Testec ShortSniffers are great short circuit finding tools. They are small, portable, convenient, and very effective. They are optimized for pinpoint location of shorts on multi-layer PC boards and ground/power plane shorts. There is no magic to the design. They inject an audio frequency current into the shorted nodes, then senses the current flow path (the path of least resistance) with an inductive pickup coil. The received signal is amplified and used to drive a speaker so you can hear the current path while waving the pickup coil around the surface of the board. The audio feedback (your ears and brain) allow rapid location of the short.

This document will show you how to make your own ShortSniffer type device. Testec is providing this information for several possible reasons:

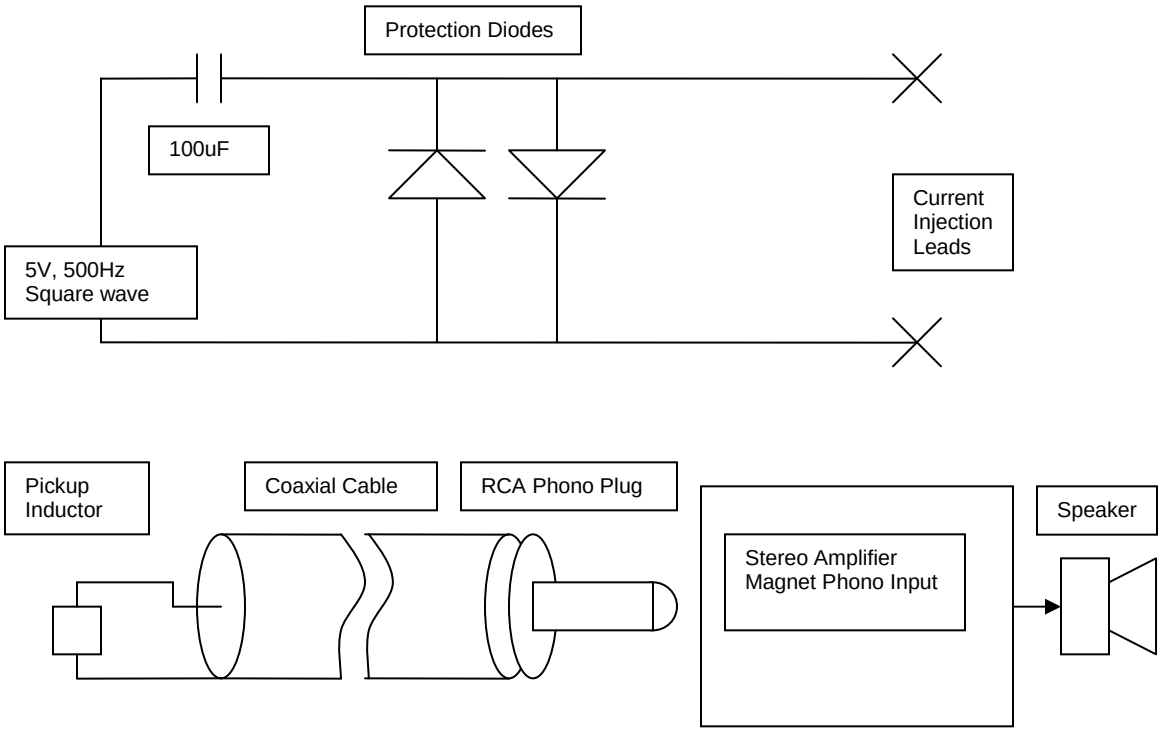
1. If you only need to find a short circuit one time, it doesn't make sense to buy a special purpose tool.
2. You might need to find a short circuit RIGHT NOW instead of waiting a couple of days for a UPS shipment.
3. If you are not in the US, the purchasing process is complicated, with expensive shipping and import duties (we don't have foreign distributors).
4. You are a "smart guy". You always build all of your tools.
5. You work for startup company and your test equipment budget is $10.
6. You want to design a better product and capture this lucrative market.

The next page shows a "block diagram" of a short-sniffing generator and detector system. Dust off that old Hi-Fi amplifier, grab some speakers (or headphones), locate a signal generator (with low impedance drive), find a chip inductor, some coaxial cable, an RCA plug, a capacitor and a couple of diodes, then get to work.

The pickup coil is an un-shielded chip inductor. Select one in the range of 100uH to 1000uH, like the Central Technologies CTMC1811-101J or CTMC1812-102J. A shielded inductor will not work.

The diodes can be any general purpose Silicon or Schottky diodes. They prevent high voltage spikes from damaging semiconductors in cases of high resistance or intermittent shorts.

Hook up all the stuff, practice finding a couple of user created shorts (short a pair of adjacent pins on an IC with a solder blob), then go hunting for the real shorts.




Do-It-Yourself ShortSniffer