CIRCUIT ALIGNMENT

Equipment Required.—An r.f. signal generator amplitude modulated 30 per cent; an output meter of 8Ω impedance for use in place of the loudspeaker, or a model 8 Avometer set to the 2·5V a.c. range connected in parallel with the loudspeaker; a 0·1μF capacitor.

TRANSISTOR ANALYSIS

Voltages quoted in the table in col. 3 were supplied by the manufacturers and were measured with a 20,000 ohms/volt meter under no signal conditions. With the exception of transistors **TR5** and **TR6** all the voltages are negative with respect to the relevant transistor's positive power supply line.

Transistor Table

Transistor	Emitter (V)	Base (V)	Collector (V)
TR1 2SA201	0·45	0·48	5·2
TR2 2SA202	0·06	0·14	5·2
TR3 2SA203	0·42	0·53	3·5
TR4 2SB186	1·0	1·1	4·9
TR5 2SB187	0·13*	—	—
TR6 2SB187	0·13*	—	—

** Measured between base and emitter.*

Resistors

R1	120kΩ	B1
R2	40kΩ	B1
R3	4·7kΩ	B1
R4	1·8kΩ	B1
R5	470kΩ	B1
R6	56kΩ	B1
R7	700Ω	B1
R8	56kΩ	B1
R9	10kΩ	B1
R10	560Ω	B1
R11	2·2kΩ	B1
R12	4·7kΩ	B1
R13	1kΩ	B2
R14	100Ω	B1
R15	4·7kΩ	B1
R16	330kΩ	B1
R17	5Ω	B2
R18	22kΩ	B2
R19	5·6kΩ	B2
R20	560Ω	B2
R21	220Ω	B2
R22	330Ω	B2
R23	4·7kΩ	B2
R24	22Ω	B2
R25	120kΩ	B2
R26	120kΩ	B1
VR1	5kΩ	B2

Capacitors

C1	18pF	B1
C2	0·01μF	B1
C3	5,000pF	B1
C4	0·01μF	B1
C5	300pF	B1
C6	130pF	B1
C7	18pF	B1
C8	25pF	B1
C9	30μF	B1
C10	0·01μF	B1
C11	0·01μF	B1
C12	6pF	B1
C13	6pF	B1
C14	0·01μF	B1
C15	0·02μF	B1
C16	2μF	B1
C17	30μF	B1
C18	0·04μF	B1
C19	1μF	B1
C20	0·02μF	B2
C21	1μF	B1
C22	50μF	B1
C23	200μF	A2
C24	5μF	B2
C25	100μF	B2
C26	50μF	B2
C27	0·01μF	B2
C28	0·01μF	B2
C29	100μF	B2
C30	6pF	B1
C31	—	B1
C32	—	B1
C33	—	B1
VC1	—	B1
VC2	—	B1
TC1	—	B1
TC2	—	B1
TC3	—	B1
TC4	—	B1

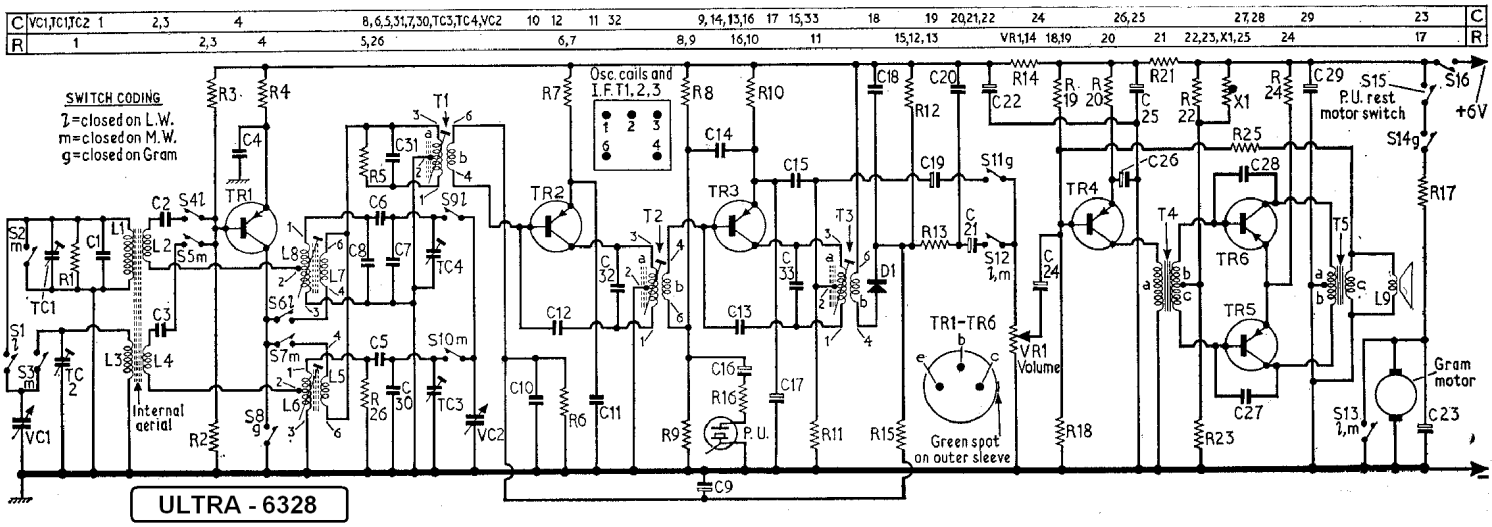
Coils and Transformers*

L1	5·5Ω	B1
L2	—	B1
L3	1·5Ω	A1
L4	—	A1
L5	—	B1
L6	1·6Ω	B1
L7	—	B1
L8	3·5Ω	B1
L9	8Ω	A1
T1 a	4Ω	B1
T1 b	—	
T2 a	4Ω	B1
T2 b	—	
T3 a	4·5Ω	B1
T3 a	—	
T4 a	—	B2
T4 b	—	
T4 c	—	
T5 a	5Ω	B2
T5 b	5Ω	
T5 c	1Ω	

Miscellaneous

D1	1S426	B1
S1-S14	—	B2
S15	—	B2
S16	—	B2
X1	—	B2

** Approximate d.c. resistance in ohms.*



In order to avoid alignment error due to the action of the a.g.c. during alignment, the input signal strength should be attenuated sufficiently to maintain the audio output at approximately 100mW with the volume control at maximum.

All adjustments are to be made for maximum output.

Coils **L3** and **L1** are situated on the ferrite rod and they are adjusted by sliding the formers along the rod.

1.—Switch receiver to m.w., and rotate tuning gang to maximum capacitance. Feed in a 470kc/s a.m. signal via the 0·1μF capacitor between **TR1** base and chassis. Adjust **T3, T2** and **T1** in that order. Repeat in the same order until no further improvement can be obtained.

2.—Connect the signal generator across **C1** and switch the receiver to m.w.

3.—Tune receiver to 500m and feed in a 600kc/s a.m. signal. Adjust **L6** and **L3.**

4.—Tune receiver to approximately 214m and feed in a 1,400kc/s a.m. signal. Adjust **TC3** and **TC2.**

5.—Switch receiver to l.w. and tune to approximately 1,765m. Feed in a 170kc/s a.m. signal and adjust **L8** and **L1.**

6.—Tune receiver to 1,200m and feed in a 250kc/s a.m. signal. Adjust **TC4** and **TC1.**

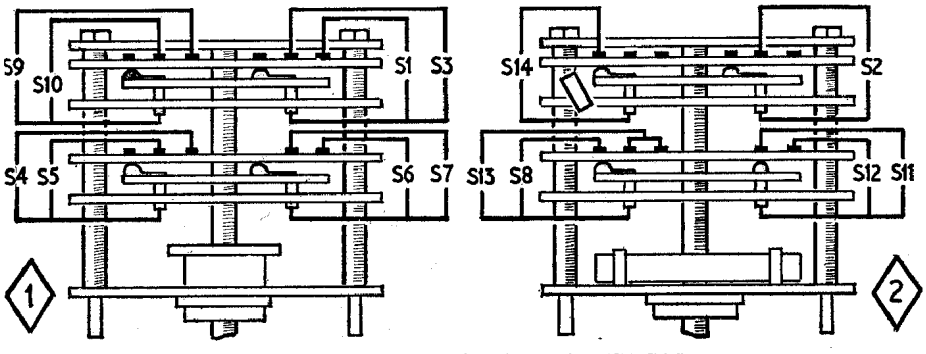


Illustration of the waveband switches **(S1-S14).**