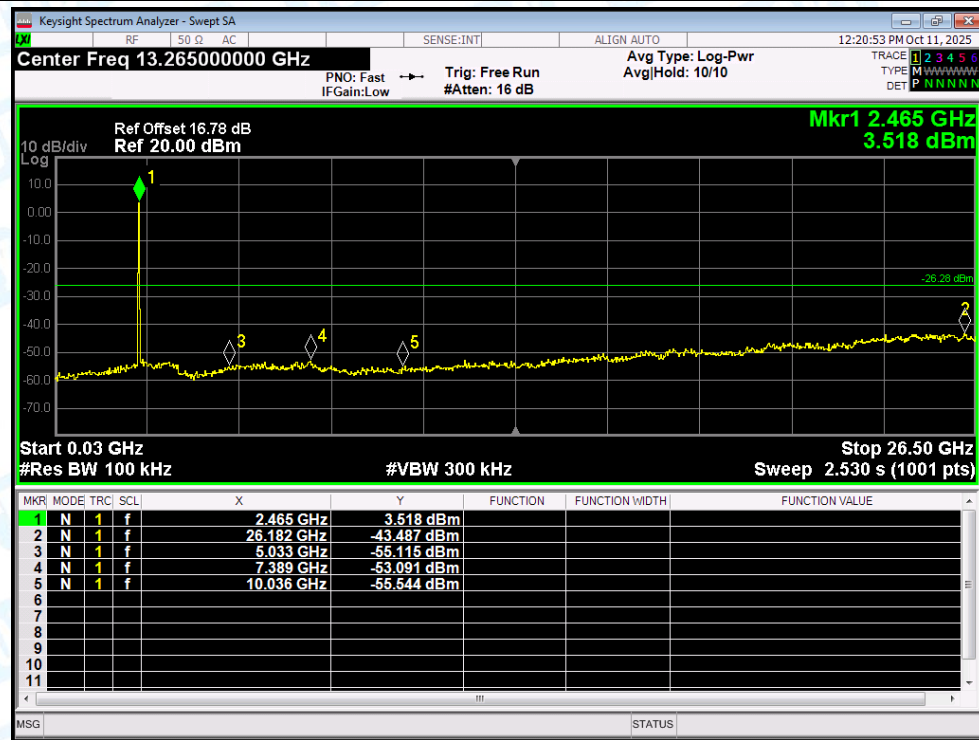
Tx. Spurious NVNT g 2437MHz Ant1 Emission



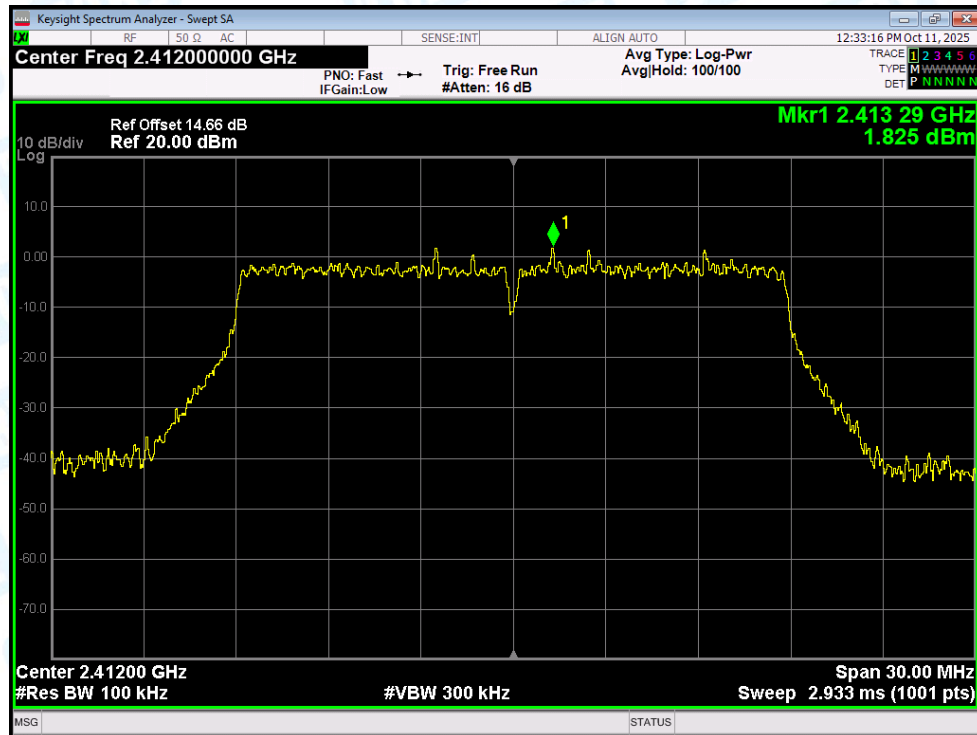
Tx. Spurious NVNT g 2462MHz Ant1 Ref



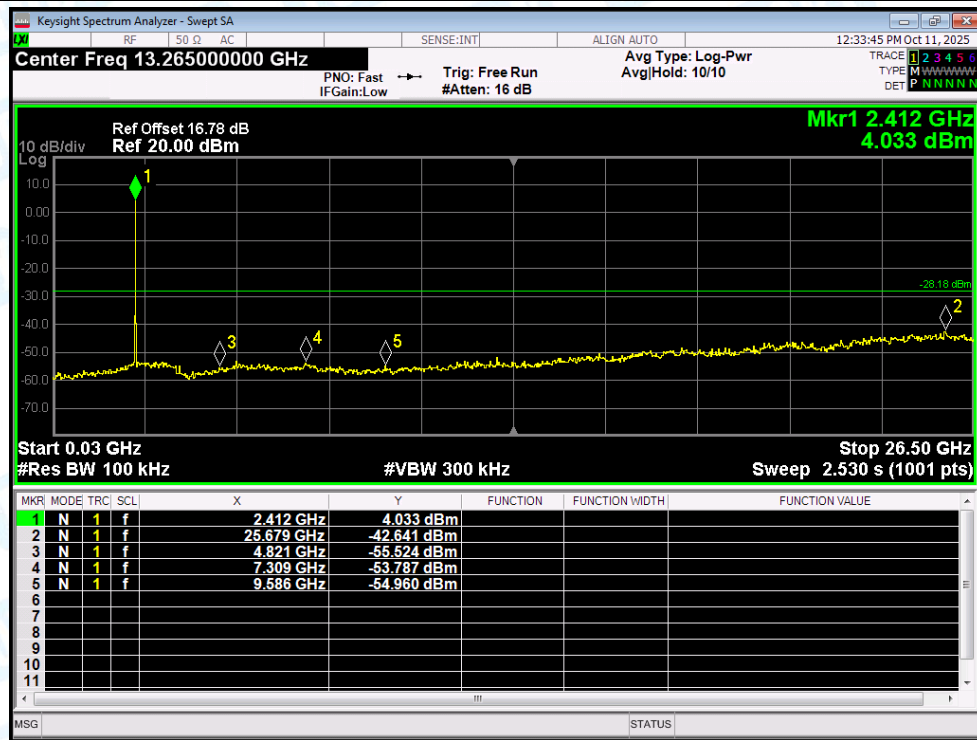
Tx. Spurious NVNT g 2462MHz Ant1 Emission



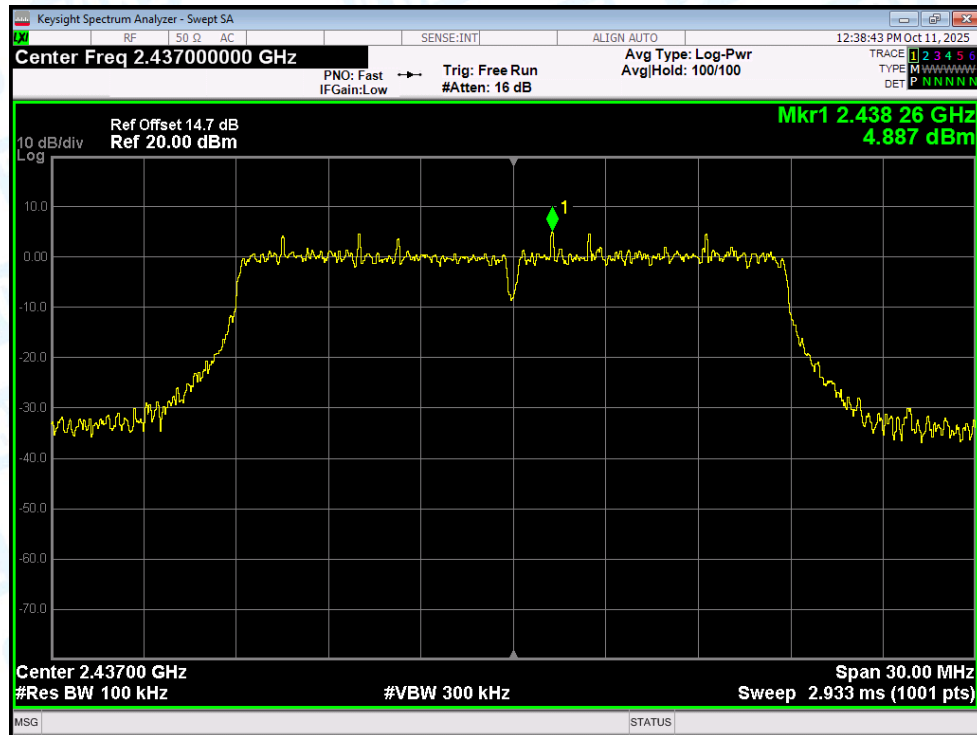
Tx. Spurious NVNT n(HT20) 2412MHz Ant1 Ref



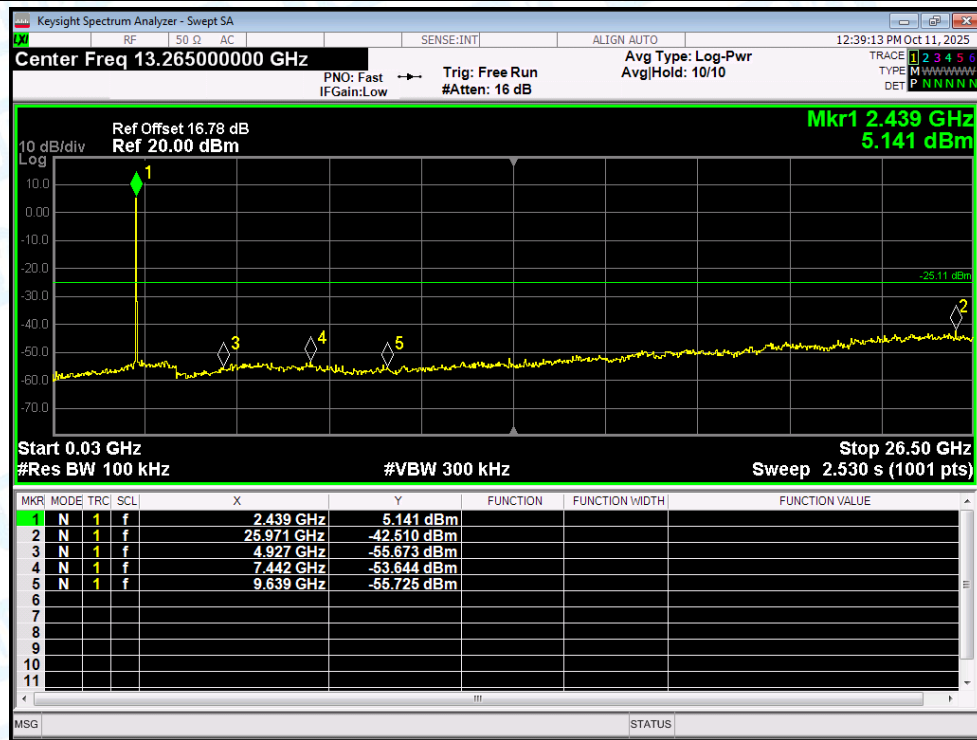
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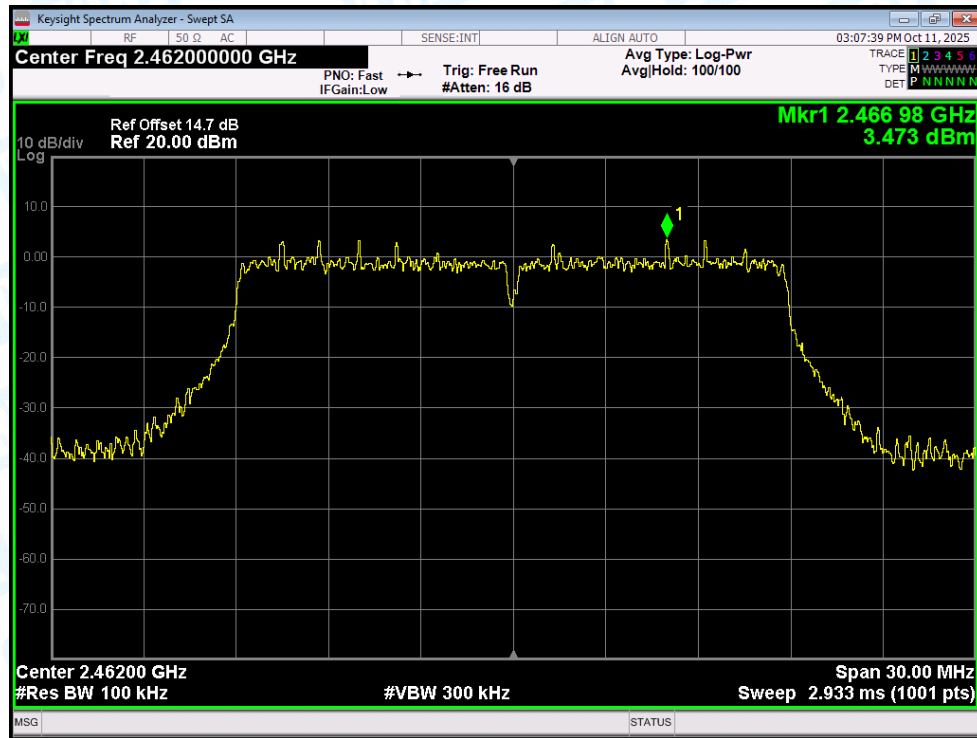
Tx. Spurious NVNT n(HT20) 2437MHz Ant1 Ref



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



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



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

