

"TRADER" SERVICE SHEET
1418

G.E.C. BC4450

2-band Receiver for Mains/Battery Operation



Appearance of the G.E.C. BC4450.

THE G.E.C. 4450 is a 4-valve portable receiver, designed to operate from all-dry batteries or A.C./D.C. mains of 200-250V, 25-60c/s in the case of A.C. The waveband ranges are 187-572m (M.W.) and 1,130-2,000m (L.W.).

Release date and original price: August, 1958, £13 5s 4d. Purchase tax extra.

CIRCUIT DESCRIPTION

Ferrite rod aerial coils L2 (M.W.) and L3, L4 (L.W.) are tuned by the R.F. section of the tuning gang C5, parallel trimmer C4, and C3 on M.W.; and additionally by C2 on L.W.

Heptode valve V1 is employed as frequency changer, oscillator grid coil L7 being tuned by C12-C15 on M.W., and in addition by C11 on L.W. C13 is formed by the oscillator section of the tuning gang. Reaction coupling from oscillator anode via C17, L8.

Variable- μ pentode V2 operates as intermediate frequency amplifier with tuned

transformer couplings L5, L6 and L9, L10. Neutralizing by C19.

Intermediate frequency 470kc/s

Diode signal detector is part of diode-pentode valve V3. The audio frequency component in its rectified output is developed across the diode load formed by R13 and volume control R14, and is passed via C25 to the control grid of V3 pentode section, which operates as A.F. amplifier.

The D.C. component developed across R13, R14 is fed back as bias to V1 and V2, giving automatic gain control.

Resistance-capacitance coupling by R17, C29 and R20, between V3 pentode anode

and the control grid of pentode output valve V4. Tone correction by C30.

For mains operation, all switches indicated by the suffix (M) are closed. L.T. and H.T. current is obtained from half-wave rectifier MR1, L.T. current via R28-R32 and filament ballast resistors R24, R25 and R26. Filament current is adjusted by the pre-set variable resistance of R26 and the shorting link across R25, their adjustment being described under "General Notes" overleaf.

The centre-tap of V4 filament is positive with respect to its control grid, thus providing grid bias. The A.G.C. line is connected

(Continued overleaf, col. 1)

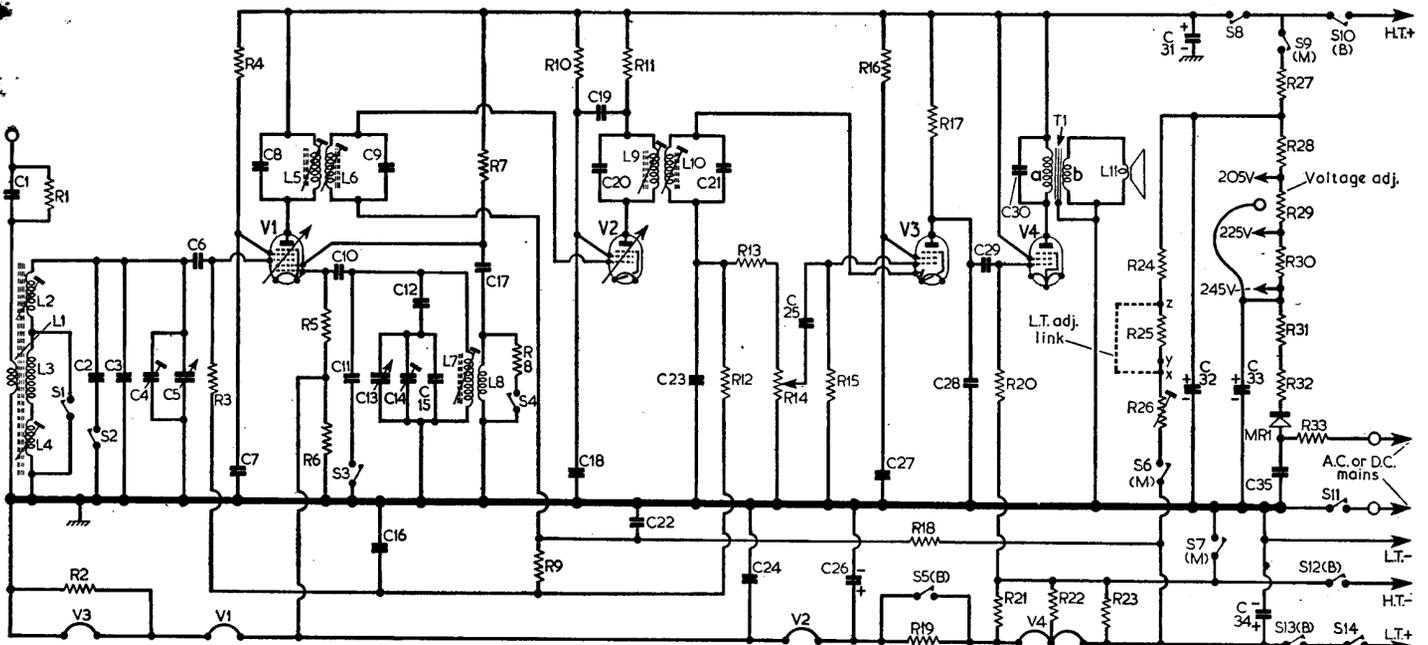
Capacitors			
C1	470pF	B1	
C2	160pF	E4	
C3	15pF	A1	
C4	—	A2	
C5	—	A2	
C6	300pF	E4	
C7	0.04 μ F	E3	
C8	100pF	A2	
C9	100pF	A2	
C10	47pF	E3	
C11	495pF	E3	
C12	585pF	E3	
C13	—	A2	
C14	—	A2	
C15	22pF	A1	
C16	0.04 μ F	E4	
C17	0.005 μ F	E3	
C18	0.002 μ F	E4	
C19	0.04 μ F	E4	
C20	100pF	A2	
C21	100pF	A2	
C22	0.04 μ F	E4	
C23	300pF	E4	
C24	0.25 μ F	E4	
C25	0.01 μ F	D4	
C26	25 μ F	C2	
C27	0.04 μ F	D4	
C28	22pF	D4	
C29	0.001 μ F	D4	
C30	0.002 μ F	D4	
C31	32 μ F	B1	
C32	32 μ F	B1	
C33	32 μ F	B1	
C34	250 μ F	B2	
C35	0.1 μ F	C2	

Resistors			
R1	1.5M Ω	B1	
R2	680 Ω	D4	
R3	1M Ω	E4	
R4	120k Ω	E4	
R5	27k Ω	E4	
R6	1k Ω	E4	
R7	33k Ω	E4	
R8	6.8k Ω	E3	
R9	2.2M Ω	E4	
R10	39k Ω	E4	
R11	2.7k Ω	E4	
R12	2.2M Ω	E4	
R13	68k Ω	D4	
R14	1M Ω	D3	
R15	10M Ω	D4	
R16	3.3M Ω	D4	
R17	1M Ω	D4	
R18	6.8M Ω	E4	
R19	33 Ω	C2	
R20	2.2M Ω	D4	
R21	1.8k Ω	D4	
R22	2.7k Ω	D4	
R23	1.8k Ω	D4	
R24	3.1k Ω	C1	
R25	470 Ω	C1	
R26	500 Ω	C1	
R27	1.8k Ω	C1	
R28	†1,603 Ω	C1	
R29	710 Ω	C1	
R30	710 Ω	C1	
R31	250 Ω	B1	
R32	82 Ω	C1	
R33	82 Ω	C2	

Coils*			
L1	—	B1	
L2	—	A1	
L3	—	B1	
L4	{ 1.35 }	B1	
L5	{ (total) }	A2	
L6	10.0	A2	
L7	—	E3	
L8	—	E3	
L9	10.0	A2	
L10	10.0	A2	
L11	3.0	C2	

Miscellaneous*			
T1	{ a 900.0 }	B2	
	{ b — }	B2	
MR1	C2D†	B2	
S1-S4, S8	—	E3	
S5, S12	—	C2	
S6, S7, S9,	—	C1	
S10, S13	—	C1	
S11, S14	—	B1	

*Approximate D.C. resistance in ohms.
†18k Ω and 1,760 Ω in parallel.
‡S.T.C.



Circuit diagram of the G.E.C. BC4450. Valve base diagrams are given overleaf. The L.T. adjusting link may be connected from x to y as shown or, alternatively, from x to z. See "L.T. Adjustment" col. 3 overleaf.