

# Philips' "Radioplayer" Battery Dual-wave Models 6612, 6618

Radioplayer models "6612" and "6618" are six-valve receivers designed for dual-wave coverage and operation from battery power supplies. A two-volt accumulator (total drain, 0.53 A., approximately, without dial lamps) serves as "A" supply, and three 45-volt dry batteries in series form the "B" supply; no bias battery is required as the necessary grid voltages are obtained from the drop across a tapped resistor (R12) wired in series with the B-negative lead. Both models use 8-inch diameter permanent magnet speakers and, apart from a variation in cabinet style, are identical in every respect. Further references to the model numbers of these receivers will be made as a composite group "6612/18."

Four controls are fitted to model 6612/18. These are (in order from left to right) a three-position battery switch (off—on, with dial lamps—on, without dial lamps), single-ratio tuning control, wave-change switch (this is lever-con-

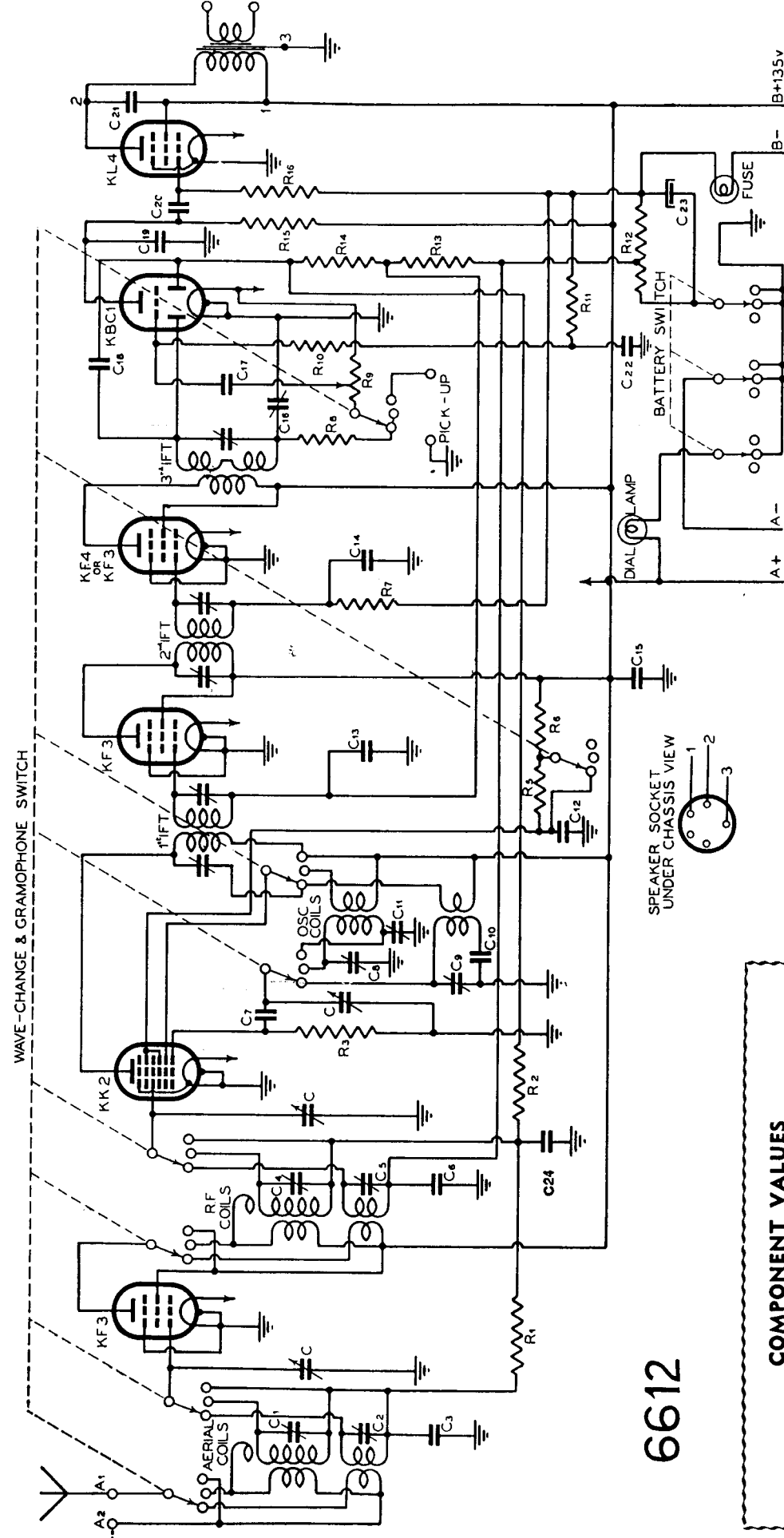
(Continued on Page 310)

## COMPONENT VALUES

**CONDENSERS:** C, C, C—sections of 3-gang var. cond.; C1—B/C aerial trimmer; C2—S/W aerial trimmer; C3, C6, C13, C14, C24—0.05 mfd. paper; C4—B/C R.F. trimmer; C5—S/W R.F. trimmer; C7, C19—0.0001 mfd. mica; C8—B/C osc. trimmer; C9—S/W osc. trimmer; C10, C21—0.004 mfd. mica; C11—B/C padder; C12, C22, C25—0.1 mfd. paper; C15, C26—0.5 mfd. paper; C16—special pre-set R.F. bypass in 3rd I.F.T. can. must not be readjusted; C17, C20—0.01 mfd. mica; C18—0.00025 mfd. mica; C23—25 mfd. low voltage electro.

**RESISTORS:** R1—0.1 megohm,  $\frac{1}{2}$  W.; R2, R14—1.0 megohm,  $\frac{1}{2}$  W.; R3, R5, R6, R8—50,000 ohms 1 W.; R7, R13, R16—0.5 megohm,  $\frac{1}{2}$  W.; R9—0.5 megohm volume control; R10—1.0 megohm, 1 W.; R11—0.25 megohm,  $\frac{1}{2}$  W.; R12—400 ohms, wire-wound and provided with tapping clip; R15—0.25 megohm, 1 W.

# 6612



WAVE-CHANGE & GRAMOPHONE SWITCH

B+135v

B-

A-

A+

FUSE

BATTERY SWITCH

DIAL LAMP

PICK-UP

OSC. COILS

RF COILS

AERIAL COILS

3rd I.F.T.

2nd I.F.T.

1st I.F.T.

KK2

KF3

KF4 OR KF3

KBC1

KL4

C1

C2

C3

C4

C5

C6

C7

C8

C9

C10

C11

C12

C13

C14

C15

C16

C17

C18

C19

C20

C21

C22

C23

C24

R1

R2

R3

R4

R5

R6

R7

R8

R9

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R216

R217

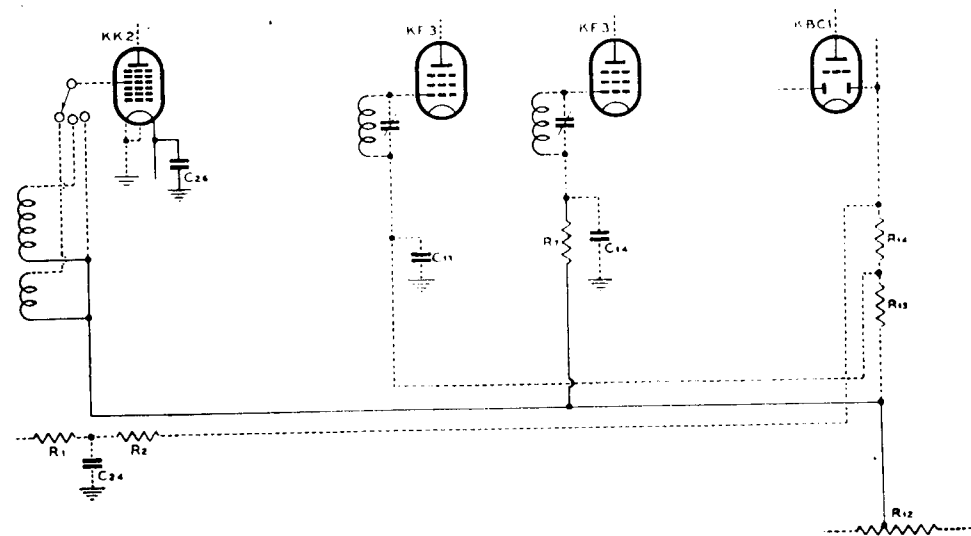
R218

R219

R220

R221

# Philips "Radioplayer" Dual-wave Models 6612, 6618



This diagram shows the changes which have been made in the 6612/18 circuit. The dotted lines indicate unaltered connections, whereas modifications are shown by solid lines. Full details are given in the text.

(Continued from Page 309.)

trolled and is arranged concentrically with the tuning control, thus giving the external appearance of only three controls; a third position is provided for gramo. switching), and volume control. The dial lamp (one only) used in this receiver is a 2.5 v. 0.1 A. miniature screw type.

The circuit arrangement is fairly straightforward and follows the practice generally adopted in Radioplayer design. Particular attention should be paid to the diagram showing the modifications which have been made to the A.V.C. wiring. In the original diagram it will be noted that A.V.C. was applied to the KK2 on broadcast and that the grid return on short wave was made direct to the bias tapping. In the new arrangement, no A.V.C. whatever is applied to the KK2 on either wave-band, the low-potential ends of the two coils being bridged and both returned to the bias tapping. The R1, R2, C24 group of components is left exactly as it was, the only difference being that no connection is now made to the junction of the three components. A further change is found in the biasing of the second I.F. amplifier. Originally, the maximum bias voltage was applied to this valve, but under the new arrangement the grid return is made to the 2-volt tapping. R7 and C14 are left in place in order to prevent coupling between the I.F. and octode grids, which are now taken to the same point. The final change made is the addition of an extra fixed condenser (C26, 0.5 mfd. paper) which is wired direct from the filament positive socket contact of the KK2 to earth.

The intermediate frequency used in this receiver is exactly 462.5 KC. The first two I.F. transformers are of the conventional "double-tuned" type, but it should be noted that the "B" side of the first I.F.T. primary trimmer is wired to the plate side of the short wave oscillator reaction coil, thus completing its

circuit through the reaction winding. The third I.F.T. is of special design and has an untuned primary. The secondary is wound in two series-connected sections and is tuned. The second trimmer adjustment in the third I.F.T. can is for a special R.F. bypass (C16) across the diode load (volume control) and filter resistor (R8). It should be noted that this trimmer returns direct to earth, whereas the diode load is returned to the positive side of the filament.

The battery connections to this receiver are quite simple. No "B" battery tappings are required and biasing is "automatic." Attention should be paid to the fuse lamp in series with the "B" negative lead in cases of sudden cessation of operation.

### OPERATING VOLTAGES

The following measurements were made with a "1,000 ohms per volt" meter between chassis and the socket contacts indicated. The grid voltages were measured at the source of potential and

not at the sockets; on account of the high values of resistance present in the grid circuits, accurate indications of the actual applied grid voltages can only be obtained with a meter of the "no drain" type. For the above measurements, all controls were at their maximum (clockwise) settings and the receiver was detuned from any signal.

**KF3, R.F. Amplifier:** Plate, 130 v.; screen, 130 v.; grid, 2 v. negative. Plate current, 1.6 mA.

**KK2, Octode Frequency Converter:** Plate, 130 v.; screen (B/C) 45 v. (S/W) 60 v.; grid, 2 v. negative. Plate current, 0.7 mA. Osc. plate voltage, 130 v.

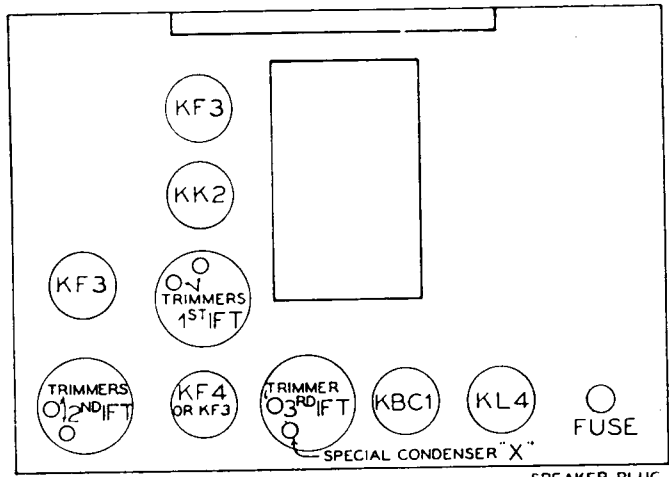
**KF3, 462.5 KC. 1st I.F. Amplifier:** Plate, 130 v.; screen, 130 v.; grid, 2 v. negative. Plate current, 1.6 mA.

**KF3 or KF4 2nd I.F. Amplifier:** Plate, 130 v.; screen, 130 v.; grid, old conditions, 5.5 v. negative; grid, new conditions, 2 v. negative. Plate current, old conditions, 9.5 mA.; plate current, new conditions, 1.6 mA.

**KBC1, Detector, A.V.C. Rectifier and Audio Amplifier:** Plate, 80 v.; grid, 5.5 v. negative. Plate current, 0.1 mA.

**KL4, Output Pentode:** Plate, 125 v.; screen, 130 v.; grid, 5.5 v. negative. Plate current, 5 mA.

Top chassis layout of Radioplayer dual-wave models 6612 and 6618. A special note regarding condenser "X" will be found in the components list, and also in the text, where it is referred to as "C16".



BACK OF CHASSIS

SPEAKER PLUG