

Appendix B for 5.8GWIFI Test Data

Product Name: Pathfinder MotoNavAI

Test Model: CK3-PLUS

Environmental Conditions

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

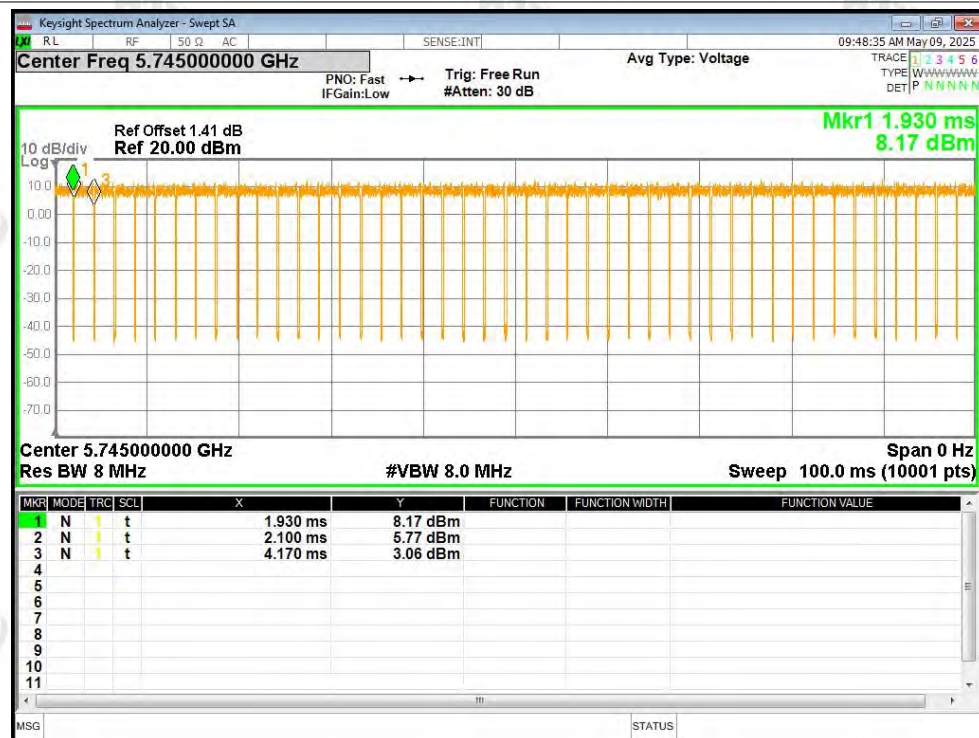
B.1 Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	Ant1	92.41	0.34	0.48
NVNT	a	5785	Ant1	93.21	0.31	0.49
NVNT	a	5825	Ant1	92.83	0.32	0.48
NVNT	n20	5745	Ant1	89.72	0.47	0.52
NVNT	n20	5785	Ant1	89.72	0.47	0.52
NVNT	n20	5825	Ant1	90.57	0.43	0.52
NVNT	n40	5755	Ant1	89.62	0.48	1.05
NVNT	n40	5795	Ant1	90.38	0.44	1.06
NVNT	ac20	5745	Ant1	85.19	0.7	0.48
NVNT	ac20	5785	Ant1	85.19	0.7	0.48
NVNT	ac20	5825	Ant1	84.08	0.75	0.49
NVNT	ac40	5755	Ant1	83.06	0.81	0.49
NVNT	ac40	5795	Ant1	83.81	0.77	0.48

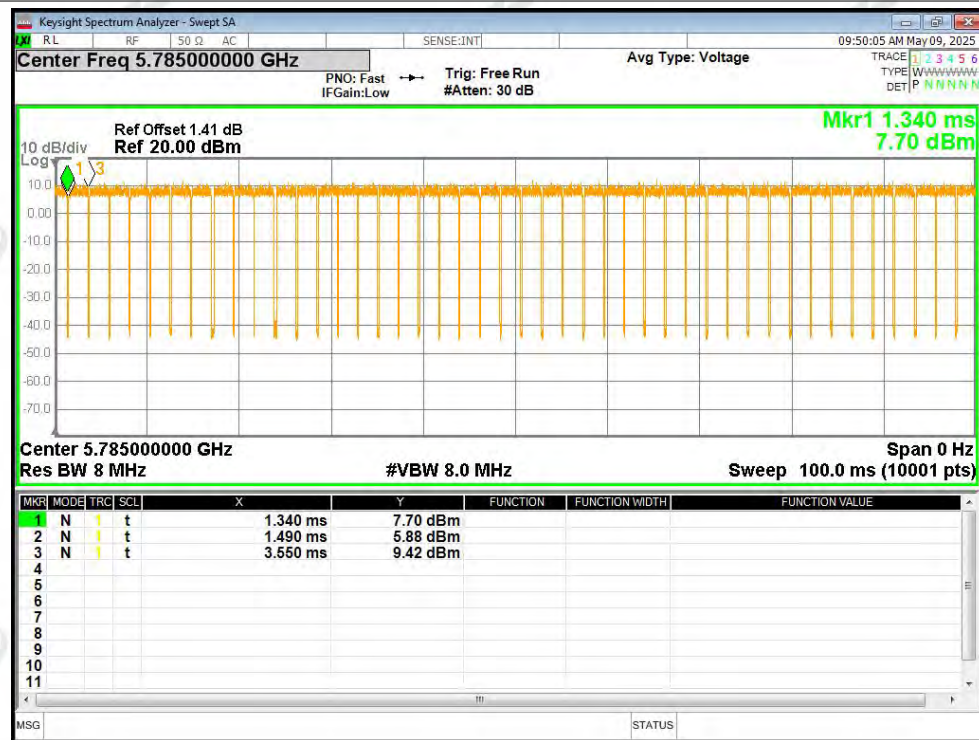


Test Graphs

Duty Cycle NVNT a 5745MHz Ant1

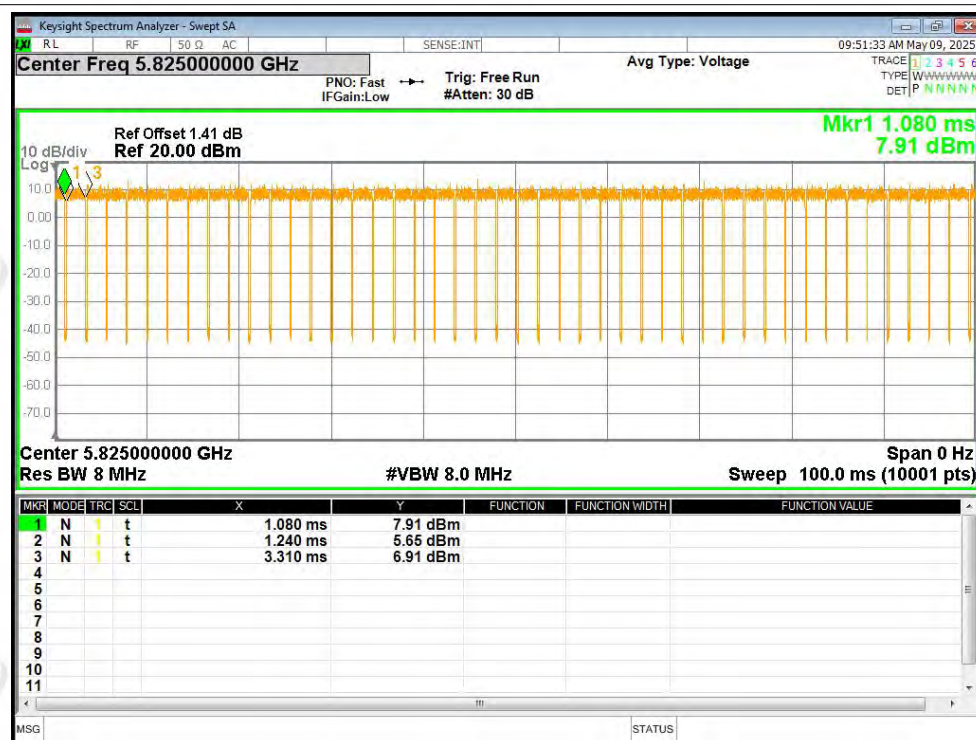


Duty Cycle NVNT a 5785MHz Ant1

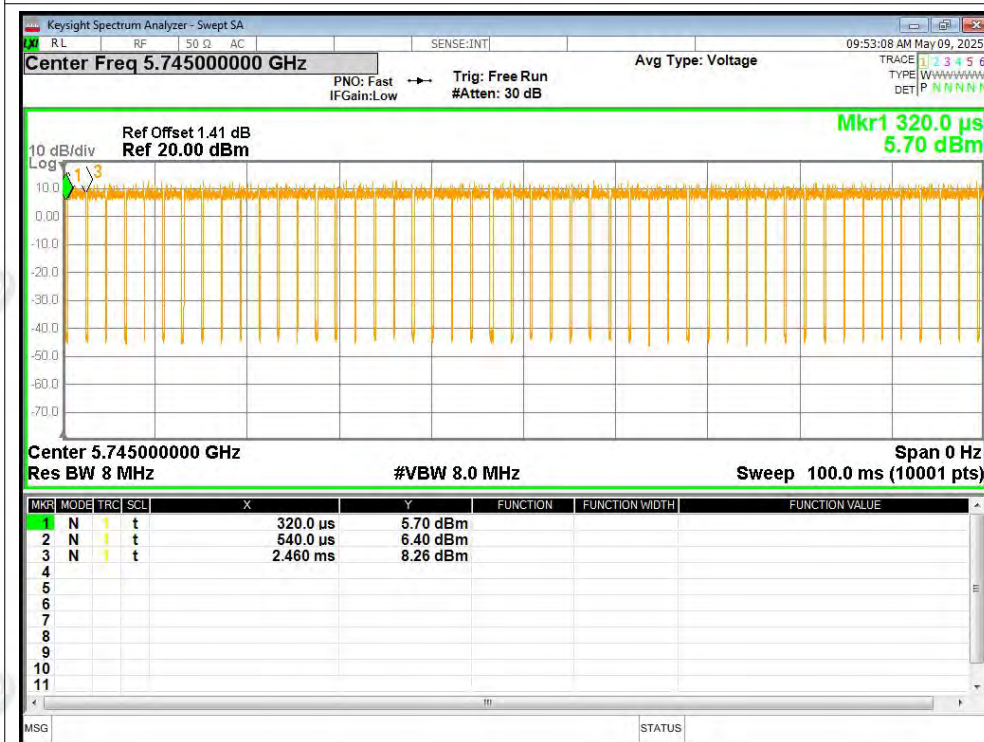




Duty Cycle NVNT a 5825MHz Ant1

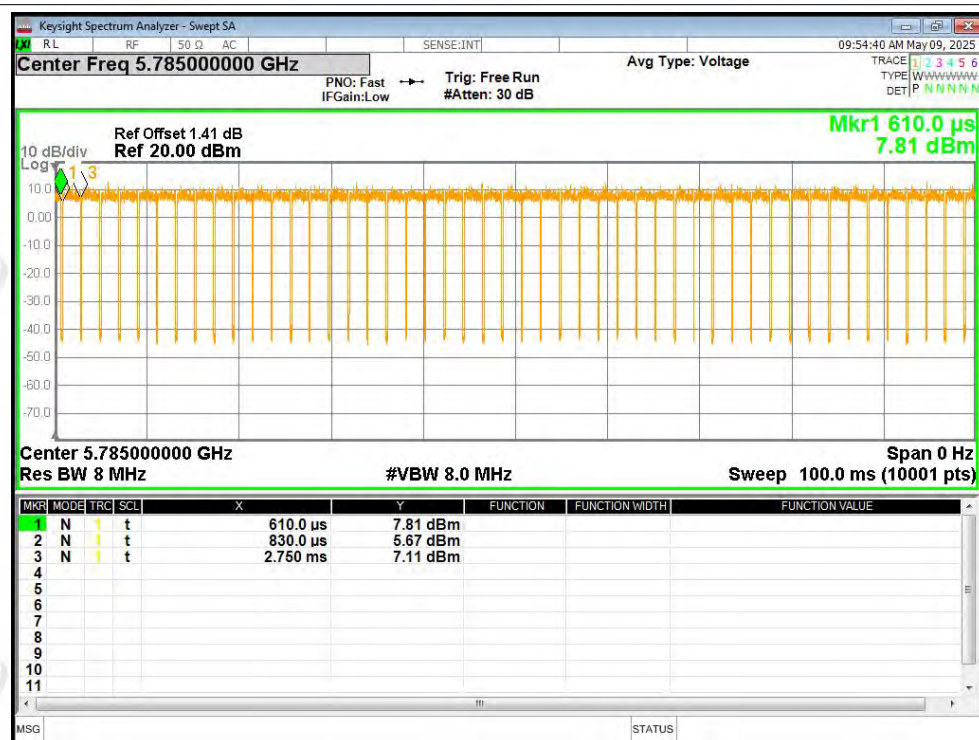


Duty Cycle NVNT n20 5745MHz Ant1

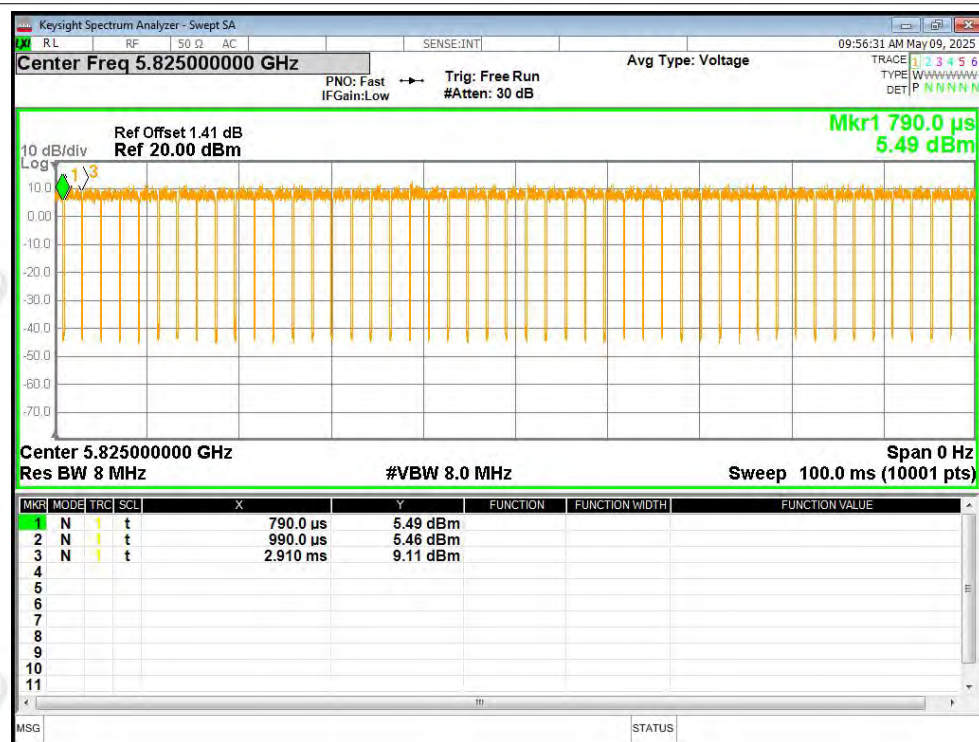




Duty Cycle NVNT n20 5785MHz Ant1

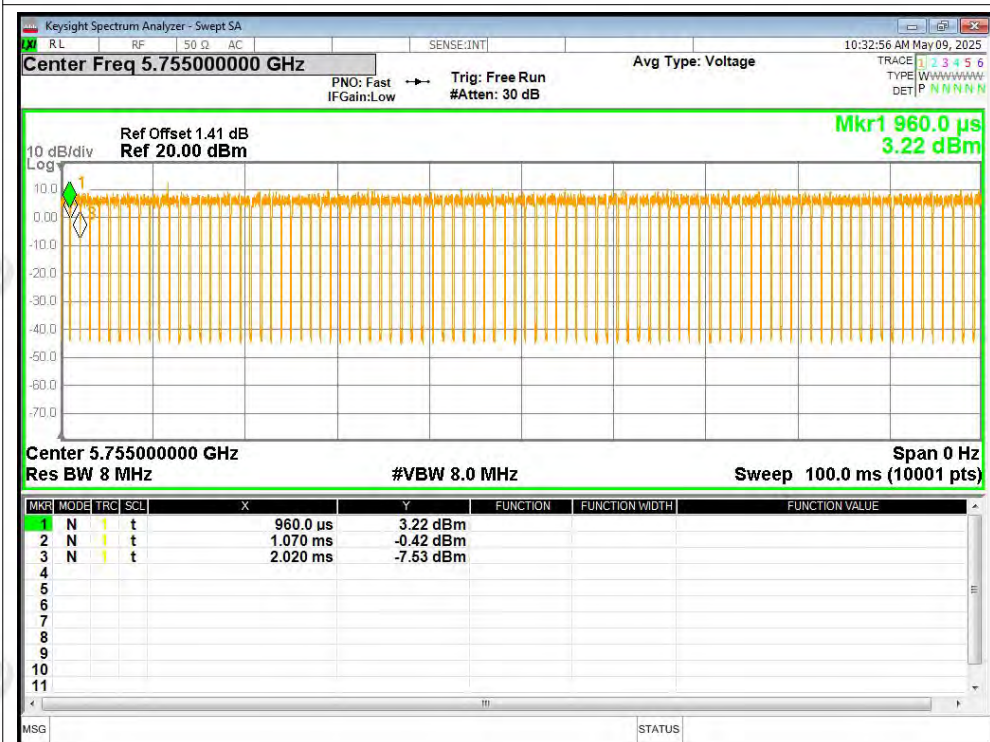


Duty Cycle NVNT n20 5825MHz Ant1





Duty Cycle NVNT n40 5755MHz Ant1

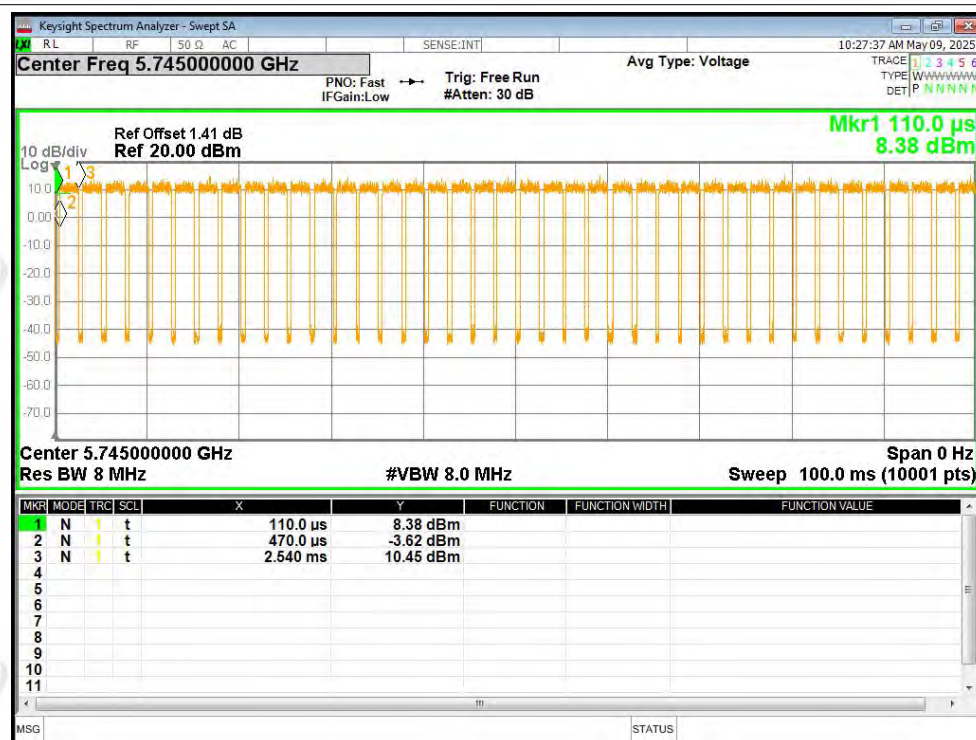


Duty Cycle NVNT n40 5795MHz Ant1

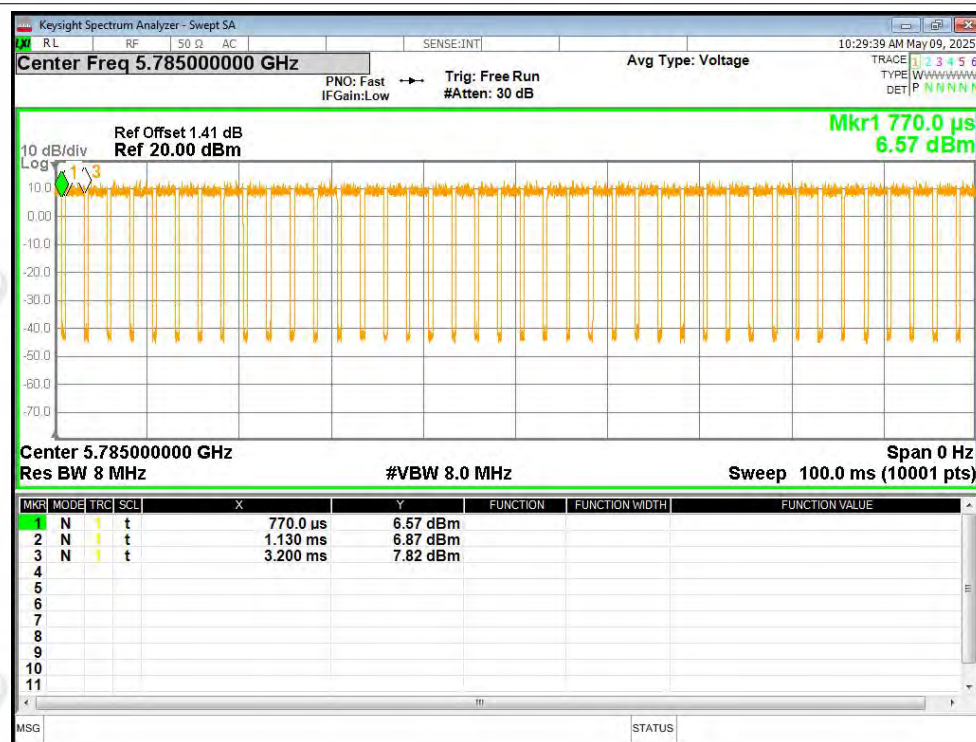




Duty Cycle NVNT ac20 5745MHz Ant1

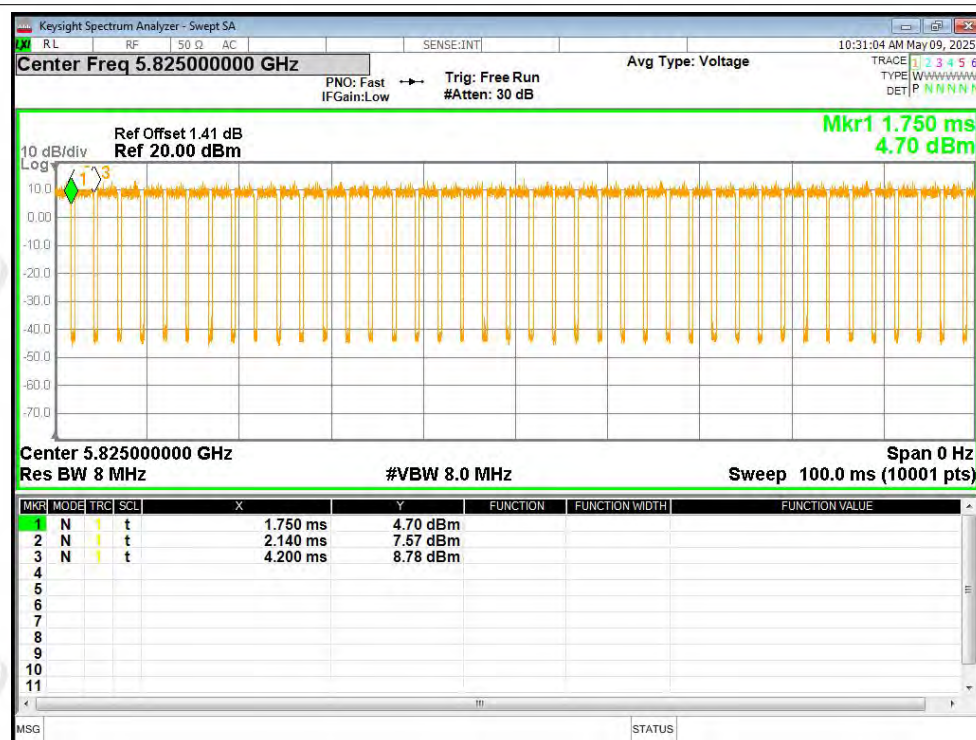


Duty Cycle NVNT ac20 5785MHz Ant1

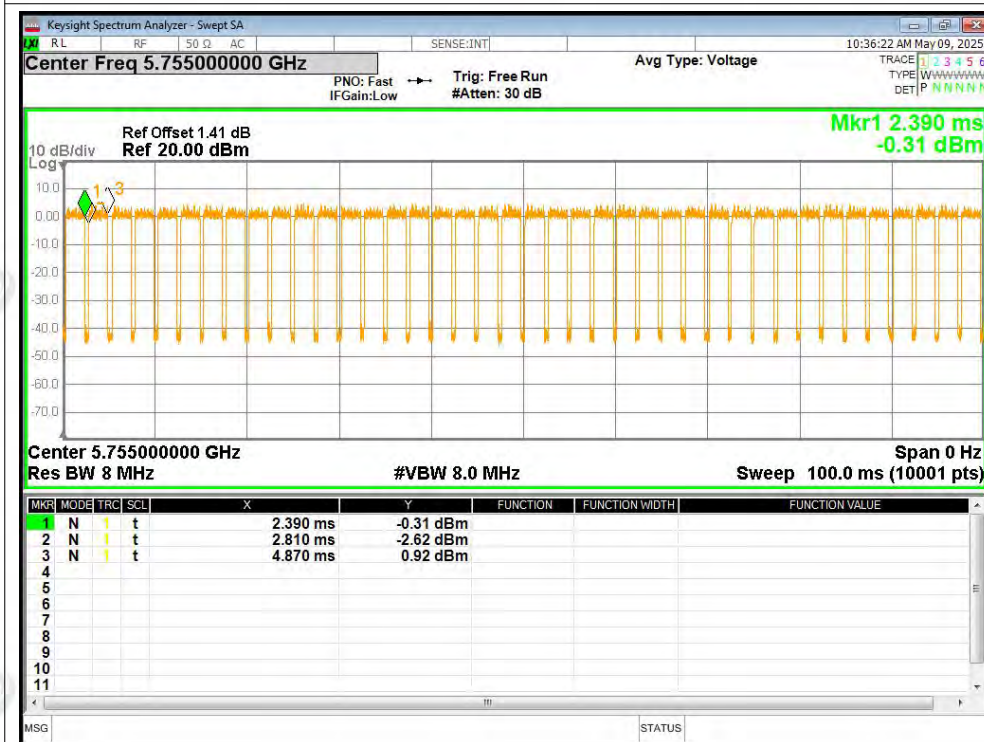


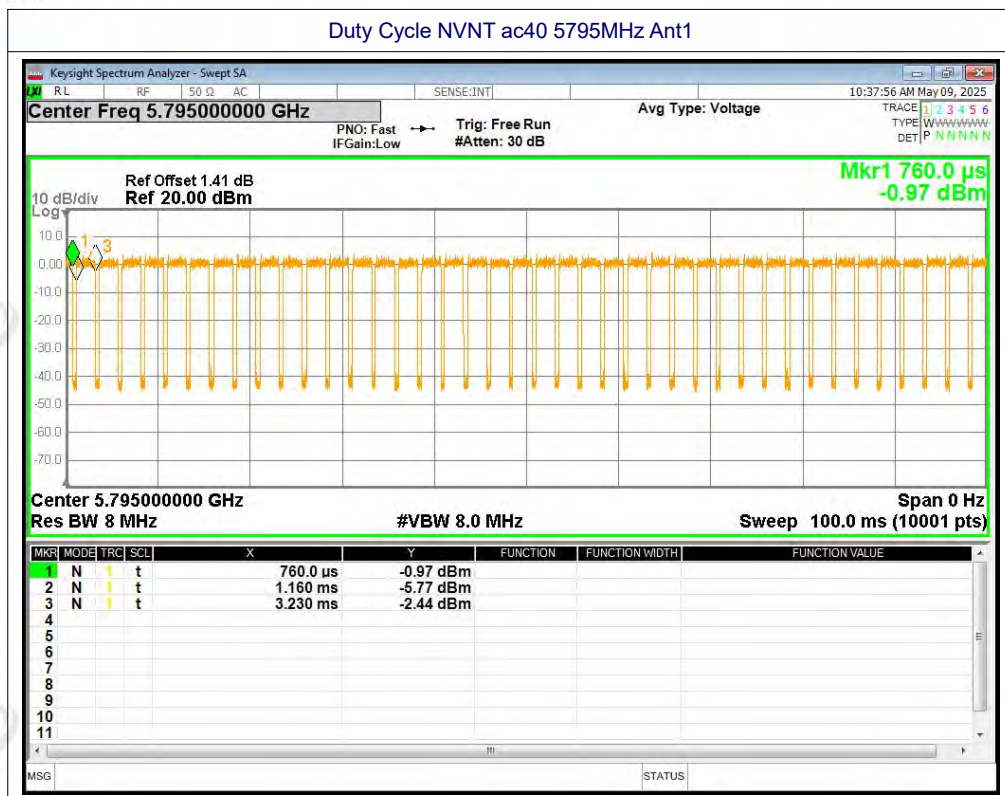


Duty Cycle NVNT ac20 5825MHz Ant1



Duty Cycle NVNT ac40 5755MHz Ant1







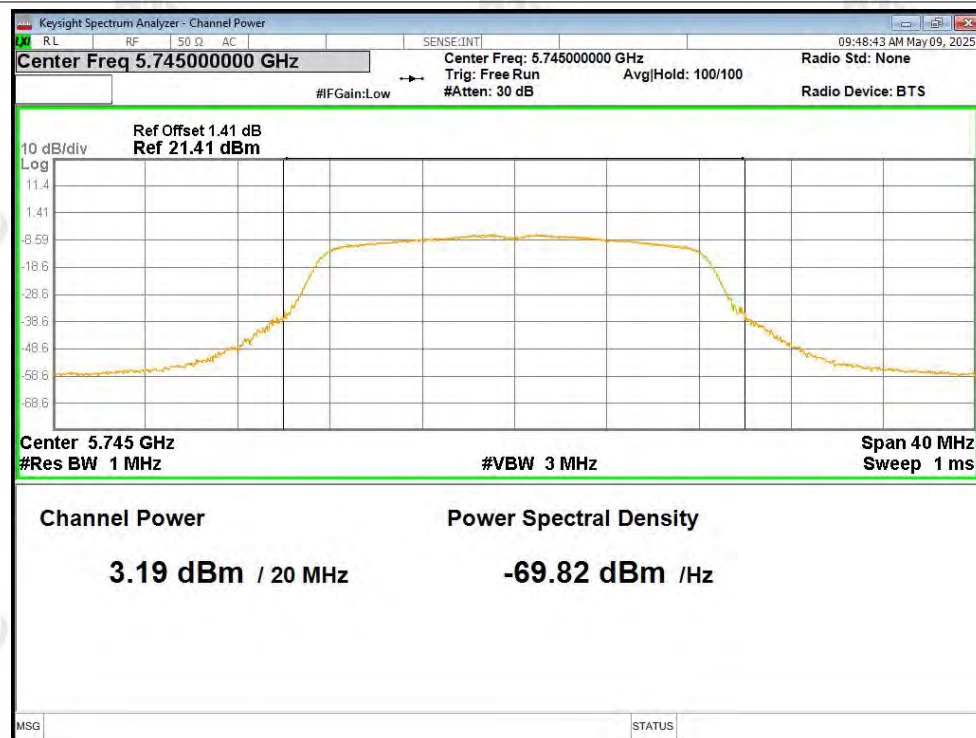
B.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	3.19	0.34	3.53	30	Pass
NVNT	a	5785	Ant1	2.77	0.31	3.08	30	Pass
NVNT	a	5825	Ant1	2.9	0.32	3.22	30	Pass
NVNT	n20	5745	Ant1	3	0.47	3.47	30	Pass
NVNT	n20	5785	Ant1	2.62	0.47	3.09	30	Pass
NVNT	n20	5825	Ant1	2.48	0.43	2.91	30	Pass
NVNT	n40	5755	Ant1	3.17	0.48	3.65	30	Pass
NVNT	n40	5795	Ant1	2.59	0.44	3.03	30	Pass
NVNT	ac20	5745	Ant1	4.69	0.7	5.39	30	Pass
NVNT	ac20	5785	Ant1	3.53	0.7	4.23	30	Pass
NVNT	ac20	5825	Ant1	3.35	0.75	4.1	30	Pass
NVNT	ac40	5755	Ant1	2.72	0.81	3.53	30	Pass
NVNT	ac40	5795	Ant1	2.29	0.77	3.06	30	Pass

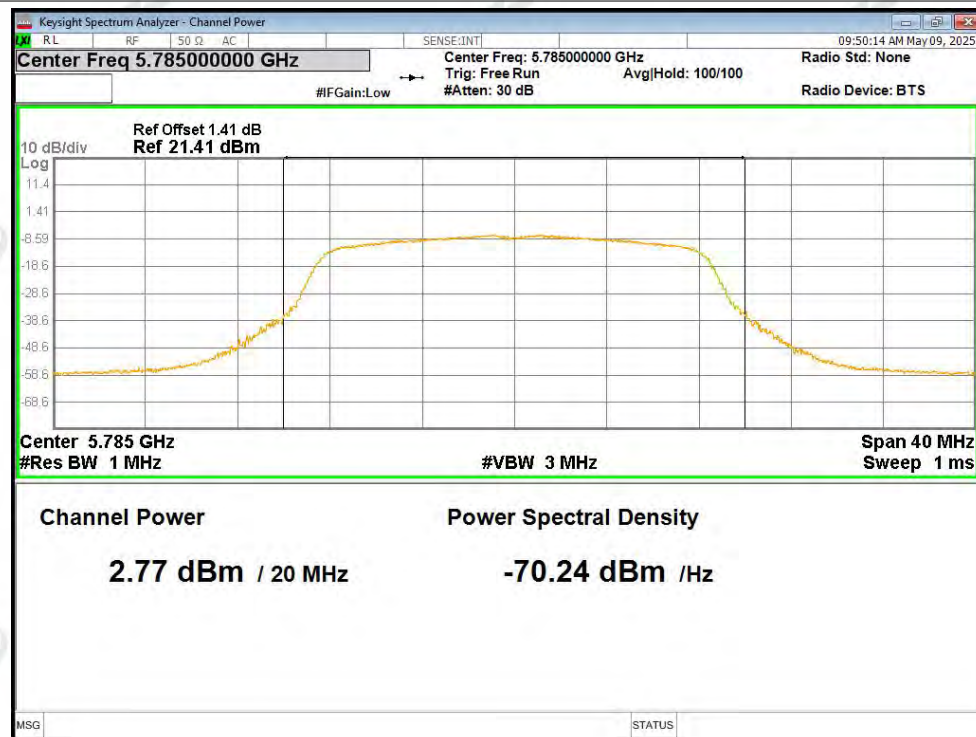


Test Graphs

Power NVNT a 5745MHz Ant1



Power NVNT a 5785MHz Ant1

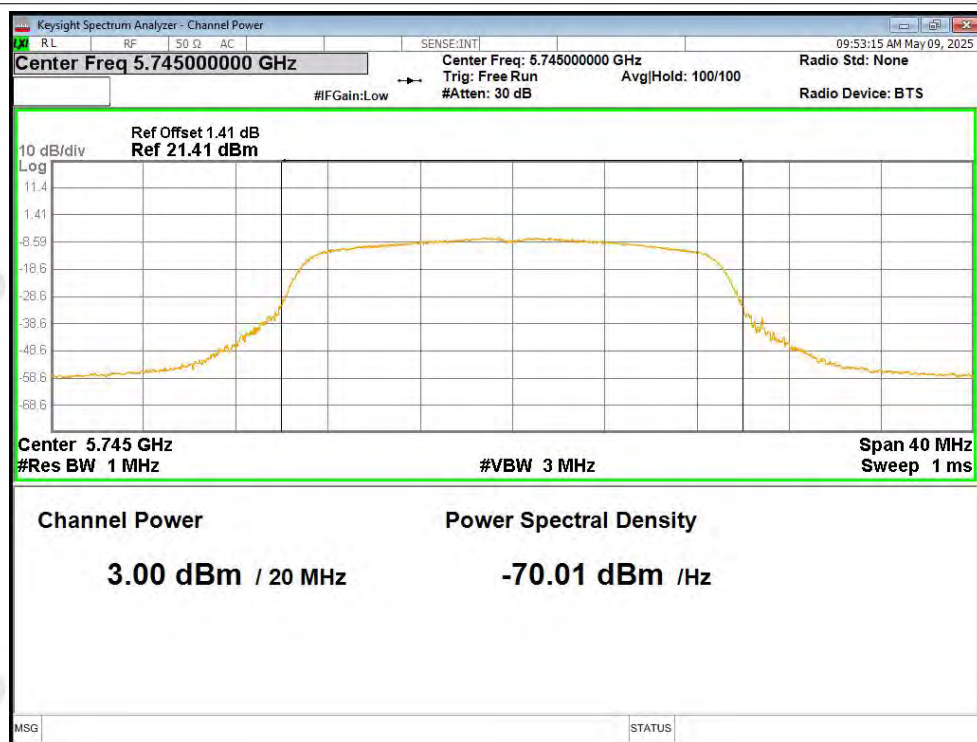




Power NVNT a 5825MHz Ant1



Power NVNT n20 5745MHz Ant1

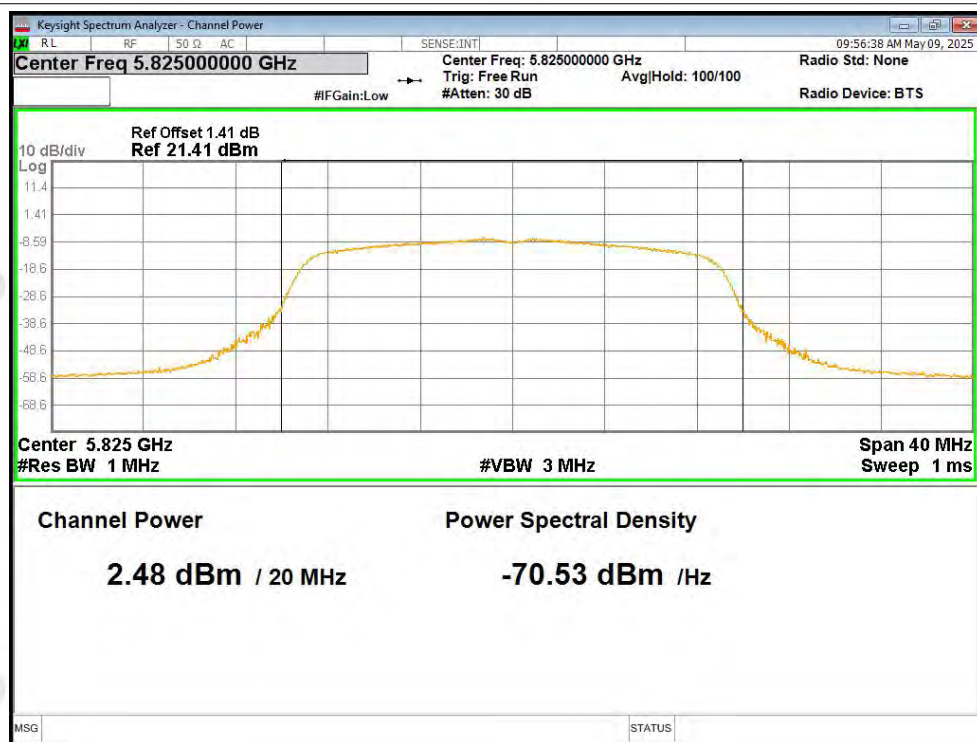




Power NVNT n20 5785MHz Ant1

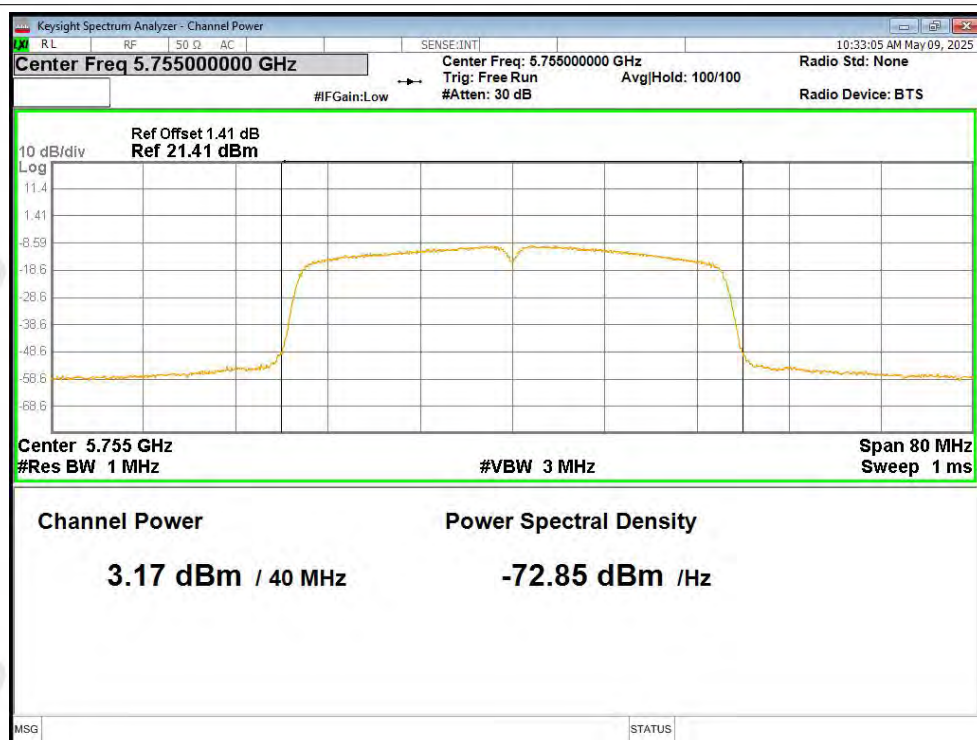


Power NVNT n20 5825MHz Ant1

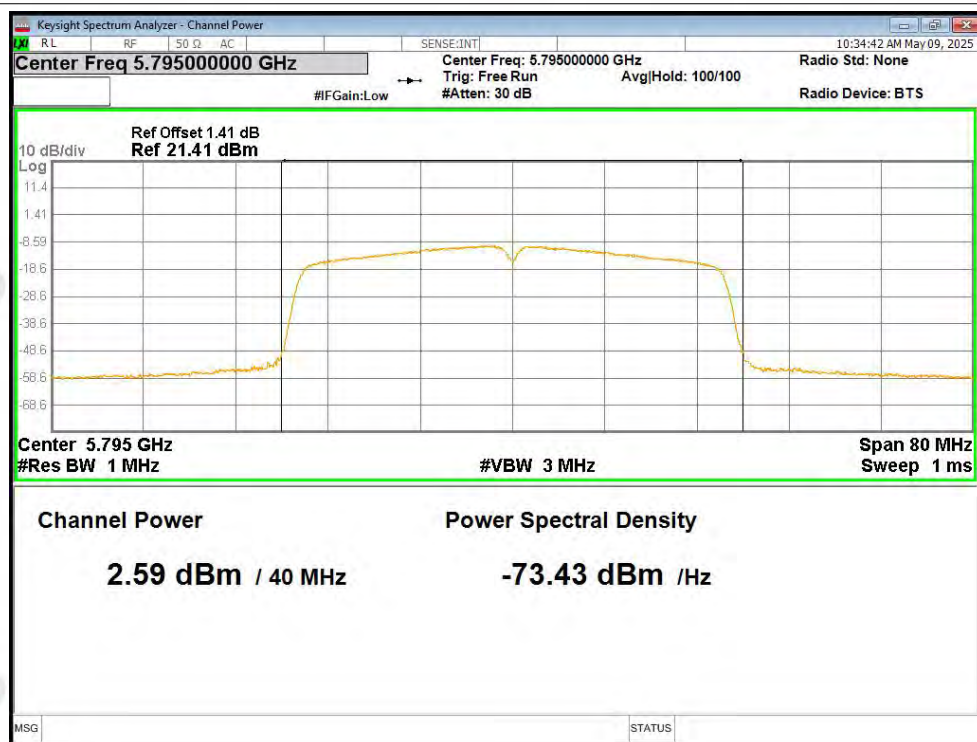




Power NVNT n40 5755MHz Ant1



Power NVNT n40 5795MHz Ant1

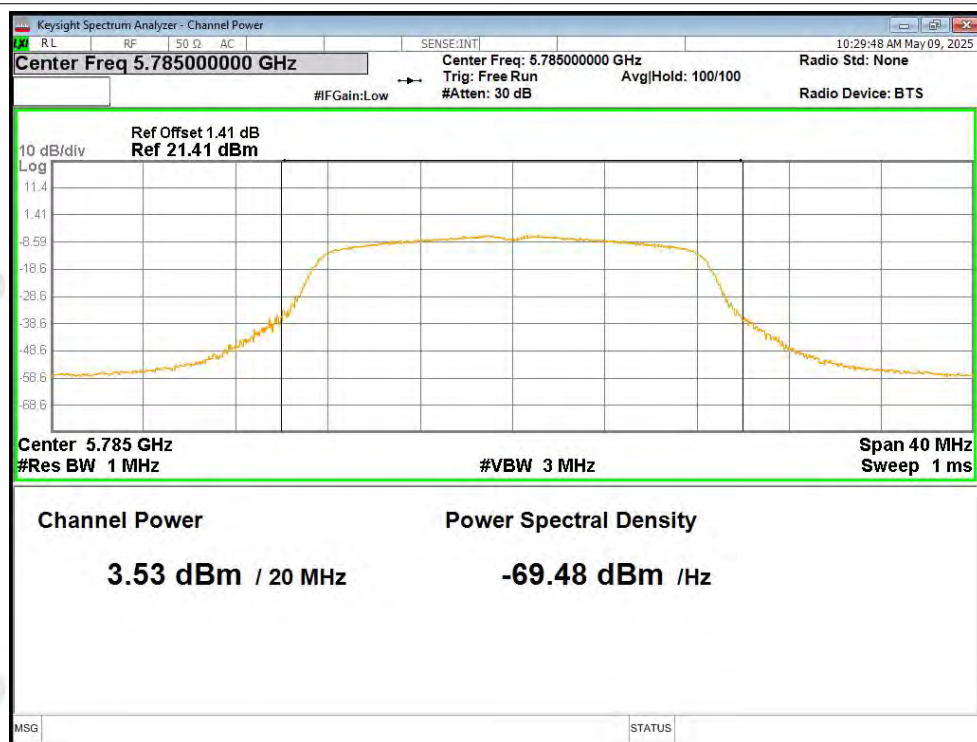




Power NVNT ac20 5745MHz Ant1



Power NVNT ac20 5785MHz Ant1

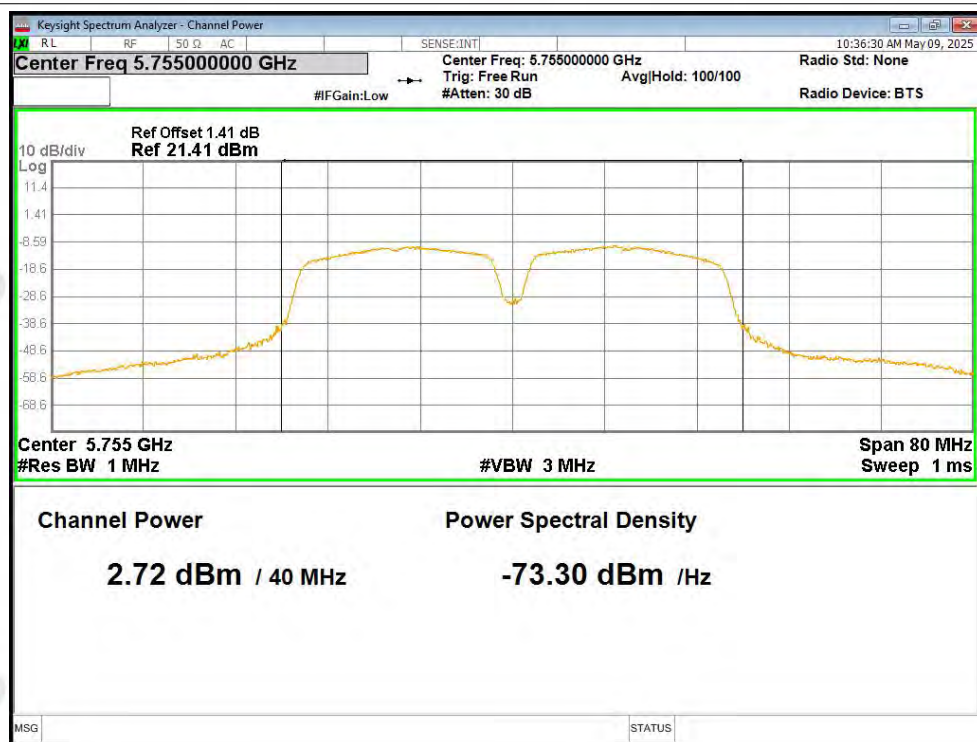


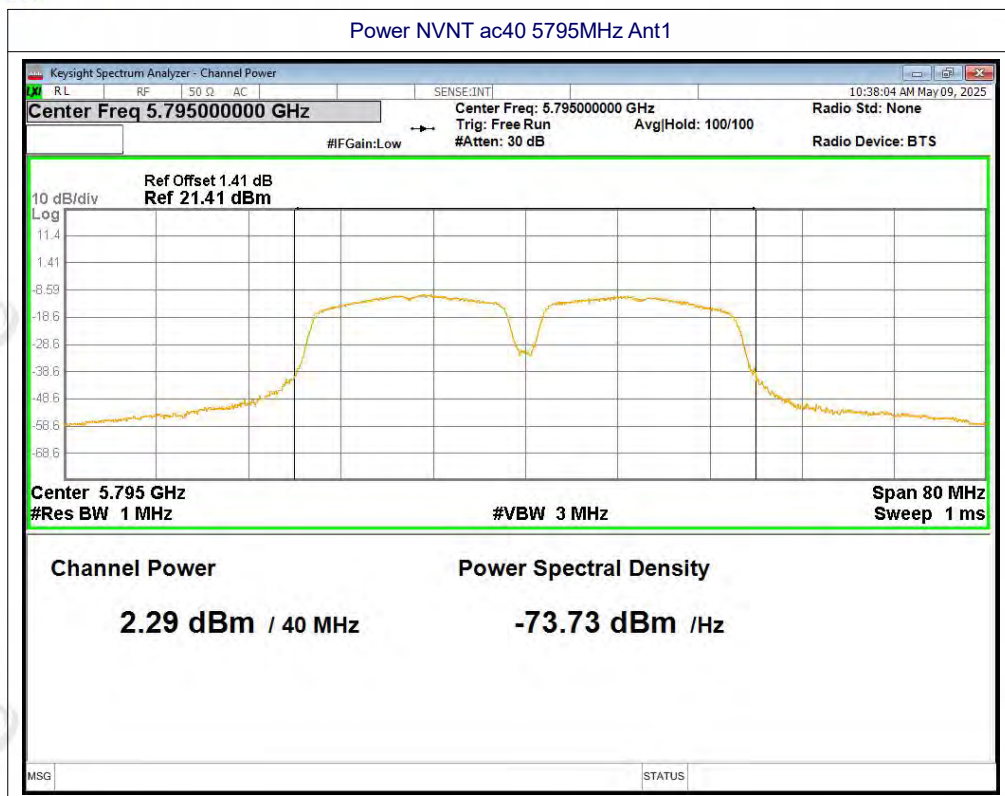


Power NVNT ac20 5825MHz Ant1



Power NVNT ac40 5755MHz Ant1





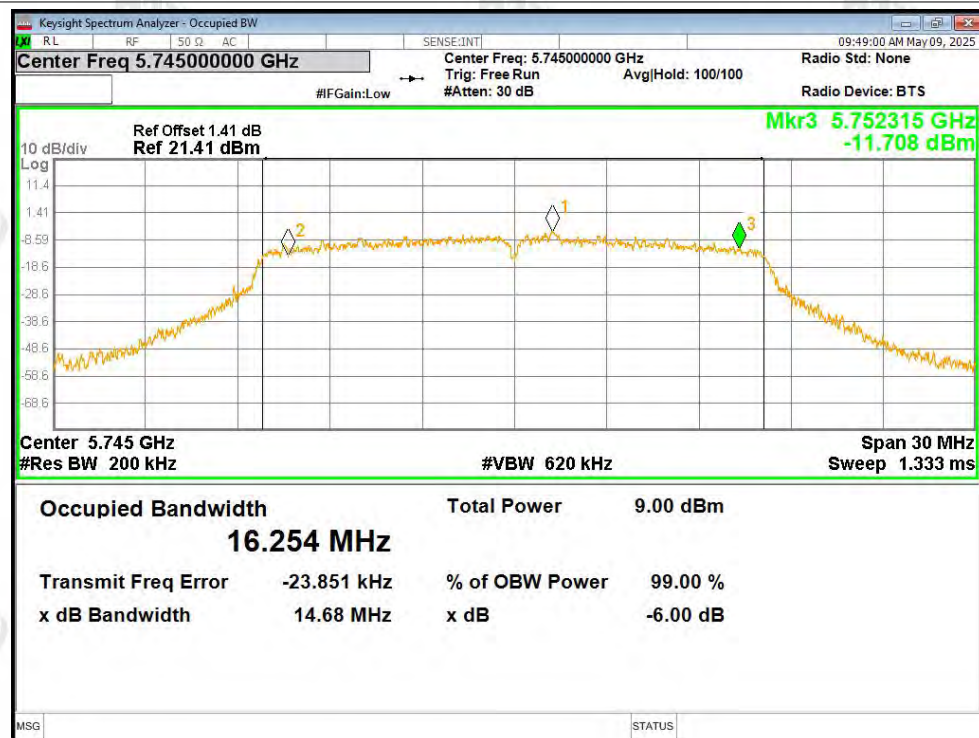
**B.3 -6dB Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	14.679	0.5	Pass
NVNT	a	5785	Ant1	15.431	0.5	Pass
NVNT	a	5825	Ant1	15.234	0.5	Pass
NVNT	n20	5745	Ant1	14.507	0.5	Pass
NVNT	n20	5785	Ant1	15.286	0.5	Pass
NVNT	n20	5825	Ant1	16.256	0.5	Pass
NVNT	n40	5755	Ant1	32.063	0.5	Pass
NVNT	n40	5795	Ant1	30.825	0.5	Pass
NVNT	ac20	5745	Ant1	15.683	0.5	Pass
NVNT	ac20	5785	Ant1	14.638	0.5	Pass
NVNT	ac20	5825	Ant1	15.859	0.5	Pass
NVNT	ac40	5755	Ant1	33.119	0.5	Pass
NVNT	ac40	5795	Ant1	32.591	0.5	Pass

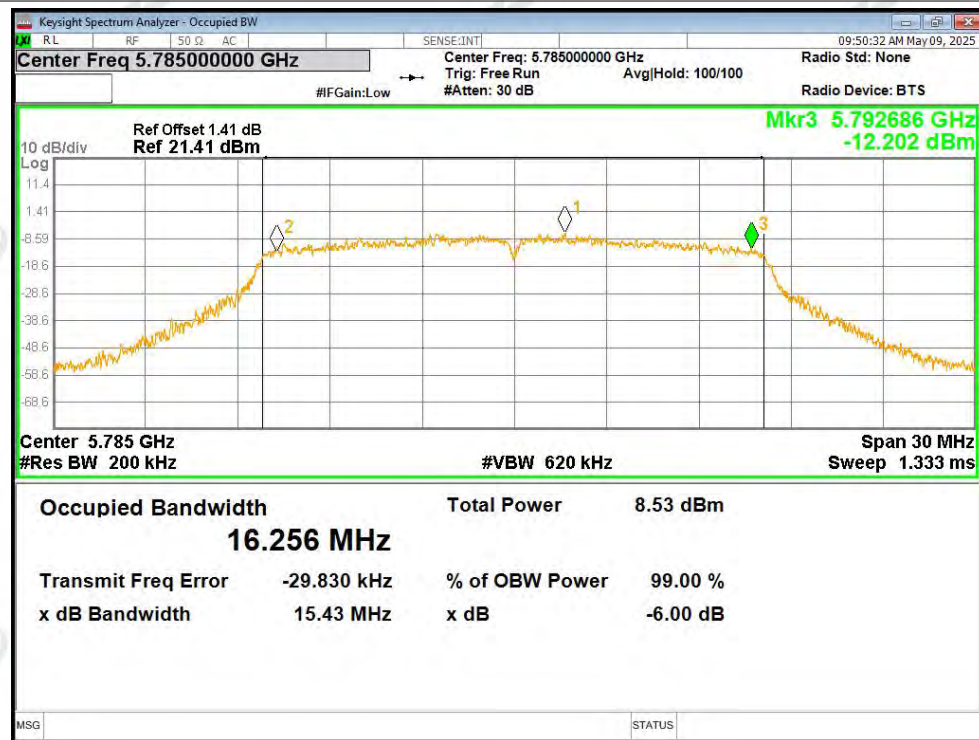


Test Graphs

-6dB Bandwidth NVNT a 5745MHz Ant1

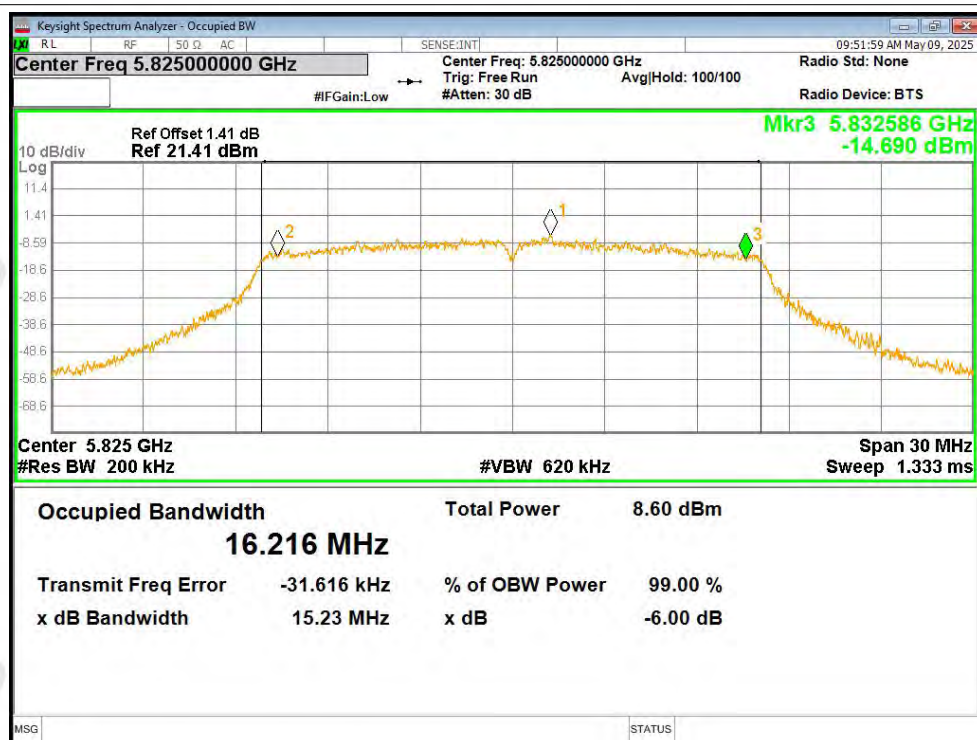


-6dB Bandwidth NVNT a 5785MHz Ant1

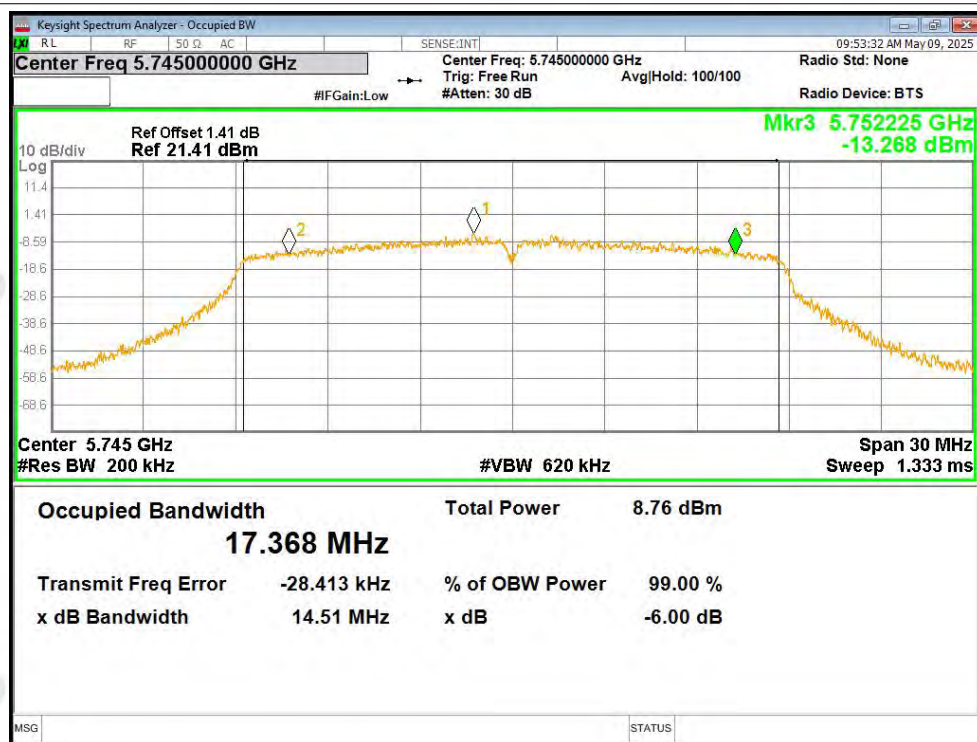




-6dB Bandwidth NVNT a 5825MHz Ant1

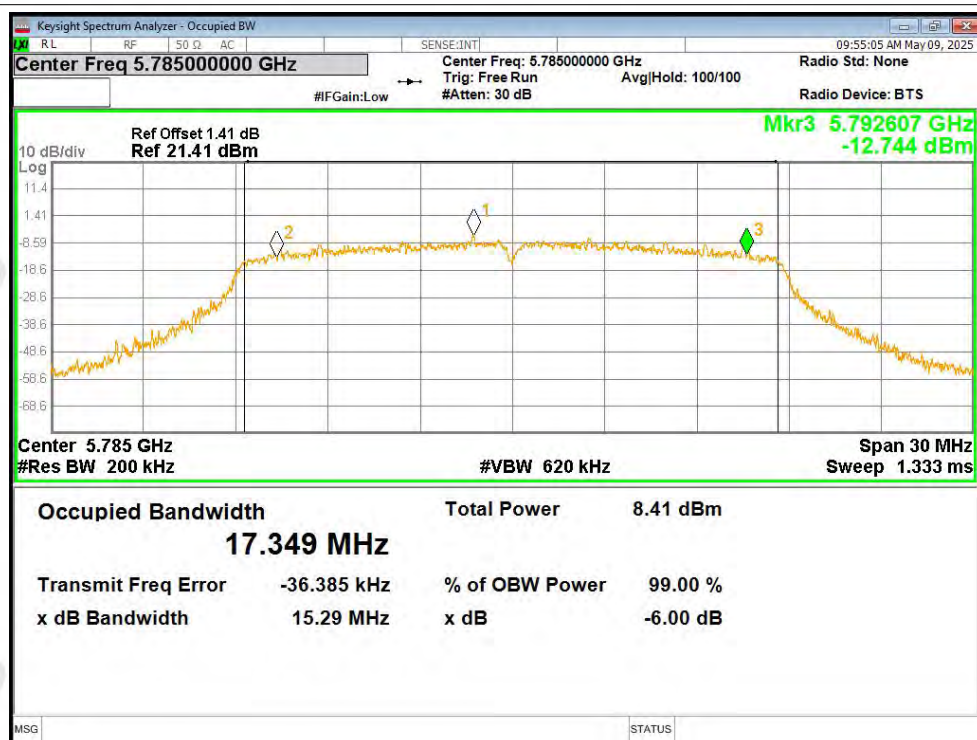


-6dB Bandwidth NVNT n20 5745MHz Ant1

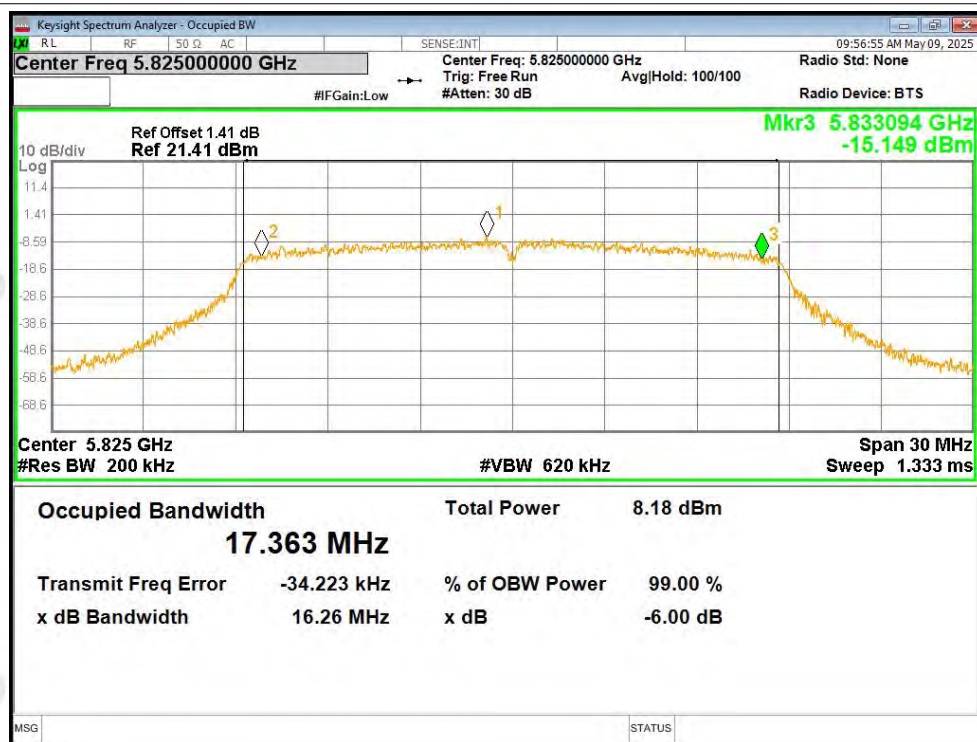




-6dB Bandwidth NVNT n20 5785MHz Ant1

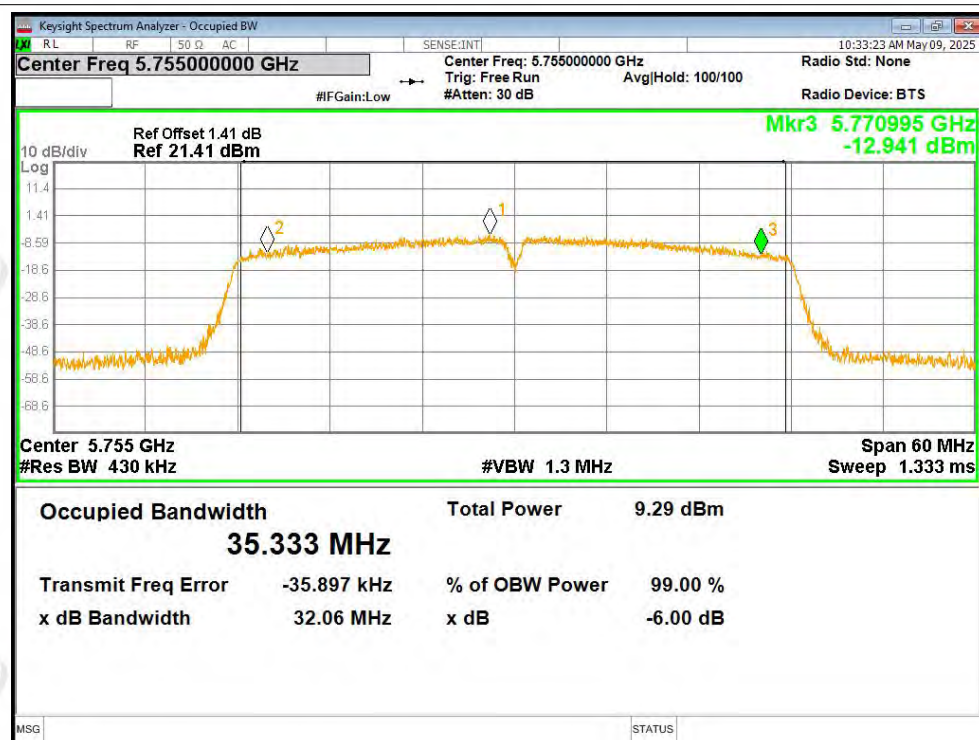


-6dB Bandwidth NVNT n20 5825MHz Ant1

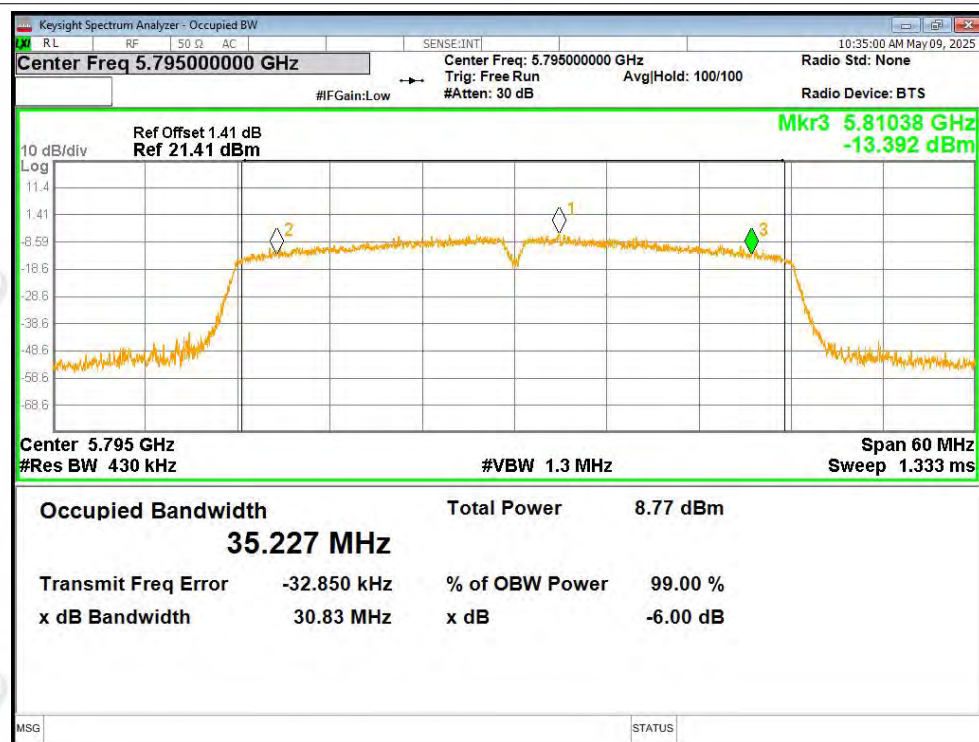




-6dB Bandwidth NVNT n40 5755MHz Ant1

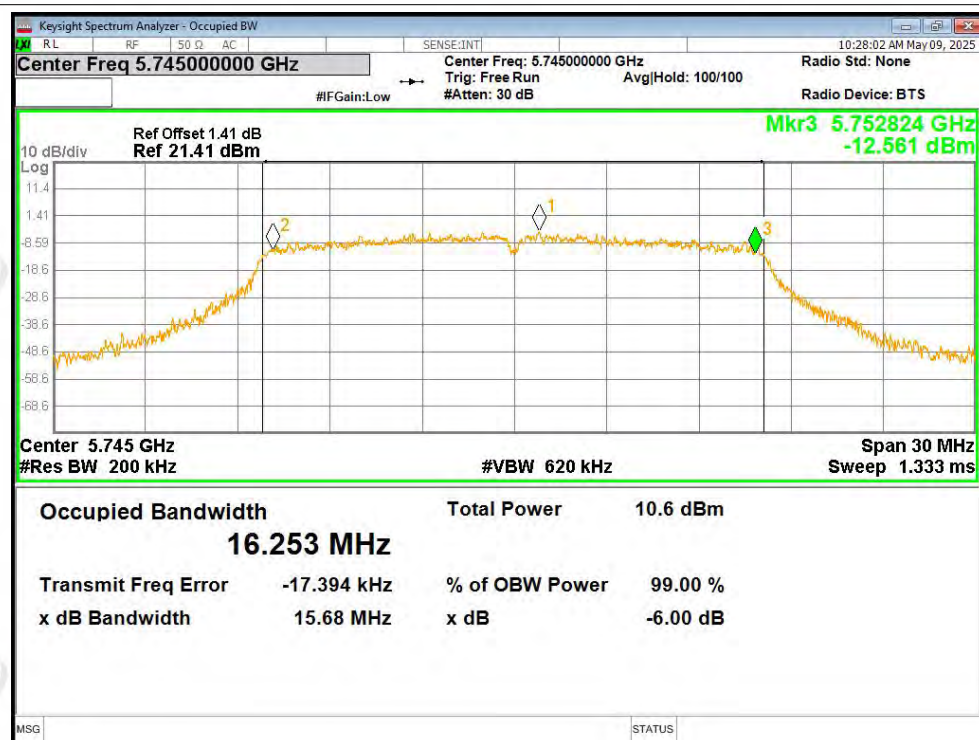


-6dB Bandwidth NVNT n40 5795MHz Ant1

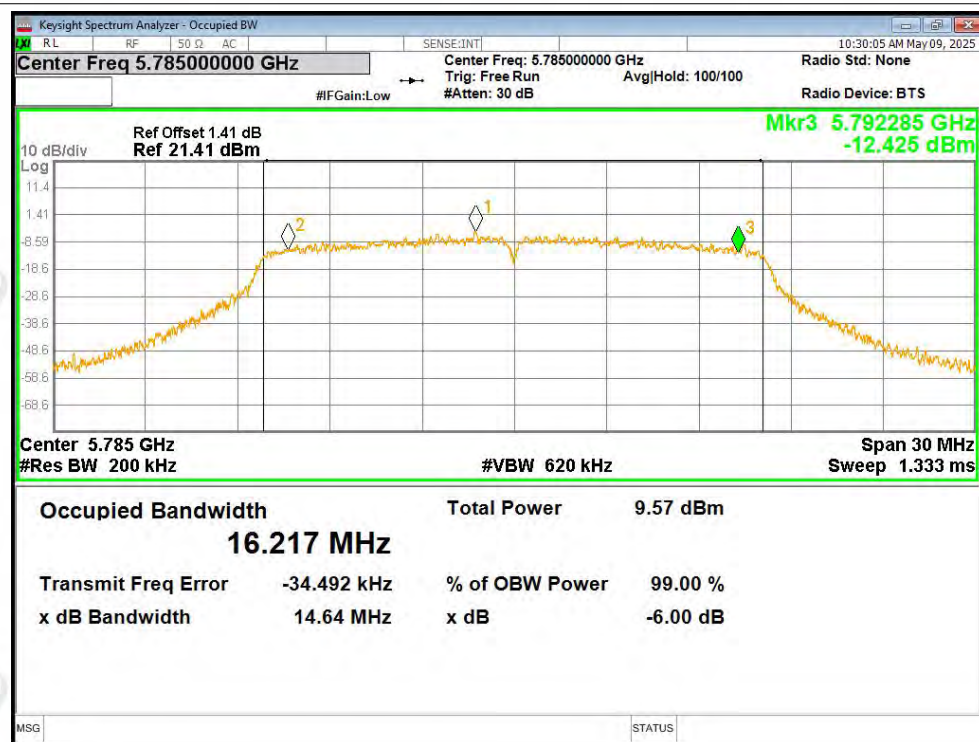




-6dB Bandwidth NVNT ac20 5745MHz Ant1

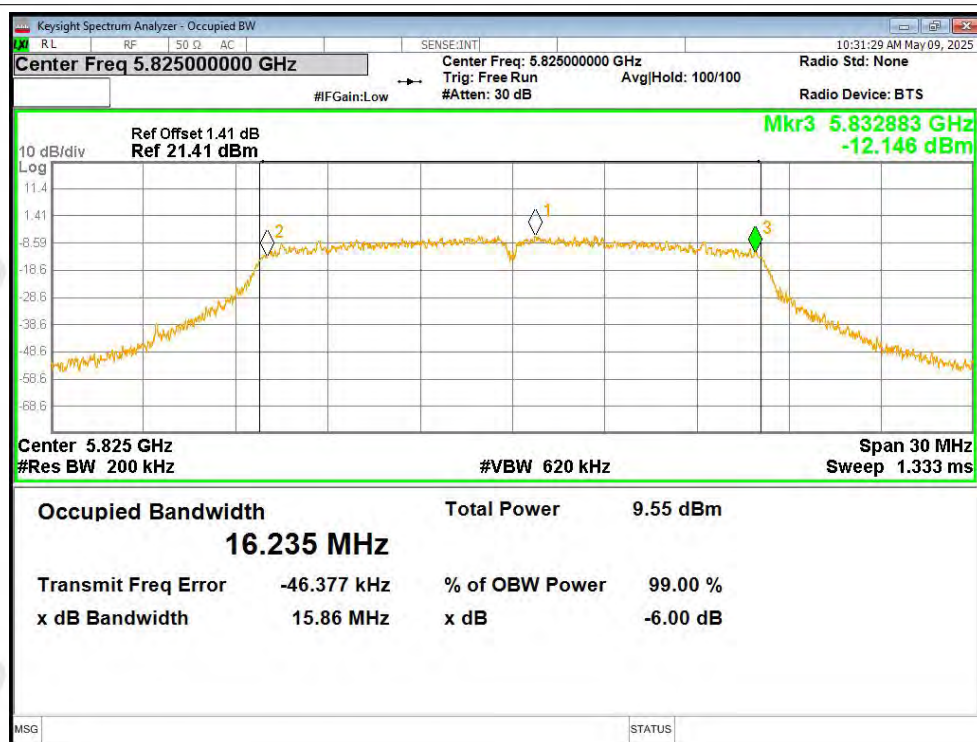


-6dB Bandwidth NVNT ac20 5785MHz Ant1

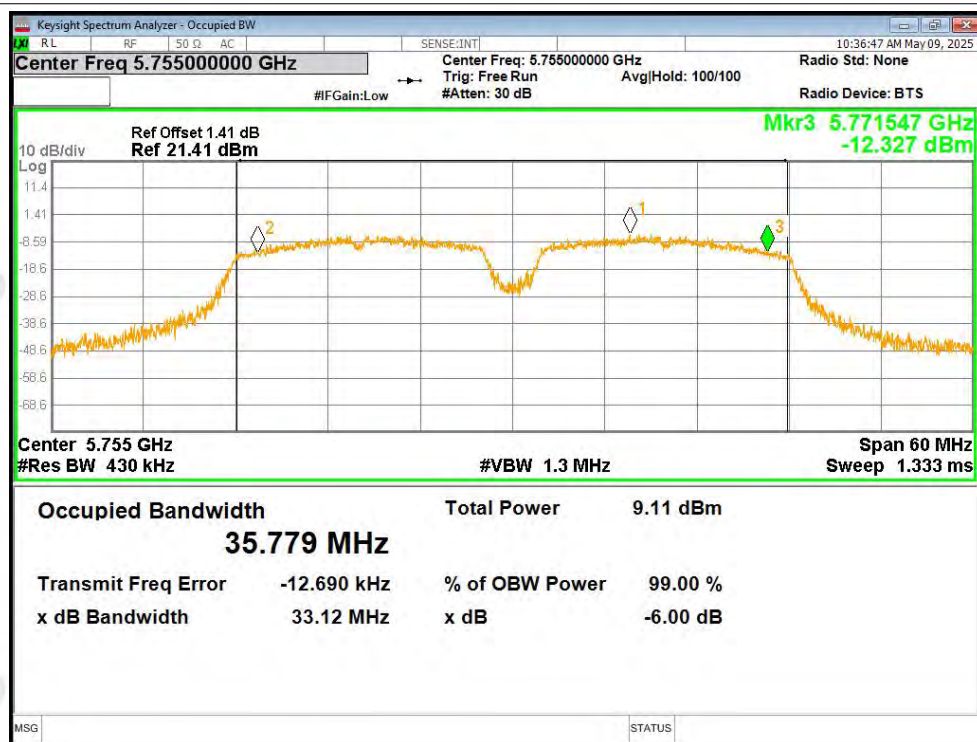


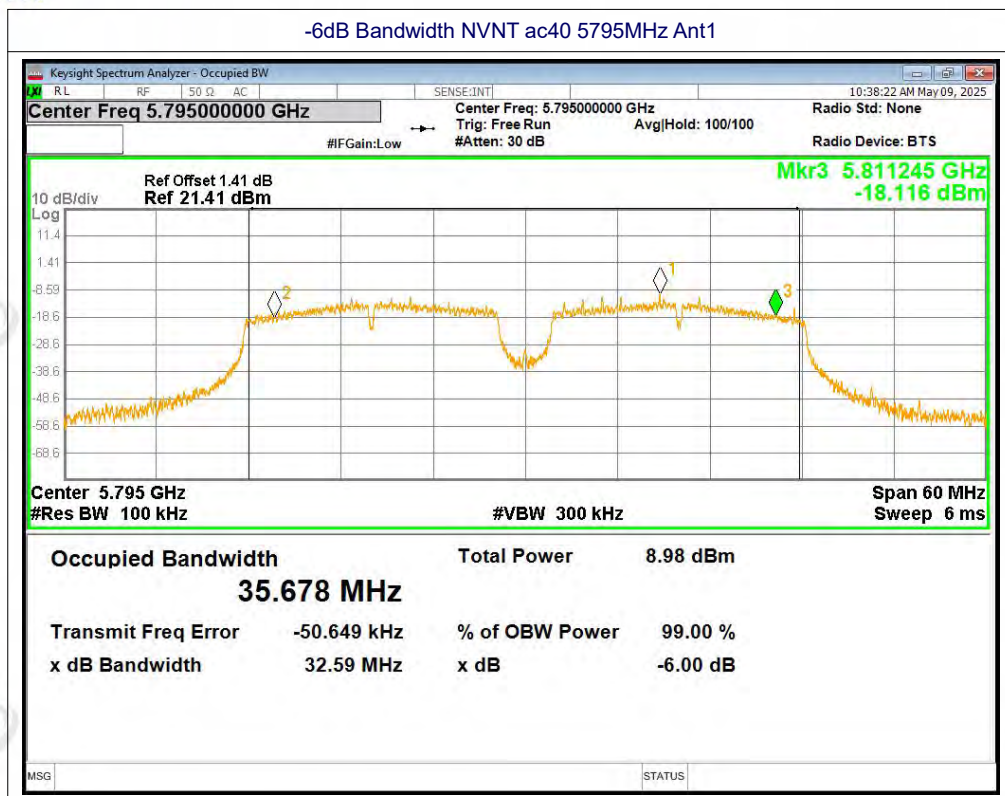


-6dB Bandwidth NVNT ac20 5825MHz Ant1



-6dB Bandwidth NVNT ac40 5755MHz Ant1







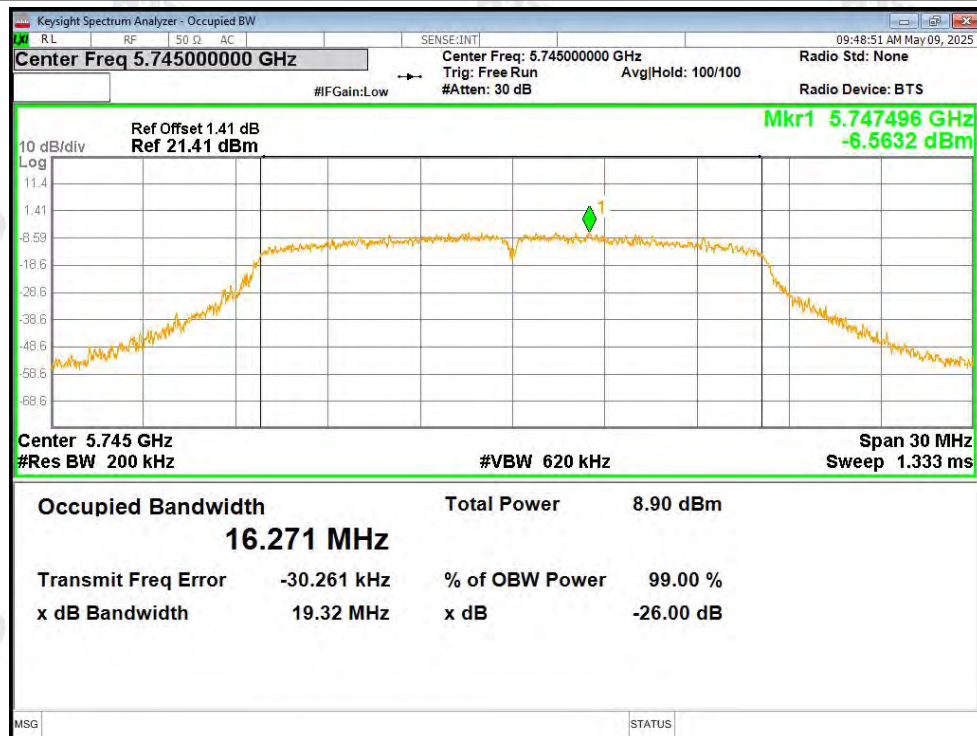
B.4 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.271
NVNT	a	5785	Ant1	16.249
NVNT	a	5825	Ant1	16.211
NVNT	n20	5745	Ant1	17.355
NVNT	n20	5785	Ant1	17.328
NVNT	n20	5825	Ant1	17.33
NVNT	n40	5755	Ant1	36.251
NVNT	n40	5795	Ant1	36.197
NVNT	ac20	5745	Ant1	16.242
NVNT	ac20	5785	Ant1	16.216
NVNT	ac20	5825	Ant1	16.232
NVNT	ac40	5755	Ant1	36.257
NVNT	ac40	5795	Ant1	36.246

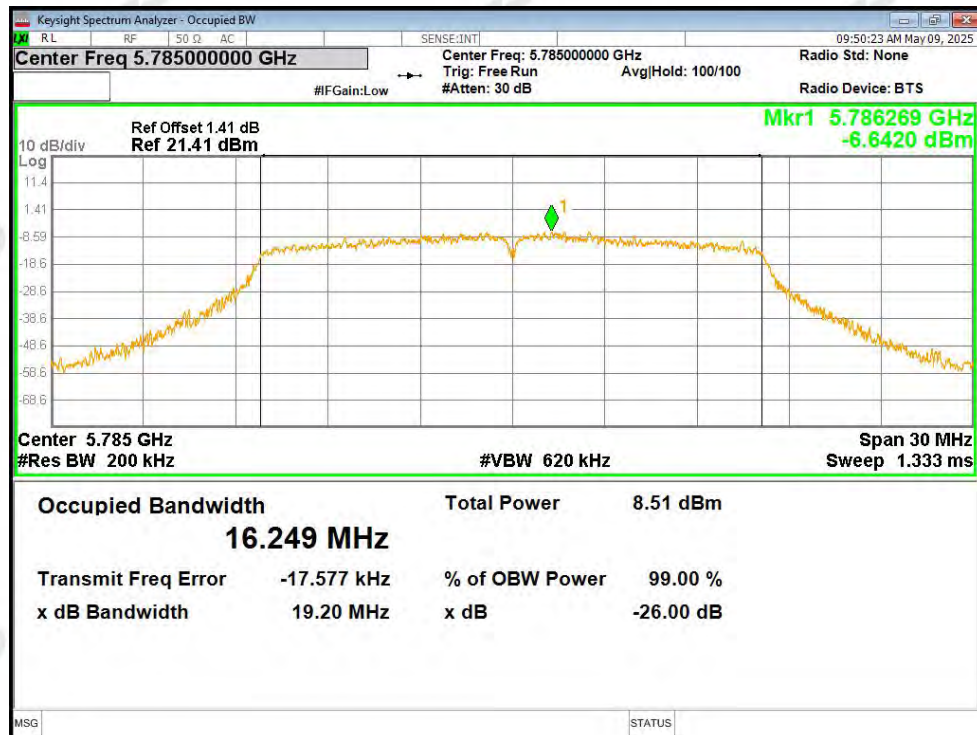


Test Graphs

OBW NVNT a 5745MHz Ant1

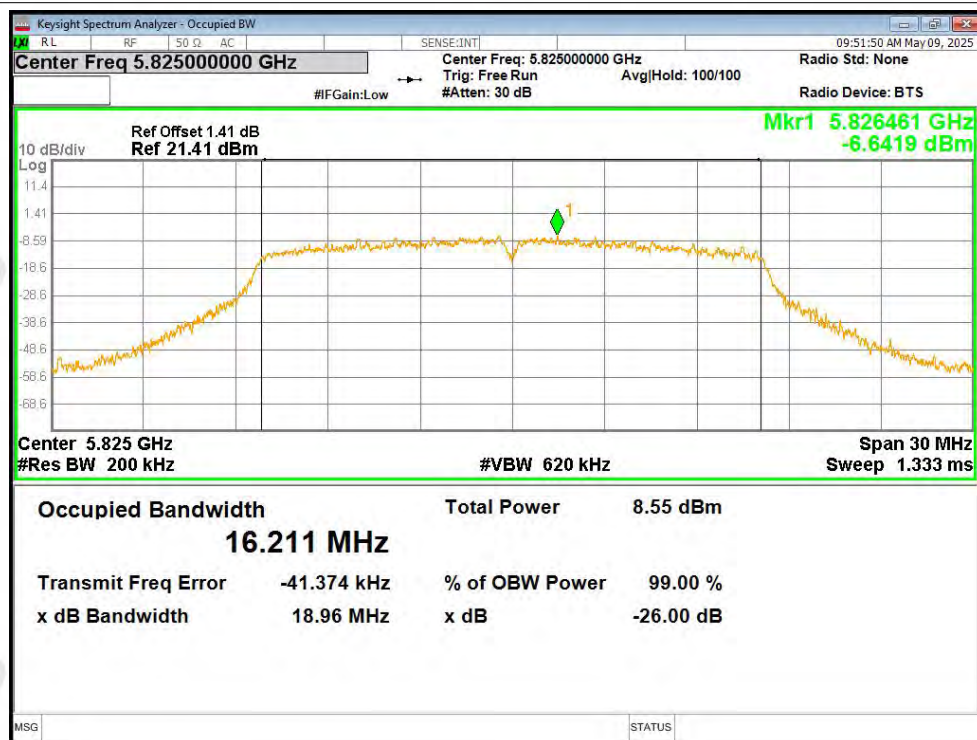


OBW NVNT a 5785MHz Ant1

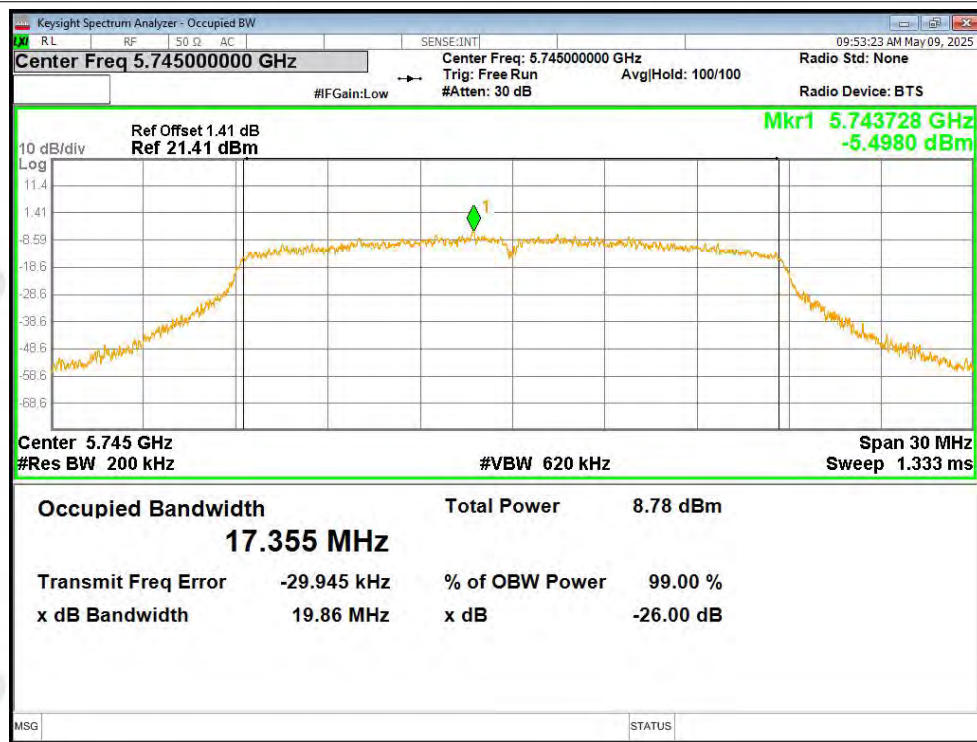




OBW NVNT a 5825MHz Ant1

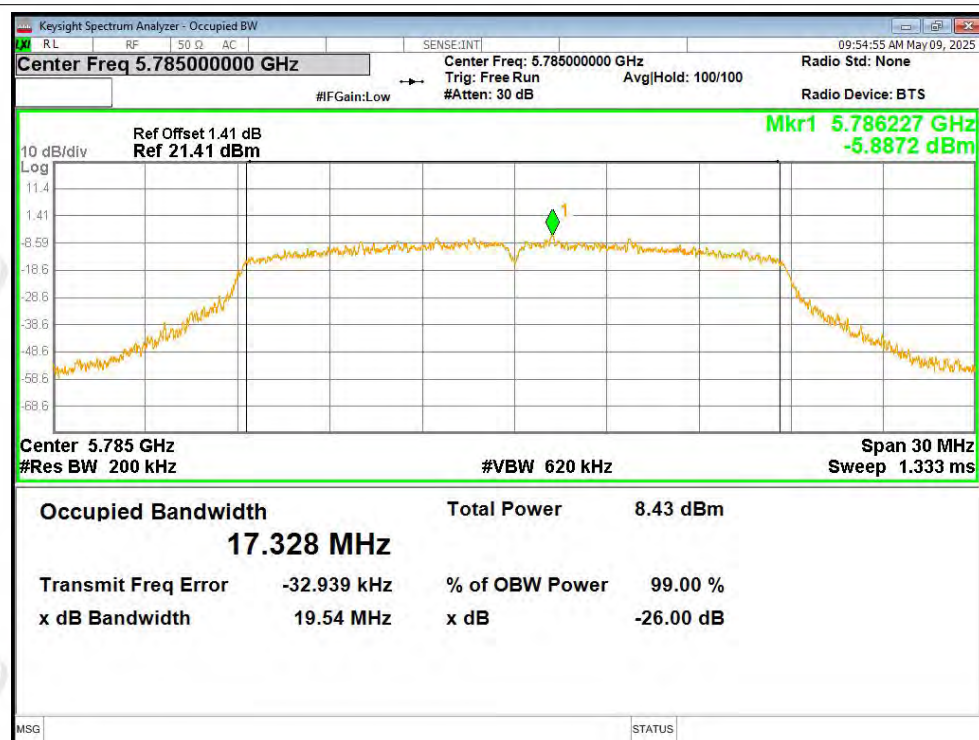


OBW NVNT n20 5745MHz Ant1

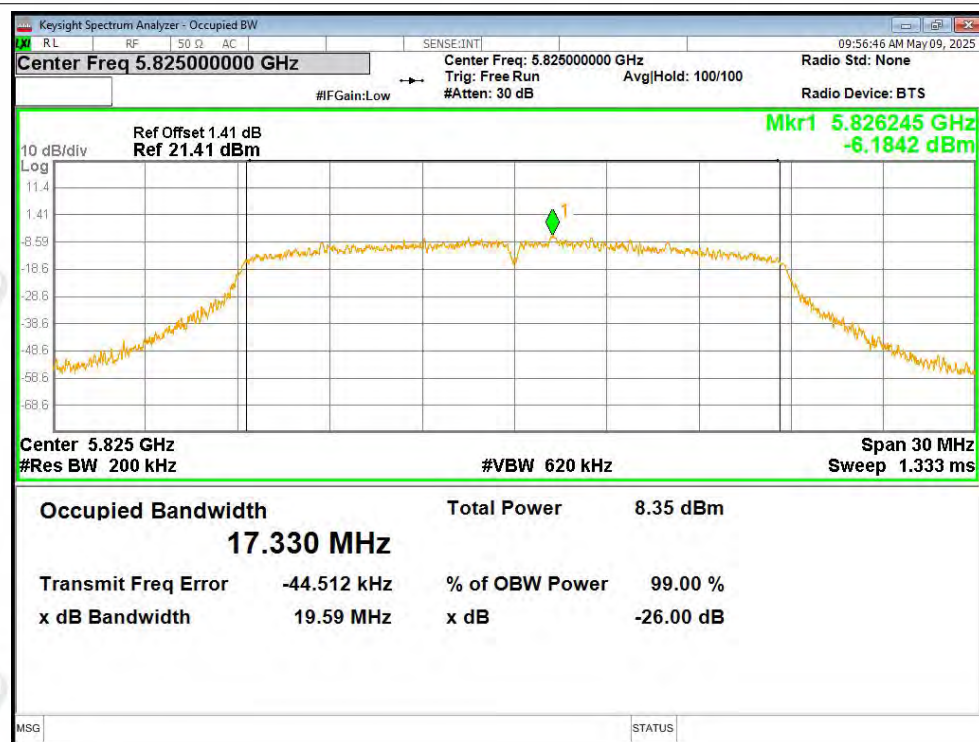




OBW NVNT n20 5785MHz Ant1

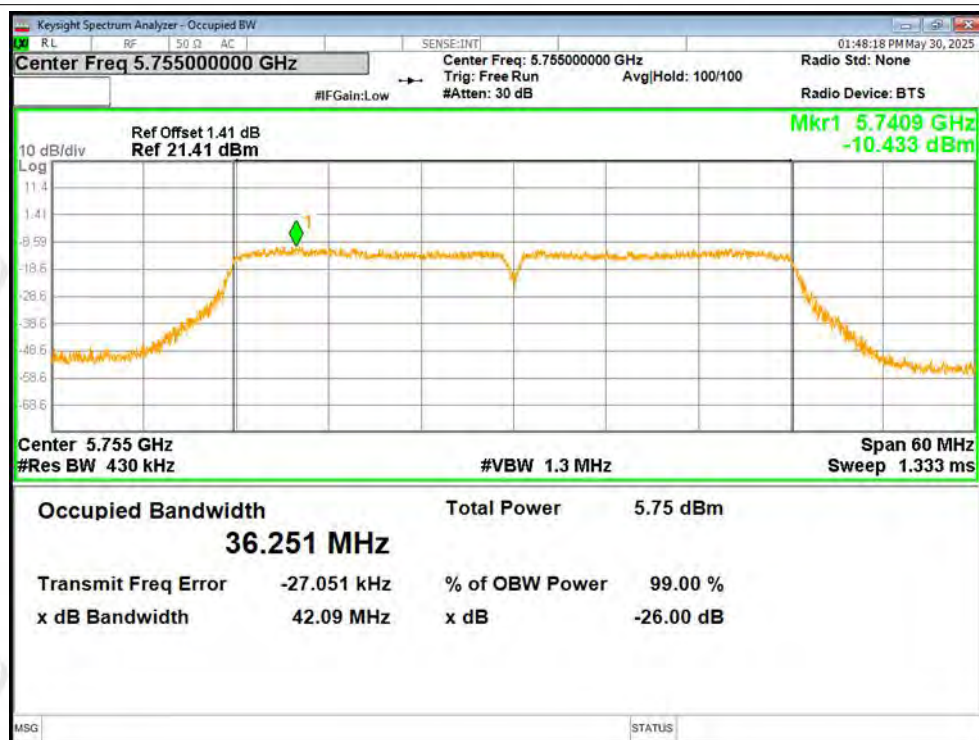


OBW NVNT n20 5825MHz Ant1

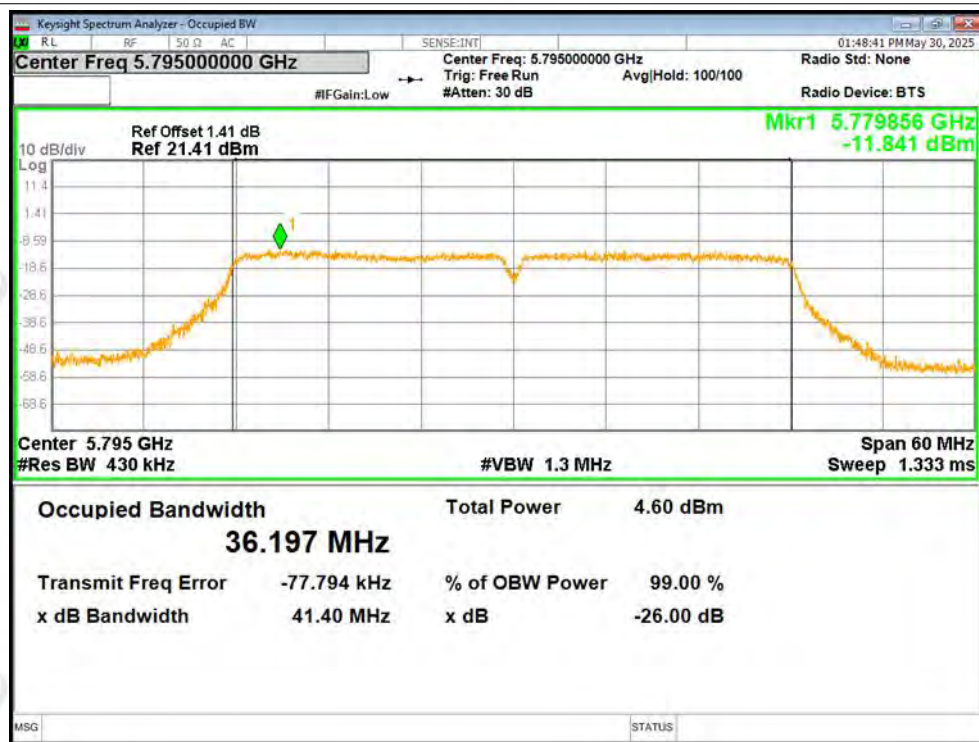




OBW NVNT n40 5755MHz Ant1

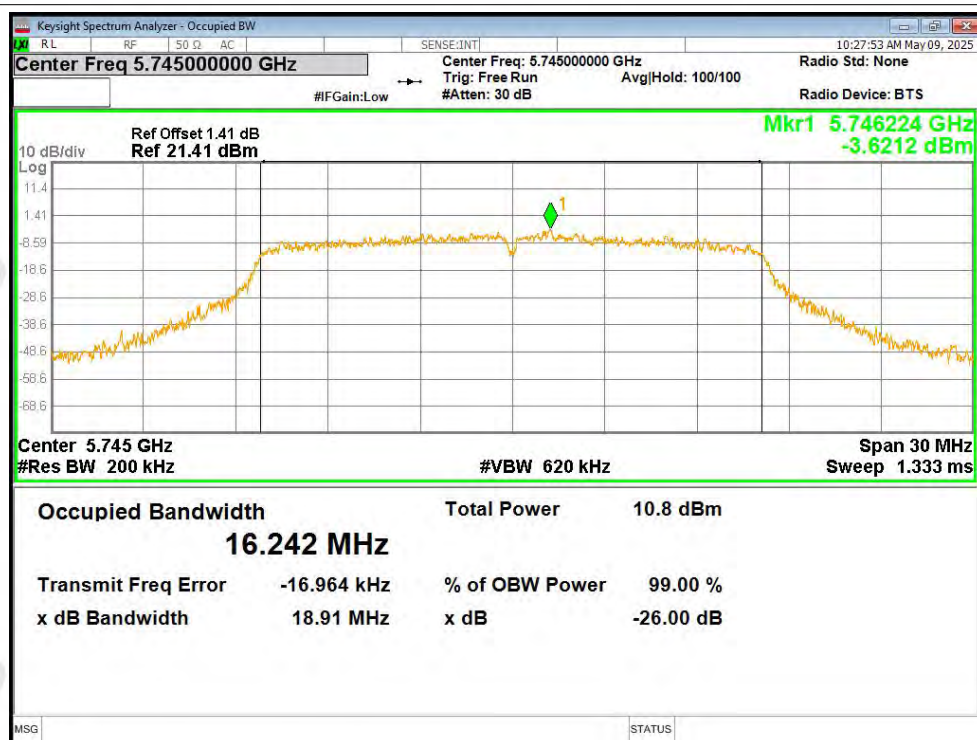


OBW NVNT n40 5795MHz Ant1

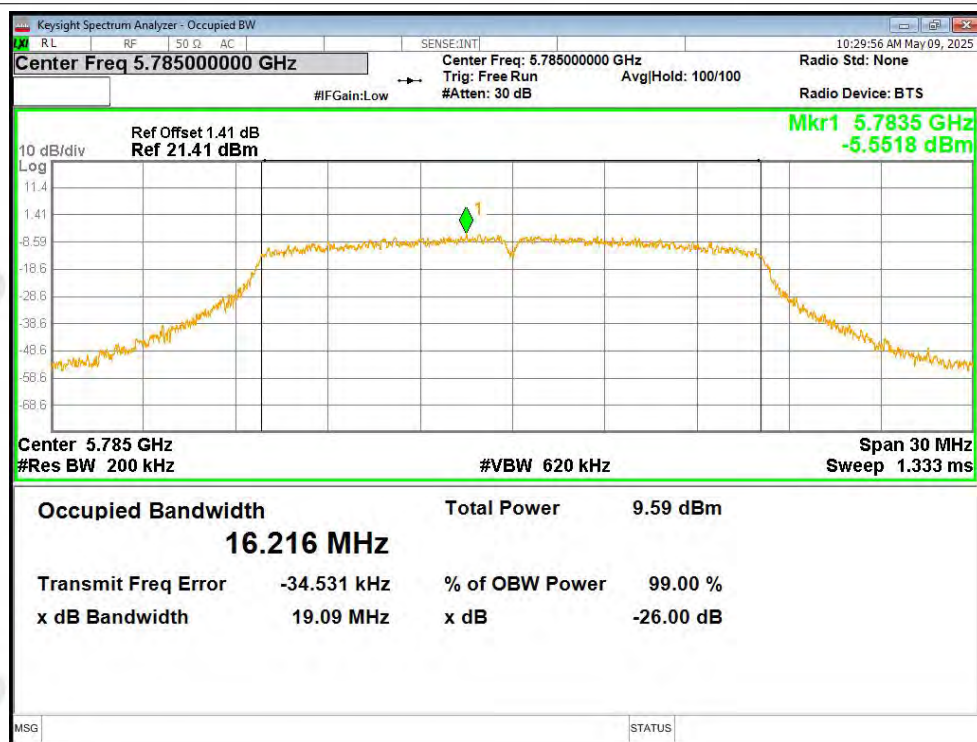




OBW NVNT ac20 5745MHz Ant1

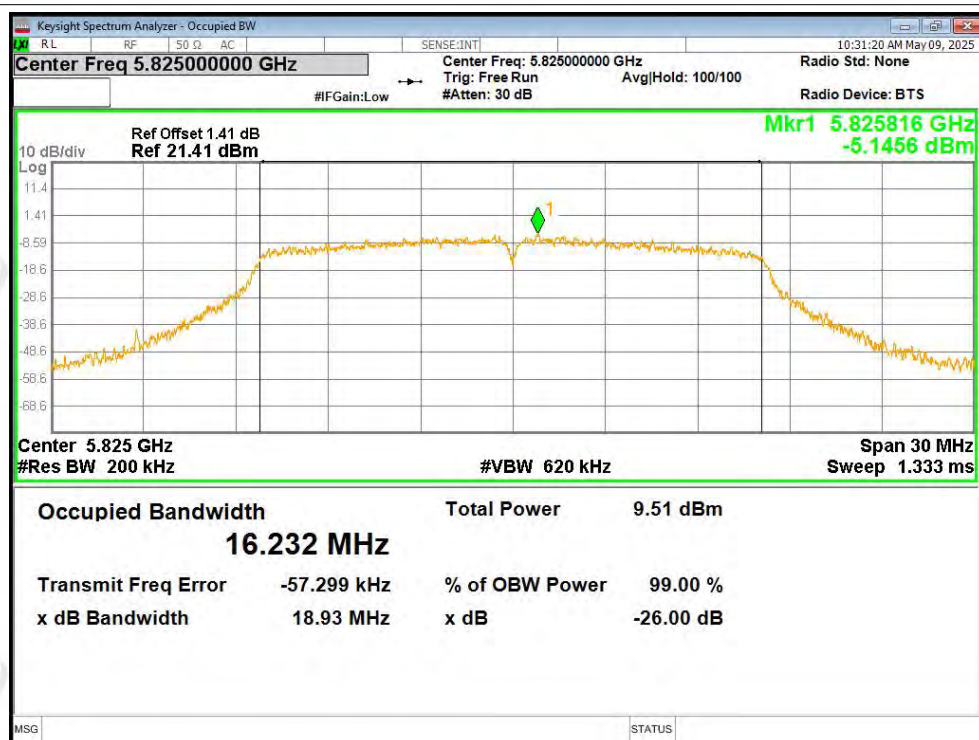


OBW NVNT ac20 5785MHz Ant1

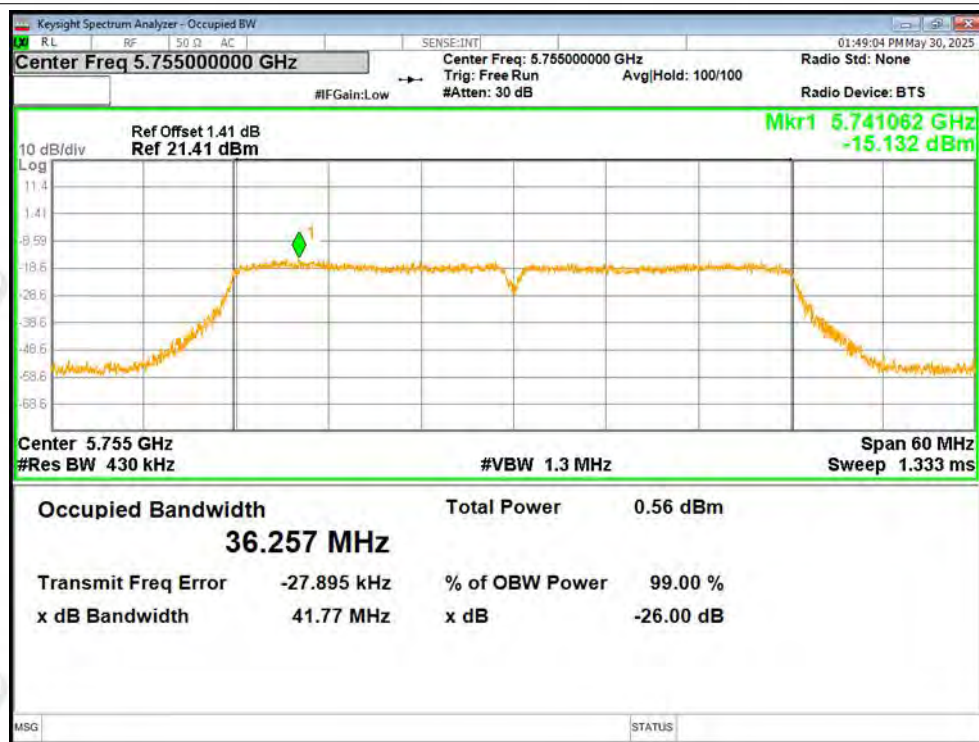


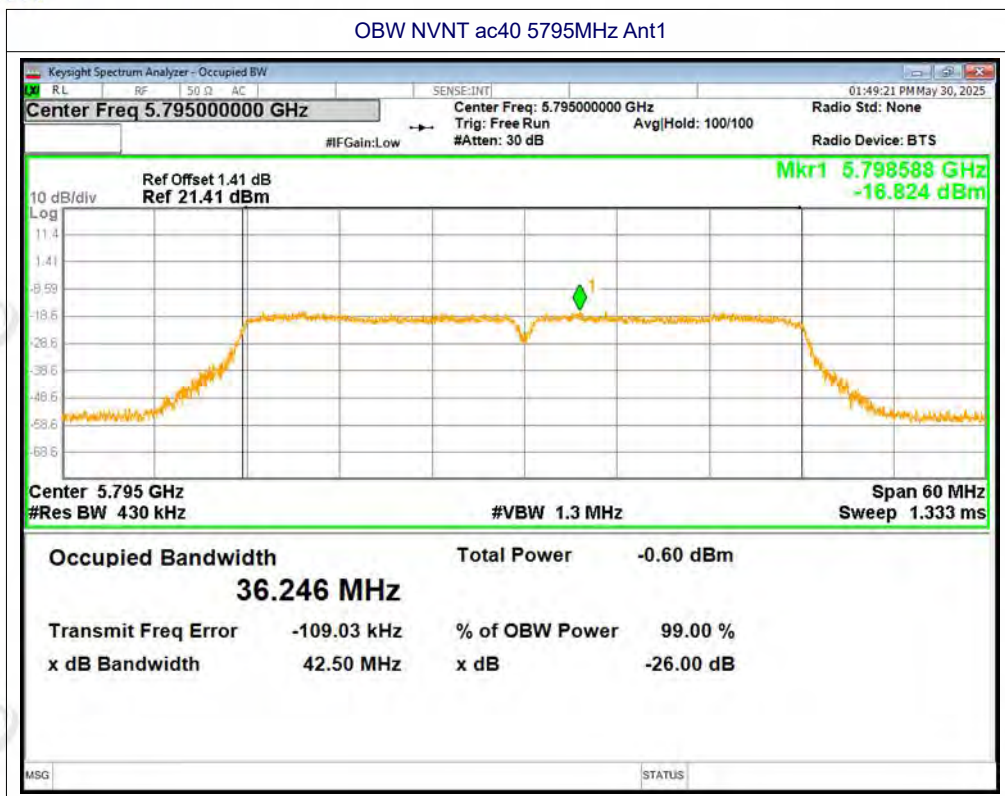


OBW NVNT ac20 5825MHz Ant1



OBW NVNT ac40 5755MHz Ant1







B.5 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	RB factor(dB)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Verdict
NVNT	a	5745	Ant1	-29.84	0.34	-0.086	-29.586	30	Pass
NVNT	a	5785	Ant1	-28.83	0.31	-0.086	-28.606	30	Pass
NVNT	a	5825	Ant1	-30.39	0.32	-0.086	-30.156	30	Pass
NVNT	n20	5745	Ant1	-32.08	0.47	-0.086	-31.696	30	Pass
NVNT	n20	5785	Ant1	-31.12	0.47	-0.086	-30.736	30	Pass
NVNT	n20	5825	Ant1	-29.16	0.43	-0.086	-28.816	30	Pass
NVNT	n40	5755	Ant1	-39.91	0.48	-0.086	-39.516	30	Pass
NVNT	n40	5795	Ant1	-39.16	0.44	-0.086	-38.806	30	Pass
NVNT	ac20	5745	Ant1	-19.9	0.7	-0.086	-19.286	30	Pass
NVNT	ac20	5785	Ant1	-20.33	0.7	-0.086	-19.716	30	Pass
NVNT	ac20	5825	Ant1	-19.41	0.75	-0.086	-18.746	30	Pass
NVNT	ac40	5755	Ant1	-22.82	0.81	-0.086	-22.096	30	Pass
NVNT	ac40	5795	Ant1	-22.19	0.77	-0.086	-21.506	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



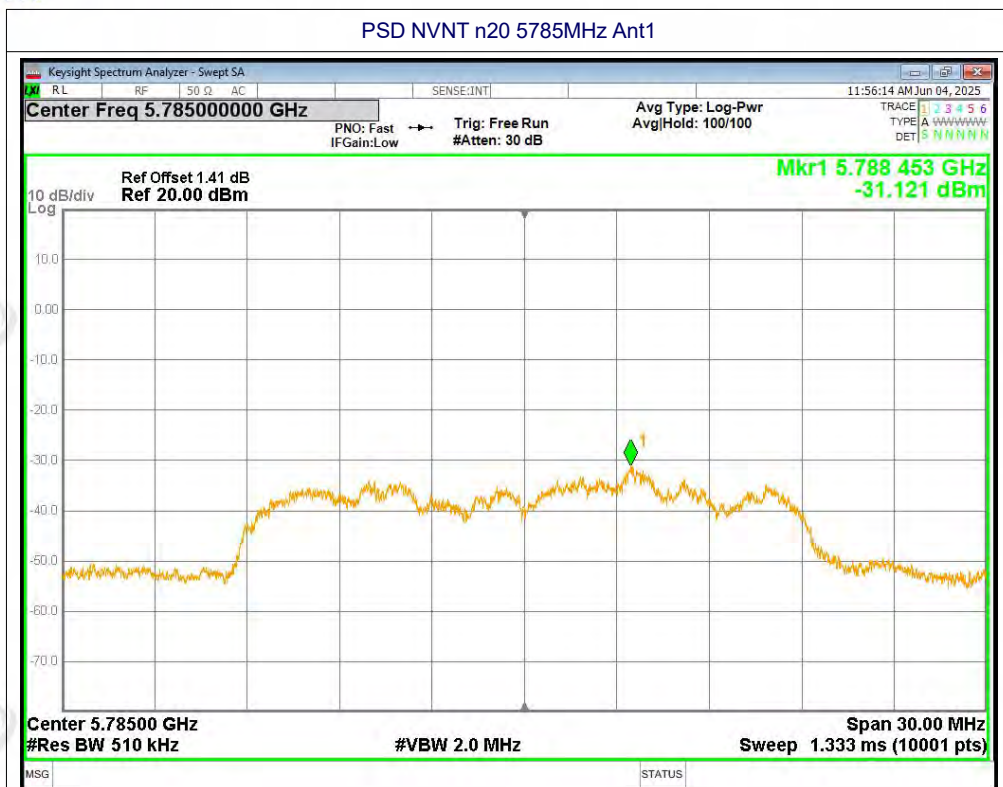


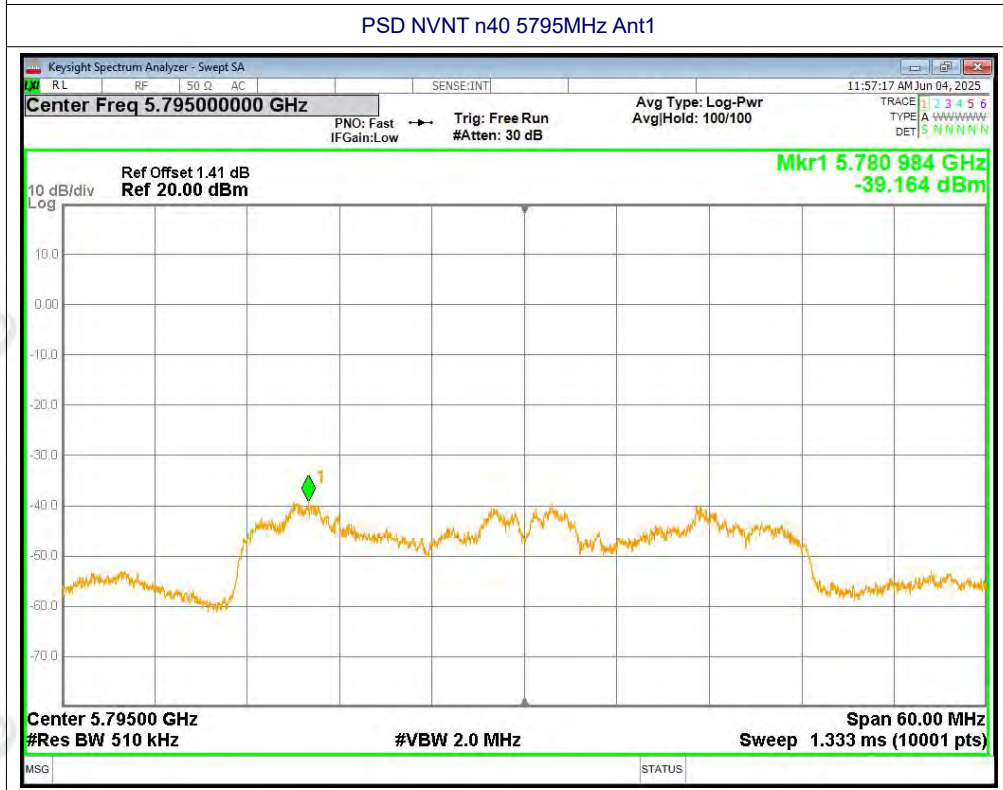
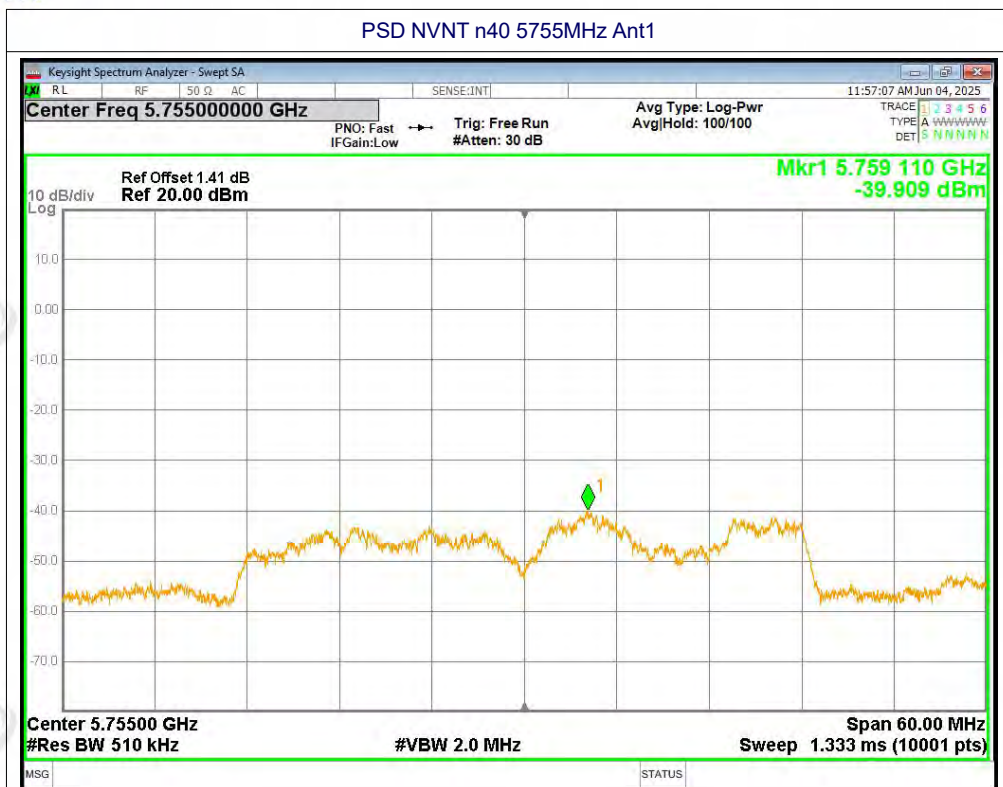
PSD NVNT a 5825MHz Ant1



PSD NVNT n20 5745MHz Ant1

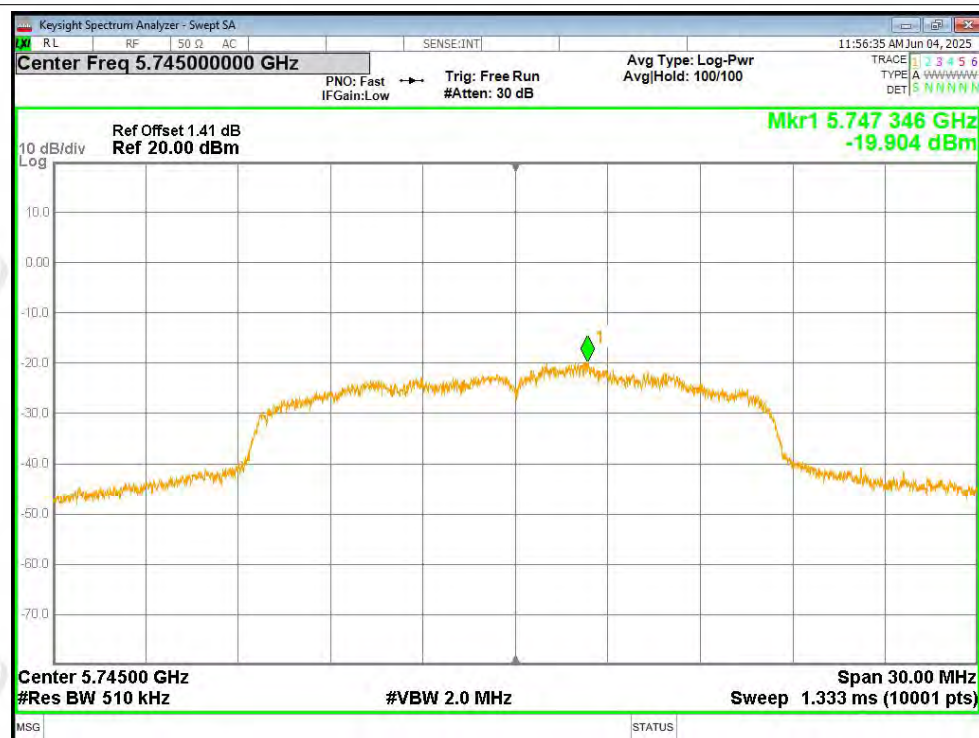




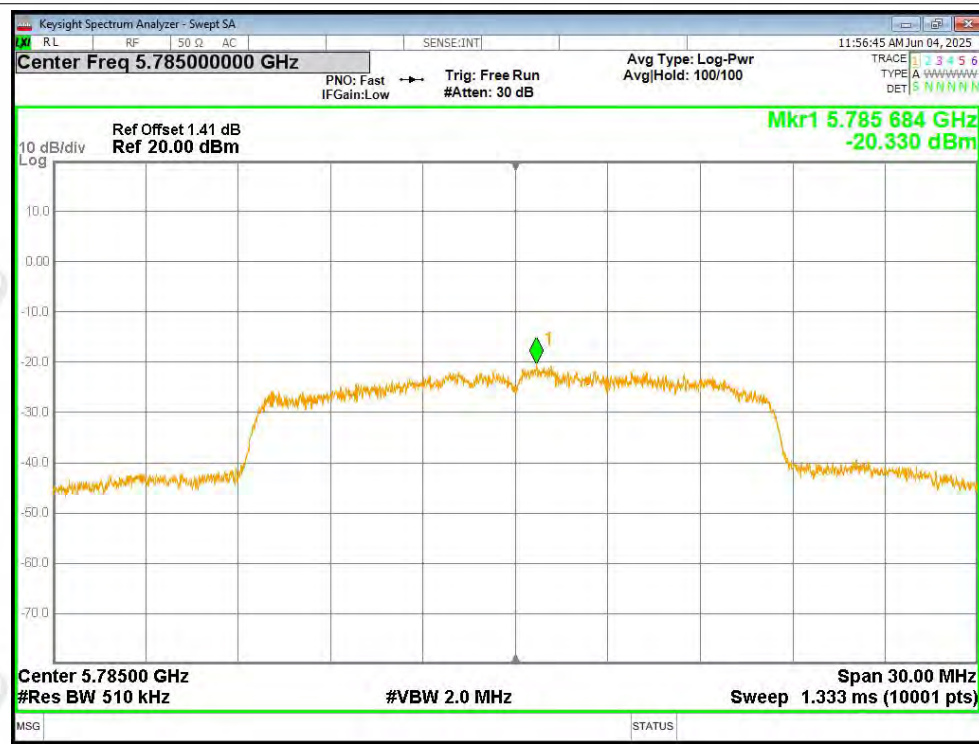




PSD NVNT ac20 5745MHz Ant1

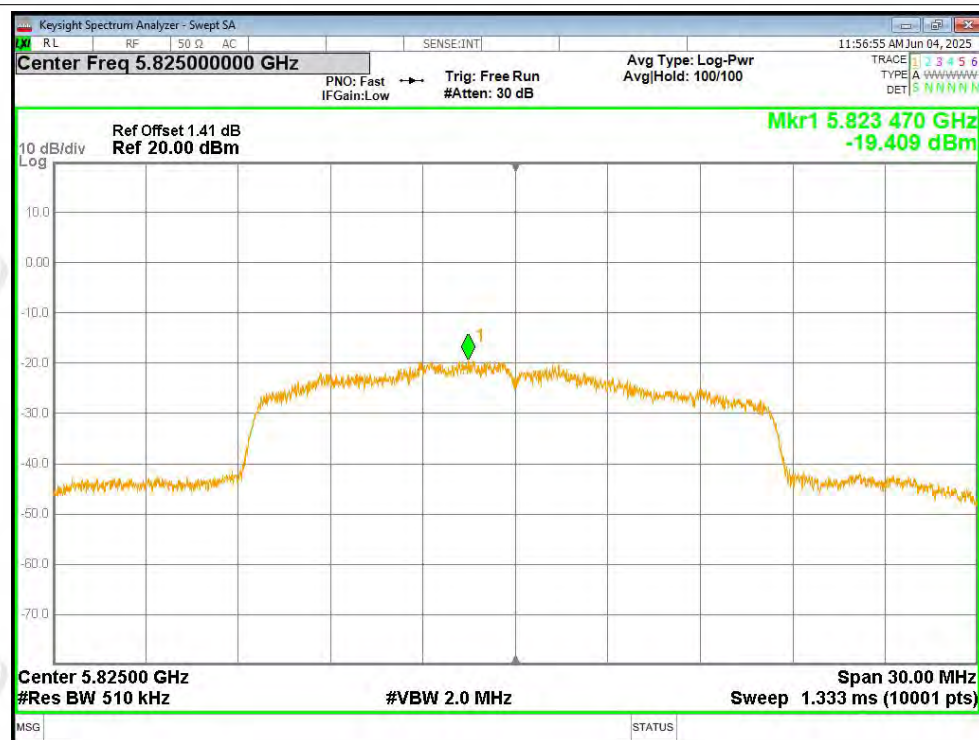


PSD NVNT ac20 5785MHz Ant1



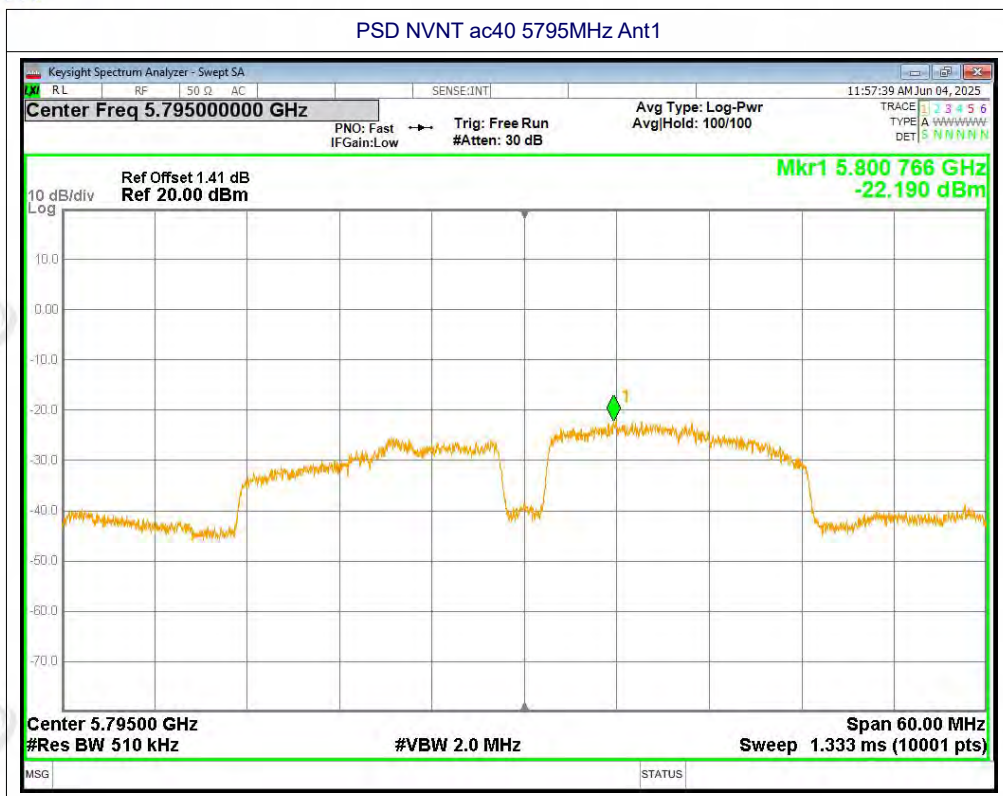


PSD NVNT ac20 5825MHz Ant1



PSD NVNT ac40 5755MHz Ant1





**B.6 Band Edge**

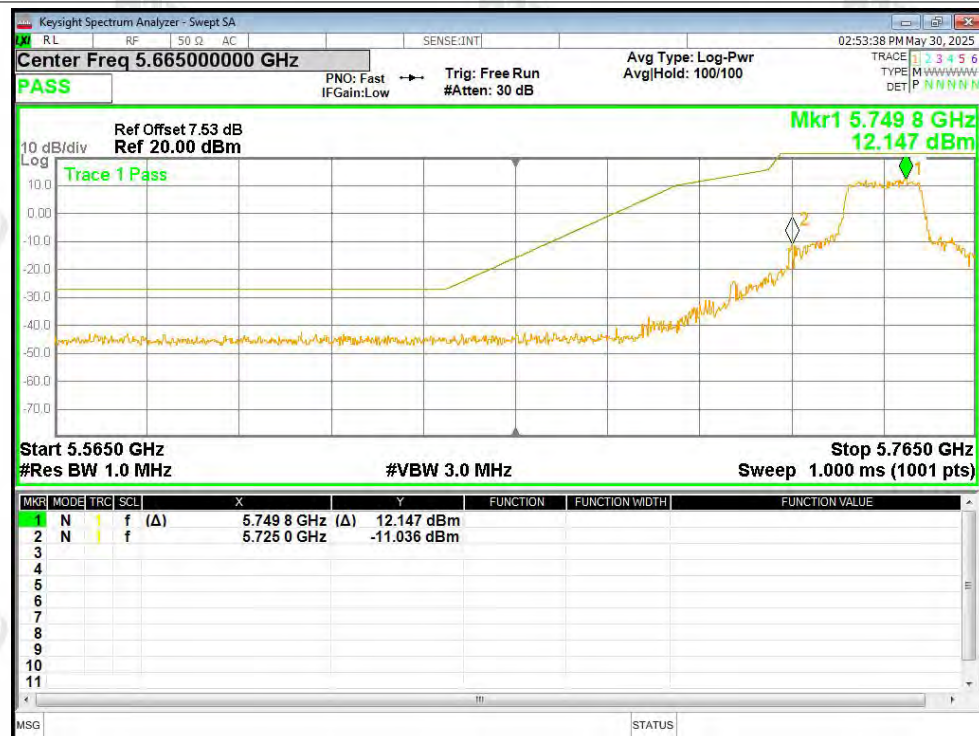
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-11.03	See the test diagram	Pass
NVNT	a	5825	Ant1	-24.92	See the test diagram	Pass
NVNT	n20	5745	Ant1	-16.43	See the test diagram	Pass
NVNT	n20	5825	Ant1	-29.81	See the test diagram	Pass
NVNT	n40	5755	Ant1	-10.94	See the test diagram	Pass
NVNT	n40	5795	Ant1	-26.67	See the test diagram	Pass
NVNT	ac20	5745	Ant1	-14.3	See the test diagram	Pass
NVNT	ac20	5825	Ant1	-26.29	See the test diagram	Pass
NVNT	ac40	5755	Ant1	-7.84	See the test diagram	Pass
NVNT	ac40	5795	Ant1	-20.46	See the test diagram	Pass

Note: During testing, the antenna gain has been added to the Ref offset.



Test Graphs

Band Edge NVNT a 5745MHz Low Ant1

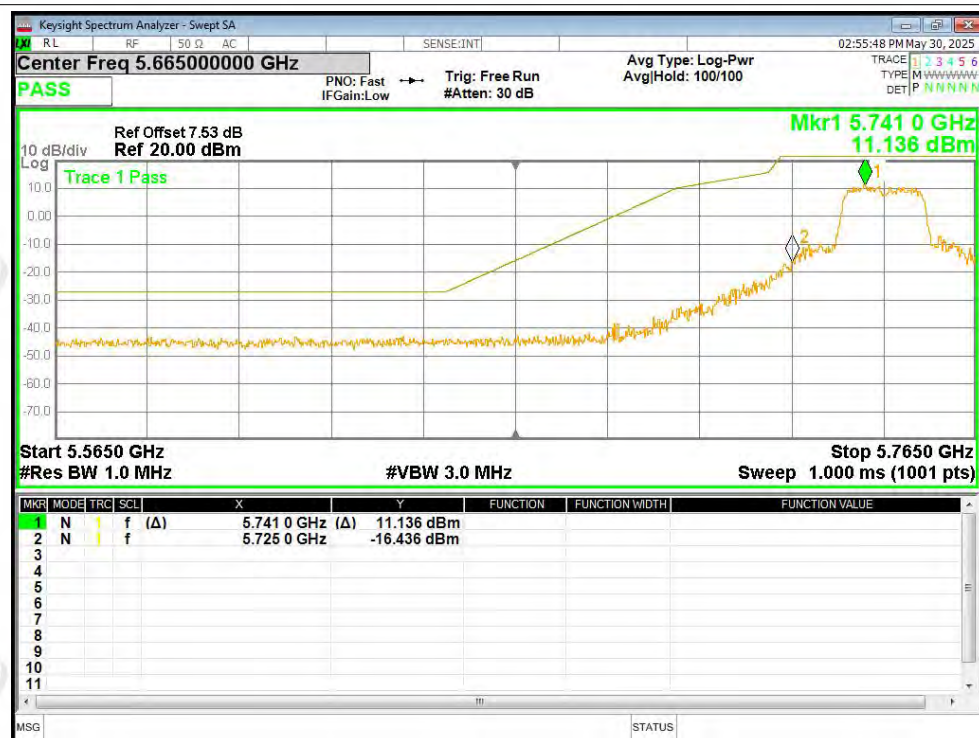


Band Edge NVNT a 5825MHz High Ant1





Band Edge NVNT n20 5745MHz Low Ant1

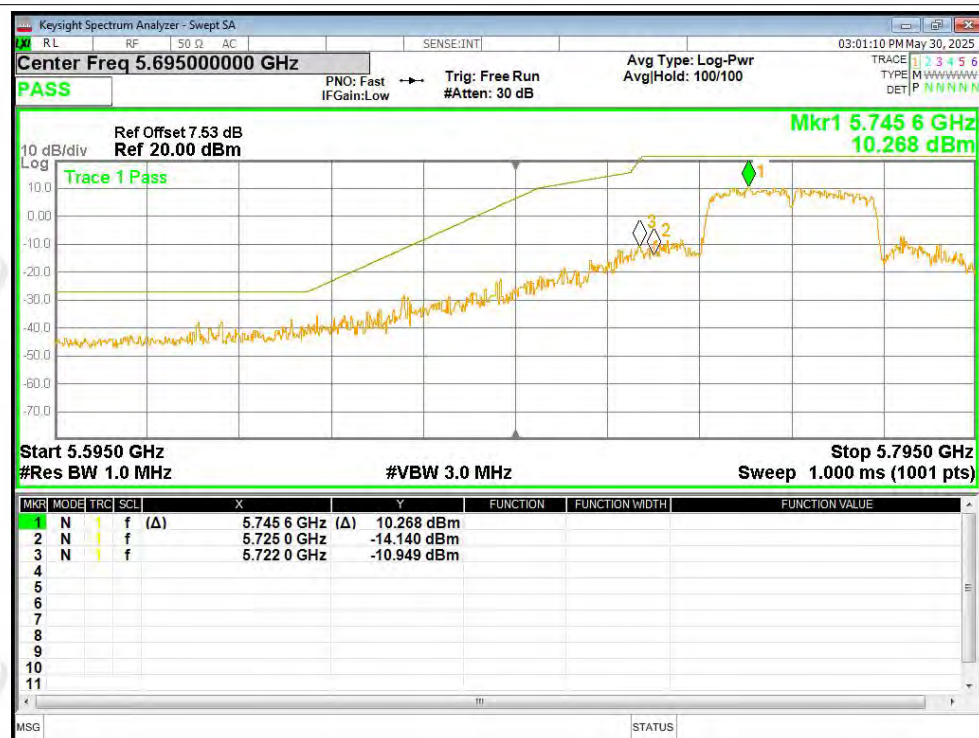


Band Edge NVNT n20 5825MHz High Ant1





Band Edge NVNT n40 5755MHz Low Ant1

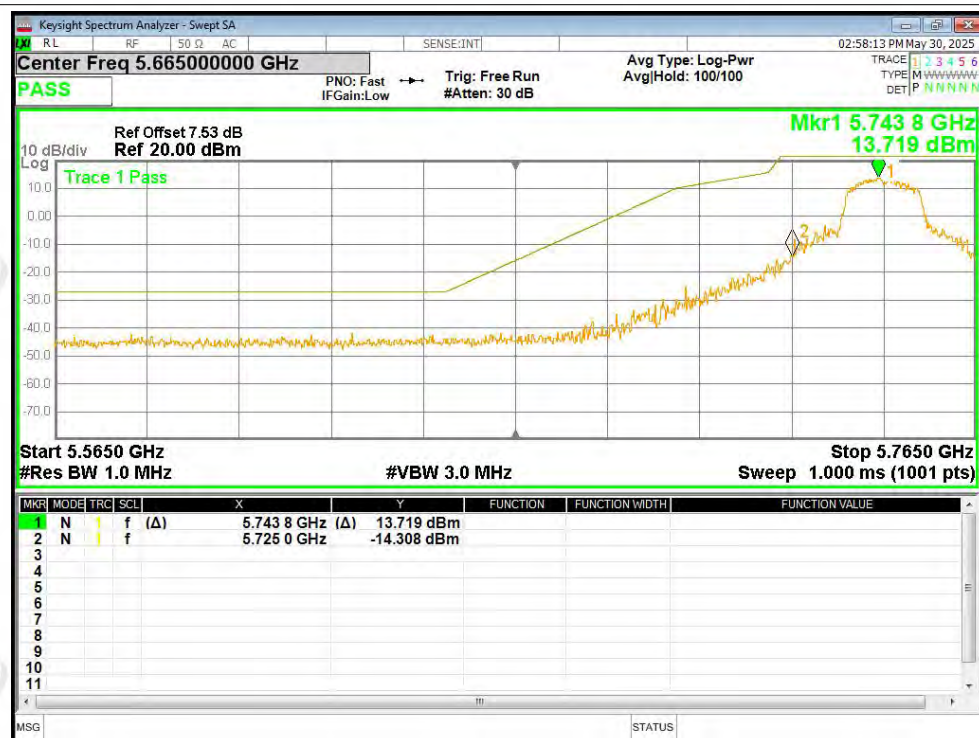


Band Edge NVNT n40 5795MHz High Ant1





Band Edge NVNT ac20 5745MHz Low Ant1

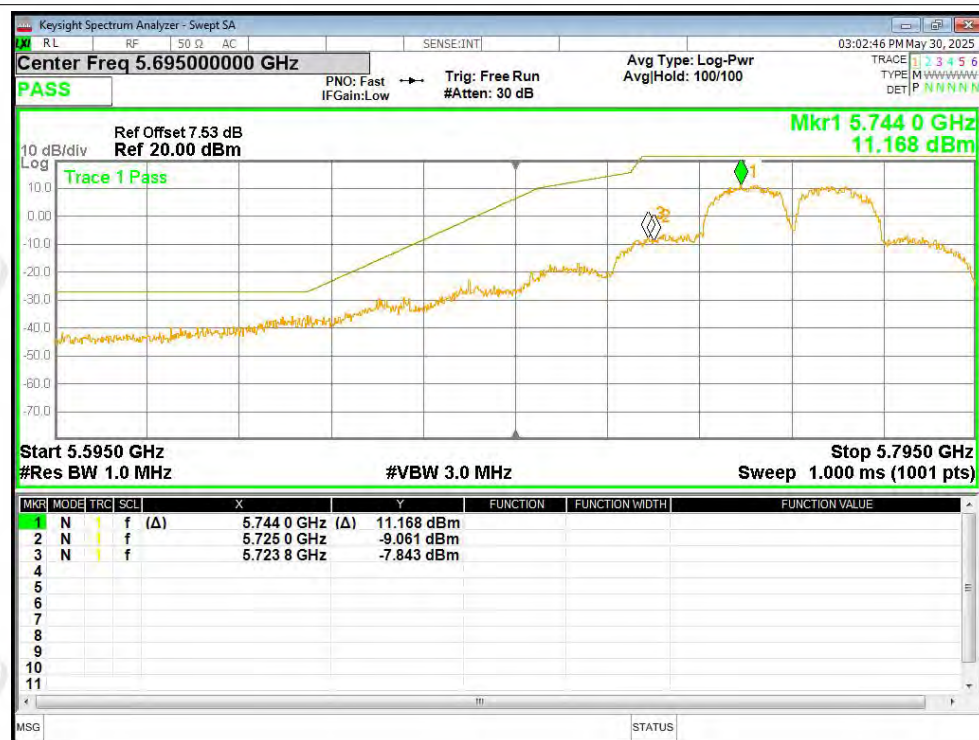


Band Edge NVNT ac20 5825MHz High Ant1

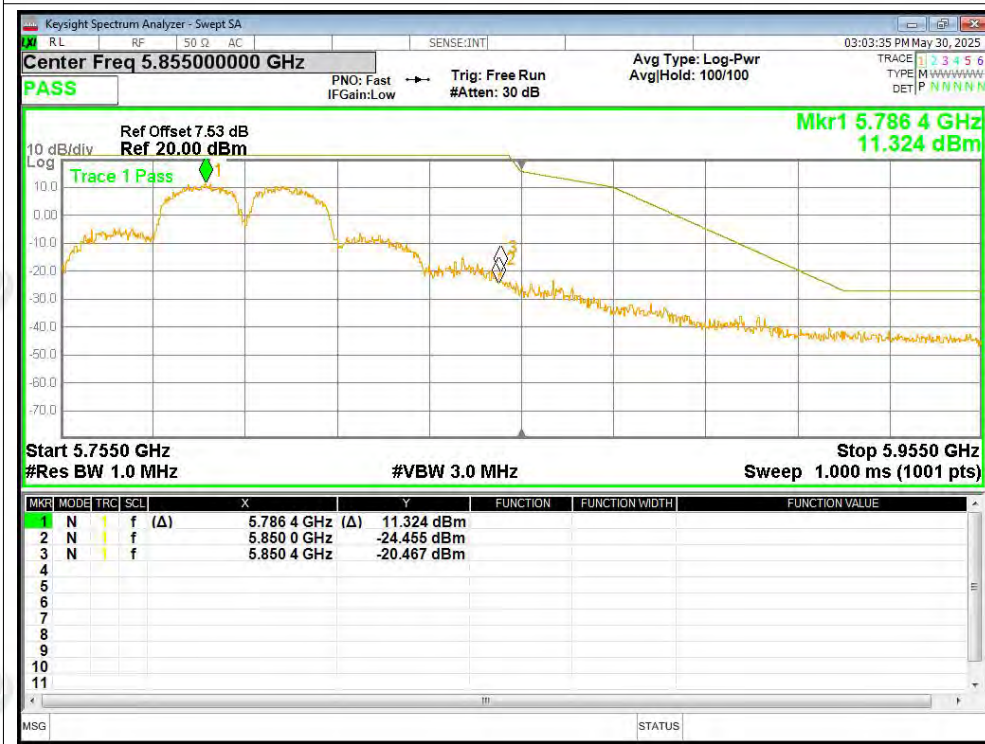




Band Edge NVNT ac40 5755MHz Low Ant1



Band Edge NVNT ac40 5795MHz High Ant1





B.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	25	Pass
NVNT	a	5785	Ant1	5785	0	0	25	Pass
NVNT	a	5825	Ant1	5824.94	-60000	-10.3	25	Pass
NVNT	n20	5745	Ant1	5744.96	-40000	-6.96	25	Pass
NVNT	n20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
NVNT	n20	5825	Ant1	5824.96	-40000	-6.87	25	Pass
NVNT	n40	5755	Ant1	5754.96	-40000	-6.95	25	Pass
NVNT	n40	5795	Ant1	5794.88	-120000	-20.71	25	Pass
NVNT	ac20	5745	Ant1	5744.98	-20000	-3.48	25	Pass
NVNT	ac20	5785	Ant1	5784.98	-20000	-3.46	25	Pass
NVNT	ac20	5825	Ant1	5824.92	-80000	-13.73	25	Pass
NVNT	ac40	5755	Ant1	5755	0	0	25	Pass
NVNT	ac40	5795	Ant1	5795.08	80000	13.81	25	Pass

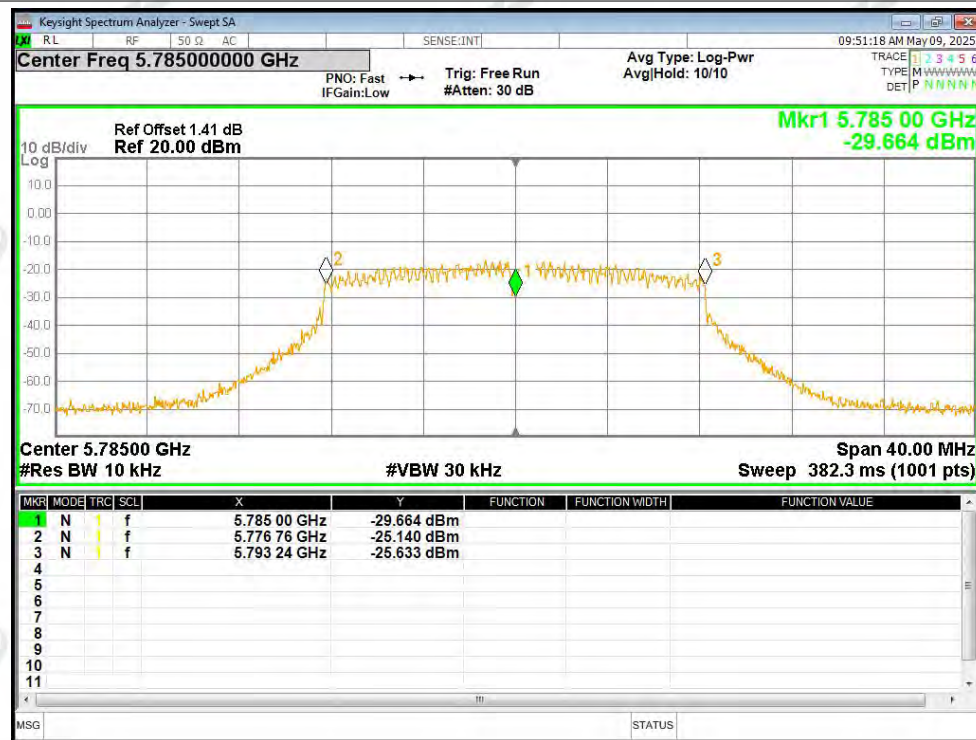


Test Graphs

Freq. Stability NVNT a 5745MHz Ant1

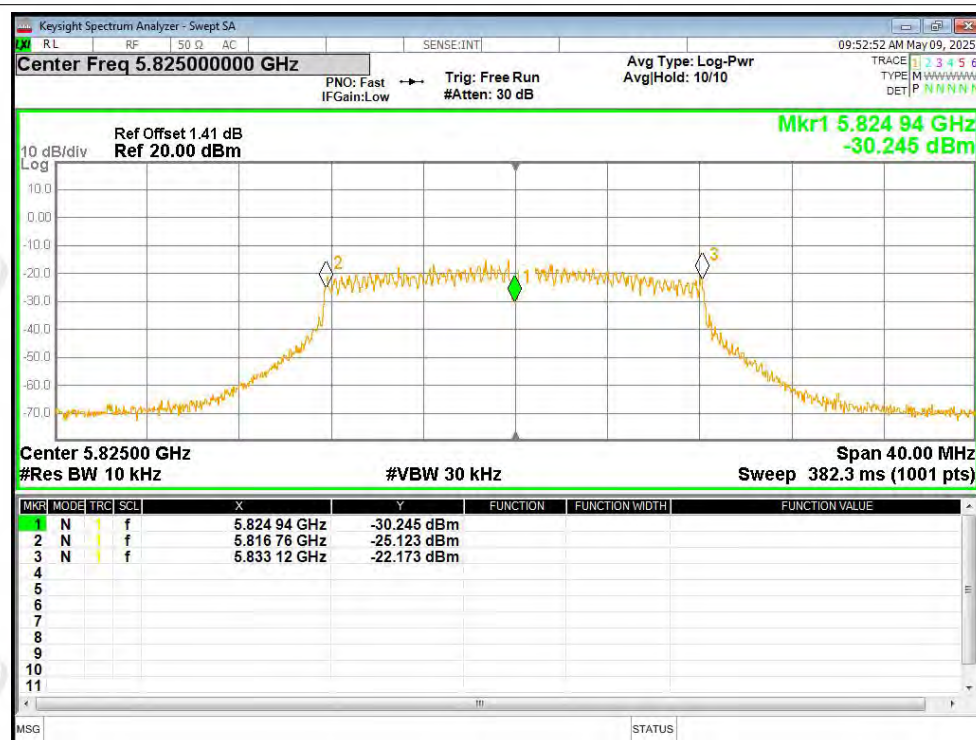


Freq. Stability NVNT a 5785MHz Ant1

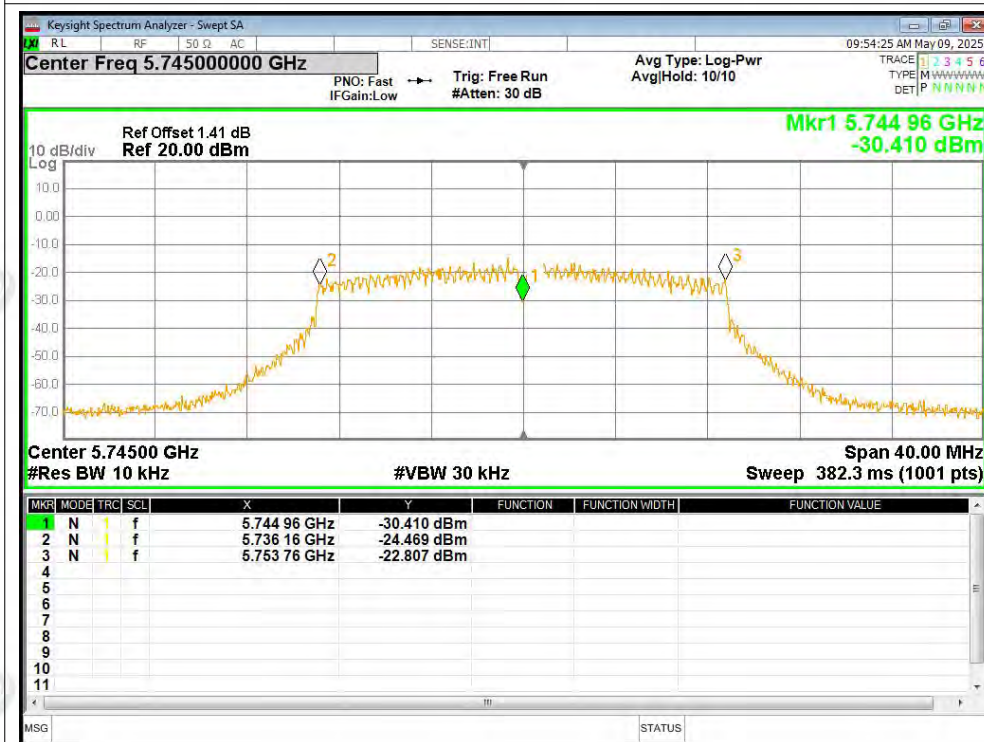




Freq. Stability NVNT a 5825MHz Ant1

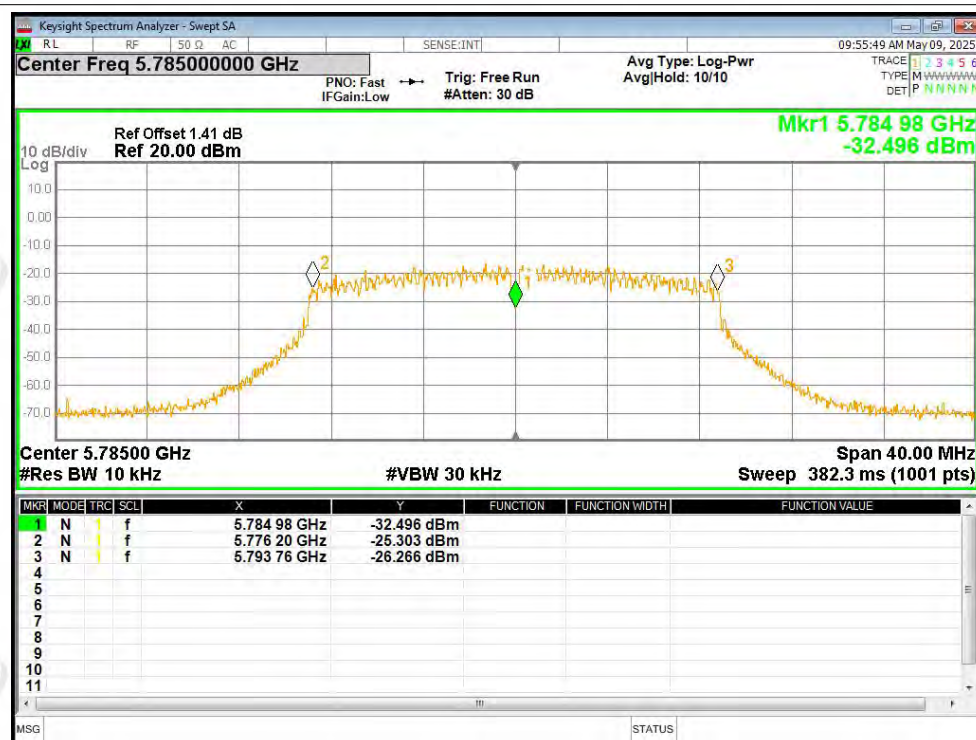


Freq. Stability NVNT n20 5745MHz Ant1

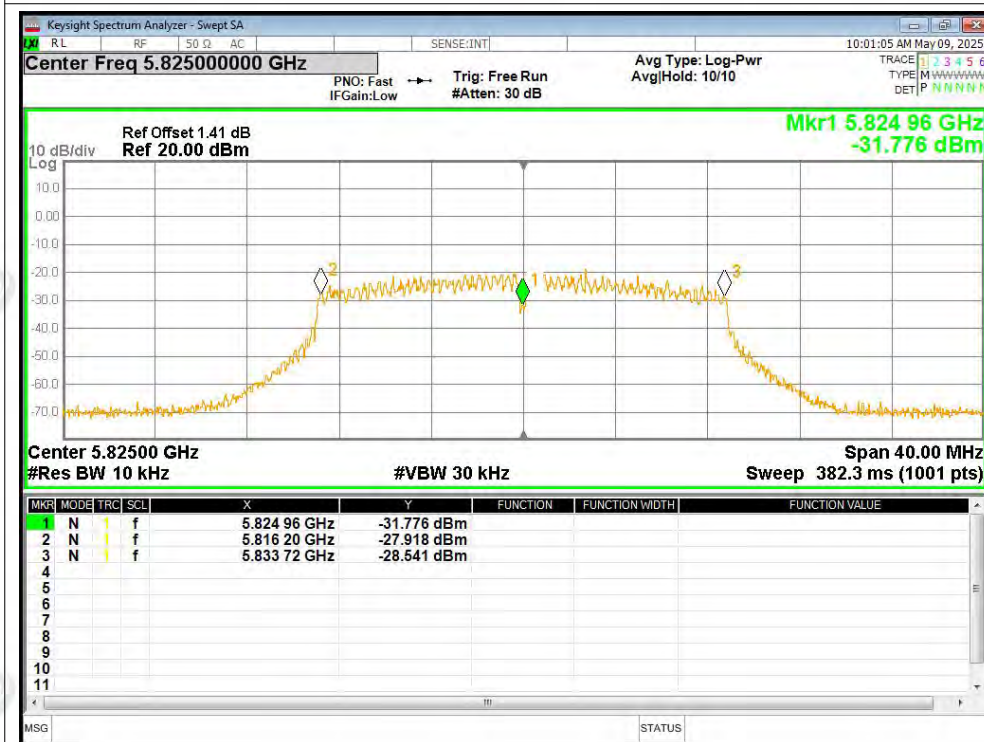




Freq. Stability NVNT n20 5785MHz Ant1

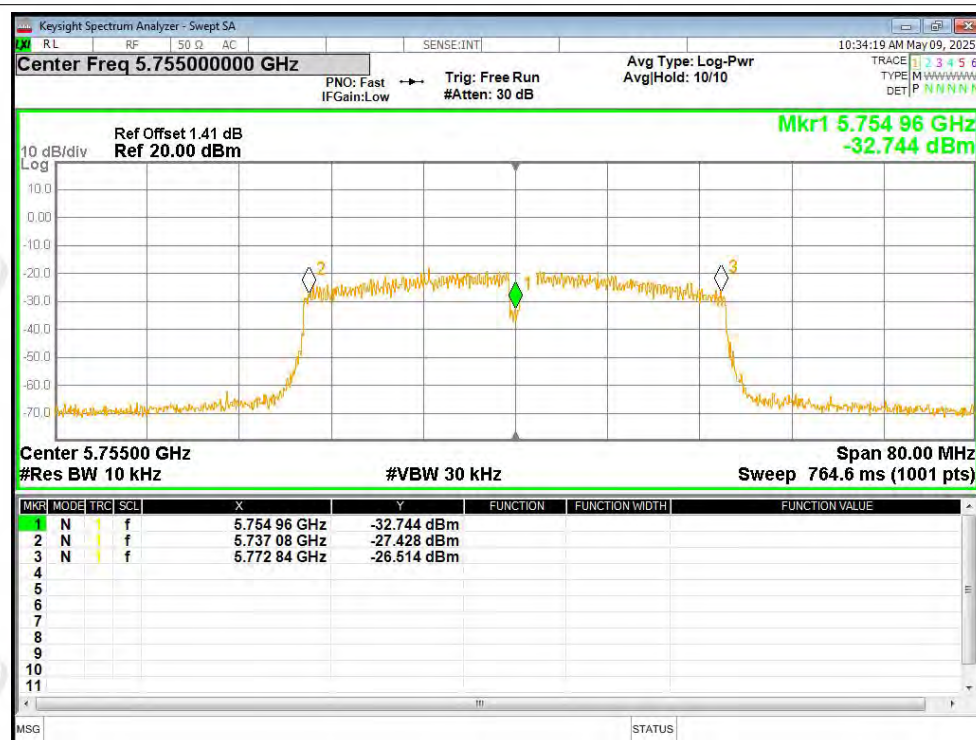


Freq. Stability NVNT n20 5825MHz Ant1

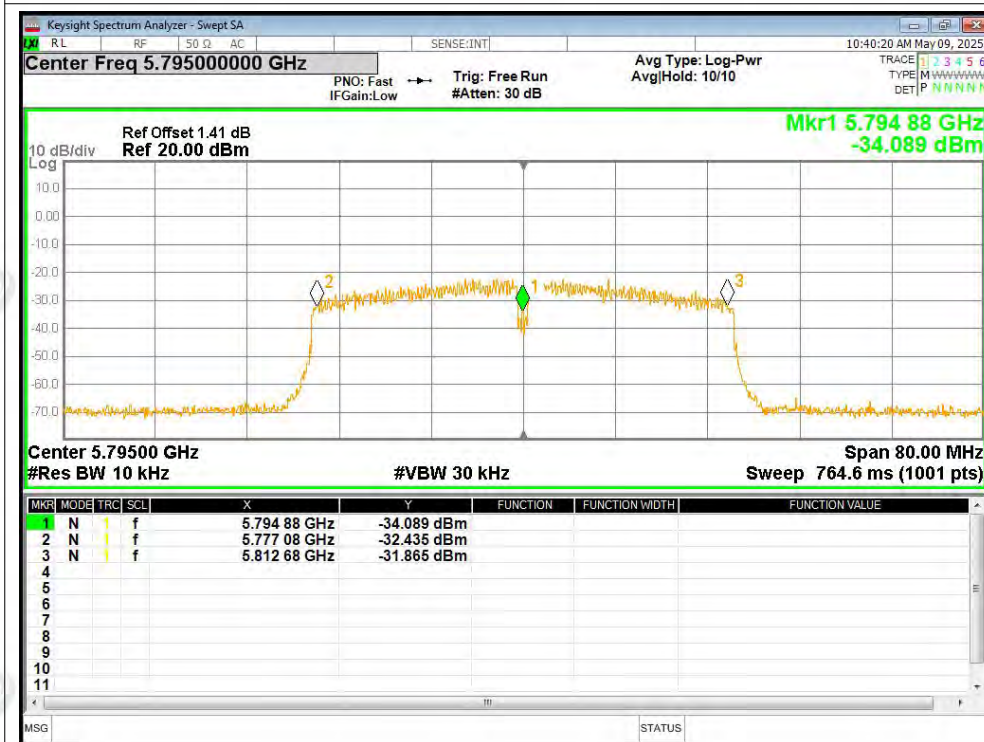




Freq. Stability NVNT n40 5755MHz Ant1

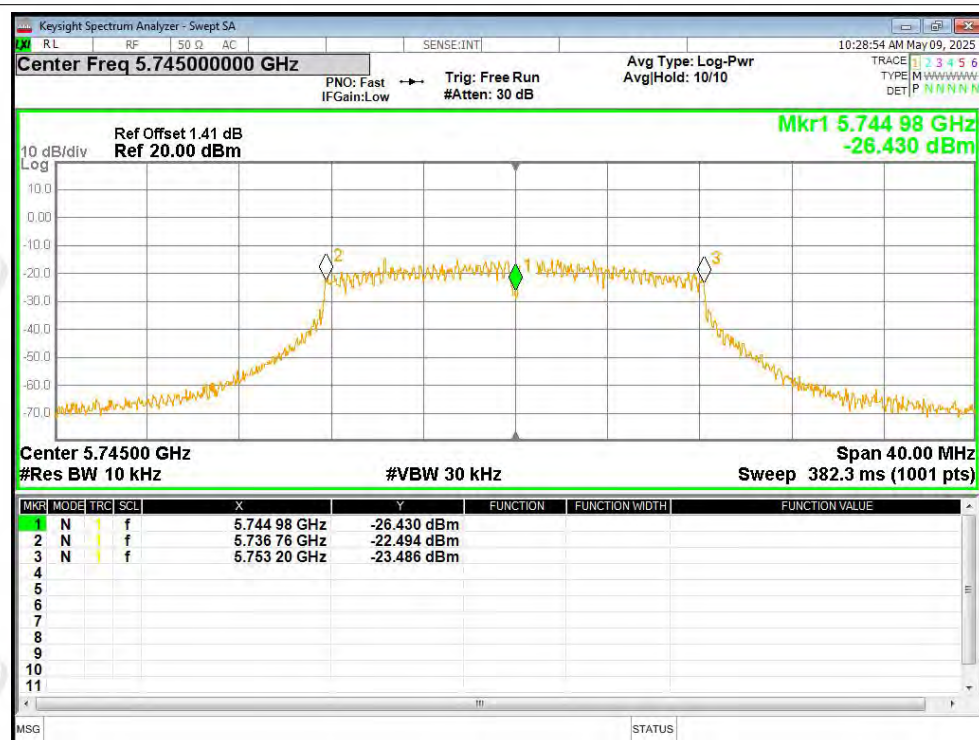


Freq. Stability NVNT n40 5795MHz Ant1

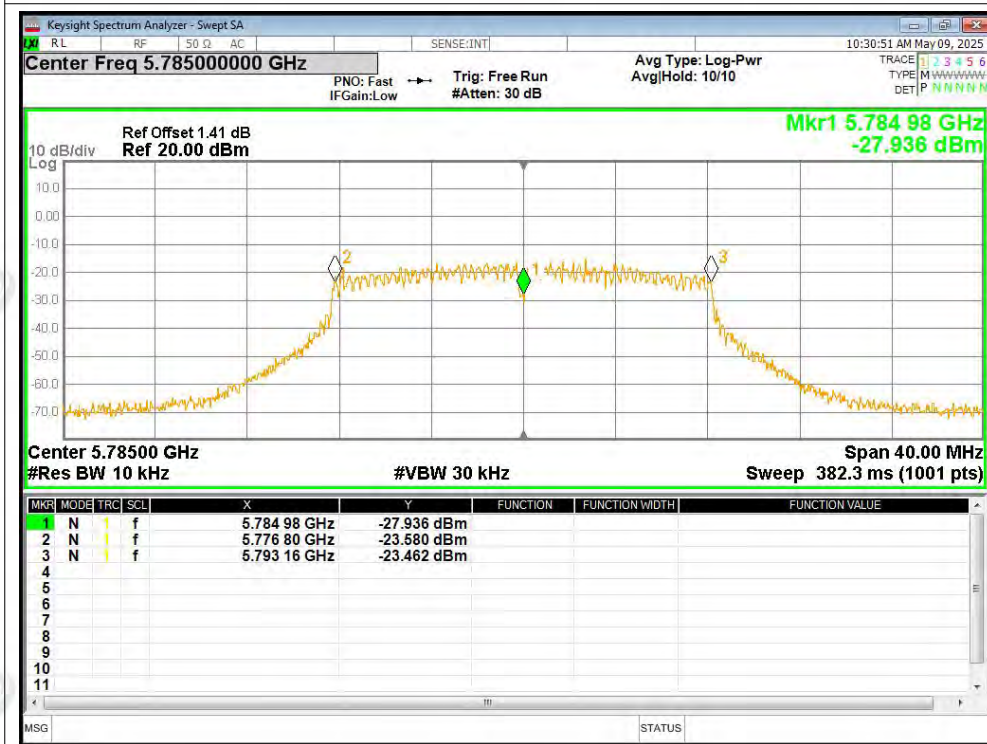




Freq. Stability NVNT ac20 5745MHz Ant1

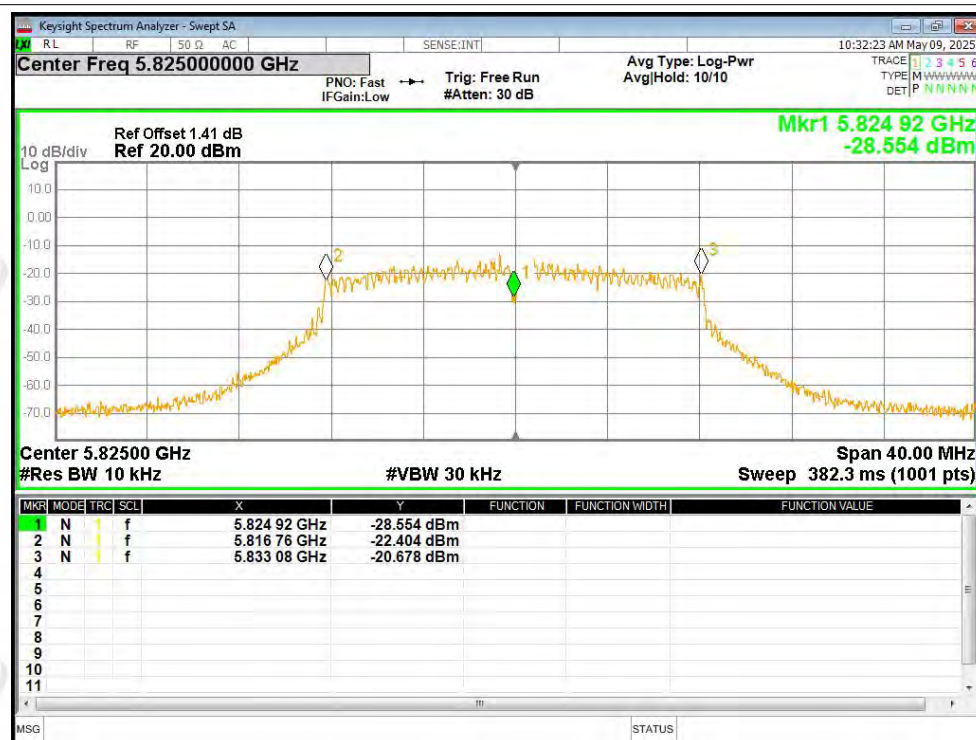


Freq. Stability NVNT ac20 5785MHz Ant1

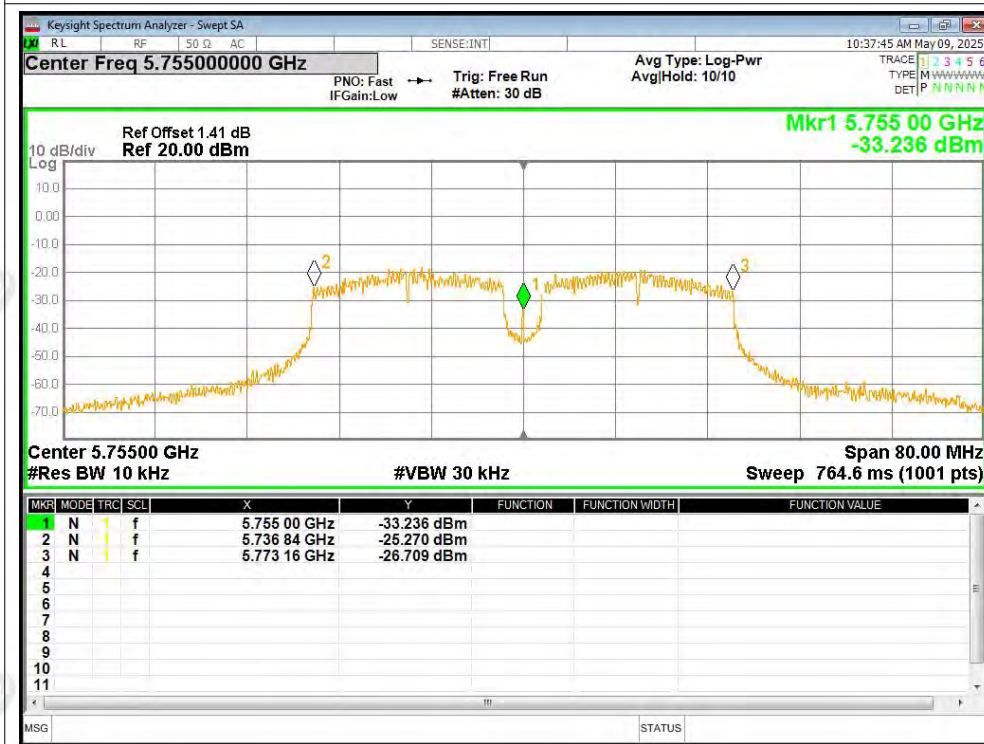


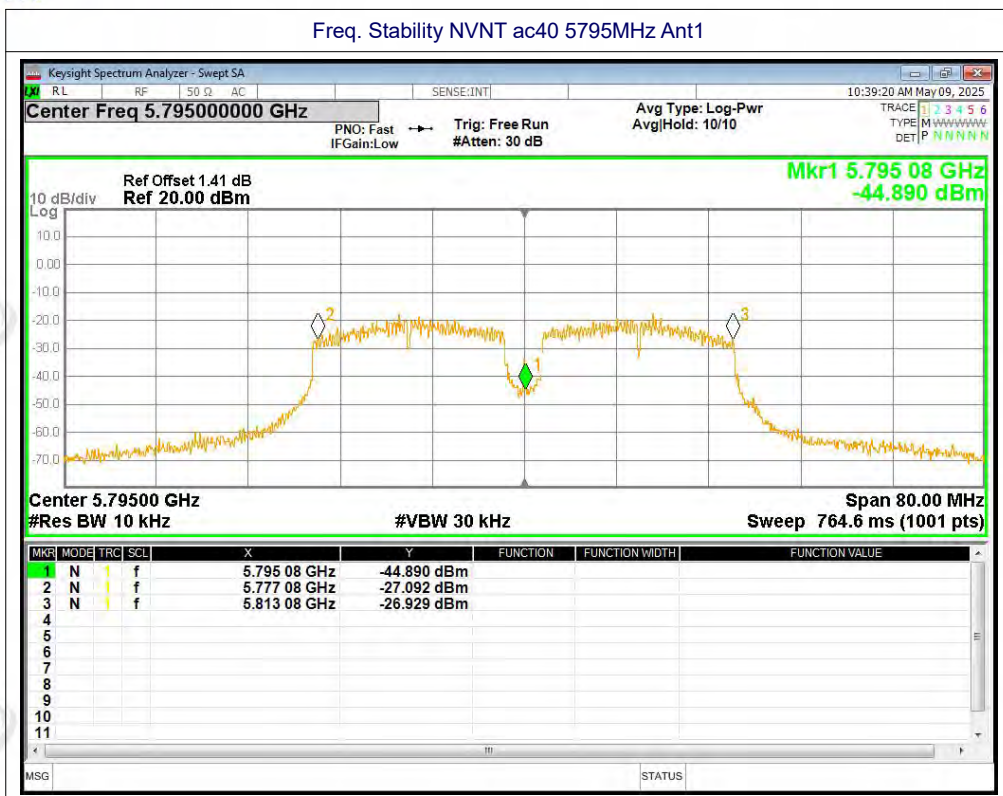


Freq. Stability NVNT ac20 5825MHz Ant1



Freq. Stability NVNT ac40 5755MHz Ant1







B.8 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5745	Ant1	-31.56	-27	Pass
NVNT	a	5785	Ant1	-31.29	-27	Pass
NVNT	a	5825	Ant1	-31.33	-27	Pass
NVNT	n20	5745	Ant1	-30.55	-27	Pass
NVNT	n20	5785	Ant1	-30.43	-27	Pass
NVNT	n20	5825	Ant1	-31.82	-27	Pass
NVNT	n40	5755	Ant1	-31.19	-27	Pass
NVNT	n40	5795	Ant1	-31.18	-27	Pass
NVNT	ac20	5745	Ant1	-31.5	-27	Pass
NVNT	ac20	5785	Ant1	-31.32	-27	Pass
NVNT	ac20	5825	Ant1	-30.99	-27	Pass
NVNT	ac40	5755	Ant1	-30.01	-27	Pass
NVNT	ac40	5795	Ant1	-31.21	-27	Pass

Note: During testing, the antenna gain has been added to the Ref offset.



Test Graphs

Tx. Spurious NVNT a 5745MHz Ant1 Emission

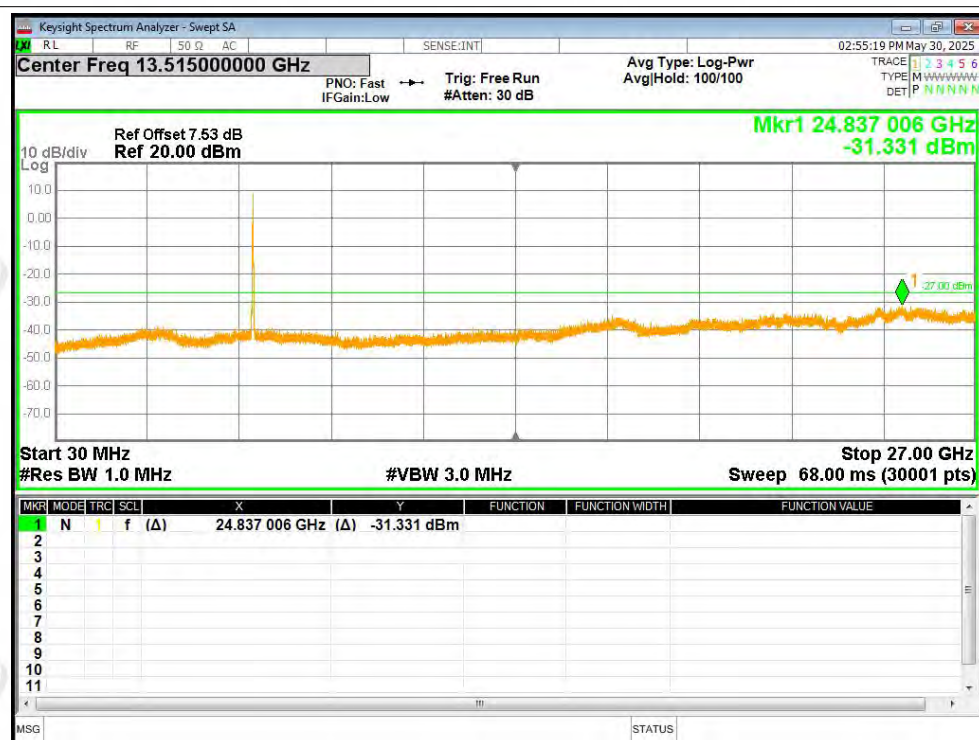


Tx. Spurious NVNT a 5785MHz Ant1 Emission





Tx. Spurious NVNT a 5825MHz Ant1 Emission

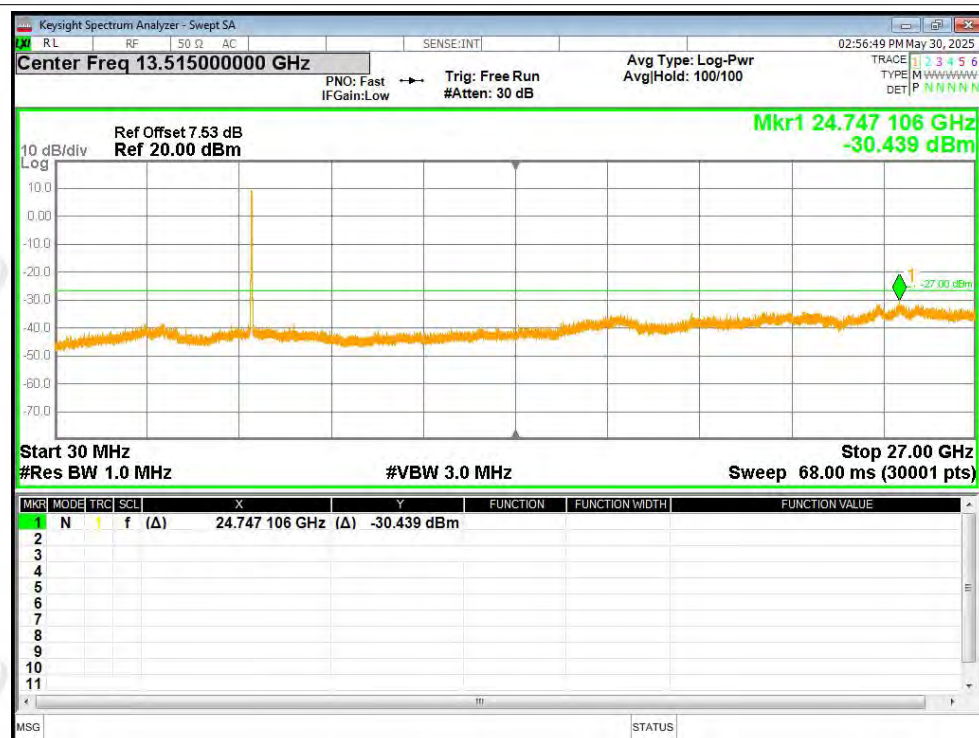


Tx. Spurious NVNT n20 5745MHz Ant1 Emission





Tx. Spurious NVNT n20 5785MHz Ant1 Emission

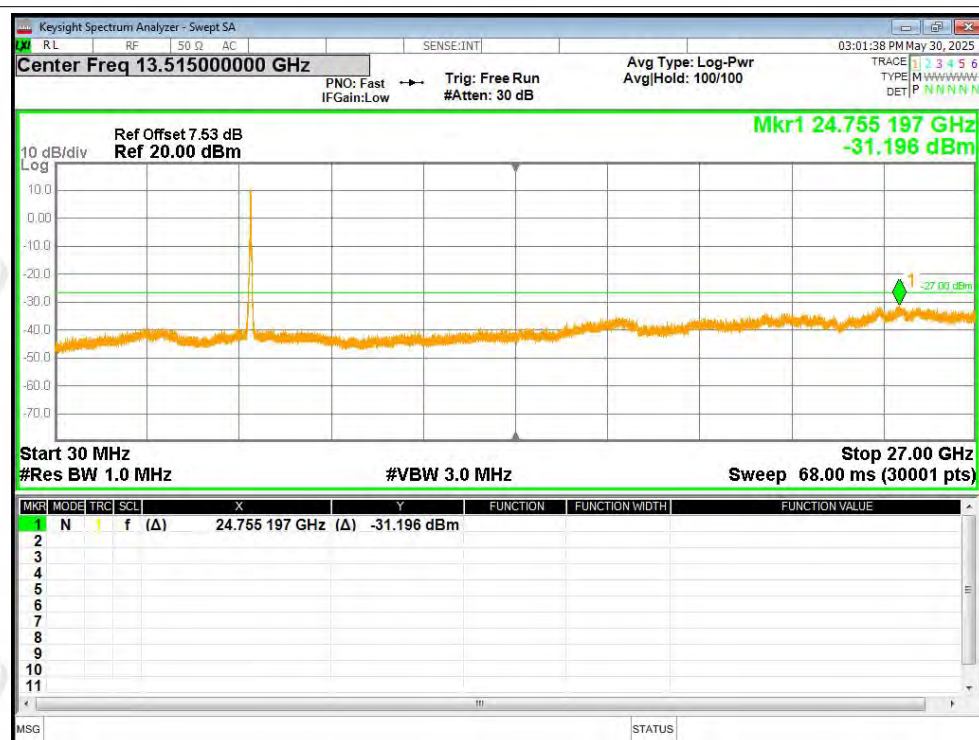


Tx. Spurious NVNT n20 5825MHz Ant1 Emission





Tx. Spurious NVNT n40 5755MHz Ant1 Emission



Tx. Spurious NVNT n40 5795MHz Ant1 Emission





Tx. Spurious NVNT ac20 5745MHz Ant1 Emission

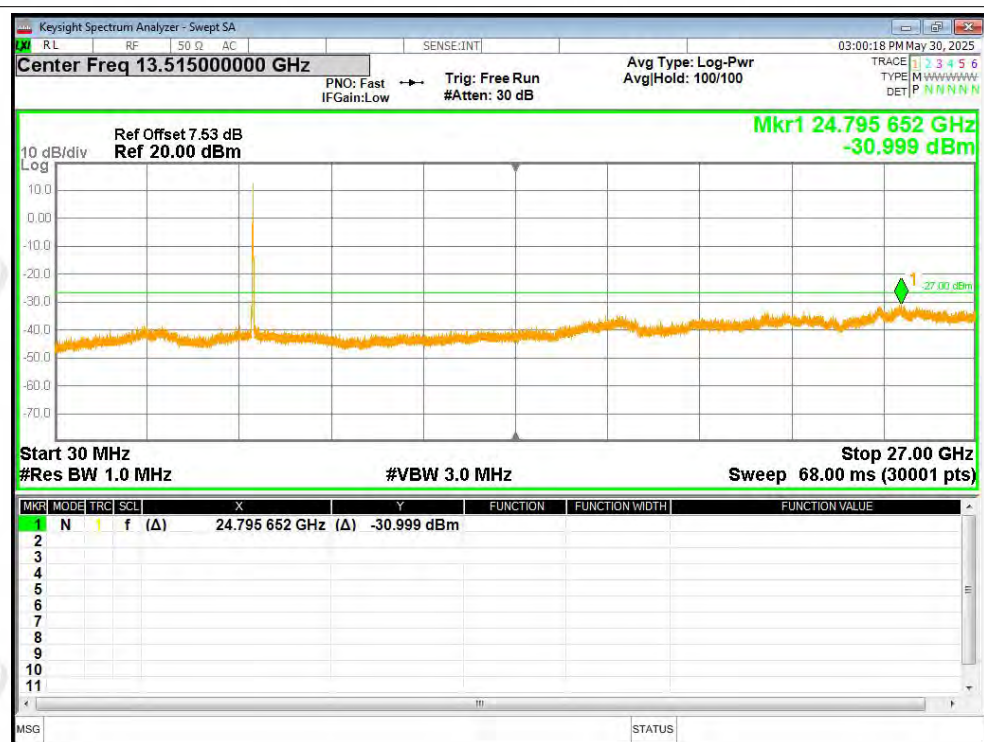


Tx. Spurious NVNT ac20 5785MHz Ant1 Emission





Tx. Spurious NVNT ac20 5825MHz Ant1 Emission



Tx. Spurious NVNT ac40 5755MHz Ant1 Emission



