

Appendix C

RF Test Data for 5.2GWIFI (Conducted Measurement)

Product Name: Magnetic Mobile Screen

Test Model: VMP002

Environmental Conditions

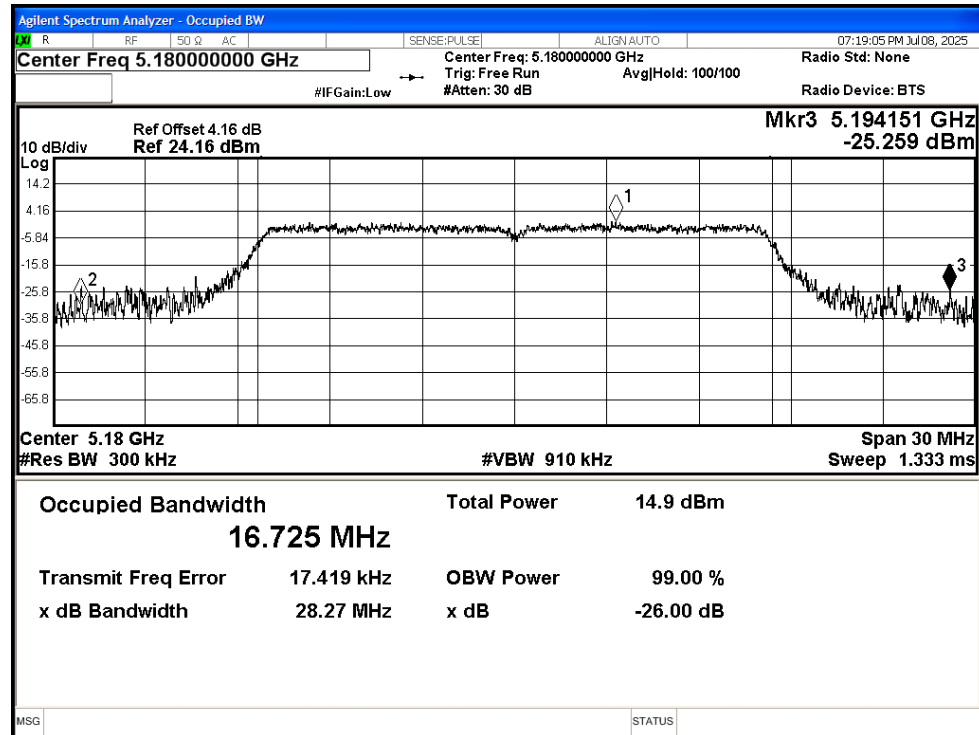
Temperature:	23.8°C
Relative Humidity:	52.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

C.1 -26dB Bandwidth

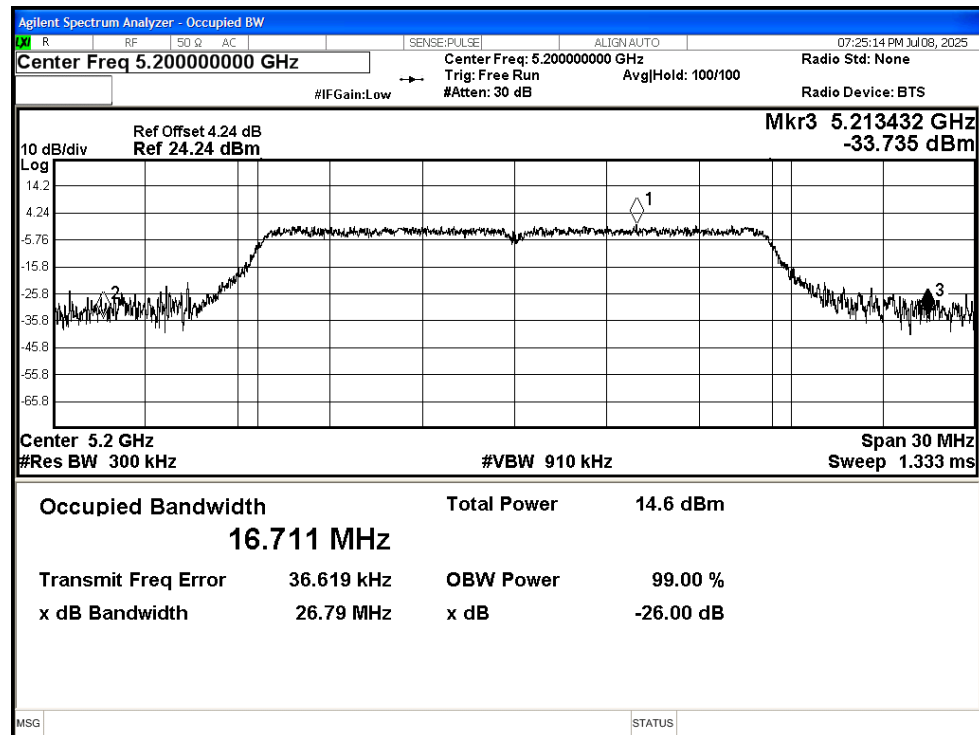
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	28.266	---	Pass
NVNT	a	5200	Ant1	26.79	---	Pass
NVNT	a	5240	Ant1	28.558	---	Pass
NVNT	n20	5180	Ant1	29.062	---	Pass
NVNT	n20	5200	Ant1	27.596	---	Pass
NVNT	n20	5240	Ant1	28.981	---	Pass
NVNT	n40	5190	Ant1	48.685	---	Pass
NVNT	n40	5230	Ant1	47.01	---	Pass
NVNT	ac20	5180	Ant1	27.56	---	Pass
NVNT	ac20	5200	Ant1	25.557	---	Pass
NVNT	ac20	5240	Ant1	27.881	---	Pass
NVNT	ac40	5190	Ant1	55.693	---	Pass
NVNT	ac40	5230	Ant1	55.313	---	Pass

Test Graphs

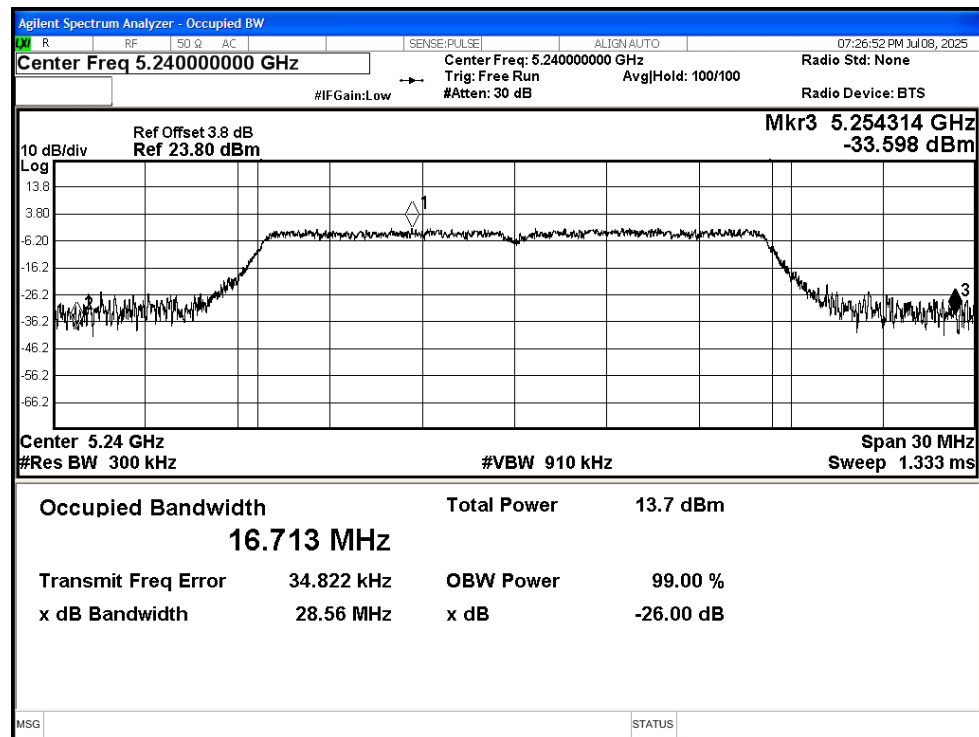
-26dB Bandwidth NVNT a 5180MHz Ant1



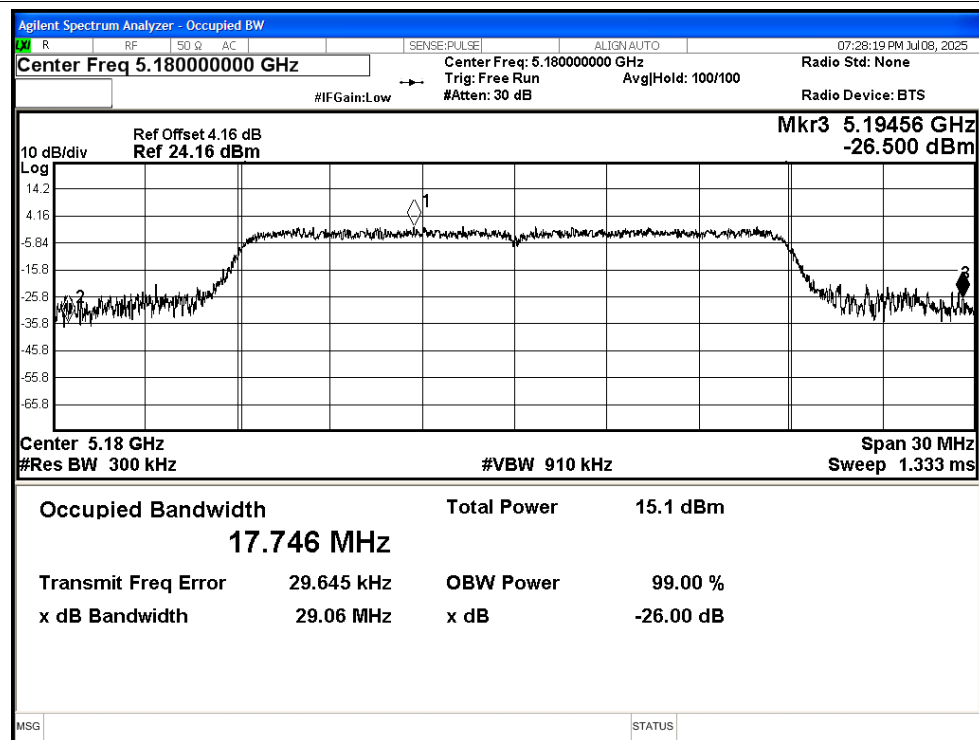
-26dB Bandwidth NVNT a 5200MHz Ant1



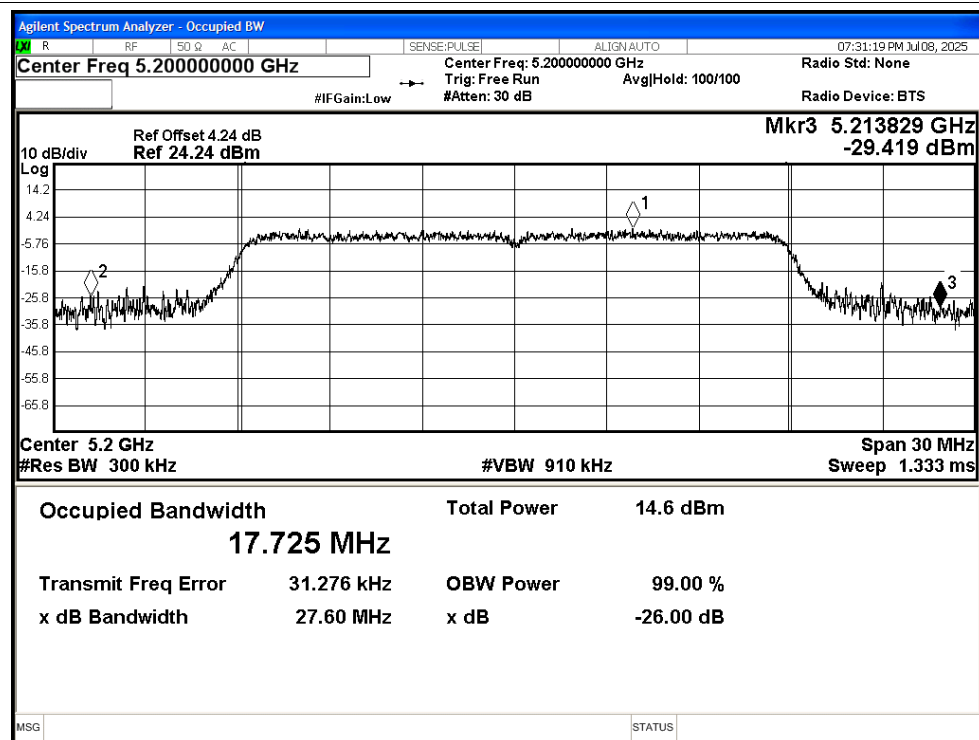
-26dB Bandwidth NVNT a 5240MHz Ant1



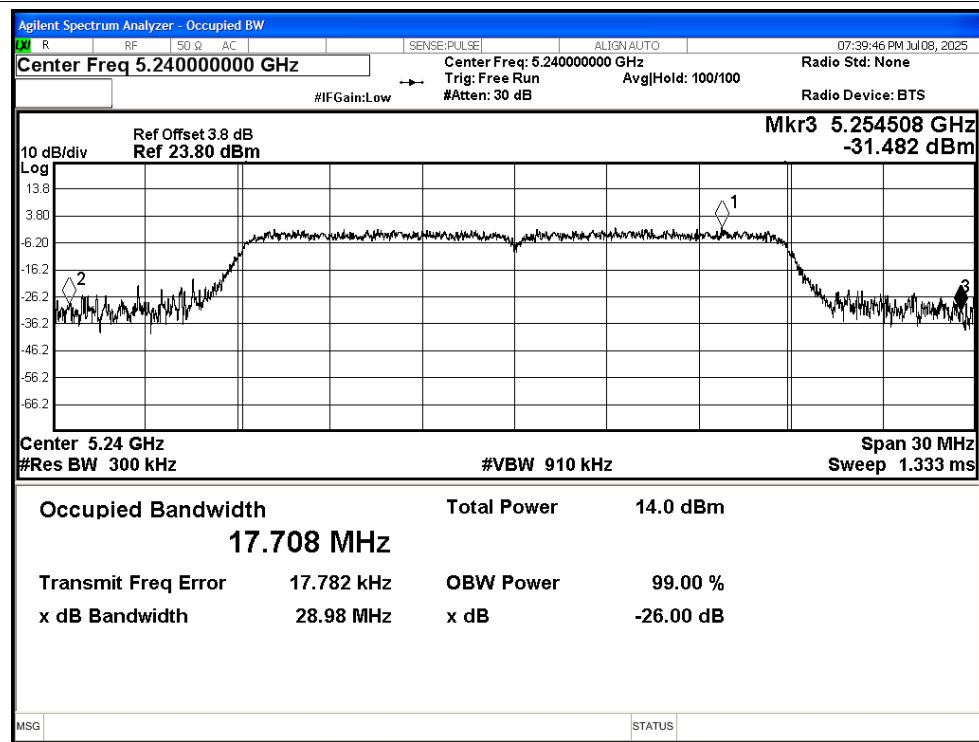
-26dB Bandwidth NVNT n20 5180MHz Ant1



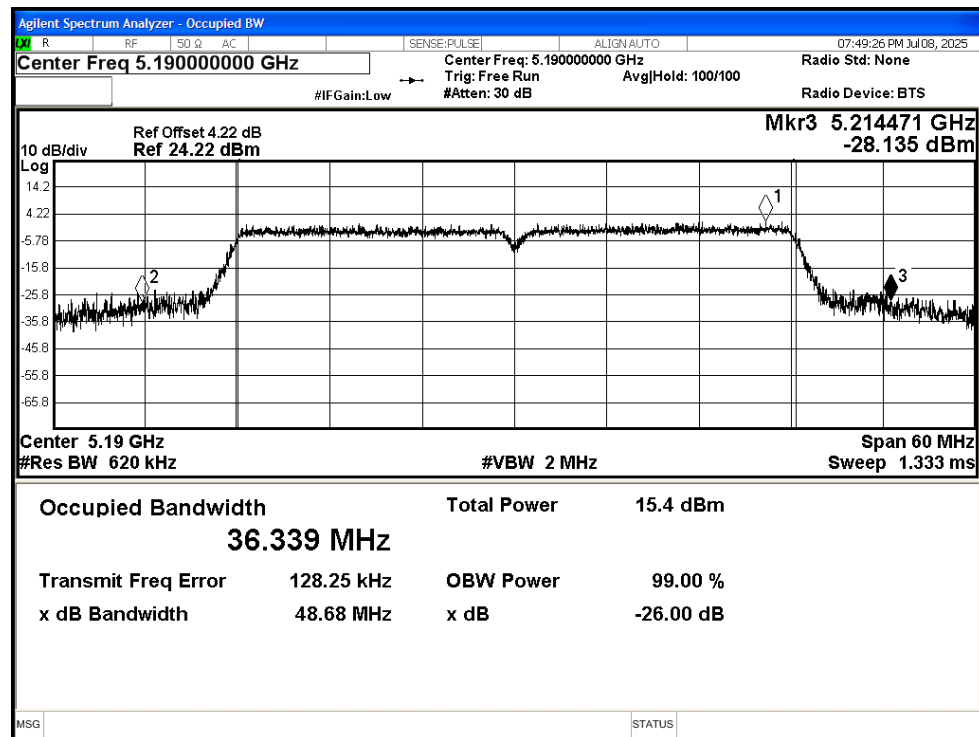
-26dB Bandwidth NVNT n20 5200MHz Ant1



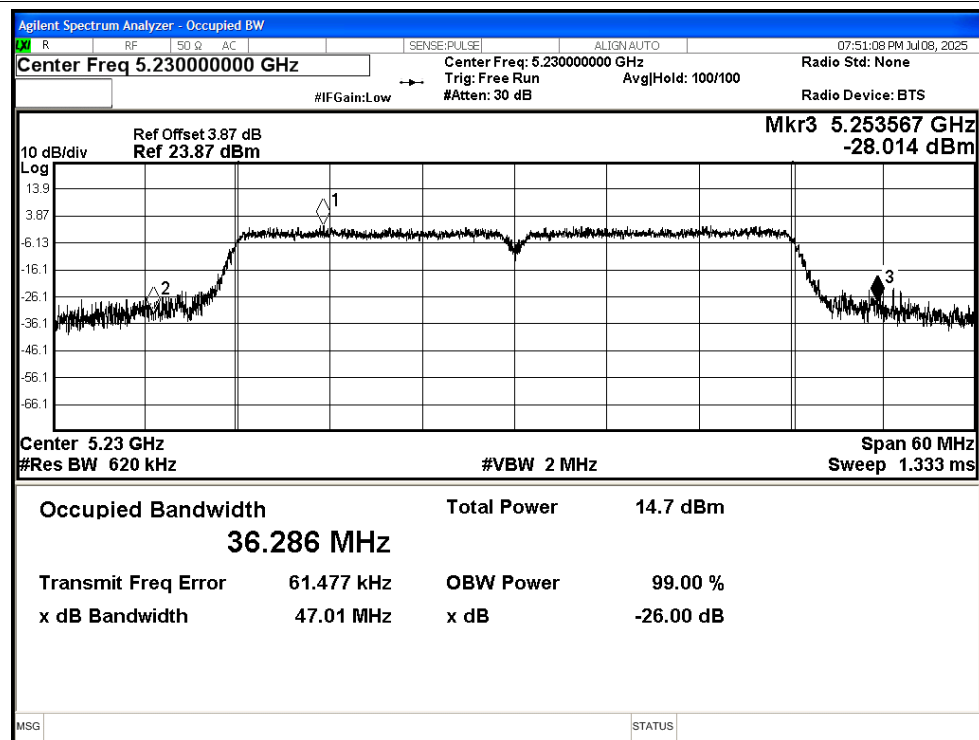
-26dB Bandwidth NVNT n20 5240MHz Ant1



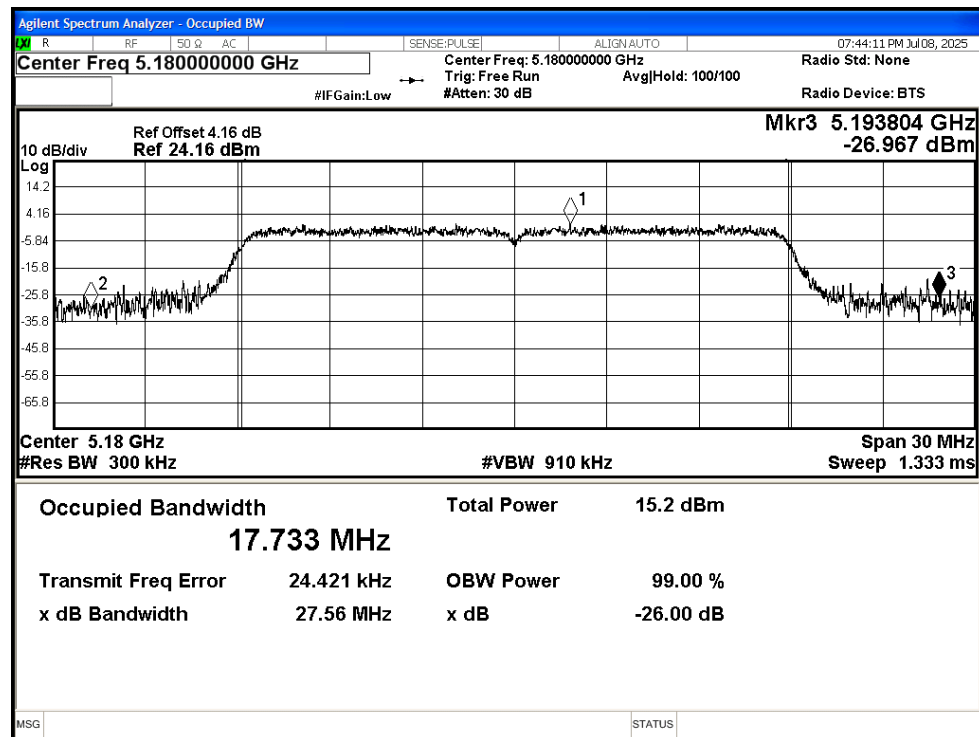
-26dB Bandwidth NVNT n40 5190MHz Ant1



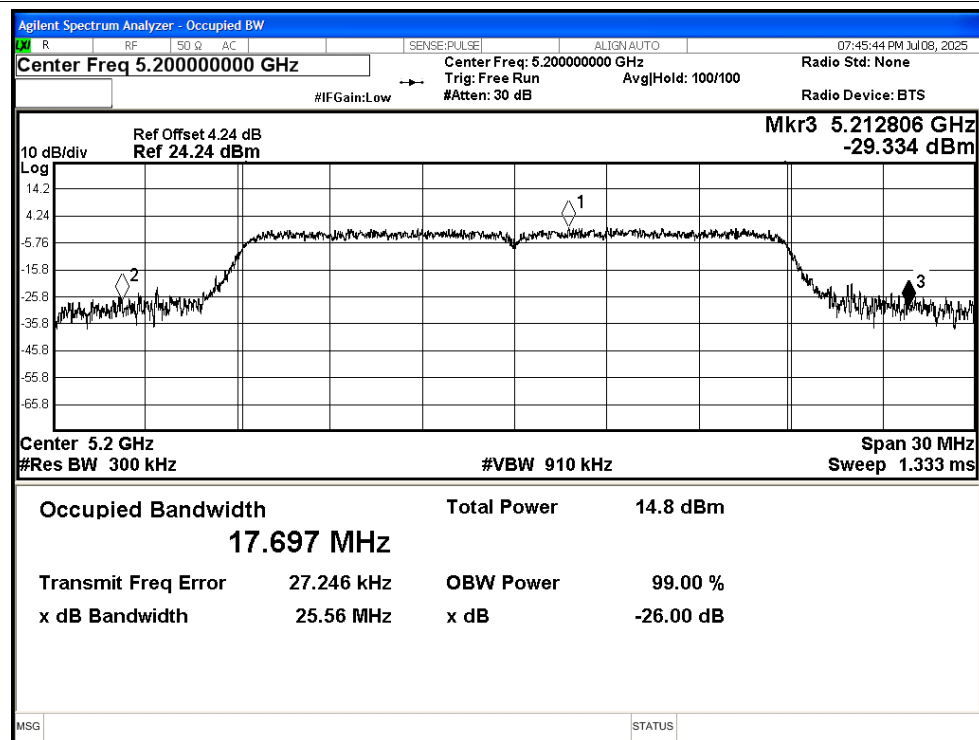
-26dB Bandwidth NVNT n40 5230MHz Ant1



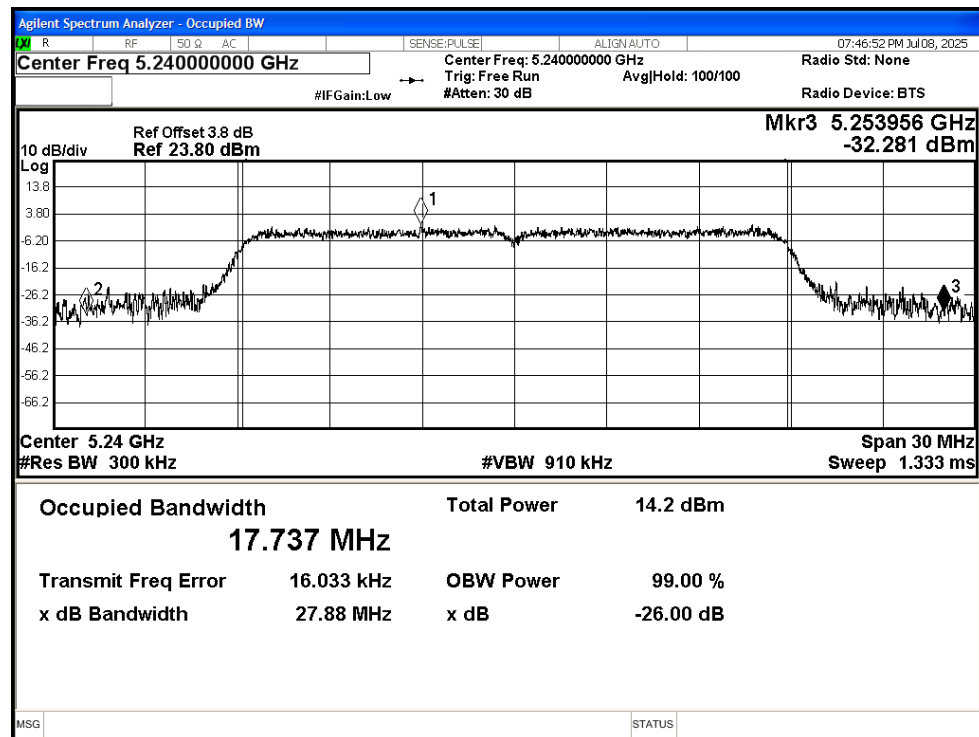
-26dB Bandwidth NVNT ac20 5180MHz Ant1



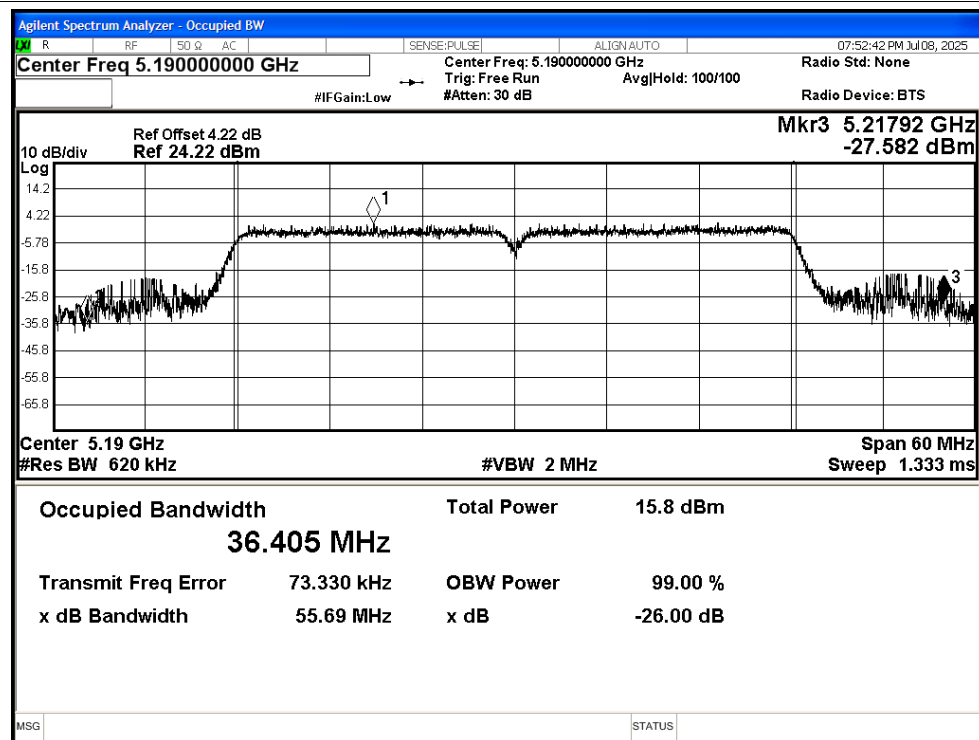
-26dB Bandwidth NVNT ac20 5200MHz Ant1

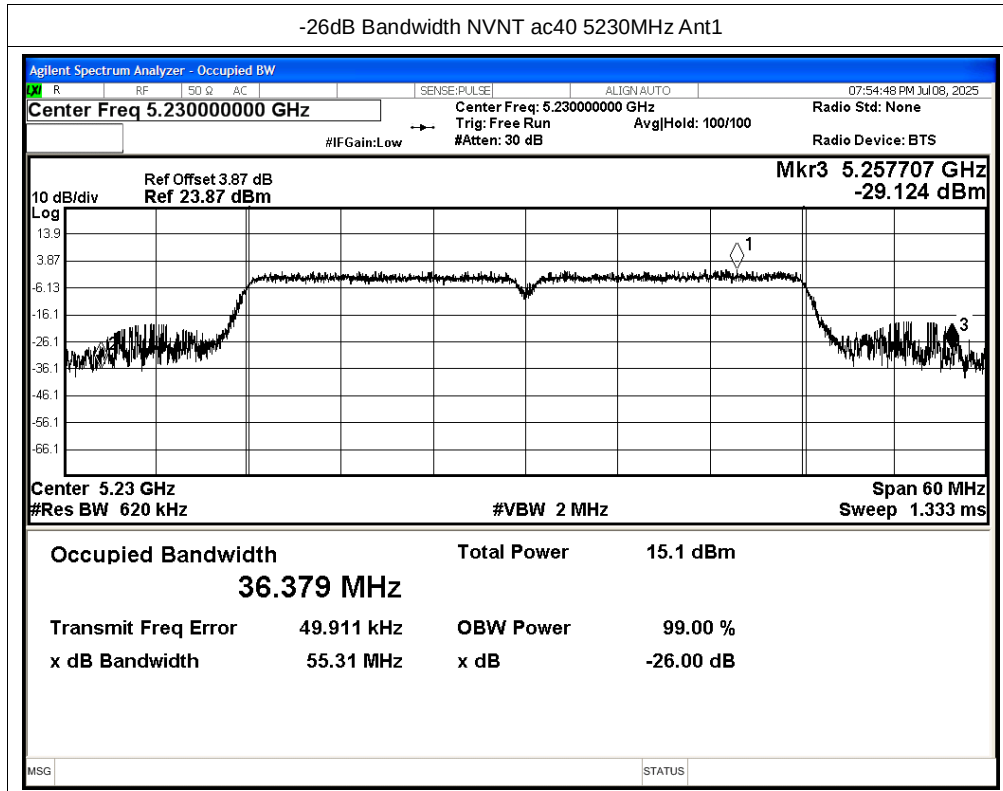


-26dB Bandwidth NVNT ac20 5240MHz Ant1



-26dB Bandwidth NVNT ac40 5190MHz Ant1





C.2 Maximum Conducted Output Power

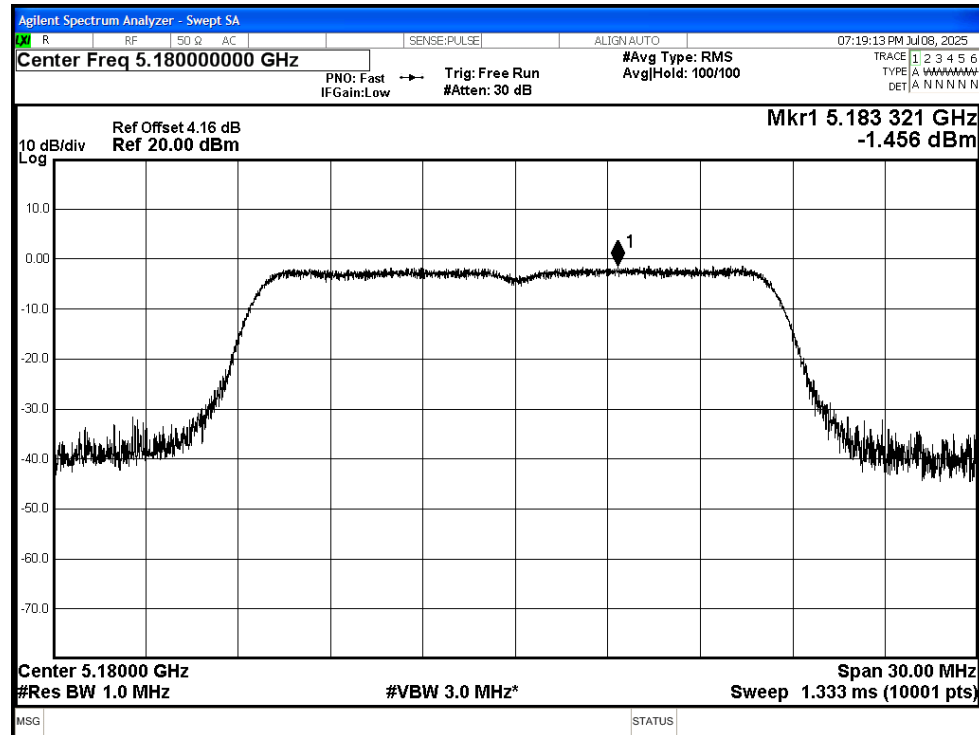
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	2.46	0.24	2.7	24	Pass
NVNT	a	5200	Ant1	2.39	0.24	2.63	24	Pass
NVNT	a	5240	Ant1	0.99	0.24	1.23	24	Pass
NVNT	n20	5180	Ant1	2.7	0.28	2.98	24	Pass
NVNT	n20	5200	Ant1	2.79	0.28	3.07	24	Pass
NVNT	n20	5240	Ant1	1.34	0.28	1.62	24	Pass
NVNT	n40	5190	Ant1	2.27	0.55	2.82	24	Pass
NVNT	n40	5230	Ant1	1.18	0.55	1.73	24	Pass
NVNT	ac20	5180	Ant1	2.7	0.28	2.98	24	Pass
NVNT	ac20	5200	Ant1	2.69	0.28	2.97	24	Pass
NVNT	ac20	5240	Ant1	1.39	0.28	1.67	24	Pass
NVNT	ac40	5190	Ant1	2.31	0.53	2.84	24	Pass
NVNT	ac40	5230	Ant1	1.18	0.53	1.71	24	Pass

C.3 Maximum Power Spectral Density Level

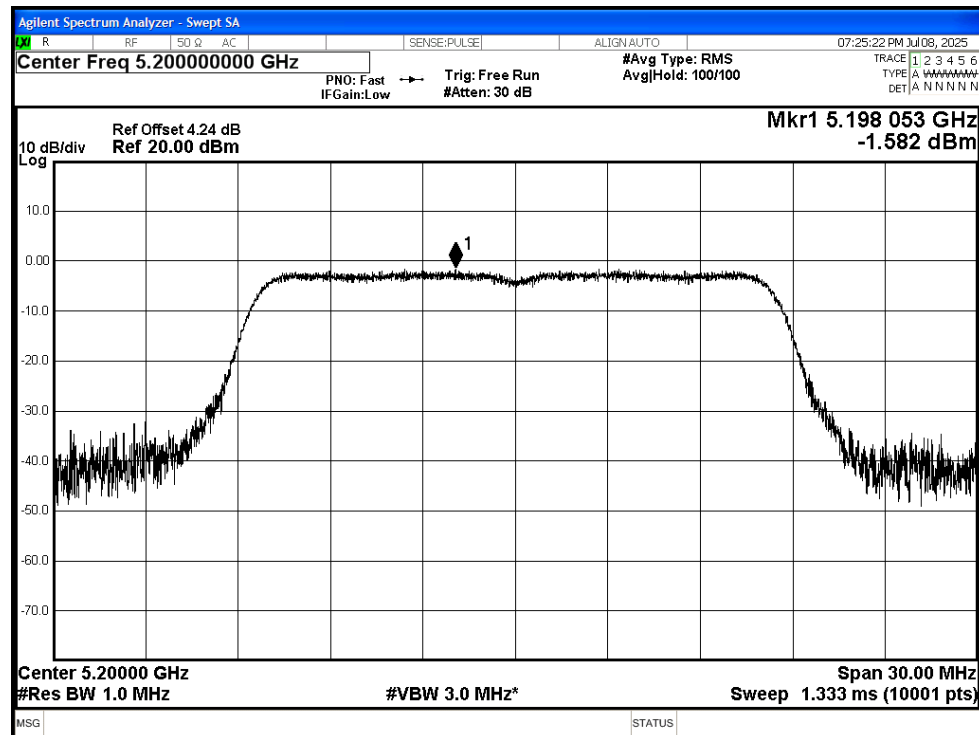
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	Ant1	-1.46	0.24	-1.22	11	Pass
NVNT	a	5200	Ant1	-1.58	0.24	-1.34	11	Pass
NVNT	a	5240	Ant1	-2.61	0.24	-2.37	11	Pass
NVNT	n20	5180	Ant1	-1.39	0.28	-1.11	11	Pass
NVNT	n20	5200	Ant1	-1.89	0.28	-1.61	11	Pass
NVNT	n20	5240	Ant1	-2.47	0.28	-2.19	11	Pass
NVNT	n40	5190	Ant1	-4.35	0.55	-3.8	11	Pass
NVNT	n40	5230	Ant1	-5.39	0.55	-4.84	11	Pass
NVNT	ac20	5180	Ant1	-1.36	0.28	-1.08	11	Pass
NVNT	ac20	5200	Ant1	-1.46	0.28	-1.18	11	Pass
NVNT	ac20	5240	Ant1	-2.16	0.28	-1.88	11	Pass
NVNT	ac40	5190	Ant1	-4.02	0.53	-3.49	11	Pass
NVNT	ac40	5230	Ant1	-5.26	0.53	-4.73	11	Pass

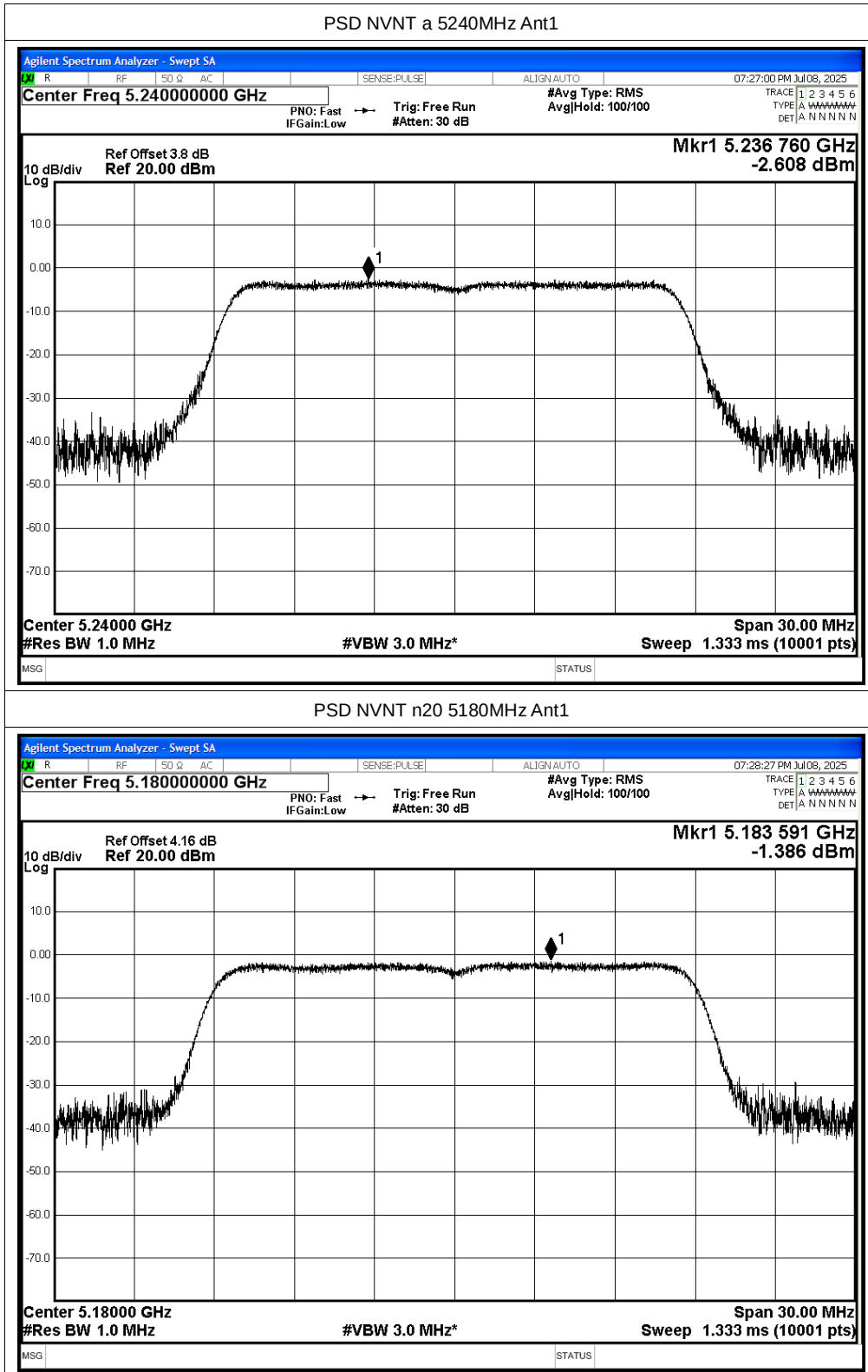
Test Graphs

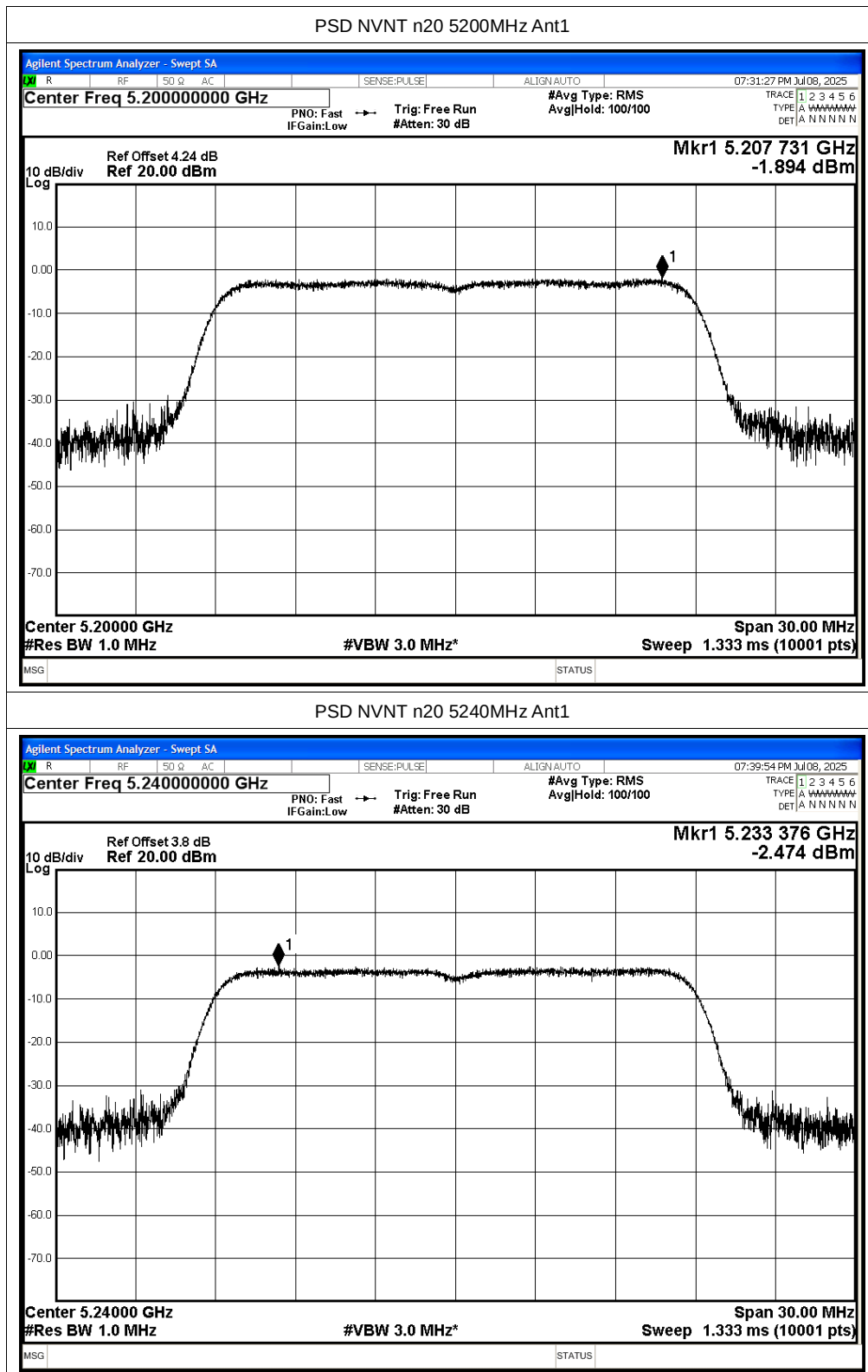
PSD NVNT a 5180MHz Ant1

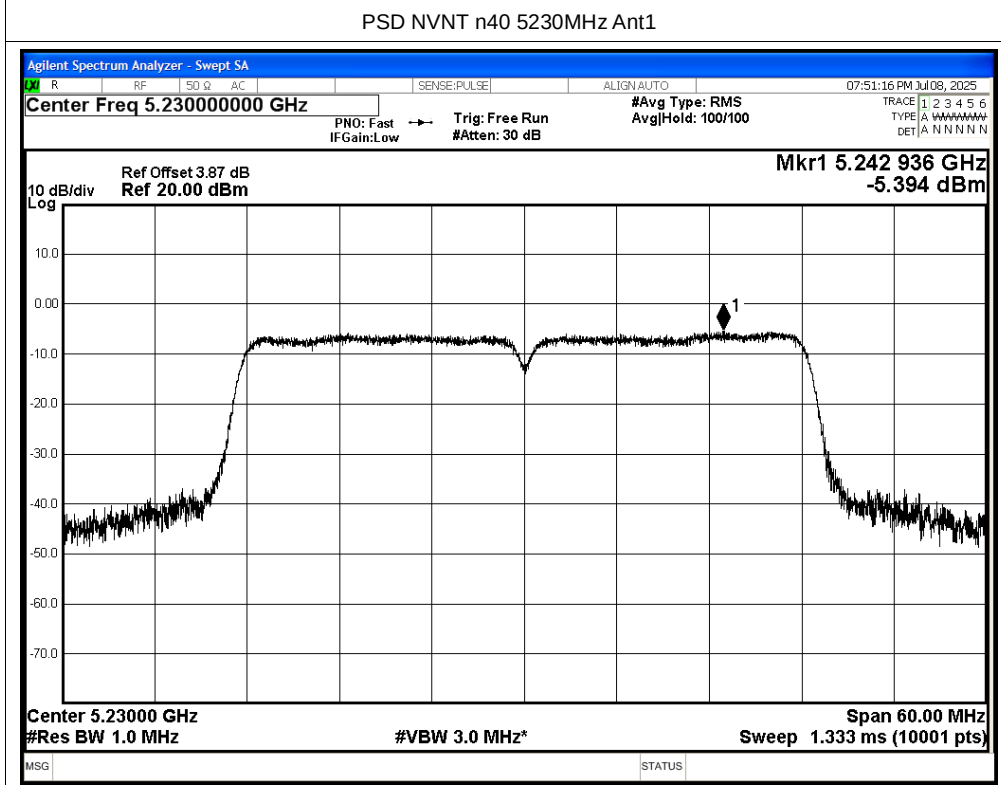
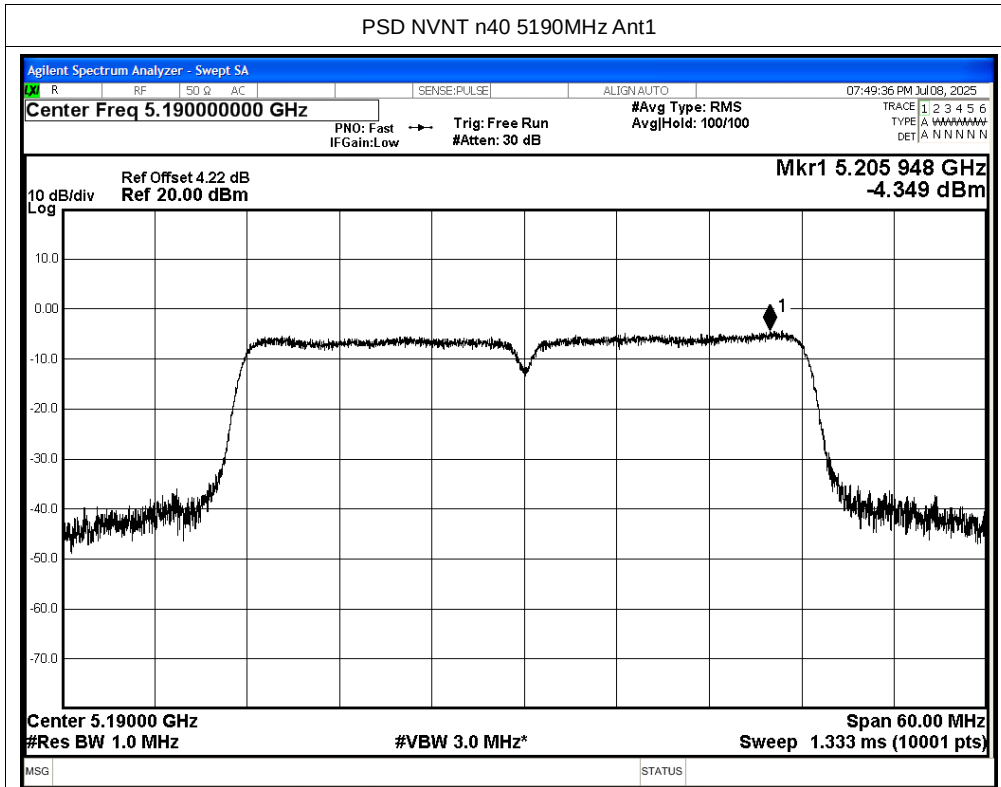


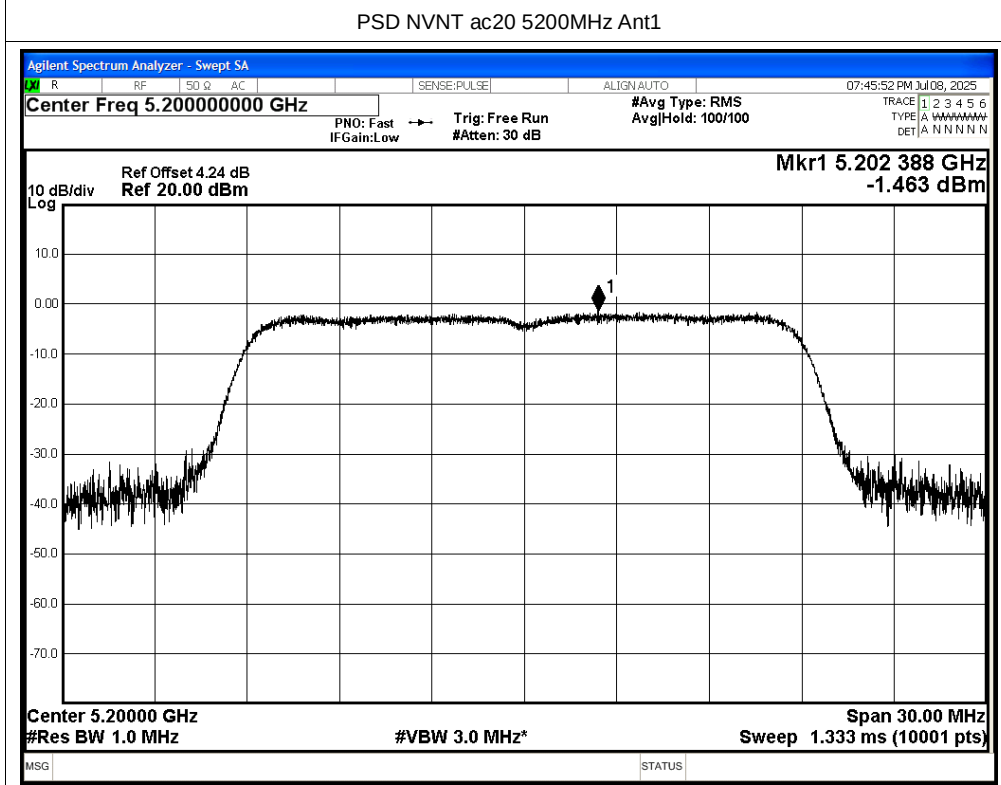
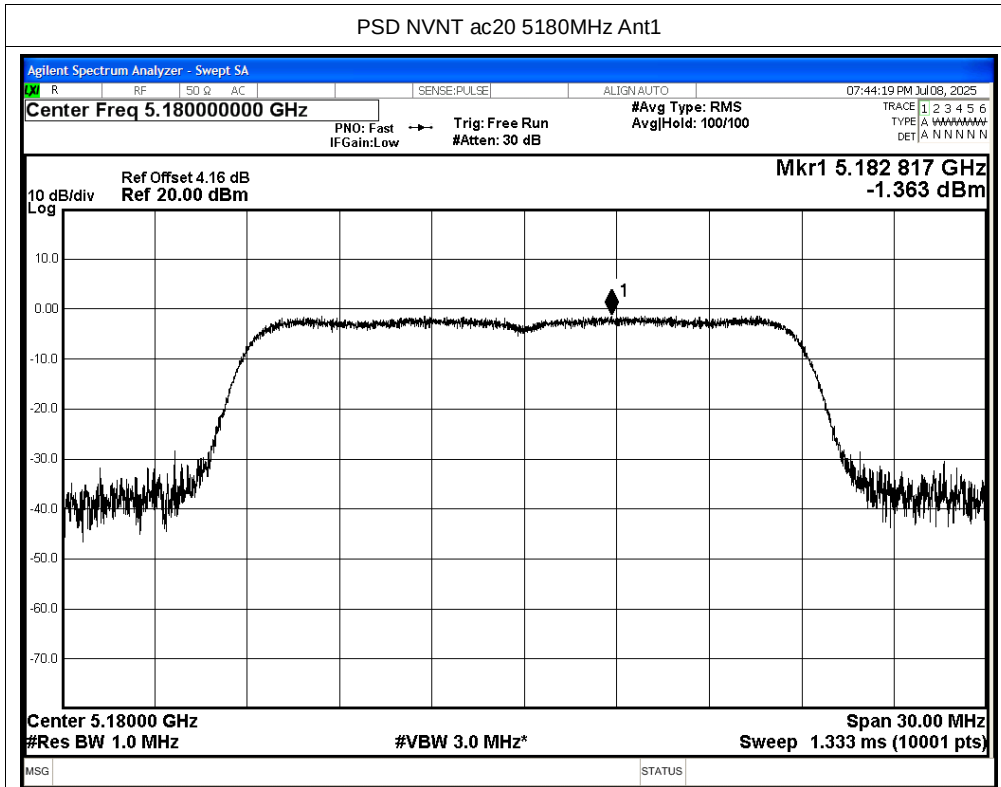
PSD NVNT a 5200MHz Ant1

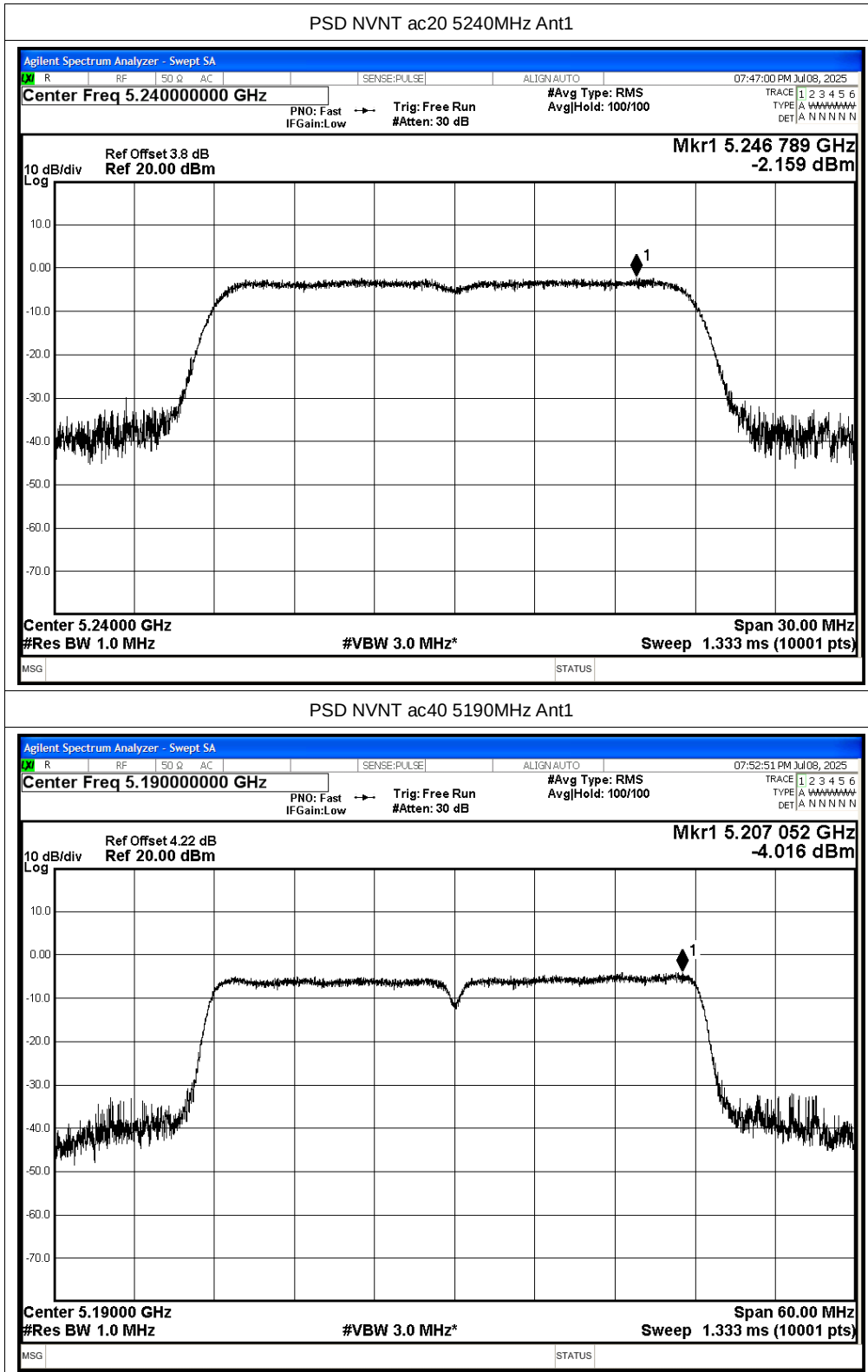


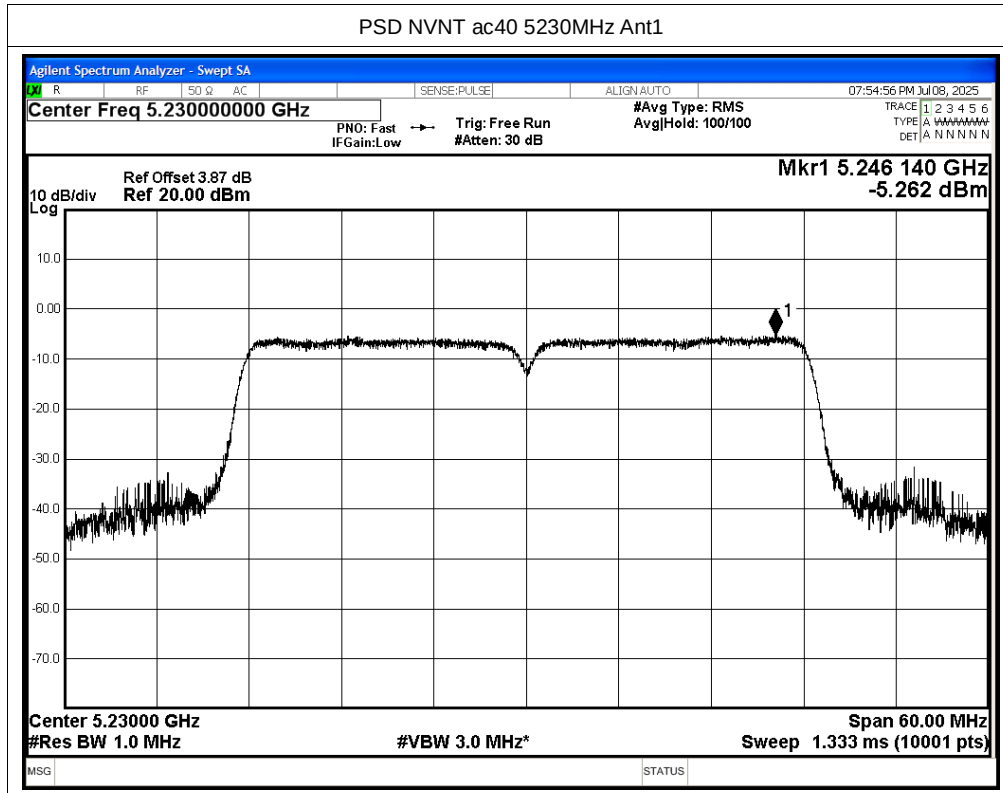












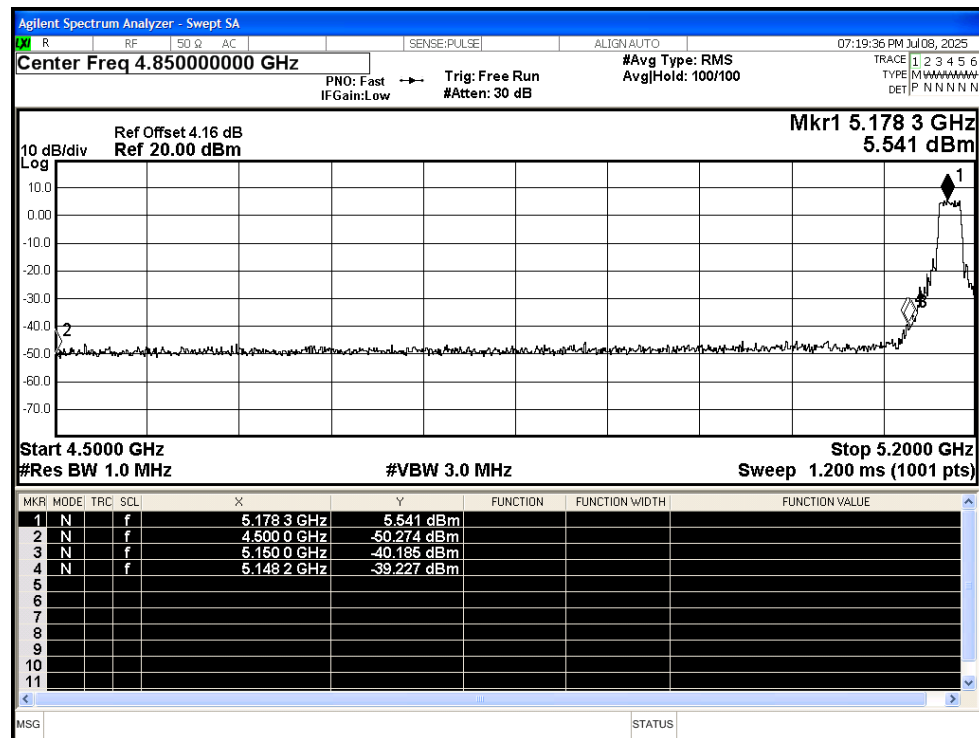
C.4 Restrict Band

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	-50.27	2.77	-	47.76	Peak	68.2	Pass
NVNT	a	5180	Ant1	4500	-58.29	2.77	0.24	39.98	Average	54	Pass
NVNT	a	5180	Ant1	5148.2	-39.23	2.77	-	58.80	Peak	68.2	Pass
NVNT	a	5180	Ant1	5147.5	-52.35	2.77	0.24	45.92	Average	54	Pass
NVNT	a	5180	Ant1	5150	-40.19	2.77	-	57.84	Peak	68.2	Pass
NVNT	a	5180	Ant1	5150	-51.77	2.77	0.24	46.50	Average	54	Pass
NVNT	a	5240	Ant1	5350	-48.74	2.77	-	49.29	Peak	68.2	Pass
NVNT	a	5240	Ant1	5350	-56.71	2.77	0.24	41.56	Average	54	Pass
NVNT	a	5240	Ant1	5389.2	-46.8	2.77	-	51.23	Peak	68.2	Pass
NVNT	a	5240	Ant1	5362.8	-56.29	2.77	0.24	41.98	Average	54	Pass
NVNT	a	5240	Ant1	5460	-50.52	2.77	-	47.51	Peak	68.2	Pass
NVNT	a	5240	Ant1	5460	-56.82	2.77	0.24	41.45	Average	54	Pass
NVNT	n20	5180	Ant1	4500	-49.23	2.77	-	48.80	Peak	68.2	Pass
NVNT	n20	5180	Ant1	4500	-57.54	2.77	0.28	40.77	Average	54	Pass
NVNT	n20	5180	Ant1	5148.2	-40.65	2.77	-	57.38	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5149.6	-52.22	2.77	0.28	46.09	Average	54	Pass
NVNT	n20	5180	Ant1	5150	-39.74	2.77	-	58.29	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5150	-51.52	2.77	0.28	46.79	Average	54	Pass
NVNT	n20	5240	Ant1	5350	-49.48	2.77	-	48.55	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5350	-56.9	2.77	0.28	41.41	Average	54	Pass
NVNT	n20	5240	Ant1	5350.32	-46.9	2.77	-	51.13	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5352.24	-56.15	2.77	0.28	42.16	Average	54	Pass
NVNT	n20	5240	Ant1	5460	-49.26	2.77	-	48.77	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5460	-58.07	2.77	0.28	40.24	Average	54	Pass
NVNT	n40	5190	Ant1	4500	-49.42	2.77	-	48.61	Peak	68.2	Pass
NVNT	n40	5190	Ant1	4500	-58.25	2.77	0.55	40.33	Average	54	Pass
NVNT	n40	5190	Ant1	5148.97	-39.11	2.77	-	58.92	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5148.97	-51.75	2.77	0.55	46.83	Average	54	Pass
NVNT	n40	5190	Ant1	5150	-40	2.77	-	58.03	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5150	-51.97	2.77	0.55	46.61	Average	54	Pass
NVNT	n40	5230	Ant1	5350	-47.93	2.77	-	50.10	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5350	-56.35	2.77	0.55	42.23	Average	54	Pass
NVNT	n40	5230	Ant1	5384.13	-45.92	2.77	-	52.11	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5351.19	-56.23	2.77	0.55	42.35	Average	54	Pass
NVNT	n40	5230	Ant1	5460	-48.08	2.77	-	49.95	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5460	-57.34	2.77	0.55	41.24	Average	54	Pass
NVNT	ac20	5180	Ant1	4500	-50.64	2.77	-	47.39	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	4500	-57.69	2.77	0.28	40.62	Average	54	Pass
NVNT	ac20	5180	Ant1	5148.2	-39.89	2.77	-	58.14	Peak	68.2	Pass

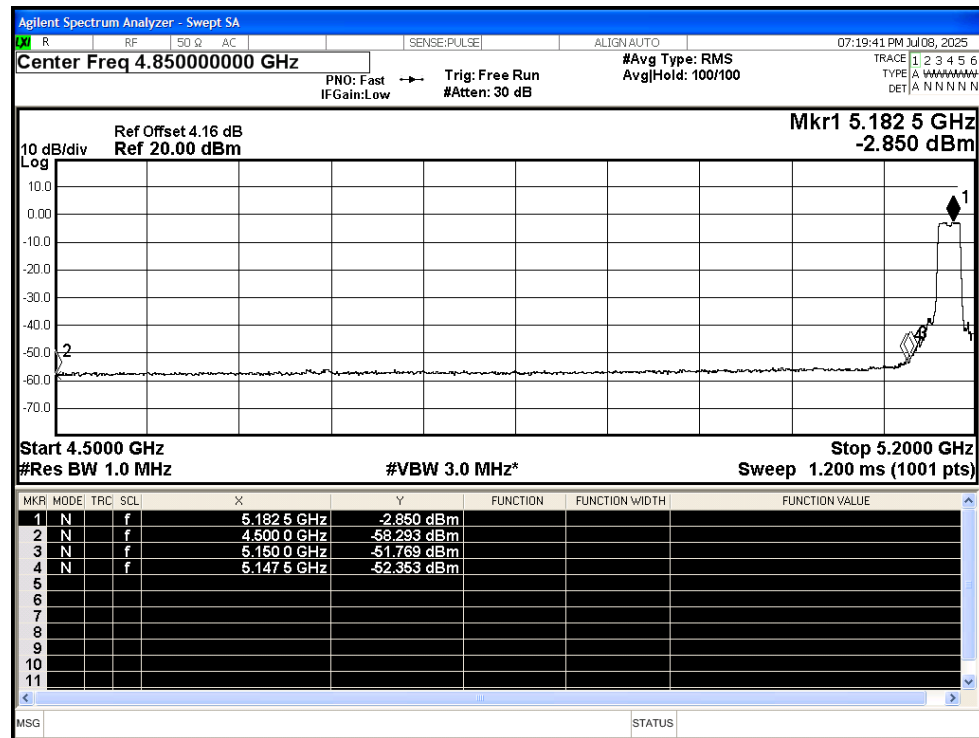
NVNT	ac20	5180	Ant1	5148.9	-50.41	2.77	0.28	47.90	Average	54	Pass
NVNT	ac20	5180	Ant1	5150	-35.35	2.77	-	62.68	Peak	68.2	Pass
NVNT	ac20	5180	Ant1	5150	-50.67	2.77	0.28	47.64	Average	54	Pass
NVNT	ac20	5240	Ant1	5350	-49.35	2.77	-	48.68	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5350	-56.67	2.77	0.28	41.64	Average	54	Pass
NVNT	ac20	5240	Ant1	5367.84	-46.18	2.77	-	51.85	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5352	-56.07	2.77	0.28	42.24	Average	54	Pass
NVNT	ac20	5240	Ant1	5460	-48.83	2.77	-	49.20	Peak	68.2	Pass
NVNT	ac20	5240	Ant1	5460	-57.6	2.77	0.28	40.71	Average	54	Pass
NVNT	ac40	5190	Ant1	4500	-49.39	2.77	-	48.64	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	4500	-57.71	2.77	0.53	40.85	Average	54	Pass
NVNT	ac40	5190	Ant1	5146.78	-37.12	2.77	-	60.91	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	5149.7	-51.42	2.77	0.53	47.14	Average	54	Pass
NVNT	ac40	5190	Ant1	5150	-38.86	2.77	-	59.17	Peak	68.2	Pass
NVNT	ac40	5190	Ant1	5150	-51.42	2.77	0.53	47.14	Average	54	Pass
NVNT	ac40	5230	Ant1	5350	-48.45	2.77	-	49.58	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5350	-56.94	2.77	0.53	41.62	Average	54	Pass
NVNT	ac40	5230	Ant1	5399.25	-45.6	2.77	-	52.43	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5420.58	-56.31	2.77	0.53	42.25	Average	54	Pass
NVNT	ac40	5230	Ant1	5460	-49.67	2.77	-	48.36	Peak	68.2	Pass
NVNT	ac40	5230	Ant1	5460	-56.6	2.77	0.53	41.96	Average	54	Pass

Test Graphs

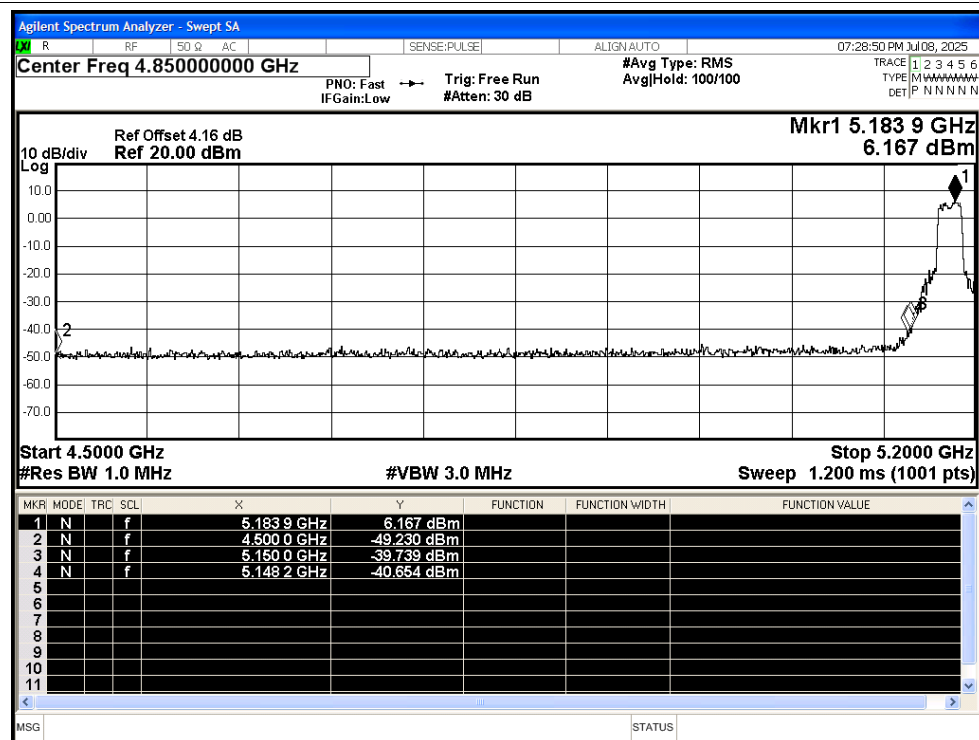
Restrict Band NVNT a 5180MHz Ant1 Peak



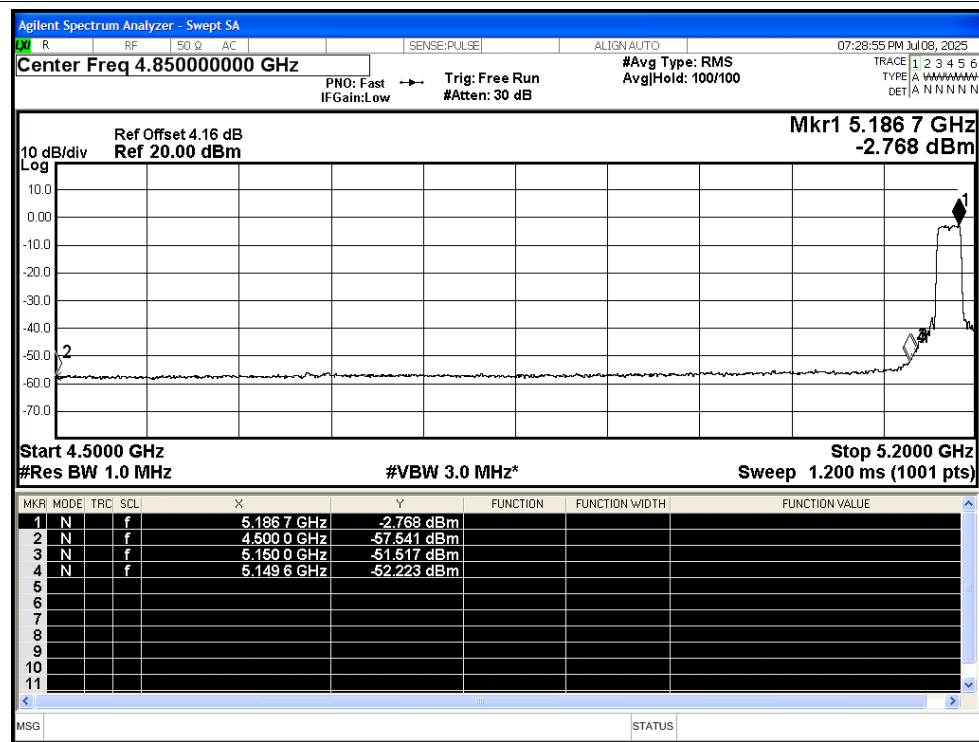
Restrict Band NVNT a 5180MHz Ant1 Average



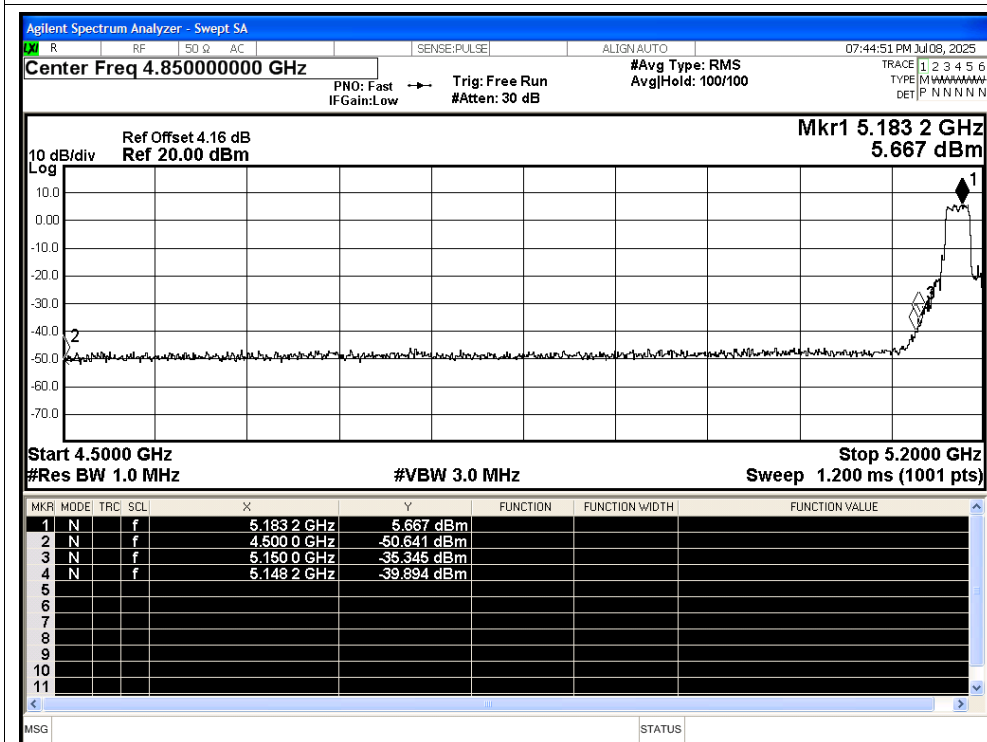
Restrict Band NVNT n20 5180MHz Ant1 Peak



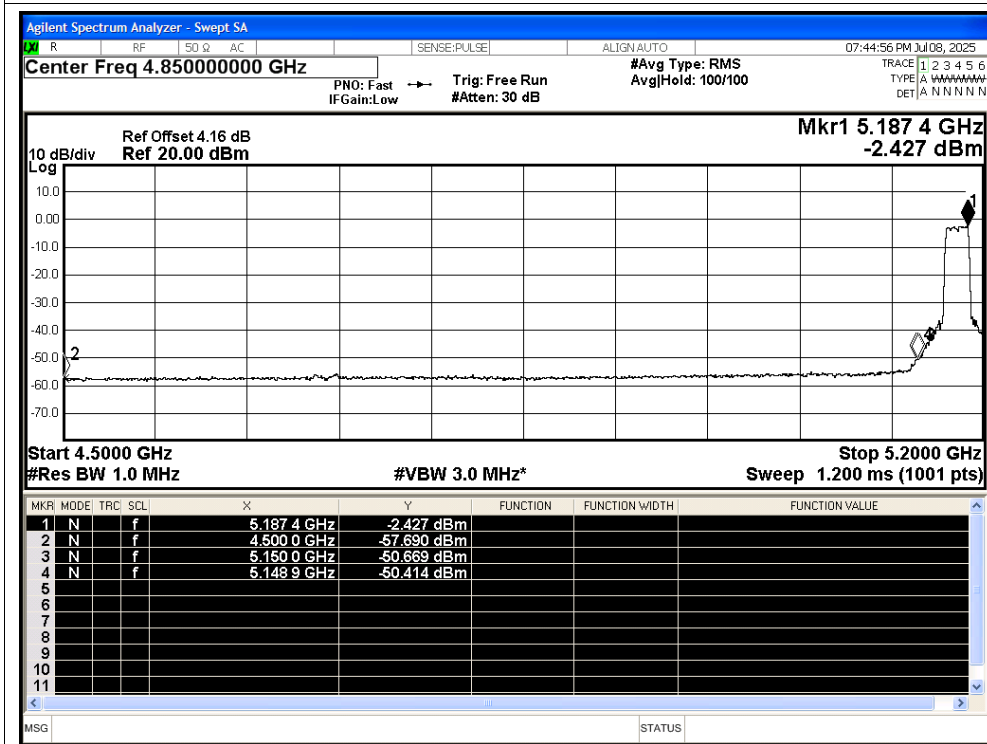
Restrict Band NVNT n20 5180MHz Ant1 Average

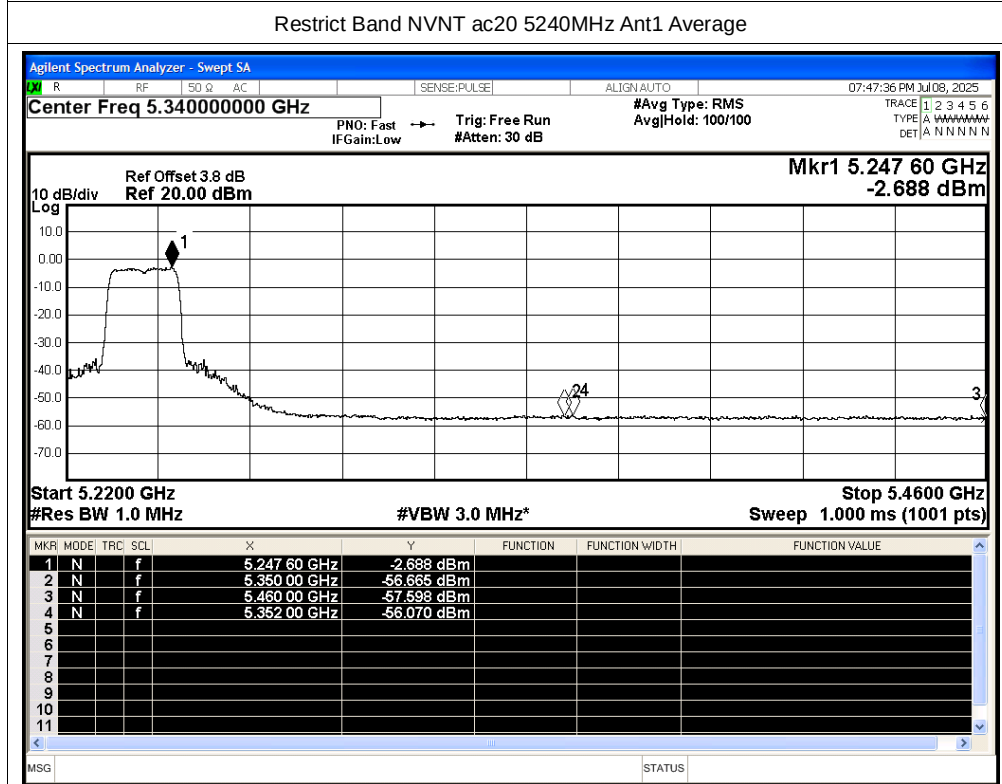


Restrict Band NVNT ac20 5180MHz Ant1 Peak

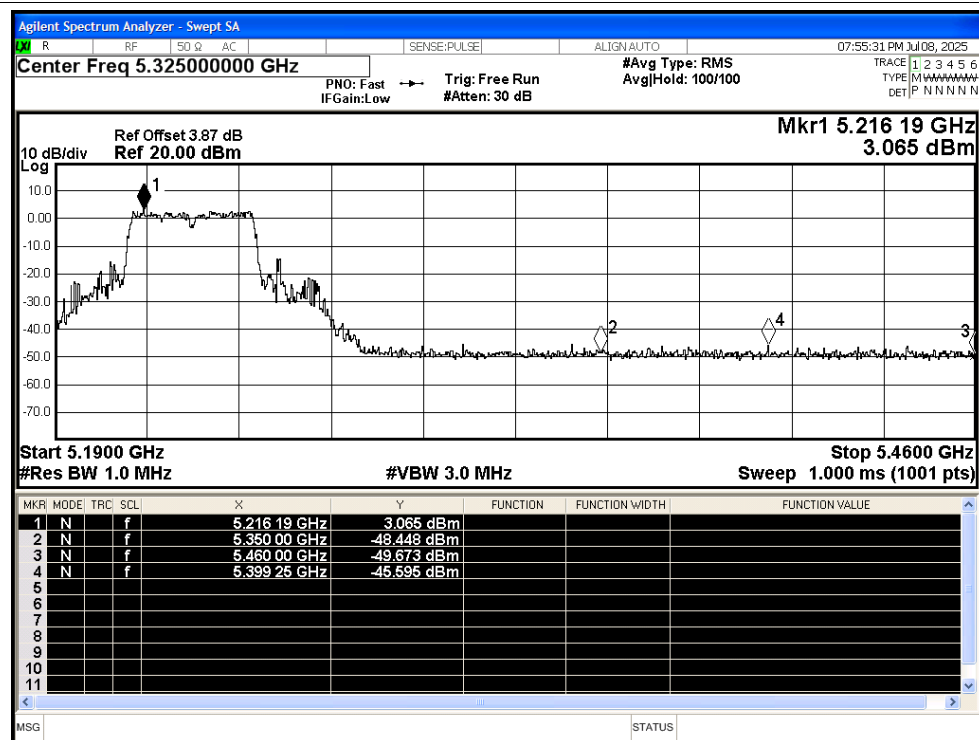


Restrict Band NVNT ac20 5180MHz Ant1 Average

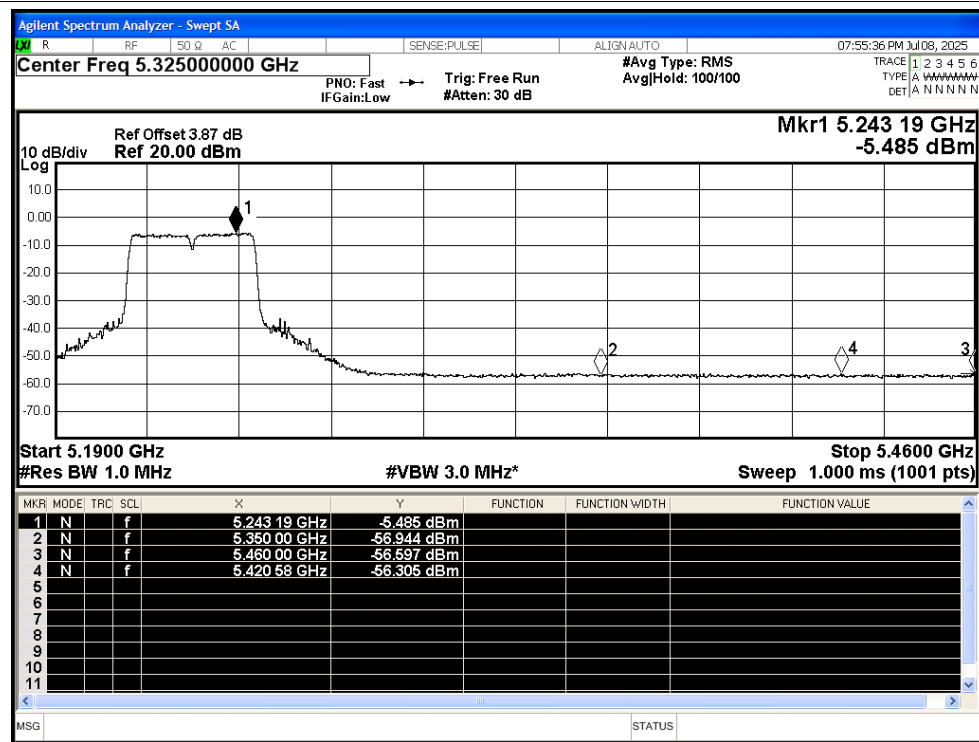




Restrict Band NVNT ac40 5230MHz Ant1 Peak



Restrict Band NVNT ac40 5230MHz Ant1 Average

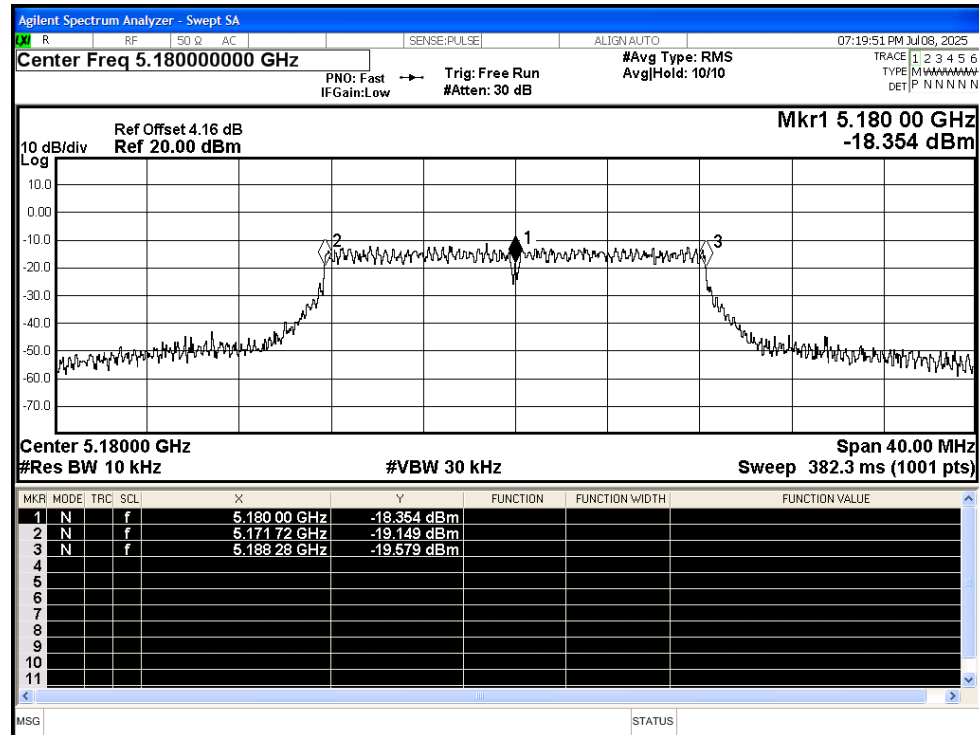


C.5 Frequency Stability

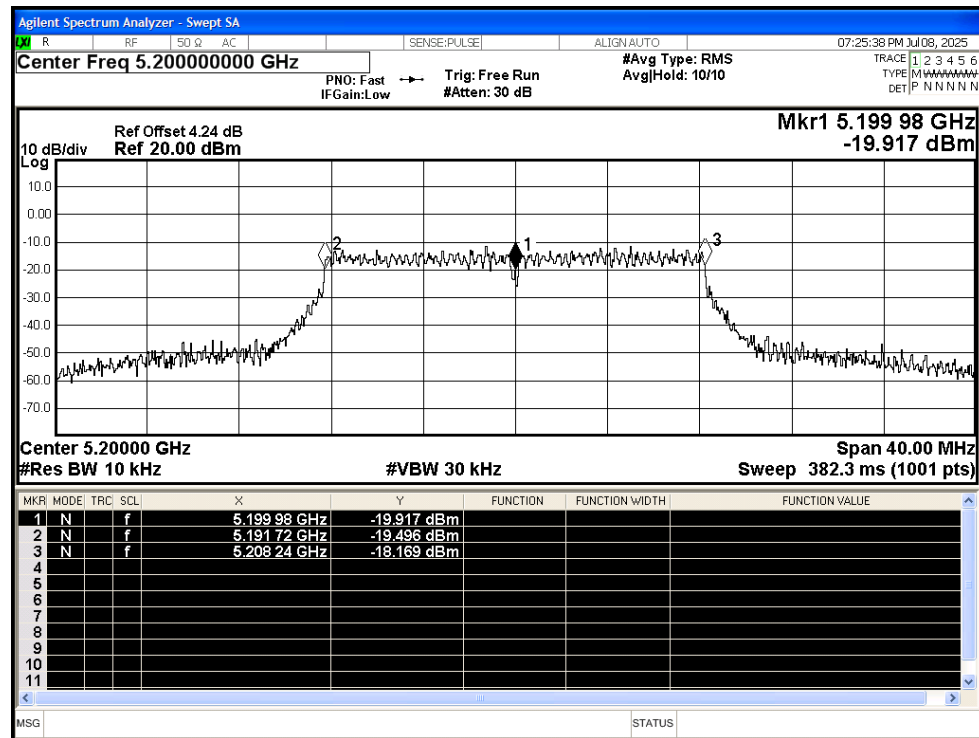
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5180	Ant1	5180	0	0	25	Pass
NVNT	a	5200	Ant1	5199.98	-20000	-3.85	25	Pass
NVNT	a	5240	Ant1	5240	0	0	25	Pass
NVNT	n20	5180	Ant1	5180	0	0	25	Pass
NVNT	n20	5200	Ant1	5200.02	20000	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	5229.96	-40000	-7.65	25	Pass
NVNT	ac20	5180	Ant1	5179.98	-20000	-3.86	25	Pass
NVNT	ac20	5200	Ant1	5200	0	0	25	Pass
NVNT	ac20	5240	Ant1	5240	0	0	25	Pass
NVNT	ac40	5190	Ant1	5190	0	0	25	Pass
NVNT	ac40	5230	Ant1	5230	0	0	25	Pass

Test Graphs

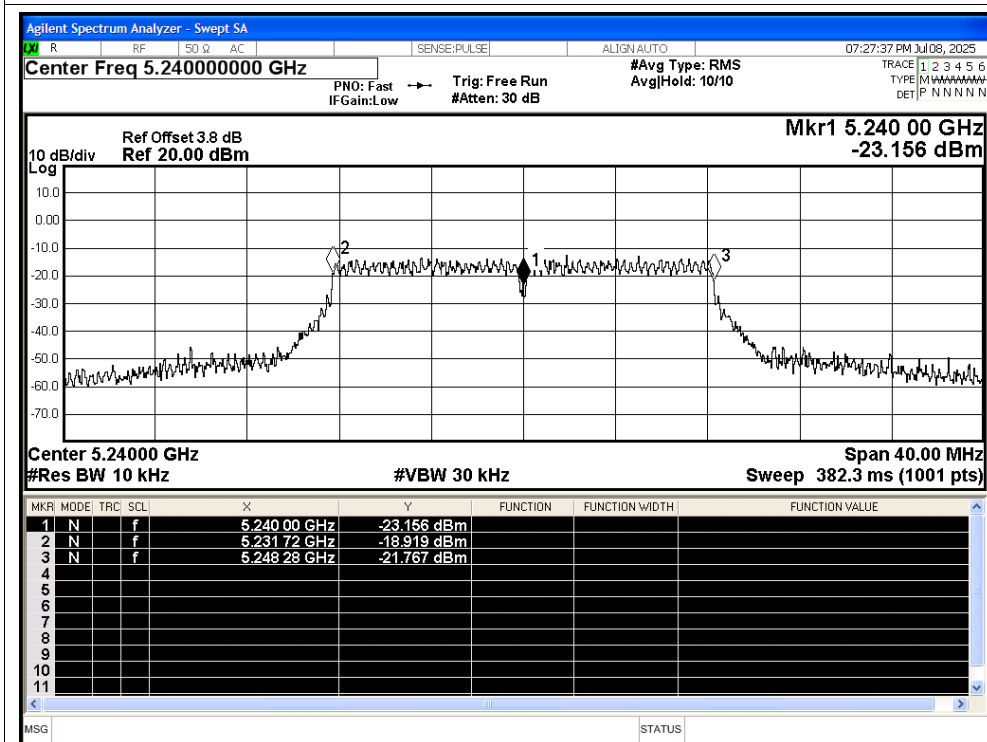
Freq. Stability NVNT a 5180MHz Ant1



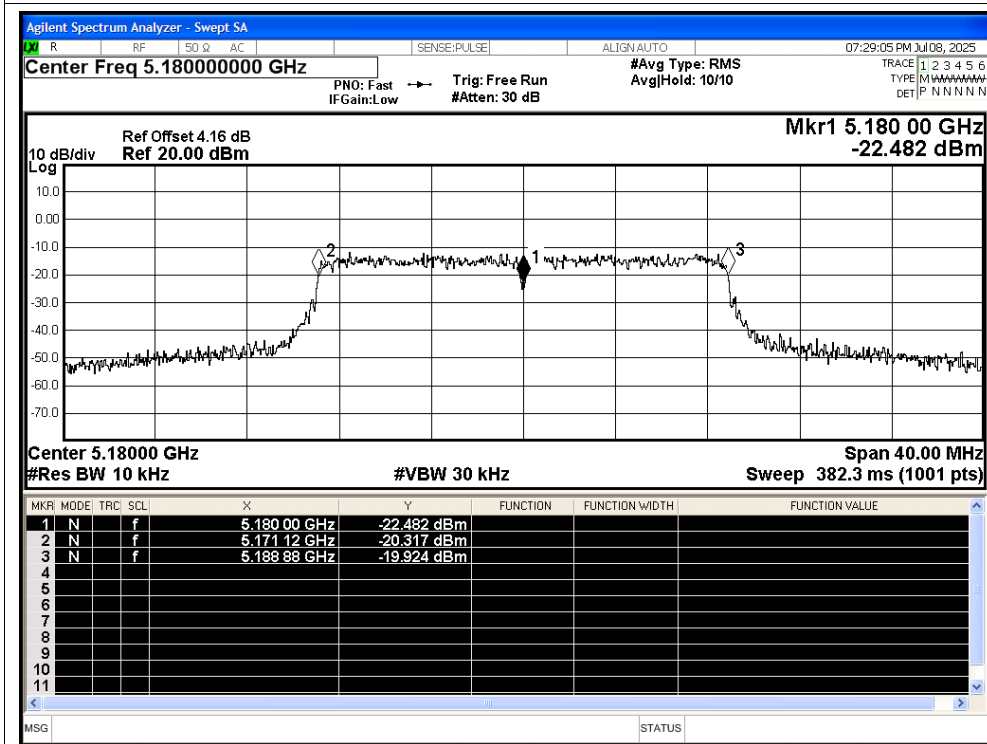
Freq. Stability NVNT a 5200MHz Ant1



Freq. Stability NVNT a 5240MHz Ant1



Freq. Stability NVNT n20 5180MHz Ant1



Agilent Spectrum Analyzer - Swept SA

Center Freq 5.20000000 GHz

Ref Offset 4.24 dB
Ref 20.00 dBm

PN0: Fast
IF Gain: Low

Trig: Free Run
#Atten: 30 dB

#Avg Type: RMS
Avg/Hold: 10/10

Mkr1 5.200 02 GHz
-26.585 dBm

10 dB/div
Log

Center 5.20000 GHz
#Res BW 10 kHz
#VBW 30 kHz

Span 40.00 MHz
Sweep 382.3 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		5.200 02 GHz	-26.585 dBm			
2	N	f		5.191 12 GHz	-18.901 dBm			
3	N	f		5.208 92 GHz	-21.350 dBm			
4								
5								
6								
7								
8								
9								
10								
11								

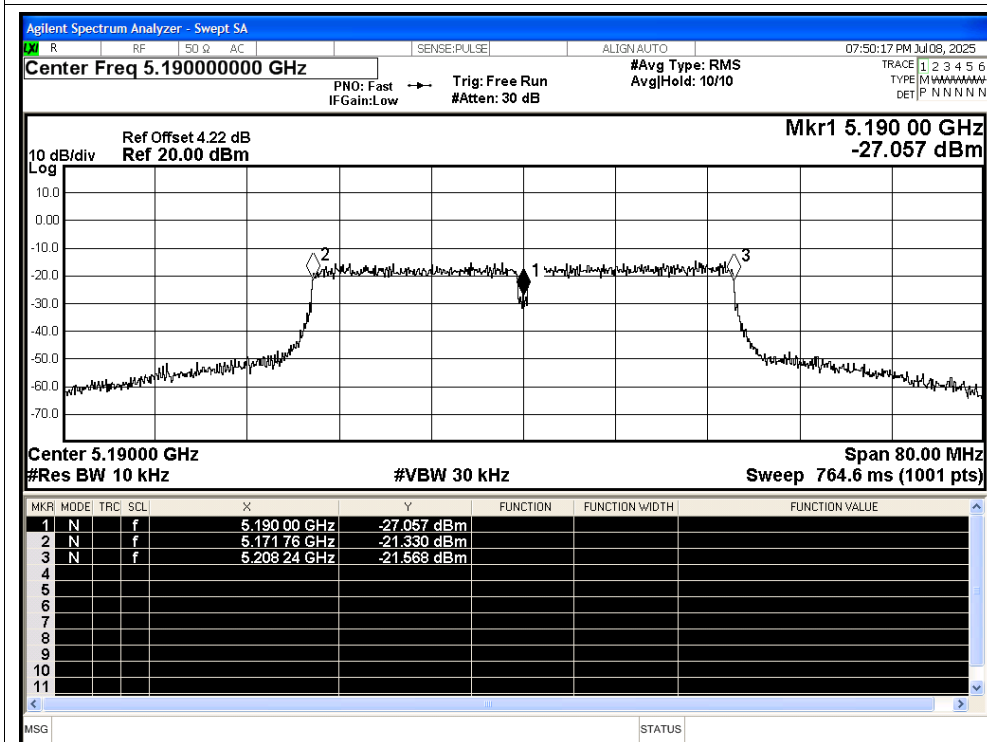
MSG STATUS

Freq. Stability NVNT n20 5240MHz Ant1

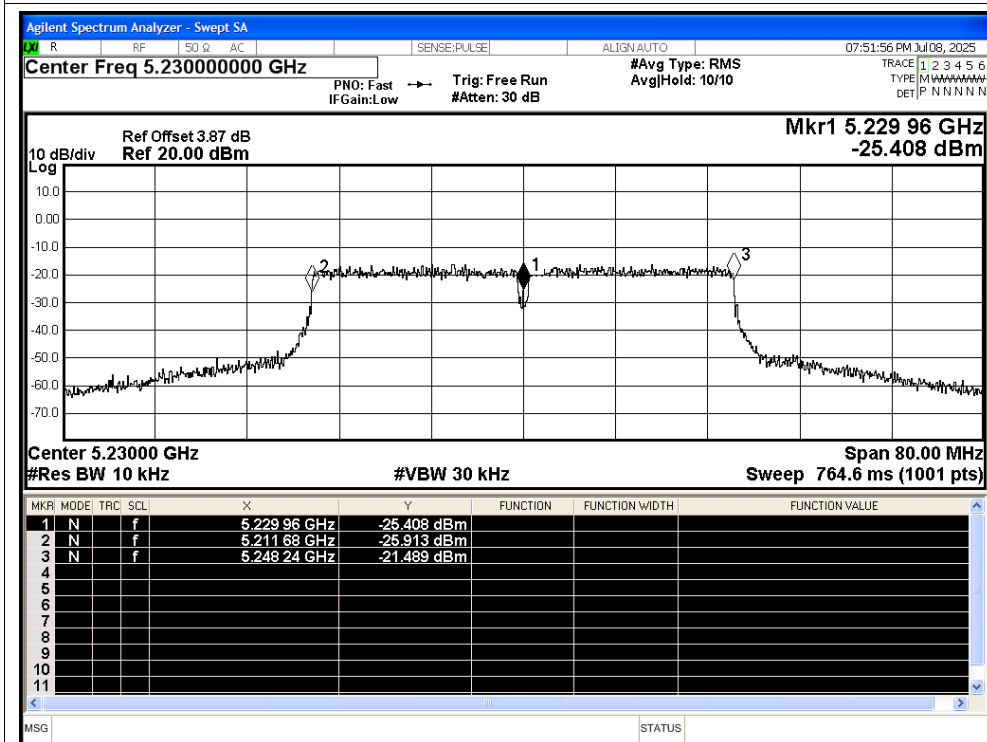
The screenshot displays the Agilent Spectrum Analyzer interface. The main plot shows a swept frequency spectrum from 5.240 GHz to 5.248 GHz. A significant signal peak is visible at 5.240 GHz, labeled with a marker '1' and a value of -23.932 dBm. The plot has a resolution bandwidth (RBW) of 30 kHz and a video bandwidth (VBW) of 30 kHz. The sweep time is 382.3 ms. The reference offset is 3.8 dB, and the reference level is 20.00 dBm. The trace is set to 'Free Run' mode with an attenuation of 30 dB.

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		5.240 00 GHz	-23.932 dBm			
2	N	f		5.231 08 GHz	-22.241 dBm			
3	N	f		5.248 92 GHz	-22.462 dBm			

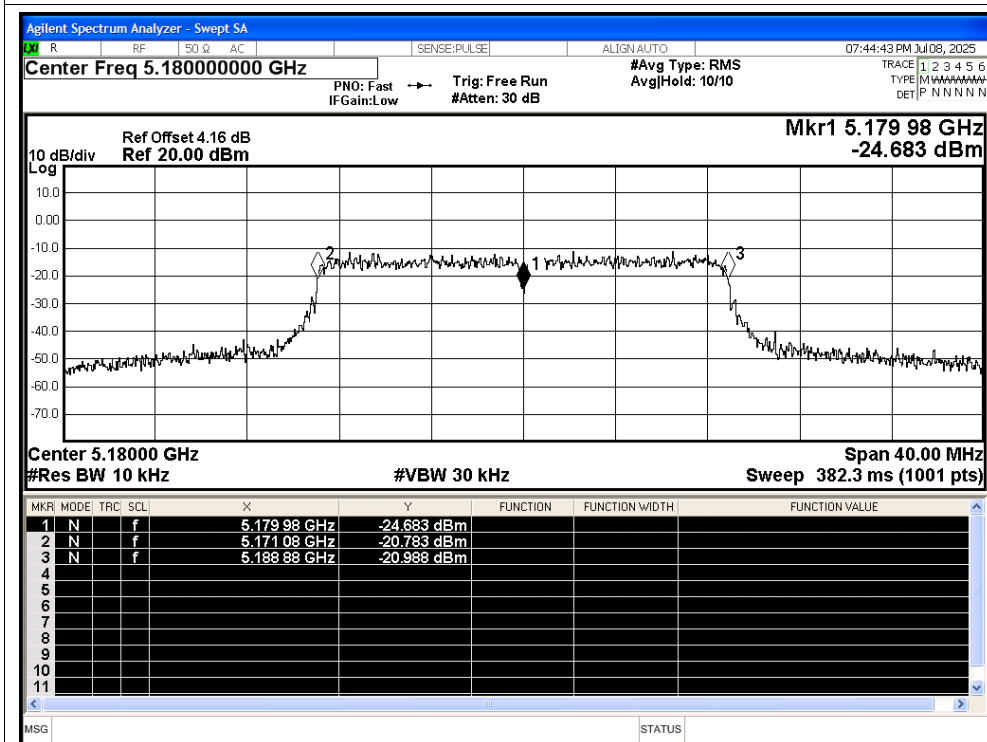
Freq. Stability NVNT n40 5190MHz Ant1



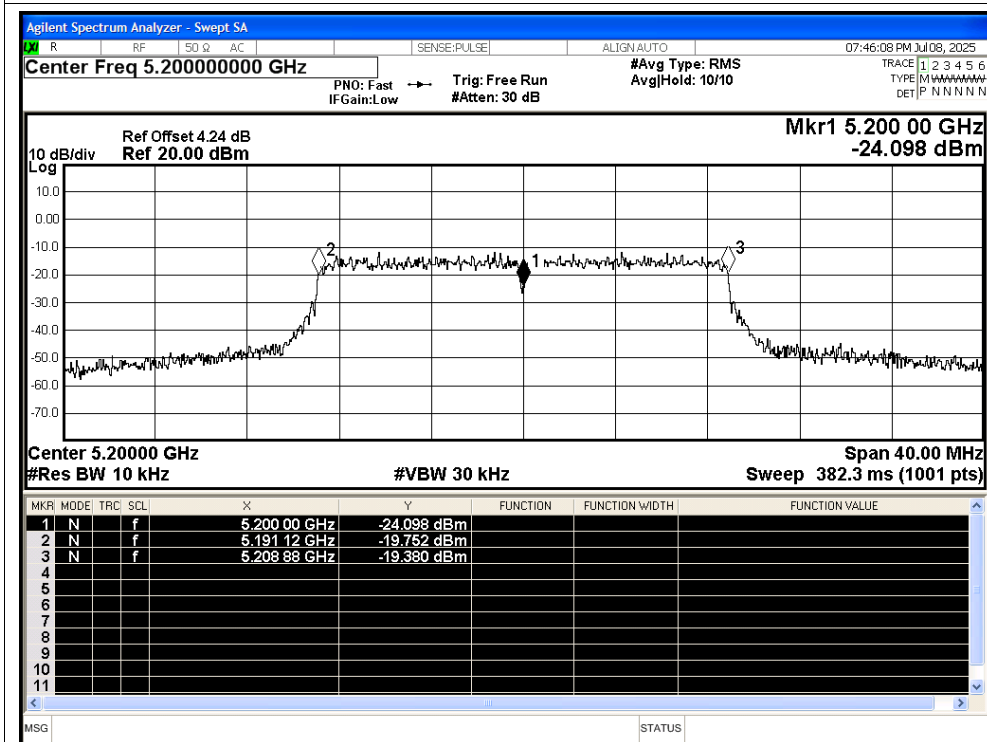
Freq. Stability NVNT n40 5230MHz Ant1



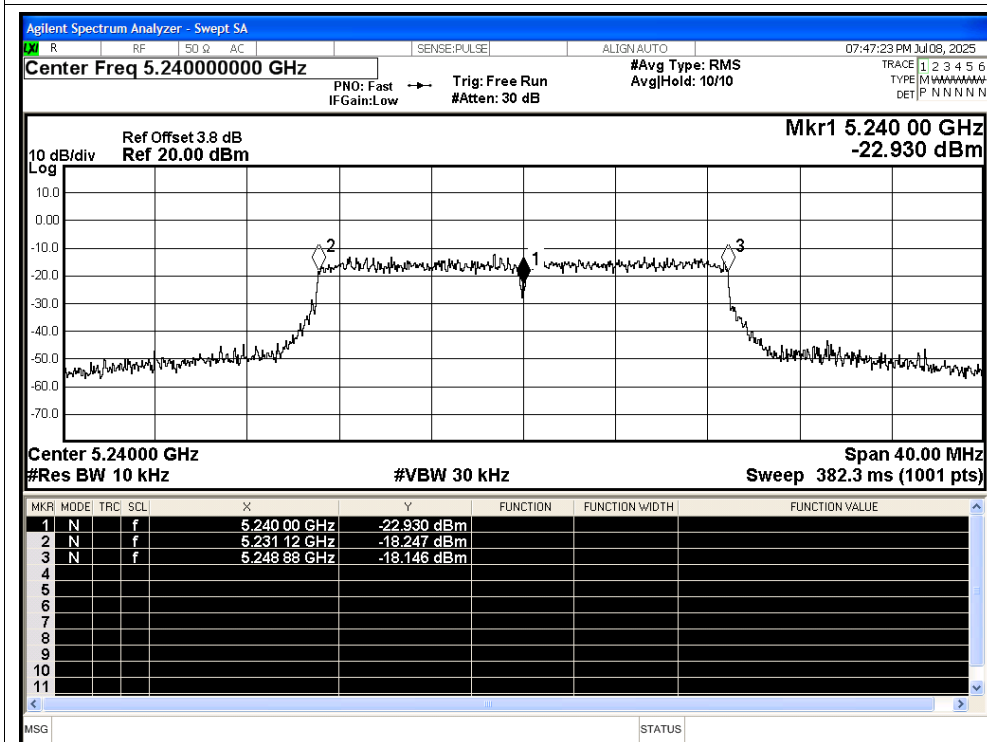
Freq. Stability NVNT ac20 5180MHz Ant1



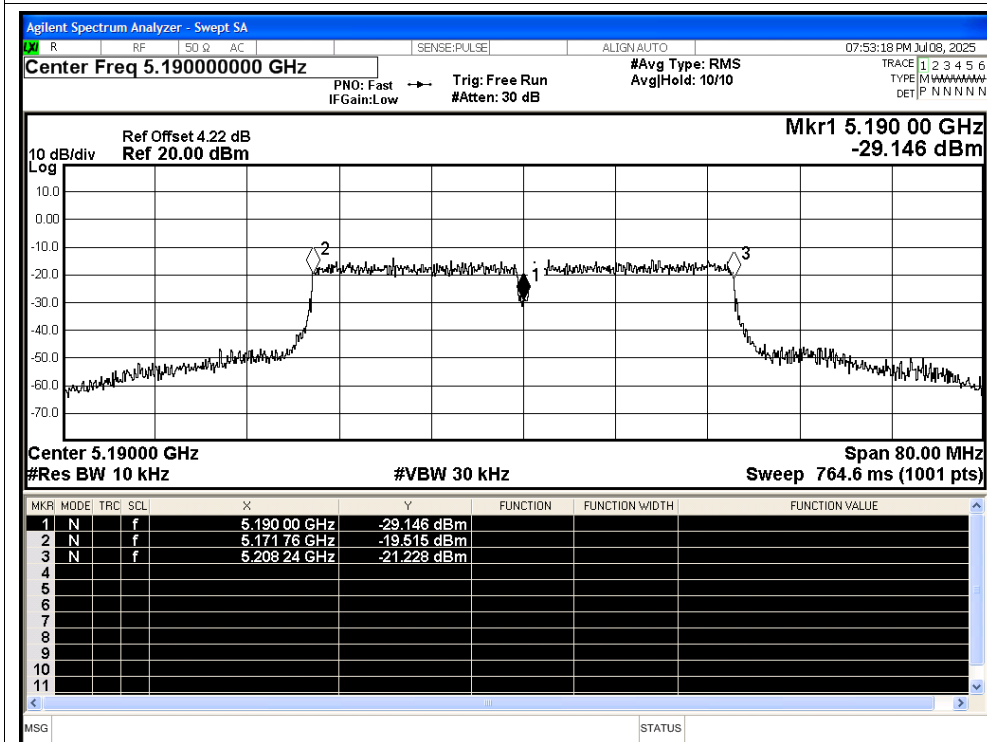
Freq. Stability NVNT ac20 5200MHz Ant1

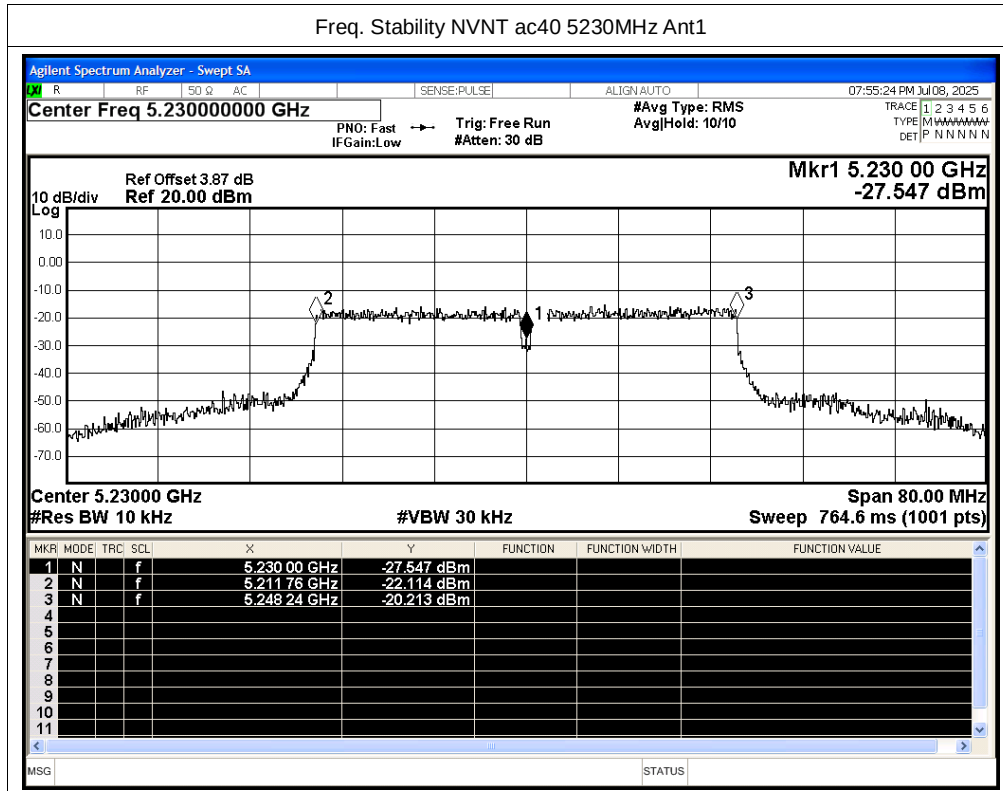


Freq. Stability NVNT ac20 5240MHz Ant1



Freq. Stability NVNT ac40 5190MHz Ant1



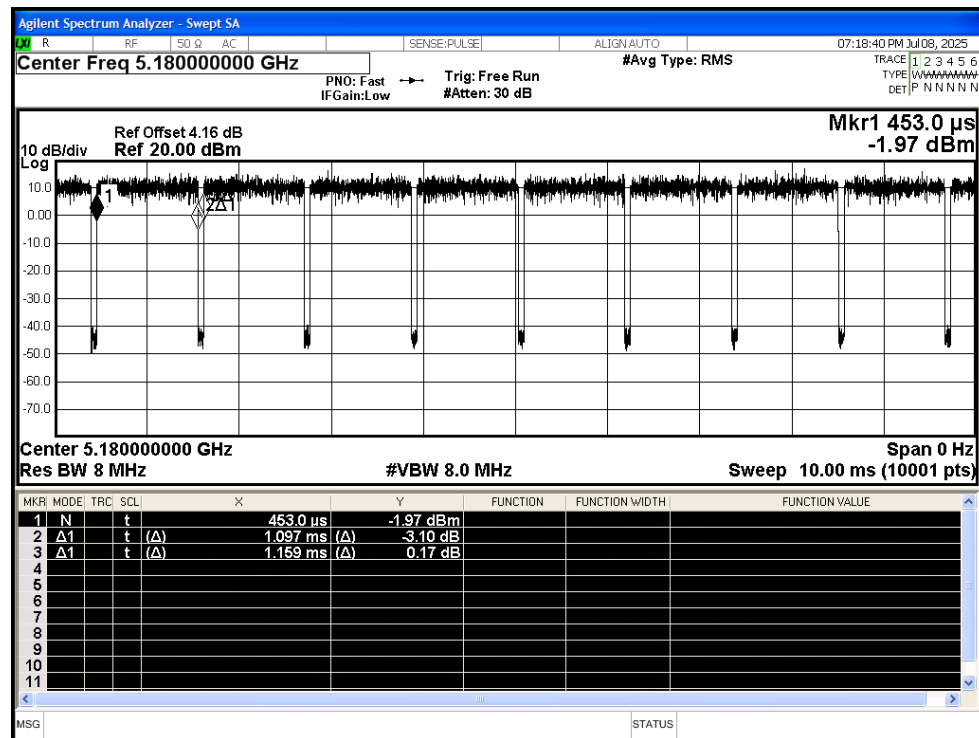


C.6 Duty Cycle

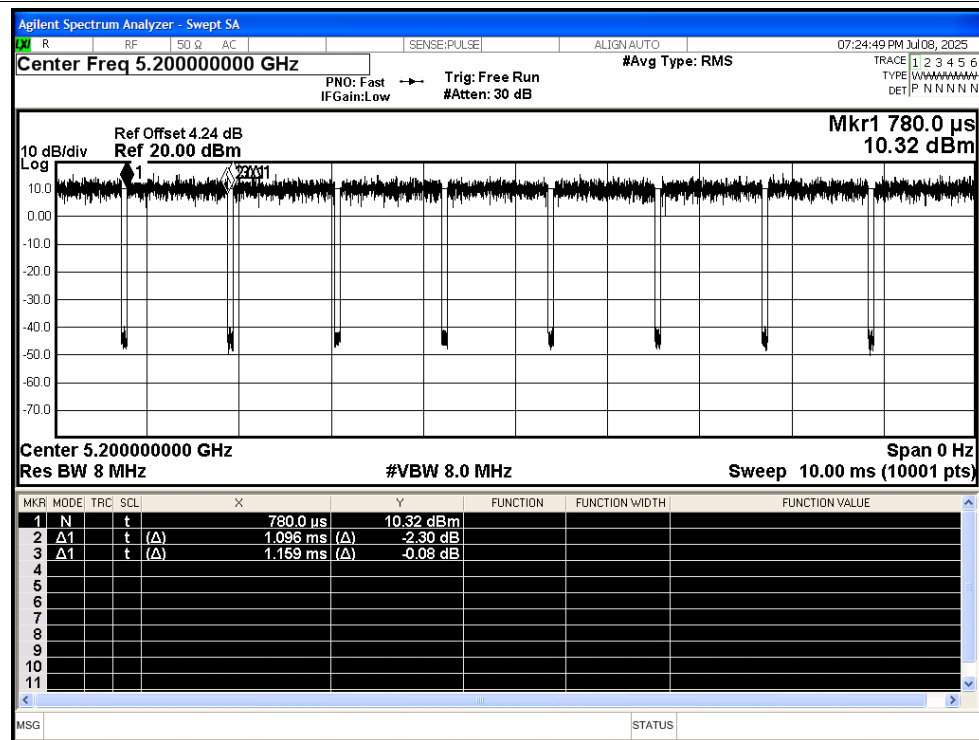
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	94.65	0.24	0.91
NVNT	a	5200	Ant1	94.56	0.24	0.91
NVNT	a	5240	Ant1	94.56	0.24	0.91
NVNT	n20	5180	Ant1	93.77	0.28	1.07
NVNT	n20	5200	Ant1	93.77	0.28	1.07
NVNT	n20	5240	Ant1	93.77	0.28	1.07
NVNT	n40	5190	Ant1	88.14	0.55	2.14
NVNT	n40	5230	Ant1	88.14	0.55	2.14
NVNT	ac20	5180	Ant1	93.72	0.28	1.06
NVNT	ac20	5200	Ant1	93.82	0.28	1.06
NVNT	ac20	5240	Ant1	93.72	0.28	1.06
NVNT	ac40	5190	Ant1	88.48	0.53	2.1
NVNT	ac40	5230	Ant1	88.48	0.53	2.1

Test Graphs

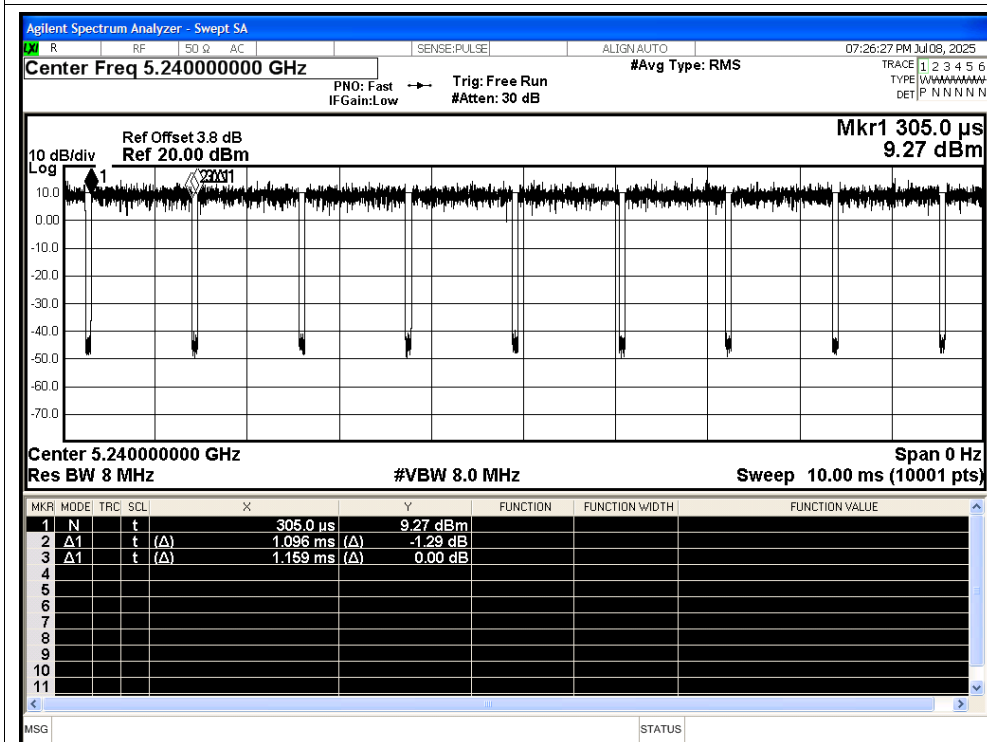
Duty Cycle NVNT a 5180MHz Ant1



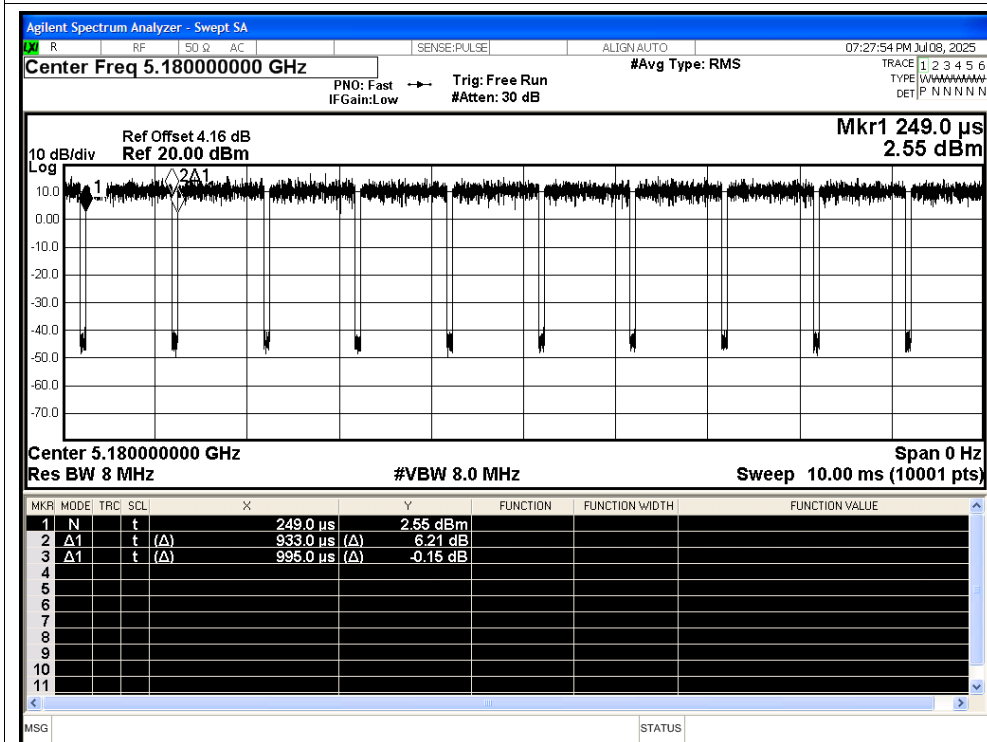
Duty Cycle NVNT a 5200MHz Ant1



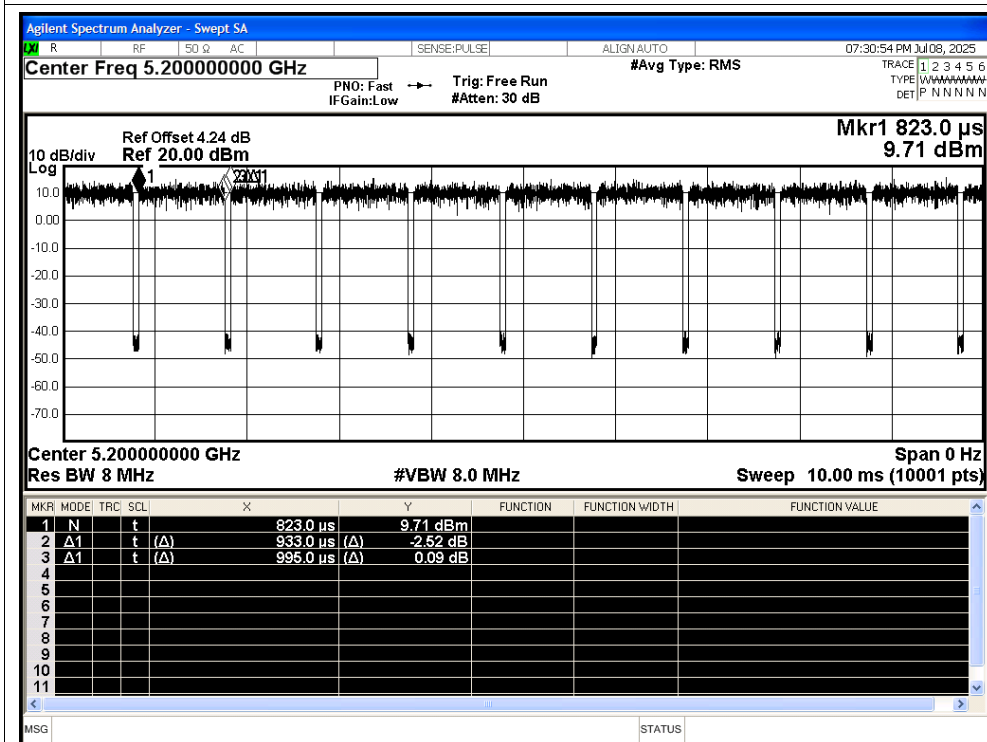
Duty Cycle NVNT a 5240MHz Ant1



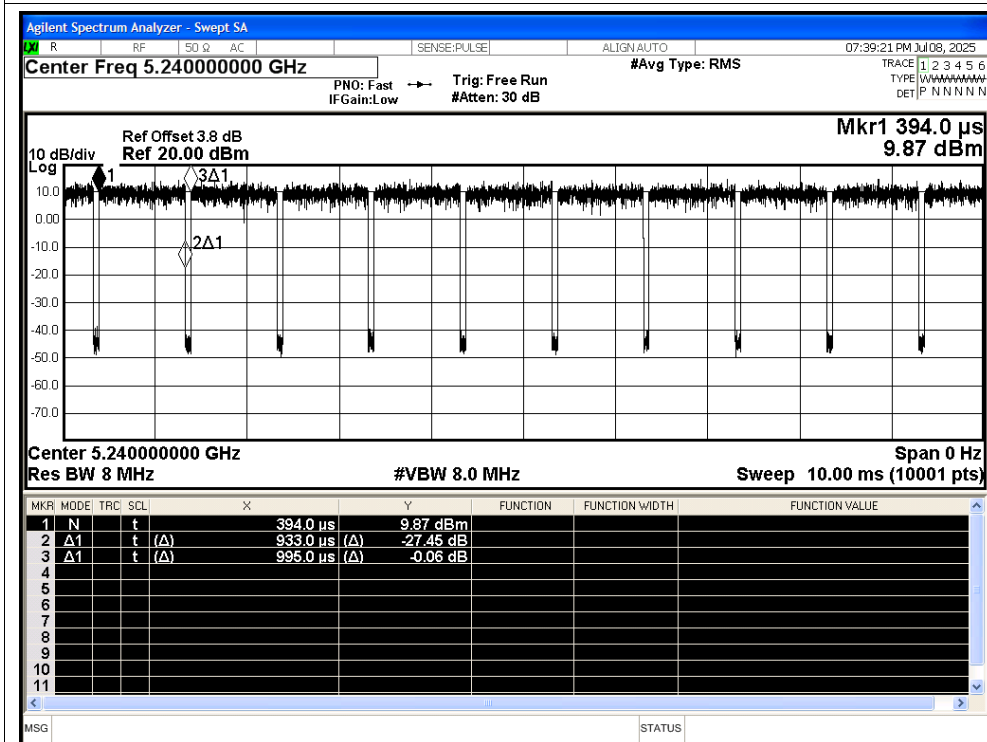
Duty Cycle NVNT n20 5180MHz Ant1



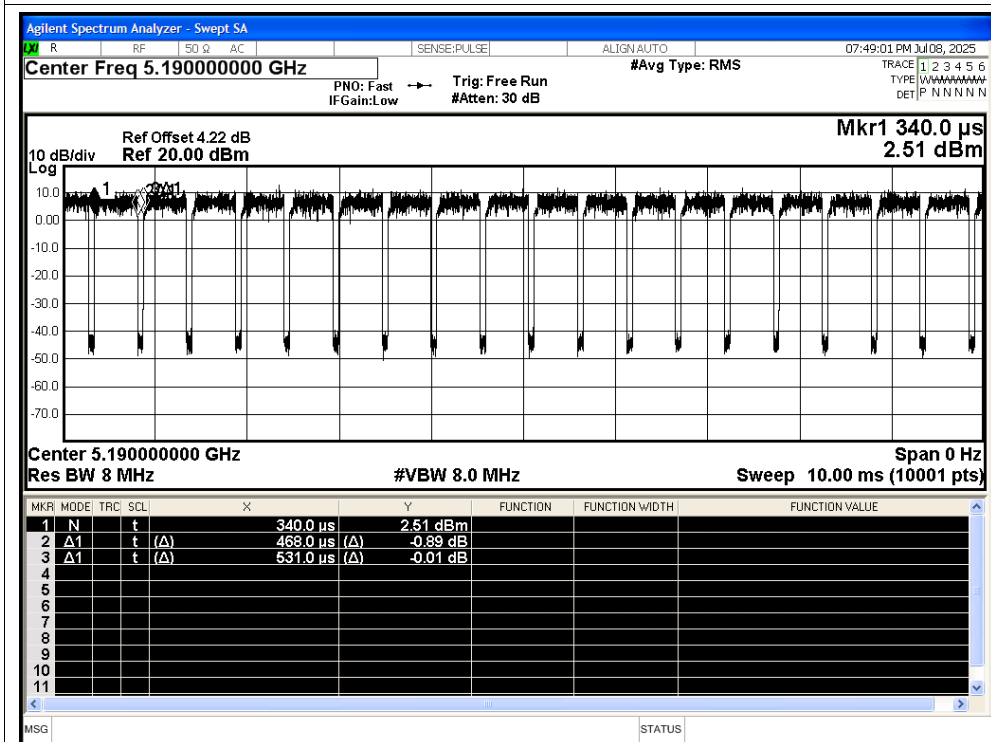
Duty Cycle NVNT n20 5200MHz Ant1



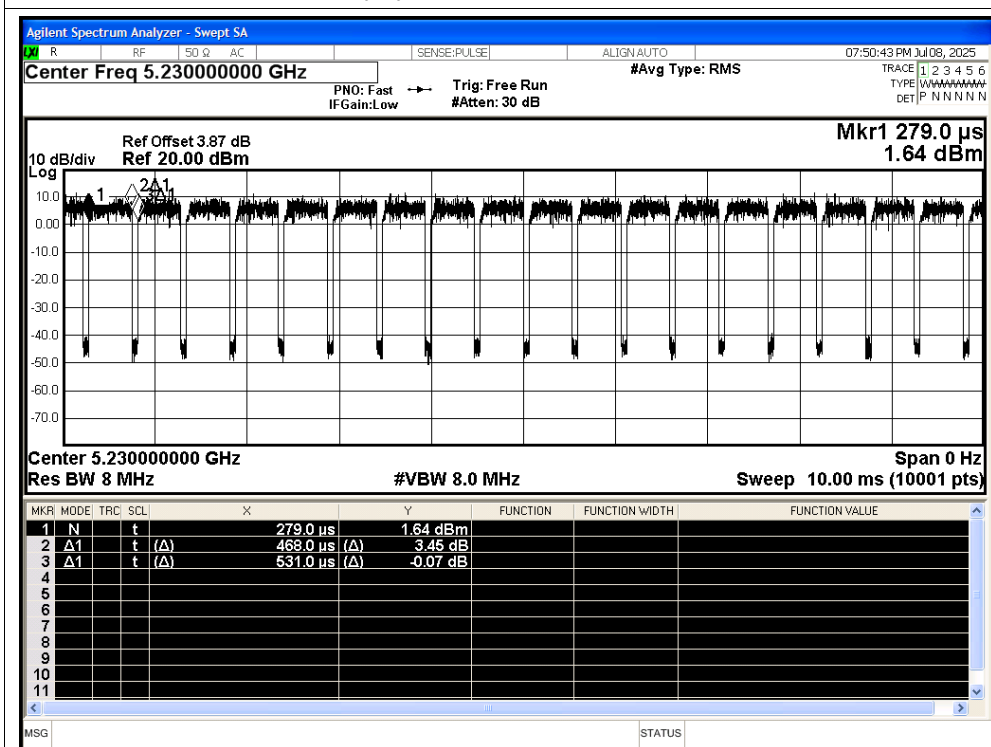
Duty Cycle NVNT n20 5240MHz Ant1



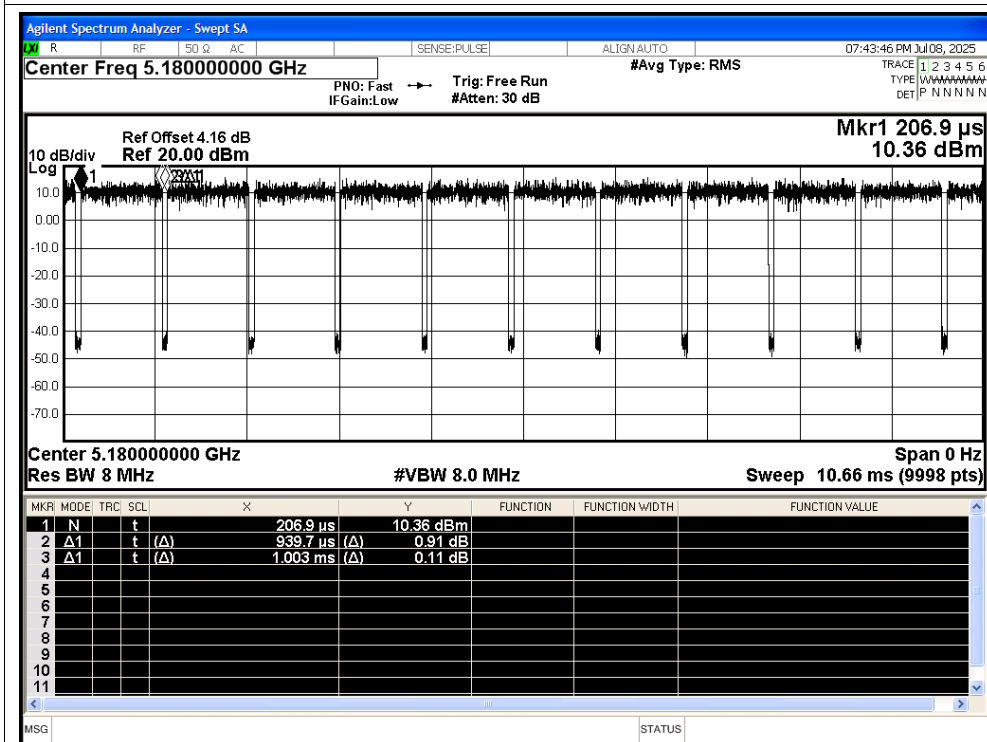
Duty Cycle NVNT n40 5190MHz Ant1



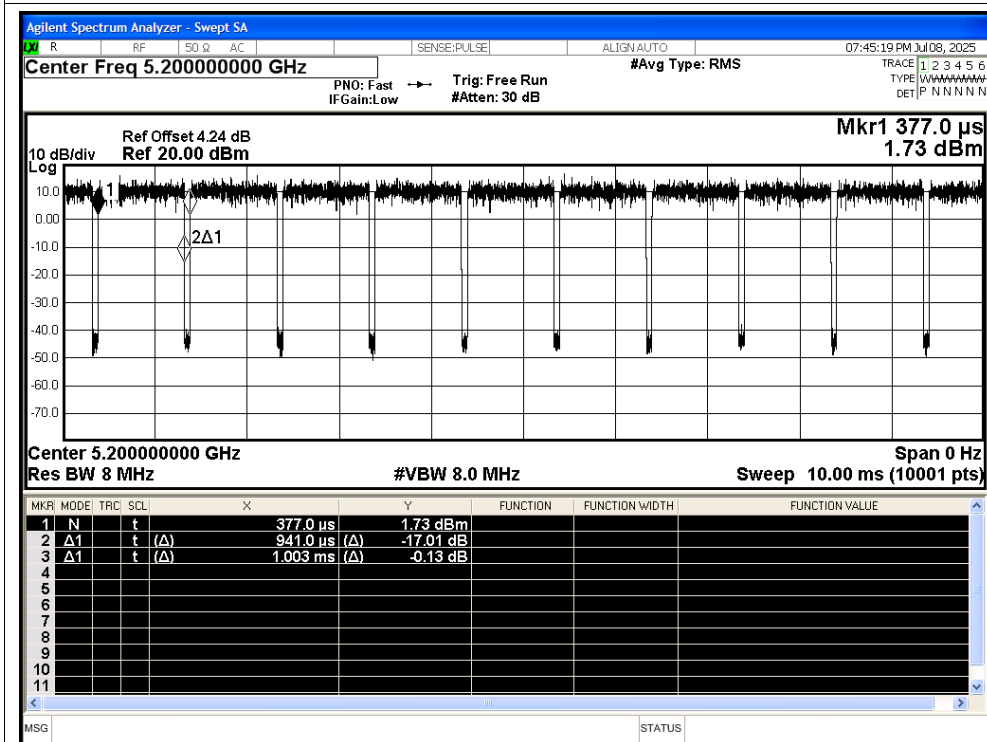
Duty Cycle NVNT n40 5230MHz Ant1



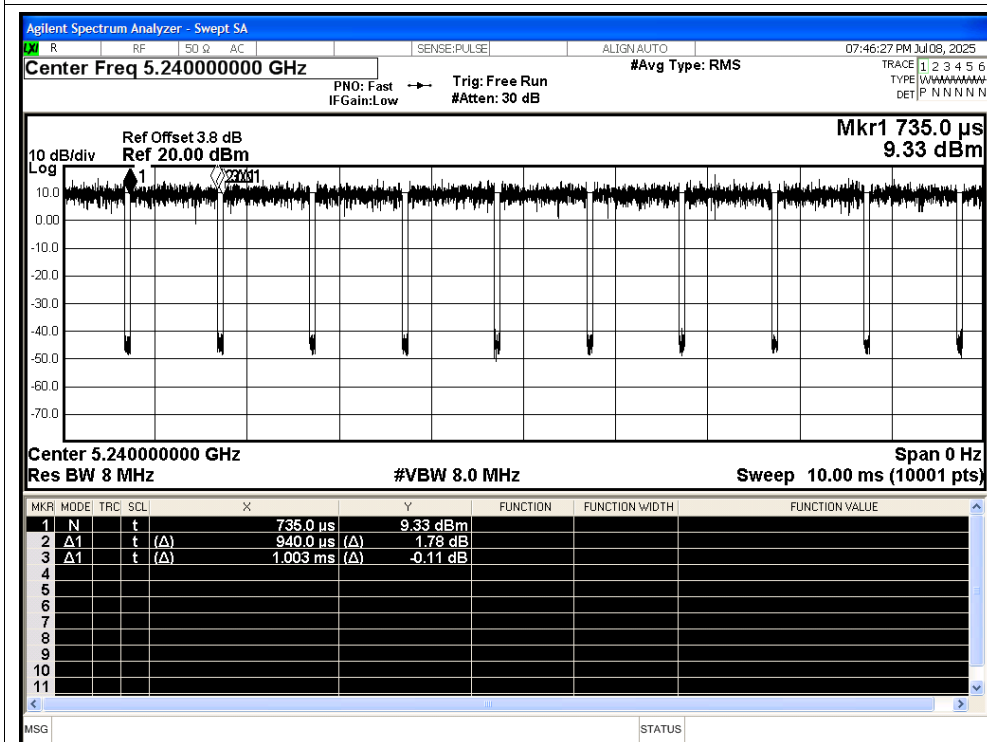
Duty Cycle NVNT ac20 5180MHz Ant1



Duty Cycle NVNT ac20 5200MHz Ant1



Duty Cycle NVNT ac20 5240MHz Ant1



Duty Cycle NVNT ac40 5190MHz Ant1

