

General Description : Four-valve (including rectifier), three-waveband superheterodyne receiver. Released 1946.

Power Supplies : A.C./D.C. mains, 95-115 volts (separate plug) and 190-260 volts. Consumption 41 watts at 220 volts A.C.

Wavebands : S.W. 16.5-51 m.; M.W. 198-575 m.; L.W. 750-2000 m.

Intermediate Frequency : 470 kc/s.

Ext. Loudspeaker : 5-7 ohms impedance.

Valve Analysis : Voltages measured using a 20,000-ohms/volt meter.

	Valve	V _a	I _a	V _{at}	I _{at}	V _{g2}	I _{g2}
B ₂	UCH ₂₁	148	1.75	102 *	4.15	78	5.0
B ₃	UCH ₂₁	148	4.5	33	1.75	78	3.0
B ₅	UBL ₂₁	165	43.5	—	—	147	7.0
B ₆	UY ₂₁						

Cathode to negative connection C₁ 180 v.

* Oscillatory condition.

Pilot Lamp : Philips, type 8095D-99 (25 volts, 0.1 amp.).

Notes : R₁ may be two 2.2k resistors in parallel. For re-centring the loudspeaker speech coil use non-magnetic feeler gauges of 0.01 in. thickness.

Alignment Procedure : With wire trimmers, capacitance is reduced by removing turns of wire. When trimming, wire is removed until the deflection of the output meter passes its peak: turns are then replaced, the surplus cut off and the windings fixed with wax. Do not attempt to increase capacitance by adding wire, as extra turns cannot be wound tightly enough.

Warning—Chassis may be "Live".

I.F. : Tune receiver to 192 m. Apply a 470-kc/s. signal to grid of B₂ via fixed 0.032- μ F. capacitor. Damp and trim circuits as follows (damp circuits by connecting 80-pF. capacitors across windings indicated). (1) Damp S₆₁, S₆₂; trim S₆₃, S₆₄ (lower core). (2) Damp S₅₃, S₅₄; trim S₆₁, S₆₂, and S₅₁, S₅₂ (upper core). (3) Damp S₅₁, S₅₂; trim S₅₃, S₅₄ (lower core).

R.F. : Place scale centrally in slot and adjust gang to minimum capacitance. Adjust small milled screw on the pointer holder so that pointer coincides with small mark just below 200 m. mark on scale. Align in order indicated, applying modulated signal to aerial socket via a suitable dummy aerial.

Waveband	Signal Generator	Receiver Setting	Adjust for Maximum Response
S.W.	17.5 Mc/s.	17.5 Mc/s.	C ₁₄
M.W.	1440 kc/s.	1440 kc/s.	C ₃₈ , then C ₁₈
L.W.	160 kc/s.	160 kc/s.	C ₅₀

Note : Oscillator frequency is higher than signal frequency on all ranges. Keep R.F. input as low as possible to prevent A.V.C. action.

Model 209U

Capacitors.

C1 47
 C2 32
 C6 492 pF.
 C8 492 pF.
 C14 32 pF.
 C18 32 pF.
 C19 39 pF.
 C20 22 pF.
 C38 32 pF.
 C40 47 pF.
 C48 432 pF.
 C50 200 pF.
 C75 75
 C83 6,800 pF.

C85
 C100
 C101
 C102
 C103
 C104
 C105
 C107
 C108
 C109
 C110
 C111
 C112
 C113

4,700 pF.
 1,000 pF.
 120 pF.
 470 pF.
 82 pF.
 47,000 pF.
 47,000 pF.
 100 pF.
 68 pF.
 150 pF.
 47,000 pF.
 56 pF.
 1000 pF.
 22,000 pF.

Resistors.

R1 1,200
 R2 170
 R3 250
 R4 100
 R5 150
 R11 0.5M
 R12 47k
 R30 160
 R31 1M
 R32 10k

R33
 R34
 R35
 R36
 R40
 R41
 R43
 R44
 R75
 R81

68k
 1M
 6.8M
 0.68M
 10k
 18k
 6.8M
 1M
 120
 47k

WAVE CHANGE SWITCH POSITION S.W.2.

SWITCH TURNS 2x90°

WAVE RANGES . S.W.2. M.W. L.W.

SWITCH CONTACTS MAKING

S.W.	23-1	9-12	14-13	19-24	-
M.W.	5-10	15-18	20-19	2-23	1-6
L.W.	11-13	2-1	8-5	10-12	-

