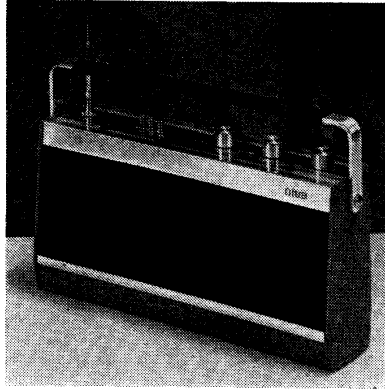


E SERVICE
R CHART
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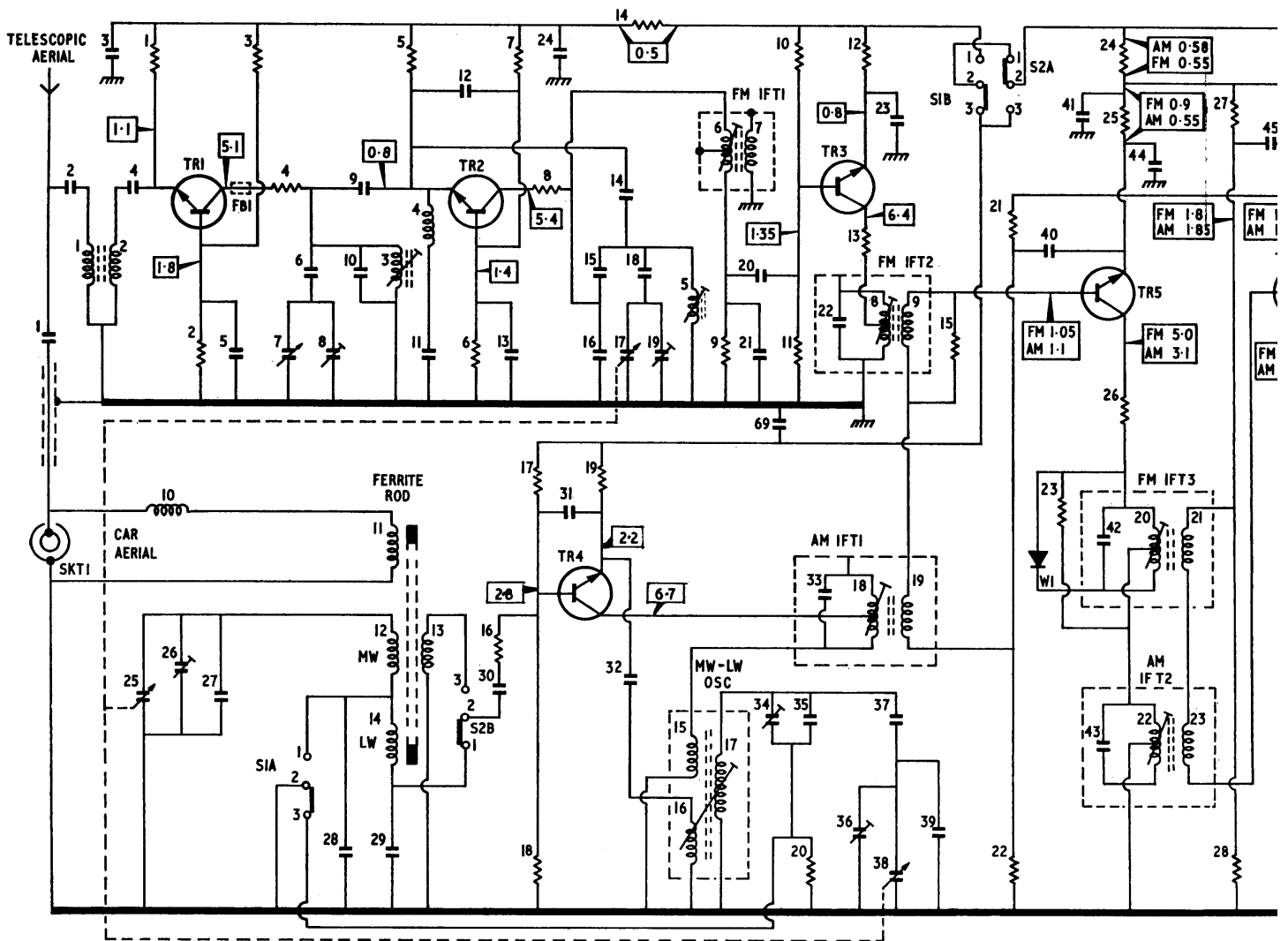


**MARCONIPHONE
4175**

ULTRA 6175

**Three waveband
AM/FM portable**

R	1	2	3	4	5	6	7	8	14	9	10	11	12	15	21	24	25	27																						
C	1	2	3	4	5	7	6	8	10	9	11	12	13	24	15	16	14	18	19	20	21	22	23	40	41	44	45													
L	1	2	10	25	26	27	28	29	30	31	17	32	34	69	35	33	36	37	38	39	5	6	7	8	9	42	43	20	21	11	12	14	13	15	16	17	18	19	22	23



RESISTORS

R1	1K5	B3
R2	12K	B3
R3	5K6	B3
R4	1K	B3
R5	1K	A3
R6	18K	A3
R7	5K6	A3
R8	220	A3
R9	470	A3
R10	5K6	A3
R11	18K	A3
R12	1K	B3
R13	470	B3
R14	220	A3
R15	100	B3
R16	100	A3
R17	1K5	B3
R18	2K2	B3
R19	2K2	B3
R20	68K	A3
R21	5K6	B3
R22	220K	B3
R23	5K6	B3
R24	220	A2

R25	1K	B3
R26	1K	B3
R27	5K6	B3
R28	12K	B3
R29	1K	B3
R30	1K	B3
R31	18K	B3
R32	330	B2
R33	5K6	B2
R34	22K	B2
R35	68	A2
R36	5K6	B2
R37	5K6	B2
R38	1K	B2
R39	20K	A1
R40	100K	B1
R41	22K	A1
R42	330	A1
R43	5K6	A1
R44	680	B1
R45	33K	A1
R46	68K	A1
R47	39K	A1
R48	10	A1
R49	1K5	A2
R50	680	B2

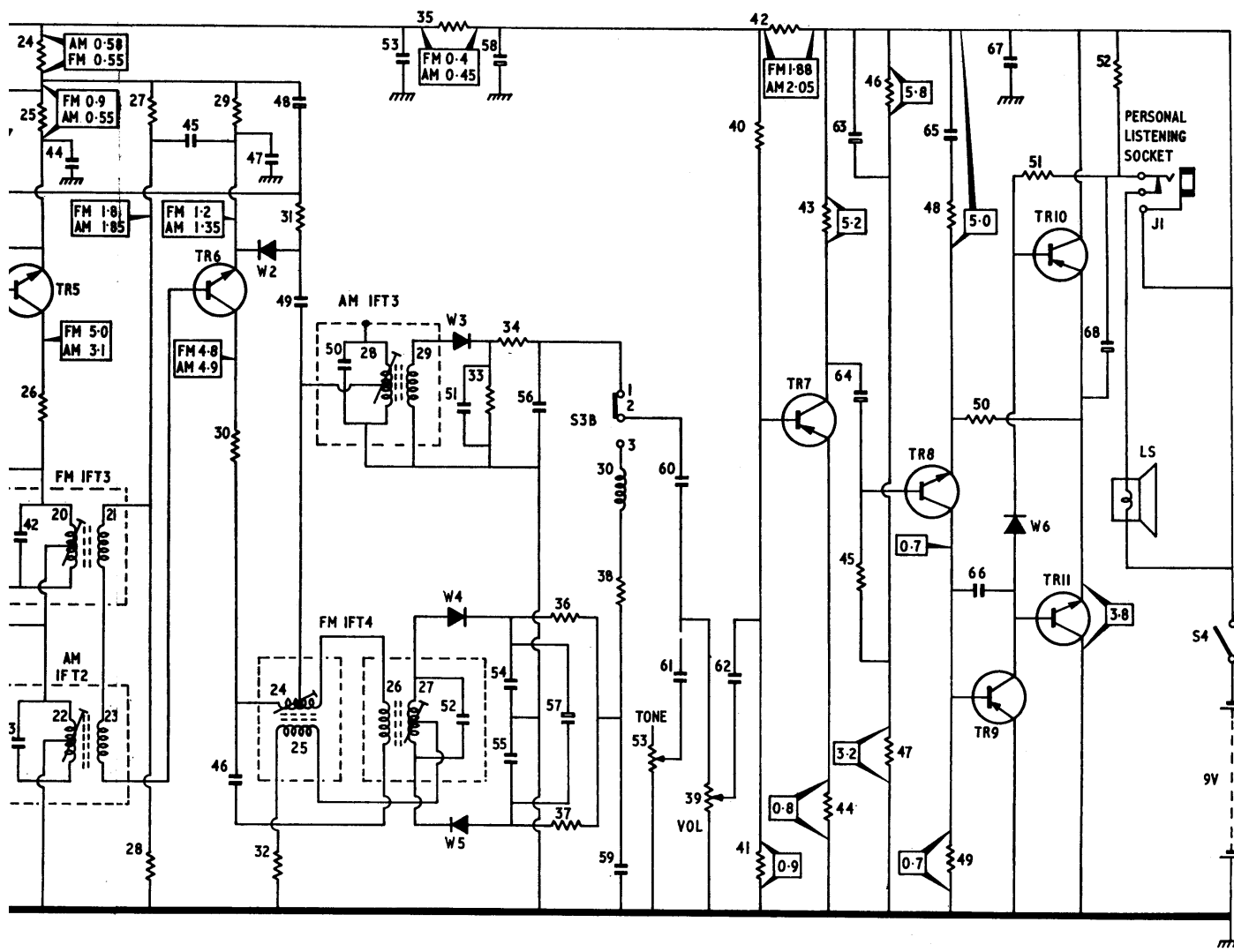
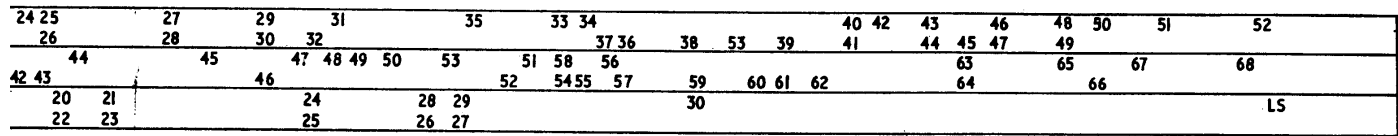
R51	680	A2
R52	330	A2
R53	22K	A2

CAPACITORS

C1	20pF	B3
C2	15pF	B3
C3	2KpF	A3
C4	12pF	B3
C5	1KpF	B3
C6	47pF	B3
C7	20pF	—
C8	5pF	B3
C9	3.3pF	B3
C10	12pF	B3
C11	510pF	A3
C12	20pF	A3
C13	1KpF	A3
C14	3.3pF	B3
C15	15pF	A3
C16	20pF	A3
C17	20pF	—

C18	47pF	B3
C19	5pF	B3
C20	2KpF	A3
C21	510pF	A3
C22	50pF	B3
C23	20KpF	B3
C24	10KpF	B3
C25	266pF	—
C26	5pF	B3
C27	5pF	B3
C28	60pF	A3
C29	2KpF	A3
C30	5KpF	A2
C31	100pF	B3
C32	10KpF	B3
C33	180pF	B3
C34	25pF	A3
C35	230pF	B3
C36	5pF	B3
C37	290pF	B3
C38	266pF	—
C39	15pF	A3
C40	20KpF	B3
C41	20KpF	B3
C42	50pF	B3
C43	180pF	B3

C44	20KpF	B3
C45	20KpF	B3
C46	30pF	B2
C47	20KpF	B3
C48	8μF	B3
C49	100pF	B3
C50	180pF	B2
C51	10KpF	B2
C52	90pF	B2
C53	20KpF	A2
C54	510pF	B2
C55	510pF	B2
C56	5KpF	B2
C57	8μF	B2
C58	150μF	A2
C59	10KpF	B2
C60	220KpF	A2
C61	50KpF	A2
C62	220KpF	B1
C63	8μF	A1
C64	8μF	A1
C65	300μF	A1
C66	2KpF	A2
C67	300μF	A2
C68	300μF	A2
C69	50KpF	—



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ELECTRICALLY identical, these two EBRC battery operated portable radios differ only in presentation. Both have chromium plated push-buttons and spun-aluminium rotary control knobs.

The Ultra 6174 is housed in a moulded case in tobacco brown with leathergrain effect. The speaker grille is in sienna brown.

Marconiphone 4174 is in a case moulded in eclipse blue material with leathergrain finish. It has an anodised black aluminium speaker grille.

Battery. 9V type PP9 or equivalent.

Consumption. Quiescent current: AM 15mA, FM 15.5mA.

Wavebands. LW, MW and VHF/FM.

Transistors. TR1 VHF RF amplifier BF274, TR2 VHF mixer/oscillator BF194,

TR3 FM IF amplifier BF194, TR4 AM mixer/oscillator, TR5 common IF amplifier

BF194, TR6 common IF amplifier BF194, TR7 AF pre-amplifier BC154, TR8 AF amplifier U3540, TR9 driver 2N3702, TR10 AC142K and TR11 AC141K complementary push-pull output stage.

Diodes. W1 FM overload AA112, W2 AGC AA112, W3 AM detector AA112, W4 AA112 and W5 AA112 FM ratio detector, W6 output stage bias stabilizing D3.

IF's. AM 472kHz. FM 10.7MHz.

Aerials. Internal ferrite rod assembly for LW and MW, swivelling telescopic for VHF. Co-aerial socket for car type aerial all wavebands.

Speaker. 5in. diameter 10ohm impedance.

Output. 600mW.

Outlet. Normally closed miniature jack for earphone.

Dimensions. 6½ × 12½ × 3¼in. both models.

Price. £20.70 both models.

Manufacturer. British Radio Corporation Ltd.

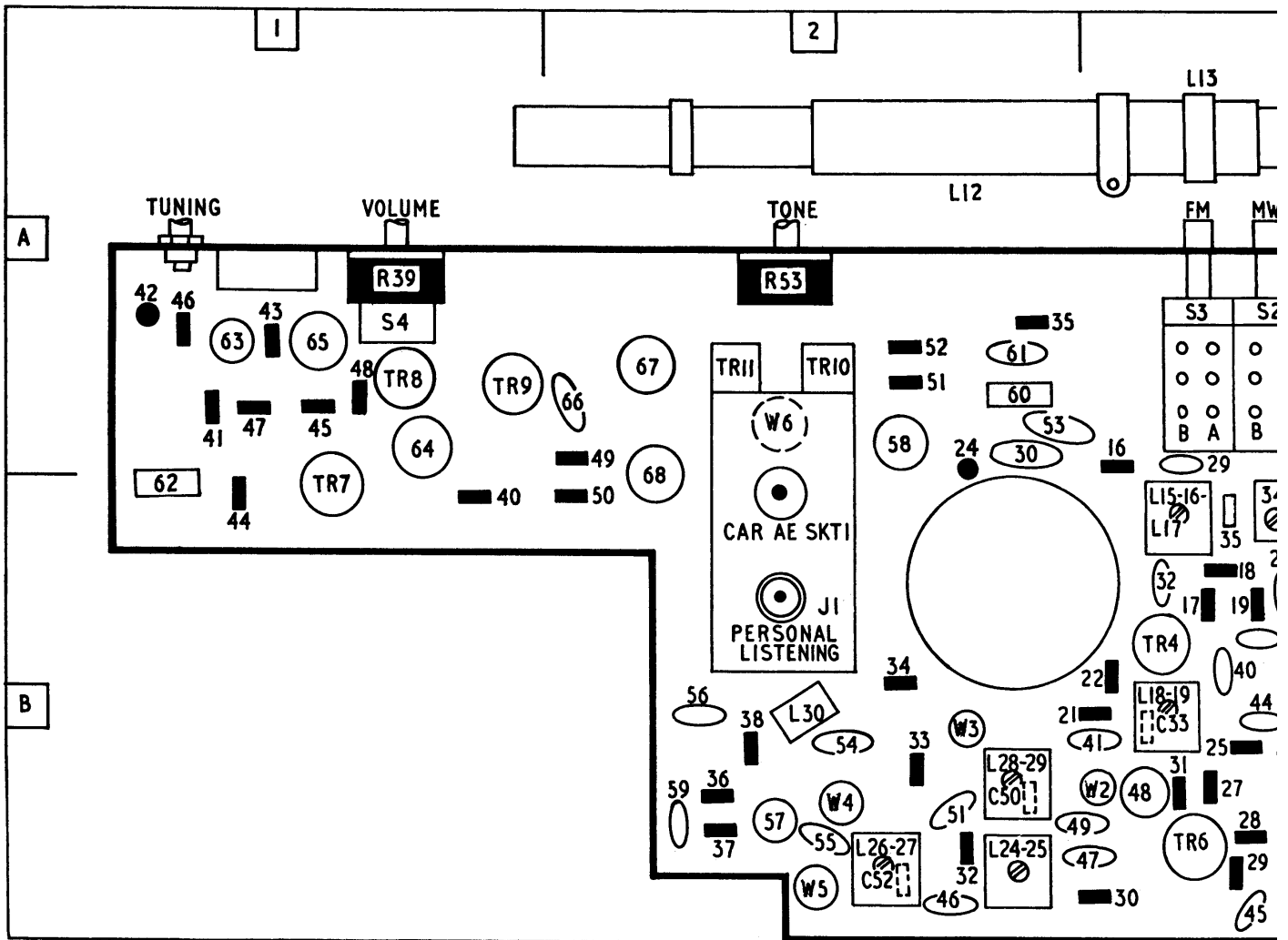
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DISMANTLING

Take out and disconnect battery. Remove coin slotted studs securing handle taking care to observe position of spacers and spring washers.

From top centre of the wrap-round case back, unscrew and remove 6BA countersunk screw also the three countersunk screws located at the bottom of the case. The case back can now be separated from the case front which contains the chassis giving access to component side of panel.

For access to the foil side of panel and the drive cord assembly, first unscrew and remove the screw securing telescopic aerial to base of case half then remove aerial. Pull off the three control knobs and un-



screw and remove two screws from lower edge of panel, also three 4BA screws—two from top left hand side of panel and tuning drive assembly and one from top right hand side of panel—securing panel and tuning drive assembly.

SERVICE NOTES

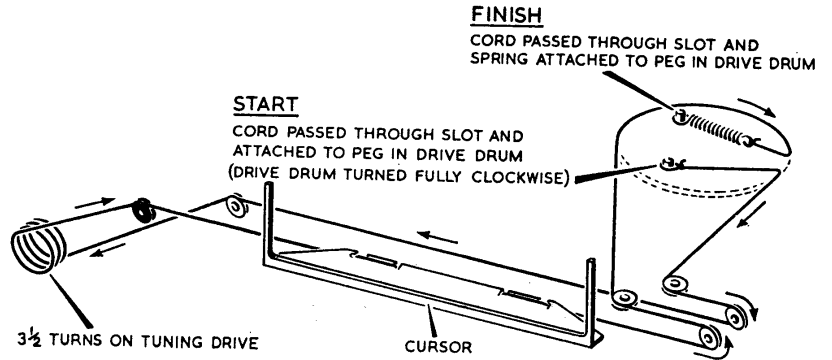
Voltages indicated on the circuit diagram were obtained from information supplied by the manufacturers. They were measured under quiescent conditions with a 20,000 ohm/V meter and are with respect to the emitter line of each transistor, except where otherwise shown.

Transistor types which are similar to those given in the specification may be fitted during manufacture or supplied as replacements.

ALIGNMENT

Equipment required. An AM/FM signal generator, an audio output meter with 10ohm impedance or a model 8 Avometer, a 10KpF capacitor and an RF coupling coil.

In order to avoid alignment error due to AGC action, the input signal level should be adjusted so that with the volume control set at maximum an audio output of about



Drive cord assembly. Use approximately 40in. of nylon braided cord—actual length between knots 35½in. Rotate drum fully anti-clockwise and route cord as illustrated

50mW is maintained.

Terminate output meter in a miniature jack-plug and insert plug into earphone jack or, alternatively connect an Avo 8 set to the 10V AC range in parallel with speaker.

AM IF. Switch receiver to MW and rotate tuning gang to maximum capacitance. Feed in a 472kHz AM signal via 10KpF capacitor between junction C25/L12 and frame of tuning gang. Adjust L28, L22 and L18 in that order for maximum output.

Repeat in same order until no further improvement can be obtained. Disconnect signal generator.

AM RF. With tuning gang at maximum capacitance, check and if necessary, adjust cursor to coincide with zero market pips on right hand end of scale. MW must be aligned first.

Terminate signal in an RF coupling coil and loosely couple to ferrite rod aerial assembly.

Switch receiver to MW and tune to centre of 500m on scale. Feed in a 600kHz AM signal and adjust L17 and position of ring on ferrite rod for maximum output.

Tune receiver to centre of 200m on scale and feed in a 1500kHz AM signal. Adjust C36 and C26 for maximum output.

Switch receiver to LW, tune to centre of 1400m on scale and feed in a 220kHz AM signal. Adjust C34 and position of L14 on ferrite rod for maximum output.

Repeat adjustments as necessary for maximum output. Disconnect signal generator.

FM IF. Switch receiver VHF/FM and feed in a 10.7MHz (25kHz deviation) FM signal between junction C6/C7 and frame of tuning gang. Adjust L27, L24, L20, L8 and L6 for maximum output. Switch signal generator to 10.7MHz AM and adjust L27 for minimum output—AM rejection.

Repeat as necessary for maximum FM and minimum AM output. Disconnect signal generator.

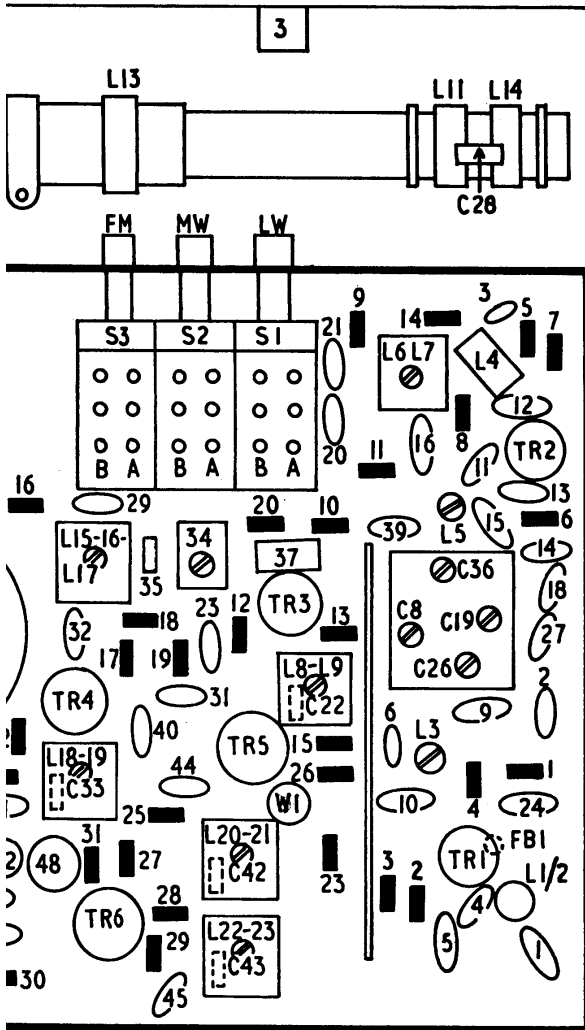
FM RF. Disconnect telescopic aerial lead to C2 and connect signal generator output to lead.

Tune receiver to centre of 88MHz on scale and feed in an 88MHz FM signal. Adjust L5 and L3 for maximum output.

Tune receiver to centre of 96MHz on scale and feed in a 96MHz FM signal. Adjust C19 and C8 for maximum output.

Repeat adjustments in same order until no further improvement can be obtained. Disconnect signal generator and output meter then reconnect telescopic aerial.

Additional copies of this chart 25p, including postage. Payment with order please to ERT, Dorset House, Stamford Street, London SE1. 9LU



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