

Appendix A for 5GWIFI Test Data

Product Name: Car Navigation Multimedia Receiver
Test Model: V10G2090C

Environmental Conditions

Temperature:	25.3℃
Relative Humidity:	52%
ATM Pressure:	101.0 kPa
Test Engineer:	Leon Li
Supervised by:	Baret Wu

5.2G WIFI DATA

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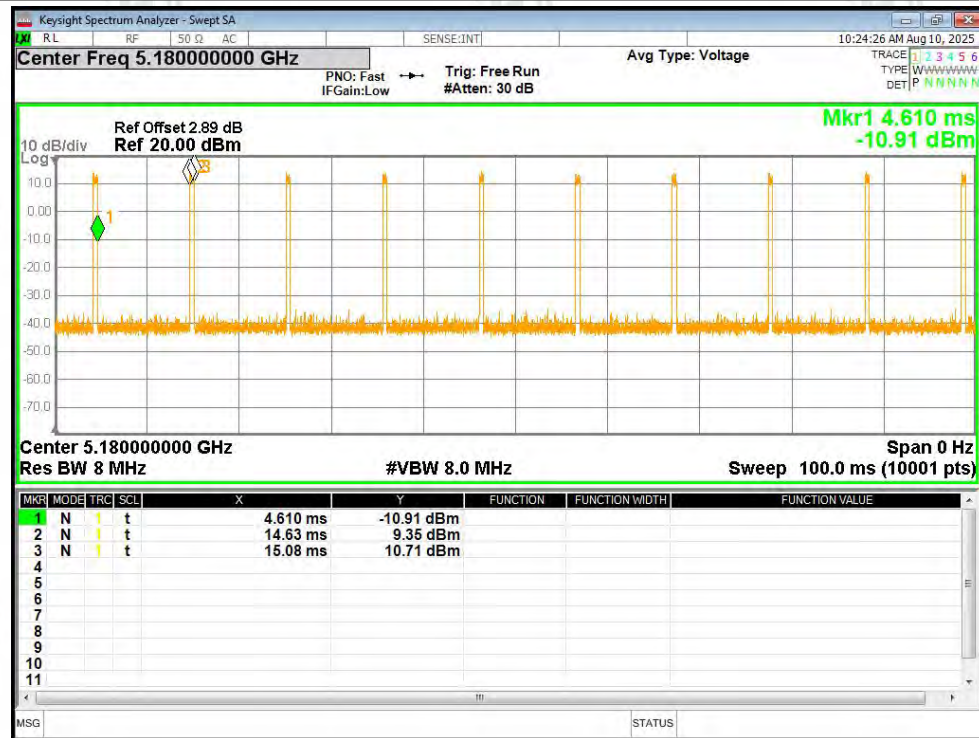
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Duty Cycle

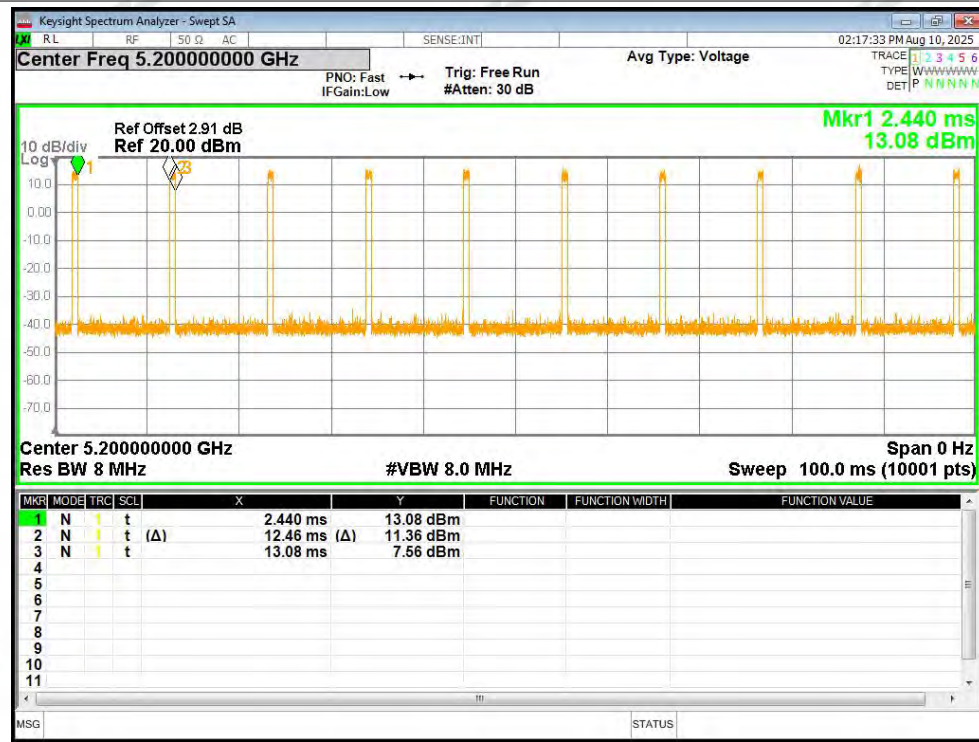
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	4.3	13.67	2.22
NVNT	a	5200	Ant1	5.83	12.34	1.61
NVNT	a	5240	Ant1	5.83	12.34	1.61
NVNT	n20	5180	Ant1	5.02	12.99	1.89
NVNT	n20	5200	Ant1	5.02	12.99	1.89
NVNT	n20	5240	Ant1	5.02	12.99	1.89
NVNT	n40	5190	Ant1	2.72	15.65	3.57
NVNT	n40	5230	Ant1	2.72	15.65	3.57
NVNT	ac20	5180	Ant1	4.3	13.67	2.22
NVNT	ac20	5200	Ant1	4.39	13.58	2.17
NVNT	ac20	5240	Ant1	4.3	13.67	2.22
NVNT	ac40	5190	Ant1	2.15	16.68	4.55
NVNT	ac40	5230	Ant1	2.15	16.68	4.55

Test Graphs

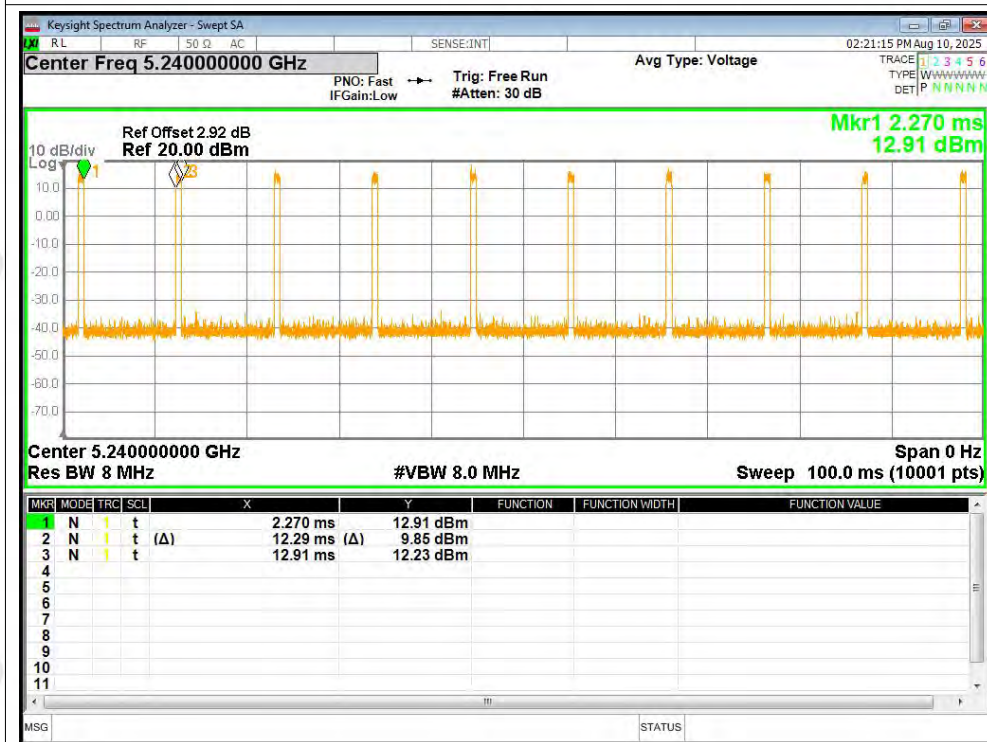
Duty Cycle NVNT a 5180MHz Ant1



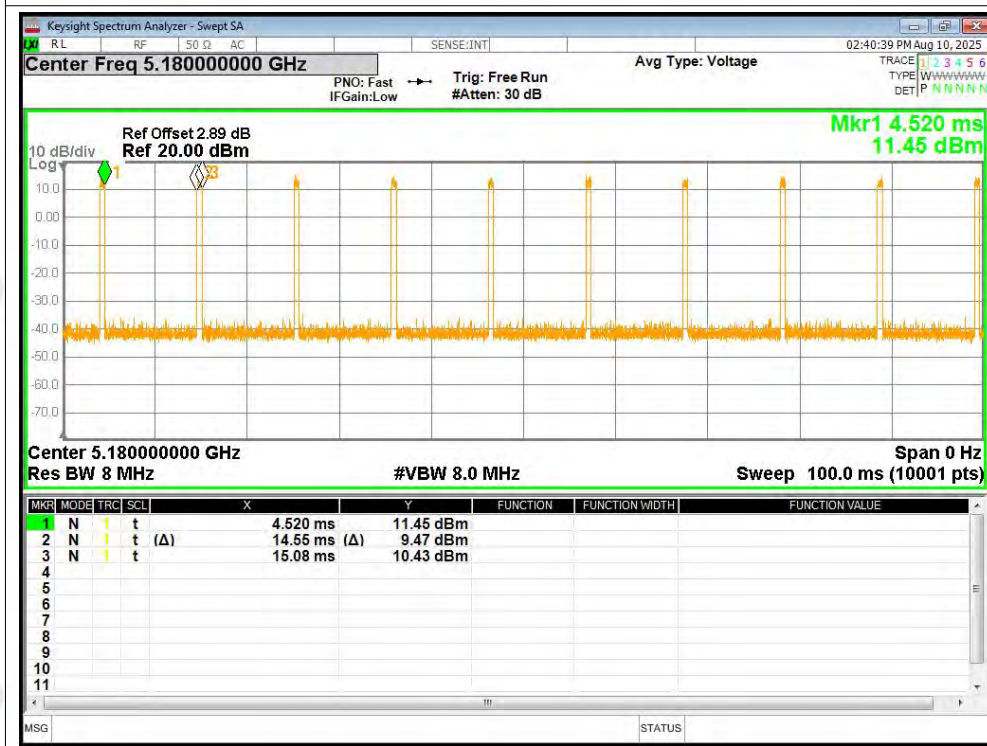
Duty Cycle NVNT a 5200MHz Ant1



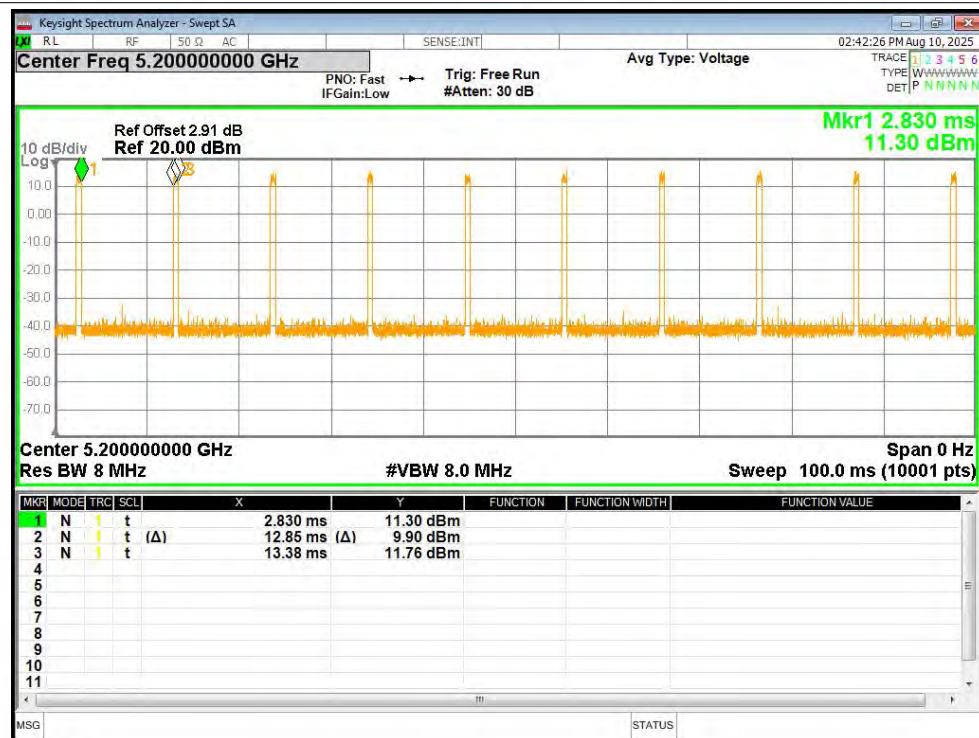
Duty Cycle NVNT a 5240MHz Ant1



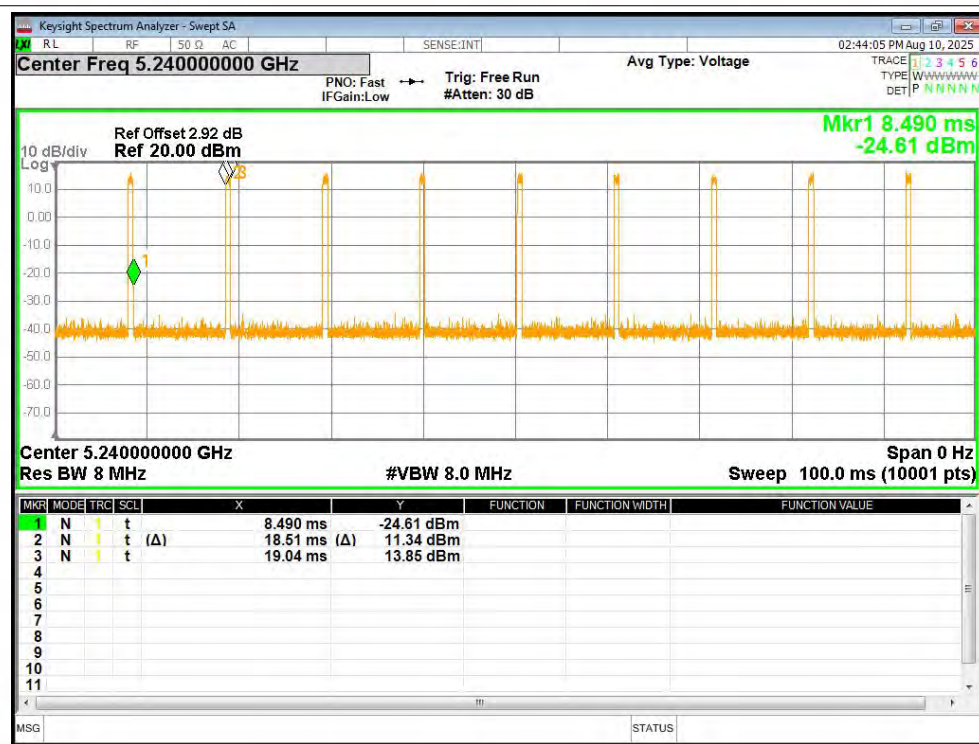
Duty Cycle NVNT n20 5180MHz Ant1



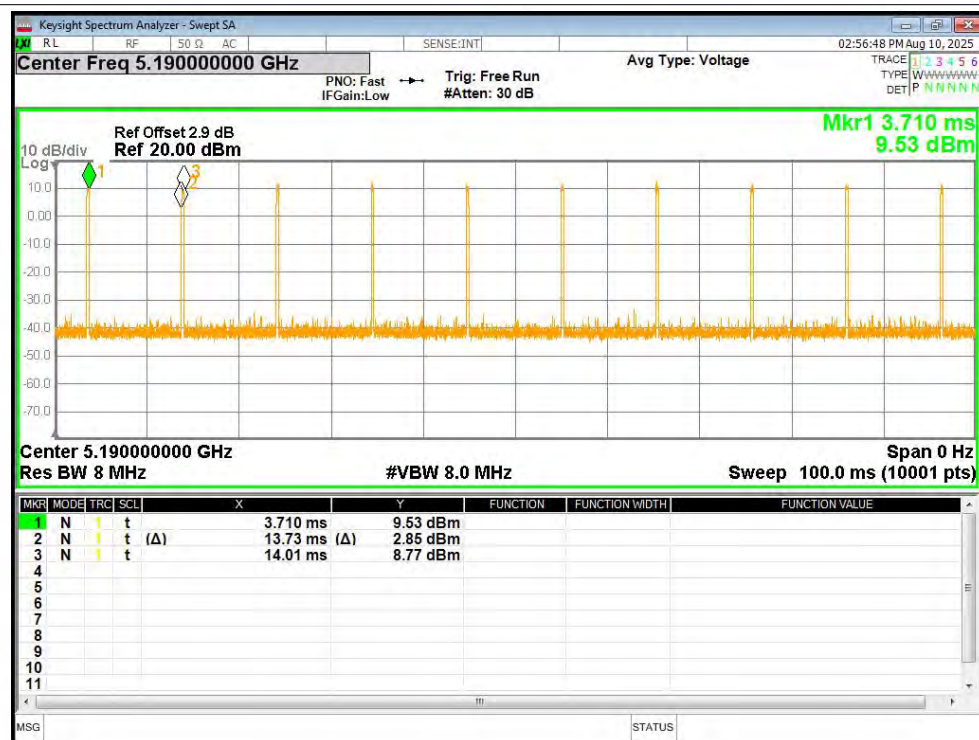
Duty Cycle NVNT n20 5200MHz Ant1



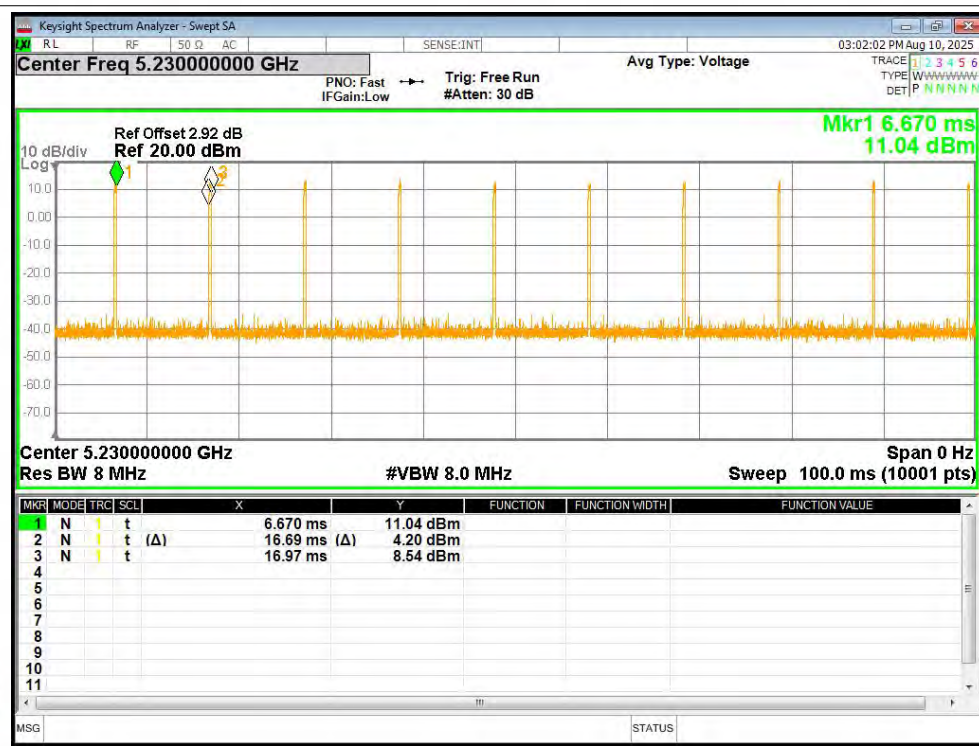
Duty Cycle NVNT n20 5240MHz Ant1



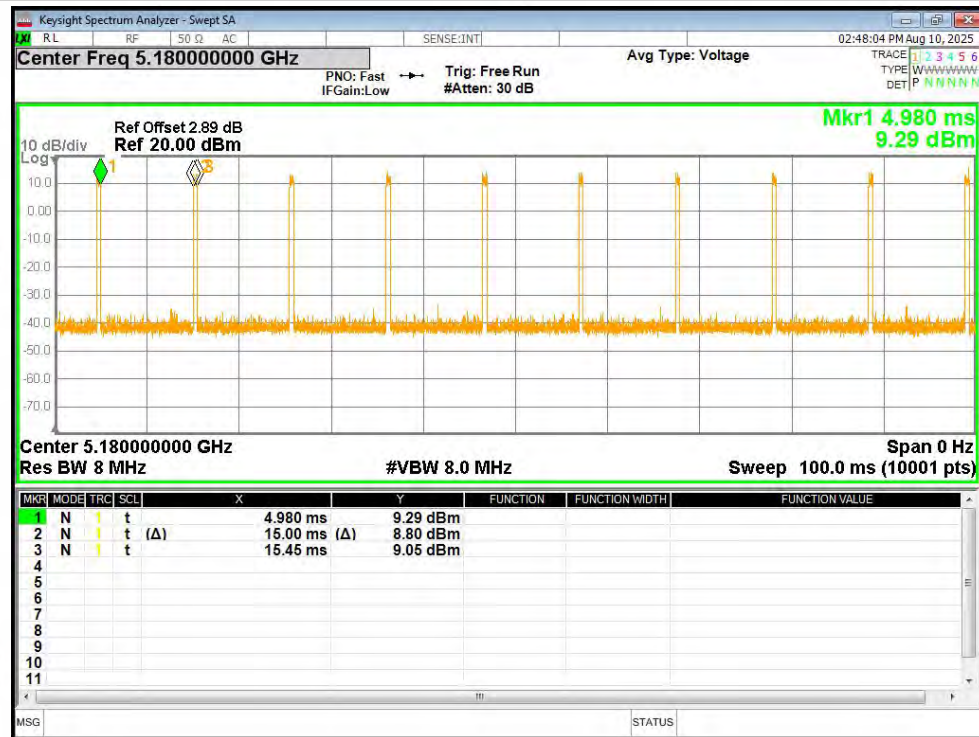
Duty Cycle NVNT n40 5190MHz Ant1



Duty Cycle NVNT n40 5230MHz Ant1



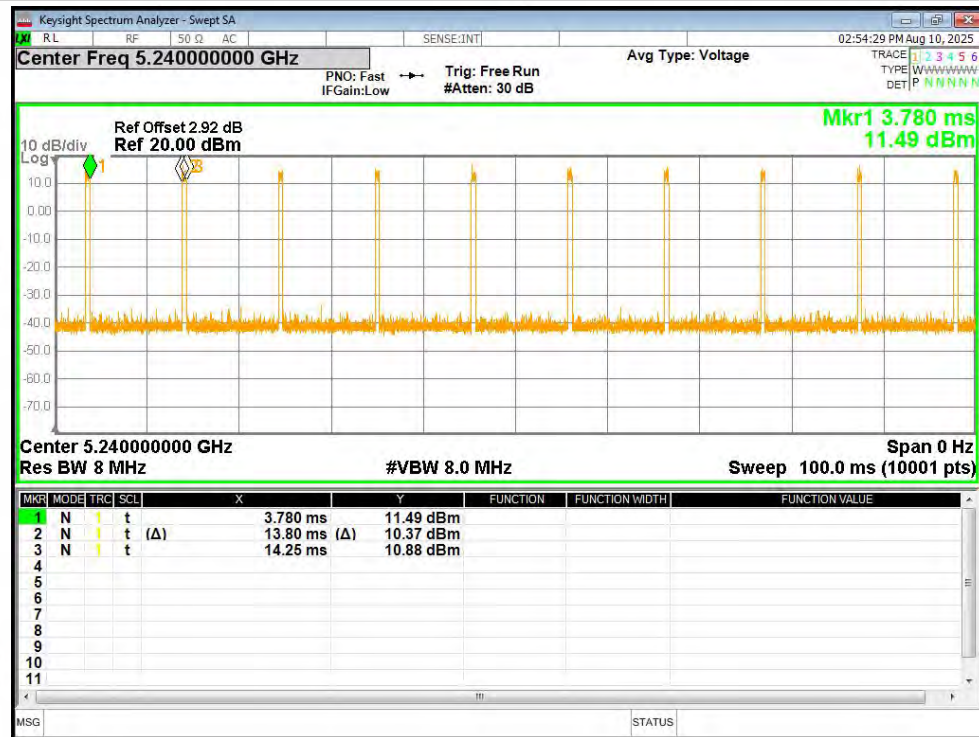
Duty Cycle NVNT ac20 5180MHz Ant1



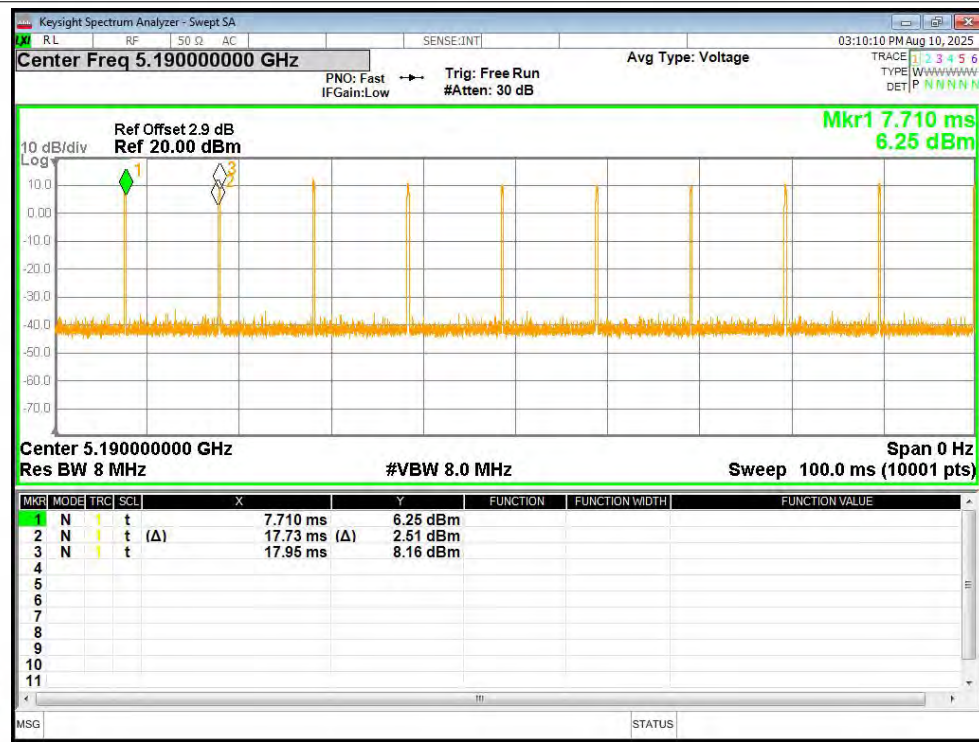
Duty Cycle NVNT ac20 5200MHz Ant1

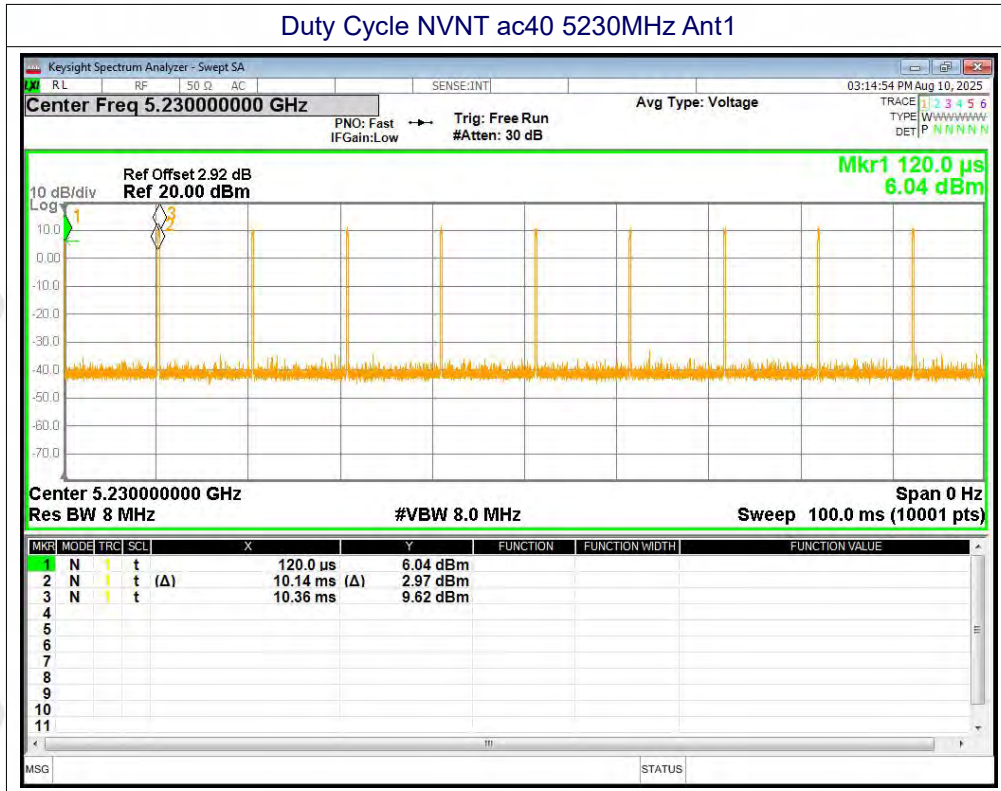


Duty Cycle NVNT ac20 5240MHz Ant1



Duty Cycle NVNT ac40 5190MHz Ant1





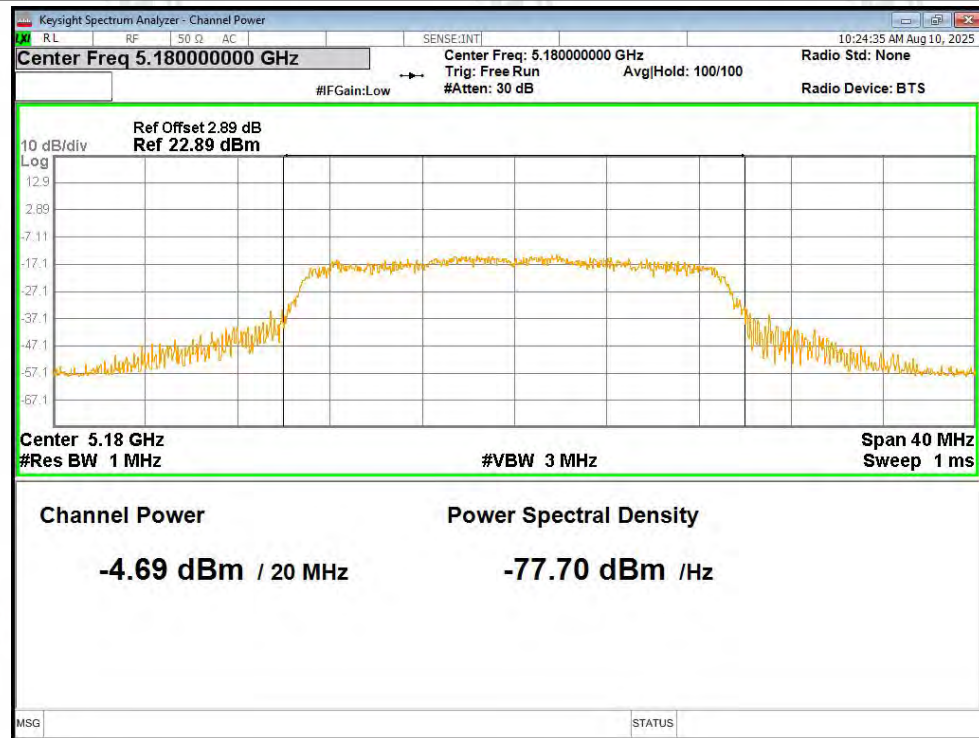


Maximum Conducted Output Power

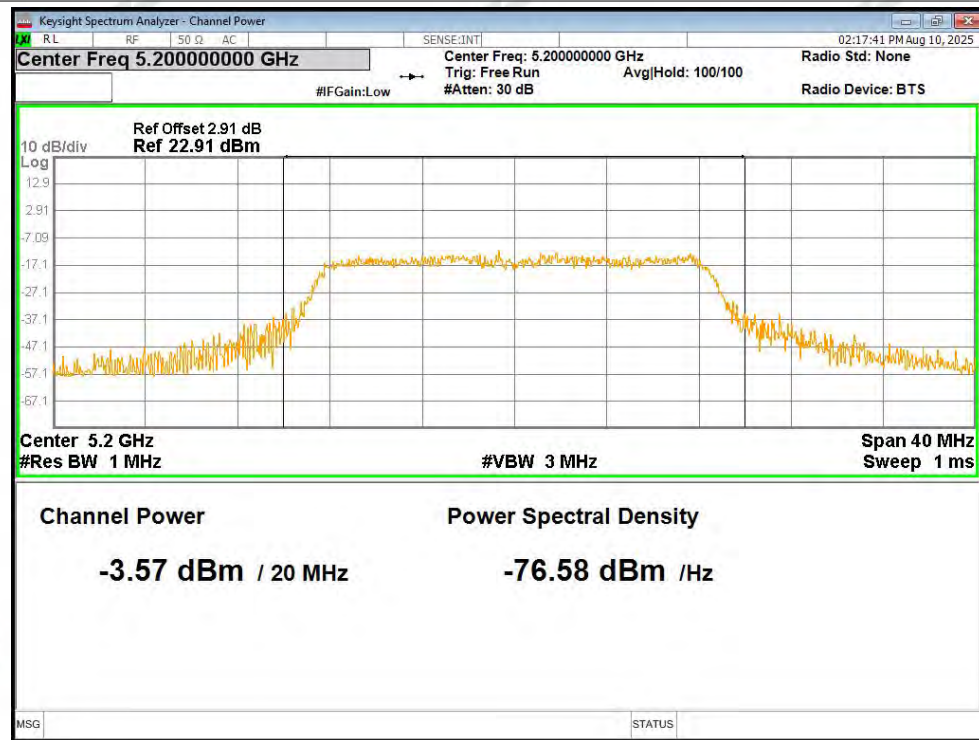
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	-4.69	13.67	8.98	24	Pass
NVNT	a	5200	Ant1	-3.57	12.34	8.77	24	Pass
NVNT	a	5240	Ant1	-6.27	12.34	6.07	24	Pass
NVNT	n20	5180	Ant1	-3.39	12.99	9.6	24	Pass
NVNT	n20	5200	Ant1	-5.36	12.99	7.63	24	Pass
NVNT	n20	5240	Ant1	-2.74	12.99	10.25	24	Pass
NVNT	n40	5190	Ant1	-6.61	15.65	9.04	24	Pass
NVNT	n40	5230	Ant1	-5.82	15.65	9.83	24	Pass
NVNT	ac20	5180	Ant1	-9.18	13.67	4.49	24	Pass
NVNT	ac20	5200	Ant1	-9.16	13.58	4.42	24	Pass
NVNT	ac20	5240	Ant1	-3.68	13.67	9.99	24	Pass
NVNT	ac40	5190	Ant1	-6.16	16.68	10.52	24	Pass
NVNT	ac40	5230	Ant1	-6.19	16.68	10.49	24	Pass

Test Graphs

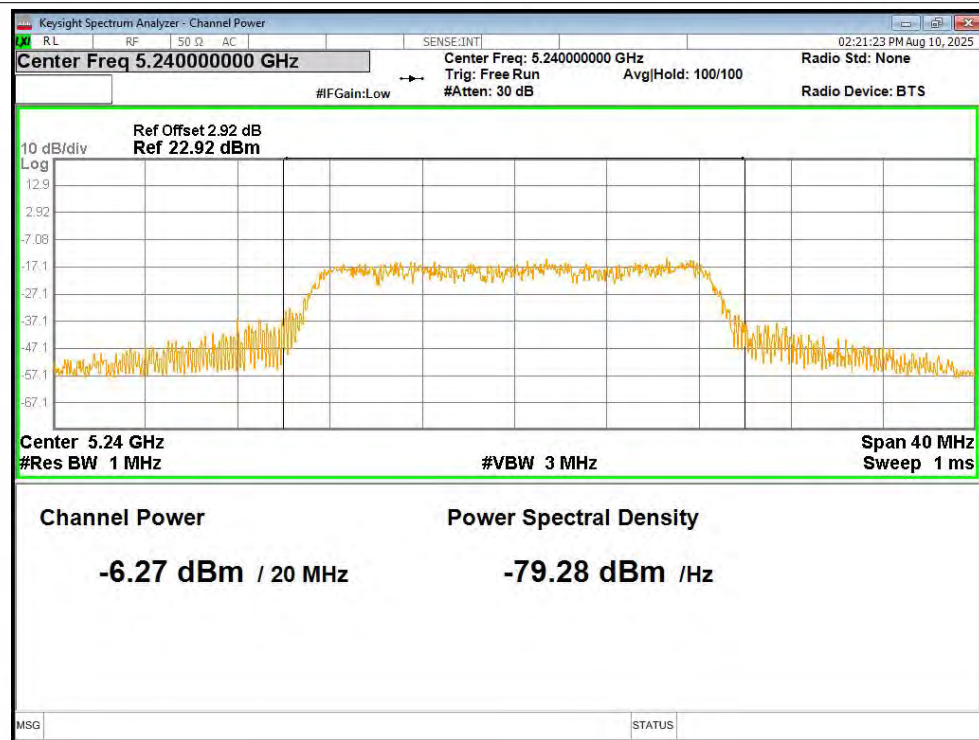
Power NVNT a 5180MHz Ant1



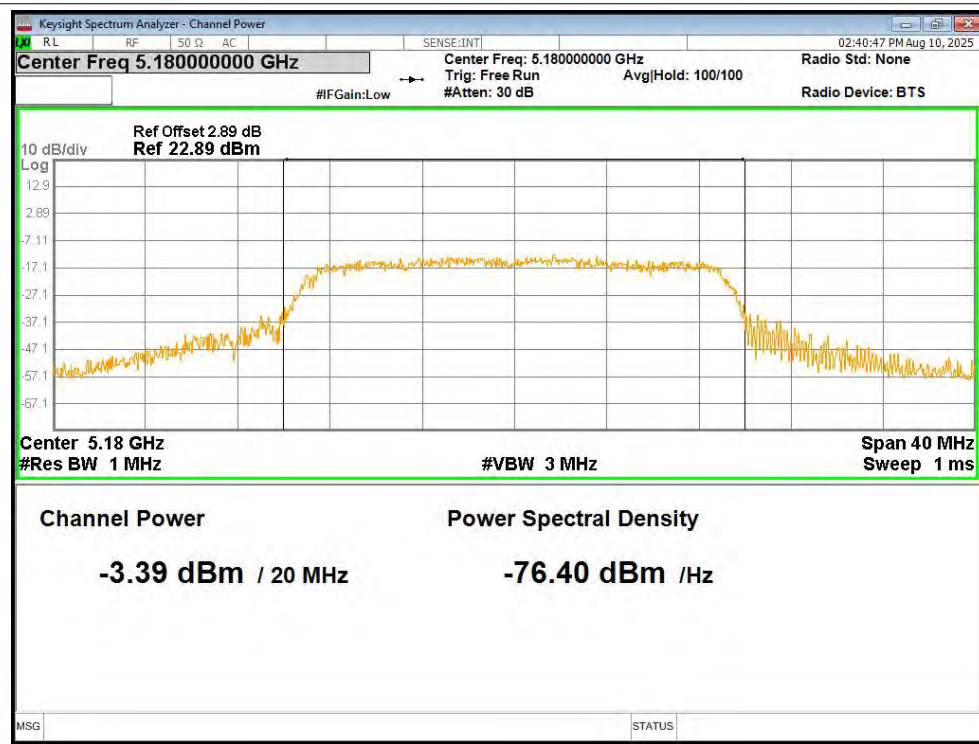
Power NVNT a 5200MHz Ant1



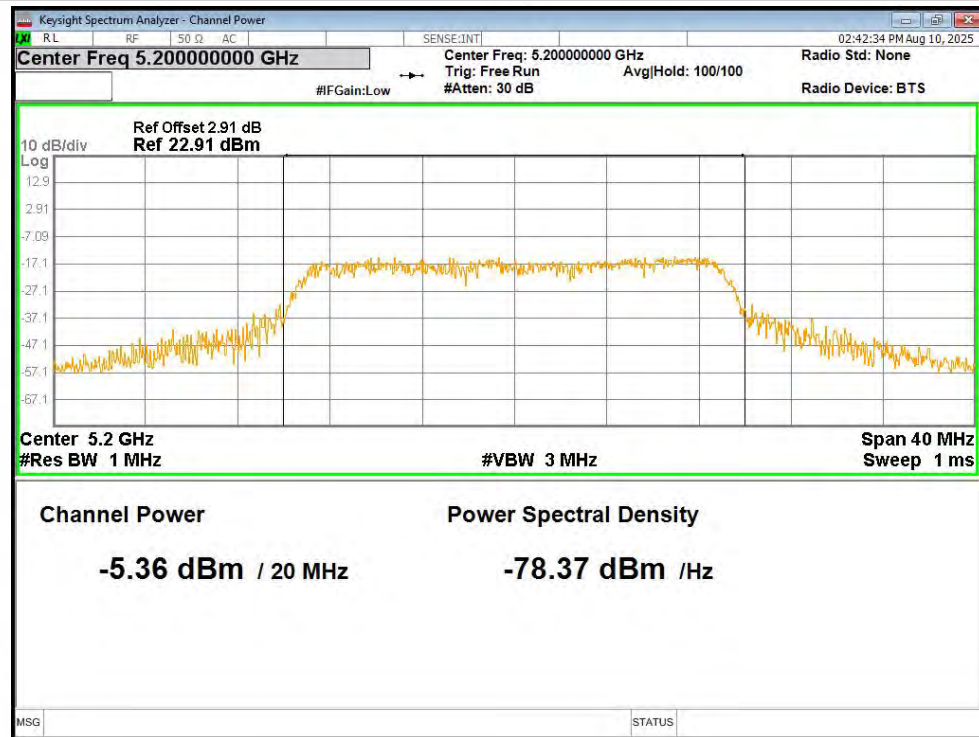
Power NVNT a 5240MHz Ant1



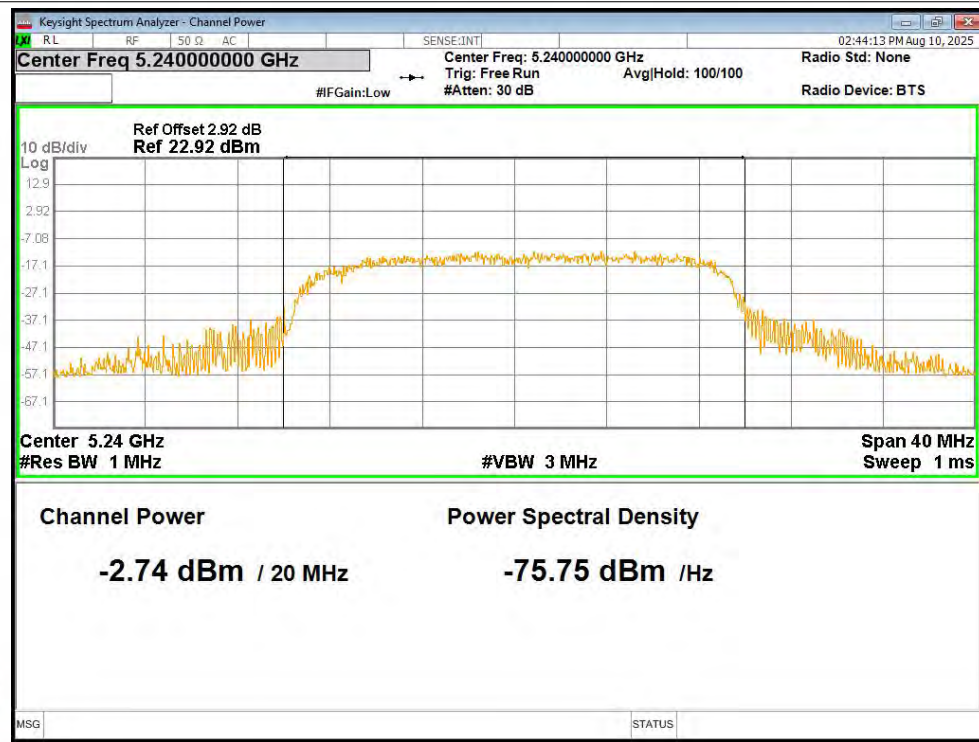
Power NVNT n20 5180MHz Ant1



Power NVNT n20 5200MHz Ant1



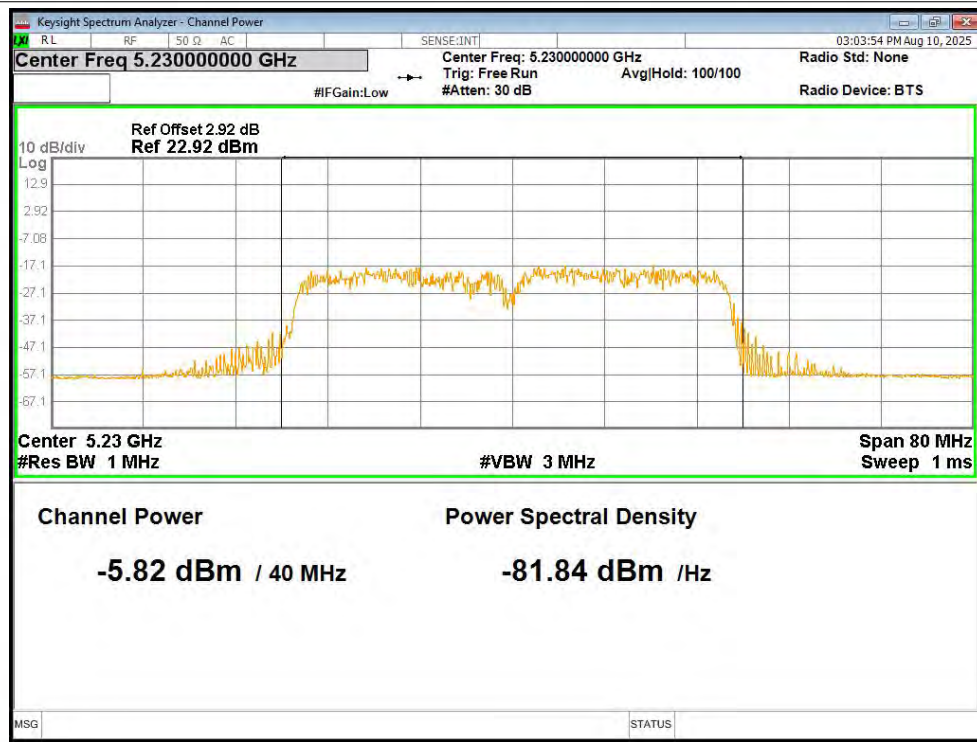
Power NVNT n20 5240MHz Ant1



Power NVNT n40 5190MHz Ant1



Power NVNT n40 5230MHz Ant1



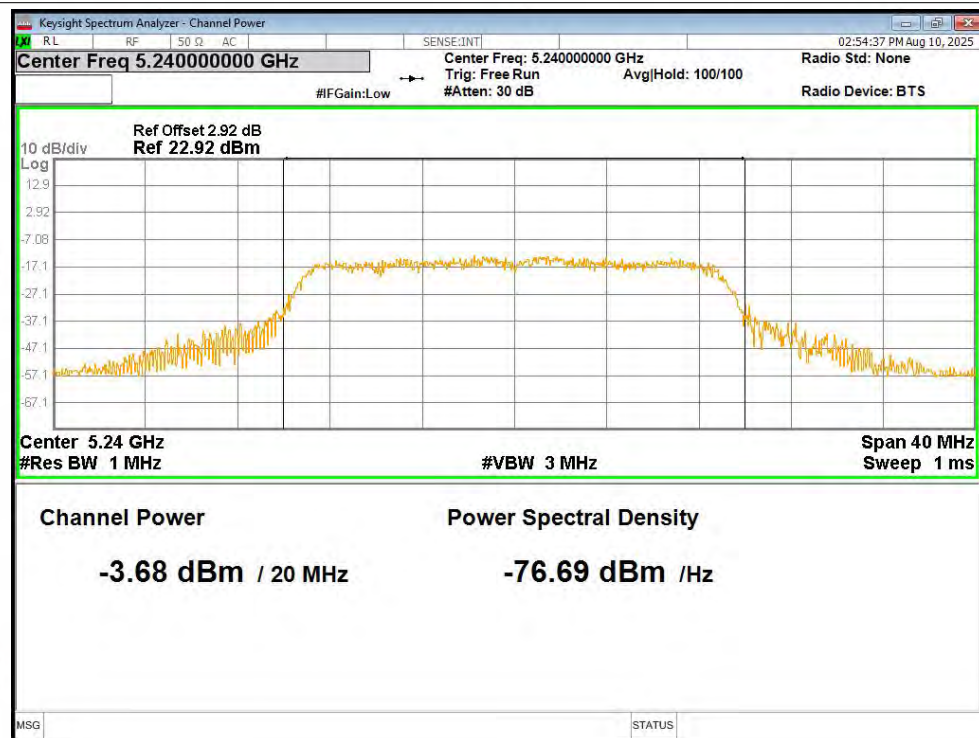
Power NVNT ac20 5180MHz Ant1



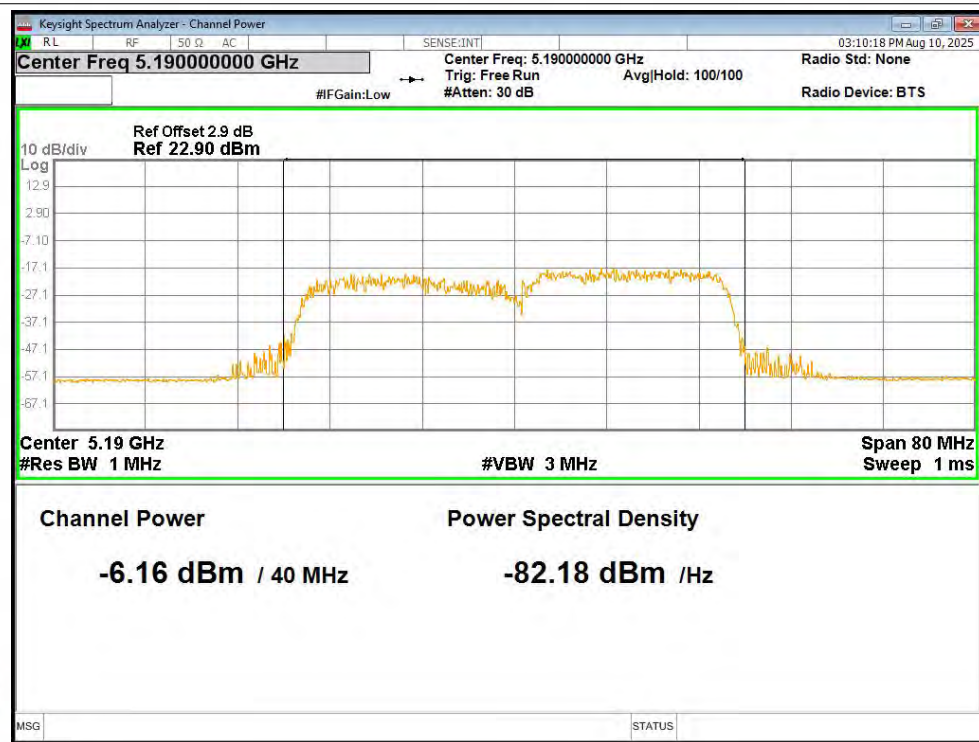
Power NVNT ac20 5200MHz Ant1

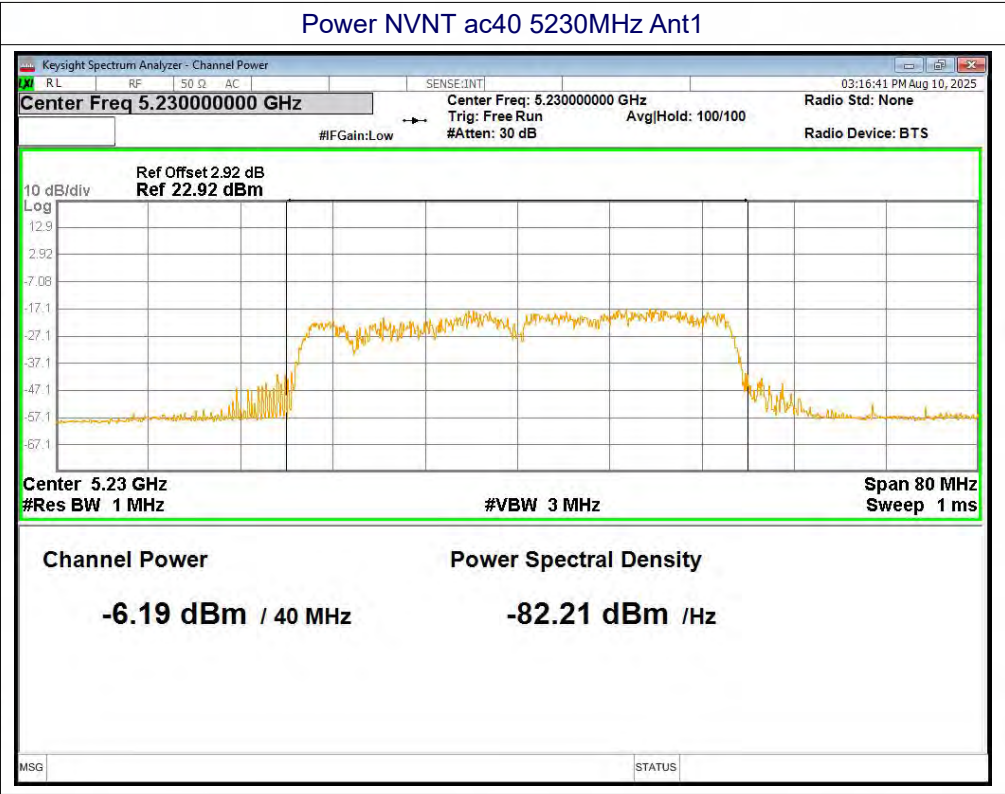


Power NVNT ac20 5240MHz Ant1



Power NVNT ac40 5190MHz Ant1



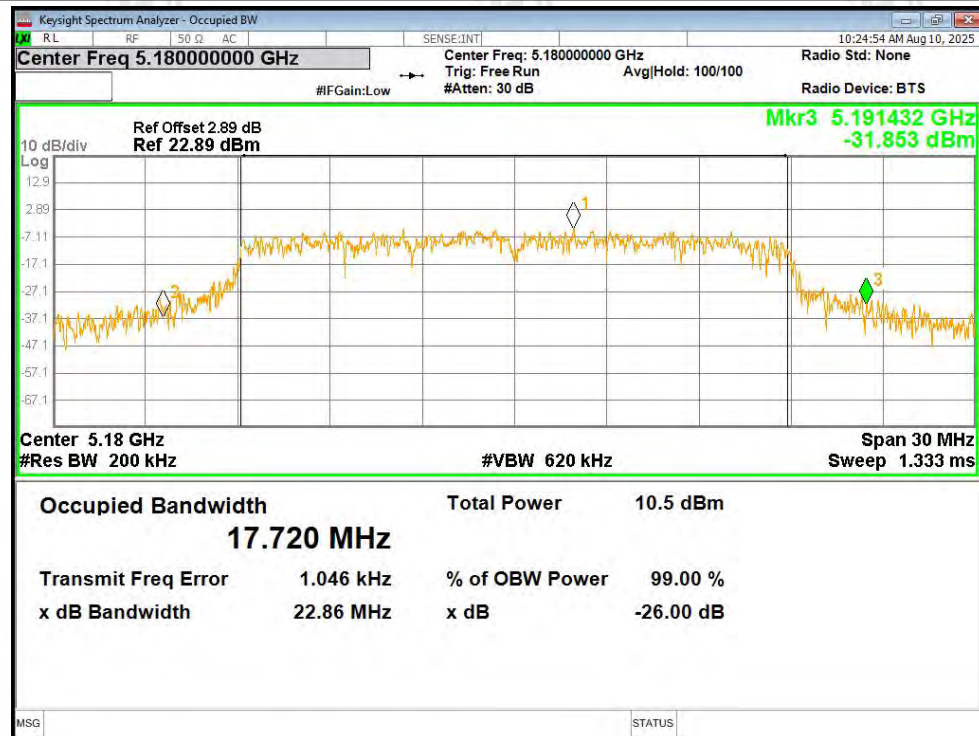


**-26dB Bandwidth**

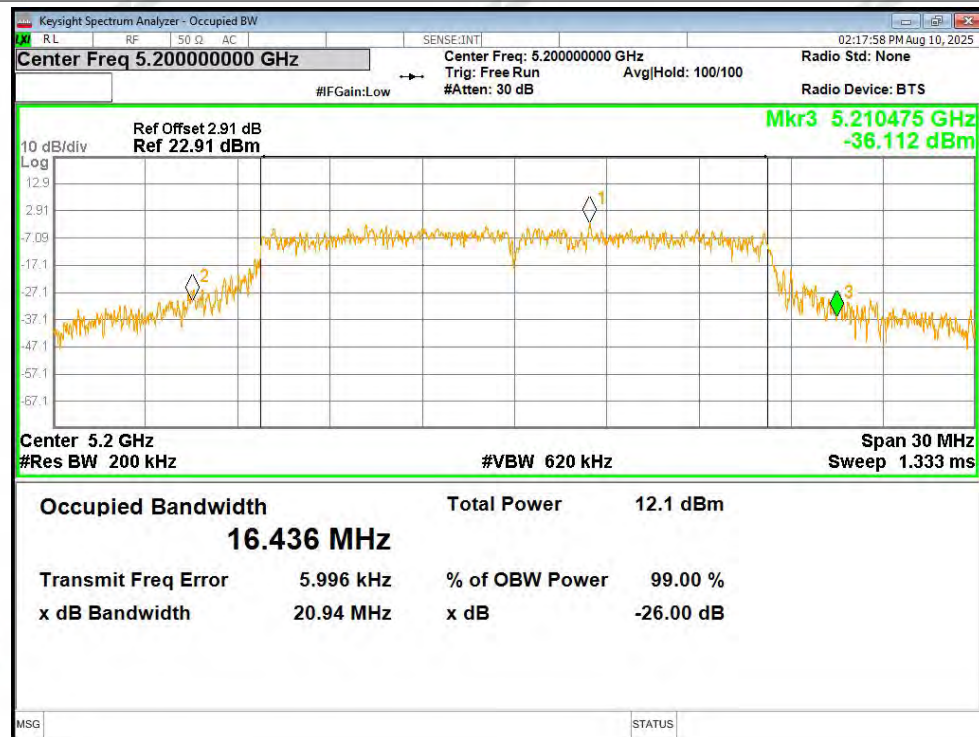
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	22.861	Pass
NVNT	a	5200	Ant1	20.938	Pass
NVNT	a	5240	Ant1	20.879	Pass
NVNT	n20	5180	Ant1	23.162	Pass
NVNT	n20	5200	Ant1	22.093	Pass
NVNT	n20	5240	Ant1	22.893	Pass
NVNT	n40	5190	Ant1	40.292	Pass
NVNT	n40	5230	Ant1	42.045	Pass
NVNT	ac20	5180	Ant1	22.166	Pass
NVNT	ac20	5200	Ant1	23.753	Pass
NVNT	ac20	5240	Ant1	23.343	Pass
NVNT	ac40	5190	Ant1	41.468	Pass
NVNT	ac40	5230	Ant1	42.117	Pass

Test Graphs

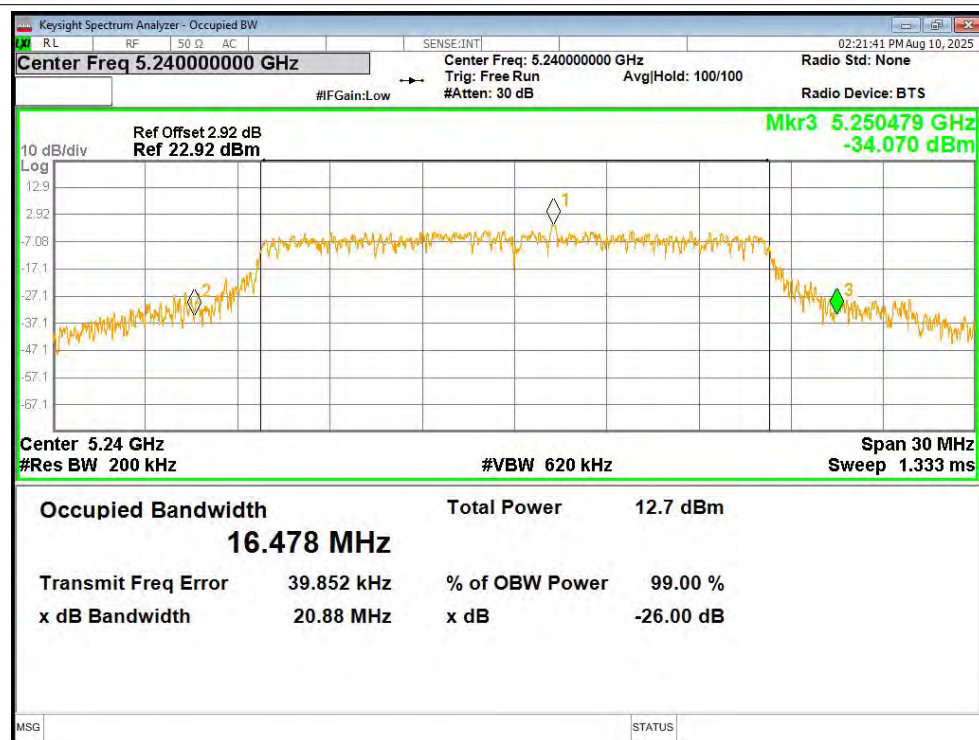
-26dB Bandwidth NVNT a 5180MHz Ant1



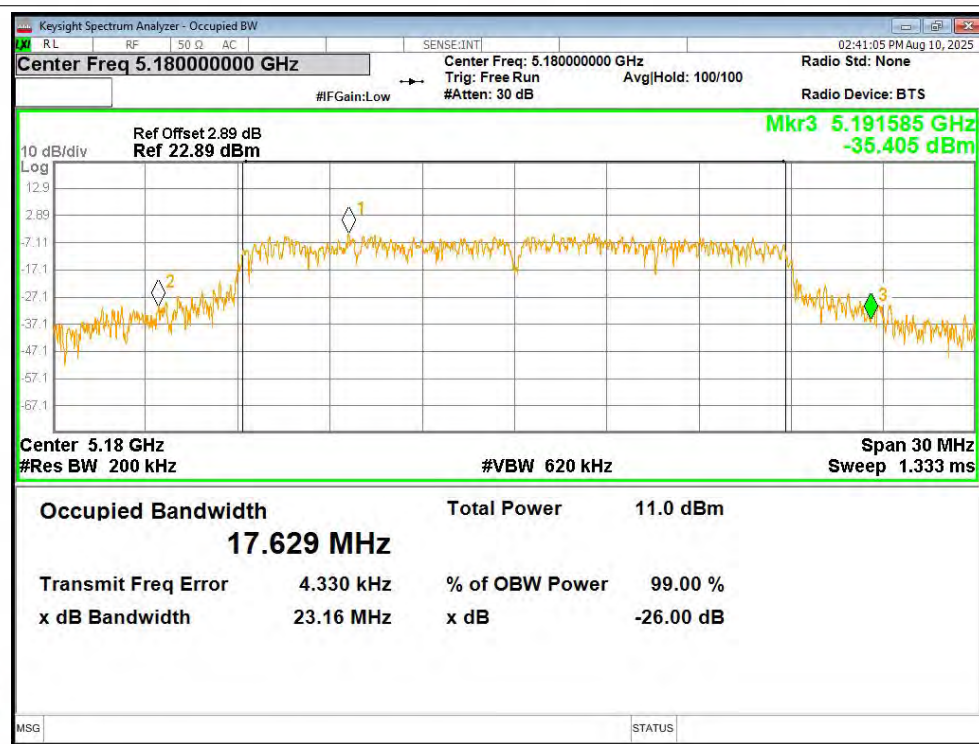
-26dB Bandwidth NVNT a 5200MHz Ant1



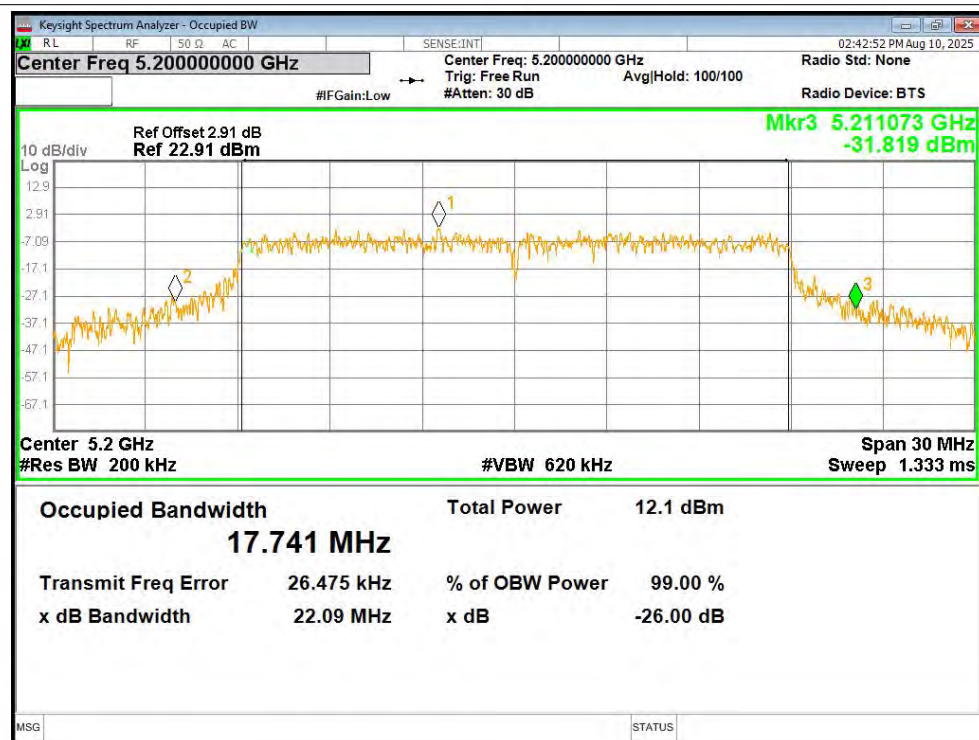
-26dB Bandwidth NVNT a 5240MHz Ant1



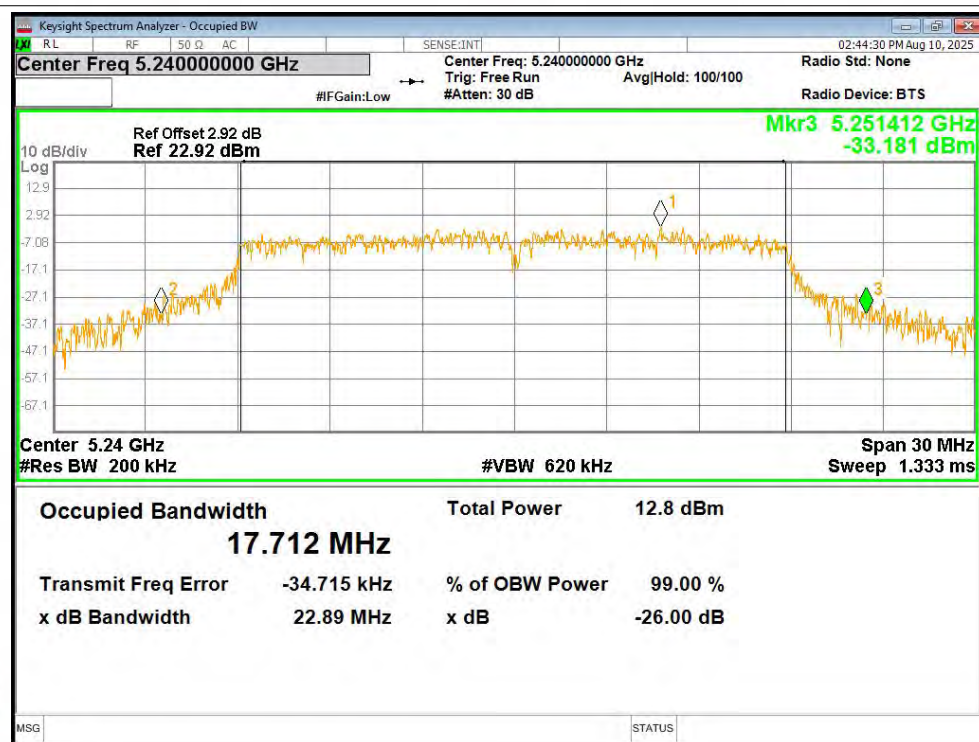
-26dB Bandwidth NVNT n20 5180MHz Ant1



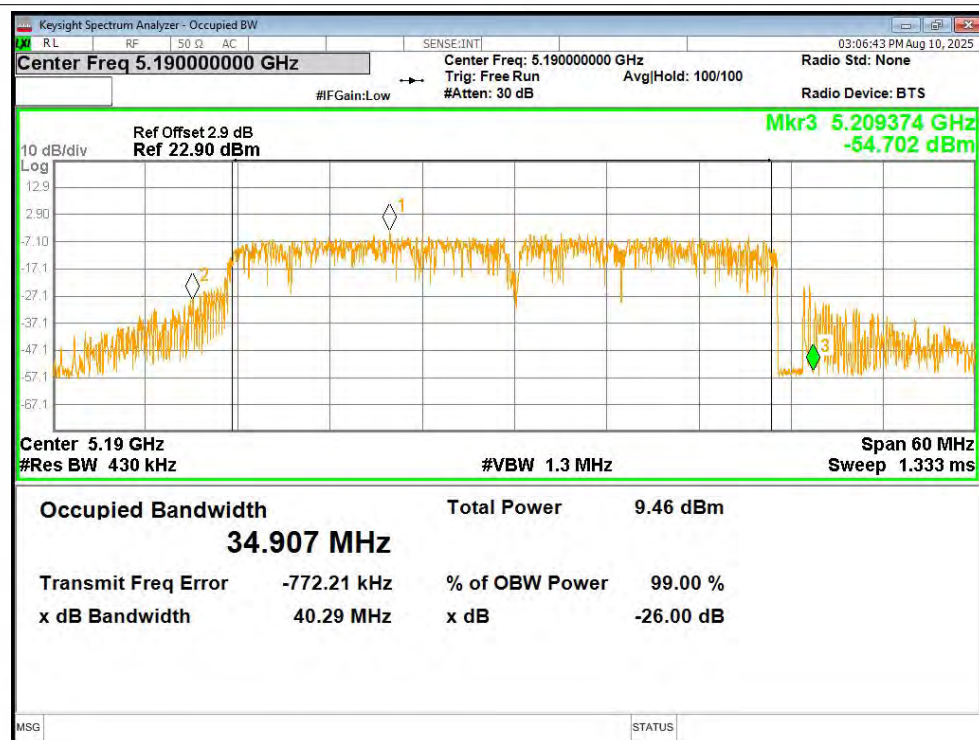
-26dB Bandwidth NVNT n20 5200MHz Ant1



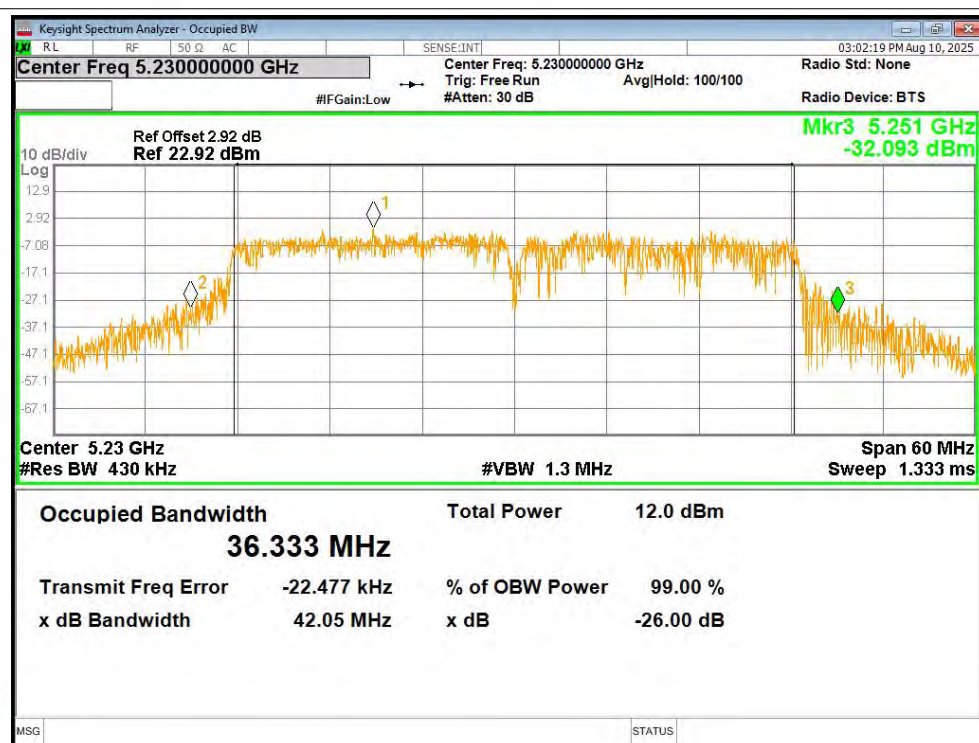
-26dB Bandwidth NVNT n20 5240MHz Ant1



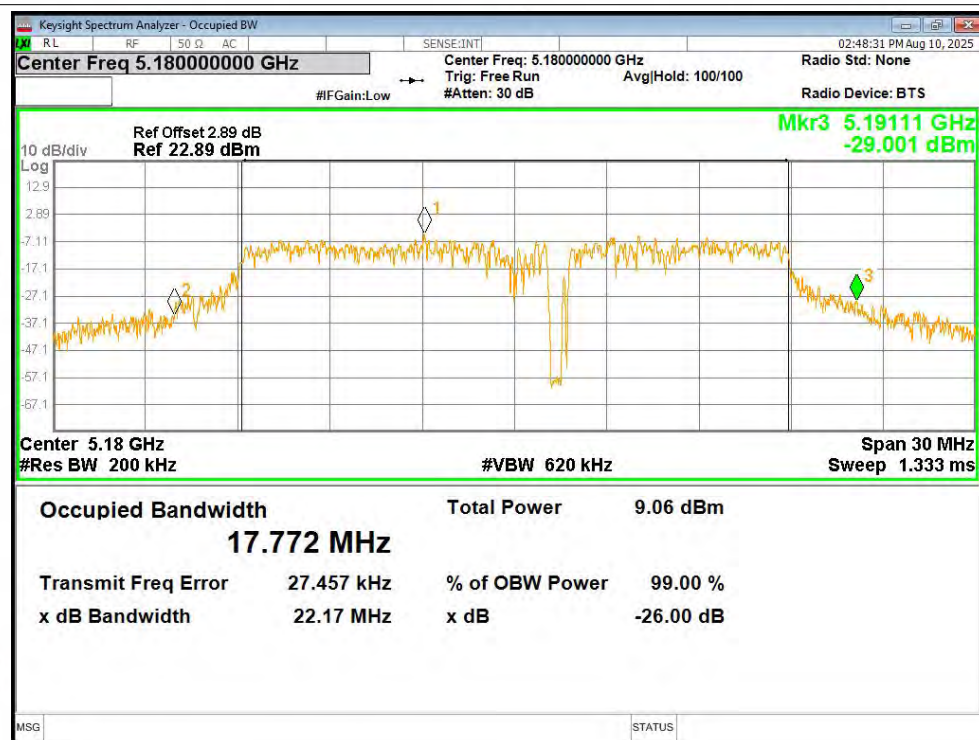
-26dB Bandwidth NVNT n40 5190MHz Ant1



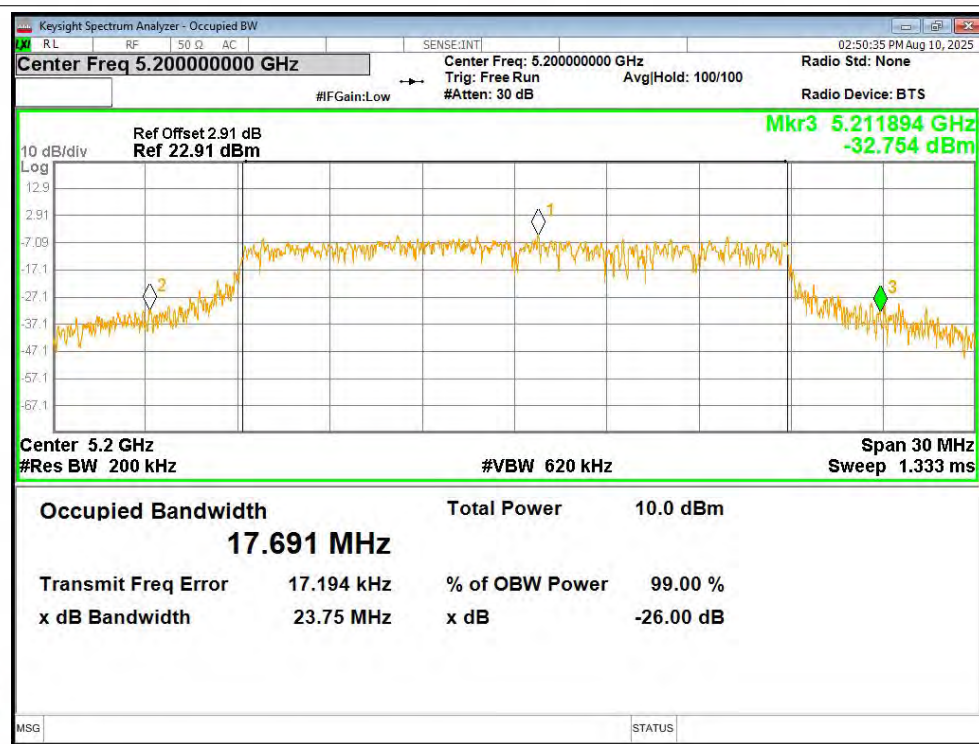
-26dB Bandwidth NVNT n40 5230MHz Ant1



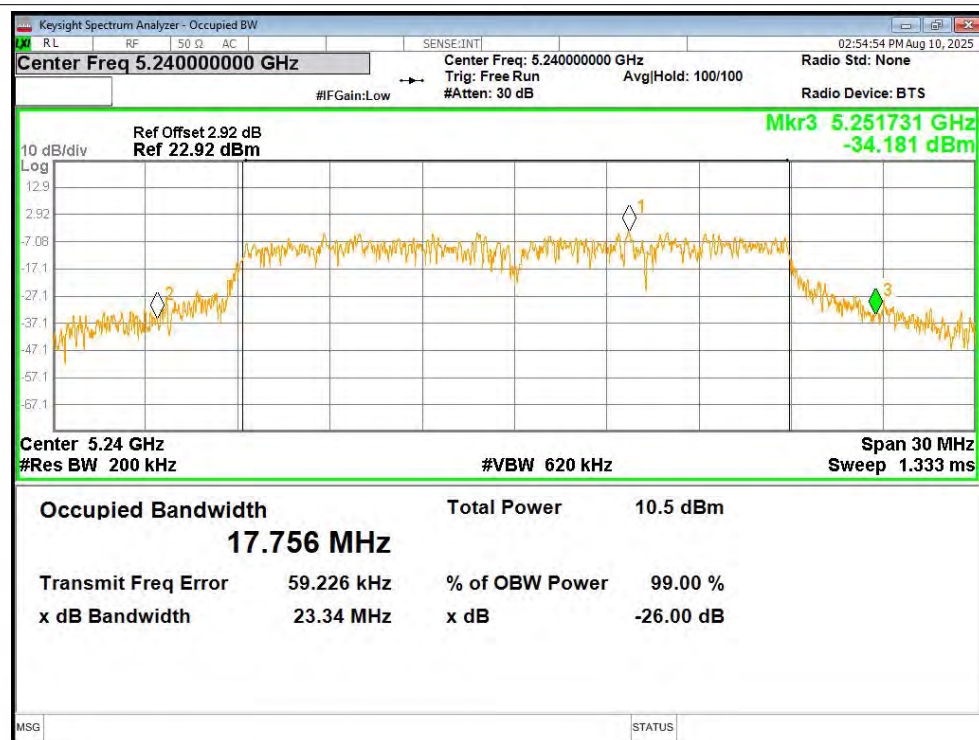
-26dB Bandwidth NVNT ac20 5180MHz Ant1



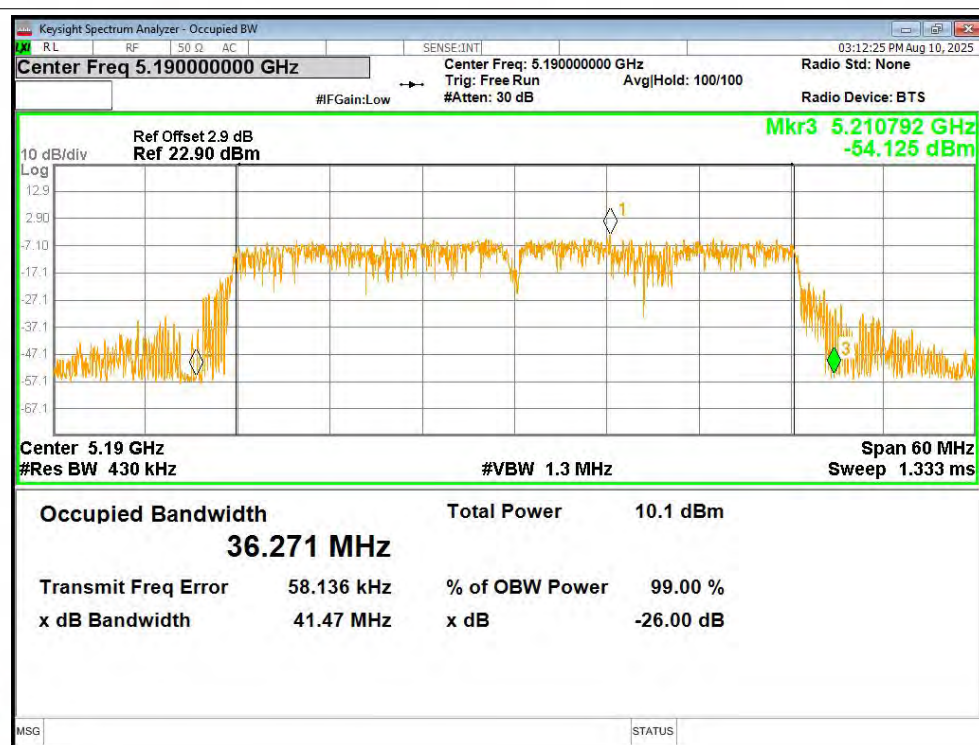
-26dB Bandwidth NVNT ac20 5200MHz Ant1

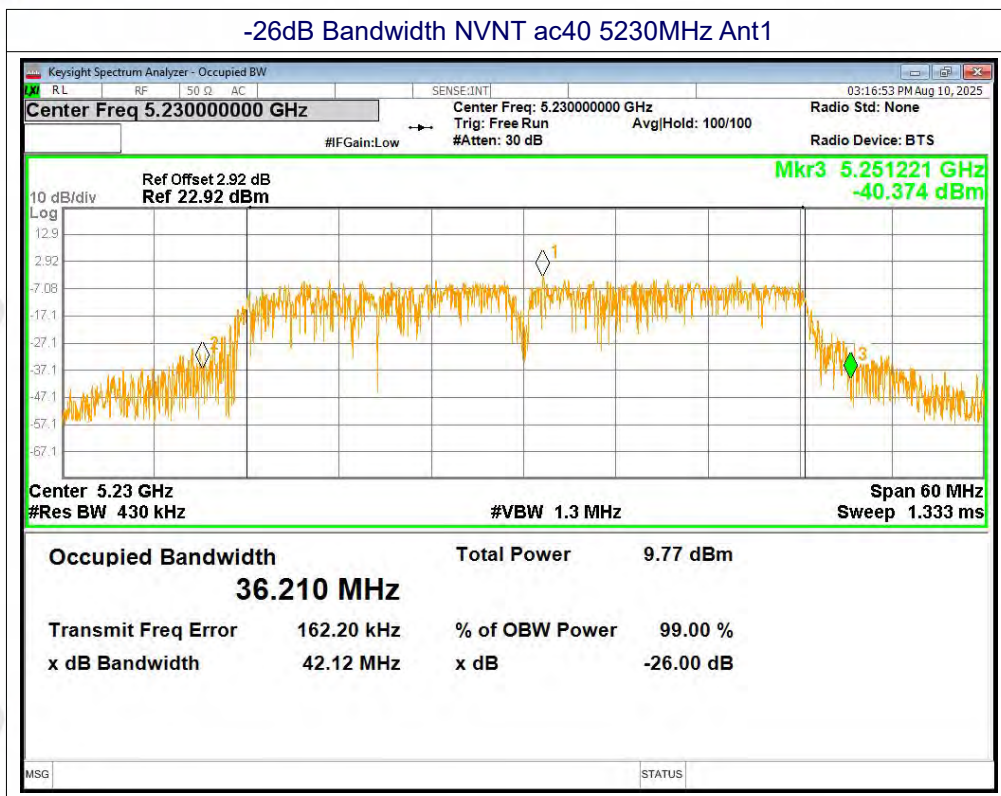


-26dB Bandwidth NVNT ac20 5240MHz Ant1



-26dB Bandwidth NVNT ac40 5190MHz Ant1





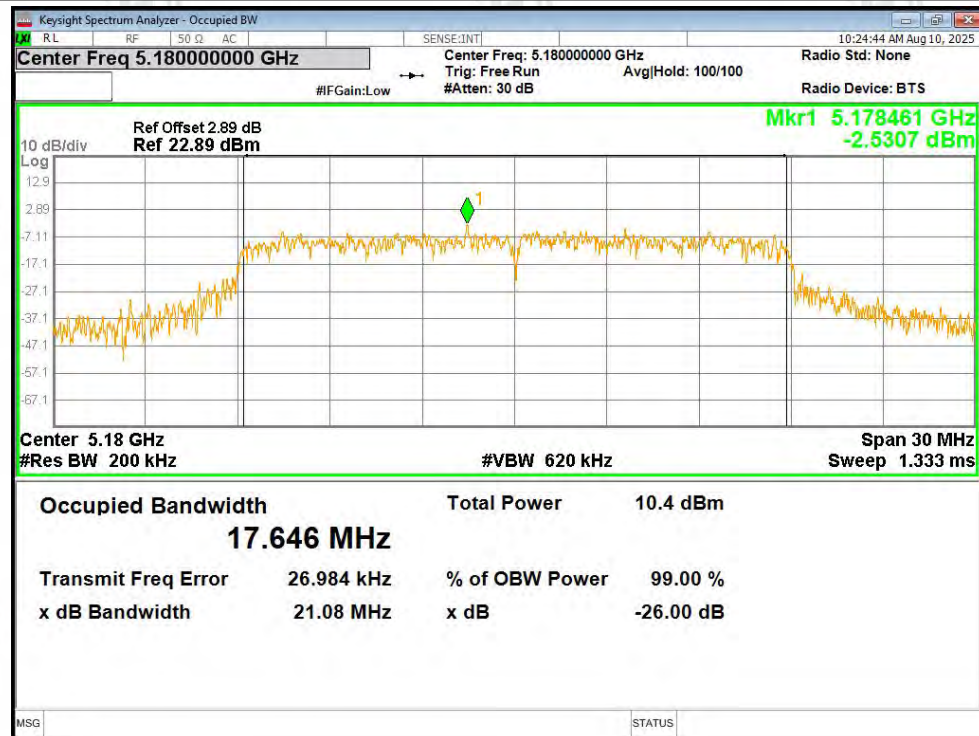


Occupied Channel Bandwidth

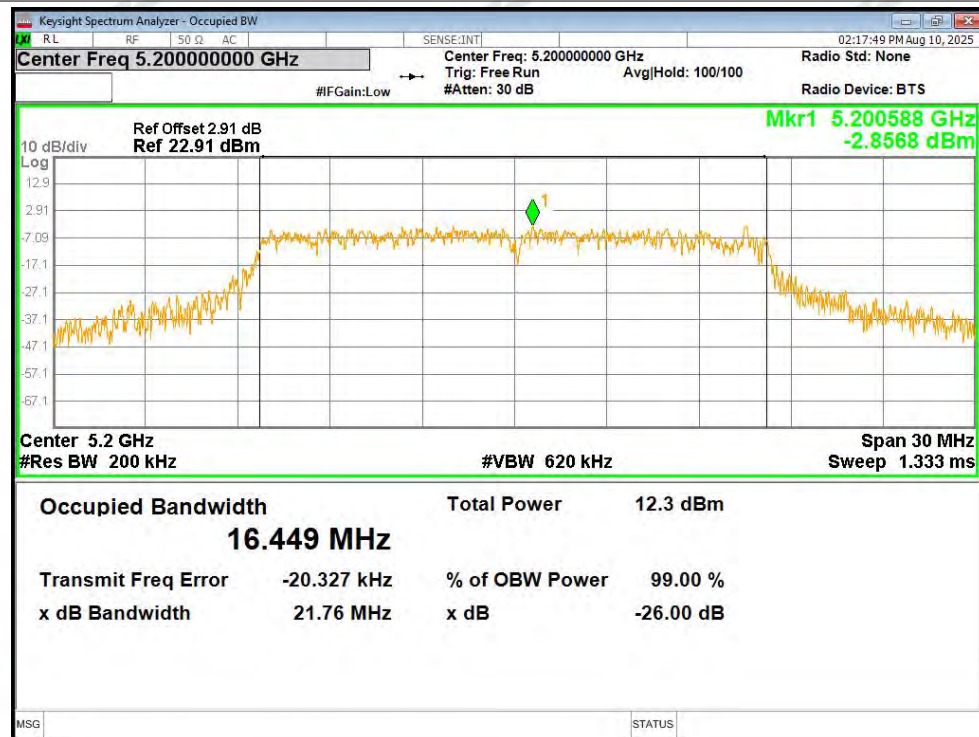
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	17.646
NVNT	a	5200	Ant1	16.449
NVNT	a	5240	Ant1	16.508
NVNT	n20	5180	Ant1	17.64
NVNT	n20	5200	Ant1	17.696
NVNT	n20	5240	Ant1	17.635
NVNT	n40	5190	Ant1	36.131
NVNT	n40	5230	Ant1	36.116
NVNT	ac20	5180	Ant1	17.735
NVNT	ac20	5200	Ant1	17.666
NVNT	ac20	5240	Ant1	17.812
NVNT	ac40	5190	Ant1	36.155
NVNT	ac40	5230	Ant1	36.011

Test Graphs

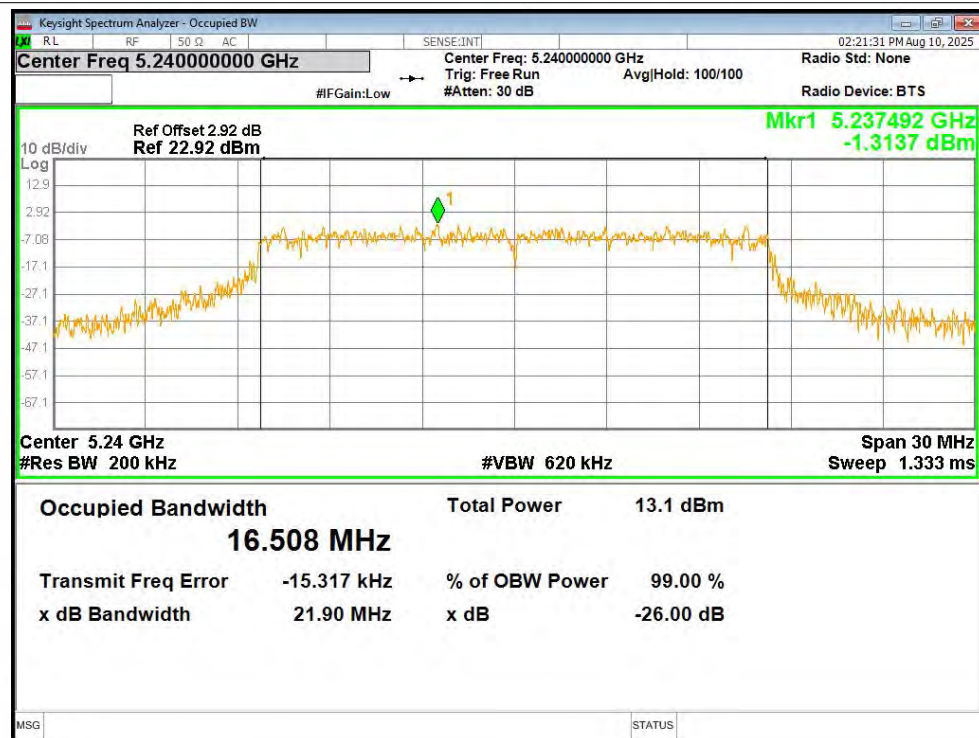
OBW NVNT a 5180MHz Ant1



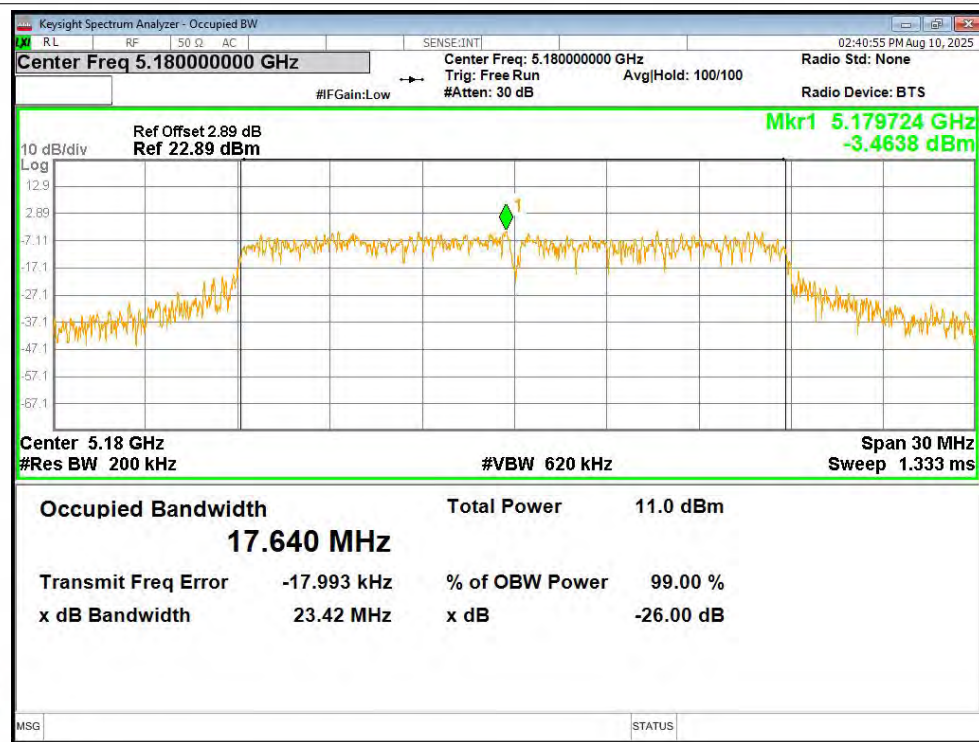
OBW NVNT a 5200MHz Ant1



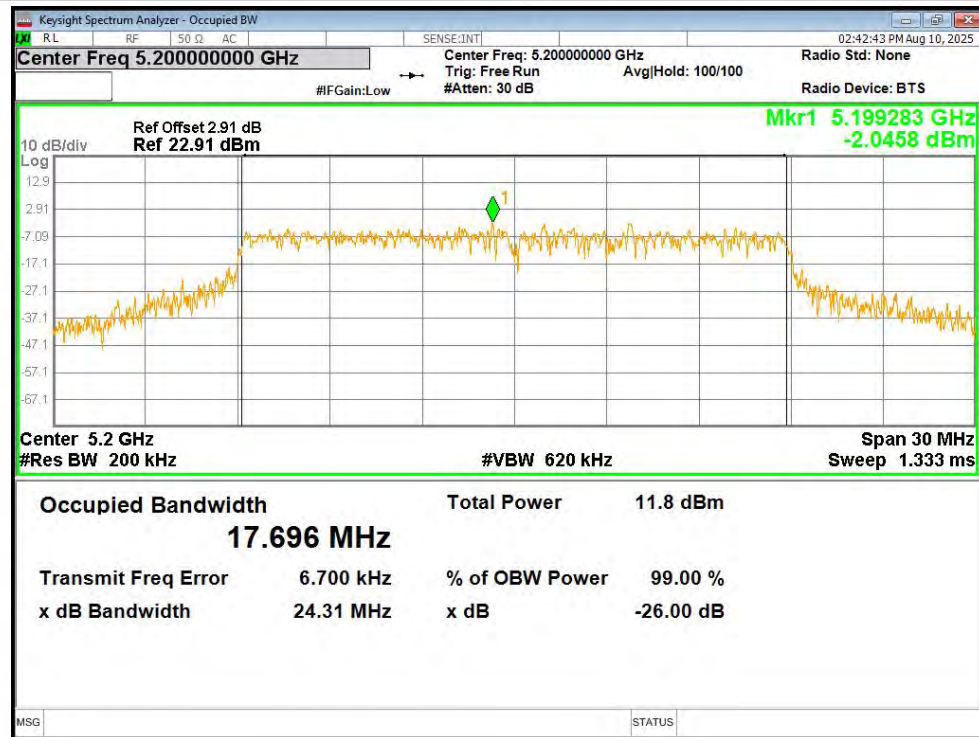
OBW NVNT a 5240MHz Ant1



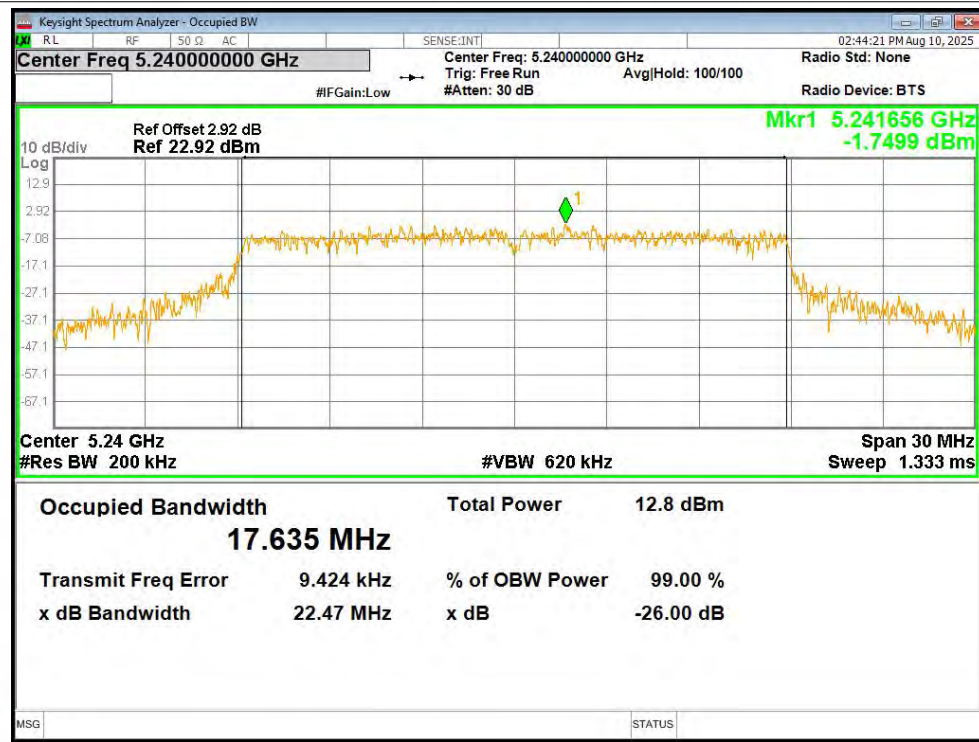
OBW NVNT n20 5180MHz Ant1



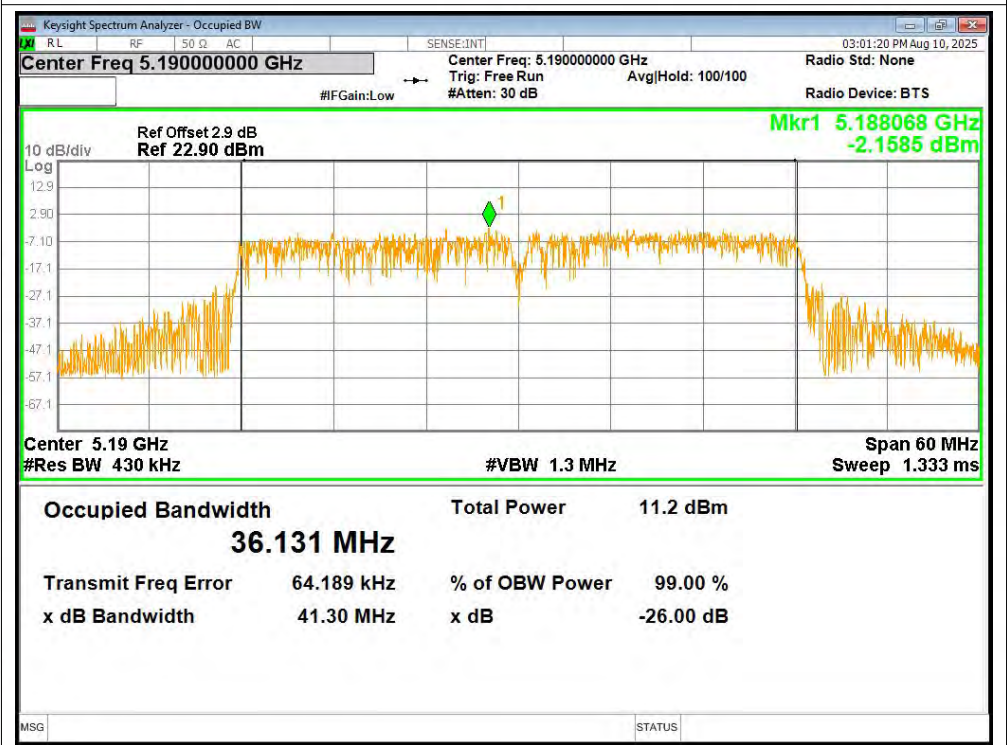
OBW NVNT n20 5200MHz Ant1



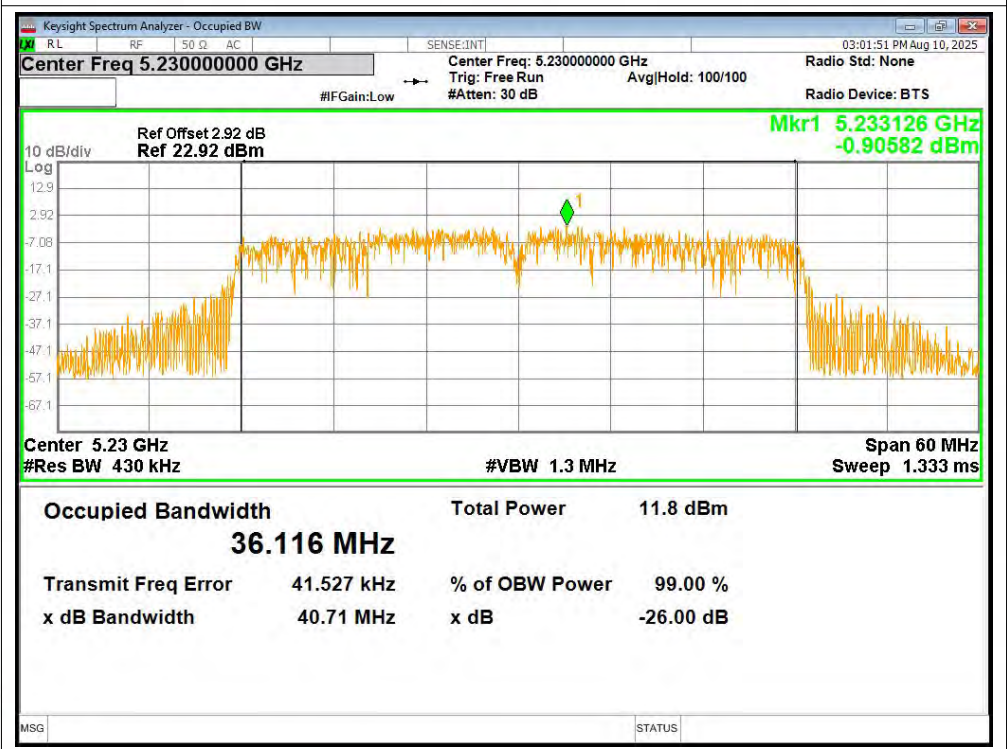
OBW NVNT n20 5240MHz Ant1



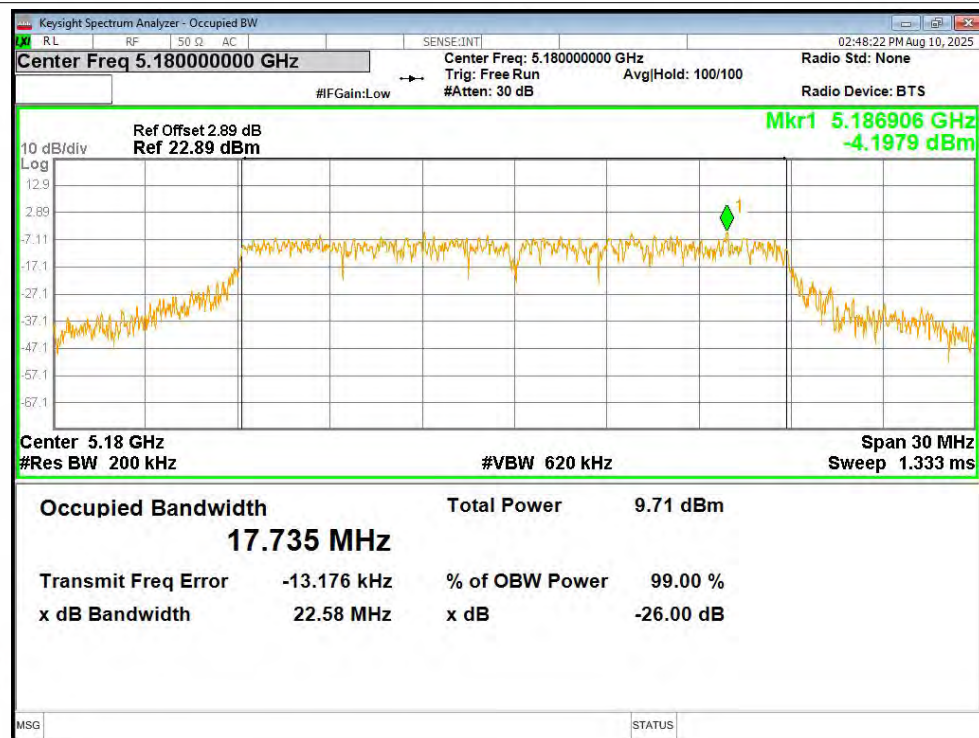
OBW NVNT n40 5190MHz Ant1



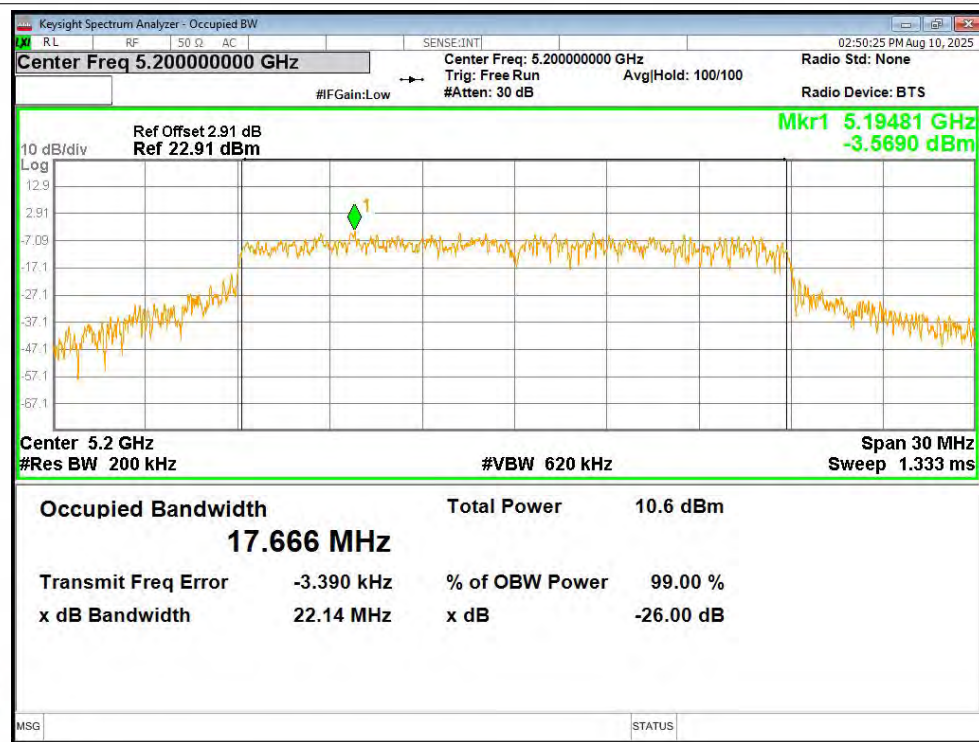
OBW NVNT n40 5230MHz Ant1



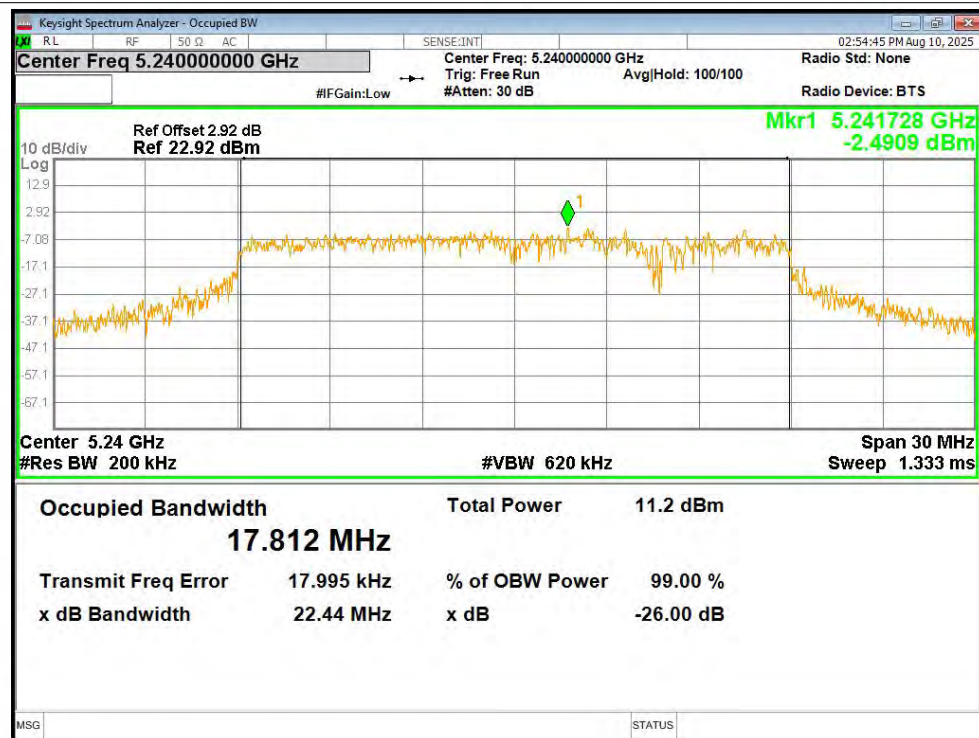
OBW NVNT ac20 5180MHz Ant1



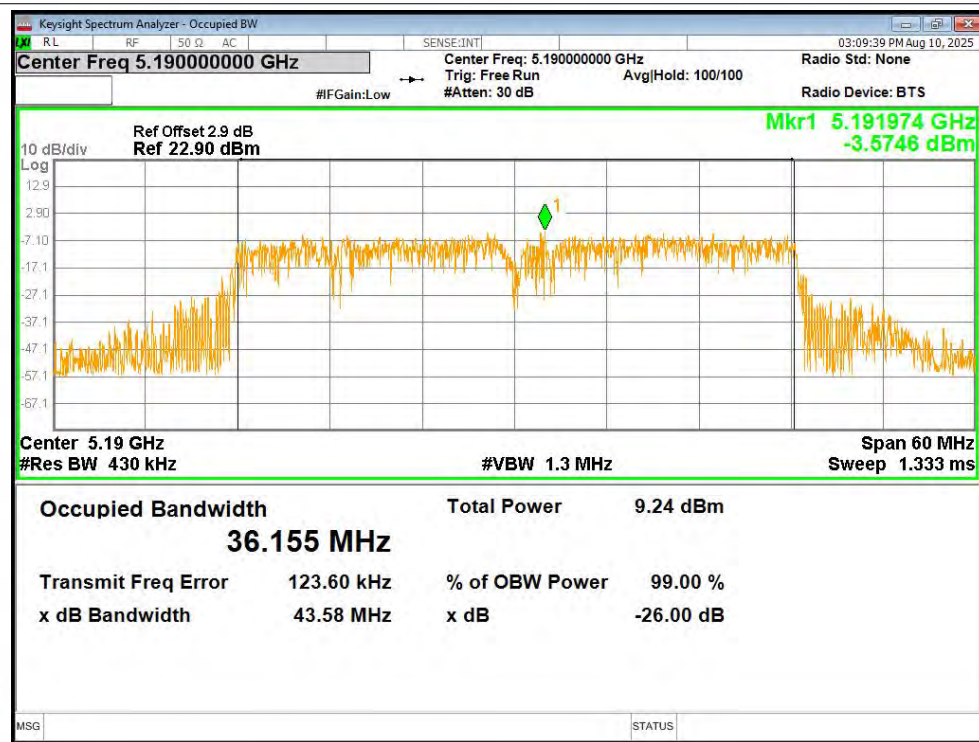
OBW NVNT ac20 5200MHz Ant1

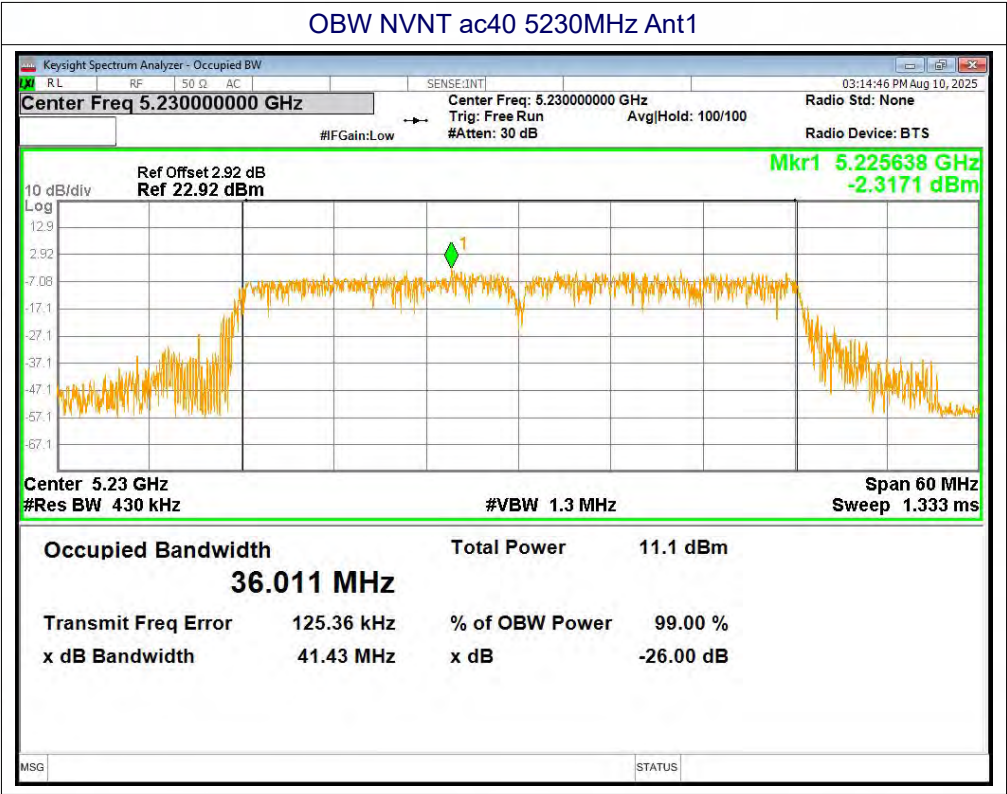


OBW NVNT ac20 5240MHz Ant1



OBW NVNT ac40 5190MHz Ant1





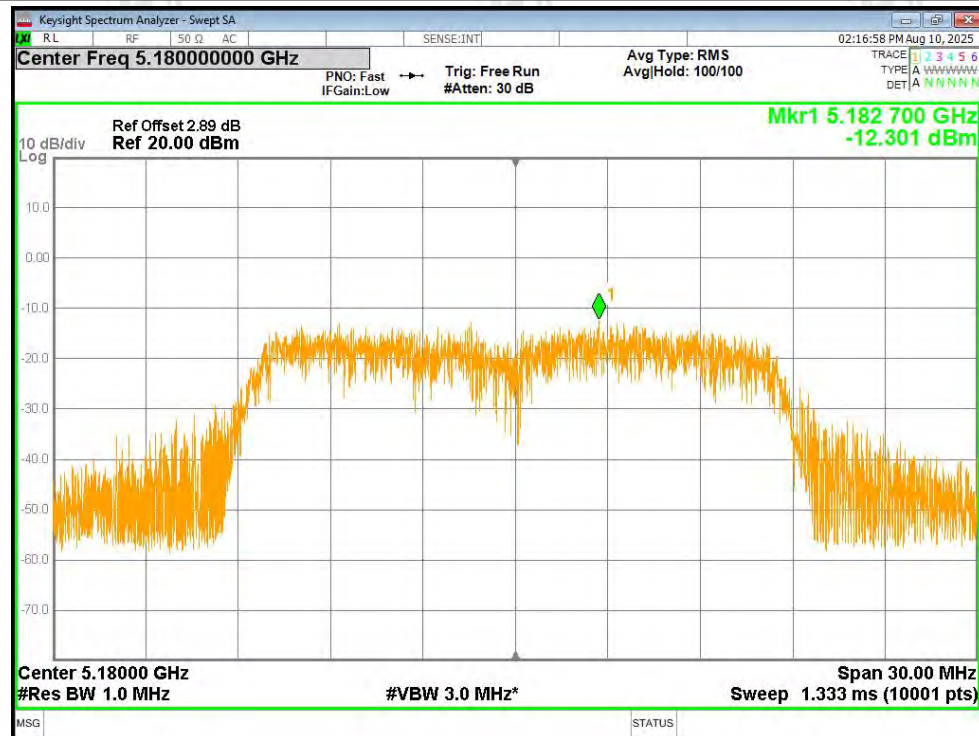


Maximum Power Spectral Density Level

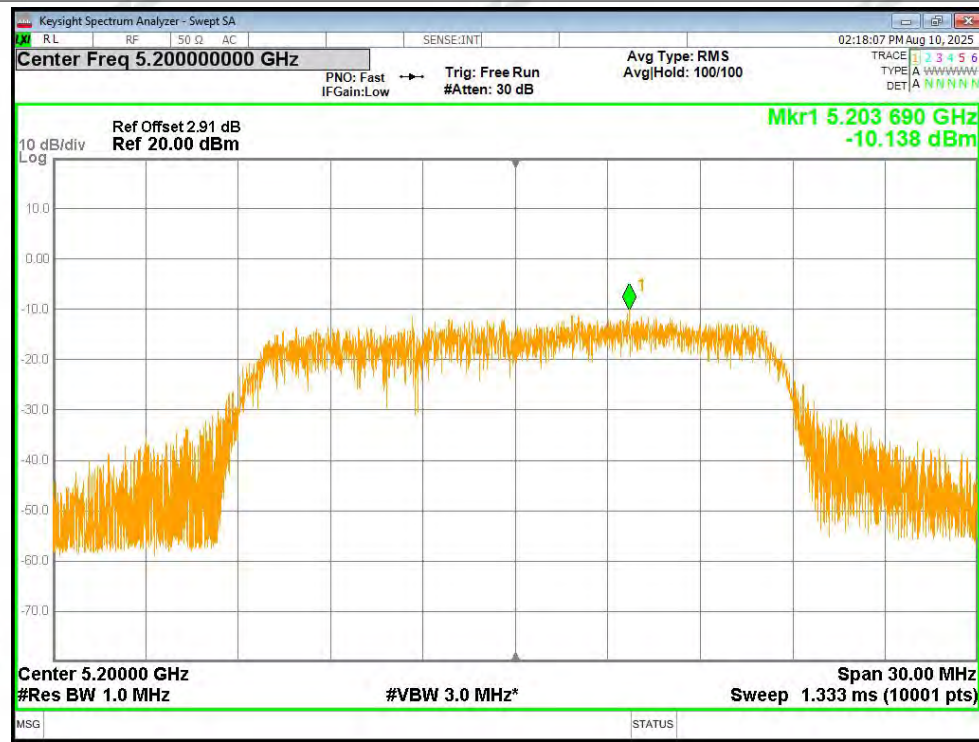
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	Ant1	-12.3	13.67	1.37	11	Pass
NVNT	a	5200	Ant1	-10.14	12.34	2.2	11	Pass
NVNT	a	5240	Ant1	-10.76	12.34	1.58	11	Pass
NVNT	n20	5180	Ant1	-10.07	12.99	2.92	11	Pass
NVNT	n20	5200	Ant1	-11.53	12.99	1.46	11	Pass
NVNT	n20	5240	Ant1	-10.07	12.99	2.92	11	Pass
NVNT	n40	5190	Ant1	-18.22	15.65	-2.57	11	Pass
NVNT	n40	5230	Ant1	-13.14	15.65	2.51	11	Pass
NVNT	ac20	5180	Ant1	-13.77	13.67	-0.01	11	Pass
NVNT	ac20	5200	Ant1	-13.72	13.58	-0.14	11	Pass
NVNT	ac20	5240	Ant1	-10.51	13.67	3.16	11	Pass
NVNT	ac40	5190	Ant1	-17.09	16.68	-0.41	11	Pass
NVNT	ac40	5230	Ant1	-15.95	16.68	0.73	11	Pass

Test Graphs

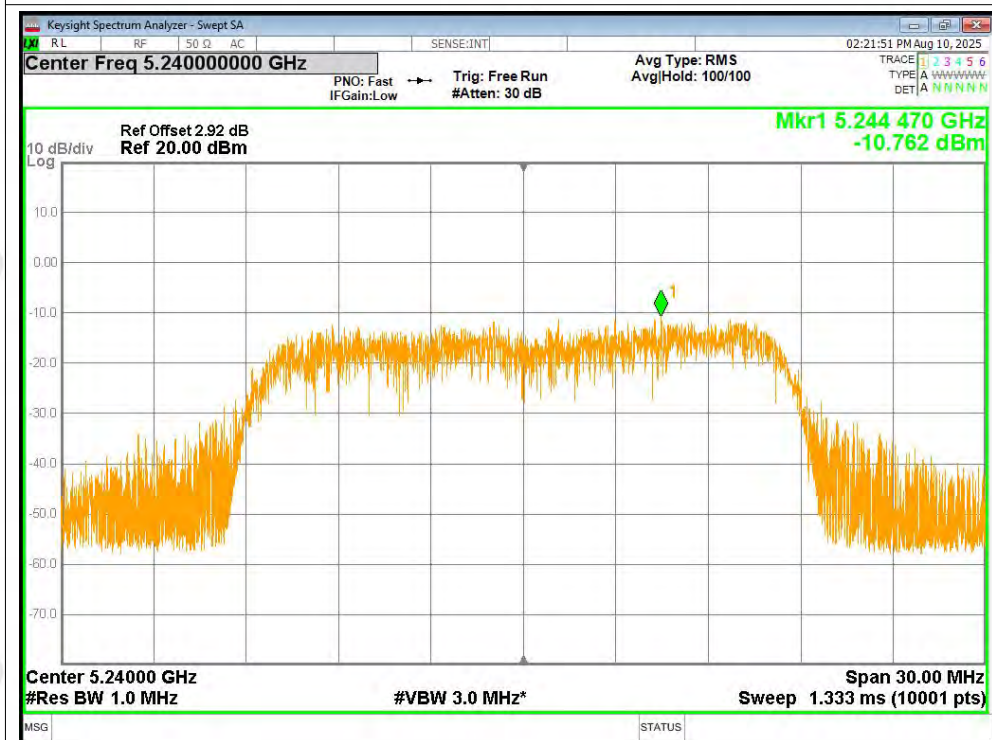
PSD NVNT a 5180MHz Ant1



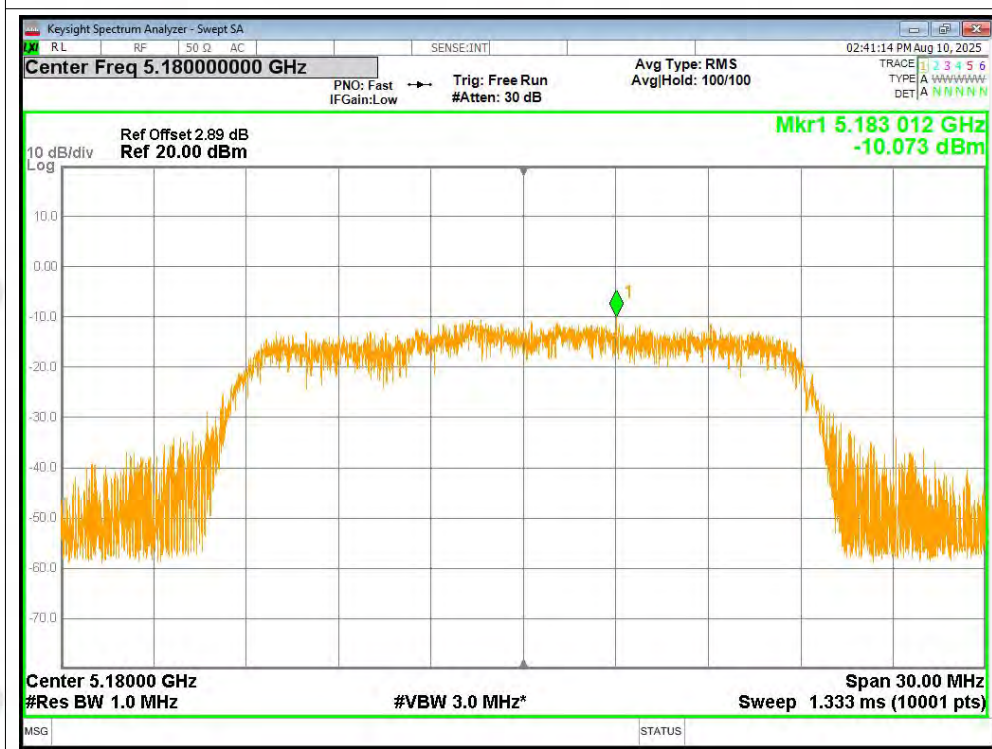
PSD NVNT a 5200MHz Ant1



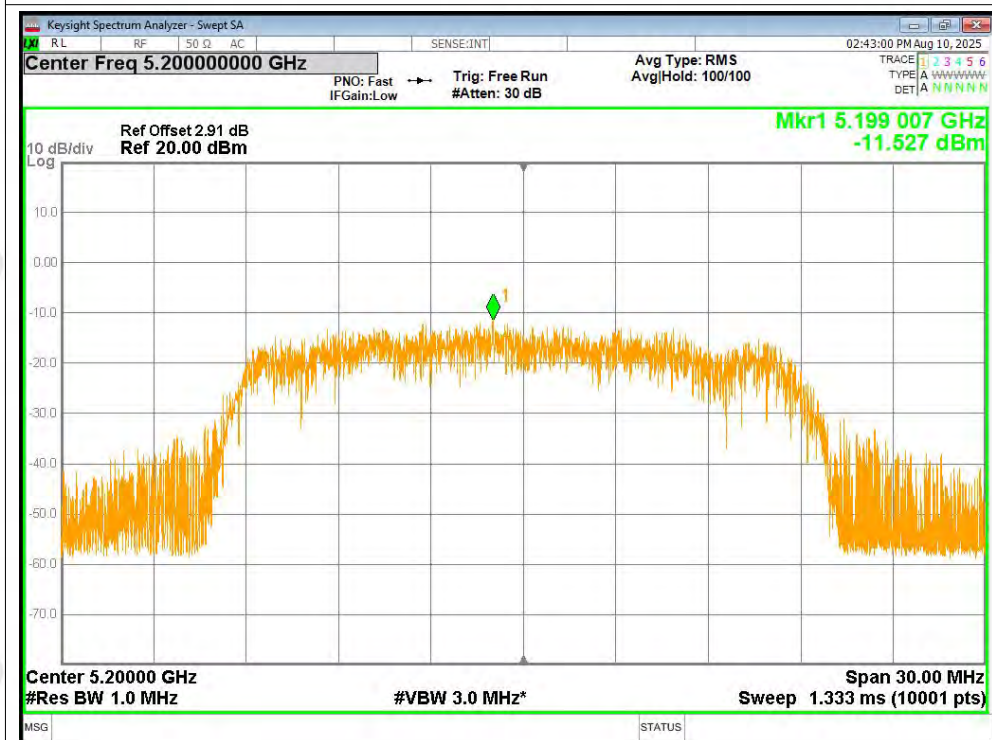
PSD NVNT a 5240MHz Ant1



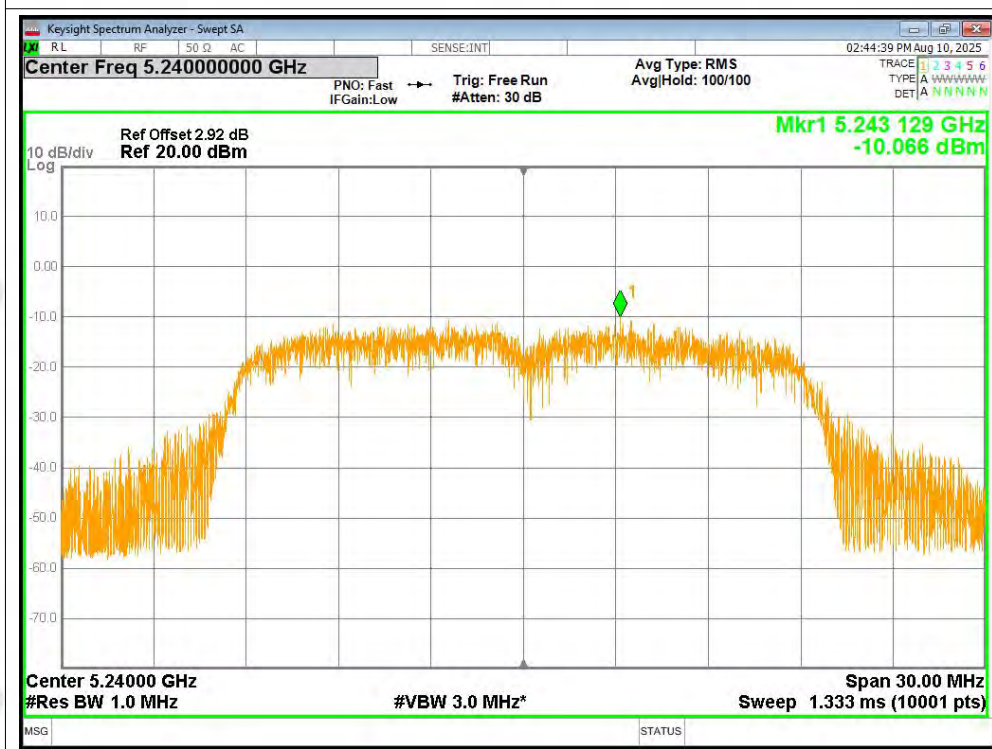
PSD NVNT n20 5180MHz Ant1



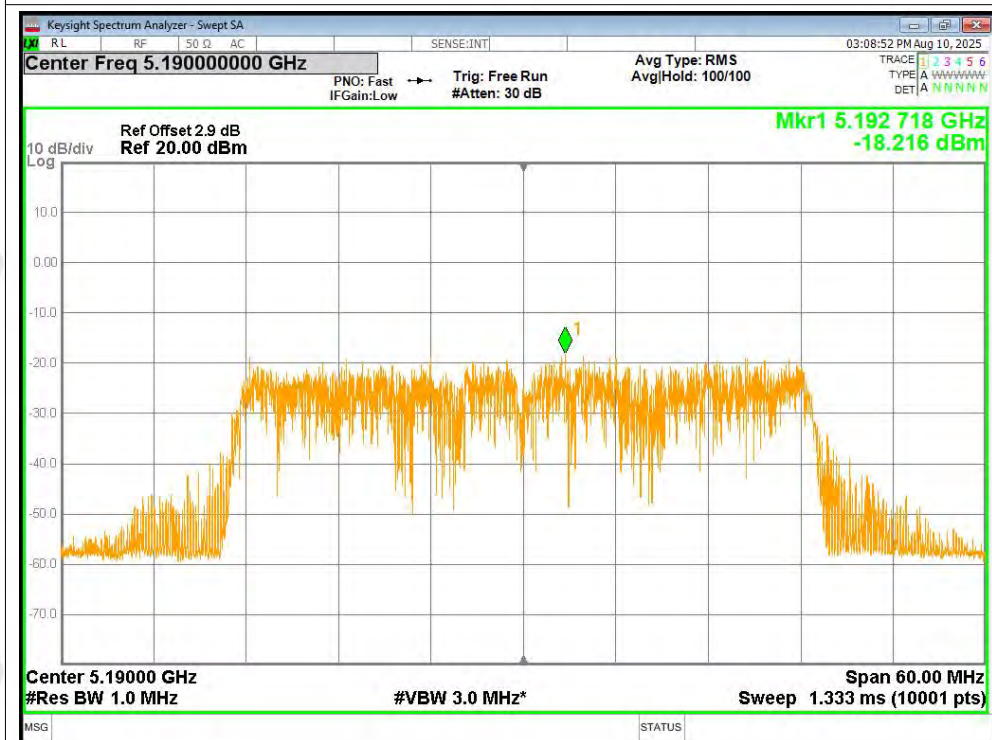
PSD NVNT n20 5200MHz Ant1



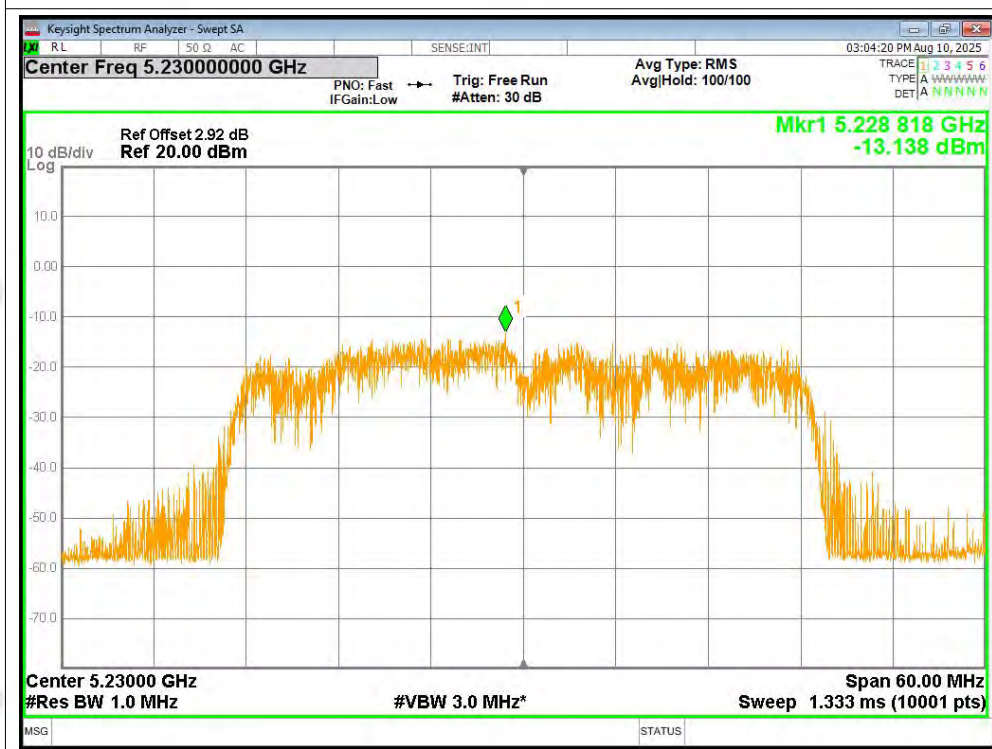
PSD NVNT n20 5240MHz Ant1



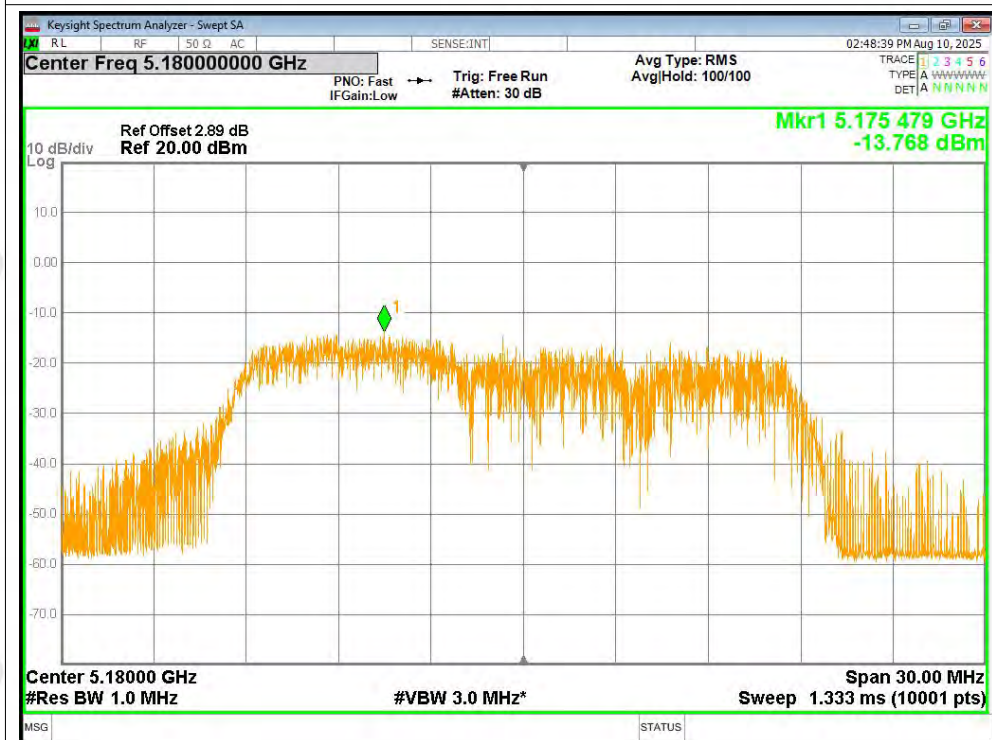
PSD NVNT n40 5190MHz Ant1



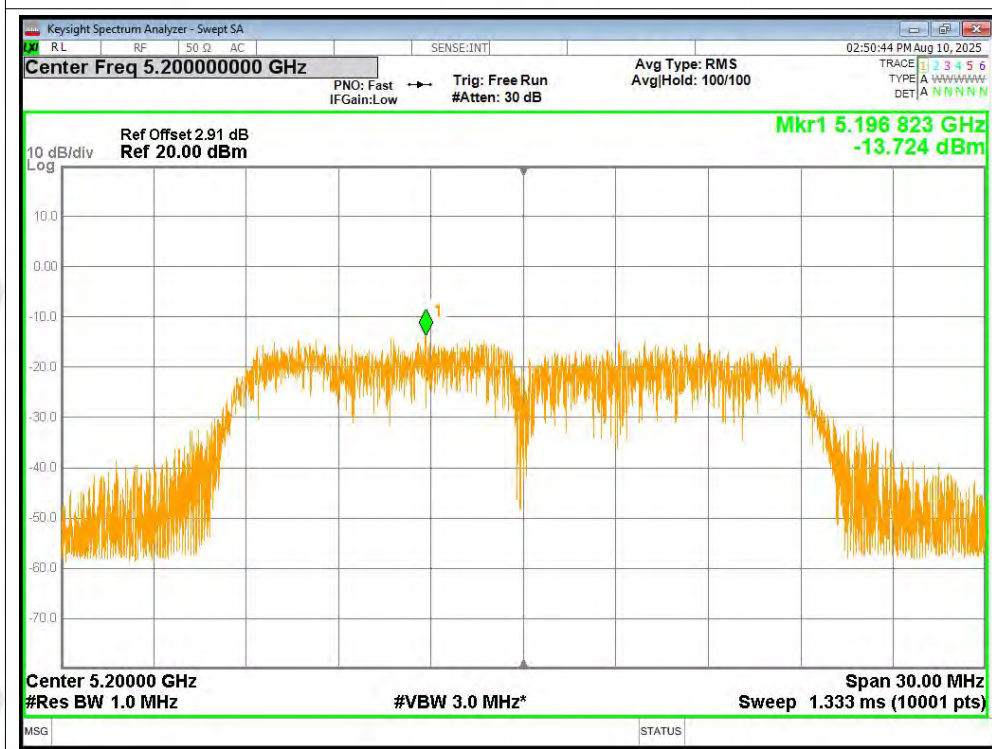
PSD NVNT n40 5230MHz Ant1



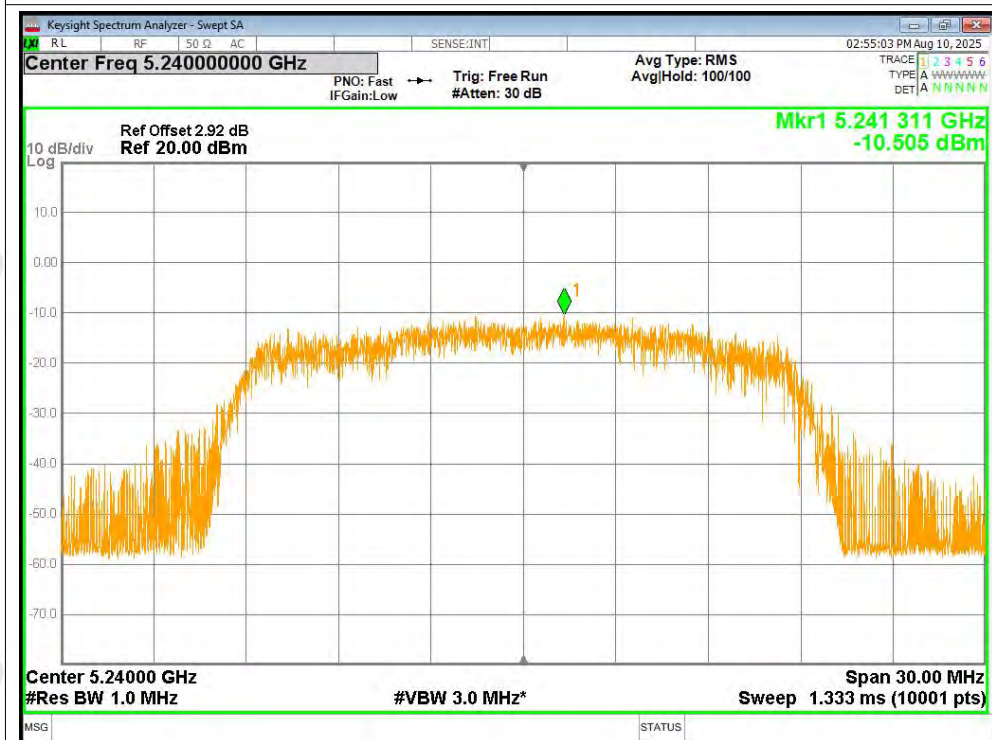
PSD NVNT ac20 5180MHz Ant1



PSD NVNT ac20 5200MHz Ant1

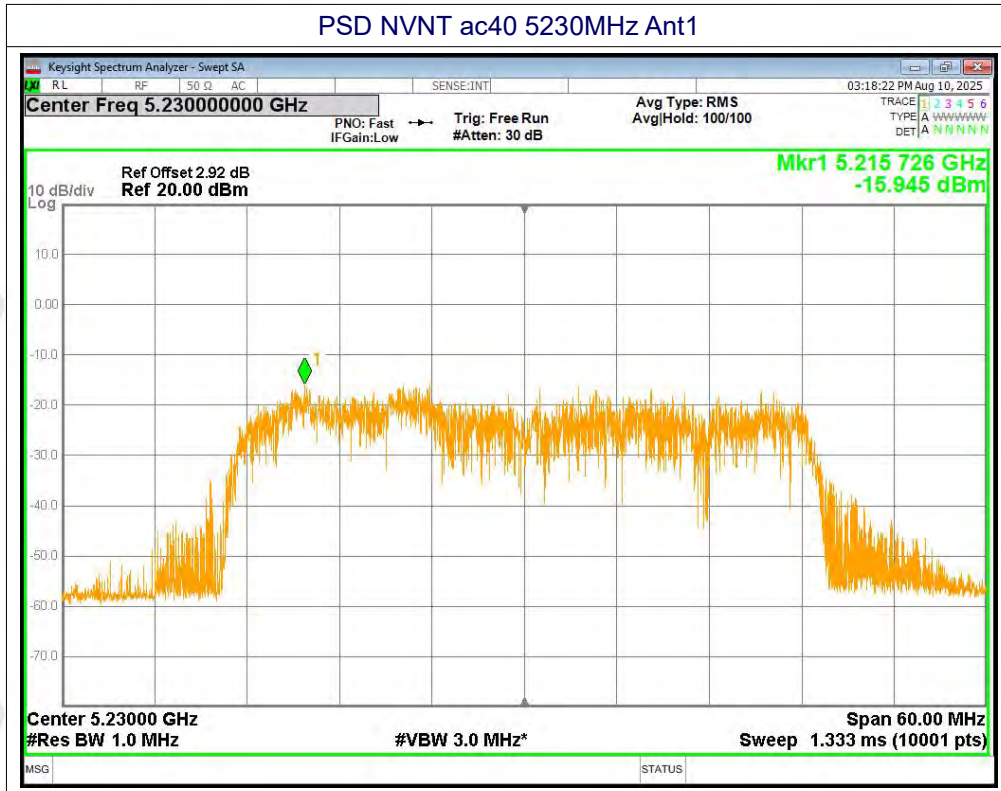


PSD NVNT ac20 5240MHz Ant1



PSD NVNT ac40 5190MHz Ant1





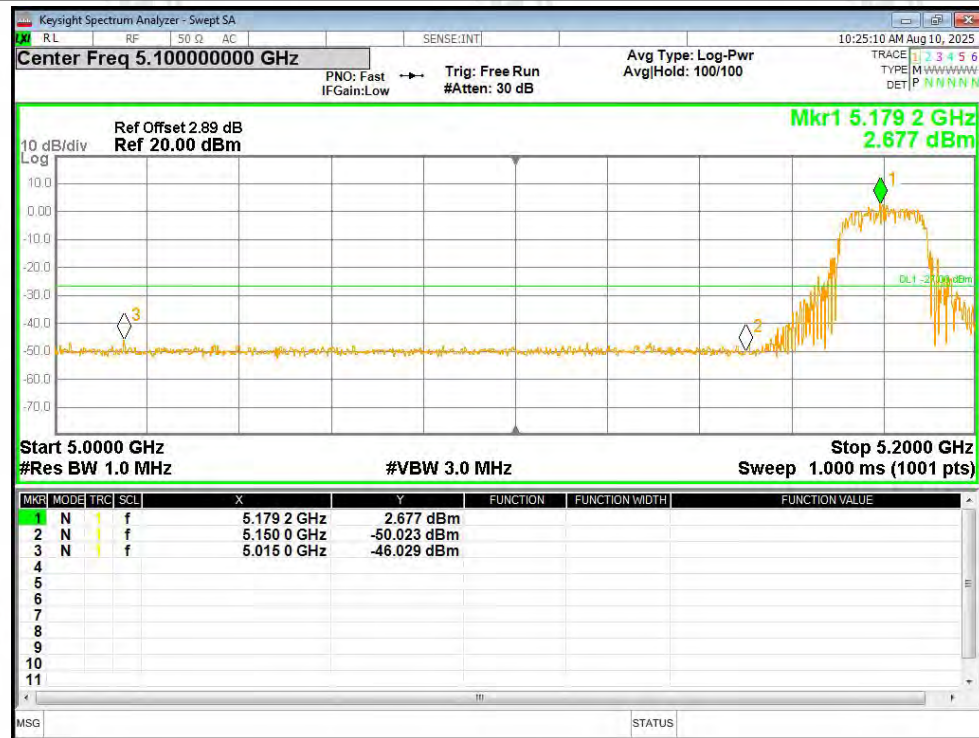


Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	ANT Gain (dBi)	EIRP Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-46.02	1.56	-44.46	-27	Pass
NVNT	a	5240	Ant1	-46.35	1.56	-44.79	-27	Pass
NVNT	n20	5180	Ant1	-40.17	1.56	-38.61	-27	Pass
NVNT	n20	5240	Ant1	-46.21	1.56	-44.65	-27	Pass
NVNT	n40	5190	Ant1	-43.29	1.56	-41.73	-27	Pass
NVNT	n40	5230	Ant1	-45.99	1.56	-44.43	-27	Pass
NVNT	ac20	5180	Ant1	-46.88	1.56	-45.32	-27	Pass
NVNT	ac20	5240	Ant1	-45.54	1.56	-43.98	-27	Pass
NVNT	ac40	5190	Ant1	-45.89	1.56	-44.33	-27	Pass
NVNT	ac40	5230	Ant1	-46.44	1.56	-44.88	-27	Pass

Test Graphs

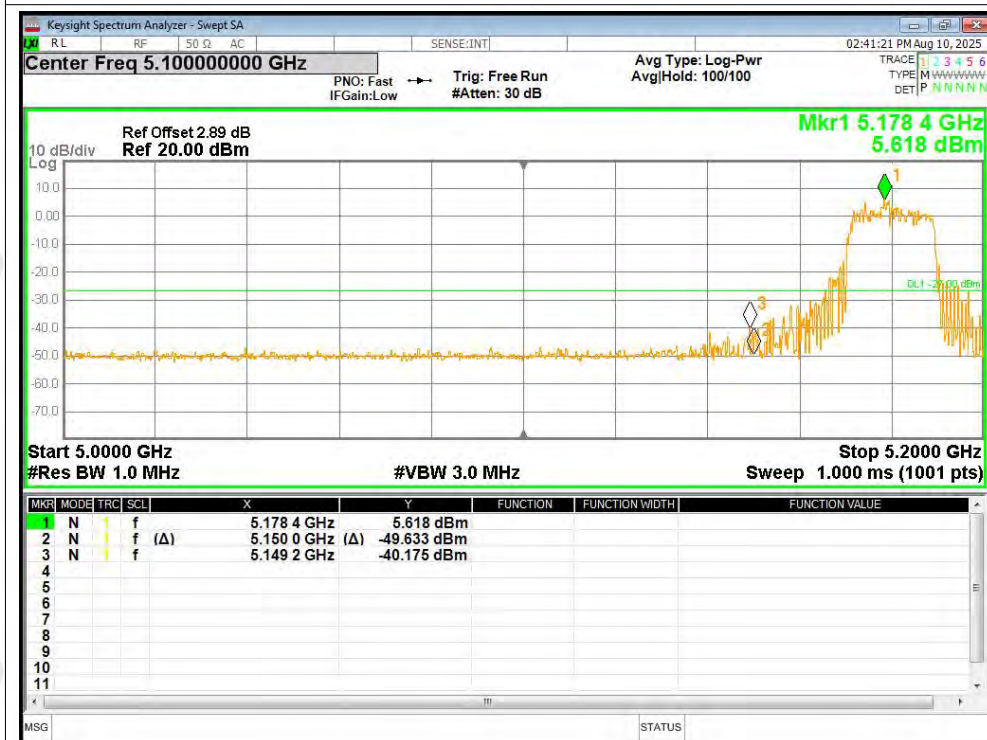
Band Edge NVNT a 5180MHz Low Ant1



Band Edge NVNT a 5240MHz High Ant1



Band Edge NVNT n20 5180MHz Low Ant1



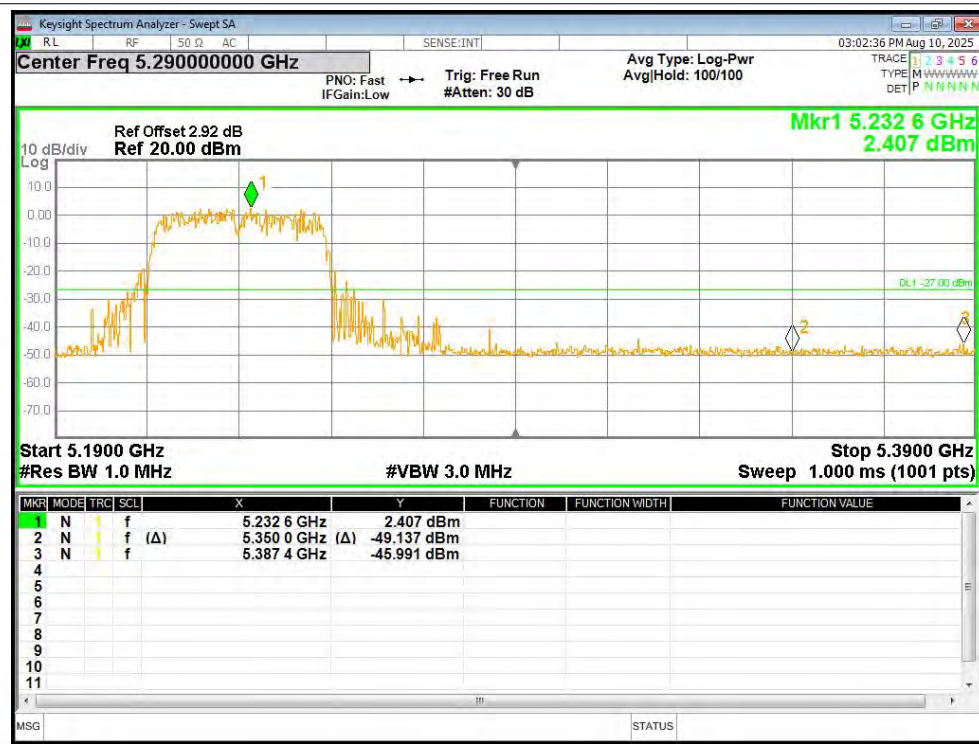
Band Edge NVNT n20 5240MHz High Ant1



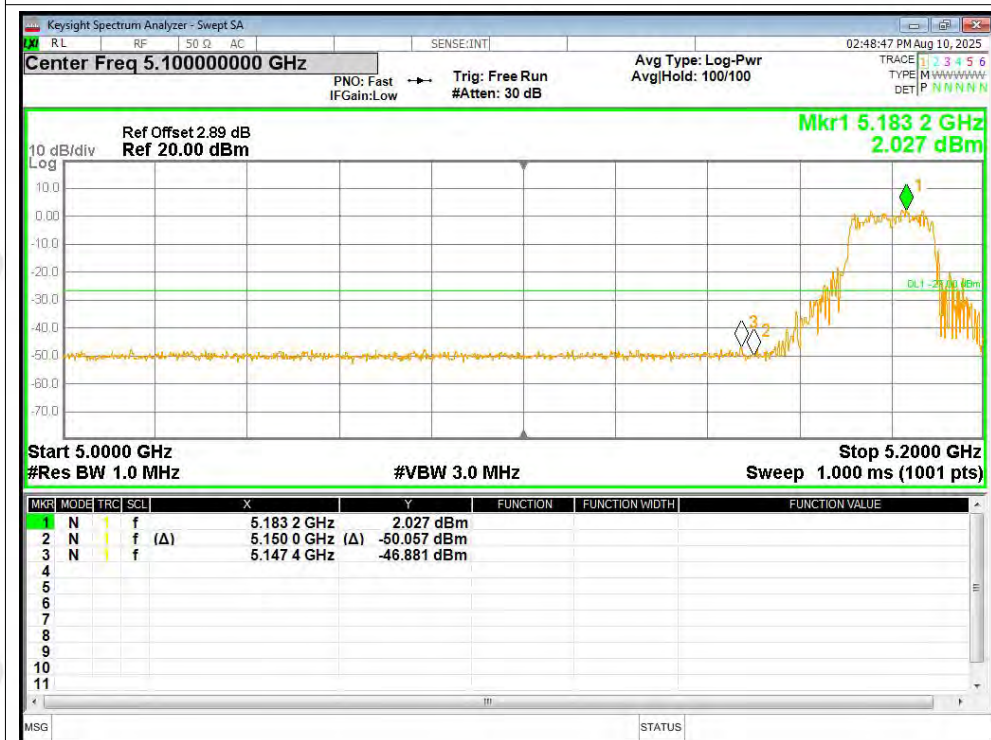
Band Edge NVNT n40 5190MHz Low Ant1



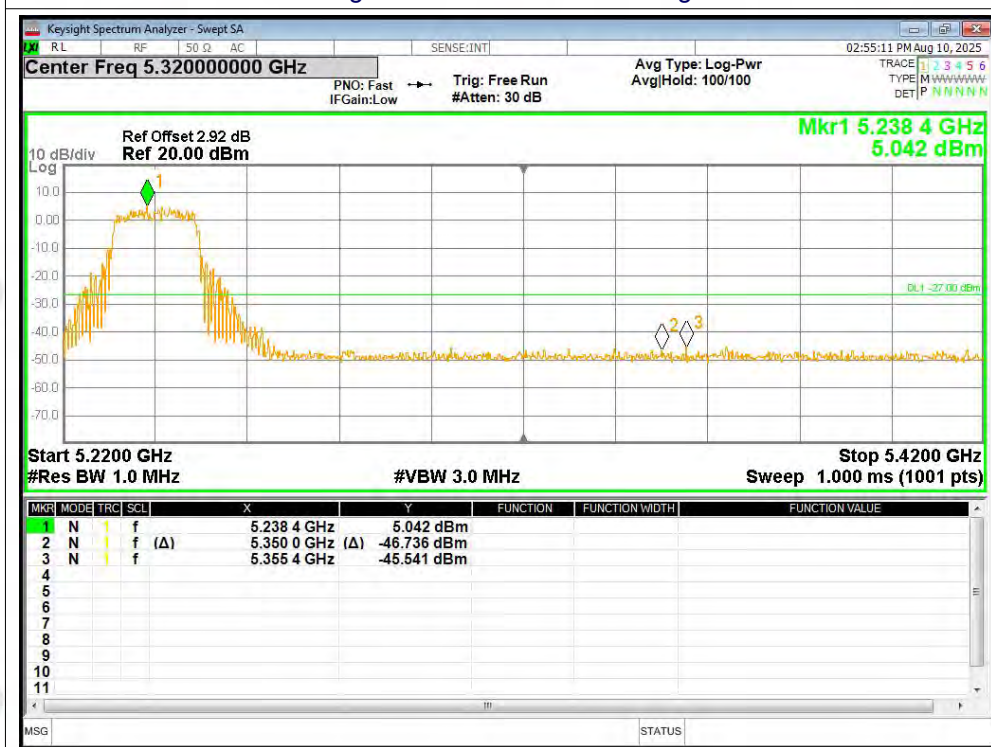
Band Edge NVNT n40 5230MHz High Ant1



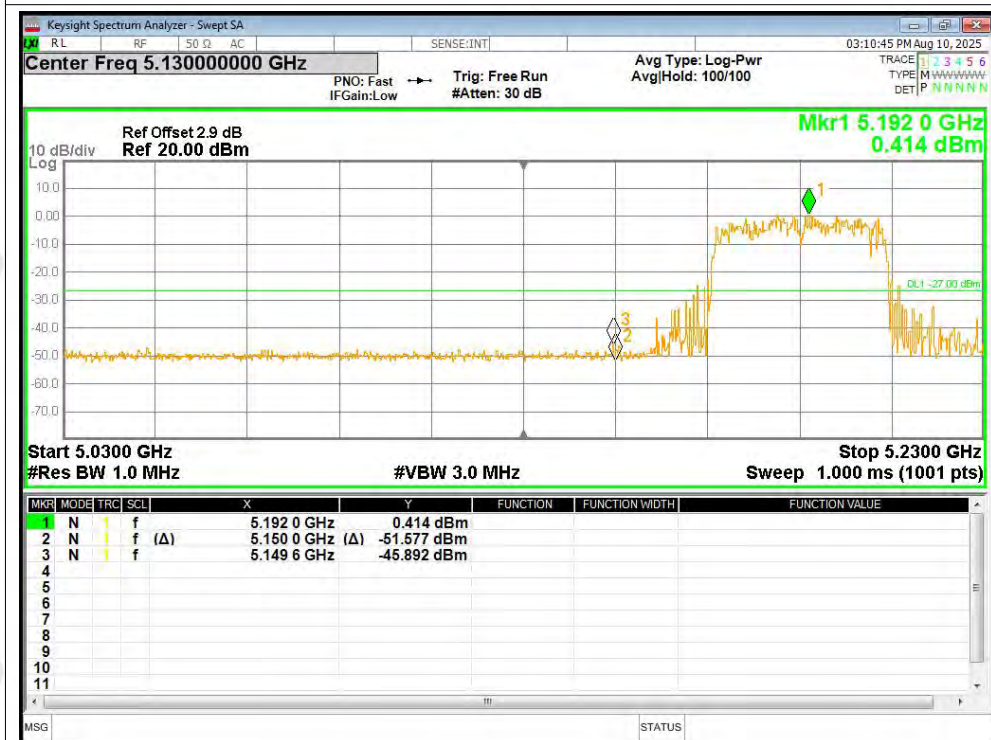
Band Edge NVNT ac20 5180MHz Low Ant1



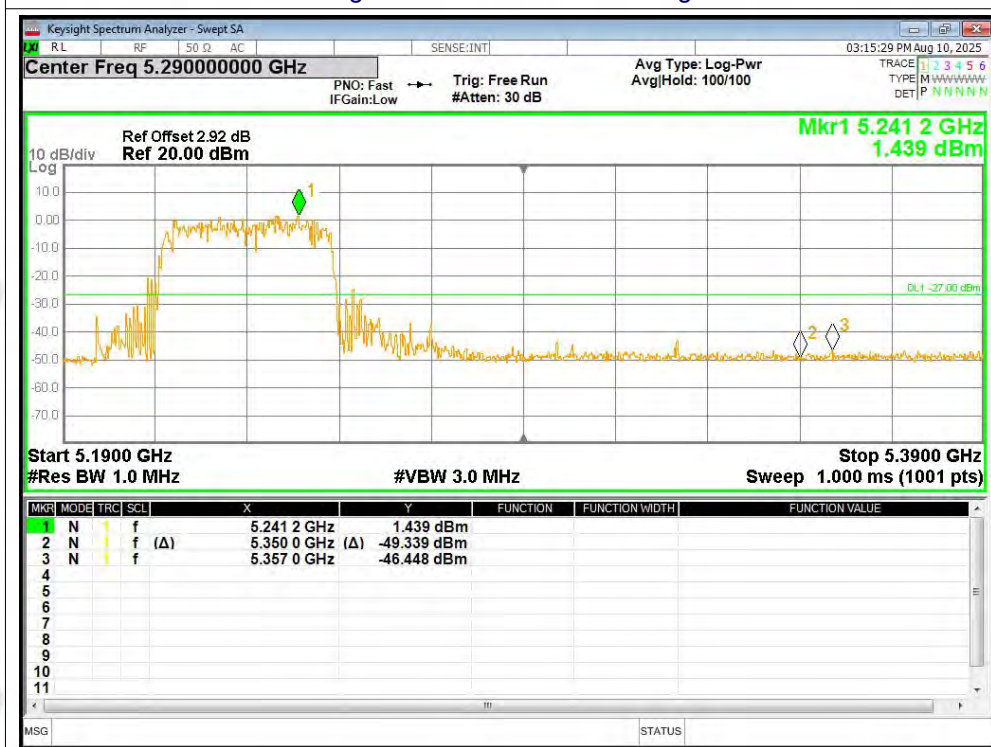
Band Edge NVNT ac20 5240MHz High Ant1



Band Edge NVNT ac40 5190MHz Low Ant1



Band Edge NVNT ac40 5230MHz High Ant1





Frequency Stability

Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5180	Ant1	5180	0	0	Within 5180-5240MHz	Pass
a	5200	Ant1	5200	0	0		Pass
a	5240	Ant1	5239.98	-20000	-3.82		Pass
n20	5180	Ant1	5180.02	20000	3.86		Pass
n20	5200	Ant1	5199.98	-20000	-3.85		Pass
n20	5240	Ant1	5240	0	0		Pass
n40	5190	Ant1	5190	0	0	Within 5190-5230MHz	Pass
n40	5230	Ant1	5230.04	40000	7.65		Pass
ac20	5180	Ant1	5180	0	0	Within 5180-5240MHz	Pass
ac20	5200	Ant1	5200.02	20000	3.85		Pass
ac20	5240	Ant1	5239.98	-20000	-3.82		Pass
ac40	5190	Ant1	5190.04	40000	7.71	Within	Pass
ac40	5230	Ant1	5230.04	40000	7.65	5190-5230MHz	Pass

Note: Test temperature: -20° to +70°. At room temperature, the test results are the worst, only reflecting the test results graphs at room temperature.

Test Graphs

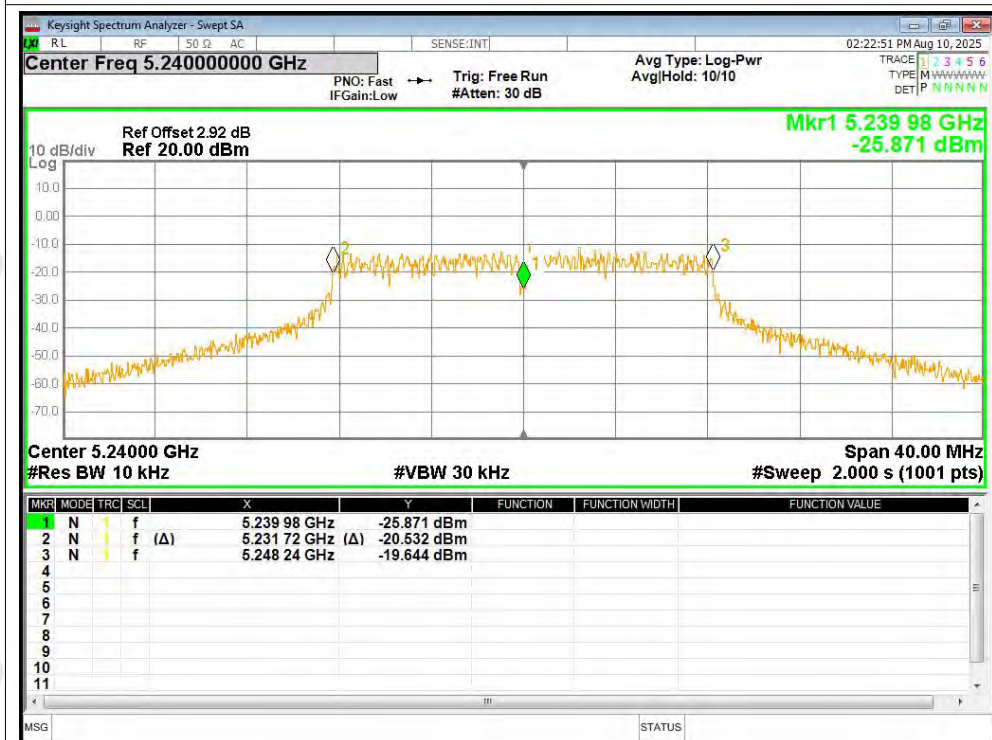
Freq. Stability NVNT a 5180MHz Ant1



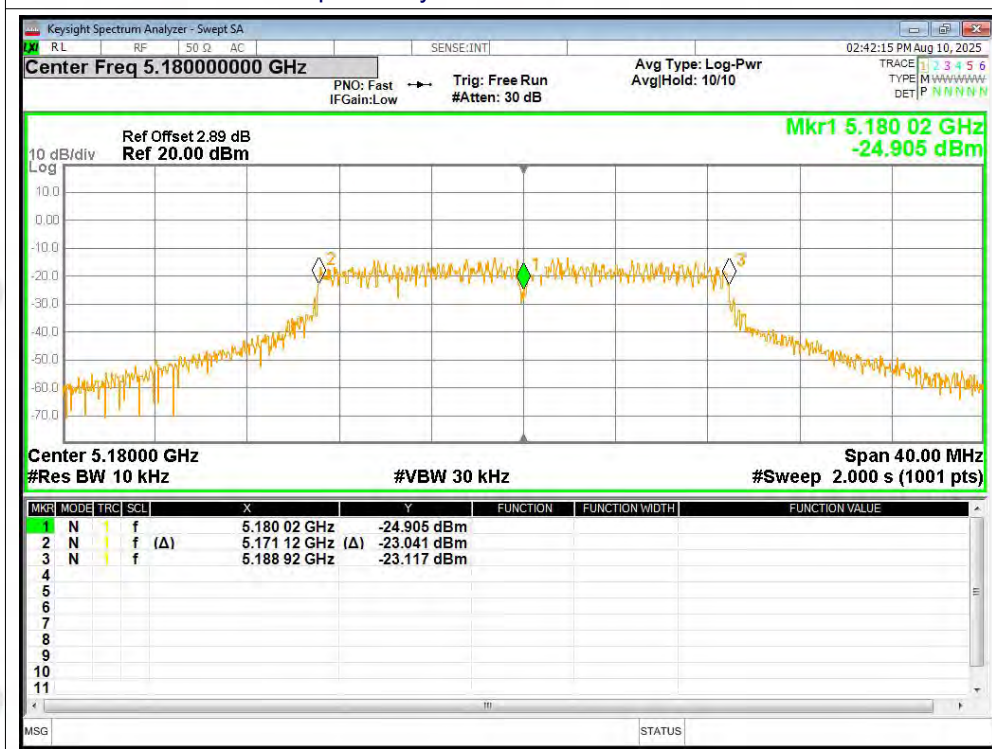
Freq. Stability NVNT a 5200MHz Ant1



Freq. Stability NVNT a 5240MHz Ant1



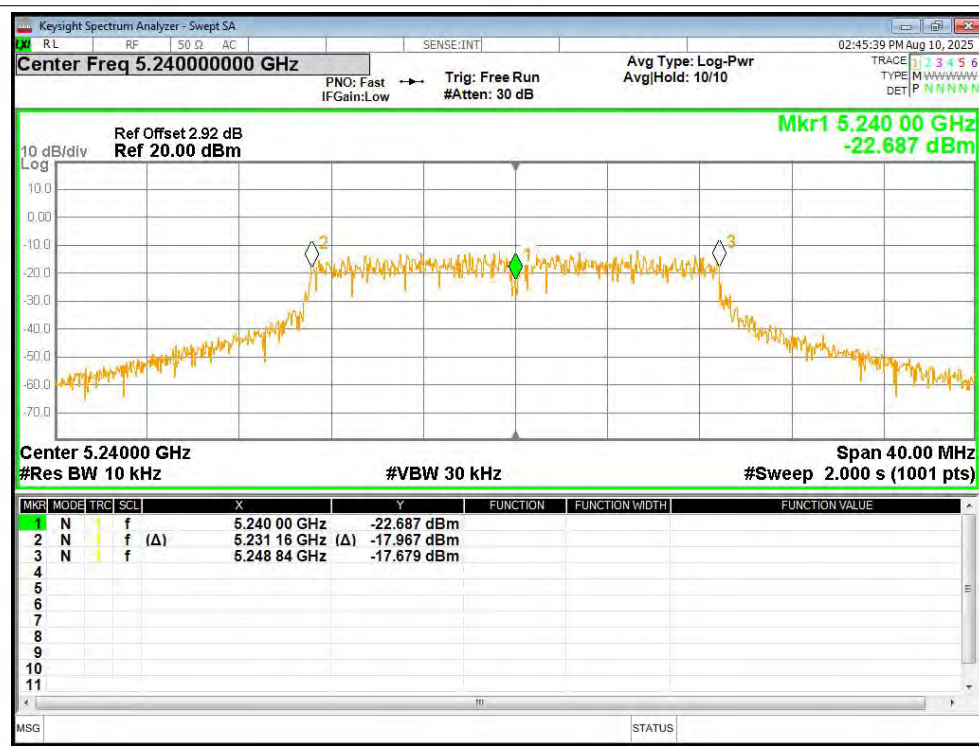
Freq. Stability NVNT n20 5180MHz Ant1



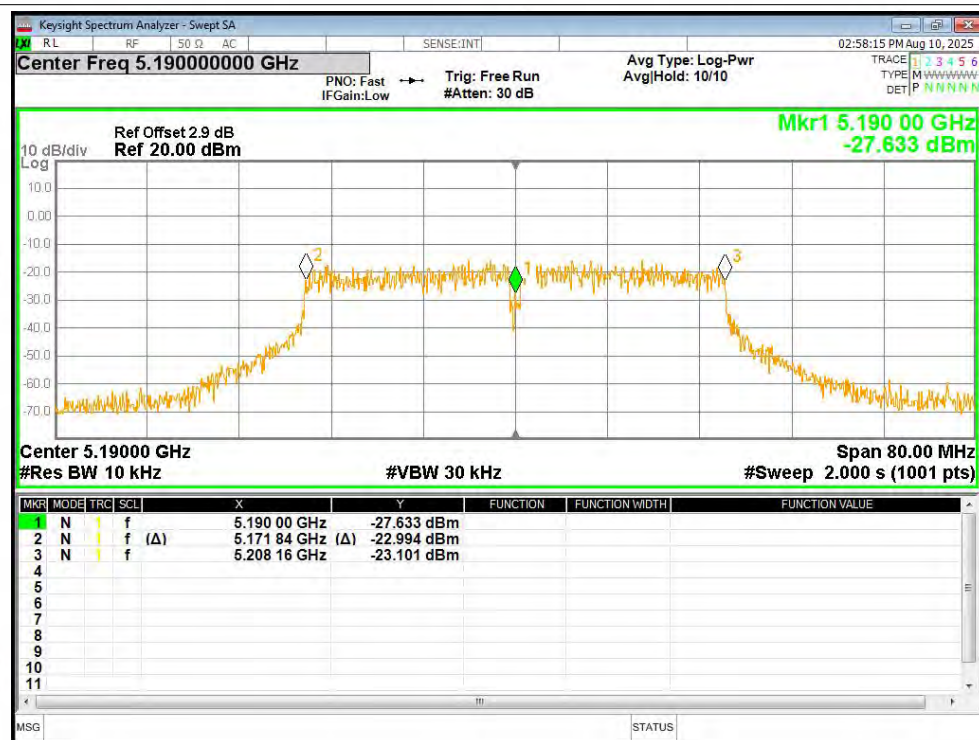
Freq. Stability NVNT n20 5200MHz Ant1



Freq. Stability NVNT n20 5240MHz Ant1



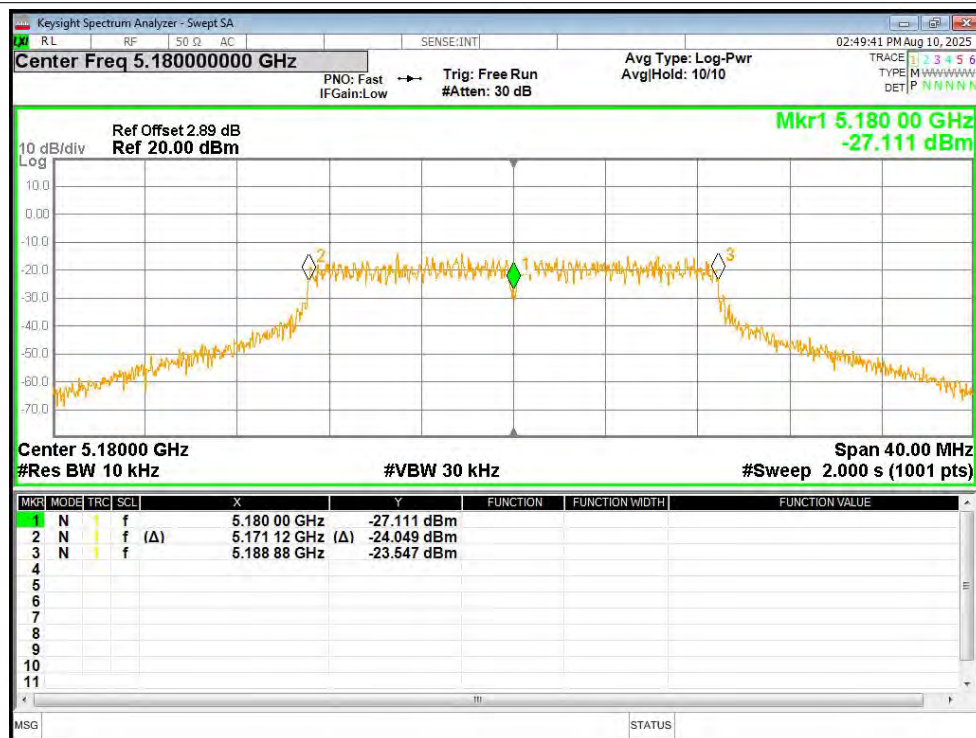
Freq. Stability NVNT n40 5190MHz Ant1



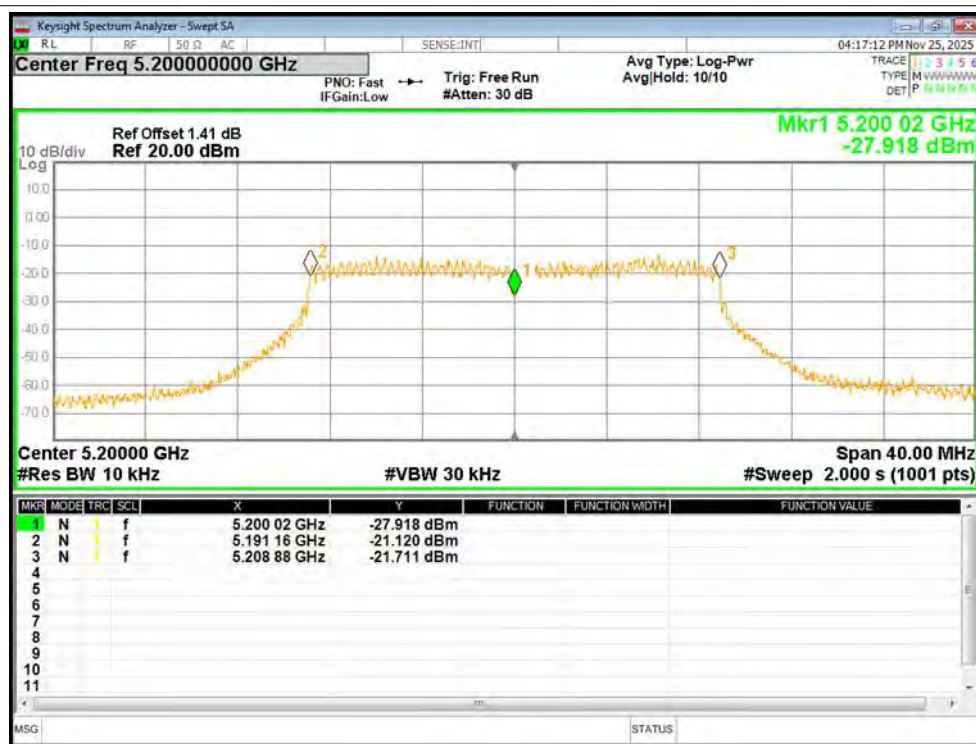
Freq. Stability NVNT n40 5230MHz Ant1



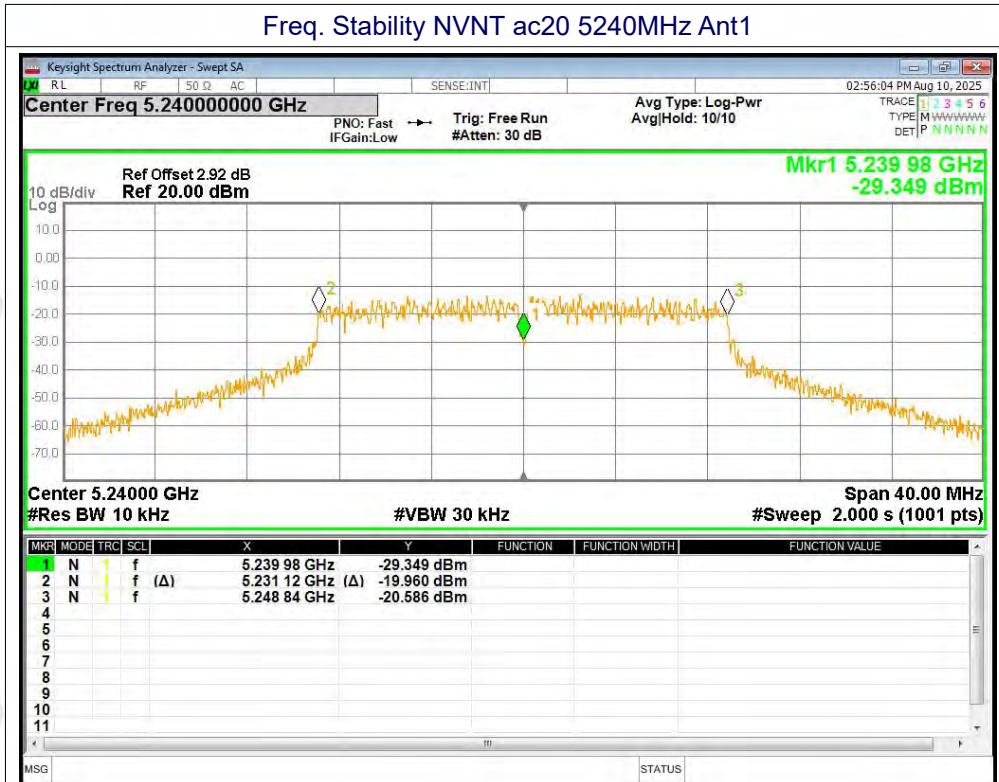
Freq. Stability NVNT ac20 5180MHz Ant1



Freq. Stability NVNT ac20 5200MHz Ant1



Freq. Stability NVNT ac20 5240MHz Ant1



Freq. Stability NVNT ac40 5190MHz Ant1

