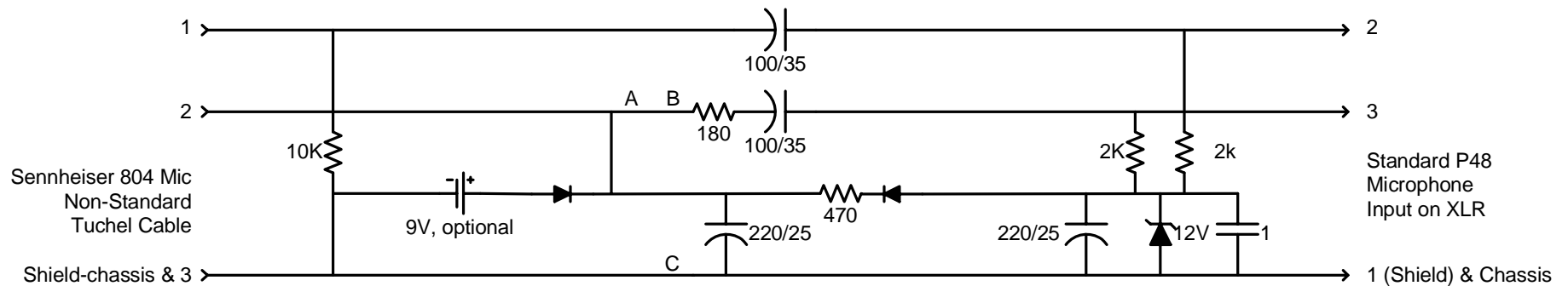


Phantom Power Adapter for early Sennheiser
RF Condenser Microphones MKH-104, MKH-404, & MKH-804
by Richard L. Hess 2009-03-06



This design is based on a 1966 catalog booklet from Sennheiser with powering instructions and works because these microphones are designed for 3-conductor PLUS shield interconnect. In this design, we are using the shield as the -9V feed and Pin 2, which is the common for the 9V power and the audio is left at +9V. This works because because the circuitry is floating within the case. Ideally, pin 3 of the Tuchel would be a third conductor and the shield would only be connected to the screw locking ring. Mic preamp input impedance should be as high as possible since the mic really wants to be loaded with 2000 ohms or more. That is why the power takeoff resistors are 2200 ohms. In our Phantom-to-T-power adapter, we use 680 ohm resistors there. This is optimized for the MKH-804 long shotgun microphone. For the omni (MKH-104) and the Cardioid (MKH-404), change the 180 ohm resistor to 100 ohms.

This design should also work for the MKH-110 with minor modifications as follows.

Use a standard Tuchel pinout with the shield connected to Pin 2 instead of Pin 3.

Reverse Pins 2 and 3 of the Tuchel so that Pin 2 is ground and audio return.

The left side, top to bottom becomes: 1, 3, 2 & shield.

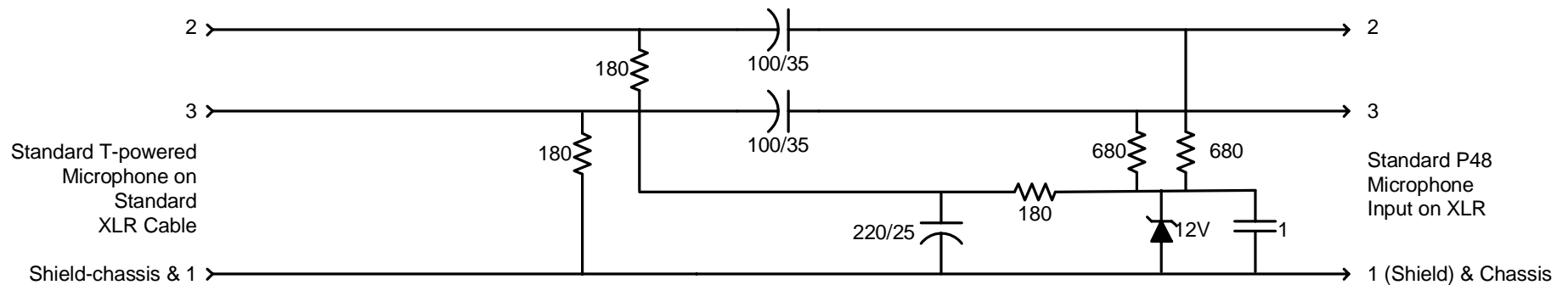
Break the circuit between points A & B and connect B to C.

The 9V battery should provide 30-50 hours of power for one microphone. Remove the battery when not in use for extended periods so that any leakage in the capacitor doesn't discharge the battery.

Paired resistors should be matched to better than 1%.

This document and the information contained herein is provided as-is with no warranties of any kind including suitability for the described purpose. If you choose to use this information, you are solely responsible for its proper application and any consequences and you are solely responsible for any damages whatsoever to any persons or property. These circuits may permanently damage other types of microphones connected to them.

Phantom Power Adapter for Sennheiser and other
T-Power (aka AB-Power, Tonader Power) Condenser Microphones



This design by the author was independently developed circa 1998, but is quite similar to other designs available. The author has built several of these into Switchcraft S3FM XLR "barrels" and the 1 μ F capacitor (which will theoretically help lower the noise floor) was not included for space reasons. The 180 ohm resistor in series with the power supply allows better filtering of the zener noise which would otherwise be impressed across the microphone.