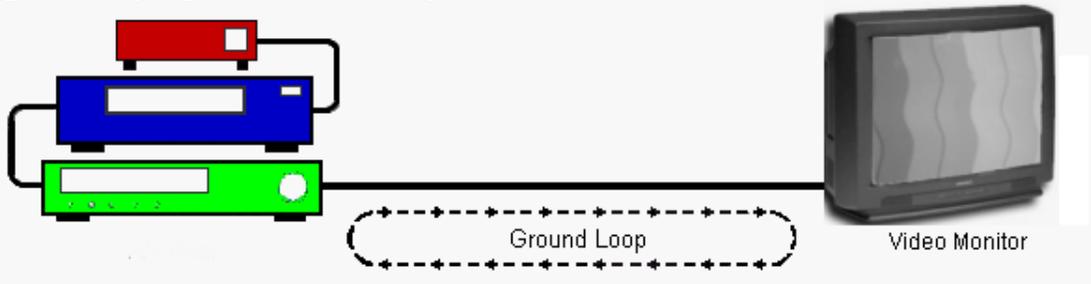


## HUM ELIMINATOR AND VIDEO ISOLATION TRANSFORMER FREQUENTLY ASKED QUESTIONS

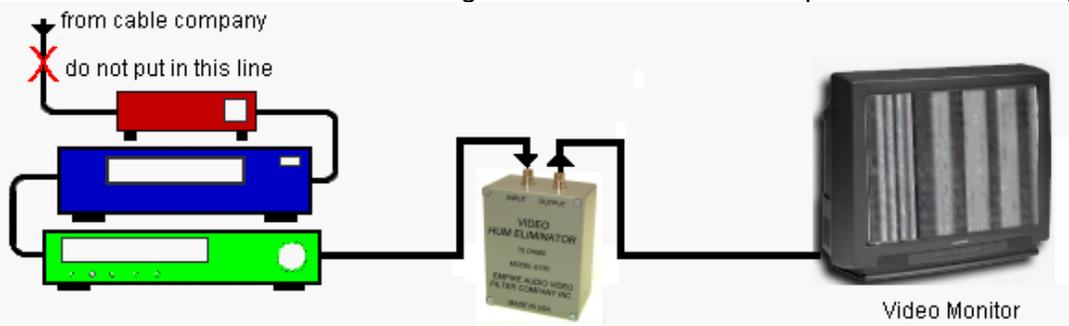
### How are hum and ground loops formed and what do they look like on the monitor?

Hum and ground loops are generated in two ways. First, differences in voltage between equipment grounding points cause a ground loop and second magnetic coupling causes hum or noise. Any long cable run may suffer from both problems. It is common that Video equipment is not connected to the same ground because of their location, which could be in different parts of a building. This could cause a ground loop. A long cable run may be run alongside other power cables that could cause magnetic coupling and result in 60 cycle hum.



### When you are using a hum eliminator or isolation transformer where should you put it in the video system?

The best place to put the hum eliminator or isolation transformer is at the end of the cable run near the monitor or display. With complex problems you can experiment with more convenient locations until you find the best location. A hum eliminator or isolation transformer can handle a large ground loop current so position is not always critical. A hum eliminator usually will remove any hum in the system. If the problem is severe and all hum is not all removed by a hum eliminator you should use a isolation transformer that breaks the ground connection and stops the current flowing in the shield.



### What makes a hum eliminator work?

When ground loop currents flow through the shield of video cables it produces a magnetic field in the iron core of the hum eliminator. This creates an inductor, or choke. At power frequencies, the high impedance of this choke in the ground path and the counter EMF produced effectively blocks the hum from passing through the unit. The video signal, on the center conductor, is shielded from this choke (by the cable's shield) and passes through the unit unaffected.

### Why would I use a hum eliminator instead of a video isolation transformer?

Hum eliminators have high bandwidth and less effect on the video signal. The hum eliminator is DC coupled (low frequency response extends to dc. A high frequency response of over 100 MHz makes hum eliminators suitable for even high-definition and projection TV systems. For NTSC or composite signals 8 MHz bandwidth is more than enough so isolation transformers provide a cure for stubborn hum or noise problems. than 10 MHz.

**Can a hum eliminator or isolation transformer be used with PAL and 50 cycle systems?** Yes they can, both our hum eliminators and isolation transformers are designed for 50 and 60 cycle power. PAL and NTSC video need approximately a dc to 6 MHz bandwidth to operate. A hum eliminator or isolation transformer has a bandwidth over that. Both are suitable for PAL and NTSC .