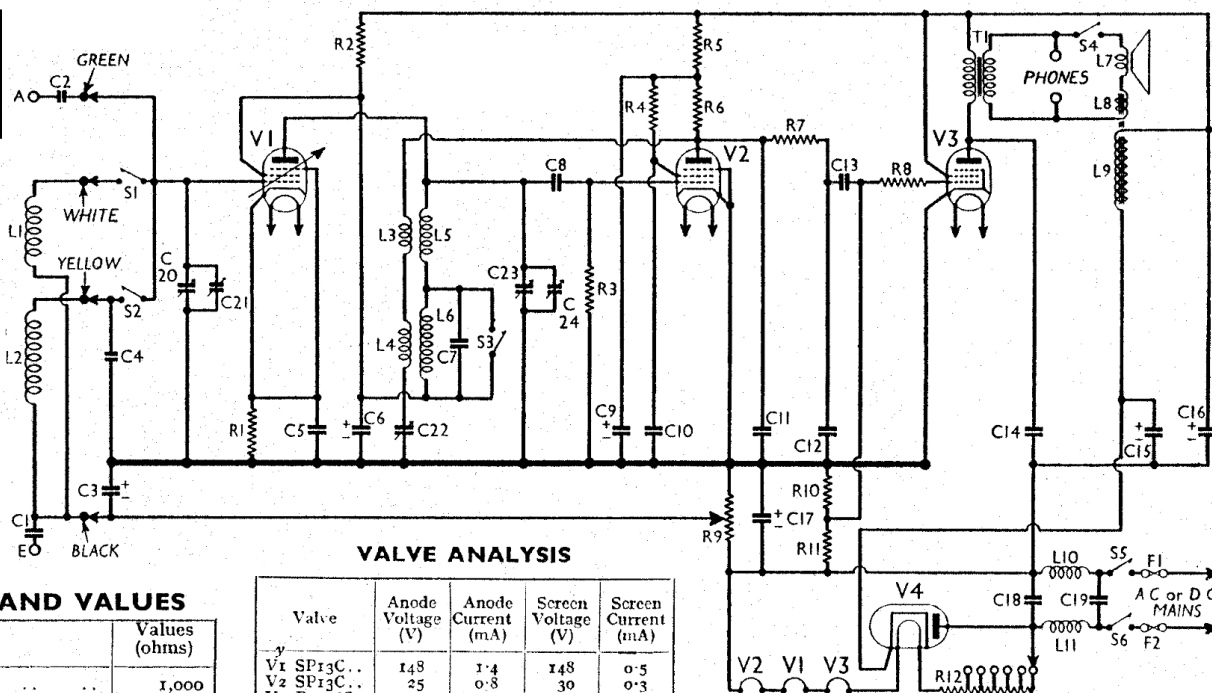


PYE BABY QU

Circuit diagram of the Pye Baby QU AC/DC portable receiver. It employs a 3-pentode "straight" circuit. **R9** and **C22** are ganged. Note the grid bias arrangements.



VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 SP13C..	148	1.4	148	0.5
V2 SP13C..	25	0.8	30	0.3
V3 Pen36C	144	37.5	160	6.6
V4 URIC†	—	—	—	—

† Cathode to chassis 290 V DC.

Valve voltages and currents given in the tables above are those measured in our receiver when it was operating on AC mains of 230 V, using the 230 V tapping on the mains resistance. The receiver was tuned to the lowest wavelength on the medium band and volume control was at minimum, but there was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

GENERAL NOTES

Switches.—**S1-S3** are the waveband switches in a rotary unit, ganged with the mains switches **S5, S6**. In the off position, **S5** and **S6** are open, and in the MW and LW they are closed. In the MW position **S1** and **S3** are closed, and **S2** is open. In the LW position, **S2** is closed and **S1** and **S3** are open. **S4** is the internal speaker jack switch, which opens when external phone plugs are fully inserted into the sockets at the right-hand side of the cabinet. The switch is not shown in our illustrations of the chassis.

Coils.—**L1** and **L2** are the frame aerial windings, inside the cabinet. Their connections to the chassis are colour-coded in our circuit diagram. **L3-L6** are in a screened unit attached to the chassis.

External Phones.—These can be plugged into the sockets at the right-hand side

of the cabinet, and should be of the low impedance type, having a DC resistance of about 50 Ω. If an extension speaker is used, it should have a speech coil impedance of 2-4 Ω.

Condensers C1, C2.—These are associated with the external aerial and earth sockets, and are situated inside the cabinet. They are therefore not included in our chassis illustrations.

Fuses F1, F2.—These are two 1 A $\frac{1}{2}$ in. glass tubular types, incorporated in the special mains plug. Two spares are fitted in clips inside the base of the cabinet.

Condensers C15, C16.—These are two dry electrolytics in a single carton fitted inside the cabinet, and therefore not shown in our chassis illustrations. They have a common negative (black) lead. The yellow lead is the positive of **C15** (8 μF) and the red the positive of **C16** (16 μF).

Resistance R3.—This is inside the top cap connector of **V2**.

Components C22, R9.—The reaction and gain controls are ganged, in such a way that the gain increases to maximum before reaction is applied, and remains at maximum for the remainder of the travel of the control.

CIRCUIT ALIGNMENT

The chassis should be in the cabinet when aligning. The volume control should be mid-way between minimum and maximum.

Switch set to MW, tune to 210 m on scale, and feed a 210 m (430 KC/S) signal into the external **A** and **E** sockets. Adjust **C21** and **C24** for maximum output. Check calibration at 550, 900 and 1,900 m.

If the pointer has slipped, it can be re-set by turning the gang until the rotor vanes are fully in mesh, and adjusting the pointer so that it is located at the mark at the top end of the LW scale.

COMPONENTS AND VALUES

RESISTANCES	Values (ohms)
R1 V1 fixed GB	1,000
R2 V1 anode and SG HT feed	5,000
R3 V2 grid leak	510,000
R4 V2 SG HT feed	260,000
R5 V2 anode and SG decoupling	20,000
R6 V2 anode load	110,000
R7 RF stopper	110,000
R8 V3 CG RF stopper	50,000
R9 V1 gain control, ganged C22	250
R10 V3 GB potential divider	1,100,000
R11 and CG resistances	1,100,000
R12 Heater ballast resistance	840*

* Tapped at 45 Ω+, 45 Ω+, 45 Ω+, 50 Ω+, 50 Ω+, 605 Ω from V4 heater.

CONDENSERS	Values (μF)
C1 Ext. earth isolating	0.05
C2 Ext. aerial isolating	0.000005
C3* V1 CG decoupling	10.0
C4 Frame aerial LW trimmer	0.00002
C5 V1 cathode by-pass	0.1
C6* V1 anode and SG decoupling	2.0
C7 V1 anode circuit LW trimmer	0.00002
C8 V2 CG condenser	0.0001
C9* V2 anode and SG decoupling	2.0
C10 V2 SG RF by-pass	0.1
C11 V2 anode RF by-pass con-	0.0002
C12 densers	0.001
C13 V2 to V3 AF coupling	0.01
C14 Fixed tone corrector	0.003
C15* HT smoothing	8.0
C16* Auto GB circuit decoupling	16.0
C17* Parts of mains input circuit	10.0
C18 RF filter	0.1
C19 Frame aerial tuning	0.1
C20† Frame aerial MW trimmer	—
C21† Reaction control, ganged R9	—
C23† V1 anode circuit tuning	—
C24† V1 anode MW trimmer	—

* Electrolytic. † Variable. ‡ Pre-set.

OTHER COMPONENTS	Approx. Values (ohms)
L1 } Frame aerial windings	1.72
L2 } Frame aerial windings	26.0
L3 } Reaction coils	3.5
L4 } Reaction coils	3.5
L5 } V1 anode circuit tuning coils	3.0
L6 } V1 anode circuit tuning coils	12.0
L7 Speaker speech coil	1.6
L8 Hum neutralising coil	0.2
L9 Speaker field coil	1,000.0
L10 } Mains RF filter chokes	2.0
L11 } Mains RF filter chokes	2.0
T1 Output trans. { Pri.	450.0
	0.3
S1-S3 Waveband switches	—
S4 Speaker switch	—
S5, S6 Mains switches	—
F1, F2 Mains circuit fuses	—