

MASTERADIO - CHEPSTOW

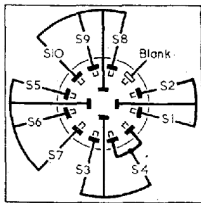


Diagram of the waveband switches as seen from the rear of an inverted chassis.

Switch	S.W.	M.W.	L.W.
S1	o	o	o
S2	o	o	o
S3	o	o	o
S4	o	o	o
S5	o	o	o
S6	o	o	o
S7	o	o	o
S8	o	o	o
S9	o	o	o
S10	o	o	o

RESISTORS	Values	Locations
R1 V1 G.B. ...	180Ω	G3
R2 V1 osc. C.G. ...	47kΩ	G3
R3 V1 osc. anode feed ...	22kΩ	G4
R4 V2 G.B. ...	180Ω	F4
R5 I.F. stopper ...	47kΩ	F4
R6 A.G.C. decoupling ...	1MΩ	G4
R7 Volume control ...	500kΩ	D3
R8 V3 C.G. ...	4.7MΩ	E4
R9 V3 anode load ...	100kΩ	F4
R10 V4 C.G. ...	220kΩ	E4
R11 V4 G.B. ...	180Ω	D4
R12 H.T. smoothing ...	1kΩ	E3
R13 Surge limiter ...	15Ω	E4
R14 Thermistor CZ2A ...	—	D4
R15* Ballast resistor ...	535Ω	C2

* Tapped at 85Ω + 300Ω + 150Ω from R14.

Intermediate frequency 470 ks/s.

CAPACITORS	Values	Locations
C1 Chassis isolator ...	0.01μF	G4
C2 Aerial series ...	0.001μF	G3
C3 L.W. aerial trim... ..	100pF	G3
C4 A.G.C. decoupling ...	0.1μF	G4
C5 1st I.F. trans ...	82pF	A2
C6 tuning ...	82pF	A2
C7 V1 osc. C.G. ...	56pF	G3
C8 M.W. osc. tracker ...	600pF	F3
C9 L.W. osc. tracker ...	150pF	F3
C10 L.W. osc. trimmer ...	100pF	F3
C11 Osc. anode coup. ...	50pF	G3
C12 2nd I.F. trans ...	82pF	B2
C13 tuning ...	82pF	B2
C14 I.F. by-passes ...	100pF	F4
C15 ...	100pF	F4
C16 ...	0.01μF	E4
C17 A.F. couplings ...	0.01μF	E4
C18 Tone corrector ...	0.02μF	E4
C19* H.T. smoothing ...	30μF	B1
C20* ...	30μF	B1
C21 Mains R.F. filter... ..	0.01μF	E3
C22† S.W. aerial trim. ...	70pF	G3
C23† M.W. aerial trim. ...	70pF	A1
C24† Aerial tuning ...	—	A2
C25† S.W. osc. trim. ...	70pF	G3
C26† M.W. osc. trim. ...	70pF	F3
C27† L.W. osc. trim. ...	70pF	F3
C28† Oscillator tuning... ..	—	A1

*Electrolytic. †Variable. ‡Pre-set.

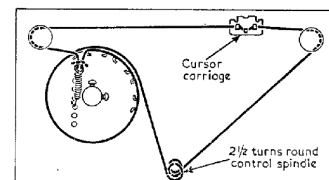
OTHER COMPONENTS	Approx. Values (ohms)	Locations
L1 Aerial coupling ...	—	G3
L2 coils ...	—	A2
L3 S.W. tuning coil... ..	—	G3
L4 Frame aerial ...	1.0	A1
L5 L.W. loading coil ...	18.0	G4
L6 Oscillator reaction ...	—	F3
L7 coils ...	—	F3

(Continued col. 3)

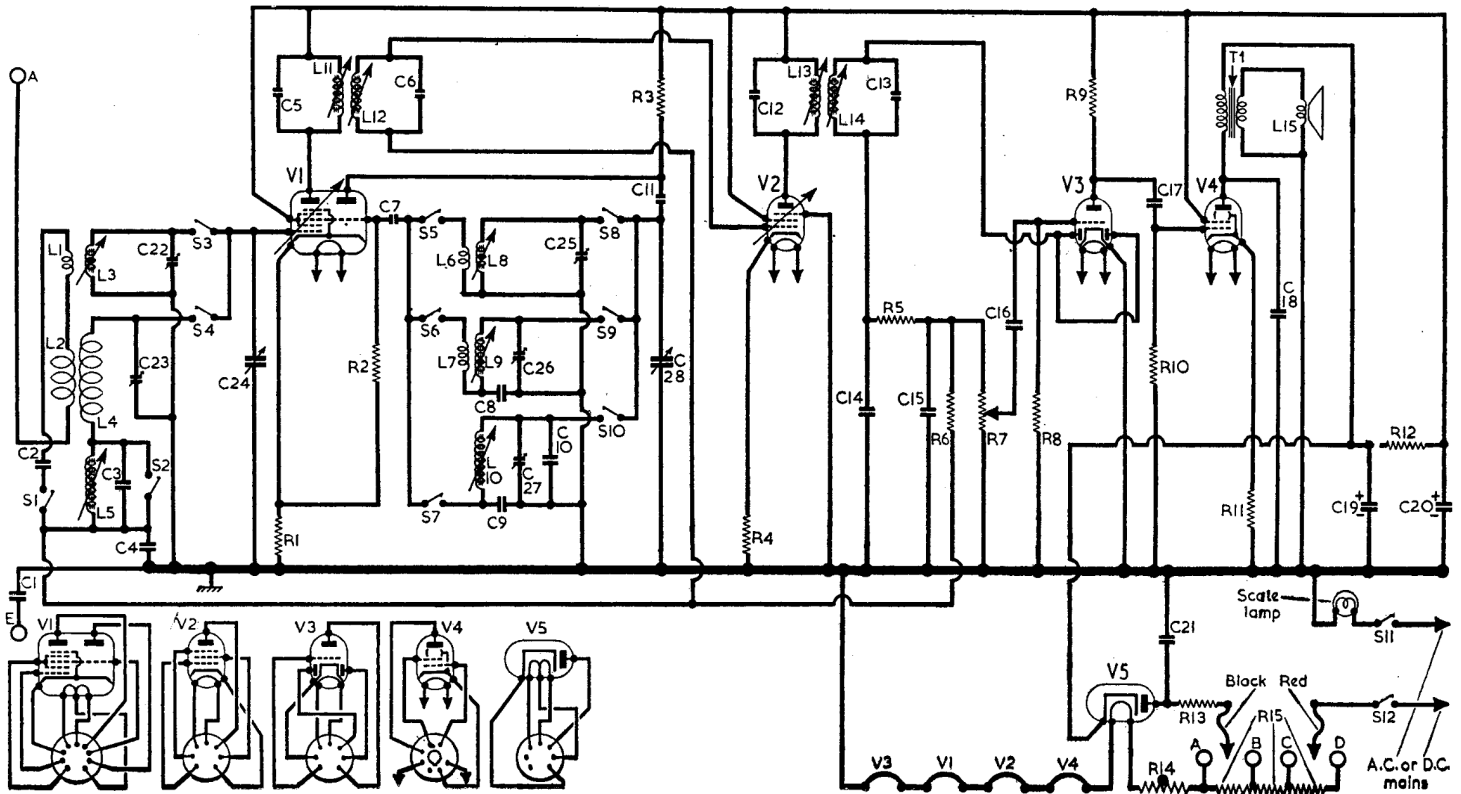
OTHER COMPONENTS (Continued)	Approx. Values (ohms)	Locations
L8 } Oscillator tuning {	—	F3
L9 } coils ...	2.0	F3
L10 } ...	8.0	F3
L11 } 1st I.F. trans. { Pri.	13.0	A2
L12 } { Sec.	13.0	A2
L13 } 2nd I.F. trans. { Pri.	13.0	B2
L14 } { Sec.	13.0	B2
L15 } Speech coil ...	2.2	—
T1 } O.P. trans. { Pri.	120.0	—
} { Sec.	—	—
S1- S10 Waveband switches	—	G3
S11, S12 Mains sw., g'd R7...	—	D3

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 12AH8	96	2.6	96	4.5	2.0
V2 12BA6	46	2.0	96	3.6	1.5
V3 12AT6	96	4.9	96	2.0	6.0
V4 35L6GT	65	0.36	96	—	—
V5 35W4	112	30.0	—	—	116.0†
	145*	—	—	—	—

*A.C. reading. †Cathode current, 49 mA.



Above: Sketch of the drive cord system.



CIRCUIT ALIGNMENT

I.F. Stages.—Switch receiver to M.W. and tune to a point at the highest wavelength end of the band where there is no signal pick-up. Connect output of signal generator, via an 0.01 μF capacitor in each lead, to control grid (pin 1) of V2 and chassis. Feed in a 470 kc/s (638.3m) signal and adjust the cores of L14 (location reference B2) and L13 (F4) for maximum output. Repeat these adjustments. Transfer signal generator "live" lead to control grid (pin 2) of V1. Feeding in a 470 kc/s signal, adjust the cores of L12 (A2) and L11 (G4) for maximum output.

R.F. and Oscillator Stages.—With the gang at minimum capacitance check that the cursor coincides with the lowest wavelength ends of the tuning scales.

L.W.—Switch receiver to L.W. and tune to 2,000 m. Disconnect the A.G.C. lead joining L12 to the L.W. loading coil L5, and connect the signal generator output, using a low-impedance (2-3 Ω) termination, to the junction of L5, S1 and to chassis. Feed in a 2,000 m (150 kc/s) signal and adjust the core of L10 (F3) for maximum output. Tune receiver to 1,000 m, feed in a 1,000 m (300 kc/s) signal and adjust C27 (F3) for maximum output. Tune receiver to 1,400 m, feed in a 1,400 m (214.3 kc/s) signal and adjust the core of L5 (G4) for maximum output.

M.W.—Switch receiver to M.W. and tune to 500 m. With the signal generator connected as for L.W. alignment, feed in a 500 m (600 kc/s) signal and adjust the core of L9 (F3) for maximum output. Tune receiver to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust C26 (F3) for maximum output. Tune receiver to 230 m, feed in a 230 m (1,304 kc/s) signal and adjust C23 (A1) for maximum output. Repeat these adjustments until no improvement results.

S.W.—Switch receiver to S.W. and tune to 50 m. Reconnect A.G.C. lead, and connect output of signal generator, via a dummy aerial, to A and E clips. Feed in a 50 m (60 Mc/s) signal and adjust the core of L8 (F3) for maximum output. Tune receiver to 16 m, feed in a 16 m (18.75 Mc/s) signal and adjust C25 (G3) for maximum output. Tune receiver to 42 m, feed in a 42 m (7.143 kc/s) signal and adjust the core of L3 (G3) for maximum output. Tune receiver to 16 m, feed in a 16 m (18.75 Mc/s) signal input.