

By Thorsten Loesch

iFi Ultra Low-Noise AC/DC Adapter

London, U.K. – 28th December 2012

NOT ALL ADAPTERS ARE CREATED EQUAL

Note: This article focuses on the iFi Ultra Low-Noise AC/DC Adapter, NOT the iFi iUSB Power

Here at iFi, our products all ship with the same, specially-designed Ultra Low-Noise AC/DC Adapter using Switched Mode Power Supply (SMPS) technology. To some, upon first glance this unassuming ‘wall wart’ may be seen as a sign of cost-cutting and compromise. We even have some ask why we include a “Phone Charger”, even though it is clearly labelled “iFi Ultra Low-Noise AC/DC Adapter” (or iFi ULN Adapter for short).



Source: iFi

The iFi Ultra Adapter’s roots do not lie in cost-cutting or compromise:

1. Designed & constructed thoroughly, SMPS are as good, or even better than linear ones.
2. Correctly designed SMPS allow ease of use on all mains systems world-wide.
3. A correctly designed SMPS consumes less materials and electricity than a linear one, thus reducing environmental impact.

We have before asserted that our SMPS is just as quiet as an audio-grade linear power supply, simply because we designed it ground-up to be low-noise for audio use. Yet talking is one thing, proof positive another.

THE USUAL SUSPECTS

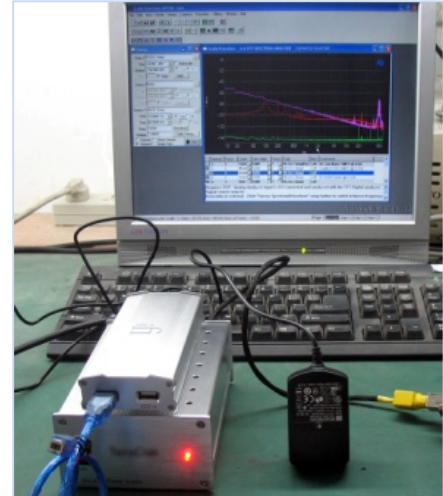
Just before the Holidays we took the time to record some measurements, so we can actually show just how good our SMPS is and how much it is different from your average phone charger.

Here you can see us testing 6 different SMPS Power adapters including our own. They all had identical specifications. You can see noise levels vary a LOT!



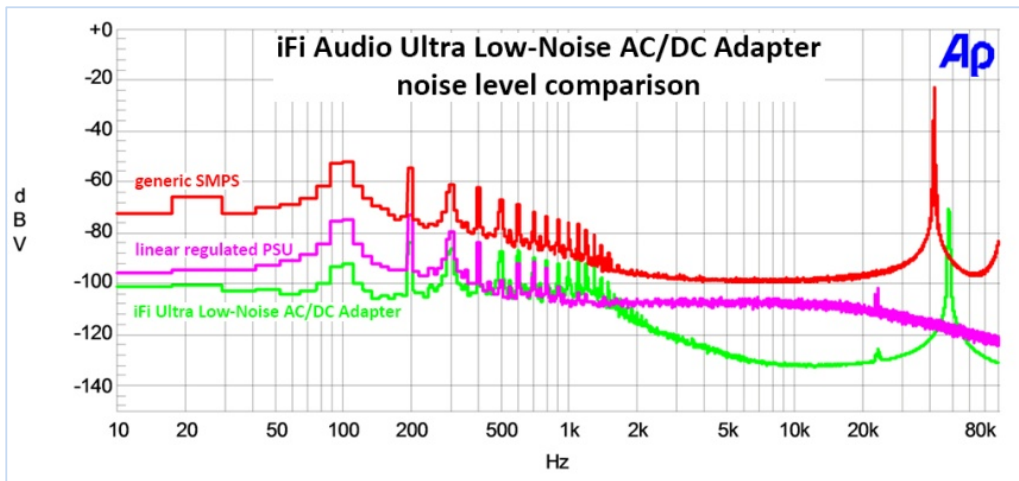
BRING ON THE BIG GUNS

But we can do even better. We also tested against a competitor’s linear 5V power supply, marketed as “low-noise linear regulated power supply” and sold with a number of different “Tails” as power supply upgrade for a number of different applications needing 5V. This linear supply has a price tag close to that of the iFi iUSB Power, is big, heavy and custom-built. Linear “Plugtop” type supplies are built to much lesser standards.



IFI ADAPTER RULES THEM ALL...

The chart below represents the noise level (y-axis) versus the frequency range (x-axis). The lower across the frequency range, the better and vice versa.



Summary:

1. The **generic SMPS** power adapter (**RED** line) is very noisy.
2. Dedicated, **low-noise linear regulated power supply** (**PURPLE** line) is quieter than generic SMPS power adapter...
3. ...but the **iFi Audio Ultra Low-Noise AC/DC Adapter** (**GREEN** line) by FAR is the QUIETEST of all.

DETAILED ANALYSIS:

For 100Hz noise the generic SMPS produces around 40dB or 100 times more noise than the iFi Ultra Adapter. At the main switching frequency the generic SMPS had nearly 100mV switching noise, while the iFi AC Adapter has less than 300uV, a 300-fold improvement for the iFi AC adapter!

Even the expensive dedicated low-noise linear regulated power supply has more noise than the iFi ULN Adapter at most frequencies. We see as much as 20dB/10 times more noise around 100Hz and in the 5kHz – 30kHz range from the linear supply! But we can also see that the linear supply is a significant improvement on the cheap generic SMPS.

The next time you listen one of iFi's product and remark how quiet it is, don't forget to thank that little unassuming iFi Ultra Adapter!

Welcome to better Computer Audio playback by iFi.

AUDIO PRECISION SERIES 2 TEST SYSTEM: TO MEASURE IS TO KNOW.

All tests were carried out under identical conditions and used our Audio Precision Series 2 Test System. This test system, with an MSRP of USD19,250, is an industry reference standard and used widely in the industry as well as by Stereophile and other magazines for audio measurements. All power supplies were tested with 15 Ohm loads, which for 5V supplies mean 333mA current where drawn while for 9V (like our iFi ULN Adapter) the current draw was 0.6A.



Find us on: www.facebook.com/ifiAudio and on https://twitter.com/ifi_audio

About iFi™

iFi™ is a subsidiary of Abbingdon Global. Abbingdon Global is also the parent company of Abbingdon Music Research (AMR). For further information, please contact Vincent Luke: vincentl@ifi-audio.com

Note to journalists: High resolution photos and official logos downloadable from: www.ifi-audio.com/partnerdownload/