

CONDENSERS	Values (μF)
C1 V1 hexode CG decoupling	0.1
C2 HT circuit RF by-pass	0.1
C3 V1, V3 filaments RF by-pass	0.1
C4 V1 osc. anode coupling	0.00025
C5 V1 SG decoupling	0.1
C6 V2 CG decoupling	0.02
C7 IF by-pass condensers	0.0001
C8 AF coupling to V3 triode	0.001
C9 IF by-pass	0.0001
C10 V3 triode to V4 AF coupling	0.001
C11 Heater circuit by-pass	40.0
C12 Fixed tone corrector	0.001
C13 HT smoothing condensers	16.0
C14 Mains RF by-pass	32.0
C15 Frame aerial LW trimmer	0.01
C16 Frame aerial MW trimmer	0.000016
C17 Frame aerial tuning	0.000046
C18 Oscillator circuit tuning	—
C19 Osc. circuit MW trimmer	0.00014
C20 Osc. circuit LW trimmer	0.000046
C21 Osc. circuit MW tracker	0.00029
C22 Osc. circuit LW tracker	0.000132
C23 1st IF trans. pri. tuning	—
C24 1st IF trans. sec. tuning	—
C25 2nd IF trans. pri. tuning	—
C26 2nd IF trans. sec. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES	Values (ohms)
R1 V1 osc. CG resistance	250,000
R2 V1 osc. anode HT feed	25,000
R3 V1 SG HT feed	50,000
R4 2nd IF trans. pri. shunt	500,000
R5 V3 diode load resistance	500,000
R6 IF stopper	250,000
R7 V2 AVC feed potential divider resistances	4,000,000
R8 V1 AVC feed potential divider resistances	4,000,000
R9 Manual volume control	2,000,000
R10 V3 triode anode load	1,000,000
R11 V4 CG resistance	1,000,000
R12 V1-V4 heater circuit ballast	2,200
R13 HT smoothing resistance	5,000
R14 Line cord; V5 heater circuit ballast	870†

† Tapped at 580 ohms from V5 heater end.

OTHER COMPONENTS	Approx. Values (ohms)
L1 External aerial coupling	0.1
L2 windings	0.7
L3 Frame aerial windings	1.0
L4 Osc. circuit MW tuning coil	16.0
L5 Osc. circuit LW tuning coil	2.0
L6 Oscillator reaction coil	5.0
L7 1st IF trans. {Pri.}	0.8
L8 {Sec.}	17.0
L9 2nd IF trans. {Pri.}	17.0
L10 {Sec.}	17.0
L11 Speaker speech coil	2.5
L12 Speaker input trans. {Pri.}	500.0
Relay Magnet winding	0.3
S1-S4 Waveband switches	1,000.0
S5-S7 Mains/battery change-over switches (Relay operated)	—
S8 Battery on/off switch	—
S9 Mains on/off switch	—

VALVE ANALYSIS

Valve voltages and currents given in the tables below are those measured in our receiver when it was operating with (a) a new HT battery reading 90 V on load (see battery table); and (b) AC mains of 232 V (see mains table). The receiver was tuned to the lowest wavelength on the MW band, and the volume control was at maximum, but there was no signal input, as the frame aerial plug was withdrawn and short-circuited.

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

Battery Table

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 DK1	90	0.3	81	0.3
V2 DF1	65	0.5	90	0.3
V3 DAC1	90	1.2	90	0.5
V4 DL1	15	0.03	90	0.5

Mains Table

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 DK1	105	0.75	93	0.4
V2 DF1	77	0.7	—	—
V3 DAC1	105	1.9	105	0.5
V4 DL1	17	0.04	—	—
V5 1D5	103	3.7	105	0.7
	145*	—	—	—
	154†	—	—	—

* Cathode to chassis, DC. † Anode to chassis, AC

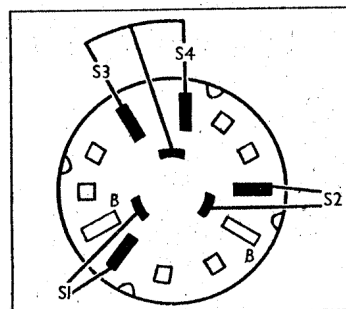
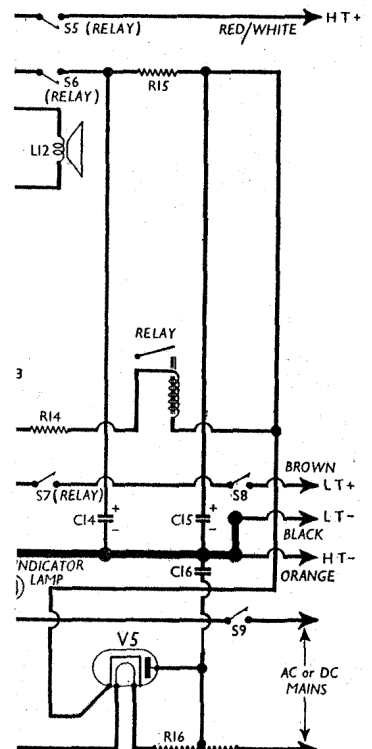


Diagram of the waveband switch unit as seen from the rear of the underside of the chassis.



CIRCUIT ALIGNMENT

IF Stages.—Connect the signal generator leads via a 0.1 μF condenser to control grid (top cap) of V1 and chassis, and short-circuit the C20 section of the gang. Feed in a 470 KC/S (638.3 m) signal, and adjust C28, C27, C26 and C25 in that order for maximum output. Repeat these adjustments, and remove short-circuit from C20.

RF and Oscillator Stages.—With the gang at maximum, the pointer should be horizontal. For the rest of the alignment, the chassis should be in the cabinet, the back cover should be in position, and the batteries should be in their compartment connected ready for use. By inverting the receiver, the trimmers and trackers can now be reached through a slot in the floor of the carrying case.

Connect the signal generator to a length of wire, and couple this to the receiver by winding it once or twice round the carrying case.

MW.—Switch set to MW, tune to 214 m on scale, feed in a 214 m (1,400 KC/S) signal, and adjust C21, then C18, for maximum output. Feed in a 500 m (600 KC/S) signal, tune it in, and adjust C23 for maximum output, while rocking the gang for optimum results. Repeat the 214 m adjustments.

LW.—Switch set to LW, tune to 1,250 m on scale, feed in a 1,250 m (240 KC/S) signal, and adjust C22, then C17, for maximum output. Feed in a 2,000 m (150 KC/S) signal, tune it in, and adjust C24 for maximum output, while rocking the gang for optimum results. Repeat the 1,250 m adjustments.