



Appendix E

RF Test Data for 5.3GWIFI(Conducted Measurement)

Product Name: Smart Phone

Test Model: HPPL67A

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Can Kun
Supervised by:	Nick Peng





E.1 -26dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5260	Ant	28.825	---	Pass
NVNT	a	5300	Ant	27.176	---	Pass
NVNT	a	5320	Ant	26.98	---	Pass
NVNT	n20	5260	Ant	27.246	---	Pass
NVNT	n20	5300	Ant	27.908	---	Pass
NVNT	n20	5320	Ant	28.293	---	Pass
NVNT	n40	5270	Ant	44.231	---	Pass
NVNT	n40	5310	Ant	44.962	---	Pass
NVNT	ac20	5260	Ant	28.013	---	Pass
NVNT	ac20	5300	Ant	29.35	---	Pass
NVNT	ac20	5320	Ant	29.584	---	Pass
NVNT	ac40	5270	Ant	44.407	---	Pass
NVNT	ac40	5310	Ant	46.921	---	Pass

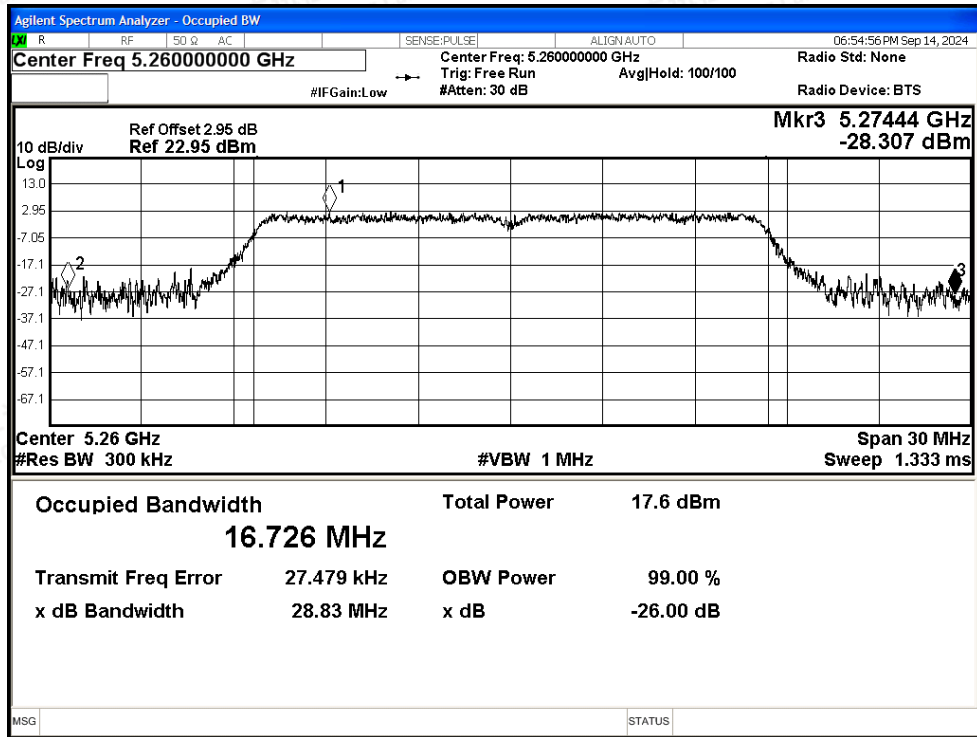


Shenzhen LCS Compliance Testing Laboratory Ltd.
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity

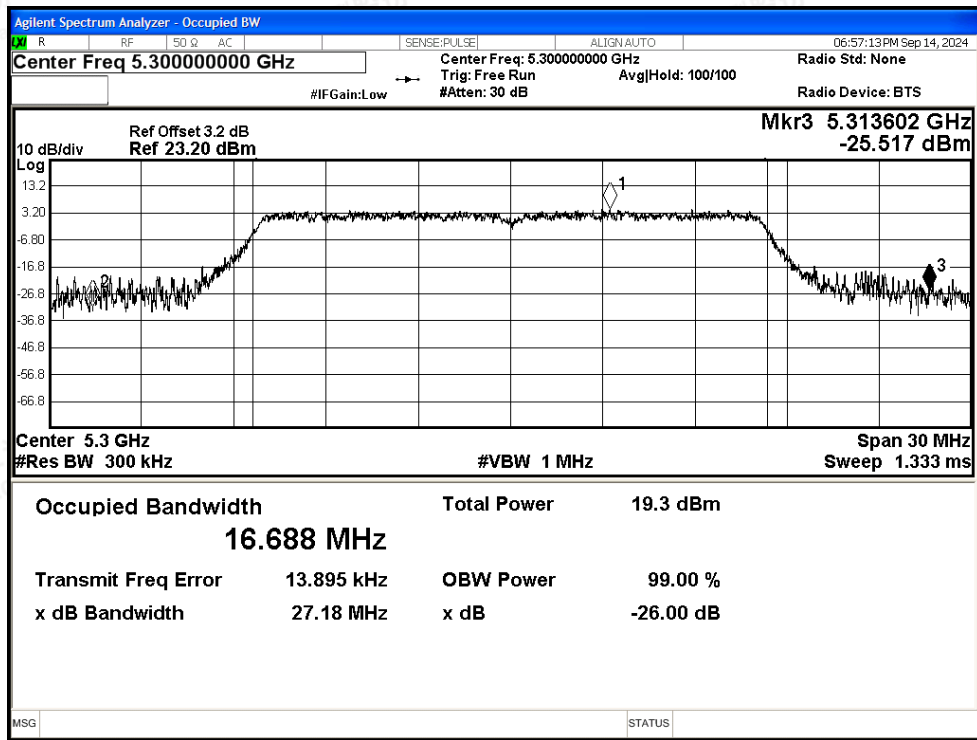


Test Graphs

-26dB Bandwidth NVNT a 5260MHz Ant

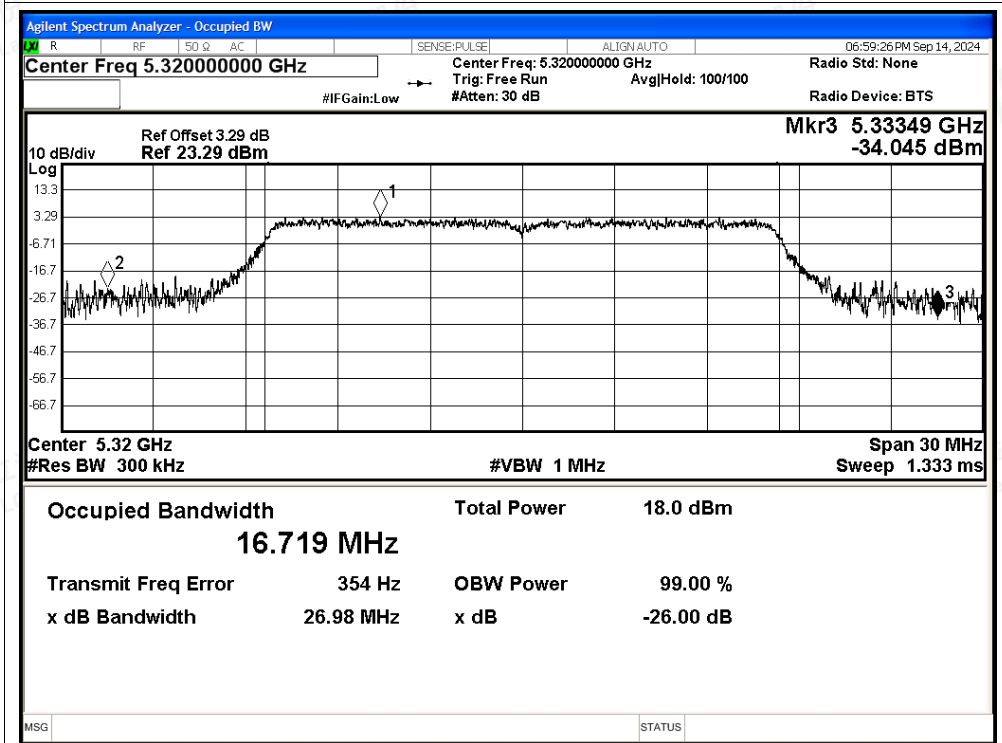


-26dB Bandwidth NVNT a 5300MHz Ant

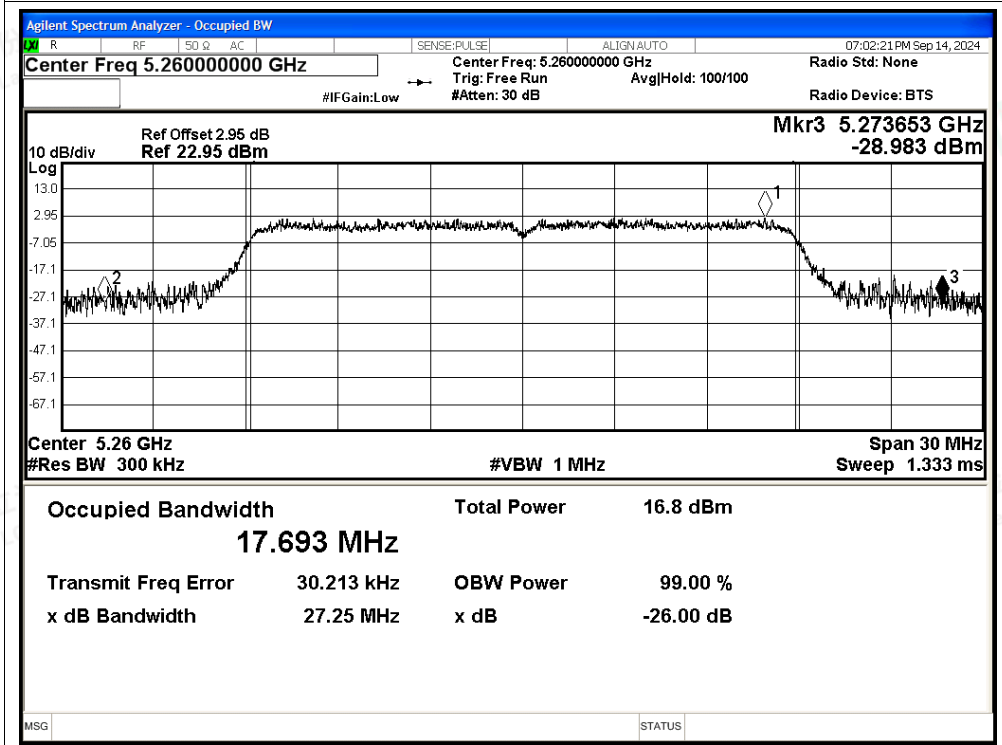




-26dB Bandwidth NVNT a 5320MHz Ant

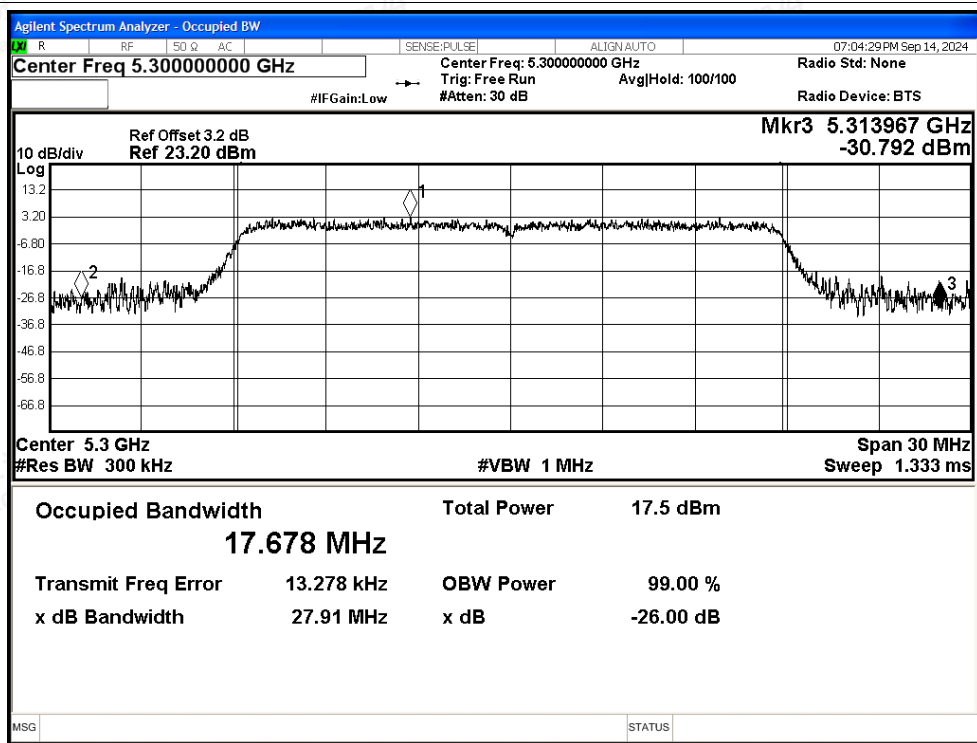


-26dB Bandwidth NVNT n20 5260MHz Ant

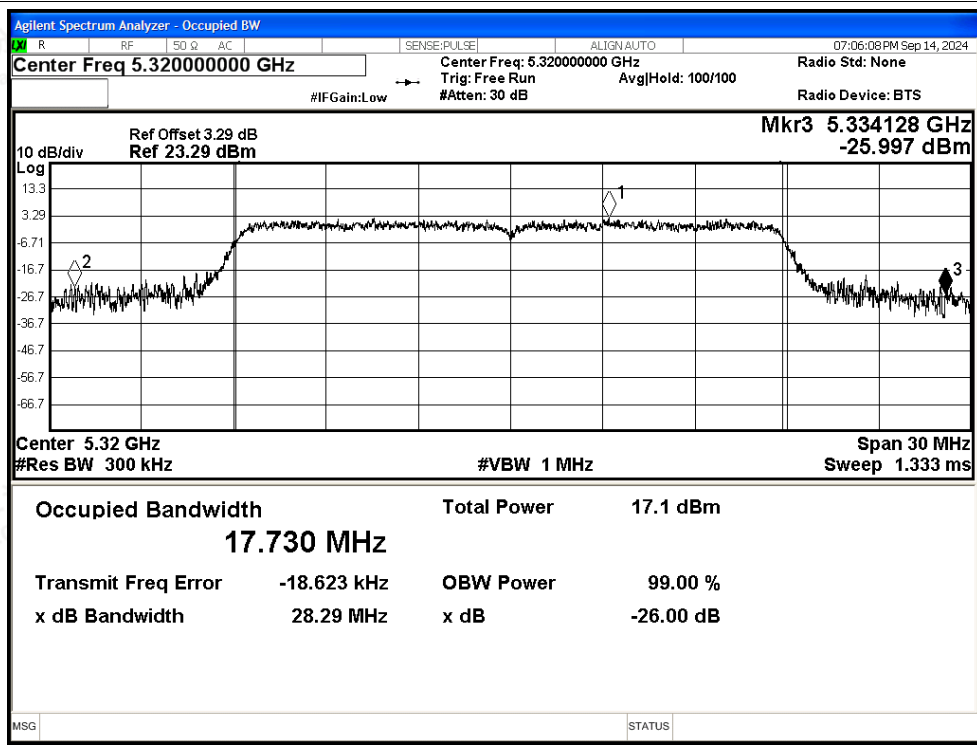




-26dB Bandwidth NVNT n20 5300MHz Ant

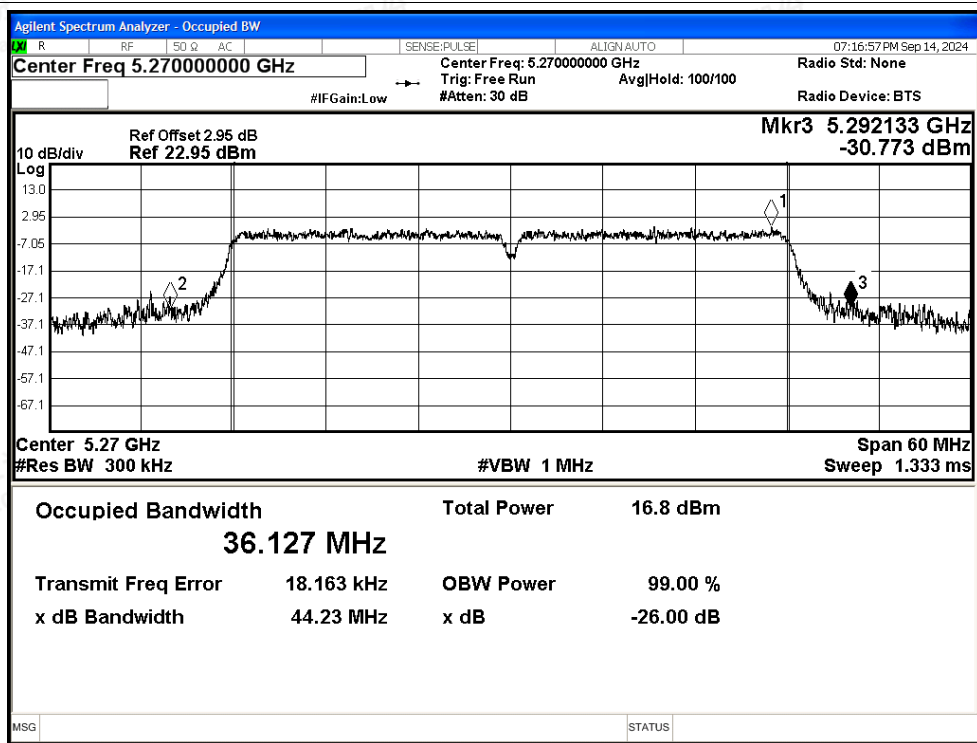


-26dB Bandwidth NVNT n20 5320MHz Ant

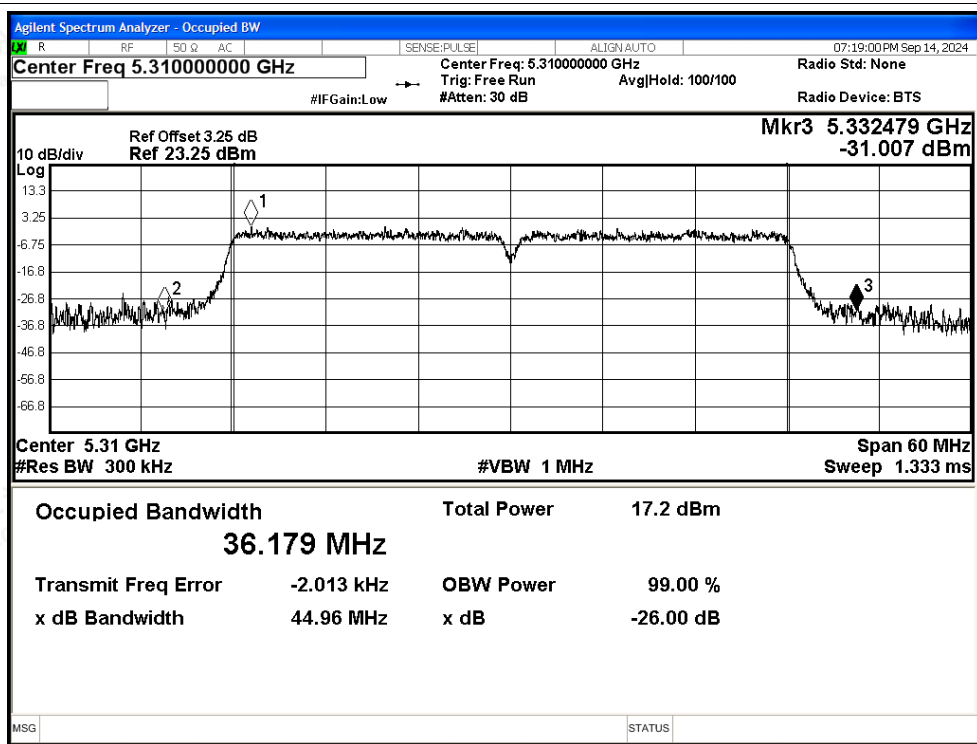




-26dB Bandwidth NVNT n40 5270MHz Ant

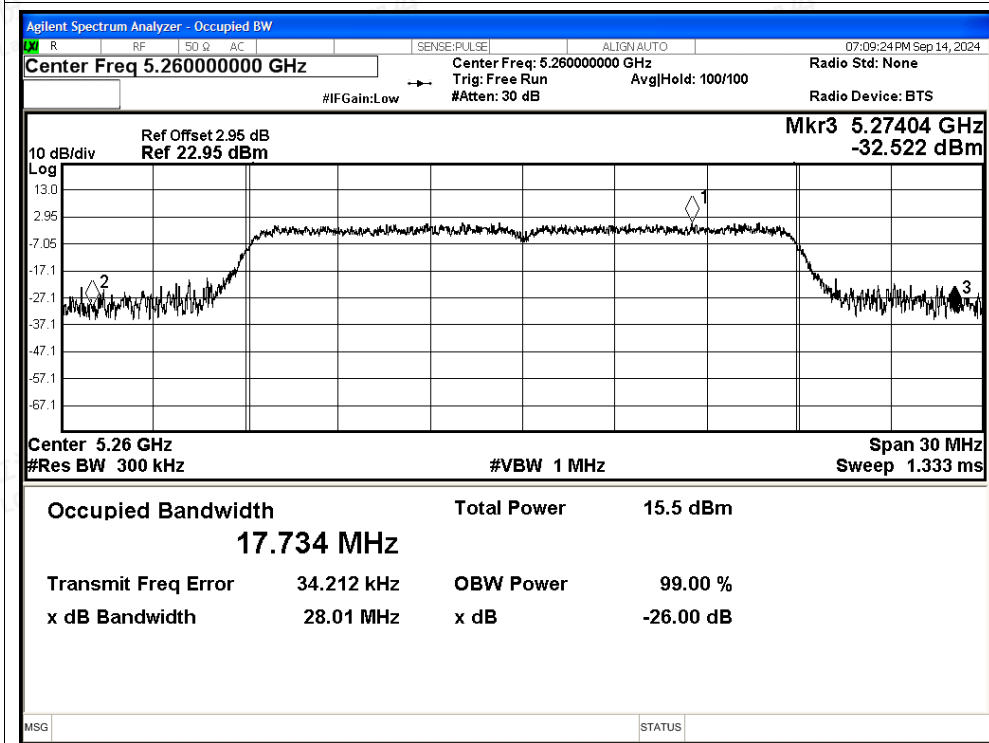


-26dB Bandwidth NVNT n40 5310MHz Ant

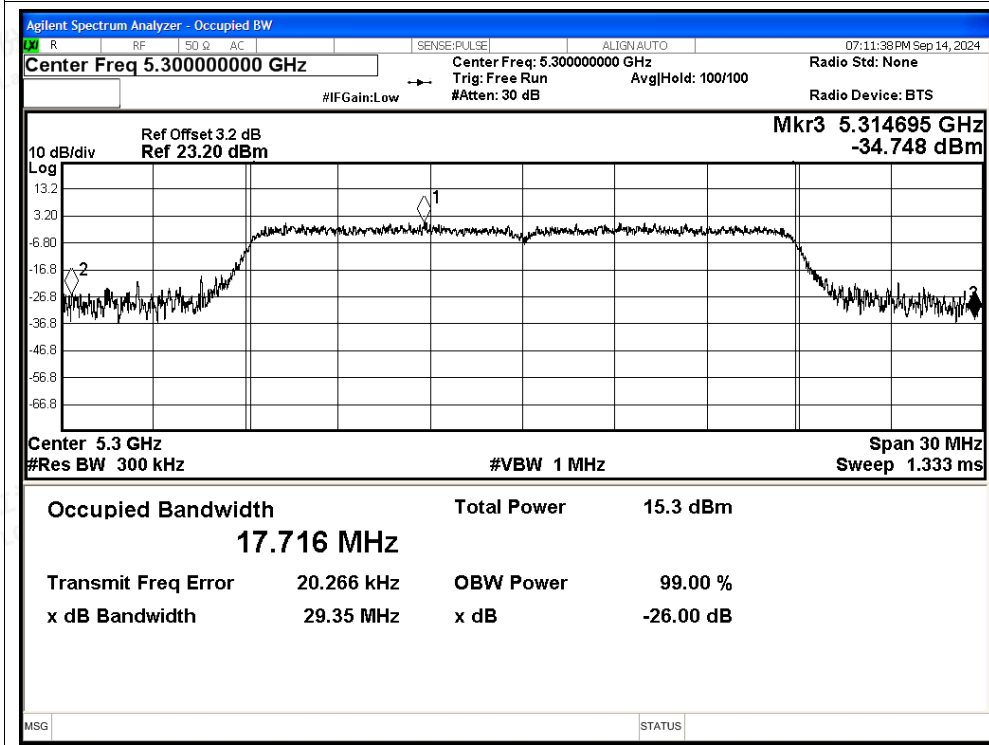




-26dB Bandwidth NVNT ac20 5260MHz Ant

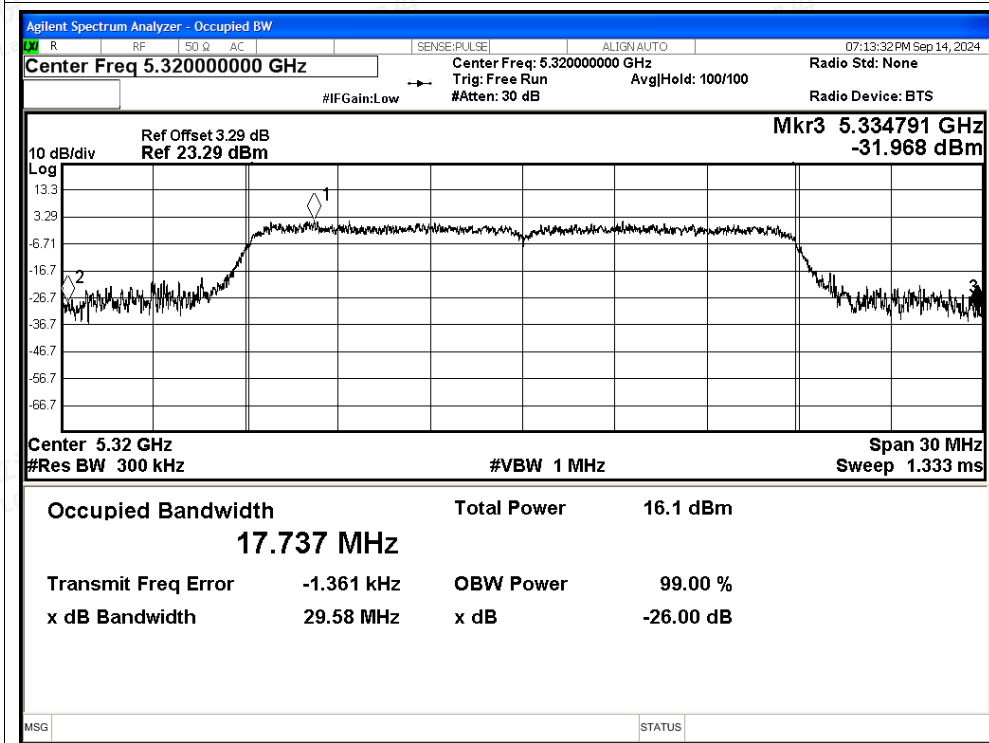


-26dB Bandwidth NVNT ac20 5300MHz Ant

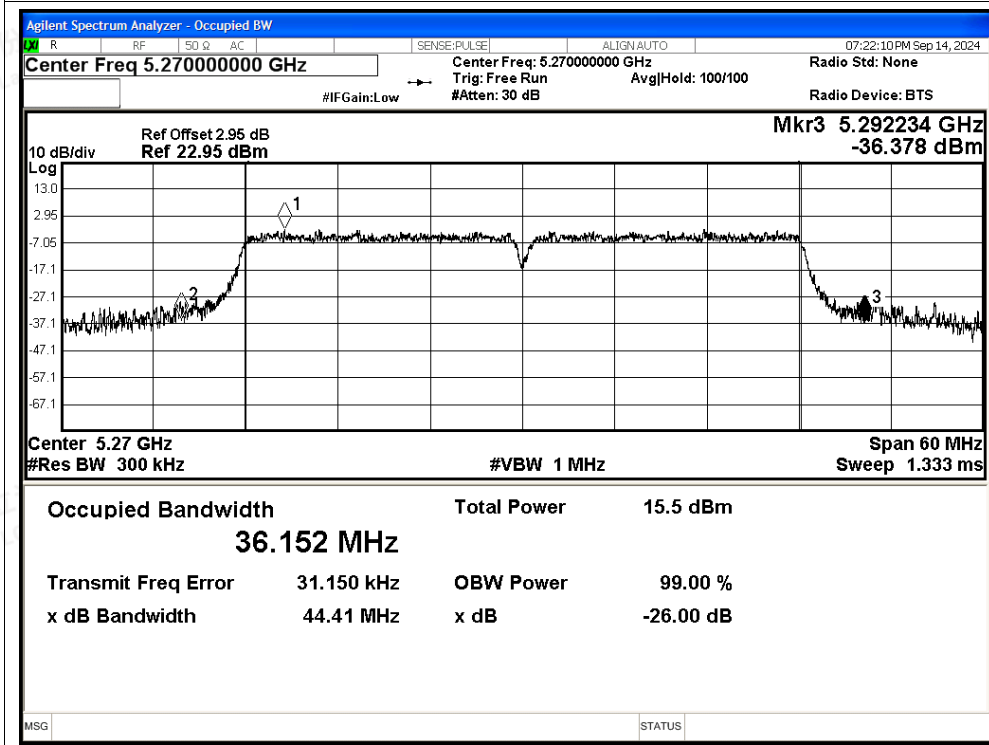


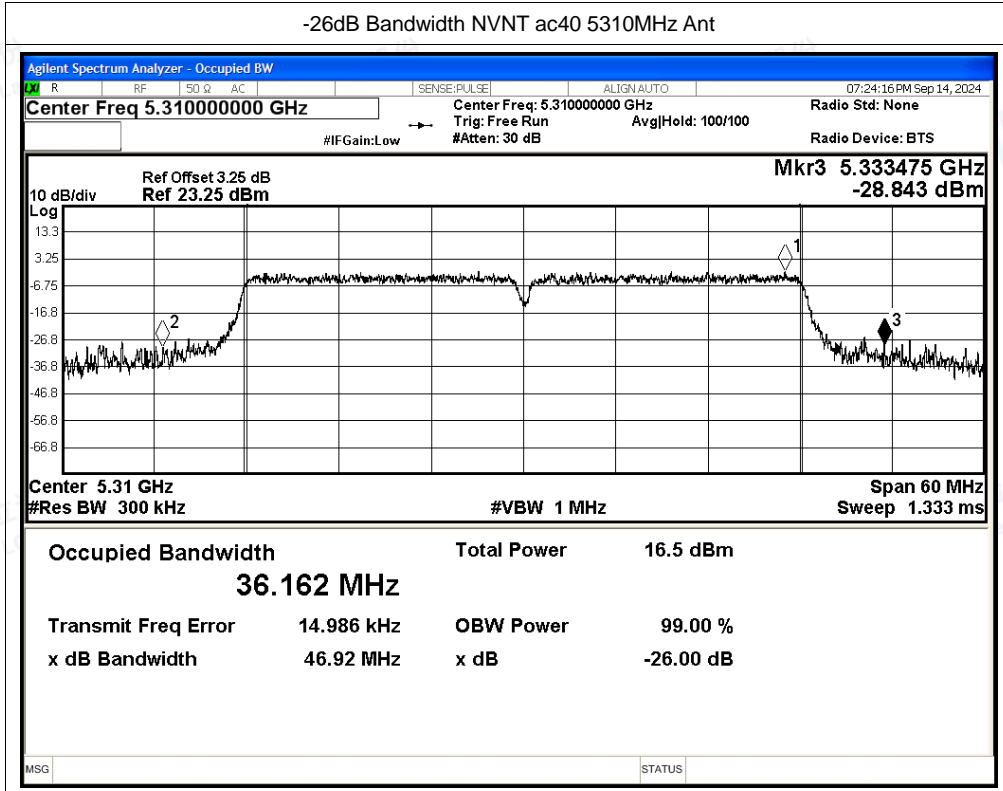


-26dB Bandwidth NVNT ac20 5320MHz Ant



-26dB Bandwidth NVNT ac40 5270MHz Ant







E.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	Ant	12.62	0.24	12.86	24	Pass
NVNT	a	5300	Ant	12.41	0.24	12.65	24	Pass
NVNT	a	5320	Ant	12.25	0.24	12.49	24	Pass
NVNT	n20	5260	Ant	11.28	0.12	11.4	24	Pass
NVNT	n20	5300	Ant	11.92	0.12	12.04	24	Pass
NVNT	n20	5320	Ant	11.62	0.12	11.74	24	Pass
NVNT	n40	5270	Ant	11.01	0.12	11.13	24	Pass
NVNT	n40	5310	Ant	11.46	0.12	11.58	24	Pass
NVNT	ac20	5260	Ant	10.02	0.12	10.14	24	Pass
NVNT	ac20	5300	Ant	10.73	0.12	10.85	24	Pass
NVNT	ac20	5320	Ant	10.52	0.12	10.64	24	Pass
NVNT	ac40	5270	Ant	9.7	0.12	9.82	24	Pass
NVNT	ac40	5310	Ant	10.63	0.12	10.75	24	Pass





E.3 Maximum Power Spectral Density Level

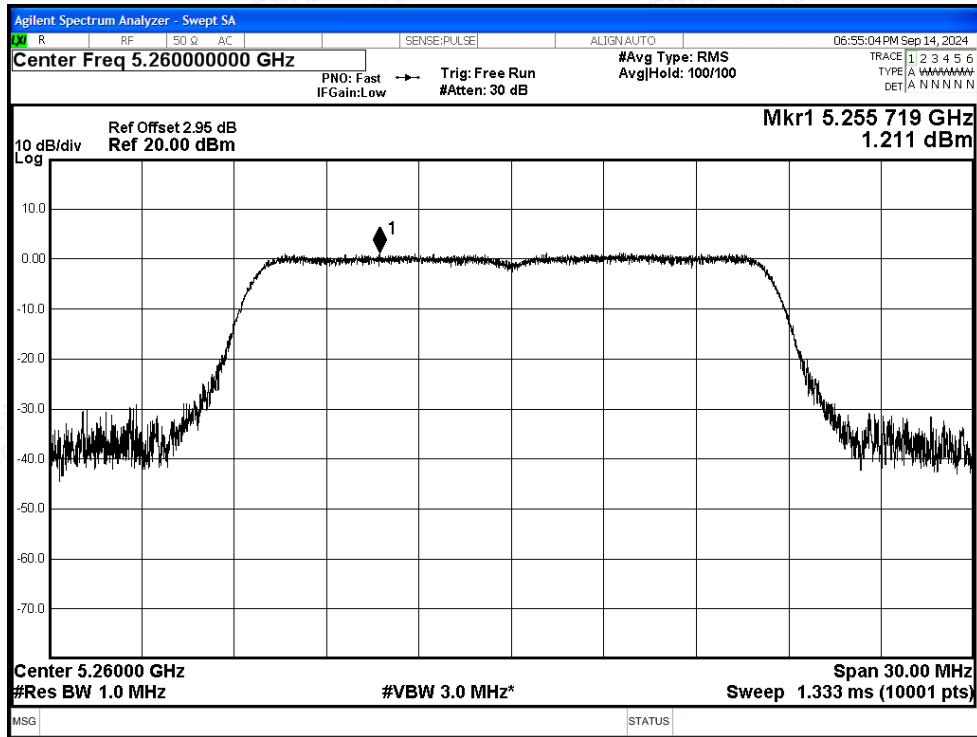
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/MHz)	Duty Factor (dB)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5260	Ant	1.21	0.24	1.45	11	Pass
NVNT	a	5300	Ant	3.09	0.24	3.33	11	Pass
NVNT	a	5320	Ant	1.89	0.24	2.13	11	Pass
NVNT	n20	5260	Ant	0.79	0.12	0.91	11	Pass
NVNT	n20	5300	Ant	0.98	0.12	1.1	11	Pass
NVNT	n20	5320	Ant	0.84	0.12	0.96	11	Pass
NVNT	n40	5270	Ant	-2.49	0.12	-2.37	11	Pass
NVNT	n40	5310	Ant	-2.21	0.12	-2.09	11	Pass
NVNT	ac20	5260	Ant	-0.69	0.12	-0.57	11	Pass
NVNT	ac20	5300	Ant	-1.15	0.12	-1.03	11	Pass
NVNT	ac20	5320	Ant	-0.31	0.12	-0.19	11	Pass
NVNT	ac40	5270	Ant	-3.9	0.12	-3.78	11	Pass
NVNT	ac40	5310	Ant	-3.07	0.12	-2.95	11	Pass



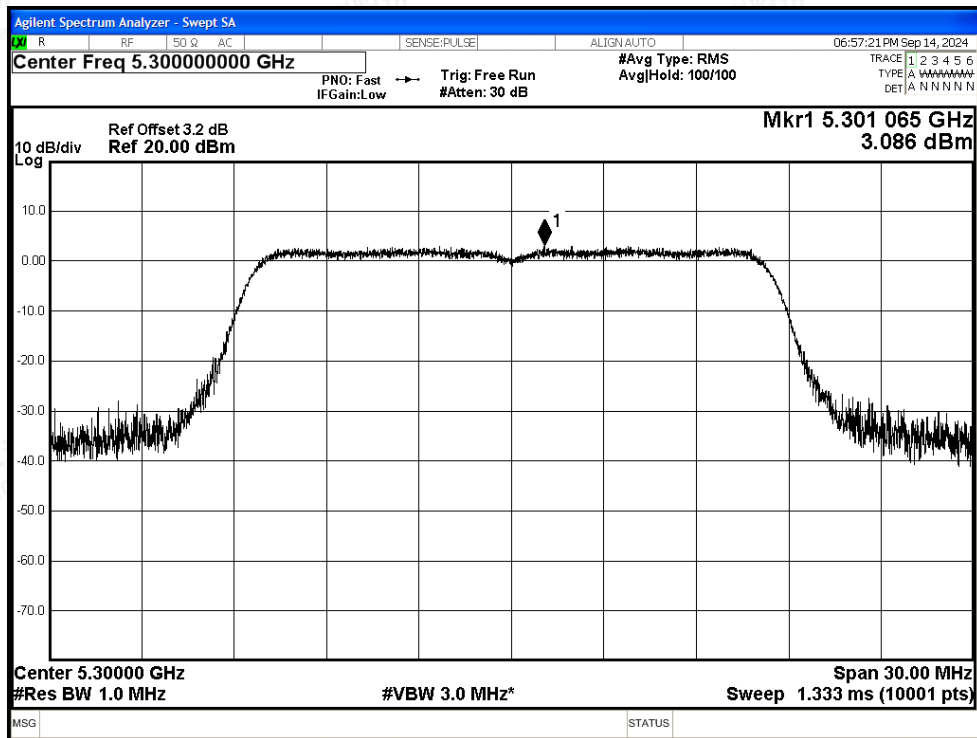


Test Graphs

PSD NVNT a 5260MHz Ant

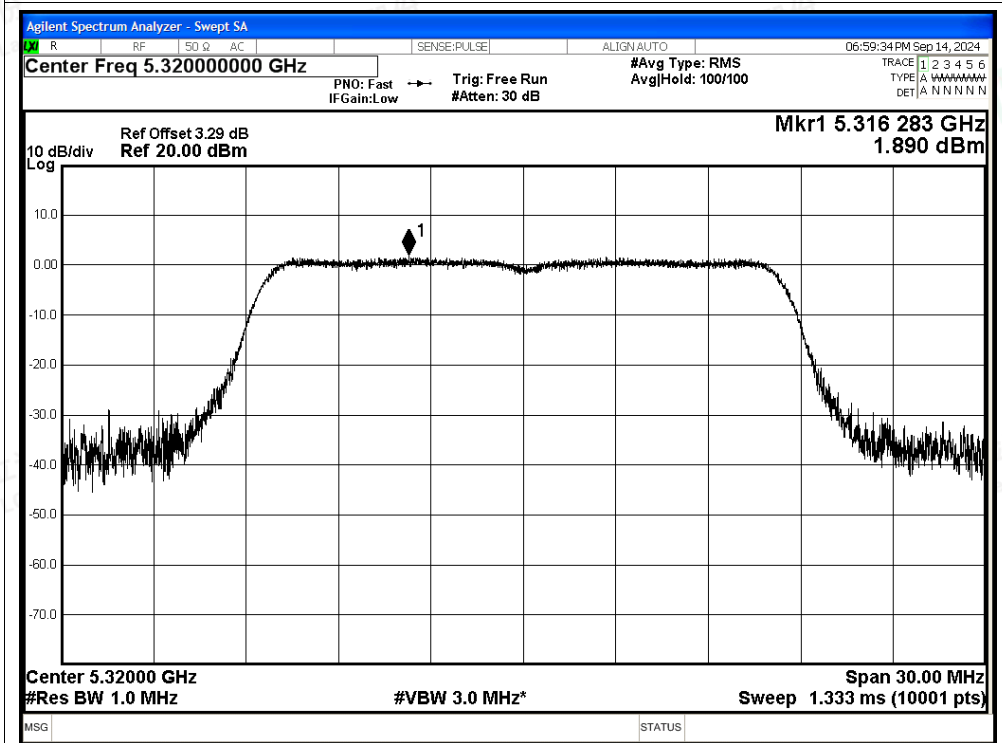


PSD NVNT a 5300MHz Ant

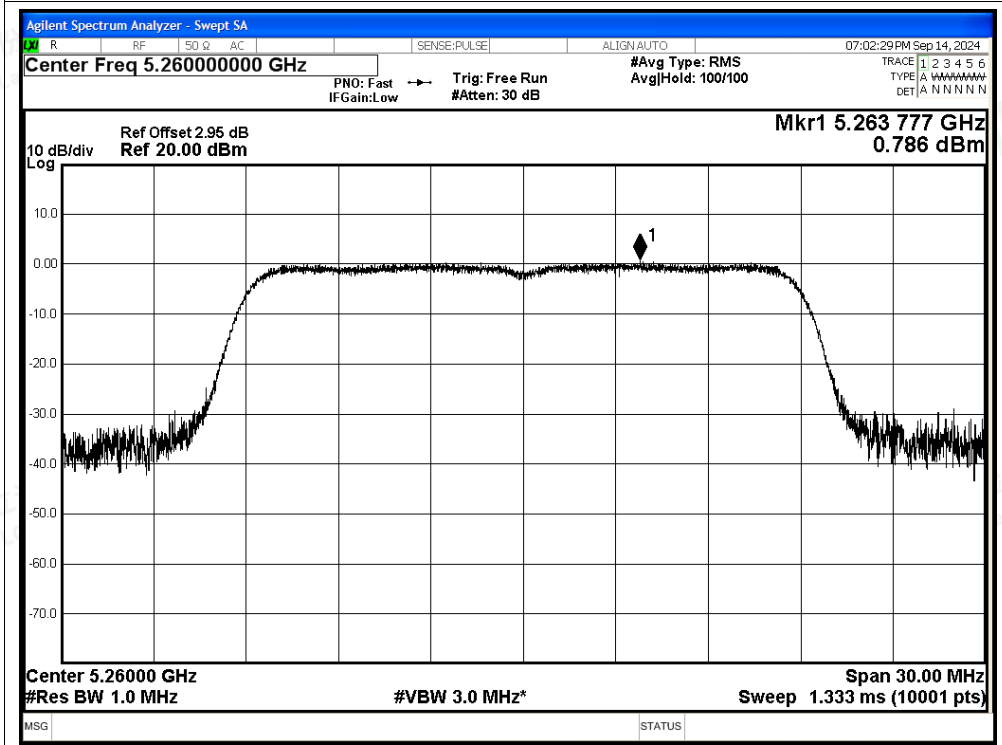


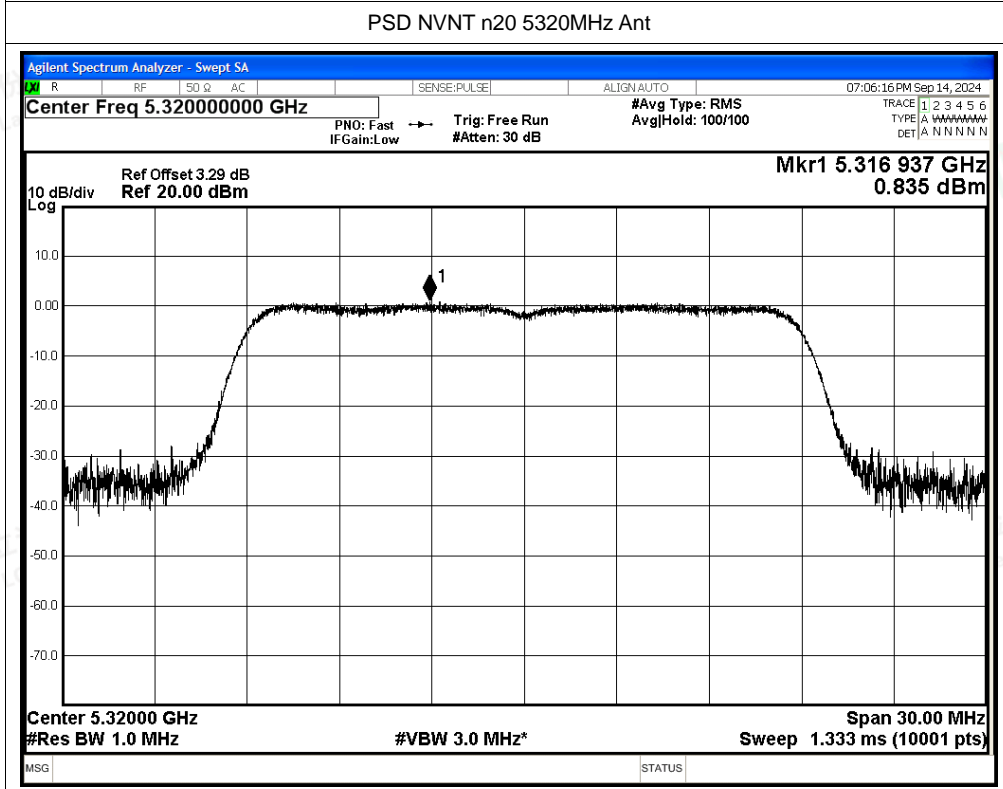
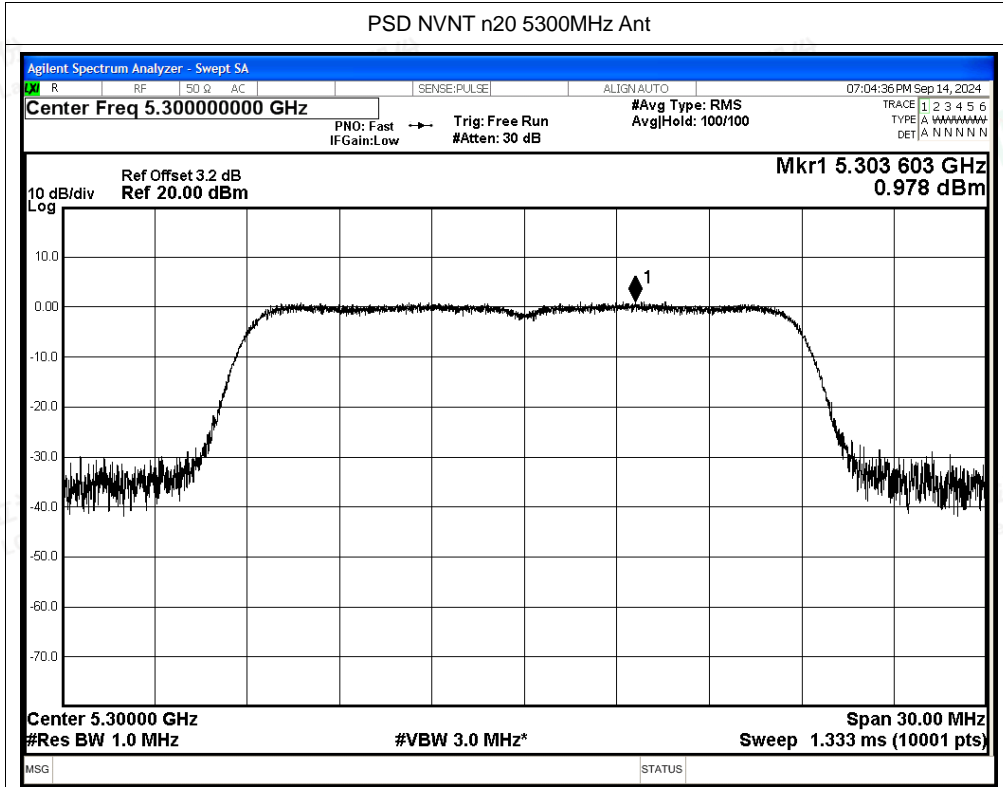


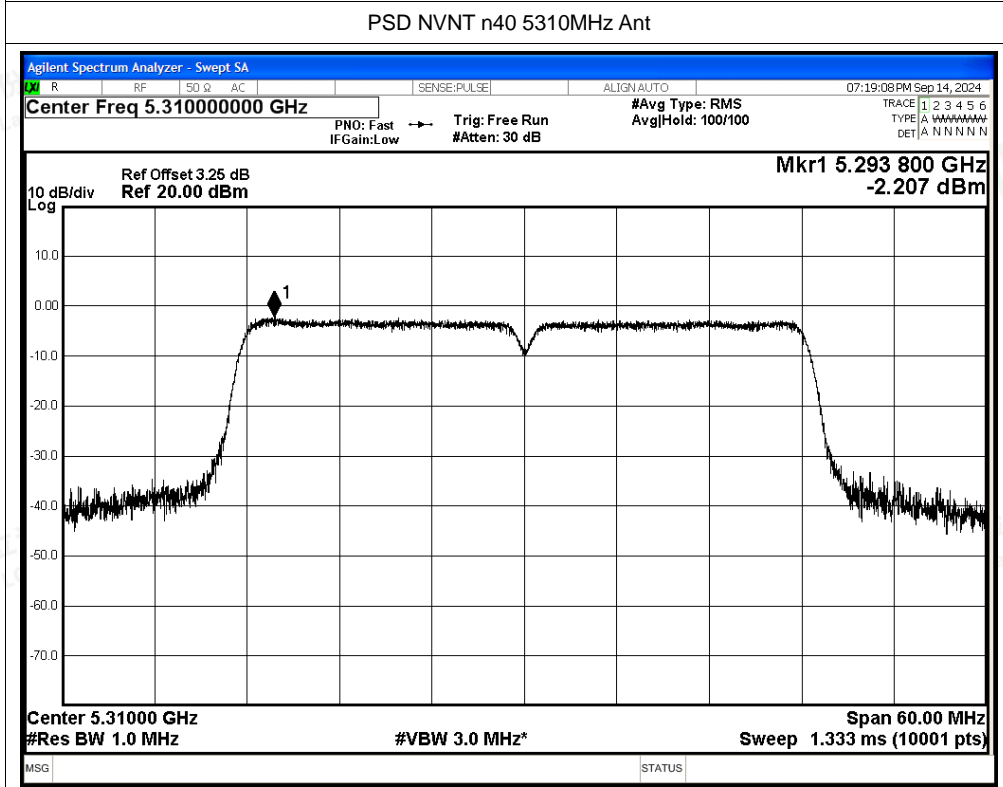
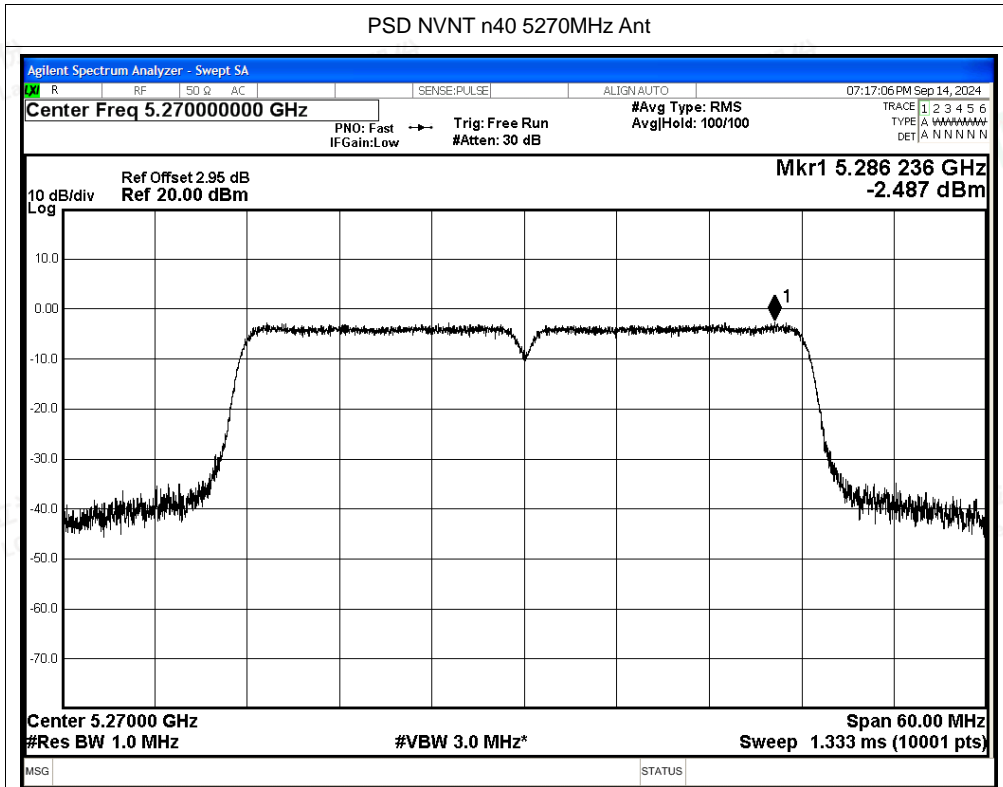
PSD NVNT a 5320MHz Ant

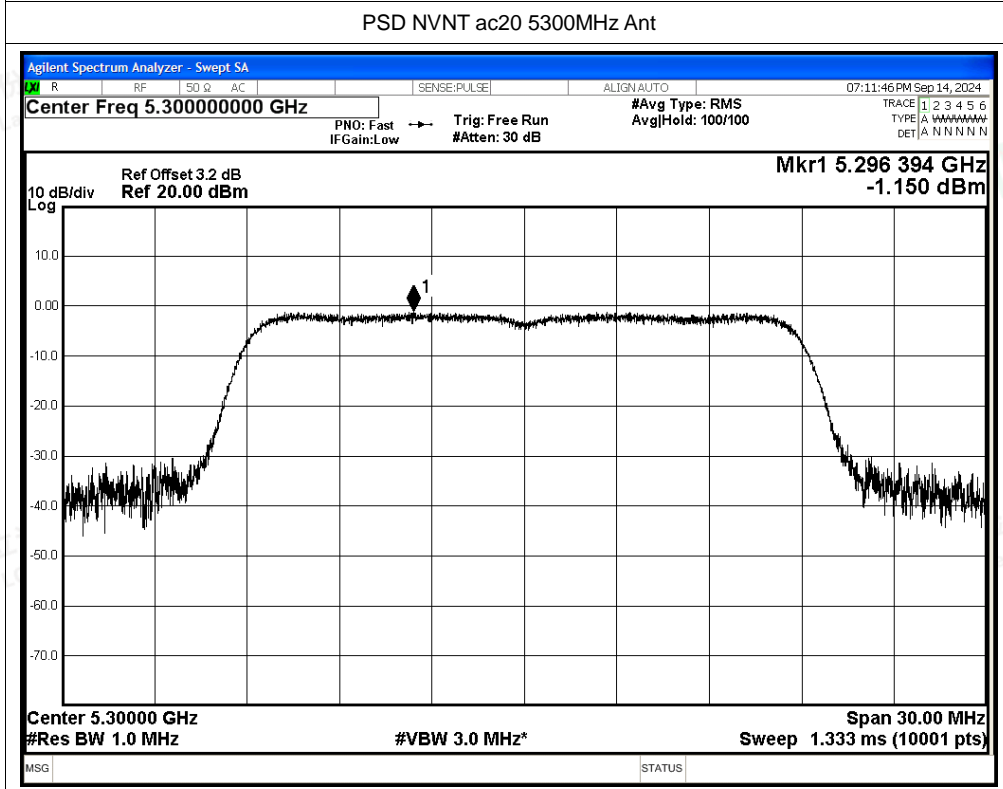
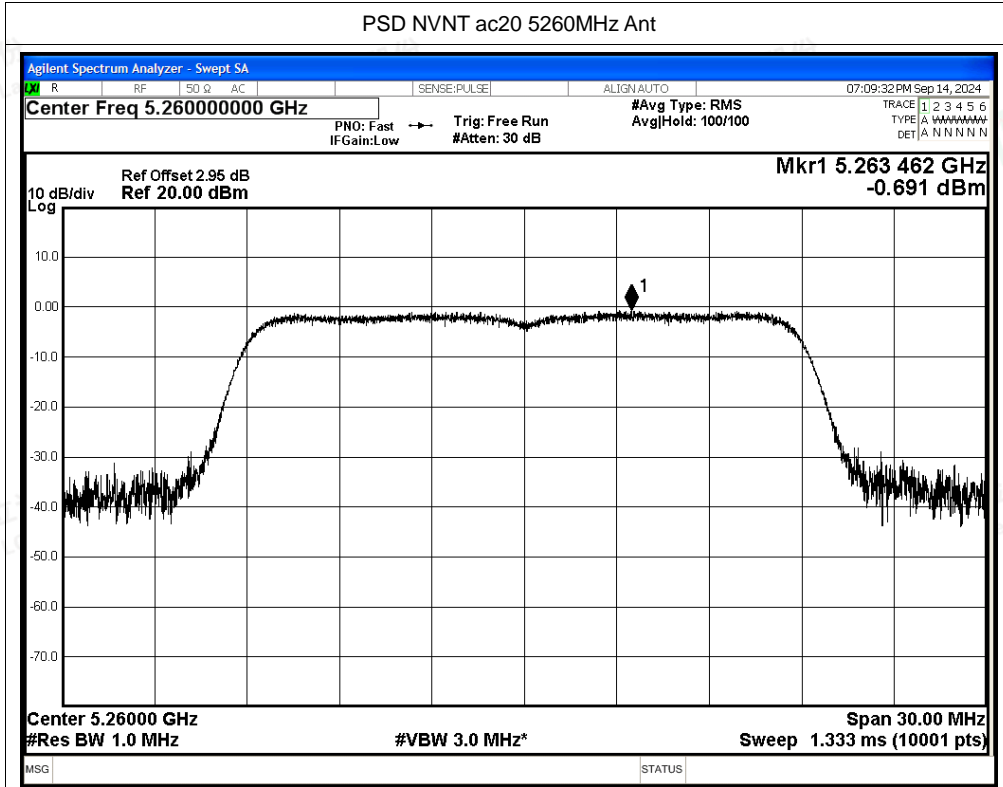


PSD NVNT n20 5260MHz Ant



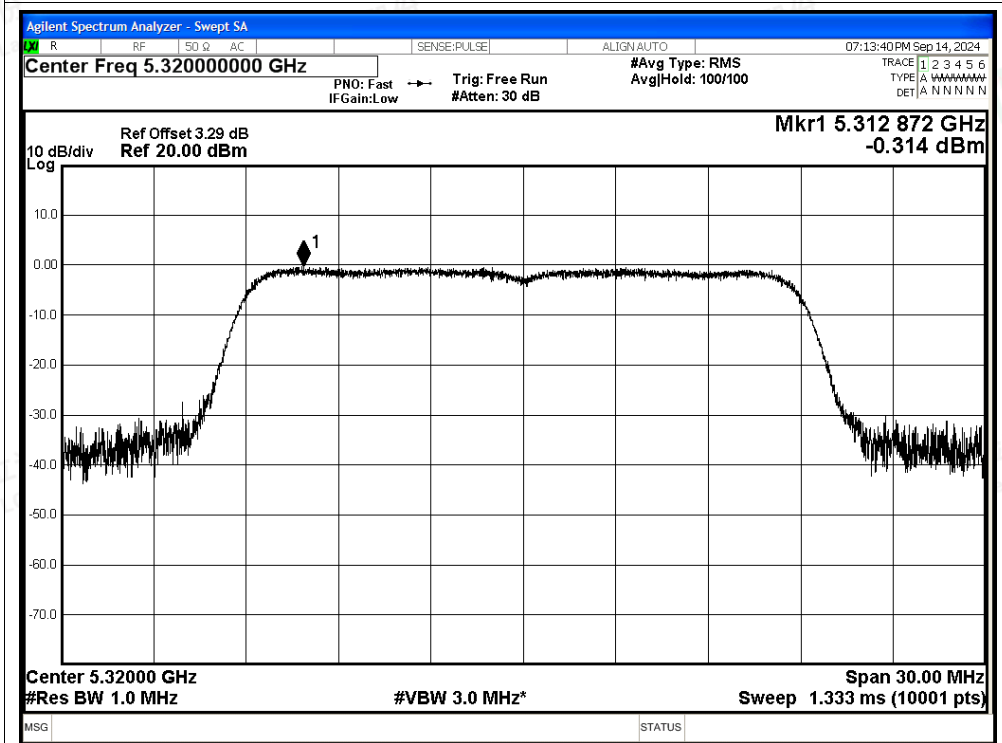




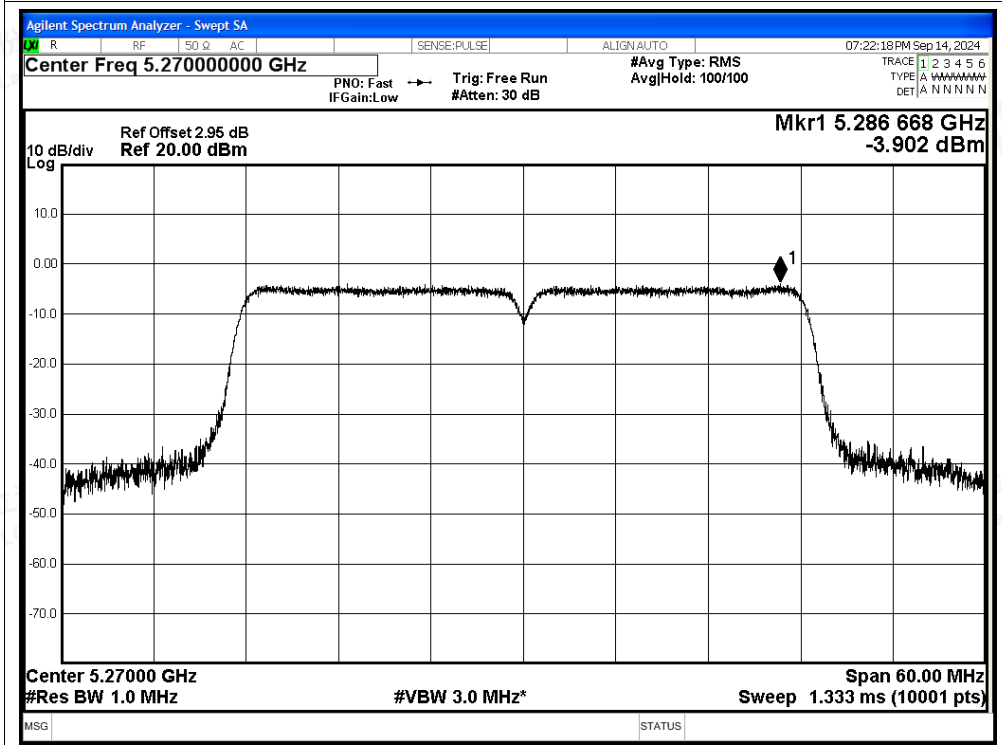


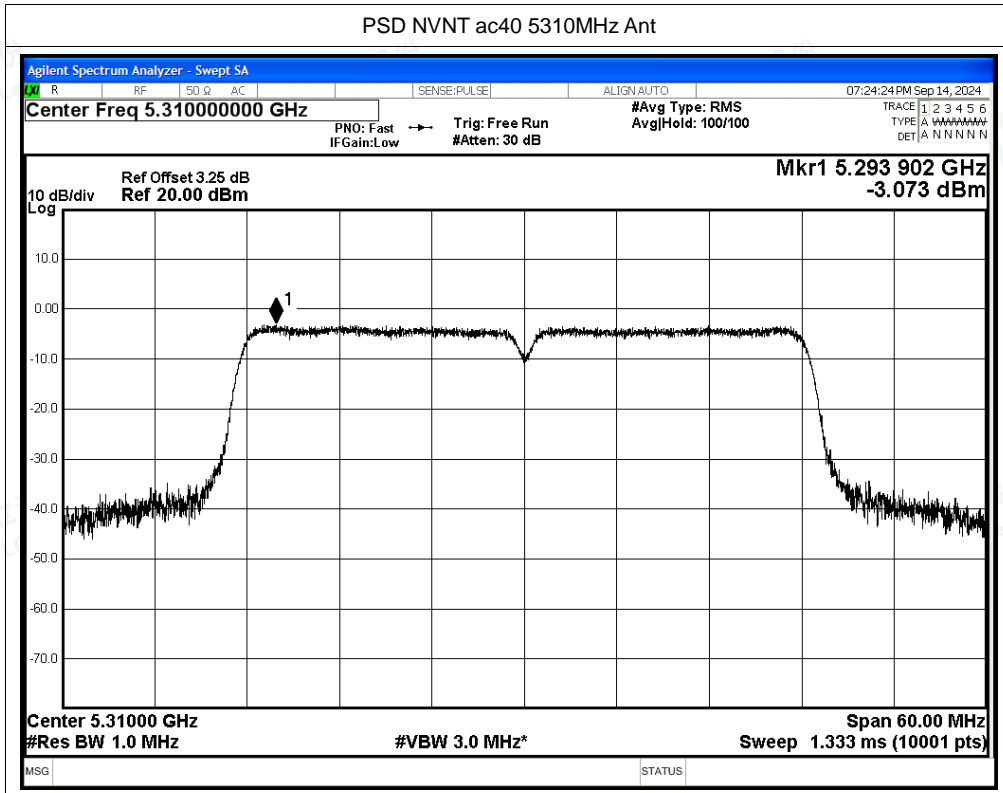


PSD NVNT ac20 5320MHz Ant



PSD NVNT ac40 5270MHz Ant







E.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	5260	Ant	4500	-50.06	2	-	47.17	Peak	68.2	Pass
NVNT	a	5260	Ant	4500	-59.43	2	0.24	38.04	Average	54	Pass
NVNT	a	5260	Ant	4772.22	-46.42	2	-	50.81	Peak	68.2	Pass
NVNT	a	5260	Ant	4787.82	-54.8	2	0.24	42.67	Average	54	Pass
NVNT	a	5260	Ant	5150	-49.01	2	-	48.22	Peak	68.2	Pass
NVNT	a	5260	Ant	5150	-56.16	2	0.24	41.31	Average	54	Pass
NVNT	a	5320	Ant	5350	-40.53	2	-	56.7	Peak	68.2	Pass
NVNT	a	5320	Ant	5350	-53.95	2	0.24	43.52	Average	54	Pass
NVNT	a	5320	Ant	5351	-37.5	2	-	59.73	Peak	68.2	Pass
NVNT	a	5320	Ant	5350.8	-53.59	2	0.24	43.88	Average	54	Pass
NVNT	a	5320	Ant	5460	-50.16	2	-	47.07	Peak	68.2	Pass
NVNT	a	5320	Ant	5460	-57.78	2	0.24	39.69	Average	54	Pass
NVNT	n20	5260	Ant	4500	-48.71	2	-	48.52	Peak	68.2	Pass
NVNT	n20	5260	Ant	4500	-59.51	2	0.12	37.84	Average	54	Pass
NVNT	n20	5260	Ant	4787.82	-45.47	2	-	51.76	Peak	68.2	Pass
NVNT	n20	5260	Ant	4787.82	-54.91	2	0.12	42.44	Average	54	Pass
NVNT	n20	5260	Ant	5150	-49.3	2	-	47.93	Peak	68.2	Pass
NVNT	n20	5260	Ant	5150	-56.65	2	0.12	40.7	Average	54	Pass
NVNT	n20	5320	Ant	5350	-37.42	2	-	59.81	Peak	68.2	Pass
NVNT	n20	5320	Ant	5350	-53.96	2	0.12	43.39	Average	54	Pass
NVNT	n20	5320	Ant	5460	-48.55	2	-	48.68	Peak	68.2	Pass
NVNT	n20	5320	Ant	5460	-57.66	2	0.12	39.69	Average	54	Pass
NVNT	n40	5270	Ant	4500	-51.07	2	-	46.16	Peak	68.2	Pass
NVNT	n40	5270	Ant	4500	-59	2	0.12	38.35	Average	54	Pass
NVNT	n40	5270	Ant	4806.99	-43.19	2	-	54.04	Peak	68.2	Pass
NVNT	n40	5270	Ant	4806.18	-51.55	2	0.12	45.8	Average	54	Pass
NVNT	n40	5270	Ant	5150	-49.55	2	-	47.68	Peak	68.2	Pass
NVNT	n40	5270	Ant	5150	-57.16	2	0.12	40.19	Average	54	Pass
NVNT	n40	5310	Ant	5350	-44.11	2	-	53.12	Peak	68.2	Pass
NVNT	n40	5310	Ant	5350	-54.47	2	0.12	42.88	Average	54	Pass
NVNT	n40	5310	Ant	5350.4	-40.54	2	-	56.69	Peak	68.2	Pass
NVNT	n40	5310	Ant	5460	-49.92	2	-	47.31	Peak	68.2	Pass
NVNT	n40	5310	Ant	5460	-57.93	2	0.12	39.42	Average	54	Pass
NVNT	ac20	5260	Ant	4500	-51.43	2	-	45.8	Peak	68.2	Pass
NVNT	ac20	5260	Ant	4500	-59.39	2	0.12	37.96	Average	54	Pass
NVNT	ac20	5260	Ant	5148.96	-45.71	2	-	51.52	Peak	68.2	Pass
NVNT	ac20	5260	Ant	4787.04	-55.66	2	0.12	41.69	Average	54	Pass
NVNT	ac20	5260	Ant	5150	-46.75	2	-	50.48	Peak	68.2	Pass



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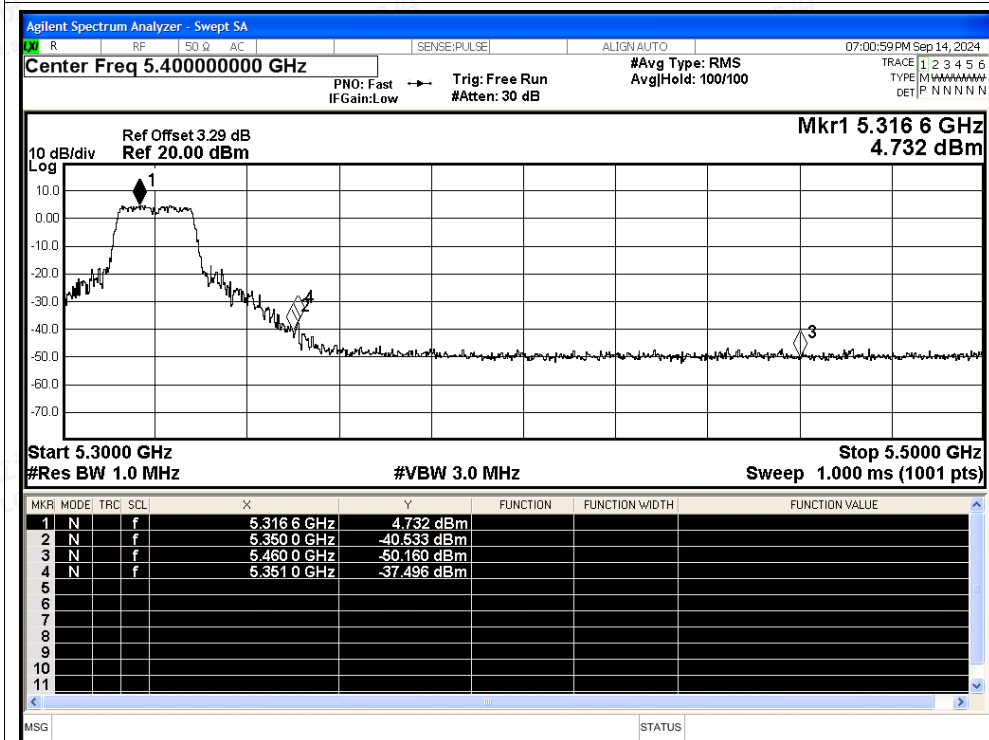
NVNT	ac20	5260	Ant	5150	-56.96	2	0.12	40.39	Average	54	Pass
NVNT	ac20	5320	Ant	5350	-40.36	2	-	56.87	Peak	68.2	Pass
NVNT	ac20	5320	Ant	5350	-55.01	2	0.12	42.34	Average	54	Pass
NVNT	ac20	5320	Ant	5353.2	-37.52	2	-	59.71	Peak	68.2	Pass
NVNT	ac20	5320	Ant	5350.4	-54.7	2	0.12	42.65	Average	54	Pass
NVNT	ac20	5320	Ant	5460	-49.73	2	-	47.5	Peak	68.2	Pass
NVNT	ac20	5320	Ant	5460	-56.91	2	0.12	40.44	Average	54	Pass
NVNT	ac40	5270	Ant	4500	-49.74	2	-	47.49	Peak	68.2	Pass
NVNT	ac40	5270	Ant	4500	-58.95	2	0.12	38.4	Average	54	Pass
NVNT	ac40	5270	Ant	4773.78	-44.41	2	-	52.82	Peak	68.2	Pass
NVNT	ac40	5270	Ant	4806.18	-52.63	2	0.12	44.72	Average	54	Pass
NVNT	ac40	5270	Ant	5150	-48.13	2	-	49.1	Peak	68.2	Pass
NVNT	ac40	5270	Ant	5150	-56.89	2	0.12	40.46	Average	54	Pass
NVNT	ac40	5310	Ant	5350	-39.67	2	-	57.56	Peak	68.2	Pass
NVNT	ac40	5310	Ant	5350	-52.68	2	0.12	44.67	Average	54	Pass
NVNT	ac40	5310	Ant	5350.4	-35.1	2	-	62.13	Peak	68.2	Pass
NVNT	ac40	5310	Ant	5351.6	-52.64	2	0.12	44.71	Average	54	Pass
NVNT	ac40	5310	Ant	5460	-48.77	2	-	48.46	Peak	68.2	Pass
NVNT	ac40	5310	Ant	5460	-57.81	2	0.12	39.54	Average	54	Pass



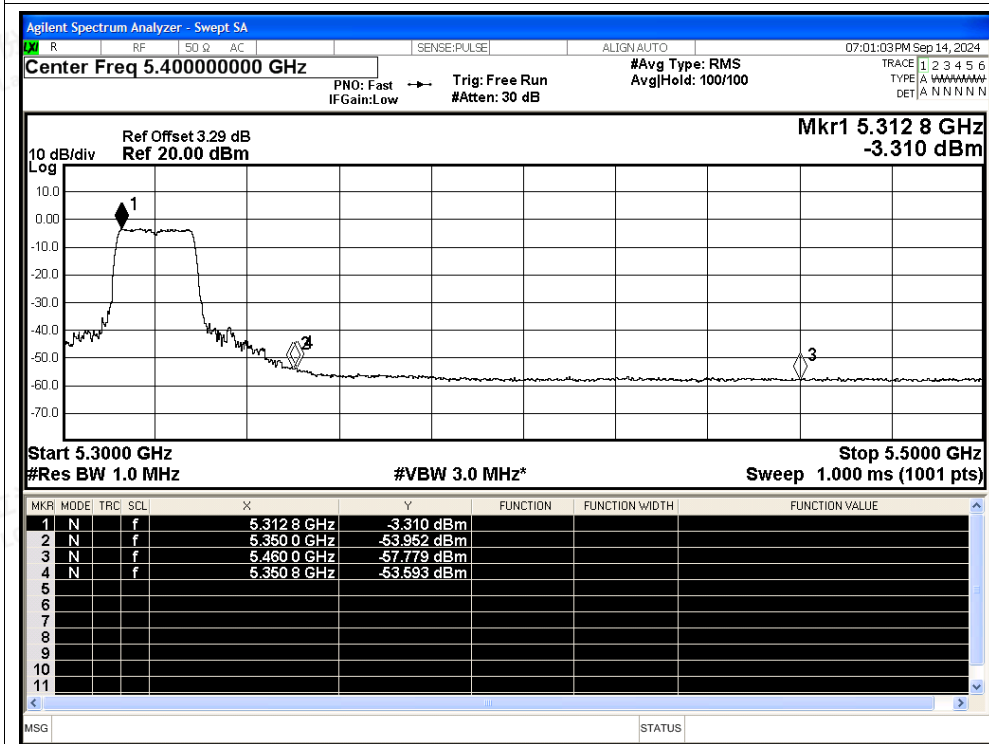
Shenzhen LCS Compliance Testing Laboratory Ltd.
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity



Restrict Band NVNT a 5320MHz Ant Peak

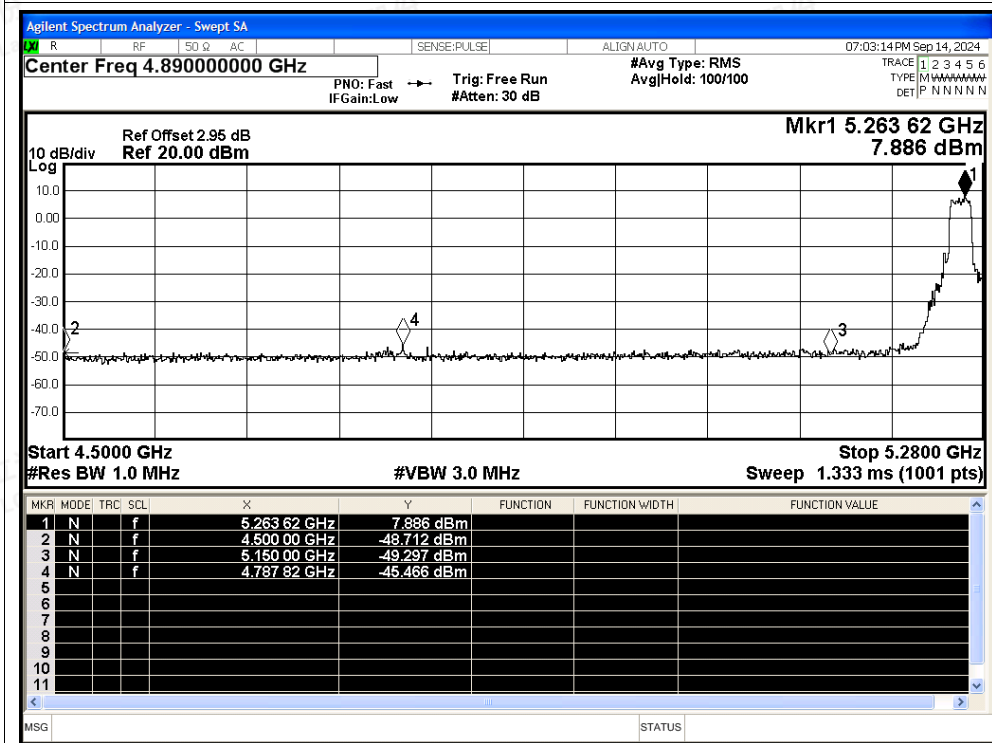


Restrict Band NVNT a 5320MHz Ant Average

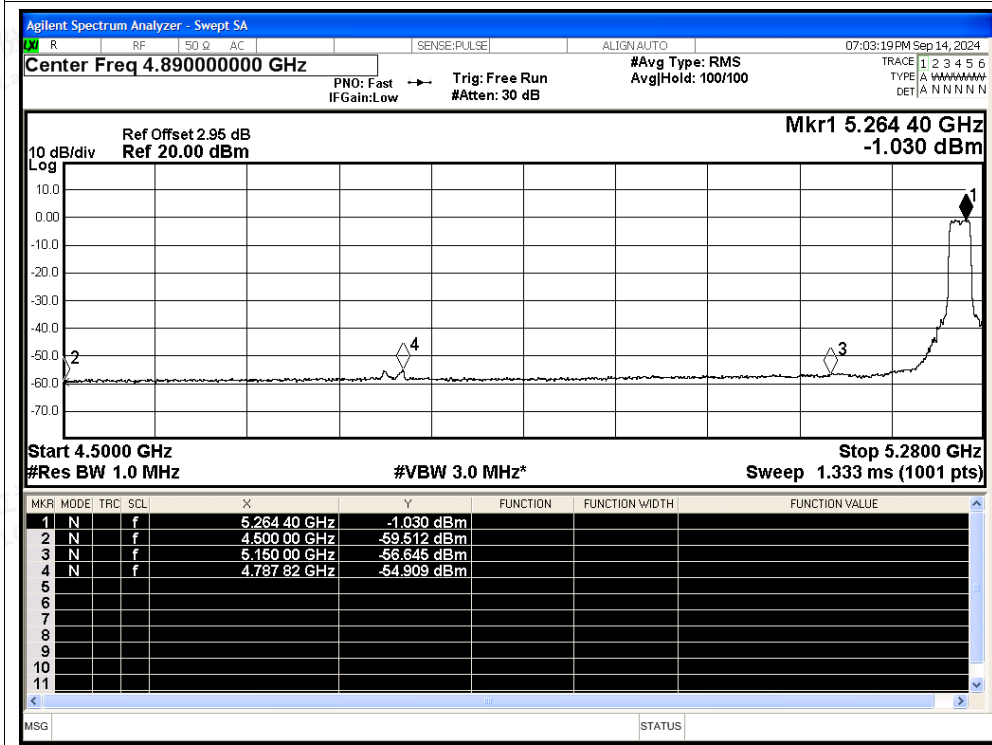




Restrict Band NVNT n20 5260MHz Ant Peak

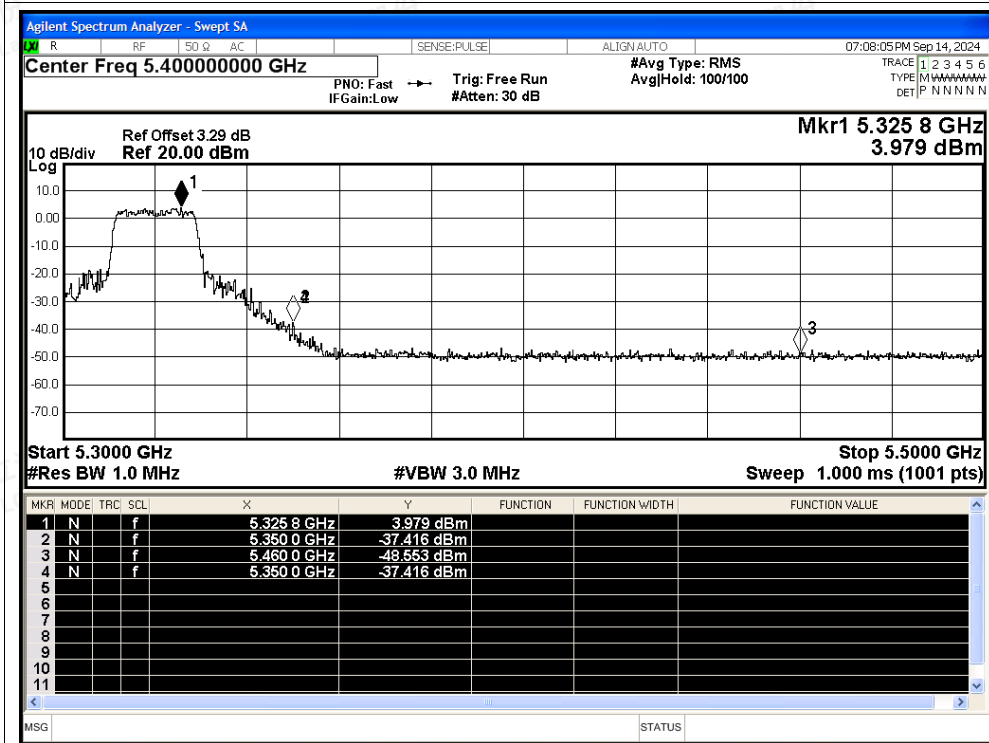


Restrict Band NVNT n20 5260MHz Ant Average

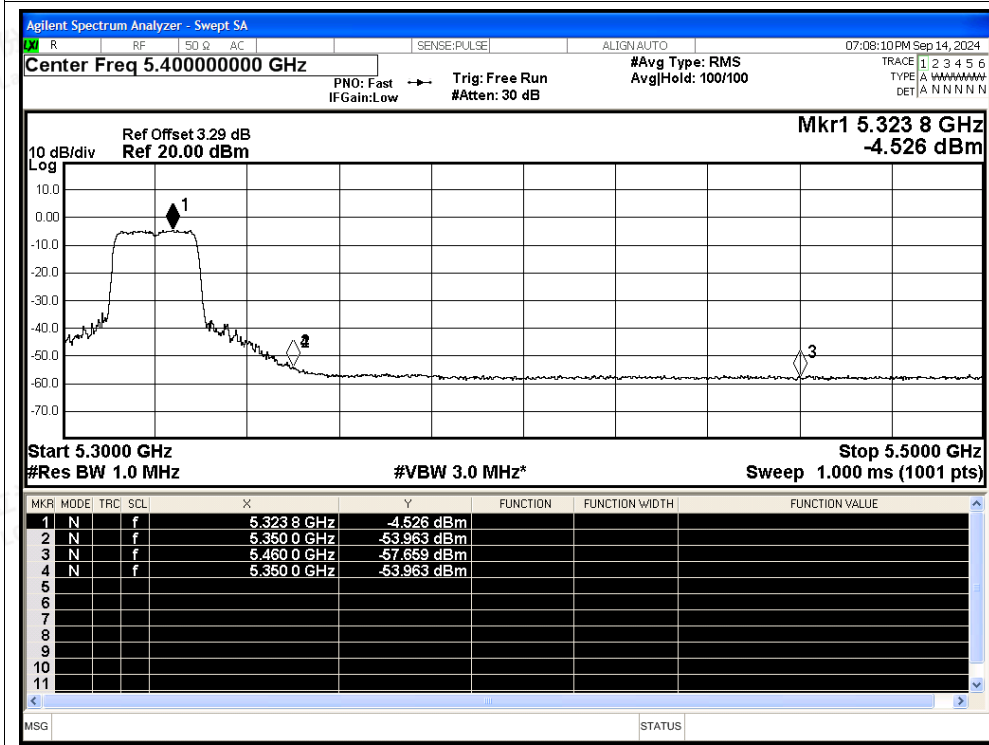




Restrict Band NVNT n20 5320MHz Ant Peak

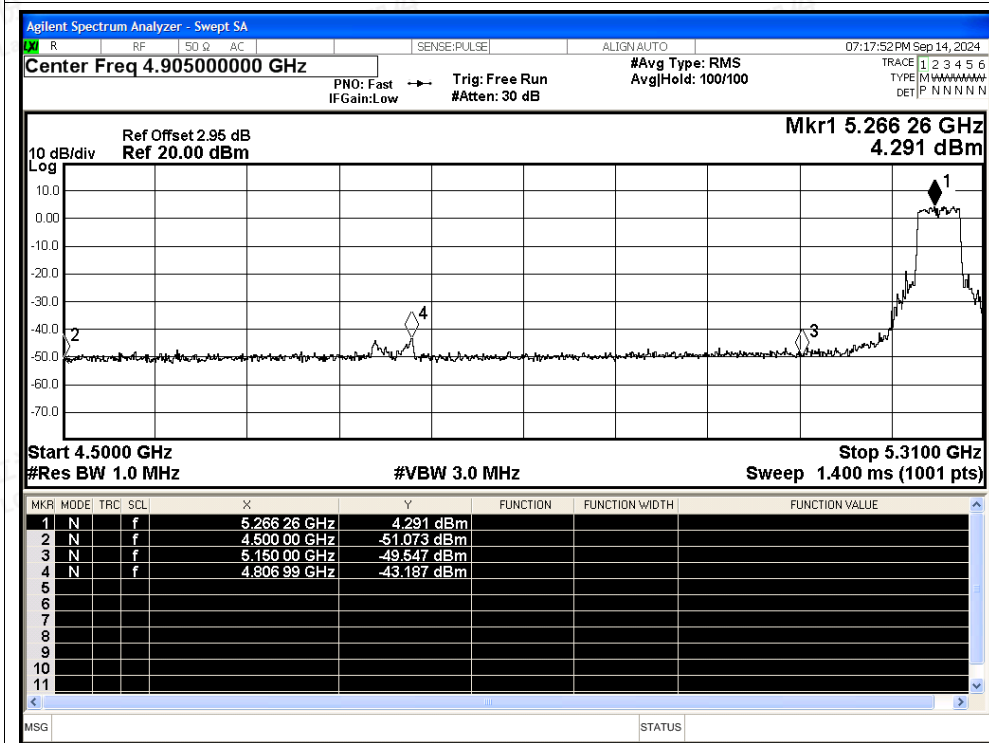


Restrict Band NVNT n20 5320MHz Ant Average

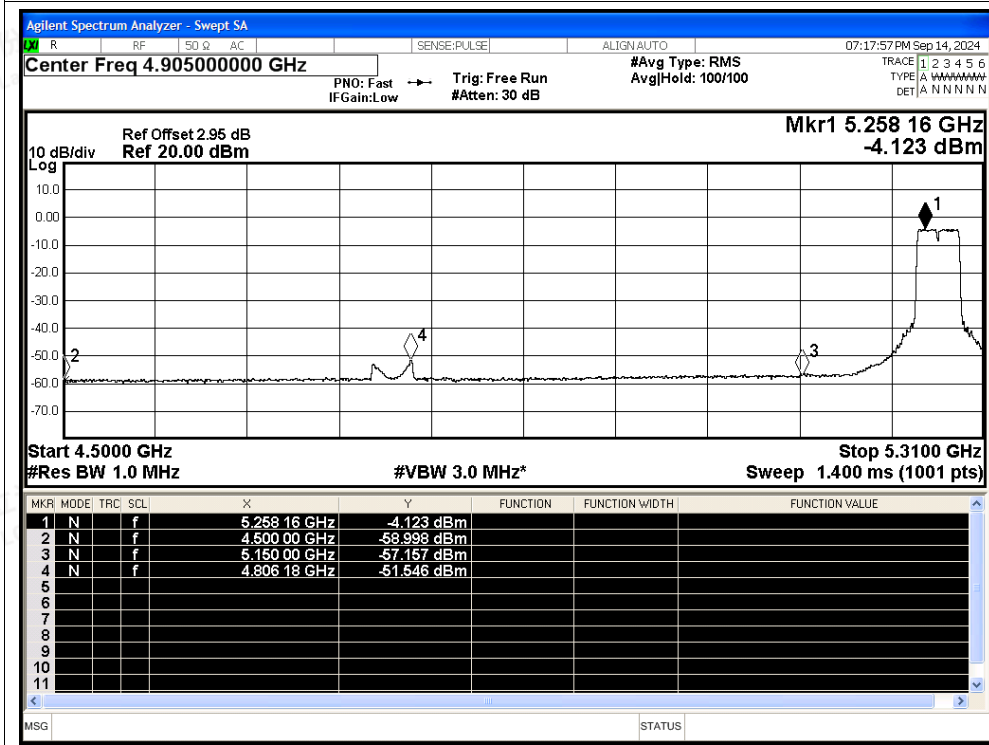




Restrict Band NVNT n40 5270MHz Ant Peak

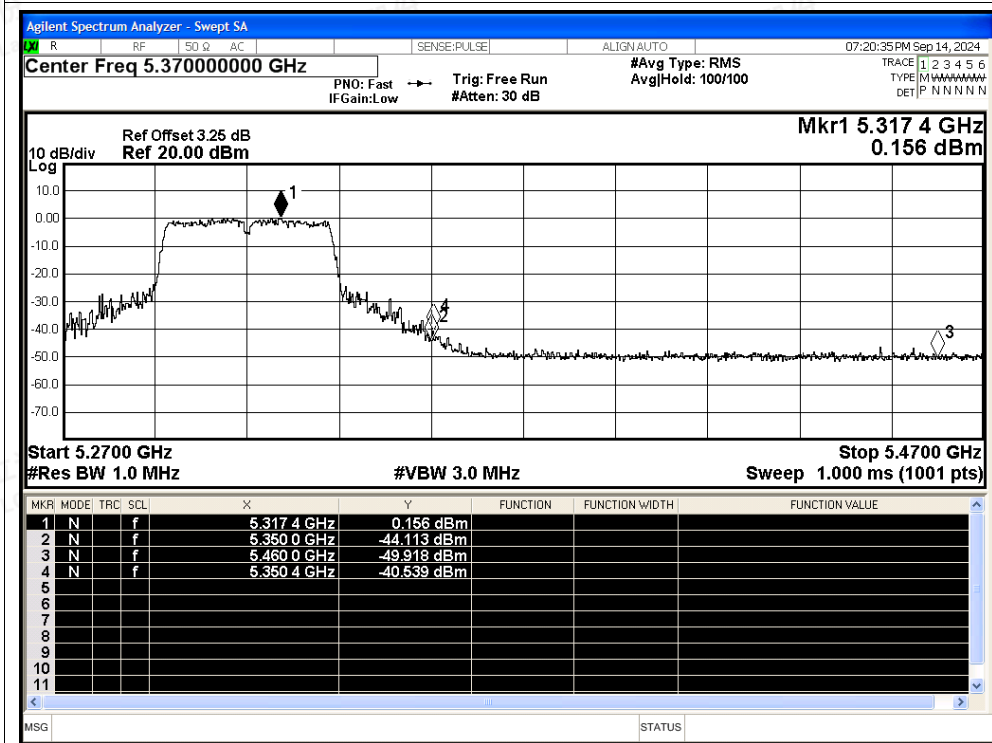


Restrict Band NVNT n40 5270MHz Ant Average

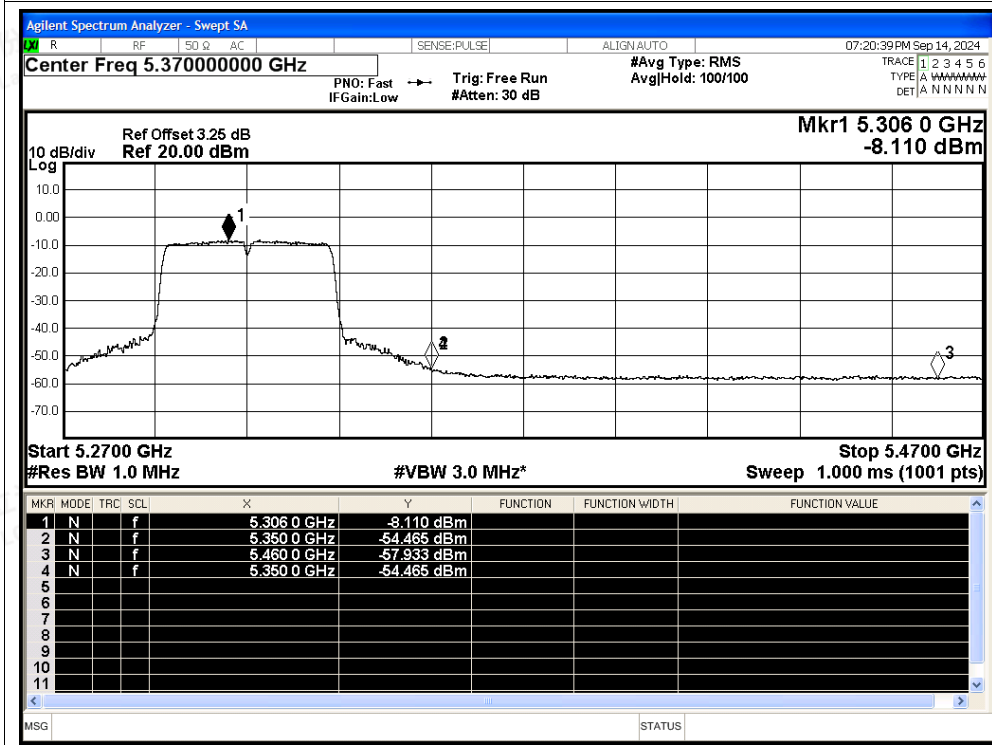




Restrict Band NVNT n40 5310MHz Ant Peak

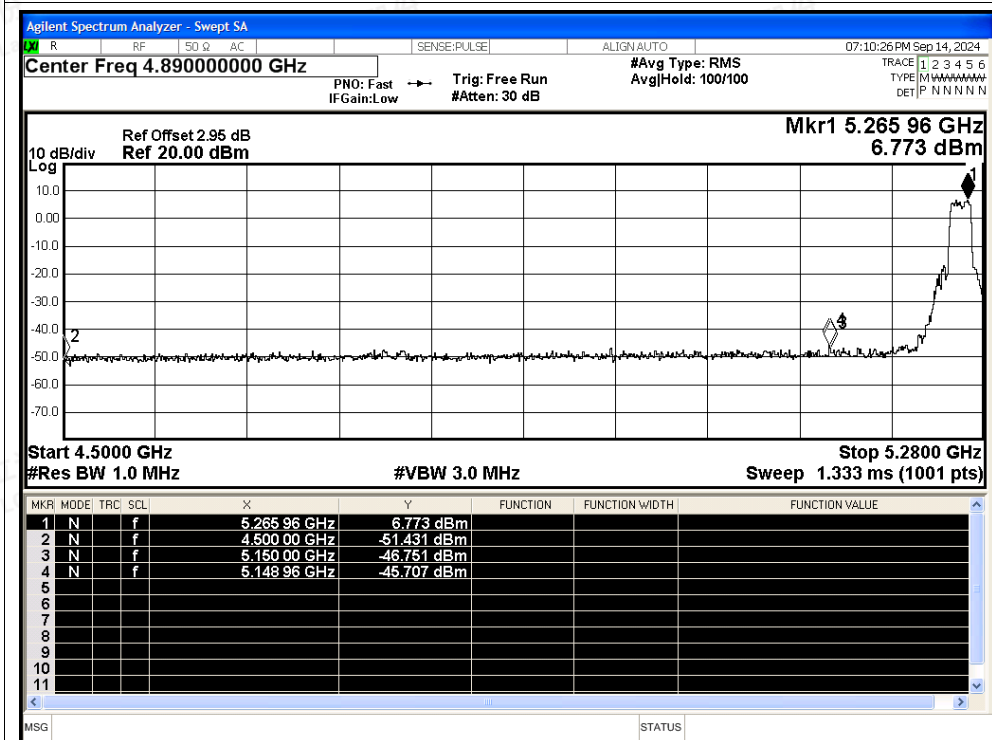


Restrict Band NVNT n40 5310MHz Ant Average

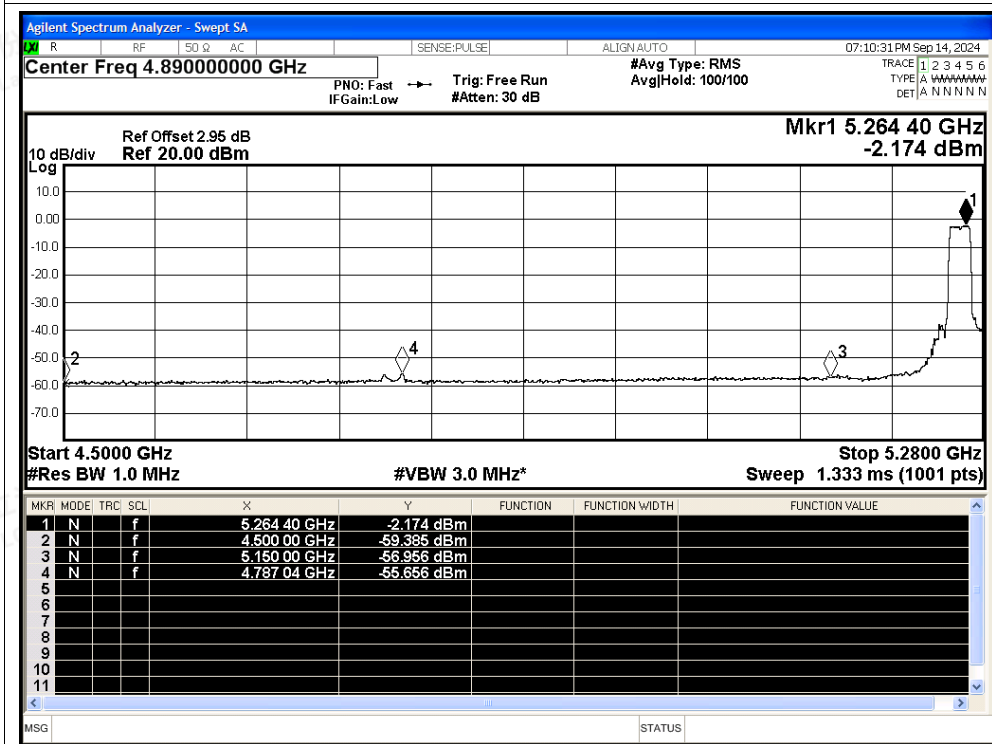




Restrict Band NVNT ac20 5260MHz Ant Peak

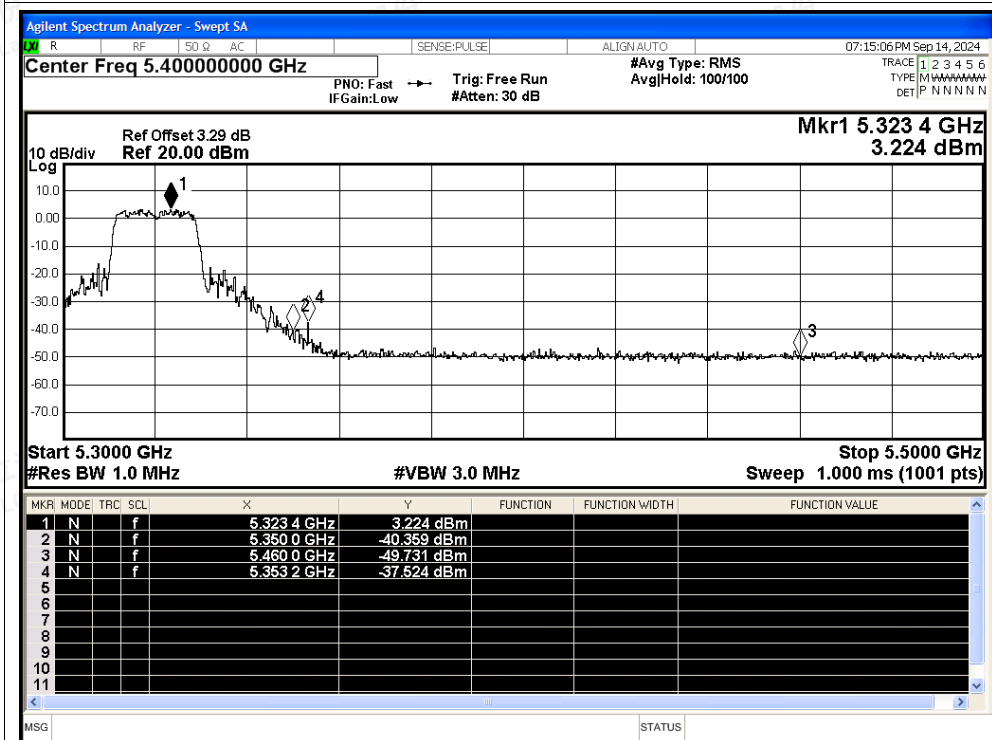


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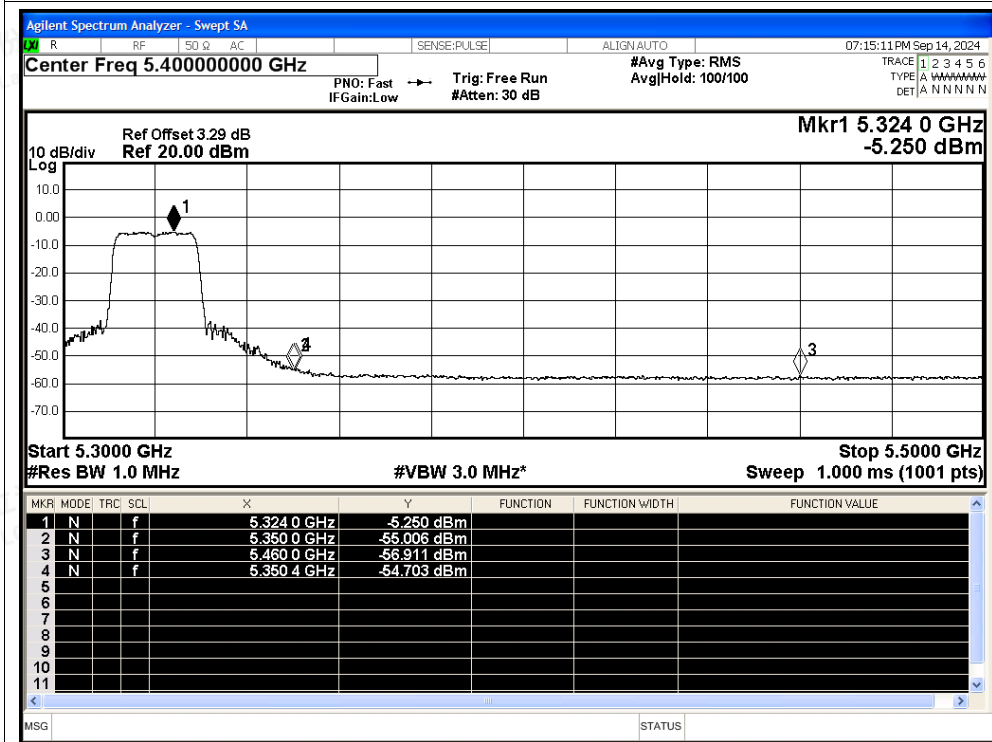




Restrict Band NVNT ac20 5320MHz Ant Peak

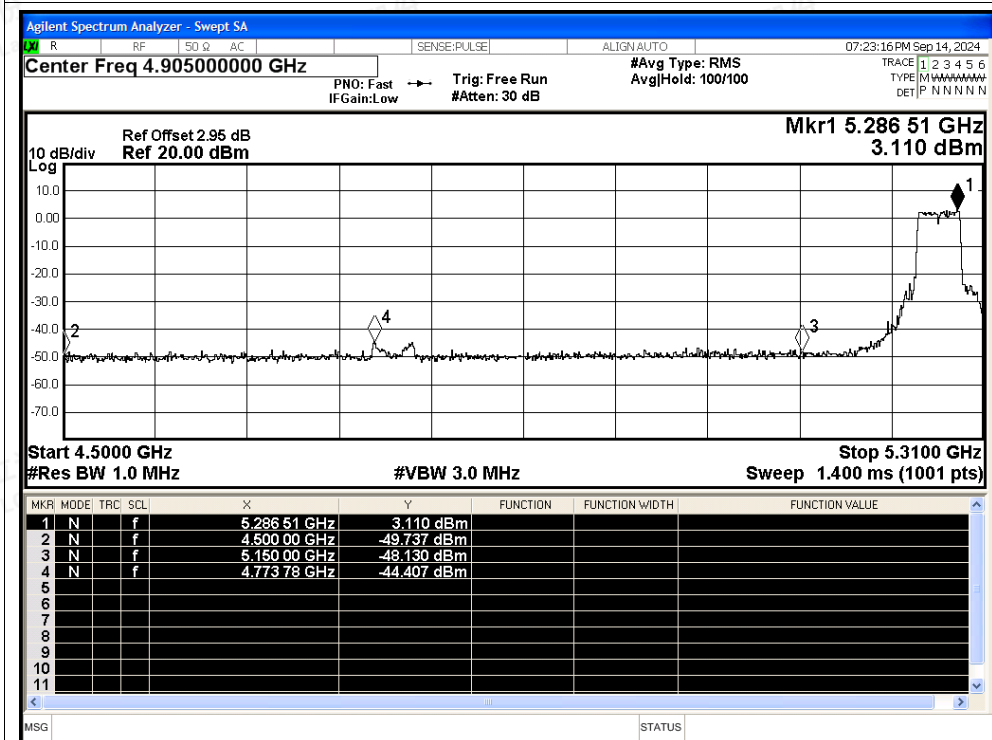


Restrict Band NVNT ac20 5320MHz Ant Average

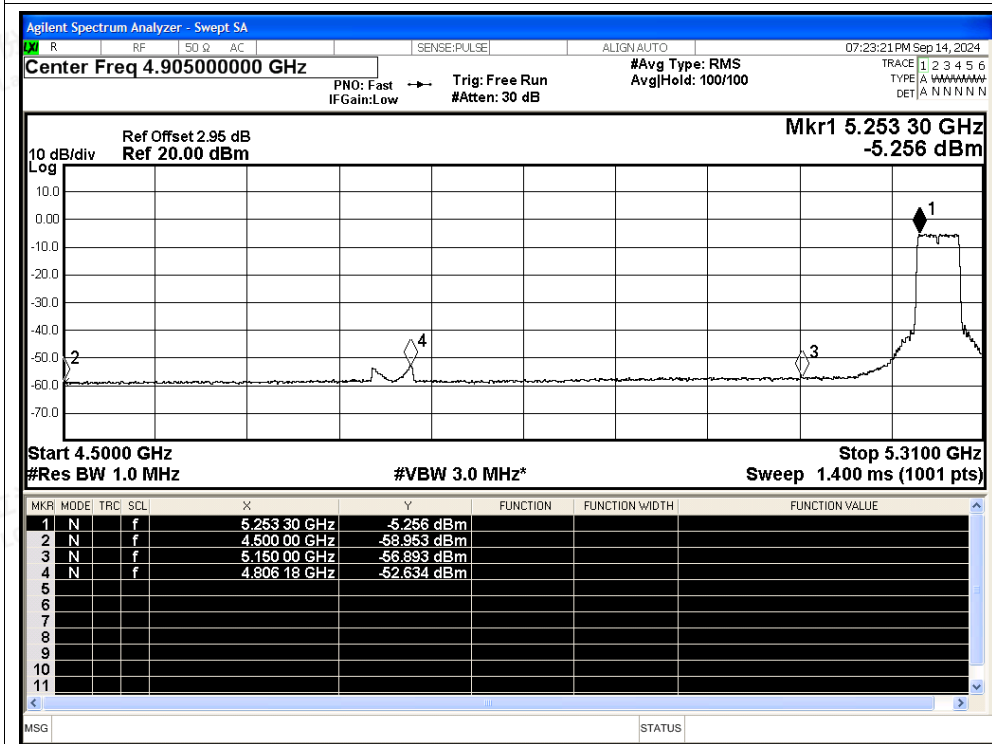




Restrict Band NVNT ac40 5270MHz Ant Peak

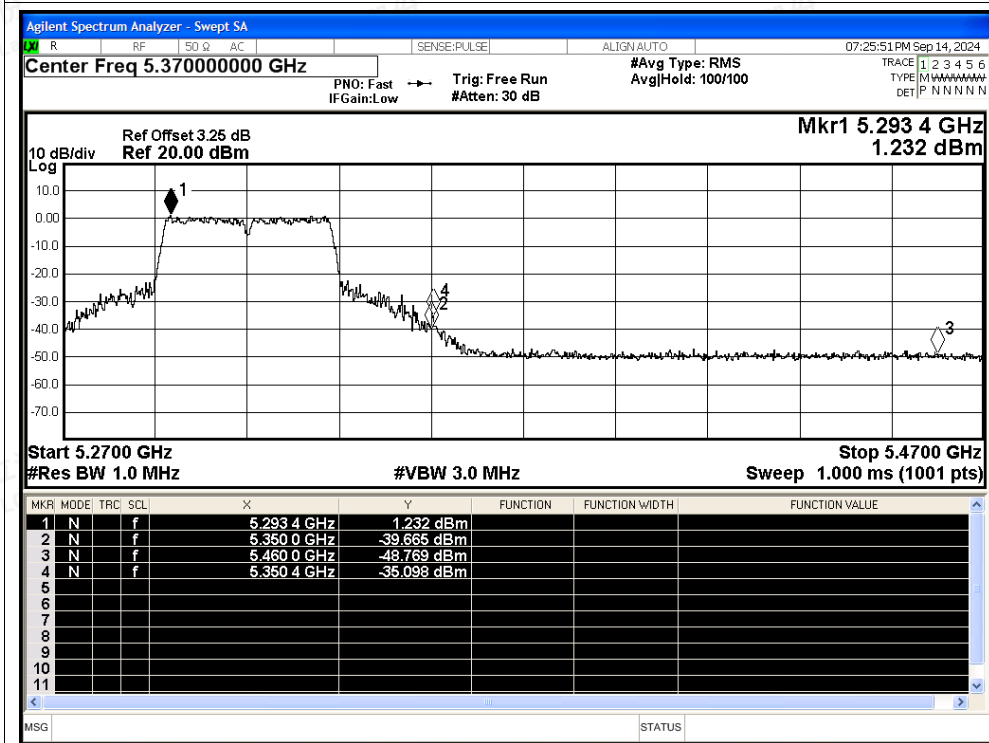


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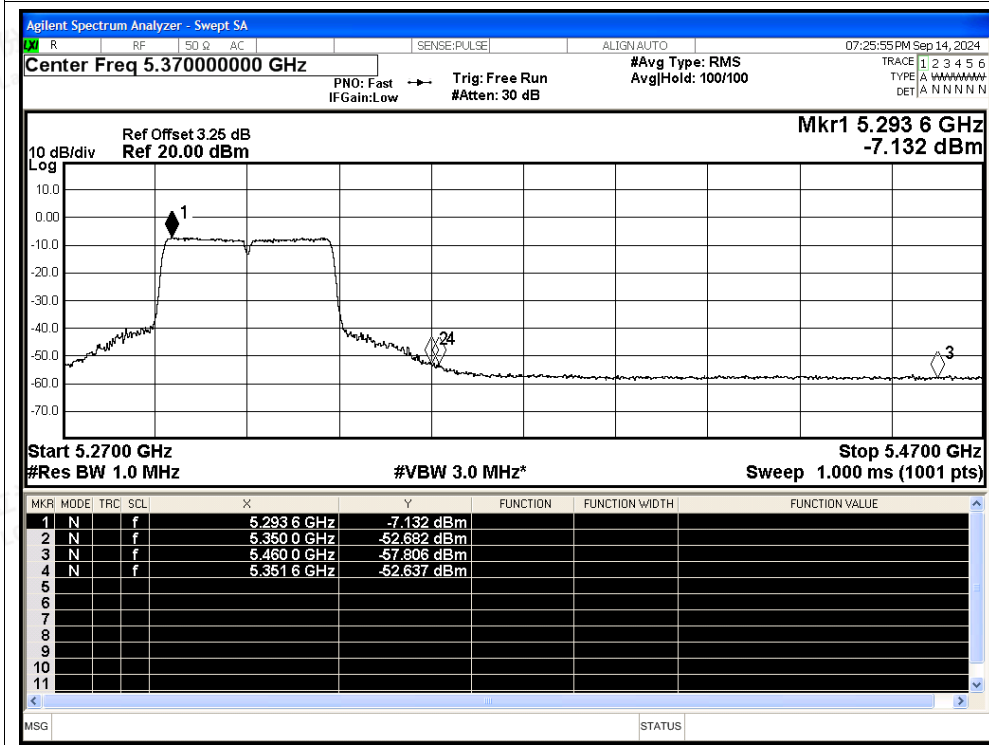




Restrict Band NVNT ac40 5310MHz Ant Peak



Restrict Band NVNT ac40 5310MHz Ant Average





E.5 Frequency Stability

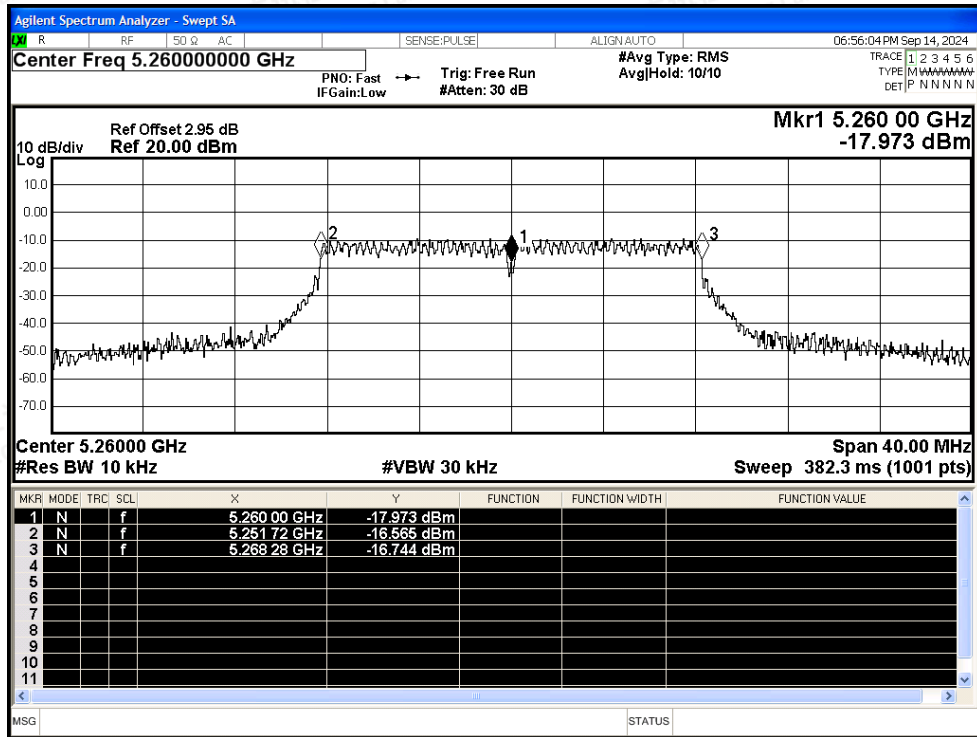
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5260	Ant	5260	0	0	25	Pass
NVNT	a	5300	Ant	5300	0	0	25	Pass
NVNT	a	5320	Ant	5320	0	0	25	Pass
NVNT	n20	5260	Ant	5260	0	0	25	Pass
NVNT	n20	5300	Ant	5299.98	-20000	-3.77	25	Pass
NVNT	n20	5320	Ant	5320	0	0	25	Pass
NVNT	n40	5270	Ant	5270	0	0	25	Pass
NVNT	n40	5310	Ant	5310	0	0	25	Pass
NVNT	ac20	5260	Ant	5260	0	0	25	Pass
NVNT	ac20	5300	Ant	5299.98	-20000	-3.77	25	Pass
NVNT	ac20	5320	Ant	5320	0	0	25	Pass
NVNT	ac40	5270	Ant	5269.96	-40000	-7.59	25	Pass
NVNT	ac40	5310	Ant	5309.96	-40000	-7.53	25	Pass



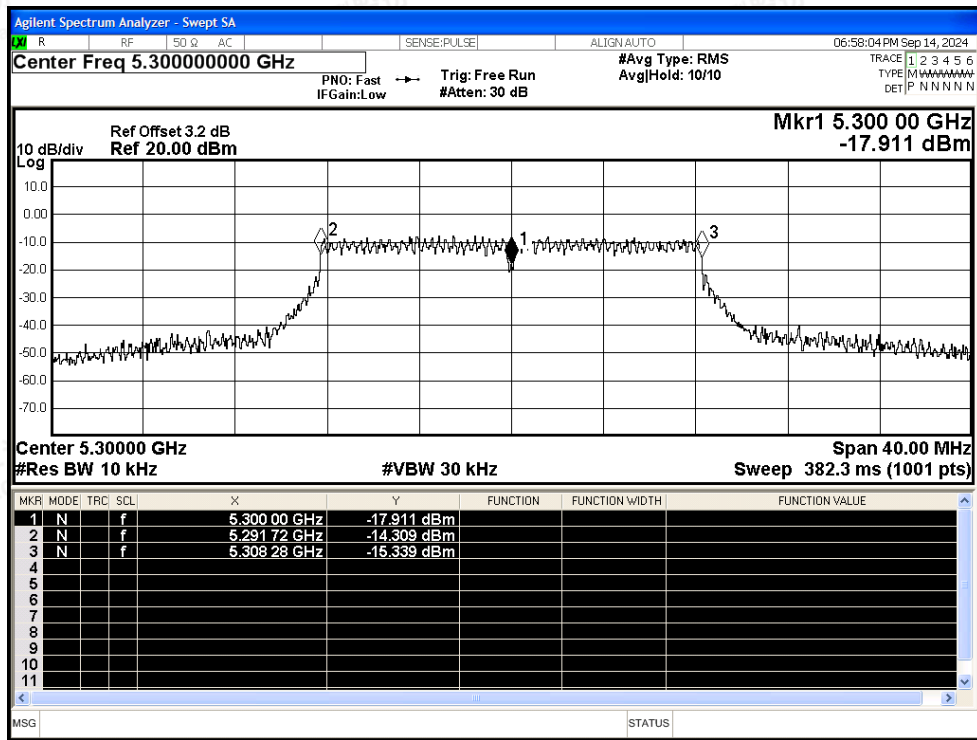


Test Graphs

Freq. Stability NVNT a 5260MHz Ant

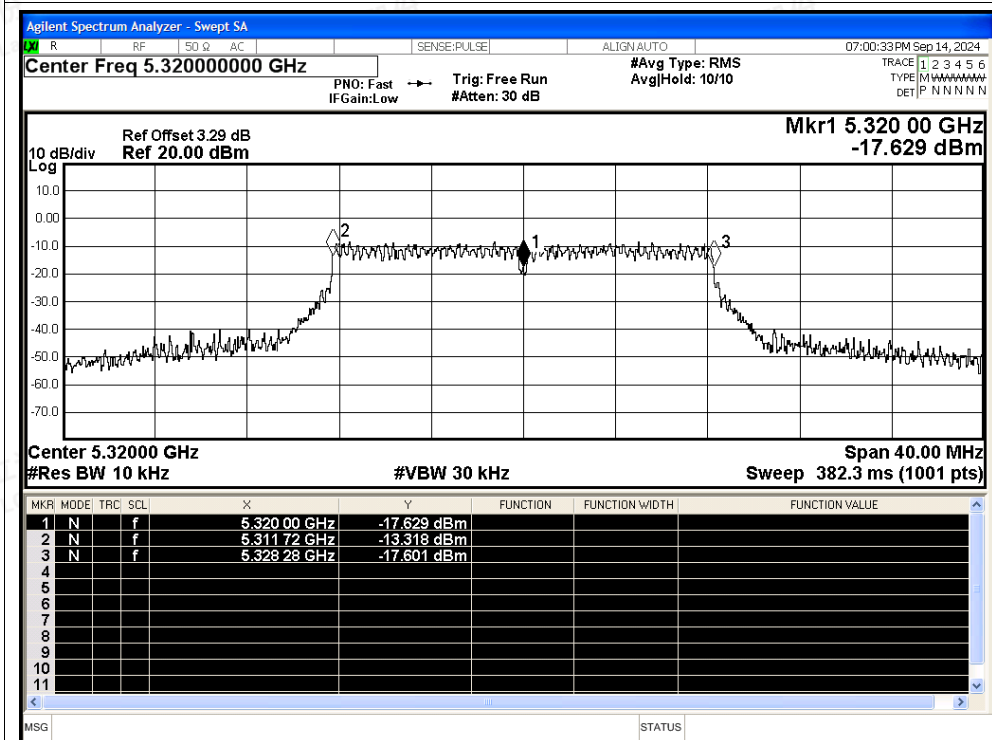


Freq. Stability NVNT a 5300MHz Ant

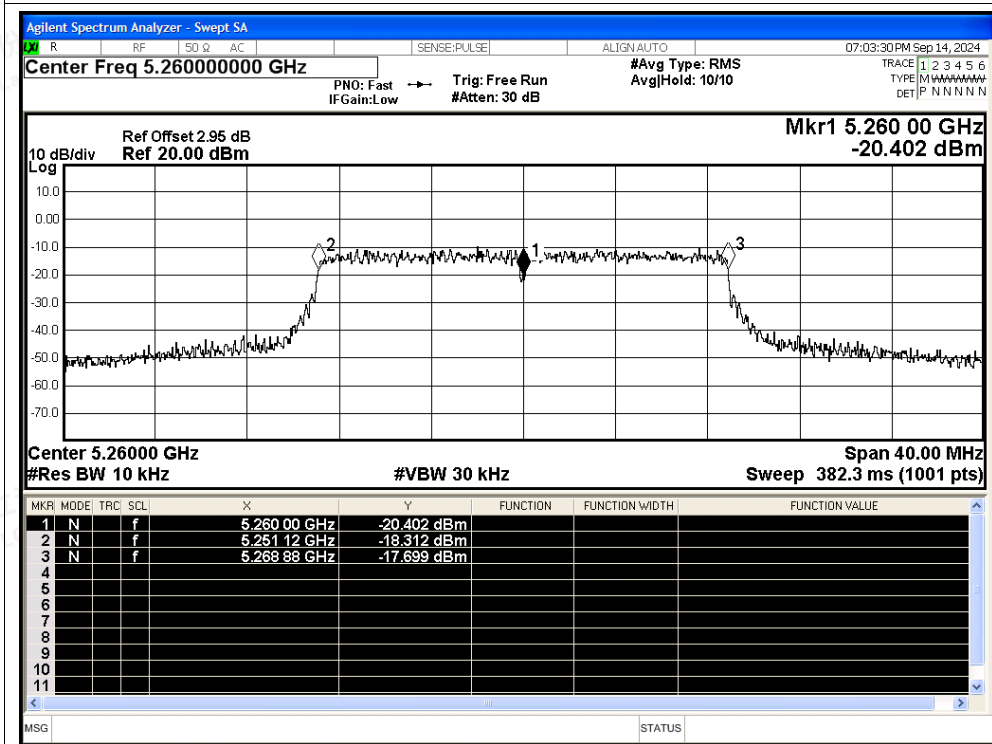




Freq. Stability NVNT a 5320MHz Ant

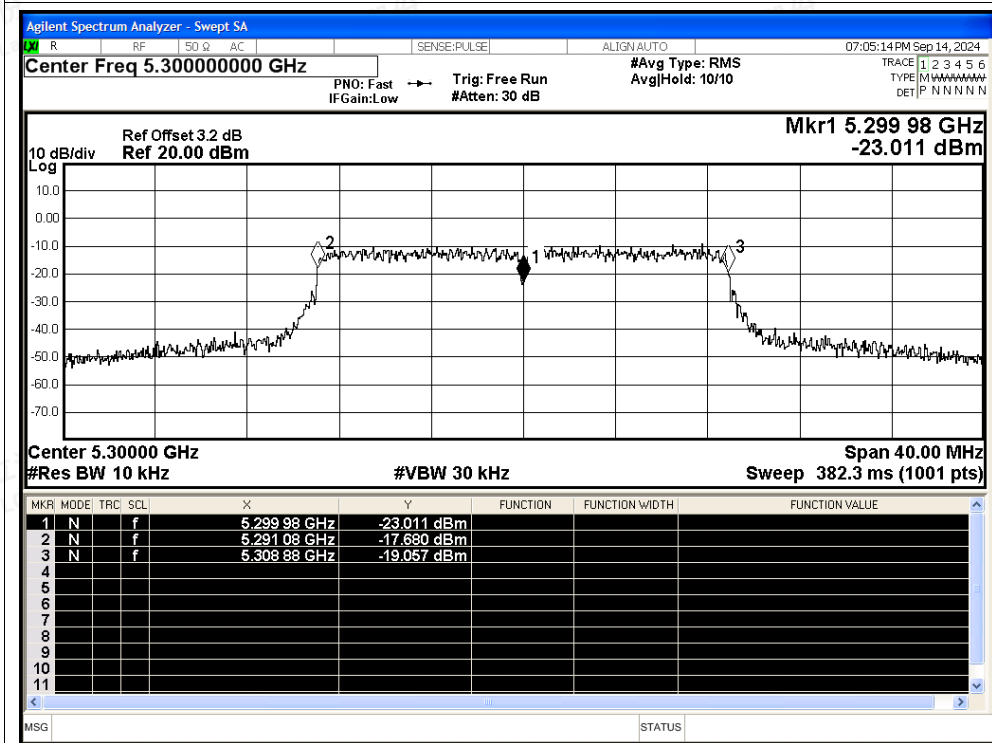


Freq. Stability NVNT n20 5260MHz Ant

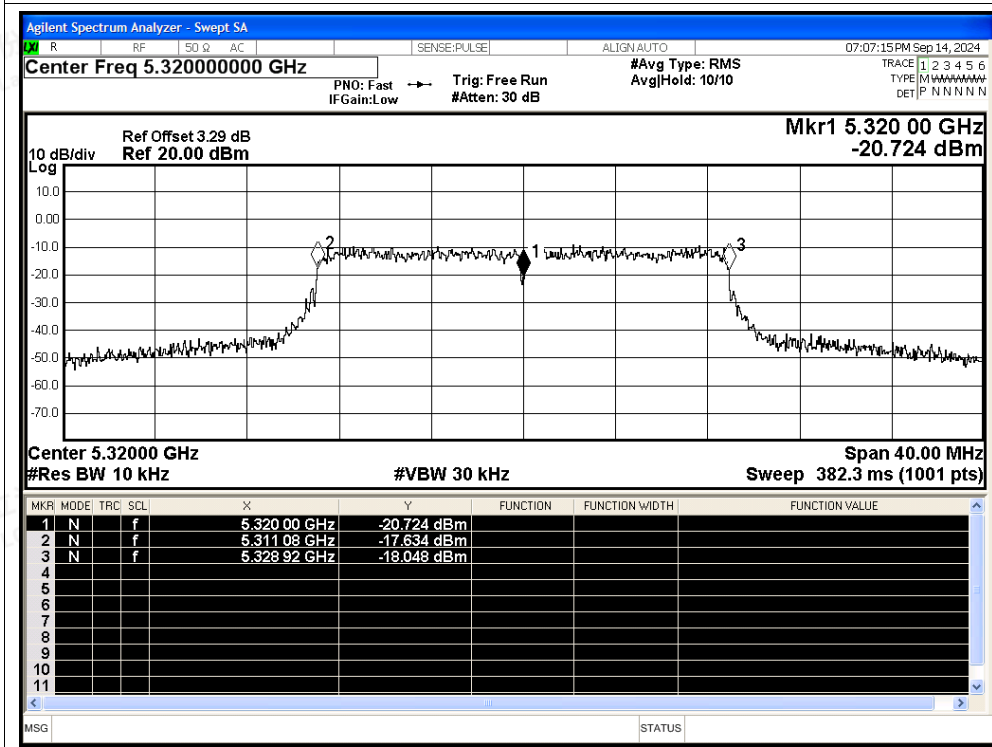




Freq. Stability NVNT n20 5300MHz Ant

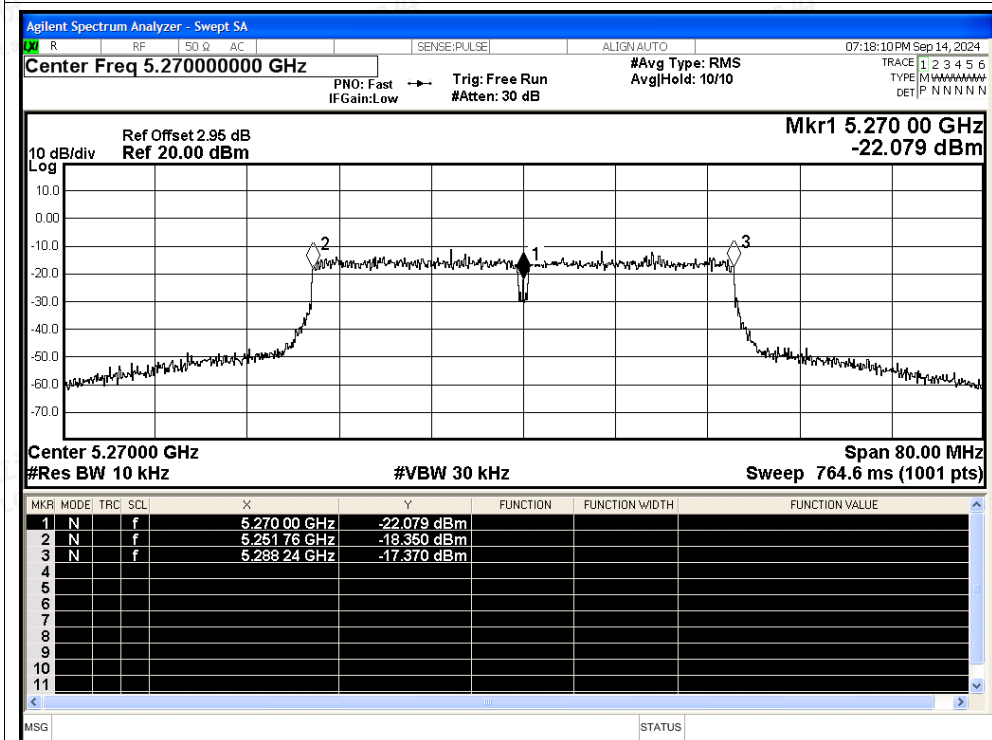


Freq. Stability NVNT n20 5320MHz Ant

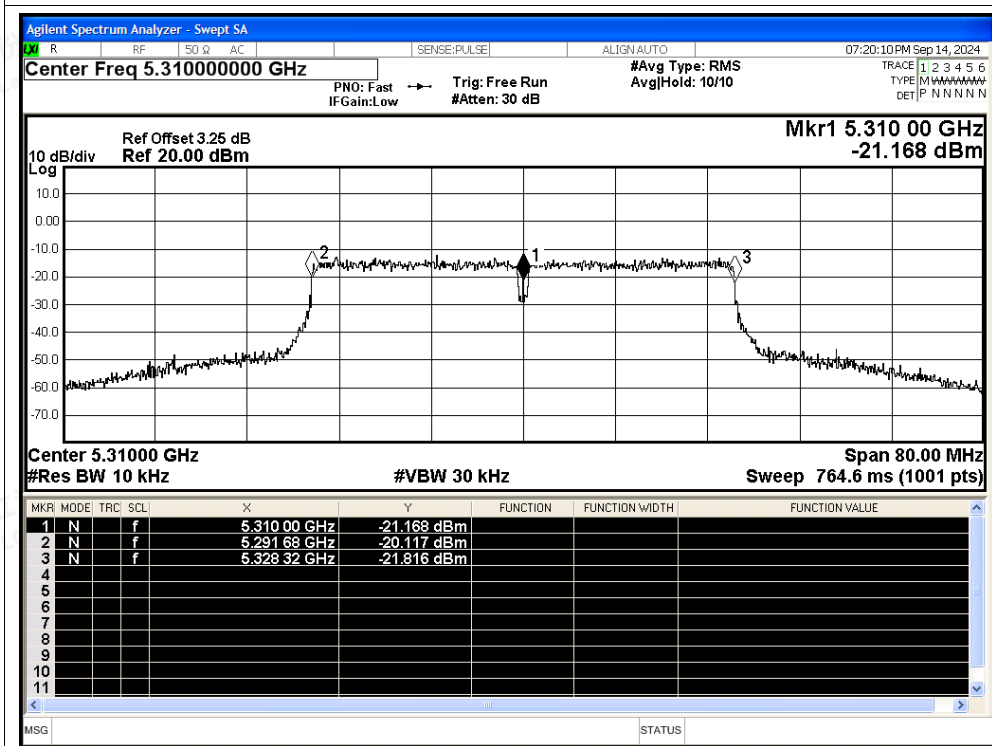




Freq. Stability NVNT n40 5270MHz Ant

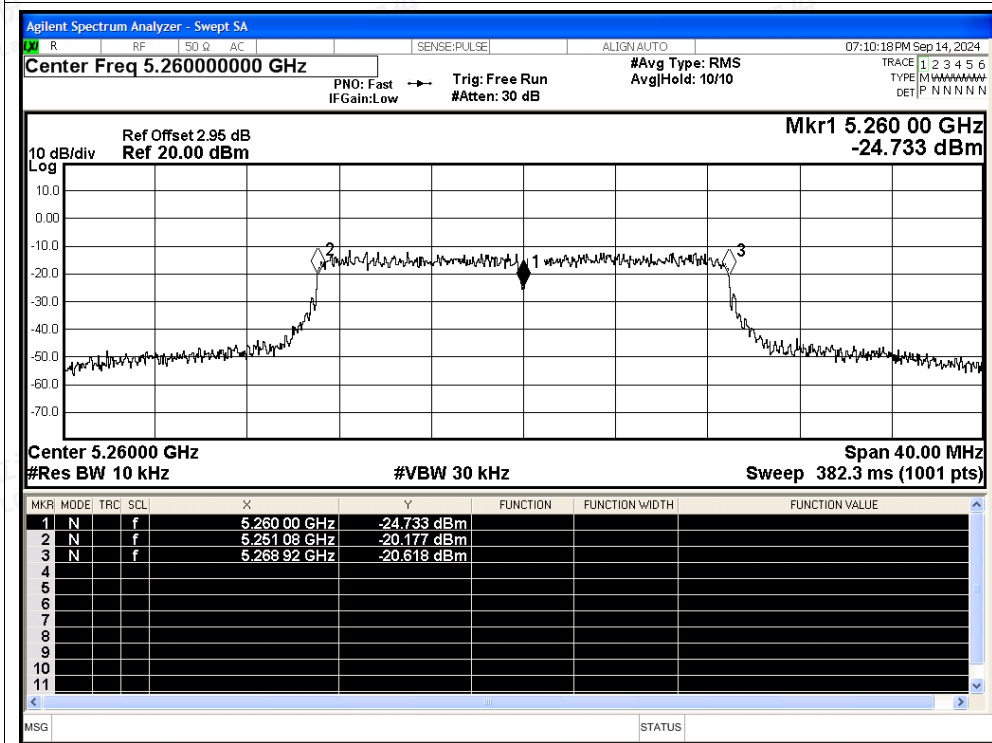


Freq. Stability NVNT n40 5310MHz Ant

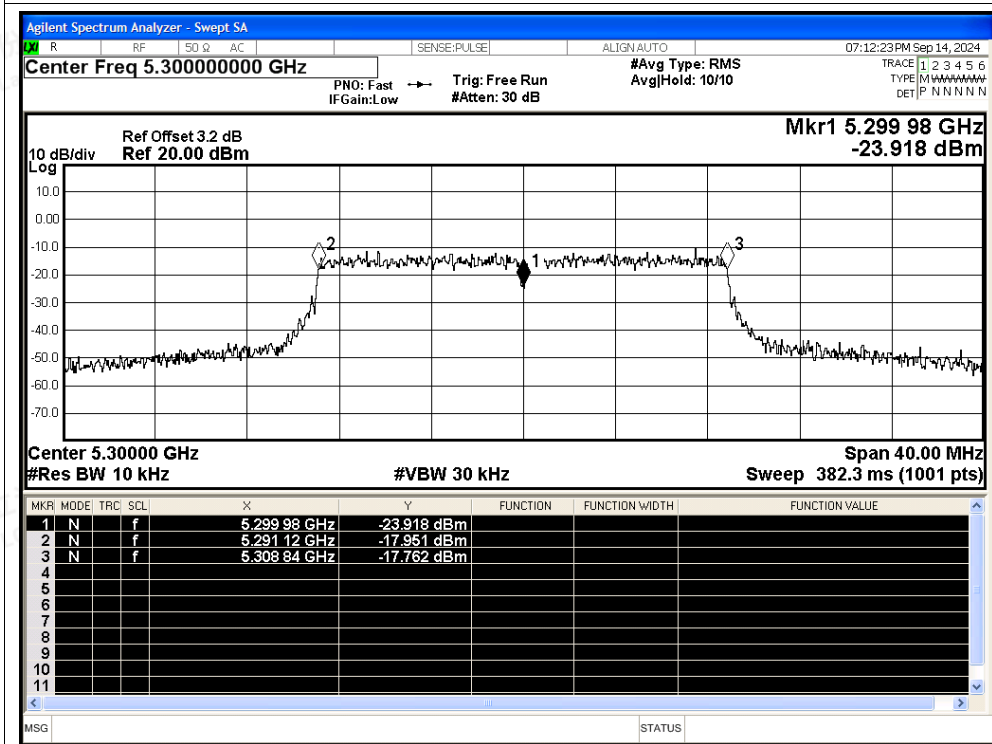




Freq. Stability NVNT ac20 5260MHz Ant

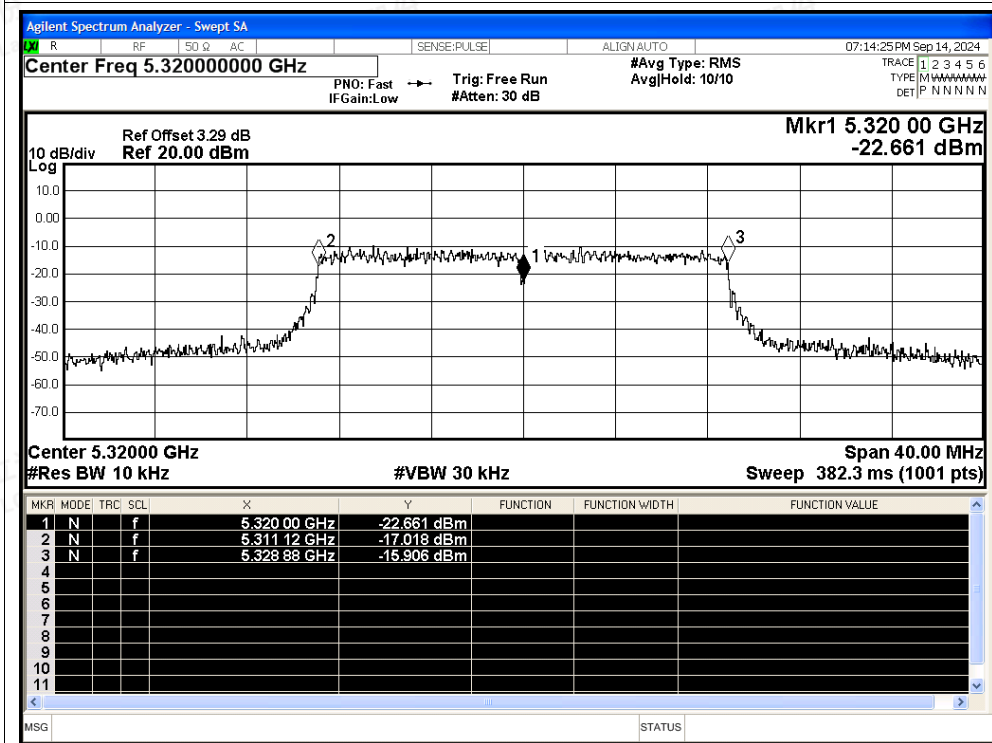


Freq. Stability NVNT ac20 5300MHz Ant

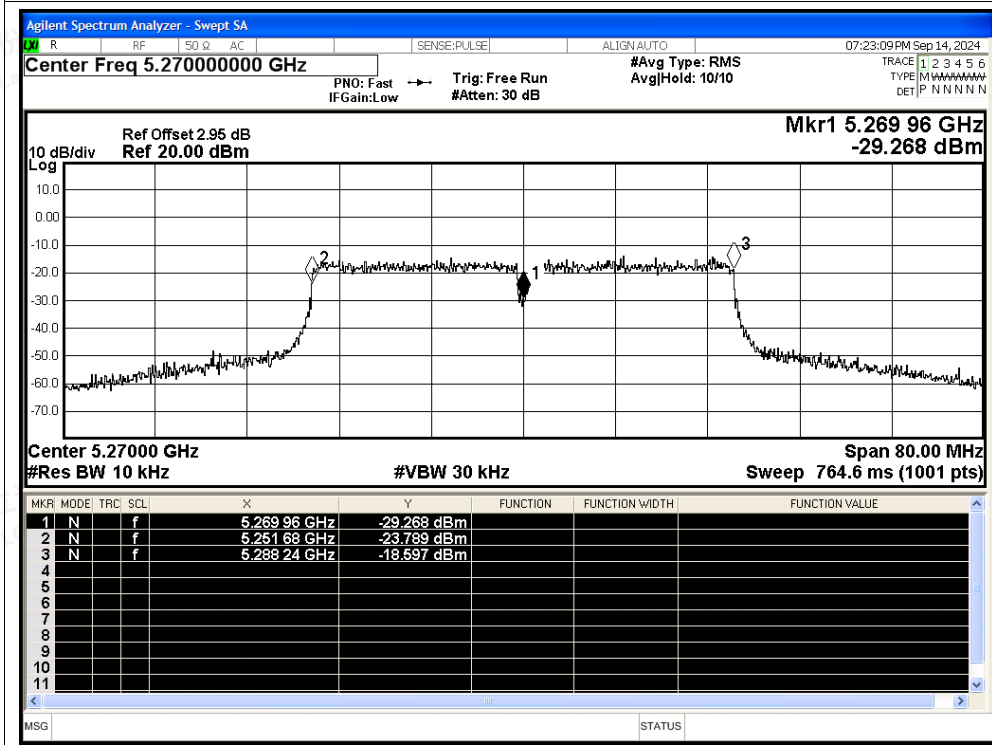


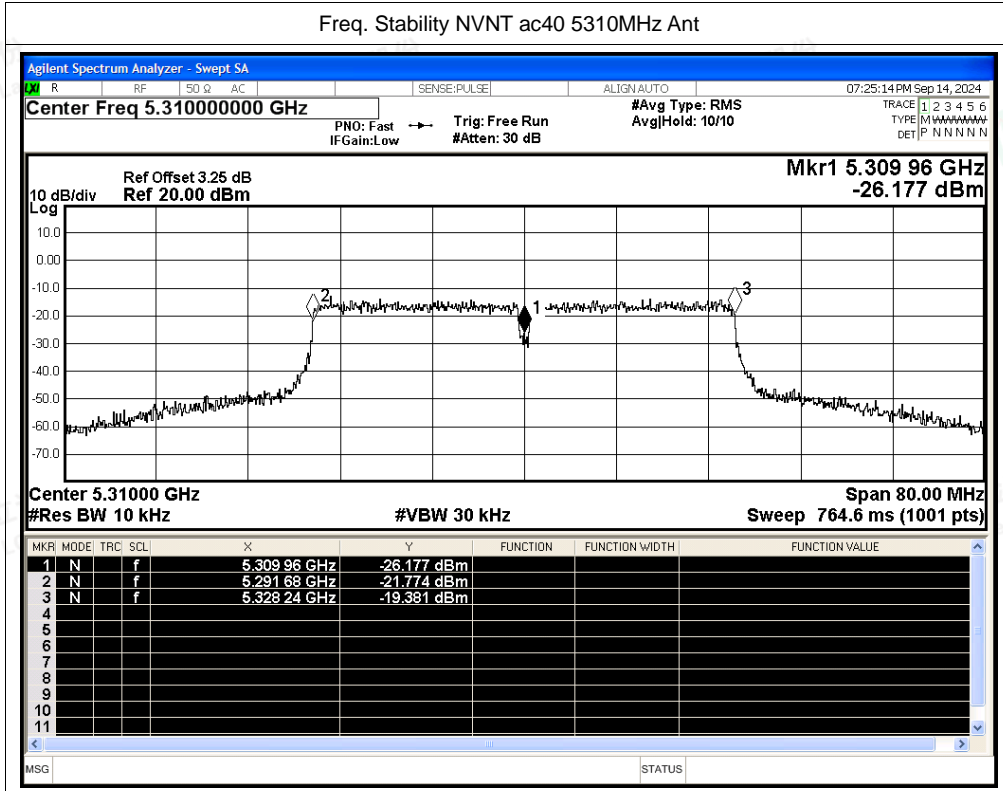


Freq. Stability NVNT ac20 5320MHz Ant



Freq. Stability NVNT ac40 5270MHz Ant







E.6 Duty Cycle

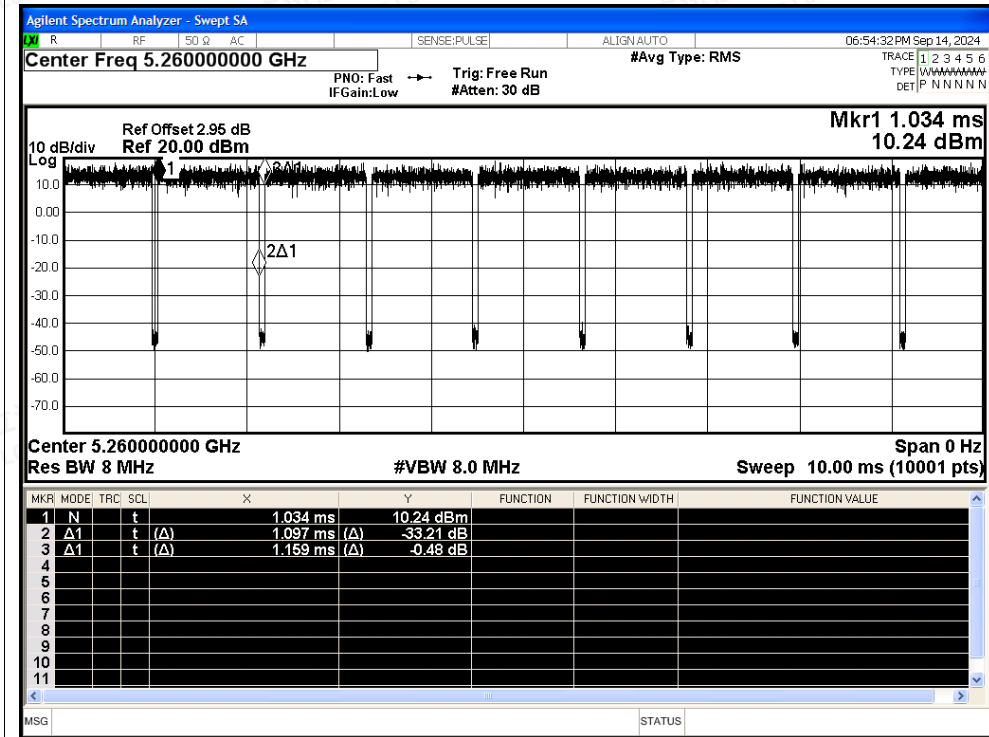
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5260	Ant	94.65	0.24	0.91
NVNT	a	5300	Ant	94.65	0.24	0.91
NVNT	a	5320	Ant	94.56	0.24	0.91
NVNT	n20	5260	Ant	97.29	0.12	0.44
NVNT	n20	5300	Ant	97.29	0.12	0.44
NVNT	n20	5320	Ant	97.29	0.12	0.44
NVNT	n40	5270	Ant	97.23	0.12	0.46
NVNT	n40	5310	Ant	97.23	0.12	0.46
NVNT	ac20	5260	Ant	97.3	0.12	0.44
NVNT	ac20	5300	Ant	97.34	0.12	0.44
NVNT	ac20	5320	Ant	97.3	0.12	0.44
NVNT	ac40	5270	Ant	97.24	0.12	0.46
NVNT	ac40	5310	Ant	97.19	0.12	0.46



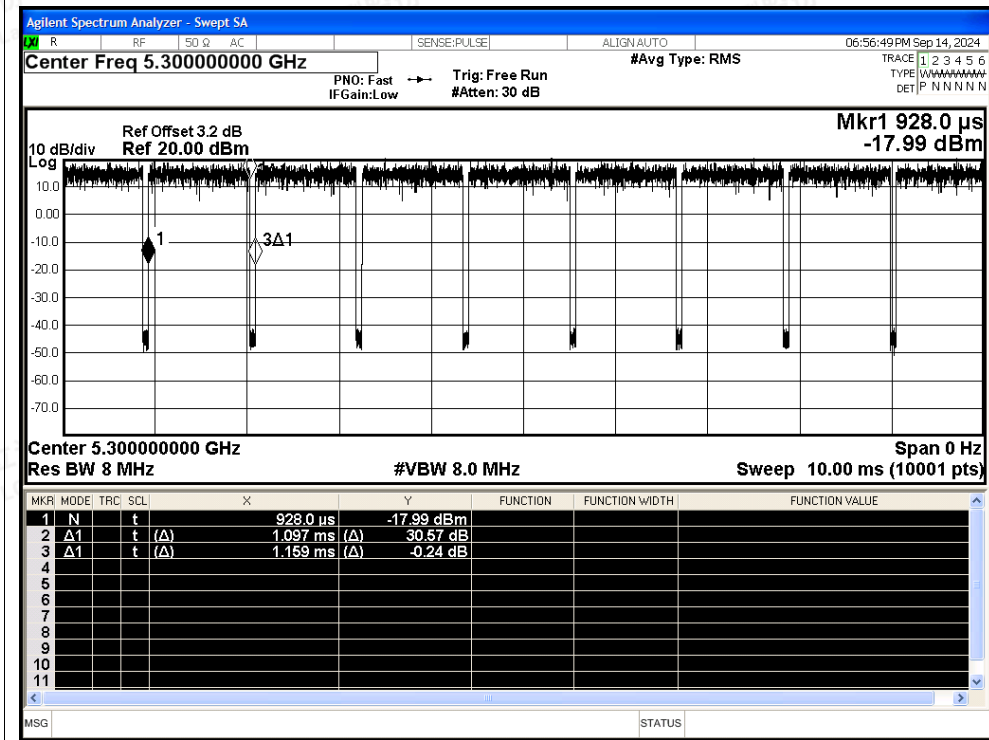


Test Graphs

Duty Cycle NVNT a 5260MHz Ant

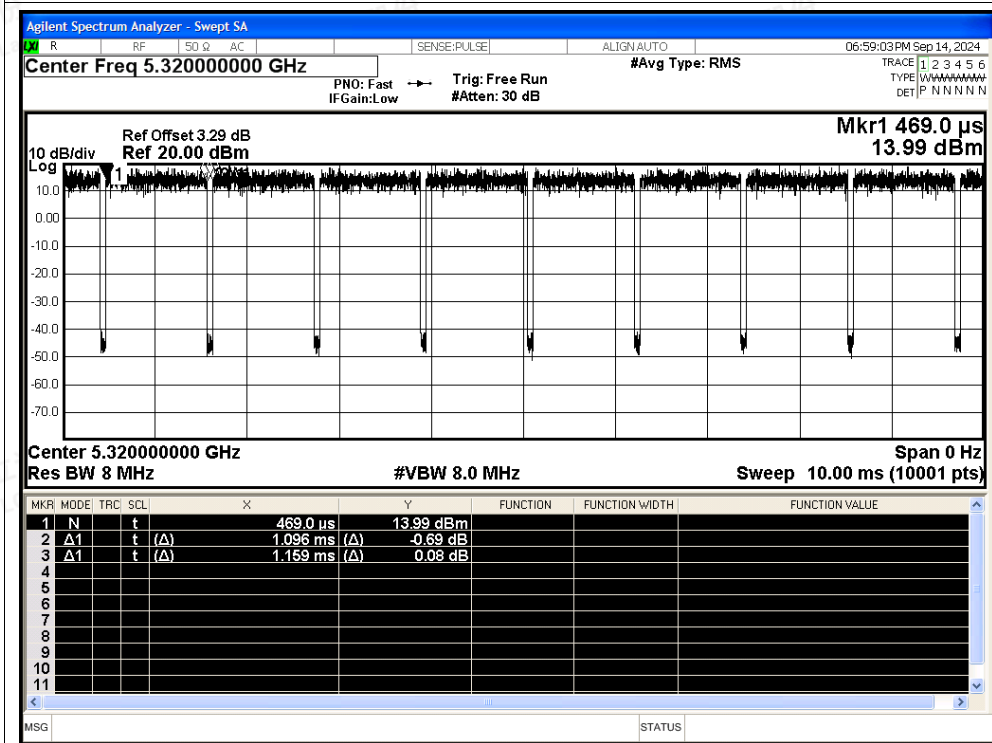


Duty Cycle NVNT a 5300MHz Ant

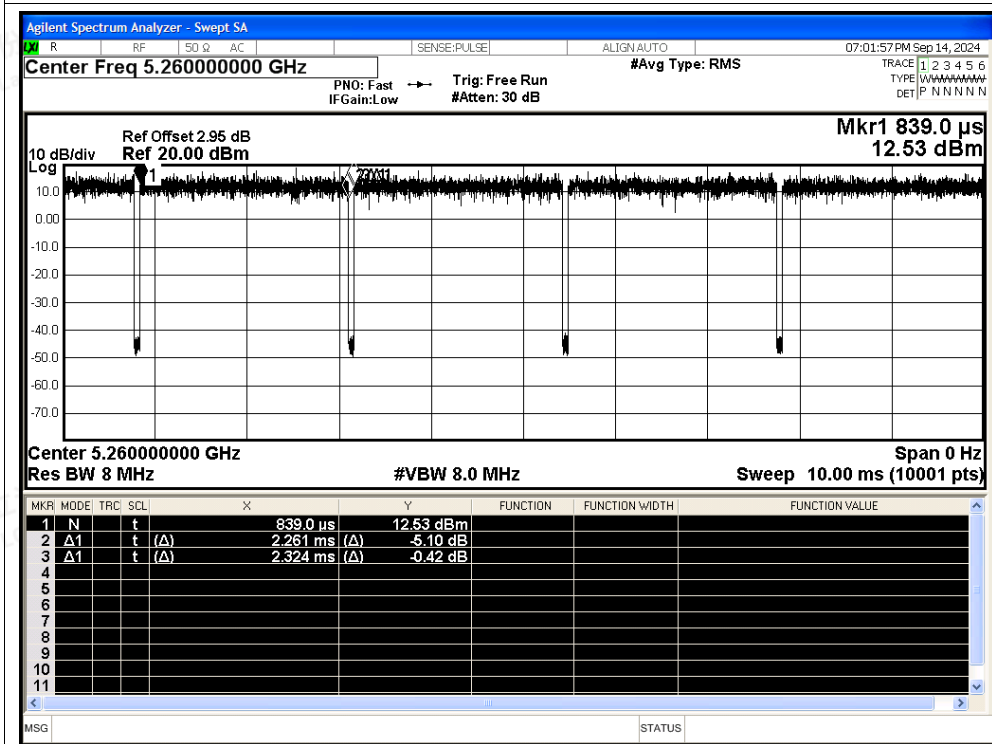


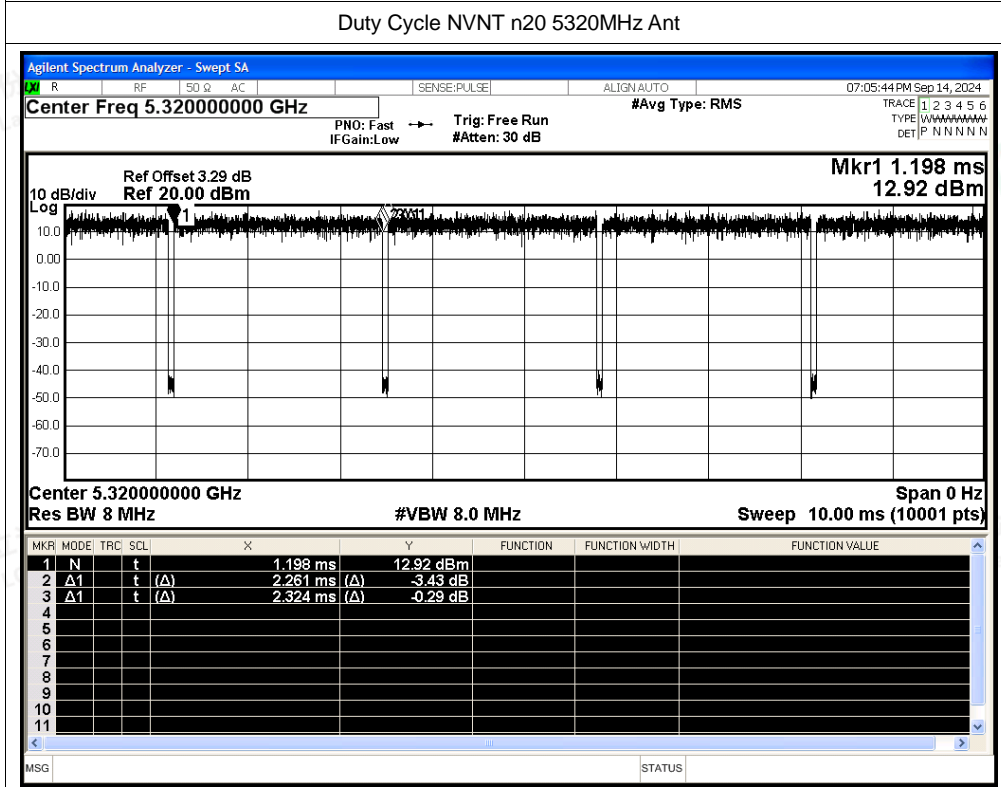
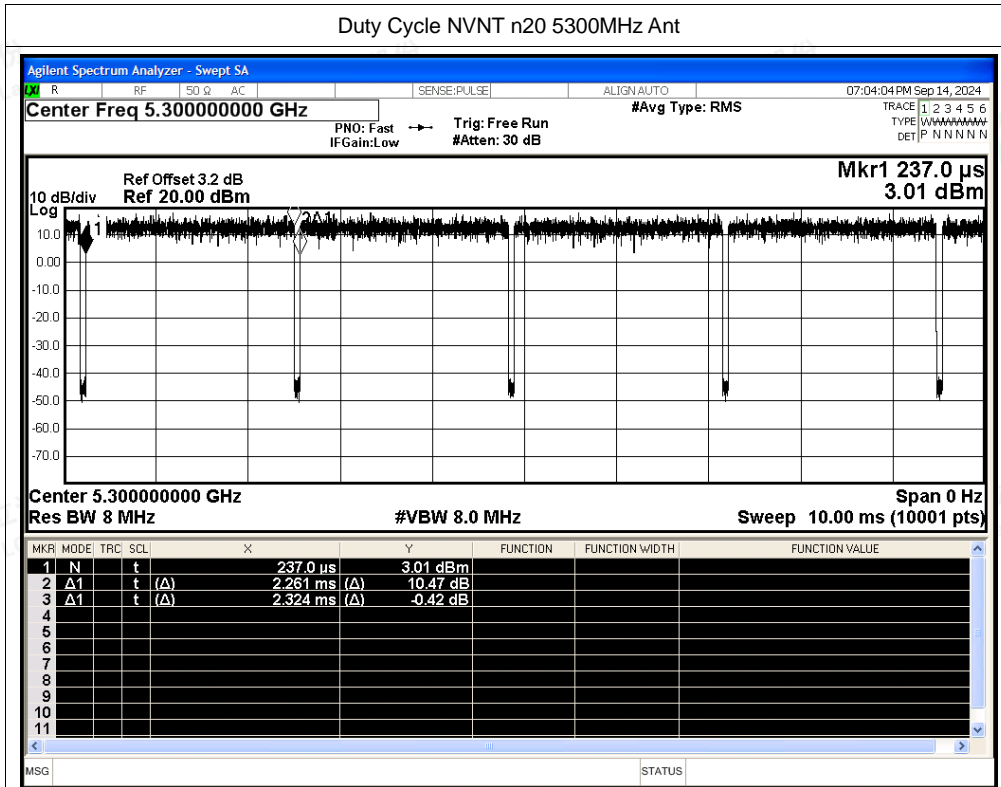


Duty Cycle NVNT a 5320MHz Ant



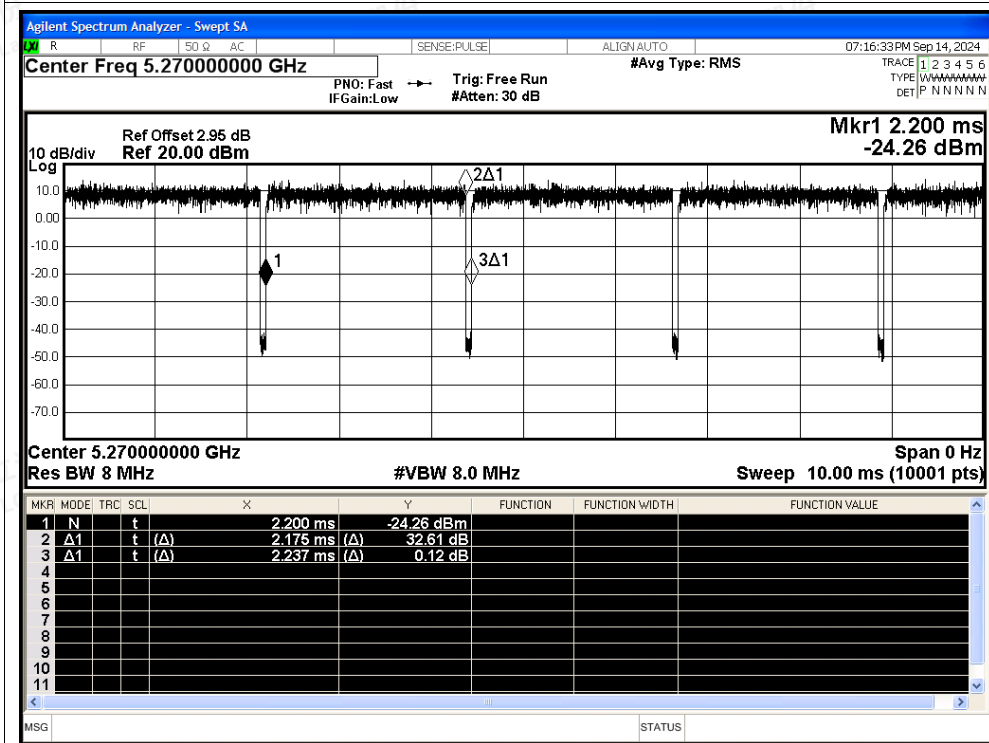
Duty Cycle NVNT n20 5260MHz Ant



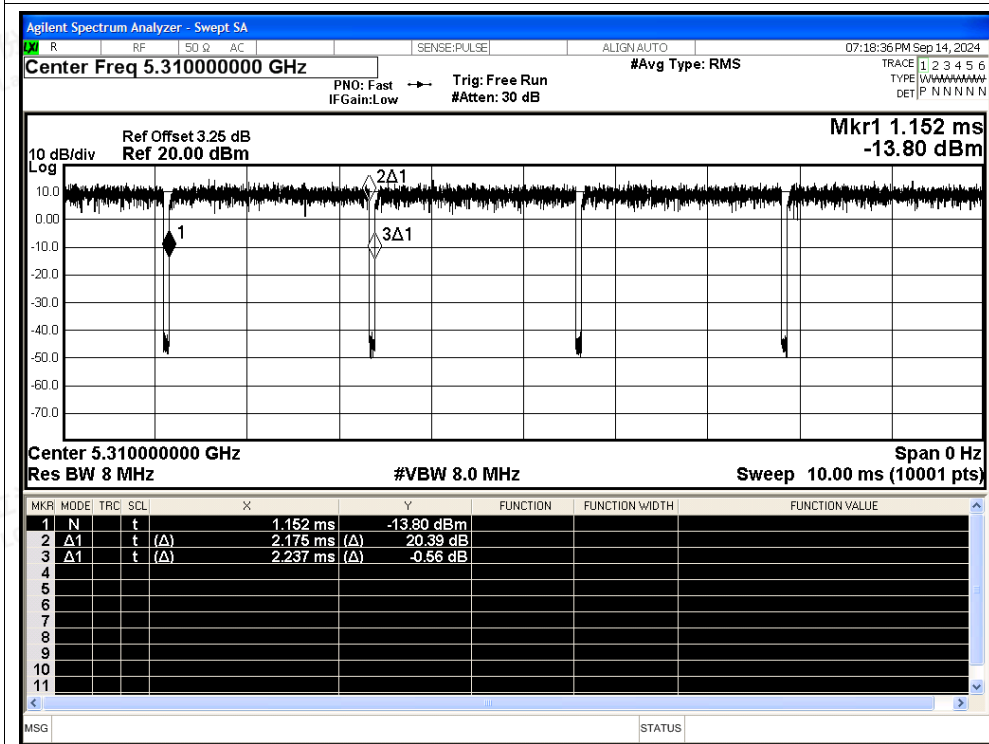




Duty Cycle NVNT n40 5270MHz Ant

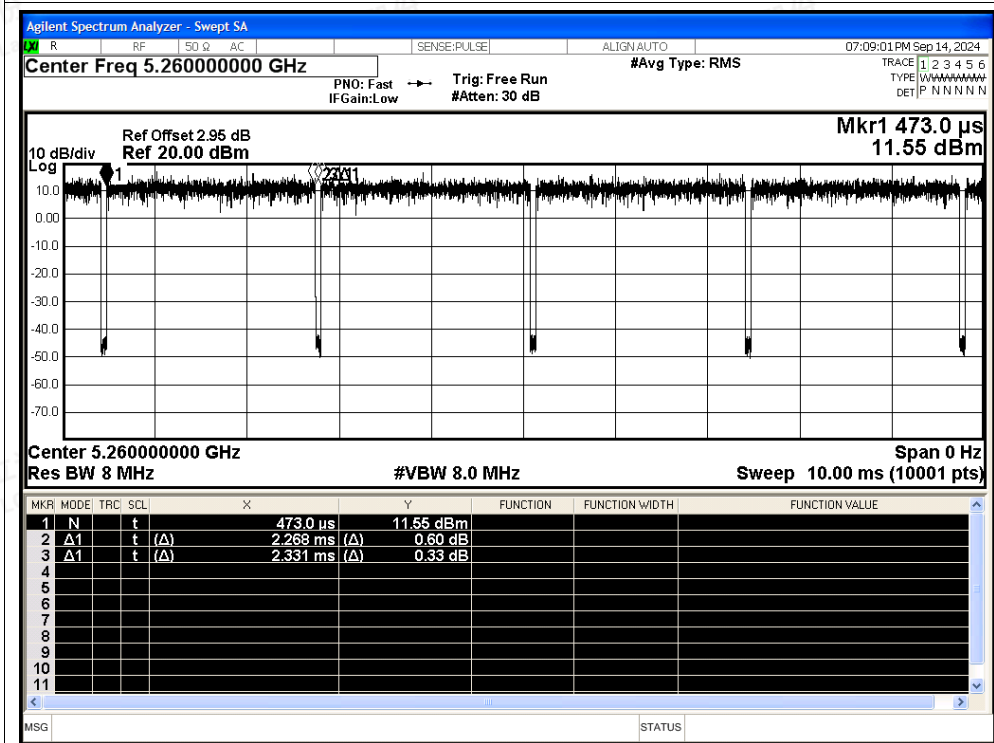


Duty Cycle NVNT n40 5310MHz Ant

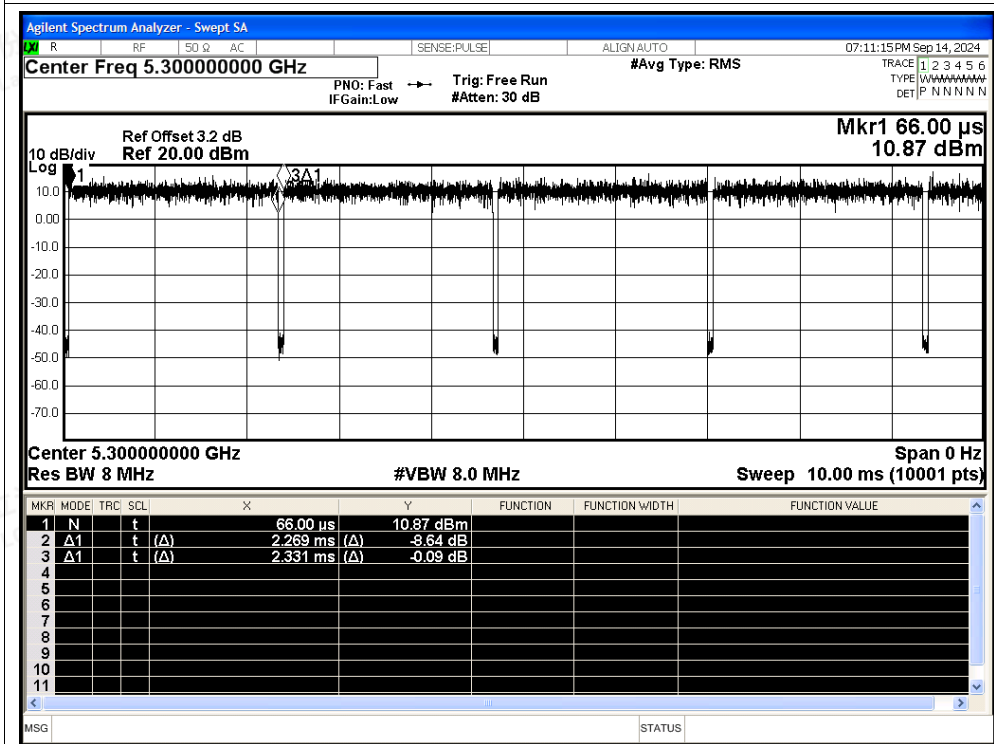




Duty Cycle NVNT ac20 5260MHz Ant

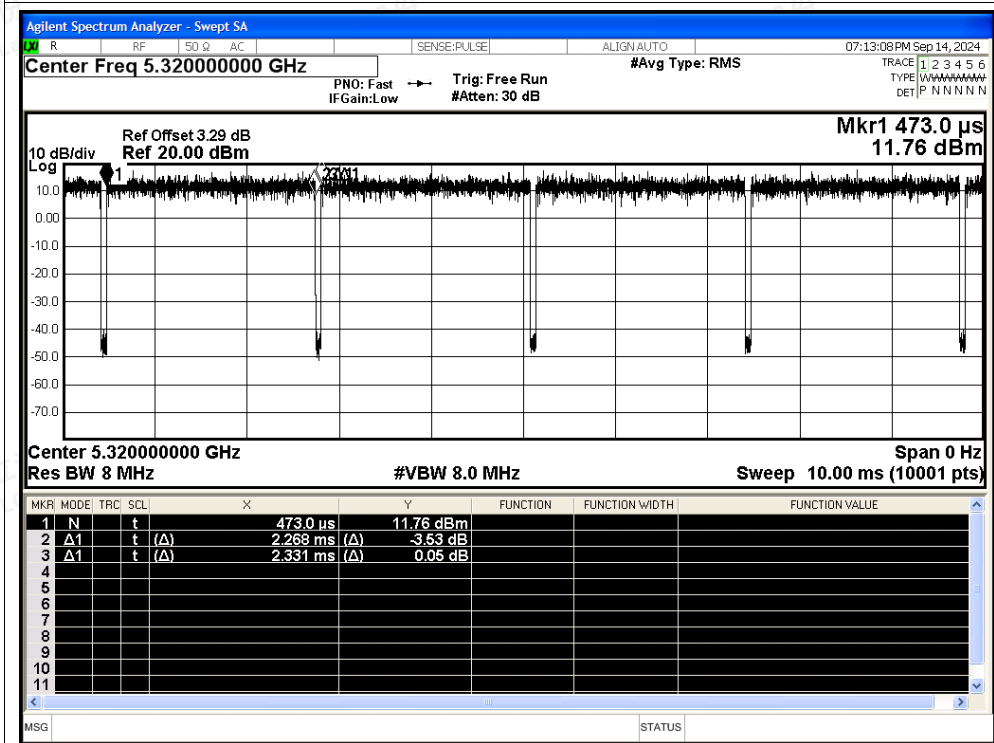


Duty Cycle NVNT ac20 5300MHz Ant





Duty Cycle NVNT ac20 5320MHz Ant



Duty Cycle NVNT ac40 5270MHz Ant

