



Appendix A

RF Test Data for 5.2GWIFI (Conducted Measurement)

Product Name: Long range Wireless HDMI extender

Test Model: ST121WHDLR Receiver

Environmental Conditions

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



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A.1 -26dB Bandwidth

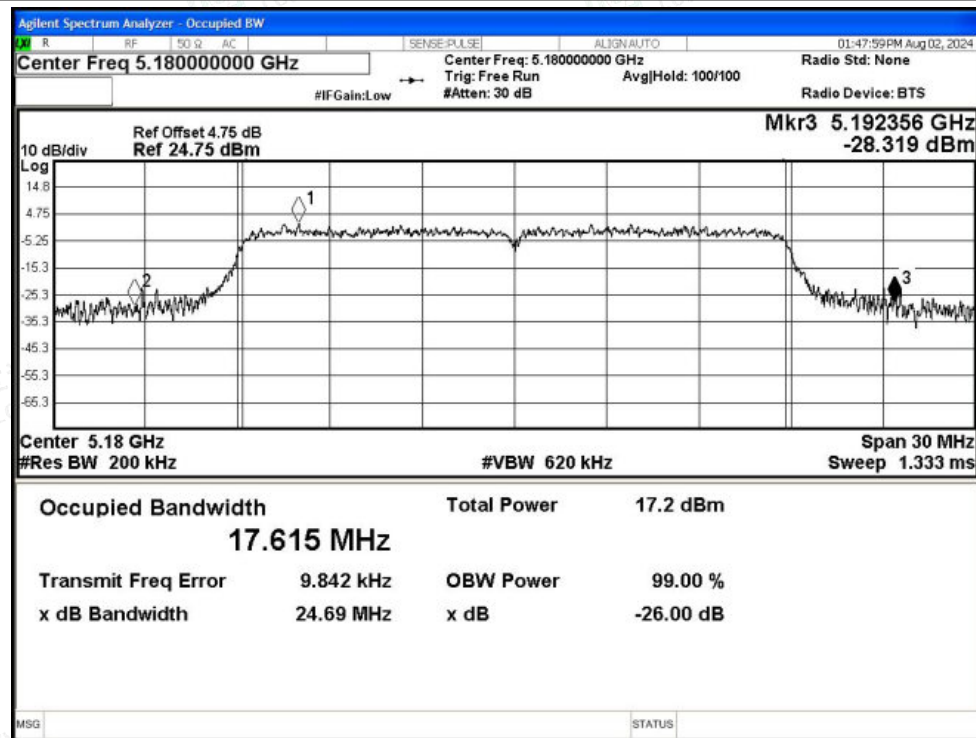
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	n20	5180	Ant0	24.693	≥ 0.5	Pass
NVNT	n20	5200	Ant0	26.141	≥ 0.5	Pass
NVNT	n20	5240	Ant0	27.133	≥ 0.5	Pass
NVNT	n40	5190	Ant0	47.163	≥ 0.5	Pass
NVNT	n40	5230	Ant0	46.211	≥ 0.5	Pass



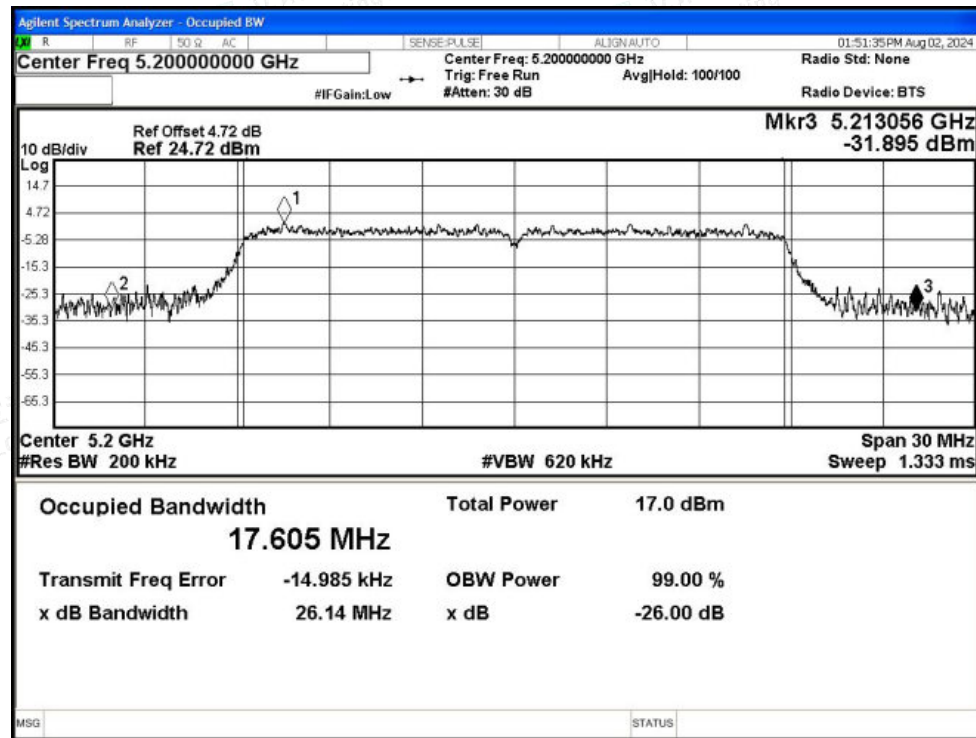


Test Graphs

-26dB Bandwidth NVNT n20 5180MHz Ant0

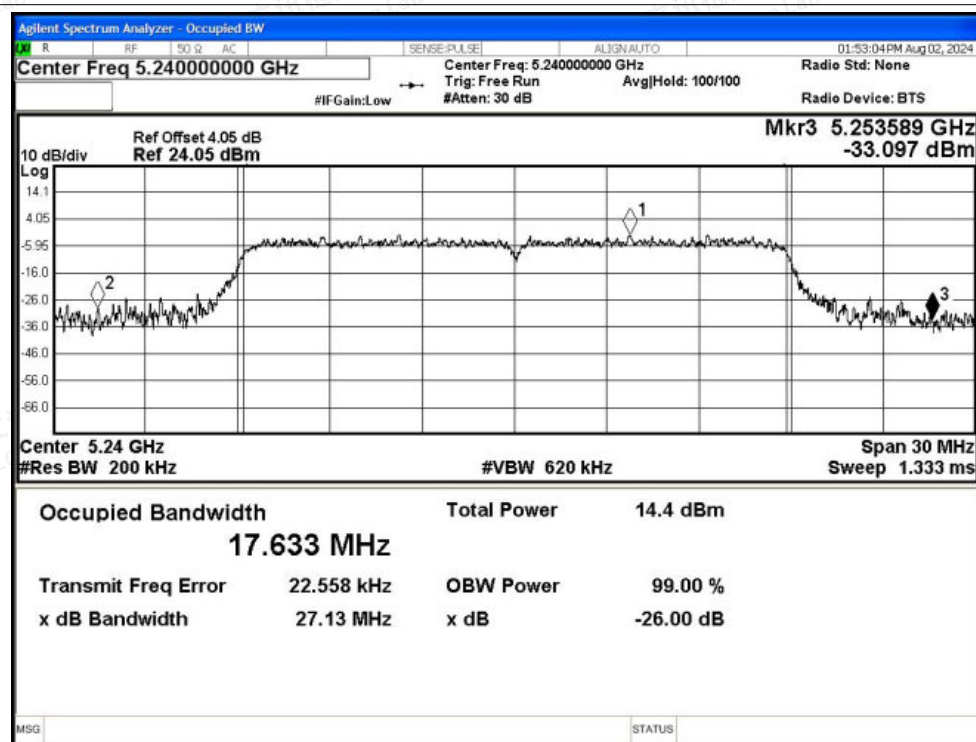


-26dB Bandwidth NVNT n20 5200MHz Ant0

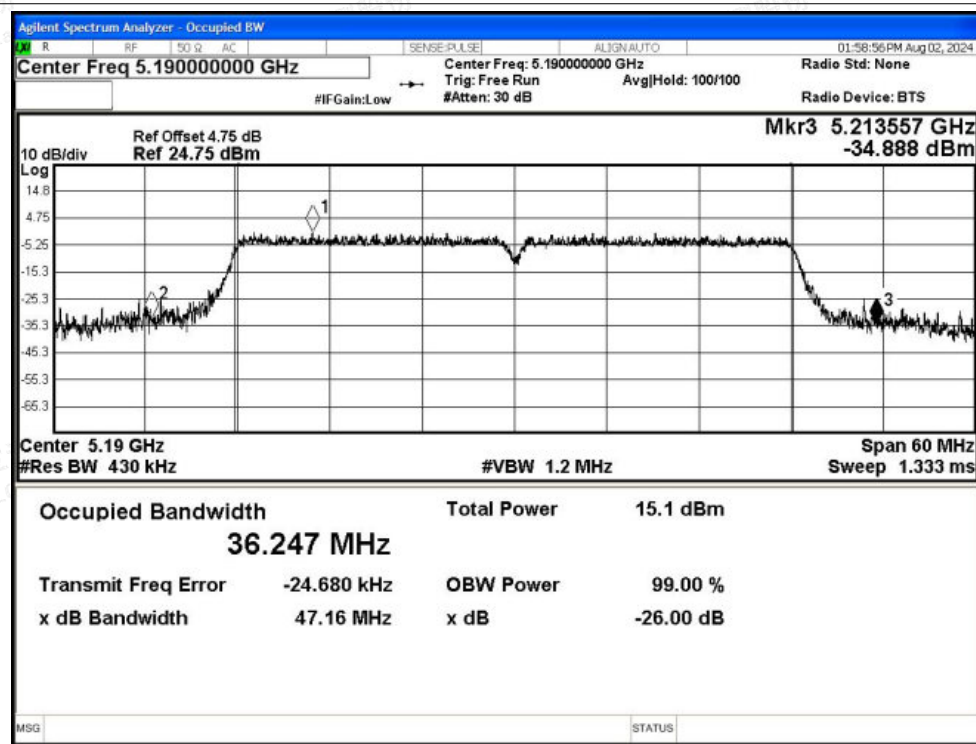


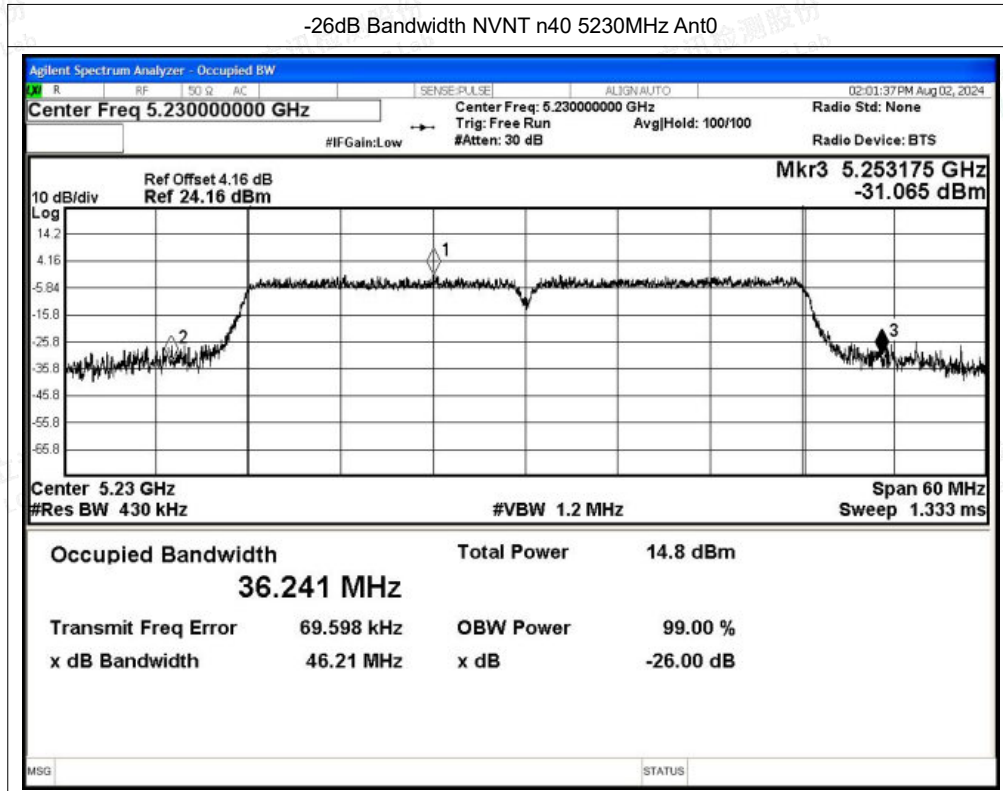


-26dB Bandwidth NVNT n20 5240MHz Ant0



-26dB Bandwidth NVNT n40 5190MHz Ant0







Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	n20	5180	Ant1	25.669	≥ 0.5	Pass
NVNT	n20	5200	Ant1	22.497	≥ 0.5	Pass
NVNT	n20	5240	Ant1	26.601	≥ 0.5	Pass
NVNT	n40	5190	Ant1	45.048	≥ 0.5	Pass
NVNT	n40	5230	Ant1	49.375	≥ 0.5	Pass

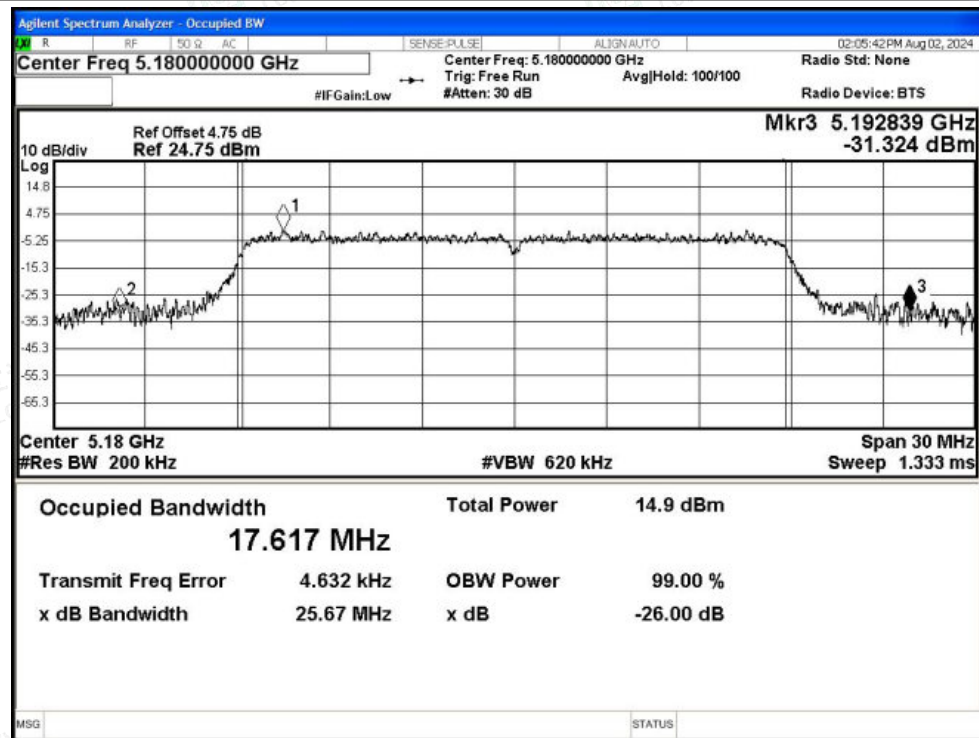


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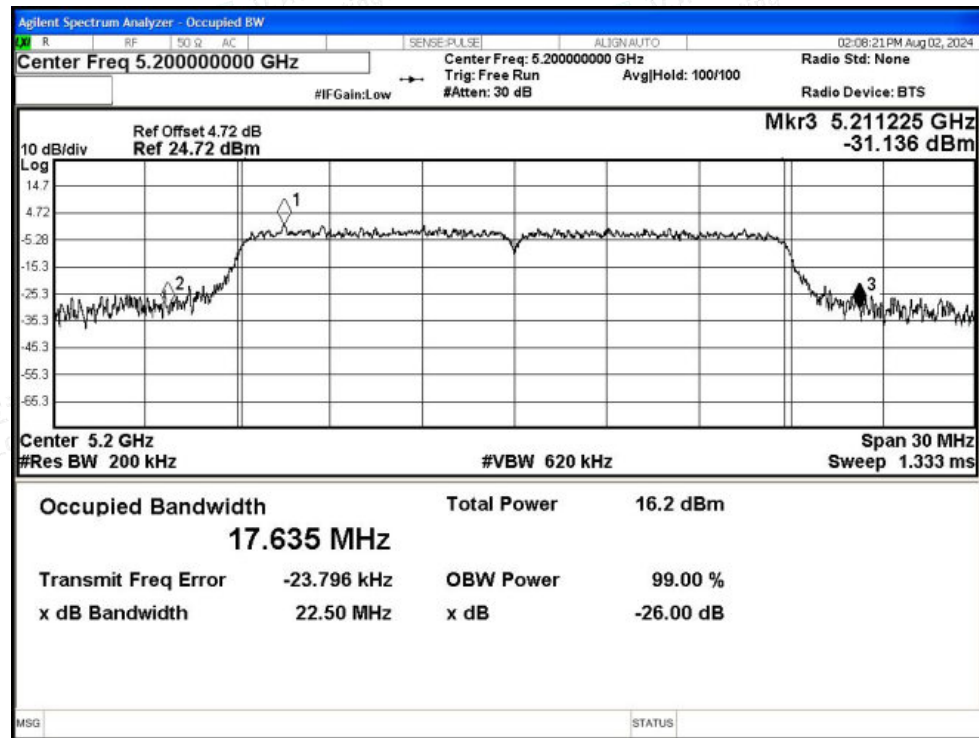


Test Graphs

-26dB Bandwidth NVNT n20 5180MHz Ant1

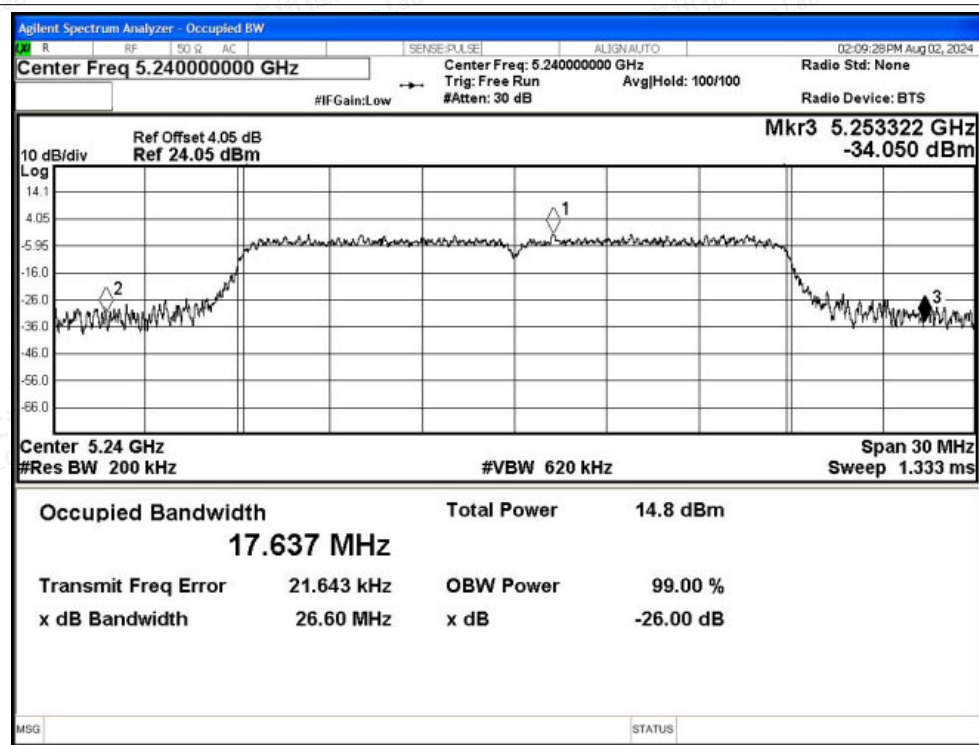


-26dB Bandwidth NVNT n20 5200MHz Ant1

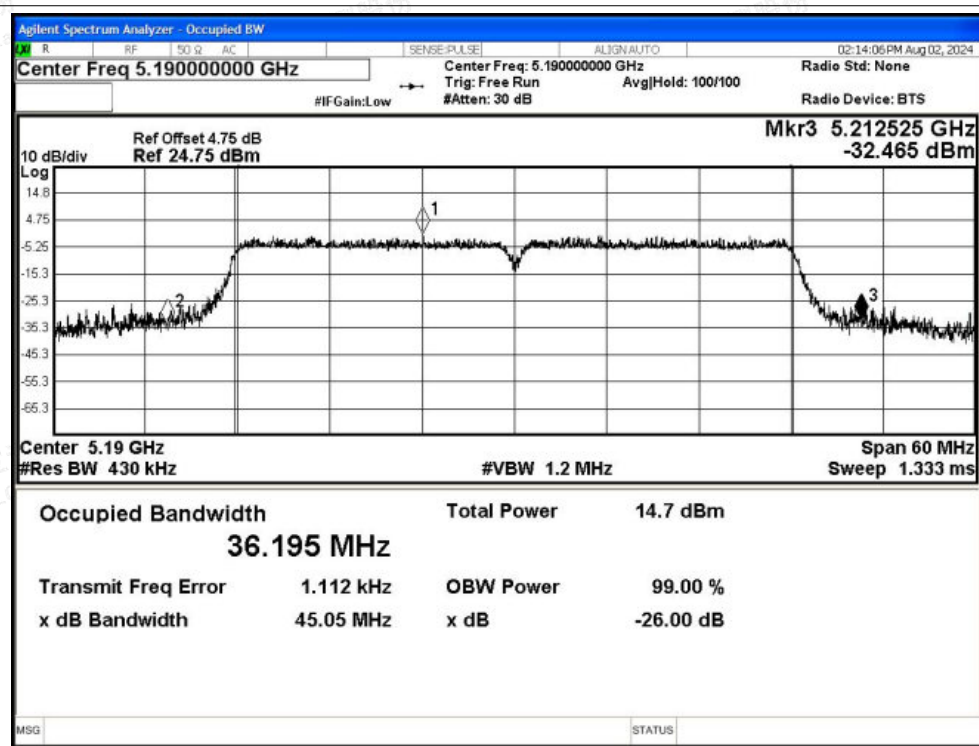


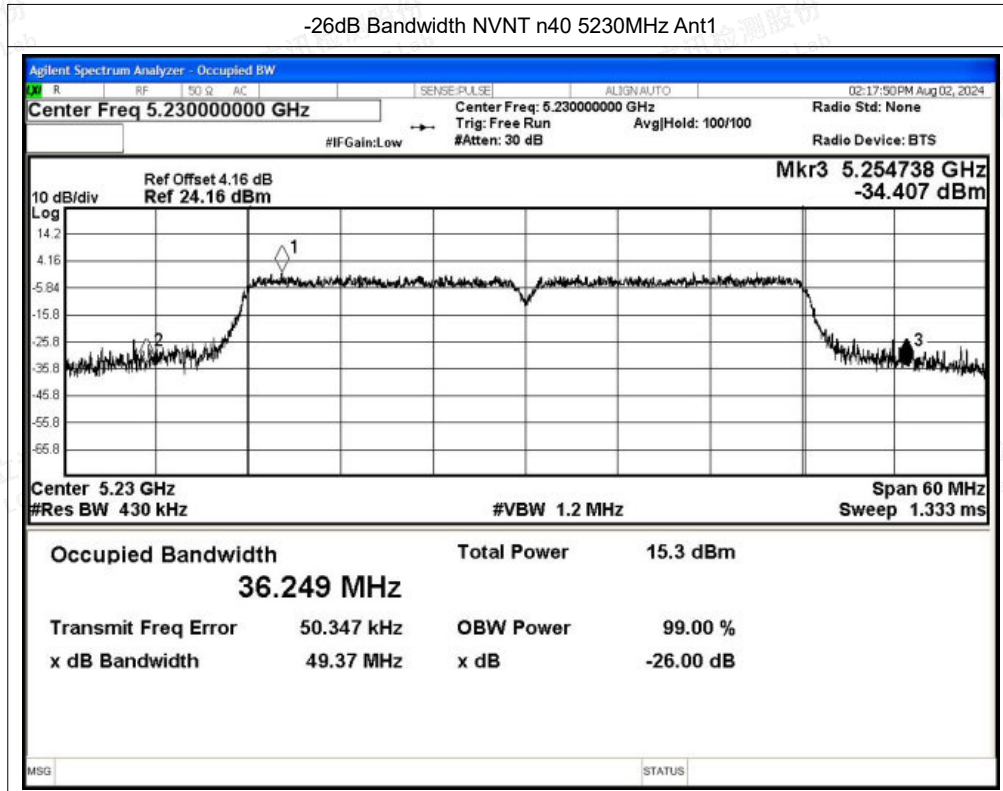


-26dB Bandwidth NVNT n20 5240MHz Ant1



-26dB Bandwidth NVNT n40 5190MHz Ant1







A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	n20	5180	Ant0	11.55	0.28	11.83	30.00	Pass
NVNT	n20	5200	Ant0	11.28	0.28	11.56	30.00	Pass
NVNT	n20	5240	Ant0	11.3	0.28	11.58	30.00	Pass
NVNT	n40	5190	Ant0	10.07	0.45	10.52	30.00	Pass
NVNT	n40	5230	Ant0	9.93	0.44	10.37	30.00	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	n20	5180	Ant1	10.49	0.28	10.77	30.00	Pass
NVNT	n20	5200	Ant1	10.49	0.28	10.77	30.00	Pass
NVNT	n20	5240	Ant1	10.35	0.28	10.63	30.00	Pass
NVNT	n40	5190	Ant1	9.03	0.45	9.48	30.00	Pass
NVNT	n40	5230	Ant1	9.4	0.45	9.85	30.00	Pass

MIMO

Condition	Mode	Frequency (MHz)	Total Power (dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
NVNT	n20	5180	11.83	10.77	14.34	30.00	Pass
NVNT	n20	5200	11.56	10.77	14.19	30.00	Pass
NVNT	n20	5240	11.58	10.63	14.14	30.00	Pass
NVNT	n40	5190	10.52	9.48	13.04	30.00	Pass
NVNT	n40	5230	10.37	9.85	13.13	30.00	Pass





A.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	n20	5180	Ant0	0.75	0.28	1.03	17.00	Pass
NVNT	n20	5200	Ant0	0.7	0.28	0.98	17.00	Pass
NVNT	n20	5240	Ant0	-2.15	0.28	-1.87	17.00	Pass
NVNT	n40	5190	Ant0	-4.77	0.45	-4.32	17.00	Pass
NVNT	n40	5230	Ant0	-4.86	0.44	-4.42	17.00	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	n20	5180	Ant1	-1.37	0.28	-1.09	17.00	Pass
NVNT	n20	5200	Ant1	-0.01	0.28	0.27	17.00	Pass
NVNT	n20	5240	Ant1	-1.6	0.28	-1.32	17.00	Pass
NVNT	n40	5190	Ant1	-4.99	0.45	-4.54	17.00	Pass
NVNT	n40	5230	Ant1	-4.59	0.45	-4.14	17.00	Pass

MIMO

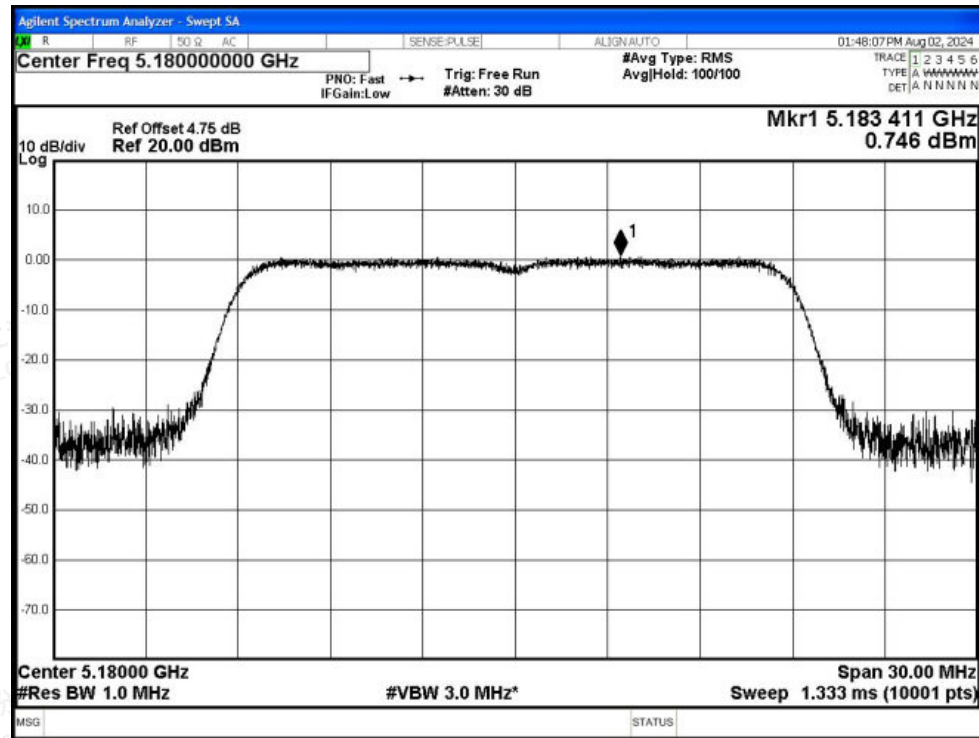
Condition	Mode	Frequency (MHz)	Total PSD (dBm/MHz)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
NVNT	n20	5180	1.03	-1.09	1.03	15.49	Pass
NVNT	n20	5200	0.98	0.27	0.98	15.49	Pass
NVNT	n20	5240	-1.87	-1.32	-1.87	15.49	Pass
NVNT	n40	5190	-4.32	-4.54	-4.32	15.49	Pass
NVNT	n40	5230	-4.42	-4.14	-4.42	15.49	Pass



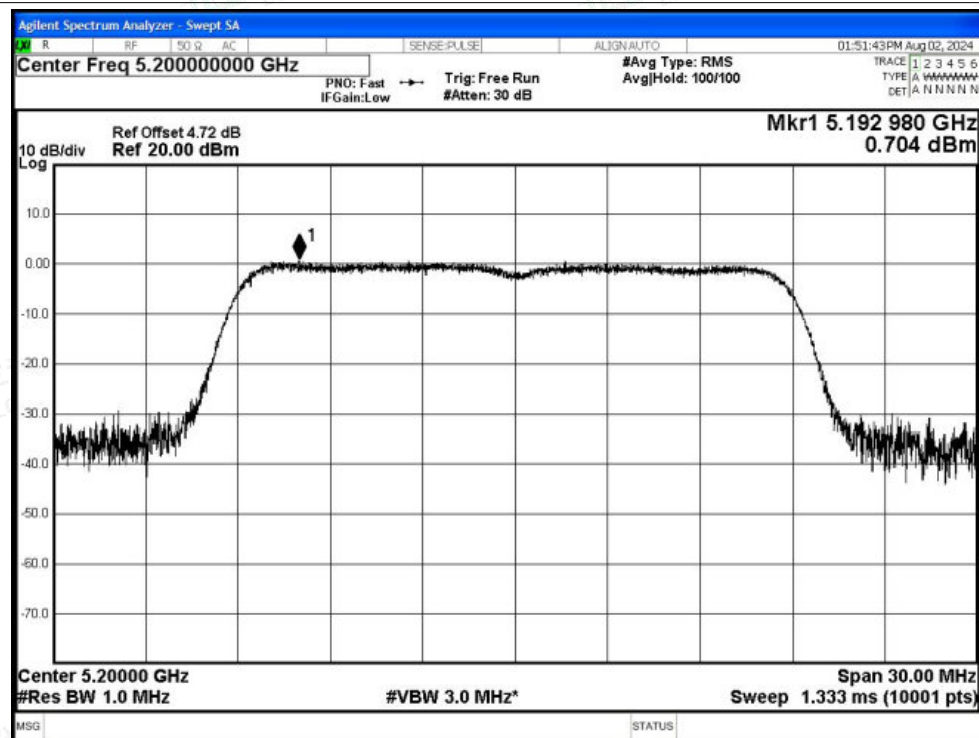


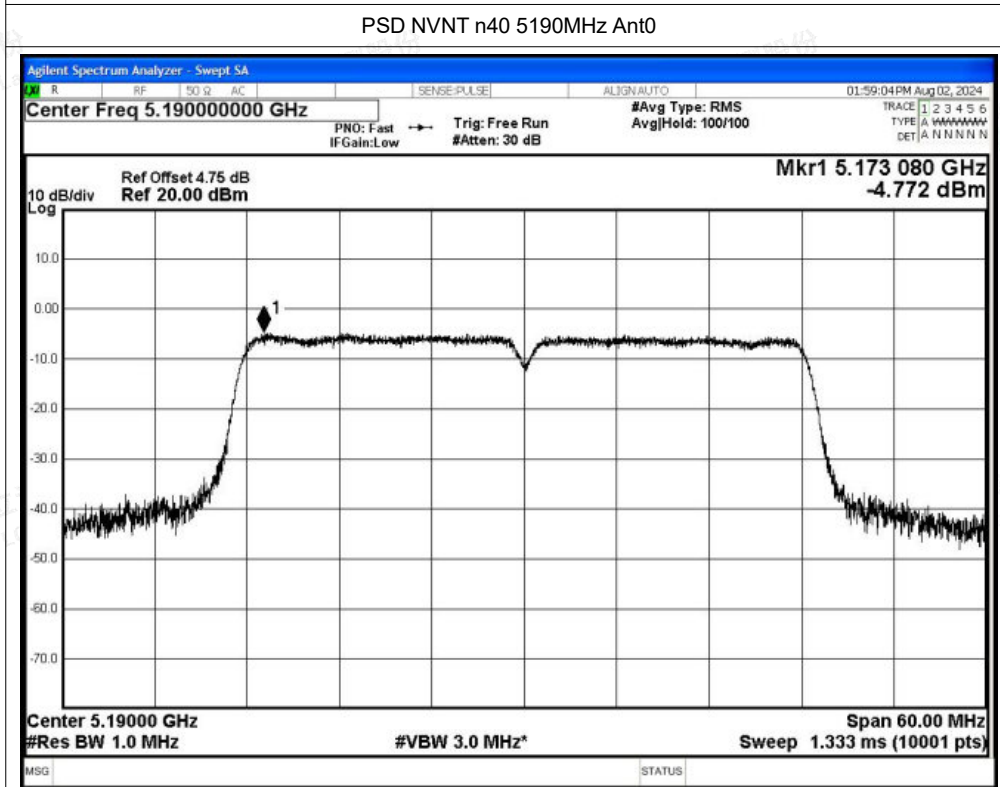
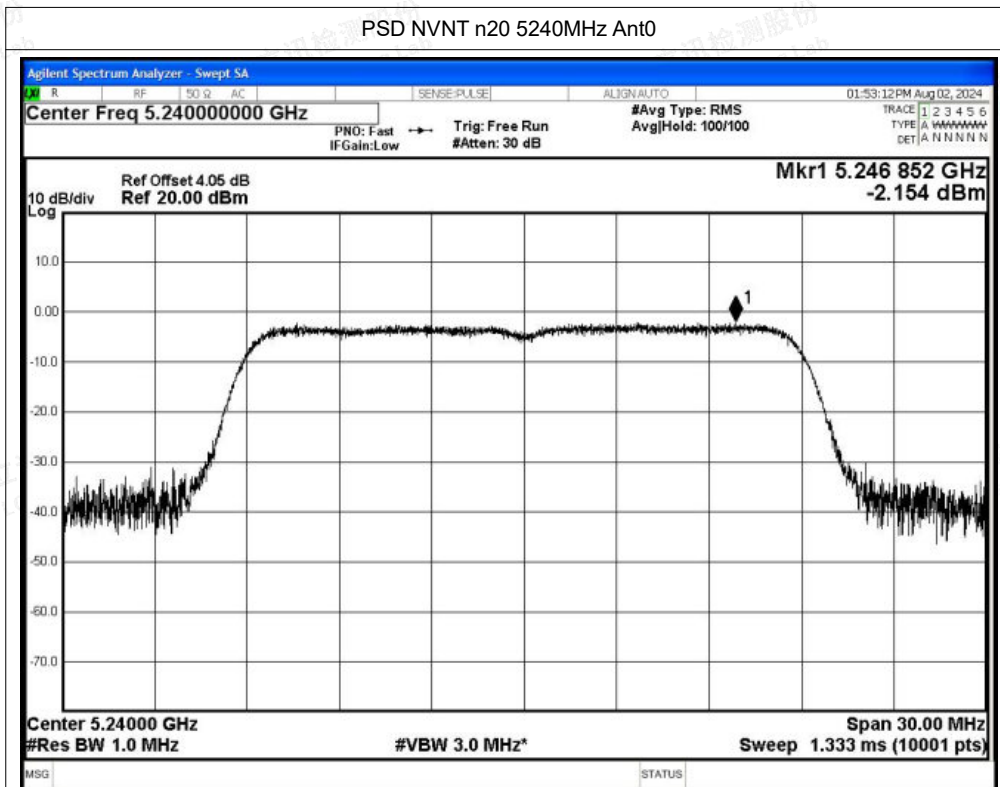
Test Graphs

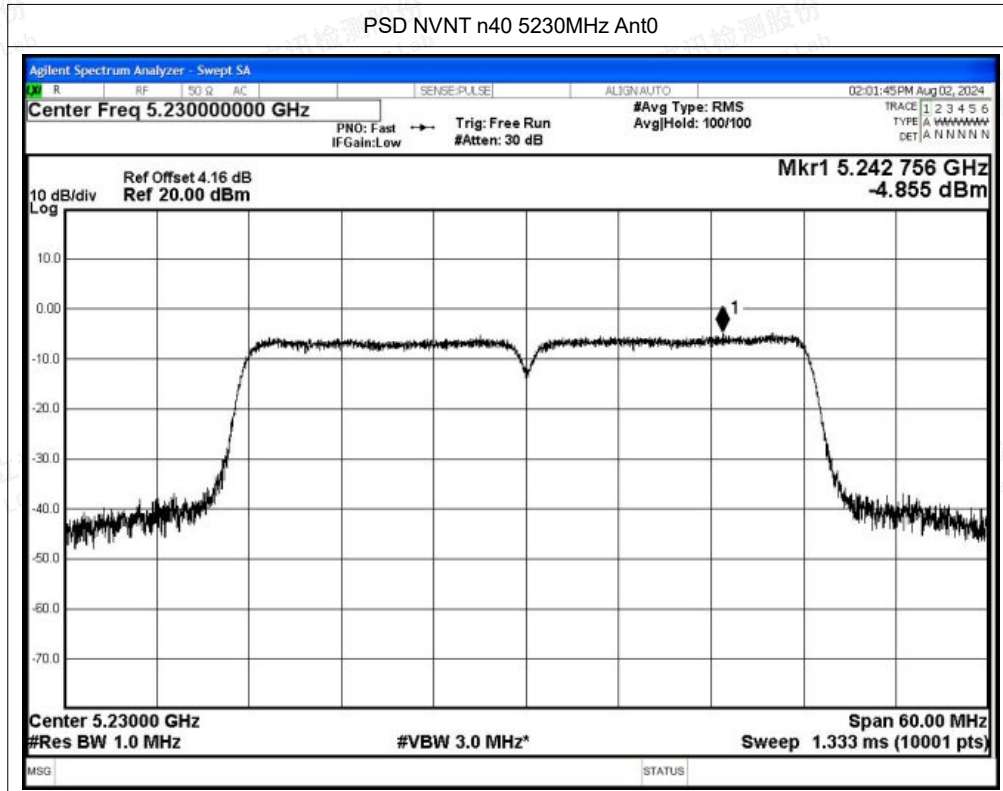
PSD NVNT n20 5180MHz Ant0



PSD NVNT n20 5200MHz Ant0



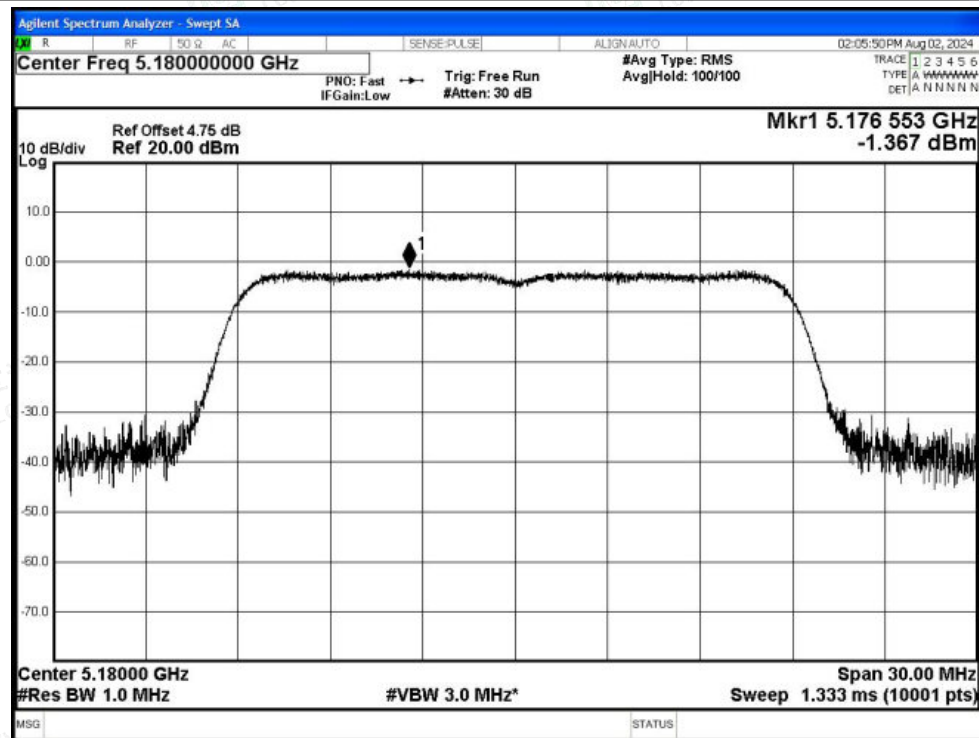




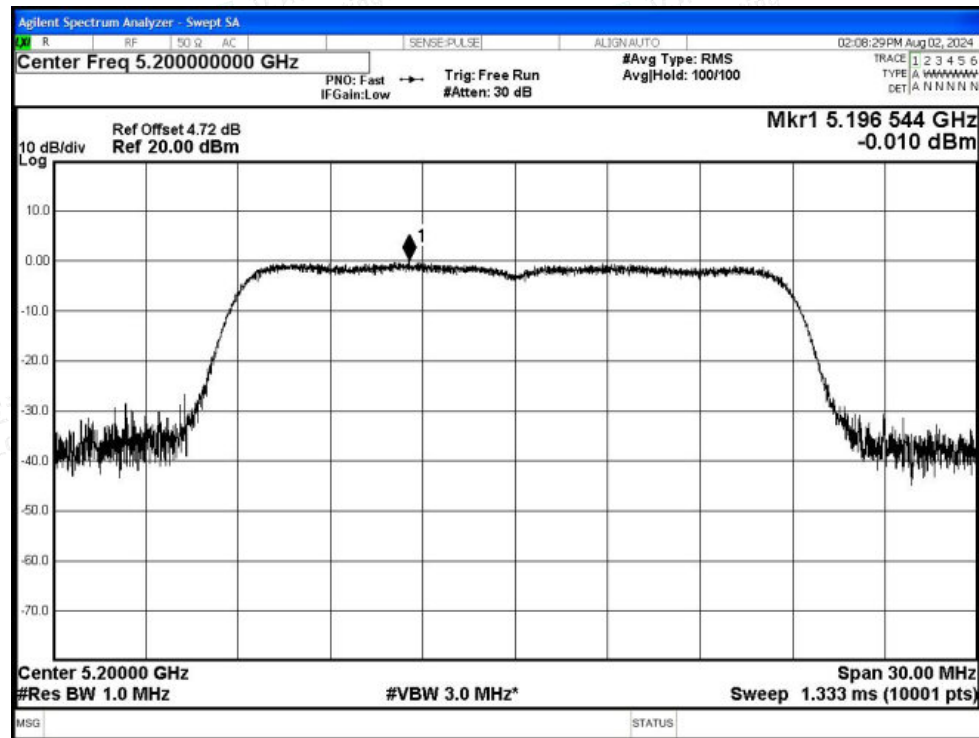


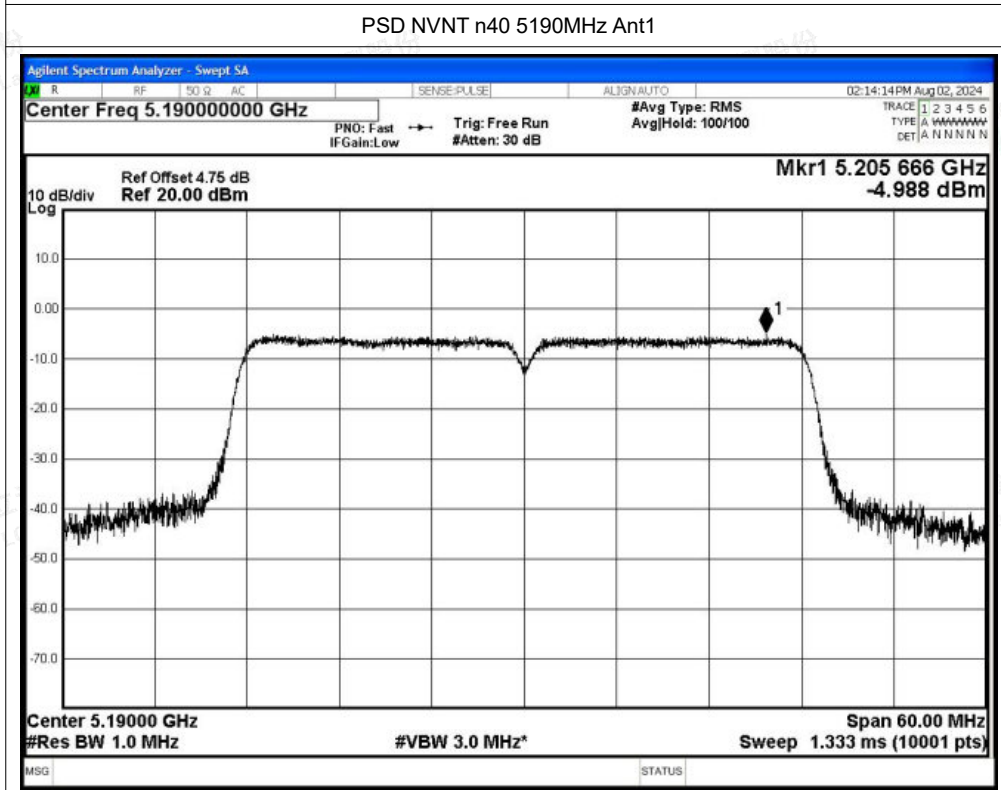
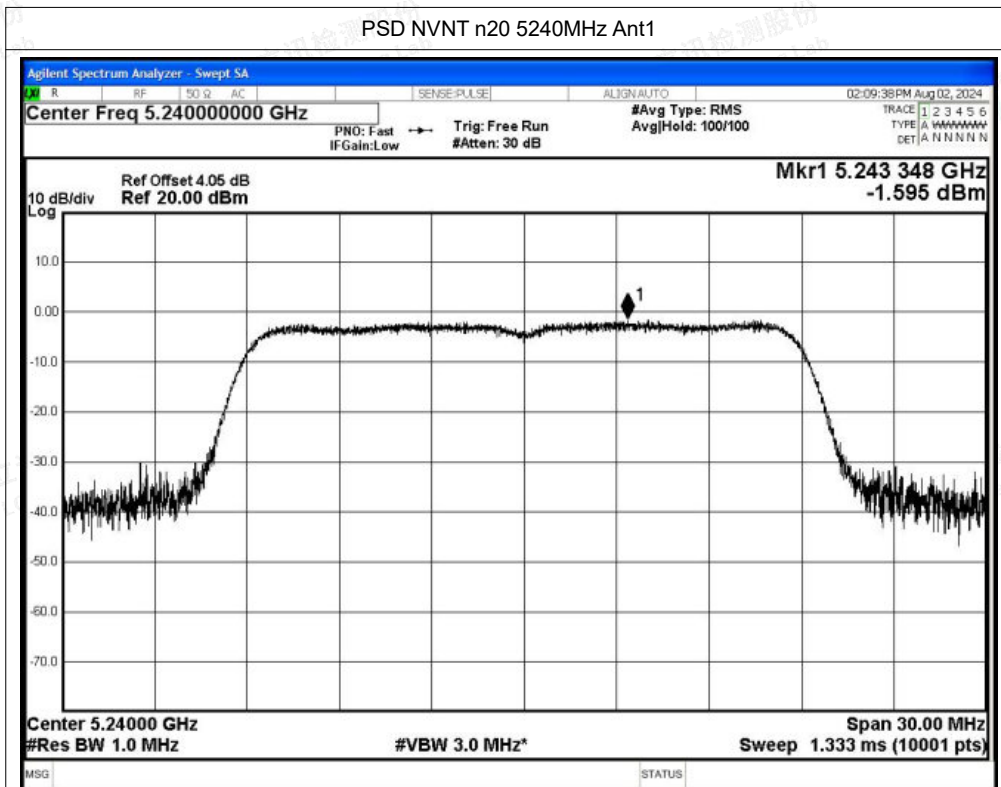
Test Graphs

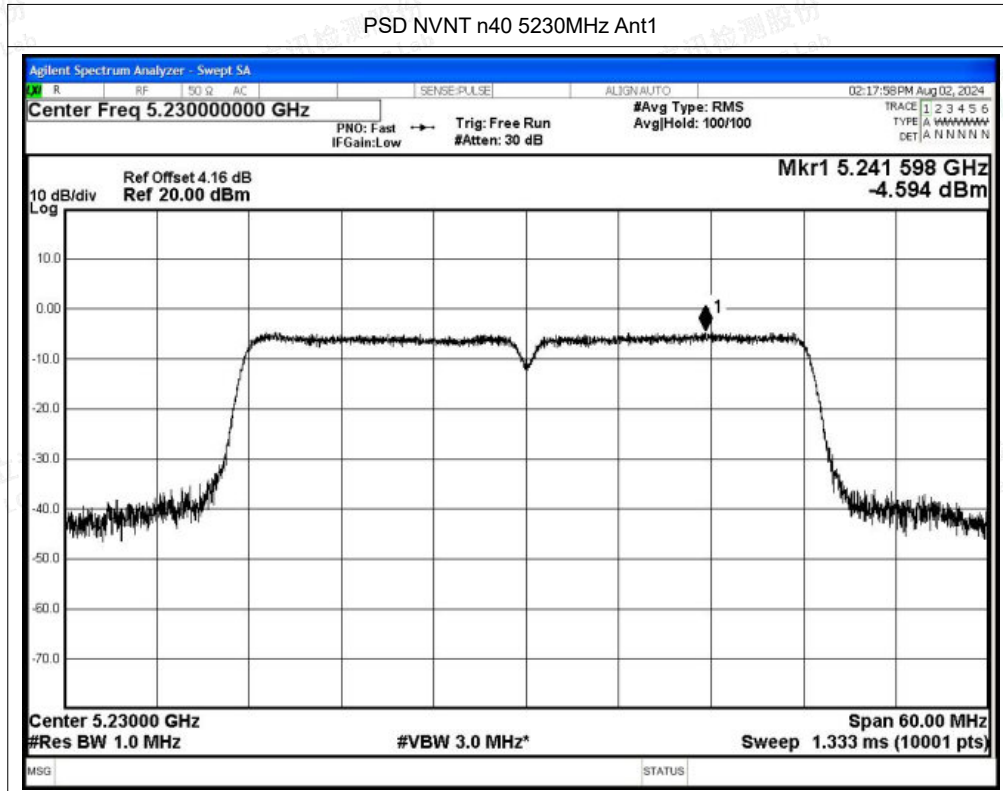
PSD NVNT n20 5180MHz Ant1



PSD NVNT n20 5200MHz Ant1







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A.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	n20	5180	Ant0	4500	-49.31	4.50	-	50.42	Peak	68.2	Pass
NVNT	n20	5180	Ant0	4500	-57.63	4.50	0.28	42.38	Average	54	Pass
NVNT	n20	5180	Ant0	5148.9	-39.14	4.50	-	60.59	Peak	68.2	Pass
NVNT	n20	5180	Ant0	5149.6	-52.21	4.50	0.28	47.80	Average	54	Pass
NVNT	n20	5180	Ant0	5150	-37.71	4.50	-	62.02	Peak	68.2	Pass
NVNT	n20	5180	Ant0	5150	-52.82	4.50	0.28	47.19	Average	54	Pass
NVNT	n20	5240	Ant0	5350	-48.73	4.50	-	51.00	Peak	68.2	Pass
NVNT	n20	5240	Ant0	5350	-56.75	4.50	0.28	43.26	Average	54	Pass
NVNT	n20	5240	Ant0	5384.88	-46.14	4.50	-	53.59	Peak	68.2	Pass
NVNT	n20	5240	Ant0	5413.44	-56.02	4.50	0.28	43.99	Average	54	Pass
NVNT	n20	5240	Ant0	5460	-48.05	4.50	-	51.68	Peak	68.2	Pass
NVNT	n20	5240	Ant0	5460	-57.1	4.50	0.28	42.91	Average	54	Pass
NVNT	n40	5190	Ant0	4500	-49.26	4.50	-	50.47	Peak	68.2	Pass
NVNT	n40	5190	Ant0	4500	-56.88	4.50	0.45	43.30	Average	54	Pass
NVNT	n40	5190	Ant0	5148.97	-38.26	4.50	-	61.47	Peak	68.2	Pass
NVNT	n40	5190	Ant0	5149.7	-51.59	4.50	0.45	48.59	Average	54	Pass
NVNT	n40	5190	Ant0	5150	-38.83	4.50	-	60.90	Peak	68.2	Pass
NVNT	n40	5190	Ant0	5150	-51.59	4.50	0.45	48.59	Average	54	Pass
NVNT	n40	5230	Ant0	5350	-48.4	4.50	-	51.33	Peak	68.2	Pass
NVNT	n40	5230	Ant0	5350	-57.36	4.50	0.44	42.81	Average	54	Pass
NVNT	n40	5230	Ant0	5418.69	-46.07	4.50	-	53.66	Peak	68.2	Pass
NVNT	n40	5230	Ant0	5383.86	-56.15	4.50	0.44	44.02	Average	54	Pass
NVNT	n40	5230	Ant0	5460	-49.08	4.50	-	50.65	Peak	68.2	Pass
NVNT	n40	5230	Ant0	5460	-56.73	4.50	0.44	43.44	Average	54	Pass





Condition	Mode	Frequency (MHz)	Antenna	Spur Freq (MHz)	Power (dBm)	Gain (dBi)	Duty Factor (dB)	E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	n20	5180	Ant1	4500	-48.59	4.50	-	51.14	Peak	68.2	Pass
NVNT	n20	5180	Ant1	4500	-57.32	4.50	0.28	42.69	Average	54	Pass
NVNT	n20	5180	Ant1	5148.9	-38.1	4.50	-	61.63	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5149.6	-52.32	4.50	0.28	47.69	Average	54	Pass
NVNT	n20	5180	Ant1	5150	-37.76	4.50	-	61.97	Peak	68.2	Pass
NVNT	n20	5180	Ant1	5150	-52.66	4.50	0.28	47.35	Average	54	Pass
NVNT	n20	5240	Ant1	5350	-48.4	4.50	-	51.33	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5350	-56.64	4.50	0.28	43.37	Average	54	Pass
NVNT	n20	5240	Ant1	5390.16	-46.19	4.50	-	53.54	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5421.12	-56.09	4.50	0.28	43.92	Average	54	Pass
NVNT	n20	5240	Ant1	5460	-48.04	4.50	-	51.69	Peak	68.2	Pass
NVNT	n20	5240	Ant1	5460	-57.5	4.50	0.28	42.51	Average	54	Pass
NVNT	n40	5190	Ant1	4500	-50.28	4.50	-	49.45	Peak	68.2	Pass
NVNT	n40	5190	Ant1	4500	-57.85	4.50	0.45	42.33	Average	54	Pass
NVNT	n40	5190	Ant1	5146.78	-38.28	4.50	-	61.45	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5149.7	-52.14	4.50	0.45	48.04	Average	54	Pass
NVNT	n40	5190	Ant1	5150	-39.55	4.50	-	60.18	Peak	68.2	Pass
NVNT	n40	5190	Ant1	5150	-52.14	4.50	0.45	48.04	Average	54	Pass
NVNT	n40	5230	Ant1	5350	-48.72	4.50	-	51.01	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5350	-56.41	4.50	0.45	43.77	Average	54	Pass
NVNT	n40	5230	Ant1	5352.27	-45.7	4.50	-	54.03	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5350.92	-55.92	4.50	0.45	44.26	Average	54	Pass
NVNT	n40	5230	Ant1	5460	-48.48	4.50	-	51.25	Peak	68.2	Pass
NVNT	n40	5230	Ant1	5460	-56.59	4.50	0.45	43.59	Average	54	Pass





MIMO

Condition	Mode	Frequency (MHz)	Ant0 Power (dBm)	Ant1 Power (dBm)	Gain (dBi)	Total E (dBuV/m)	Detector	Limit (dBuV/m)	Verdict
NVNT	n20	5180	-49.31	-48.59	7.51	56.81	Peak	68.2	Pass
NVNT	n20	5180	-57.63	-57.32	7.51	48.28	Average	54	Pass
NVNT	n20	5180	-39.14	-38.1	7.51	67.16	Peak	68.2	Pass
NVNT	n20	5180	-52.21	-52.32	7.51	53.48	Average	54	Pass
NVNT	n20	5180	-37.71	-37.76	7.51	68.01	Peak	68.2	Pass
NVNT	n20	5180	-52.82	-52.66	7.51	53.01	Average	54	Pass
NVNT	n20	5240	-48.73	-48.4	7.51	57.19	Peak	68.2	Pass
NVNT	n20	5240	-56.75	-56.64	7.51	49.05	Average	54	Pass
NVNT	n20	5240	-46.14	-46.19	7.51	59.58	Peak	68.2	Pass
NVNT	n20	5240	-56.02	-56.09	7.51	49.69	Average	54	Pass
NVNT	n20	5240	-48.05	-48.04	7.51	57.70	Peak	68.2	Pass
NVNT	n20	5240	-57.1	-57.5	7.51	48.45	Average	54	Pass
NVNT	n40	5190	-49.26	-50.28	7.51	56.01	Peak	68.2	Pass
NVNT	n40	5190	-56.88	-57.85	7.51	48.41	Average	54	Pass
NVNT	n40	5190	-38.26	-38.28	7.51	67.48	Peak	68.2	Pass
NVNT	n40	5190	-51.59	-52.14	7.51	53.89	Average	54	Pass
NVNT	n40	5190	-38.83	-39.55	7.51	66.57	Peak	68.2	Pass
NVNT	n40	5190	-51.59	-52.14	7.51	53.89	Average	54	Pass
NVNT	n40	5230	-48.4	-48.72	7.51	57.19	Peak	68.2	Pass
NVNT	n40	5230	-57.36	-56.41	7.51	48.89	Average	54	Pass
NVNT	n40	5230	-46.07	-45.7	7.51	59.87	Peak	68.2	Pass
NVNT	n40	5230	-56.15	-55.92	7.51	49.71	Average	54	Pass
NVNT	n40	5230	-49.08	-48.48	7.51	56.98	Peak	68.2	Pass
NVNT	n40	5230	-56.73	-56.59	7.51	49.09	Average	54	Pass

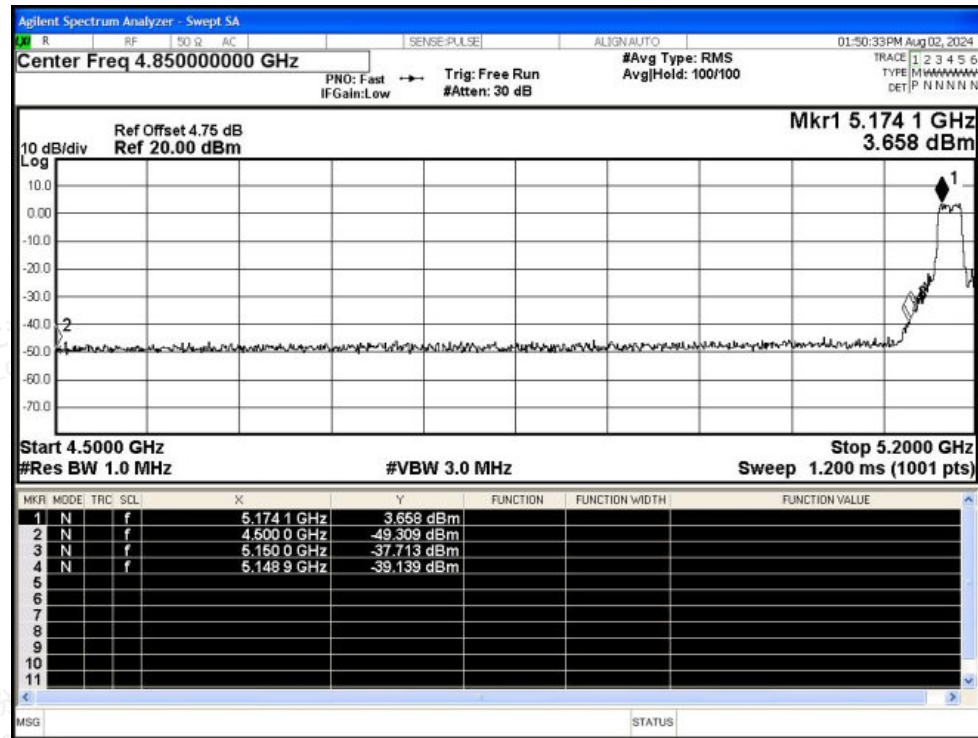


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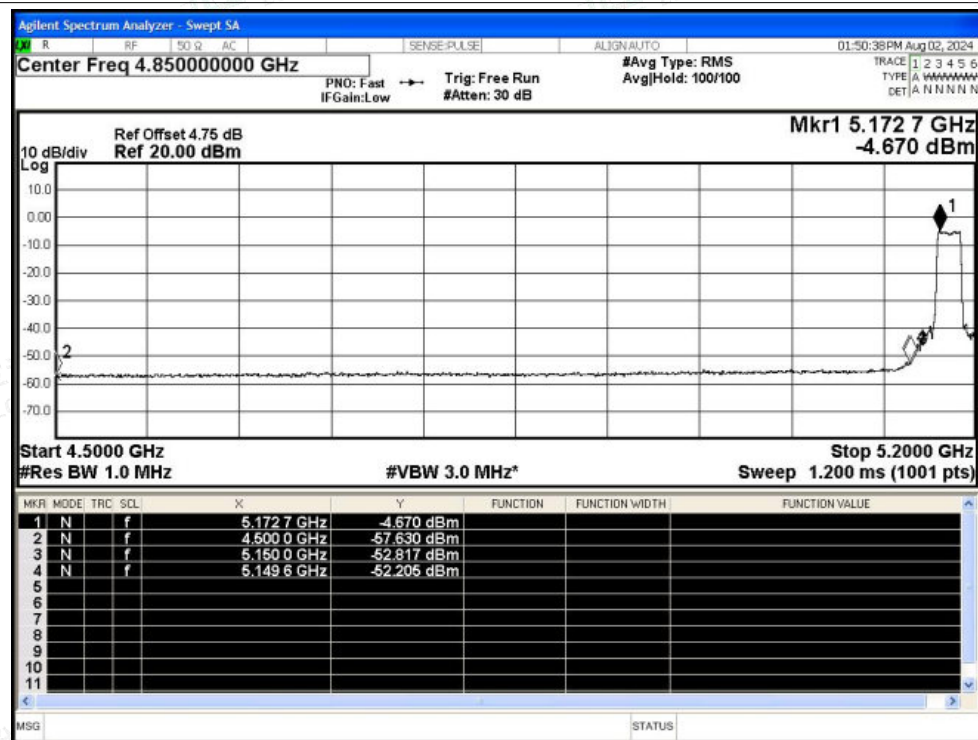


Test Graphs

Restrict Band NVNT n20 5180MHz Ant0 Peak



Restrict Band NVNT n20 5180MHz Ant0 Average



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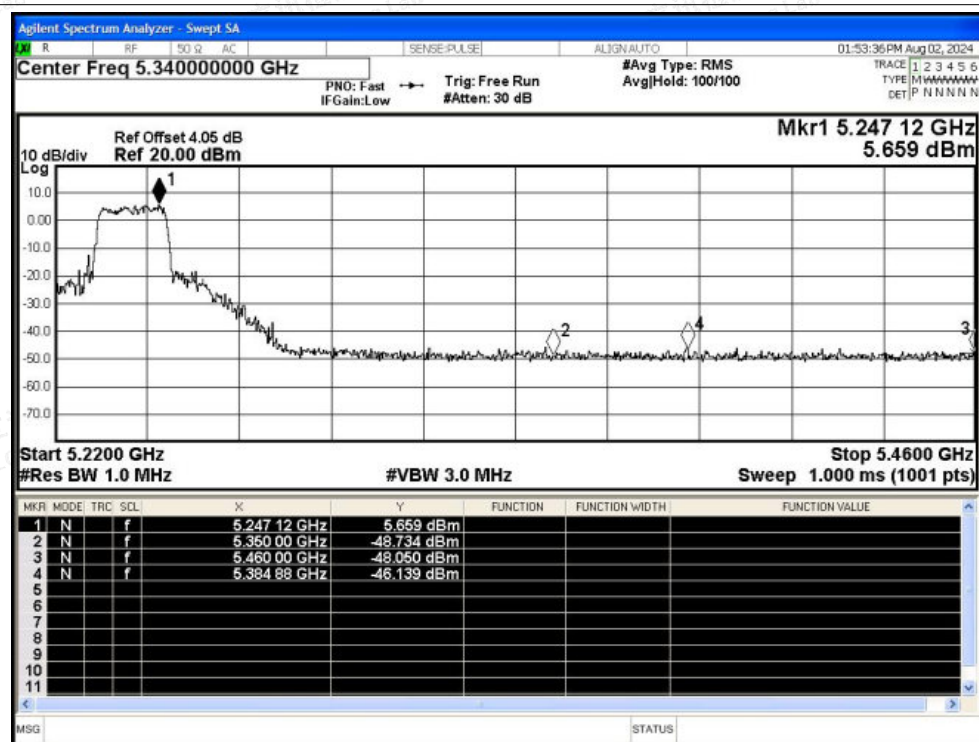
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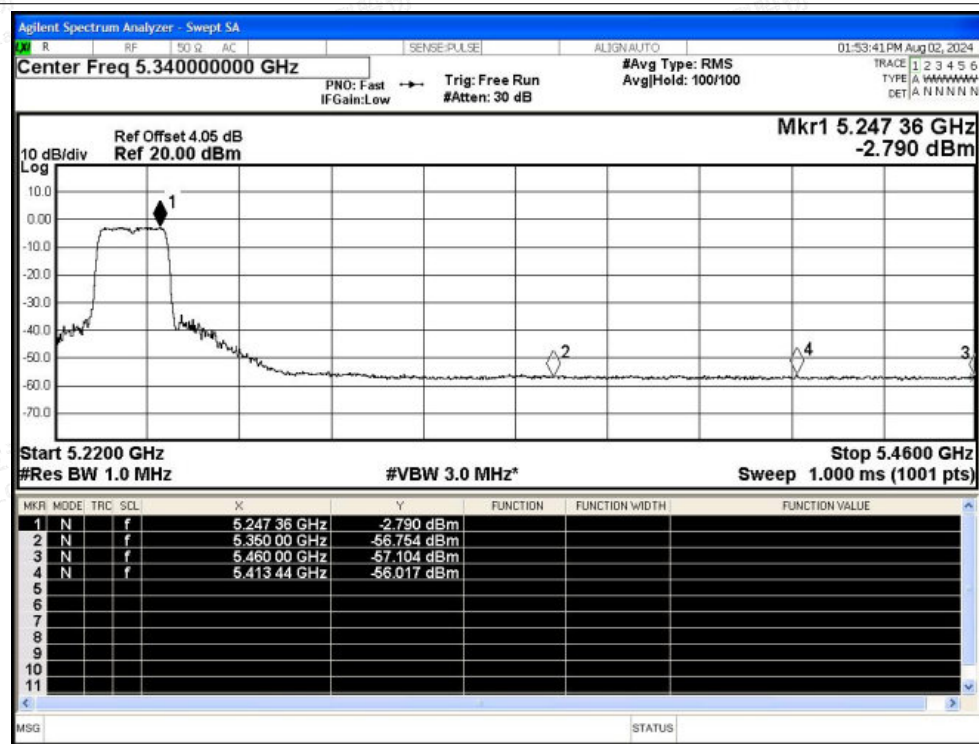
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Restrict Band NVNT n20 5240MHz Ant0 Peak

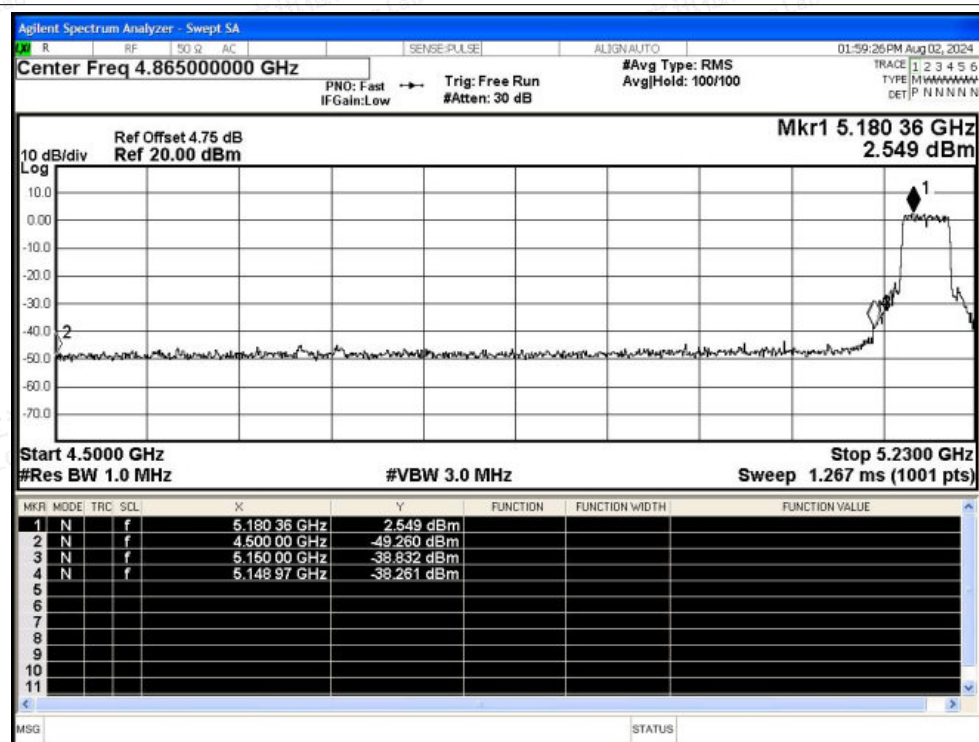


Restrict Band NVNT n20 5240MHz Ant0 Average

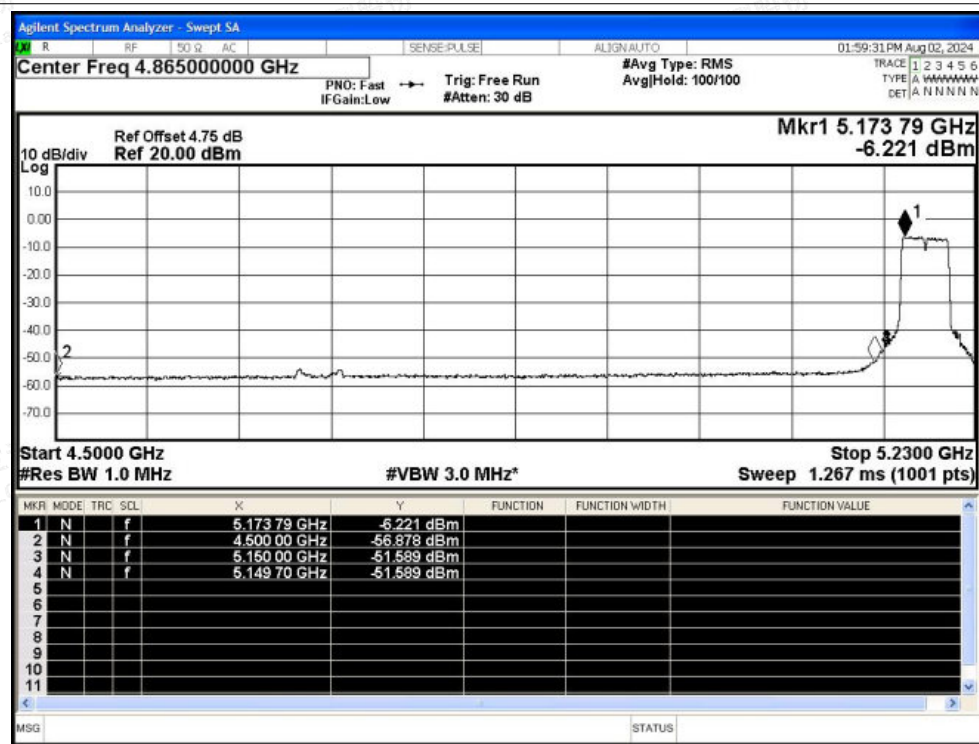




Restrict Band NVNT n40 5190MHz Ant0 Peak

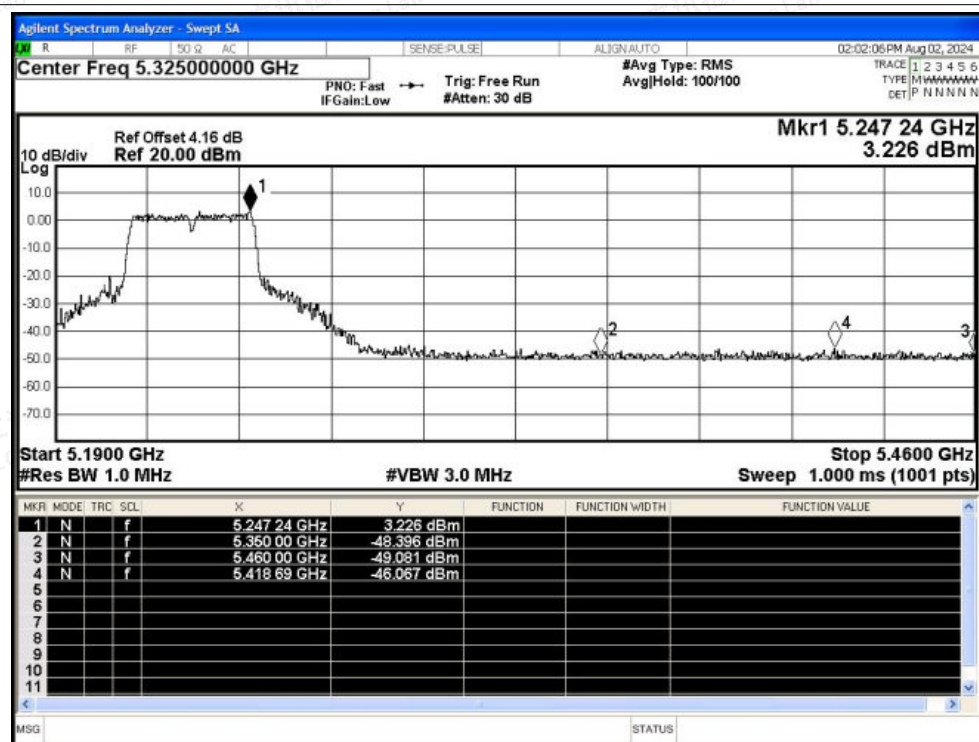


Restrict Band NVNT n40 5190MHz Ant0 Average

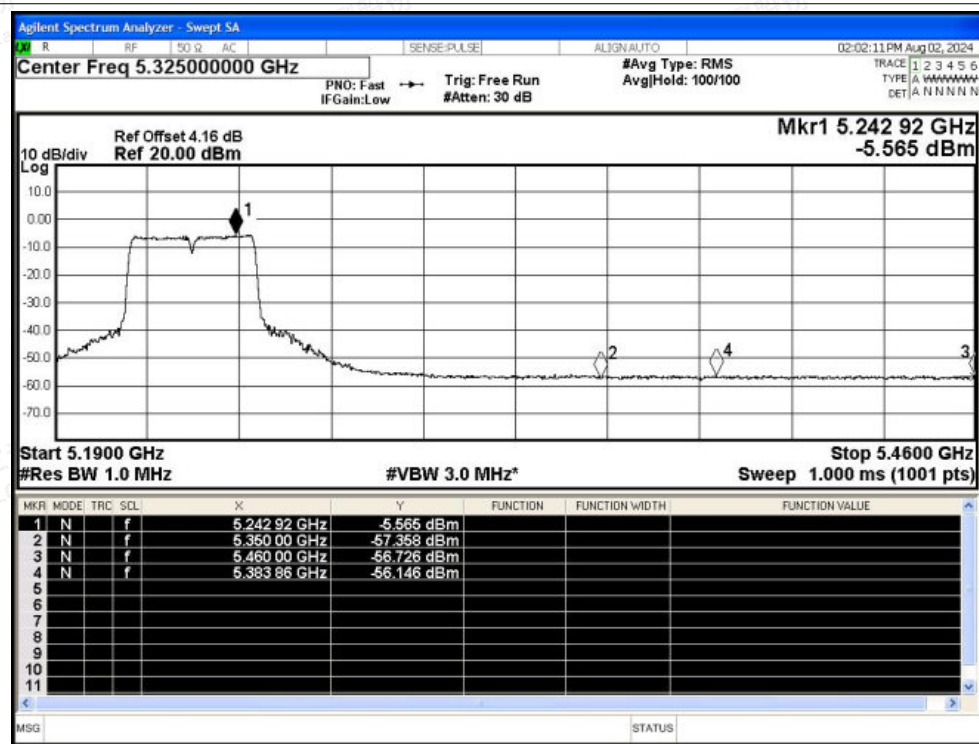




Restrict Band NVNT n40 5230MHz Ant0 Peak



Restrict Band NVNT n40 5230MHz Ant0 Average

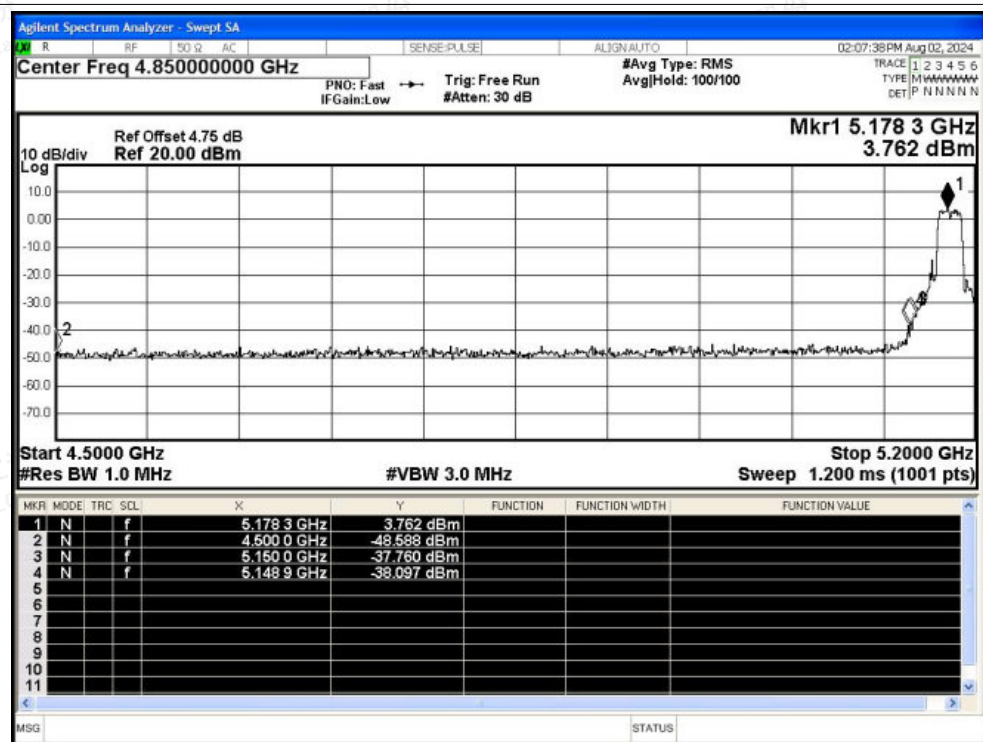


Test Graphs

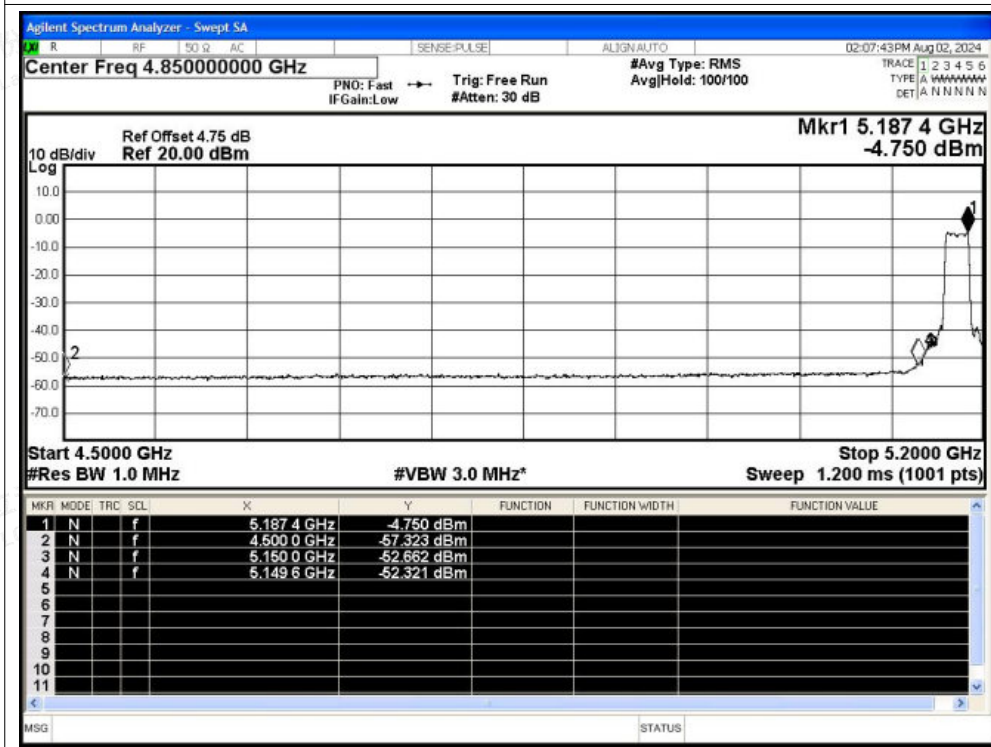
Restrict Band NVNT n20 5180MHz Ant1 Peak



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Restrict Band NVNT n20 5180MHz Ant1 Average



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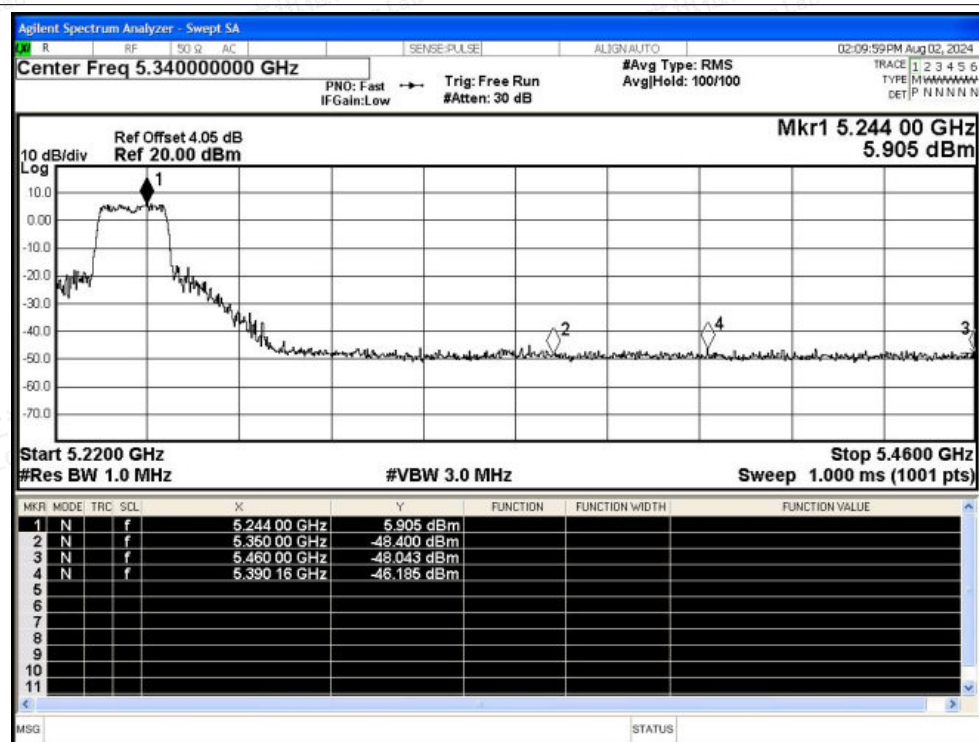
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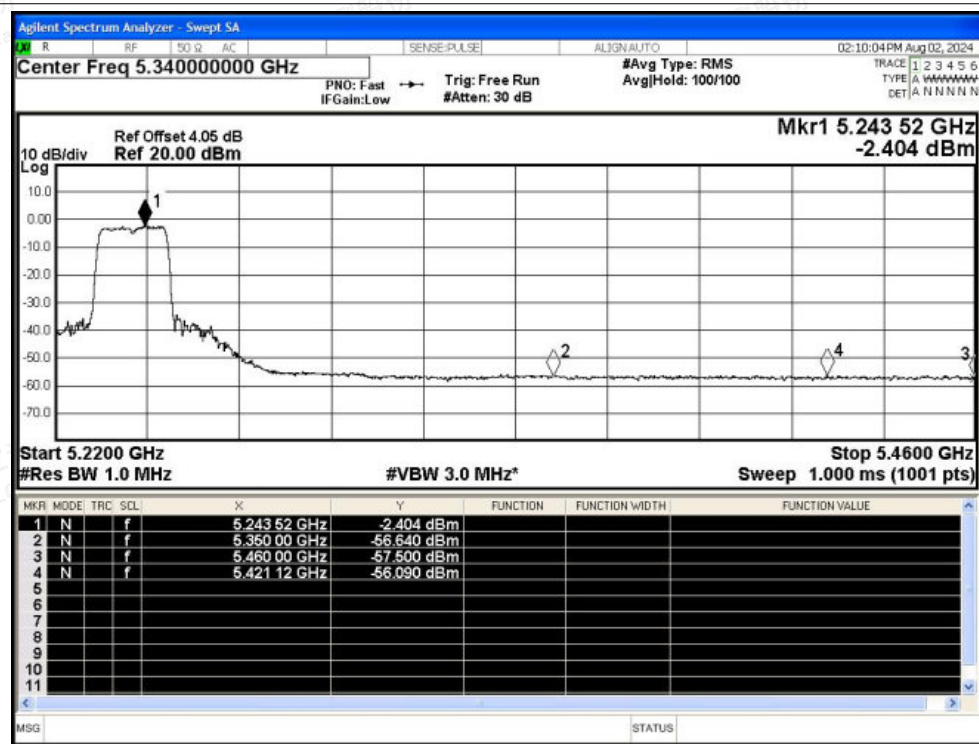
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Restrict Band NVNT n20 5240MHz Ant1 Peak



Restrict Band NVNT n20 5240MHz Ant1 Average





A.5 Frequency Stability

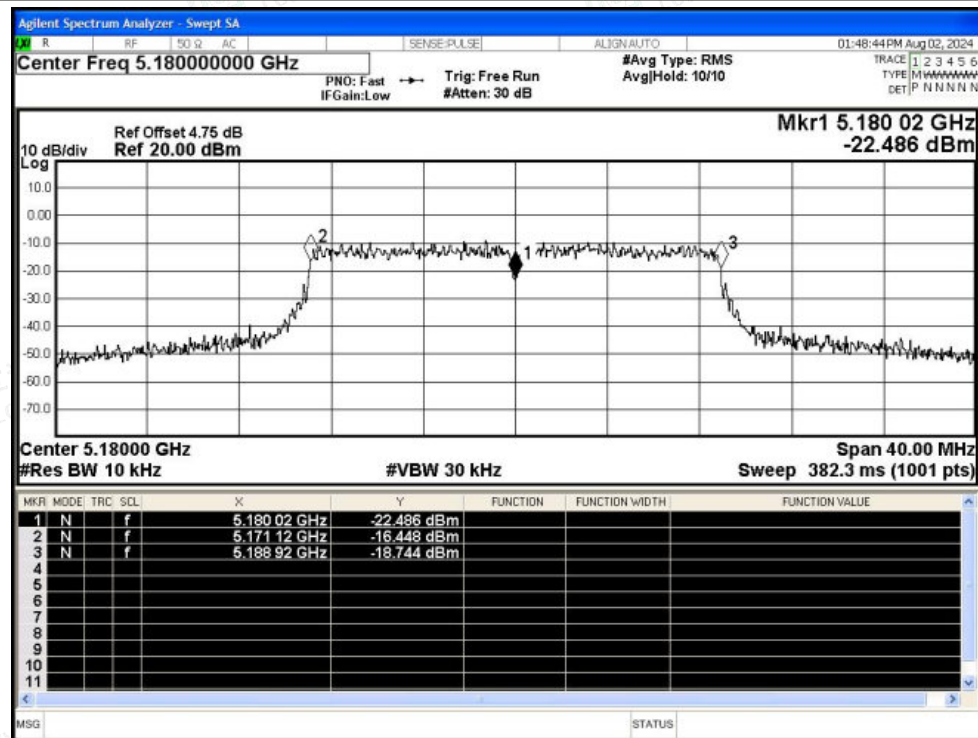
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	n20	5180	Ant0	5180.02	20000	3.86	25	Pass
NVNT	n20	5200	Ant0	5199.98	-20000	-3.85	25	Pass
NVNT	n20	5240	Ant0	5239.98	-20000	-3.82	25	Pass
NVNT	n40	5190	Ant0	5190	0	0	25	Pass
NVNT	n40	5230	Ant0	5230	0	0	25	Pass



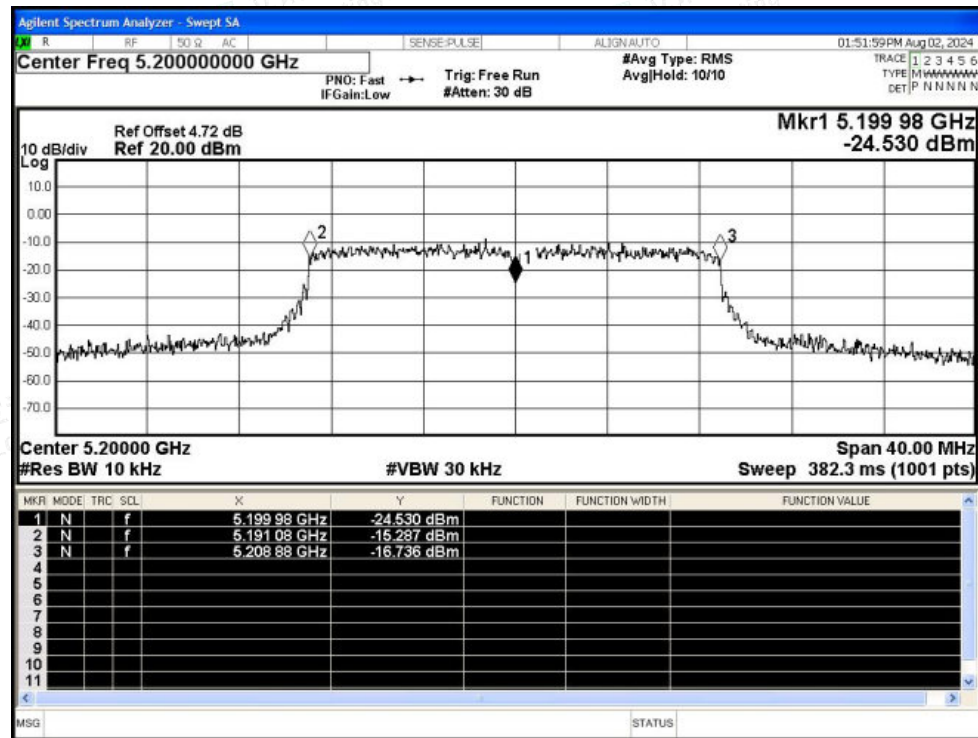


Test Graphs

Freq. Stability NVNT n20 5180MHz Ant0

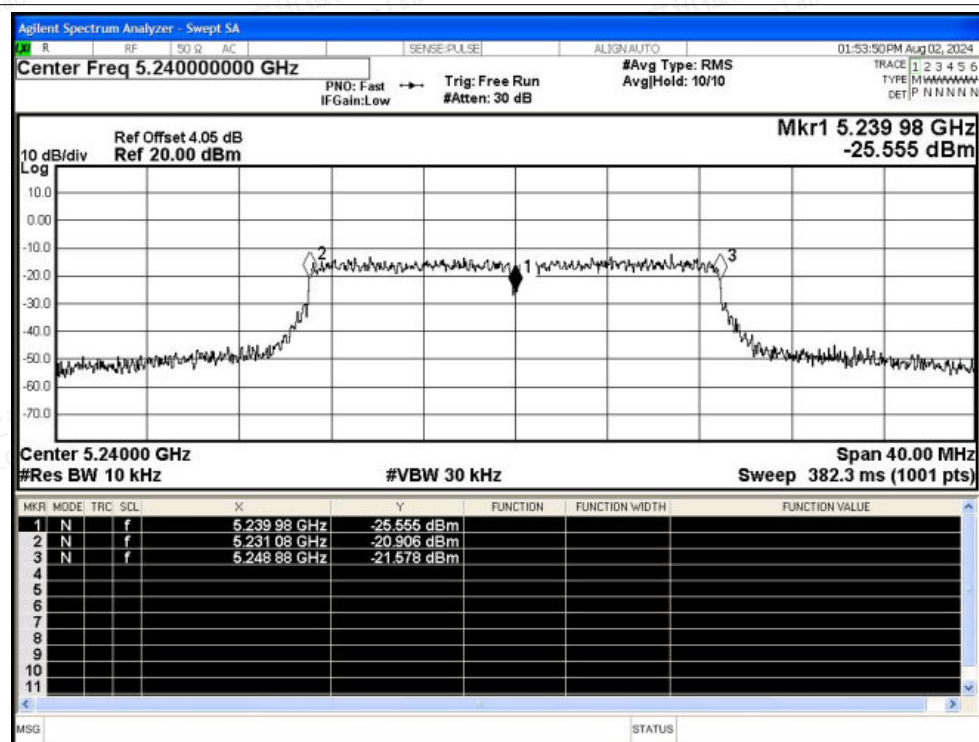


Freq. Stability NVNT n20 5200MHz Ant0

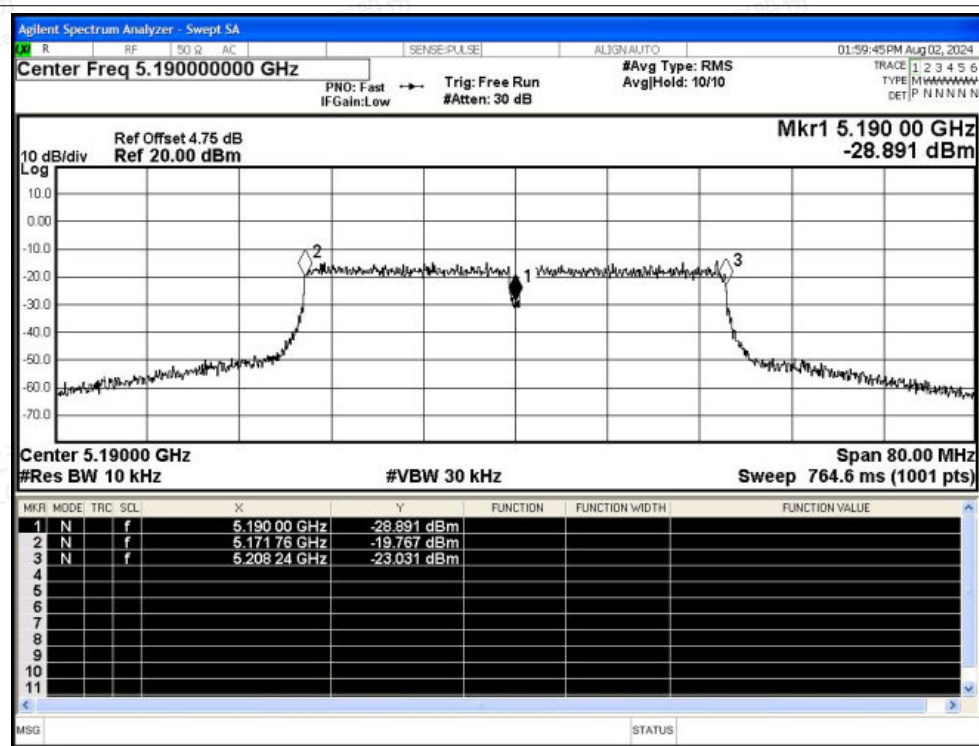


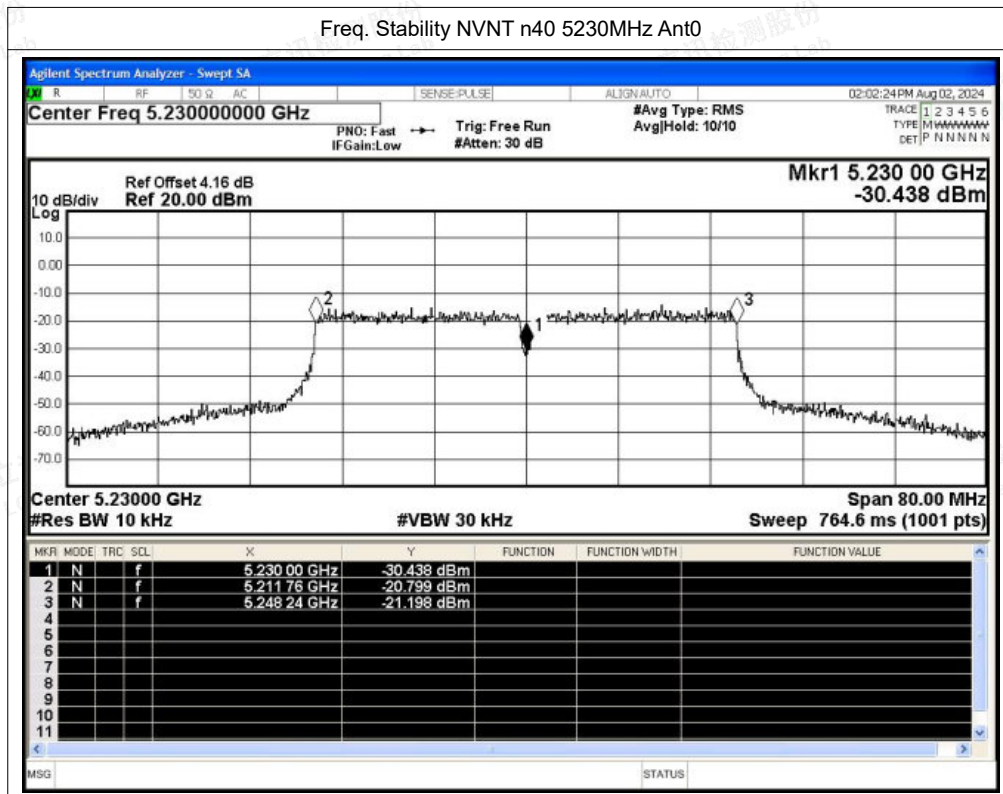


Freq. Stability NVNT n20 5240MHz Ant0



Freq. Stability NVNT n40 5190MHz Ant0







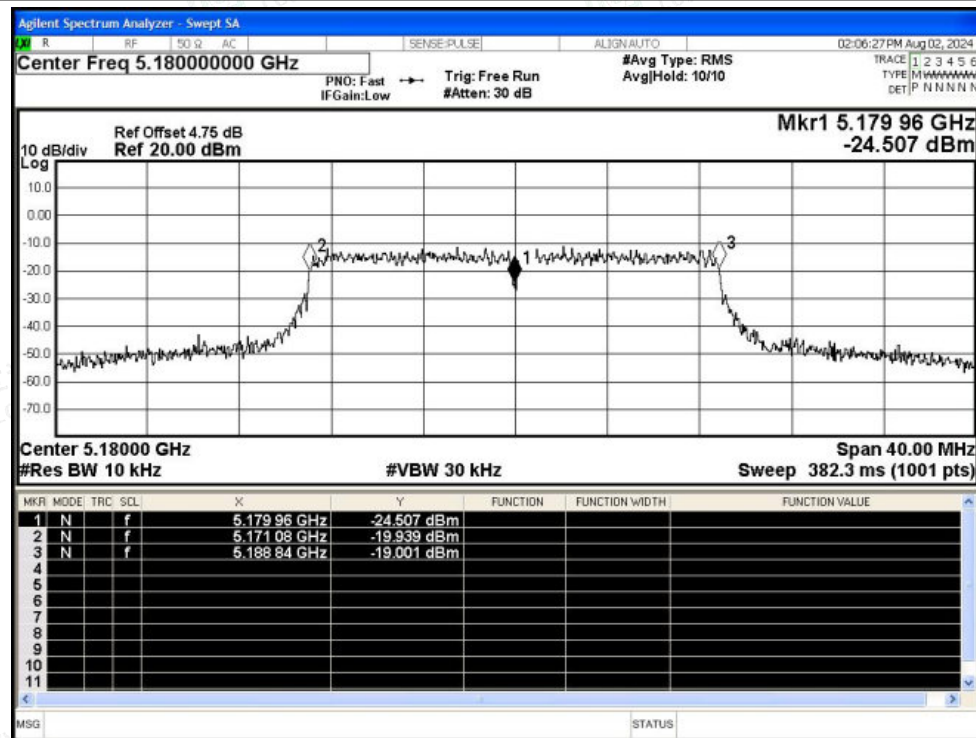
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	n20	5180	Ant1	5179.96	-40000	-7.72	25	Pass
NVNT	n20	5200	Ant1	5200	0	0	25	Pass
NVNT	n20	5240	Ant1	5240	0	0	25	Pass
NVNT	n40	5190	Ant1	5189.96	-40000	-7.71	25	Pass
NVNT	n40	5230	Ant1	5229.96	-40000	-7.65	25	Pass



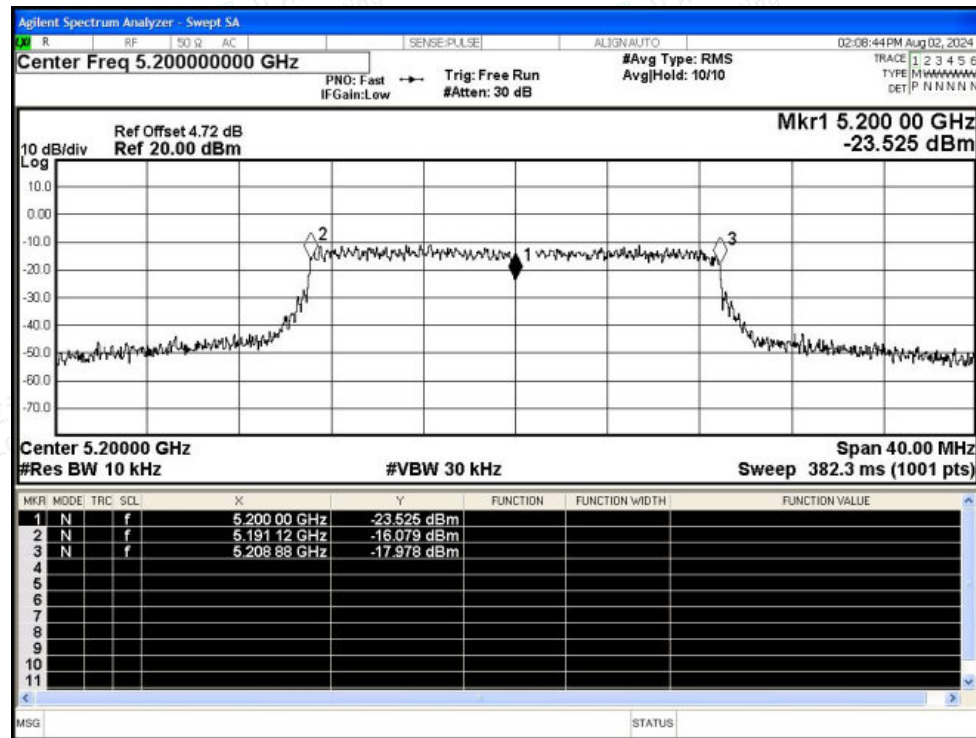


Test Graphs

Freq. Stability NVNT n20 5180MHz Ant1

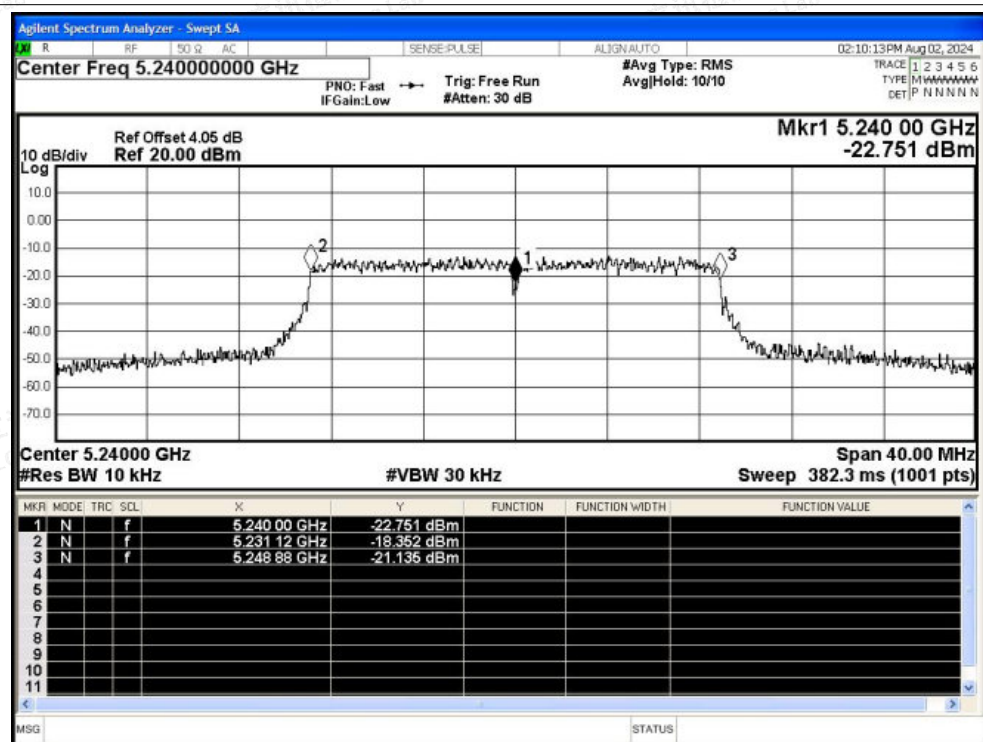


Freq. Stability NVNT n20 5200MHz Ant1

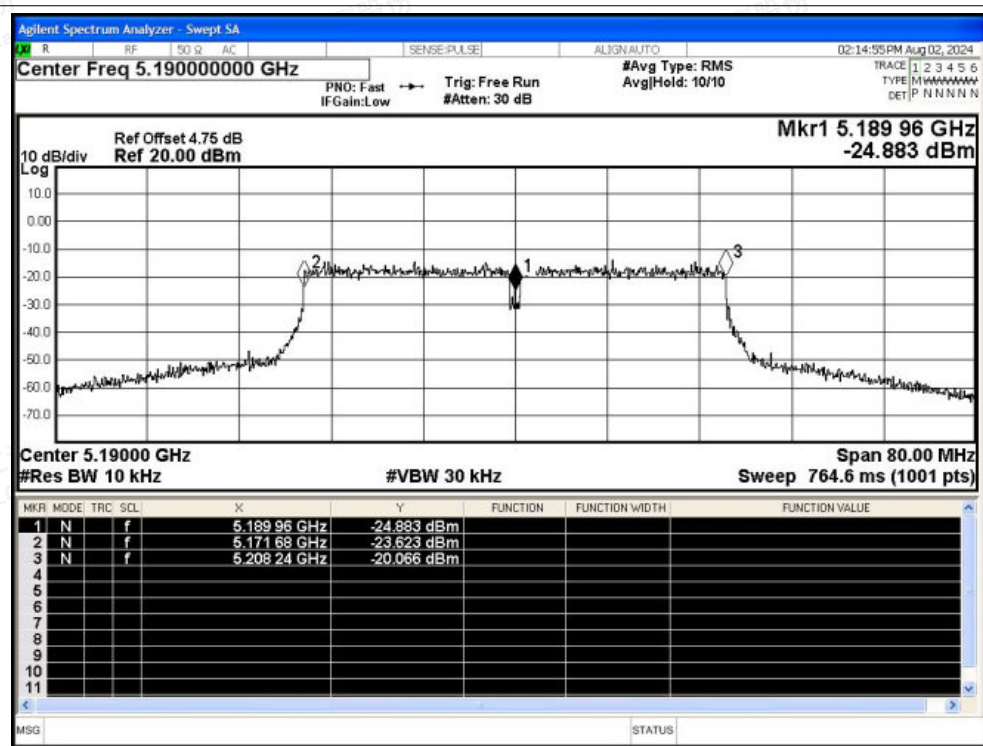




Freq. Stability NVNT n20 5240MHz Ant1



Freq. Stability NVNT n40 5190MHz Ant1

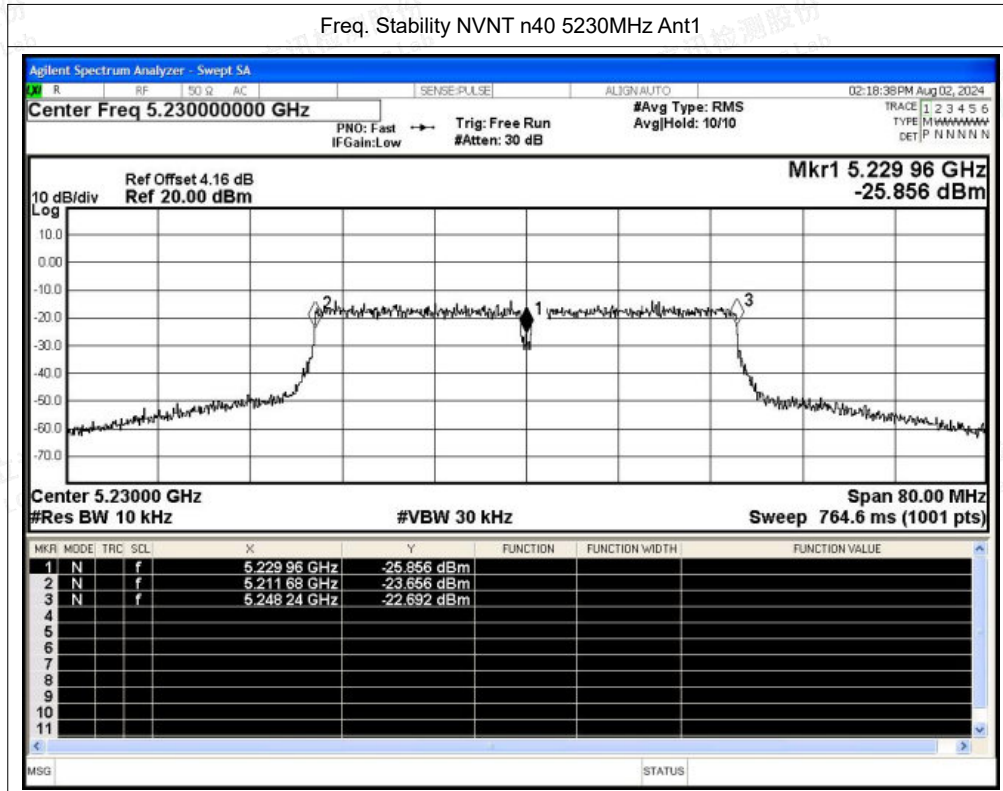


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A.6 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	n20	5180	Ant0	93.77	0.28	1.07
NVNT	n20	5200	Ant0	93.77	0.28	1.07
NVNT	n20	5240	Ant0	93.67	0.28	1.07
NVNT	n40	5190	Ant0	90.14	0.45	1.74
NVNT	n40	5230	Ant0	90.3	0.44	1.73

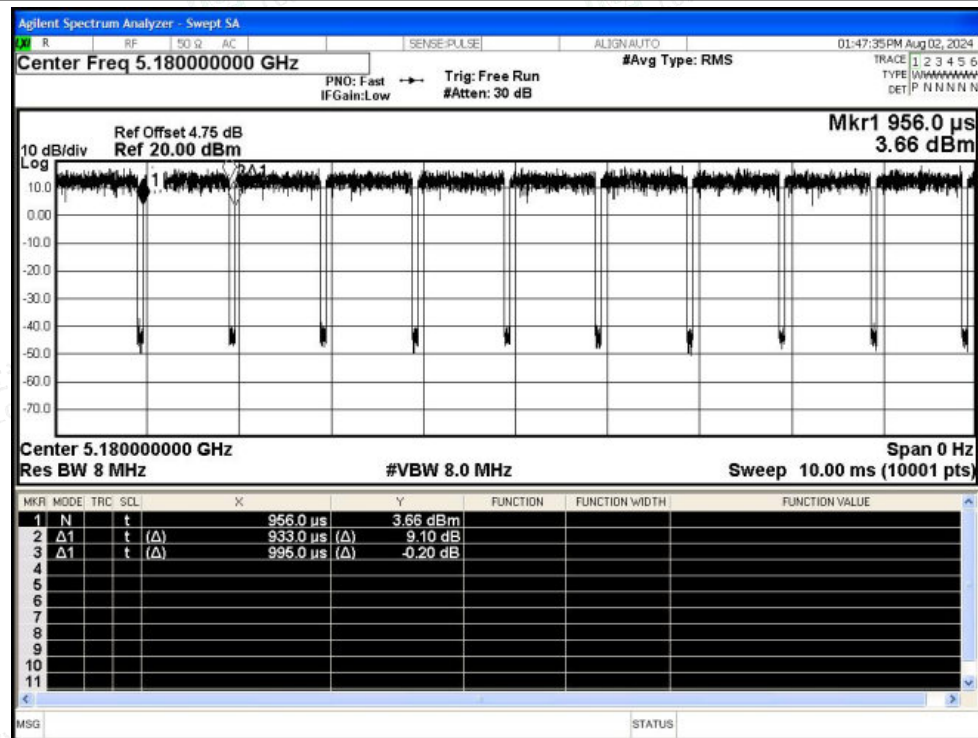


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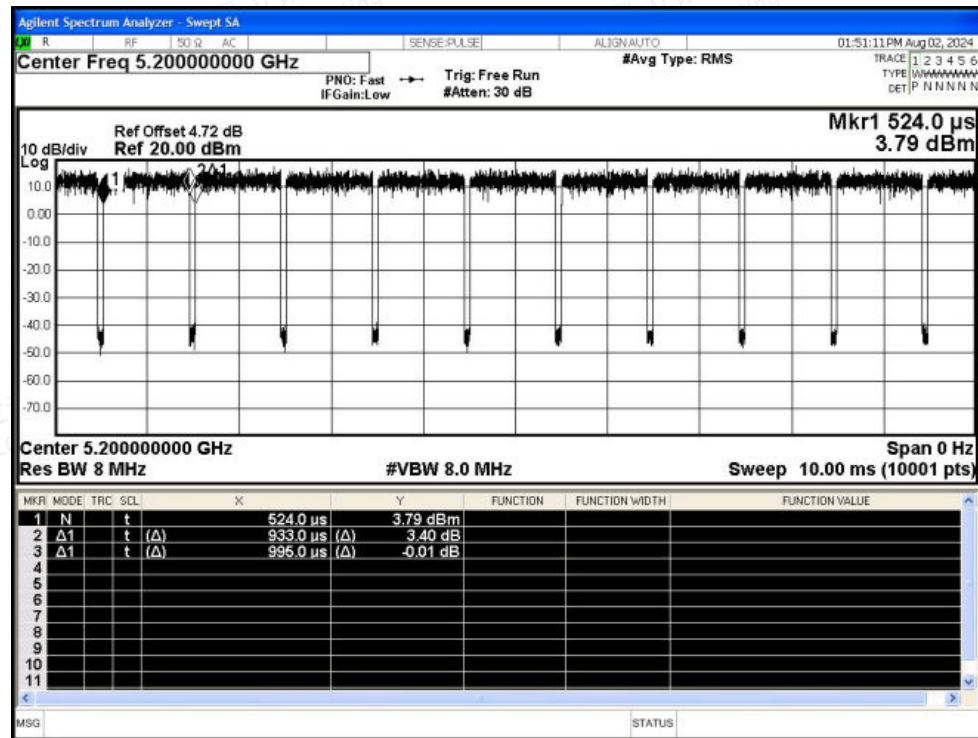


Test Graphs

Duty Cycle NVNT n20 5180MHz Ant0



Duty Cycle NVNT n20 5200MHz Ant0



Shenzhen LCS Compliance Testing Laboratory Ltd.

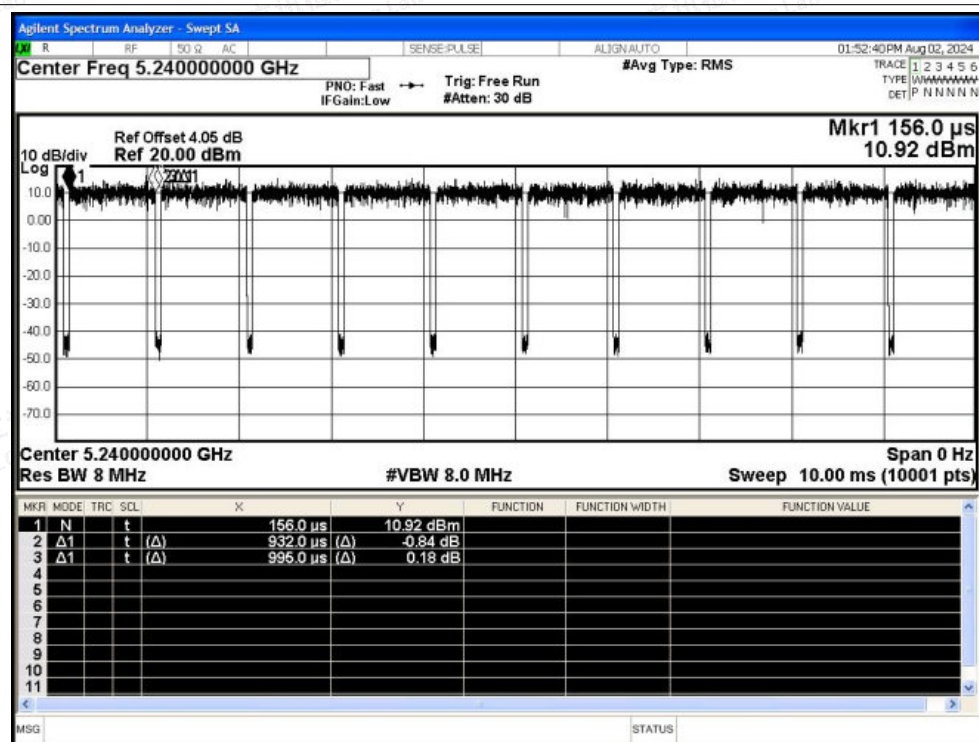
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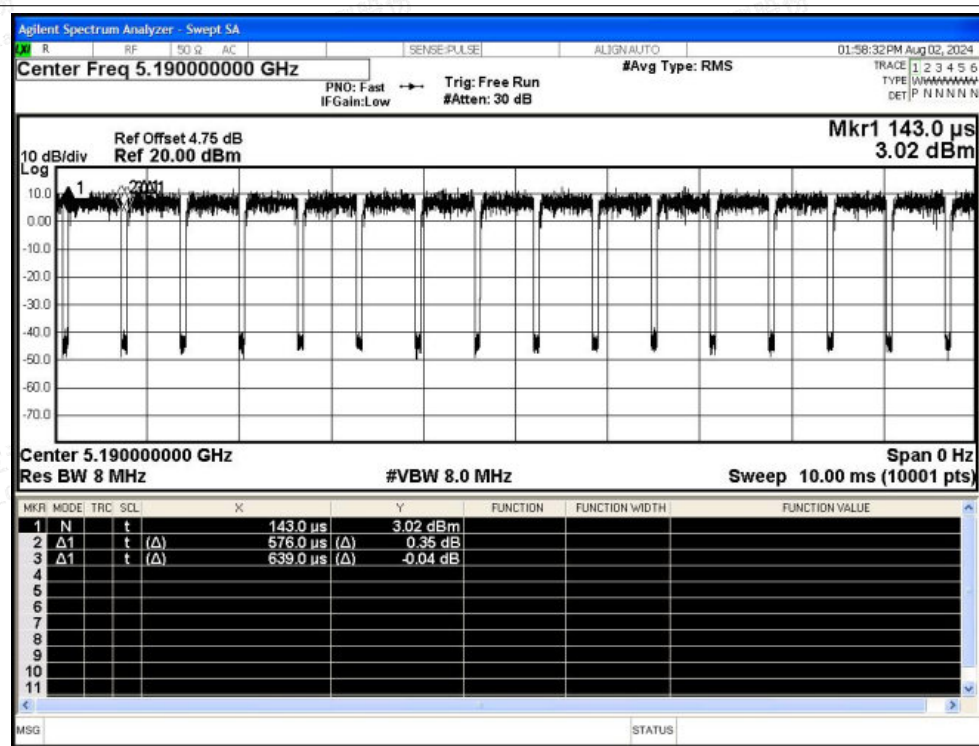
Scan code to check authenticity

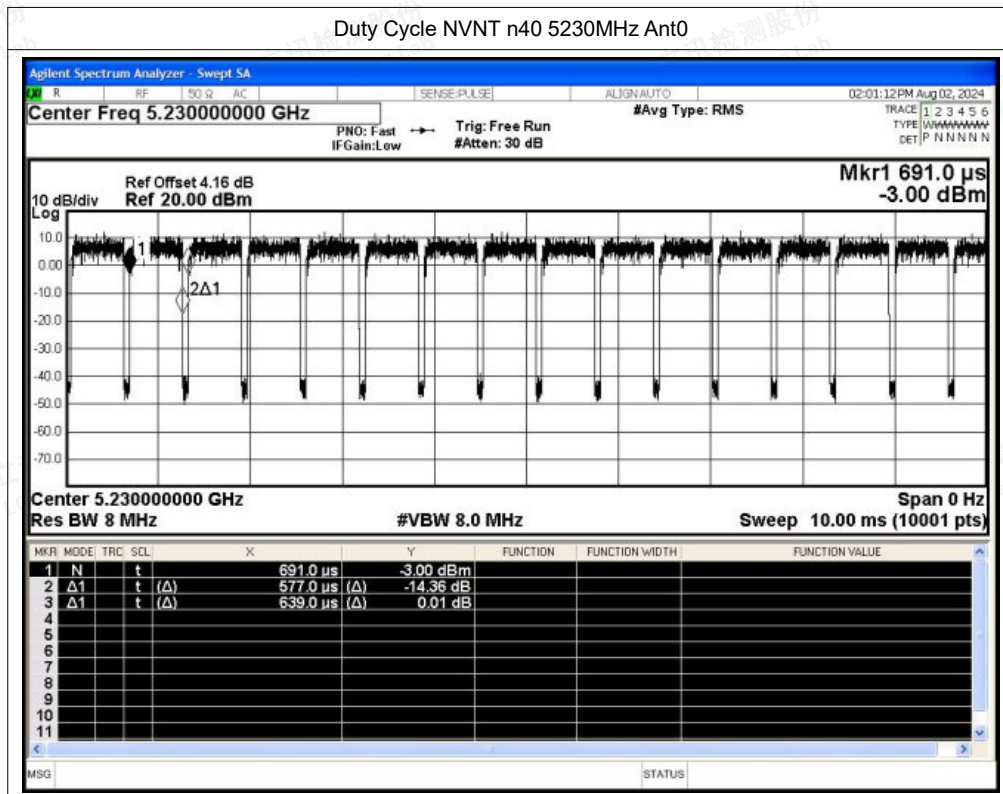


Duty Cycle NVNT n20 5240MHz Ant0



Duty Cycle NVNT n40 5190MHz Ant0







Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
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	90.14	0.45	1.74
NVNT	n40	5230	Ant1	90.14	0.45	1.74

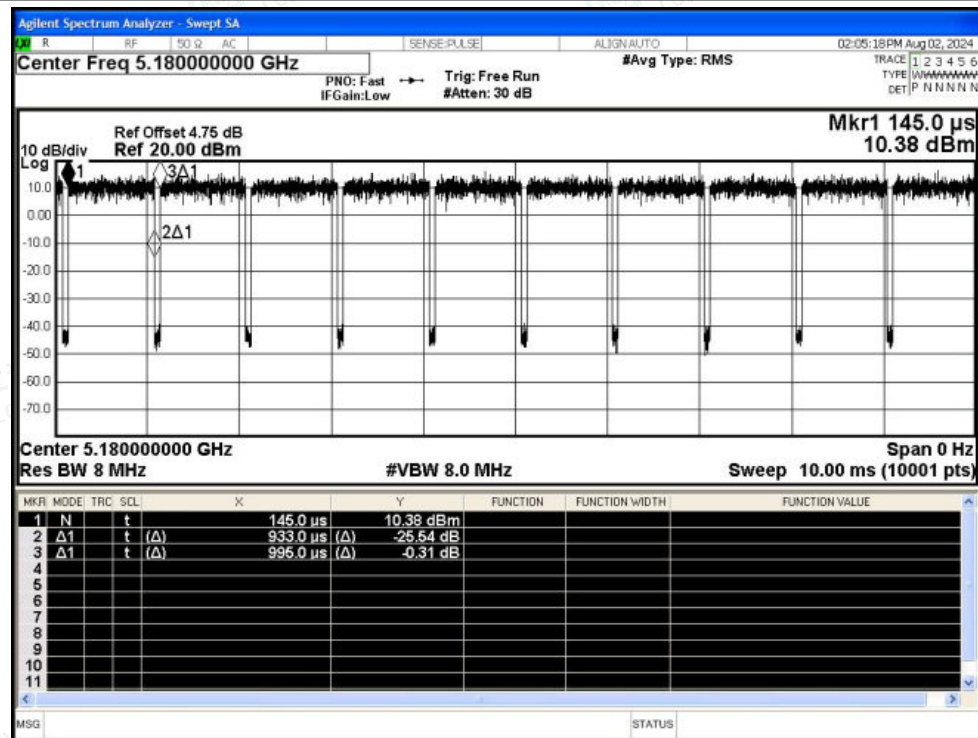


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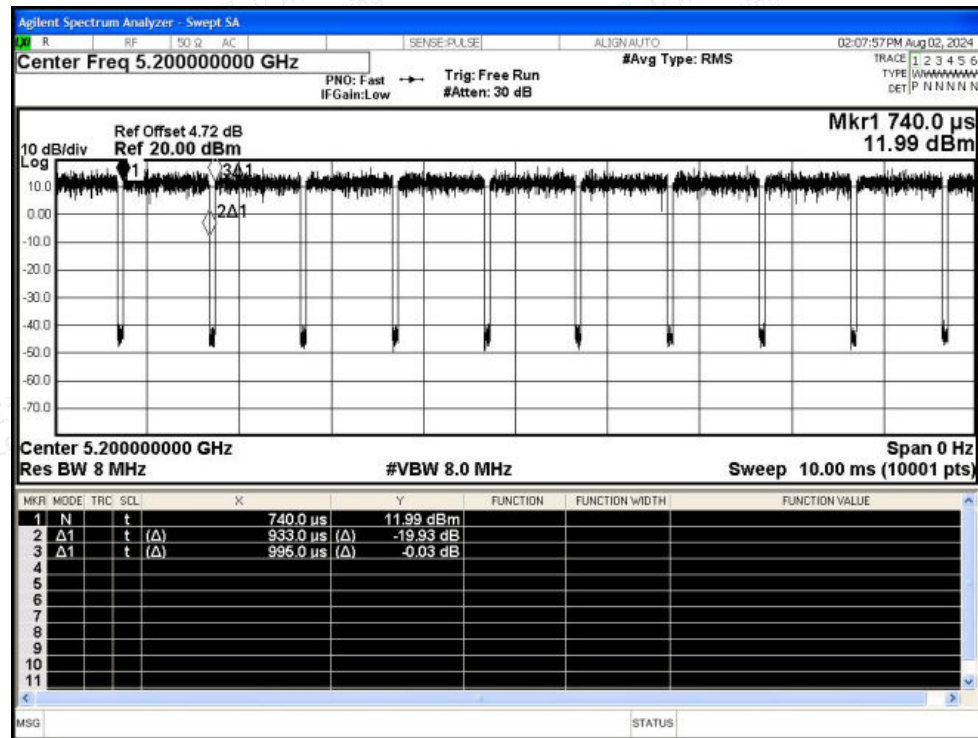


Test Graphs

Duty Cycle NVNT n20 5180MHz Ant1

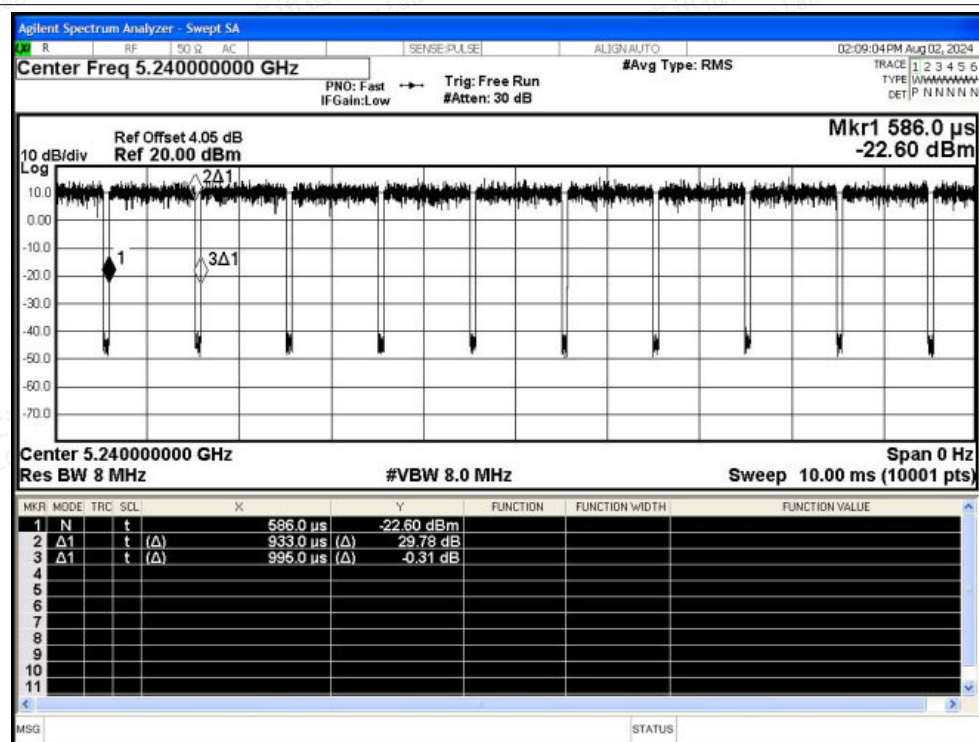


Duty Cycle NVNT n20 5200MHz Ant1





Duty Cycle NVNT n20 5240MHz Ant1



Duty Cycle NVNT n40 5190MHz Ant1

