

#125 Psych System Grounding



[07/09/01]

Tech Note

Instructions for Grounding an Entire Psychologist Remote Monitor Mix System

Having a good, consistent ground is imperative to any successful electrical system. Grounding is even more important in an audio system where there can be digital signals, audio signals, and power signals. Each of these signals needs to be separate and grounded so that audio signals will be heard cleanly, digital signals will be sent and received accurately, and the system will be powered appropriately and sufficiently. It is particularly critical to properly ground everything in the Psychologist Remote Monitor Mixing System because digital, audio, and power signals run in very close proximity.

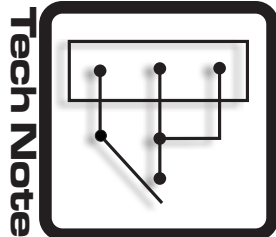
Page 2 of this Tech Note contains a diagram of the proper grounding of a Psychologist System, from the Main CPU of the Psychologist Matrix to the Mini-Mixer Remotes. For the sake of clarity, the drawing does not show the clock and data connections of the system. Two ground signals are shown: System Signal Ground and ESD Protection and Chassis Ground.

System Signal Ground

The PRJ12/DB9 adapter adapts the 9 conductor DB9 cable system to the 6 conductor RJ12 connection on the matrix CPU board. Digital Circuit ground is carried from the mini-mixer remotes on Pin 5 of the DB9 cable system. Digital Ground is connected to the CPU board digital ground via Pin 1 of the RJ12 connectors. This connection provides the ground reference for the data and clock signals between the CPU and the mini-mixers. The PPS-12 provides +/- DC power via Pins 9 and 6 of the DB9 cable system. Note that Pin 9 is connected to Pin 6 of the RJ12 connector through a blocking diode. This diode prevents the digital ground connection on Pin 6 of the matrix CPU from interfering with the +9 VDC supply connections on Pin 9 of the DB9 system. This connection is necessary when a mini-mixer is connected to an AMIX system. In this case, the AMIX system supplies the power for the mini-mixer in place of the PPS-12. Note the AMIX Link module connections shown in the drawing.

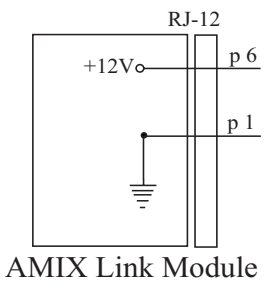
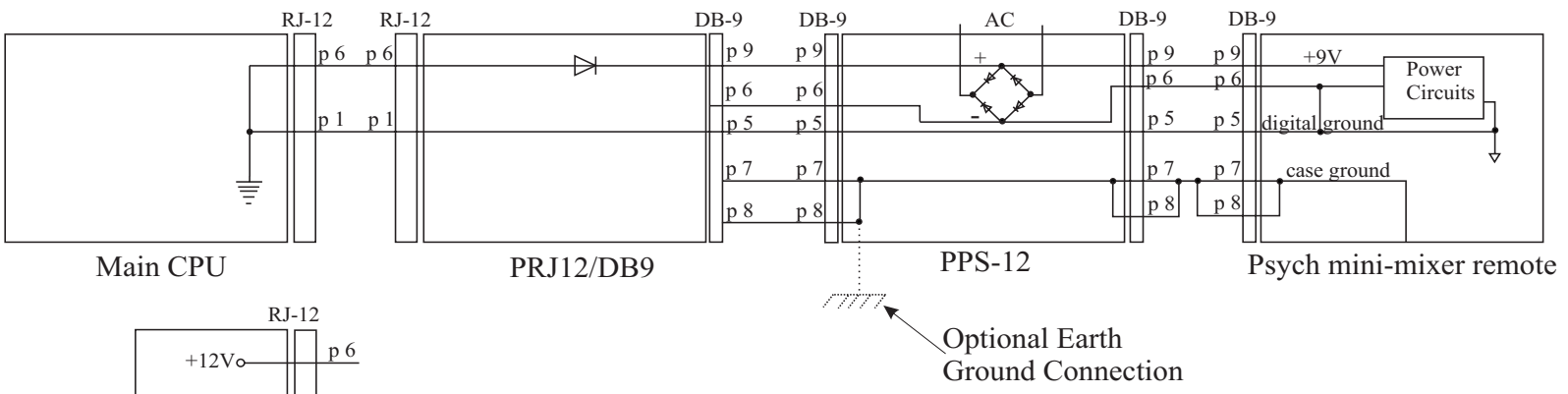
ESD Protection and Chassis Ground

The shield of the DB9 cables are connected to Pins 7 and 8 of the DB9 connectors. This circuit is tied to the metal case of the mini-mixer. You will note that this circuit does not connect to the matrix. There are not enough conductors in the RJ12 cables. In situations where ESD (Electrostatic Discharge) may be a problem, this chassis ground circuit should be connected to earth or building ground. On portable cable systems, this can be most conveniently done at the PPS-12, as shown in the drawing. A ground lead can be soldered to Pins 7 and 8 in the PPS-12 and connected to the building earth (green) ground. This lead can exit the plastic case of the PPS-12 in the same place as the AC transformer leads. The case can be opened by lifting the 4 small tabs on the sides of the case with a screwdriver. In systems with permanent in wall cabling, the earth ground connection should be made at each wall or floor box outlet closest to the mini-mixers.



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Psychologist Grounding Scheme

- Notes:
- 1) Rev C 7/10/01
 - 2) Clock and data Lines are not shown.