

(c) Dual language: 274.1Hz

Tone decoders are normally provided to detect these tones and switch the outputs appropriately. However, readers may like to experiment with stereo reception using manual switching.

This circuit shows a simple method of obtaining stereo sound from a Philips K9 or K11 receiver. The method consists of duplicating the FM demodulator section and dematrixing the resulting (Right) output to yield Left and Right channels.

A simple demodulator is the Philips U240 module which can easily be retuned to 5.742MHz. When added to a Philips K9 or K11 receiver, the module outputs are then suitable for direct connection into a summing amplifier. The outputs of the two op-amps are Left and Right directly, and can drive line level inputs on your stereo or VCR. The prototype used an 8-pin dual MC1458 op amp IC but two 741s would be just as good.

Note that pins 2 and 3 of the U240 module provide a balanced audio output at constant level. Pin 5, however, provides an audio output that varies with the remote control setting.

A standard TV IF response is designed to handle an FM sound signal at

31.375MHz, and the response includes a minimum at this frequency. Some frame buzz may be evident in the output of the second channel, and the setting of the sound IF trap may need to be changed to a frequency between the old (31.375MHz) and new (31.133MHz) sound carriers.

The alignment procedure for the additional U240 module is as follows:

- Connect an FM signal generator to pin 17. Set generator to $100\mu\text{V}$ out at 5.5MHz, modulated with 1kHz;
- Observe demodulated audio on pin 3 of module (preferably using a CRO);

- Adjust L11 and L12 for maximum audio output (see Fig.1). Adjust L10 for lowest noise/distortion;
- Retune signal generator to 5.6MHz, 5.7MHz and, finally, 5.742MHz. Adjust L11, L12 and L10 as above for each new frequency;
- Check that limiting occurs at IF input at 100-130 μV ;
- Set generator to 5.742MHz and 50% AM and adjust L10 for minimum demodulated audio. (Note: the shield should be fitted for this adjustment.)

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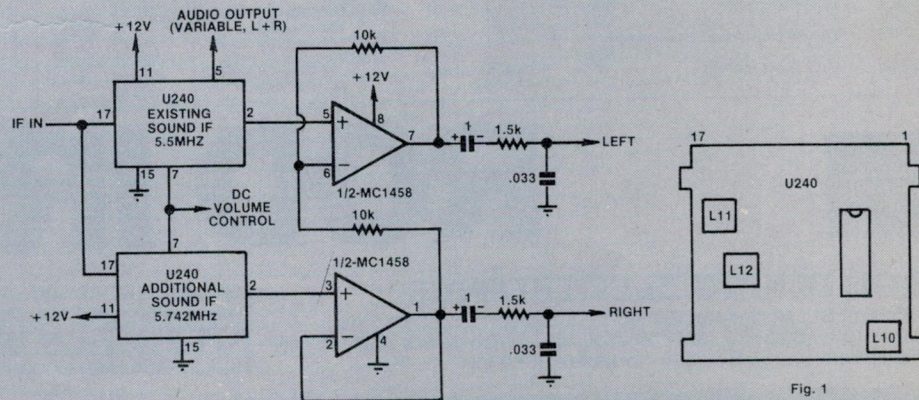


Fig. 1