



COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	Aerial input potential divider resistances	110,000
R2		11,000
R3		110,000
R4	V1 hexode SW CG decoupling	110,000
R5	V1 SG HT feed resistance	20,000
R6	V1 SG RF stopper	75
R7	V1 fixed GB resistance	150
R8	V1 osc. CG resistance	51,000
R9	Oscillator circuit damping	200
R10	Oscillator MW reaction damping	1,100
R11	Oscillator LW reaction damping	2,100
R12	V1 osc. anode HT feed	20,000
R13	V2 SG HT feed	25,000
R14	V2 fixed GB resistance	250
R15	V3 signal diode load resistances	510,000
R16	IF stopper	260,000
R17	Variable tone control	110,000
R18	Manual volume control	2,000,000
R19	V3 triode GB; AVC delay	500,000
R20	V3 triode anode decoupling	1,000
R21	V3 triode anode load	11,000
R22	V3 triode cathode load	40,000
R23	V3 AVC diode load	1,100,000
R24	AVC line decoupling	260,000
R25	V4 CG resistance	510,000
R26	Negative feed-back coupling	250,000
R27	V4 grid stopper	110,000
R28	V4 GB resistance	150

CONDENSERS		Values (μF)
C1	Aerial SW coupling	0.00001
C2	V1 hexode CG MW and LW decoupling	0.1
C3	Aerial circuit SW tracker	0.01
C4	V1 SG decoupling	0.1
C5	V1 heater RF by-pass	0.005
C6	V1 cathode by-pass	0.1
C7	V1 osc. CG condenser	0.0001
C8	Osc. circuit MW fixed tracker	0.0005
C9	V1 osc. anode coupling	0.0003
C10	V2 CG decoupling	0.1
C11	V2 SG decoupling	0.1
C12	V2 cathode by-pass	0.1
C13	IF by-pass	0.0001
C14	AF coupling to V3 triode	0.05
C15	IF by-pass	0.0001
C16	Part of variable tone control	0.002
C17*	V3 triode anode decoupling	2.0
C18	Coupling to V3 AVC diode	0.00001
C19*	V3 cathode AF by-pass	50.0
C20	V3 cathode RF by-pass	0.0005
C21	V3 triode to V4 AF coupling	0.05
C22*	V4 cathode by-pass	50.0
C23*	HT smoothing	8.0
C24*	HT smoothing	16.0
C25†	Band-pass pri. MW trimmer	0.00001
C26†	Band-pass pri. LW trimmer	0.00009
C27†	Band-pass pri. tuning	—
C28†	Aerial circuit SW trimmer	0.00004
C29†	Band-pass sec. MW trimmer	0.00004
C30†	Band-pass sec. LW trimmer	0.00009
C31†	SW aerial and band-pass secondary tuning	—
C32†	Oscillator circuit tuning	—
C33†	Osc. circuit SW trimmer	0.00002
C34†	Osc. circuit MW trimmer	0.0001
C35†	Osc. circuit LW trimmer	0.0001
C36†	Osc. circuit MW tracker	0.00025
C37†	Osc. circuit LW tracker	0.00025
C38†	1st IF trans. pri. tuning	0.0003
C39†	1st IF trans. sec. tuning	0.0003
C40†	2nd IF trans. pri. tuning	0.0003
C41†	2nd IF trans. sec. tuning	0.0003

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial MW and LW coupling	11.0
L2	Band-pass primary coils	2.5
L3		11.0
L4	Aerial SW tuning coil	Very low
L5	Band-pass secondary coils	2.5
L6		11.0
L7	Osc. circuit SW tuning coil	Very low
L8	Osc. circuit MW tuning coil	1.8
L9	Osc. circuit LW tuning coil	5.0
L10	Oscillator SW reaction	0.3
L11	Oscillator MW reaction	6.25
L12	Oscillator LW reaction	8.3
L13	1st IF trans.	Pri. 6.5
L14		Sec. 6.5
L15	2nd IF trans.	Pri. 6.5
L16		Sec. 6.5
L17	Speaker speech coil	2.5
L18	HT smoothing choke	230.0
T1	Speaker input trans	Pri. 0.4
T2	Mains trans.	Pri., total 19.0
	Heater sec.	0.05
	Rect. heat. sec.	0.1
	HT sec., total	240.0
S1-11	Waveband switches	—
S12	Mains switch, ganged R19	—

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 A36C	268	2.8	108	7.0
	Oscillator	7.8	—	—
V2 A50P	105	8.7	176	3.0
V3 A23A	268	3.2	—	—
V4 A70D	106	36.0	268	5.4
V5 A11D	252†	—	—	—

† Each anode, AC.

Valve voltages and currents given in the table above are those measured in our receiver when it was operating on mains of 231V, using the 216-235 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

GENERAL NOTES

Switches.—S1-S11 are the waveband switches, in two rotary units beneath the chassis. These are indicated in our under-chassis view, and shown in detail in the diagrams in column 3, where they are drawn as seen looking from the rear of the underside of the chassis.

The table (col. 2) gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates *open*, and *C*, *closed*.

S12 is the QMB mains switch, ganged with the volume control potentiometer **R19**.

Coils.—L1-L6 are in a tubular un-screened unit beneath the chassis. L7-L12, and the IF transformers L13, L14 and L15, L16 are in three screened units on the chassis deck, with their associated trimmers. Note that the L7-L12 unit also contains the reaction damping resistances R10, R11.

The smoothing choke L18 is mounted on the baffle to the right of the speaker and the input transformer T1.

CIRCUIT ALIGNMENT

IF Stages.—Switch set to MW, and short circuit C32. Connect signal generator to control grid (top cap) of V1, via a 0.1 μF condenser, and chassis. Feed in a 452 KC/S signal, and adjust C41, C40, C39 and C38, in that order, for maximum output. Re-check these settings, then remove the short circuit from C32.

RF and Oscillator Stages.—With gang at maximum, pointer should register with the horizontal line across the centre of the scale. Connect signal generator to A1 and E sockets.

LW.—Switch set to LW, and adjust tracker C37 to be at approximately three-quarters of its full capacity. Tune to 1,200 m on scale, feed in a 1,200 m (250 KC/S) signal, and adjust C35, then C30 and C26, for maximum output. Tune to 1,700 m on scale, feed in a 1,700 m (176.5 KC/S) signal, and adjust C37 for maximum output. Now repeat the 1,200 m adjustments, and return to 1,700 m. See that the pointer is at the 1,700 m mark when receiving the 1,700 m signal. If not, make a slight re-adjustment to C37.

MW.—Switch set to MW, and adjust tracker C36 to be at approximately three-quarters of its full capacity. Tune to 214 m mark on scale, and feed in a 214 m (1,400 KC/S) signal, and adjust C34, then C29 and C25, for maximum output. Tune to 500 m on scale, feed in a 500 m (600 KC/S) signal, and adjust C36 for maximum output. Now repeat the 214 m adjustments, and return to 500 m. See that the pointer is at the 500 m mark when receiving the 500 m signal. If not, make a slight re-adjustment to C36.

SW.—Switch set to SW, and screw up C33 fully. Tune to 15 MC/S on scale, and feed in a 15 MC/S (20 m) signal. Now unscrew C33 slowly, and adjust accurately for maximum output on the first peak reached from the fully screwed up position. Next adjust C28 for maximum output. Feed in a 7.5 MC/S (40 m) signal, and tune it in. Adjust the end turn of L4 (nearest the end of the coil former beneath the chassis) for maximum output, while rocking the gang for optimum results. Repeat the 15 MC/S adjustments.