BEETHOVEN Model U3048

General Description : Five-valve (including rectifier), three-waveband (M.W. and two S.W.) universal superheterodyne receiver. Models U3048 Released 1947. P1, P2, P3 and P4 comprise U3048 chassis in small period-style cabinets.

Power Supply : A.C./D.C. mains, 200–250 volts.

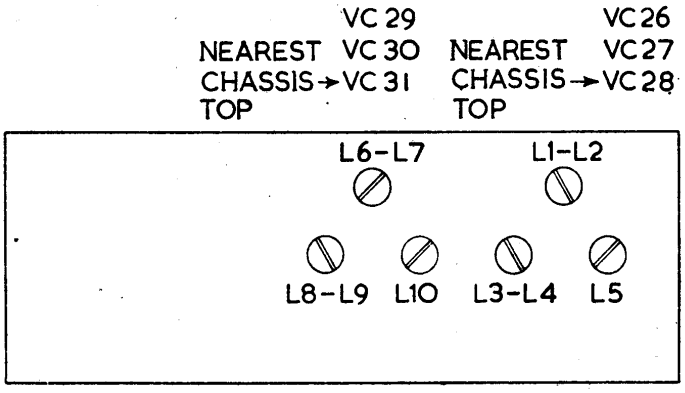
Wavebands : S.W.1 13–30 m.; S.W.2 30–100 m.; M.W. 200–550 m.

Intermediate Frequency : 465 kc/s.

Valves : (V1) CCH35; (V2) EF39; (V3) EBC33; (V4) CL33; (V5) CY31.

Pilot Lamps : Two 6.5 volts, 0.3 amp.

Alignment Procedure : Connect signal generator to grid (top cap) of V1 and adjust I.F. cores for maximum output at 465 kc/s.



TRIMMER AND CORE LAY-OUT DIAGRAM

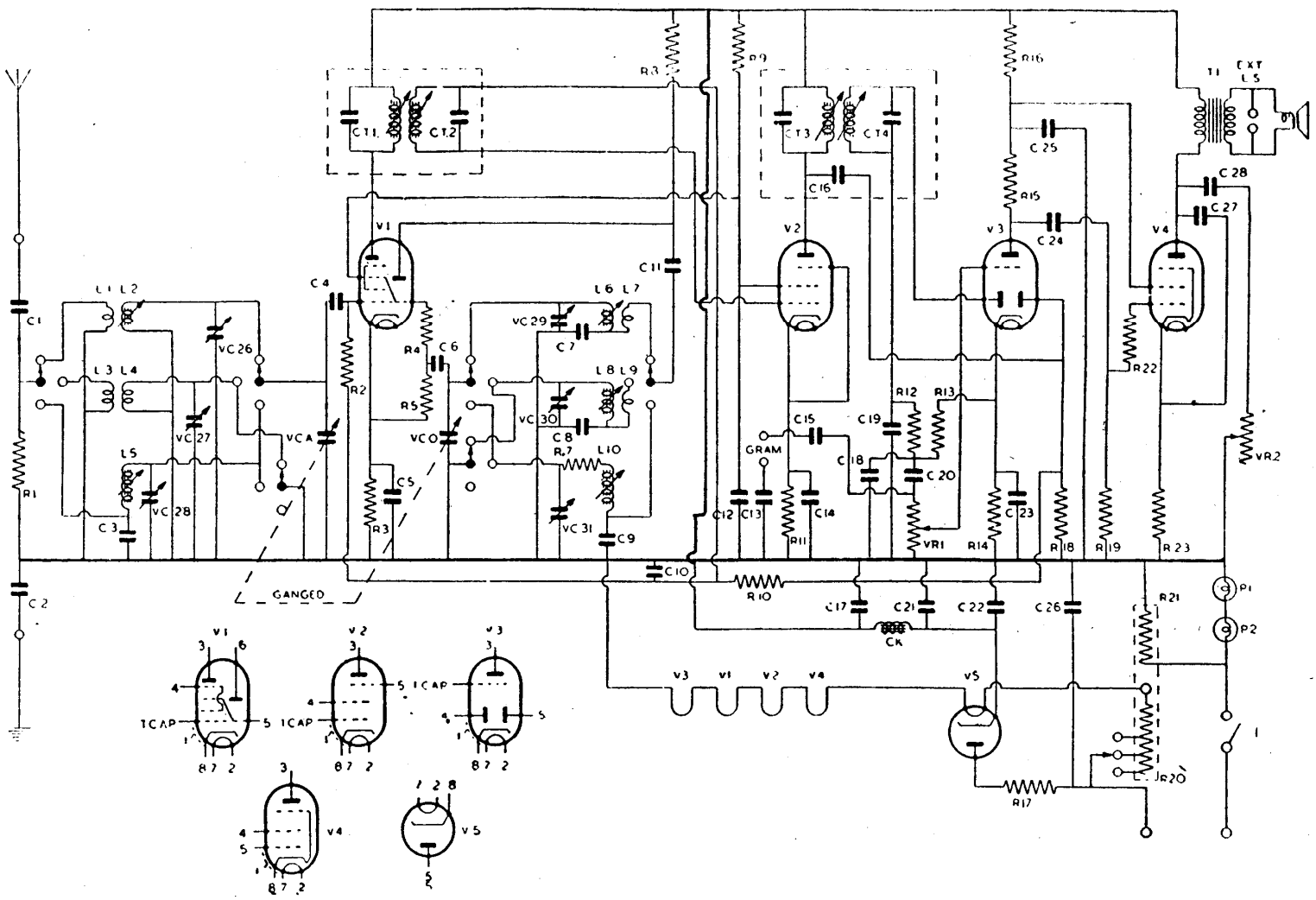
Connect signal generator to aerial socket via all-wave dummy aerial. Set pointer to 600 kc/s. (500 m.). Inject 600-kc/s. signal. Tune signal by adjusting core L10 and peak output by adjusting core L5. Set pointer and signal generator to 1400 kc/s. (214 m.) and tune oscillator with VC31 and peak sensitivity by adjusting VC28. Re-adjust at 600 kc/s. and, if necessary, at 1400 kc/s.

Repeat above procedure on S.W.1 band at 9 Mc/s. (L6, L2) and at 20 Mc/s. (VC29, VC26).

On S.W.2 set signal generator and pointer to 7·5 Mc/s. Tune signal with trimmer VC30 and peak with VC27. Tune to 3·0 Mc/s., and, while rocking gang capacitor, adjust L8 for maximum output. Re-adjust at 7·5 Mc/s.

Check Points :

V1	Anode (pin 3) 210 v., 3 mA.	Screen (pin 4) 130 v., 2 mA.	Osc. anode (pin 6) 85 v., 3·5 mA.	Cathode (pin 8) 1·9 v.
V2	Anode (pin 3) 210 v., 6 mA.	Screen (pin 4) 130 v., 2 mA.	Cathode (pin 8) 2·1 v.	—
V3	Anode (pin 3) 85 v., 1·6 mA.	Cathode (pin 8) 1·6 v.	—	—
V4	Anode (pin 3) 190 v., 35 mA.	Screen (pin 4) 175 v., 4 mA.	Cathode (pin 8) 6·5 v.	—
V5	Anode (pin 5) 210 v. A.C.	Cathode (pin 8) 225 v. D.C.	—	—



Circuit Diagram—Beethoven Model U3048

Capacitors.

C1	0·1
C2	0·1
C3	0·002 (1%)
C4	100 pF.
C5	0·1
C6	100 pF.
C7	0·005 (5%)
C8	0·002 (5%)
C9	335 pF. (1%)
C10	0·1
C11	0·01 (1000 v.)
C12	0·1
C13	0·01 (1000 v.)
C14	0·1
C15	0·01 (1000 v.)
C16	10 pF.
C17	16 (350 v.)
C18	150 pF.
C19	150 pF.
C20	0·02 (1000 v.)
C21	16 (350 v.)
C22	0·01 (1000 v.)
C23	25 (25 v.)
C24	0·05
C25	4 (350 v.)
C26	0·01 (1000 v.)
C27	0·002 (1000 v.)
C28	0·05 (1000 v.)
CT1	100 pF. (2%)
CT2	100 pF. (2%)
CT3	100 pF. (2%)
CT4	200 pF. (2%)
VC26	3–30 pF.
VC27	3–30 pF.
VC28	3–30 pF.
VC29	2·5–25 pF.
VC30	2·5–25 pF.
VC31	3–30 pF.
VCA	442 pF. Swing
VCO	442 pF. Swing

Resistors.

R1	10k
R2	1M
R3	220
R4	20
R5	47k
R7	50
R8	33k (½ W.)
R9	33k (½ W.)
R10	1M
R11	270
R12	33k
R13	0·47M
R14	1k
R15	47k
R16	6·8k
R17	100 (1 W.)
R18	1M
R19	0·47M
R20	625 tapped at 50 & 100
R21	100 (10 W.)
R22	47k
R23	180 (1W.)
VR1	1M (Pot.)
VR2	50k (Pot.)