



RESISTORS	Values (ohms)
R1	LW frame damping ... 35,000
R2	V1 CG decoupling ... 1,000,000
R3	V1 CG stabiliser ... 1,000
R4	V1-V3 80% HT feed ... 25,000
R5	V1 potential divider ... 25,000
R6	V1 V2 anodes decoupling ... 100,000
R7	V2 80 HT feed ... 50,000
R8	V2 CG resistor ... 500,000
R9	V1 signal diode load ... 50,000
R10	IF stopper ... 50,000
R11	AVC line decoupling ... 500,000
R12	Signal volume control ... 250,000
R13	V4 80 resistor ... 1,000
R14	V4 triode anode load ... 50,000
R15	V4 AVC diode load ... 500,000
R16	Speaker field shunt, AVC ... 10,000
R17	delay potential divider ... 150,000
R18	HT smoothing resistor ... 40,000
R19	V5 80 HT feed ... 5,000
R20	V5 grid stopper ... 250,000
R21	V5 80 resistor ... 600,000
R22	V5 CG decoupling ... 250,000
R23	Heater circuit potentiometer ... 48

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VMS418	100	5.0	70	0.9
V2 N814B	100	0.6	30	0.3
V3 VMS418	120	3.2	70	0.7
V4 M1134	90	3.5	250	7.1
V5 M1174	260	37.0	250	7.1
V6 M1112	350†	—	—	—

† Each anode, AC.

CAPACITORS

	Values (μF)
C1	External aerial coupling ... 0.00005
C2	V1 CG decoupling ... 0.1
C3	V1, V3 SG's decoupling ... 0.2
C4	V1, V2 anodes decoupling ... 0.4
C5	V2 CG capacitor ... 0.0001
C6	V2 SG decoupling ... 0.2
C7	1st IF trans. fixed trimmer ... 0.0001
C8	Osc. circ. LW trimmer ... 0.00015
C9	Osc. circ. tracker ... 0.0017
C10	Tuning indicator winding shunt ... 0.1
C11*	... 10.0
C12	IF by-pass capacitors ... 0.0002
C13	... 0.0002
C14	AVC line decoupling ... 0.1
C15	AF coupling to V4 triode ... 0.1
C16*	V4 cathode by-pass ... 25.0
C17	HT smoothing capacitor ... 2.0
C18	V4 AVC diode coupling ... 0.0002
C19	AF coupling to V5 ... 0.1
C20	IF by-pass ... 0.001
C21*	AVC delay decoupling ... 25.0
C22	V5 CG decoupling ... 0.25
C23*	V5 SG decoupling ... 4.0
C24	Fixed tone corrector ... 0.003
C25*	HT smoothing capacitors ... 4.0
C26*	... 8.0
C27	Mains RF filter capacitors ... 0.002
C28	... 0.002
C29†	Frame aerial tuning ... 0.0003
C30†	Frame aerial trimmer ... 0.0003
C31†	RF trans. LW trimmer ... 0.00007
C32†	RF trans. sec. tuning ... —
C33†	RF trans. MW trimmer ... —
C34†	Oscillator circuit tuning ... —
C35†	Osc. circ. MW trimmer ... —
C36†	1st IF trans. pri. tuning ... —
C37†	1st IF trans. sec. tuning ... —
C38†	2nd IF trans. pri. tuning ... —
C39†	2nd IF trans. sec. tuning ... —

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS

	Approx. Values (ohms)
L1	Frame aerial windings ... 2.0
L2	... 20.0
L3	RF trans. primary ... 20.0
L4	RF trans. MW sec. ... 5.0
L5	RF trans. LW sec. ... 15.0
L6	Oscillator reaction coils, total ... 1.0
L7	... 1.0
L8	Osc. circ. MW tuning ... 3.5
L9	Osc. circ. LW tuning ... 7.0
L10	1st IF trans. { Pri. ... 65.0
L11	{ Sec. ... 95.0
L12	2nd IF trans. { Pri. ... 75.0
L13	{ Sec. ... 95.0
L14	Speaker speech coil ... 8.0
L15	Hum neutralising coil ... 2.5
L16	Speaker field coil, total ... 2,250.0*
T1	Tuning indicator winding ... 3,500.0
T2	Speaker input { Pri. ... 750.0
	{ Sec. ... 2.0
	{ Pri. total ... 28.0
T2	Mains { Heater sec. ... 0.1
	{ Rect. heat. sec. ... 0.1
	{ HT sec., total ... 540.0
S1	Waveband switches ... —
S3-S5	Radio muting switch ... —
S2	Gram pick-up switch ... —
S6	Wavechange muting ... —
S7	Wavechange muting ... —
S8, S9	Mains circuit switches ... —

* Tapped at 250 Ω from F + end.

CIRCUIT ALIGNMENT

IF Stages.—Join together the two outer frame aerial terminals, short-circuiting the frame windings, and connect V2 cathode to chassis, short-circuiting the oscillator circuit reaction coils L6, L7. The output meter may conveniently be an 0.2 V AC voltmeter, connected to the "Ext." and "LS" terminals, but the tuning indicator should not be used as an output meter. Remove the plate covering the underside of the valve deck.

Connect the signal generator leads to V2 control grid and chassis, turn the gang to minimum, and the volume control to maximum. Feed in a 127 kc/s (2,362 m) signal, and adjust C39 for maximum output. Feed in a 123 kc/s (2,439 m) signal, and adjust C38 and C37 for maximum output. Feed in a 127 kc/s signal again, and adjust C36 for maximum output. Repeat these adjustments. If the signal generator output is now swung from 123 kc/s to 127 kc/s, the output indicated on the meter should remain substantially level.

RF and Oscillator Stages.—Great accuracy must be observed in making the following adjustments, otherwise instability may occur. Remove short-circuits from frame connections and V2 cathode, but disconnect frame aerial leads and transfer signal generator leads to the two outer frame terminals.

MW.—Switch set to MW, tune to 220 m exactly on scale, feed in a 220 m (1,364 kc/s) signal. Screw up C33 and C35 to maximum capacitance, then unscrew C35 until the second peak is reached. It is essential that two peak positions are found, and the gang may be manipulated to obtain this condition. Adjust C35 on the second peak (lower trimmer capacitance) for maximum output.

Now slowly unscrew C33, with which two peaks again must be found, but adjust it this time on the first peak (greater trimmer capacitance) for maximum output. Then repeat these adjustments.

LW.—Switch set to LW, tune to 1,400 m on scale, feed in a 1,400 m (214 kc/s) signal, and adjust C31 for maximum output.

Switch Table

Switch	MW	LW	Gram
S1	○	—	—
S2	○	○	—
S3	○	—	—
S4	○	—	—
S5	—	○	—
S6	—	—	—
S7*	—	—	—

* Closed between settings only.