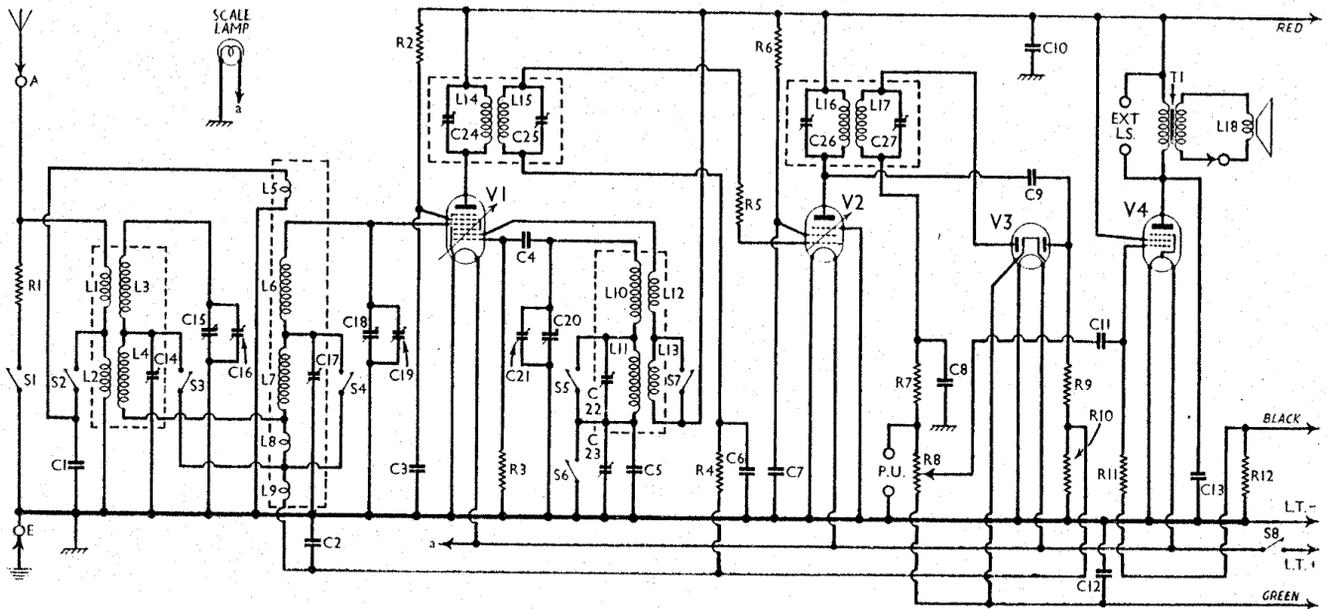


BUSH - SB 3



Circuit diagram of the Bush SB3 battery superhet. Note the arrangement of the battery leads and the bias resistor R12.

COMPONENTS AND VALUES

Resistances		Values (ohms)
R1	Aerial-earth shunt	50
R2	V1 S.G.'s H.T. feed	100,000
R3	V1 oscillator C.G. resistance	70,000
R4	V2 C.G. circuit stabiliser	1,000,000
R5	V2 S.G. H.T. feed	5,000
R6	V2 S.G. H.T. feed	10,000
R7	I.F. stopper	50,000
R8	Signal diode load; vol. control	500,000
R9	A.V.C. diode load	1,000,000
R10	A.V.C. diode load	100,000
R11	V4 C.G. resistance	1,000,000
R12	Auto G.B. resistance	300

Condensers		Values (μ F)
C1	Part of image suppression circuit	0.01
C2	V1 pentode C.G. decoupling	0.1
C3	V1 S.G.'s by-pass	0.1
C4	V1 oscillator C.G. condenser	0.0005
C5	Oscillator L.W. tracker, fixed	0.0001
C6	V2 C.G. decoupling	0.1
C7	V2 S.G. by-pass	0.1
C8	I.F. by-pass	0.0001
C9	Coupling to V3 A.V.C. diode	0.0001
C10	H.T. reservoir	2.0
C11	L.F. coupling to V4	0.01
C12	A.V.C. delay voltage circuit by-pass	0.1
C13	Tone corrector	0.003
C14†	Band-pass pri. L.W. trimmer	—
C15†	Band-pass primary tuning	—
C16†	Band-pass pri. main trimmer	—
C17†	Band-pass sec. L.W. trimmer	—
C18†	Band-pass secondary tuning	—
C19†	Band-pass sec. main trimmer	—
C20†	Oscillator tuning	—
C21†	Oscillator main trimmer	—
C22†	Oscillator L.W. trimmer	—
C23†	Oscillator L.W. tracker	—
C24†	1st I.F. trans. pri. tuning	—
C25†	1st I.F. trans. sec. tuning	—
C26†	2nd I.F. trans. pri. tuning	—
C27†	2nd I.F. trans. sec. tuning	—

† Variable. ‡ Pre-set.

Other Components (contd.)		Approx. Values (ohms)
L5	Image suppression coil	0.05
L6	Band-pass secondary coils	3.2
L7		13.0
L8	Band-pass coupling coils	3.5
L9		0.5
L10	Oscillator tuning coils	3.5
L11		8.5
L12	Oscillator reaction coils	2.2
L13		2.5
L14	1st I.F. trans. Pri.	110.0
L15	1st I.F. trans. Sec.	110.0
L16	2nd I.F. trans. Pri.	110.0
L17	2nd I.F. trans. Sec.	110.0
L18	Speaker speech coil	2.0
T1	Speaker input trans. Pri.	800.0
	Speaker input trans. Sec.	0.3
S1	Local-distant switch	—
S2-S7	Waveband switches	—
S8	L.T. switch, ganged R8	—

VALVE ANALYSIS

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V1 FC2*	133	0.7	54	0.8
V2 VP2	133	2.4	120	0.7
V3 2D2	—	—	—	—
V4 PM22D	130	4.9	133	0.9

* Osc. anode (G2) 133V, 0.9 mA.

Valve voltages and currents given in the table above are those measured in our receiver when it was operating from a new 129 V H.T. volume and sensitivity controls were at maximum and the receiver was

Other Components		Approx. Values (ohms)
L1	Aerial coupling coils	1.3
L2		6.0
L3		3.2
L4		13.0

tuned to the lowest wavelength on the medium band, but there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, with chassis as negative.

GENERAL NOTES

Switches.—S1 is the Q.M.B. "local-distant" switch located at the front of the chassis. This is *closed* when the knob is to the left ("local").

S2-S7 are the waveband switches ganged in a single unit beneath the chassis. They are all *closed* on the M.W. band and *open* on the L.W. band. Incidentally, S5 and S7 in our chassis are transposed in relation to their positions in the makers' service instructions. We show the positions as we found them.

S8 is the Q.M.B. L.T. switch, ganged with the volume control R8.

Coils.—All the coils, except the I.F. units, are in three screened units beneath the chassis. The screens have bayonet fittings, but in each case there is an obstacle in the way of their removal. Note that the L10-L13 unit also contains C4. In the middle unit L5 is held to the inside of the screen, and one connection of it goes to the screen.

The I.F. units, L14, L15 and L16, L17 are in two screens on the chassis deck, each with a dual concentric type of trimmer unit, of which the nut adjusts the primary and the central screw the secondary.

Scale Lamp.—This is an Osram M.E.S. type, rated at 3.5 V, 0.15 A.