

RFI Test Report – Apple A1401 12W USB Power Adapter

Manufacturer: Apple

Model: A1401

Model number: **A1401** Item number: **MD836LL/A**

Description: Wall wart module, USB type A socket, 5.2V 2.4A rating

Purchased from: Amazon Price: \$12 (Note: Obsolete, but readily available)

Test equipment: Isolation transformer, 50 uH LISN, HP 8560A with 20 dB preamp, Tek TDS320A. Note: Spectrum spikes around 100 MHz are FM band leakage.

Tested by: Gary Johnson, NA6O Date: Aug 13, 2019

Summary

Recommend for amateur radio stations: **YES**

FCC Part 15 conducted emissions: Compliant

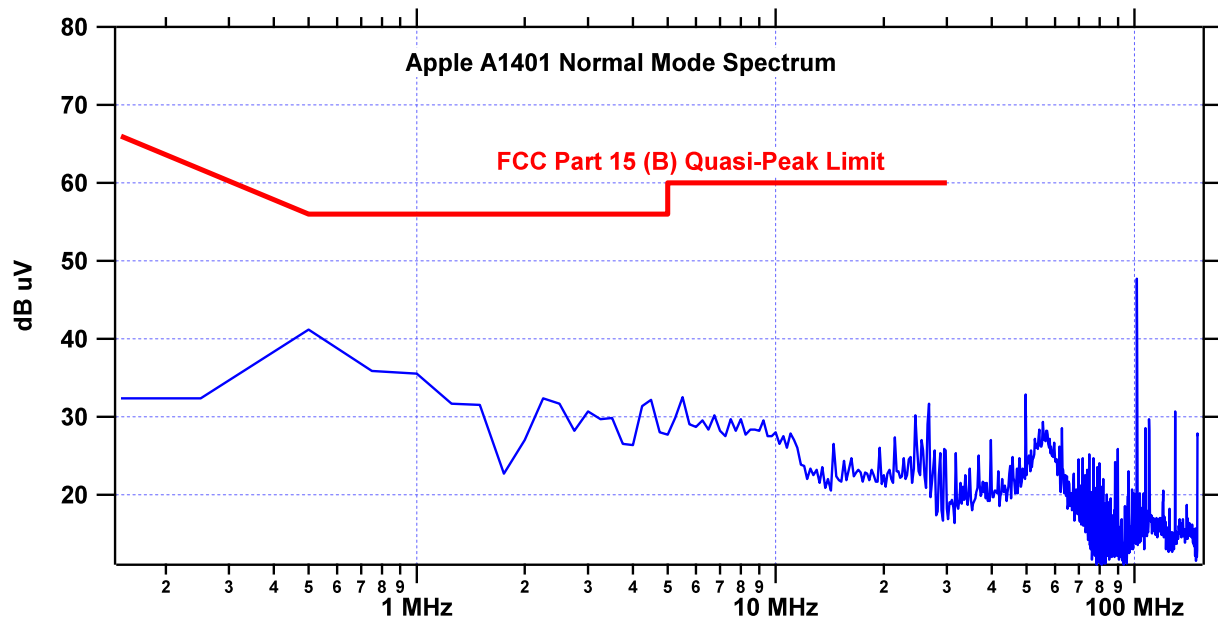
FCC Part 15 labeling: Compliant, listed on instructions

Observations:

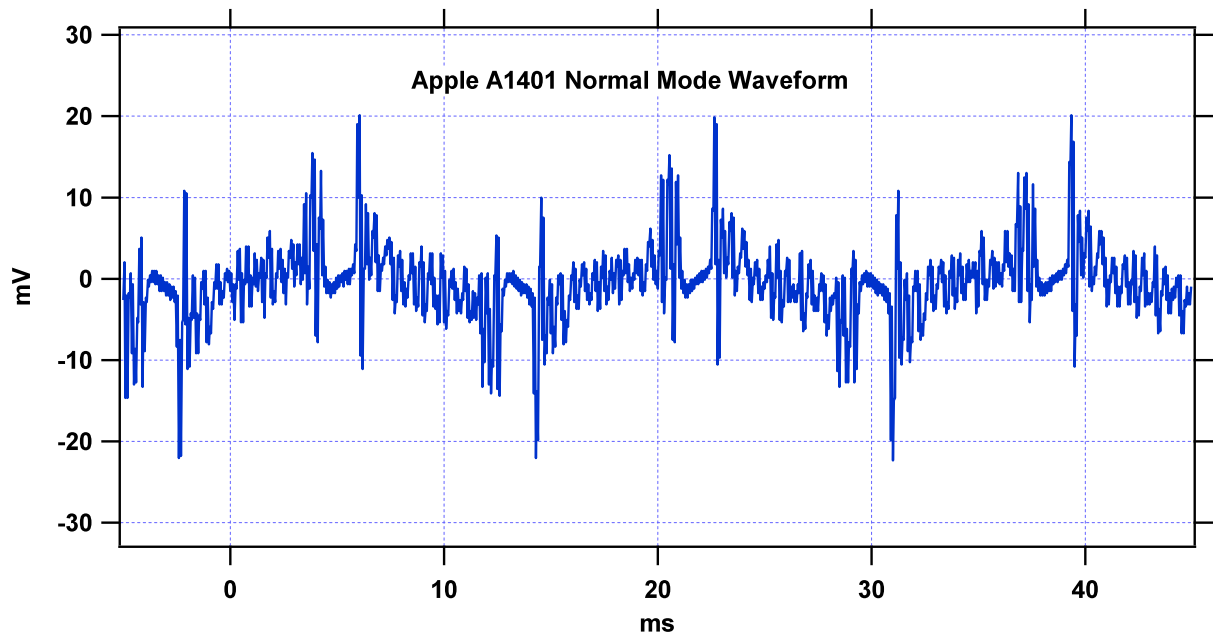
All testing performed with a 10 ohm (500 mA) load. DC output voltage was 5.1 V with low noise. First impression is that this is an extremely quiet switching supply. Switching frequency appears to be 2.7 kHz. Normal-mode noise is well-suppressed and limited to the audio range. The normal-mode spectrum shows that all energy is well below the FCC Part 15 (B) limit. There is very little VHF energy, my measurements being limited by local FM station leakage. Common-mode current is very low with no significant peaks and, again, no VHF energy. Noise is undetectable with my portable HF radio and direction finding antenna beyond a few feet away. Overall, an exceptionally clean device and a fine job by the Apple engineers. If you need to power a 5V device, such as a Raspberry Pi, this is an excellent adapter to choose.



Normal-Mode Spectrum



Normal-Mode Waveform



Common-mode Spectrum

