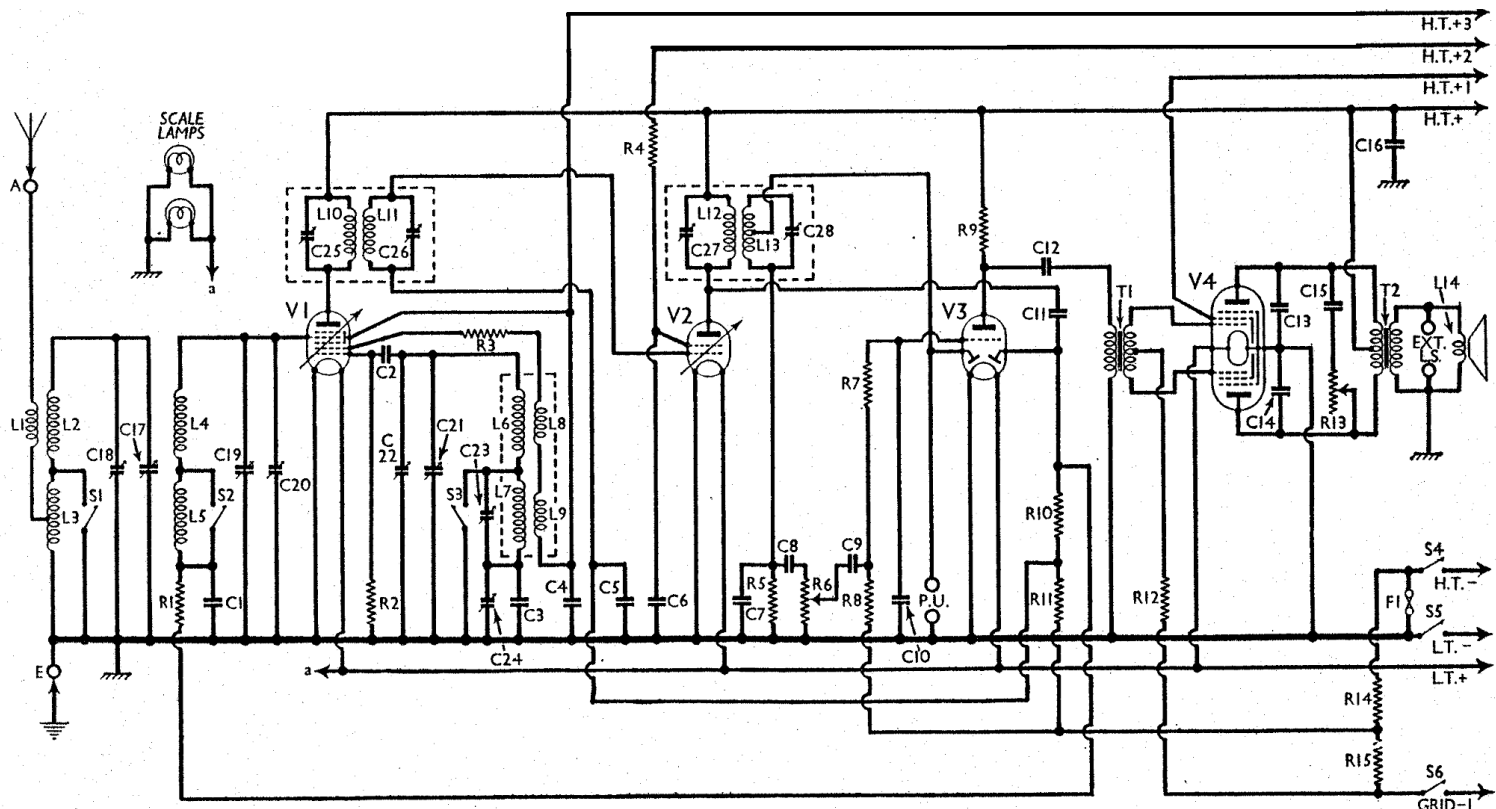


G.E.C. - SUPERHET BATTERY FOUR



Circuit diagram of the G.E.C. "Superhet Battery Four." A double-pentode Q.P.P. output stage is employed. The colour coding and voltages of the battery leads are given under "General Notes."

COMPONENTS AND VALUES

Resistances	Values (ohms)
R1	V1 tet. cont. grid decoupling
R2	V1 osc. grid resistance
R3	V1 osc. anode series resistance
R4	V2 S.G. H.T. feed
R5	V3 signal diode load
R6	Manual volume control
R7	V3 grid I.F. stopper
R8	V3 grid resistance
R9	V3 anode load
R10	V3 A.V.C. diode load
R11	V4 anti-parasitic resistance
R12	Variable tone control
R13	G.B. potential divider
R14	
R15	

Condensers	Values (μF)
C1	V1 tet. cont. grid decoupling
C2	V1 osc. grid condenser
C3	Oscillator L.W. tracker, fixed
C4	V1 S.G.'s and osc. anode decoupling
C5	V2 cont. grid decoupling
C6	V2 S.G. by-pass
C7	I.F. by-pass
C8	L.F. coupling to vol. control
C9	L.F. coupling to V3 triode
C10	V3 grid I.F. by-pass
C11	Coupling to V3 A.V.C. diode
C12	L.F. coupling to T1
C13	Fixed tone correctors
C14	
C15	Part of tone control filter
C16	H.T. reservoir
C17	Band-pass primary tuning
C18	Band-pass primary trimmer
C19	Band-pass secondary tuning
C20	Band-pass secondary trimmer
C21	Oscillator tuning
C22	Oscillator main trimmer
C23	Oscillator L.W. trimmer
C24	Oscillator L.W. tracker
C25	1st I.F. trans. pri tuning
C26	1st I.F. trans. sec. tuning
C27	2nd I.F. trans. pri. tuning
C28	2nd I.F. trans. sec. tuning

† Variable. ‡ Pre-set.

Other Components	Approx. Values (ohms)
L1	Aerial coupling coil (M.W.)
L2	Band-pass primary coils
L3	
L4	Band-pass secondary coils
L5	
L6	Oscillator tuning coils
L7	
L8	Oscillator reaction coils, total
L9	
L10	1st I.F. trans. Pri.
L11	1st I.F. trans. Sec.
L12	2nd I.F. trans. Pri.
L13	2nd I.F. trans. Sec.
L14	Speaker speech coil
T1	Interval trans. Pri.
T2	Interval trans. Sec. total
T3	Interval trans. Pri. total
T4	Interval trans. Sec. total
T5	Interval trans. Pri. total
T6	Interval trans. Sec. total
T7	Interval trans. Pri. total
T8	Interval trans. Sec. total
T9	Interval trans. Pri. total
T10	Interval trans. Sec. total
T11	Interval trans. Pri. total
T12	Interval trans. Sec. total
T13	Interval trans. Pri. total
T14	Interval trans. Sec. total
T15	Interval trans. Pri. total
T16	Interval trans. Sec. total
T17	Interval trans. Pri. total
T18	Interval trans. Sec. total
T19	Interval trans. Pri. total
T20	Interval trans. Sec. total
T21	Interval trans. Pri. total
T22	Interval trans. Sec. total
T23	Interval trans. Pri. total
T24	Interval trans. Sec. total
T25	Interval trans. Pri. total
T26	Interval trans. Sec. total
T27	Interval trans. Pri. total
T28	Interval trans. Sec. total
T29	Interval trans. Pri. total
T30	Interval trans. Sec. total
T31	Interval trans. Pri. total
T32	Interval trans. Sec. total
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T43	Interval trans. Pri. total
T44	Interval trans. Sec. total
T45	Interval trans. Pri. total
T46	Interval trans. Sec. total
T47	Interval trans. Pri. total
T48	Interval trans. Sec. total
T49	Interval trans. Pri. total
T50	Interval trans. Sec. total
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T52	Interval trans. Sec. total
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T75	Interval trans. Pri. total
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T78	Interval trans. Sec. total
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T80	Interval trans. Sec. total
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T85	Interval trans. Pri. total
T86	Interval trans. Sec. total
T87	Interval trans. Pri. total
T88	Interval trans. Sec. total
T89	Interval trans. Pri. total
T90	Interval trans. Sec. total
T91	Interval trans. Pri. total
T92	Interval trans. Sec. total
T93	Interval trans. Pri. total
T94	Interval trans. Sec. total
T95	Interval trans. Pri. total
T96	Interval trans. Sec. total
T97	Interval trans. Pri. total
T98	Interval trans. Sec. total
T99	Interval trans. Pri. total
T100	Interval trans. Sec. total

VALVE ANALYSIS

Valve voltages and currents given in the table overleaf were taken with the receiver operating from new batteries, the H.T. reading 158 V and the G.B. reading 9.4 V. The volume control was at maximum and the receiver was tuned to the lowest wavelength on the M.W. band, but there was no signal input.

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

In the case of V4, the screen voltage depends on the letter marked on the bulb. These letters (V, W and X) correspond with similarly marked sockets on the battery. A grade V valve requires 132 V, a grade W valve needs 140 V, and a grade X valve requires 147 V.

In our chassis the QP21 was a grade W valve.

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V1 X21*	155	0.4	65	1.4
V2 VS24	155	1.4	55	0.6
V3 HD22	100	0.9	—	—
V4 QP21	155†	1.1†	145‡	0.5 ‡

* Osc. anode (G2) 60 V, 2.9 mA.

† Each anode.

‡ In our chassis.

GENERAL NOTES

Switches.—The waveband and battery switches, S1-S6, are in a single unit, indicated in the under-chassis view, and shown in detail in a diagram, as it appears looking at the underside of the chassis, from the rear. The table below gives the switch positions for the various control settings, O indicating open, and C closed.

Switch	Off	M.W.	L.W.
S1	O	C	O
S2	O	C	O
S3	O	C	O
S4	O	C	C
S5	O	C	C
S6	O	C	C

Coils.—L1-L5 are in two unscreened units beneath the chassis. L1, L2 and L4 are single layer coils on a tubular former, while L3 and L5 are wave-wound coils on a cylindrical wooden former.