Subject: Re: IR Remote Control
Posted by gofar99 on Tue, 08 Jan 2013 16:40:52 GMT
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Hi Yes indeed just like the rabbit in Alice in Wonderland.

Anyhow, yes grounding is not nearly as simple as it would seem. In a typical audio project I use the metal chassis (if there is one) as a shield directly connected to the earth side of the AC mains at the input power jack. I use only IEC three wire connections and always a line filter there. I isolate the power supply and signal portions of the circuitry and at a single point of each connect them together. Often at the input as mentioned before. Then from there connect the chassis to the circuitry ground through a 0.1 to 0.22 uf type X2 capacitor with a parallel resistor in the range of 120-150 ohms. This arrangement does two thing, first lets the chassis act as a shield for the stuff inside, and second as a protective barrier if there is an internal fault that would possibly energize the chassis. I use the buss arrangement on occasion as well. This can be the case when there are numerous physically isolated ground connections. I still keep the power and signal grounds separated though. It may then require two busses that eventually connect. I like to use silver wire for the signal buss and large diameter copper wire (12g or larger) for the power buss. The choice of wire largely depends on the the magnitude of the current flow and how low the impedance must be for good S/N.

As Wayne noted when it all connects to the AC power source things can get a bit funky. You can get external ground loops through the AC ground just as easily as internal ones. The bit about CATV systems is right on. I had that problem in one set up. The CATV and AC mains grounds were not the same and a huge amount of noise was introduced into the audio. The fix for that was a ground isolator in the CATV line. My present stereo is not connected to the CATV or any other external source (like Ethernet) thus no contamination.

I guess I went down the same rabbit hole.