

Appendix A for 5.2GWIFI Test Data

Product Name: Pathfinder MotoNavAI

Test Model: CK3-PLUS

Environmental Conditions

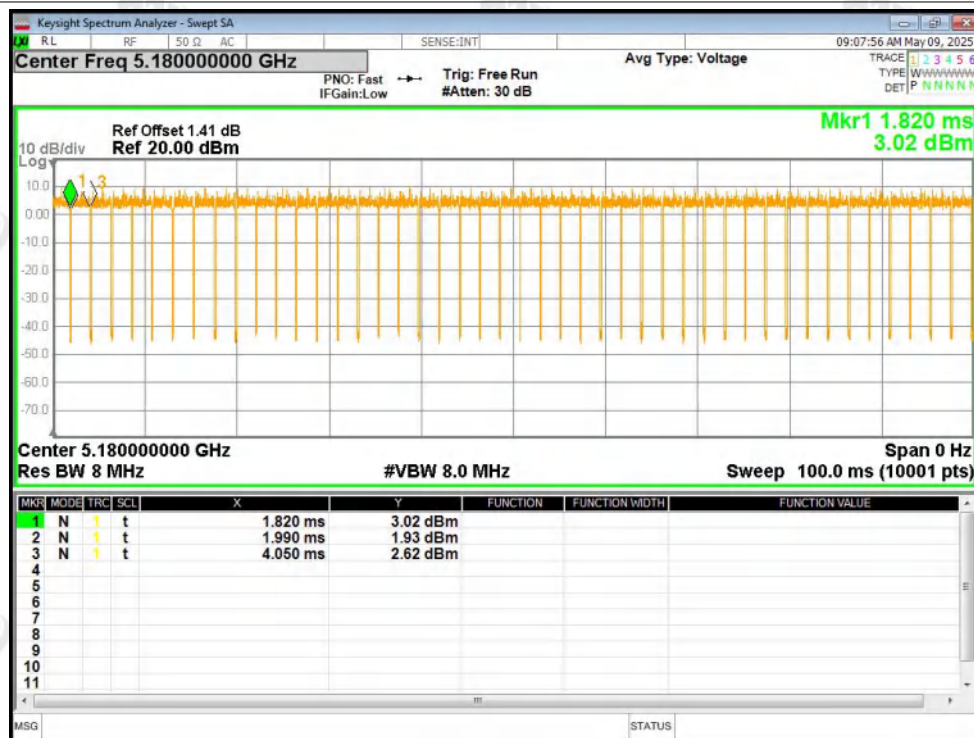
Temperature:	23.8℃
Relative Humidity:	52%
ATM Pressure:	101.0 kPa
Test Engineer:	Leon Li
Supervised by:	Baret Wu

A.1 Duty Cycle

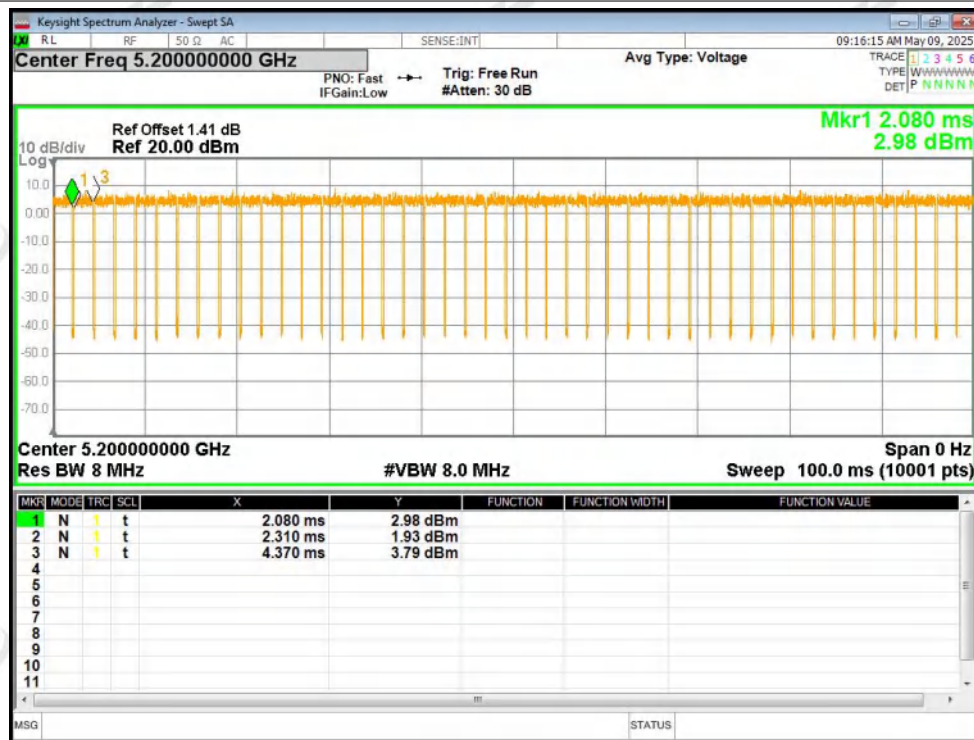
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	92.38	0.34	0.49
NVNT	a	5200	Ant1	89.96	0.46	0.49
NVNT	a	5240	Ant1	94.93	0.23	0.49
NVNT	n20	5180	Ant1	90.57	0.43	0.52
NVNT	n20	5200	Ant1	92.75	0.33	0.52
NVNT	n20	5240	Ant1	95.05	0.22	0.52
NVNT	n40	5190	Ant1	80.34	0.95	1.06
NVNT	n40	5230	Ant1	83.93	0.76	1.06
NVNT	ac20	5180	Ant1	83.74	0.77	0.49
NVNT	ac20	5200	Ant1	81.1	0.91	0.49
NVNT	ac20	5240	Ant1	84.77	0.72	0.49
NVNT	ac40	5190	Ant1	83.81	0.77	0.48
NVNT	ac40	5230	Ant1	83.74	0.77	0.49

Test Graphs

Duty Cycle NVNT a 5180MHz Ant1

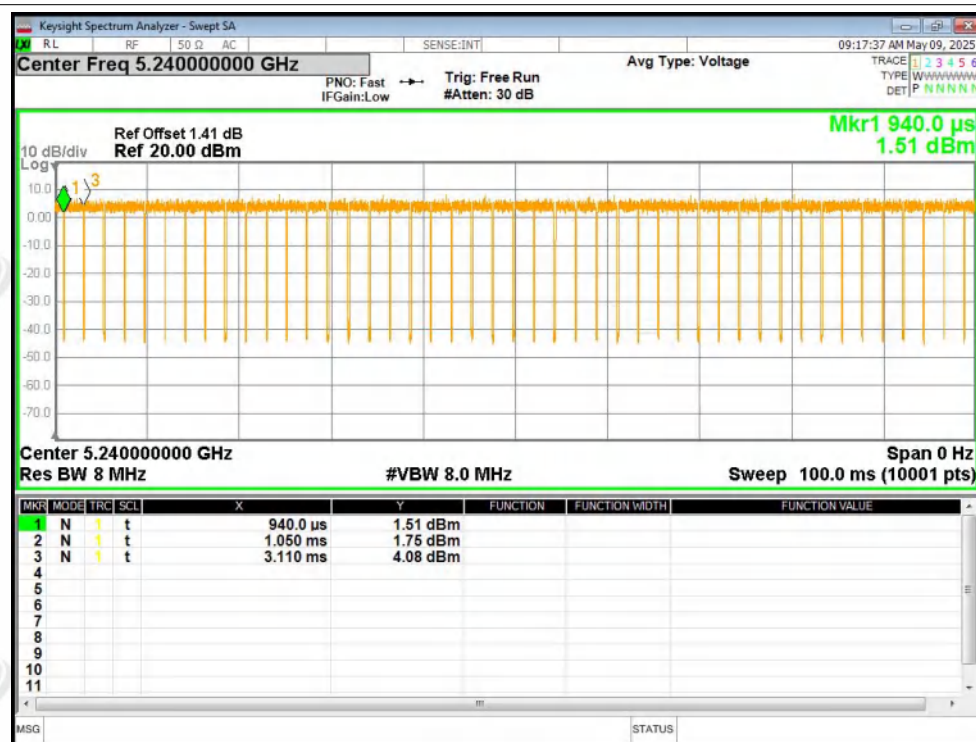


Duty Cycle NVNT a 5200MHz Ant1

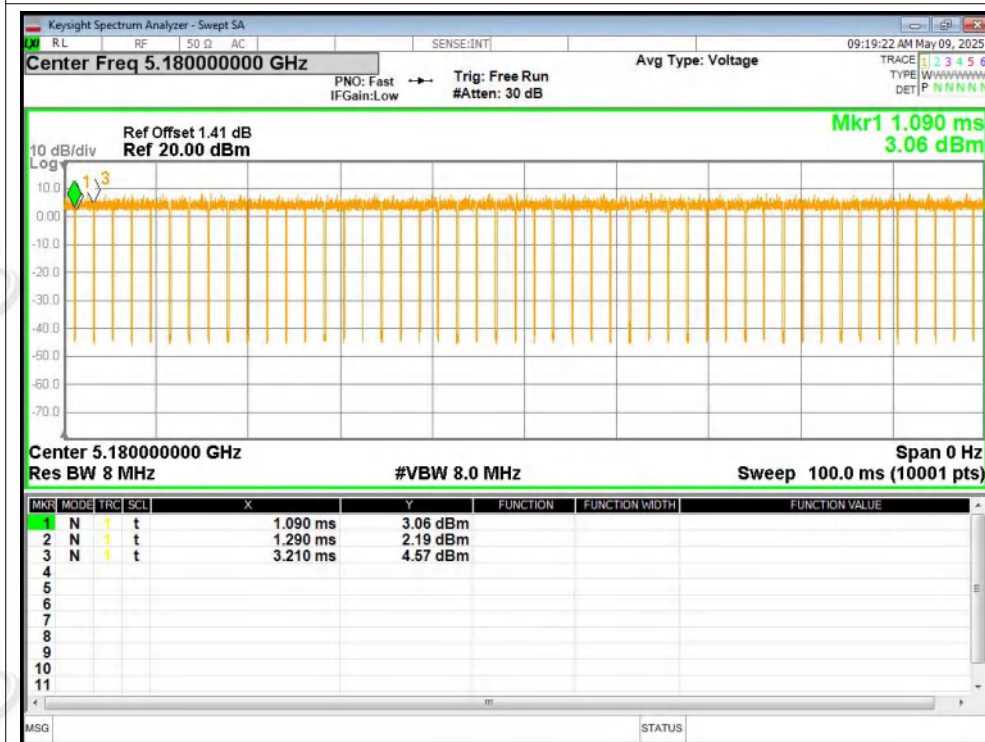




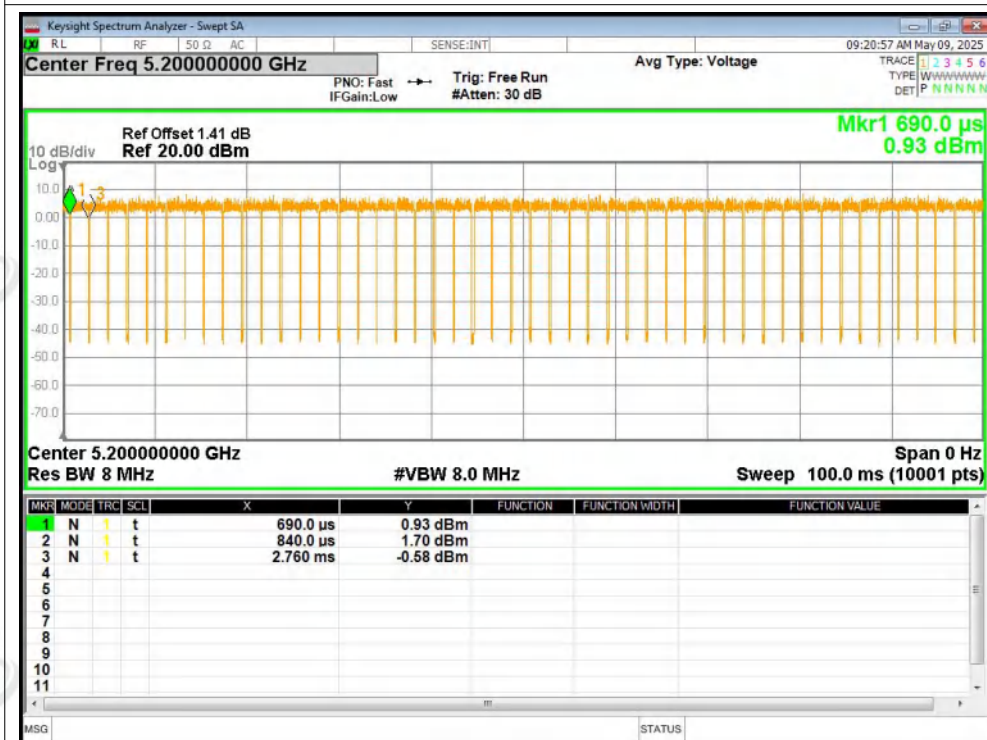
Duty Cycle NVNT a 5240MHz Ant1



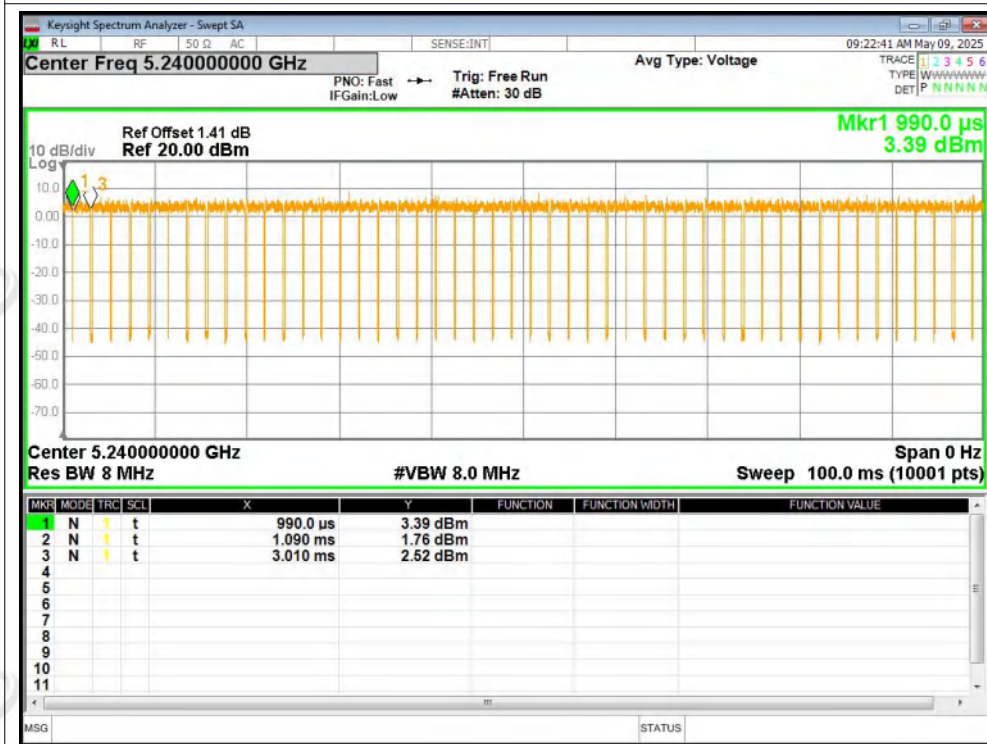
Duty Cycle NVNT n20 5180MHz Ant1



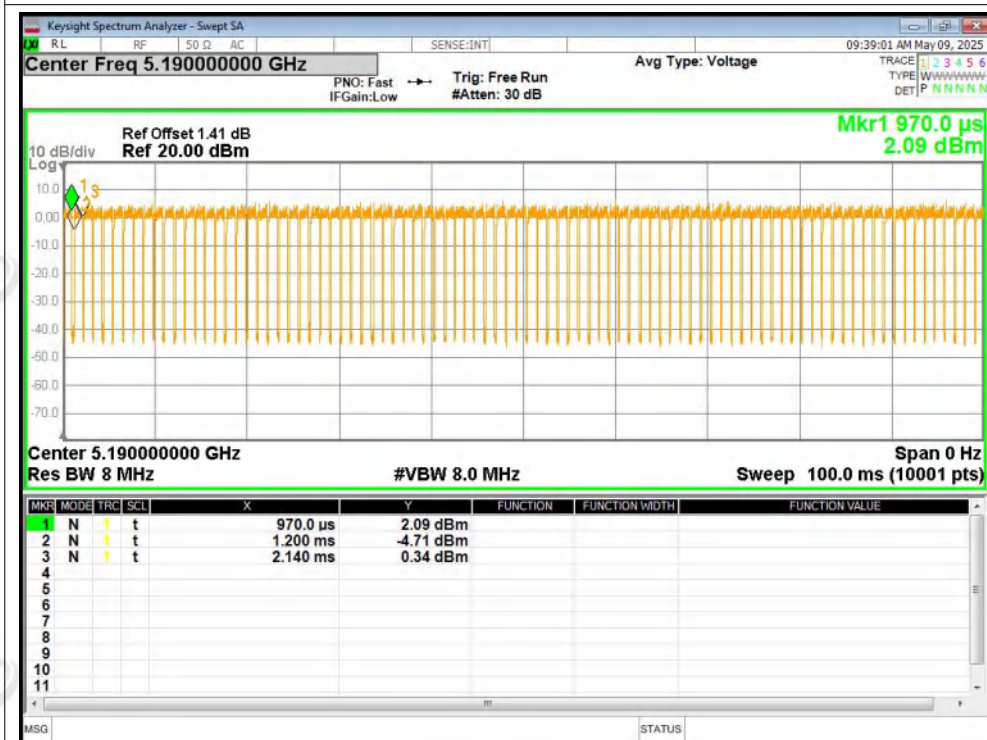
Duty Cycle NVNT n20 5200MHz Ant1



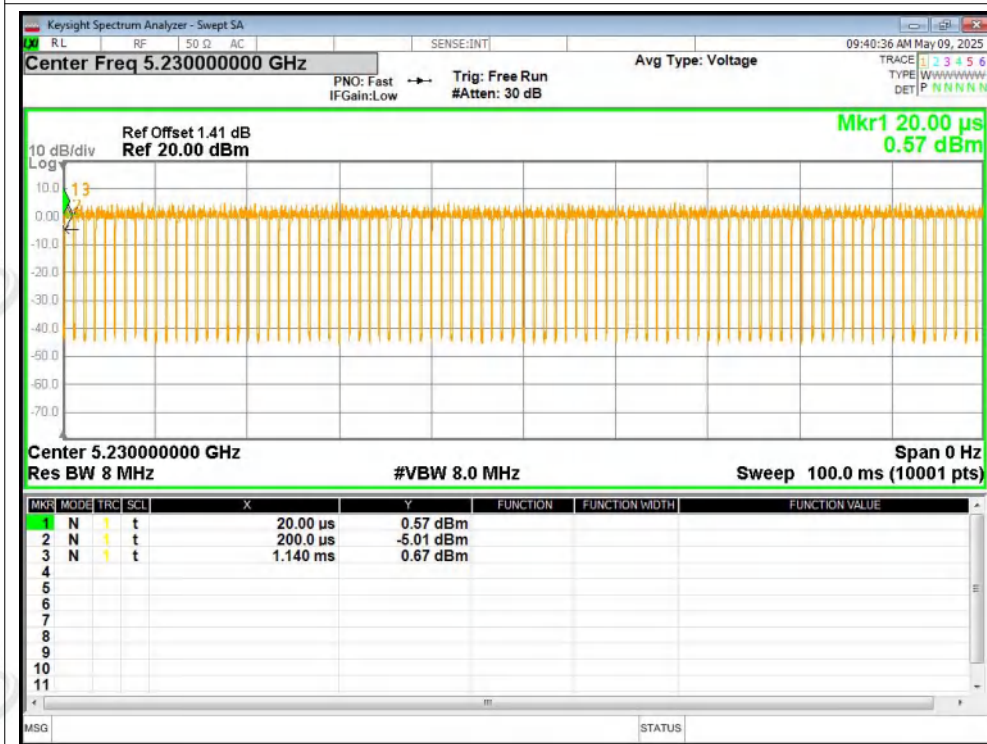
Duty Cycle NVNT n20 5240MHz Ant1



Duty Cycle NVNT n40 5190MHz Ant1

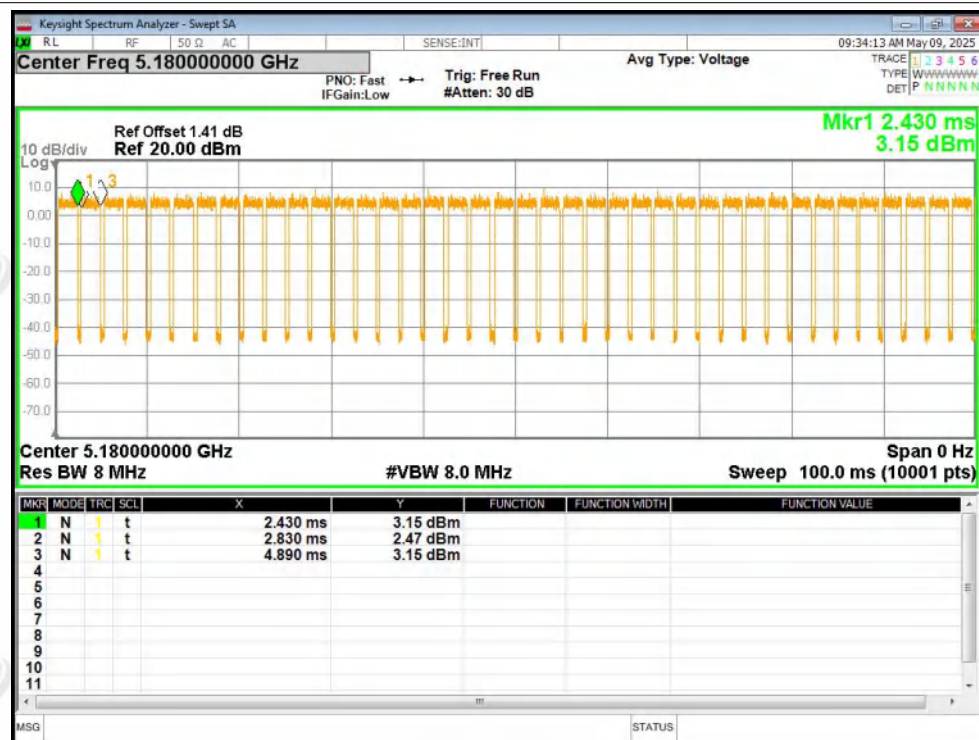


Duty Cycle NVNT n40 5230MHz Ant1

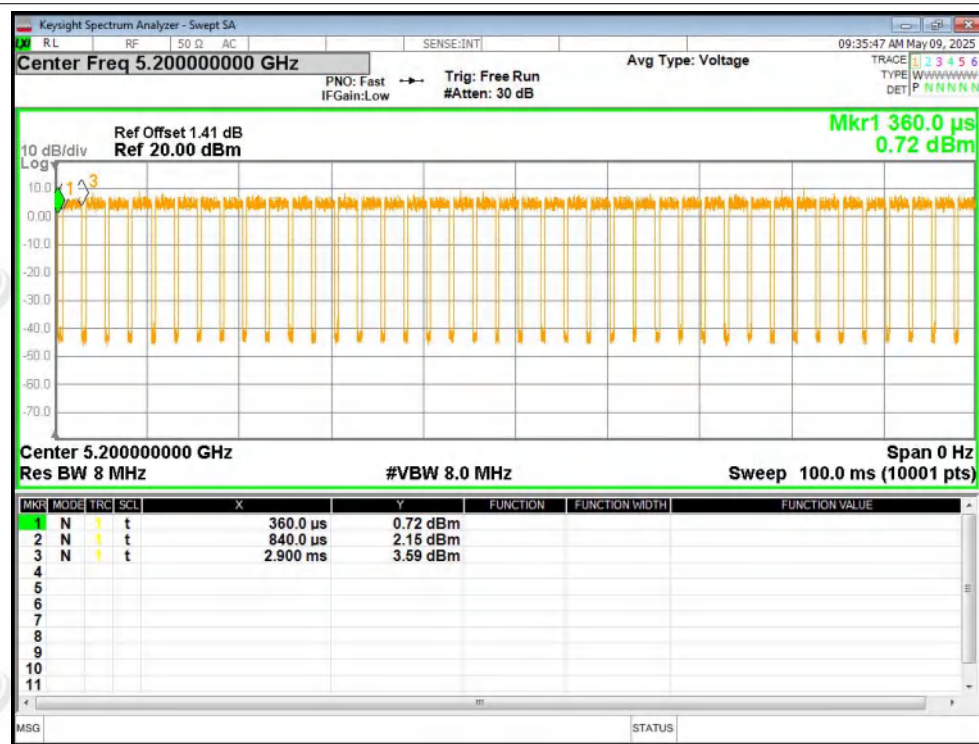




Duty Cycle NVNT ac20 5180MHz Ant1

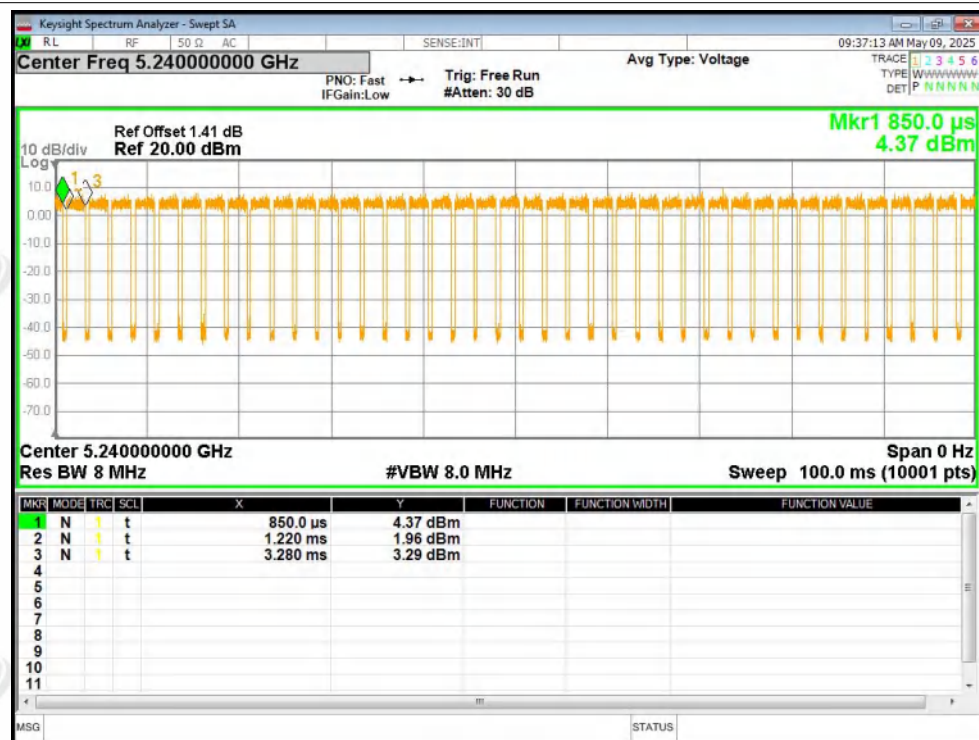


Duty Cycle NVNT ac20 5200MHz Ant1

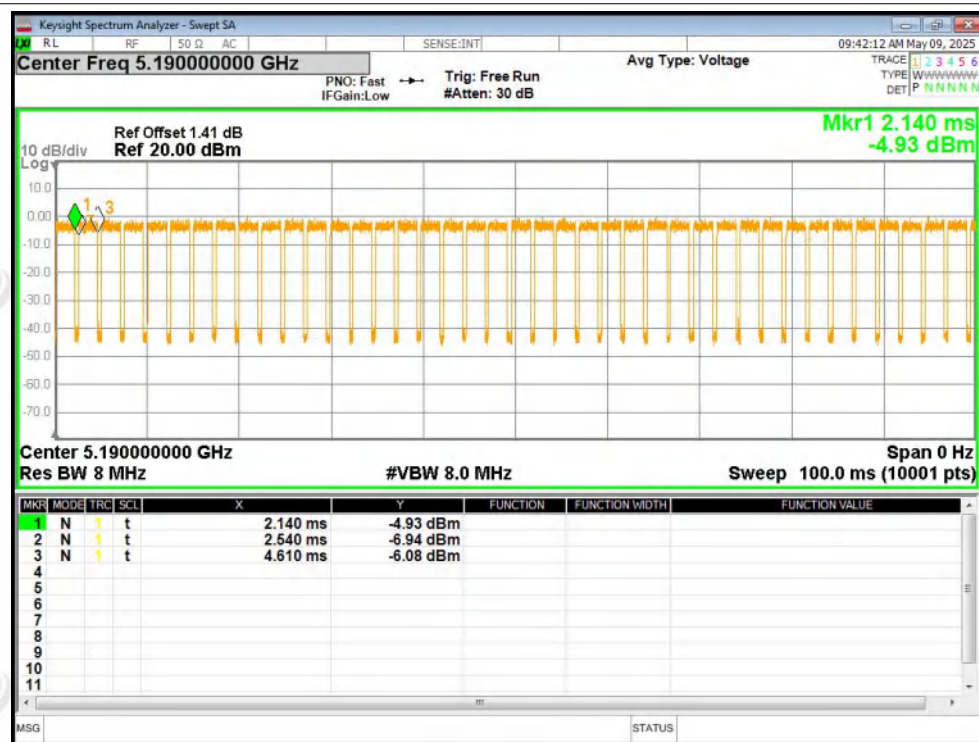


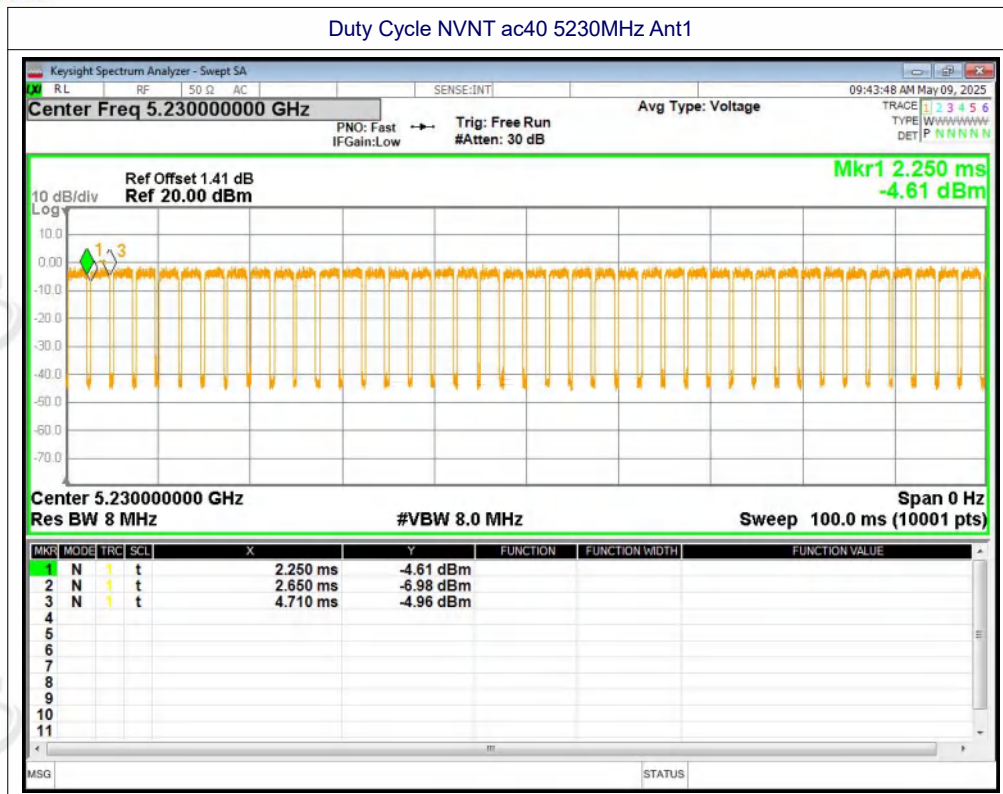


Duty Cycle NVNT ac20 5240MHz Ant1



Duty Cycle NVNT ac40 5190MHz Ant1





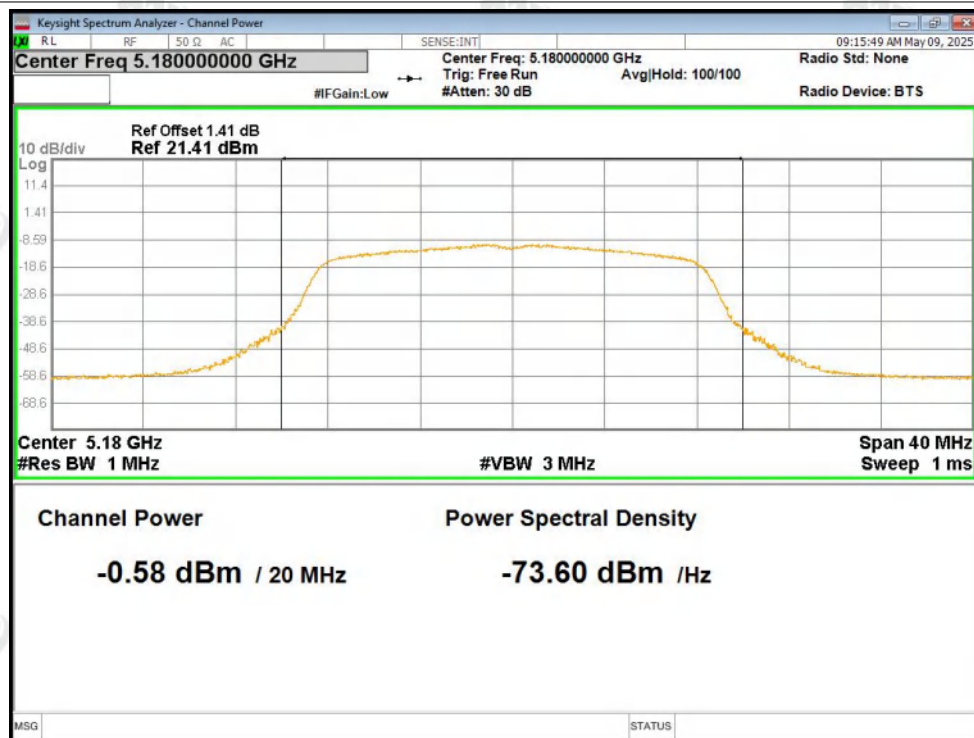


A.2 Maximum Conducted Output Power

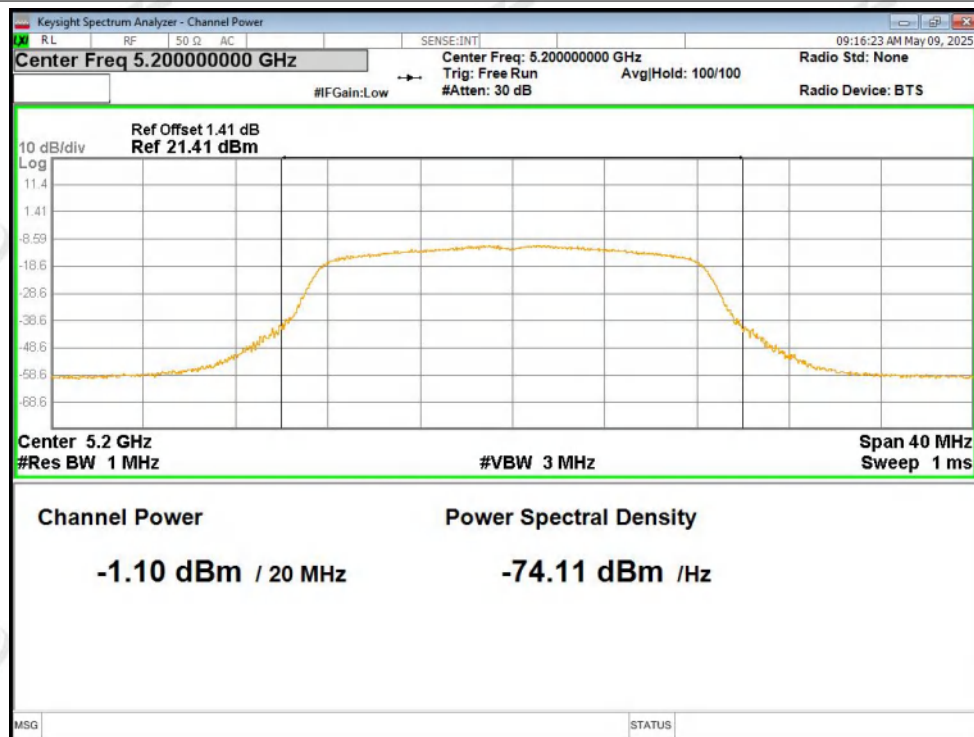
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	-0.58	0.34	-0.24	24	Pass
NVNT	a	5200	Ant1	-1.1	0.46	-0.64	24	Pass
NVNT	a	5240	Ant1	-1.57	0.23	-1.34	24	Pass
NVNT	n20	5180	Ant1	-1.08	0.43	-0.65	24	Pass
NVNT	n20	5200	Ant1	-1.33	0.33	-1	24	Pass
NVNT	n20	5240	Ant1	-1.65	0.22	-1.43	24	Pass
NVNT	n40	5190	Ant1	-1.67	0.95	-0.72	24	Pass
NVNT	n40	5230	Ant1	-1.92	0.76	-1.16	24	Pass
NVNT	ac20	5180	Ant1	-1.23	0.77	-0.46	24	Pass
NVNT	ac20	5200	Ant1	-1.28	0.91	-0.37	24	Pass
NVNT	ac20	5240	Ant1	-1.89	0.72	-1.17	24	Pass
NVNT	ac40	5190	Ant1	-1.67	0.77	-0.9	24	Pass
NVNT	ac40	5230	Ant1	-1.84	0.77	-1.07	24	Pass

Test Graphs

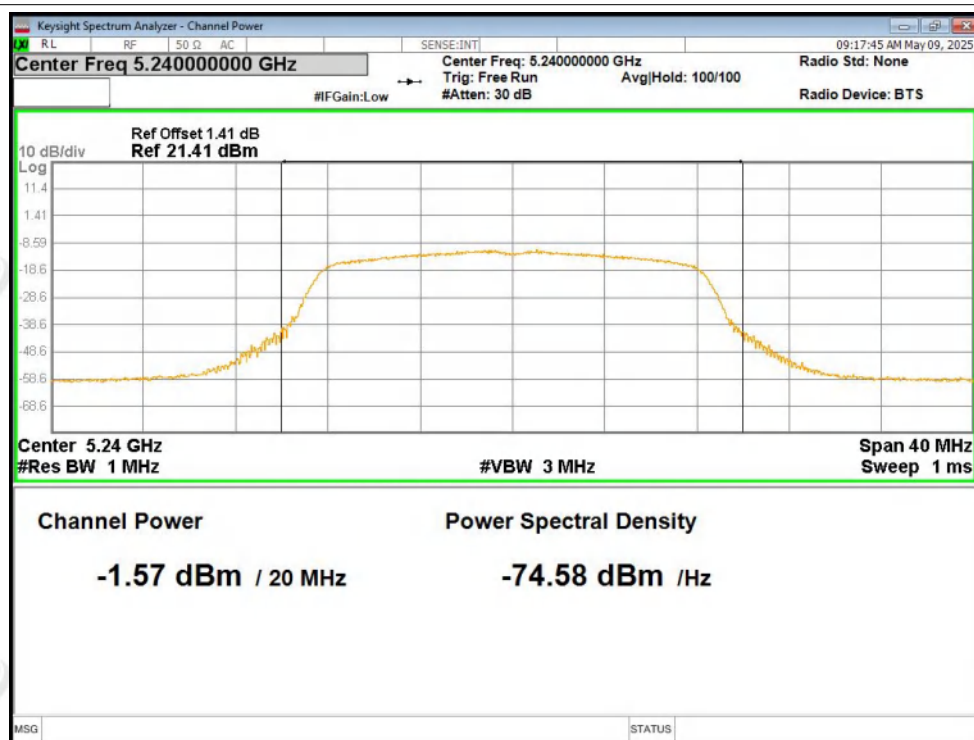
Power NVNT a 5180MHz Ant1



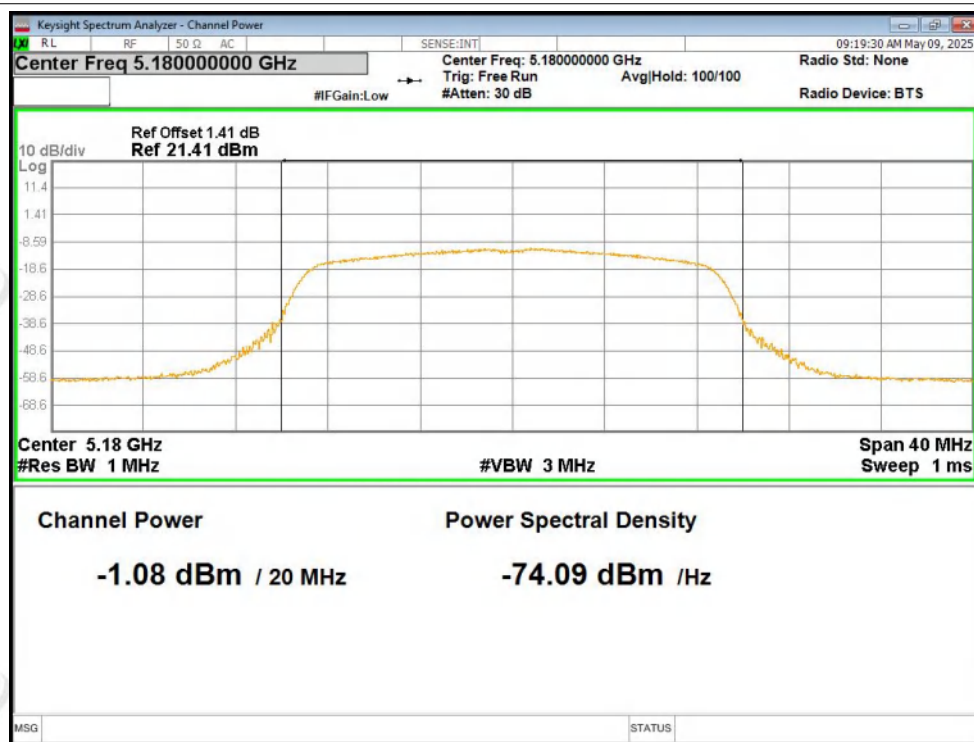
Power NVNT a 5200MHz Ant1



Power NVNT a 5240MHz Ant1

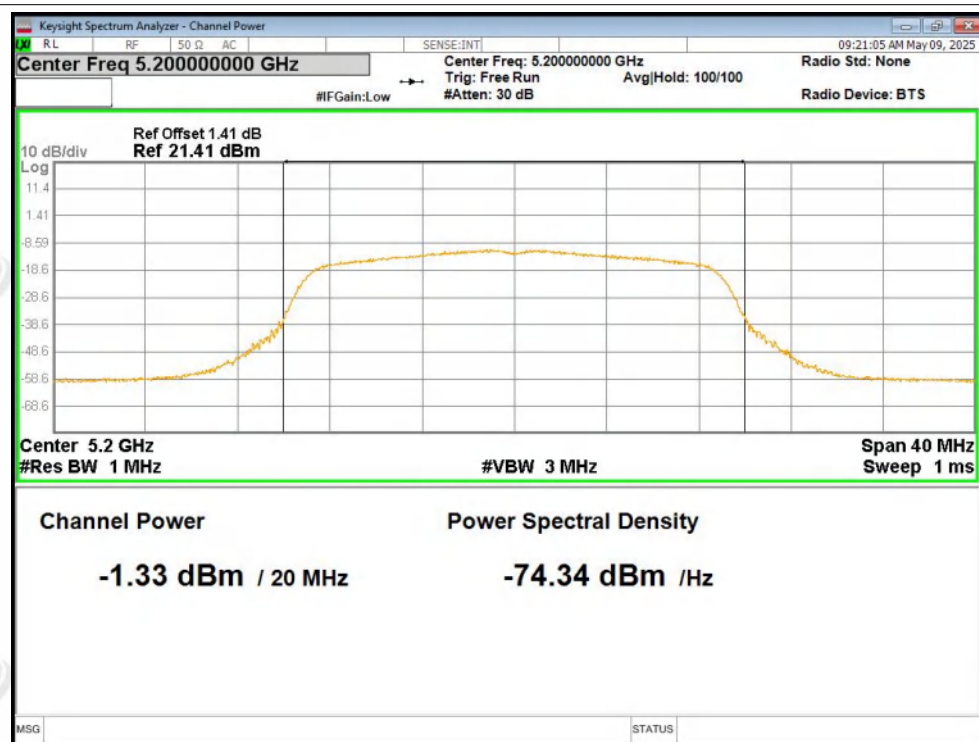


Power NVNT n20 5180MHz Ant1

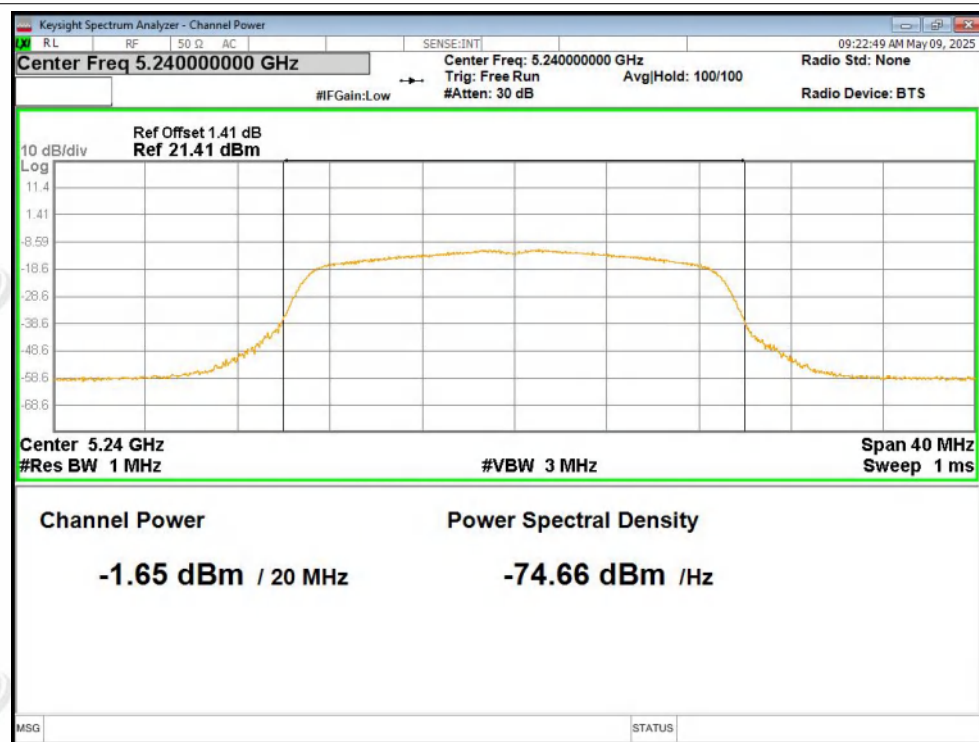




Power NVNT n20 5200MHz Ant1

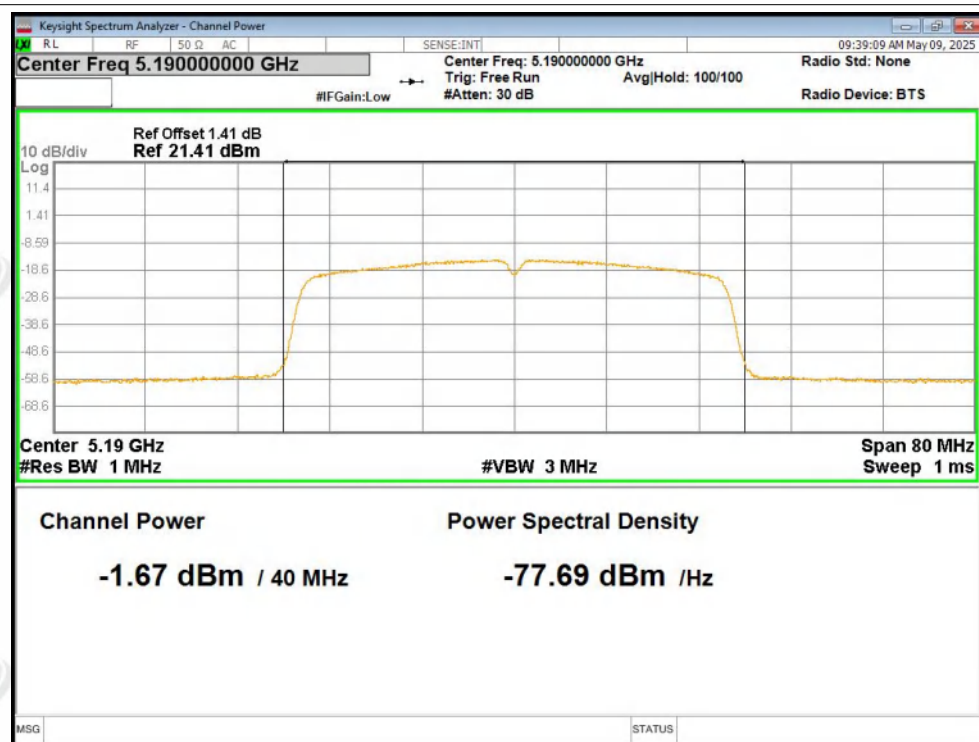


Power NVNT n20 5240MHz Ant1

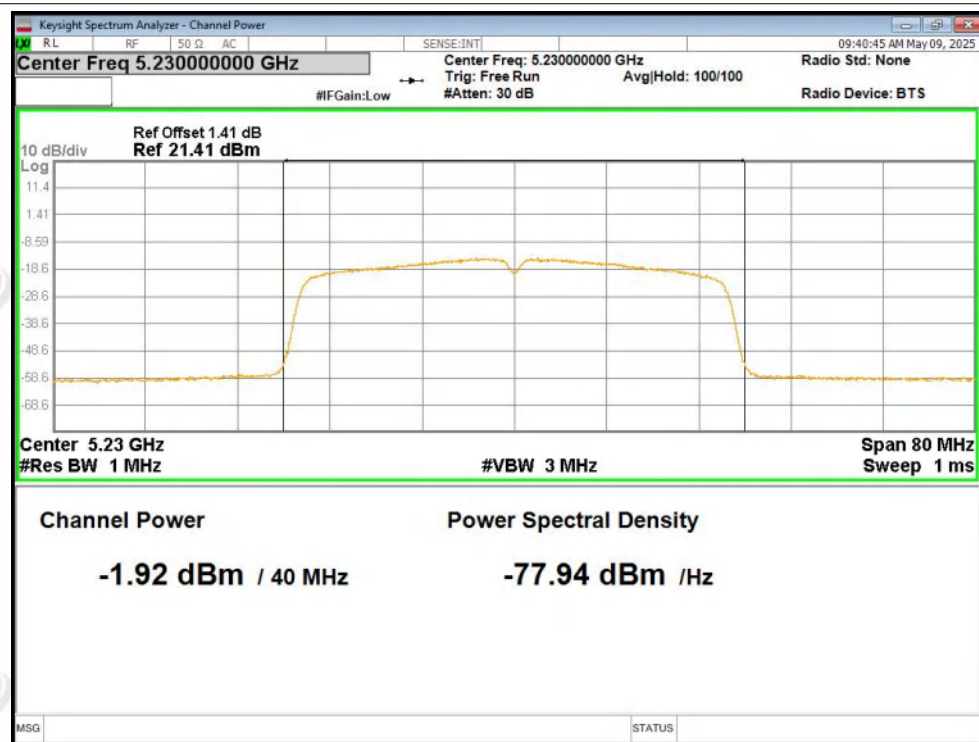




Power NVNT n40 5190MHz Ant1

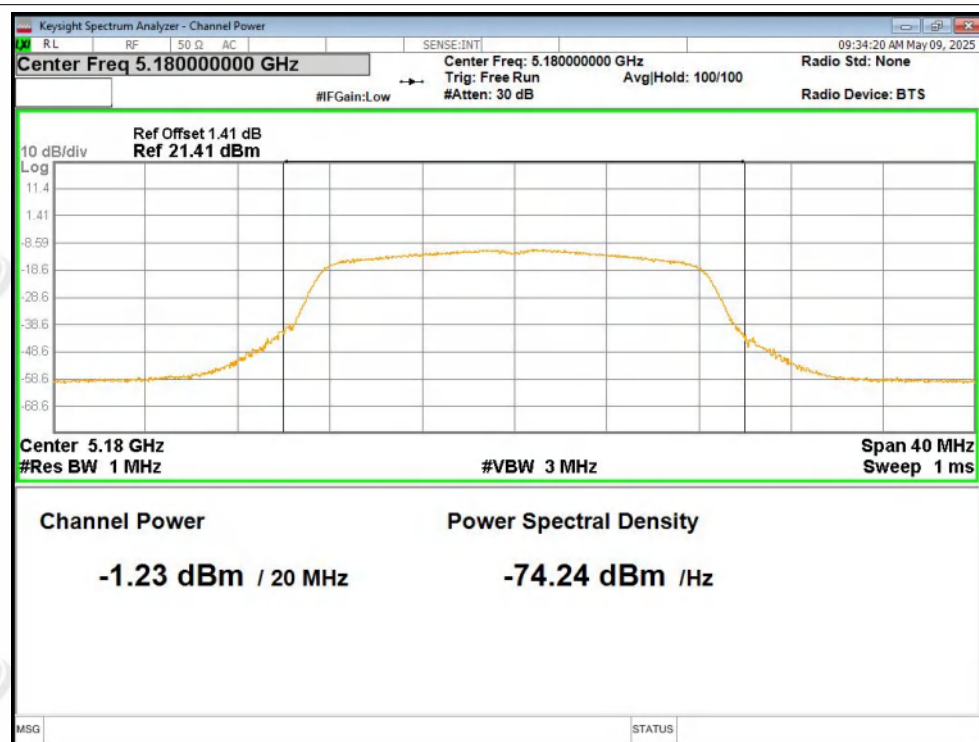


Power NVNT n40 5230MHz Ant1

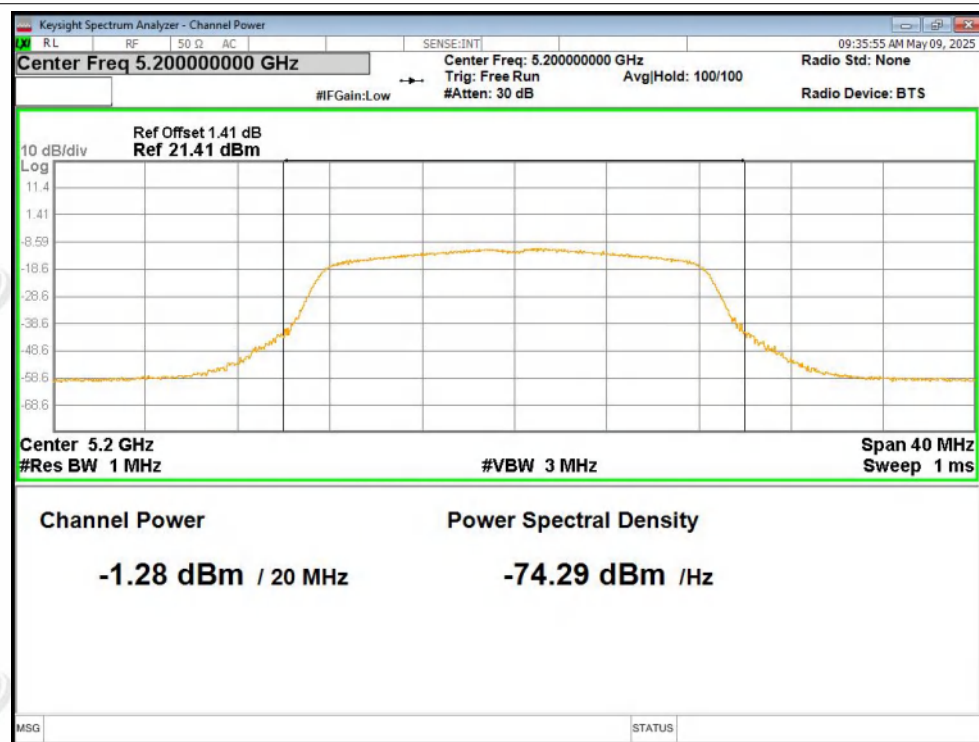




Power NVNT ac20 5180MHz Ant1

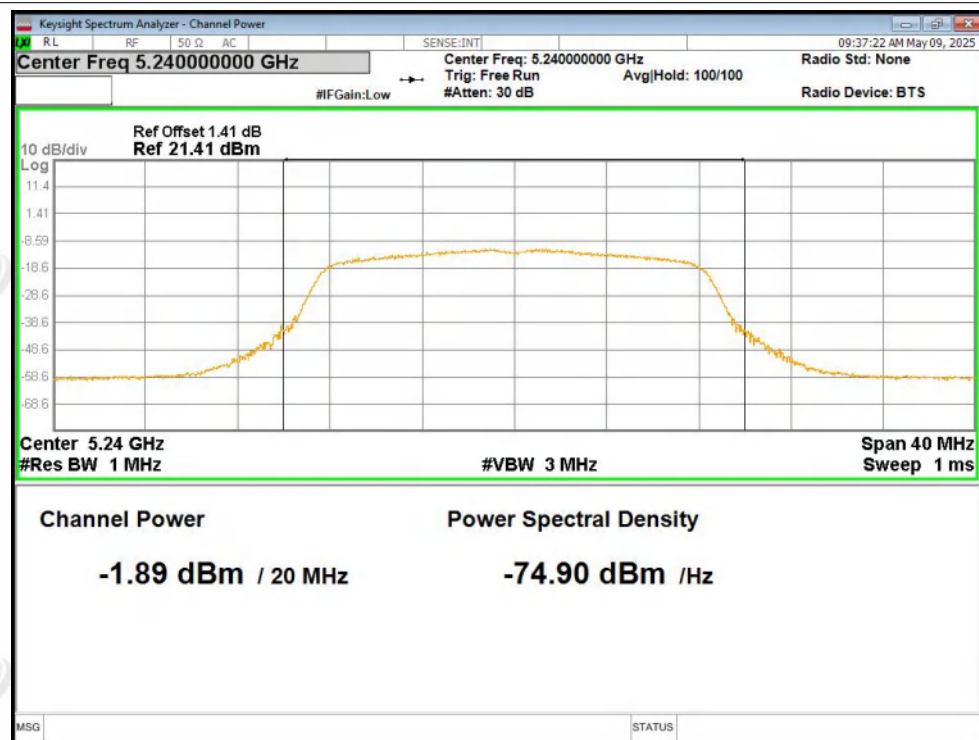


Power NVNT ac20 5200MHz Ant1

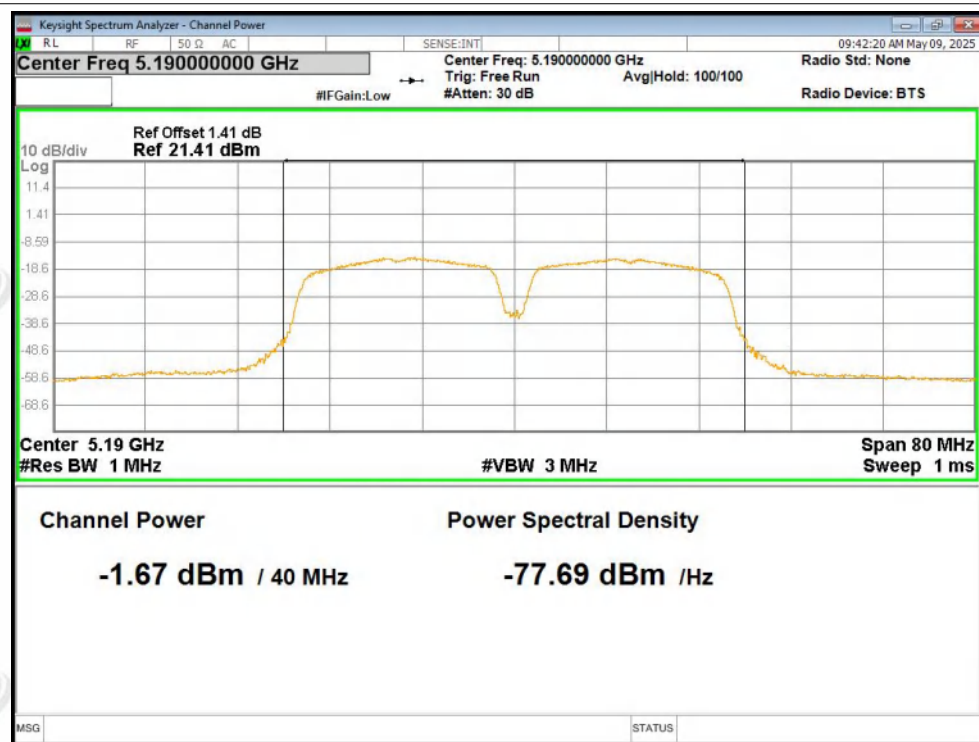


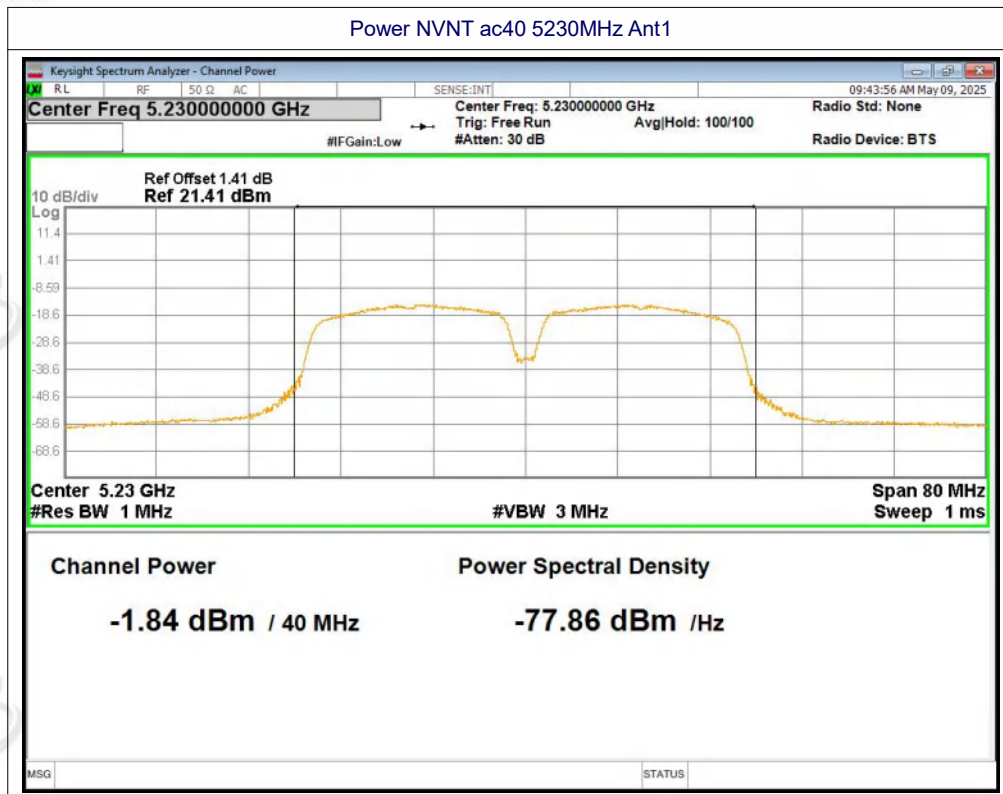


Power NVNT ac20 5240MHz Ant1



Power NVNT ac40 5190MHz Ant1



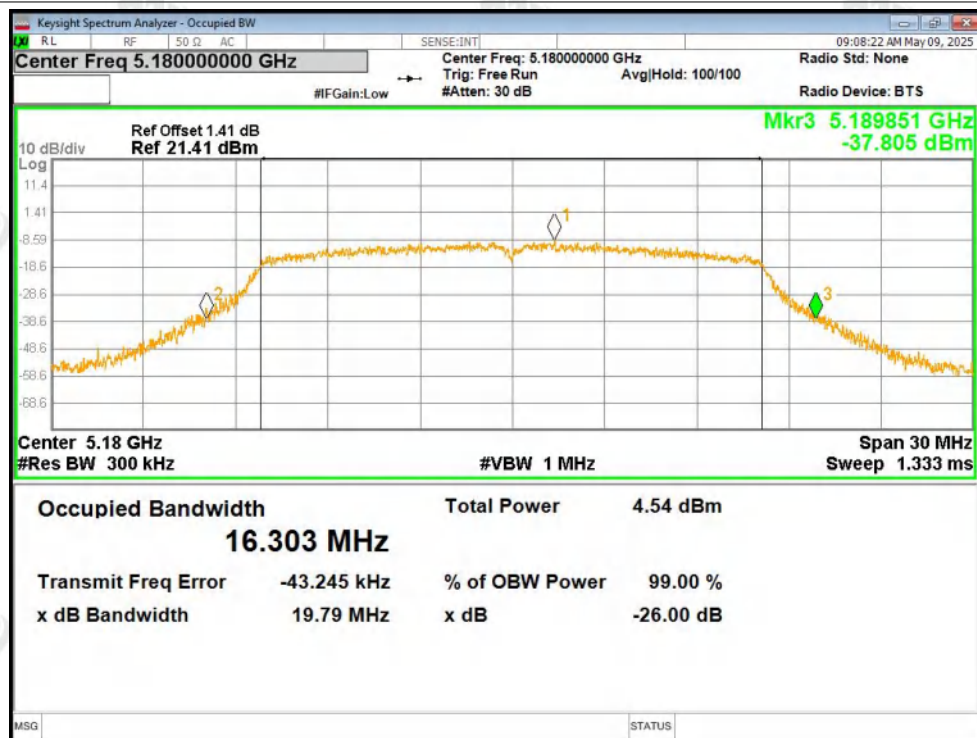


**A.3 -26dB Bandwidth**

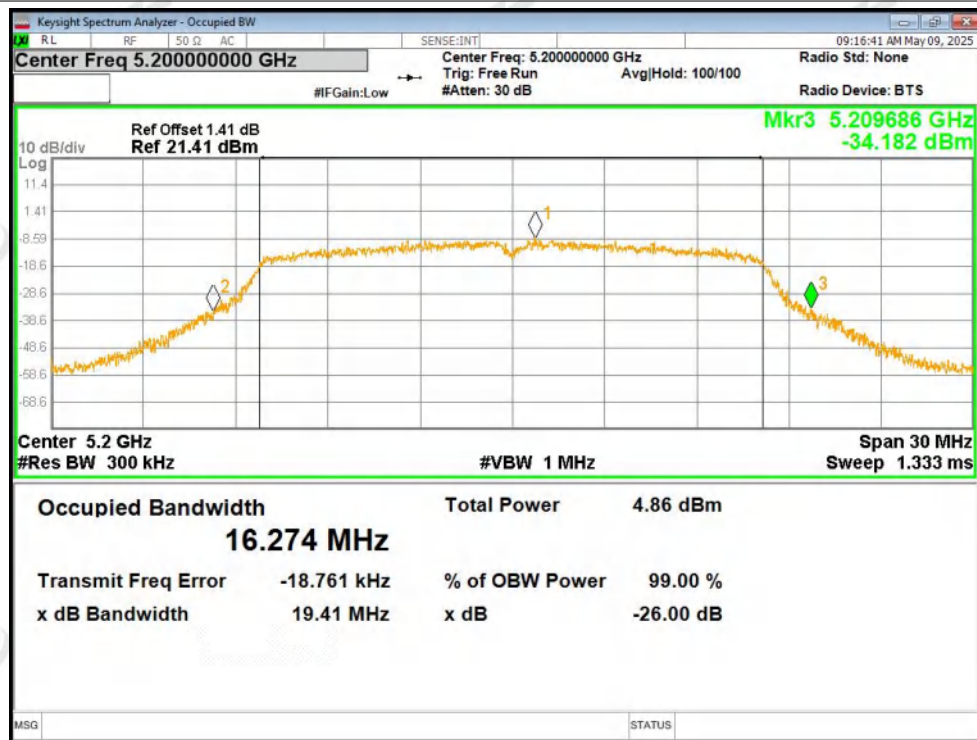
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	19.788	0.5	Pass
NVNT	a	5200	Ant1	19.409	0.5	Pass
NVNT	a	5240	Ant1	19.987	0.5	Pass
NVNT	n20	5180	Ant1	20.424	0.5	Pass
NVNT	n20	5200	Ant1	20.69	0.5	Pass
NVNT	n20	5240	Ant1	20.717	0.5	Pass
NVNT	n40	5190	Ant1	37.931	0.5	Pass
NVNT	n40	5230	Ant1	37.845	0.5	Pass
NVNT	ac20	5180	Ant1	19.489	0.5	Pass
NVNT	ac20	5200	Ant1	19.751	0.5	Pass
NVNT	ac20	5240	Ant1	19.971	0.5	Pass
NVNT	ac40	5190	Ant1	40.121	0.5	Pass
NVNT	ac40	5230	Ant1	40.302	0.5	Pass

Test Graphs

-26dB Bandwidth NVNT a 5180MHz Ant1

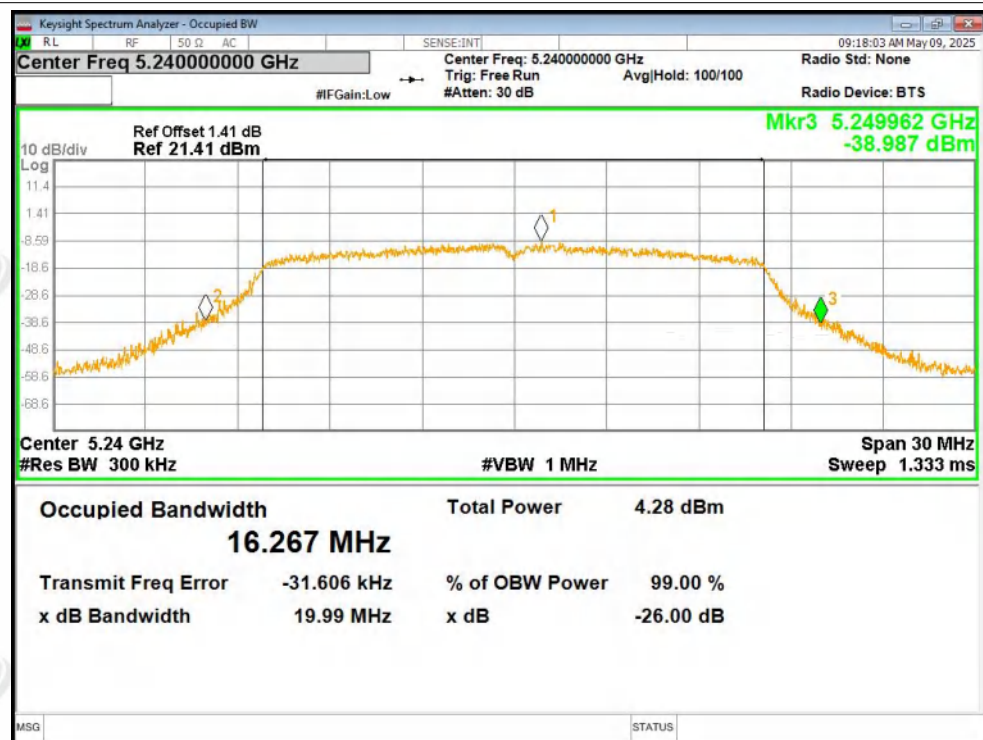


-26dB Bandwidth NVNT a 5200MHz Ant1

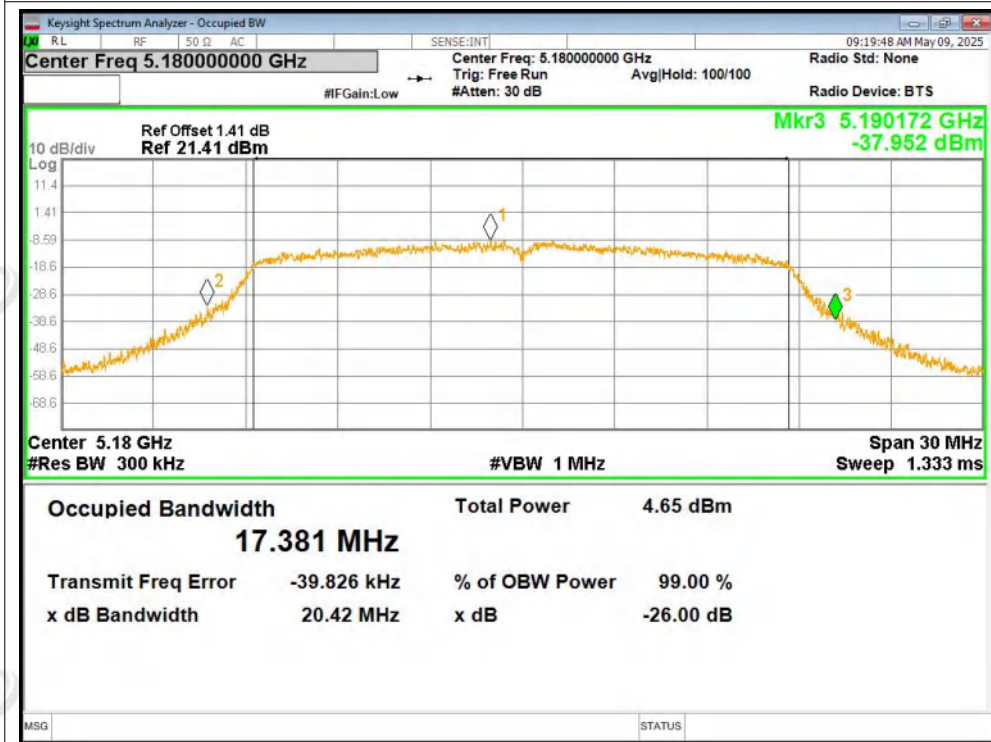




-26dB Bandwidth NVNT a 5240MHz Ant1

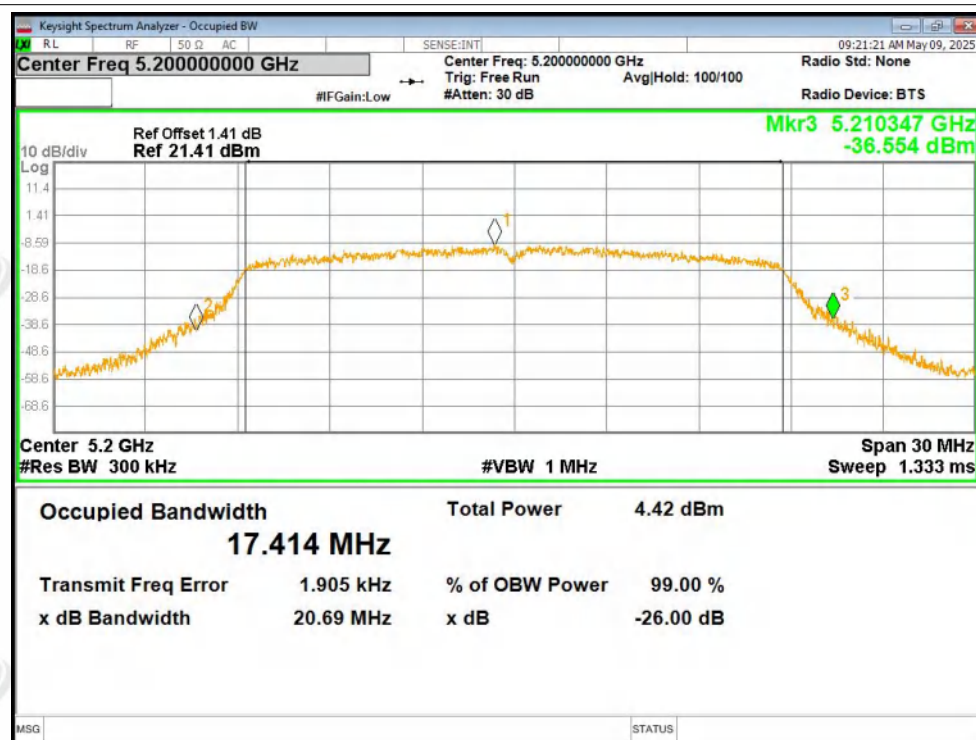


-26dB Bandwidth NVNT n20 5180MHz Ant1

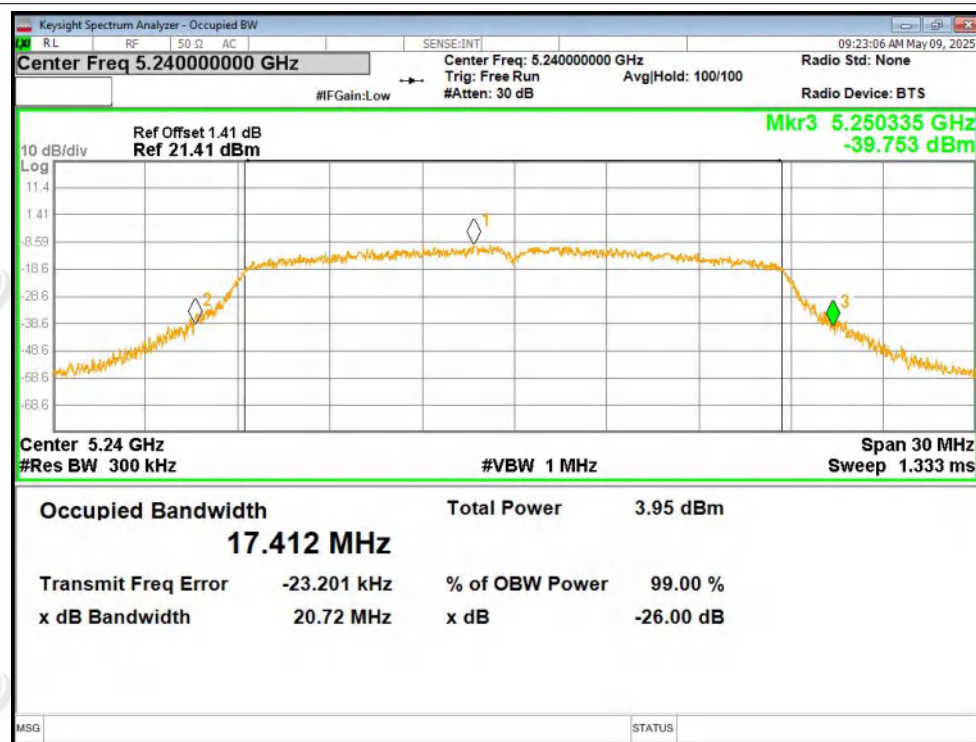




-26dB Bandwidth NVNT n20 5200MHz Ant1

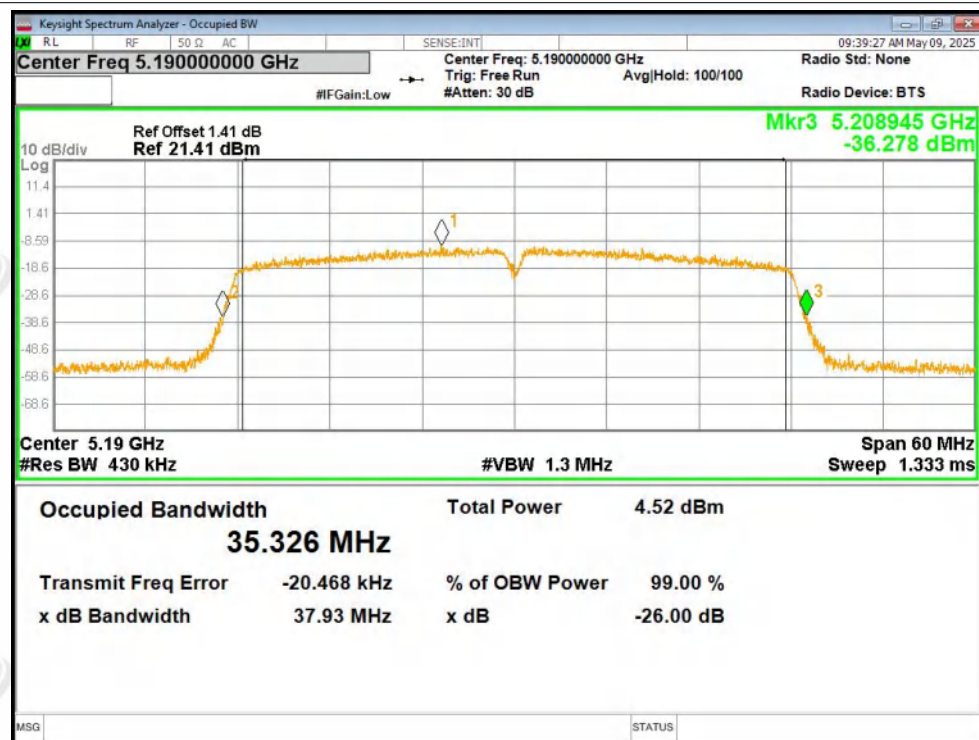


-26dB Bandwidth NVNT n20 5240MHz Ant1

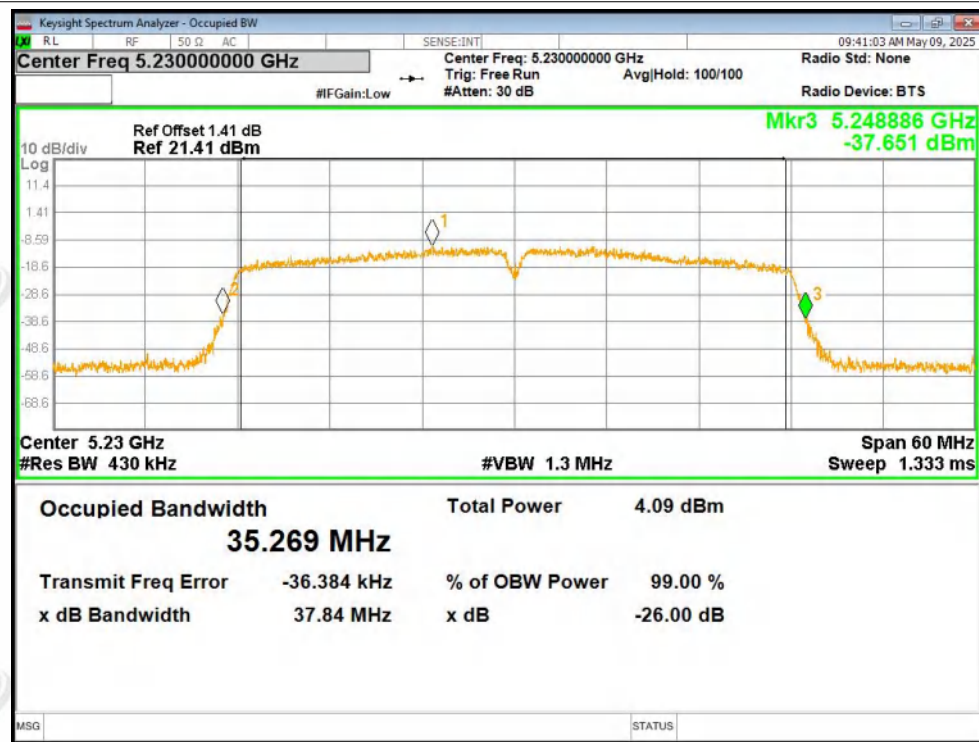




-26dB Bandwidth NVNT n40 5190MHz Ant1

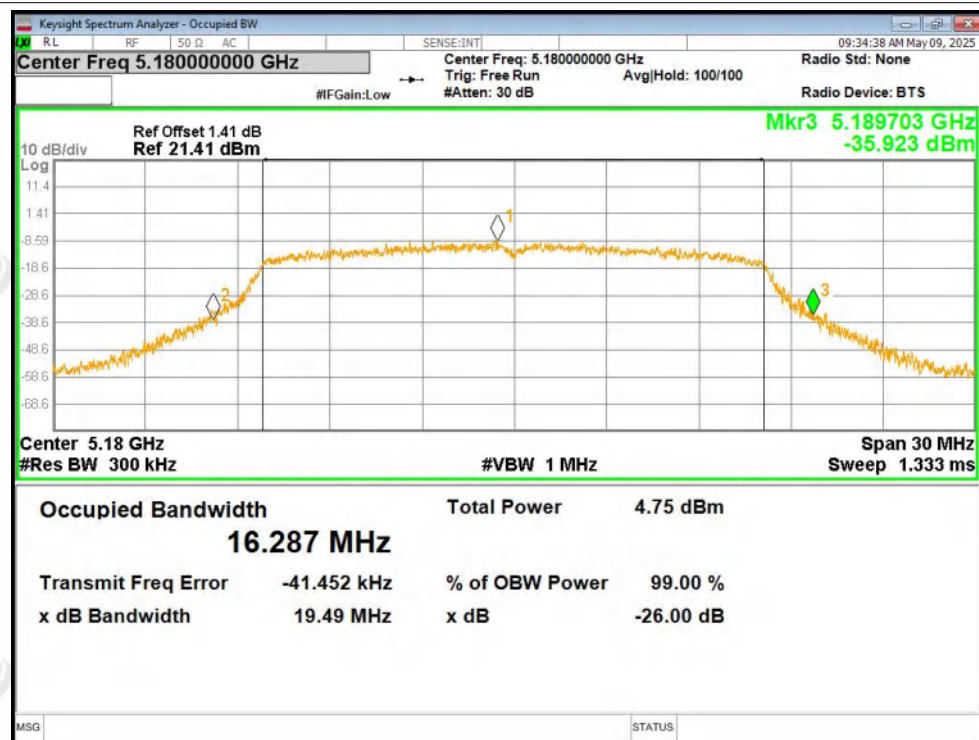


-26dB Bandwidth NVNT n40 5230MHz Ant1

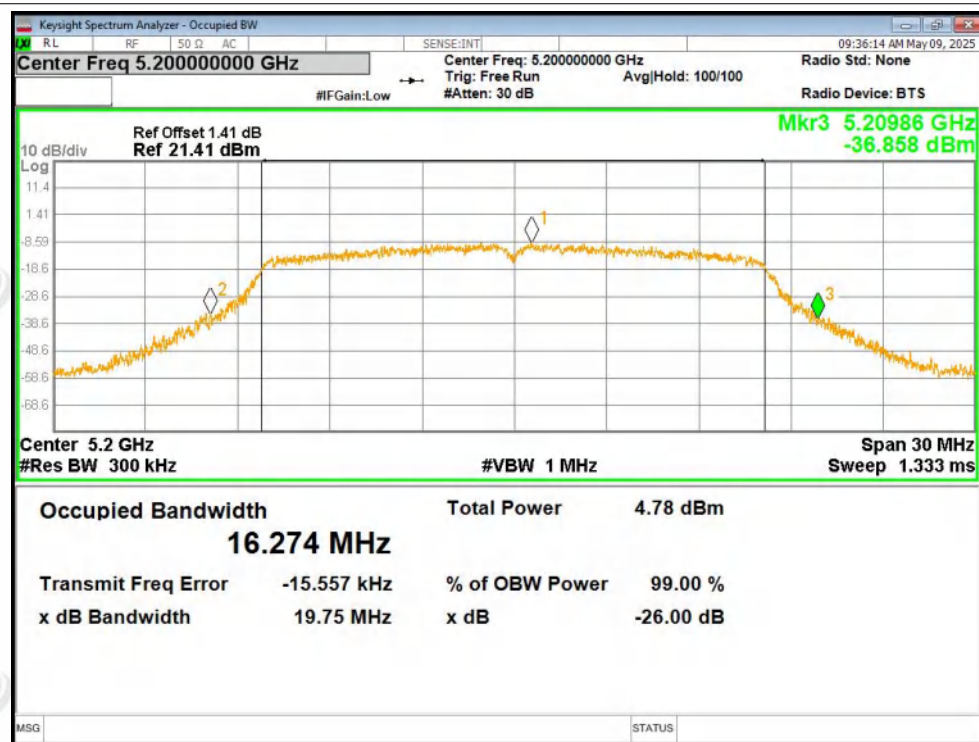




-26dB Bandwidth NVNT ac20 5180MHz Ant1

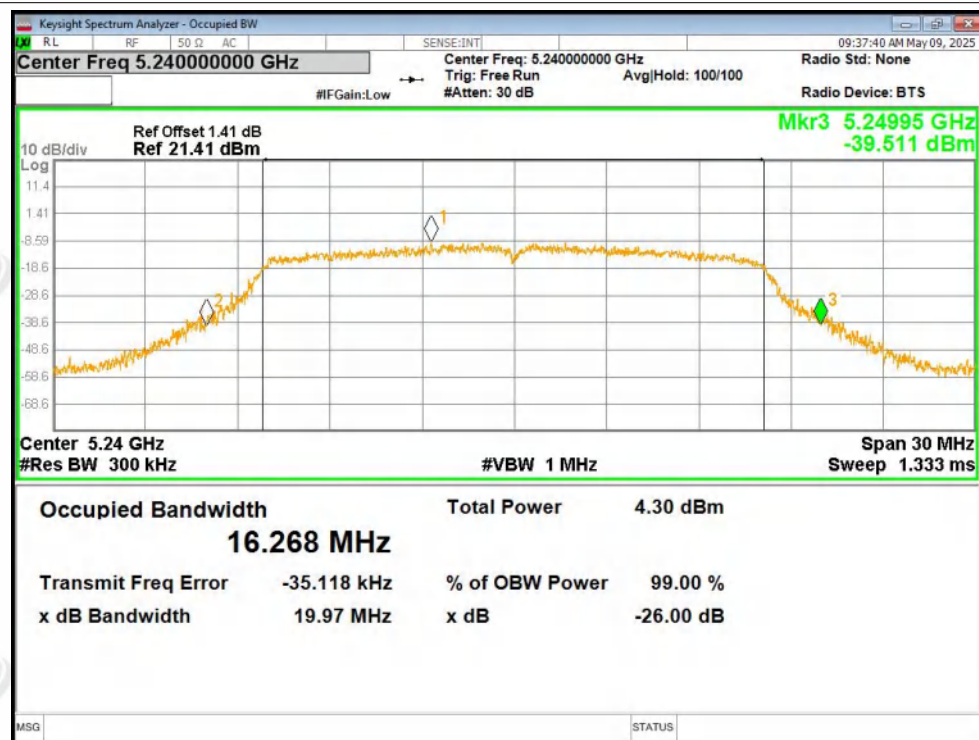


-26dB Bandwidth NVNT ac20 5200MHz Ant1

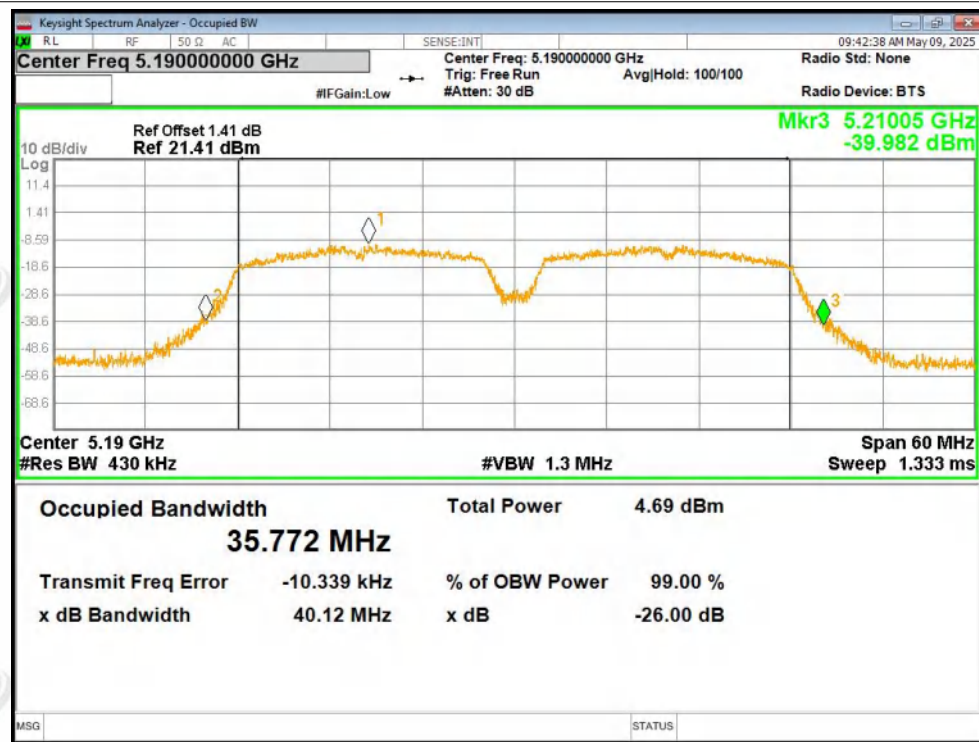


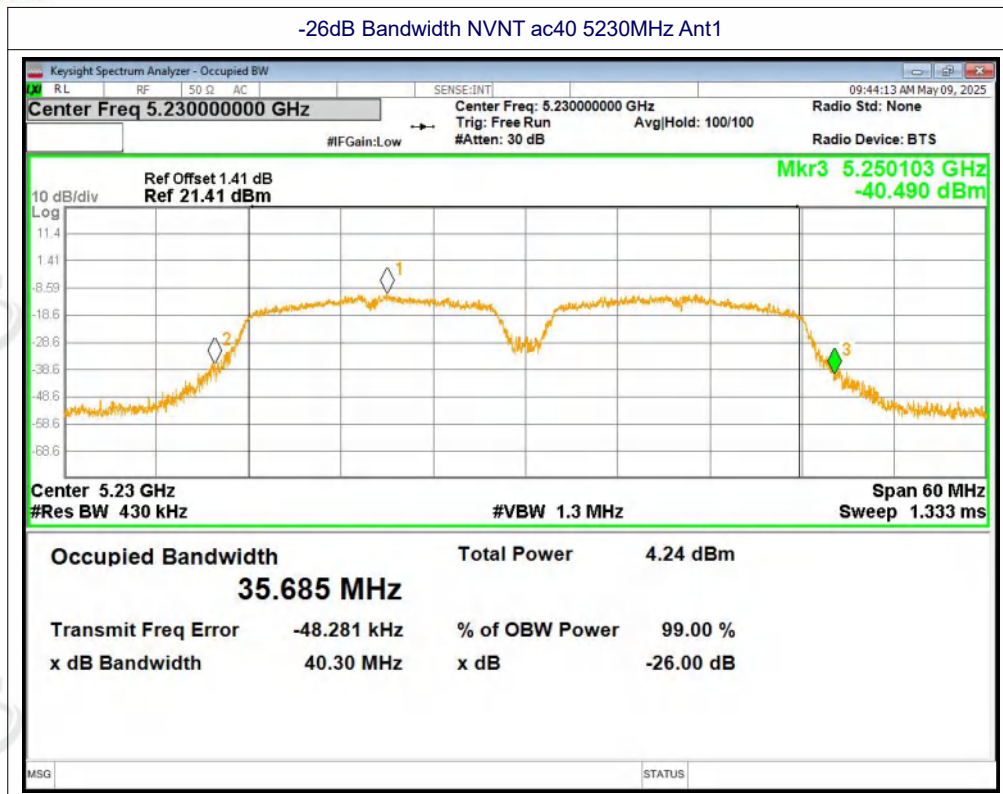


-26dB Bandwidth NVNT ac20 5240MHz Ant1



-26dB Bandwidth NVNT ac40 5190MHz Ant1



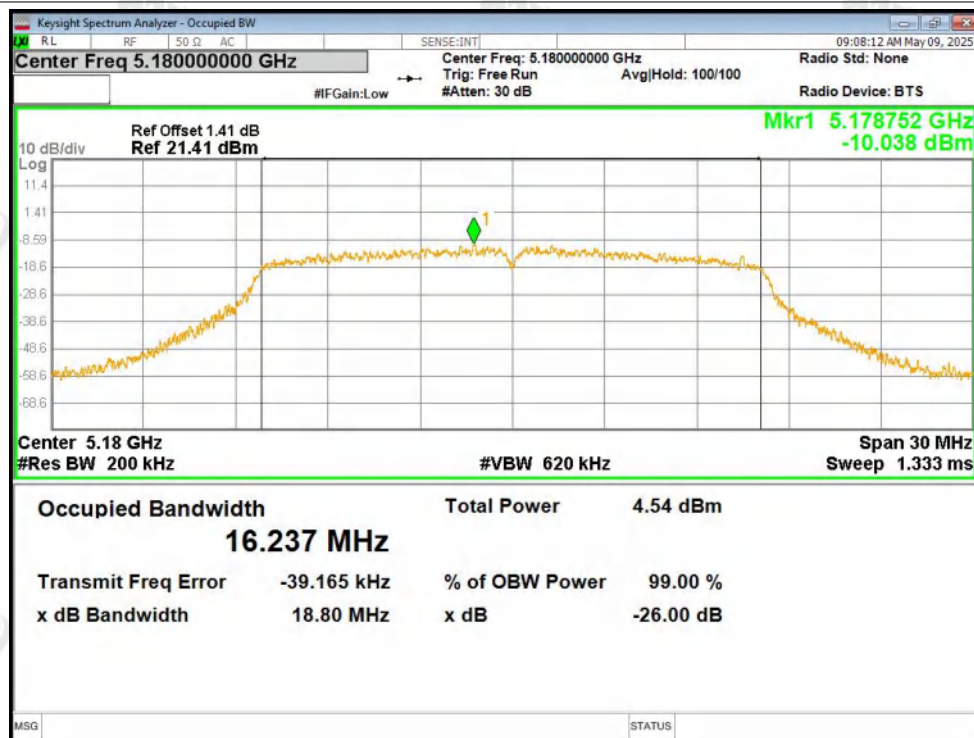


A.4 Occupied Channel Bandwidth

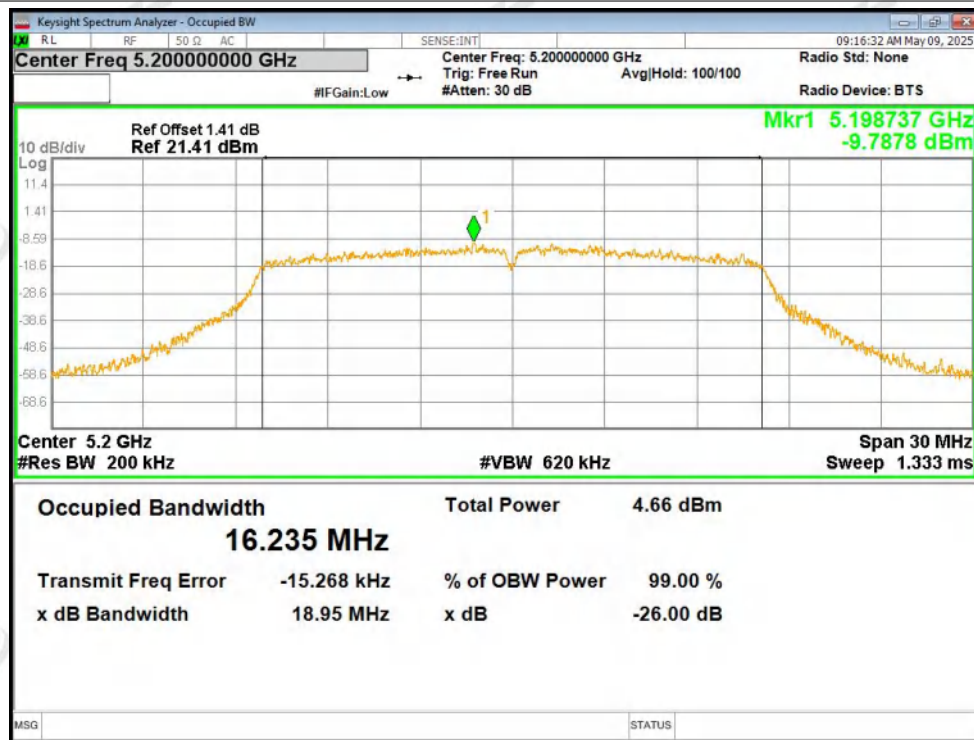
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.237
NVNT	a	5200	Ant1	16.235
NVNT	a	5240	Ant1	16.228
NVNT	n20	5180	Ant1	17.346
NVNT	n20	5200	Ant1	17.358
NVNT	n20	5240	Ant1	17.36
NVNT	n40	5190	Ant1	36.232
NVNT	n40	5230	Ant1	36.159
NVNT	ac20	5180	Ant1	16.204
NVNT	ac20	5200	Ant1	16.23
NVNT	ac20	5240	Ant1	16.208
NVNT	ac40	5190	Ant1	36.132
NVNT	ac40	5230	Ant1	36.079

Test Graphs

OBW NVNT a 5180MHz Ant1

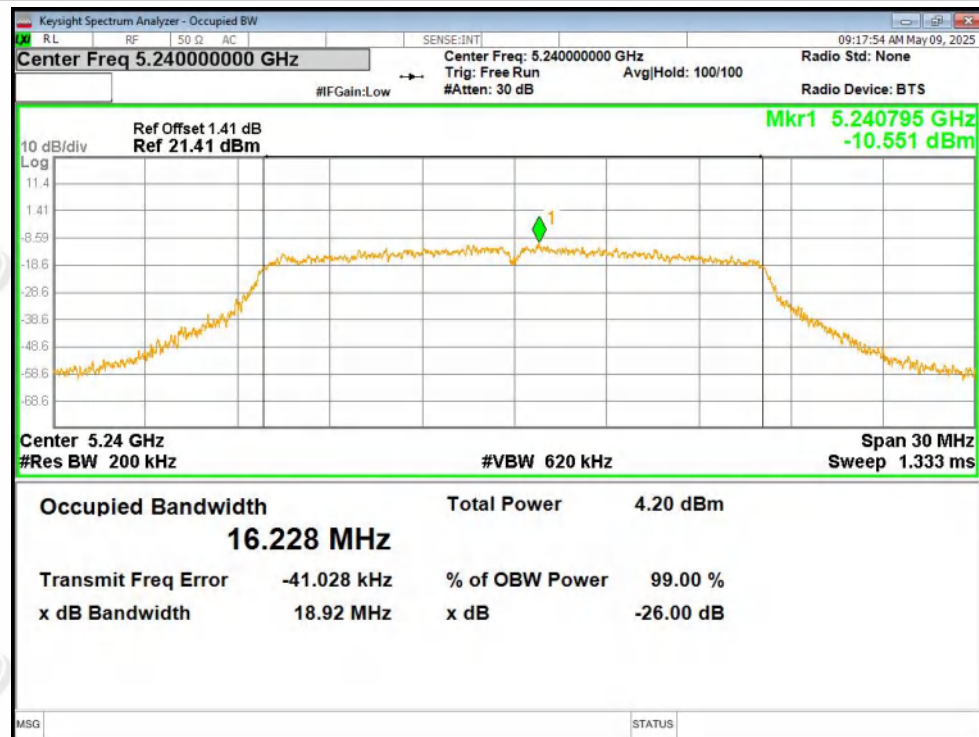


OBW NVNT a 5200MHz Ant1

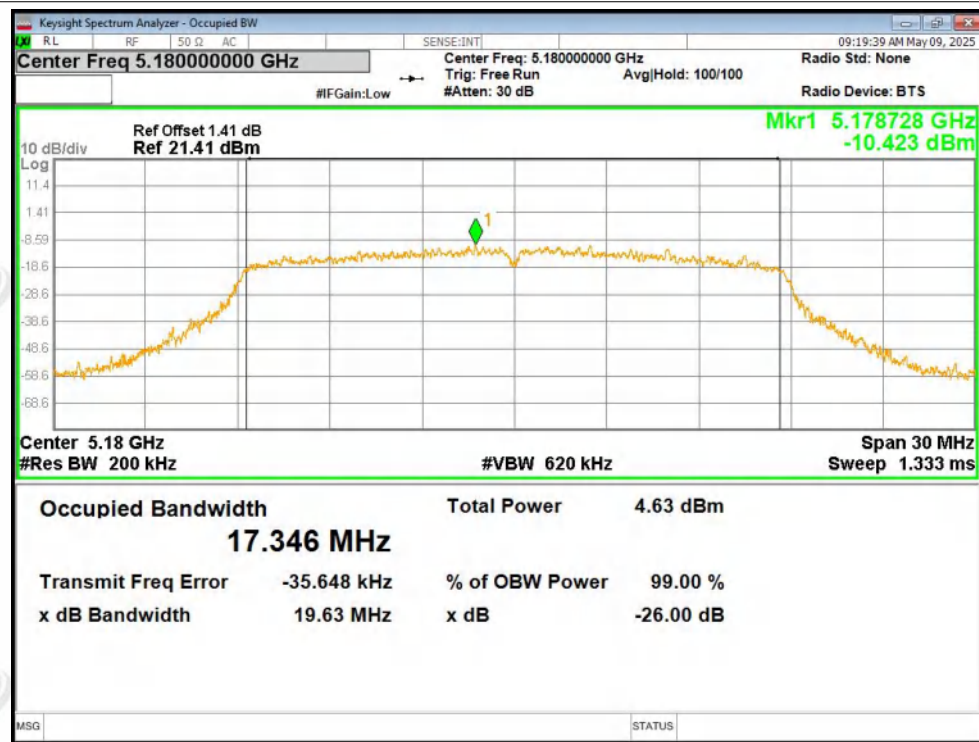




OBW NVNT a 5240MHz Ant1

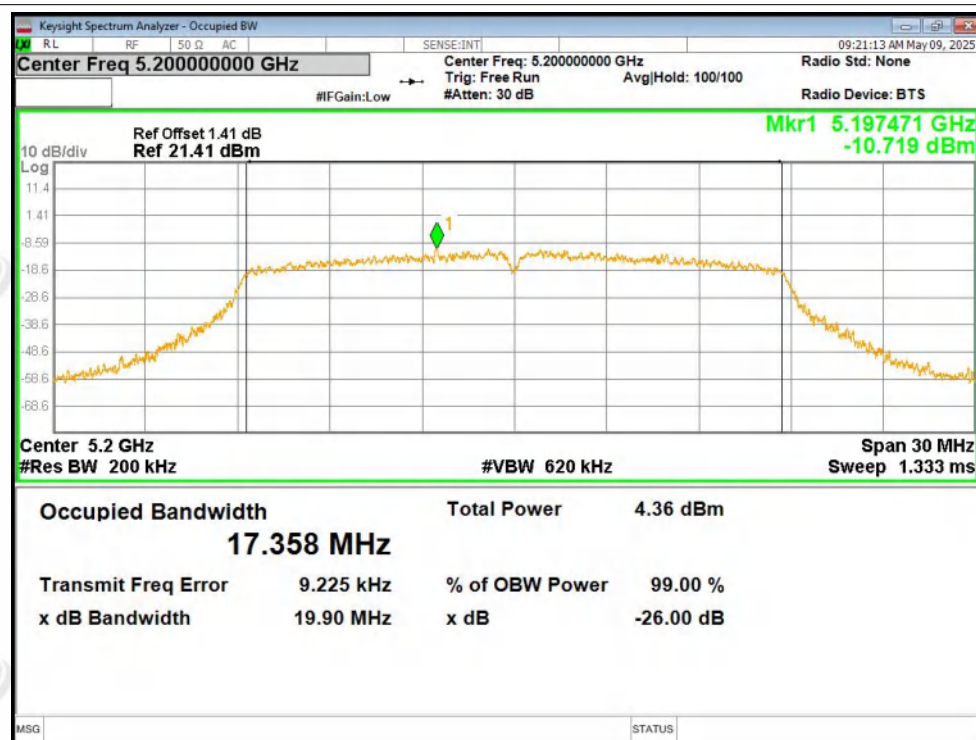


OBW NVNT n20 5180MHz Ant1

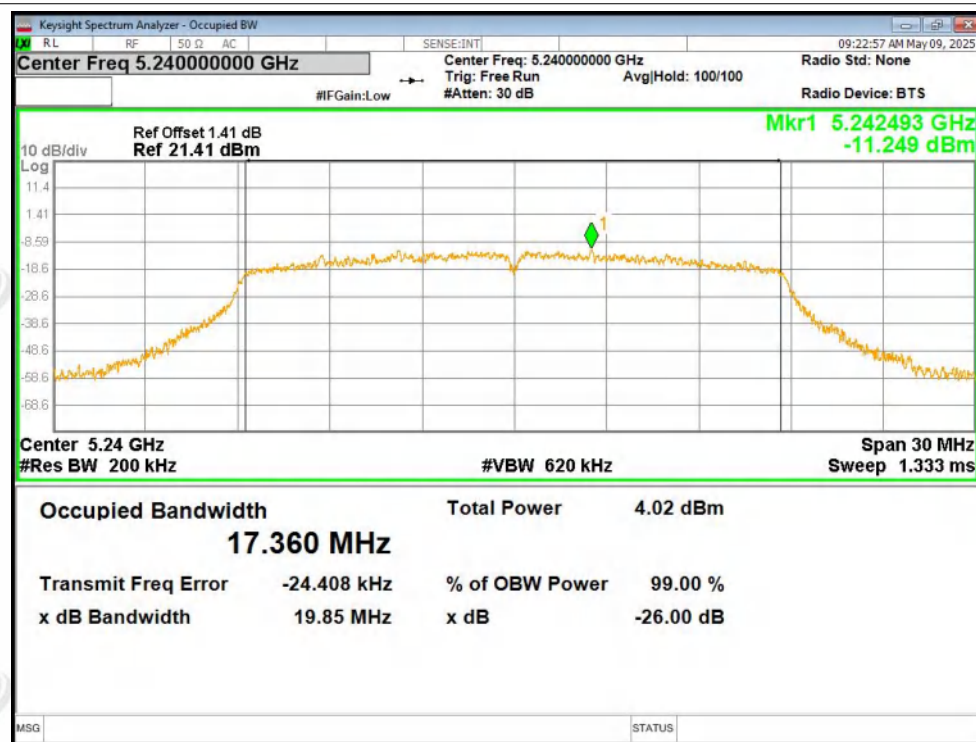




OBW NVNT n20 5200MHz Ant1

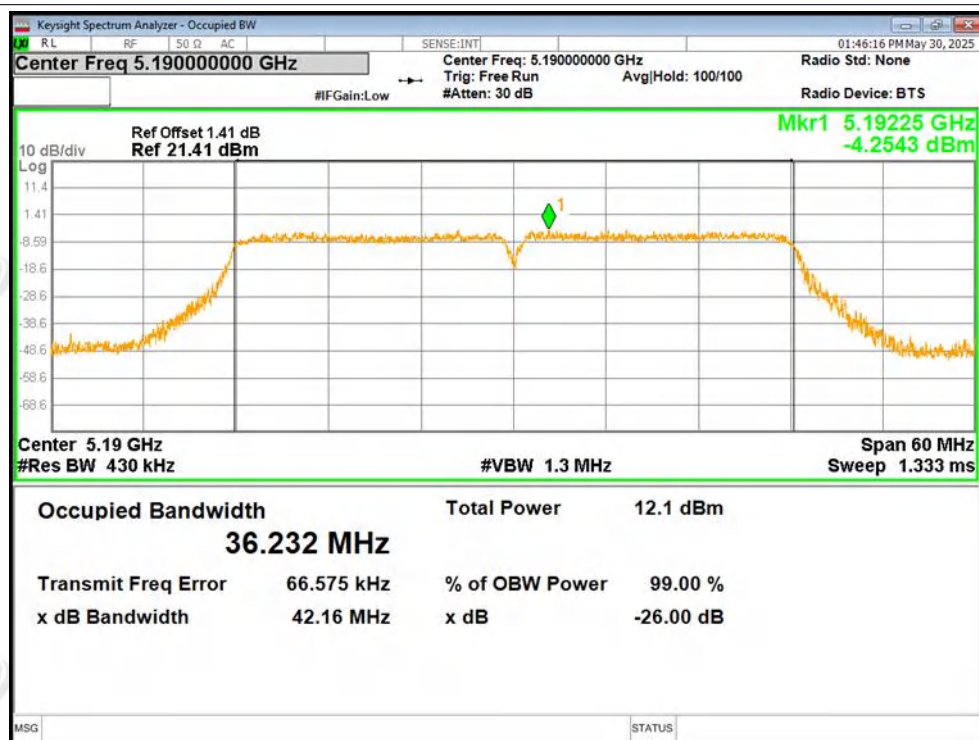


OBW NVNT n20 5240MHz Ant1

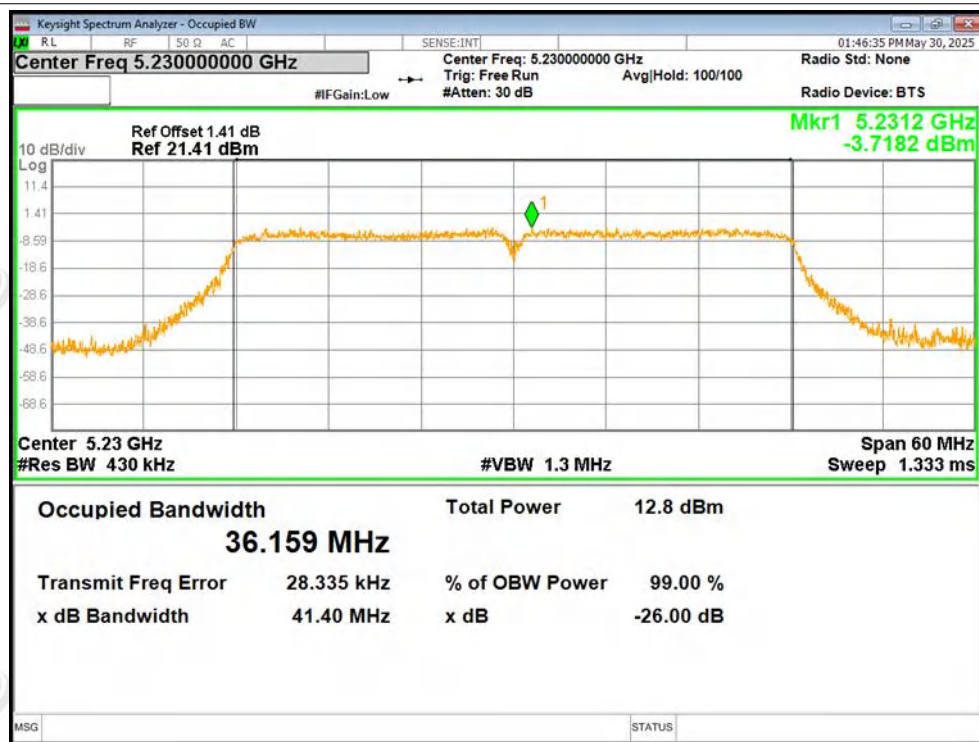




OBW NVNT n40 5190MHz Ant1

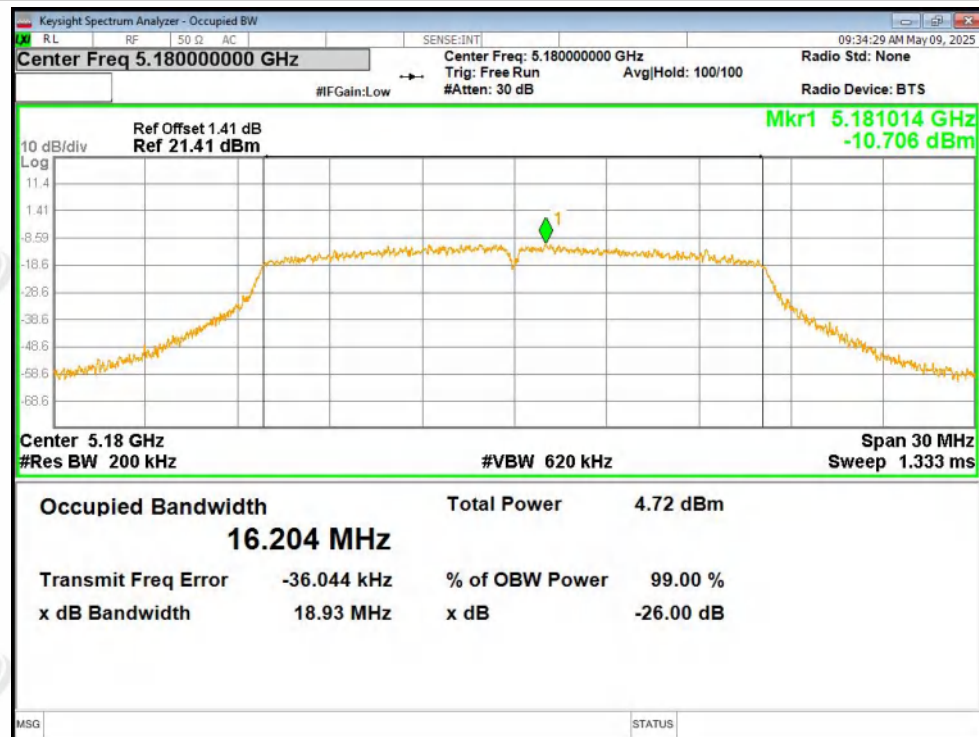


OBW NVNT n40 5230MHz Ant1

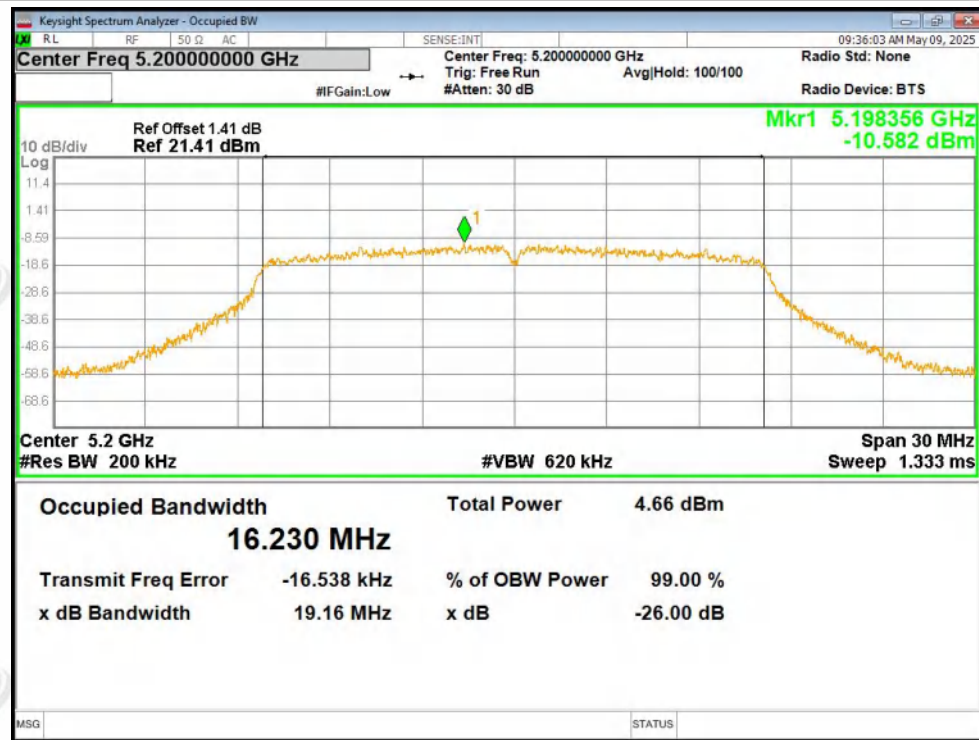




OBW NVNT ac20 5180MHz Ant1

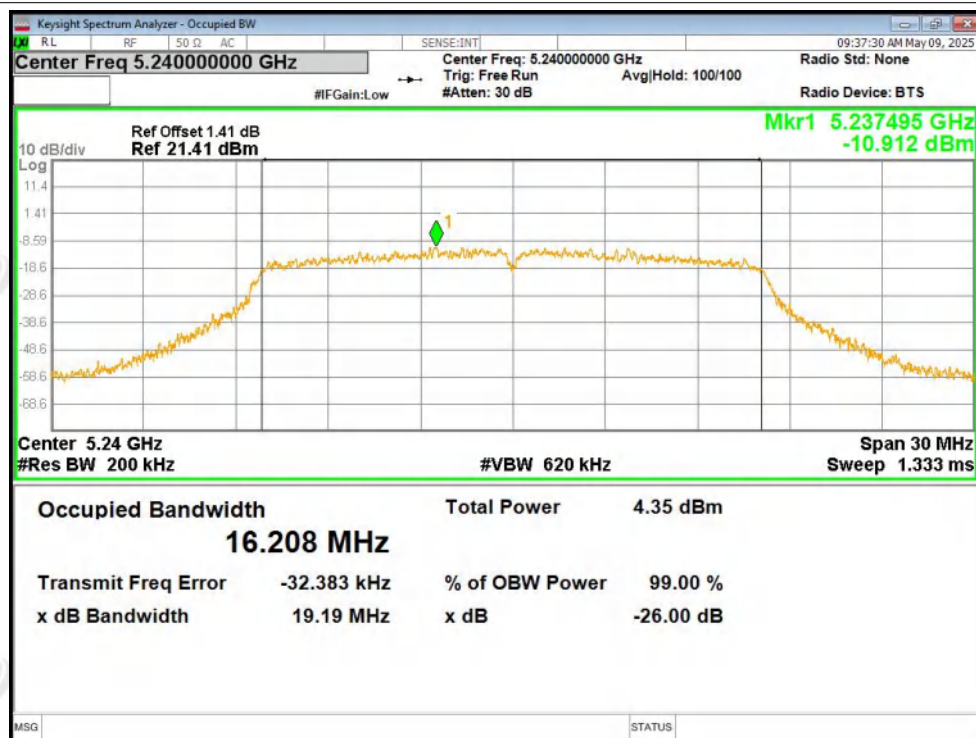


OBW NVNT ac20 5200MHz Ant1

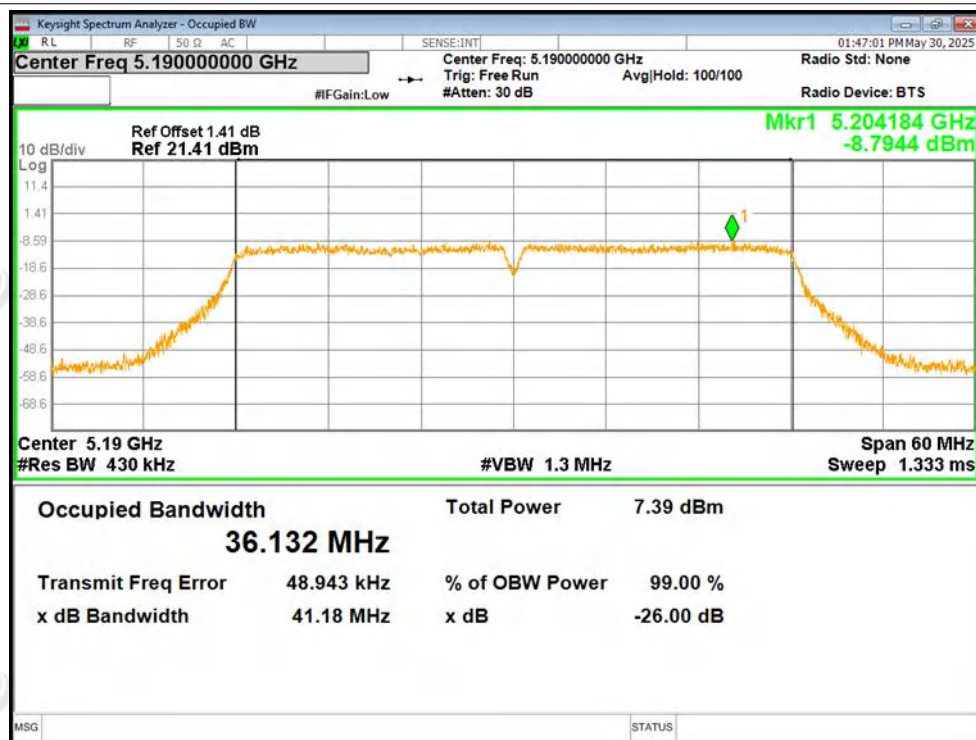


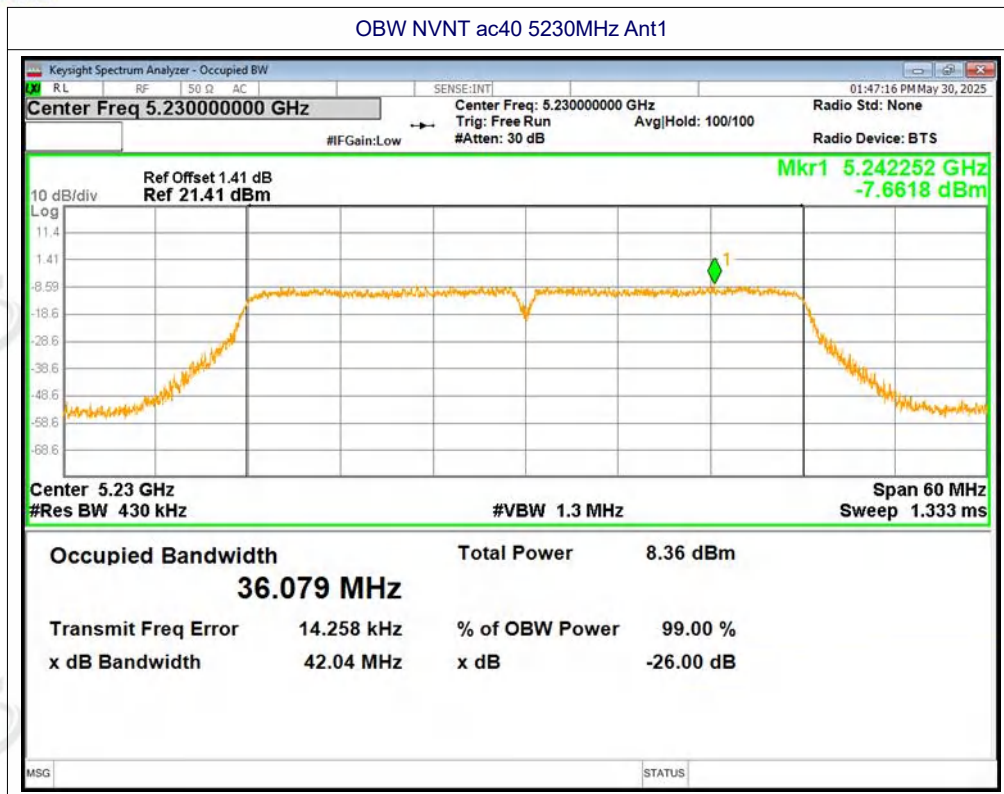


OBW NVNT ac20 5240MHz Ant1



OBW NVNT ac40 5190MHz Ant1





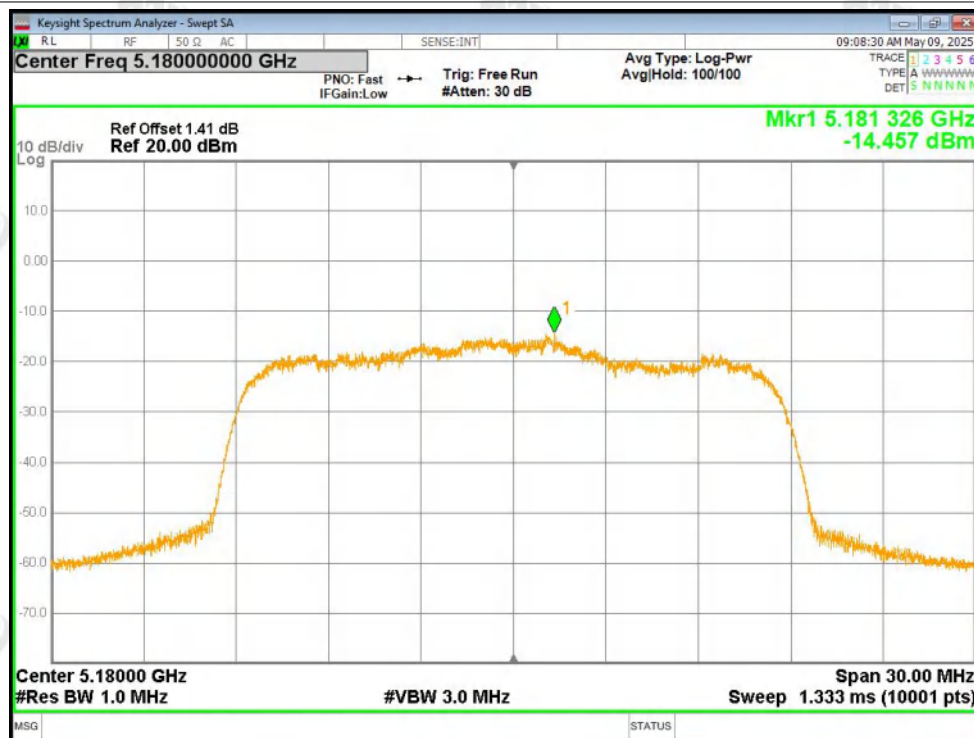


A.5 Maximum Power Spectral Density Level

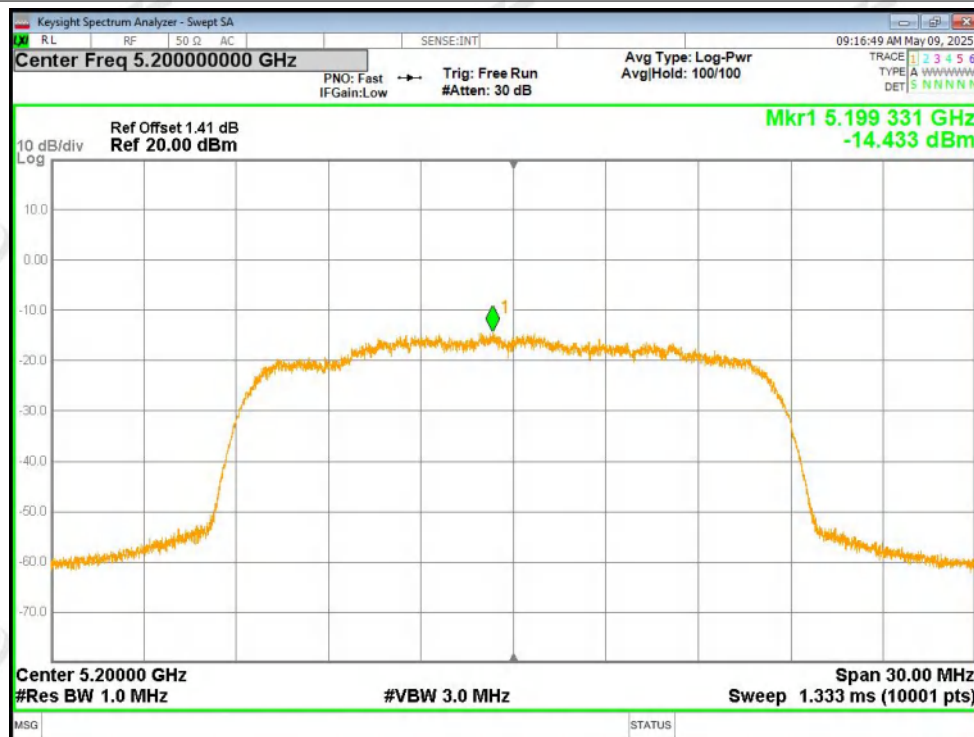
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	-14.46	0.34	-14.12	11	Pass
NVNT	a	5200	Ant1	-14.43	0.46	-13.97	11	Pass
NVNT	a	5240	Ant1	-13.83	0.23	-13.6	11	Pass
NVNT	n20	5180	Ant1	-15.07	0.43	-14.64	11	Pass
NVNT	n20	5200	Ant1	-14.86	0.33	-14.53	11	Pass
NVNT	n20	5240	Ant1	-16.02	0.22	-15.8	11	Pass
NVNT	n40	5190	Ant1	-20.84	0.95	-19.89	11	Pass
NVNT	n40	5230	Ant1	-22.2	0.76	-21.44	11	Pass
NVNT	ac20	5180	Ant1	-18.39	0.77	-17.62	11	Pass
NVNT	ac20	5200	Ant1	-19.64	0.91	-18.73	11	Pass
NVNT	ac20	5240	Ant1	-19.82	0.72	-19.1	11	Pass
NVNT	ac40	5190	Ant1	-22.5	0.77	-21.73	11	Pass
NVNT	ac40	5230	Ant1	-22.37	0.77	-21.6	11	Pass

Test Graphs

PSD NVNT a 5180MHz Ant1

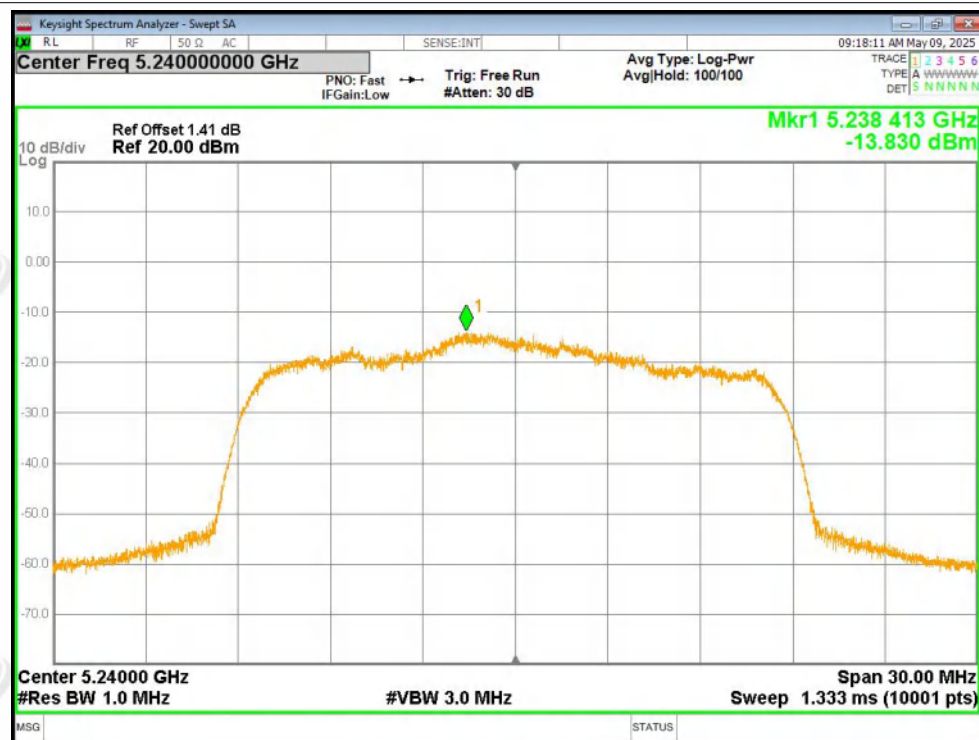


PSD NVNT a 5200MHz Ant1

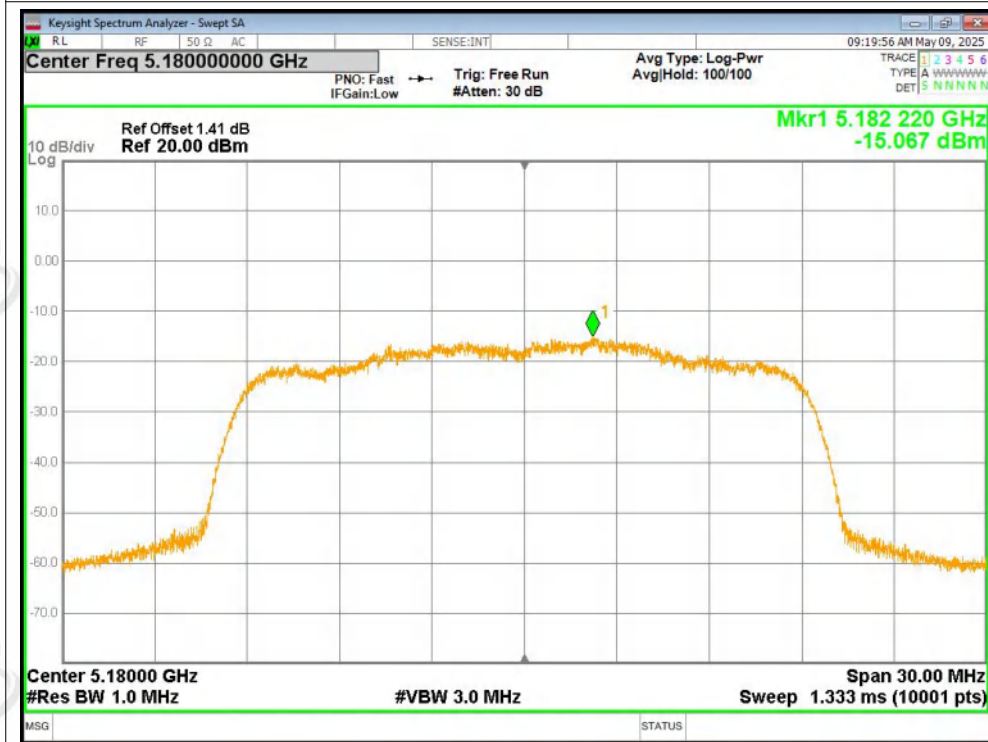




PSD NVNT a 5240MHz Ant1

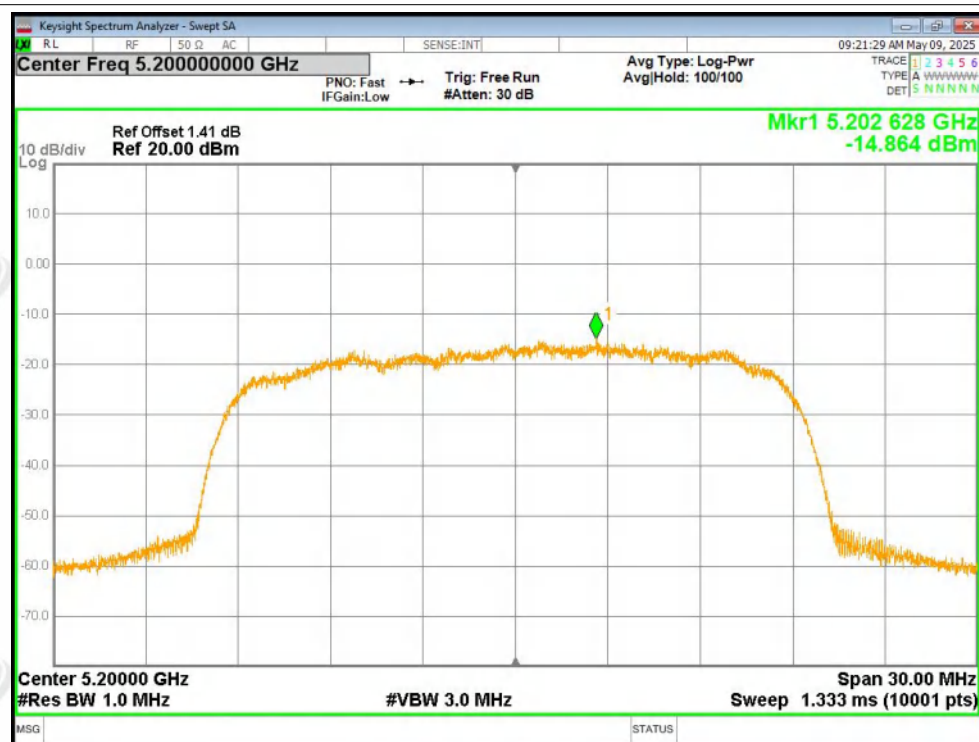


PSD NVNT n20 5180MHz Ant1

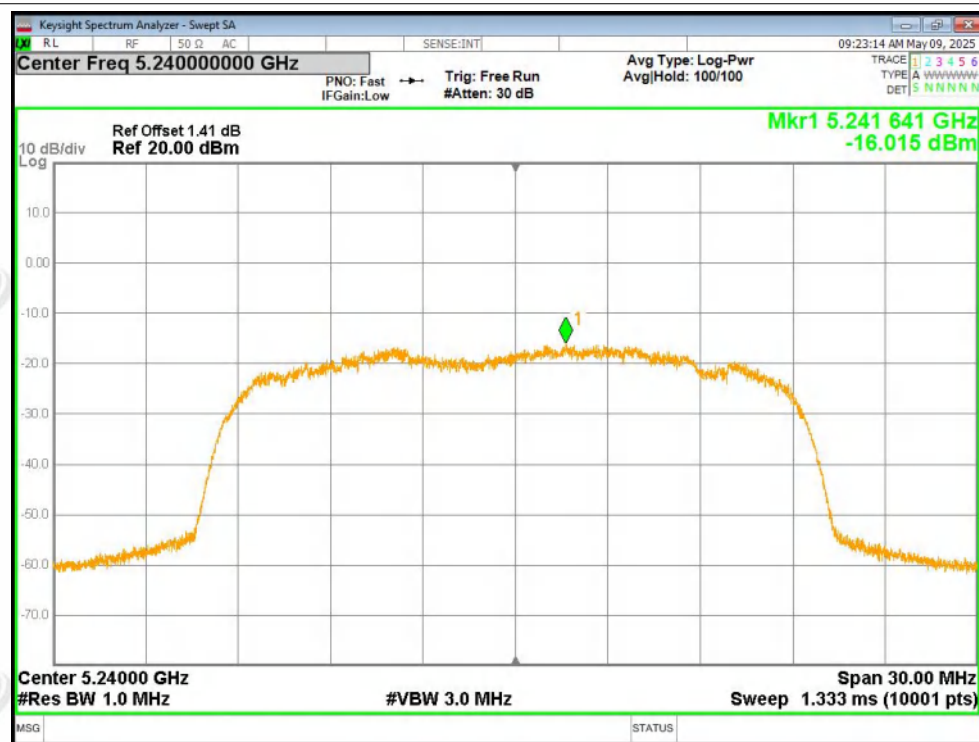




PSD NVNT n20 5200MHz Ant1

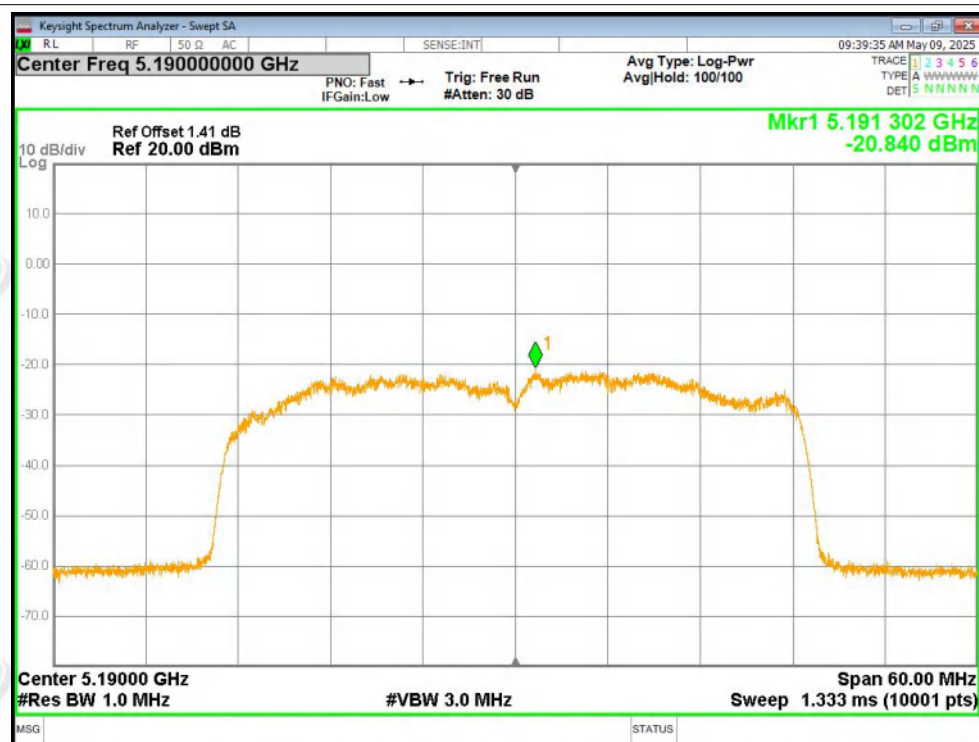


PSD NVNT n20 5240MHz Ant1

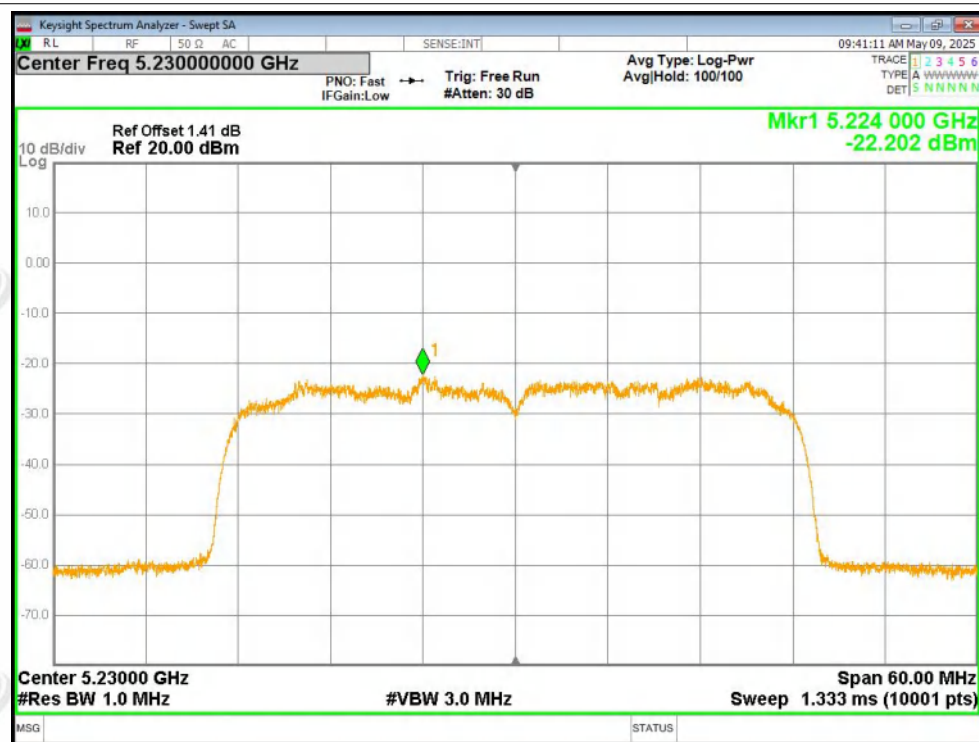




PSD NVNT n40 5190MHz Ant1

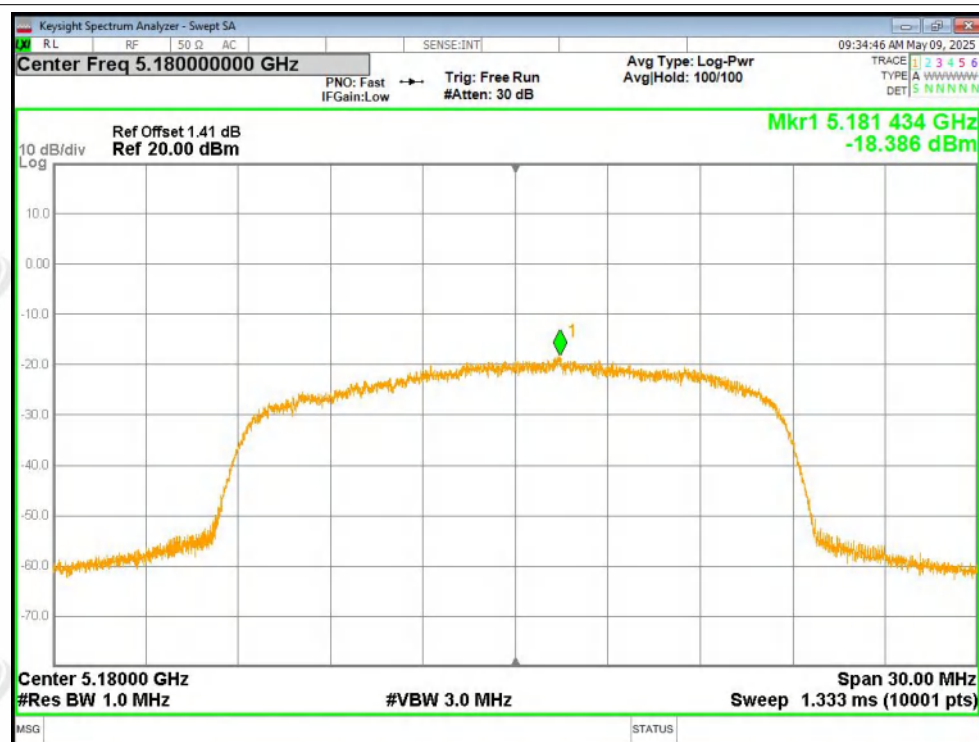


PSD NVNT n40 5230MHz Ant1

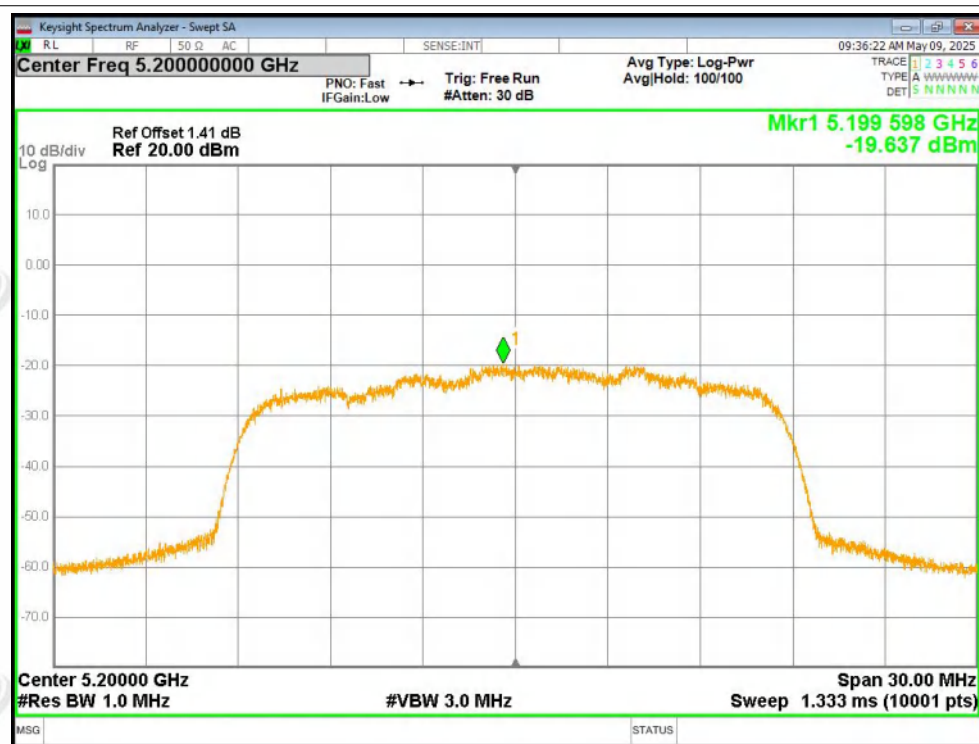




PSD NVNT ac20 5180MHz Ant1

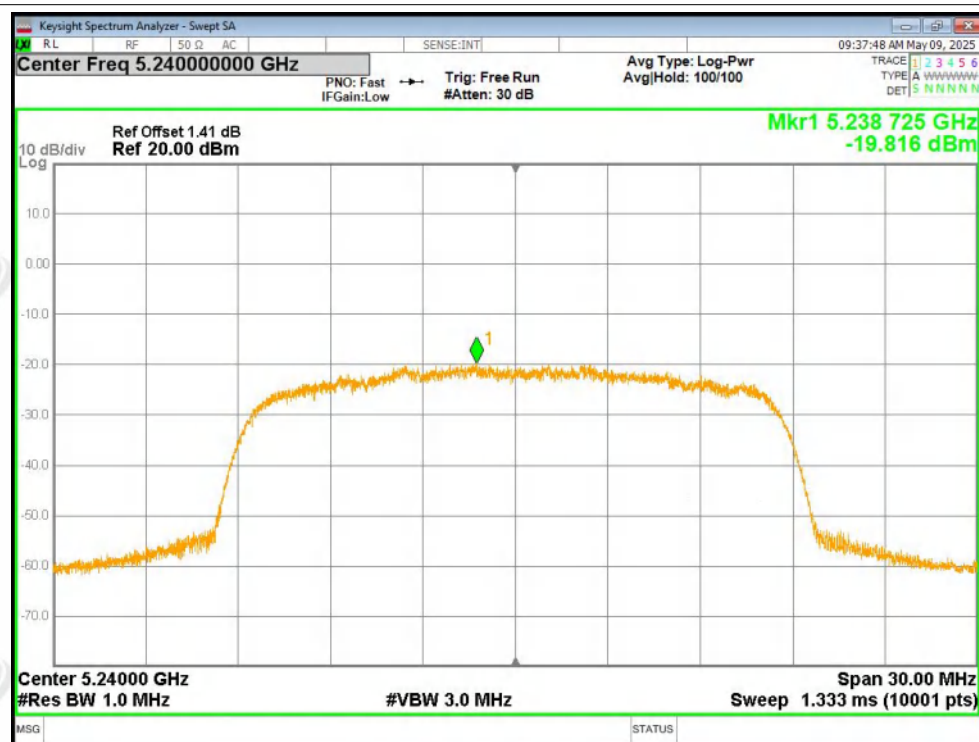


PSD NVNT ac20 5200MHz Ant1

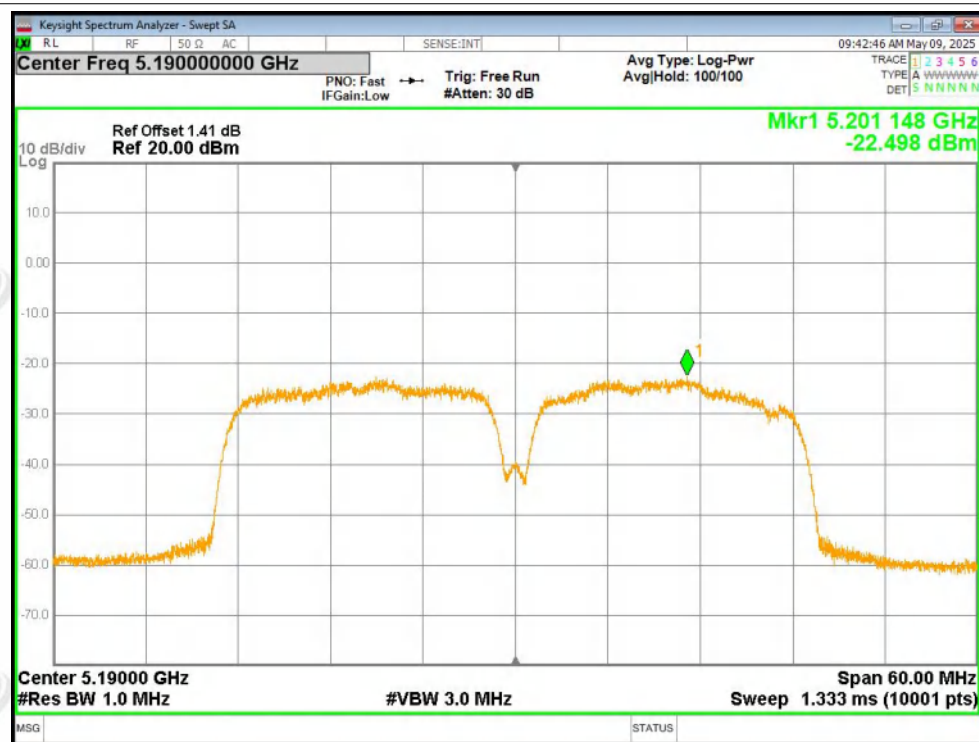


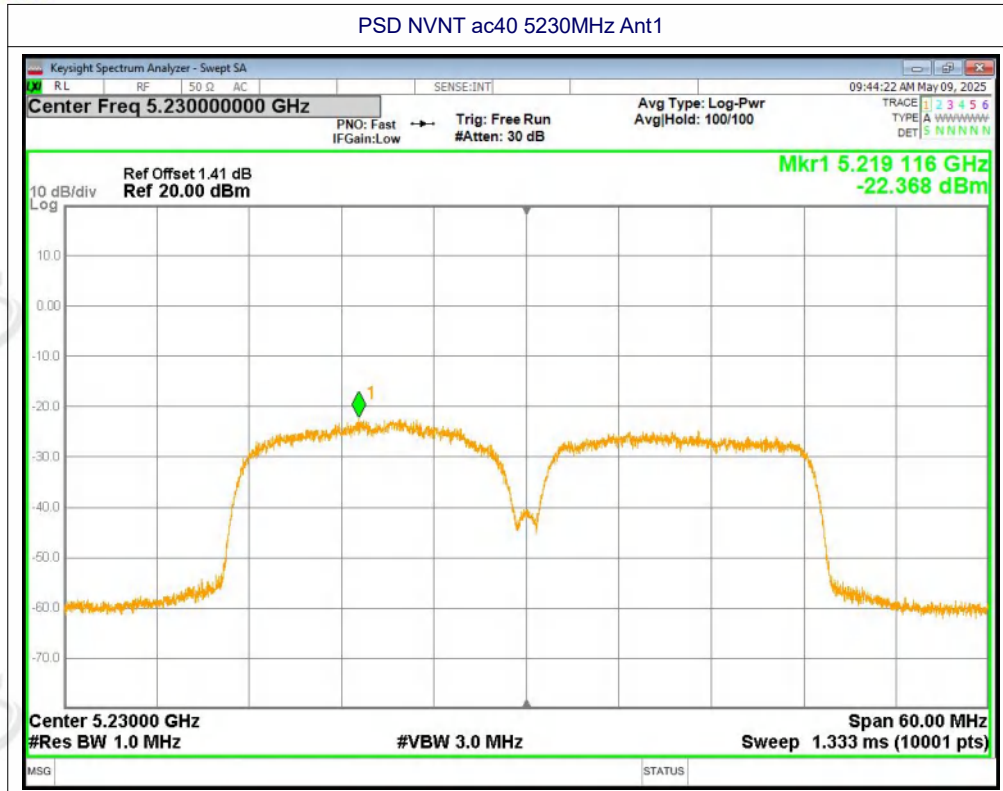


PSD NVNT ac20 5240MHz Ant1



PSD NVNT ac40 5190MHz Ant1







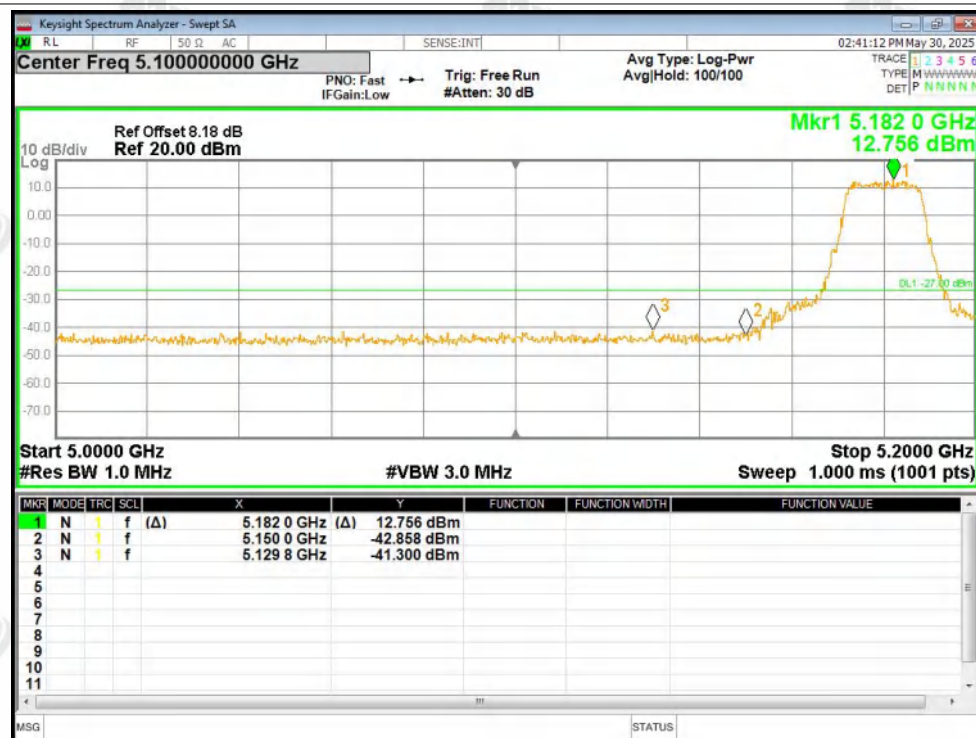
A.6 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-41.3	-27	Pass
NVNT	a	5240	Ant1	-41.07	-27	Pass
NVNT	n20	5180	Ant1	-40.36	-27	Pass
NVNT	n20	5240	Ant1	-40.55	-27	Pass
NVNT	n40	5190	Ant1	-32.8	-27	Pass
NVNT	n40	5230	Ant1	-40.95	-27	Pass
NVNT	ac20	5180	Ant1	-39.38	-27	Pass
NVNT	ac20	5240	Ant1	-40.39	-27	Pass
NVNT	ac40	5190	Ant1	-34.82	-27	Pass
NVNT	ac40	5230	Ant1	-41.23	-27	Pass

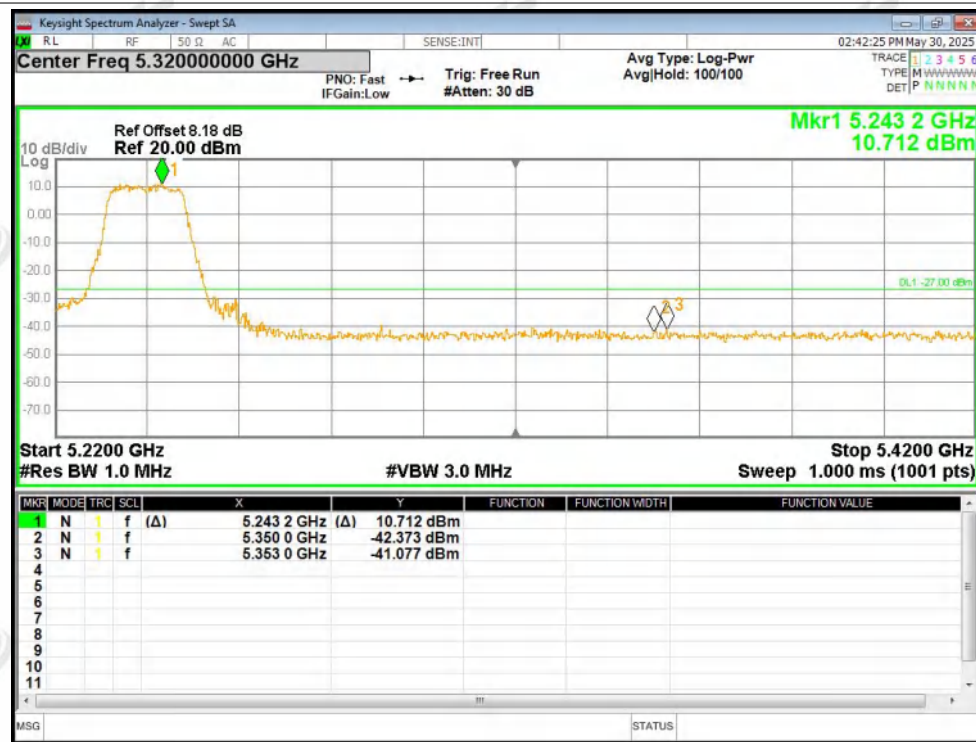
Note: During testing, the antenna gain has been added to the Ref offset.

Test Graphs

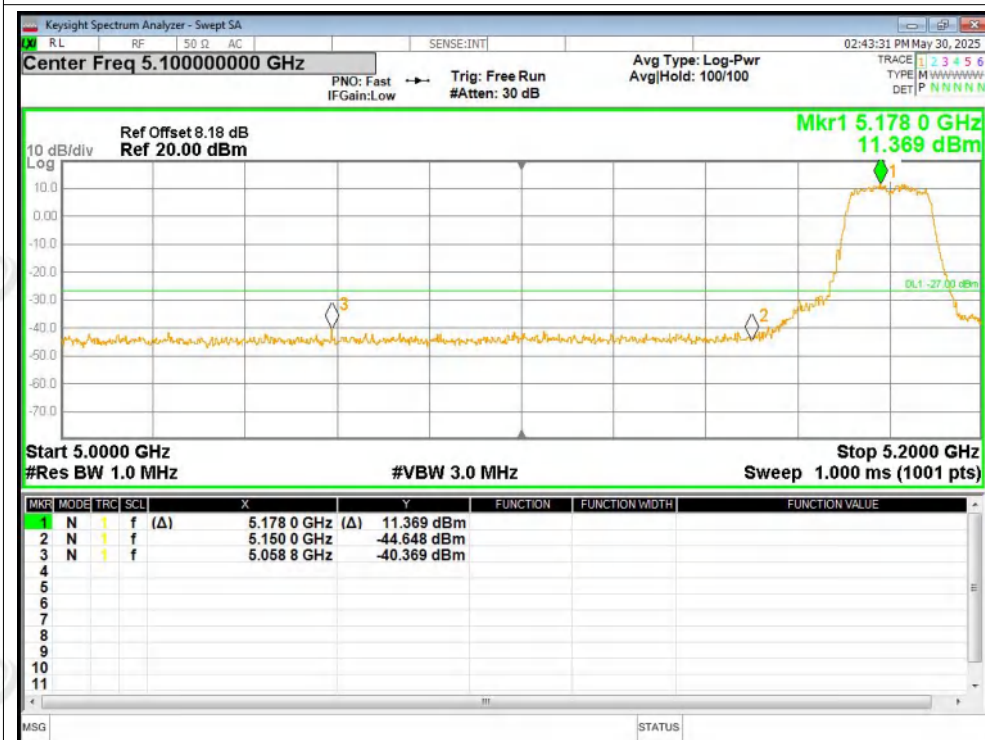
Band Edge NVNT a 5180MHz Low Ant1



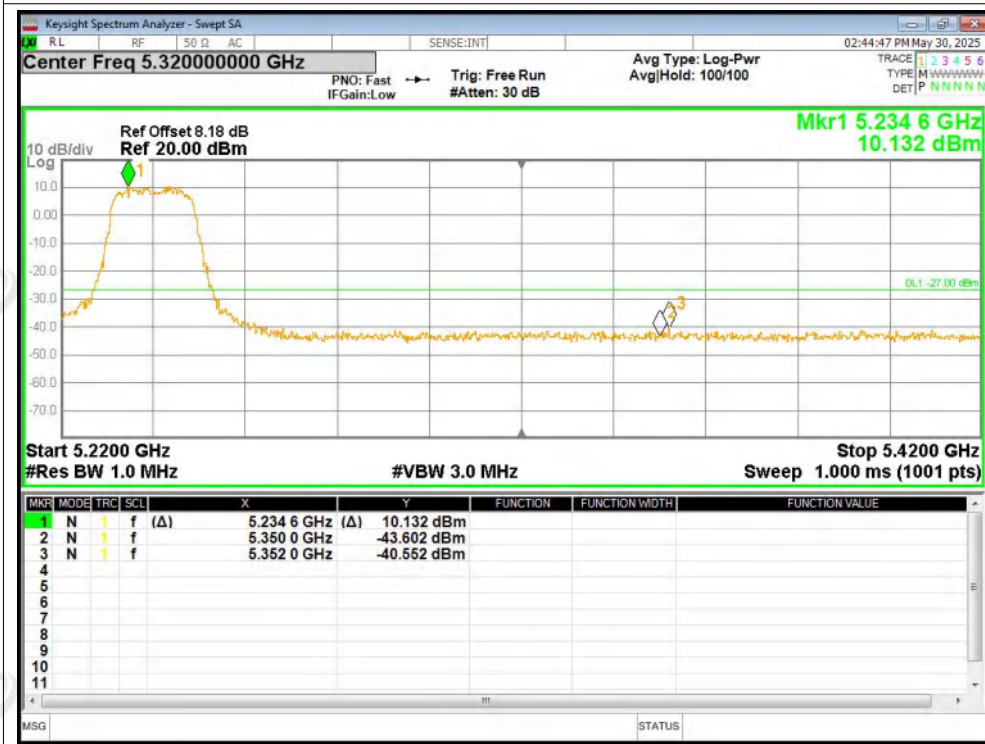
Band Edge NVNT a 5240MHz High Ant1



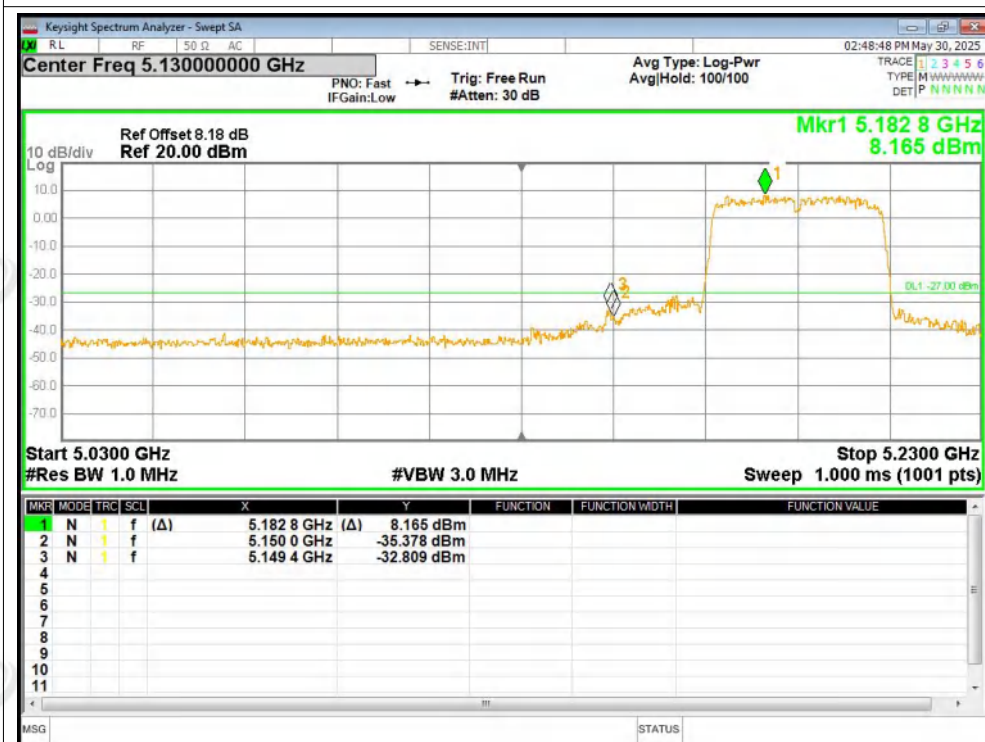
Band Edge NVNT n20 5180MHz Low Ant1



Band Edge NVNT n20 5240MHz High Ant1



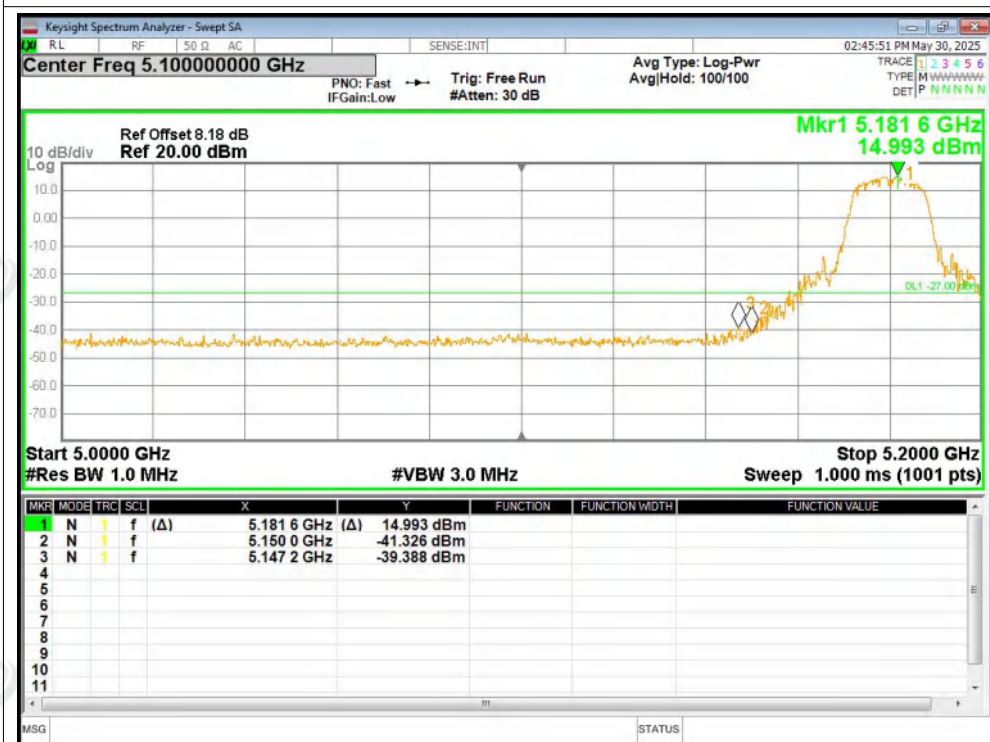
Band Edge NVNT n40 5190MHz Low Ant1



Band Edge NVNT n40 5230MHz High Ant1



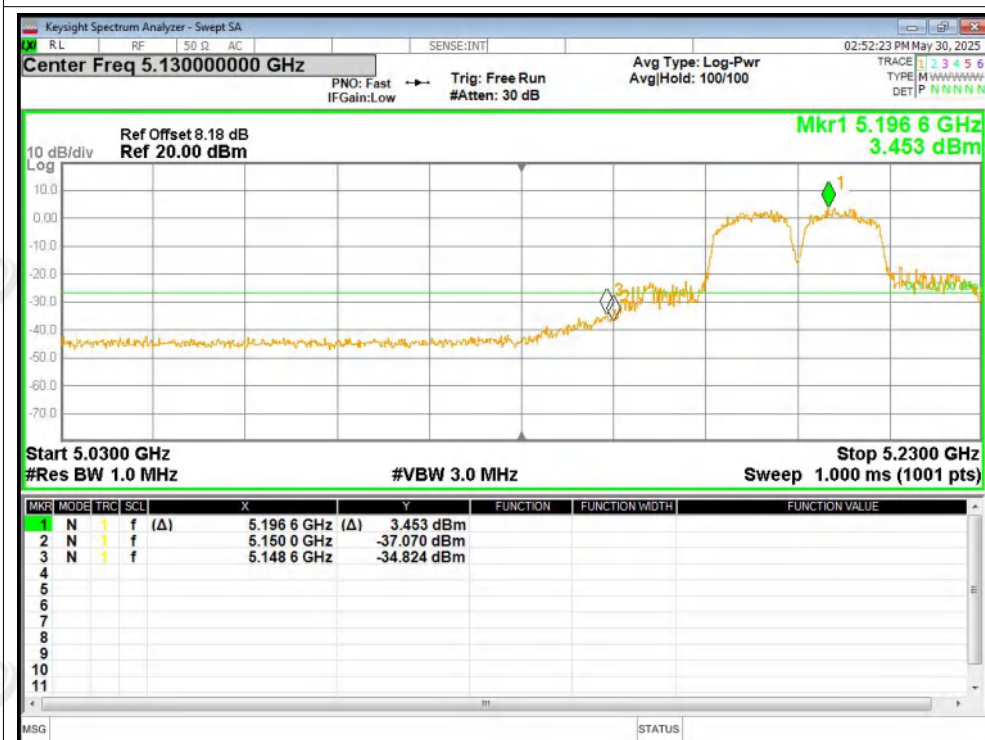
Band Edge NVNT ac20 5180MHz Low Ant1



Band Edge NVNT ac20 5240MHz High Ant1



Band Edge NVNT ac40 5190MHz Low Ant1



Band Edge NVNT ac40 5230MHz High Ant1



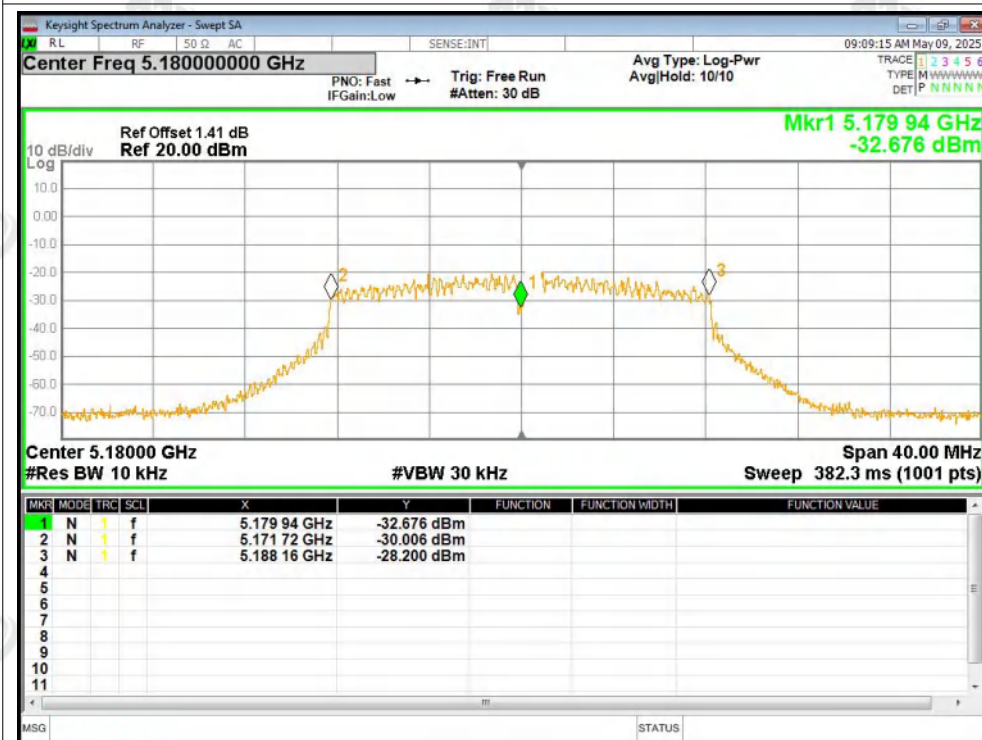


A.7 Frequency Stability

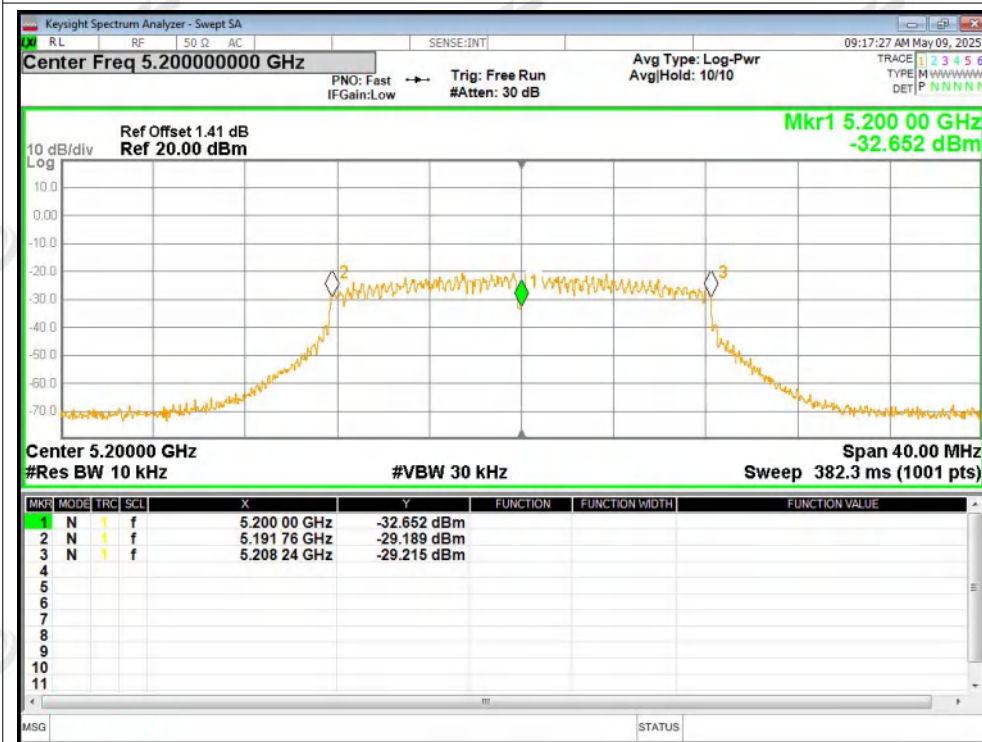
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	Ant1	5179.94	-60000	-11.58	25	Pass
NVNT	a	5200	Ant1	5200	0	0	25	Pass
NVNT	a	5240	Ant1	5239.94	-60000	-11.45	25	Pass
NVNT	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
NVNT	n20	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	n20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
NVNT	n40	5190	Ant1	5189.96	-40000	-7.71	25	Pass
NVNT	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass
NVNT	ac20	5180	Ant1	5180	0	0	25	Pass
NVNT	ac20	5200	Ant1	5199.96	-40000	-7.69	25	Pass
NVNT	ac20	5240	Ant1	5239.94	-60000	-11.45	25	Pass
NVNT	ac40	5190	Ant1	5189.96	-40000	-7.71	25	Pass
NVNT	ac40	5230	Ant1	5229.96	-40000	-7.65	25	Pass

Test Graphs

Freq. Stability NVNT a 5180MHz Ant1

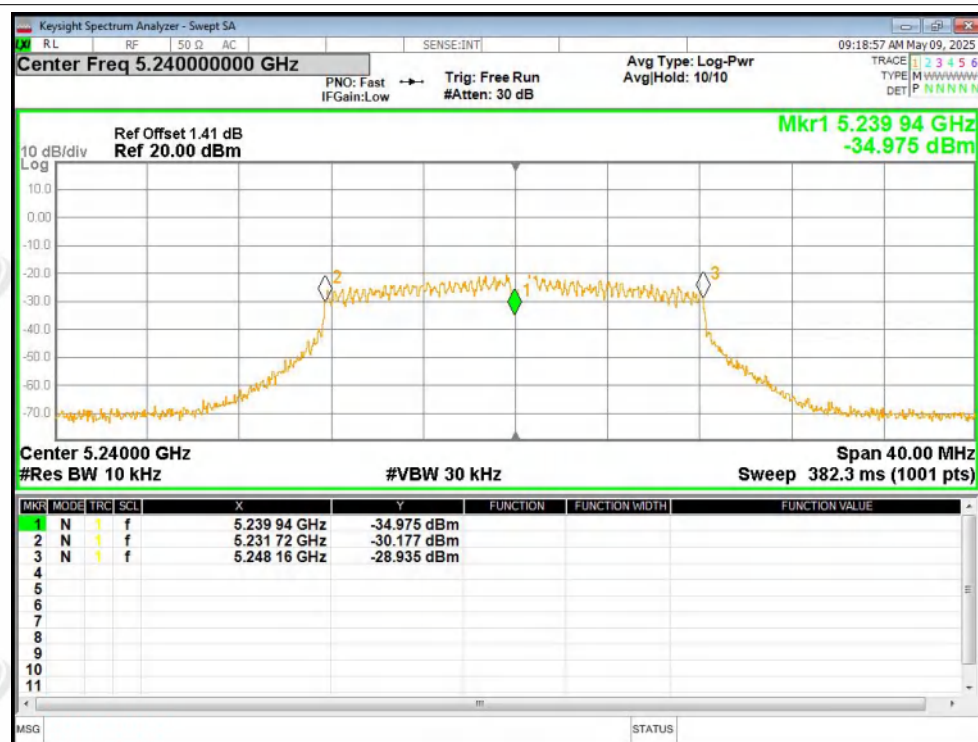


Freq. Stability NVNT a 5200MHz Ant1

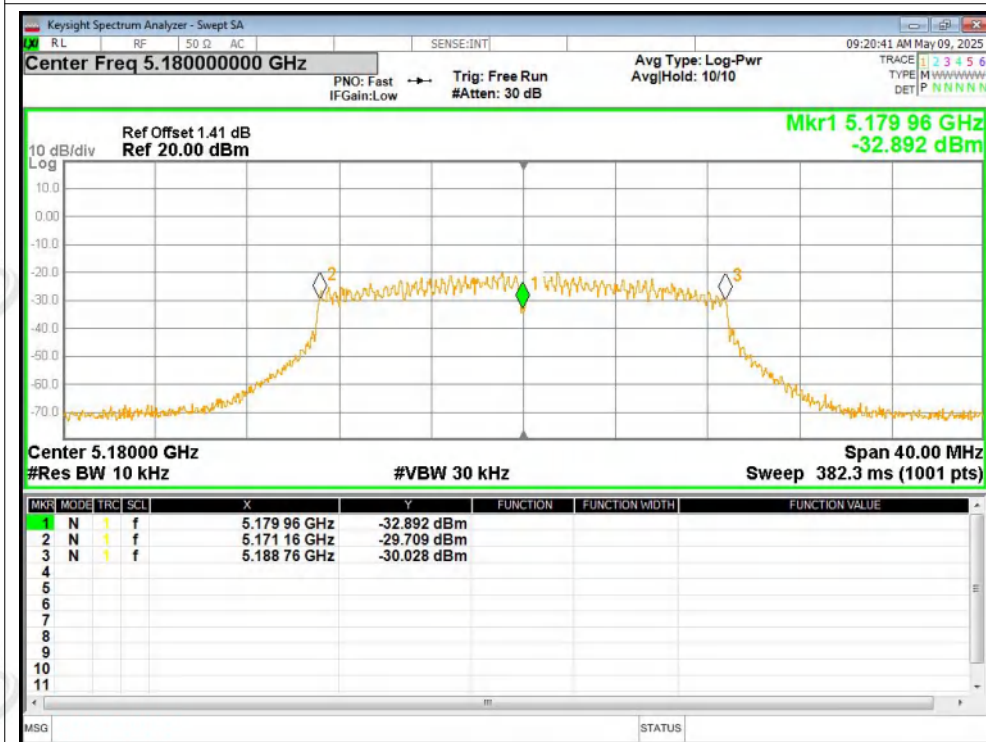




Freq. Stability NVNT a 5240MHz Ant1

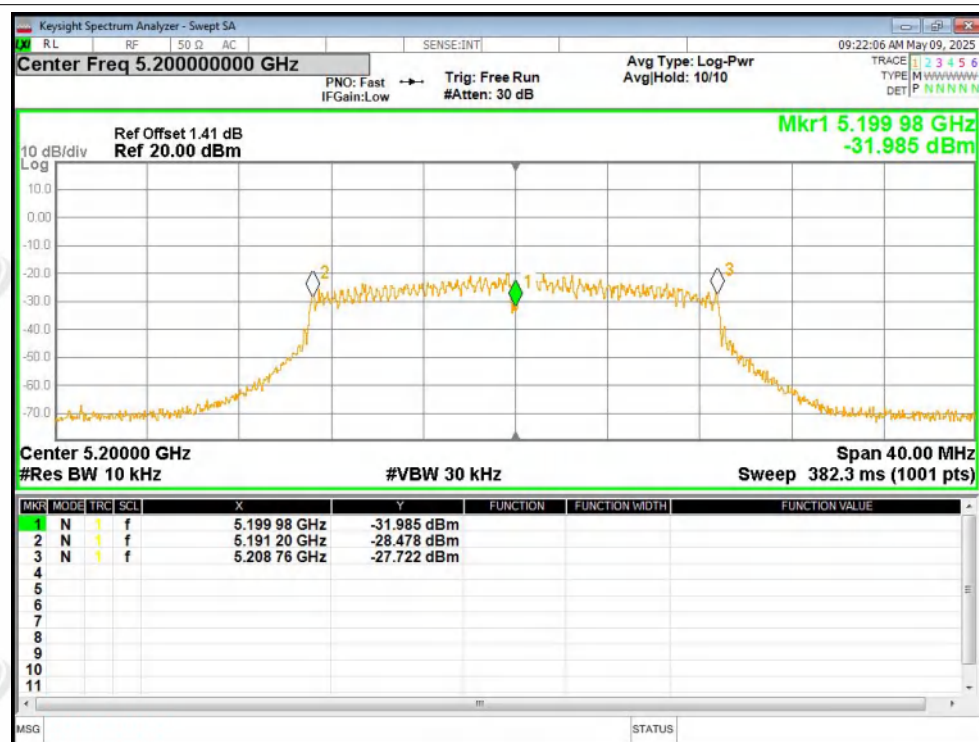


Freq. Stability NVNT n20 5180MHz Ant1

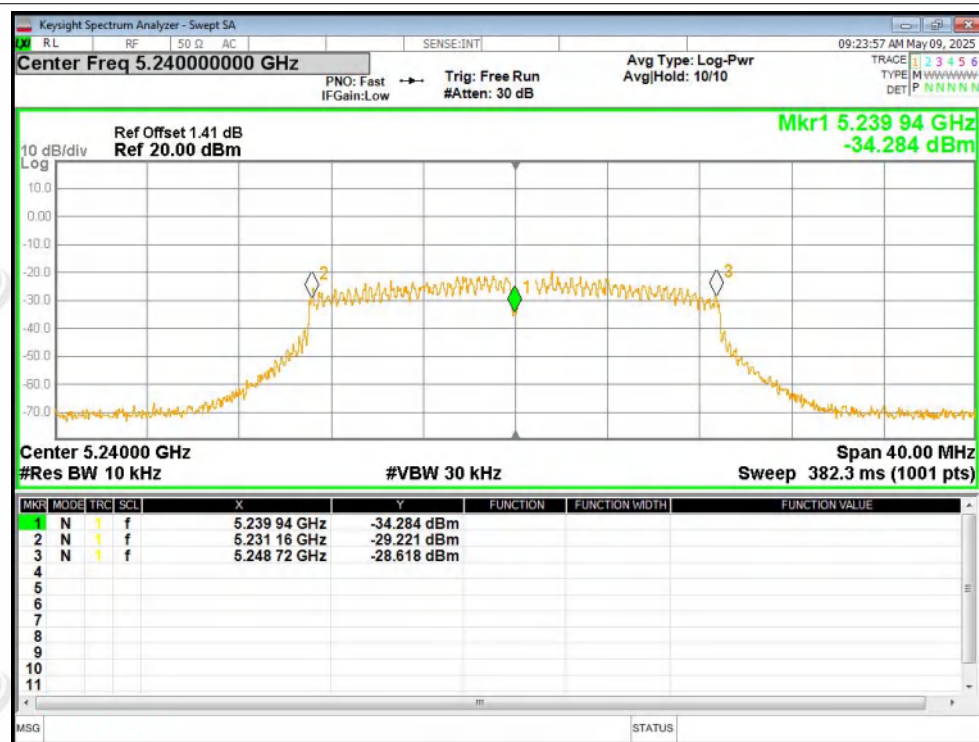




Freq. Stability NVNT n20 5200MHz Ant1

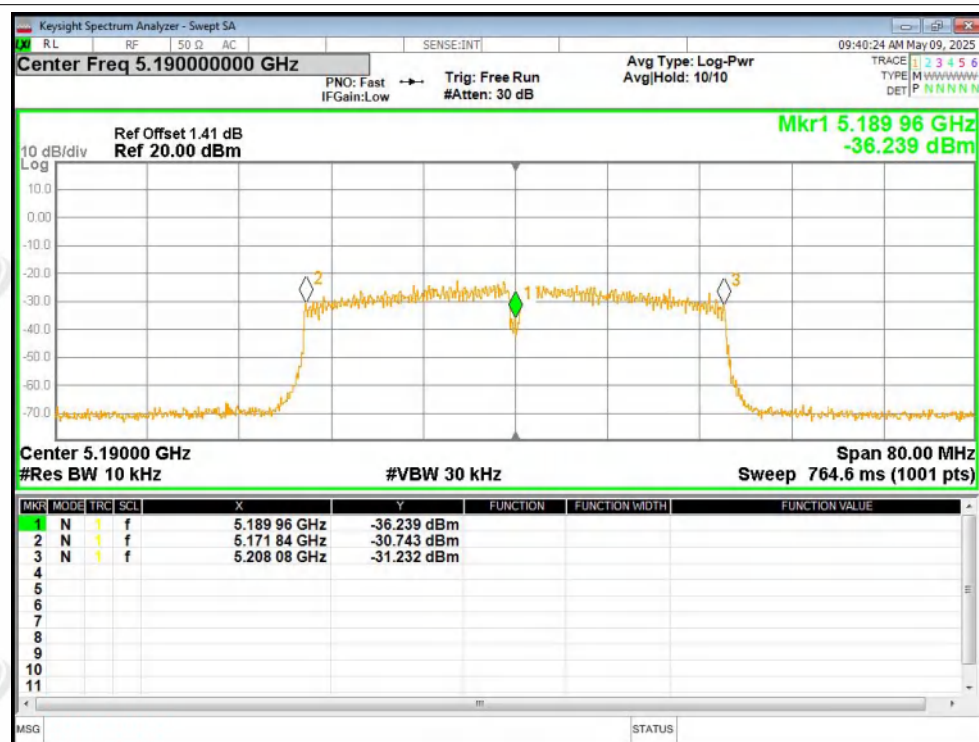


Freq. Stability NVNT n20 5240MHz Ant1

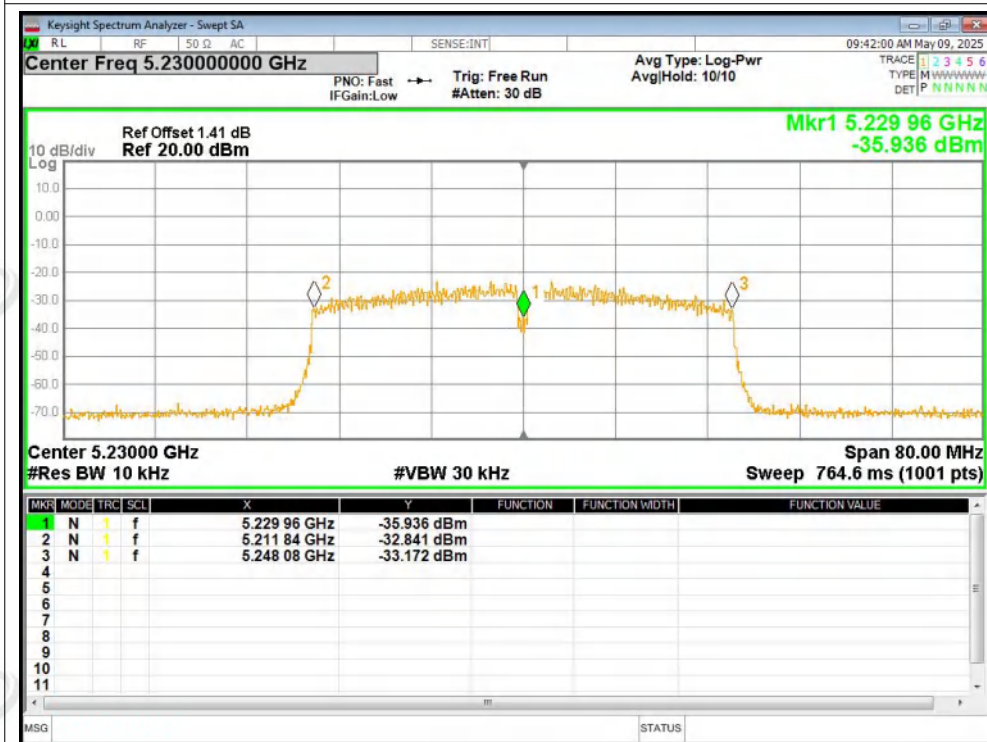




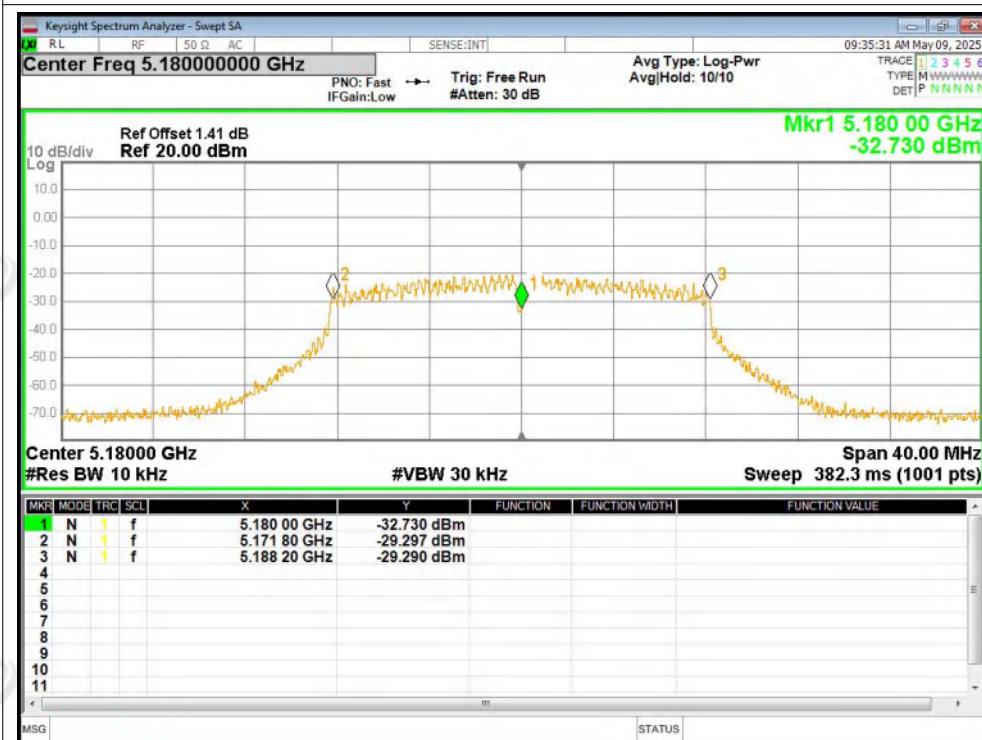
Freq. Stability NVNT n40 5190MHz Ant1



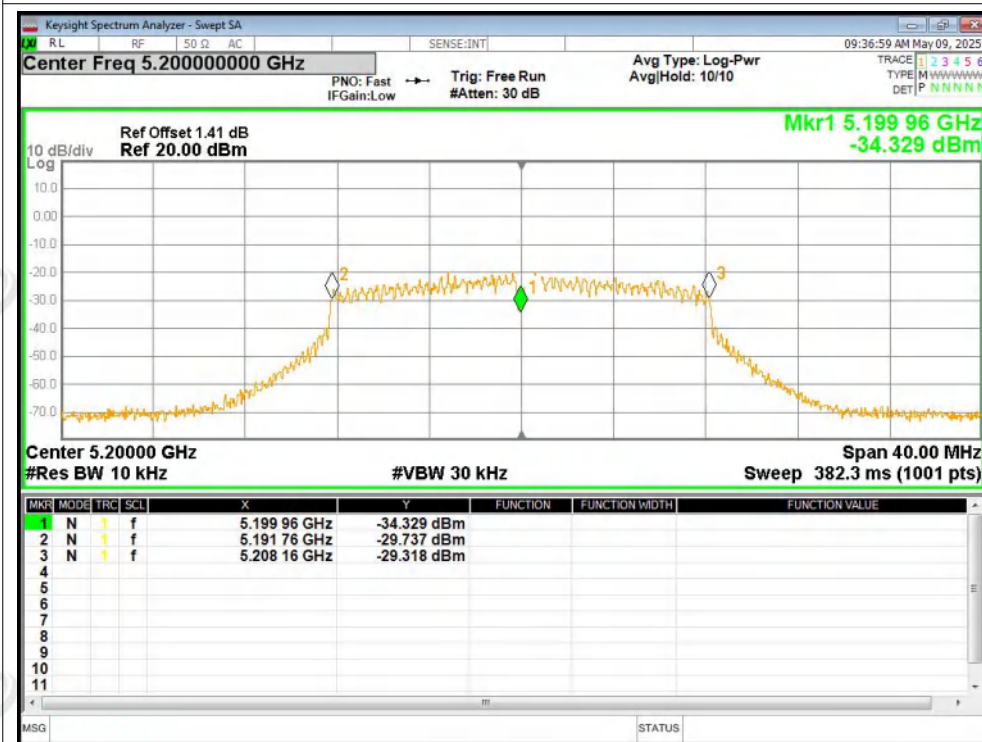
Freq. Stability NVNT n40 5230MHz Ant1



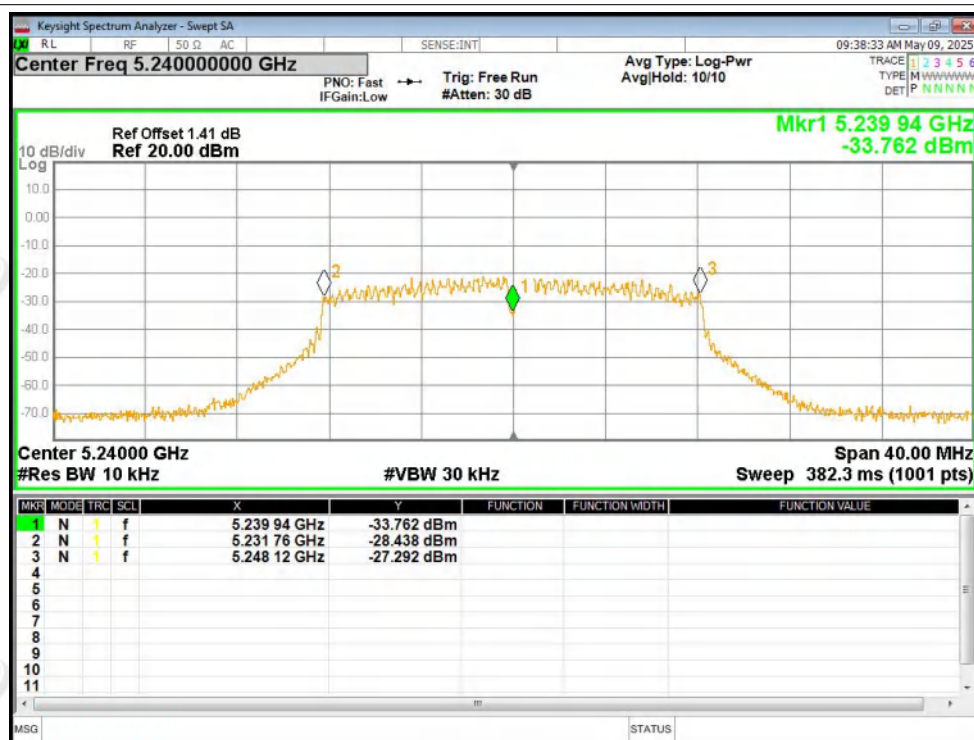
Freq. Stability NVNT ac20 5180MHz Ant1



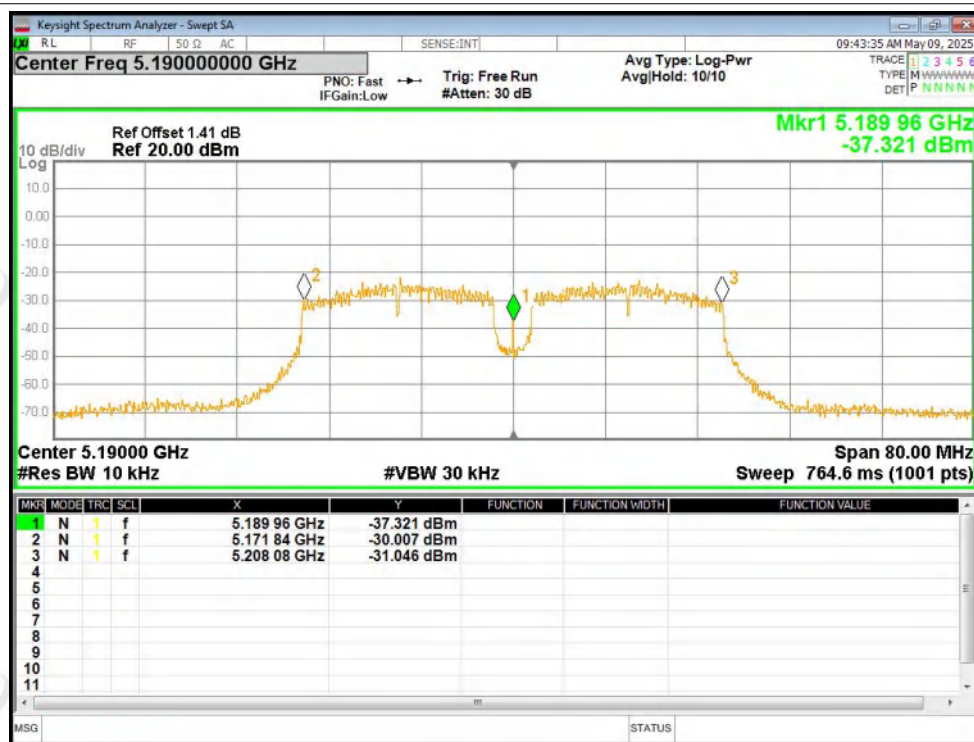
Freq. Stability NVNT ac20 5200MHz Ant1



Freq. Stability NVNT ac20 5240MHz Ant1

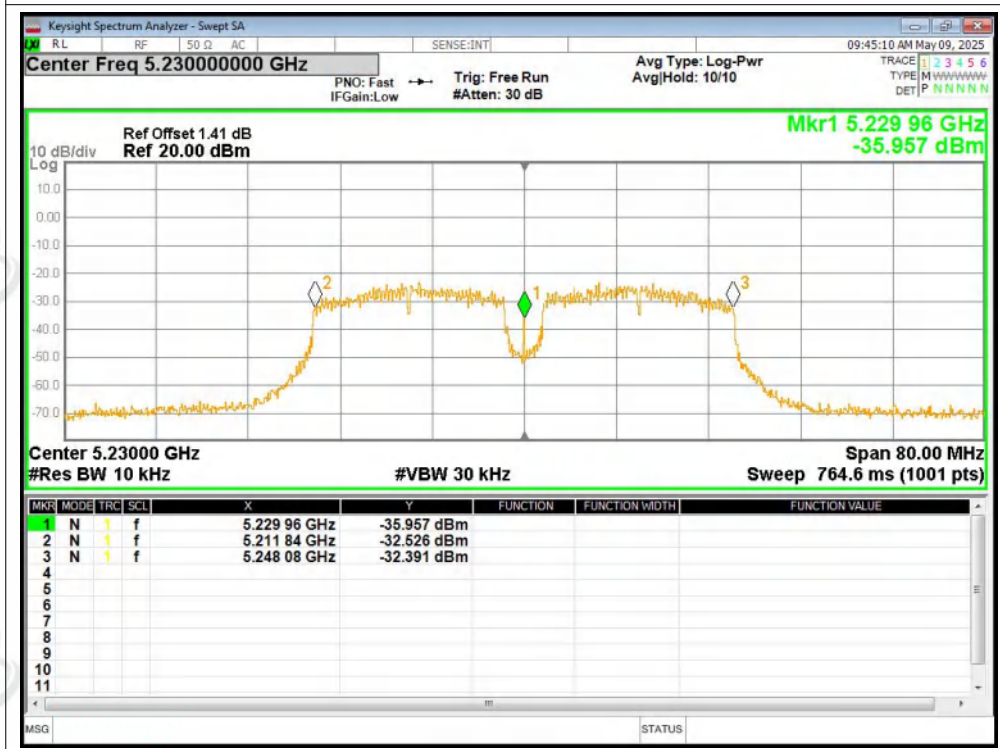


Freq. Stability NVNT ac40 5190MHz Ant1





Freq. Stability NVNT ac40 5230MHz Ant1





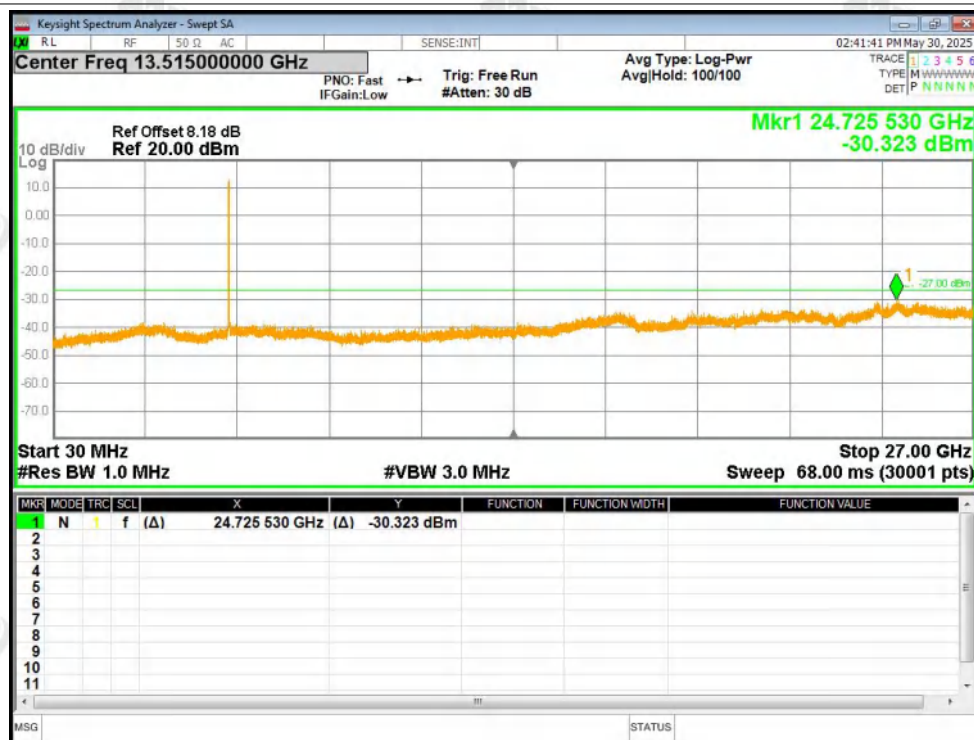
A.8 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-30.32	-27	Pass
NVNT	a	5200	Ant1	-29.82	-27	Pass
NVNT	a	5240	Ant1	-30.28	-27	Pass
NVNT	n20	5180	Ant1	-30.63	-27	Pass
NVNT	n20	5200	Ant1	-30.31	-27	Pass
NVNT	n20	5240	Ant1	-29.72	-27	Pass
NVNT	n40	5190	Ant1	-30.49	-27	Pass
NVNT	n40	5230	Ant1	-30.33	-27	Pass
NVNT	ac20	5180	Ant1	-30.77	-27	Pass
NVNT	ac20	5200	Ant1	-30.22	-27	Pass
NVNT	ac20	5240	Ant1	-30.97	-27	Pass
NVNT	ac40	5190	Ant1	-30.25	-27	Pass
NVNT	ac40	5230	Ant1	-30.21	-27	Pass

Note: During testing, the antenna gain has been added to the Ref offset.

Test Graphs

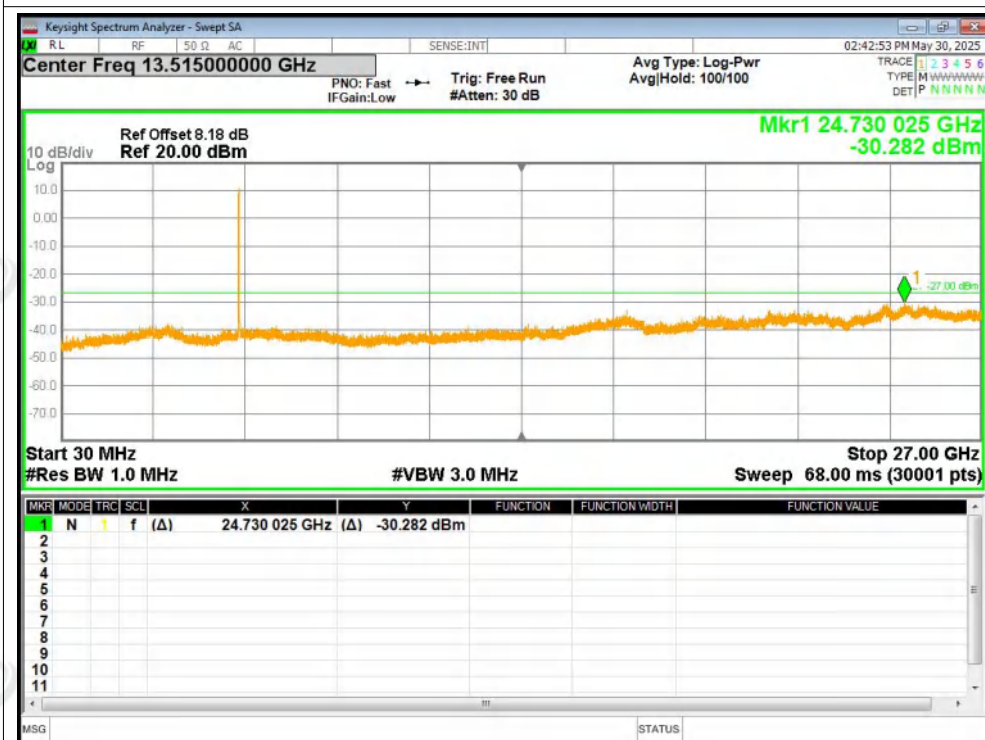
Tx. Spurious NVNT a 5180MHz Ant1 Emission



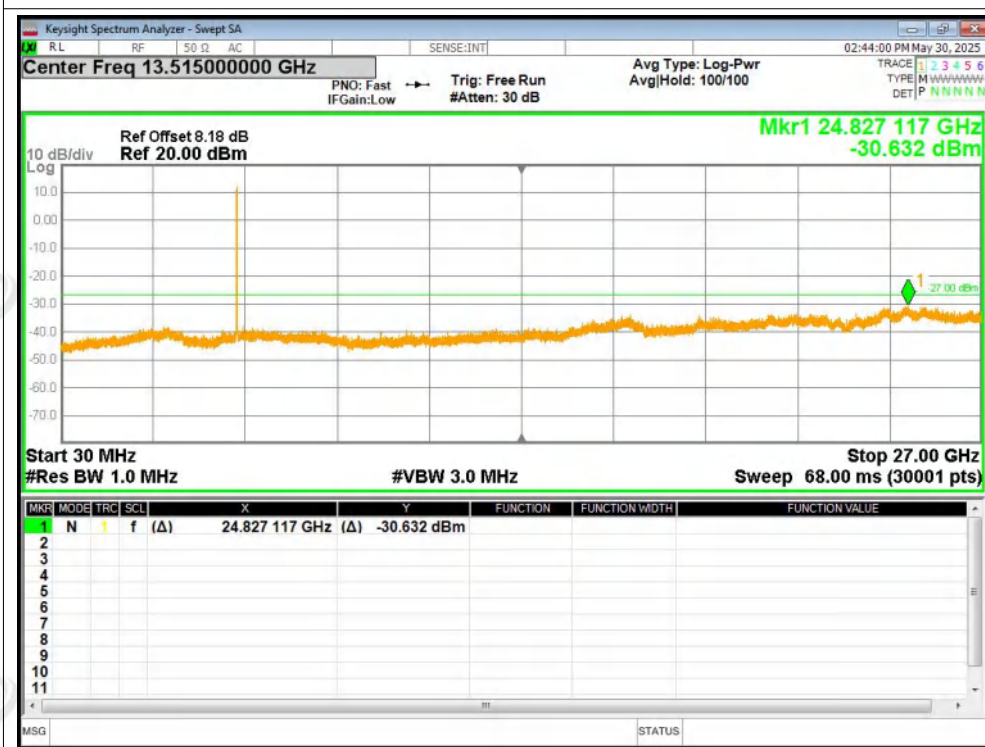
Tx. Spurious NVNT a 5200MHz Ant1 Emission



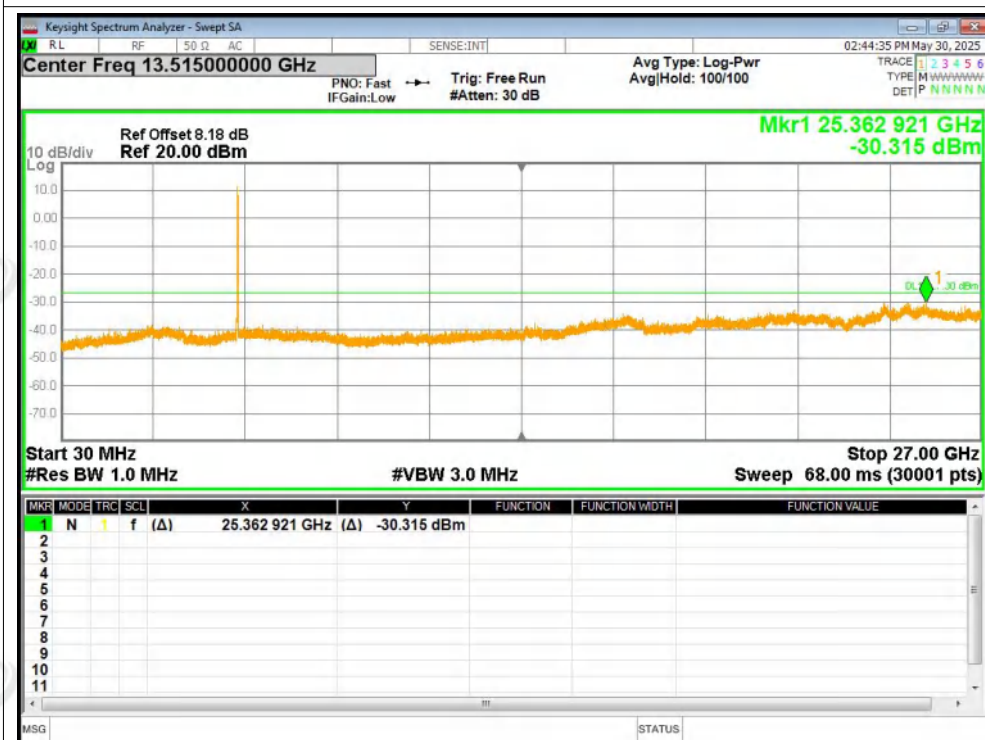
Tx. Spurious NVNT a 5240MHz Ant1 Emission



Tx. Spurious NVNT n20 5180MHz Ant1 Emission



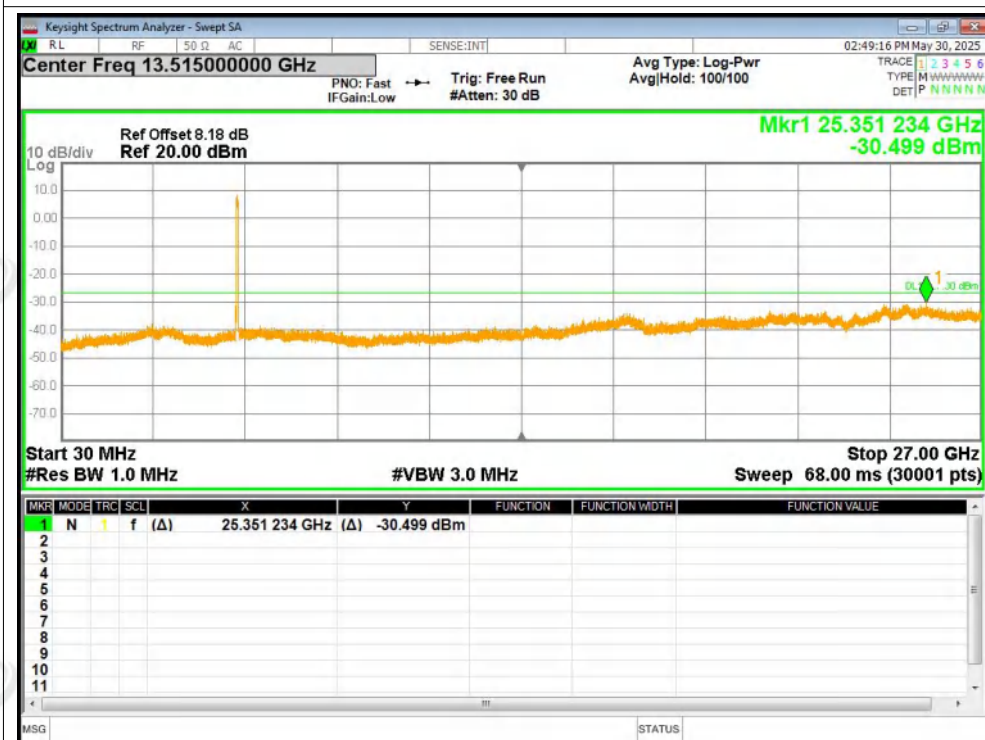
Tx. Spurious NVNT n20 5200MHz Ant1 Emission



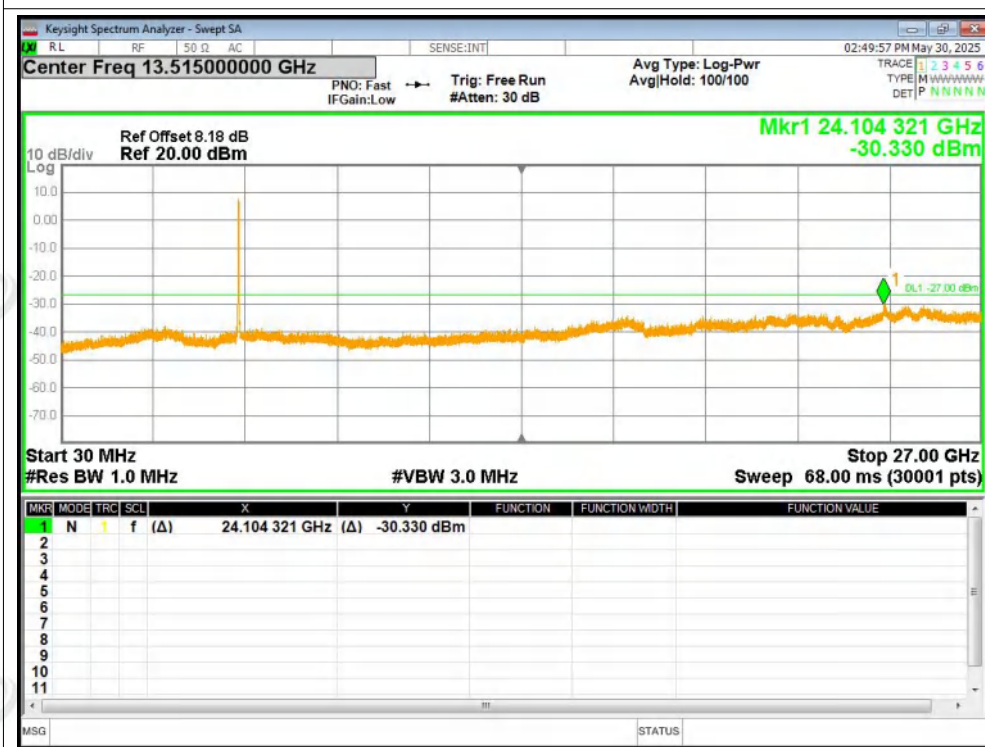
Tx. Spurious NVNT n20 5240MHz Ant1 Emission



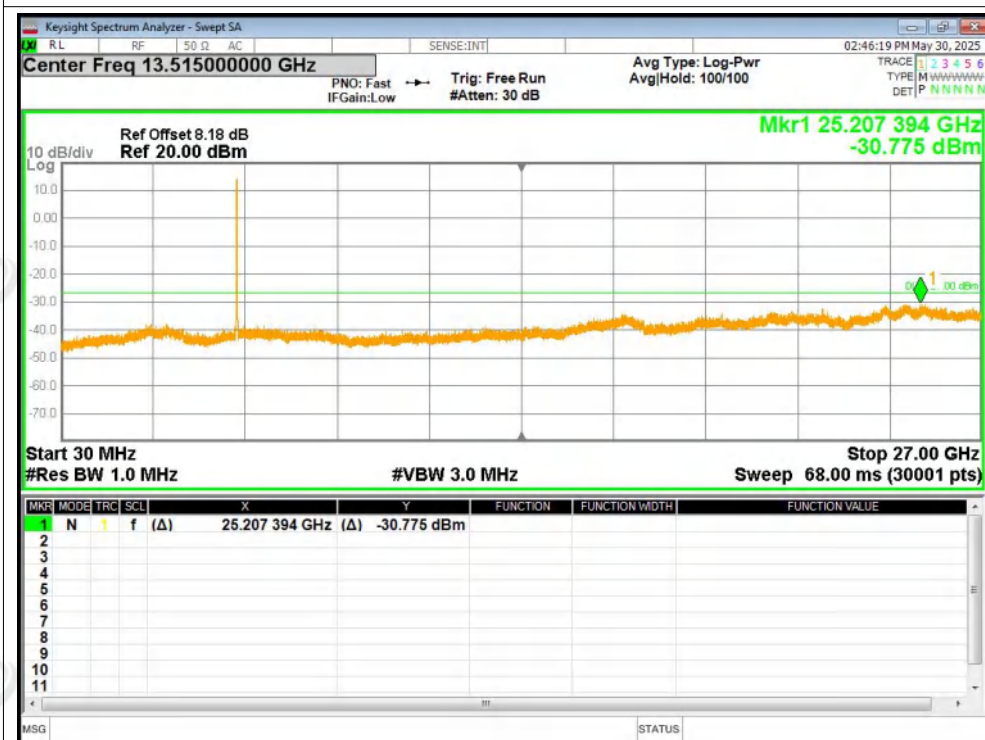
Tx. Spurious NVNT n40 5190MHz Ant1 Emission



Tx. Spurious NVNT n40 5230MHz Ant1 Emission



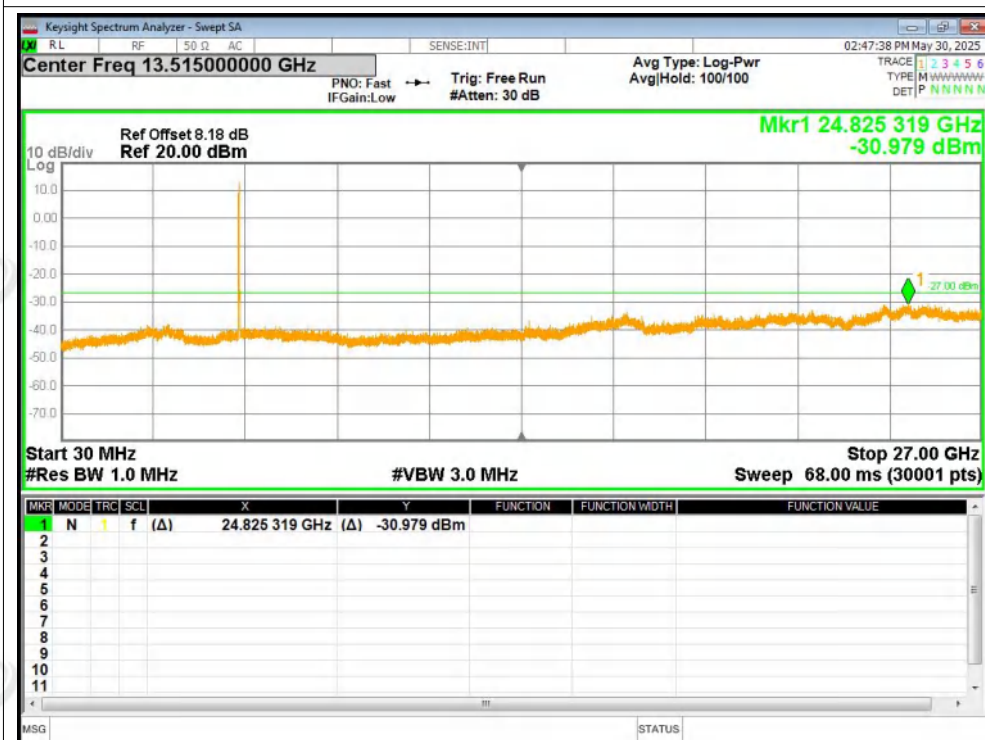
Tx. Spurious NVNT ac20 5180MHz Ant1 Emission



Tx. Spurious NVNT ac20 5200MHz Ant1 Emission



Tx. Spurious NVNT ac20 5240MHz Ant1 Emission



Tx. Spurious NVNT ac40 5190MHz Ant1 Emission



