

Re: Stopping RFI from a PC

Source: <http://sci.tech-archive.net/Archive/sci.electronics.basics/2005-10/msg00512.html>

- *From:* w_tom <w_tom1@xxxxxxxxxxxx>
 - *Date:* Thu, 20 Oct 2005 16:57:53 -0400
-

Noise is 'routinely' blocked inside the metal (power supply) box by the line filter – if filter exists. You are fooling yourself if you think some coil on the power cord or grounding is going to solve the problem. The power supply appears to be defective when designed. It appears to be another classic example of power supplies designed for MBAs types who call themselves 'computer literate'. Overseas manufacturers have discovered a lucrative market of technically naive computer 'experts' AND have dumped product into that market for higher profits.

You don't need a local electronics store. The internet is chock full of responsible vendors who sell minimally acceptable supplies. Supplies that meet Intel ATX power supply specs – and say so. Supplies that meet FCC Part 15 and the even more stringent European standards. Supplies that must also meet ISO, CE, UL, and other standards – all in the same box. Where are those approval labels on your power supply? What other problems will those missing standard (functions) create?

A previous post listed other functions that the power supply must provide. For example, does that supply have over voltage protection (OVP)? If not, then a power supply problem could destroy every other component inside a computer – later. OVP was standard even 30+ years ago so that a power supply failure to 'never' damage other computer parts. And yet power supplies missing essential functions such as AC line filter would also 'forget' to include other important functions.

How would you know if that supply has OVP? As pbdelete noted – open the power supply to identify an AC line filter:

- > Make sure there is a line filter. Like those with two
- > inductors in serial to the mains.

If no filter, then you are not going to fix that supply.

Other essential functions, such as OVP, are also probably missing. A supply designed for bean counters – people who are so often the reasons for failure.

Re: Stopping RFI from a PC

Noted earlier was how a power supply sells at lower price for greater profits. OVP is but another function routinely missing on power supplies designed for bean counter consumption. Power supply that provides no written specifications because so many such 'computer experts' only look at two numbers – dollars and watts. People who will rationalize their decision rather than take hard and conclusive actions.

If that power supply does not have an AC line filter as pbdelete asked to inspect for, then that missing function may be part of an iceberg. Your only viable solution is a new power supply from a responsible power supply vendor and manufacturer. Some computer parts houses don't even stock such supplies.

Meanwhile, what is accomplished by learning AC house wiring? Learn which wires are better and worse transmitting antennas. Again – and it should be so painfully obvious – no grounding was going to solve your RFI. That ground wire inside the wall only becomes a transmitting antenna – as was stated previously.

There is no plug-in or power cord solution for a missing filter that was required and standard even generations ago. There is no "coil to put around the the AC cord". A supply is causing RFI interference. Then the entire supply is defective by design. Completely unacceptable, a reason for more future problems, and a classic example of why people with MBA mentalities create so many failures. Patching a solution on the power cord is called 'curing symptoms' or a 'kludge'. A solution must exist at the problem – inside that power supply box – where the solution would have cost so little money.

"W. Watson" wrote:

- > First, let me note that I am in a community where electronic supplies
- > are not readily available—6K people in the Sierra foothills miles
- > and miles from Sacramento. I'm 60 miles from the nearest really full
- > scale vendor, and 45 miles from a good used electronic parts store.
- > While you wer complaining that I wasn't following pdelete's dictum,
- > I was trying to find a reasonable coil to put around the the AC cord
- > per other suggestions. None were readily availble. Hence, it the
- > intervening time I certainly felt that is worth pursuing other
- > avenues in this thread.
- >
- > Second, pdelete asked if the unit had PFC, so not knowing I tried to
- > contact the vendor. The answer is now known as "No". Only their
- > units distributed to Europe have them I am told. Further, I talked
- > to the vendor on the phone finally, they have no spec sheets or
- > circuit diagrams to distribute. What one sees on the box is it.
- >

Re: Stopping RFI from a PC

> Third, I decided to pull the new supply and put in the old one to
> find out if my observation was correct. Yes, the old unit did not
> produce any RFI. I then decided to turn on another computer in
> the room. It did not produce any noise in the AM radio I was using
> to test interference. I then plugged that computer into the outlet
> for the other 'noisy' computer. Voilla. Noise galore.
>
> Finally, this prompted to look for other noise sources in the three
> rooms of the building and examine the ground on outlet just
> mentioned. Since I had no clue as to how the four circuits in the
> small building worked, I mapped all the outlets, switches, and
> lights to the circuit breaker panel. Then I began experimeinting by
> turning parts of the circuit on and off, etc. The best I could do
> using this approach (so far) is to note that the one circuit that
> has the most devices on it is fairly noisy. I found one device, a
> network hub, that was a bit noisier than anything else.
>
> Where I plan to go from here is likely to see if I can just plain
> quell the noise at the questionable outlet and devices plugged into
> it. Beyond that, I'll live with the ruckus caused on the AM portion
> of the dial that distrubs me the most. In the meantime, I'm close
> to being off this little project, and getting onto other things of
> higher priority. The obvious disturbance in the AM signal attracted
> me enough to put this much time in on it, but not enough to keep me
> going for days trying to squelch it. Other things first. When they
> are out of the way, I'll look into this further. Summing it up I
> seem to have an RFI problem of unknown origin.
>
> As far as the new PSU unit is concerned, I'm keeping it. At least, it
> doesn't just belly up every 3-4 days.
>
> Since you are curious about this, I'll try to do you the favor of
> photographing the inside of both PSUs and posting it. That's not
> likely to happen today.
>
> If nothing else, at least I now have the circuit panel mapped.
> Thanks for your interest.

• *References:*

- ◆ ***Stopping RFI from a PC***
 ◇ *From: W. Watson*
- ◆ ***Re: Stopping RFI from a PC***
 ◇ *From: W. Watson*
- ◆ ***Re: Stopping RFI from a PC***
 ◇ *From: W. Watson*
- ◆ ***Re: Stopping RFI from a PC***
 ◇ *From: w_tom*
- ◆ ***Re: Stopping RFI from a PC***

Re: Stopping RFI from a PC

◇ *From: W. Watson*

- Prev by Date: ***Re: modem holds line..***
- Next by Date: ***Re: Water for Fuel 555 timer project***
- Previous by thread: ***Re: Stopping RFI from a PC***
- Next by thread: ***Re: Stopping RFI from a PC***
- Index(es):
 - ◆ ***Date***
 - ◆ ***Thread***