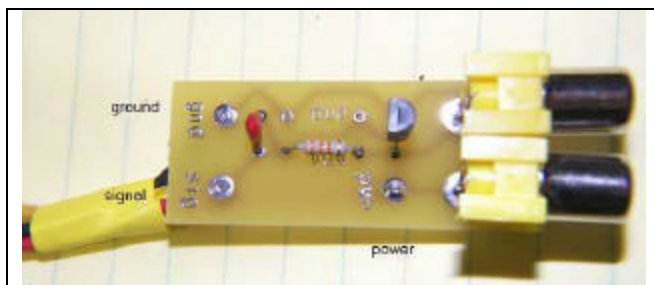


# A universal probe interface.

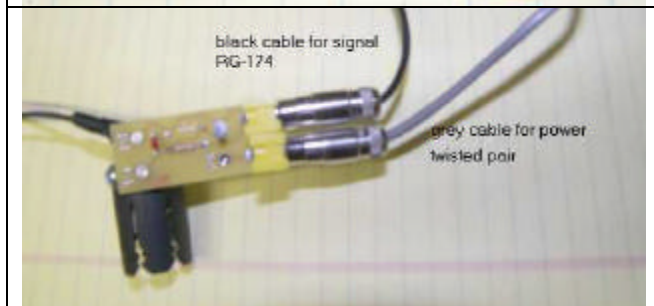
Signal pickup probe for  
DFD's and Digital Dials  
Makes almost any  
installation plug-n-play

**\$5.00 each.**

**Postage \$2.00 for 1 to 3 probes.**



The probe has three connections, power, ground and signal

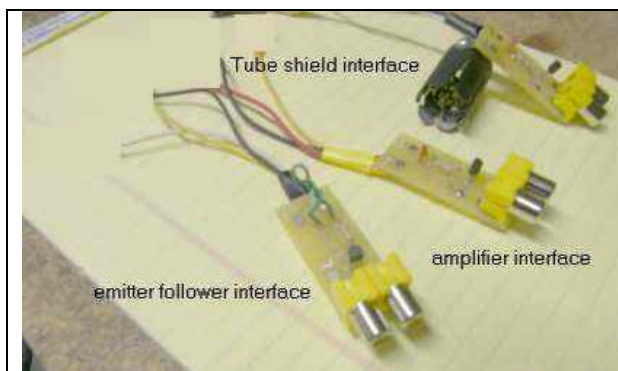


The probe has two RCA jacks that interface to the DFD or digital dial  
Power and signal.

Power ( use grey cable supplied with digital dials) is 9 to 18 VDC for a DFD or 9 to 18 VDC or 6.3 to 12.6 VAC for a digital dial.

Use of the power connection is optional. It does not power the probe.  
It is intended to tap power from the radio for the DFD or digital dial.

Signal (use black cable supplied with digital dials) is the oscillator signal to DFD or digital dial.



It can be built on three versions

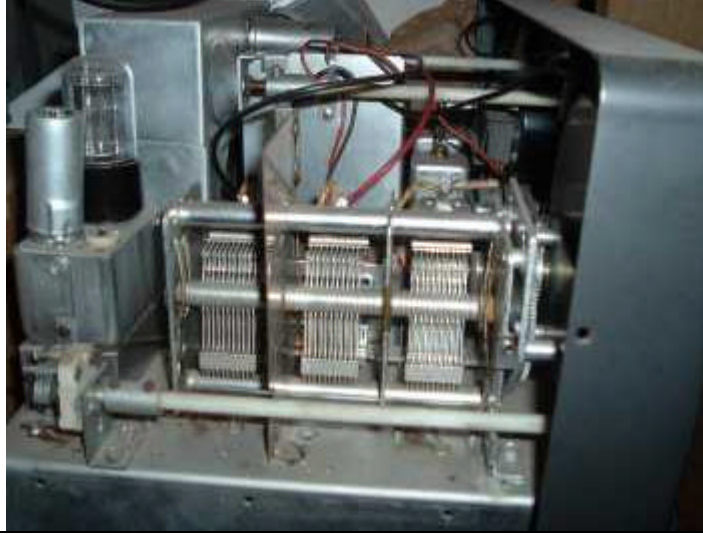
- 1) emitter follower interface
- 2) amplifier interface
- 3) tube shield interface

# The emitter follower interface

has no gain but a high input impedance and low input capacitance.  
It is used to connect to the tuning gang of any radio, as shown below.

The intent of this interface is minimum loading on the radio and isolation of the coax cable leading to the digital dial.

The tuning gang interface works with most older vacuum tube radios.  
The tuning gang is the large air variable capacitors used for bandset and/or bandspread tuning.  
The connection is made to the section of the tuning gang that controls the local oscillator.



This is the tuning gang of my SX-100  
A GIMMICK makes a very small (<1pF) capacitor so detuning of the local oscillator is trivial and the emitter follower isolates the coax cable..

The tuning gang fixed plates (stator) is usually the signal and the moving plates (rotor) is ground.

It takes about 15V p-p to use this interface up to 32MHz, fairly easy for a vacuum tube radio.

The emitter follower version can be used to make direct connection to solid state radios.  
Replace the gimmick with a small capacitor for increased sensitivity.

capacitor	signal@32MHz
2.2pF	15 Vp-p
4.7pF	7 Vp-p
10pF	3.5 Vp-p
15pF	2 Vp-p
20pF	1.8 Vp-p
24pF	1.5 Vp-p
30pF	1.25V p-p

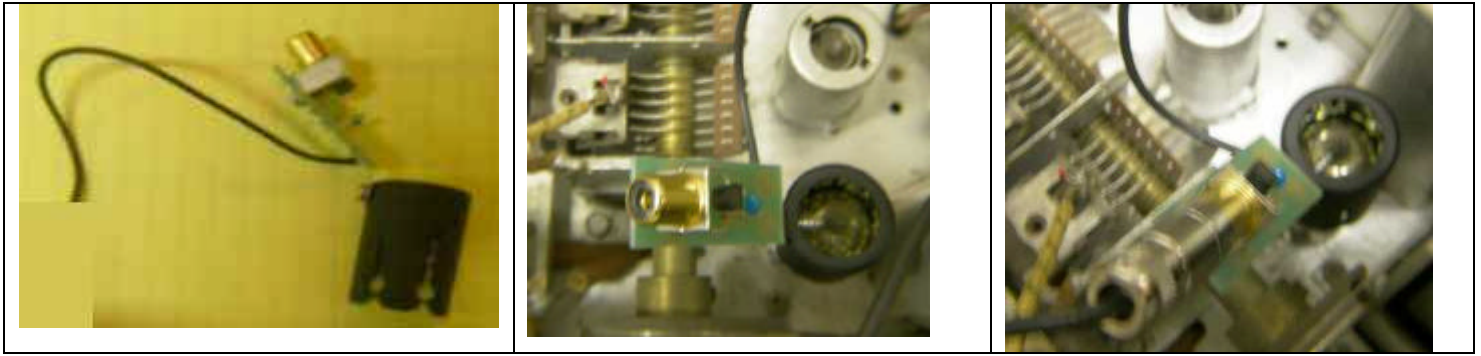
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# The tube shield interface

works with most vacuum tube radios.

The signal connection is a tube shield which you simply slide over the oscillator tube.

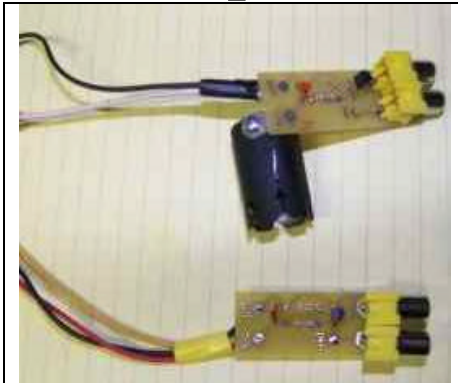
The tube shield should not touch metal, only the glass of the tube.



The tube shield attaches to the signal point on the probe. It has a ground connection alligator clip.

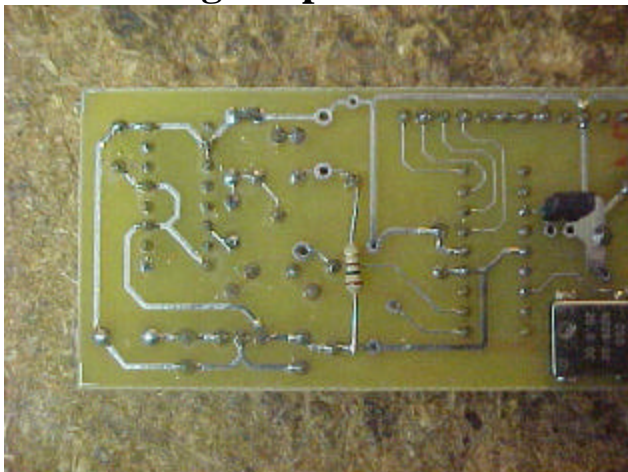
Simply slide the tube shield over the oscillator tube and connect the ground to a nearby chassis ground.

## The amplifier interface



has a gain of 4 but has a lower input impedance. It is used for the tube shield interface and for direct connection to solid state oscillators or the cathode of vacuum tube oscillators

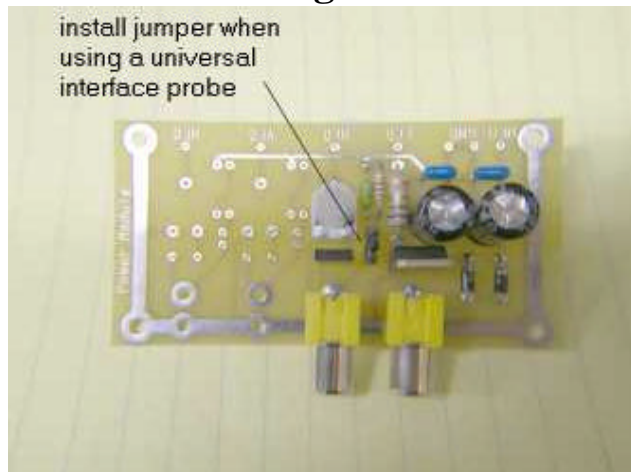
## When using the probe with a DFD



Solder a 100 ohm  $\frac{1}{4}$  W resistor from the input to +5V as shown above. input).

Typically an RCA jack is installed in the receiver and an RG174 coax cable with RCA plugs at both ends is used to connect the radio to the DFD.

## or with a digital dial



install the jumper on the power module board (there are one to three jumpers, one for each input).





**Solder the NPN transistor with flat side away from the large holes for the RCA jacks.  
Solder the 36K resistor between the pads having NPN written between them**

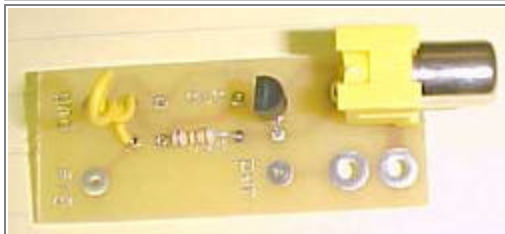
## For both configurations



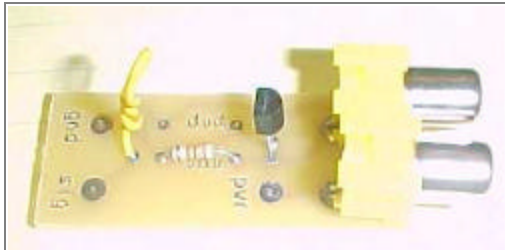
**solder the loop of wire across the two pads shown**



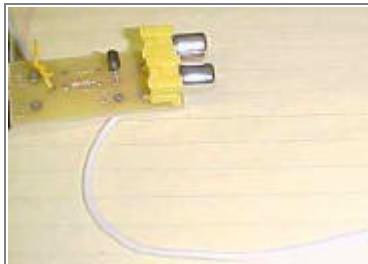
**Twist the loop a couple turns.**



**Solder an RCA jack in the signal position.**



**If desired  
Solder an RCA jack in the power position.**



**Solder a lead to the pwr pad on the pcb.**

		<p>Solder a lead to the gnd pad.</p>
		<p>For the tuning gang or solid state radio solder a lead to the signal pad. For the tube shield interface see below.</p>
		<p>For the tuning gang connection clip the top off the loop. This forms a very small capacitor.</p>
		<p>For the tube shield interface. Remove the silver lining inside the shield if for a 9 pin tube.</p>
		<p>Using the supplied solder lug and screw, solder the tube shield to the signal pad on the probe.</p>

Additional information is available at  
<http://www.aade.com/applications2/app2.html>