

**INVICTA****Model 16**

**General Description:** Five-valve (including rectifier), two-waveband transportable table receiver using printed-circuit board.

**Power Supplies:** A.C./D.C. mains, 200–250 volts. Consumption about 48 watts.

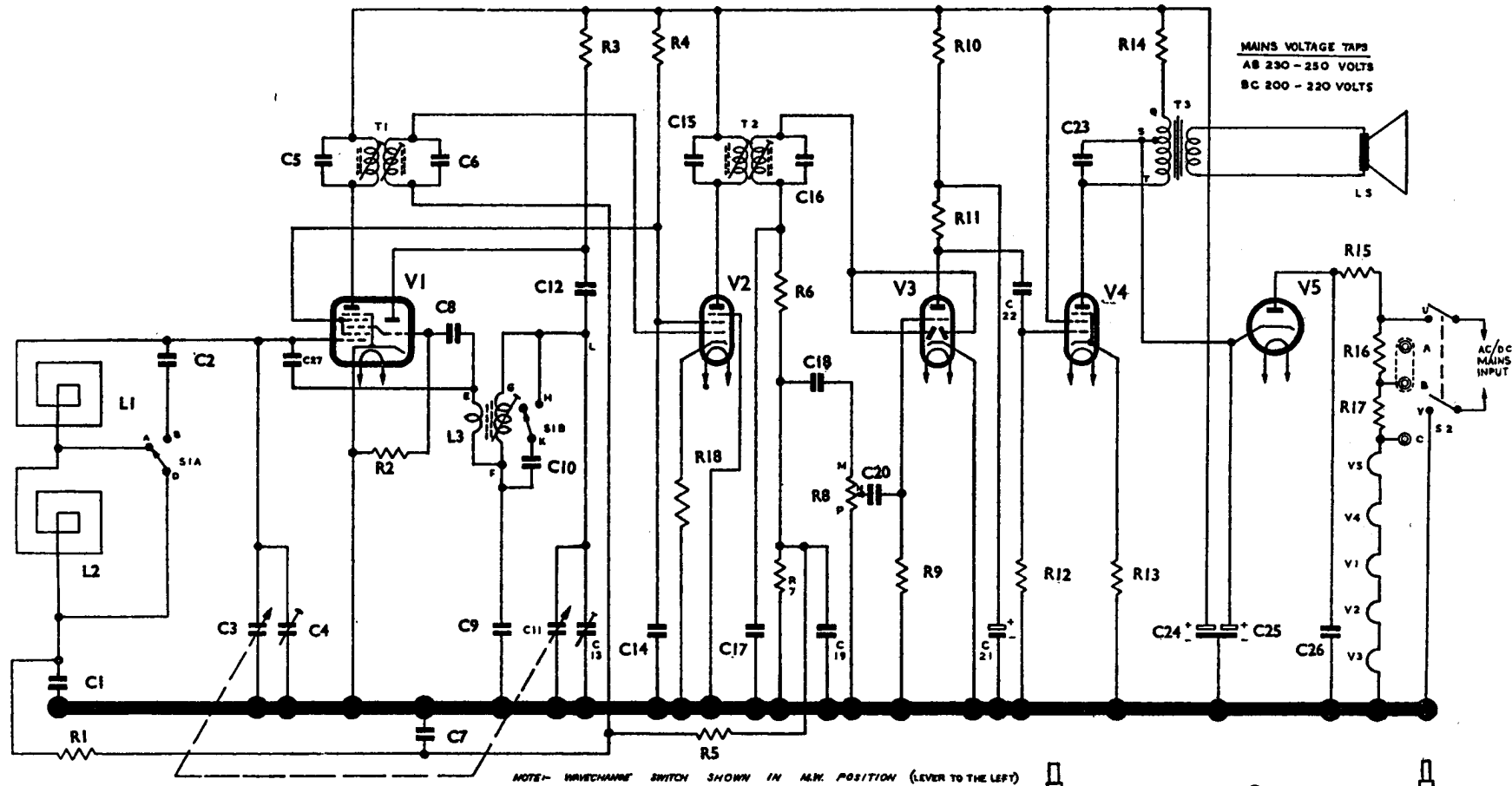
**Valve Analysis:** Measurements taken with Avo Model 8 (20,000 ohms/volt) with 240 volts A.C. into the 230–250-volt tap. No-signal conditions.

<i>Valve</i>	<i>Anode, volts</i>	<i>Anode, mA.</i>	<i>Screen, volts</i>	<i>Screen, mA.</i>	<i>Cathode, volts</i>
V <sub>1</sub> UCH81 .	176	—	66	} 5.0	—
V <sub>2</sub> UF89 .	176	—	66		0.8
V <sub>3</sub> UBC81 .	52	—	—	—	—
V <sub>4</sub> UL84 .	200	60	176	—	13
V <sub>5</sub> UY85 .	225 A.C.	—	—	—	215
V <sub>I</sub> (osc.) .	88	4.0	—	—	—

**Alignment Procedure:**

<i>Apply Signal as Below</i>	<i>Set Controls to</i>	<i>Adjust in Order for Maximum Output</i>
(1) 470 kc/s. between gang frame and control grid of V <sub>I</sub> via 0.1 μF.	560 m.	T <sub>1</sub> and T <sub>2</sub>
(2) 600 kc/s. into standard loop placed 50 cm. from M.W. frame aerial	M.W. 500 m.	Core L <sub>3</sub>
(3) As (2) but 1500 kc/s.	M.W. 200 m.	C <sub>13</sub> and C <sub>4</sub>
(4) As (2) but 214 kc/s.	L.W. 1400 m. (tune to signal)	Check sensitivity and calibration

**Servicing Notes:** The usual precautions should be taken when dealing with the printed circuit. Where the need arises for testing on the printed-circuit side of the chassis plate, insulating varnish must first be scraped away from the test points. It is important to note that the grub screws holding the control knobs must be tight and inaccessible. The switch knob must be intact and securely attached to the switch lever. The two screws underneath the cabinet fasten the chassis down with special insulated-nut assemblies. It is advisable to check this insulation after replacing the chassis, preferably by applying a Megger insulation tester between each screw head and the chassis metalwork.



CIRCUIT AND LAY-OUT DIAGRAMS—INVICTA MODEL 16

<i>Capacitors.</i>			
C1	0.04	C14	0.05
C2	130 pF. (2%)	C15	100 pF. (2%)
C3	523 pF. (swing)	C16	100 pF. (2%)
C4	3-30 pF.	C17	100 pF.
C5	100 pF. (2%)	C18	0.01
C6	100 pF. (2%)	C19	0.001 (400 v.)
C7	0.02	C20	0.01
C8	100 pF.	C21	4 (250 v.)
C9	510 pF. (2%)	C22	0.01 (400 v.)
C10	470 pF. (2%)	C23	0.01 (440 v.)
C11	523 pF. (swing)	C24	50 (275 v.)
C12	100 pF.	C25	50 (275 v.)
C13	3-30 pF.	C26	0.1 (300 v. A.C.)
		C27	1 pF.
		<i>Resistors.</i>	
		R1	470k
		R2	47k
		R3	22k
		R4	22k (10%, ½ W.)
		R5	2.2M
		R6	100k
		R7	470k
		R8	1M (pot.)
		R9	10M
		R10	47k
		R11	470k
		R12	1M
		R13	180 (10%, ½ W.)
		R14	1.5k (5%, 4 W.)
		R15	180 + 815 +
		R16	300 (5%,
		R17	20 W.)
		R18	150 (10%)

