



News & Upcoming Events

What is *Technical Power*?

By **TARA Labs Chief Engineer, Garry Lambert**

In a standard AC supply system, as presented at the AC socket in your favorite listening room, the voltage measured between the "live" terminal and the "neutral" terminal is 120 volts AC. The neutral and ground terminals are connected at your fuse box. In practice, current does not flow through the wall socket's ground terminal, but returns through the neutral terminal. The ground terminal is thus a "safety" return, should a fault occur.

Technical Power is the official term to describe AC supplies that offer the 120 volts in a balanced format. Simply put, the primary winding (input) of a transformer is plugged into the 120V AC wall socket, and the transformer secondary winding (output) presents the AC as 60-0-60, in *three* wires. One 60 volt wire is the "live," the center (or 0 volts) is the "ground," and the third wire, also 60 volts, is the "neutral." Note that now neutral has become live also. Any noise that is present on the 120 volt AC line, is also present on *each* of the 60 volt lines, but *out of phase* with each line, and therefore is cancelled. The electronic component plugged into this system, still "sees" 120 volts AC between neutral and live, but now has AC power with a substantial reduction in AC-borne noise.

Technical Power is used in recording studios, which require a massive transformer. In components for home use,

such as TARA Labs AD/10B and IDAT Power Screens, smaller transformers are utilized, and are designed to supply balanced AC to low current, high sensitivity devices such as CD players, pre-amplifiers, and other source components. They are not designed for power amplifiers.

The one disadvantage of Technical Power or Balanced Power is that the supply current is limited by the size, in watts (or current capability), of the balanced transformer. To supply power amplifiers, the transformer is, by necessity, very large. However, power amplifiers are considerably less voltage sensitive than pre-amplifiers and source components, so can be left unbalanced. In all cases where we have listened to balanced AC with a power amp plugged in as well as the source components, the soundstage is limited. The AD/10B and IDAT have separate outlet sockets for power amps, which are unbalanced, but still treated for RFI and EMI. This represents the best of both technologies, used where the greatest benefit can be gained.

Balanced AC devices, such as the AD/10B and IDAT are required to include a Ground Fault Circuit Interrupter (GFCI) to isolate the balanced power outlets should any fault occur.

Lighting equipment, projectors, and high current electrical devices should never be plugged into a Technical Power outlet.

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RSC Prime 500 is a quality speaker cable with great bass weight and definition. Two of our original Rectangular Solid Core conductors per run provide 14 AWG of Super-Annealed Oxygen-Free Eight Nines (SA-OF8N®) copper. The conductor runs are helixed together with a pure cotton core inside the anti-static jacket. The result is superb mid-range clarity and effortless high frequency extension.

