

General Description : Fifteen-valve (including rectifier and voltage stabiliser), five-waveband communications receiver with two stages of R.F. amplification, crystal filter, "S"-meter and noise limiter. Released 1949.

Power Supplies : A.C. mains, 110 and 200-250 volts.

Intermediate Frequency : 450 kc/s. ± 1 kc/s. I.F. circuits should be peaked to exact frequency of crystal. The I.F. transformer cores, however, are sealed, and should not be disturbed unless there is good reason to believe that they require re-alignment.

Valves : (V₁) 6BA6; (V₂) 6BA6; (V₃) 7S7, X81M or 6BE6; (V₄) 8D3 (local oscillator); (V₅) 6BA6; (V₆) 6BA6; (V₇) 6AL5 or D77; (V₈) 6AU6; (V₉) 6AU6; (V₁₀) 7D9; (V₁₁) 7D9; (V₁₂) 6BA6 (B.F.O.); (V₁₃) 6AL5 or D77 (noise limiter); (V₁₄) 5Z4G; (V₁₅) VR150/30 (voltage stabiliser). Type 8D3 (V₄) is now re-classified as type 6AM6, occasionally type Z77 is used in this position. Type 6BR7 (8D5) replaces type 6AU6 in the 1952 model, known as the 680X.

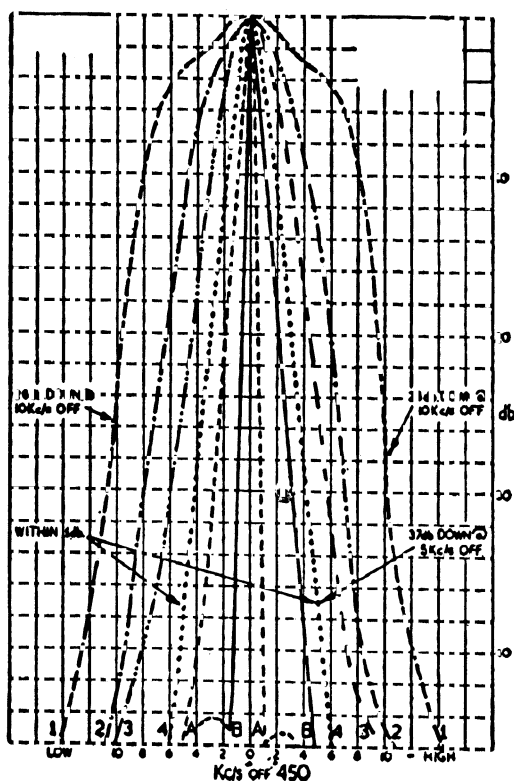
Modifications : Minor modifications may be found in later models, particularly in arrangement adopted for gain compensation with varying selectivity. Circuit Diagrams for the 680 and 680X are given.

Notes : Aerial input impedance 400 ohms (nominal). Output impedance 2.5 ohms. The pre-set controls at the back of the cabinet are for "S"-meter zero adjustment and for dial-illumination control (R61). The heater circuits are balanced to earth, the noise-limiter valve being supplied by a separate winding on the mains transformer. Fuse rating 1 amp.

Alignment Procedure : Trimmer lay-out and alignment frequencies are given on pages 196-7. Alignment of the I.F. stages should be made with the selectivity control in the position of maximum selectivity (curve 4 in the accompanying illustration). Alignment of the R.F. circuits follows normal procedure: the oscillator circuits are first adjusted to correct any calibration errors, then the F.C., second R.F. and first R.F. stages (in that order) are aligned for maximum response.

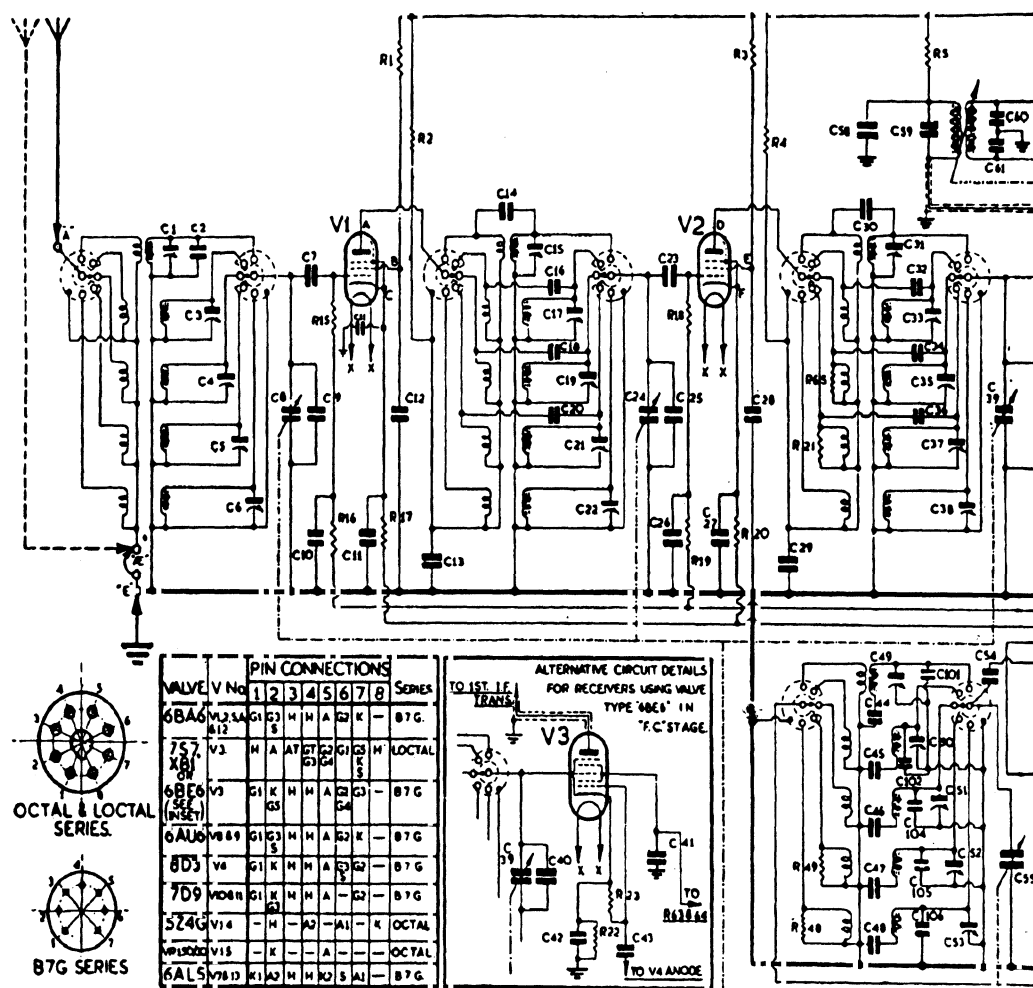
SELECTIVITY CURVES FOR THE "680" RECEIVER

- (1) ——— minimum position.
- (2) - - - - - first intermediate position.
- (3) second intermediate position.
- (4) maximum selectivity.
- (A) ——— maximum selectivity, with crystal filter in, and phased to reject signal on one side.
- B) ——— as "A", but with crystal phased on other side.



Voltage Values : Voltages given below are between the points indicated and chassis. Voltage indicated depends on the internal resistance of the particular meter employed. A tolerance of plus or minus 10 per cent should be allowed. Total H.T. current 115 mA.

Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter	Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter
A	218 v.	210 v.	Q	1.0 v.	1.0 v.
B	90 v.	82 v.	R	10.2 v.	9.5 v.
C	0.8 v.	0.8 v.	S	60 v.	35 v.
D	210 v.	208 v.	T	40 v.	30 v.
E	90 v.	85 v.	U	0.9 v.	0.7 v.
F	1.2 v.	1 v.	V	62 v.	38 v.
G	218 v.	215 v.	W	0.9 v.	0.7 v.
H	104 v.	100 v.	X	220 v.	220 v.
J	1.3 v.	1.3 v.	Y	222 v.	222 v.
K	104 v.	100 v.	Z	10.2 v.	9.5 v.
L	212 v.	210 v.	A-	85 v.	80 v.
M	90 v.	82 v.	B-	150 v.	150 v.
N	1.0 v.	0.9 v.	C-	260 v.	260 v.
O	200 v.	200 v.	D-	250 v. (A.C.)	250 v. (A.C.)
P	90 v.	82 v.	E-	150 v.	150 v.



CIRCUIT DIAGRAM—

Capacitors.
3/20 pF. (air)

3 pF.
6 pF.
8 pF.
10 pF.
20 pF.
25 pF.
50 pF.
100 pF.
200 pF.
2400 pF.
2500 pF.
1625 pF.
900 pF.
400 pF.
500 pF.
800 pF.
0.0005 (mica)
0.002 (mica)
0.01 (mica)
0.01 (paper)
0.1

C1, C3, C4, C5, C6, C15, C17, C19, C21,
C22, C31, C33, C35, C37, C38, C49,
C50, C51, C52, C53
C18, C20, C34, C36
C16, C32, C89
C72
C2, C43, C104, C105, C106
C14, C30, C63
C9, C25, C40
C56
C7, C23, C82, C83, C90, C92, C103
C54
C44
C45
C46
C47
C48, C59, C65, C67, C70, C71
C64
C60, C61
C96, C97, C107
C73
C75, C86, C88, C98
C11, C26, C68, C76, C84, C93, C99,
C100
C10, C11, C12, C13, C27, C28, C29,
C41, C42, C57, C58, C66, C69, C77,
C79, C80, C81
C74
C87
C85
C94
C95
C8, C24, C39, C55 4 Gang capacitor. 10-368 pF. per
section.
C62 Crystal phasing capacitor. C91 BFO pitch
condenser.
C44, C45, C46, C47, C48 $\pm 1\%$ tolerance.

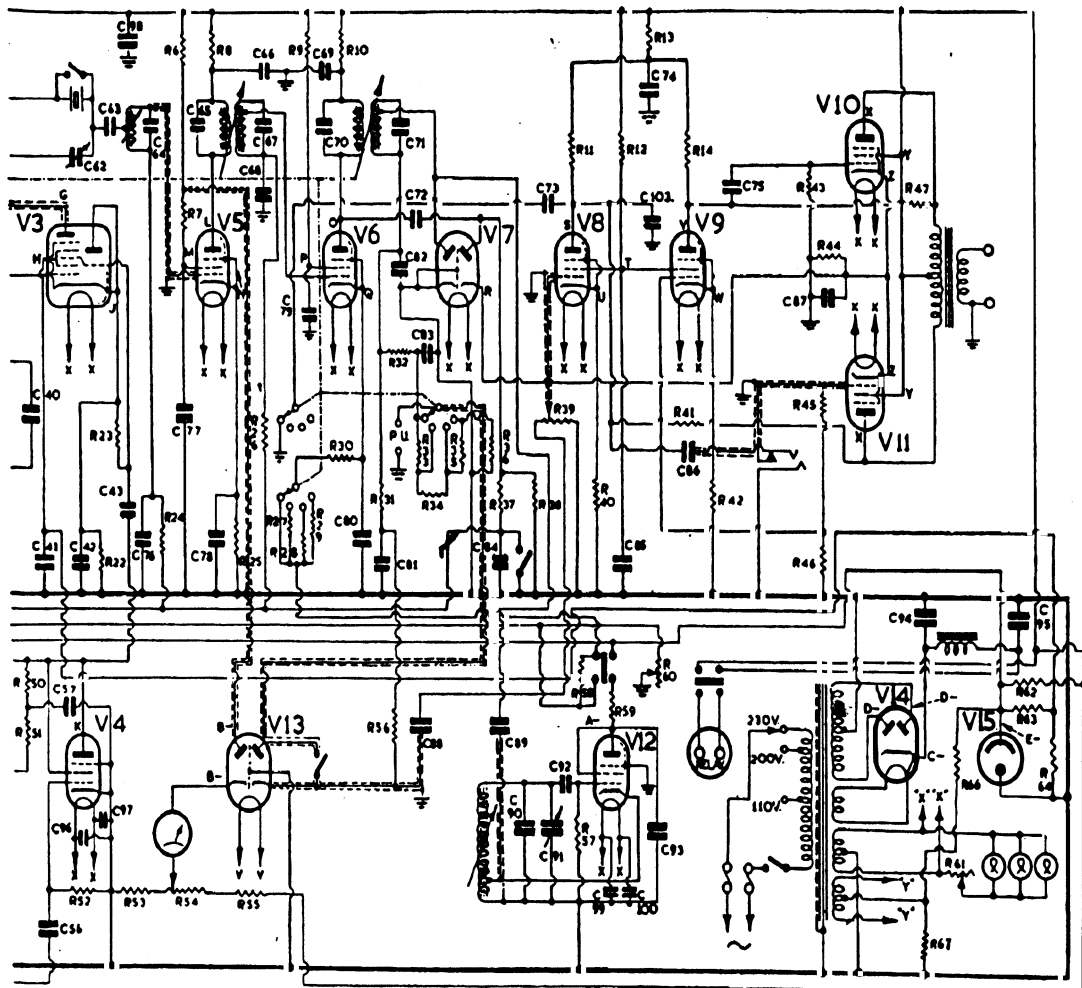
* One each, 0.01 and 0.1 in parallel.

C59, C60, C61, C64, C65, C67, C70, C71, C72 $\pm 2\%$
tolerance.
C9, C25, C40 $\pm 5\%$ tolerance.

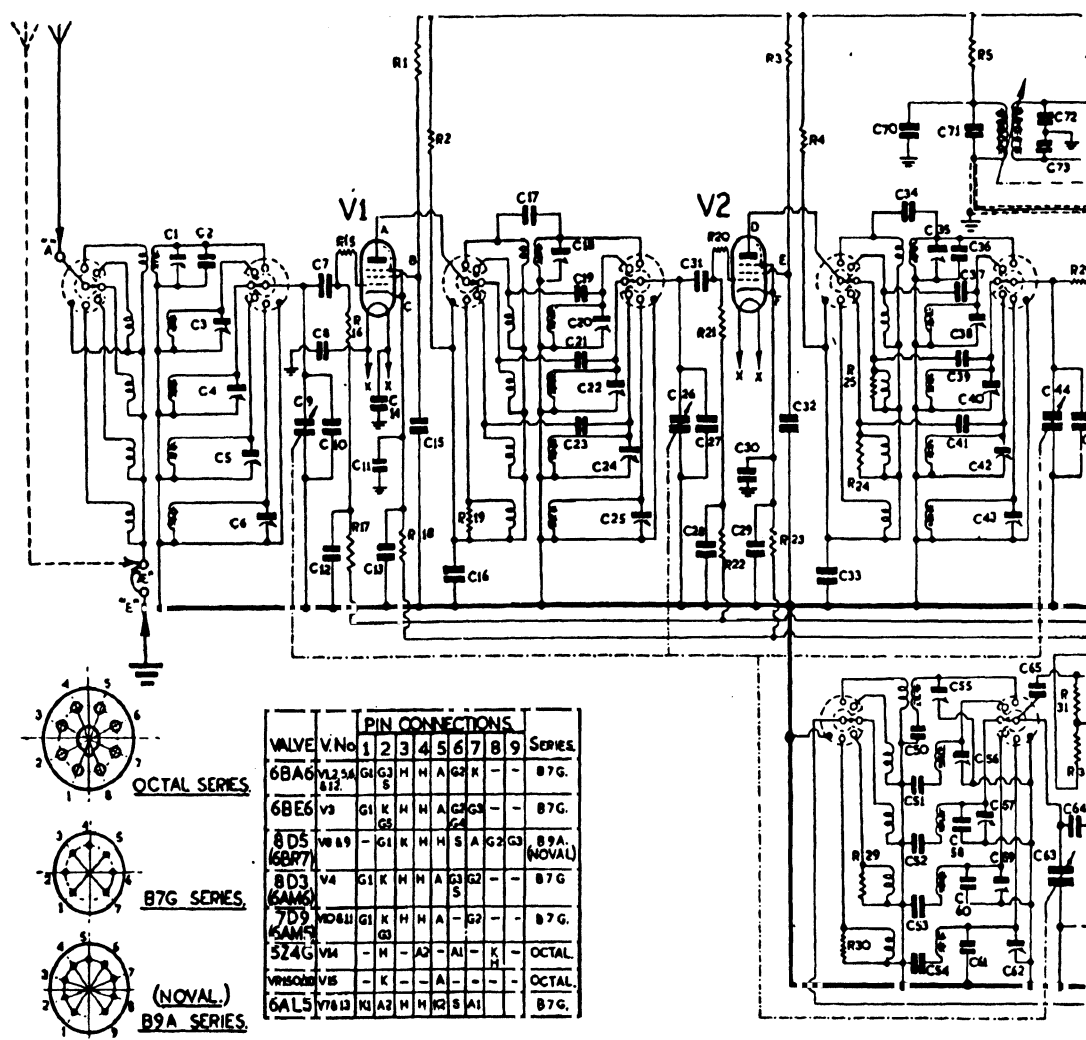
Resistors.

68 R17, R20, R25, R30
150 R21
200 R22
560 R40, R42, R58
620 R44
750 R27
1k R2, R4, R5, R8, R51
1.5k R65
2.2k R48, R49
2.7k R10, R62
4.7k R28, R63
6.8k R67
7.5k R35, R46
8.2k R29
10k R13, R50, R59
12.5k R55
13k R36
15k R6, R7, R64
22k R34, R52
27k R53
33k R1, R3, R9
47k R33, R57
0.1M R11, R14, R23, R32, R66
0.18M R12
0.47M R15, R16, R18, R19, R24, R26 R37, R43,
R45
1M R31, R38
2.2M R56
3M R41, R47
R1, R3, R9, R53, R64 1-watt. R62 5-watt. Re-
mainder $\frac{1}{2}$ -watt.
Potentiometers: R60 10,000 ohms; R61 5 ohms; R39
0.5M; R54 5,000 ohms.

* Two 25,000-ohm resistors in parallel.



EDDYSTONE MODEL 680



CIRCUIT DIAGRAM-

Capacitors.

C1	3-23 pF.	C30	0.01	C59	3-23 pF.	C88	0.01
C2	10 pF.	C31	100 pF.	C60	20 pF.	C89	0.1
C3	3-23 pF.	C32	0.1	C61	20 pF.	C90	0.1
C4	3-23 pF.	C33	0.1	C62	3-23 pF.	C91	0.1
C5	3-23 pF.	C34	20 pF.	C63	10-367.75 pF.	C92	0.1
C6	3-23 pF.	C35	3-23 pF.	C64	12 pF.	C93	0.1
C7	100 pF.	C36	3 pF.	C65	200 pF.	C94	100 pF.
C8	0.0005	C37	6 pF.	C66	50 pF.	C95	100 pF.
C9	10-367.75 pF.	C38	3-23 pF.	C67	0.0005	C96	0.5
C10	25 pF.	C39	3 pF.	C68	0.0005	C97	0.01
C11	0.01	C40	3-23 pF.	C69	0.1	C98	30
C12	0.01	C41	3 pF.	C70	0.1	C99	30
C13	0.1	C42	3-23 pF.	C71	400 pF.	C100	0.01
C14	0.0005	C43	3-23 pF.	C72	800 pF.	C101	0.5
C15	0.1	C44	10-367.75 pF.	C73	800 pF.	C102	30
C16	0.1	C45	25 pF.	C74		C103	0.002
C17	20 pF.	C46	0.1	C75	20 pF.	C104	0.01
C18	3-23 pF.	C47	0.1	C76	0.01	C105	0.002
C19	6 pF.	C48	0.01	C77	500 pF.	C106	0.01
C20	3-23 pF.	C49	10 pF.	C78	400 pF.	C107	8 pF.
C21	3 pF.	C50	7000 pF.	C79	0.1	C108	100 pF.
C22	3-23 pF.	C51	3625 pF.	C80	400 pF.	C109	100 pF.
C23	3 pF.	C52	1625 pF.	C81	0.01	C110	
C24	3-23 pF.	C53	900 pF.	C82	400 pF.	C111	0.01
C25	3-23 pF.	C54	440 pF.	C83	0.1	C112	0.01
C26	10-367.75 pF.	C55	3-23 pF.	C84	400 pF.	C113	0.01
C27	25 pF.	C56	3-23 pF.	C85	10 pF.	C114	16
C28	0.01	C57	3-23 pF.	C86	8	C115	40
C29	0.1	C58	10 pF.	C87	0.01		

