

# Construction Options for the Bat Scanner Detector

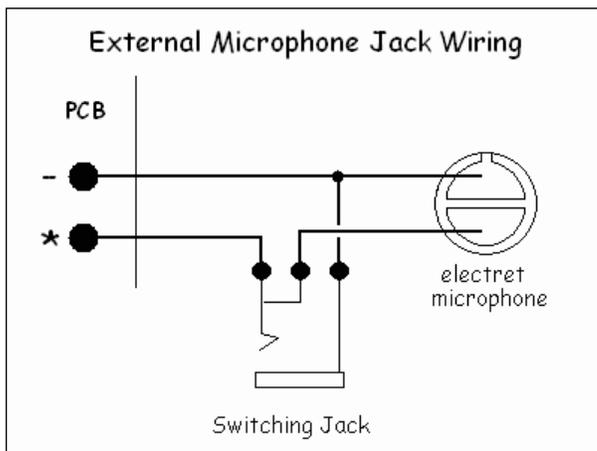
There are several optional features that you may wish to add to the Bat Scanner. Options requiring a jack on the bottom panel can be added anytime, but the options requiring a jack on the top panel need to be addressed when the detector is first constructed.



Here are the options:

- External Microphone Jack - This option is installed on the top panel of the detector, next to the microphone. It allows an external / remote microphone to be connected to the detector ... disconnecting the internal microphone.
- External Headphone Jack - This option should be installed on the bottom panel, and can be added anytime. The external headphone jack supports a monaural headset, and turns off the speaker when connected.
- Tape Recorder Output Jack - This option can be installed on either the top or bottom panel. If you wish to install it on the top panel, the connections are made to the volume control. If the option is installed on the bottom panel, the connections are made directly to the circuit board. The bottom panel is the preferred location.

## OPTION 1: Installing an External Microphone Jack



Adjust the layout of the front panel as shown in the picture above, installing a switching, single circuit, 3.5mm phone jack.

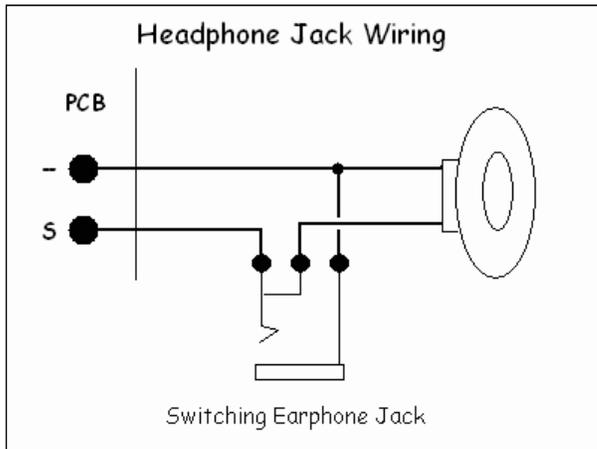
Use 2 short lengths of wire to connect the internally mounted electret element to the jack.

Use shielded cable to connect the PCB to the jack.

Note that the **shield** of the shielded cable is connected to the pad with the ground (-) symbol on the PCB.

When wired as shown, connecting an external microphone will disable the internal microphone.

## OPTION 2: Installing an External Headphone Jack



Install a 3.5mm switching, single circuit, phone jack in the upper left corner of the bottom panel ( See option 3a )

Use 2 lengths of wire to connect the speaker to the jack.

Use 2 shorter wires to connect the PCB to the jack.

When wired as shown, the speaker will be turned off when the headphone is plugged into the jack.

## OPTION 3a: Installing a Tape Recorder Jack

( Bottom Panel Method )



This picture shows a tape recorder output jack installed on the bottom panel. A single circuit, 3.5mm phone jack is mounted in the upper left corner of the bottom panel.

Connect a short wire from the ground ( - ) pad on the PCB to the to the ground connection on the audio jack ( the sleeve ).

Then connect highest volume control pad on the PCB to the tip connection of the audio jack with a .05uF ceramic or mylar capacitor. I use insulation stripped off a piece of wire to insulate the capacitor leads.

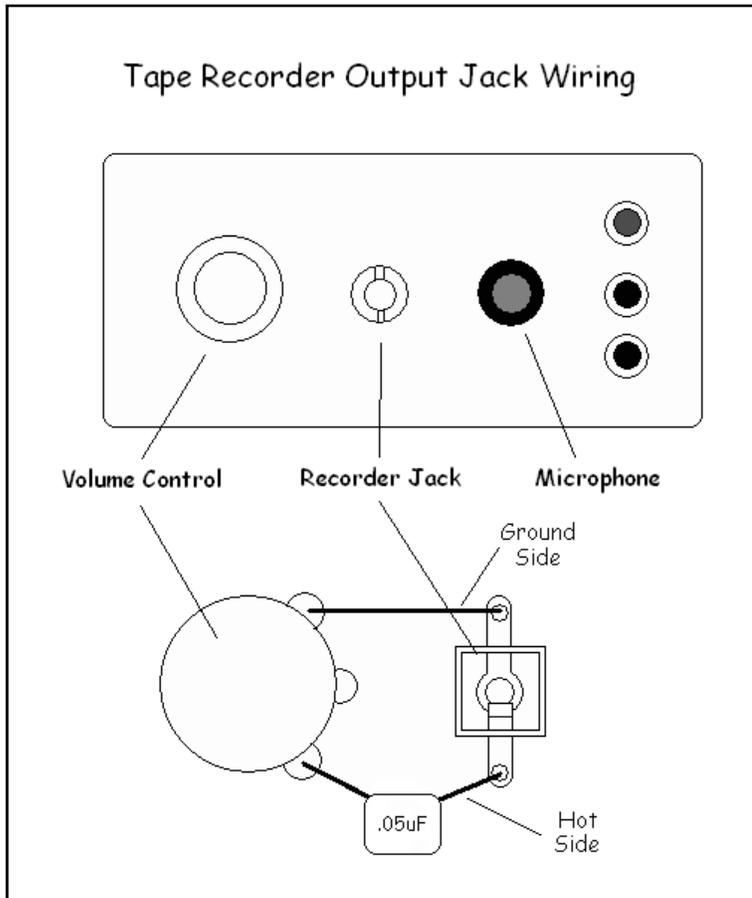
To make a recording, use a patch cord with mono audio plugs at both ends to connect the detector to the microphone input of the recorder or computer.

The signal level to the recorder is fixed, and does not change with the volume setting.

Connecting the patch cord will not disable the speaker.

## OPTION 3b: Installing a Tape Recorder Jack

( Top Panel Method )



Adjust the layout of the front panel as shown to the left, and install a single circuit 3.5mm phone jack.

Connect the ground side of the pot ( the solder lug that connects to the lowest pad on the PCB ) to the ground connection on the audio jack ( the sleeve ).

Then connect the hot side of the volume control ( the solder lug that goes to the highest pad on the PCB ) to the tip connection of the audio jack with a .05uF ceramic or mylar capacitor.

To make a recording, use a patch cord with mono audio plugs at both ends to connect the detector to the microphone input of the recorder or computer.

The signal level to the recorder is fixed, and does not change with the volume setting.

Connecting the patch cord will not disable the speaker.