

Appendix D for 5.8GWIFI 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:	Leon Li
Supervised by:	Baret Wu

D.1 Duty Cycle

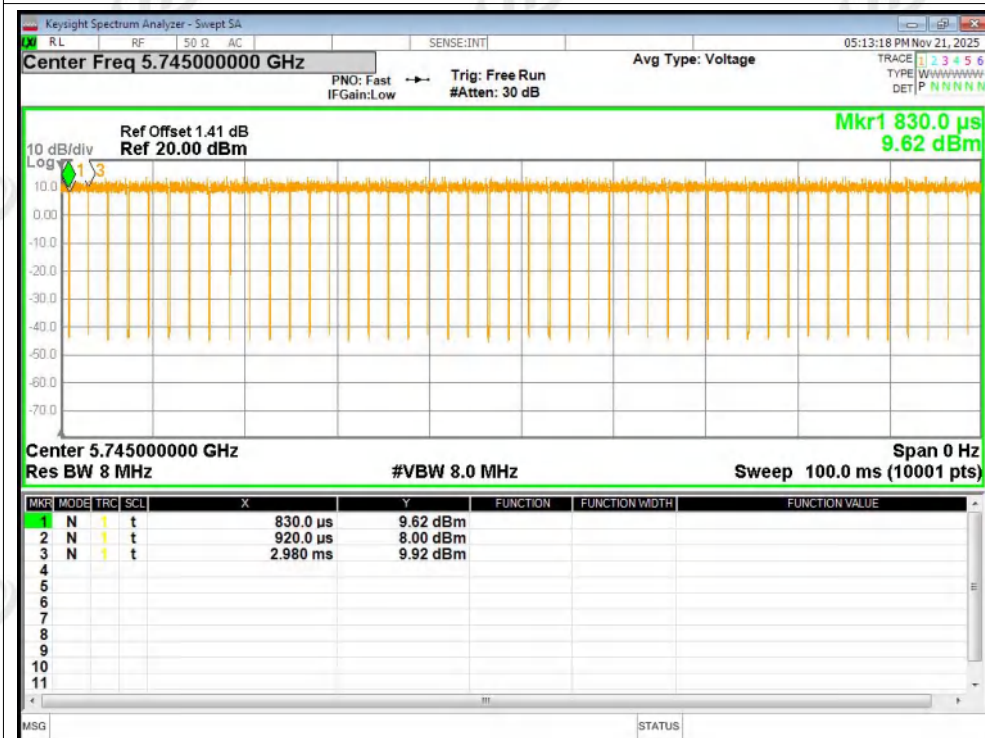
Mode	Frequency (MHz)	Antenna	T _{on} ms	T _{total} ms	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
a	5745	Ant1	2.06	2.15	95.81	0.19	0.49
a	5785	Ant1	2.07	2.19	94.52	0	0.48
a	5825	Ant1	2.06	2.12	97.17	0.12	0.49
n20	5745	Ant1	1.92	1.96	97.96	0	0.52
n20	5785	Ant1	1.92	1.96	97.96	0.09	0.52
n20	5825	Ant1	1.92	2.08	92.31	0.35	0.52
n40	5755	Ant1	0.95	1.01	94.06	0	1.05
n40	5795	Ant1	0.94	1.08	87.04	0.6	1.06
ac20	5745	Ant1	1.93	1.97	97.97	0.09	0.52
ac20	5785	Ant1	1.94	2.07	93.72	0.28	0.52
ac20	5825	Ant1	1.93	2.02	95.54	0.2	0.52
ac40	5755	Ant1	0.95	1.04	91.35	0.39	1.05
ac40	5795	Ant1	0.95	1.08	87.96	0.31	1.05
ac80	5775	Ant1	0.46	0.53	86.79	0	2.17

Note:

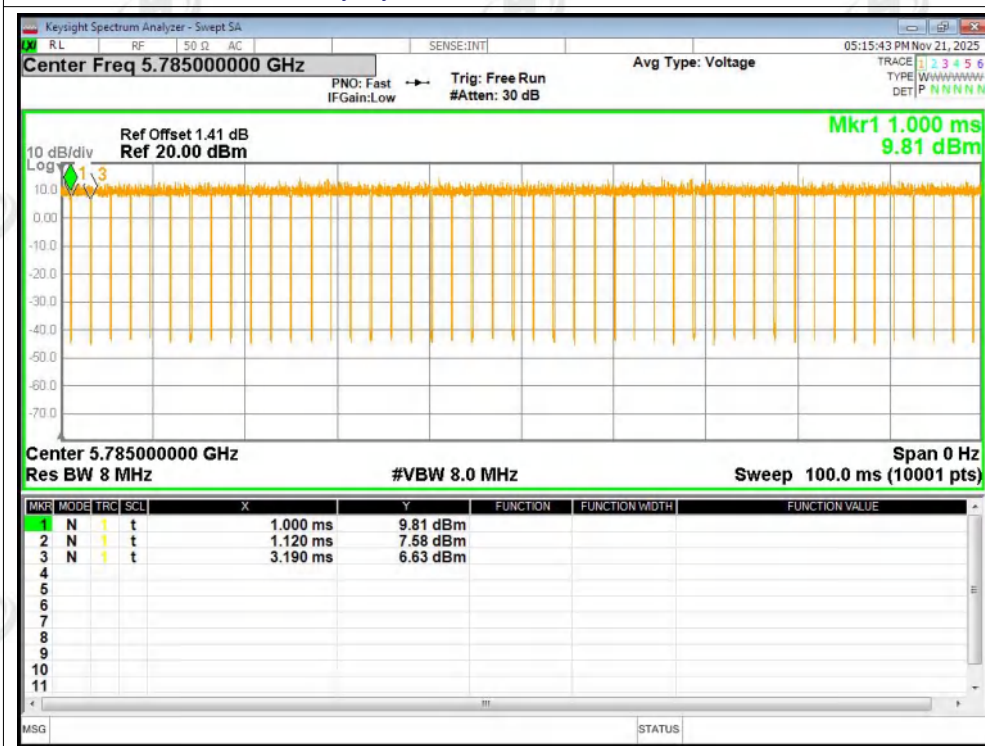
1. Duty Cycle = T_{on} / T_{total}
2. Correction Factor = $10 \log (1 / \text{Duty Cycle})$.
3. $1/T = 1/T_{on}$

Test Graphs

Duty Cycle NVNT a 5745MHz Ant1

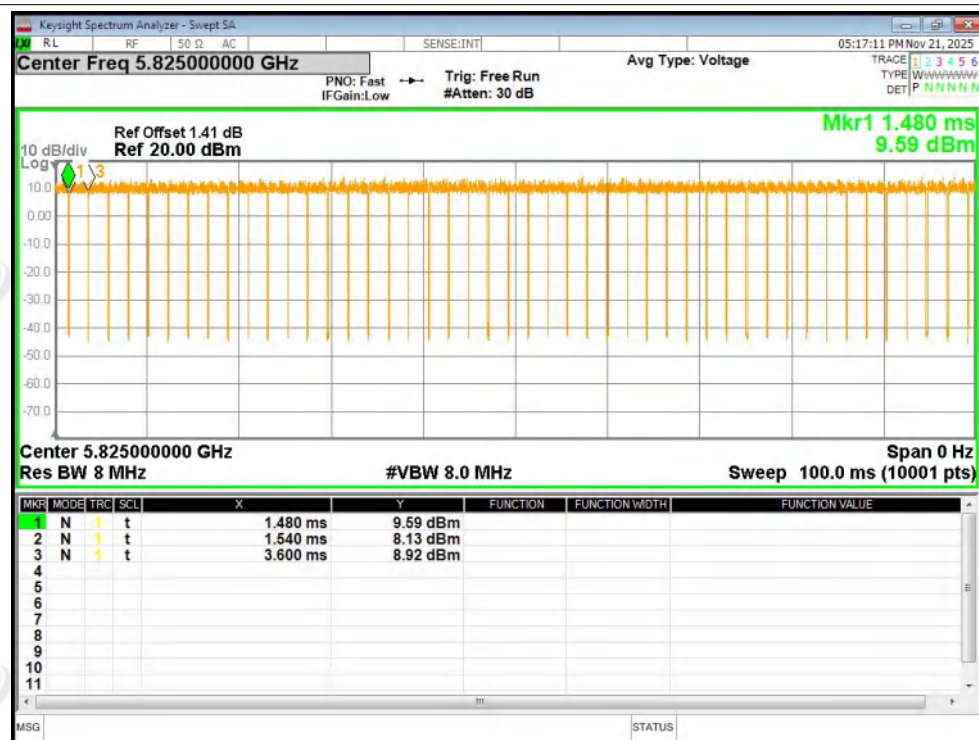


Duty Cycle NVNT a 5785MHz Ant1

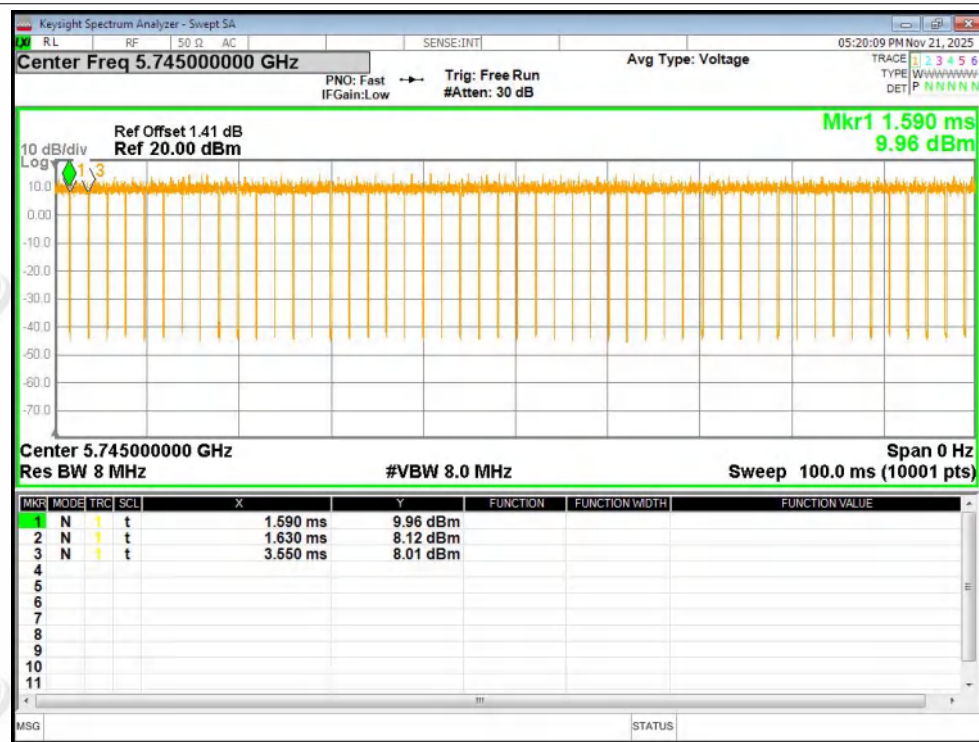




Duty Cycle NVNT a 5825MHz Ant1

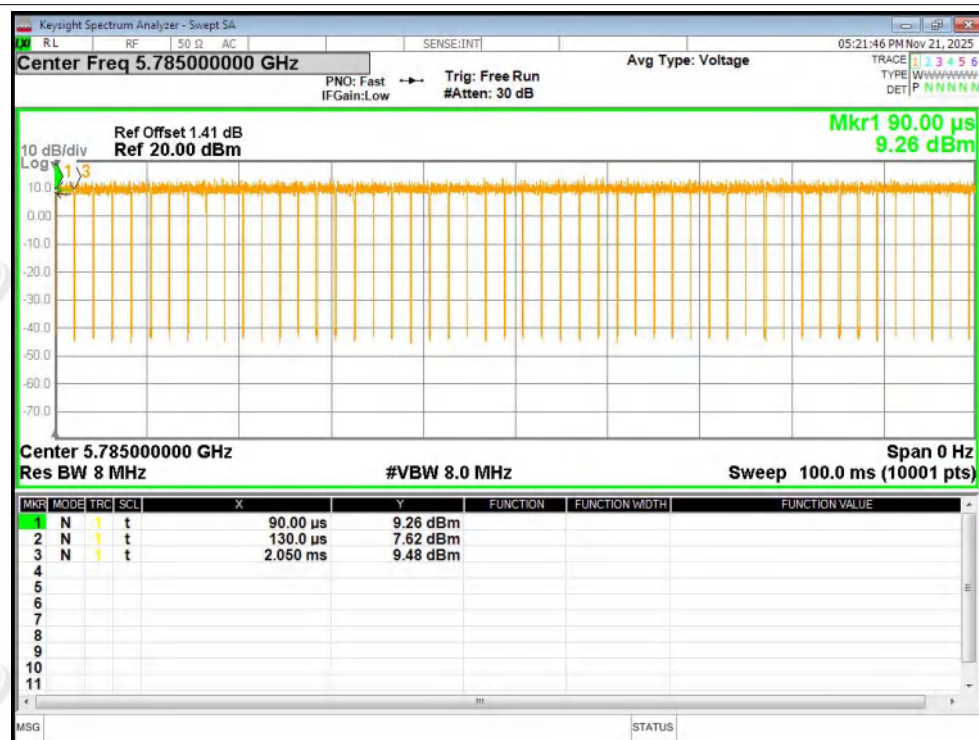


Duty Cycle NVNT n20 5745MHz Ant1

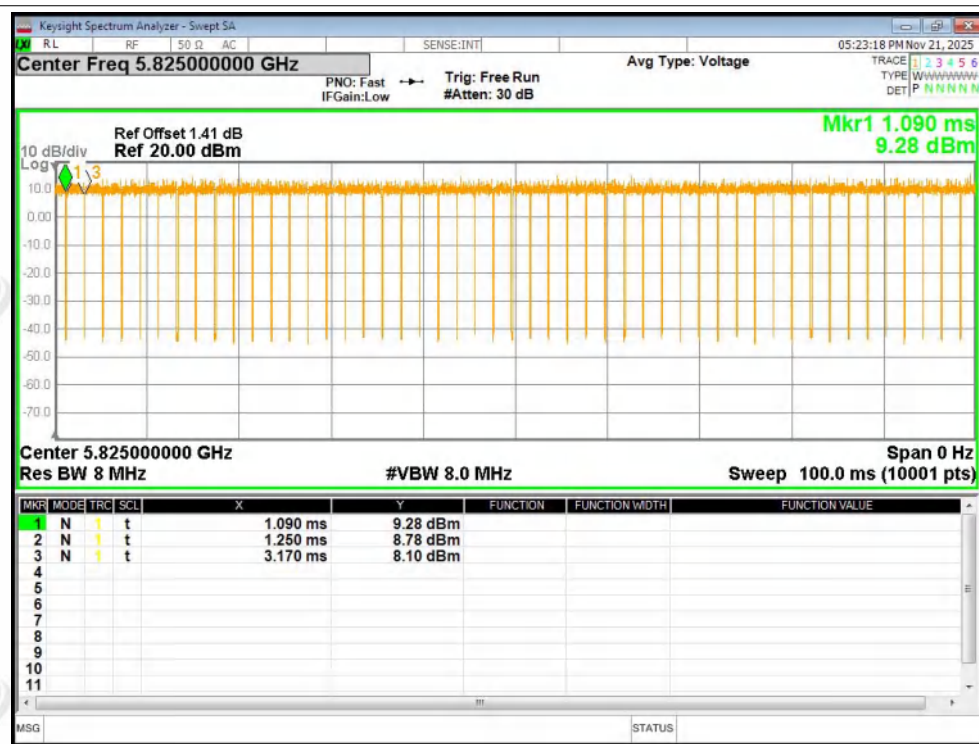




Duty Cycle NVNT n20 5785MHz Ant1

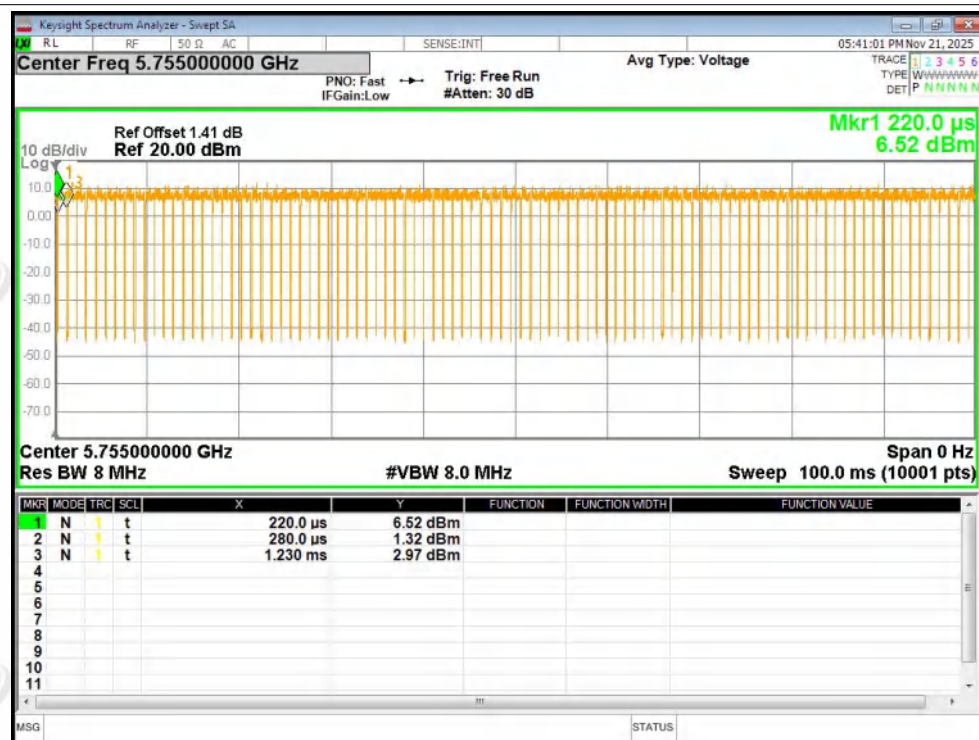


Duty Cycle NVNT n20 5825MHz Ant1





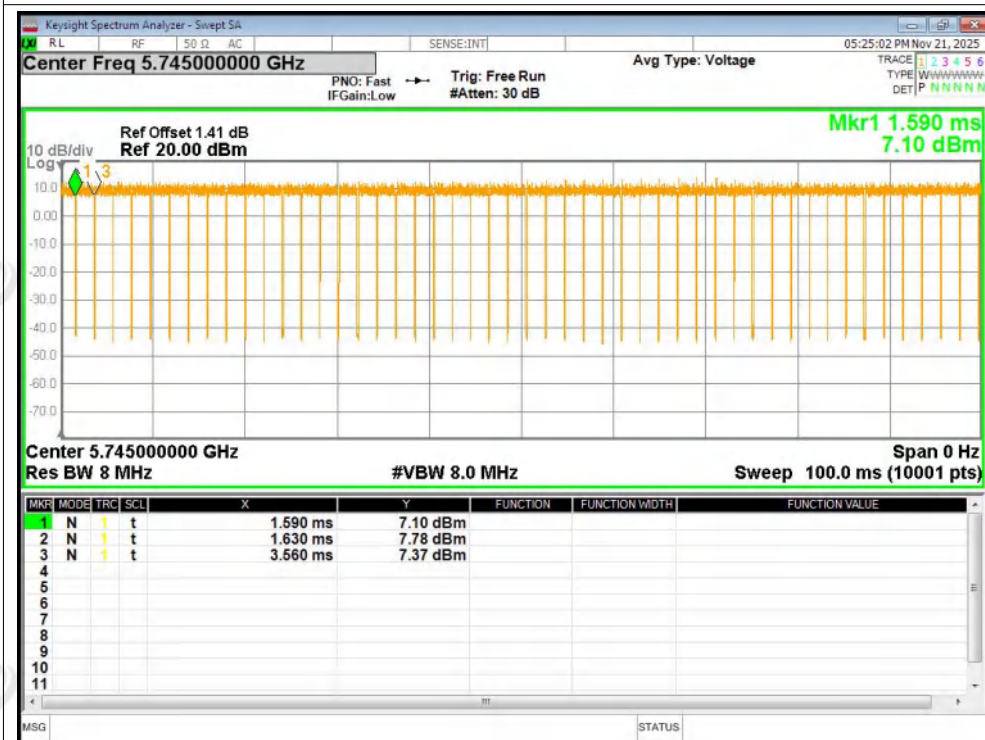
Duty Cycle NVNT n40 5755MHz Ant1



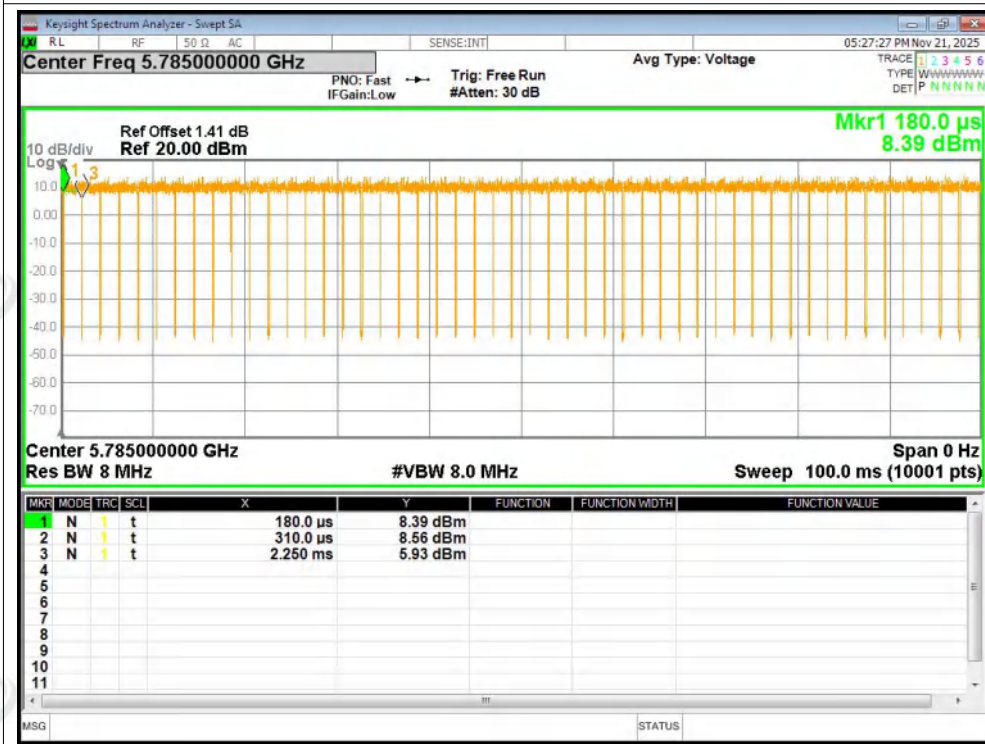
Duty Cycle NVNT n40 5795MHz Ant1



Duty Cycle NVNT ac20 5745MHz Ant1

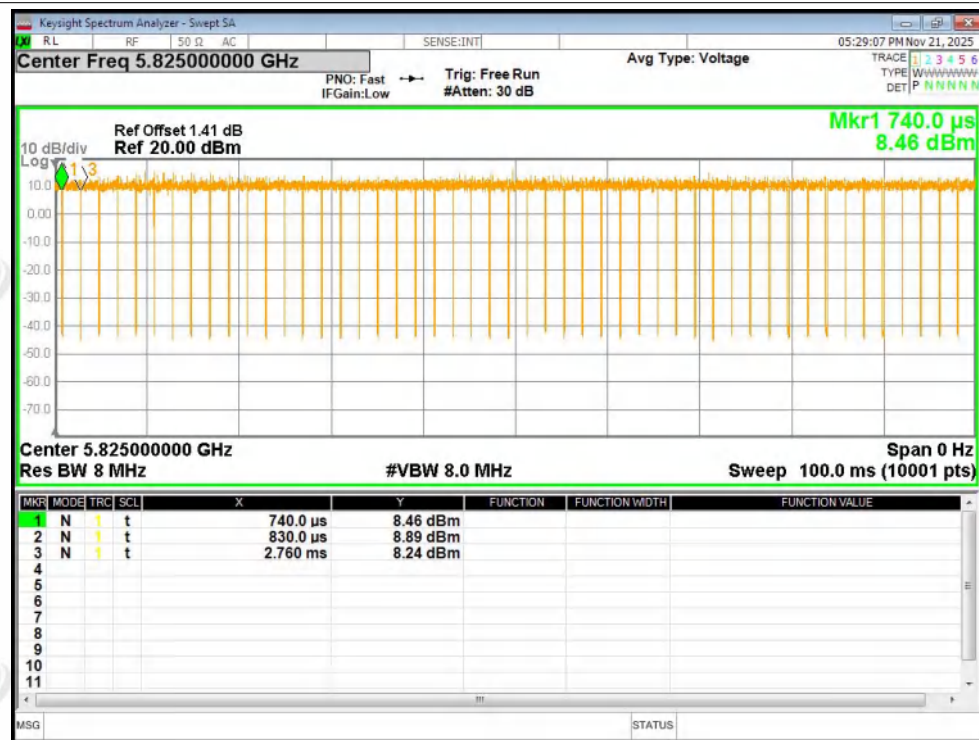


Duty Cycle NVNT ac20 5785MHz Ant1

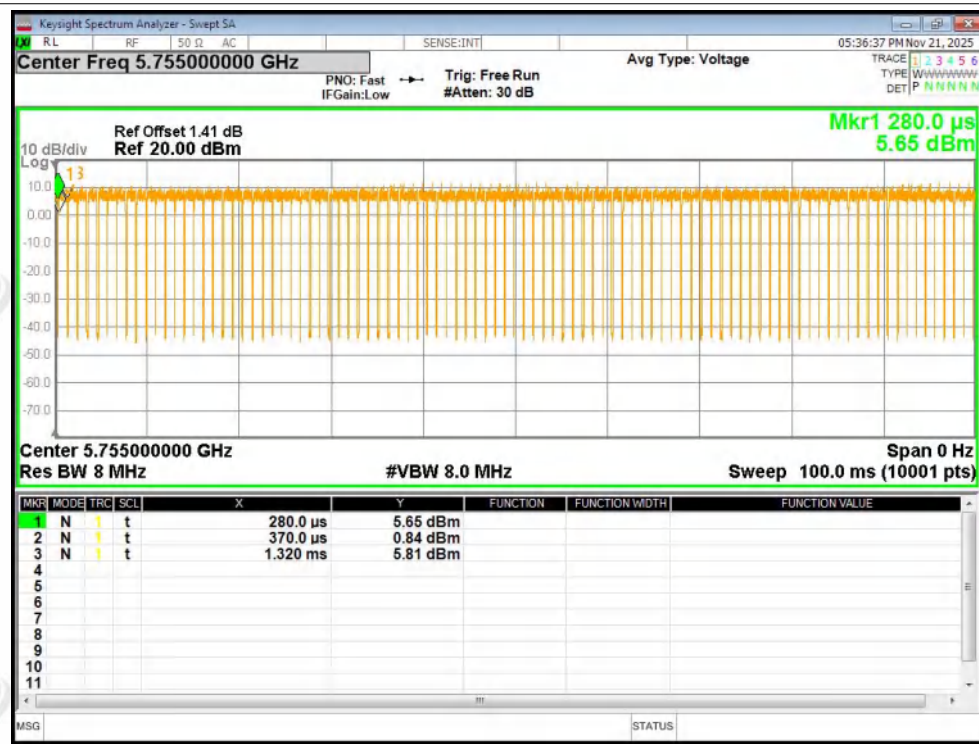




Duty Cycle NVNT ac20 5825MHz Ant1

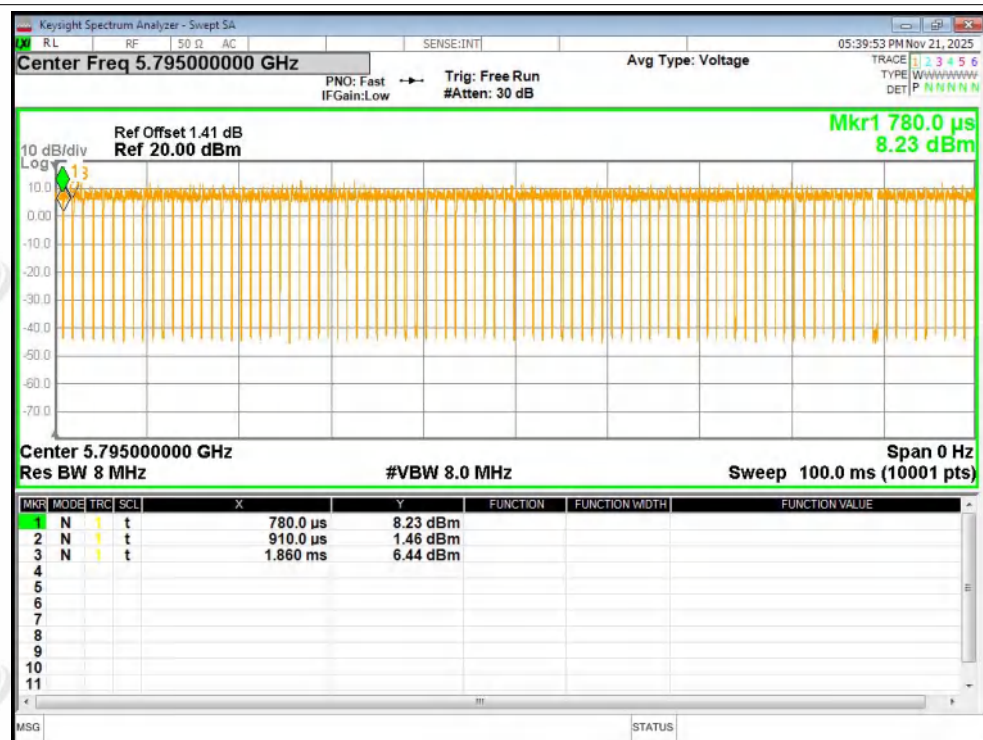


Duty Cycle NVNT ac40 5755MHz Ant1

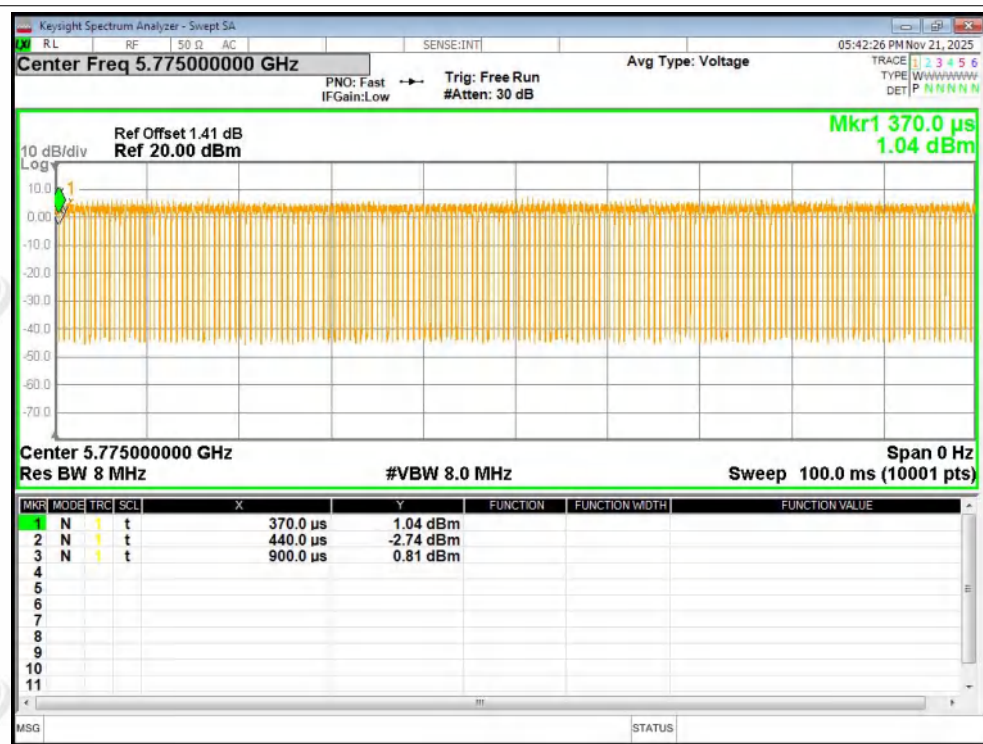




Duty Cycle NVNT ac40 5795MHz Ant1



Duty Cycle NVNT ac80 5775MHz Ant1



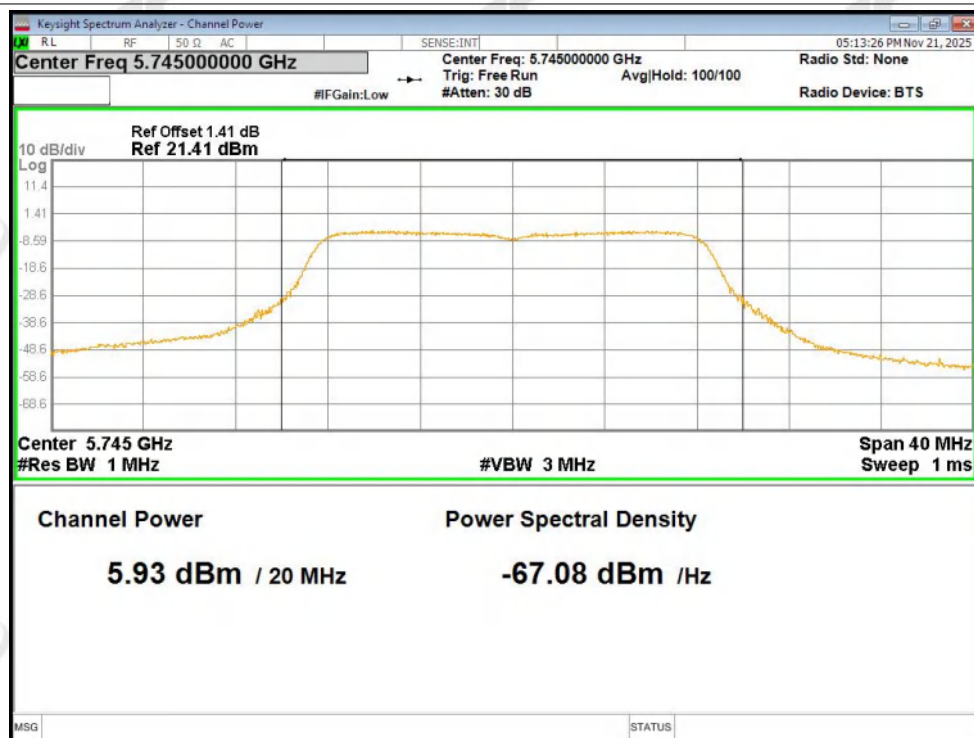


D.2 Maximum Conducted Output Power

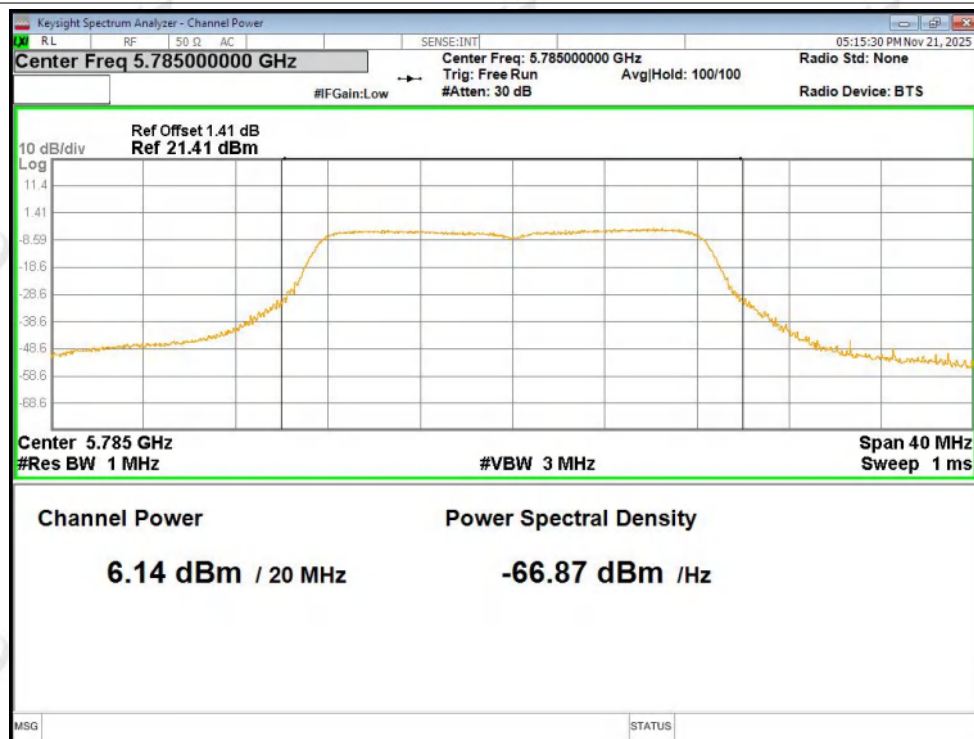
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	5.93	0.19	6.12	30	Pass
NVNT	a	5785	Ant1	6.14	0	6.14	30	Pass
NVNT	a	5825	Ant1	6.23	0.12	6.35	30	Pass
NVNT	n20	5745	Ant1	6.19	0	6.19	30	Pass
NVNT	n20	5785	Ant1	6.32	0.09	6.41	30	Pass
NVNT	n20	5825	Ant1	6.43	0.35	6.78	30	Pass
NVNT	n40	5755	Ant1	6.66	0	6.66	30	Pass
NVNT	n40	5795	Ant1	6.38	0.6	6.98	30	Pass
NVNT	ac20	5745	Ant1	5.63	0.09	5.72	30	Pass
NVNT	ac20	5785	Ant1	6.42	0.28	6.7	30	Pass
NVNT	ac20	5825	Ant1	6.51	0.2	6.71	30	Pass
NVNT	ac40	5755	Ant1	5.88	0.39	6.27	30	Pass
NVNT	ac40	5795	Ant1	6.36	0.31	6.67	30	Pass
NVNT	ac80	5775	Ant1	6.35	0	6.35	30	Pass

Test Graphs

Power NVNT a 5745MHz Ant1

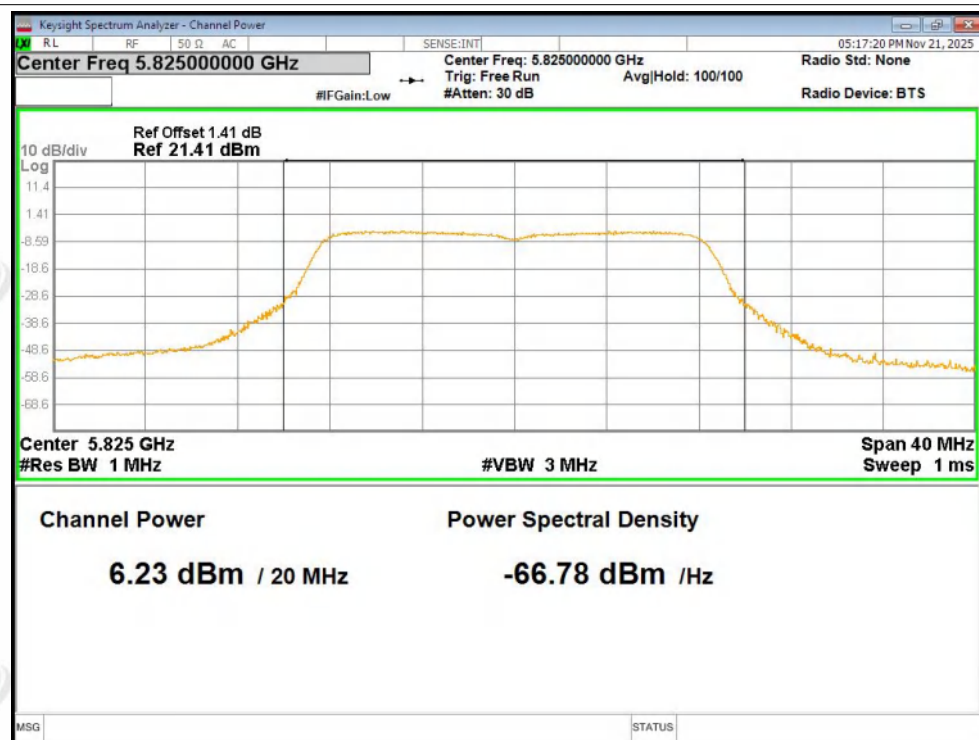


Power NVNT a 5785MHz Ant1

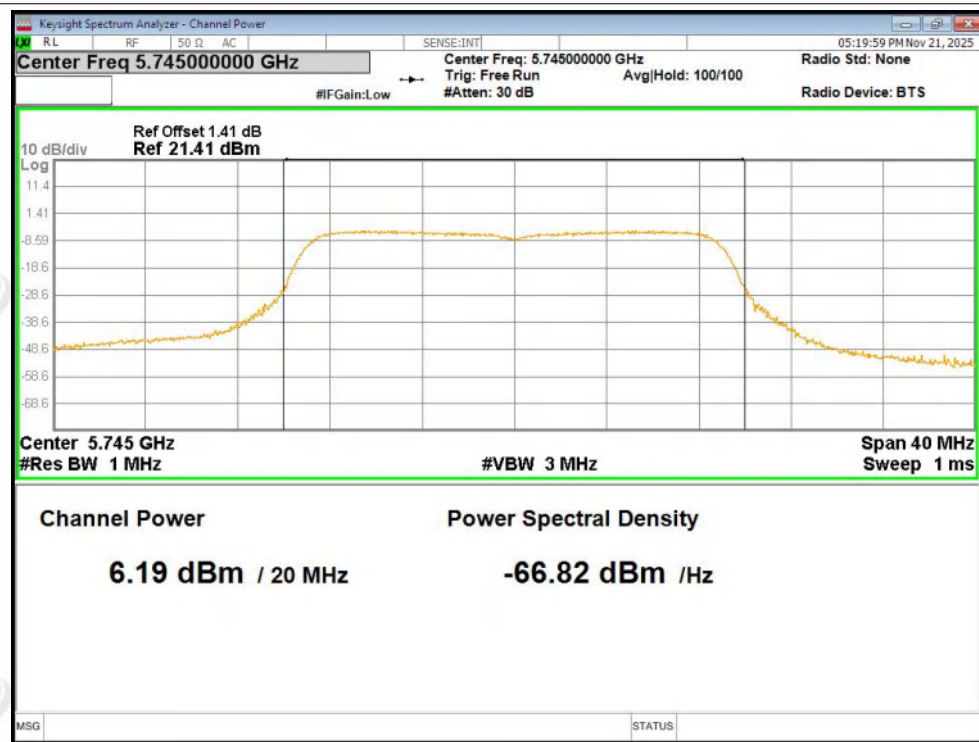




Power NVNT a 5825MHz Ant1

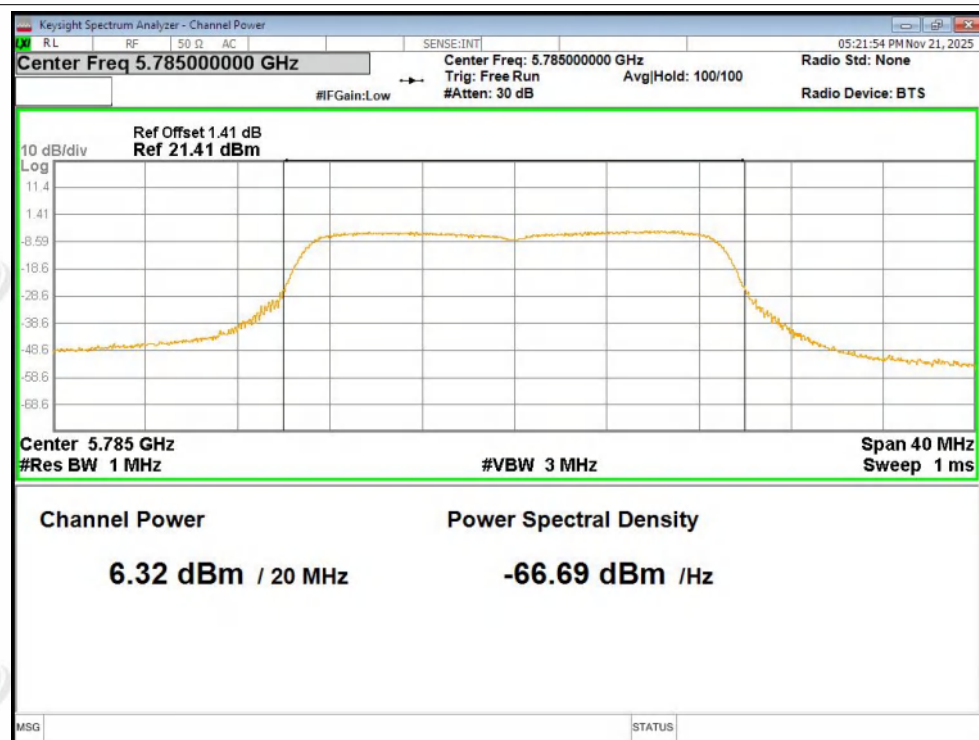


Power NVNT n20 5745MHz Ant1

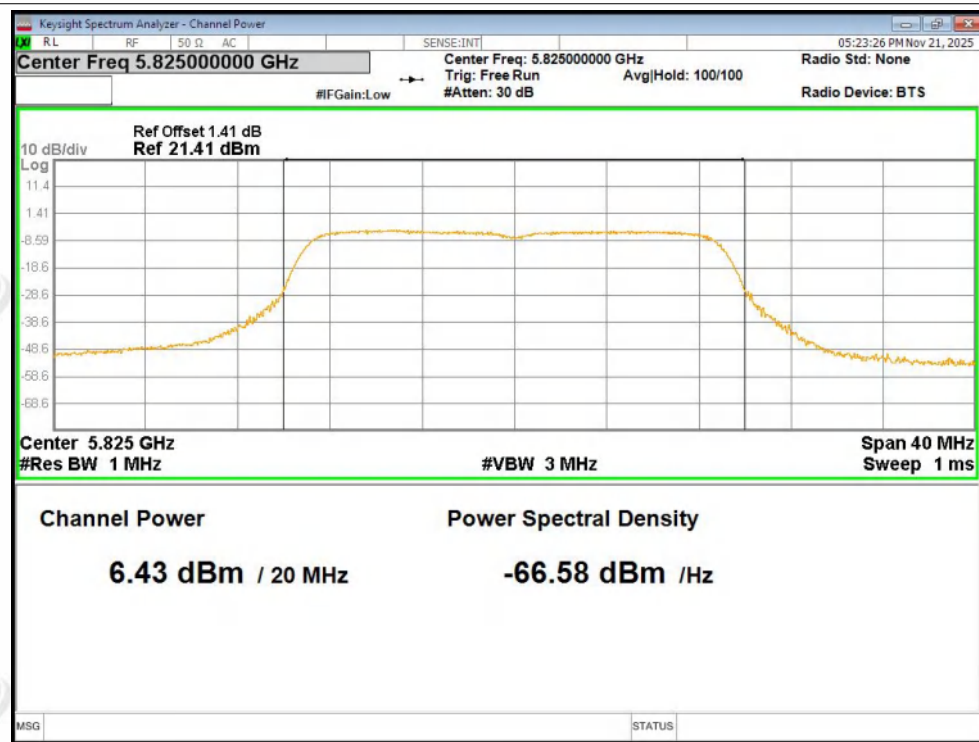




Power NVNT n20 5785MHz Ant1

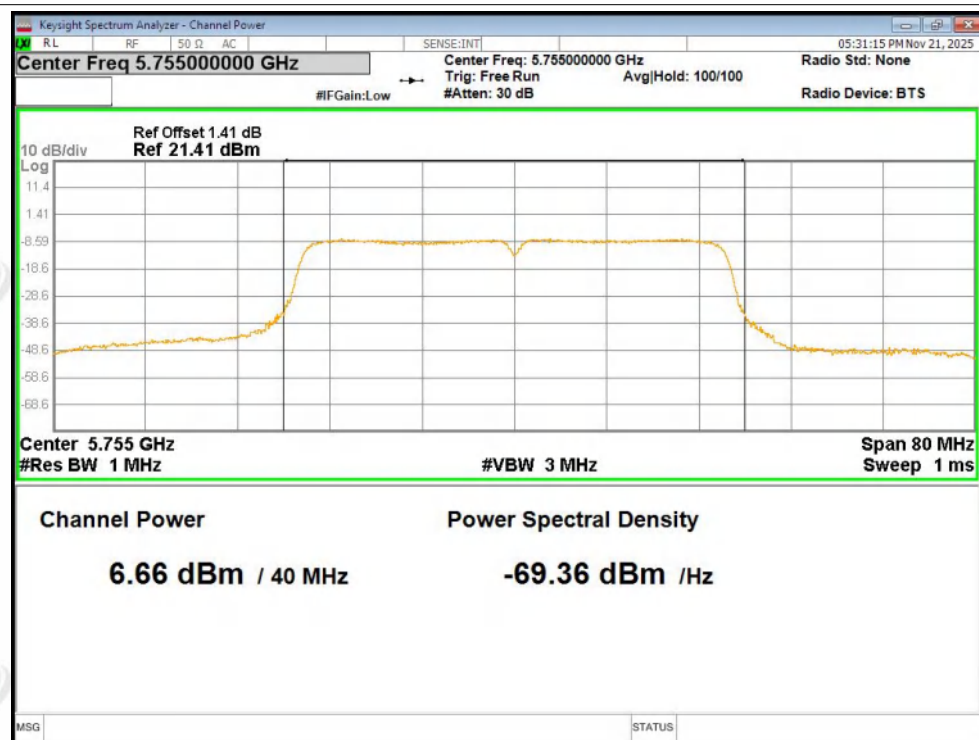


Power NVNT n20 5825MHz Ant1





Power NVNT n40 5755MHz Ant1

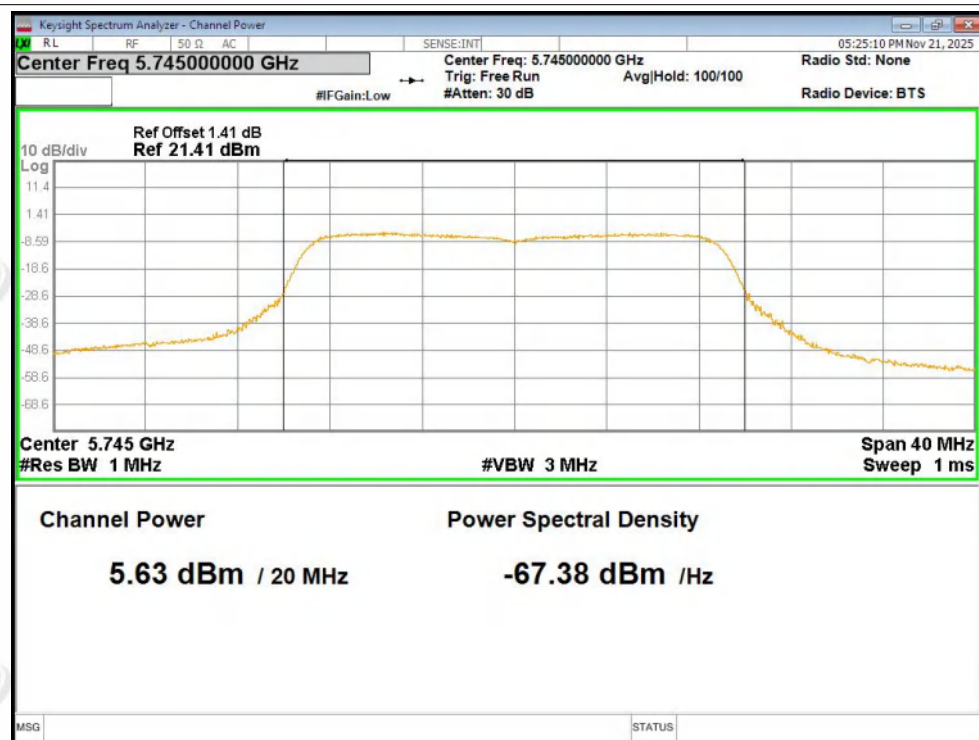


Power NVNT n40 5795MHz Ant1





Power NVNT ac20 5745MHz Ant1

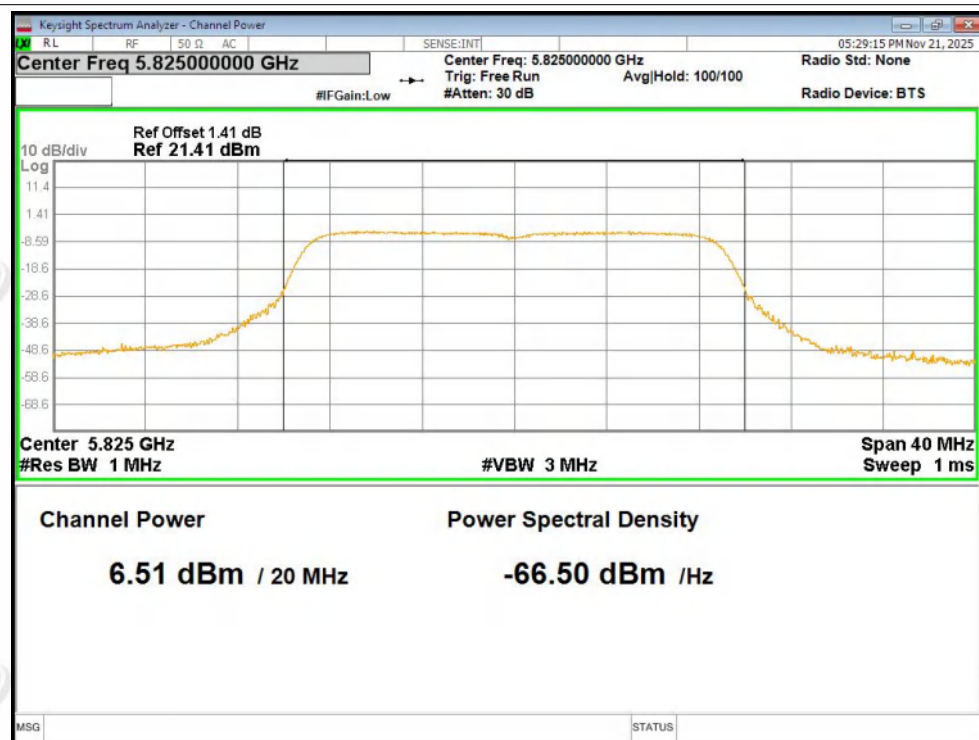


Power NVNT ac20 5785MHz Ant1

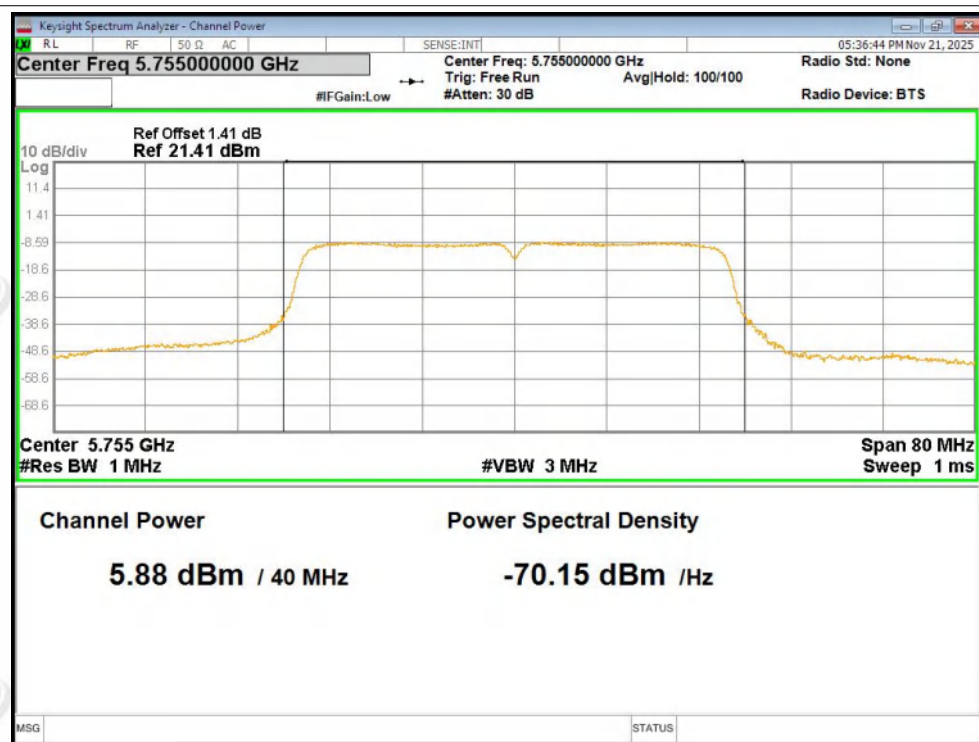




Power NVNT ac20 5825MHz Ant1

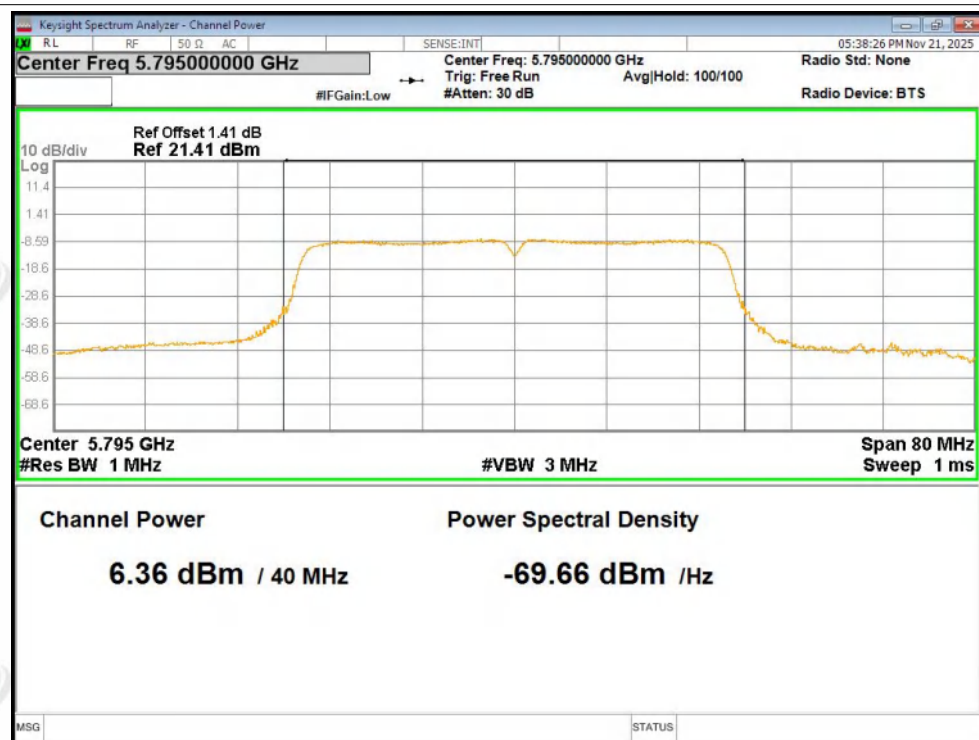


Power NVNT ac40 5755MHz Ant1

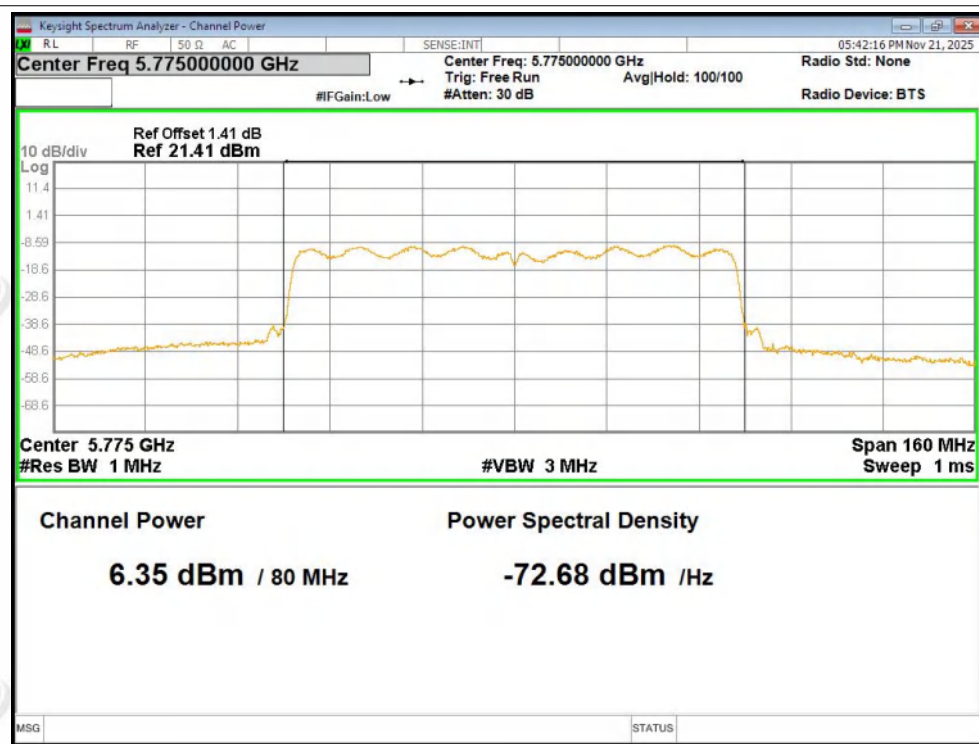




Power NVNT ac40 5795MHz Ant1



Power NVNT ac80 5775MHz Ant1

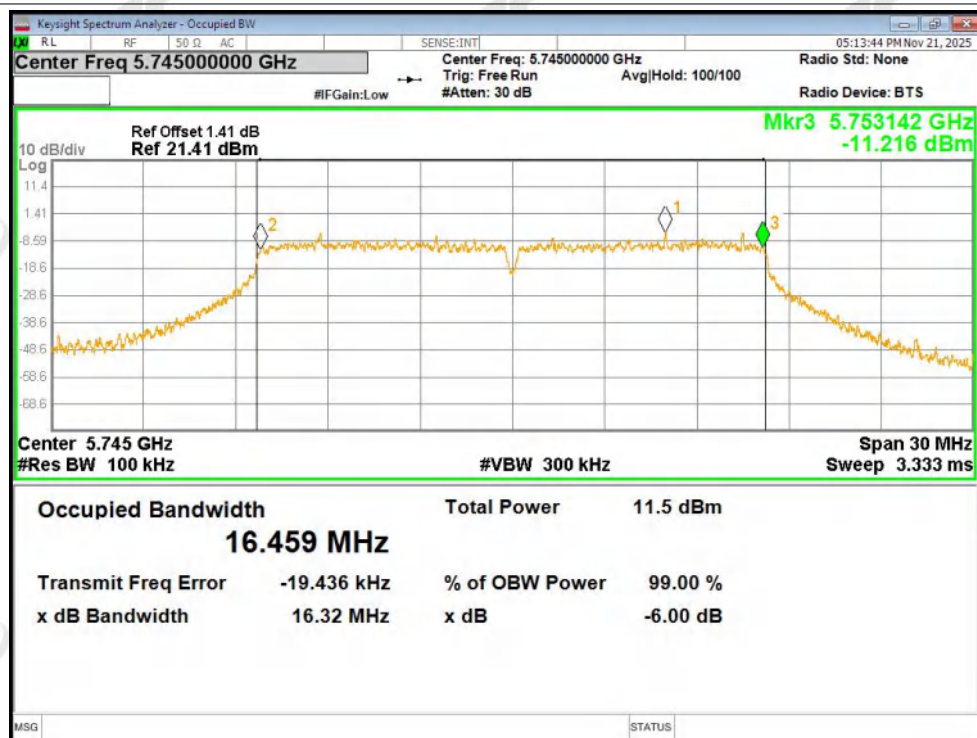


D.3 -6dB Bandwidth

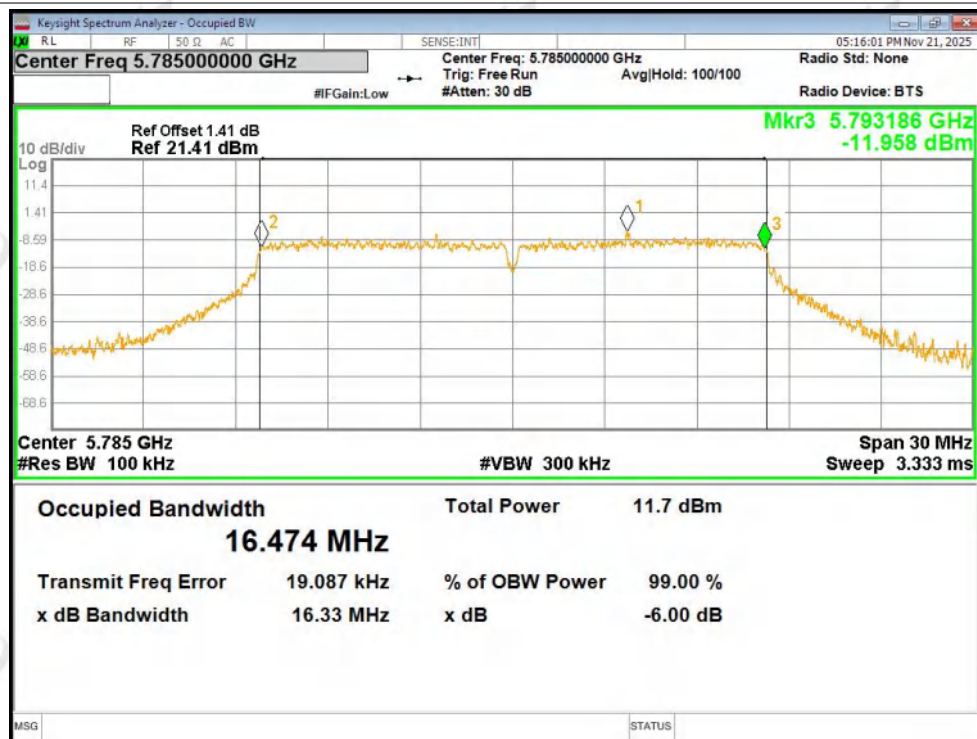
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.324	0.5	Pass
NVNT	a	5785	Ant1	16.333	0.5	Pass
NVNT	a	5825	Ant1	16.303	0.5	Pass
NVNT	n20	5745	Ant1	16.933	0.5	Pass
NVNT	n20	5785	Ant1	17.019	0.5	Pass
NVNT	n20	5825	Ant1	16.642	0.5	Pass
NVNT	n40	5755	Ant1	35.325	0.5	Pass
NVNT	n40	5795	Ant1	35.05	0.5	Pass
NVNT	ac20	5745	Ant1	17.051	0.5	Pass
NVNT	ac20	5785	Ant1	17.554	0.5	Pass
NVNT	ac20	5825	Ant1	17.033	0.5	Pass
NVNT	ac40	5755	Ant1	35.156	0.5	Pass
NVNT	ac40	5795	Ant1	35.298	0.5	Pass
NVNT	ac80	5775	Ant1	75.133	0.5	Pass

Test Graphs

-6dB Bandwidth NVNT a 5745MHz Ant1

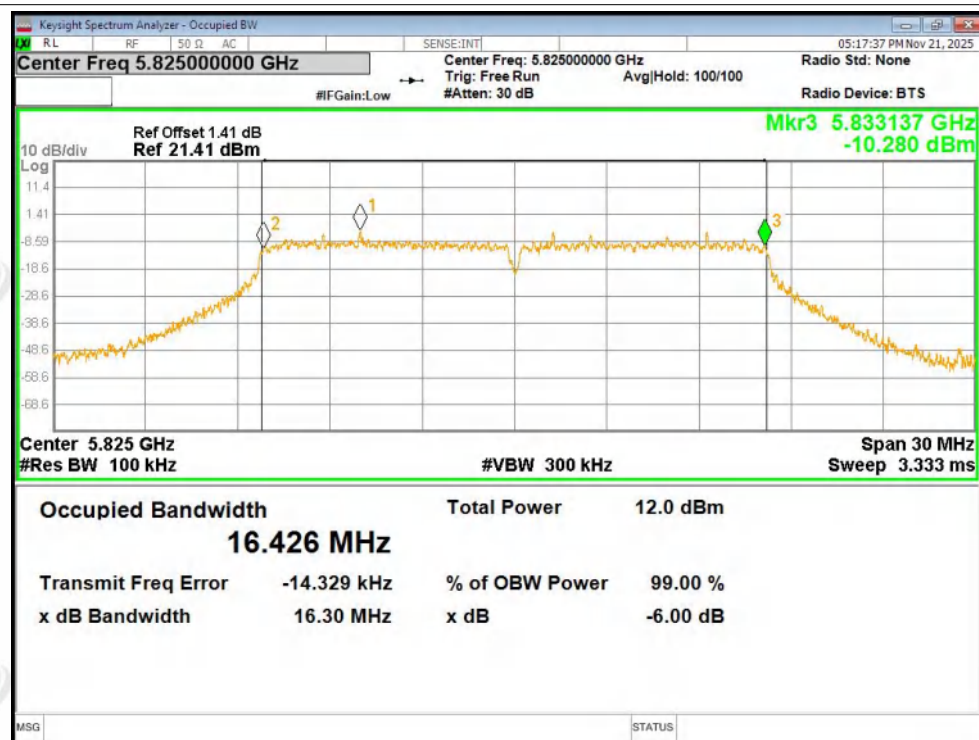


-6dB Bandwidth NVNT a 5785MHz Ant1

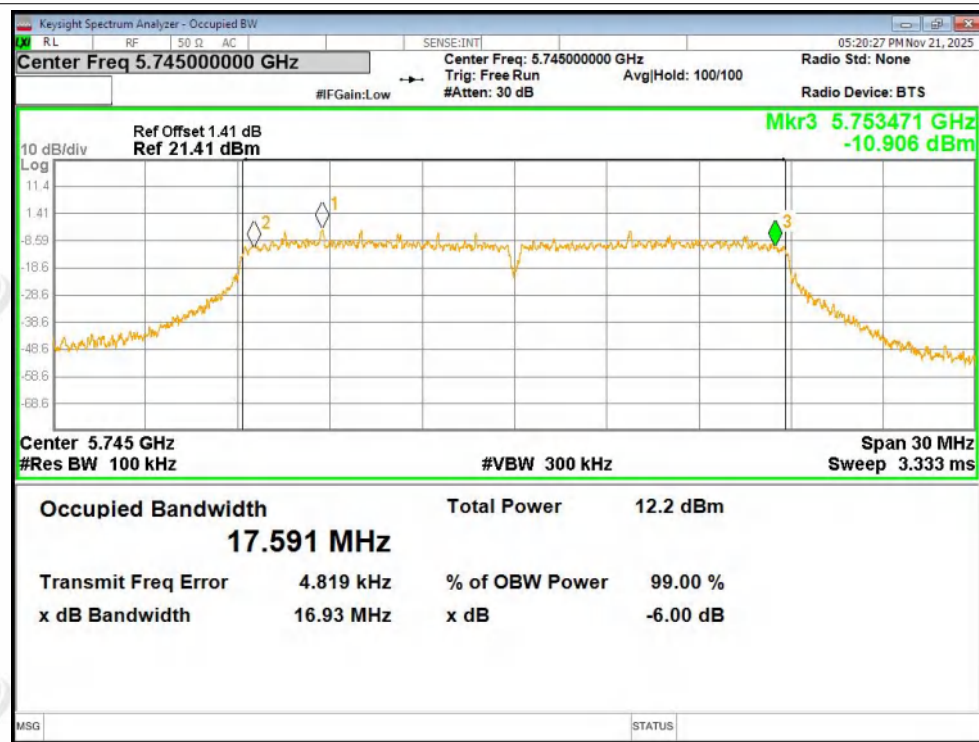




-6dB Bandwidth NVNT a 5825MHz Ant1

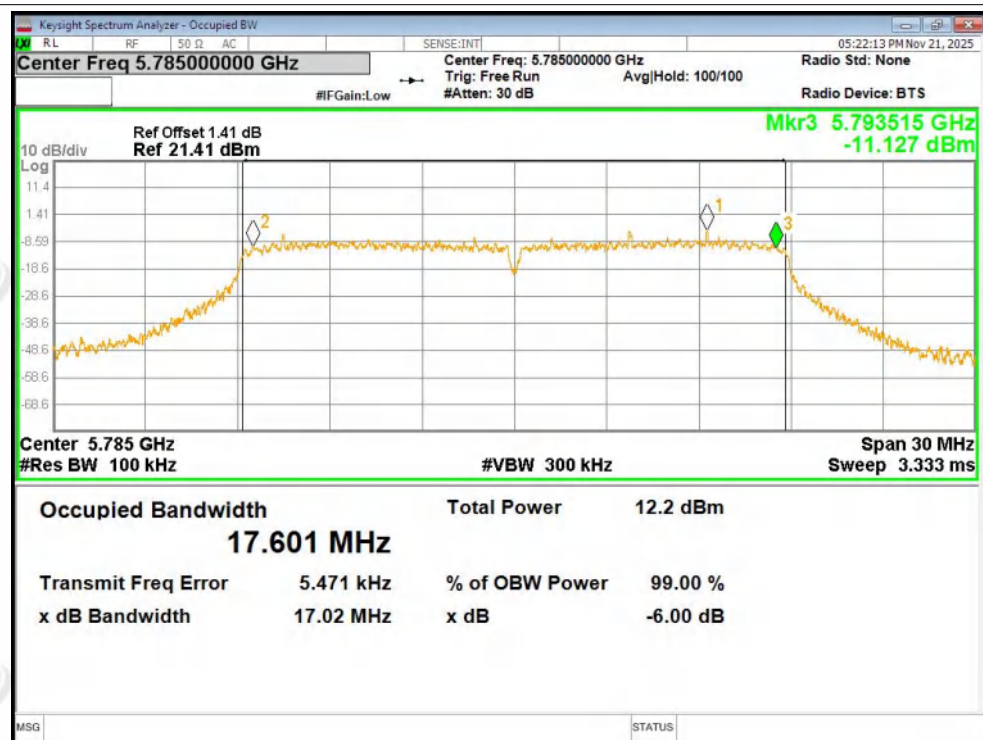


-6dB Bandwidth NVNT n20 5745MHz Ant1

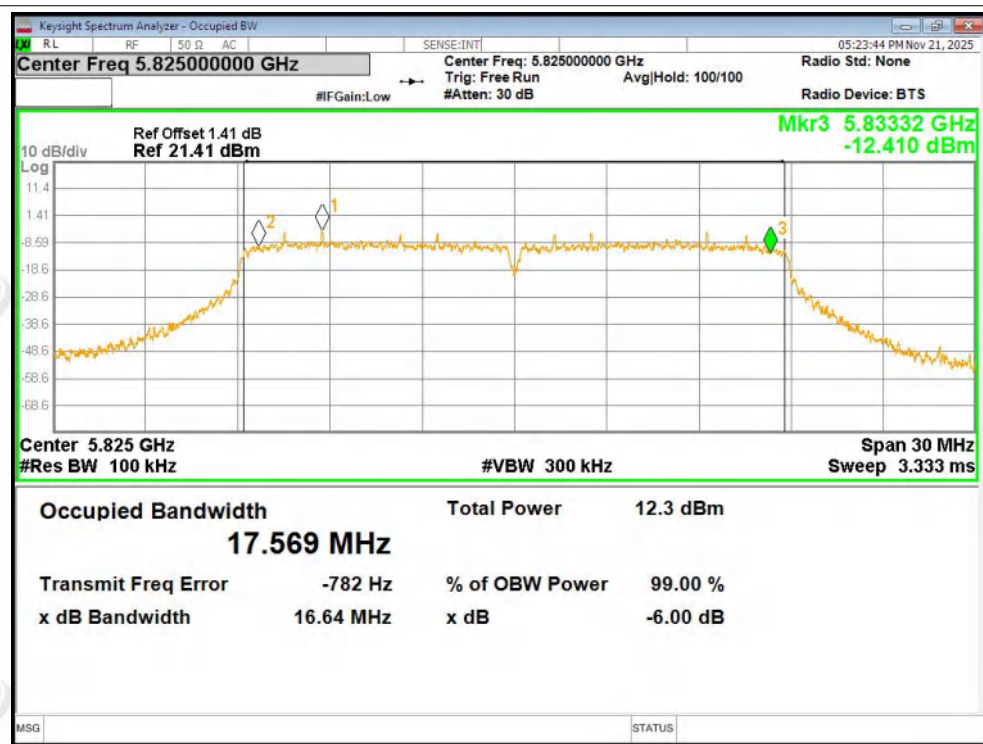




-6dB Bandwidth NVNT n20 5785MHz Ant1

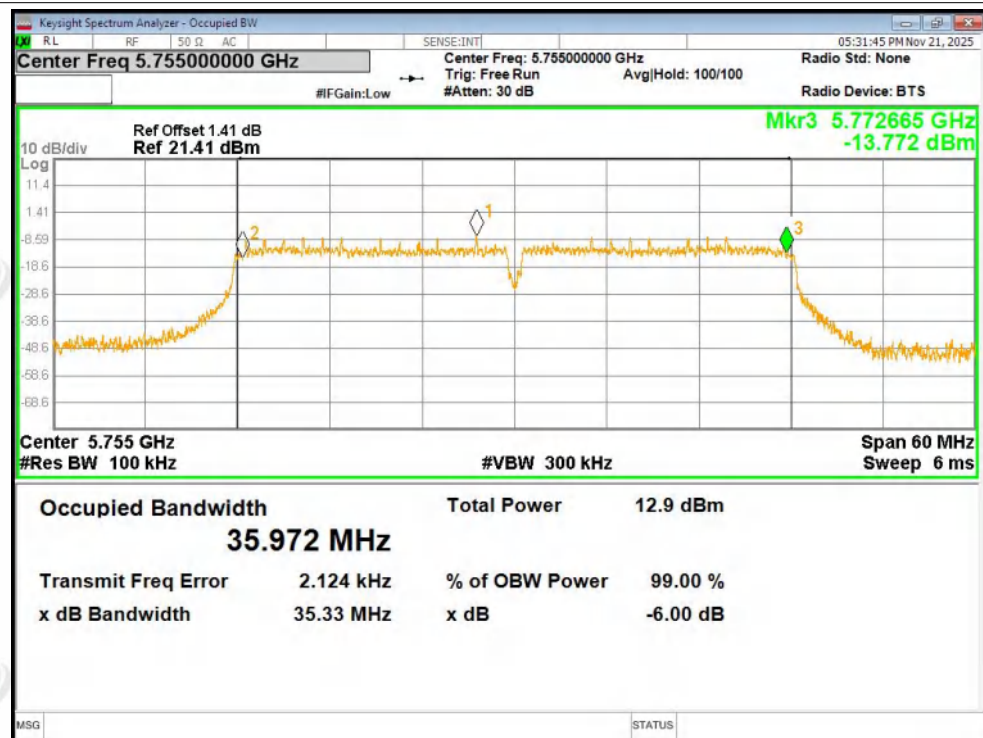


-6dB Bandwidth NVNT n20 5825MHz Ant1

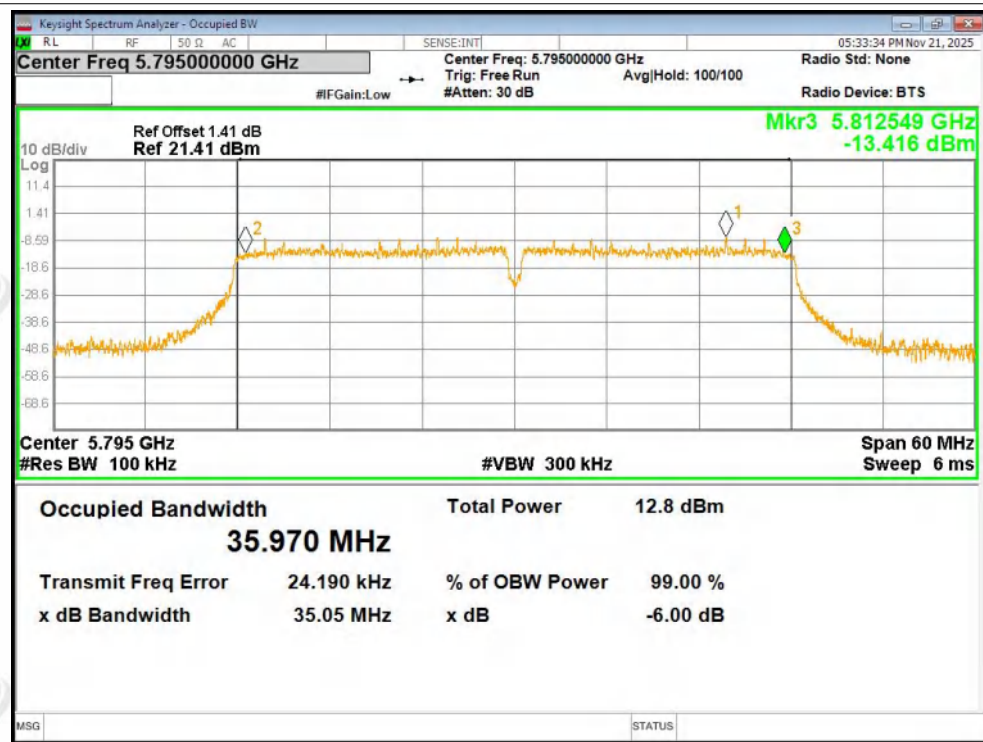




-6dB Bandwidth NVNT n40 5755MHz Ant1

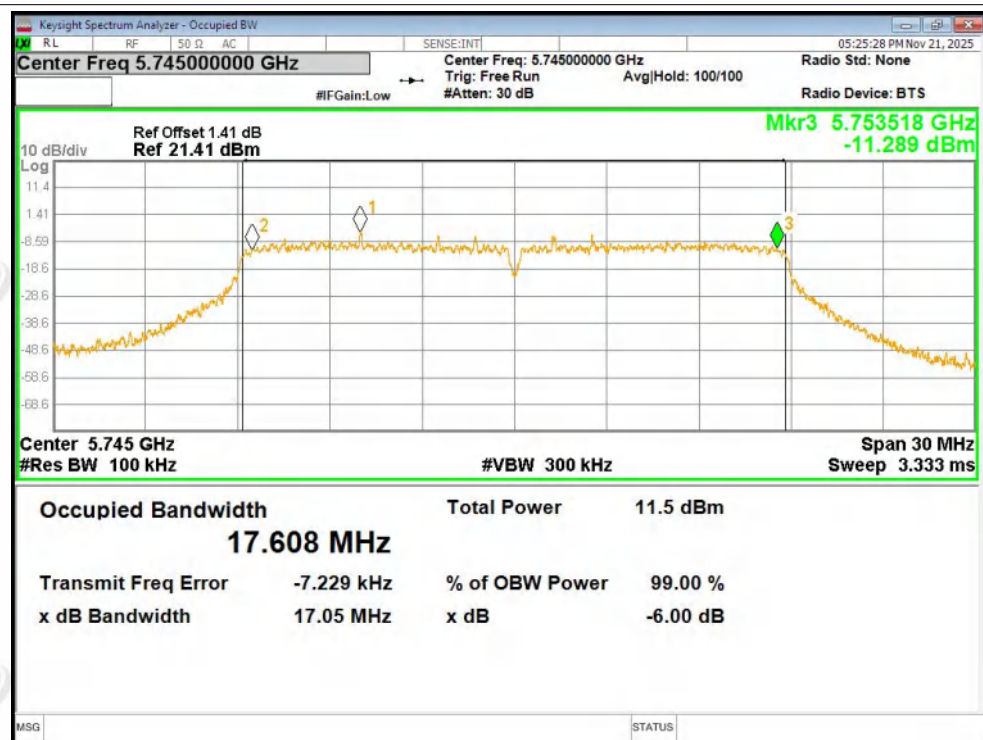


-6dB Bandwidth NVNT n40 5795MHz Ant1

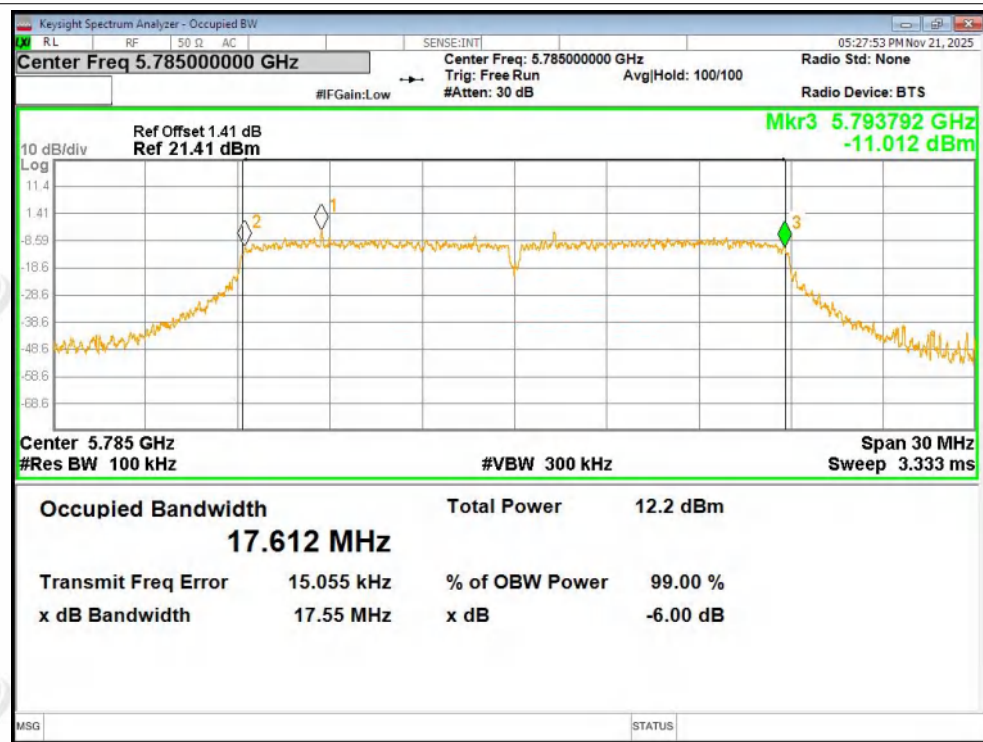




-6dB Bandwidth NVNT ac20 5745MHz Ant1

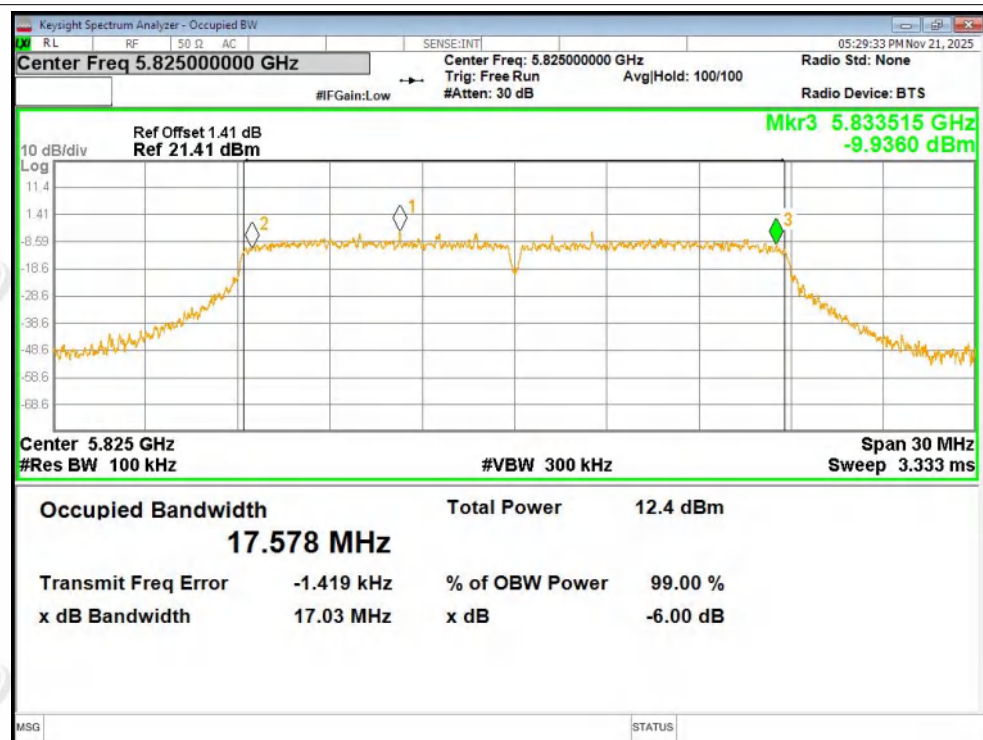


-6dB Bandwidth NVNT ac20 5785MHz Ant1

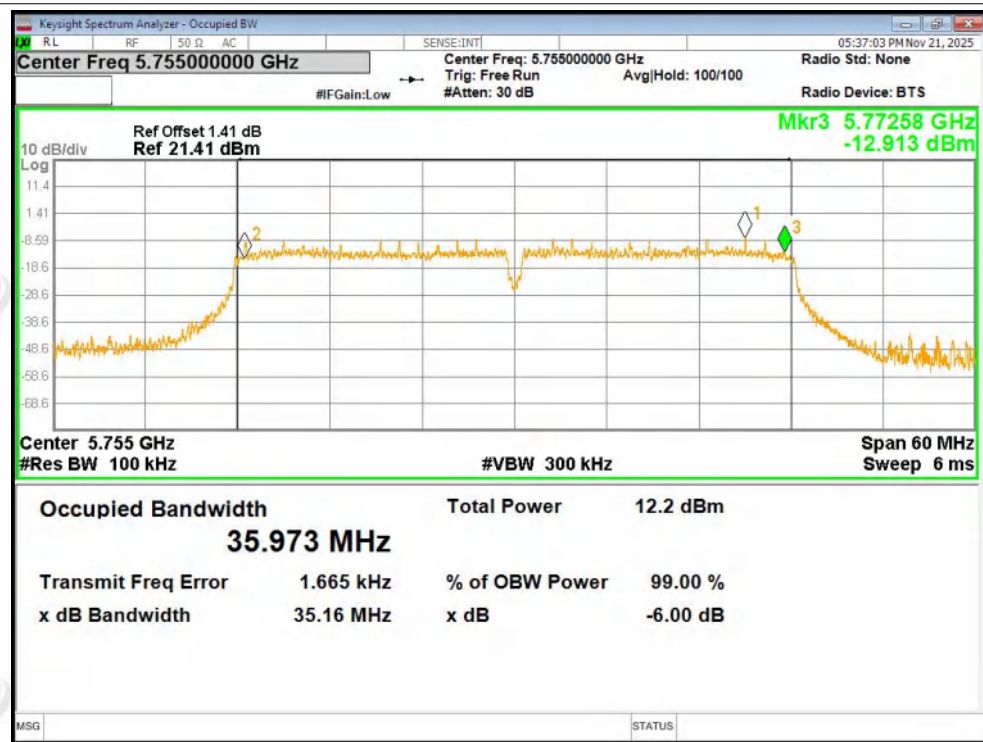




-6dB Bandwidth NVNT ac20 5825MHz Ant1

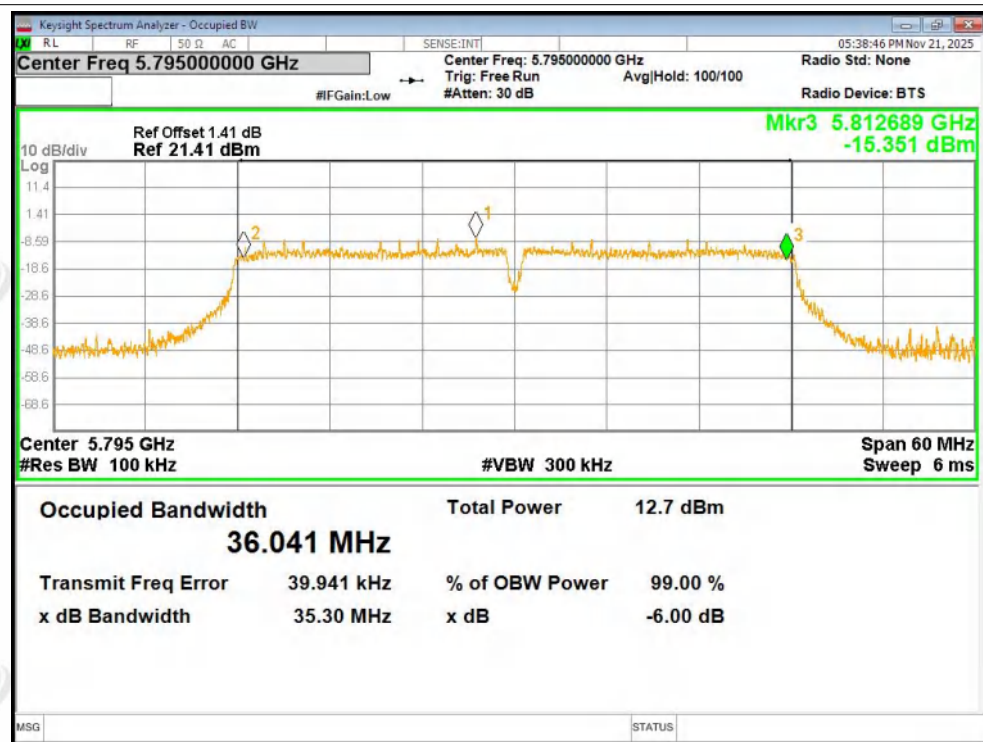


-6dB Bandwidth NVNT ac40 5755MHz Ant1

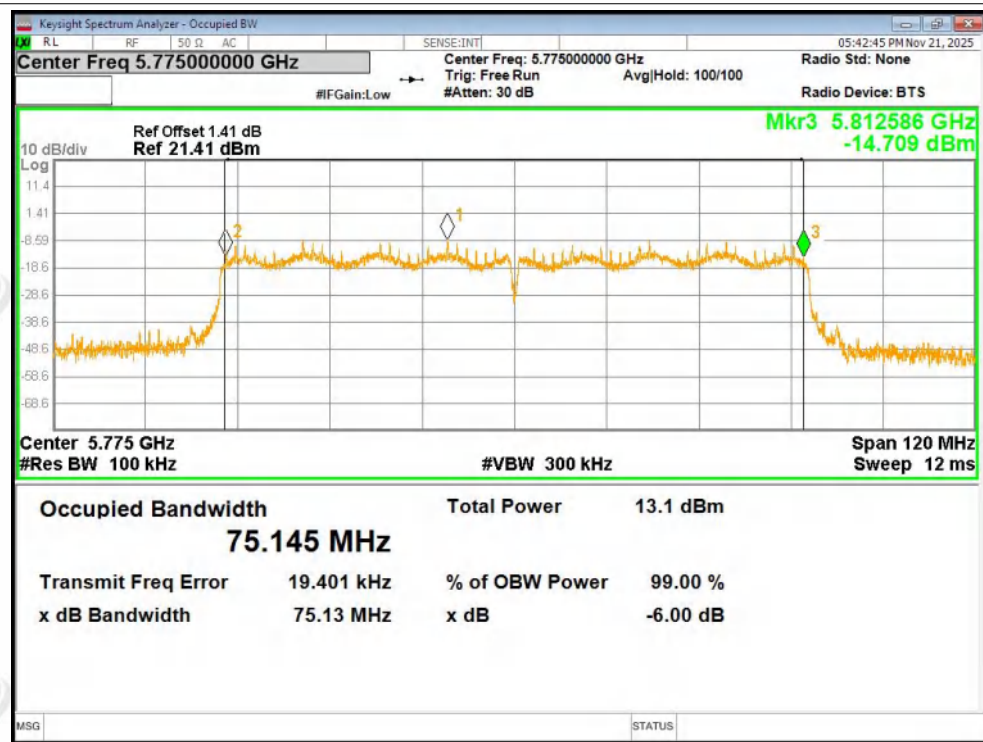




-6dB Bandwidth NVNT ac40 5795MHz Ant1



-6dB Bandwidth NVNT ac80 5775MHz Ant1



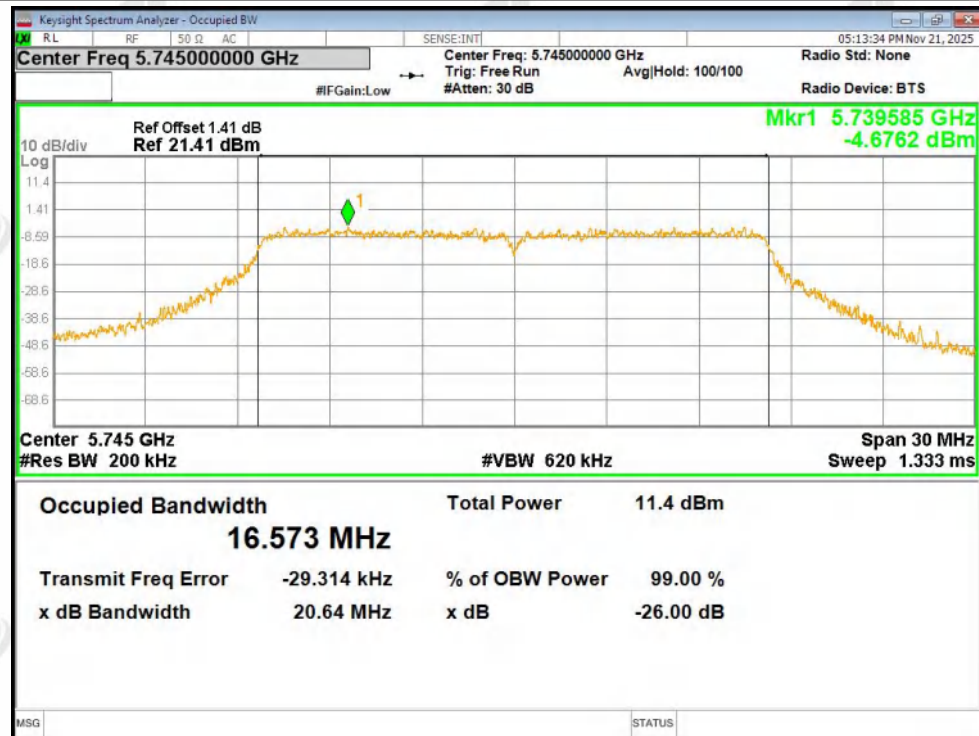
D.4 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.573
NVNT	a	5785	Ant1	16.587
NVNT	a	5825	Ant1	16.512
NVNT	n20	5745	Ant1	17.66
NVNT	n20	5785	Ant1	17.652
NVNT	n20	5825	Ant1	17.582
NVNT	n40	5755	Ant1	36.119
NVNT	n40	5795	Ant1	36.173
NVNT	ac20	5745	Ant1	17.668
NVNT	ac20	5785	Ant1	17.649
NVNT	ac20	5825	Ant1	17.628
NVNT	ac40	5755	Ant1	36.13
NVNT	ac40	5795	Ant1	36.12
NVNT	ac80	5775	Ant1	75.266

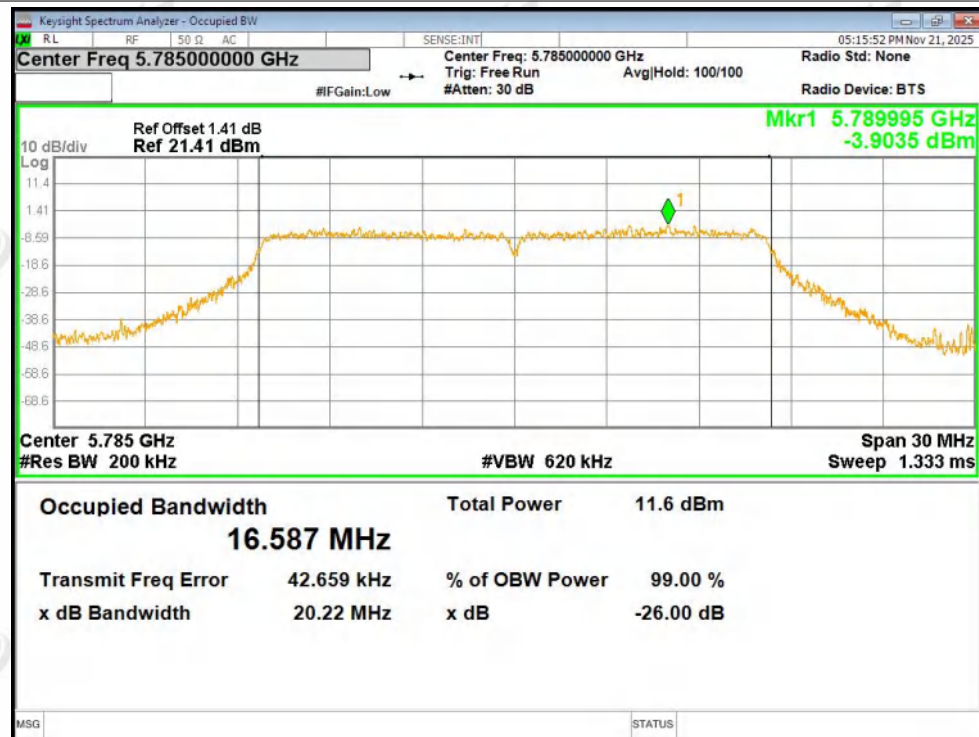


Test Graphs

OBW NVNT a 5745MHz Ant1

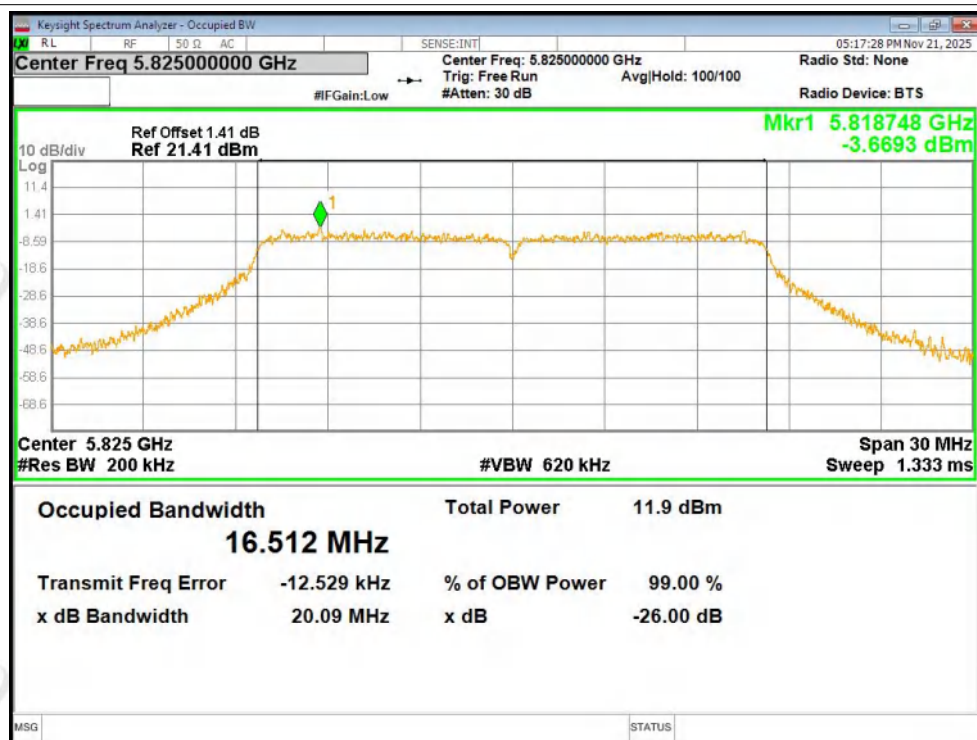


OBW NVNT a 5785MHz Ant1

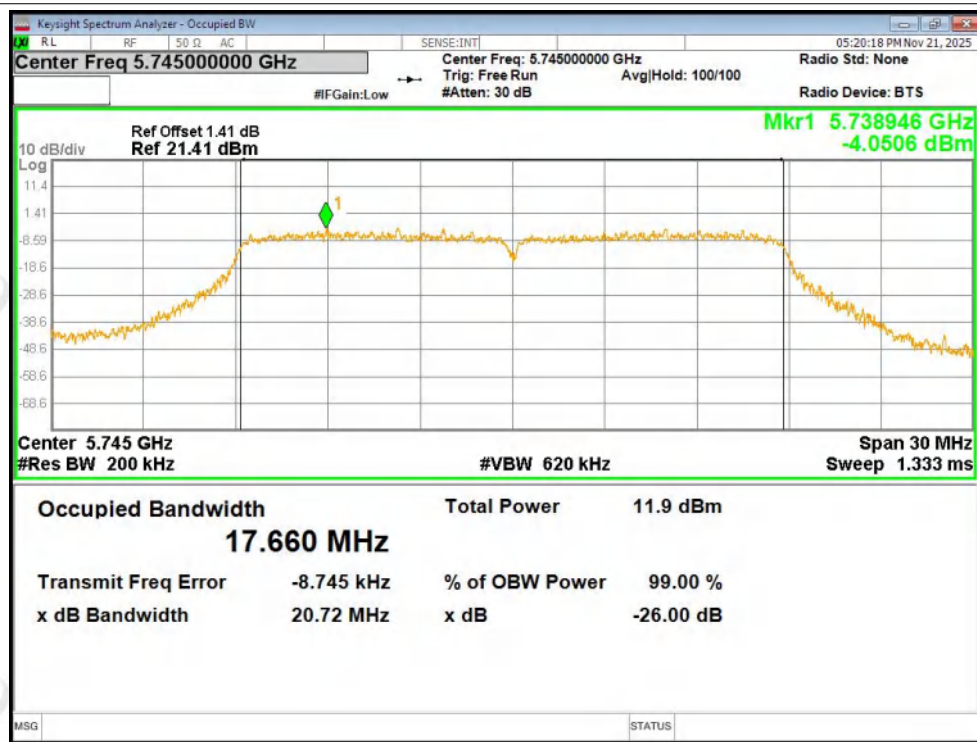




OBW NVNT a 5825MHz Ant1

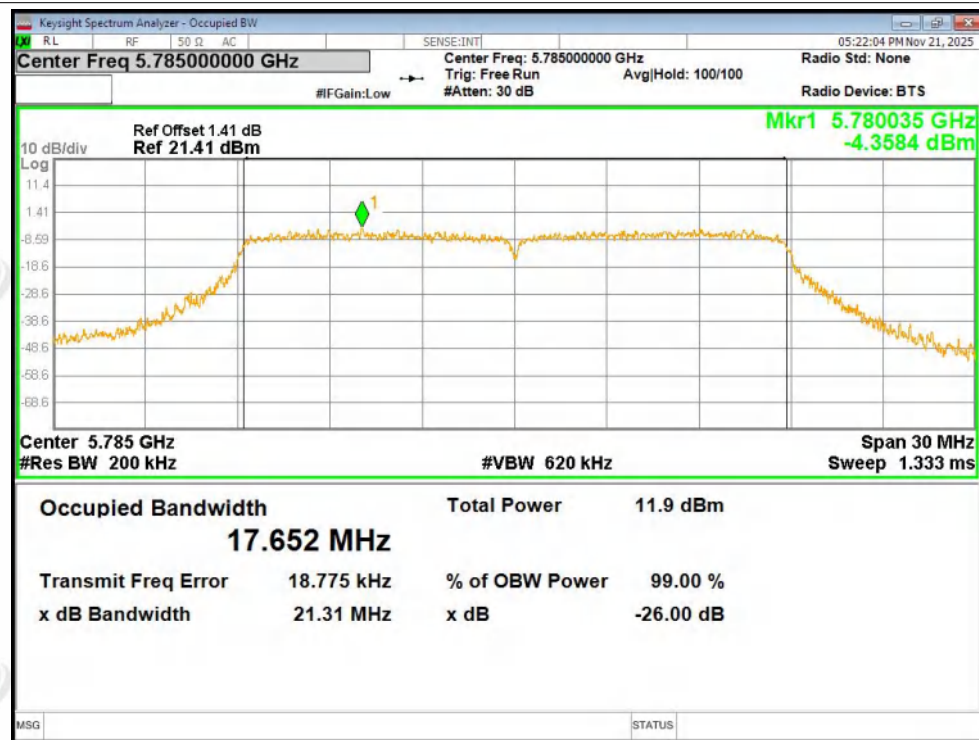


OBW NVNT n20 5745MHz Ant1

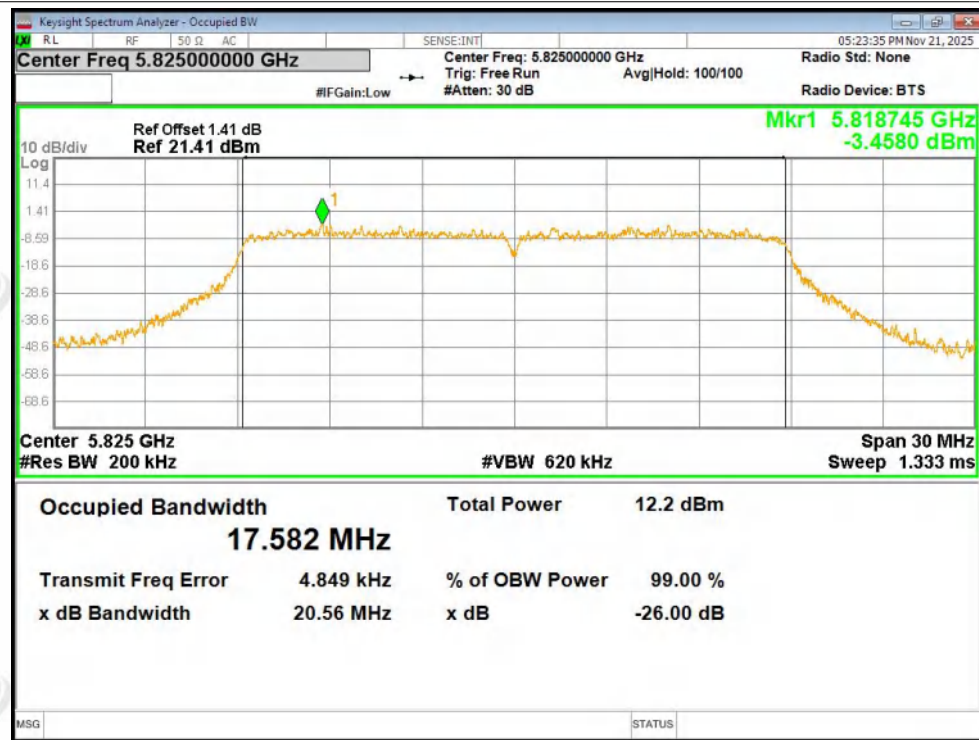




OBW NVNT n20 5785MHz Ant1

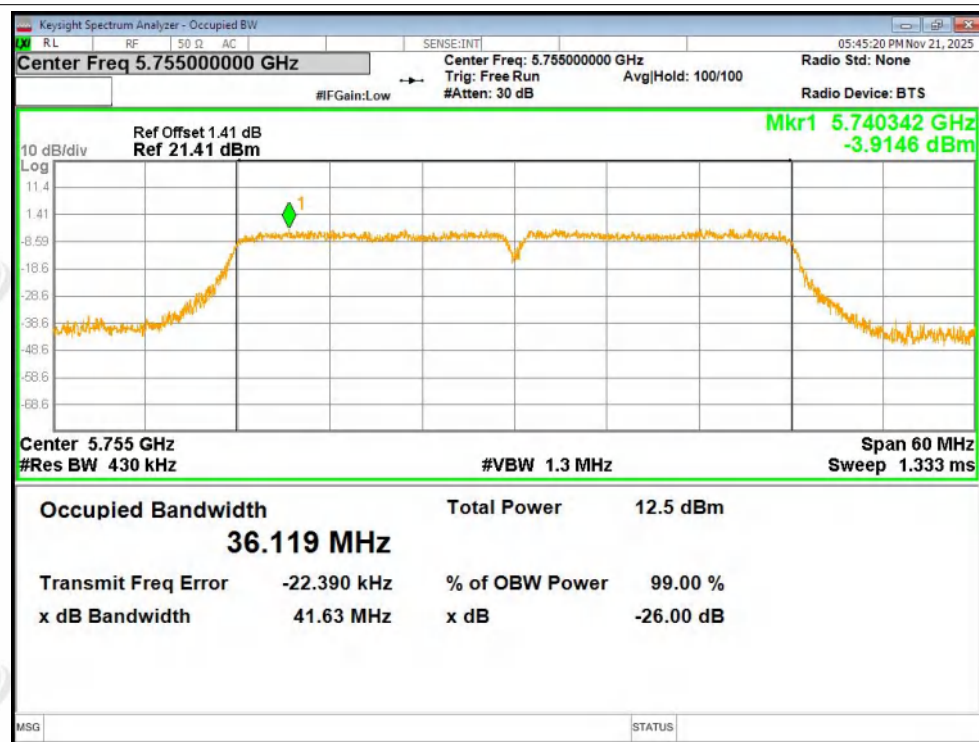


OBW NVNT n20 5825MHz Ant1

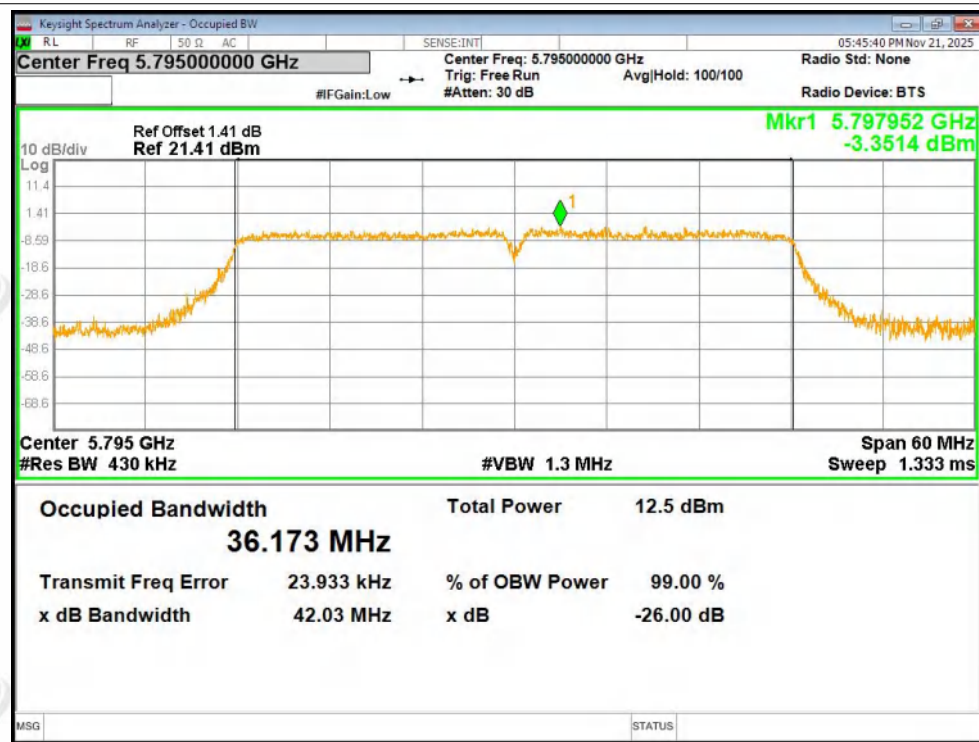




OBW NVNT n40 5755MHz Ant1

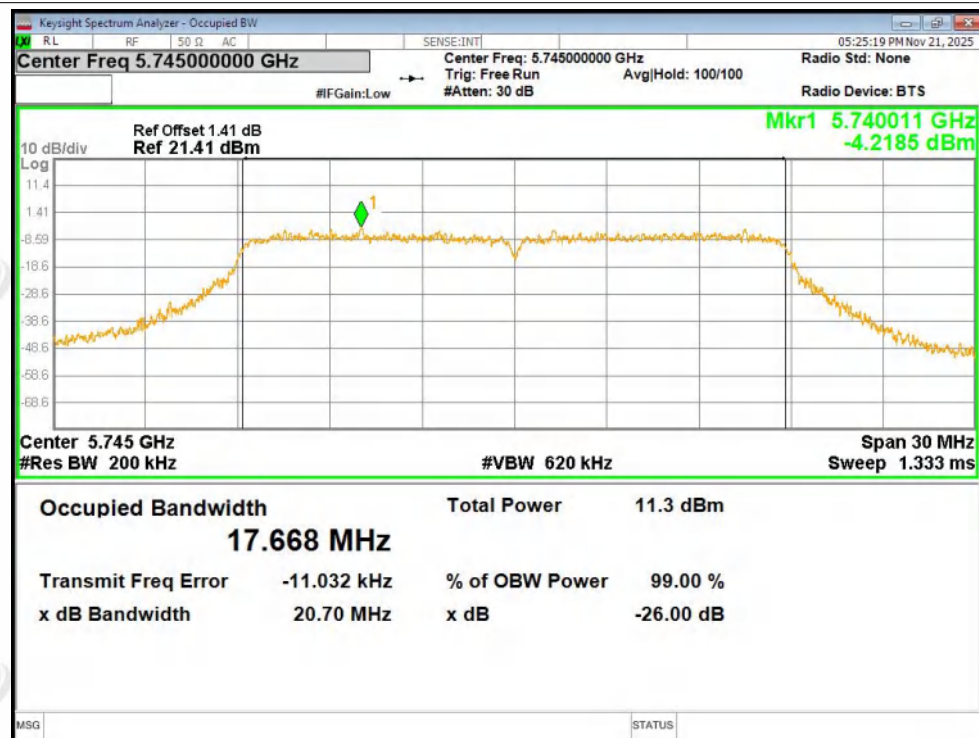


OBW NVNT n40 5795MHz Ant1

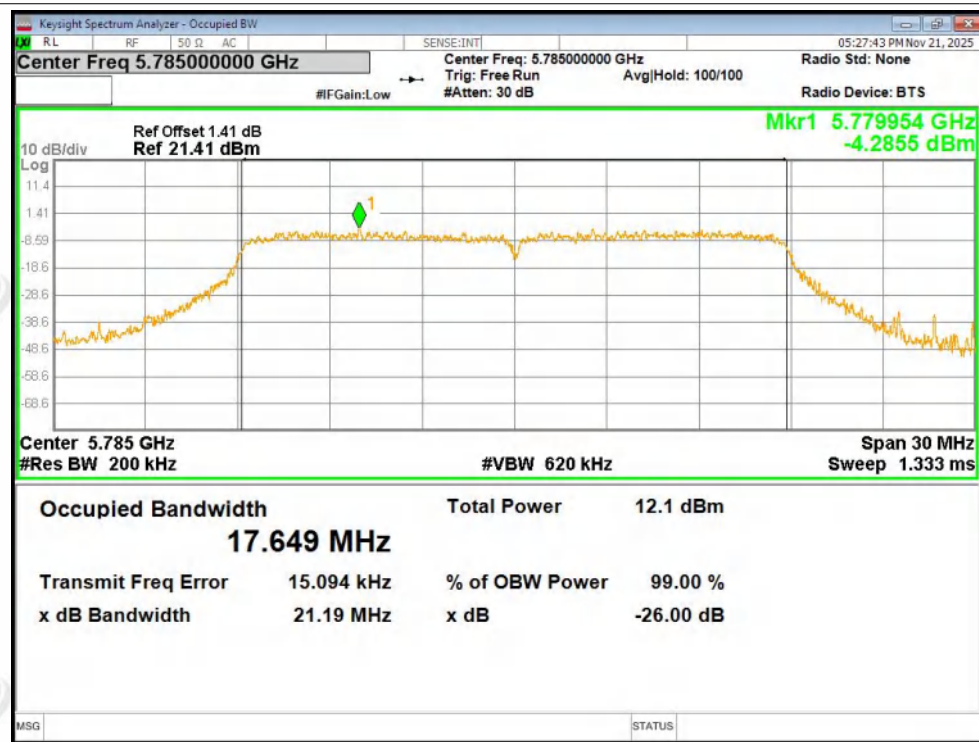




OBW NVNT ac20 5745MHz Ant1

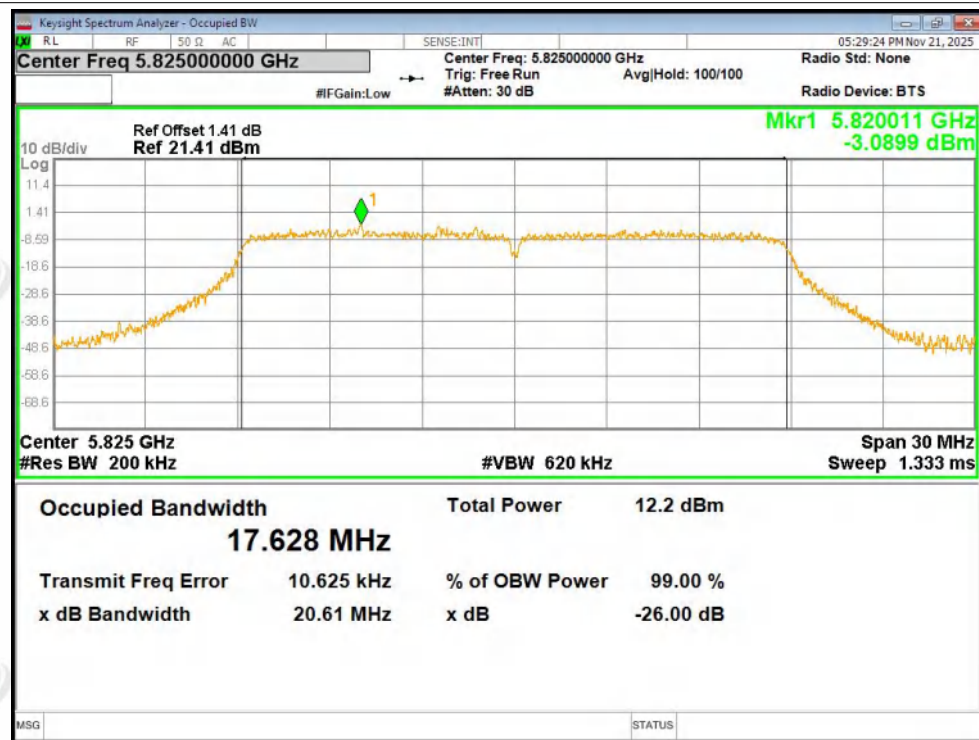


OBW NVNT ac20 5785MHz Ant1

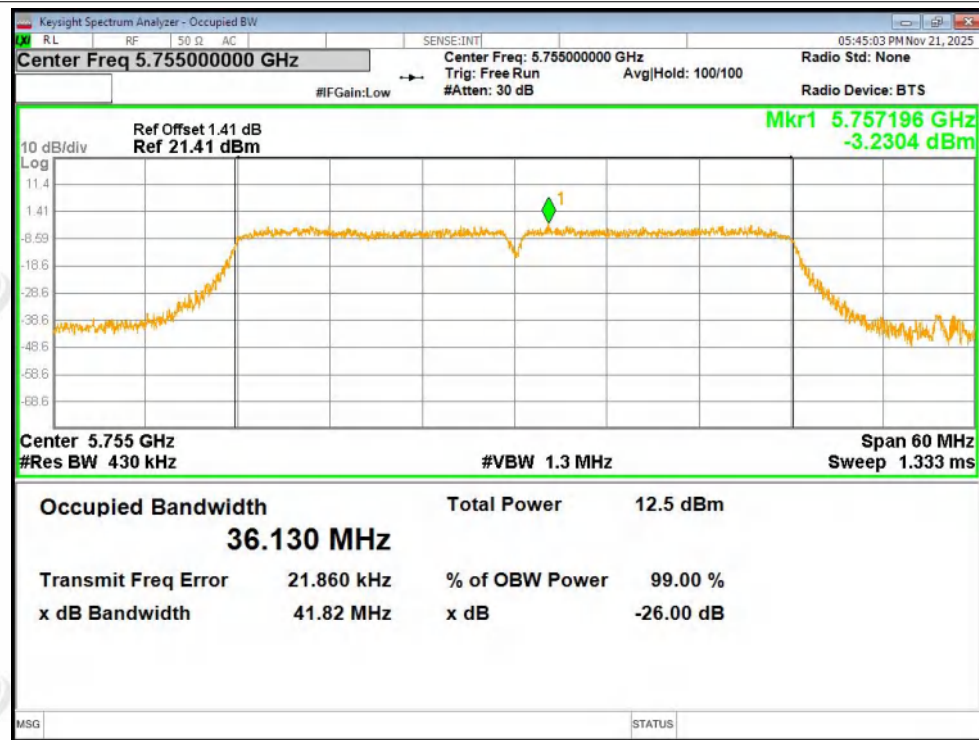




OBW NVNT ac20 5825MHz Ant1

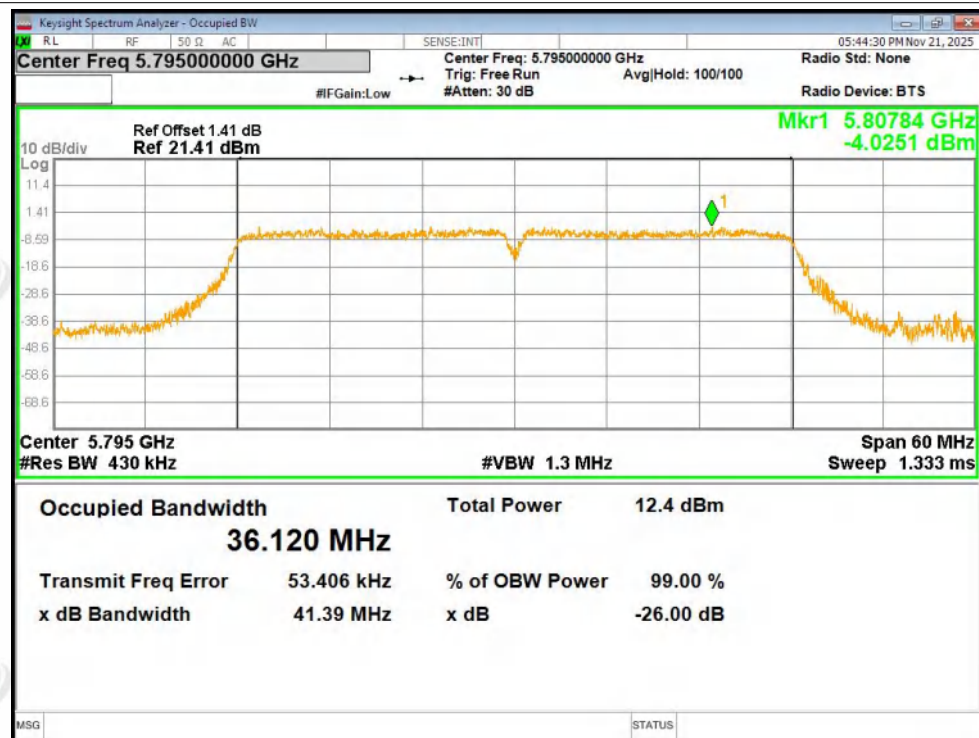


OBW NVNT ac40 5755MHz Ant1

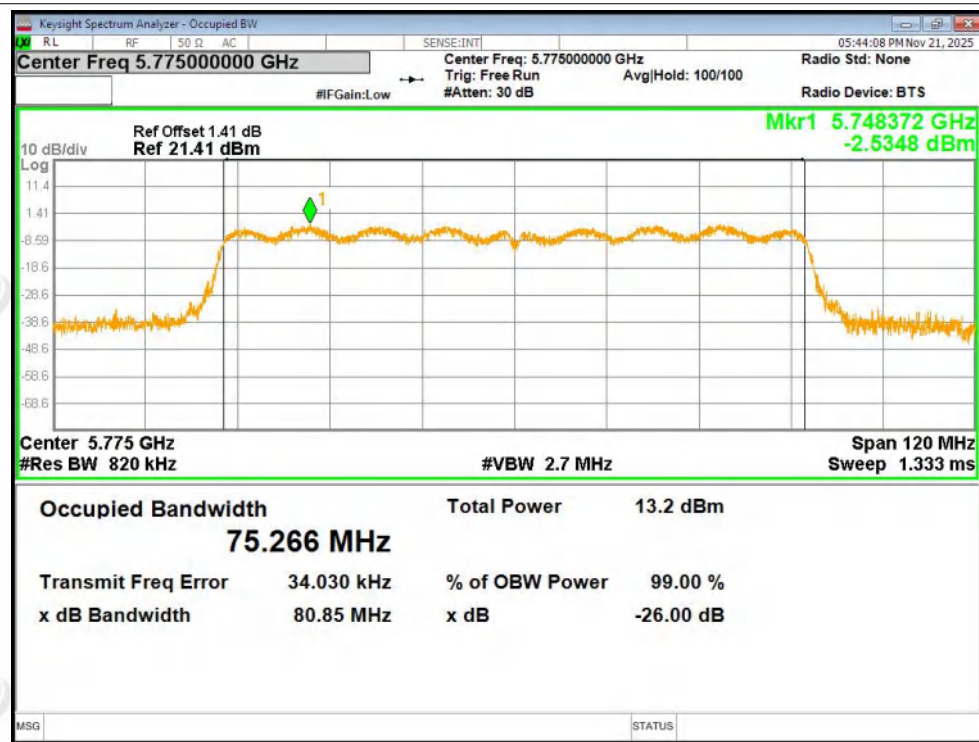




OBW NVNT ac40 5795MHz Ant1



OBW NVNT ac80 5775MHz Ant1



D.5 Maximum Power Spectral Density Level

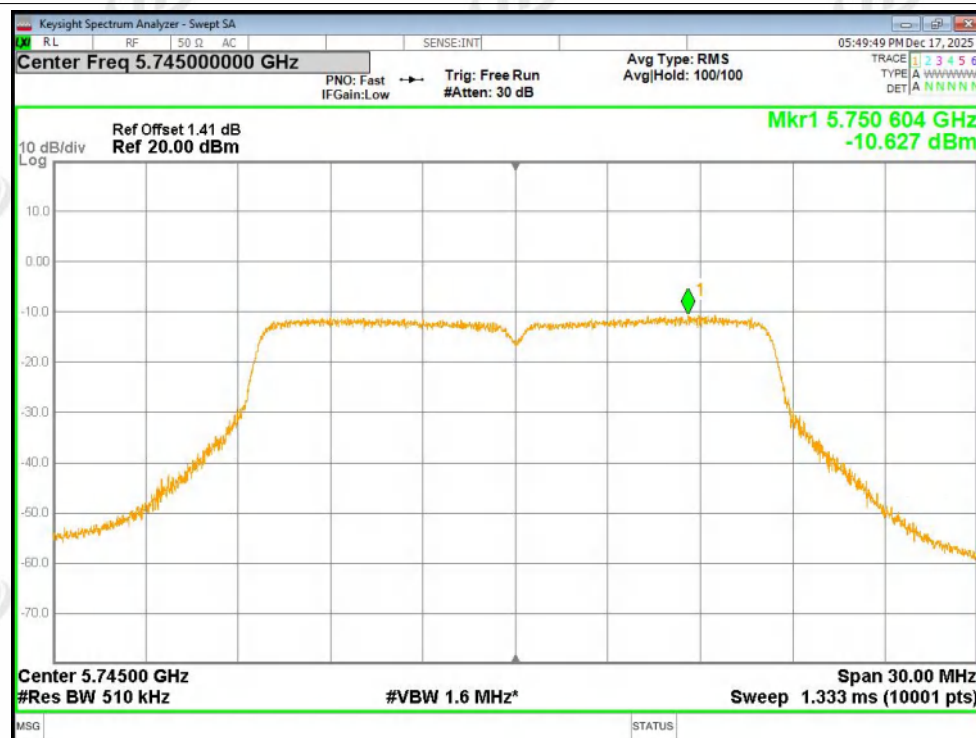
Mode	Frequency (MHz)	Antenna	Conducted PSD dBm/510KHz	Duty Factor (dB)	RB factor (dB)	Total PSD dBm/500KHz	Limit dBm/500KHz	Verdict
a	5745	Ant1	-10.63	0.19	-0.086	-10.526	30	Pass
a	5785	Ant1	-10.08	0.24	-0.086	-9.926	30	Pass
a	5825	Ant1	-10.34	0.12	-0.086	-10.306	30	Pass
n20	5745	Ant1	-10.37	0.09	-0.086	-10.366	30	Pass
n20	5785	Ant1	-9.82	0.09	-0.086	-9.816	30	Pass
n20	5825	Ant1	-10.1	0.35	-0.086	-9.836	30	Pass
n40	5755	Ant1	-15.42	0.6	-0.086	-14.906	30	Pass
n40	5795	Ant1	-14.59	0.6	-0.086	-14.076	30	Pass
ac20	5745	Ant1	-10.75	0.09	-0.086	-10.746	30	Pass
ac20	5785	Ant1	-10.44	0.28	-0.086	-10.246	30	Pass
ac20	5825	Ant1	-10.57	0.2	-0.086	-10.456	30	Pass
ac40	5755	Ant1	-15.98	0.39	-0.086	-15.676	30	Pass
ac40	5795	Ant1	-15.42	0.31	-0.086	-15.196	30	Pass
ac80	5775	Ant1	-18.45	0.62	-0.086	-17.916	30	Pass

RB factor = $10 \lg (\text{Measure RB} / 500)$, Measure RB = 510 kHz

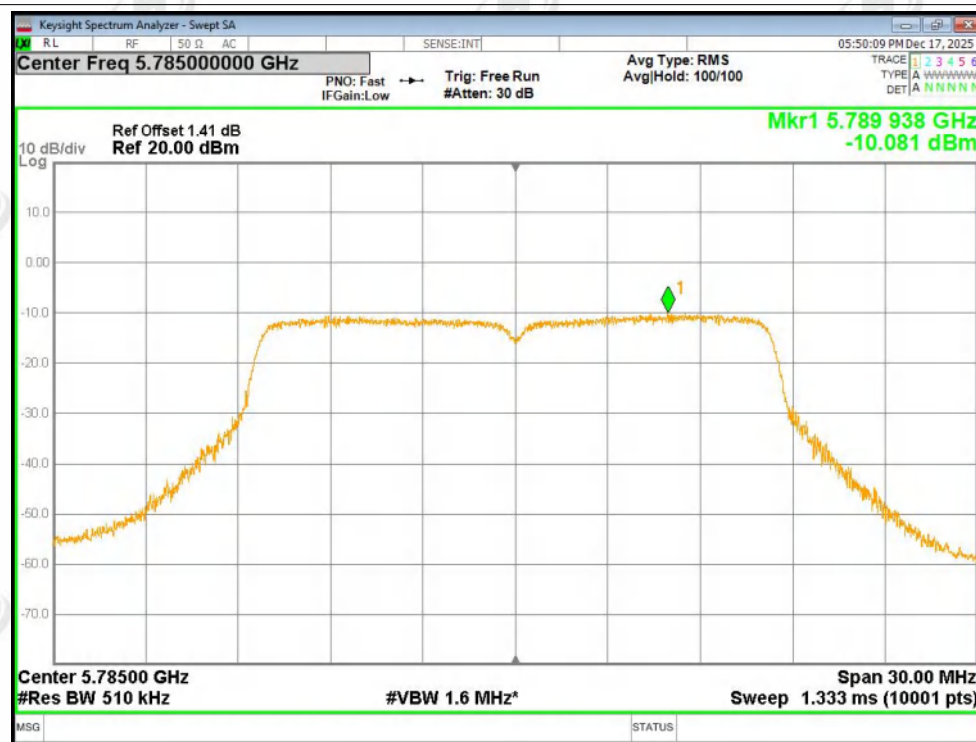
Total PSD = Conducted PSD + Duty factor(dB) + RB factor(dB)

Test Graphs

PSD NVNT a 5745MHz Ant1

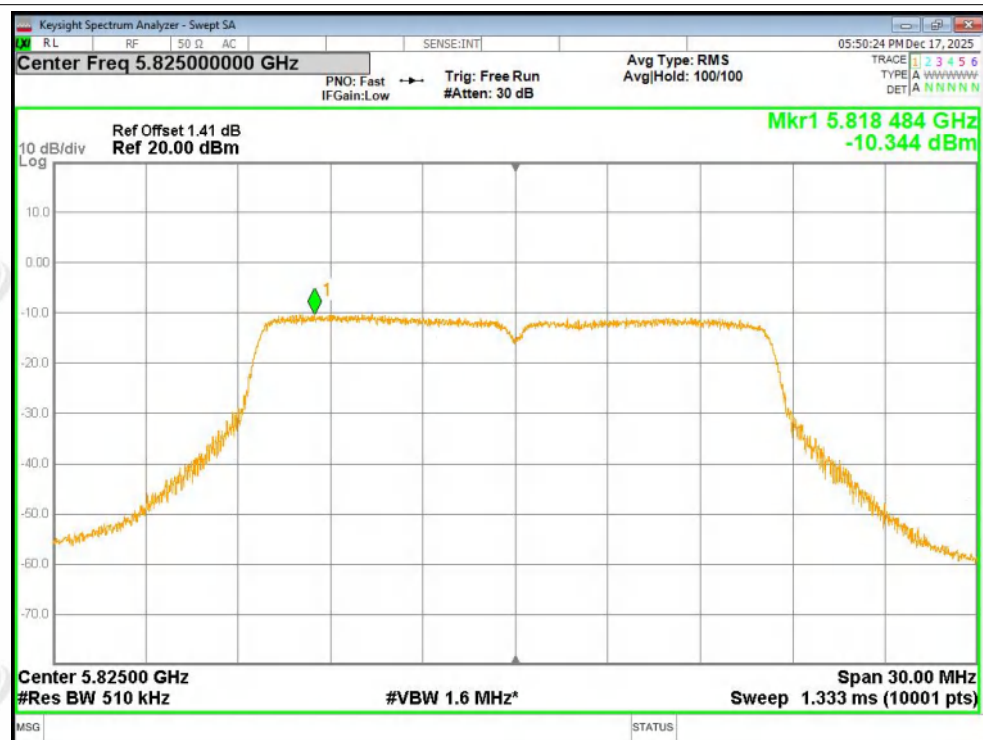


PSD NVNT a 5785MHz Ant1

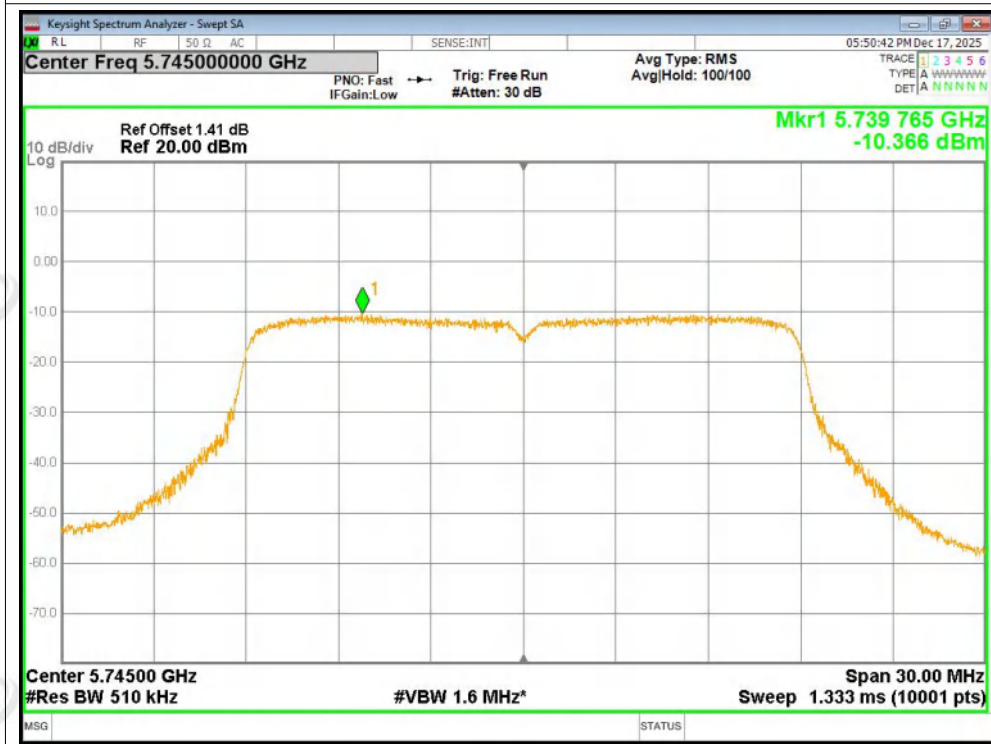




PSD NVNT a 5825MHz Ant1

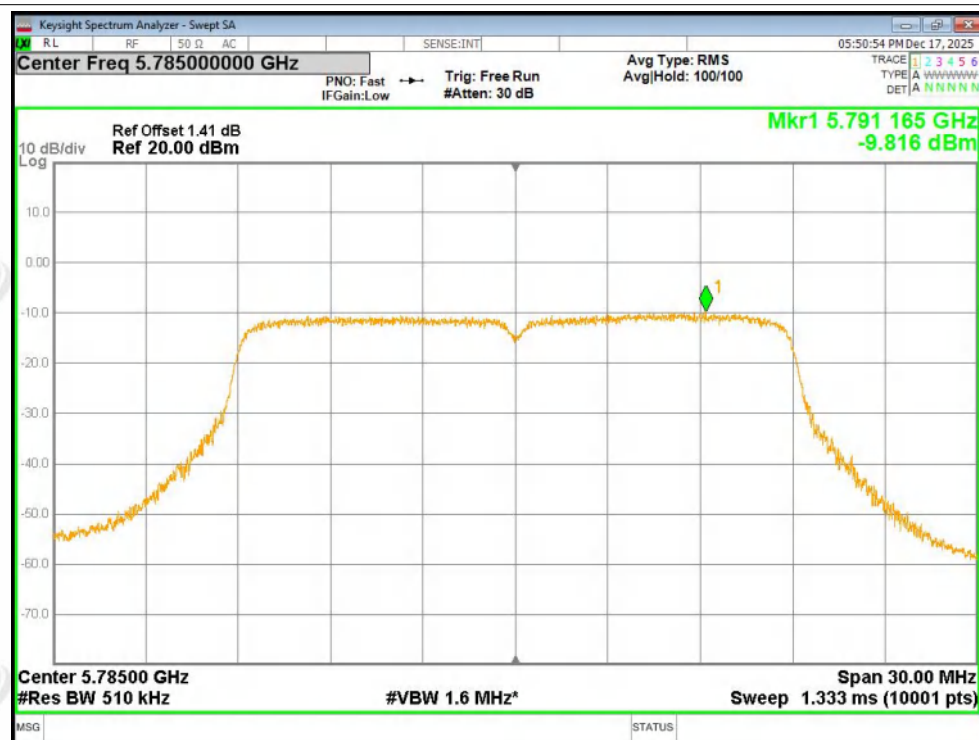


PSD NVNT n20 5745MHz Ant1

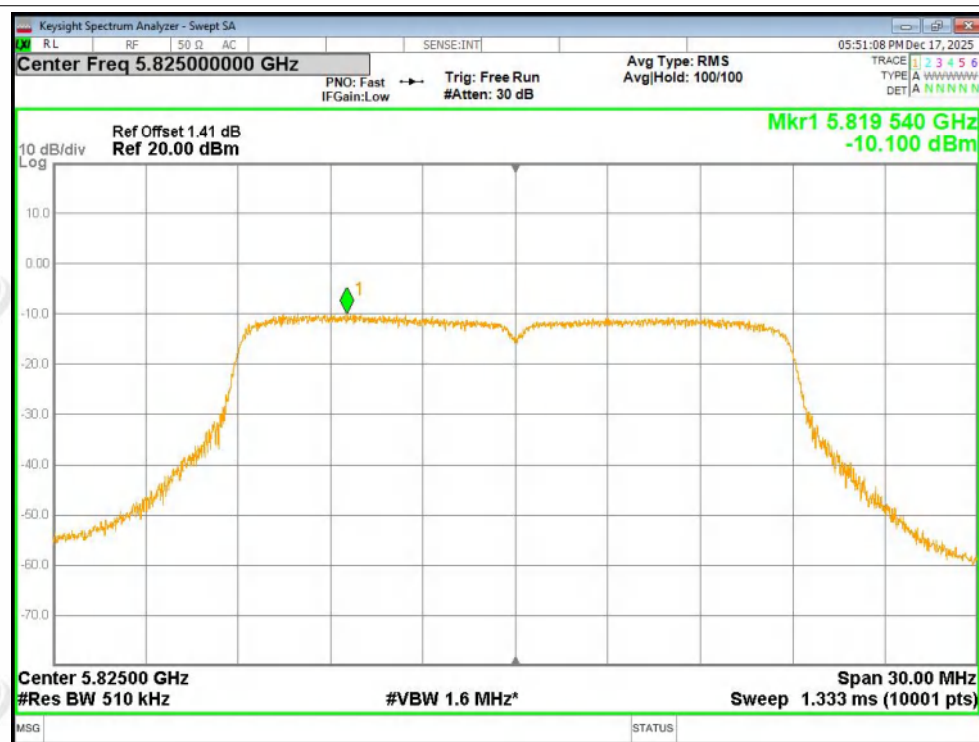




PSD NVNT n20 5785MHz Ant1

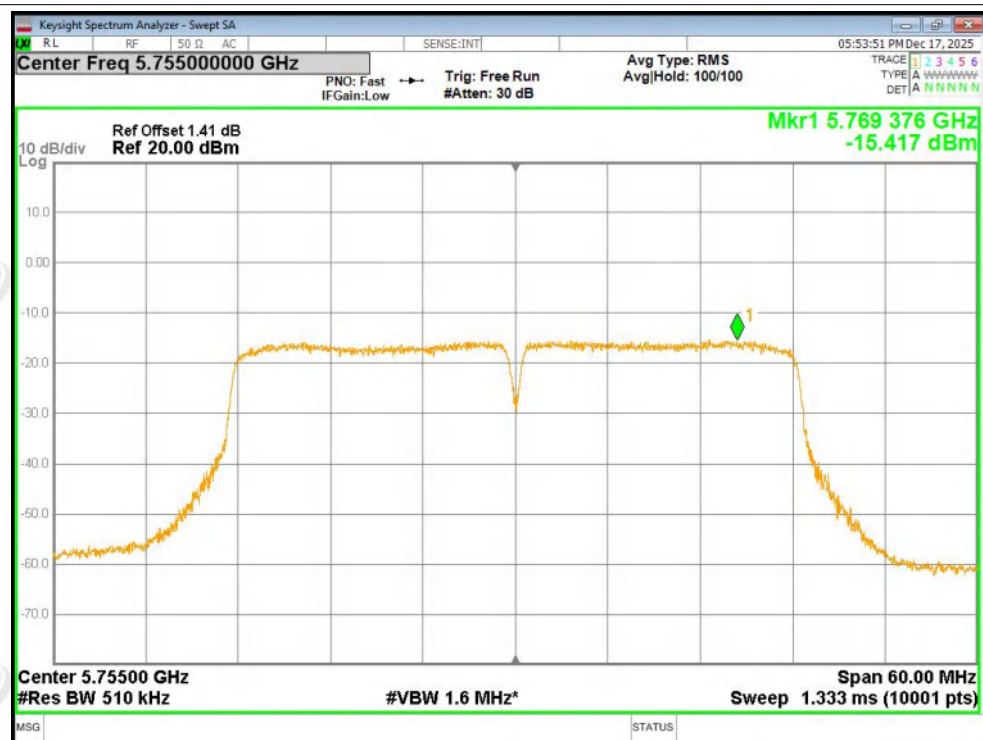


PSD NVNT n20 5825MHz Ant1

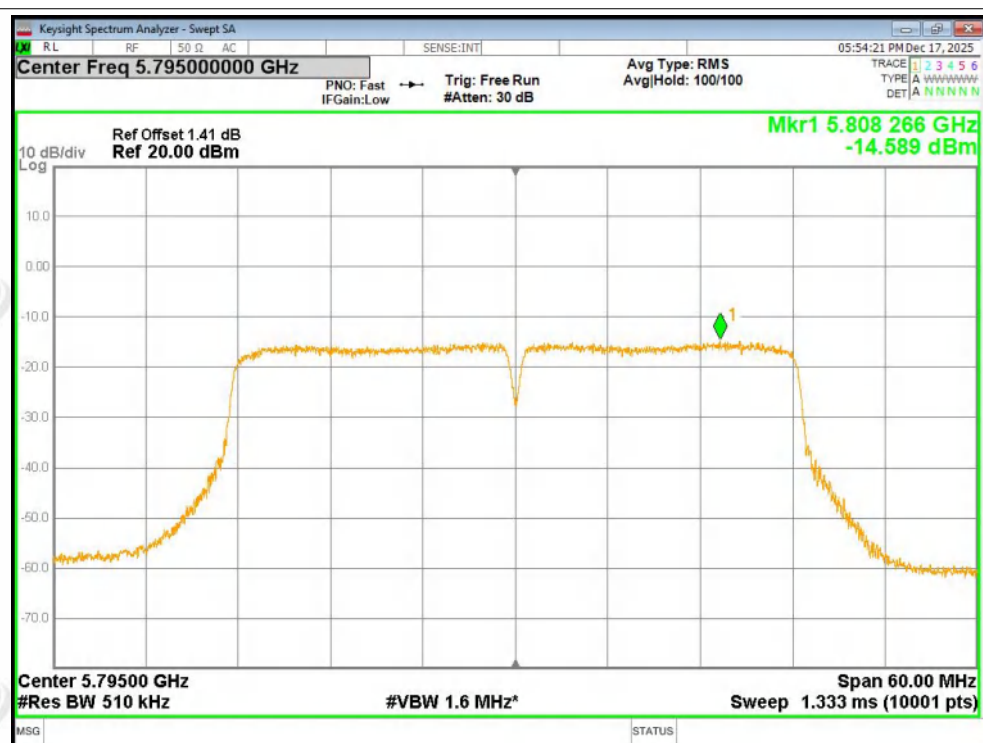




PSD NVNT n40 5755MHz Ant1

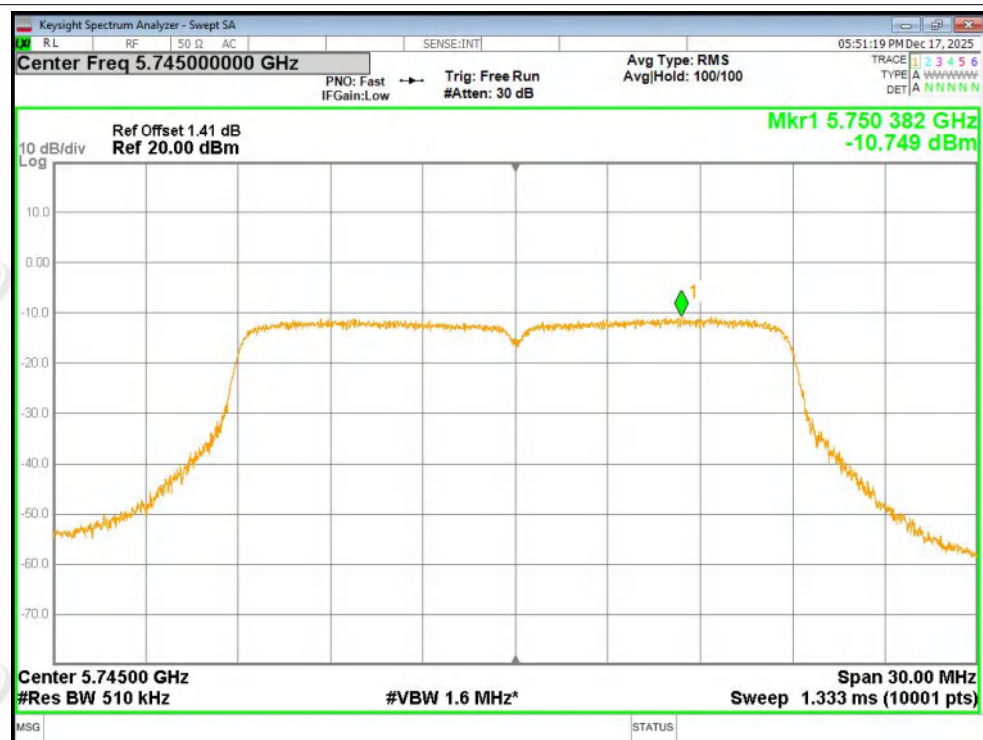


PSD NVNT n40 5795MHz Ant1

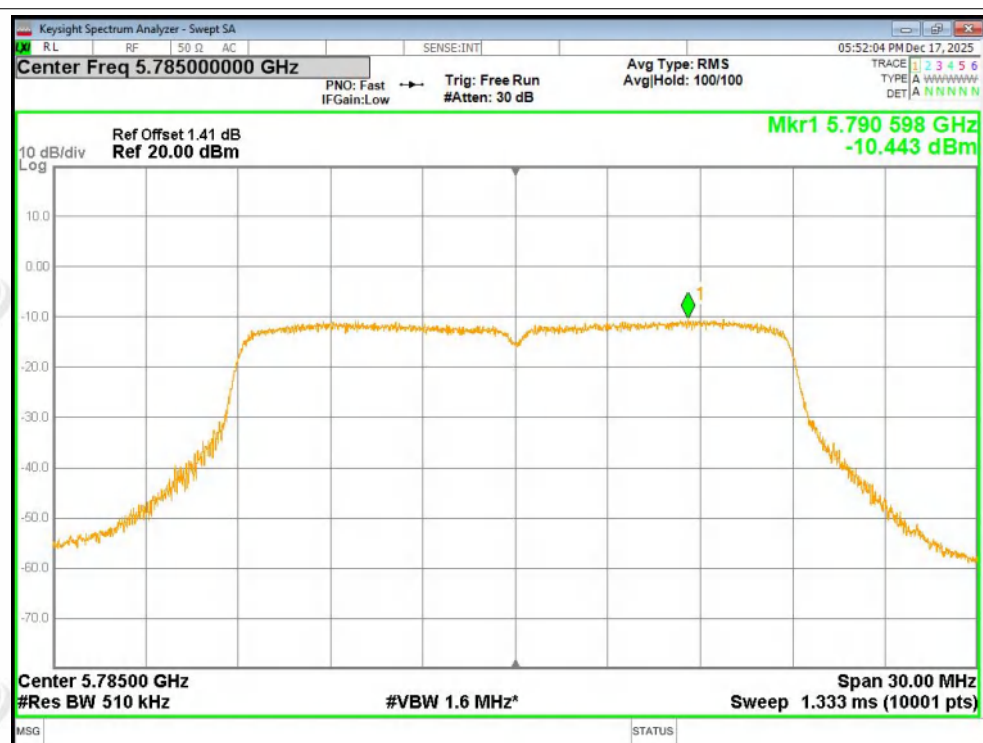




PSD NVNT ac20 5745MHz Ant1

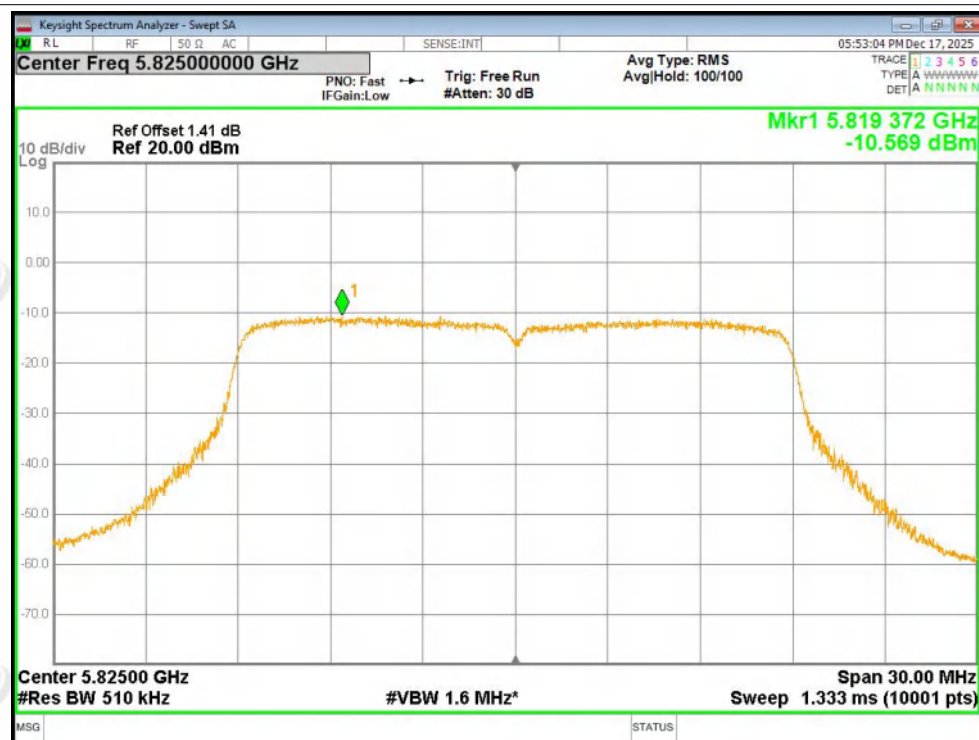


PSD NVNT ac20 5785MHz Ant1

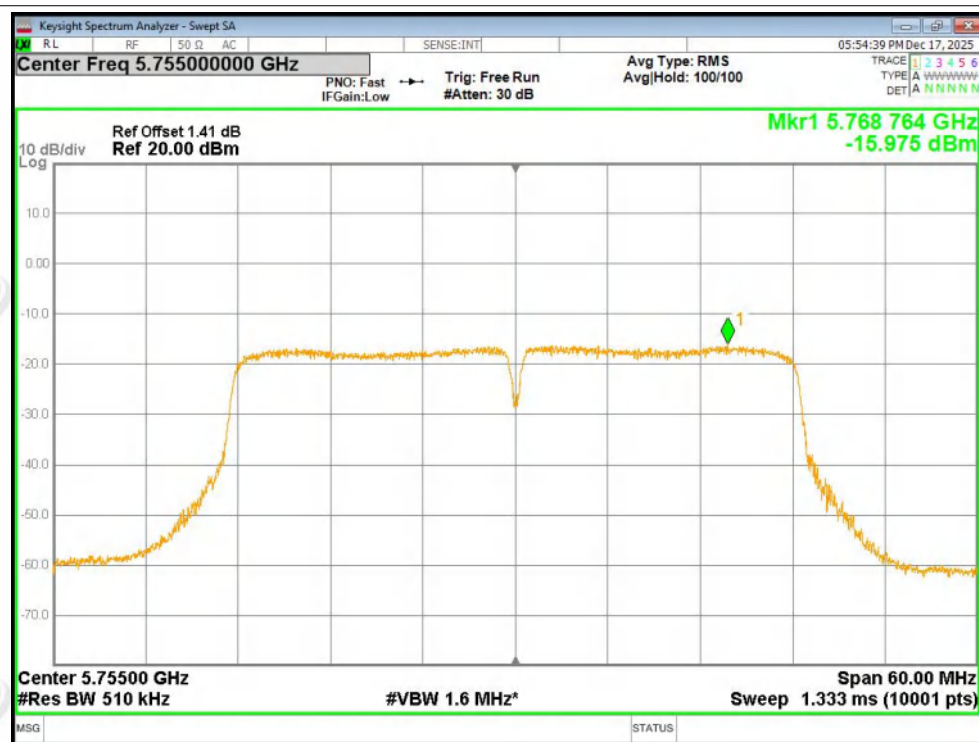




PSD NVNT ac20 5825MHz Ant1

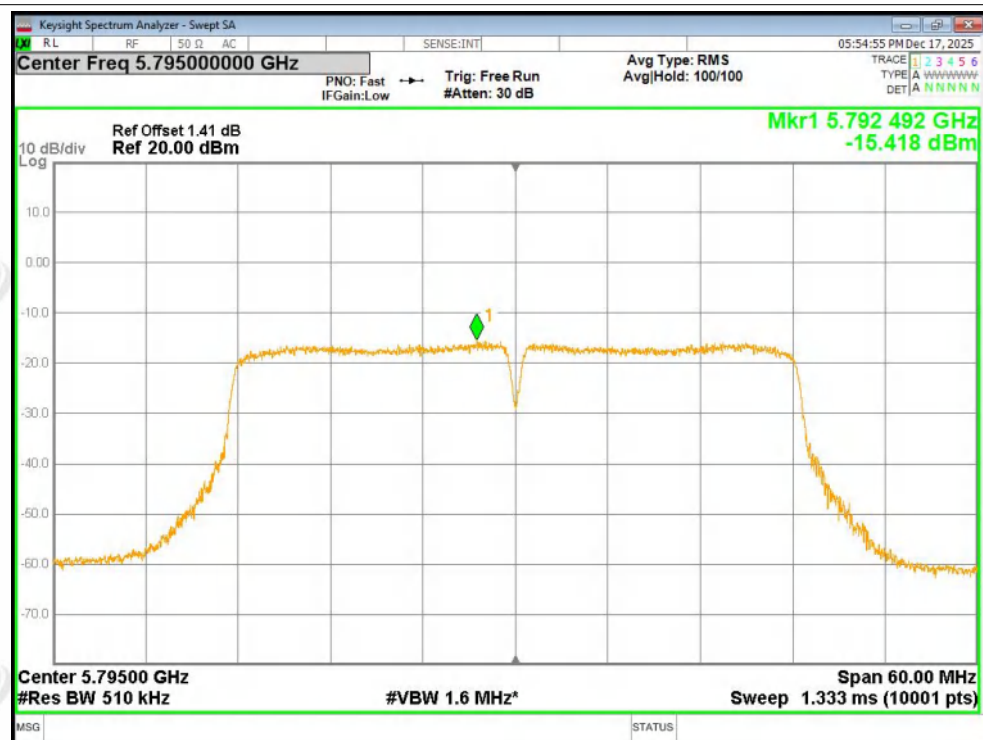


PSD NVNT ac40 5755MHz Ant1

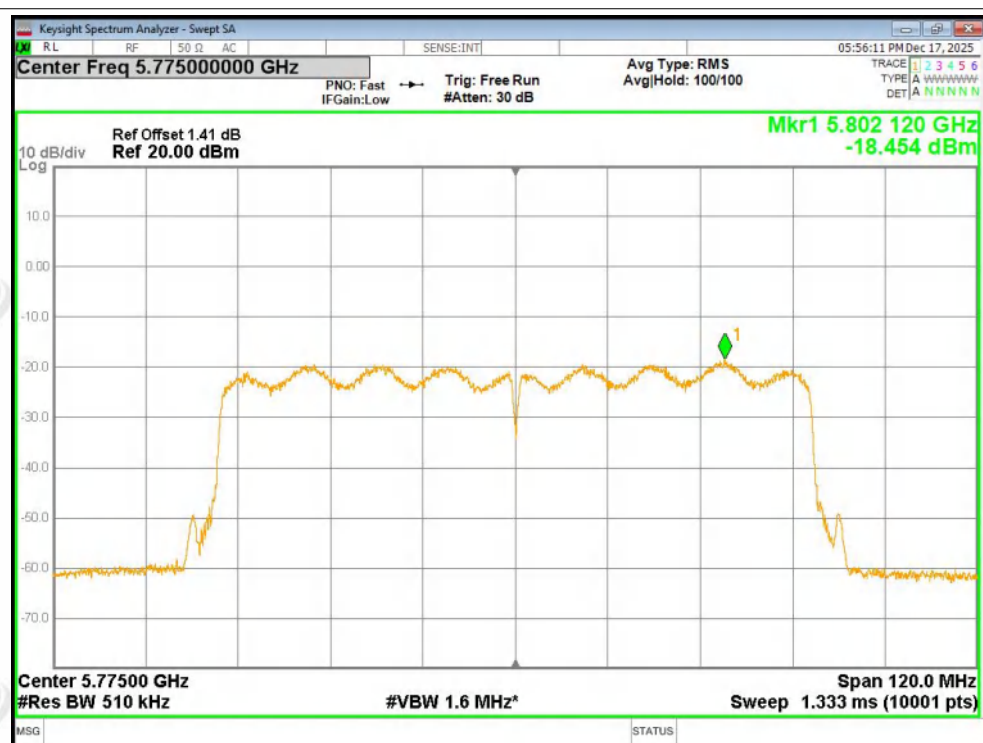




PSD NVNT ac40 5795MHz Ant1



PSD NVNT ac80 5775MHz Ant1

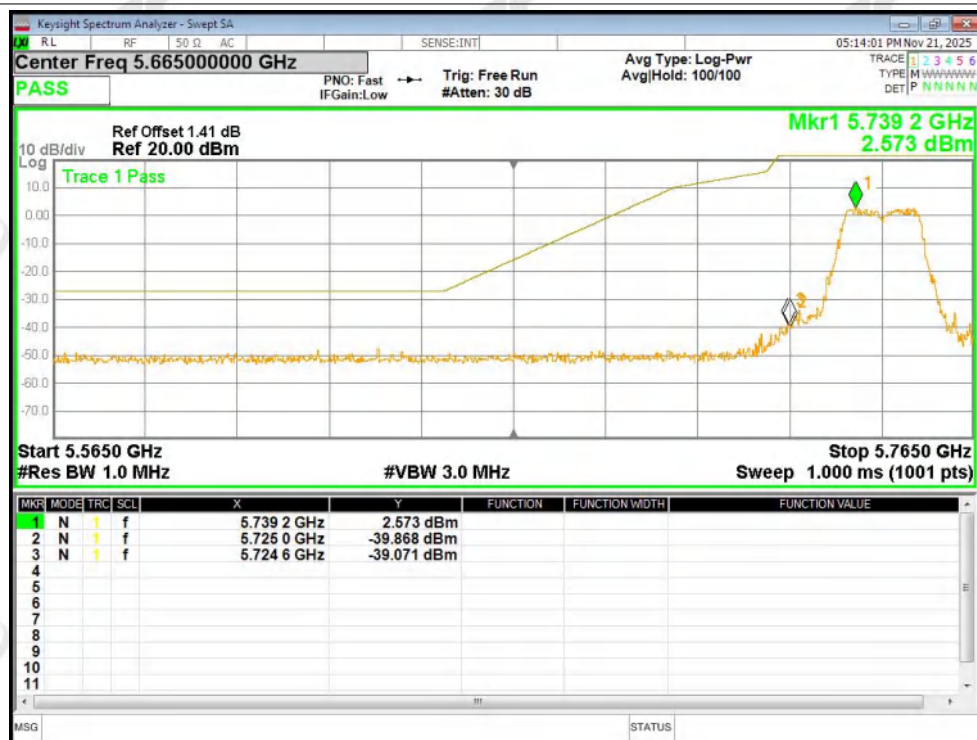


D.6 Band Edge

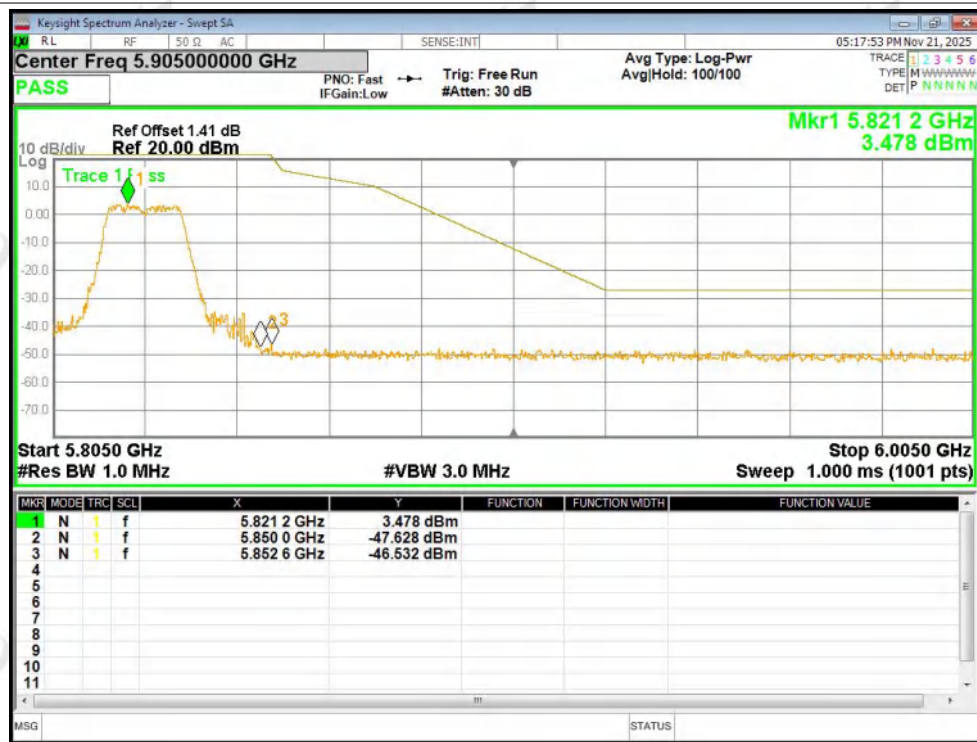
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-39.07	Reference data graph	Pass
NVNT	a	5825	Ant1	-46.53	Reference data graph	Pass
NVNT	n20	5745	Ant1	-34.17	Reference data graph	Pass
NVNT	n20	5825	Ant1	-45.53	Reference data graph	Pass
NVNT	n40	5755	Ant1	-33.05	Reference data graph	Pass
NVNT	n40	5795	Ant1	-47.02	Reference data graph	Pass
NVNT	ac20	5745	Ant1	-38.16	Reference data graph	Pass
NVNT	ac20	5825	Ant1	-41.4	Reference data graph	Pass
NVNT	ac40	5755	Ant1	-36.25	Reference data graph	Pass
NVNT	ac40	5795	Ant1	-45.63	Reference data graph	Pass
NVNT	ac80	5775	Ant1	-32.29	Reference data graph	Pass

Test Graphs

Band Edge NVNT a 5745MHz Low Ant1

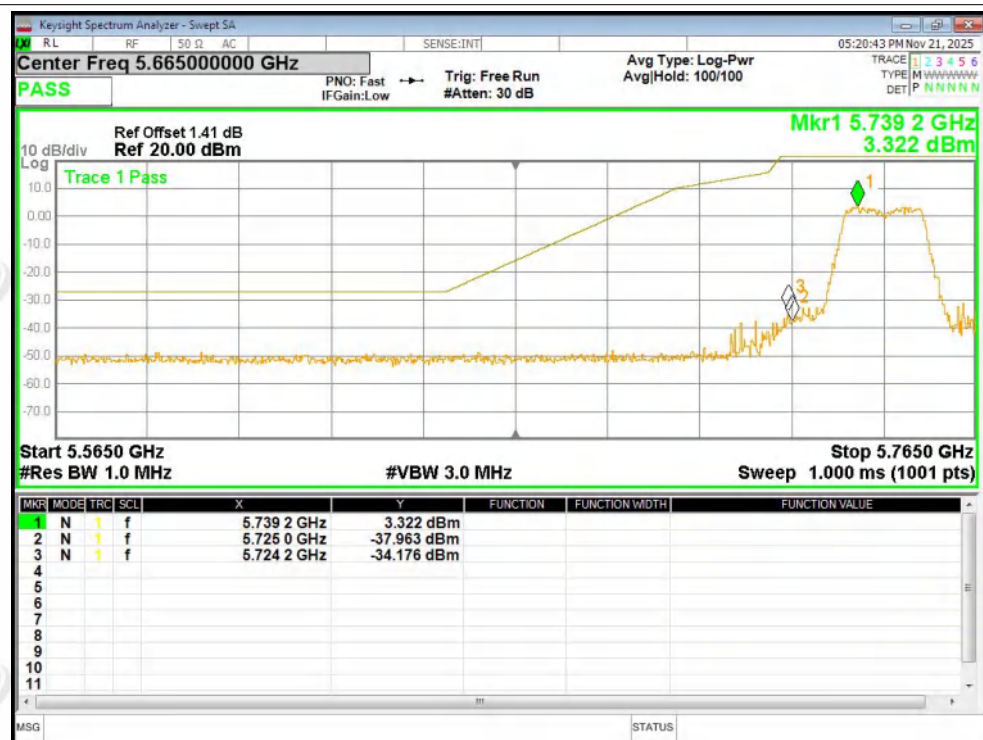


Band Edge NVNT a 5825MHz High Ant1

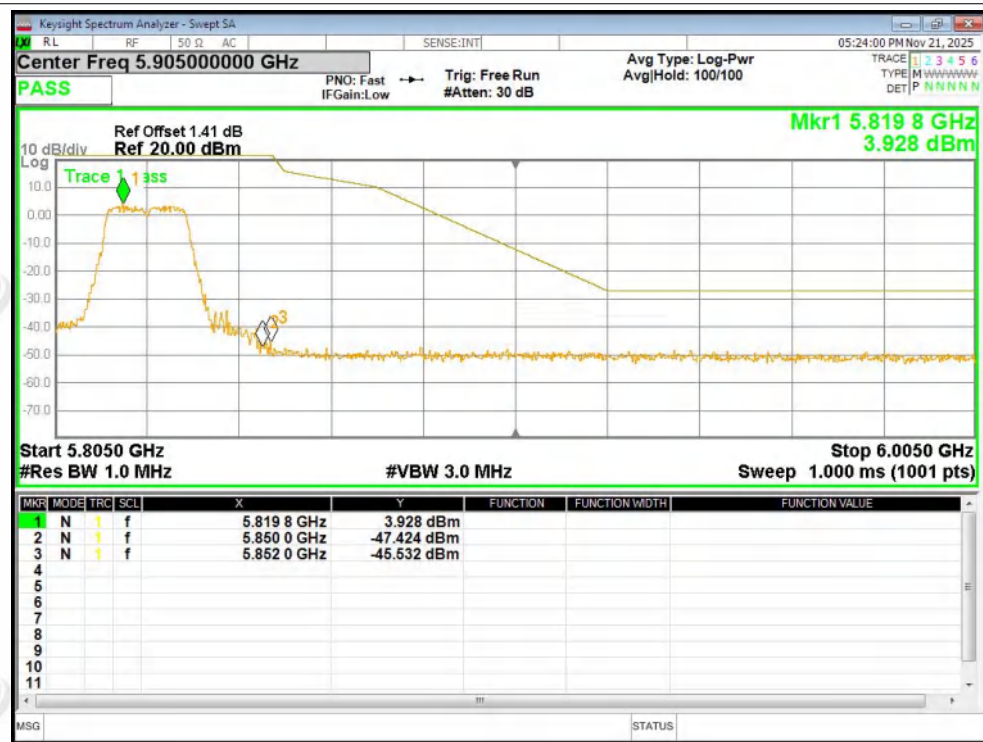




Band Edge NVNT n20 5745MHz Low Ant1

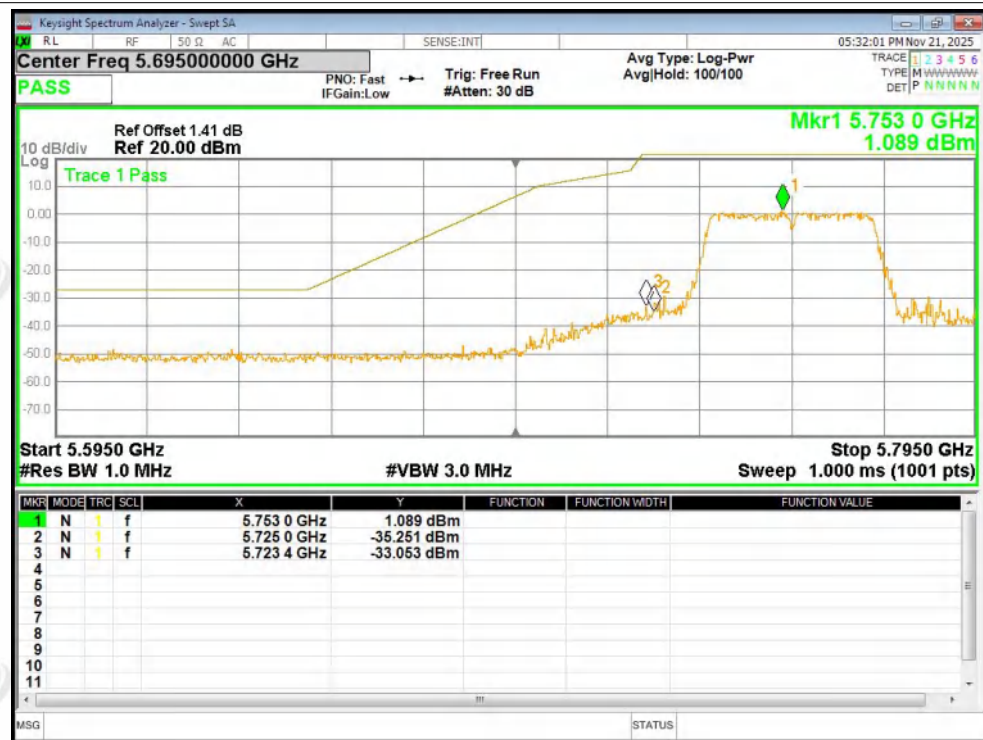


Band Edge NVNT n20 5825MHz High Ant1

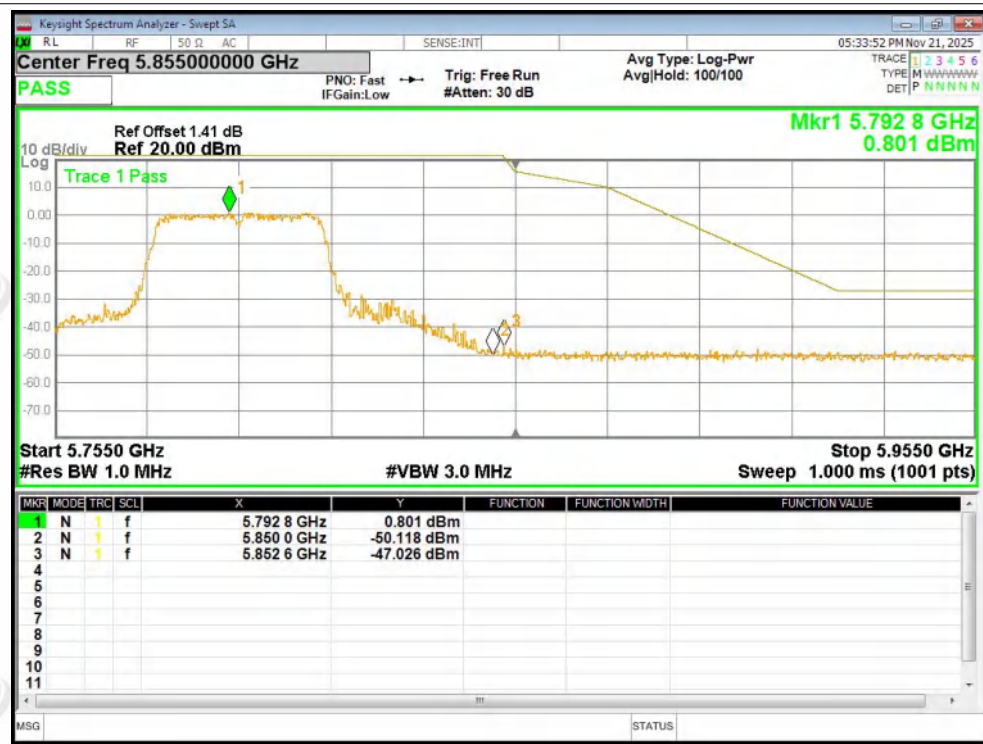




Band Edge NVNT n40 5755MHz Low Ant1

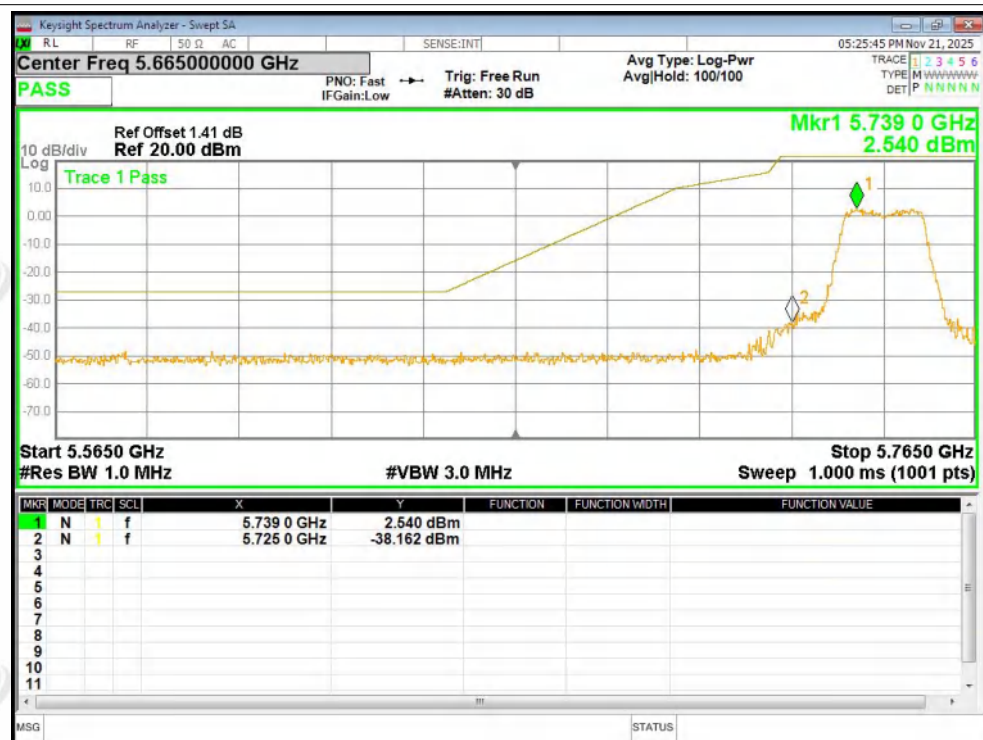


Band Edge NVNT n40 5795MHz High Ant1

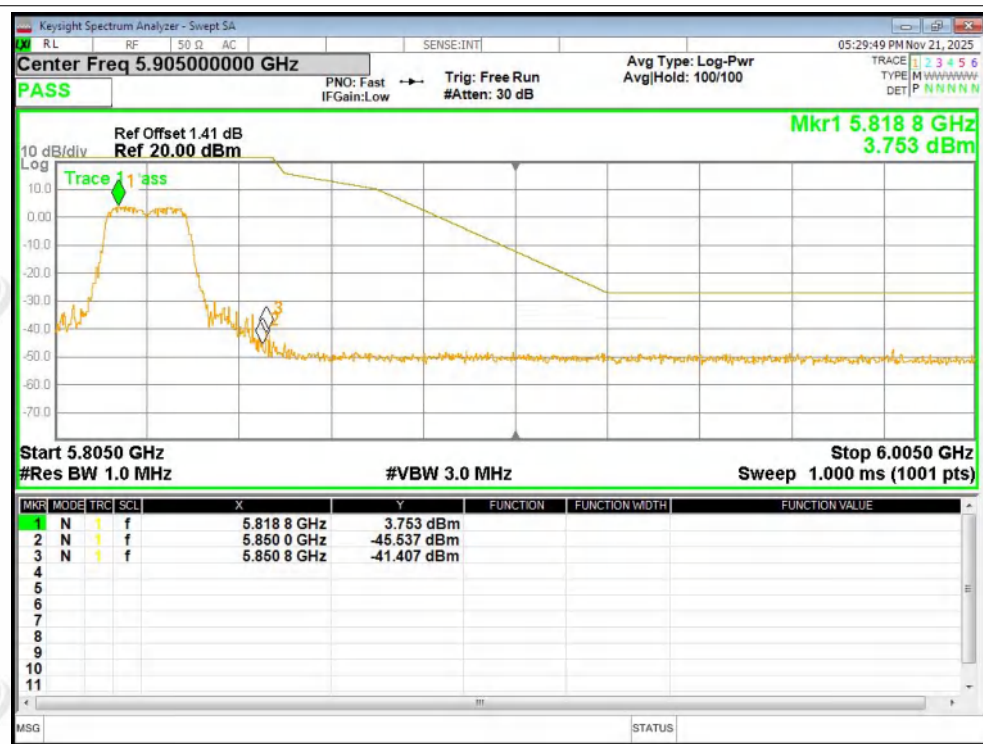




Band Edge NVNT ac20 5745MHz Low Ant1

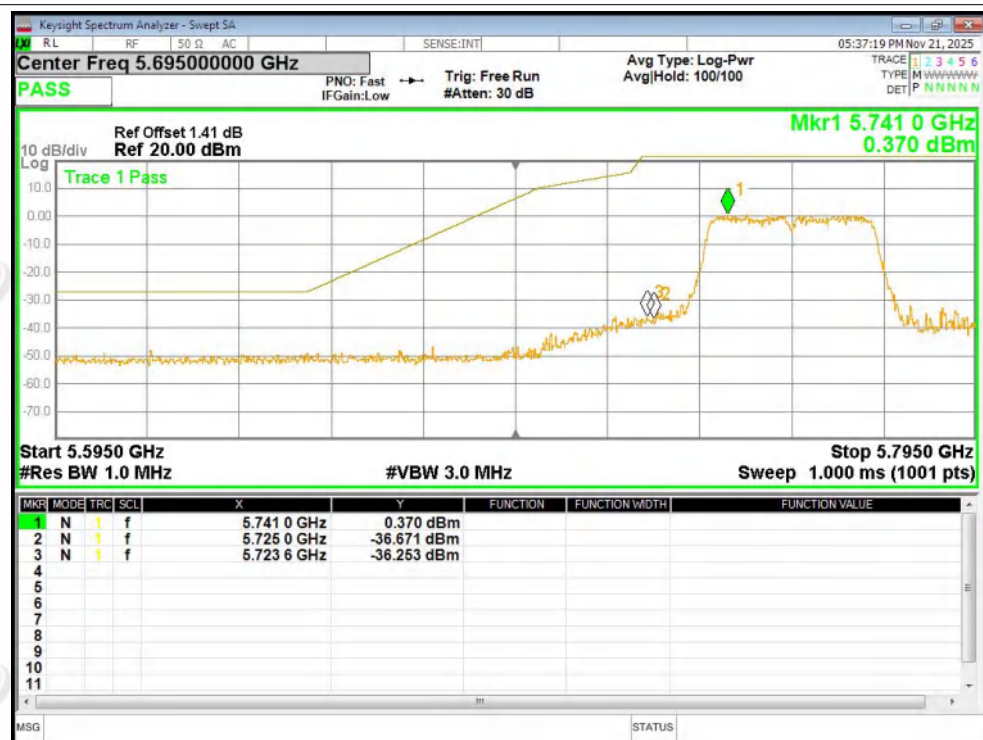


Band Edge NVNT ac20 5825MHz High Ant1





Band Edge NVNT ac40 5755MHz Low Ant1

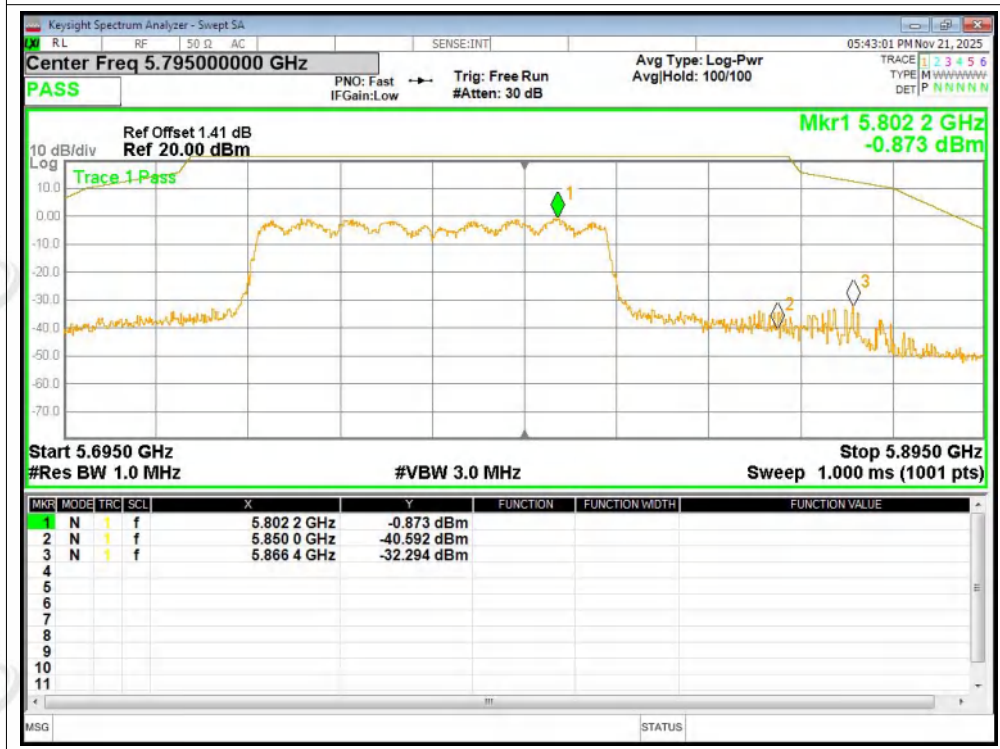


Band Edge NVNT ac40 5795MHz High Ant1





Band Edge NVNT ac80 5775MHz High Ant1

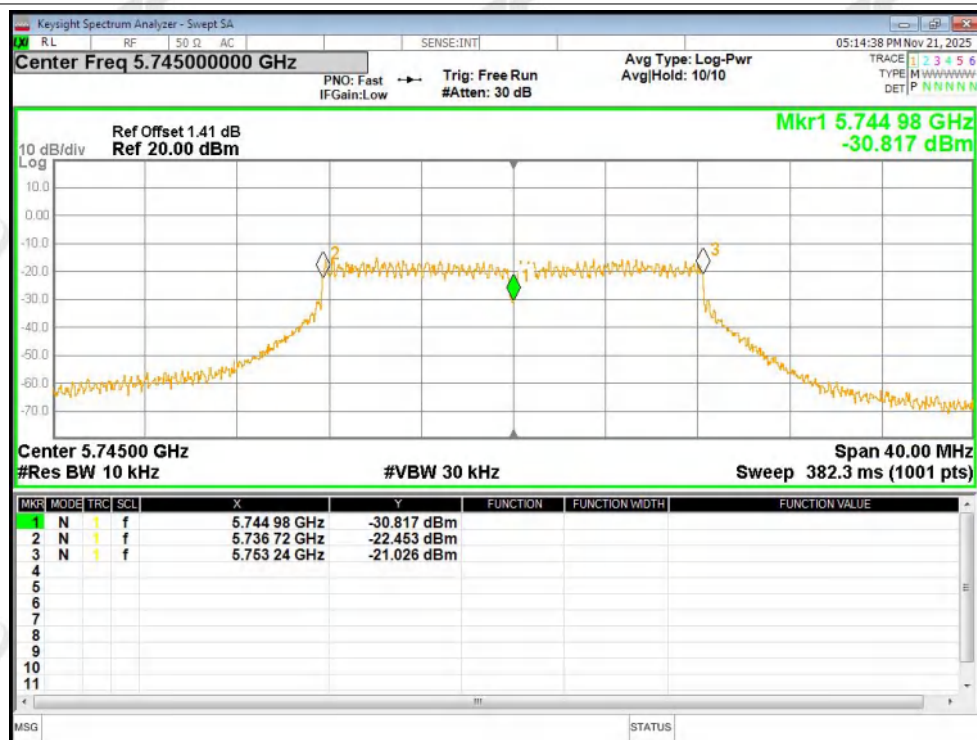


D.7 Frequency Stability

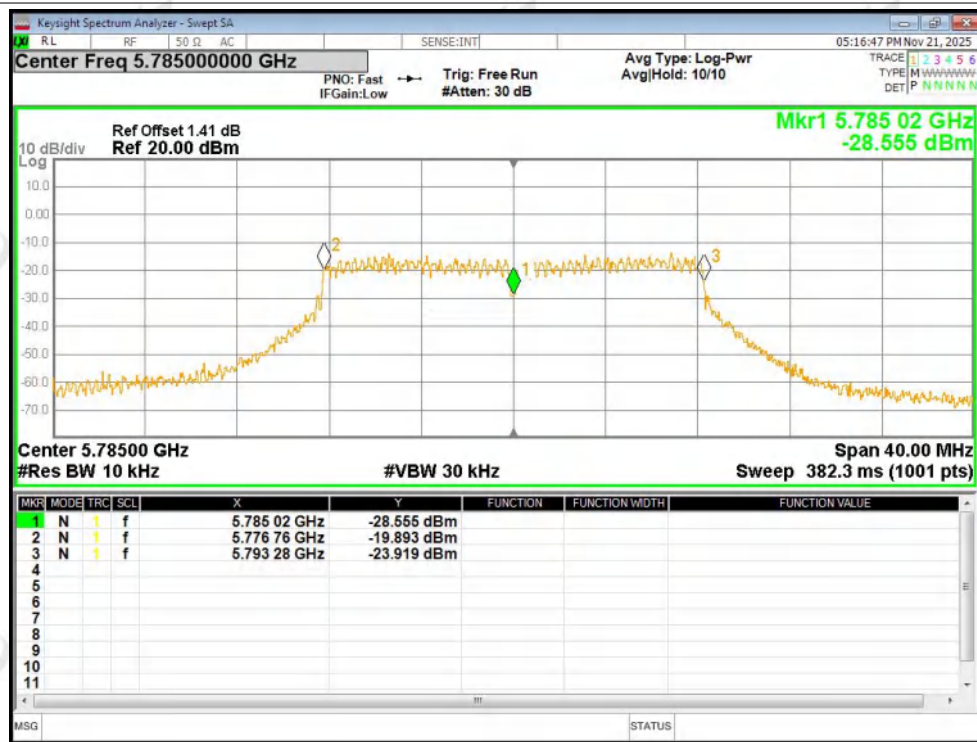
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
NVNT	a	5745	Ant1	5744.98	-20000	-3.48	Within 5745-5825MHz	Pass
NVNT	a	5785	Ant1	5785.02	20000	3.46		Pass
NVNT	a	5825	Ant1	5825.02	20000	3.43		Pass
NVNT	n20	5745	Ant1	5744.98	-20000	-3.48		Pass
NVNT	n20	5785	Ant1	5785	0	0		Pass
NVNT	n20	5825	Ant1	5824.98	-20000	-3.43		Pass
NVNT	n40	5755	Ant1	5755	0	0		Pass
NVNT	n40	5795	Ant1	5795	0	0		Pass
NVNT	ac20	5745	Ant1	5745.02	20000	3.48		Pass
NVNT	ac20	5785	Ant1	5785	0	0		Pass
NVNT	ac20	5825	Ant1	5825	0	0		Pass
NVNT	ac40	5755	Ant1	5755	0	0		Pass
NVNT	ac40	5795	Ant1	5795	0	0		Pass
NVNT	ac80	5775	Ant1	5775	0	0		Pass

Test Graphs

Freq. Stability NVNT a 5745MHz Ant1

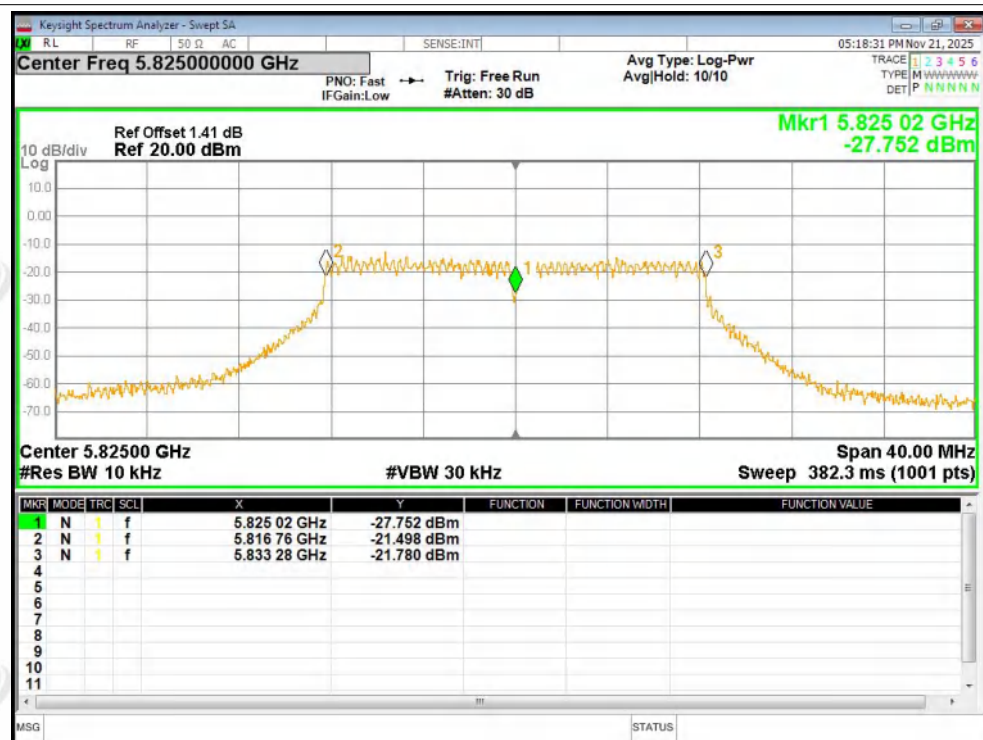


Freq. Stability NVNT a 5785MHz Ant1

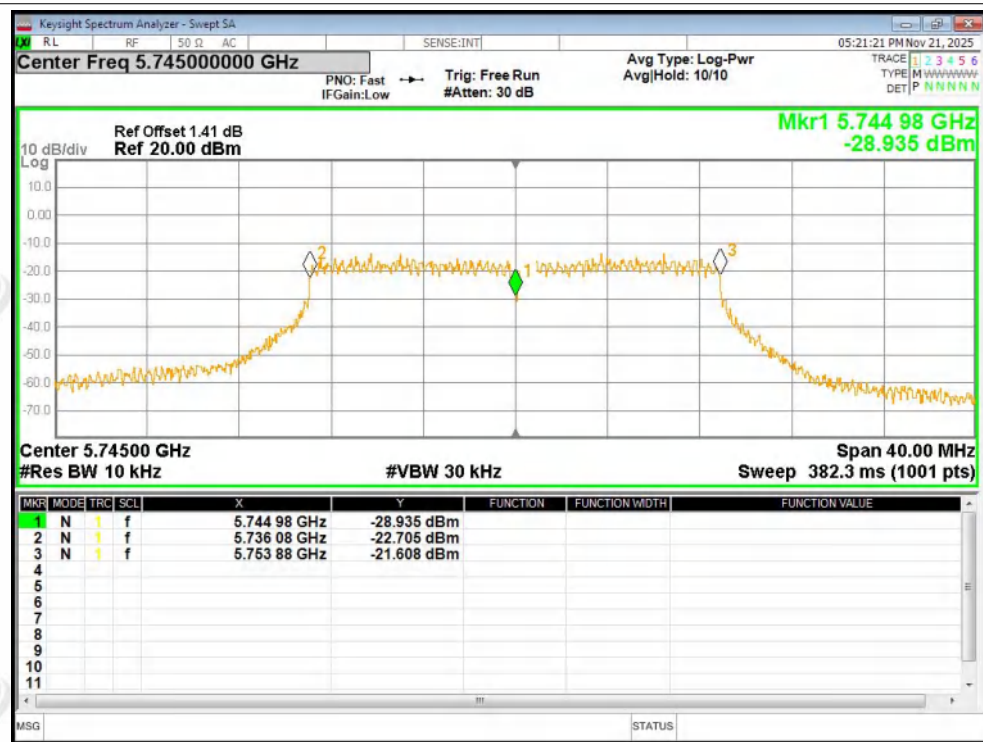




Freq. Stability NVNT a 5825MHz Ant1



Freq. Stability NVNT n20 5745MHz Ant1

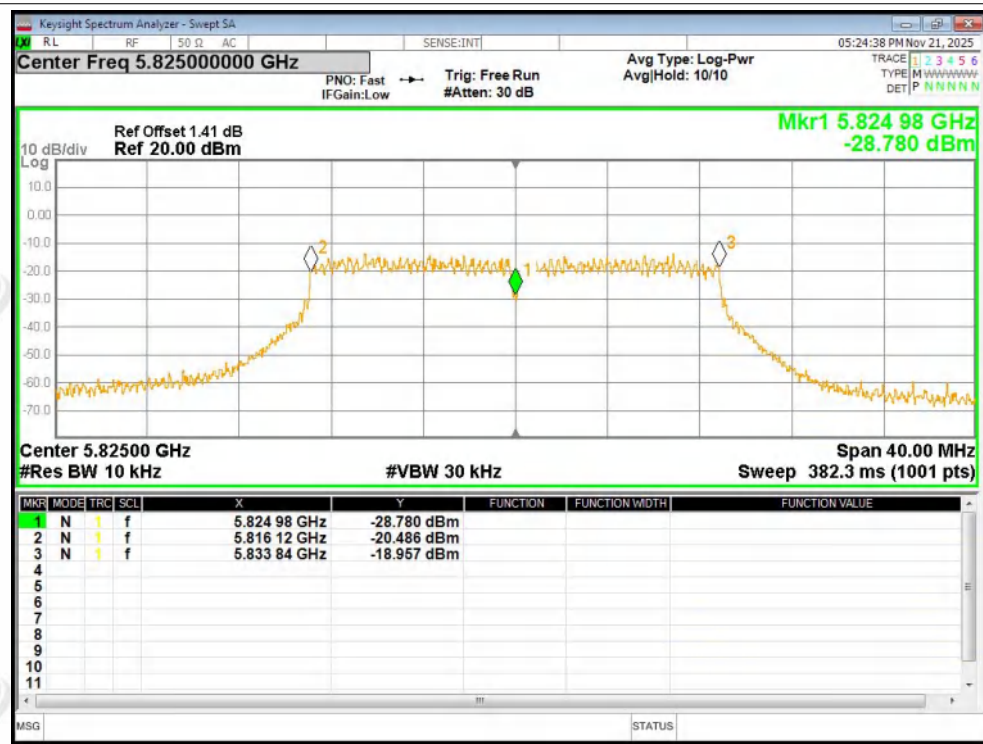




Freq. Stability NVNT n20 5785MHz Ant1

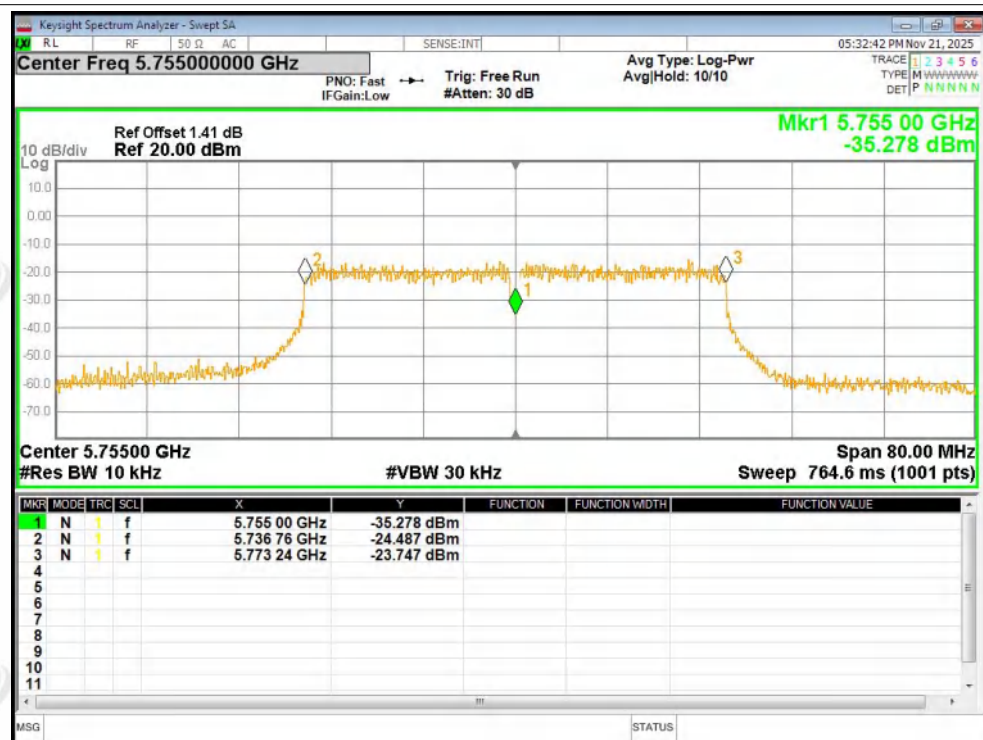


Freq. Stability NVNT n20 5825MHz Ant1

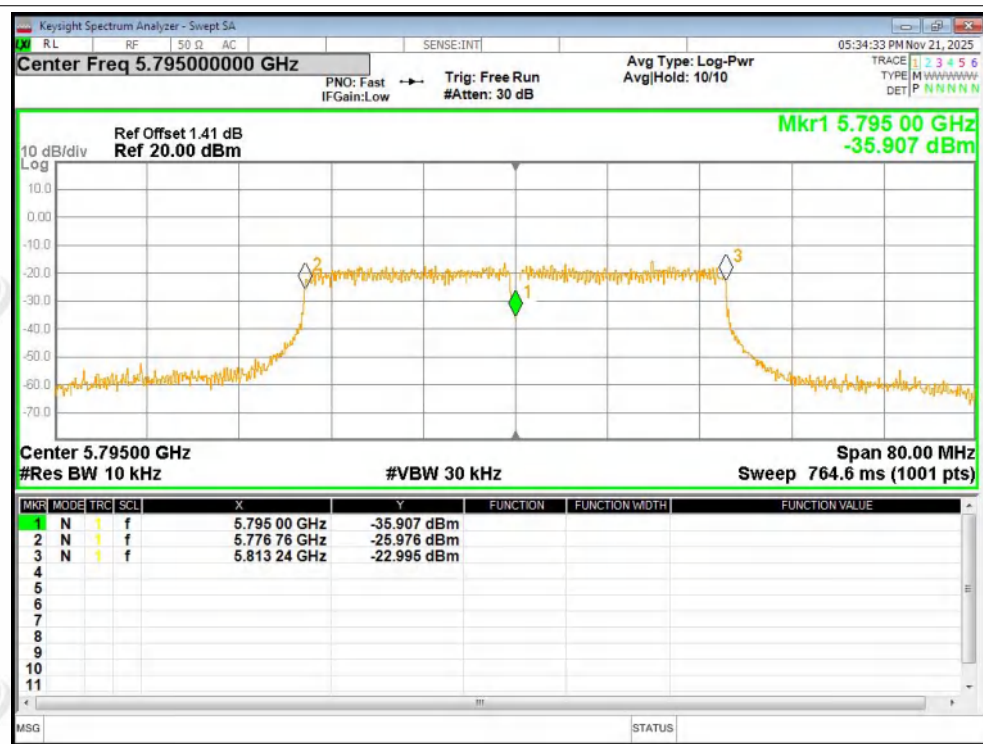




Freq. Stability NVNT n40 5755MHz Ant1

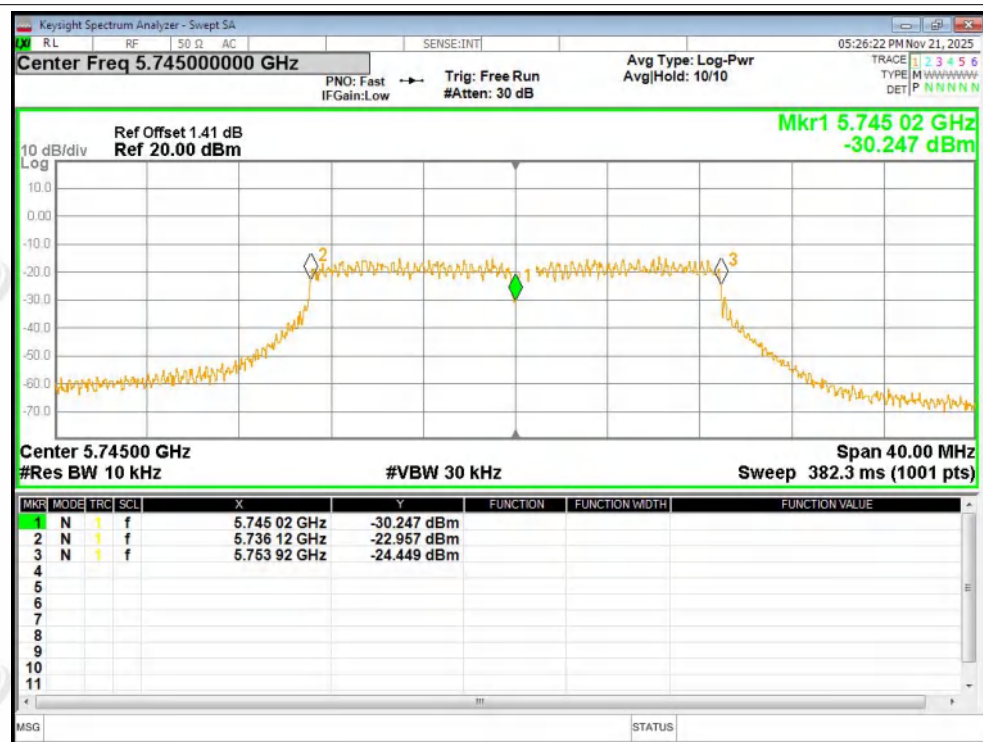


Freq. Stability NVNT n40 5795MHz Ant1

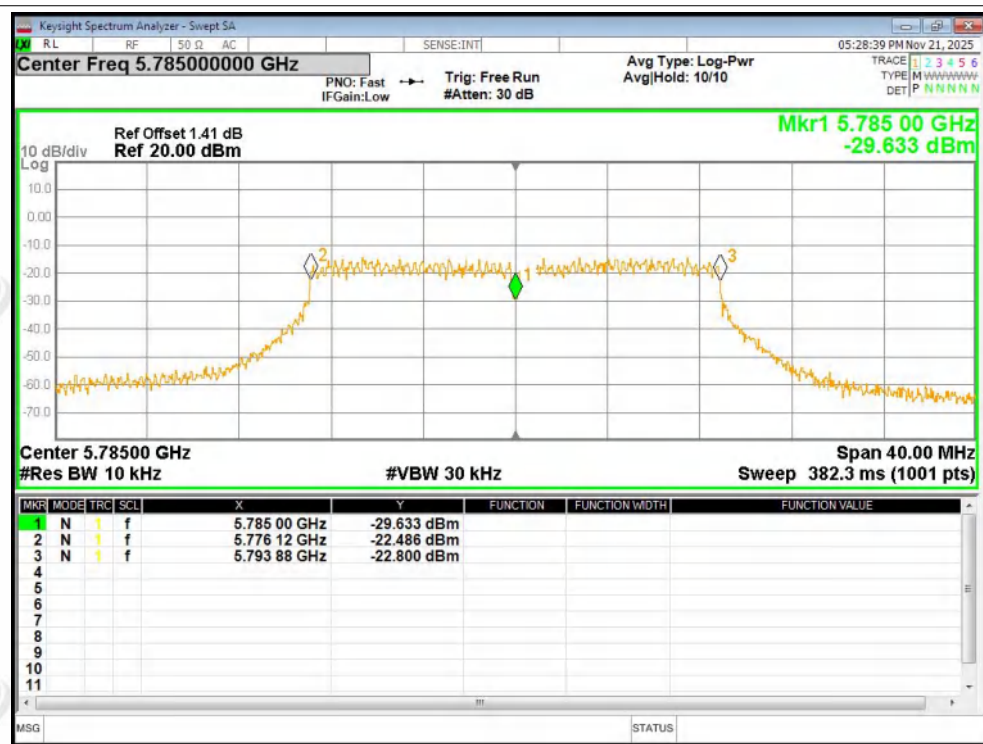




Freq. Stability NVNT ac20 5745MHz Ant1

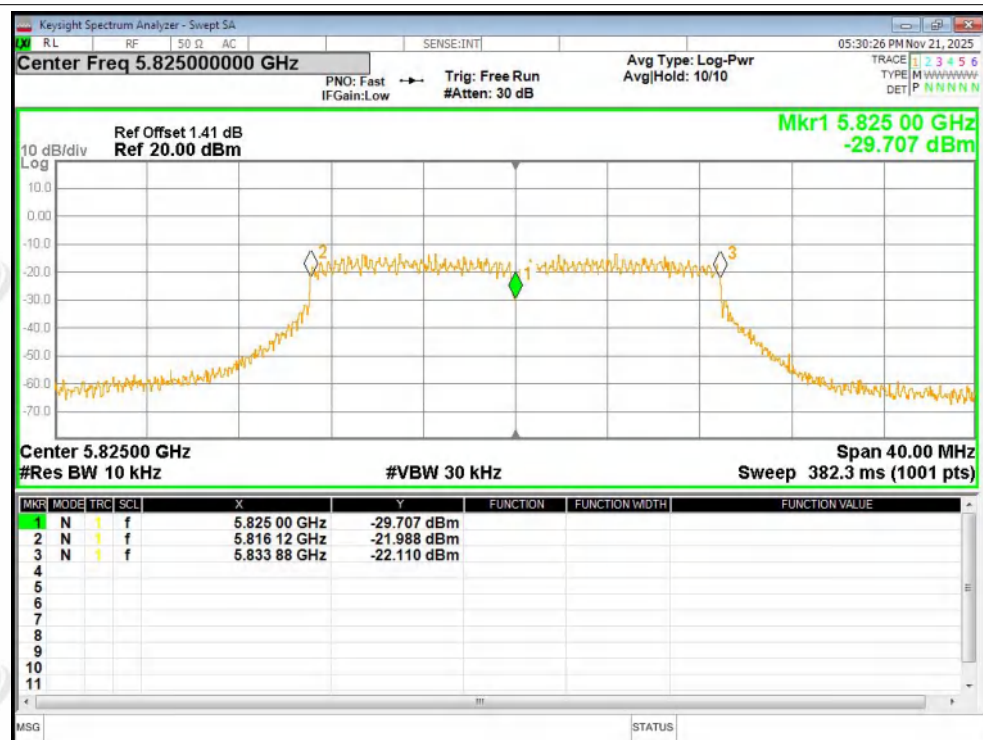


Freq. Stability NVNT ac20 5785MHz Ant1

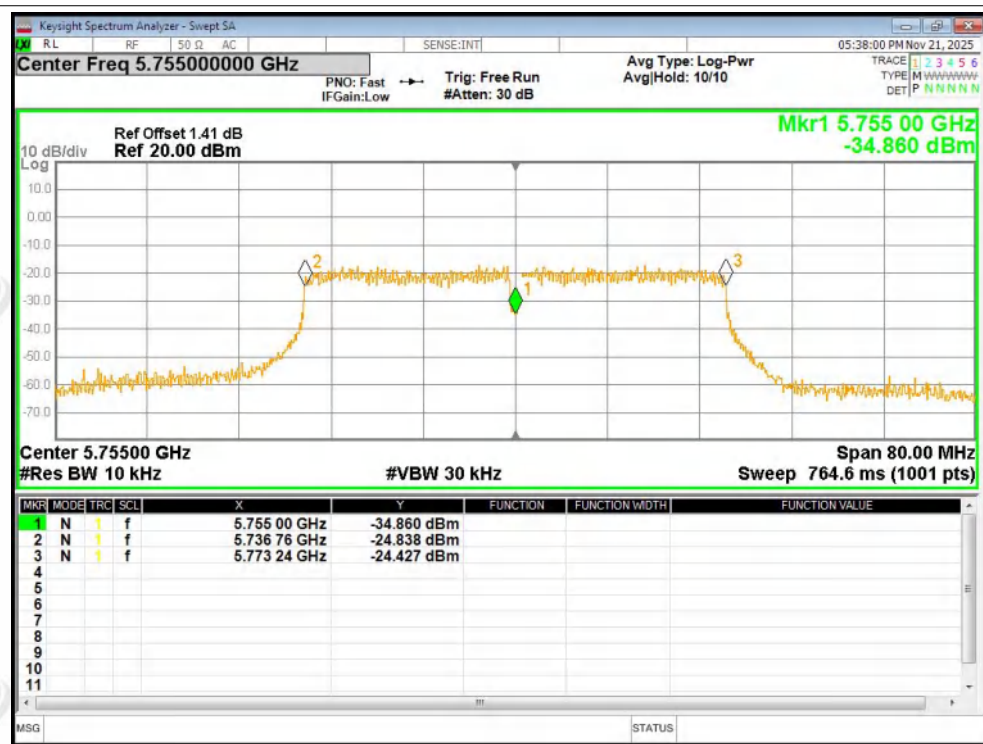




Freq. Stability NVNT ac20 5825MHz Ant1

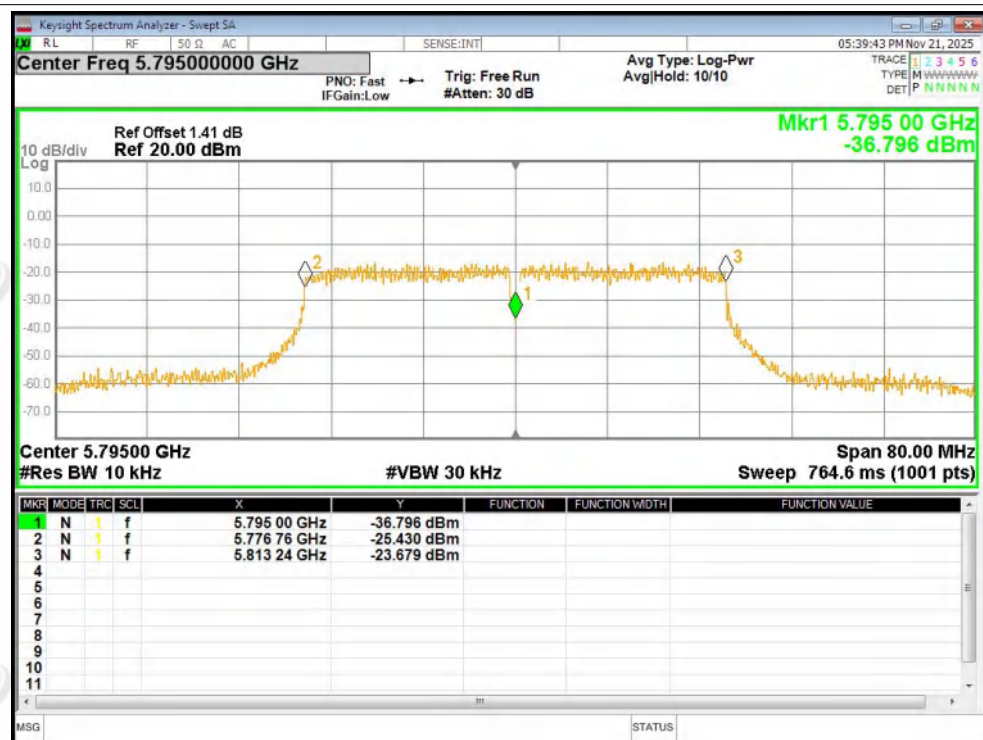


Freq. Stability NVNT ac40 5755MHz Ant1





Freq. Stability NVNT ac40 5795MHz Ant1



Freq. Stability NVNT ac80 5775MHz Ant1

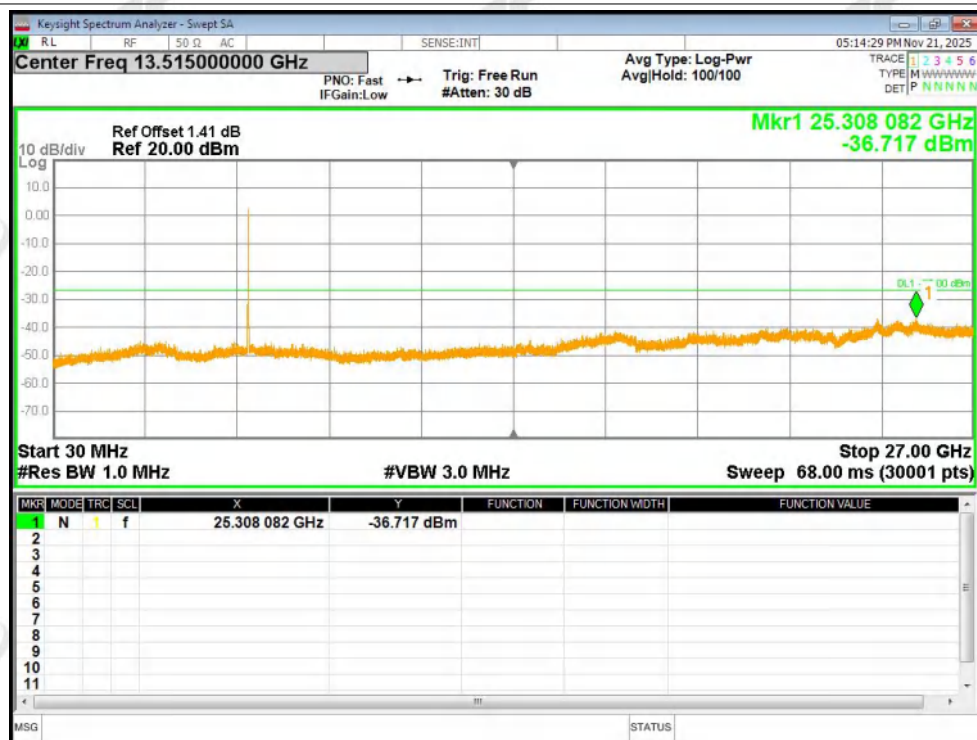


D.8 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-36.71	-27	Pass
NVNT	a	5785	Ant1	-37.52	-27	Pass
NVNT	a	5825	Ant1	-37.43	-27	Pass
NVNT	n20	5745	Ant1	-36.81	-27	Pass
NVNT	n20	5785	Ant1	-37.27	-27	Pass
NVNT	n20	5825	Ant1	-37.27	-27	Pass
NVNT	n40	5755	Ant1	-35.37	-27	Pass
NVNT	n40	5795	Ant1	-37.21	-27	Pass
NVNT	ac20	5745	Ant1	-37.43	-27	Pass
NVNT	ac20	5785	Ant1	-36.07	-27	Pass
NVNT	ac20	5825	Ant1	-37.34	-27	Pass
NVNT	ac40	5755	Ant1	-37.24	-27	Pass
NVNT	ac40	5795	Ant1	-37.52	-27	Pass
NVNT	ac80	5775	Ant1	-37.16	-27	Pass

Test Graphs

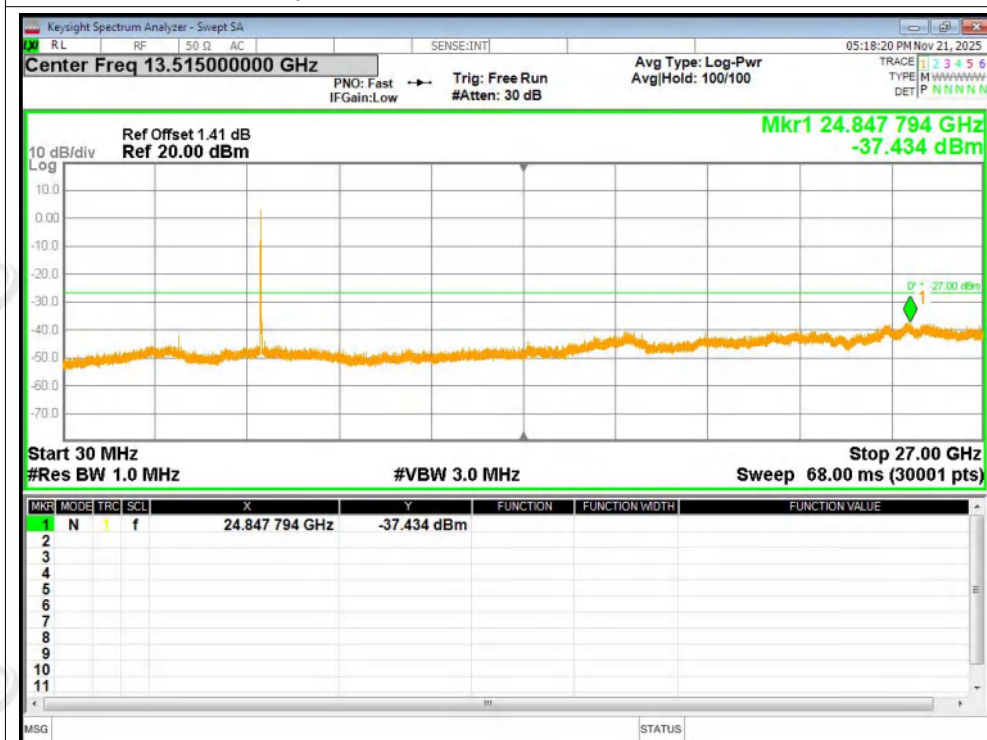
Tx. Spurious NVNT a 5745MHz Ant1 Emission



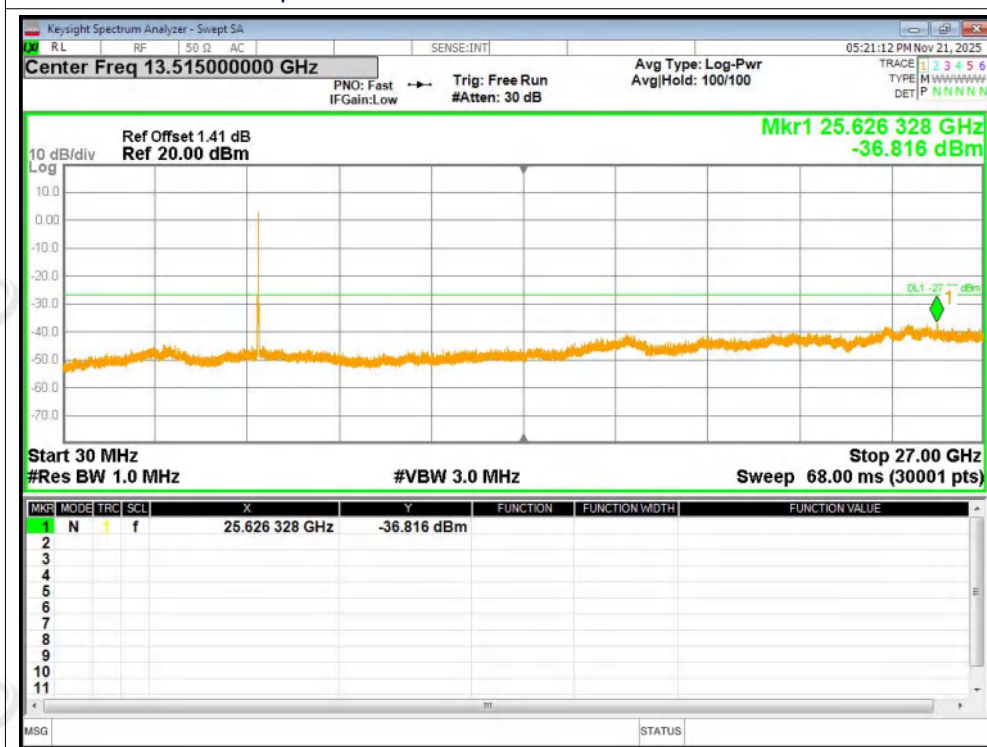
Tx. Spurious NVNT a 5785MHz Ant1 Emission



Tx. Spurious NVNT a 5825MHz Ant1 Emission

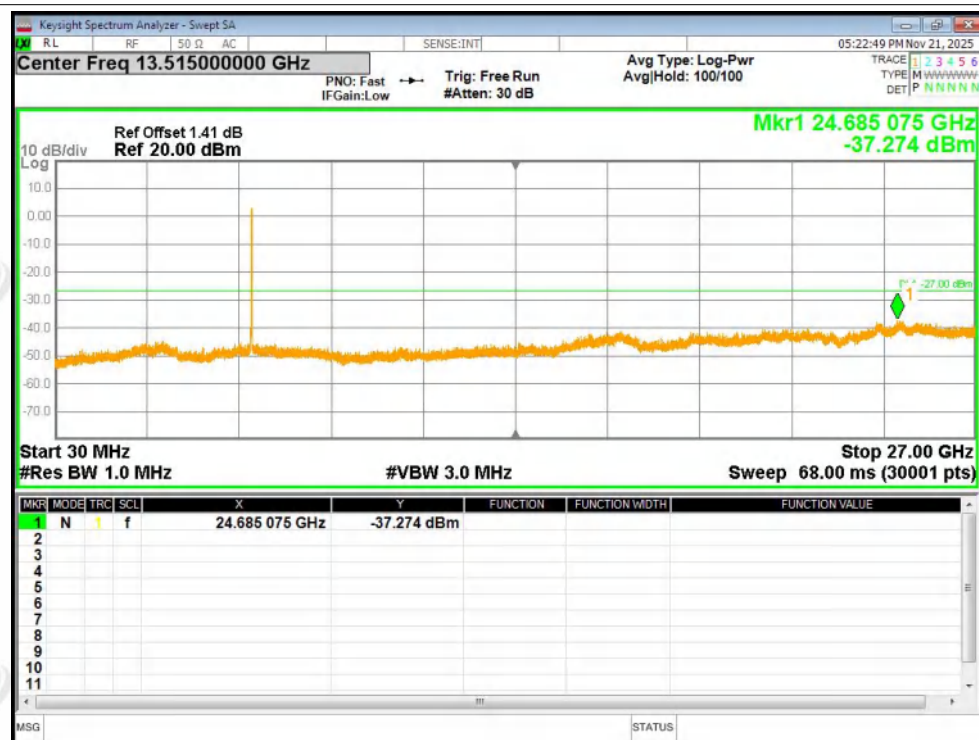


Tx. Spurious NVNT n20 5745MHz Ant1 Emission





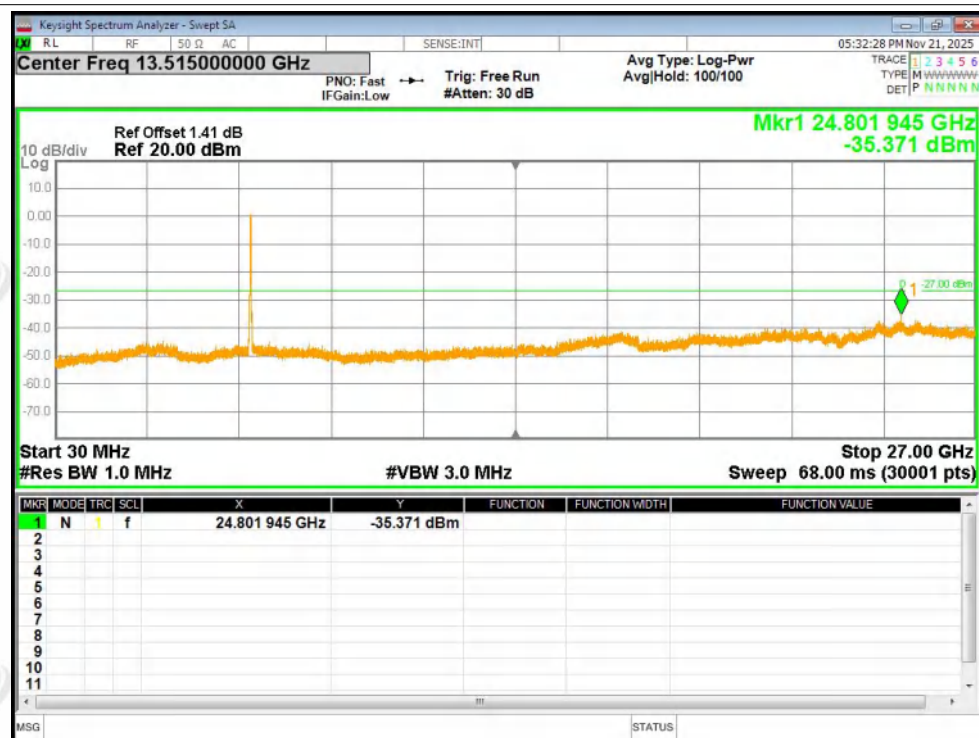
Tx. Spurious NVNT n20 5785MHz Ant1 Emission



Tx. Spurious NVNT n20 5825MHz Ant1 Emission



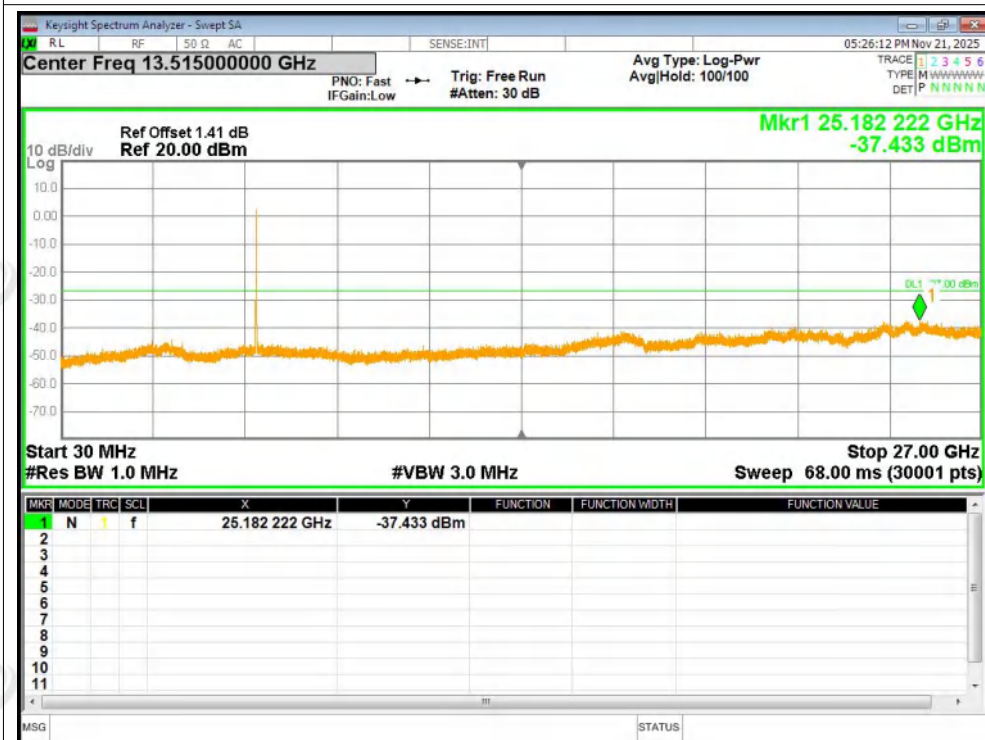
Tx. Spurious NVNT n40 5755MHz Ant1 Emission



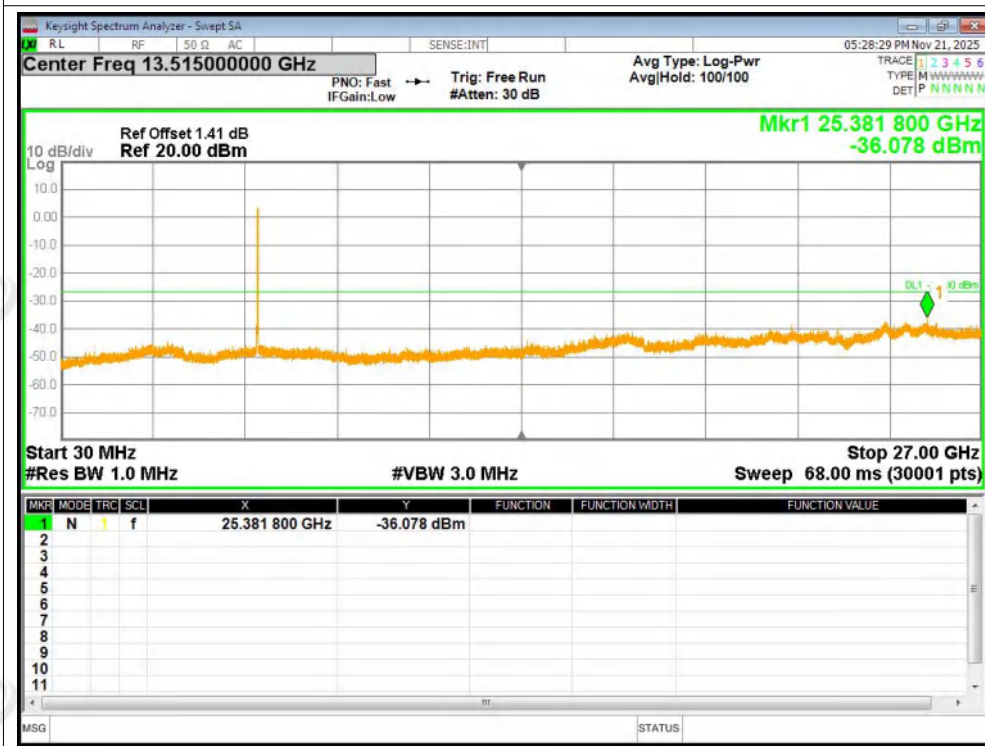
Tx. Spurious NVNT n40 5795MHz Ant1 Emission



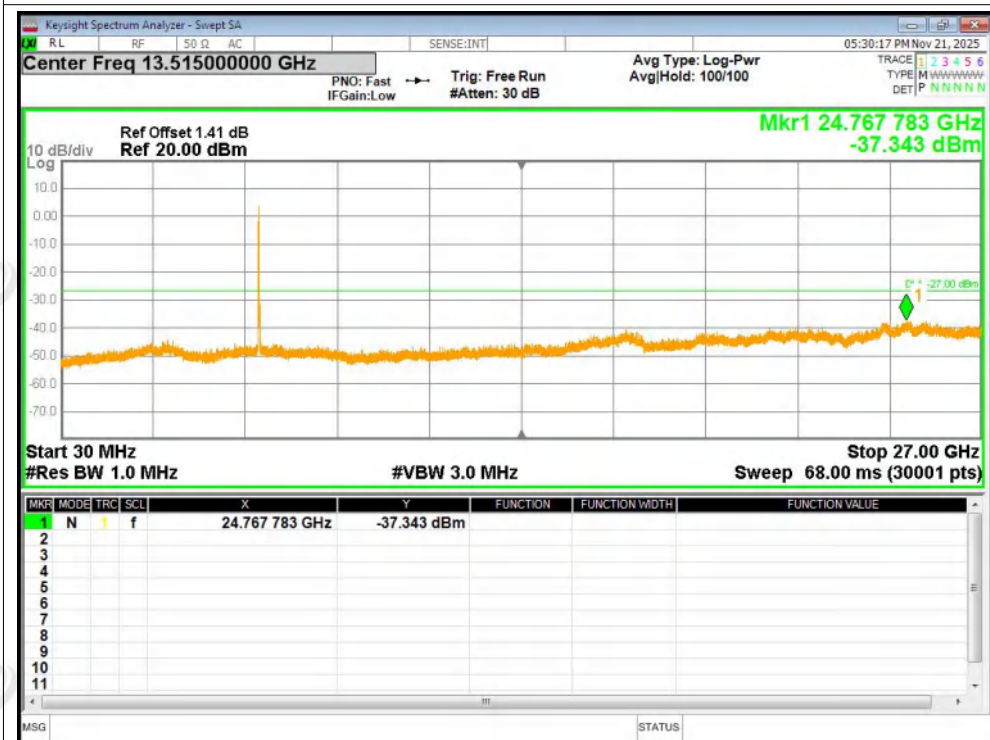
Tx. Spurious NVNT ac20 5745MHz Ant1 Emission



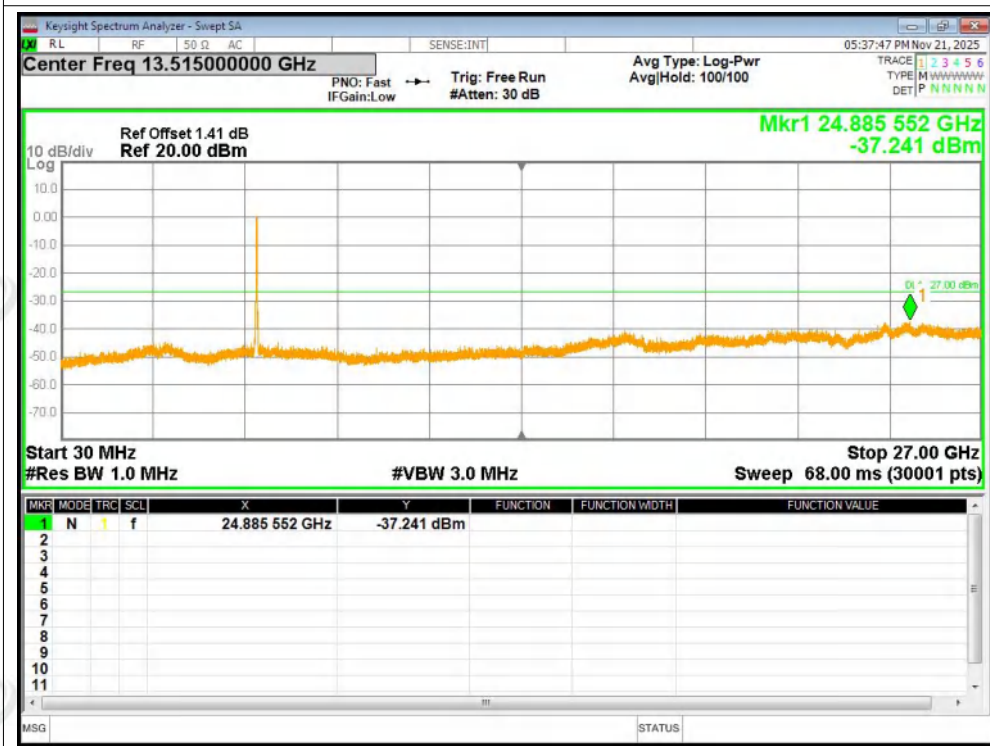
Tx. Spurious NVNT ac20 5785MHz Ant1 Emission



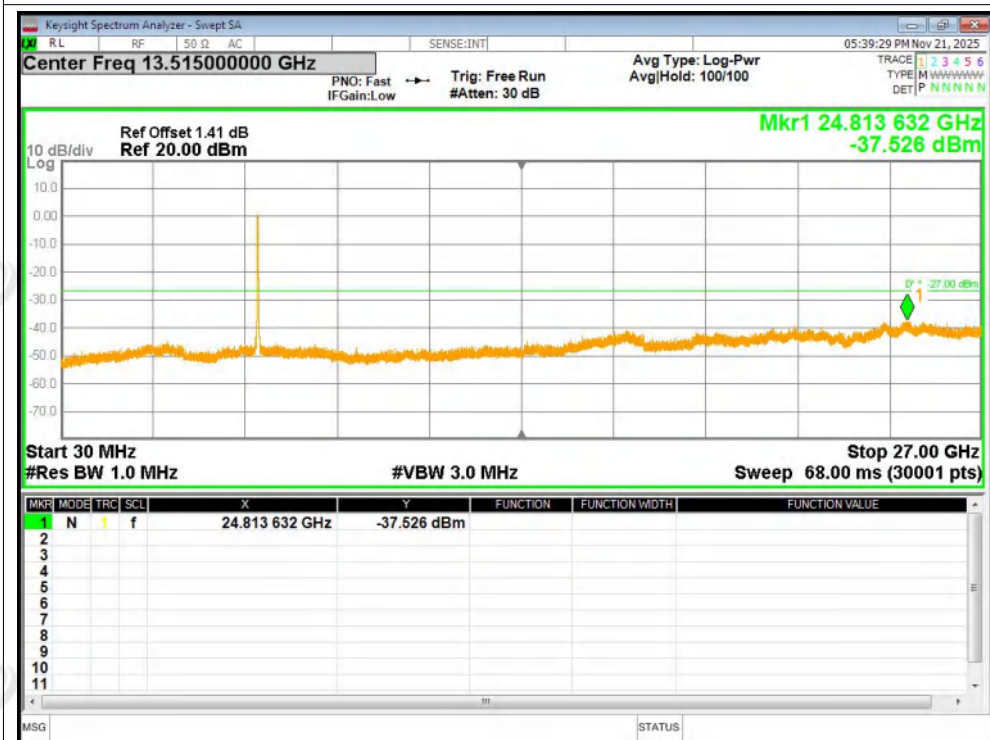
Tx. Spurious NVNT ac20 5825MHz Ant1 Emission



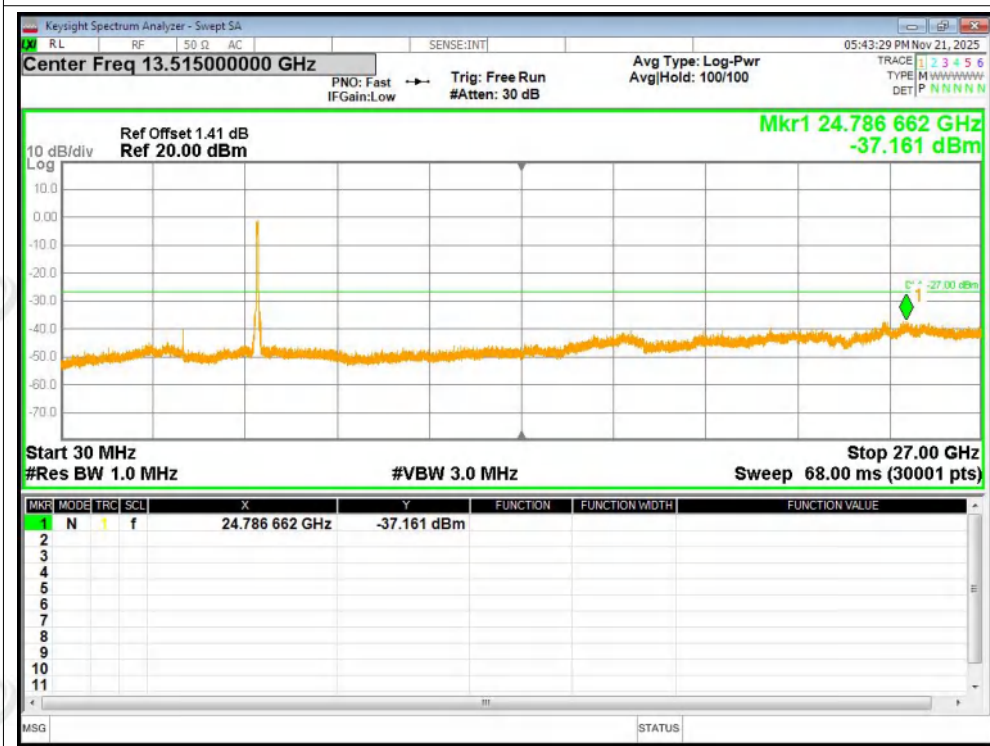
Tx. Spurious NVNT ac40 5755MHz Ant1 Emission



Tx. Spurious NVNT ac40 5795MHz Ant1 Emission



Tx. Spurious NVNT ac80 5775MHz 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.