

"TRADER" SERVICE SHEET
1787

ALBA 838 "Trans-Continental"

Transistor Portable Radio Receiver

FEATUREING separate oscillator and mixer transistors and having a fine tuner operative on all wavebands, Alba 838 is a 6V battery powered, 8 transistor portable radio receiver covering long, medium and short wavebands.

Waveband ranges are 857-2,000m (l.w.),

(Continued overleaf col. 1)

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1	2SA222	0.2	0.25
TR2	2SA222	0.85	0.85
TR3	2SA322	0.4	0.6
TR4	2SA203	0.3	0.45
TR5	2SB185	0.1	0.2
TR6	2SB186	0.3	0.5
TR7	2SB22	—	1.5
TR8	2SB22	—	1.5

Resistors

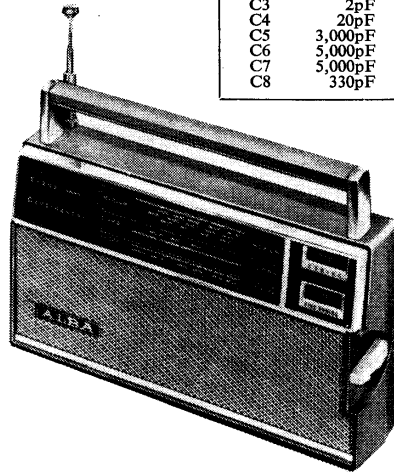
R1	68Ω	A1
R2	82Ω	A1
R3	150Ω	A2
R4	1.2kΩ	B2
R5	4.7kΩ	B2
R6	22kΩ	B2
R7	56kΩ	B1
R8	33kΩ	B1
R9	1.5kΩ	B1
R10	82kΩ	B1
R11	1kΩ	C1
R12	47kΩ	B2
R13	390Ω	C2

R14	5.6kΩ	B2
R15	3.9kΩ	C2
R16	1kΩ	B2
R17	39kΩ	C2
R18	22kΩ	C2
R19	150Ω	C2
R20	82kΩ	C2
R21	6.8kΩ	C2
R22	120Ω	C2
R23	100Ω	C1
R24	1.8kΩ	C2
R25	91Ω	C2
R26	3.3Ω	C1
VR1	50kΩ	C1
VR2	5kΩ	D1

Capacitors

C1	5pF	A2
C2	7pF	B1
C3	2pF	A1
C4	20pF	B1
C5	3,000pF	A1
C6	5,000pF	A1
C7	5,000pF	A2
C8	330pF	A1

C9	3,100pF	B2
C10	160pF	A1
C11	7pF	B1
C12	80pF	B2
C13	100pF	B2
C14	0.04μF	B2
C15	0.01μF	A2
C16	500pF	B2
C17	5,000pF	A2
C18	0.01μF	B2
C19	3,000pF	B1
C20	0.05μF	C1
C21	10μF	C1
C22	0.05μF	C1
C23	30μF	C1
C24	3pF	B1
C25	13pF	B2
C26	0.05μF	B2
C27	0.04μF	C2
C28	10μF	C2
C29	10μF	C2
C30	30μF	C2
C31	200μF	C2
C32	7,500pF	C1
C33	7,500pF	C1
C34	100μF	C1
C35	7pF	B1
CT1	—	B1
CT2	—	B1
CT3	—	B1
CT4	—	B1
CT5	—	B2
CT6	—	B2
VC1	—	B1
VC2	—	B1
VC3	—	A1



Coils

L1	—	C1
L2	—	B1
L3	—	A1
L4	—	A1
L5	—	B2
L6	—	A2
L7	—	B2
L8	7Ω	C2

Transformers

T1	—	B1
T2	—	B1
T3	—	B2
T4	—	D1
T5	—	D2

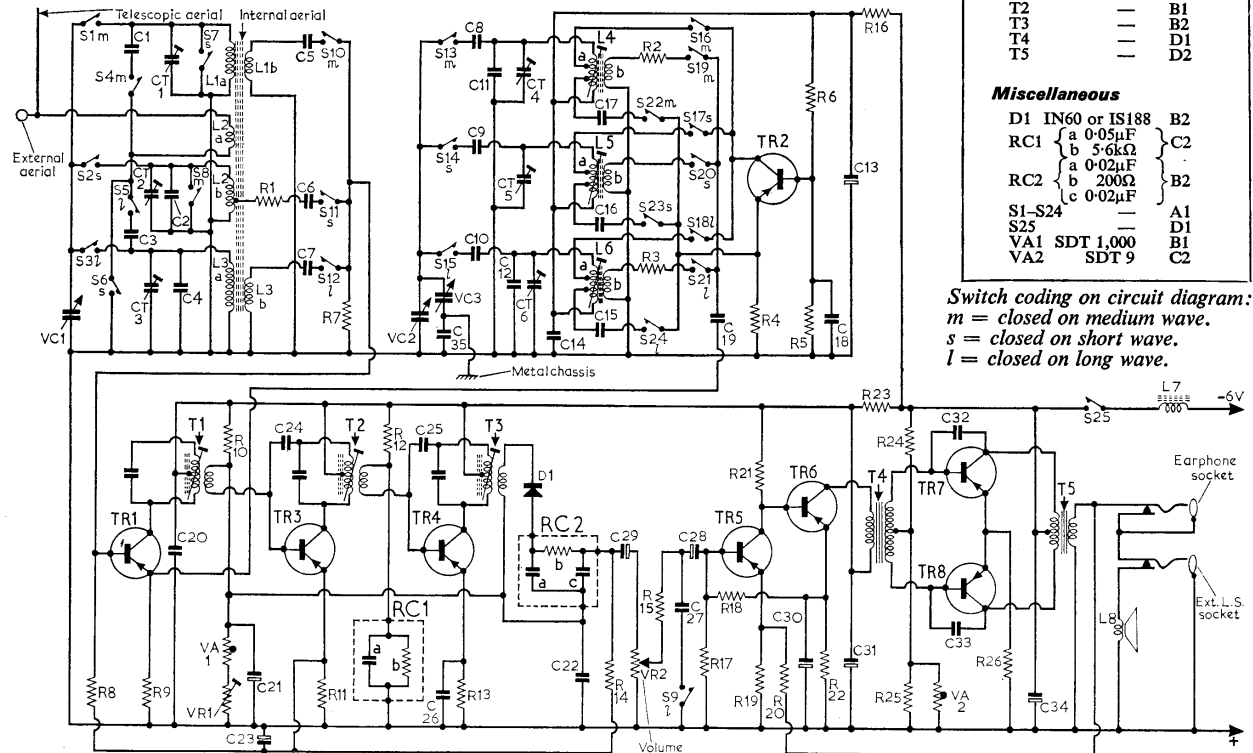
Miscellaneous

D1	IN60 or IS188	B2
RC1	a 0.05μF	C2
	b 5.6kΩ	
	c 0.02μF	
RC2	a 0.02μF	B2
	b 200Ω	
	c 0.02μF	
S1-S24	—	A1
S25	—	D1
VA1	SDT 1,000	B1
VA2	SDT 9	C2

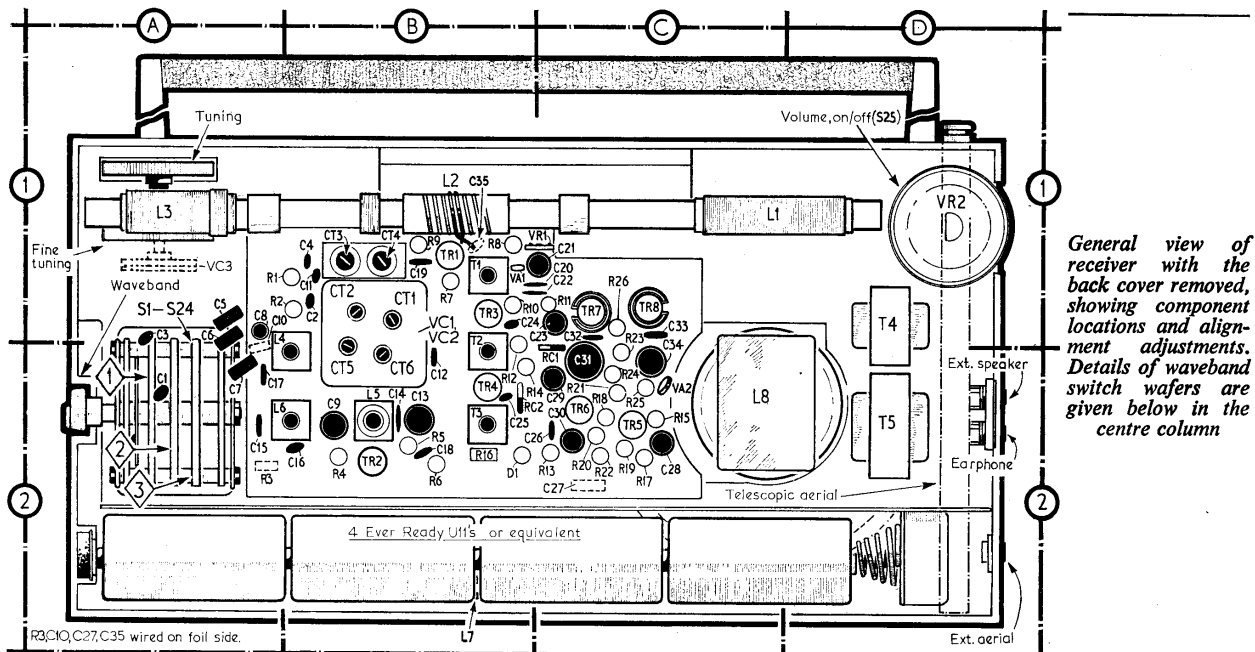
TRANSISTOR ANALYSIS

Transistor voltages given in the table above were taken from data supplied by the manufacturers, and were measured on a model 8 Avometer. All readings are negative with respect to battery positive.

Note.—The metal chassis of the receiver is d.c. isolated from the battery positive line.



Switch coding on circuit diagram:
m = closed on medium wave.
s = closed on short wave.
l = closed on long wave.



Continued from overleaf—

187-566m (m.w.) and 16.7-50.4m (s.w.). An internal ferrite rod aerial is fitted for medium and long wave reception and a telescopic aerial for short wave. A socket is provided for the connection of an external aerial.

An output of 400mW is available which is handled by the internal 3 in loudspeaker. Two sockets are provided which allow an external loudspeaker or earpiece to be operated with the internal loudspeaker "on" or "off" depending on which socket is used.

CIRCUIT NOTES

The circuit features separate mixer (TR1) and oscillator (TR2) transistors and a fine tuning control which consists of a small variable capacitor VC3, wired in parallel with the main oscillator tuning capacitor VC2. TR3 and TR4 are i.f. amplifiers, D1 the demodulator and TR5 an a.f. amplifier transistor. TR5 is direct-coupled to the driver TR6 which, via T4, feeds a conventional push-pull output circuit employing TR7 and TR8 and the output transformer T5.

CIRCUIT ALIGNMENT

Equipment Required.—An a.m. signal generator; an audio output meter with an impedance to match 7Ω; an r.f. coupling loop; a 0.1μF blocking capacitor and a suitable non-ferrous trimming tool.

During alignment the signal input level should be adjusted to maintain receiver output at 50mW, with the volume control at maximum.

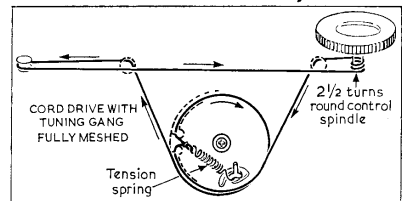
- 1.—Switch on signal generator and allow to warm up for 15 minutes, then connect the output via a 0.1μF isolating capacitor across the aerial section of the tuning gang VC1. Connect the output meter across the loudspeaker terminals.
- 2.—Switch receiver to m.w. and feed in a 470kc/s signal. Adjust the cores of T3, T2 and T1 for maximum output. Repeat as necessary, until, with an input level of 1μV, an output of 50mW is obtained.
- 3.—With receiver still switched to m.w. and

the tuning gang at maximum, loosely couple the output of the signal generator to the receiver via the r.f. coupling loop.

- 4.—Feed in a 520kc/s signal and adjust L4 for maximum output. Turn tuning gang to minimum and feed in a 1,650kc/s signal, adjust CT4 for maximum output.
- 5.—Tune receiver to 500m and feed in a 600kc/s signal, adjust L1 for maximum output. Tune receiver to 214m and feed in a 1,400kc/s signal, adjust CT1 for maximum output.
- 6.—Switch receiver to l.w., turn tuning gang

- to maximum and feed in a 145kc/s signal. Adjust L6 for maximum output. Turn gang to minimum, feed in a 355kc/s signal and adjust CT6 for maximum output.
- 7.—Tune receiver to 1,875m, feed in a 160kc/s signal and adjust L3 for maximum output. Tune receiver to 880m, feed in a 340kc/s signal and adjust CT3 for maximum output.
- 8.—Switch receiver to s.w. and turn tuning gang to maximum. Feed in a 5.8Mc/s signal and adjust L5 for maximum output. Turn gang to minimum and feed in an 18.5Mc/s signal. Adjust CT5 for maximum output.

Drive Cord Assembly



- 9.—Tune receiver to 46m and feed in a 6.5Mc/s signal, adjust L2 for maximum output. Tune receiver to 17.65m, feed in a 17Mc/s signal and adjust CT2 for maximum output.
- 10.—Repeat all adjustments until no further improvement can be obtained.

GENERAL NOTES

Dismantling.—To remove the chassis from the case, first remove the back cover by unscrewing the central coil-slotted fixing screw. Remove the batteries and their polythene tube container.

Unclip the cursor from the drive cord and remove the four Phillips self-tapping screws located on the left and right-hand sides of the metal chassis. Unscrew the metal pillar from the centre of the printed panel. The chassis can now be removed to the extent of the loudspeaker leads.

Battery.—Four Ever Ready type U11 batteries (or equivalent) are required as replacements.

