

Appendix B for 5.3GWIFI Test Data

Product Name: CR S2

Test Model: CR S2

Environmental Conditions

Temperature:	25.4℃
Relative Humidity:	54.3%
ATM Pressure:	101.0 kPa
Test Engineer:	Kimi Lu
Supervised by:	Baret Wu

B.1 Duty Cycle

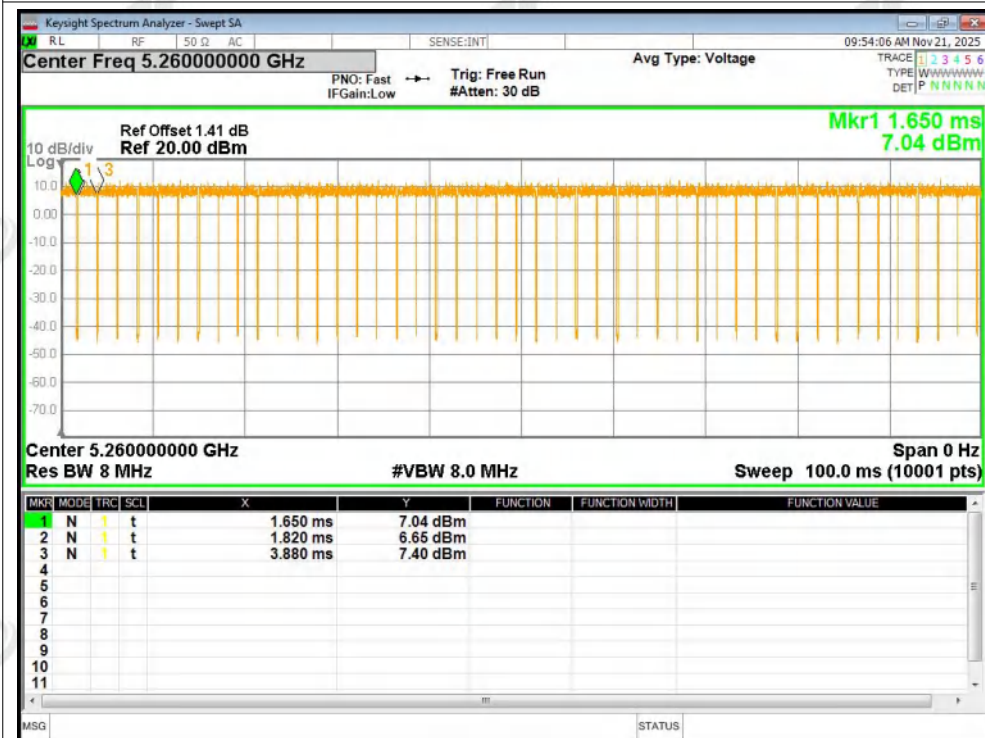
Mode	Frequency (MHz)	Antenna	T _{on} ms	T _{total} ms	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5260	Ant1	2.06	2.23	92.38	0.34	0.49
a	5280	Ant1	2.07	2.16	95.83	0.18	0.48
a	5320	Ant1	2.06	2.15	95.81	0.19	0.49
n20	5260	Ant1	1.92	2.05	93.66	0.22	0.52
n20	5280	Ant1	1.92	2.05	93.66	0.32	0.52
n20	5320	Ant1	1.92	2.08	92.31	0.35	0.52
n40	5270	Ant1	0.95	1.03	92.23	0.35	1.05
n40	5310	Ant1	0.94	0.99	94.95	0.23	1.06
ac20	5260	Ant1	1.96	2.04	96.04	0.18	0.52
ac20	5280	Ant1	1.93	1.98	97.47	0.2	0.52
ac20	5320	Ant1	1.93	2.06	93.69	0.28	0.52
ac40	5270	Ant1	0.96	1.08	88.89	0.51	1.04
ac40	5310	Ant1	0.95	1.10	86.36	0.64	1.05
ac80	5290	Ant1	0.46	0.55	83.64	0.78	2.17

Note:

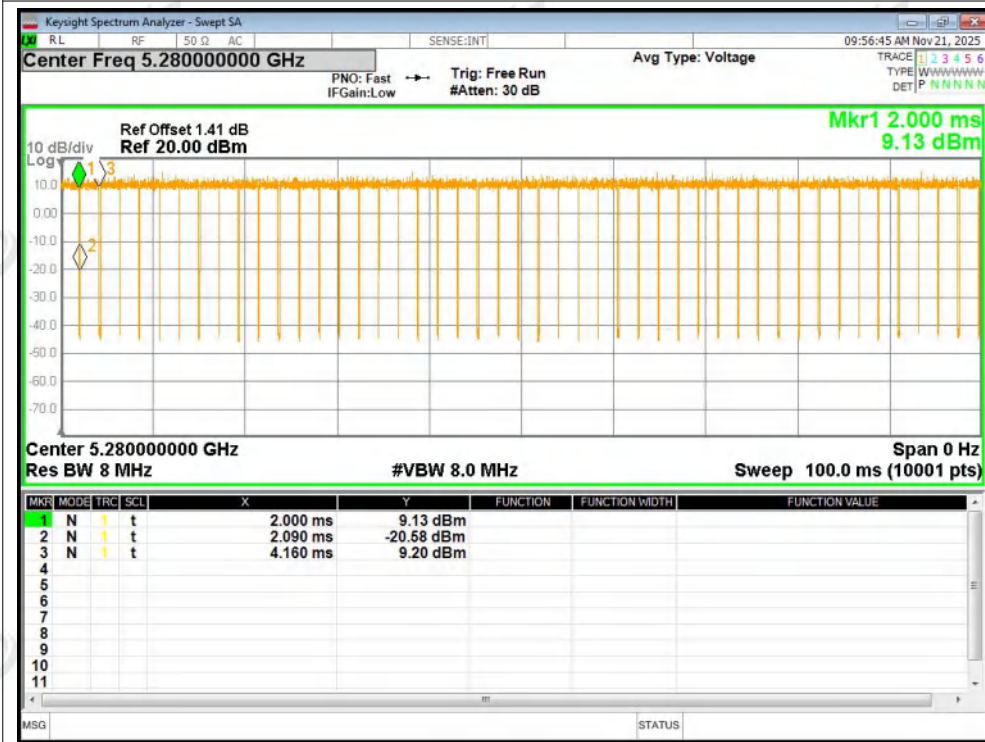
1. Duty Cycle = T_{on} / T_{total}
2. Correction Factor = $10 \log (1 / \text{Duty Cycle})$.
3. $1/T = 1/T_{on}$

Test Graphs

Duty Cycle NVNT a 5260MHz Ant1

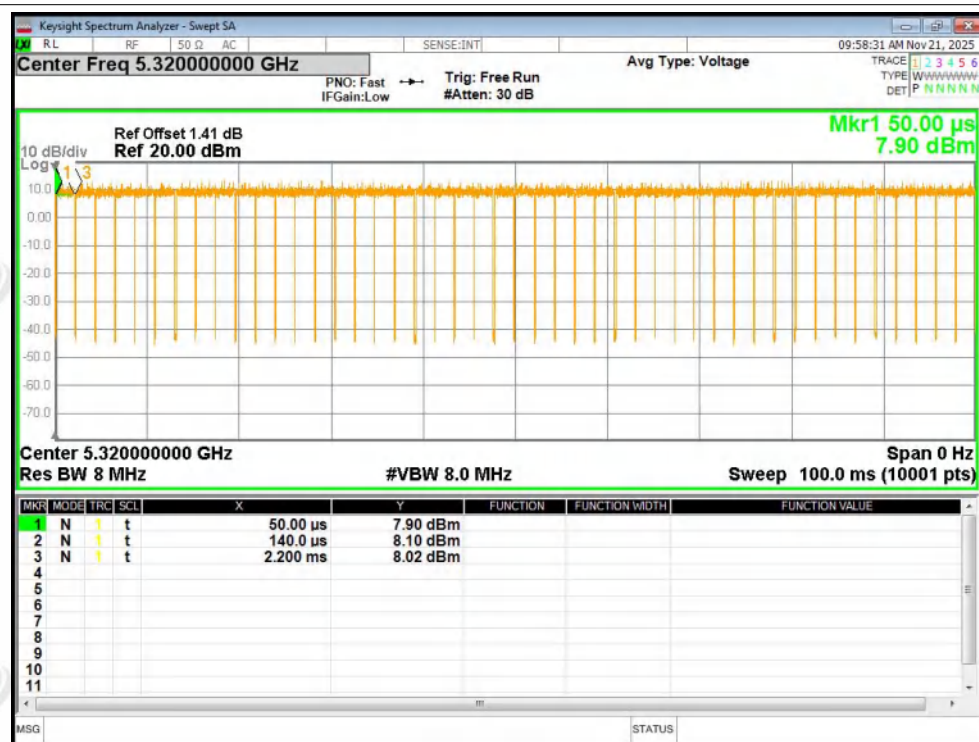


Duty Cycle NVNT a 5280MHz Ant1

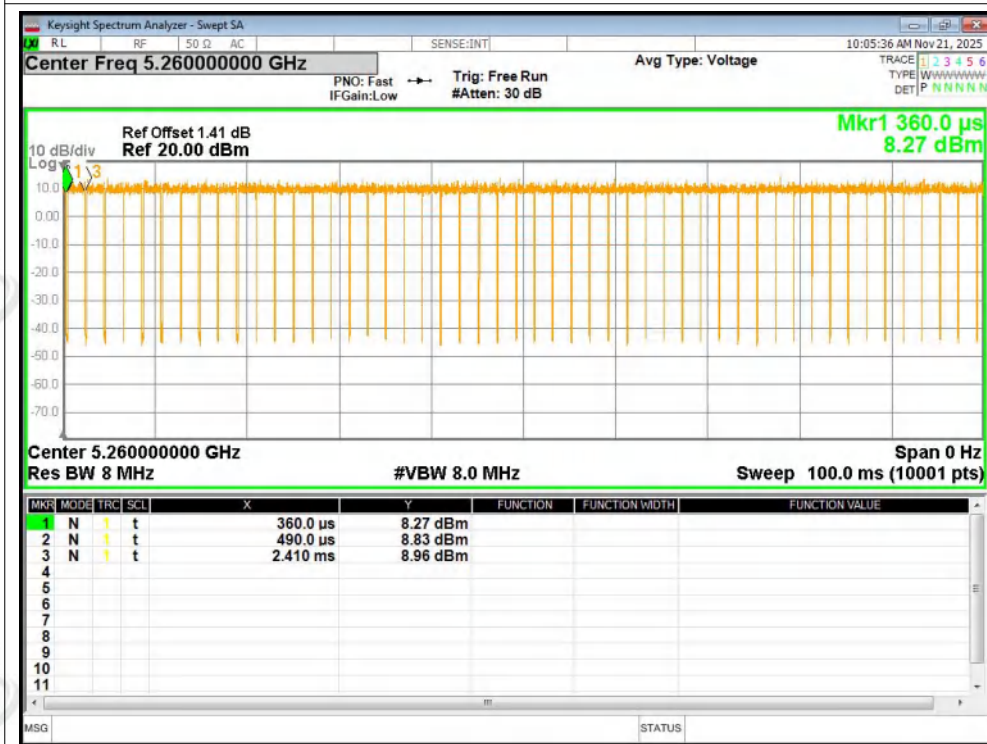




Duty Cycle NVNT a 5320MHz Ant1

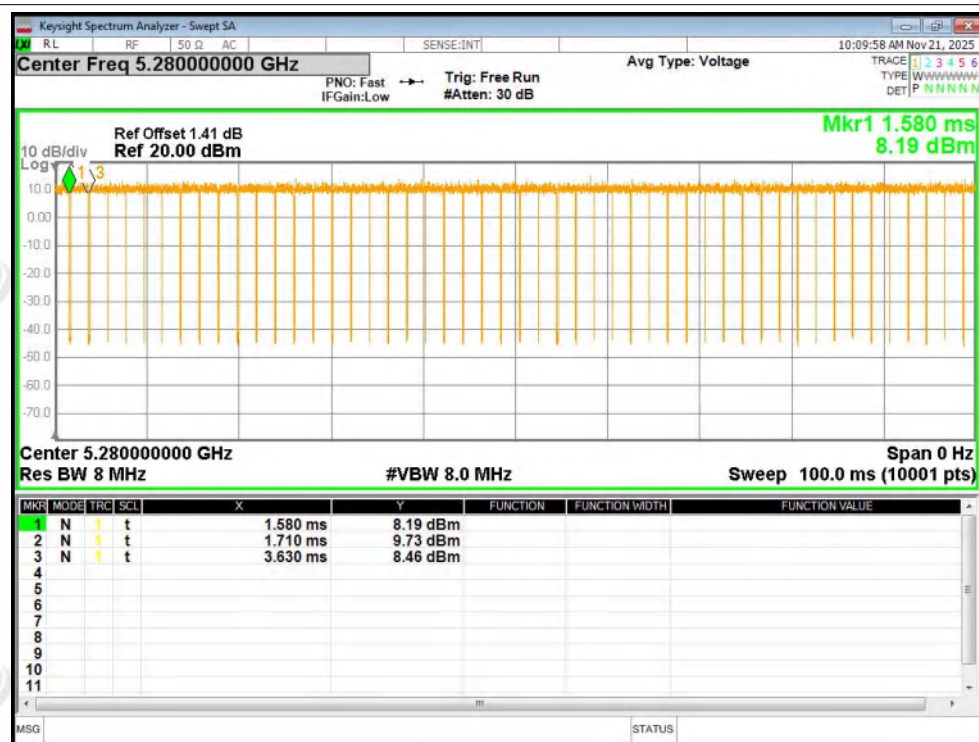


Duty Cycle NVNT n20 5260MHz Ant1

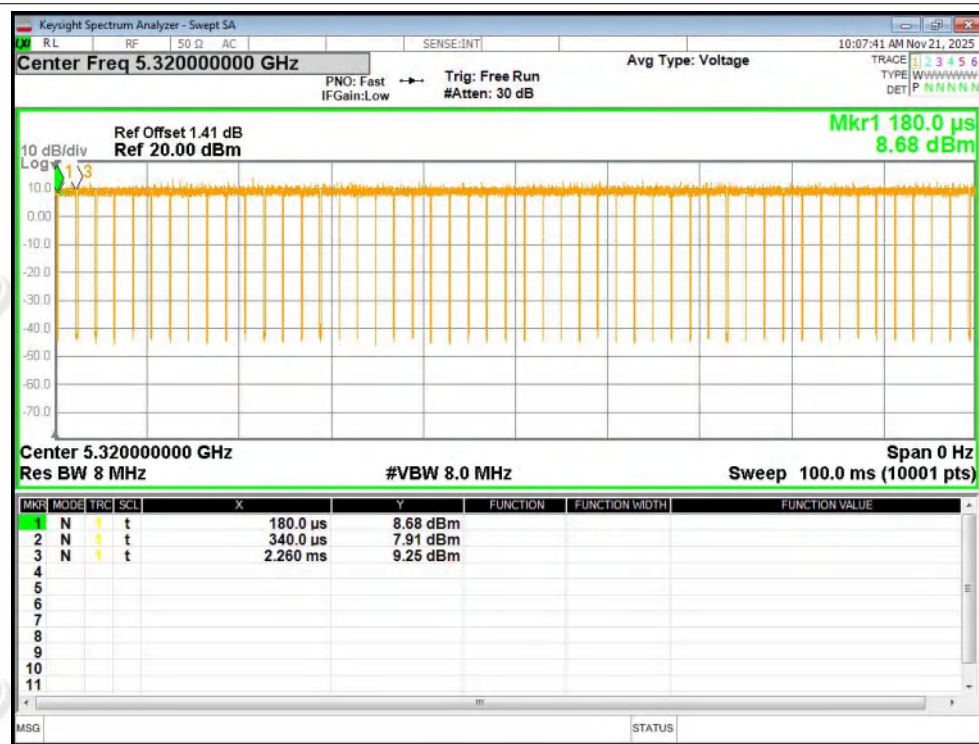




Duty Cycle NVNT n20 5280MHz Ant1

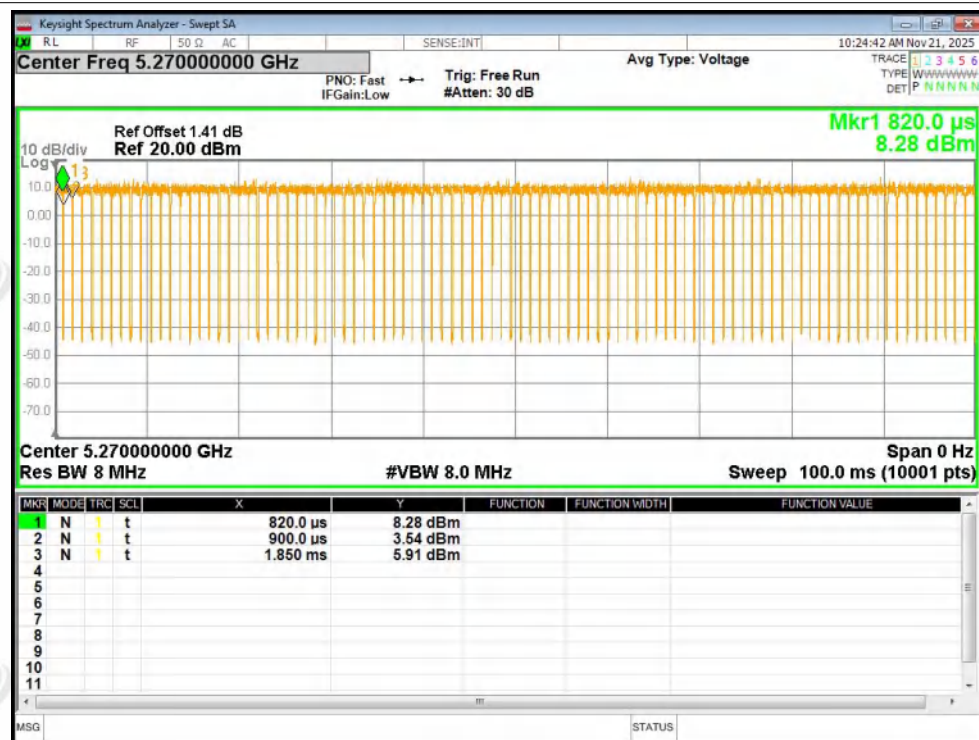


Duty Cycle NVNT n20 5320MHz Ant1

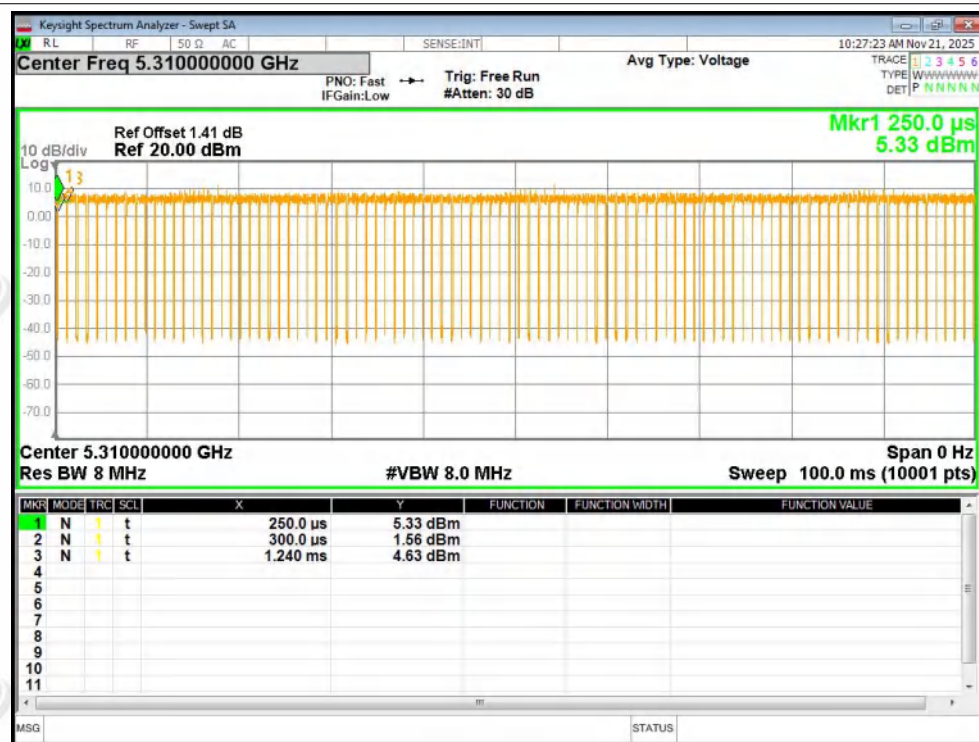




Duty Cycle NVNT n40 5270MHz Ant1

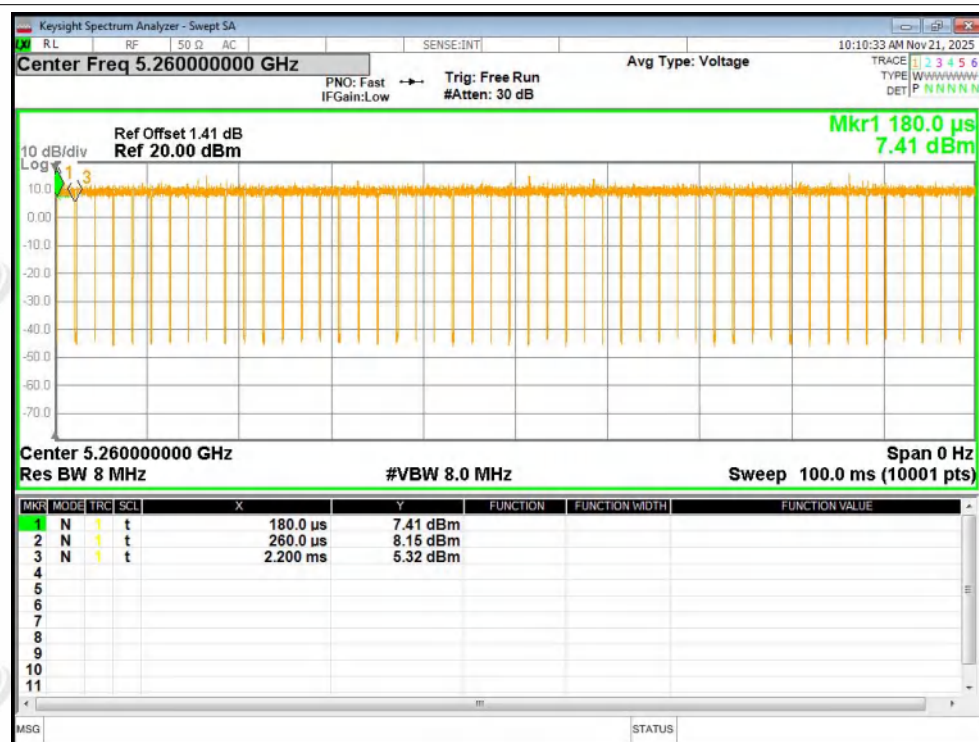


Duty Cycle NVNT n40 5310MHz Ant1

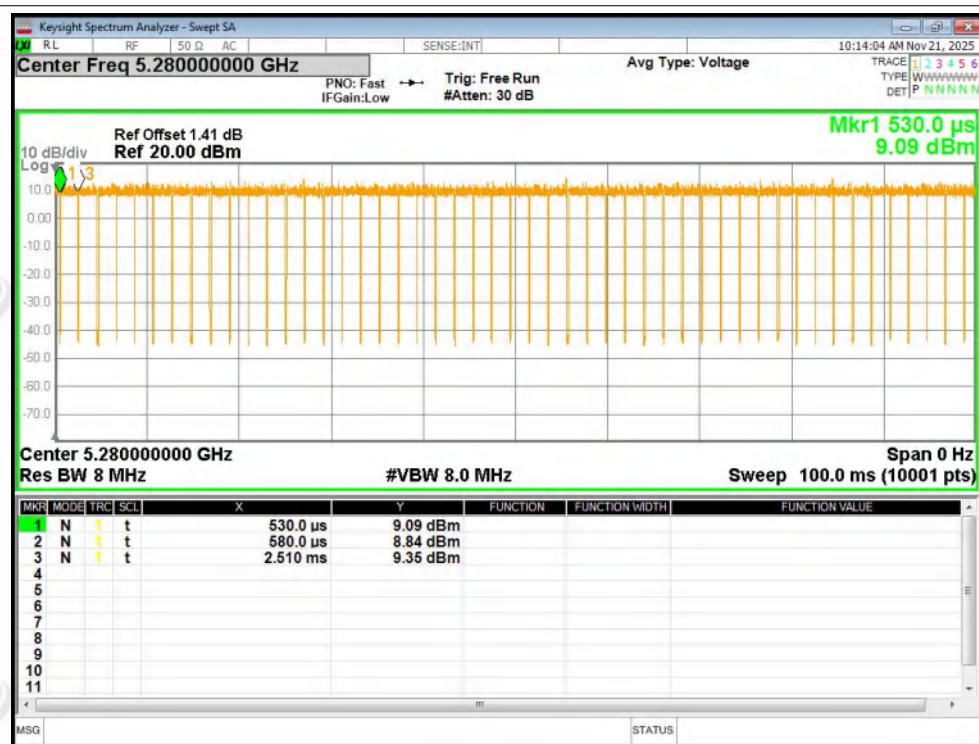




Duty Cycle NVNT ac20 5260MHz Ant1

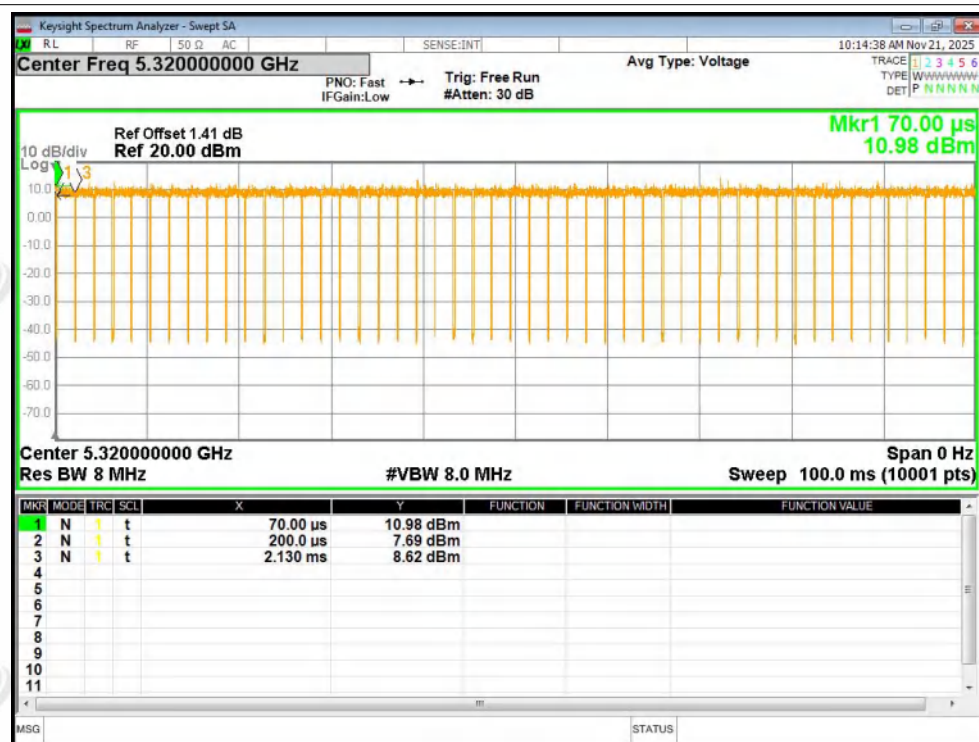


Duty Cycle NVNT ac20 5280MHz Ant1

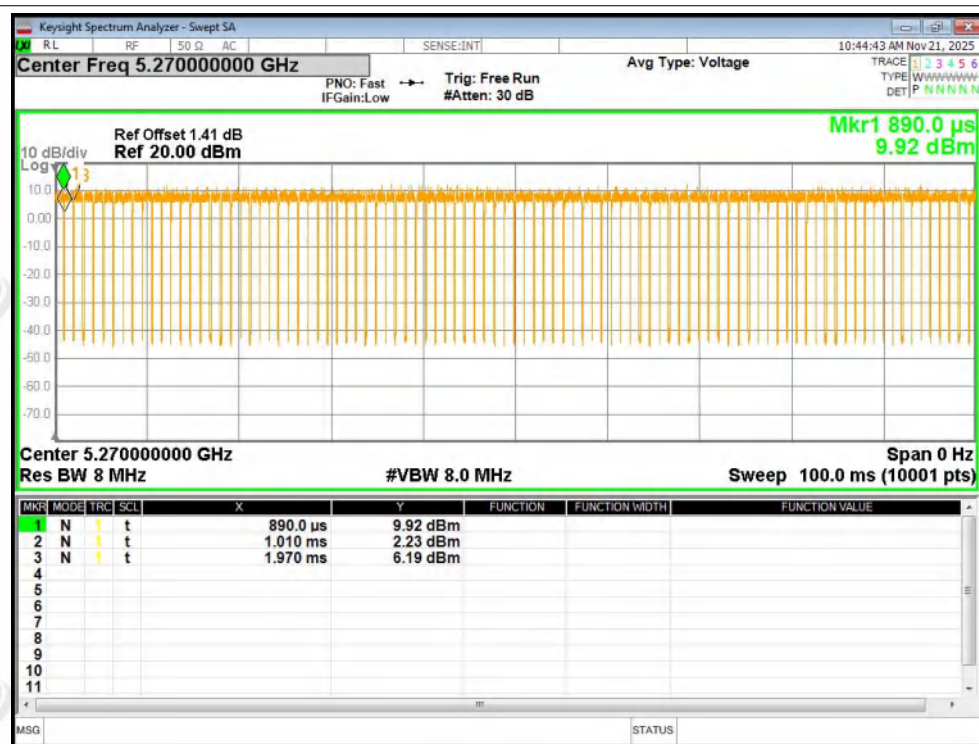




Duty Cycle NVNT ac20 5320MHz Ant1

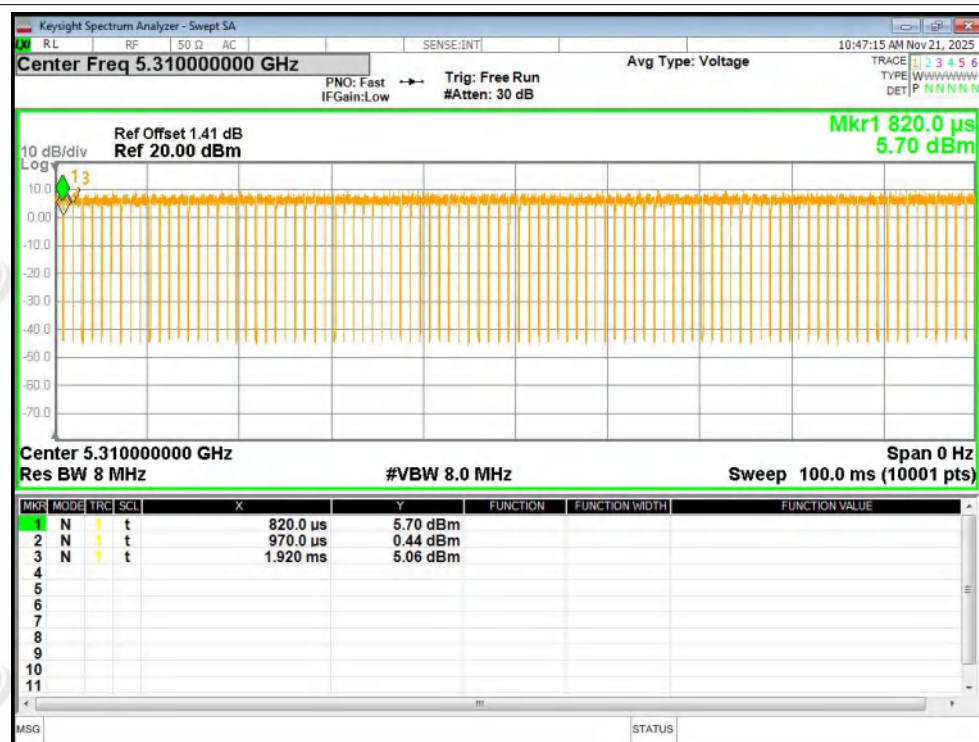


Duty Cycle NVNT ac40 5270MHz Ant1

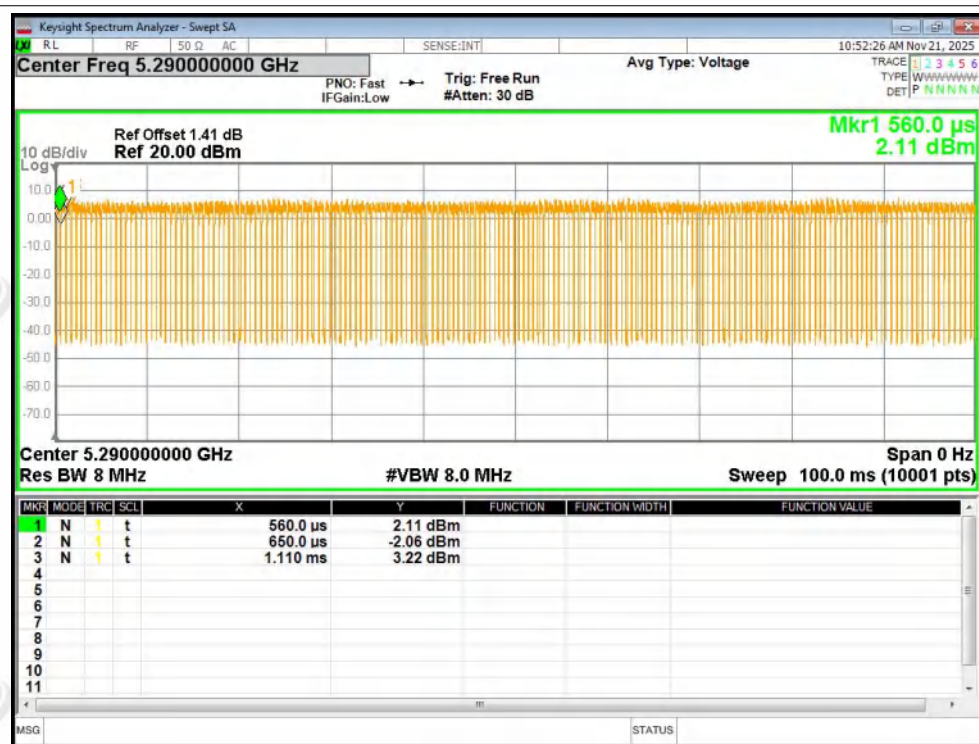




Duty Cycle NVNT ac40 5310MHz Ant1



Duty Cycle NVNT ac80 5290MHz Ant1



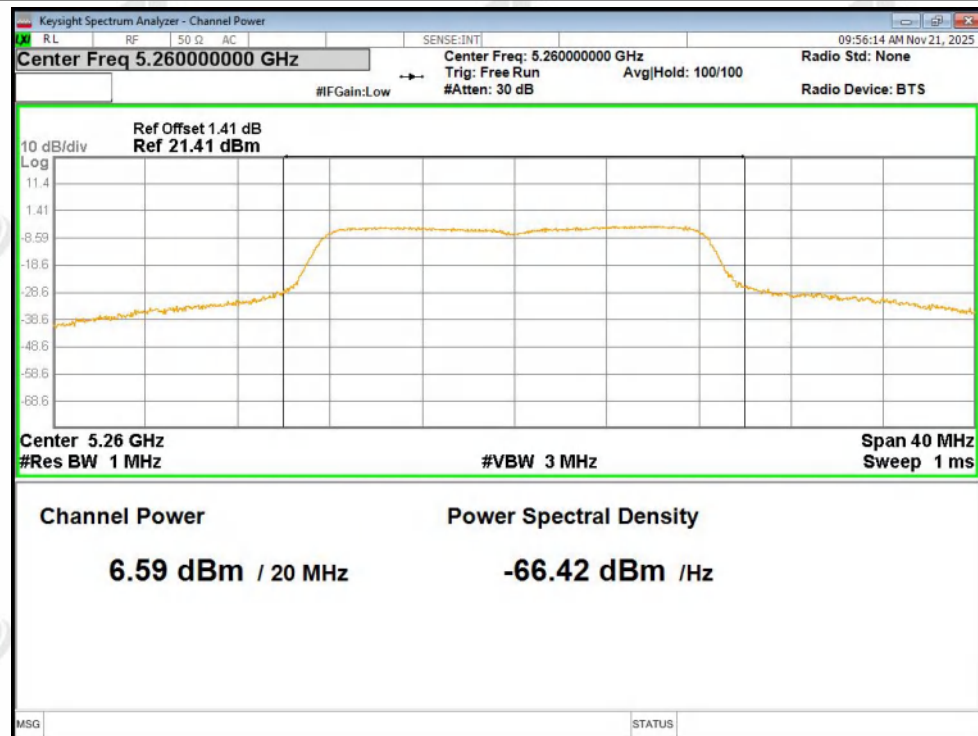
**ZHONGHAN****B.2 Maximum Conducted Output Power**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	Ant1	6.59	0.34	6.93	24	Pass
NVNT	a	5280	Ant1	6.85	0.18	7.03	24	Pass
NVNT	a	5320	Ant1	6.14	0.19	6.33	24	Pass
NVNT	n20	5260	Ant1	6.48	0.22	6.7	24	Pass
NVNT	n20	5280	Ant1	6.83	0.32	7.15	24	Pass
NVNT	n20	5320	Ant1	6.23	0.35	6.58	24	Pass
NVNT	n40	5270	Ant1	6.36	0.35	6.71	24	Pass
NVNT	n40	5310	Ant1	6.45	0.23	6.68	24	Pass
NVNT	ac20	5260	Ant1	5.9	0.18	6.08	24	Pass
NVNT	ac20	5280	Ant1	6.37	0.2	6.57	24	Pass
NVNT	ac20	5320	Ant1	6.18	0.28	6.46	24	Pass
NVNT	ac40	5270	Ant1	6.41	0.51	6.92	24	Pass
NVNT	ac40	5310	Ant1	6.47	0.64	7.11	24	Pass
NVNT	ac80	5290	Ant1	6.58	0.78	7.36	24	Pass

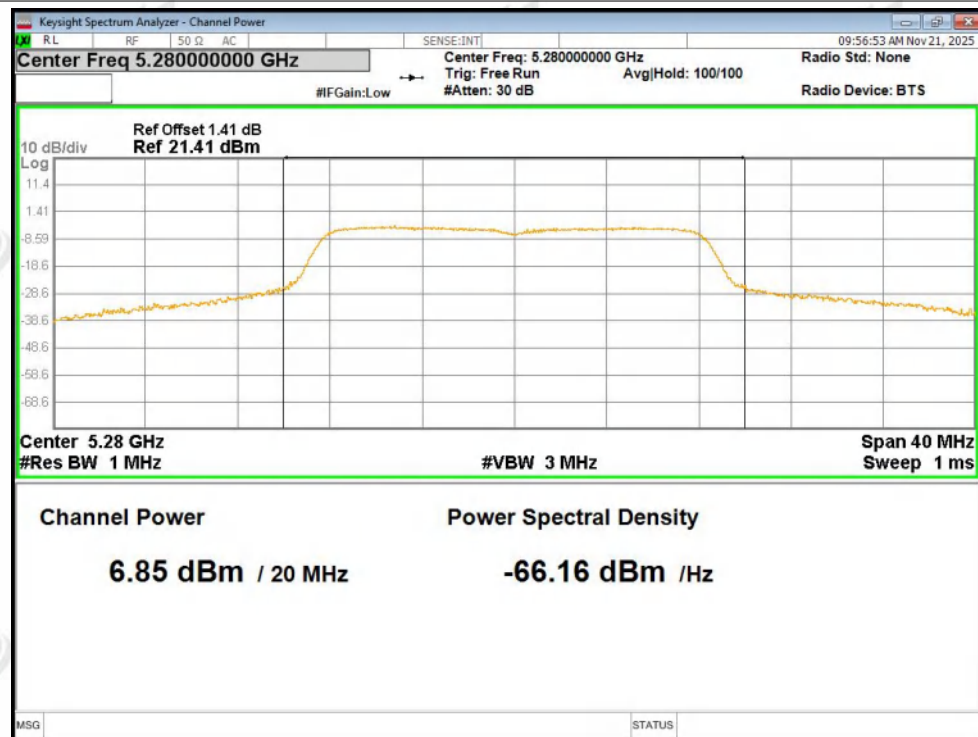


Test Graphs

Power NVNT a 5260MHz Ant1

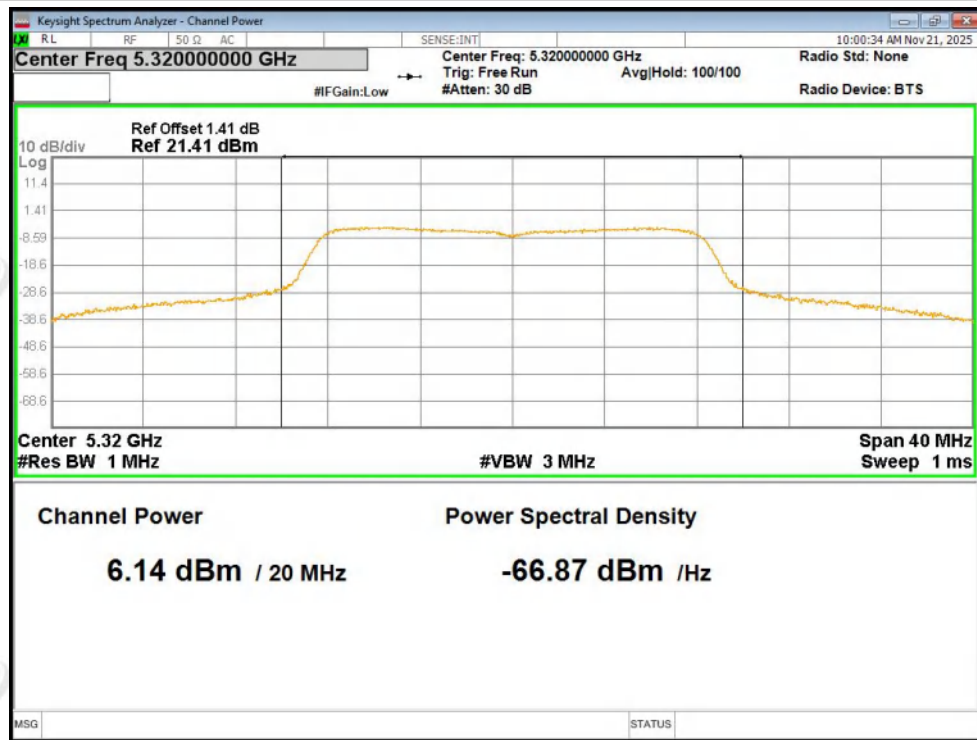


Power NVNT a 5280MHz Ant1

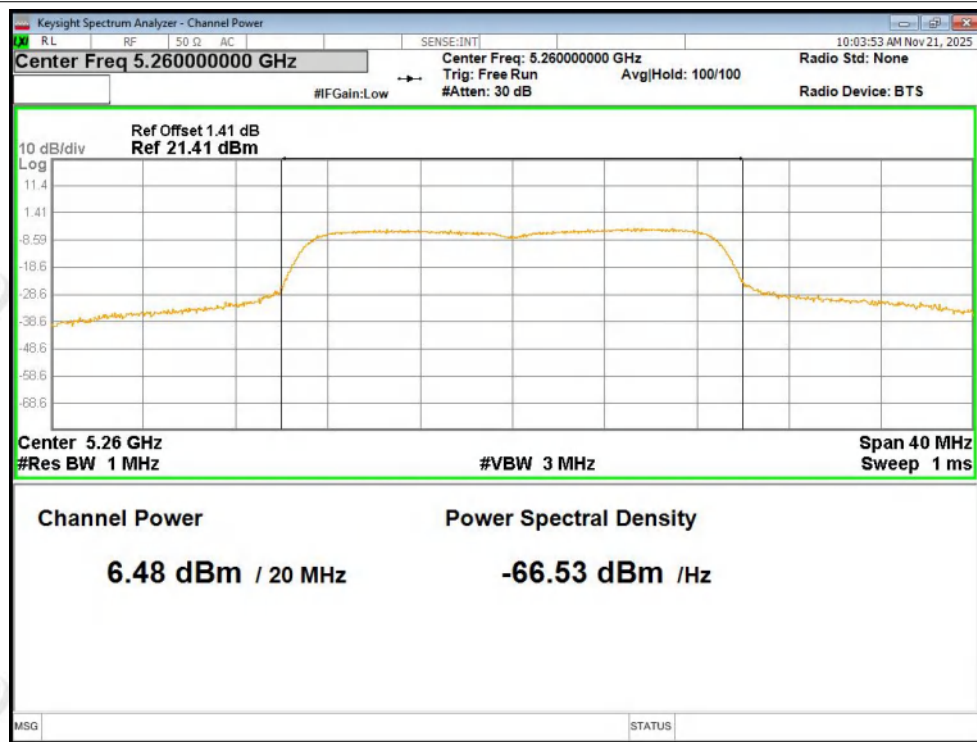




Power NVNT a 5320MHz Ant1

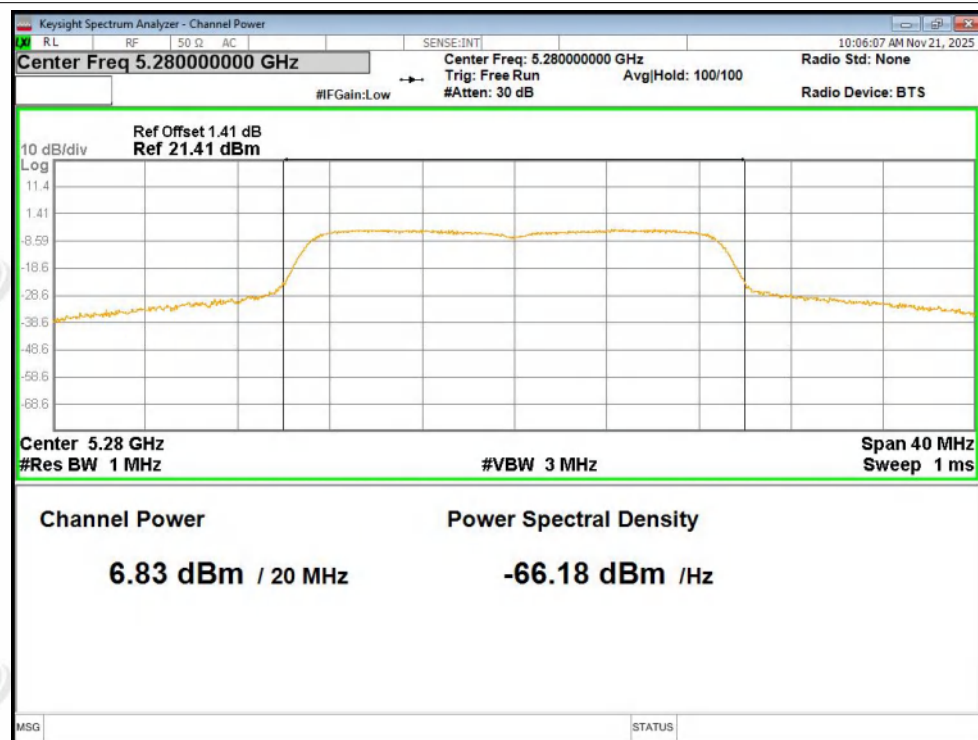


Power NVNT n20 5260MHz Ant1

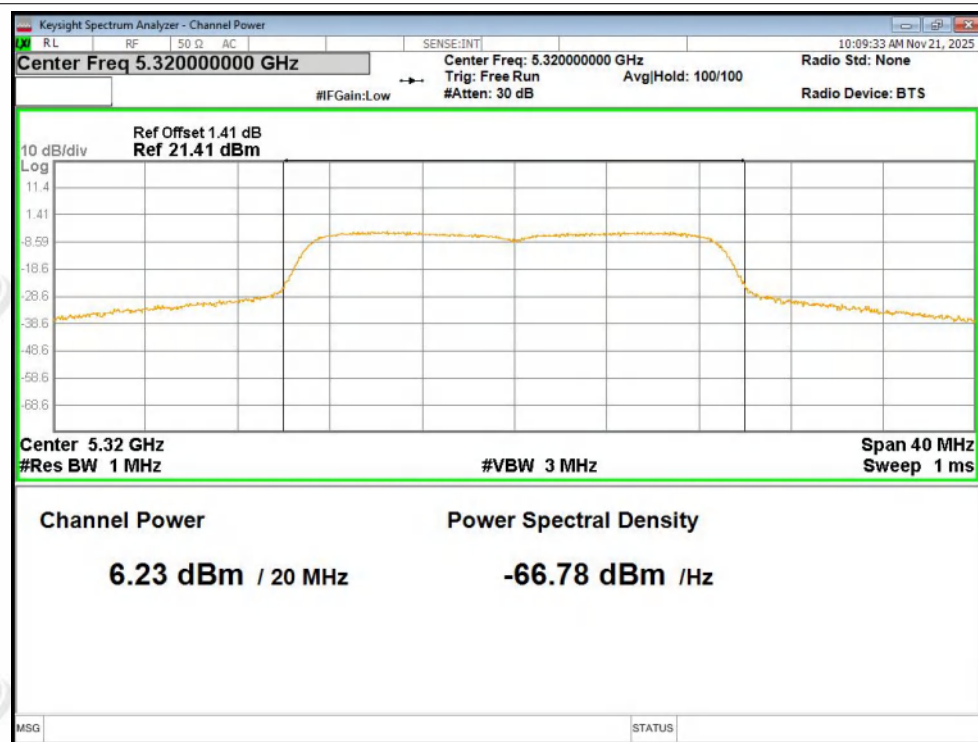




Power NVNT n20 5280MHz Ant1

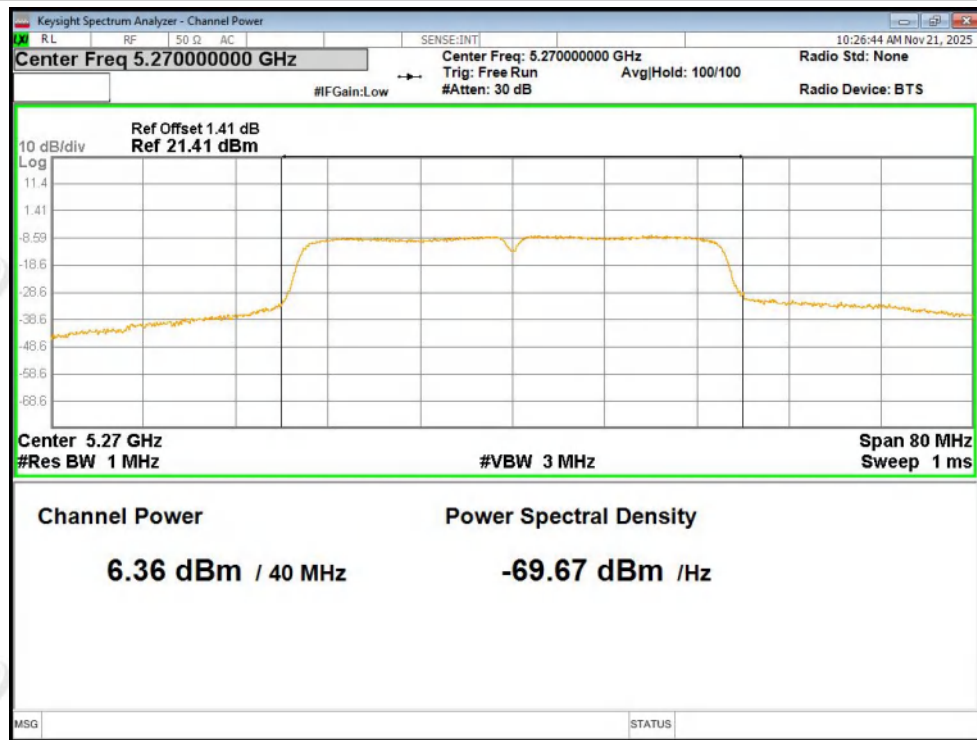


Power NVNT n20 5320MHz Ant1

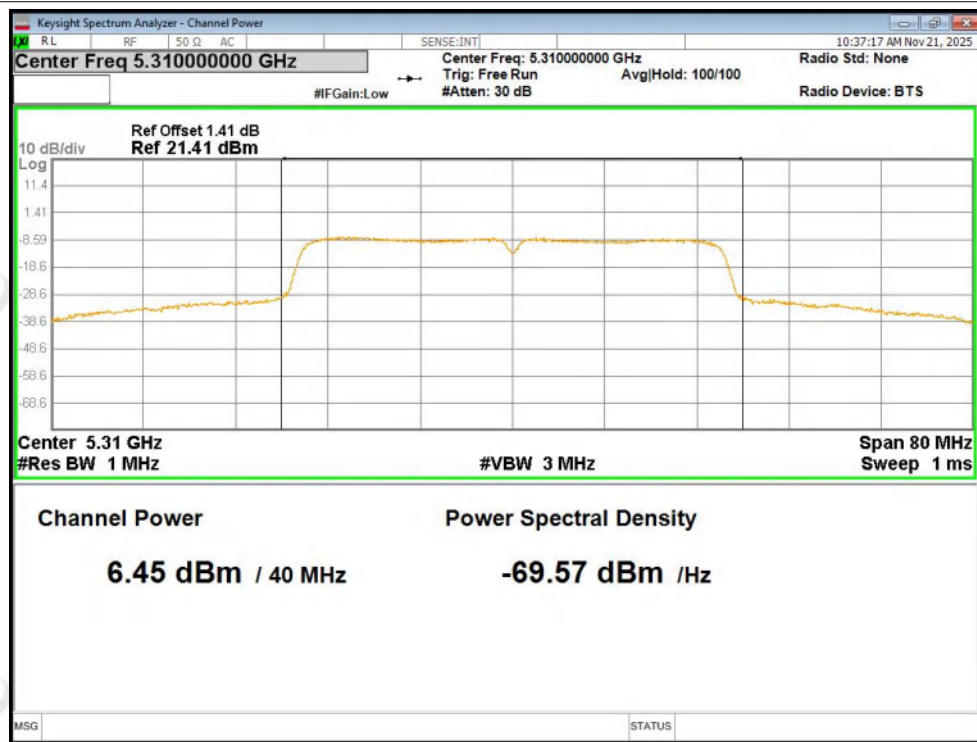




Power NVNT n40 5270MHz Ant1

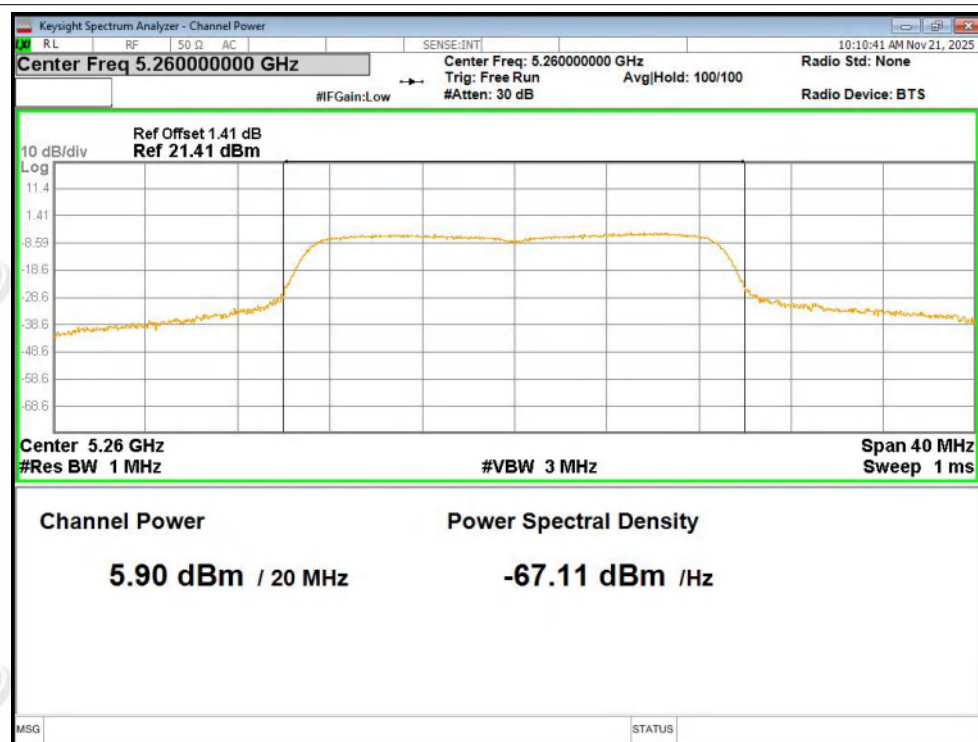


Power NVNT n40 5310MHz Ant1

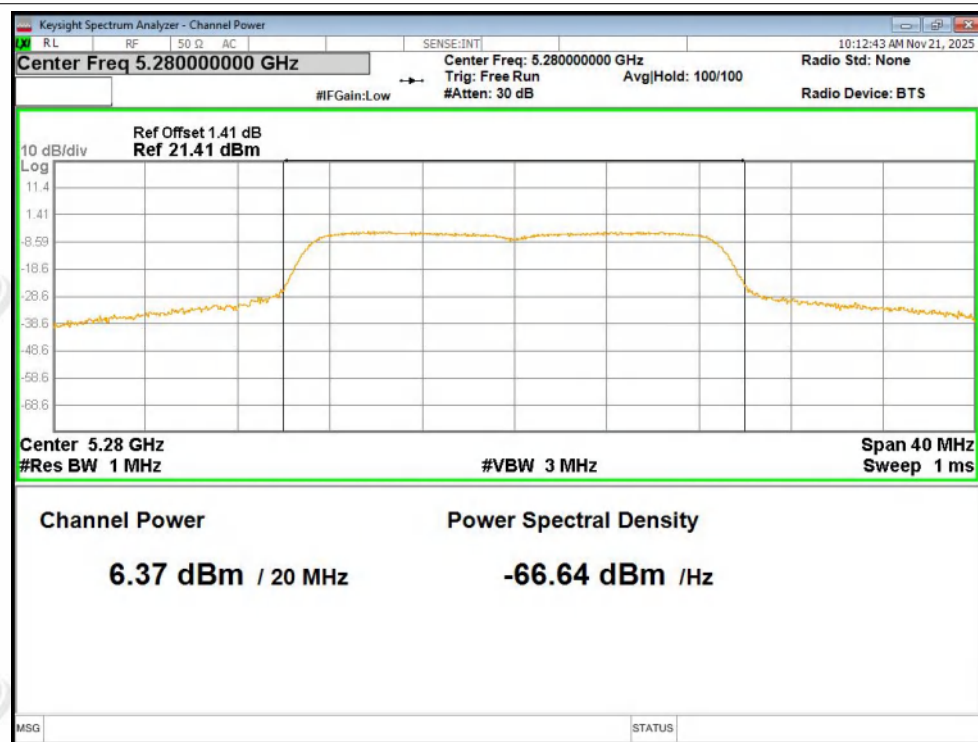




Power NVNT ac20 5260MHz Ant1

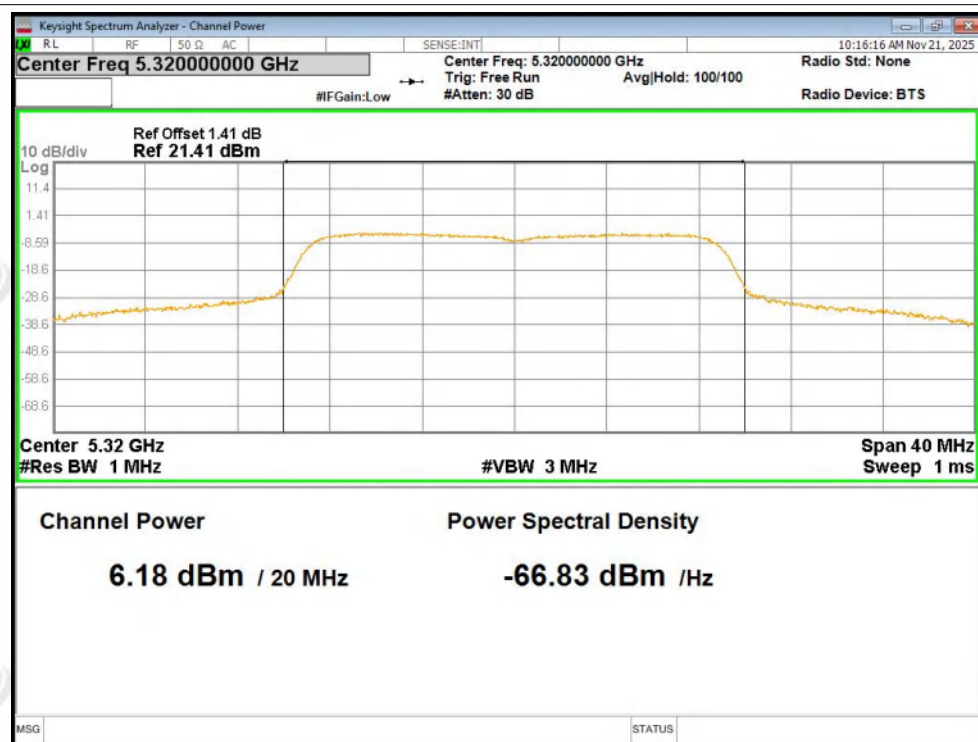


Power NVNT ac20 5280MHz Ant1

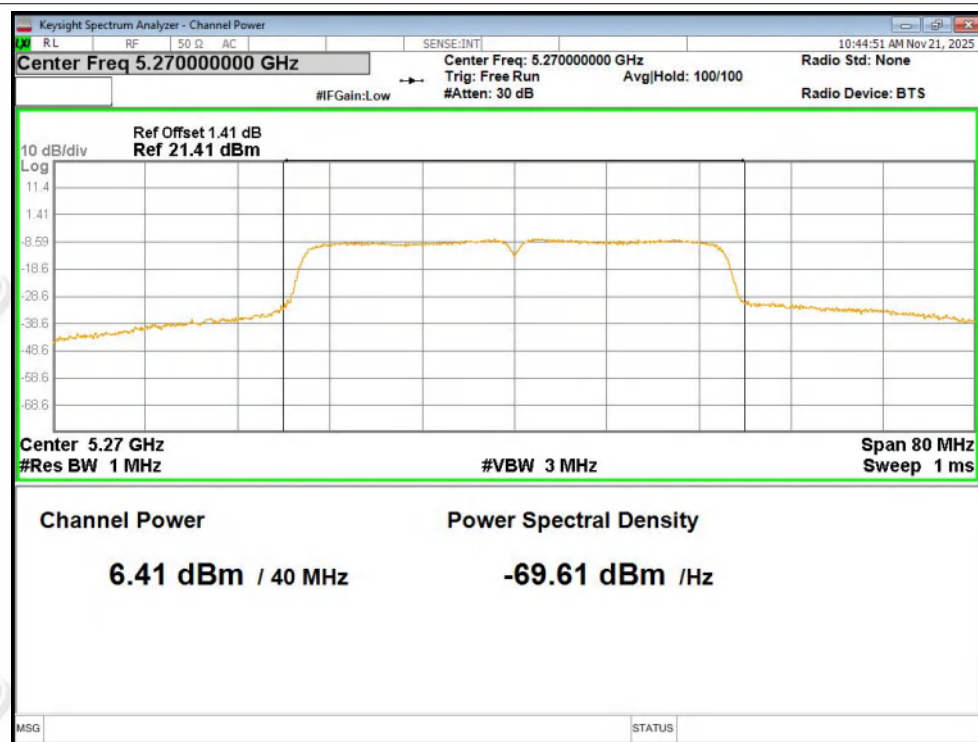




Power NVNT ac20 5320MHz Ant1

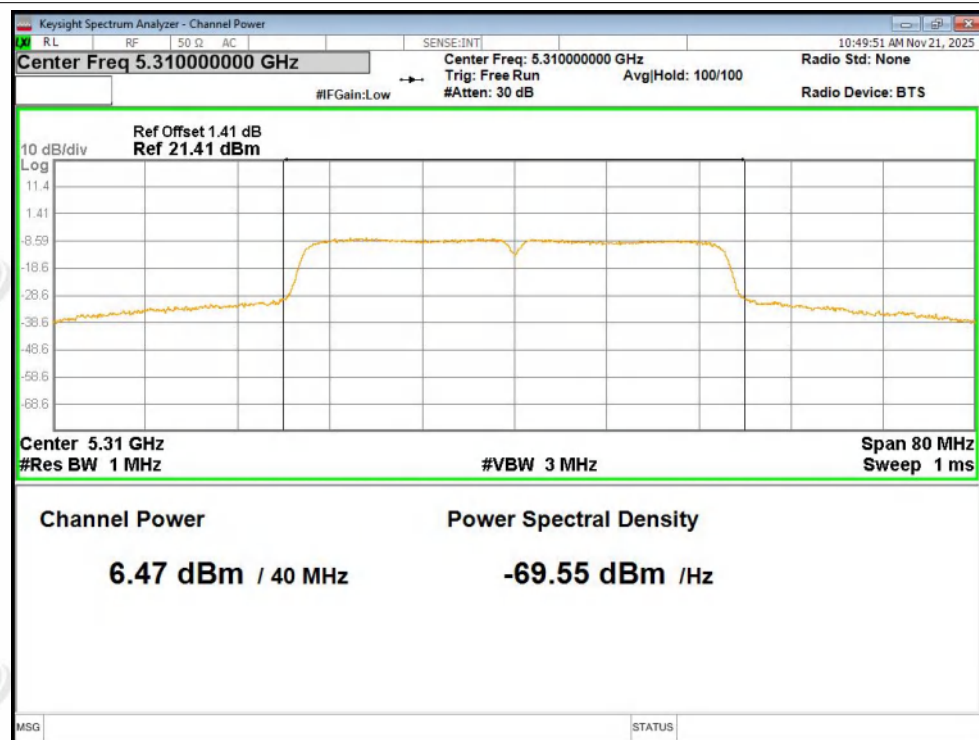


Power NVNT ac40 5270MHz Ant1

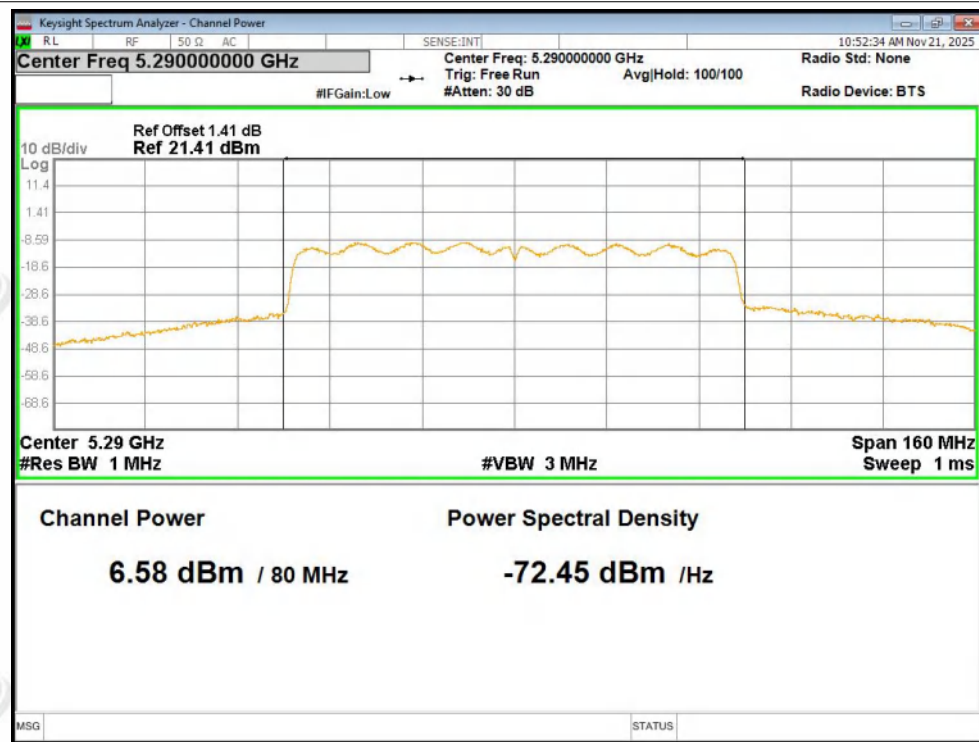




Power NVNT ac40 5310MHz Ant1



Power NVNT ac80 5290MHz Ant1



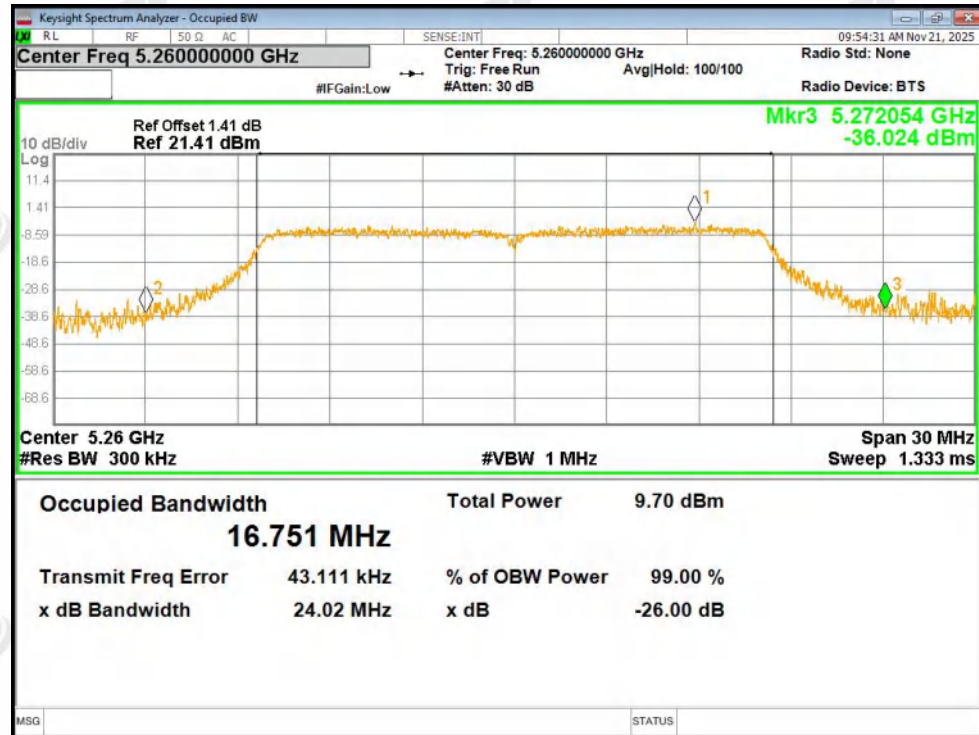
**ZHONGHAN****B.3 -26dB Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5260	Ant1	24.022	0.5	Pass
NVNT	a	5280	Ant1	28.221	0.5	Pass
NVNT	a	5320	Ant1	27.294	0.5	Pass
NVNT	n20	5260	Ant1	29.471	0.5	Pass
NVNT	n20	5280	Ant1	30	0.5	Pass
NVNT	n20	5320	Ant1	29.371	0.5	Pass
NVNT	n40	5270	Ant1	59.817	0.5	Pass
NVNT	n40	5310	Ant1	58.449	0.5	Pass
NVNT	ac20	5260	Ant1	28.351	0.5	Pass
NVNT	ac20	5280	Ant1	29.581	0.5	Pass
NVNT	ac20	5320	Ant1	29.127	0.5	Pass
NVNT	ac40	5270	Ant1	52.357	0.5	Pass
NVNT	ac40	5310	Ant1	57.556	0.5	Pass
NVNT	ac80	5290	Ant1	109.384	0.5	Pass

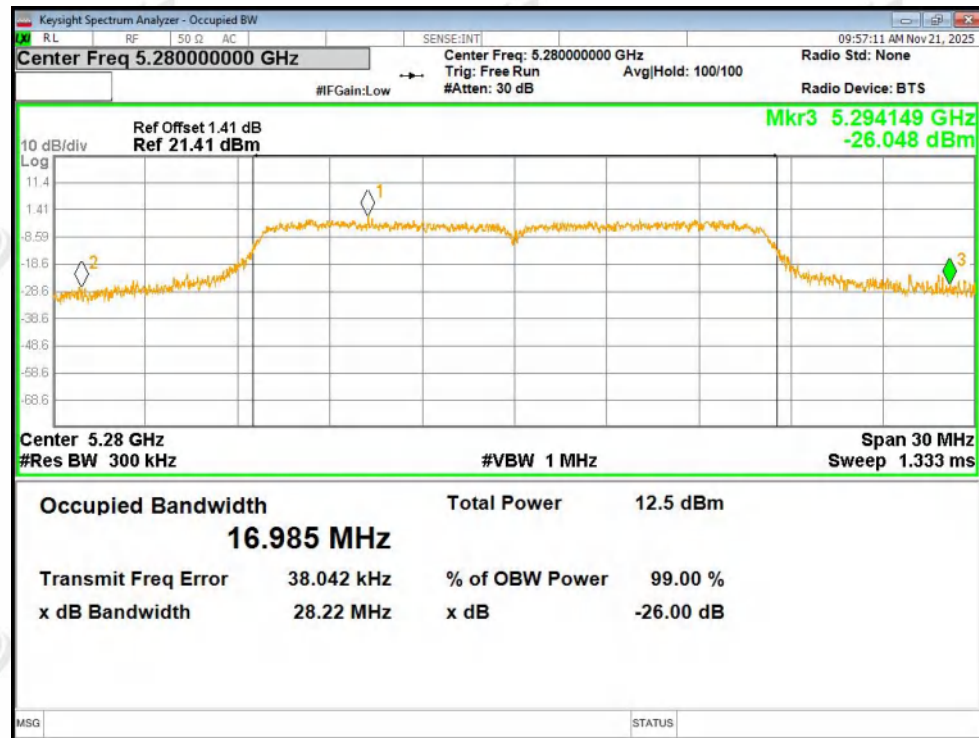


Test Graphs

-26dB Bandwidth NVNT a 5260MHz Ant1

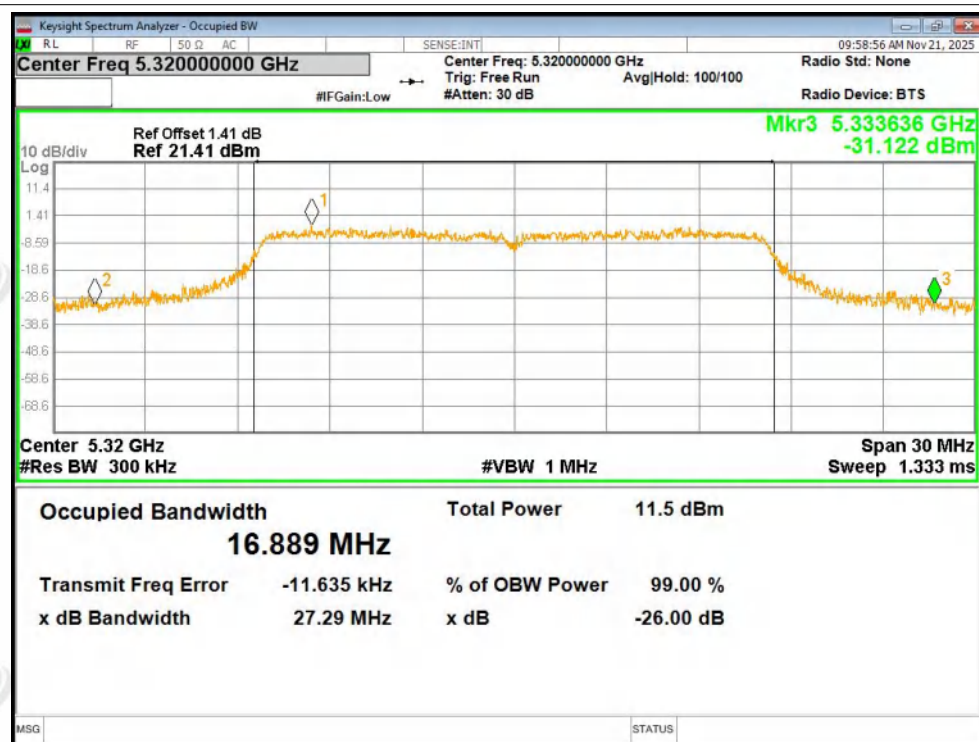


-26dB Bandwidth NVNT a 5280MHz Ant1

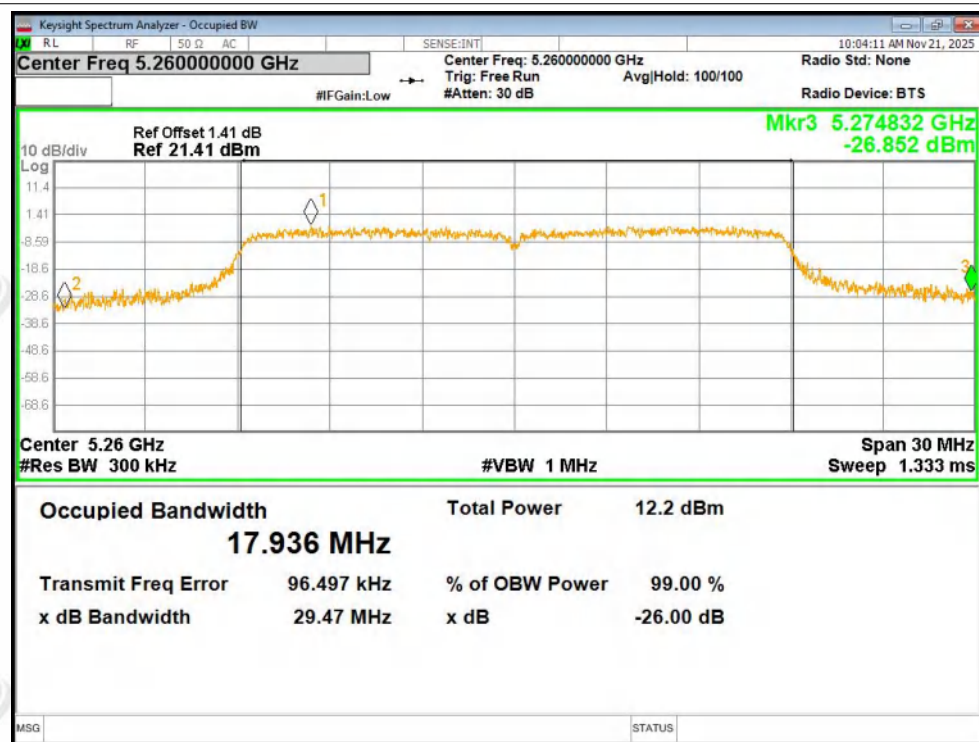




-26dB Bandwidth NVNT a 5320MHz Ant1

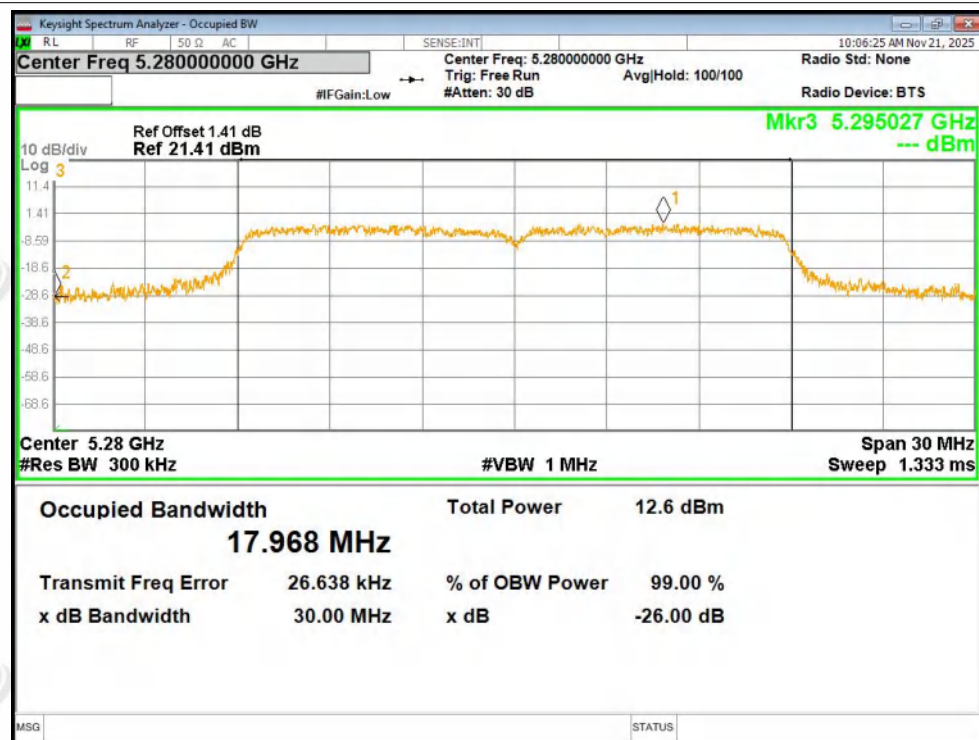


-26dB Bandwidth NVNT n20 5260MHz Ant1

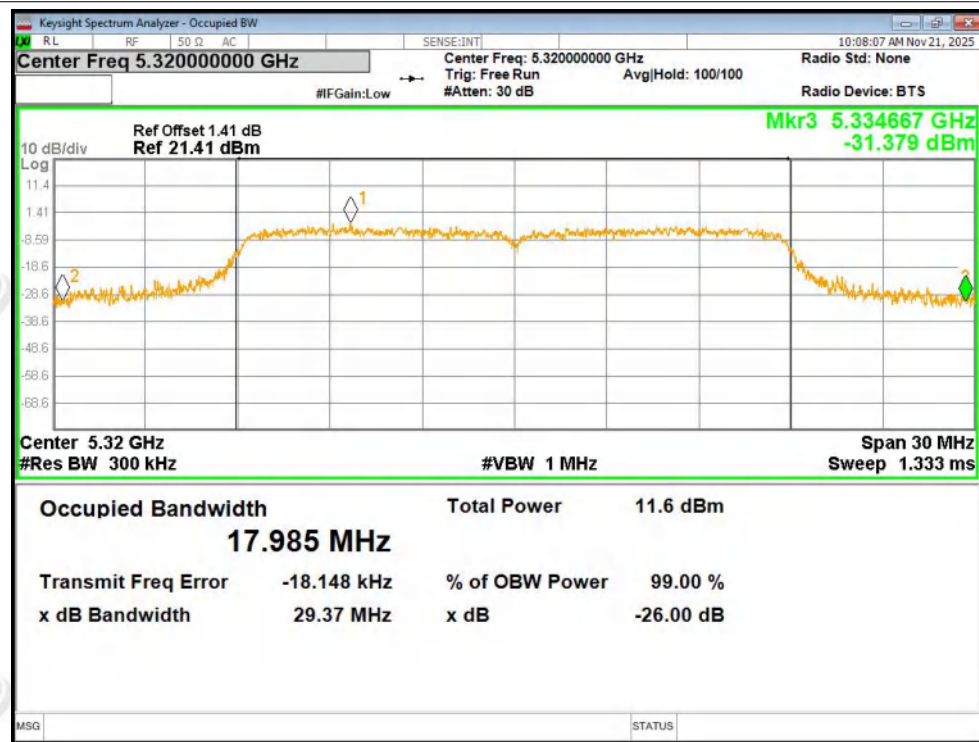




-26dB Bandwidth NVNT n20 5280MHz Ant1

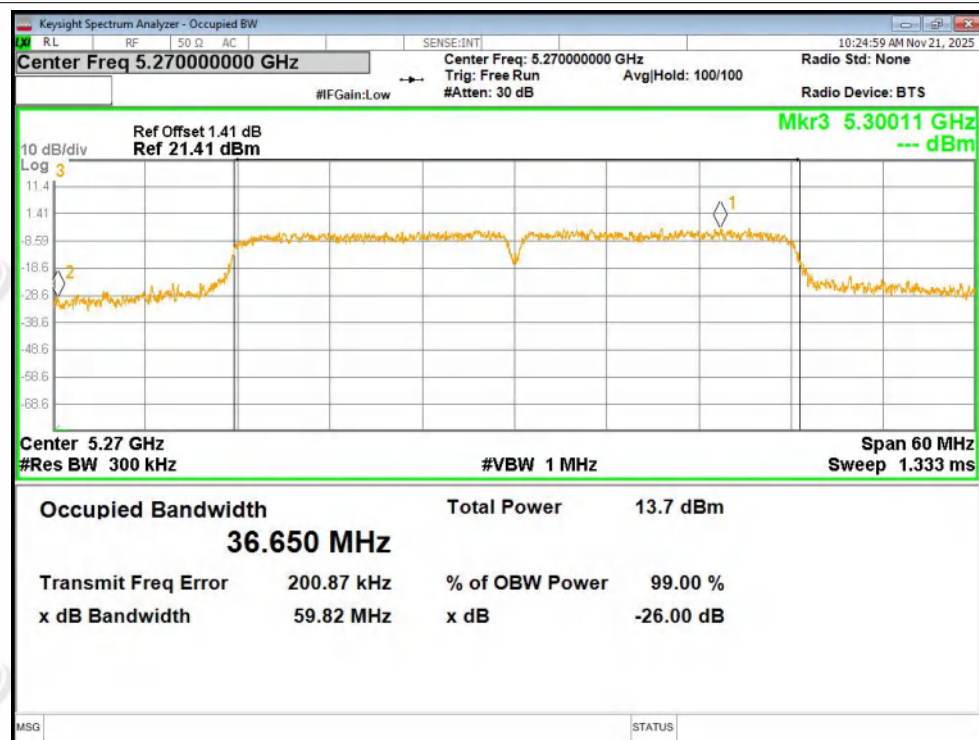


-26dB Bandwidth NVNT n20 5320MHz Ant1

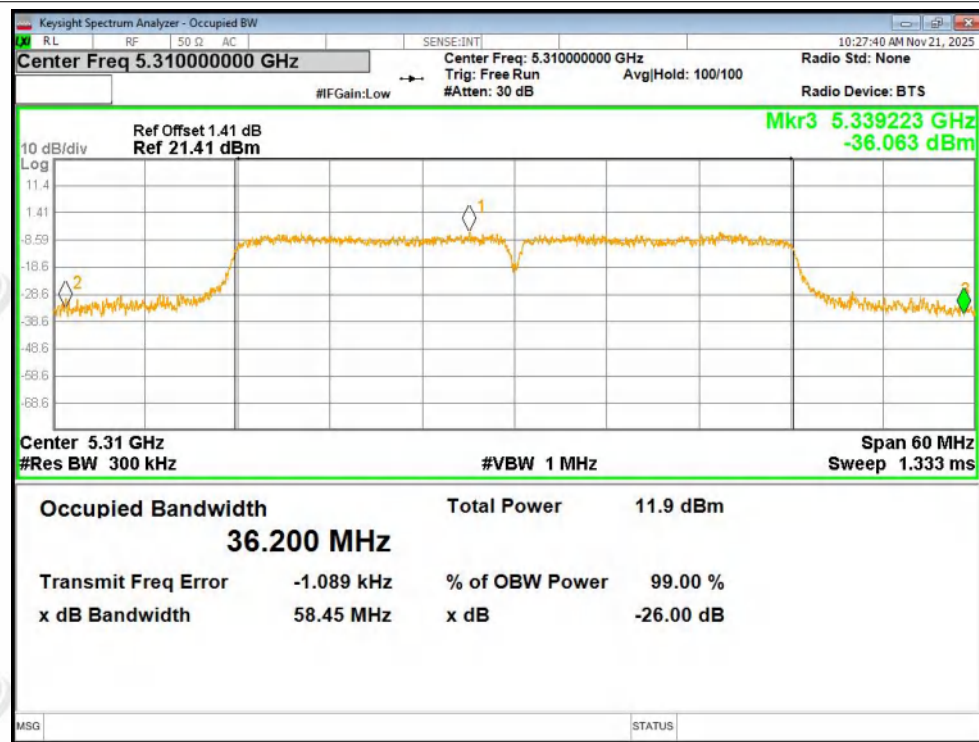




-26dB Bandwidth NVNT n40 5270MHz Ant1

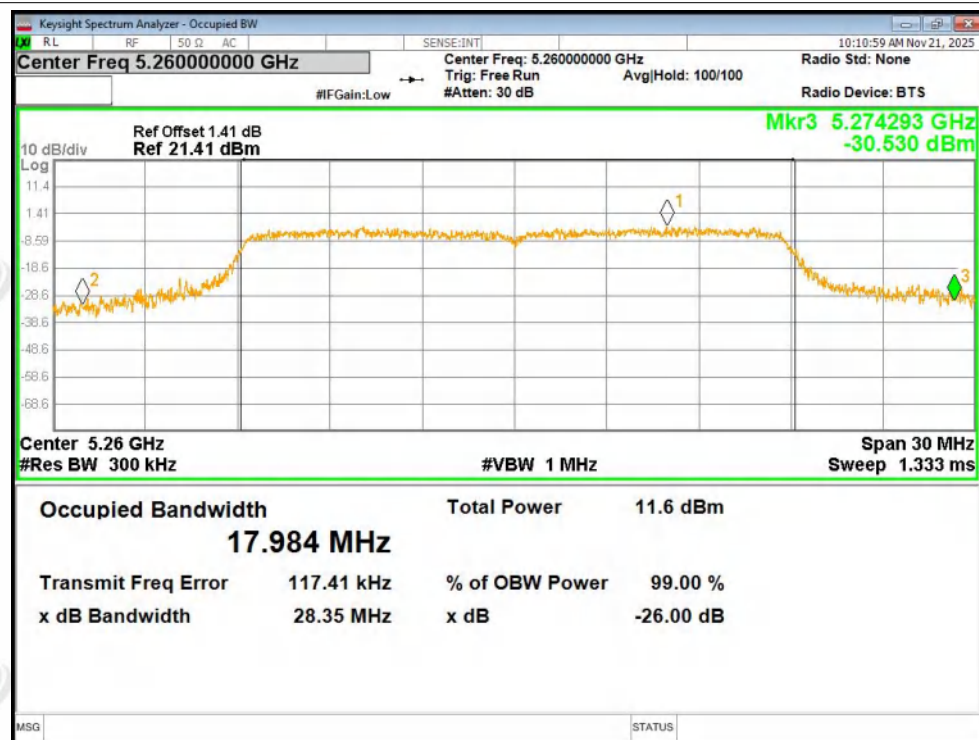


-26dB Bandwidth NVNT n40 5310MHz Ant1

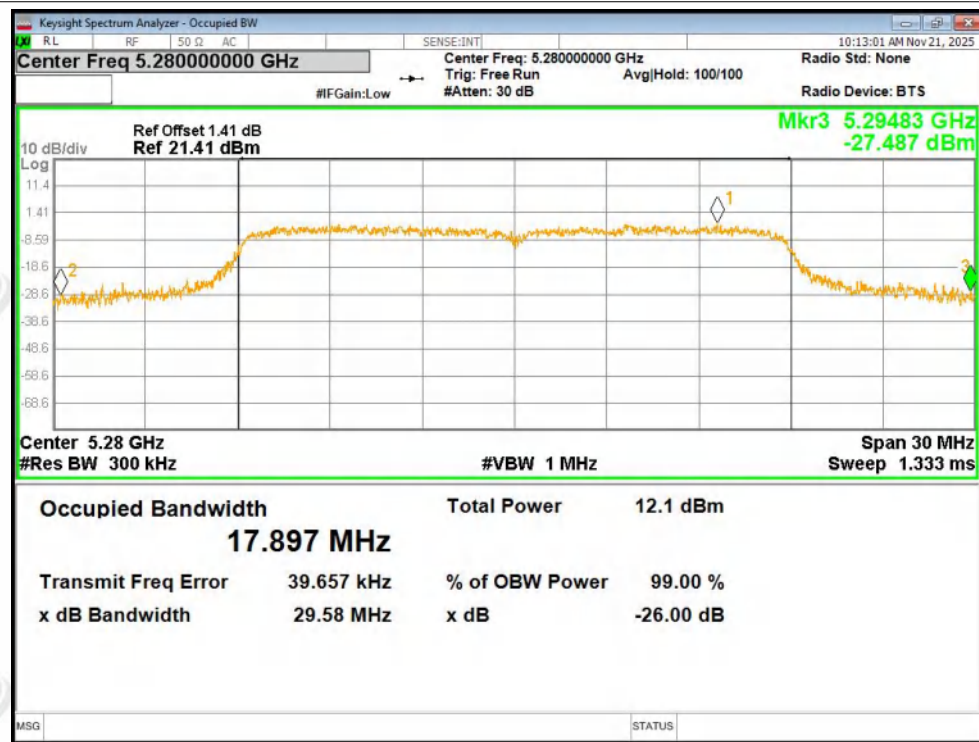




-26dB Bandwidth NVNT ac20 5260MHz Ant1

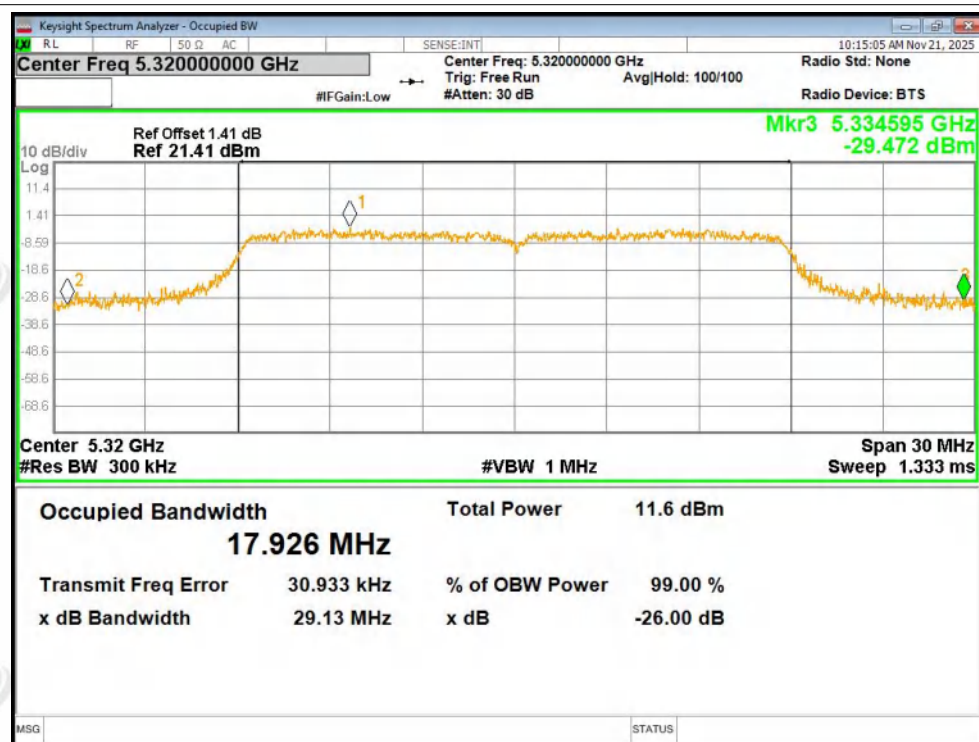


-26dB Bandwidth NVNT ac20 5280MHz Ant1

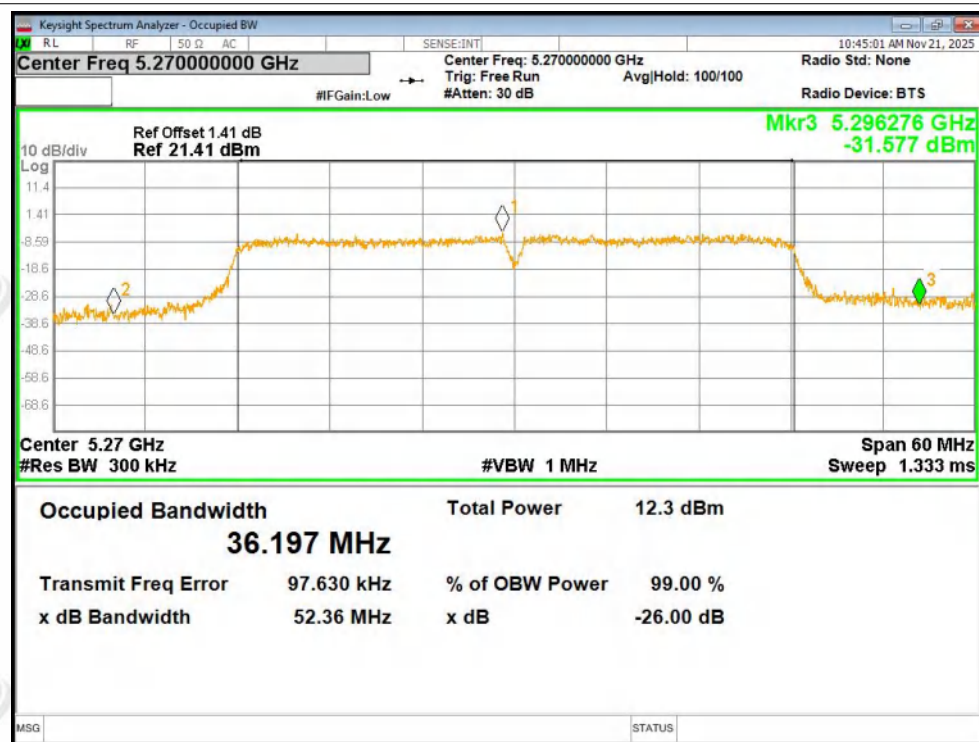




-26dB Bandwidth NVNT ac20 5320MHz Ant1

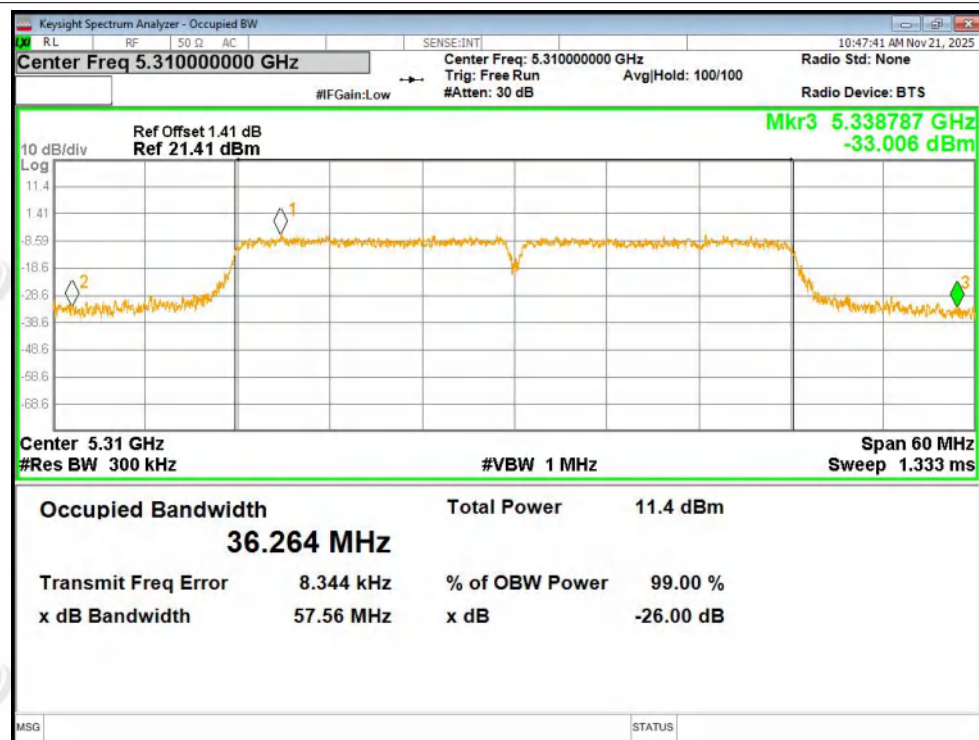


-26dB Bandwidth NVNT ac40 5270MHz Ant1

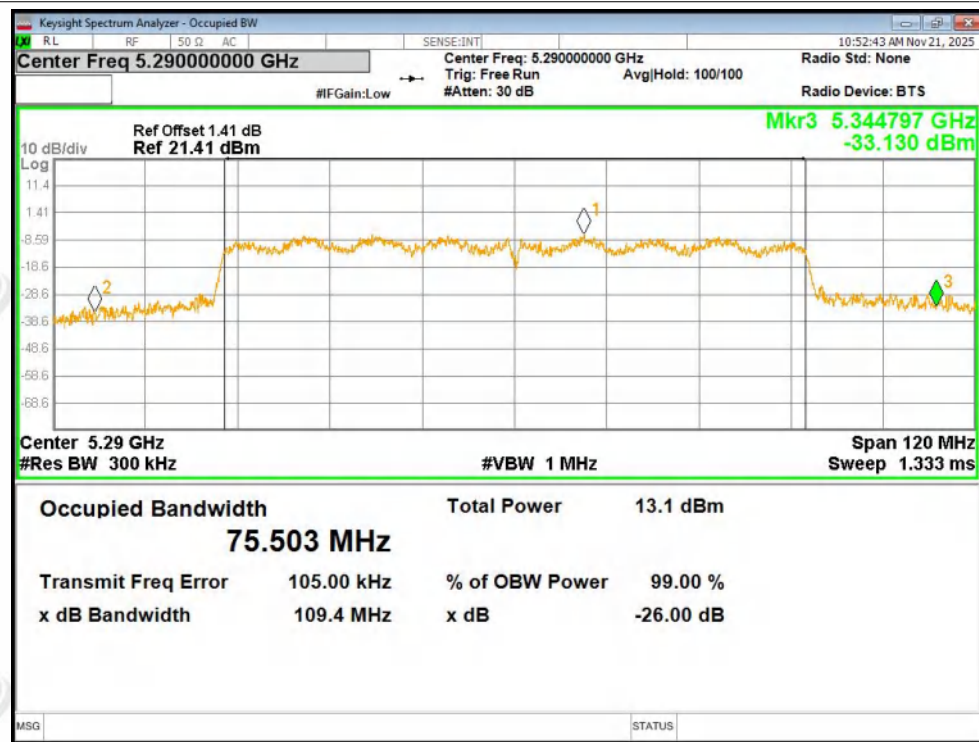




-26dB Bandwidth NVNT ac40 5310MHz Ant1



-26dB Bandwidth NVNT ac80 5290MHz Ant1



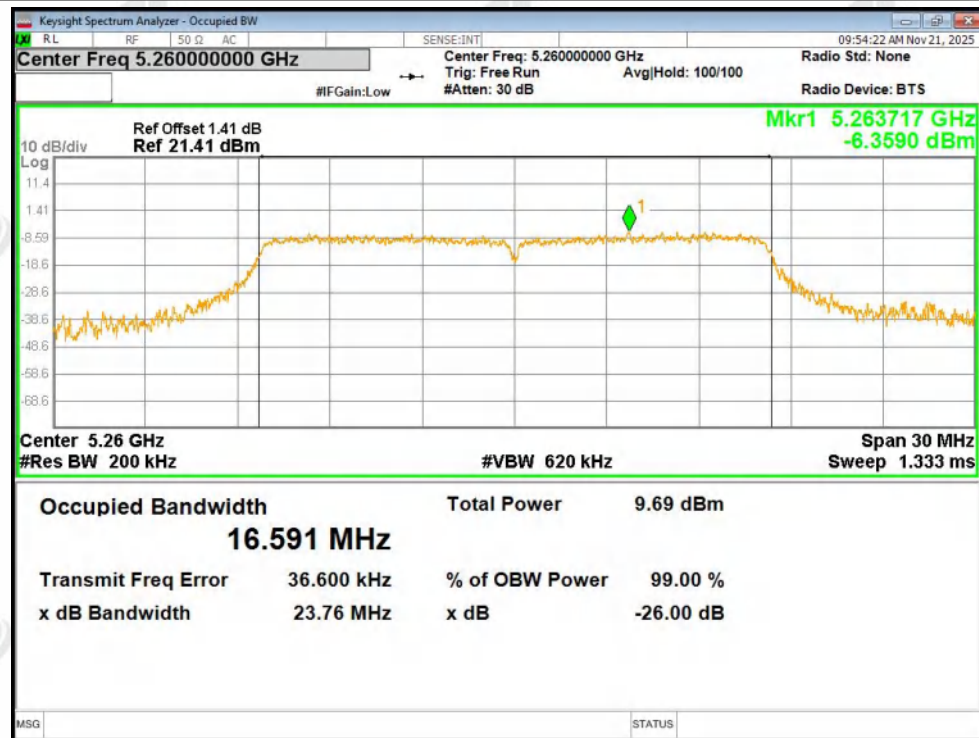
**ZHONGHAN****B.4 Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5260	Ant1	16.591
NVNT	a	5280	Ant1	16.762
NVNT	a	5320	Ant1	16.724
NVNT	n20	5260	Ant1	17.864
NVNT	n20	5280	Ant1	17.855
NVNT	n20	5320	Ant1	17.782
NVNT	n40	5270	Ant1	36.359
NVNT	n40	5310	Ant1	36.365
NVNT	ac20	5260	Ant1	17.822
NVNT	ac20	5280	Ant1	17.767
NVNT	ac20	5320	Ant1	17.819
NVNT	ac40	5270	Ant1	36.221
NVNT	ac40	5310	Ant1	36.41
NVNT	ac80	5290	Ant1	75.61

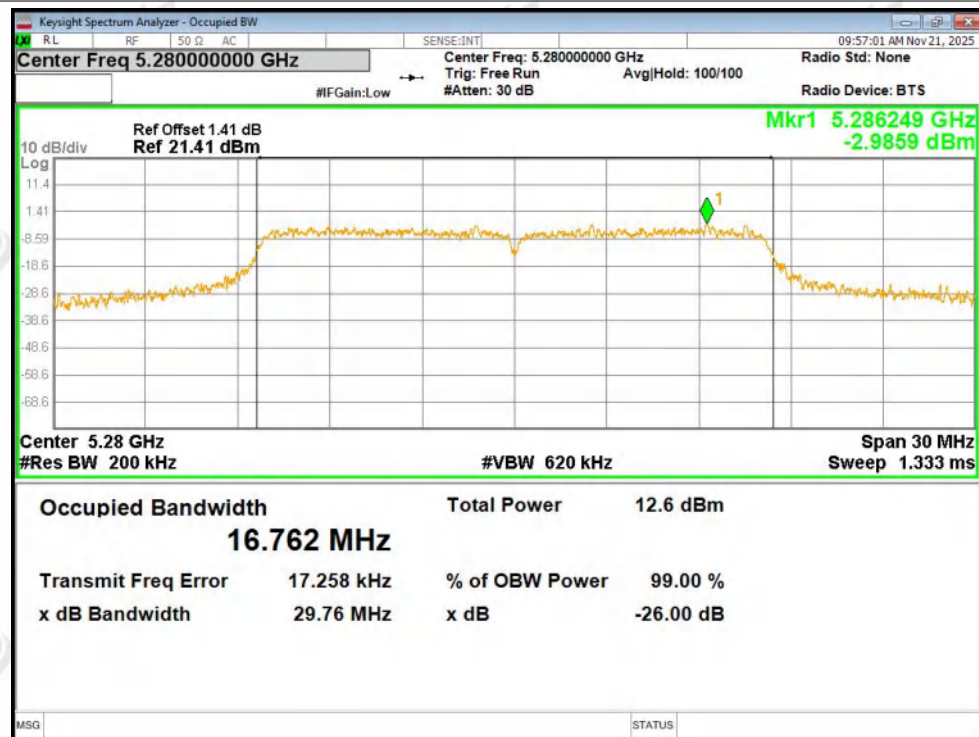


Test Graphs

OBW NVNT a 5260MHz Ant1

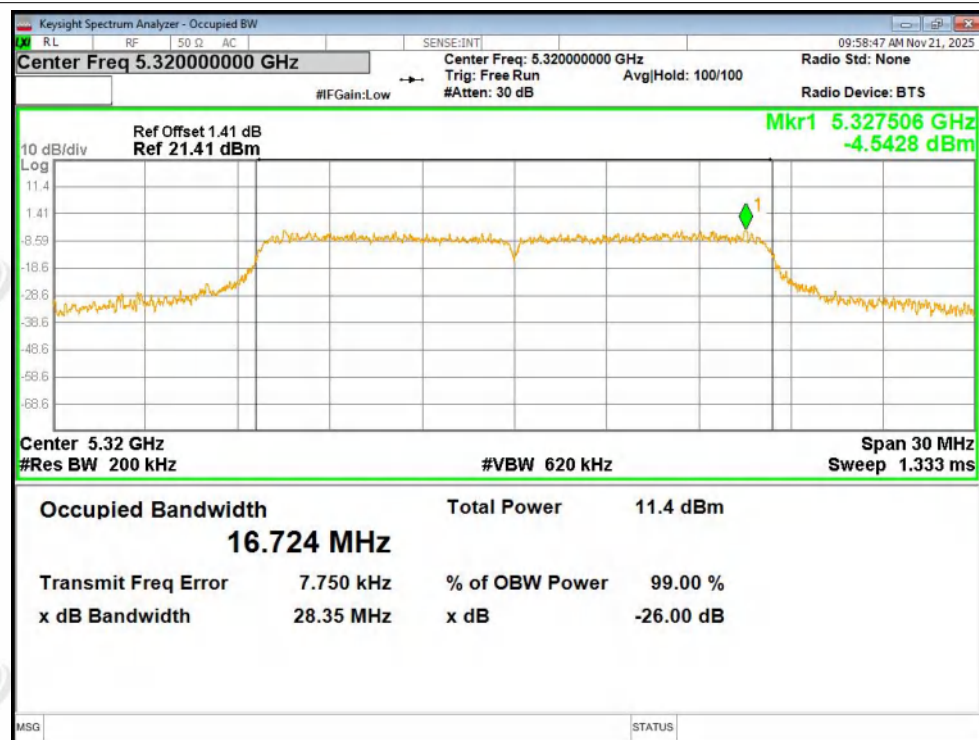


OBW NVNT a 5280MHz Ant1

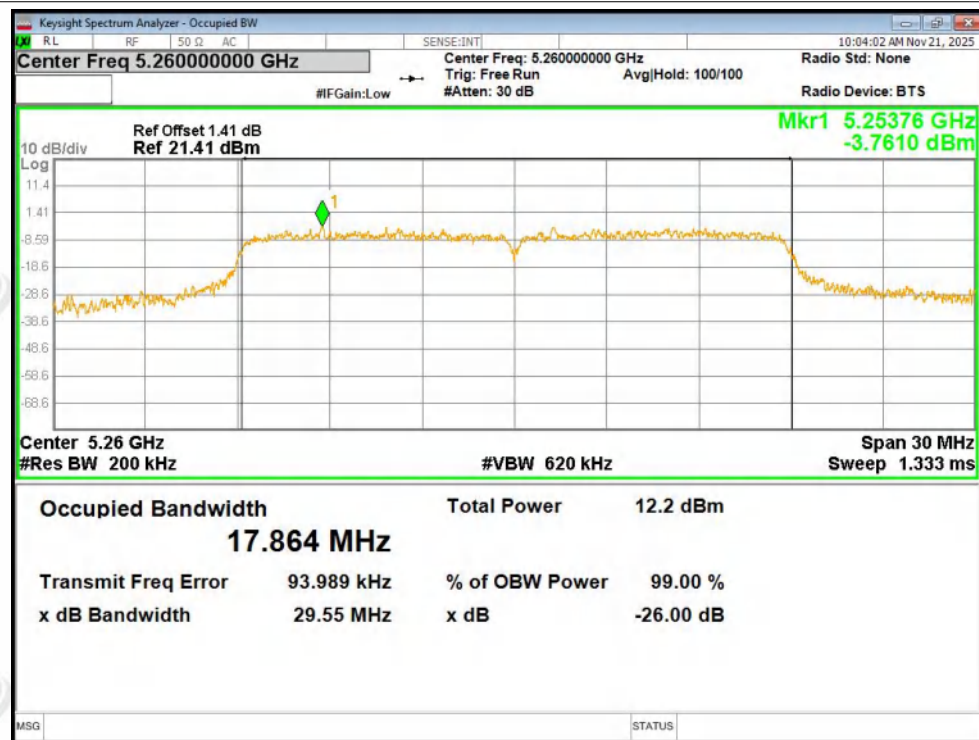




OBW NVNT a 5320MHz Ant1

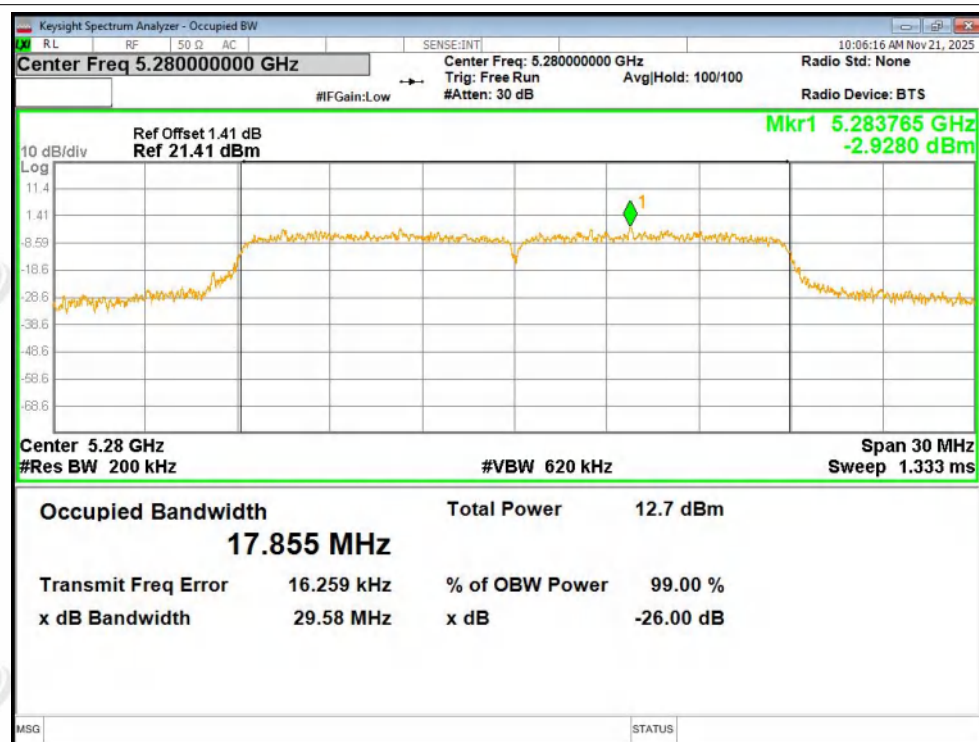


OBW NVNT n20 5260MHz Ant1

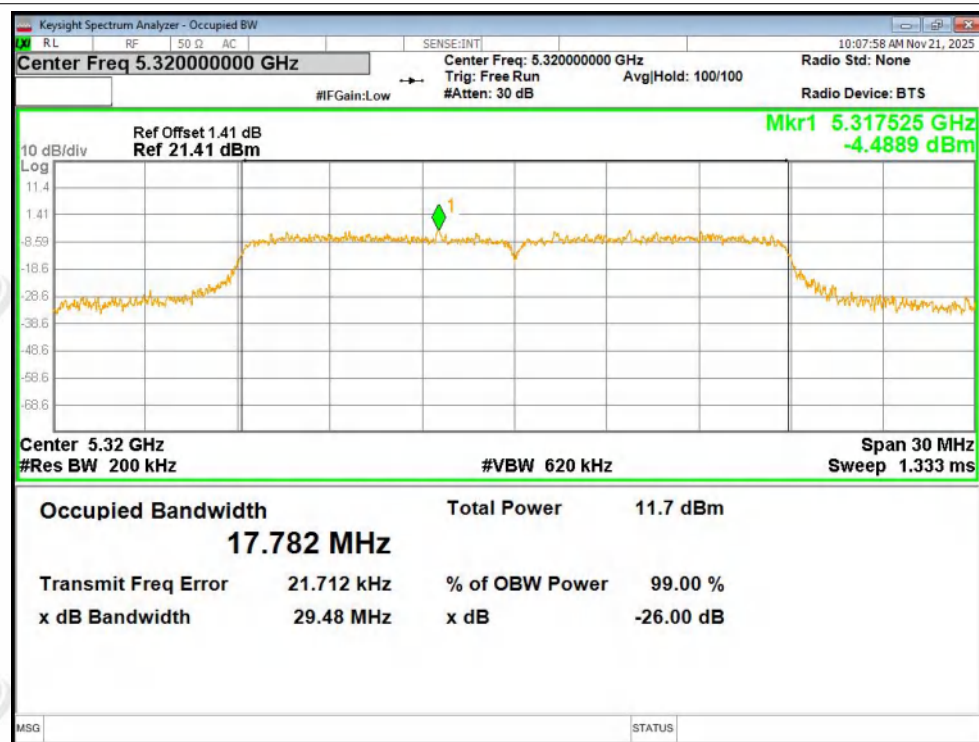




OBW NVNT n20 5280MHz Ant1

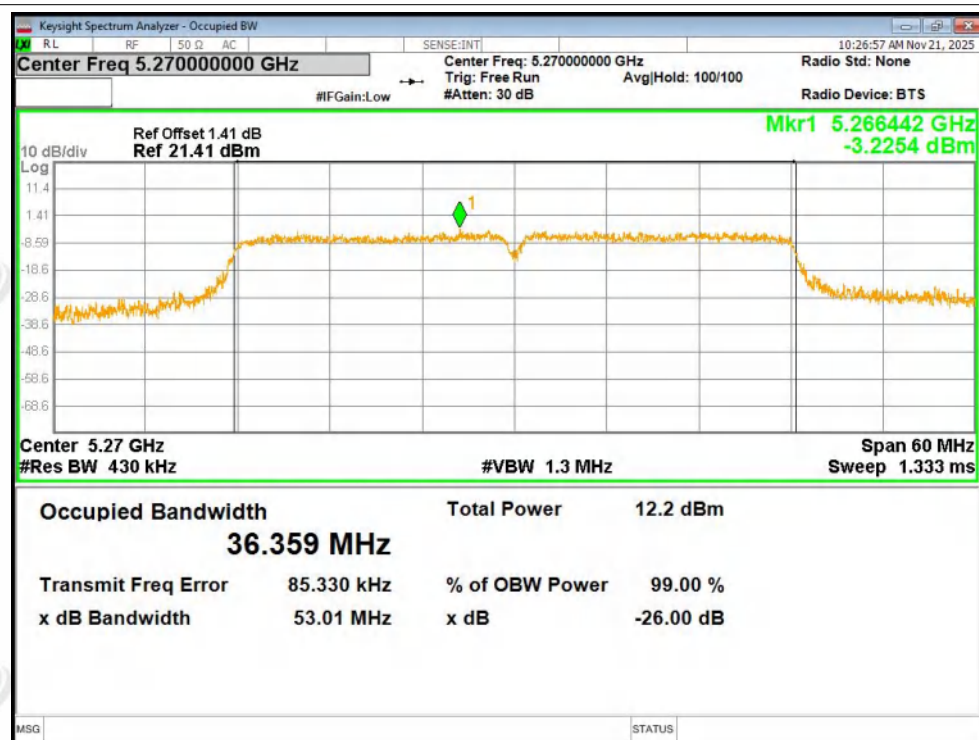


OBW NVNT n20 5320MHz Ant1

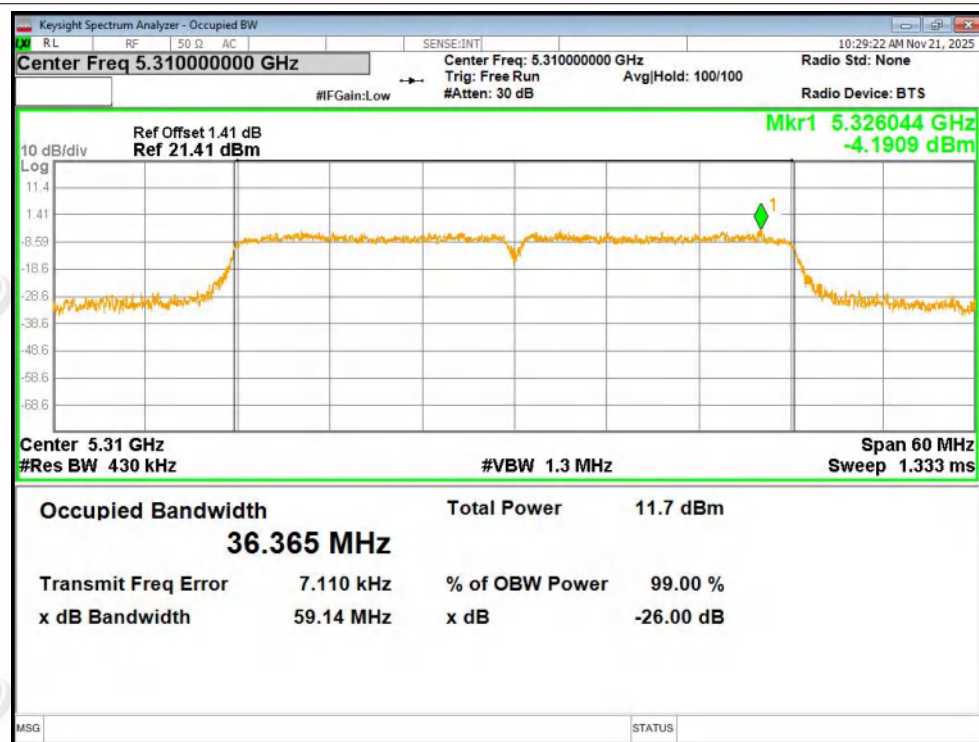




OBW NVNT n40 5270MHz Ant1

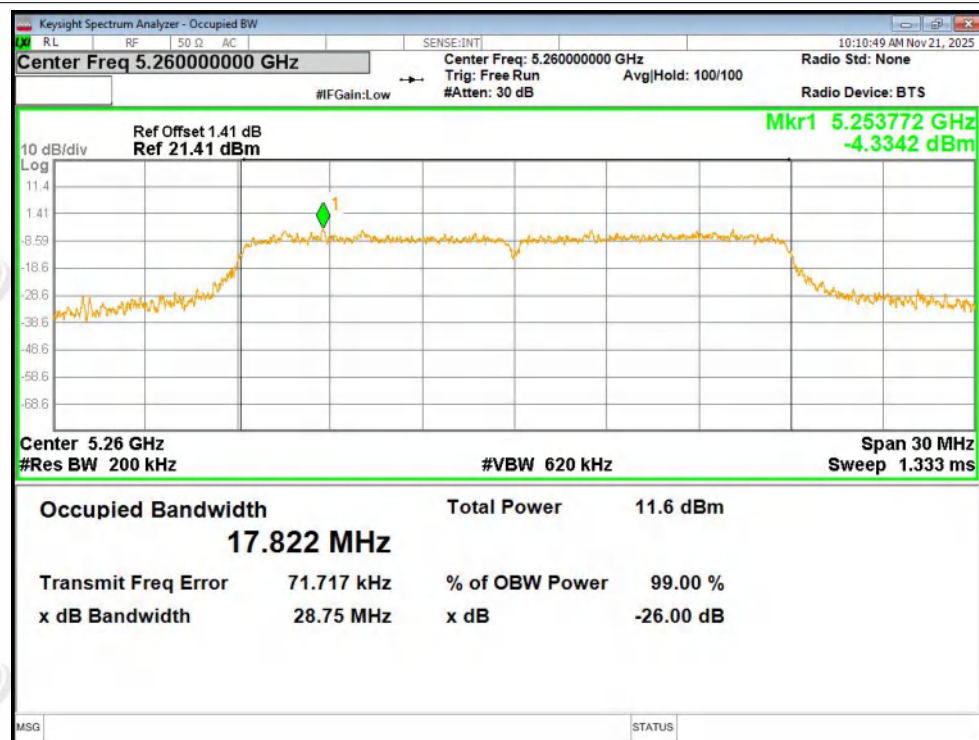


OBW NVNT n40 5310MHz Ant1

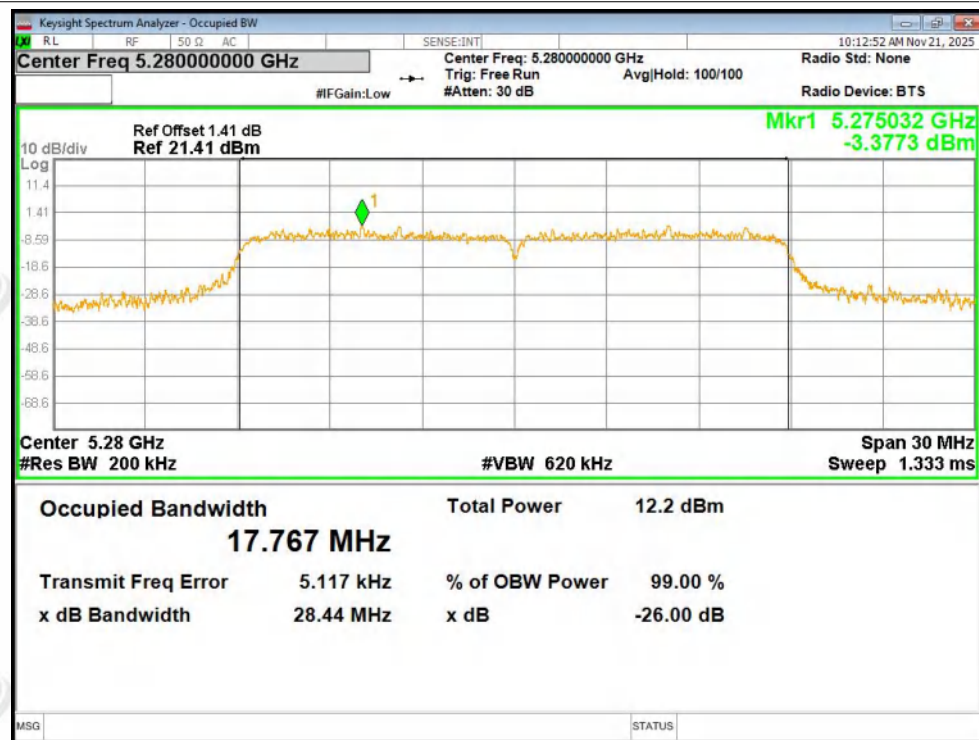




OBW NVNT ac20 5260MHz Ant1

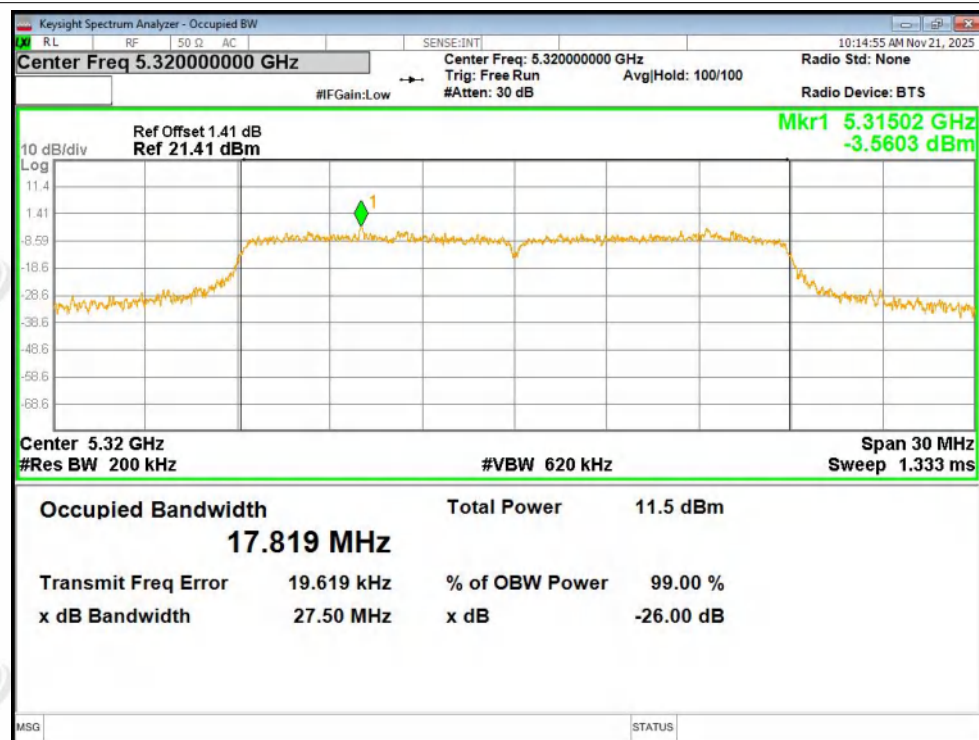


OBW NVNT ac20 5280MHz Ant1

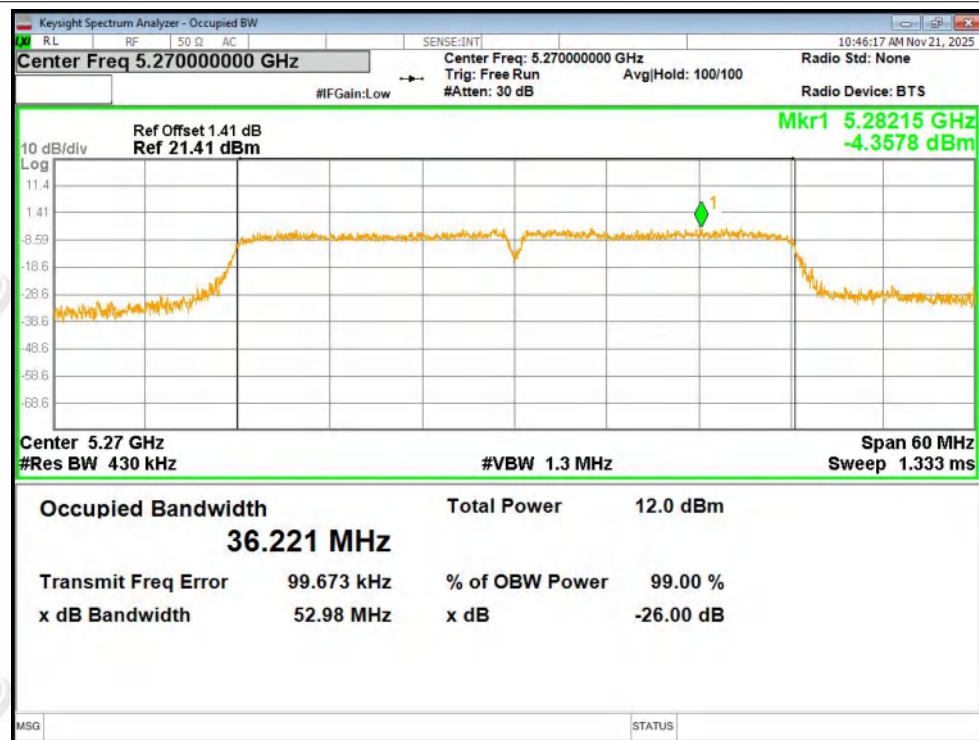




OBW NVNT ac20 5320MHz Ant1

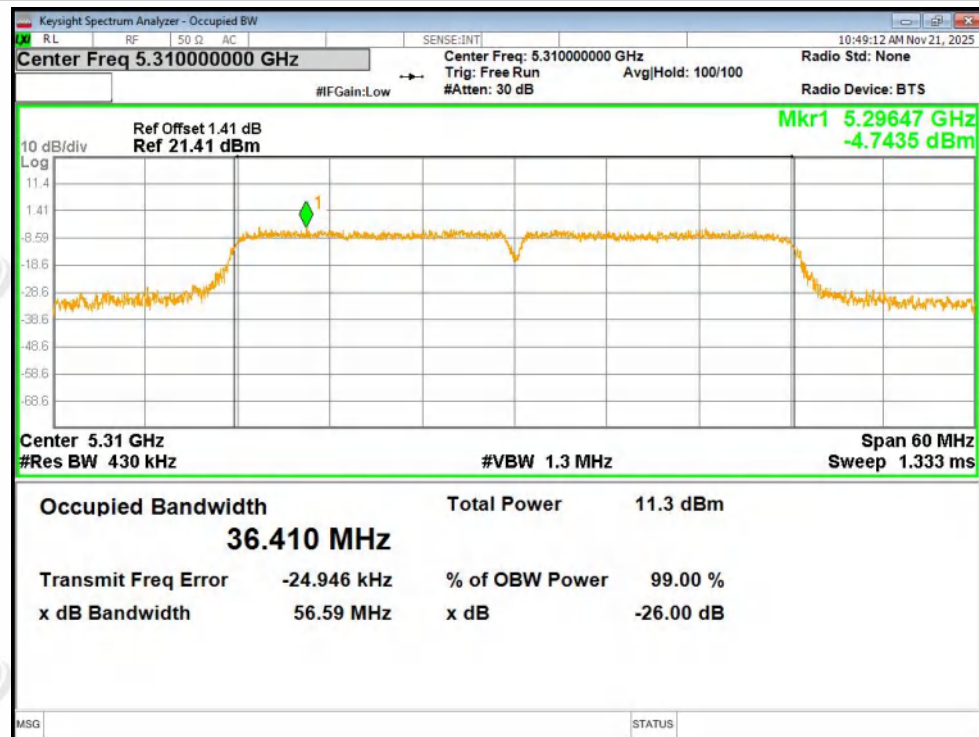


OBW NVNT ac40 5270MHz Ant1

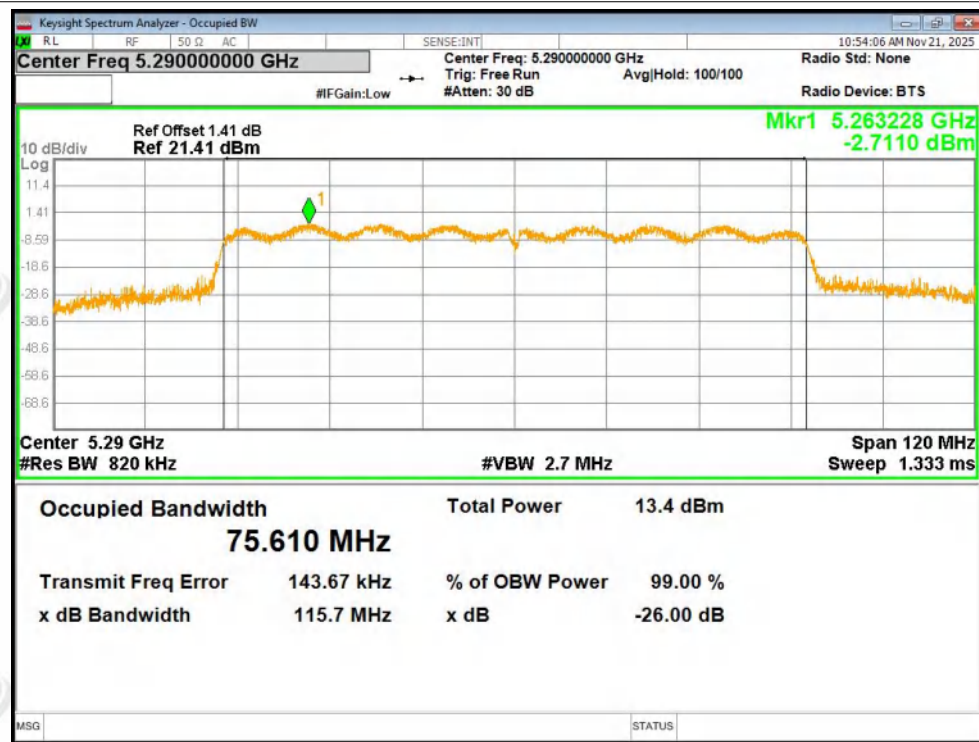




OBW NVNT ac40 5310MHz Ant1



OBW NVNT ac80 5290MHz Ant1

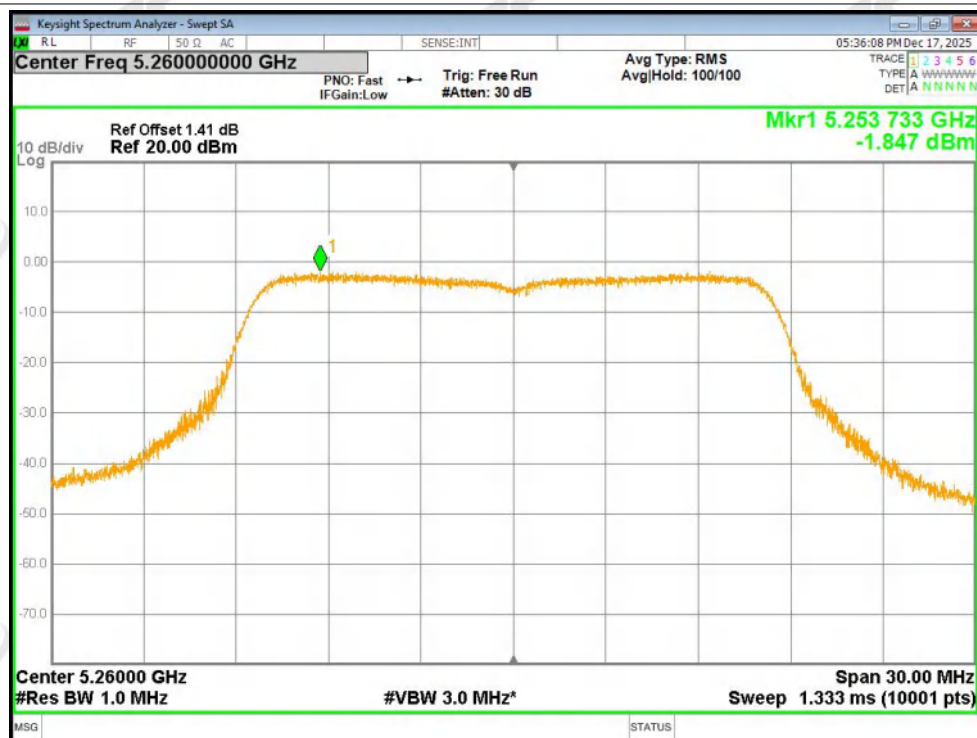


**ZHONGHAN****B.5 Maximum Power Spectral Density Level**

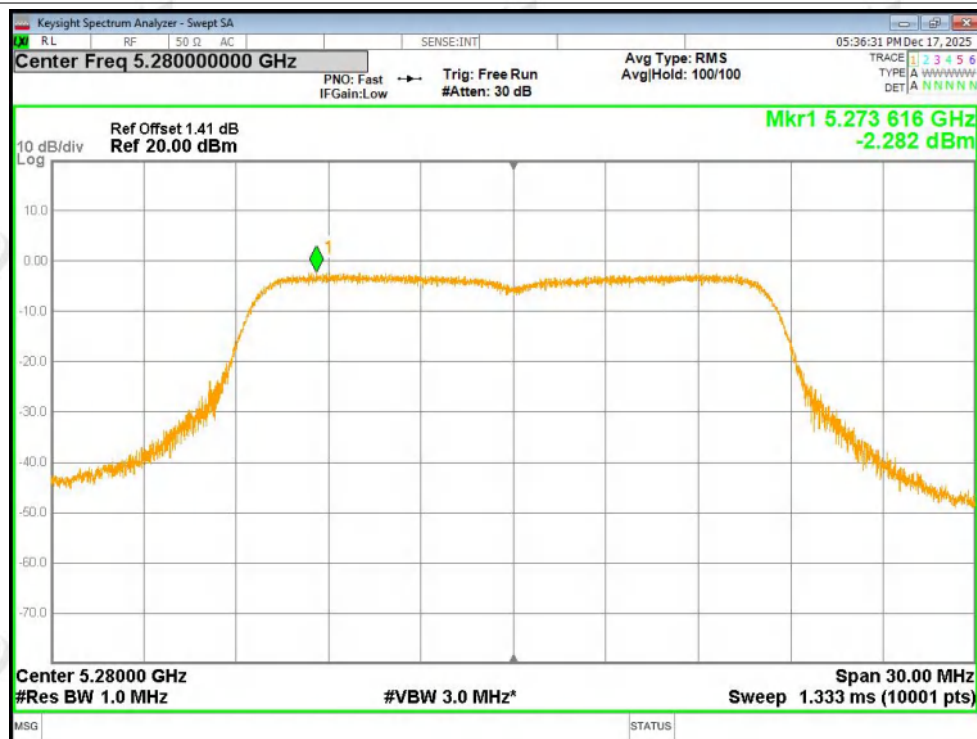
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	Ant1	-1.85	0.34	-1.51	11	Pass
NVNT	a	5280	Ant1	-2.28	0.18	-2.1	11	Pass
NVNT	a	5320	Ant1	-3.06	0.19	-2.87	11	Pass
NVNT	n20	5260	Ant1	-1.87	0.22	-1.65	11	Pass
NVNT	n20	5280	Ant1	-1.97	0.32	-1.65	11	Pass
NVNT	n20	5320	Ant1	-2.73	0.35	-2.38	11	Pass
NVNT	n40	5270	Ant1	-6.75	0.35	-6.4	11	Pass
NVNT	n40	5310	Ant1	-7.39	0.23	-7.16	11	Pass
NVNT	ac20	5260	Ant1	-2.51	0.18	-2.33	11	Pass
NVNT	ac20	5280	Ant1	-2.63	0.2	-2.43	11	Pass
NVNT	ac20	5320	Ant1	-3.28	0.28	-3	11	Pass
NVNT	ac40	5270	Ant1	-8.05	0.51	-7.54	11	Pass
NVNT	ac40	5310	Ant1	-8.06	0.64	-7.42	11	Pass
NVNT	ac80	5290	Ant1	-10.65	0.78	-9.87	11	Pass

Test Graphs

PSD NVNT a 5260MHz Ant1

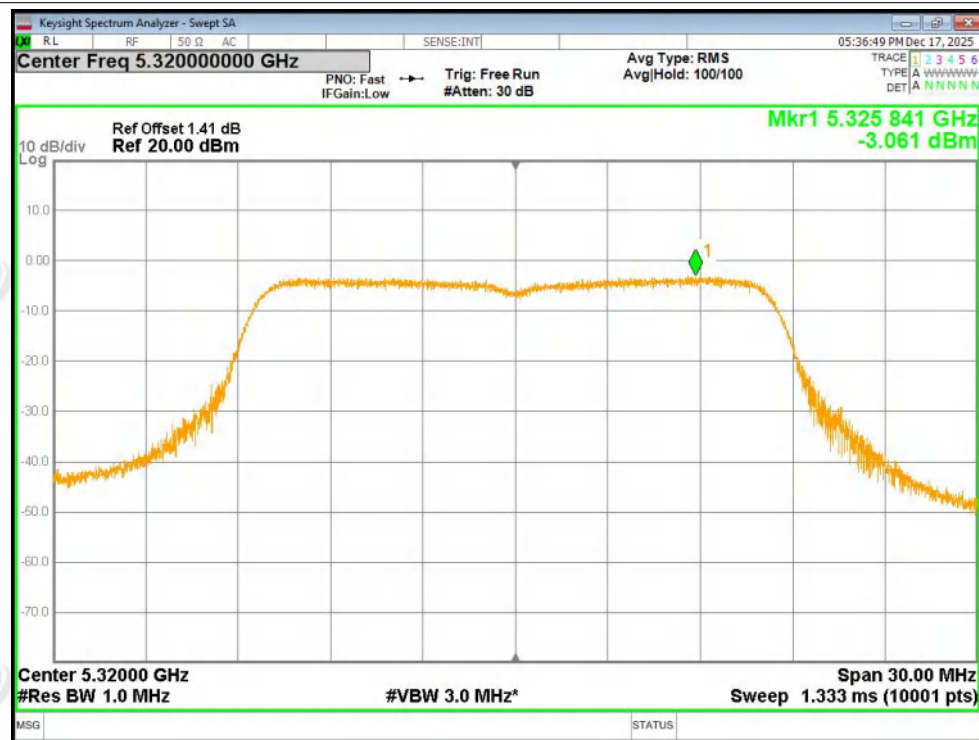


PSD NVNT a 5280MHz Ant1

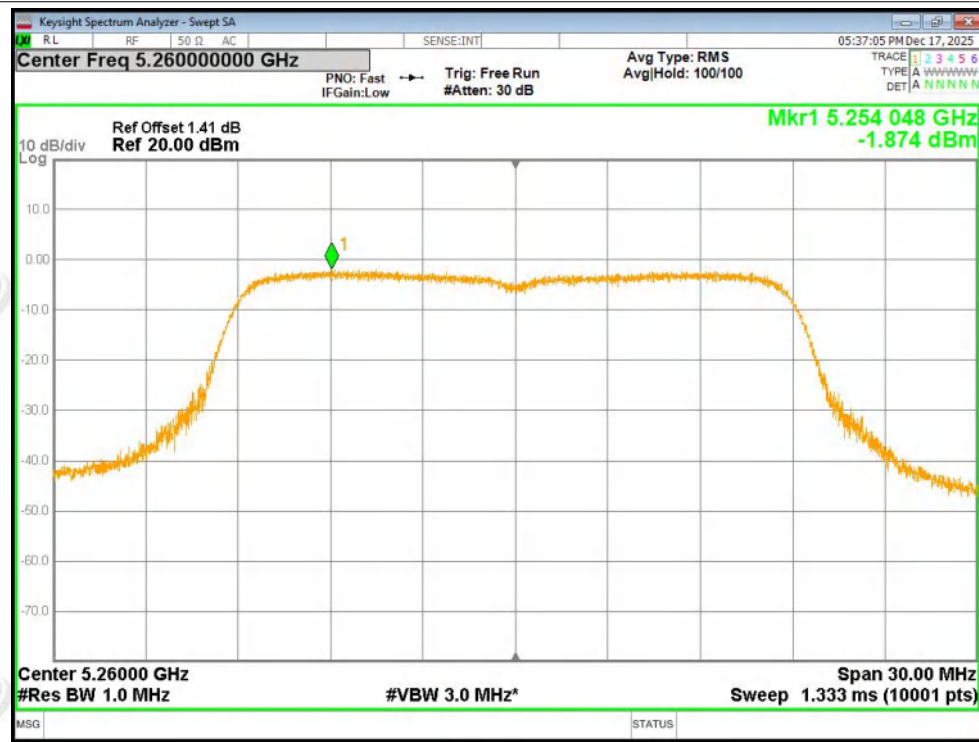




PSD NVNT a 5320MHz Ant1

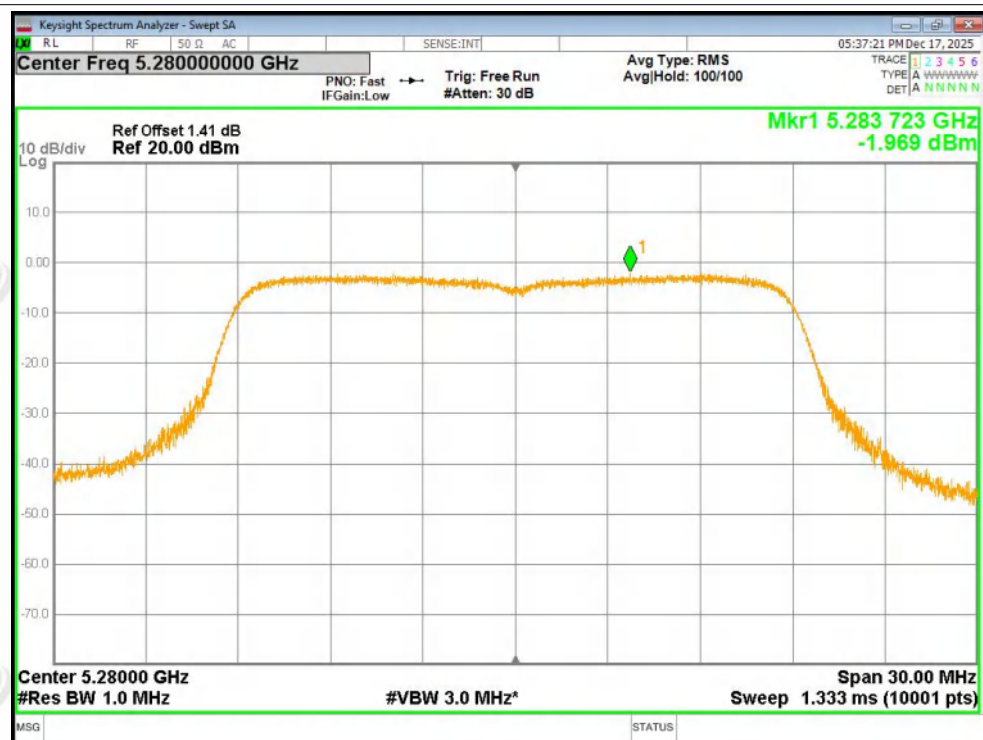


PSD NVNT n20 5260MHz Ant1

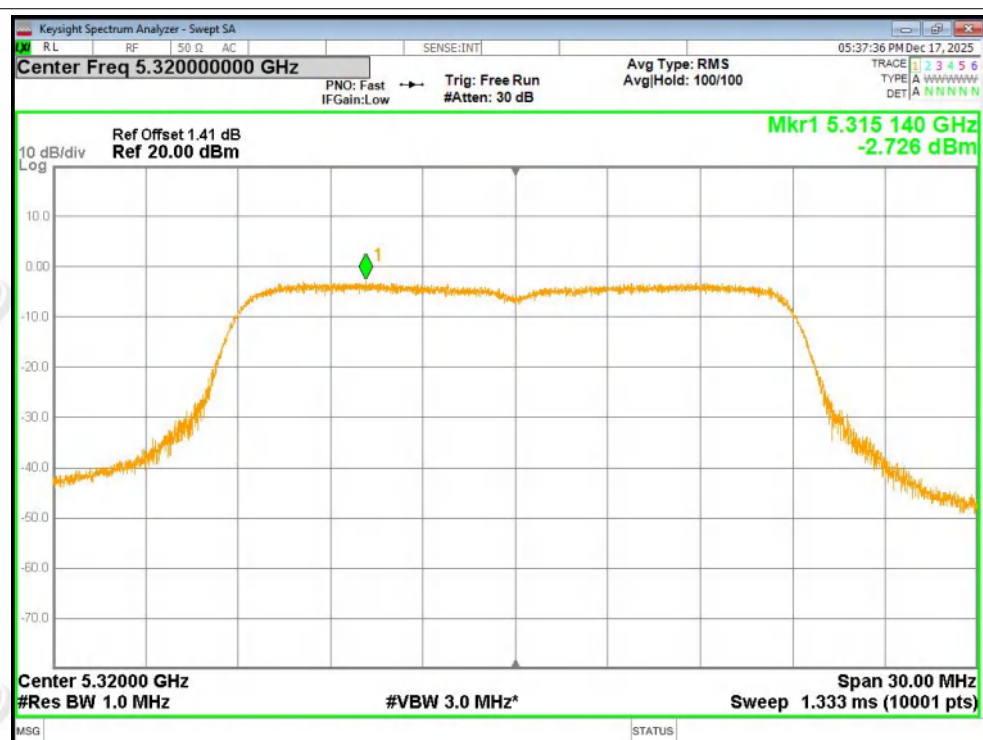




PSD NVNT n20 5280MHz Ant1

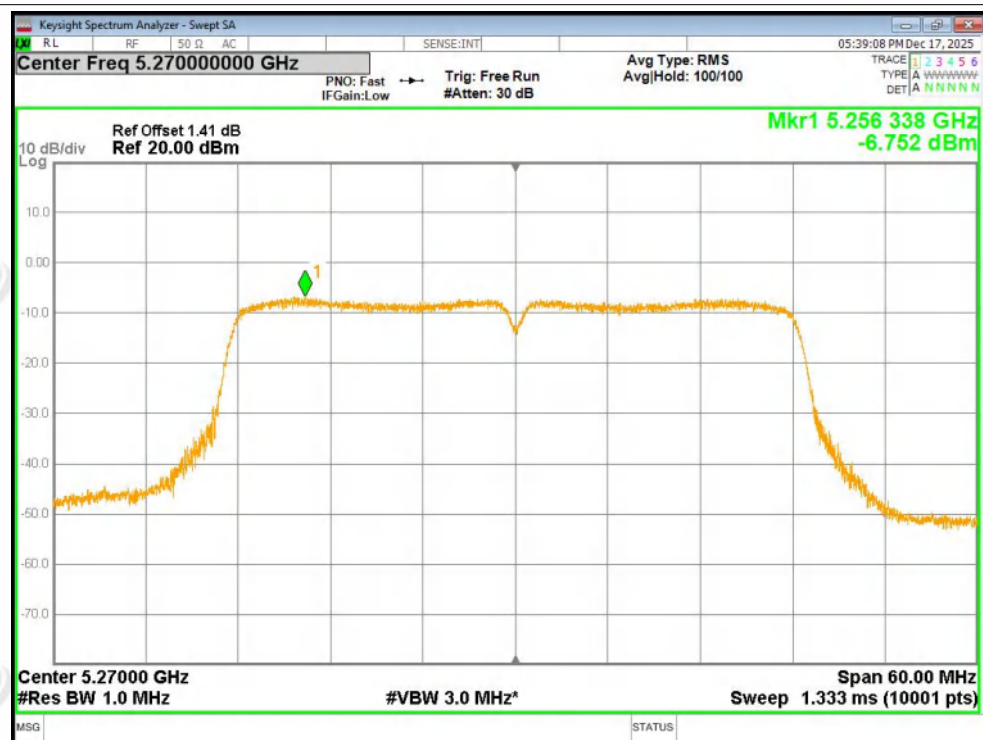


PSD NVNT n20 5320MHz Ant1

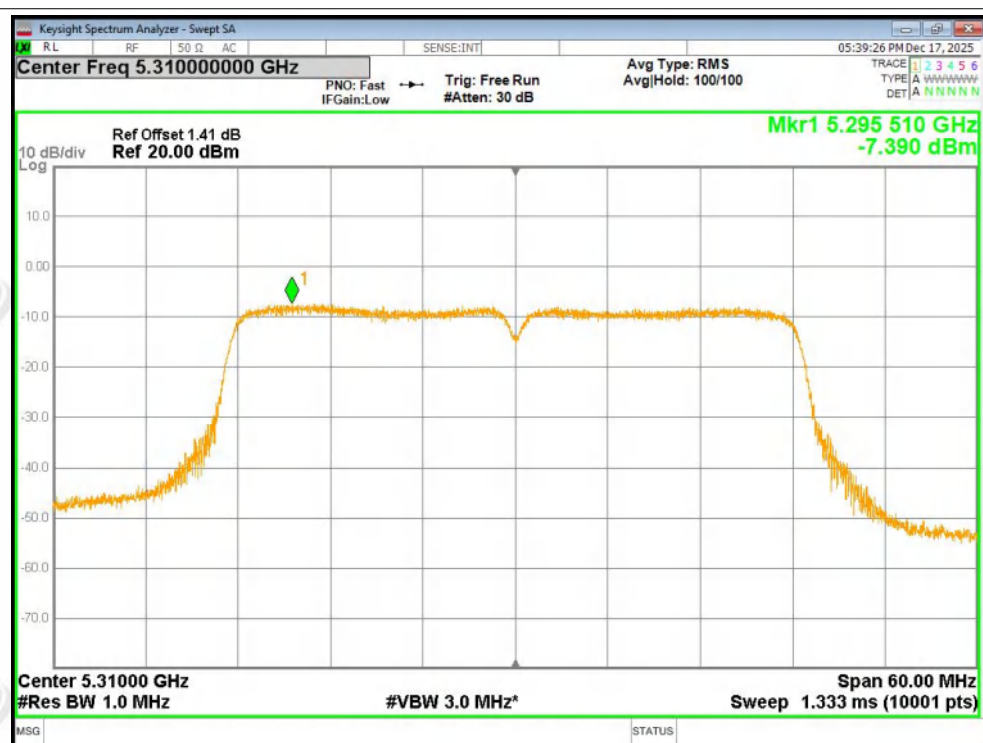




PSD NVNT n40 5270MHz Ant1

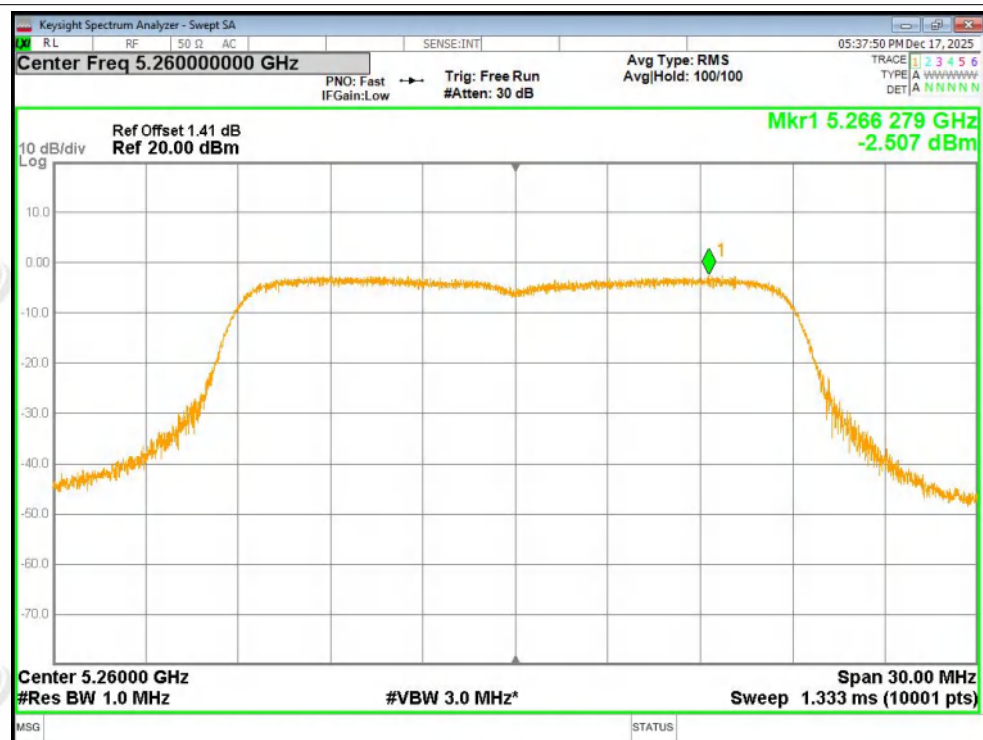


PSD NVNT n40 5310MHz Ant1

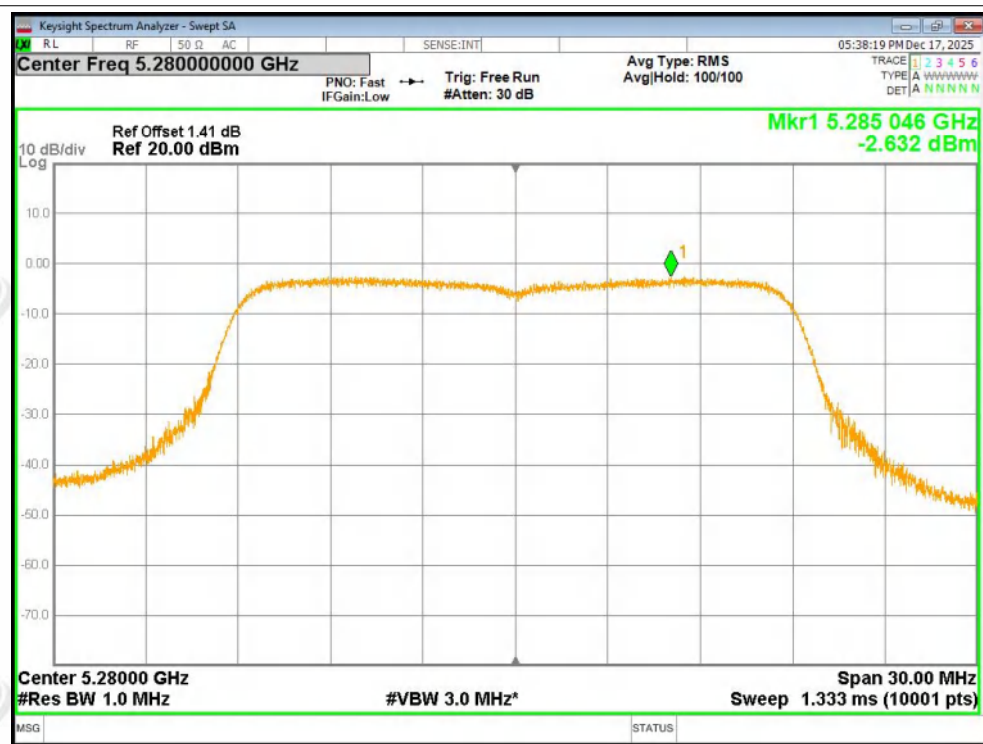




PSD NVNT ac20 5260MHz Ant1

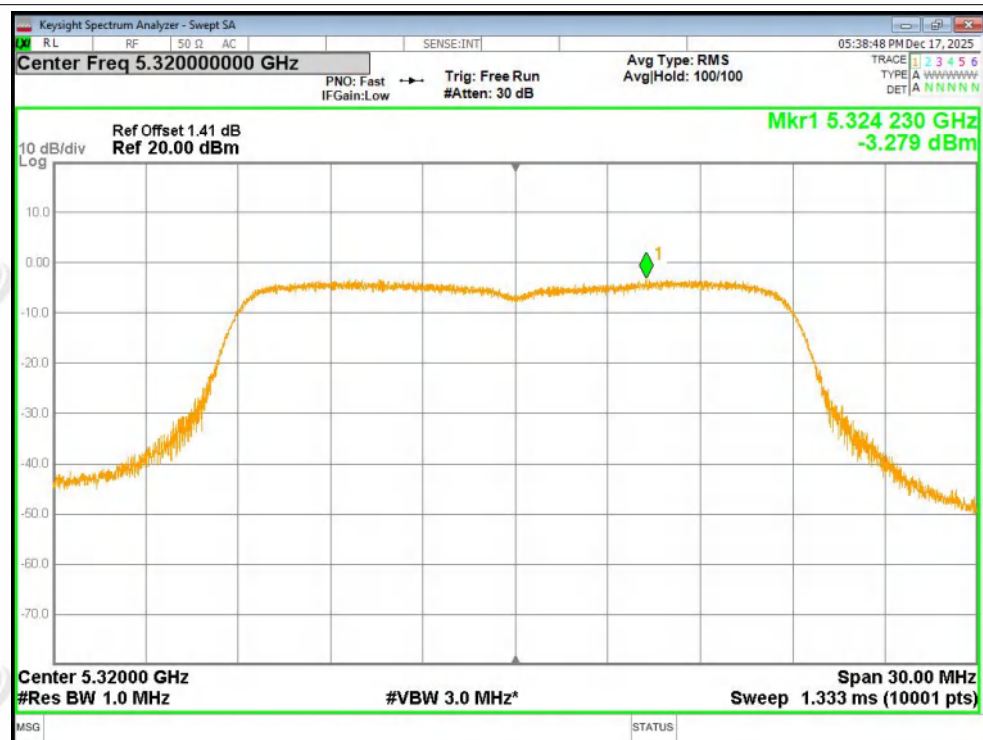


PSD NVNT ac20 5280MHz Ant1

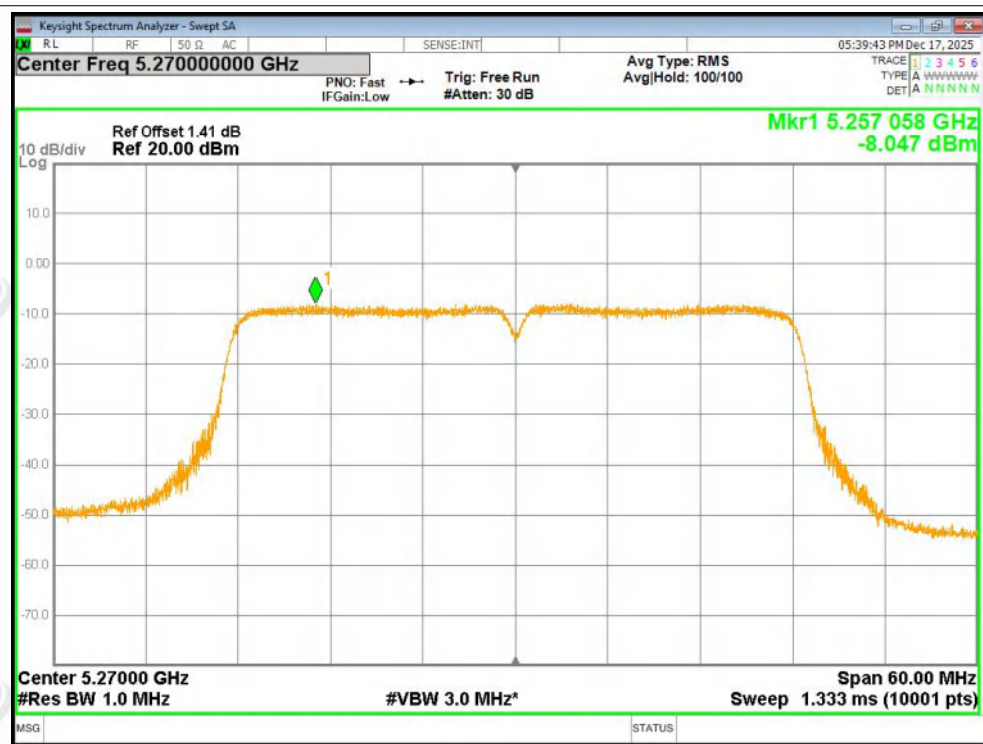




PSD NVNT ac20 5320MHz Ant1

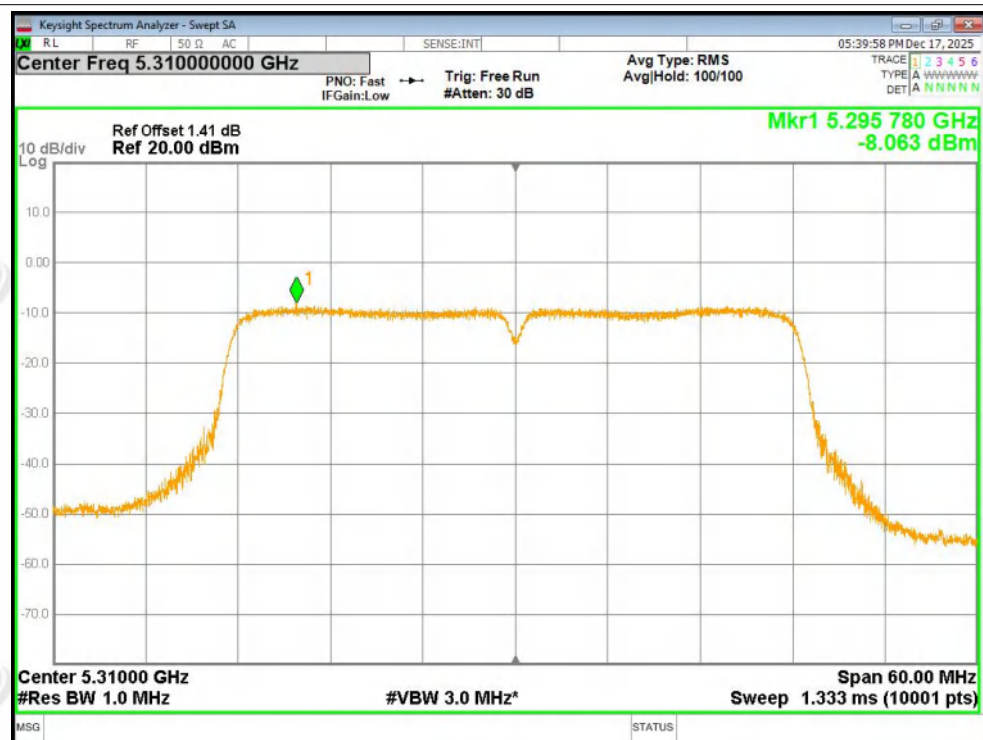


PSD NVNT ac40 5270MHz Ant1

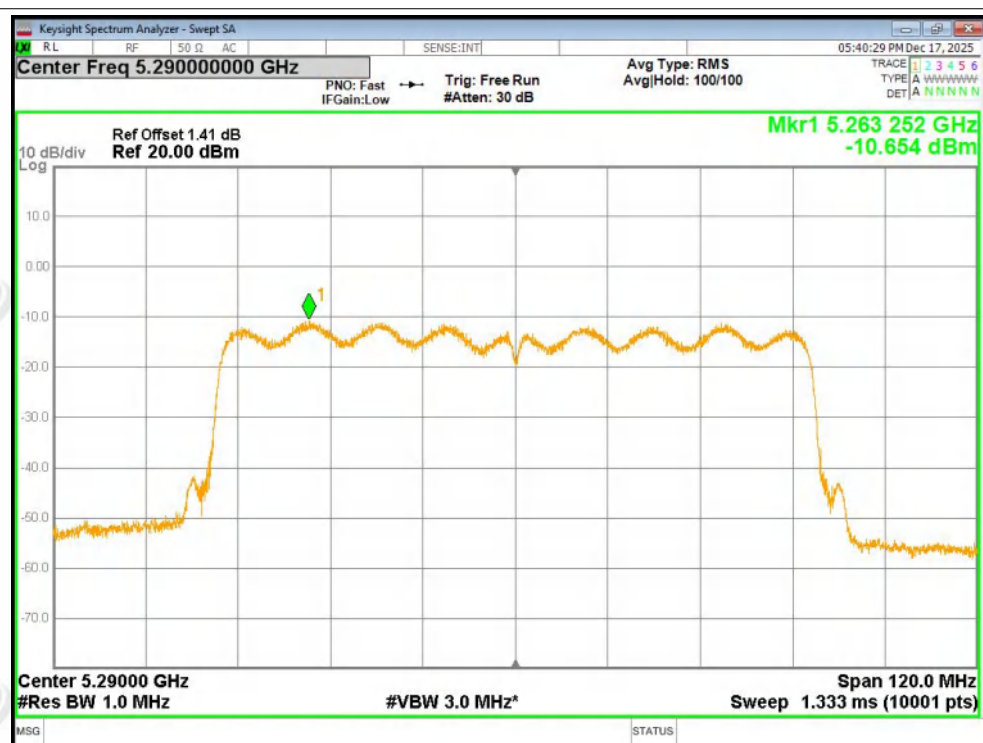




PSD NVNT ac40 5310MHz Ant1



PSD NVNT ac80 5290MHz Ant1



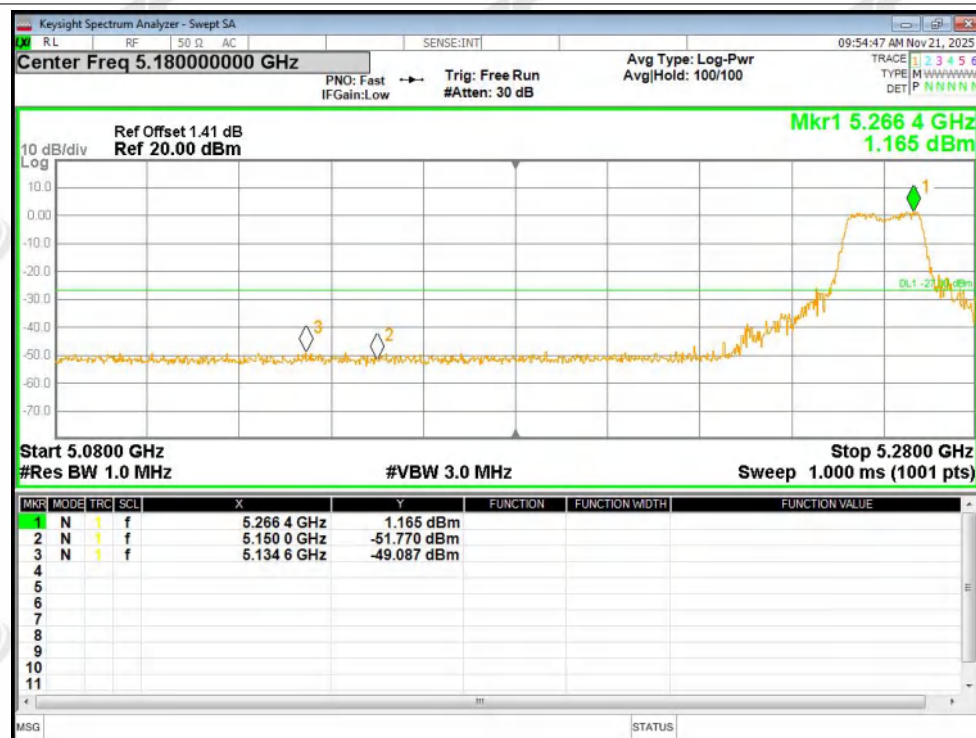


ZHONGHAN
B.6 Band Edge

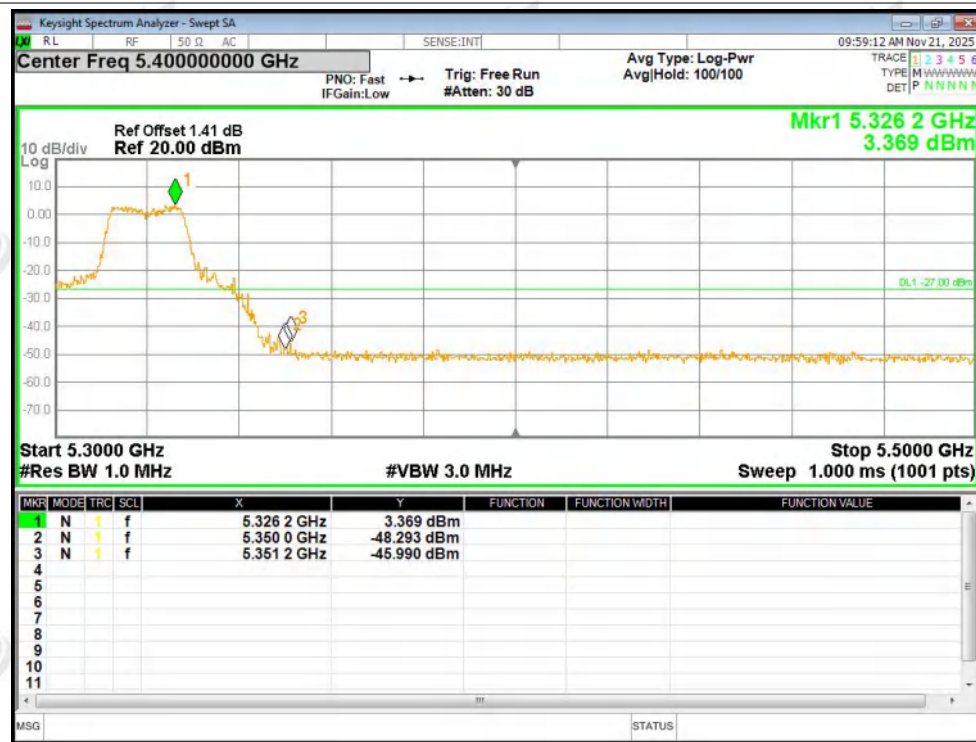
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	ANT Gain (dBi)	EIRP Value (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	Ant1	-49.08	3	-46.08	-27	Pass
NVNT	a	5320	Ant1	-45.99	3	-42.99	-27	Pass
NVNT	n20	5260	Ant1	-49.15	3	-46.15	-27	Pass
NVNT	n20	5320	Ant1	-41.68	3	-38.68	-27	Pass
NVNT	n40	5270	Ant1	-49.17	3	-46.17	-27	Pass
NVNT	n40	5310	Ant1	-46.88	3	-43.88	-27	Pass
NVNT	ac20	5260	Ant1	-48.93	3	-45.93	-27	Pass
NVNT	ac20	5320	Ant1	-43.28	3	-40.28	-27	Pass
NVNT	ac40	5270	Ant1	-49.08	3	-46.08	-27	Pass
NVNT	ac40	5310	Ant1	-47.82	3	-44.82	-27	Pass
NVNT	ac80	5290	Ant1	-35.77	3	-32.77	-27	Pass

Test Graphs

Band Edge NVNT a 5260MHz Low Ant1

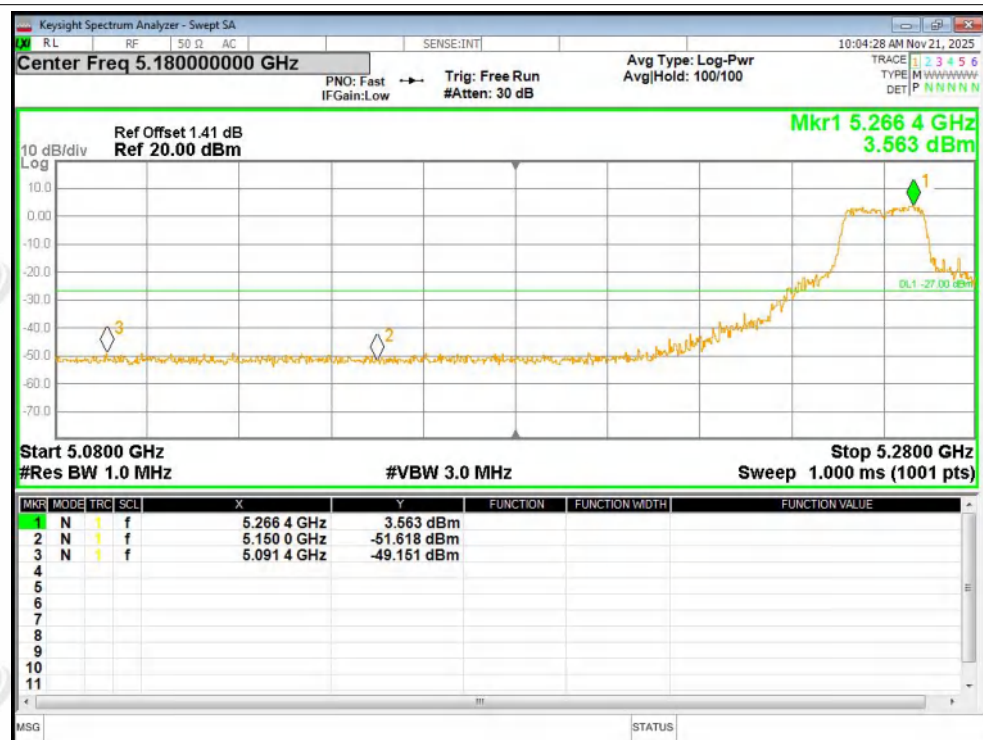


Band Edge NVNT a 5320MHz High Ant1

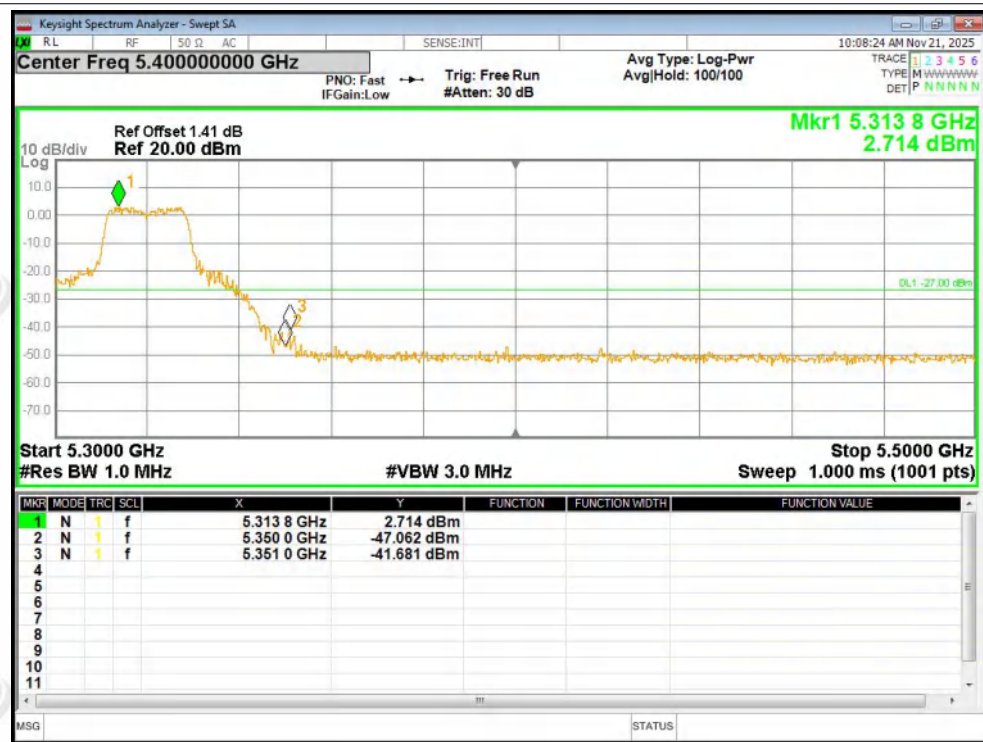




Band Edge NVNT n20 5260MHz Low Ant1

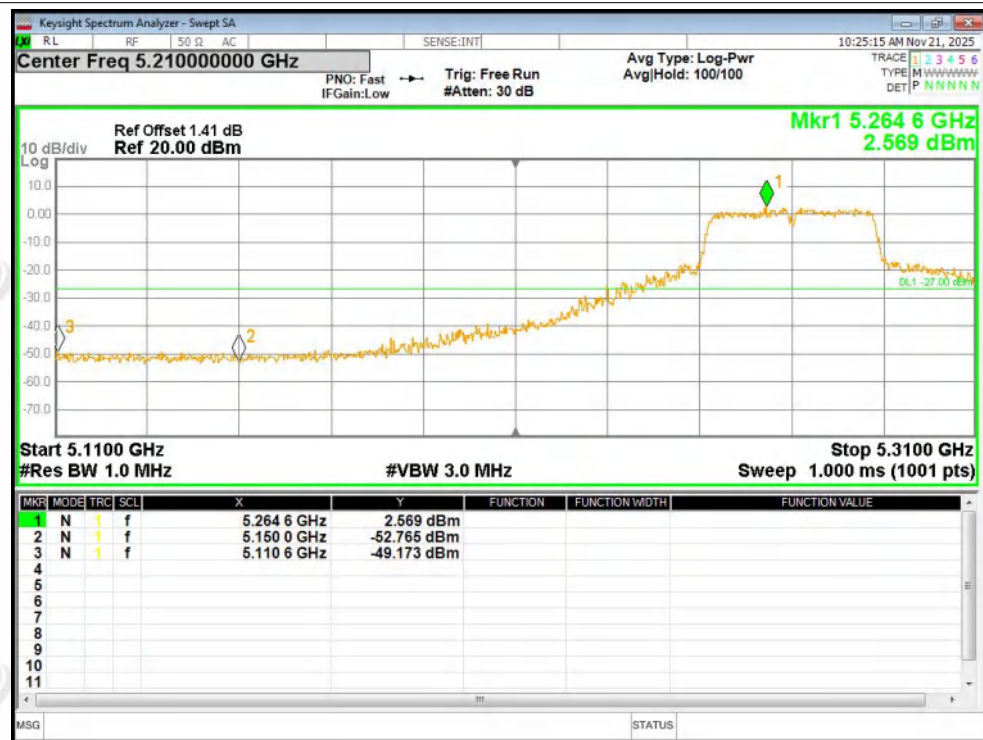


Band Edge NVNT n20 5320MHz High Ant1

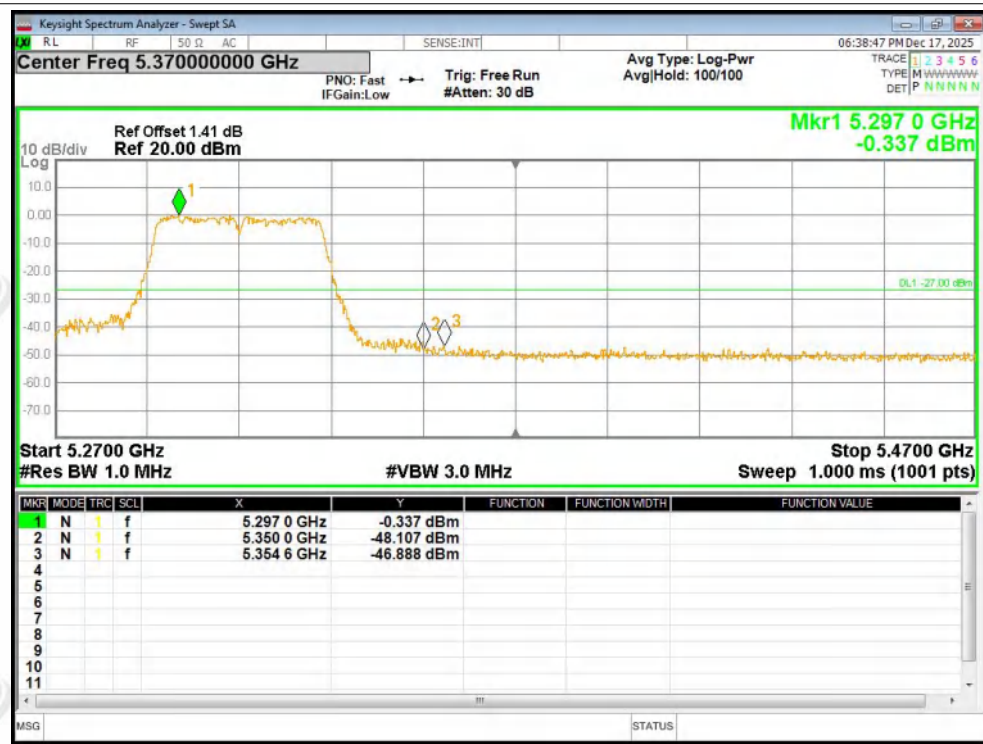




Band Edge NVNT n40 5270MHz Low Ant1

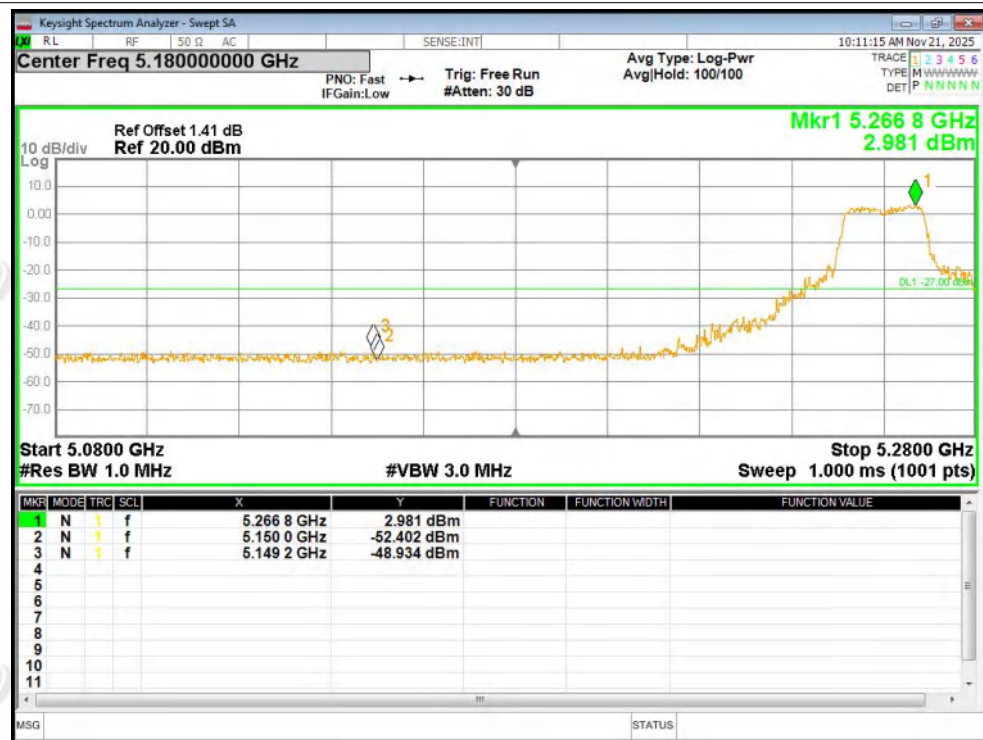


Band Edge NVNT n40 5310MHz High Ant1

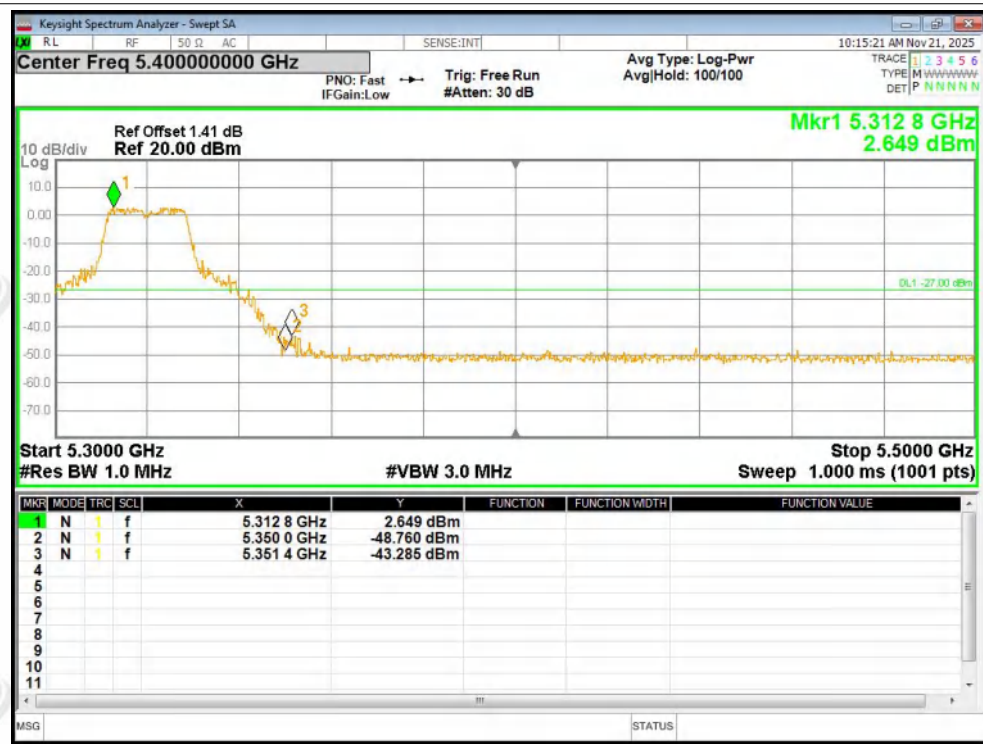




Band Edge NVNT ac20 5260MHz Low Ant1

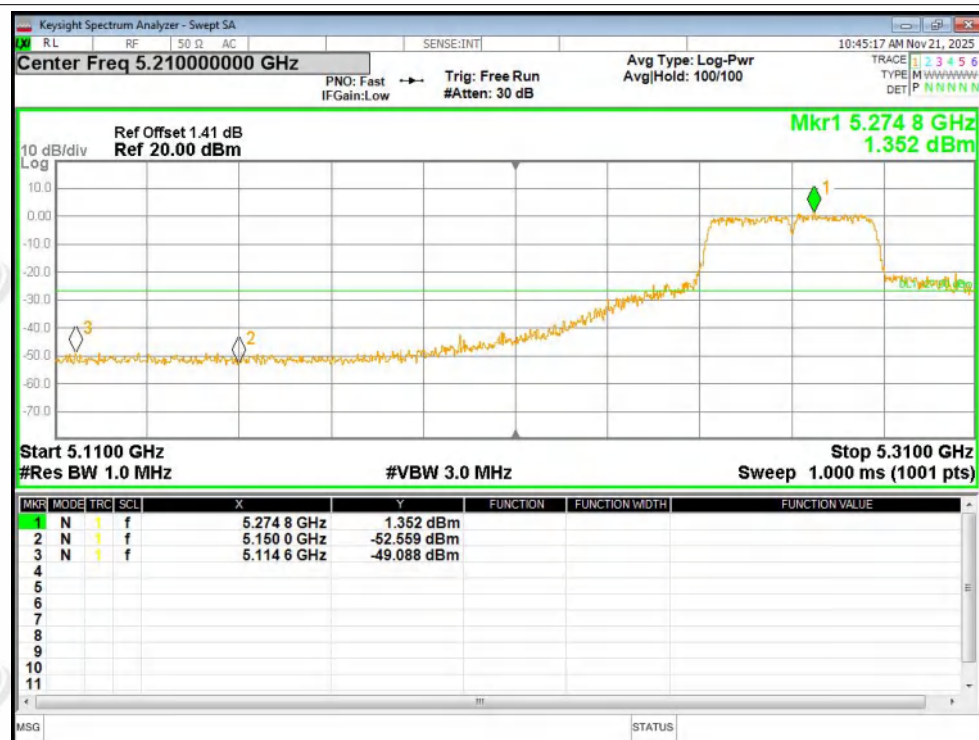


Band Edge NVNT ac20 5320MHz High Ant1

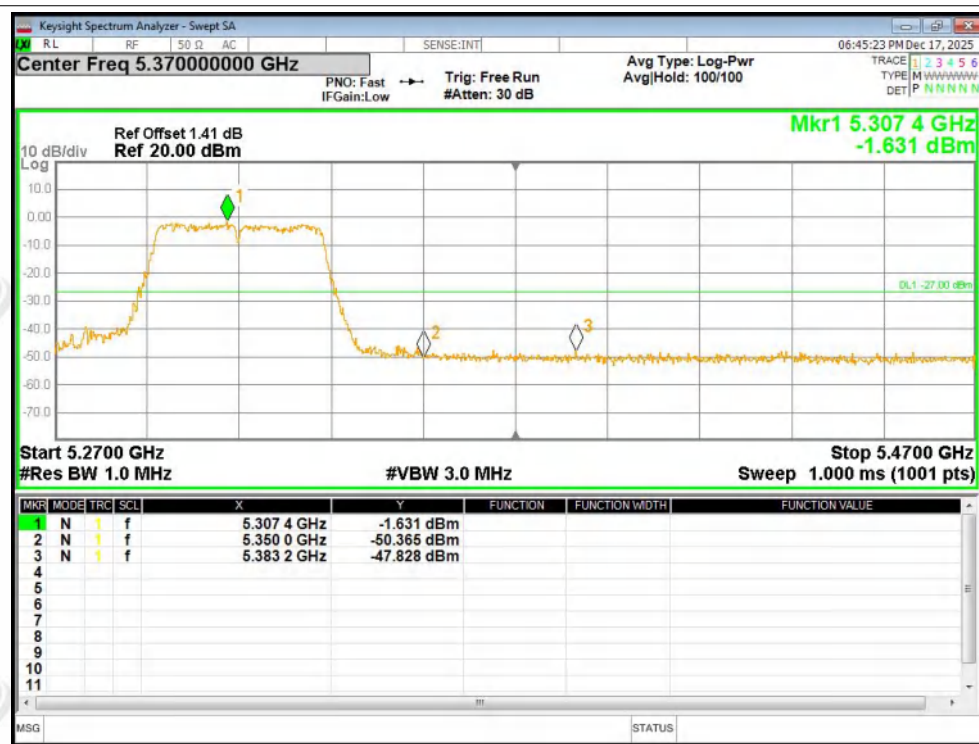




Band Edge NVNT ac40 5270MHz Low Ant1



Band Edge NVNT ac40 5310MHz High Ant1





Band Edge NVNT ac80 5290MHz High Ant1

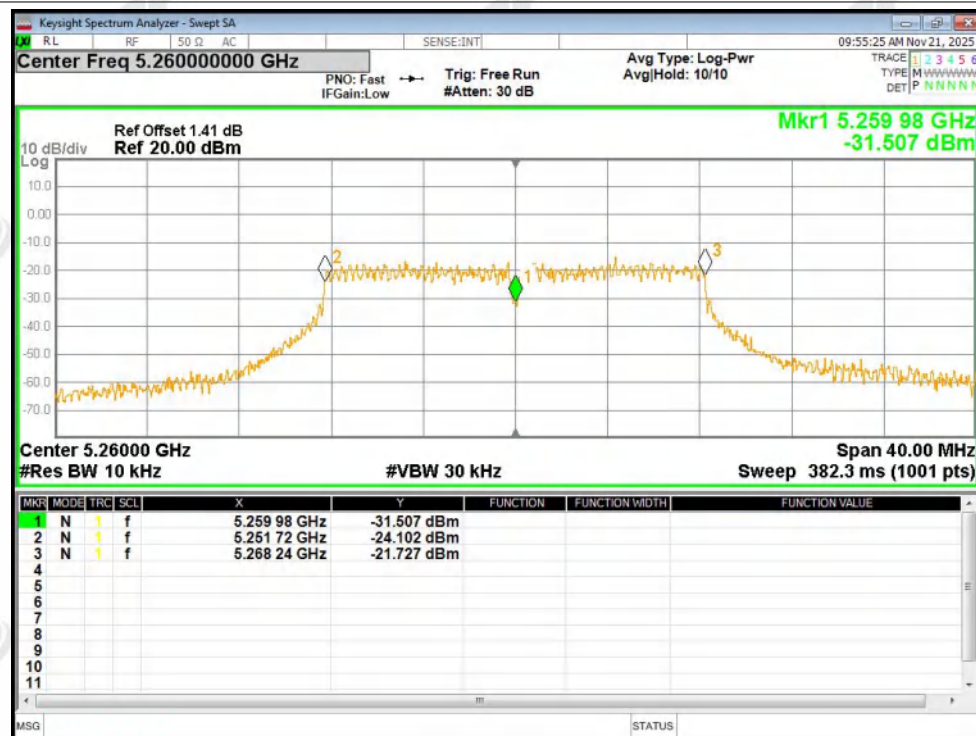


**ZHONGHAN****B.7 Frequency Stability**

Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5260	Ant1	5259.98	-20000	-3.8	Within 5260-5320MHz	Pass
NVNT	a	5280	Ant1	5279.98	-20000	-3.79		Pass
NVNT	a	5320	Ant1	5320	0	0		Pass
NVNT	n20	5260	Ant1	5260.02	20000	3.8		Pass
NVNT	n20	5280	Ant1	5280.02	20000	3.79		Pass
NVNT	n20	5320	Ant1	5320.02	20000	3.76		Pass
NVNT	n40	5270	Ant1	5270	0	0		Pass
NVNT	n40	5310	Ant1	5310	0	0		Pass
NVNT	ac20	5260	Ant1	5260	0	0		Pass
NVNT	ac20	5280	Ant1	5280.02	20000	3.79		Pass
NVNT	ac20	5320	Ant1	5320.04	40000	7.52		Pass
NVNT	ac40	5270	Ant1	5270	0	0		Pass
NVNT	ac40	5310	Ant1	5310	0	0		Pass
NVNT	ac80	5290	Ant1	5290.08	80000	15.12		Pass

Test Graphs

Freq. Stability NVNT a 5260MHz Ant1

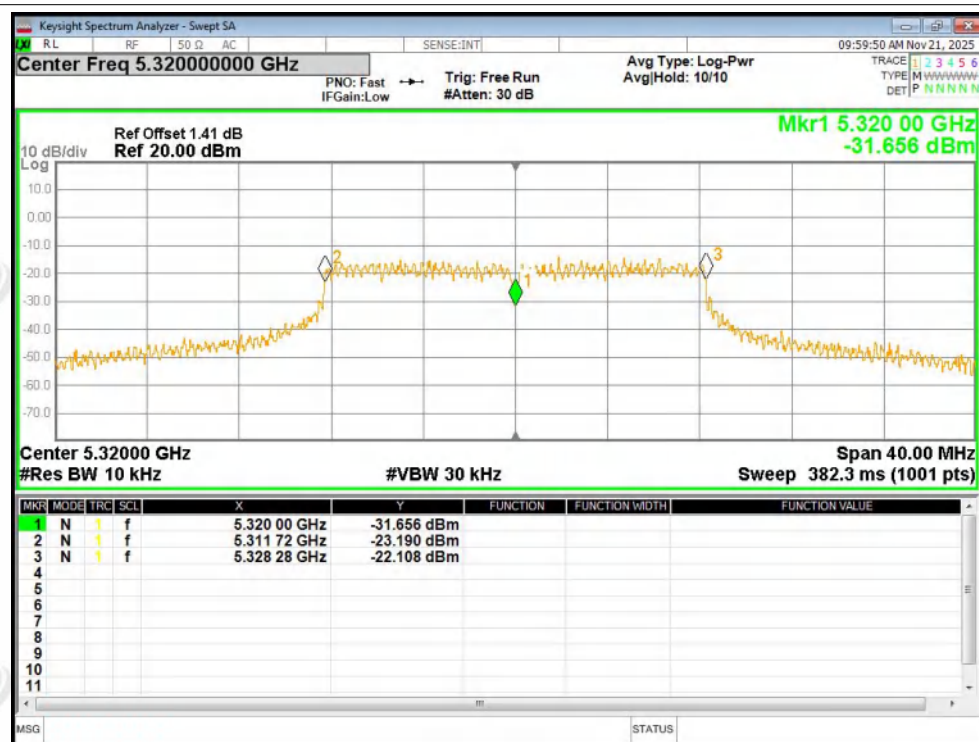


Freq. Stability NVNT a 5280MHz Ant1





Freq. Stability NVNT a 5320MHz Ant1

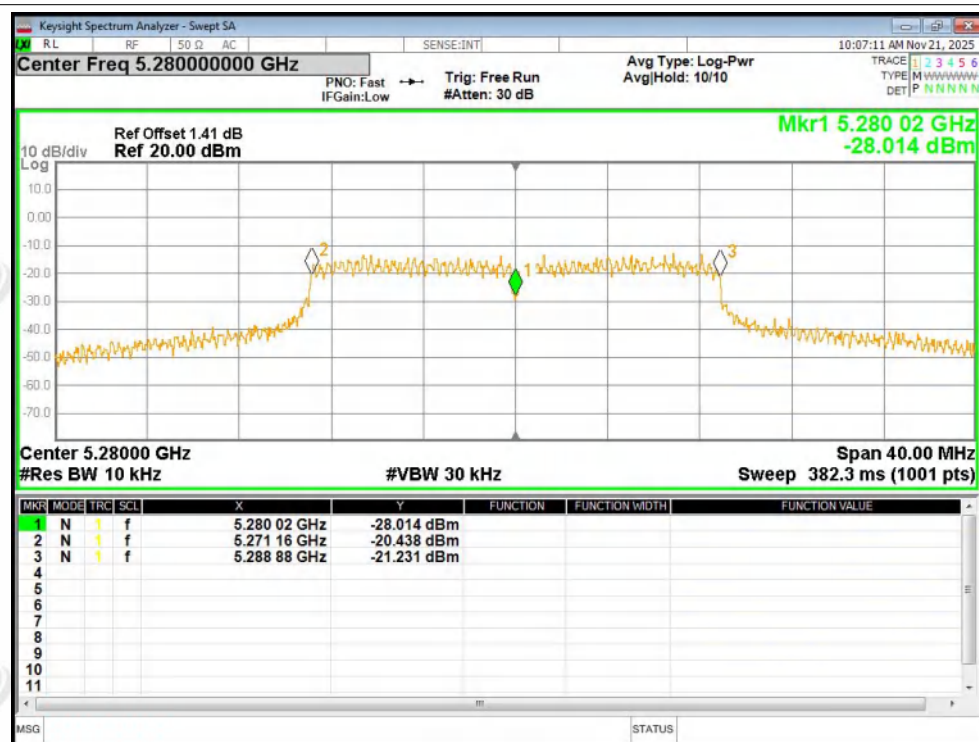


Freq. Stability NVNT n20 5260MHz Ant1





Freq. Stability NVNT n20 5280MHz Ant1

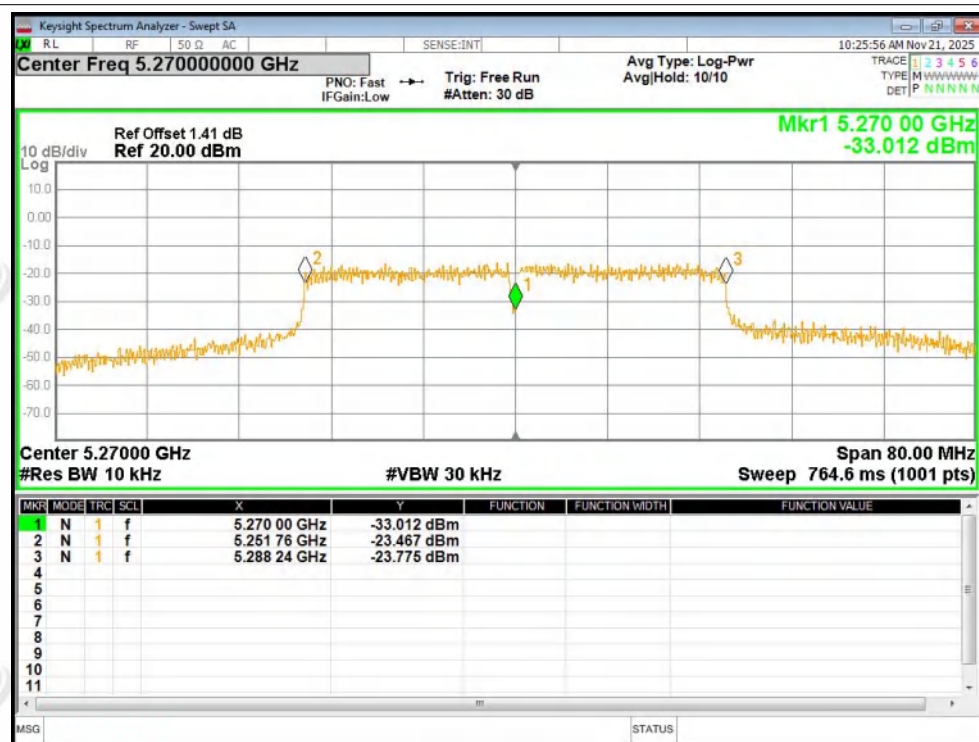


Freq. Stability NVNT n20 5320MHz Ant1

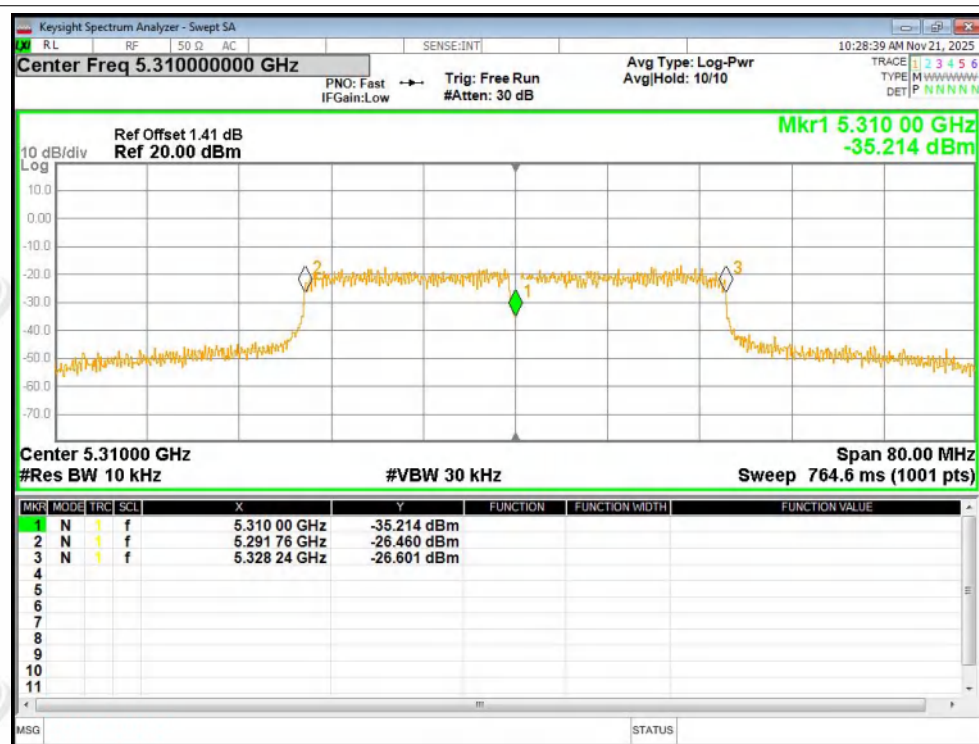




Freq. Stability NVNT n40 5270MHz Ant1

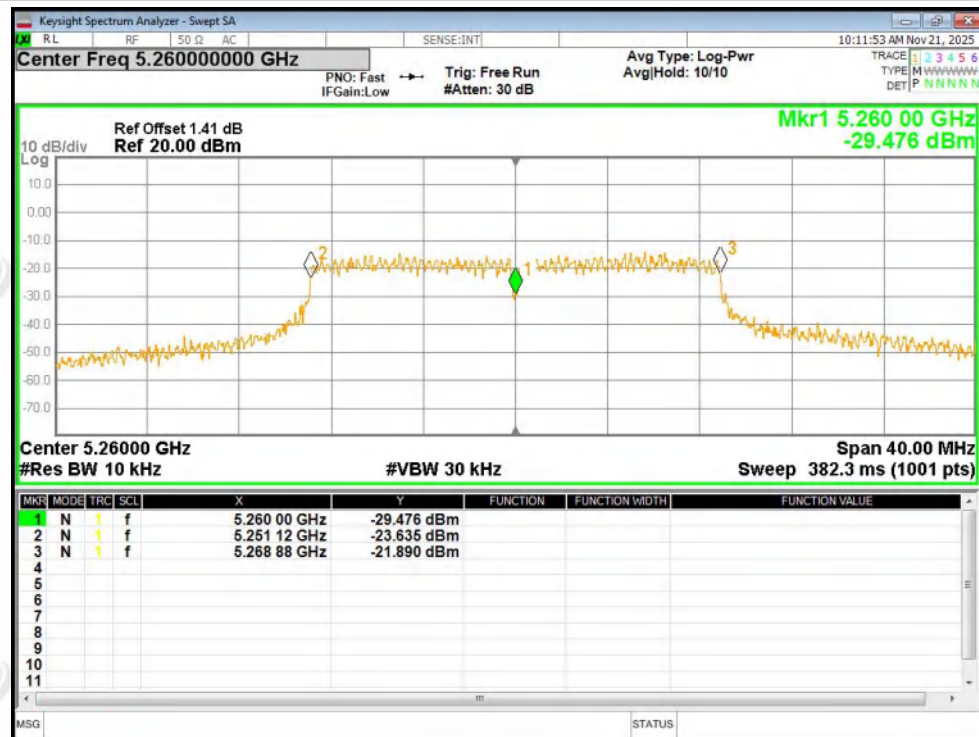


Freq. Stability NVNT n40 5310MHz Ant1





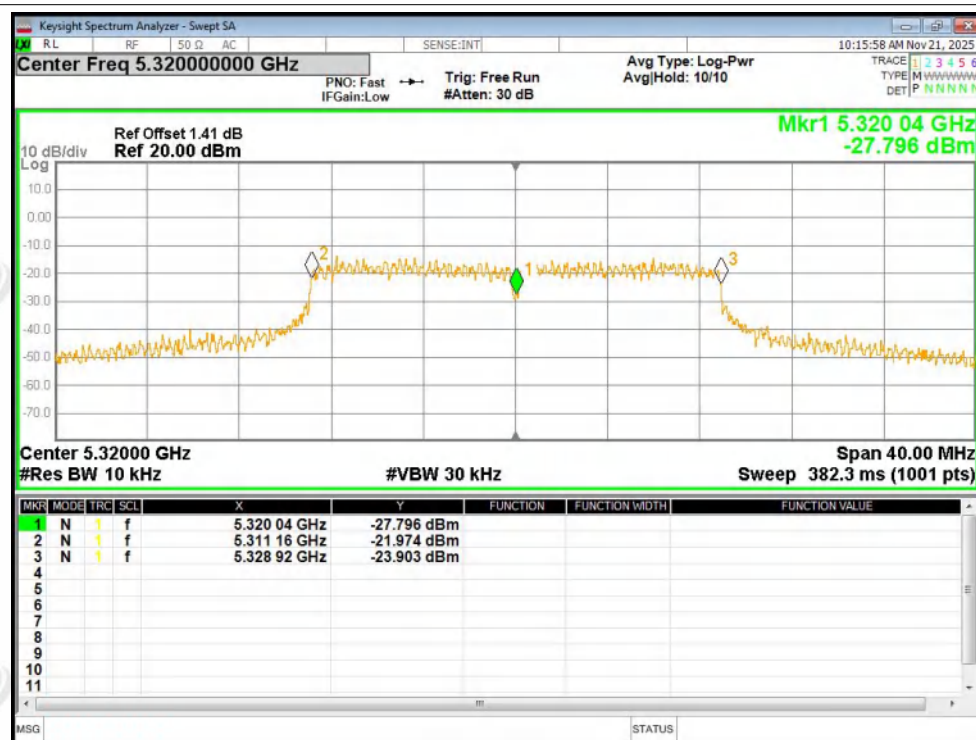
Freq. Stability NVNT ac20 5260MHz Ant1



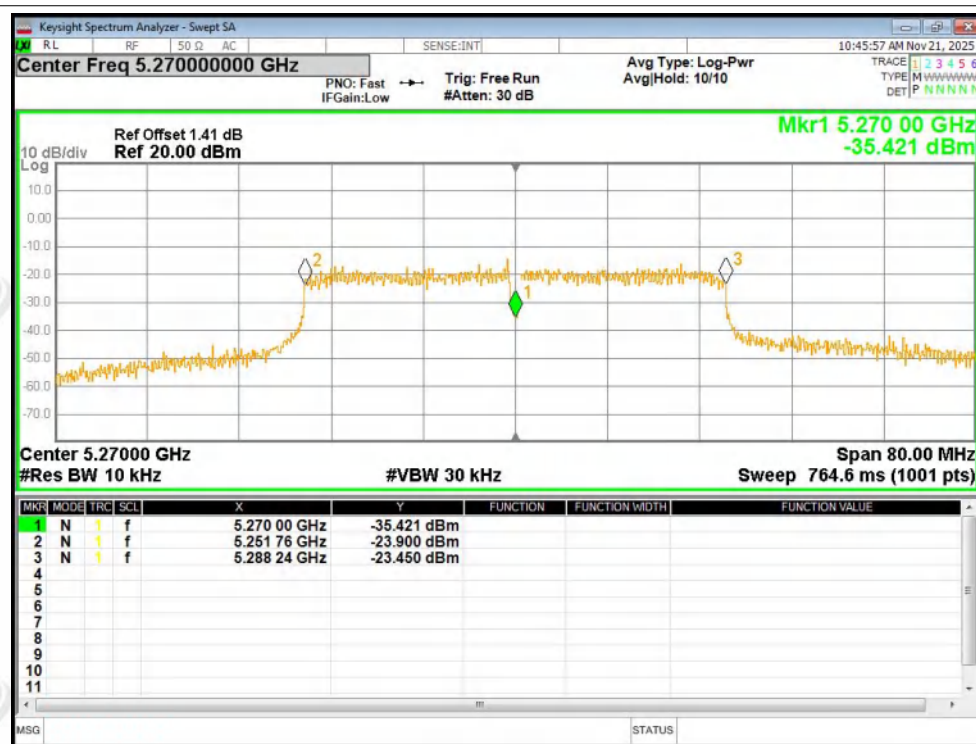
Freq. Stability NVNT ac20 5280MHz Ant1



Freq. Stability NVNT ac20 5320MHz Ant1

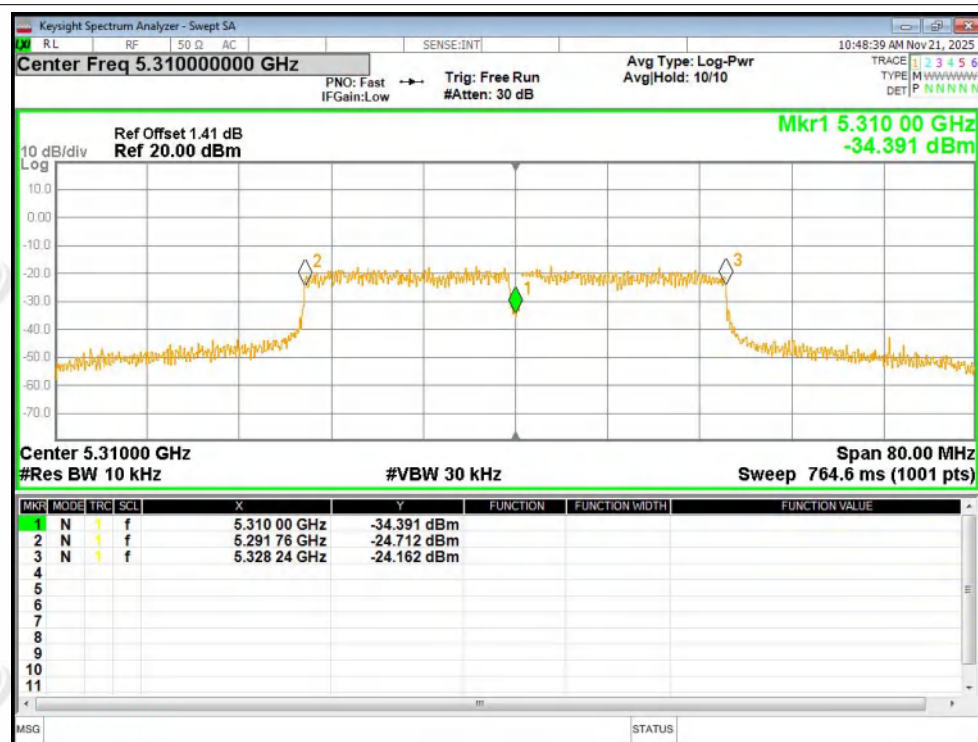


Freq. Stability NVNT ac40 5270MHz Ant1

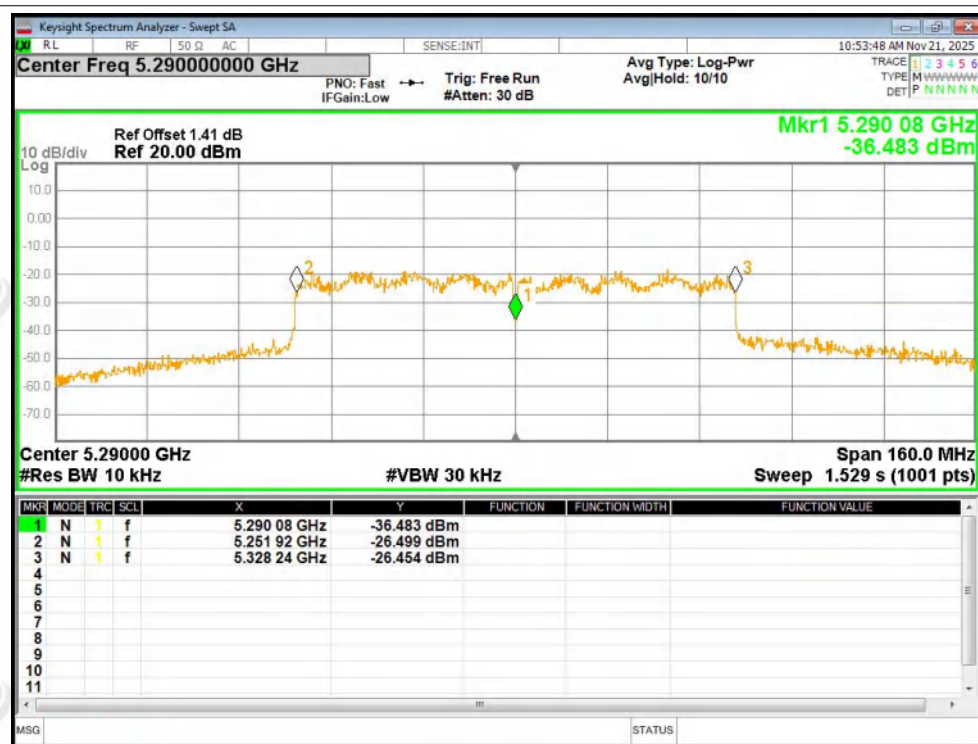




Freq. Stability NVNT ac40 5310MHz Ant1



Freq. Stability NVNT ac80 5290MHz Ant1

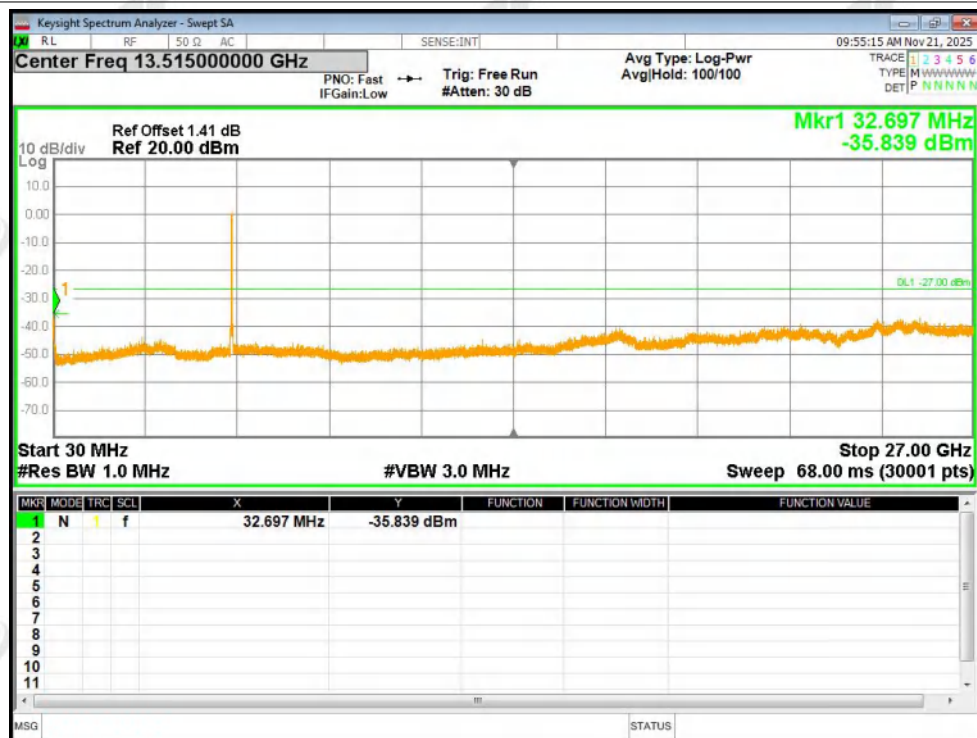


**ZHONGHAN****B.8 Conducted RF Spurious Emission**

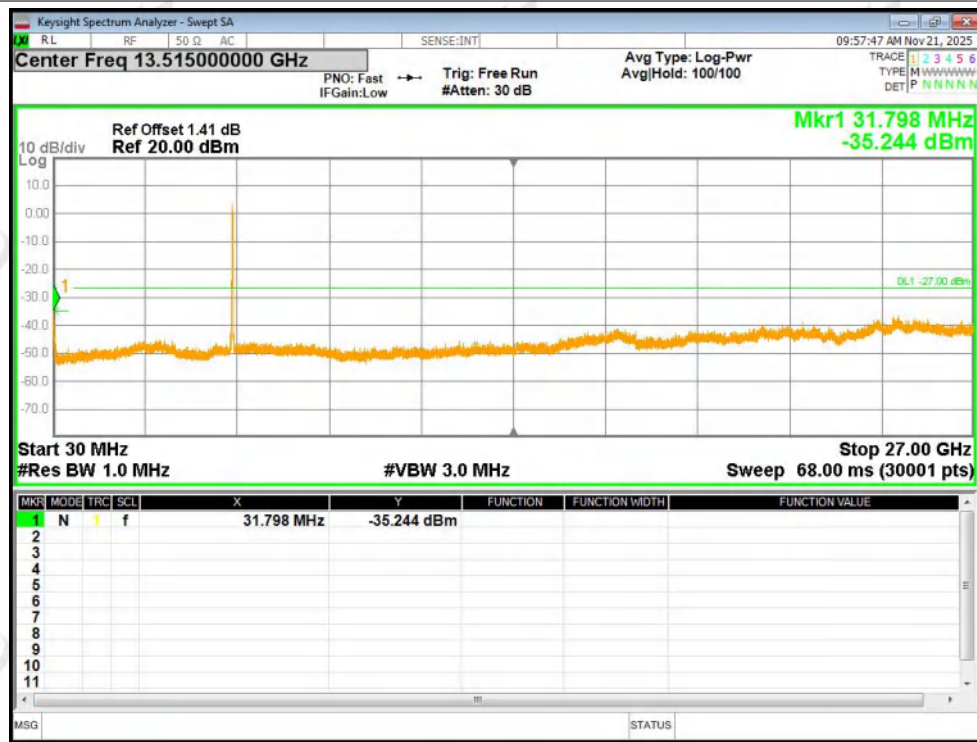
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	Ant1	-35.83	-27	Pass
NVNT	a	5280	Ant1	-35.24	-27	Pass
NVNT	a	5320	Ant1	-34.88	-27	Pass
NVNT	n20	5260	Ant1	-36.38	-27	Pass
NVNT	n20	5280	Ant1	-33.36	-27	Pass
NVNT	n20	5320	Ant1	-35.83	-27	Pass
NVNT	n40	5270	Ant1	-35.31	-27	Pass
NVNT	n40	5310	Ant1	-33.46	-27	Pass
NVNT	ac20	5260	Ant1	-35.56	-27	Pass
NVNT	ac20	5280	Ant1	-35.52	-27	Pass
NVNT	ac20	5320	Ant1	-35.57	-27	Pass
NVNT	ac40	5270	Ant1	-34.21	-27	Pass
NVNT	ac40	5310	Ant1	-35.55	-27	Pass
NVNT	ac80	5290	Ant1	-34.96	-27	Pass

Test Graphs

Tx. Spurious NVNT a 5260MHz Ant1 Emission

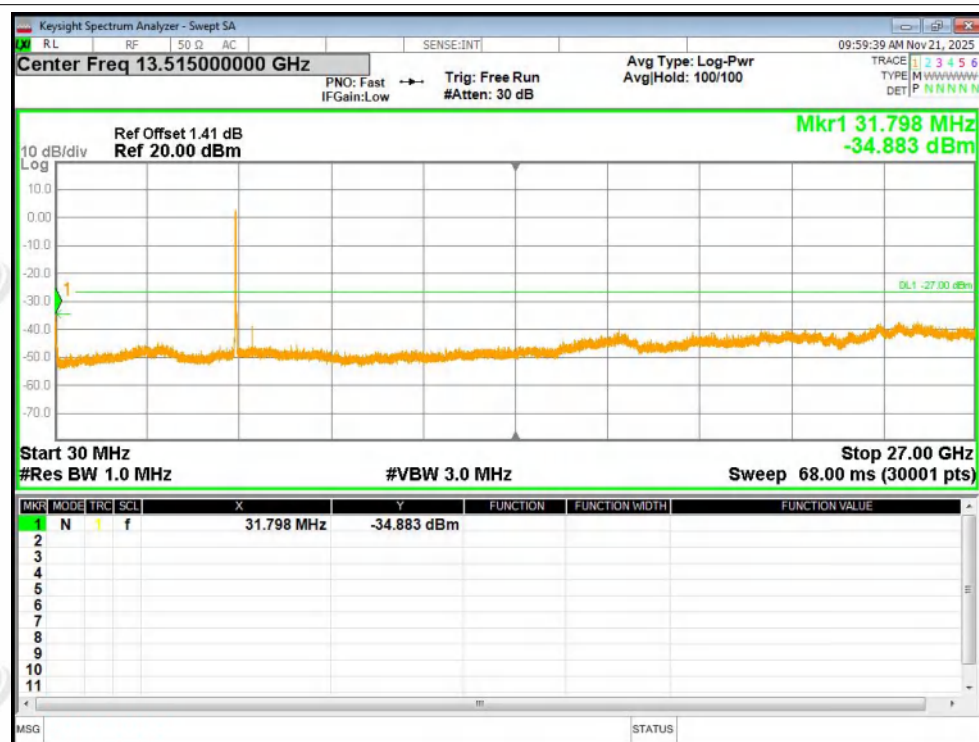


Tx. Spurious NVNT a 5280MHz Ant1 Emission

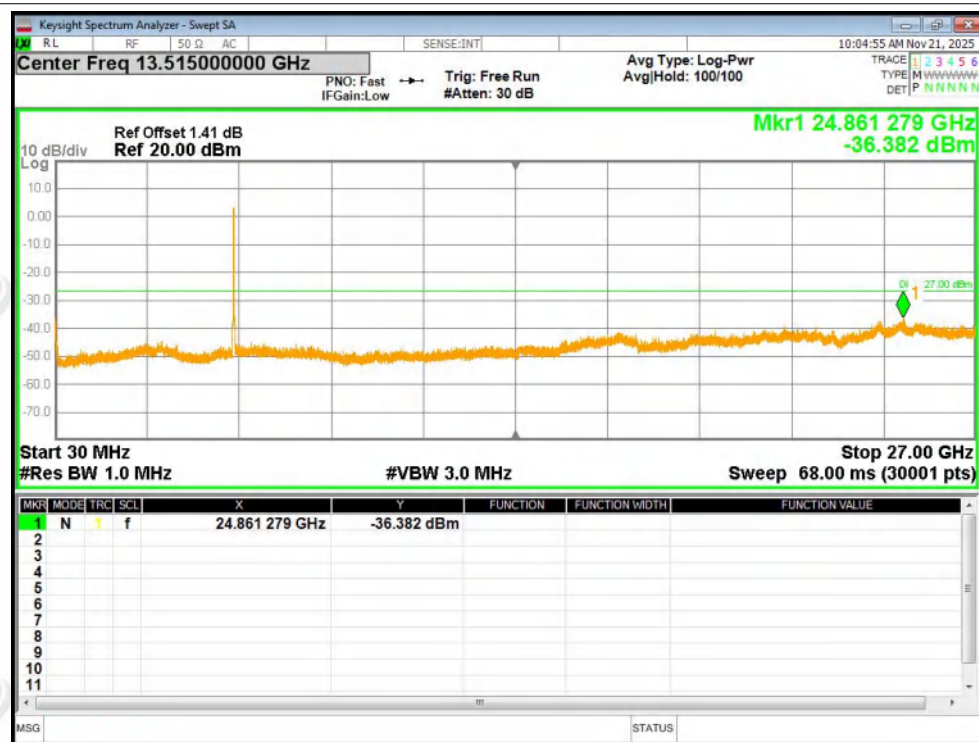




Tx. Spurious NVNT a 5320MHz Ant1 Emission

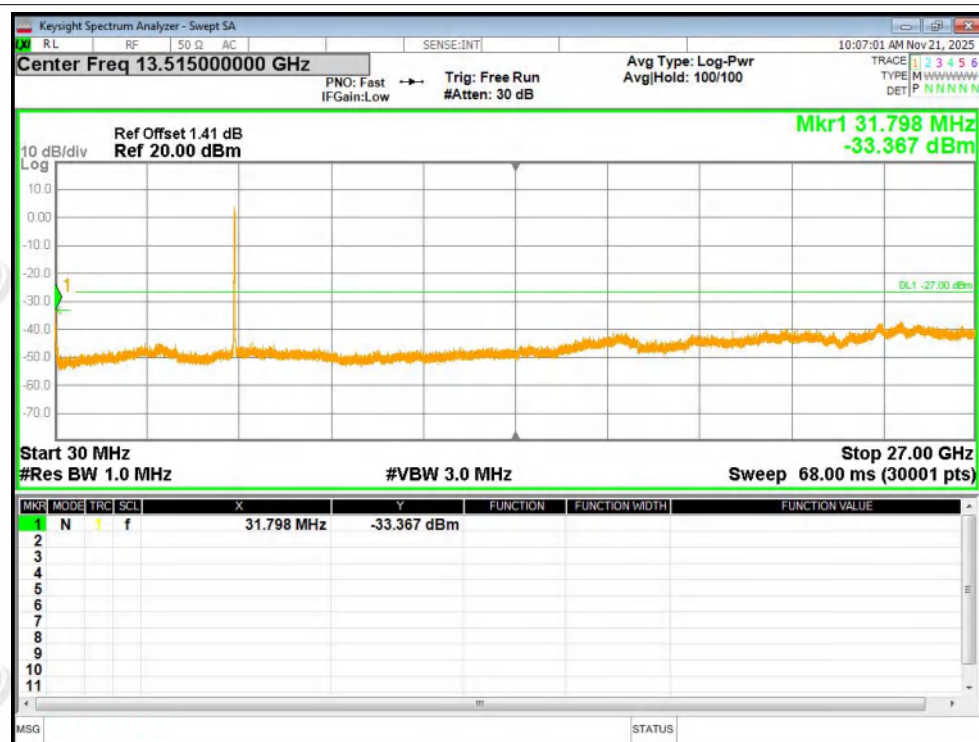


Tx. Spurious NVNT n20 5260MHz Ant1 Emission

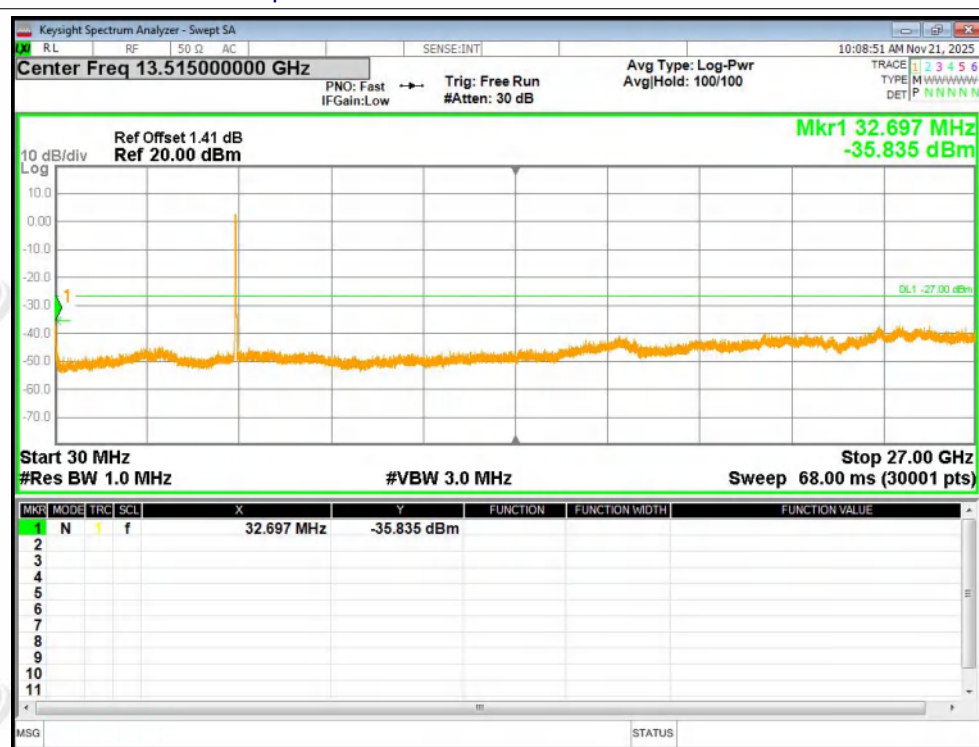




Tx. Spurious NVNT n20 5280MHz Ant1 Emission

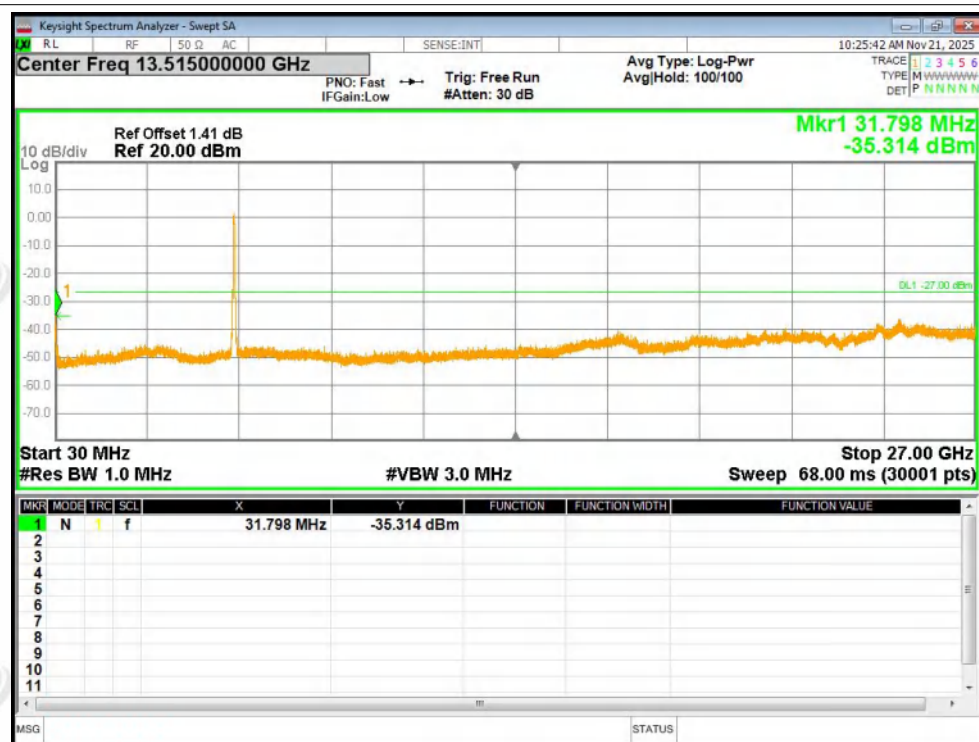


Tx. Spurious NVNT n20 5320MHz Ant1 Emission

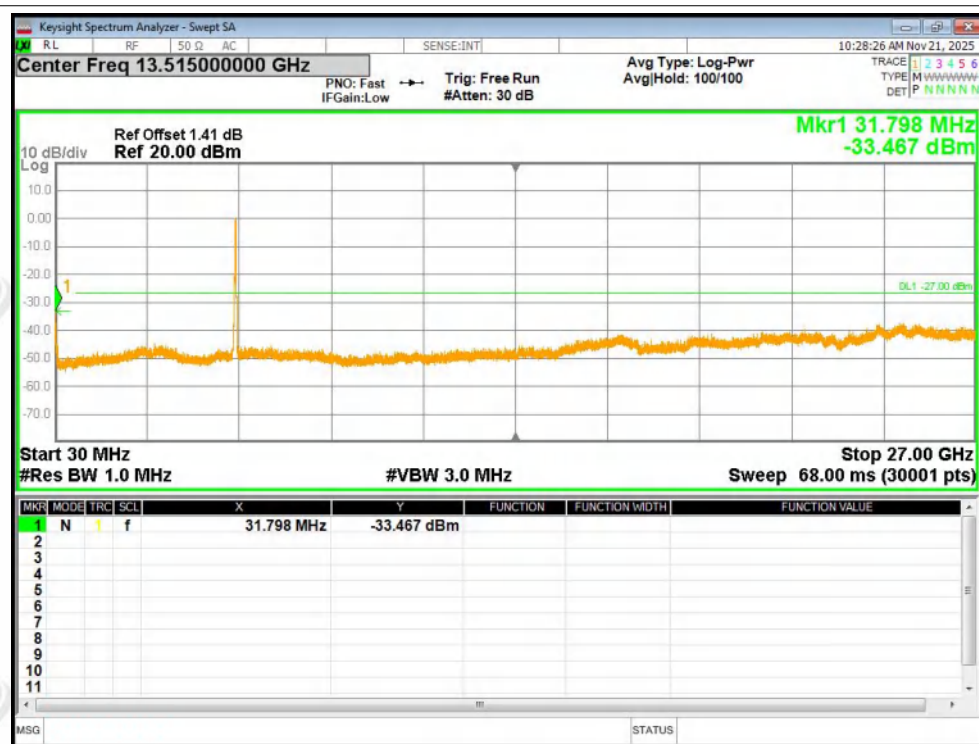




Tx. Spurious NVNT n40 5270MHz Ant1 Emission

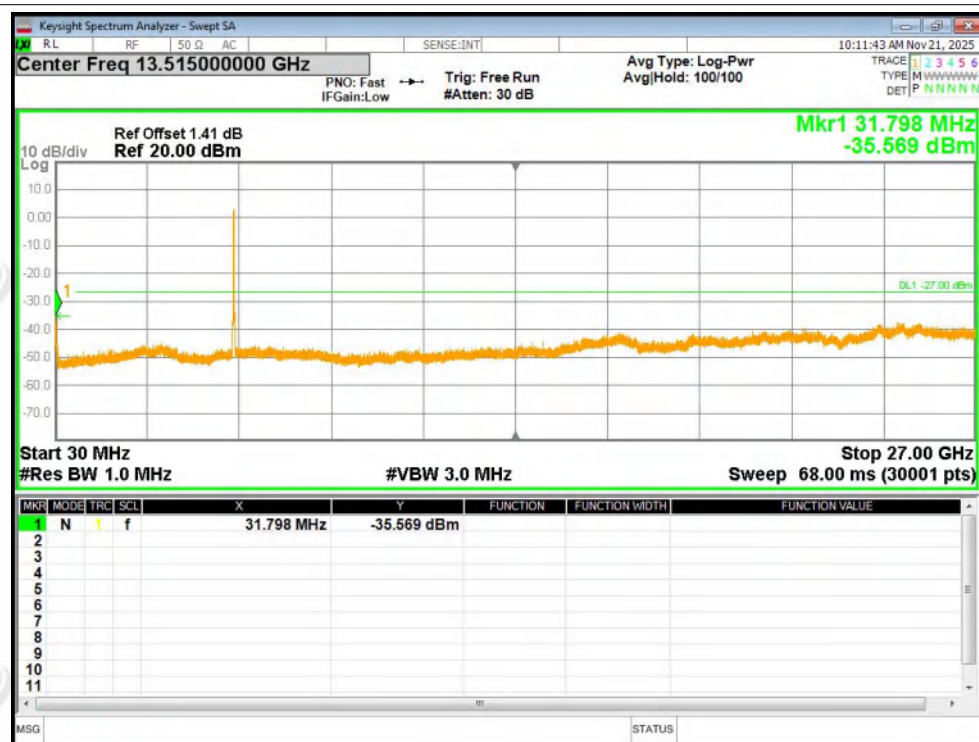


Tx. Spurious NVNT n40 5310MHz Ant1 Emission

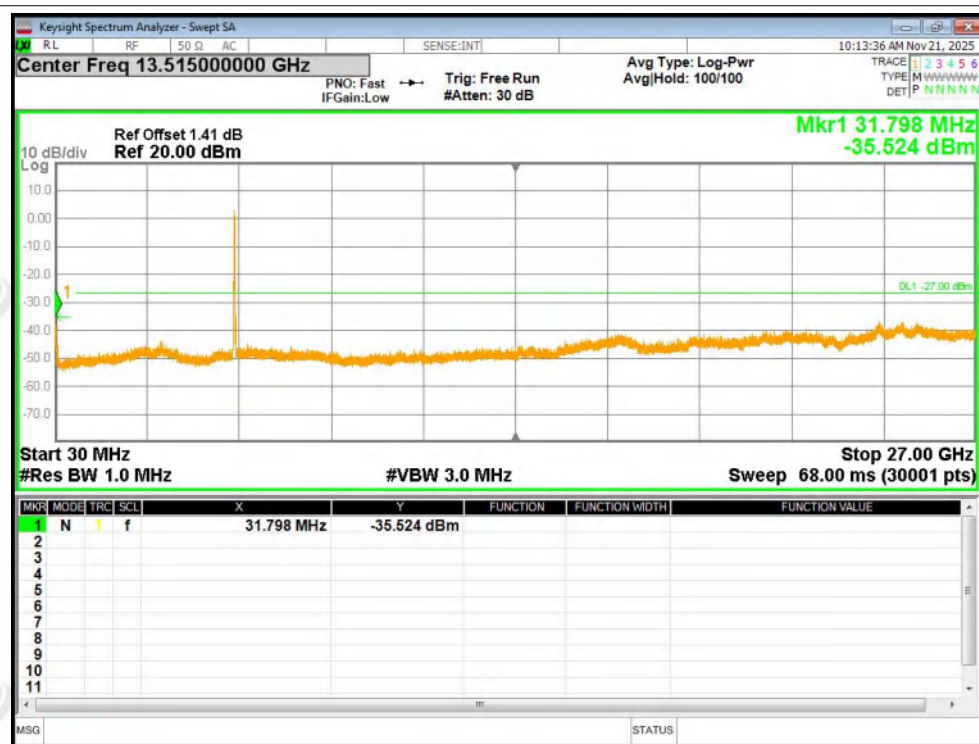




Tx. Spurious NVNT ac20 5260MHz Ant1 Emission

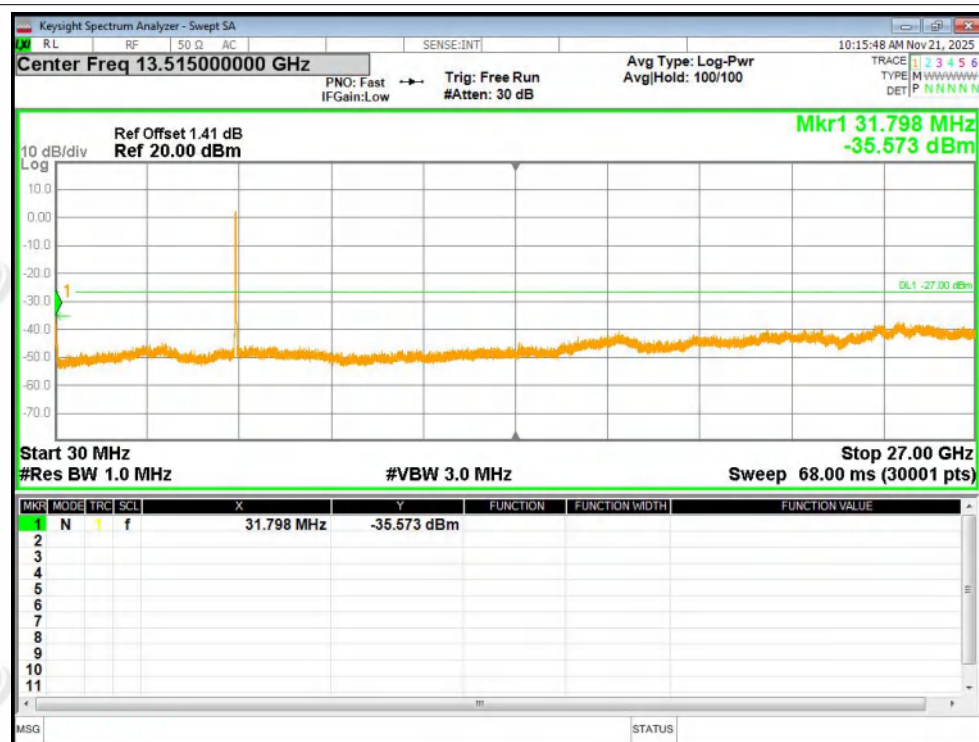


Tx. Spurious NVNT ac20 5280MHz Ant1 Emission

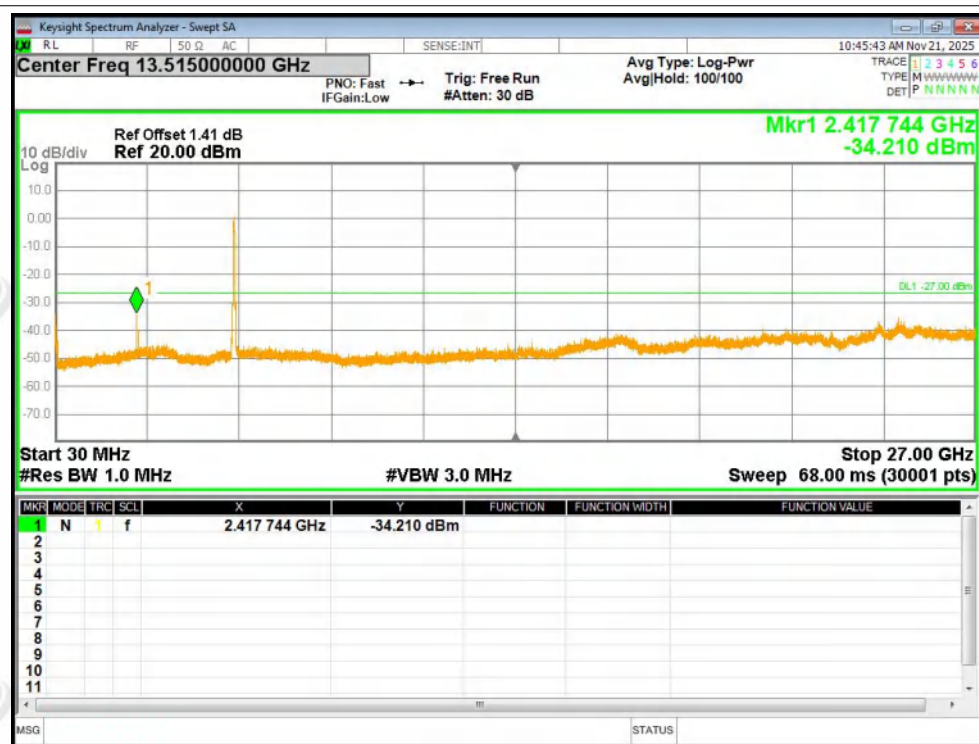




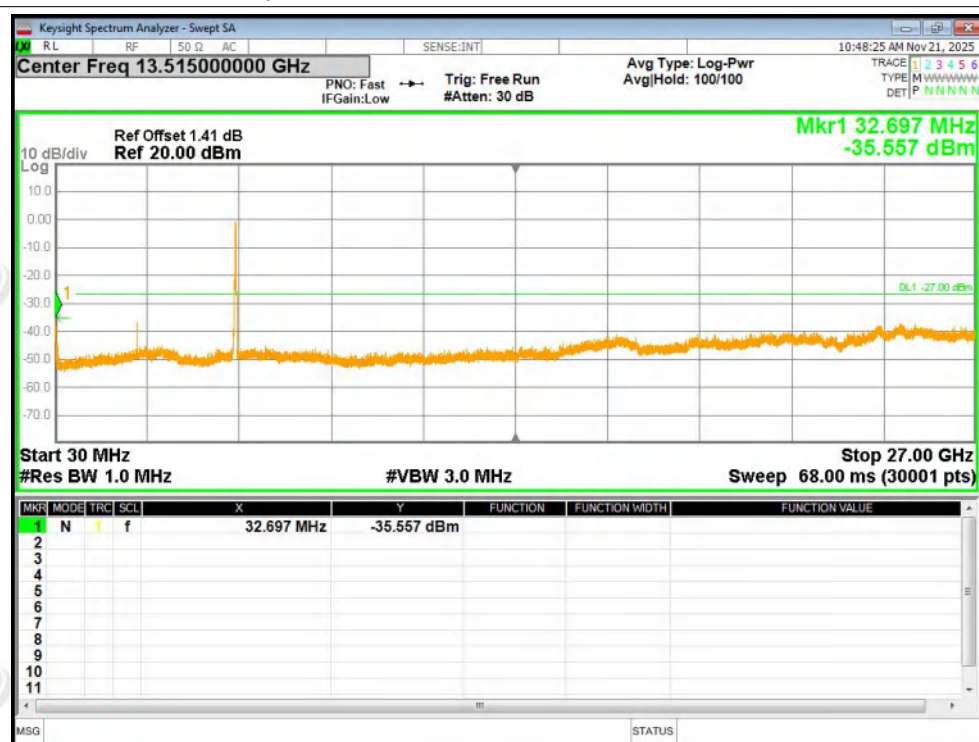
Tx. Spurious NVNT ac20 5320MHz Ant1 Emission



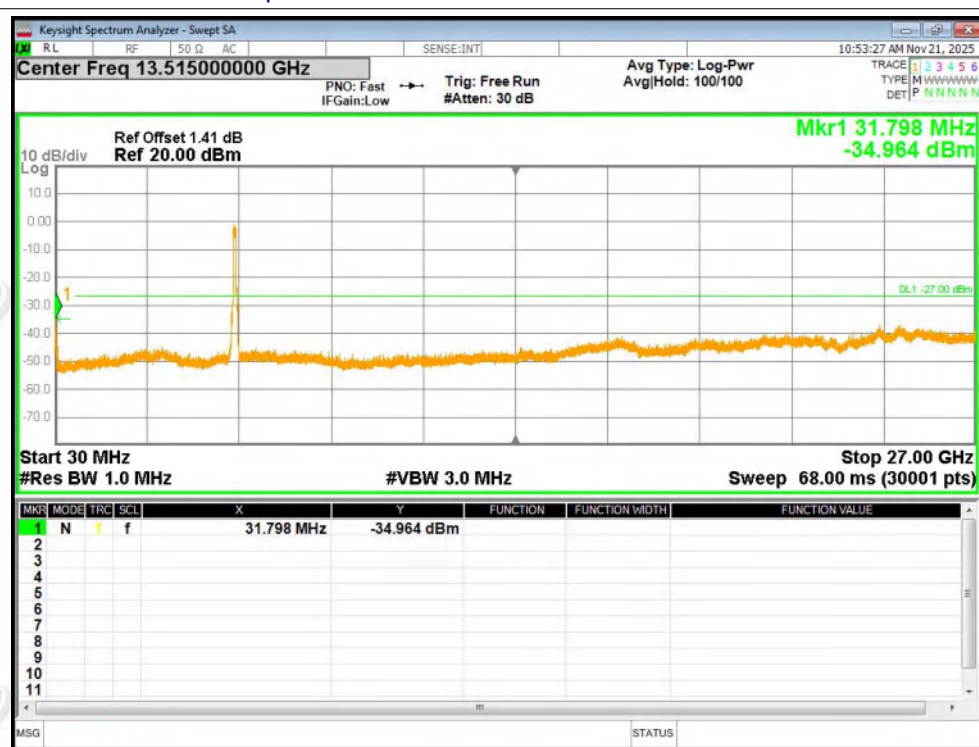
Tx. Spurious NVNT ac40 5270MHz Ant1 Emission



Tx. Spurious NVNT ac40 5310MHz Ant1 Emission



Tx. Spurious NVNT ac80 5290MHz Ant1 Emission



Remark1: From 26.5GHz to 40GHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.