

capable of running to at least

10.7MHz — borrow one if you don't

possess one! If you own or can bor-

row a scope all the better. A fre-

quency counter would be useful at

times, although the transceiver has

its own digital readout (ready built)

which can be used. We will show

how to align it without full test

equipment, although you do need a

signal generator of some sort to

align the noise blanker in this IF unit

housed in a readily available com-

mercial case. To help you get a pro-

fessional appearance after all your

hardwork, there will be a ready

screened overlay or panel available

for the unit if there is sufficient

VFO to receive any signals! It can

be tested using a signal generator

(or any other oscillator) as a VFO.

This IF strip obviously needs a

The finished transceiver will be

successfully.

demand

Assembled main IF board

Wherever possible, prewound transformers have been used. These are also pre-aligned, which reduces alignment time. Detailed instructions are given for the transformers that you will have to make for yourself.

The instructions for assembling each unit will be as detailed as possible (expert constructors amongst you can skip over parts of the text), and will include where to look for any problems that may arise during testing. Long instructions don't necessarily mean that a unit is complicated — they are there for the benefit of less experienced constructors.

Test equipment

For alignment, you will need a high impedance voltmeter, and preferably a signal generator



IF strip construction

If you are building the whole transceiver, then the complete PCB assembly is required. For receive only, the TX 10.7MHz oscillator (Q10/11) and associated components can be omitted. before launching into the assembly, check the PCB for any solder bridges arising from the roller tinning process. These may not be obvious after soldering components in.

Note that the notch filter circuit is on a separate PCB, which will be described next month, so we have ignored the components associated with it for the present.

One of the semiconductors (O2. VN2222LM) is sensitive to static so handle it by its body not its leads. Alternatively push the leads through some aluminium kitchen foil before use, and remove them after soldering. The MOSFETs (3SK45 or equivalent) do not need any special handling other than an earthed soldering iron. make sure your soldering iron is well earthed or is a low-leakage ceramic sheathed element type. Also, the SBL1 double balanced mixer must on no account have any DC applied to it, or it will probably fail rapidly.

Order of assembly

We suggest you follow the order given here when assembling — this will ease assembly in some tight areas, and give you reference points when inserting components.

One of the errors made by many beginners in assembling this sort of PCB is leaving too long a lead length above the PCB. This can lead to instability and unwanted signal pick-up. Virtually all the capacitors can be pushed far enough into the PCB for the lower part off the body to either rest on the surface, or have leads no longer than 3mm, without damage to the capacitor — if they will go against the PCB then let them. The same applies to the resistors and semiconductors.

1) First, insert all the 1mm connection pins into their respective holes from the underside, and solder them into place. Each point where a pin is needed is identified by a letter on the upper surface of the PCB. They need to be pushed hard home so that the splines are inside the hole.

2) Insert and solder IC1 (LM380N) and IC2 (741), observing orientation. Solder all pins on the under-