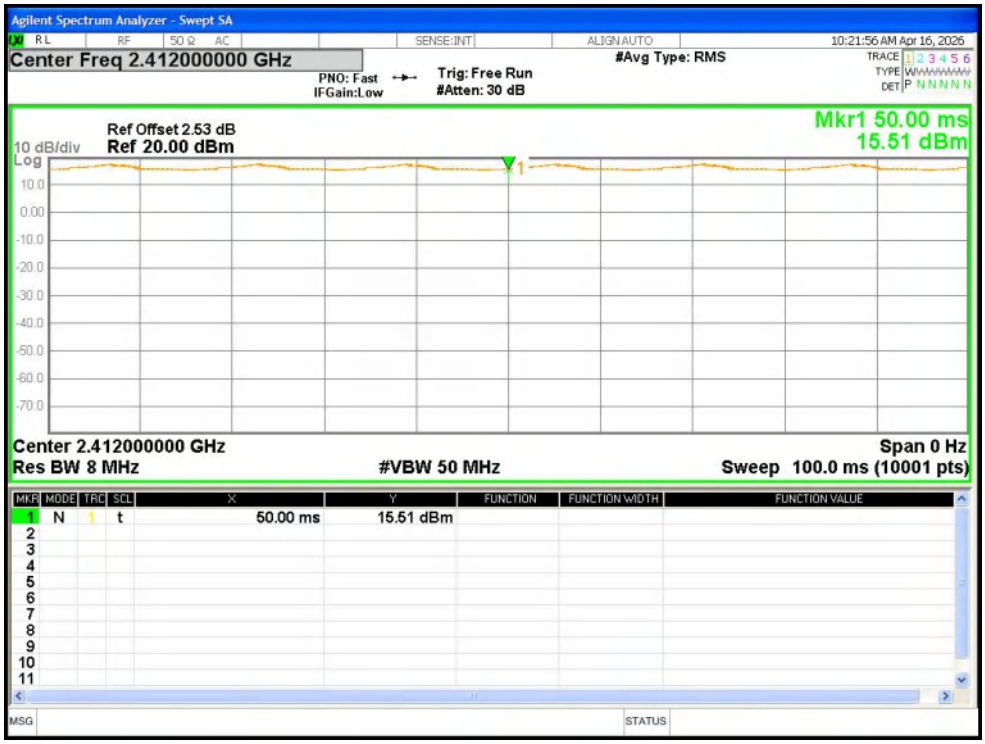
ZHUJI PHAFFON TECHNOLOGY CO.,LTD.

Model: HALO-1

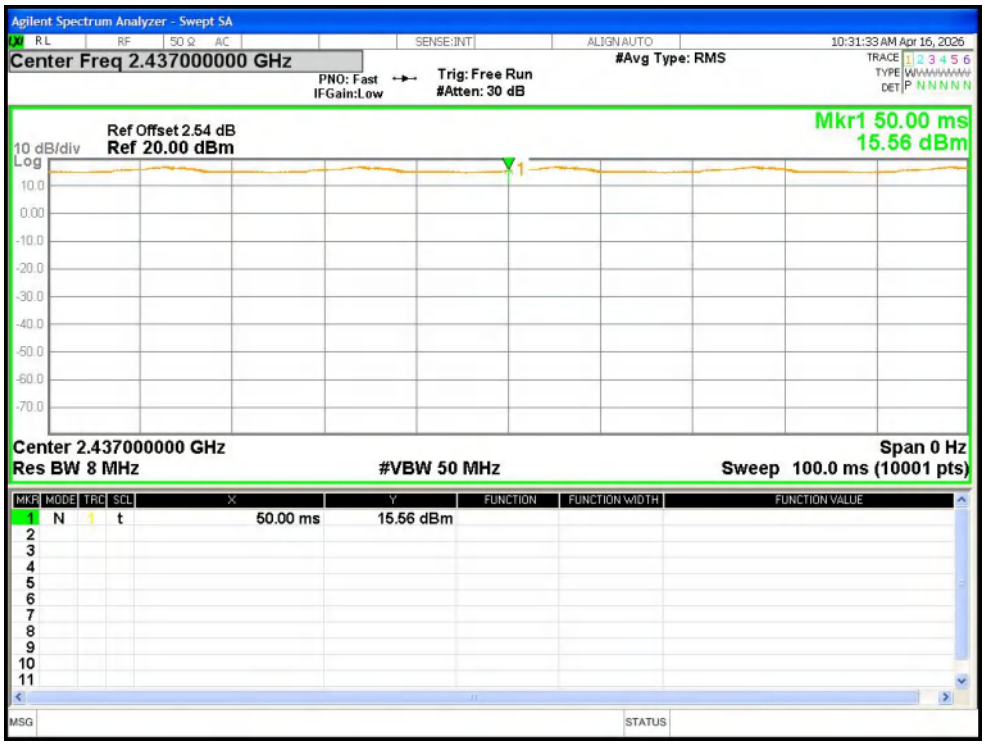
FCC ID: 2BWDR-HALO-1

1. Duty Cycle

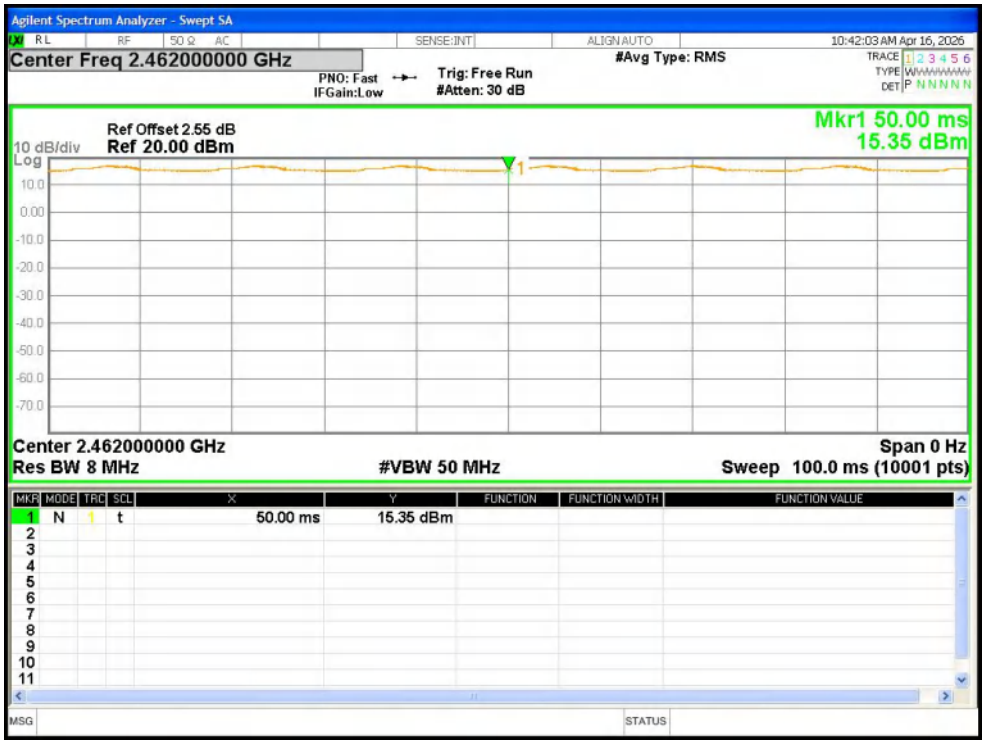
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	Ant1	100	0	0
NVNT	b	2437	Ant1	100	0	0
NVNT	b	2462	Ant1	100	0	0
NVNT	g	2412	Ant1	100	0	0
NVNT	g	2437	Ant1	100	0	0
NVNT	g	2462	Ant1	100	0	0
NVNT	n20	2412	Ant1	100	0	0
NVNT	n20	2437	Ant1	100	0	0
NVNT	n20	2462	Ant1	100	0	0
NVNT	n40	2422	Ant1	100	0	0
NVNT	n40	2437	Ant1	100	0	0
NVNT	n40	2452	Ant1	100	0	0



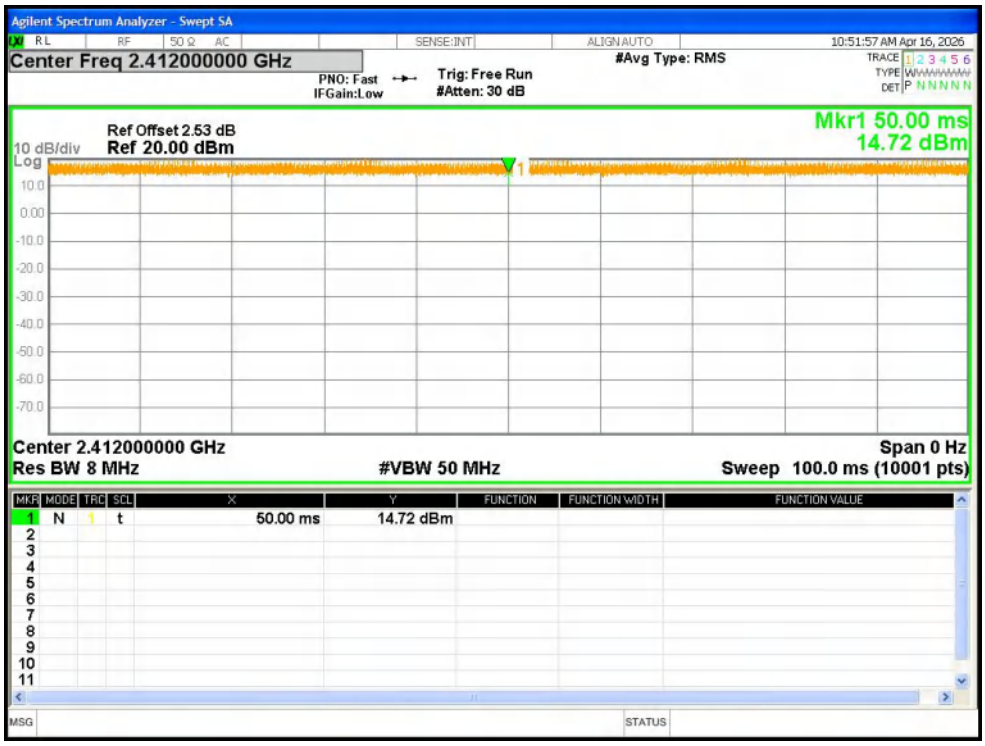
Duty Cycle NVNT b 2412MHz Ant1



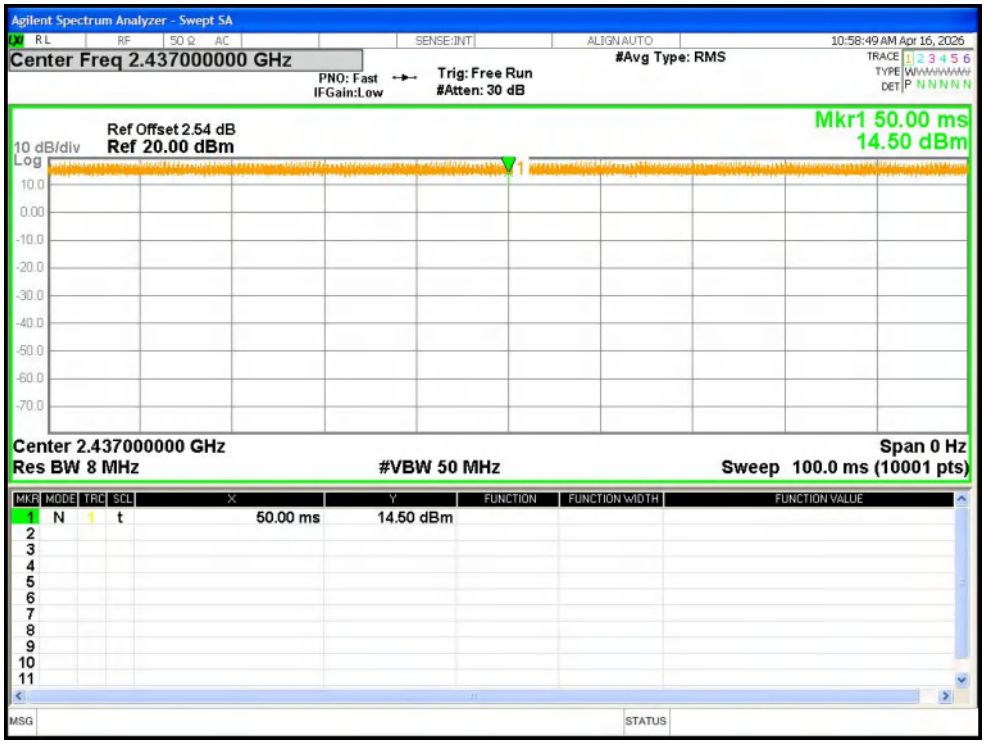
Duty Cycle NVNT b 2437MHz Ant1



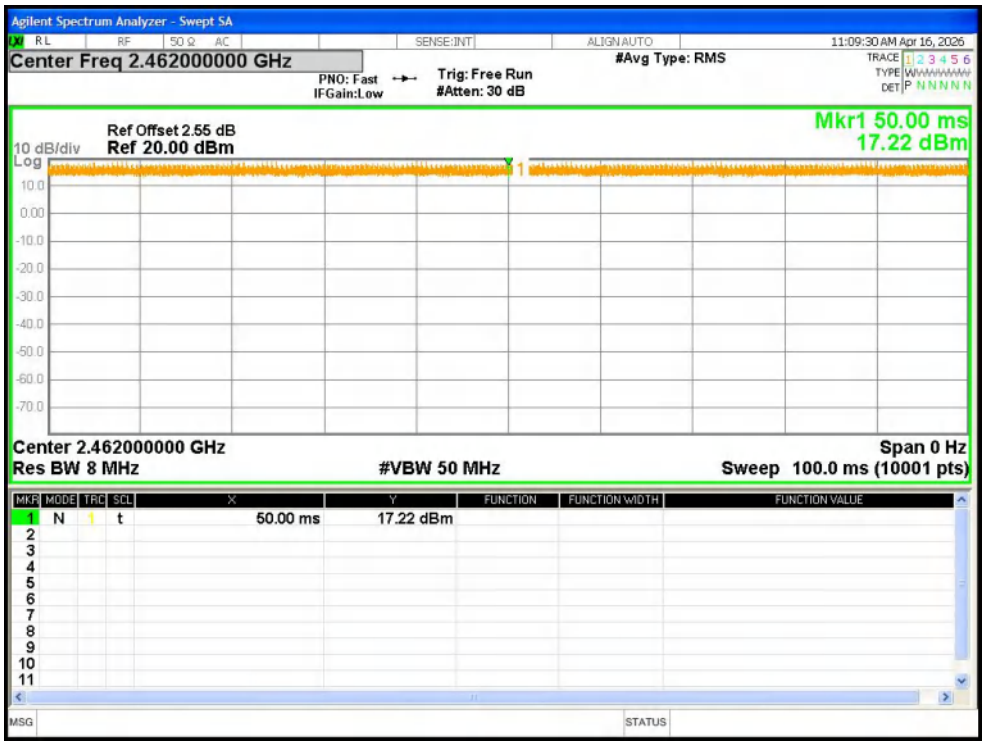
Duty Cycle NVNT b 2462MHz Ant1



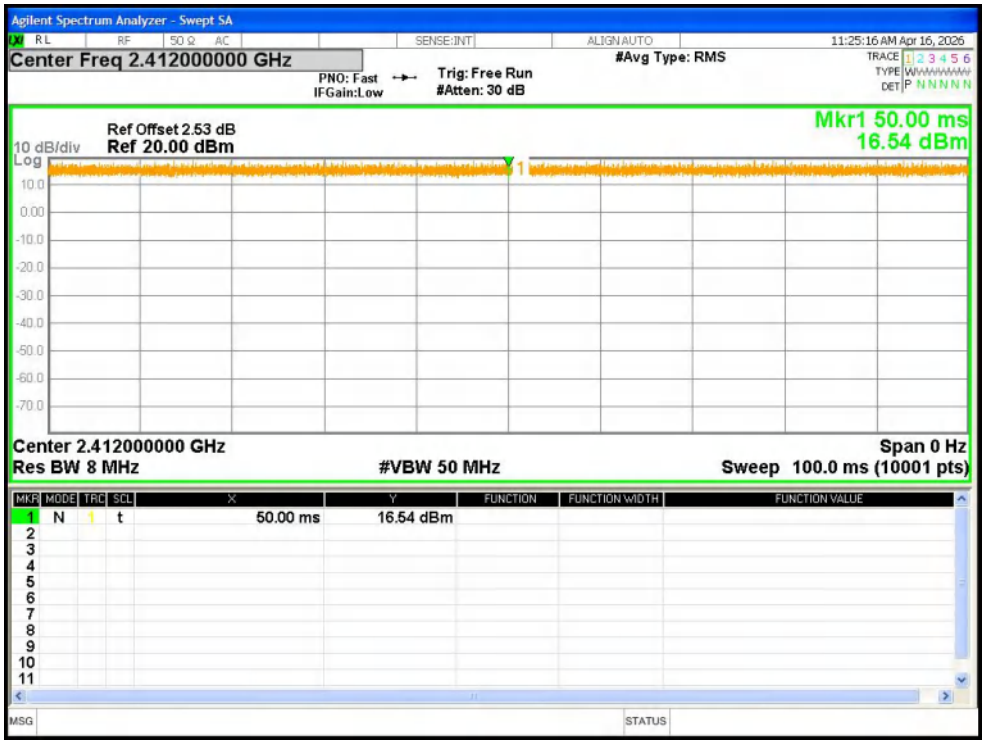
Duty Cycle NVNT g 2412MHz Ant1



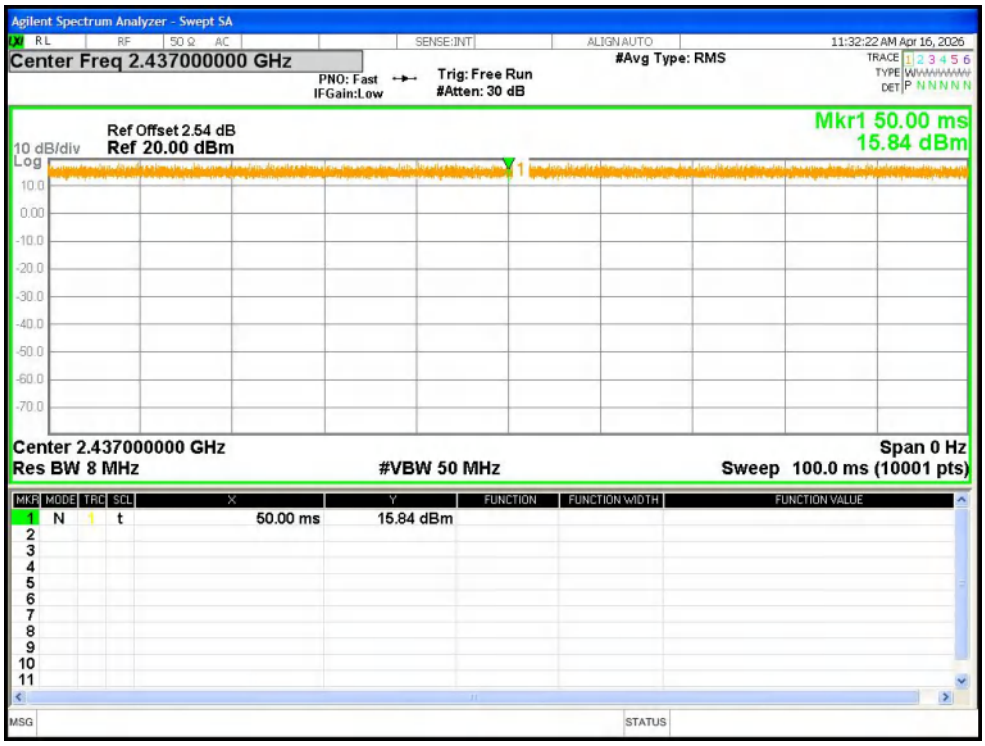
Duty Cycle NVNT g 2437MHz Ant1



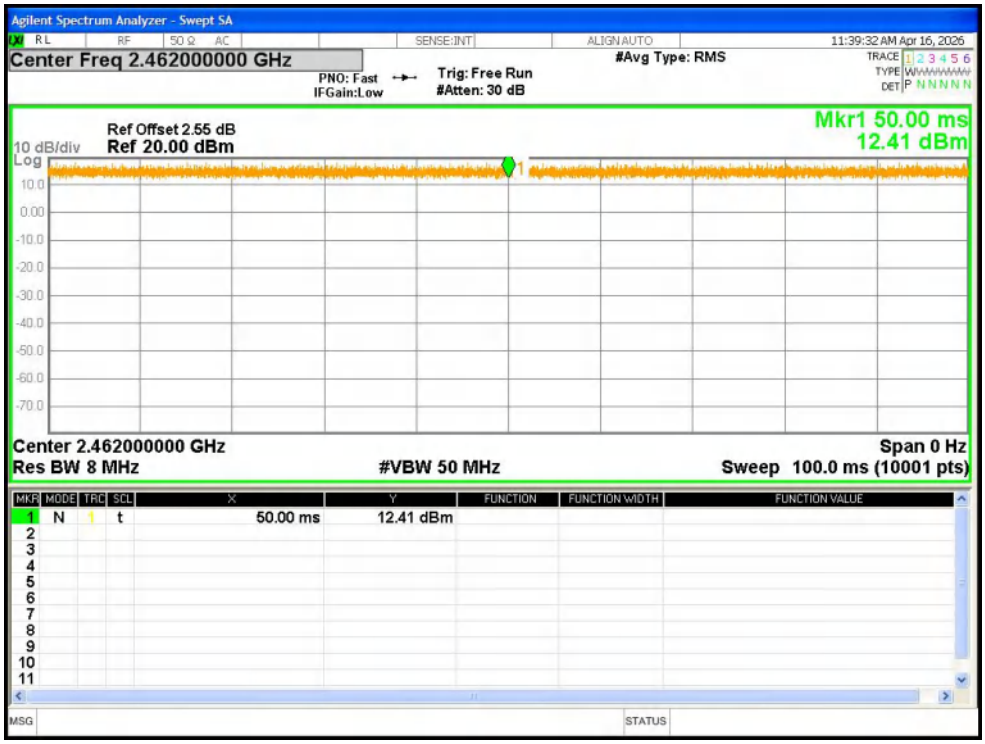
Duty Cycle NVNT g 2462MHz Ant1



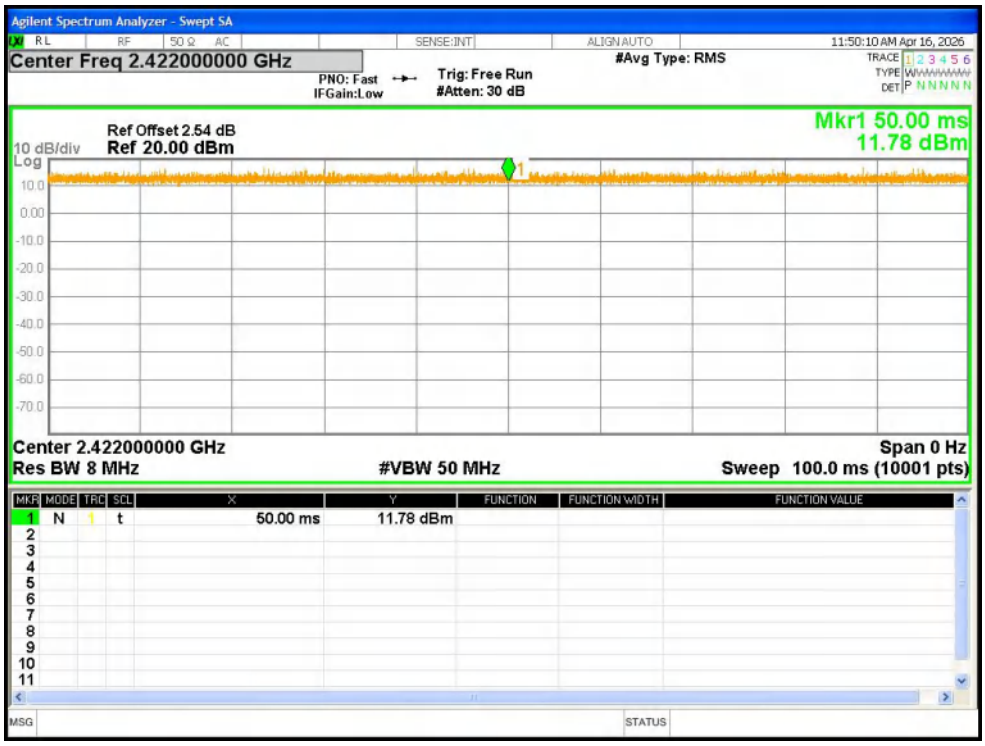
Duty Cycle NVNT n20 2412MHz Ant1



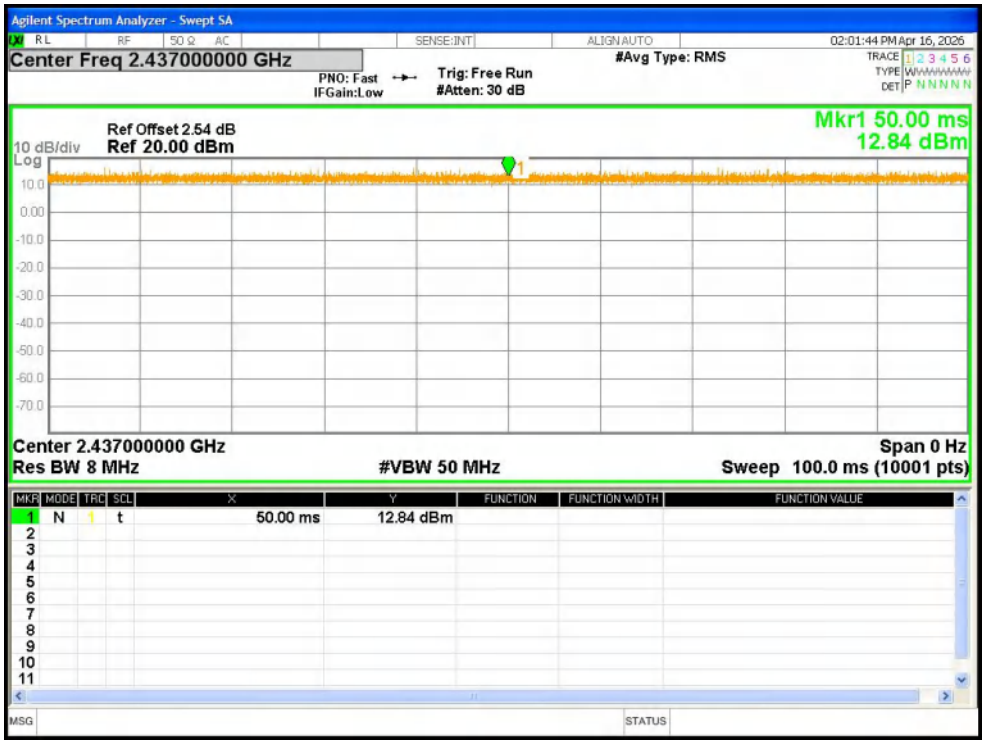
Duty Cycle NVNT n20 2437MHz Ant1



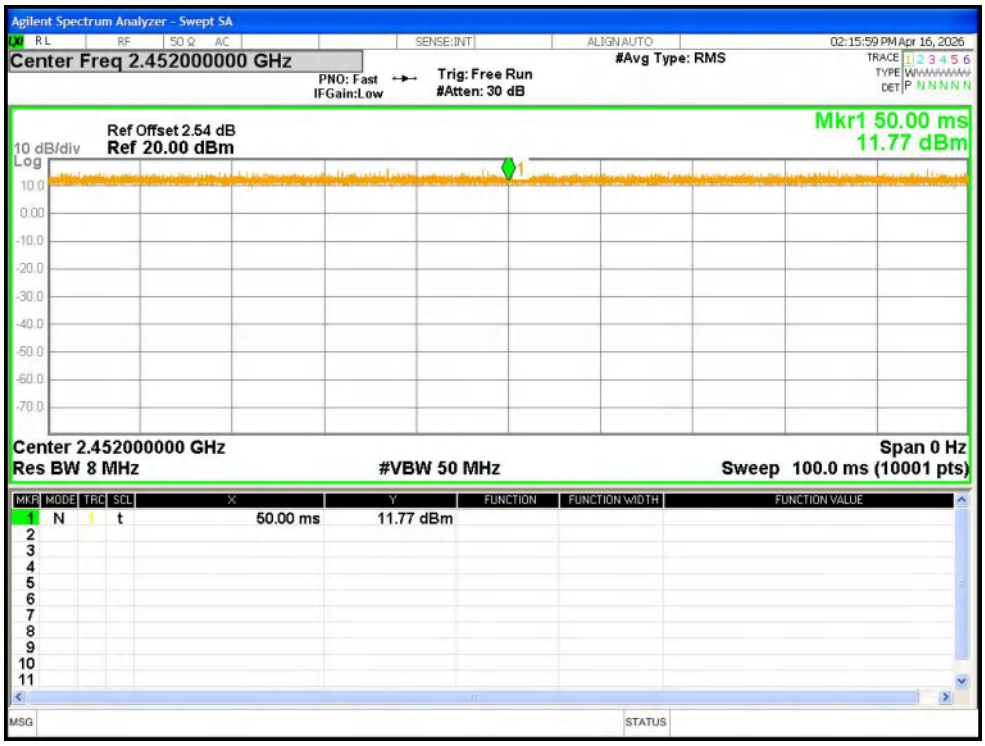
Duty Cycle NVNT n20 2462MHz Ant1



Duty Cycle NVNT n40 2422MHz Ant1



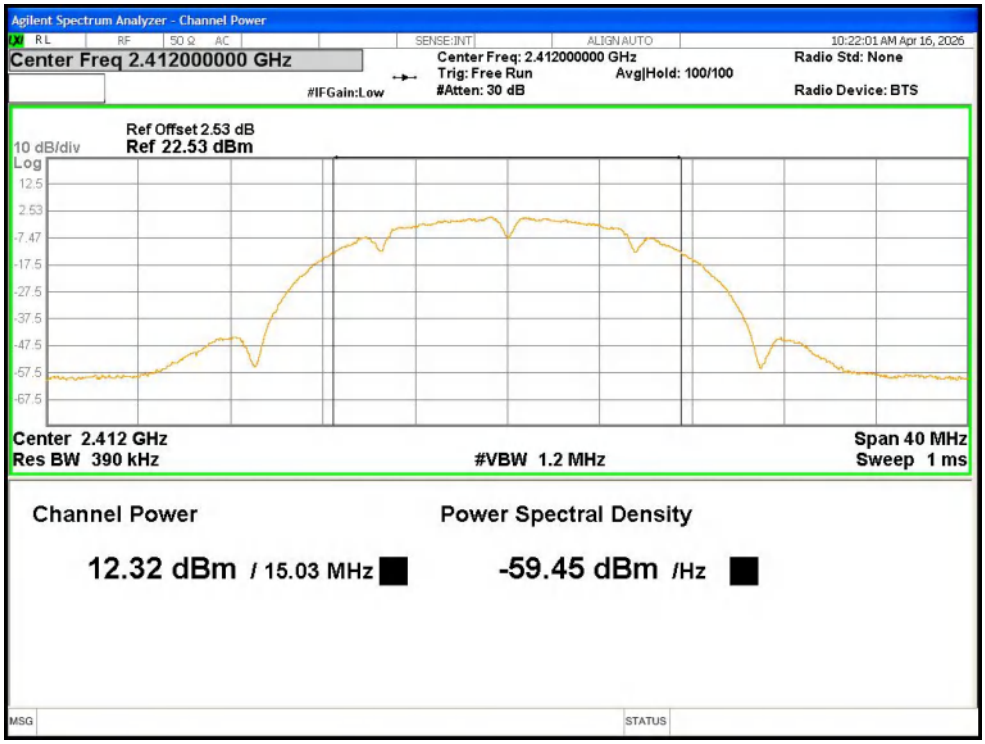
Duty Cycle NVNT n40 2437MHz Ant1



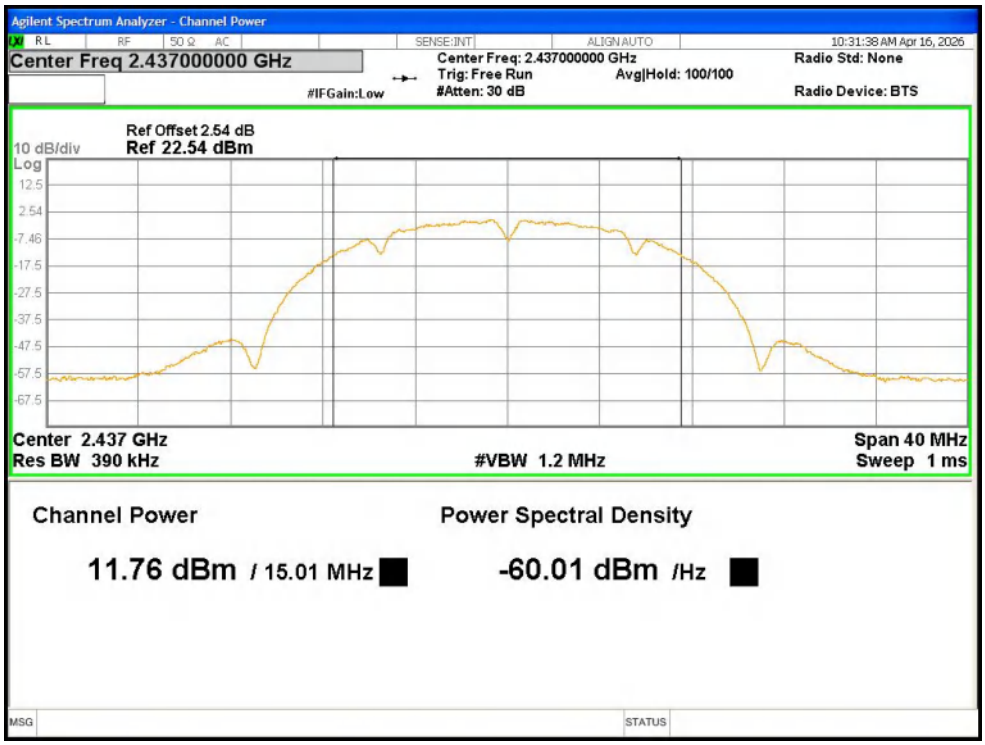
Duty Cycle NVNT n40 2452MHz Ant1

2. Maximum Average Conducted Output Power

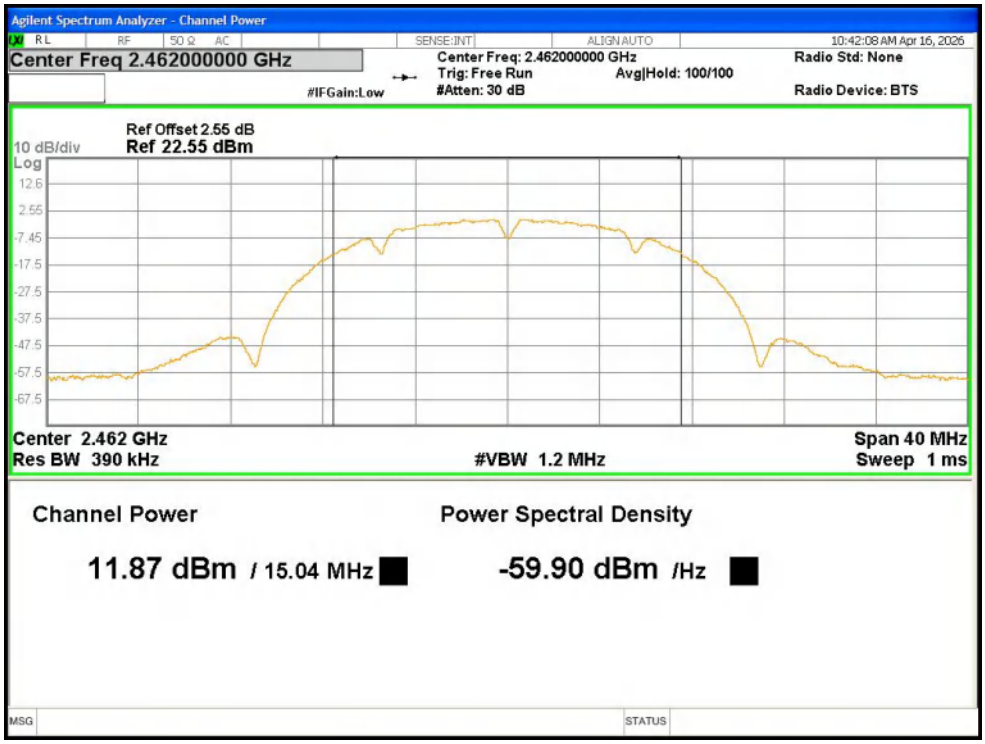
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	12.32	0	12.32	30	Pass
NVNT	b	2437	Ant1	11.76	0	11.76	30	Pass
NVNT	b	2462	Ant1	11.87	0	11.87	30	Pass
NVNT	g	2412	Ant1	12.56	0	12.56	30	Pass
NVNT	g	2437	Ant1	12.16	0	12.16	30	Pass
NVNT	g	2462	Ant1	12.12	0	12.12	30	Pass
NVNT	n20	2412	Ant1	11.83	0	11.83	30	Pass
NVNT	n20	2437	Ant1	11.43	0	11.43	30	Pass
NVNT	n20	2462	Ant1	11.16	0	11.16	30	Pass
NVNT	n40	2422	Ant1	12.47	0	12.47	30	Pass
NVNT	n40	2437	Ant1	12.11	0	12.11	30	Pass
NVNT	n40	2452	Ant1	12.03	0	12.03	30	Pass



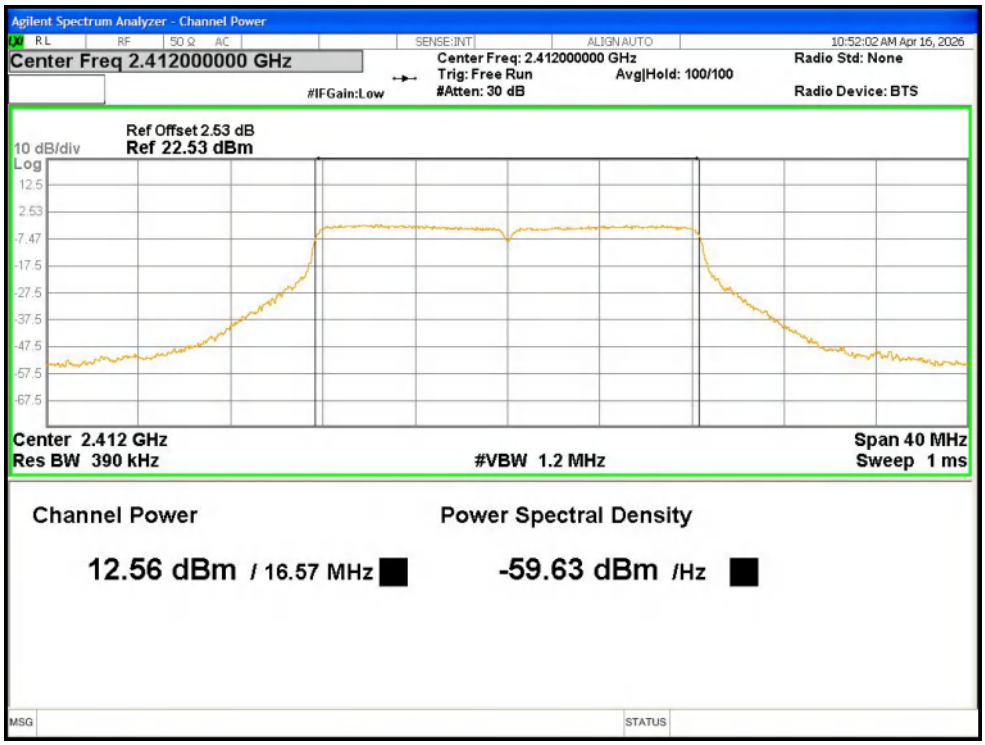
Average Power NVNT b 2412MHz Ant1



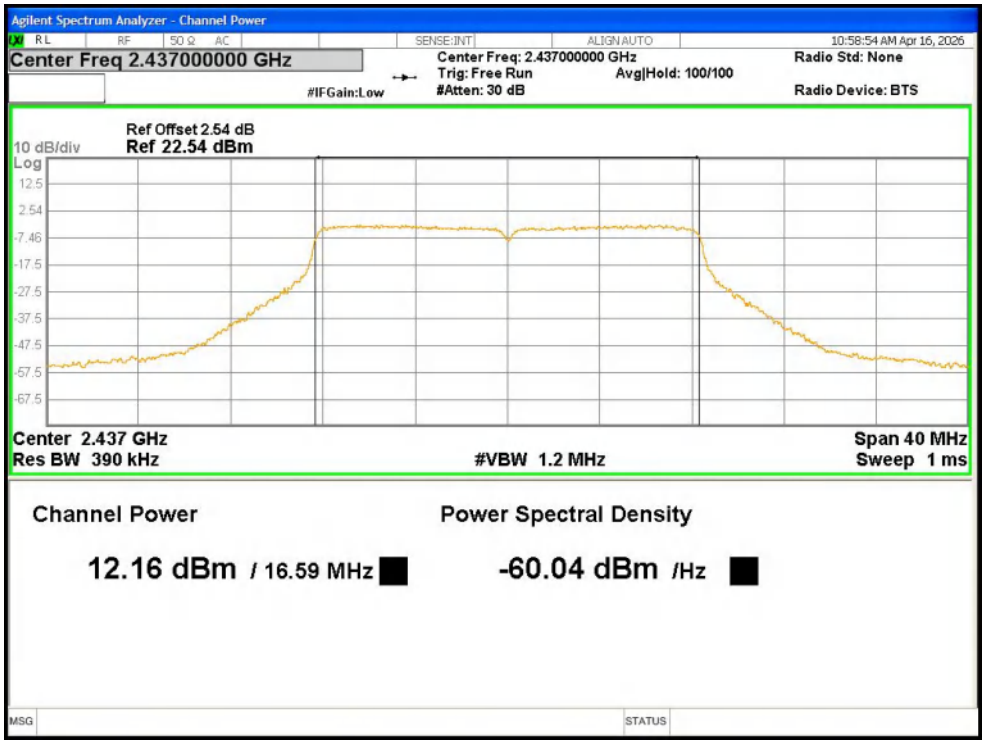
Average Power NVNT b 2437MHz Ant1



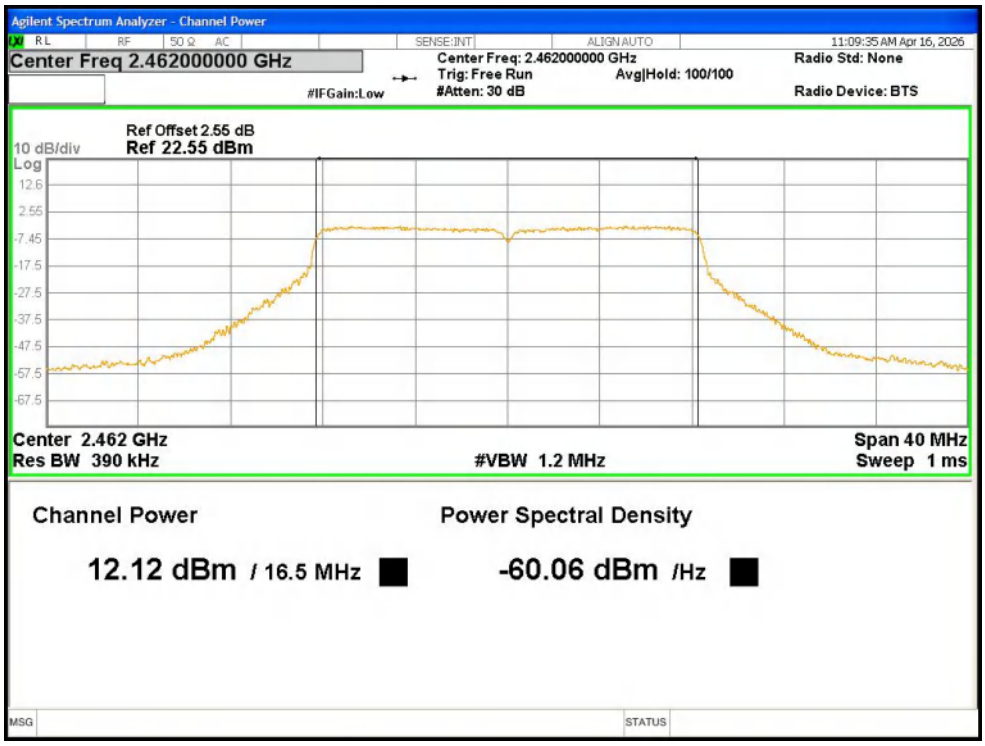
Average Power NVNT b 2462MHz Ant1



Average Power NVNT g 2412MHz Ant1

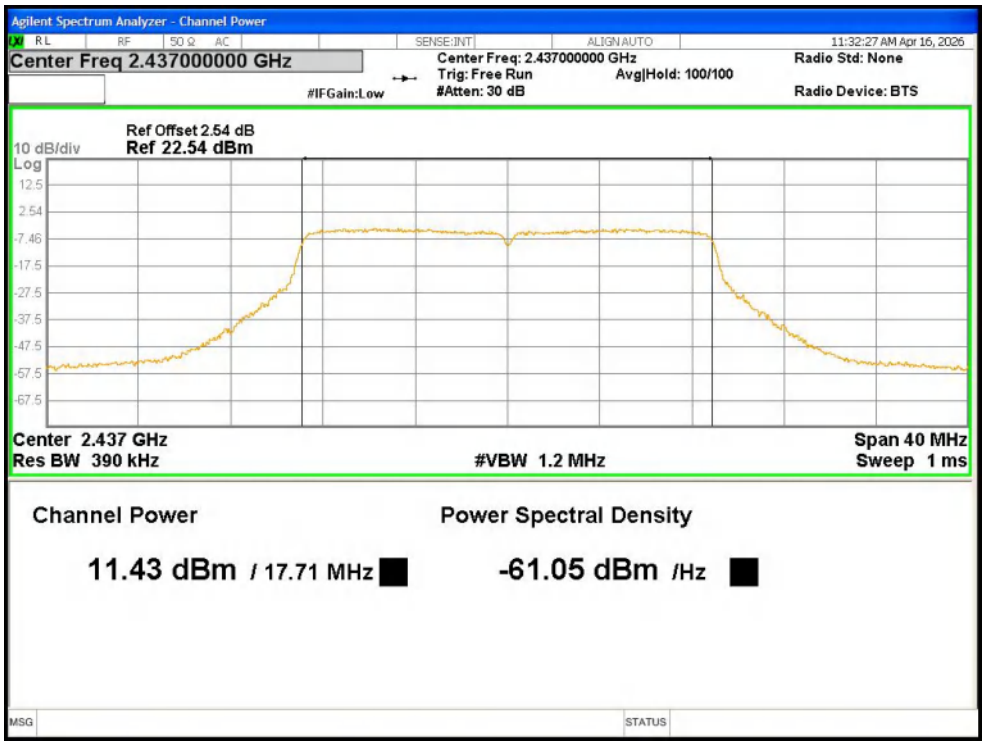


Average Power NVNT g 2437MHz Ant1

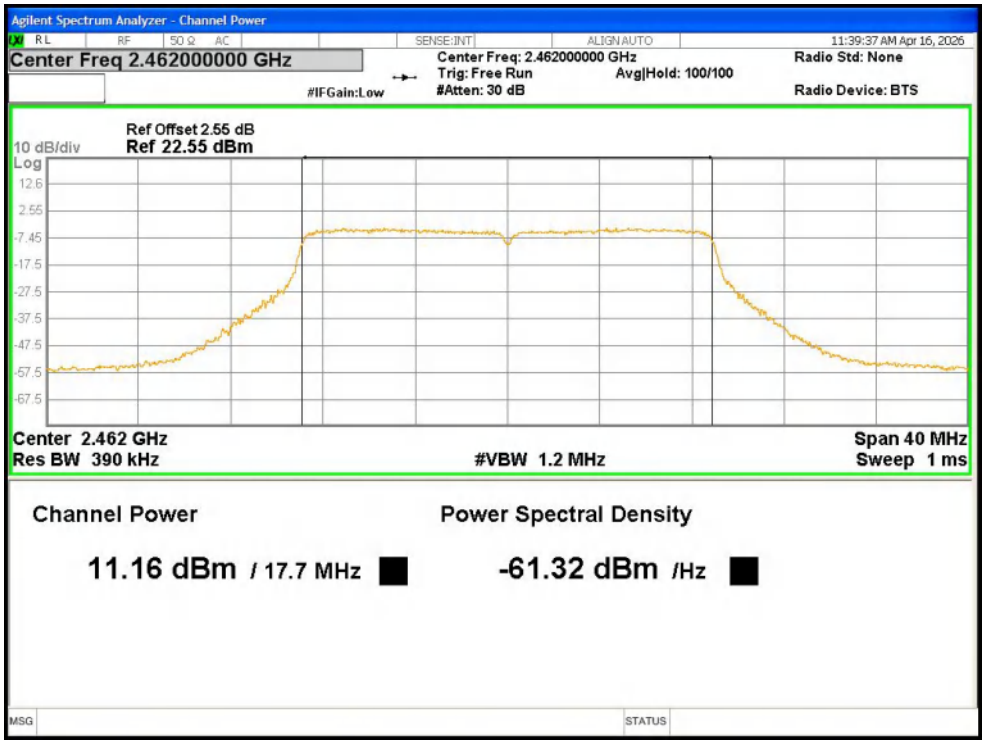


Average Power NVNT g 2462MHz Ant1

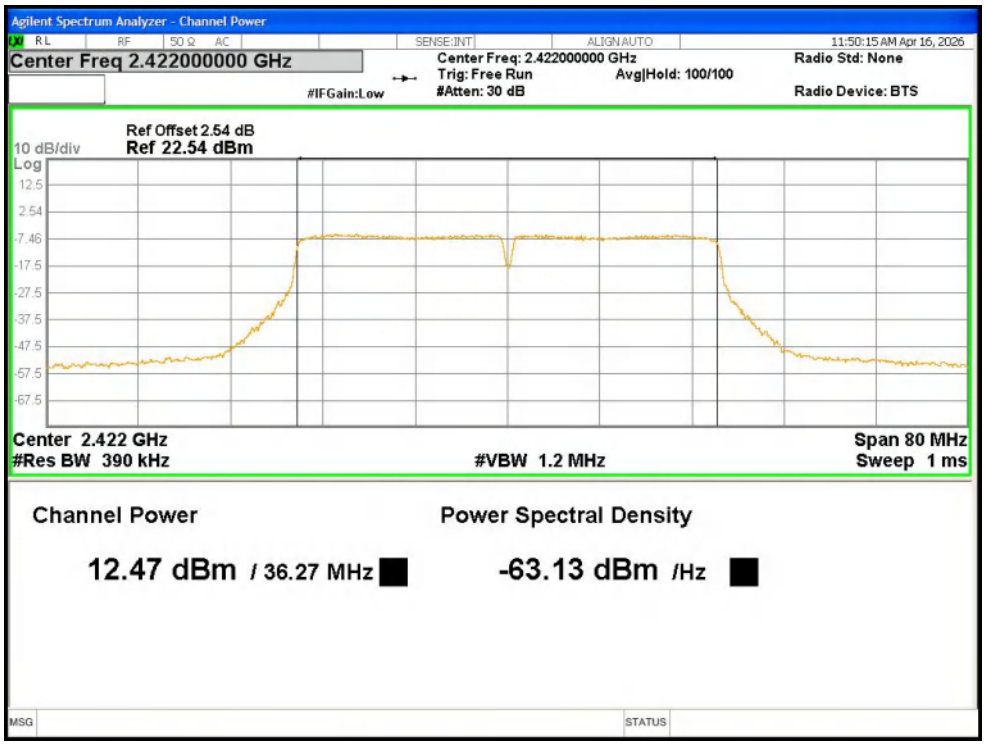
Average Power NVNT n20 2412MHz Ant1



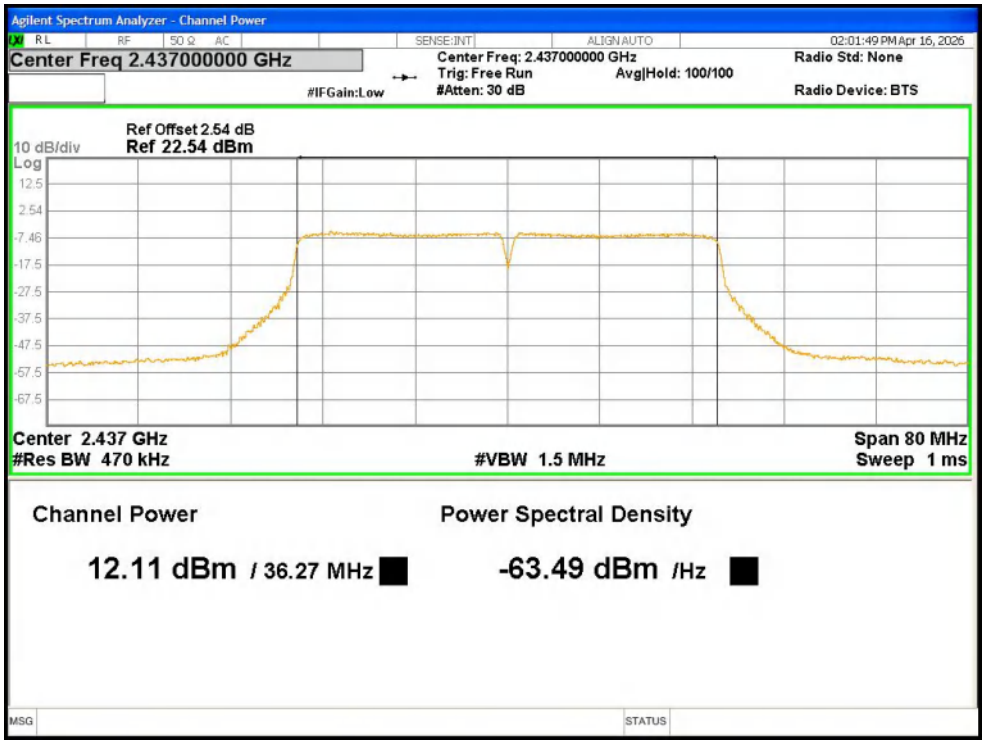
Average Power NVNT n20 2437MHz Ant1



Average Power NVNT n20 2462MHz Ant1



Average Power NVNT n40 2422MHz Ant1

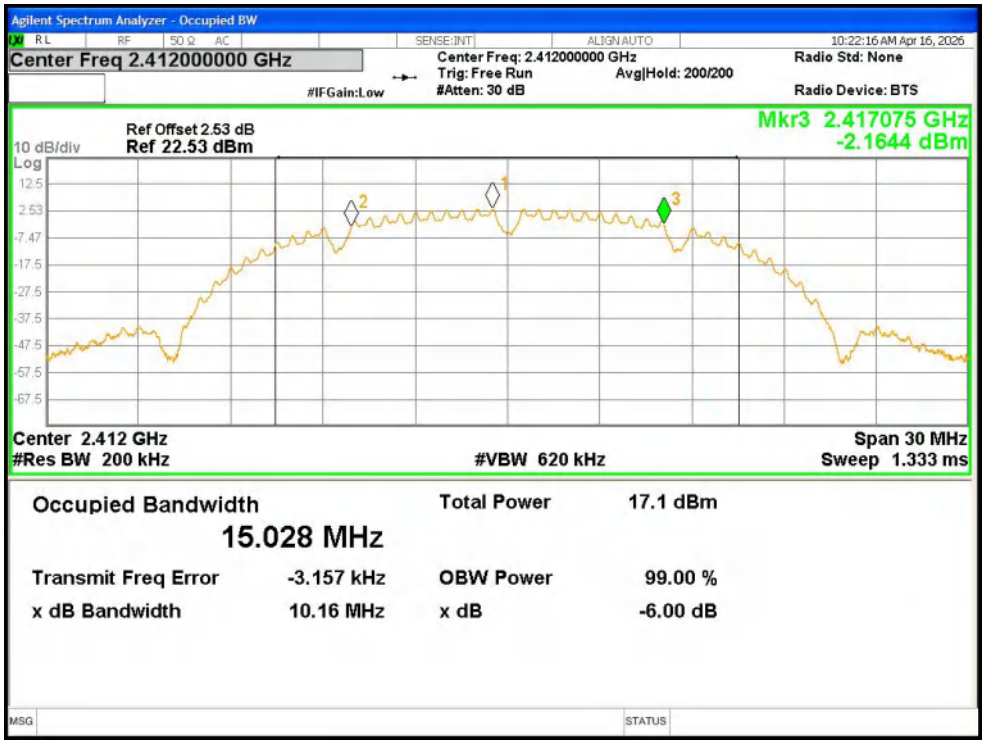


Average Power NVNT n40 2437MHz Ant1

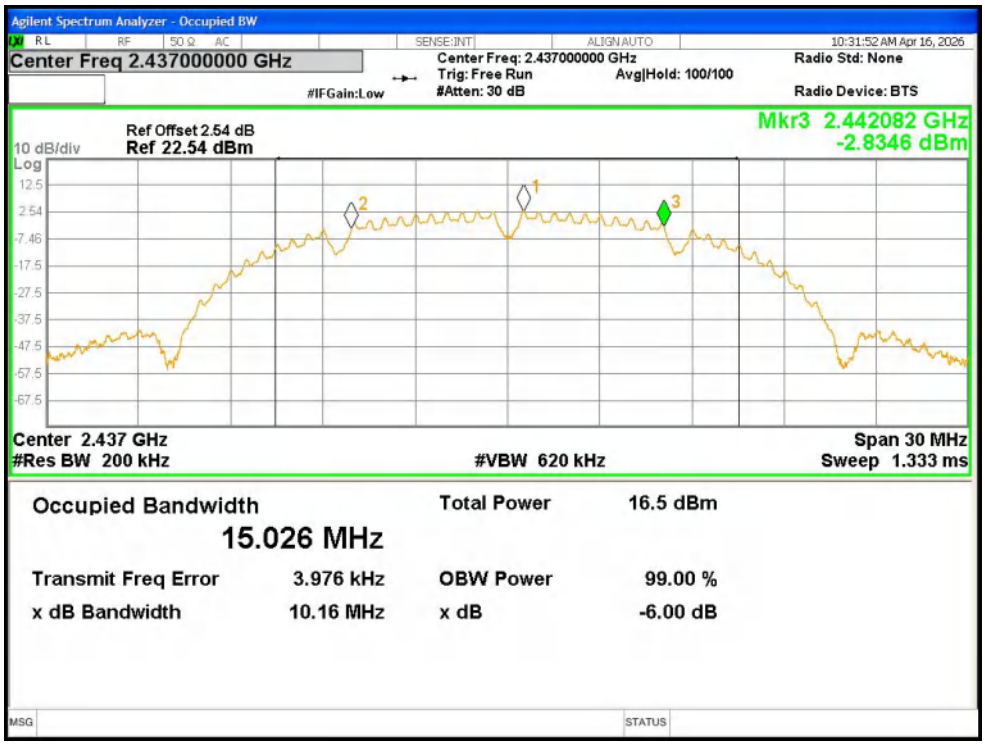
Average Power NVNT n40 2452MHz Ant1

3. -6dB Bandwidth

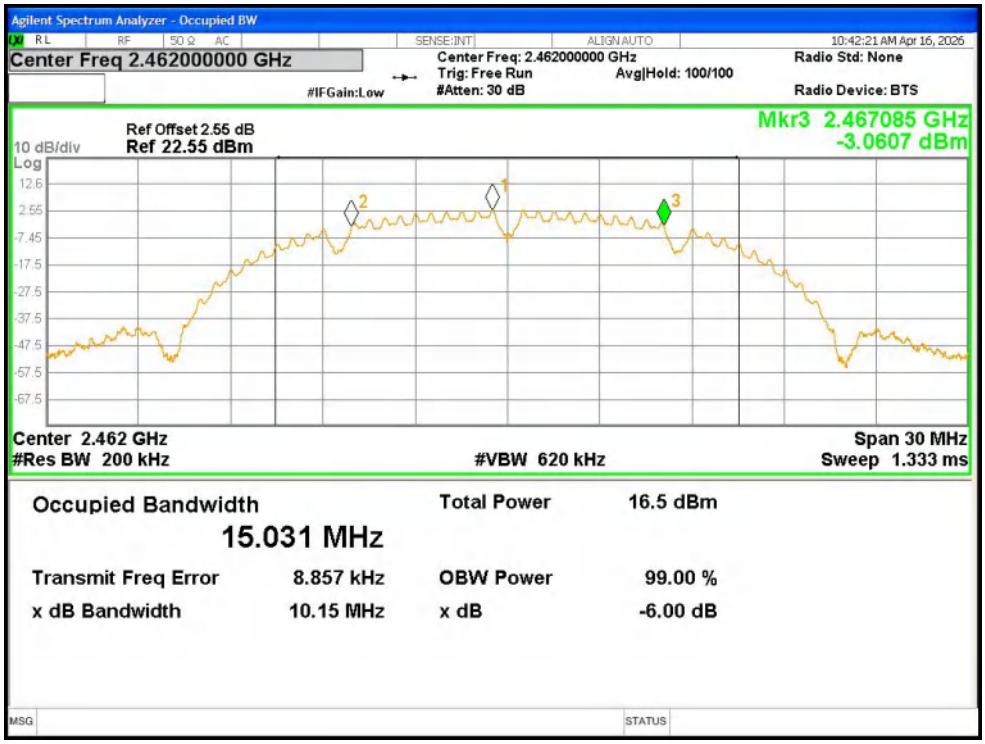
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	10.157	0.5	Pass
NVNT	b	2437	Ant1	10.155	0.5	Pass
NVNT	b	2462	Ant1	10.153	0.5	Pass
NVNT	g	2412	Ant1	16.381	0.5	Pass
NVNT	g	2437	Ant1	16.498	0.5	Pass
NVNT	g	2462	Ant1	16.465	0.5	Pass
NVNT	n20	2412	Ant1	17.612	0.5	Pass
NVNT	n20	2437	Ant1	17.603	0.5	Pass
NVNT	n20	2462	Ant1	17.629	0.5	Pass
NVNT	n40	2422	Ant1	36.197	0.5	Pass
NVNT	n40	2437	Ant1	35.986	0.5	Pass
NVNT	n40	2452	Ant1	36.14	0.5	Pass



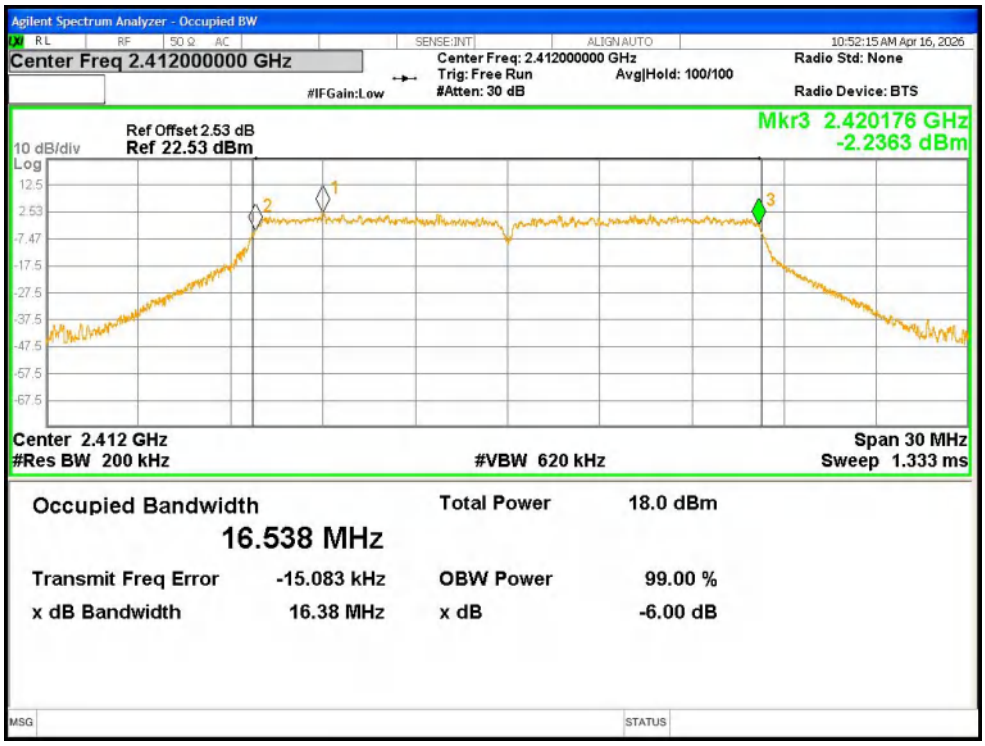
-6dB Bandwidth NVNT b 2412MHz Ant1



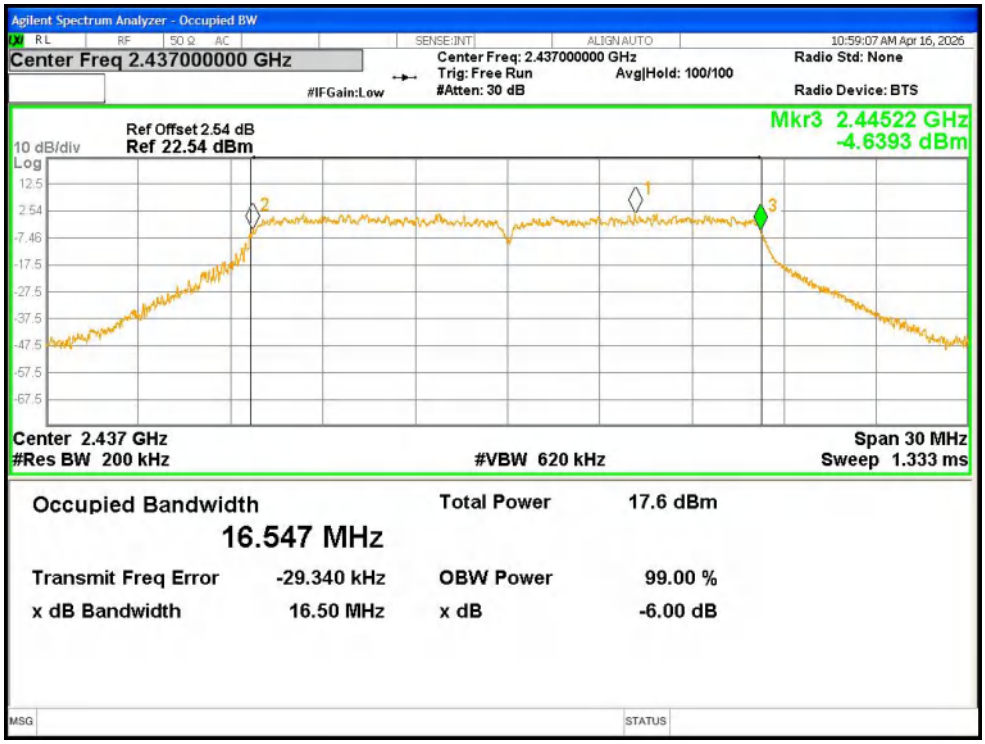
-6dB Bandwidth NVNT b 2437MHz Ant1



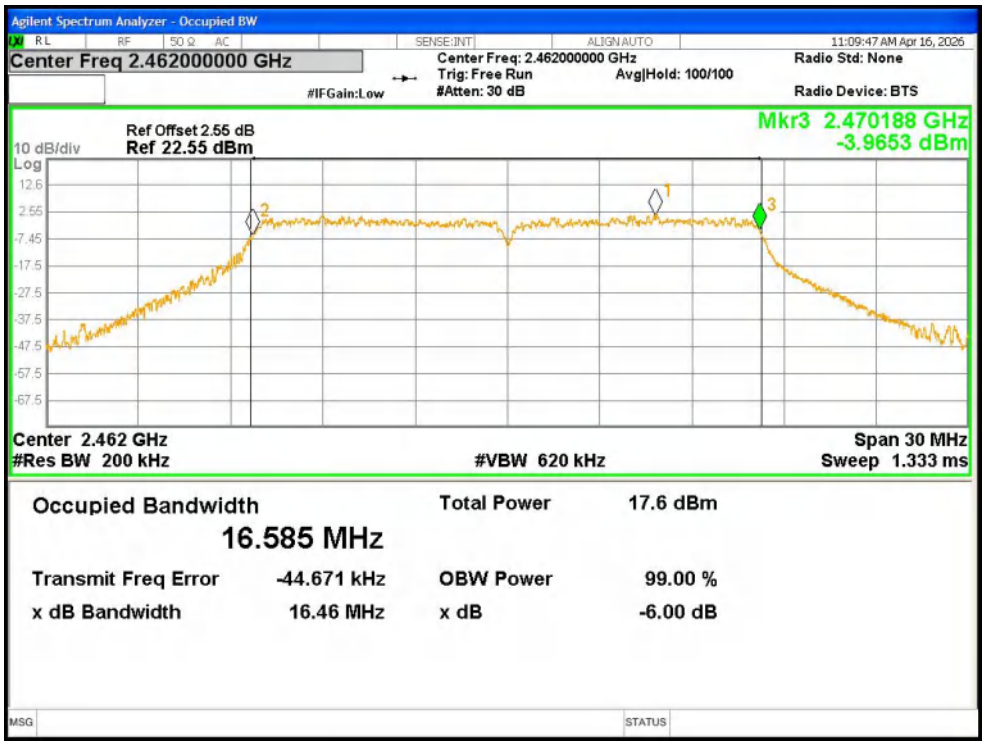
-6dB Bandwidth NVNT b 2462MHz Ant1



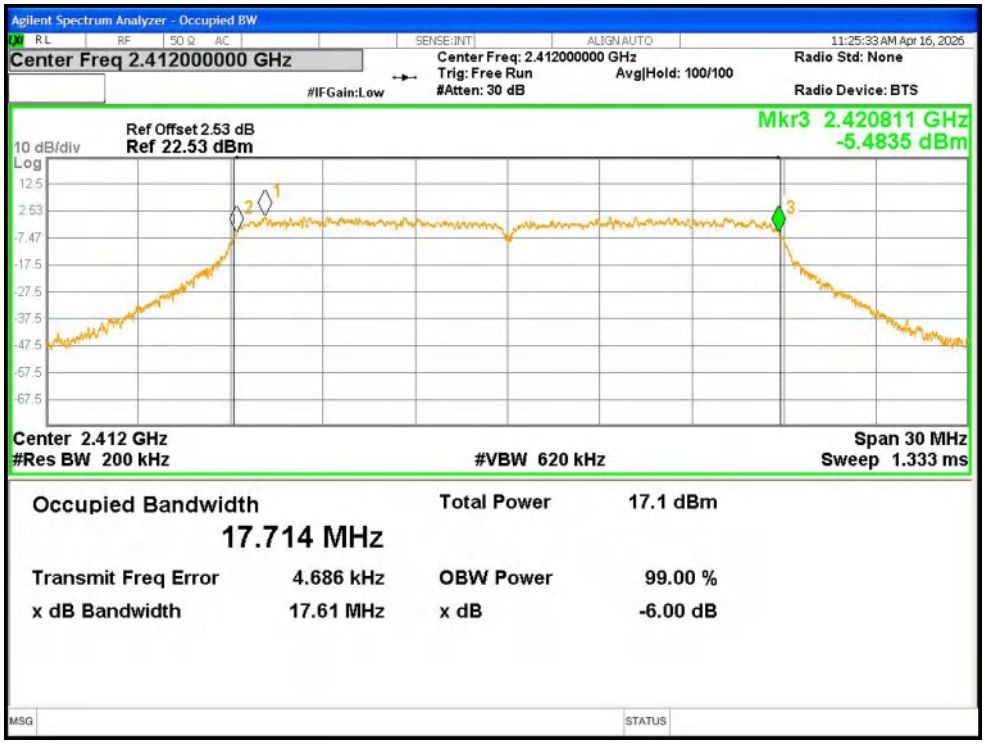
-6dB Bandwidth NVNT g 2412MHz Ant1



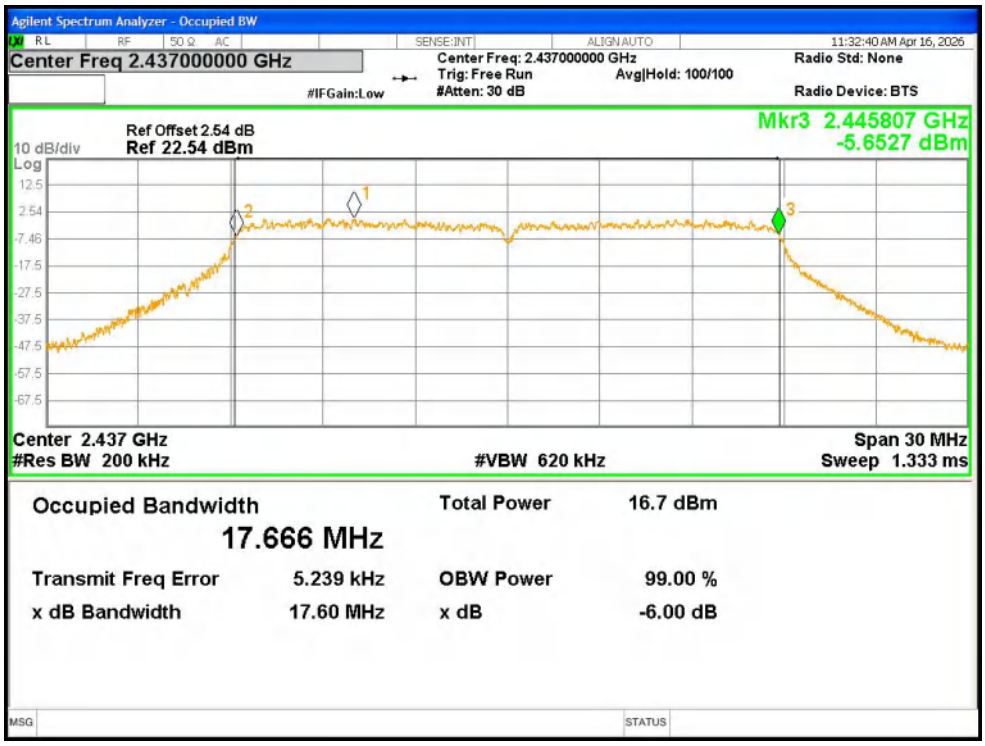
-6dB Bandwidth NVNT g 2437MHz Ant1



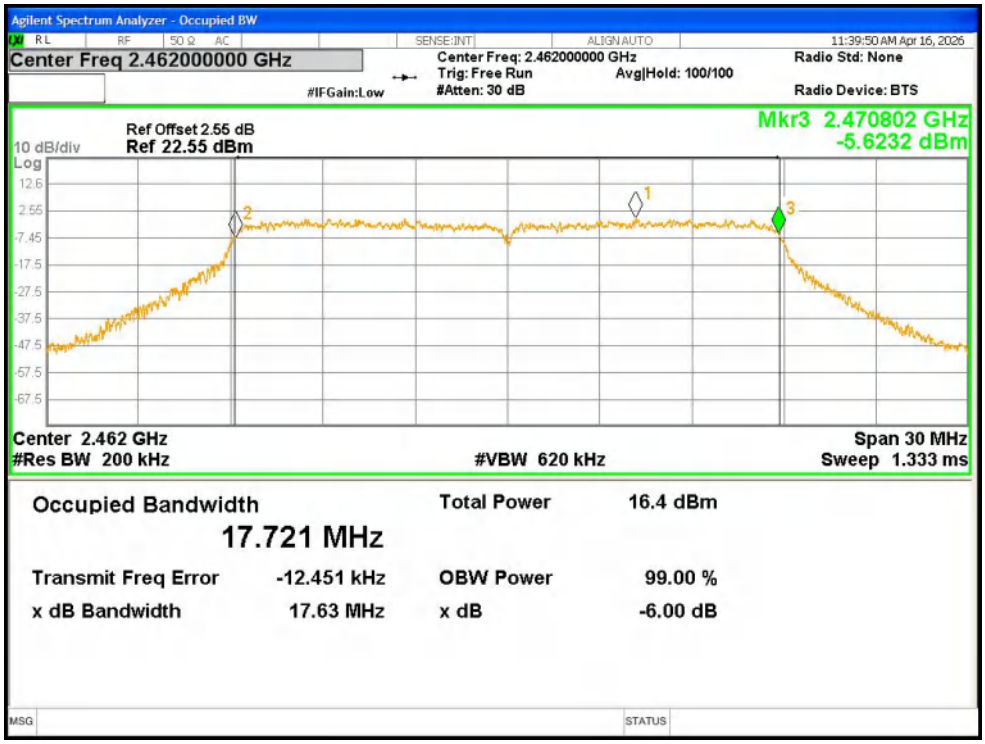
-6dB Bandwidth NVNT g 2462MHz Ant1



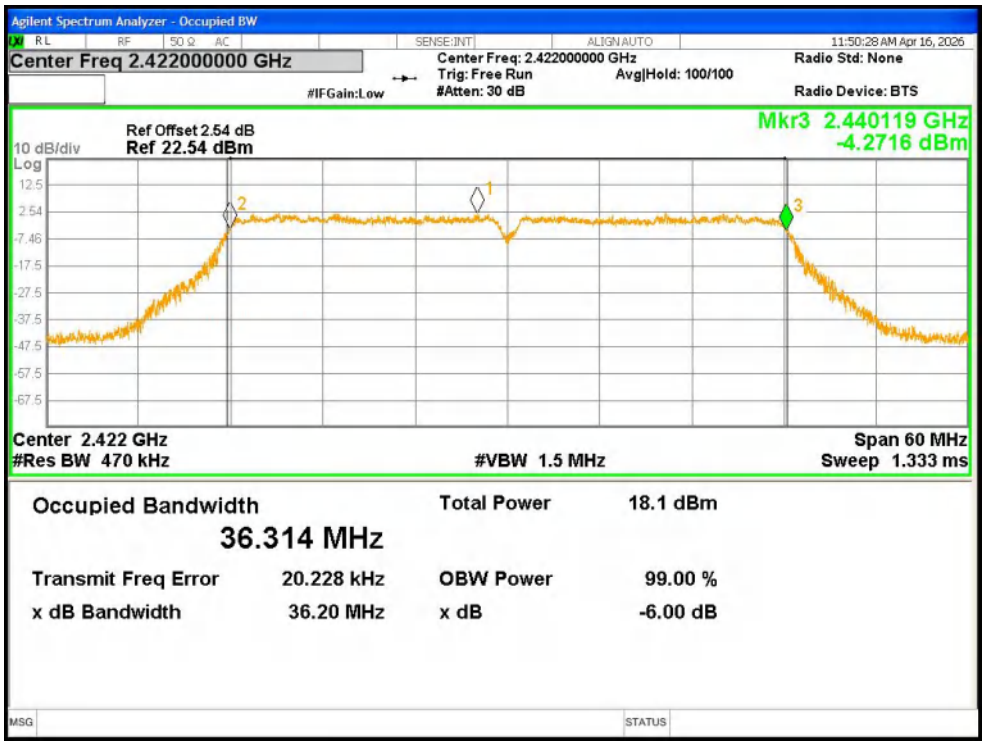
-6dB Bandwidth NVNT n20 2412MHz Ant1



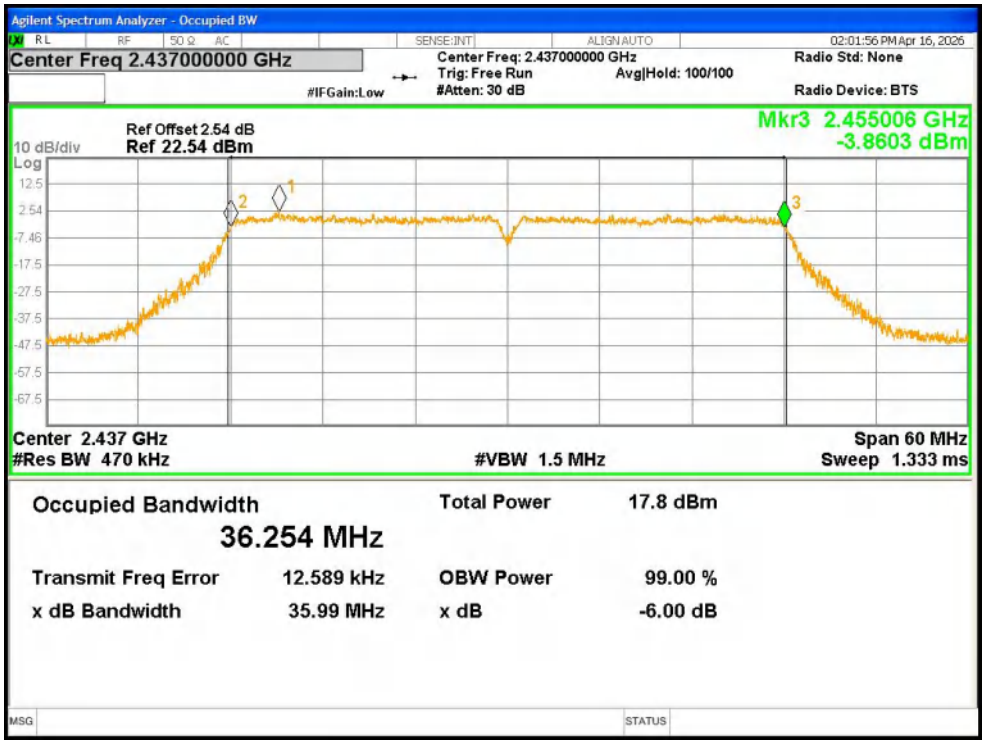
-6dB Bandwidth NVNT n20 2437MHz Ant1



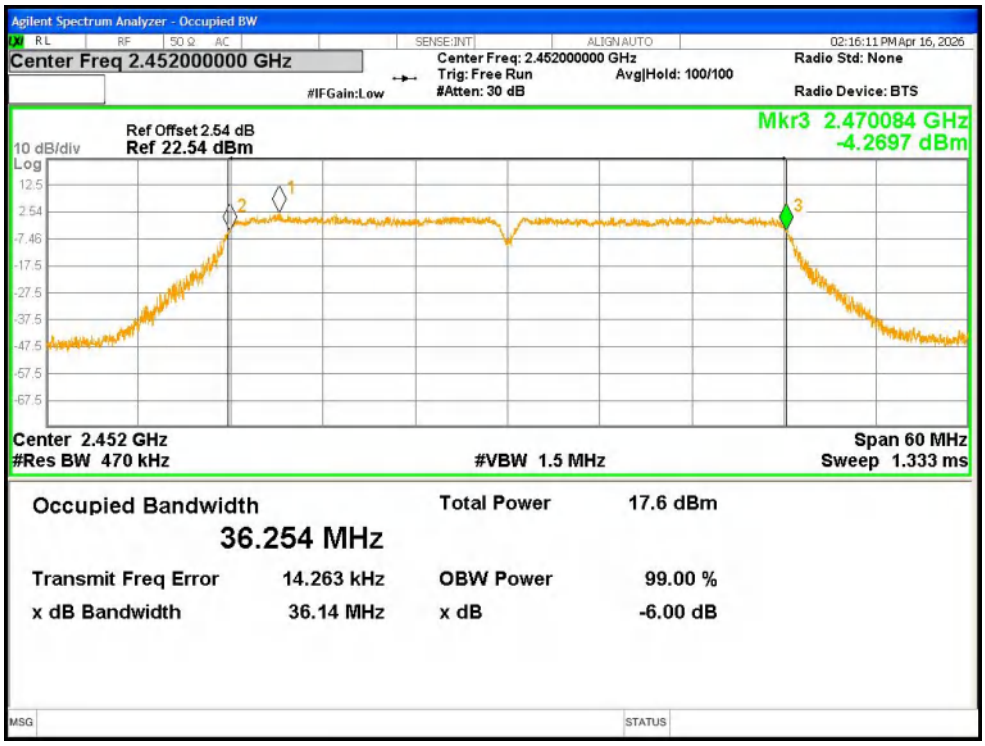
-6dB Bandwidth NVNT n20 2462MHz Ant1



-6dB Bandwidth NVNT n40 2422MHz Ant1



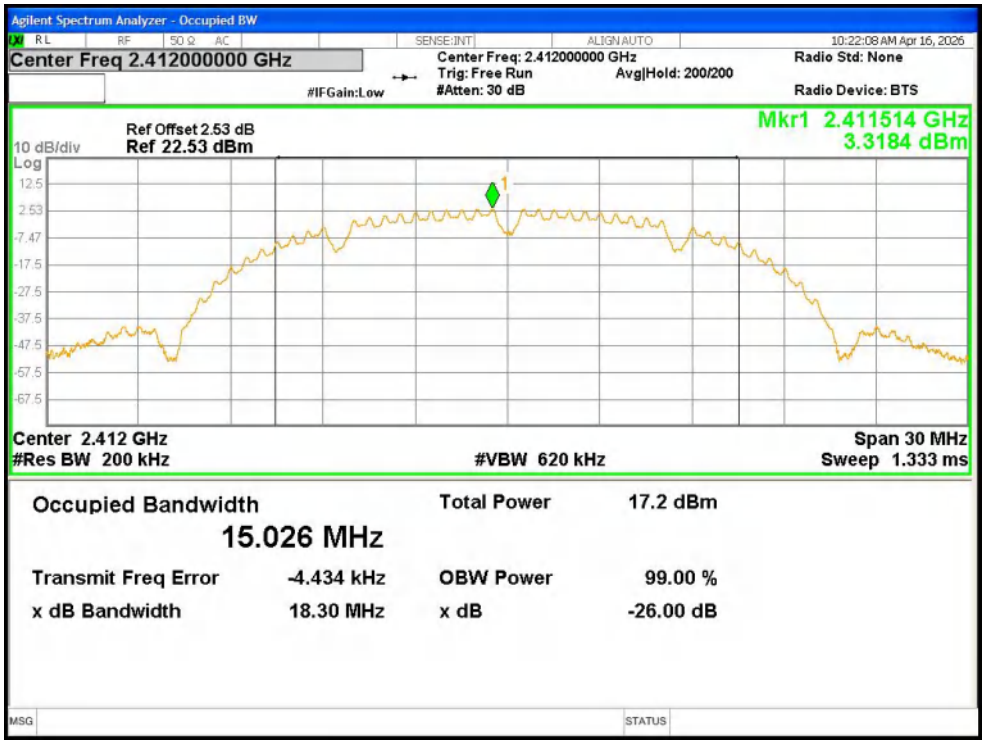
-6dB Bandwidth NVNT n40 2437MHz Ant1



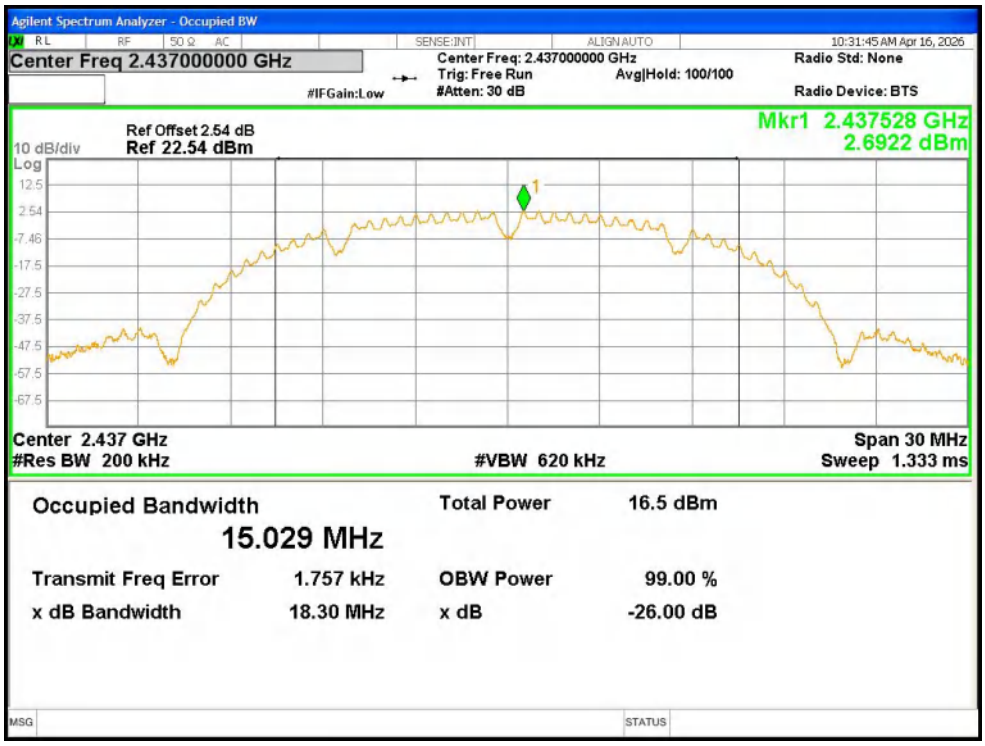
-6dB Bandwidth NVNT n40 2452MHz Ant1

4. Occupied Channel Bandwidth

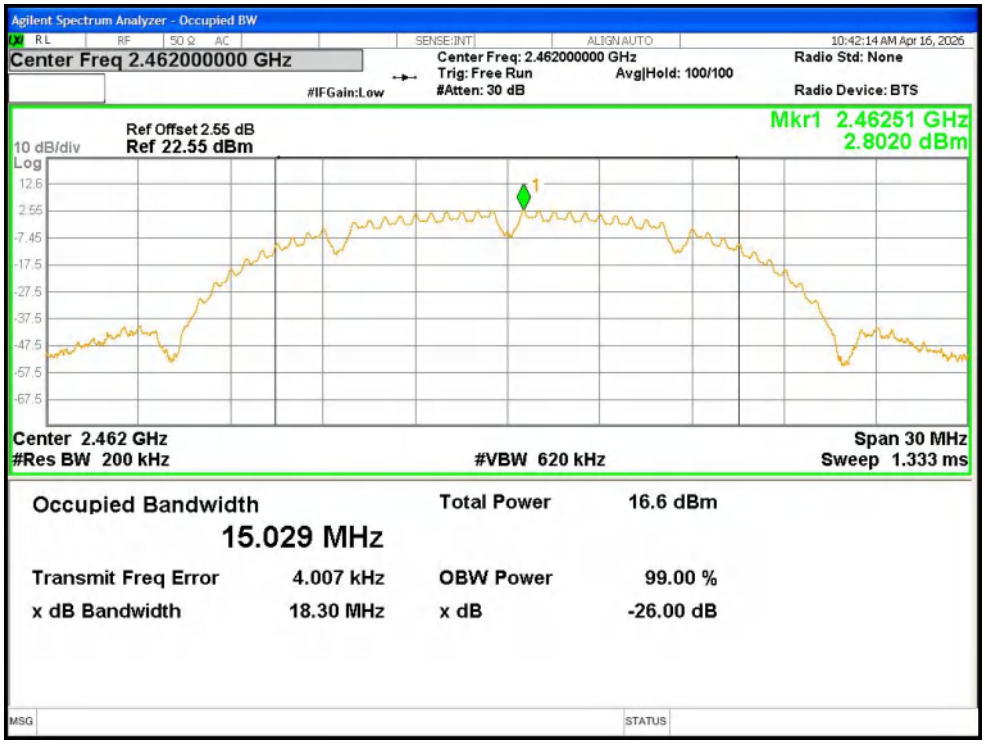
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	15.026
NVNT	b	2437	Ant1	15.029
NVNT	b	2462	Ant1	15.029
NVNT	g	2412	Ant1	16.548
NVNT	g	2437	Ant1	16.547
NVNT	g	2462	Ant1	16.555
NVNT	n20	2412	Ant1	17.717
NVNT	n20	2437	Ant1	17.698
NVNT	n20	2462	Ant1	17.694
NVNT	n40	2422	Ant1	36.272
NVNT	n40	2437	Ant1	36.274
NVNT	n40	2452	Ant1	36.28



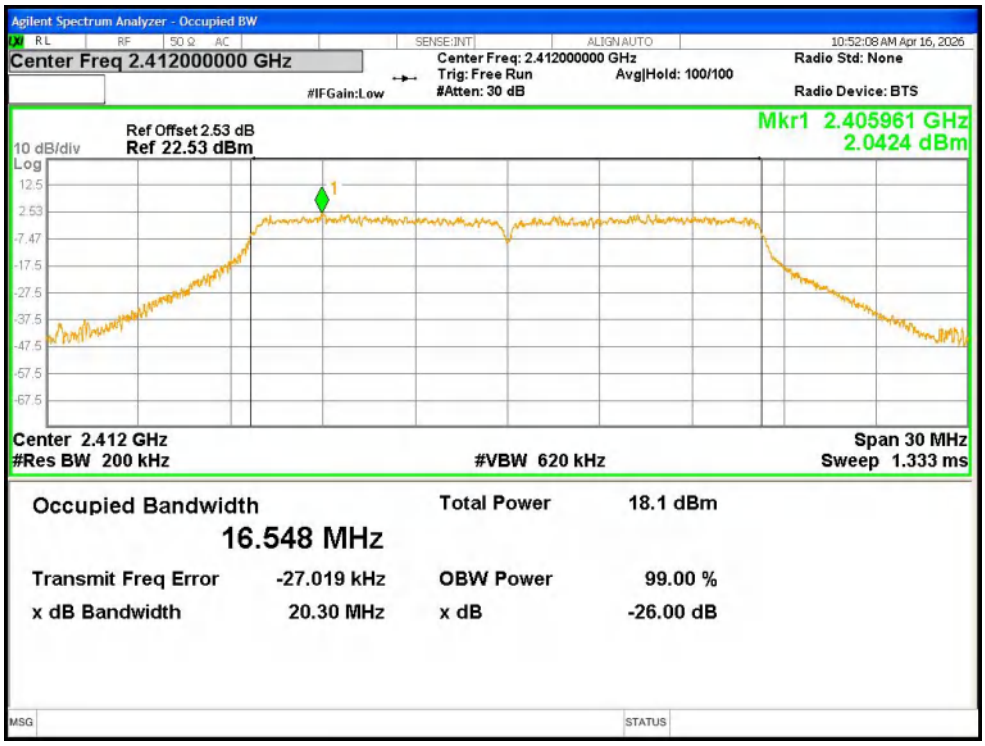
OBW NVNT b 2412MHz Ant1



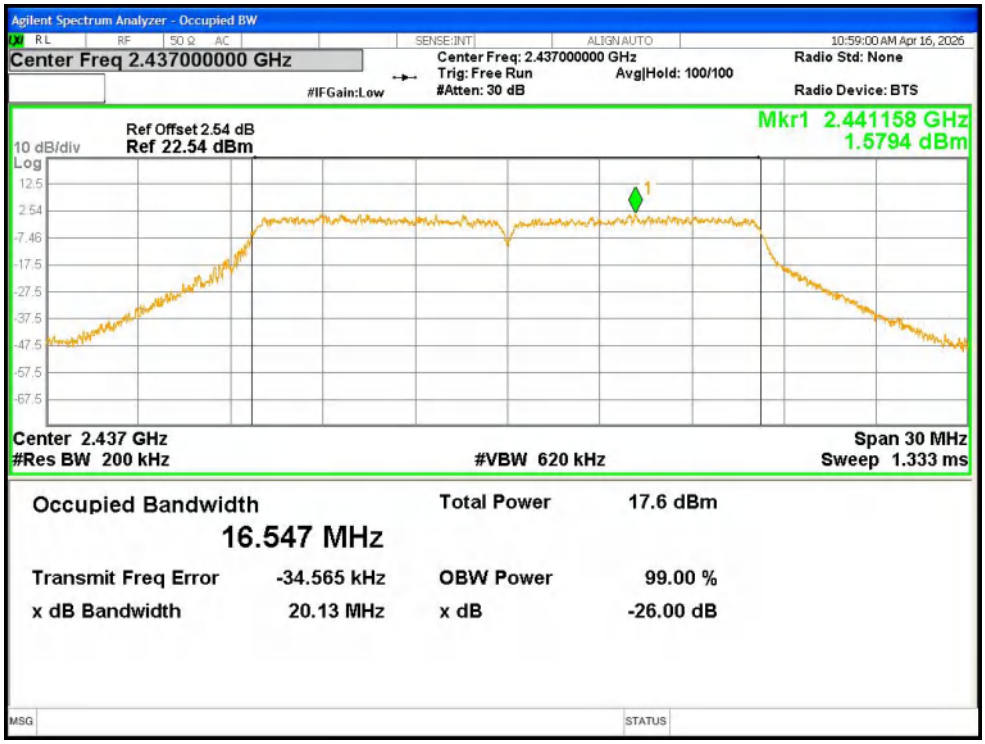
OBW NVNT b 2437MHz Ant1



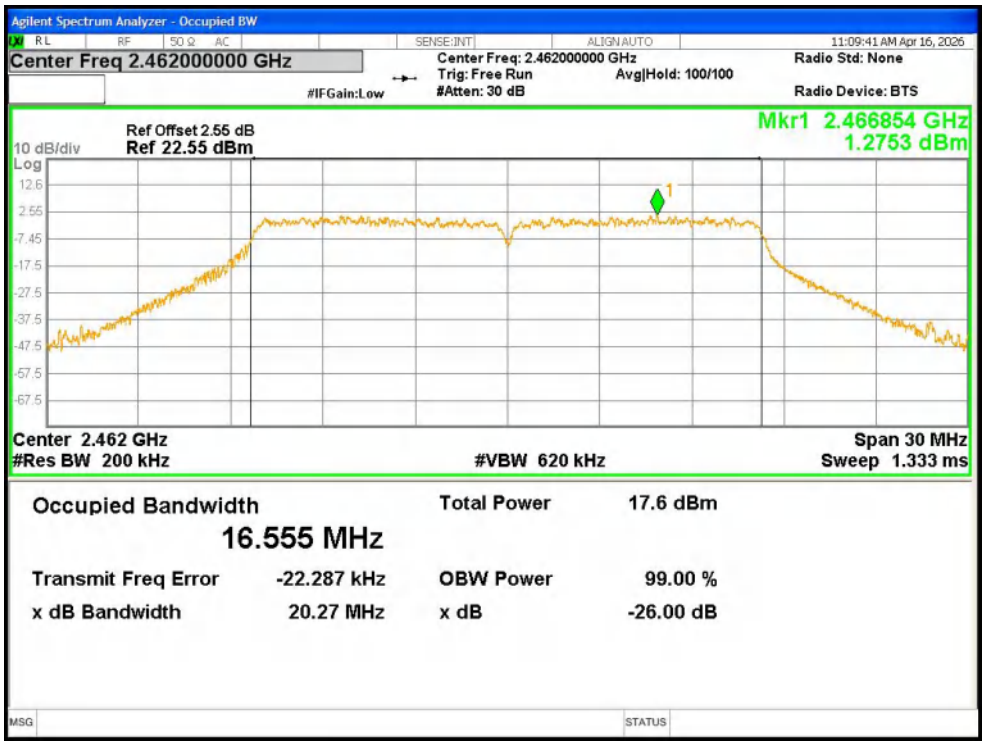
OBW NVNT b 2462MHz Ant1



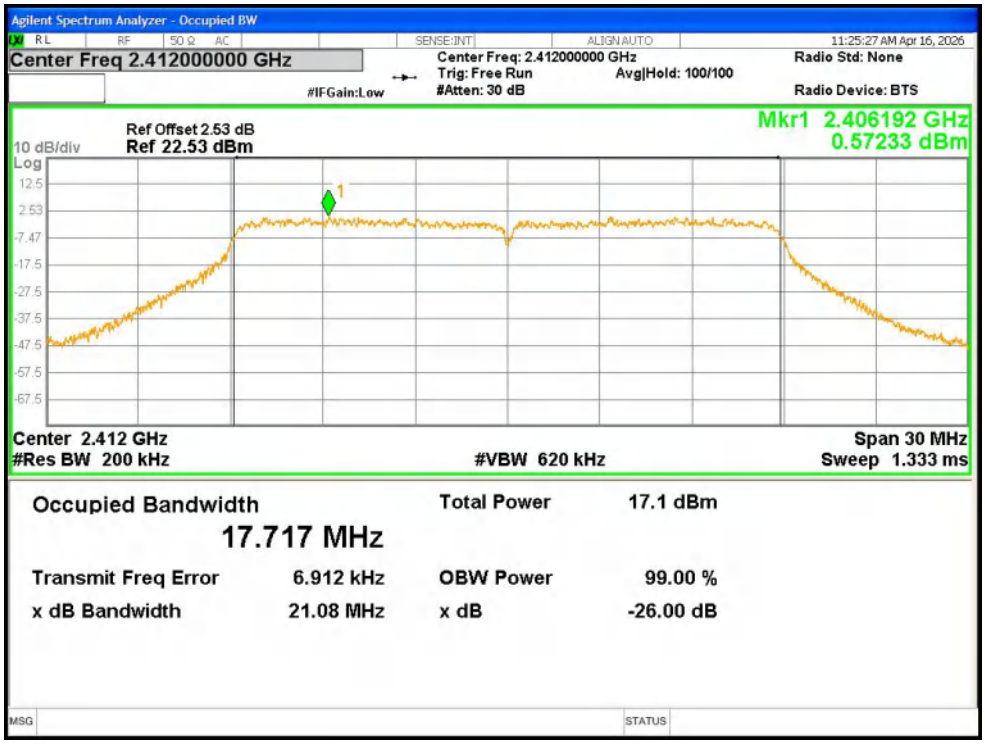
OBW NVNT g 2412MHz Ant1



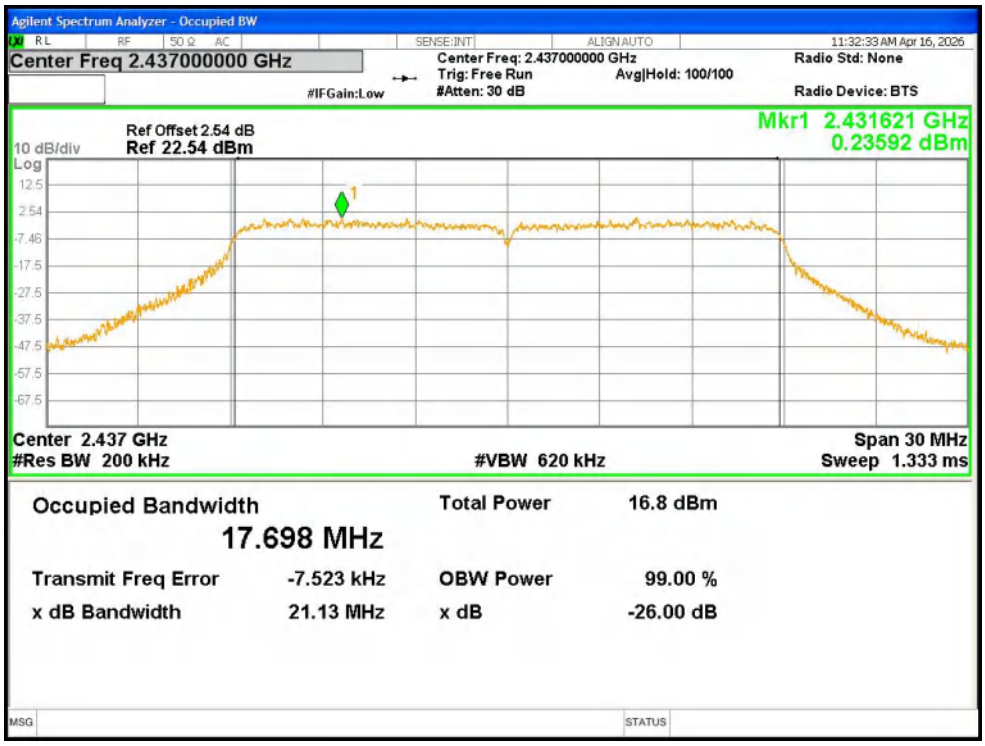
OBW NVNT g 2437MHz Ant1



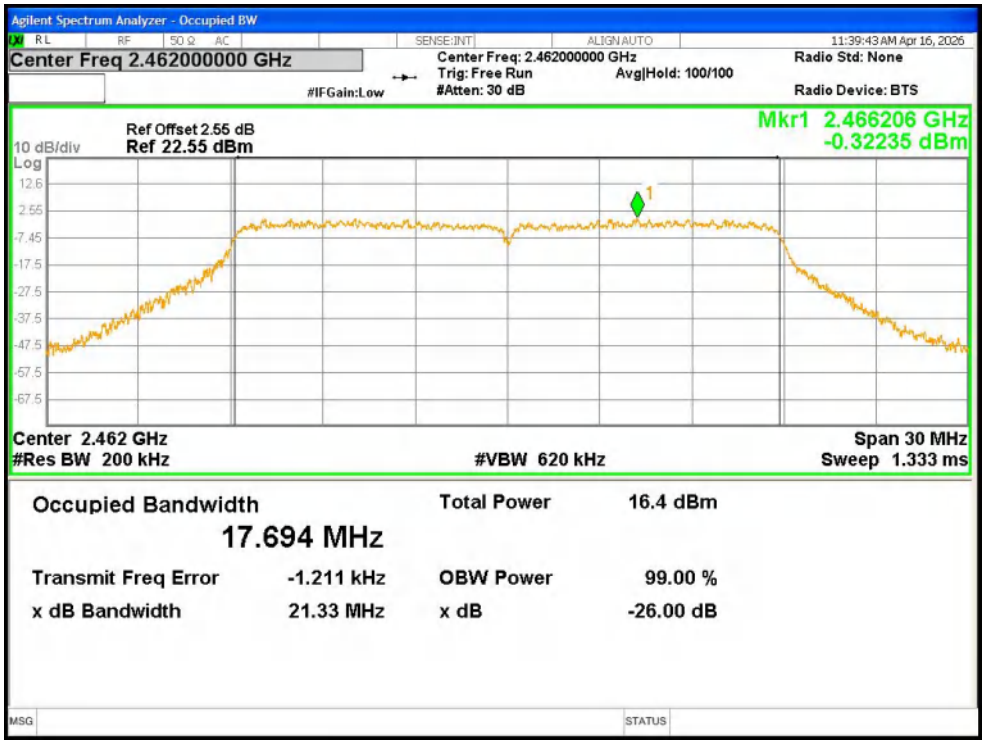
OBW NVNT g 2462MHz Ant1



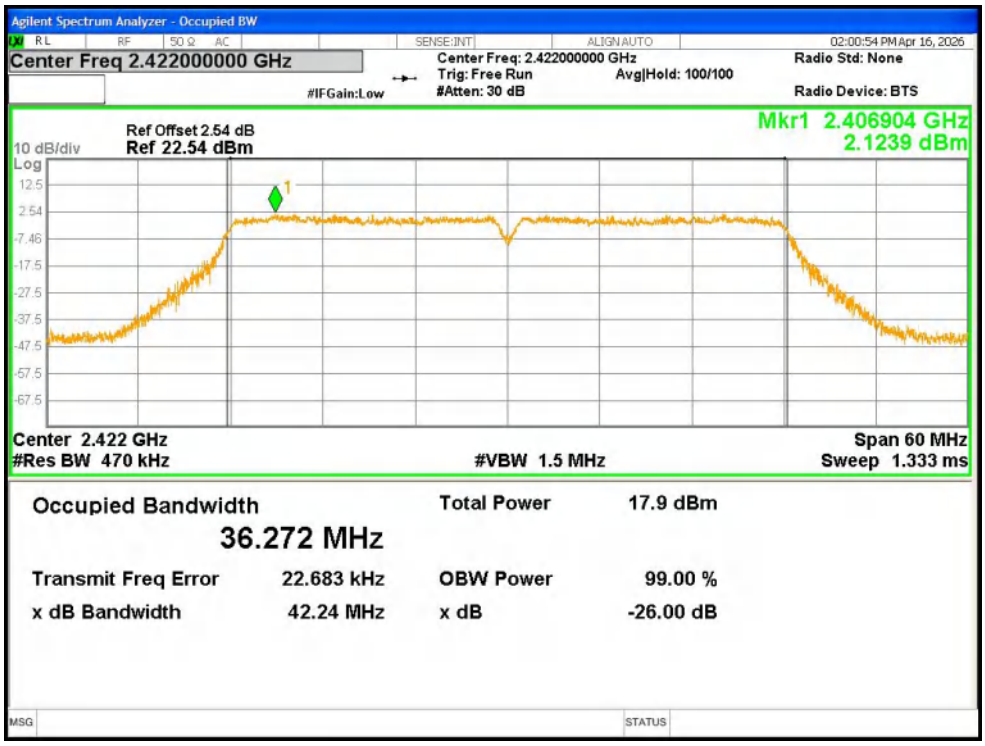
OBW NVNT n20 2412MHz Ant1



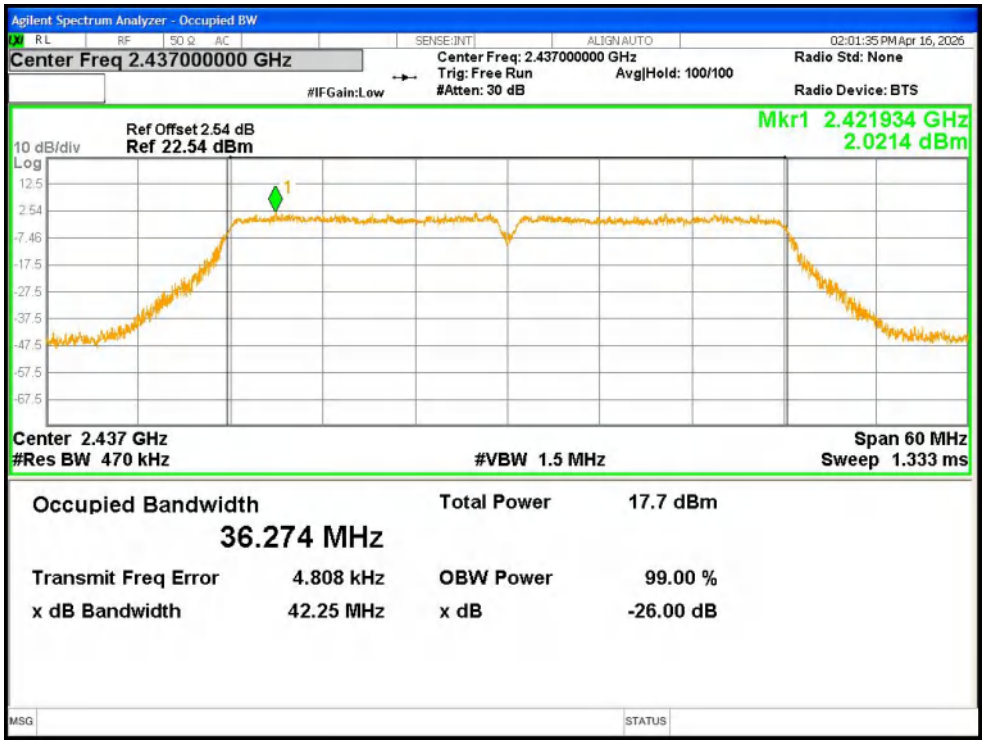
OBW NVNT n20 2437MHz Ant1



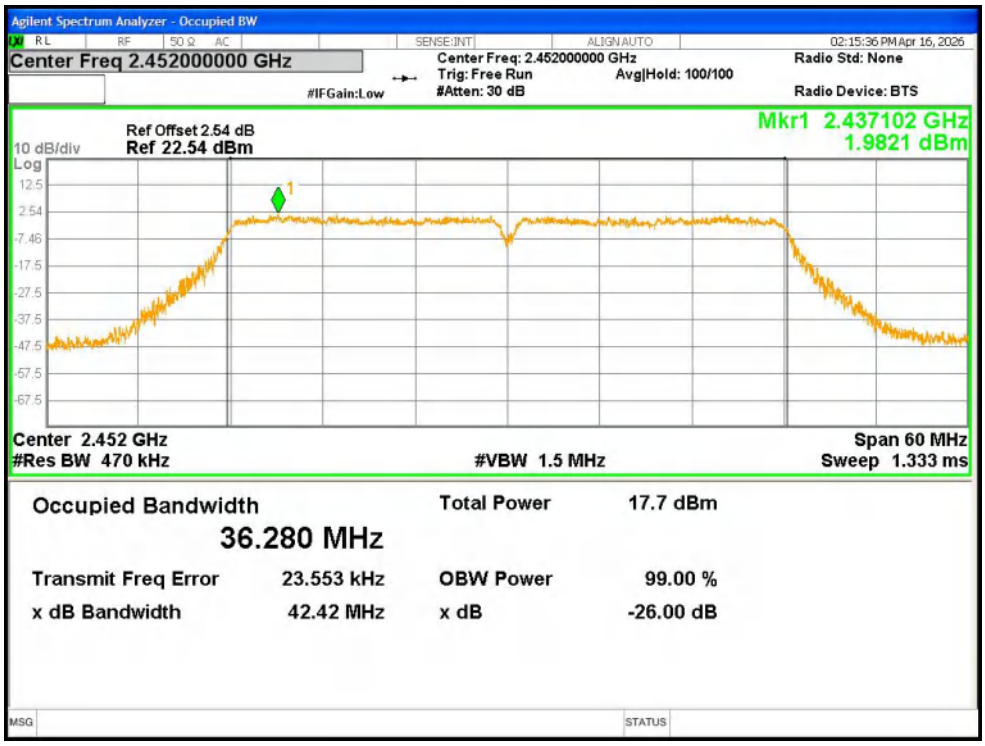
OBW NVNT n20 2462MHz Ant1



OBW NVNT n40 2422MHz Ant1



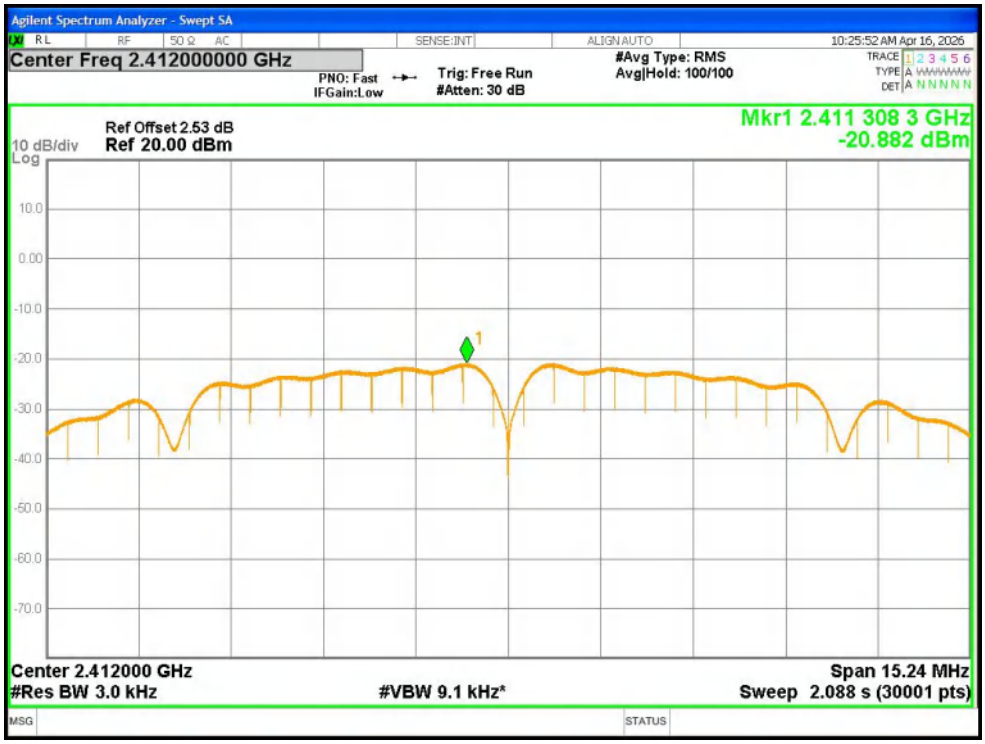
OBW NVNT n40 2437MHz Ant1



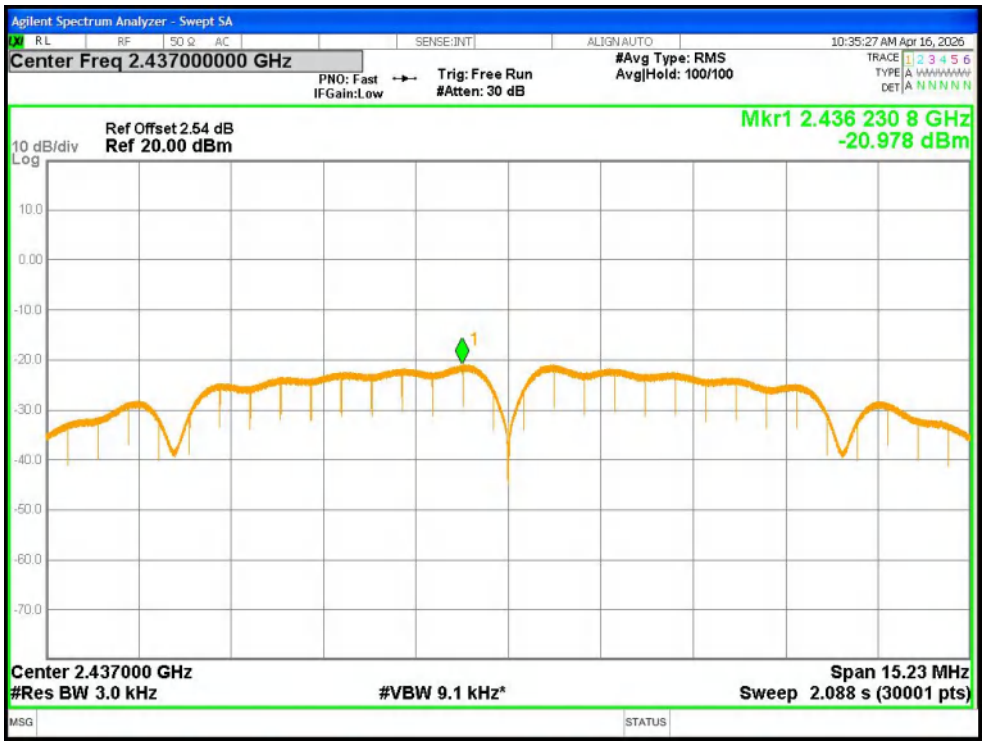
OBW NVNT n40 2452MHz Ant1

5. Maximum Power Spectral Density Level

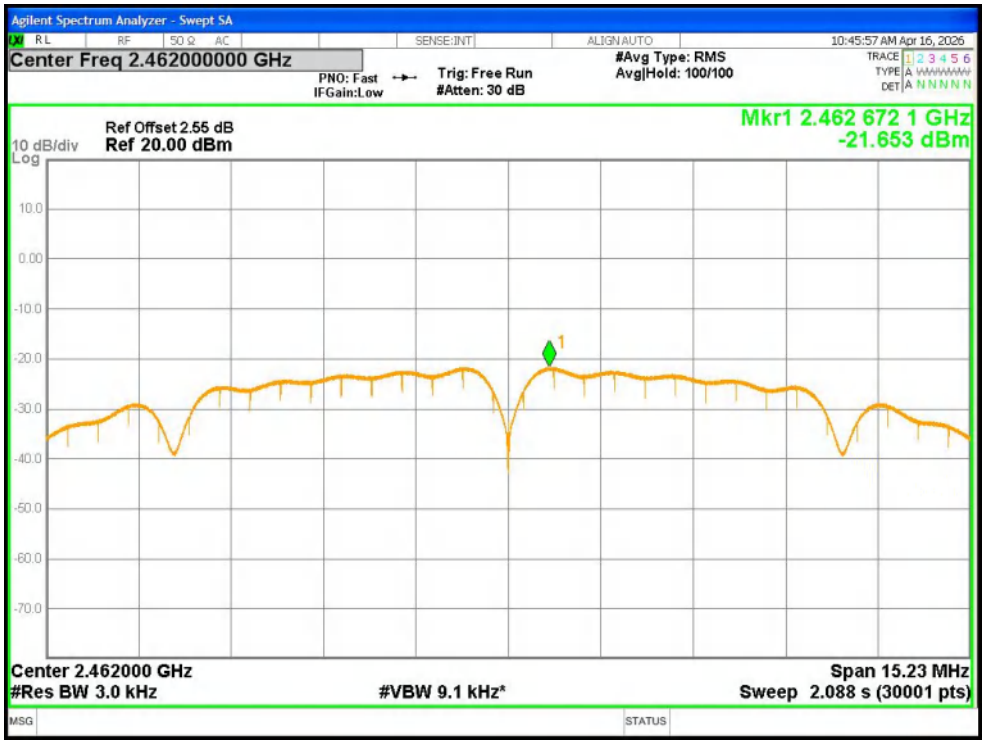
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-20.88	0	-20.88	8	Pass
NVNT	b	2437	Ant1	-20.98	0	-20.98	8	Pass
NVNT	b	2462	Ant1	-21.65	0	-21.65	8	Pass
NVNT	g	2412	Ant1	-19.77	0	-19.77	8	Pass
NVNT	g	2437	Ant1	-20.75	0	-20.75	8	Pass
NVNT	g	2462	Ant1	-20.3	0	-20.3	8	Pass
NVNT	n20	2412	Ant1	-20.93	0	-20.93	8	Pass
NVNT	n20	2437	Ant1	-21.72	0	-21.72	8	Pass
NVNT	n20	2462	Ant1	-22.07	0	-22.07	8	Pass
NVNT	n40	2422	Ant1	-22.68	0	-22.68	8	Pass
NVNT	n40	2437	Ant1	-23.2	0	-23.2	8	Pass
NVNT	n40	2452	Ant1	-23.12	0	-23.12	8	Pass



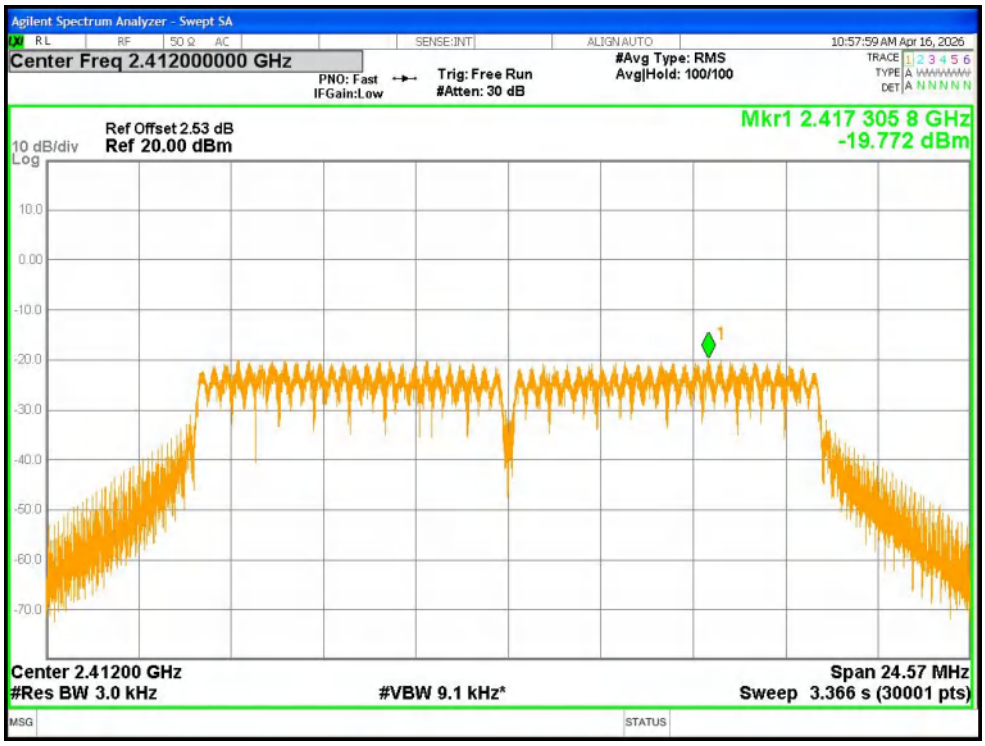
PSD NVNT b 2412MHz Ant1



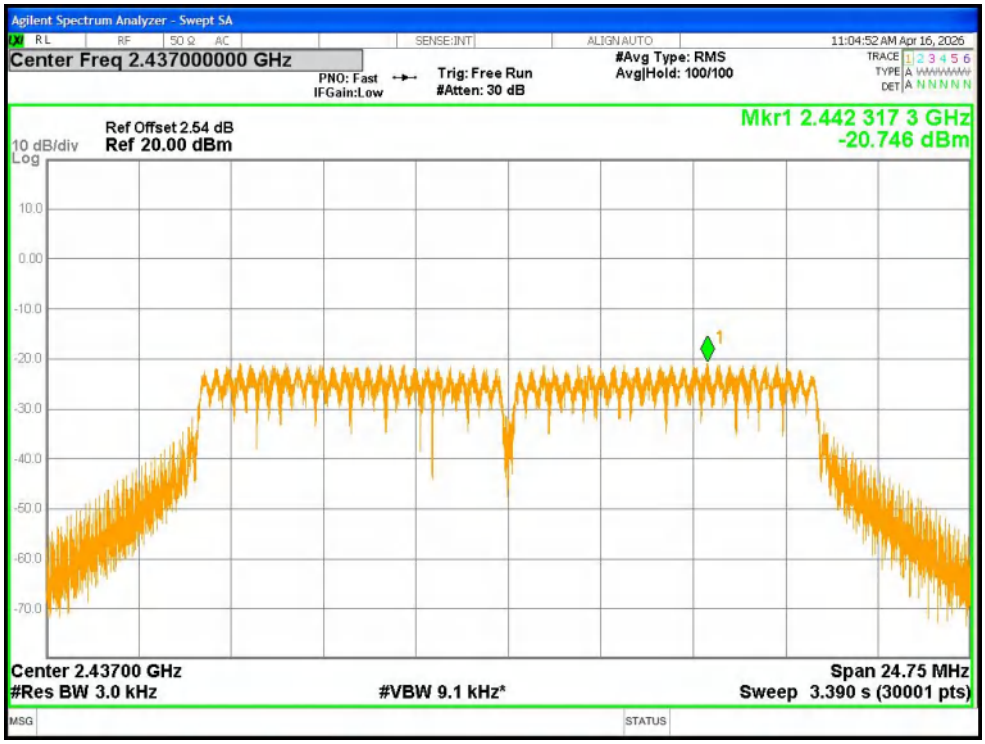
PSD NVNT b 2437MHz Ant1



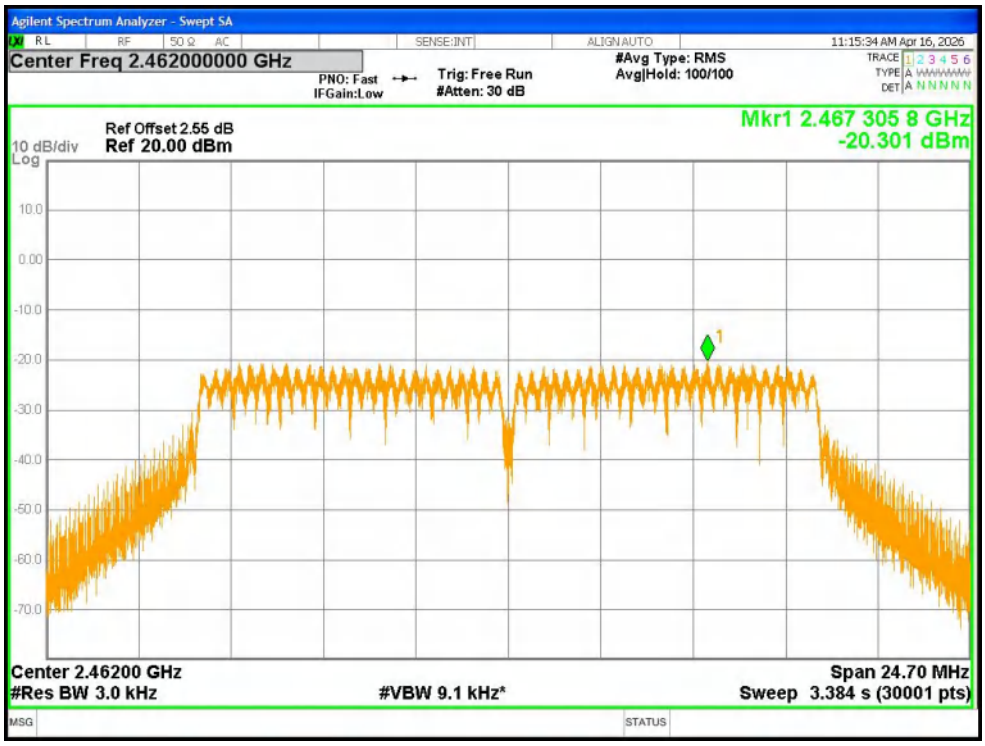
PSD NVNT b 2462MHz Ant1



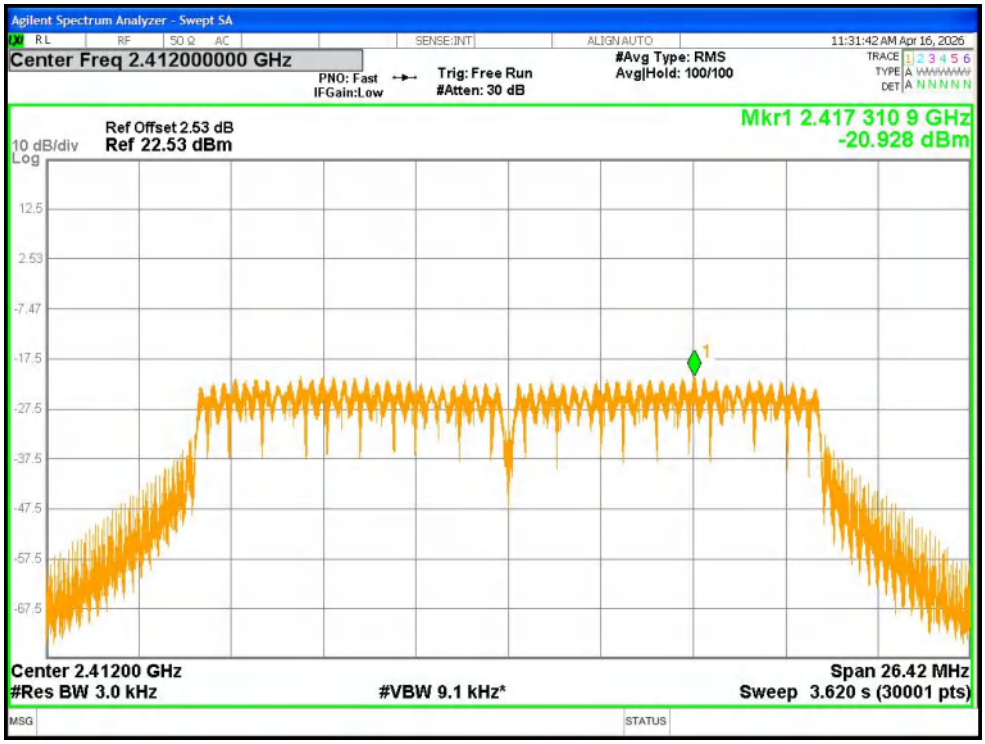
PSD NVNT g 2412MHz Ant1



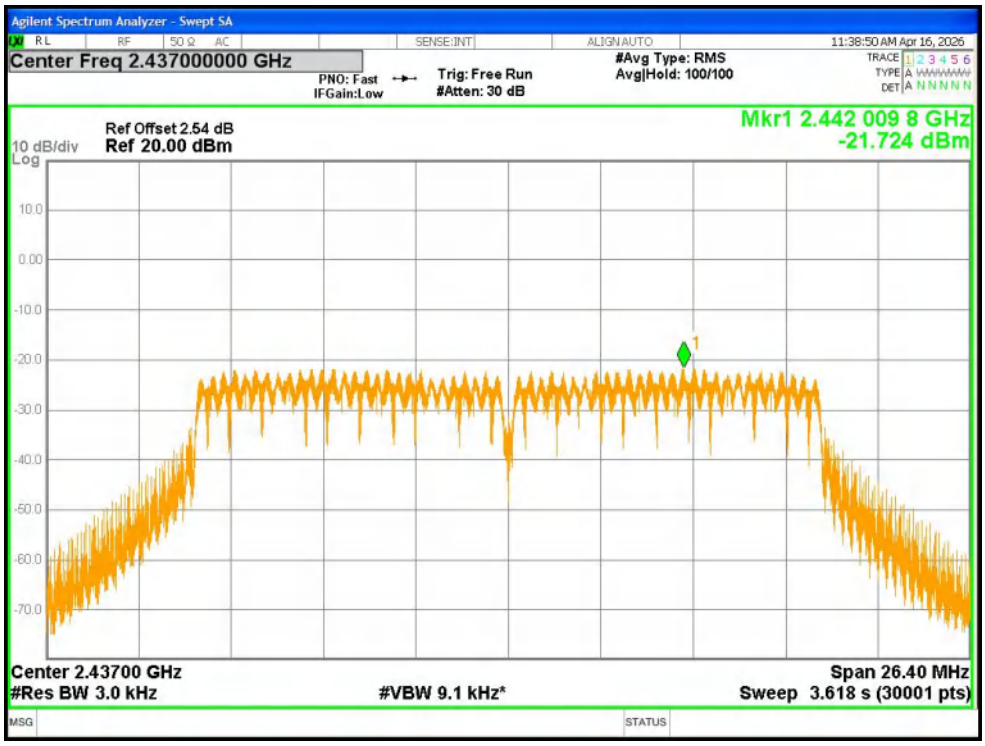
PSD NVNT g 2437MHz Ant1



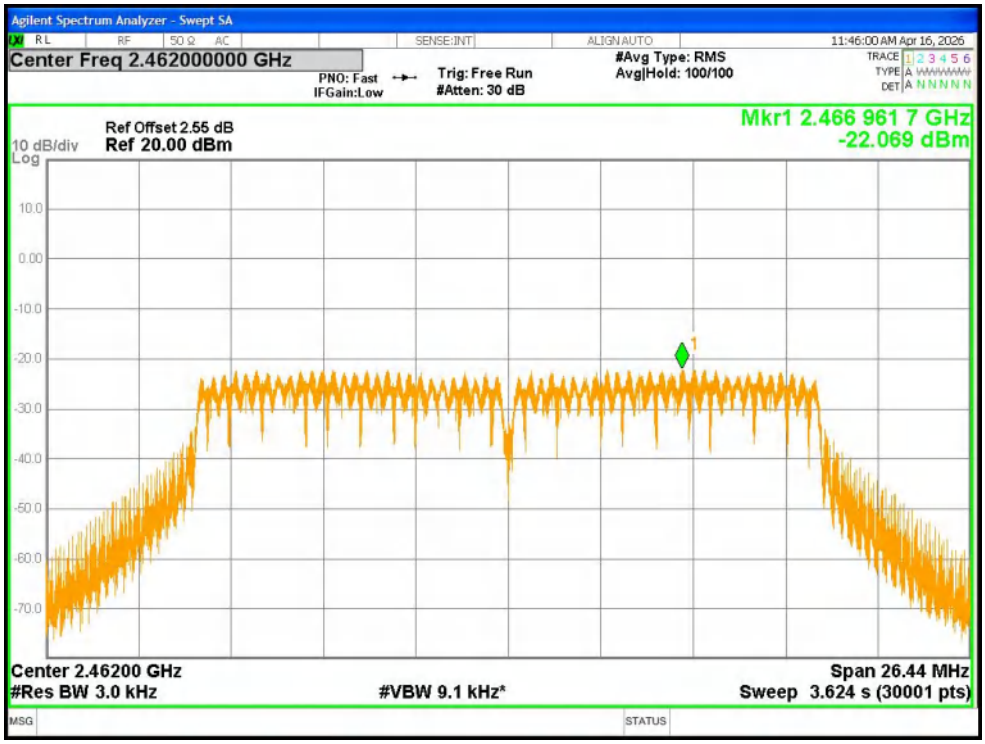
PSD NVNT g 2462MHz Ant1



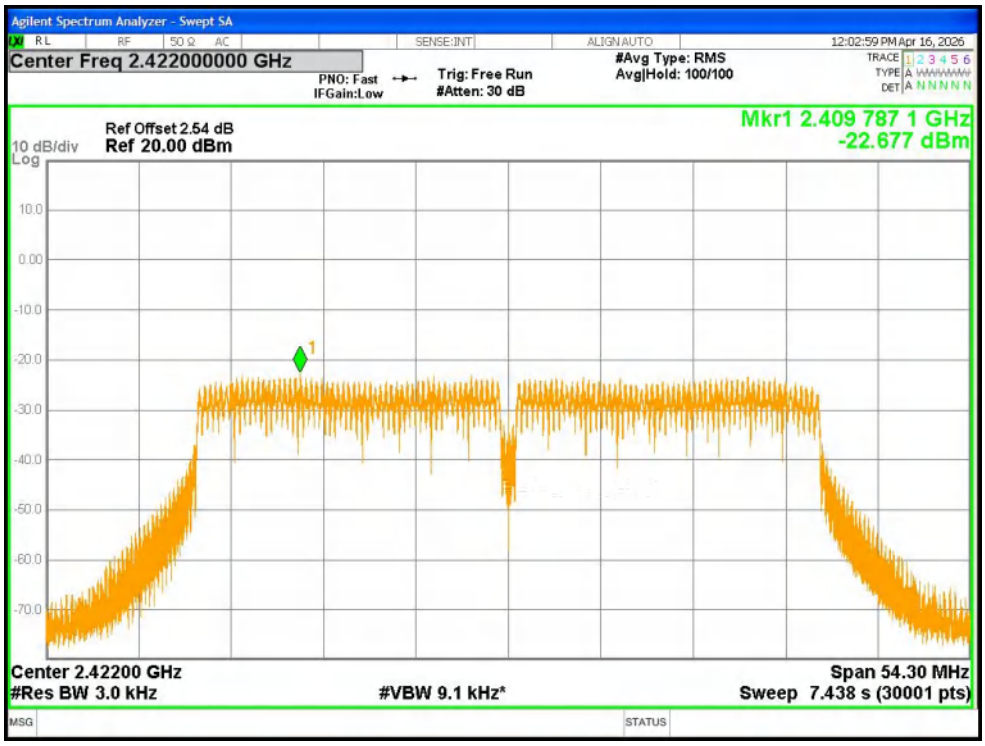
PSD NVNT n20 2412MHz Ant1



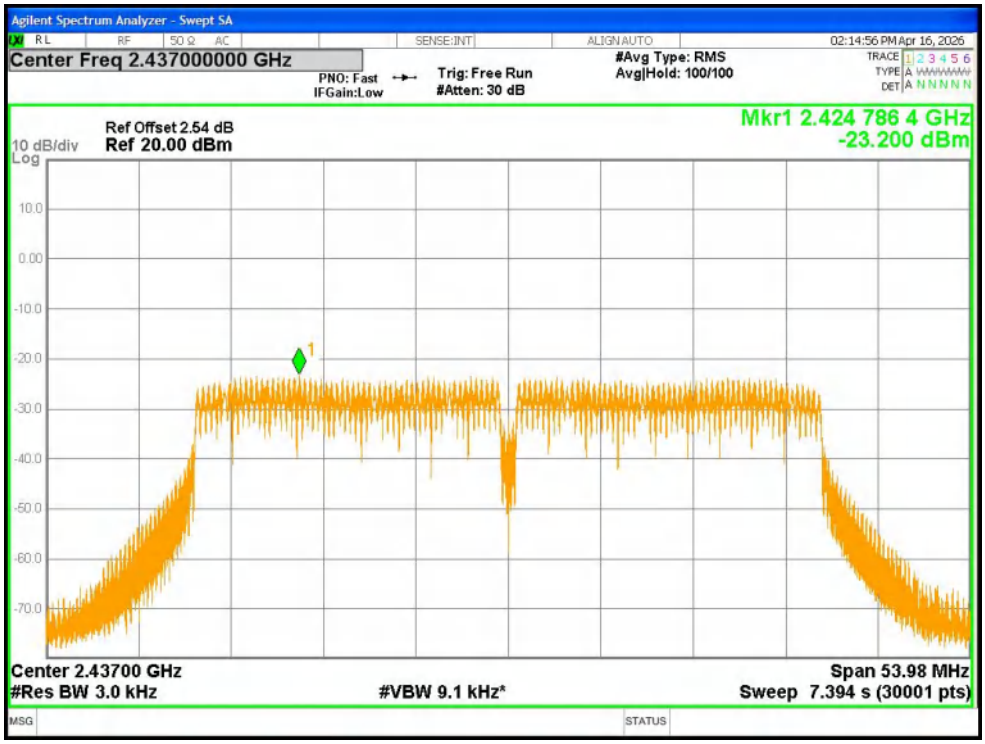
PSD NVNT n20 2437MHz Ant1



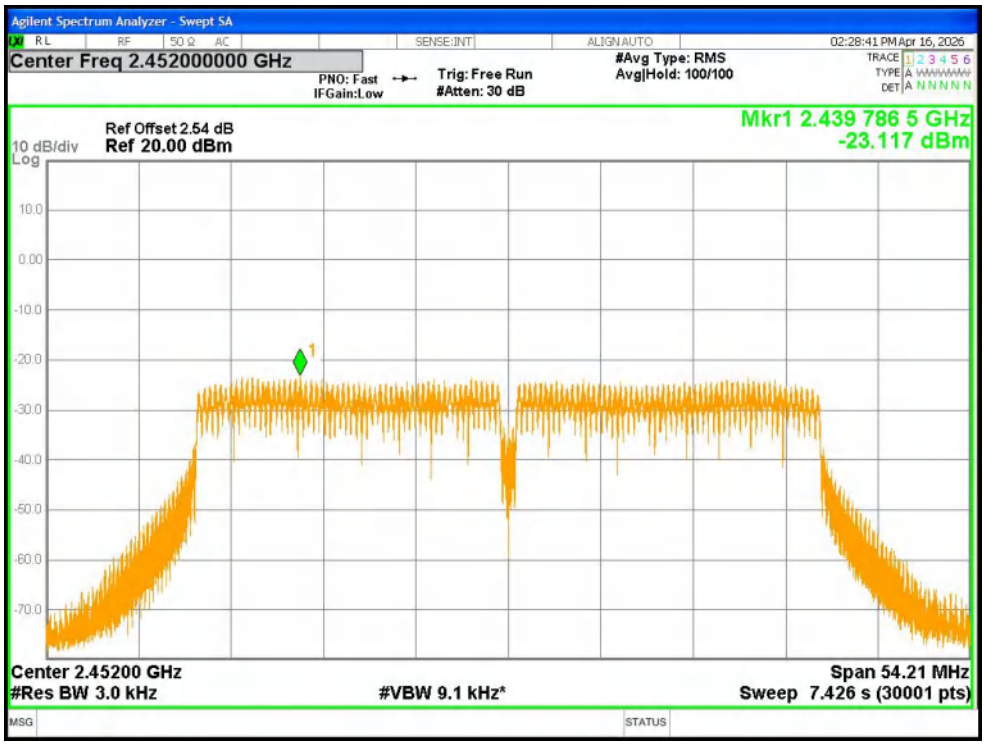
PSD NVNT n20 2462MHz Ant1



PSD NVNT n40 2422MHz Ant1



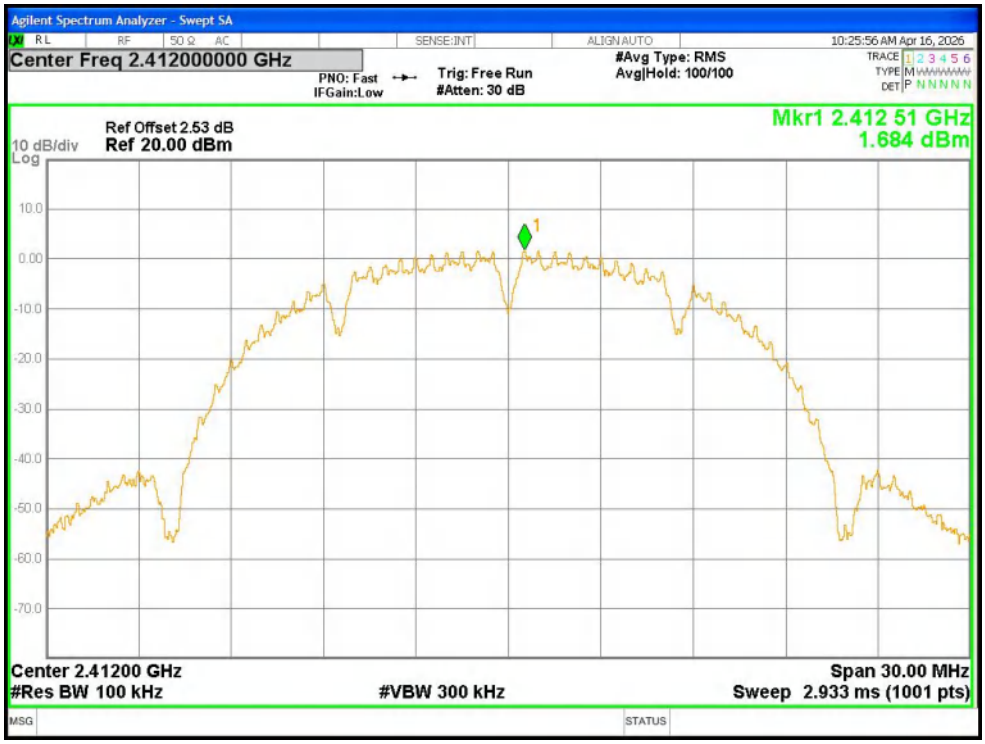
PSD NVNT n40 2437MHz Ant1



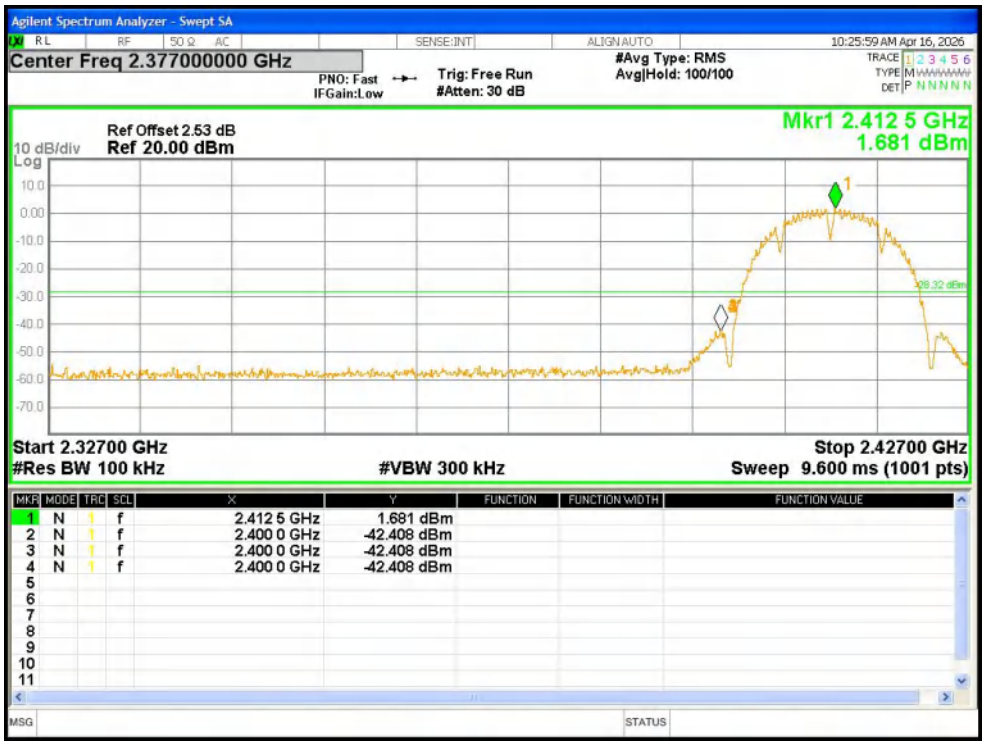
PSD NVNT n40 2452MHz Ant1

6. Band Edge

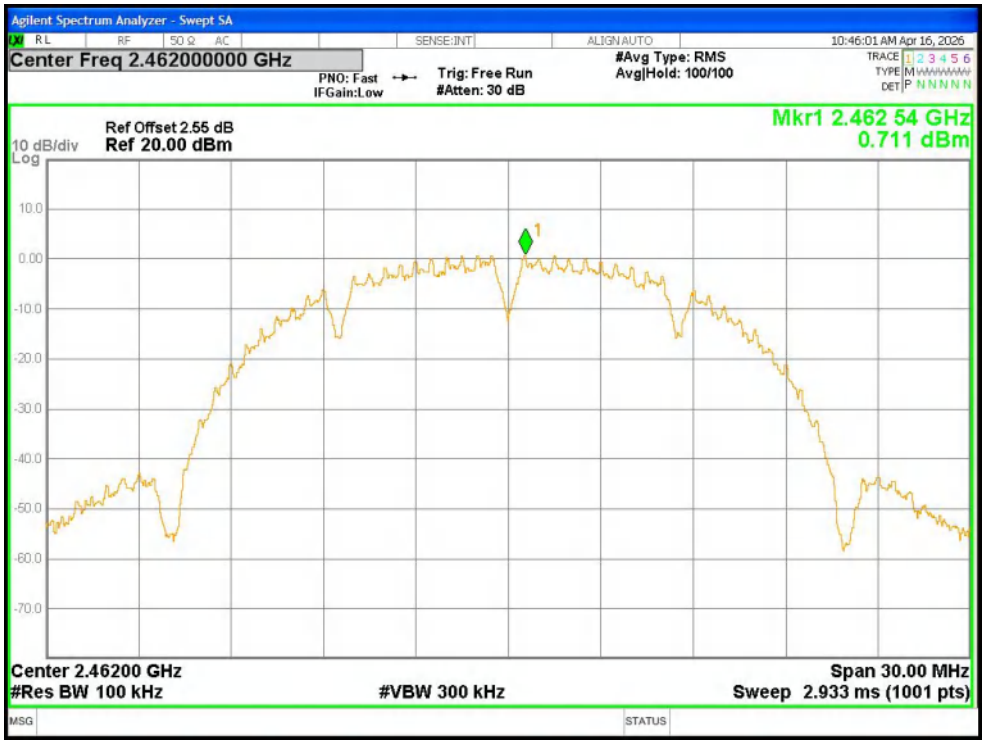
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-44.08	-30	Pass
NVNT	b	2462	Ant1	-57.5	-30	Pass
NVNT	g	2412	Ant1	-38.27	-30	Pass
NVNT	g	2462	Ant1	-50.75	-30	Pass
NVNT	n20	2412	Ant1	-36.79	-30	Pass
NVNT	n20	2462	Ant1	-51.37	-30	Pass
NVNT	n40	2422	Ant1	-34.57	-30	Pass
NVNT	n40	2452	Ant1	-43.73	-30	Pass



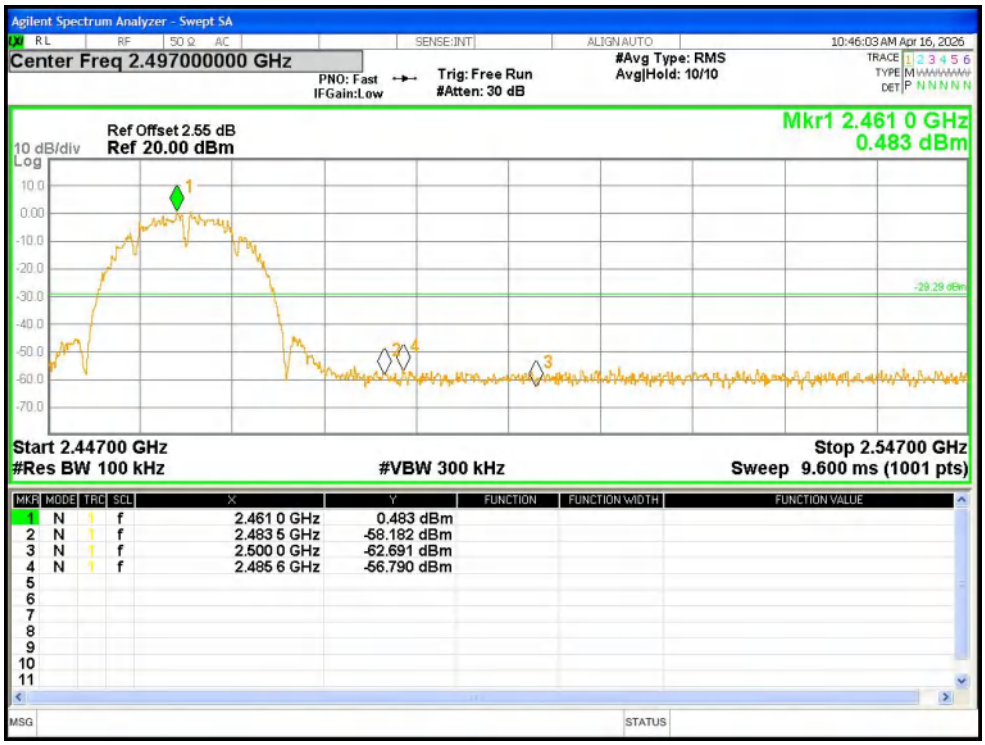
Band Edge NVNT b 2412MHz Ant1 Ref



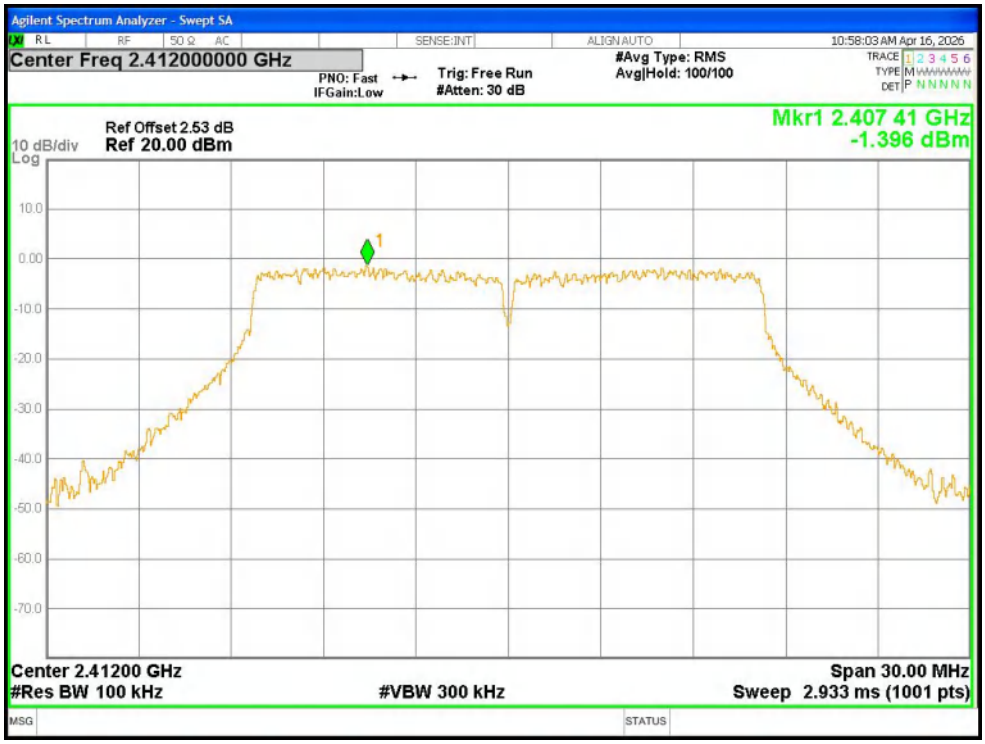
Band Edge NVNT b 2412MHz Ant1 Emission



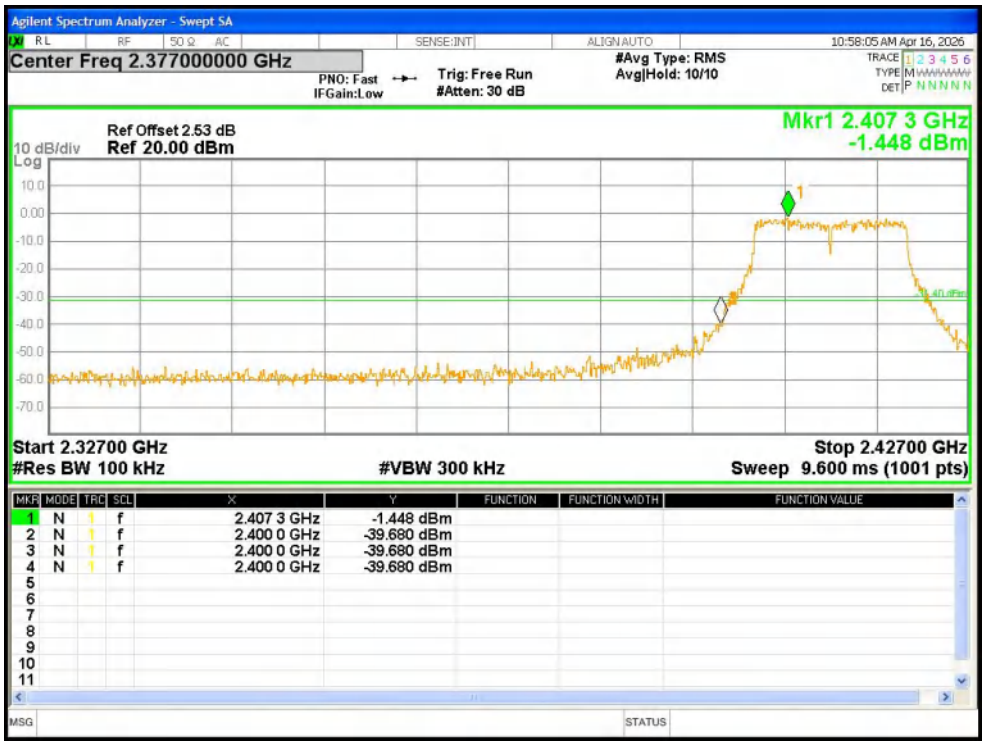
Band Edge NVNT b 2462MHz Ant1 Ref



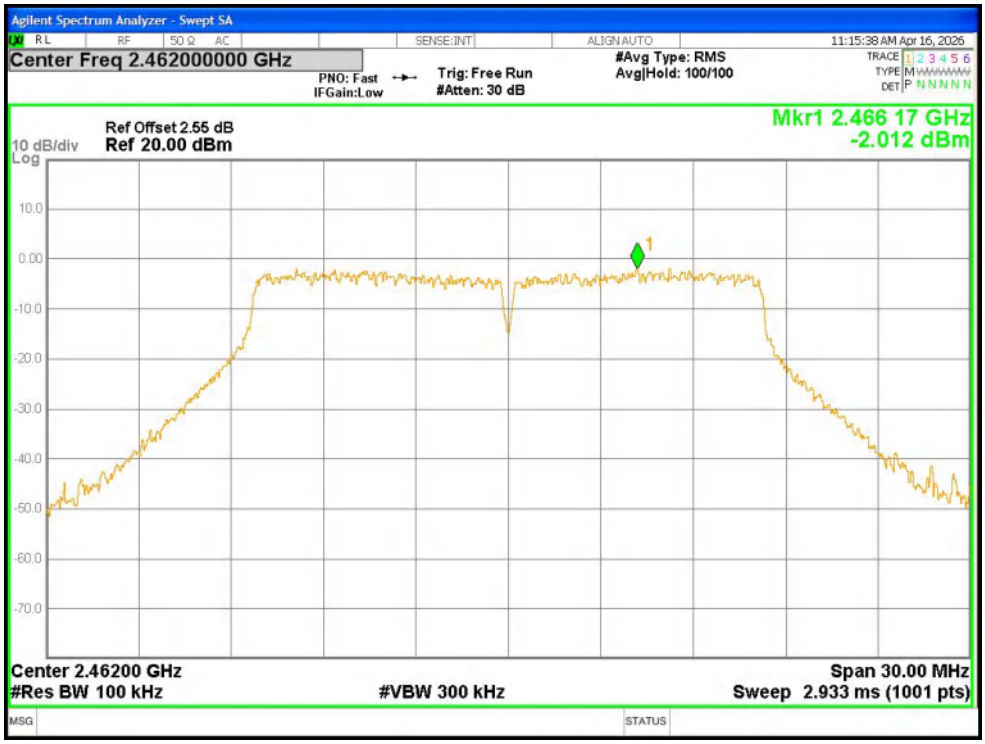
Band Edge NVNT b 2462MHz Ant1 Emission



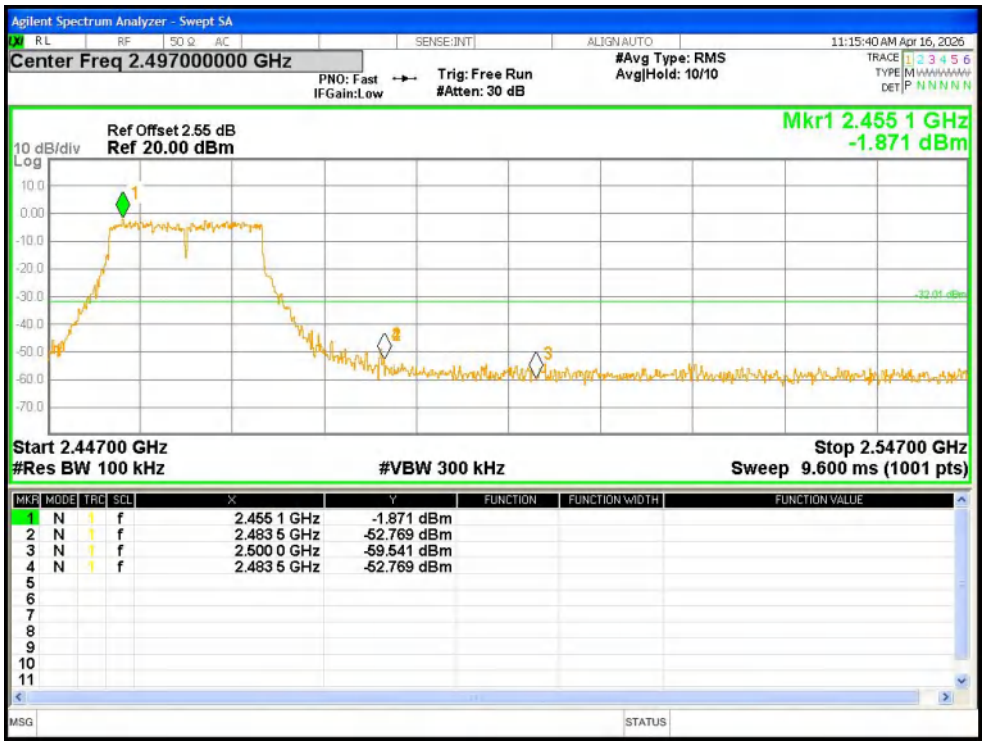
Band Edge NVNT g 2412MHz Ant1 Ref



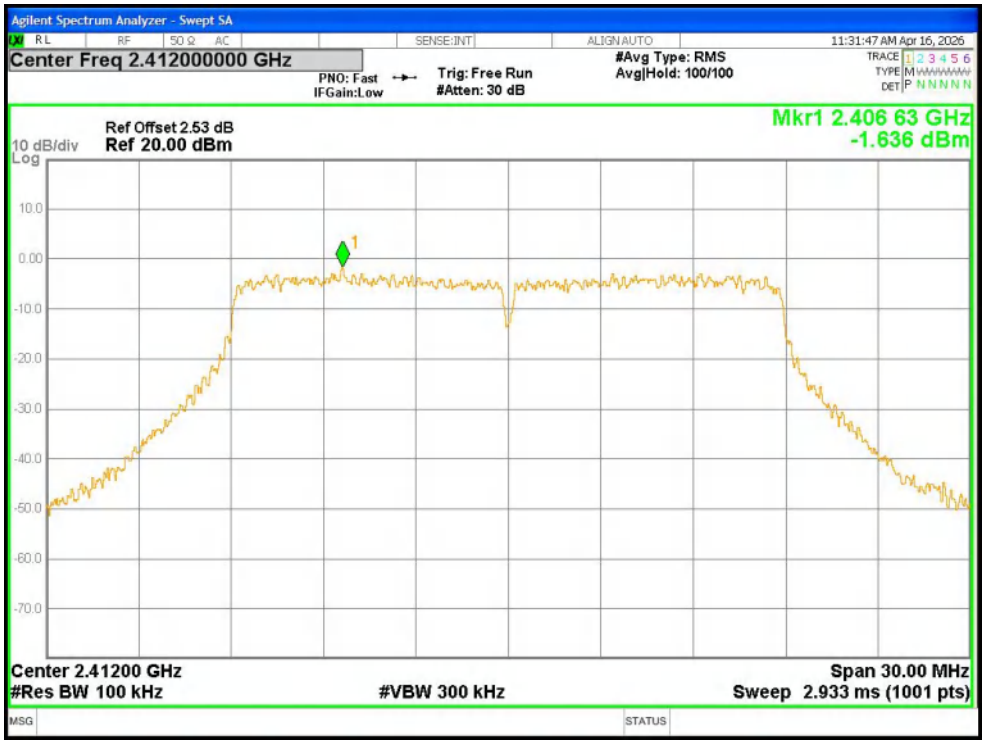
Band Edge NVNT g 2412MHz Ant1 Emission



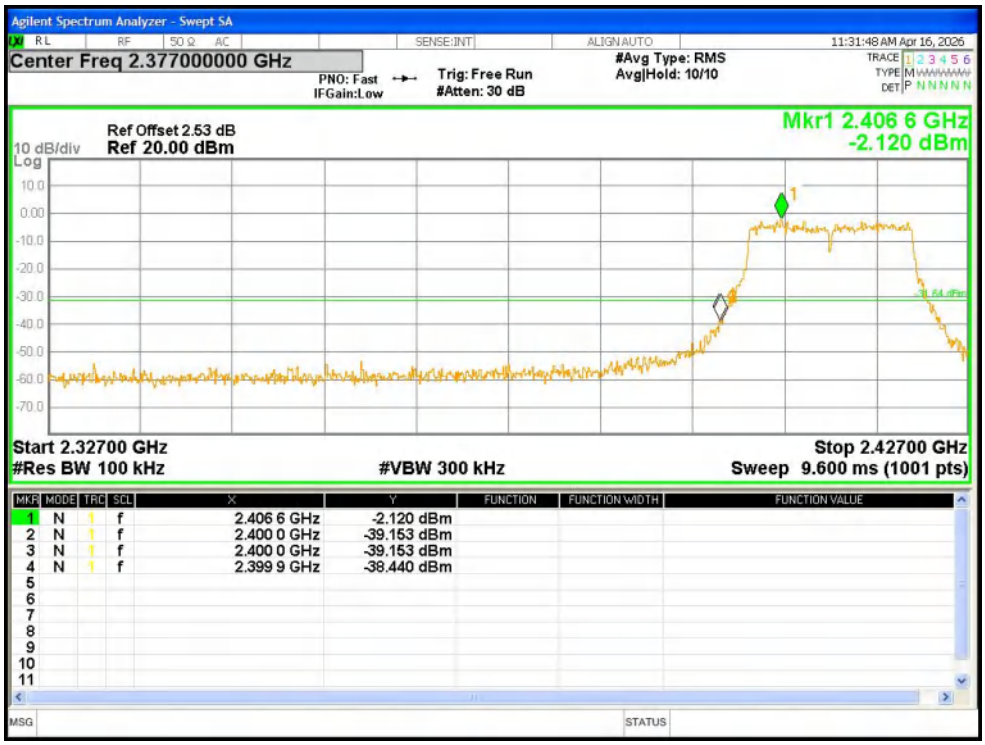
Band Edge NVNT g 2462MHz Ant1 Ref



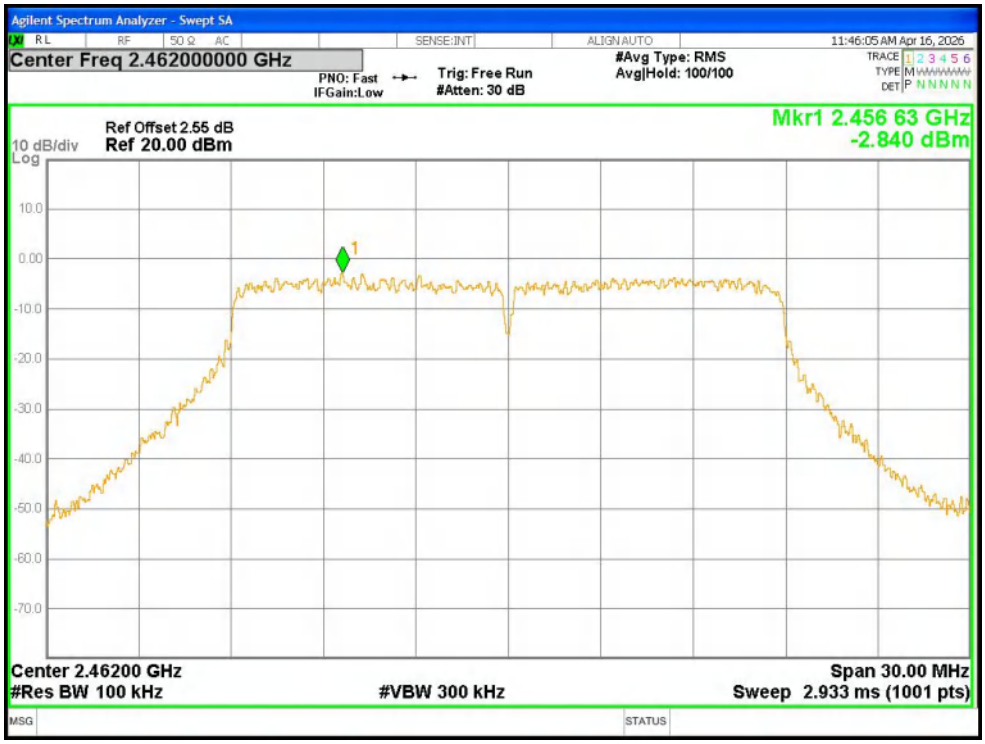
Band Edge NVNT g 2462MHz Ant1 Emission



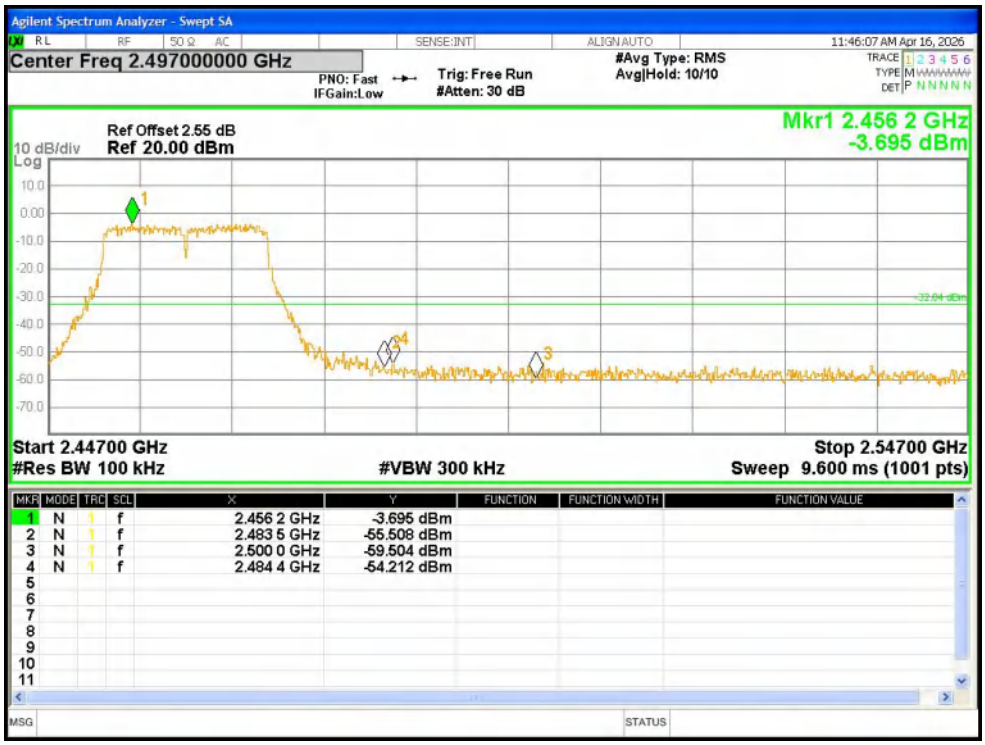
Band Edge NVNT n20 2412MHz Ant1 Ref



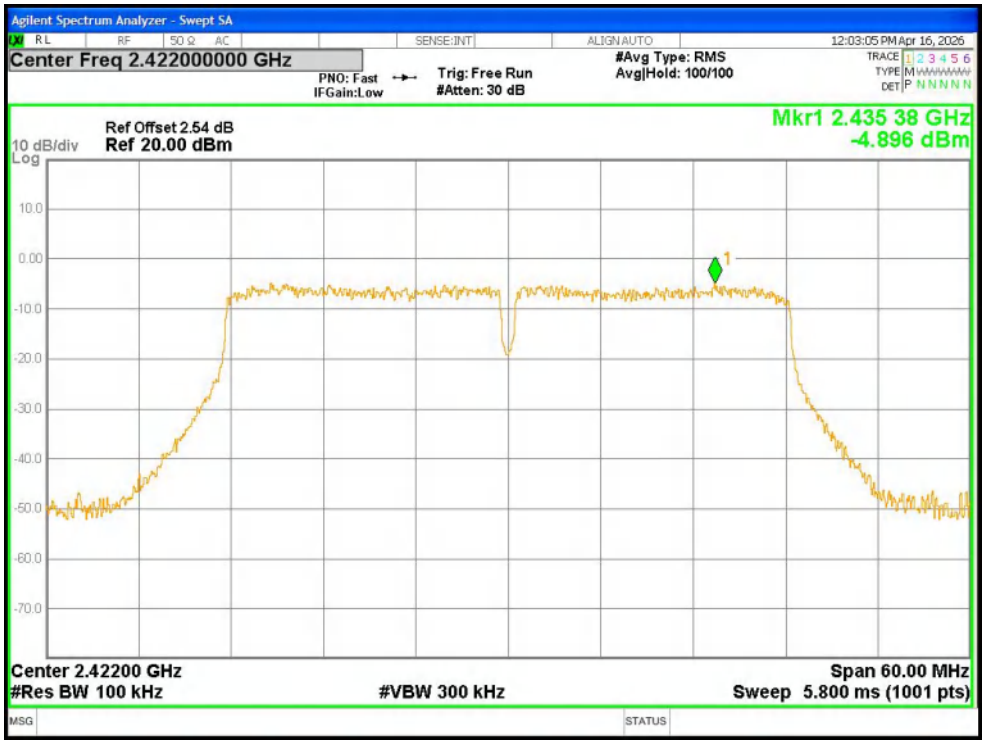
Band Edge NVNT n20 2412MHz Ant1 Emission



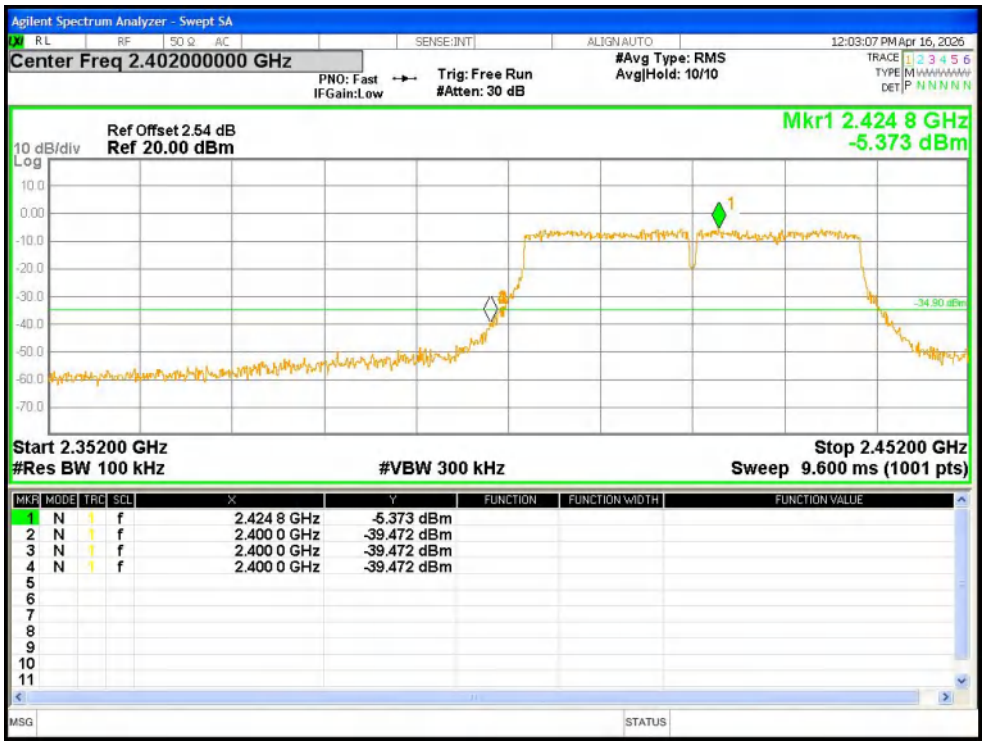
Band Edge NVNT n20 2462MHz Ant1 Ref



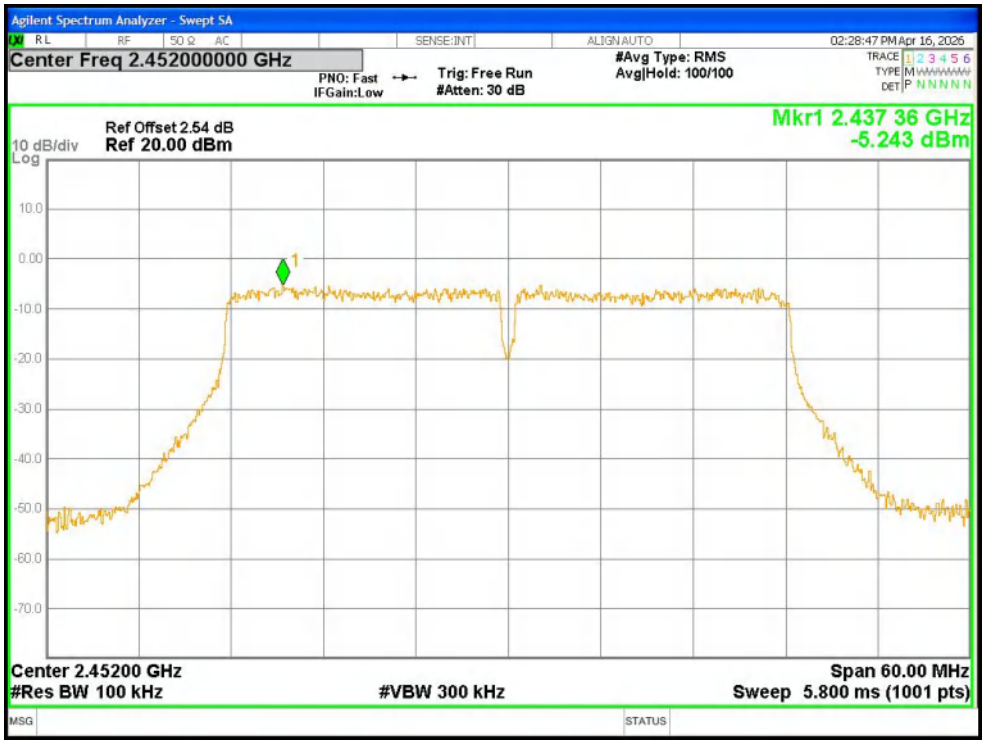
Band Edge NVNT n20 2462MHz Ant1 Emission



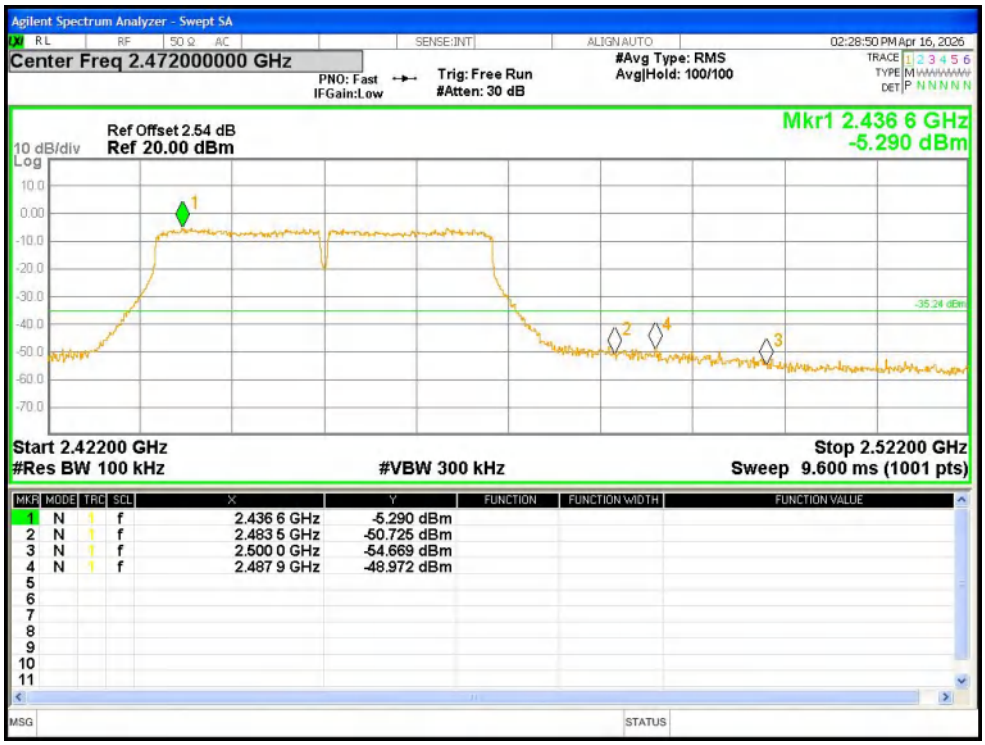
Band Edge NVNT n40 2422MHz Ant1 Ref



Band Edge NVNT n40 2422MHz Ant1 Emission



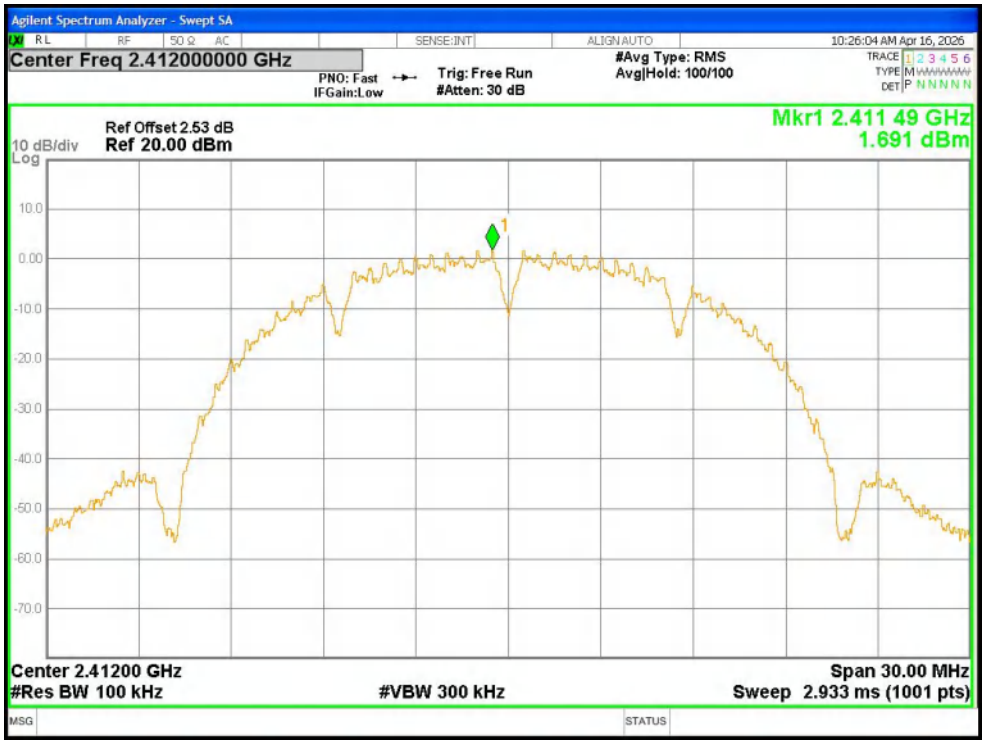
Band Edge NVNT n40 2452MHz Ant1 Ref



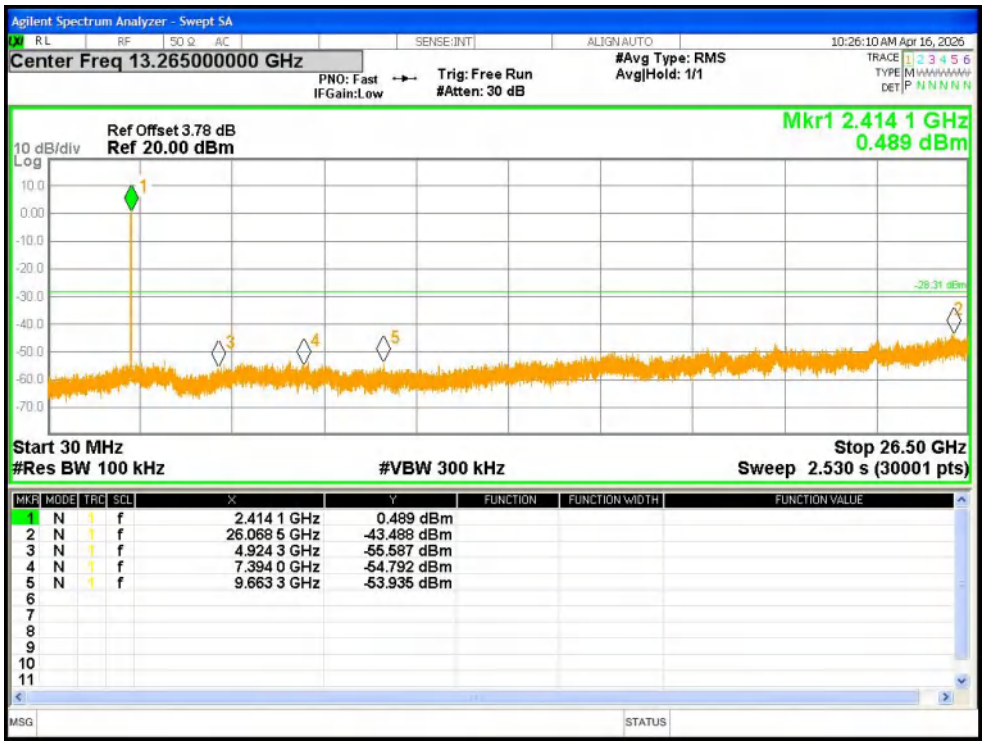
Band Edge NVNT n40 2452MHz Ant1 Emission

7. Conducted RF Spurious Emission

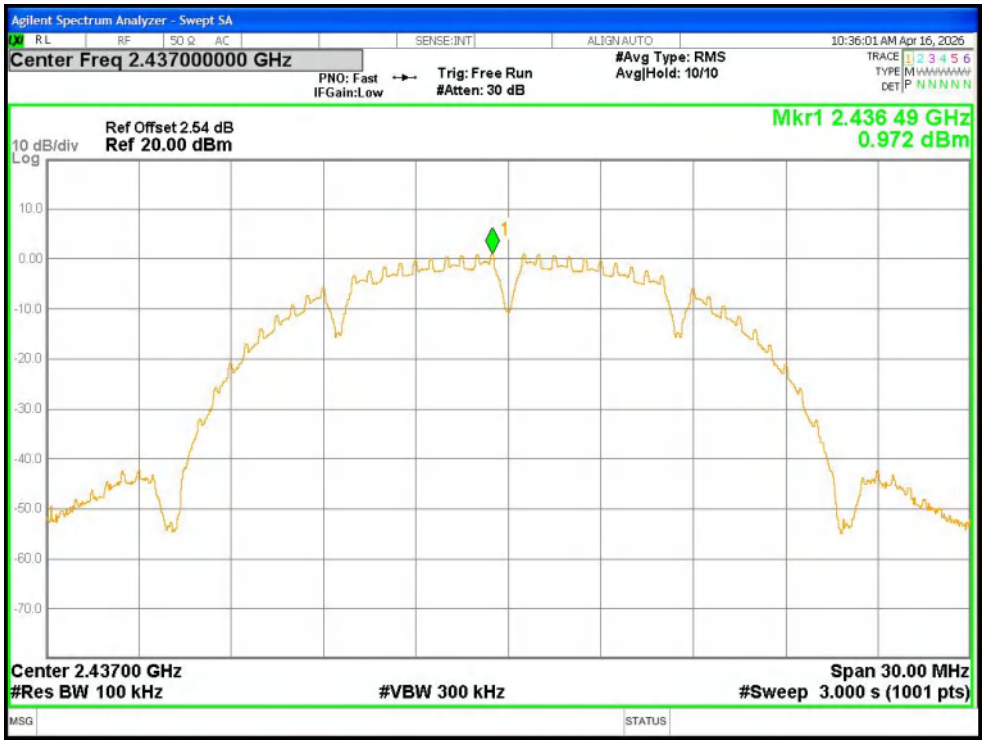
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-45.17	-30	Pass
NVNT	b	2437	Ant1	-43.46	-30	Pass
NVNT	b	2462	Ant1	-43.85	-30	Pass
NVNT	g	2412	Ant1	-40.94	-30	Pass
NVNT	g	2437	Ant1	-39.3	-30	Pass
NVNT	g	2462	Ant1	-39.69	-30	Pass
NVNT	n20	2412	Ant1	-39.97	-30	Pass
NVNT	n20	2437	Ant1	-38.23	-30	Pass
NVNT	n20	2462	Ant1	-36.5	-30	Pass
NVNT	n40	2422	Ant1	-38.07	-30	Pass
NVNT	n40	2437	Ant1	-37.69	-30	Pass
NVNT	n40	2452	Ant1	-37.42	-30	Pass



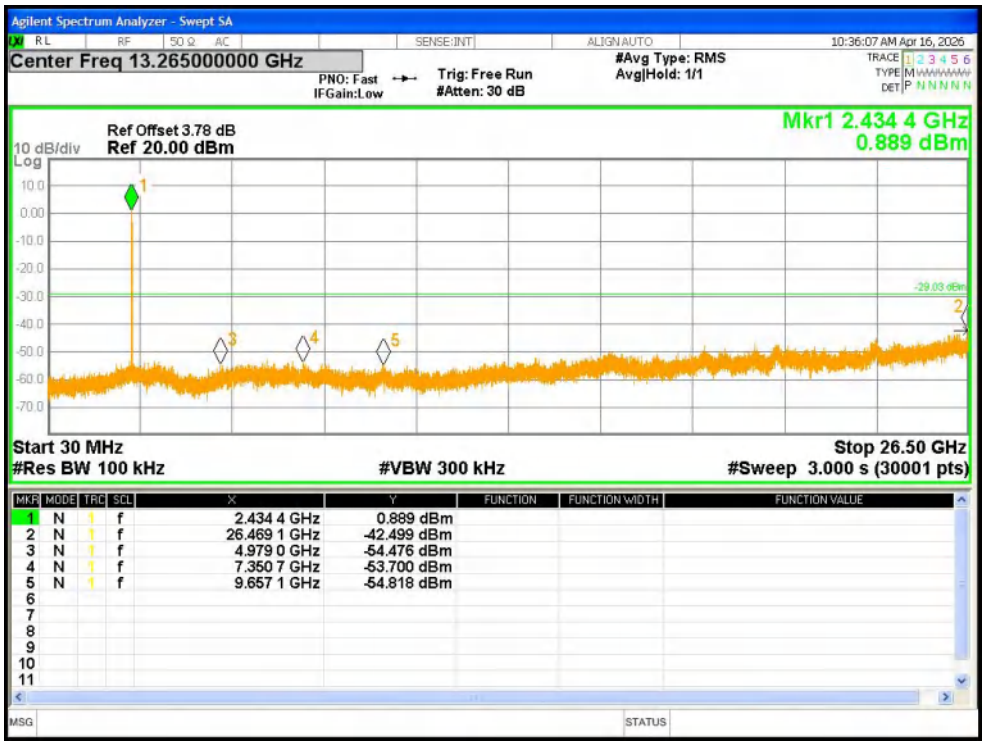
Tx. Spurious NVNT b 2412MHz Ant1 Ref



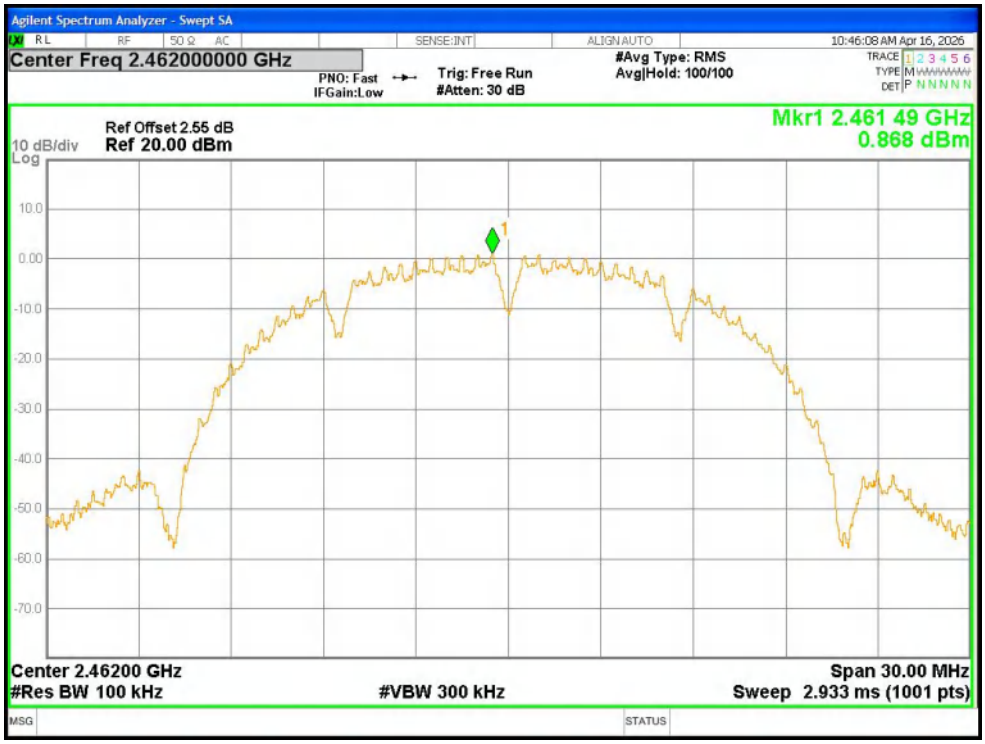
Tx. Spurious NVNT b 2412MHz Ant1 Emission



Tx. Spurious NVNT b 2437MHz Ant1 Ref



Tx. Spurious NVNT b 2437MHz Ant1 Emission



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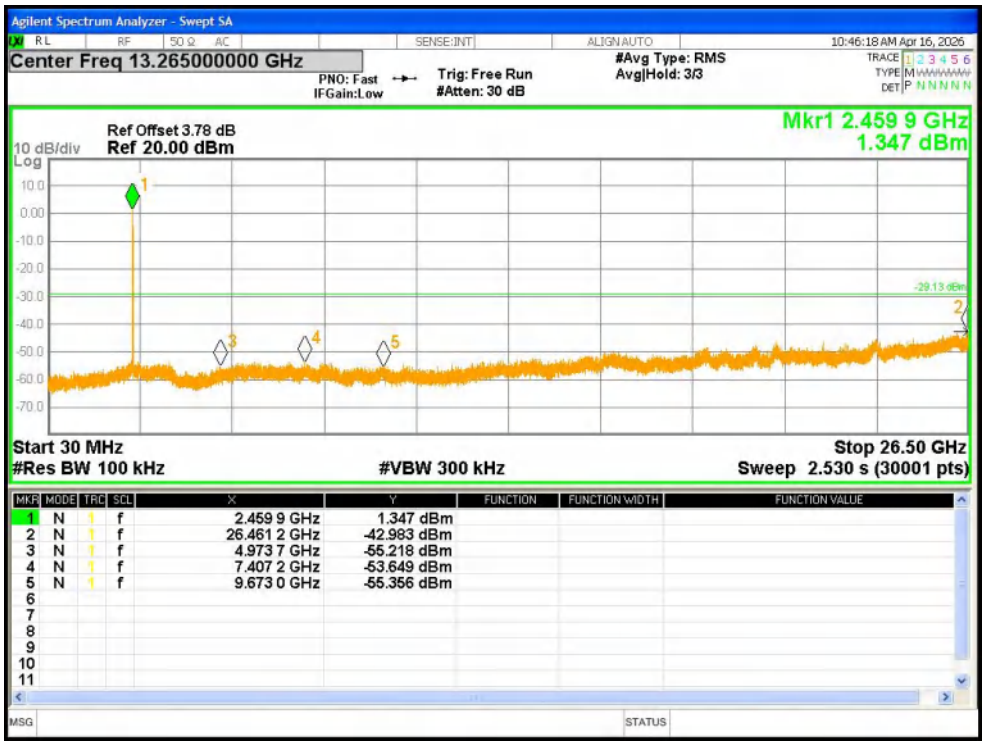
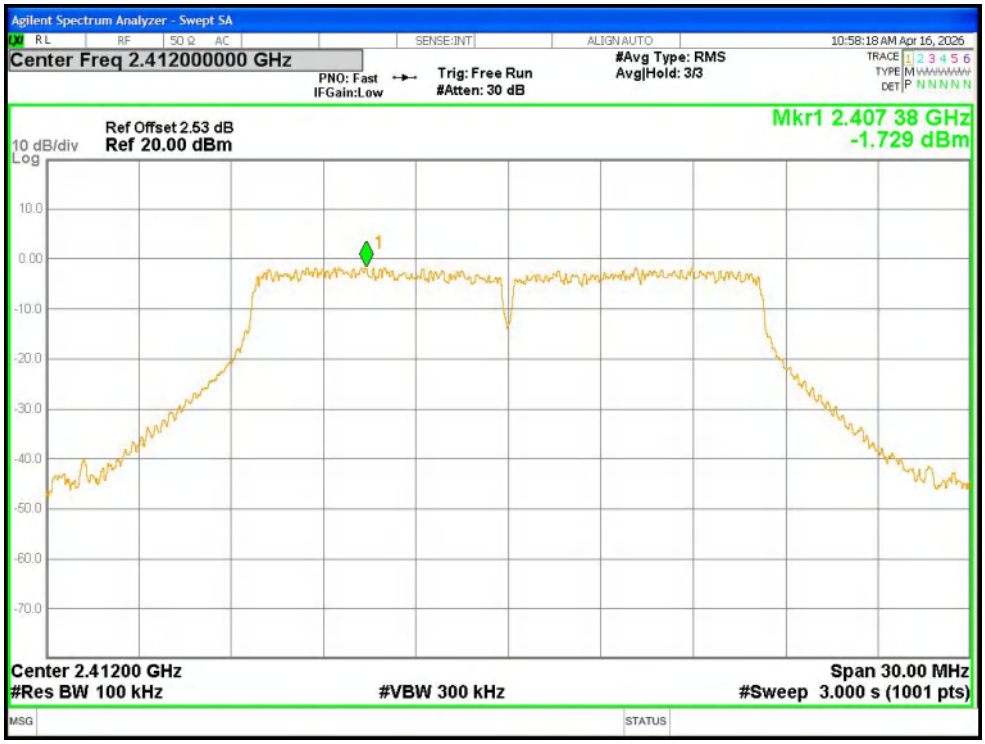
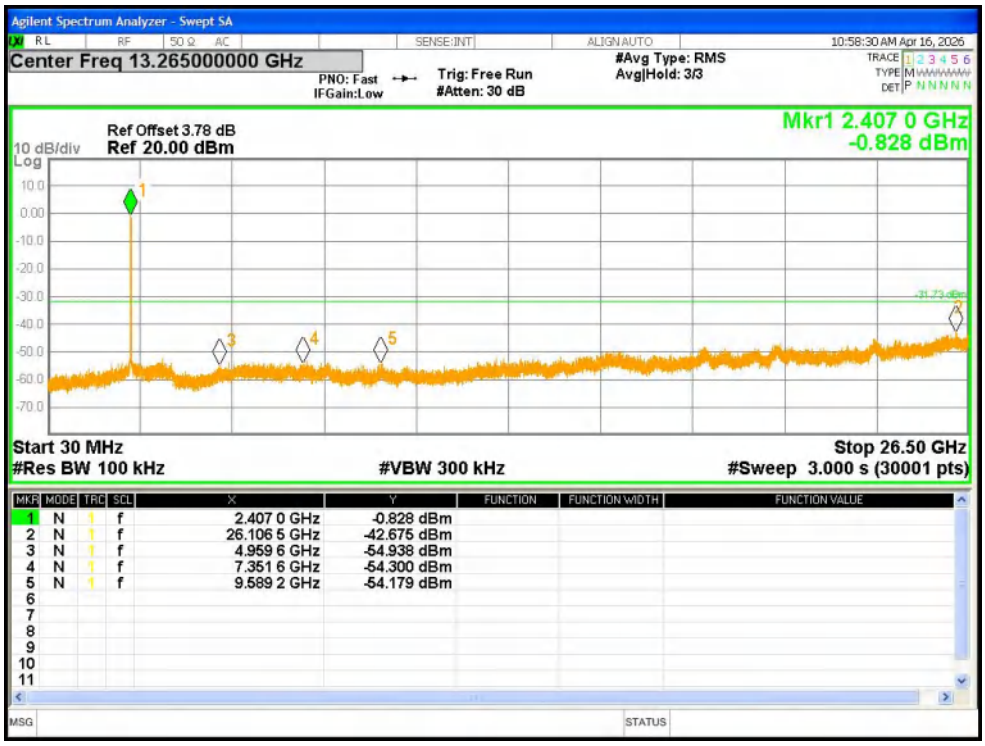


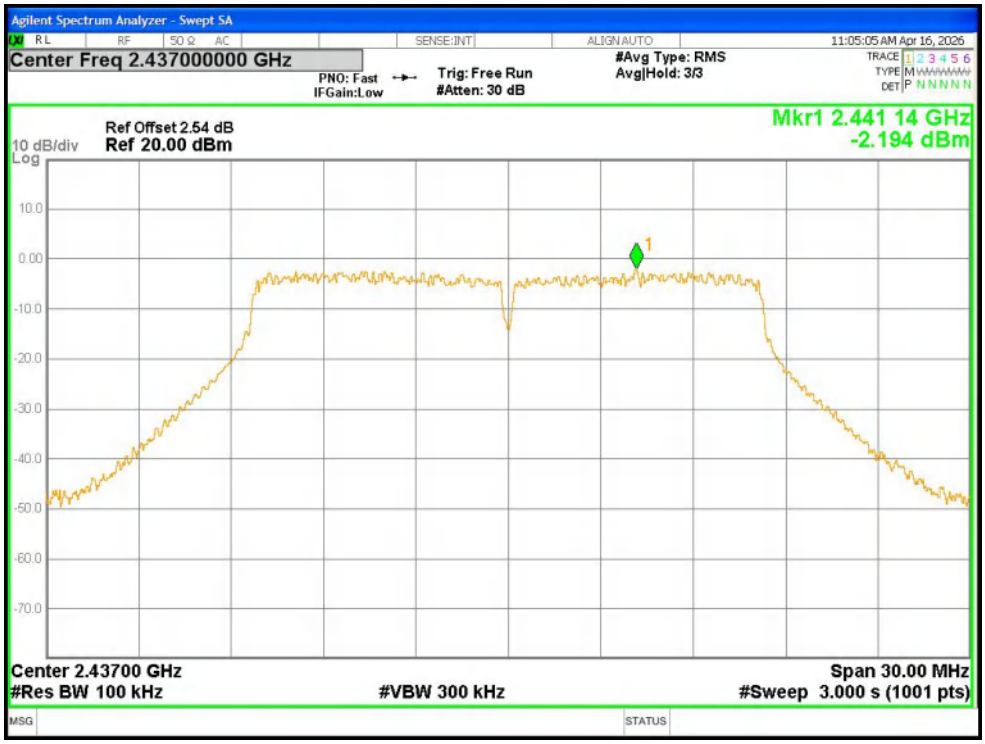
Tx. Spurious NVNT b 2462MHz Ant1 Emission



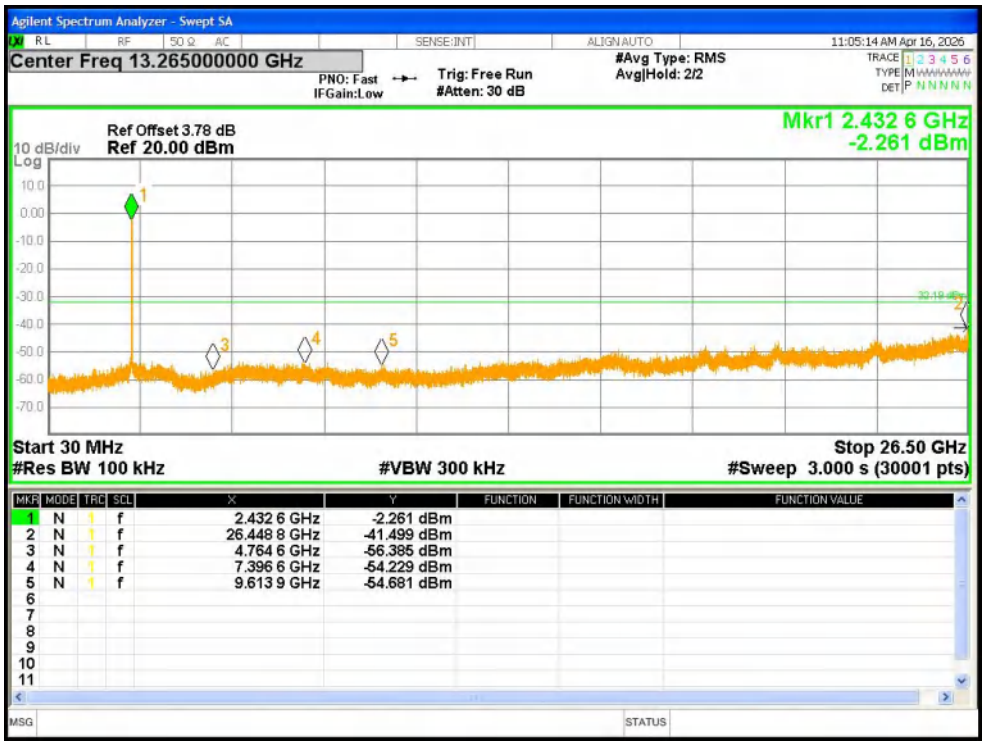
Tx. Spurious NVNT g 2412MHz Ant1 Ref



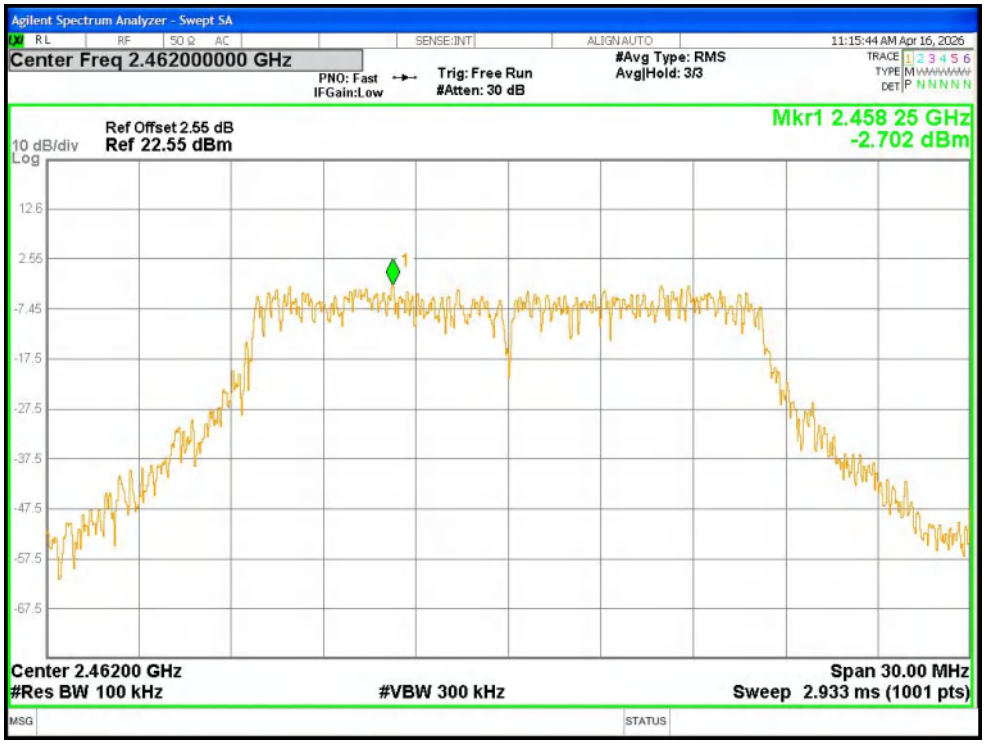
Tx. Spurious NVNT g 2412MHz Ant1 Emission



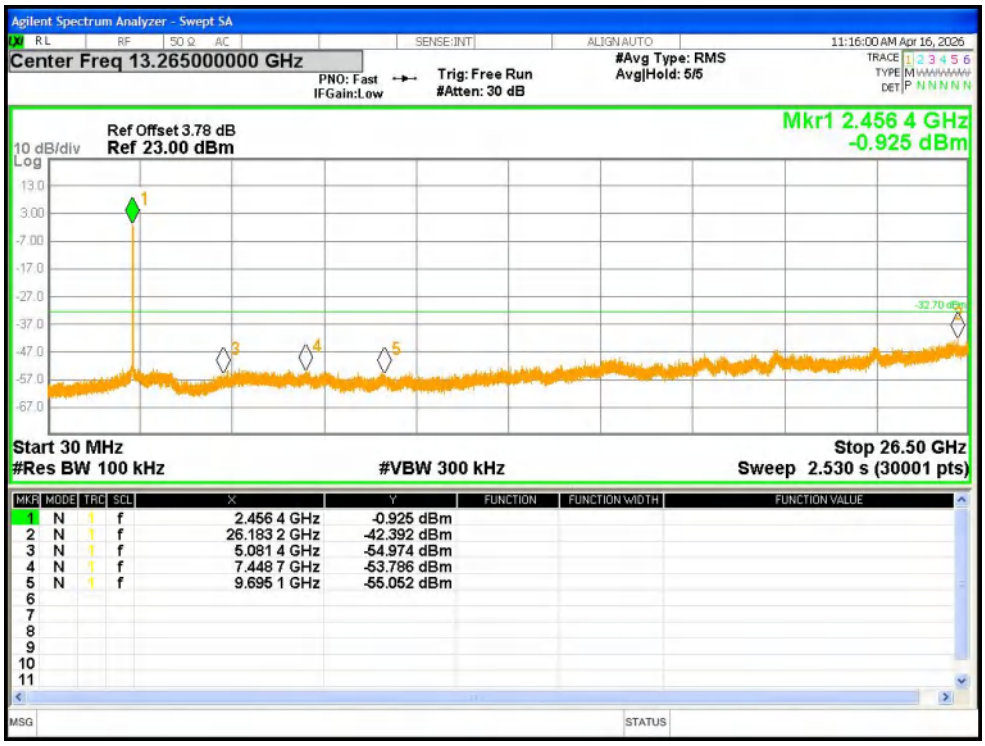
Tx. Spurious NVNT g 2437MHz Ant1 Ref



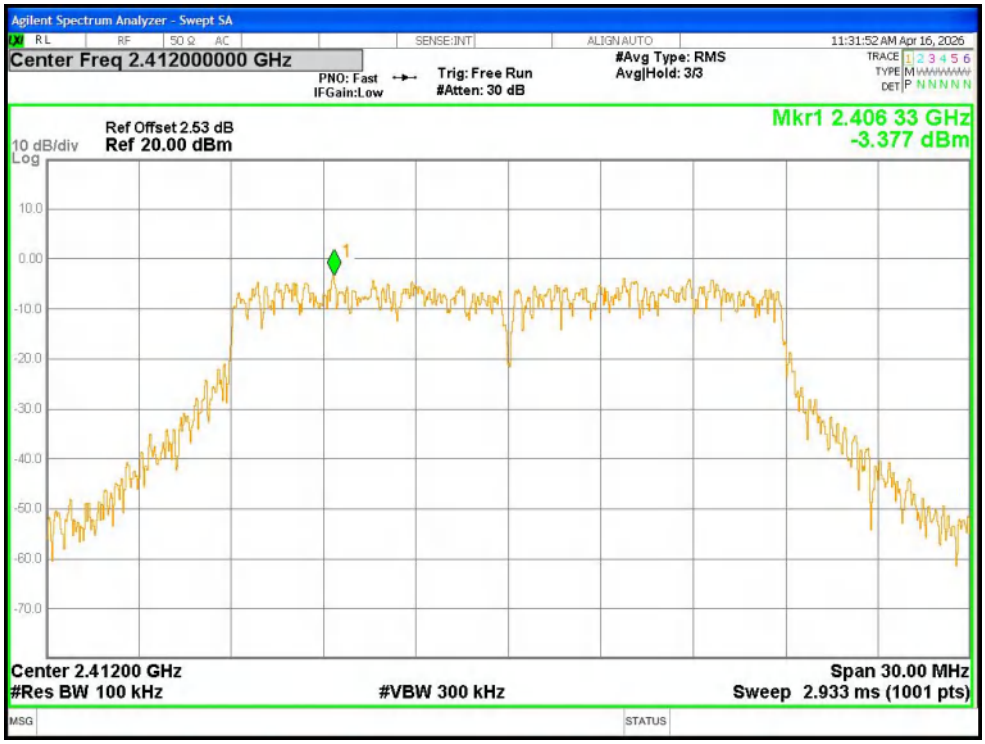
Tx. Spurious NVNT g 2437MHz Ant1 Emission



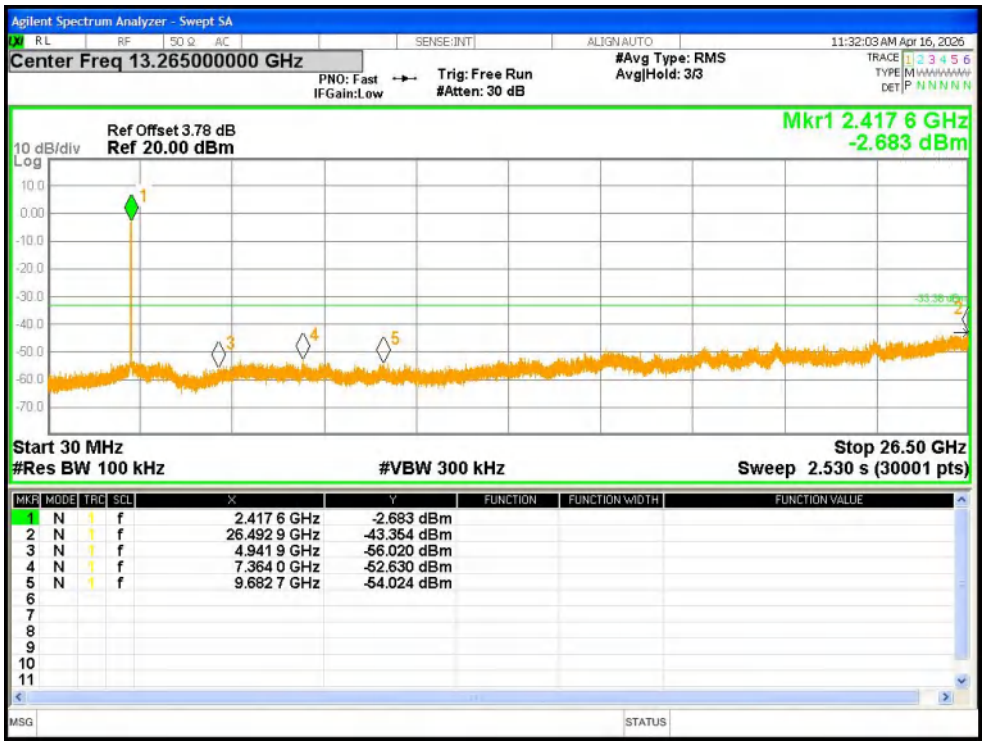
Tx. Spurious NVNT g 2462MHz Ant1 Ref



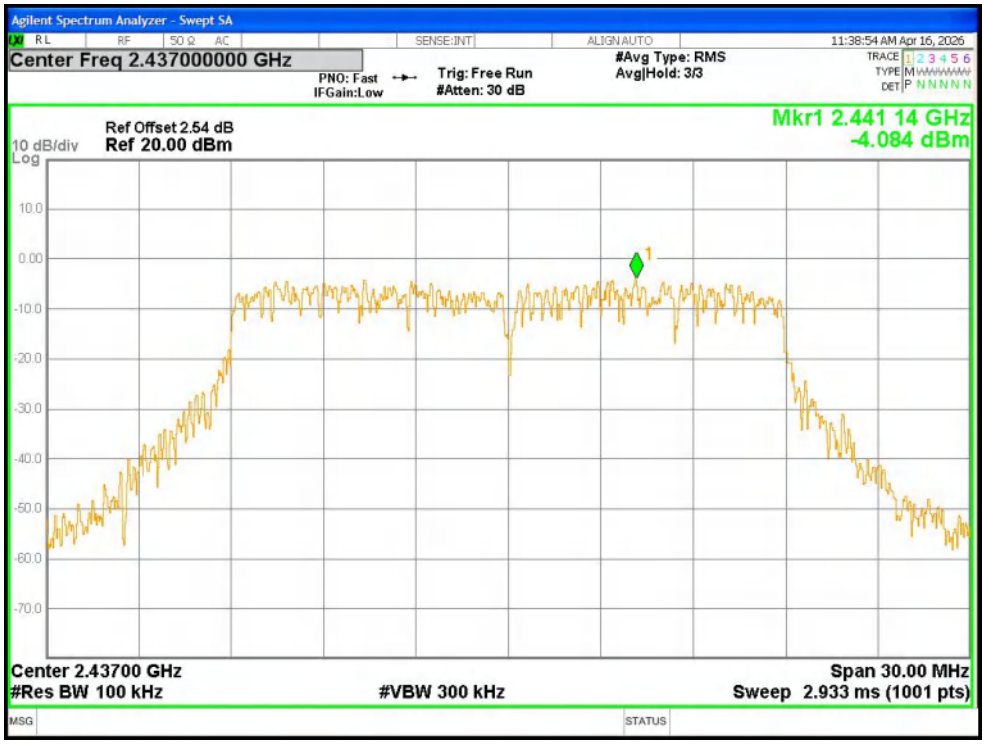
Tx. Spurious NVNT g 2462MHz Ant1 Emission



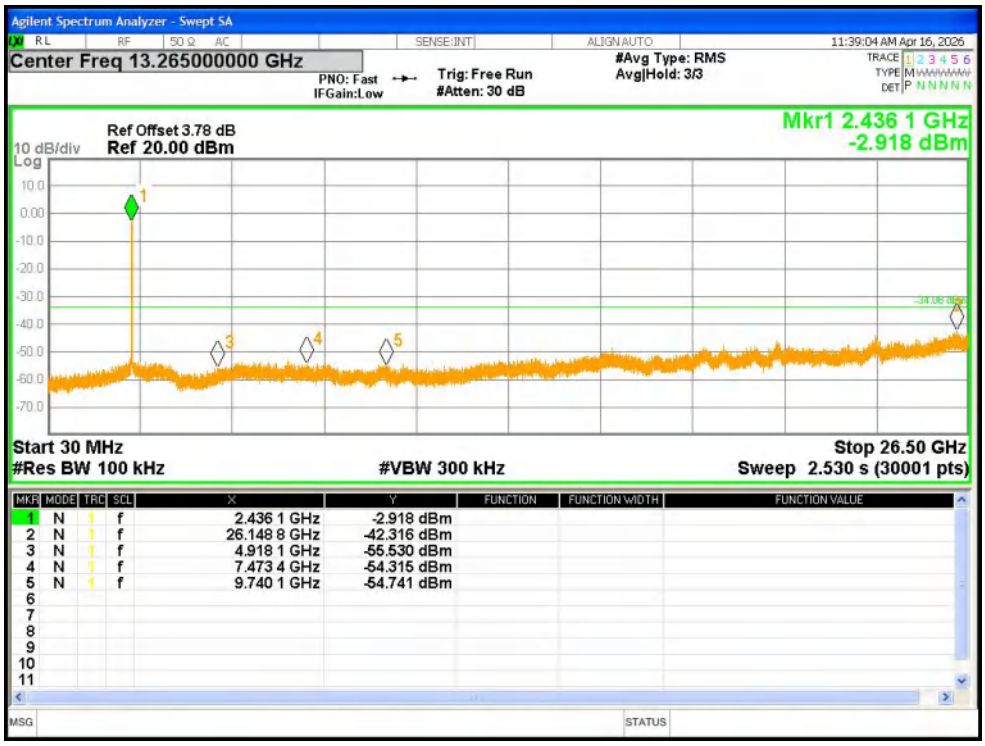
Tx. Spurious NVNT n20 2412MHz Ant1 Ref



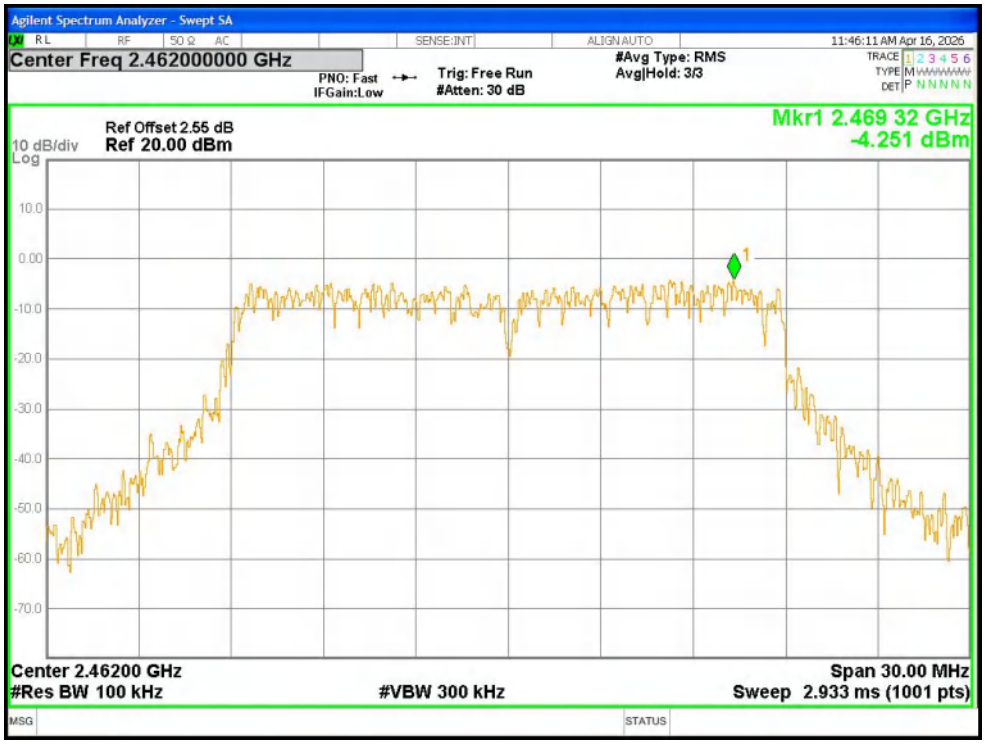
Tx. Spurious NVNT n20 2412MHz Ant1 Emission



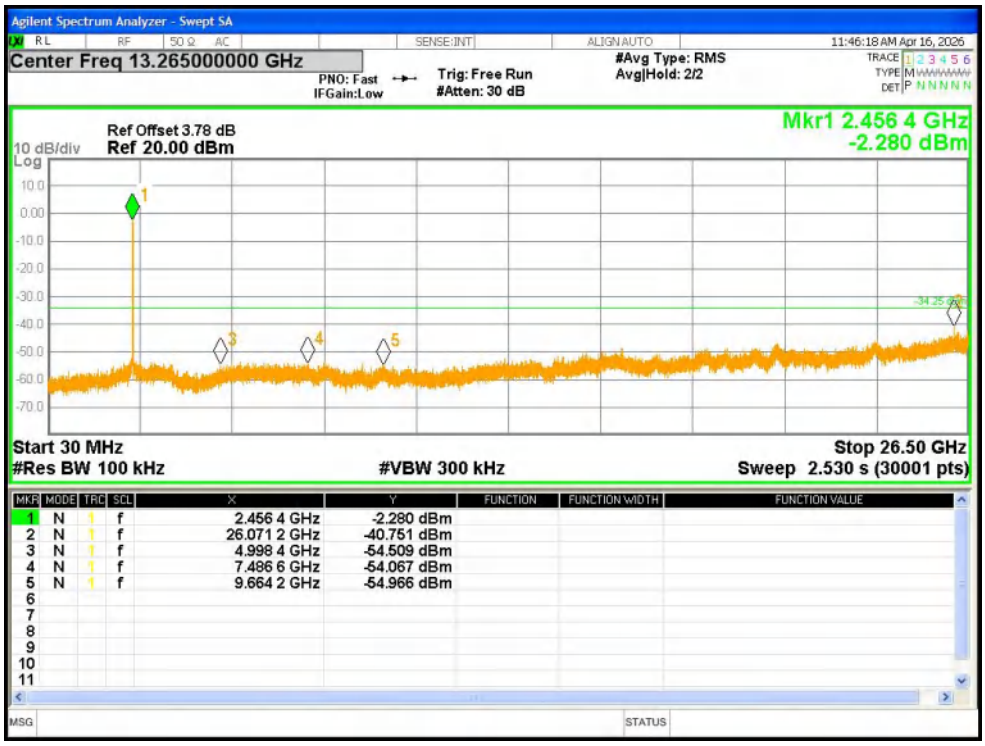
Tx. Spurious NVNT n20 2437MHz Ant1 Ref



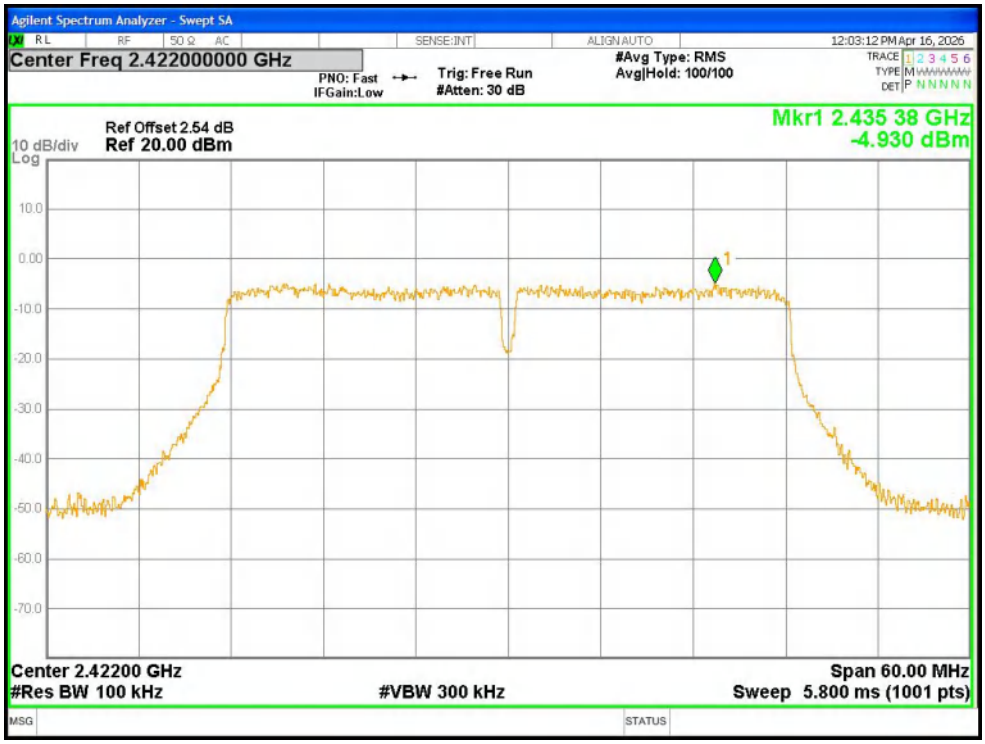
Tx. Spurious NVNT n20 2437MHz Ant1 Emission



Tx. Spurious NVNT n20 2462MHz Ant1 Ref



Tx. Spurious NVNT n20 2462MHz Ant1 Emission



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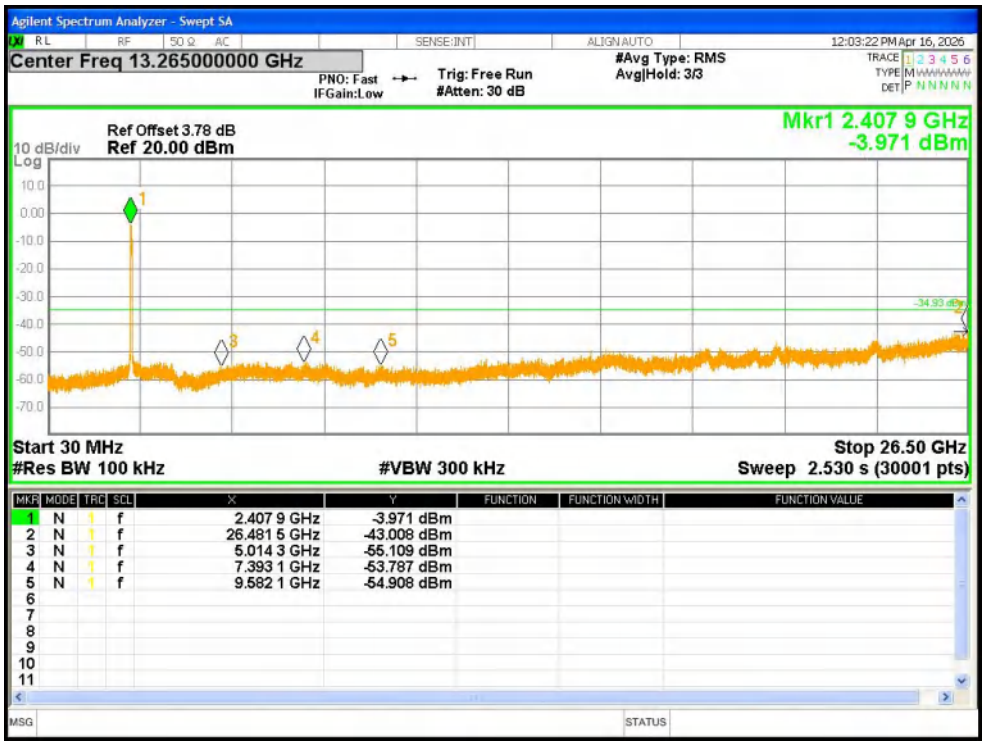
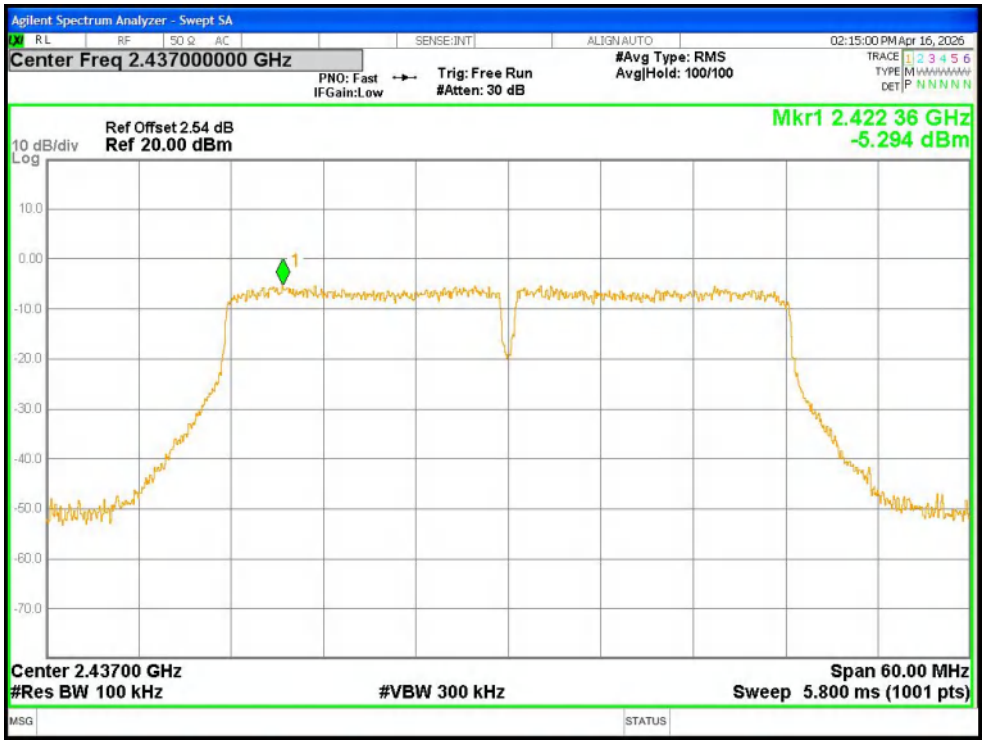
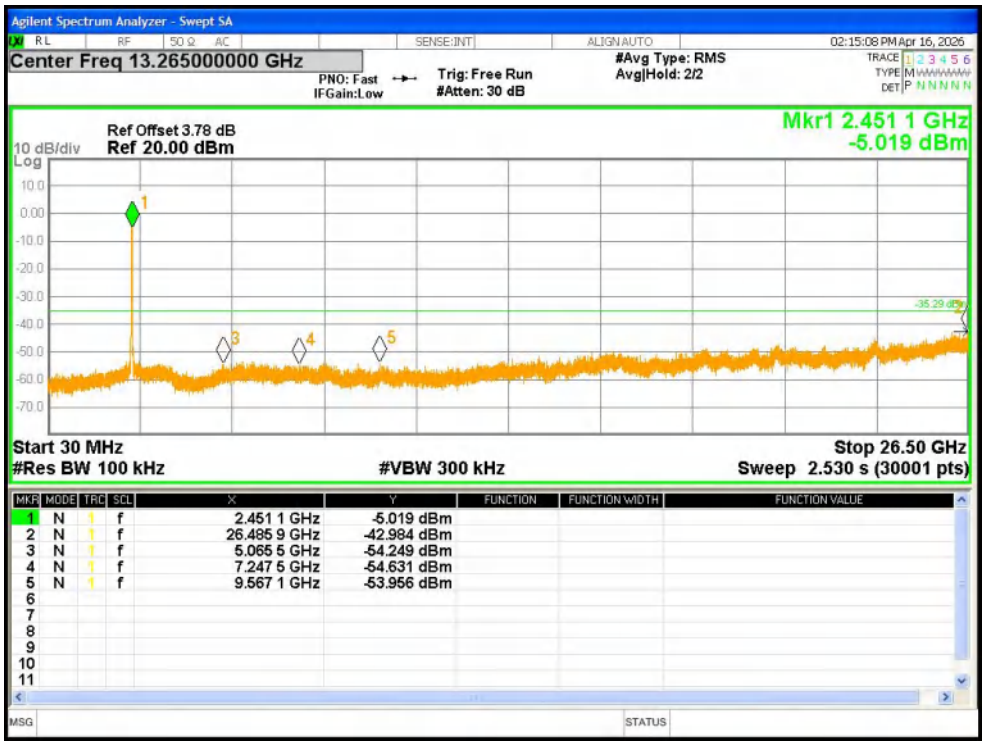


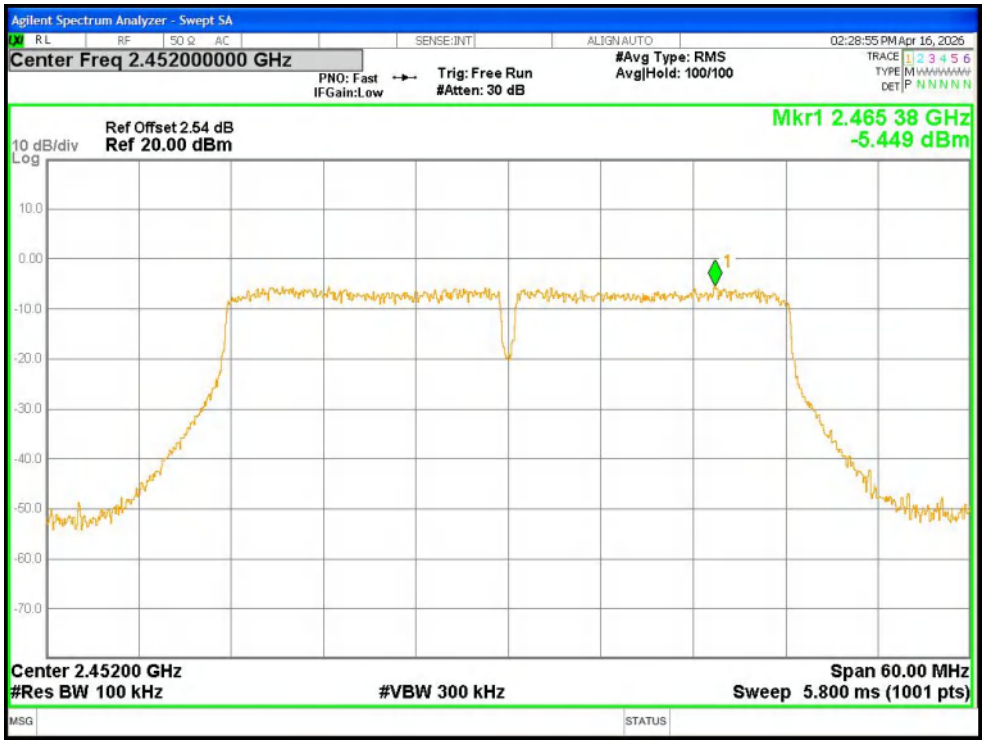
Tx. Spurious NVNT n40 2422MHz Ant1 Emission



Tx. Spurious NVNT n40 2437MHz Ant1 Ref



Tx. Spurious NVNT n40 2437MHz Ant1 Emission



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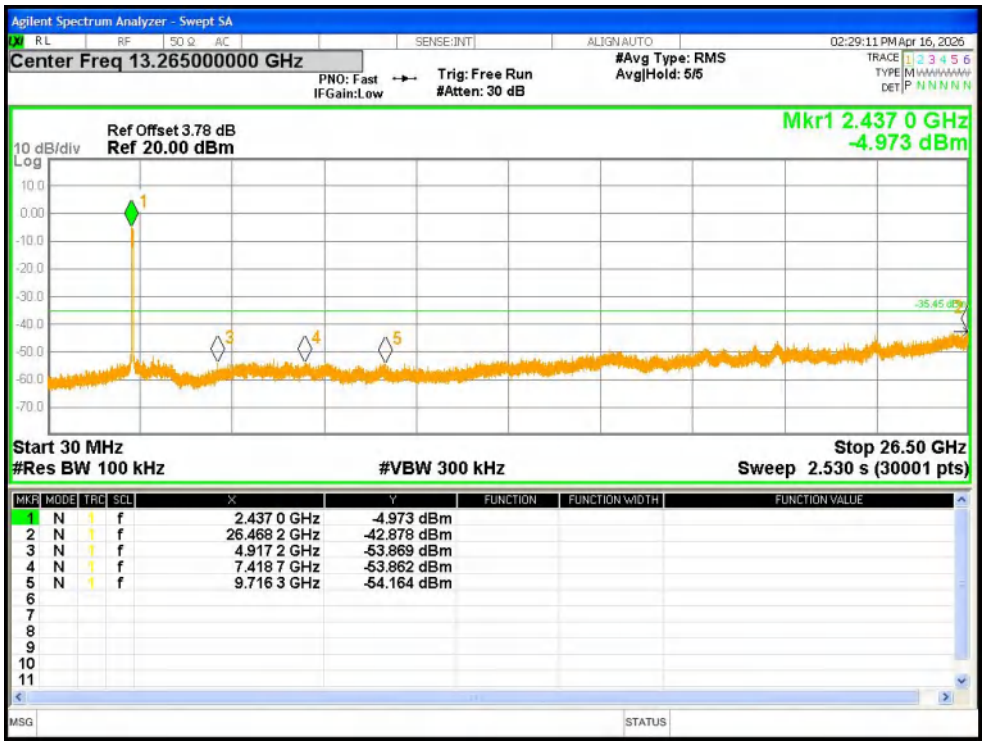

Tx. Spurious NVNT n40 2452MHz Ant1 Emission