

# Simple Squelching Circuit for Stereo FM Tuners

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**M**ANY inexpensive stereo FM tuners have no automatic "squelch" to eliminate between-station hiss. However, they invariably have a stereo indicator lamp that can be used to trigger a very simple squelching circuit like that shown in the schematic.

The add-on squelch circuit shown employs an inexpensive photo Darlington amplifier (HEP1001), operating with its base connection "floating". The Darlington amplifier switches from a very high resistance in darkness to a very low resistance when illuminated by relatively low light levels. When the photo transistor is switched to low resistance, essentially the supply voltage from the battery is applied across the gate-source terminals of both HEP 802 FET's. This pinches off the FET's and causes them to present a very high source-drain resistance across the outputs of the tuner, effectively doing nothing.

When there is no light present, the photo transistor presents a high resistance to the gates of the FET's. The source-drain resistance of the FET's therefore drops to about 200 ohms, effectively short-circuiting the outputs of the tuner.

If the tuner being used has an exceptionally low output impedance—less than 600 ohms or so—the between-station muting may be insufficient with this setup. In this case, a 100-ohm resistor placed in each output line of the tuner (see phantom portion of schematic) should remedy the problem. Since most amplifiers have a relatively high input impedance, these resistors should have no effect on system performance.

No power switch is needed with the add-on squelch circuit because battery drain is very low. Even when operating at full capacity, the drain is less than 10  $\mu$ A. So, the battery will last just about its shelf life with power continuously on, which eliminates the bother of having to remember to turn on an extra power switch.

When installing the squelch circuit, use only shielded audio cable to make the hookups between tuner, squelcher, and amplifier. Also, mount the Darlington amplifier as close as possible to the stereo indicator lamp in the tuner. This transistor is very sensitive; so, care must be taken to insure that it "sees" light from only the stereo indicator lamp and not from any other light sources.  $\diamond$

