



## Appendix B for 5GWIFI Test Data

Product Name: iSmart-Automotive Diagnostic System

Test Model: iSmart920

### Environmental Conditions

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

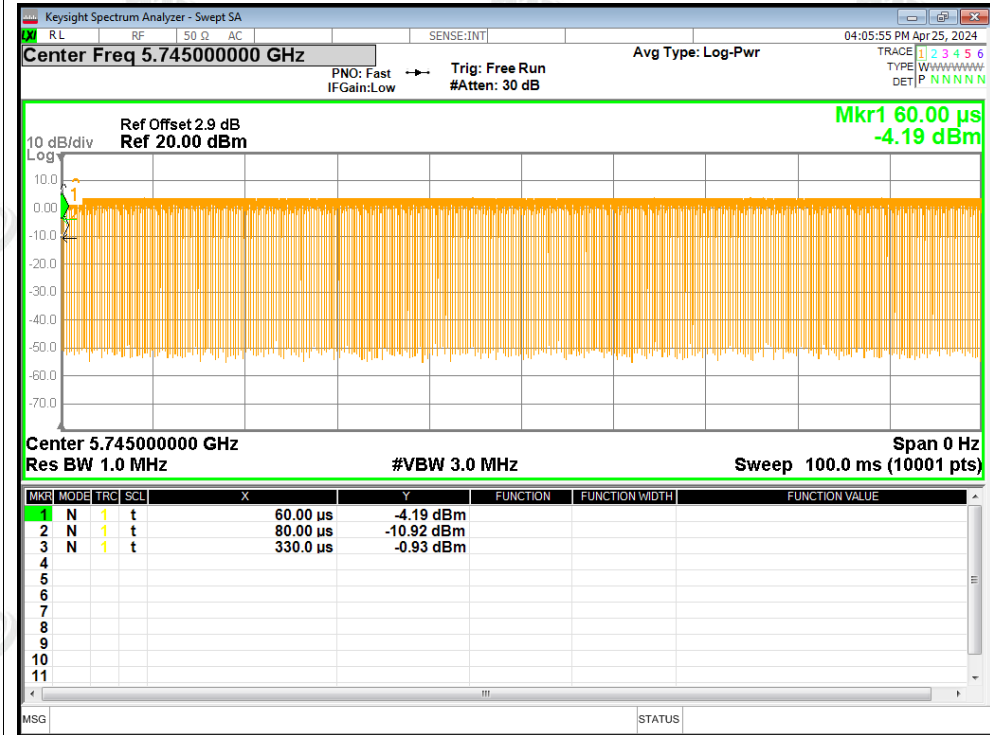
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**B1. Duty Cycle**

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	Ant1	92.59	0.33	4
NVNT	a	5785	Ant1	92.59	0.33	4
NVNT	a	5825	Ant1	89.29	0.49	4
NVNT	n20	5745	Ant1	88.46	0.53	4.35
NVNT	n20	5785	Ant1	88.46	0.53	4.35
NVNT	n20	5825	Ant1	92	0.36	4.35

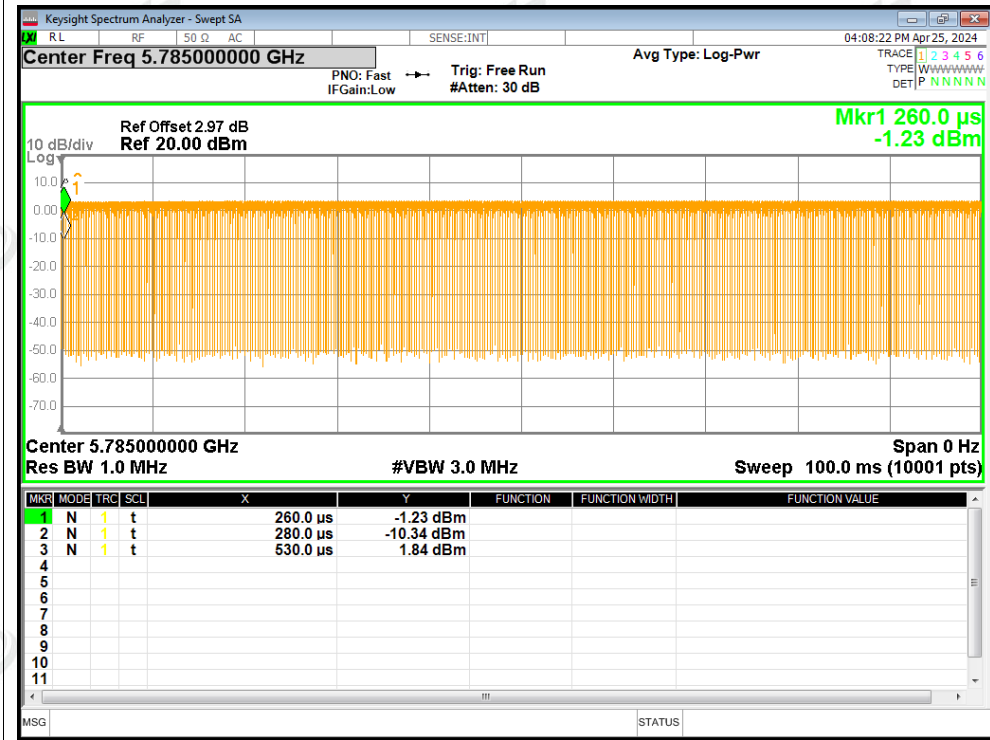


Test Graphs

Duty Cycle NVNT a 5745MHz Ant1

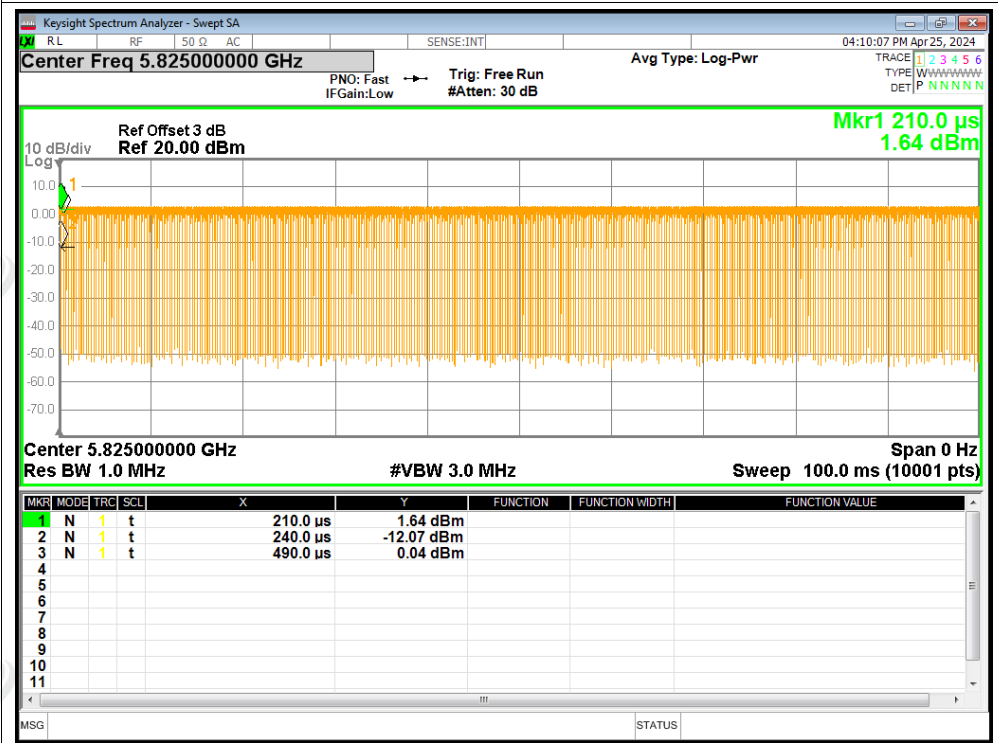


Duty Cycle NVNT a 5785MHz Ant1

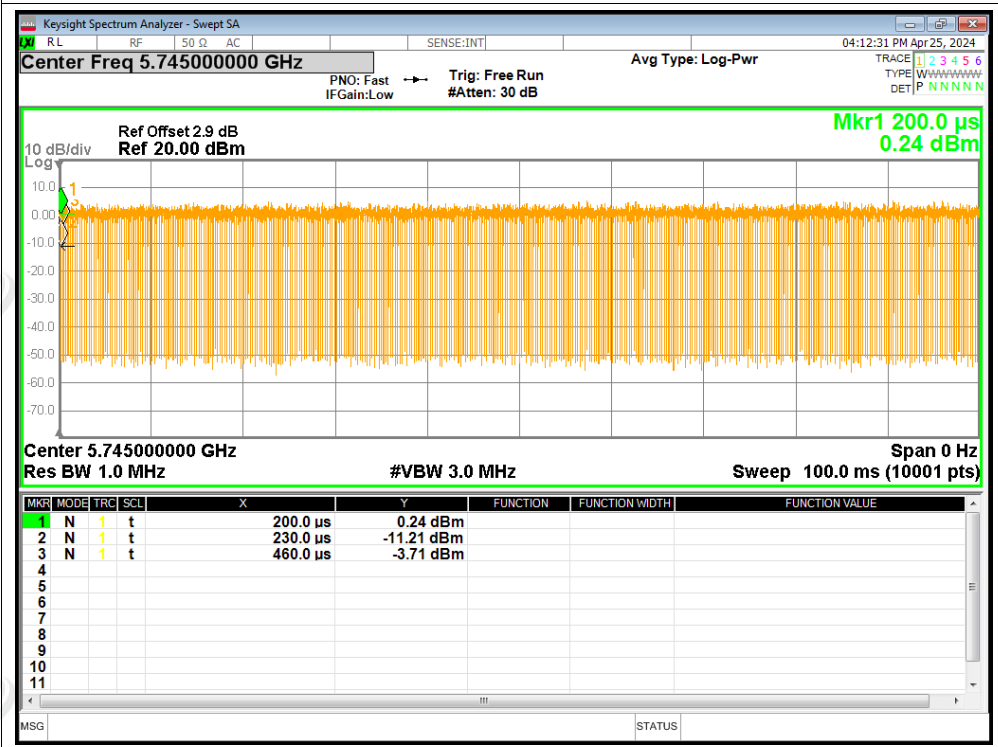




Duty Cycle NVNT a 5825MHz Ant1

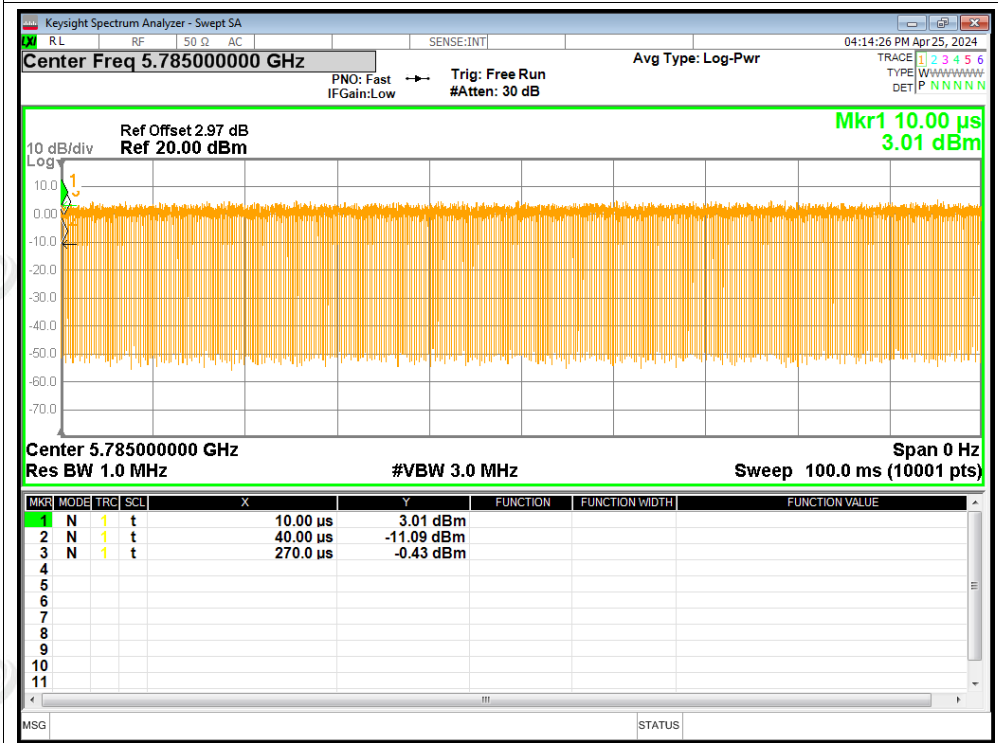


Duty Cycle NVNT n20 5745MHz Ant1

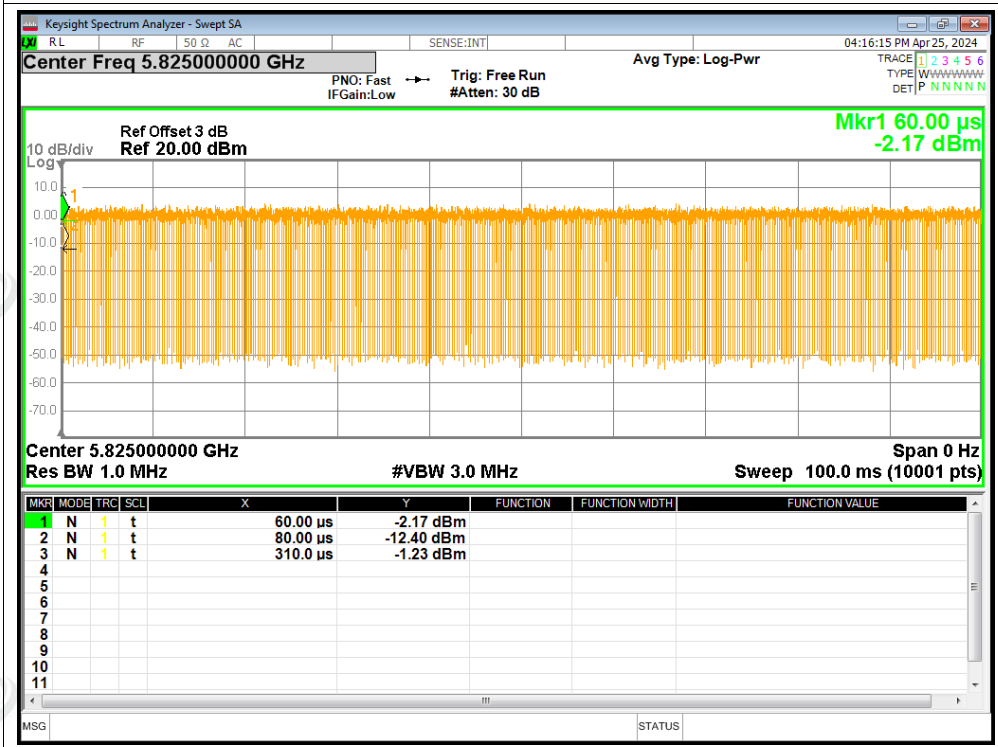




Duty Cycle NVNT n20 5785MHz Ant1



Duty Cycle NVNT n20 5825MHz Ant1





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B2. 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	6.53	0.33	6.86	30	Pass
NVNT	a	5785	Ant1	6.34	0.33	6.67	30	Pass
NVNT	a	5825	Ant1	6.45	0.49	6.94	30	Pass
NVNT	n20	5745	Ant1	6.44	0.53	6.97	30	Pass
NVNT	n20	5785	Ant1	6.38	0.53	6.91	30	Pass
NVNT	n20	5825	Ant1	6.47	0.36	6.83	30	Pass



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**B3. -6dB Bandwidth**

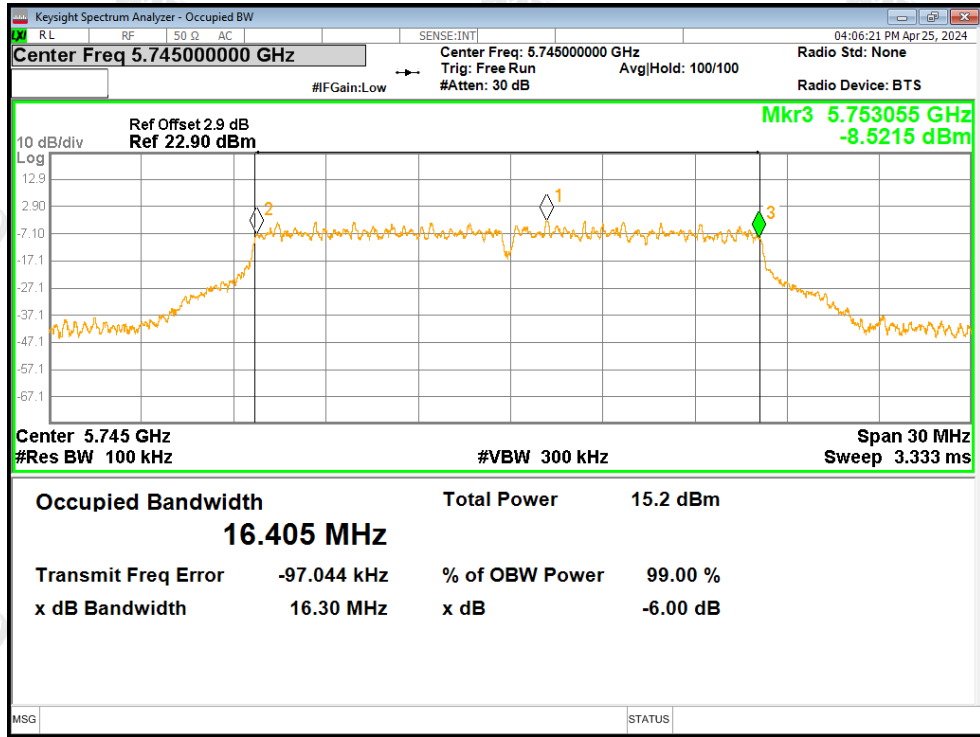
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.304	0.5	Pass
NVNT	a	5785	Ant1	16.336	0.5	Pass
NVNT	a	5825	Ant1	16.394	0.5	Pass
NVNT	n20	5745	Ant1	17.662	0.5	Pass
NVNT	n20	5785	Ant1	17.676	0.5	Pass
NVNT	n20	5825	Ant1	17.708	0.5	Pass



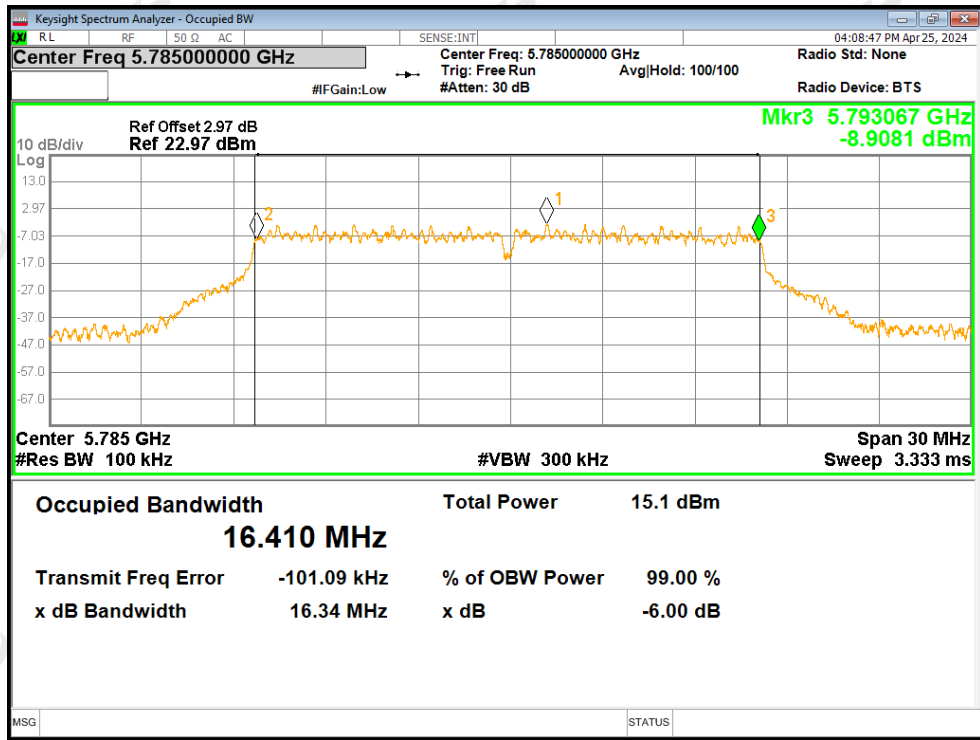


Test Graphs

-6dB Bandwidth NVNT a 5745MHz Ant1



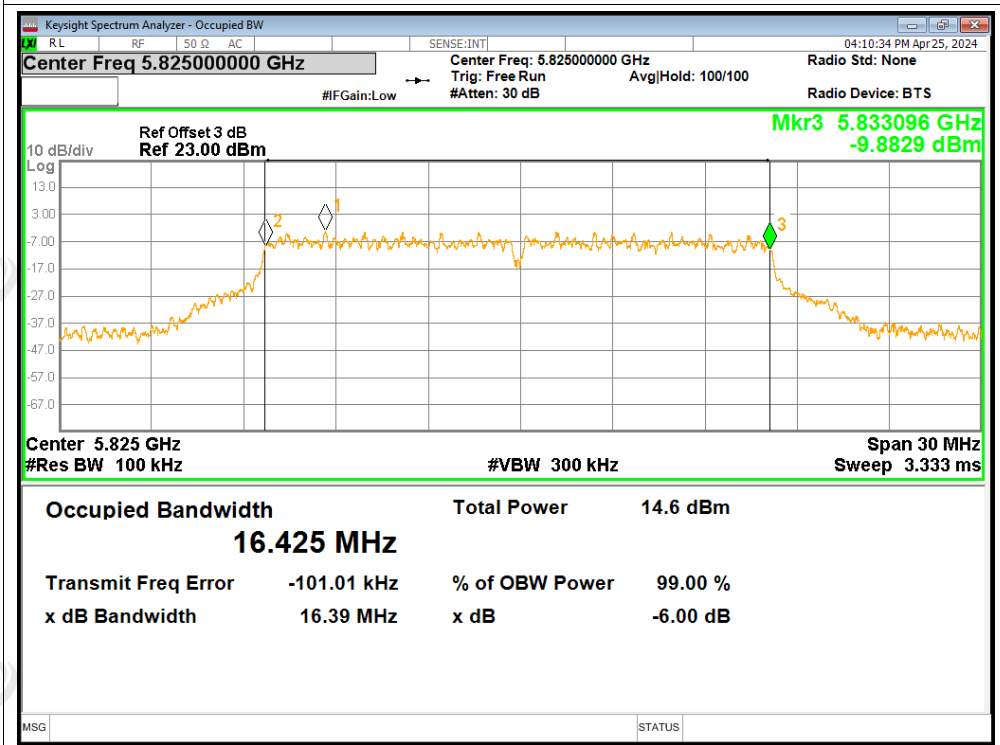
-6dB Bandwidth NVNT a 5785MHz Ant1



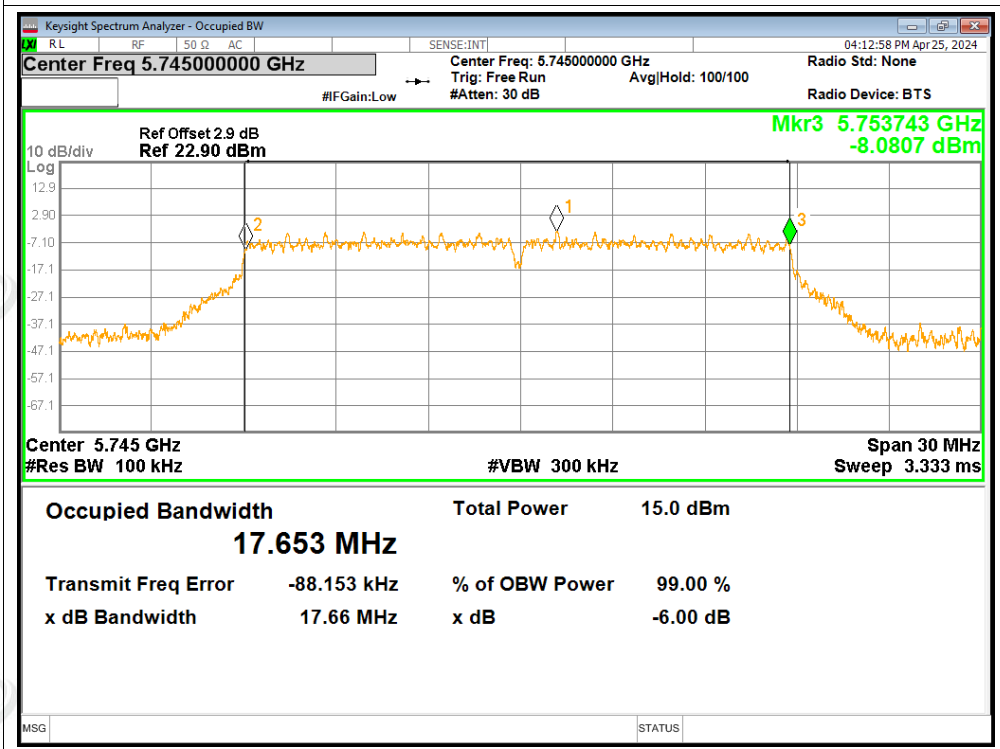




-6dB Bandwidth NVNT a 5825MHz Ant1

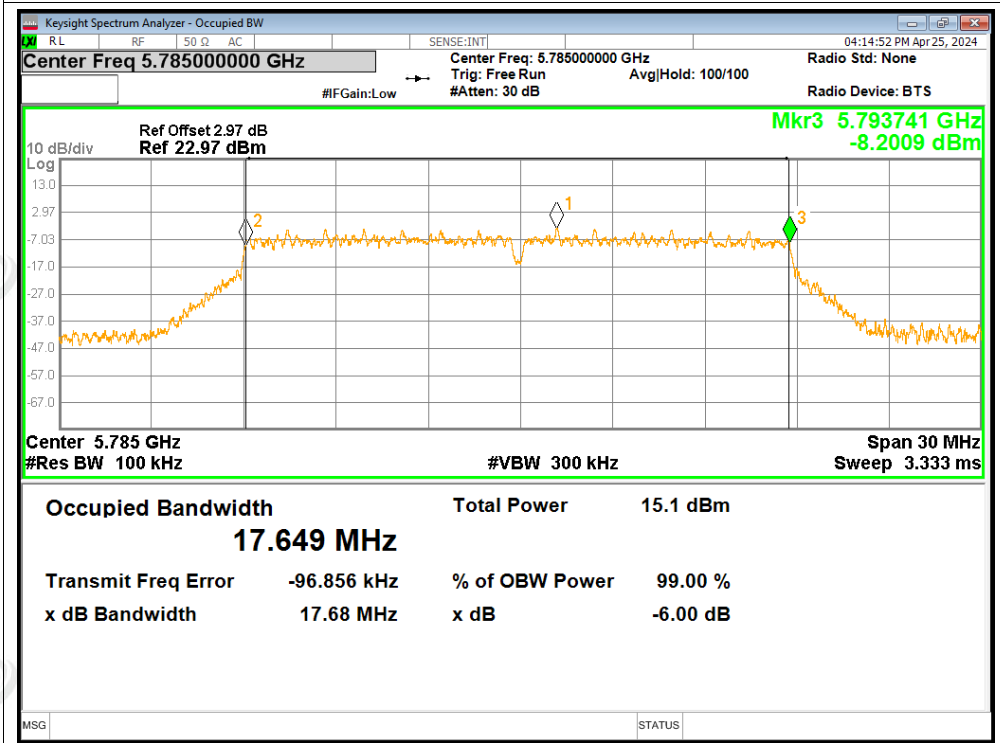


-6dB Bandwidth NVNT n20 5745MHz Ant1

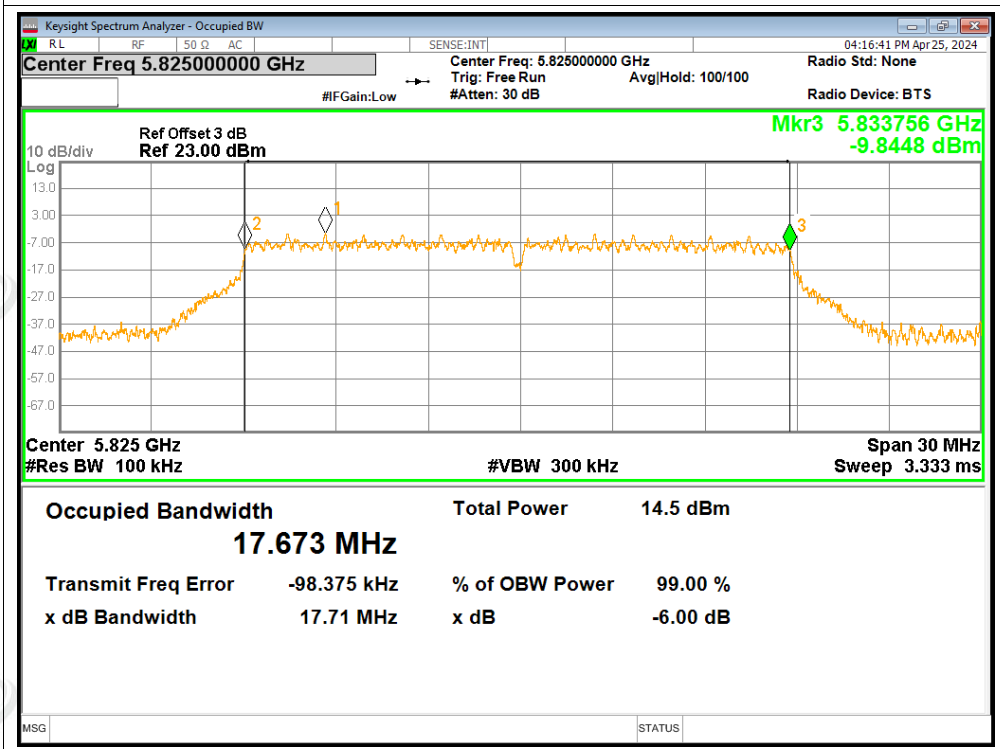




-6dB Bandwidth NVNT n20 5785MHz Ant1



-6dB Bandwidth NVNT n20 5825MHz Ant1





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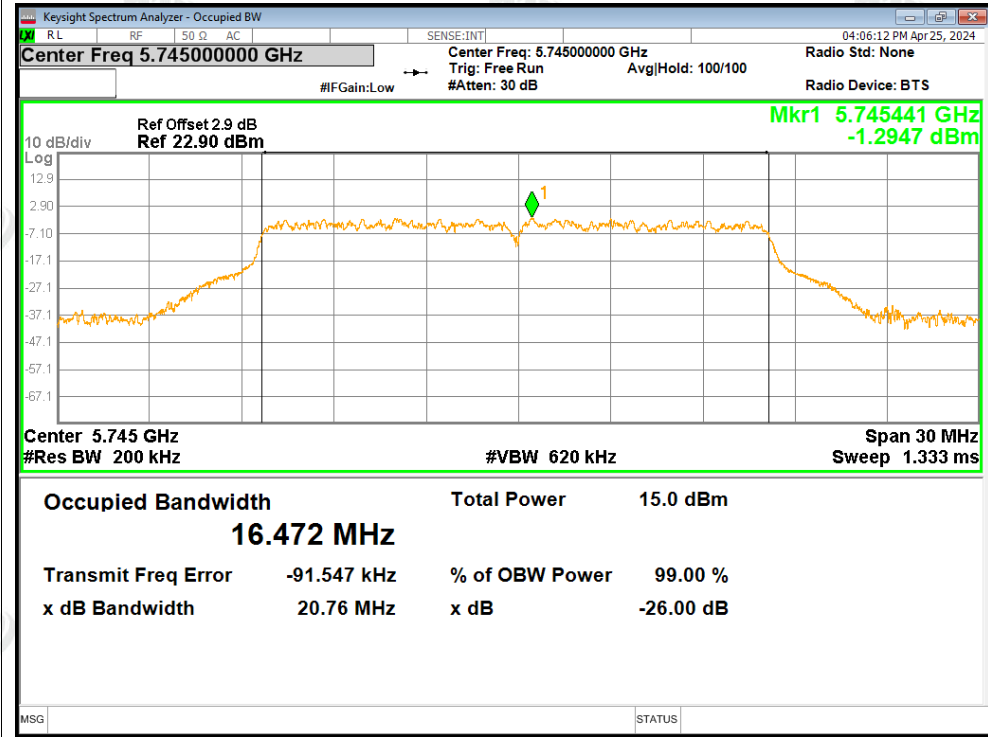
**B4. Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.472
NVNT	a	5785	Ant1	16.483
NVNT	a	5825	Ant1	16.504
NVNT	n20	5745	Ant1	17.736
NVNT	n20	5785	Ant1	17.738
NVNT	n20	5825	Ant1	17.748
NVNT	ac20	5745	Ant1	17.725

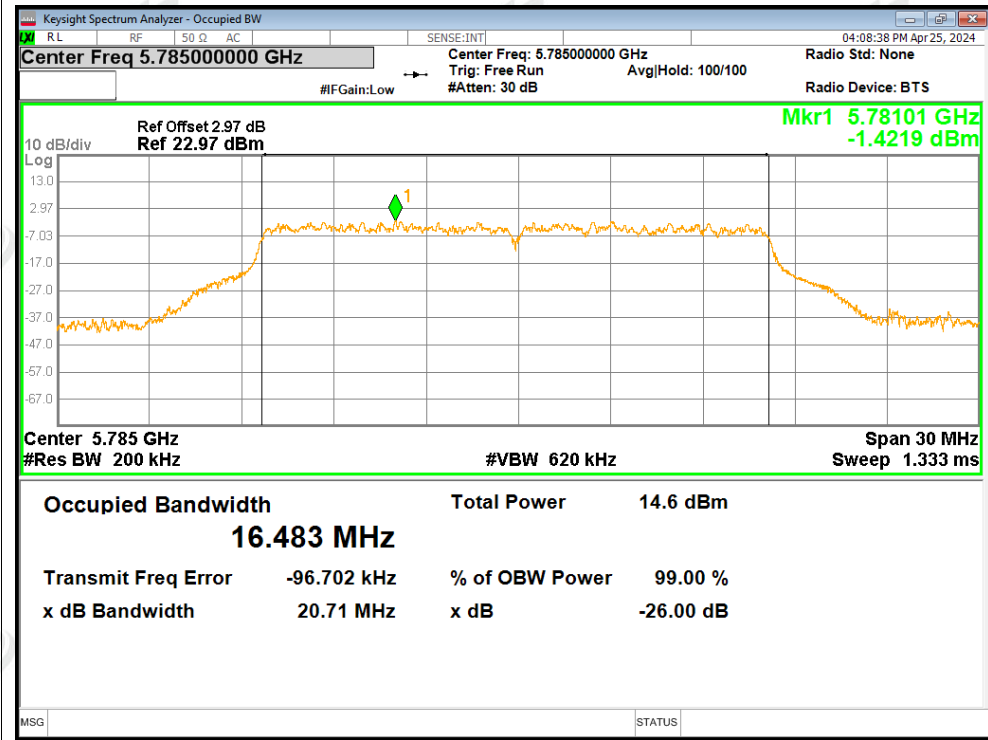


Test Graphs

OBW NVNT a 5745MHz Ant1

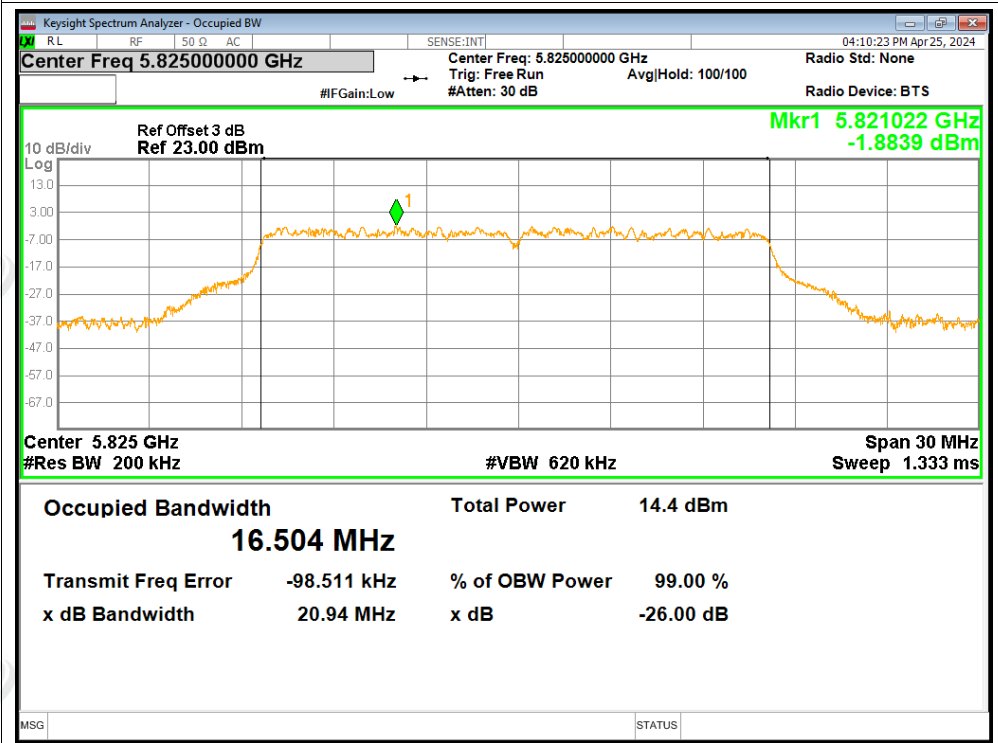


OBW NVNT a 5785MHz Ant1

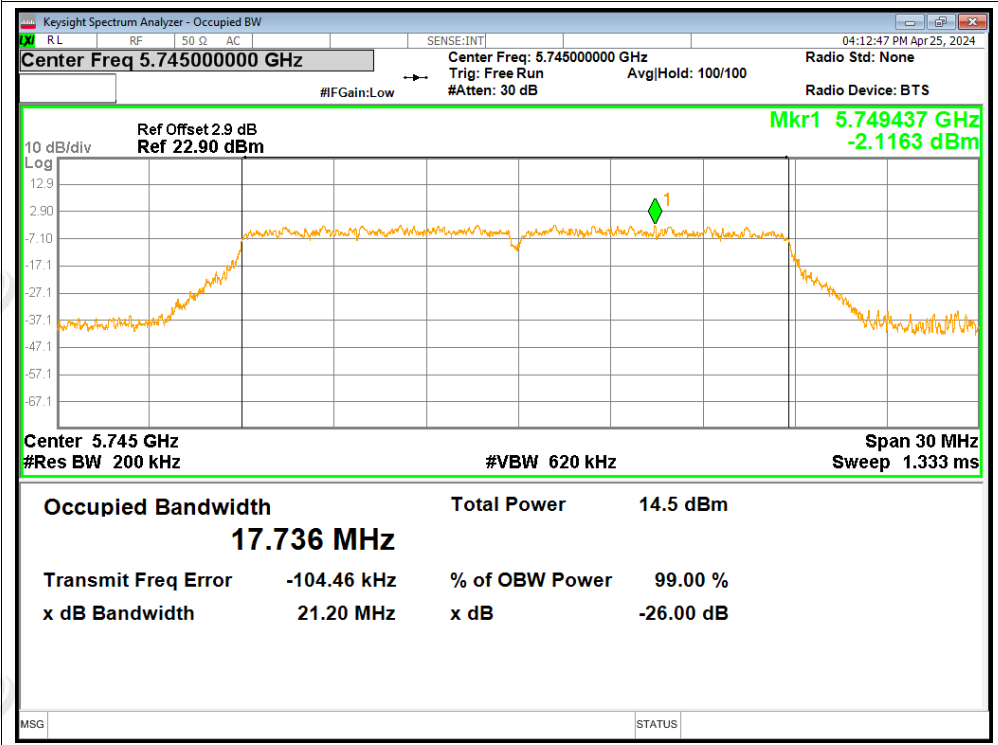




OBW NVNT a 5825MHz Ant1

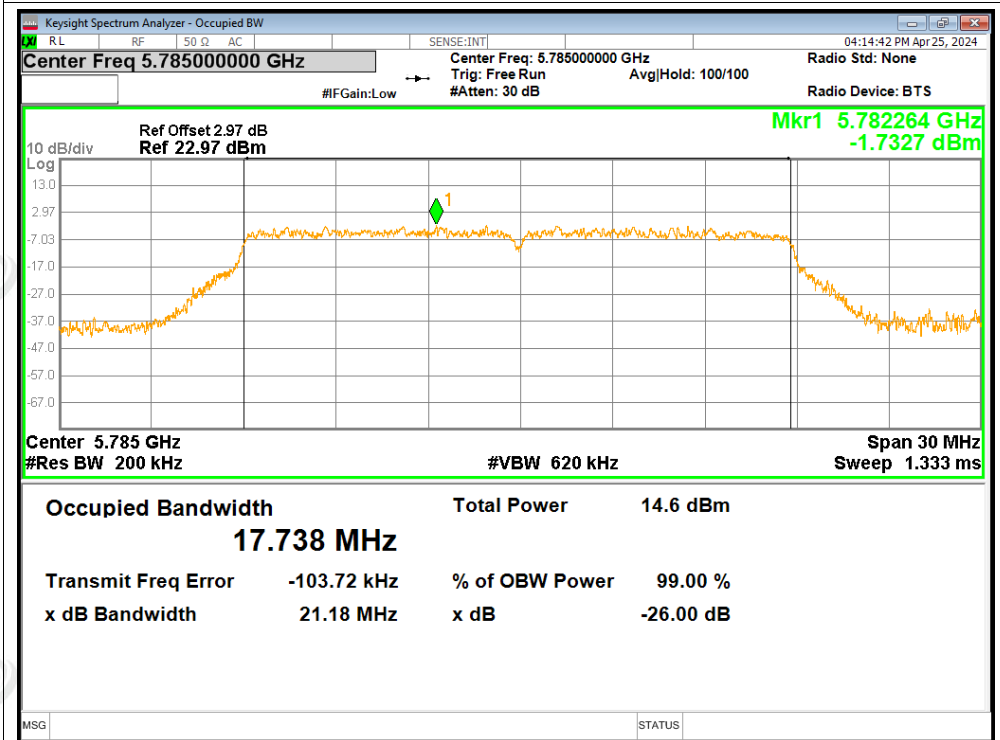


OBW NVNT n20 5745MHz Ant1

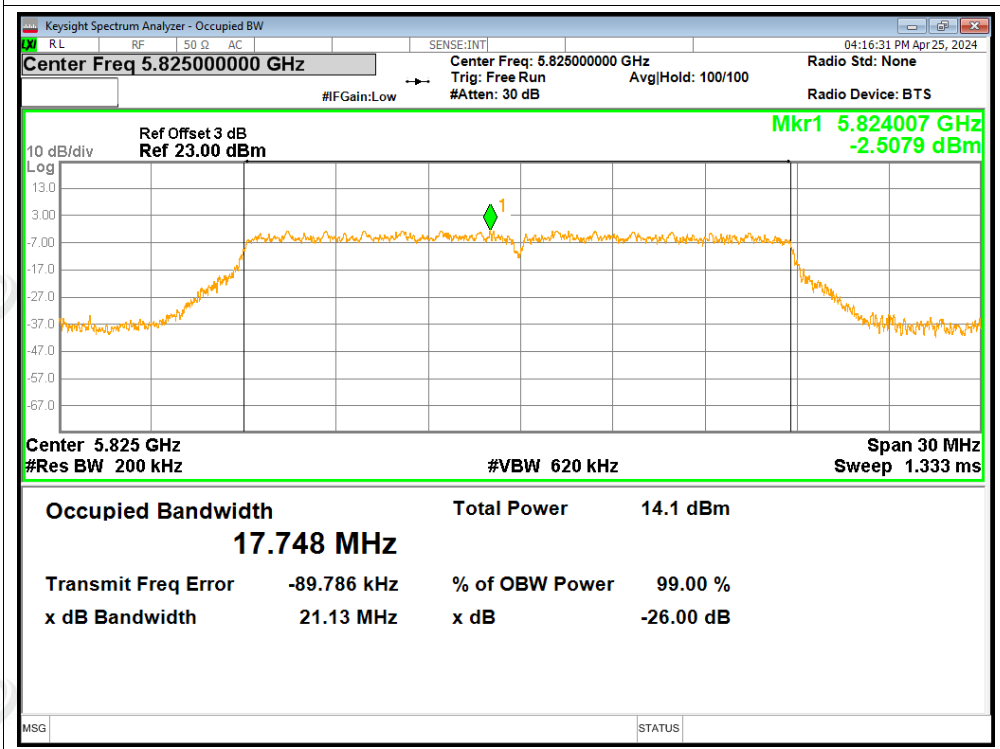


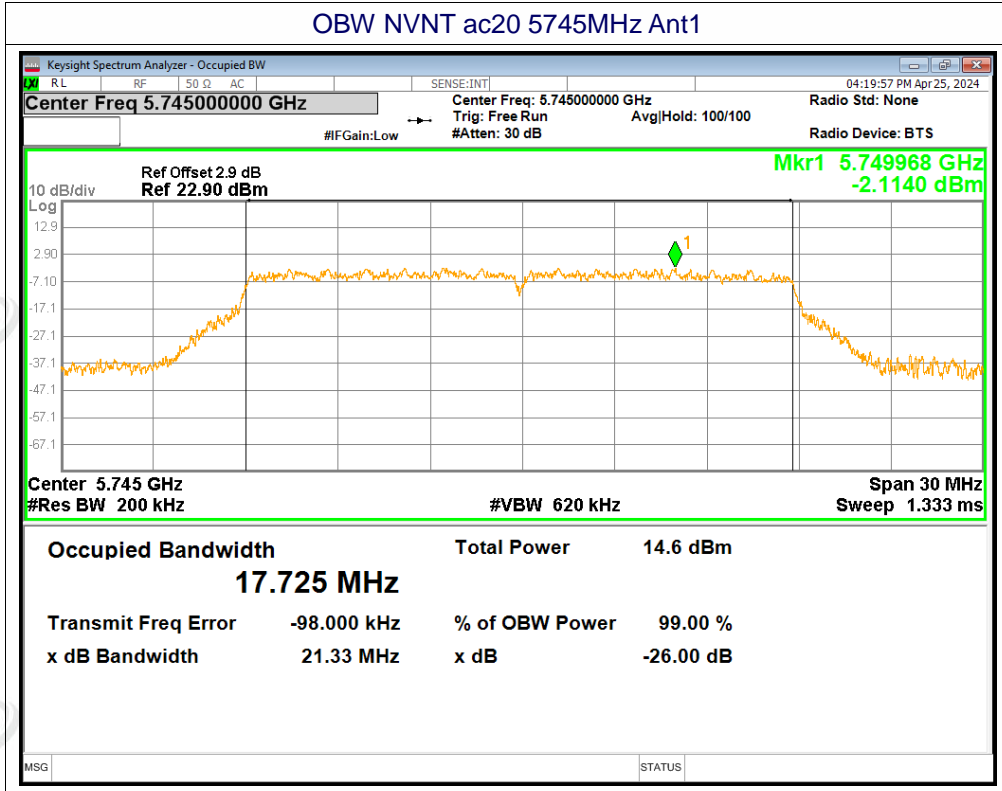


OBW NVNT n20 5785MHz Ant1



OBW NVNT n20 5825MHz Ant1









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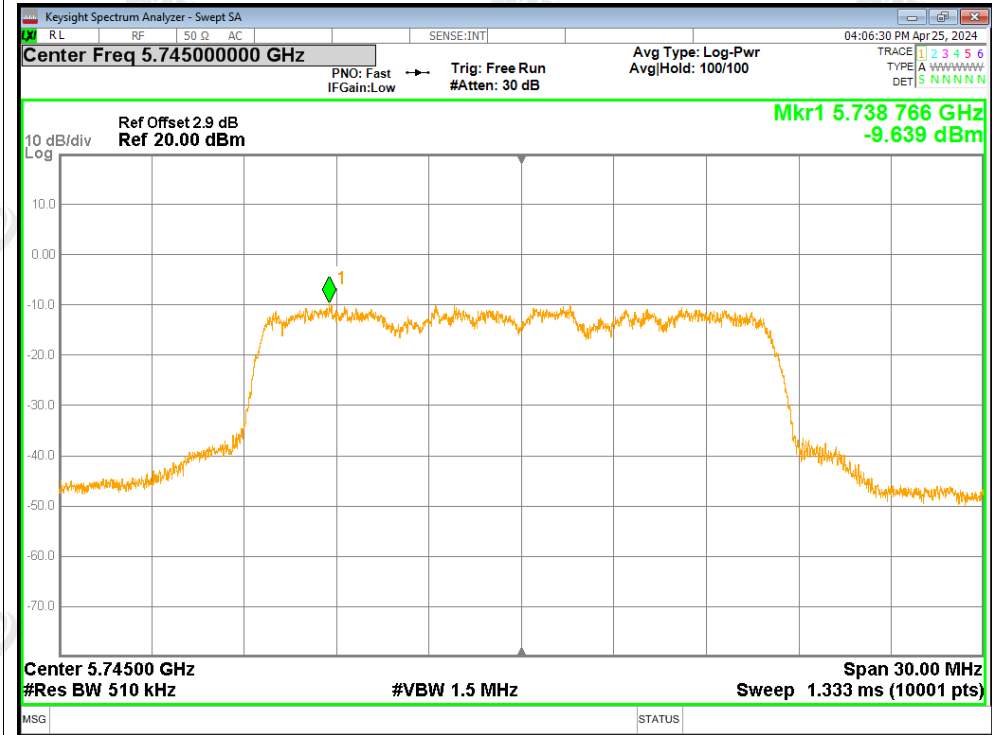
B5. Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-9.64	0.33	-9.31	30	Pass
NVNT	a	5785	Ant1	-8.55	0.33	-8.22	30	Pass
NVNT	a	5825	Ant1	-8.82	0.49	-8.33	30	Pass
NVNT	n20	5745	Ant1	-10.07	0.53	-9.54	30	Pass
NVNT	n20	5785	Ant1	-10.48	0.53	-9.95	30	Pass
NVNT	n20	5825	Ant1	-10.33	0.36	-9.97	30	Pass

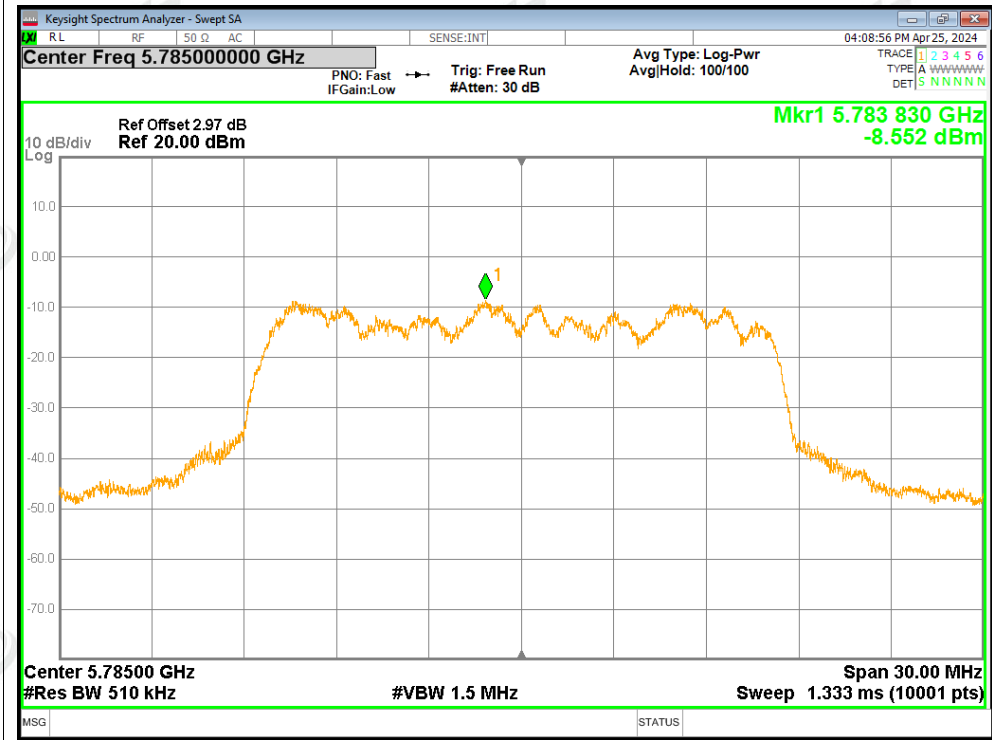


Test Graphs

PSD NVNT a 5745MHz Ant1

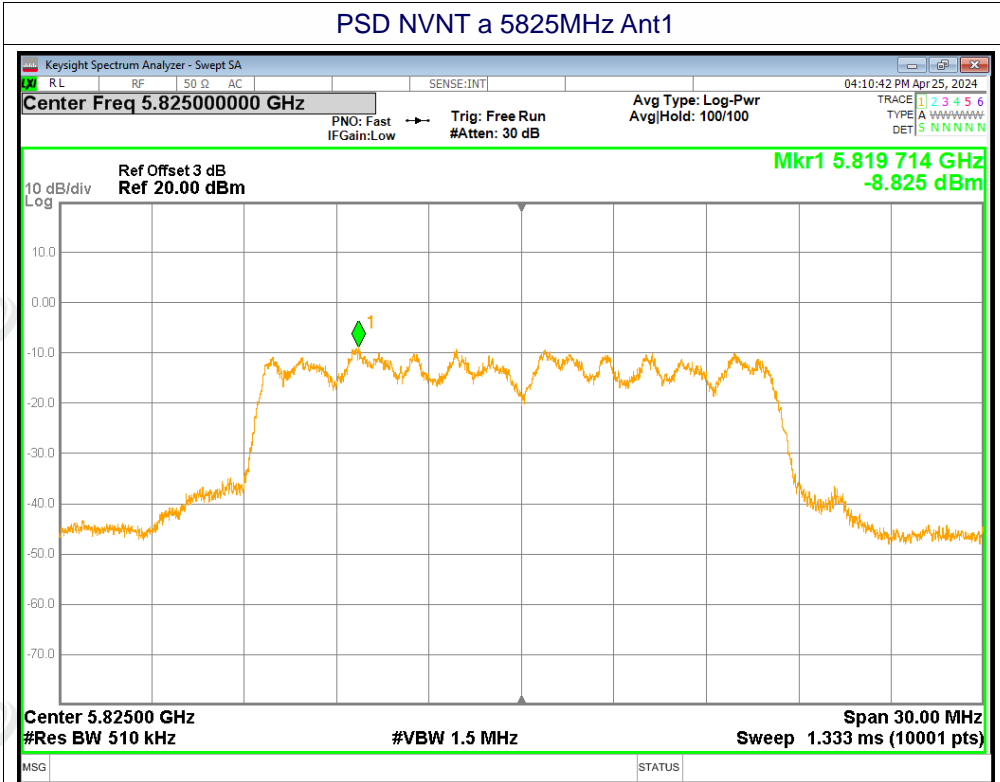


PSD NVNT a 5785MHz Ant1

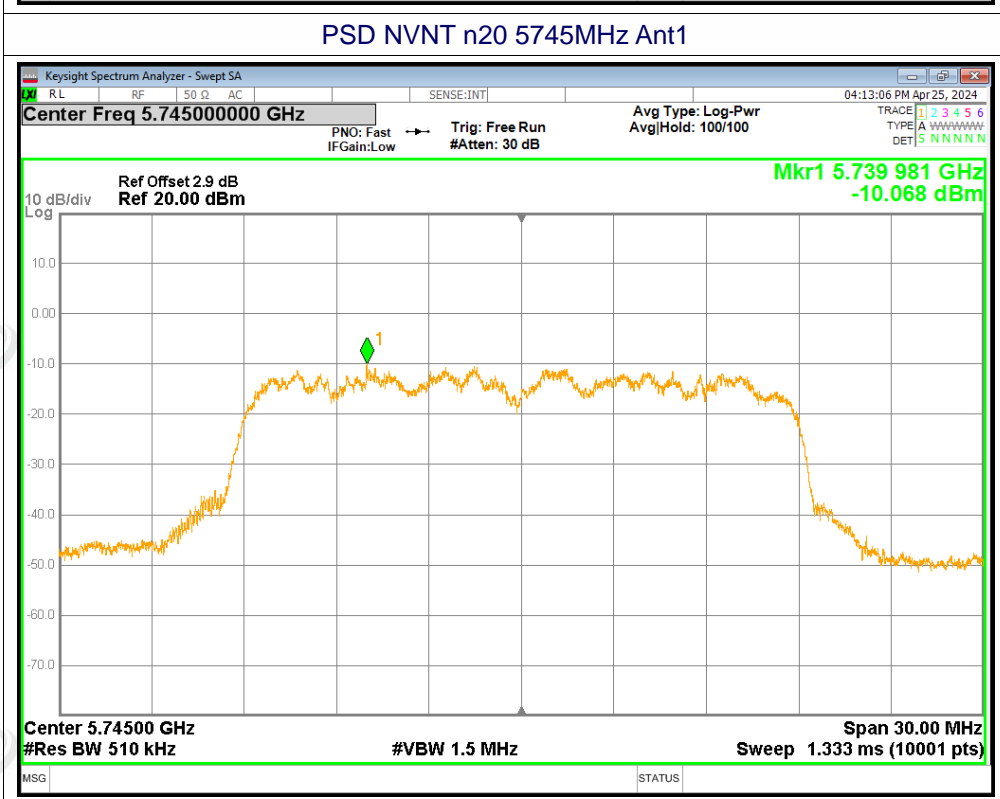




PSD NVNT a 5825MHz Ant1

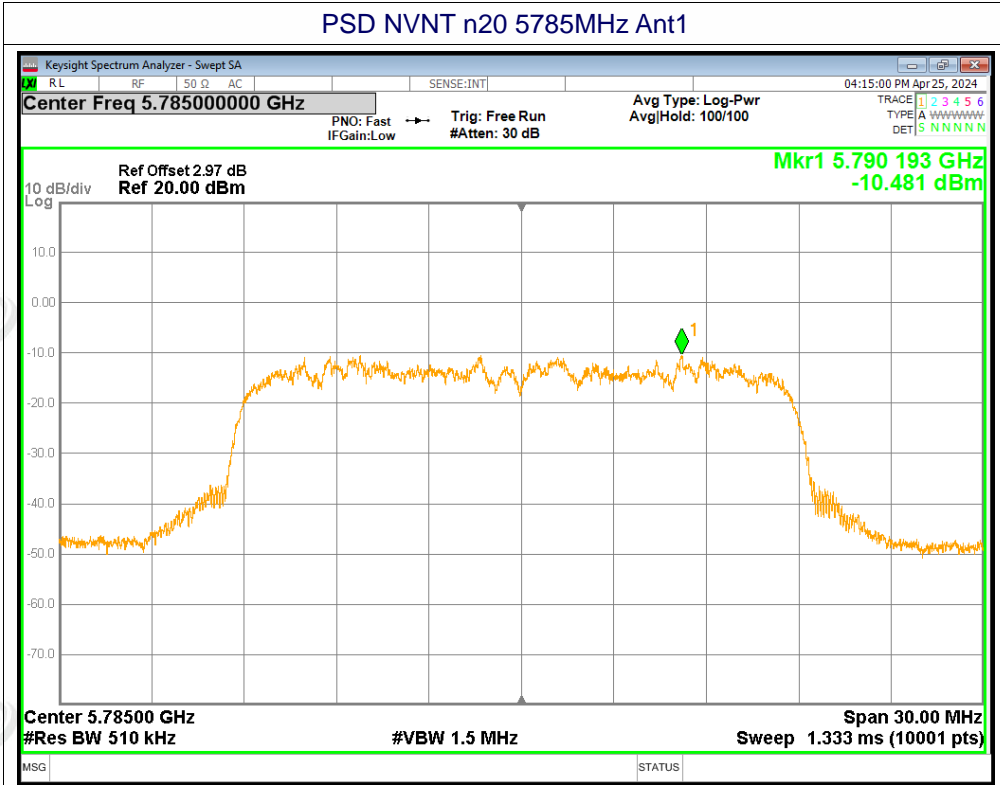


PSD NVNT n20 5745MHz Ant1

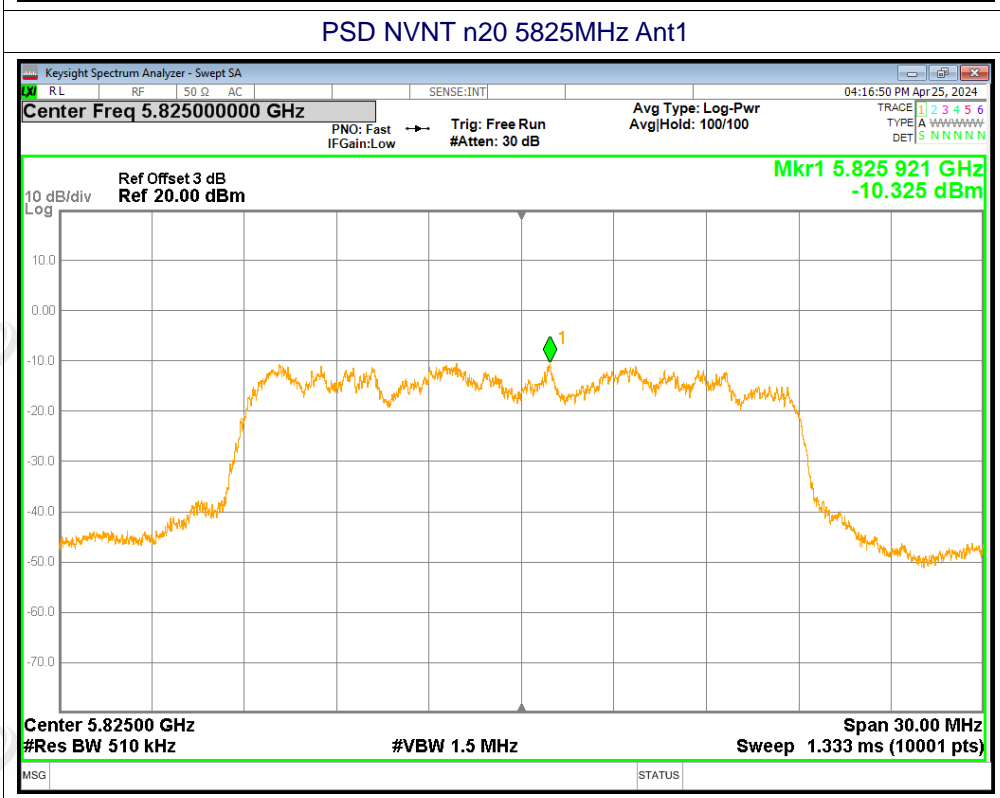




PSD NVNT n20 5785MHz Ant1



PSD NVNT n20 5825MHz Ant1





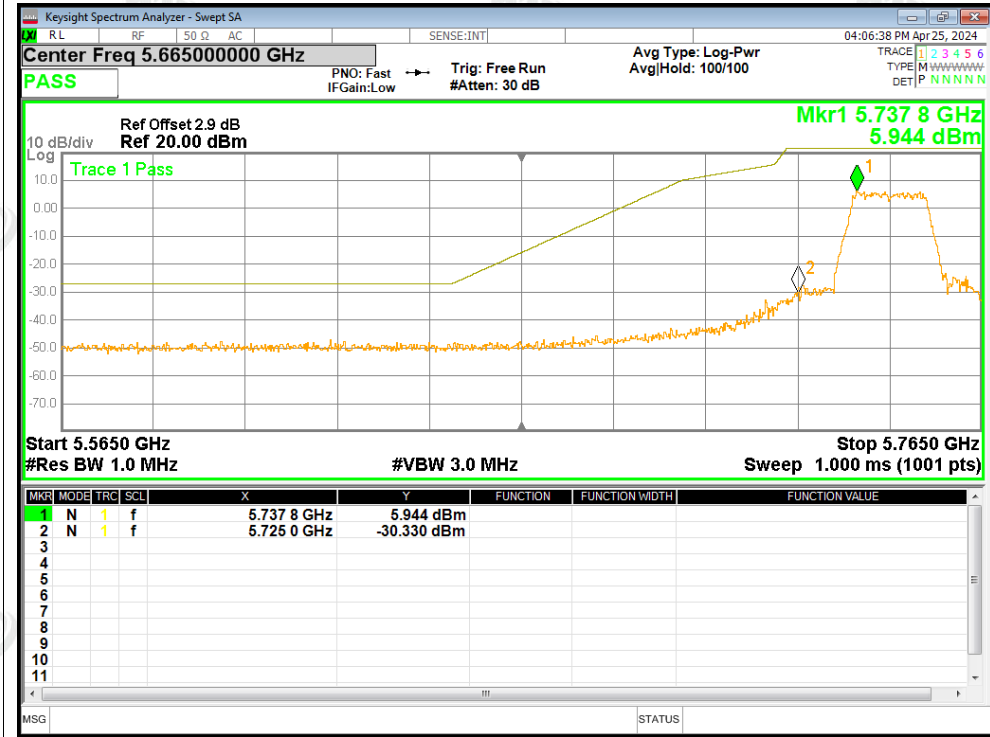
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**B6. Band Edge**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	Verdict
NVNT	a	5745	Ant1	-30.33	Pass
NVNT	a	5825	Ant1	-37.67	Pass
NVNT	n20	5745	Ant1	-28.03	Pass
NVNT	n20	5825	Ant1	-33.47	Pass

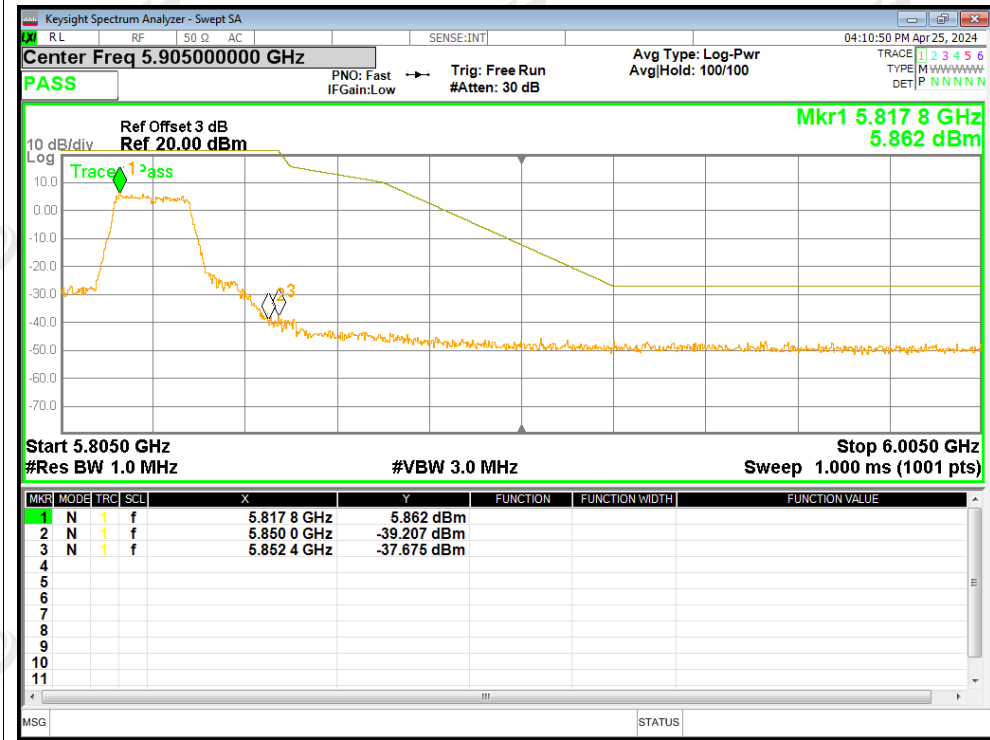


Test Graphs

Band Edge NVNT a 5745MHz Low Ant1

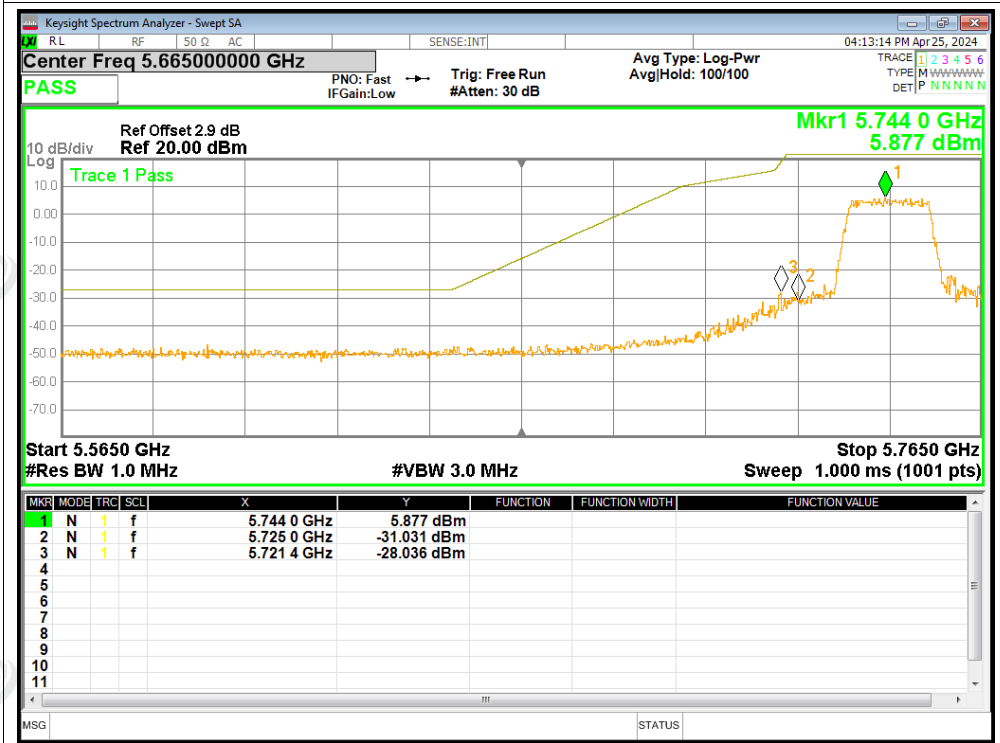


Band Edge NVNT a 5825MHz High Ant1

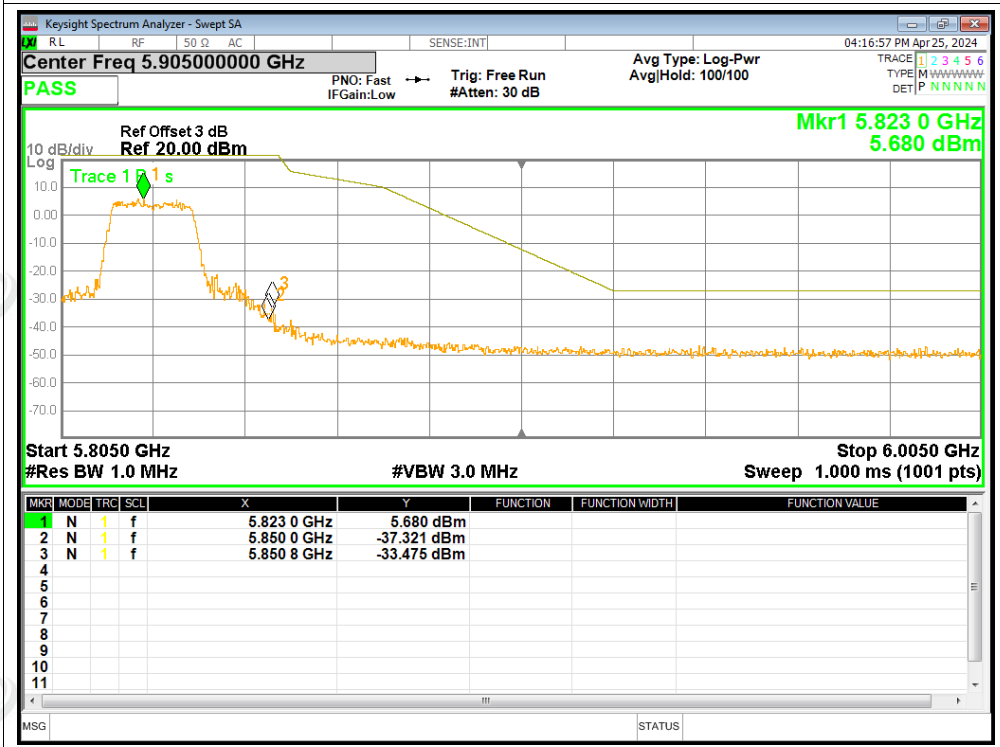




Band Edge NVNT n20 5745MHz Low Ant1



Band Edge NVNT n20 5825MHz High Ant1







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B7. Frequency Stability

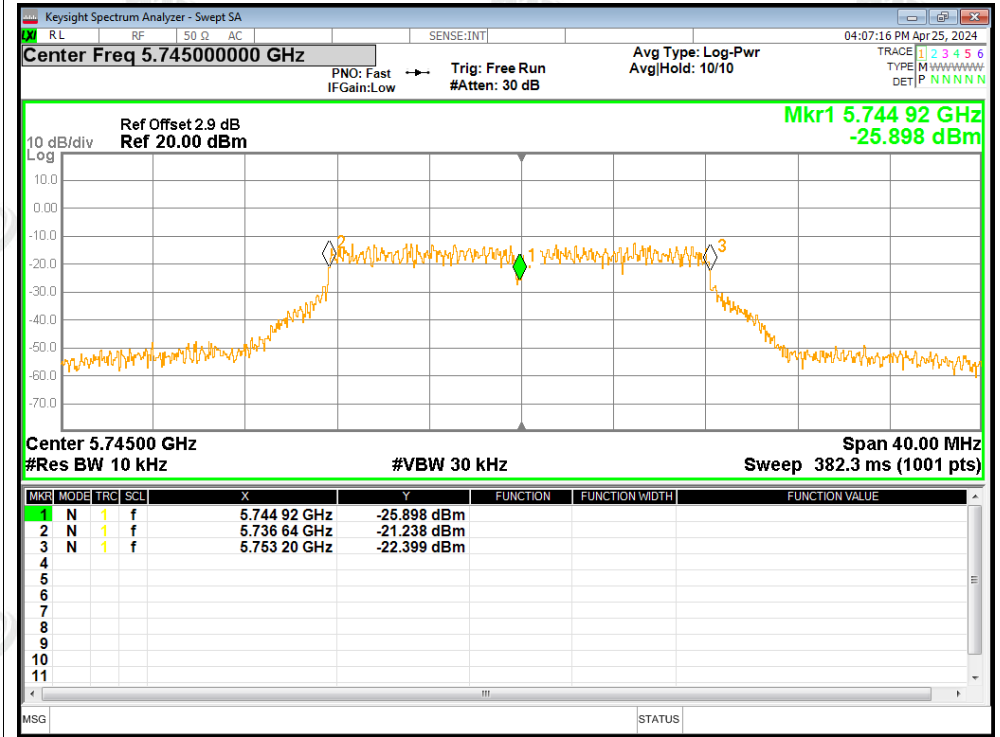
Mode	Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5745	5744.92	-80000	-13.93	Within 5745-5825MHz	Pass
a	5785	5784.92	-80000	-13.83		Pass
a	5825	5824.92	-80000	-13.73		Pass
n20	5745	5744.9	-100000	-17.41		Pass
n20	5785	5784.9	-100000	-17.29		Pass
n20	5825	5824.9	-100000	-17.17		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.

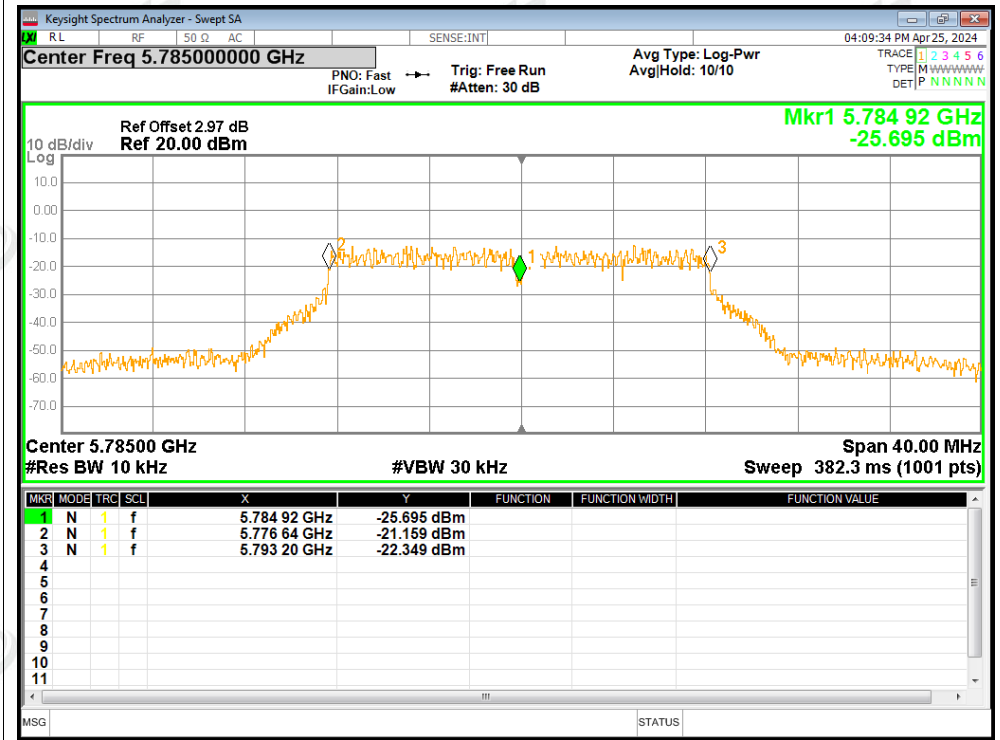


Test Graphs

Freq. Stability NVNT a 5745MHz Ant1

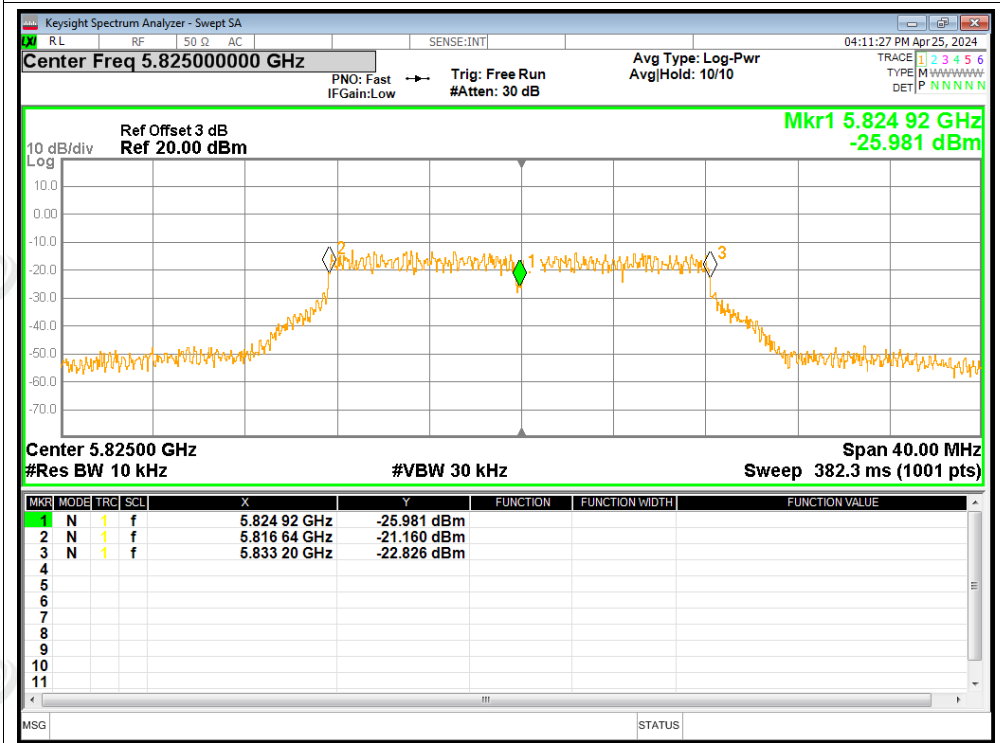


Freq. Stability NVNT a 5785MHz Ant1

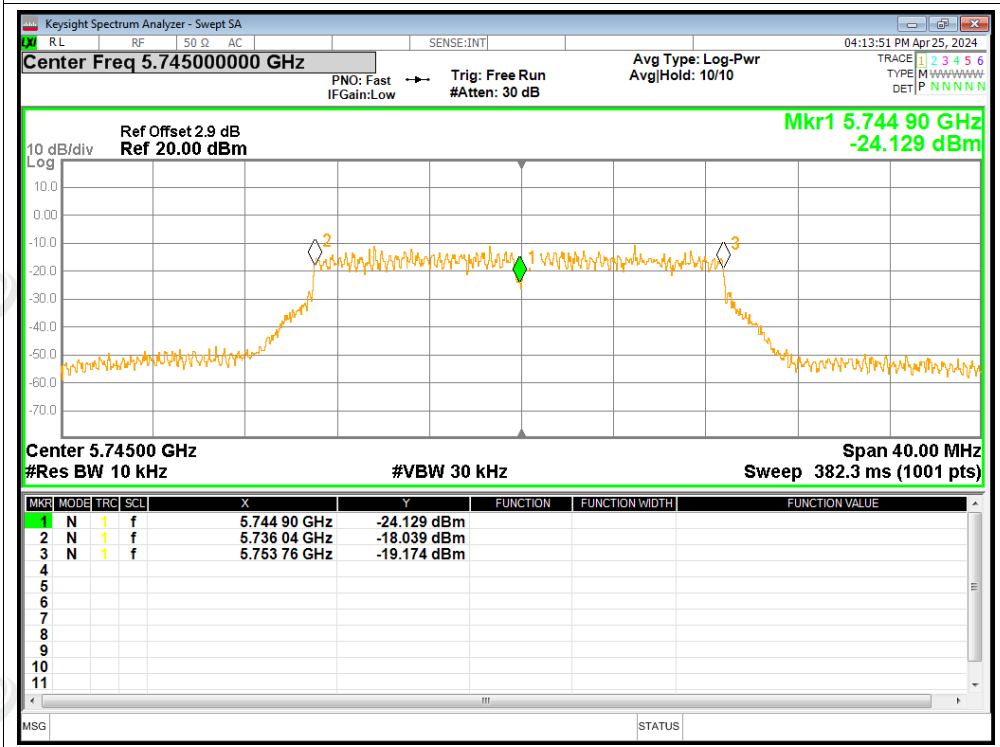




### Freq. Stability NVNT a 5825MHz Ant1

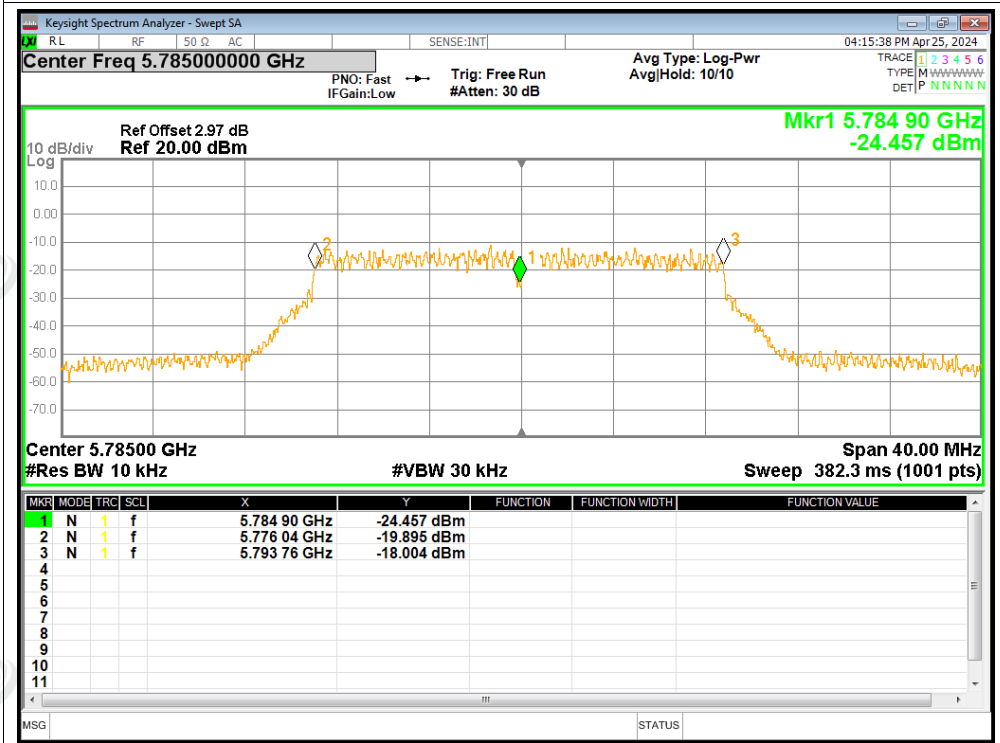


### Freq. Stability NVNT n20 5745MHz Ant1

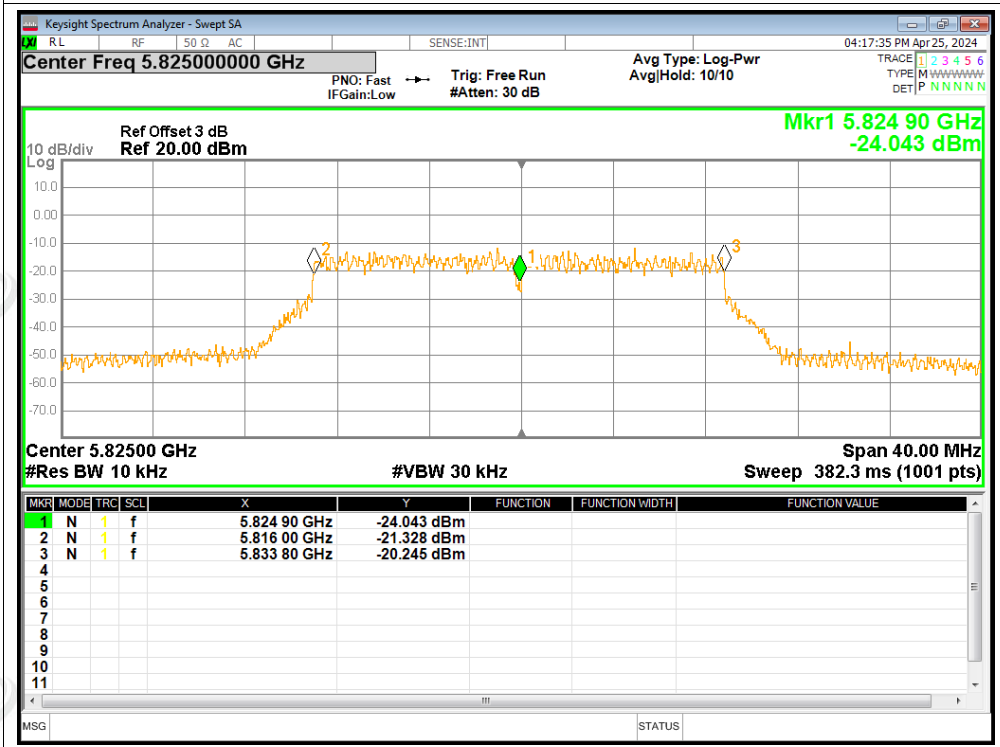




Freq. Stability NVNT n20 5785MHz Ant1



Freq. Stability NVNT n20 5825MHz Ant1



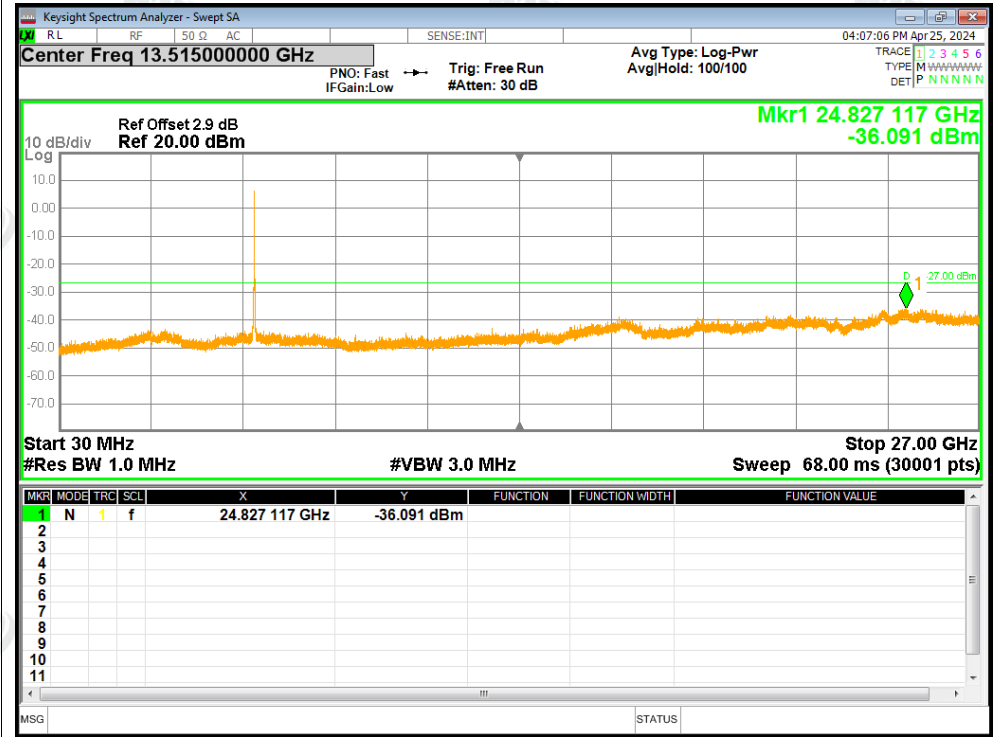
**ZHONGHAN****B8. Conducted RF Spurious Emission**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5745	Ant1	-36.09	-27	Pass
NVNT	a	5785	Ant1	-35.43	-27	Pass
NVNT	a	5825	Ant1	-35.72	-27	Pass
NVNT	n20	5745	Ant1	-35.53	-27	Pass
NVNT	n20	5785	Ant1	-34.69	-27	Pass
NVNT	n20	5825	Ant1	-35.58	-27	Pass

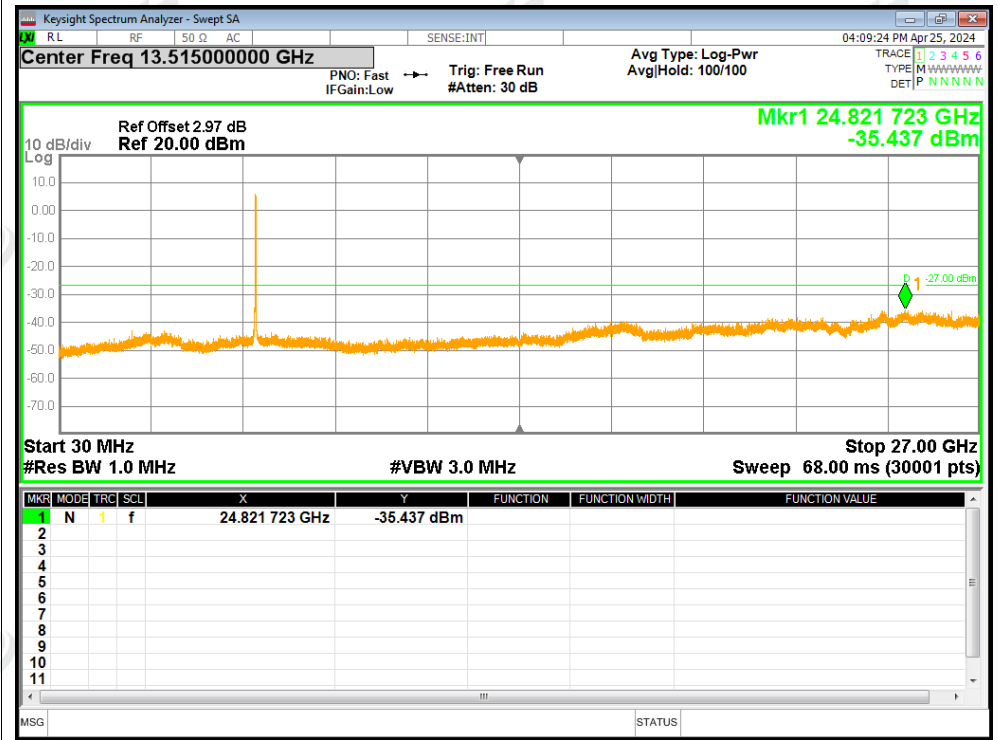


Test Graphs

Tx. Spurious NVNT a 5745MHz Ant1 Emission

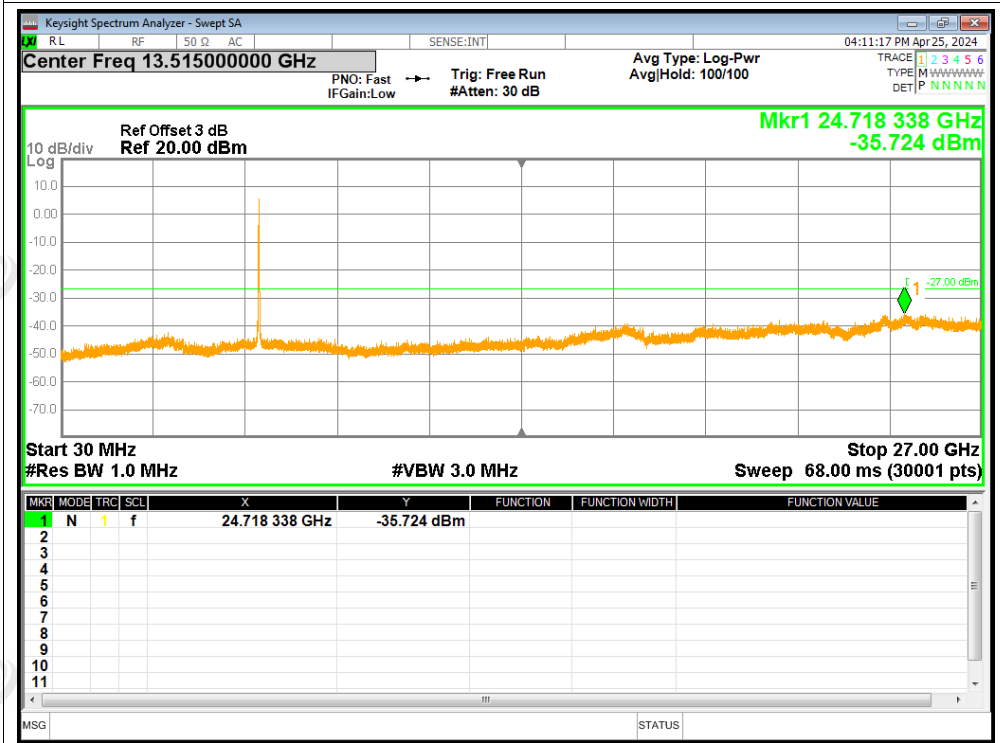


Tx. Spurious NVNT a 5785MHz Ant1 Emission

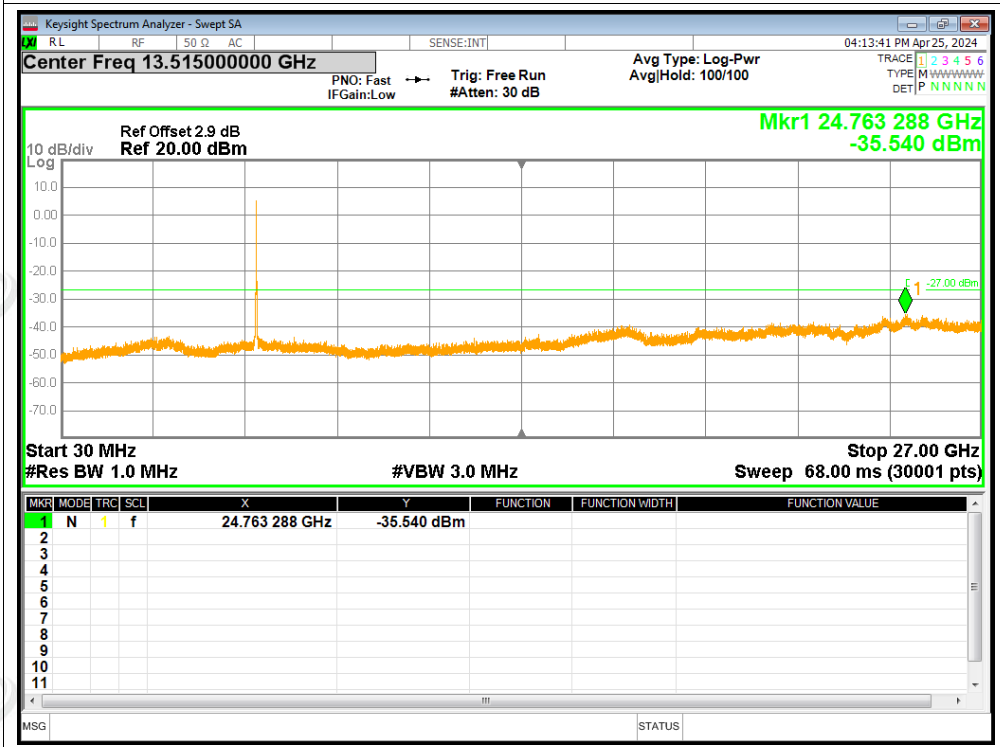




Tx. Spurious NVNT a 5825MHz Ant1 Emission



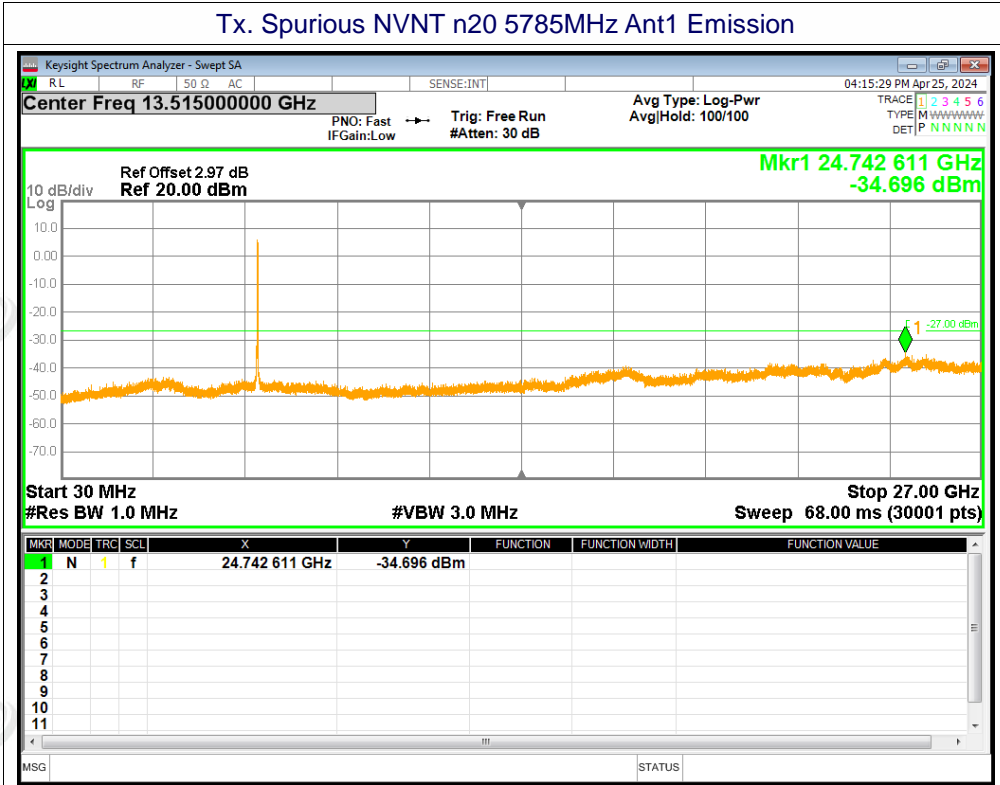
Tx. Spurious NVNT n20 5745MHz Ant1 Emission







Tx. Spurious NVNT n20 5785MHz Ant1 Emission



Tx. Spurious NVNT n20 5825MHz Ant1 Emission

