Re: HAS DOMESTIC MAINS EARTH FAILED AT SOME POINT?

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- *From*: "Main Account" <silviumotoc@xxxxxxxxxxx>
- *Date*: Thu, 26 May 2005 00:18:52 −0400

I may not have an answer to your question but I have some healthy advice for you. I worked in electricity transmission and distribution for the last 15 years, got within the limits of approach at voltage level going from 120V to 750kV on two continents. My main specialty is work safety so what I'm telling you is mostly from this perspective.
Remember that the ONLY protection you have, as a living creature is the ground (what you call "earthing"). If that fails you're virtually dead − meaning that you're not breathing, seeing, talking, eating, f..., etc − the fact that didn't happen yet doesn't mean it cannot happen, just that it didn't happen yet. If you have any doubt, even the smallest one, that your house grounding is not 100% safe have it checked ASAP before what I just said happens.
As a rule of thumb, for normal people like you and me (and probably 99% of the guys writing here) everything above 24V is lethal and should be treated accordingly. There's only one thing that makes the difference between life and death: your skin resistance. As long as that holds you're ok, as soon as it fails you're gone. What's underneath your skin is mostly salted water which guarantees a massive failure due to the electrical current passing through. Examples of how your skin resistance can decrease are: moisture (sweat, hands recently washed, hand lotion, etc), cuts, burns, scratches, etc. In other words, there is one thing that works for you, one million things against you.
Household grounding failure is a main cause for many accidents, some lethal, some not, some with long term consequences. Remember that copper oxidizes, the oxide increases the contact resistance which diminishes the efficiency of the ground connection. Also contact pressure has a tendency of decreasing in time with the same effect. Also bending the solid copper wires can reduce the copper section increasing the resistance thou reducing the overall grounding efficiency. In this scenario, one hand on the metal case of your PC and the other hand on the floor establishes a current path dangerously close to your heart, you had no problem when you first tested it because your hands are dry, next time you'll try it after eating an orange, you'll have some juice still on your finger and the next person entering your room will find you immobilized there and if this happens after more than 4 minutes your brain already suffered irreversible damage... Even if they manage to re−start your heart they'll never manage to fully re−load your operating system...
Again: if you have the smallest suspicion that your house grounding may be

faulty or not necessarily faulty, just if you thing it lost some of it's efficiency, have it checked. If you know exactly what you're doing you can do it yourself.... which I believe you would've done already... if you knew what you're doing... remember that money are of no value if you're not around to spend them, hire a certified electrician to have your grounding checked and eventually brought back within proper operating parameters before something unwanted happens.
This may also fix your problem... but again, it may not. The switching power supplies used in computers are converting the household AC voltage into DC, converts it back to AC but this time with a high frequency that allows use of a little high efficiency step down transformer to reduce the voltage. Once reduced it's converted to DC that's used by all components. To eliminate − as much as possible − interferences between the household AC frequency and whatever goes out of the power supply they use all sorts of filters (capacitors, inductors, etc). As you know, all filters have a certain range where their efficiency is high, outside of that range the efficiency decreases so it may allow some system frequency components or harmonics to enter your PC. If the ground is ok it may be that you, acting as a capacitor, change the filter range a little, sufficiently to reduce the hum to more acceptable levels. In which case you may want to try a different power supply, one that may better filter the primary components.

...sm

"andy12345" <andyk9@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote in message news:42952024$1_3@xxxxxxxxxxxxxxxxxxxx
> Hello,
> It has come to my attention recently − after using computer
> communications voice software that I can reduce the hum of the
> microphone recording by lightly touching my pc case.
> I was always under the impression that the earthing worked in my room.
> However, I have bypassed the psu earth temporarily simply by
> connecting a wire from a clamp in the pc case(unpainted surface) to
> the earth contact hole of the mains socket.
> This does not reduce the hum at all. However, by touching the case
> and touching the floor with the other hand I can reduce the hum on
> the signal. Therefore, is the earthing failing at some point in the
> house or is there something that I am ignorant of?
>
> I can supply any information if you require more detail.
> thanks
> goodbye
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- ***References***:

- ***HAS DOMESTIC MAINS EARTH FAILED AT SOME POINT?***
  - *From:* andy12345

- Prev by Date: ***Re: PS2 plays DVD with dim picture***
- Next by Date: ***Re: HAS DOMESTIC MAINS EARTH FAILED AT SOME POINT?***
- Previous by thread: ***HAS DOMESTIC MAINS EARTH FAILED AT SOME POINT?***
- Next by thread: ***Re: HAS DOMESTIC MAINS EARTH FAILED AT SOME POINT?***
- Index(es):
  - ***Date***
  - ***Thread***