



X = LEAD SOLDERED TO TOP FOIL O_{FB} = FERRITE BEAD ON LEAD ● = CONNECTION PIN X = CASE SOLDERED TO TOP FOIL

is continuously variable through a front panel control.

The phasing notch filter is mounted on a separate circuit board and can be used independently of the CIFPU board. The 50 ohm system produces a 50dB notch when correctly adjusted. RV1 is for fine adjustment on notch depth. If the filter is not required, simply bridge points B and C.

CW only

In its uncustomised form, the CIFPU comes equipped to operate primarily in the transmit and receive CW mode. A BFO and TX carrier oscillator (Q12 and Q10/11 respectively) are standard equipment. In many ways the basic Omega system answers the basic quest for a high quality CW transceiver system. It can be further dedicated to the mode by fitting an active variable bandwidth CW filter between points E and F. See page 66 for constructional details of this module.

Note that the transmit signal injection point for all modes is point K. In transmit the grounded gate IF pre-amp Q1 acts as a source follower to the ring mixer circuit.

Sidetone for CW transmit is supplied by mixing a little of the keyed carrier oscillator output in the product detector.

A philosophical note

It might seem rather regressive to have used, in the main, discrete components in the CIFPU. There are a number of ICs from both Plessey and others which can perform many of the functions. We make no apologies for this. Although the Plessey 1600 range of ICs is without doubt the finest in the world, they are quite expensive and can be a little fiddly to use in the hands of inexperienced builders. There is another point. Discrete circuitry allows the designer to optimise on the features which he considers the most important. It would have been difficult to match the level of noise blanker performance with present IC technology. It may also have been difficult to provide enough circuit versatility which is the intended hallmark of the Omega system.

Kits

As this series progresses, complete kits of parts will be available from WPO Communications for each of the modules described. The board kit for this IF module, complete with drilled PCB, all components, potentiometers, wire etc costs £69.50 inclusive of VAT and post & packing. It does not include a

speaker, the meter or diecast box which you may already have. The diecast box specified is also available at £5.50 inc. PCBs are available separately at £6.50 inc.

General notes on constructing the transceiver

Before starting this, we strongly advise you to use the PCBs available — you can then be fairly sure that the units will work as well as the prototypes. An awful lot of development went into the boards to get them right — for instance, this IF unit required three layouts just to get the Woodpecker blanker working correctly — the layout is critical in places and using ready-made PCBs will save you having to sort out the problems all over again.

Can I build it?

For those who are wondering if they can build this whole project, we would advise that it is not suitable for absolute beginners who have never used a soldering iron before, or who cannot understand the basic descriptions of the circuits. If you fall into this category then you should leave it until later, or make sure that you have a friend who can help you out.