

FCC Appendix RF Test Data for 5.2GWIFI

Product Name: Smart Diagnostic System

Test Model: VD800

Environmental Conditions

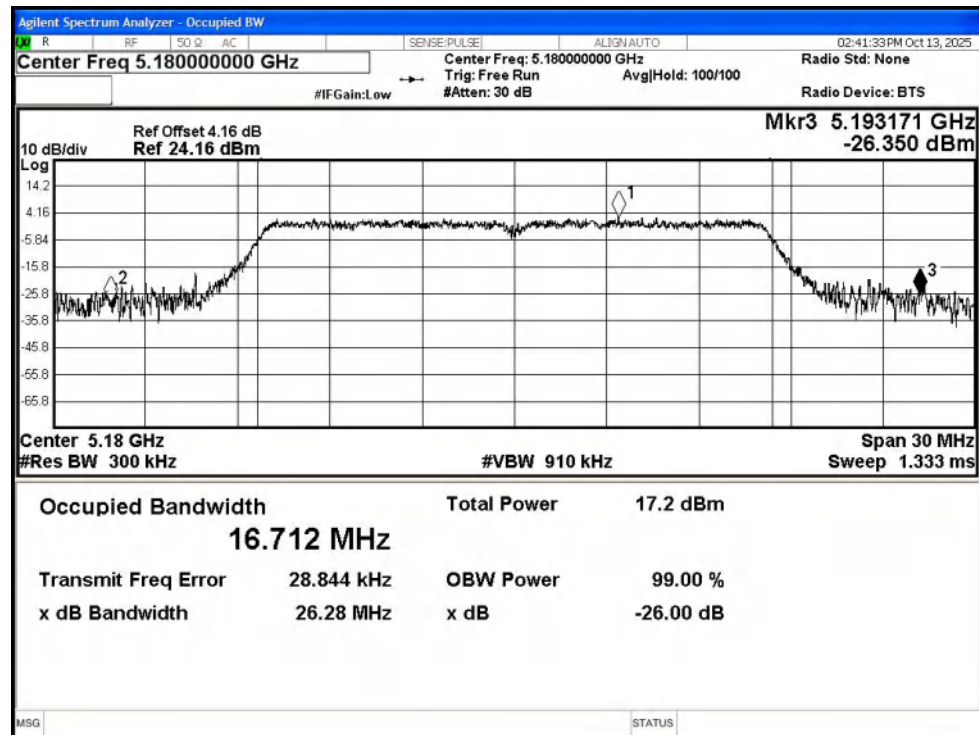
Temperature:	24.2° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Zoey Cao
Supervised by:	Eric Wang

1. -26dB Bandwidth

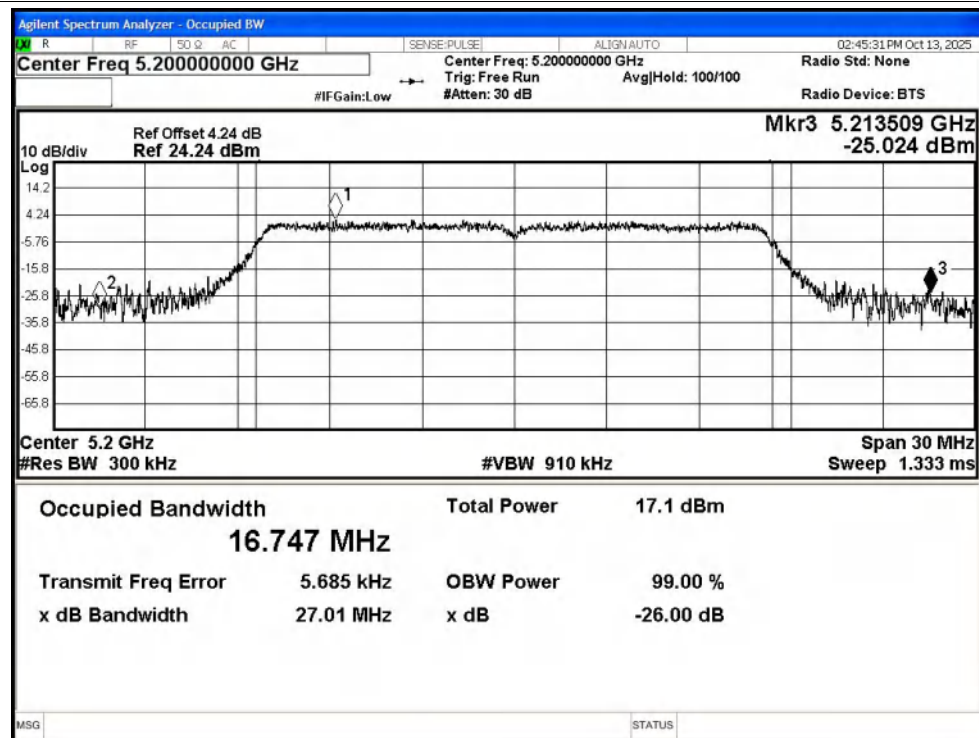
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	26.285	---	Pass
NVNT	a	5200	Ant1	27.007	---	Pass
NVNT	a	5240	Ant1	25.421	---	Pass
NVNT	n20	5180	Ant1	28.699	---	Pass
NVNT	n20	5200	Ant1	29.282	---	Pass
NVNT	n20	5240	Ant1	28.068	---	Pass
NVNT	n40	5190	Ant1	44.772	---	Pass
NVNT	n40	5230	Ant1	48.038	---	Pass
NVNT	ac20	5180	Ant1	27.1	---	Pass
NVNT	ac20	5200	Ant1	27.594	---	Pass
NVNT	ac20	5240	Ant1	27.483	---	Pass
NVNT	ac40	5190	Ant1	48.765	---	Pass
NVNT	ac40	5230	Ant1	47.572	---	Pass
NVNT	ac80	5210	Ant1	87.371	---	Pass

Test Graphs

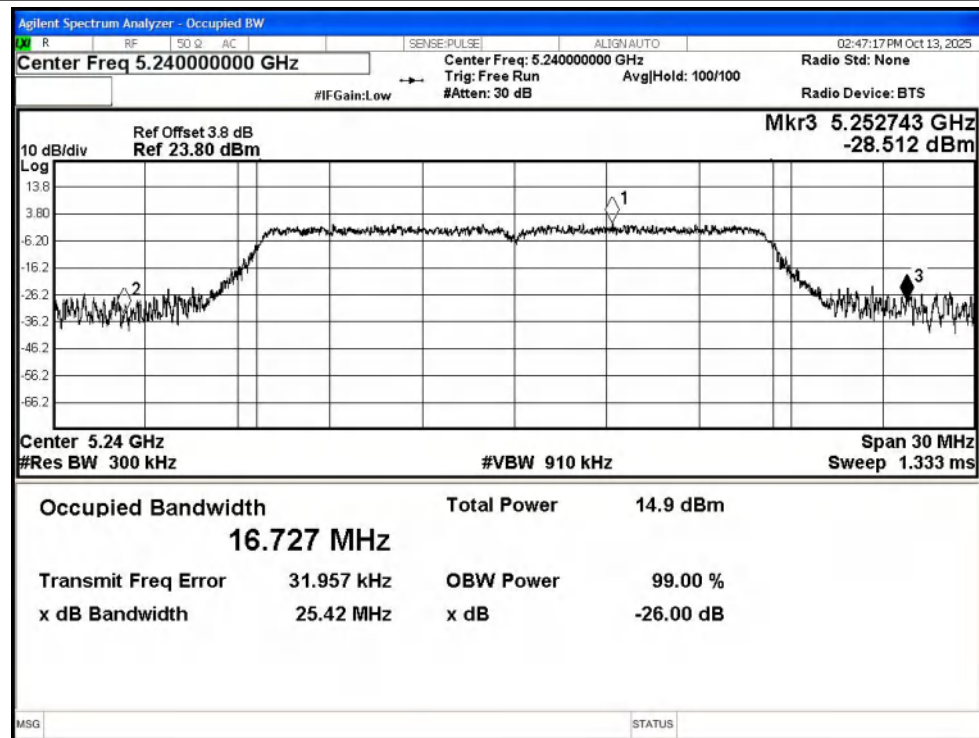
-26dB Bandwidth NVNT a 5180MHz Ant1



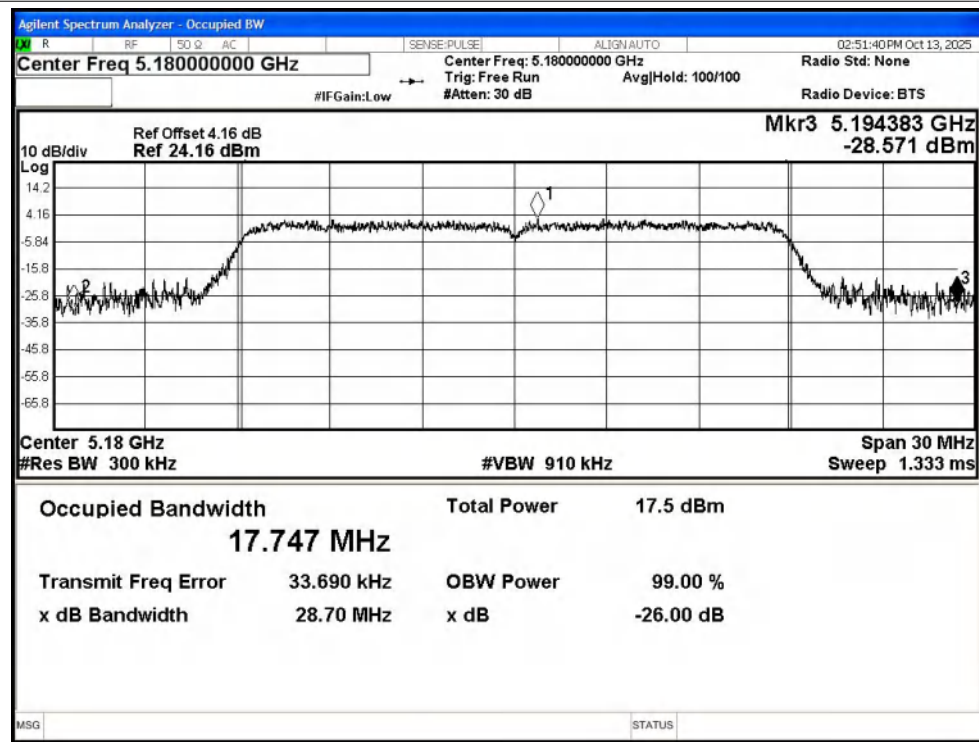
-26dB Bandwidth NVNT a 5200MHz Ant1



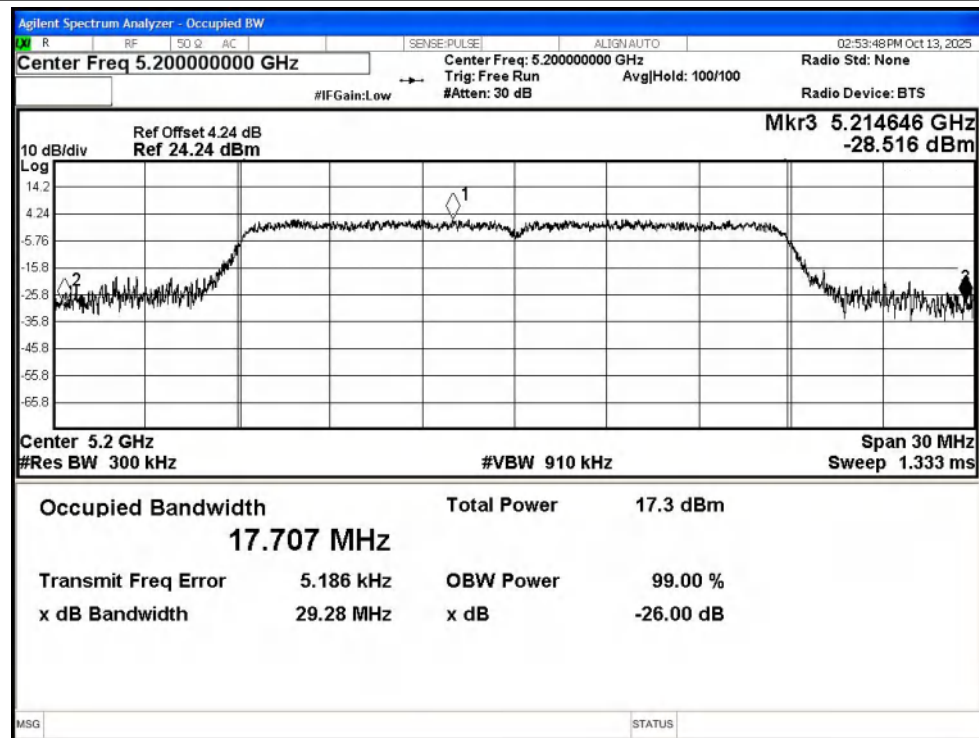
-26dB Bandwidth NVNT a 5240MHz Ant1



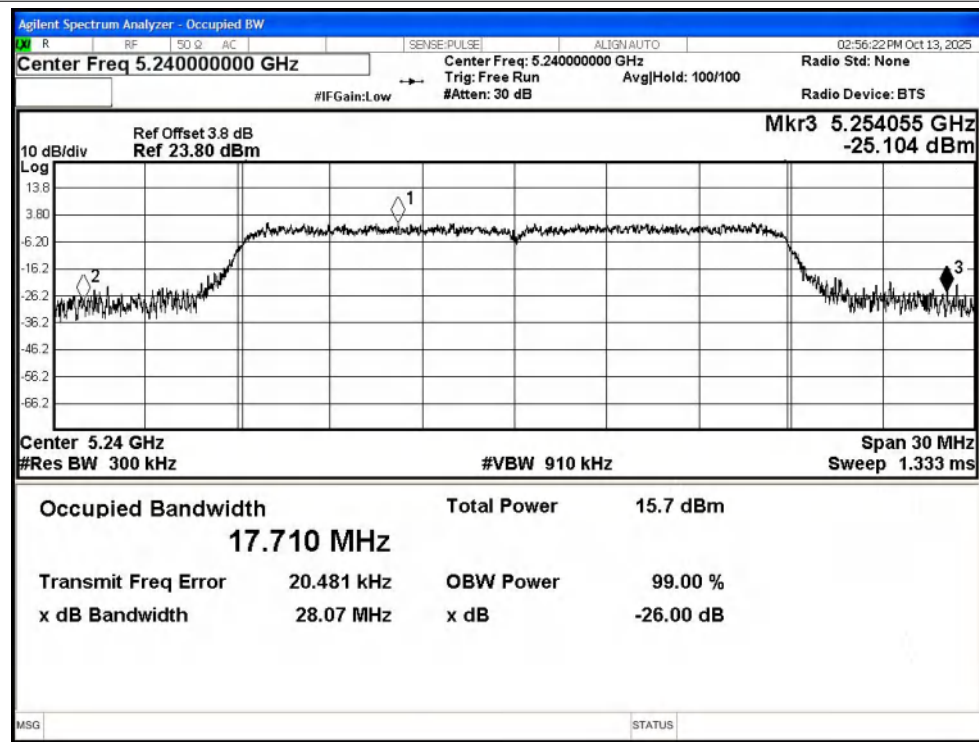
-26dB Bandwidth NVNT n20 5180MHz Ant1



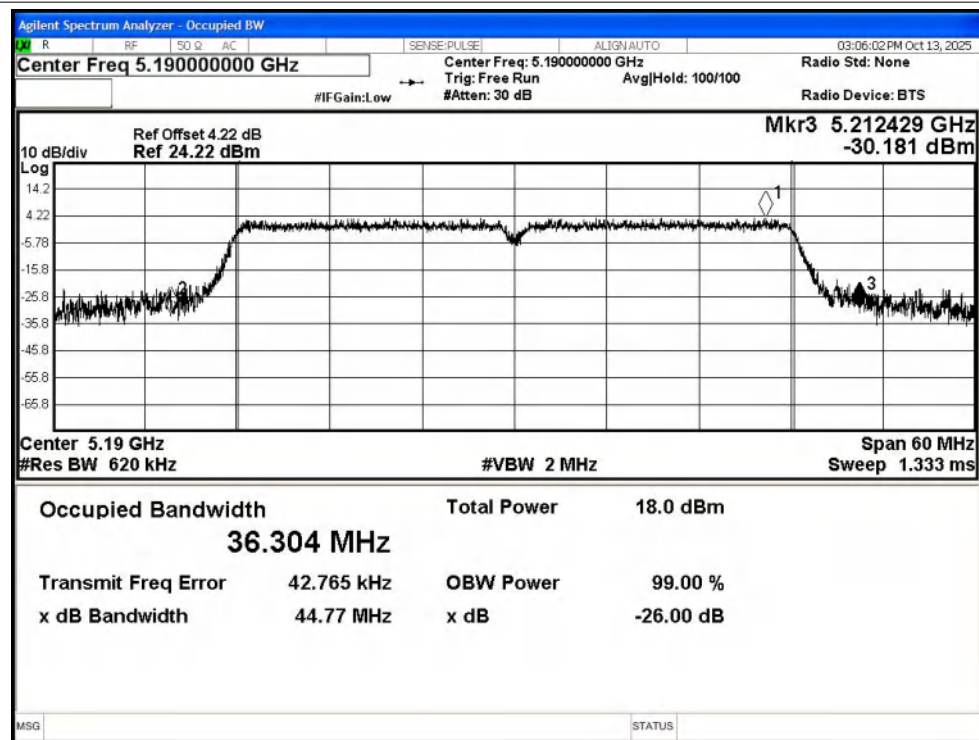
-26dB Bandwidth NVNT n20 5200MHz Ant1



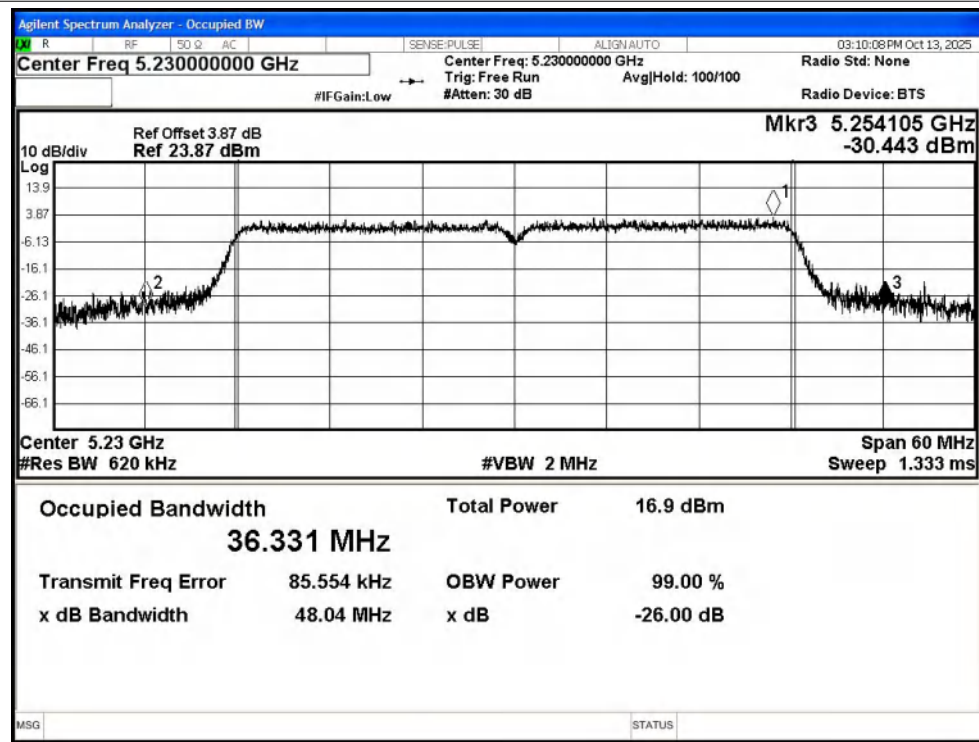
-26dB Bandwidth NVNT n20 5240MHz Ant1



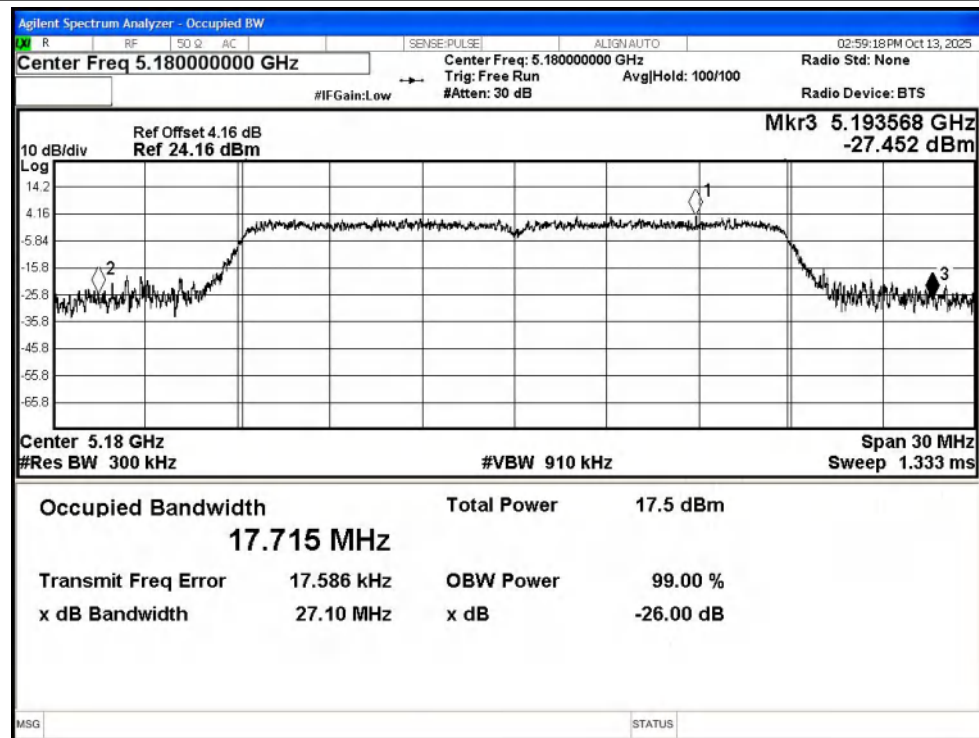
-26dB Bandwidth NVNT n40 5190MHz Ant1



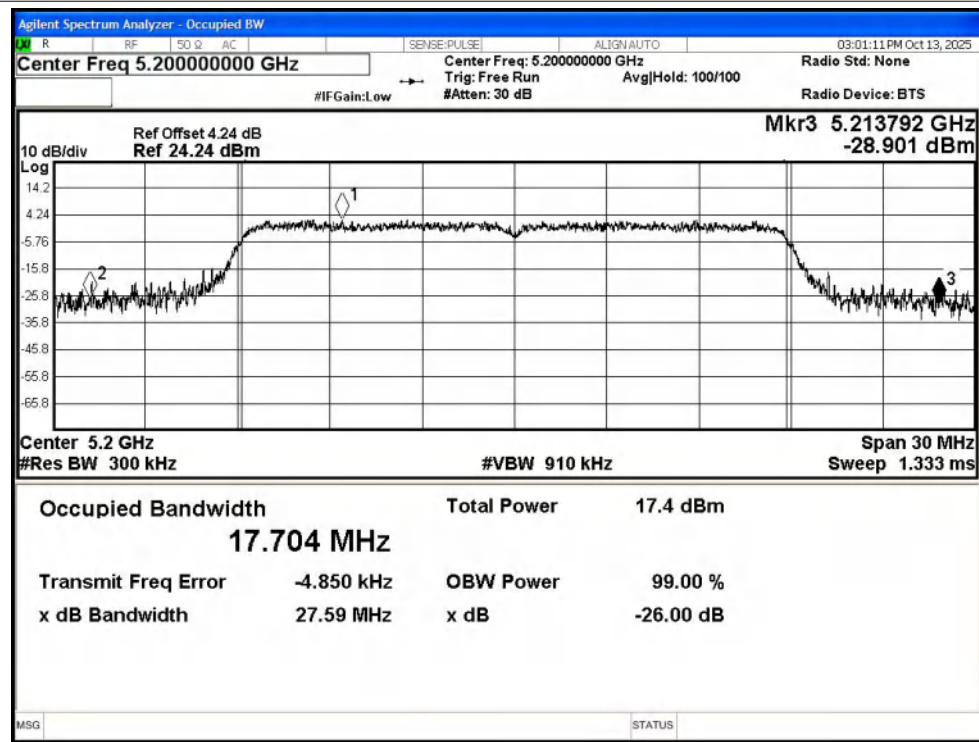
-26dB Bandwidth NVNT n40 5230MHz Ant1



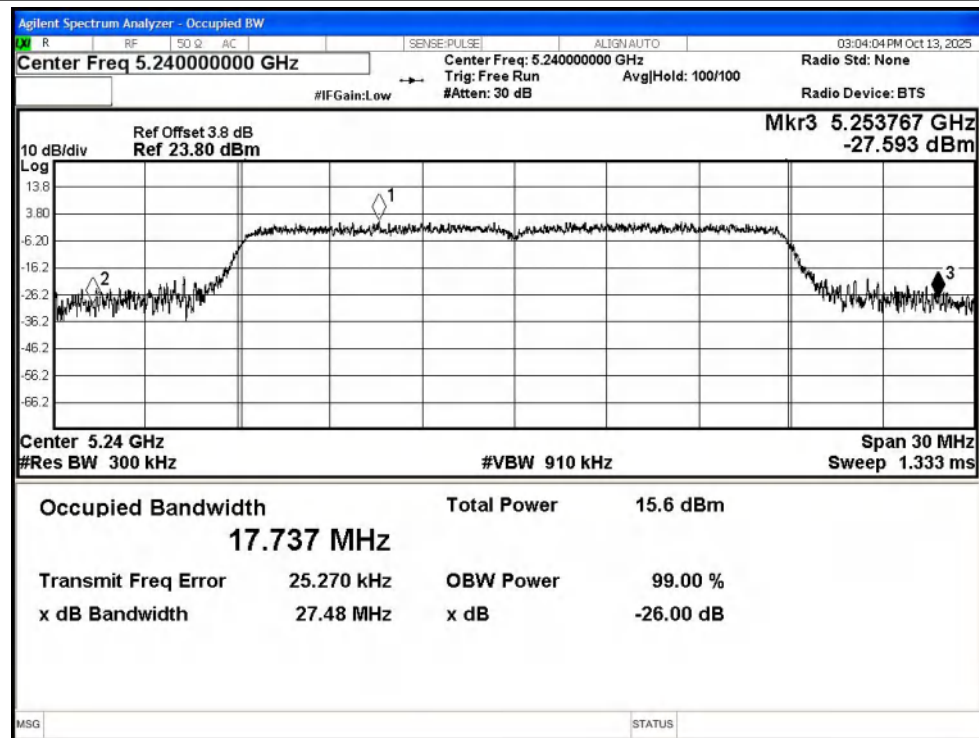
-26dB Bandwidth NVNT ac20 5180MHz Ant1



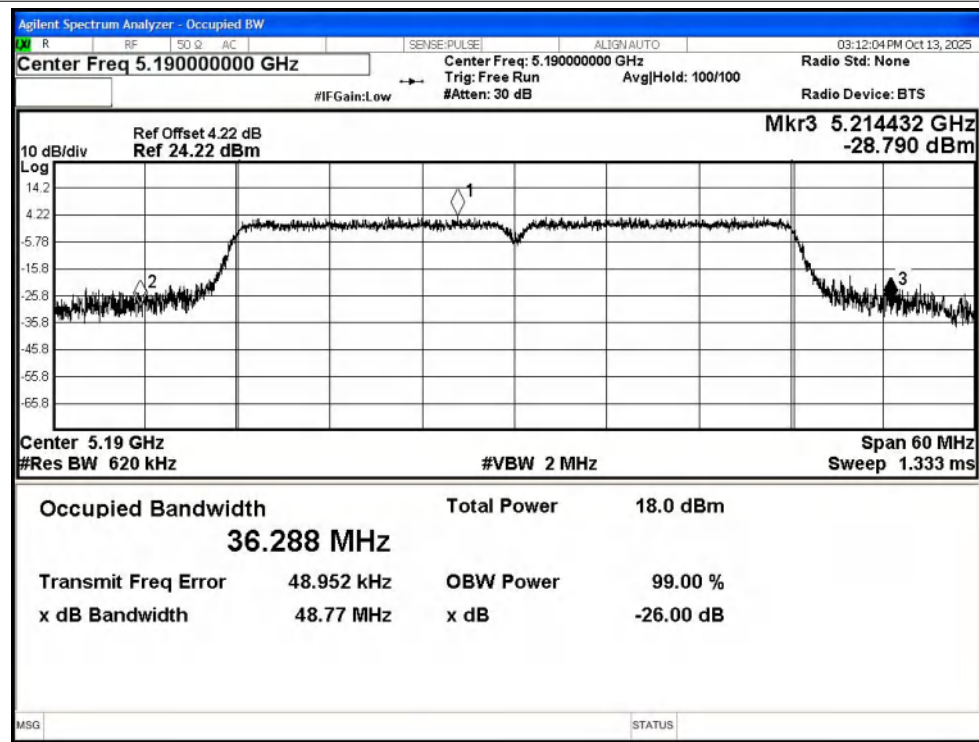
-26dB Bandwidth NVNT ac20 5200MHz Ant1



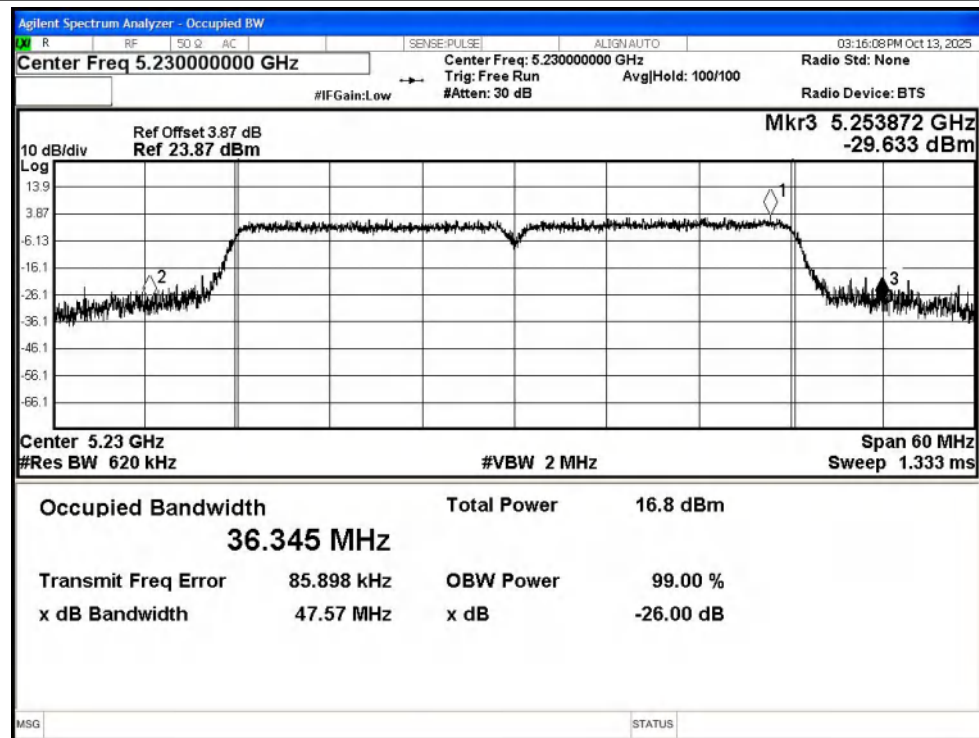
-26dB Bandwidth NVNT ac20 5240MHz Ant1



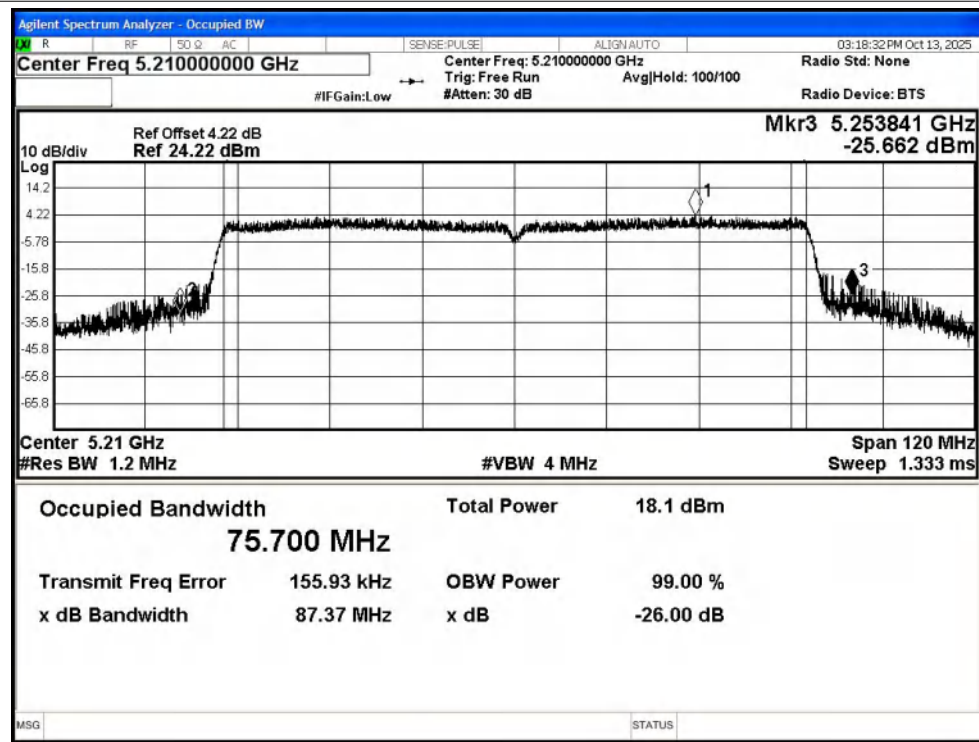
-26dB Bandwidth NVNT ac40 5190MHz Ant1



-26dB Bandwidth NVNT ac40 5230MHz Ant1



-26dB Bandwidth NVNT ac80 5210MHz Ant1



2. Maximum Conducted Output Power

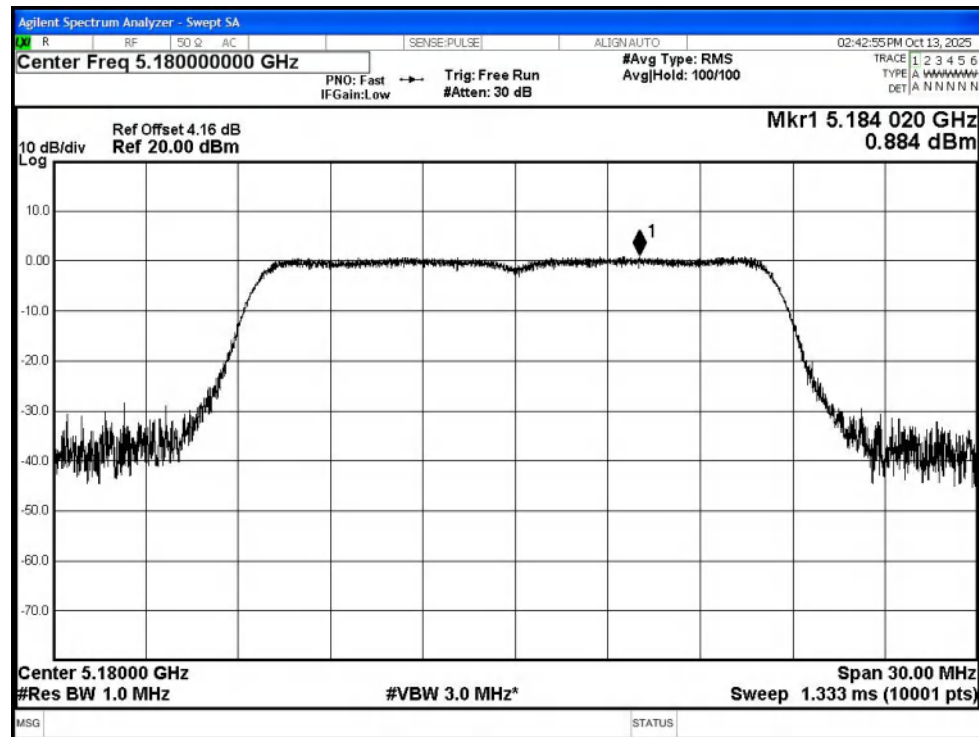
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	11.74	0.1	11.84	24	Pass
NVNT	a	5200	Ant1	11.53	0.1	11.63	24	Pass
NVNT	a	5240	Ant1	9.31	0.1	9.41	24	Pass
NVNT	n20	5180	Ant1	11.93	0.12	12.05	24	Pass
NVNT	n20	5200	Ant1	11.89	0.12	12.01	24	Pass
NVNT	n20	5240	Ant1	10.19	0.12	10.31	24	Pass
NVNT	n40	5190	Ant1	11.74	0.23	11.97	24	Pass
NVNT	n40	5230	Ant1	10.52	0.23	10.75	24	Pass
NVNT	ac20	5180	Ant1	11.97	0.12	12.09	24	Pass
NVNT	ac20	5200	Ant1	11.95	0.11	12.06	24	Pass
NVNT	ac20	5240	Ant1	10.19	0.12	10.31	24	Pass
NVNT	ac40	5190	Ant1	11.71	0.23	11.94	24	Pass
NVNT	ac40	5230	Ant1	10.46	0.23	10.69	24	Pass
NVNT	ac80	5210	Ant1	10.68	0.47	11.15	24	Pass

3. Maximum Power Spectral Density Level

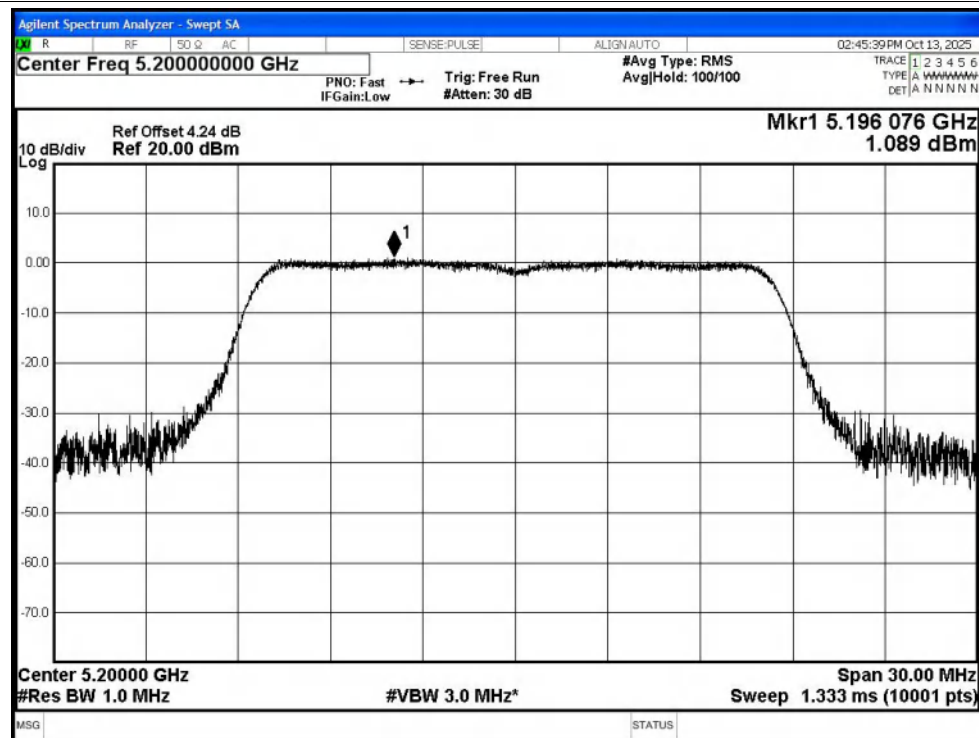
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	Ant1	0.88	0.1	0.98	11	Pass
NVNT	a	5200	Ant1	1.09	0.1	1.19	11	Pass
NVNT	a	5240	Ant1	-1.31	0.1	-1.21	11	Pass
NVNT	n20	5180	Ant1	1.16	0.12	1.28	11	Pass
NVNT	n20	5200	Ant1	0.94	0.12	1.06	11	Pass
NVNT	n20	5240	Ant1	-0.7	0.12	-0.58	11	Pass
NVNT	n40	5190	Ant1	-2.02	0.23	-1.79	11	Pass
NVNT	n40	5230	Ant1	-2.98	0.23	-2.75	11	Pass
NVNT	ac20	5180	Ant1	1.17	0.12	1.29	11	Pass
NVNT	ac20	5200	Ant1	1.09	0.11	1.2	11	Pass
NVNT	ac20	5240	Ant1	-0.65	0.12	-0.53	11	Pass
NVNT	ac40	5190	Ant1	-2.02	0.23	-1.79	11	Pass
NVNT	ac40	5230	Ant1	-2.78	0.23	-2.55	11	Pass
NVNT	ac80	5210	Ant1	-5.49	0.47	-5.02	11	Pass

Test Graphs

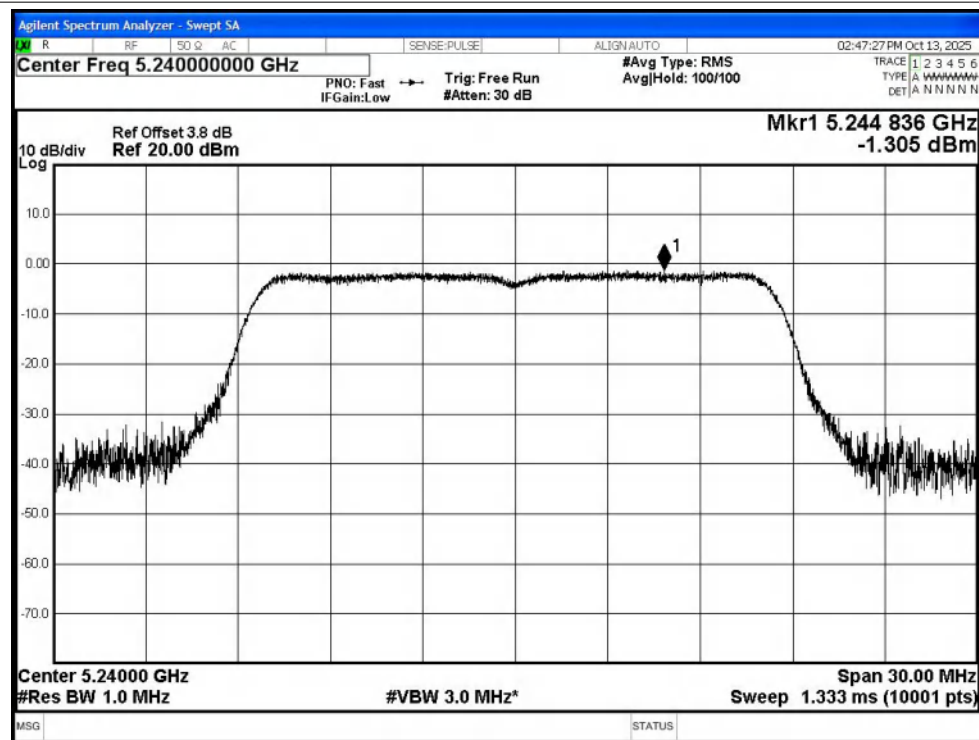
PSD NVNT a 5180MHz Ant1



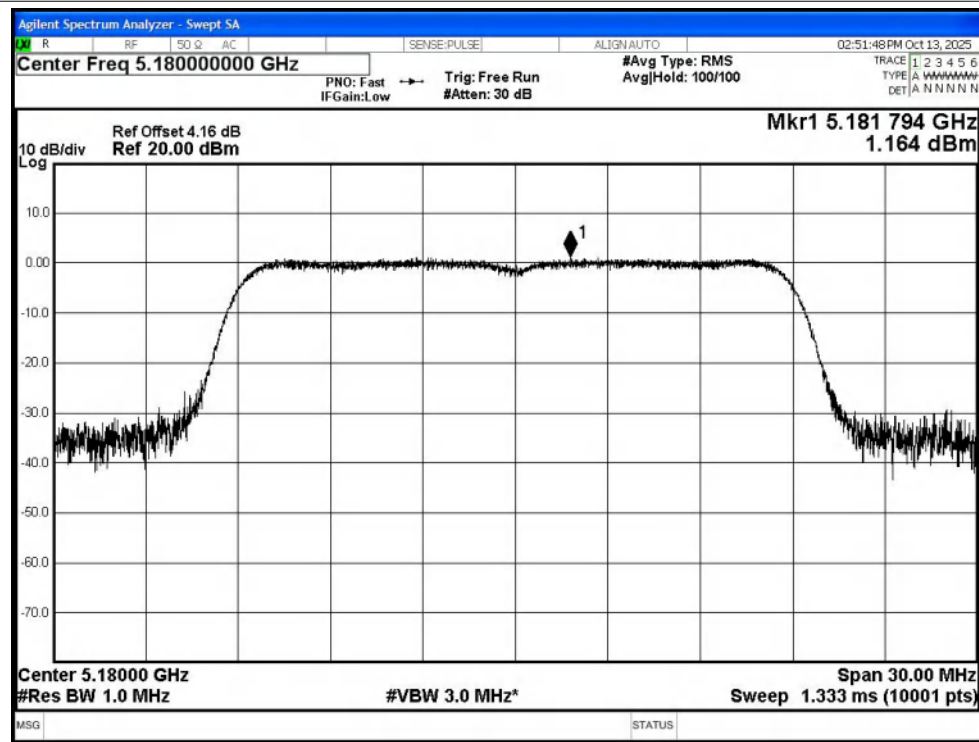
PSD NVNT a 5200MHz Ant1



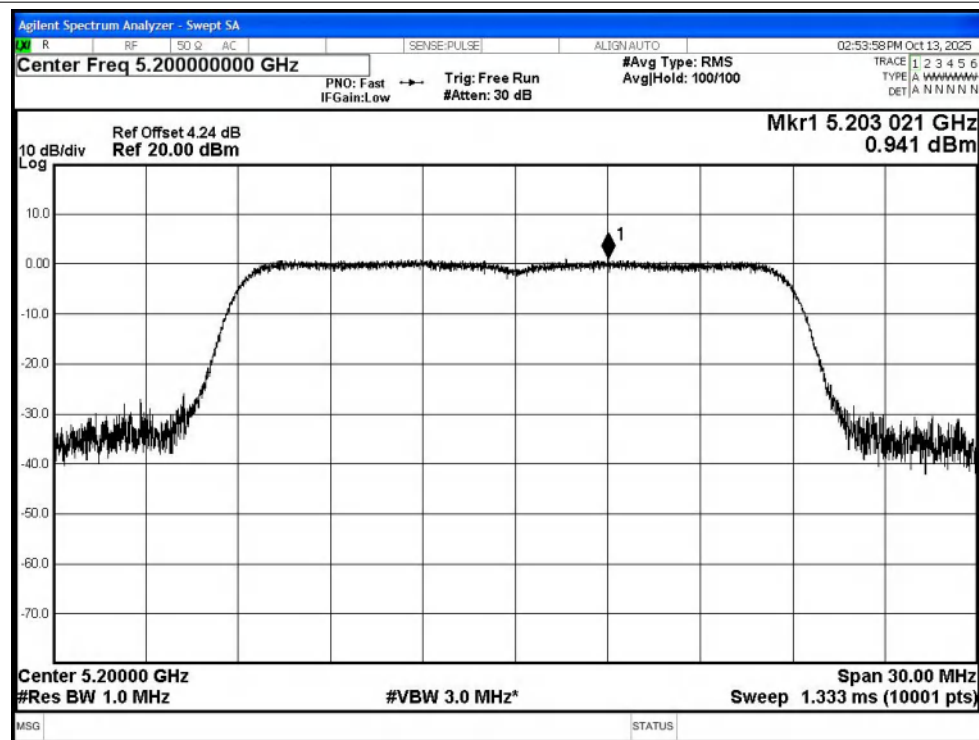
PSD NVNT a 5240MHz Ant1



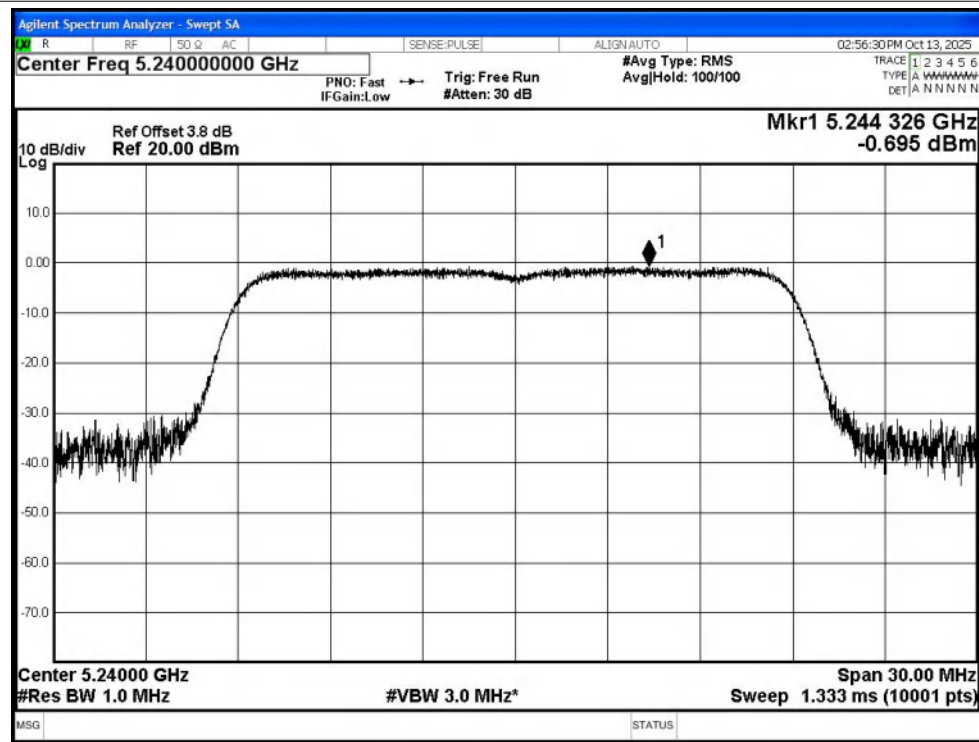
PSD NVNT n20 5180MHz Ant1



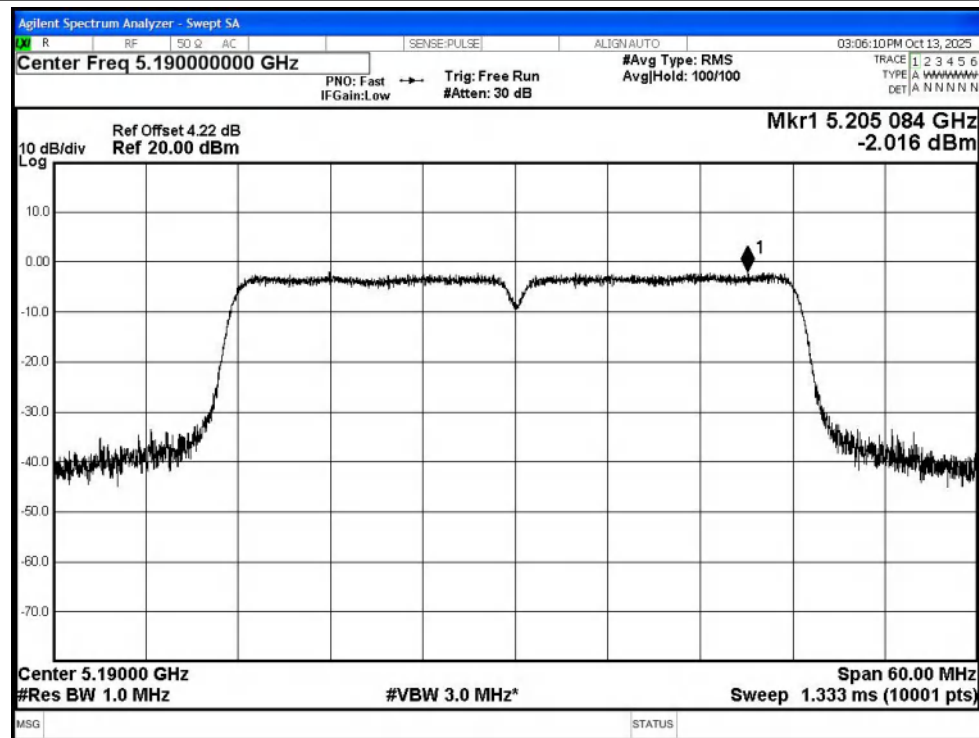
PSD NVNT n20 5200MHz Ant1



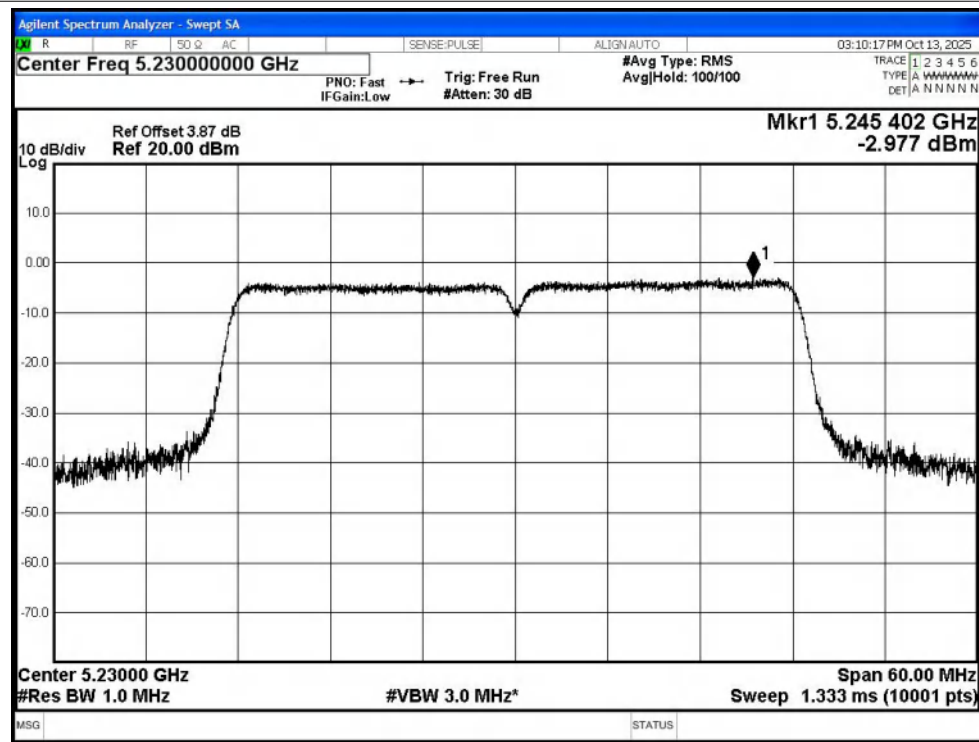
PSD NVNT n20 5240MHz Ant1



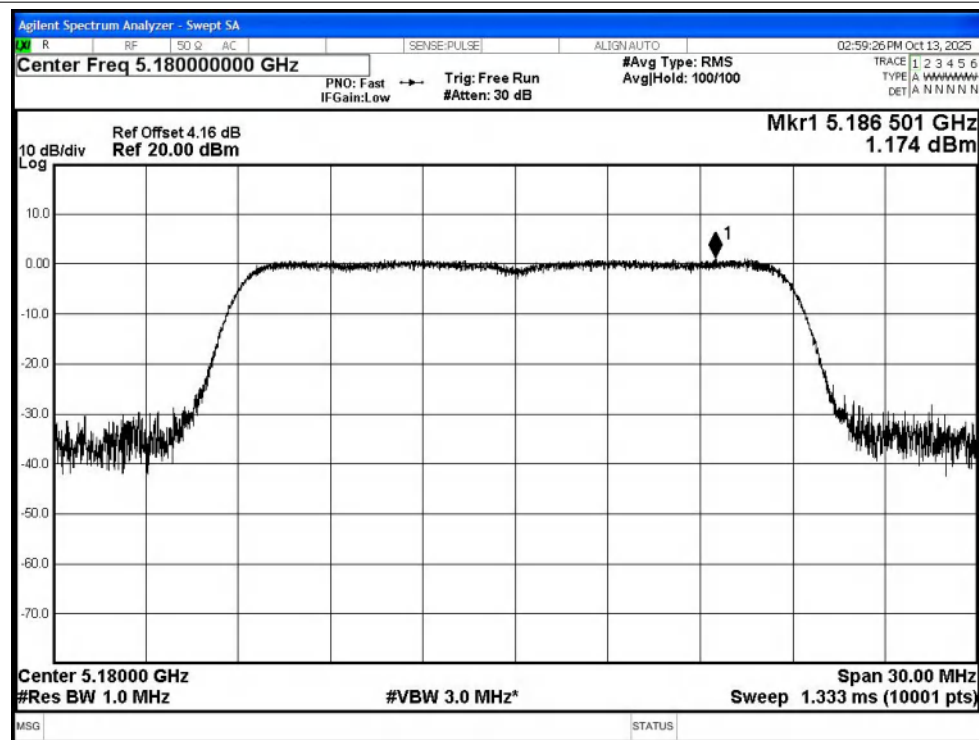
PSD NVNT n40 5190MHz Ant1



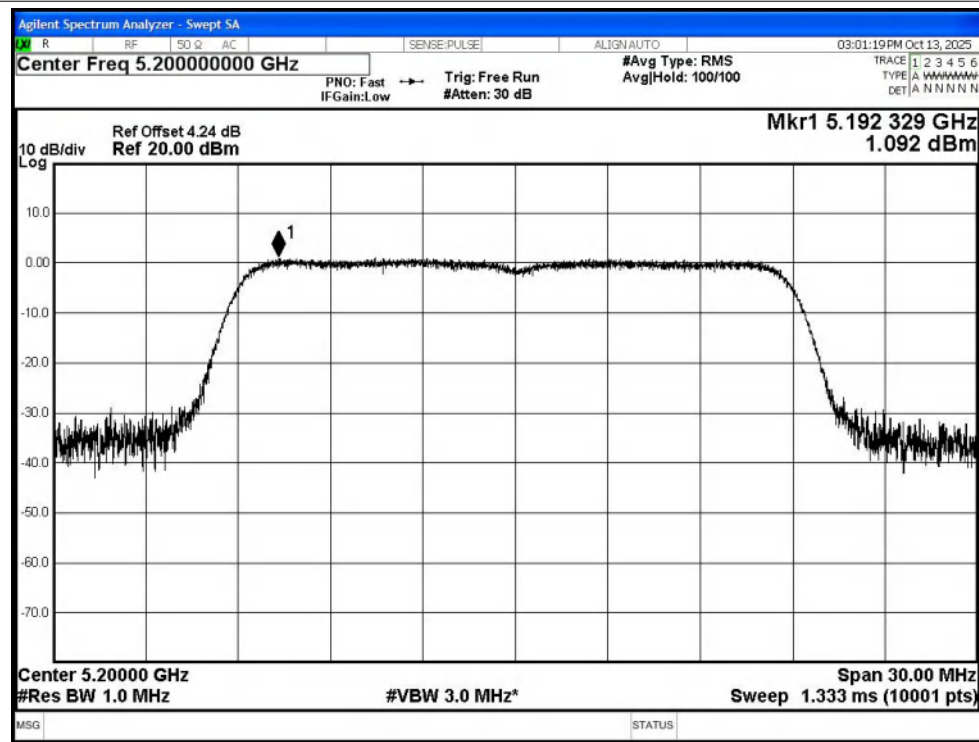
PSD NVNT n40 5230MHz Ant1



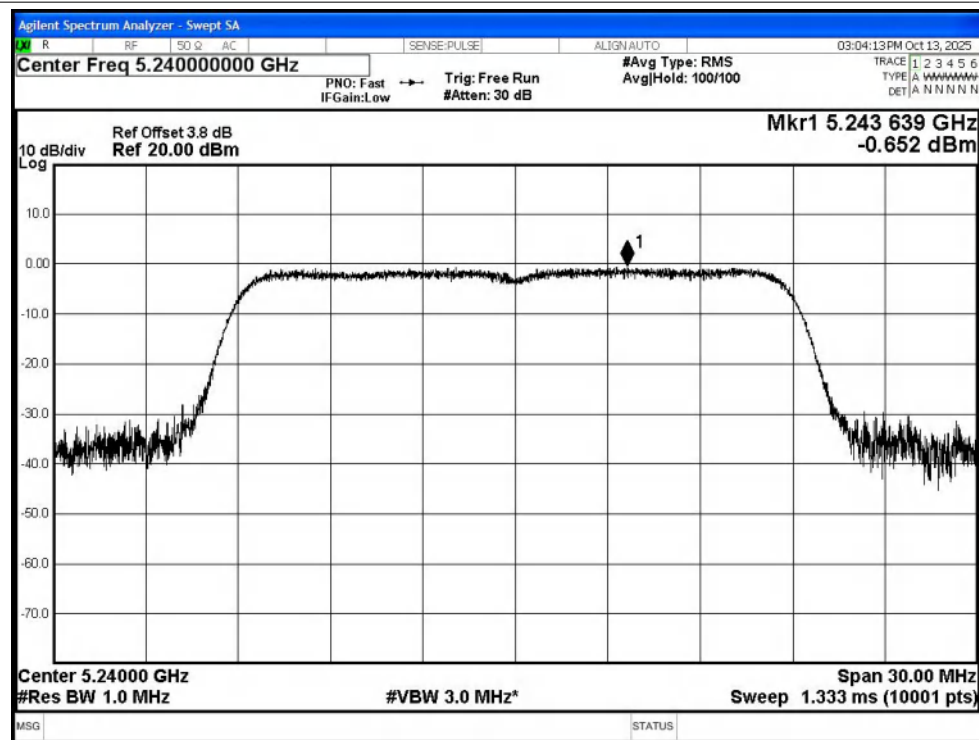
PSD NVNT ac20 5180MHz Ant1



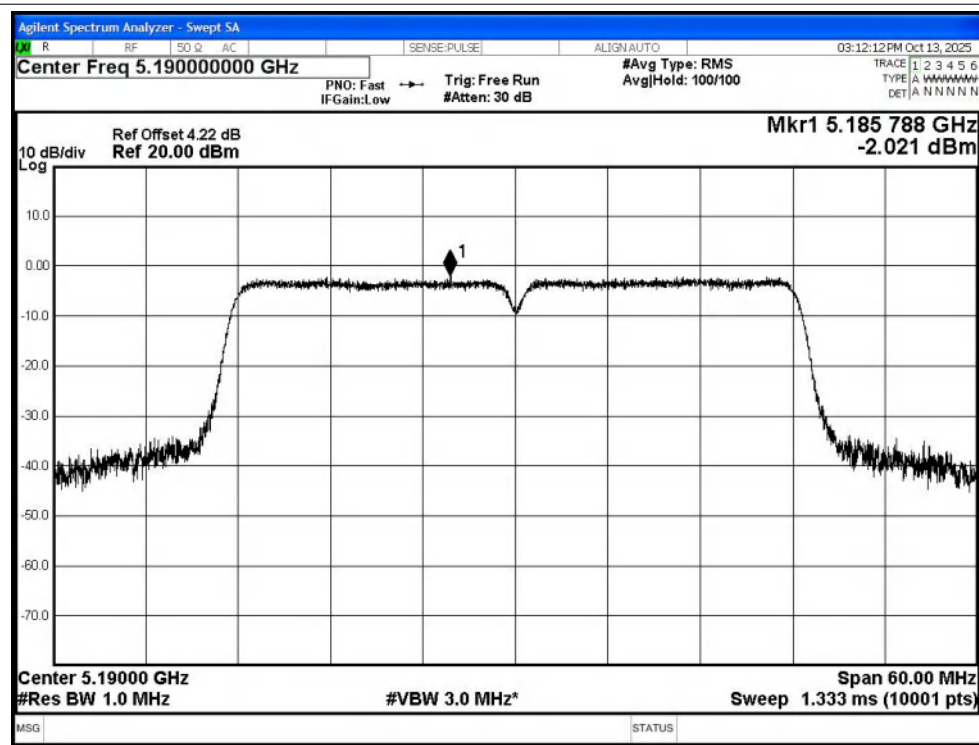
PSD NVNT ac20 5200MHz Ant1



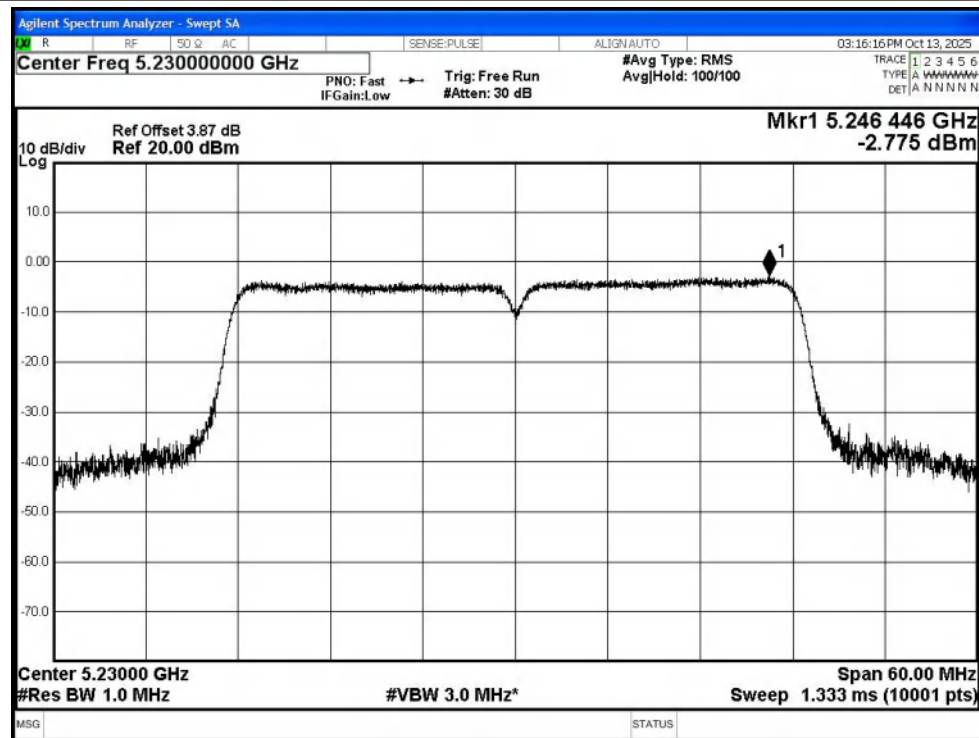
PSD NVNT ac20 5240MHz Ant1



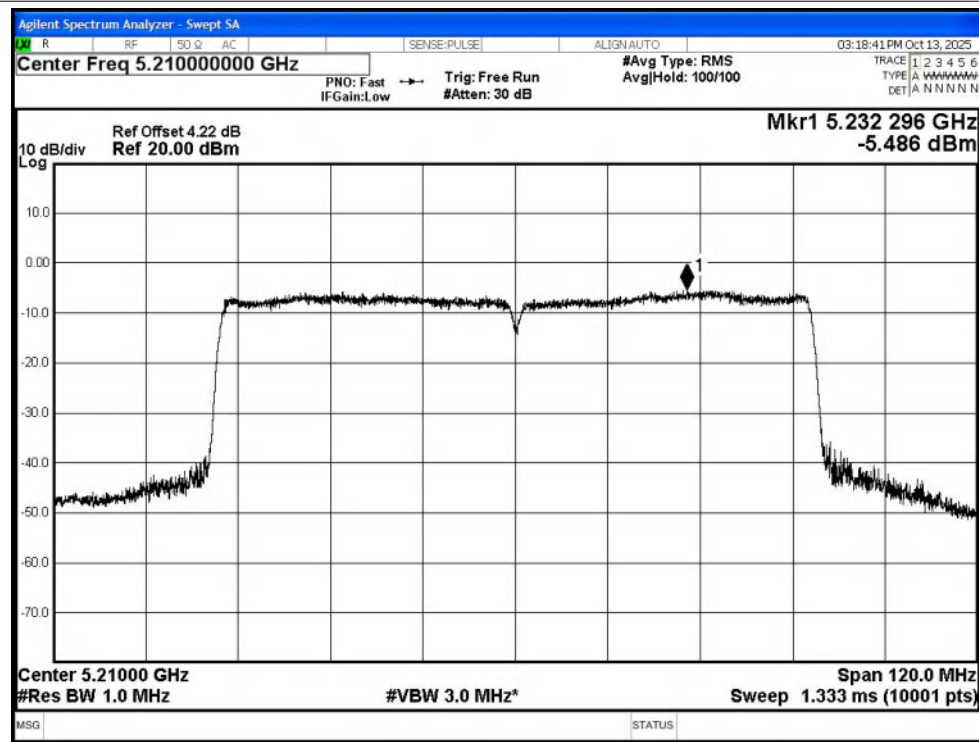
PSD NVNT ac40 5190MHz Ant1



PSD NVNT ac40 5230MHz Ant1



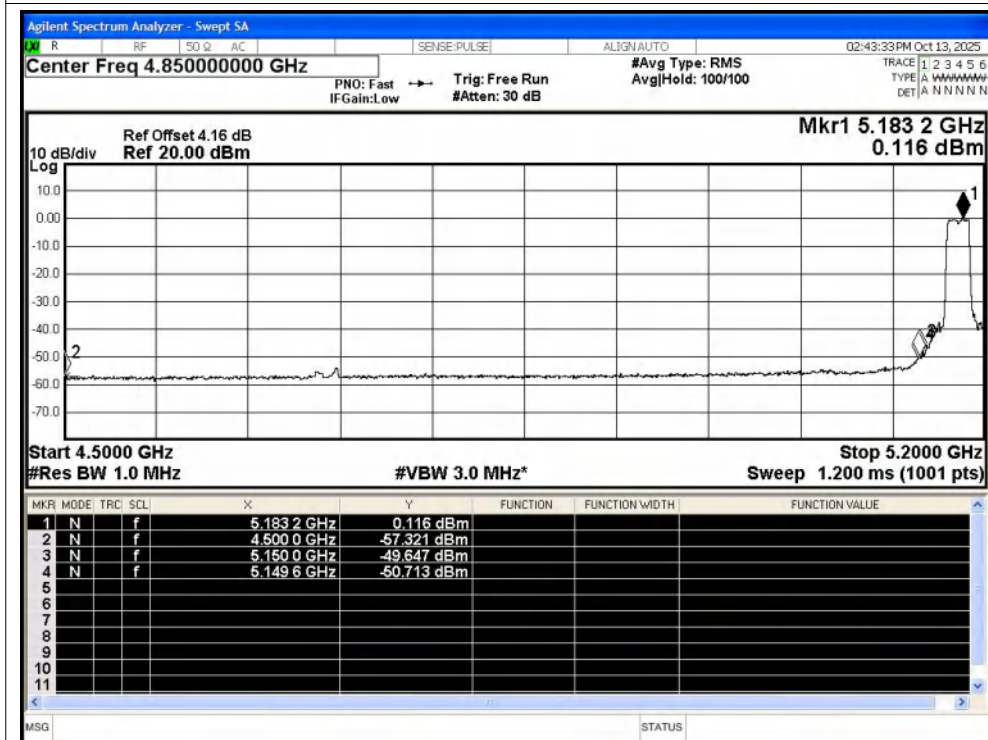
PSD NVNT ac80 5210MHz Ant1



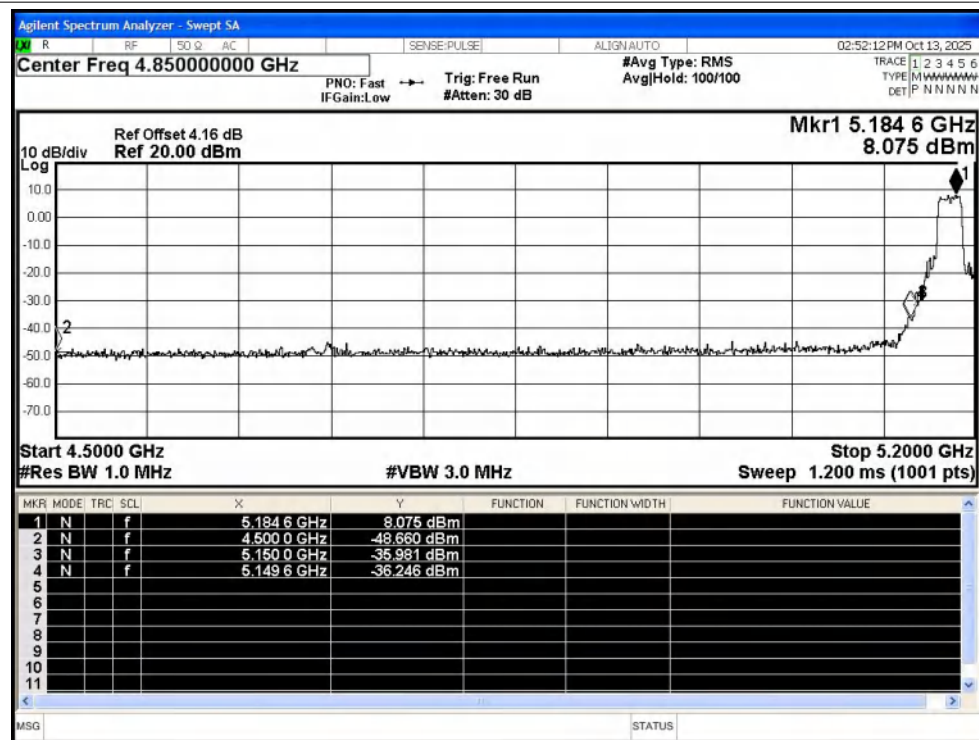
4. Restrict Band

Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	a	5180	Ant1	4500	-49.78	2.57	-	48.02	Peak	68.2	Pass
NVNT	a	5180	Ant1	4500	-57.32	2.57	0.1	40.58	Average	54	Pass
NVNT	a	5180	Ant1	5148.2	-36.99	2.57	-	60.81	Peak	68.2	Pass
NVNT	a	5180	Ant1	5149.6	-50.71	2.57	0.1	47.19	Average	54	Pass
NVNT	a	5180	Ant1	5150	-37.23	2.57	-	60.57	Peak	68.2	Pass
NVNT	a	5180	Ant1	5150	-49.65	2.57	0.1	48.25	Average	54	Pass
NVNT	a	5240	Ant1	5350	-49.64	2.57	-	48.16	Peak	68.2	Pass
NVNT	a	5240	Ant1	5350	-56.24	2.57	0.1	41.66	Average	54	Pass
NVNT	a	5240	Ant1	5355.12	-44.91	2.57	-	52.89	Peak	68.2	Pass
NVNT	a	5240	Ant1	5373.6	-56.02	2.57	0.1	41.88	Average	54	Pass
NVNT	a	5240	Ant1	5460	-49.15	2.57	-	48.65	Peak	68.2	Pass
NVNT	a	5240	Ant1	5460	-57.45	2.57	0.1	40.45	Average	54	Pass
NVNT	n20	5180	Ant1	4500	-48.66	2.57	-	49.14	Peak	68.2	Pass
NVNT	n20	5180	Ant1	4500	-57.78	2.57	0.12	40.14	Average	54	Pass
NVNT	n20	5180	Ant1	5149.6	-36.25	2.57	-	61.55	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5148.9	-50.72	2.57	0.12	47.20	Average	54	Pass
NVNT	n20	5180	Ant1	5150	-35.98	2.57	-	61.82	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5150	-50.16	2.57	0.12	47.76	Average	54	Pass
NVNT	n20	5240	Ant1	5350	-47.89	2.57	-	49.91	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5350	-56.06	2.57	0.12	41.86	Average	54	Pass
NVNT	n20	5240	Ant1	5393.28	-45.79	2.57	-	52.01	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5350.08	-56.06	2.57	0.12	41.86	Average	54	Pass
NVNT	n20	5240	Ant1	5460	-49.28	2.57	-	48.52	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5460	-57.43	2.57	0.12	40.49	Average	54	Pass
NVNT	n40	5190	Ant1	4500	-49.89	2.57	-	47.91	Peak	68.2	Pass
NVNT	n40	5190	Ant1	4500	-57.88	2.57	0.23	40.15	Average	54	Pass
NVNT	n40	5190	Ant1	5149.7	-35.43	2.57	-	62.37	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5148.97	-47.87	2.57	0.23	50.16	Average	54	Pass
NVNT	n40	5190	Ant1	5150	-35.43	2.57	-	62.37	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5150	-48.63	2.57	0.23	49.40	Average	54	Pass
NVNT	n40	5230	Ant1	5350	-49.74	2.57	-	48.06	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5350	-56.12	2.57	0.23	41.91	Average	54	Pass
NVNT	n40	5230	Ant1	5416.8	-45.94	2.57	-	51.86	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5350.11	-56.12	2.57	0.23	41.91	Average	54	Pass
NVNT	n40	5230	Ant1	5460	-48.83	2.57	-	48.97	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5460	-56.94	2.57	0.23	41.09	Average	54	Pass
NVNT	ac20	5180	Ant1	4500	-49.82	2.57	-	47.98	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	4500	-58.09	2.57	0.12	39.83	Average	54	Pass

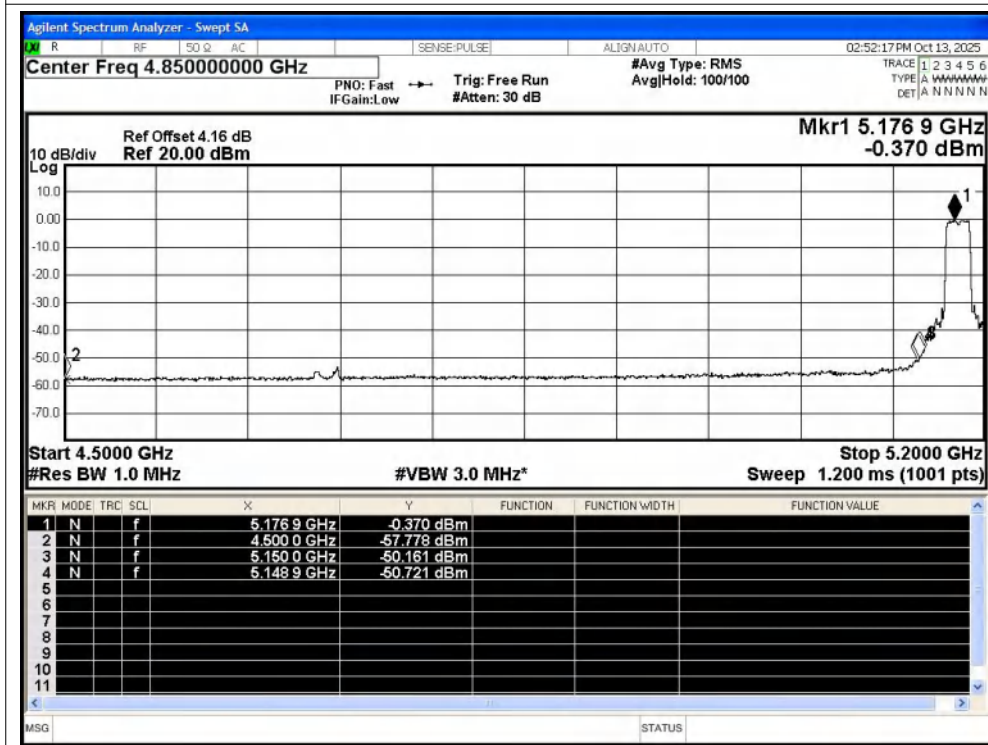
NVNT	ac20	5180	Ant1	5148.9	-37.06	2.57	-	60.74	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	5148.9	-50.26	2.57	0.12	47.66	Average	54	Pass
NVNT	ac20	5180	Ant1	5150	-38.63	2.57	-	59.17	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	5150	-50.16	2.57	0.12	47.76	Average	54	Pass
NVNT	ac20	5240	Ant1	5350	-49.79	2.57	-	48.01	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5350	-56.31	2.57	0.12	41.61	Average	54	Pass
NVNT	ac20	5240	Ant1	5438.16	-45.97	2.57	-	51.83	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5350.32	-55.98	2.57	0.12	41.94	Average	54	Pass
NVNT	ac20	5240	Ant1	5460	-46.68	2.57	-	51.12	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5460	-57.09	2.57	0.12	40.83	Average	54	Pass
NVNT	ac40	5190	Ant1	4500	-49.46	2.57	-	48.34	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	4500	-57.81	2.57	0.23	40.22	Average	54	Pass
NVNT	ac40	5190	Ant1	5148.97	-38.53	2.57	-	59.27	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	5149.7	-49.91	2.57	0.23	48.12	Average	54	Pass
NVNT	ac40	5190	Ant1	5150	-39.12	2.57	-	58.68	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	5150	-49.91	2.57	0.23	48.12	Average	54	Pass
NVNT	ac40	5230	Ant1	5350	-47.49	2.57	-	50.31	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5350	-56.69	2.57	0.23	41.34	Average	54	Pass
NVNT	ac40	5230	Ant1	5450.01	-45.72	2.57	-	52.08	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5370.63	-55.97	2.57	0.23	42.06	Average	54	Pass
NVNT	ac40	5230	Ant1	5460	-49.67	2.57	-	48.13	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5460	-57.51	2.57	0.23	40.52	Average	54	Pass
NVNT	ac80	5210	Ant1	5350	-46.65	2.57	-	51.15	Peak	68.2	Pass
NVNT	ac80	5210	Ant1	5350	-55.68	2.57	0.47	42.59	Average	54	Pass
NVNT	ac80	5210	Ant1	5380.8	-46.03	2.57	-	51.77	Peak	68.2	Pass
NVNT	ac80	5210	Ant1	5350.11	-55.68	2.57	0.47	42.59	Average	54	Pass
NVNT	ac80	5210	Ant1	5460	-48.71	2.57	-	49.09	Peak	68.2	Pass
NVNT	ac80	5210	Ant1	5460	-56.96	2.57	0.47	41.31	Average	54	Pass
NVNT	ac80	5210	Ant1	4500	-49.14	2.57	-	48.66	Peak	68.2	Pass
NVNT	ac80	5210	Ant1	4500	-58.04	2.57	0.47	40.23	Average	54	Pass
NVNT	ac80	5210	Ant1	5143.85	-39.1	2.57	-	58.70	Peak	68.2	Pass
NVNT	ac80	5210	Ant1	5143.06	-49.89	2.57	0.47	48.38	Average	54	Pass
NVNT	ac80	5210	Ant1	5150	-41.43	2.57	-	56.37	Peak	68.2	Pass
NVNT	ac80	5210	Ant1	5150	-50.32	2.57	0.47	47.95	Average	54	Pass



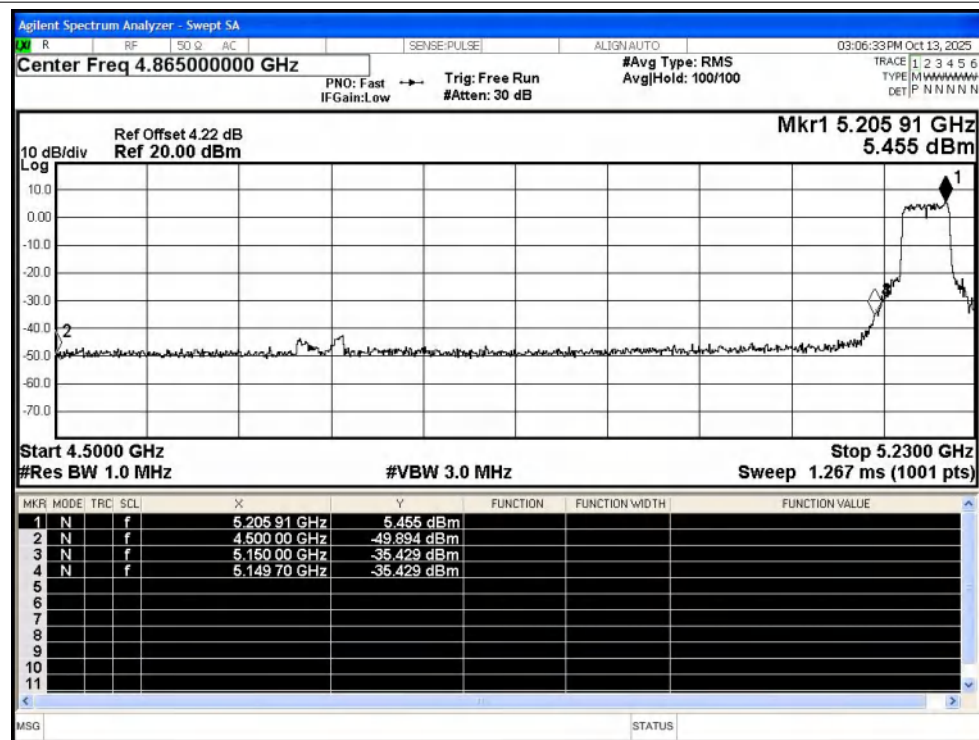
Restrict Band NVNT n20 5180MHz Ant1 Peak



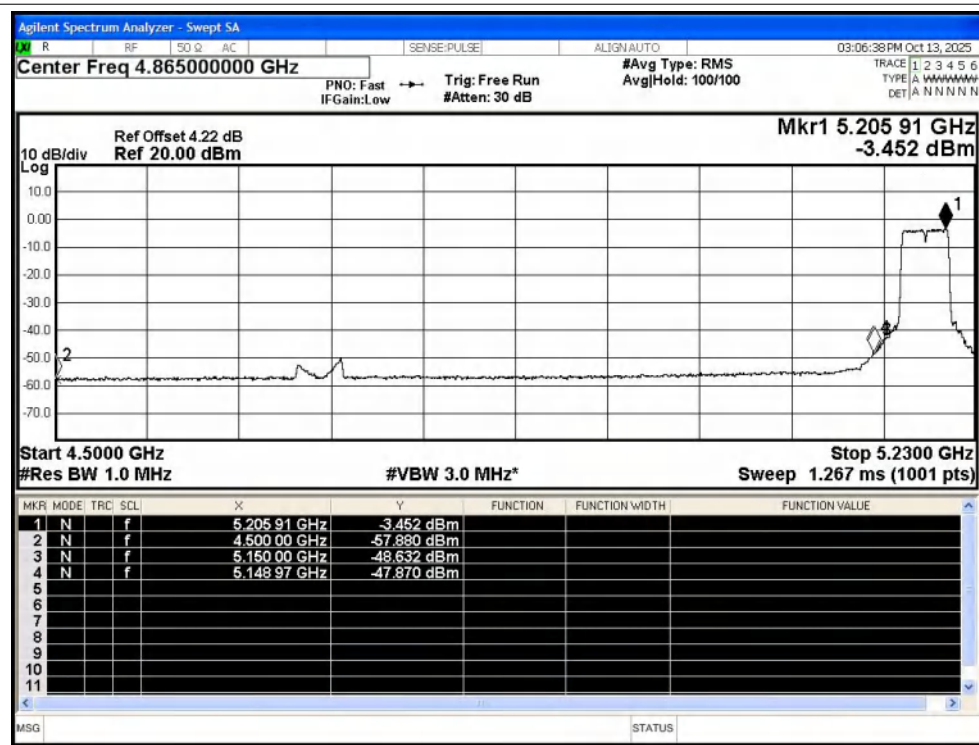
Restrict Band NVNT n20 5180MHz Ant1 Average



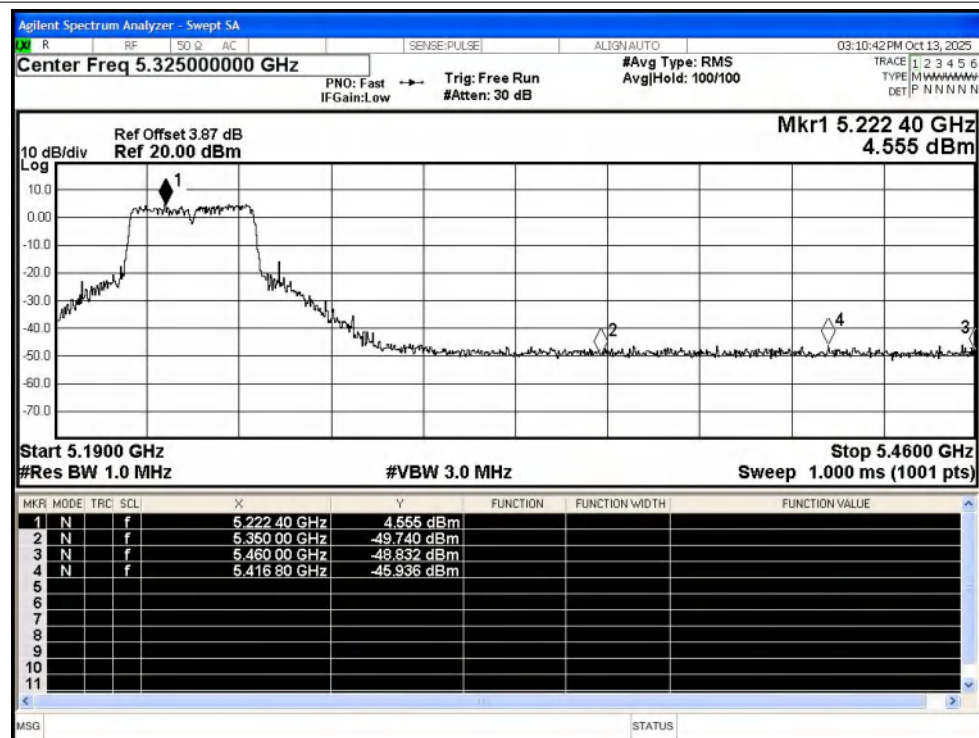
Restrict Band NVNT n40 5190MHz Ant1 Peak



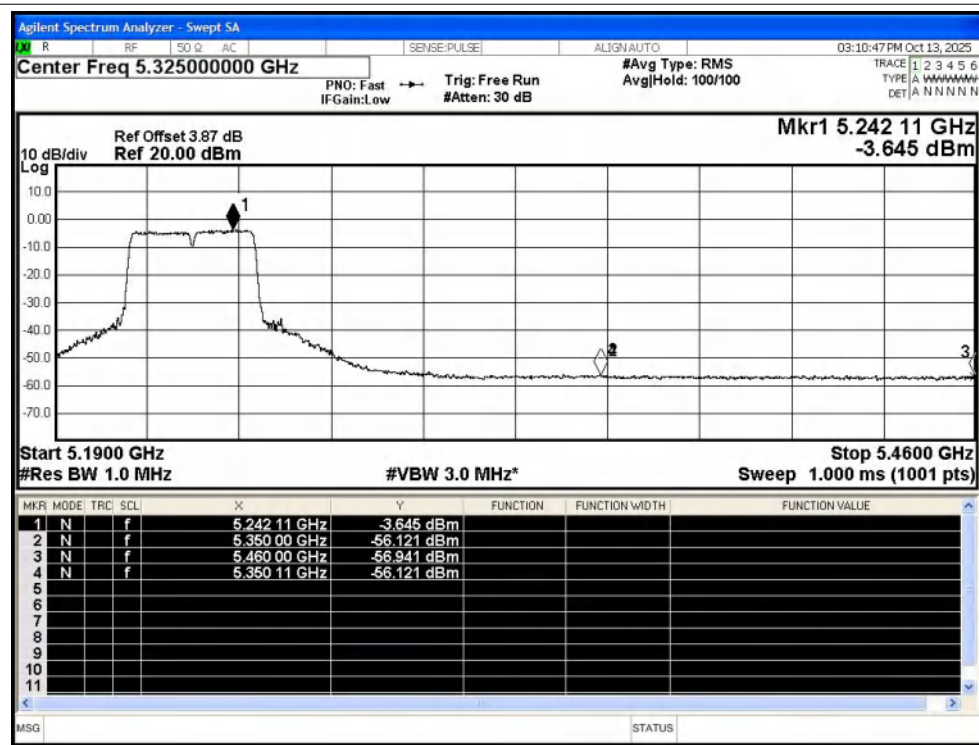
Restrict Band NVNT n40 5190MHz Ant1 Average



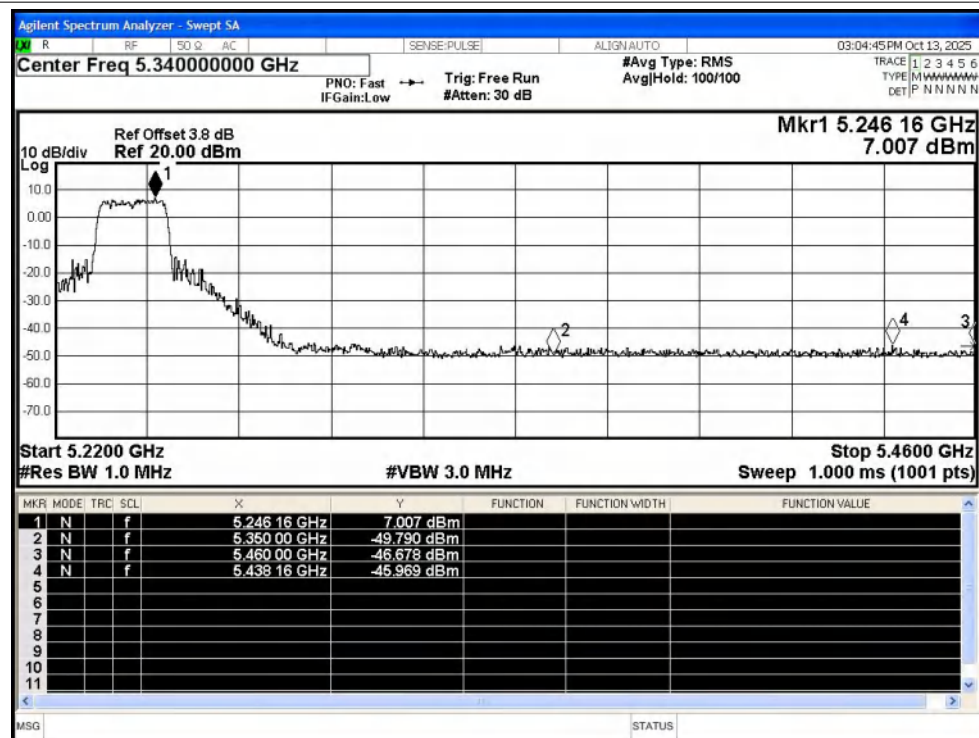
Restrict Band NVNT n40 5230MHz Ant1 Peak



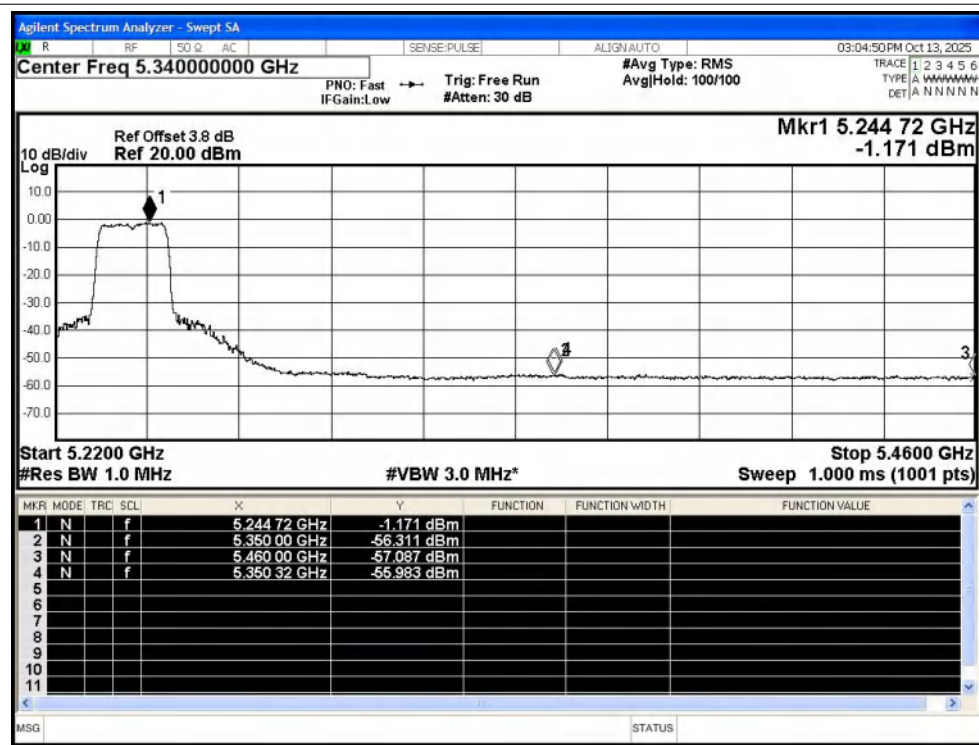
Restrict Band NVNT n40 5230MHz Ant1 Average



Restrict Band NVNT ac20 5240MHz Ant1 Peak



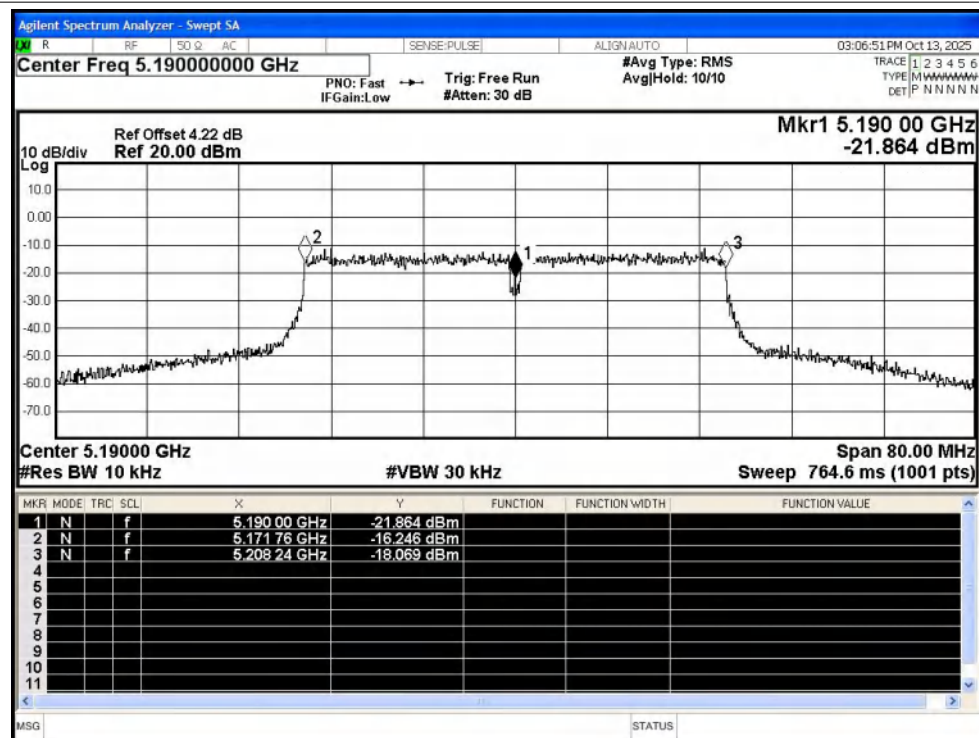
Restrict Band NVNT ac20 5240MHz Ant1 Average



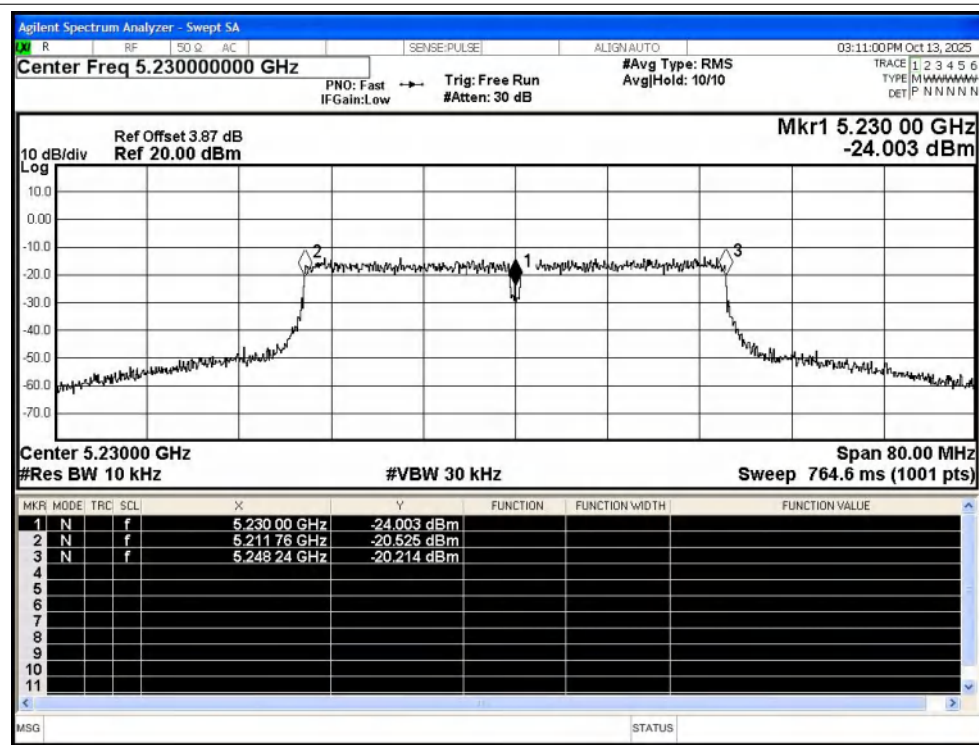
5. Frequency Stability

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	Ant1	5180	0	0	25	Pass
NVNT	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	a	5240	Ant1	5239.98	-20000	-3.82	25	Pass
NVNT	n20	5180	Ant1	5180	0	0	25	Pass
NVNT	n20	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	n20	5240	Ant1	5240	0	0	25	Pass
NVNT	n40	5190	Ant1	5190	0	0	25	Pass
NVNT	n40	5230	Ant1	5230	0	0	25	Pass
NVNT	ac20	5180	Ant1	5179.98	-20000	-3.86	25	Pass
NVNT	ac20	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	ac20	5240	Ant1	5239.98	-20000	-3.82	25	Pass
NVNT	ac40	5190	Ant1	5190	0	0	25	Pass
NVNT	ac40	5230	Ant1	5230	0	0	25	Pass
NVNT	ac80	5210	Ant1	5210	0	0	25	Pass

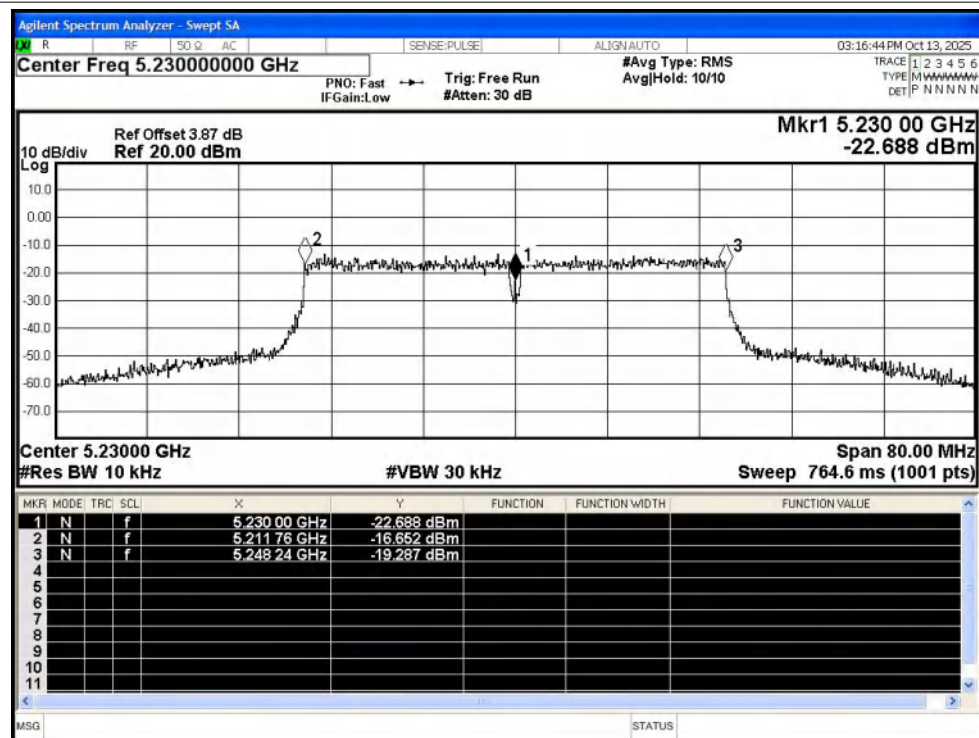
Freq. Stability NVNT n40 5190MHz Ant1



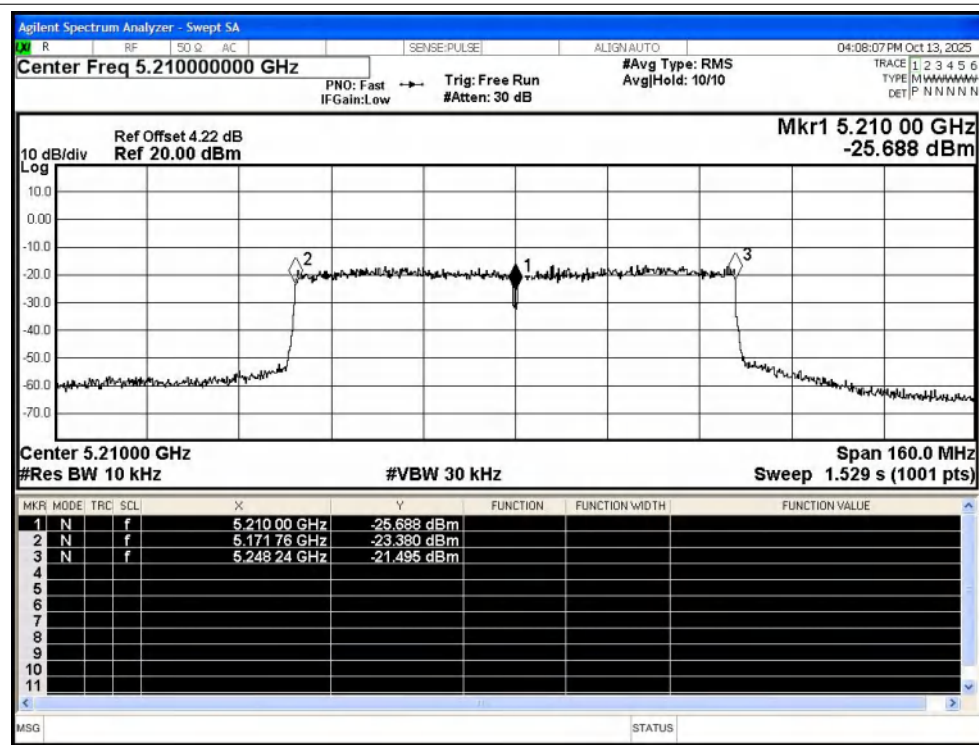
Freq. Stability NVNT n40 5230MHz Ant1

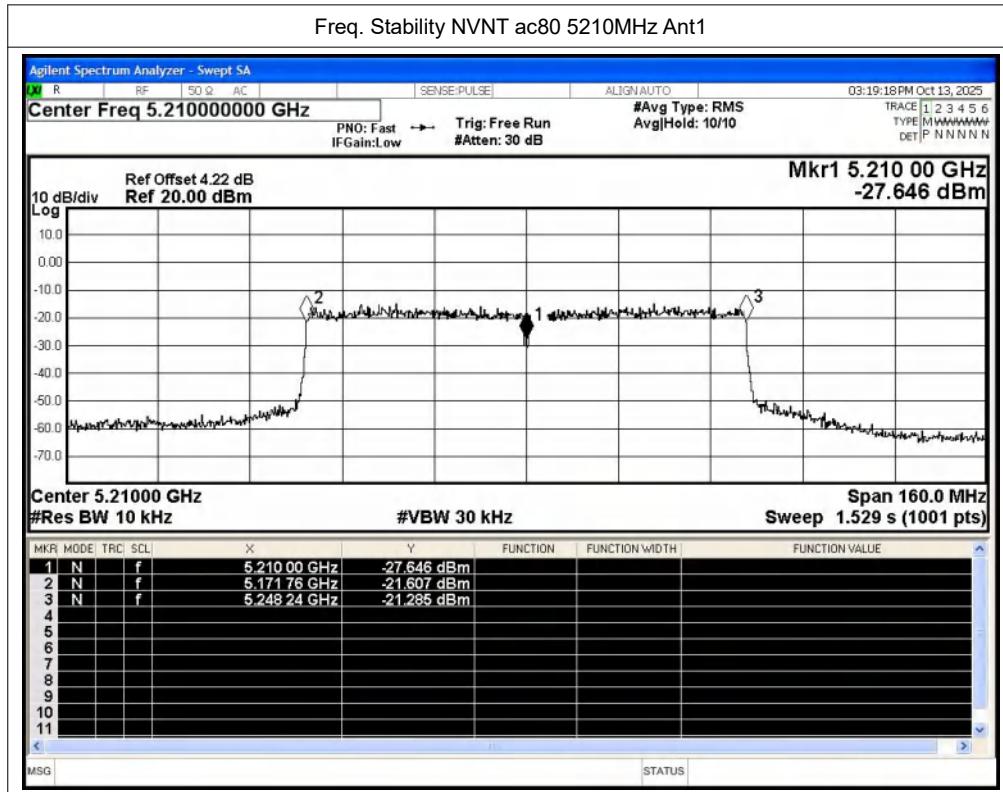


Freq. Stability NVNT ac40 5230MHz Ant1



Freq. Stability NVNT ac80 5210MHz Ant1



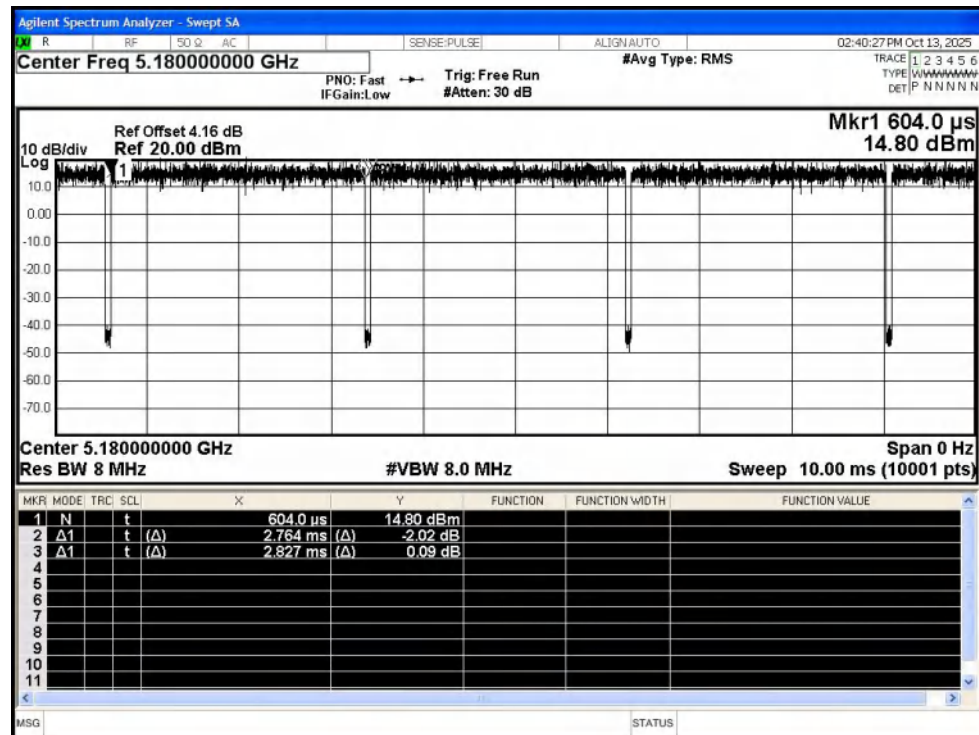


6. Duty Cycle

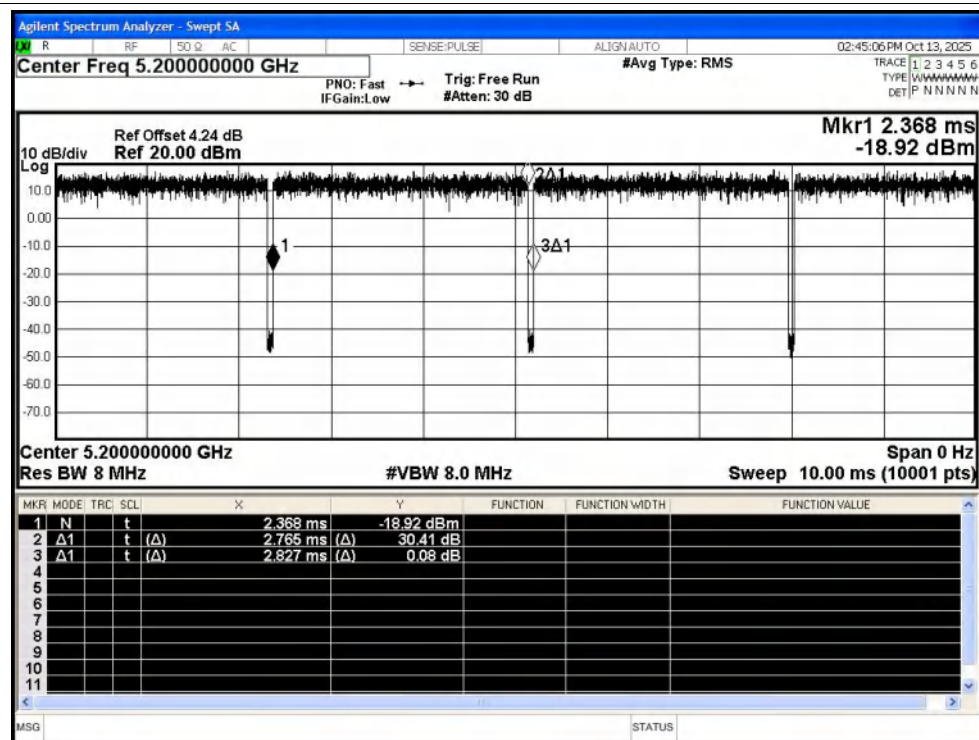
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	97.77	0.1	0.36
NVNT	a	5200	Ant1	97.81	0.1	0.36
NVNT	a	5240	Ant1	97.77	0.1	0.36
NVNT	n20	5180	Ant1	97.35	0.12	0.43
NVNT	n20	5200	Ant1	97.35	0.12	0.43
NVNT	n20	5240	Ant1	97.35	0.12	0.43
NVNT	n40	5190	Ant1	94.82	0.23	0.88
NVNT	n40	5230	Ant1	94.82	0.23	0.88
NVNT	ac20	5180	Ant1	97.36	0.12	0.43
NVNT	ac20	5200	Ant1	97.4	0.11	0.43
NVNT	ac20	5240	Ant1	97.36	0.12	0.43
NVNT	ac40	5190	Ant1	94.85	0.23	0.88
NVNT	ac40	5230	Ant1	94.85	0.23	0.88
NVNT	ac80	5210	Ant1	89.84	0.47	1.82

Test Graphs

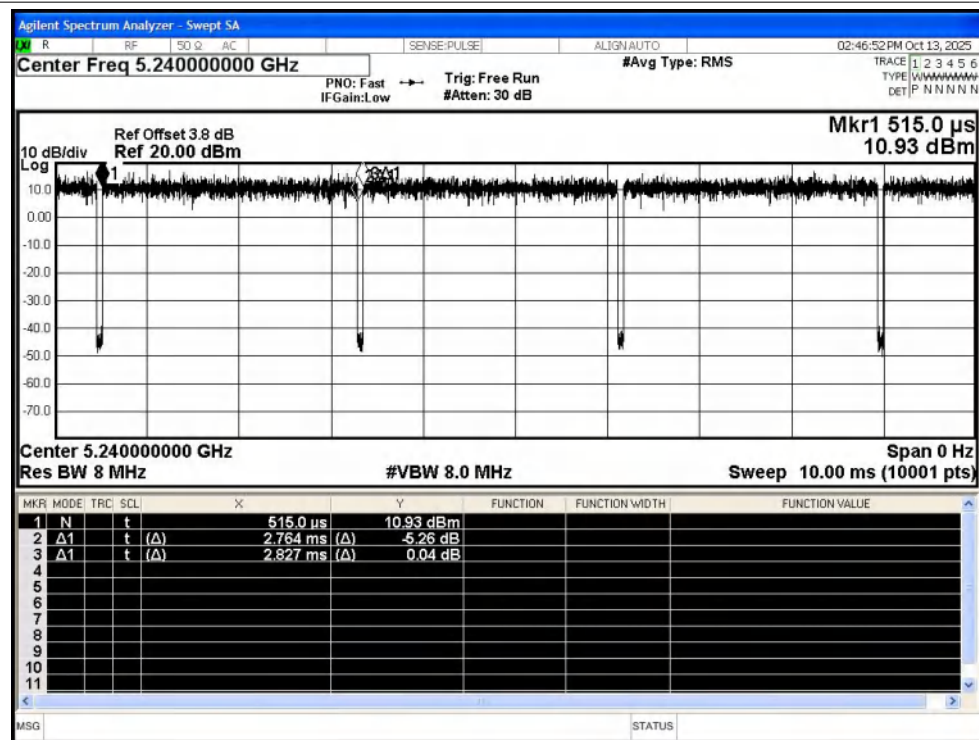
Duty Cycle NVNT a 5180MHz Ant1



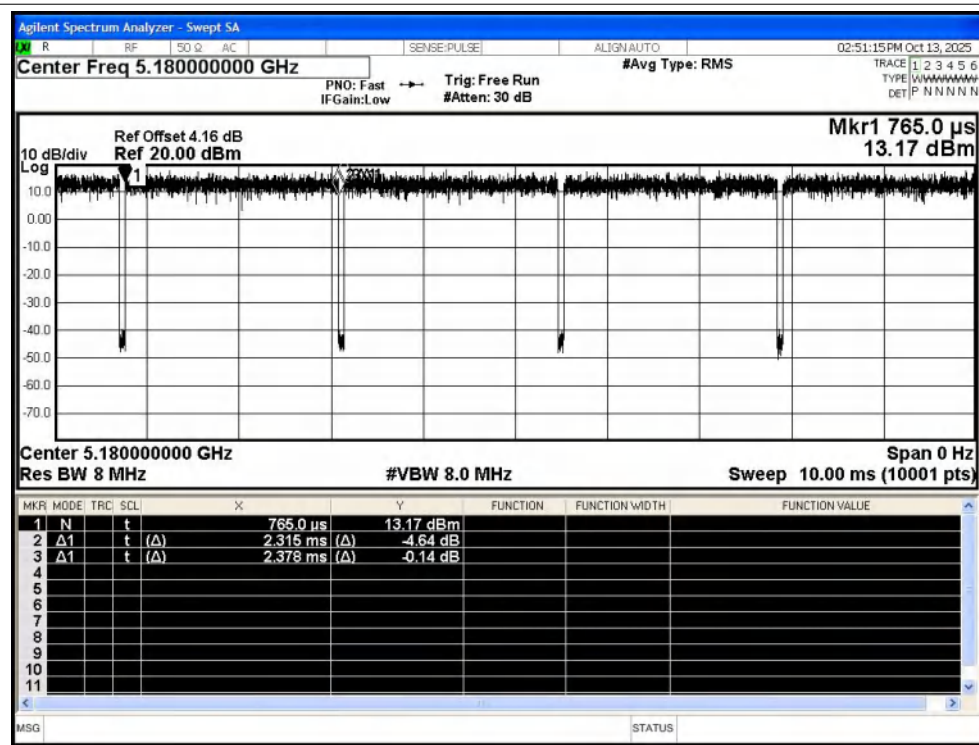
Duty Cycle NVNT a 5200MHz Ant1



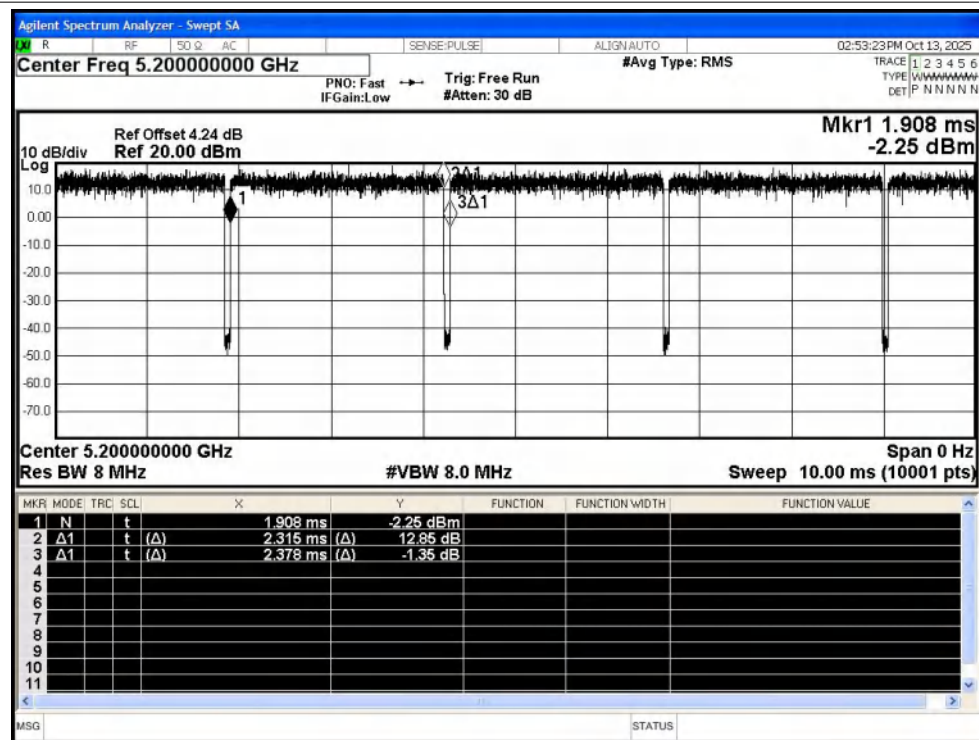
Duty Cycle NVNT a 5240MHz Ant1



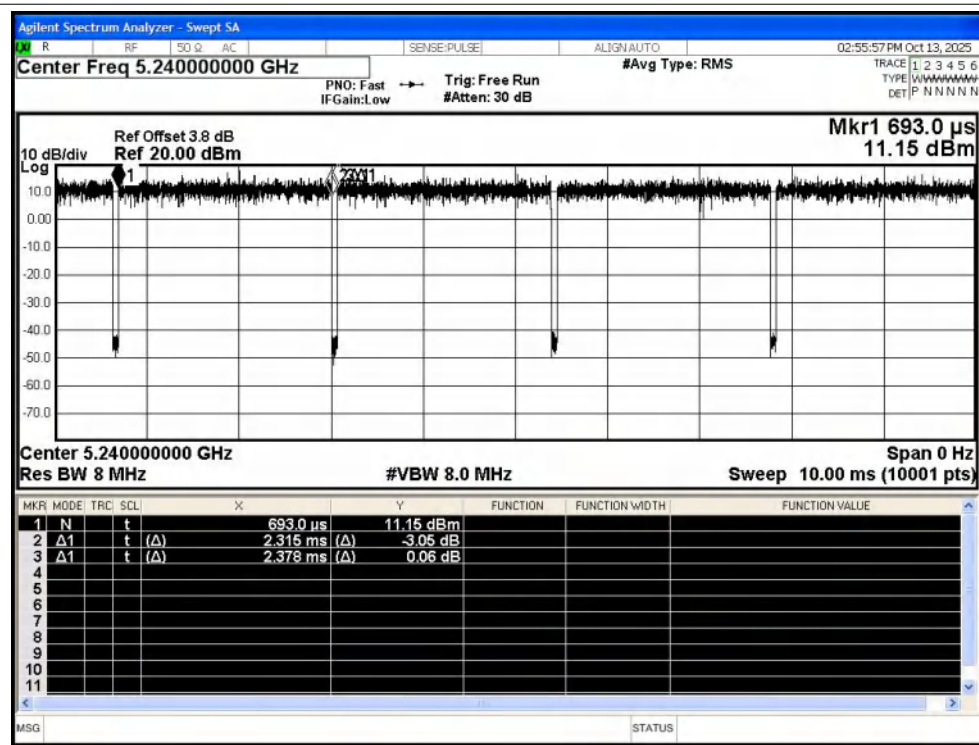
Duty Cycle NVNT n20 5180MHz Ant1

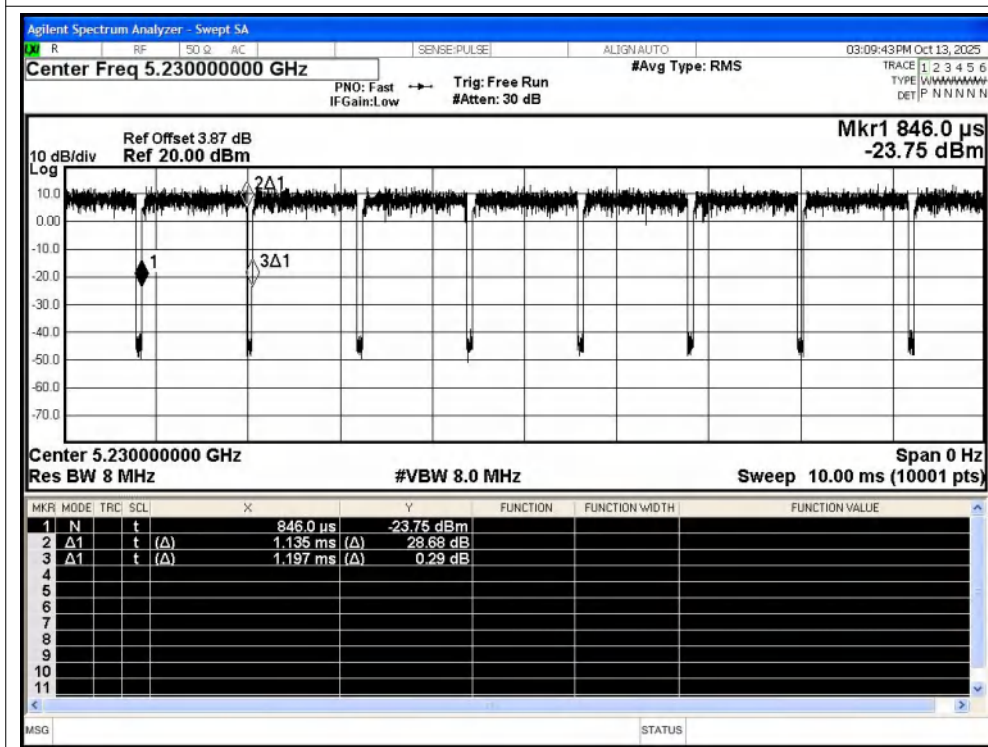


Duty Cycle NVNT n20 5200MHz Ant1

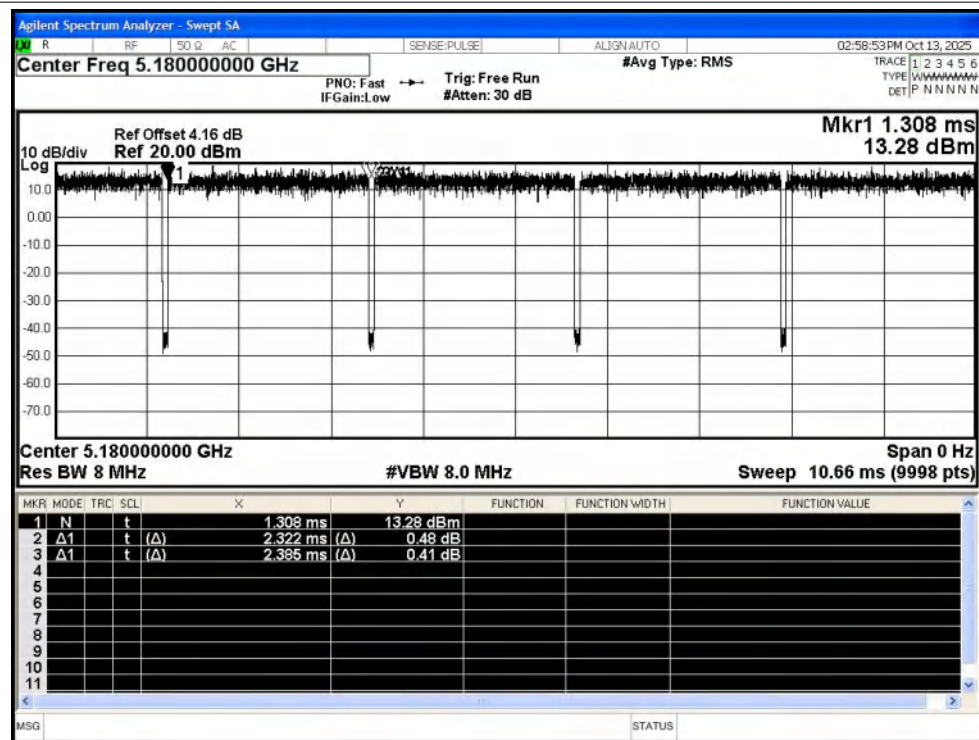


Duty Cycle NVNT n20 5240MHz Ant1

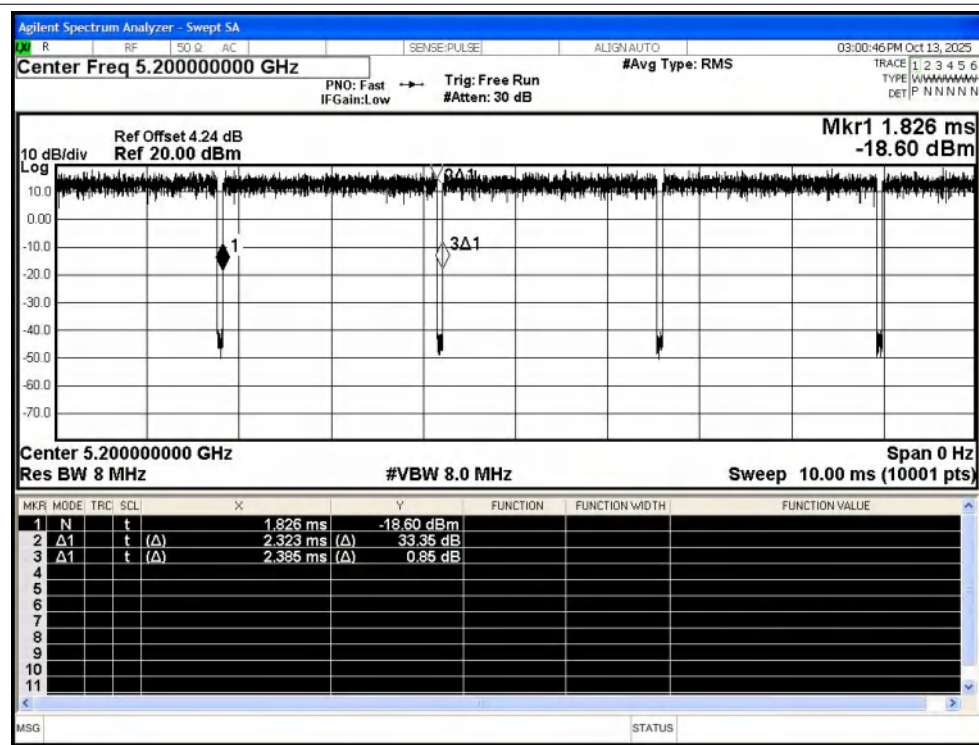




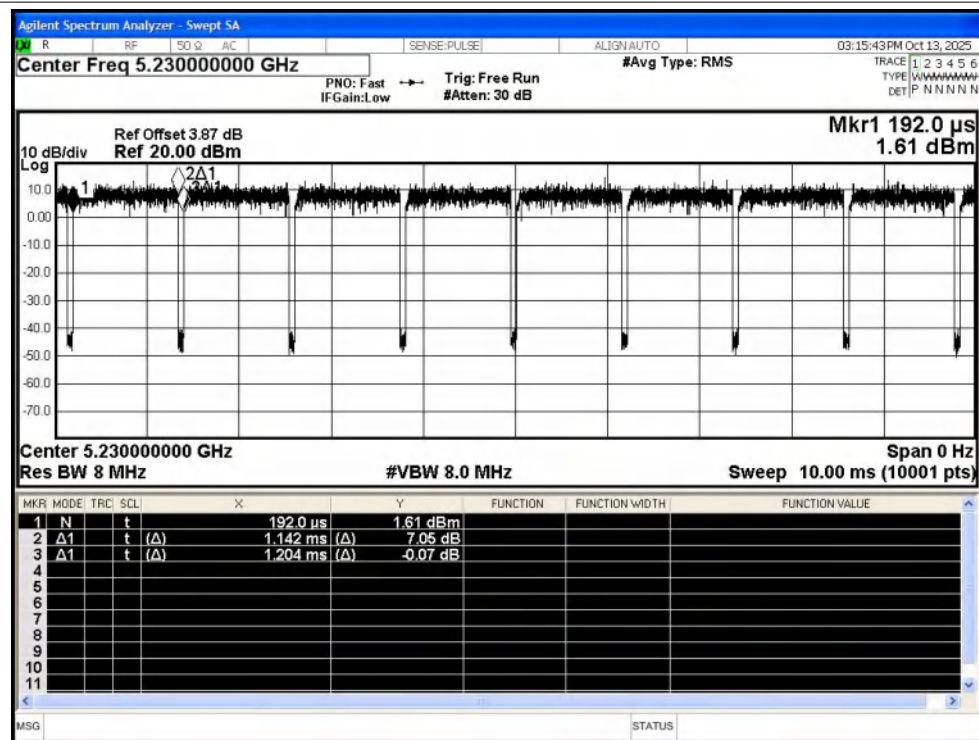
Duty Cycle NVNT ac20 5180MHz Ant1



Duty Cycle NVNT ac20 5200MHz Ant1



Duty Cycle NVNT ac40 5230MHz Ant1



Duty Cycle NVNT ac80 5210MHz Ant1

