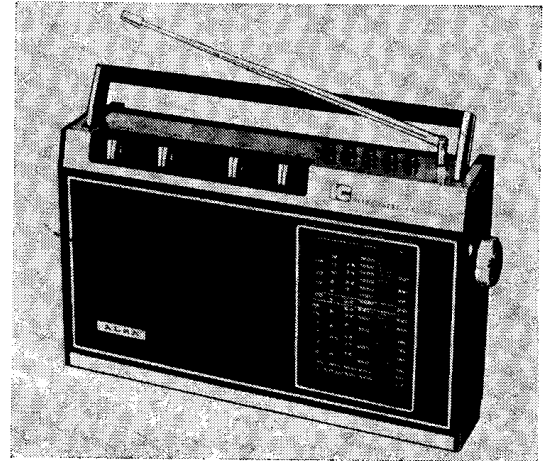


ALBA 845

a.m.-f.m. portable radio



This is a five-band a.m.-f.m. portable radio receiver employing nine transistors, nine semiconductor diodes and one integrated circuit. The waveband coverage is:-

LW: 150-310kHz (2,000-970m)
 MW: 530-1,630kHz (566-184m)
 SW1: 1.5-4MHz (20-75m)
 SW2: 3.8-12.2MHz (78.9-24.6m)
 VHF: 87-105MHz

The transistor complement is ED-1502B r.f. amplifier (FM), ED-1502B mixer-oscillator (AM), 3 x ED-1502C i.f. amplifiers, ED-1502B audio amplifier, 2SB178S audio driver, 2SB324S/2SB324S push-pull output pair. An integrated circuit type LD1110 is used as mixer-oscillator on f.m. Type 1N60 diodes are employed for i.f. damping, ratio detector, a.m. limiting, f.m. limiting. Two B178's are used in the mains rectifier circuit. Other diodes are FV1043 (a.f.c. diode) and CD000 (a.m. detector).

Sockets are provided for the following facilities:

(1) for the connection of an external f.m. aerial.

(2) for feeding into a tape recorder or other audio equipment (5-pin DIN socket). Voltage available is 100mV. Also, when connected to this socket with all push buttons released, such audio equipment can be played through the receiver—input voltage required is 530mV.

(3) for the connection of an earphone or external loudspeaker at an impedance of 4Ω. Insertion of plug automatically disconnects the internal 4Ω loudspeaker.

(4) A.C. mains socket.

Audio output is 720mW maximum. The receiver may be run from internal battery source of 6V (4 x 1.5V cells of type SP2 or equivalent), or direct from 220-240V

50Hz a.c. mains. The mains input circuit incorporates a 50mA fuse. Current con-

sumption of the receiver is 75mA (no signal), 250mA (maximum).

DISMANTLING

Remove battery compartment flap. Remove the four X-head screws in deep holes in cabinet back—two at the top and two at the bottom. The cabinet back/handle assembly may then be taken off to give access to the component side of the printed circuit board and the main external components. Alignment can be carried out without further dismantling.

To obtain access to the copper side of the circuit board and to the cord drive system, first pull off the tuning knob and the five push button knobs. Remove the batteries. Then take out the following screws: 1 in deep hole at right hand side

of battery well, 1 on lug at left hand side of battery well, 2 in deep holes each side of the transformer/fuse sub-assembly, 2 in holes in lugs by the push button switch bank. Note: before removing the left hand screw by the switch, it will be necessary to release the telescopic aerial by removing the fixing screw accessible from inside the battery well.

Unsolder the three leads to the loud-speaker tag panel. The whole chassis assembly may then be freed to the extent of the remaining interconnecting leads.

The scale plate may be removed by taking out the four fixing screws.

ALIGNMENT

Removal of back cover/handle assembly (see under 'Dismantling') provides access to all alignment tuning points. For all a.m. adjustments, the signal generator should be coupled to the receiver via a standard transmitting loop placed near to, and coaxial with, the ferrite rod aerials. Test signals should be amplitude modulated 30% and the level kept as low as possible consistent with useful readings on an audio output meter (4Ω impedance) connected across the loudspeaker. All adjustments are for maximum reading on output meter.

signal of 470kHz and adjust cores of T8, T4 and T6.

L.W. Circuits

Switch to LW and tune to 100 mark. Inject signal of 300kHz and adjust TC66. Retune to 200 mark, inject signal of 150kHz and adjust core of L12. Repeat these adjustments.

Tune receiver to 110 mark, inject signal of 272kHz and adjust TC45. Retune receiver to 180 mark, inject signal of 167kHz and tune core of L5. Repeat these adjustments.

M.W. Circuits

Switch to MW and tune to extreme high frequency end of band. Inject signal of

I.F. Alignment

Switch receiver to MW and tune to extreme low frequency end of band. Turn volume control to maximum. Inject

—continued overleaf

ALIGNMENT

—continued

1630kHz and adjust TC63. Retune to extreme low frequency end of band, inject signal of 530kHz and tune core of L11. Repeat these adjustments.

Tune receiver to LUX mark, inject signal of 1,442kHz and adjust TC48. Retune receiver to 500 mark, inject signal of 600kHz and tune core of L6. Repeat these adjustments.

S.W. Circuits

Switch to SW1 and tune to extreme high frequency end of band. Inject signal of 4MHz and adjust TC58. Retune receiver to extreme low frequency end of band, inject signal of 1,500kHz and tune core of L10. Repeat these adjustments.

Tune receiver to 3.5 mark, inject signal of 3,500kHz and adjust TC46. Retune receiver to 1.7 mark, inject signal of 1,700kHz and tune core of L7. Repeat these adjustments.

Switch to SW2 and tune to extreme high frequency end of band. Inject signal of 12.2MHz and adjust TC1d. Retune receiver to extreme low frequency end of band, inject signal of 3.8MHz and tune core of L9. Repeat these adjustments.

Tune receiver to 10 mark, inject signal of 10MHz and adjust TC1c. Retune receiver to 4.5 mark, inject signal of 4.5MHz and tune core of L8. Repeat these adjustments.

F.M. ALIGNMENT

Connect oscilloscope between junction C69/C70 and earth. Connect f.m. sweep marker generator via 10pF capacitor to TR1 emitter and earth. All adjustments are for maximum output.

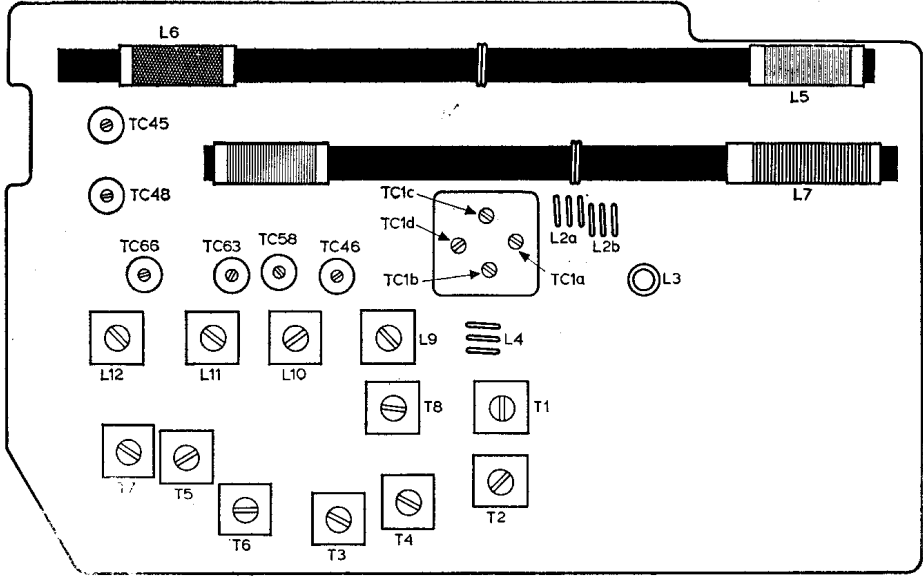
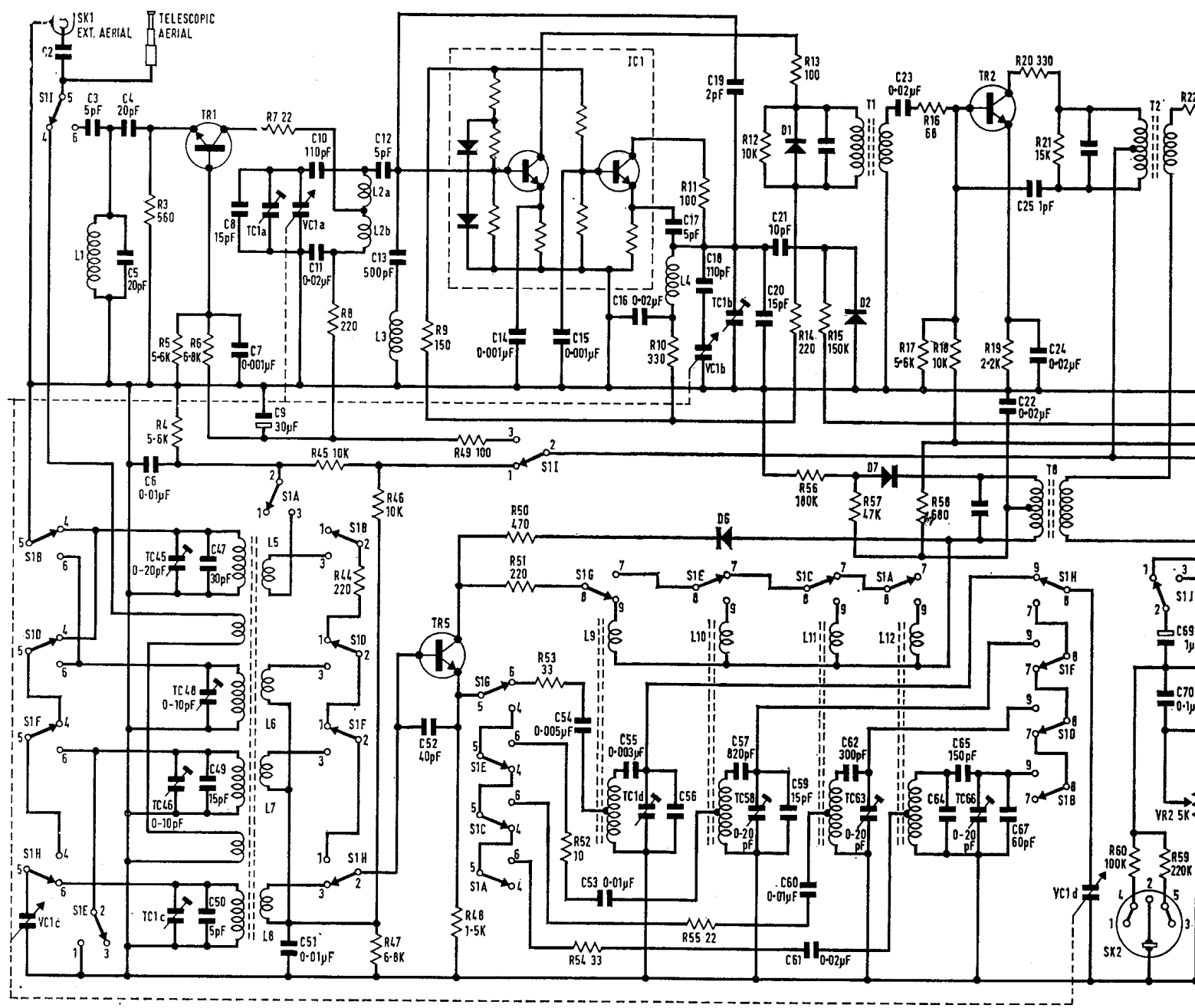
I.F. Circuits

Switch to FM, tune to extreme low frequency end of band and turn volume control to minimum. Inject signal of 10.7MHz and adjust the cores of T1, T2, T3, T5 and T7 to obtain symmetrical S-curve centred on 10.7MHz.

R.F. Circuits

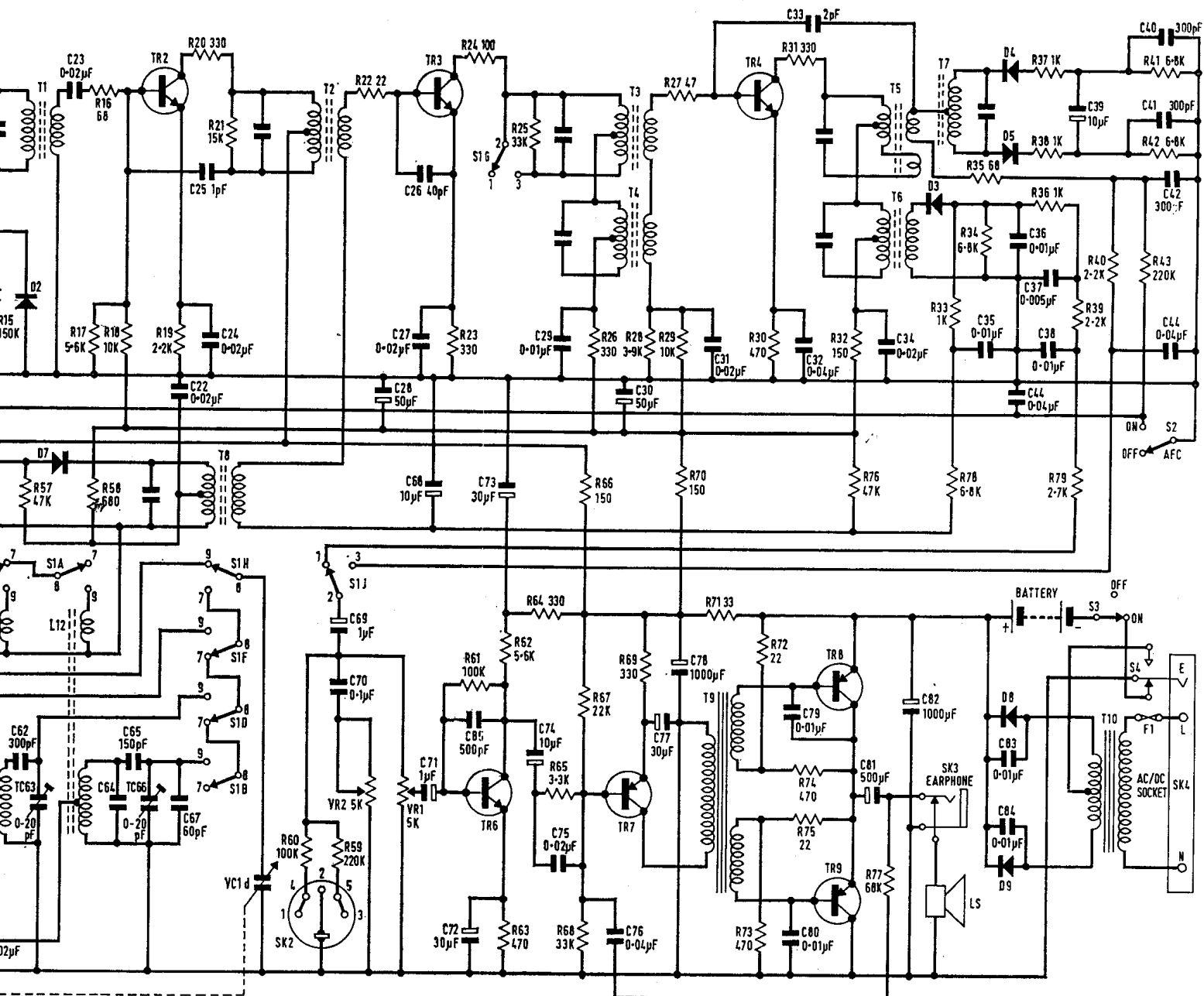
Retune receiver to extreme high frequency end of band. Transfer f.m. generator to junction of C2/S11 and inject signal of 105MHz, then adjust TC1b. Retune receiver to extreme low frequency end of band, inject signal of 87MHz and tune core of L4. Repeat these adjustments.

Tune receiver to 102 mark, inject signal of 102MHz and adjust TC1a. Retune receiver to 90 mark, inject signal of 90MHz and adjust L2a by carefully altering spacing of turns. Repeat these adjustments.



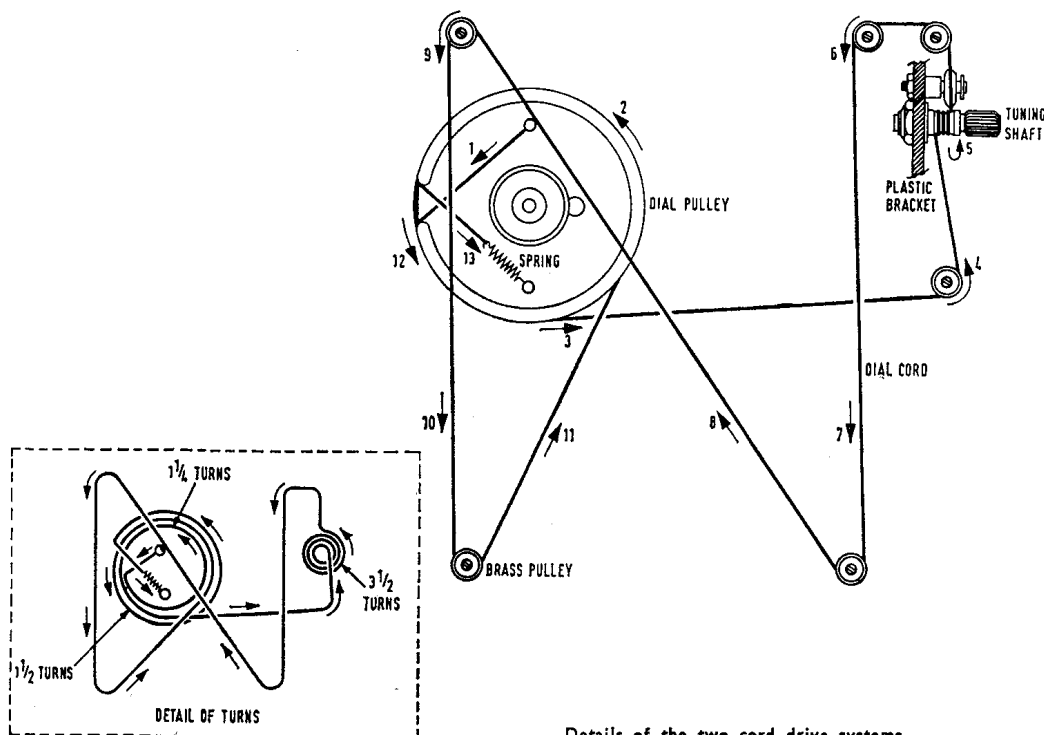
	C	B	E
Tr1	3.0*	1.4*	0.8*
Tr2	4.7	1.7	1.0
Tr3	4.5	0.9	0.25
Tr4	4.1	1.3	0.6
Tr5	4.4	1.9	1.3
Tr6	2.0	1.0	0.3
Tr7	0.6	3.7	3.9
Tr8	3.0	6.0	6.0
Tr9	0	2.9	3.0

The above voltages were measured under no-signal conditions, volume control at maximum, the receiver switched to extreme low frequency end of the MW band. Voltages marked (*) were obtained with the receiver switched to VHF.

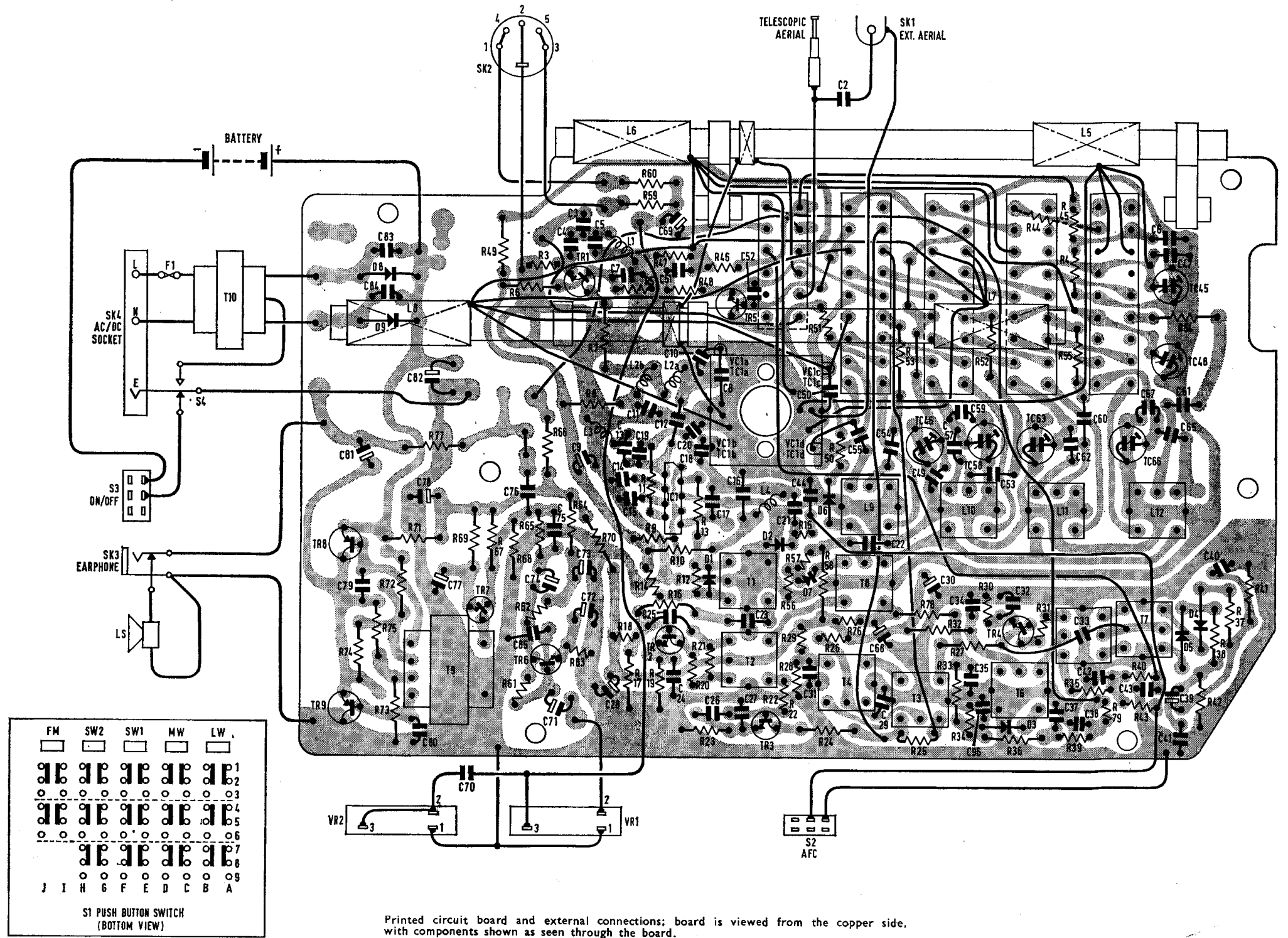


	C	B	E
Tr1	3.0*	1.4*	0.8*
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Tr3	4.5	0.9	0.25
Tr4	4.1	1.3	0.6
Tr5	4.4	1.9	1.3
Tr6	2.0	1.0	0.3
Tr7	0.6	3.7	3.9
Tr8	3.0	6.0	6.0
Tr9	0	2.9	3.0

The above voltages were measured under no-signal conditions, volume control at maximum, the receiver switched to extreme low frequency end of the MW band. Voltages marked (*) were obtained with the receiver switched to VHF.



Details of the two cord drive systems.



FM	SW2	SW1	MW	LW	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P1
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P2
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P3
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P6
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	P9
J	I	H	G	F	E
					D
					C
					B
					A

S1 PUSH BUTTON SWITCH
(BOTTOM VIEW)

Printed circuit board and external connections; board is viewed from the copper side, with components shown as seen through the board.