

8. SPECTRAL DENSITY TEST

8.1.Limit

Band 5150-5250 MHz:

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

Band 5250-5350 MHz:

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

Band 5470-5725 MHz:

The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

Band 5725-5850 MHz:

The power spectral density shall not exceed 30 dBm in any 500 KHz band.

8.2.Test Procedure

Use the test method described in ANSI C63.10 clause 12.5:

For the Band 5.15-5.35GHz; 5.47-5.725 GHz:

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW; Detector: RMS mode.

For the band 5.725-5.85 GHz:

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW,RMS Detector.

So use the test method described in KDB789033 clause E

- 1) Set the RBW=100kHz and VBW =300kHz
- 2) Number of points in sweep $\geq 2 \text{ Span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, so that narrowband signals are not lost between frequency bins.)
- 3) Sweep time = auto
- 4) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- 5) Use the “peak search” function of spectrum analyzer find the max value, then add $10\log(500\text{kHz}/\text{RBW})$ to the measured result.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

8.3.Test Results

EUT: Desktop 3D Printer		
M/N: Phrozen Sonic LS+ 3D Printer		
Test date: 2026-01-15	Pressure: 102.5±1.0 kpa	Humidity: 53.6±3.0%
Tested by: Carl	Test site: RF site	Temperature: 22.4±0.6°C

U-NII-1 Band:

Test Mode	Frequency (MHz)	Power Spectral Density (dBm/MHz)	Limit (dBm/MHz)
11a	5180	-4.834	17
	5200	-4.777	
	5240	-4.755	
11n HT20	5180	-5.884	17
	5200	-5.580	
	5240	-5.918	
11n HT40	5190	-8.860	17
	5230	-9.249	
11ac VHT20	5180	-5.783	17
	5200	-5.533	
	5240	-6.250	
11ac VHT40	5190	-9.016	17
	5230	-9.236	
11ac VHT80	5210	-10.309	17
Conclusion: Pass			

U-NII-3 Band:

Test Mode	Frequency (MHz)	Power Spectral Density (dBm/500KHz)	Limit (dBm/500KHz)
11a	5745	-7.104	30
	5785	-6.140	
	5825	-6.618	
11n HT20	5745	-6.731	30
	5785	-6.530	
	5825	-6.497	
11n HT40	5755	-10.694	30
	5795	-10.159	
11ac VHT20	5745	-6.850	30
	5785	-6.945	
	5825	-6.660	
11ac VHT40	5755	-10.911	30
	5795	-10.120	
11ac VHT80	5775	-12.920	30
Conclusion: Pass			

