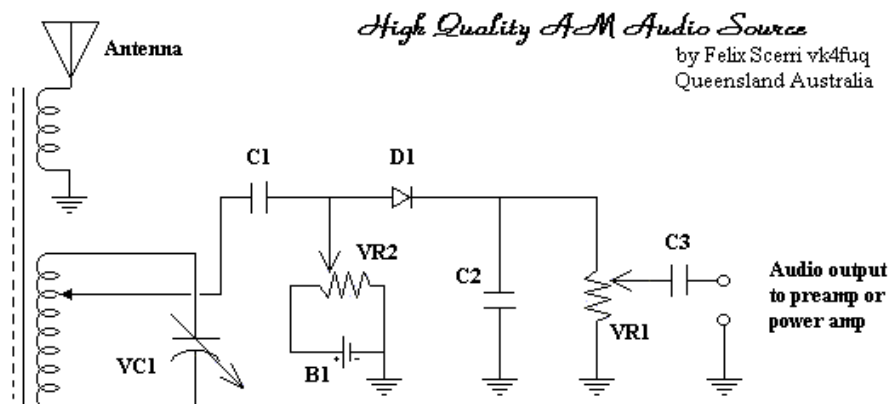


Stay Tuned**Crystal Radios & Tube Radios**

High Quality AM Audio Source

by
Felix Scerri



- VC1 Variable Capacitor
- VR1 Variable Resistor 47k ohm
- VR2 Variable Resistor 1 meg. ohm
- C1 Capacitor 1 or 2 uf polyester
- C2 Capacitor 180 pf ceramic bypass
- C3 Capacitor 2 uf polyester
- D1 Diode 1N5711
- B1 Battery 1.5 volts AA size

When using crystal sets as high quality AM/MW audio program sources, considerable audio result from low signal levels, due to issues to do with the diode turn on voltage barrier or "door", as found the use of "bias" an excellent method of overcoming diode detector distortion essentially reg incoming RF signal level. My method of applying bias is done in a rather unique manner by breaki of the anode of the diode from the feeding tuned circuit with a capacitor, and applying bias directly the diode, through an adjustable potentiometer arrangement and a 1.5v battery, referenced to circu potentiometer allows full adjustment of bias from full off to full on, allowing for any signal strength

Contrary to what has often been written, I have not really found any discernable improveme when using ordinary germanium diodes such as the 1N34A, with applied bias, however bias does ho silicon diodes such as the 1N4148/914 series to perform adequately as RF detectors, however, I have useful in eliminating diode detector audio distortion. I have also found that hot carrier diodes perfe application, having a particularly low noise audio profile. I have used mainly 1N5711 hot carrier dic results, but I have also sampled other hot carrier diodes with excellent results, including diodes call diode equivalents" which are apparently variants of hot carrier diodes (available as BAT 46's and country). 1N34a's will work with bias, but are not recommended.

In practice, it is a easy matter to simply adjust the potentiometer for the "cleanest" audio, re

at either extreme of the potentiometers rotation,detection will simply stop,that is,diode being short or saturated at the other (full bias supply applied).One note of caution,loud clicks and audio transients produced and fed to the audio system under some conditions during adjustment.Conduct all tests in good conditions.The bias circuit can be used with any "typical" crystal set circuit.When the crystal set is connected to a following audio amplifier,it may be necessary to interpose an audio preamp to raise the audio level to a "line level" value,compatible with the line level inputs of most audio amps.I use a simple one transistor emitter stage using a low noise BC549/550 transistor.A standard opamp non inverting audio preamp is also very suitable.Don't skimp here,the "biased" crystal set tuner deserves a high quality audio preamp,consider it quite important to have a defined, reasonably high value resistive load (around 47k) on the output.A simple potentiometer level control with the wiper feeding the following preamp or audio amplifier works nicely.Be sure to also include a DC "blocking" capacitor in the audio signal path,to eliminate any signal following the "diode load" potentiometer.Prepare to be amazed at the quality of wideband AM audio.

Felix Scerri vk4fuq.
Queensland Australia.

[Return to "Stay Tuned " Home Page](#)

© 1999-2010 Darryl Boyd, All rights reserved

Copyright Notice:

My website is copyrighted. This includes all images, text, drawings.

If you are thinking of downloading my copyrighted items and selling them on ebay (or anywhere) keep this in mind,

I monitor ebay for such violations. I will pursue the issue with ebay and in the courts if necessary.
I do not furnish them for your gain from my hard work.

Send Email To:

b o y d @ b o y d h o u s e . c o m

Because of antispam techniques, you can not "cut and paste" the above text

We have made every effort to ensure that the information provided on this website is accurate and up to date. All information on this website is informational only and no guarantees to the accuracy of any of the projects or circuits on this site or calculators. If you find something you feel is inaccurate, please inform us by e-mail. Be sure to provide a thorough argument to support your case. Confirmed changes will be made as quickly as possible.

The images on this website are protected by copyright. They are the property of the owner of this website and may not be used without the owners permission. Please don't use the images made by us on this website without