Appendix B

RF Test Data for 5.2GWIFI(Conducted Measurement)

Product Name: Smart Battery Camera

Test Model: Q9

Environmental Conditions

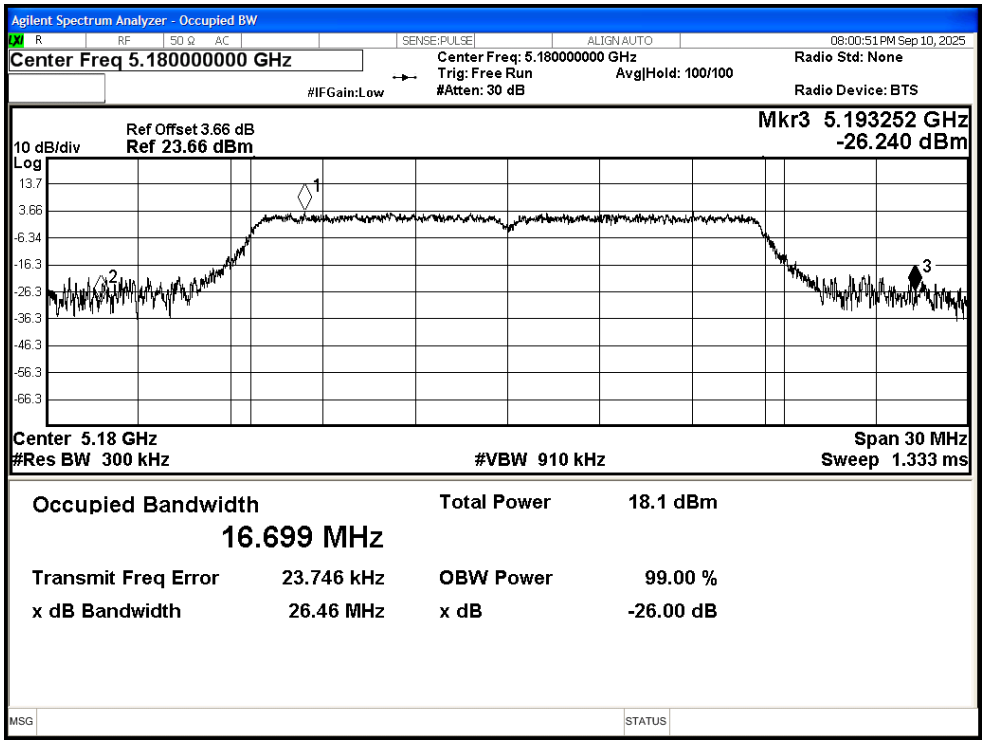
Temperature:	23.5°C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Jone.Lee
Supervised by:	Yan Chen

B.1 -26dB Bandwidth

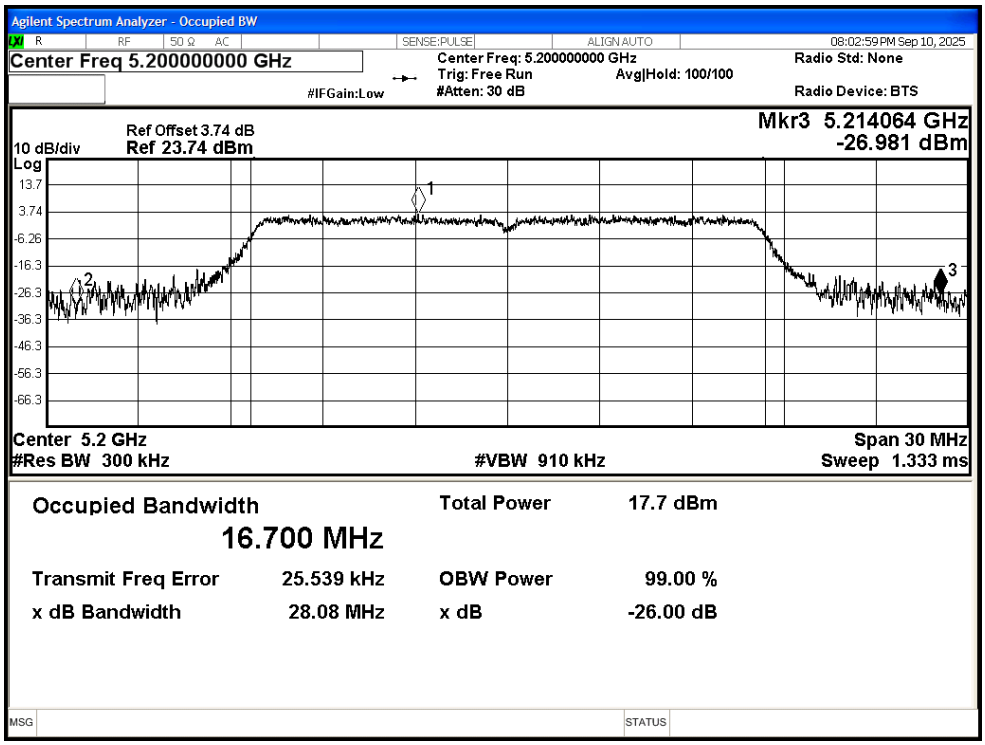
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	26.457	---	Pass
NVNT	a	5200	Ant1	28.078	---	Pass
NVNT	a	5240	Ant1	24.221	---	Pass
NVNT	n20	5180	Ant1	27.114	---	Pass
NVNT	n20	5200	Ant1	27.921	---	Pass
NVNT	n20	5240	Ant1	28.8	---	Pass
NVNT	n40	5190	Ant1	49.828	---	Pass
NVNT	n40	5230	Ant1	47.435	---	Pass
NVNT	ac20	5180	Ant1	29.517	---	Pass
NVNT	ac20	5200	Ant1	29.512	---	Pass
NVNT	ac20	5240	Ant1	29.187	---	Pass
NVNT	ac40	5190	Ant1	46.11	---	Pass
NVNT	ac40	5230	Ant1	47.64	---	Pass
NVNT	ax20	5180	Ant1	28.717	---	Pass
NVNT	ax20	5200	Ant1	27.905	---	Pass
NVNT	ax20	5240	Ant1	27.528	---	Pass
NVNT	ax40	5190	Ant1	51.287	---	Pass
NVNT	ax40	5230	Ant1	52.044	---	Pass

Test Graphs

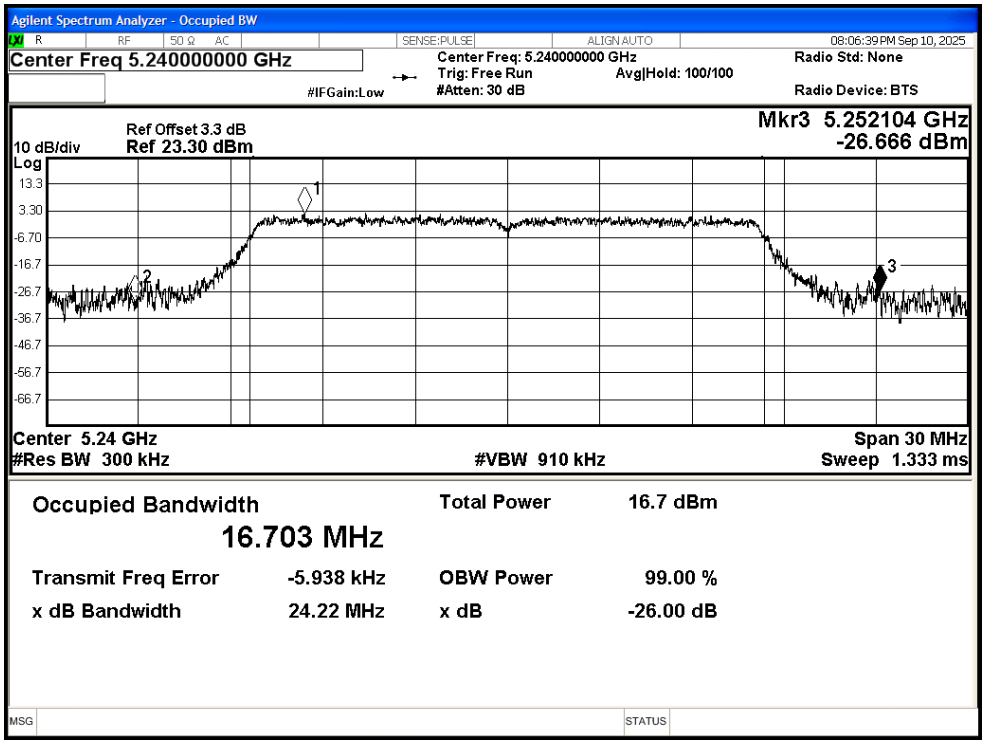
-26dB Bandwidth NVNT a 5180MHz Ant1



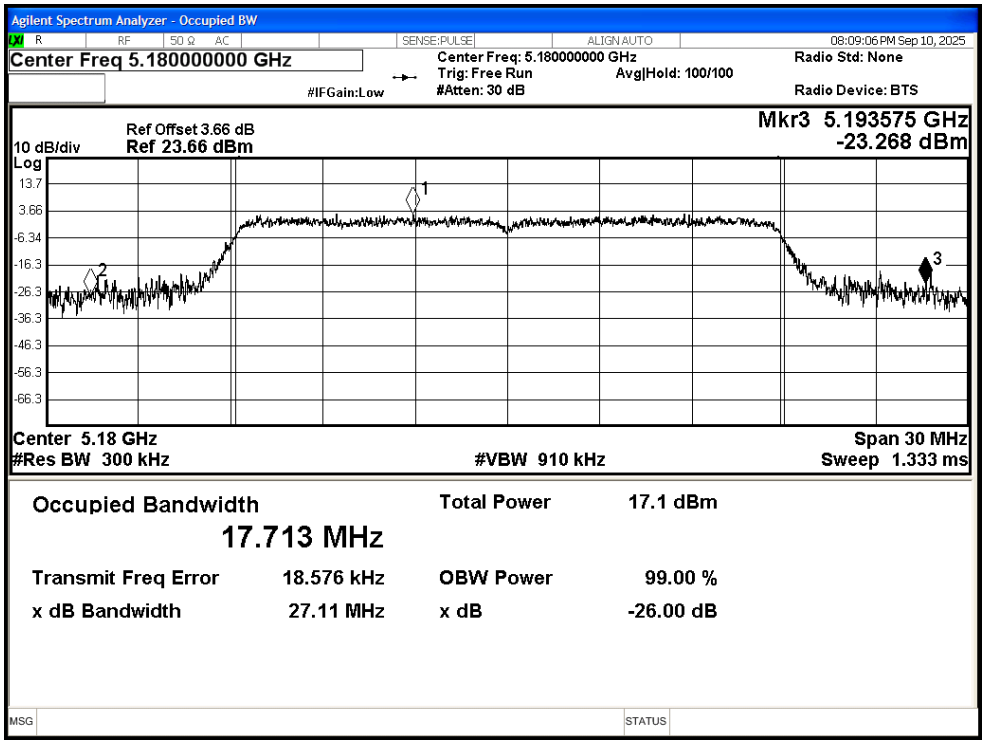
-26dB Bandwidth NVNT a 5200MHz Ant1



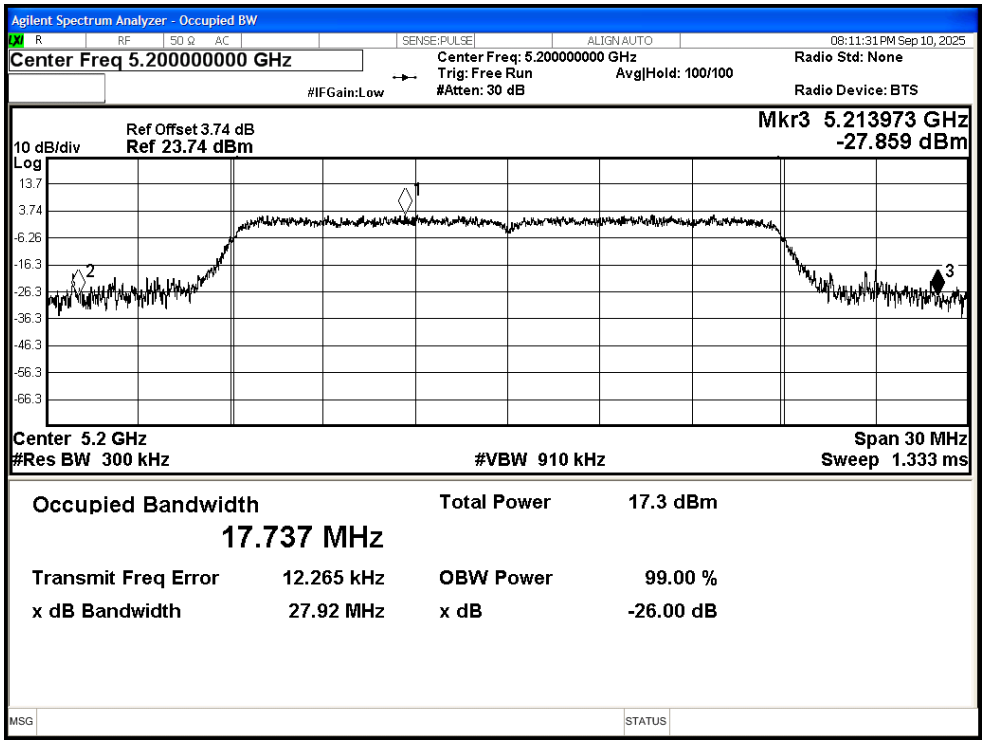
-26dB Bandwidth NVNT a 5240MHz Ant1



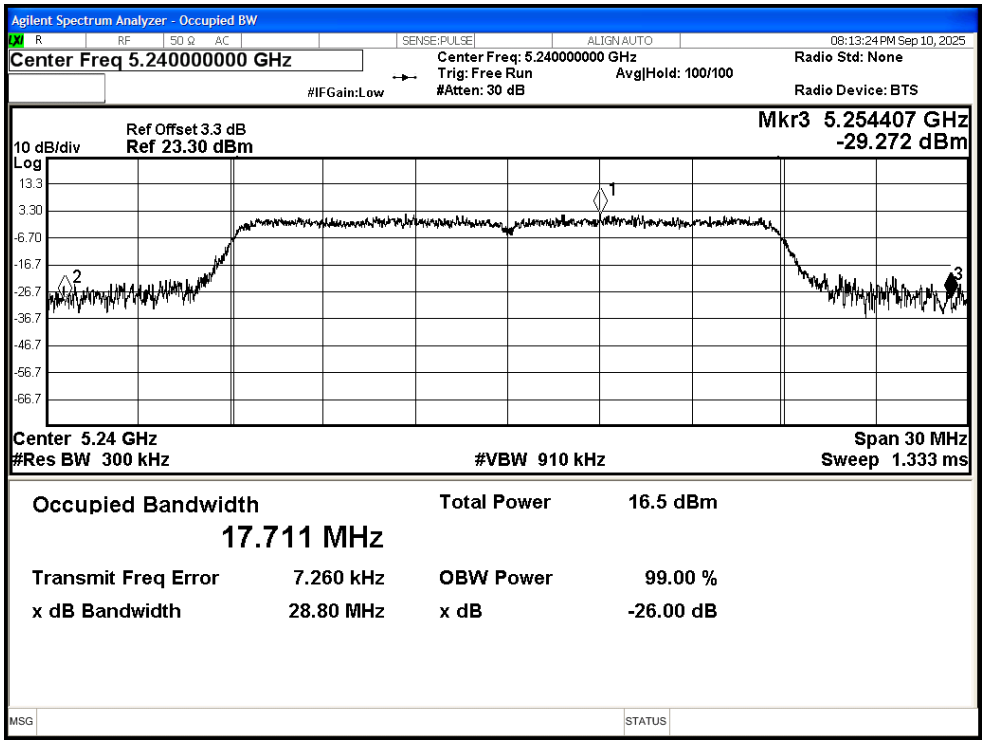
-26dB Bandwidth NVNT n20 5180MHz Ant1



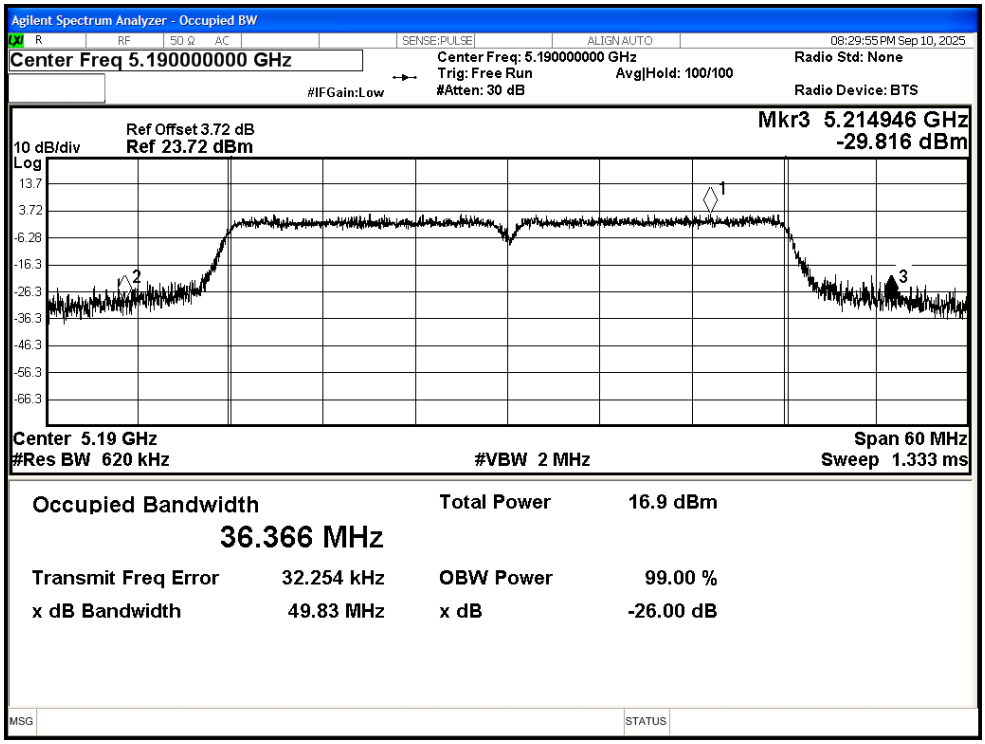
-26dB Bandwidth NVNT n20 5200MHz Ant1



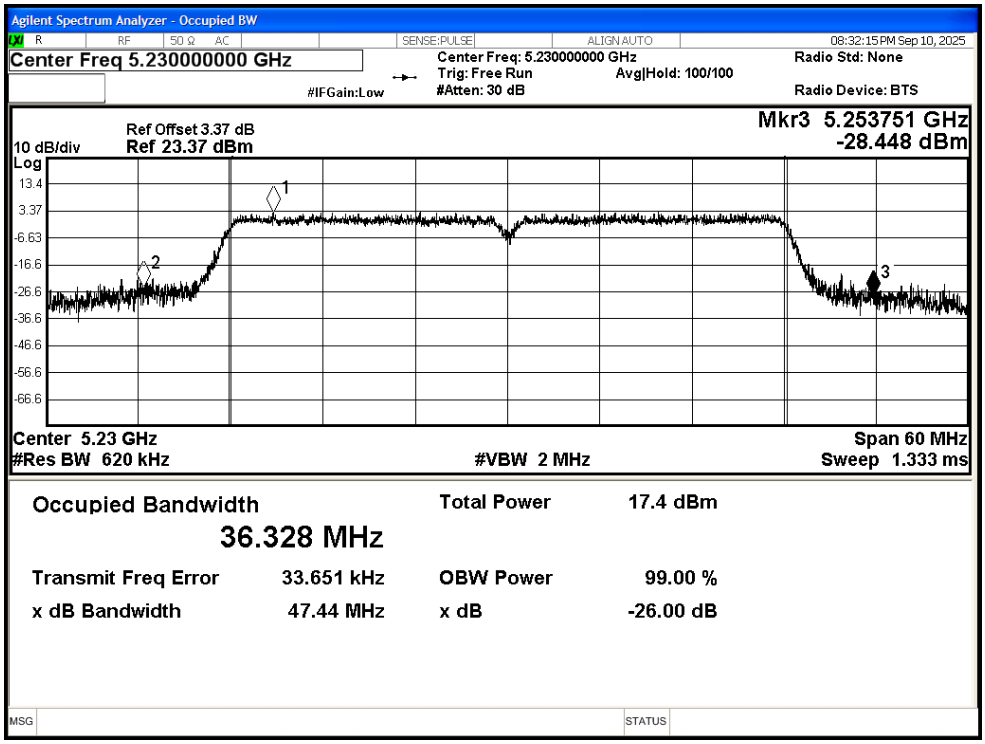
-26dB Bandwidth NVNT n20 5240MHz Ant1



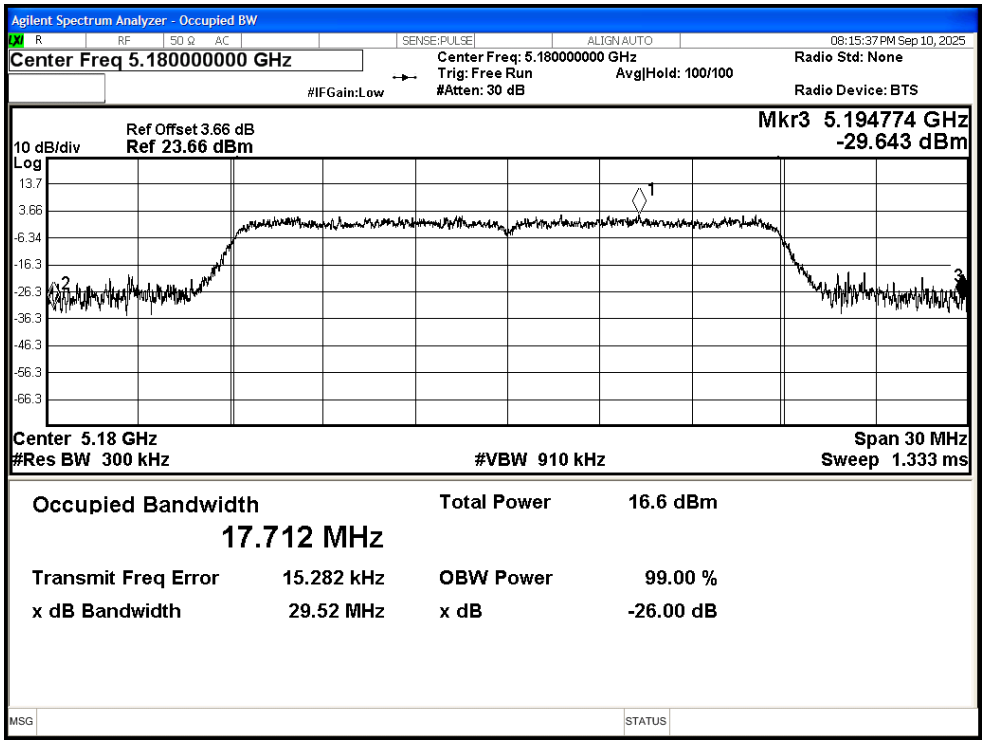
-26dB Bandwidth NVNT n40 5190MHz Ant1



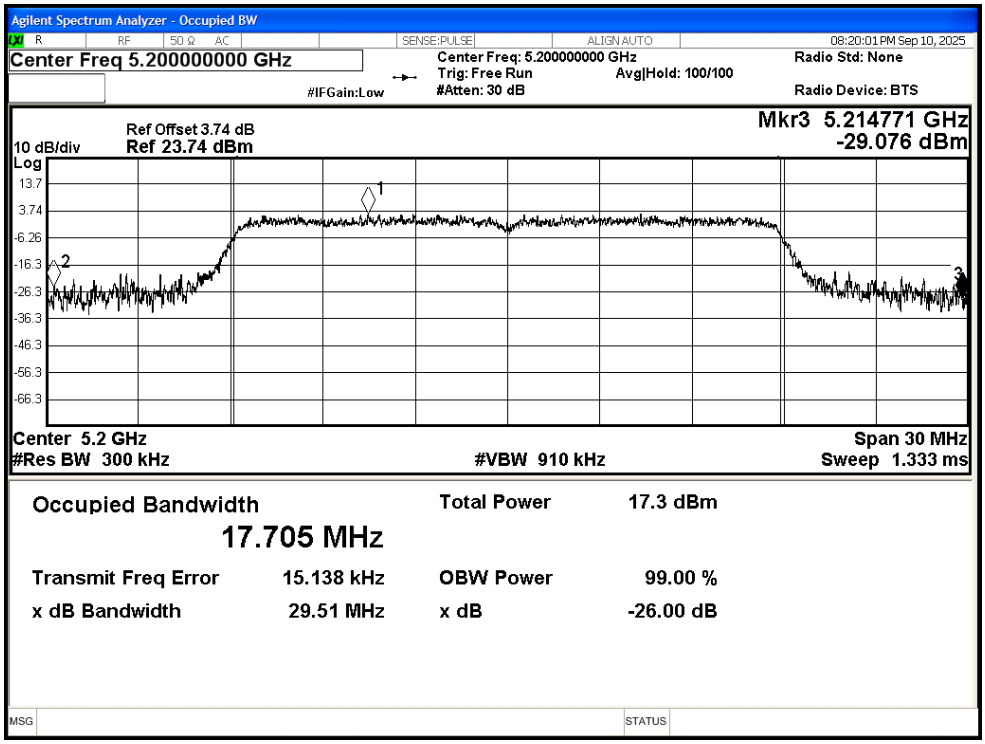
-26dB Bandwidth NVNT n40 5230MHz Ant1



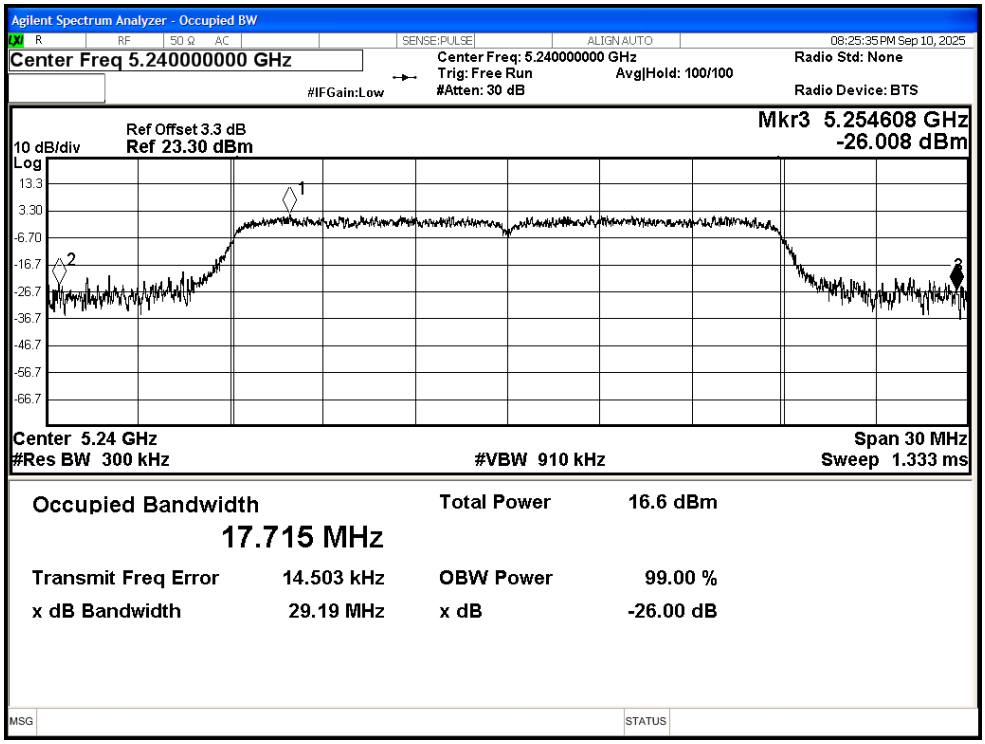
-26dB Bandwidth NVNT ac20 5180MHz Ant1



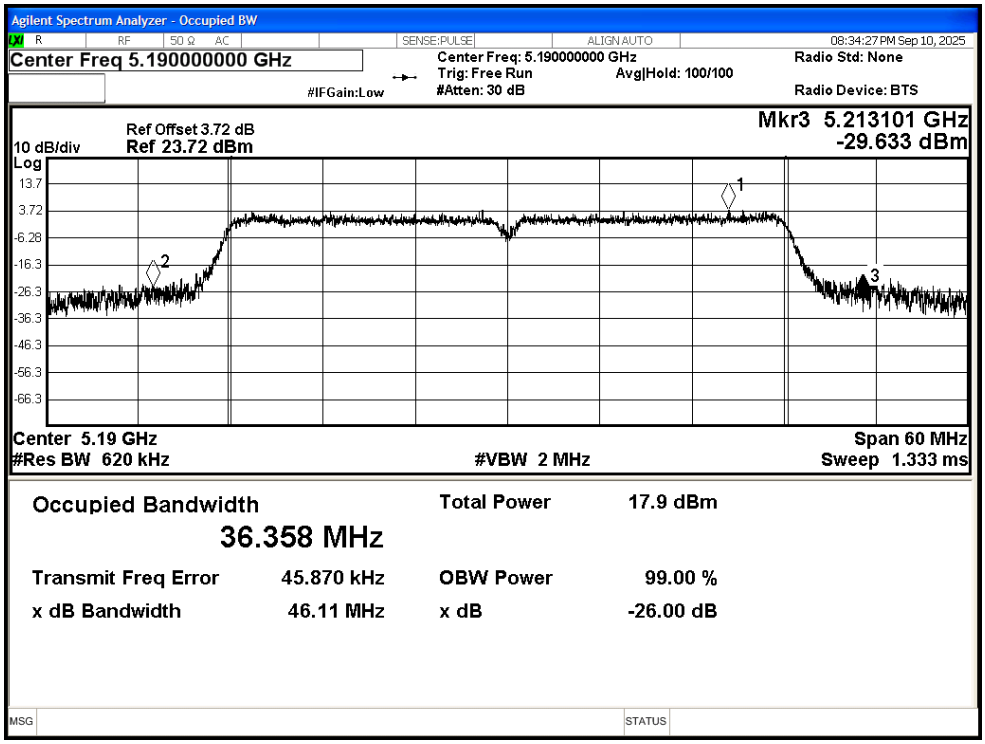
-26dB Bandwidth NVNT ac20 5200MHz Ant1



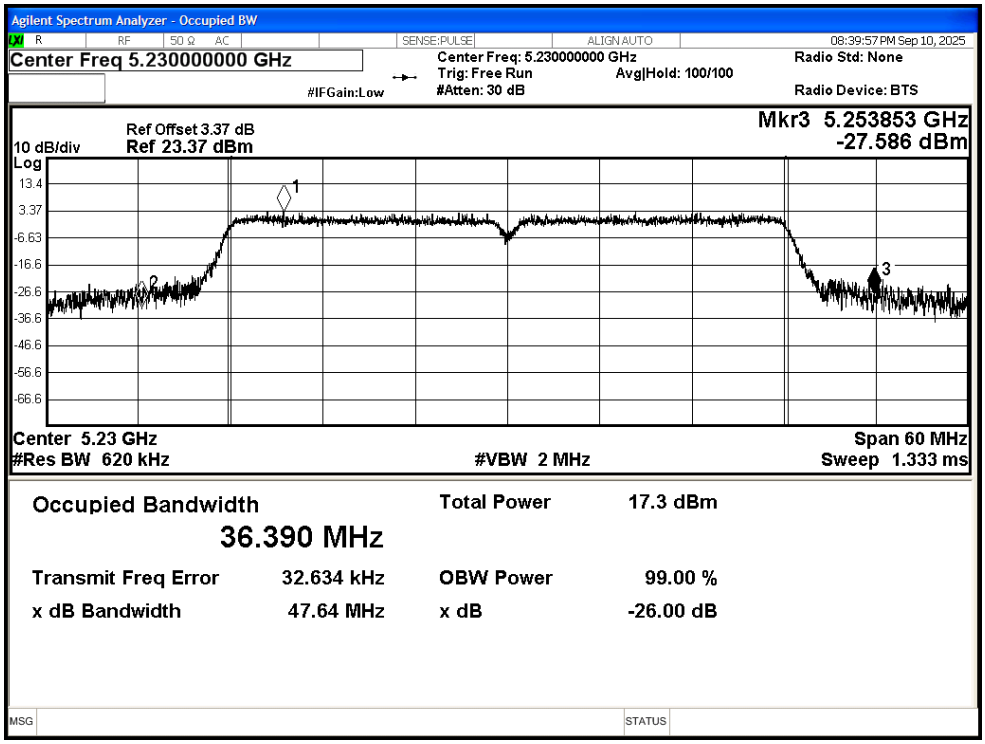
-26dB Bandwidth NVNT ac20 5240MHz Ant1



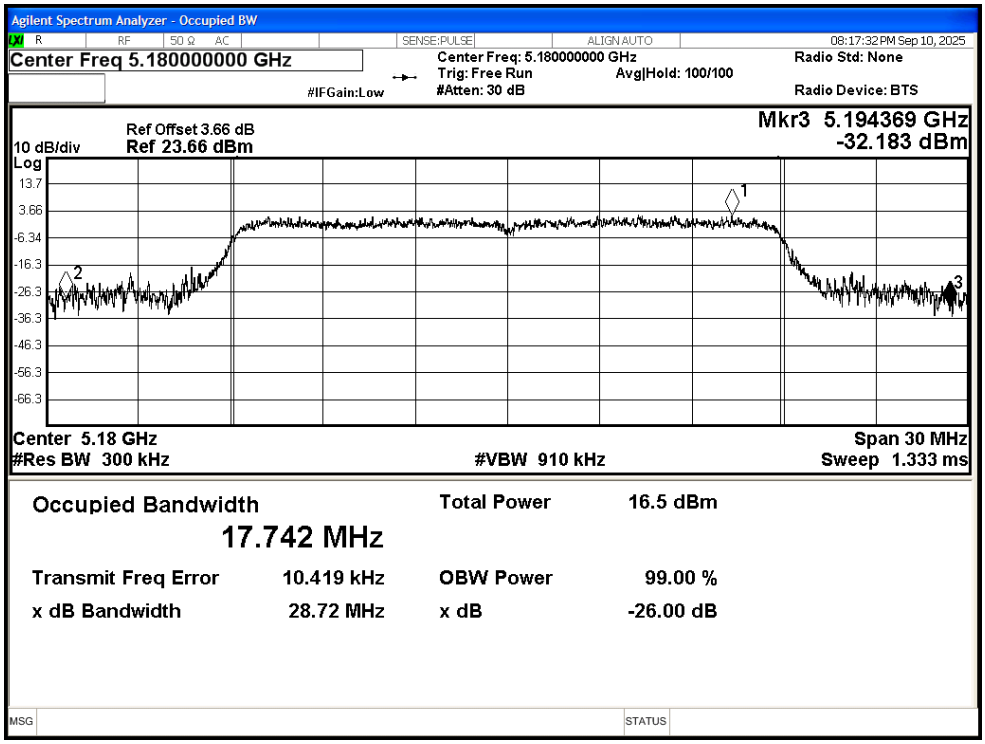
-26dB Bandwidth NVNT ac40 5190MHz Ant1



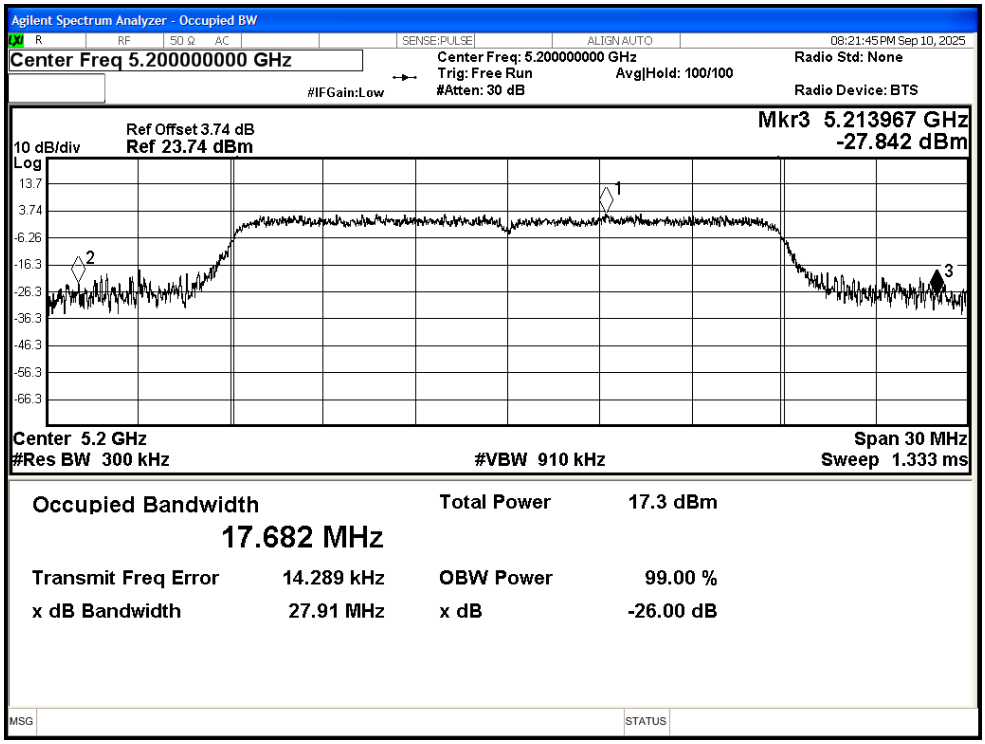
-26dB Bandwidth NVNT ac40 5230MHz Ant1



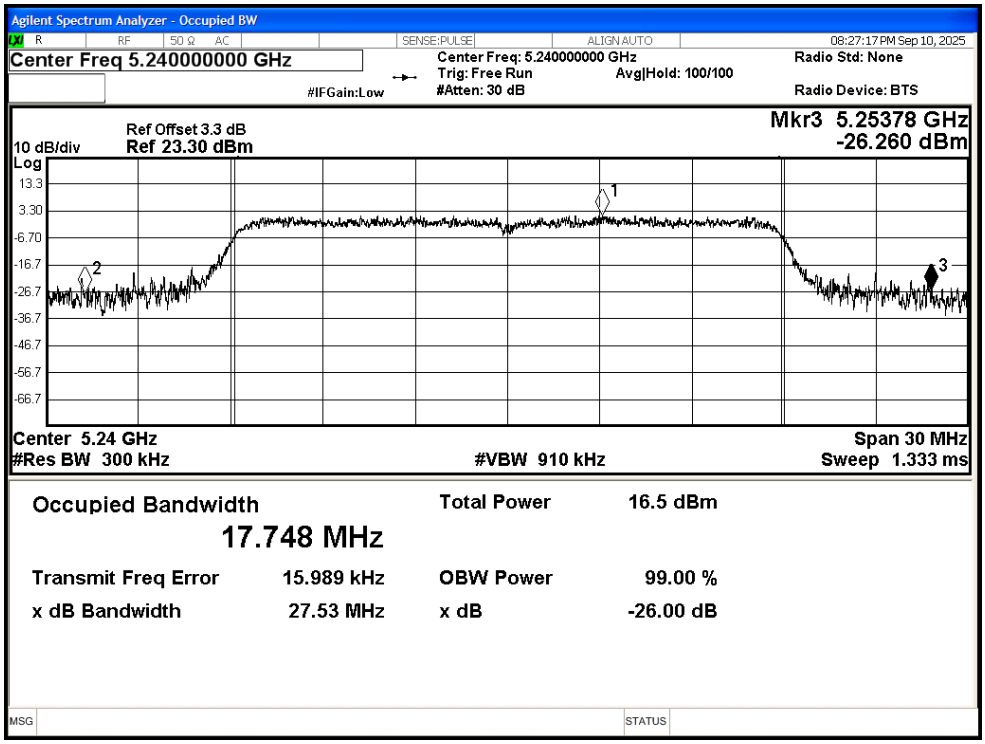
-26dB Bandwidth NVNT ax20 5180MHz Ant1



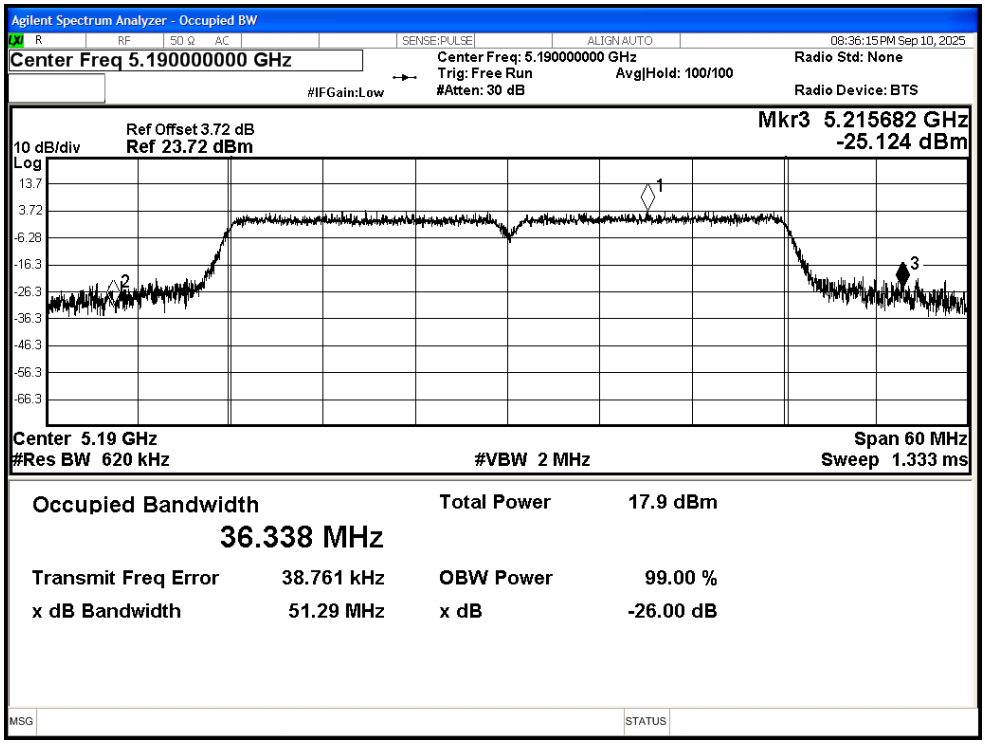
-26dB Bandwidth NVNT ax20 5200MHz Ant1



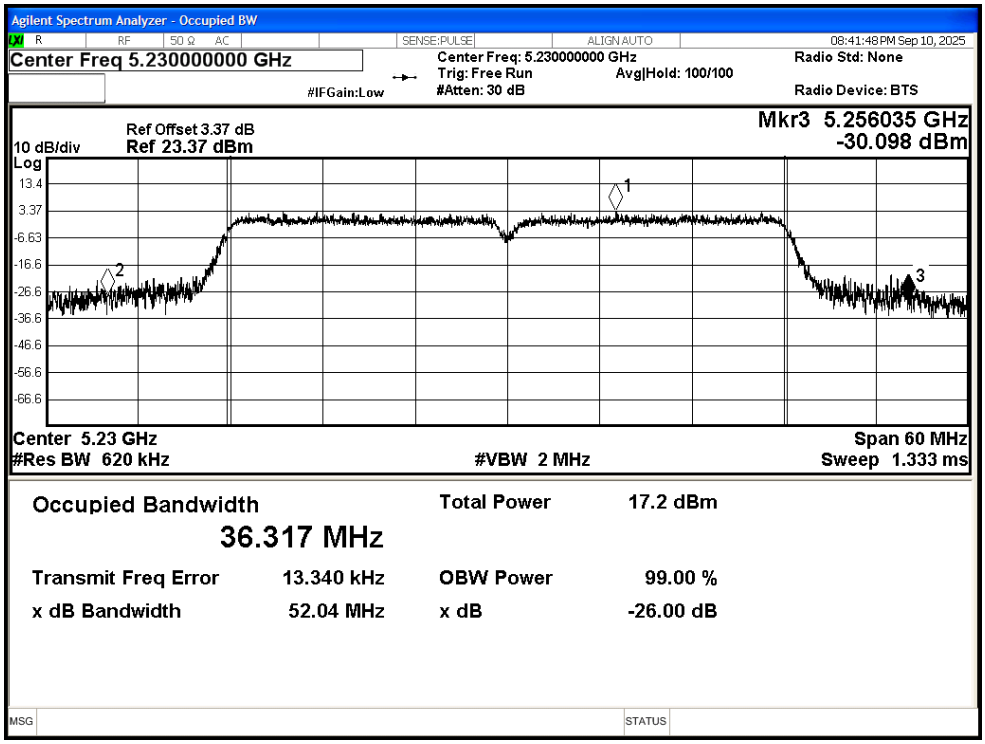
-26dB Bandwidth NVNT ax20 5240MHz Ant1



-26dB Bandwidth NVNT ax40 5190MHz Ant1



-26dB Bandwidth NVNT ax40 5230MHz Ant1



B.2 Maximum Conducted Output Power

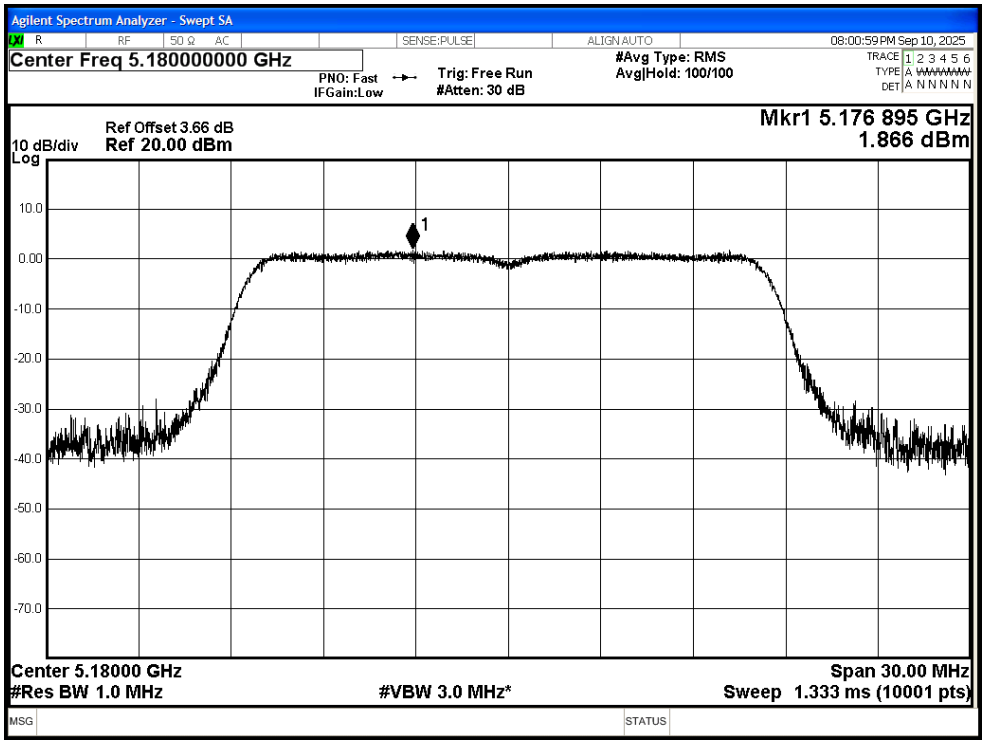
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant	11.82	0.28	12.1	24	Pass
NVNT	a	5200	Ant	12.01	0.24	12.25	24	Pass
NVNT	a	5240	Ant	10.95	0.24	11.19	24	Pass
NVNT	n20	5180	Ant	11.6	0.12	11.72	24	Pass
NVNT	n20	5200	Ant	11.83	0.12	11.95	24	Pass
NVNT	n20	5240	Ant	10.82	0.12	10.94	24	Pass
NVNT	n40	5190	Ant	10.58	0.24	10.82	24	Pass
NVNT	n40	5230	Ant	11.11	0.24	11.35	24	Pass
NVNT	ac20	5180	Ant	11.07	0.12	11.19	24	Pass
NVNT	ac20	5200	Ant	11.81	0.12	11.93	24	Pass
NVNT	ac20	5240	Ant	11.02	0.12	11.14	24	Pass
NVNT	ac40	5190	Ant	11.52	0.24	11.76	24	Pass
NVNT	ac40	5230	Ant	10.78	0.24	11.02	24	Pass
NVNT	ax20	5180	Ant	11	0.12	11.12	24	Pass
NVNT	ax20	5200	Ant	11.73	0.12	11.85	24	Pass
NVNT	ax20	5240	Ant	10.84	0.12	10.96	24	Pass
NVNT	ax40	5190	Ant	11.5	0.24	11.74	24	Pass
NVNT	ax40	5230	Ant	10.63	0.24	10.87	24	Pass

B.3 Maximum Power Spectral Density Level

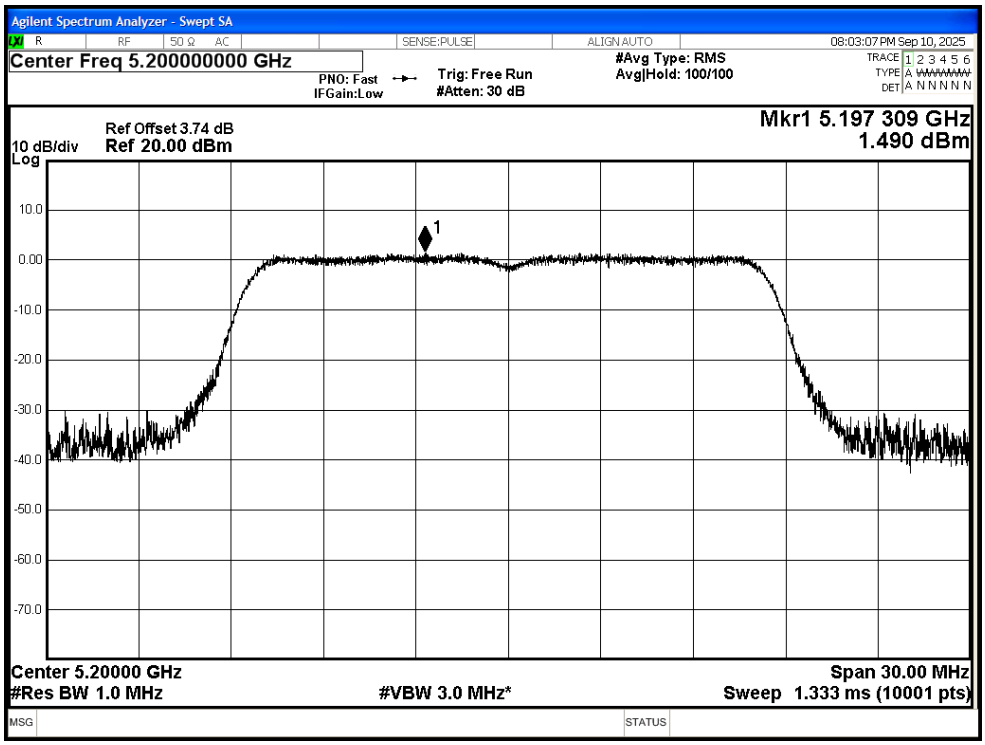
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD(dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	Ant1	1.87	0.28	2.15	11	Pass
NVNT	a	5200	Ant1	1.49	0.24	1.73	11	Pass
NVNT	a	5240	Ant1	0.49	0.24	0.73	11	Pass
NVNT	n20	5180	Ant1	0.86	0.12	0.98	11	Pass
NVNT	n20	5200	Ant1	1.12	0.12	1.24	11	Pass
NVNT	n20	5240	Ant1	0.24	0.12	0.36	11	Pass
NVNT	n40	5190	Ant1	-2.86	0.24	-2.62	11	Pass
NVNT	n40	5230	Ant1	-2.48	0.24	-2.24	11	Pass
NVNT	ac20	5180	Ant1	0.26	0.12	0.38	11	Pass
NVNT	ac20	5200	Ant1	0.98	0.12	1.1	11	Pass
NVNT	ac20	5240	Ant1	0.12	0.12	0.24	11	Pass
NVNT	ac40	5190	Ant1	-1.86	0.24	-1.62	11	Pass
NVNT	ac40	5230	Ant1	-2.85	0.24	-2.61	11	Pass
NVNT	ax20	5180	Ant1	0.32	0.12	0.44	11	Pass
NVNT	ax20	5200	Ant1	0.96	0.12	1.08	11	Pass
NVNT	ax20	5240	Ant1	0.04	0.12	0.16	11	Pass
NVNT	ax40	5190	Ant1	-2.15	0.24	-1.91	11	Pass
NVNT	ax40	5230	Ant1	-2.86	0.24	-2.62	11	Pass

Test Graphs

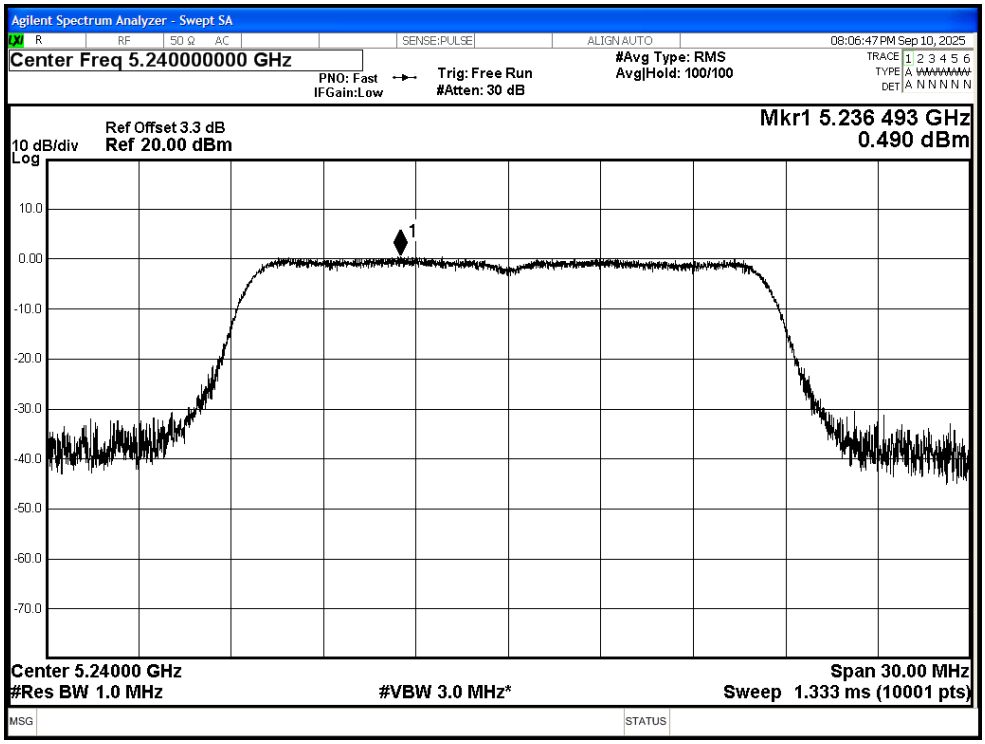
PSD NVNT a 5180MHz Ant1



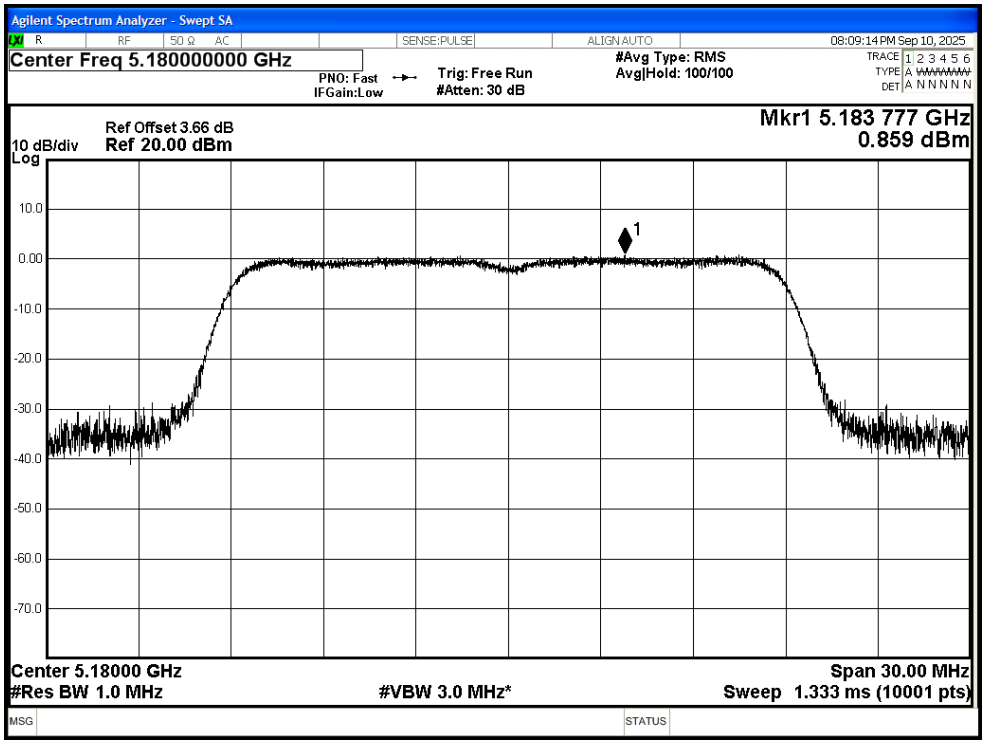
PSD NVNT a 5200MHz Ant1



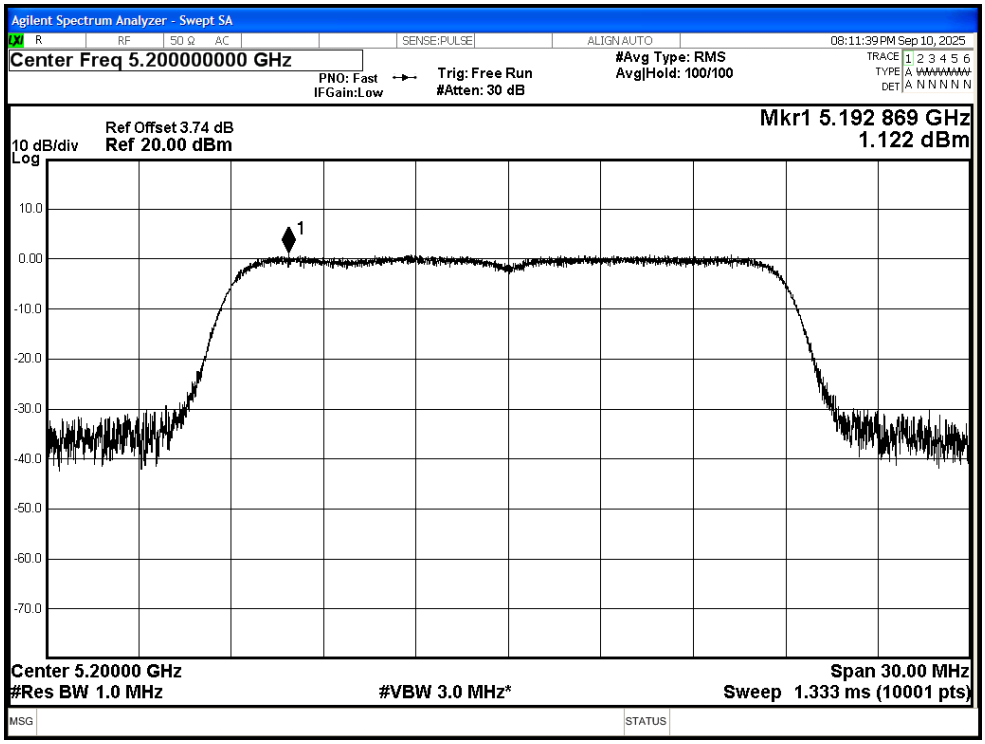
PSD NVNT a 5240MHz Ant1



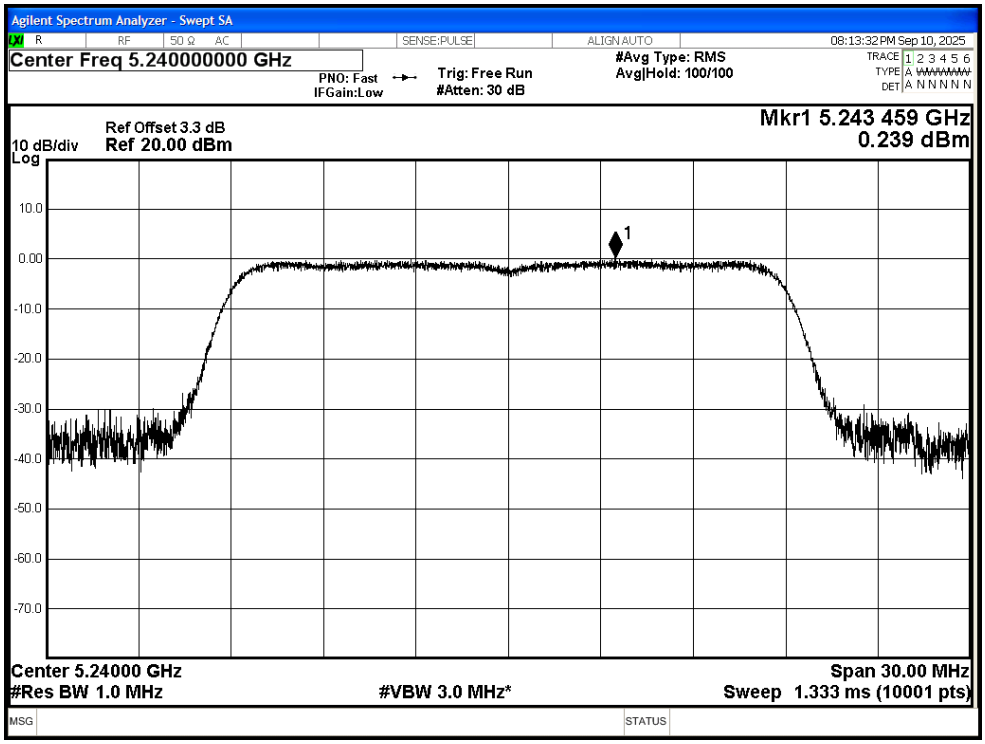
PSD NVNT n20 5180MHz Ant1



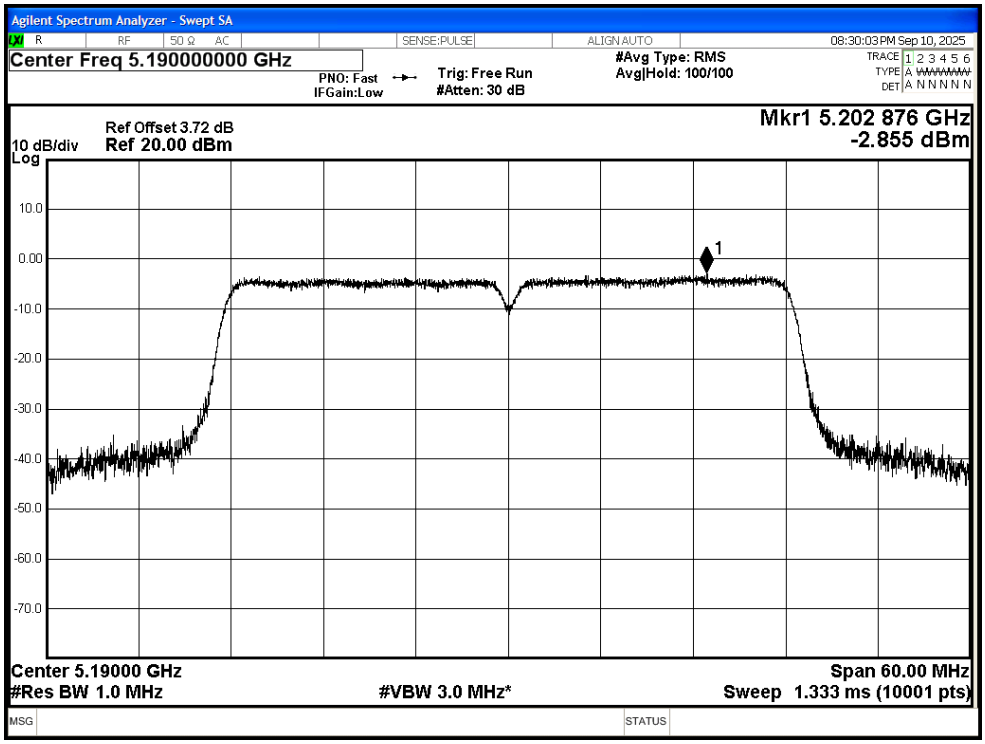
PSD NVNT n20 5200MHz Ant1



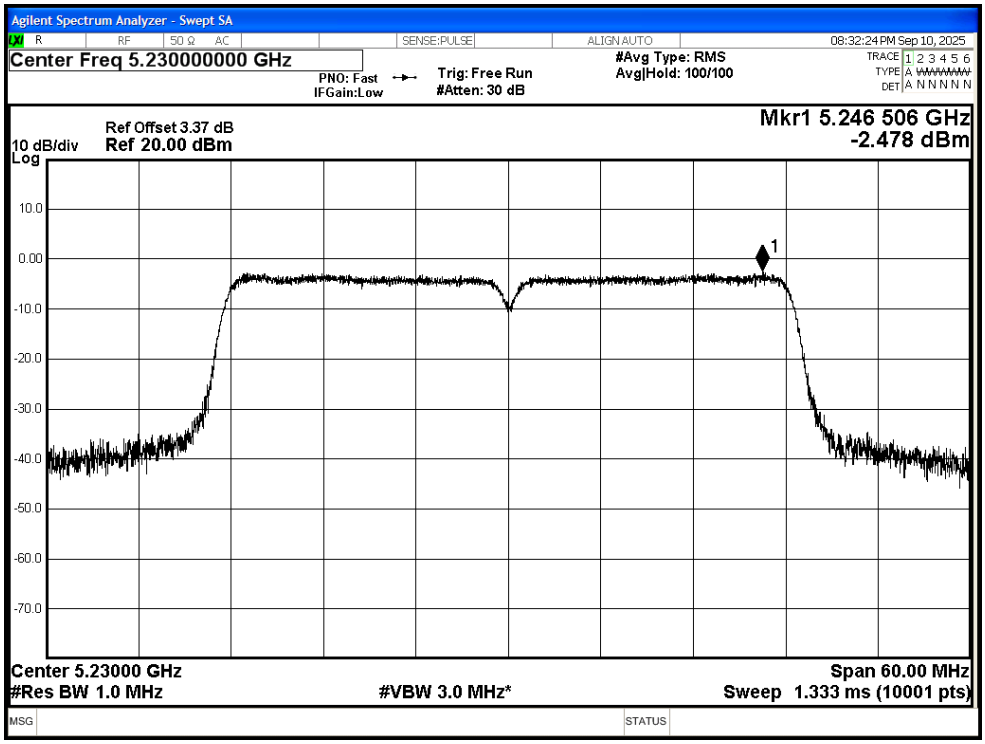
PSD NVNT n20 5240MHz Ant1



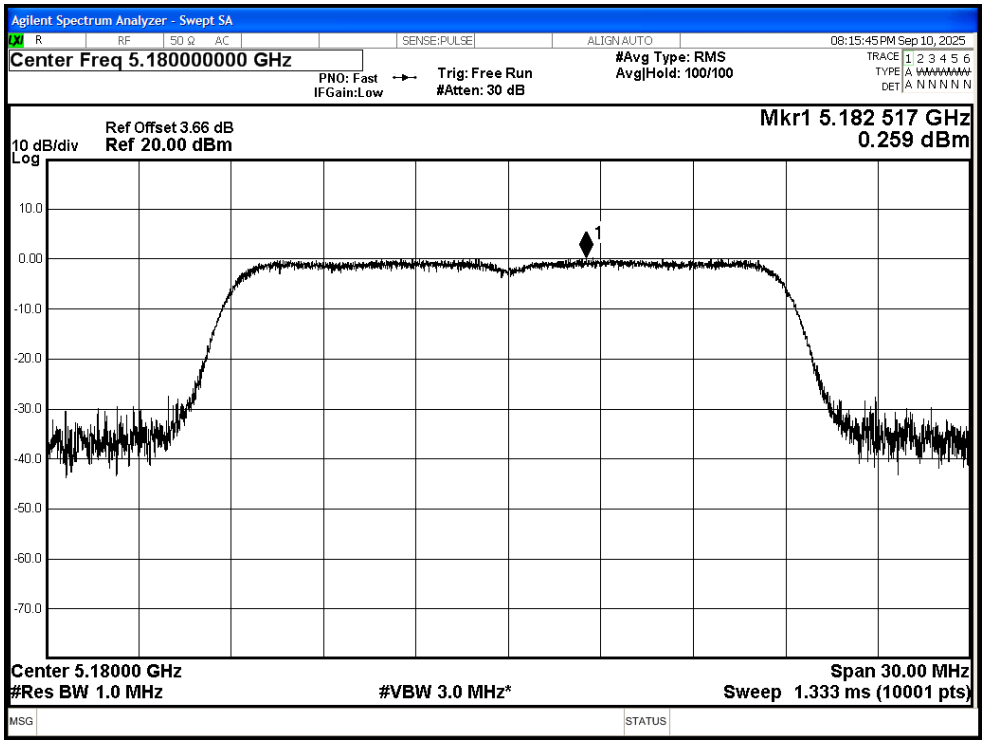
PSD NVNT n40 5190MHz Ant1



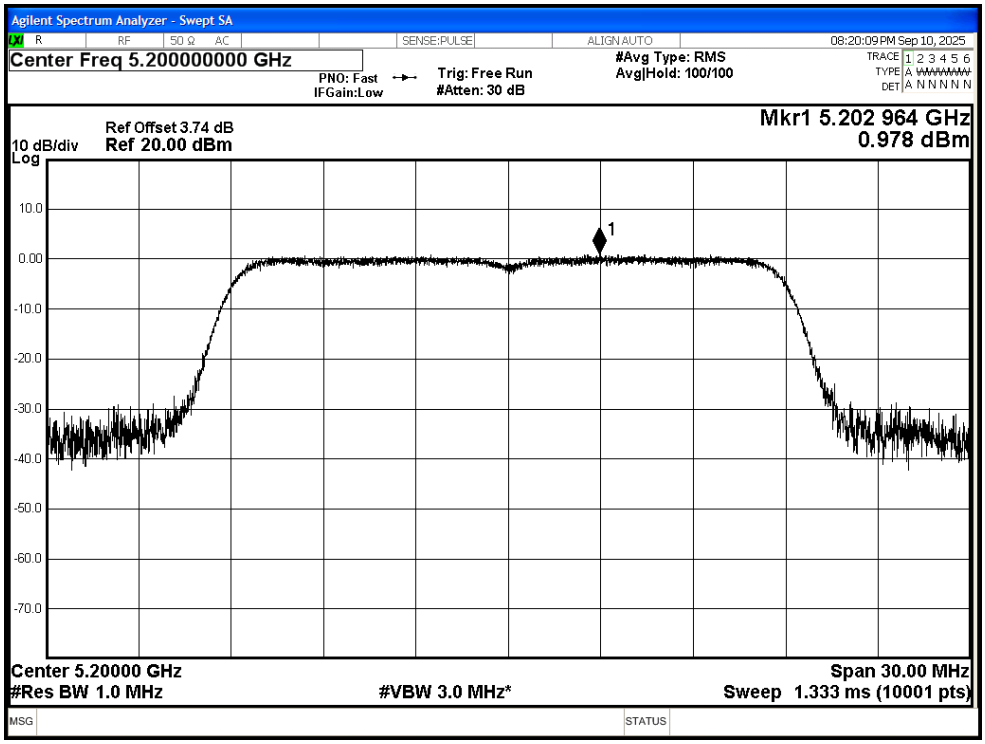
PSD NVNT n40 5230MHz Ant1



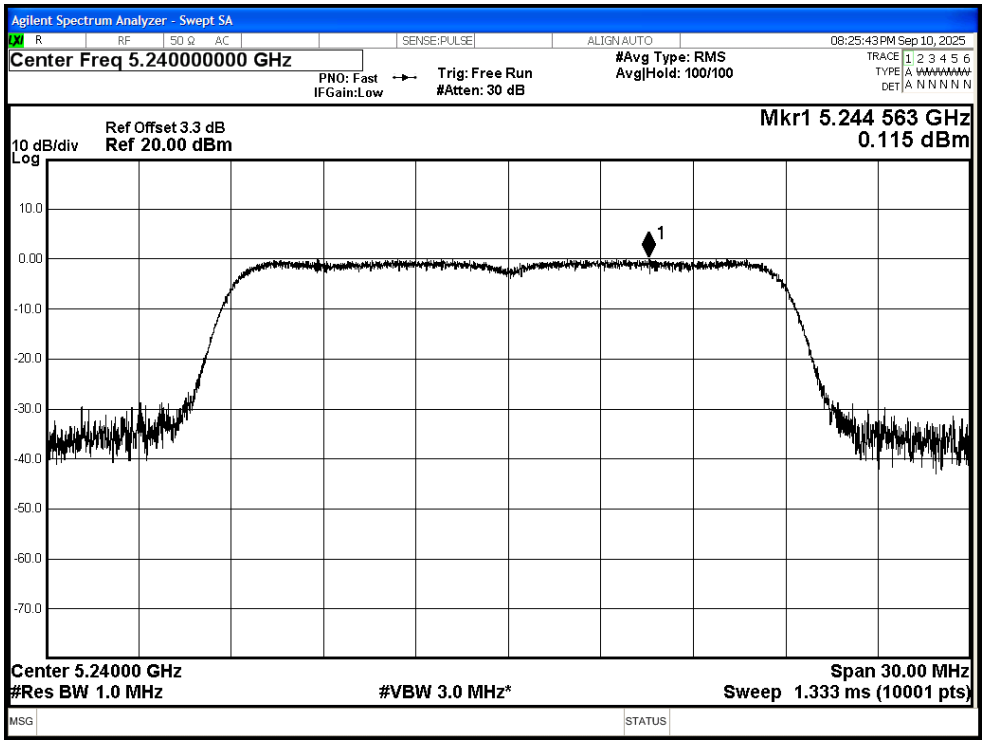
PSD NVNT ac20 5180MHz Ant1



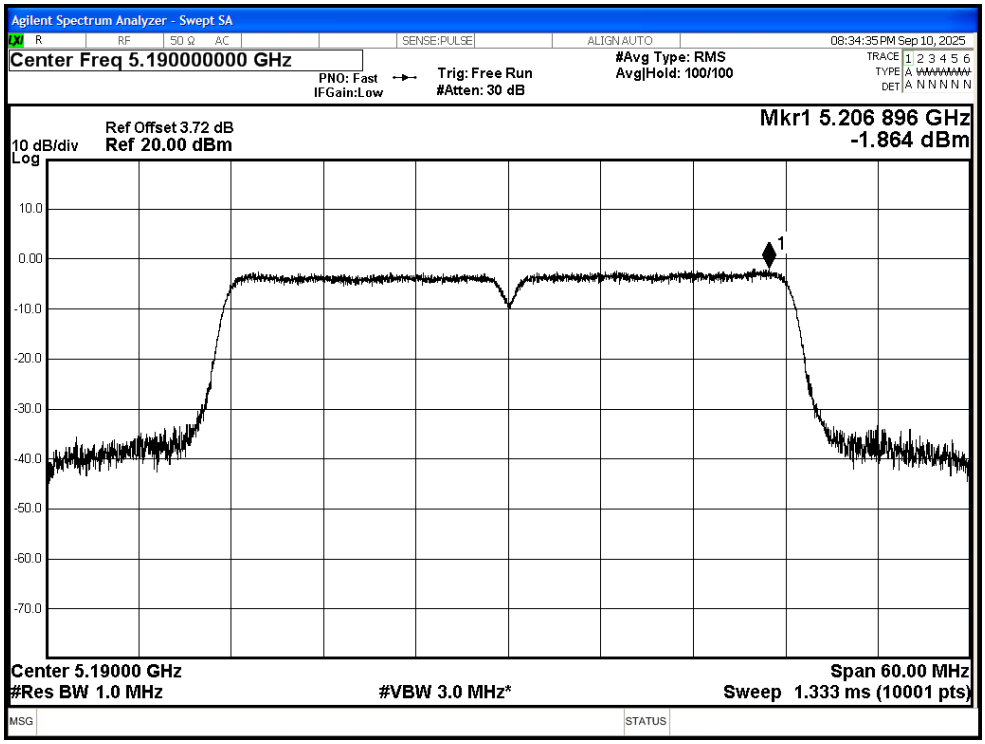
PSD NVNT ac20 5200MHz Ant1



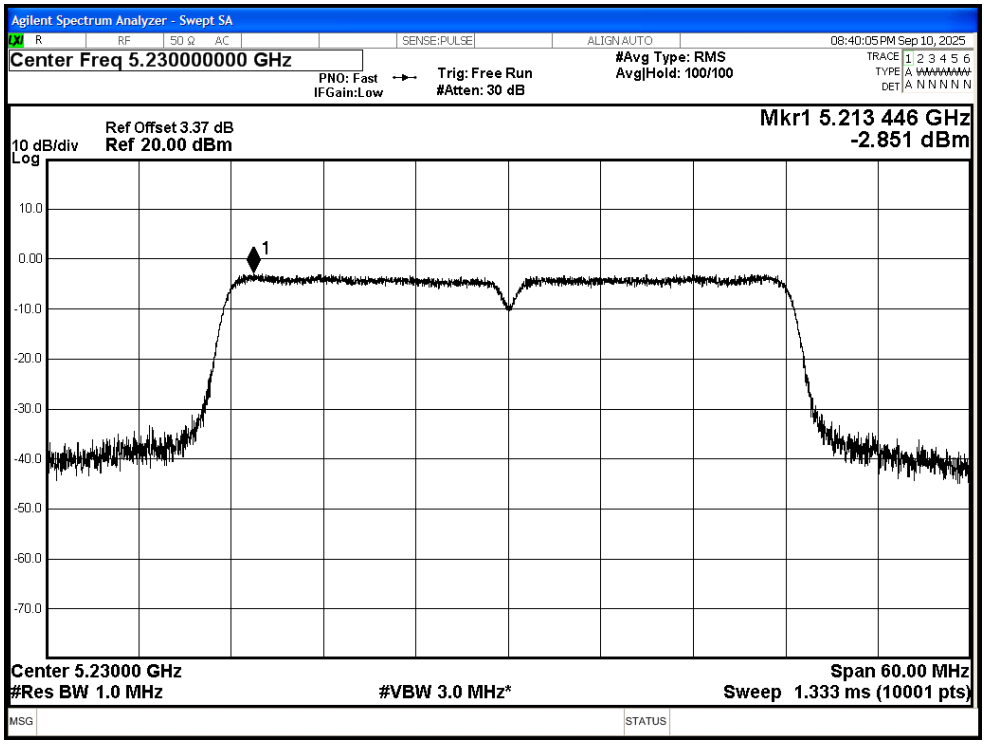
PSD NVNT ac20 5240MHz Ant1



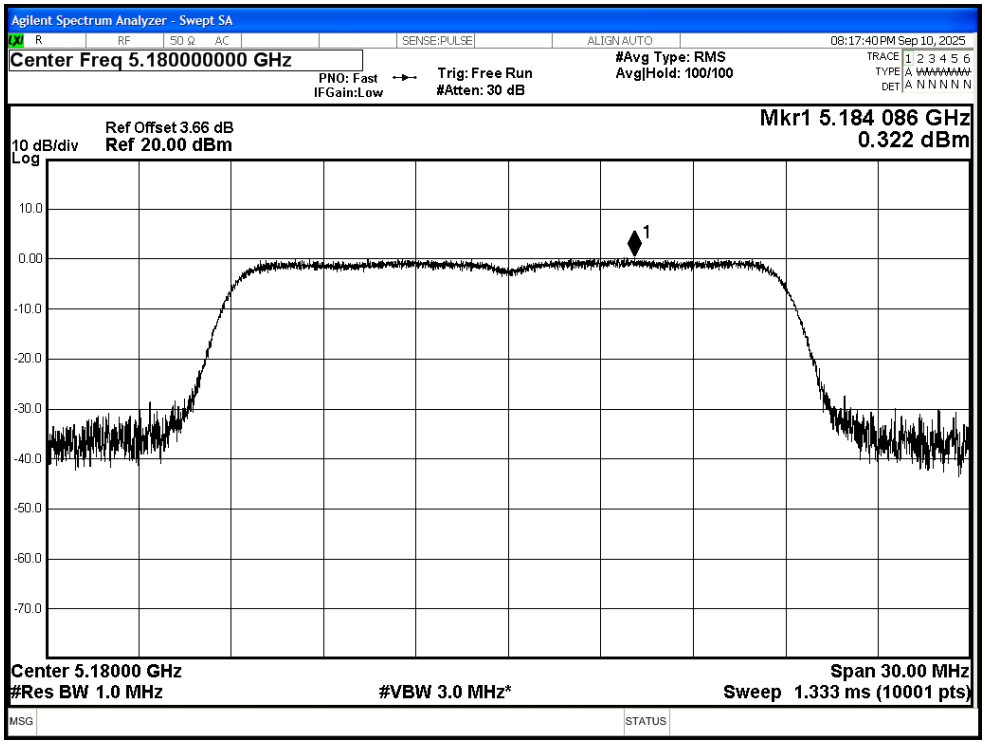
PSD NVNT ac40 5190MHz Ant1



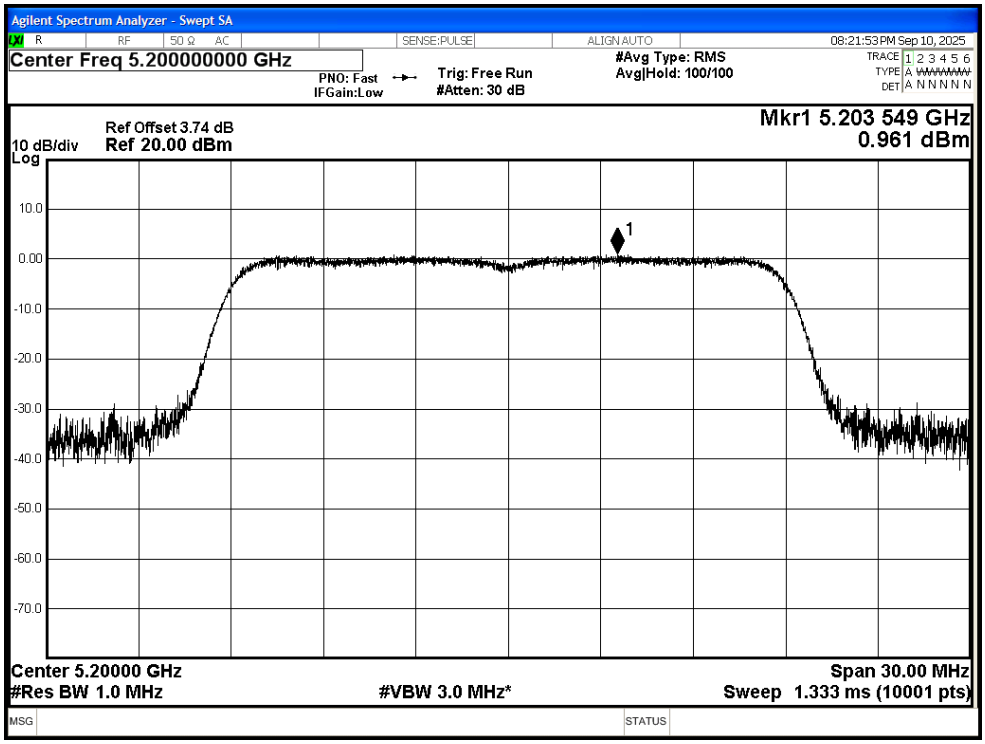
PSD NVNT ac40 5230MHz Ant1



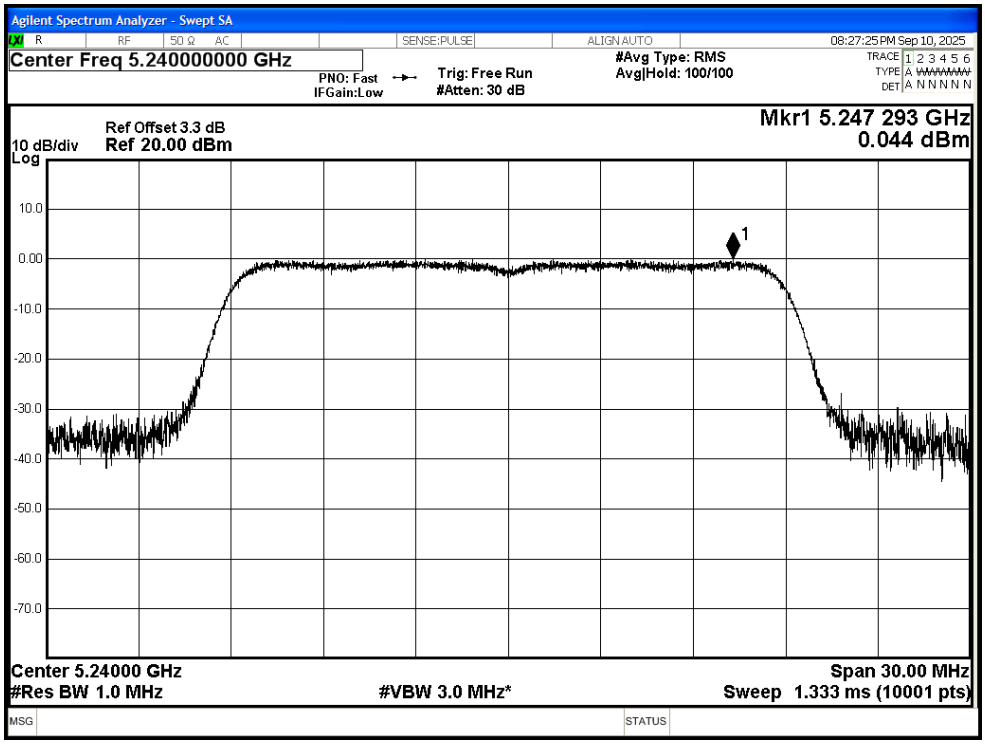
PSD NVNT ax20 5180MHz Ant1



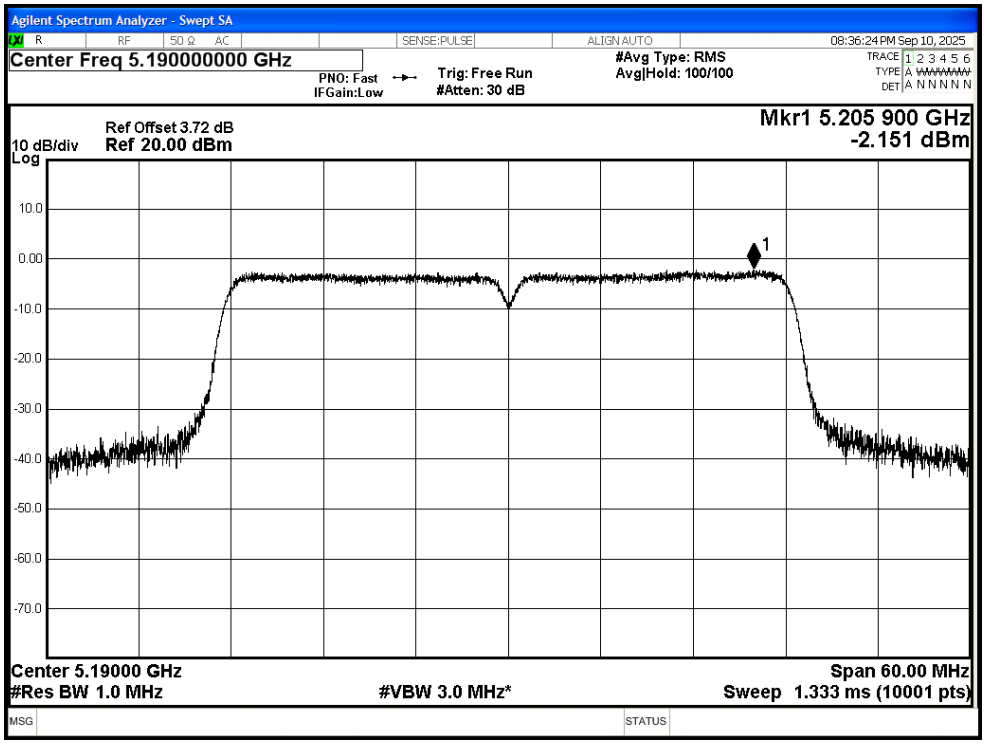
PSD NVNT ax20 5200MHz Ant1



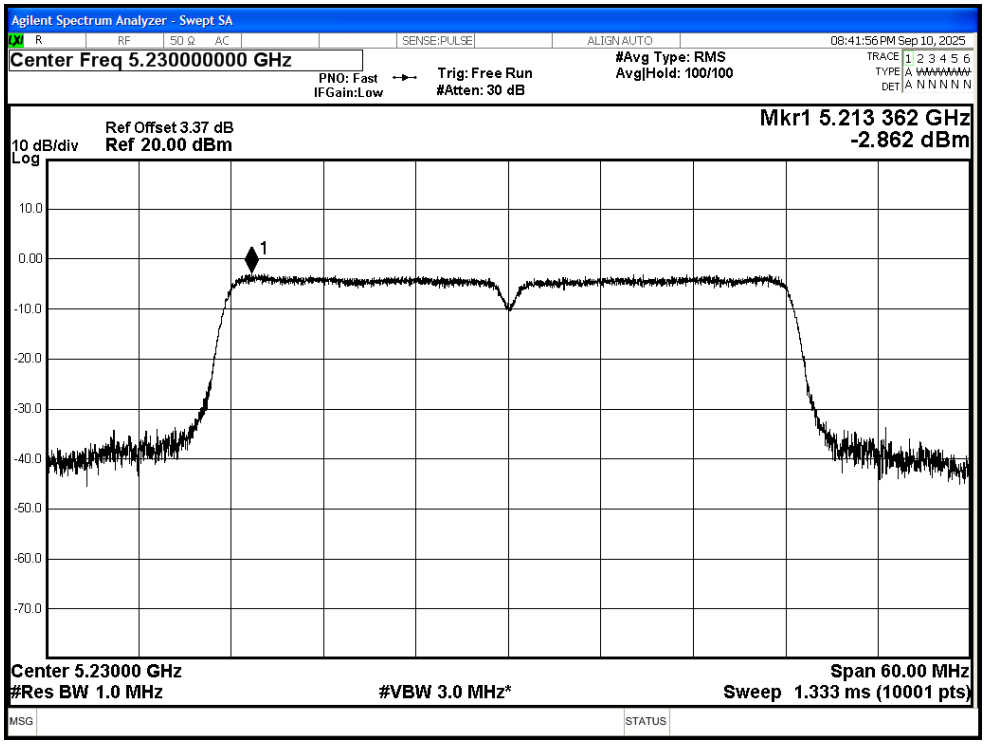
PSD NVNT ax20 5240MHz Ant1



PSD NVNT ax40 5190MHz Ant1



PSD NVNT ax40 5230MHz Ant1



B.4 Restrict Band

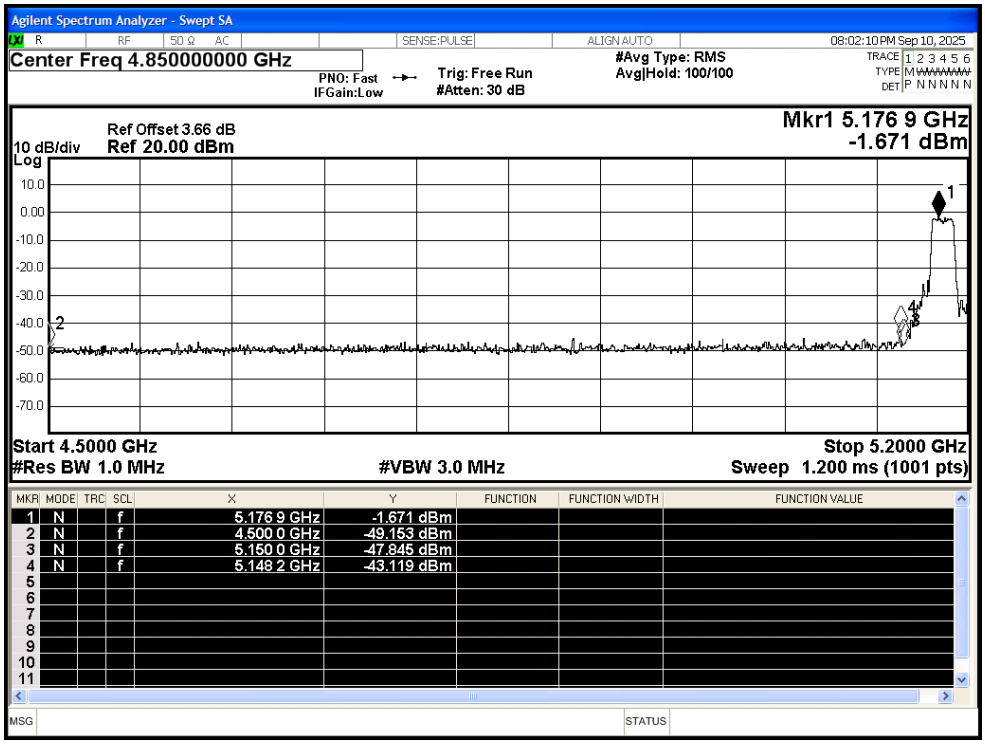
Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	a	5180	Ant1	4500	-49.15	3.86	-	49.94	Peak	68.2	Pass
NVNT	a	5180	Ant1	4500	-58.27	3.86	0.28	41.10	Average	54	Pass
NVNT	a	5180	Ant1	5148.2	-43.12	3.86	-	55.97	Peak	68.2	Pass
NVNT	a	5180	Ant1	5104.1	-55.92	3.86	0.28	43.45	Average	54	Pass
NVNT	a	5180	Ant1	5150	-47.85	3.86	-	51.24	Peak	68.2	Pass
NVNT	a	5180	Ant1	5150	-55.86	3.86	0.28	43.51	Average	54	Pass
NVNT	a	5240	Ant1	5350	-49.48	3.86	-	49.61	Peak	68.2	Pass
NVNT	a	5240	Ant1	5350	-57.63	3.86	0.24	41.70	Average	54	Pass
NVNT	a	5240	Ant1	5429.28	-46.96	3.86	-	52.13	Peak	68.2	Pass
NVNT	a	5240	Ant1	5431.68	-57.05	3.86	0.24	42.28	Average	54	Pass
NVNT	a	5240	Ant1	5460	-48.32	3.86	-	50.77	Peak	68.2	Pass
NVNT	a	5240	Ant1	5460	-58.07	3.86	0.24	41.26	Average	54	Pass
NVNT	n20	5180	Ant1	4500	-50.92	3.86	-	48.17	Peak	68.2	Pass
NVNT	n20	5180	Ant1	4500	-59.13	3.86	0.12	40.08	Average	54	Pass
NVNT	n20	5180	Ant1	4734.5	-45.95	3.86	-	53.14	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5125.1	-55.65	3.86	0.12	43.56	Average	54	Pass
NVNT	n20	5180	Ant1	5150	-38.76	3.86	-	60.33	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5150	-55.96	3.86	0.12	43.25	Average	54	Pass
NVNT	n20	5240	Ant1	5350	-47.75	3.86	-	51.34	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5350	-57.63	3.86	0.12	41.58	Average	54	Pass
NVNT	n20	5240	Ant1	5403.36	-47.34	3.86	-	51.75	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5374.8	-57.01	3.86	0.12	42.20	Average	54	Pass
NVNT	n20	5240	Ant1	5460	-49.67	3.86	-	49.42	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5460	-58.08	3.86	0.12	41.13	Average	54	Pass
NVNT	n40	5190	Ant1	4500	-50.26	3.86	-	48.83	Peak	68.2	Pass
NVNT	n40	5190	Ant1	4500	-58.16	3.86	0.24	41.17	Average	54	Pass
NVNT	n40	5190	Ant1	5144.59	-43.08	3.86	-	56.01	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5149.7	-54.73	3.86	0.24	44.60	Average	54	Pass
NVNT	n40	5190	Ant1	5150	-46.7	3.86	-	52.39	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5150	-54.73	3.86	0.24	44.60	Average	54	Pass
NVNT	n40	5230	Ant1	5350	-47.75	3.86	-	51.34	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5350	-58.05	3.86	0.24	41.28	Average	54	Pass
NVNT	n40	5230	Ant1	5421.39	-46.69	3.86	-	52.40	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5418.69	-56.93	3.86	0.24	42.40	Average	54	Pass
NVNT	n40	5230	Ant1	5460	-49.71	3.86	-	49.38	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5460	-57.55	3.86	0.24	41.78	Average	54	Pass
NVNT	ac20	5180	Ant1	4500	-50.09	3.86	-	49.00	Peak	68.2	Pass

NVNT	ac20	5180	Ant1	4500	-58.13	3.86	0.12	41.08	Average	54	Pass
NVNT	ac20	5180	Ant1	5149.6	-41.4	3.86	-	57.69	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	5149.6	-55.26	3.86	0.12	43.95	Average	54	Pass
NVNT	ac20	5180	Ant1	5150	-45.16	3.86	-	53.93	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	5150	-55.17	3.86	0.12	44.04	Average	54	Pass
NVNT	ac20	5240	Ant1	5350	-51.68	3.86	-	47.41	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5350	-57.99	3.86	0.12	41.22	Average	54	Pass
NVNT	ac20	5240	Ant1	5360.16	-46.35	3.86	-	52.74	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5351.76	-57.05	3.86	0.12	42.16	Average	54	Pass
NVNT	ac20	5240	Ant1	5460	-50.87	3.86	-	48.22	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5460	-58.13	3.86	0.12	41.08	Average	54	Pass
NVNT	ac40	5190	Ant1	4500	-50.13	3.86	-	48.96	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	4500	-58.41	3.86	0.24	40.92	Average	54	Pass
NVNT	ac40	5190	Ant1	5149.7	-42.83	3.86	-	56.26	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	5149.7	-54.91	3.86	0.24	44.42	Average	54	Pass
NVNT	ac40	5190	Ant1	5150	-42.83	3.86	-	56.26	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	5150	-54.91	3.86	0.24	44.42	Average	54	Pass
NVNT	ac40	5230	Ant1	5350	-48.25	3.86	-	50.84	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5350	-57.47	3.86	0.24	41.86	Average	54	Pass
NVNT	ac40	5230	Ant1	5459.46	-45.71	3.86	-	53.38	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5395.2	-57.02	3.86	0.24	42.31	Average	54	Pass
NVNT	ac40	5230	Ant1	5460	-49.99	3.86	-	49.10	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5460	-57.59	3.86	0.24	41.74	Average	54	Pass
NVNT	ax20	5180	Ant1	4500	-50.24	3.86	-	48.85	Peak	68.2	Pass
NVNT	ax20	5180	Ant1	4500	-58.16	3.86	0.12	41.05	Average	54	Pass
NVNT	ax20	5180	Ant1	5149.6	-44.24	3.86	-	54.85	Peak	68.2	Pass
NVNT	ax20	5180	Ant1	5147.5	-55.43	3.86	0.12	43.78	Average	54	Pass
NVNT	ax20	5180	Ant1	5150	-44.36	3.86	-	54.73	Peak	68.2	Pass
NVNT	ax20	5180	Ant1	5150	-54.85	3.86	0.12	44.36	Average	54	Pass
NVNT	ax20	5240	Ant1	5350	-50.83	3.86	-	48.26	Peak	68.2	Pass
NVNT	ax20	5240	Ant1	5350	-57.7	3.86	0.12	41.51	Average	54	Pass
NVNT	ax20	5240	Ant1	5397.84	-47.37	3.86	-	51.72	Peak	68.2	Pass
NVNT	ax20	5240	Ant1	5382.72	-56.92	3.86	0.12	42.29	Average	54	Pass
NVNT	ax20	5240	Ant1	5460	-50.11	3.86	-	48.98	Peak	68.2	Pass
NVNT	ax20	5240	Ant1	5460	-58.34	3.86	0.12	40.87	Average	54	Pass
NVNT	ax40	5190	Ant1	4500	-50.47	3.86	-	48.62	Peak	68.2	Pass
NVNT	ax40	5190	Ant1	4500	-58.1	3.86	0.24	41.23	Average	54	Pass
NVNT	ax40	5190	Ant1	5149.7	-42.07	3.86	-	57.02	Peak	68.2	Pass
NVNT	ax40	5190	Ant1	5149.7	-54.85	3.86	0.24	44.48	Average	54	Pass
NVNT	ax40	5190	Ant1	5150	-42.07	3.86	-	57.02	Peak	68.2	Pass
NVNT	ax40	5190	Ant1	5150	-54.85	3.86	0.24	44.48	Average	54	Pass
NVNT	ax40	5230	Ant1	5350	-50.29	3.86	-	48.80	Peak	68.2	Pass

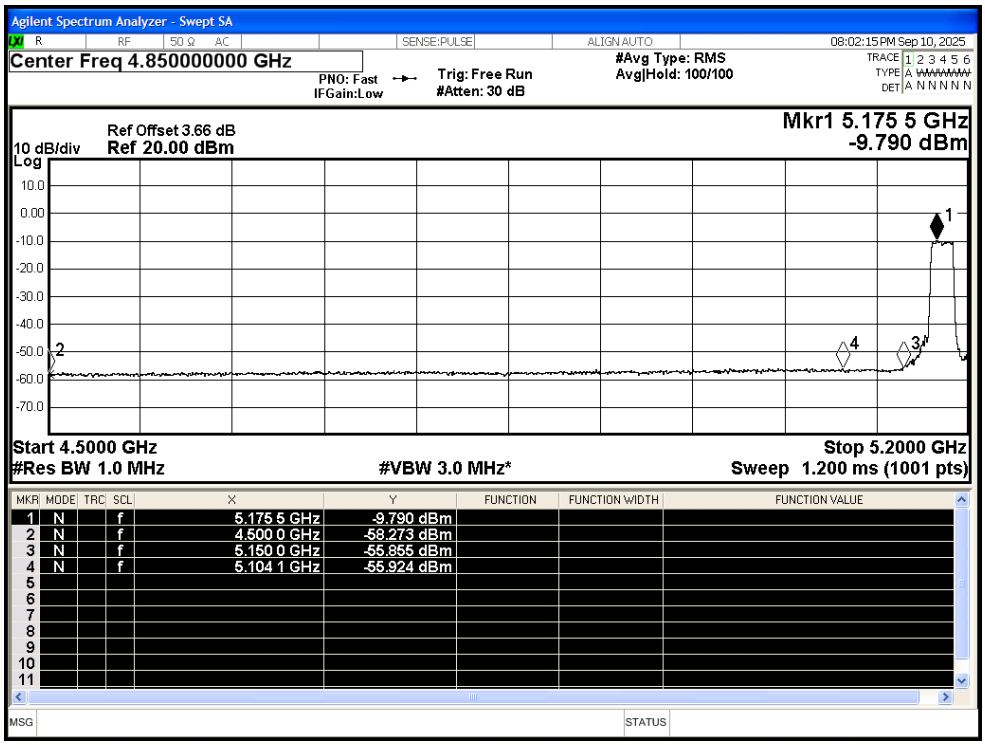
NVNT	ax40	5230	Ant1	5350	-57.39	3.86	0.24	41.94	Average	54	Pass
NVNT	ax40	5230	Ant1	5443.53	-46.05	3.86	-	53.04	Peak	68.2	Pass
NVNT	ax40	5230	Ant1	5350.38	-56.9	3.86	0.24	42.43	Average	54	Pass
NVNT	ax40	5230	Ant1	5460	-50.27	3.86	-	48.82	Peak	68.2	Pass
NVNT	ax40	5230	Ant1	5460	-58.66	3.86	0.24	40.67	Average	54	Pass

Test Graphs

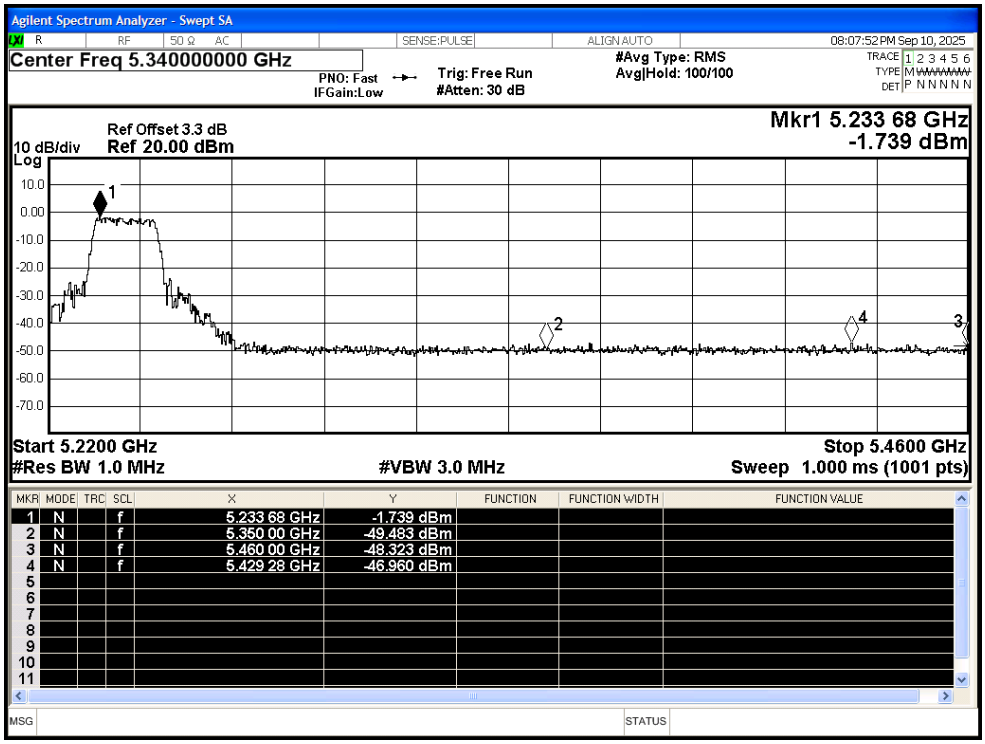
Restrict Band NVNT a 5180MHz Ant1 Peak



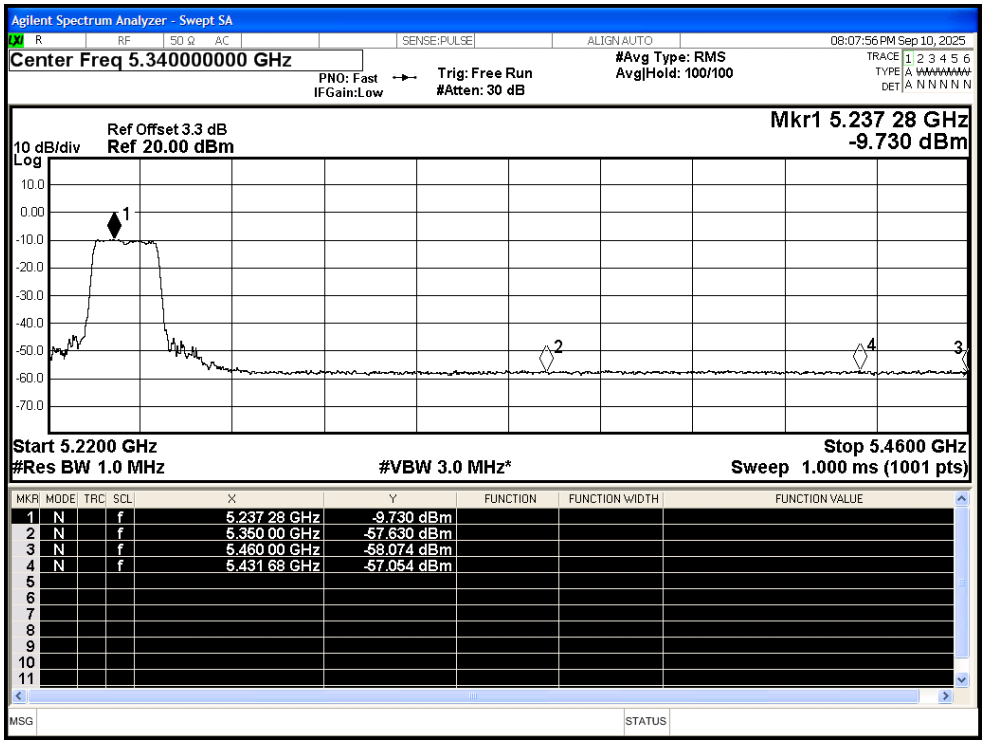
Restrict Band NVNT a 5180MHz Ant1 Average



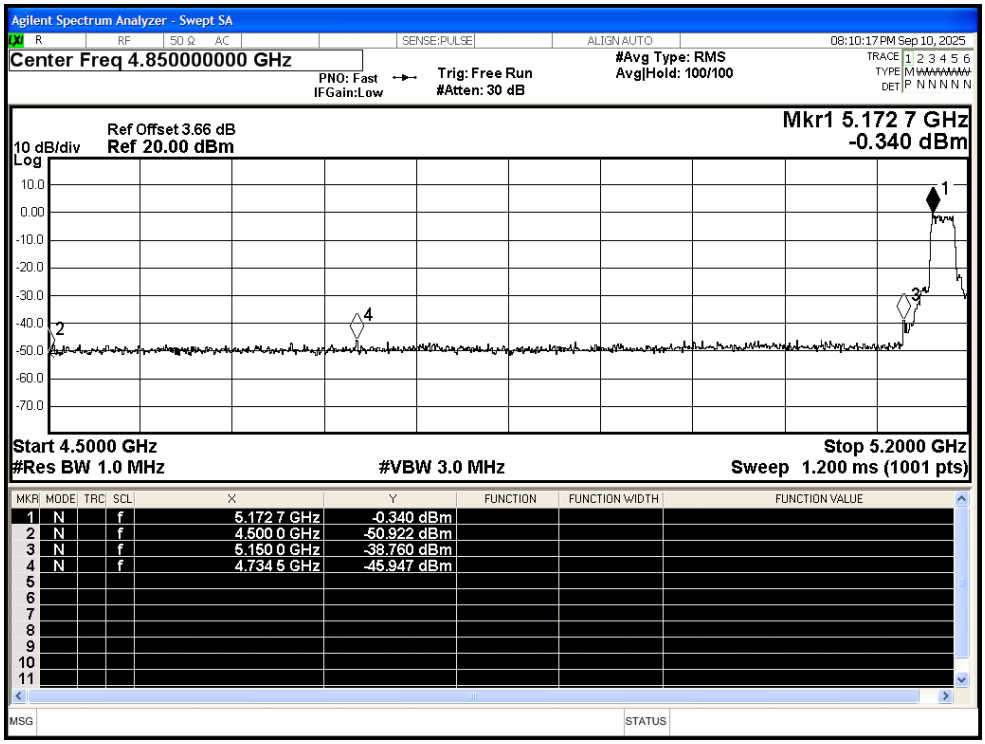
Restrict Band NVNT a 5240MHz Ant1 Peak



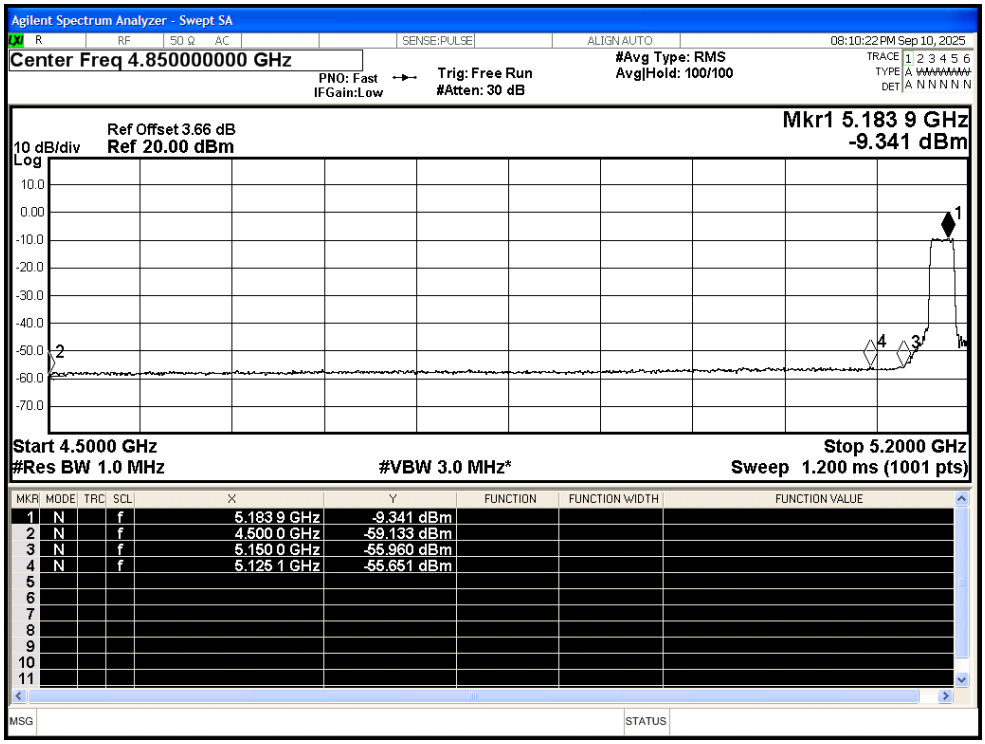
Restrict Band NVNT a 5240MHz Ant1 Average



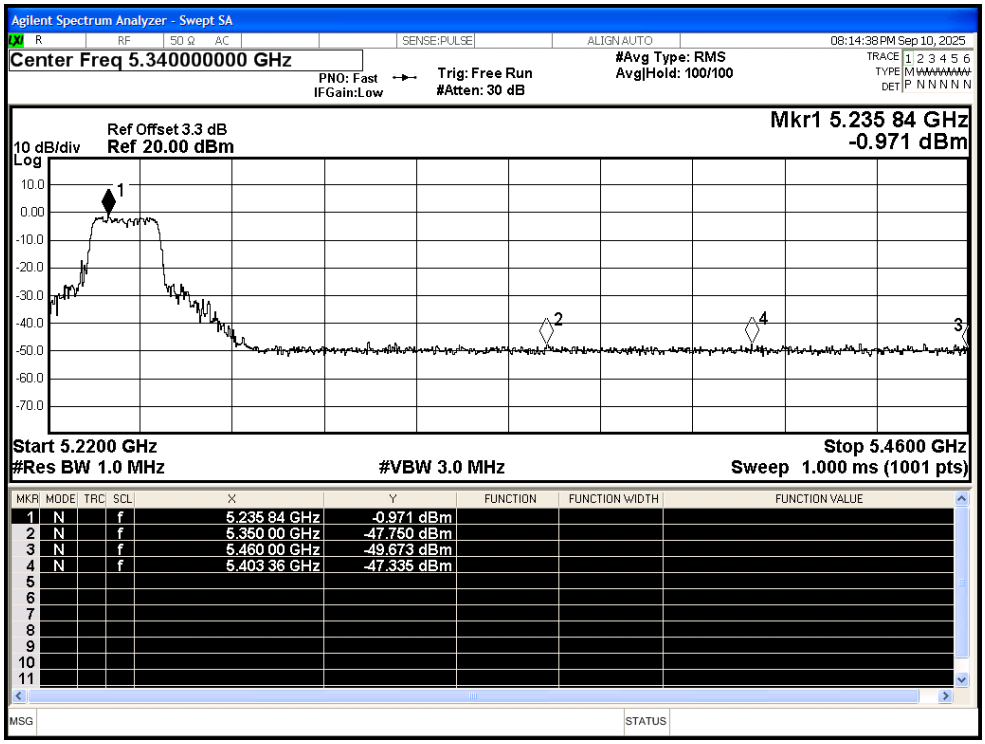
Restrict Band NVNT n20 5180MHz Ant1 Peak



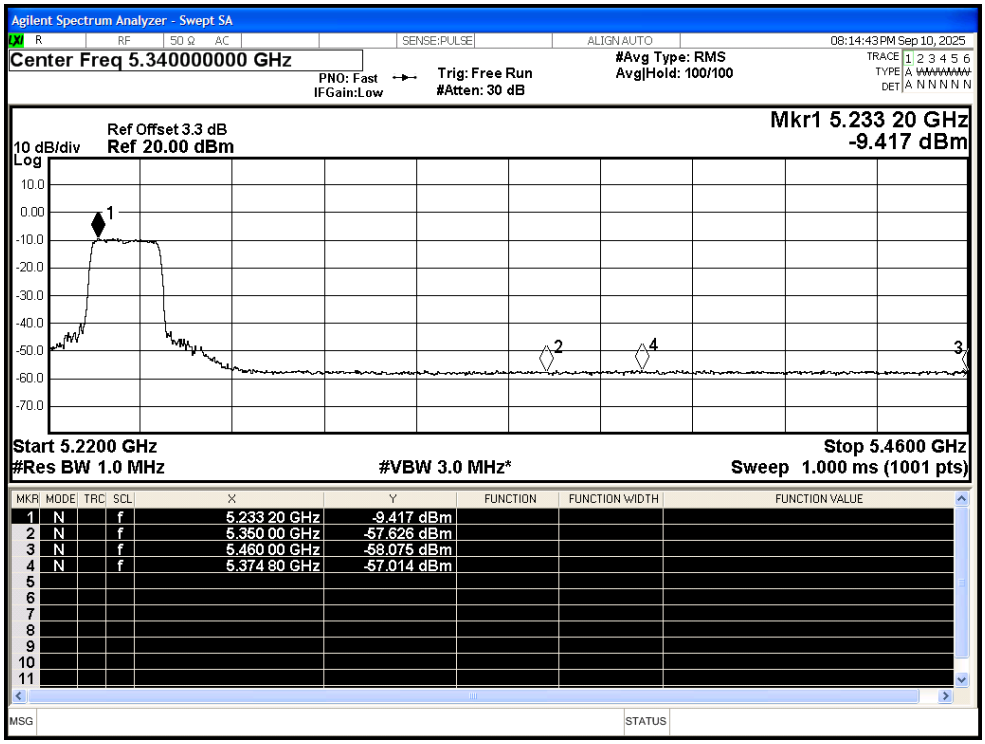
Restrict Band NVNT n20 5180MHz Ant1 Average



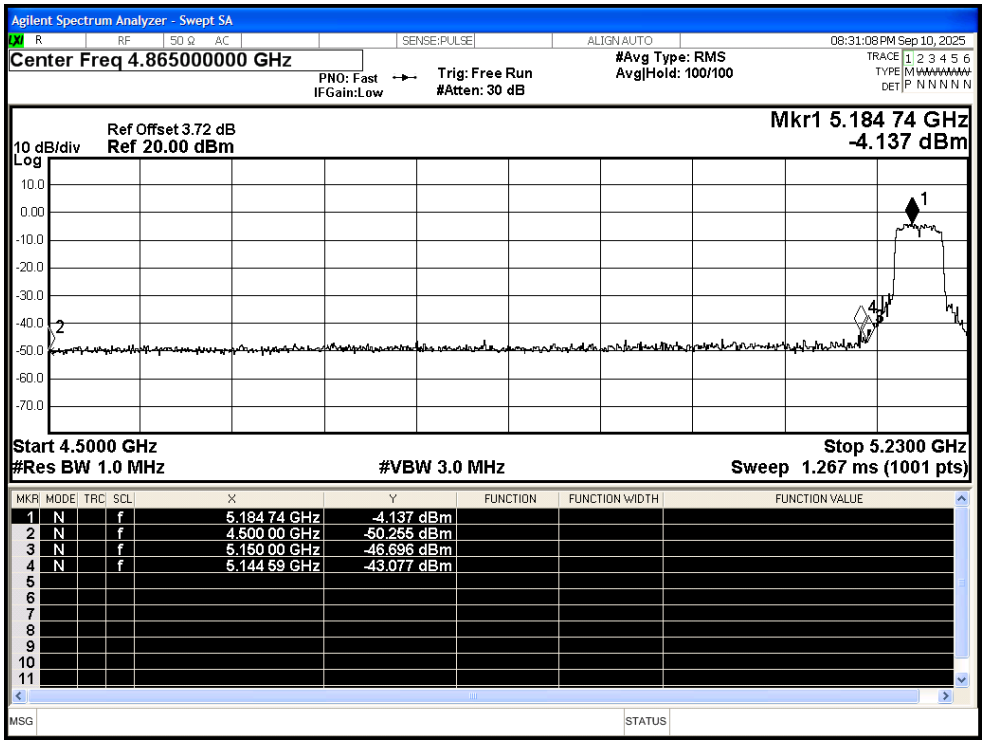
Restrict Band NVNT n20 5240MHz Ant1 Peak



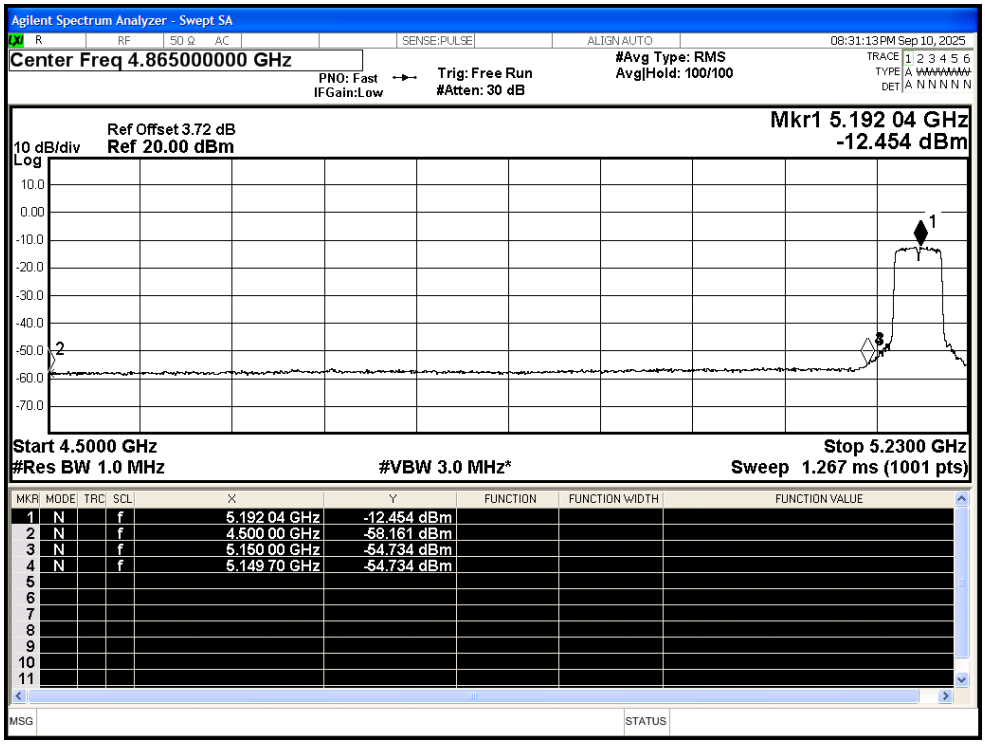
Restrict Band NVNT n20 5240MHz Ant1 Average



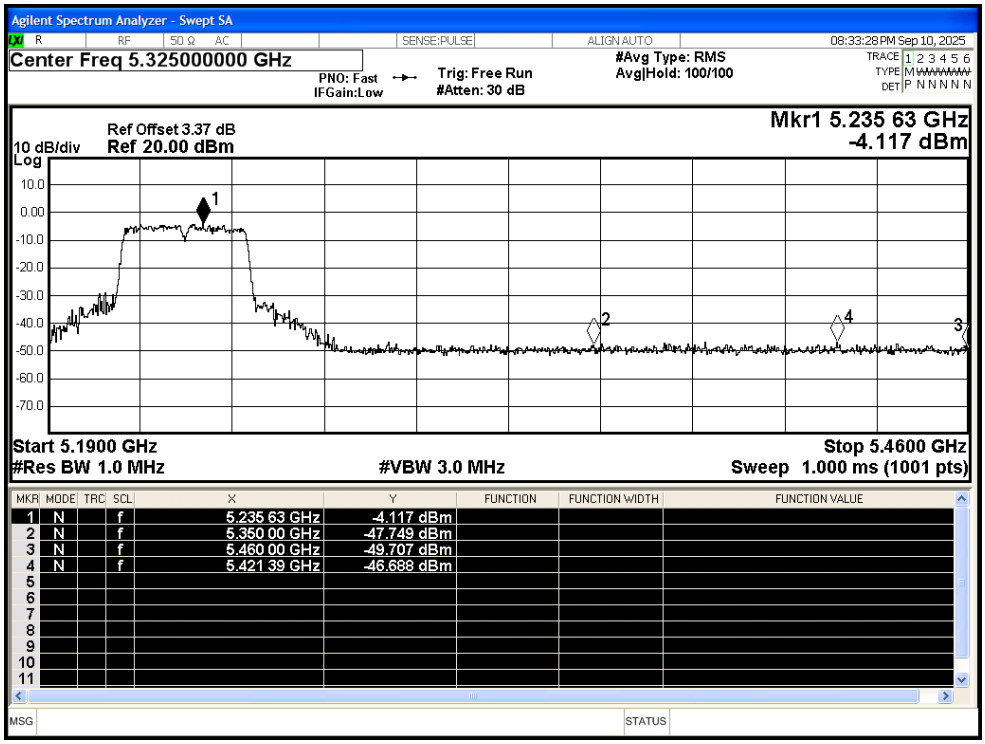
Restrict Band NVNT n40 5190MHz Ant1 Peak



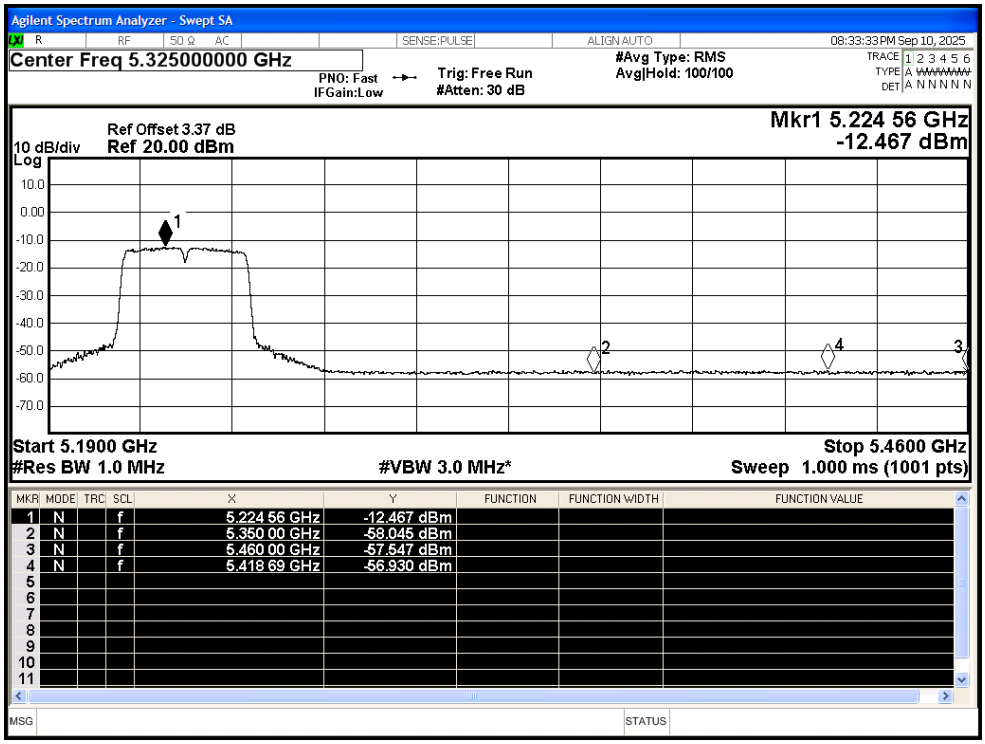
Restrict Band NVNT n40 5190MHz Ant1 Average



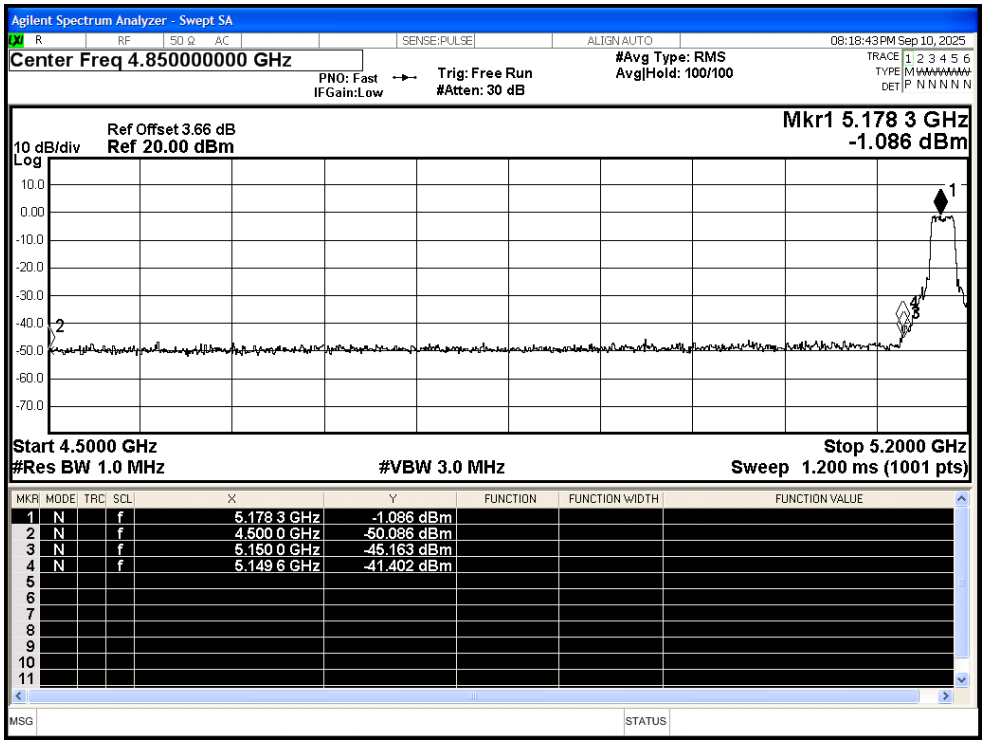
Restrict Band NVNT n40 5230MHz Ant1 Peak



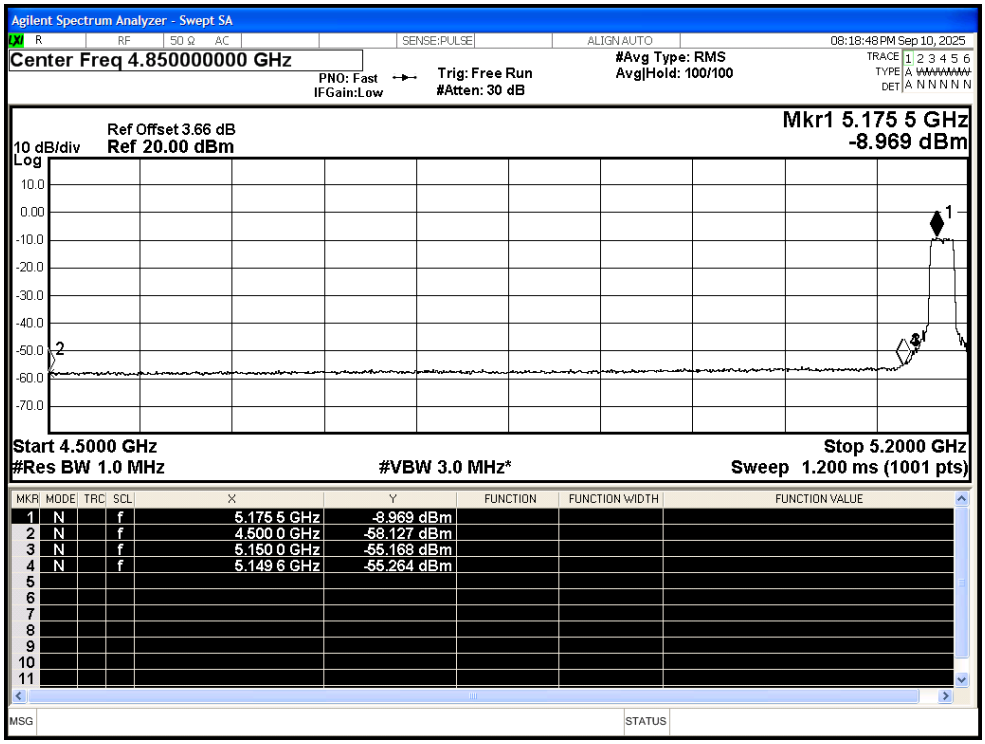
Restrict Band NVNT n40 5230MHz Ant1 Average



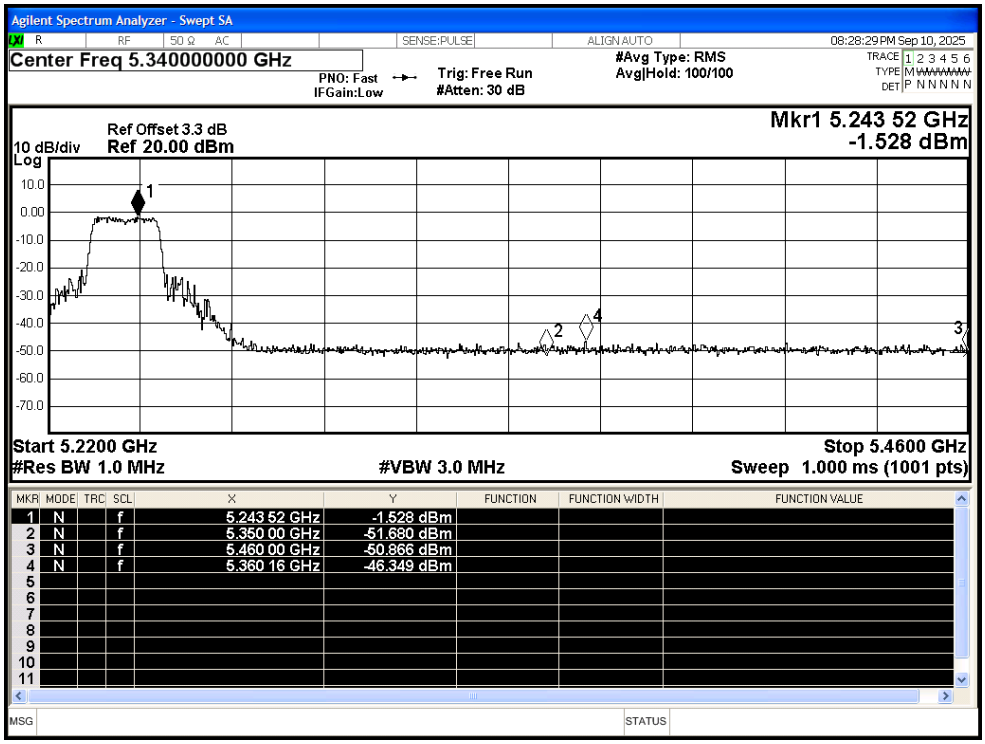
Restrict Band NVNT ac20 5180MHz Ant1 Peak



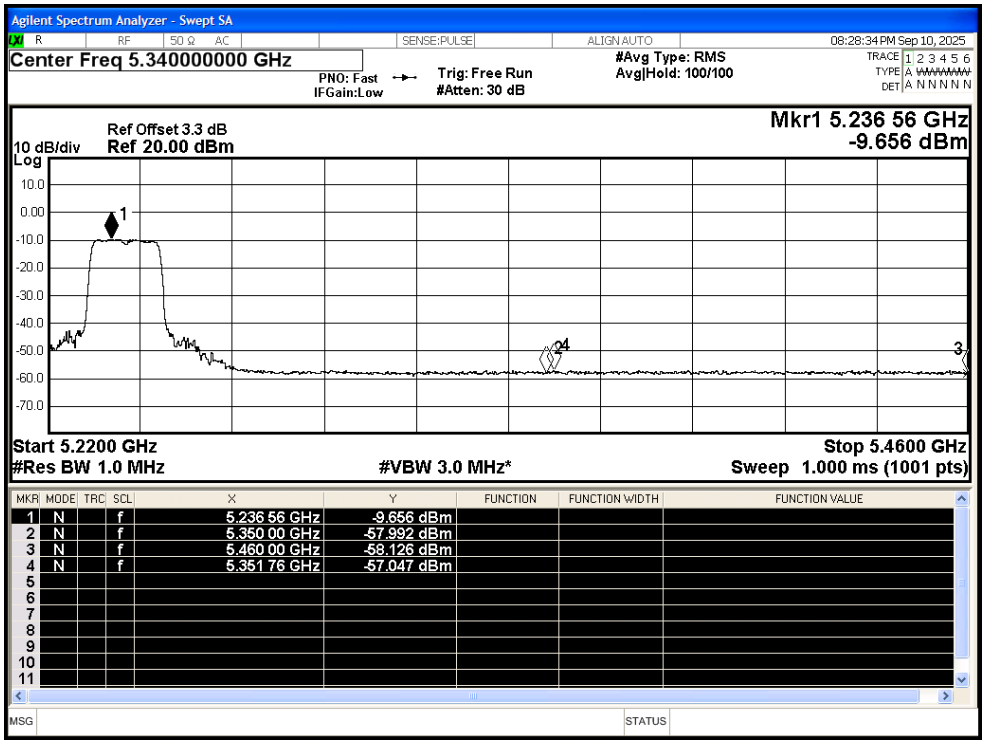
Restrict Band NVNT ac20 5180MHz Ant1 Average



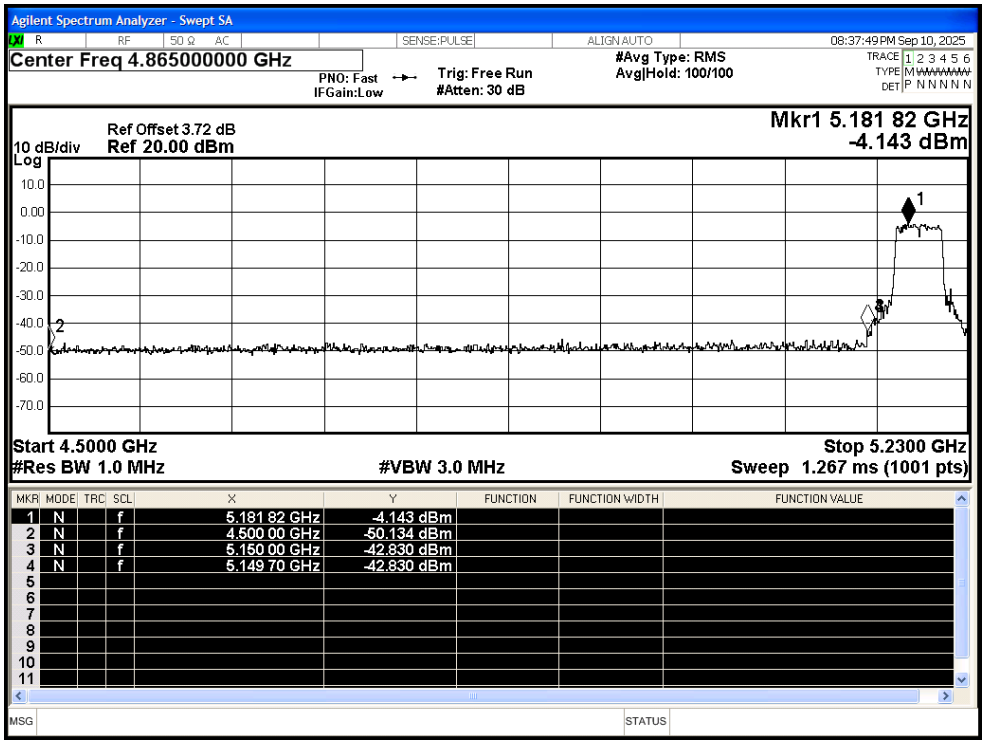
Restrict Band NVNT ac20 5240MHz Ant1 Peak



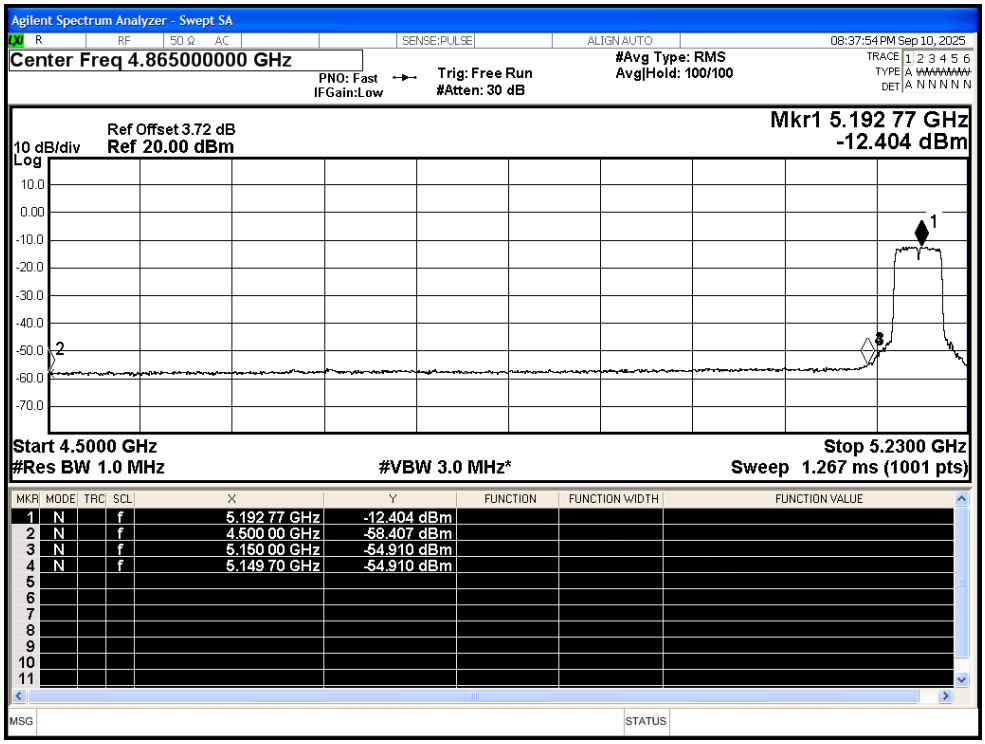
Restrict Band NVNT ac20 5240MHz Ant1 Average



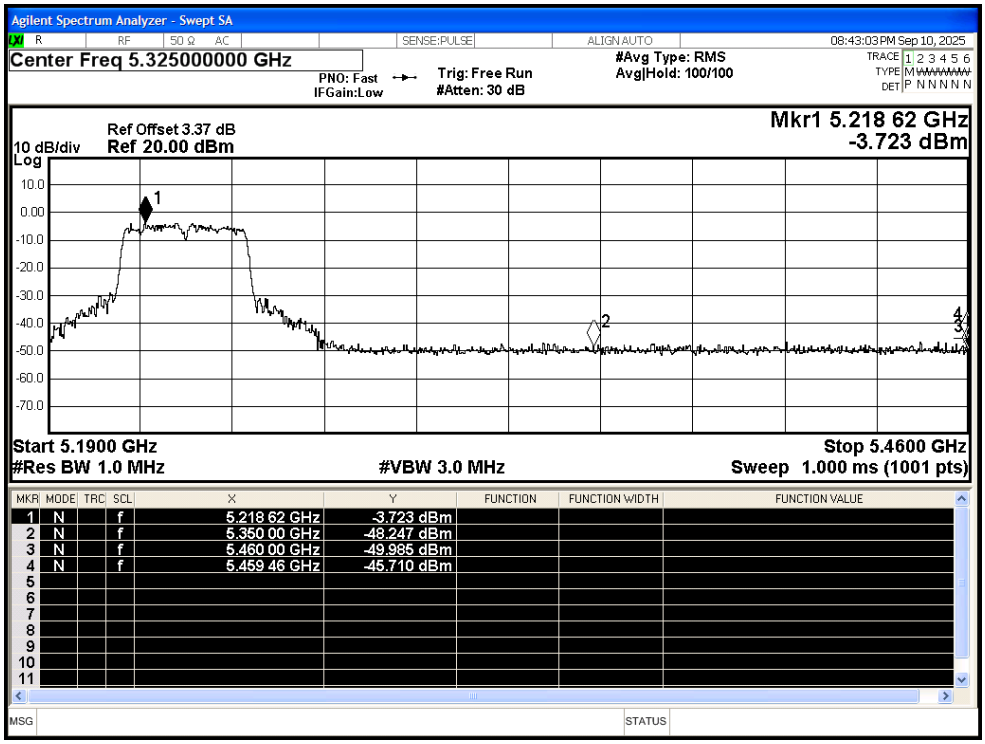
Restrict Band NVNT ac40 5190MHz Ant1 Peak



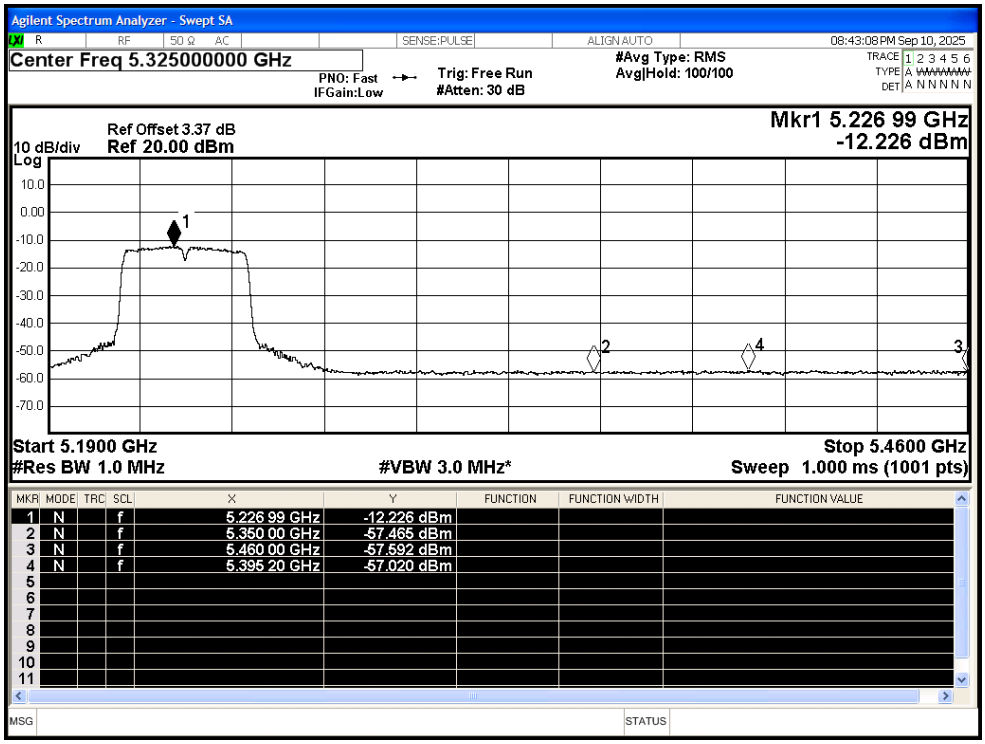
Restrict Band NVNT ac40 5190MHz Ant1 Average



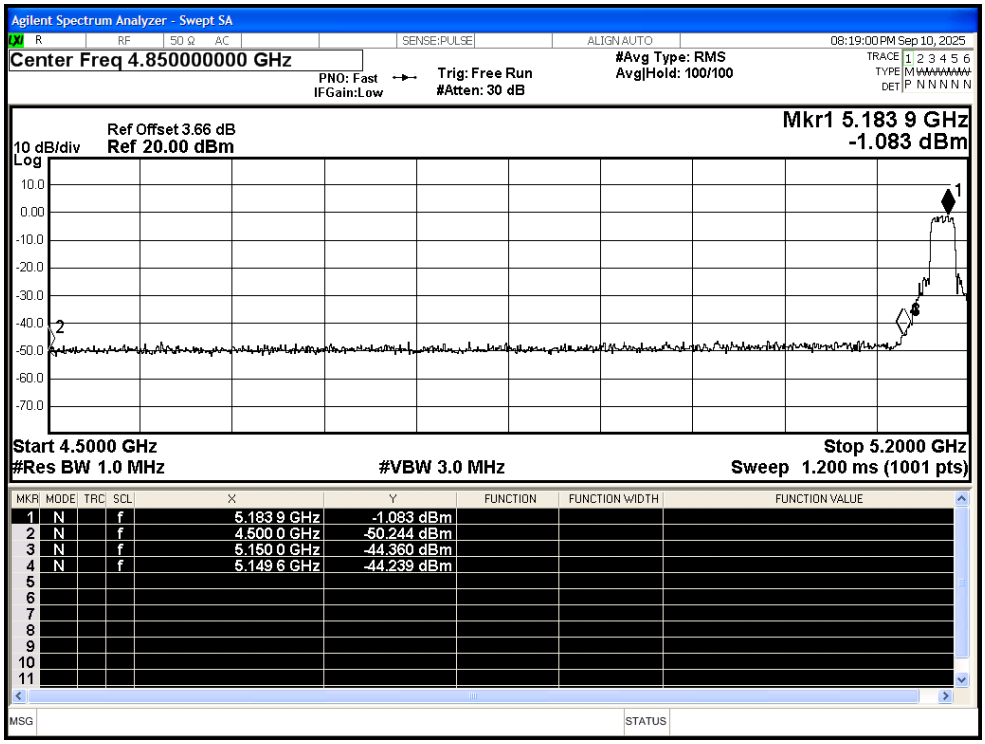
Restrict Band NVNT ac40 5230MHz Ant1 Peak



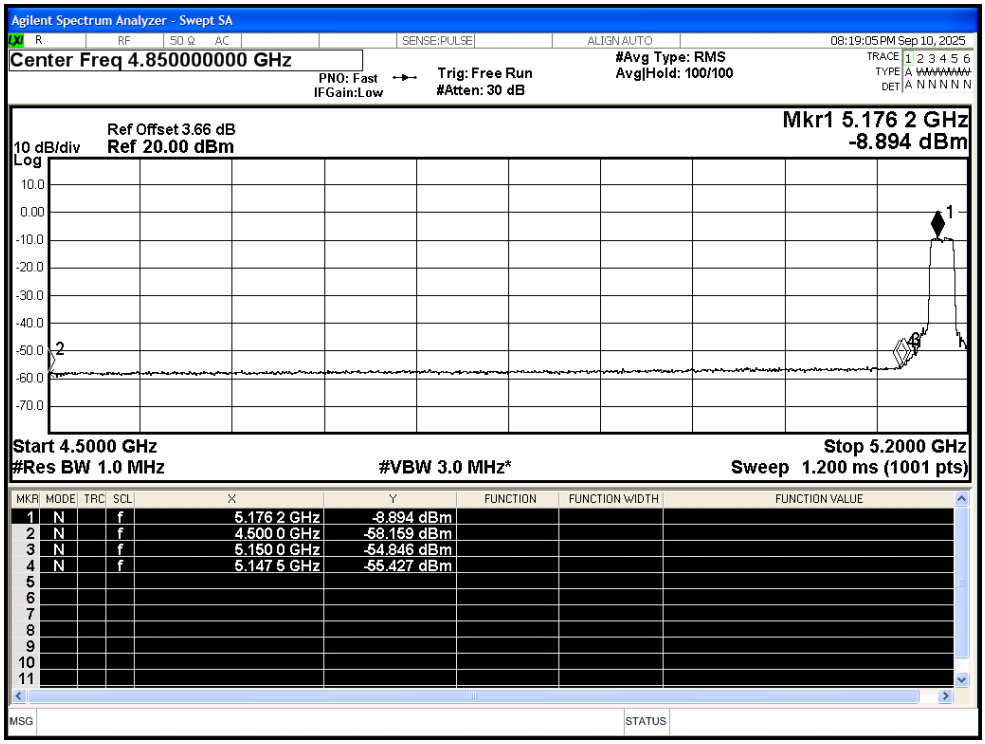
Restrict Band NVNT ac40 5230MHz Ant1 Average



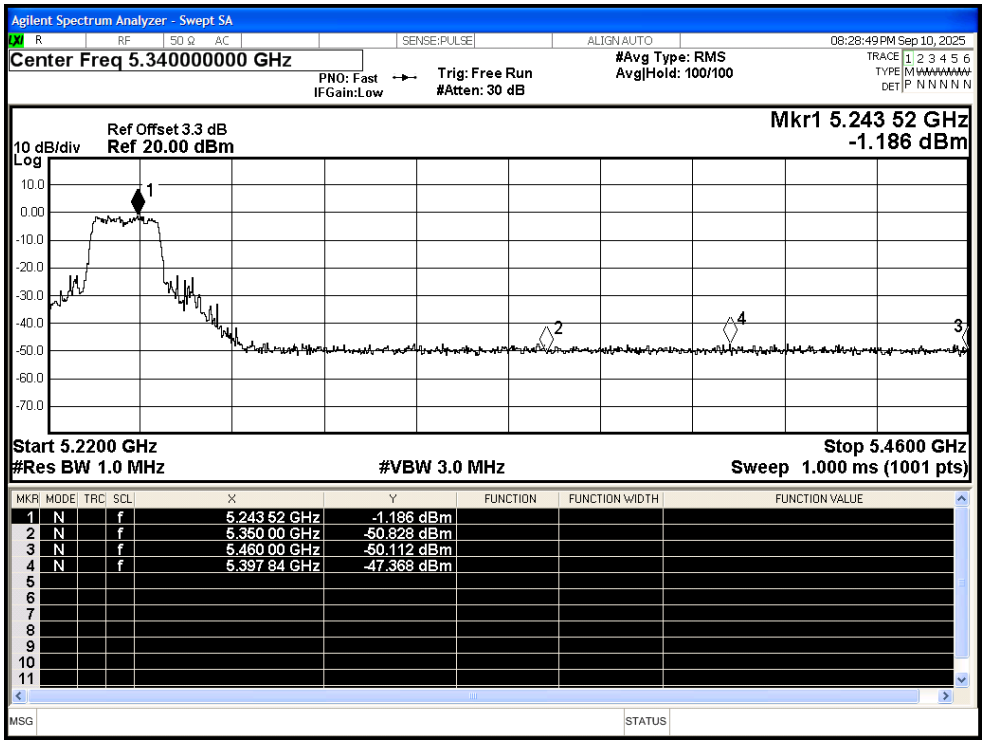
Restrict Band NVNT ax20 5180MHz Ant1 Peak



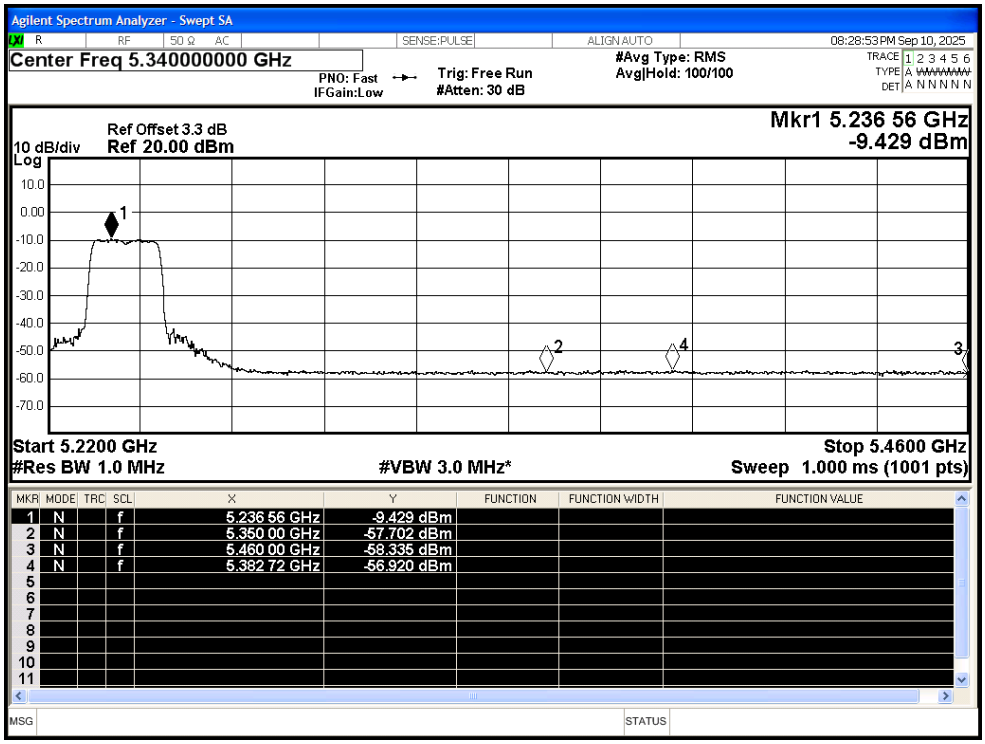
Restrict Band NVNT ax20 5180MHz Ant1 Average



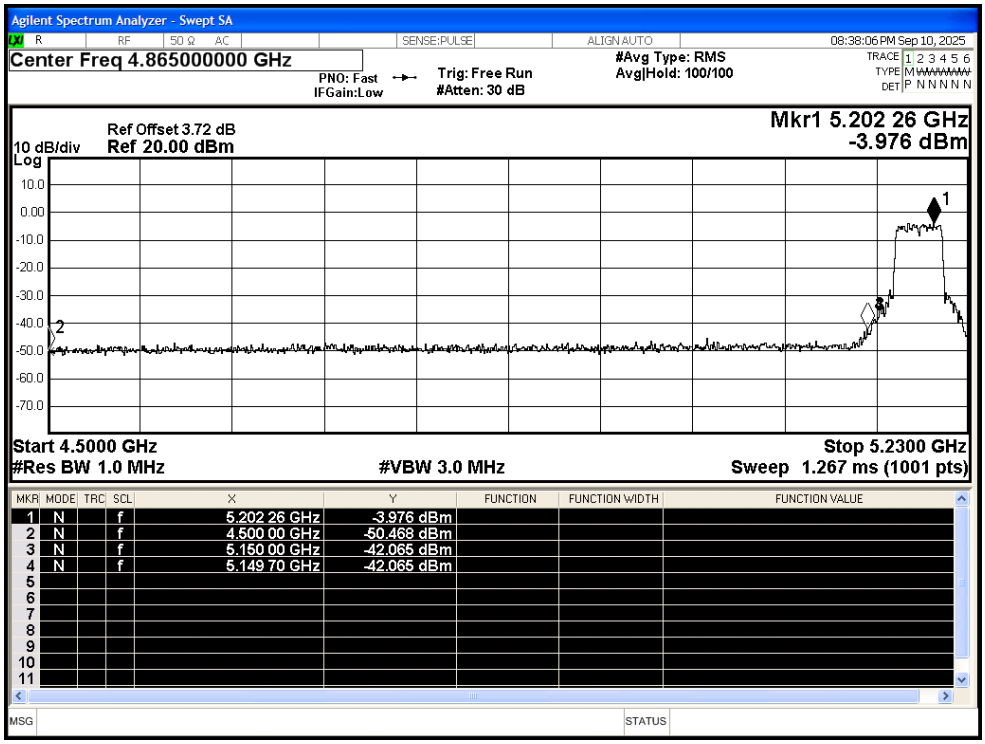
Restrict Band NVNT ax20 5240MHz Ant1 Peak



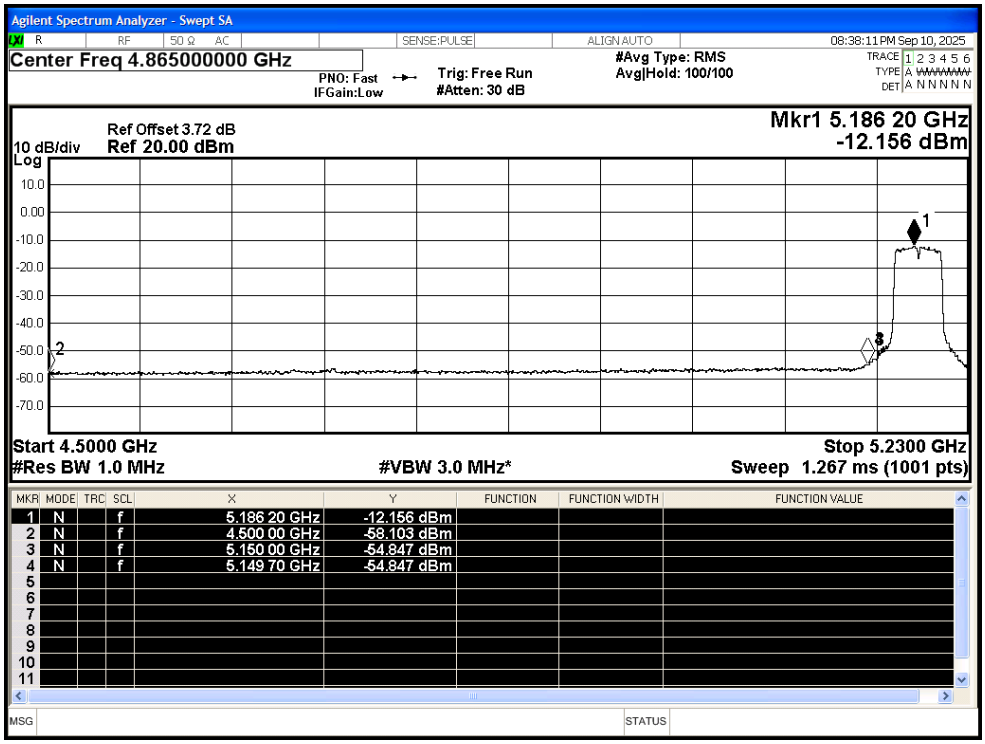
Restrict Band NVNT ax20 5240MHz Ant1 Average



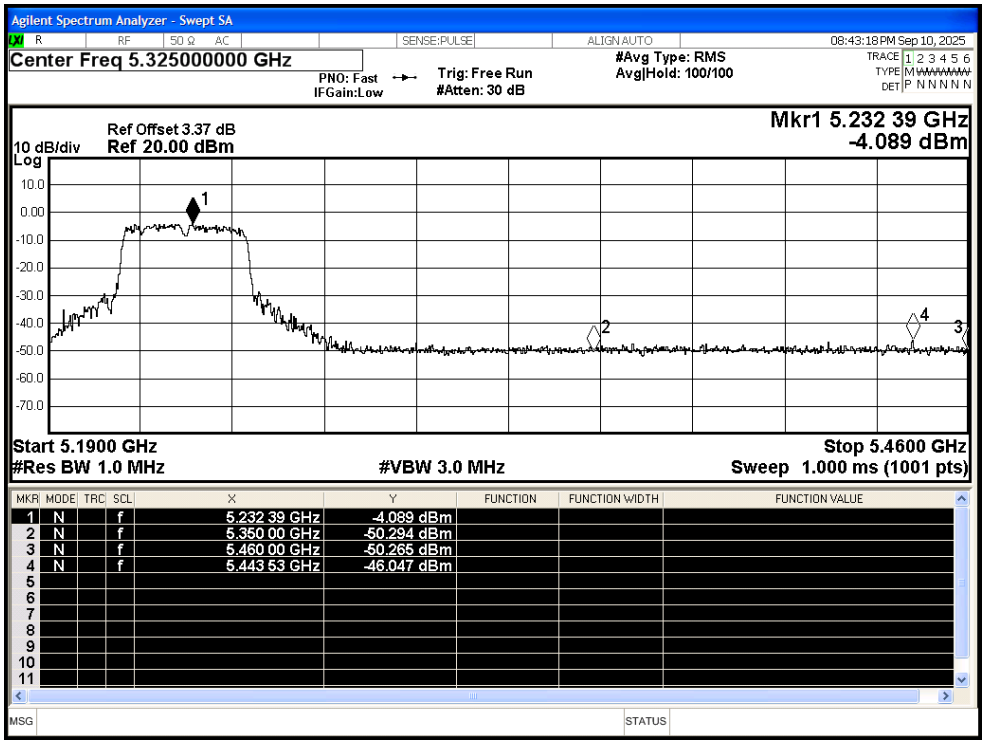
Restrict Band NVNT ax40 5190MHz Ant1 Peak



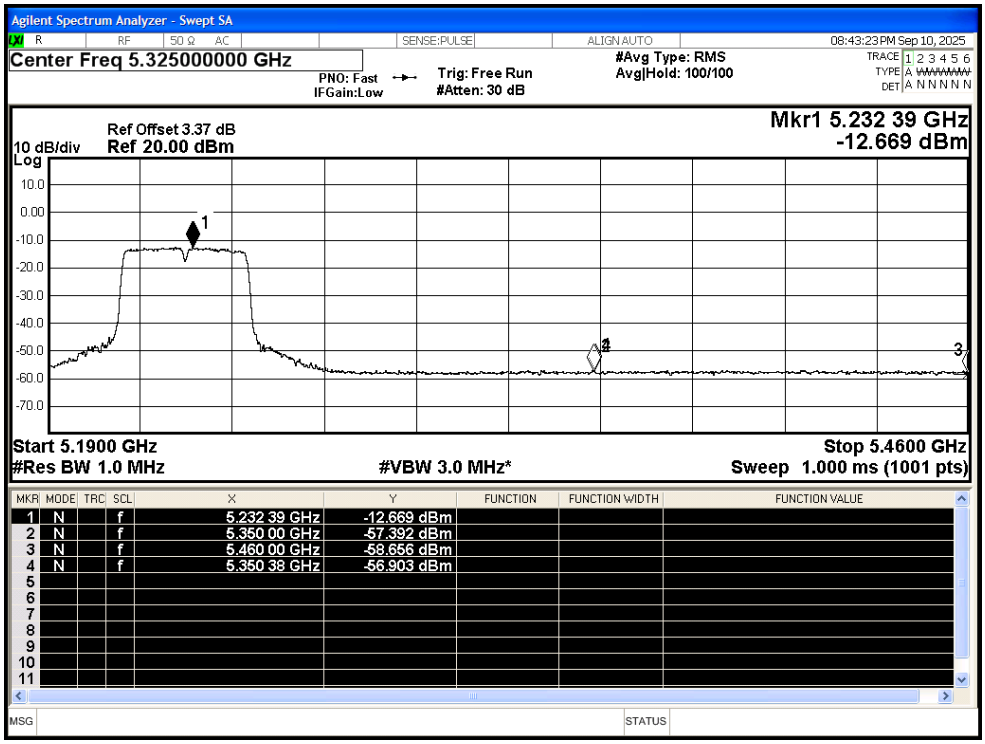
Restrict Band NVNT ax40 5190MHz Ant1 Average



Restrict Band NVNT ax40 5230MHz Ant1 Peak



Restrict Band NVNT ax40 5230MHz Ant1 Average

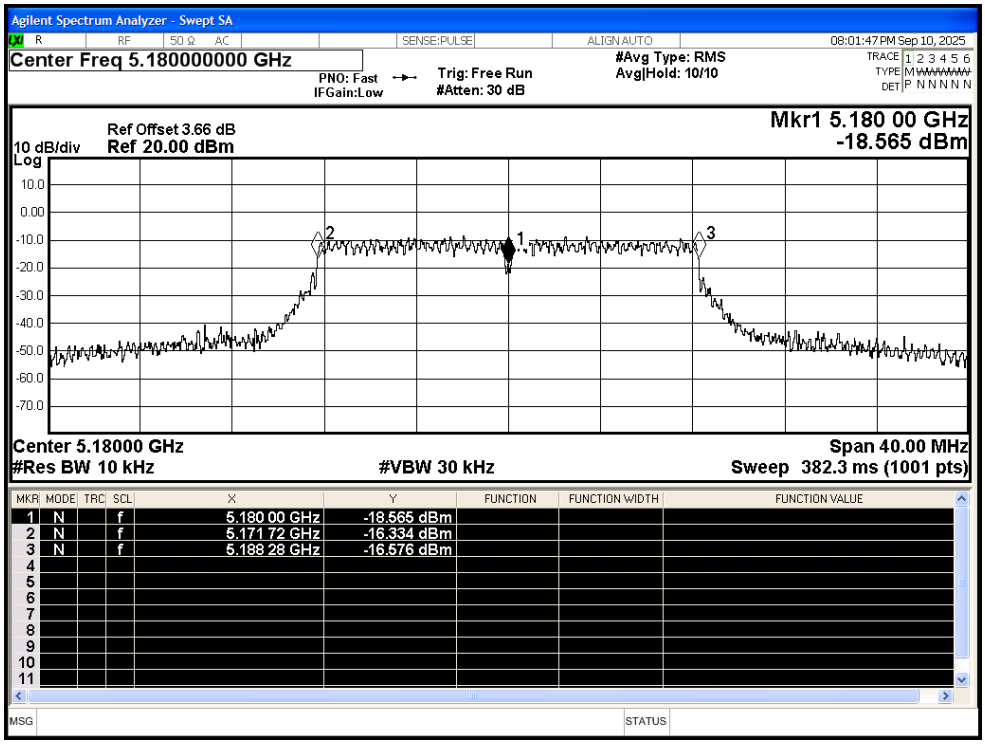


B.5 Frequency Stability

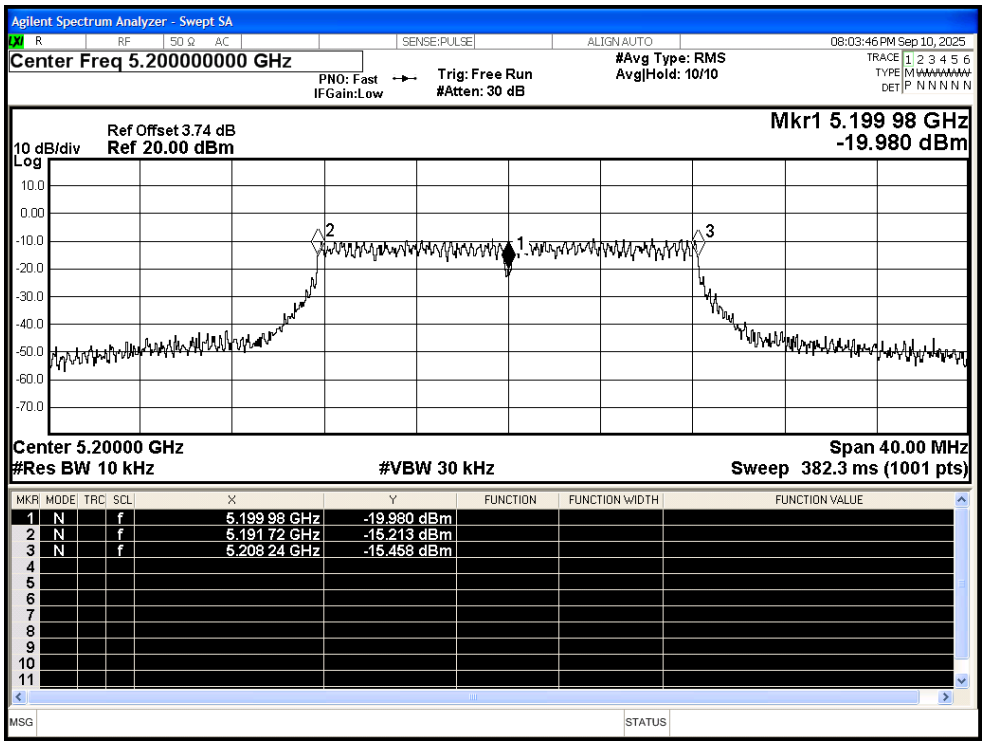
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	Ant1	5180	0	0	25	Pass
NVNT	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	a	5240	Ant1	5240	0	0	25	Pass
NVNT	n20	5180	Ant1	5179.98	-20000	-3.86	25	Pass
NVNT	n20	5200	Ant1	5200	0	0	25	Pass
NVNT	n20	5240	Ant1	5239.98	-20000	-3.82	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	5229.96	-40000	-7.65	25	Pass
NVNT	ax20	5180	Ant1	5180	0	0	25	Pass
NVNT	ax20	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	ax20	5240	Ant1	5239.98	-20000	-3.82	25	Pass
NVNT	ax40	5190	Ant1	5190	0	0	25	Pass
NVNT	ax40	5230	Ant1	5230	0	0	25	Pass

Test Graphs

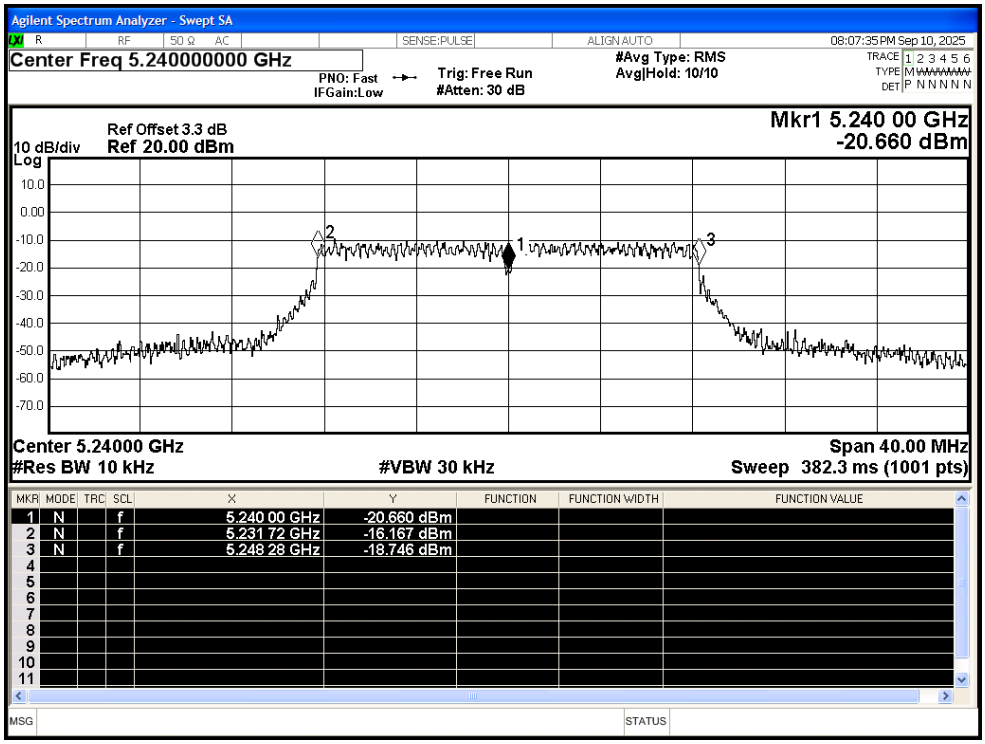
Freq. Stability NVNT a 5180MHz Ant1



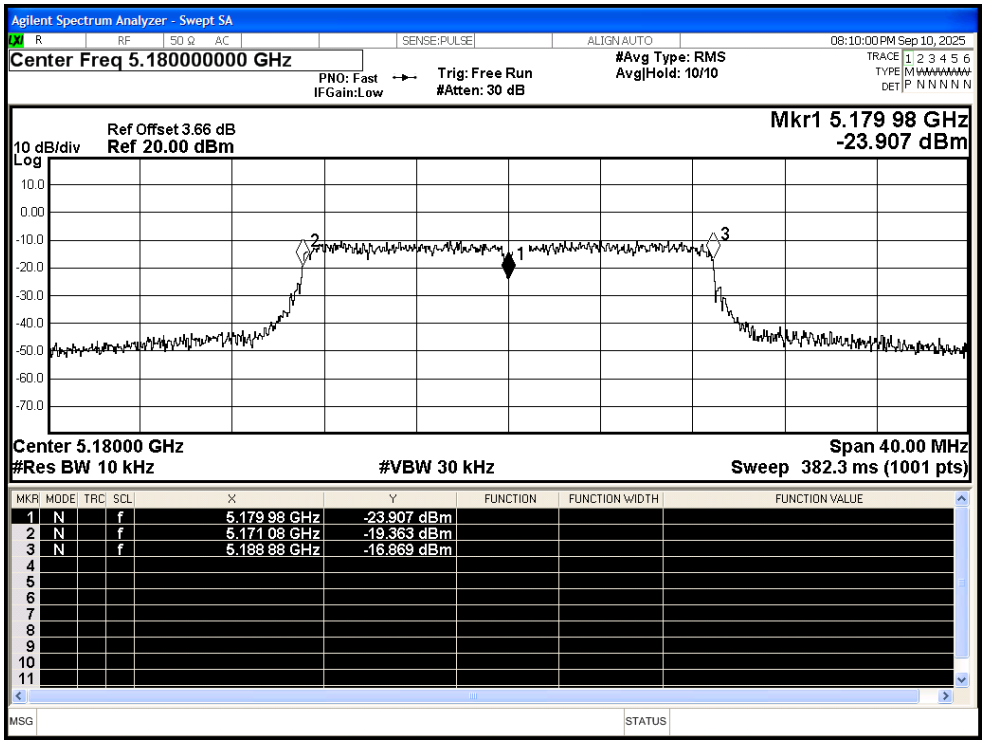
Freq. Stability NVNT a 5200MHz Ant1



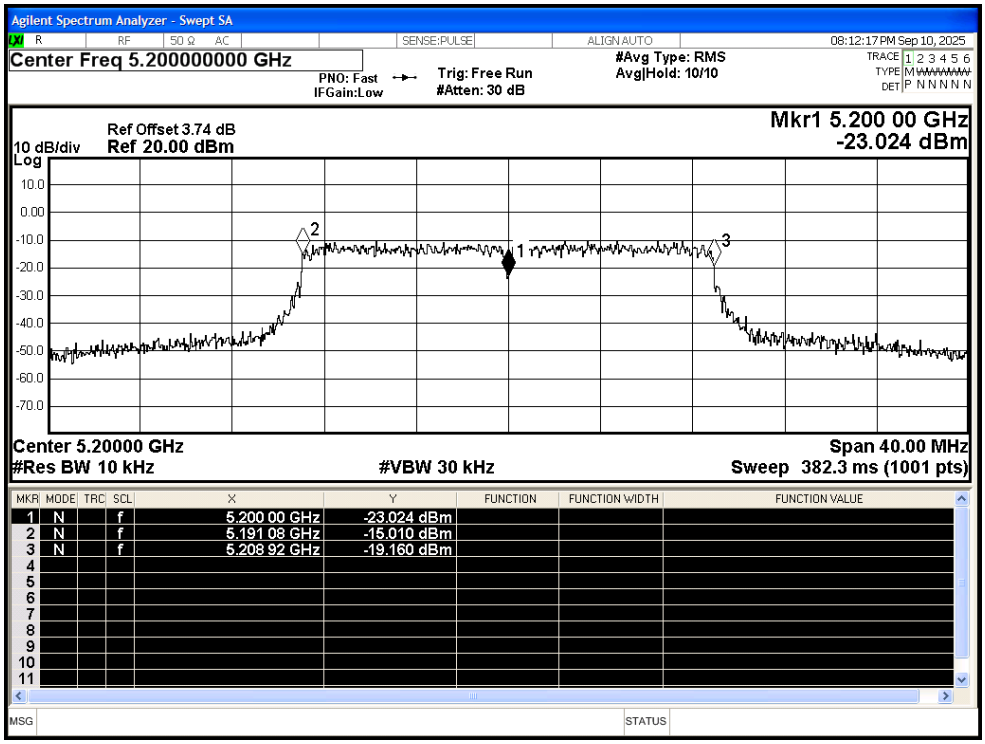
Freq. Stability NVNT a 5240MHz Ant1



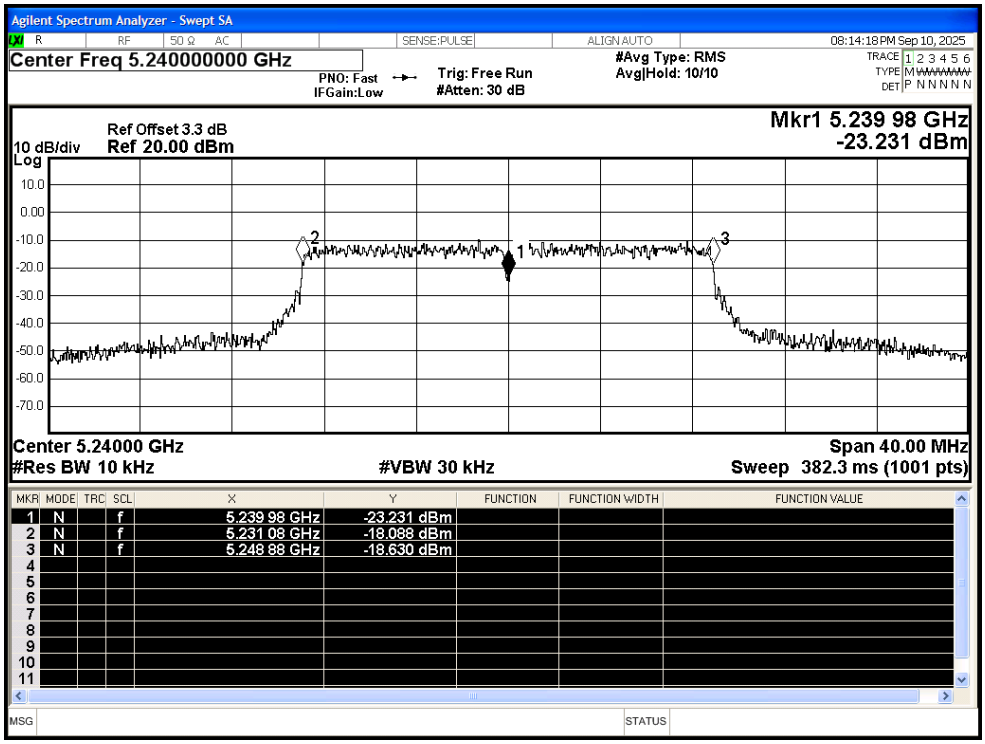
Freq. Stability NVNT n20 5180MHz Ant1



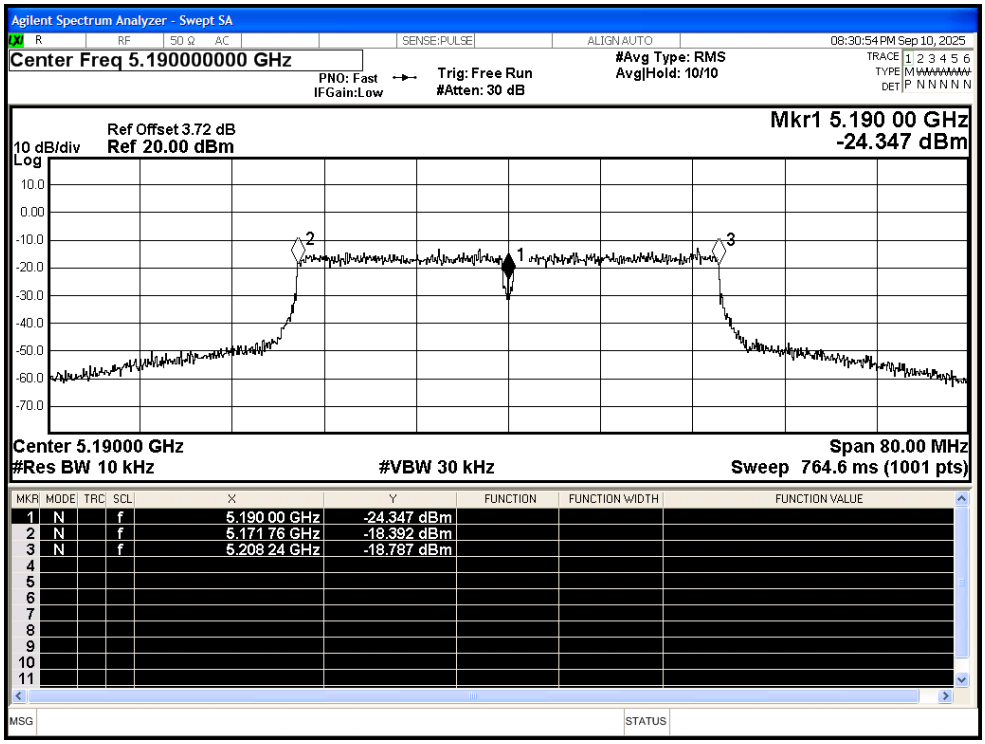
Freq. Stability NVNT n20 5200MHz Ant1



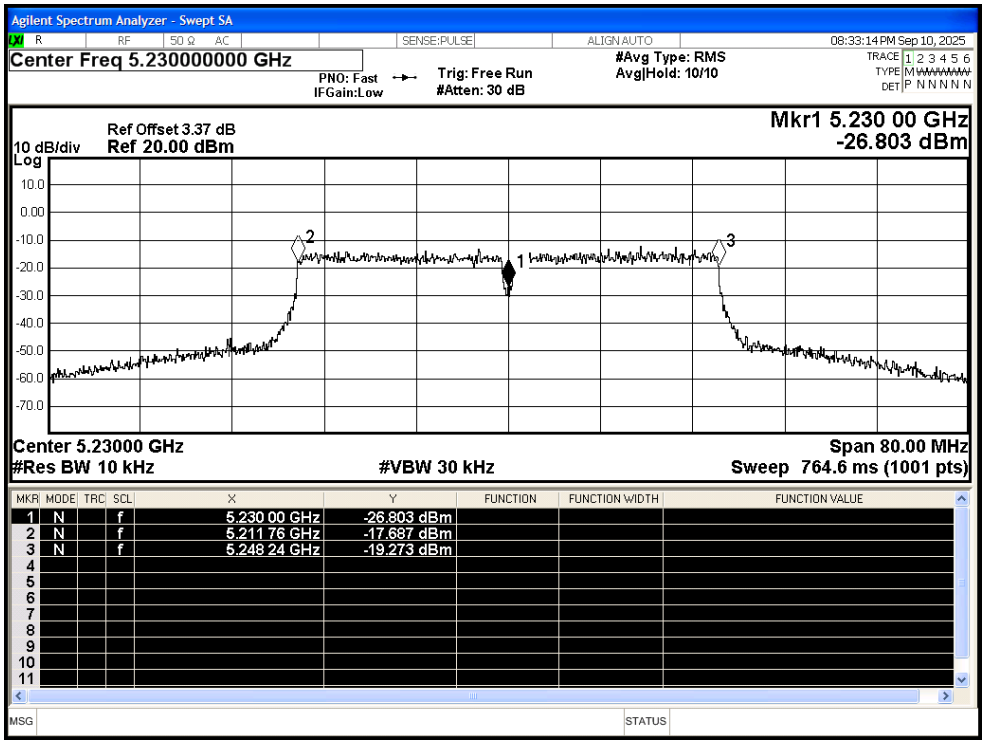
Freq. Stability NVNT n20 5240MHz Ant1



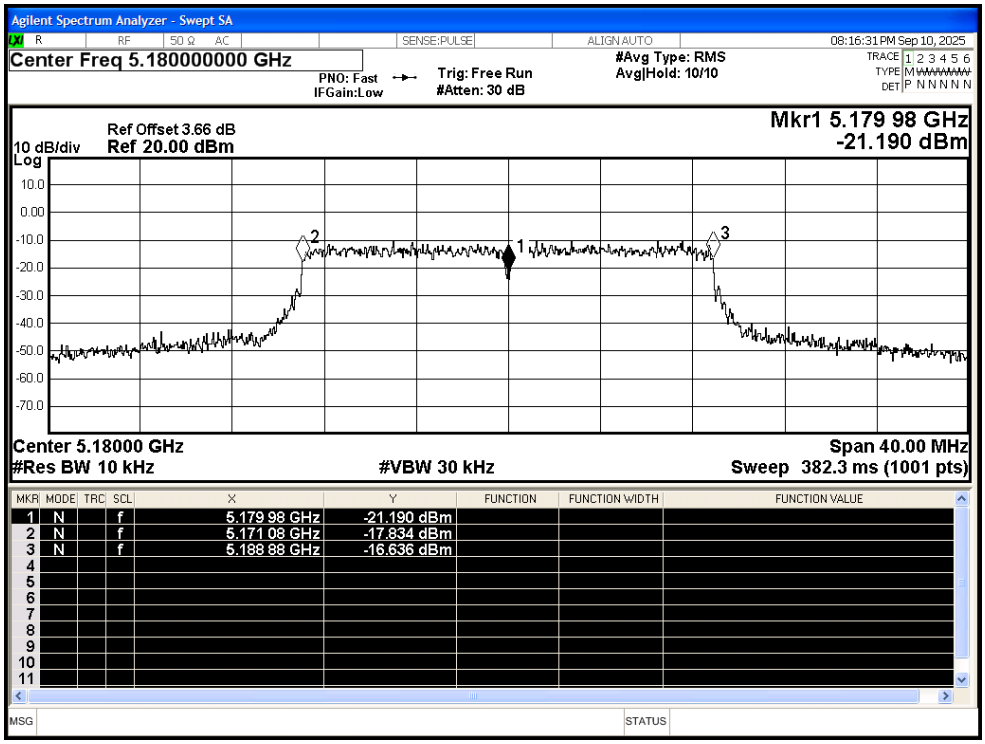
Freq. Stability NVNT n40 5190MHz Ant1



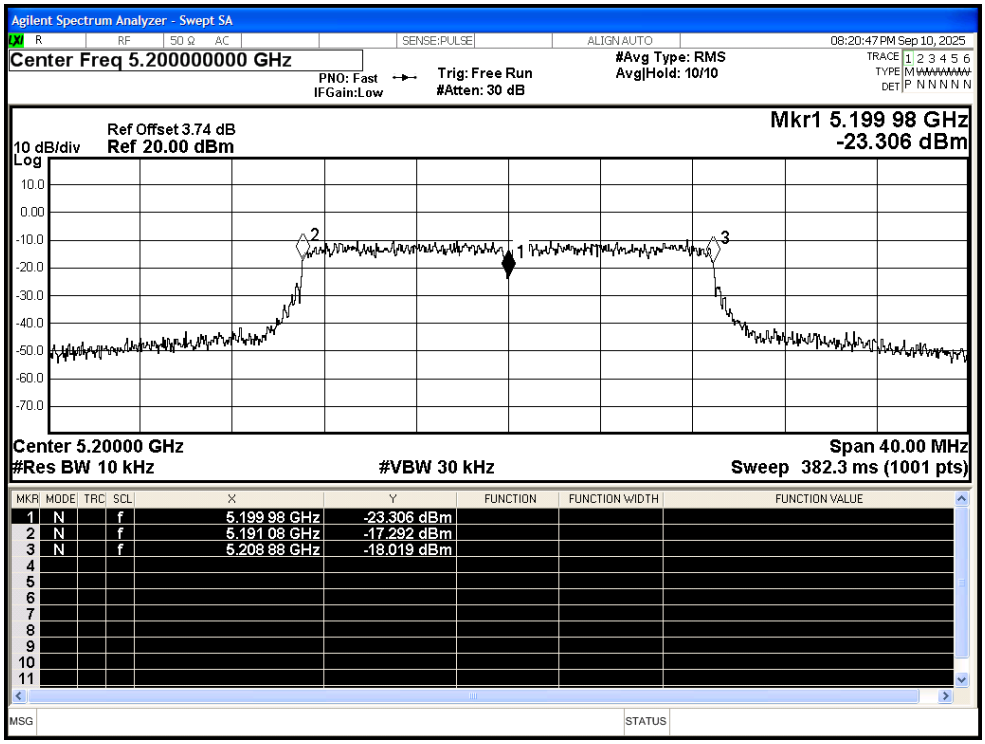
Freq. Stability NVNT n40 5230MHz Ant1



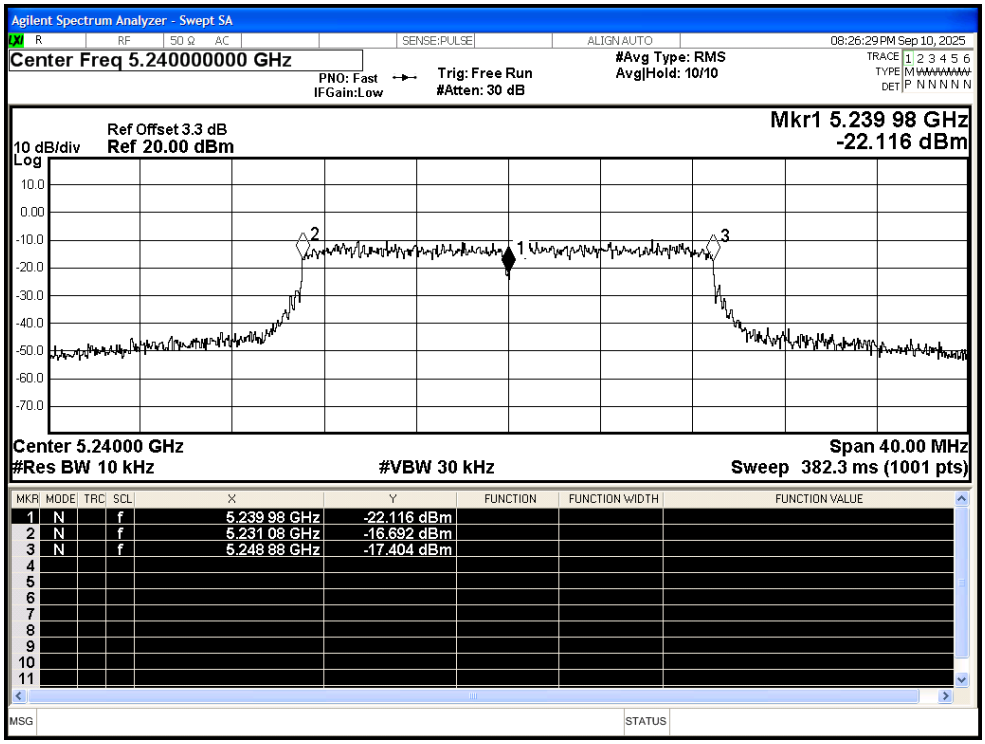
Freq. Stability NVNT ac20 5180MHz Ant1



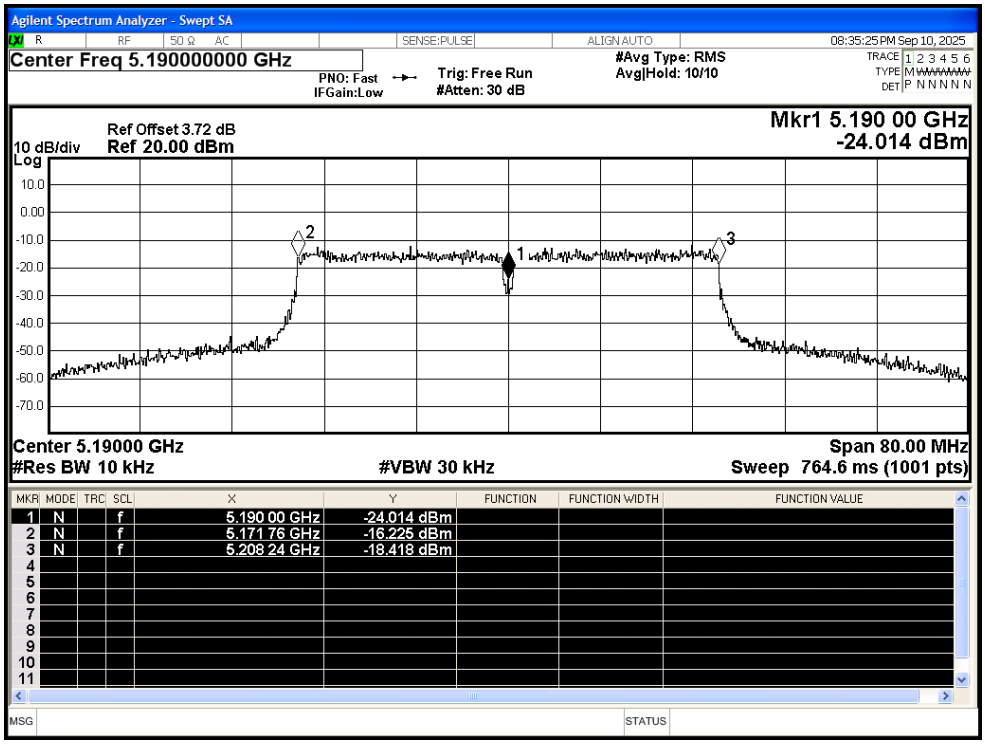
Freq. Stability NVNT ac20 5200MHz Ant1



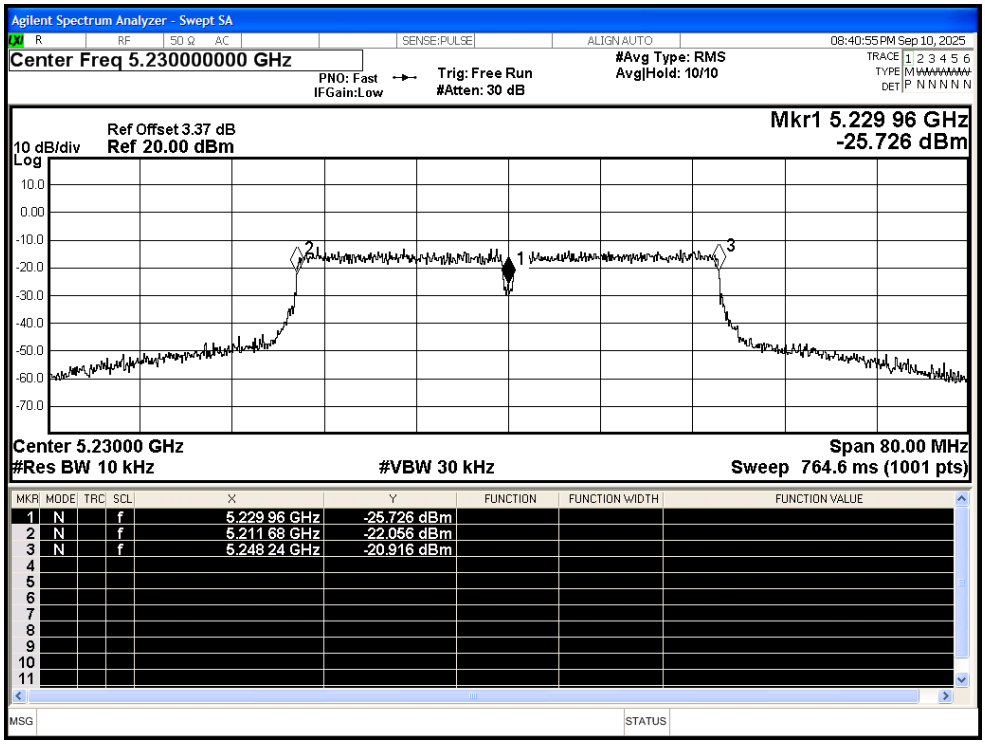
Freq. Stability NVNT ac20 5240MHz Ant1



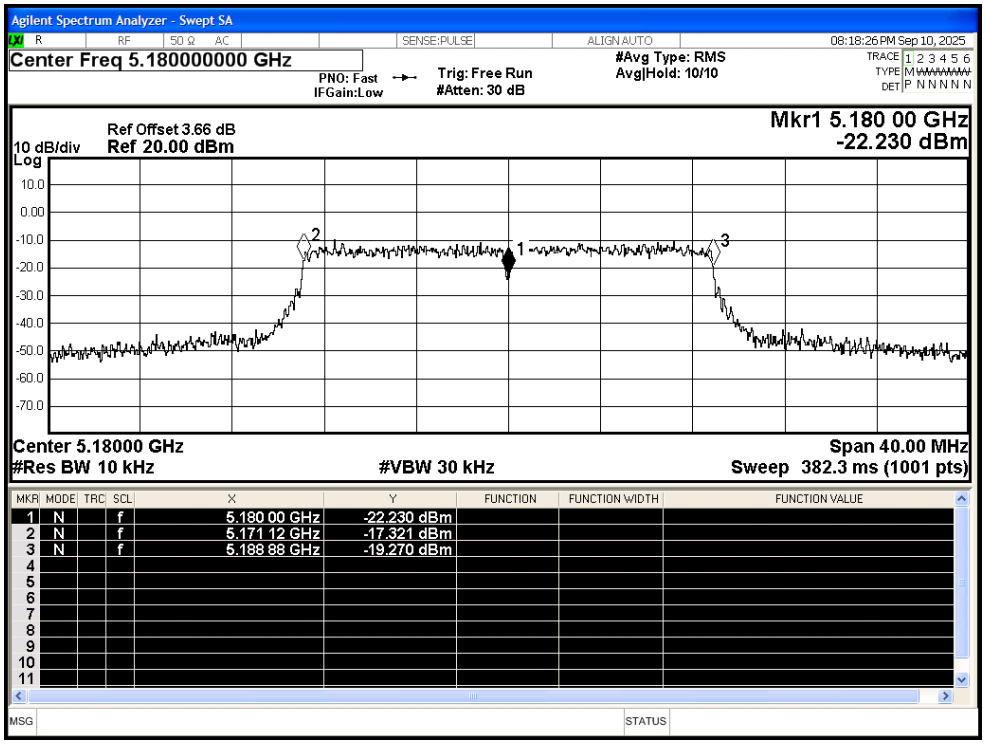
Freq. Stability NVNT ac40 5190MHz Ant1



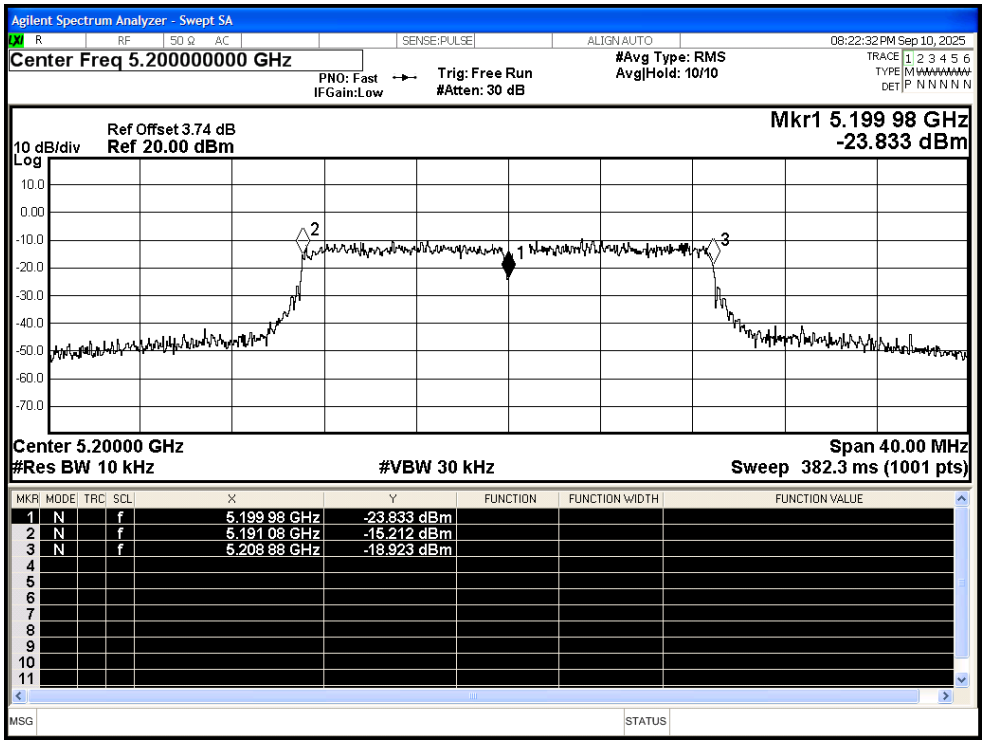
Freq. Stability NVNT ac40 5230MHz Ant1



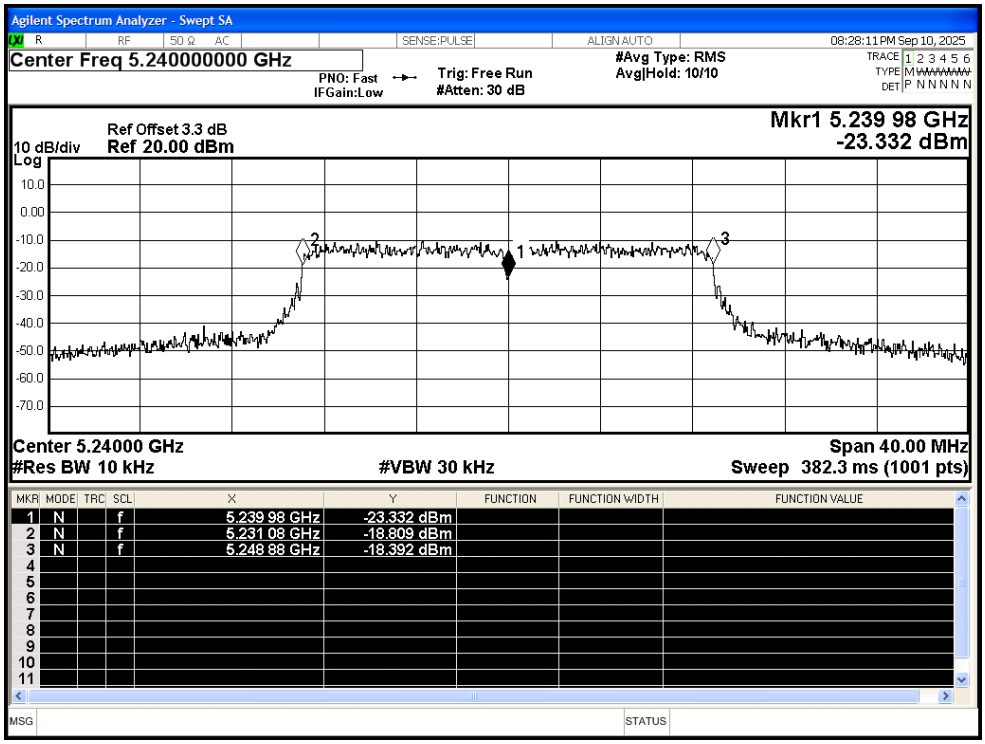
Freq. Stability NVNT ax20 5180MHz Ant1



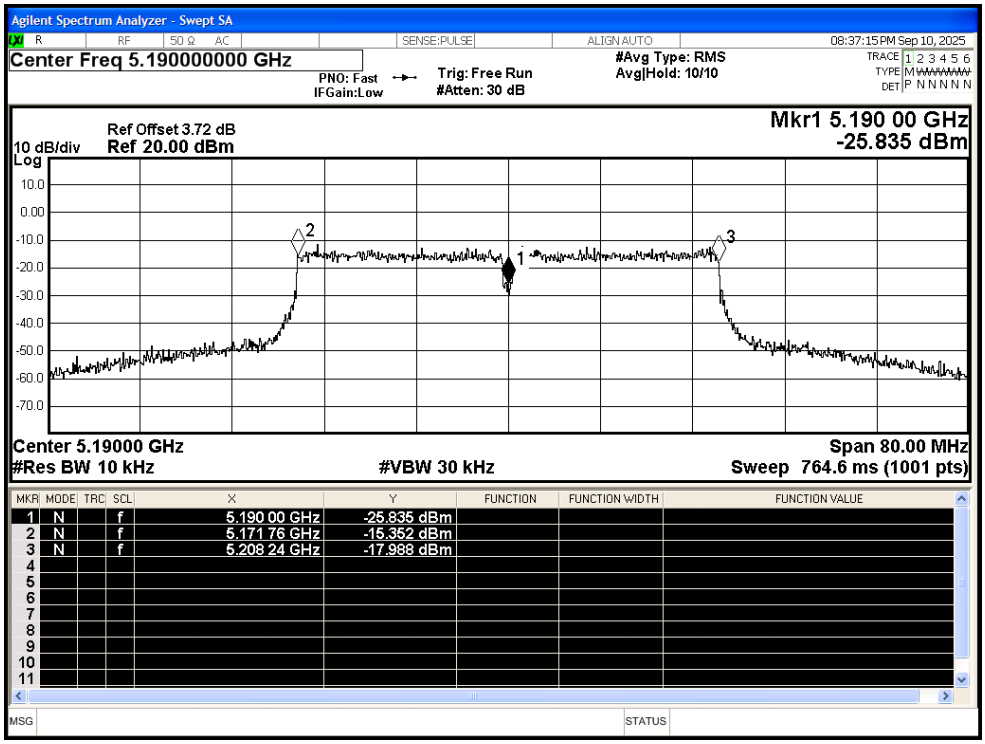
Freq. Stability NVNT ax20 5200MHz Ant1



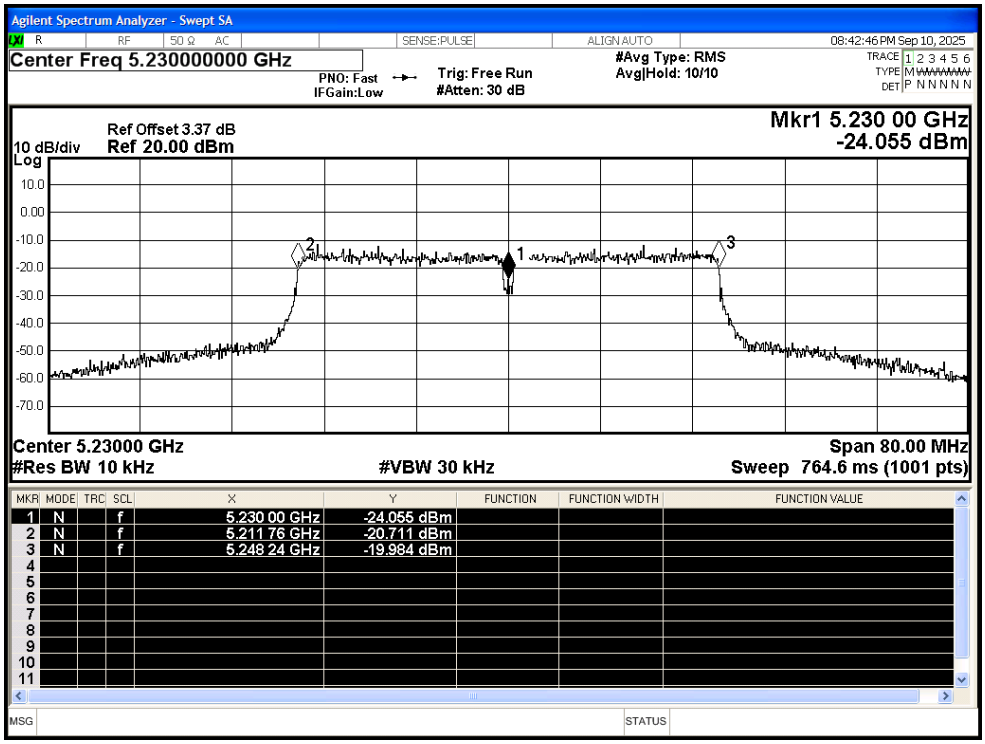
Freq. Stability NVNT ax20 5240MHz Ant1



Freq. Stability NVNT ax40 5190MHz Ant1



Freq. Stability NVNT ax40 5230MHz Ant1

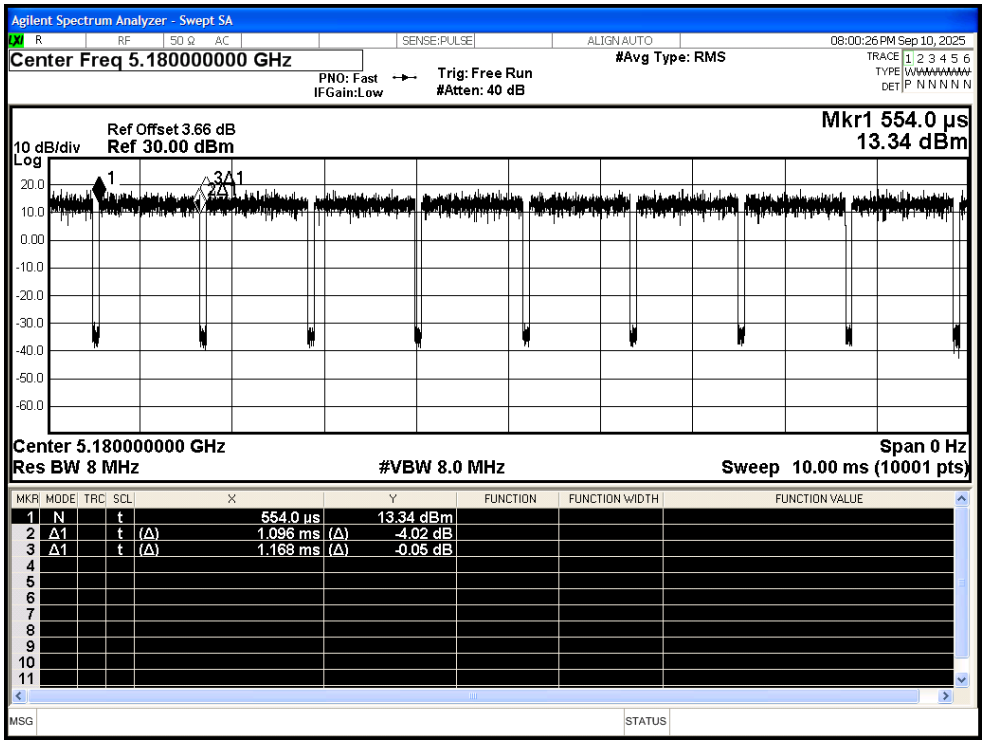


B.6 Duty Cycle

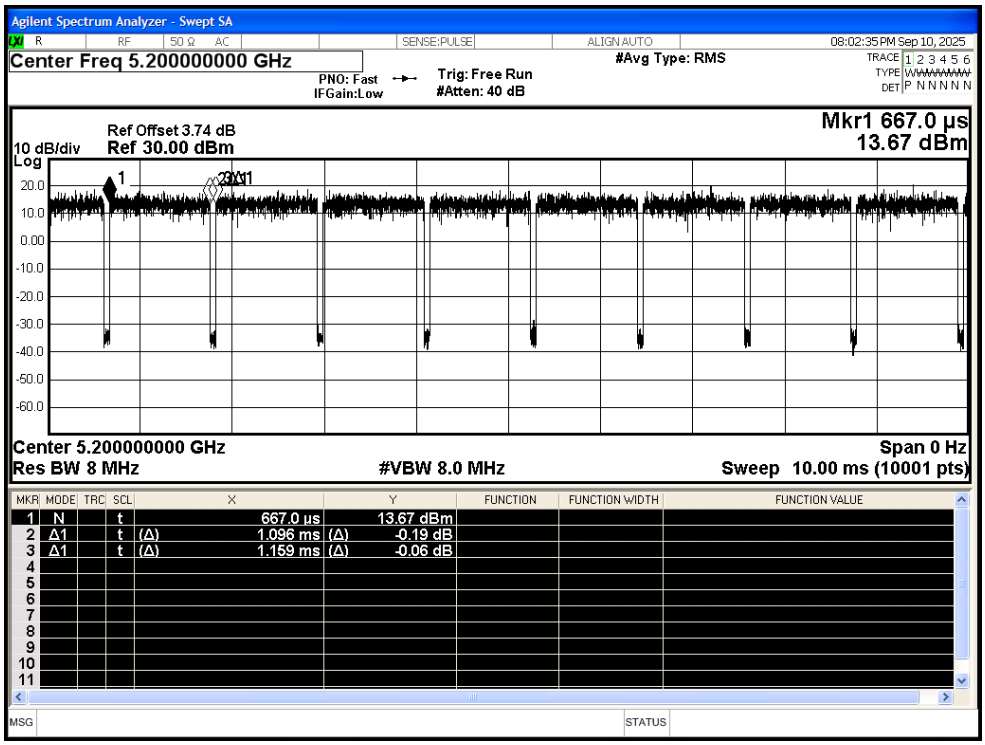
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	93.84	0.28	0.91
NVNT	a	5200	Ant1	94.56	0.24	0.91
NVNT	a	5240	Ant1	94.56	0.24	0.91
NVNT	n20	5180	Ant1	97.29	0.12	0.44
NVNT	n20	5200	Ant1	97.29	0.12	0.44
NVNT	n20	5240	Ant1	97.29	0.12	0.44
NVNT	n40	5190	Ant1	94.71	0.24	0.9
NVNT	n40	5230	Ant1	94.71	0.24	0.9
NVNT	ac20	5180	Ant1	97.34	0.12	0.44
NVNT	ac20	5200	Ant1	97.34	0.12	0.44
NVNT	ac20	5240	Ant1	97.34	0.12	0.44
NVNT	ac40	5190	Ant1	94.72	0.24	0.9
NVNT	ac40	5230	Ant1	94.72	0.24	0.9
NVNT	ax20	5180	Ant1	97.3	0.12	0.44
NVNT	ax20	5200	Ant1	97.3	0.12	0.44
NVNT	ax20	5240	Ant1	97.34	0.12	0.44
NVNT	ax40	5190	Ant1	94.72	0.24	0.9
NVNT	ax40	5230	Ant1	94.72	0.24	0.9

Test Graphs

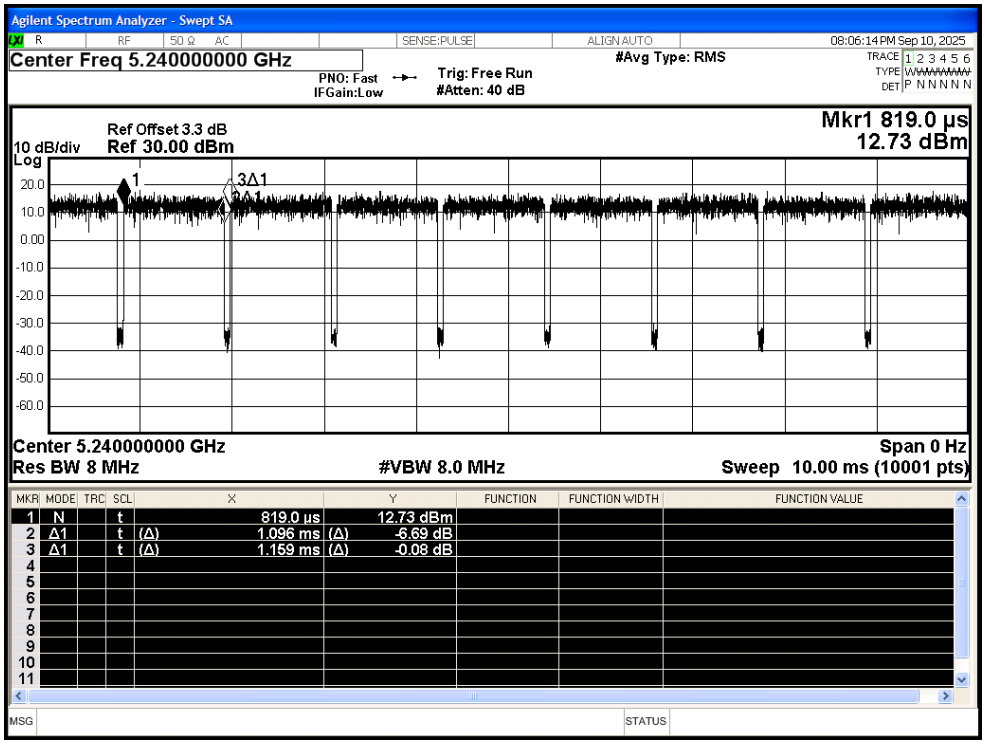
Duty Cycle NVNT a 5180MHz Ant1



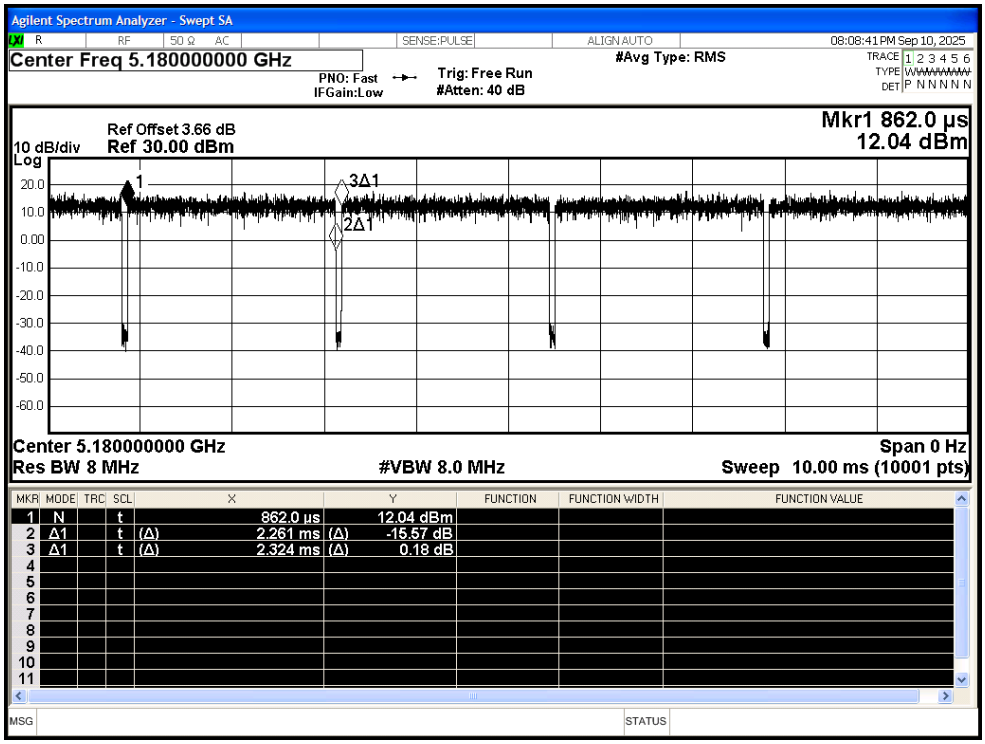
Duty Cycle NVNT a 5200MHz Ant1



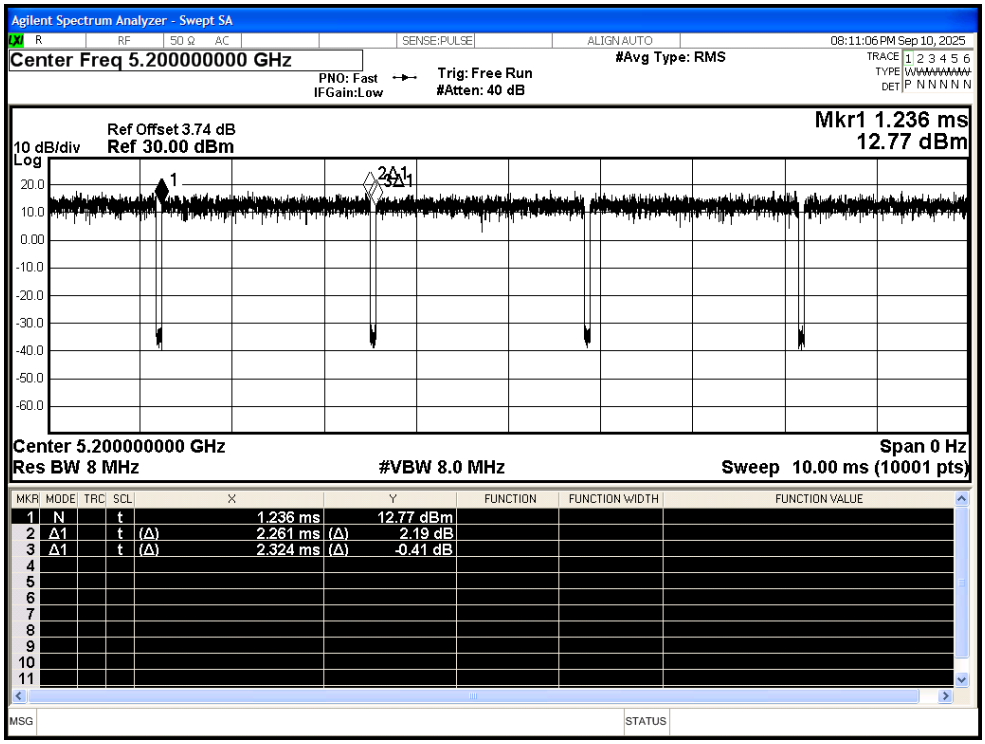
Duty Cycle NVNT a 5240MHz Ant1



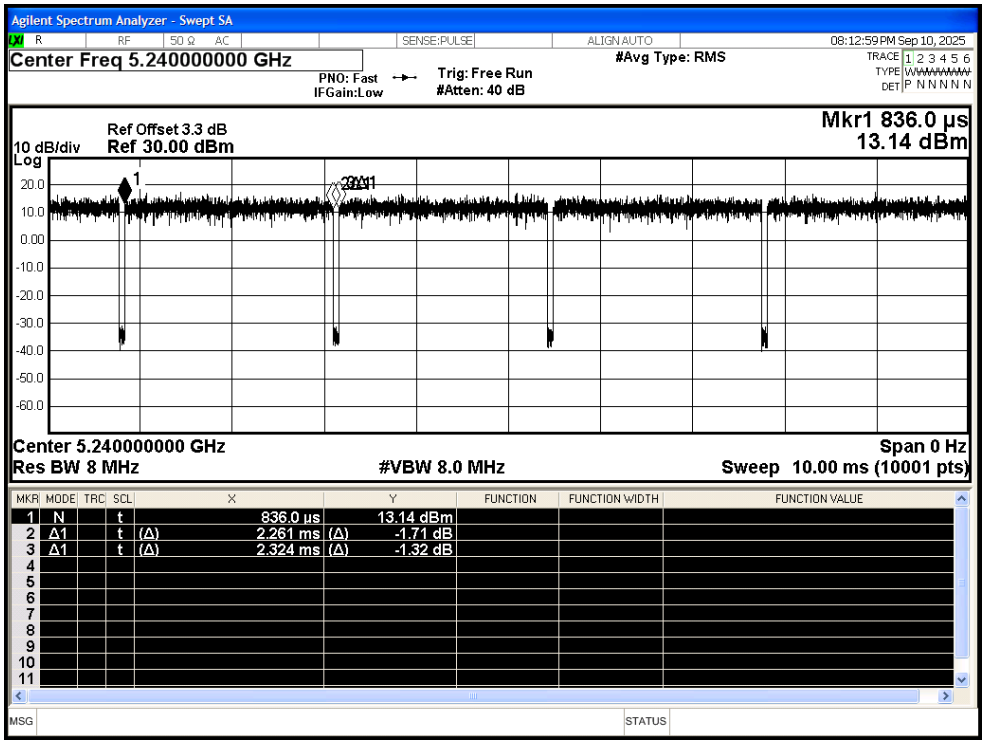
Duty Cycle NVNT n20 5180MHz Ant1



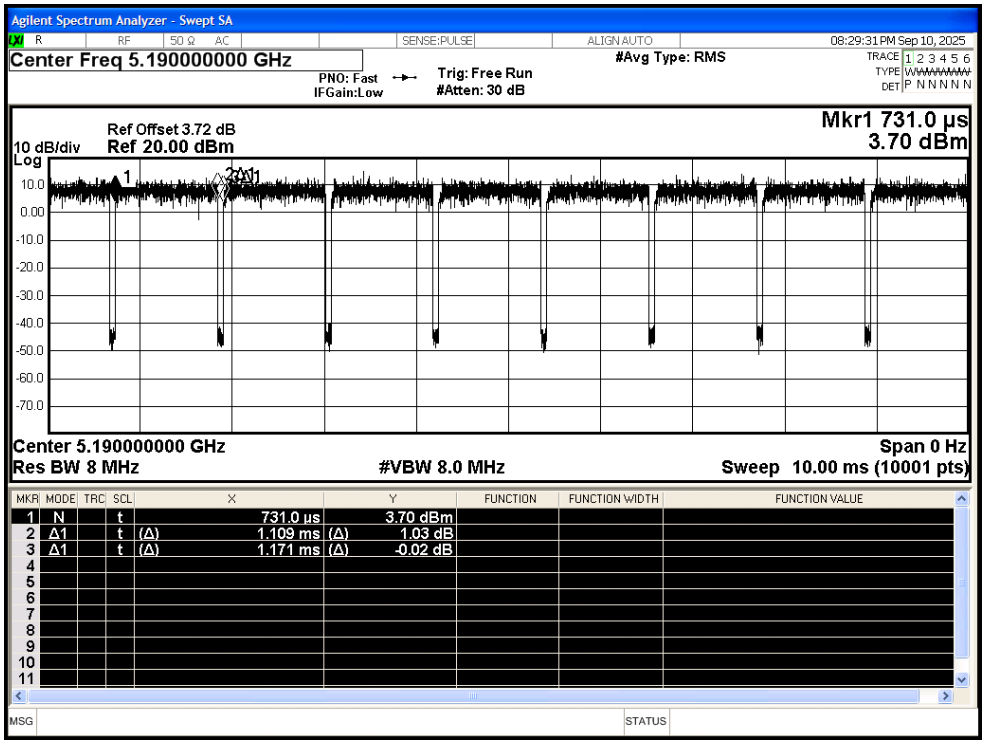
Duty Cycle NVNT n20 5200MHz Ant1



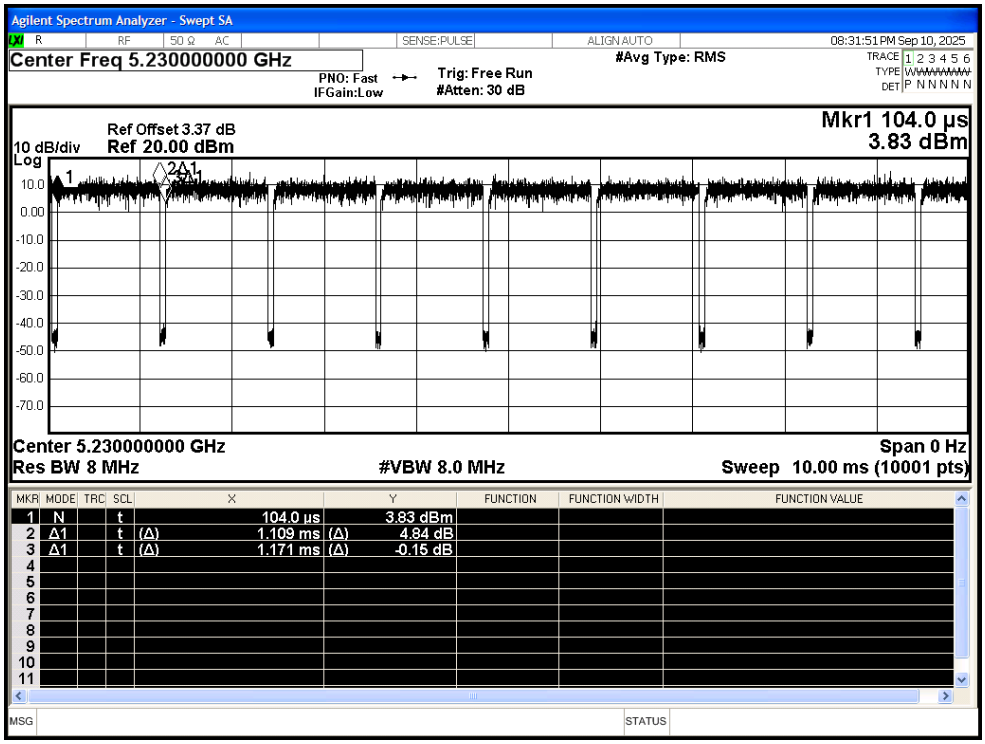
Duty Cycle NVNT n20 5240MHz Ant1



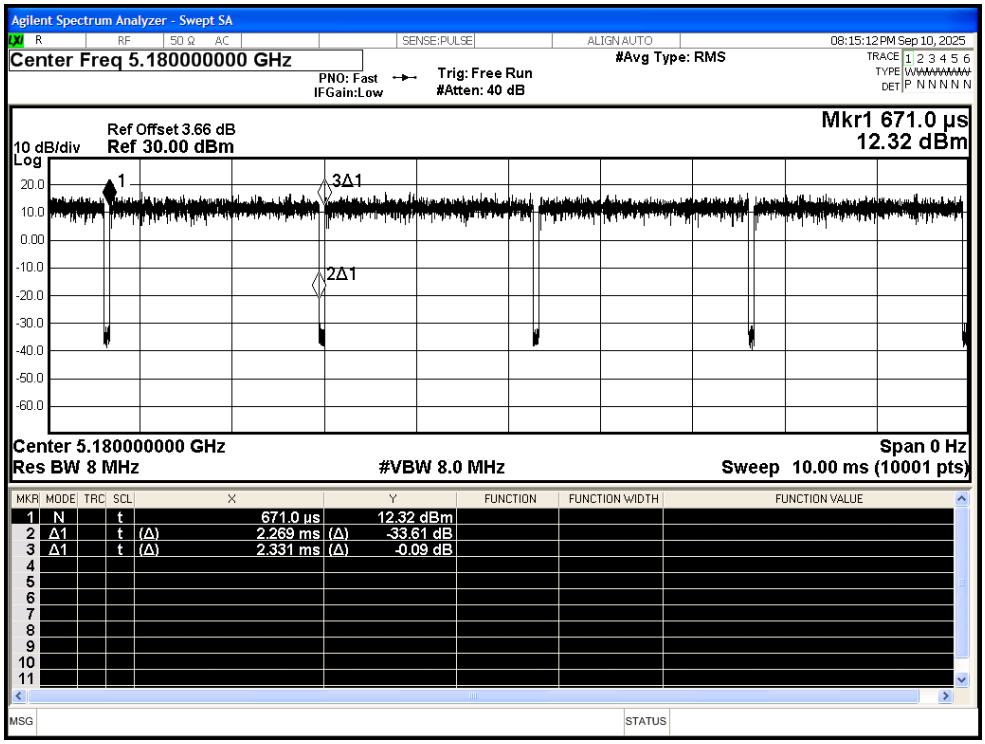
Duty Cycle NVNT n40 5190MHz Ant1



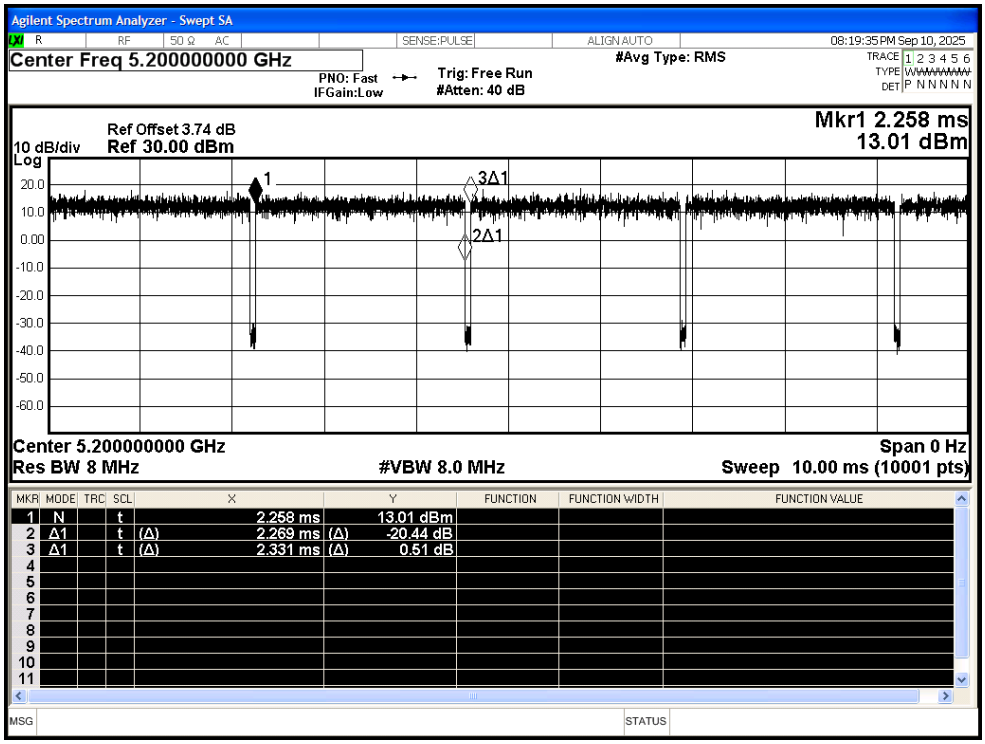
Duty Cycle NVNT n40 5230MHz Ant1



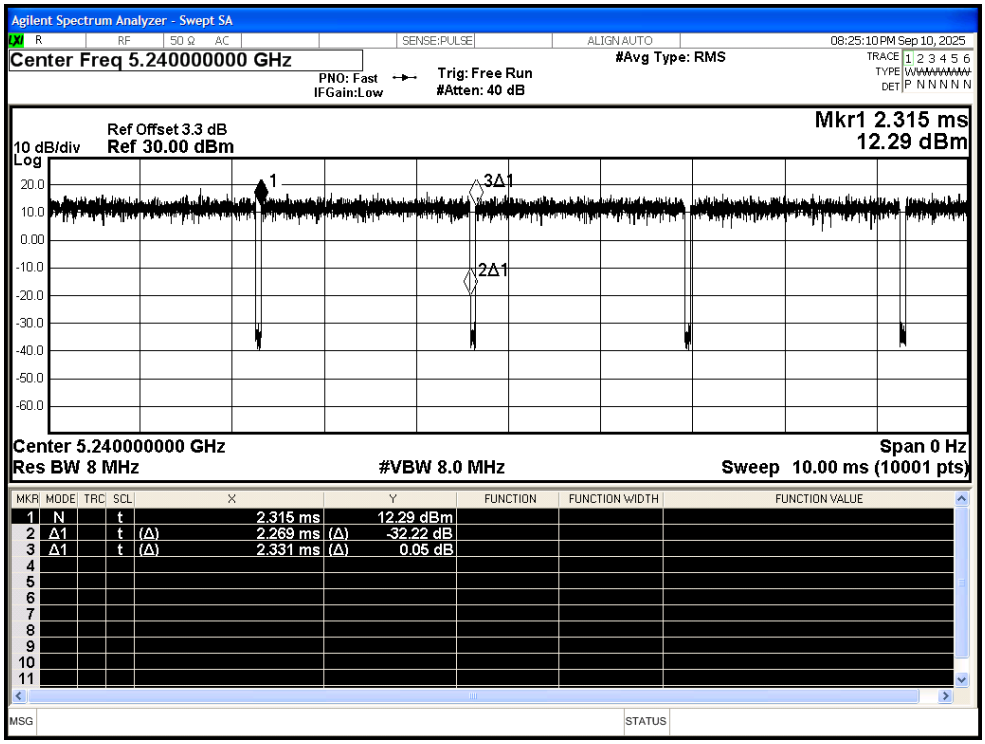
Duty Cycle NVNT ac20 5180MHz Ant1



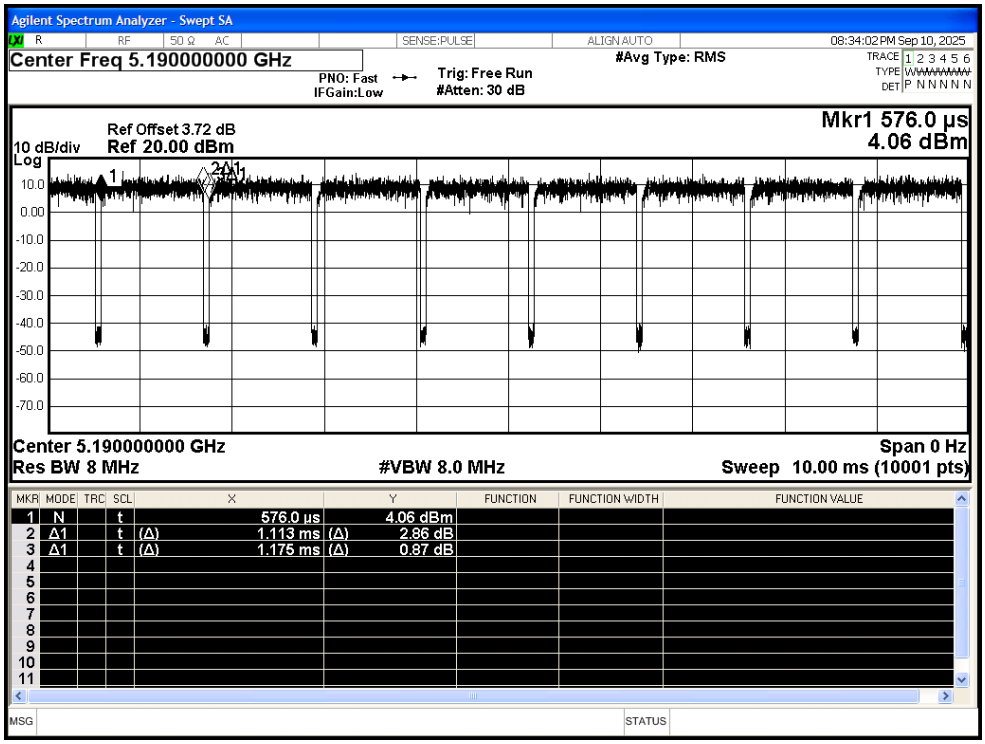
Duty Cycle NVNT ac20 5200MHz Ant1



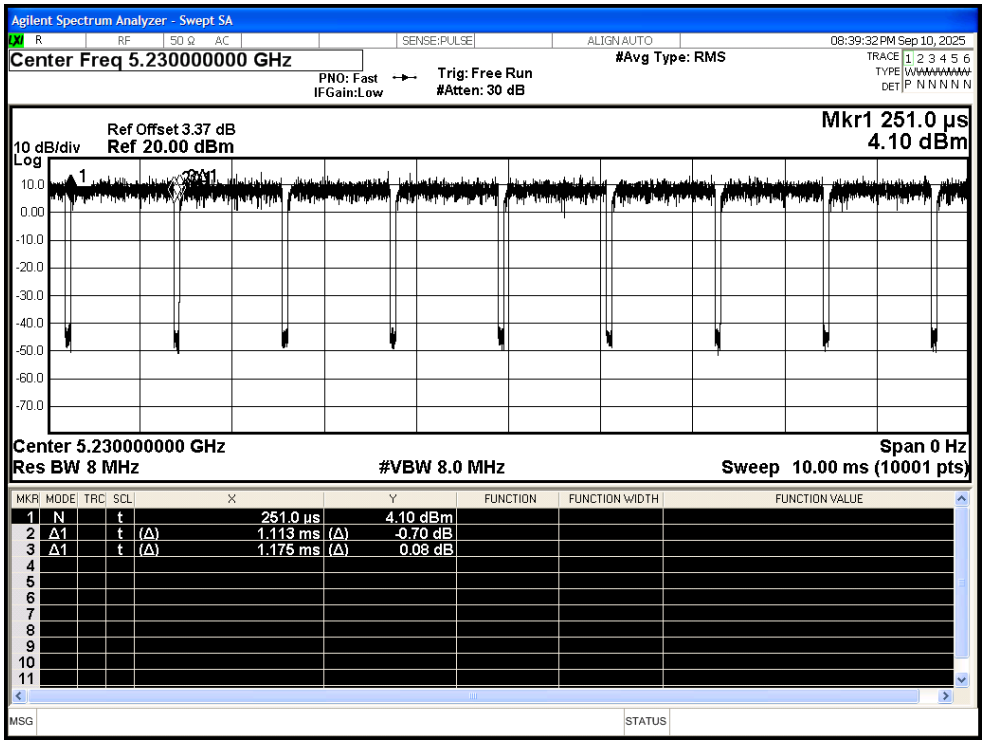
Duty Cycle NVNT ac20 5240MHz Ant1



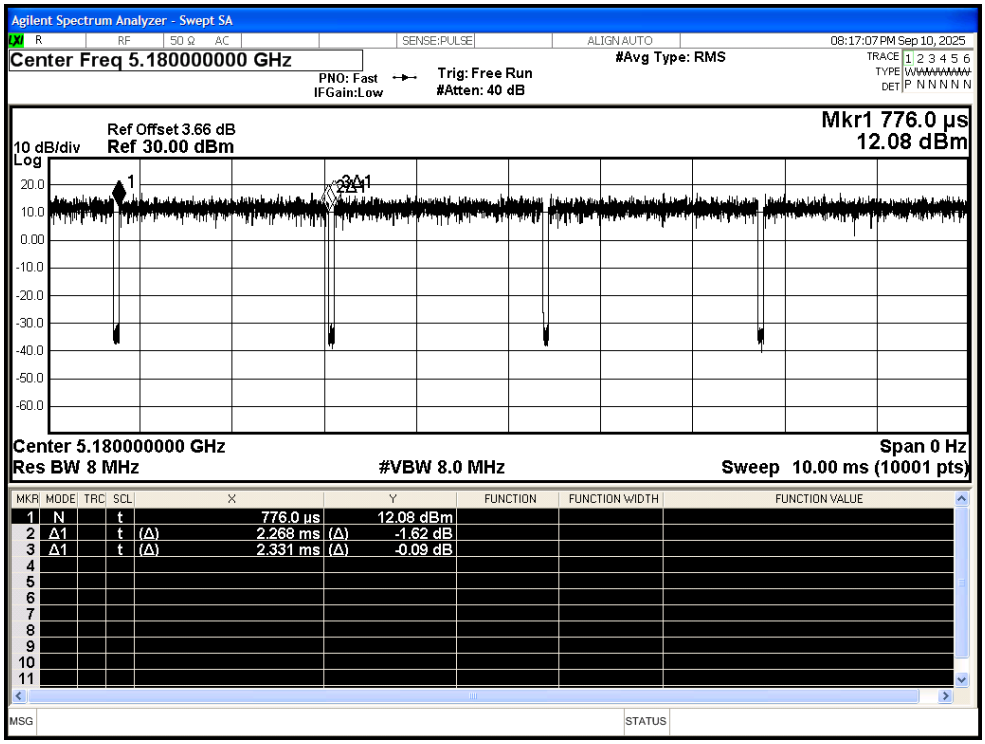
Duty Cycle NVNT ac40 5190MHz Ant1



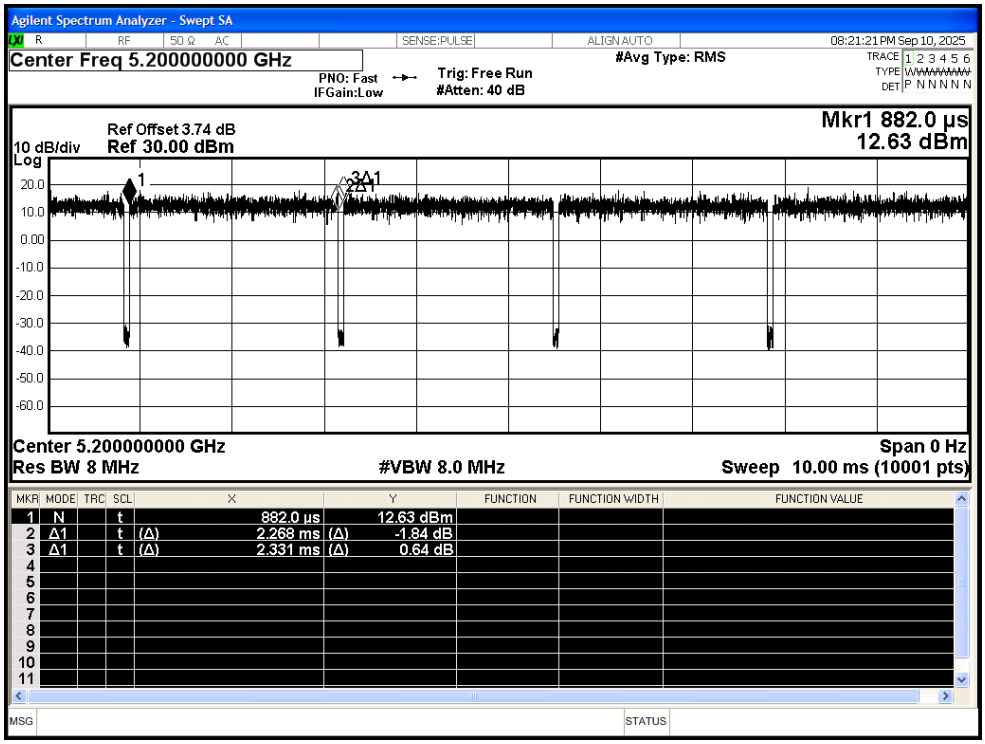
Duty Cycle NVNT ac40 5230MHz Ant1



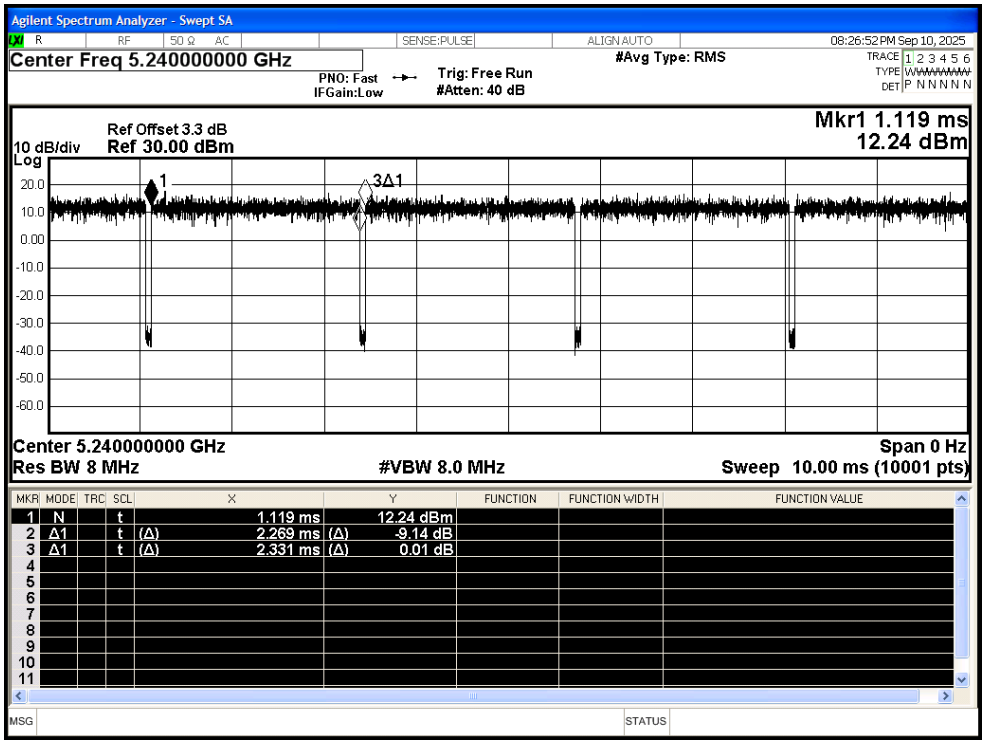
Duty Cycle NVNT ax20 5180MHz Ant1



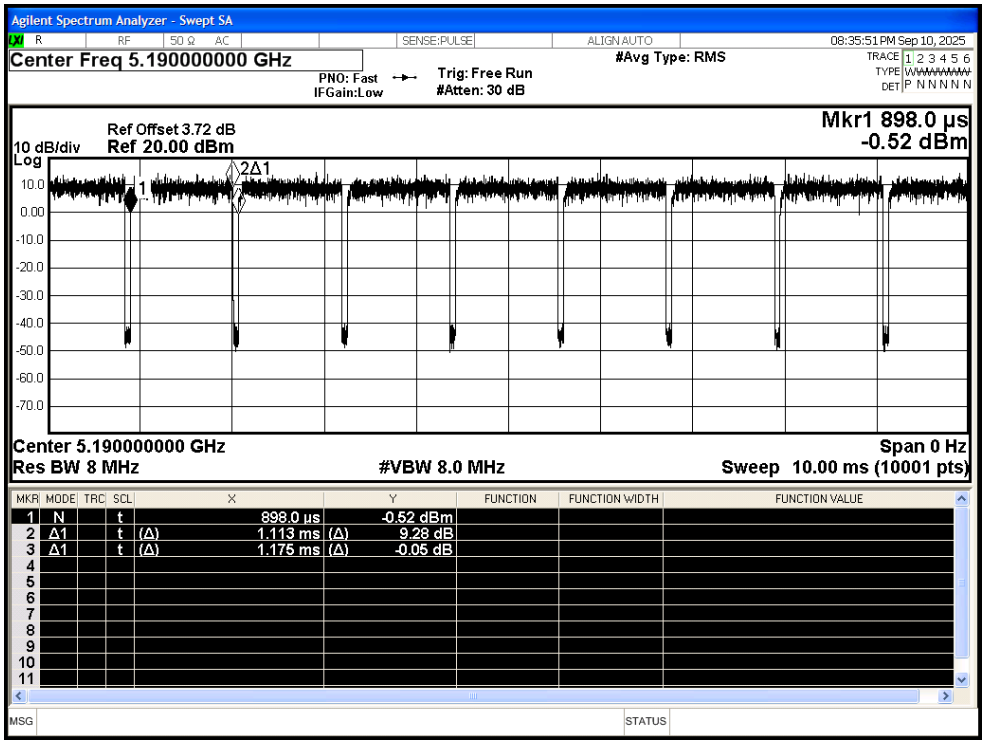
Duty Cycle NVNT ax20 5200MHz Ant1



Duty Cycle NVNT ax20 5240MHz Ant1



Duty Cycle NVNT ax40 5190MHz Ant1



Duty Cycle NVNT ax40 5230MHz Ant1