

Re: Whole house surge suppressors

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Communication ports are easily damaged if ports are used beyond their design criteria. Two examples are RS-232 port to interconnect buildings and stereos driving outside speakers. However, first one must ask where was the incoming and outgoing path for that damage.

Does a surge enter on communication port, damage that port, then stop?

Of course not. First a complete circuit is established from cloud to earth. After that circuit is conducting electricity through everything in that circuit, only then does something fail. If that circuit is incoming and outgoing via appliance – a condition where 1000+ volts means the 'whole house protector system was defective – then the solution is not to supplement the protector. The solution is to fix the 'whole house' protector and its so critically necessary earth ground.

As noted previously, many communication ports, to communicate with devices not adjacent to the computer, already have effective internal protection. For example NIC (ethernet) port is typically good for in excess of 1000 volts. That is effective protection that can be overwhelmed if the necessary 'whole house' protector system is not installed. Most critical component of that system? Single point earth ground.

Do we fix the single point ground or do we install 'point of use' protectors on every of well over 100 appliances inside the house? Remember, GFCIs in kitchen and bathroom, furnace, electronic timer switch, dishwasher, clock radio, portable phone, microwave, alarm system – are but a few of the electronics that each need a \$15 or \$50 protector if the 'whole house' system is not properly installed. Better and less expensive to fix the 'whole house' (secondary) protection system.

Charles Perry cites a paper that is a 'must read' for anyone who needs surge protection:

<http://www.eeel.nist.gov/817/817g/spd-anthology/files/Enlightening.pdf>

Same authors make same point in an application note for builders and other structural contractors – again must read:

http://www.pueblo.gsa.gov/cic_text/housing/surge/contractors.htm

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In the Cozy Cabin example, simple principles of single point earth ground are violated. Damage was made possible by human failure. The Rambling Residence suffers from a similar failure. For example, outside speakers are incoming wires that did not first connect to single point ground before leaving the building.