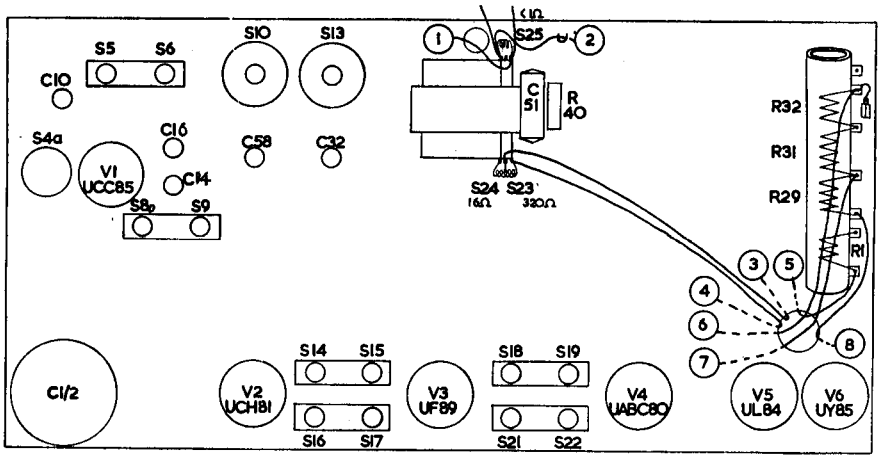
PHILIPS Model B3G85U

General Description: Six-valve (including rectifier), two-waveband (M.W./V.H.F.), A.M./F.M. table receiver, with permeability tuning on both bands. Moulded cabinet.

Power Supplies: A.C./D.C. mains, 200–250 volts, about 70 watts.

Wavebands: M.W. 187–560 m.; V.H.F. 87·5–100 Mc/s.

Valves: (V1) UCC85; (V2) UCH81; (V3) UF89; (V4) UABC80; (V5) UL84; (V6) UY85. Typical valve voltages shown on circuit diagram.



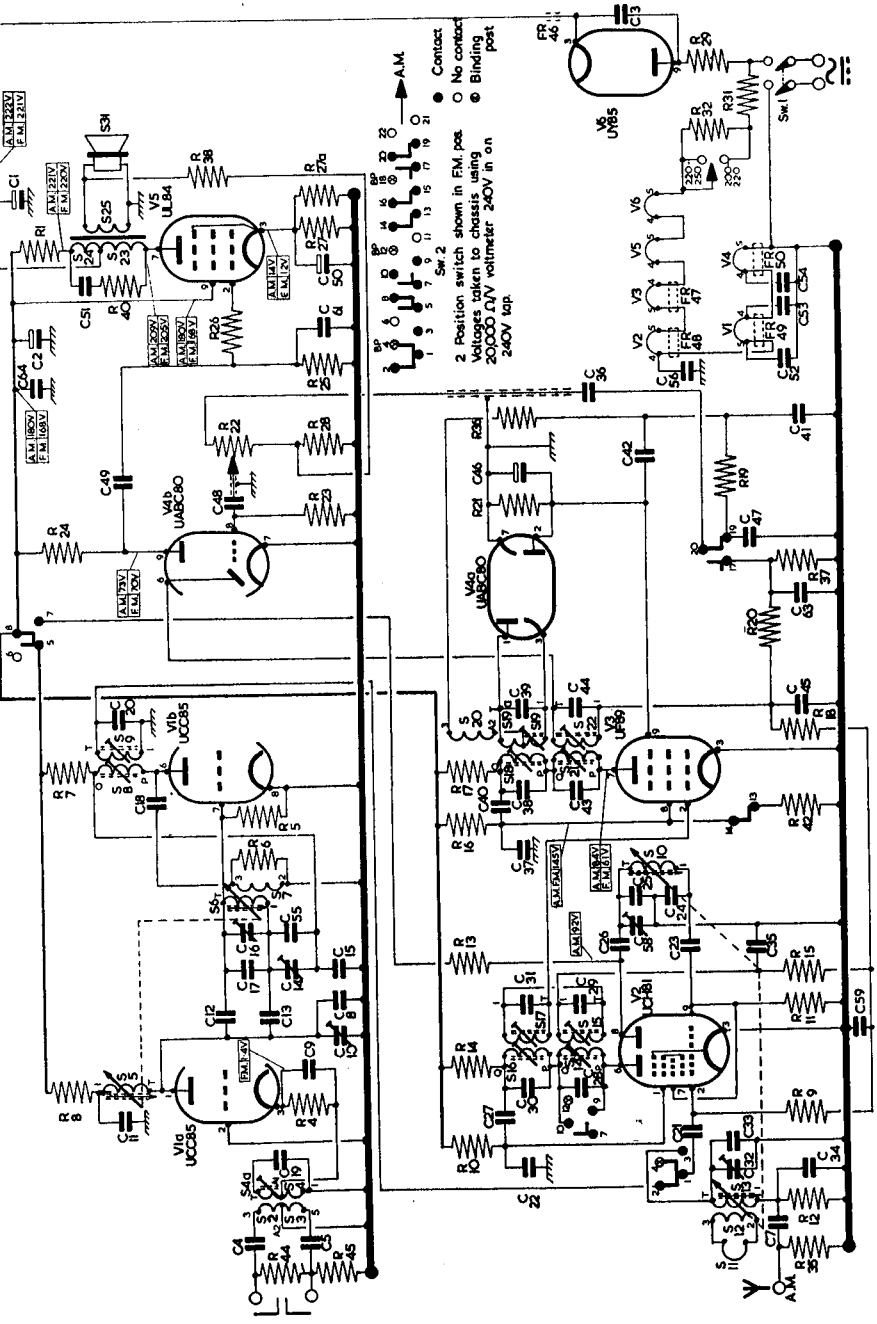
ABOVE CHASSIS LAY-OUT

Capacitors.

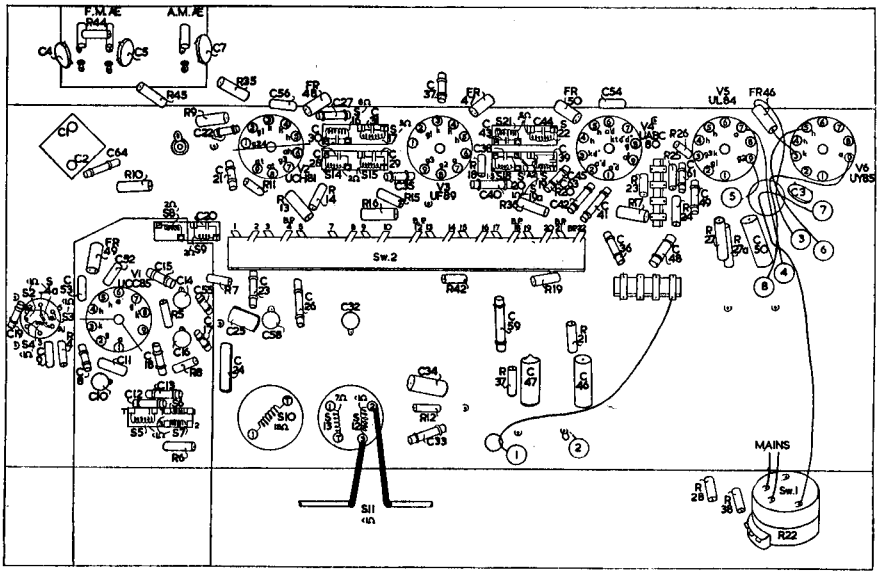
C1	50 (El. 275 v.)	C29	15 pF.	C55	5·6 pF. (±¼ pF.)	R17	4·7k (10%. 1 W.)
C2	100 (El. 275 v.)	C30	110 pF.	C56	1,000 pF.	R18	1·2M (10%)
C3	4,700 pF.	C31	195 pF.	C58	18 pF.	R19	47k (10%)
C4	470 pF.	C32	18 pF.	C59	22,000 pF.	R20	47k
C5	470 pF.	C33	33 pF. (10%)	C61	1,500 pF.	R21	27 (10%)
C7	1,800 pF.	C34	3,000 pF. (5%)	C63	100 pF.	R22	2M (log.)
C8	6·5 pF. (±½ pF.)	C35	100 pF. (10%)	C64*	1,500 pF.	R23	10M (10%)
C9	1,000 pF.	C36	4,700 pF.			R24	0·22M (10%)
C10	2–5 pF.	C37	4,700 pF.			R25	0·47M (10%)
C11	1,000 pF.	C38	22 pF.			R26	1k (10%)
C12	8·2 pF. (±½ pF.)	C39	47 pF.	*Resistors.*		R27	560 (10%, 1 W.)
C13	8·2 pF. (±½ pF.)	C40	4,700 pF.	R1	1k (5%, W.W.)	R27a	560 (10%, 1 W.)
C14	2–10 pF.	C41	330 pF. (10%)	R29	140 (5%, W.W.)	R28	68 (10%)
C15	130 pF. (1%)	C42	330 pF. (10%)	R31	430 (5%, W.W.)	R35	4·7M (¼ W.)
C16	2–10 pF.	C43	195 pF.	R32	235 (5%, W.W.)	R36	120
C17†	15 pF.	C44	195 pF.	R4	180 (10%)	R37	0·22M
C18	33 pF.	C45	100 pF.	R5	0·1M (10%)	R38	3·3k (10%)
C19	6·8 pF. (±½ pF.)	C46	2 (El. 50 v.)	R6	2·2k (10%)	R40	27k (10%, 1 W.)
C20	15 pF.	C47	1,000 pF. (400 v., 10%)	R7	27k (10%)	R42	47k (10%)
C21	100 pF. (10%)	C48	10,000 pF.	R8	2·2k (10%)	R44	10k
C22	1,000 pF.	C49	10,000 pF.	R9	1M (10%)	R45	4·7M (¼ W.)
C23	56 pF. (10%)	C50	25 (El. 25 v.)	R10	39k (10%, 1 W.)		
C24	290 pF. (1%)	C51	1,000 pF. (1,300 v.)	R11	47k (10%)		
C25	130 pF. (1%)	C52	1,000 pF.	R12	33k (10%)		
C26	470 pF. (10%)	C53	1,000 pF.	R13	33k (10%, 1 W.)		
C27	4,700 pF.	C54	1,000 pF.	R14	2·2k (10%)		
C28	15 pF.			R15	1M (10%)		
				R16	33k (10%, 1 W.)		

* Some sets only.

† Some sets have two 8·2 pF. in parallel.



CIRCUIT DIAGRAM—PHILIPS MODEL B3G85U



UNDER CHASSIS LAY-OUT

Alignment Procedure: Following F.M. procedure is suitable for use with A.M. only instruments.

I.F. (A.M.): Set to M.W., tuner open (knob fully anti-clockwise), inject a 470-kc/s. signal to control grid of V2 via a 0·047-μF. capacitor. Adjust S22, S21, S17 and S16 in that order for maximum output.

M.W.: Connect generator to A.M. aerial socket via dummy aerial. Open tuner 21 mm. from closed position and with input of 1620 kc/s., adjust C58 and C32 for maximum output.

I.F. (F.M.): Set to F.M., minimum volume and tuner closed. Connect valve voltmeter across C46 via a 100k resistor. During tuning reading should not exceed 8 volts. Inject a 10·7-Mc/s. unmodulated signal via a 0·047-μF. capacitor to control grid of V2. Damp S14 with a 4·7k resistor and adjust S15 for maximum output. Transfer damper to S15 and adjust S14. Remove damper. Trim S18 for maximum reading and adjust input to give output of 8 volts. Transfer meter to across C41 and adjust S19, S19a to give a 4-volt reading. Apply signal to anode (pin 1) of V1a via a 0·047-μF. capacitor and with meter across C46, damp S8 and trim S9. Then damp S9 and adjust S8. To check I.F. response connect meter across C46, adjust 10·7 Mc/s. unmodulated input to give reading of 8 volts. Increase generator output 1·6 times and swing generator frequency either side of resonance until output across C46 returns to 8 volts. Total frequency response should be greater than 160 kc/s. Increase generator output ten times, detune until 8 volts is indicated. Total frequency response should be less than 450 kc/s.

R.F. (F.M.): 75-ohm balanced output from generator is required (for

unbalance-to-balance network see Philips Model G62A in earlier volume). Set C10, C14 and C16 to mid-positions and connect meter across C46 via a 100k resistor. Open tuner unit 21 mm. from closed position and inject a 100-Mc/s. signal to aerial socket (via matching pad if necessary). Trim C10 and C16 for maximum output. With tuner closed apply input of 86·5 Mc/s. and trim S6 and S5 for maximum output. Reading should not exceed 8 volts during tuning. Repeat until trimming is correct.