

### ROBERTS R606

### a.m. - f.m. portable radio

This is a 3-band a.m.-f.m. portable radio, employing 14 transistors and seven diodes. Waveband coverage is:-

MW: 185-566m (1620-530kHz)

LW: 1152-2000m (265-150kHz)

VHF: 87.5-104.5MHz

Three modules are used: LP1402 v.h.f. tuner, LP1185 10.7MHz i.f. amplifier, and LP1181 470kHz i.f. amplifier. Discrete transistors are BC149 audio preamplifier, BC149 audio driver, BC158 output stabilising, AC128/T2 output balance, AC128/AC188 output transistors.

Audio output is 1.5W nominal continuous sinewave via an elliptical 4Ω loudspeaker. Socket facilities are (1) 3.5mm jack socket for external earphone, (2) coaxial v.h.f. aerial socket, (3) 6mm socket for external power supply (9V d.c.).

The receiver may be operated from external d.c. supply or by internal batteries (6 x 1.5V, SP2 type or equivalent). Quiescent current is 23.5mA (a.m.) or 25mA (f.m.).

#### ALIGNMENT

The three modules (LP1402 tuner, LP1185 10.7MHz i.f. amplifier and LP1181 470kHz i.f. amplifier) are pre-aligned in the factory and, since specialised equipment is required for this purpose, no instructions are provided by the makers. In the event of any fault, remove the complete module and return to Roberts Radio for replacement.

#### Output Stage Adjustments

Before carrying out the following adjustments, ensure that the supply voltage across C30 is 9.0V.

Connect voltmeter between TR5 emitter and chassis. Adjust preset resistor R26 to obtain reading of 4.25V on meter.

Connect milliammeter in place of red link LP under printed circuit board. Adjust preset resistor R27 to obtain a reading of 3.5mA on meter after 1 minute at 20°C.

Connect oscilloscope across loudspeaker and inject 1kHz sinewave signal to junction of C19/R14. Then adjust R26 for optimum symmetry at onset of clipping.

#### A.M. Alignment

Check that scale pointer coincides with left-hand end of scale window.

When feeding in test signals, the input should be kept as low as possible to prevent a.g.c. action masking the alignment peaks.

Calibration marks are provided on the scale at 200m and 536m.

Connect output meter across the loudspeaker; connect signal generator output to coupling loop placed near to, and coaxial with, the ferrite rod.

Switch to MW, set pointer to 200m calibration mark. Inject signal of 1500 kHz (30% mod) and adjust trimmers C7 and C13 for maximum reading on output meter.

Retune receiver to 536m calibration



mark, inject signal of 560kHz and adjust core of T1 and L1 on ferrite rod for maximum output.

Repeat these adjustments for optimum results, finishing with C7/C13 adjustment.

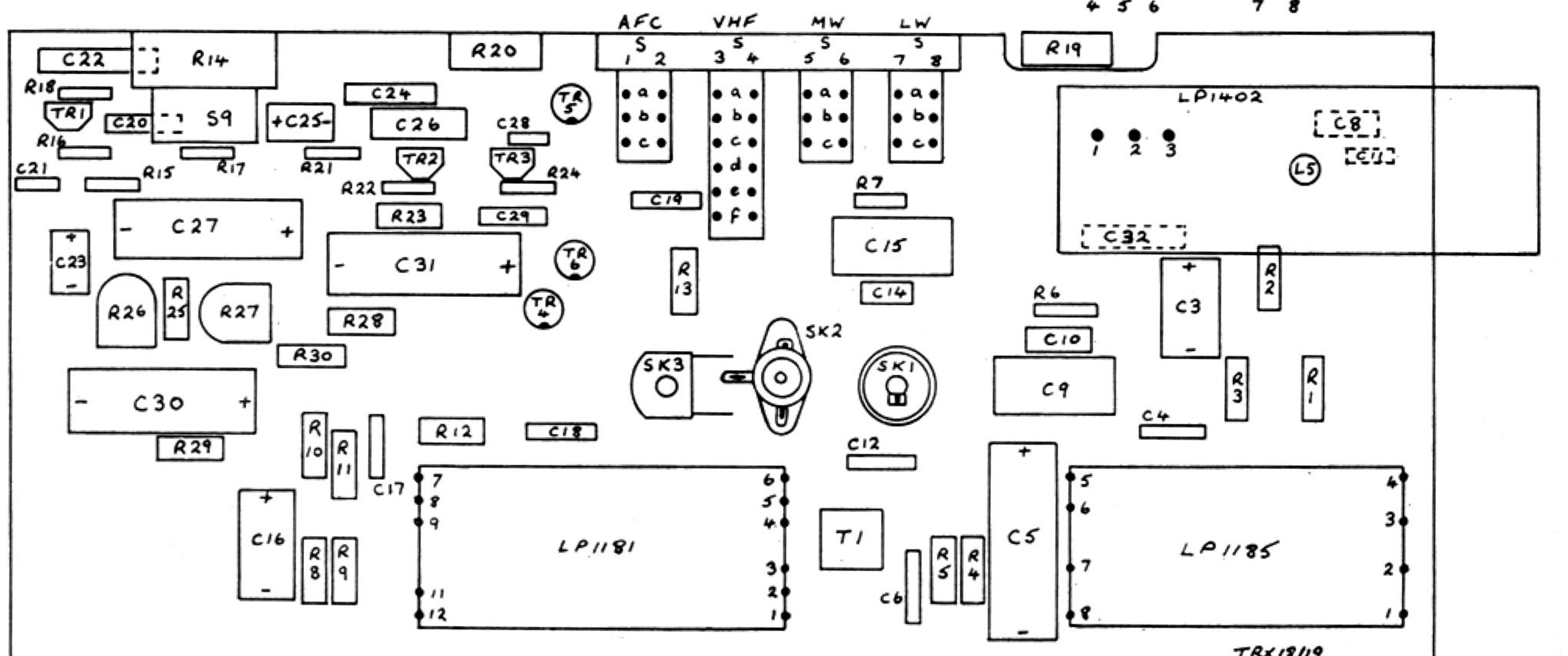
Switch receiver to LW, and set pointer to 200m calibration mark. Inject signal of 263kHz and adjust trimmers C9 and C15 for maximum reading on output meter.

Retune receiver to 536m calibration mark, inject signal of 158kHz and adjust L2 on ferrite rod for maximum output.

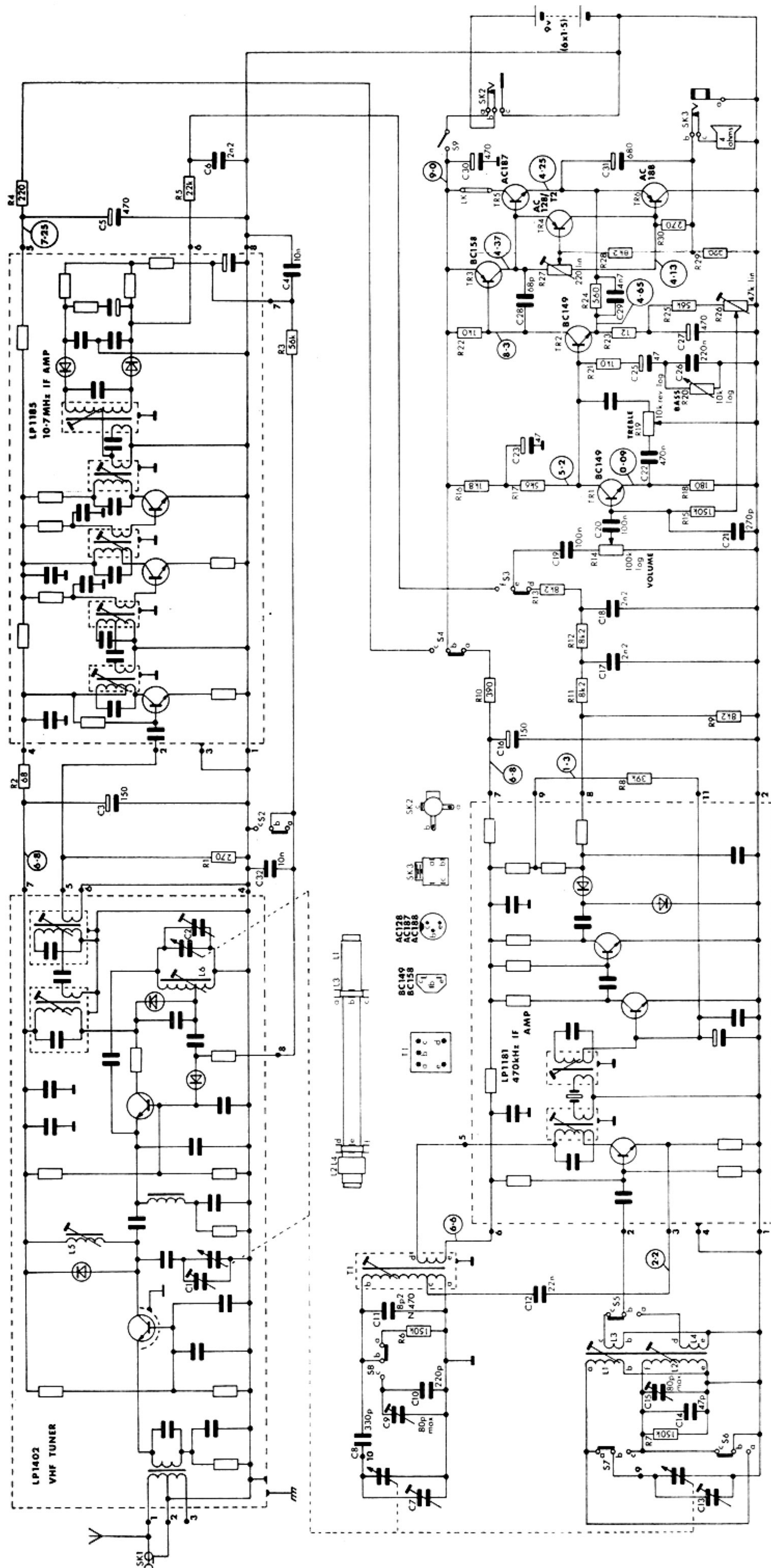
Repeat LW adjustments for optimum results, finishing with C9/C15 adjustments.

#### F.M. Alignment

Switch to VHF. Switch off AFC (button depressed). Connect signal generator to f.m. aerial socket.







Set receiver pointer to 102MHz, inject signal of 102MHz and adjust trimmers C2 and C1 for maximum reading on output meter.

Retune receiver to 90MHz, inject signal of 90MHz and adjust cores of L6 and L5 for maximum output.

Repeat these adjustments for optimum results, finishing with C2/C1 adjustment.

**DISMANTLING**

Undo the clip holding the plastics battery compartment and remove the

battery compartment from the cabinet.

Remove the two screws securing fibre strips at either end of the case and remove the screw retaining the telescopic aerial.

The complete chassis may then be removed from the top of the cabinet.

To remove the loudspeaker, remove the two nuts at the bottom of the case and carefully slide the loudspeaker upwards and outwards over the bolts. Note that the bolts do not go through the slots in the loudspeaker when replacing.

