

Surge Suppression and Why it is needed!

Lightning --- we've all seen it and for some it is a spectacular event to be admired, photographed and studied. For others lightning is frightening causing severe stress and panic. In either case you should take precautions to protect yourself as well as your electronic equipment from lightning strikes. This Tech Note/Application Note will not go into detail explaining how lightning is formed but you can visit the following web sites for more information:

http://www.crh.noaa.gov/pub/?n=/ltg/ltg_what_is_it.php

<http://en.wikipedia.org/wiki/Lightning>

<http://www.sky-fire.tv/index.cgi/lightning.html#whatis>

Surges and transients can occur for many reasons in perfectly calm clear weather without any presence of lightning or storms affecting more than just power lines. Any wire that ventures outside holds the potential for attracting lightning. Any long wiring run for example Speaker Loops or Zone Loops is susceptible to induced voltages including noise and surges. These over voltages can be transmitted directly into your electronic equipment or its peripherals and cause the same damage as a power line surge.

The worst offender is the telephone line that connects to your modem or terminal adapter for ISDN or DSL service. Although the telephone wiring is meant for lower voltage operation, telephone lines run the same risk of connecting with lightning strikes as do power lines. Although there are significant differences between power lines and telephone lines, the end result is the same. The telephone line provides a direct path into your electronic equipment for the high voltage spikes produced by lightning strikes or surges. A surge can travel into your electronic equipment and destroy not only the modem but also the adjacent expansion boards, the motherboard, or the entire unit. The same holds true for your security and home automation equipment connected to the phone line.

<http://www.extremetech.com/article2/0,2845,1155239,00.asp> See examples of lightning damage below:



It is always a good idea to incorporate additional protection when installing electronic equipment that's connected to a phone line, cable line, etc. However even with the best preparation it is impossible to guarantee against every possible scenario. Contacting your local phone service provider to see if they can offer any recommendations for additional protection as well as installing a whole house electrical surge suppressor may be needed.

ELK Products offers the ELK-950, ELK-951, ELK-952 and ELK-955 Surge Suppressors

<http://www.elkproducts.com/suppressors.htm> to help protect the Incoming Phone Line and in the case of the ELK-950 the Incoming Phone Line and Low Voltage AC from the Transformer. For a surge suppressor to work correctly it must be earth grounded.

Elk Product feels so strongly about the importance of phone line surge suppression that we now include the ELK-952 as part of the M1 Control panel kits. The ELK-952, when properly installed and grounded, can significantly decrease the likelihood of surge damage to a security control.

ELK Products, Inc
Technical Support