

Fig. 4. COMPONENT LAYOUT

E 011

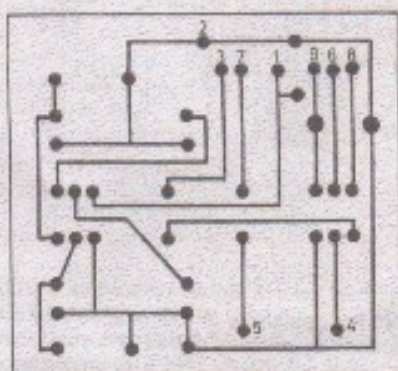


Fig. 5. SUGGESTED PCB LAYOUT (To scale)

E 012

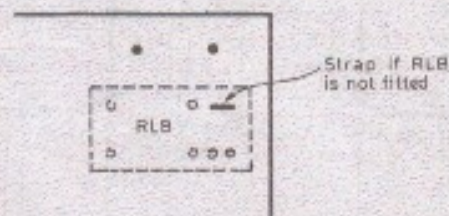


Fig. 6

E 013

The first job, having identified FL1 and R420 on the IF circuit board, is to very carefully remove them. I recommend the use of a lightweight soldering iron and a spring-loaded solder sucker for this job. Any damage caused to the PCB or filter more than outweighs the cost of these simple tools, which I consider absolutely necessary for any electronics work.

These components along with the new filter, relay and resistor are fitted to the PCB as shown in Figs. 4 and 6. Solid PVC-covered wire is soldered onto the input, output and earth points of the original filter and then onto the new PCB — to points 4, 3 and 2 — such that the latter is suspended below the existing board; these wires are kept as short as possible. By using solid wire this arrangement is quite satisfactory and no other mechanical support is needed. A tapping is taken from the junction of D2 and D3 to the input of one of the spare wafers on the mode switch. The output from the switch is taken to RLA on the PCB point 1 and is wired such that the relay is energised when the LSB or USB/CW selections are made. Should it be thought preferable, a switch could be fitted to the rear panel to give a change of selectivity as required.

From the design of PCB, Fig. 5, it can be seen that a further relay RLB can be fitted to the board. This is to enable a narrow band frequently modulation (NBFM) decoder to be fitted as shown in Fig. 3. These decoders are now readily available usually based on the MC3357 IC, which is an NBFM IF system and detector. The input to this decoder is directly from C417, the output taken directly to the volume control via the relay RLB. As can be seen from the circuit in Fig. 3, this relay is again energised from the mode switch using the other set of contacts and energising the relay when the AM/ANL mode is selected. I used a design of decoder originally intended for the RX80<sup>2</sup> and experienced no problems — the AF output from the decoder being similar to that of the FRG-7's detectors.

Reversion to the original receiver circuitry is extremely simple. No chassis modifications are needed, thus allowing a pristine receiver to be sold, should such a thing be contemplated — for with these modifications a very versatile receiver is produced.

#### References

- [1] FRG-7 Instruction Manual, Yaesu-Musen Co. Ltd.
- [2] *Radio Communication*, October 1981.

AKD produce a range of anti-TVI filters, and shown here is the HNF2 which is stocked pre-tuned to some of the more common interfering frequencies. Full details of AKD "Blackline" filters are available from Telecomm, 189 London Road, North End, Portsmouth (tel: 0705-660036), who are exclusive distributors of the range.

