Models 22, 23, 24

Short Wave Converter

Specifications

General:

The Model 24 Short Wave Converter when used with the Model 20 or 21 is coded Model 22 or 23 respectively. Specifications here cover the converter only.

Tubes:

Type	Function
224A	First Detector
227A	Oscillator

Frequency Range:

1.5 to 22 megacycles

I.F.:

1000 K.C.

Realignment:

No. 1. (A) Set Weston Type 590 Oscillator at 1000 K.C. (see note re this oscillator below).

(B) Connect output of oscillator (with attenuator cut out of circuit) to antenna lead of converter.

(C) Set broadcast receiver at 1000 K.C. Set short wave receiver dial at 20 megacycles.

(D) Using twentieth harmonic of 1000 K.C. from oscillator align first detector tuning condenser trimmer C-7 (parallel pad) and oscillator parallel pad C-8 (both on main tuning gang). See that low capacity point is obtained in order to ensure tuning to 22 megacycles. This parallel pad adjustment holds for all three frequency ranges.

No. 2. (A) Set Weston 590 Oscillator to 700 K.C.

(B) Set short wave receiver dial to 3.5 megacycles, middle or green band.

(C) Using fifth harmonic of 700 K.C. viz: 3,500 K.C., align oscillator series pad, condenser C-11.

No. 3. (A) Set Weston 590 Oscillator at 1600 K.C. (or use second harmonic of 800 K.C.)

(B) Set short wave receiver dial to 1.6 megacycles, lowest or purple band.

(C) Align oscillator series pad, condenser C-13.

The trimming condensers referred to in this realigning operation are located on the short wave chassis as follows:

C-7 and C-8—On the main tuning gang condenser.

C-11—Through top of main tuning condenser, hole located to the right, viewing chassis from the rear.

C-13—Through base of chassis (beside power transformer).

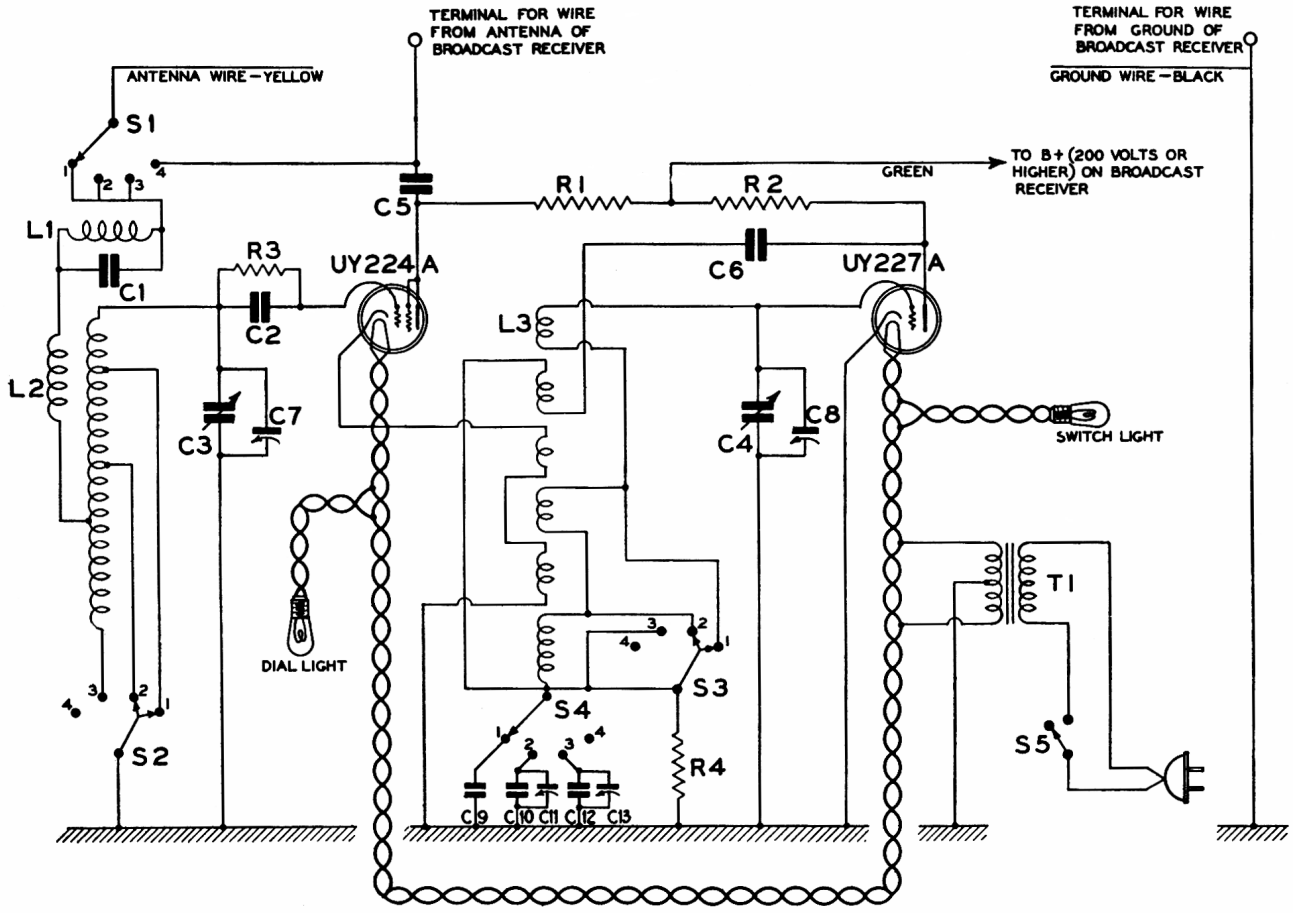

Fig. 3
Schematic of Model 24 Short Wave Converter

NOMENCLATURE

C-1 Wavetrap condenser .0005 mfd.
C-2 First detector grid leak condenser .0001 mfd.
C-3 } Main tuning condensers,
C-4 } ganged, 250 mmfds.
C-5 Antenna coupling condenser .001 mfd.
C-6 Blocking and regeneration condenser .000125 mfd.
C-7 Trimmer condenser on first detector main tuning condenser.
C-8 Oscillator parallel pad (on main tuning condenser).
C-9 Oscillator series padding condenser (fixed) for 20 megacycle aligning (.00015 mfd.)
C-10 Oscillator series padding condenser (fixed) .0006 mfd., for middle band (3.5 megacycle signal frequency, aligning).
C-11 Trimmer for C-10 above—5 to 175 mmfds.
C-12 Oscillator series padding condenser, (fixed) .0002 mfd., for low frequency range aligning, (signal frequency 1.6 megacycles).
C-13 Trimmer for C-12 above (5-175 mmfds.)

R-1 First detector plate resistor, 1 watt, 400,000 ohms.
R-2 Oscillator Plate resistor, 1 watt, 20,000 ohms.
R-3 First detector grid leak, 1 watt, 2 megohms.
R-4 Oscillator (grid leak) bias resistor, midget, 500,000 ohms.

S-1 "Normal broadcast—short wave" portion of four-way quadruple point switch.
S-2 "Antenna transformer" portion of four-way quadruple point switch.
S-3 "Oscillator coil" portion of four-way quadruple point switch.
S-4 "Oscillator series pad" portion of four-way quadruple point switch.
S-5 A.C. Power switch on filament transformer, ganged, with S-1, S-2, S-3 and S-4, and designed to open between position 3 and 4.

T-1 Filament transformer, Universal, 120V, 25 or 60 cycles.

L-1 Wavetrap inductance.
L-2 Antenna transformer coils.
L-3 Oscillator coils.