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WIRELESS STATION C13

(WS C13, S.U.V. No 16 and A.T.U. No 11)

TECHNICAL HANDBOOK - FAULT-FINDING AND REPAIR DATA

This Part 2 contains fault-finding and repair data in tabular and diagrammatic form. Part 1 of this EHER contains a general description of the equipment. Tels H 163 and H 164 deal with repairs.

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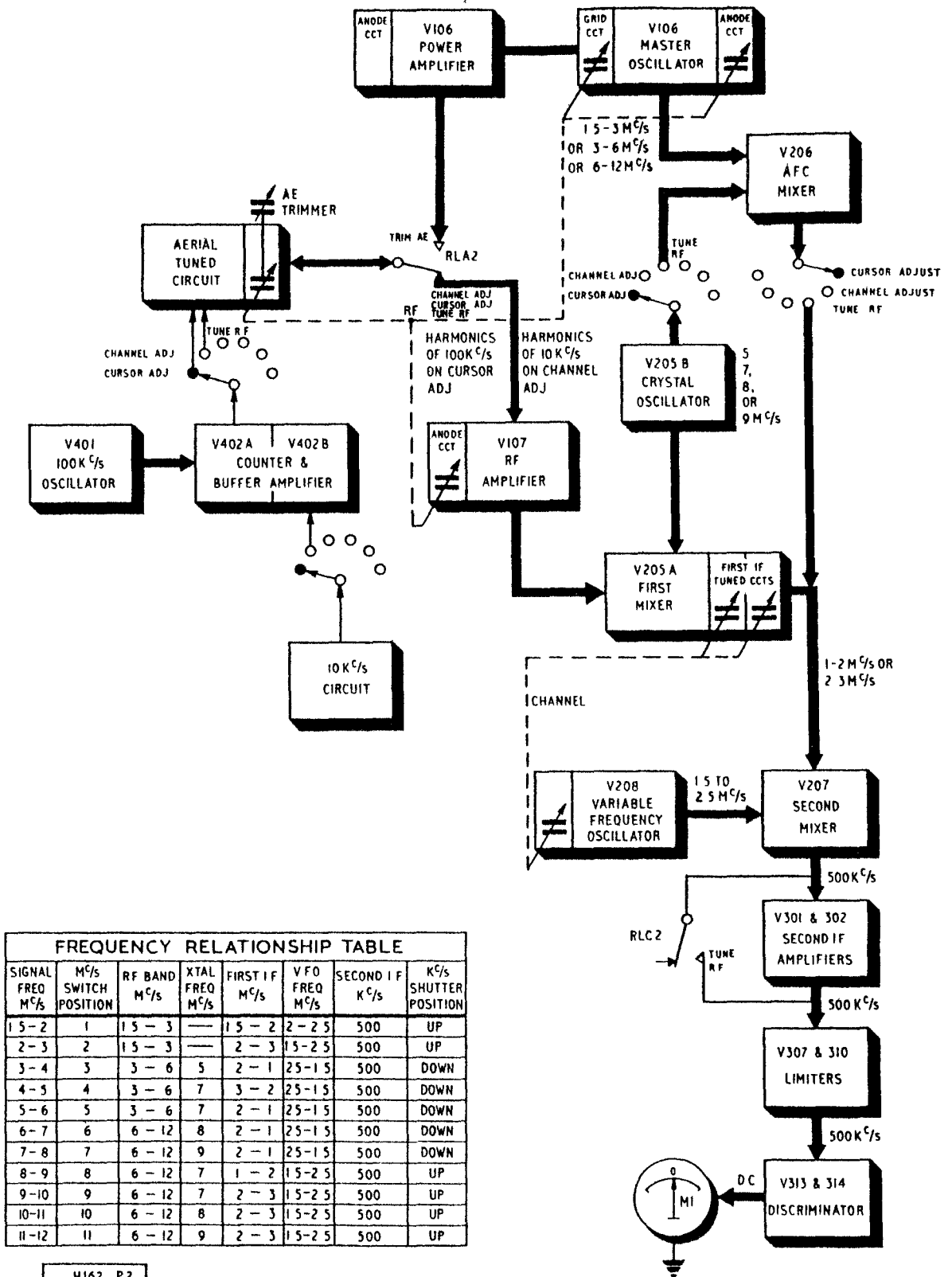
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Note: Grid references are given in the form figure-letter-figure. The prefix figure refers to the drawing and the suffix letter and figure denote the actual grid reference on the drawing, eg 4S8 means that a component is located at S8 on Fig 2504.



FREQUENCY RELATIONSHIP TABLE							
SIGNAL FREQ Mc/s	Mc/s SWITCH POSITION	RF BAND Mc/s	XTAL FREQ Mc/s	FIRST IF Mc/s	VFO FREQ Mc/s	SECOND IF Kc/s	Kc/s SHUTTER POSITION
15-2	1	15-3	—	15-2	2-2.5	500	UP
2-3	2	15-3	—	2-3	15-2.5	500	UP
3-4	3	3-6	5	2-1	25-15	500	DOWN
4-5	4	3-6	7	3-2	25-15	500	DOWN
5-6	5	3-6	7	2-1	25-15	500	DOWN
6-7	6	6-12	8	2-1	25-15	500	DOWN
7-8	7	6-12	9	2-1	25-15	500	DOWN
8-9	8	6-12	7	1-2	15-2.5	500	UP
9-10	9	6-12	7	2-3	15-2.5	500	UP
10-11	10	6-12	8	2-3	15-2.5	500	UP
11-12	11	6-12	9	2-3	15-2.5	500	UP

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1-2501

Fig 2501 - Calibrate block diagram

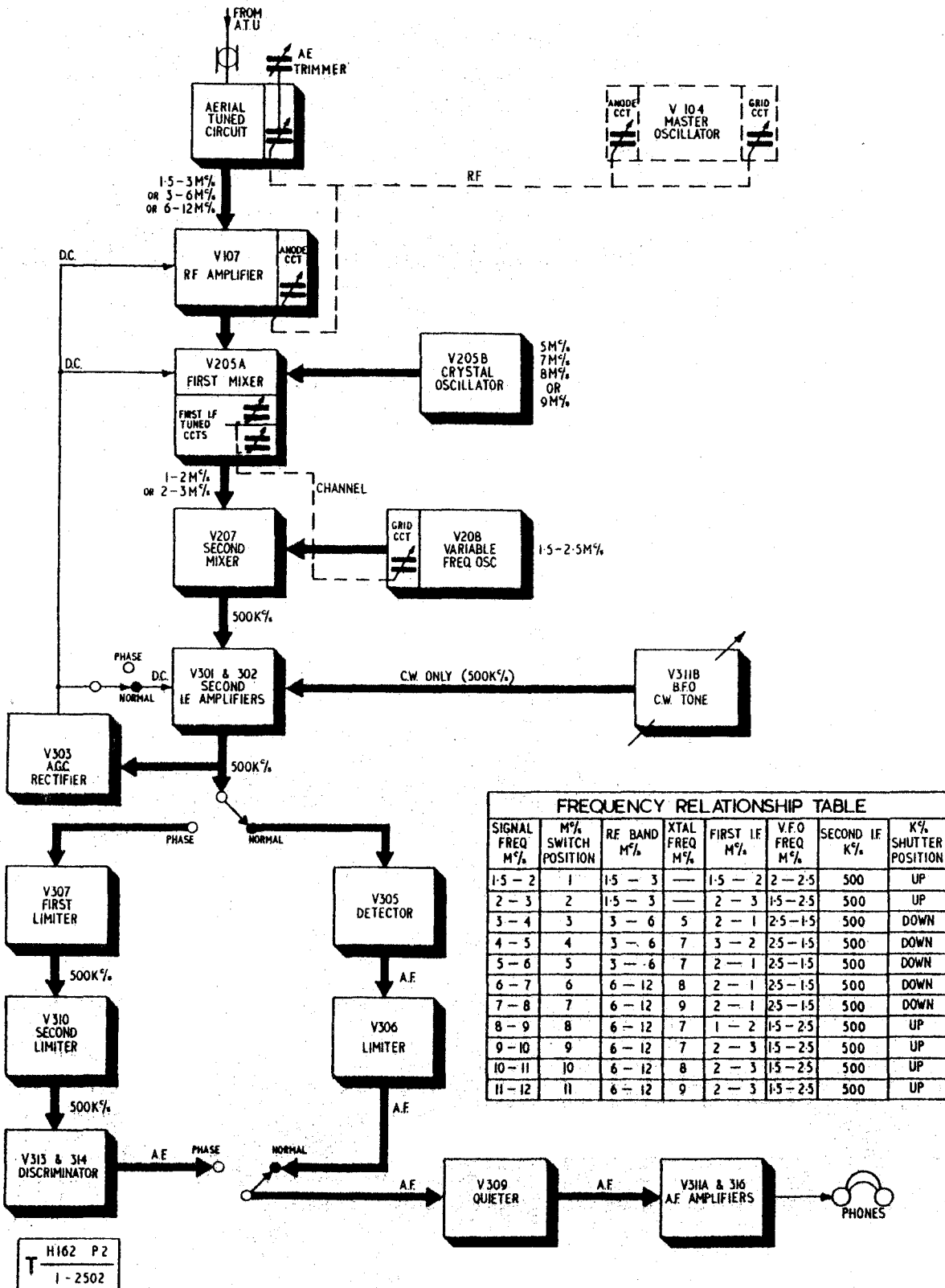


Fig 2502 - Receive block diagram

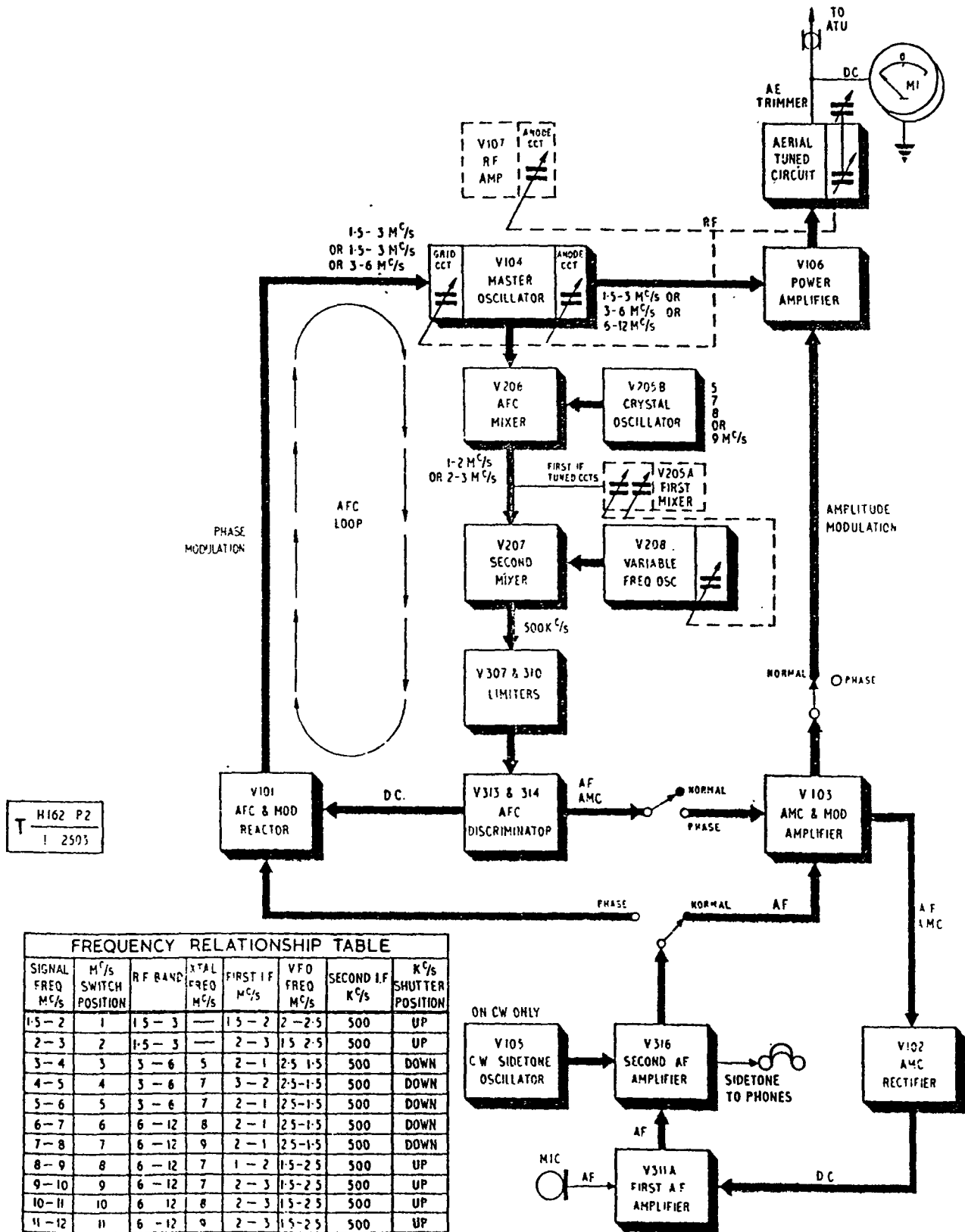


Fig 2503 - Transmit block diagram

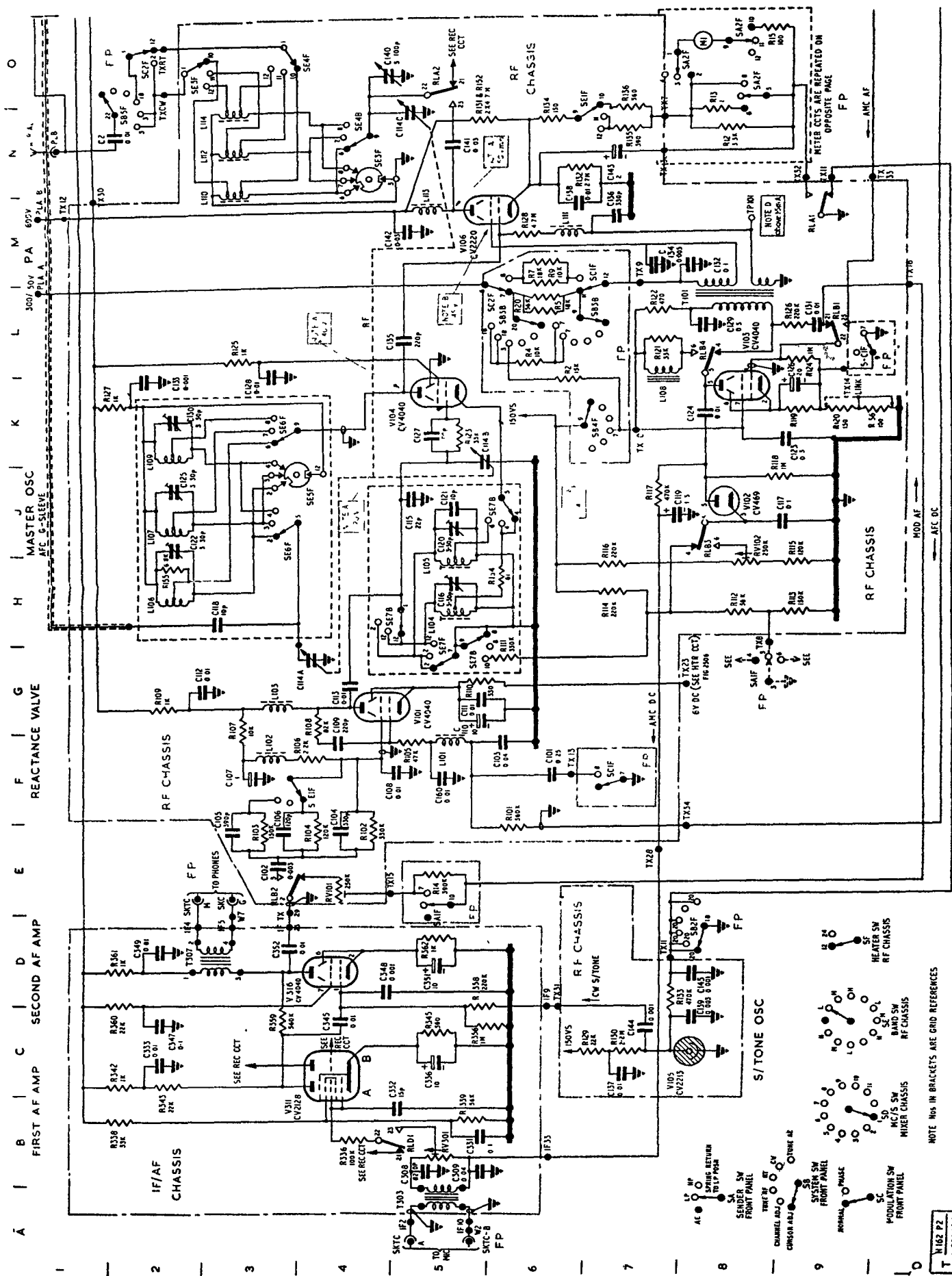
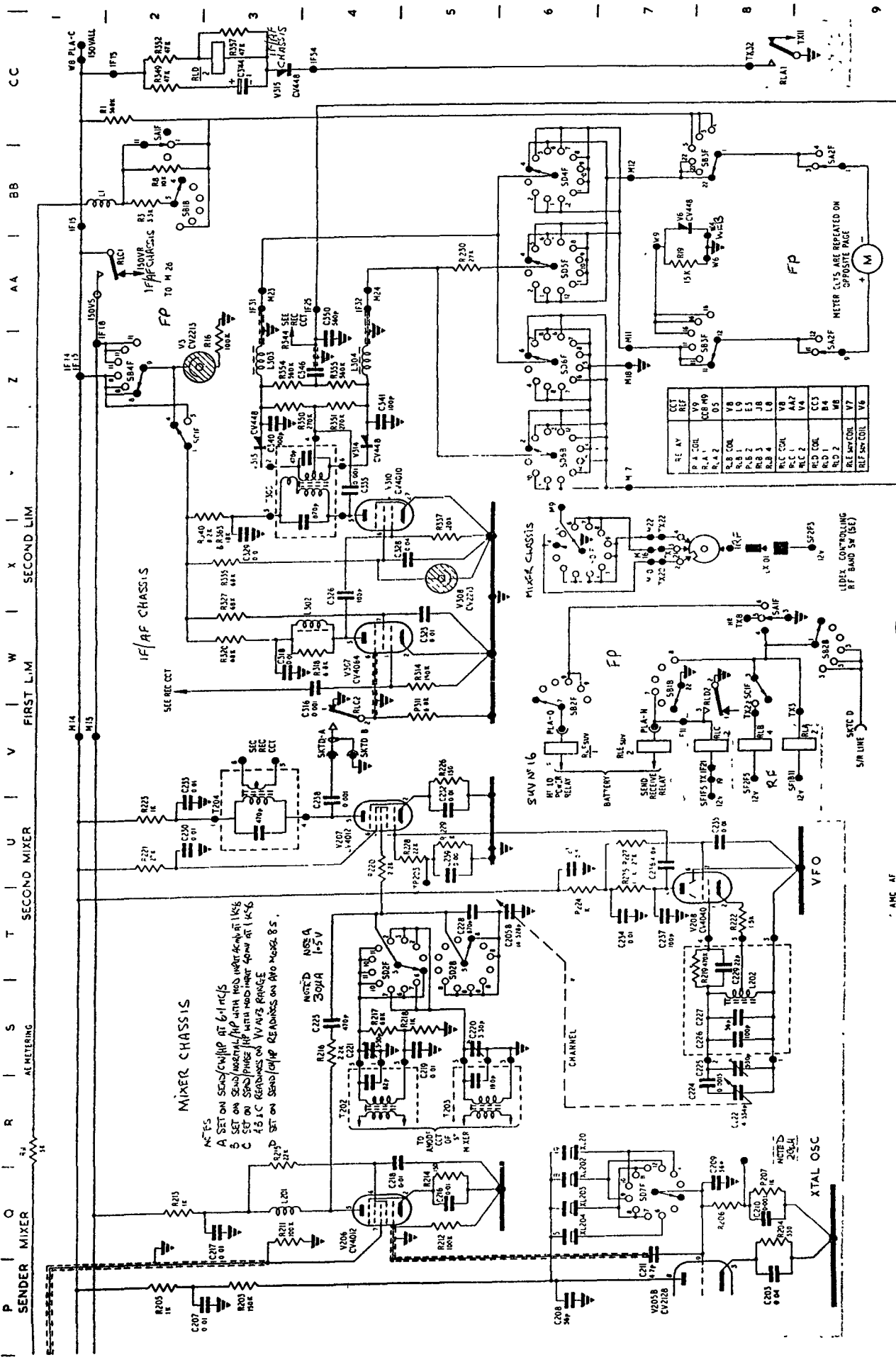


Fig. 2504a - Transmitter circuit (part 1)



FOR HEATER CCTS. CODING OF VALVE BASES RELAYS ETC SEE RESPECTIVE CHASSIS CCTS

RELAY	RELAY	RELAY	RELAY	RELAY	RELAY	RELAY
R.A.1	R.A.2	R.B.1	R.B.2	R.B.3	R.B.4	R.B.5
R.C.1	R.C.2	R.C.3	R.C.4	R.C.5	R.C.6	R.C.7
R.D.1	R.D.2	R.E.1	R.E.2	R.E.3	R.E.4	R.E.5
R.F.1	R.F.2	R.F.3	R.F.4	R.F.5	R.F.6	R.F.7
R.G.1	R.G.2	R.G.3	R.G.4	R.G.5	R.G.6	R.G.7
R.H.1	R.H.2	R.H.3	R.H.4	R.H.5	R.H.6	R.H.7
R.I.1	R.I.2	R.I.3	R.I.4	R.I.5	R.I.6	R.I.7
R.J.1	R.J.2	R.J.3	R.J.4	R.J.5	R.J.6	R.J.7
R.K.1	R.K.2	R.K.3	R.K.4	R.K.5	R.K.6	R.K.7
R.L.1	R.L.2	R.L.3	R.L.4	R.L.5	R.L.6	R.L.7
R.M.1	R.M.2	R.M.3	R.M.4	R.M.5	R.M.6	R.M.7
R.N.1	R.N.2	R.N.3	R.N.4	R.N.5	R.N.6	R.N.7
R.O.1	R.O.2	R.O.3	R.O.4	R.O.5	R.O.6	R.O.7
R.P.1	R.P.2	R.P.3	R.P.4	R.P.5	R.P.6	R.P.7
R.Q.1	R.Q.2	R.Q.3	R.Q.4	R.Q.5	R.Q.6	R.Q.7
R.R.1	R.R.2	R.R.3	R.R.4	R.R.5	R.R.6	R.R.7
R.S.1	R.S.2	R.S.3	R.S.4	R.S.5	R.S.6	R.S.7
R.T.1	R.T.2	R.T.3	R.T.4	R.T.5	R.T.6	R.T.7
R.U.1	R.U.2	R.U.3	R.U.4	R.U.5	R.U.6	R.U.7
R.V.1	R.V.2	R.V.3	R.V.4	R.V.5	R.V.6	R.V.7
R.W.1	R.W.2	R.W.3	R.W.4	R.W.5	R.W.6	R.W.7
R.X.1	R.X.2	R.X.3	R.X.4	R.X.5	R.X.6	R.X.7
R.Y.1	R.Y.2	R.Y.3	R.Y.4	R.Y.5	R.Y.6	R.Y.7
R.Z.1	R.Z.2	R.Z.3	R.Z.4	R.Z.5	R.Z.6	R.Z.7
R.AA.1	R.AA.2	R.AA.3	R.AA.4	R.AA.5	R.AA.6	R.AA.7
R.AB.1	R.AB.2	R.AB.3	R.AB.4	R.AB.5	R.AB.6	R.AB.7
R.AC.1	R.AC.2	R.AC.3	R.AC.4	R.AC.5	R.AC.6	R.AC.7
R.AD.1	R.AD.2	R.AD.3	R.AD.4	R.AD.5	R.AD.6	R.AD.7
R.AE.1	R.AE.2	R.AE.3	R.AE.4	R.AE.5	R.AE.6	R.AE.7
R.AF.1	R.AF.2	R.AF.3	R.AF.4	R.AF.5	R.AF.6	R.AF.7
R.AG.1	R.AG.2	R.AG.3	R.AG.4	R.AG.5	R.AG.6	R.AG.7
R.AH.1	R.AH.2	R.AH.3	R.AH.4	R.AH.5	R.AH.6	R.AH.7
R.AI.1	R.AI.2	R.AI.3	R.AI.4	R.AI.5	R.AI.6	R.AI.7
R.AJ.1	R.AJ.2	R.AJ.3	R.AJ.4	R.AJ.5	R.AJ.6	R.AJ.7
R.AK.1	R.AK.2	R.AK.3	R.AK.4	R.AK.5	R.AK.6	R.AK.7
R.AL.1	R.AL.2	R.AL.3	R.AL.4	R.AL.5	R.AL.6	R.AL.7
R.AM.1	R.AM.2	R.AM.3	R.AM.4	R.AM.5	R.AM.6	R.AM.7
R.AN.1	R.AN.2	R.AN.3	R.AN.4	R.AN.5	R.AN.6	R.AN.7
R.AO.1	R.AO.2	R.AO.3	R.AO.4	R.AO.5	R.AO.6	R.AO.7
R.AP.1	R.AP.2	R.AP.3	R.AP.4	R.AP.5	R.AP.6	R.AP.7
R.AQ.1	R.AQ.2	R.AQ.3	R.AQ.4	R.AQ.5	R.AQ.6	R.AQ.7
R.AR.1	R.AR.2	R.AR.3	R.AR.4	R.AR.5	R.AR.6	R.AR.7
R.AS.1	R.AS.2	R.AS.3	R.AS.4	R.AS.5	R.AS.6	R.AS.7
R.AT.1	R.AT.2	R.AT.3	R.AT.4	R.AT.5	R.AT.6	R.AT.7
R.AU.1	R.AU.2	R.AU.3	R.AU.4	R.AU.5	R.AU.6	R.AU.7
R.AV.1	R.AV.2	R.AV.3	R.AV.4	R.AV.5	R.AV.6	R.AV.7
R.AW.1	R.AW.2	R.AW.3	R.AW.4	R.AW.5	R.AW.6	R.AW.7
R.AX.1	R.AX.2	R.AX.3	R.AX.4	R.AX.5	R.AX.6	R.AX.7
R.AY.1	R.AY.2	R.AY.3	R.AY.4	R.AY.5	R.AY.6	R.AY.7
R.AZ.1	R.AZ.2	R.AZ.3	R.AZ.4	R.AZ.5	R.AZ.6	R.AZ.7
R.AAA.1	R.AAA.2	R.AAA.3	R.AAA.4	R.AAA.5	R.AAA.6	R.AAA.7
R.AAB.1	R.AAB.2	R.AAB.3	R.AAB.4	R.AAB.5	R.AAB.6	R.AAB.7
R.AAC.1	R.AAC.2	R.AAC.3	R.AAC.4	R.AAC.5	R.AAC.6	R.AAC.7
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R.AAG.1	R.AAG.2	R.AAG.3	R.AAG.4	R.AAG.5	R.AAG.6	R.AAG.7
R.AAH.1	R.AAH.2	R.AAH.3	R.AAH.4	R.AAH.5	R.AAH.6	R.AAH.7
R.AAI.1	R.AAI.2	R.AAI.3	R.AAI.4	R.AAI.5	R.AAI.6	R.AAI.7
R.AAJ.1	R.AAJ.2	R.AAJ.3	R.AAJ.4	R.AAJ.5	R.AAJ.6	R.AAJ.7
R.AAK.1	R.AAK.2	R.AAK.3	R.AAK.4	R.AAK.5	R.AAK.6	R.AAK.7
R.AAL.1	R.AAL.2	R.AAL.3	R.AAL.4	R.AAL.5	R.AAL.6	R.AAL.7
R.AAM.1	R.AAM.2	R.AAM.3	R.AAM.4	R.AAM.5	R.AAM.6	R.AAM.7
R.AAN.1	R.AAN.2	R.AAN.3	R.AAN.4	R.AAN.5	R.AAN.6	R.AAN.7
R.AAO.1	R.AAO.2	R.AAO.3	R.AAO.4	R.AAO.5	R.AAO.6	R.AAO.7
R.AAP.1	R.AAP.2	R.AAP.3	R.AAP.4	R.AAP.5	R.AAP.6	R.AAP.7
R.AAQ.1	R.AAQ.2	R.AAQ.3	R.AAQ.4	R.AAQ.5	R.AAQ.6	R.AAQ.7
R.AAR.1	R.AAR.2	R.AAR.3	R.AAR.4	R.AAR.5	R.AAR.6	R.AAR.7
R.AAS.1	R.AAS.2	R.AAS.3	R.AAS.4	R.AAS.5	R.AAS.6	R.AAS.7
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R.AAV.1	R.AAV.2	R.AAV.3	R.AAV.4	R.AAV.5	R.AAV.6	R.AAV.7
R.AAW.1	R.AAW.2	R.AAW.3	R.AAW.4	R.AAW.5	R.AAW.6	R.AAW.7
R.AAX.1	R.AAX.2	R.AAX.3	R.AAX.4	R.AAX.5	R.AAX.6	R.AAX.7
R.AAY.1	R.AAY.2	R.AAY.3	R.AAY.4	R.AAY.5	R.AAY.6	R.AAY.7
R.AAZ.1	R.AAZ.2	R.AAZ.3	R.AAZ.4	R.AAZ.5	R.AAZ.6	R.AAZ.7
R.AAA.1	R.AAA.2	R.AAA.3	R.AAA.4	R.AAA.5	R.AAA.6	R.AAA.7
R.AAB.1	R.AAB.2	R.AAB.3	R.AAB.4	R.AAB.5	R.AAB.6	R.AAB.7
R.AAC.1	R.AAC.2	R.AAC.3	R.AAC.4	R.AAC.5	R.AAC.6	R.AAC.7
R.AAD.1	R.AAD.2	R.AAD.3	R.AAD.4	R.AAD.5	R.AAD.6	R.AAD.7
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R.AAG.1	R.AAG.2	R.AAG.3	R.AAG.4	R.AAG.5	R.AAG.6	R.AAG.7
R.AAH.1	R.AAH.2	R.AAH.3	R.AAH.4	R.AAH.5	R.AAH.6	R.AAH.7
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R.AAT.1	R.AAT.2	R.AAT.3	R.AAT.4	R.AAT.5	R.AAT.6	R.AAT.7
R.AAU.1	R.AAU.2	R.AAU.3	R.AAU.4	R.AAU.5	R.AAU.6	R.AAU.7
R.AAV.1	R.AAV.2	R.AAV.3	R.AAV.4	R.AAV.5	R.AAV.6	R.AAV.7
R.AAW.1	R.AAW.2	R.AAW.3	R.AAW.4	R.AAW.5	R.AAW.6	R.AAW.7
R.AAX.1	R.AAX.2	R.AAX.3	R.AAX.4	R.AAX.5	R.AAX.6	R.AAX.7
R.AAY.1	R.AAY.2	R.AAY.3	R.AAY.4	R.AAY.5	R.AAY.6	R.AAY.7
R.AAZ.1	R.AAZ.2	R.AAZ.3	R.AAZ.4	R.AAZ.5	R.AAZ.6	R.AAZ.7
R.AAA.1	R.AAA.2	R.AAA.3	R.AAA.4	R.AAA.5	R.AAA.6	R.AAA.7
R.AAB.1	R.AAB.2	R.AAB.3	R.AAB.4	R.AAB.5	R.AAB.6	R.AAB.7
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R.AAD.1	R.AAD.2	R.AAD.3	R.AAD.4	R.AAD.5	R.AAD.6	R.AAD.7
R.AAE.1	R.AAE.2	R.AAE.3	R.AAE.4	R.AAE.5	R.AAE.6	R.AAE.7
R.AAF.1	R.AAF.2	R.AAF.3	R.AAF.4	R.AAF.5	R.AAF.6	R.AAF.7
R.AAG.1	R.AAG.2	R.AAG.3	R.AAG.4	R.AAG.5	R.AAG.6	R.AAG.7
R.AAH.1	R.AAH.2	R.AAH.3	R.AAH.4	R.AAH.5	R.AAH.6	R.AAH.7
R.AAI.1	R.AAI.2	R.AAI.3	R.AAI.4	R.AAI.5	R.AAI.6	R.AAI.7
R.AAJ.1	R.AAJ.2	R.AAJ.3	R.AAJ.4	R.AAJ.5	R.AAJ.6	R.AAJ.7
R.AAK.1	R.AAK.2	R.AAK.3	R.AAK.4	R.AAK.5	R.AAK.6	R.AAK.7
R.AAL.1	R.AAL.2	R.AAL.3	R.AAL.4	R.AAL.5	R.AAL.6	R.AAL.7
R.AAM.1	R.AAM.2	R.AAM.3	R.AAM.4	R.AAM.5	R.AAM.6	R.AAM.7
R.AAN.1	R.AAN.2	R.AAN.3	R.AAN.4	R.AAN.5	R.AAN.6	R.AAN.7
R.AAO.1	R.AAO.2	R.AAO.3	R.AAO.4	R.AAO.5	R.AAO.6	R.AAO.7
R.AAP.1	R.AAP.2	R.AAP.3	R.AAP.4	R.AAP.5	R.AAP.6	R.AAP.7
R.AAQ.1	R.AAQ.2	R.AAQ.3	R.AAQ.4	R.AAQ.5	R.AAQ.6	R.AAQ.7
R.AAR.1	R.AAR.2	R.AAR.3	R.AAR.4	R.AAR.5	R.AAR.6	R.AAR.7
R.AAS.1	R.AAS.2	R.AAS.3	R.AAS.4	R.AAS.5	R.AAS.6	R.AAS.7
R.AAT.1	R.AAT.2	R.AAT.3	R.AAT.4	R.AAT.5	R.AAT.6	R.AAT.7
R.AAU.1	R.AAU.2	R.AAU.3	R.AAU.4	R.AAU.5	R.AAU.6	R.AAU.7
R.AAV.1	R.AAV.2	R.AAV.3	R.AAV.4	R.AAV.5	R.AAV.6	R.AAV.7
R.AAW.1	R.AAW.2	R.AAW.3	R.AAW.4	R.AAW.5	R.AAW.6	R.AAW.7
R.AAX.1	R.AAX.2	R.AAX.3	R.AAX.4	R.AAX.5	R.AAX.6	R.AAX.7
R.AAY.1	R.AAY.2	R.AAY.3	R.AAY.4	R.AAY.5	R.AAY.6	R.AAY.7
R.AAZ.1	R.AAZ.2	R.AAZ.3	R.AAZ.4	R.AAZ.5	R.AAZ.6	R.AAZ.7

AME AF

AME DC

(Additional copies of this figure, for use as bench copies, may be obtained from the supplementary manual)

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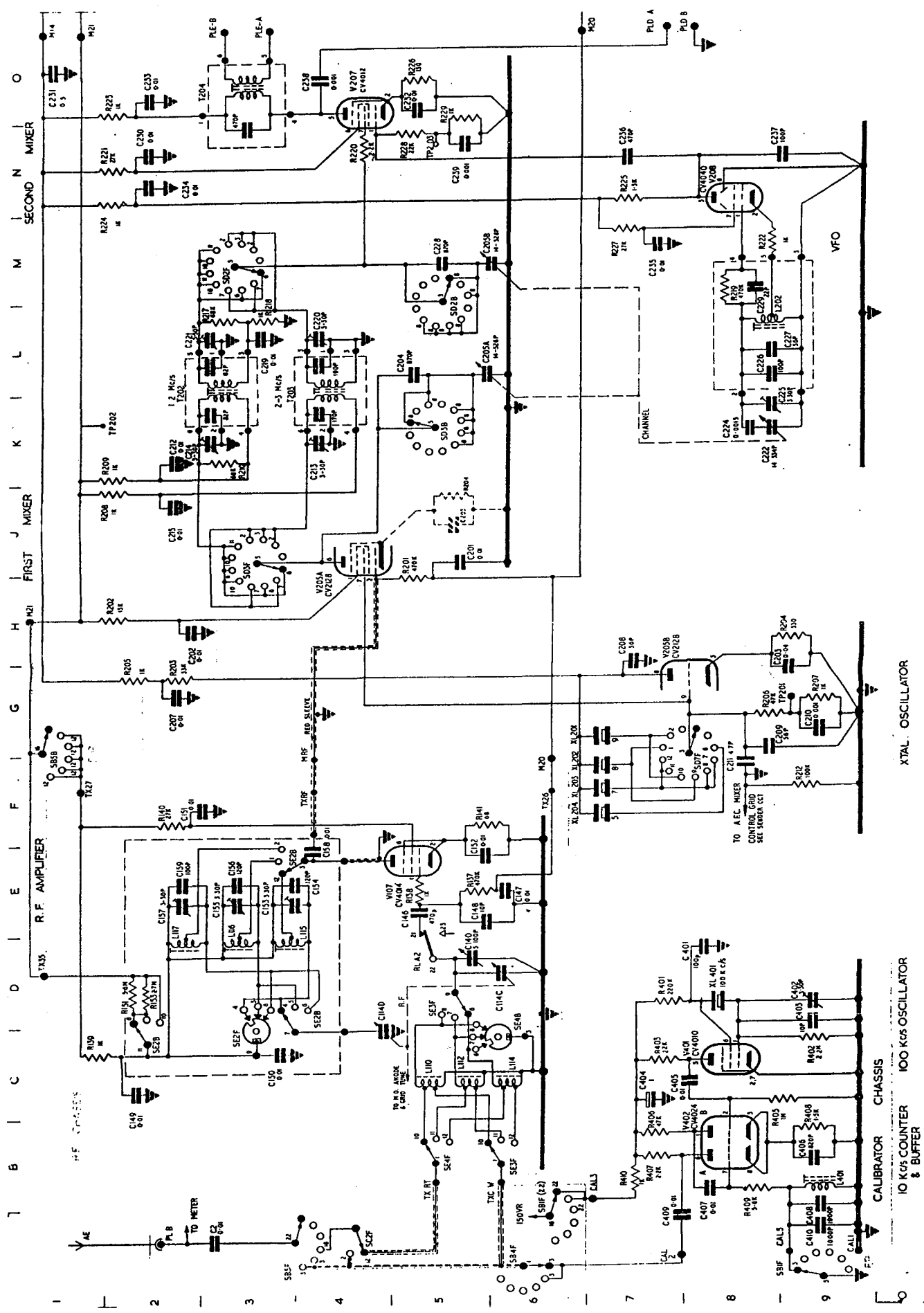


Fig 2554 - Receiver circuit (Part 1)

(Additional copies of this figure, for use as spare copies, may be obtained on supplementary demand)

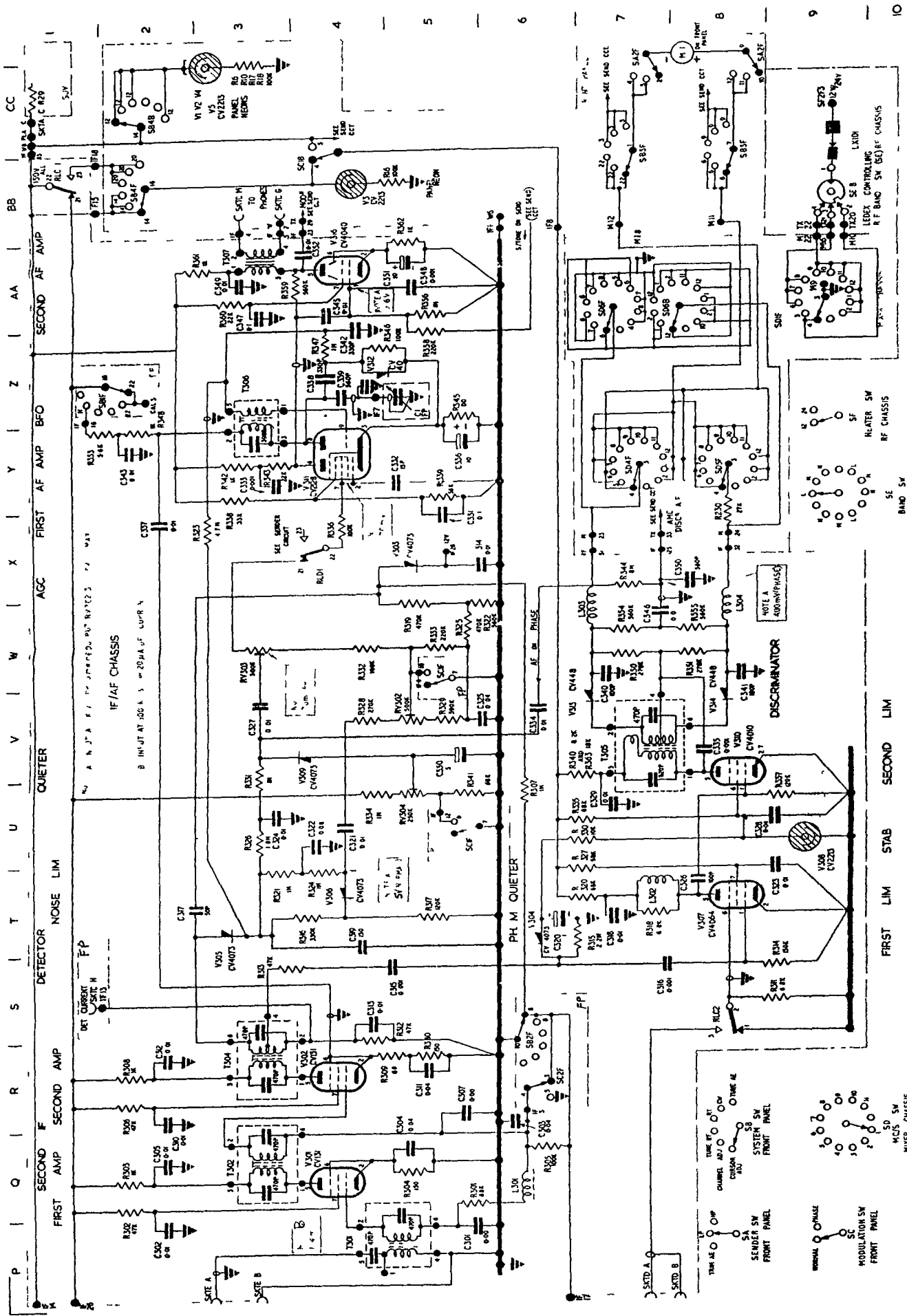


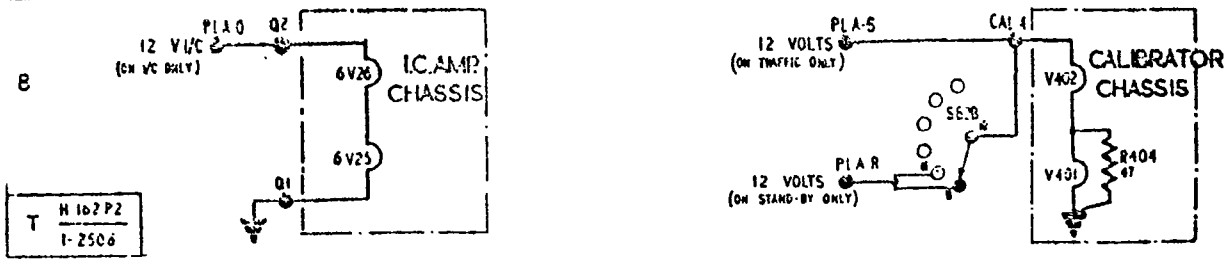
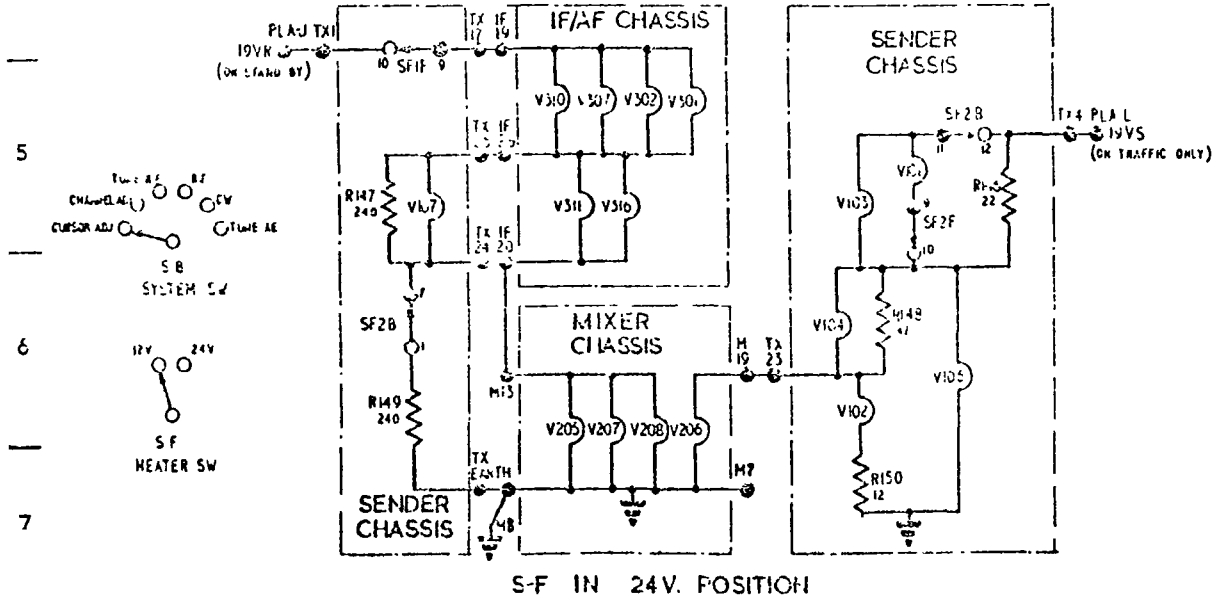
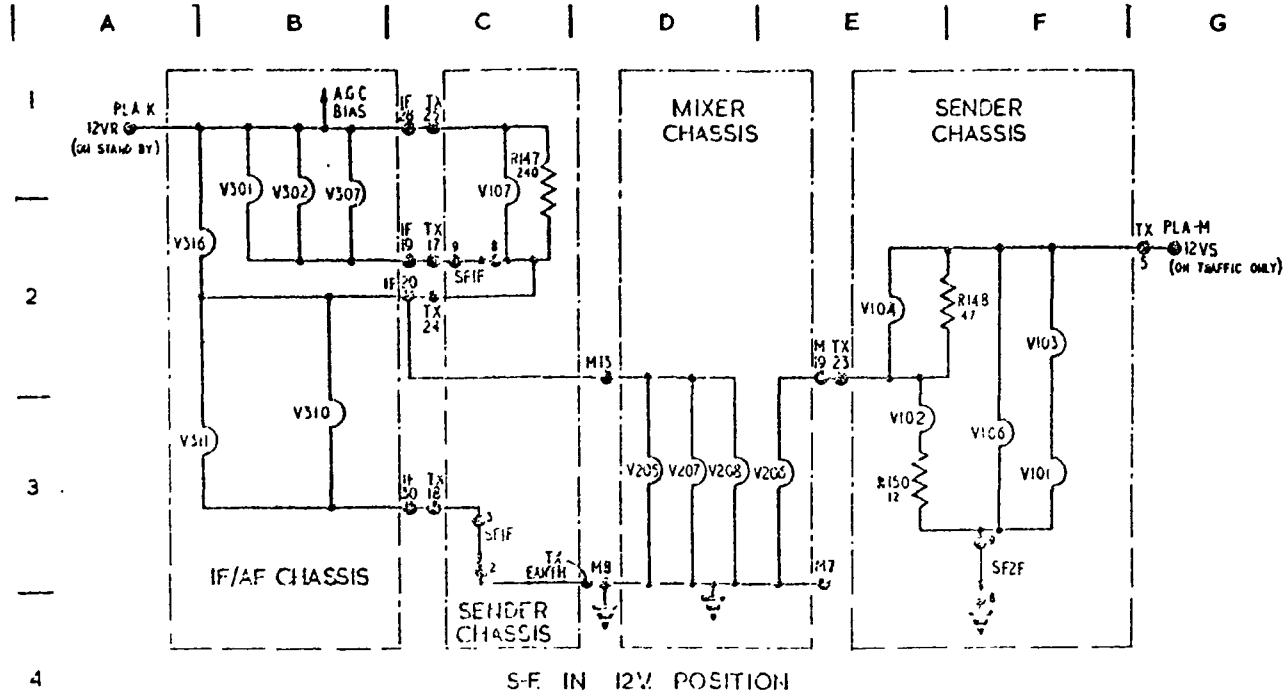
FIG. 5505b - Receiver Circuit (Part C)

NOTE FOR HEATER CTCS CODING OF VALVE BASES RELAYS ETC SEE RESPECTIVE CHASSIS CTCS

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FIG. 5505b - Receiver Circuit (Part C)

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T H 162 P 2
 1-2506

Fig 2506 - Heater circuit diagram

Table 2501 - Intercomm amplifier - component schedule

Cct. ref.	Component location		Value	Rating	Type and limit	Part No
	Fig 2507	Fig 2508				
RESISTORS						
6R131	C1	C5	470K	1/2W	Comp ±10%	5905-99-022-3122
6R132	B3	F4	120K	1/2W	Comp ±10%	5905-99-022-3050
6R133	C1	D5	220K			
6R134	C3	D5	1K	1/2W	Comp ±10%	5905-99-022-2005
6R135	D2	C4	270K	1/2W	Comp ±10%	5905-99-022-3092
6R136	D1	C3	6.8K	1/2W	Comp ±10%	5905-99-022-2110
6R137	D3	D3	560K	1/2W	Comp ±10%	5905-99-022-3134
6R138	E3	D3	270K	1/2W	Comp ±10%	5905-99-022-1164
6R139	C2	D5	100K	1/2W	Comp ±10%	5905-99-022-3037
CAPACITORS						
6C131	C2	C4	0.1µF	350V d.c.	Pap met tub ±25%	5910-99-011-5506
6C132	D2	D4	0.01µF	200V d.c.	Pap met tub ±20%	5910-99-011-5594
6C133	D1	D4	0.1µF	350V d.c.	Pap met tub ±25%	5910-99-011-5506
6C134	C3	D4	470pF	750V d.c.	Mica ±10%	5910-99-012-3949
6C135	C3	C5	470pF	750V d.c.	Mica ±10%	5910-99-012-3949
Cct. ref.	Component location		Description	Part No		
	Fig 2507	Fig 2508				
MISCELLANEOUS						
6T2	B2	B2	Microphone transformer	ZA 43931		
6T3	E1	F4	Output transformer	ZA 43514		
6V25) 6V26)			Valve type CV850 or CV4014	5960-99-000-4014		

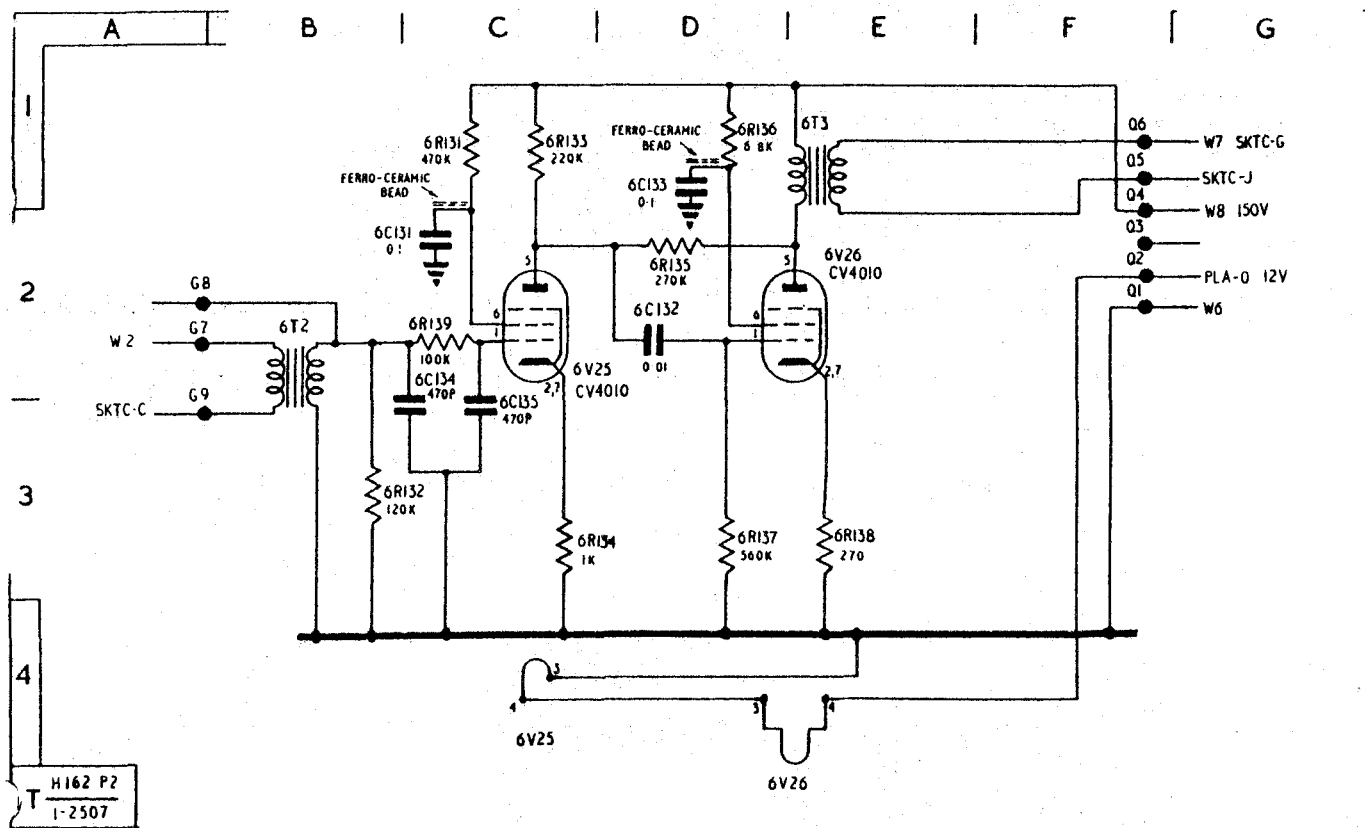
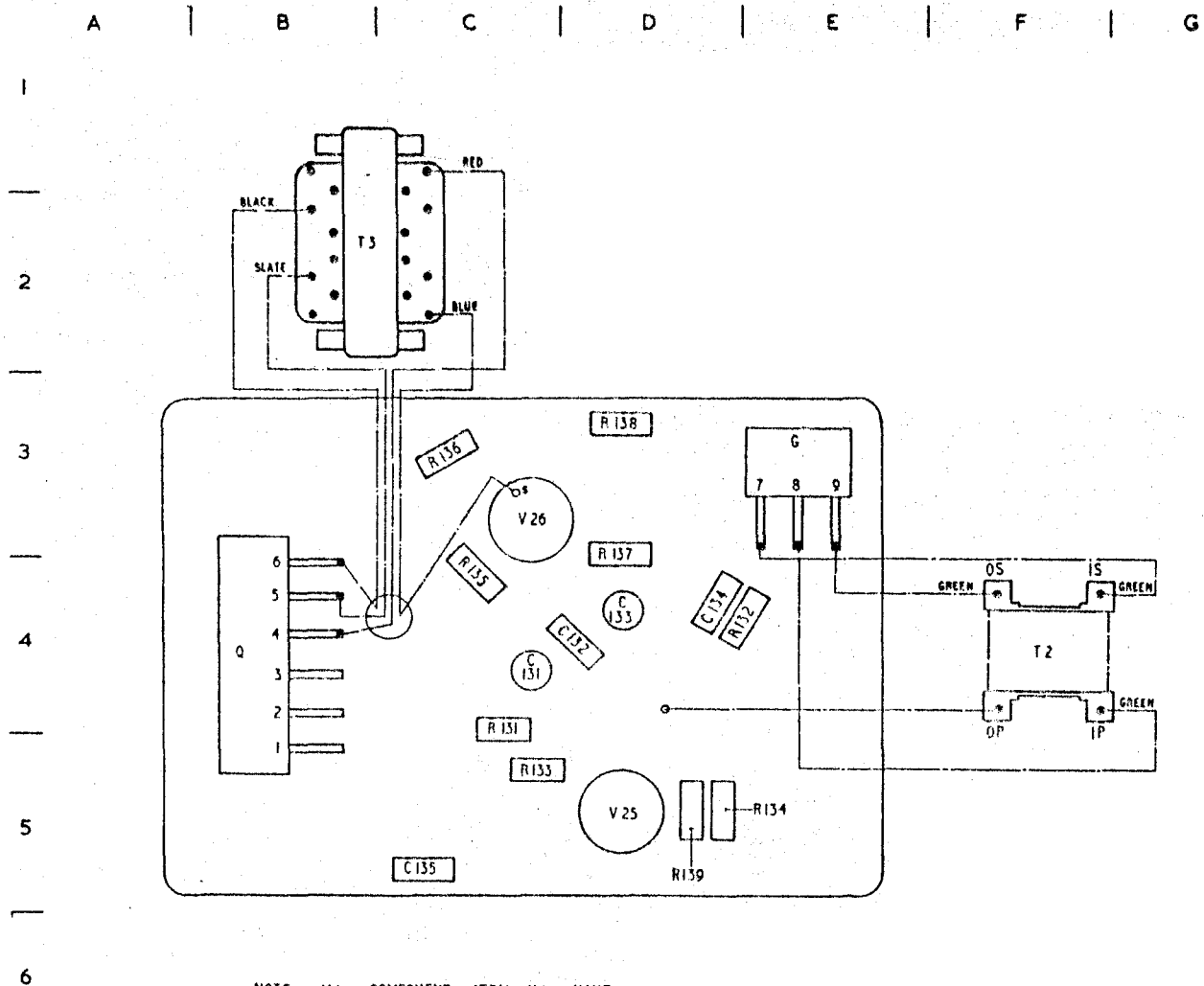


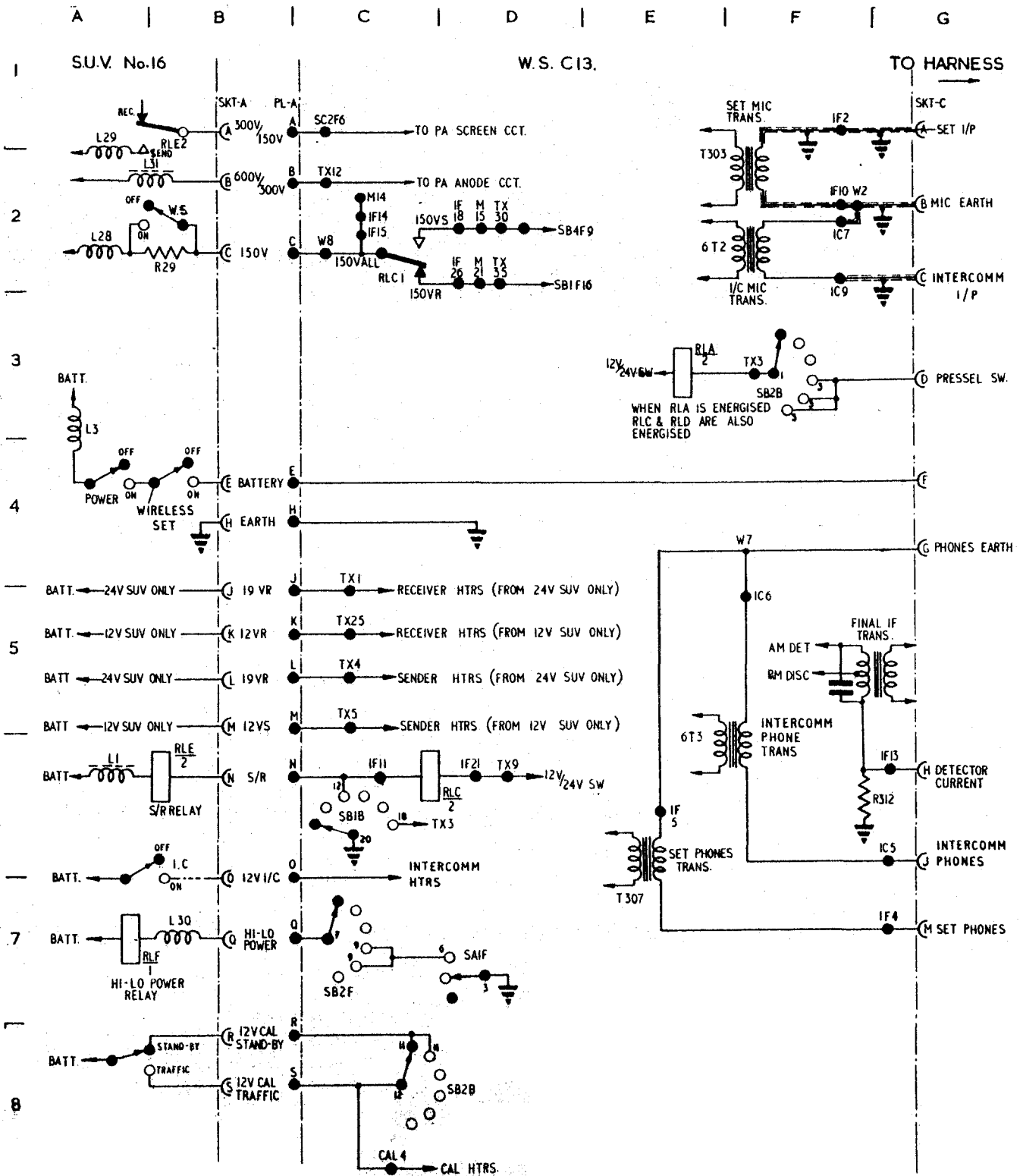
Fig 2507 - Intercomm amplifier - circuit diagram



NOTE:- ALL COMPONENT ITEM Nos HAVE
PREFIX 6. eg. 6C135.

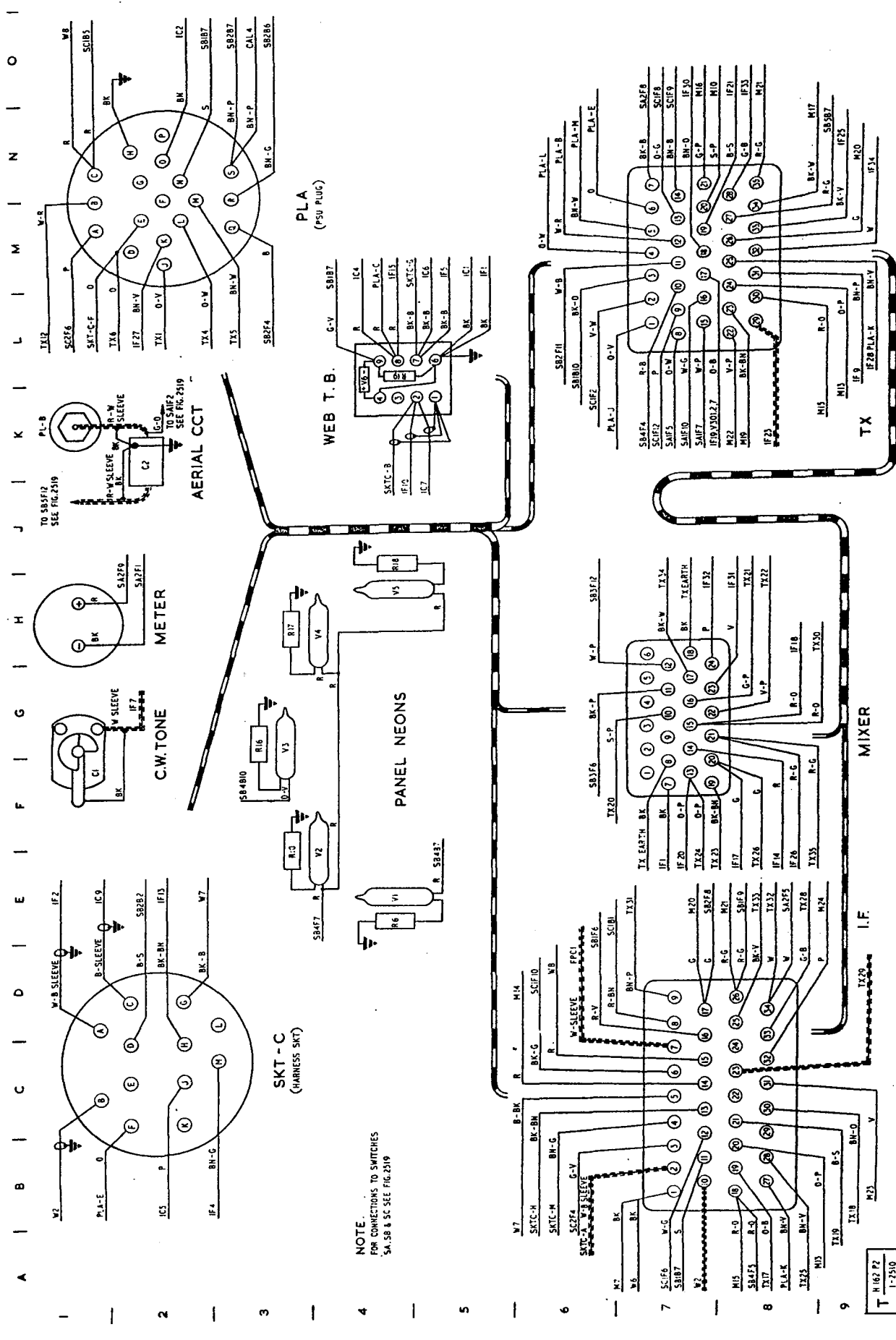
T	H162 P2
	I 2508

Fig 2508 - Intercomm amplifier - layout



T H162 P2
I-2509

Fig 2509 - Interconnection circuit S.U.V. No 16-C13-harness



NOTE:
FOR CONNECTIONS TO SWITCHES
SA, SB & SC SEE FIG. 2519

H 162 P2
1-2510

Fig 2510 - Inter-boards and wafers from within

Table 2502 - R.F. chassis - component schedule

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2511	Unit layout				
RESISTORS							
R101	4E6	B6	13bS3	560K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3133
R102	4E4	B5	13aE7	220K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3079
R103	4E3	B4	13aE7	150K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3058
R104	4E4	B5	13aE7	120K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3049
R105	4F5	C6	13LS2	47K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R106	4F4	C5	13LS4	2.2K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2046
R107	4G3	C4	13LS1	10K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2130
R108	4G4	C5	13LS2	82K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3028
R109	4G2	C3	13LQ3	1K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R110	4G5	D6	13bS1	330	1/4W	Comp ins grade 2 ±10%	5905-99-022-2025
R111	4G6	D6	13aD3	330K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3100
R112	4H8	D8	13bS3	56K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3007
R113	4H9	D8	13bS3	150K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3058
R114	4H7	E7	13bP8	220K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3079
R115	4H9	E8	13bP8	120K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3049
R116	4H7	E7	13bS4	220K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3079
R117	4J7	F8	13bS5	470K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R118	4J9	F8	13LS5	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R119	4K9	F8	13bO6	470	1/4W	Comp ins grade 2 ±10%	5905-99-022-1193
R120	4K9	F8	13bO6	150	1/4W	Comp ins grade 2 ±10%	5905-99-022-1172
R121	4L7	G7	13bP8	33K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2133
R122	4L7	G7	13bO6	470	1/4W	Comp ins grade 2 ±10%	5905-99-022-1193
R123	4K5	G5	13bO4	33K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2193
R124	4K9	G8	13bC6	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R125	4L3	H4	13bP3	1K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R126	4L9	G7	13bP8	220K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3079
R127	4E2	G1	13bS4	1K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R128	4M6	H6	13bF4	4.7K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2088
R129	4O7	H7	13bS4	22K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2172
R130	4O7	H7	13bS4	2.2M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3205
R131	4N5	J4	13bS5	4.7M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3247
R132	4N5	J6	13bO5	2.7M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3217
R133	4D7	J7	13bS4	470K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R134	4N6	J5	13bP4	150	3W	W.W. vit ±5%	5905-2113300
R135	4N7	J6	13aC7	390	3W	W.W. vit ±5%	5905-2113310
R136	4N7	J6	13aD7	560	3W	W.W. vit ±5%	5905-2113314
R137	5E5	K5	13bP6	470K	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R138	5E5	L5	13bP6	470	1/4W	Comp ins grade 2 ±10%	5905-99-022-1193
R139	5C1	L2	13bS6	1K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R140	5F2	L5	13bS6	27K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2184
R141	5F5	L6	13bP6	68	1/4W	Comp ins grade 2 ±10%	5905-99-022-1088
R142	-	M6	13bJ8	220	1.1/2W	W.W. vit ±5%	5905-2113239
R143	-	M7	13bJ8	2.2	3W	W.W. vit ±5%	5905-99-011-9774
R144	-	M7	13bJ8	220	1.1/2W	W.W. vit ±5%	5905-2113239
R145	-	M8	13b	220	1.1/2W	W.W. vit ±5%	5905-2113239
R146	-	M8	13bH8	22	1.1/2W	W.W. vit ±5%	5905-2113245

Table 2502 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2511	Unit layout				
RESISTORS (cont)							
R147	-	M6	13bJ8	240	1.1/2W	W.W. vit ±5%	5905-Z117881
R148	-	N8	13bS5	47	1.1/2W	W.W. vit ±5%	5905-Z113223
R149	-	N5	13bJ8	240	1.1/2W	W.W. vit ±5%	5905-Z117881
R150	-	N8	13bJ8	12	1.1/2W	W.W. vit ±5%	5905-Z113209
R151	5D2	N3	13aD6	5.6M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3259
R152	4N5	J4	13bR5	4.7M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3247
R153	5D2	N3	13aD6	2.7M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3217
R154	4H6	E6	-	68	1/4W	Comp ins grade 2 ±10%	5905-99-022-1088
R155	4H2	E2	-	6.8K	1/4W	Comp ins grade 2 ±10%	5905-99-022-2109
R156	4K10	F9	-	100	1/4W	Comp ins grade 2 ±10%	5905-99-022-1110
PV101	4E4	A5	13b08	250K	250V) Pre-set comp) linear law ±20%	5905-Z111628
PV102	4H8	E8	13bP8	250K	250V		5905-Z111628
CAPACITORS							
C101	4F6	A6	13bS5	0.25	150V	Pap met ±25%	Z115563
C102	4E3	A4	13aE7	0.003	400V	Pap met ±20%	Z115817
C103	4F6	E6	13bP3	0.04	150V	Pap met ±25%	Z115560
C104	4E4	E5	13aE7	330p	350V	Silver mica ins ±2%	
C105	4E3	E4	13aE7	390p	350V	Silver mica ins ±2%	
C106	4E3	E4	13aE7	120p	350V	Silver mica ins ±2%	5910-99-940-9846
C107	4F3	C4	13bS2	1	275V	Elec metal	Z145003
C108	4F5	C5	13bP3	0.01	400V	Pap met ±20%	Z115827
C109	4F4	C5	13bT2	220p	300V	Ceramic ±10%	5910-99-940-9813
C110	4G5	C6	13bR1	10	12V	Elec metal	Z145274
C111	4G5	C6	13bS1	0.01	150V	Pap met	Z115826
C112	4G2	D4	13bP3	0.01	400V	Pap met	Z115827
C113	4G4	D4	13bP4	0.01	400V	Pap met	Z115827
C114A	4G3	D4	13aB4	4 gang	500V	13-195p	5910-99-940-9835
C114B	4K5	F5	13aB3			11.5-266p	
C114C	4N4	J4	13aB5			12.5-187.2p	
C114D	5D6	M4	13aB6			14.0-532p	
C115	4J4	F5	13aD3	22p	750V	Ceramic ±5%	5910-Z118305
C116	4H5	F5	13aE3	3-30p		Var conc air	5910-Z167006
C117	4J8	E8	13bS8	0.1	200V	Paper ±25%	5910-99-011-9827
C118	4H3	E3	13aD4	10p	750V	Ceramic ±0.5pF	5910-Z118297
C119	4J7	E8	13bS5	1.5	50V	Elec	Z145292
C120	4J5	F5	13aE3	3-30p		Var conc air	5910-Z167006
C121	4J5	F5	13aE3	10p	750V	Ceramic ±0.5pF	5910-Z118297
C122	4H2	E2	13aE4	3-30p		Var conc air	5910-Z167006
C123	4K8	F8	13b07	0.5	350V	Paper ±25%	5910-99-011-9834
C124	4K8	G7	13bP6	0.01	400V	Paper ±20%	Z115827
C125	4J2	F2	13aE4	3-30p		Var conc air	5910-Z167006
C126	4K9	G8	13bF7	20	12V	Elec ±20%	Z145275
C127	4K5	G5	13b03	100p	500V	Ceramic ±10%	Z132300

Table 2502 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2511	Unit layout				
CAPACITORS (cont)							
C128	4K3	G4	13b04	0.01	400V	Pap met ±20%	Z115827
C129	4L8	G7	13bP7	0.5	350V	Pap met ±20%	5910-99-011-9834
C130	4K2	G2	13aE4	3-30p		Var conc air	5910-Z167006
C131	4L9	G8	13bP8	0.01	400V	Paper ±20%	Z115827
C132	4L7	H6	13bL6	0.1	400V	Paper ±25%	5910-99-011-9829
C133	4K2	G2	13bS4	0.01	400V	Paper ±20%	Z115827
C134	4M7	H6	13b05	0.005	400V	Paper ±20%	Z115824
C135	4L5	H5	13b05	220p	300V	Ceramic ±10%	5910-99-940-9813
C136	4M7	H7	13bP5	330	300V	Ceramic ±10%	5910-99-940-9815
C137	4C7	J7	13bS4	0.01	400V	Paper ±20%	Z115827
C138	4M6	J6	13bP5	0.01	400V	Paper ±20%	Z115827
C139	4C8	J8	13bS4	2200p	400V	Paper ±20%	Z115817
C140	5D5/ 404	K4	13bL4	5-100p		Trimmer	
C141	4N5	J5	13bS5	0.03	1500V	Plate ceramicons	5910-99-940-9438
C142	4M4	H4	13bS5	0.03	1500V	Plate ceramicons	5910-99-940-9438
C143	4N7	J5	13bS6	2	150V	Elec ±20%	Z145332
C144	4C7	J8	13bS5	0.001	300V	Ceramic ±20%	5910-99-940-8878
C145	4D8	K7	13bS5	0.001	300V	Ceramic ±20%	5910-99-940-8878
C146	5E5	K5	13bP5	470p	300V	Ceramic ±20%	
C147	5E6	K6	13bS6	0.01	150V	Paper ±20%	Z115826
C148	5E5	K6	13bP6	10P	500V	Ceramic ±10%	Z132253
C149	5C2	L2	13bS6	0.01	400V	Paper ±20%	Z115827
C150	5C3	M4	13aD6	0.1	200V	Paper ±25%	5910-99-011-9827
C151	5F2	L6	13bP6	0.01	400V	Paper ±20%	Z115827
C152	5E5	L6	13bQ6	0.01	400V	Paper ±20%	Z115827
C153	5E4	M3	13aE6	3-30p		Var conc air	5910-Z167006
C154	5E4	M3	13aE7	120p	350V	Silver mica ins ±2%	5910-99-940-9846
C155	5E3	M3	13aE6	3-30p		Var conc air	5910-Z167006
C156	5E3	N3	13aE7	120p	350V	Silver mica ins ±2%	5910-99-940-9846
C157	5E2	N3	13aE6	3-30p		Var conc air	5910-Z167006
C158	5E4	N4	13aD7	0.01	400V	Paper ±20%	Z115827
C159	5E2	O3	13aD7	100p	350V	Silver mica ins ±2%	5910-99-940-9256
C160	4F5	C6		0.01	150V	Paper	Z115826

Cct. ref.	Component location			Description	Part No
	Main cct.	Fig 2511	Unit layout		
INDUCTORS AND TRANSFORMERS					
L101	4F5	B6	13bS2	R.F. choke	5950-99-911-0841
L102	4F3	C4	13bS3	R.F. choke	5950-99-911-0841
L103	4G3	C4	13bS1	R.F. choke	5950-99-911-0624
L104	4H5	E5	13aE3	Coil assy, m.o. grid, L & M range	

Table 2502 (cont)

Cct. ref.	Component location			Description	Part No	
	Main cct.	Fig. 2511	Unit layout			
INDUCTORS AND TRANSFORMERS (cont)						
L105	4H5	E5	13aE3	Coil assy, m.o. grid, H range	5950-99-911-0796	
L106	4H2	E2	13bJ4	Coil assy, m.o. anode, L range	5950-99-911-0654	
L107	4J2	F2	13bJ4	Coil assy, m.o. anode, M range	5950-99-911-0655	
L108	4I7	F7	13bS7	A.F. choke	5950-99-911-0826	
L109	4K2	F2	13bK4	Coil assy, m.o. anode, H range	5950-99-911-0656	
L110	4N3/ 5C5	J2	13bJ5	Coil assy, p.a. anode, with L112 L114	5950-99-949-0911	
L111	4M6	H7	13bP5	R.F. choke	5950-99-911-0624	
L112	4N3/ 5C5	J2	13bJ5	Coil assy, p.a. anode, with L110 L114	5950-99-949-0911	
L113	4M5	H4	13bR5	R.F. choke		
L114	4N3/ 5C6	K2	13bK5	Coil assy, p.a. anode, with L110 L112	5950-99-949-0911	
L115	5D4	L3	13bJ7	Coil assy, r.f. anode, L range		
L116	5D3	M3	13bJ7	Coil assy, r.f. anode, M range	5950-99-911-0797	
L117	5D2	N3	13bK7	Coil assy, r.f. anode, H range	5950-99-911-0798	
T101	4L8	G7	13bL3	Transformer, a.f., modulation	5950-99-911-0827	
MISCELLANEOUS						
RLA/2	4V9	M7	13bF5	Non-sealed min. RCL 166, SM4-LC	Z 530223	
RLB/4	4V8	M7	13bS7	Relay armature 300V max, 1A max	Y1/5945-99-901-0264	
LX101	4X8			Ledex coil) Ledex and 1st	5930-99-911-0676	
SE				7 band, 3 pos. switch) wafer		
					2nd wafer	5930-99-911-0671
					3rd wafer	5930-99-911-0672
					4th wafer	5930-99-911-0673
					5th wafer	5930-99-911-0674
SF			Switch rotary 2 band) 1st wafer	5930-99-940-9400		
			2 position) 2nd wafer	5930-99-940-9401		
VALVES						
V101	4G4	C5	13bM3	Valve electronic CV4040		
V102	4J8	E8	13bS5	Valve electronic CV469		
V103	4K8	G8	13bM6	Valve electronic CV4040		
V104	4K5	G5	13bM4	Valve electronic CV4040		
V105	4C8	H8	13bS4	Valve electronic CV2213		
V106	4M5	H5	13bM5	Valve electronic CV2220		
V107	5E5	L5	13bL6	Valve electronic CV4014		

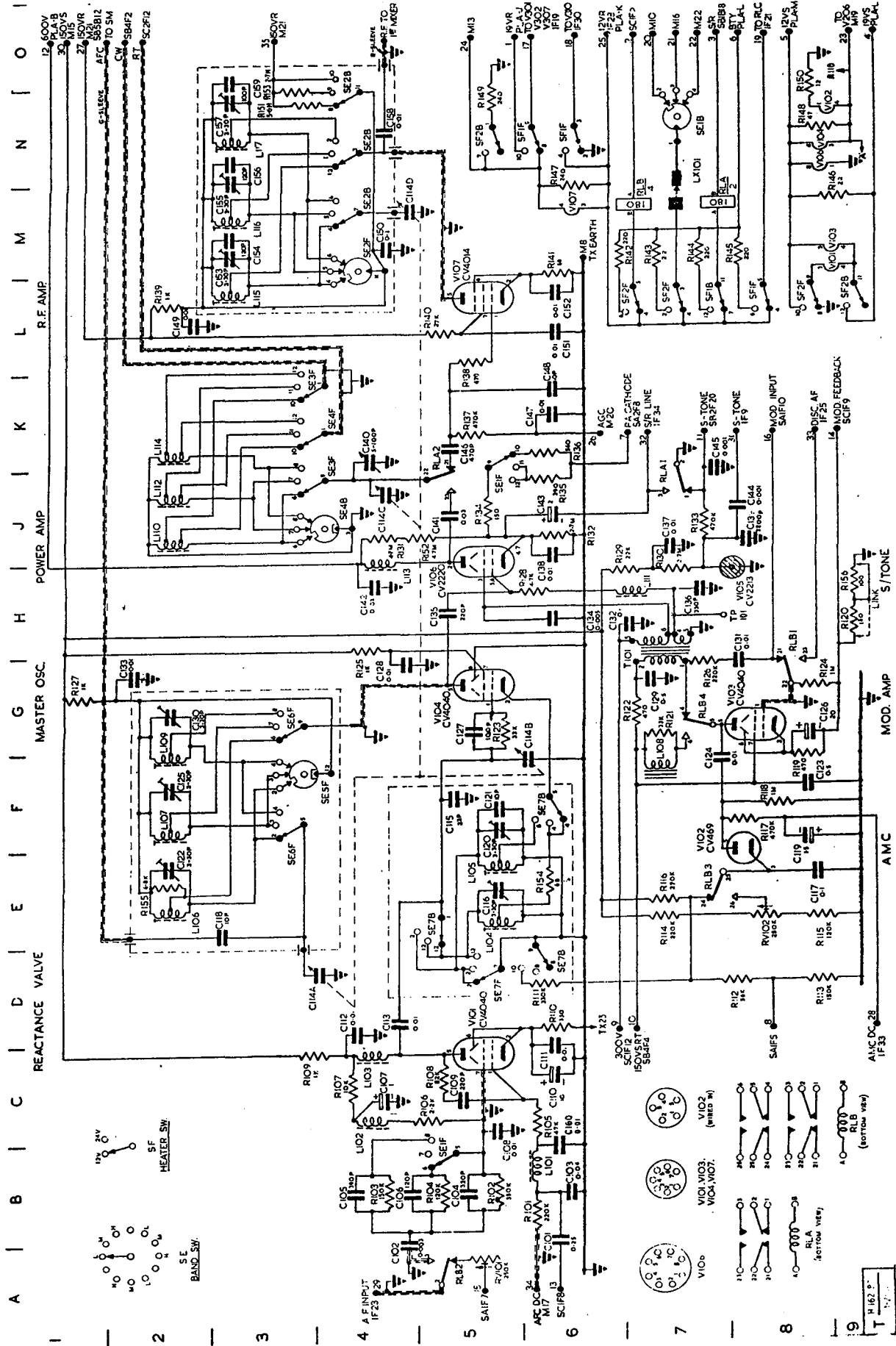
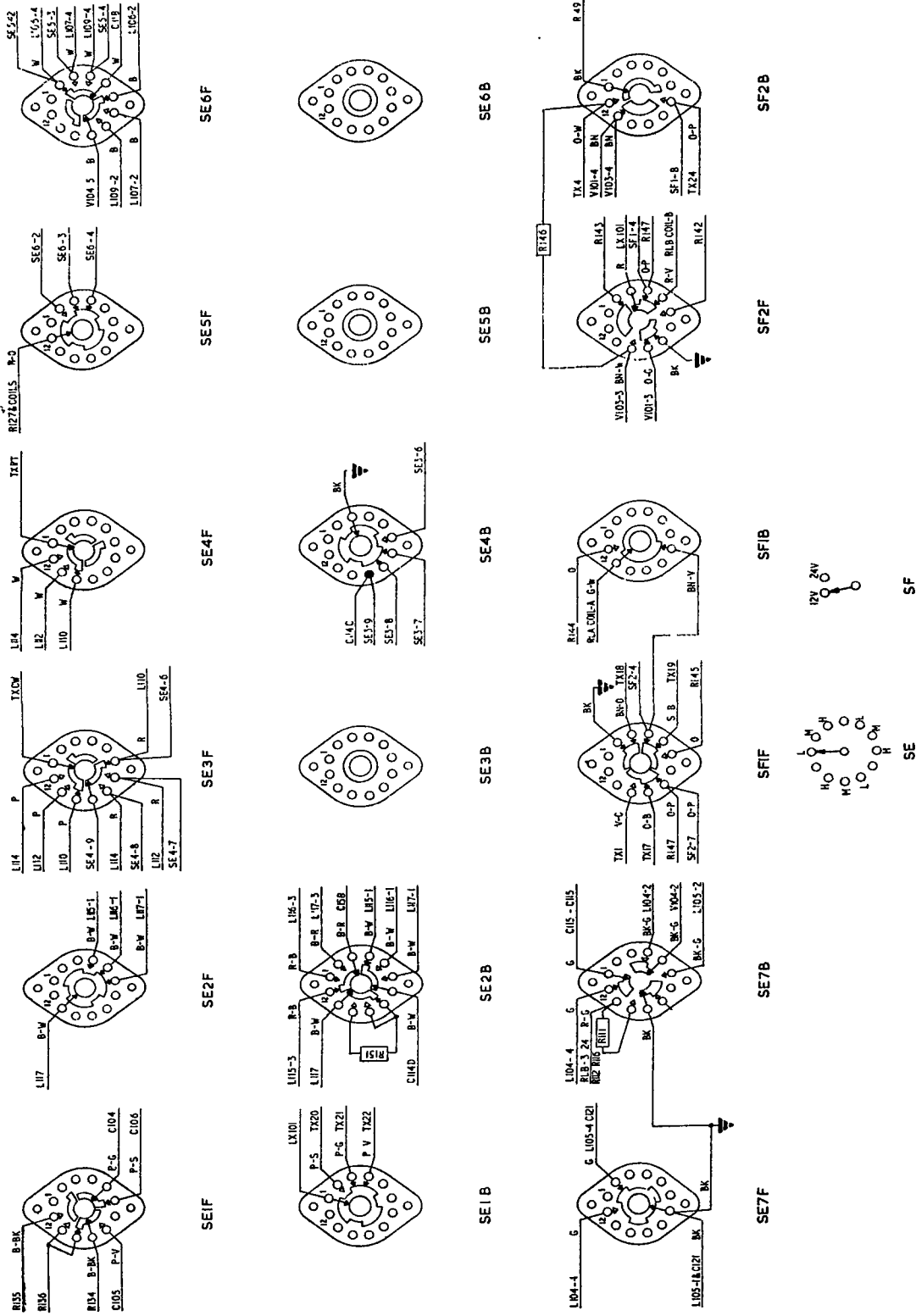


Fig 2511 - P.F. chassis - circuit diagram



H 162 P2
T 1-2512

Fig 2512 - R.F. chassis - station for various SF, SE

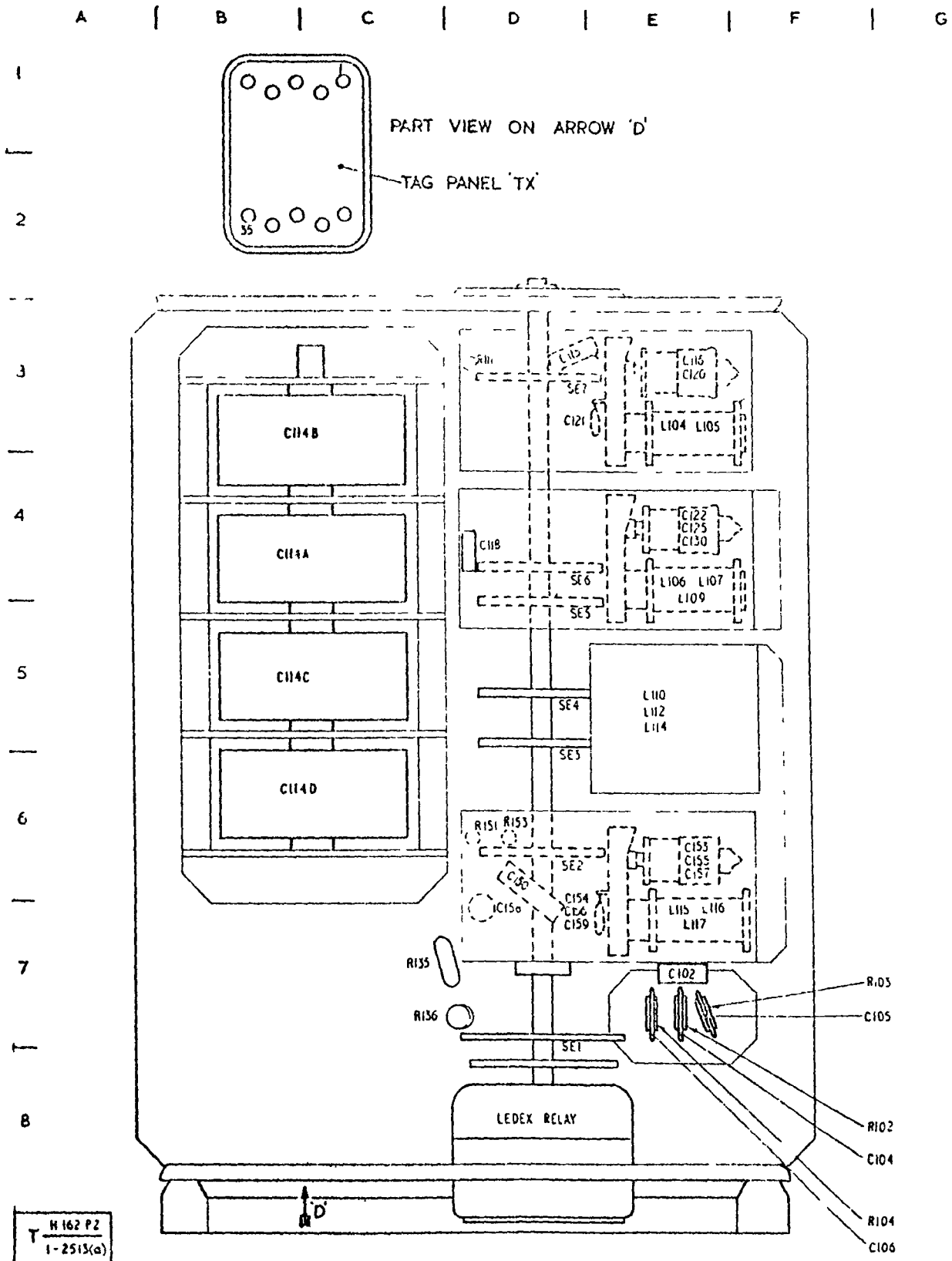


Fig 2513a - R.F. chassis - component layout (Part 1)

Table 2503 - Mixer chassis - component schedule

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2514	Unit layout				
RESISTORS							
R201	5H5	B4	15bG5	470k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R202	5H2	B2	15bF5	15k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2151
R203	4P3/ 5G2	D6	15bG3	33k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2193
R204	4Q8/ 5H8	D8	15bF5	330	1/4W	Comp ins grade 2 ±10%	5905-99-022-1172
R205	4P2/ 5G2	E6	15bG3	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R206	4Q8/ 5C8	E3	15bF4	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R207	4Q9/ 5G9	E8	15bF5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R208	5J1	D2	15bE5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R209	5K1	E2	15bE6	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R210	5K3	D2	15bD2	68k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3016
R211	4Q4	F6	15bE5	100k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3037
R212	4Q5	F8	15bE5	100k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3037
R213	4Q2	G6	15bG2	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R214	4Q5	G8	15bE5	150	1/4W	Comp ins grade 2 ±10%	5905-99-022-1130
R215	4Q3	G6		22k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2174
R216	4S4	H7	15bD4	2.2k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2046
R217	4S4/ 5L3	G2	15bD5	68k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3016
R218	4S5/ 5L3	G3	15bD5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R219	4S8/ 5L8	J7	15bB5	470k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R220	4L4/ 5N4	J3	15bD4	2.2k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2046
R221	4U2/ 5N2	J2	15bC5	27k	1/2W	Comp ins grade 2 ±10%	5905-99-022-2186
R222	4T8/ 5M8	J8	15bB5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R223	4V2/ 5O2	K2	15bC5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R224	4T6/ 5N2	K6	15bC5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R225	4T7/ 5N7	K6	15bC5	1.5k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2025
R226	4V5/ 5O5	K5	15bC5	150	1/4W	Comp ins grade 2 ±10%	5905-99-022-1130
R227	4U7/ 5M7	K7	15bB5	27k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2184
R228	4U5/ 5N5	K4	15bD5	22k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2174

Table 2503 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2514	Unit layout				
RESISTORS (cont)							
R229	4U5/ 5N5	K5	15bD6	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R230	4AA5 /5X8	N7	15aE5	27k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2184
CAPACITORS							
C201	5J5	B4	15bG5	0.01	150V	Pap met ±20%	Z115826
C202	5H2	B3	15bG5	0.01	400V	Pap met ±20%	Z115827
C203	4P8/ 5G9	D8	15bF5	0.04	150V	Pap met ±20%	Z115830
C204	5L5	C4	15bD4	870p	350V	Silver mica ±2%	5910-99-940-9833
C205A	5L5	C5	15bD2	14-528p	}	Double gang	
C205B	4T6/ 5M5	H5	15bD2	14-528p			
C207	4P2/ 5G2	D6	15bG3	0.01	400V	Pap met ±20%	Z115827
C208	4P6/ 5G7	D7	15bF3	56p	500V	Ceramic ±10%	Z132371
C209	4Q8/ 5F8	D8	15bF5	56p	500V	Ceramic ±10%	Z132371
C210	4Q8/ 5G9	E8	15bF5	0.001	300V	Ceramic ±20%	5910-99-940-8878
C211	4F7/ 5F8	E7	15bF4	4.7p	500V	Ceramic ±10%	Z132420
C212	5K2	E3	15bD5	0.01	400V	Pap met ±20%	Z115827
C213	5K4	E4	15bE8	3-30p		Var conc air	5910-Z167006
C214	5K2	E2	15bD8	3-30p		Var conc air	5910-Z167006
C215	5J2	E5	15bF5	0.01	400V	Pap met ±20%	Z115827
C216	4Q5	G8	15bE5	0.01	150V	Pap met ±20%	Z115826
C217	4Q3	G6	15bE4	0.01	400V	Pap met ±20%	Z115827
C218	4Q4	G8	15bE5	0.01	400V	Pap met ±20%	Z115827
C219	4S5/ 5L3	F3	15bD5	0.01	150V	Pap met ±20%	Z115826
C220	4S5/ 5L4	F4	15bE8	3-30p		Var conc air	5910-Z167006
C221	4S4/ 5L2	F2	15bD8	3-30p		Var conc air	5910-Z167006
C222	4R8/ 5K8	G8	15bB2	14-534p		Single gang	5910-99-940-9834
C223	4S4	H7	15bD4	470p	300V	Ceramic ±20%	5910-99-940-9834
C224	4R8/ 5K8	H7	15bB3	0.0015	350V	Silver mica ins ±1%	
C225	4R8/ 5K8	H8	15bB4	3-30p		Min Air trimmer	

Table 2503 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2514	Unit layout				
CAPACITORS (cont)							
C226	4S8/ 5L8	H8	15bB4	100p	350V	Silver mica ±2%	5910-99-940-9256
C227	4S8/ 5L8	H8	15bB4	56p	350V	Silver mica ±2%	
C228	4T5/ 5M5	H4	15bD3	870p	350V	Silver mica ±2%	
C229	4S8/ 5M8	J7	15bA5	22p	500V	Ceramic ±10%	Z132277
C230	4U2/ 5N2	J2	15bD5	0.01	400V	Pap met ±20%	Z115827
C231	4U6/ 5O1	J6	15bC4	0.5	250V	Pap met ±25%	5910-99-011-9834
C232	4U5/ 5O5	K5	15bC5	0.01	150V	Pap met ±20%	Z115826
C233	4U2/ 5O2	K2	15bC5	0.01	400V	Pap met ±20%	Z115827
C234	4T7/ 5N2	B5	15bK6	0.01	400V	Pap met ±20%	Z115827
C235	4T8/ 5M7	L7	15bB5	0.01	400V	Pap met ±20%	Z115827
C236	4U7/ 5N7	L6	15bC5	470p	300V	Ceramic ±10%	
C237	4T7/ 5N9	L7	15bB5	100p	350V	Silver mica ±10%	
C238	4U4/ 5O4	L3	15bC4	0.001	300V	Ceramic ±20%	5910-99-940-8878
C239	4U5/ 5N5	L5	15bD6	0.001	300V	Ceramic ±20%	5910-99-940-8878
Cct. ref.	Component location			Description	Part No		
	Main cct.	Fig 2514	Unit layout				
INDUCTORS AND TRANSFORMERS							
L201	4Q3	G6	15bE5	R.F. choke	5950-99-911-0841		
L202	4S8/ 5L8	J8	15bA4	V.F.O. coil	5950-99-911-0819		
T202	4R4/ 5K3	E2	15bD7	I.F. transformer assembly 1500kc/s	5950-99-911-0653		
T203	4R5/ 5K4	E4	15bE7	I.F. transformer assembly 2500kc/s	5950-99-911-0652		
T204	4U3/ 5O3	K2	15bC7	I.F. transformer assembly 500kc/s	5950-99-911-0651		

Table 2503 (cont)

Cct. ref.	Component location			Description	Part No
	Main cct.	Fig 2514	Unit layout		
CRYSTALS					
XL201	4Q6/ 5F7	E6		} Crystal units quartz to DEF 5271 Style D	9000kc/s 5955-99-911-0604
XL202	4Q6/ 5F7	E6			8000kc/s 5955-99-911-0603
XL203	4Q6/ 5F7	E7			7000kc/s 5955-99-911-0602
XL204	4P6/ 5F7	E7			5000kc/s 5955-99-911-0601
VALVES					
V205A V205B	5J4 4P8/ 5G7	B3 D7	15bG8 15bG8	} Valve, electronic CV2128	
V206 V207	4Q5 4L4/ 504	F7 J3	15bE5 15bC5		Valve, electronic CV4012 Valve, electronic CV4012
V208	4T8/ 5N8	K7	15bB5	Valve, electronic CV4040	
MISCELLANEOUS					
FLE PLD SD		M2 M4	15bC8 15bC8	Plug, miniature Plug, miniature Switch, rotary, 1 pole, 11 position (MC/S switch) Wafer 1 Wafer 2 Wafer 3 Wafer 4 Wafer 5 Wafer 6 Wafer 7	5930-99-940-9396 5930-99-940-9397 5930-99-940-9397 5930-99-940-9396 5930-99-940-9396 5930-99-940-9398 5930-99-940-9399

DESIGN

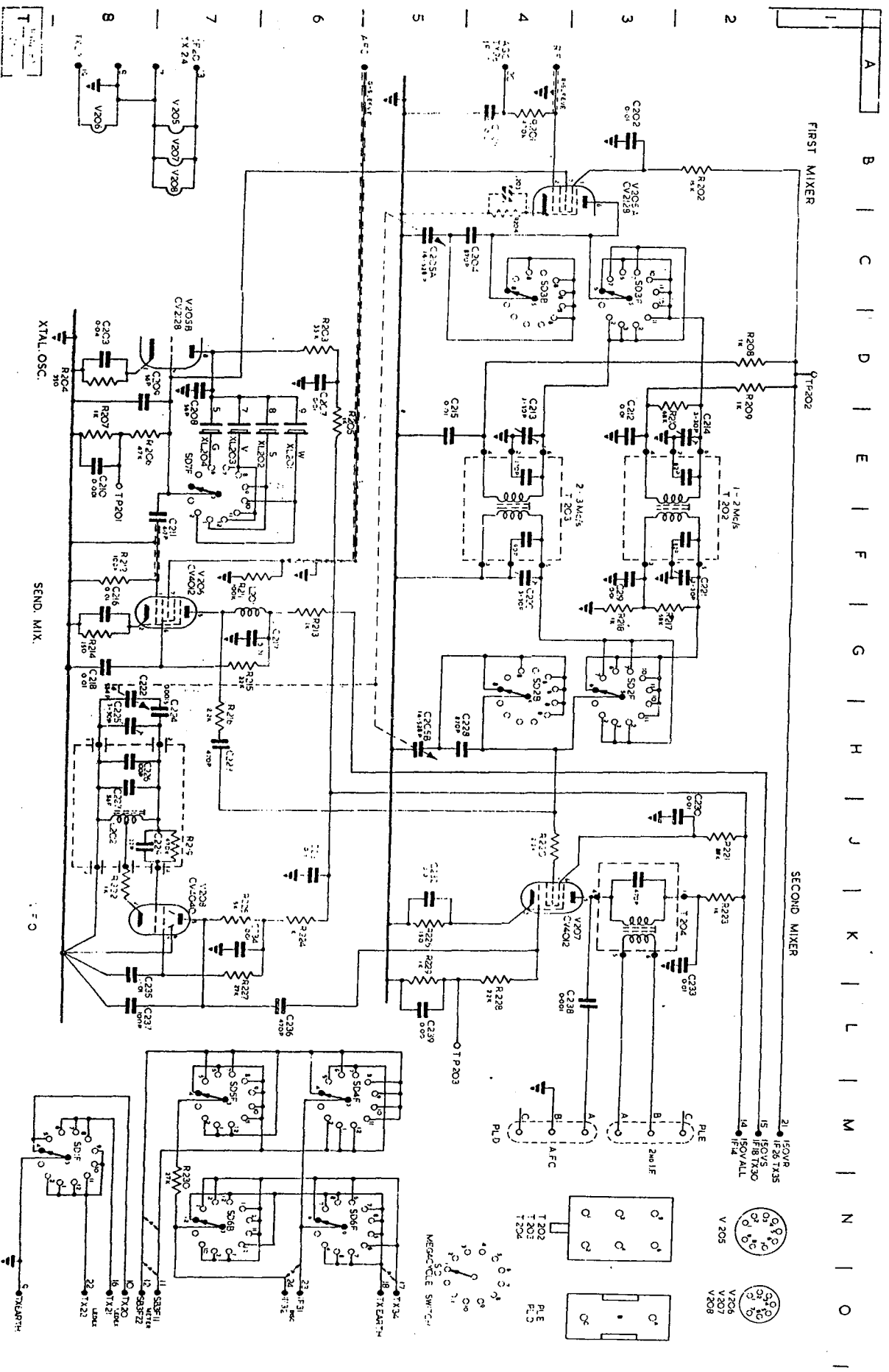
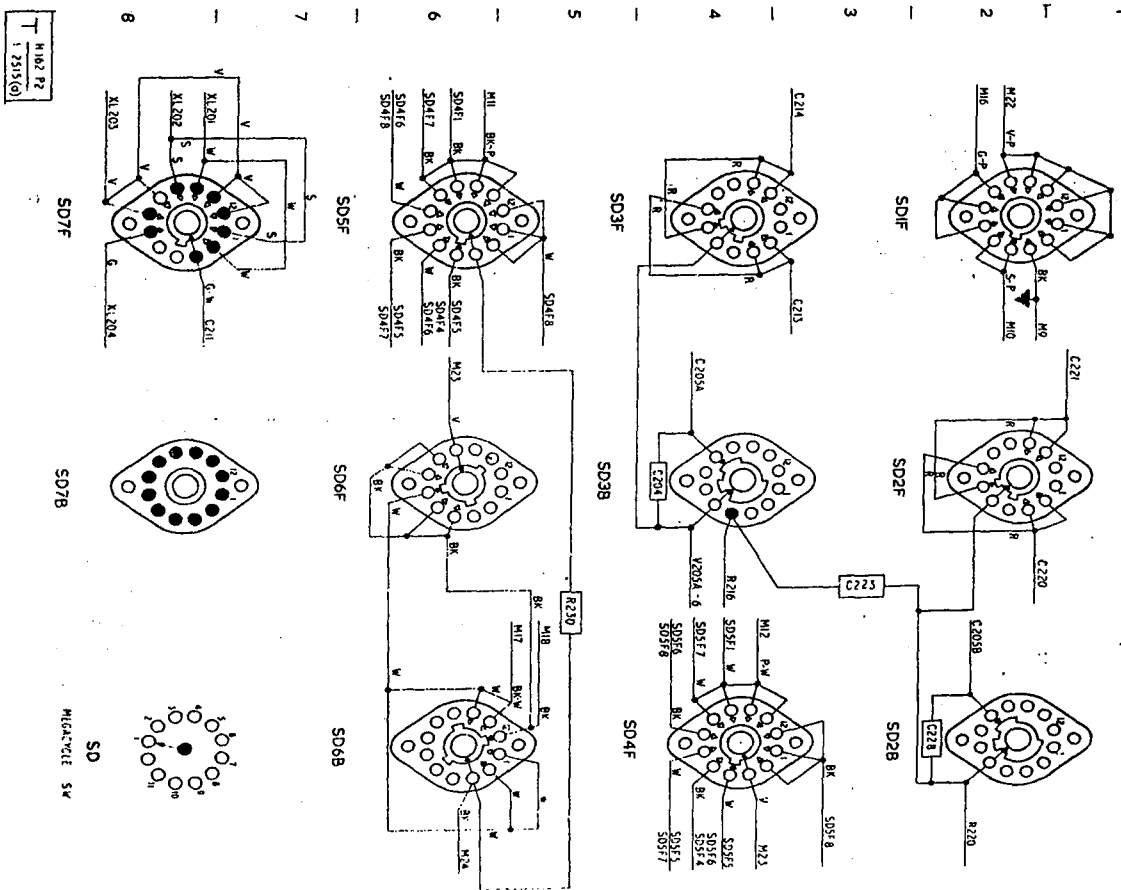


Figure 1000

Fig. 1000 - Receiver chassis - circuit diagram



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Fig. 25155 - WAFS switch (SD) - wiring

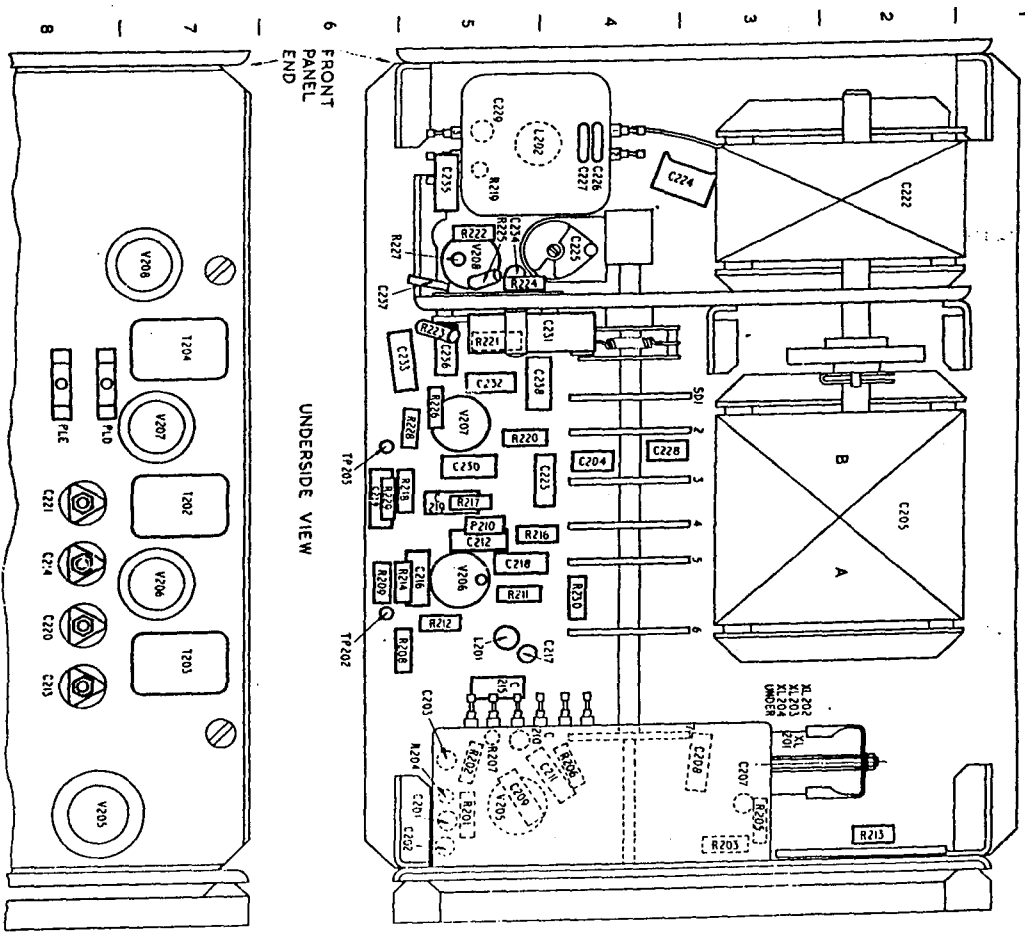


Fig. 25156 - WAFS chassis - layout

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Table 2504 - I.F./A.F. chassis - component schedule

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2516	Fig 2517				
RESISTORS							
R301	5Q6	C5	B5	6.8k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2109
R302	5Q2	D1	B6	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R303	5Q2	D1	B6	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R304	5Q5	D5	C7	150	1/4W	Comp ins grade 2 ±10%	5905-99-022-1130
R305	5Q7	E5	B6	100k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3037
R306	5R2	E1	B5	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R307	5U6	E5	B5	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R308	5R2	E1	B5	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R309	5R5	E4	C5	68	1/4W	Comp ins grade 2 ±10%	5905-99-022-1088
R310	5R5	E5	C5	150	1/4W	Comp ins grade 2 ±10%	5905-99-022-1130
R311	4V5/ 5S9	F8	B4	6.8k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2109
R312	5K5	F5	C5	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R313	5R4	F4	C4	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R314	4W5/ 5S9	G8	C4	150k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3058
R315	5T7	G7	N5	2.2M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3205
R316	5T4	G3	E6	330k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3100
R317	5T5	G4	E5	120k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3049
R318	4W4/ 5T7	G7	C3	6.8k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2109
R319	5W5	G4	M7	470k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R320	4W3/ 5T7	G6	M4	68k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3016
R321	5T3	G3	E6	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R322	5W6	G5	M7	560k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3133
R323	5X3	G2	E5	4.7M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3247
R324	5T4	G3	E6	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R325	5W5	G5	M7	470k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R326	5U3	G3	E6	1.8M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3196
R327	4W3/ 5T7	H6	M4	68k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3016
R328	5V4	G4	E5	270k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3091
R329	5V5	G4	E5	390k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3112
R330	5U7	H7	N5	10k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2130
R331	5U3	H3	E6	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R332	5W4	H4	E5	100k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3037
R333	5W5	H4	E5	220k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3079
R334	5U4	J1	E7	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R335	4X3/ 5U7	H6	N5	68k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3016
R336	4B4/ 5X4	H4	B3	100k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3037
R337	4X5/ 5V9	J8	C3	120k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3049

Table 2504 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2516	Fig 2517				
RESISTORS (cont)							
R338	4B2/ 5Y3	J3	E2	33k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2193
R339	4B5/ 5Y5	J4	B3	56k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3007
R340	4X3/ 5V7	J6	M4	8.2k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2121
R341	5V5	J2	E7	68k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3016
R342	4C2/ 5Y3	J3	E3	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R343	4C2/ 5Y3	J3	F2	22k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2172
R344	5X7	M7	M5	1.8M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3196
R345	4C5/ 5Y5	K5	B3	560	1/4W	Comp ins grade 2 ±10%	5905-99-022-1205
R346	5Z4	K5	E3	470k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3121
R347	5Z4	K4	E3	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R348	5Y2	L2	M2	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R349	4CC2	L3	M5	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R350	4Z3/ 5W7	L7	N2	270k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3091
R351	4Z4/ 5W8	L7	M2	270k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3091
R352	4CC2	L3	M5	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2216
R353	5Y2	L2	M2	5.6k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2100
R354	4Z3/ 5W7	L7	N2	560k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3133
R355	4Z4/ 5W8	L7	M2	560k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3133
R356	4C5/ 5AA5	L5	B7	1M	1/4W	Comp ins grade 2 ±10%	5905-99-022-3163
R357	4CC3	L3	M5	47k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2214
R358	4C5/ 5Z5	L5	B7	220k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3079
R359	4C3/ 5AA5	L4	F7	560k	1/4W	Comp ins grade 2 ±10%	5905-99-022-3133
R360	4C2/ 5AA3	M3	B6	22k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2172
R361	4D2/ 5AA3	M3	B6	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R362	4D5/ 5AA5	M5	B7	1k	1/4W	Comp ins grade 2 ±10%	5905-99-022-2004
R363	4X3/ 5V7	J6	C3	18k	1/2W	Comp ins grade 2 ±10%	5905-99-022-2165
RV301	4B5	E7	N7	250k		Preset comp linear	5905-Z111628
RV302	5V5	G4	E5	500k		Preset comp linear	5905-Z111679
RV303	5W3	H3	N7	500k		Preset comp linear	5905-Z111679
RV304	5U5	J2	E7	250k		Preset comp linear	5905-Z111628

Table 2504 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2516	Fig 2517				
CAPACITORS							
C301	5P6	C5	C6	0.001	375V	Min disc ceramic -20% +40%	5910-99-940-9840
C302	5P2	D2	C7	0.01	400V	Paper metal ±20%	Z115827
C303	5Q6	D5	C6	0.04	150V	Paper metal ±20%	Z115830
C304	5Q5	D5	D7	0.04	150V	Paper metal ±20%	Z115830
C305	5Q2	D2	C6	0.01	400V	Paper metal ±20%	Z115827
C306							
C307	5R5	E5	B7	0.001	375V	Min disc ceramic -20% +40%	5910-99-940-9840
C308	4B5	E7	N7	820p	500V	Ceramic ±20%	5910-99-940-9160
C309	4B5	E8	M7	0.04	150V	Paper metal ±20%	Z115830
C310	5R2	E2	C6	0.01	400V	Paper metal ±20%	Z115827
C311	5R5	E5	C5	0.04	150V	Paper metal ±20%	Z115830
C312	5R2	E2	B5	0.01	400V	Paper metal ±20%	Z115827
C313	5S4	F5	C5	0.01	150V	Paper metal ±20%	Z115826
C314	5X5	G5	M7	0.01	150V	Paper metal ±20%	Z115826
C315	5S5	F4	N4	1000p	375V	Min disc ceramic -20% +40%	5910-99-940-9840
C316	4W4/ 5S7	G7	M4	1000p	375V	Min disc ceramic -20% +40%	5910-99-940-9840
C317	5T3	G4	M8	50p	500V	Min disc ceramic ±10%	5910-99-940-9252
C318	4W3/ 5T7	G7	B3	0.01	400V	Paper metal ±20%	Z115827
C319	5T4	G3	E5	150p	350V	Silver mica ins	5910-99-940-9841
C320	5T7	G6	N4	1	150V	Electrolytic ±20%	5910-99-014-5331
321	5U4	G4	E6	0.01	150V	Paper metal ±20%	Z115826
C322a	5U4	H3	E7	0.04	150V	Paper metal ±20%	Z115830
C322b	5U4	H3	E7	0.04	150V	Paper metal ±20%	Z115830
C323	4W5/ 5T9	H8	C3	0.01	400V	Paper metal ±20%	Z115827
C324	5U3	H3	E5	0.01	150V	Paper metal ±20%	Z115826
C325	5V5	H5	M7	0.04	150V	Paper metal ±20%	Z115830
C326	4X4/ 5T8	H7	C3	100p	500V	Min disc ceramic ±10%	5910-99-940-9253
C327	5V3	H3	M7	0.01	150V	Paper metal ±20%	Z115826
C328	5U9	J8	C3	0.04	150V	Paper metal ±20%	Z115830
C329	5U7	J6	C3	0.01	400V	Paper metal ±20%	Z115827
C330	5V5	H3	E6	5	50V	Electrolytic ±20%	5910-99-014-5295
C331	4B5/ 5X5	J4	K2	0.1	200V	Paper metal ±25%	5910-99-011-9827
C332	4B5/ 5Y5	J5	B2	15p	500V	Ceramic ±10%	Z132350
C333	4C2/ 5Y3	J3	E3	0.01	400V	Paper metal ±20%	Z115827
C334	5V6	M6	M5	0.01	150V	Paper metal ±20%	Z115826
C335	4Y4/ 5V8	J7	C2	1000p	500V	Ceramic ±20%	5910-99-940-8878

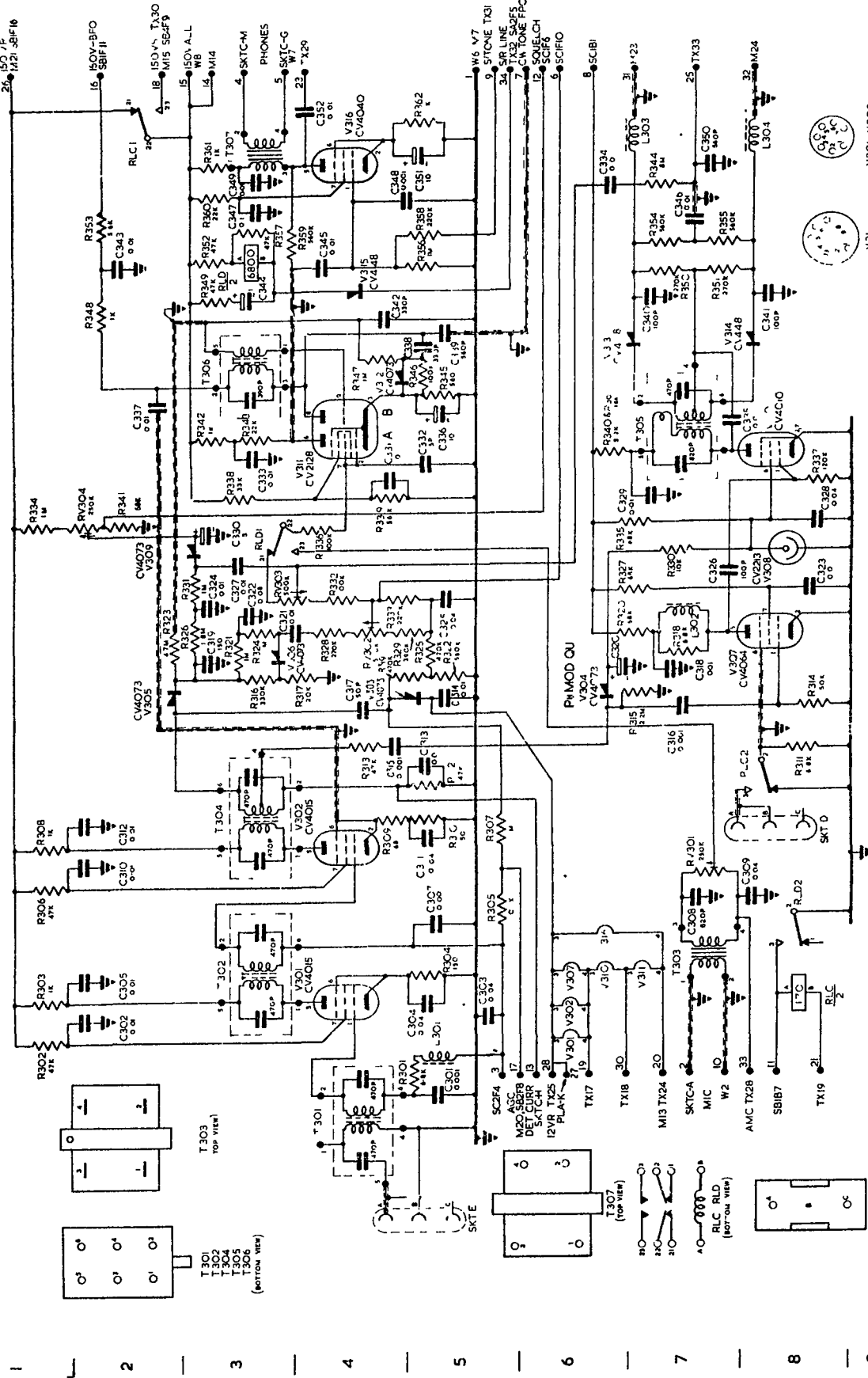
Table 2504 (cont)

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2516	Fig 2517				
CAPACITORS (cont)							
C336	4C5/ 5Y5	K5	F2	10	12V	Electrolytic ±20%	5910-99-014-5274
C337	5X2	K2	M2	0.01	400V	Paper metal ±20%	Z115827
C338	5Z4	K5	E3	330p	500V	Min disc ceramic +40% -20%	5910-99-940-9838
C339	5Z4	K5	E3	560p	500V	Min disc ceramic +40% -20%	5910-99-940-9839
C340	4Y3/ 5W7	L7	N2	100p	500V	Min disc ceramic +40% -20%	5910-99-940-9253
C341	4Y4/ 5W8	K8	M2	100p	500V	Min disc ceramic +40% -20%	5910-99-940-9253
C342	5Z4	L4	E3	330p	500V	Min disc ceramic +40% -20%	5910-99-940-9838
C343	5Y2	L2	M2	0.01	400V	Paper metal ±20%	Z115827
C344	4CC3	L3	E4	1	275V	Electrolytic +50% -20%	5910-99-014-5003
C345	4C4/ 5AA4	L4	F7	0.01	400V	Paper metal ±20%	Z115827
C346	4Z4/ 5W8	L7	N2	0.01	150V	Paper metal ±20%	Z115826
C347	4C2/ 5AA3	L3	K7	0.1	400V	Paper metal ±25%	5910-99-011-9829
C348	4D4/ 5AA5	M4	B6	0.001	375V	Min disc ceramic +40% -20%	5910-99-011-9840
C349	4D2/ 5AA3	M3	B4	0.01	400V	Paper metal ±20%	Z115827
C350	4Z4/ 5X8	M7	M2	560p	500V	Ceramic ±20%	
C351	4D5/ 5AA5	M5	B7	10	12V	Electrolytic ±20%	5910-99-014-5274
C352	4D3/ 5AA4	N4	B7	0.01	400V	Paper metal ±20%	Z115827
Cct. ref.	Component location			Description			Part No
	Main cct.	Fig 2516	Fig 2517				
INDUCTORS AND TRANSFORMERS							
L301	5Q6	D5	B6	R.F. choke			5950-99-911-0841
L302	4W4/ 5T7	G7	C4	R.F. choke			5950-99-911-0841
L303	4Z3/ 5W7	M7	N2	R.F. choke			5950-99-911-0841
L304	4Z4/ 5W8	M8	M2	R.F. choke			5950-99-911-0841

Table 2504 (cont)

Cct. ref.	Component location			Description	Part No
	Main cct.	Fig 2516	Fig 2517		
INDUCTORS AND TRANSFORMERS (cont)					
T301	5P5	C4	J7	Transformer, i.f.	5950-99-911-0646
T302	5Q3	D3	J6	Transformer, i.f.	5950-99-911-0647
T303	4B5	D7	J4	Transformer, microphone, No 40	ZA43931
T304	5R3	F3	J5	Transformer, i.f.	5950-99-911-0648
T305	4X3/ 5V7	J7	J2	Transformer, discriminator	5950-99-911-0649
T306	5Y3	K3	K2	Transformer, b.f.o.	5950-99-911-0650
T307	4D3/ 5AA3	M3	K5	Transformer, output	ZA43514
VALVES					
V301	5Q4	D4	C7	Valve, electronic CV4015	
V302	5R4	F4	C5	Valve, electronic CV4015	
V303	5X5	G4	M7	Valve, junction diode CV4073	
V304	5T6	G6	N4	Valve, junction diode CV4073	
V305	5T3	G2	M7	Valve, junction diode CV4073	
V306	5T4	G3	E6	Valve, junction diode CV4073	
V307	4W4/ 5T8	G8	C4	Valve, electronic CV4064	
V308	4X5/ 5U9	H8	C3	Valve, gas filled diode CV2213	
V309	5V4	H3	E7	Valve, junction diode CV4073	
V310	4X4/ 5U8	J8	C3	Valve, electronic CV4010	
V311	4C4/ 5Y4	J4	B3	Valve, electronic CV2128	
V312	5Z4	K4	E3	Valve, germanium diode CV448	
V313	4Y3/ 5V7	K6	N2	Valve, germanium diode CV448	
V314	4Y4/ 5V8	K7	M2	Valve, germanium diode CV448	
V315	4CC3	L4	M4	Valve, germanium diode CV448	
V316	4D4/ 5AA4	M4	B7	Valve, electronic CV4040	
MISCELLANEOUS					
SKTD	4V4/ 5P8			Socket, miniature	
SKTE	5P3			Socket, miniature	
RLC	4V8			Relay, magnetic, non-sealed 12V, 170Ω ±5% min	2530457
RLD	4CC3			Relay, magnetic, non-sealed 12V, 6800Ω ±5% min	5945-99-011-9098

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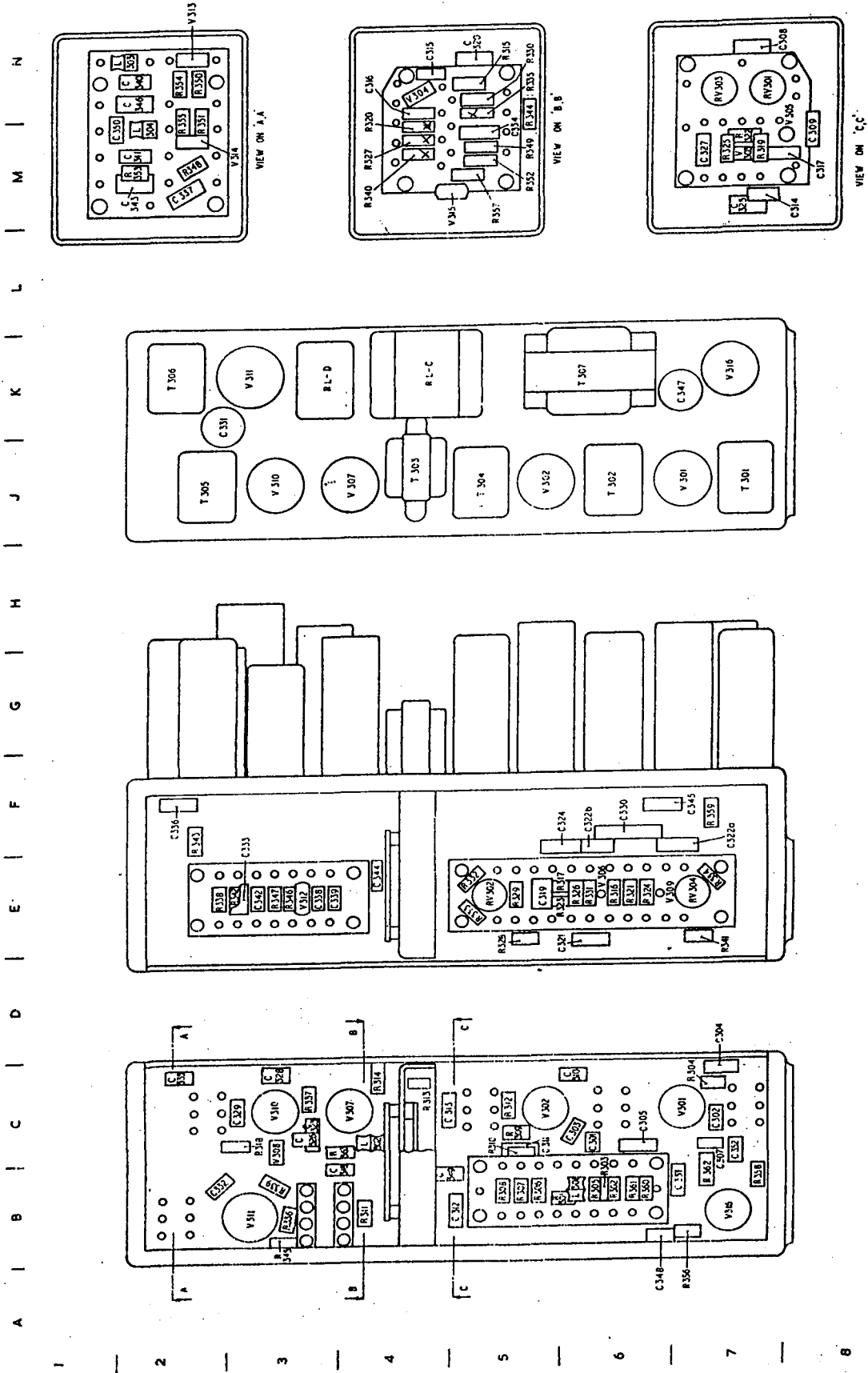


Fig 25.7 - I.F./A.F. chassis - component layout

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Table 2505 - Front panel - component schedule

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2518	Unit layout				
RESISTORS							
R1	4CC2	C4	19J4	560k	1/4W	Carbon ±10%	5905-99-022-3133
R2	4K6	C6	19K6	15k	1/4W	Carbon ±10%	5905-99-022-2151
R3	4BB2	E5	19B7	3.3k	1/4W	Carbon ±10%	5905-99-022-2067
R4	4L6	C6	19G7	10k	1/4W	Carbon ±10%	5905-99-022-2130
R5	4L6	B6	19G7	27k	1/4W	Carbon ±10%	5905-99-022-2186
R6	5CC3		20B8	100k	1/4W	Carbon ±10%	5905-99-022-3037
R7	4L6	A7	19H1	18k	1/4W	Carbon ±10%	5905-99-022-2163
R8	4BB2	F5	19B1	10k	1/4W	Carbon ±10%	5905-99-022-2130
R9	4L6	A7	19H1	10k	1/4W	Carbon ±10%	5905-99-022-2130
R10	5CC3		20C7	100k	1/4W	Carbon ±10%	5905-99-022-3037
R11	4R1	D6	19B1	1.5k	1/4W	Carbon ±10%	5905-99-022-2025
R12	4N8	F6	19E2	3.3k	3W	W.W. ±5%	5905-Z113332
R13	4N8	F6	19E2	1	1.5W	W.W. ±5%	5905-Z113195
R14	4E5	F4	19B2	390k	1/4W	Carbon ±10%	5905-99-022-3112
R15	408	F7	19D2	100	1/4W	Carbon ±5%	5905-99-022-1106
R16	4Z3	A6	20E7	100k	1/4W	Carbon ±10%	5905-99-022-3037
R17	5CC3		20F7	100k	1/4W	Carbon ±10%	5905-99-022-3037
R18	5CC3		20G8	100k	1/4W	Carbon ±10%	5905-99-022-3037
R19	4AA7	E8	20B2	15k	1/4W	Carbon ±10%	5905-99-022-2151
R20	4L6	C6	20G7	56k	1/4W	Carbon ±10%	5905-99-022-3007
CAPACITORS							
C1	5Z5	B8	20D7	3-30p		Air trimmer	
C2	4N2/ 5A2	D6	20F1	0.01		Moulded mica ±10%	Z124382
Cct. ref.	Component location			Description	Part No		
	Main cct.	Fig 2518	Unit layout				
VALVES							
V1	5CC3		20B8	Valve, electronic CV2213			
V2	5CC3		20C7	Valve, electronic CV2213			
V3	5BB4		20E7	Valve, electronic CV2213			
V4	5CC3		20F7	Valve, electronic CV2213			
V5	5CC3		20G8	Valve, electronic CV2213			
V6	4AA7		20B2	Valve, electronic CV448			
MISCELLANEOUS							
L1	4BB1	D5	20B1	Choke, 1.15mH, ±10%	5950-99-911-0624		
M1	4AA8		20E7	Meter, 250µA			
	408						
	5CC8						

Table 2502 (cont)

Cct. ref.	Component location			Description	Part No
	Main cct.	Fig 2518	Unit layout		
MISCELLANEOUS (cont)					
SA			20A6	Switch, rotary, wafer, 6 pole, 3 way	5930-99-911-0677
SB			20B6	Switch, rotary, wafer, 4 pole, 6 pos	5930-99-940-9851
				Wafer 1	5930-99-940-9852
				Wafer 2	5930-99-940-9853
				Wafer 3	5930-99-940-9854
				Wafer 4	5930-99-940-9855
				Wafer 5	5930-99-940-9857
			20E9	Switch, rotary, wafer, 7 pole, 2 way	5930-99-911-0678
PLA			20G9	Plug, sealed, Mk 4, brass, fixed, size 3/0, 18-pole	ZA52138
PLB			20H6	Plug, fixed, RCL 322	5935-99-011-9484
SKTC			20B9	Socket, sealed, Mk 4, brass, fixed, size 2/0, 12 pole	ZA48236

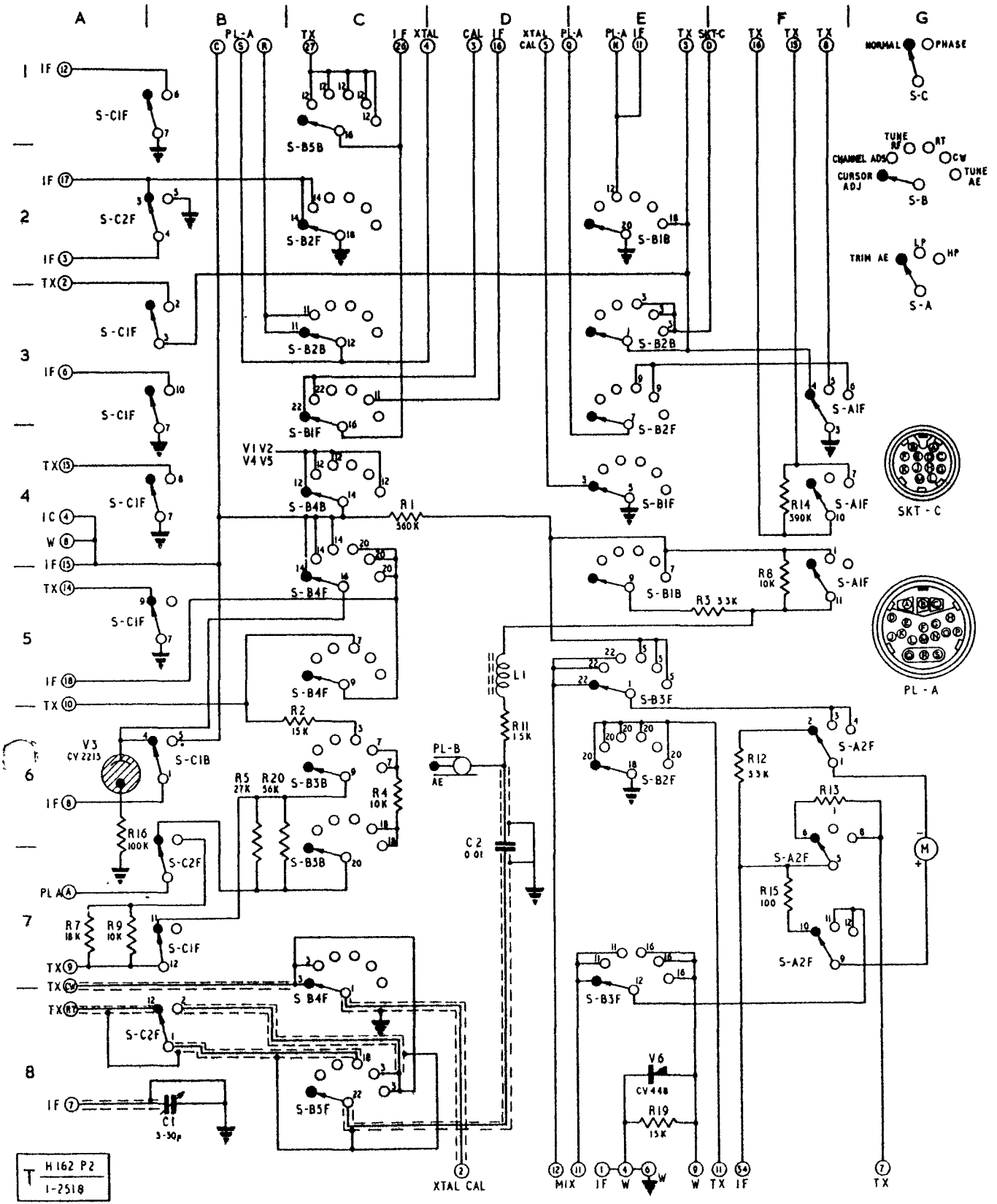


Fig 2518 - Front panel - circuit diagram

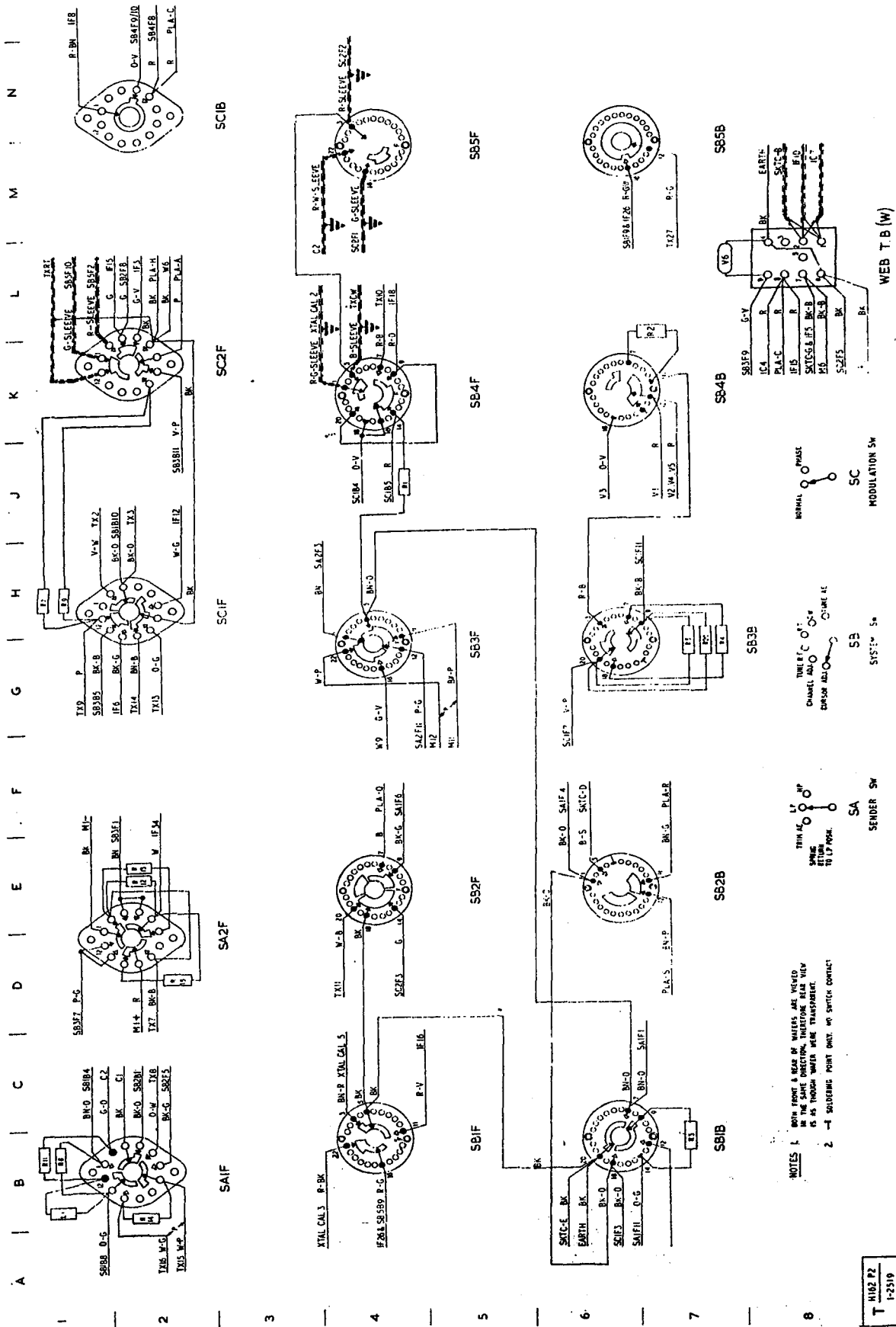
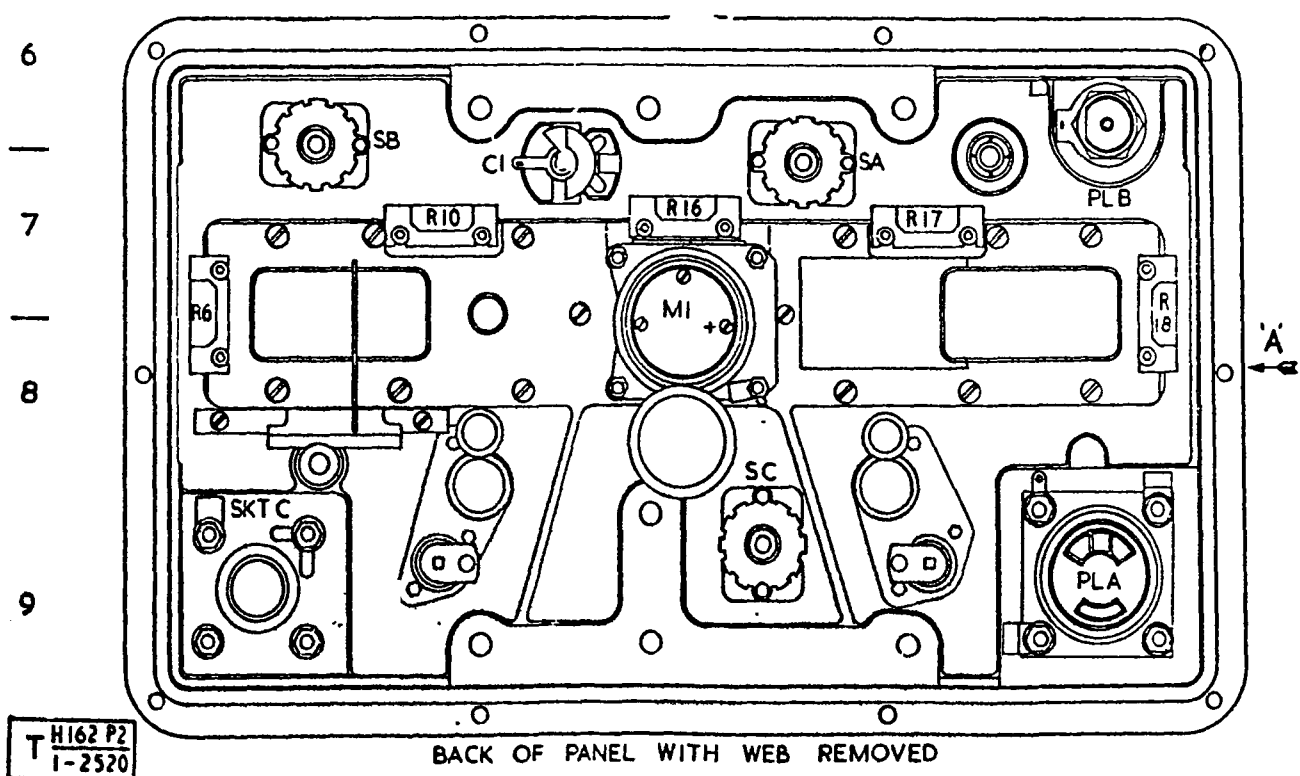
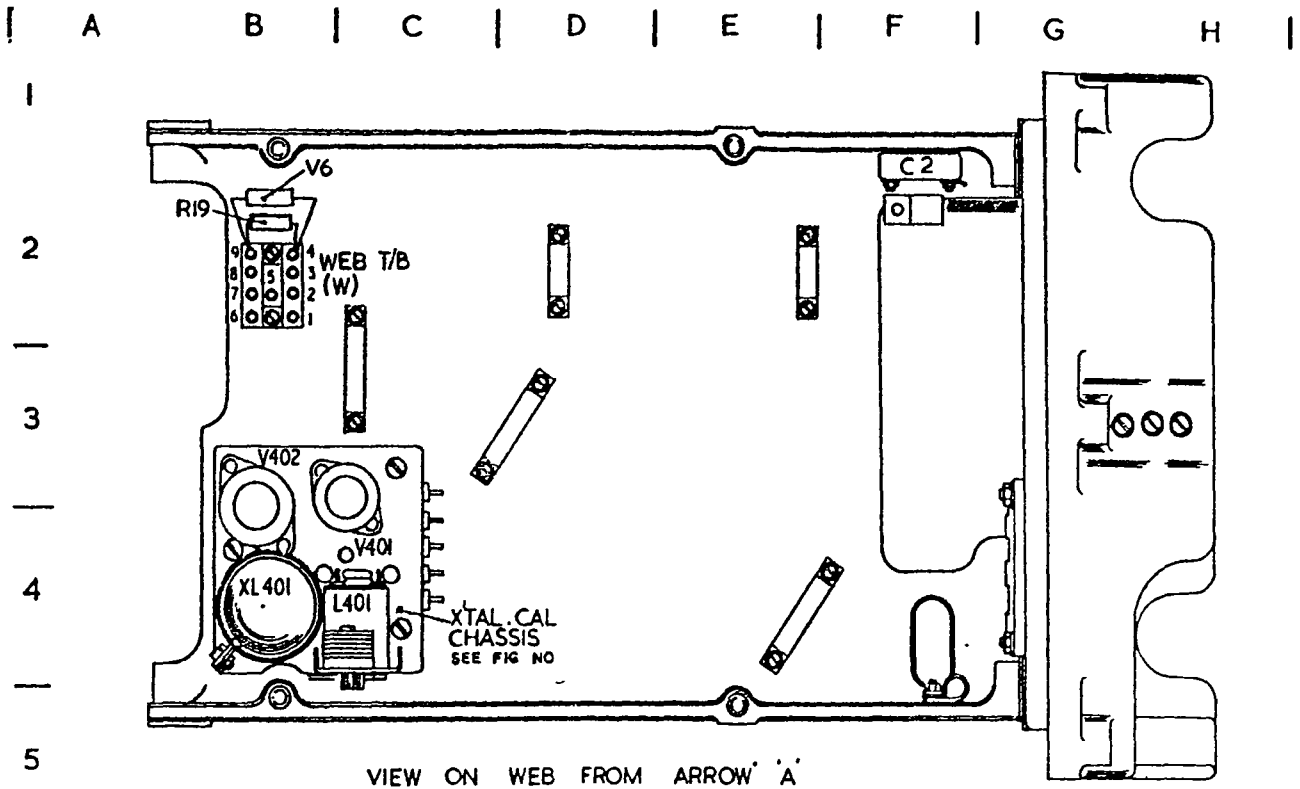


Fig. 2519 - Front panel - solder wiring (SAY 22, 23)



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Fig 2520 - Front panel and web - component layout

Table 2506 - Calibrator chassis - component schedule

Cct. ref.	Component location			Value	Rating	Type and limit	Part No
	Main cct.	Fig 2521	Fig 2522				
RESISTORS							
R401	5D7	B1	E2	220k	1/4W	Carbon ±10%	Z223079
R402	5C9	B3	E3	2.2M	1/4W	Carbon ±10%	Z223205
R403	5C7	C2	E2	22k	1/4W	Carbon ±10%	Z222172
R404	6F8	C3	E2	47	1.1/2W	W.W. ±5%	Z113223
R405	5C8	C3	E4	1M	1/4W	W.W. ±10%	Z223163
R406	5B7	D1	E4	47k	1/4W	W.W. ±10%	Z222214
R407	5B7	D1	E3	2.2k	1/4W	W.W. ±10%	Z222046
R408	5B9	D3	E4	1.5k	1/4W	W.W. ±10%	Z222025
R409	5B8	F3	F3	5.6k	1/4W	W.W. ±10%	Z222100
R410	5B7	D1	E2	1k	1/4W	W.W. ±10%	Z222004
CAPACITORS							
C401	5D8	A3	D4	100p	350V	Silver mica ±2%	5910-99-940-9256
C402	5D9	A3	B3	3-30p		Var air	
C403	5D9	B2	D3	10p	350V	Silver mica ±10%	5910-Z145003
C404	5C7	C1	D3	1	275V	Electrolytic ±20% -50%	
C405	5C8	C2	F4	61	400V	Paper ±20%	5910-Z115827
C406	5B9	C4	F3	820p	350V	Silver mica ±2%	5910-99-940-9845
C407	5B8	D2	F4	0.01	400V	Paper ±20%	5910-Z115827
C408	5A9	E3	C3	1000p	350V	Silver mica ±2%	5910-99-940-9842
C409	5A7	E2	E2	0.01	400V	Paper ±20%	5910-Z115827
C410	5A9	E3	C3	1000p	350V	Silver mica ±2%	5910-99-940-9842
Cct. ref.	Component location			Description	Part No		
	Main cct.	Fig 2521	Fig 2522				
VALVES							
V401	5C8	B3	F3	Valve, electronic CV4010			
V402	5B8	D3	F4	Valve, electronic CV4024			
MISCELLANEOUS							
L401	5B9	D3	C2	Coil			
XL401	5D8	A2	E4	Crystal, quartz, 100kc/s	5955-99-911-0836		

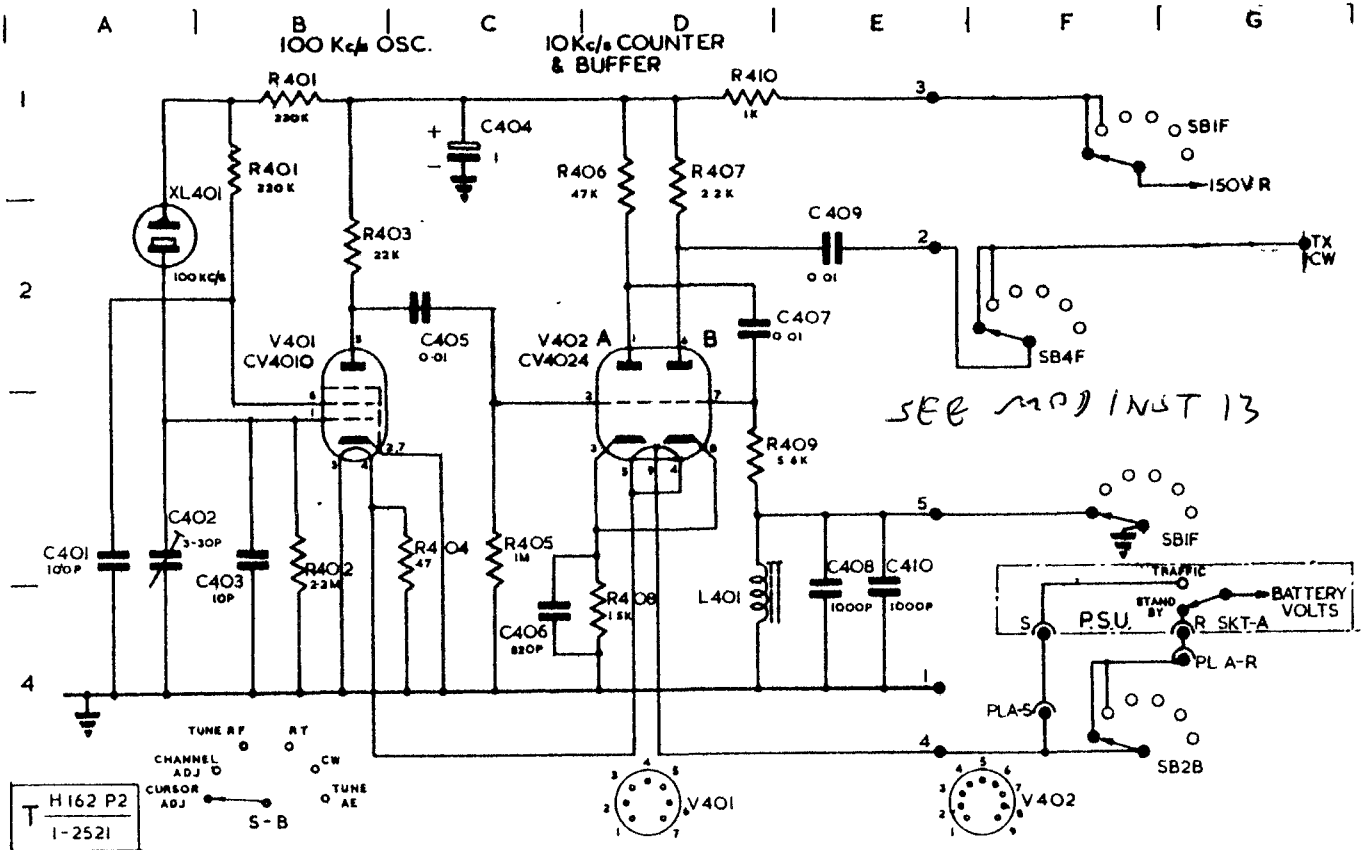


Fig 2521 - Calibrator chassis - circuit diagram

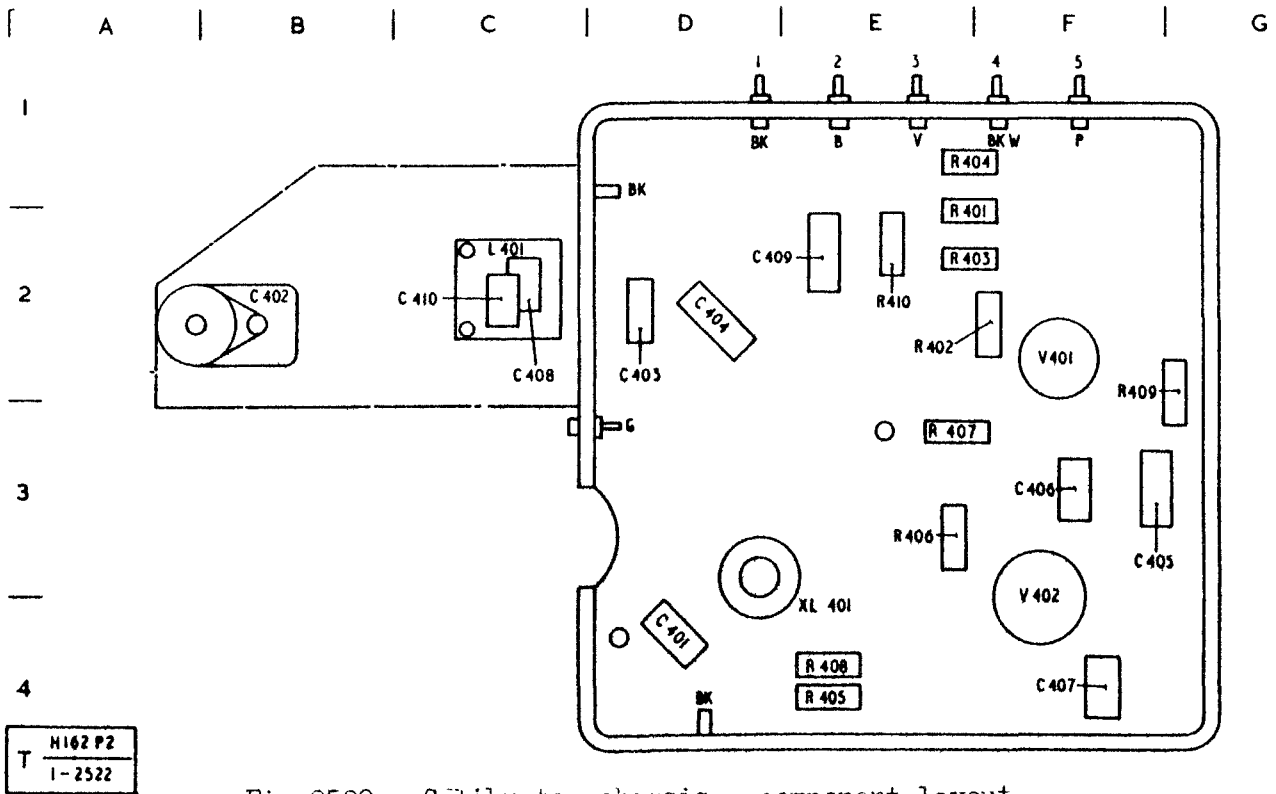


Fig 2522 - Calibrator chassis - component layout

A | B | C | D | E | F | G | H | J | K | L | M | N | O |

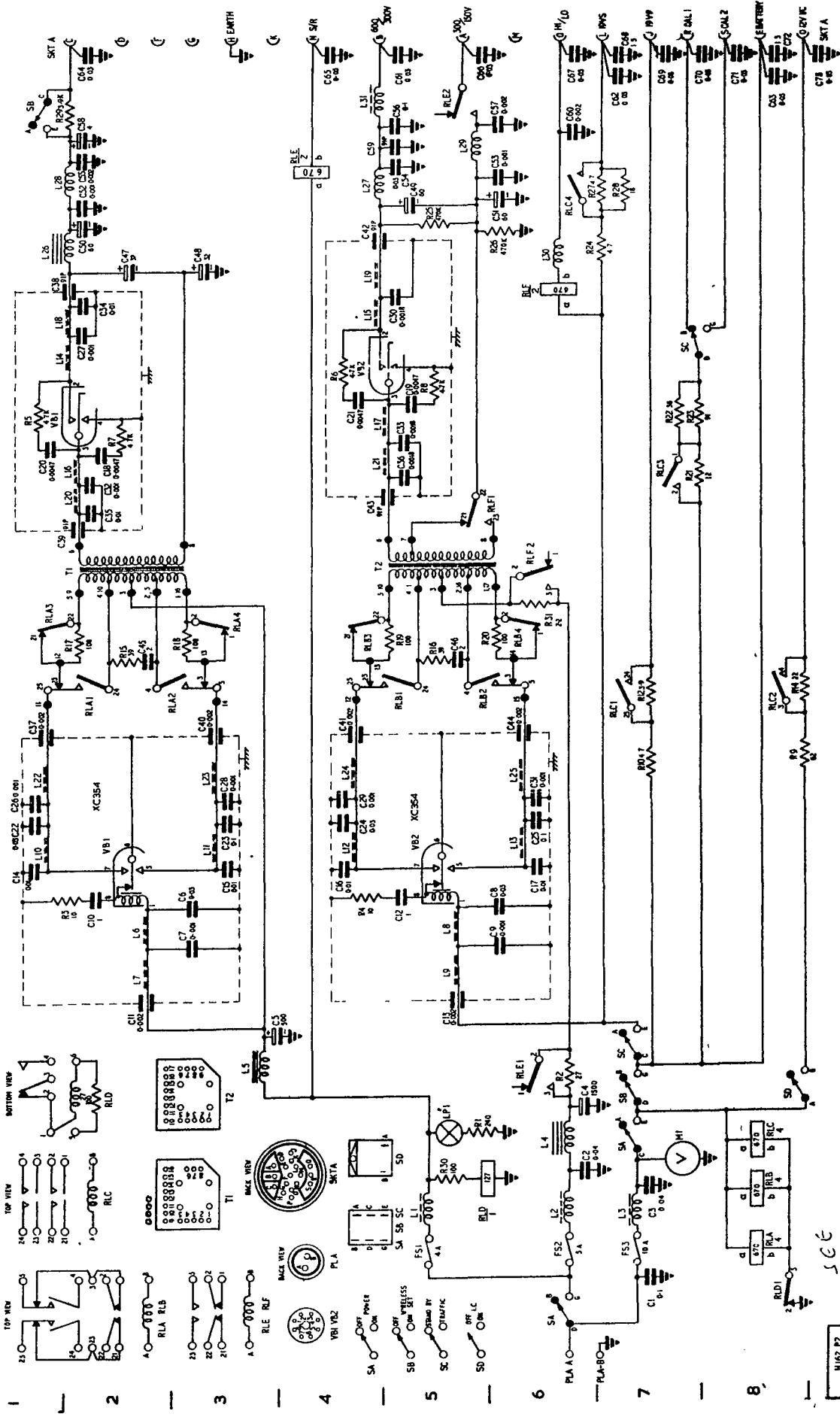


Fig 2523 - S.U.V. No 16 (24V) - circuit diagram
(Additional copies of this figure, for use as bench copies, may be obtained on supplementary demand)

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Table 2507 - S.U.V. No 16 - component schedule

Cct. ref.	Component location		Value	Rating	Type and limit	Part No
	Fig 2523	Unit layout				
RESISTORS						
R1	C5	24C1	240	1.1/2W	W.W.	±5% 5905-Z117881
R2	D6	25F1	27	3W	W.W.	±5% 5905-Z113282
R3	E2	25H6	10	1.1/2W	W.W.	±5% 5905-Z113207
R4	E4	25H3	10	1.1/2W	W.W.	±5% 5905-Z113207
R5	K1	25H6	4.7k	1/2W	Comp	±10% 5905-99-022-2090
R6	L4	25H3	4.7k	1/2W	Comp	±10% 5905-99-022-2090
R7	K2	25H8	4.7k	1/2W	Comp	±10% 5905-99-022-2090
R8	K5	25H4	4.7k	1/2W	Comp	±10% 5905-99-022-2090
R9	G8	24B2	62	3W	W.W.	±5% 5905-Z113291
R10	G7	24C2	4.7	4.1/2W	W.W.	±5% 5905-99-011-9790
R12	G7	24E2	3.9	4.1/2W	W.W.	±5% 5905-99-011-9789
R14	G8	24E2	22	1.1/2W	W.W.	±5% 5905-Z113215
R15	H2	25D6	39	3W	W.W.	±5% 5905-Z113286
R16	H5	25D2	39	3W	W.W.	±5% 5905-Z113286
R17	H2	25D6	100	1/2W	Comp	±10% 5905-99-022-1111
R18	H3	25E6	100	1/2W	Comp	±10% 5905-99-022-1111
R19	H4	25D3	100	1/2W	Comp	±10% 5905-99-022-1111
R20	H5	25E3	100	1/2W	Comp	±10% 5905-99-022-1111
R21	K7	24E2	12	1.1/2W	W.W.	±5% 5905-Z113209
R22	K7	24E6	56	3W	W.W.	±5% 5905-Z113290
R23	K7	24E6	91	1.1/2W	W.W.	±5% 5905-Z113230
R24	M6	24B2	4.7	4.1/2W	W.W.	±5% 5905-99-011-9790
R25	M5	25A3	470k	1/2W	Comp	±10% 5905-99-022-3123
R26	M6	25A4	470k	1/2W	Comp	±10% 5905-99-022-3123
R27	M6	24F2	4.7	4.1/2W	W.W.	±5% 5905-99-011-9790
R28	M7	24F2	18	1.1/2W	W.W.	±5% 5905-Z113213
R29	N2		3.9k	1.1/2W	W.W.	±5% 5905-Z113269
R30	C5	25F4	100	6W	W.W.	±5% 5905-Z113375
R31			2.2			
CAPACITORS						
C1	B7	24E7	0.1	200V	Paper metal	±25% 5910-99-011-9827
C2	C6	24D7	0.04	150V	Paper metal	±20% 5910-Z115830
C3	C7	24D7	0.04	150V	Paper metal	±20% 5910-Z115830
C4	D6	25A2	1500	50V	Electrolytic	+100% -20% 5910-Z145555
C5	D4	25C6	500	50V	Electrolytic	+100% -20% 5910-Z145519
C6	E3	25N5	0.03	1500V	Plate ceramic	+80% -20% 5910-99-940-9438
C7	E3	25M6	0.001	500V	Stand off ceramic	±20% 5910-99-940-8877
C8	E6	25N2	0.03	1500V	Plate ceramic	+80% -20% 5910-99-940-9438
C9	E6	25M2	0.001	500V	Stand off ceramic	±20% 5910-99-940-8877

Table 2507 (cont)

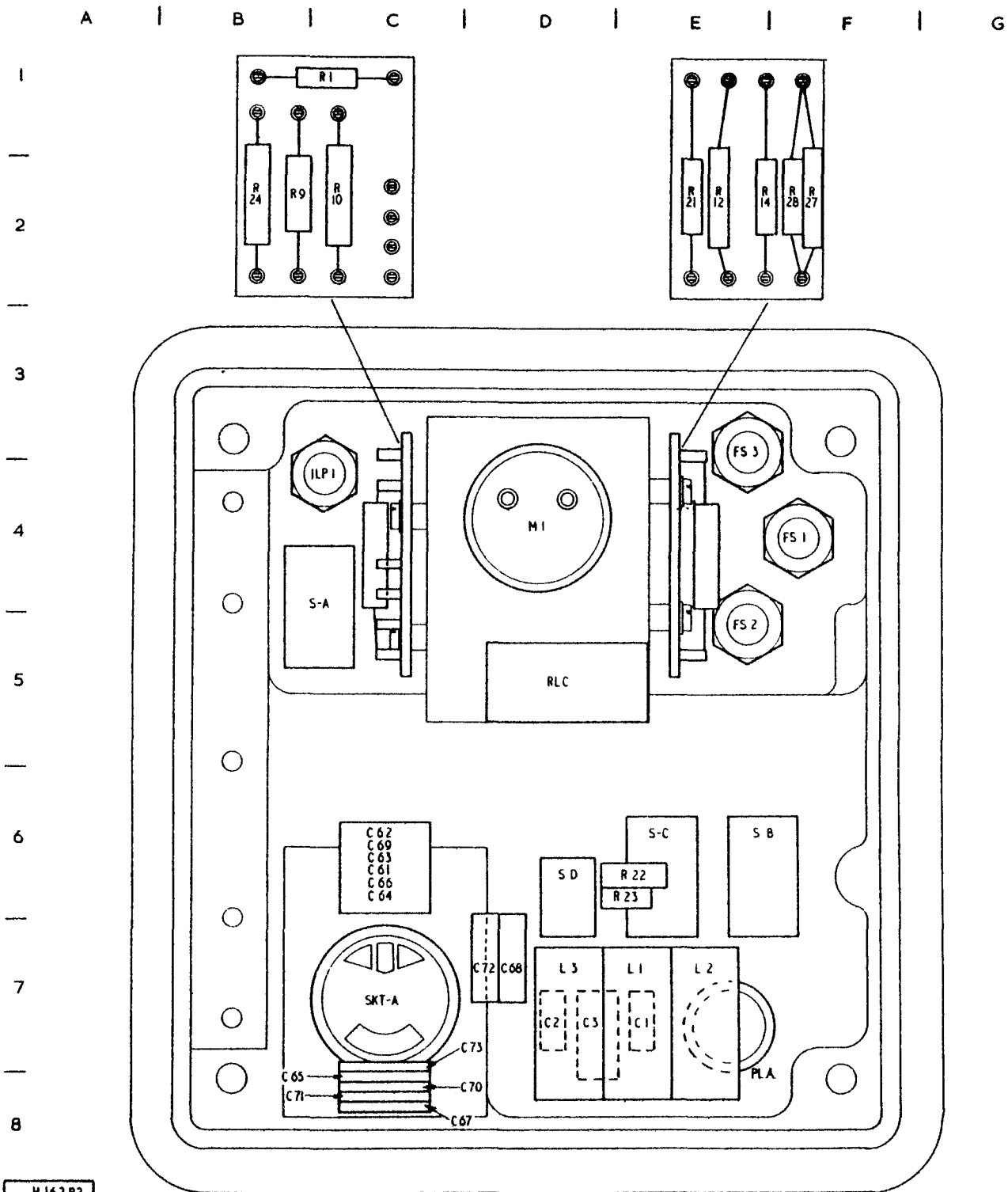
Cct. ref.	Component location		Value	Rating	Type and limit	Part No
	Fig 2523	Unit layout				
CAPACITORS (cont)						
C10	E2	25H5	1	200V	Paper metal ±25%	5910-99-011-9836
C11	D2	25K6	0.002	500V	Ceramic feed thru ±20%	
C12	E5	25H2	1	200V	Paper metal ±25%	5910-99-011-9836
C13	D5	25K2	0.002	500V	Ceramic feed thru ±20%	
C14	F1	25H6	0.01	150V	Paper metal ±20%	5910-Z115826
C15	F3	25J7	0.01	150V	Paper metal ±20%	5910-Z115826
C16	F4	25H3	0.01	150V	Paper metal ±20%	5910-Z115826
C17	F6	25J4	0.01	150V	Paper metal ±20%	5910-Z115826
C18	K2	25H7	0.0047	500V	Hi K ceramic ±20%	5910-99-940-9268
C19	K5	25H4	0.0047	500V	Hi K ceramic ±20%	5910-99-940-9268
C20	K1	25H7	0.0047	500V	Hi K ceramic ±20%	5910-99-940-9268
C21	K4	25H3	0.0047	500V	Hi K ceramic ±20%	5910-99-940-9268
C22	F1	25M5	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C23	F3	25J8	0.1	200V	Paper metal ±25%	5910-99-011-9827
C24	F4	25M2	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C25	F6	25J4	0.01	200V	Paper metal ±25%	5910-99-011-9827
C26	F1	25L7	0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C27	L2	25M6	0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C28	F3	25M8	0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C29	F4	25L2	0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C30	L4	25N3	0.0018	1250V	Isolator ceramic +80% -20%	5910-99-940-9271
C31	F6	25M4	0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C32	K2	25M7	0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C33	K4	25L3	0.0018	1250V	Isolator ceramic +80% -20%	5910-99-940-9271
C34	L2	25N6	0.01	350V	Disc ceramic +80% -20%	5910-99-940-9270
C35	J2	25N7	0.01	350V	Disc ceramic +80% -20%	5910-99-940-9270
C36	K5	25N4	0.0018	1250V	Isolator ceramic +80% -20%	5910-99-940-9271
C37	G1	25C7	0.002	500V	Ceramic feed thru ±20%	
C38	M1	25C7	91p	750V	Ceramic feed thru ±20%	5910-99-940-9260
C39	J1	25C7	91p	750V	Ceramic feed thru ±20%	5910-99-940-9260
C40	G3	25C7	0.002	500V	Ceramic feed thru ±20%	
C41	G4	25C3	0.002	500V	Ceramic feed thru ±20%	
C42	M4	25C3	91p	750V	Ceramic feed thru ±20%	5910-99-940-9260
C43	J4	25C4	91p	750V	Ceramic feed thru ±20%	5910-99-940-9260
C44	G6	25C4	0.002	500V	Ceramic feed thru ±20%	
C45	H2	25D6	2	200V	Paper metal ±25%	5910-99-011-9839
C46	H5	25D2	2	200V	Paper metal ±25%	5910-99-011-9839

Table 2507 (cont)

Cct. ref.	Component location		Value	Rating	Type and limit	Part No
	Fig 2523	Unit layout				
CAPACITORS (cont)						
C47	M2	25A6	32	150V	Electrolytic +100% -20%	Z145509
C48	M3	25A6	32	150V	Electrolytic +100% -20%	Z145509
C49	M4	25B3	60	450V	Electrolytic +50% -20%	Z145553
C50	M2	25A7	60	350V	Electrolytic +50% -20%	Z145552.
C51	M5	25B4	60	450V	Electrolytic +50% -20%	Z145553
C52	M2		0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C53	N5		0.001	500V	Stand off ceramic ±20%	5910-99-940-8877
C54	N6		0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C55	N2	25F8	0.002	500V	Ceramic feed thru ±20%	
C56	N4	25F6	0.1	1000V	Paper metal ±20%	Z115508
C57	N6	25F7	0.002	500V	Ceramic feed thru ±20%	
C58	N2	25F2	4	450V	Electrolytic +50% -20%	Z145501
C59	N4	25F6	91p	750V	Ceramic feed thru ±20%	5910-99-940-9260
C60	N6	25F5	0.002	500V	Ceramic feed thru ±20%	
C61	05	24C6	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C62	06	24C6	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C63	08	24C6	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C64	02	24C6	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C65	04	24C8	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C66	05	24C6	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C67	06	24C8	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C68	07	24D7	1.5	50V	Electrolytic ±20%	5910-99-014-5292
C69	07	23C6	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C70	07	23C8	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C71	08	23C8	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438
C72	08	23D7	1.5	50V	Electrolytic ±20%	5910-99-014-5292
C73	08	23C8	0.03	1500V	Plate ceramic +80% -20%	5910-99-940-9438

Table 2507 (cont)

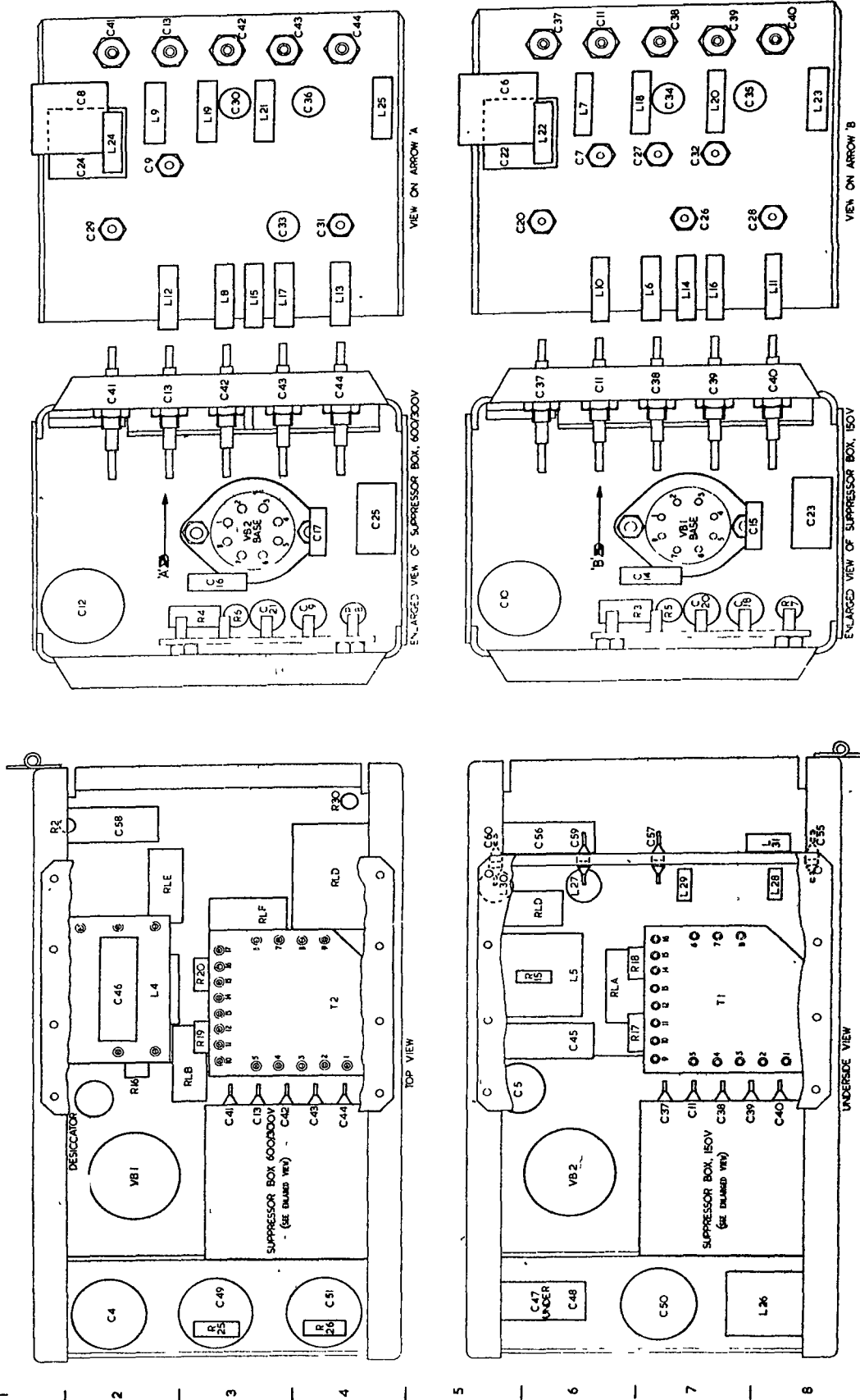
Cct. ref.	Component location		Description	Part No
	Fig 2523	Unit layout		
MISCELLANEOUS (cont)				
M1	C7	24D4	Voltmeter, d.c., 15V to 30V	X2/6625-99-110- 2007
FS1	B5	24F4	Fuse link 4A	
FS2	B6	24E5	Fuse link 7A	
FS3	B7	24E4	Fuse link 10A	
ILP1	C5	24C4	Lamp, panel type, 0.1A, 12V	X959120
RLA			Relay, seq. contact 670Ω	5949-99-901-0629
RLB			Relay, seq. contact 670Ω	5949-99-901-0629
RLC			Relay, magnetic non-sealed heavy duty 670Ω	5945-99-901-0388
RLD			Relay, 25.5V make 23.5V release 127Ω	ZA44706
RLE			Relay, RCL 166 670Ω	Z530224
RLF			Relay, RCL 166 670Ω	Z530224
SA			Switch, toggle, double-pole	Z510554
SB			Switch, toggle, double-pole	Z510554
SC			Switch, toggle, double-pole	Z510554
SD			Switch, toggle, single-pole	Z510551



T H 162 P2
1-2524

Fig 2524 - S.U.V. No 16 front panel - component layout

A | B | C | D | E | F | G | H | J' | K | L | M | N

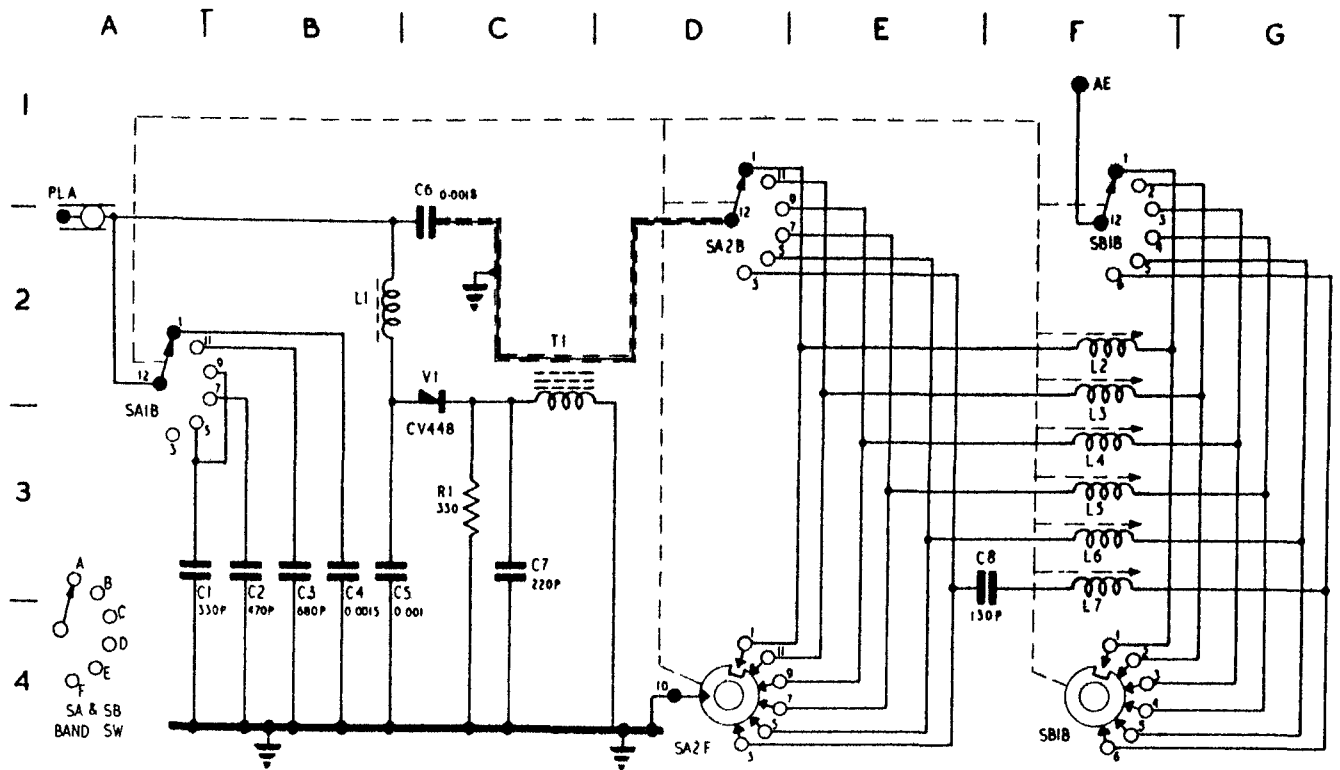


H162 72
1-2323

FIG 2525 - S.U.V. No 16 chassis - component layout

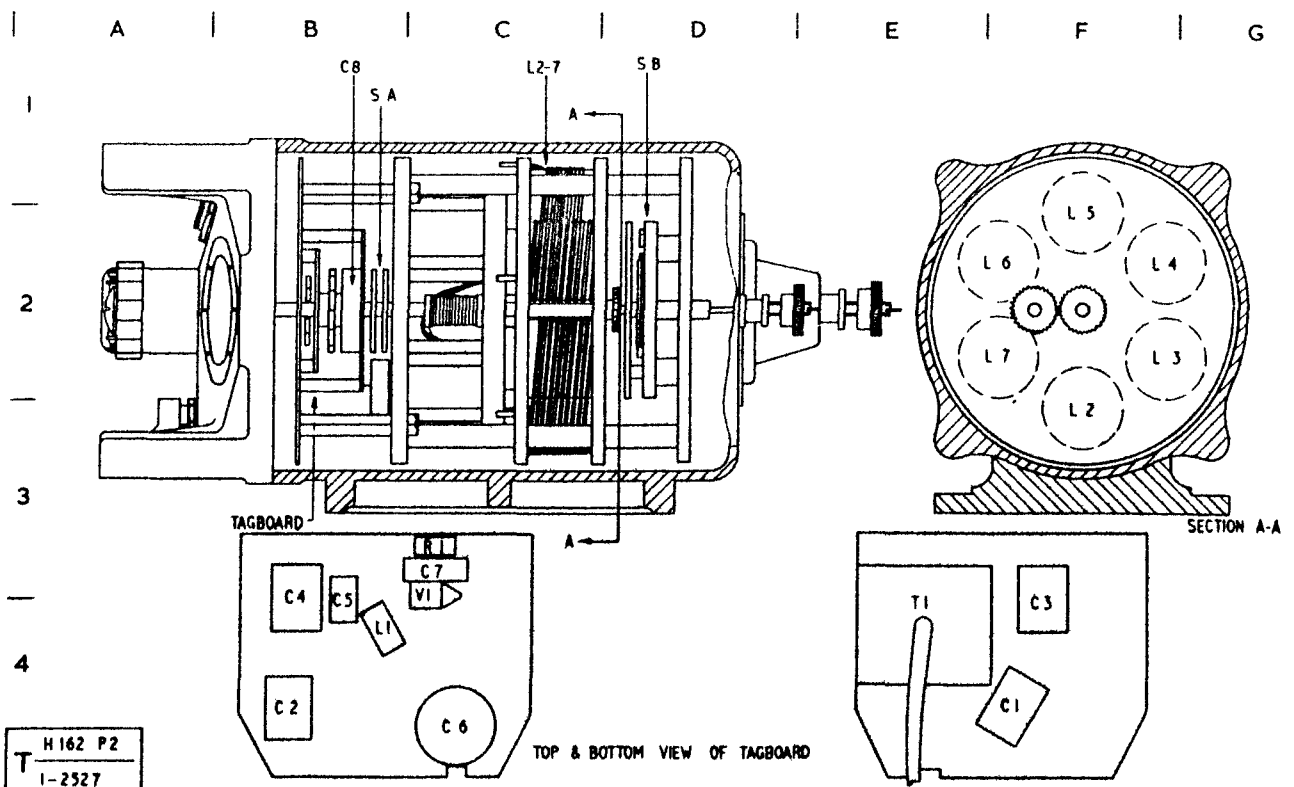
Table 2508 - A.T.U. No 11 - component schedule

Cct. ref.	Component location		Value	Rating	Type and limit	Part No
	Fig 2526	Fig 2527				
RESISTORS						
R1	C3	C3	330	1/4W	Comp ±10%	5905-99-022-1172
CAPACITORS						
C1	A3	F4	330p	750V	Silver mica ±2%	5910-Z123941
C2	B3	B4	470p	750V	Silver mica ±2%	5910-Z123947
C3	B3	F3	680p	350V	Silver mica ±2%	5910-Z123953
C4	B3	B3	1500p	350V	Silver mica ±5%	5910-Z124704
C5	B3	B3	1000p	300V	Ceramic ±20%	
C6	C2	C4	1800p	2750V	Ceramic disc ±20%	
C7	C3	C3	220p	300V	Ceramic ±10%	
C8	F3	B1	130p	500V	Ceramic ±2.1/2%	5910-Z118324
Cct. ref.	Component location		Description			Part No
	Fig 2526	Fig 2527				
INDUCTORS AND TRANSFORMERS						
L1	B2	B4	} For all coil details see Tels H 164 (when published)			
L2	F2	F2				
L3	F2	F2				
L4	F3	F2				
L5	F3	F1				
L6	F3	F2				
L7	F3	F2				
T1	C2	E3	Transformer, toroid (see Tels H 164)			
MISCELLANEOUS						
V1	C2	C3	Valve, electronic CV448			5935-99-011-9484
SA			Switch, rotary			
SB			Switch, rotary, high voltage			
PLA	A2	A2	Plug, fixed			



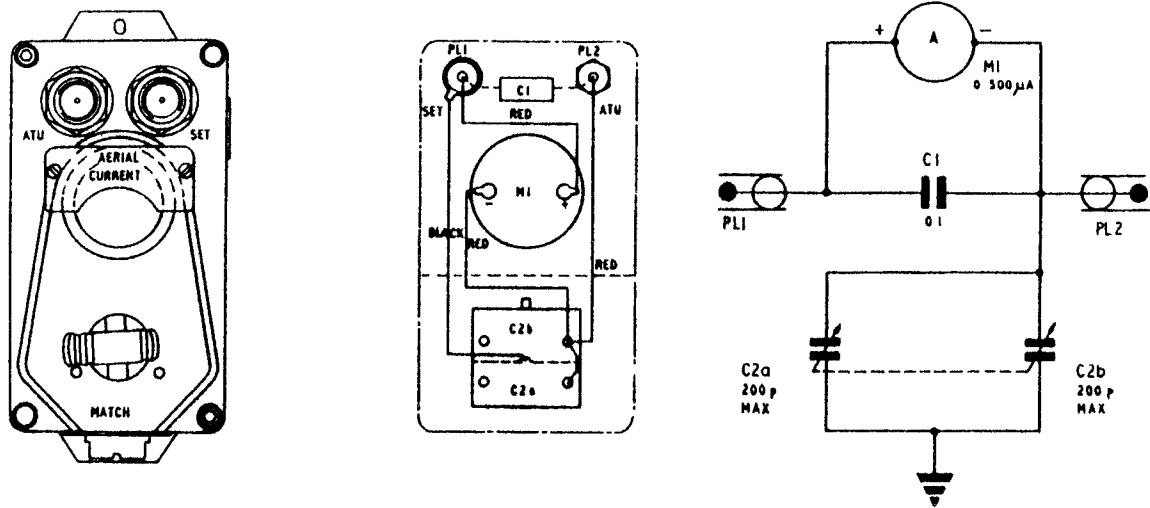
T	H 162 P2
	1-2526

Fig 2526 - Aerial tuning unit No 11 - circuit diagram



T	H 162 P2
	1-2527

Fig 2527 - Aerial tuning unit No 11 - component layout



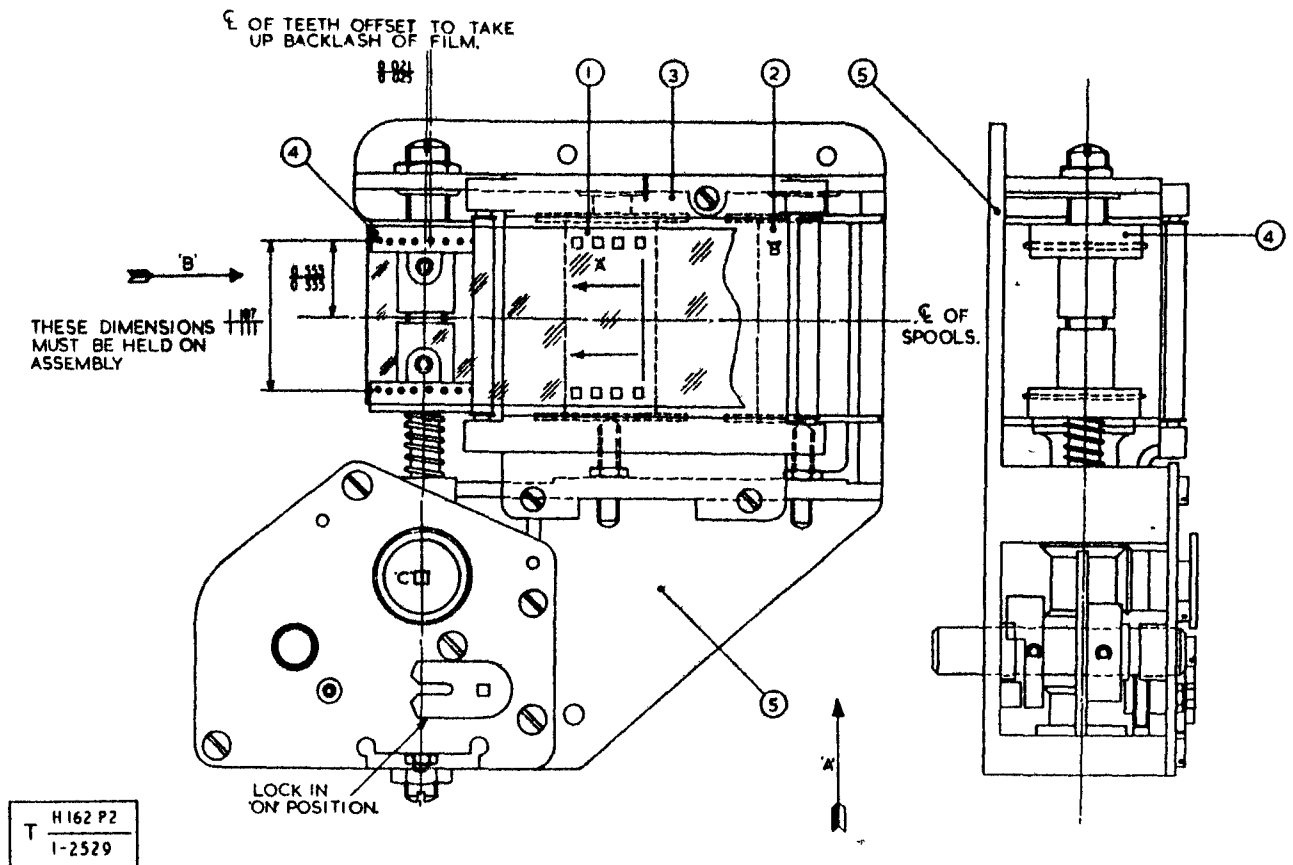
T H162 P2
1-2528

Fig 2528 - Remote aerial adaptor - circuit and layout diagram

P.S.U. socket C13 plug	In No	Nominal voltage	Nominal current
A	A	300V send high power	6.5mA
A		150V send low power	3.25mA
B	B	600V send high power	73mA
B		300V send low power	13.6mA
C		150V send and receive	100mA
J		19V receive	0.95A
L		19V send	0.9A
O		12V intercomm amplifier	0.175A
S		12V calibrator	0.3A

Note: The figures given here and those included on the main circuit diagrams are typical figures but must not be regarded as specification figures. Specification tests are given in Tables 2510, 2511 and 2512.

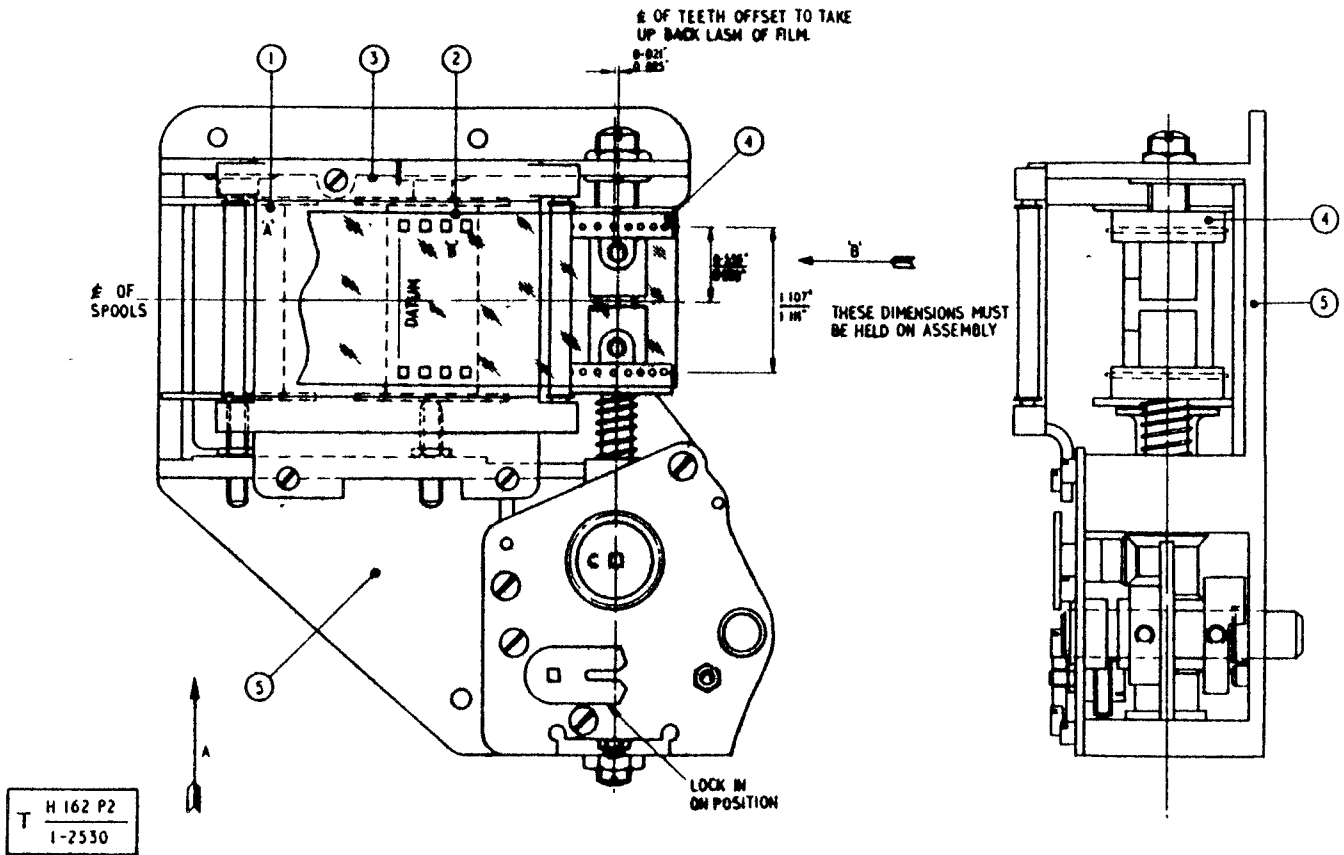
Table 2509 - Nominal h.t. and l.t. consumption for S.U.V. No 16 with C13 as load



Note: To insert a new CHANNEL film scale:-

1. Turn gear C anticlockwise to end stop.
2. Place START of the film between items 5 and 4 in direction of arrow B with reverse side facing the operator.
3. Insert the START of film into the slot in spool A (item 1) and wind the film fully on to this spool until the end arrowed mark is in the centre of item 3; pass the end of the film over the film sprockets (item 4).
4. Turn LOCK to the on position.
5. Hold the film in position, rotate spool B (item 2) approximately nine turns anticlockwise (viewed from arrow A), insert the end of the film into the slot of spool B (item 2) and allow it to take up the slack of the film.
6. Release the lock and rotate gear C clockwise to end stop.
7. Set DATUM on film scale to the marker on item 3 by releasing the film from item 4 sprockets and adjusting.

Fig 2529 - CHANNEL (KC/S) film scale assembly



Note: To insert a new R.F. film scale:-

1. Turn gear C clockwise to end stop.
2. Place START of the film between items 4 and 5 in direction of arrow B with reverse side facing the operator.
3. Insert the Start of film in the slot of spool B and wind the film fully on to this spool until the end calibration mark is in the centre of item 3; pass the end of the film over the sprockets of item 4.
4. Turn LOCK to the on position.
5. Hold the film in position, rotate spool A approximately nine turns clockwise (viewed from arrow A), insert the end of film into the slot in spool A (item 1) and allow it to take up the slack of the film.
6. Release the lock and rotate gear C anticlockwise to end stop.
7. Set DATUM on the film scale to the marker on item 3 by releasing the film from item 4 sprockets and adjusting.

Fig 2530 - RF film scale assembly

Table 2510 - Wireless set C13 - specification testsNotes

1. (a) The tests quoted are derived from the original Design Specification which may be amended during production.
- (b) Any such changes will be included in Tels H 164 or Tels H 168 when published.
- (c) Methods of carrying out the tests will be published in Tels H 164.
- (d) Tests marked (B) are not normally required to ensure serviceability but are included as they may be of value in clearing obscure faults.

Conditions of test

Supply voltage

2. The voltages at the set input plug should be:-

	<u>Normal volts</u>	<u>Low volts</u>	<u>High volts</u>
Battery supply, PLA, pin E	23	21	29
Send h.t. PLA, pin B	600	540	660
Receive h.t. PLA, pin C	150	135	170

3. Normally the input voltage only can be varied when using a superseder and a random S.U.V. No 16. In these conditions, if specification figures cannot be attained, it is permissible to adjust the supply voltage to give the stated h.t. voltages.

4. All tests are carried out at 'normal volts' unless otherwise stated.

R.F. impedances

5. An r.f. input impedance of 75Ω shall be connected at the coaxial plug PLB for receiver and transmitter tests. Signal generator voltages quoted are the open circuit voltages.

A.F. impedances

6. (a) A.F. output impedance shall be made with an effective load resistance of 50Ω .
- (b) A.F. input impedance shall be made from generator of source resistance 300Ω . The open circuit voltages are quoted.

Table 2510 (cont)

Power consumption

7. The current drain should be within the limits stated below:-

Test condition	Max drain in mA at PLA pins								
	A 300/ 150V	B 600/ 300V	C 150V	E 24V	J 19VR	L 19VS	R CAL	S CAL	O I/C
Receive, standby	0	0	70	0	950	0	0	0	0
Receive, standby, Chan adjust	0	0	70	0	950	0	330	0	0
Receive, traffic + intercomm	0	0	90	0	950	900	0	330	190
Send, RT, HP, NORMAL or PHASE	7	70	105	200	950	900	0	330	0
Send, RT, LP, NORMAL or PHASE	2.5	18	105	200	950	900	0	330	0
Send CW, HP	8.5	70	90	200	950	900	0	330	0
Send CW, LP	1	18	90	200	950	900	0	330	0

TRANSMITTER TESTS

R.F. power output

8. The r.f. power output shall be within the limits specified. In each case the AE TRIMMER C140 should be adjusted for maximum power output. At no frequency shall this maximum be outside the range of the variable capacitor.

Test condition	Power into 75Ω load (Watts)	
	1.5-6.0Mc/s	6.0-12.0Mc/s
RT, HP, NORMAL	Greater than 8	Greater than 6
RT, HP, NORMAL (Low supply volts)	Greater than 5	Greater than 4
RT, LP, NORMAL	0.5-1.5	0.3-1.0
RT, HP, PHASE	Greater than 16	Greater than 12
CW, HP	Greater than 16	Greater than 12
RT, LP, PHASE	0.9-2.0	0.6-1.5
TUNE AE	2-5	2-5

R.F. scale calibration

9. The correct frequency marking shall always be completely visible in the RF window when the set is tuned to that frequency.

Modulation sensitivity

NORMAL (a.m.)

10. The r.m.s. r.f. voltages across a 70Ω load, measured on a valve voltmeter indicating .707 peak value, eg V.V. No 3, shall be not less than shown below:-

Table 2510 (cont)

A.F. modulation input at 1kc/s	R.F. voltage		
	High power		Low power
	1.5-6.0Mc/s	6.0-12.0Mc/s	1.5-12.0Mc/s
NIL	24	21	6
40mV	42	37	10.5
400mV	46	40	-
100mV	-	-	11.5

11. The ratio $\frac{\text{R.F. voltage with 40mV a.f. input}}{\text{R.F. voltage with no a.f. input}}$ shall exceed 1.65 on high power and 1.5 on low power.

12. The modulation pattern viewed on a c.r.o. shall be free from indications of instability or depths of modulation exceeding 100% for a.f. inputs up to 400mV on high power and 100mV on low power.

PHASE

13. Connect a deviation meter as loosely as possible across the 70Ω dummy aerial.

14. On high power or low power any a.f. input level between 40mV and 400mV shall produce a frequency deviation between 900c/s and 1400c/s.

Modulation frequency characteristic

15. With the a.m.c. rendered inoperative the input required to produce 30% modulation on NORMAL or 1 radian on PHASE shall be as follows:-

A.F. frequency	400c/s	1kc/s	2kc/s	3kc/s	5kc/s	10kc/s
Input level dB	-1 to +5	0	-1 to +4	-1 to +4	greater than 9	greater than 20

Sidetone

NORMAL and PHASE

16. An input of 14mV at 1kc/s shall produce an a.f. sidetone of not less than 4mW into 50Ω.

CW

17. With the set on CW and key closed, there shall be an a.f. output of at least 1mW into 50Ω. The frequency of this output shall lie between 500c/s and 2kc/s.

A.F.C. operation

18. With the a.f.c. rendered inoperative, the RF dial (transmitter) shall be detuned from the CHANNEL dial (receiver) by the frequencies below.

Operating frequency	1.5-3.0Mc/s	3.0-6.0Mc/s	6.0-12.0Mc/s
Transmitter detuned	10kc/s	10kc/s	16kc/s

Table 2510 (cont)

19. When the a.f.c. is restored the transmitter frequency shall return to within 500c/s of the correct frequency.

C.W. operation

20. Keying speeds of up to 20 words/min shall produce sensibly square waveforms. Break-in operation between words or letters to be possible for speeds up to 6 words/min.

Hum (B)

21. Hum on the carrier when used with S.U.V No 16, shall not cause modulation of more than 1/2% (NORMAL or PHASE).

M.O. pulling (B)

22. With a.f.c. inoperative, when the AE TRIMMER is tuned through resonance the change in m.o. frequency shall not exceed 500c/s.

RECEIVER TESTS

Sensitivity

23. With the inputs quoted below the ratio of $\frac{\text{Receiver a.f. output with modulation}}{\text{Receiver a.f. output without modulation}}$ shall be at least 20dB.

(a) RT (NORMAL)

Modulation:	30% at 1kc/s
R.F. level:	Normal volts: 6.3 μ V
	Low volts: 12.5 μ V

(b) RT (PHASE)

Deviation:	400c/s at 1kc/s
R.F. level:	Normal volts: 4.0 μ V
	Low volts: 8.0 μ V

(c) CW

Modulation:	Zero from signal generator. Ratio obtained from BFO TONE adjusted for max and min a.f. output
R.F. level:	Normal volts: 2.0 μ V
	Low volts: 4.0 μ V

Quieter operation

24. With an r.f. input to give 10dB signal-to-noise ratio the quieter action shall not deteriorate the a.f. output by more than 2dB. With the same conditions but no signal input the a.f. output shall not exceed 1mW on NORMAL or PHASE.

Table 2510 (cont)

Blocking (B)

25. With a wanted input of $3\mu\text{V}$ modulated 30% at 1kc/s , the total blocking bandwidth of an unwanted signal of 30mV level shall not be greater than $\pm 60\text{kc/s}$ anywhere in the set frequency band. The blocking criterion shall be a reduction of 3dB in audio output.

Cross modulation (B)

26. With r.f. input of $30\mu\text{V}$ modulated 30% at 1kc/s , the output produced by an unwanted signal of 30mV spaced 30kc/s from the wanted signal, shall be at least 20dB down on the wanted signal output

Selectivity and 2nd i.f. centre frequency

27. On RT PHASE with input adjusted to maintain $20\mu\text{A}$ detector current.

Detuning from centre frequency*

Signal generator relative output

0	0
-2 to $+2\text{kc/s}$	Maximum variation 2dB
Greater than $\pm 3\text{kc/s}$	6dB
$\pm 10\text{kc/s}$	At least 64dB

*The centre frequency shall be the arithmetic mean of the 6dB point frequencies and must be $500\text{kc/s} \pm 2\text{kc/s}$.

Discriminator centre frequency

28. The discriminator frequency to give zero output shall be within $\pm 200\text{c/s}$ of the i.f. centre frequency measured above.

A.F. output

29. (a) NORMAL

$10\mu\text{V}$ r.f. signal modulated 30% at 1kc/s

or

(b) PHASE

$10\mu\text{V}$ r.f. signal deviated $\pm 400\text{c/s}$ at 1kc/s to produce:-

15-20mW into 50Ω	Normal volts
Greater than 10mW into 50Ω	Low volts
5-10mW into 150Ω	Normal volts

30. Total distortion with modulation depth adjusted to give 150mW a.f. output into 50Ω to be less than 10%

Table 2510 (cont)

A.F. frequency characteristic (B)

31. With r.f. inputs modulated at 30% NORMAL or 1 radian PHASE, the relative input levels to maintain 30 μ A detector current with varying modulation frequencies shall be:-

Modulation frequency	400c/s	1kc/s	2kc/s	3kc/s
Input level NORMAL	± 2 dB	0	+2 to -3dB	-2 to -10dB
Input level PHASE	-2 to -7dB	0	+2 to -3dB	-2 to -10dB

A.G.C. operation

NORMAL

32. With conditions as for a.f. output test a change of r.f. level from 6.3 μ V to 100mV shall not vary the a.f. output by more than 3dB.

PHASE (Limiting)

33. With conditions as for a.f. output test (PHASE) a change of input level from 5 μ V to 100mV shall not vary the a.f. output by more than 2dB.

CW tone control

34. The CW tone shall be less than 300c/s with CW TONE control at central position. The maximum audio frequency either side shall be between 2.5 and 3.5kc/s.

Netting error

35. After alignment with the set tuned by normal procedure the difference between the transmitted frequency and the receiver frequency (frequency to give the mean of second i.f. passband) shall not differ by more than 300c/s.

36. The actual transmitter frequency shall be the nominal ± 500 c/s.

SEAL TEST (WIRELESS SET)

37. Initial pressure: 10 lb/sq in.
Leakage rate: 40 cc/hr maximum
Time constant: not less than 220 hr

INTERCOMM AMPLIFIER TESTS

Sensitivity

38. The input required to give 250mW into 50 Ω at 1kc/s shall lie between 40 and 100mV.

Regulation

39. A change of a.f. load from 30 Ω to 150 Ω shall reduce the power from 250mW to less than 90mW.

Table 2510 (cont)

Frequency response (B)

40. With constant output of 100mW the inputs, relative to 1kc/s, shall be:-

Frequency	100	300	600	1kc/s	2kc/s	4kc/s	10kc/s	20kc/s
Relative input dB	greater than 1	-1 to +2	-1 to +1	0	+2 to +4	+6 to +8	greater than 15	greater than 25

CALL TEST

41. Connect harness pins as follows:-

- Pin B and G to chassis
- Pin C to J via 0.5 μ F

42. An output of at least 200mW at a frequency between 500c/s and 2kc/s shall be measured across 30 Ω at pins J and G.

Table 2511 - S.U.V. No 16 - specification tests

Input current

1. The input currents shall not exceed the limits quoted.

Condition	27V input	29V input
Standby + intercomm	2.3A	-
Send, low power, CW + intercomm	3.75A	-
Send, high power, CW + intercomm	6.3A	-
Open circuit (all switches open)	-	0.69A

Output volts

2. The voltages at the output socket pins shall be within the limits given below:-

Input voltage			23 and 27V		29V
SKTA pin No	Nominal volts	High or low power	On load volts		Maximum open circuit volts
			Minimum	Maximum	
A	300	H	277	308	397
A	150	L	136	153	-
B	600	H	568	627	775
B	300	L	282	308	-
C	150	-	143	167	222
J	19R	-	18	19.8	-
L	19S	-	18	19.8	-
O	12IC	-	11.5	13.5	-
R/S	12CAL	-	11.8	13.5	-

Table 2511 (cont)

Ripple

3. The ripple voltage measured centre-to-peak shall be:-

600V, HP, CW:	not greater than 2V
300V, HP, CW:	not greater than 1V
150V;	not greater than 0.5V

Seal test

4. Initial pressurs: 10 lb/sq. in.
Leakage rate: 25 cc/hr maximum
Time constant: not less than 90 hr

Table 2512 - A.T.U. No 11 - specification tests

1. The efficiency figures for the frequencies and settings shall be as given below. A dummy load of 4OpF and 10Ω is used. Precise method of carrying out this test may be critical and will be described in Tels H 164 when published, but the table is reproduced here as a guide.

A.T.U. setting	Frequency (Mc/s)	Minimum efficiency % $\left(\frac{\text{Watts in } 10\Omega \text{ load direct}}{\text{Watts in } 10\Omega \text{ via A.T.U.}} \times \frac{100}{1} \right)$
A1	1.4-1.5	19
A11	2.2-2.3	32
B1	2.1-2.2	25
B11	3.2-3.3	39
C1	3.1-3.2	27
C11	5.0-5.1	46
D1	4.7-5.0	46
D11	7.3-7.6	57
E1	6.6-7.3	46
E11	10.0-10.5	58
F1	9.0-10.0	45
F11	13.0-15.0	82

Seal test

2. Initial pressure: 10 lb/sq. in.
Leakage rate: 20 cc/hr maximum
Time constant: not less than 45 hr

EME8c/1364

END