



Appendix B for 5.8GWIFI Test Data

Product Name: Portable Navigation Recorder

Test Model: A3073

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52%
ATM Pressure:	101.0 kPa
Test Engineer:	Kevin Yang
Supervised by:	Baret Wu





B1. Duty Cycle

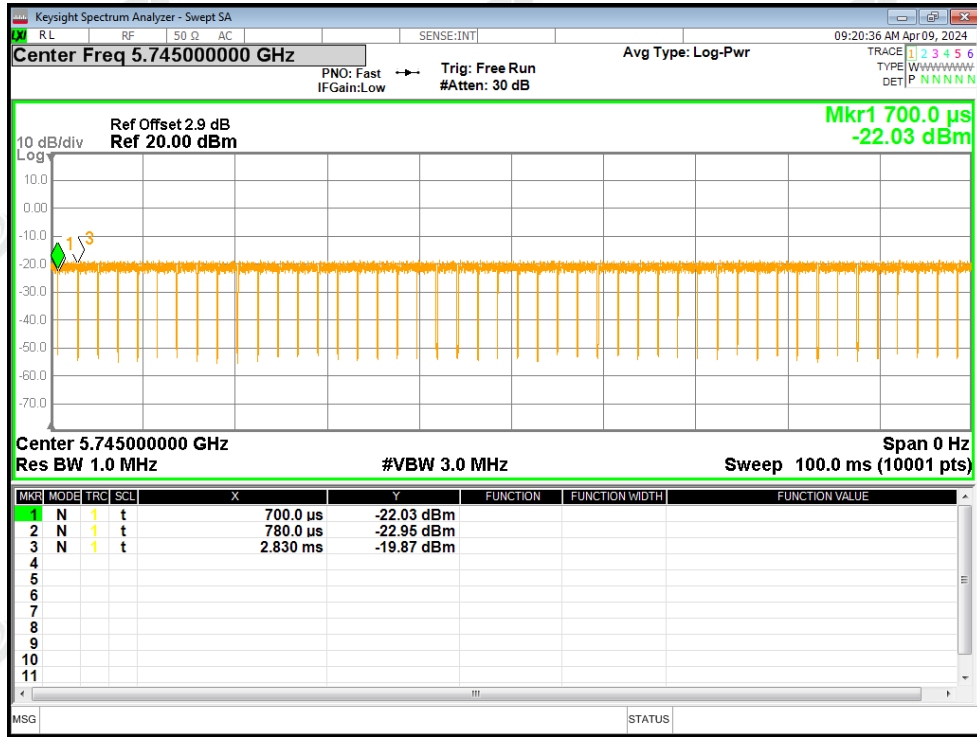
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5745	Ant1	96.24	0.17	0.49
NVNT	a	5785	Ant1	93.21	0.31	0.49
NVNT	a	5825	Ant1	91.96	0.36	0.49
NVNT	n20	5745	Ant1	96.95	0.13	0.52
NVNT	n20	5785	Ant1	96.46	0.16	0.52
NVNT	n20	5825	Ant1	91.39	0.39	0.52
NVNT	n40	5755	Ant1	0	0	
NVNT	n40	5795	Ant1	33.33	4.77	100



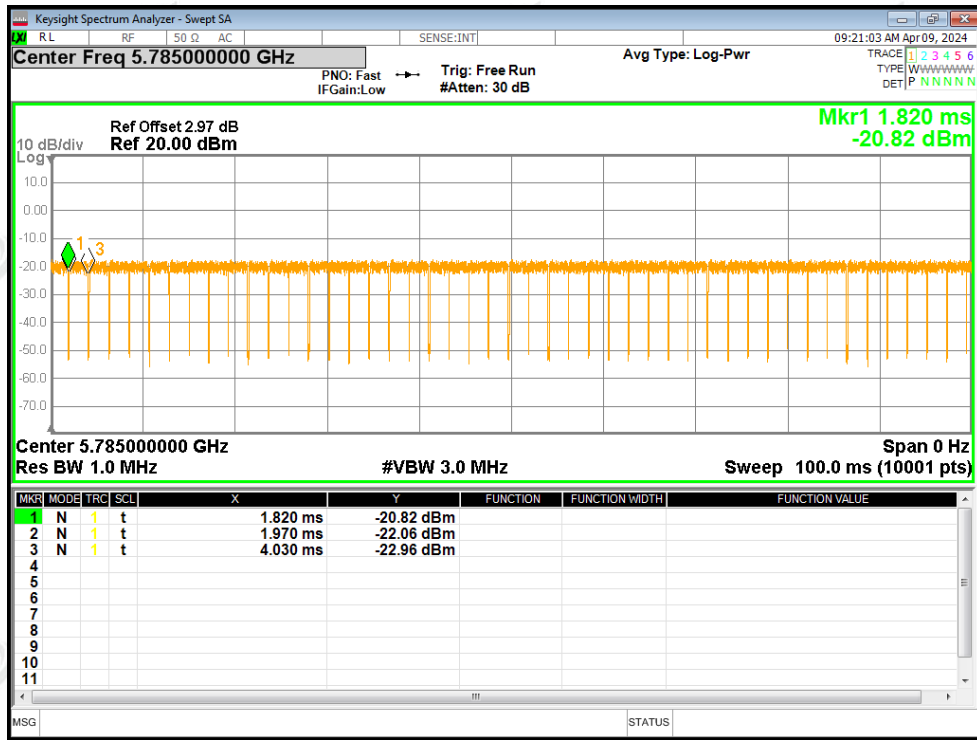


Test Graphs

Duty Cycle NVNT a 5745MHz Ant1

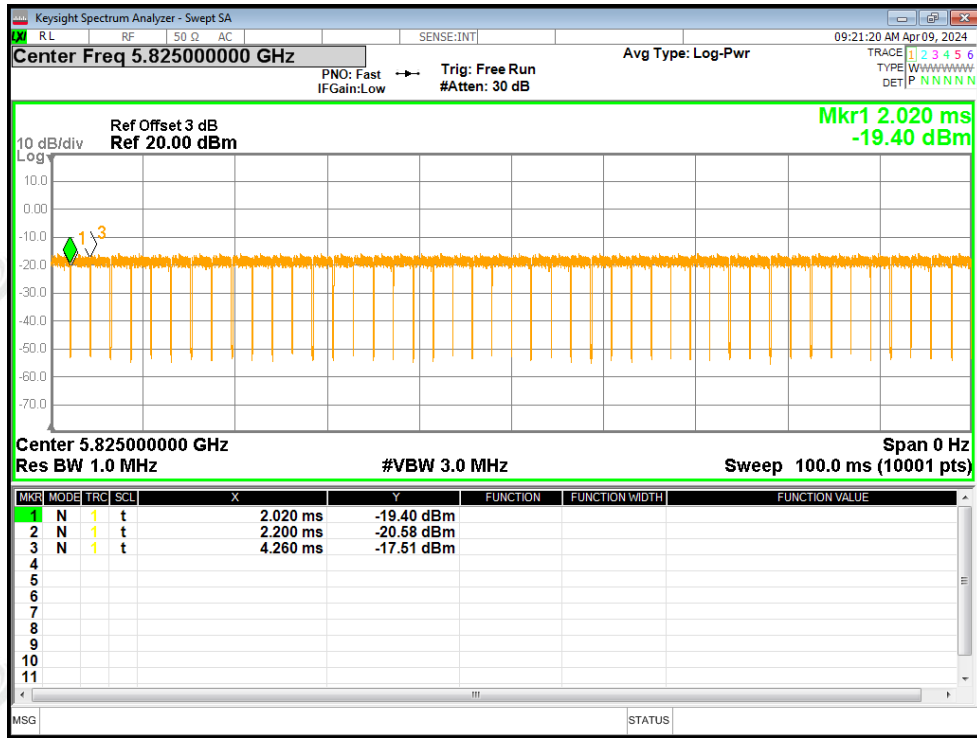


Duty Cycle NVNT a 5785MHz Ant1

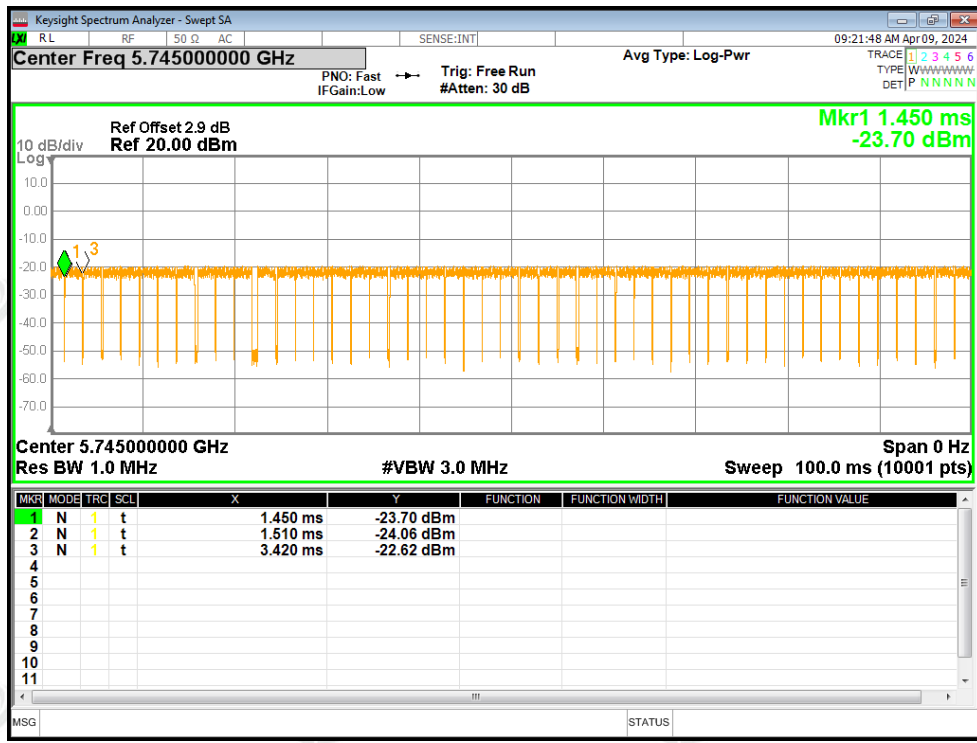




Duty Cycle NVNT a 5825MHz Ant1

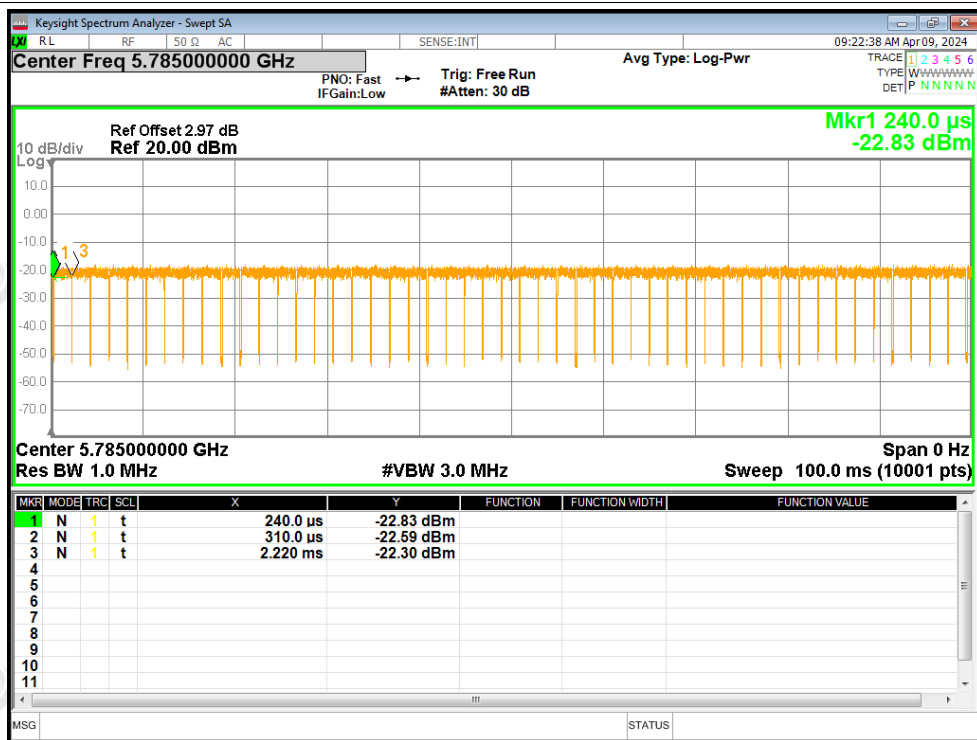


Duty Cycle NVNT n20 5745MHz Ant1

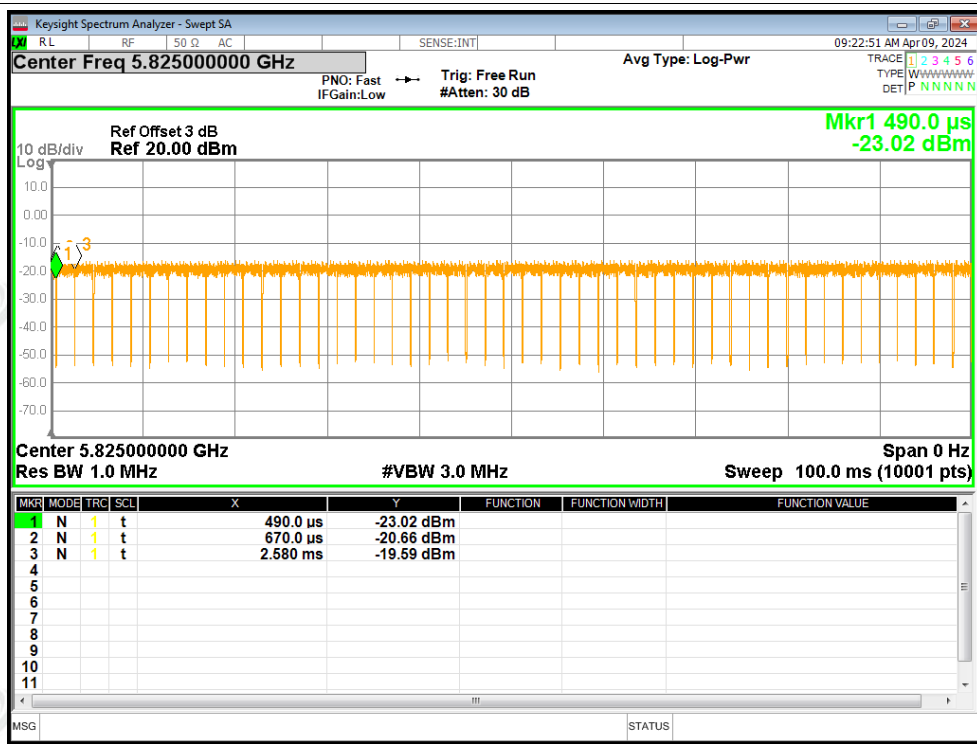




Duty Cycle NVNT n20 5785MHz Ant1

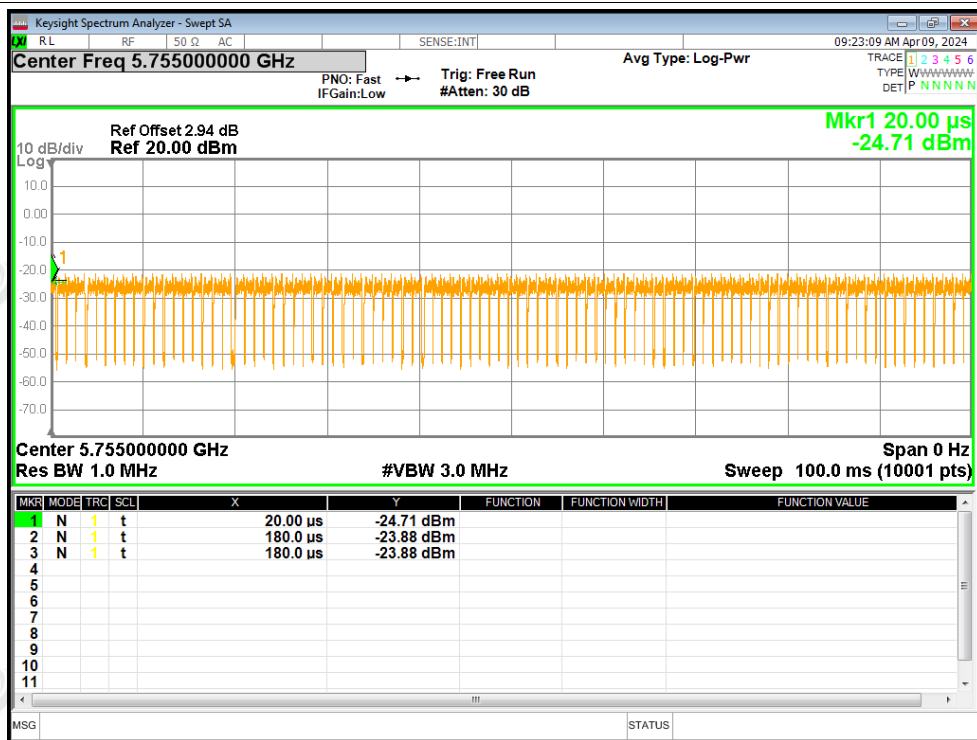


Duty Cycle NVNT n20 5825MHz Ant1

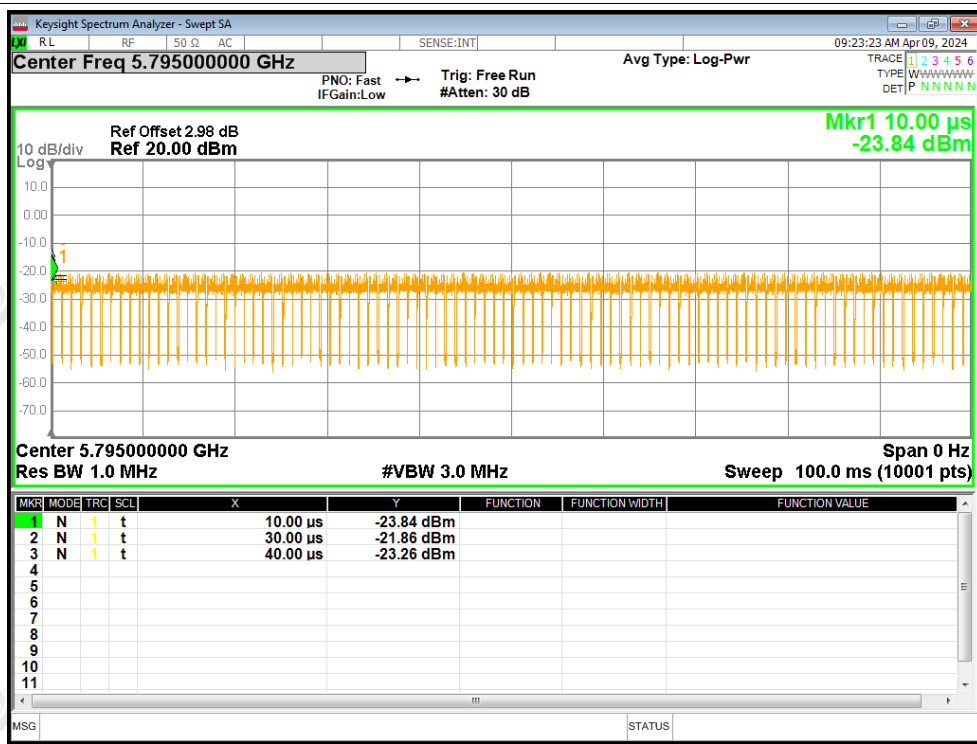




Duty Cycle NVNT n40 5755MHz Ant1



Duty Cycle NVNT n40 5795MHz Ant1



**ZHONGHAN****B2. Maximum Conducted Output Power**

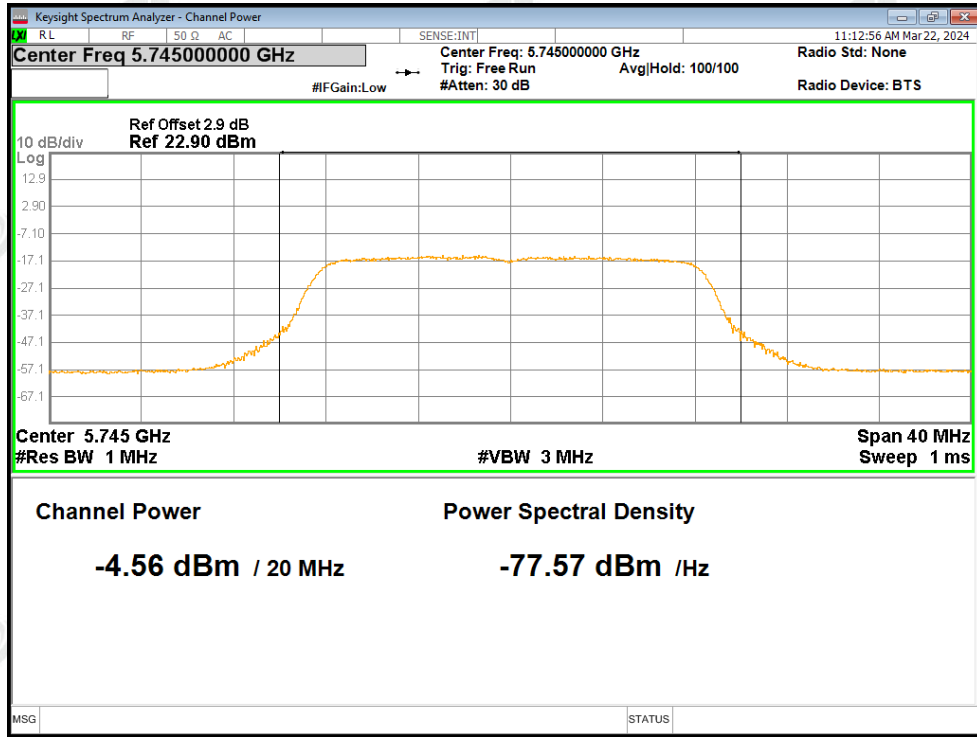
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-4.1	30	Pass
NVNT	a	5785	Ant1	-4.13	30	Pass
NVNT	a	5825	Ant1	-4.36	30	Pass
NVNT	n20	5745	Ant1	-3.99	30	Pass
NVNT	n20	5785	Ant1	-3.7	30	Pass
NVNT	n20	5825	Ant1	-4.34	30	Pass
NVNT	n40	5755	Ant1	-2.18	30	Pass
NVNT	n40	5795	Ant1	-4.32	30	Pass



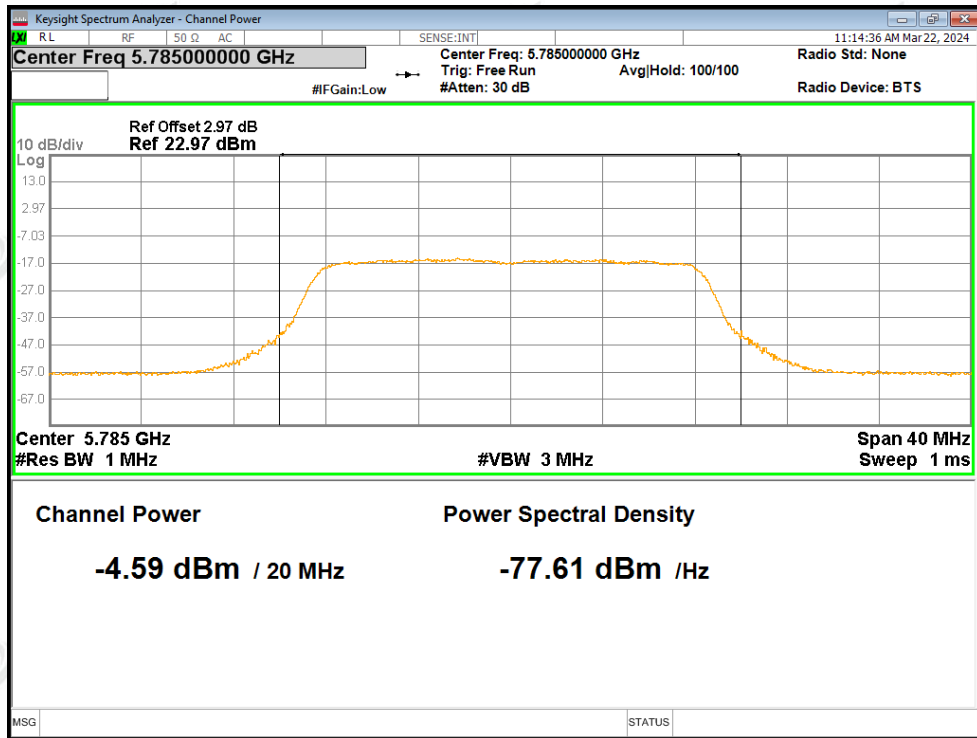


Test Graphs

Power NVNT a 5745MHz Ant1

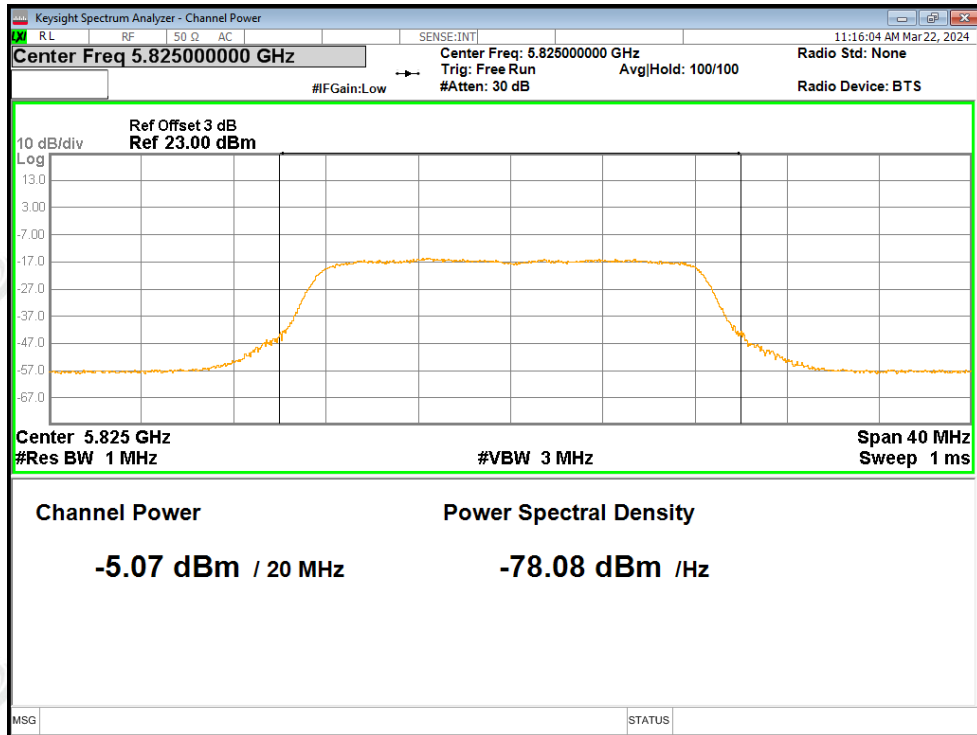


Power NVNT a 5785MHz Ant1

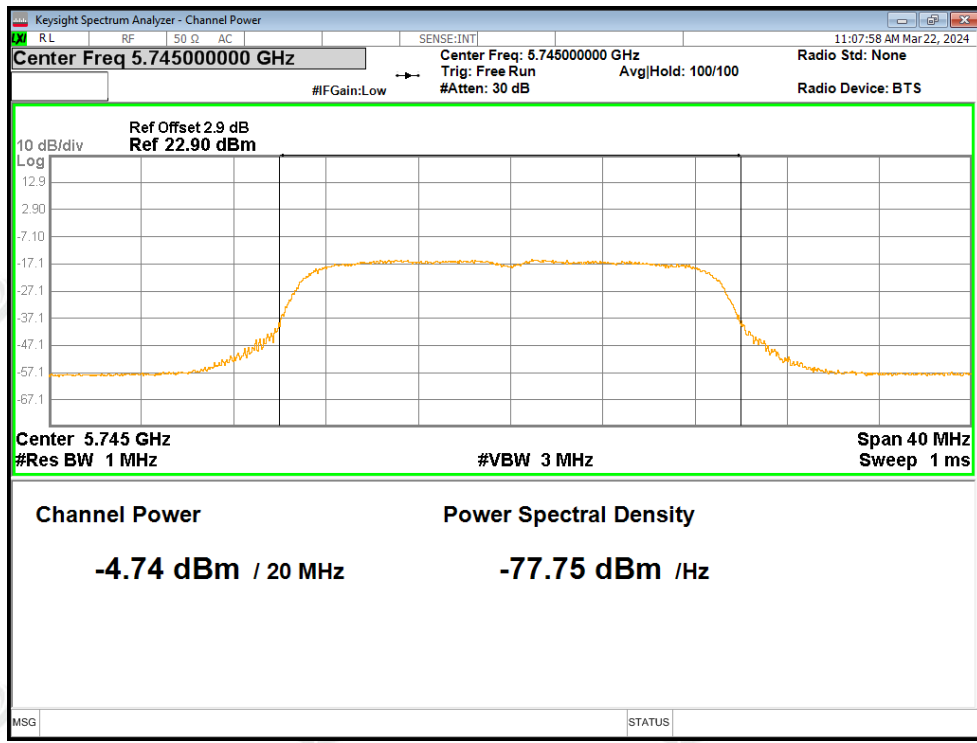




Power NVNT a 5825MHz Ant1

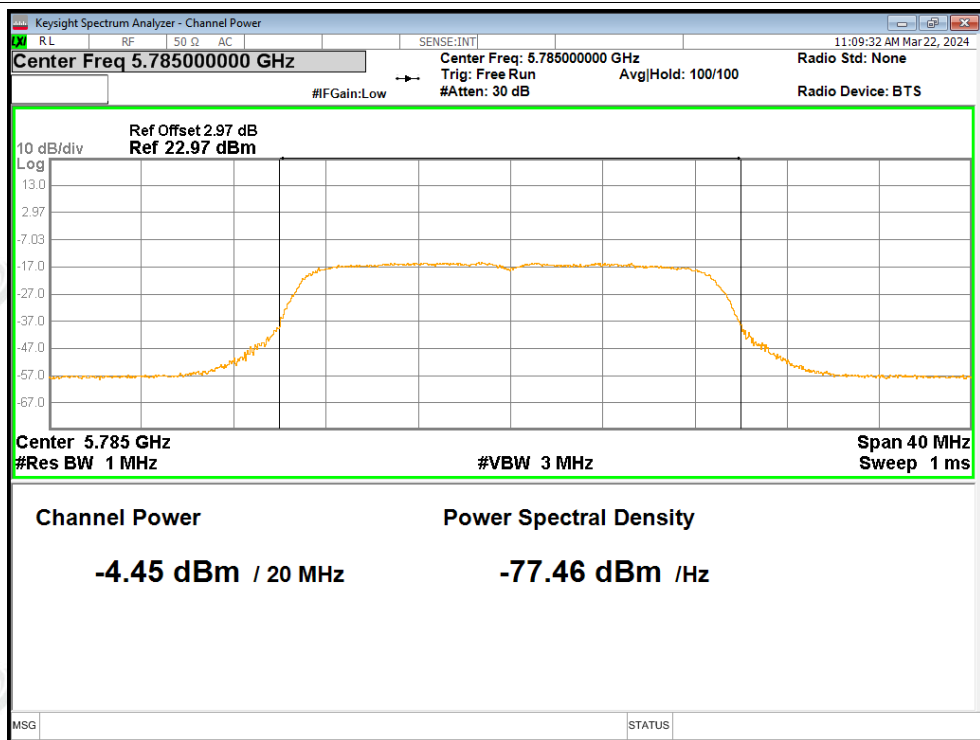


Power NVNT n20 5745MHz Ant1

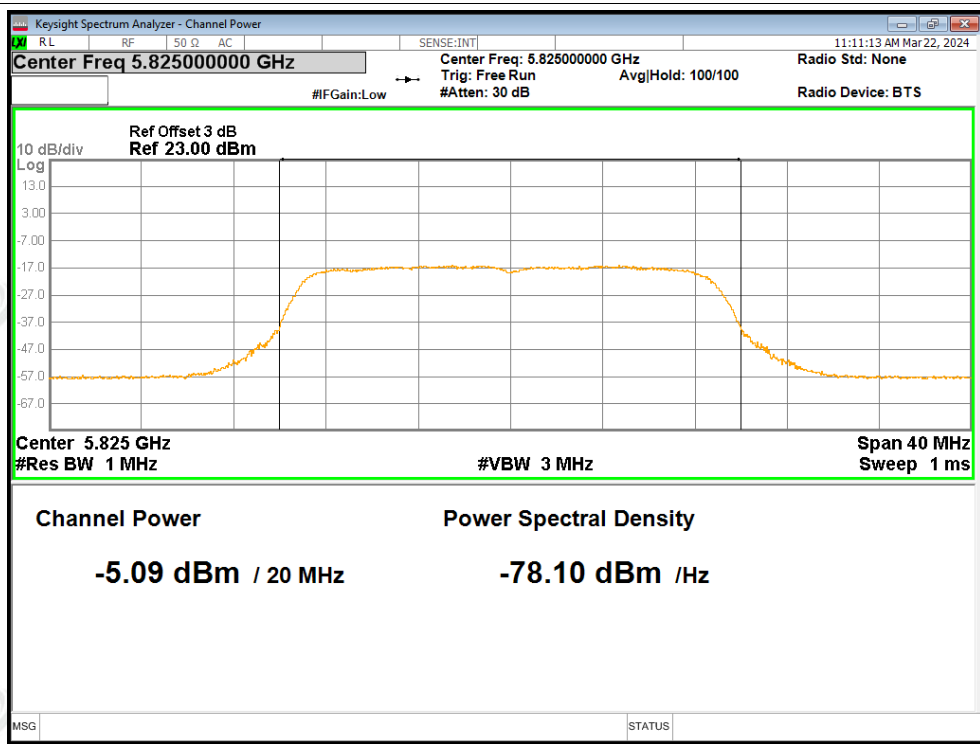




Power NVNT n20 5785MHz Ant1

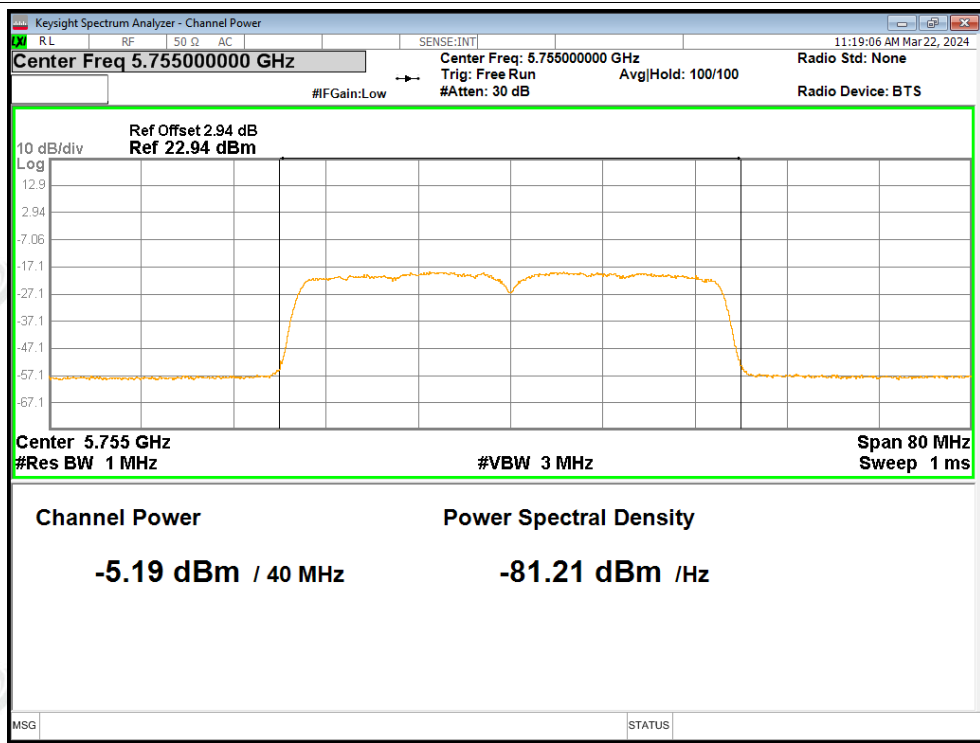


Power NVNT n20 5825MHz Ant1

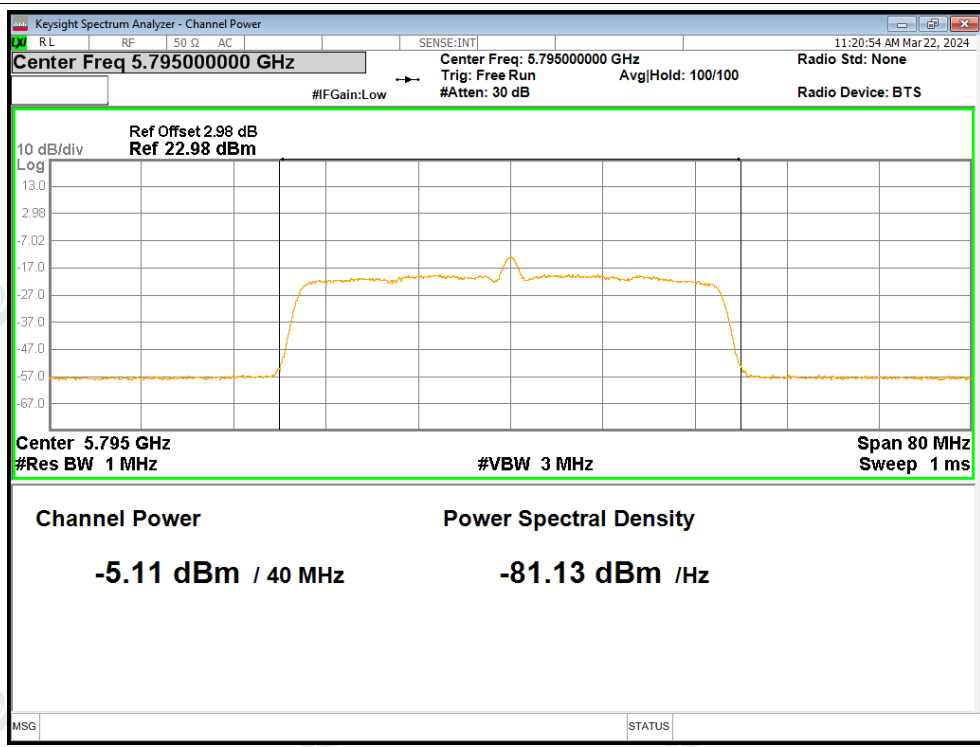




Power NVNT n40 5755MHz Ant1



Power NVNT n40 5795MHz Ant1





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B3. -6dB Bandwidth

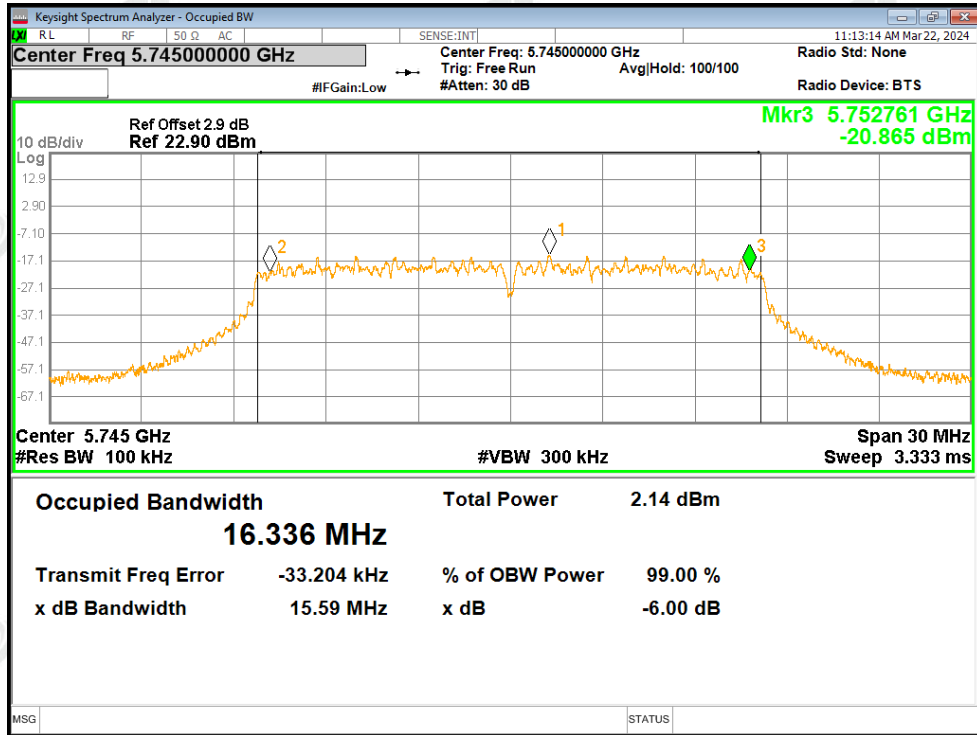
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	15.589	0.5	Pass
NVNT	a	5785	Ant1	15.661	0.5	Pass
NVNT	a	5825	Ant1	16.337	0.5	Pass
NVNT	n20	5745	Ant1	16.522	0.5	Pass
NVNT	n20	5785	Ant1	16.533	0.5	Pass
NVNT	n20	5825	Ant1	17.321	0.5	Pass
NVNT	n40	5755	Ant1	35.13	0.5	Pass
NVNT	n40	5795	Ant1	20.022	0.5	Pass



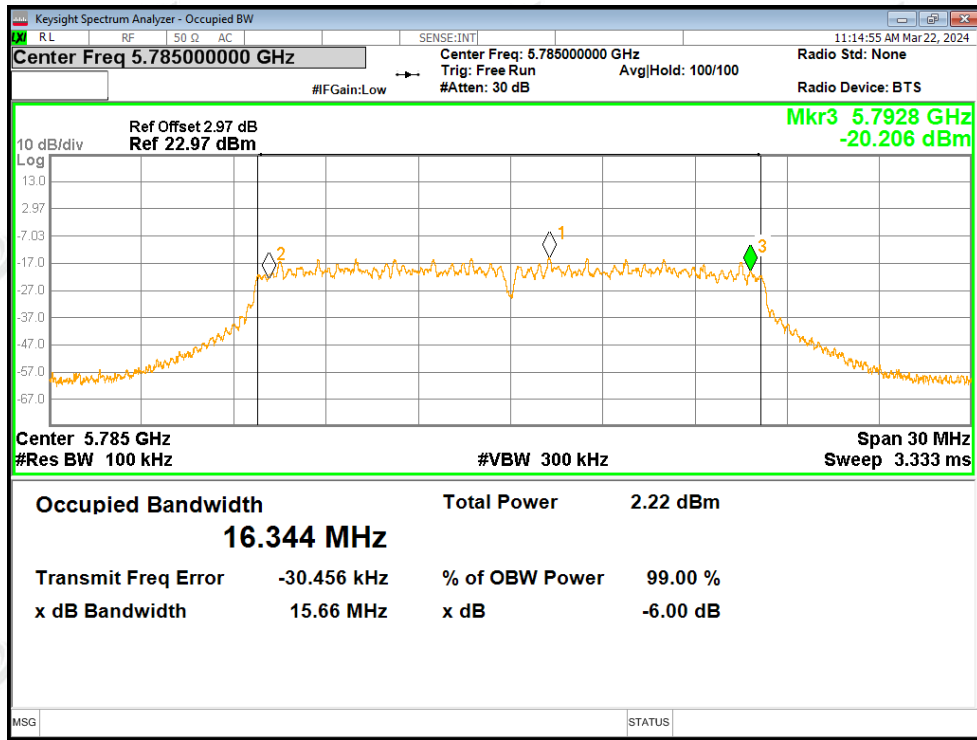


Test Graphs

-6dB Bandwidth NVNT a 5745MHz Ant1

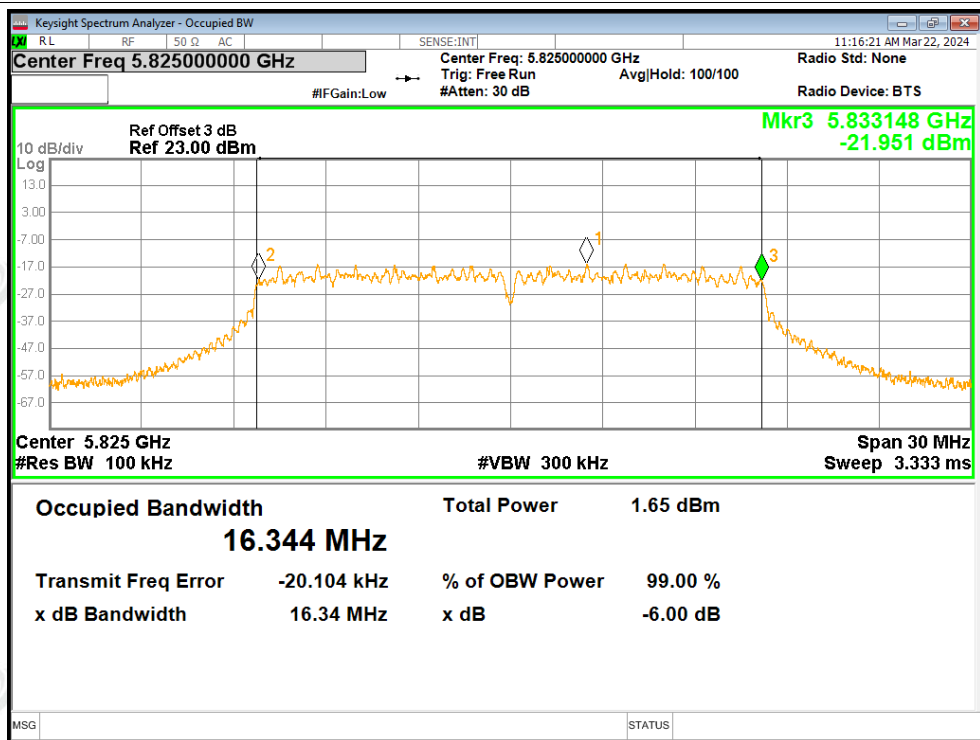


-6dB Bandwidth NVNT a 5785MHz Ant1

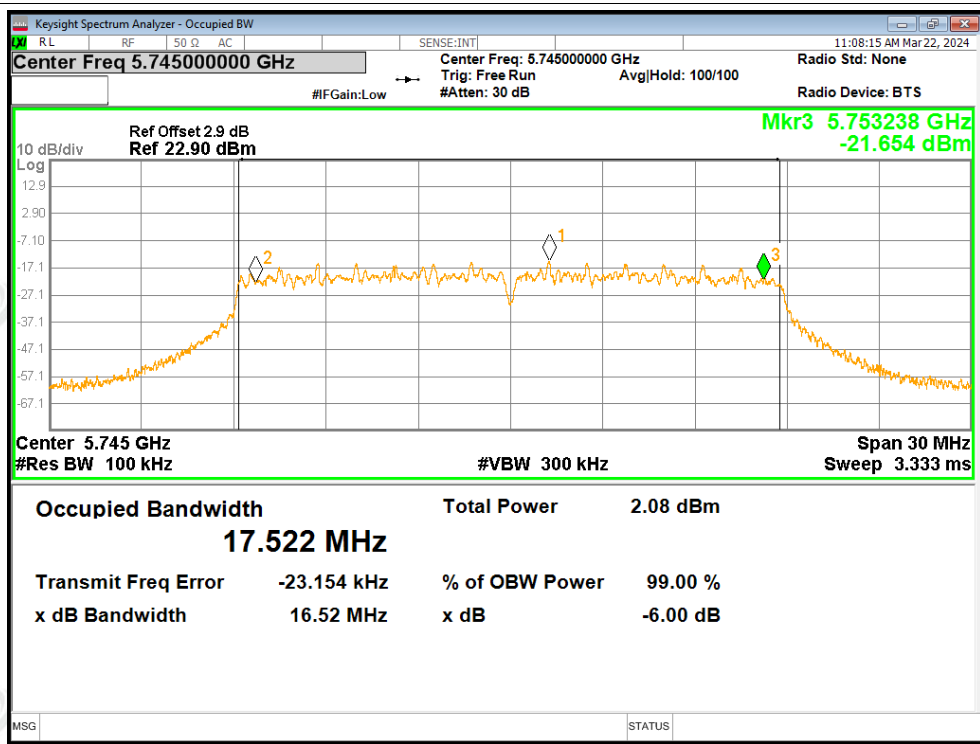




-6dB Bandwidth NVNT a 5825MHz Ant1



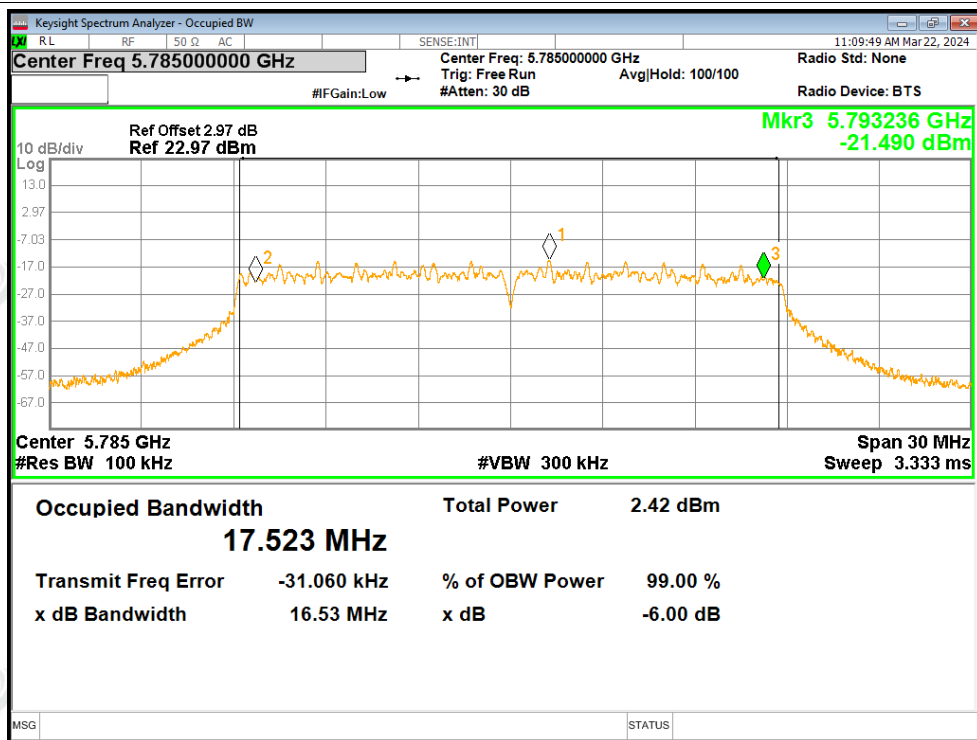
-6dB Bandwidth NVNT n20 5745MHz Ant1



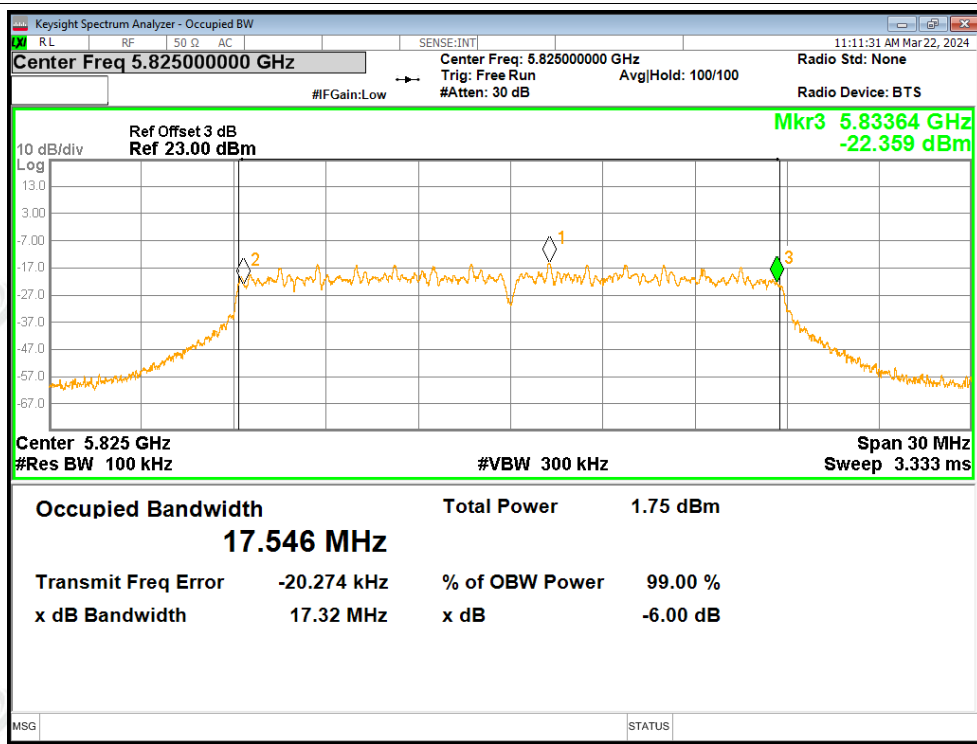


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-6dB Bandwidth NVNT n20 5785MHz Ant1



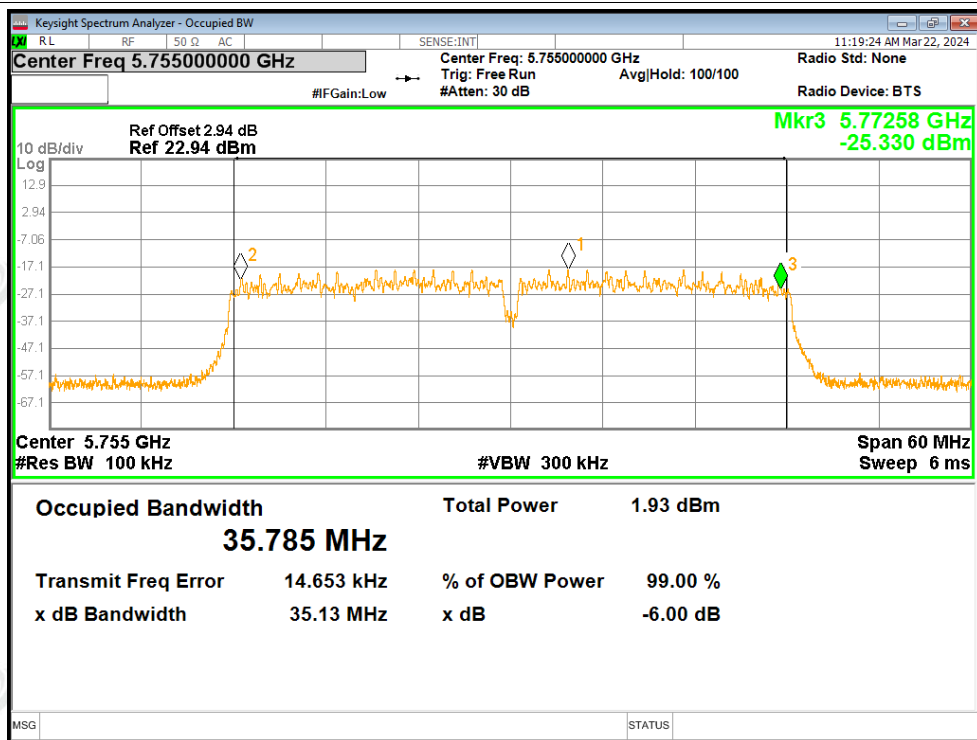
-6dB Bandwidth NVNT n20 5825MHz Ant1



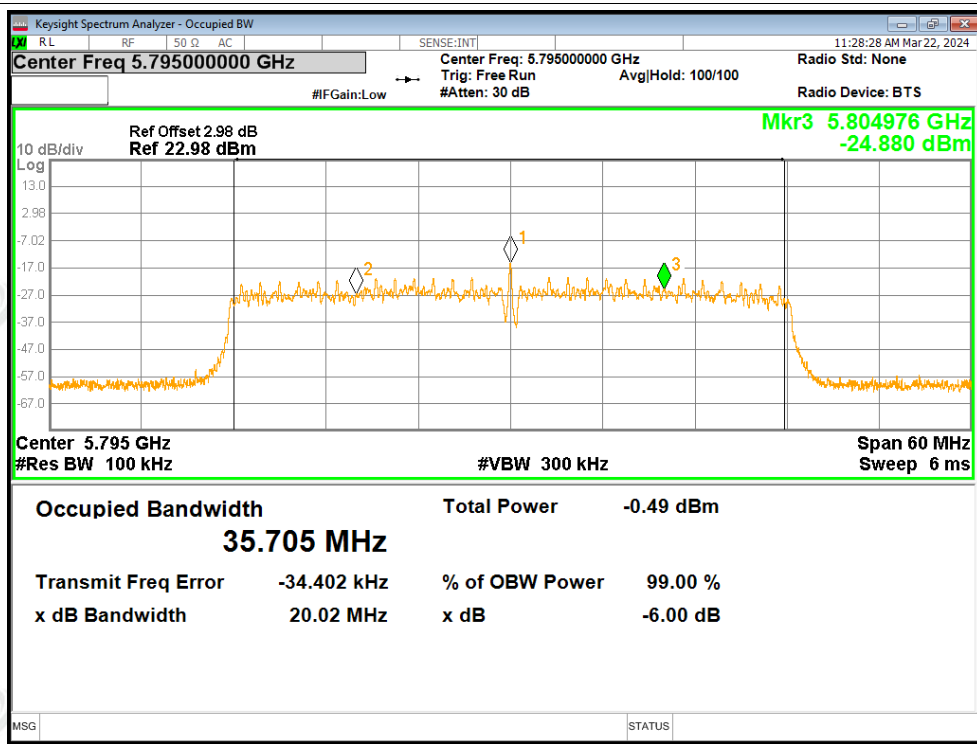


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-6dB Bandwidth NVNT n40 5755MHz Ant1



-6dB Bandwidth NVNT n40 5795MHz Ant1



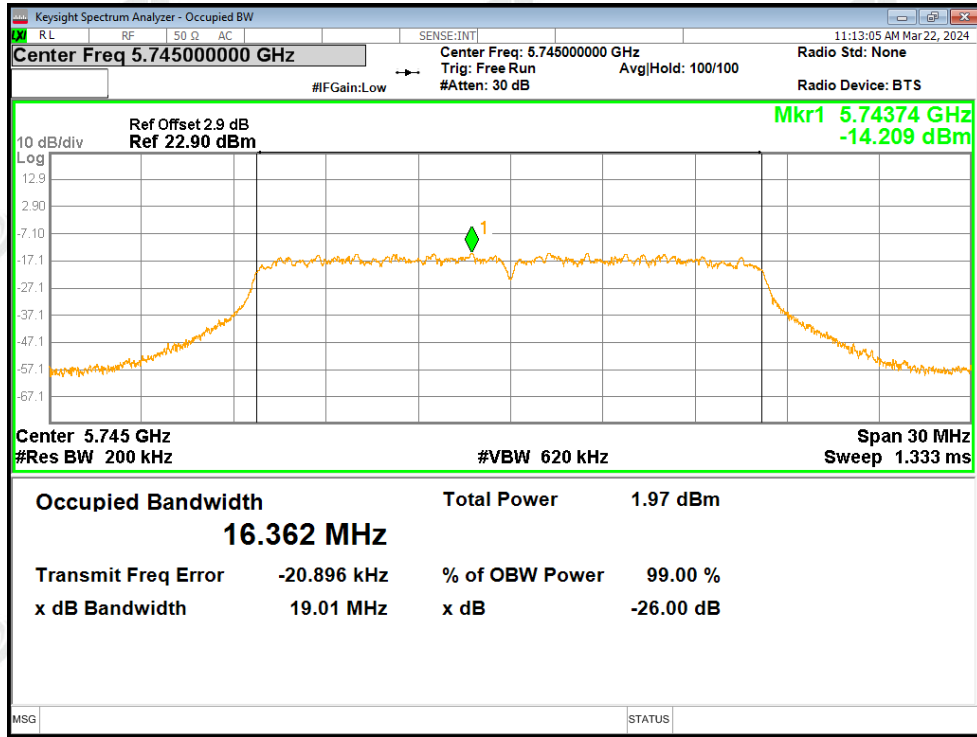
**ZHONGHAN****B4. Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.362
NVNT	a	5785	Ant1	16.375
NVNT	a	5825	Ant1	16.39
NVNT	n20	5745	Ant1	17.558
NVNT	n20	5785	Ant1	17.607
NVNT	n20	5825	Ant1	17.638
NVNT	n40	5755	Ant1	35.857
NVNT	n40	5795	Ant1	35.801

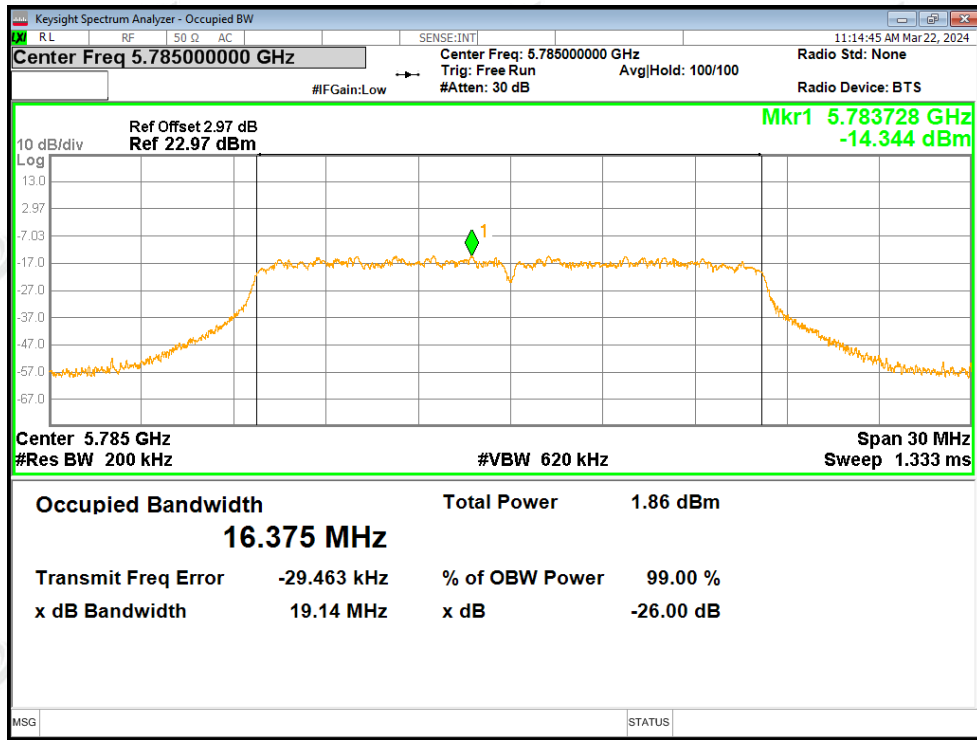


Test Graphs

OBW NVNT a 5745MHz Ant1

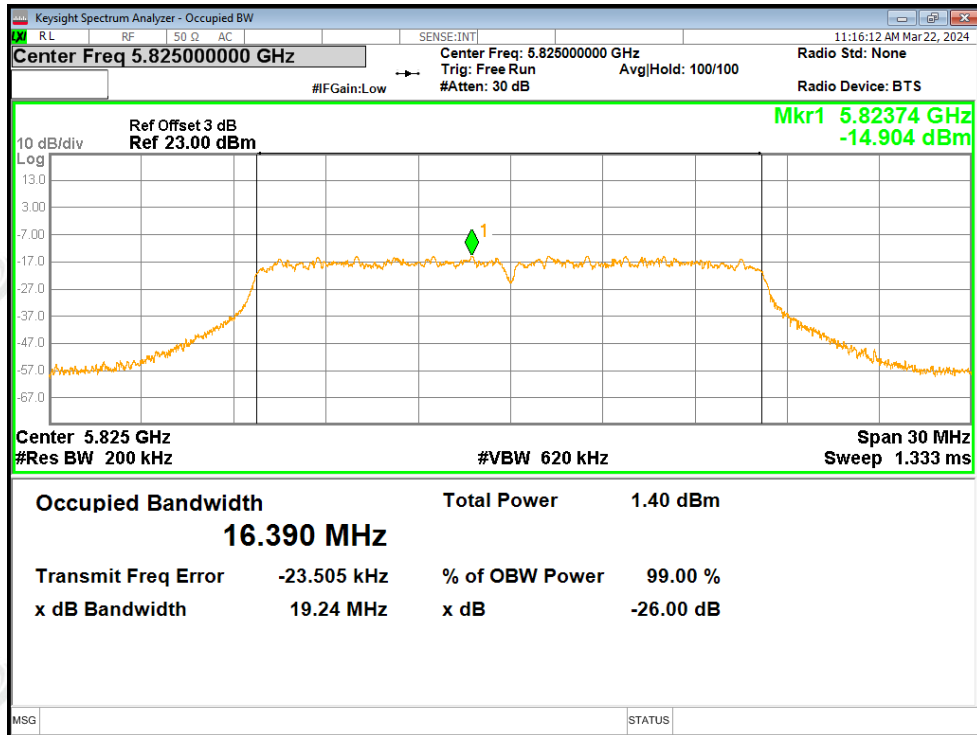


OBW NVNT a 5785MHz Ant1

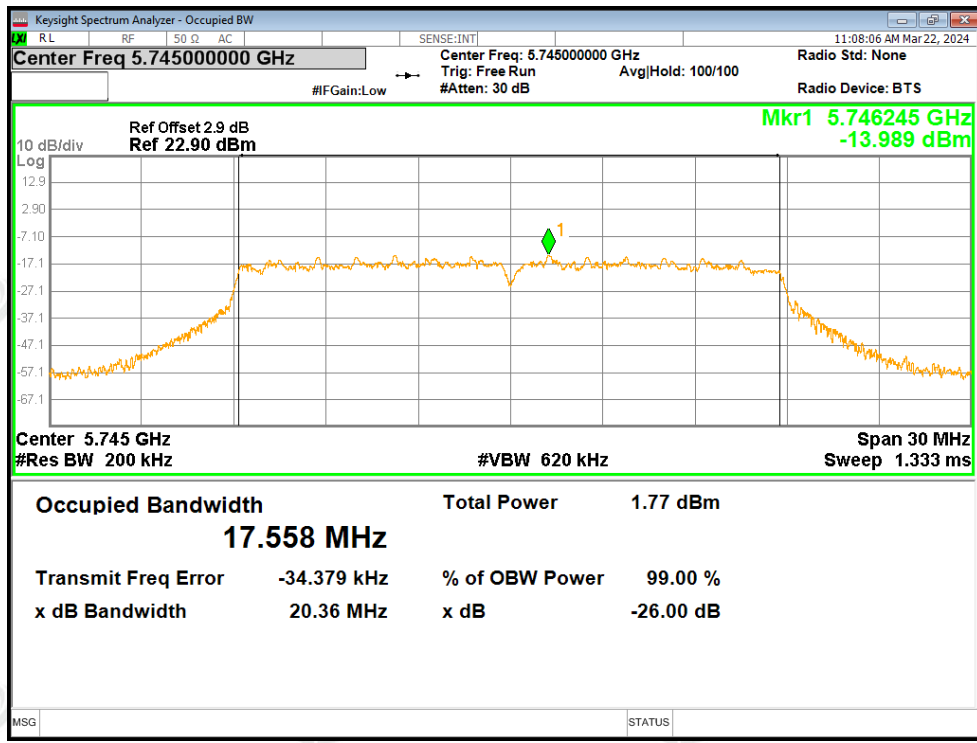




OBW NVNT a 5825MHz Ant1



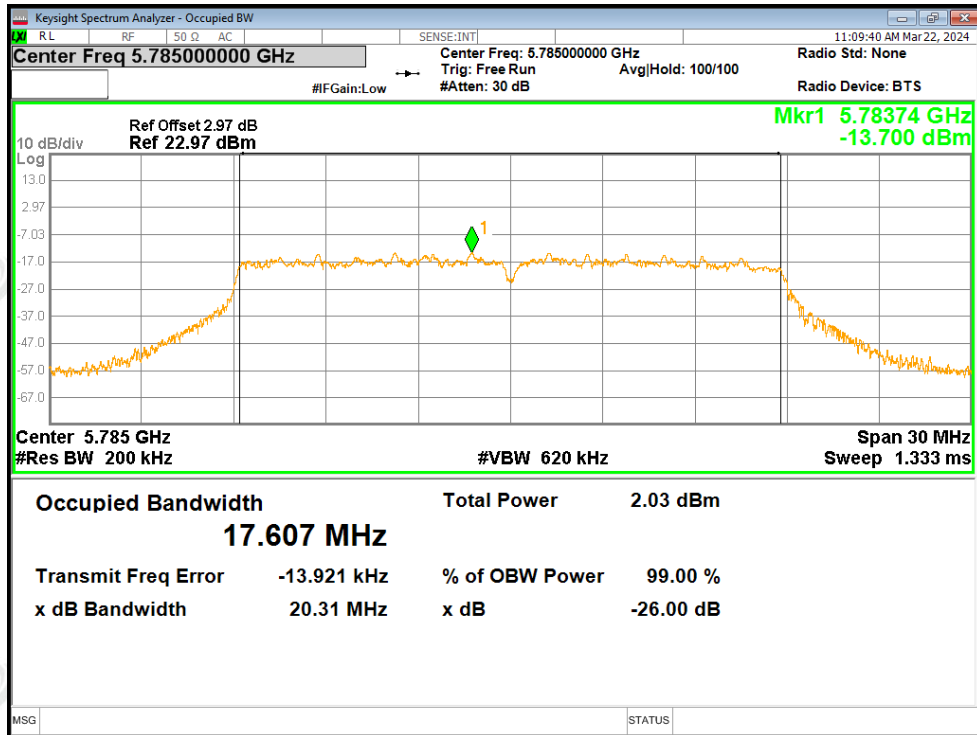
OBW NVNT n20 5745MHz Ant1



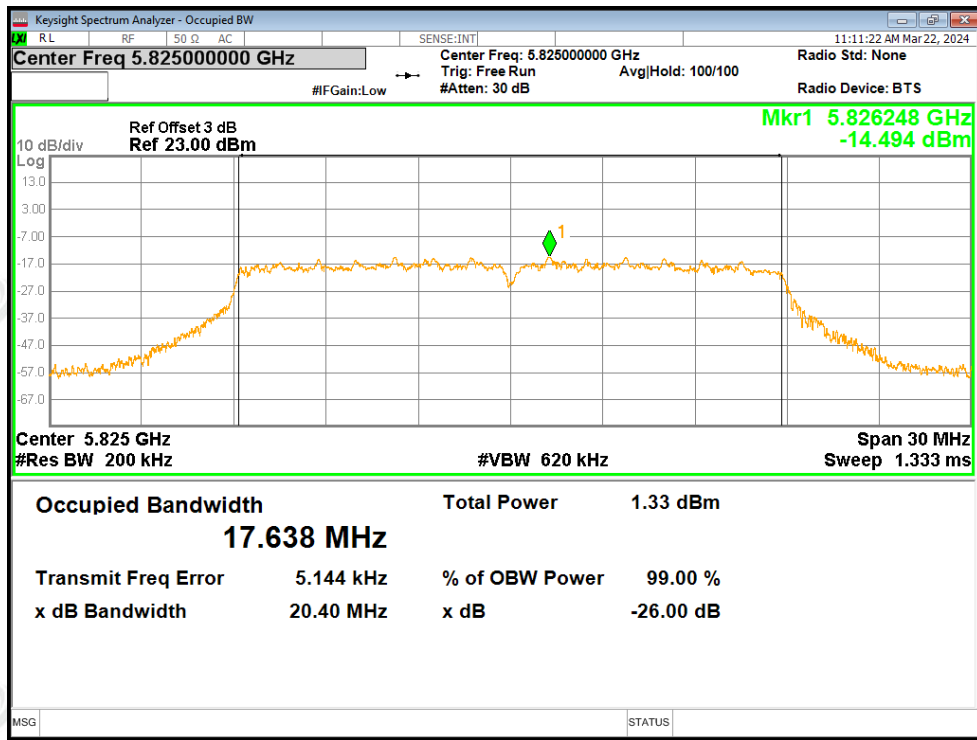


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OBW NVNT n20 5785MHz Ant1

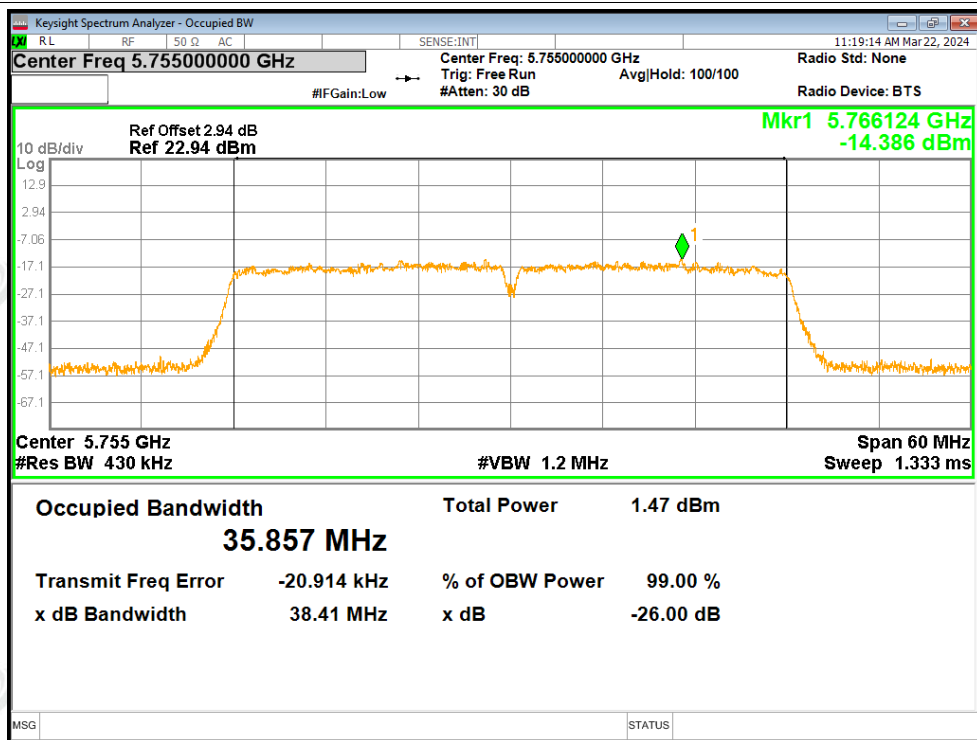


OBW NVNT n20 5825MHz Ant1

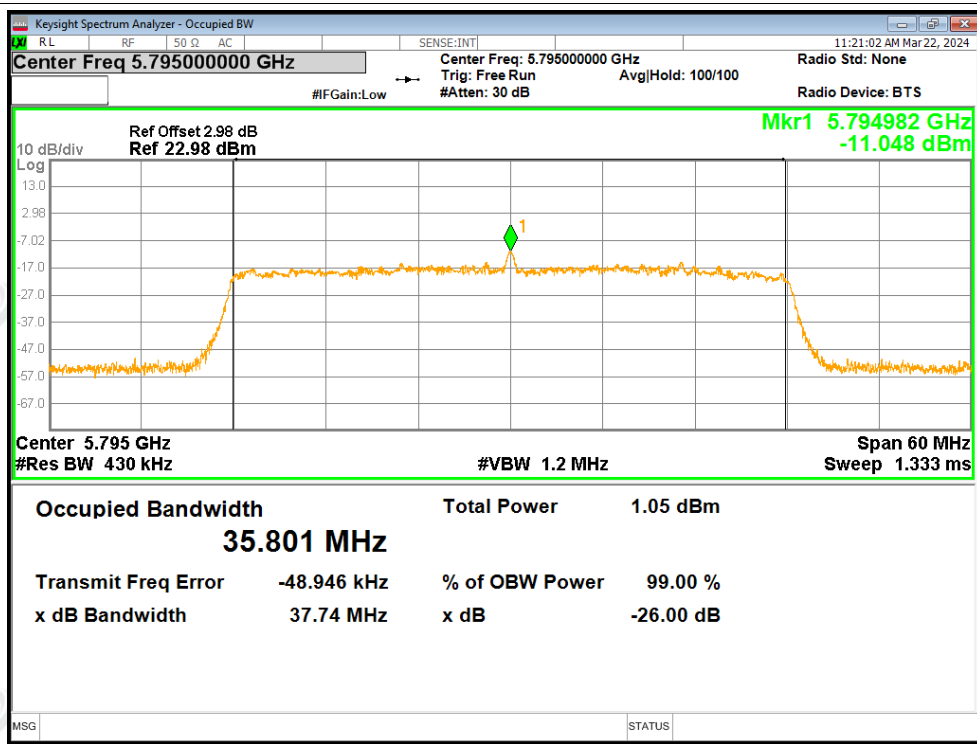




OBW NVNT n40 5755MHz Ant1



OBW NVNT n40 5795MHz Ant1



**ZHONGHAN****B5. Maximum Power Spectral Density Level**

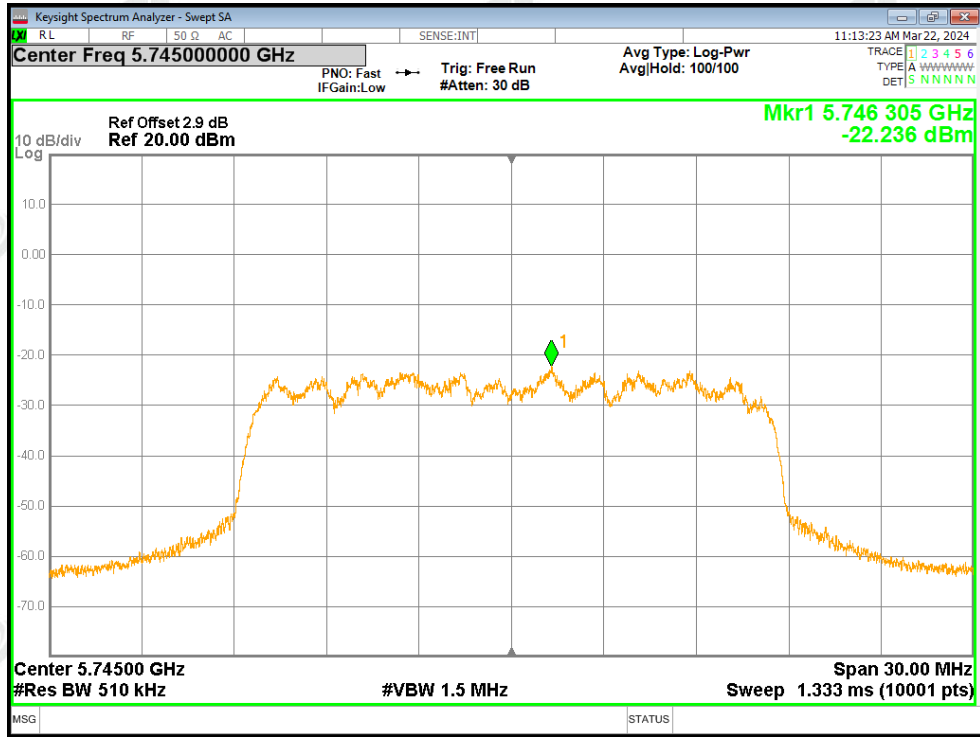
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-22.24	0.46	-21.78	30	Pass
NVNT	a	5785	Ant1	-22.86	0.46	-22.4	30	Pass
NVNT	a	5825	Ant1	-23.5	0.71	-22.79	30	Pass
NVNT	n20	5745	Ant1	-22.75	0.75	-22	30	Pass
NVNT	n20	5785	Ant1	-22.13	0.75	-21.38	30	Pass
NVNT	n20	5825	Ant1	-23.18	0.75	-22.43	30	Pass
NVNT	n40	5755	Ant1	-27.8	3.01	-24.79	30	Pass
NVNT	n40	5795	Ant1	-24.94	0.79	-24.15	30	Pass



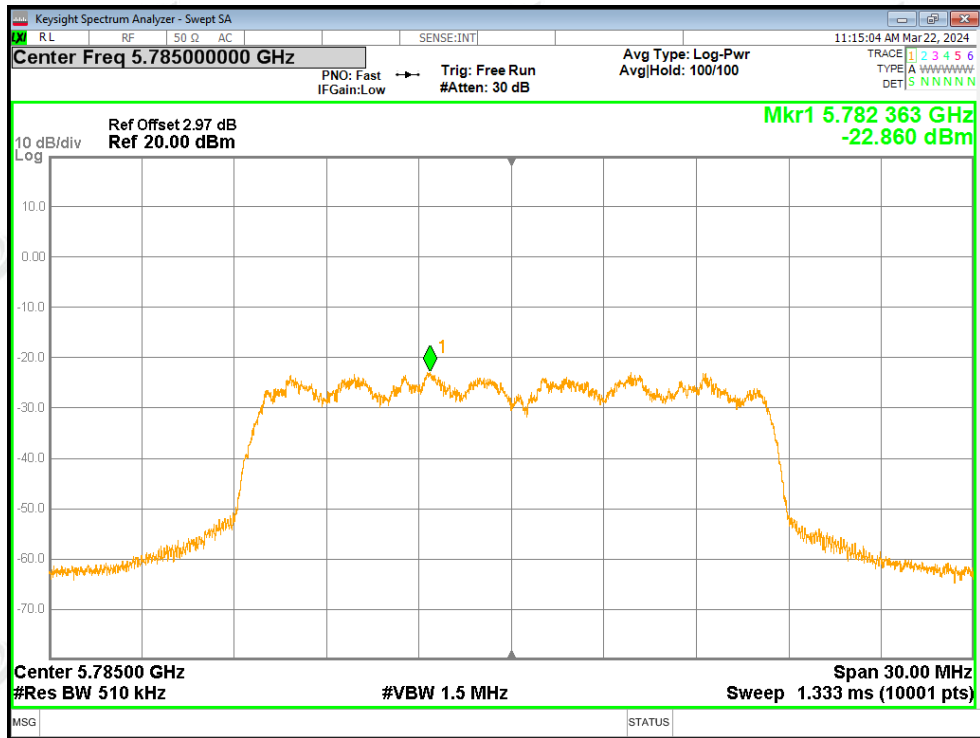


Test Graphs

PSD NVNT a 5745MHz Ant1

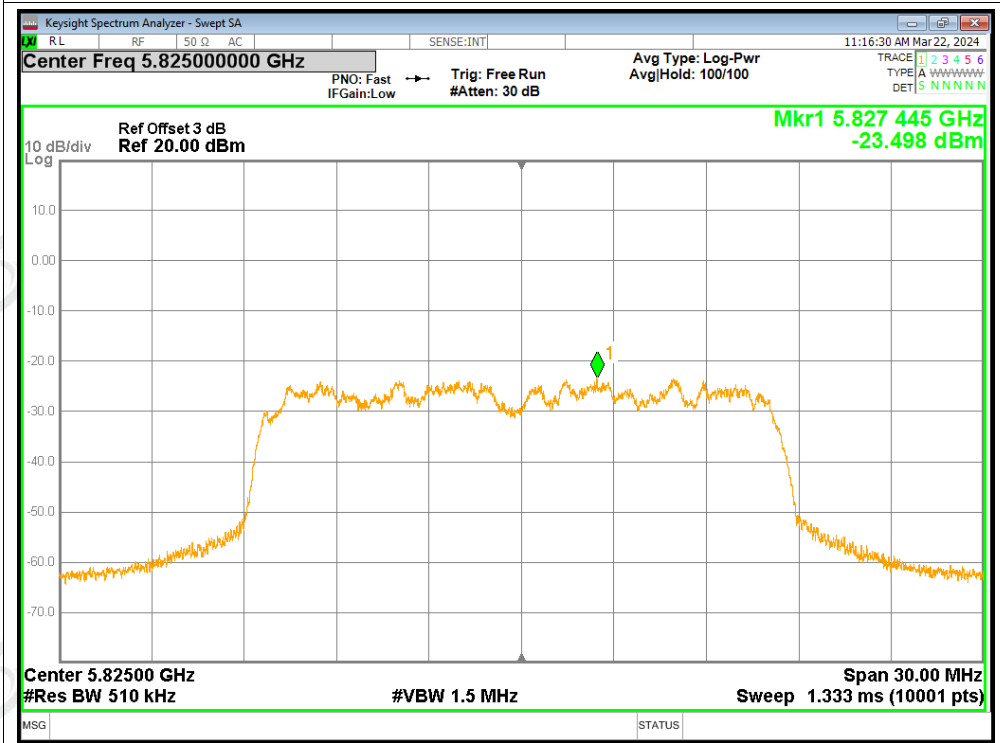


PSD NVNT a 5785MHz Ant1

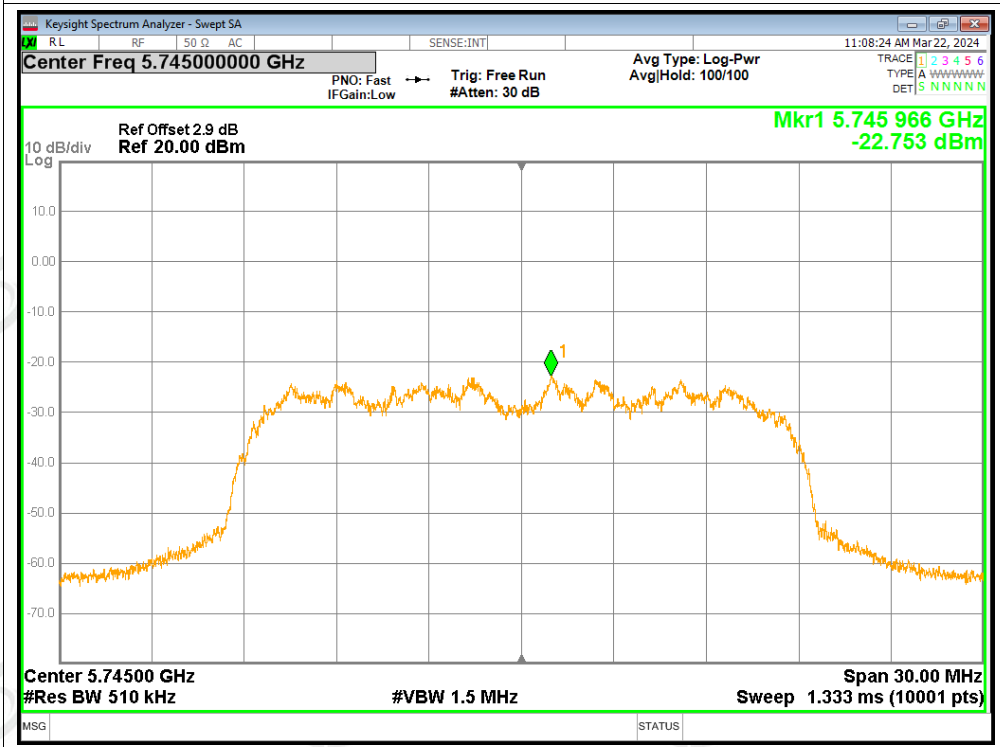




PSD NVNT a 5825MHz Ant1

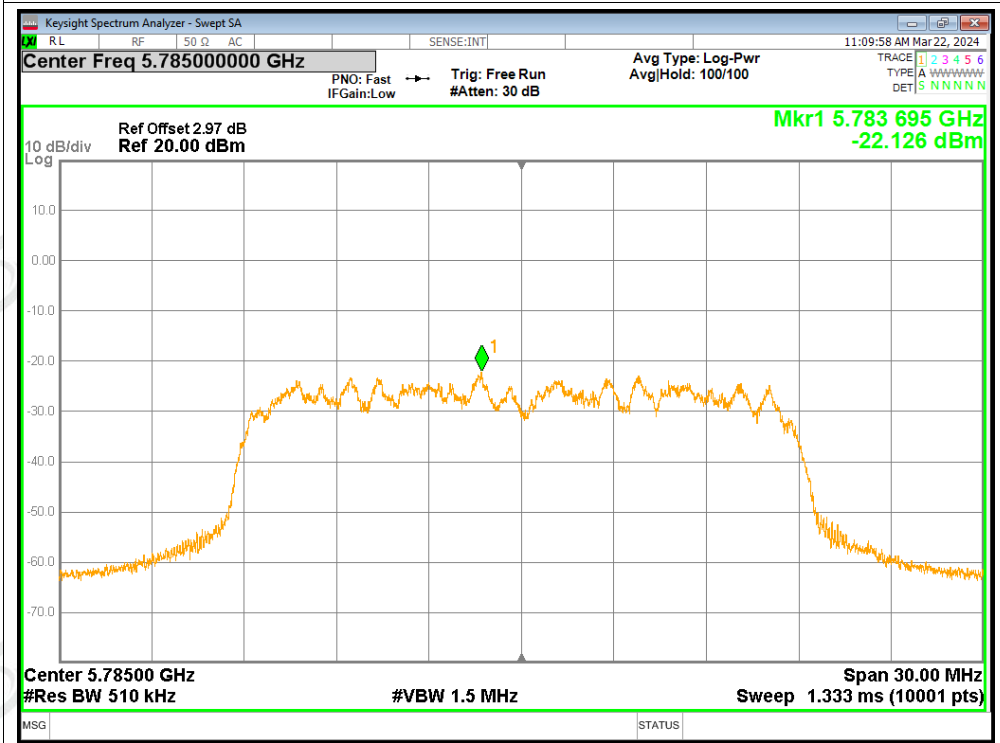


PSD NVNT n20 5745MHz Ant1

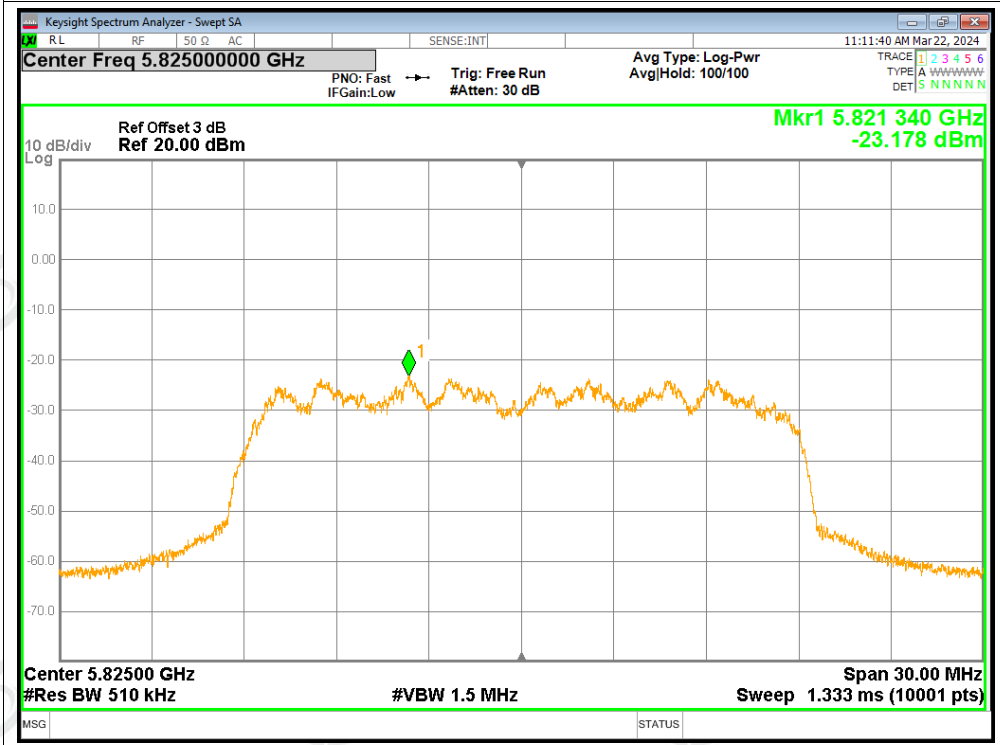




PSD NVNT n20 5785MHz Ant1



PSD NVNT n20 5825MHz Ant1

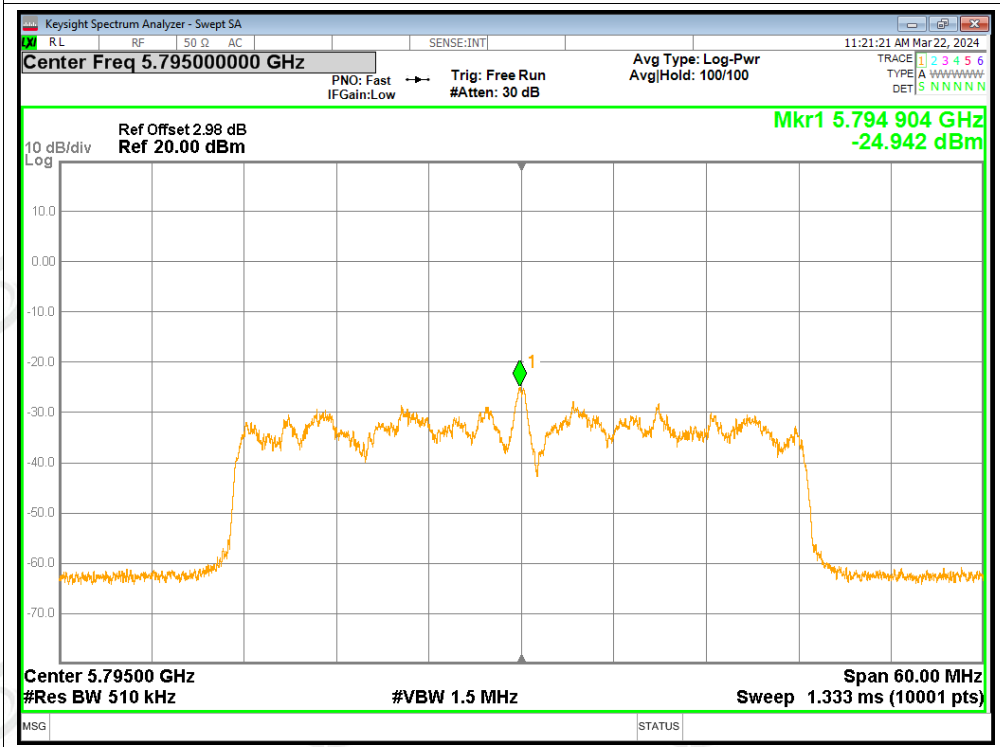




PSD NVNT n40 5755MHz Ant1



PSD NVNT n40 5795MHz Ant1



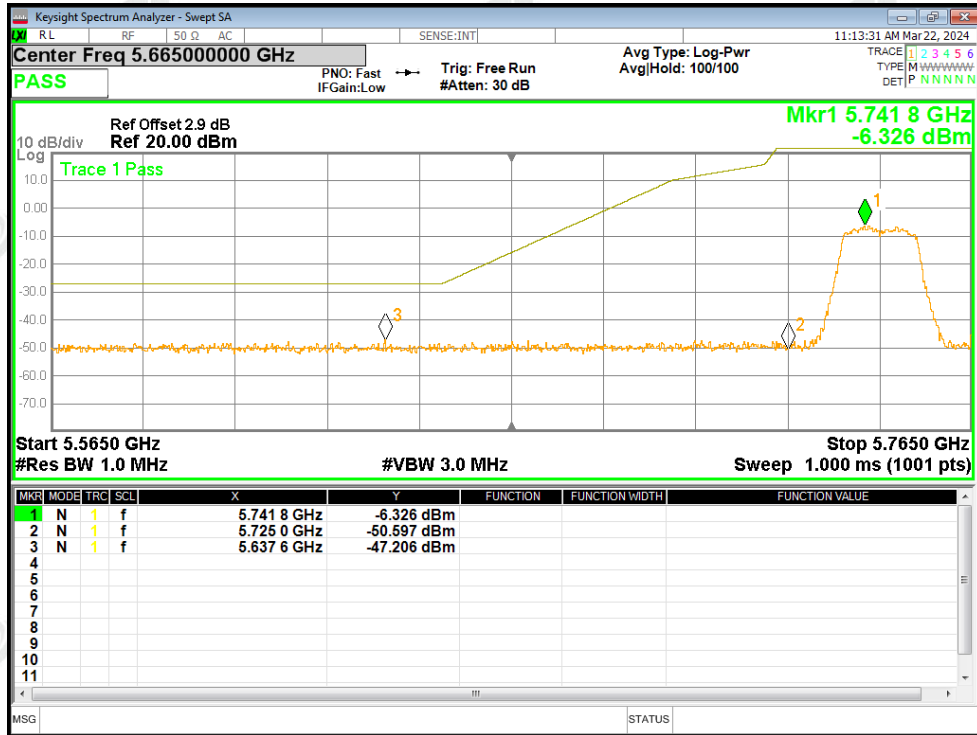
**ZHONGHAN**
B6. Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-47.2	Refer to below test plot	Pass
NVNT	a	5825	Ant1	-46.22	Refer to below test plot	Pass
NVNT	n20	5745	Ant1	-46.79	Refer to below test plot	Pass
NVNT	n20	5825	Ant1	-45.75	Refer to below test plot	Pass
NVNT	n40	5755	Ant1	-45.93	Refer to below test plot	Pass
NVNT	n40	5795	Ant1	-46.12	Refer to below test plot	Pass

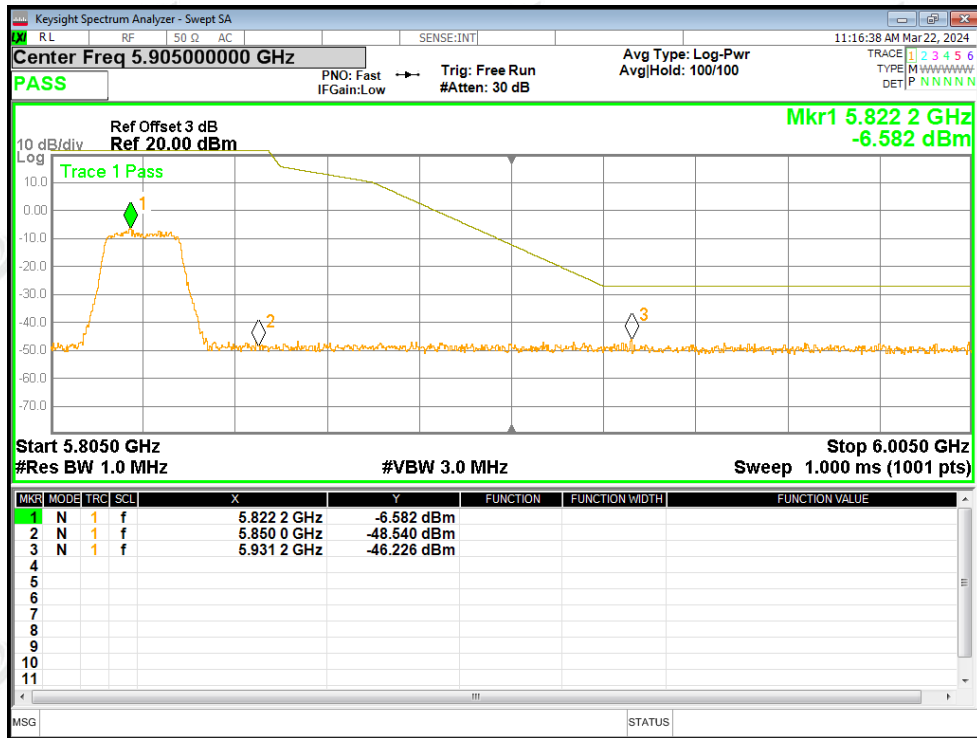


Test Graphs

Band Edge NVNT a 5745MHz Low Ant1

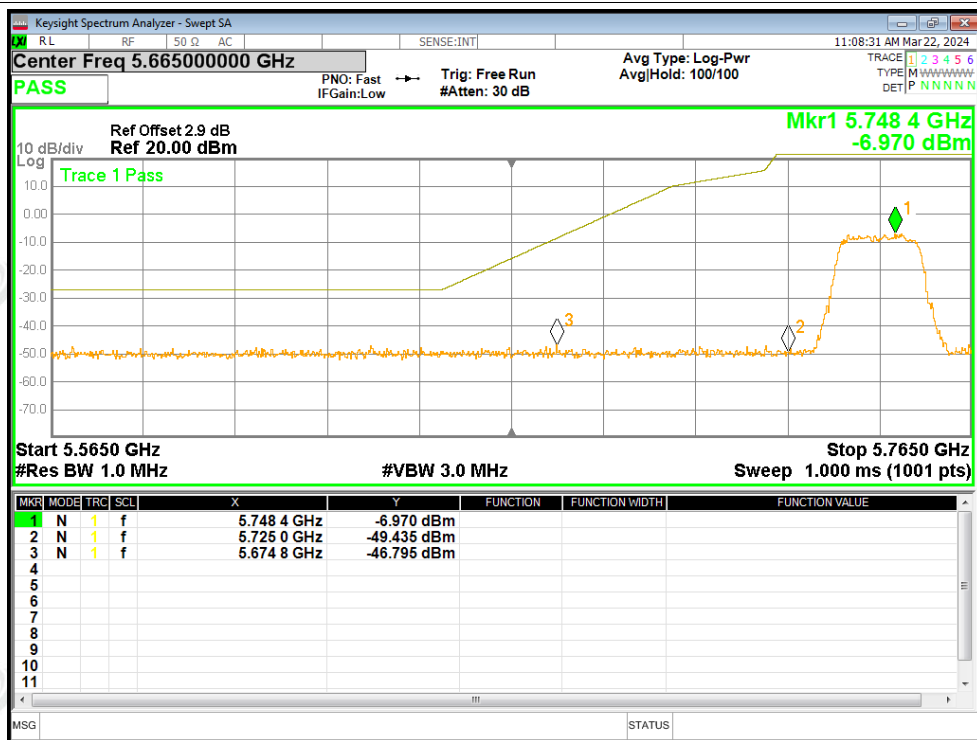


Band Edge NVNT a 5825MHz High Ant1

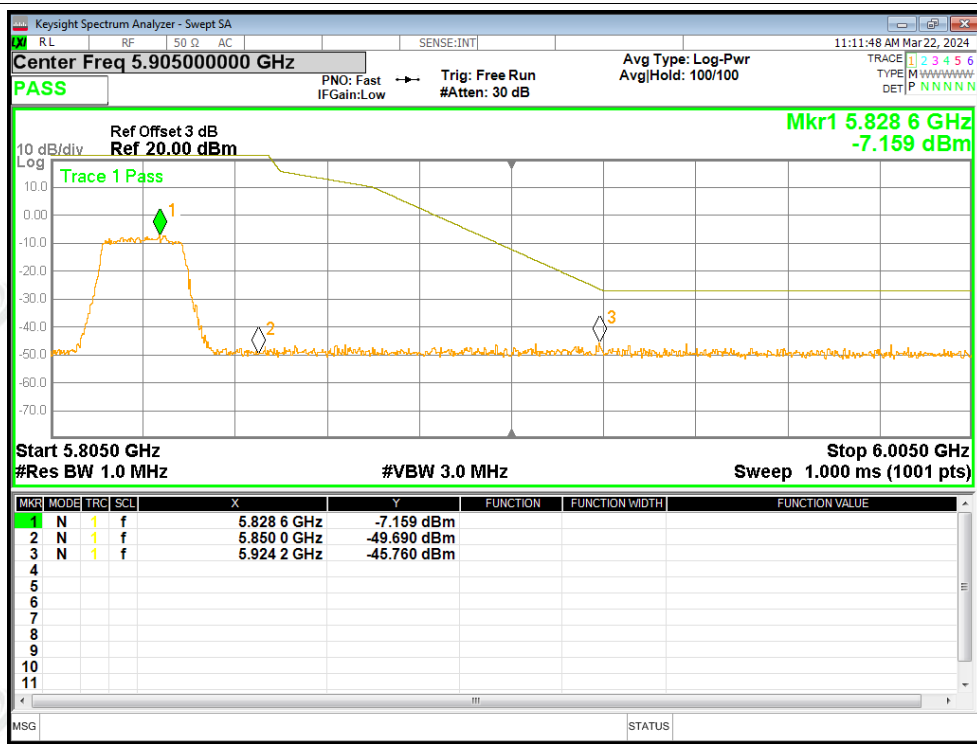




Band Edge NVNT n20 5745MHz Low Ant1

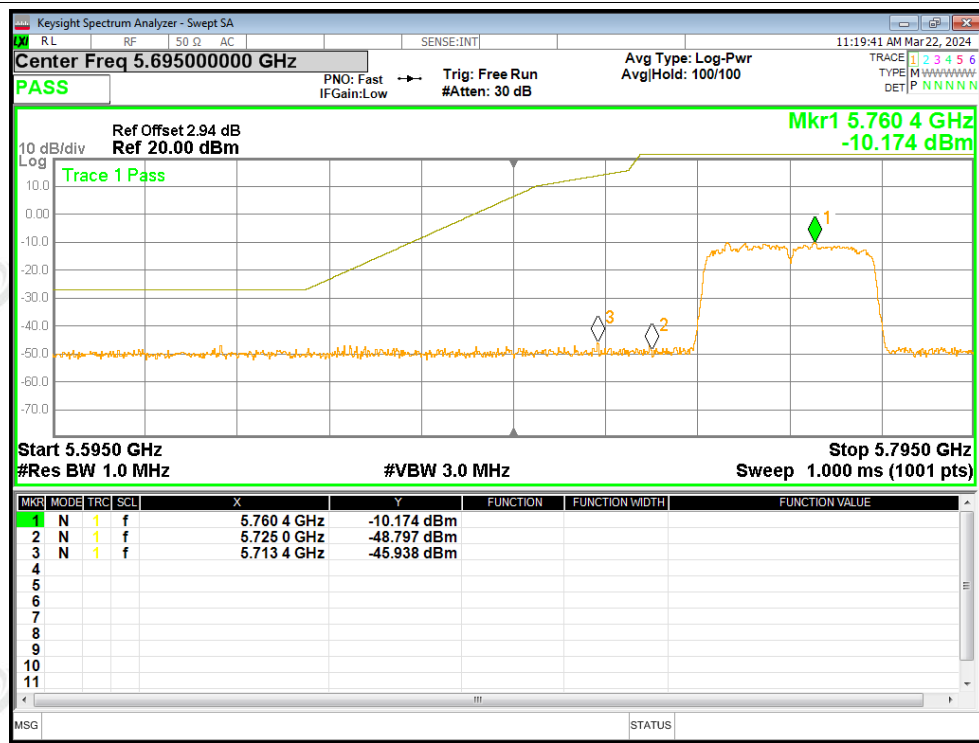


Band Edge NVNT n20 5825MHz High Ant1

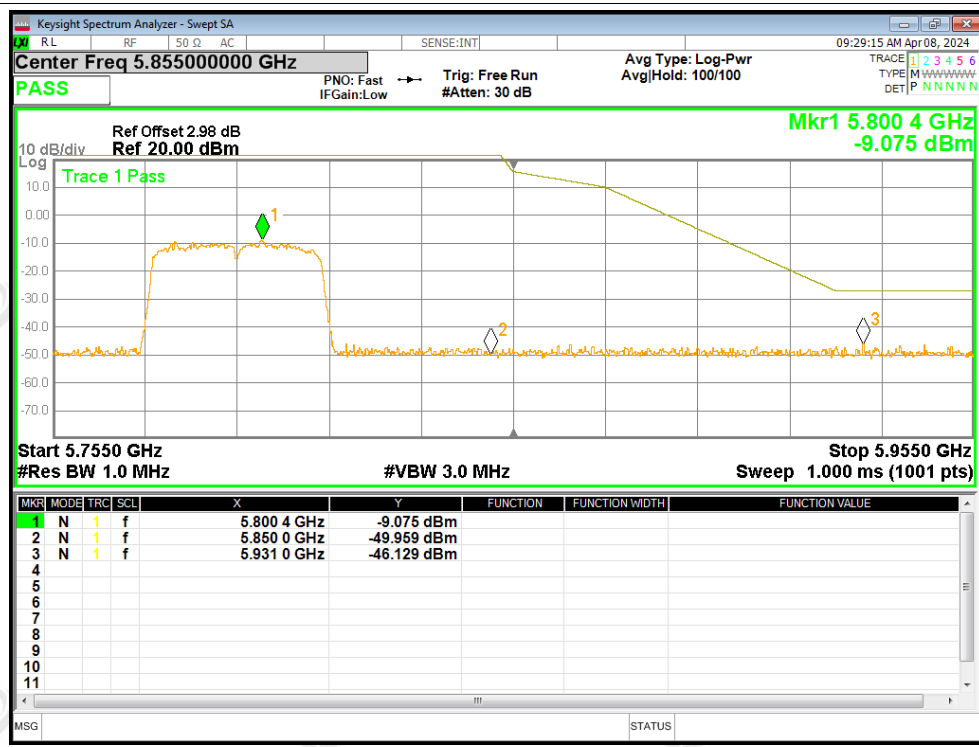




Band Edge NVNT n40 5755MHz Low Ant1



Band Edge NVNT n40 5795MHz High Ant1





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B7. Frequency Stability

Voltage							
TestMode	Channel	Voltage [Vdc]	Temperature (°C)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5745	NV	NT	-20000	-3.48	Within 5745-5825MHz	Pass
		LV	NT	-20000	-3.48		
		HV	NT	-20000	-3.48		
	5785	NV	NT	-20000	-3.46		
		LV	NT	-20000	-3.46		
		HV	NT	-20000	-3.46		
	5825	NV	NT	-20000	-3.43		
		LV	NT	-20000	-3.43		
		HV	NT	-20000	-3.43		
n20	5745	NV	NT	-20000	-3.48	Within 5745-5825MHz	Pass
		LV	NT	-20000	-3.48		
		HV	NT	-20000	-3.48		
	5785	NV	NT	-20000	-3.46		
		LV	NT	-20000	-3.46		
		HV	NT	-20000	-3.46		
	5825	NV	NT	-20000	-3.43		
		LV	NT	-20000	-3.43		
		HV	NT	-20000	-3.43		
n40	5755	NV	NT	40000	6.95	Within 5755-5795MHz	Pass
		LV	NT	40000	6.95		
		HV	NT	40000	6.95		
	5795	NV	NT	0	0		
		LV	NT	0	0		
		HV	NT	0	0		



TestMode	Channel	Temperature				Limit (ppm)	Verdict
		Voltage [Vdc]	Temperature (°C)	Frequency Error (Hz)	Deviation (ppm)		
a	5745	NV	-20	0	0	Within 5725-5850MHz	Pass
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	40	0	0		
		NV	60	0	0		
		NV	70	0	0		
	5785	NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	40	0	0		
		NV	60	0	0		
		NV	70	0	0		
	5825	NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	40	0	0		
		NV	60	0	0		
		NV	70	0	0		
N20	5745	NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	40	0	0		
		NV	60	0	0		
		NV	70	0	0		
	5785	NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	40	0	0		



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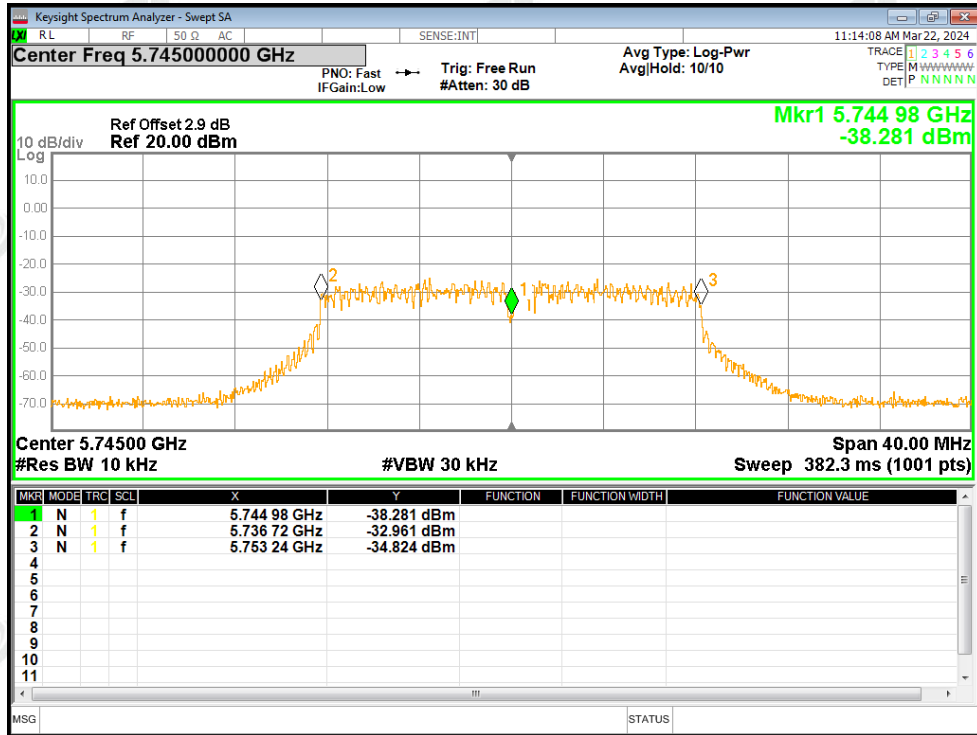
	5825	NV	60	0	0	Within 5745-5825MHz	Pass
		NV	70	0	0		
		NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	40	0	0		
		NV	60	0	0		
		NV	70	0	0		
		N40	5755	NV	-20		
NV	-10			0	0		
NV	0			0	0		
NV	20			0	0		
NV	40			0	0		
NV	60			0	0		
NV	70			0	0		
5795	NV		-20	0	0		
	NV		-10	0	0		
	NV		0	0	0		
	NV		20	0	0		
	NV		40	0	0		
	NV		60	0	0		
	NV		70	0	0		

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

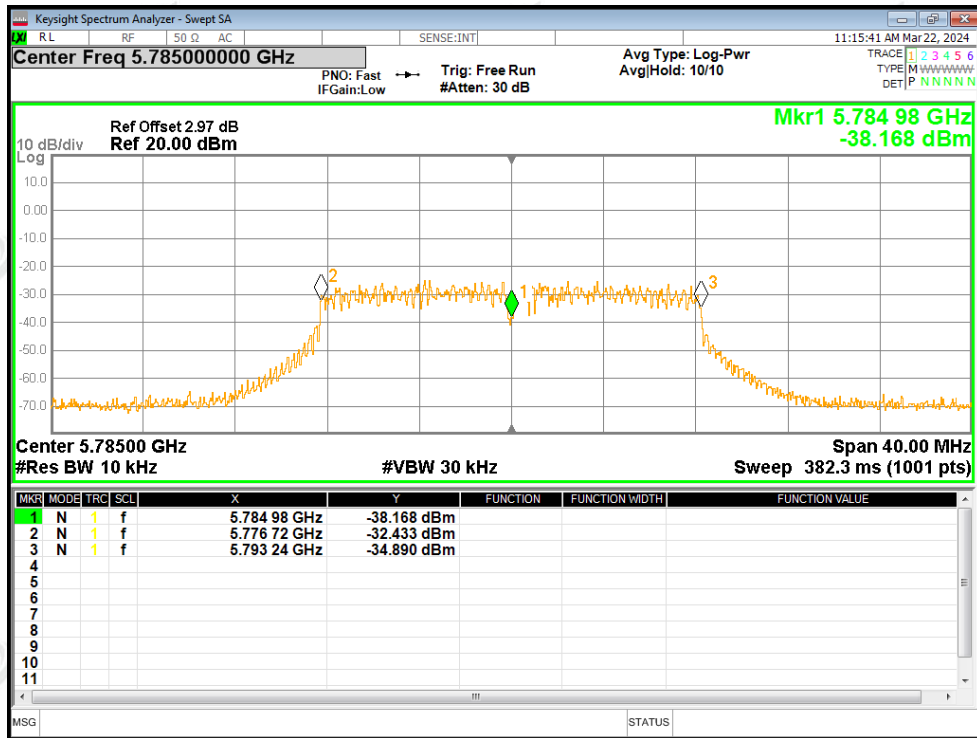


Test Graphs

Freq. Stability NVNT a 5745MHz Ant1

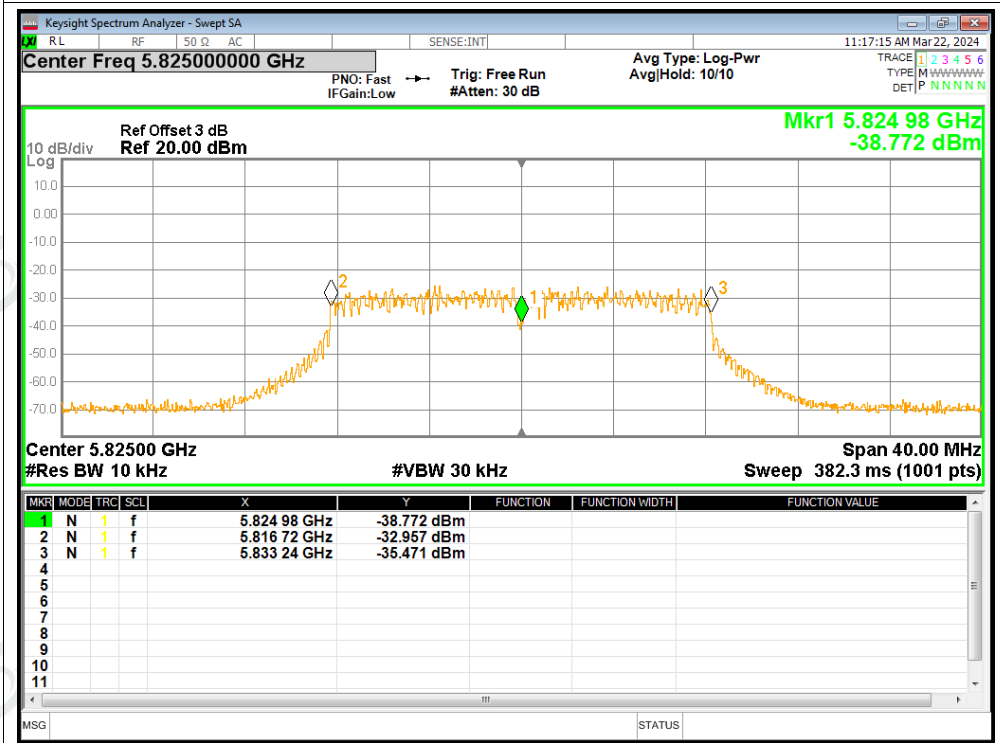


Freq. Stability NVNT a 5785MHz Ant1

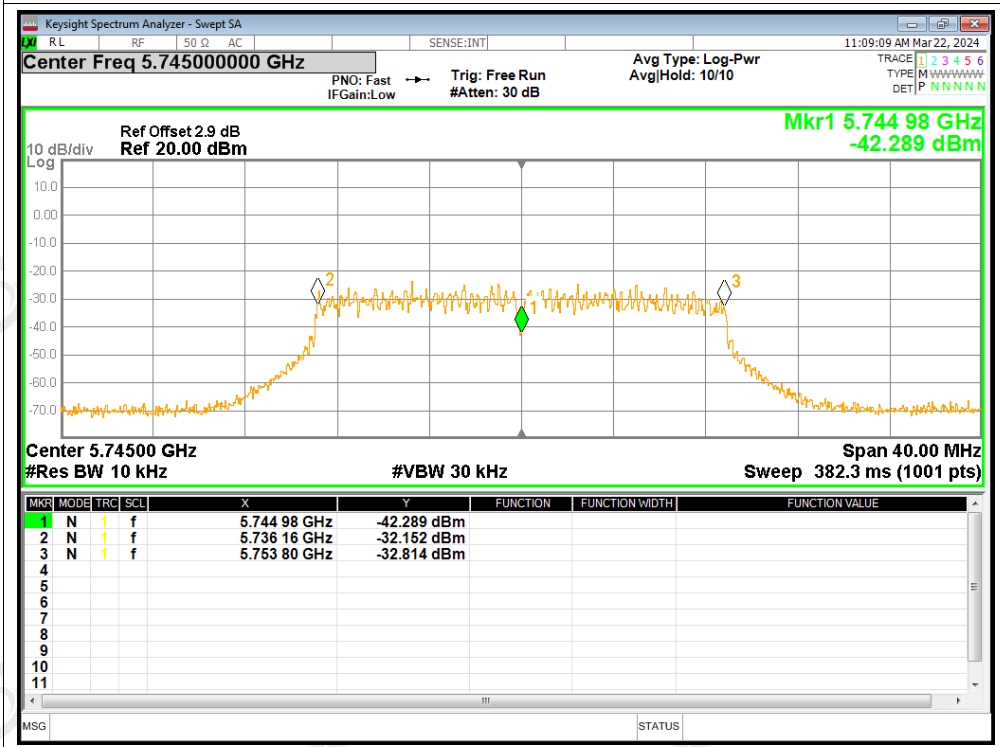




Freq. Stability NVNT a 5825MHz Ant1

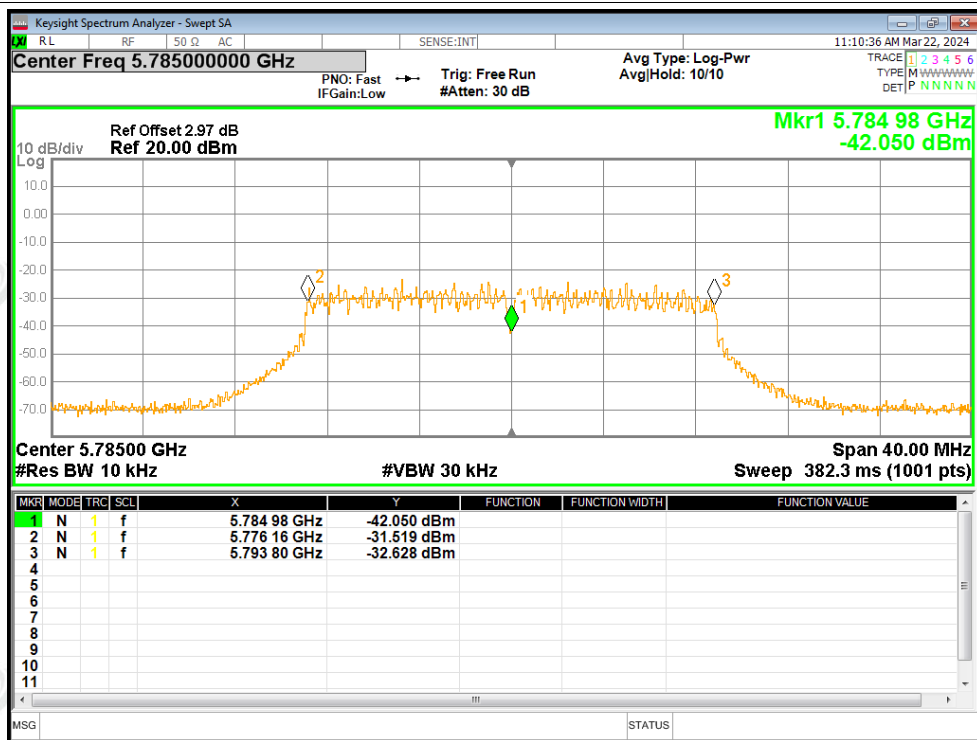


Freq. Stability NVNT n20 5745MHz Ant1

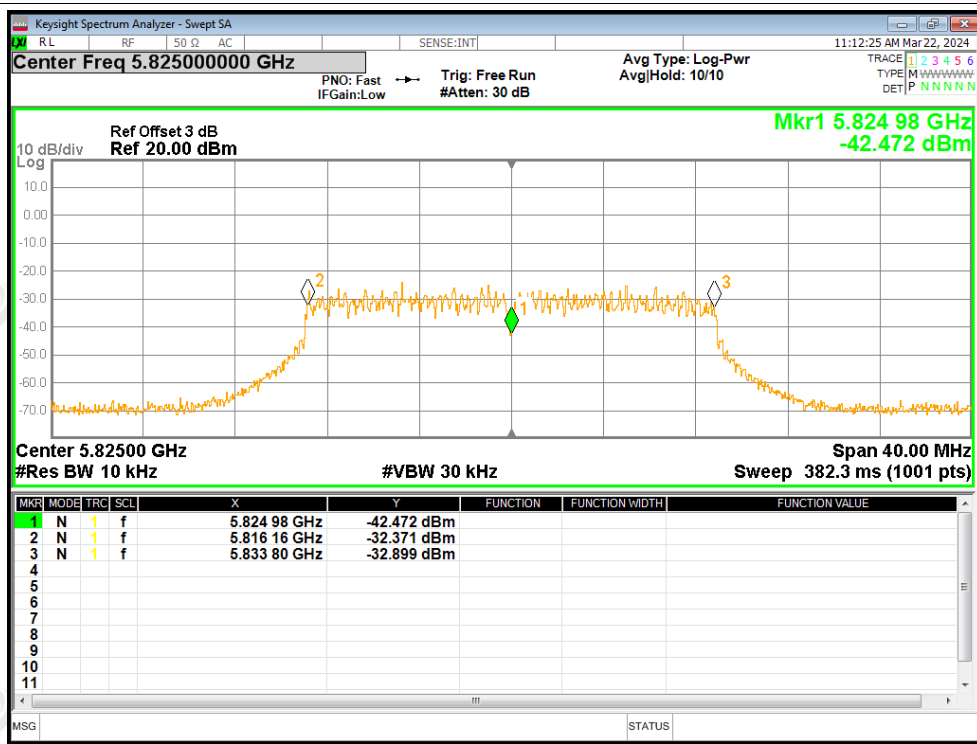




Freq. Stability NVNT n20 5785MHz Ant1

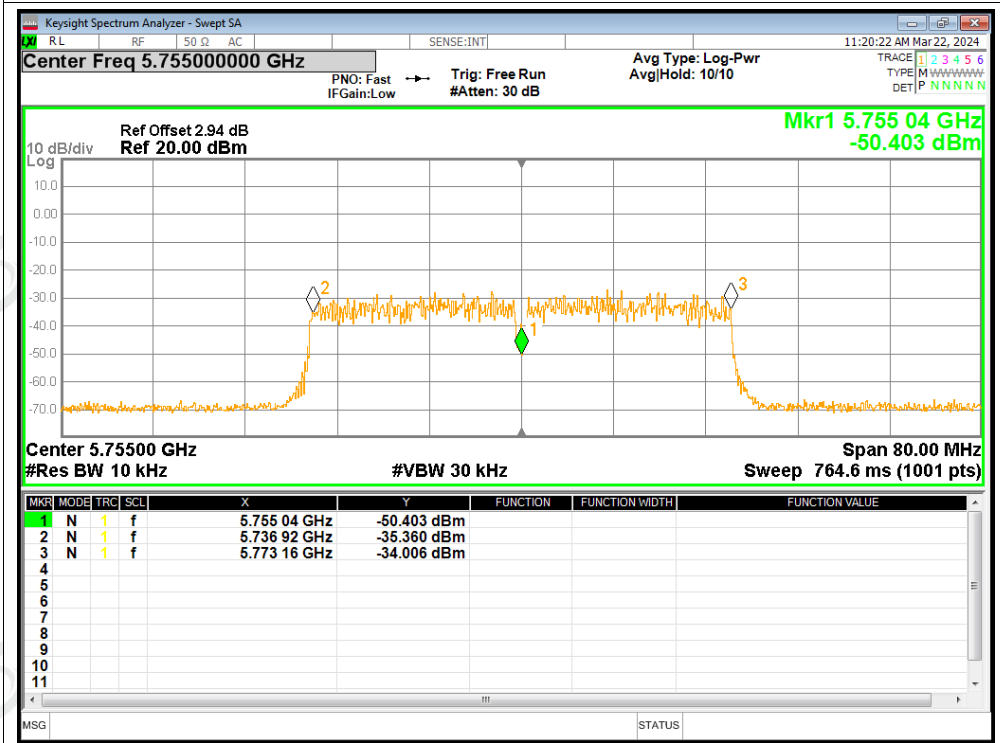


Freq. Stability NVNT n20 5825MHz Ant1

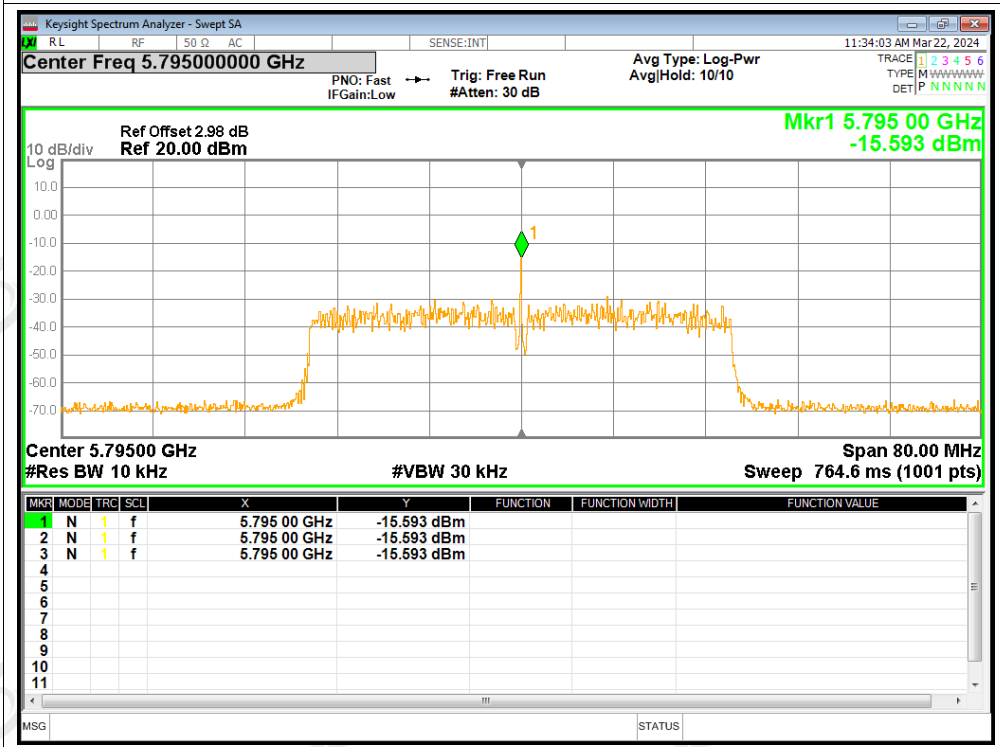




Freq. Stability NVNT n40 5755MHz Ant1



Freq. Stability NVNT n40 5795MHz Ant1



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

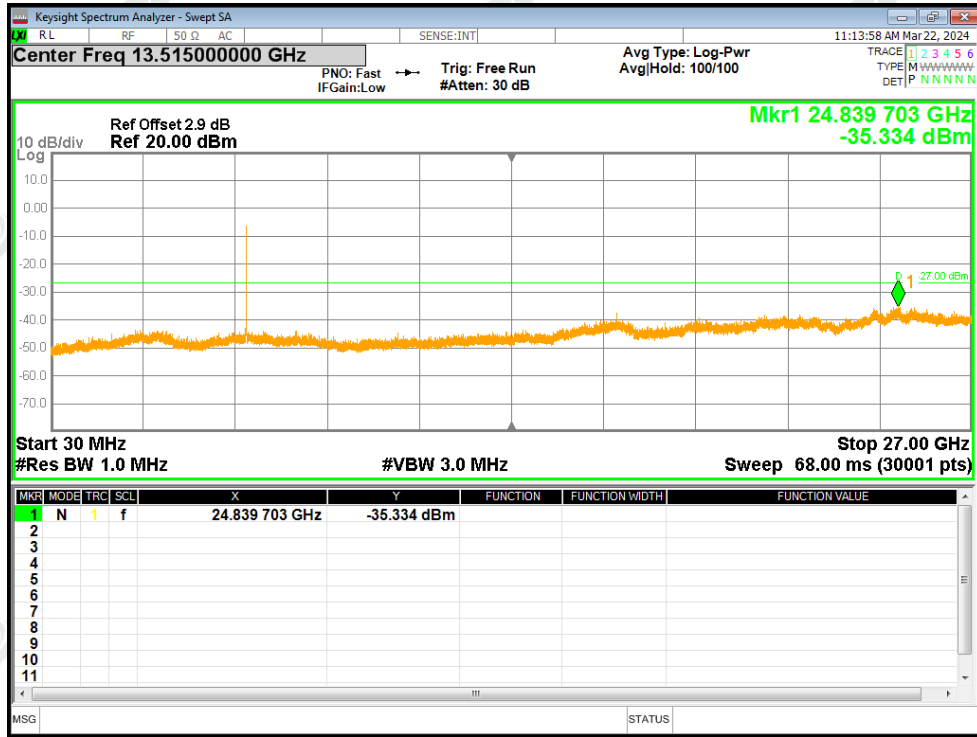
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5745	Ant1	-35.33	-27	Pass
NVNT	a	5785	Ant1	-34.84	-27	Pass
NVNT	a	5825	Ant1	-35.33	-27	Pass
NVNT	n20	5745	Ant1	-35.76	-27	Pass
NVNT	n20	5785	Ant1	-35.94	-27	Pass
NVNT	n20	5825	Ant1	-35.58	-27	Pass
NVNT	n40	5755	Ant1	-35.4	-27	Pass
NVNT	n40	5795	Ant1	-35.27	-27	Pass



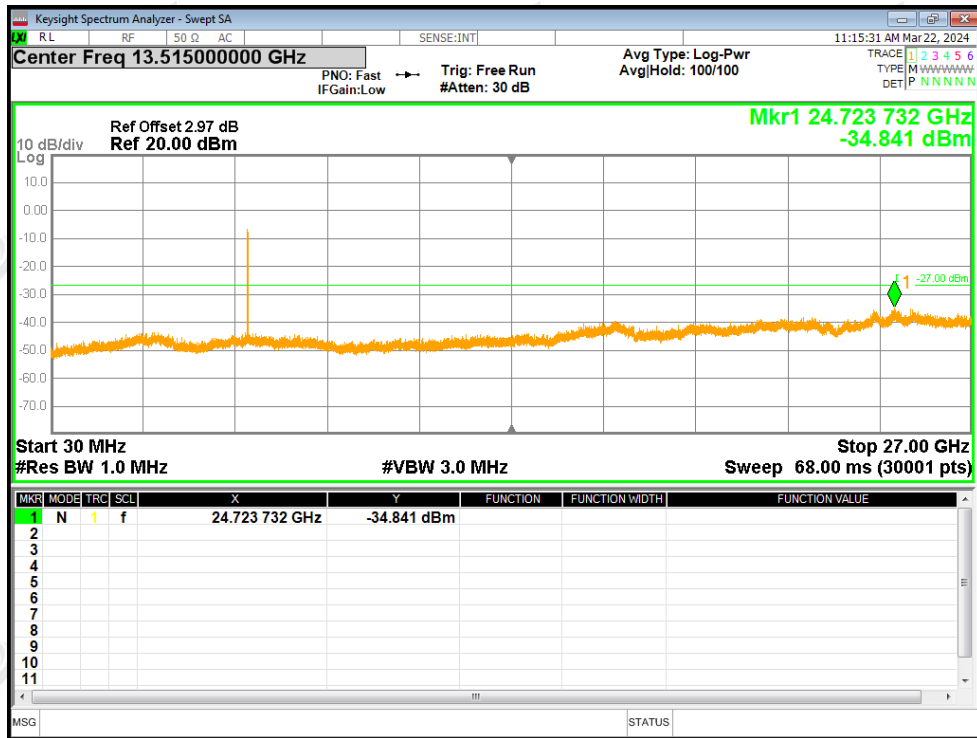


Test Graphs

Tx. Spurious NVNT a 5745MHz Ant1 Emission

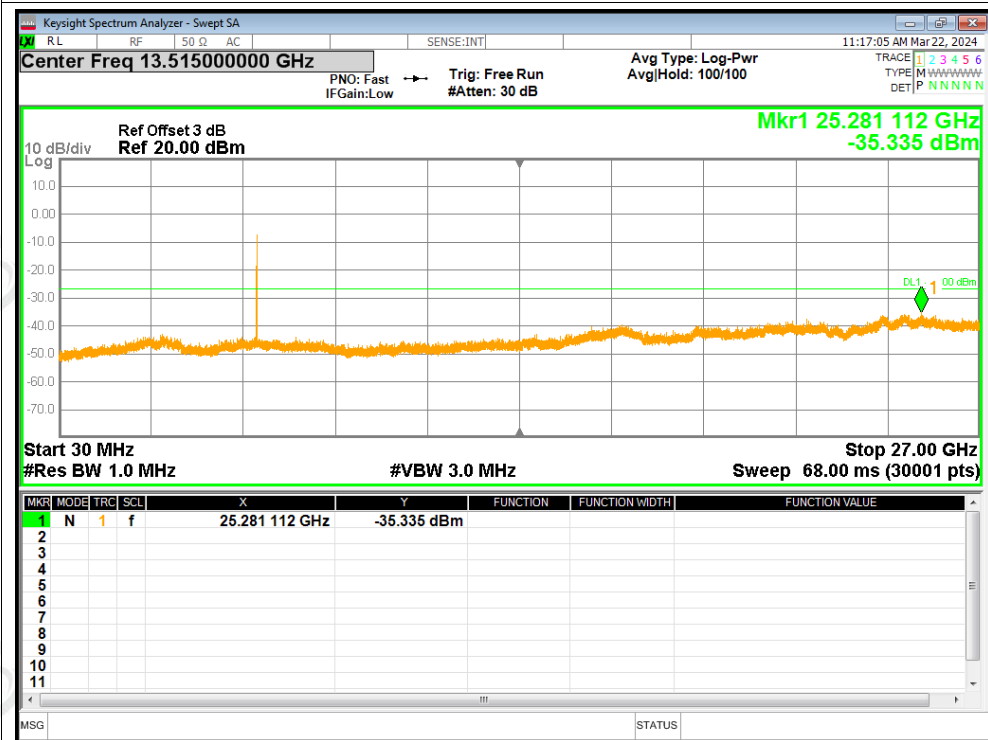


Tx. Spurious NVNT a 5785MHz Ant1 Emission

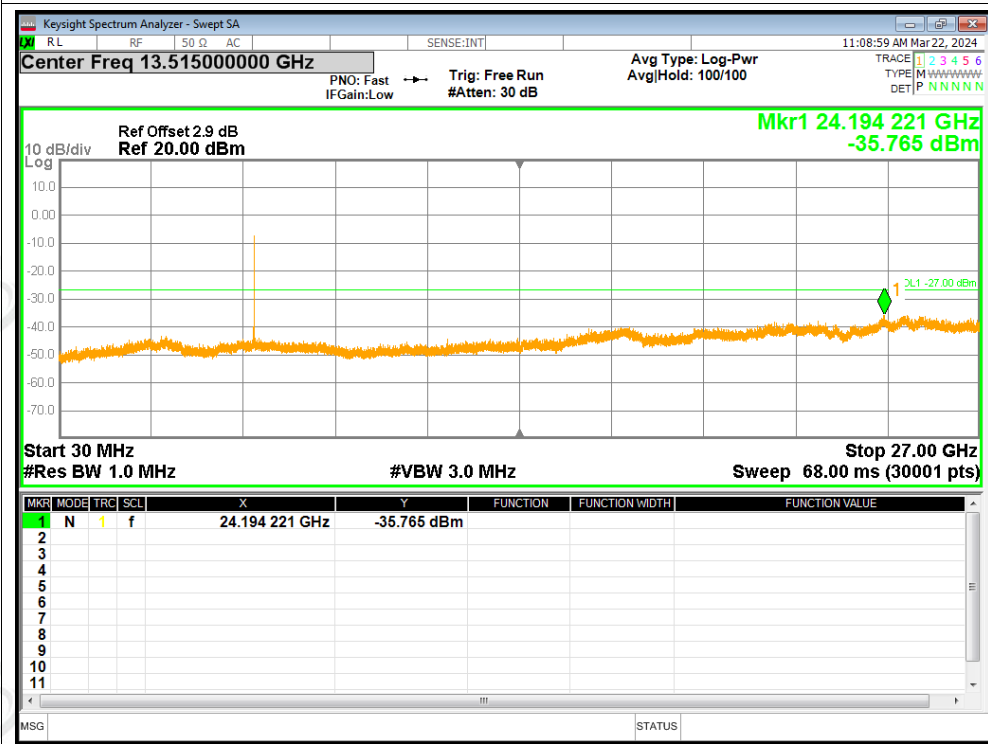




Tx. Spurious NVNT a 5825MHz Ant1 Emission

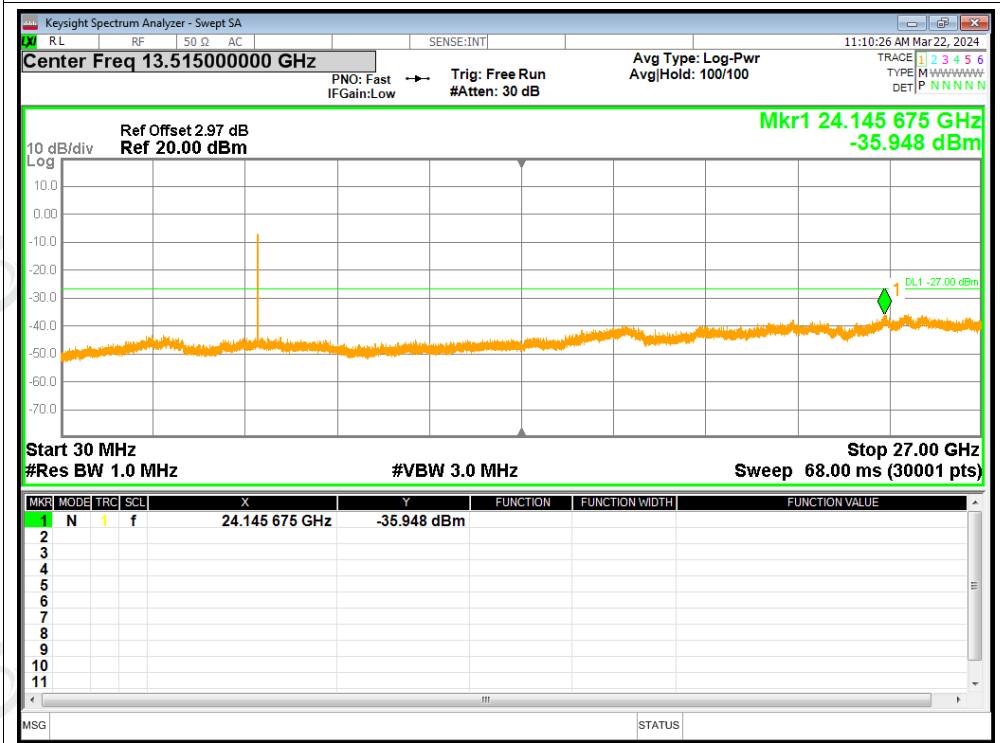


Tx. Spurious NVNT n20 5745MHz Ant1 Emission

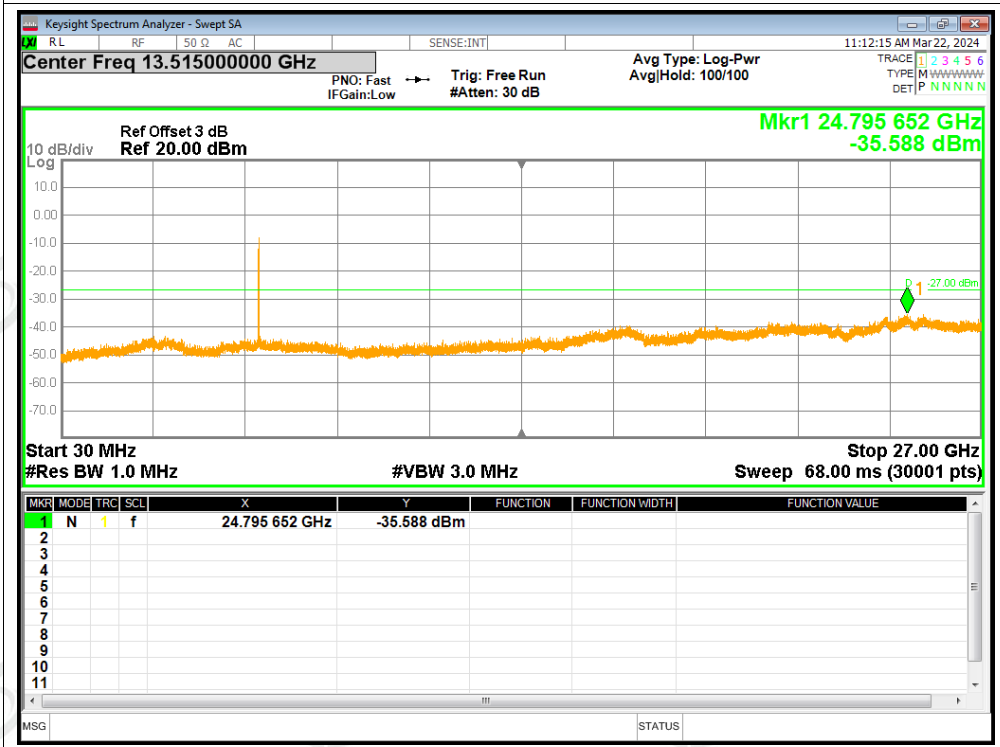




Tx. Spurious NVNT n20 5785MHz Ant1 Emission

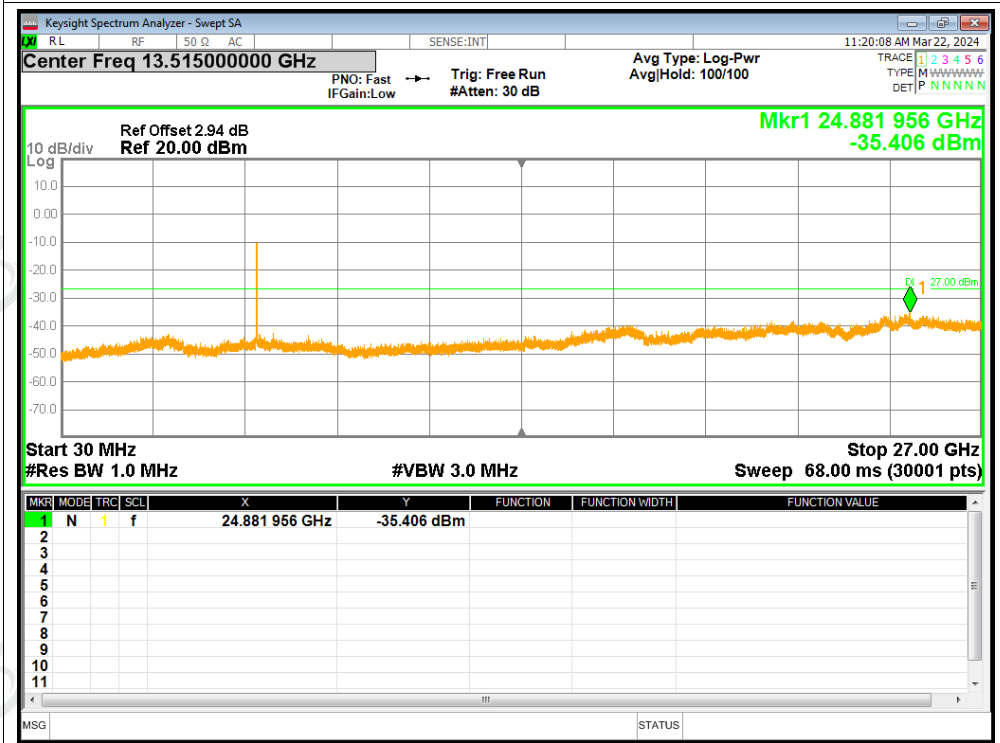


Tx. Spurious NVNT n20 5825MHz Ant1 Emission





Tx. Spurious NVNT n40 5755MHz Ant1 Emission



Tx. Spurious NVNT n40 5795MHz Ant1 Emission

