selector.

The input/output impedance of the low pass filter is 1k ohm and therefore requires matching to 50 ohms for this application. From the circuit diagram, input signals are applied to the IN terminals of the new board — when bands other than 160 or 80m are in use, Q1, a BC308, is conducting and PIN diodes D4 and D6 are biased into conduction via the RF blocking chokes. Signals can then pass in either direction through the existing preselector which functions as normal.

When 160 or 80m are in use, +12V, switched via the band switch, is applied via blocking diodes D1 or D2 — this turns Q1 off and allows D3 and D5 to conduct (with D4 and D6 reverse biased), switching signals through the new networks in either direction. T1 is wound as a step-up transformer to transform the 50 ohm input to around the 1k ohm required by the low pass filter block, while T2 transforms this back down again. In use, the existing preselector is tuned normally on all bands above 80m, but on 160 and 80m the new low pass filter requires no adjustment.

Construction

A small single sided PCB accommodates all the new circuitry. Construction is simple, requiring all components to be soldered into place, with T1 and T2 wound and inserted last. The latter are wound using a total of 18 turns each, tapped at 4 turns from the earthy end. They are wound on small 'Fair-Rite' two-hole Balun cores, as previously used, with 38swg enamelled copper wire — the 4 turn part requiring 9cm of wire and the 14 turns 29cm. Some care in winding these transformers is required, as the wire is fragile and the insulation easily stripped. The layout diagram shows the location of the earthy ends of the transformers.

When built, the new PCB is attached to the preselector board with the components *facing* the preselector. Short lengths of bare wire are used to link the *input* pins of the preselector to the new board at point D, and the *output* at point E. The existing coaxial connections to the original board are then attached to the new PCB IN/OUT pins. The other connections are +12V to point A, and connections from the bandswitch to pins B and C.

Kits

A kit of components for this module are available from WPO Communications for £9.28 inc VAT & post. The PCB alone is £3.90 inc.

Component Listing

R1,3,4,5	470R carbon film 5% 0.25W
R2,6	220R carbon film
C1,2,3,4,5,6,7,8	10n ceramic disc
Q1	BC308
D1,2	IN4148
D3,4,5,6	BA482 or BA244
F1	Toko 237LVS-1110
T1,2	Wound on Fair-Rite core type 28-43002402. 18 turns 38swg enamelled copper wire tapped at 4 turns from earthy end.
RFC1,2,3,4,5,6	Toko 7BA or BS 1mH (102)