Appendix A for 5GWIFI Test Data

Product Name: Smart Travel Device

Test Model: MT55

Environmental Conditions

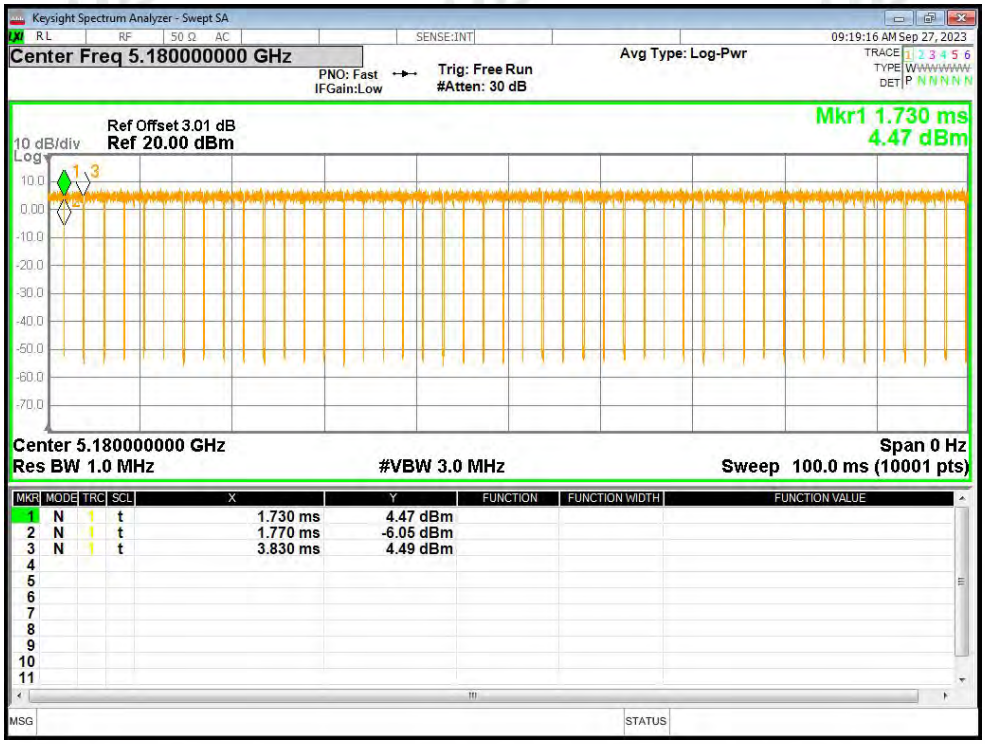
Temperature:	25.2℃
Relative Humidity:	53%
ATM Pressure:	101.0 kPa
Test Engineer:	Kimi Lu
Supervised by:	Baret Wu

A.1Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	a	5180	Ant1	98.1	0	0.49
NVNT	a	5200	Ant1	96.26	0.17	0.49
NVNT	a	5240	Ant1	97.18	0.12	0.48
NVNT	n20	5180	Ant1	94.12	0.26	0.52
NVNT	n20	5200	Ant1	92.31	0.35	0.52
NVNT	n20	5240	Ant1	94.15	0.26	0.52
NVNT	n40	5190	Ant1	87.85	0.56	1.06
NVNT	n40	5230	Ant1	89.52	0.48	1.06

Test Graphs

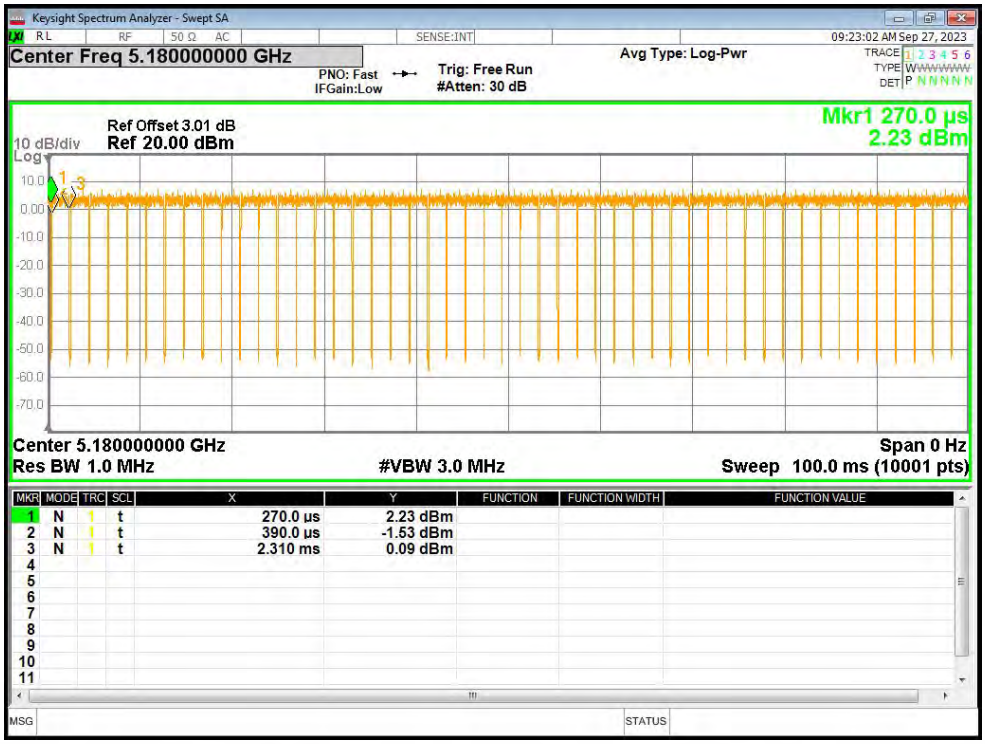
Duty Cycle NVNT a 5180MHz Ant1



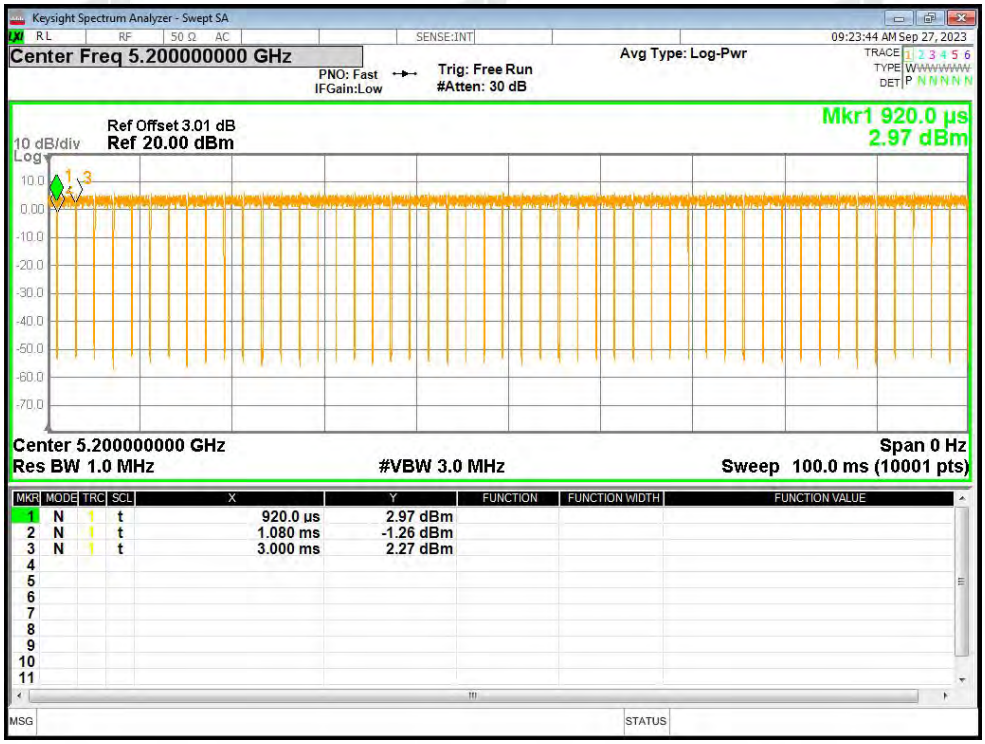
Duty Cycle NVNT a 5200MHz Ant1

Duty Cycle NVNT a 5240MHz Ant1

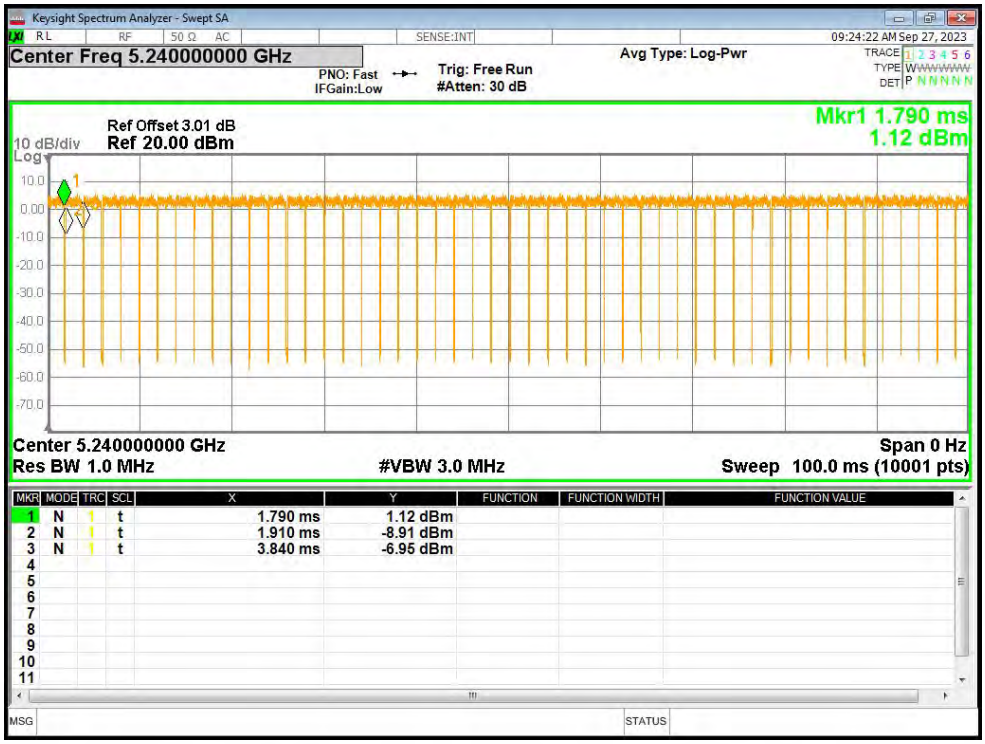
Duty Cycle NVNT n20 5180MHz Ant1



Duty Cycle NVNT n20 5200MHz Ant1

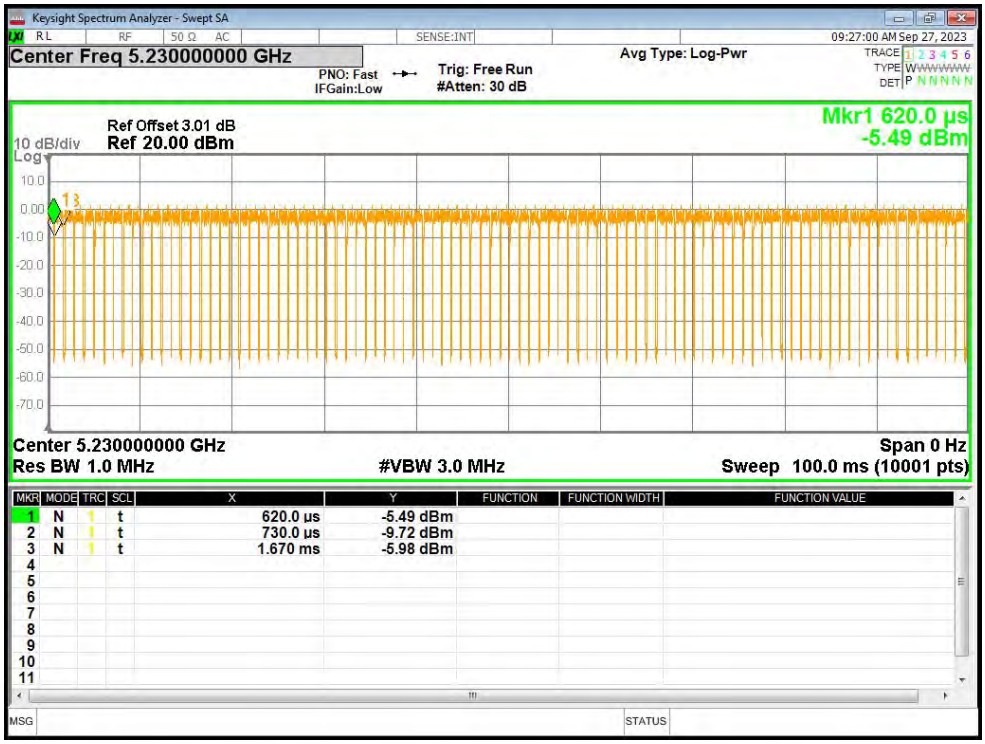


Duty Cycle NVNT n20 5240MHz Ant1



Duty Cycle NVNT n40 5190MHz Ant1

Duty Cycle NVNT n40 5230MHz Ant1

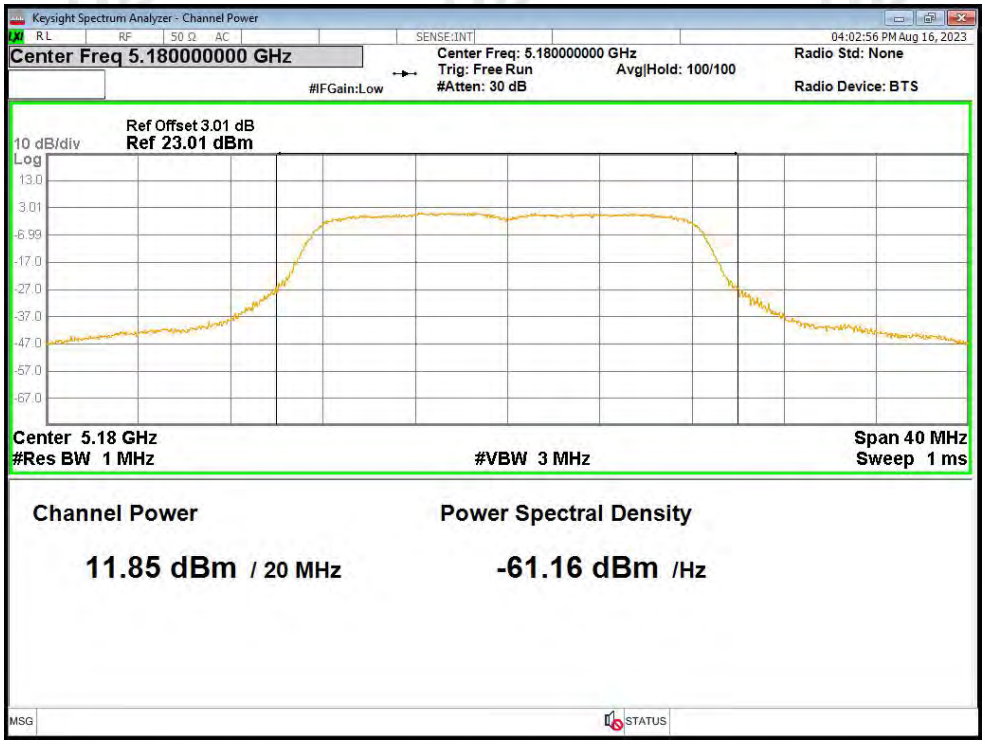


A.2Maximum Conducted Output Power

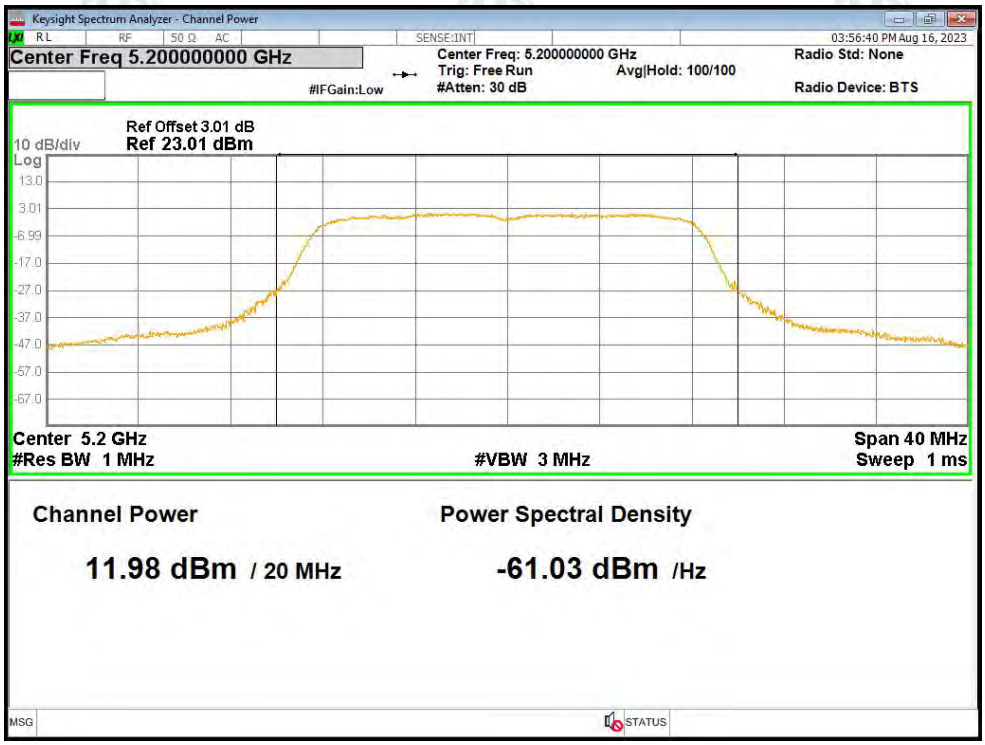
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	11.85	0	11.85	24	Pass
NVNT	a	5200	Ant1	11.98	0.17	12.15	24	Pass
NVNT	a	5240	Ant1	11.99	0.12	12.11	24	Pass
NVNT	n20	5180	Ant1	10.71	0.26	10.97	24	Pass
NVNT	n20	5200	Ant1	10.83	0.35	11.18	24	Pass
NVNT	n20	5240	Ant1	10.85	0.26	11.11	24	Pass
NVNT	n40	5190	Ant1	10.86	0.56	11.42	24	Pass
NVNT	n40	5230	Ant1	10.92	0.48	11.40	24	Pass

Test Graphs

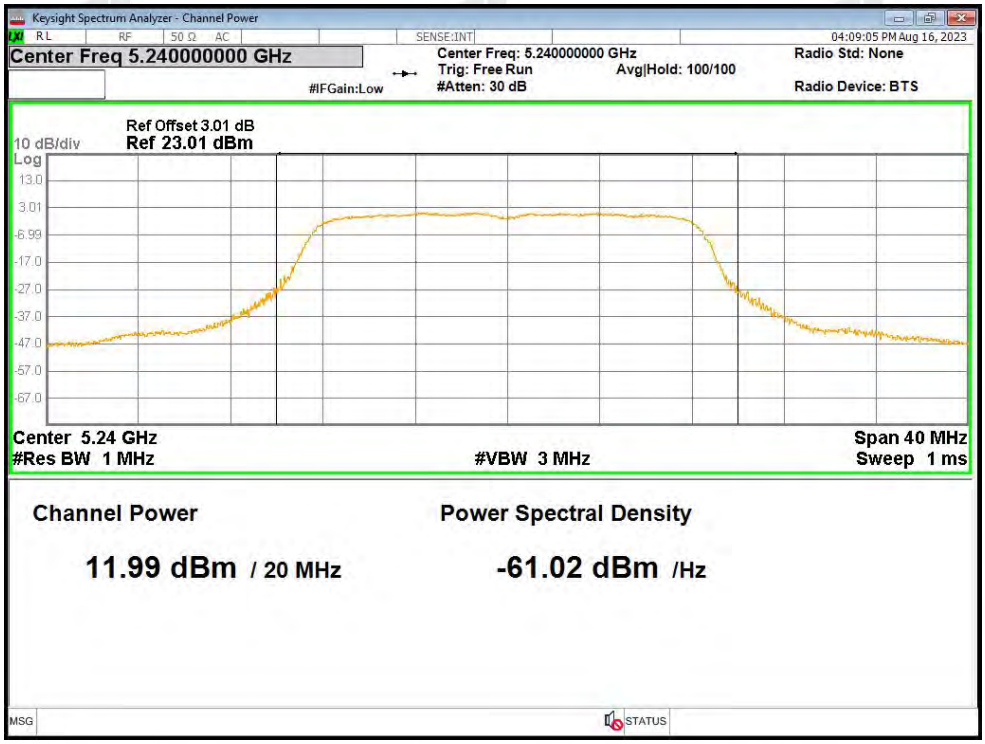
Power NVNT a 5180MHz Ant1



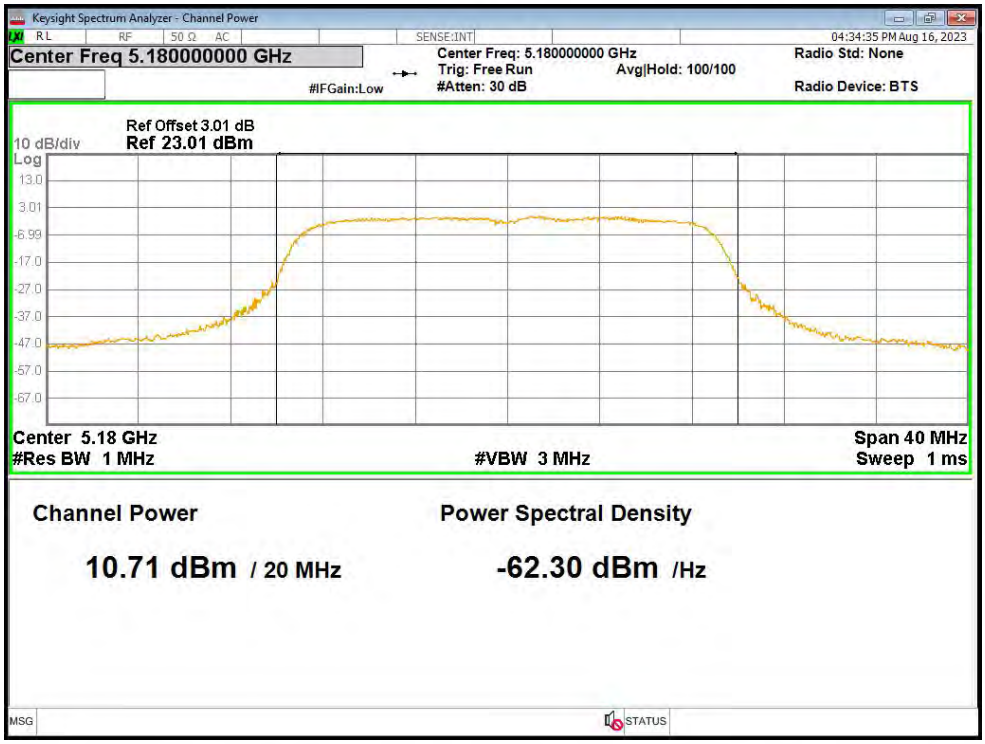
Power NVNT a 5200MHz Ant1



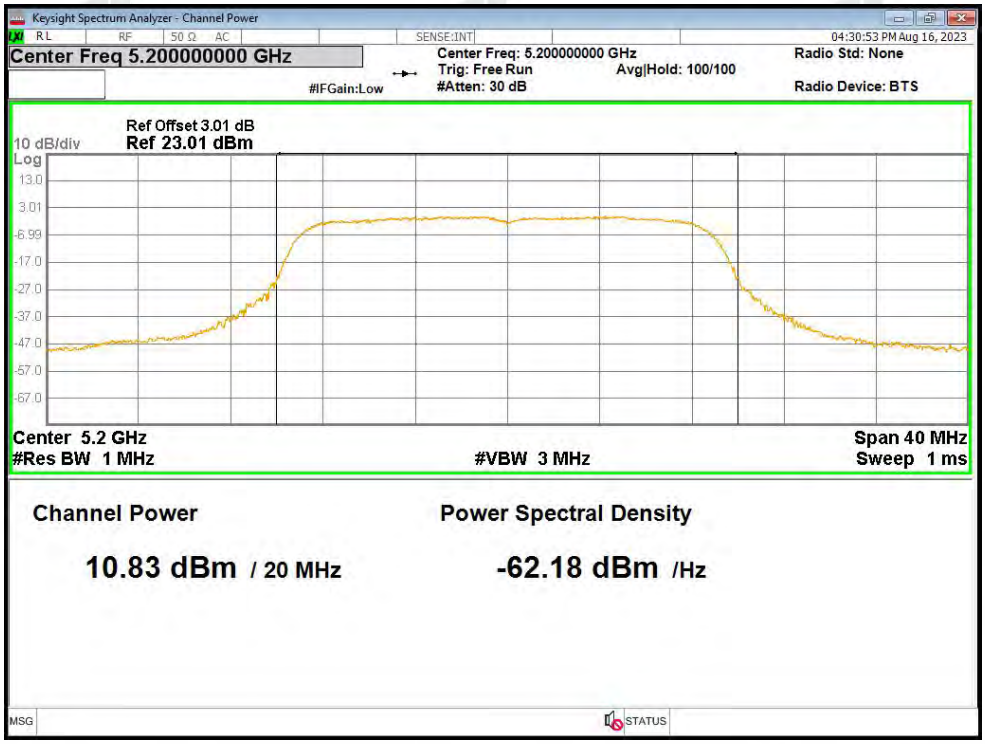
Power NVNT a 5240MHz Ant1



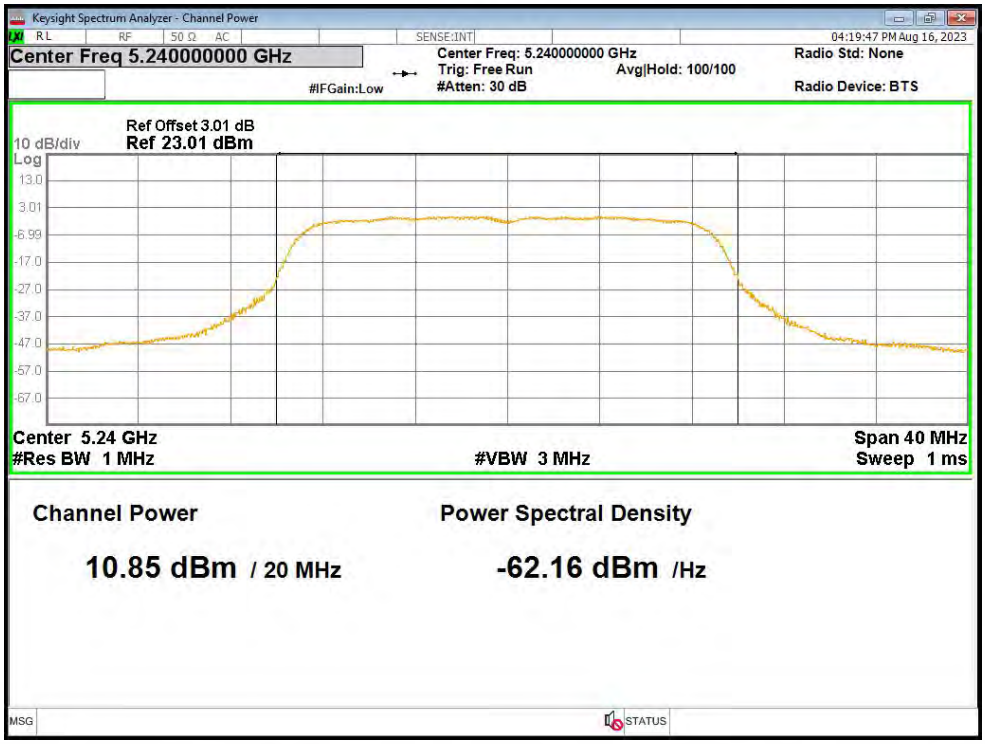
Power NVNT n20 5180MHz Ant1



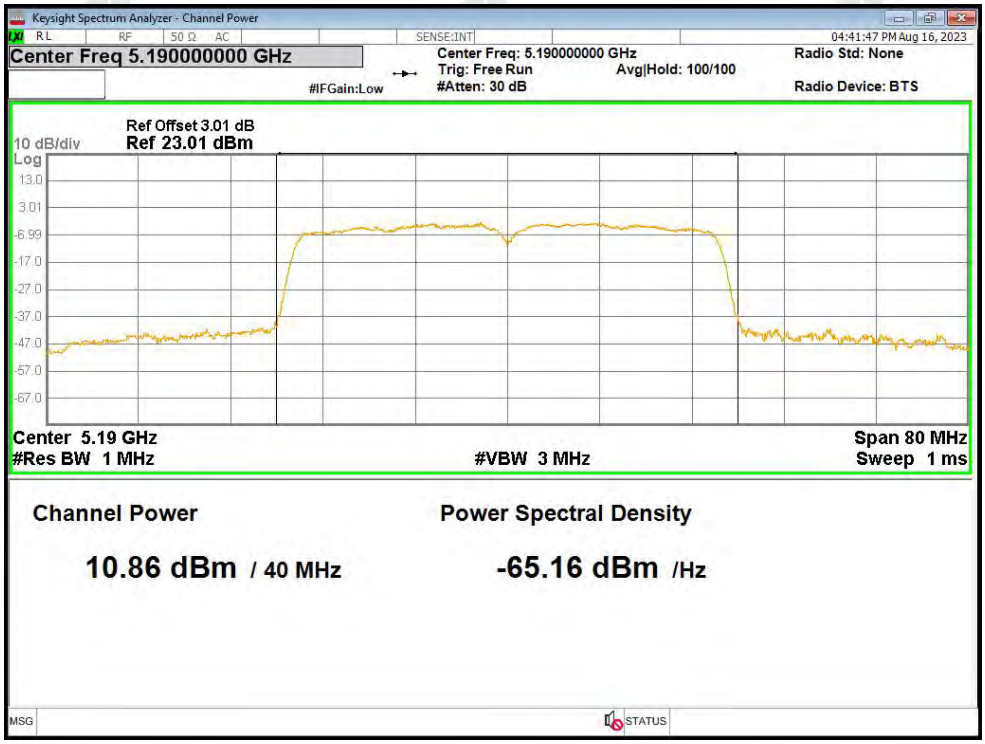
Power NVNT n20 5200MHz Ant1



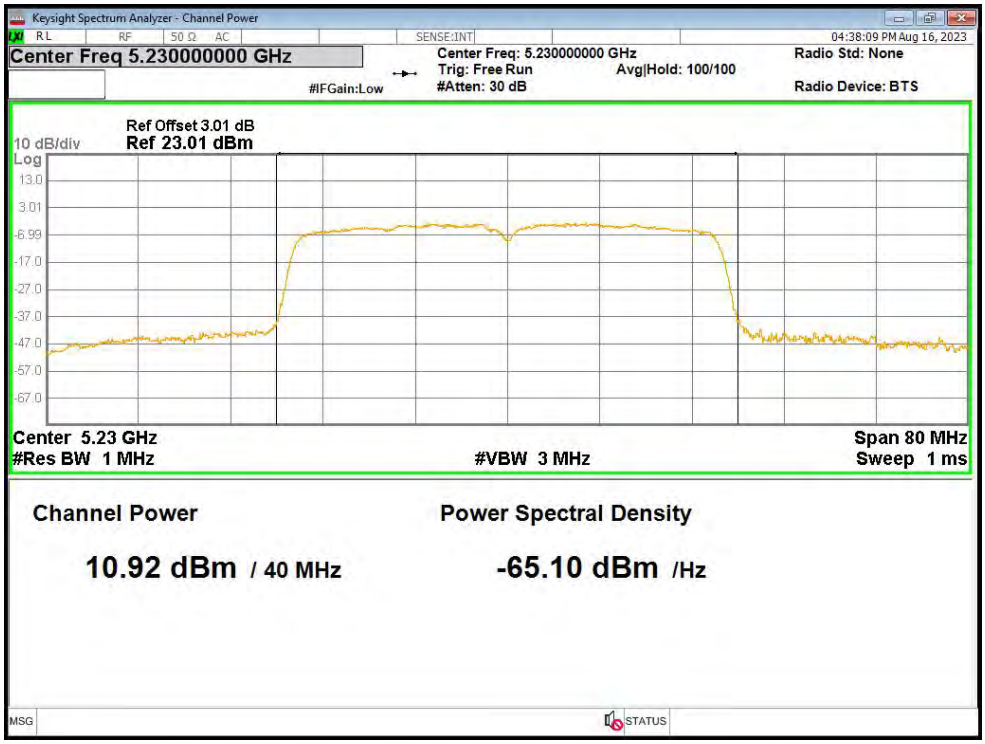
Power NVNT n20 5240MHz Ant1



Power NVNT n40 5190MHz Ant1



Power NVNT n40 5230MHz Ant1

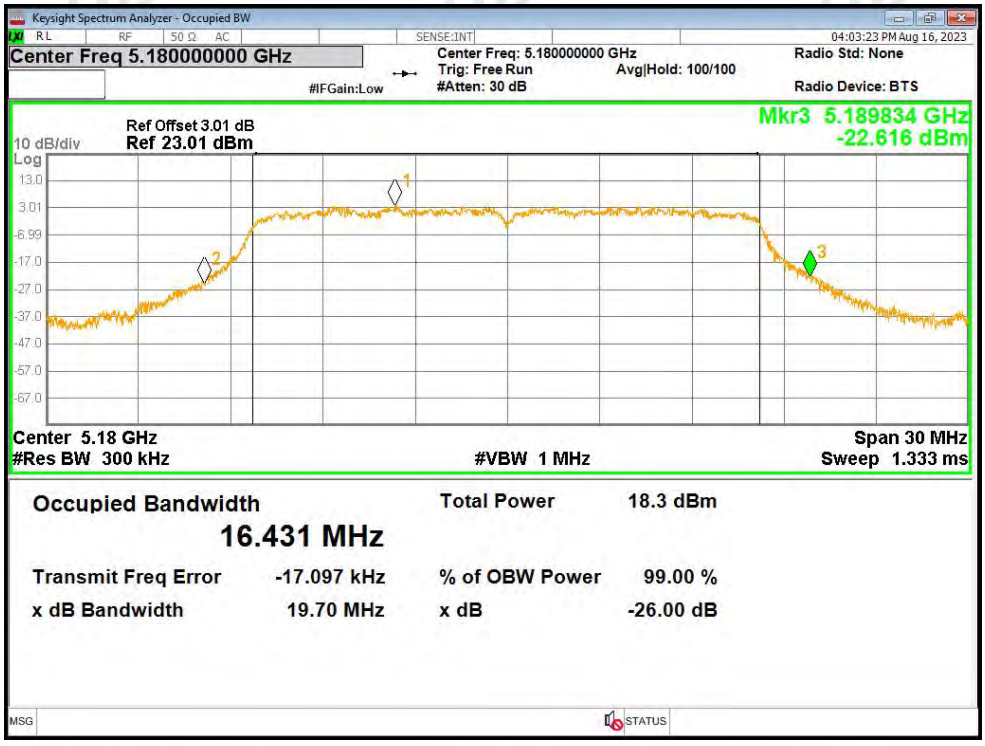


A.3-26dB Bandwidth

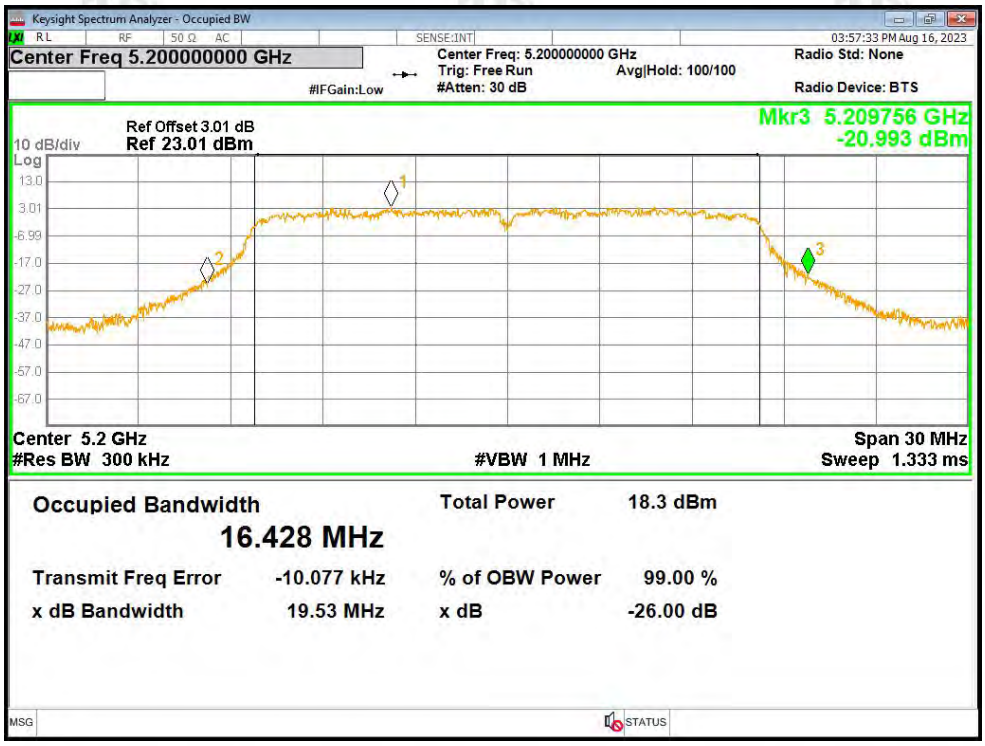
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	19.70	Pass
NVNT	a	5200	Ant1	19.53	Pass
NVNT	a	5240	Ant1	19.59	Pass
NVNT	n20	5180	Ant1	21.02	Pass
NVNT	n20	5200	Ant1	20.90	Pass
NVNT	n20	5240	Ant1	20.84	Pass
NVNT	n40	5190	Ant1	37.90	Pass
NVNT	n40	5230	Ant1	37.89	Pass

Test Graphs

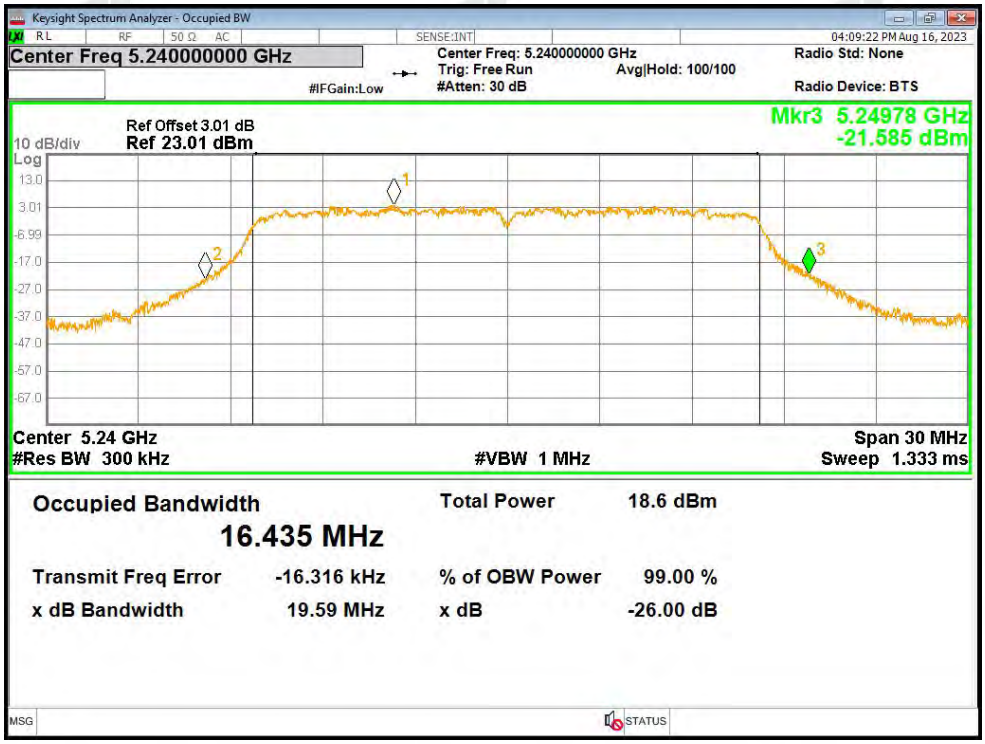
-26dB Bandwidth NVNT a 5180MHz Ant1



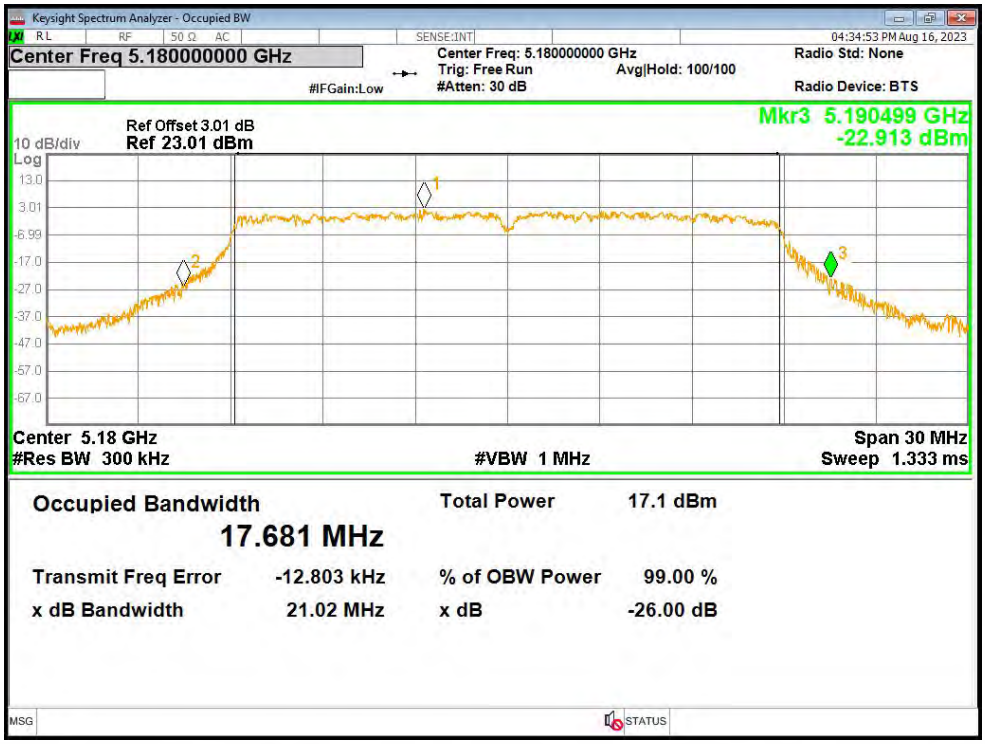
-26dB Bandwidth NVNT a 5200MHz Ant1



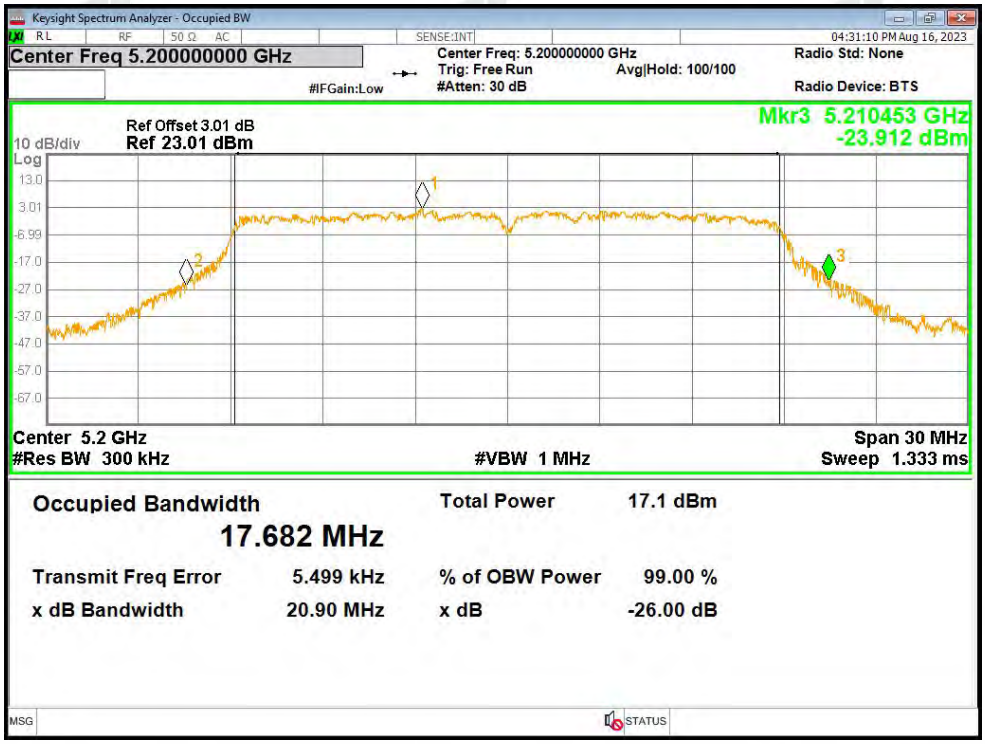
-26dB Bandwidth NVNT a 5240MHz Ant1



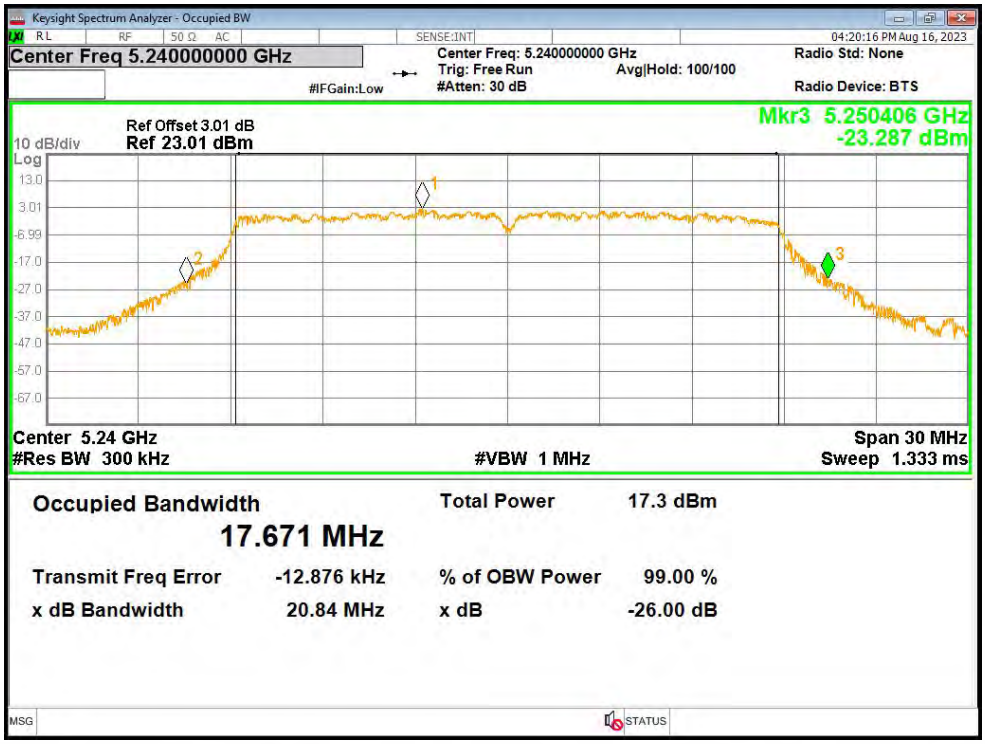
-26dB Bandwidth NVNT n20 5180MHz Ant1



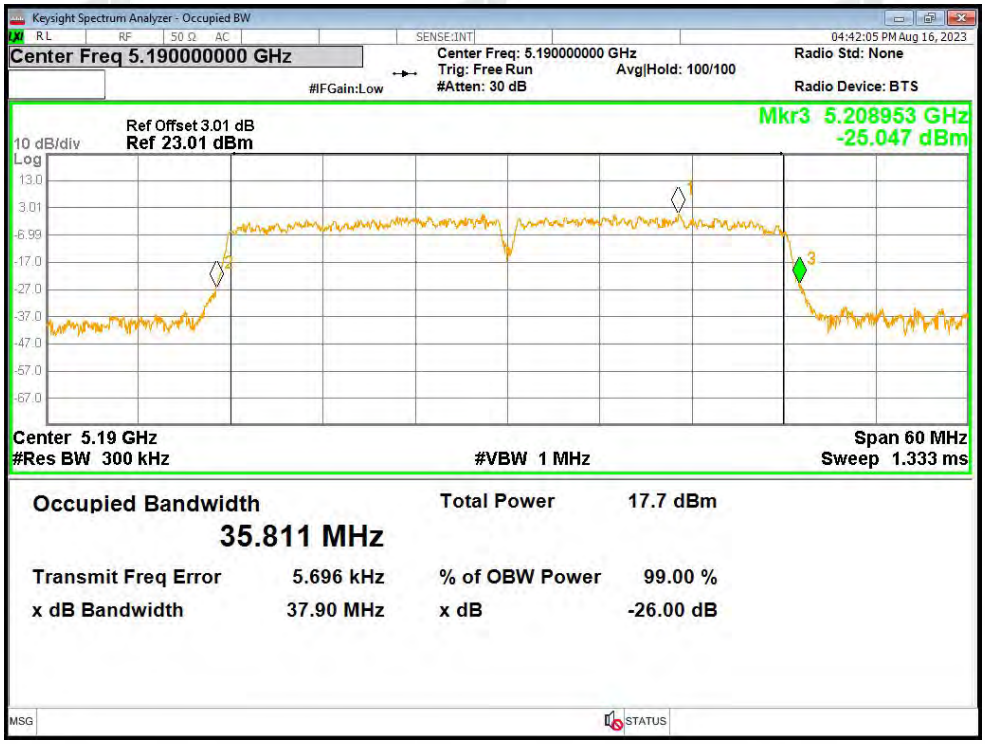
-26dB Bandwidth NVNT n20 5200MHz Ant1



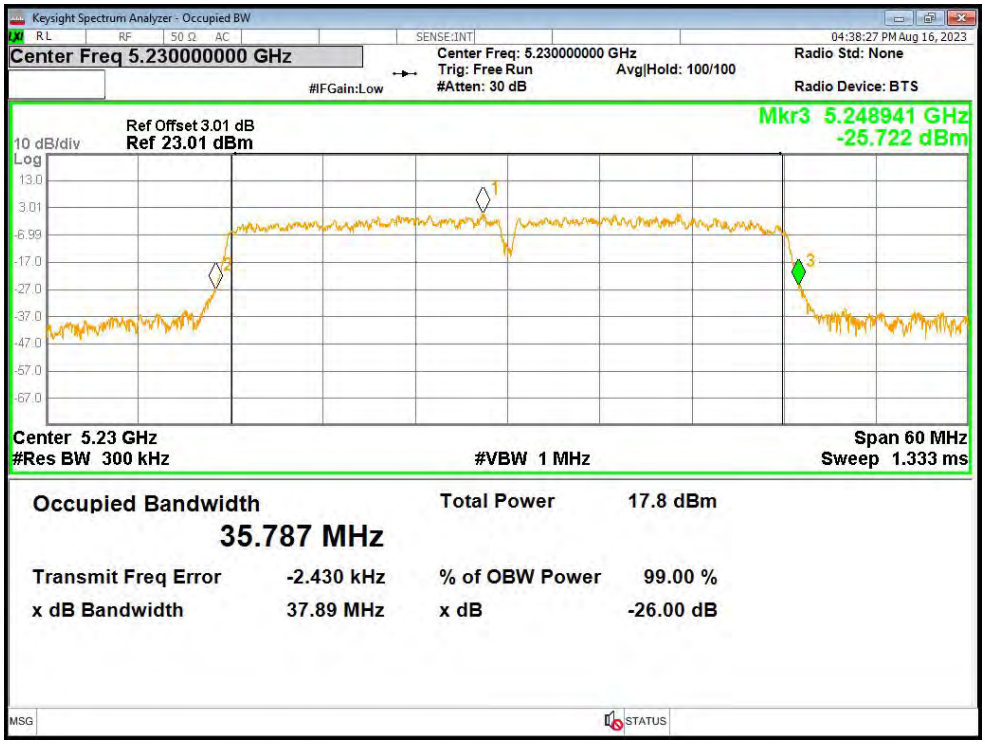
-26dB Bandwidth NVNT n20 5240MHz Ant1



-26dB Bandwidth NVNT n40 5190MHz Ant1



-26dB Bandwidth NVNT n40 5230MHz Ant1

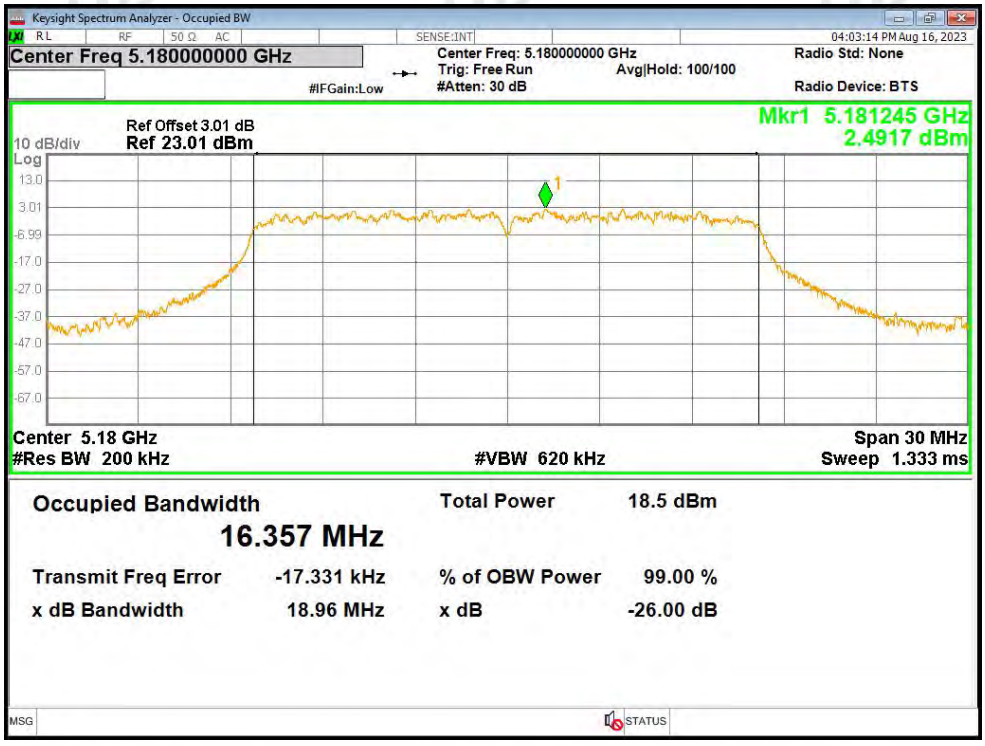


A.4Occupied Channel Bandwidth

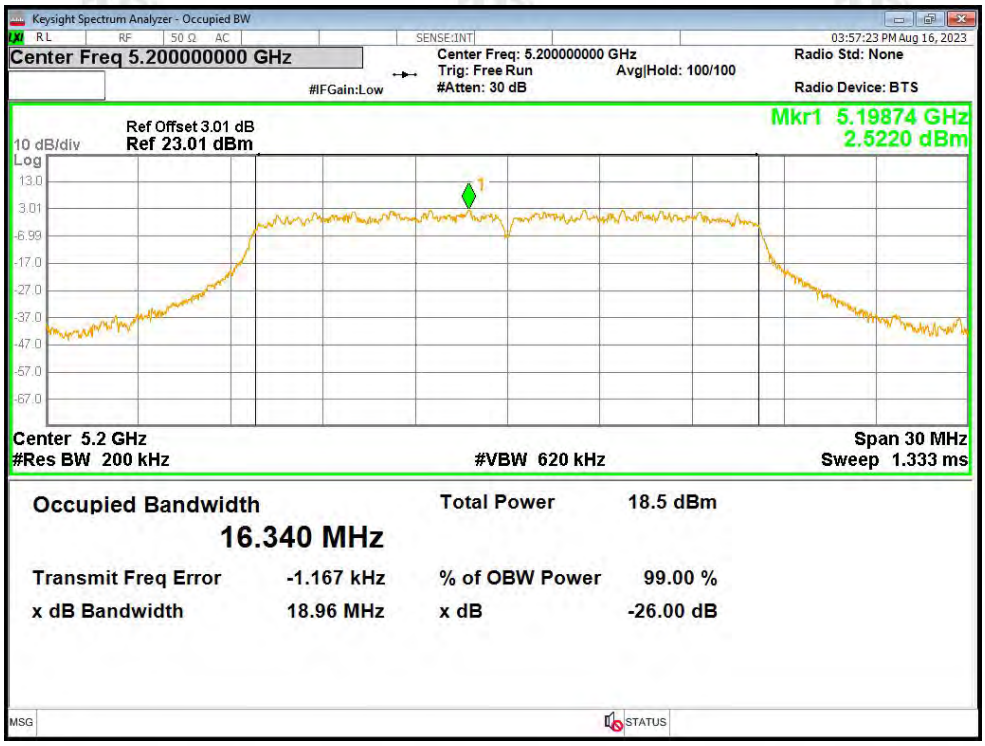
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.357
NVNT	a	5200	Ant1	16.340
NVNT	a	5240	Ant1	16.361
NVNT	n20	5180	Ant1	17.595
NVNT	n20	5200	Ant1	17.600
NVNT	n20	5240	Ant1	17.582
NVNT	n40	5190	Ant1	35.796
NVNT	n40	5230	Ant1	35.810

Test Graphs

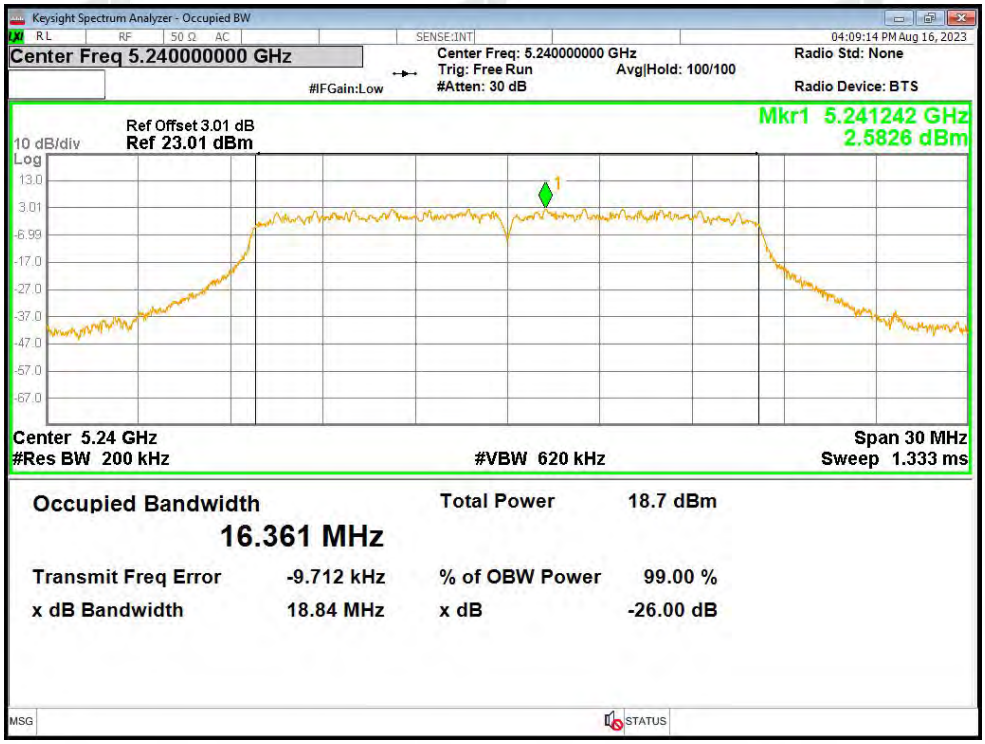
OBW NVNT a 5180MHz Ant1



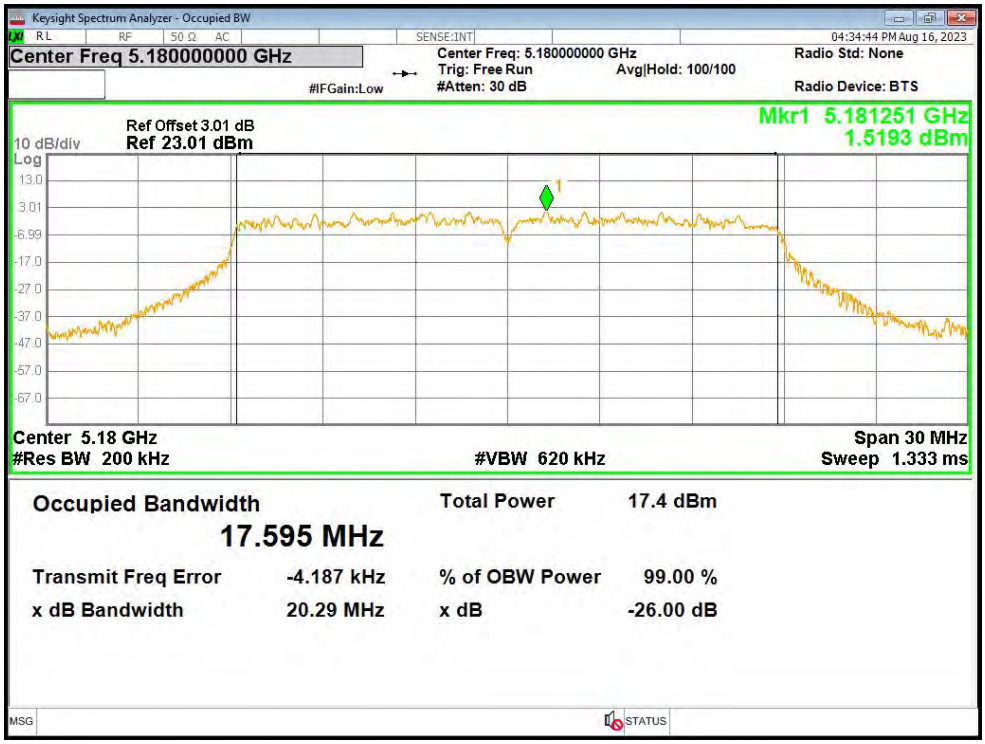
OBW NVNT a 5200MHz Ant1



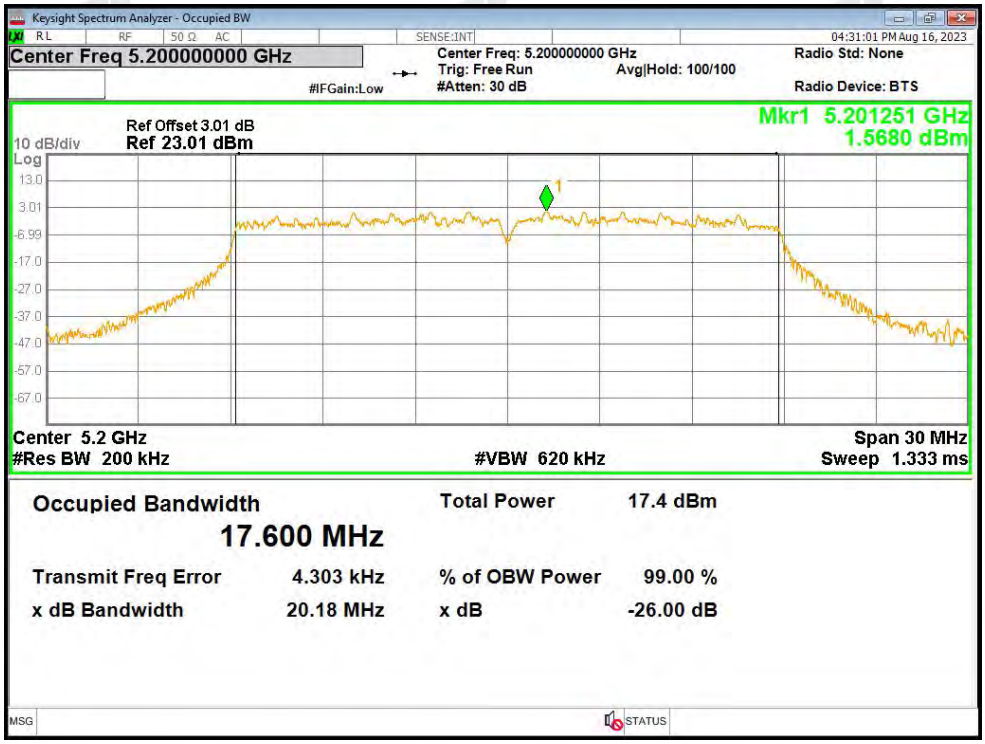
OBW NVNT a 5240MHz Ant1



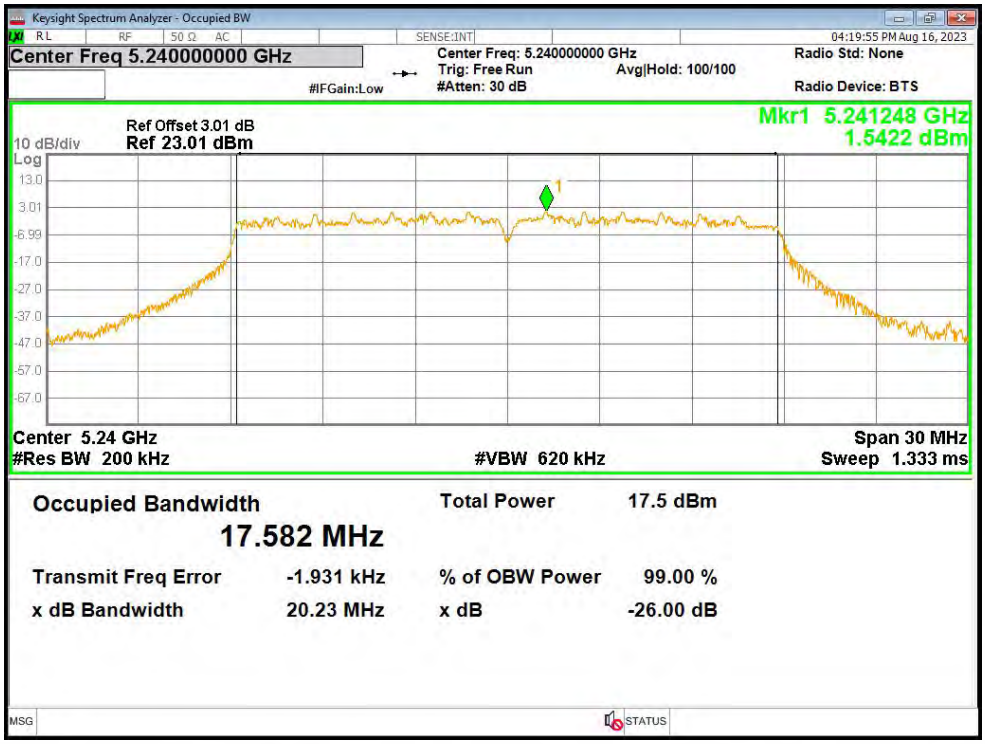
OBW NVNT n20 5180MHz Ant1



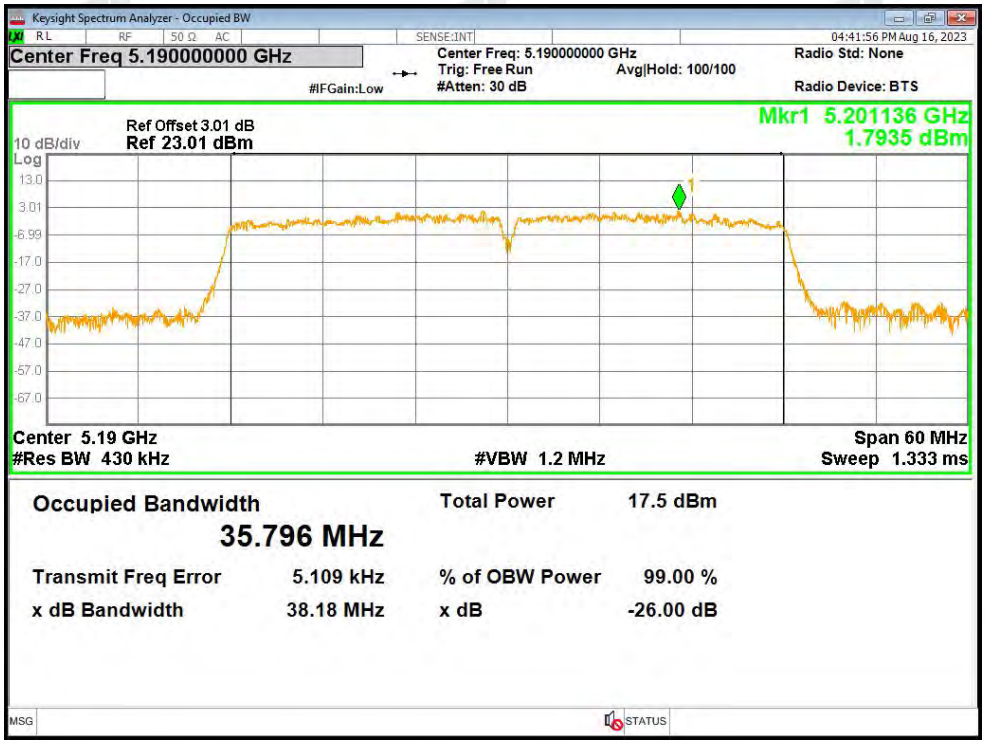
OBW NVNT n20 5200MHz Ant1



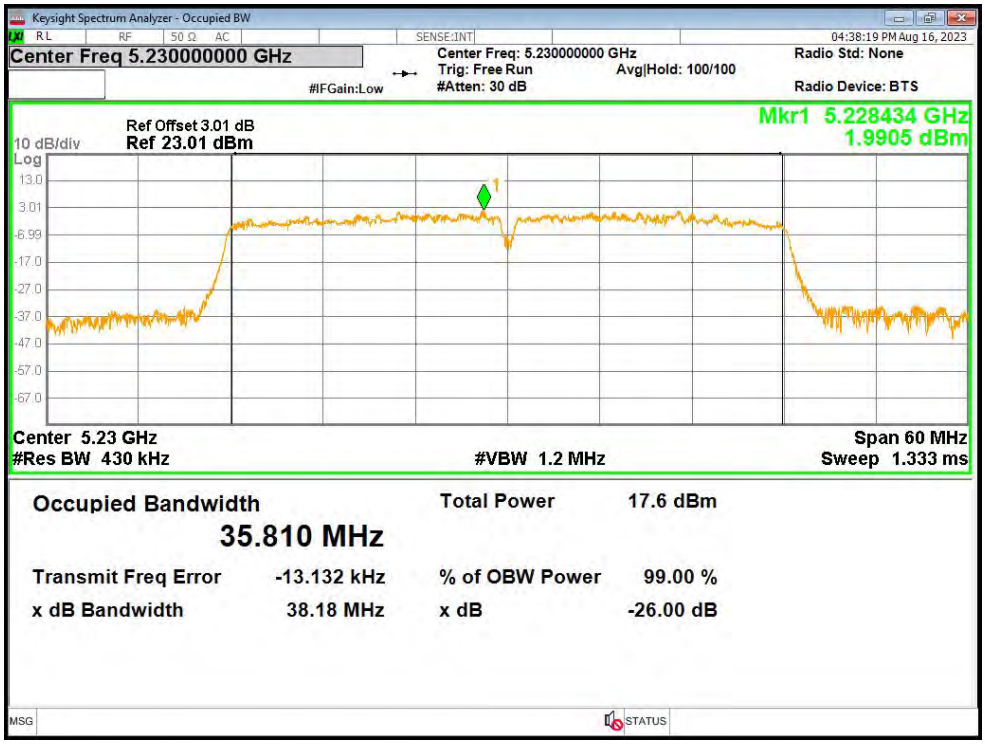
OBW NVNT n20 5240MHz Ant1



OBW NVNT n40 5190MHz Ant1



OBW NVNT n40 5230MHz Ant1



A.5Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	-4.2	0	-4.2	11	Pass
NVNT	a	5200	Ant1	-4.07	0.17	-3.9	11	Pass
NVNT	a	5240	Ant1	-4.8	0.12	-4.68	11	Pass
NVNT	n20	5180	Ant1	-4.32	0.26	-4.06	11	Pass
NVNT	n20	5200	Ant1	-4.67	0.35	-4.32	11	Pass
NVNT	n20	5240	Ant1	-6.32	0.26	-6.06	11	Pass
NVNT	n40	5190	Ant1	-11.12	0.56	-10.56	11	Pass
NVNT	n40	5230	Ant1	-11.54	0.48	-11.06	11	Pass

Test Graphs

PSD NVNT a 5180MHz Ant1

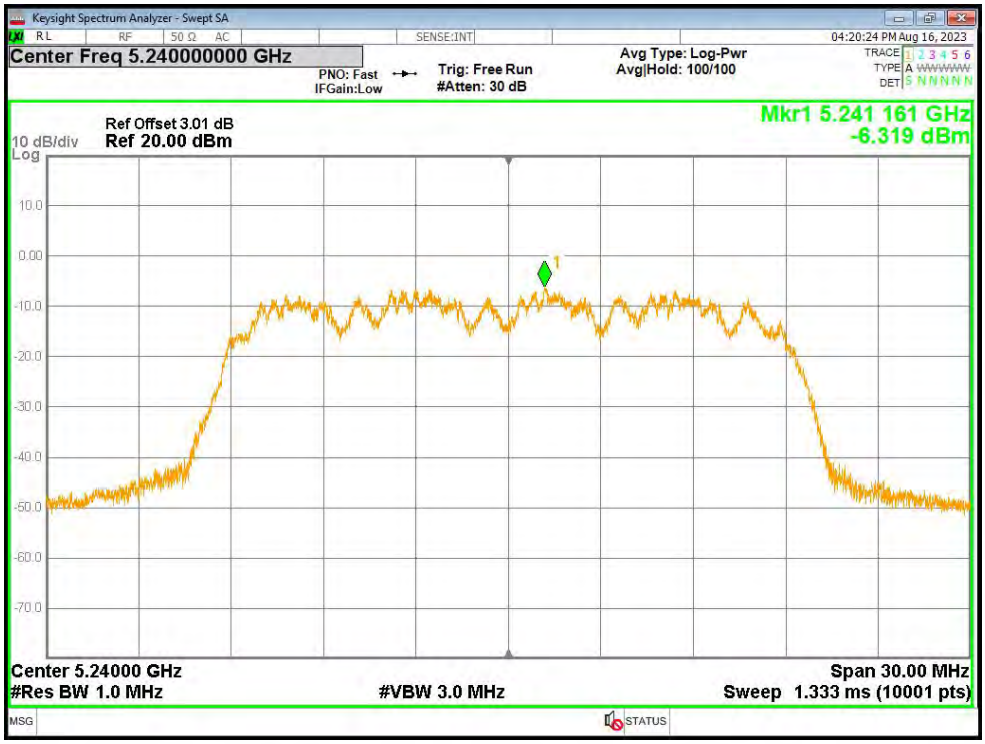
PSD NVNT a 5200MHz Ant1

PSD NVNT a 5240MHz Ant1

PSD NVNT n20 5180MHz Ant1

PSD NVNT n20 5200MHz Ant1

PSD NVNT n20 5240MHz Ant1



PSD NVNT n40 5190MHz Ant1

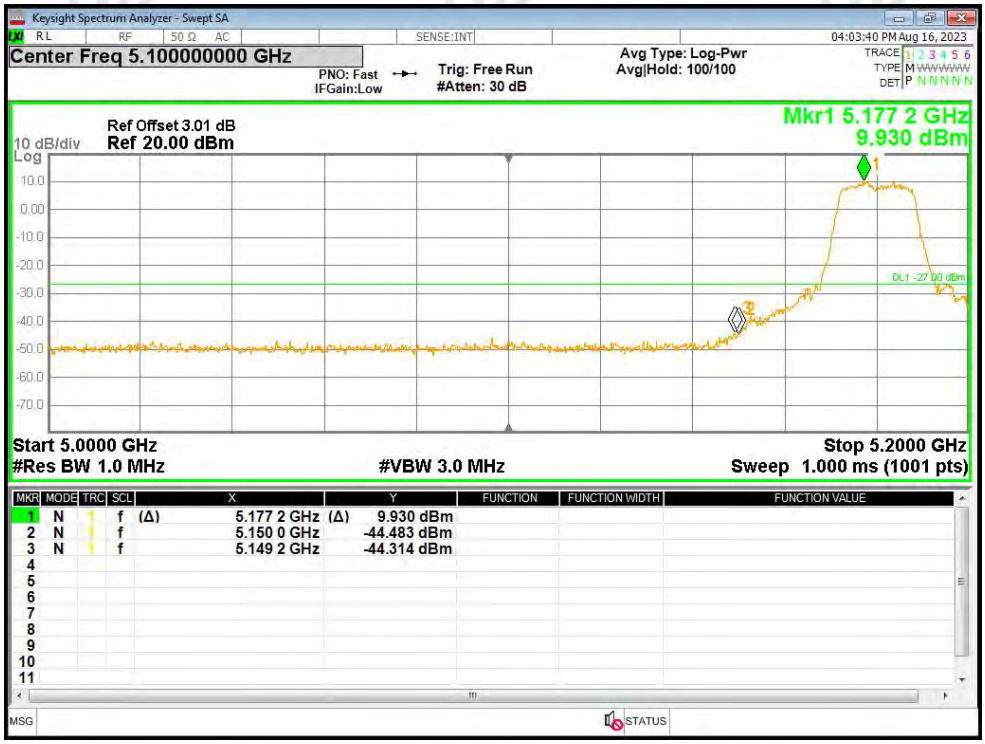
PSD NVNT n40 5230MHz Ant1

A.6Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-44.31	-27	Pass
NVNT	a	5240	Ant1	-44.86	-27	Pass
NVNT	n20	5180	Ant1	-44.94	-27	Pass
NVNT	n20	5240	Ant1	-45.51	-27	Pass
NVNT	n40	5190	Ant1	-34.58	-27	Pass
NVNT	n40	5230	Ant1	-46.35	-27	Pass

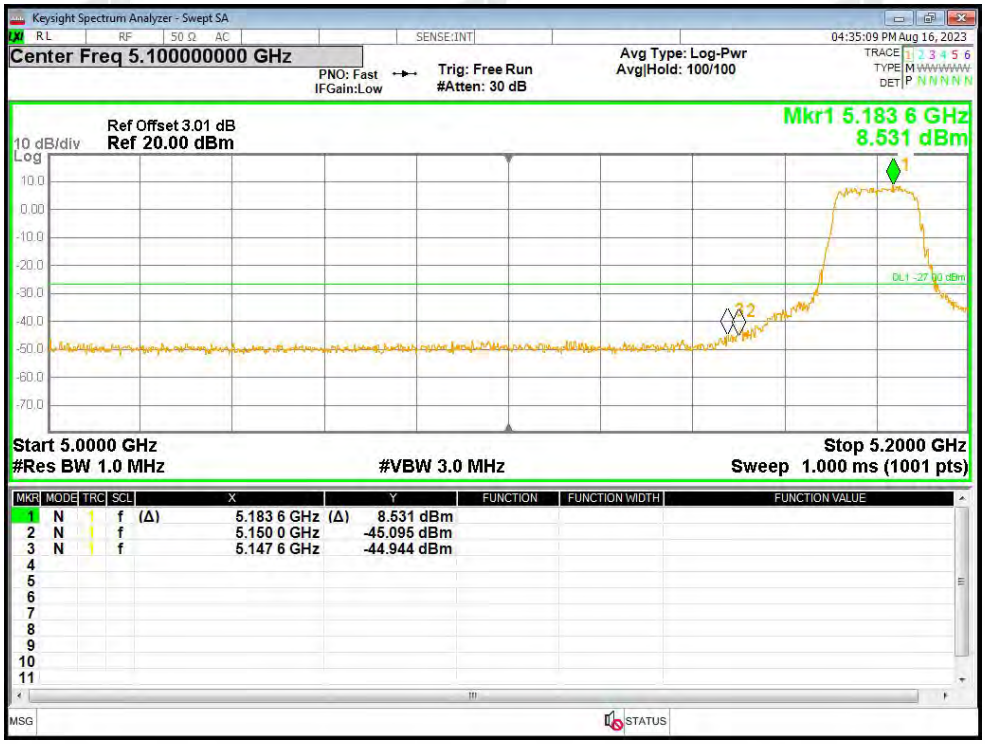
Test Graphs

Band Edge NVNT a 5180MHz Low Ant1

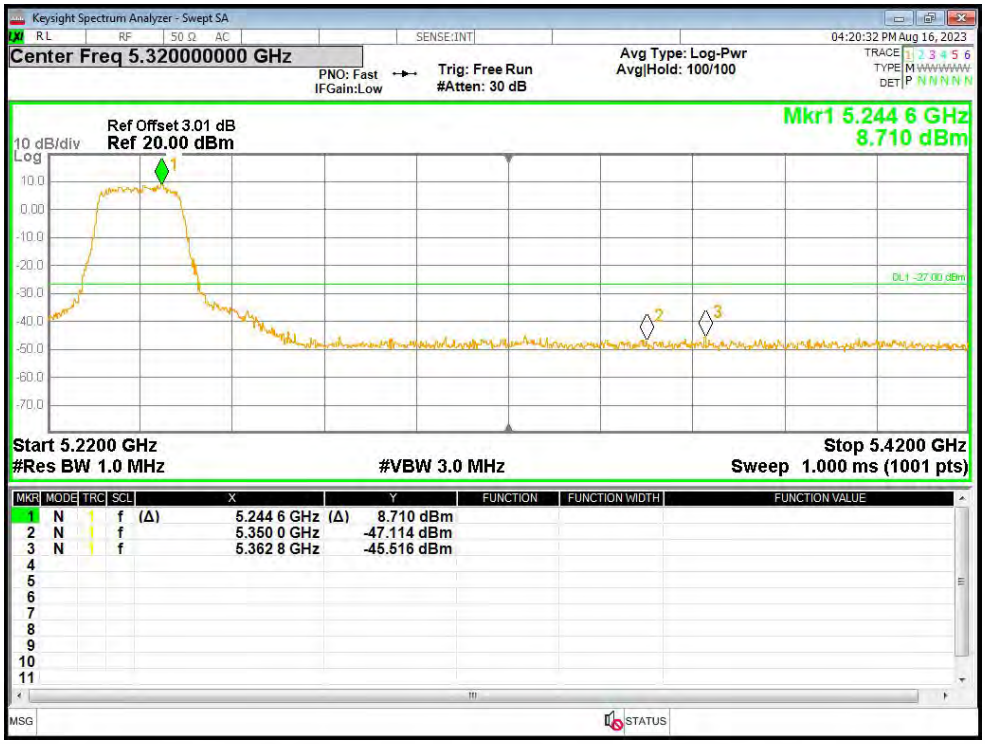


Band Edge NVNT a 5240MHz High Ant1

Band Edge NVNT n20 5180MHz Low Ant1



Band Edge NVNT n20 5240MHz High Ant1



Band Edge NVNT n40 5190MHz Low Ant1

Band Edge NVNT n40 5230MHz High Ant1

A.7Frequency Stability

Voltage							
TestMode	Channel	Voltage [Vdc]	Temperature (℃)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5180	NV	NT	-20000	-3.86	Within 5150-5250MHz	Pass
		LV	NT	-20000	-3.86		
		HV	NT	-20000	-3.86		
	5200	NV	NT	-20000	-3.85		
		LV	NT	-20000	-3.85		
		HV	NT	-20000	-3.85		
	5240	NV	NT	-20000	-3.82		
		LV	NT	-20000	-3.82		
		HV	NT	-20000	-3.82		
n20	5180	NV	NT	0	0		
		LV	NT	0	0		
		HV	NT	0	0		
	5200	NV	NT	0	0		
		LV	NT	0	0		
		HV	NT	0	0		
	5240	NV	NT	-20000	-3.82		
		LV	NT	-20000	-3.82		
		HV	NT	-20000	-3.82		
n40	5200	NV	NT	40000	7.71		
		LV	NT	40000	7.71		
		HV	NT	40000	7.71		
	5240	NV	NT	80000	15.3		
		LV	NT	80000	15.3		
		HV	NT	80000	15.3		

Temperature							
TestMode	Channel	Voltage [Vdc]	Temperature (℃)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
a	5180	NV	-30	-20000	-3.86	Within 5150-5250MHz	Pass
		NV	-20	-20000	-3.86		
		NV	-10	-20000	-3.86		
		NV	0	-20000	-3.86		
		NV	20	-20000	-3.86		
		NV	30	-20000	-3.86		
		NV	50	-20000	-3.86		
	5200	NV	-30	-20000	-3.85		
		NV	-20	-20000	-3.85		
		NV	-10	-20000	-3.85		
		NV	0	-20000	-3.85		
		NV	20	-20000	-3.85		
		NV	30	-20000	-3.85		
		NV	50	-20000	-3.85		
	5240	NV	-30	-20000	-3.82		
		NV	-20	-20000	-3.82		
		NV	-10	-20000	-3.82		
		NV	0	-20000	-3.82		
		NV	20	-20000	-3.82		
		NV	30	-20000	-3.82		
		NV	50	-20000	-3.82		
N20	5180	NV	-30	0	0		
		NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		
		NV	30	0	0		
		NV	50	0	0		
	5200	NV	-30	0	0		
		NV	-20	0	0		
		NV	-10	0	0		
		NV	0	0	0		
		NV	20	0	0		

		NV	30	0	0	Within 5150-5250MHz	Pass
		NV	50	0	0		
	5240	NV	-30	-20000	-3.82		
		NV	-20	-20000	-3.82		
		NV	-10	-20000	-3.82		
		NV	0	-20000	-3.82		
		NV	20	-20000	-3.82		
		NV	30	-20000	-3.82		
		NV	50	-20000	-3.82		
N40	5200	NV	-30	40000	7.71		
		NV	-20	40000	7.71		
		NV	-10	40000	7.71		
		NV	0	40000	7.71		
		NV	20	40000	7.71		
		NV	30	40000	7.71		
		NV	50	40000	7.71		
	5240	NV	-30	80000	15.3		
		NV	-20	80000	15.3		
		NV	-10	80000	15.3		
		NV	0	80000	15.3		
		NV	20	80000	15.3		
		NV	30	80000	15.3		
		NV	50	80000	15.3		

Note:Test temperature:−30°to + 50°, At room temperature, the test results are the worst, only reflecting the test results at room temperature.

Test Graphs

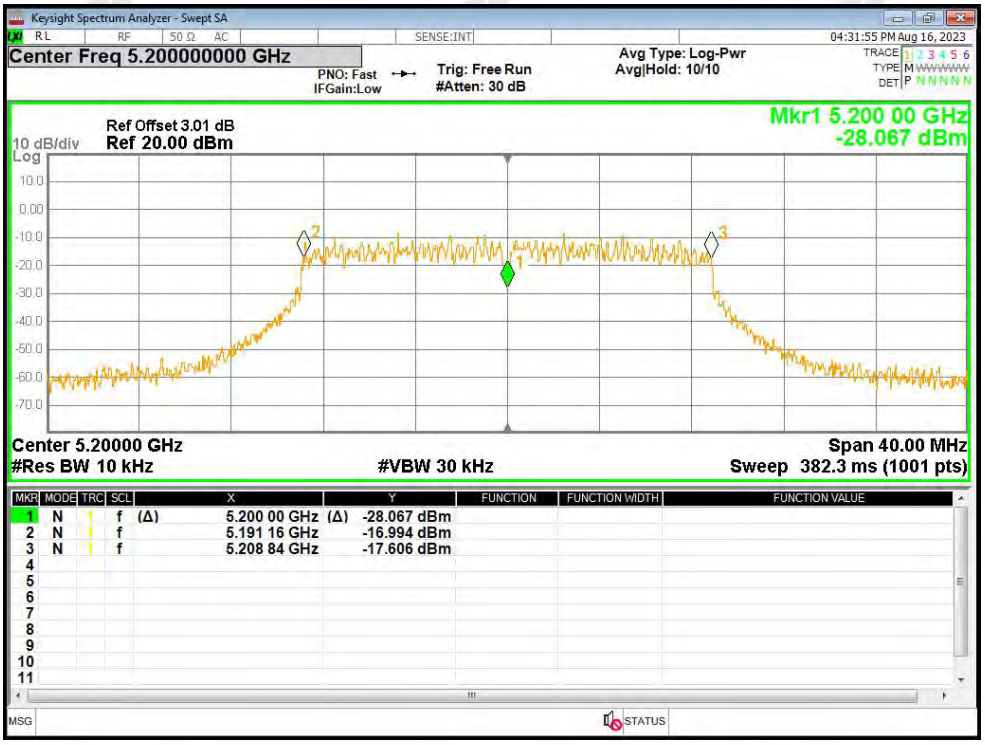
Freq. Stability NVNT a 5180MHz Ant1

Freq. Stability NVNT a 5200MHz Ant1

Freq. Stability NVNT a 5240MHz Ant1

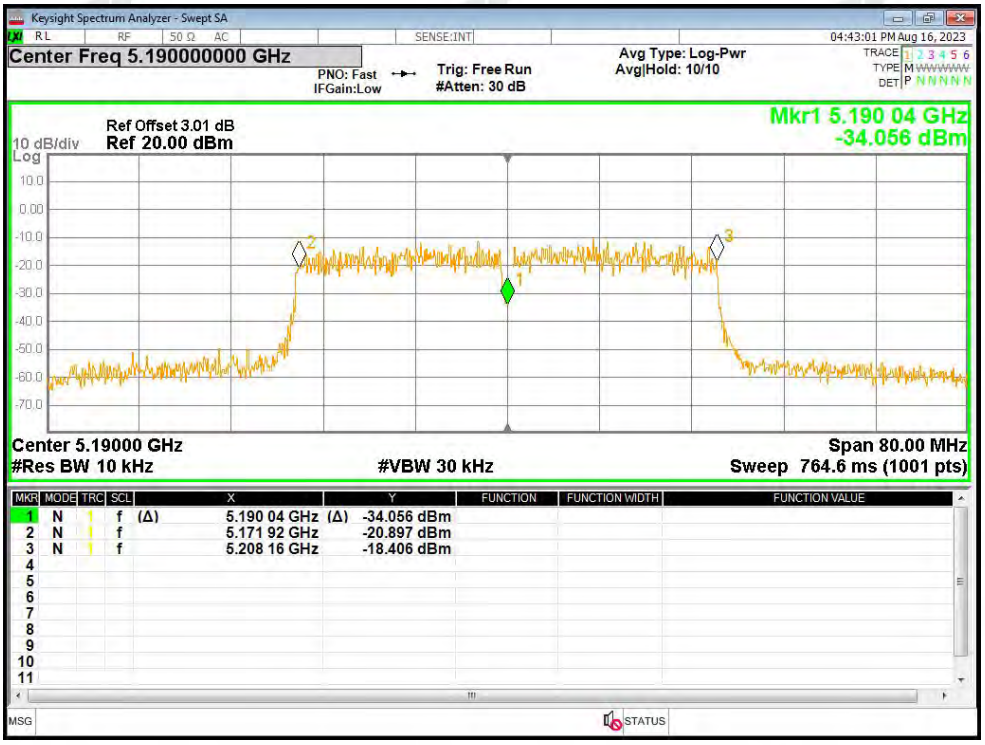
Freq. Stability NVNT n20 5180MHz Ant1

Freq. Stability NVNT n20 5200MHz Ant1

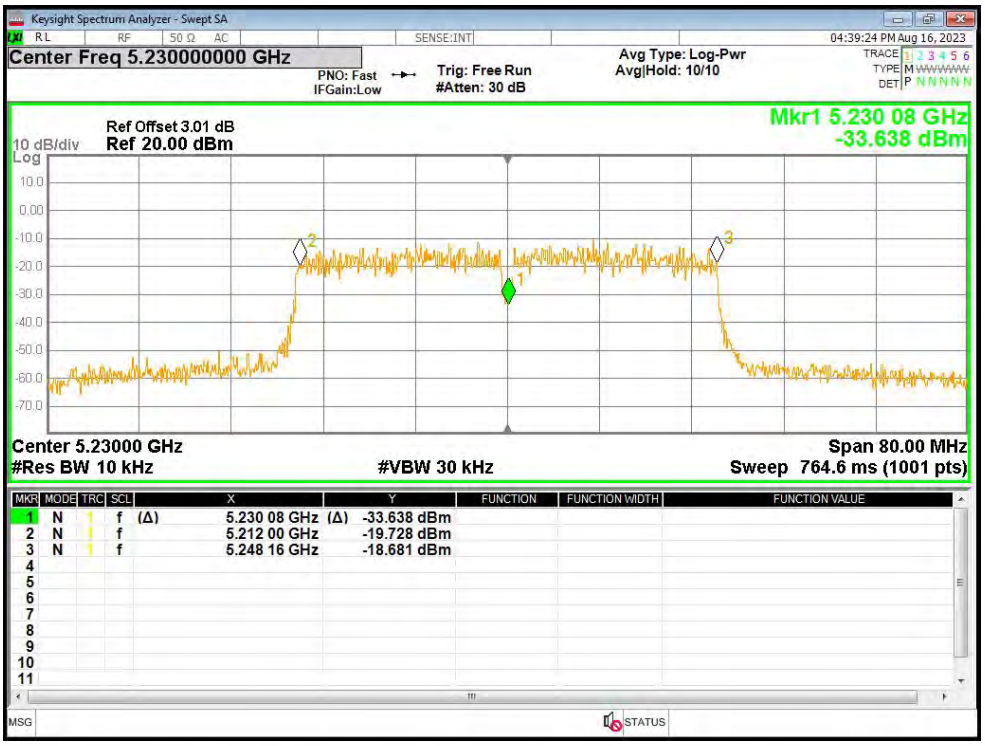


Freq. Stability NVNT n20 5240MHz Ant1

Freq. Stability NVNT n40 5190MHz Ant1



Freq. Stability NVNT n40 5230MHz Ant1

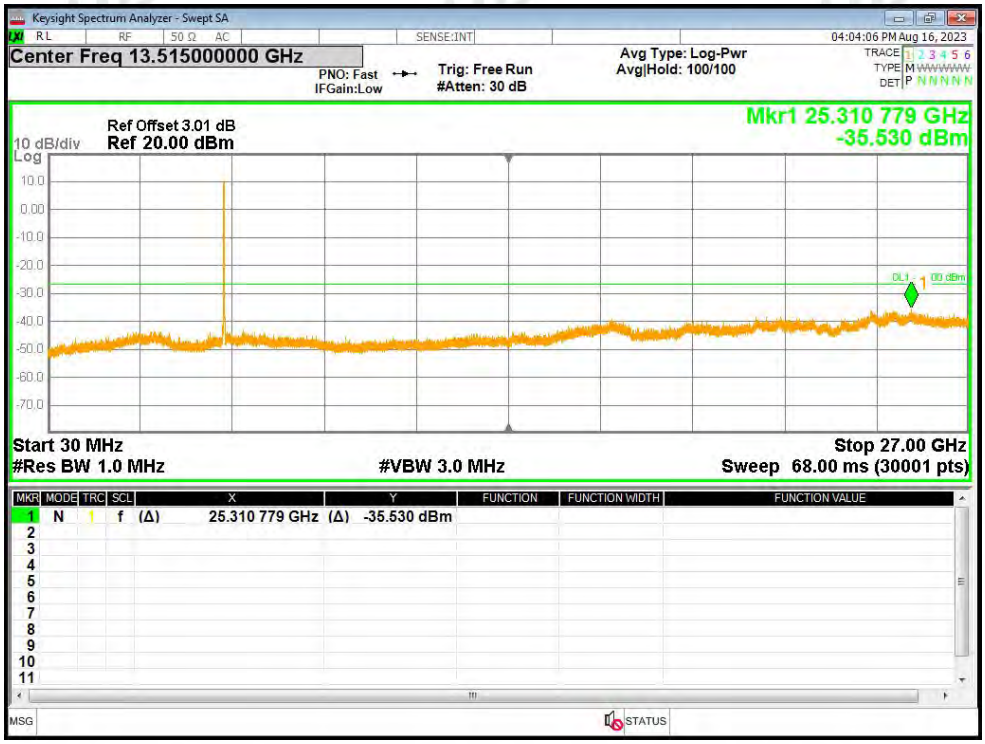


A.8Conducted RF Spurious Emission

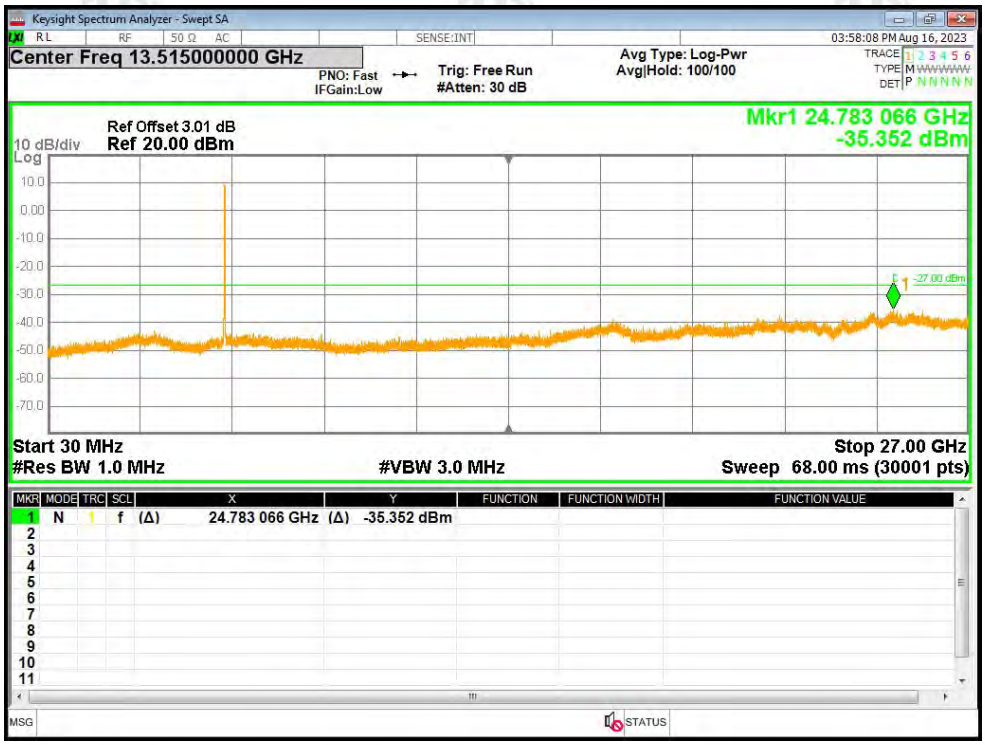
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	a	5180	Ant1	-35.53	-27	Pass
NVNT	a	5200	Ant1	-35.35	-27	Pass
NVNT	a	5240	Ant1	-35.3	-27	Pass
NVNT	n20	5180	Ant1	-36.01	-27	Pass
NVNT	n20	5200	Ant1	-35.3	-27	Pass
NVNT	n20	5240	Ant1	-35.37	-27	Pass
NVNT	n40	5190	Ant1	-35.87	-27	Pass
NVNT	n40	5230	Ant1	-35.86	-27	Pass

Test Graphs

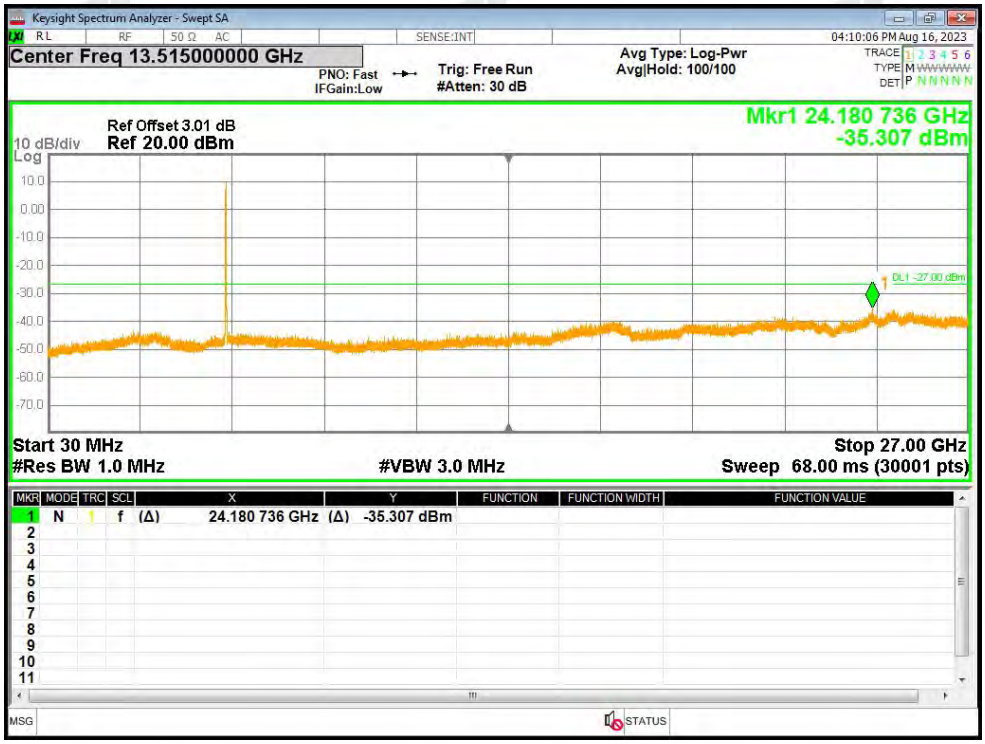
Tx. Spurious NVNT a 5180MHz Ant1 Emission



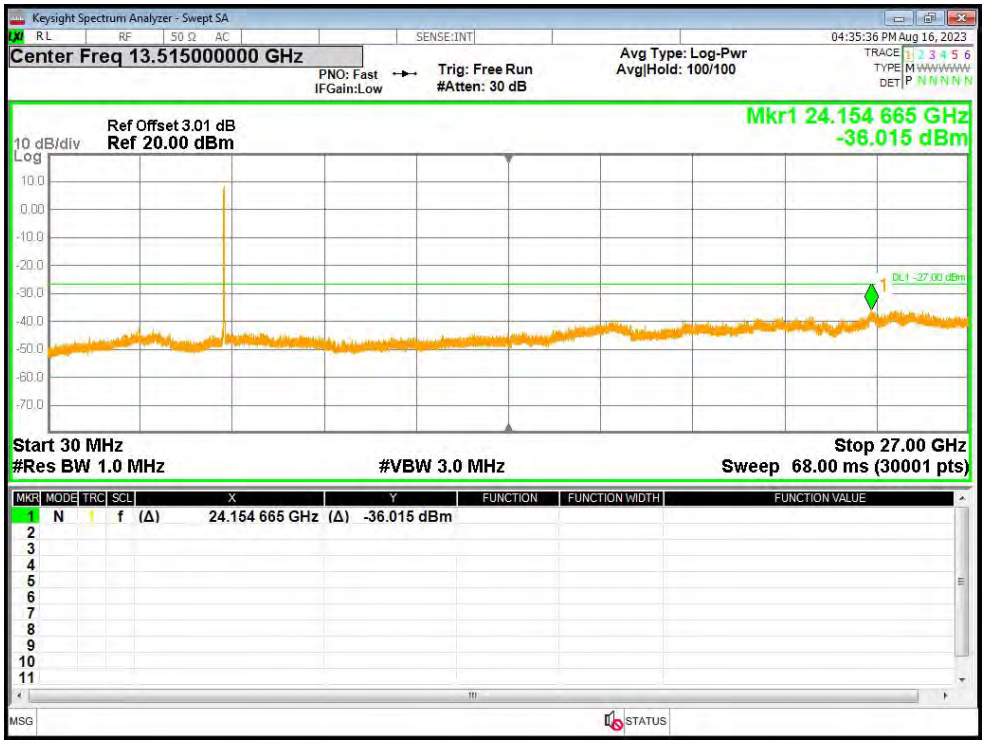
Tx. Spurious NVNT a 5200MHz Ant1 Emission



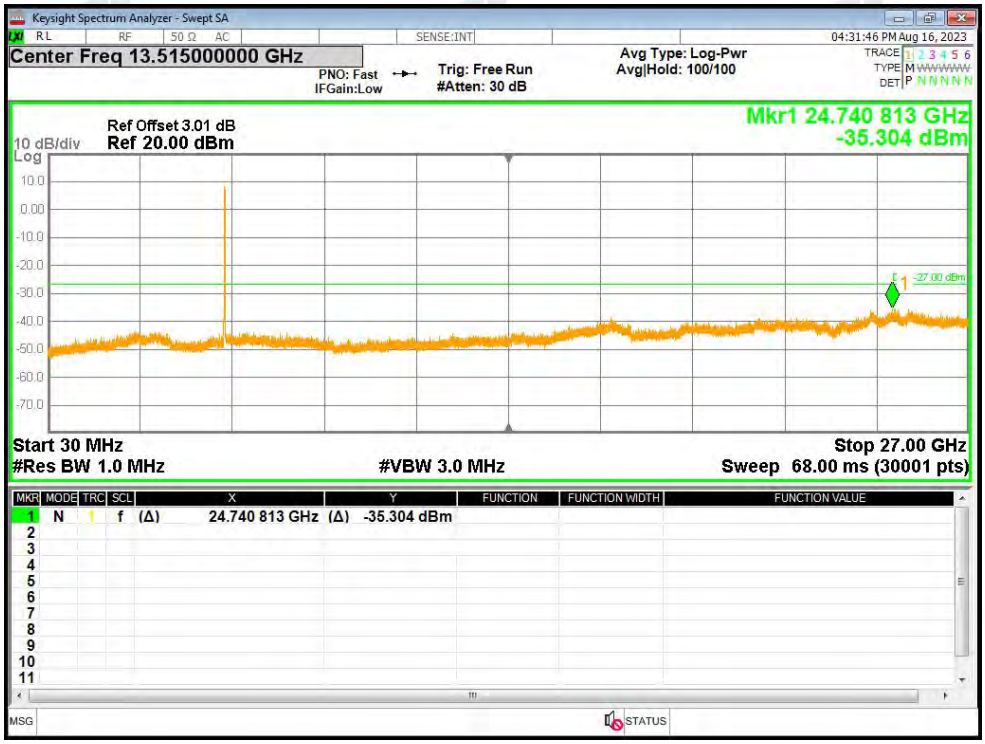
Tx. Spurious NVNT a 5240MHz Ant1 Emission



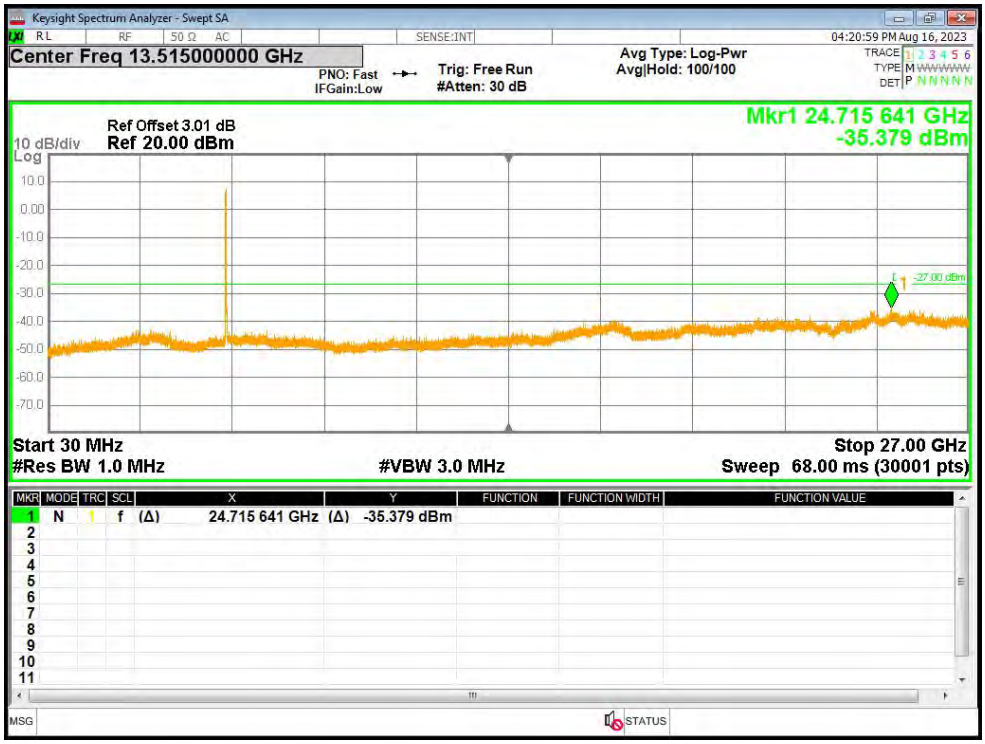
Tx. Spurious NVNT n20 5180MHz Ant1 Emission



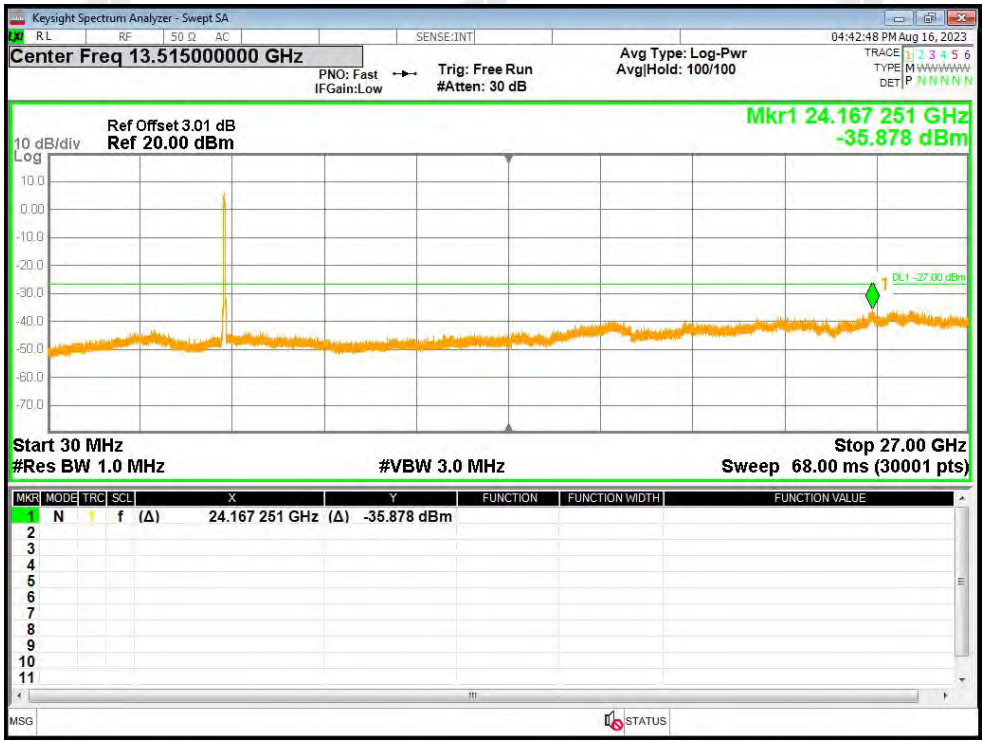
Tx. Spurious NVNT n20 5200MHz Ant1 Emission



Tx. Spurious NVNT n20 5240MHz Ant1 Emission



Tx. Spurious NVNT n40 5190MHz Ant1 Emission



Tx. Spurious NVNT n40 5230MHz Ant1 Emission