

Appendix A for 5.2GWIFI Test Data

Product Name: Mini PC

Test Model: BLMP20

Environmental Conditions

Temperature:	23.8℃
Relative Humidity:	52%
ATM Pressure:	101.0 kPa
Test Engineer:	Leon Li
Supervised by:	Baret Wu



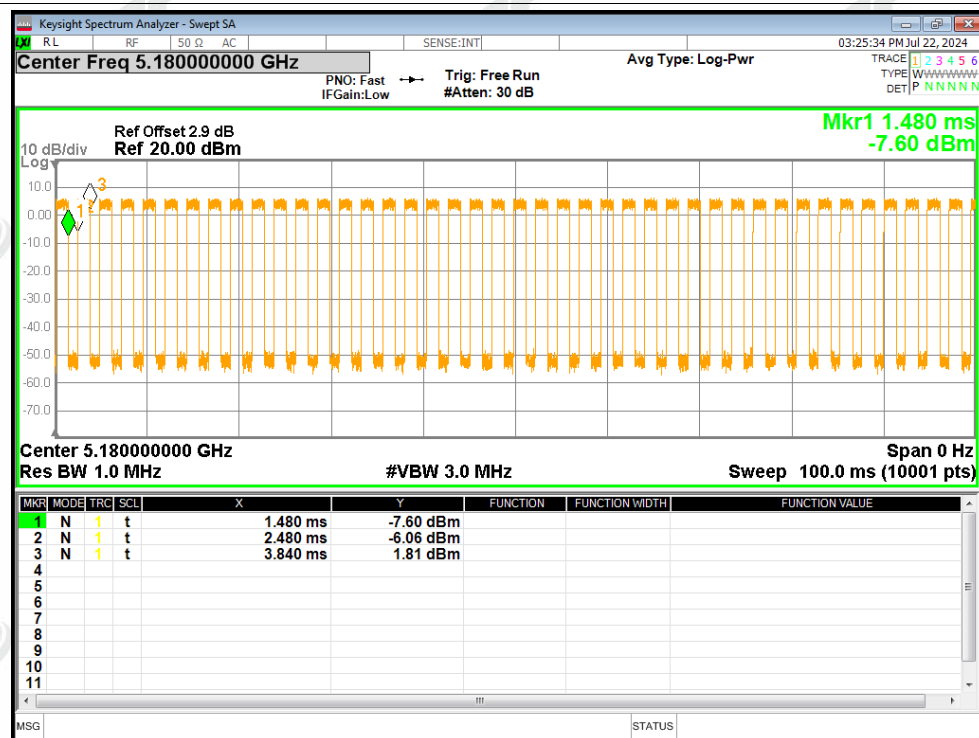
Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	57.63	2.39	0.74
NVNT	a	5200	Ant1	57.63	2.39	0.74
NVNT	a	5240	Ant1	57.81	2.38	0.73
NVNT	n20	5180	Ant1	55.95	2.52	0.79
NVNT	n20	5200	Ant1	55.7	2.54	0.79
NVNT	n20	5240	Ant1	56.14	2.51	0.78
NVNT	n40	5190	Ant1	38.41	4.16	1.59
NVNT	n40	5230	Ant1	39.02	4.09	1.56
NVNT	ac20	5180	Ant1	56.14	2.51	0.78
NVNT	ac20	5200	Ant1	56.14	2.51	0.78
NVNT	ac20	5240	Ant1	55.7	2.54	0.79
NVNT	ac40	5190	Ant1	39.02	4.09	1.56
NVNT	ac40	5230	Ant1	39.02	4.09	1.56
NVNT	ac80	5210	Ant1	24.24	6.15	3.12

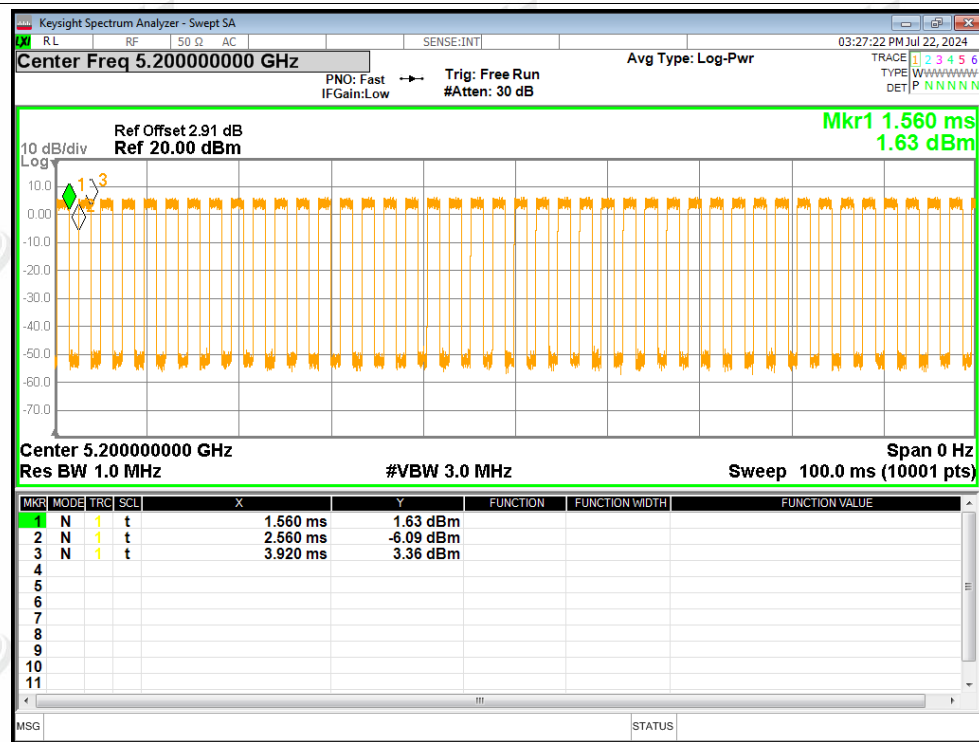


Test Graphs

Duty Cycle NVNT a 5180MHz Ant1

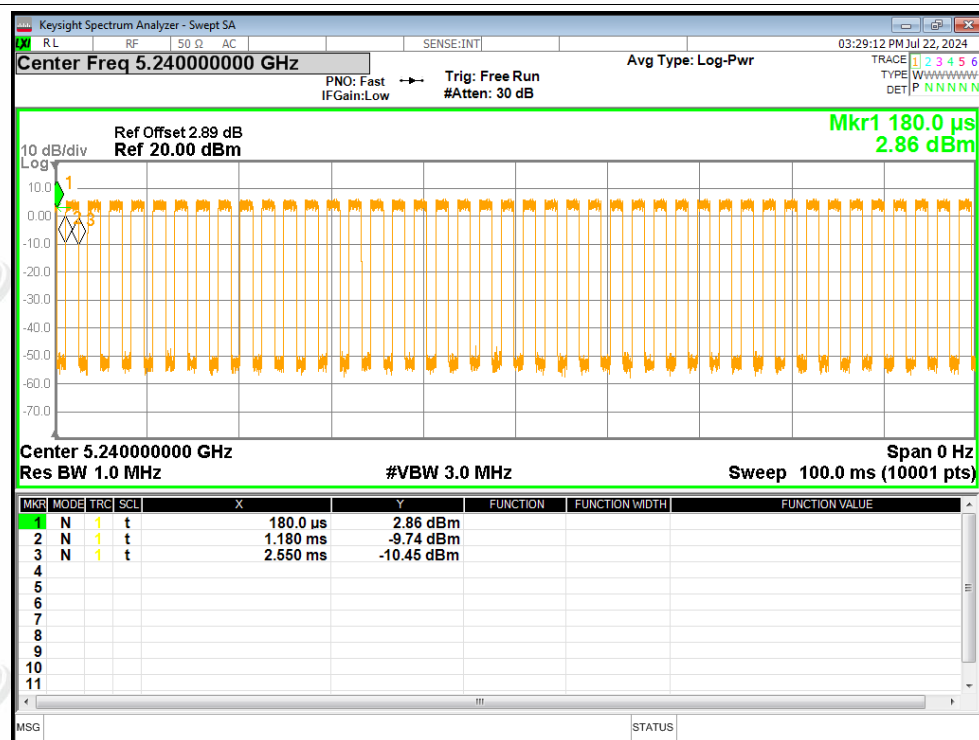


Duty Cycle NVNT a 5200MHz Ant1

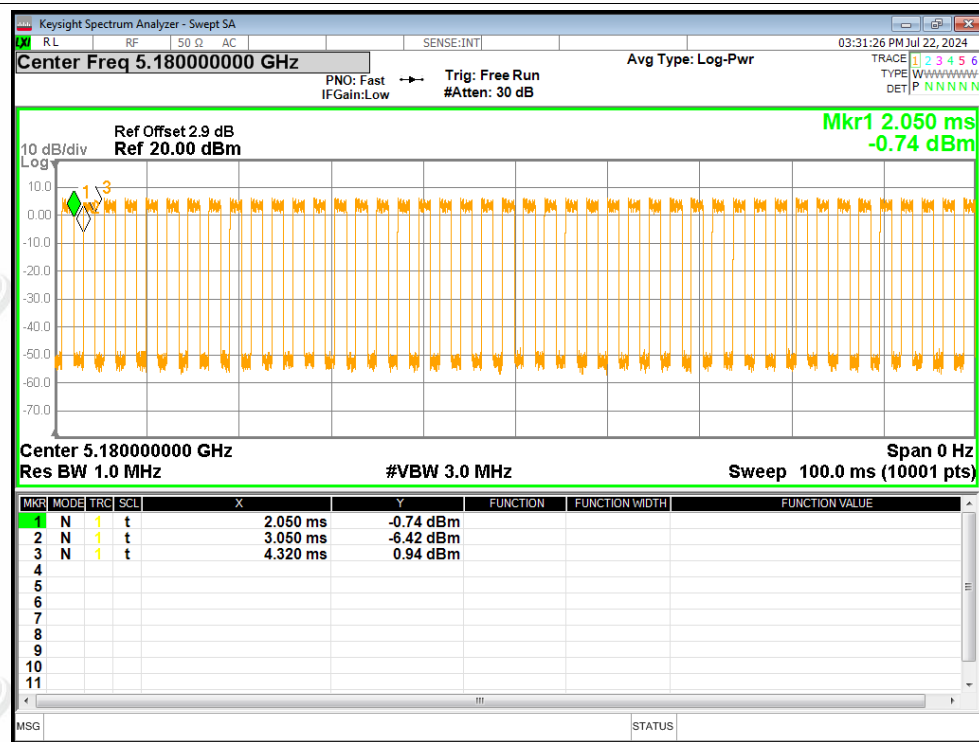




Duty Cycle NVNT a 5240MHz Ant1

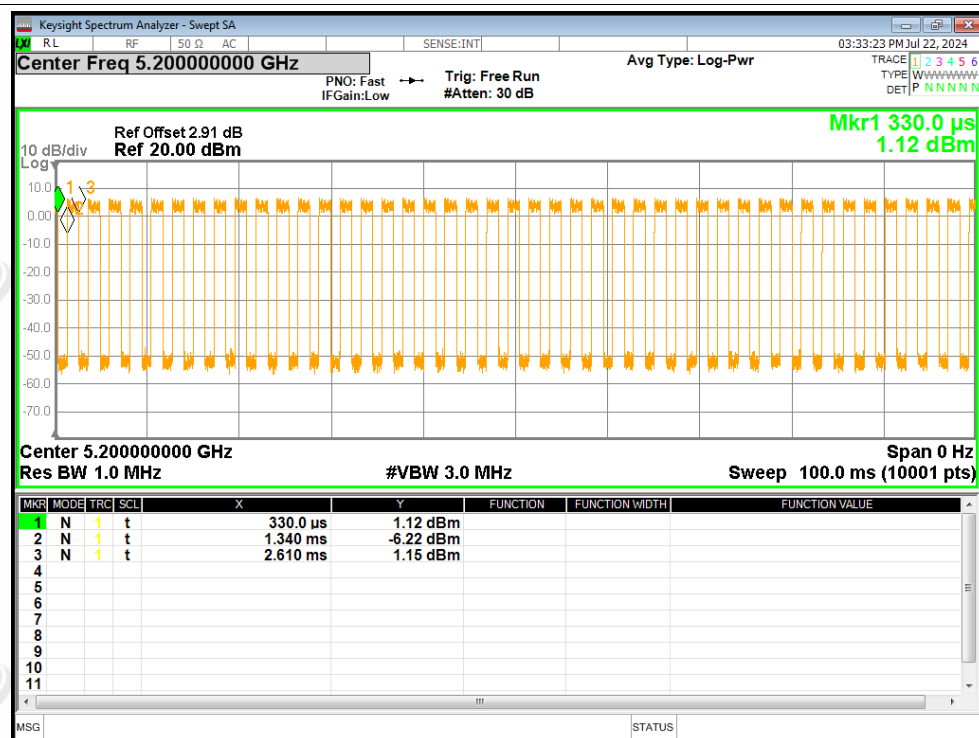


Duty Cycle NVNT n20 5180MHz Ant1

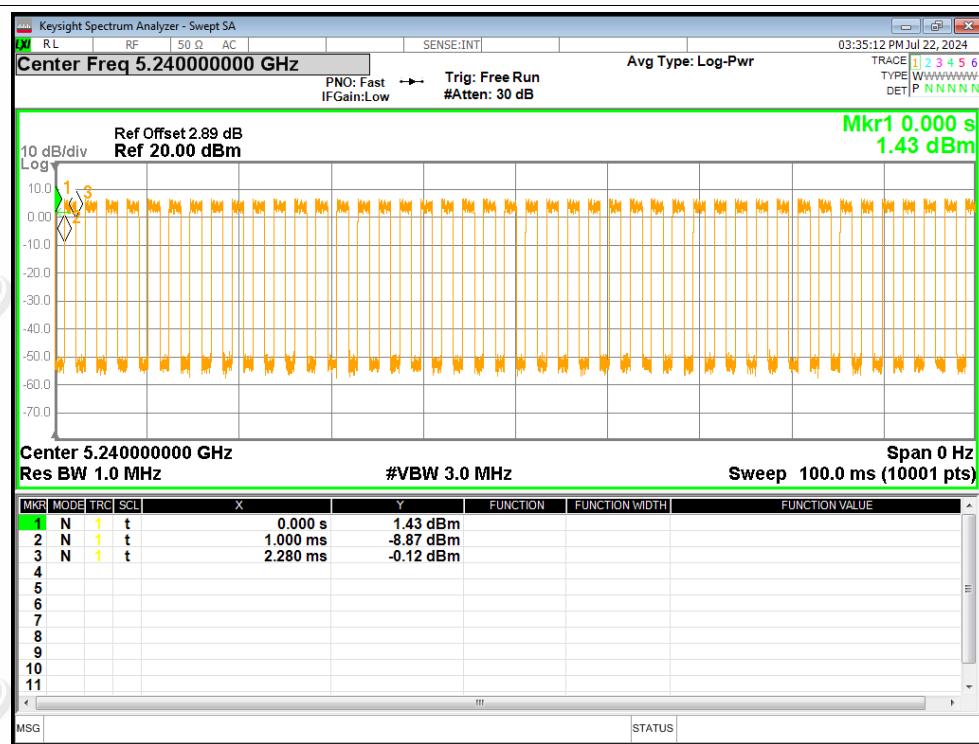




Duty Cycle NVNT n20 5200MHz Ant1

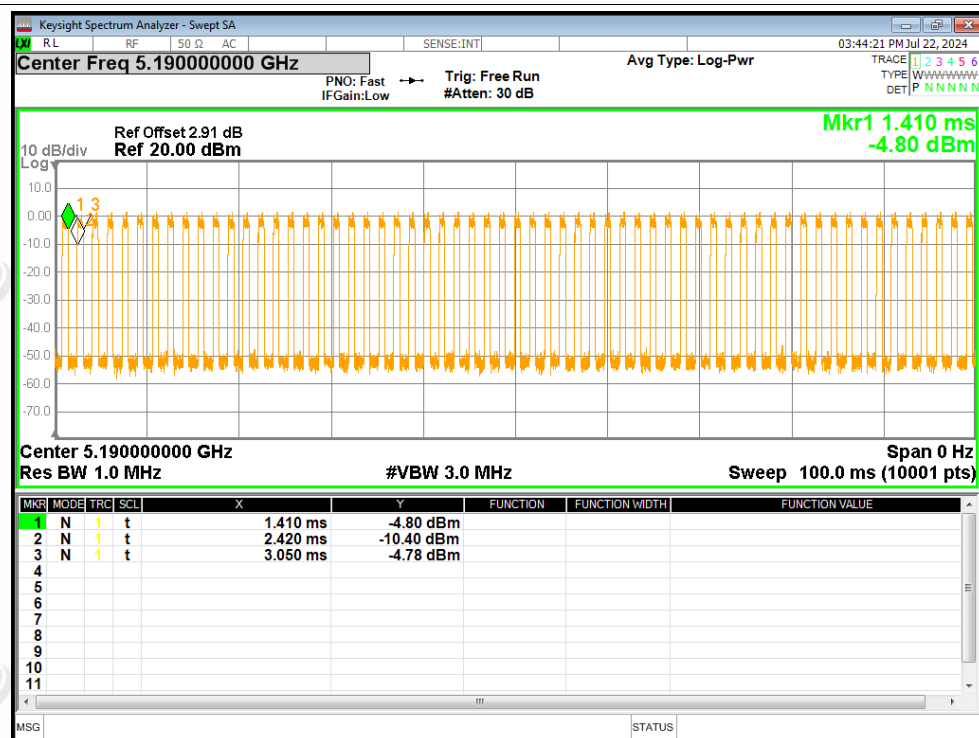


Duty Cycle NVNT n20 5240MHz Ant1

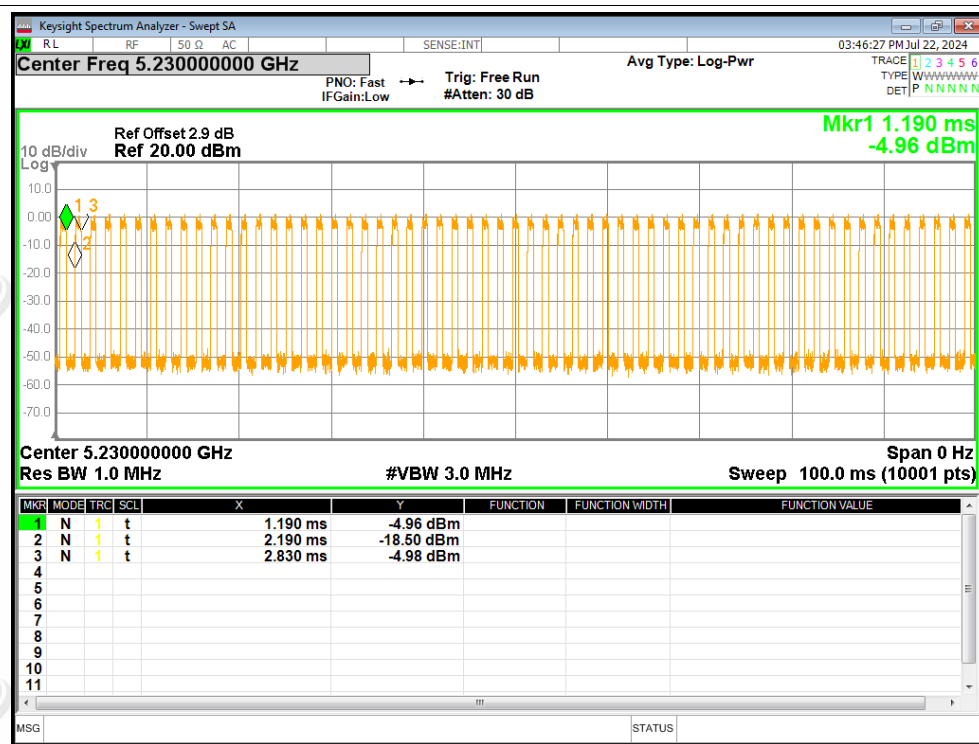




Duty Cycle NVNT n40 5190MHz Ant1

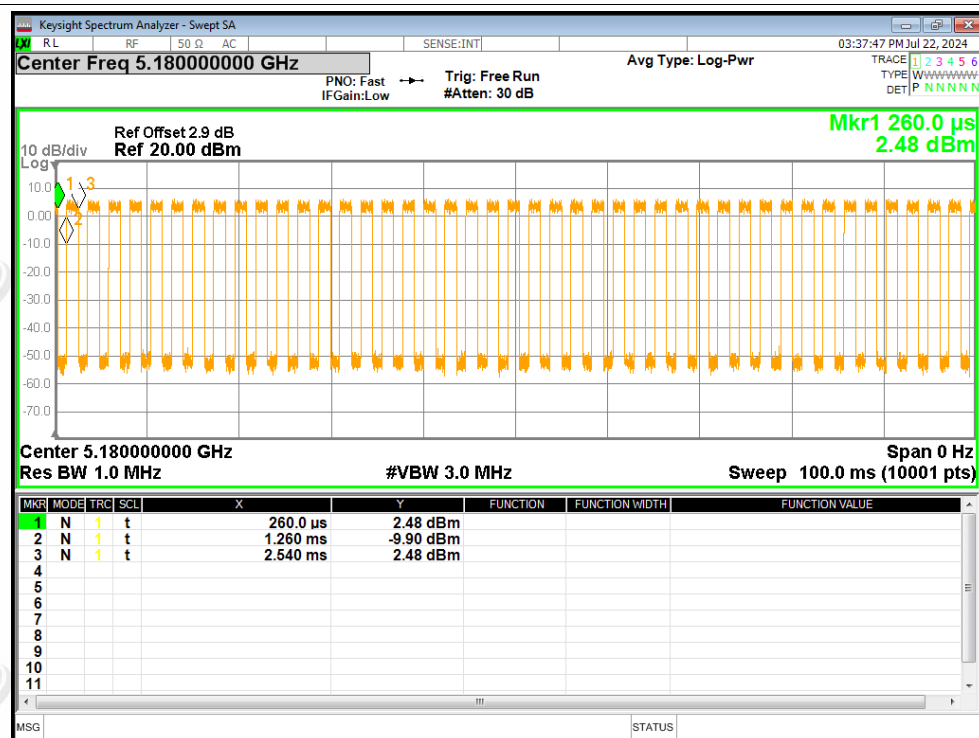


Duty Cycle NVNT n40 5230MHz Ant1

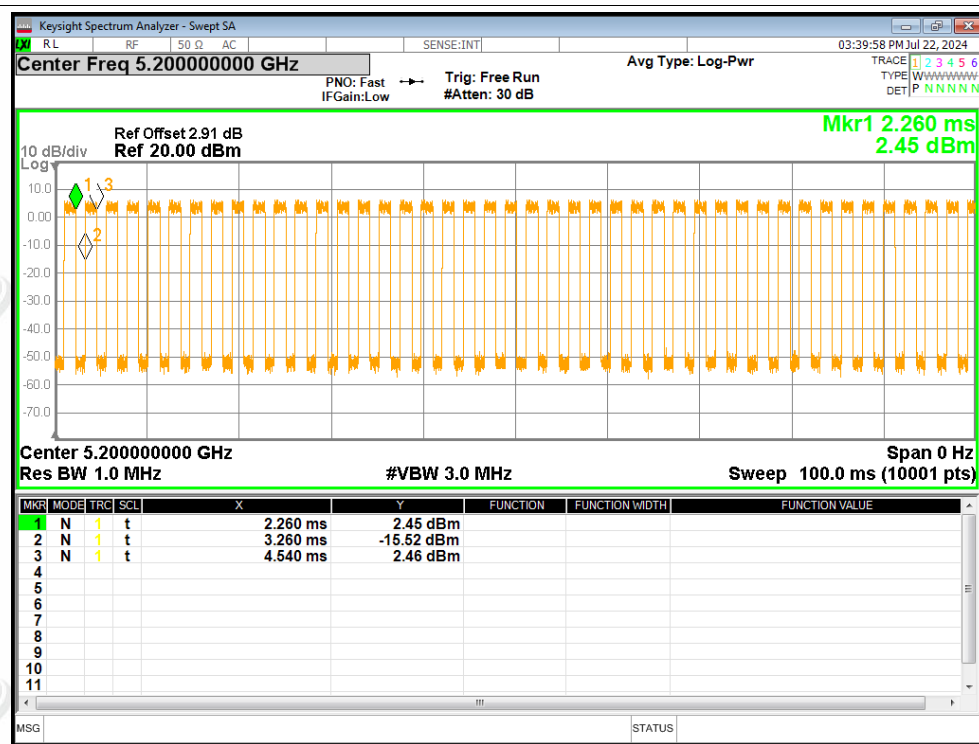




Duty Cycle NVNT ac20 5180MHz Ant1

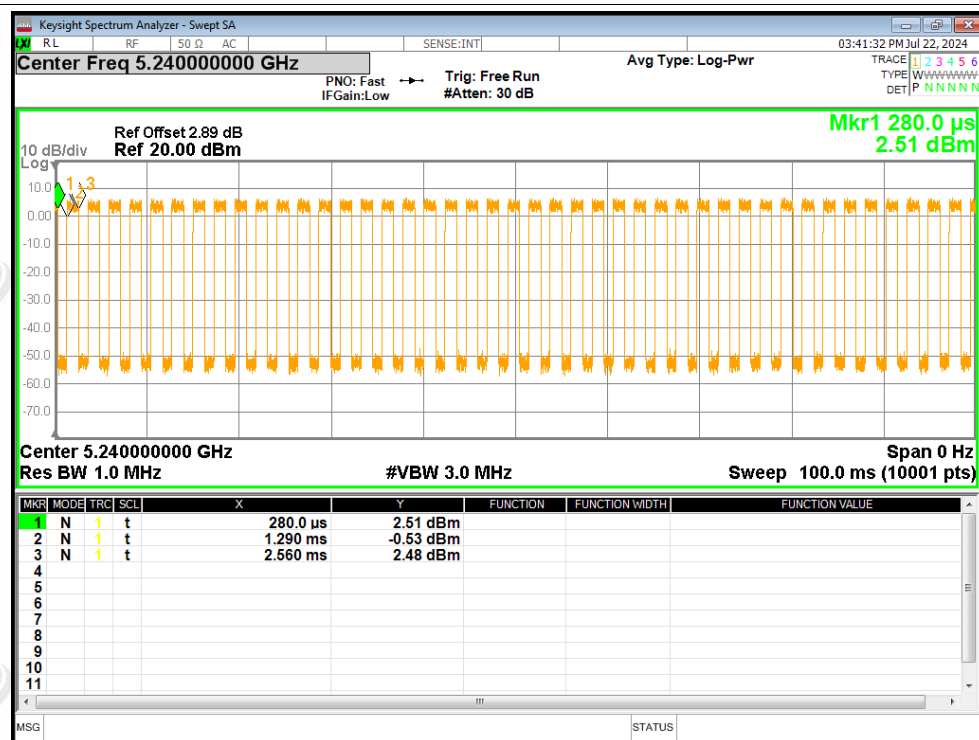


Duty Cycle NVNT ac20 5200MHz Ant1

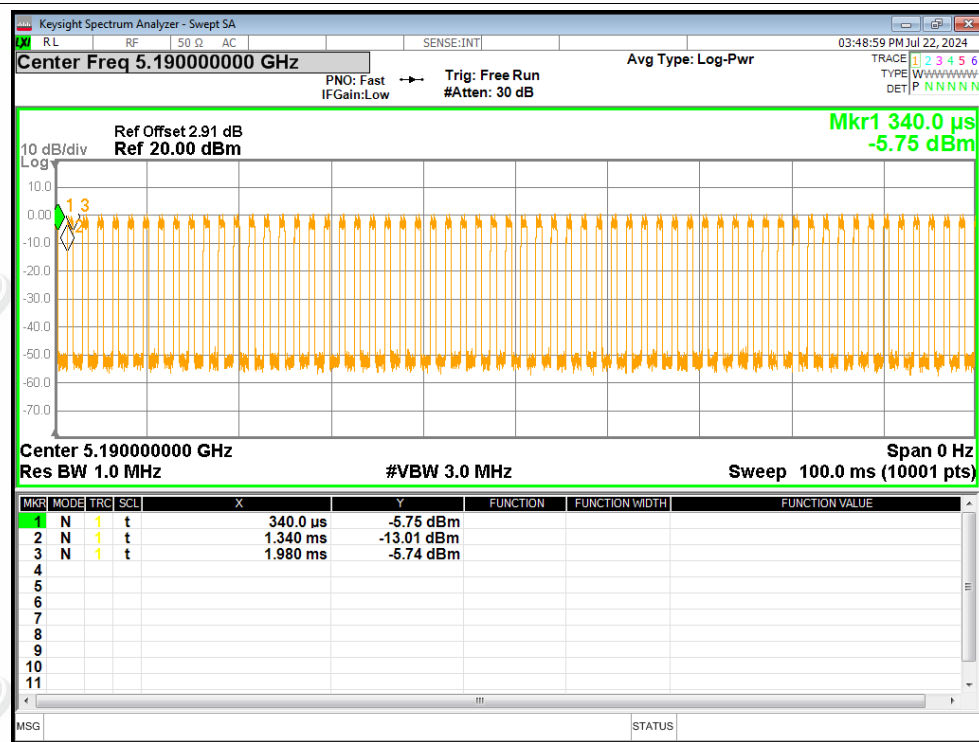




Duty Cycle NVNT ac20 5240MHz Ant1

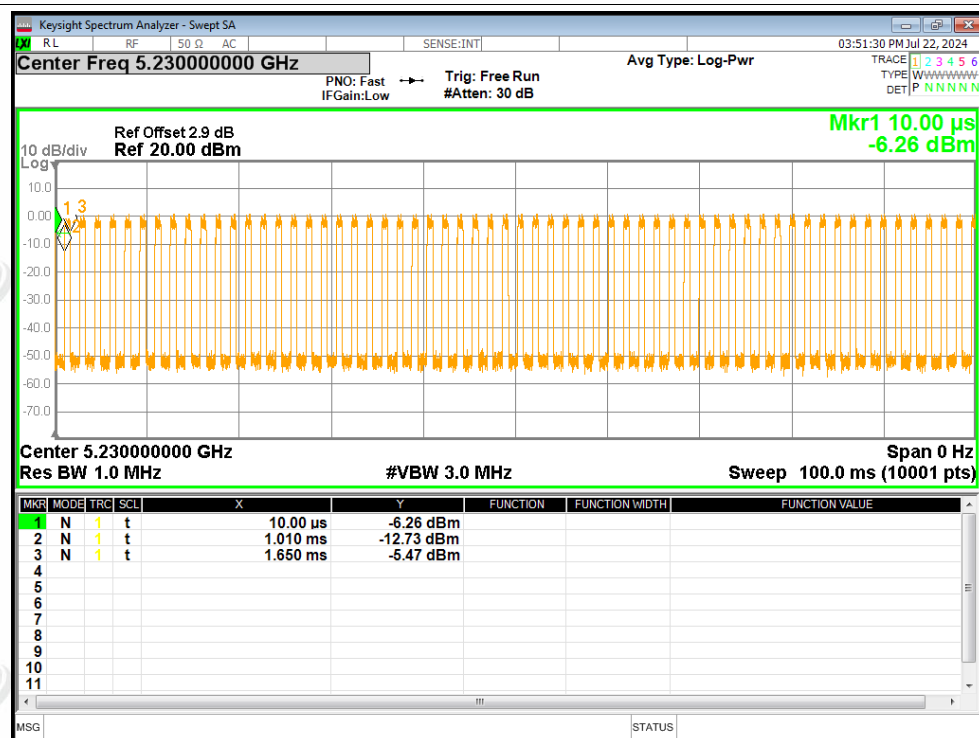


Duty Cycle NVNT ac40 5190MHz Ant1

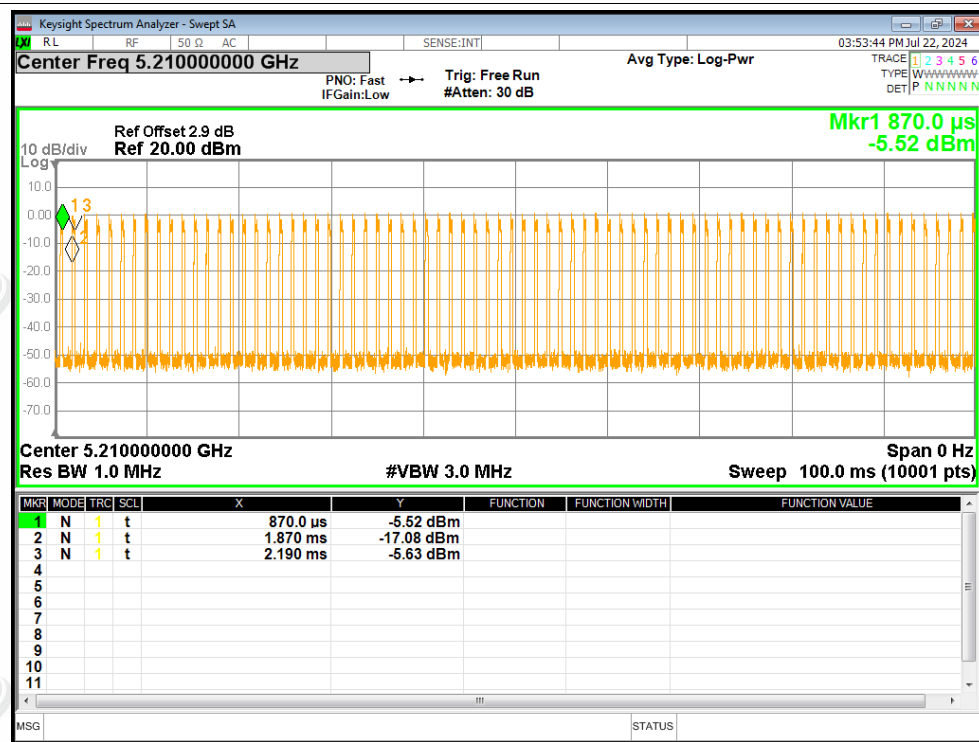




Duty Cycle NVNT ac40 5230MHz Ant1



Duty Cycle NVNT ac80 5210MHz Ant1



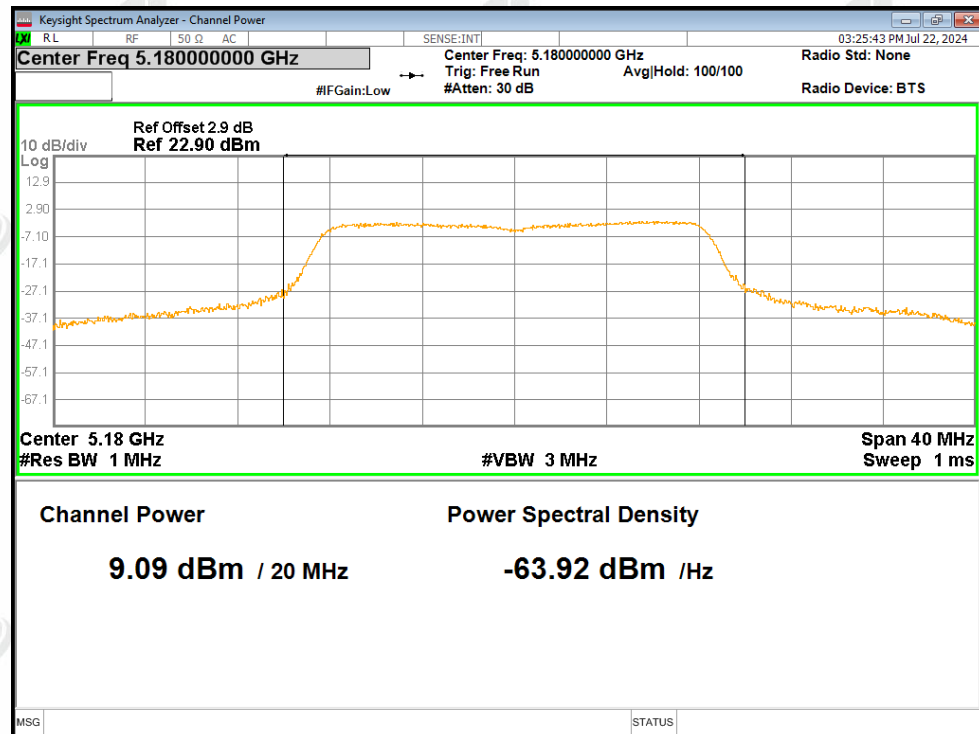
**ZHONGHAN****Maximum Conducted Output Power**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	9.09	2.39	11.48	24	Pass
NVNT	a	5200	Ant1	10.52	2.39	12.91	24	Pass
NVNT	a	5240	Ant1	9.31	2.38	11.69	24	Pass
NVNT	n20	5180	Ant1	9.34	2.52	11.86	24	Pass
NVNT	n20	5200	Ant1	9.27	2.54	11.81	24	Pass
NVNT	n20	5240	Ant1	9.57	2.51	12.08	24	Pass
NVNT	n40	5190	Ant1	8.36	4.16	12.52	24	Pass
NVNT	n40	5230	Ant1	8.05	4.09	12.14	24	Pass
NVNT	ac20	5180	Ant1	9.2	2.51	11.71	24	Pass
NVNT	ac20	5200	Ant1	9.3	2.51	11.81	24	Pass
NVNT	ac20	5240	Ant1	9.44	2.54	11.98	24	Pass
NVNT	ac40	5190	Ant1	7.75	4.09	11.84	24	Pass
NVNT	ac40	5230	Ant1	7.9	4.09	11.99	24	Pass
NVNT	ac80	5210	Ant1	5.64	6.15	11.79	24	Pass

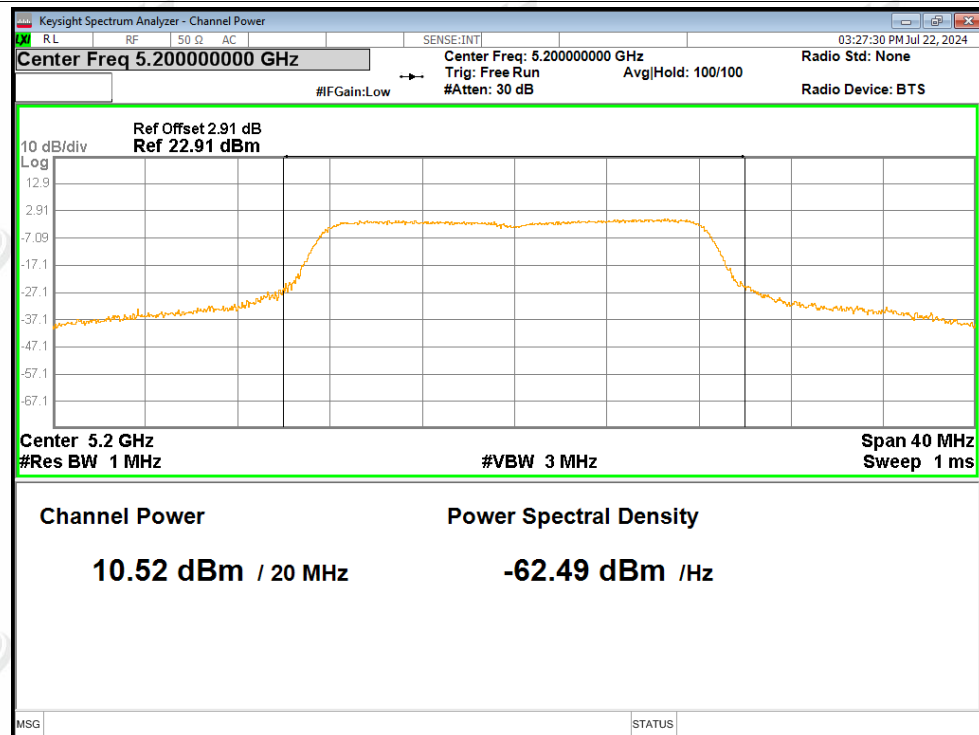


Test Graphs

Power NVNT a 5180MHz Ant1

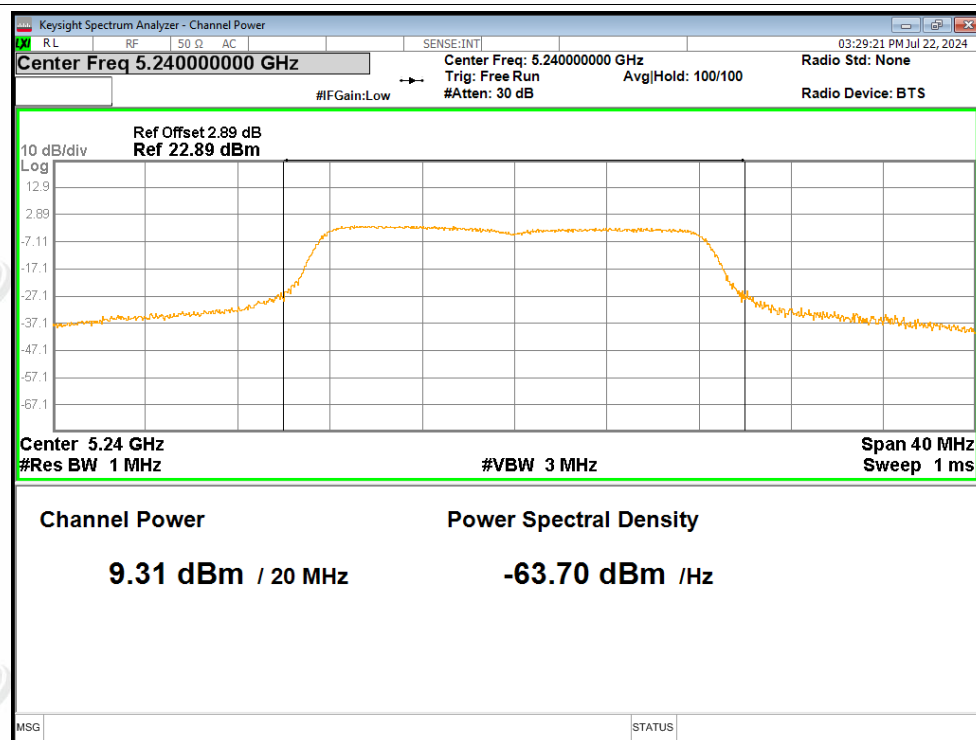


Power NVNT a 5200MHz Ant1

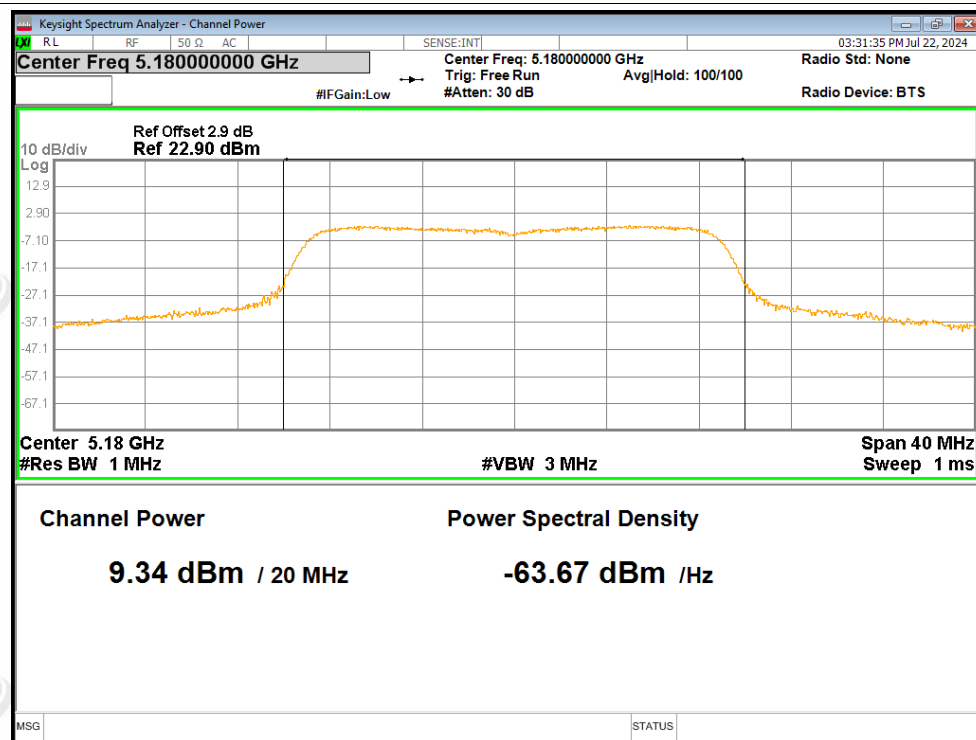




Power NVNT a 5240MHz Ant1

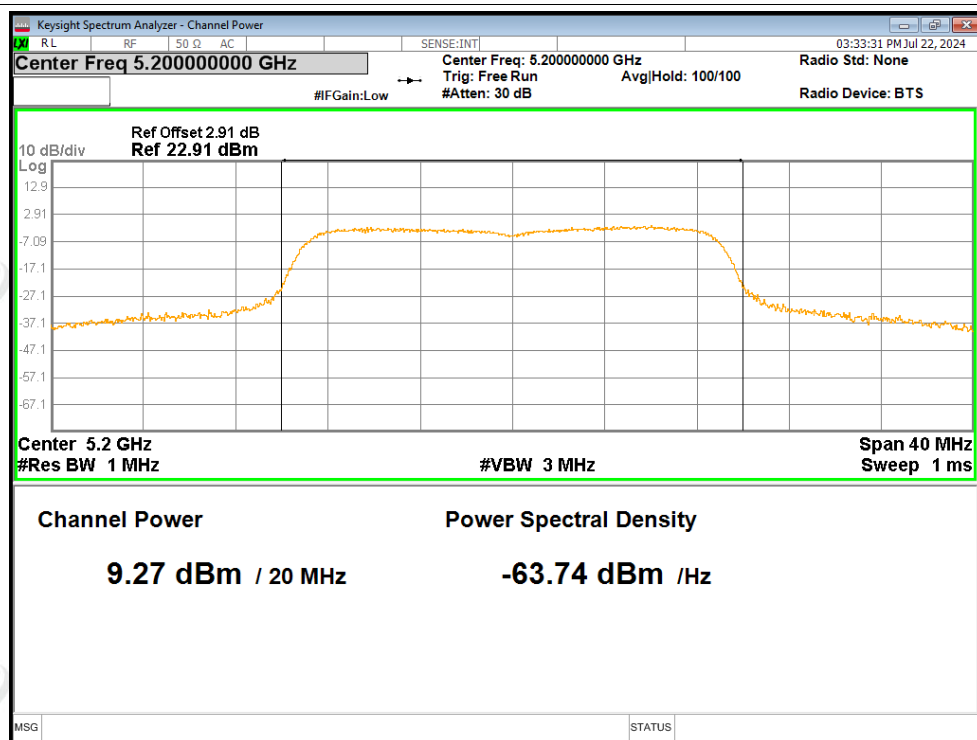


Power NVNT n20 5180MHz Ant1

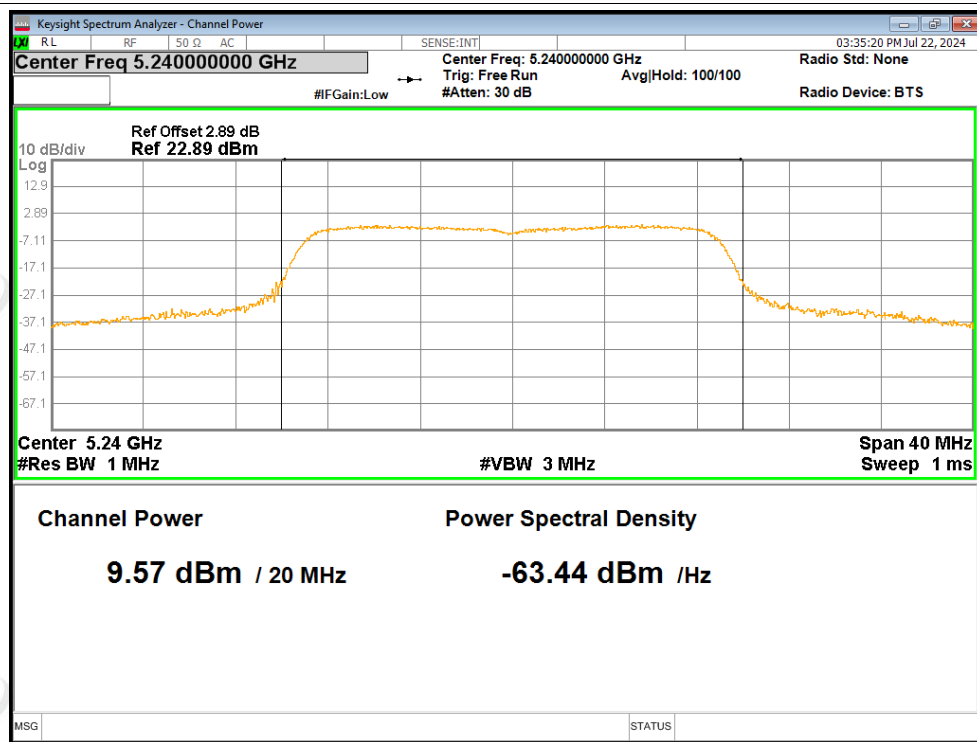




Power NVNT n20 5200MHz Ant1

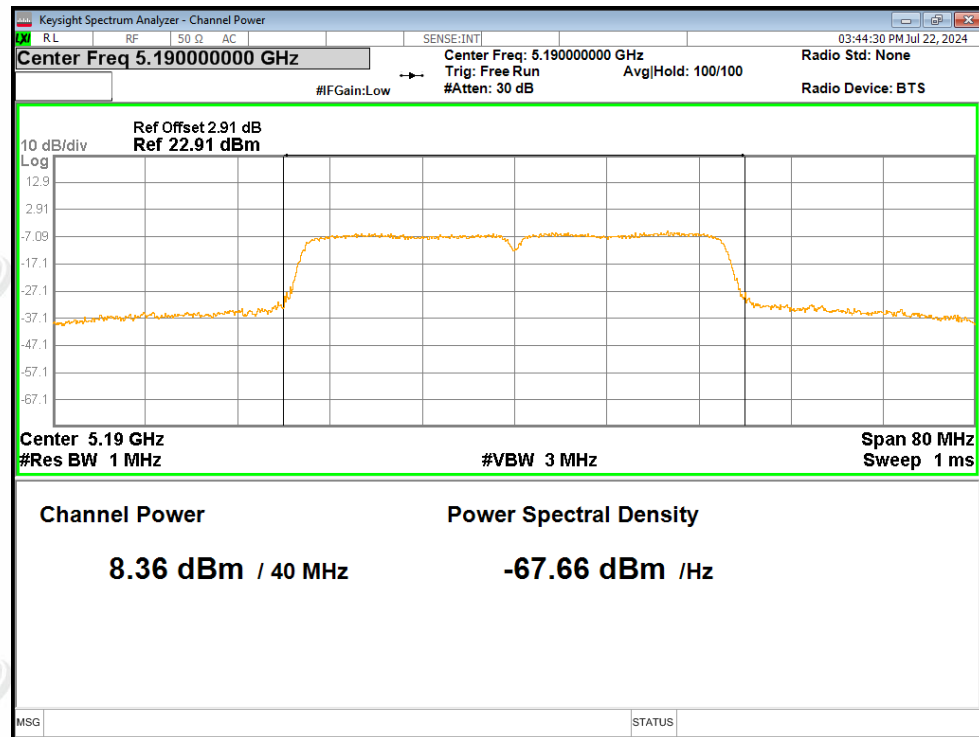


Power NVNT n20 5240MHz Ant1

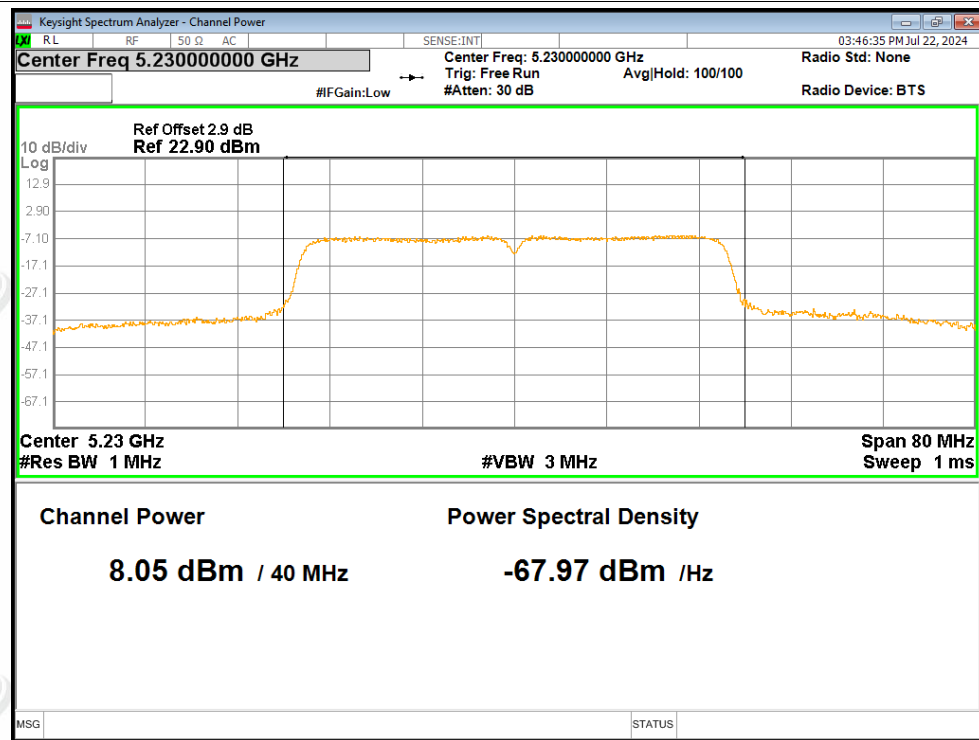




Power NVNT n40 5190MHz Ant1

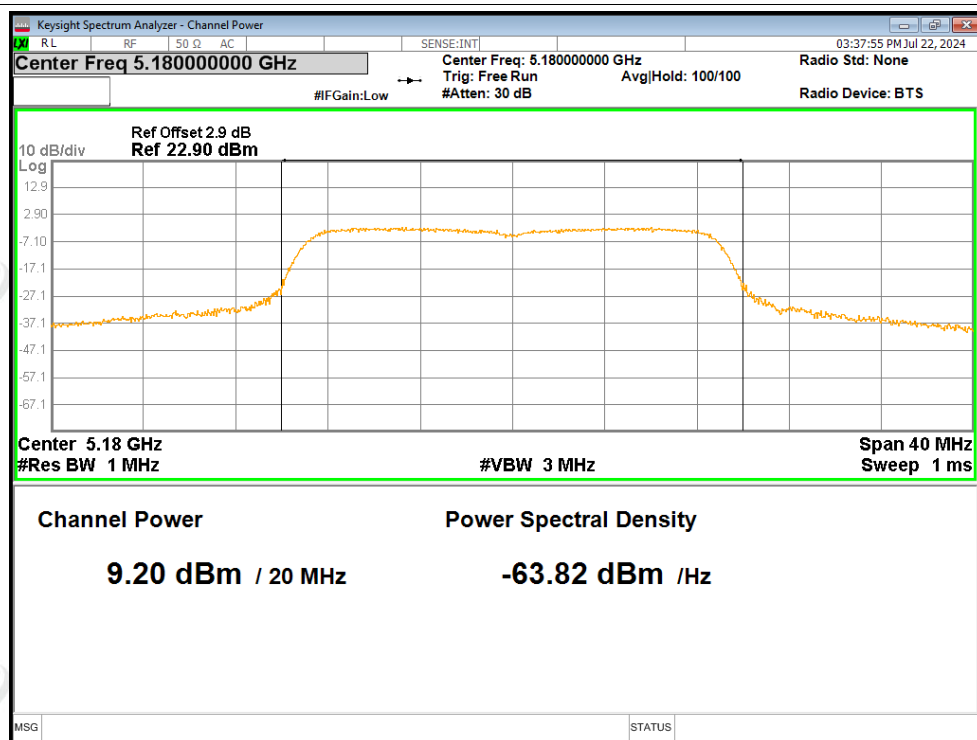


Power NVNT n40 5230MHz Ant1

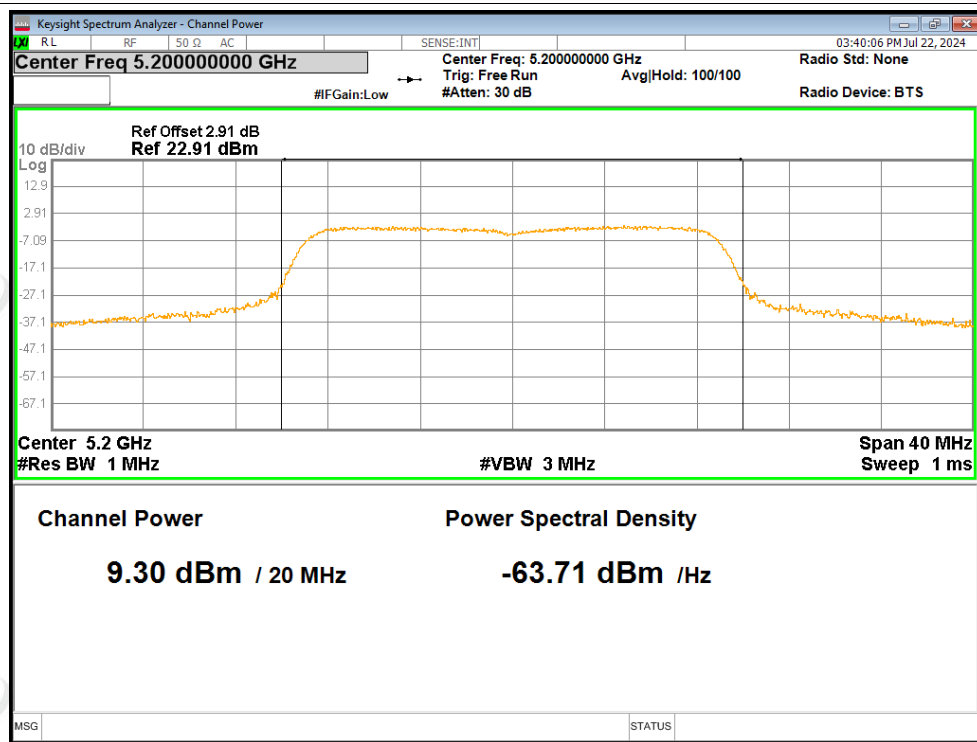




Power NVNT ac20 5180MHz Ant1

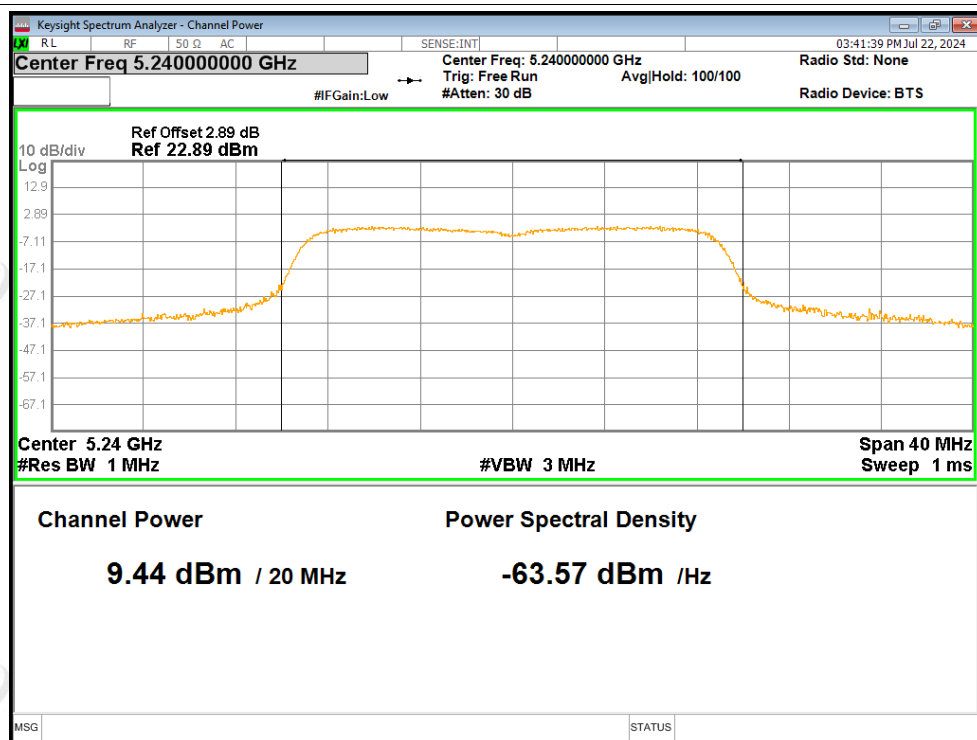


Power NVNT ac20 5200MHz Ant1

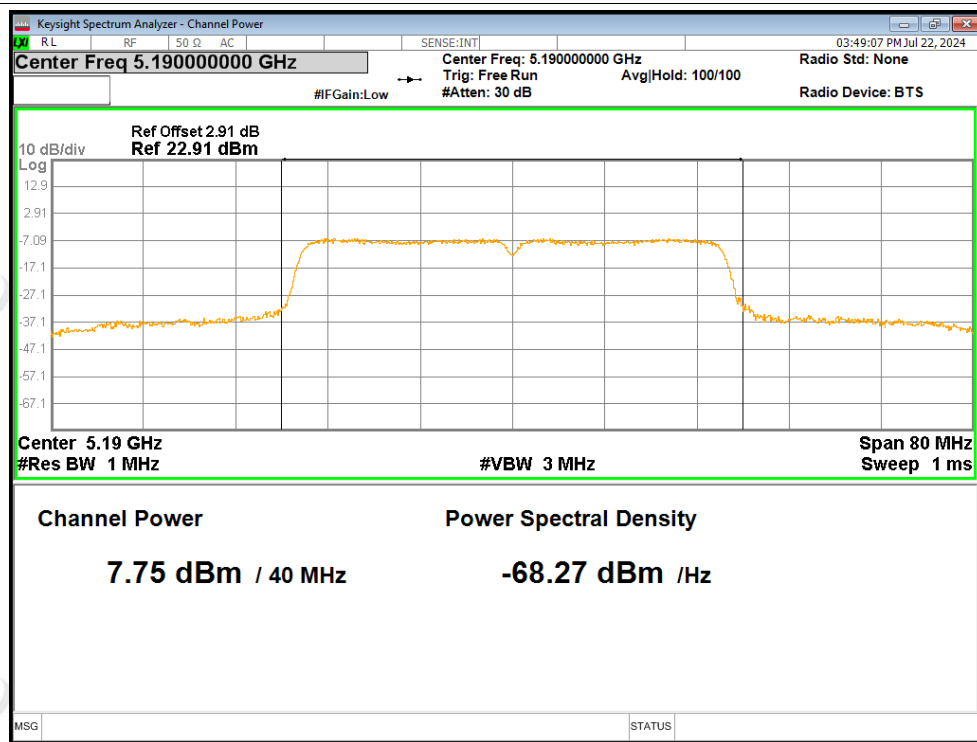




Power NVNT ac20 5240MHz Ant1

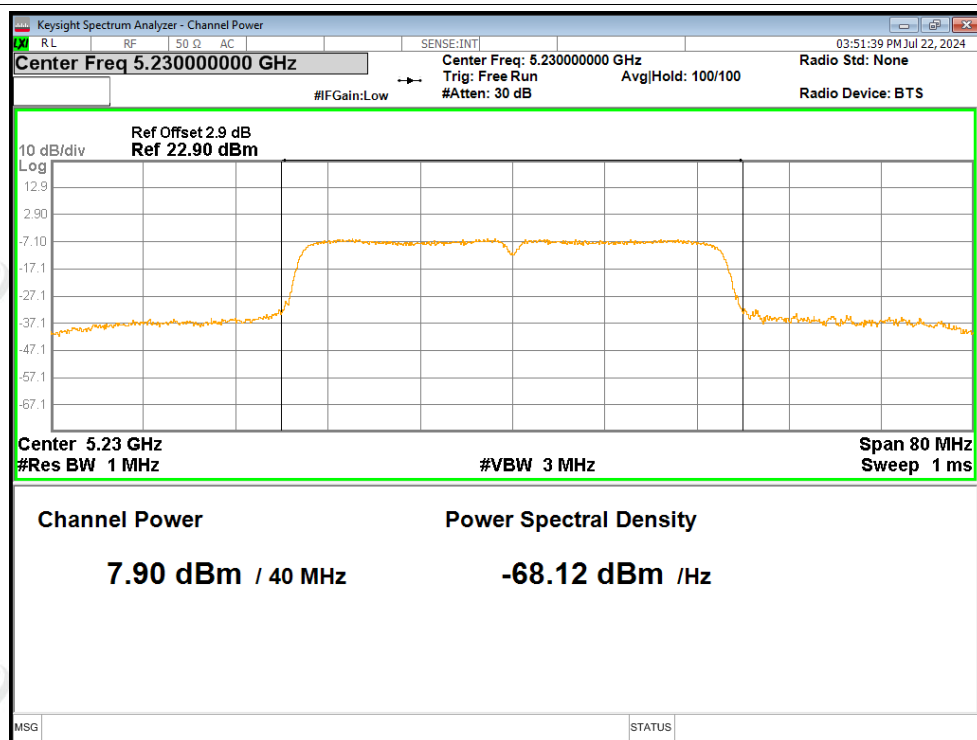


Power NVNT ac40 5190MHz Ant1

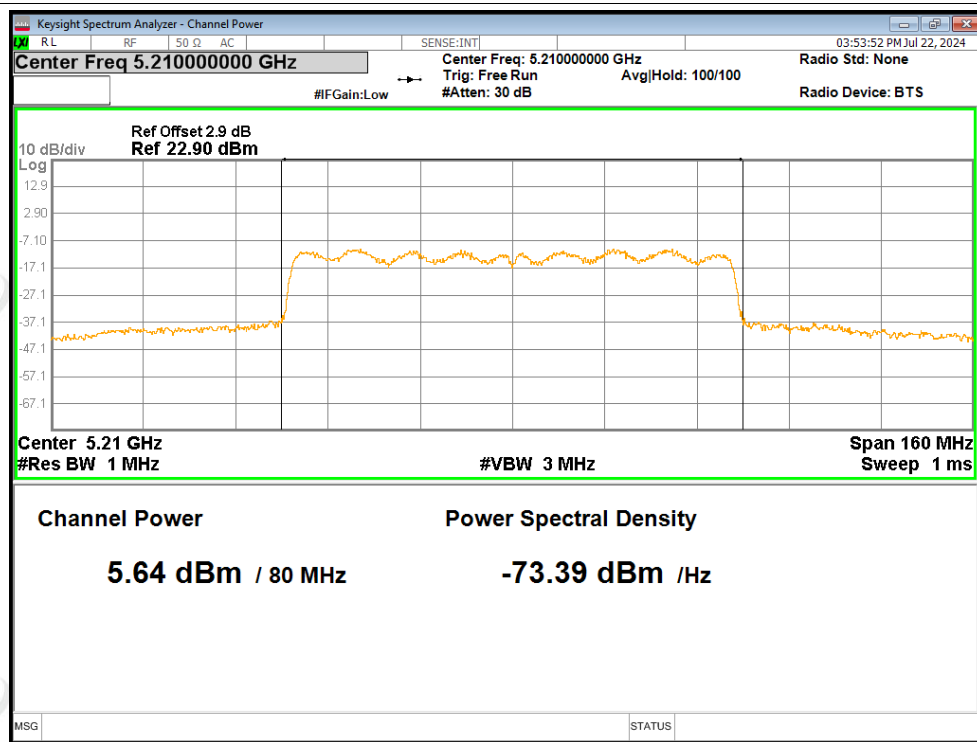




Power NVNT ac40 5230MHz Ant1



Power NVNT ac80 5210MHz Ant1



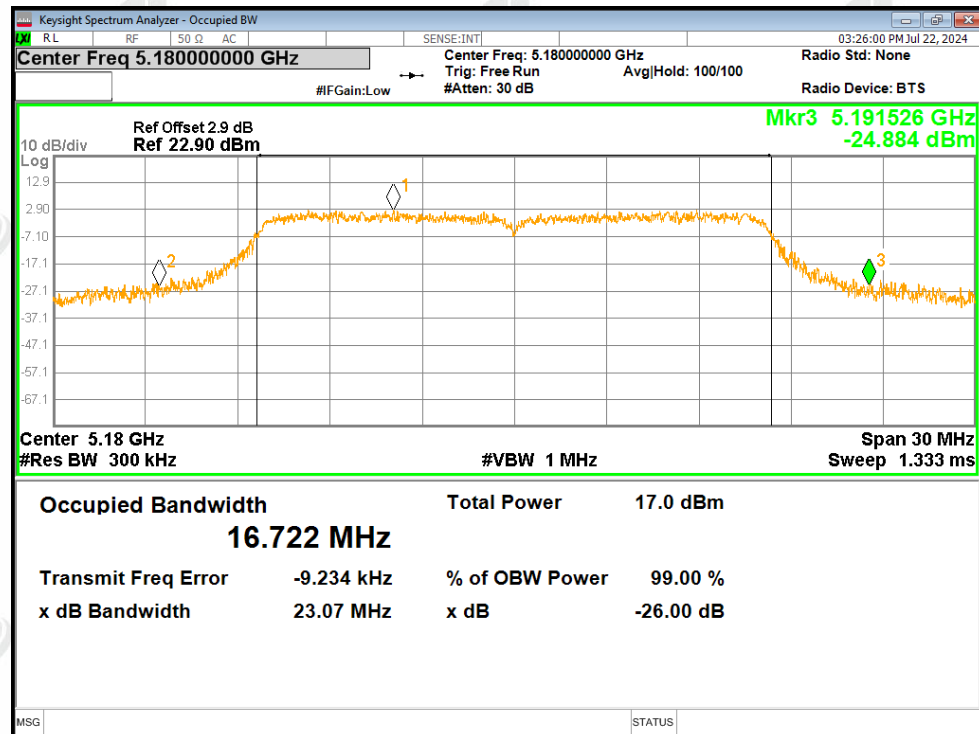
**ZHONGHAN**
-26dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	23.07	Pass
NVNT	a	5200	Ant1	24.184	Pass
NVNT	a	5240	Ant1	24.03	Pass
NVNT	n20	5180	Ant1	24.63	Pass
NVNT	n20	5200	Ant1	22.024	Pass
NVNT	n20	5240	Ant1	23.423	Pass
NVNT	n40	5190	Ant1	53.878	Pass
NVNT	n40	5230	Ant1	50.444	Pass
NVNT	ac20	5180	Ant1	24.421	Pass
NVNT	ac20	5200	Ant1	23.48	Pass
NVNT	ac20	5240	Ant1	23.731	Pass
NVNT	ac40	5190	Ant1	52.92	Pass
NVNT	ac40	5230	Ant1	45.07	Pass
NVNT	ac80	5210	Ant1	93.51	Pass

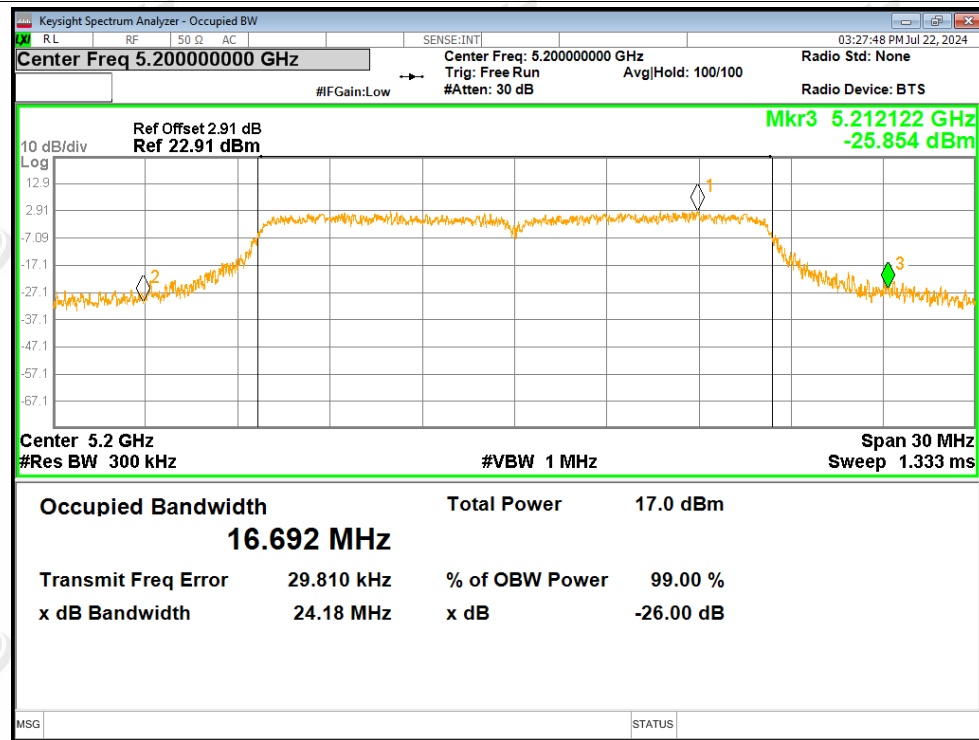


Test Graphs

-26dB Bandwidth NVNT a 5180MHz Ant1

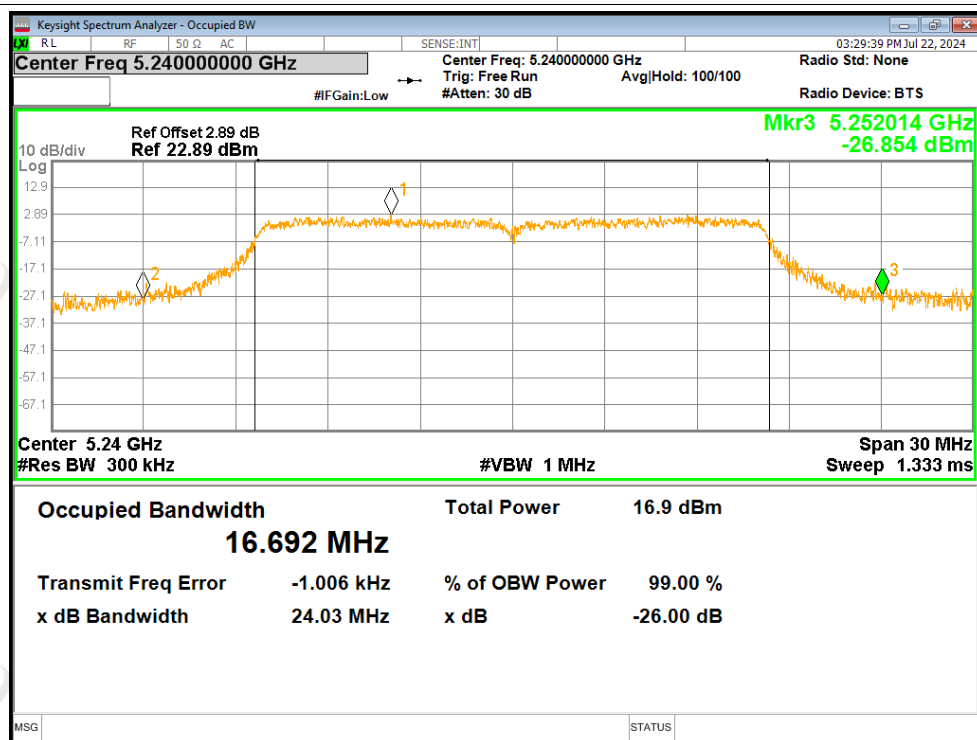


-26dB Bandwidth NVNT a 5200MHz Ant1

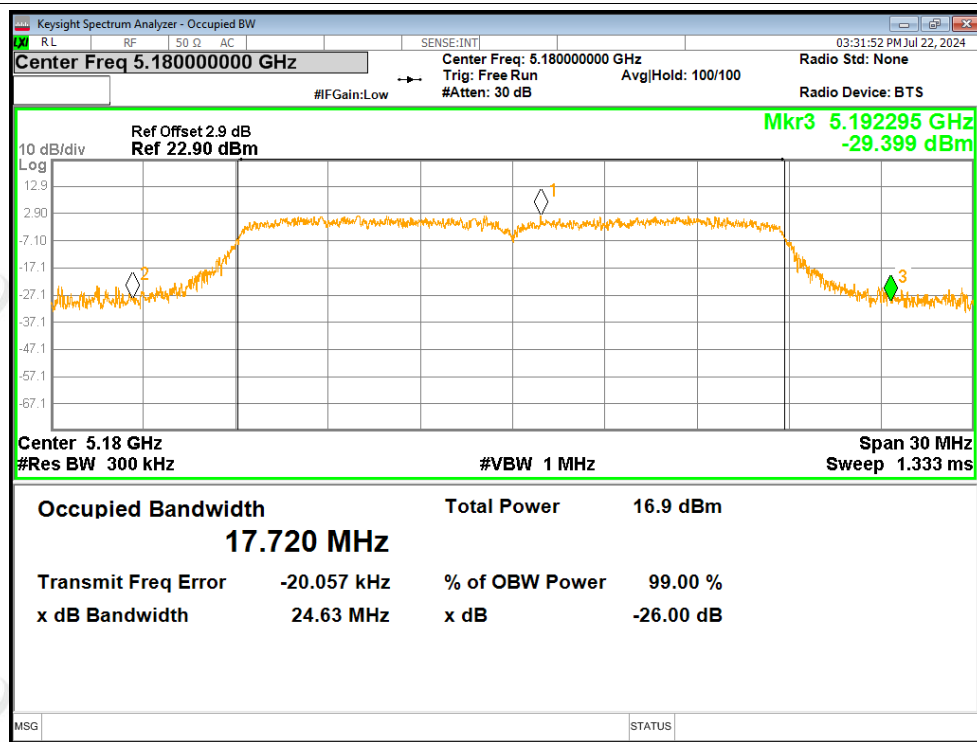




-26dB Bandwidth NVNT a 5240MHz Ant1

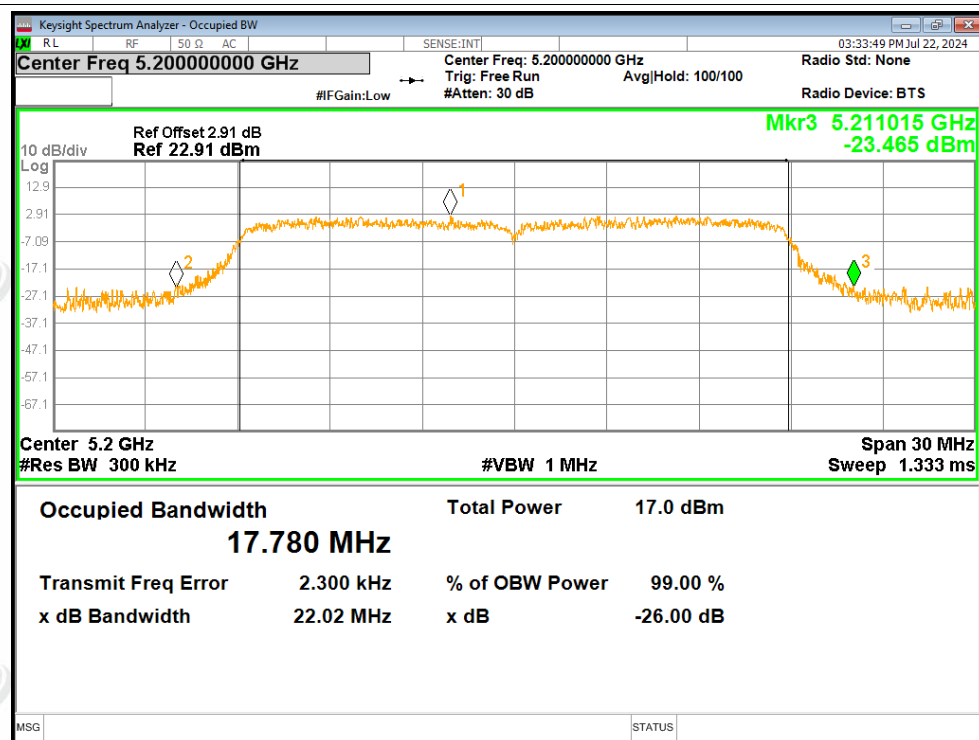


-26dB Bandwidth NVNT n20 5180MHz Ant1

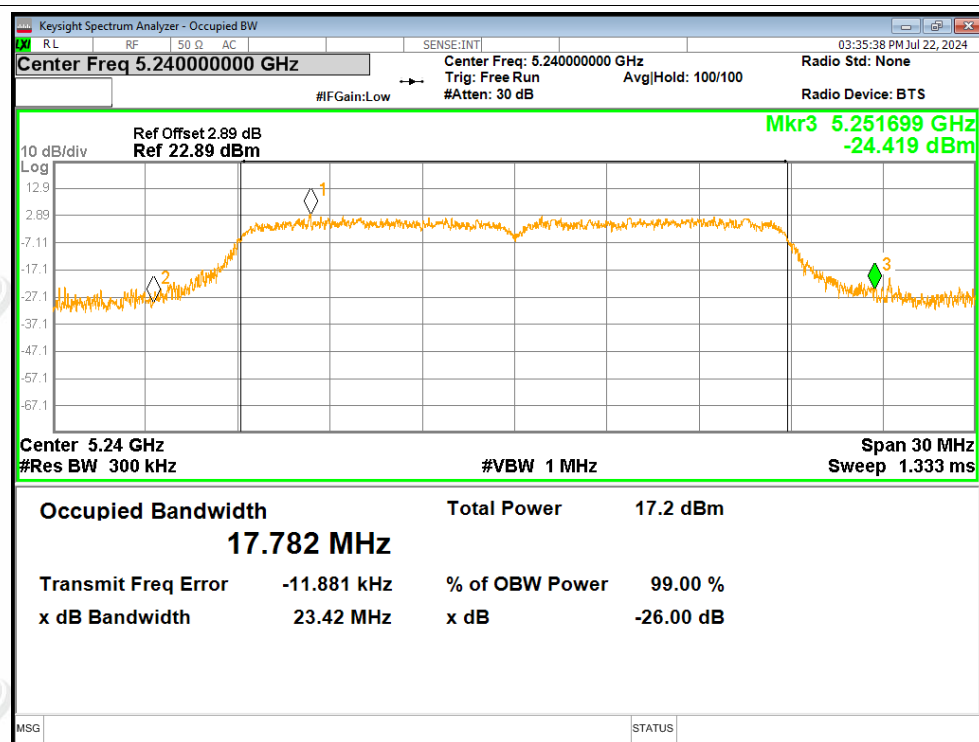




-26dB Bandwidth NVNT n20 5200MHz Ant1

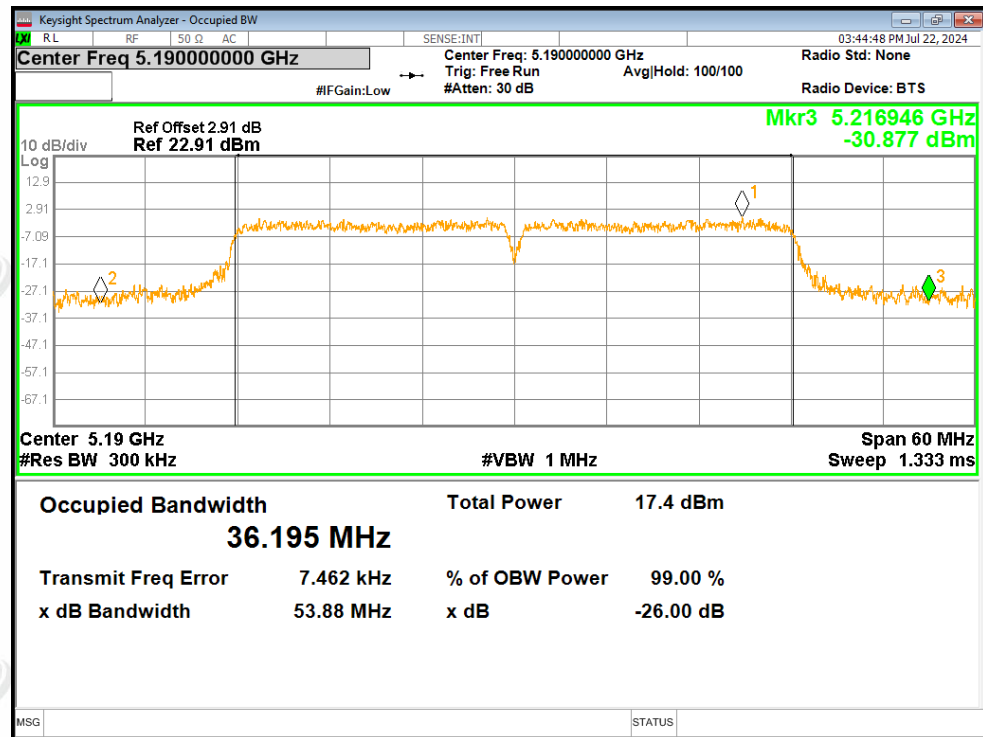


-26dB Bandwidth NVNT n20 5240MHz Ant1

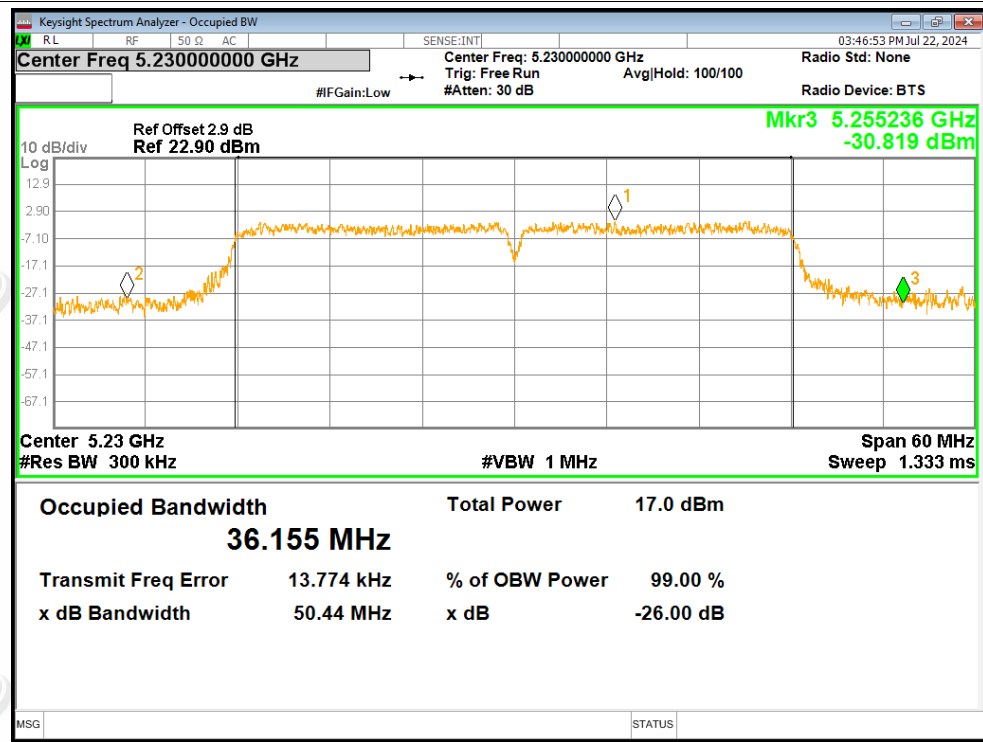




-26dB Bandwidth NVNT n40 5190MHz Ant1

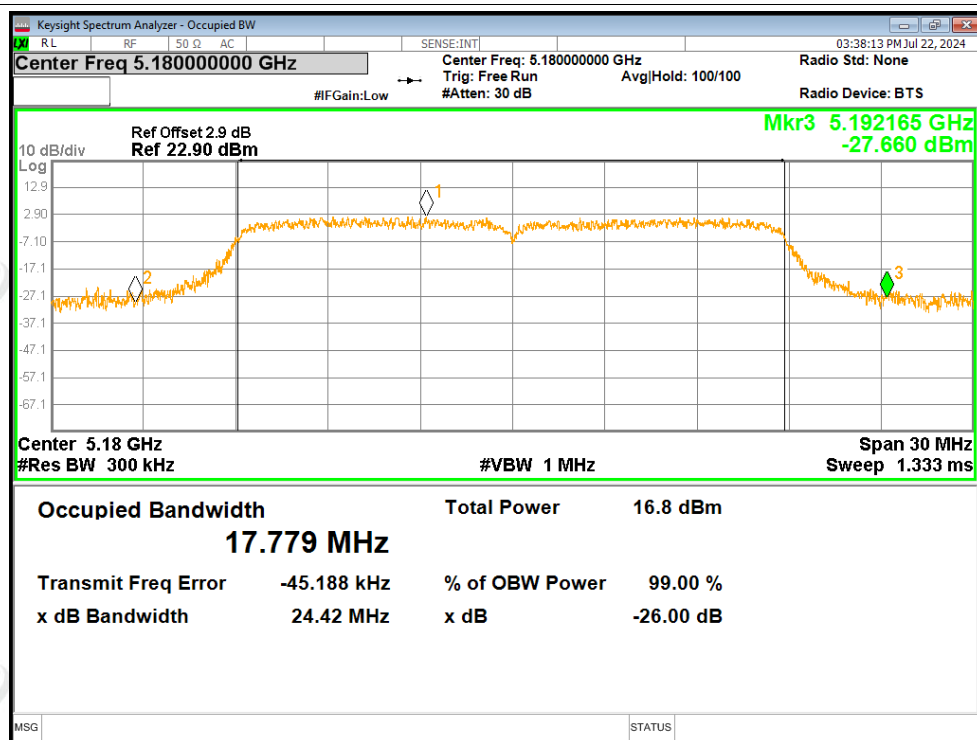


-26dB Bandwidth NVNT n40 5230MHz Ant1

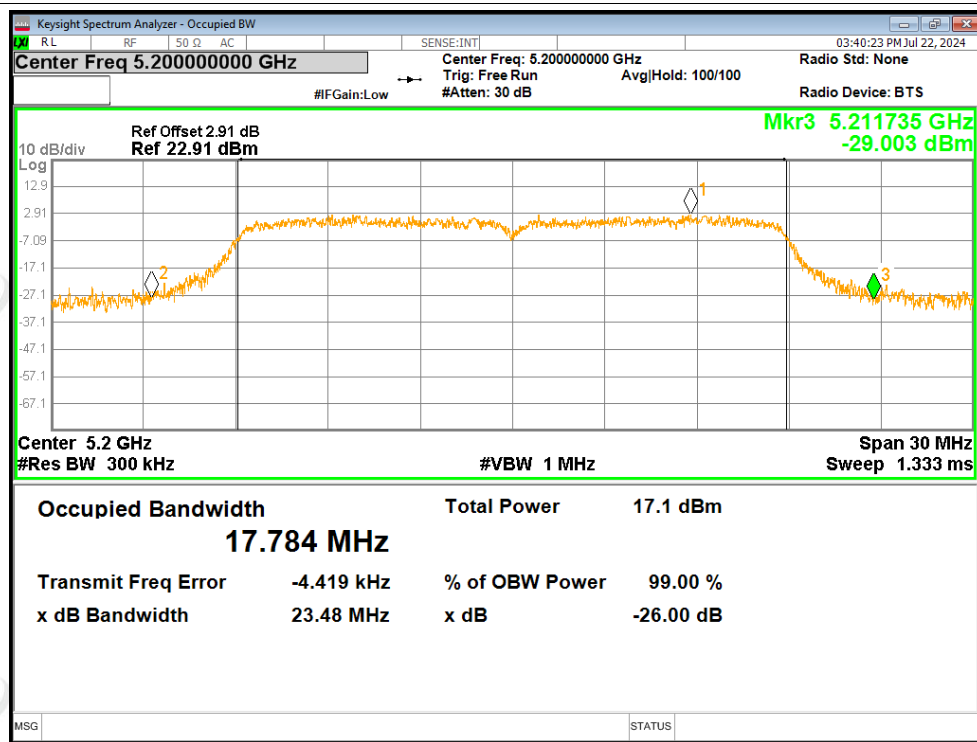




-26dB Bandwidth NVNT ac20 5180MHz Ant1

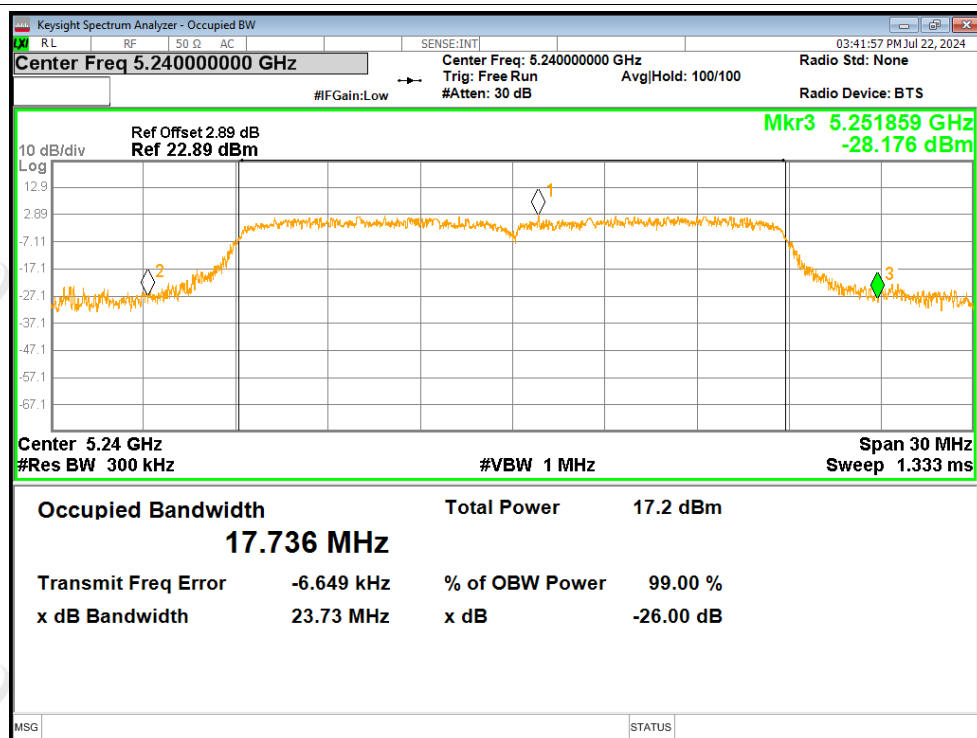


-26dB Bandwidth NVNT ac20 5200MHz Ant1

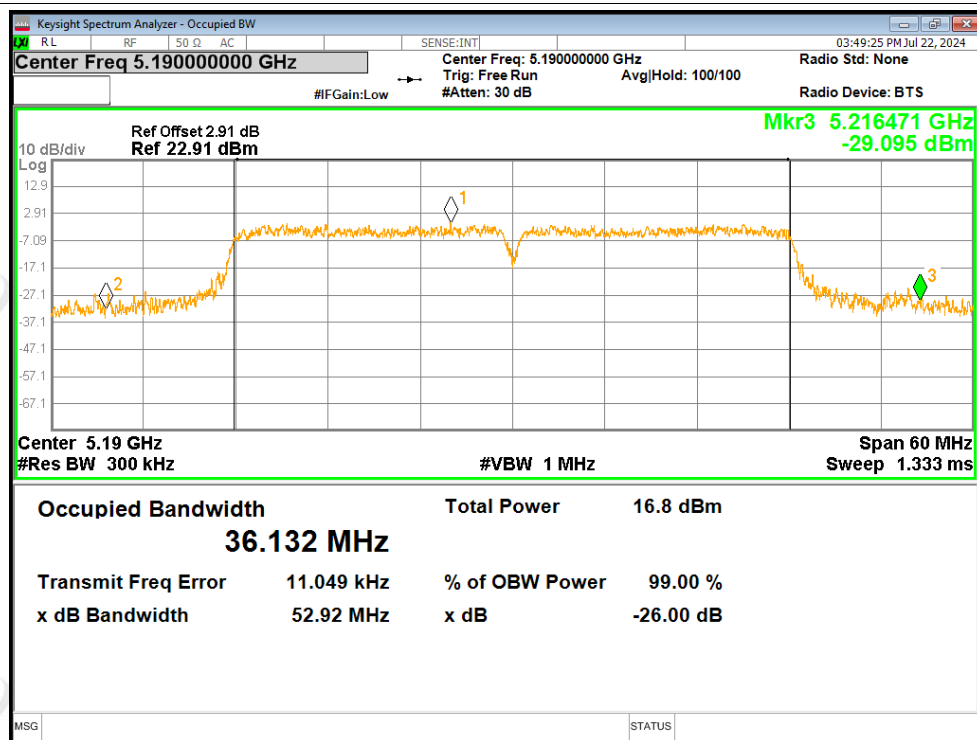




-26dB Bandwidth NVNT ac20 5240MHz Ant1

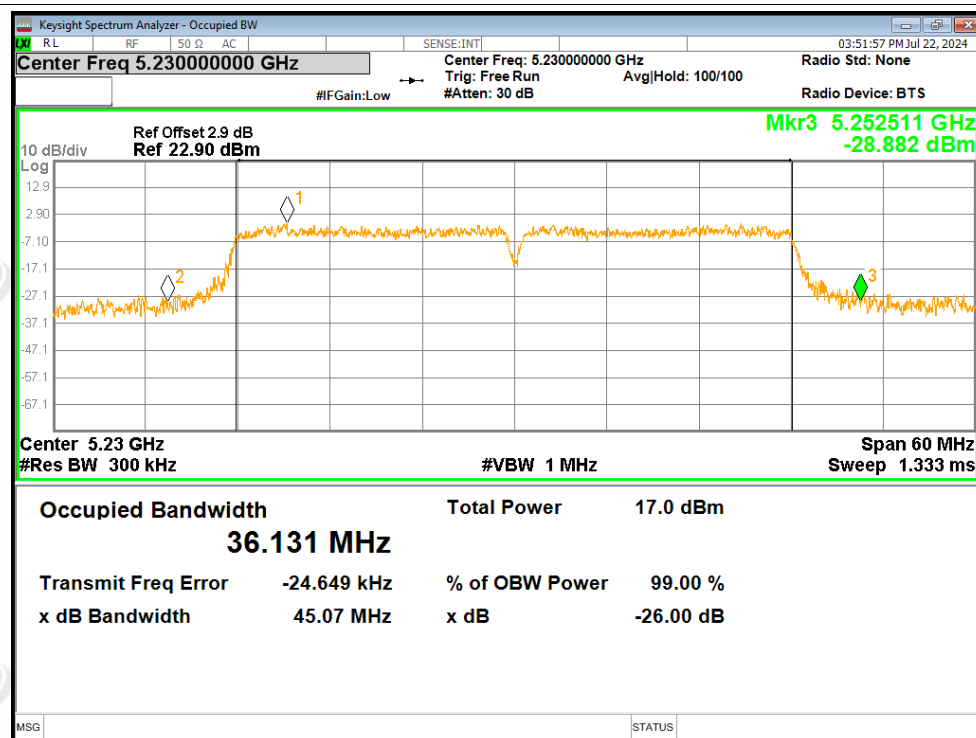


-26dB Bandwidth NVNT ac40 5190MHz Ant1

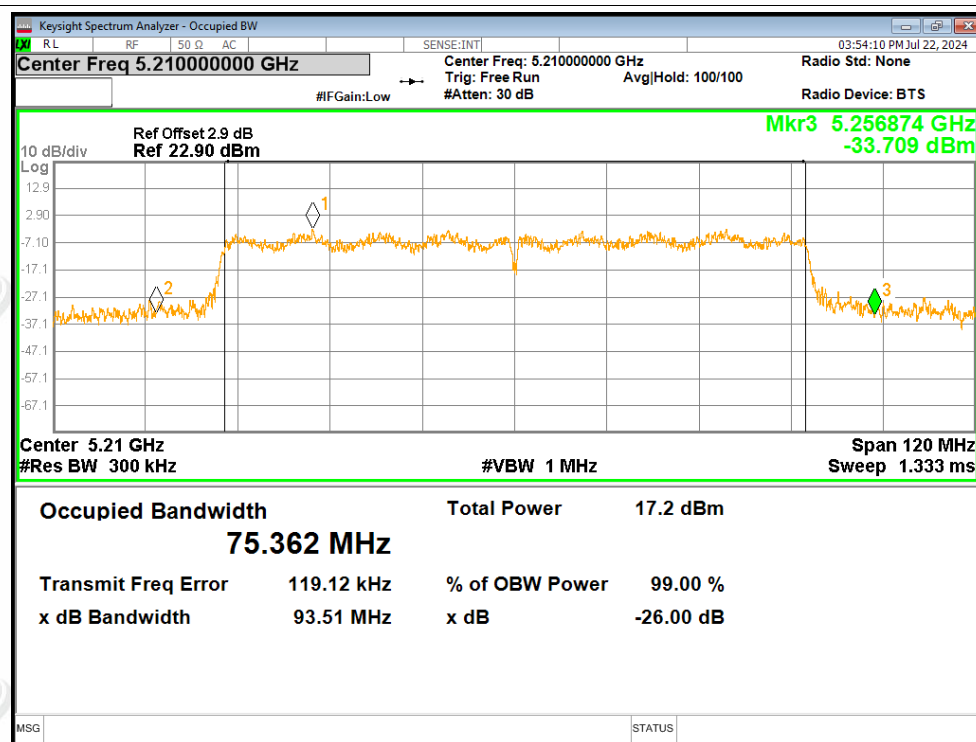




-26dB Bandwidth NVNT ac40 5230MHz Ant1



-26dB Bandwidth NVNT ac80 5210MHz Ant1



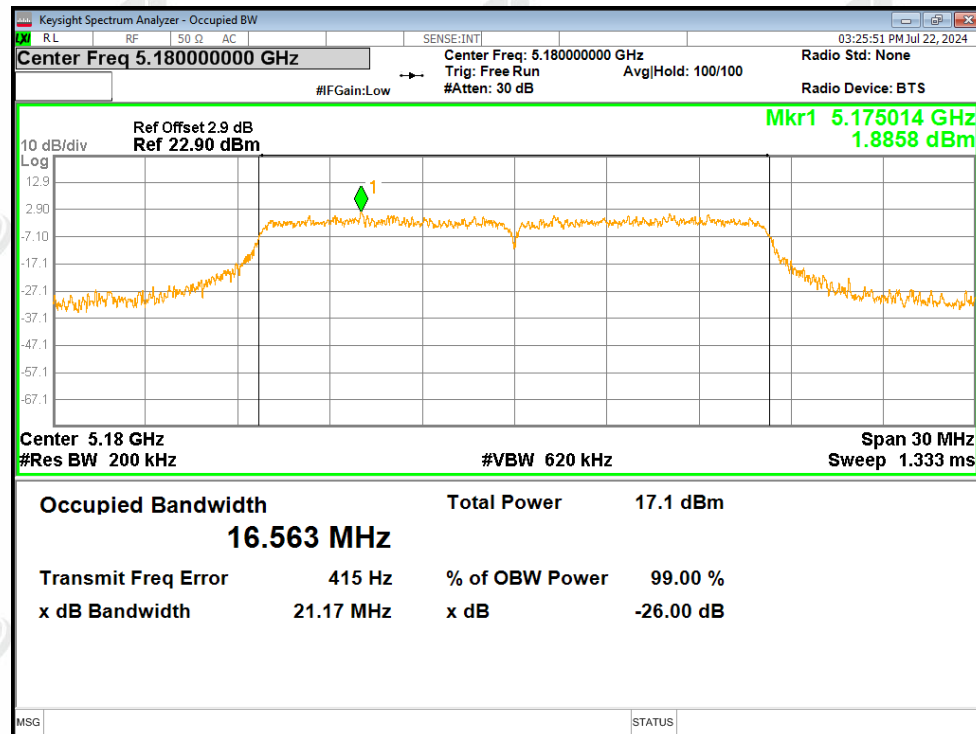
**ZHONGHAN****Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.563
NVNT	a	5200	Ant1	16.521
NVNT	a	5240	Ant1	16.541
NVNT	n20	5180	Ant1	17.651
NVNT	n20	5200	Ant1	17.676
NVNT	n20	5240	Ant1	17.66
NVNT	n40	5190	Ant1	36.318
NVNT	n40	5230	Ant1	36.202
NVNT	ac20	5180	Ant1	17.667
NVNT	ac20	5200	Ant1	17.64
NVNT	ac20	5240	Ant1	17.63
NVNT	ac40	5190	Ant1	36.231
NVNT	ac40	5230	Ant1	36.211
NVNT	ac80	5210	Ant1	75.496

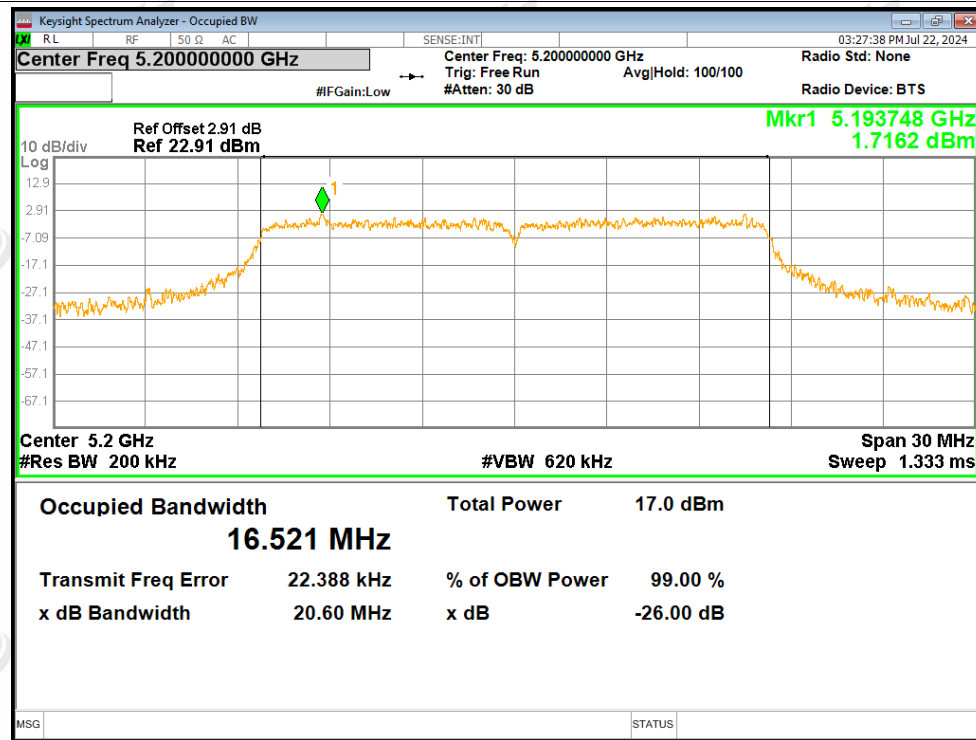


Test Graphs

OBW NVNT a 5180MHz Ant1

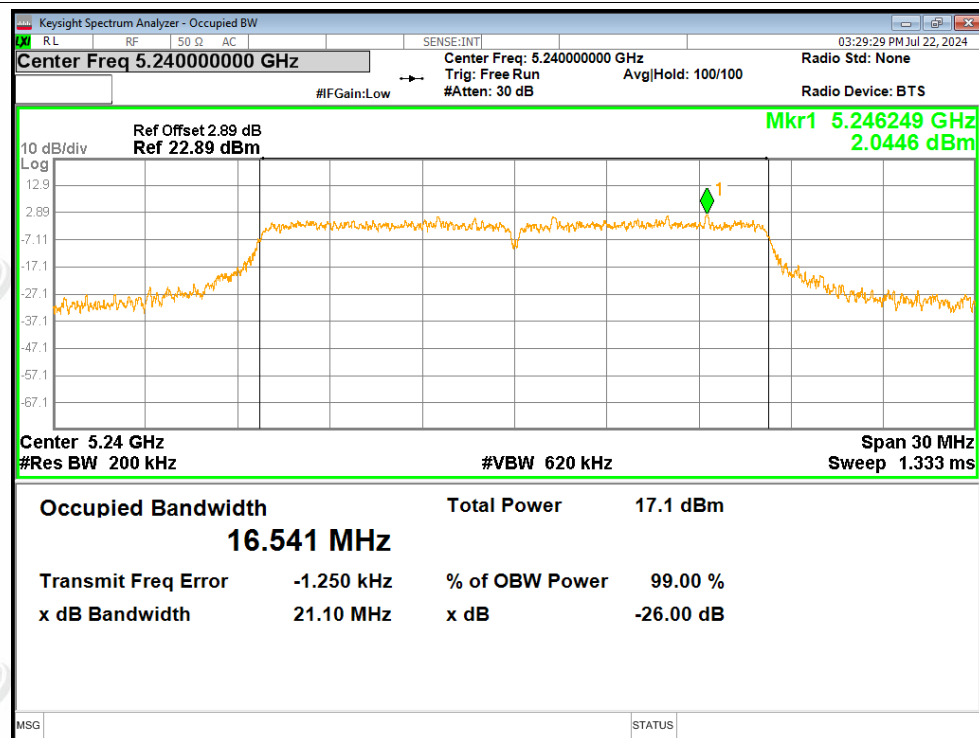


OBW NVNT a 5200MHz Ant1

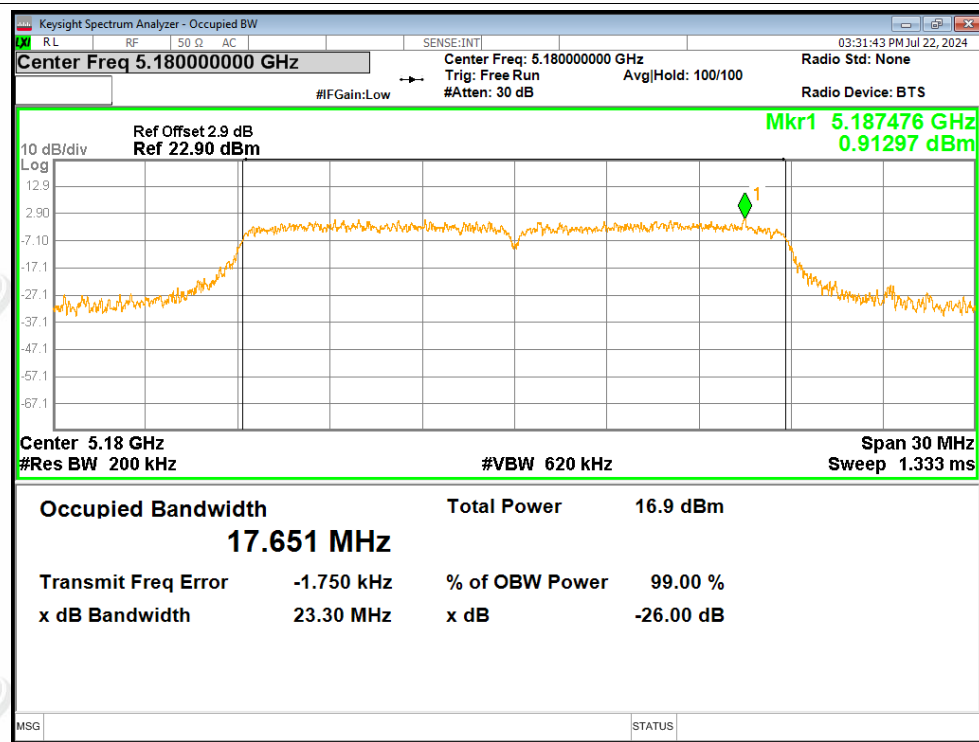




OBW NVNT a 5240MHz Ant1

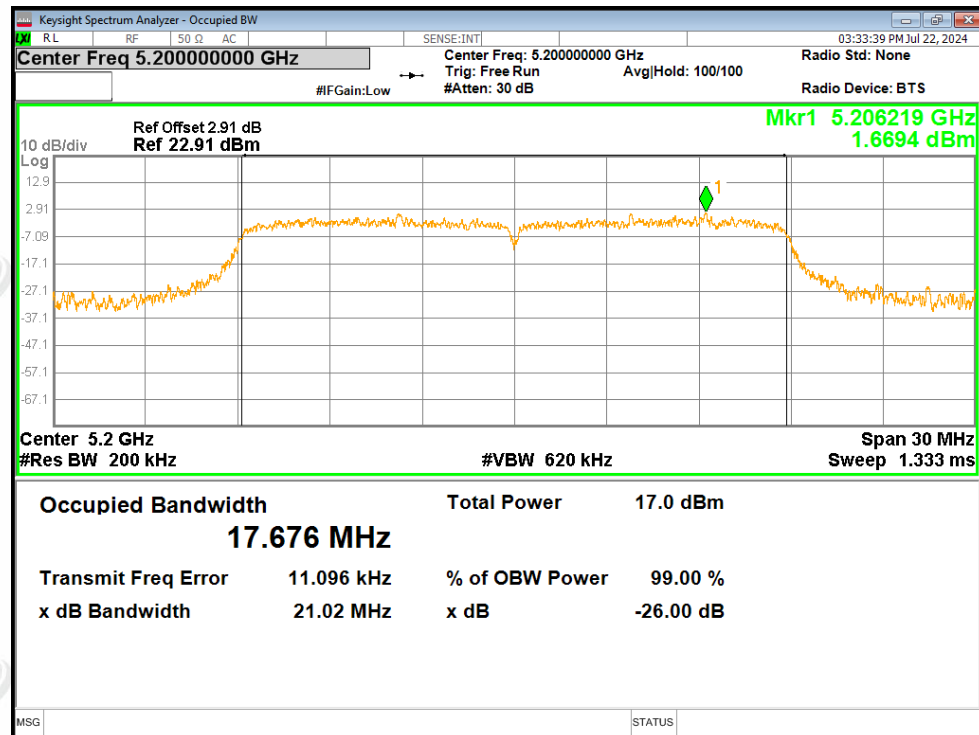


OBW NVNT n20 5180MHz Ant1

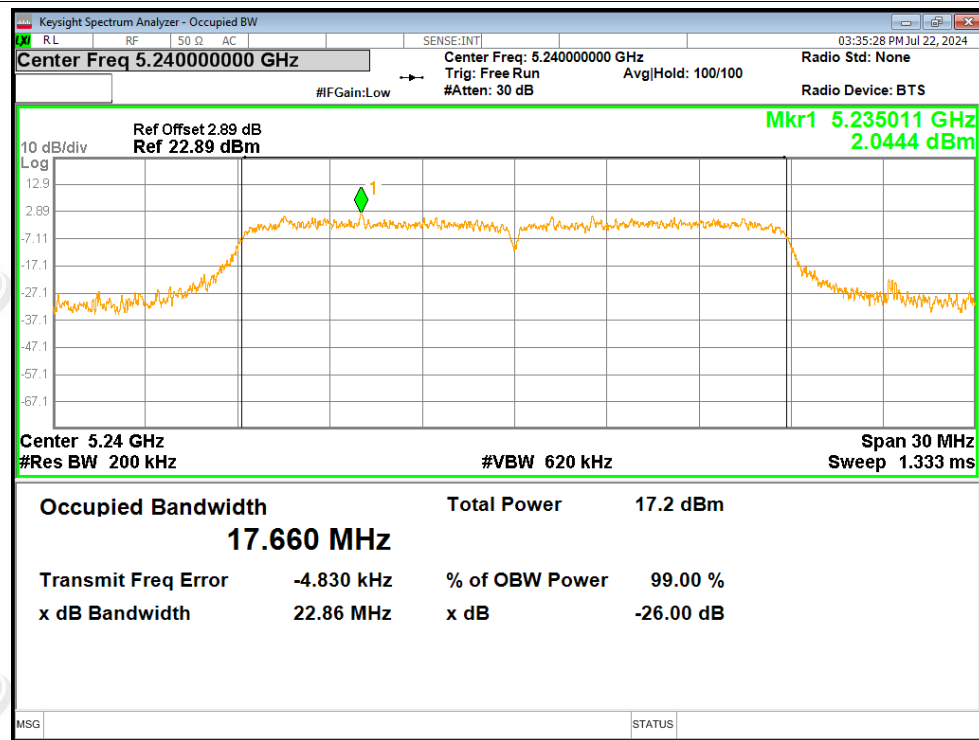




OBW NVNT n20 5200MHz Ant1

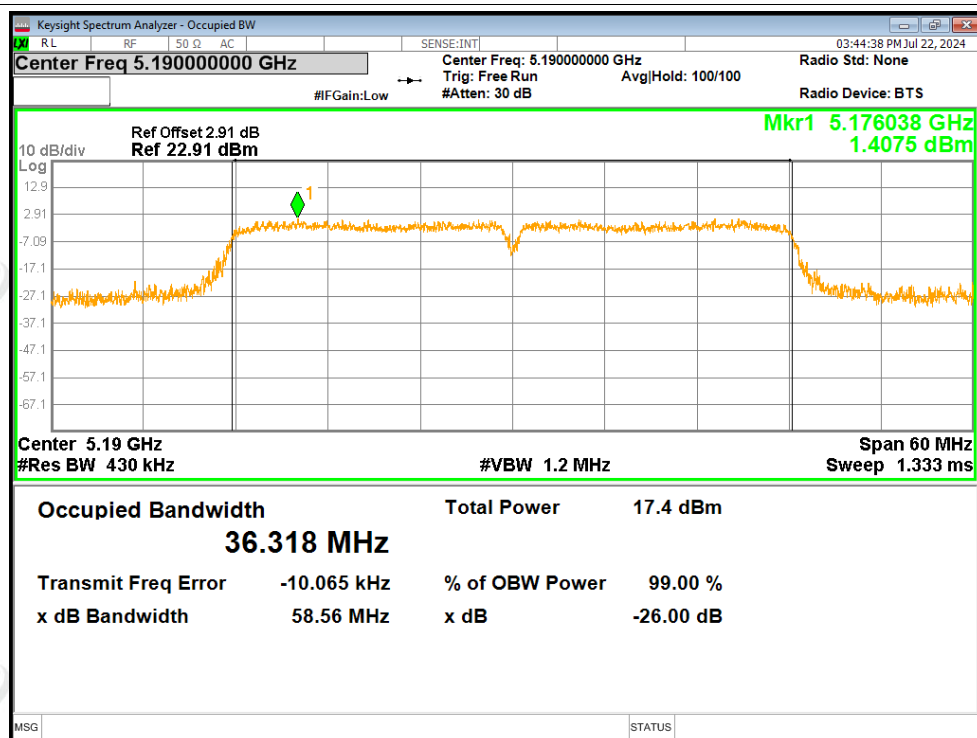


OBW NVNT n20 5240MHz Ant1

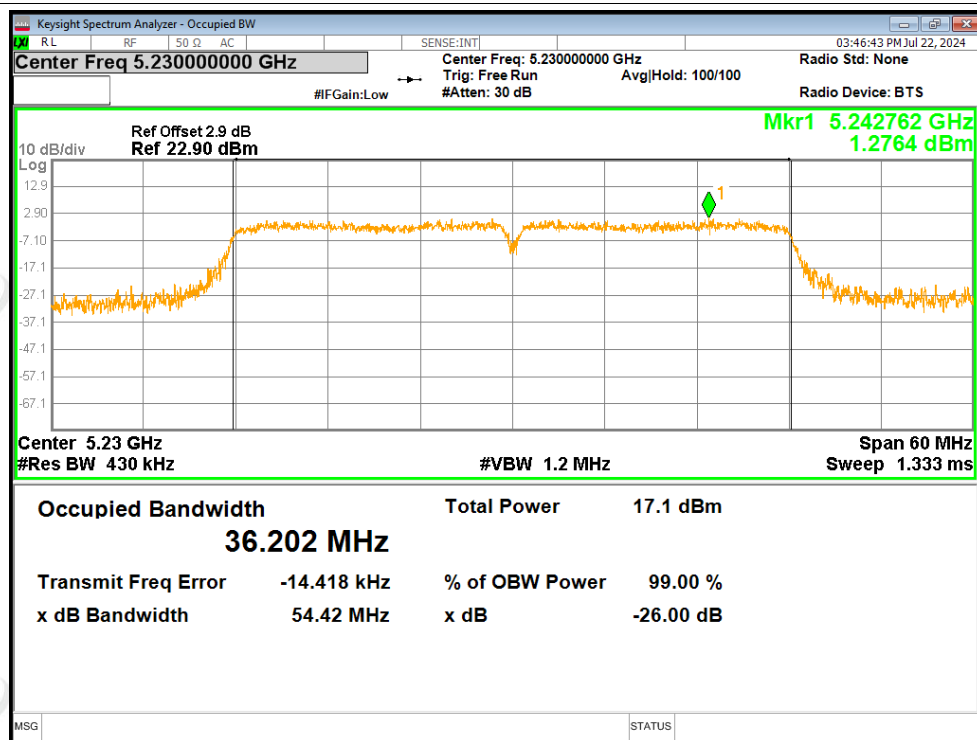




OBW NVNT n40 5190MHz Ant1

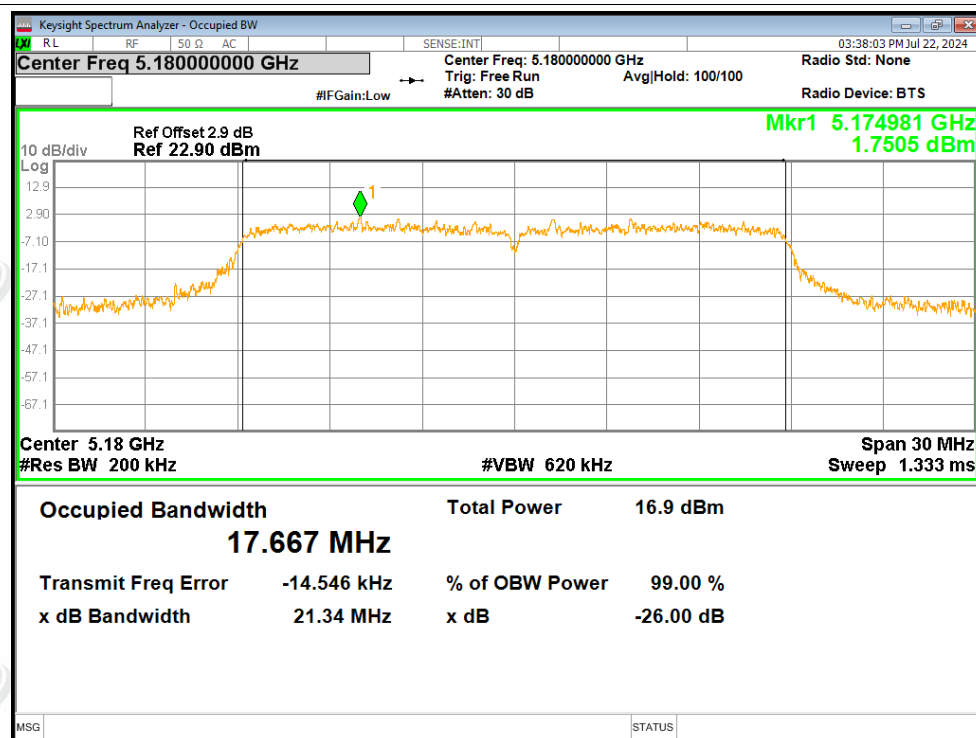


OBW NVNT n40 5230MHz Ant1

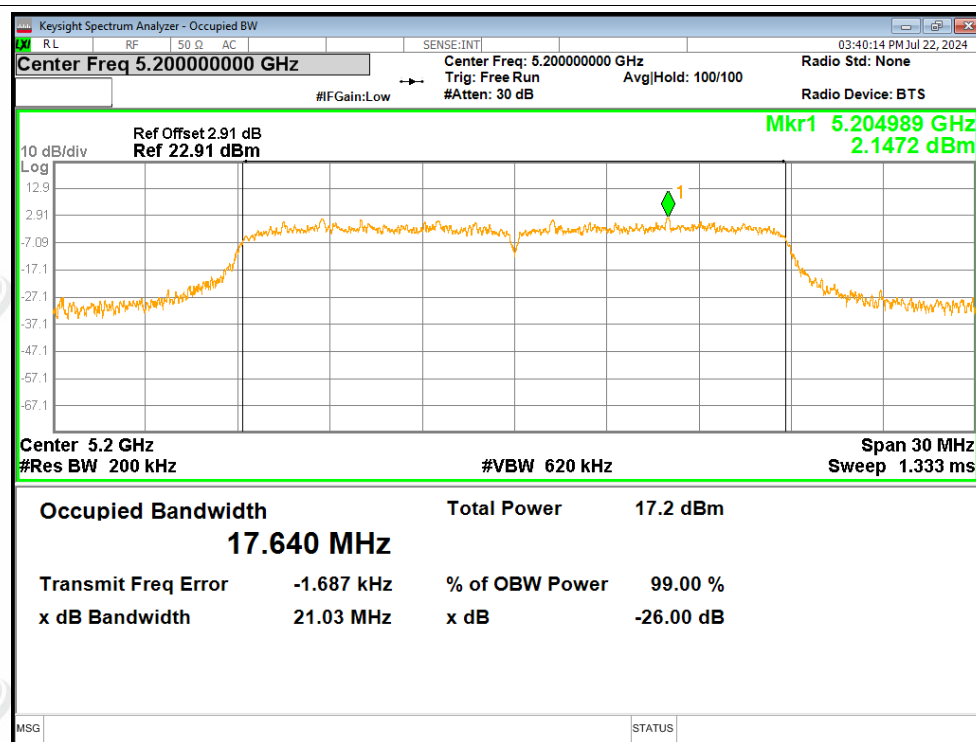




OBW NVNT ac20 5180MHz Ant1

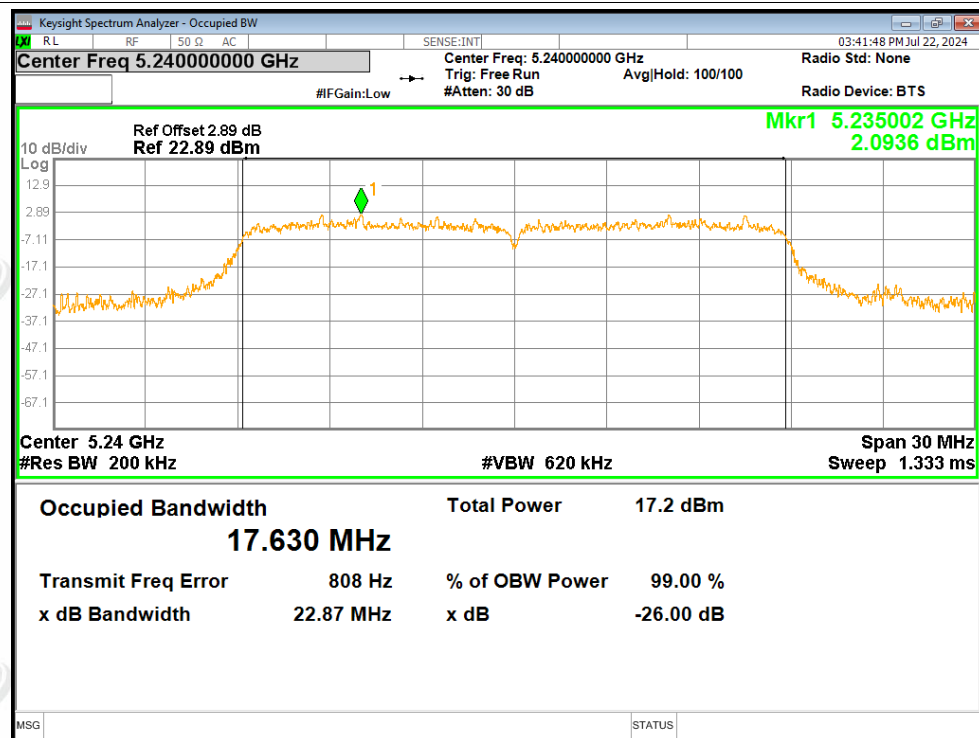


OBW NVNT ac20 5200MHz Ant1

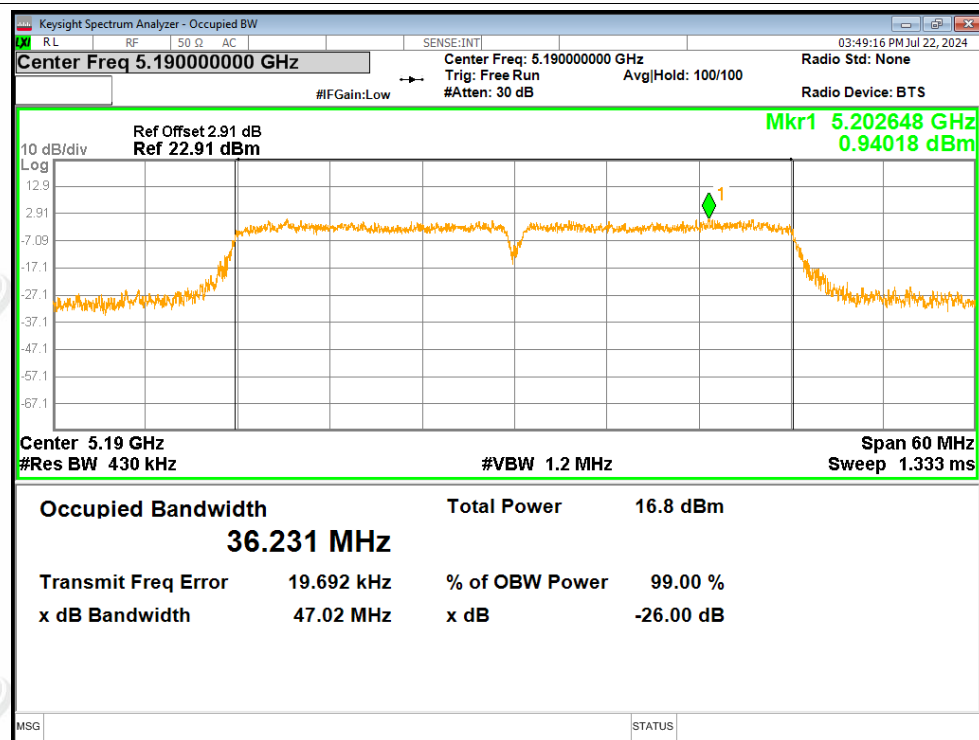




OBW NVNT ac20 5240MHz Ant1

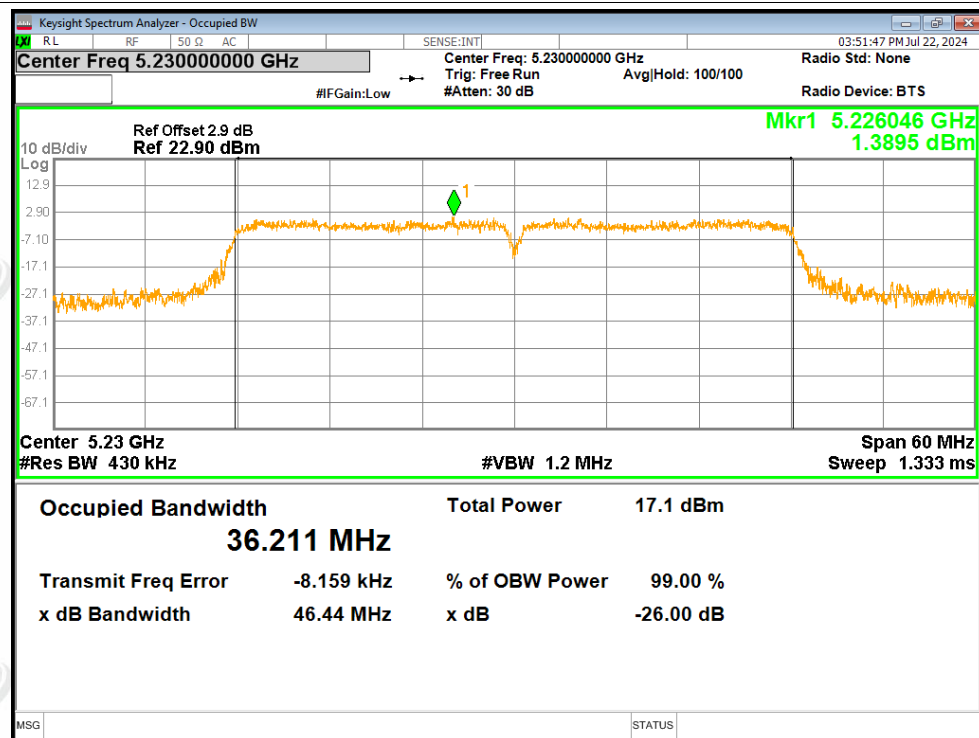


OBW NVNT ac40 5190MHz Ant1

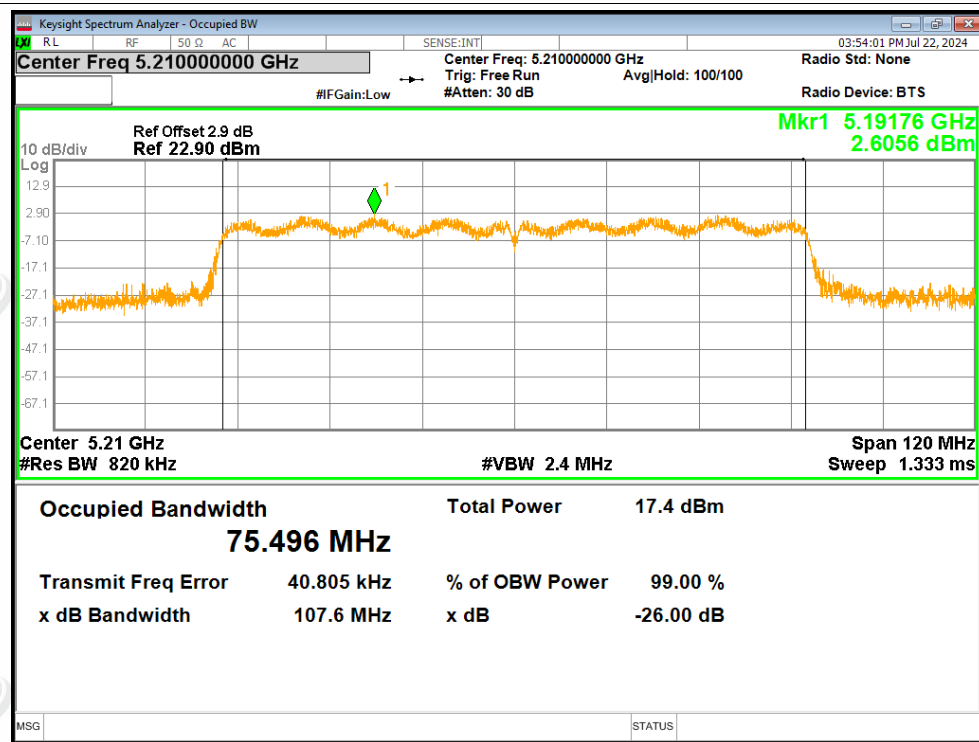




OBW NVNT ac40 5230MHz Ant1



OBW NVNT ac80 5210MHz Ant1



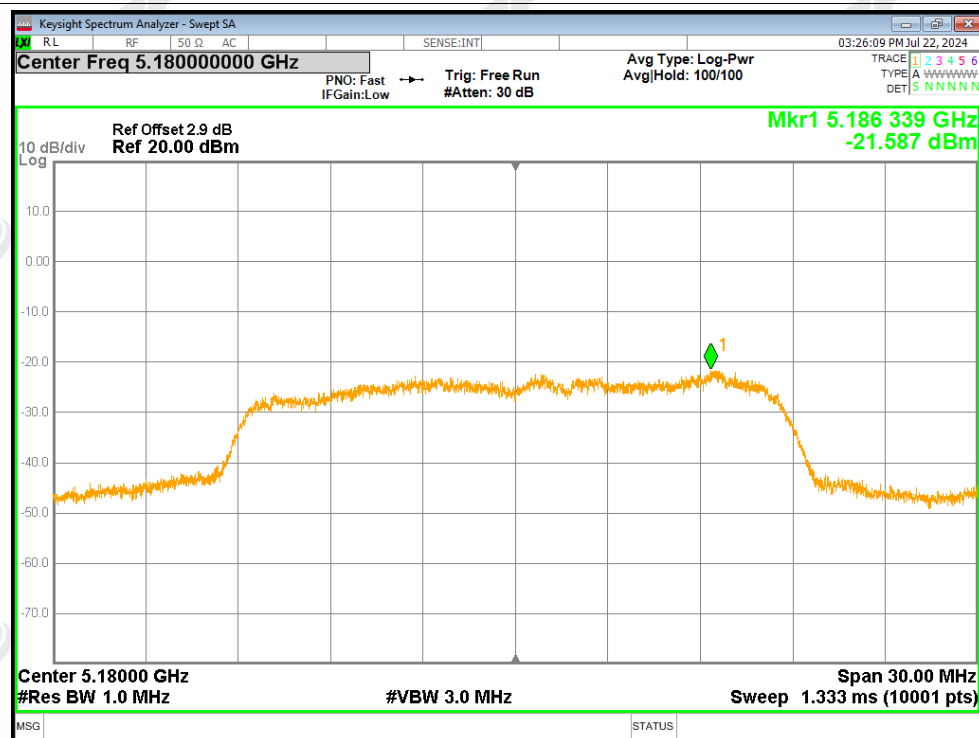
**ZHONGHAN****Maximum Power Spectral Density Level**

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	-21.59	2.39	-19.2	11	Pass
NVNT	a	5200	Ant1	-20.15	2.39	-17.76	11	Pass
NVNT	a	5240	Ant1	-13.51	2.38	-11.13	11	Pass
NVNT	n20	5180	Ant1	-25.41	2.52	-22.89	11	Pass
NVNT	n20	5200	Ant1	-23.28	2.54	-20.74	11	Pass
NVNT	n20	5240	Ant1	-25.08	2.51	-22.57	11	Pass
NVNT	n40	5190	Ant1	-33.34	4.16	-29.18	11	Pass
NVNT	n40	5230	Ant1	-31.67	4.09	-27.58	11	Pass
NVNT	ac20	5180	Ant1	-26.3	2.51	-23.79	11	Pass
NVNT	ac20	5200	Ant1	-25.64	2.51	-23.13	11	Pass
NVNT	ac20	5240	Ant1	-23.46	2.54	-20.92	11	Pass
NVNT	ac40	5190	Ant1	-29.77	4.09	-25.68	11	Pass
NVNT	ac40	5230	Ant1	-34.47	4.09	-30.38	11	Pass
NVNT	ac80	5210	Ant1	-42.43	6.15	-36.28	11	Pass

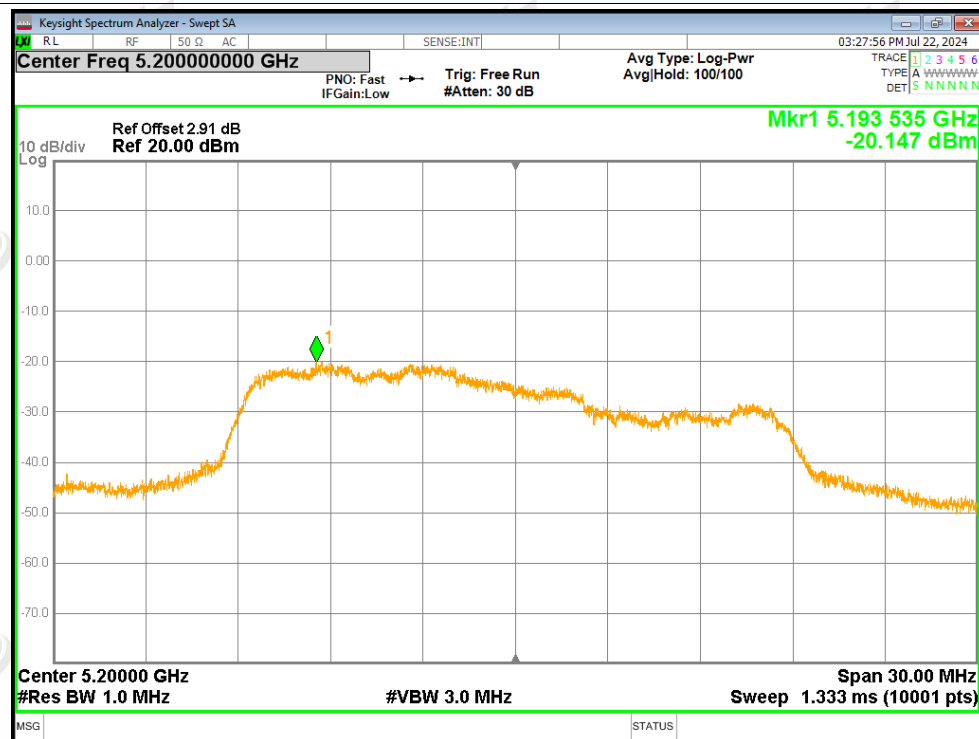


Test Graphs

PSD NVNT a 5180MHz Ant1

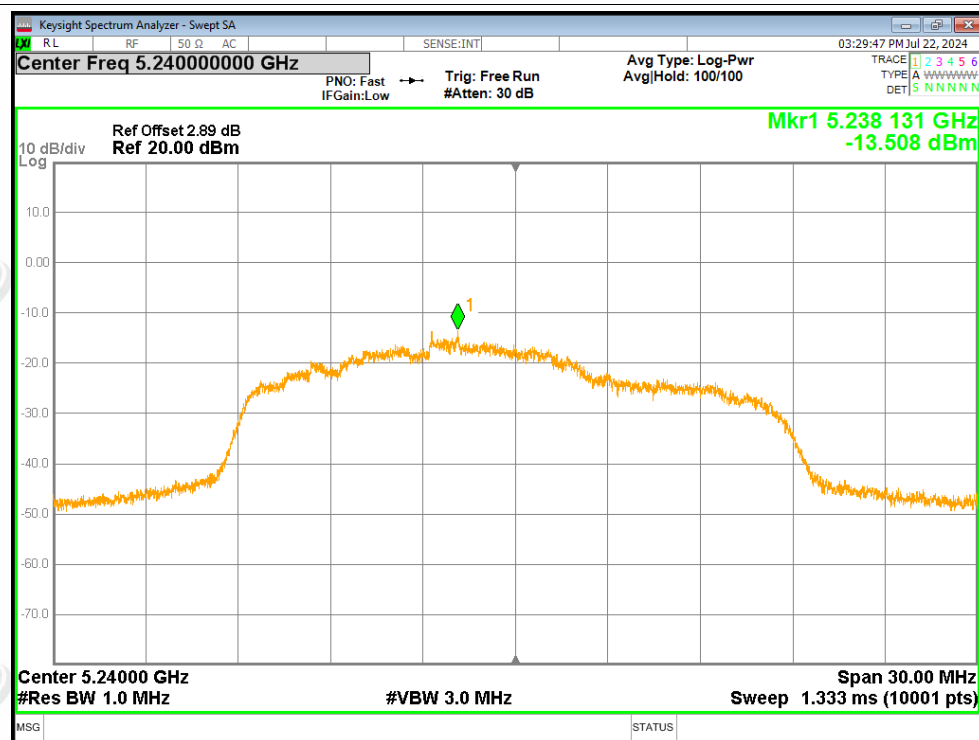


PSD NVNT a 5200MHz Ant1

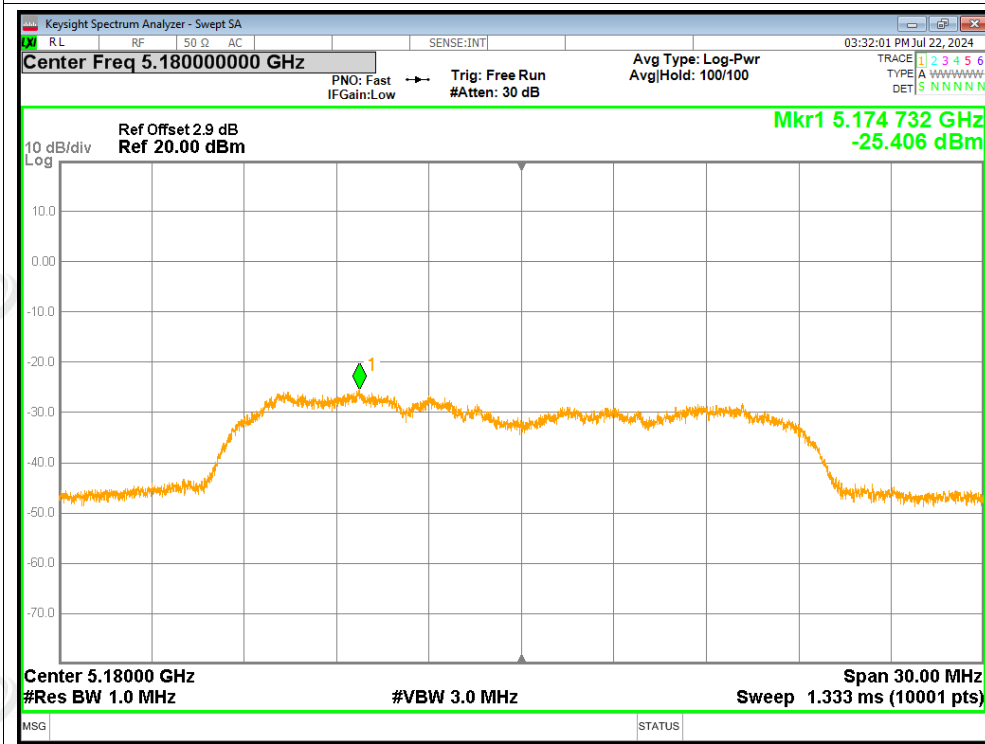




PSD NVNT a 5240MHz Ant1

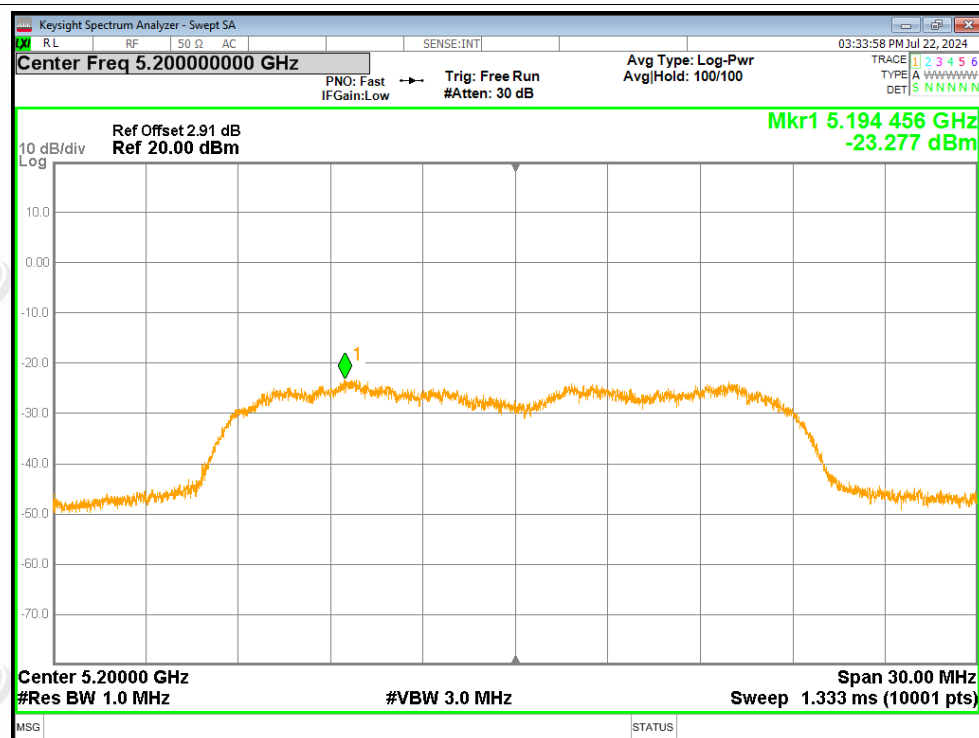


PSD NVNT n20 5180MHz Ant1

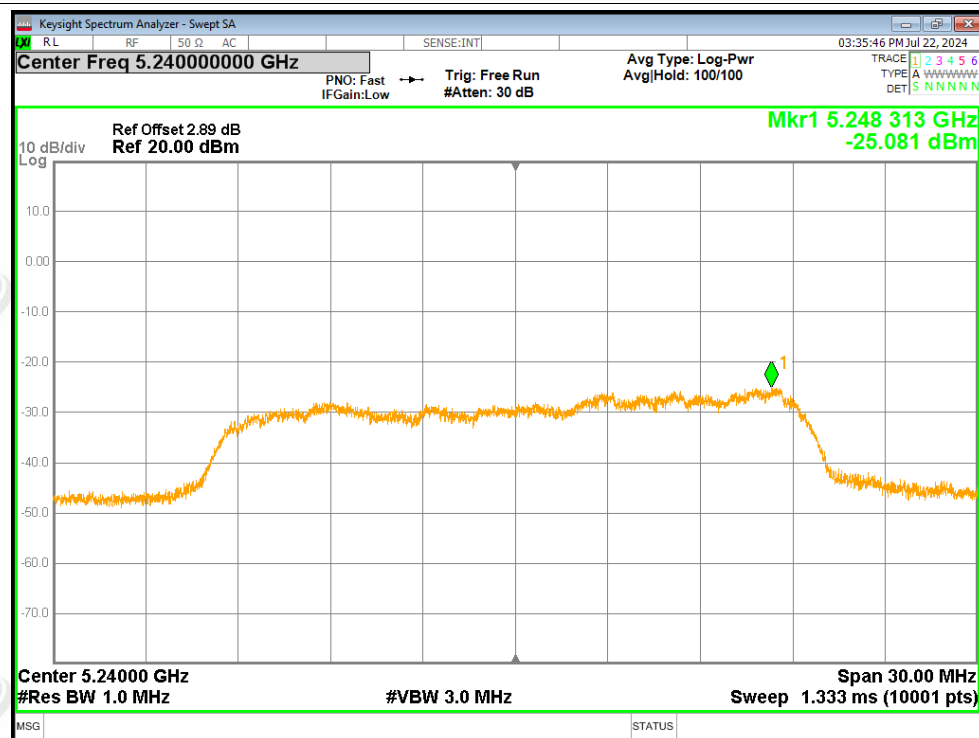




PSD NVNT n20 5200MHz Ant1

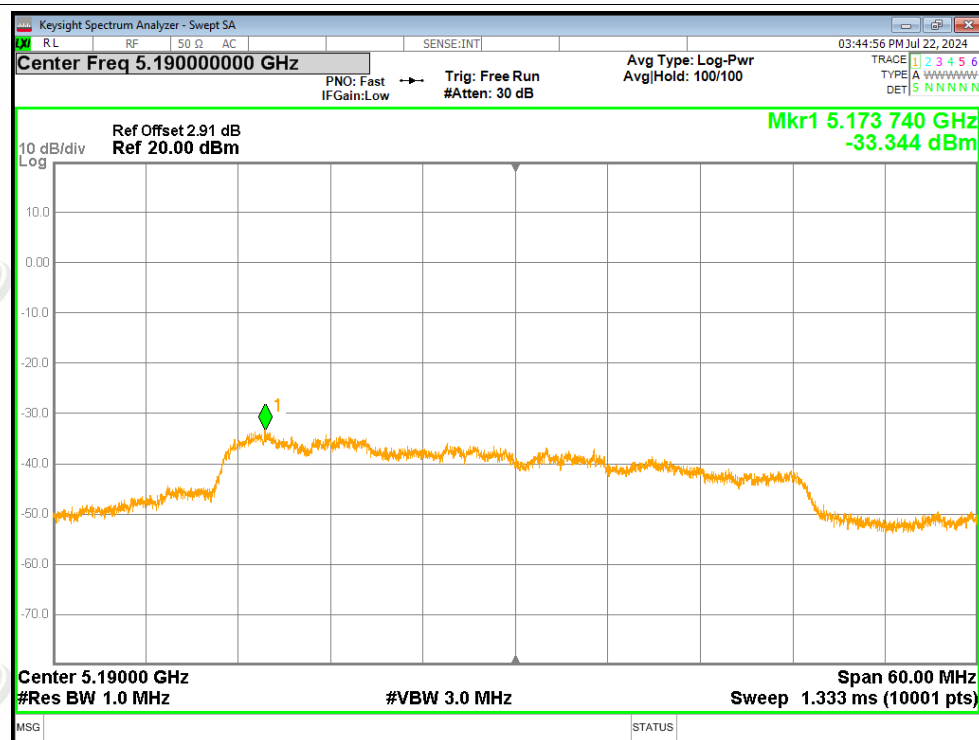


PSD NVNT n20 5240MHz Ant1

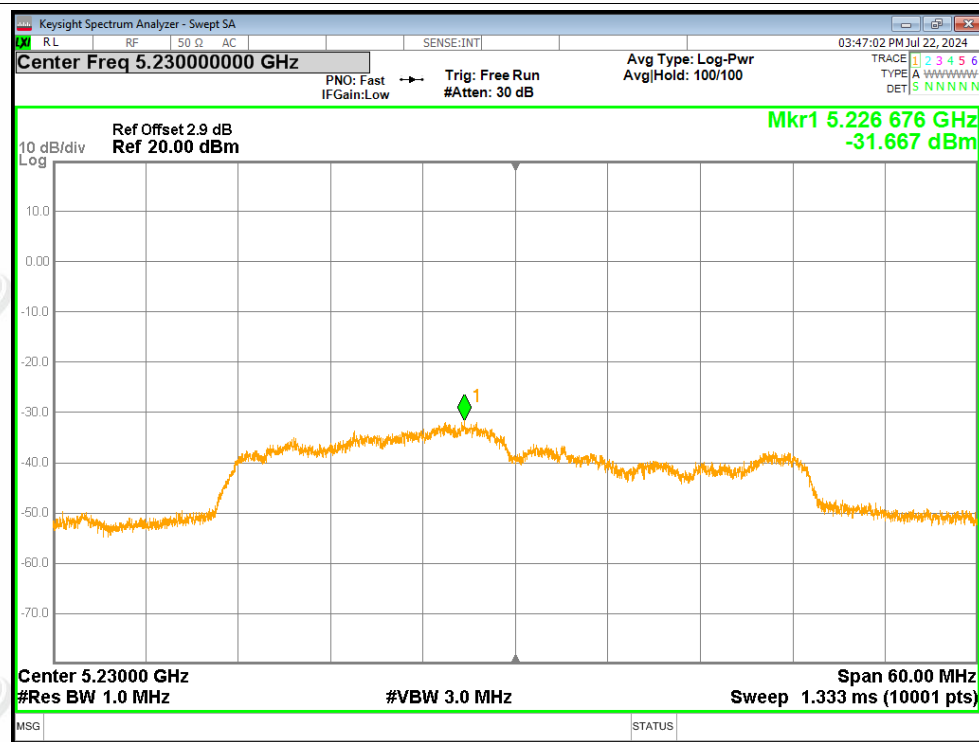




PSD NVNT n40 5190MHz Ant1

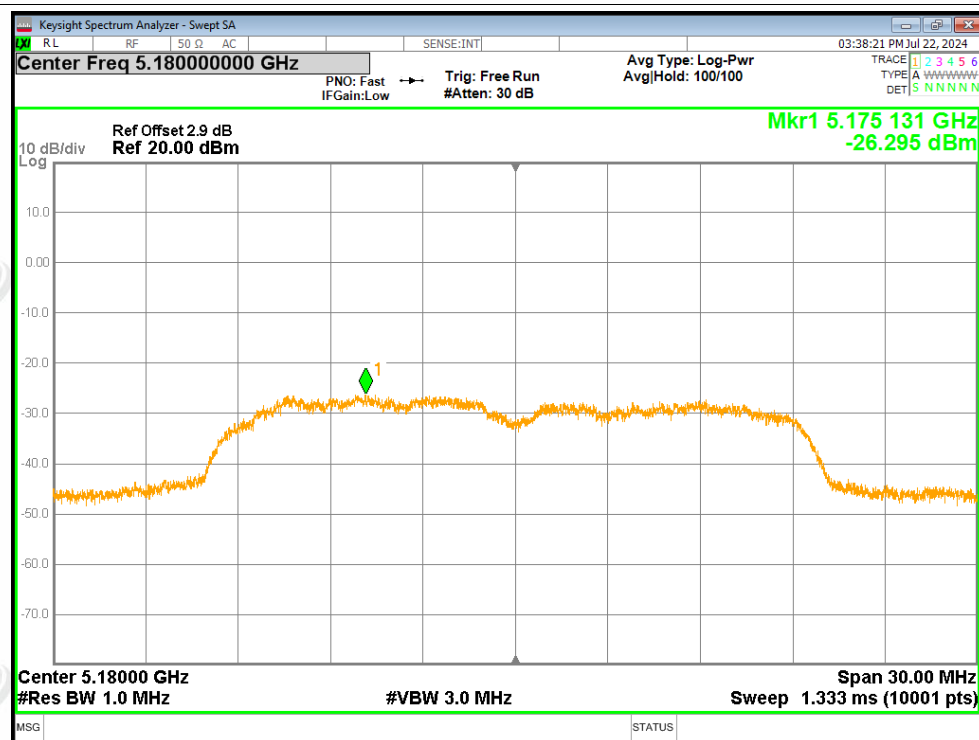


PSD NVNT n40 5230MHz Ant1

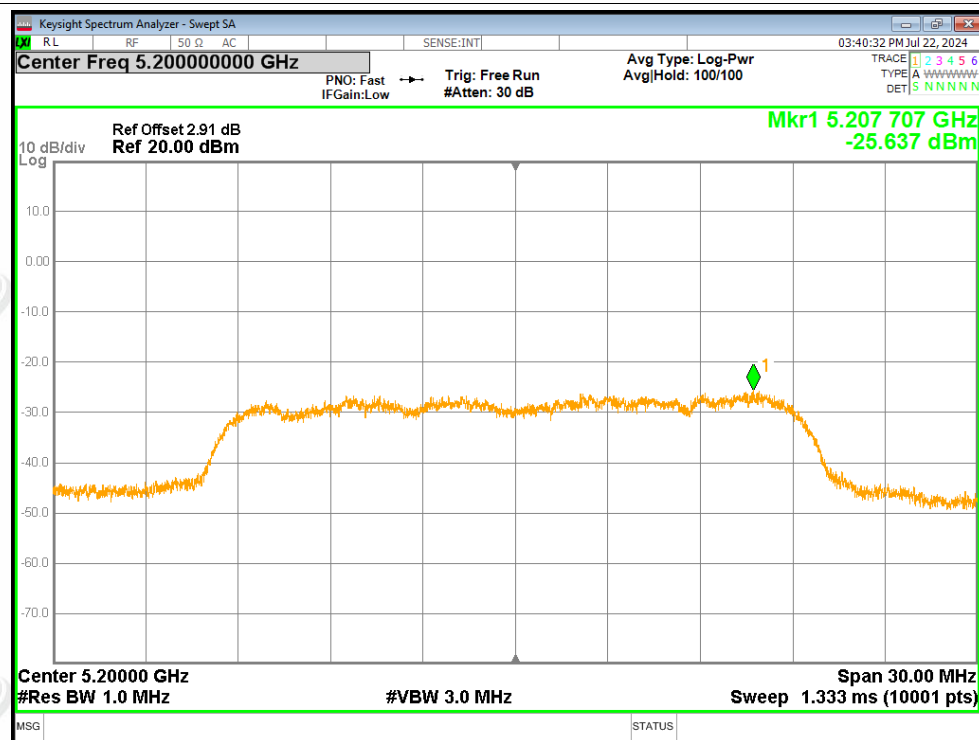




PSD NVNT ac20 5180MHz Ant1

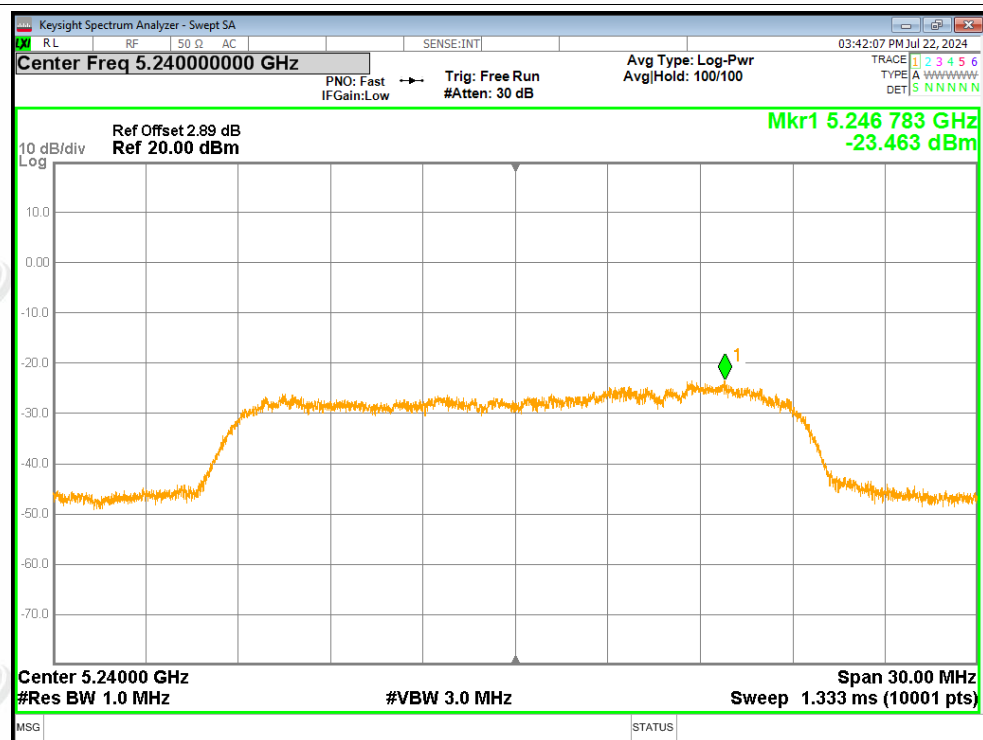


PSD NVNT ac20 5200MHz Ant1

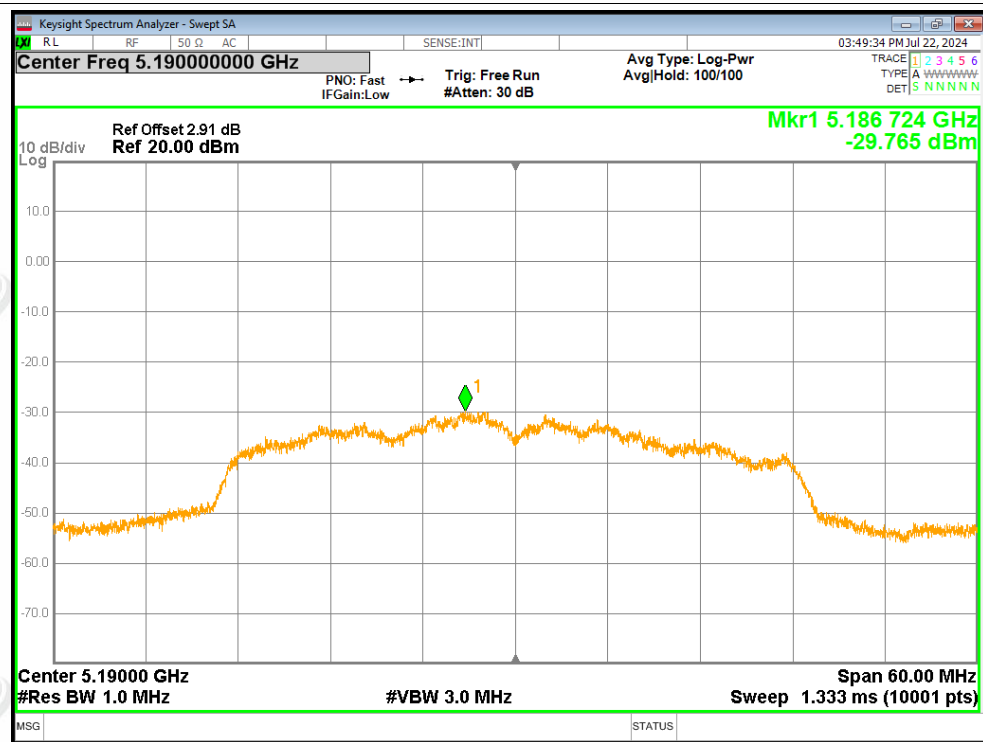




PSD NVNT ac20 5240MHz Ant1

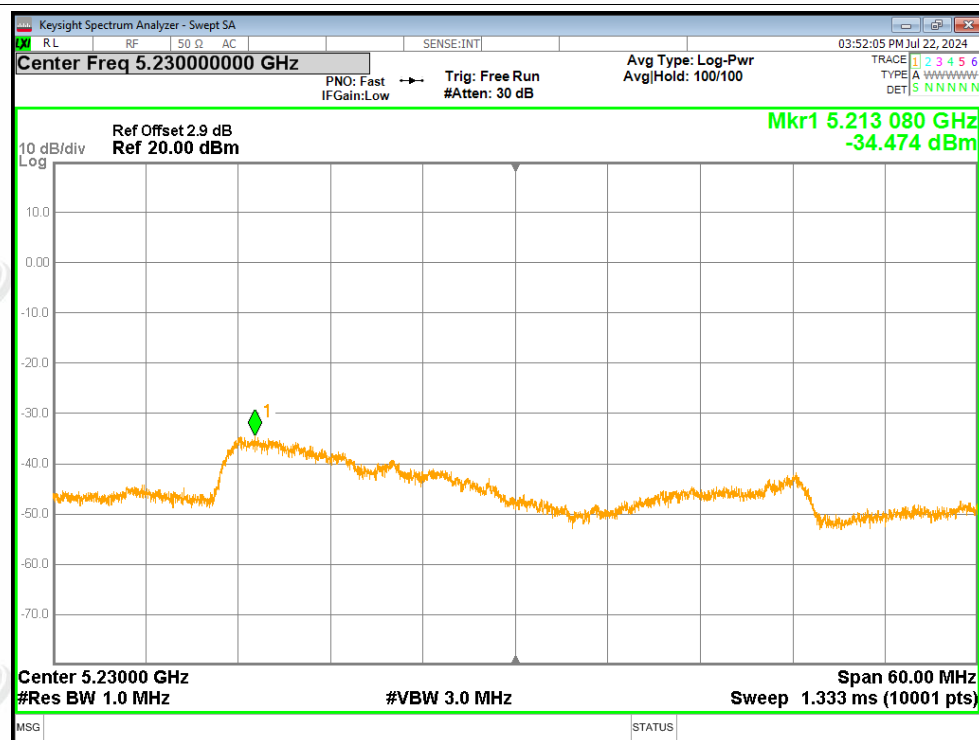


PSD NVNT ac40 5190MHz Ant1

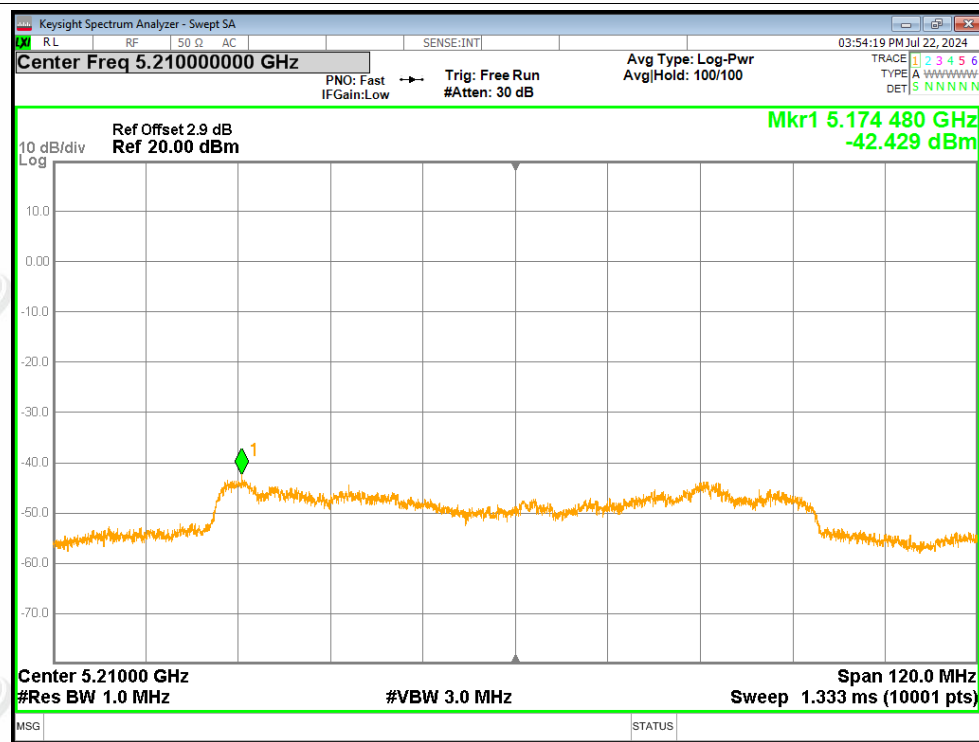




PSD NVNT ac40 5230MHz Ant1



PSD NVNT ac80 5210MHz Ant1



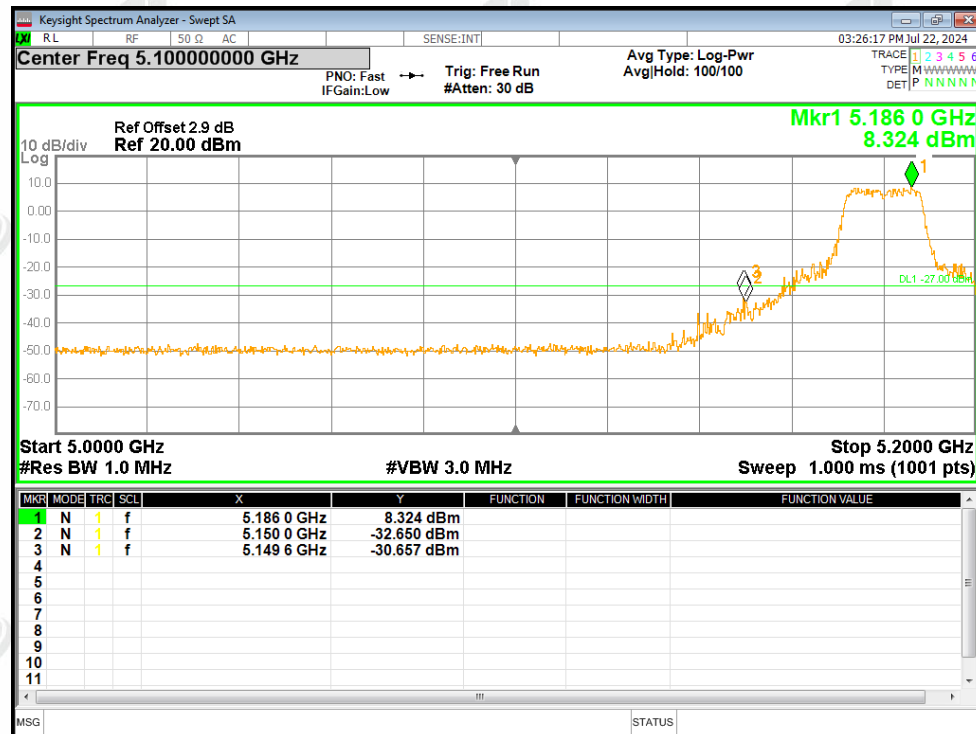
**ZHONGHAN**
Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-30.65	-27	Pass
NVNT	a	5240	Ant1	-46.36	-27	Pass
NVNT	n20	5180	Ant1	-34.14	-27	Pass
NVNT	n20	5240	Ant1	-45.52	-27	Pass
NVNT	n40	5190	Ant1	-28.06	-27	Pass
NVNT	n40	5230	Ant1	-45.89	-27	Pass
NVNT	ac20	5180	Ant1	-33.8	-27	Pass
NVNT	ac20	5240	Ant1	-45.74	-27	Pass
NVNT	ac40	5190	Ant1	-28.67	-27	Pass
NVNT	ac40	5230	Ant1	-45.89	-27	Pass
NVNT	ac80	5210	Ant1	-28.84	-27	Pass

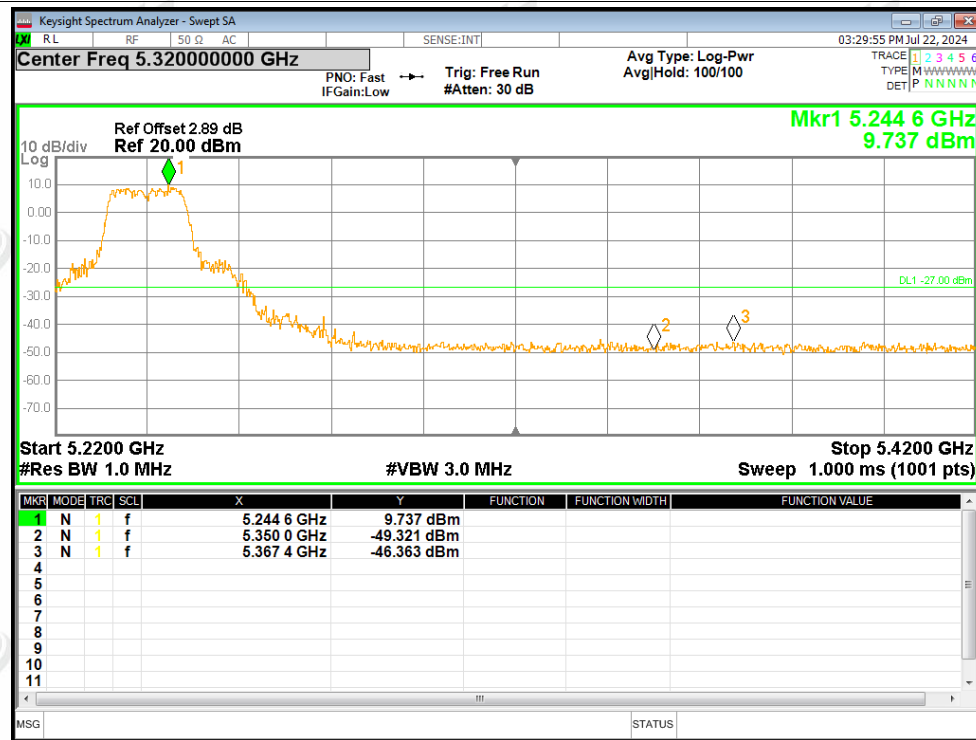


Test Graphs

Band Edge NVNT a 5180MHz Low Ant1

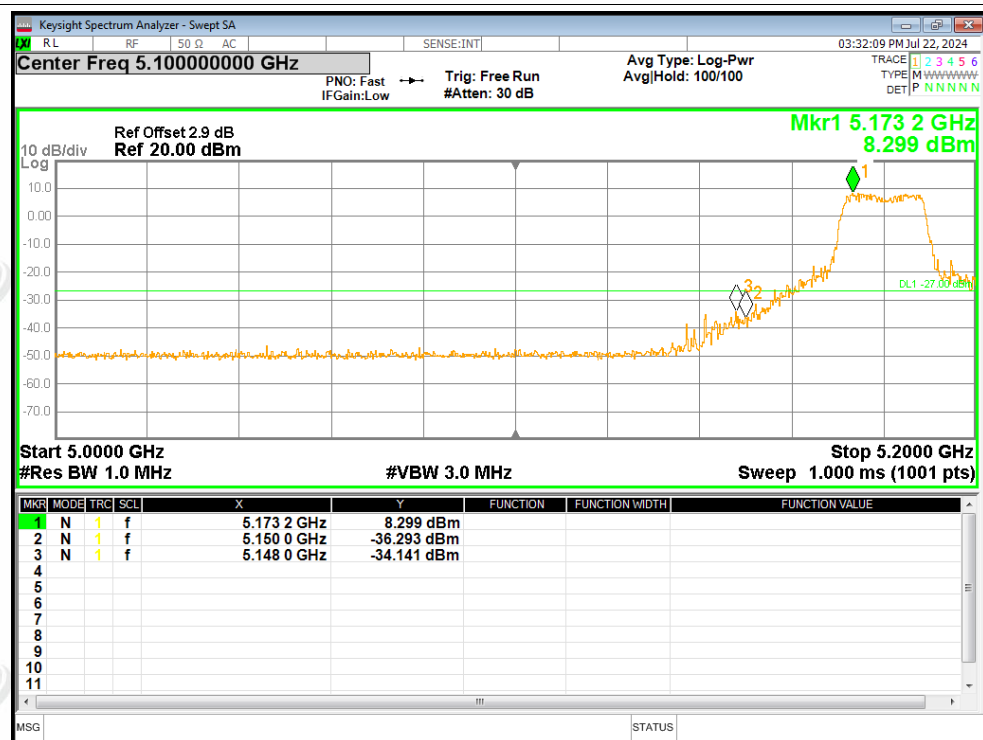


Band Edge NVNT a 5240MHz High Ant1

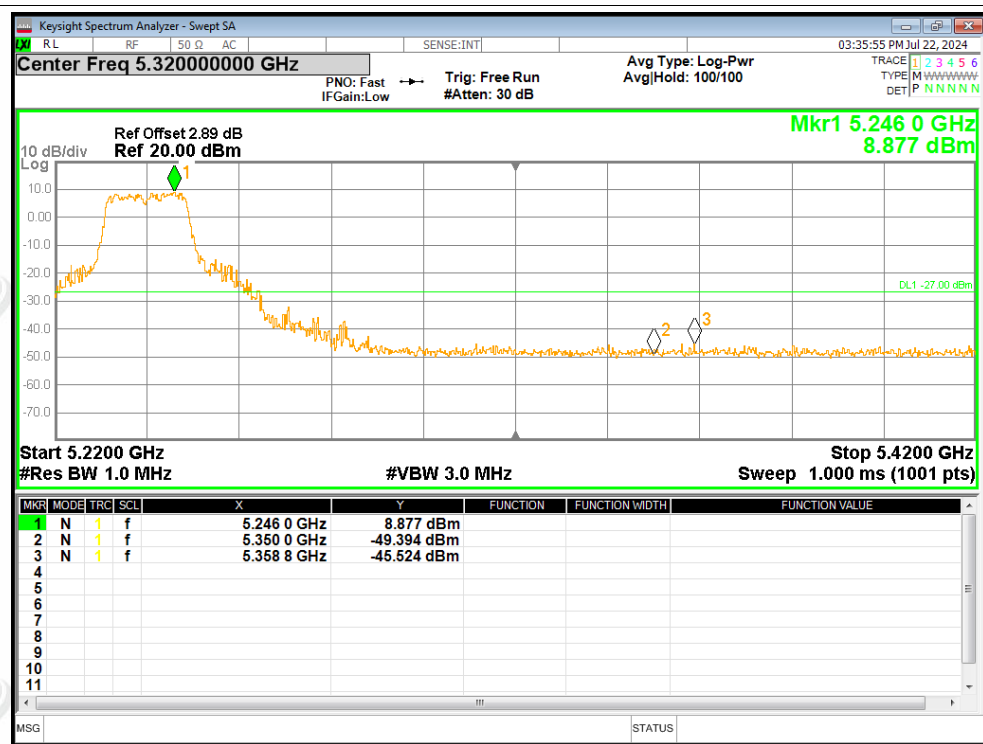




Band Edge NVNT n20 5180MHz Low Ant1

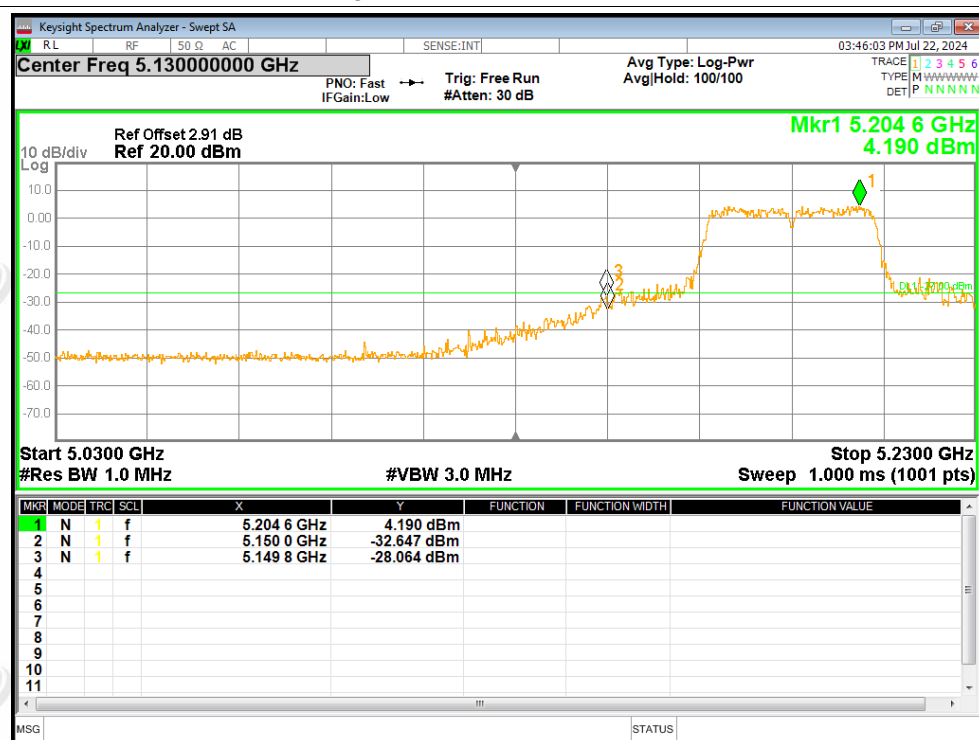


Band Edge NVNT n20 5240MHz High Ant1

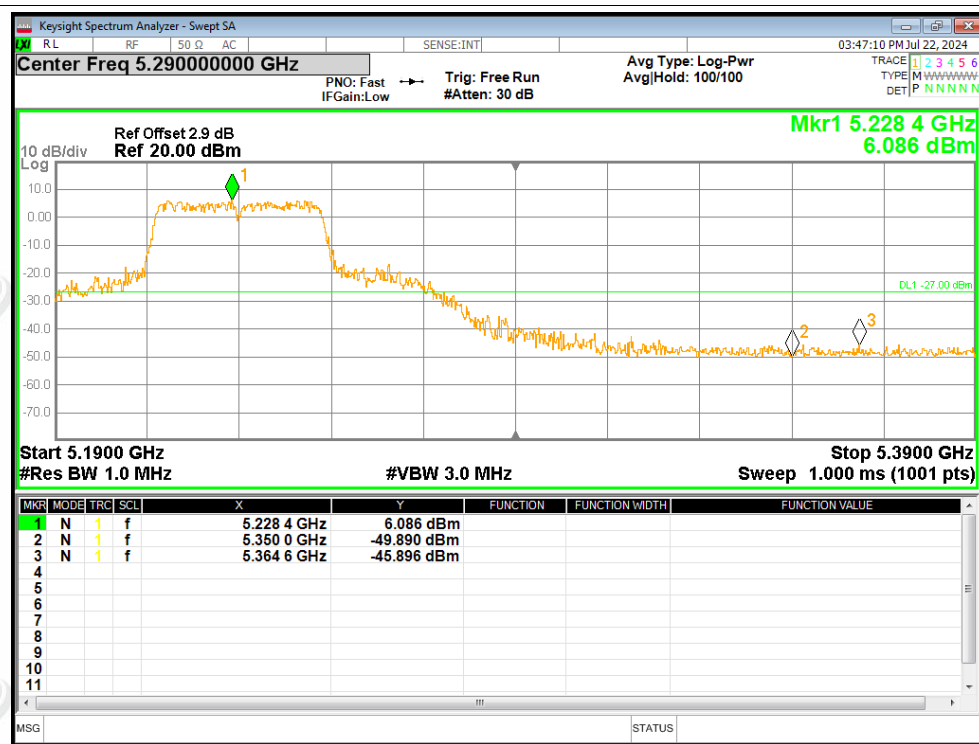




Band Edge NVNT n40 5190MHz Low Ant1

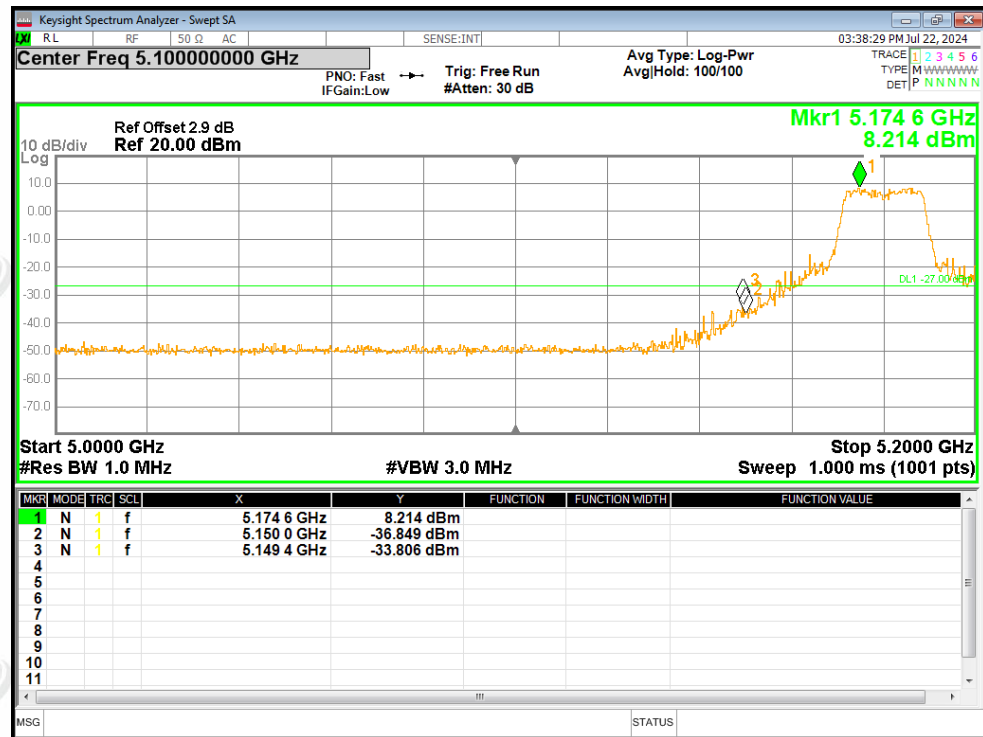


Band Edge NVNT n40 5230MHz High Ant1

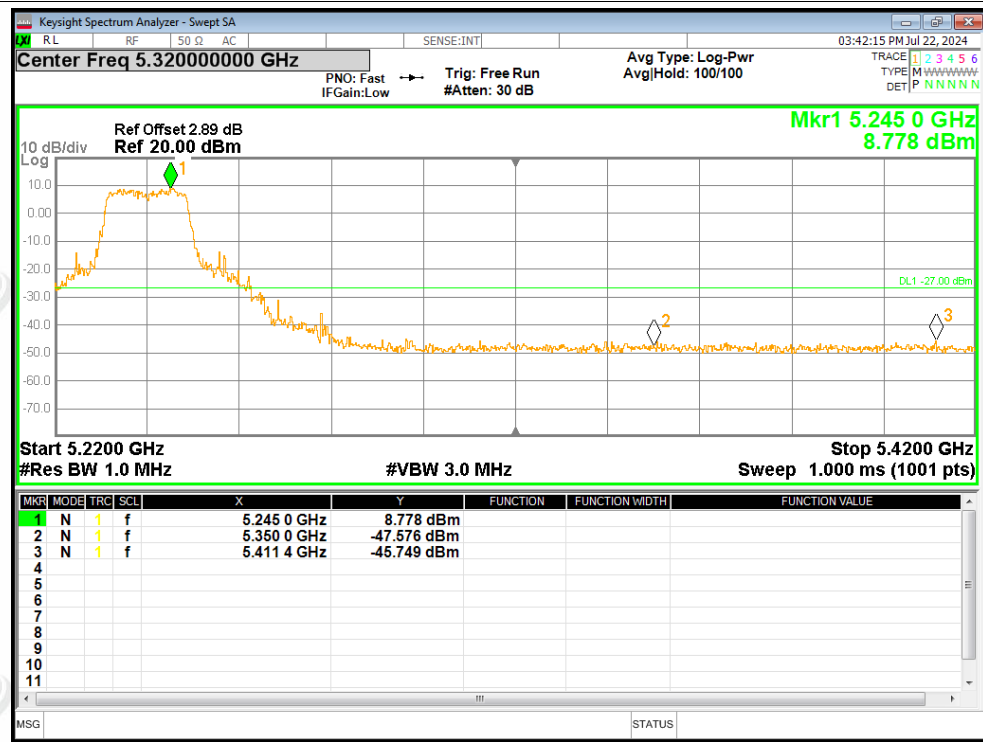




Band Edge NVNT ac20 5180MHz Low Ant1

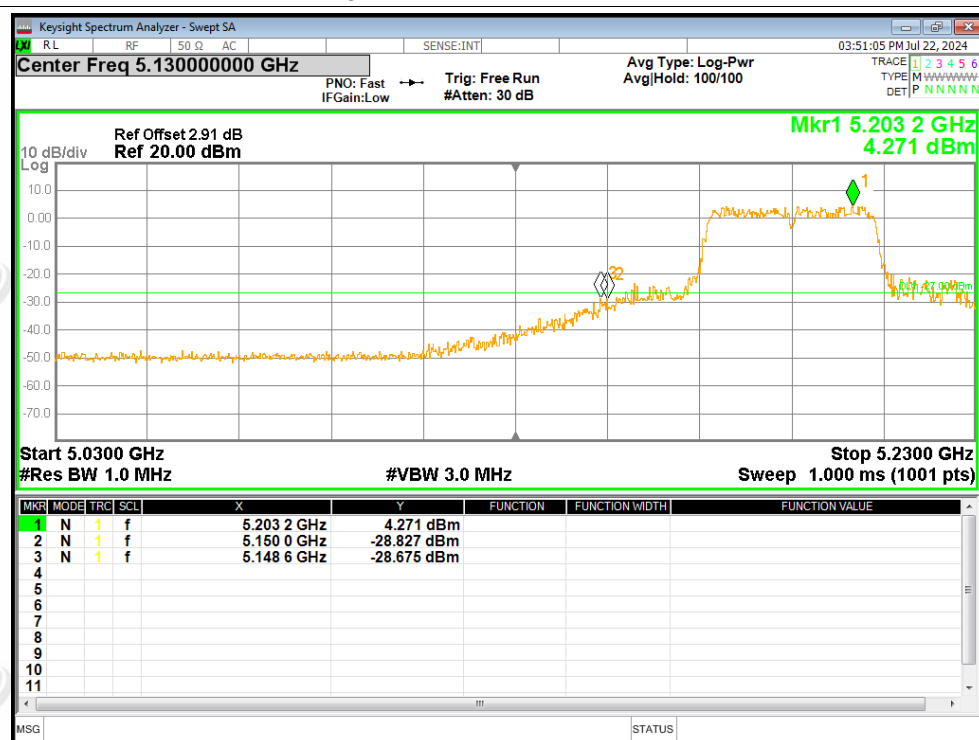


Band Edge NVNT ac20 5240MHz High Ant1

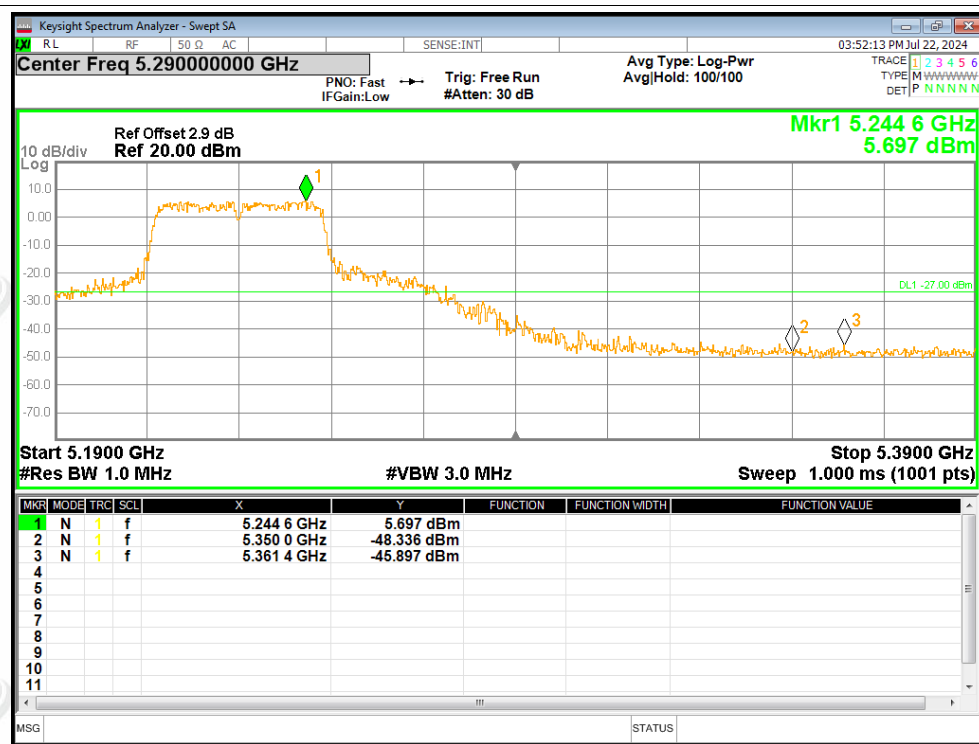


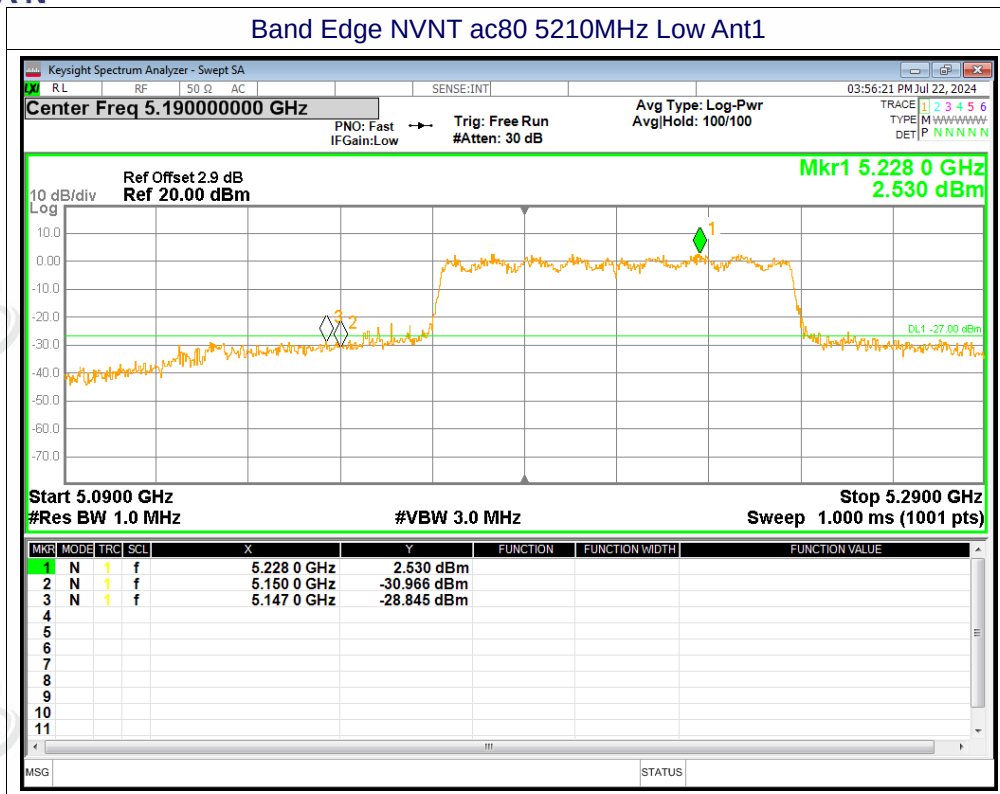


Band Edge NVNT ac40 5190MHz Low Ant1



Band Edge NVNT ac40 5230MHz High Ant1





**ZHONGHAN****Frequency Stability**

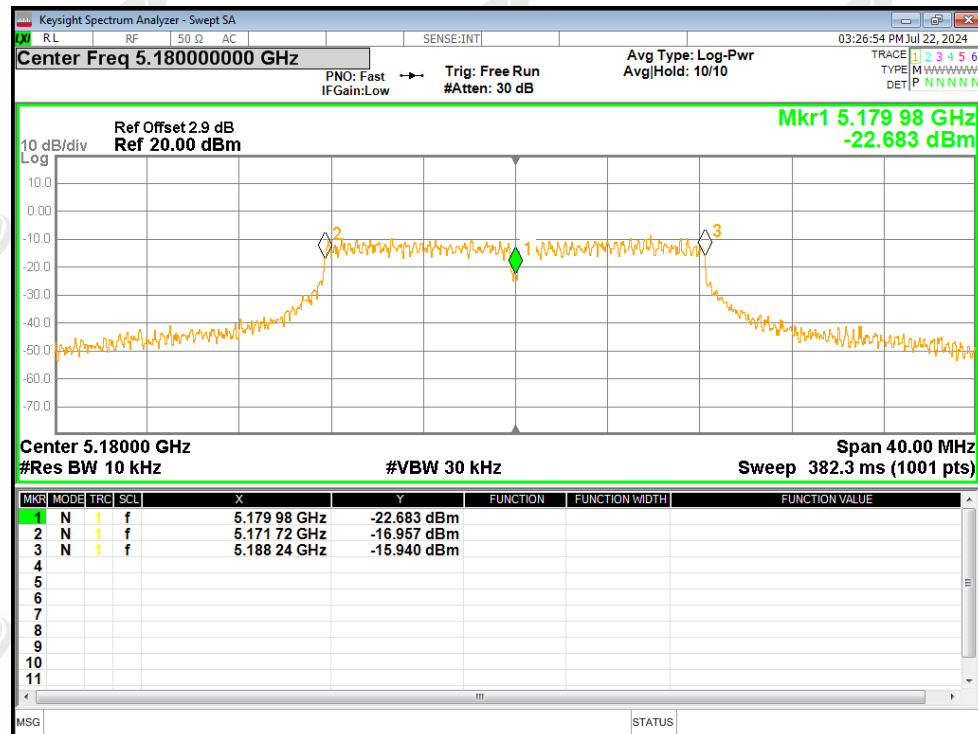
Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5180	Ant1	5179.98	-20000	-3.86	Within 5180-5240MHz	Pass
a	5200	Ant1	5200	0	0		Pass
a	5240	Ant1	5239.98	-20000	-3.82		Pass
n20	5180	Ant1	5180	0	0		Pass
n20	5200	Ant1	5200.02	20000	3.85		Pass
n20	5240	Ant1	5239.98	-20000	-3.82		Pass
n40	5190	Ant1	5190	0	0	Within 5190-5230MHz	Pass
n40	5230	Ant1	5230	0	0		Pass
ac20	5180	Ant1	5179.98	-20000	-3.86	Within 5180-5240MHz	Pass
ac20	5200	Ant1	5199.96	-40000	-7.69		Pass
ac20	5240	Ant1	5240.02	20000	3.82		Pass
ac40	5190	Ant1	5189.96	-40000	-7.71	Within 5190-5230MHz	Pass
ac40	5230	Ant1	5230	0	0		Pass
ac80	5210	Ant1	5210	0	0	Within 5210MHz	Pass

Note: Test temperature: -20° to + 70°. At room temperature, the test results are the worst, only reflecting the test results graphs at room temperature.

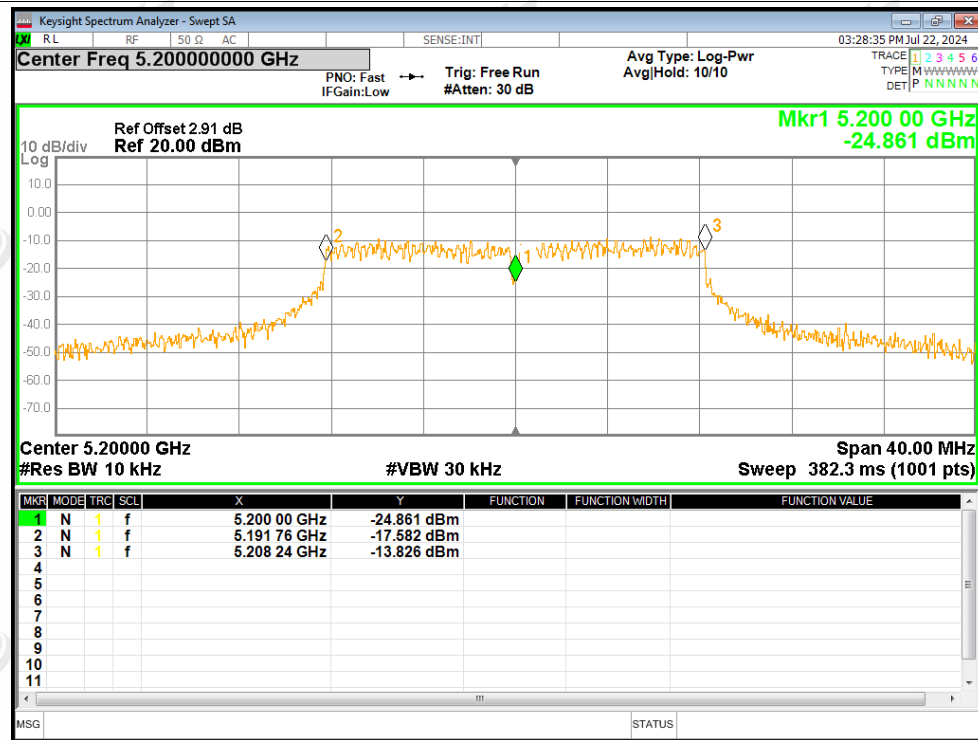


Test Graphs

Freq. Stability NVNT a 5180MHz Ant1

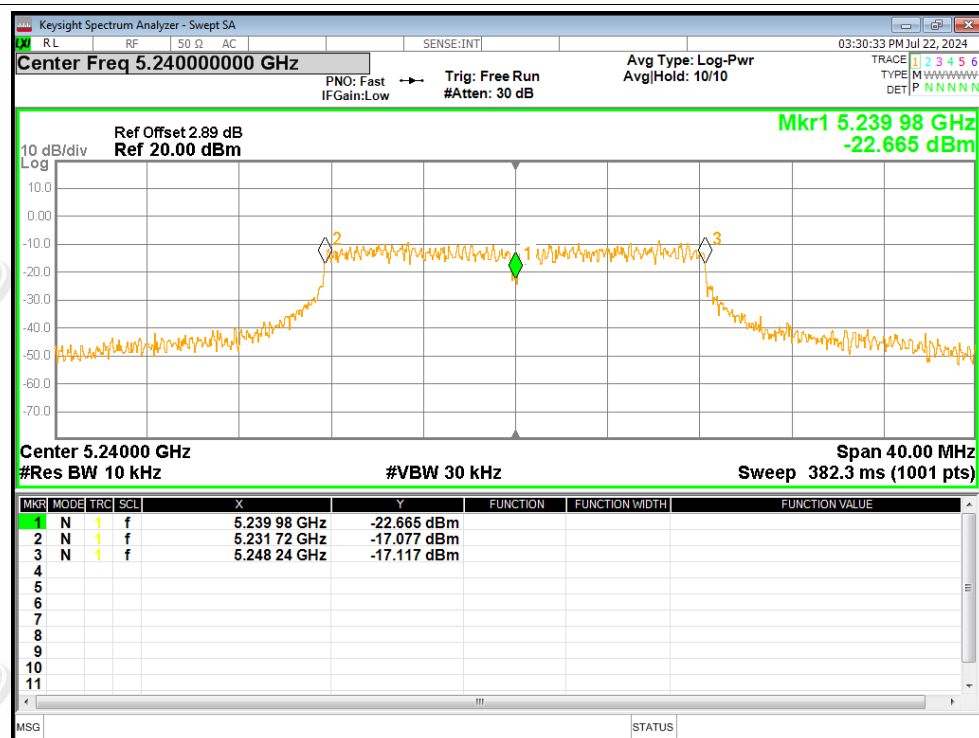


Freq. Stability NVNT a 5200MHz Ant1

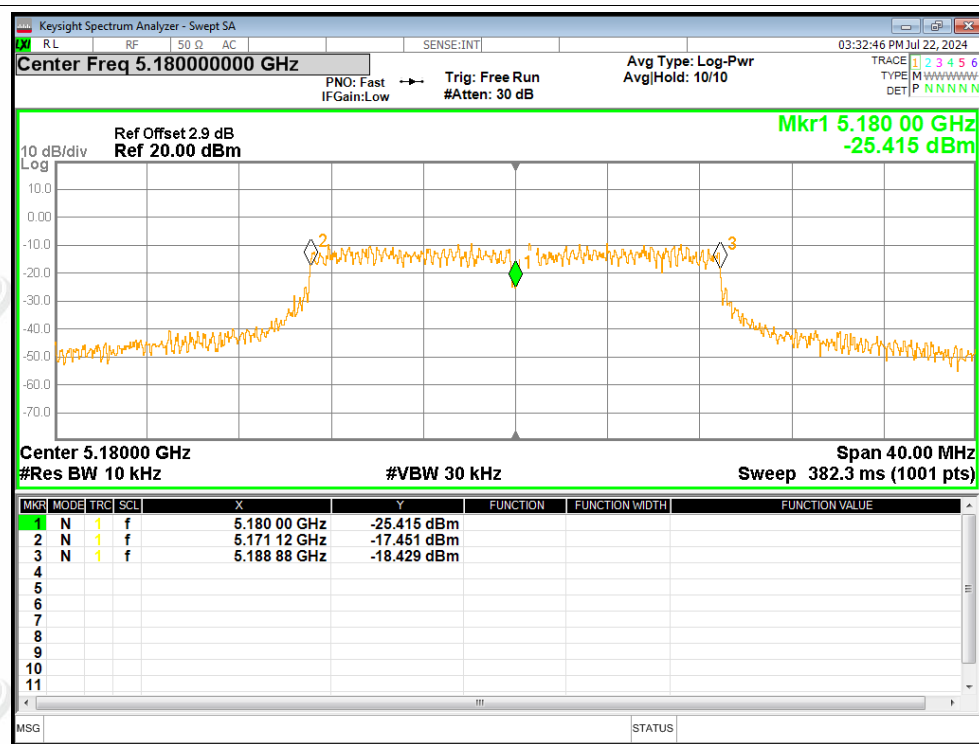




Freq. Stability NVNT a 5240MHz Ant1

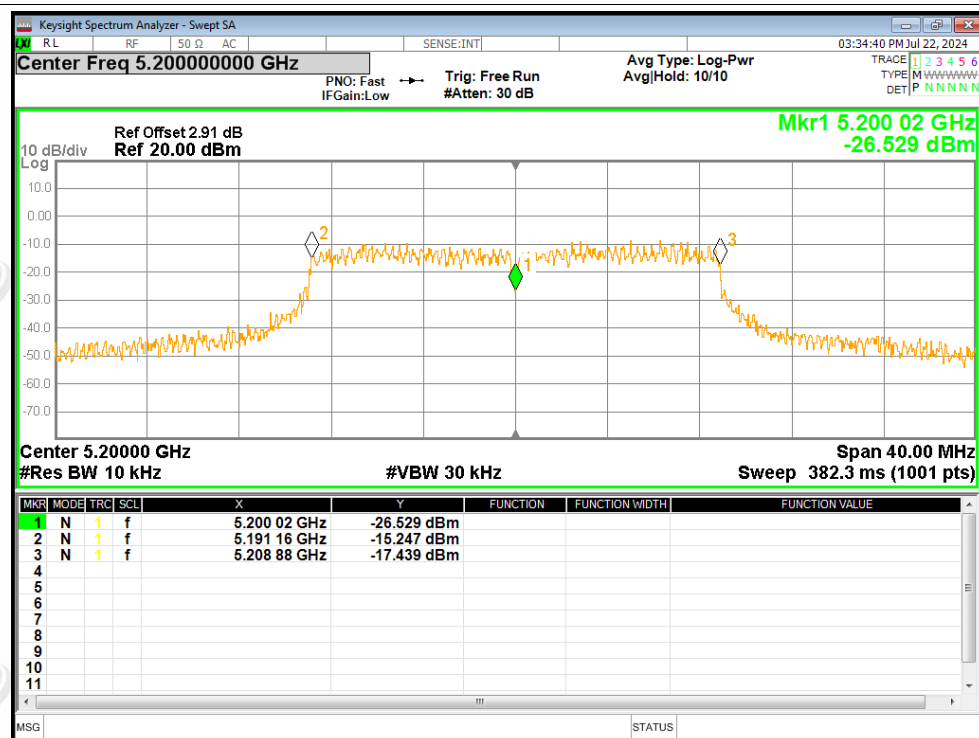


Freq. Stability NVNT n20 5180MHz Ant1

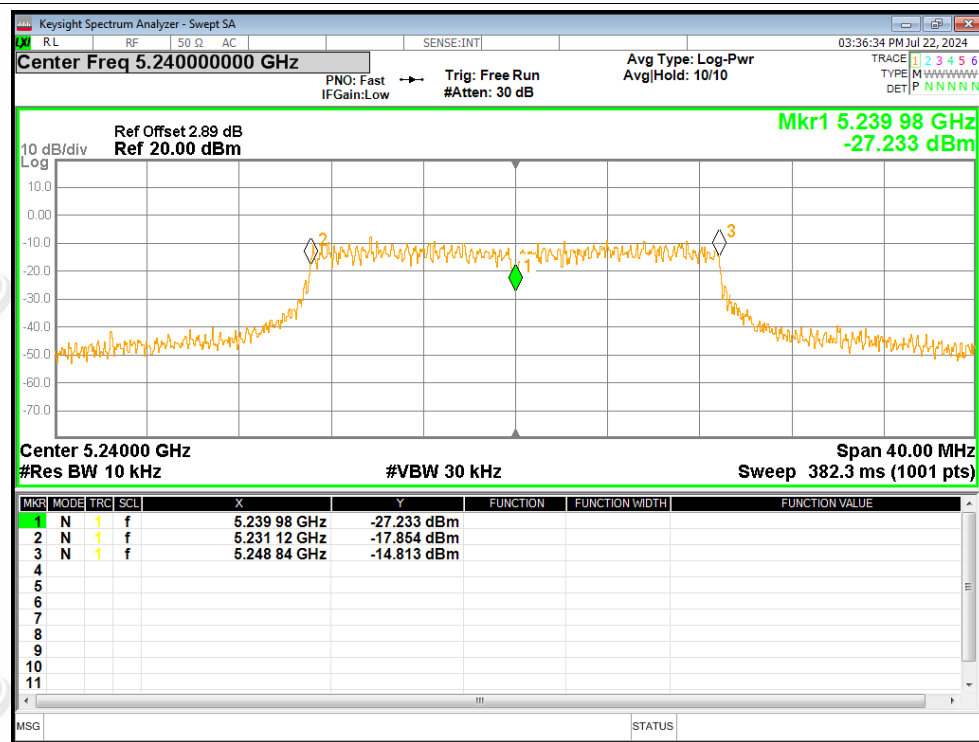




Freq. Stability NVNT n20 5200MHz Ant1

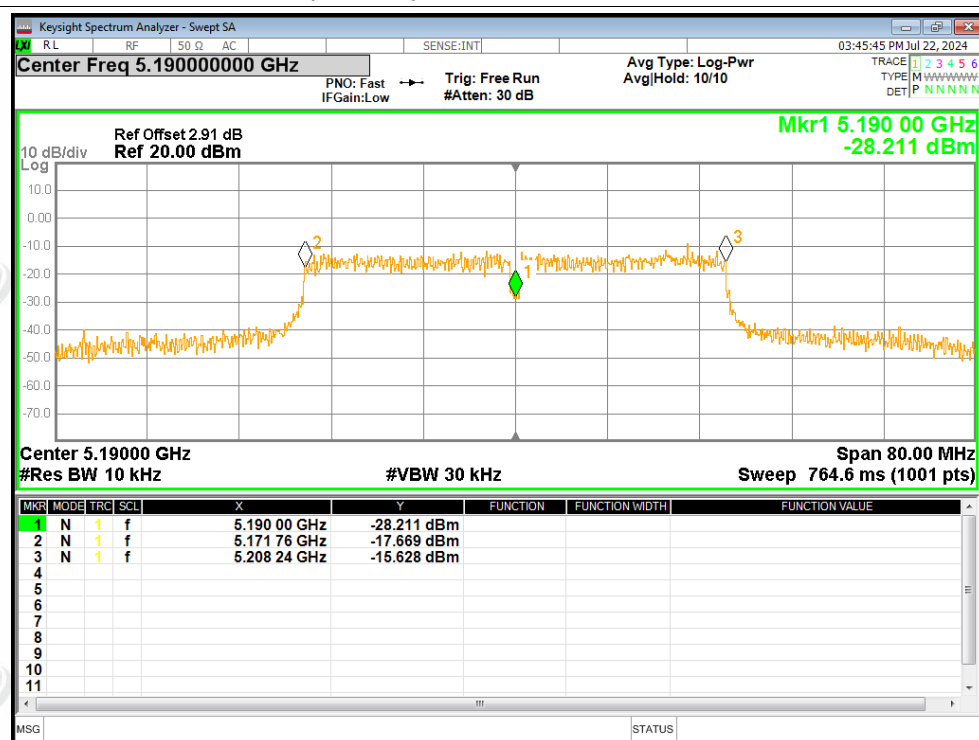


Freq. Stability NVNT n20 5240MHz Ant1

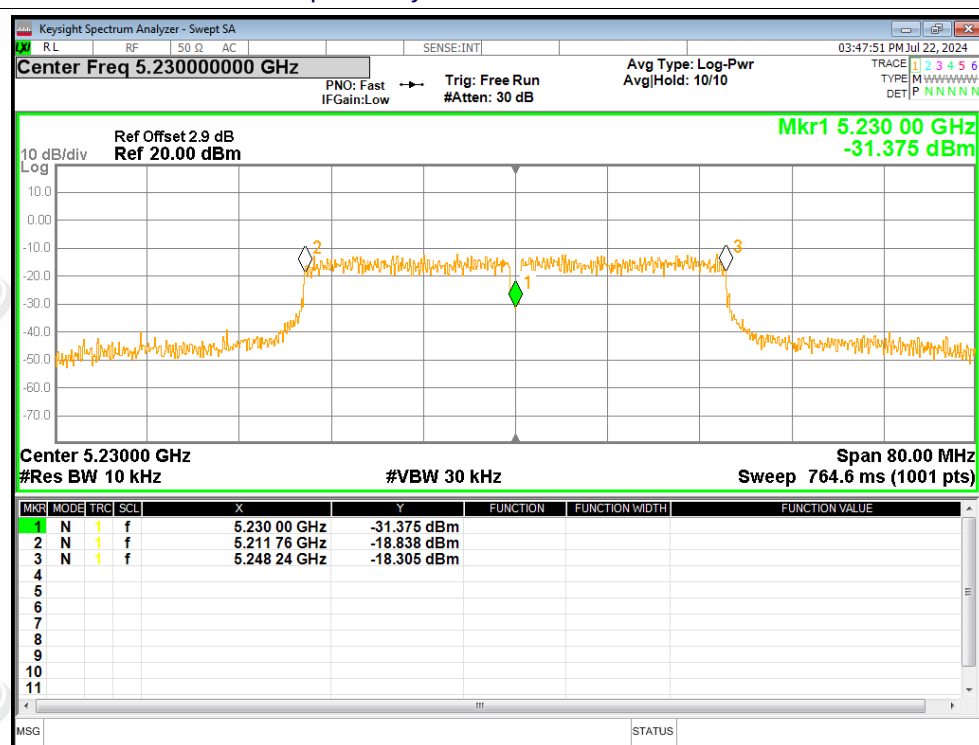




Freq. Stability NVNT n40 5190MHz Ant1

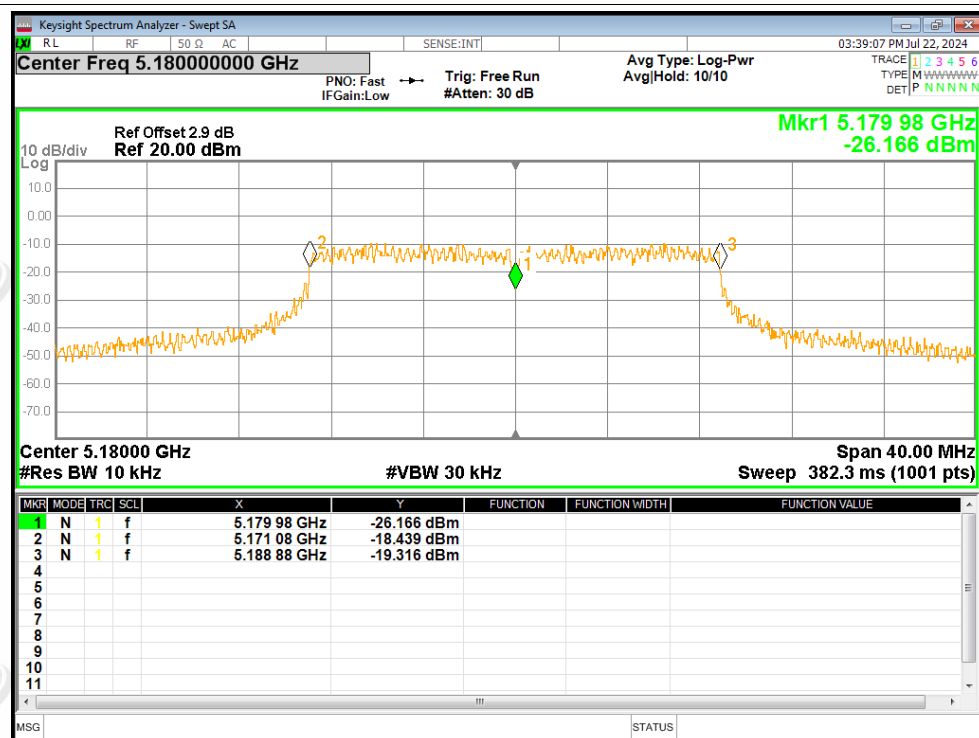


Freq. Stability NVNT n40 5230MHz Ant1

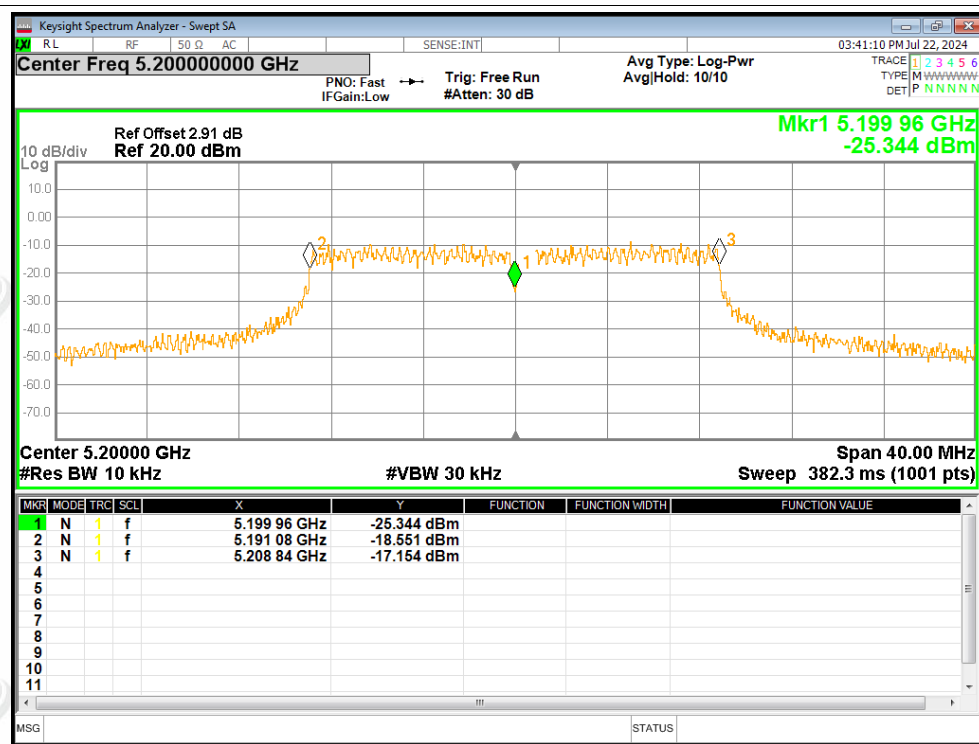




Freq. Stability NVNT ac20 5180MHz Ant1

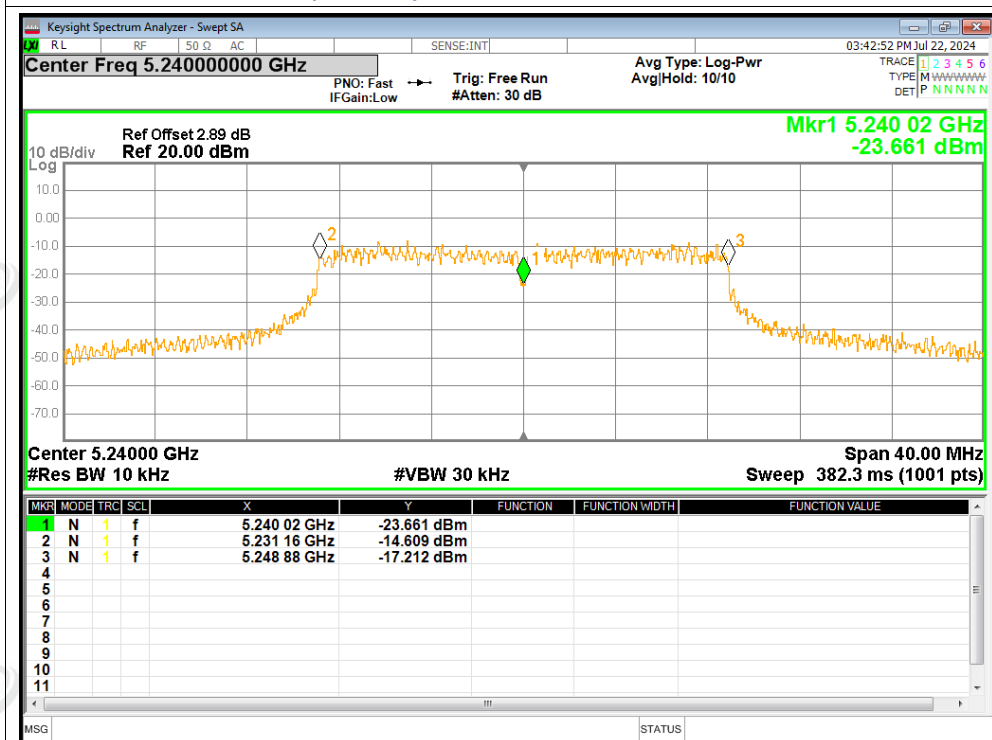


Freq. Stability NVNT ac20 5200MHz Ant1

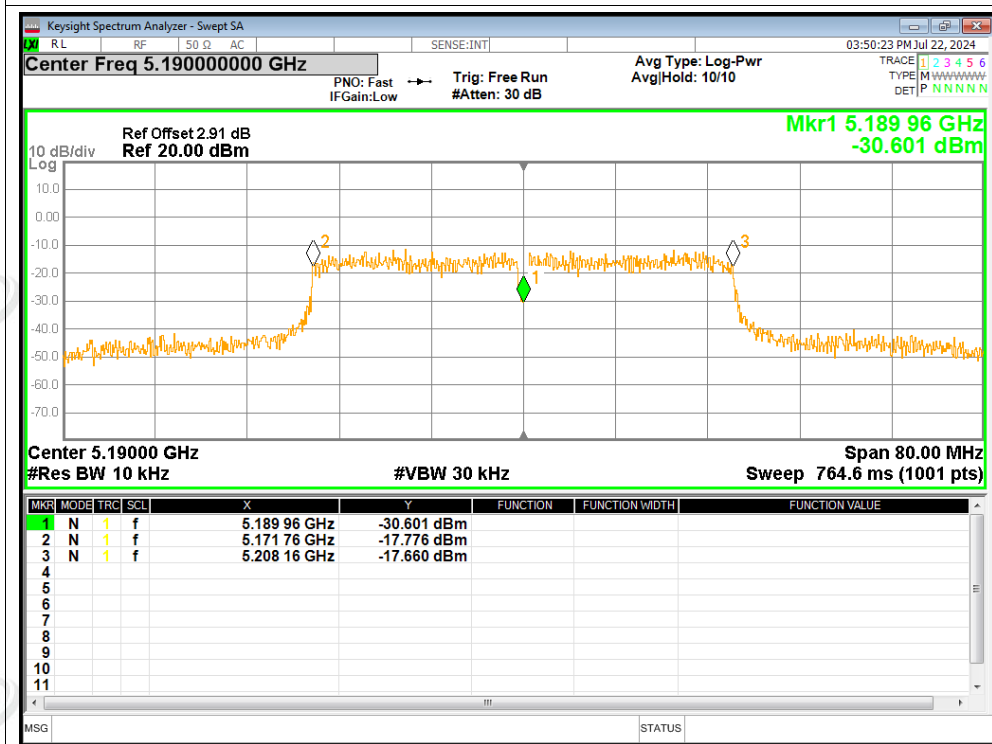




Freq. Stability NVNT ac20 5240MHz Ant1

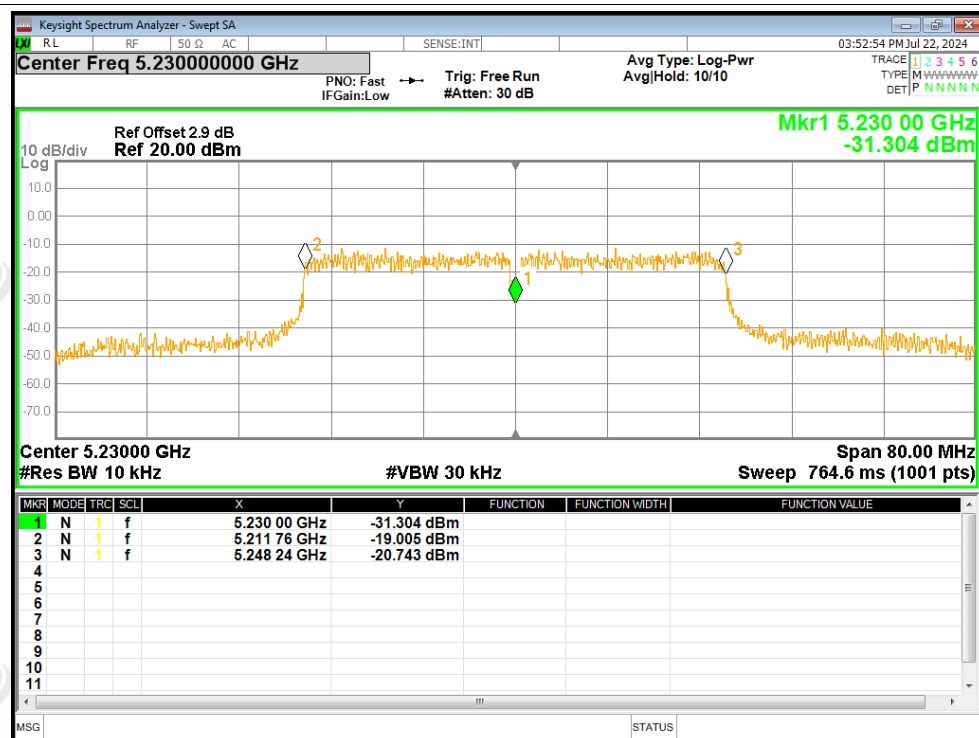


Freq. Stability NVNT ac40 5190MHz Ant1

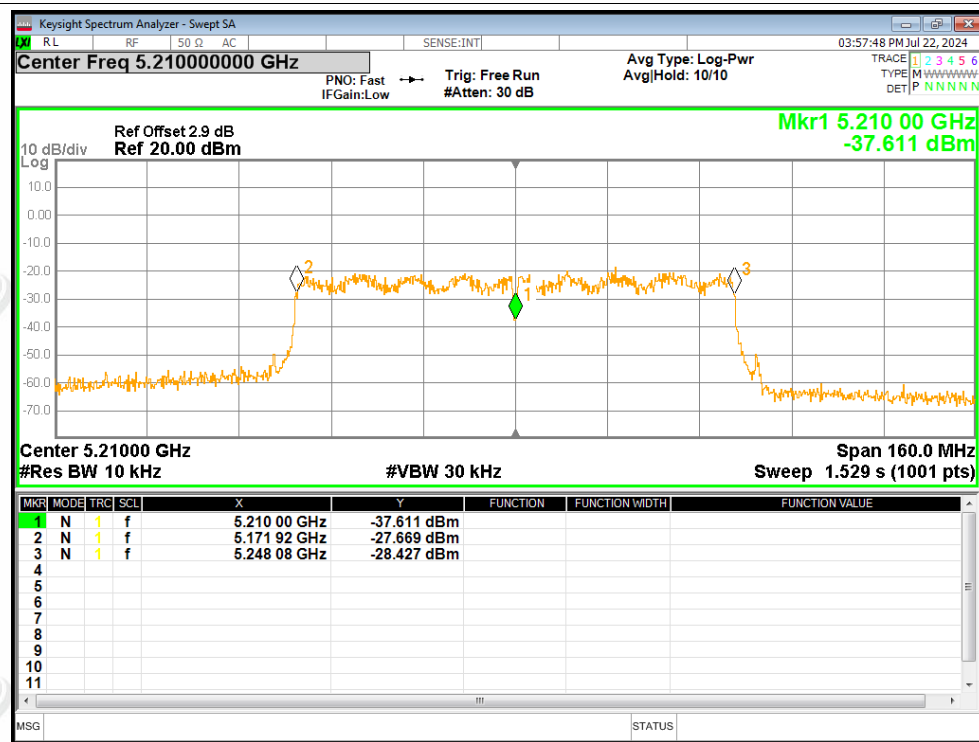




Freq. Stability NVNT ac40 5230MHz Ant1



Freq. Stability NVNT ac80 5210MHz Ant1



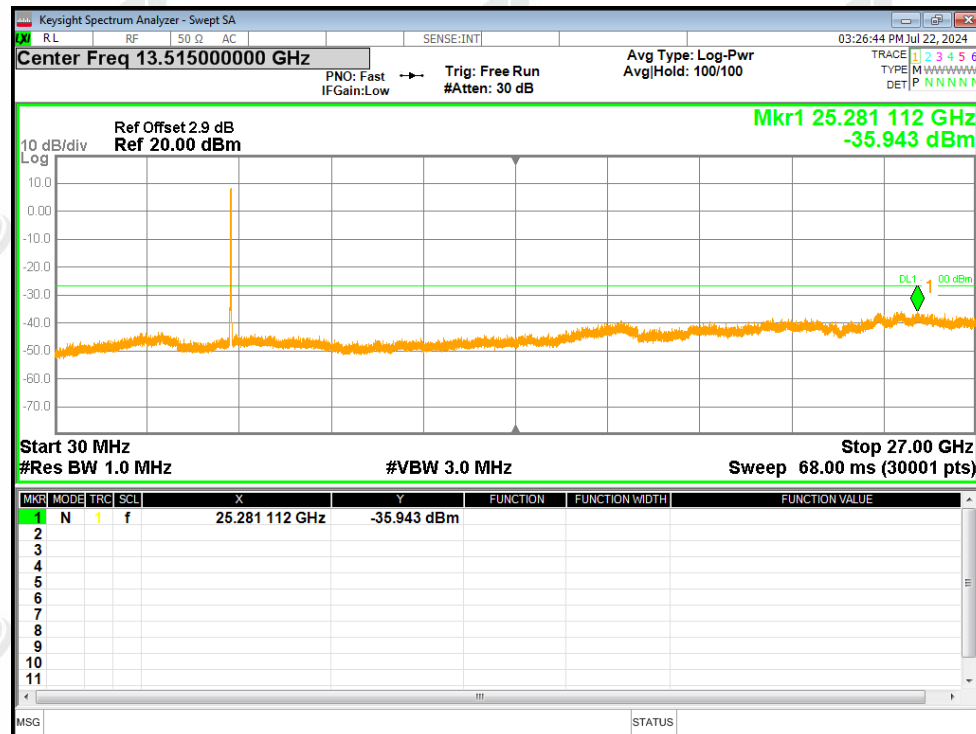
**ZHONGHAN****Conducted RF Spurious Emission**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-35.94	-27	Pass
NVNT	a	5200	Ant1	-35.6	-27	Pass
NVNT	a	5240	Ant1	-35.53	-27	Pass
NVNT	n20	5180	Ant1	-34.97	-27	Pass
NVNT	n20	5200	Ant1	-35.27	-27	Pass
NVNT	n20	5240	Ant1	-35.88	-27	Pass
NVNT	n40	5190	Ant1	-35.3	-27	Pass
NVNT	n40	5230	Ant1	-35.47	-27	Pass
NVNT	ac20	5180	Ant1	-35.66	-27	Pass
NVNT	ac20	5200	Ant1	-35.61	-27	Pass
NVNT	ac20	5240	Ant1	-35.85	-27	Pass
NVNT	ac40	5190	Ant1	-35.02	-27	Pass
NVNT	ac40	5230	Ant1	-35.4	-27	Pass
NVNT	ac80	5210	Ant1	-35.51	-27	Pass

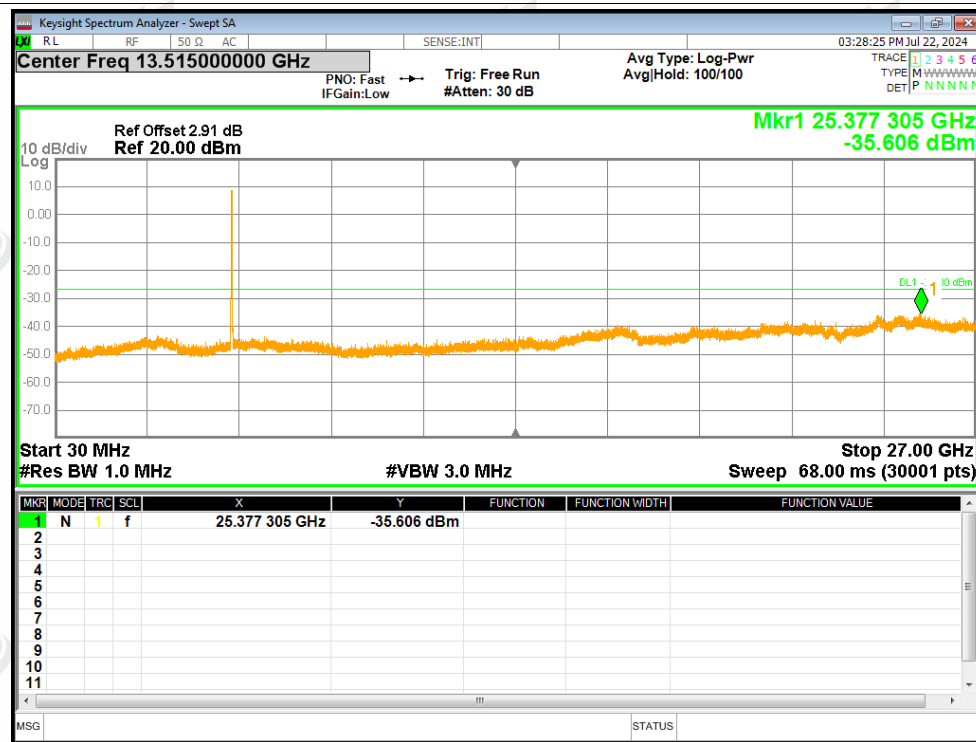


Test Graphs

Tx. Spurious NVNT a 5180MHz Ant1 Emission

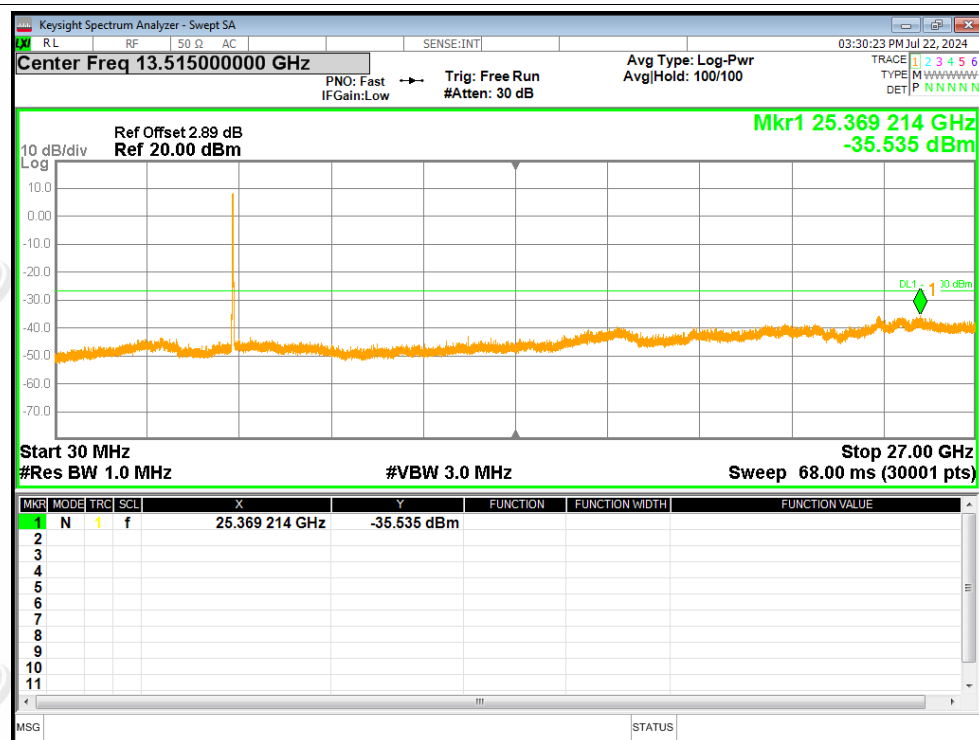


Tx. Spurious NVNT a 5200MHz Ant1 Emission

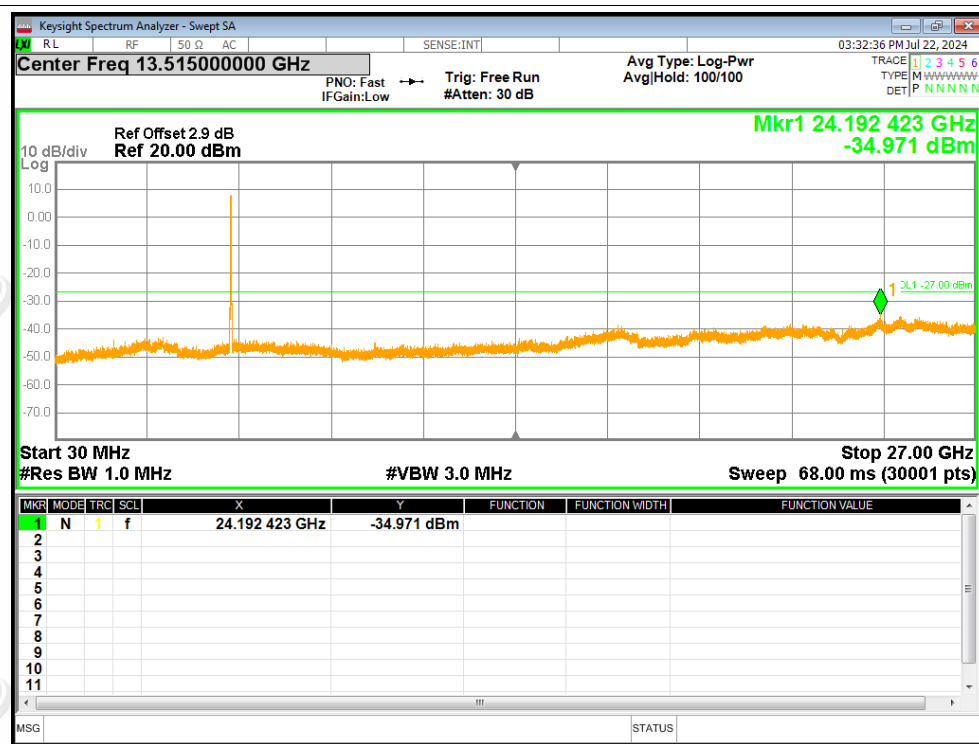




Tx. Spurious NVNT a 5240MHz Ant1 Emission

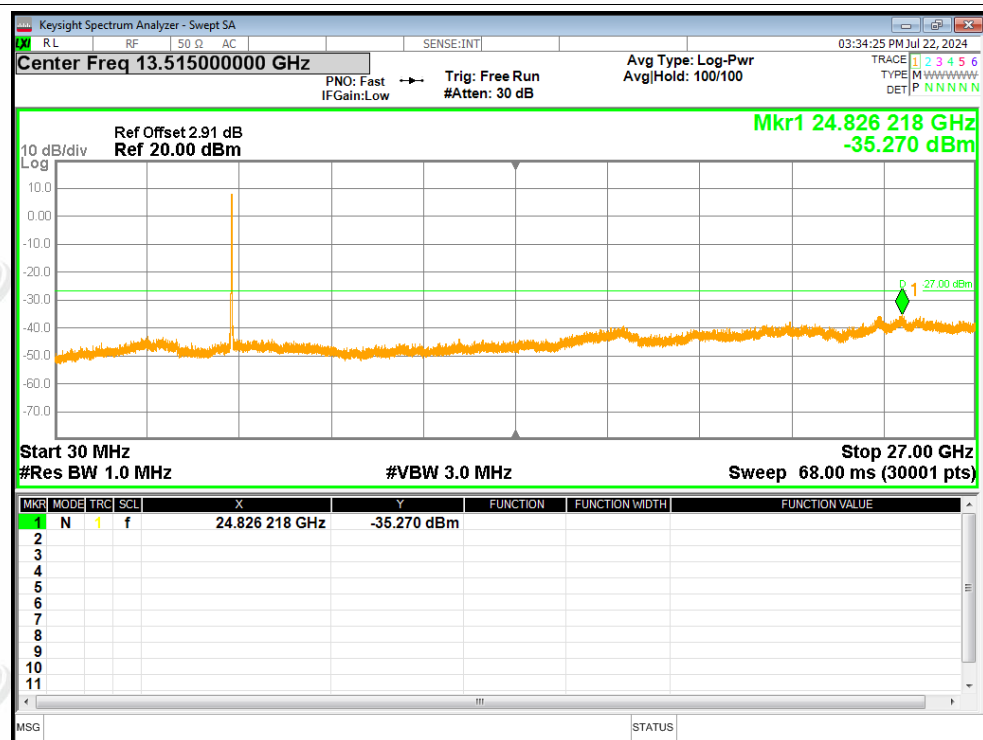


Tx. Spurious NVNT n20 5180MHz Ant1 Emission

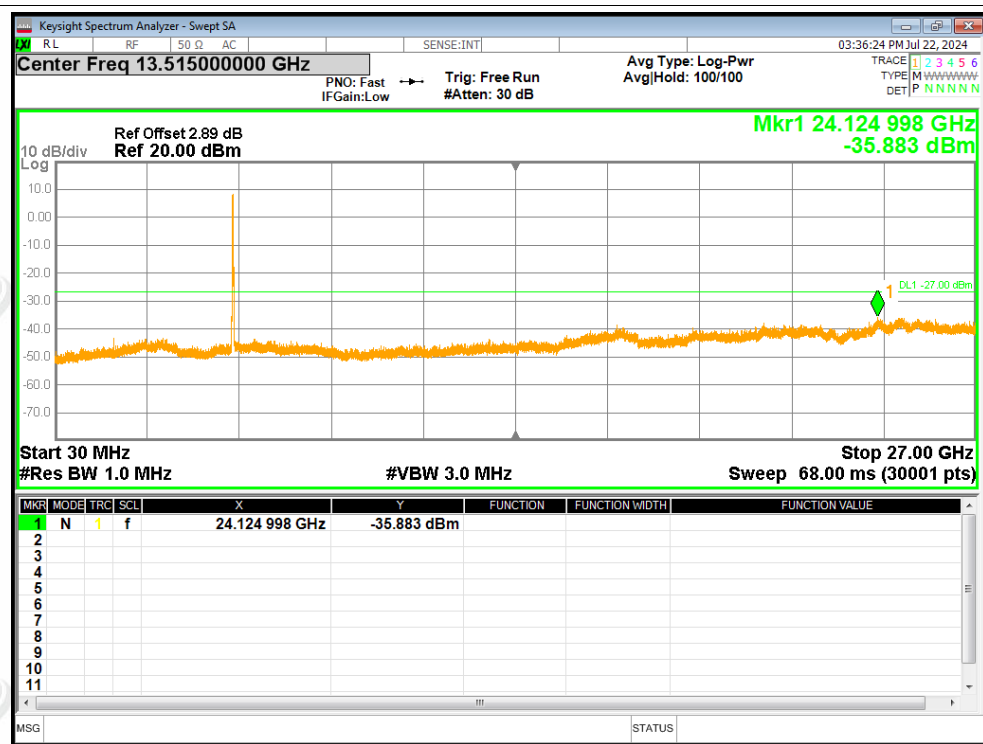




Tx. Spurious NVNT n20 5200MHz Ant1 Emission

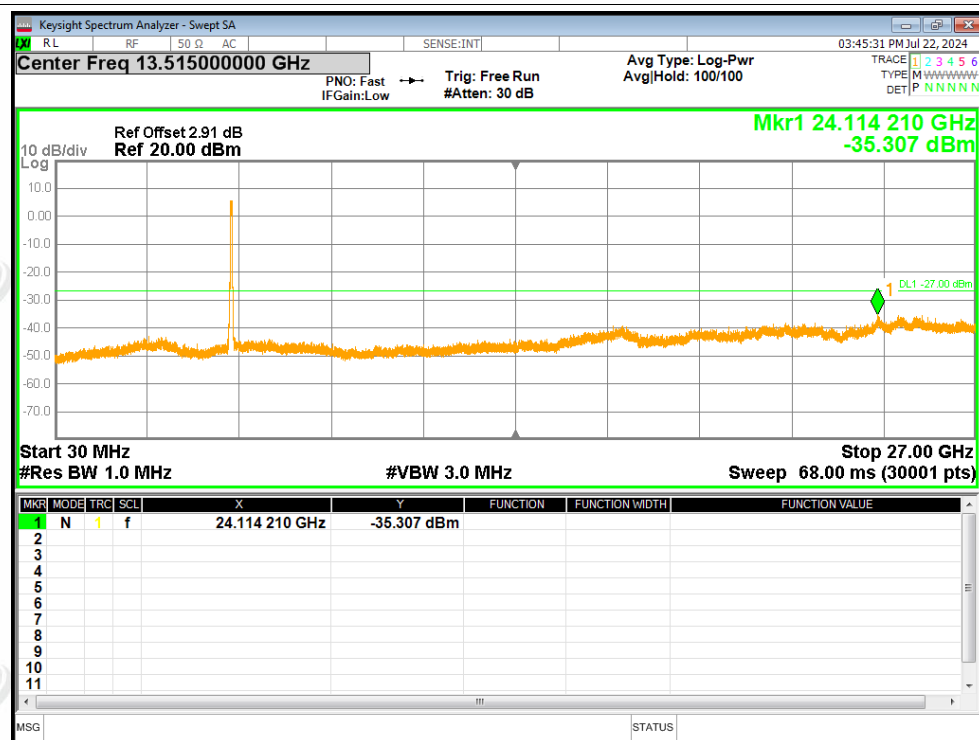


Tx. Spurious NVNT n20 5240MHz Ant1 Emission

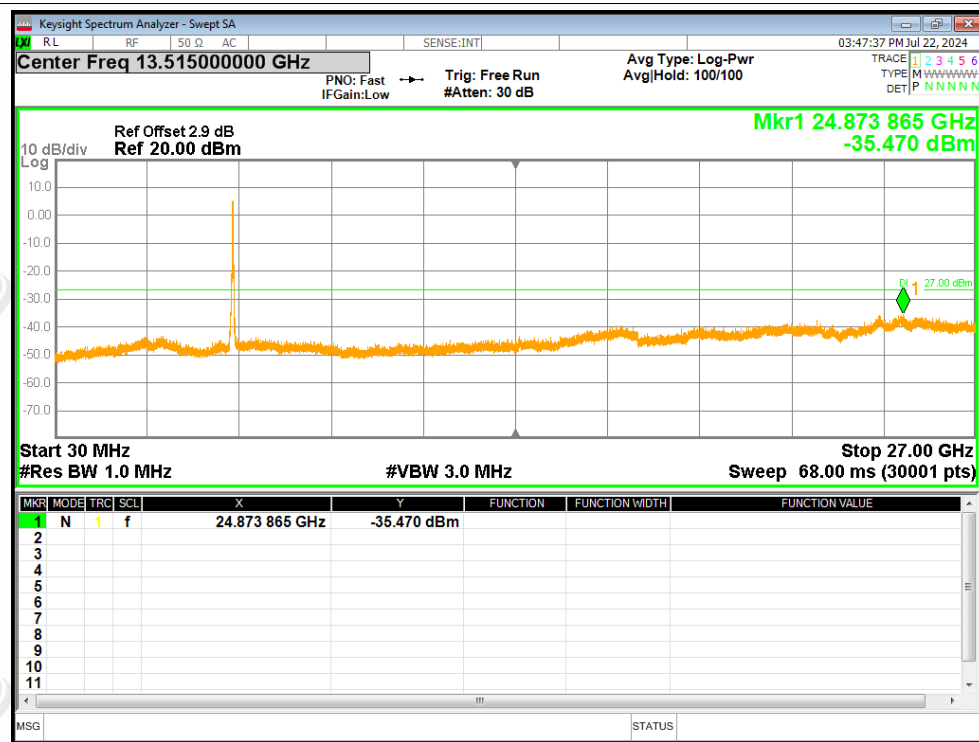




Tx. Spurious NVNT n40 5190MHz Ant1 Emission

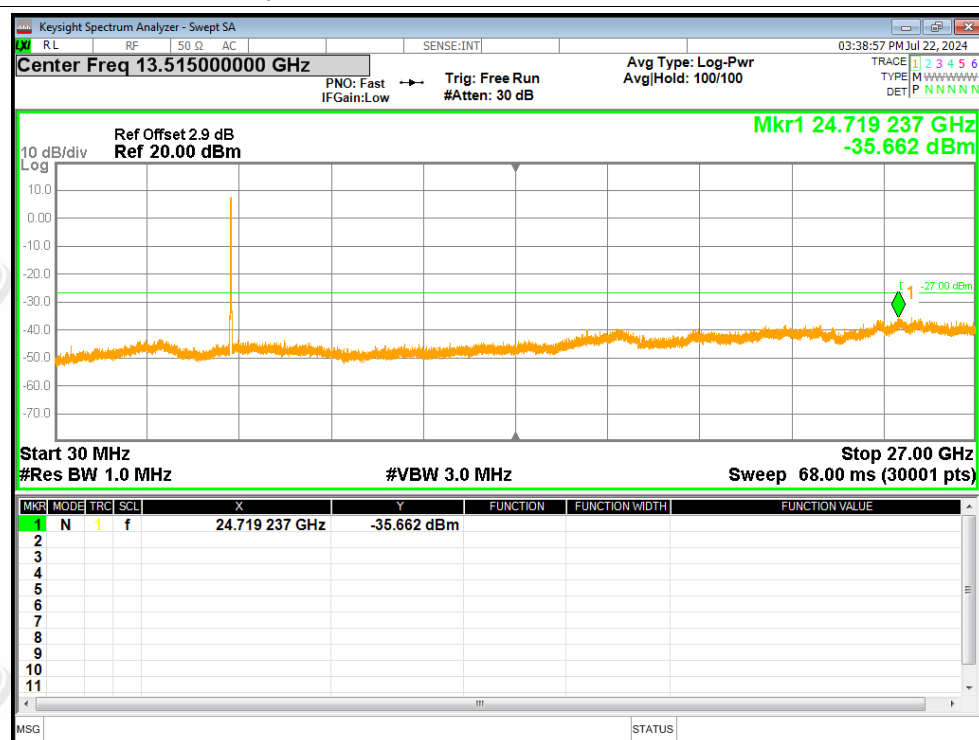


Tx. Spurious NVNT n40 5230MHz Ant1 Emission

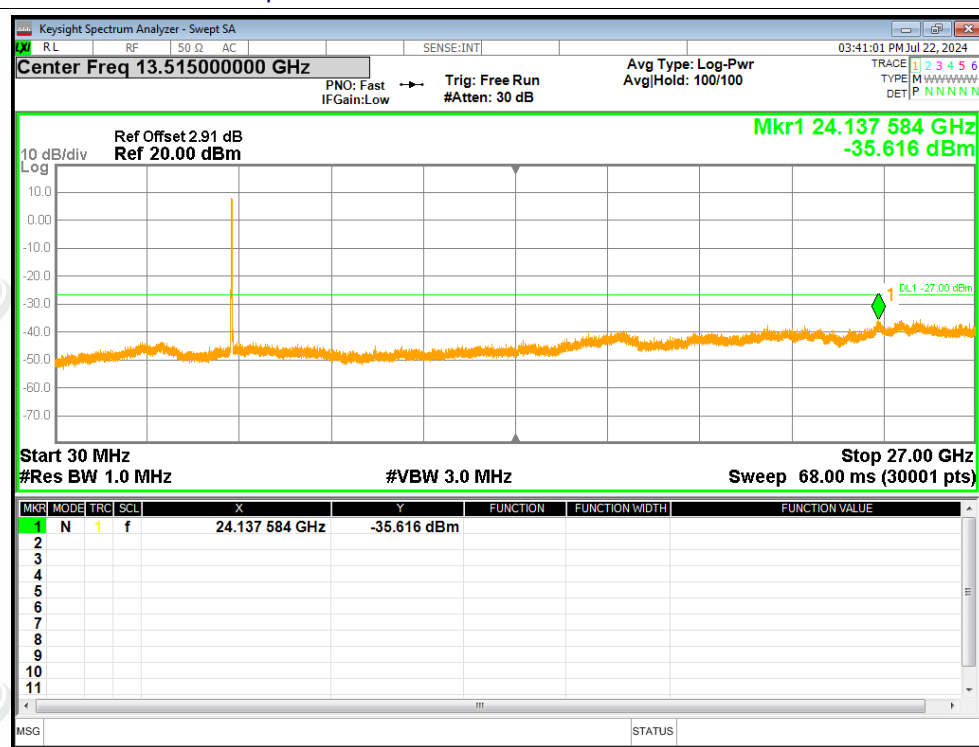




Tx. Spurious NVNT ac20 5180MHz Ant1 Emission

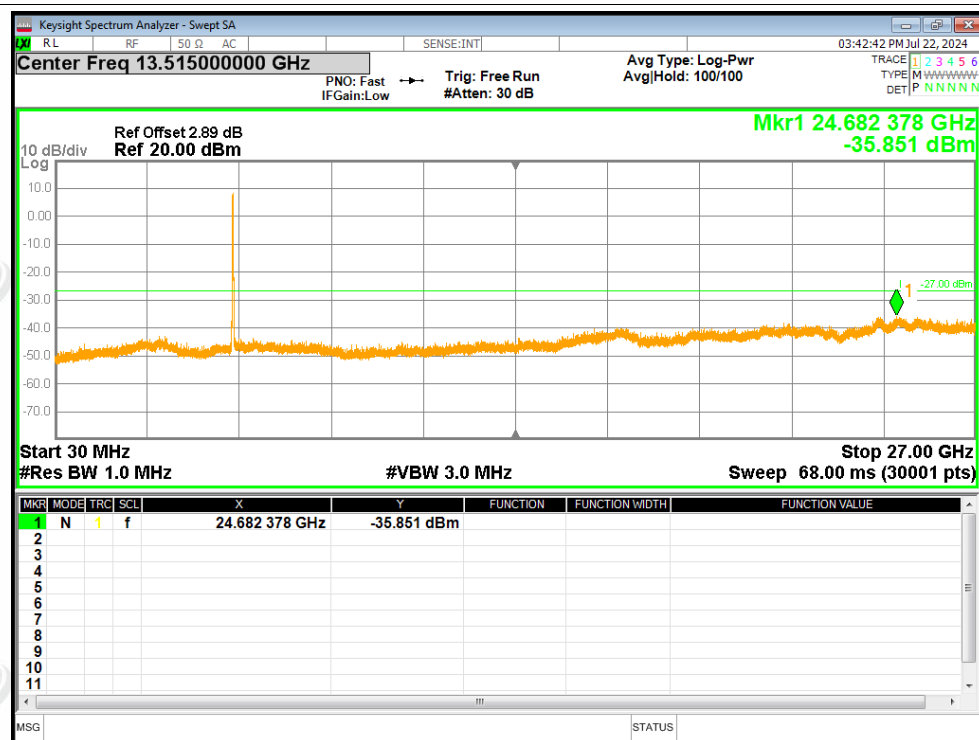


Tx. Spurious NVNT ac20 5200MHz Ant1 Emission

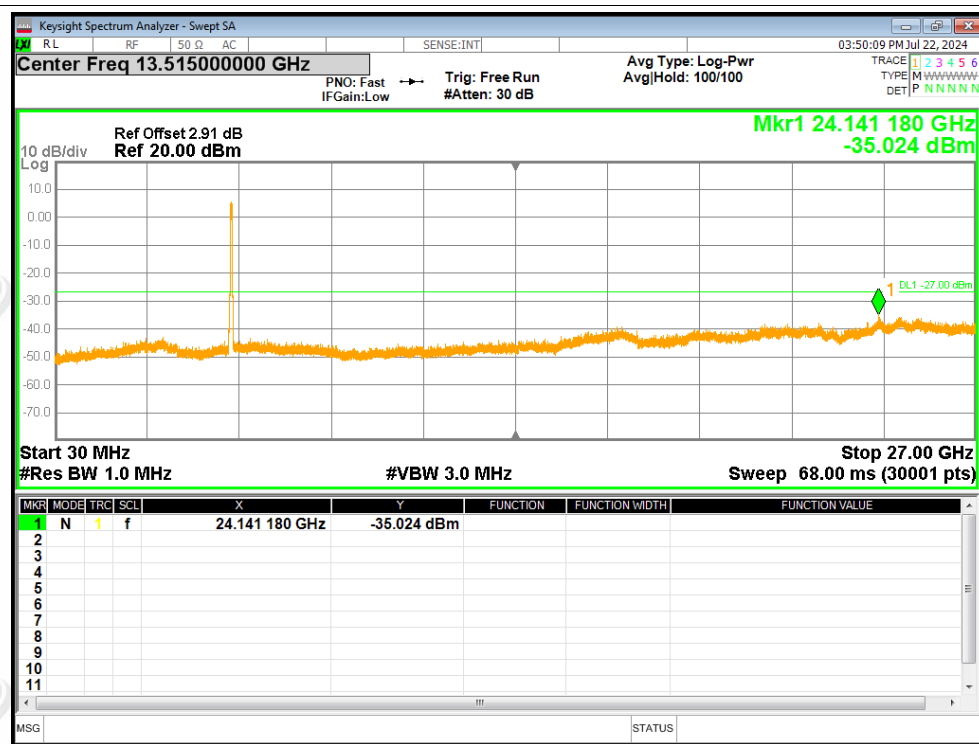




Tx. Spurious NVNT ac20 5240MHz Ant1 Emission

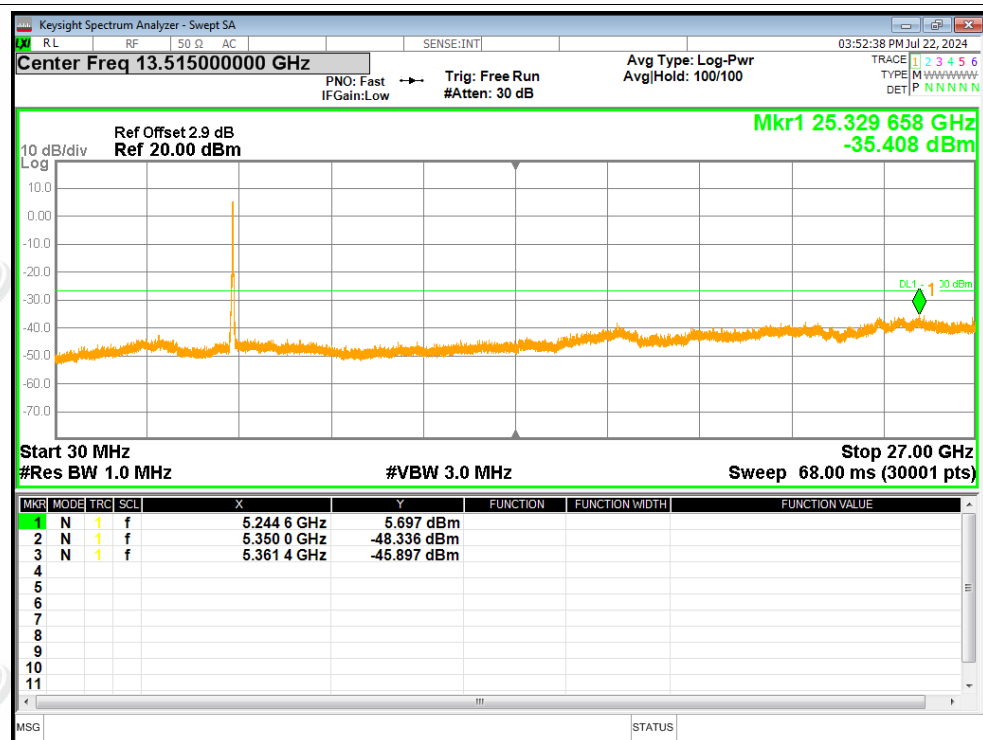


Tx. Spurious NVNT ac40 5190MHz Ant1 Emission





Tx. Spurious NVNT ac40 5230MHz Ant1 Emission



Tx. Spurious NVNT ac80 5210MHz Ant1 Emission

