

CONDENSERS	Values (μF)
C1 V1 heptode CG condenser	0.0001
C2 V1 SG decoupling	0.1
C3 1st IF transformer tuning	0.00015
C4 condensers	0.00015
C5 V1 osc. CG condenser	0.0001
C6 V1 cathode by-pass	0.1
C7 AVC line decoupling	0.1
C8 Osc. circuit SW1 tracker	0.005
C9 Osc. circuit SW2 tracker	0.002
C10 Osc. circ. MW fixed tracker	0.0005
C11 Osc. circ. LW fixed tracker	0.00015
C12 Osc. circ. LW fixed trimmer	0.00005
C13 V1 osc. anode coupling	0.0001
C14 HT circuit RF by-pass	0.25
C15 V2 SG decoupling	0.1
C16 V2 cathode by-pass	0.1
C17 2nd IF transformer tuning	0.00015
C18 condensers	0.00017
C19 IF by-pass condensers	0.0002
C20 AF coupling condensers to	0.0002
C21 V3 triode	0.05
C22 T.I. CG decoupling	0.05
C23 Coupling to V3 AVC diode	0.0001
C24 V3 and T.I. cathodes by-pass	20.0
C25* V3 triode anode decoupling	2.0
C26* IF by-pass	0.0002
C27 V3 triode to V4 AF	0.05
C28 coupling	0.05
C29 Fixed tone corrector	0.01
C30* V4 cathode by-pass	20.0
C31 Part of variable tone control	0.05
C32* HT smoothing condensers	16.0
C33* Mains RF by-pass	24.0
C34 Aerial circ. SW1 trimmer	0.00003
C35 Aerial circ. SW2 trimmer	0.00003
C36 Aerial circ. MW trimmer	0.00003
C37 Aerial circ. LW trimmer	0.00003
C38 Aerial circuit tuning	0.0001
C39 Osc. circuit MW tracker	0.0001
C40 Osc. circuit SW1 trimmer	0.00003
C41 Osc. circuit SW2 trimmer	0.00003
C42 Osc. circuit MW trimmer	0.00003
C43 Osc. circuit LW trimmer	0.00003
C44 Oscillator circuit tuning	—

OTHER COMPONENTS	Approx. Values (ohms)
L1 Aerial SW1 coupling coil	0.4
L2 Aerial SW2 coupling coil	0.3
L3 Aerial MW coupling coil	1.0
L4 Aerial LW coupling coil	90.0
L5 Aerial SW1 tuning coil	Very low
L6 Aerial SW2 tuning coil	0.3
L7 Aerial MW tuning coil	2.0
L8 Aerial LW tuning coil	9.0
L9 Oscillator SW1 reaction	0.5
L10 Oscillator SW2 reaction	36.0
L11 Oscillator MW reaction	70.0
L12 Oscillator LW reaction	1.4
L13 Osc. circ. SW1 tuning coil	Very low
L14 Osc. circ. SW2 tuning coil	0.3
L15 Osc. circuit MW tuning coil	6.0
L16 Osc. circuit LW tuning coil	4.75
L17 Pri. total	4.4
L18 Sec. total	4.4
L19 Pri. total	4.4
L20 Sec. total	4.4
L21 Speaker speech coil	2.5
L22 HT smoothing choke	380.0
T1 Speaker input trans.	500.0
T2 Mains Heater sec.	0.1
trans. Rect. heat. sec.	0.1
HT sec. total	360.0
S1-S34 Waveband switches	—
S35 Gram pick-up switch	—
S36 Speaker muting switch	—
S37 Mains switch, ganged R14	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES	Values (ohms)
R1 V1 heptode CG resistance	500,000
R2 V1 SG HT feed potential	30,000
R3 divider	20,000
R4 V1 fixed GB resistance	200
R5 V1 osc. CG resistance	50,000
R6 Oscillator reaction stabilis-	100
R7 ing resistances	250
R8 V1 osc. anode HT feed	20,000
R9 V2 SG HT feed	100,000
R10 V2 fixed GB resistance	300
R11 IF stopper	10,000
R12 V3 signal diode load re-	250,000
R13 sistances	100,000
R14 Manual volume control	500,000
R15 T.I. CG decoupling	1,000,000
R16 V3 GB AVC delay resistance	2,000
R17 V3 triode anode decoupling	20,000
R18 V3 triode anode load	500,000
R19 AVC line decoupling	500,000
R20 V3 AVC diode load	1,000,000
R21 V4 CG resistance	250,000
R22 V4 grid stopper	50,000
R23 V4 GB resistance	140
R24 Variable tone control	50,000
R25 T.I. anode HT feed	5,000,000

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 238 V, using the 240-250 V

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 ECH3	257	1.5	80	2.1
V2 EF9	235	5.0	83	1.6
V3 EBC3	257	5.7	83	1.6
V4 EL3	200	1.7	—	—
V5 AZ3	236	41.0	257	4.8
T.I. EM1	253†	—	—	—
	10	0.05	—	—
	Target	—	—	—
	257	0.4	—	—

† Each anode, AC.

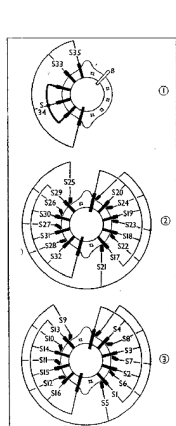
tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

C37. For maximum output. Feed in a 550m (545 KC/S) signal, tune it in, and adjust C40 for maximum output, while rocking the gang for optimum results.

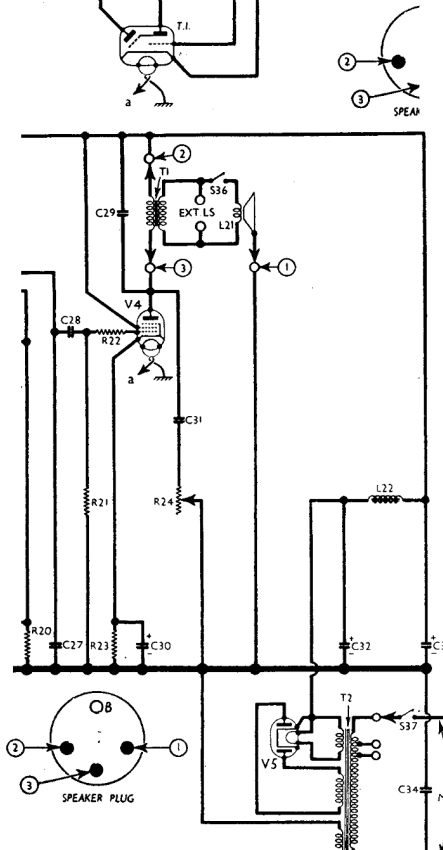
SW2. Switch set to SW2, tune to 50m on scale, feed in a 50m (6 MC/S) signal, and adjust C43, then C36, for maximum output. Tracking is fixed on this band.

SW1. Switch set to SW1, tune to 13.5m on scale, feed in a 13.5m (22.2 MC/S) signal, and adjust C42, then C35, for maximum output. There is no variable tracking condenser on this band, and tracking is adjusted at the works by means of variable iron cores (not shown in the circuit) in the L1, L5 and L9, L13 coil units. Normally these will never need adjustment, but if they have been tampered with, adjustment should be carried out at 50m.



Diagrams of the switch units, as seen from the rear of the underside of the chassis. Units 2 and 3 are double-sided

SWITCH	SW1 (1)	SW2 (2)	SW3 (3)	SW4 (4)
SW1	1	1	1	1
SW2	1	1	1	1
SW3	1	1	1	1
SW4	1	1	1	1
SW5	1	1	1	1
SW6	1	1	1	1
SW7	1	1	1	1
SW8	1	1	1	1
SW9	1	1	1	1
SW10	1	1	1	1
SW11	1	1	1	1
SW12	1	1	1	1
SW13	1	1	1	1
SW14	1	1	1	1
SW15	1	1	1	1
SW16	1	1	1	1
SW17	1	1	1	1
SW18	1	1	1	1
SW19	1	1	1	1
SW20	1	1	1	1
SW21	1	1	1	1
SW22	1	1	1	1
SW23	1	1	1	1
SW24	1	1	1	1
SW25	1	1	1	1
SW26	1	1	1	1
SW27	1	1	1	1
SW28	1	1	1	1
SW29	1	1	1	1
SW30	1	1	1	1
SW31	1	1	1	1
SW32	1	1	1	1
SW33	1	1	1	1
SW34	1	1	1	1



CIRCUIT ALIGNMENT

IF Stages.—Remove top cap connection of V1, and connect signal generator to top cap of valve and chassis. Connect a 0.25 MO resistance from top cap to chassis. Short-circuit C46, and turn volume control to maximum.

Feed in a 473 KC/S signal, and adjust cores of L20, L19, L18 and L17, in that order, for maximum output. Repeat these adjustments, then remove short circuit from C46, and the 0.25 MO resistor, and replace normal top cap connection of V1.

RF and Oscillator Stages.—With gang at maximum, pointer should cover horizontal black line at upper wavelength end of LW scale. Connect signal generator to A and E sockets, via a suitable dummy aerial.

LW.—Switch set to LW, tune to 750m on scale, feed in a 750m (400 KC/S) signal, and adjust C45, then C38, for maximum output. Feed in a 2,000m (150 KC/S) signal, tune it in, and adjust C41 for maximum output, while rocking the gang for optimum results.

MW.—Switch set to MW, tune to 200m on scale, feed in a 200m (1,500 KC/S) signal, and adjust C44, then