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Despite the above, we will be making copies of essential technical information (circuit diagram, parts list, layout) freely available to all via our website from late 2004 onwards. This will be done to try and encourage and enable the maintenance of our remaining stock of vintage electronic equipment.

Guidance on using this electronic document

Acrobat Reader version

You need to view this document with Acrobat Reader **version 5.0** or later. It is possible that the document might open with an earlier version of the Acrobat Reader (thus allowing you to get this far!), but is also likely that some pages will not be shown correctly. You can upgrade your Acrobat Reader by direct download from the internet at http://www.adobe.com/products/acrobat/readermain.html or going to http://www.adobe.com/ and navigating from there.

Don't miss the index!

This document has had "bookmarks" added – which provide you with an "on-screen index". These allow you to quickly move to particular parts of the document, a numbered section or maybe the circuit diagrams for instance, merely by clicking on the page title. Click on the "Bookmarks" tab on the left hand side of the Acrobat Viewer window to access this feature – move the cursor over these titles and notice it change shape as you do so. Click on any of these titles to move to that page.

Large diagrams

The large diagrams are given in two formats – in A4 size sheets to allow easy printing, and complete as originally published to allow easy on-screen viewing. These versions are in different sections of the document, which can be found within the bookmarks.

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1. Work out the page numbers you want to print. If you want to print the whole document, then within "Bookmarks" (see above), first click on "**Front**", and note the page number given at the bottom of the Acrobat window – this will give you the page number of the first page to be printed. Similarly click on "**End of A4 printable copy**", to determine the last page to be printed.

2. Select "File – Print" or click on the printer icon. This will bring up the print dialog box.

3. Select the correct printer if necessary.

4. In the area marked "Print Range" click on the radio button marked "Pages from..", then enter the first and last page numbers worked out in step 1 into the "from" and "to" boxes.

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Please get in touch with me at archivist@vmarsmanuals.co.uk.

Richard Hankins, VMARS Archivist, Summer 2004

STATION, RADIO, UK/PRC-316

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 EMER contains a general description of the equipment. Tels F 203 and F 204 deal with repairs.

Note: This Issue 2 supersedes Issue 1, Pages 1001-1045 dated 10 Nov 69. The regulation has been revised.

General notes on component schedules in this regulation

1. Grid references in some tables are given in a figure-letter-figure form. The prefix figure refers to the drawing and the suffix letter and figures denote the actual grid reference, eg, 10B4 means that a component is located at B4 on Figure 2510.

2. Component schedules are given only for sub-units and assemblies that will be repaired at either Field or Base workshop level.

3. The following abbreviations have been used in the 'Type' column:

comp ins	=	composition insulated
cer tub	=	ceramic tubular
cer rect	=	ceramic rectangular
tant tub	=	tubular tantalum electrolytic
tant mod	=	modular tantalum electrolytic
tant sint	=	sintered tantalum electrolytic
met film ins	=	insulated metal oxide film

4. Reference should be made to the I.S.P.L. (Army Code No 60347) for current part numbers and designations.

5. The block diagrams show signal points and 12V power points on each board. Test points are ringed in red and must be located by referring to the appropriate full sub-unit circuit and layout diagrams, the reference numbers of which are given on the block diagrams.

6. The following terms are used for the 12V lines:

12A	All functions	12L	Low band
12T	Transmit	12H	High band
12R	Receive	12N	Narrow band c.w.
12M	Metering	12W	Wide band c.w.
		12CW	Either band c.w.

TABLES

FIGURES

FIGURES - (cont)

After Table number 2513,

Insert: '2513A - Operating frequencies, type C 1042A
'2513B - Operating frequencies, type D 1042B
'2513C - Operating frequencies, type E 1042C'

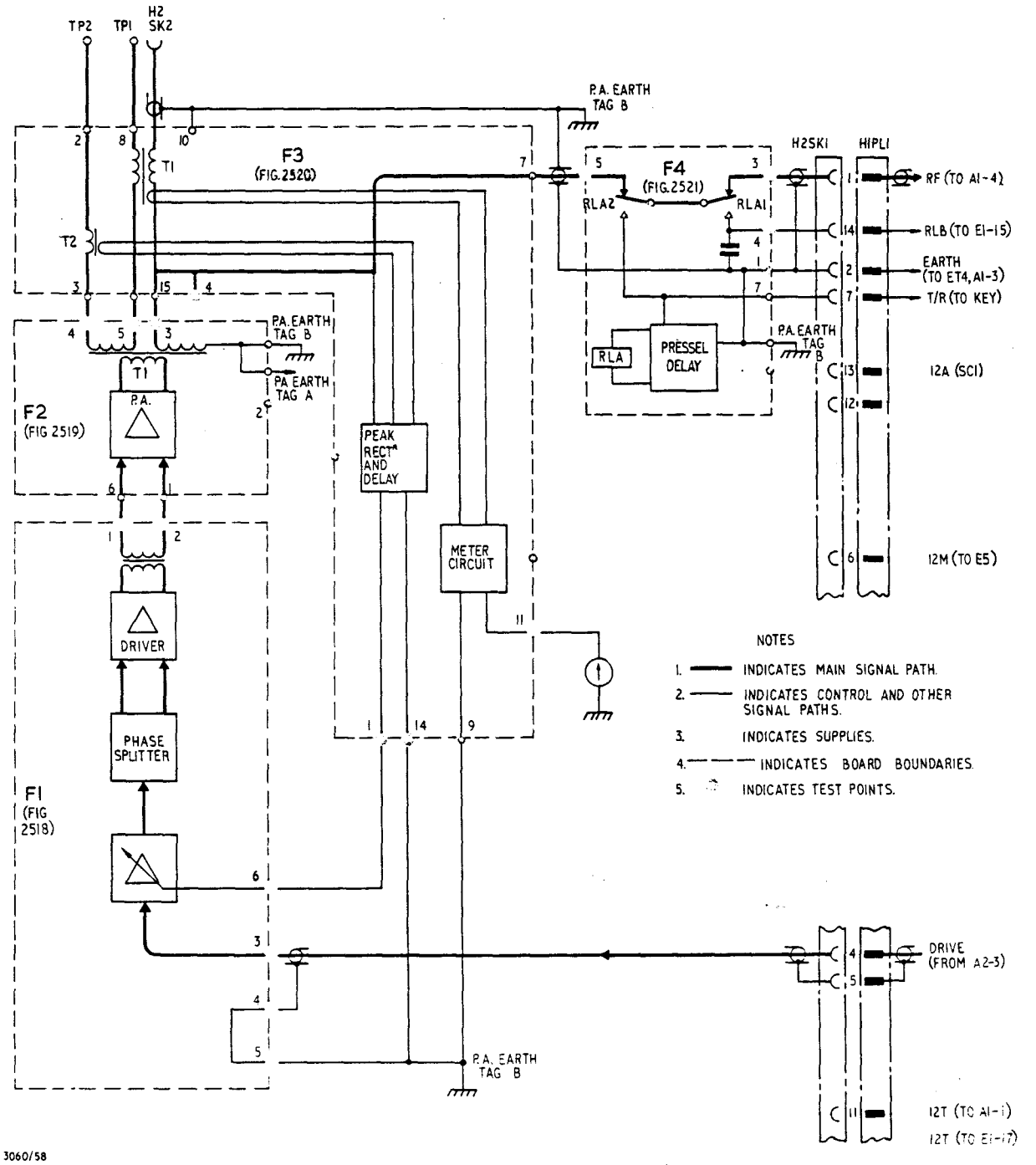


Fig 2501 - Block diagram, transmitter

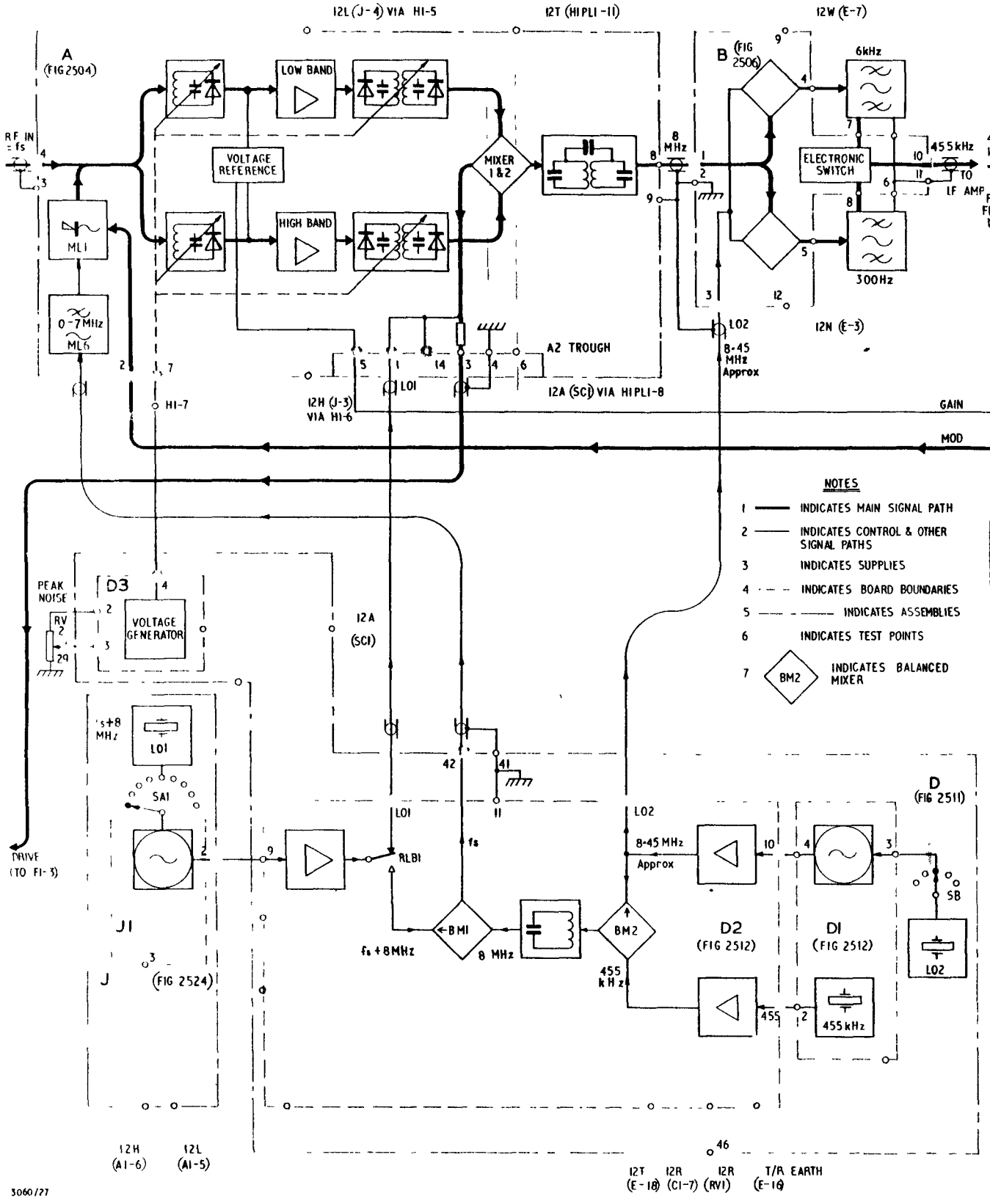
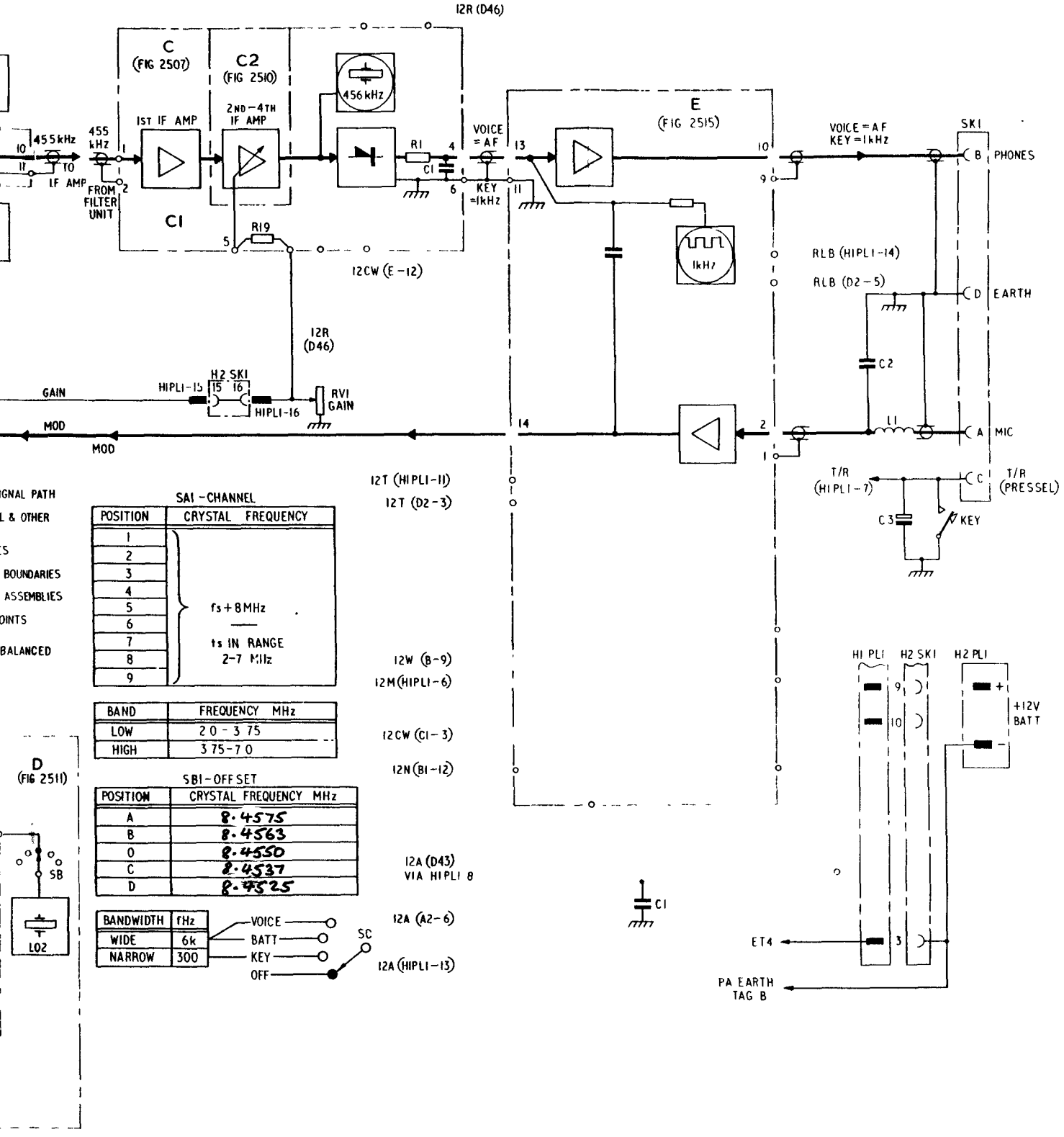
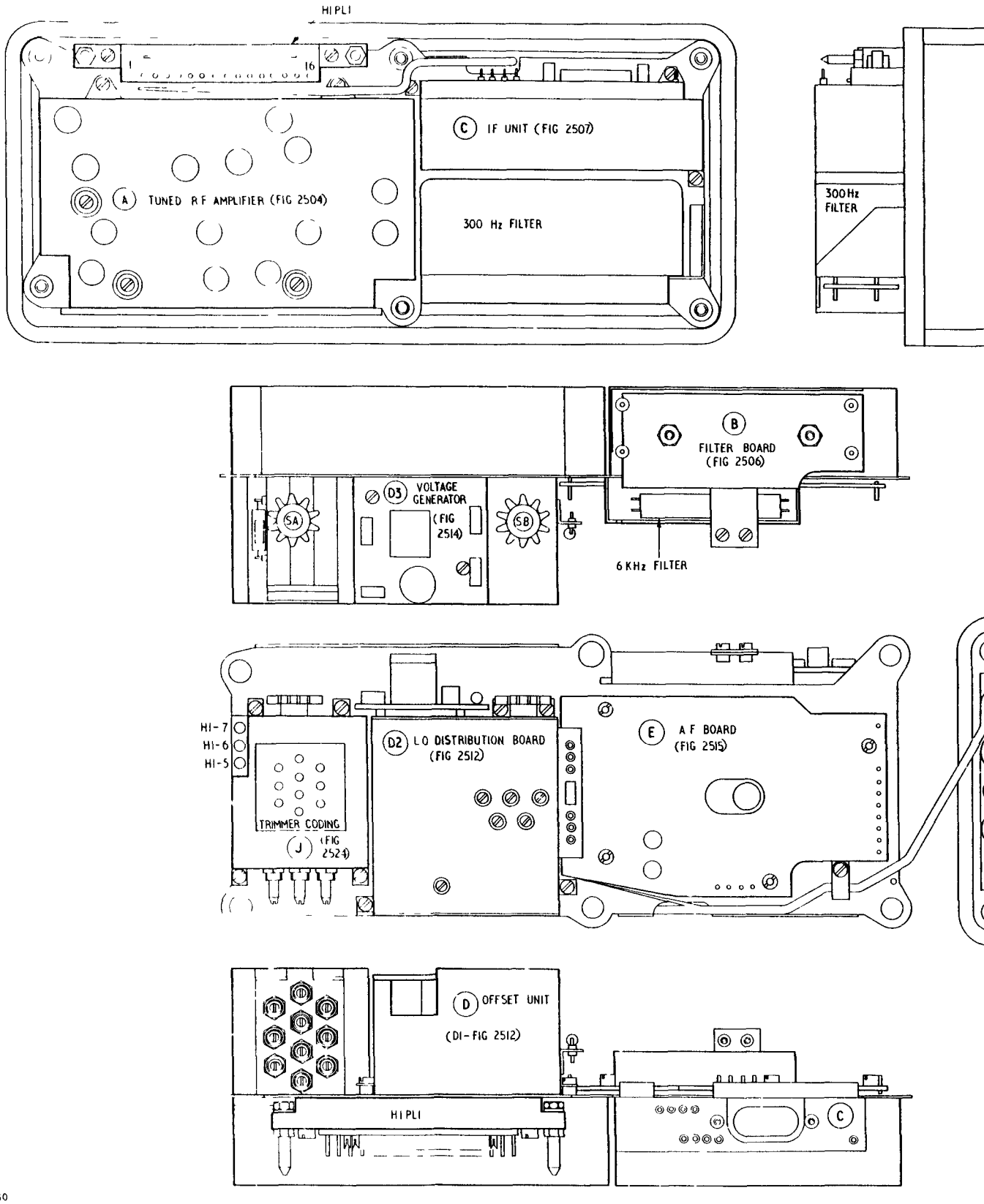


Fig 2502 - Block d

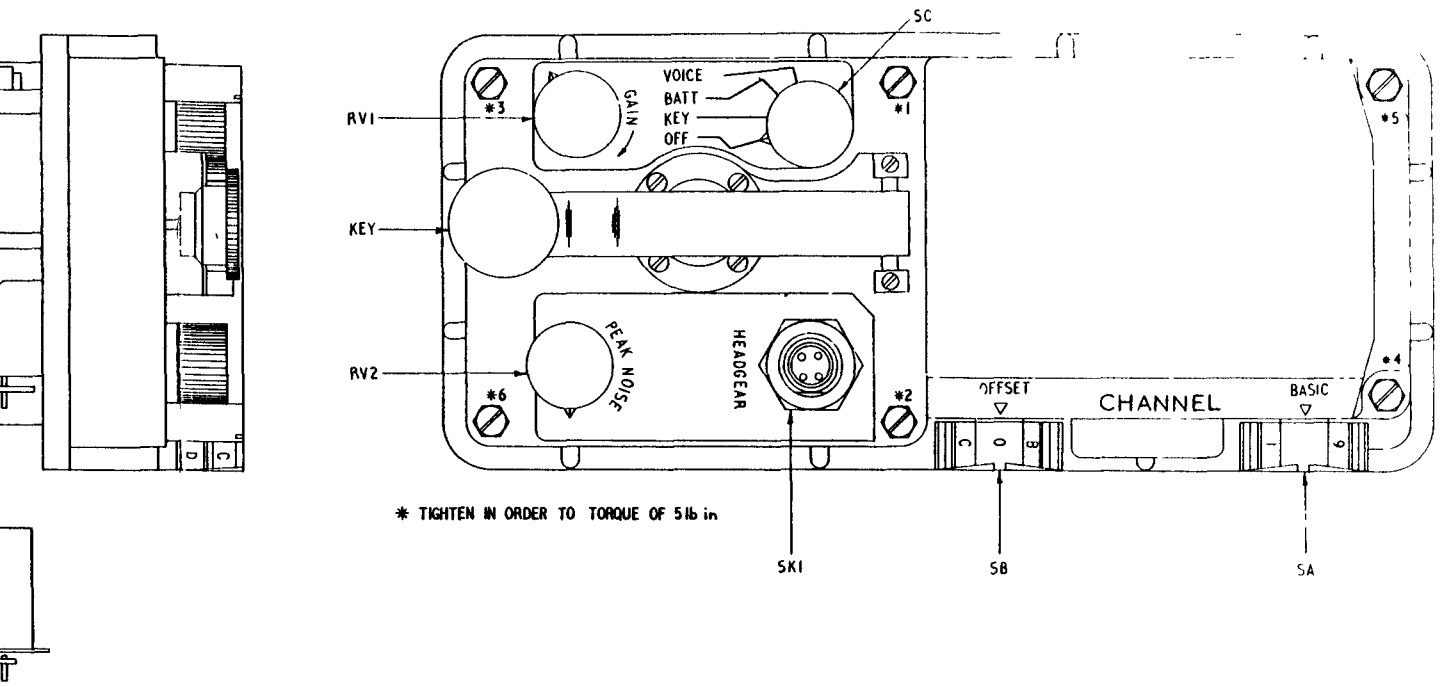


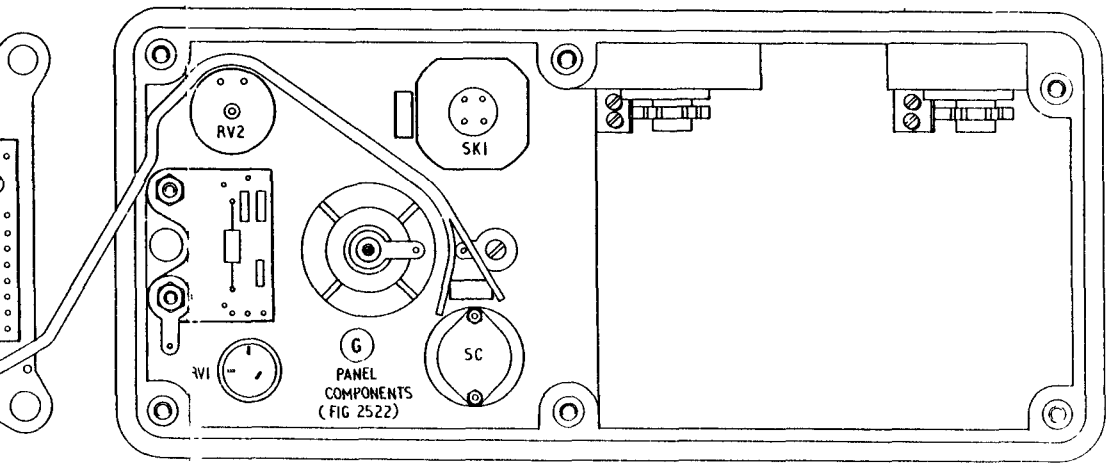
- Block diagram, receiver



5360 30

Fig 2503 - Layout





3 - Layout of sub-units

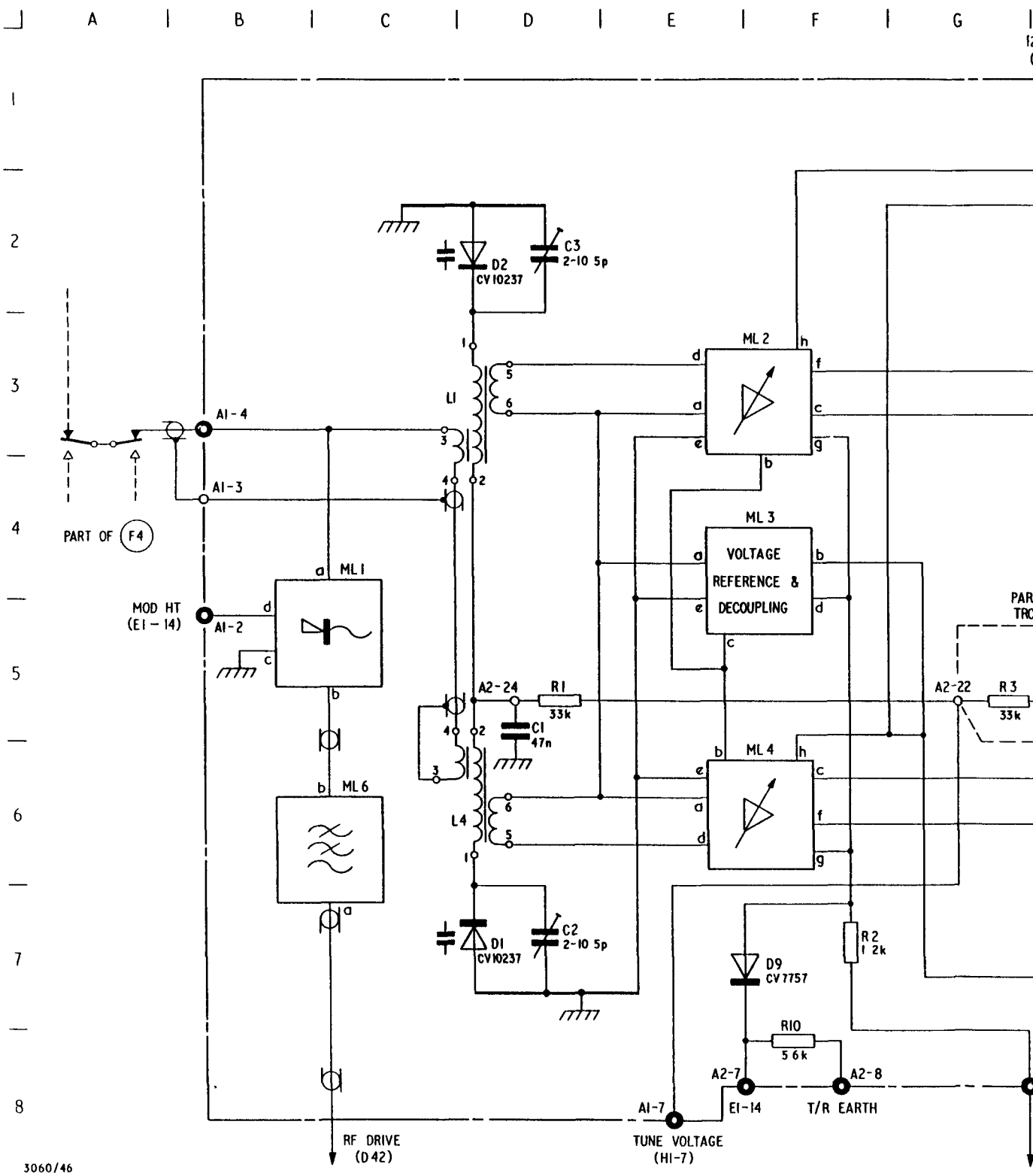
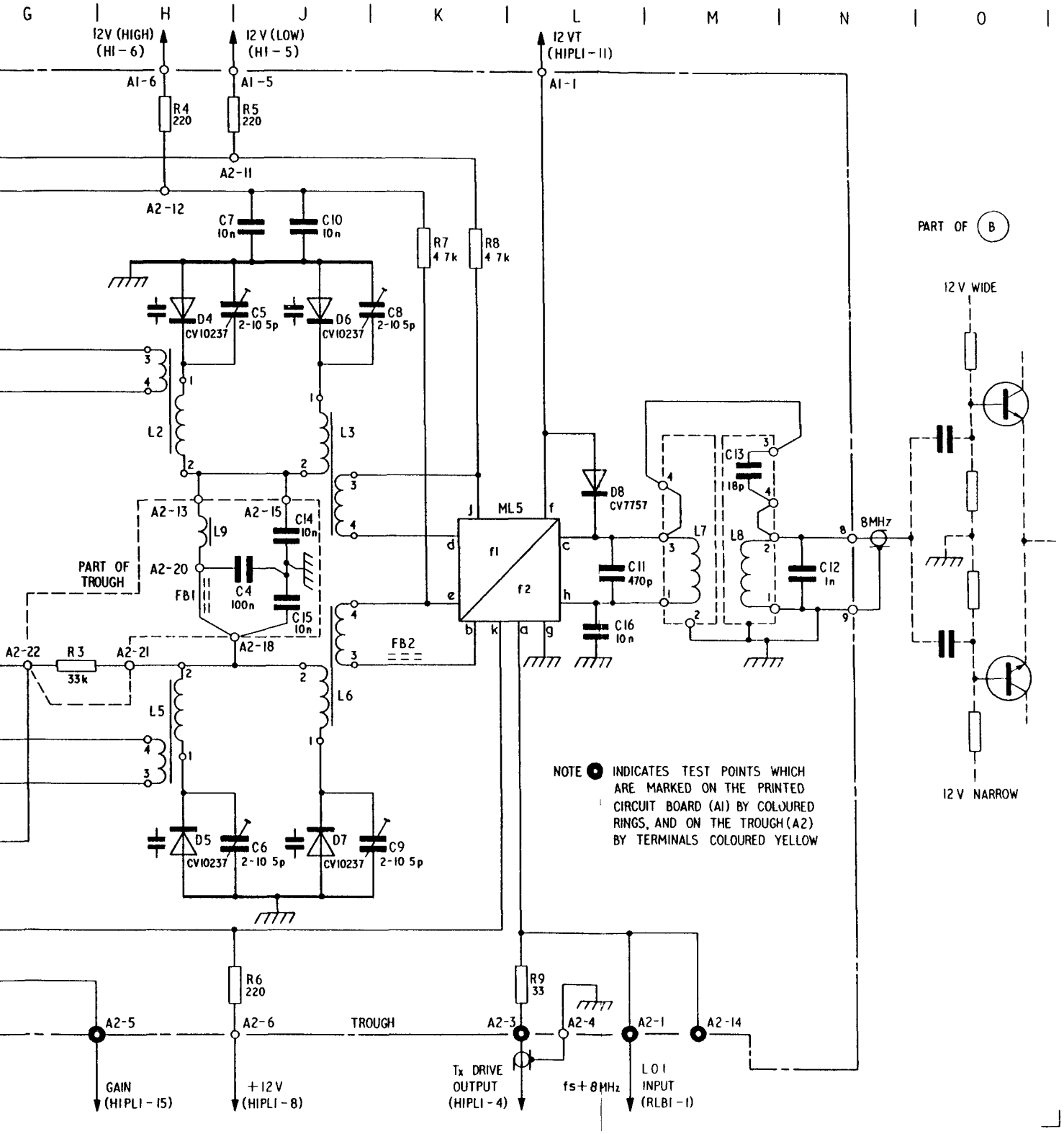


Fig 2504 - Board A, and trough



nd trough A2 r.f. unit, circuit diagram

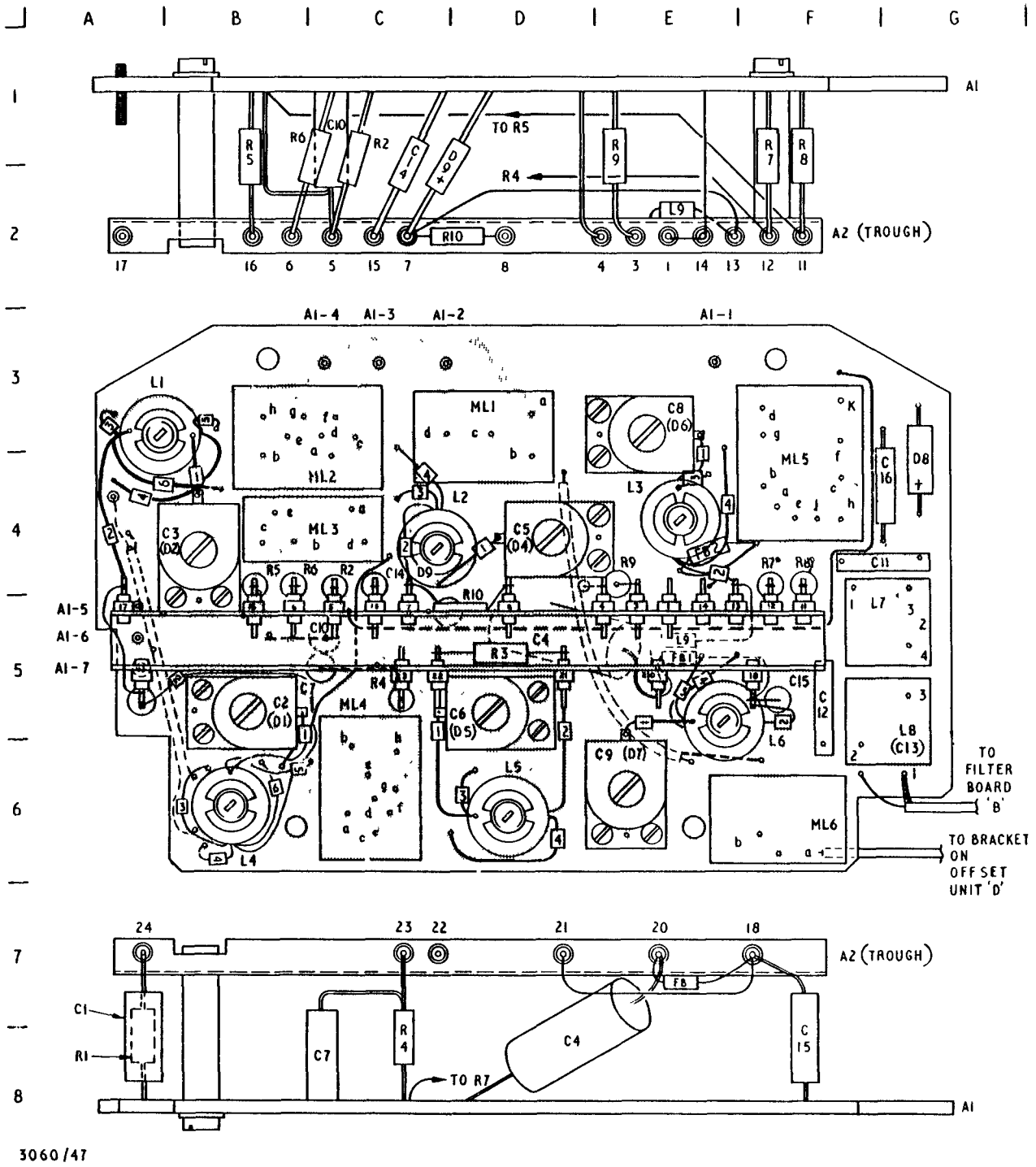


Fig 2505 - Board A and trough A2, r.f. unit, component layout

Table 2501 - Board A, component schedule
(Panel, electronic circuit, Z1/5820-99-193-5566)

Cct ref	Component location: Unit cct Fig 2504	Component location: Unit layout Fig 2505	Value	Rating	Type
		RESISTORS			
R1	D5	A8	33k	1/4W	
R2	F7	C1, C4	1.2k	1/4W	(
R3	G5	D5	33k	1/4W	(
R4	H1	C5, C8	220	1/4W	(
R5	J1	B1, B4	220	1/4W	
R6	J8	B1, B4	220	1/4W	(±5% met film ins
R7	K2	F1, F4	4.7k	1/4W	(
R8	K2	F1, F4	4.7k	1/4W	(
R9	L8	E1, E4	33	1/4W	(
R10	F8	D2, D5	5.6k	1/4W	(
		CAPACITORS			
C1	D5	A7	47n	250V	±20% plastic dielectric
C2	D7	B5	0-10.5p		Air variable (with D1)
C3	D2	B4	0-10.5p		Air variable (with D2)
C4	J5	D5, D8	0.1μ	160V	±10% plastic dielectric
C5	J3	D4	0-10.5p		Air variable (with D4)
C6	J6	D5	0-10.5p		Air variable (with D5)
C7	J2	C5, C8	10n	250V	±20% plastic dielectric
C8	K3	E3	0-10.5p		Air variable (with D6)
C9	K6	E6	0.10.5p		Air variable (with D7)
C10	J2	C1, C5	10n	250V	±20% plastic dielectric
C11	L4	F4	470p		±10% mica
C12	N4	F5	1n		±10% mica
C13	M4	F5	18p		±10% cer

Table 2501 - (cont)

Cct ref	Component location: Unit cct Fig 2504	Component location: Unit layout Fig 2505	Value	Rating	Type
CAPACITORS - (cont)					
C14	J4	C1, C4	10n	250V	±20% plastic dielectric
C15	J5	F5, F8	10n	250V	
C16	L5	F4	10n	250V	
INDUCTORS					
L1	D3	A3			Transformer r.f.
L2	H4	D4			Transformer r.f.
L3	J3	E4			Transformer r.f.
L4	D6	B6			Transformer r.f.
L5	H6	D6			Transformer r.f.
L6	J6	E6			Inductor r.f.
L7	M4	F5			Inductor r.f.14 turns
L8	M4	F6			Inductor r.f. 11 turns
L9	H4	E2, E5			Inductor r.f. 2 turns
FB1	H5	E5, E7			Choke r.f. (ferrite bead)
FB2	K5	E4			Choke r.f. (ferrite bead)

Cct ref	Component location: Unit cct Fig 2504	Component location: Unit layout Fig 2505	Description
MISCELLANEOUS			
D1	D7	B5	Semiconductor device (varicap diode) CV10237
D2	D2	B4	Semiconductor device (varicap diode) CV10237
D4	H3	D4	Semiconductor device (varicap diode CV10237

Table 2501 - (cont)

Cct ref	Component location		Description
	Unit cct Fig 2504	Unit layout Fig 2505	
MISCELLANEOUS - (cont)			
D5	H5	D5	Semiconductor device (varicap diode) CV10237
D6	J3	E3	Semiconductor device (varicap diode) CV10237
D7	J7	E6	Semiconductor device (varicap diode) CV10237
D8	L4	G4	Valve electronic CV7757
ML1	C5	D3	Module A1ML1 - brown spot
ML2	F3	C4	Module A1ML2 - yellow spot
ML3	F4	C4	Module A1ML3 - orange spot
ML4	F6	C6	Module A1ML4 - yellow spot
ML5	K4	F4	Module A1ML5 - green spot
ML6	C6	F6	Module A1ML6 - blue spot
D9	E7	C2	Valve electronic CV7757

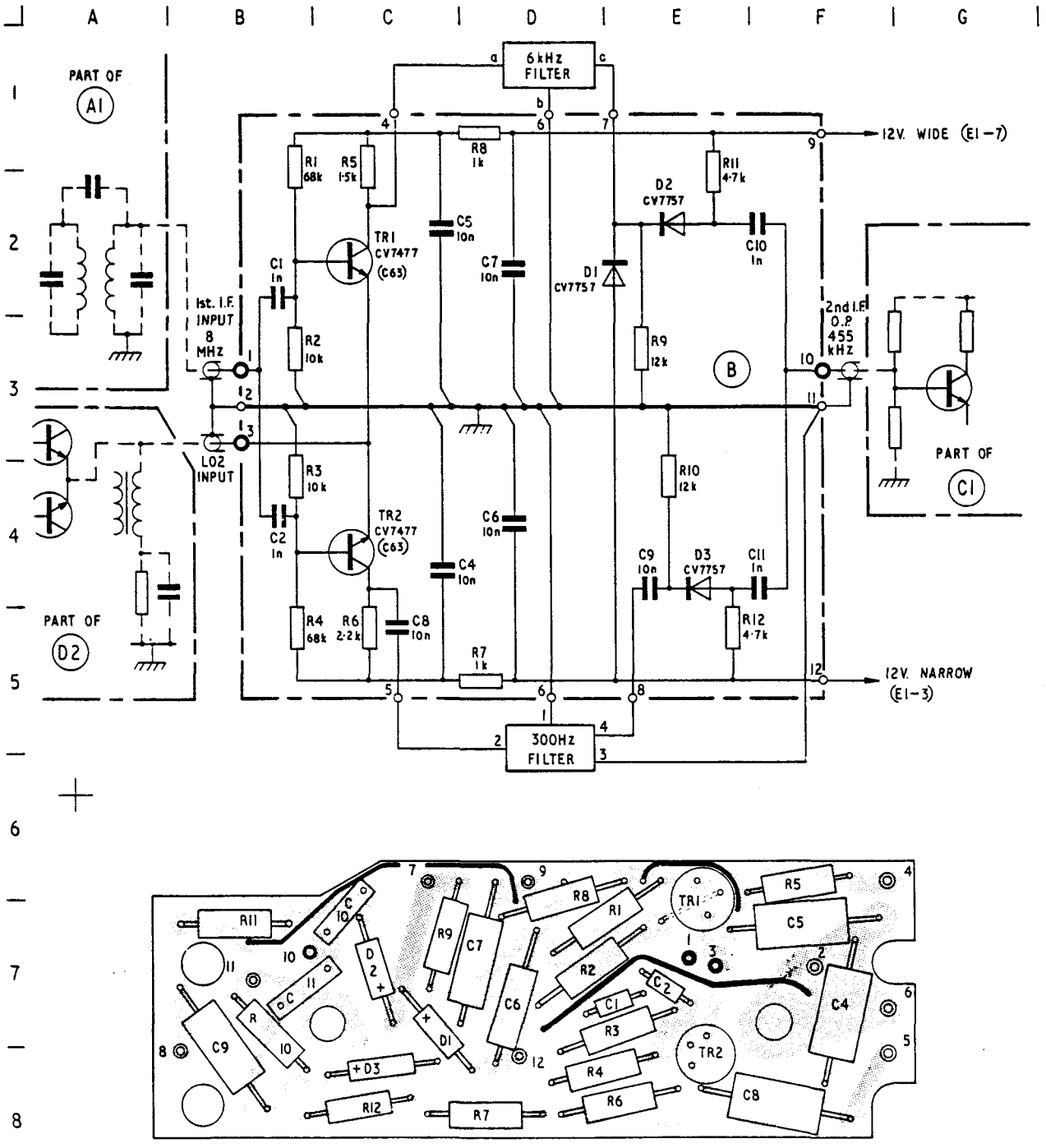


Fig 2506 - Board B, circuit diagram and component layout
(Z1/5820-99-193-7405)

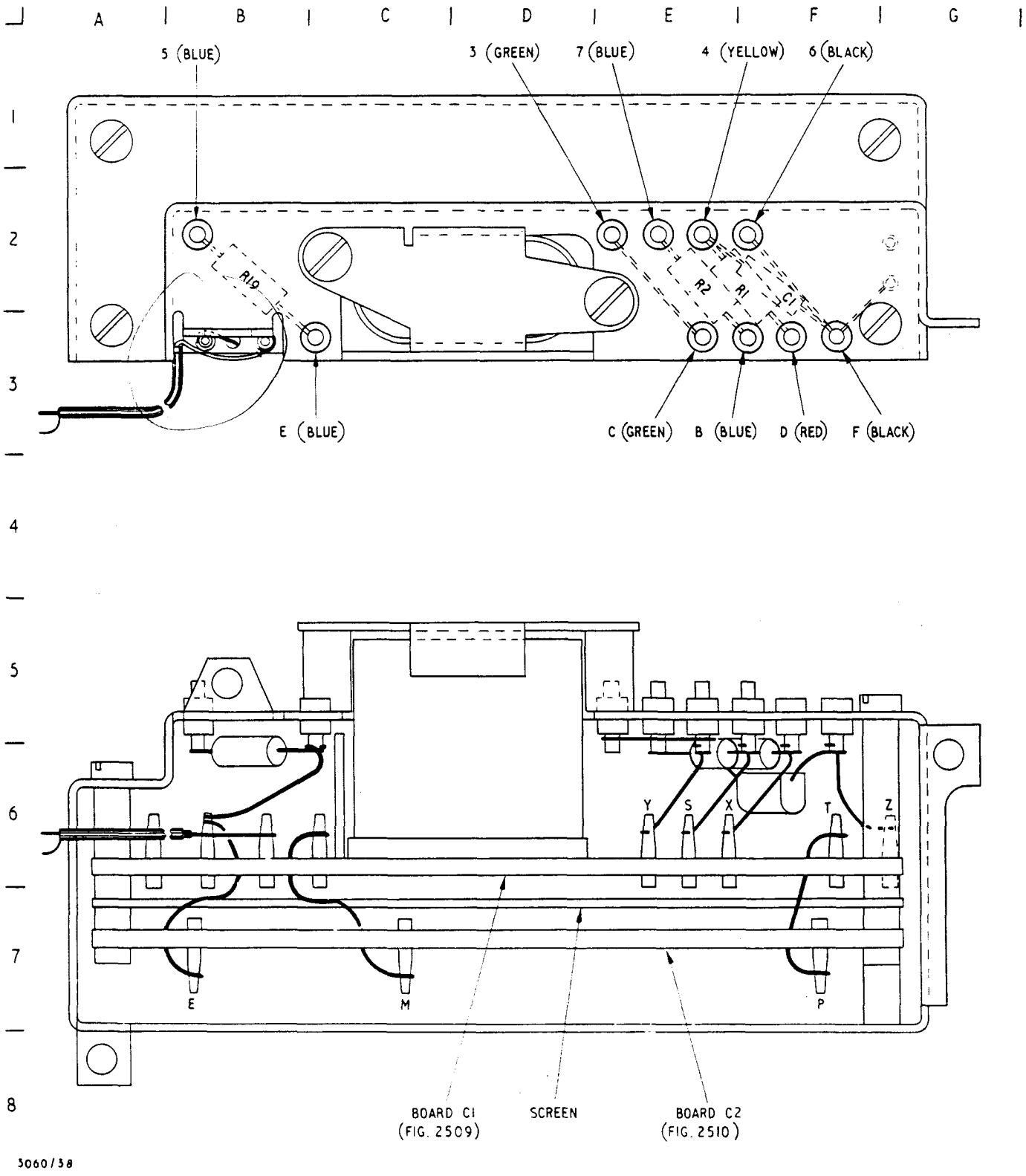


Fig 2507 - Unit C, i.f. assembly, component and board layout

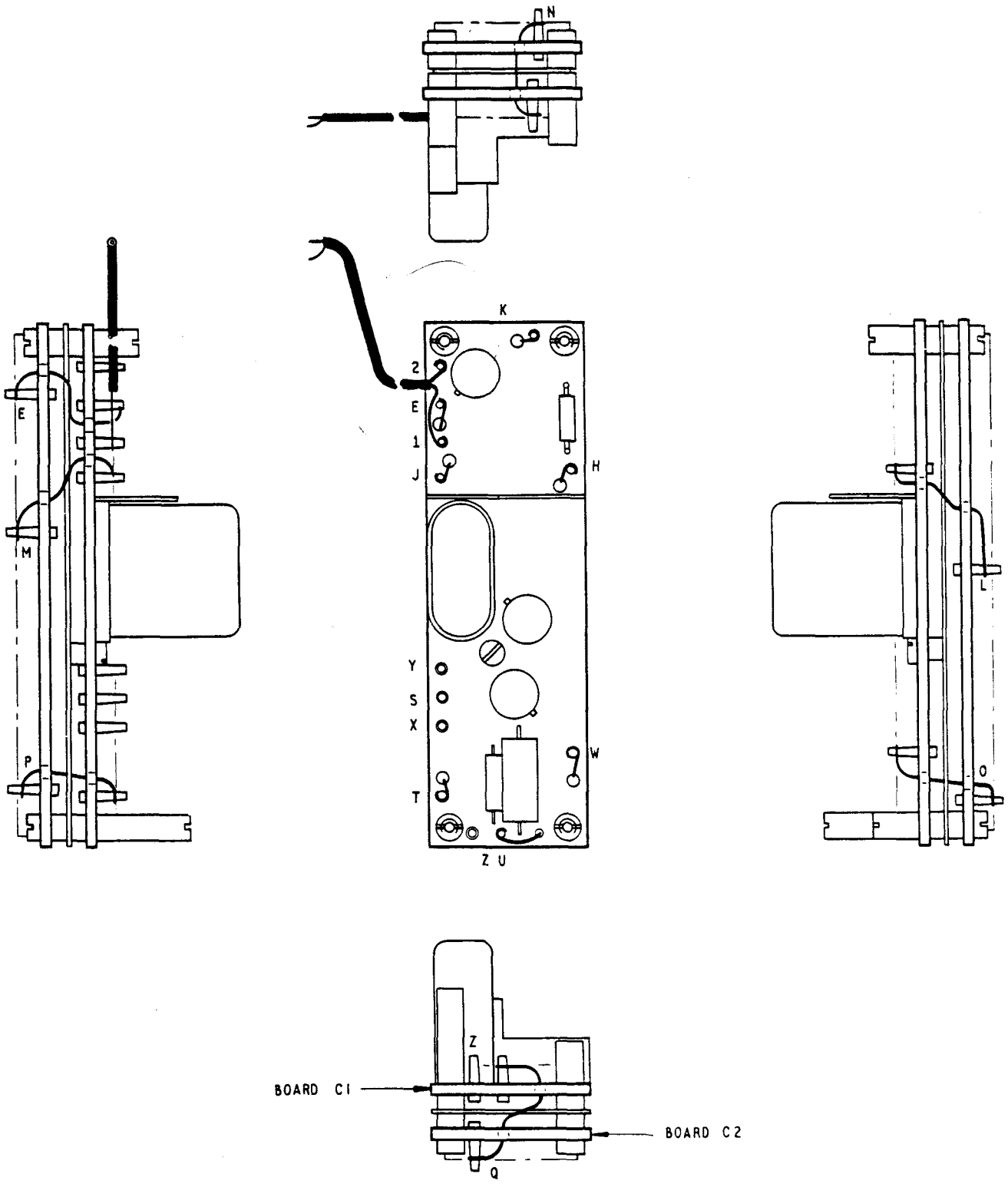
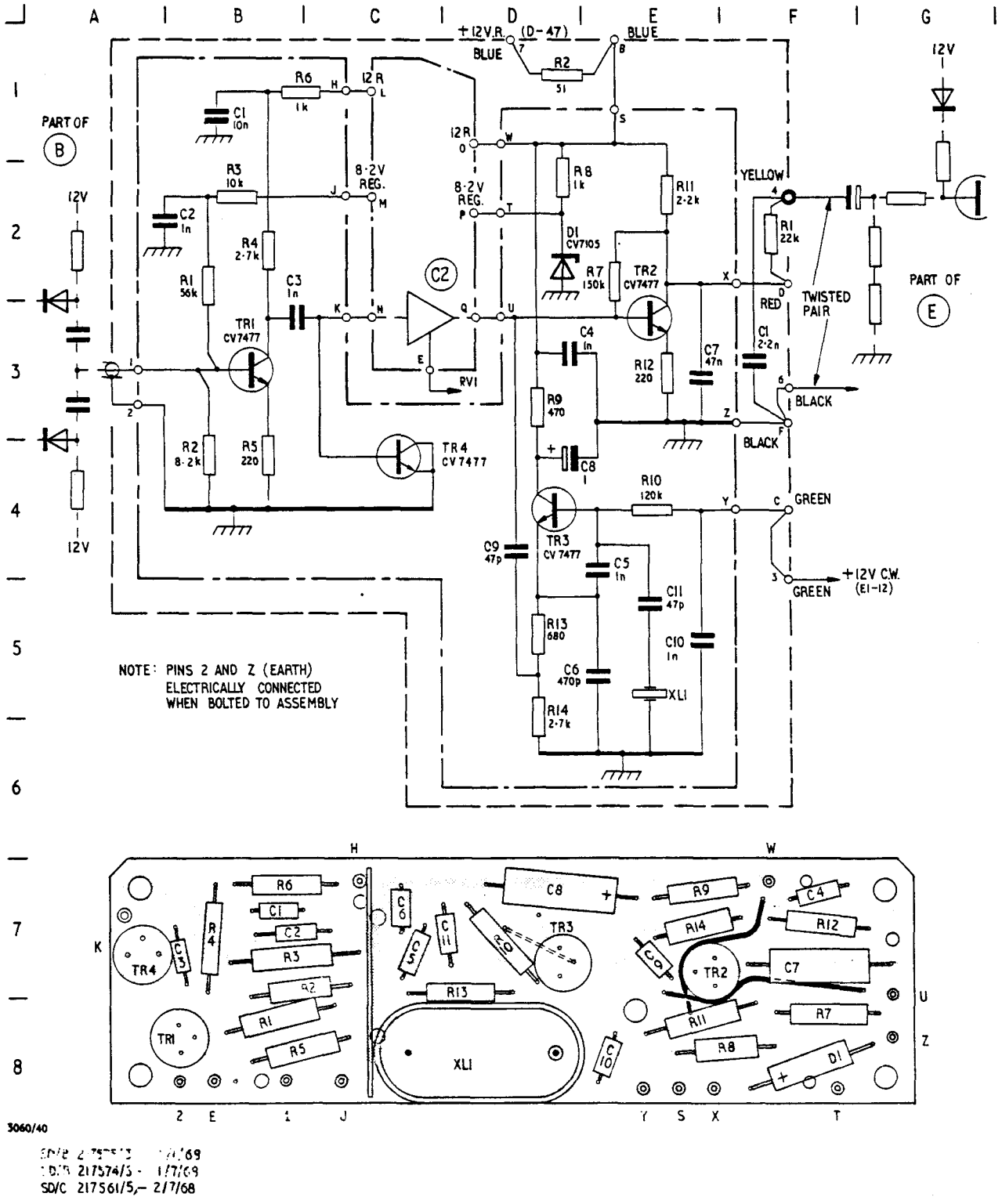


Fig 2508 - Unit C, i.f. assembly, interboard wiring

Table 2502 - I.F. assembly (unit C), component schedule
(Amplifier r.f. Z1/5820-99-193-7395)

Cct ref	Component location		Description
	Unit cct	Unit layout	
MISCELLANEOUS			
R1	9F2	7F2	Resistor, fixed, met film ins, 22k ±5% 1/4W
R2	9D1	7E2	Resistor, fixed, met film ins, 51Ω ±5% 1/4W
R19	10B4	7B2	Resistor, fixed, met film ins, 12k ±5% 1/4W
C1	9F3	7F2	Capacitor, fixed, cer, tub 2.2n ±20%
C1 board	2509	2509	Panel, electronic circuit
C2 board	2510	2510	Panel, electronic circuit



SD/E 2 [illegible] /1/69
SD/C 217574/3 - 1/7/69
SD/C 217561/5 - 2/7/68

Fig 2509 - Board C1, circuit diagram and component layout (unit C)

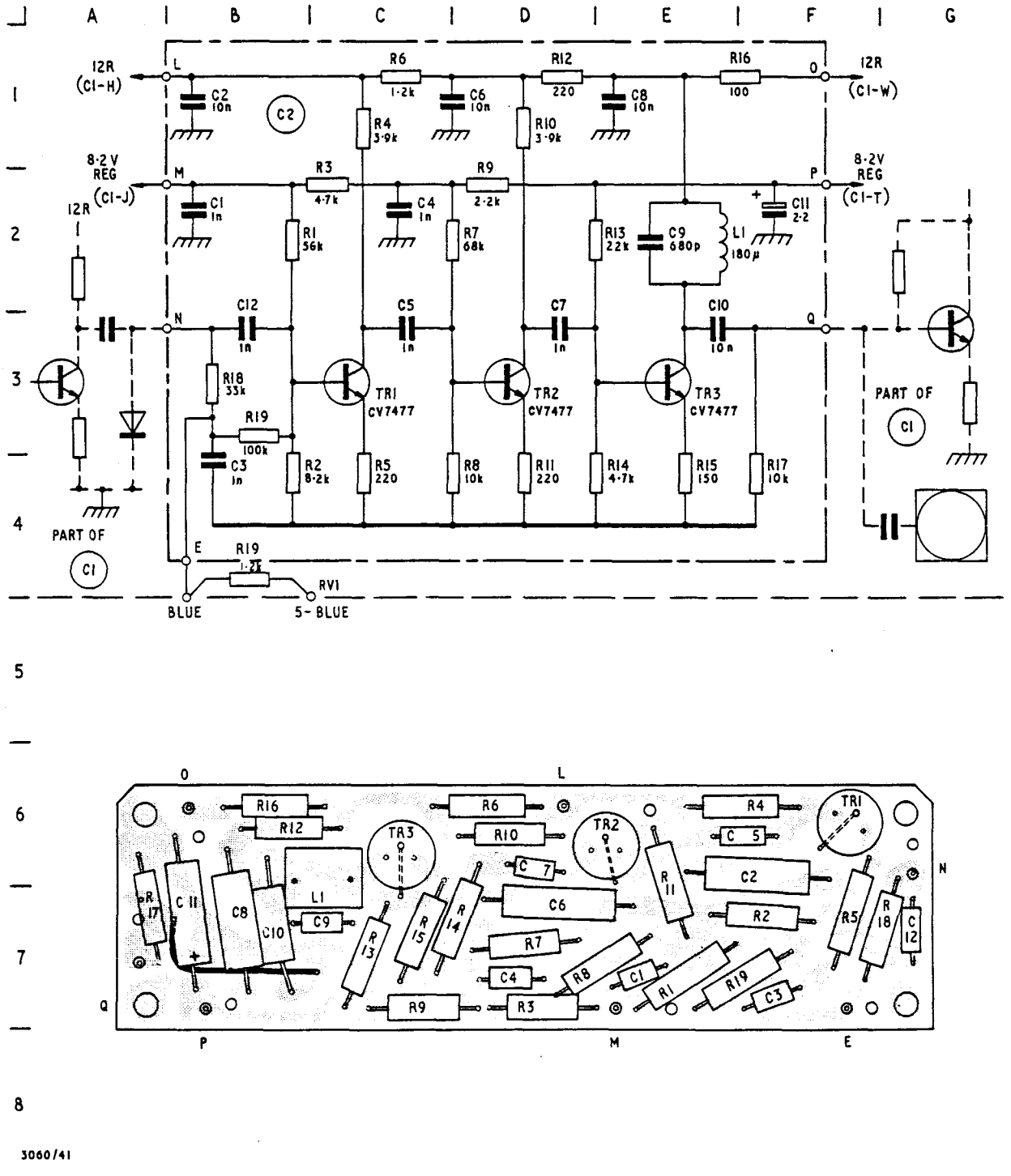


Fig 2510 - Board C2, circuit diagram and component layout (unit C)

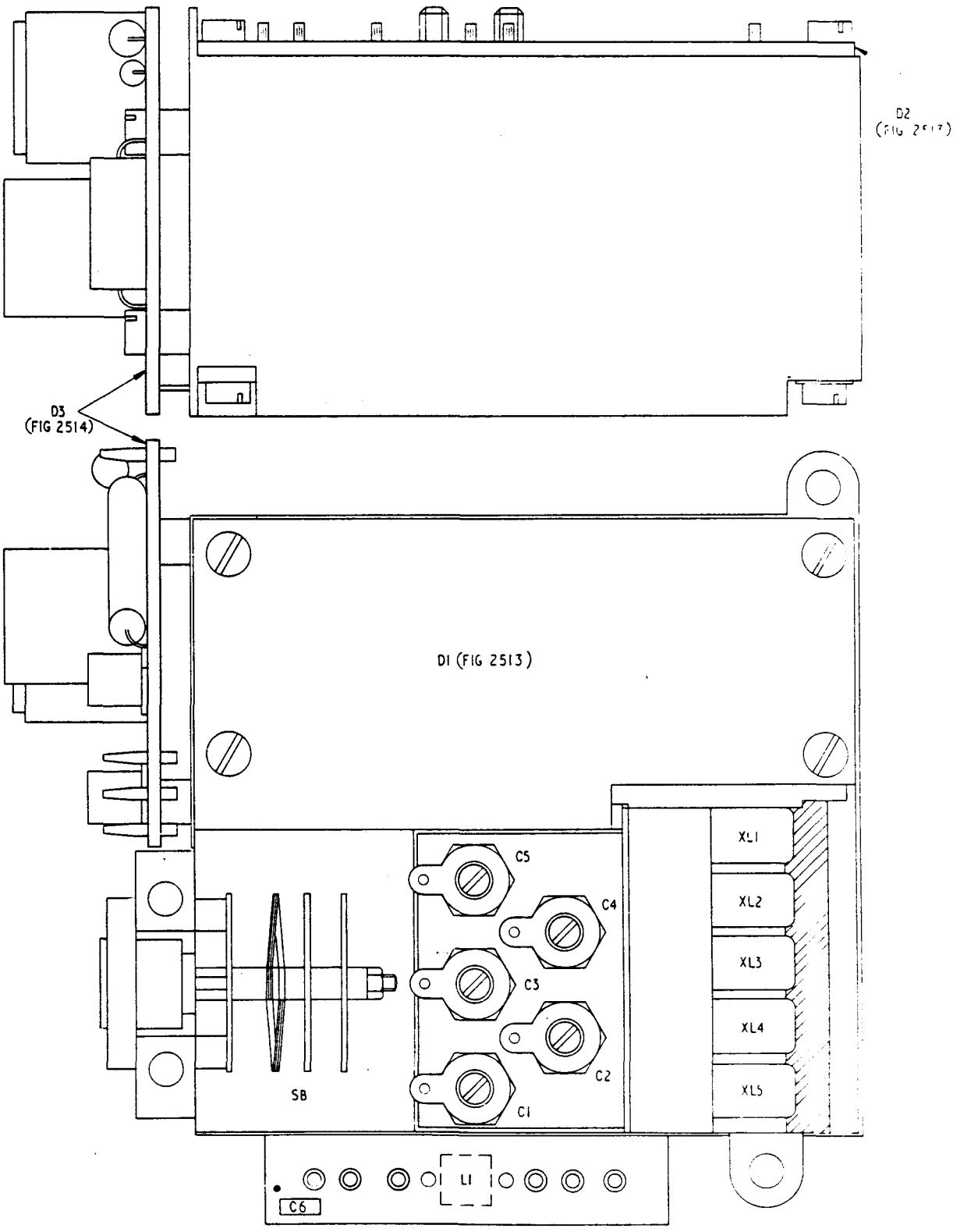


Fig 2511 - Unit D, assembly layout

Table 2503 - Unit D component schedule
(Offset unit assembly Z1/5820-99-193-7393)

Cct ref	Component location		Description
	Unit cct	Unit layout	
		MISCELLANEOUS	
XL1	12A1		Crystal unit, quartz 8.4575MHz
XL2	12A1		Crystal unit, quartz 8.4563MHz
XL3	12A1		Crystal unit, quartz 8.4550MHz
XL4	12B1		Crystal unit, quartz 8.4537MHz
XL5	12B1		Crystal unit, quartz 8.4525MHz
L1	14A1		Inductor r.f. 39 turns
C1	12B2		Capacitor, variable, cer tub 12pF 400V d.c.
C2	12B2	2511	Capacitor, variable cer tub 12pF 400V d.c.
C3	12A2		Capacitor, variable, cer tub 12pF 400 d.c.
C4	12A2		Capacitor, variable, cer tub 12pF 400V d.c.
C5	12A2		Capacitor, variable, cer tub 12pF 400V d.c.
C6	14B4		Capacitor, fixed, tant, 220nF
SB	12A2		Switch, rotary, 1-pole, 10-position
D1 board	2512	2513	Panel, electronic circuit
D2 board	2512	2513	Panel, electronic circuit
D3 board	2514	2514	Panel, electronic circuit

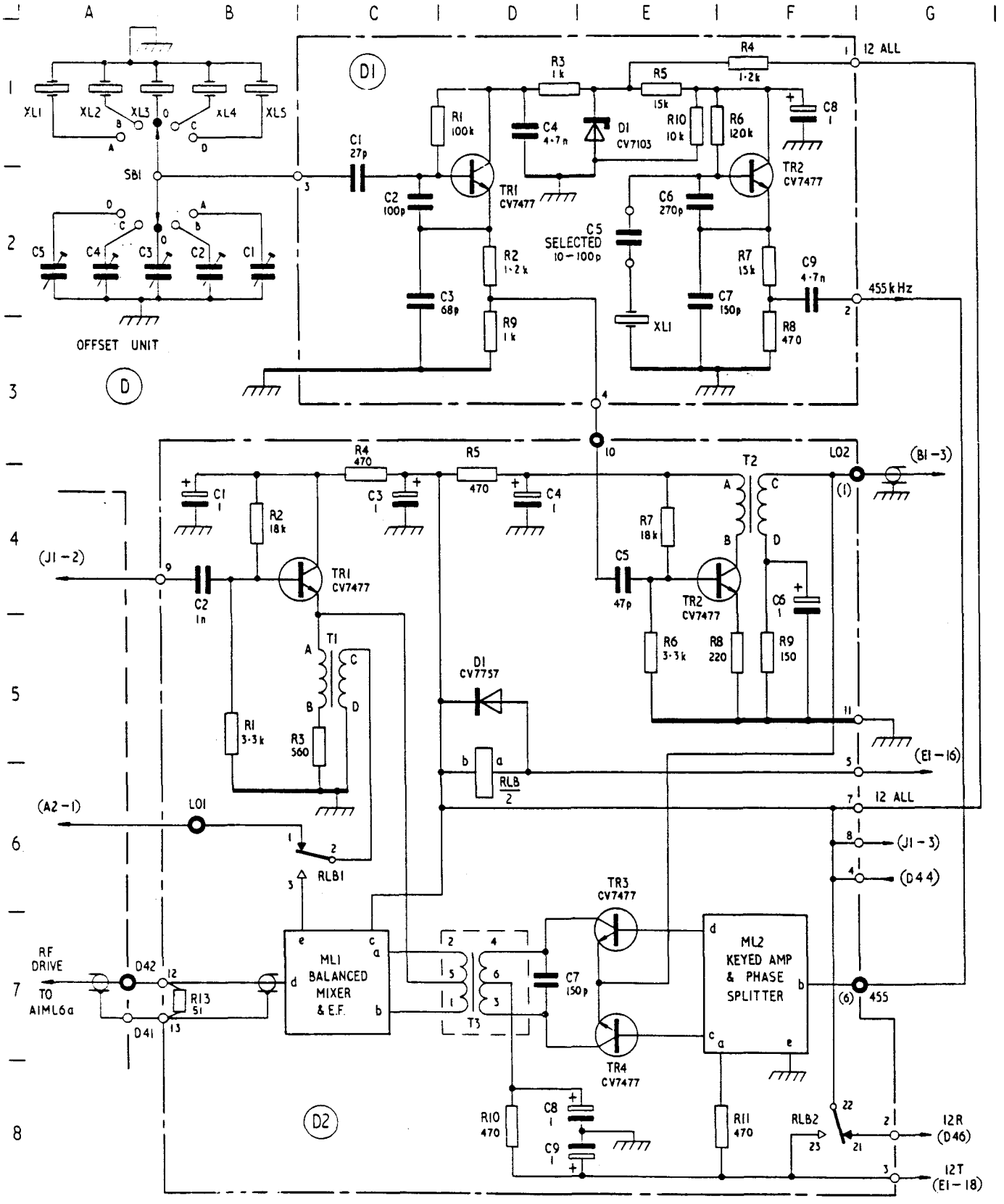


Fig 2512 – Board D1 and board D2, circuit diagram (unit D)

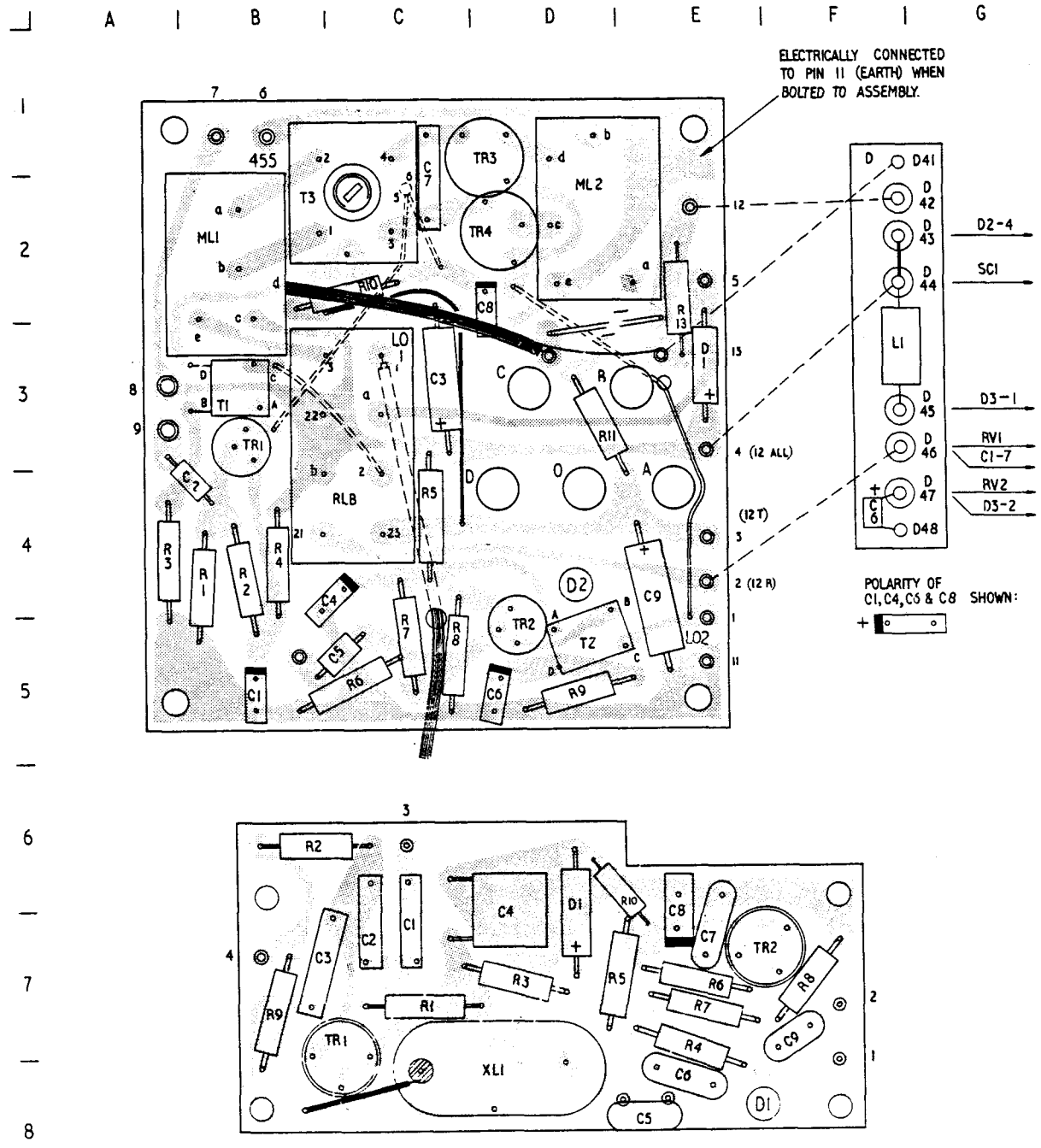


Fig 2513 - Boards D1 and D2, component layouts

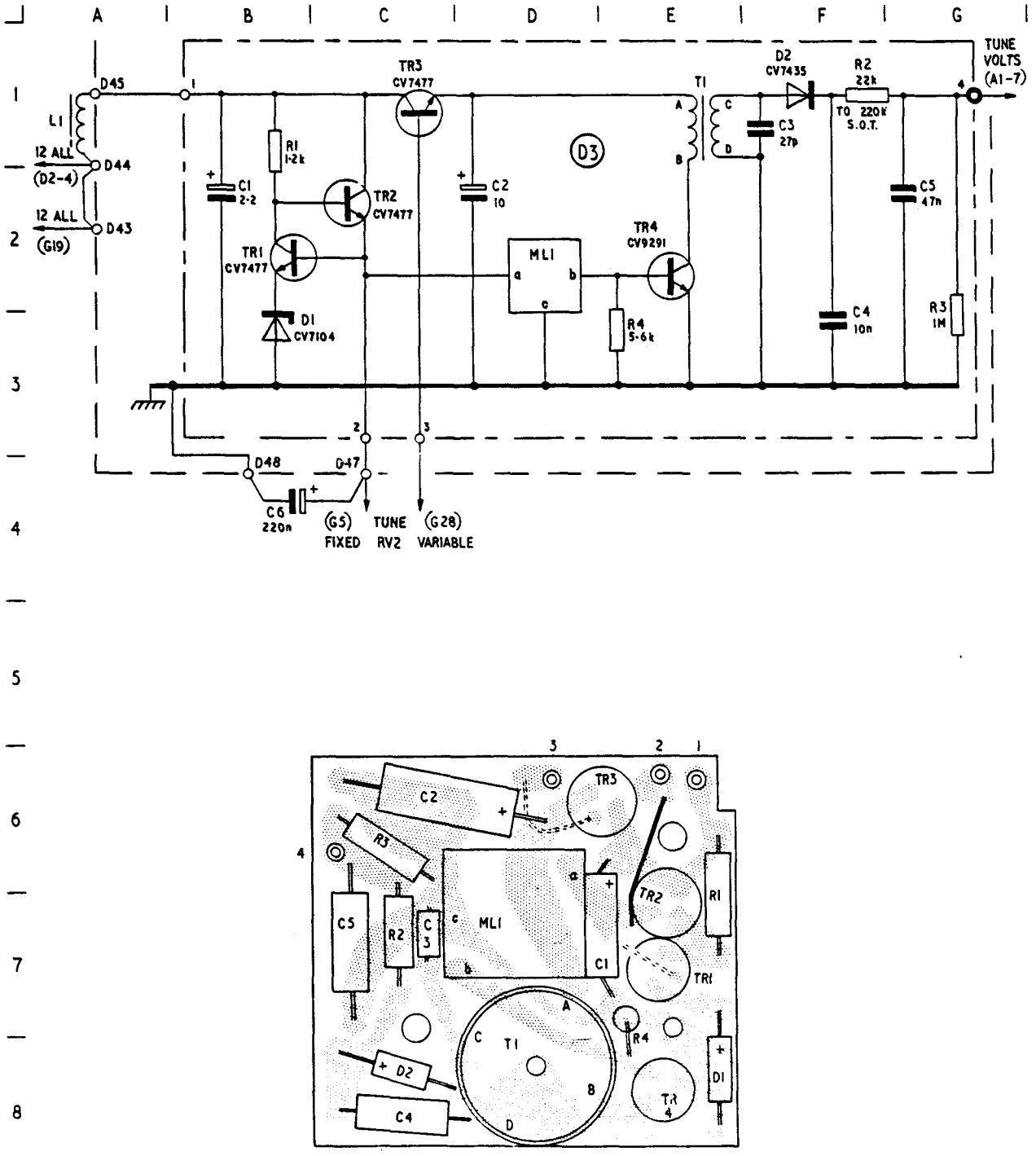


Fig 2514 - Board D3, circuit diagram and component layout (unit D)

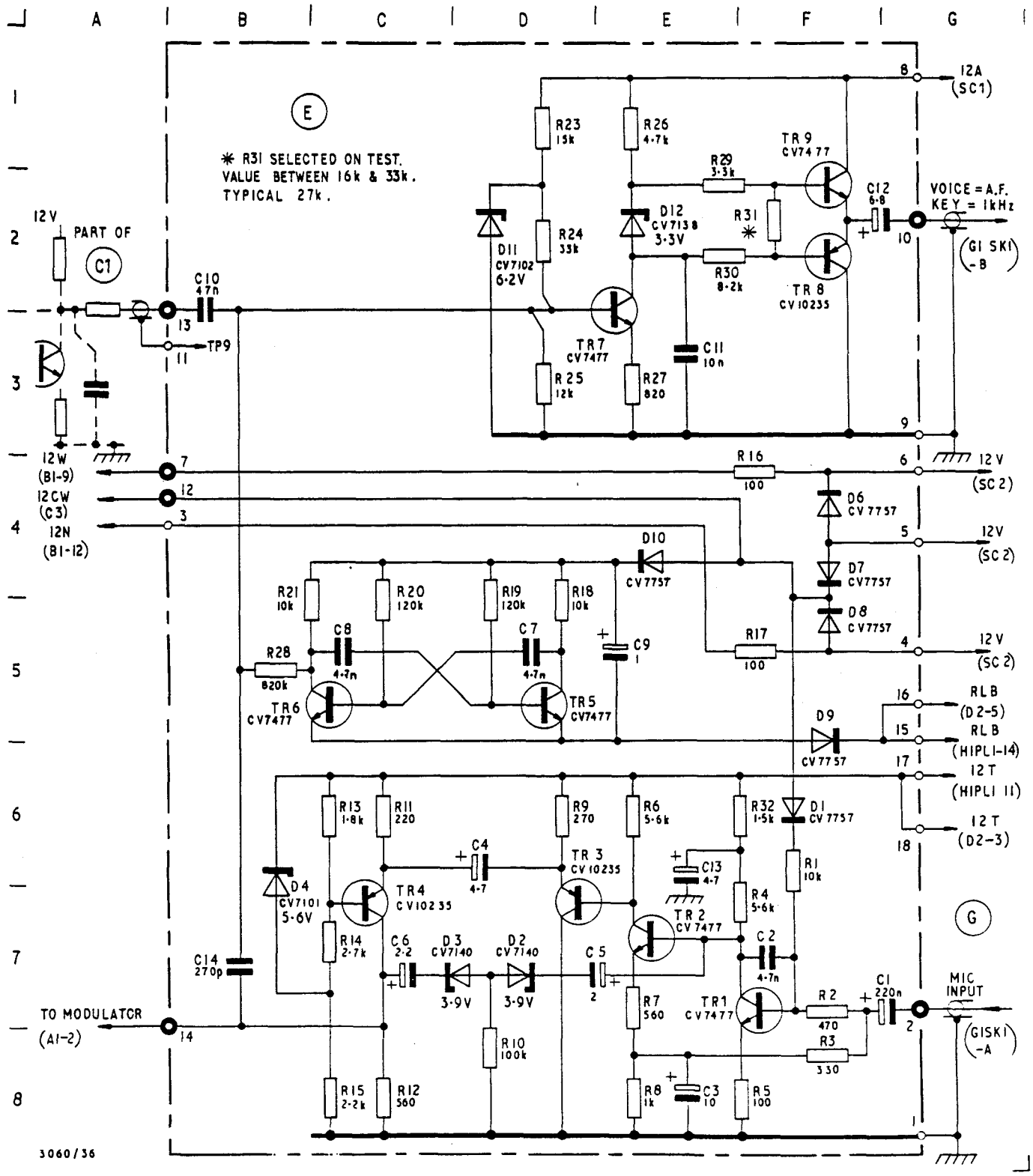


Fig 2515 - Board E, circuit diagram

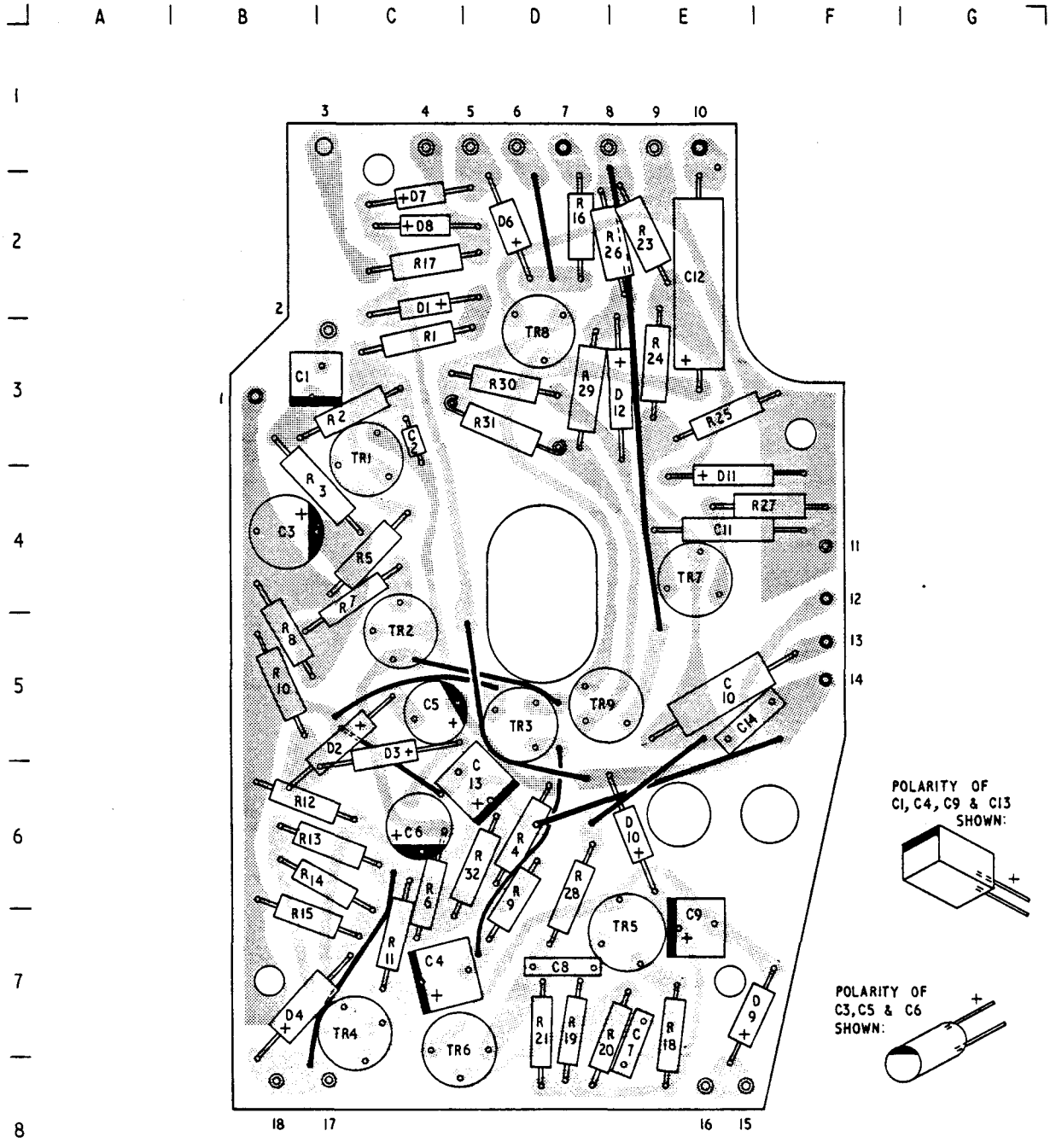


Fig 2516 - Board E, component layout

Table 2504 - Board E component schedule
(Panel electronic circuit, Z1/5820-99-193-7387)

Cct ref	Component location		Value	Rating	Type
	Unit cct Fig 2515	Unit layout Fig 2516			
R1	F6	C3	10k	1/4W	±5% met film ins
R2	F7	C3	470	1/4W	±5% met film ins
R3	F8	C4	330	1/4W	±5% met film ins
R4	F7	D6	5.6k	1/4W	±5% met film ins
R5	F8	C4	100	1/4W	±5% met film ins
R6	E6	C6	5.6k	1/4W	±5% met film ins
R7	E7	C4	560	1/4W	±5% met film ins
R8	E8	B5	1k	1/4W	±5% met film ins
R9	D6	D6	270	1/4W	±5% met film ins
R10	D8	B5	100k	1/4W	±5% met film ins
R11	C6	C7	220	1/4W	±5% met film ins
R12	C8	B6	560	1/4W	±5% met film ins
R13	C6	B6	1.8k	1/4W	±5% met film ins
R14	C7	B6	2.7k	1/4W	±5% met film ins
R15	C8	B7	2.2k	1/4W	±5% met film ins
R16	F4	D2	100	1/4W	±5% met film ins
R17	F5	C2	100	1/4W	±5% met film ins
R18	D4	E7	10k	1/4W	±5% met film ins
R19	D4	D7	120k	1/4W	±5% met film ins
R20	C4	D7	120k	1/4W	±5% met film ins
R21	B4	D7	10k	1/4W	±5% met film ins
R23	D1	E2	15k	1/4W	±5% met film ins
R24	D2	E3	33k	1/4W	±5% met film ins
R25	D3	E3	12k	1/4W	±5% met film ins
R26	E1	E2	4.7k	1/4W	±5% met film ins
R27	E3	E4	820	1/4W	±5% met film ins
R28	B5	D6	820k	1/16W	±10% comp ins
R29	E1	D3	3.3k	1/4W	±5% met film ins
R30	E2	D3	8.2k	1/4W	±5% met film ins
R31 to be selected in manufacture	F2	D3	(16k	1/4W	±5% met film ins
			(18k	1/4W	±5% met film ins
			(20k	1/4W	±5% met film ins
			(22k	1/4W	±5% met film ins
			(24k	1/4W	±5% met film ins
			(27k	1/4W	±5% met film ins
			(30k	1/4W	±5% met film ins
			(33k	1/4W	±5% met film ins
R32	F6	E6	1.5k	1/4W	±5% met film ins

Table 2504 - (cont)

Cct ref	Component location		Value	Rating	Type
	Unit cct Fig 2515	Unit layout Fig 2516			
			CAPACITORS		
C1	F7	B3	220n	35	+40-20% tant mod
C2	F7	C3	4.7µ	200	±10% cer
C3	E8	B4	10µ	4	±20% tant tub
C4	D6	C7	4.7µ	20	±20% tant mod
C5	E7	C5	2.2µ	20	±20% tant tub
C6	C7	C6	2.2µ	20	±20% tant tub
C7	D5	E7	4.7n	200	±10% cer
C8	C5	D7	4.7n	200	±10% cer
C9	E5	E7	1µ	20	+40-20% tant mod
C10	B2	E5	4.7n	250	±20% met film tub
C11	E3	E4	10n	250	±20% met film tub
C12	F2	E2	6.8µ	35	±20% tant sint
C13	E6	D6	4.7µ	20	±20% tant mod
C14	B7	E5	270p	200	±10% cer
			VALVE, ELECTRONIC		
D1	F6	C2			CV7757
D2	D7	C5			CV7140
D3	C7	C5			CV7140
D4	B6	B7			CV7101
D6	F4	D2			CV7757
D7	F4	C2			CV7757
D8	F5	C2			CV7757
D9	F5	E7			CV7757
D10	E4	E6			CV7757
D11	D2	E4			CV7102
D12	E2	E3			CV7138
TR1	E7	C3			CV7477
TR2	E7	C5			CV7477
TR3	D6	D5			CV10235
TR4	C7	C7			CV10235
TR5	D5	E7			CV7477
TR6	B5	C7			CV7477
TR7	E3	E4			CV7477
TR8	F2	D3			CV10235
TR9	F1	D5			CV7477

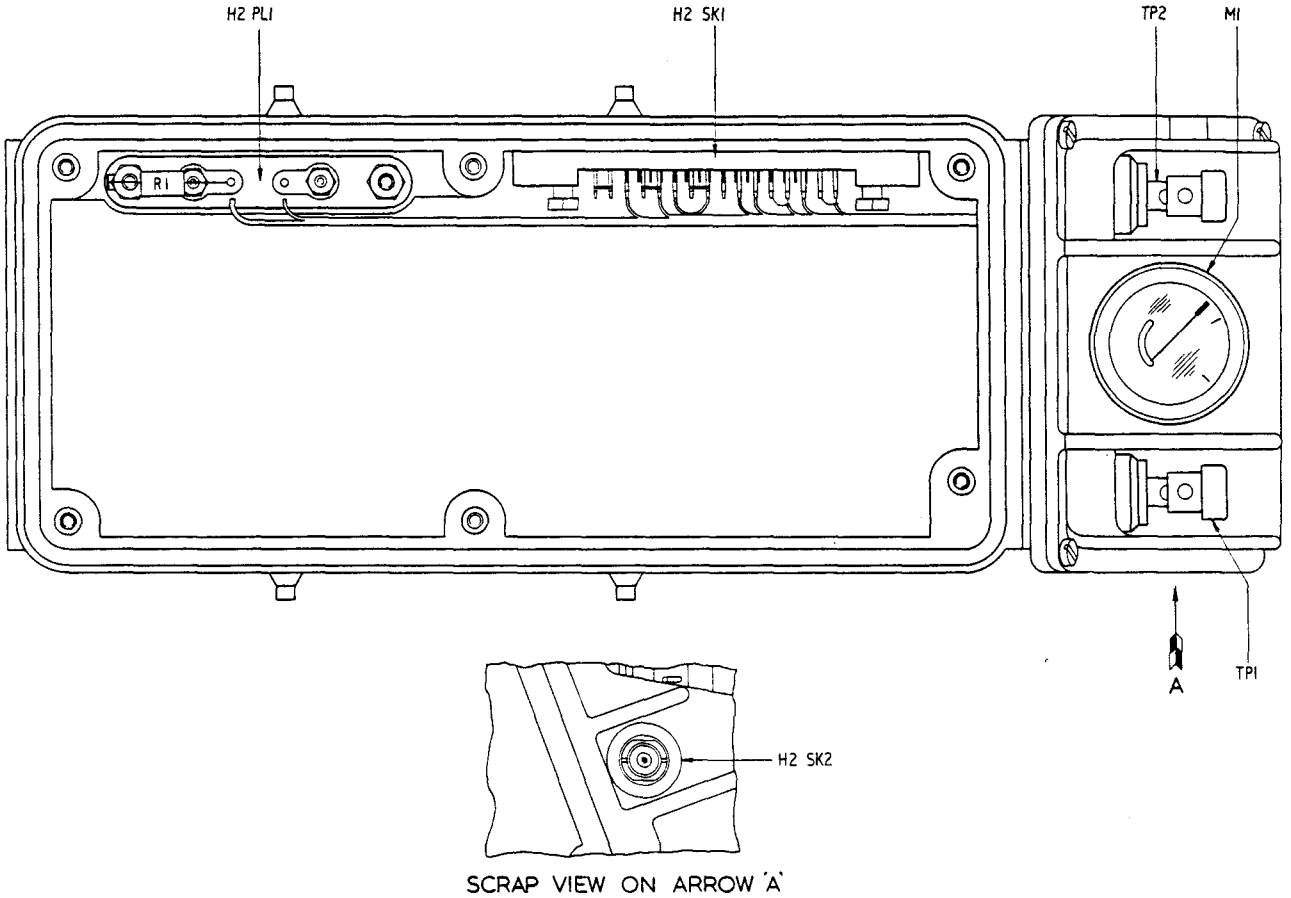


Fig 2517 - Case assembly, layout

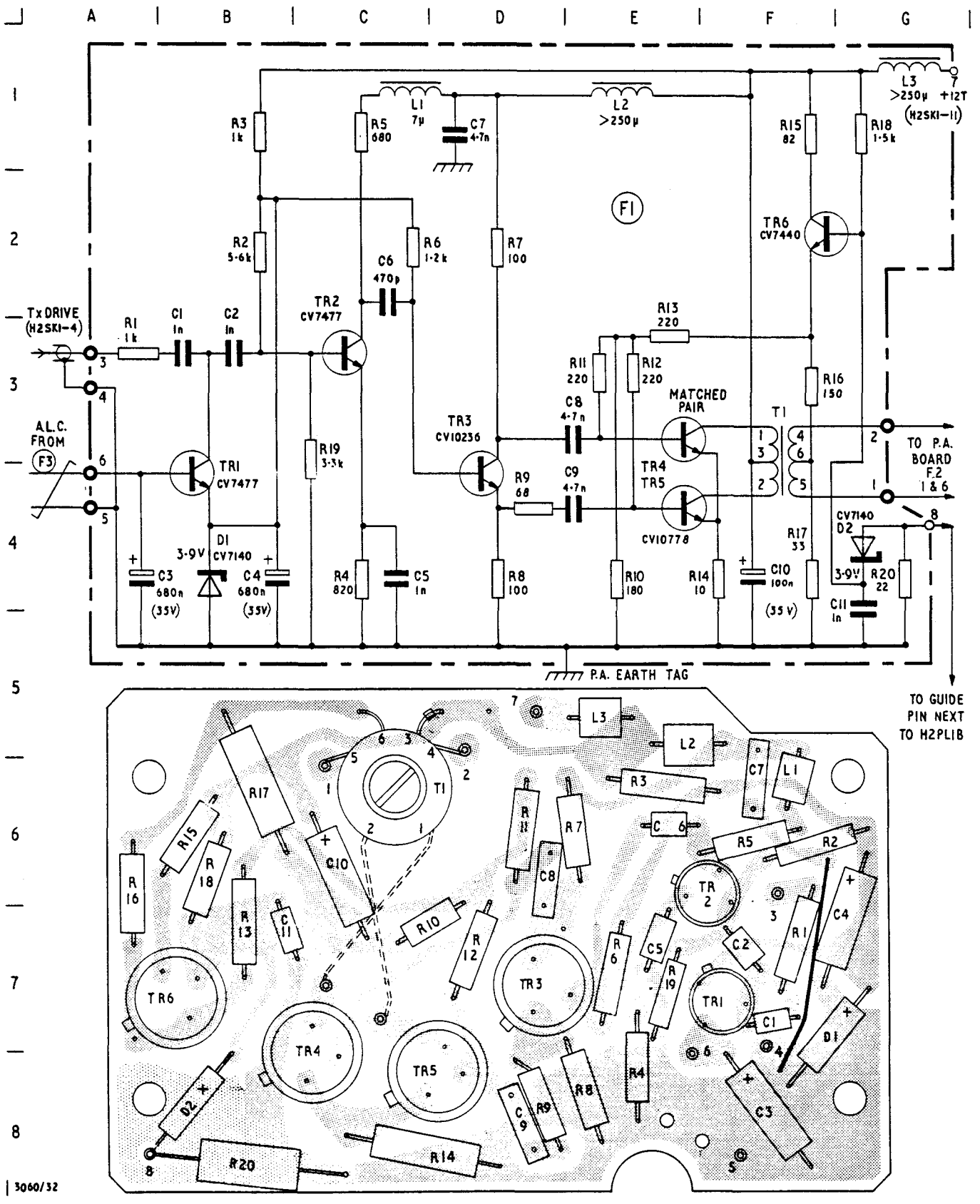


Fig 2518 - Board F1, circuit diagram and component layout

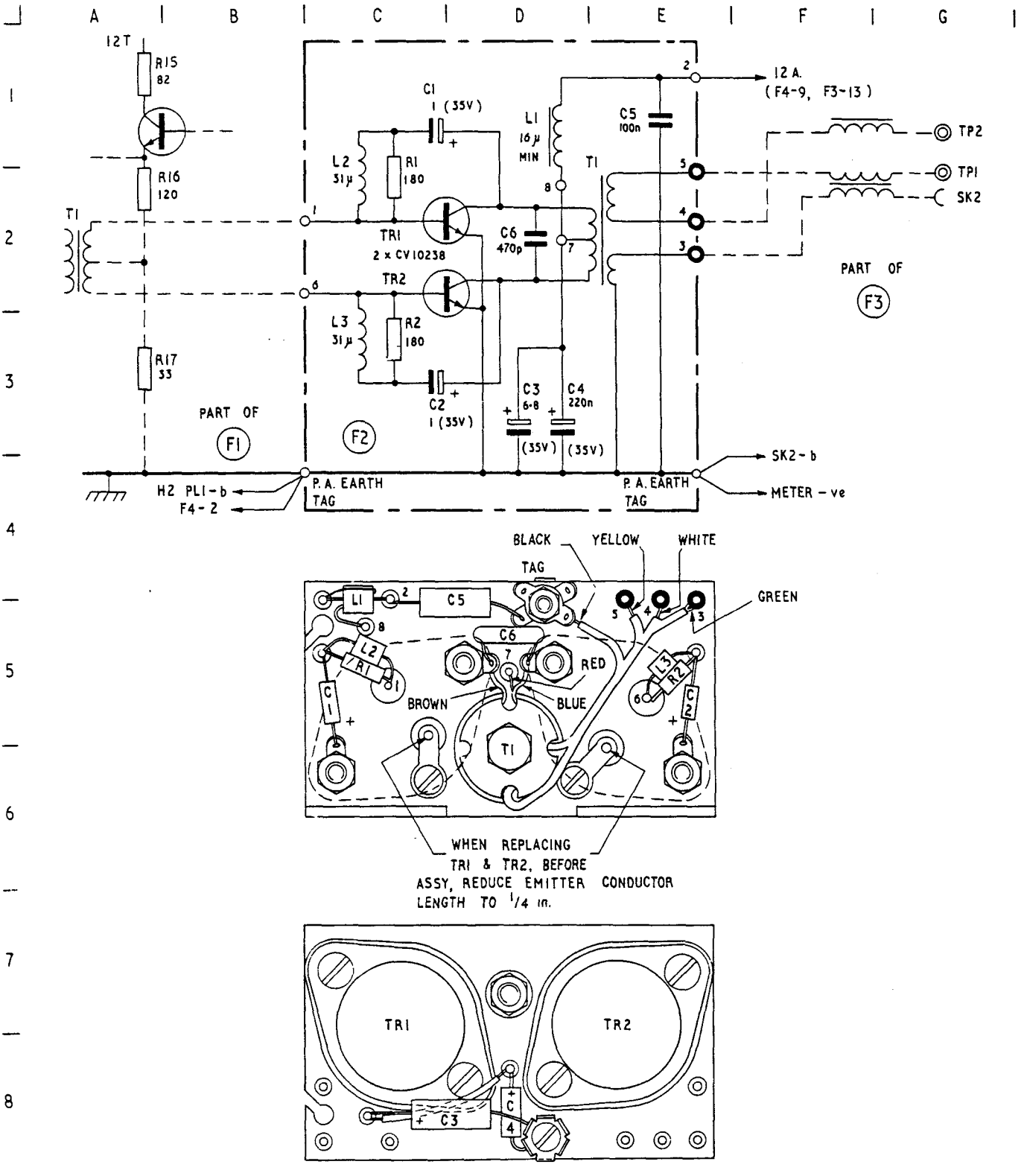


Fig 2519 - Board F2, circuit diagram and component layout

Table 2505 - Board F1 component schedule
(Panel electronic circuit, Z1/5820-99-193-7386)

Cct ref	Component location Fig 2518		Value	Rating	Type
	Unit cct	Unit layout			
		RESISTORS			
R1	A3	F7	1k	1/4W	(
R2	B2	F6	5.6k	1/4W	(
R3	B1	E6	1k	1/4W	(
R4	C4	E8	820	1/4W	(
R5	C1	F6	680	1/4W	(
R6	C2	F7	1.2k	1/4W	(
R7	D2	E6	100	1/4W	(
R8	D4	E8	100	1/4W	(
R9	D4	D8	68	1/4W	(
R10	E4	C7	180	1/4W	(
R11	E3	D6	220	1/4W	(±5% met film ins
R12	E3	D7	220	1/4W	(
R13	E3	B7	220	1/4W	(
R14	F4	C8	10	1/4W	(
R15	F1	B6	82	1/4W	(
R16	F3	A6	150	1/4W	(
R17	F4	B6	33	1/4W	(
R18	G1	B6	1.5k	1/4W	(
R19	C3	E7	3.3k	1/4W	(
R20	G4	B8	22	2.5W	±5% w.w. vitreous
		CAPACITORS			
C1	B3	F7	1n	200	±10% cer
C2	B3	F7	1n	200	±10% cer
C3	B4	F8	680n	35	±20% tant sint
C4	B4	F7	680n	35	±20% tant sint
C5	C4	E7	1n	200	±10% cer
C6	C2	E6	470p	200	±10% cer
C7	D1	F6	4.7n	200	±20% cer
C8	E3	D6	4.7n	200	±20% cer
C9	E4	D8	4.7n	200	±20% cer
C10	F4	C6	100n	35	±10% tant sint
C11	G4	B7	1n	200	±10% cer

Table 2505 - (cont)

Cct ref	Component location Fig 2518		Description
	Unit cct	Unit layout	
MISCELLANEOUS			
L1	C1	F6	Inductor, r.f. 6 turns
L2	E1	E5	Inductor, r.f. 25 turns
L3	G1	E5	Inductor, r.f. 25 turns
T1	F3	C6	Transformer, r.f.
TR1	B4	F7	Valve, electronic CV7477
TR2	C3	E7	Valve, electronic CV7477
TR3	D4	D7	Valve, electronic CV10236
TR4	E3	C7	Valve, electronic CV10778 (matched
TR5	E4	C8	pair)
TR6	F2	B7	Valve, electronic CV7440
D1	B4	F7	Valve, electronic CV7140
D2	G4	B8	Valve, electronic CV7140

Table 2506 - Board F2 component schedule
(Bracket assembly, Z1/5820-99-199-3397)

Cct ref	Component location Fig 2519		Description
	Unit cct	Unit layout	
MISCELLANEOUS			
R1	C2	C5	180Ω ±5% 1/4W resistor, met film ins
R2	C3	E5	180Ω ±5% 1/4W resistor, met film ins
C1	C1	C5	1µ ±20% 35V capacitor, tant sint
C2	C3	E5	1µ ±20% 35V capacitor, tant sint
C3	D3	C8	68µ ±20% 35V capacitor, tant sint
C4	D3	D8	220n ±10% 35V capacitor, tant sint
C5	E1	D5	100n ±10% 160V capacitor, tub plastic
C6	D2	D5	470p ±2% capacitor, mica
L1	D1	C5	Inductor, r.f. 16µH
L2	C2	C5	)Inductor set, 31µH (matched pair)
L3	C3	E5	) each
T1	D2	D6	Transformer, r.f.
TR1	C2	C7	)Valve, electronic
TR2	C2	E7	)

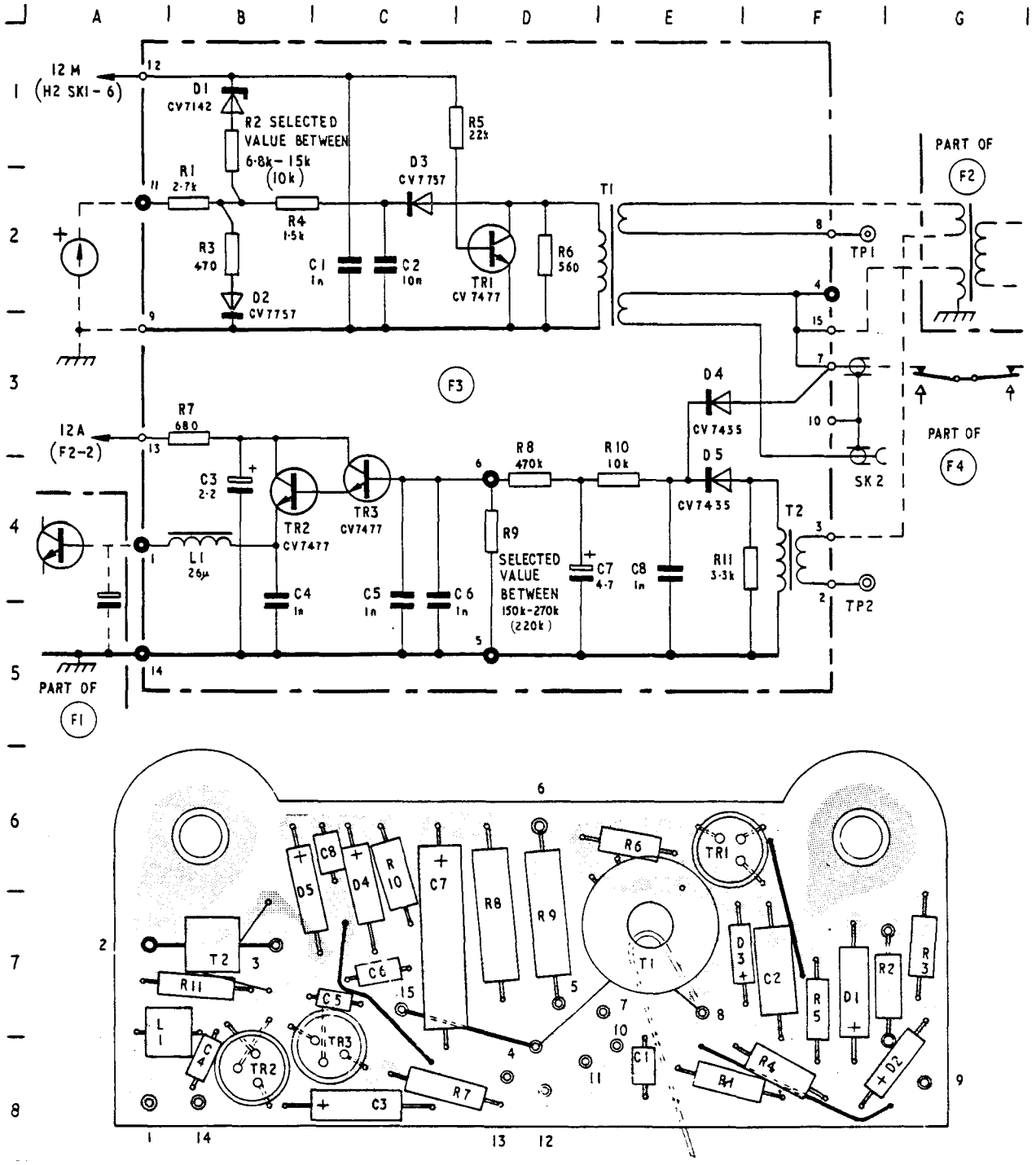


Fig 2520 - Board F3, circuit diagram and component layout
(Z1/5820-99-193-7404)

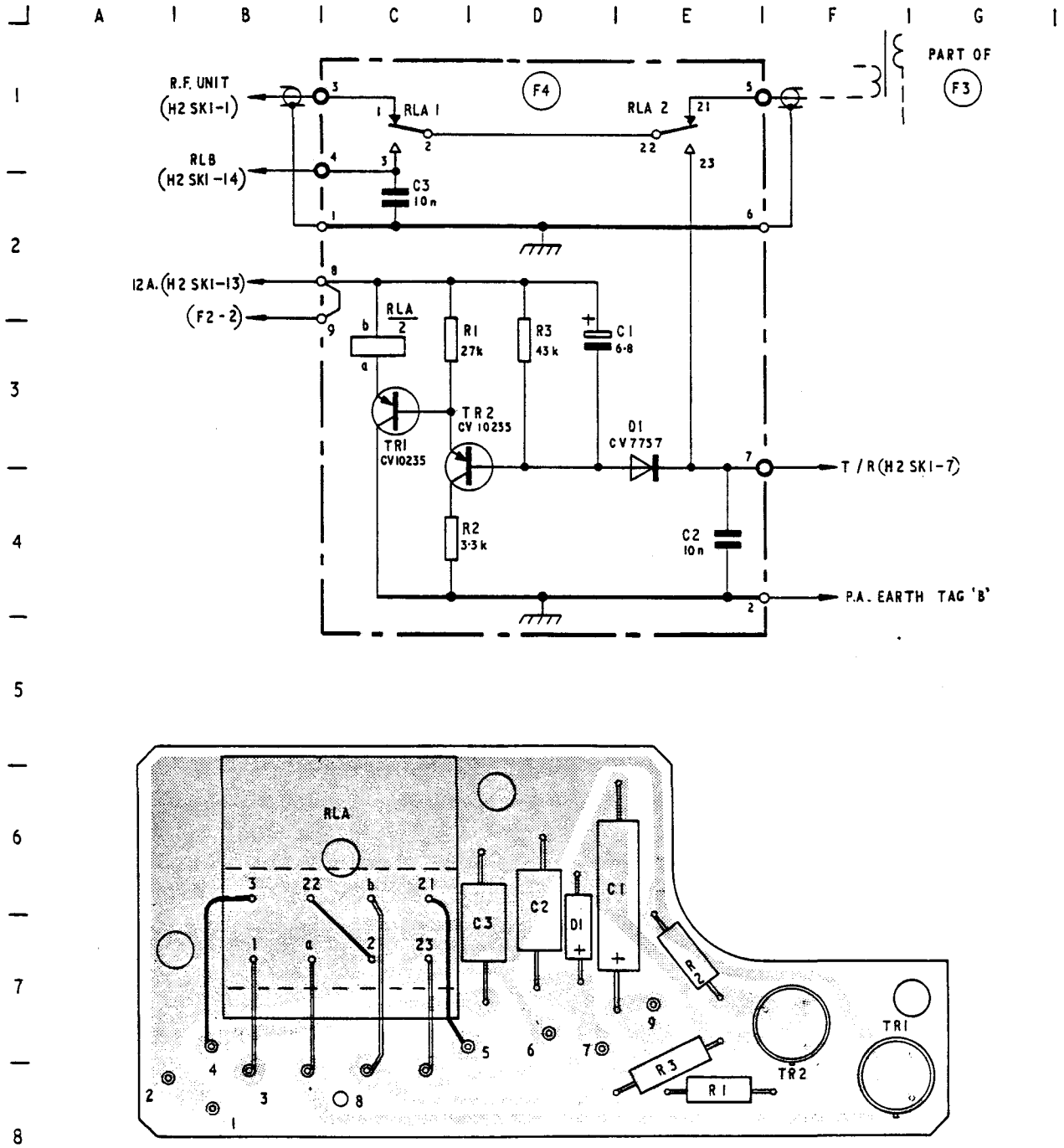


Fig 2521 - Board F4, circuit diagram and component layout
(Z1/5820-99-193-7407)

Table 2507 - Front panel assembly unit G, component schedule

Cct ref	Component location Fig 2522		Description
	Unit cct	Unit layout	
MISCELLANEOUS			
G1-R1	E5	B2	2.2k 1/4W ±5% resistor met film ins
G1-R2	F5	B2	6.8k 1/4W ±5% resistor met film ins
R1	D5	D2	330Ω 1/4W ±5% resistor met film ins
RV1	A7	B3	50kΩ 1/4W ±20% variable resistor linear
RV2	E4	B1	25kΩ 1/4W ±10% variable resistor linear
C1	D5	C2	6.8µ 35V ±20% tant sint capacitor
C2	D8	C1	10n 200V ±20% cer
C3	E8	C1	1µ 35V ±20% tant sint capacitor
C4	D5		6.8µ 35V ±20% tant sint capacitor
SC	B4 B5	C3	Switch, rotary wafer, 2-pole OFF/KEY/BATT/VOICE
SK1	D8	C2	Socket, 4-pole
G1-D1	E5	B2	Valve, electronic, CV7757
G1-I1	E7	A2	Inductor, r.f.
K1	F8	B3	Key, telegraph

Table 2508 - Case assembly unit H2, component schedule

Cct ref	Component location		Description
	Unit cct	Unit layout	
MISCELLANEOUS			
R1		)	Resistor, 22Ω ±5% 2.5W w.w. vitreous
TP1		)	Terminal, spring, head
and 2		) See	
SK1		) Fig	Socket 16-way
SK2		) 2517	Socket, electrical, 50Ω co-ax
M1.		)	Meter, arbitrary scale

Table 2509 - Chassis assembly, unit H1, component schedule

Cct ref	Component location		Description
	Unit cct	Unit layout	
MISCELLANEOUS			
ML1	6D1	)	Filter, ceramic, band pass, 6kHz
ML2	6D5	) 2503	Filter, bandpass, 300Hz
PL1		)	Plug, 16-way

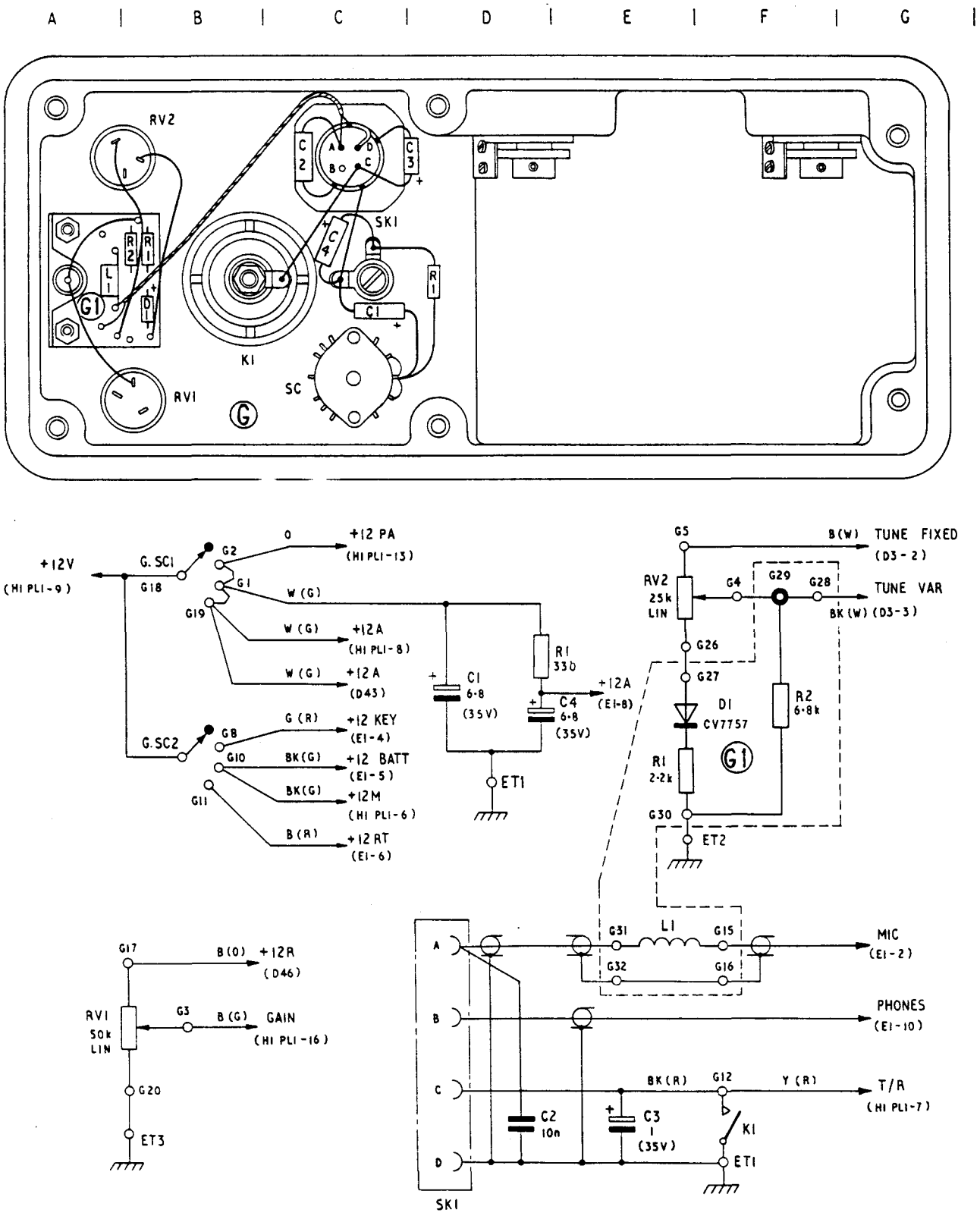
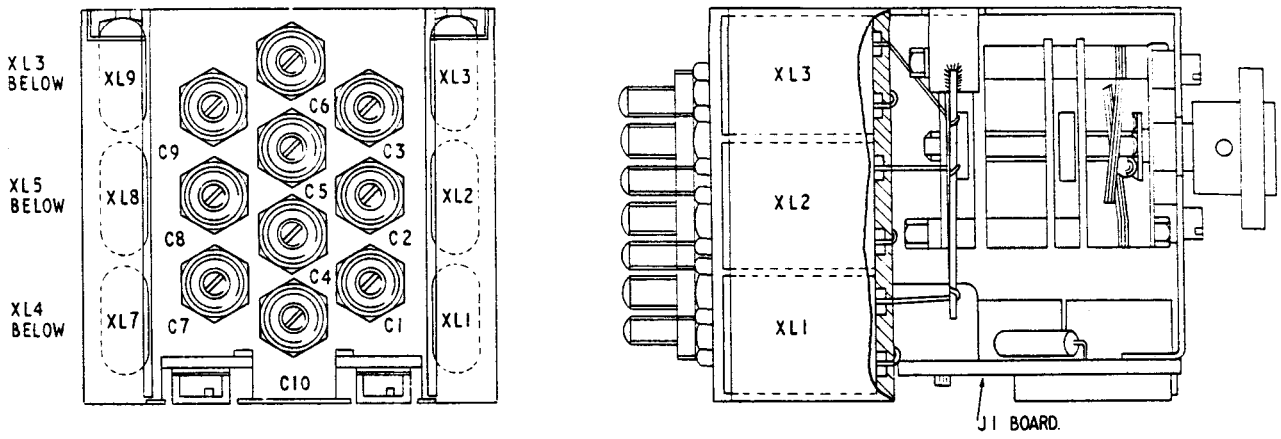


Fig 2522 - Unit G, control panel circuit diagram and component layout



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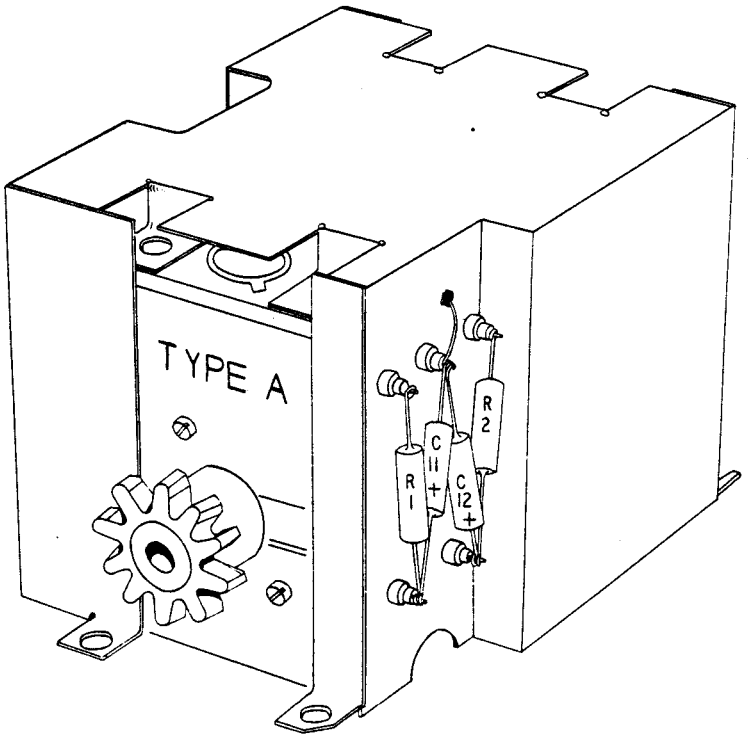


Fig 2523 - Unit J, crystal cassette, layout

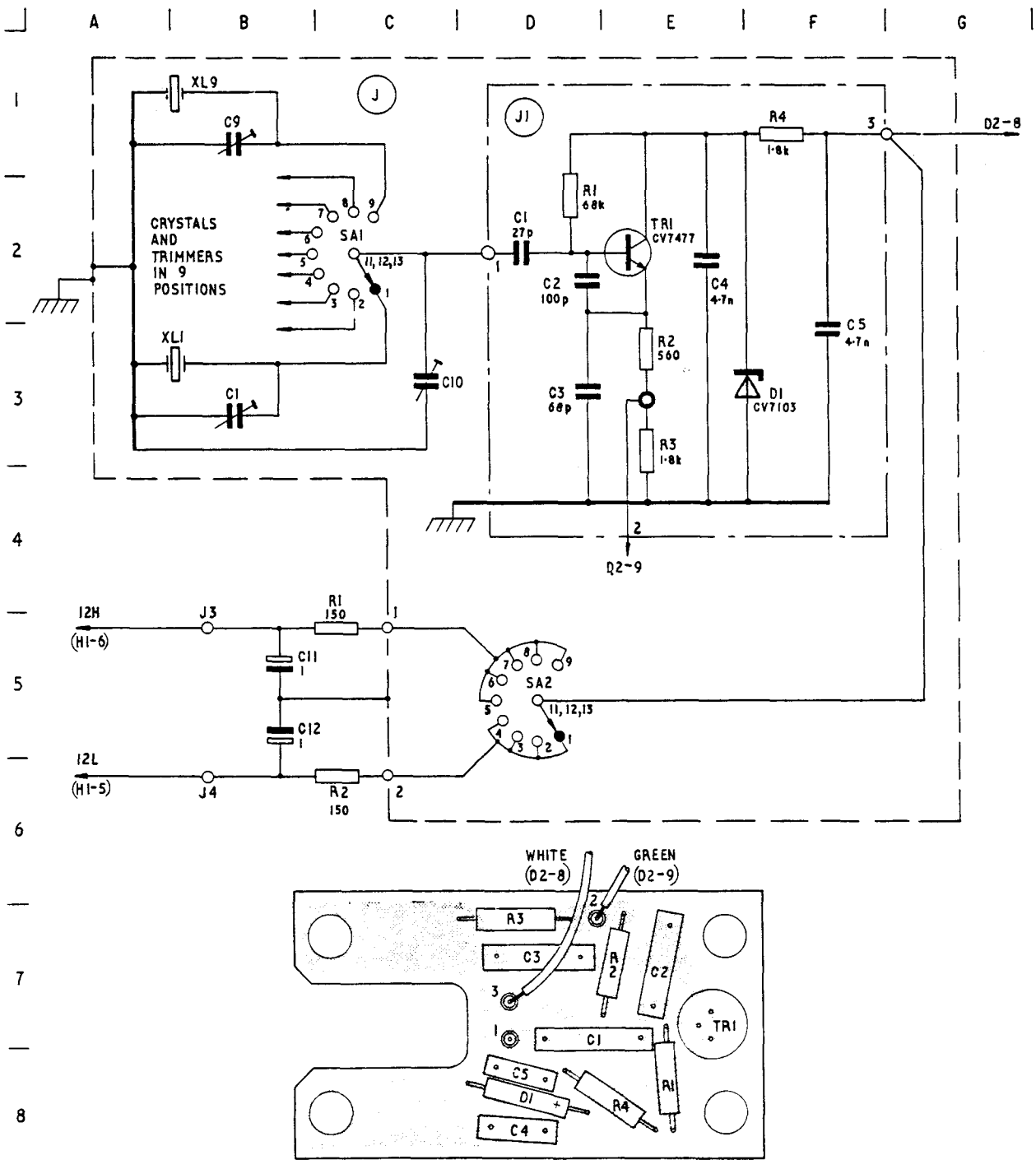


Fig 2524 - Unit J, crystal cassette, circuit diagram and layout of board J1

Table 2510 - Unit J component schedule
(Crystal cassette, type A, Z1/5820-99-193-7392)

Cct ref	Component location: Unit cct Fig 2524	Component location: Unit layout	Description
	MISCELLANEOUS		
XL1	)	)	Crystal unit, quartz, 10,215kHz
XL2	)	)	Crystal unit, quartz, 10,520kHz
XL3	)	)	Crystal unit, quartz, 10,170kHz
XL4	)	)	Crystal unit, quartz, 10,710kHz
XL5	) B1-3	)	Crystal unit, quartz, 12,590kHz
XL6	)	)	Crystal unit, quartz, 12,875kHz
XL7	)	)	Crystal unit, quartz, 13,130kHz
XL8	)	)	Crystal unit, quartz, 13,270kHz
XL9	)	)	Crystal unit, quartz, 13,895kHz
R1	C5	)	Resistor, met film ins 150Ω ±5% 1/4W
R2	C6	) 2523	Resistor, met film ins 150Ω ±5% 1/4W
C1-9	B1-3	)	Capacitor, variable, cer tub 6.8p
C10	C3	)	Capacitor, variable, cer tub 6.8p
C11	B5	)	Capacitor, tant sint, 1µ ±20% 35V
C12	B5	)	Capacitor, tant sint, 1µ ±20% 35V
SA	C2, D5	)	Switch, rotary, 2-pole 10-position
J1 board		)	Panel, electronic, circuit

Table 2511 - Unit J, component schedule
(Crystal cassette, type B, Z1/5820-99-193-7385)

Cct ref	Component location		Description
	Unit cct Fig 2524	Unit layout	
MISCELLANEOUS			
XL1	B1-3	2523	Crystal unit, quartz, 10,280kHz
XL2			Crystal unit, quartz, 10,700kHz
XL3			Crystal unit, quartz, 11,280kHz
XL4			Crystal unit, quartz, 11,710kHz
XL5			Crystal unit, quartz, 12,510kHz
XL6			Crystal unit, quartz, 12,875kHz
XL7			Crystal unit, quartz, 13,305kHz
XL8			Crystal unit, quartz, 14,350kHz
XL9			Crystal unit, quartz, 14,940kHz
	Remaining components as Table 2510		

Note: These Pages 1040A - 1040B are to be filed immediately after Page 1040, Issue 2, dated Sep 71
Tables 2511A, 2511B, and 2511C are additional.

Table 2511A - Unit J, component schedule
(Crystal cassette, type C, Z1/5820-99-117-7808)

Cct Ref	Component location		Description
	Unit cct Fig 2524	Unit Layout	
MISCELLANEOUS			
XL1	B1-3	2523	Crystal unit, quartz 11.7100MHz
XL2			Crystal unit, quartz 12.0400MHz
XL3			Crystal unit, quartz 12.4900MHz
XL4			Crystal unit, quartz 12.5740MHz
XL5			Crystal unit, quartz 12.9500MHz
XL6			Crystal unit, quartz 13.0900MHz
XL7			Crystal unit, quartz 13.9050MHz
XL8			Crystal unit, quartz 14.7700MHz
XL9			Crystal unit, quartz 14.9550MHz
			Remaining components as Table 2510.

Table 2511B - Unit J, component schedule
(Crystal cassette, type D, Z1/5820-99-117-7809)

Cct Ref	Component location		Description
	Unit cct Fig 2524	Unit Layout	
MISCELLANEOUS			
XL1	B1-3	2523	Crystal unit quartz 11.2050MHz
XL2			Crystal unit quartz 11.7100MHz
XL3			Crystal unit quartz 11.9700MHz
XL4			Crystal unit quartz 12.0400MHz
XL5			Crystal unit quartz 12.5950MHz
XL6			Crystal unit quartz 13.0900MHz
XL7			Crystal unit quartz 12.9250MHz
XL8			Crystal unit quartz 14.7700MHz
XL9			Crystal unit quartz 14.9550MHz
			Remaining components as table 2510

Table 2511C - Unit J, component schedule
(Crystal cassette, type E, Z1/5820-99-117-7810)

Cct Ref	Component location		Description
	Unit cct Fig 2524	Unit layout	
MISCELLANEOUS			
XL1	)	)	Crystal unit, quartz 10.1300MHz
XL2	)	)	Crystal unit, quartz 11.1700MHz
XL3	)	)	Crystal unit, quartz 11.9010MHz
XL4	)	)	Crystal unit, quartz 12.6590MHz
XL5	)	)	Crystal unit, quartz 12.8700MHz
XL6	) B1-3	)2523	Crystal unit, quartz 13.2020MHz
XL7	)	)	Crystal unit, quartz 14.6080MHz
XL8	)	)	Crystal unit, quartz 14.7700MHz
XL9	)	)	Crystal unit, quartz 14.9550MHz
			Remaining components as Table 2510

Table 2512 - Operating frequencies, type A

Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts	Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts
1A 2.2125	8.4575			6A 4.8725	8.4575		
1B 2.2137	8.4563			6B 4.8737	8.4563		
10 2.2150	8.4550	10.2150	7.043	60 4.8750	8.4550	12.8750	15.63
1C 2.2163	8.4537			6C 4.8763	8.4537		
1D 2.2175	8.4525			6D 4.8775	8.4525		
2A 2.5175	8.4575			7A 5.1275	8.4575		
2B 2.5187	8.4563			7B 5.1287	8.4563		
20 2.5200	8.4550	10.5200	13.41	70 5.1300	8.4550	13.1300	20.13
2C 2.5213	8.4537			7C 5.1313	8.4537		
2D 2.5225	8.4525			7D 5.1325	8.4525		
3A 3.1675	8.4575			8A 5.2675	8.4575		
3B 3.1687	8.4563			8B 5.2687	8.4563		
30 3.1700	8.4550	11.1700	41.97	80 5.2700	8.4550	13.2700	22.5
3C 3.1713	8.4537			8C 5.2713	8.4537		
3D 3.1725	8.4525			8D 5.2725	8.4525		
4A 3.7075	8.4575			9A 5.8925	8.4575		
4B 3.7087	8.4563			9B 5.8937	8.4563		
40 3.7100	8.4550	11.7100	94.92	90 5.8950	8.4550	13.8950	39.7
4C 3.7113	8.4537			9C 5.8963	8.4537		
4D 3.7125	8.4525			9D 5.8975	8.4525		
5A 4.5875	8.4575						
5B 4.5887	8.4563						
50 4.5900	8.4550	12.5900	11.60				
5C 4.5913	8.4537						
5D 4.5925	8.4525						

Table 2513 - Operating frequencies, type B

Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts	Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts
1A 2.2875	8.4575			6A 4.8725	8.4575		
1B 2.2887	8.4563			6B 4.8737	8.4563		
10 2.2900	8.4550	10.2900	8.36	60 4.8750	8.4550	12.8750	15.63
1C 2.2913	8.4537			6C 4.8763	8.4537		
1D 2.2925	8.4525			6D 4.8775	8.4525		
2A 2.6975	8.4575			7A 5.3025	8.4575		
2B 2.6987	8.4563			7B 5.3037	8.4563		
20 2.7000	8.4550	10.7000	18.77	70.5.3050	8.4550	13.3050	23.3
2C 2.7013	8.4537			7C 5.3063	8.4537		
2D 2.7025	8.4525			7D 5.3075	8.4525		
3A 3.2775	8.4575			8A 6.3475	8.4575		
3B 3.2787	8.4563			8B 6.3487	8.4563		
30 3.2800	8.4550	11.2800	49.83	80 6.3500	8.4550	14.3500	58.71
3C 3.2813	8.4537			8C 6.3513	8.4537		
3D 3.2825	8.4525			8D 6.3525	8.4525		
4A 3.7075	8.4575			9A 6.9375	8.4575		
4B 3.7087	8.4563			9B 6.9387	8.4563		
40 3.7100	8.4550	11.7100	94.92	90 6.9400	8.4550	14.9400	93.4
4C 3.7113	8.4537			9C 6.9413	8.4537		
4D 3.7125	8.4525			9D 6.9425	8.4525		
5A 4.5075	8.4575						
5B 4.5087	8.4563						
50 4.5100	8.4550	12.5100	10.52				
5C 4.5113	8.4537						
5D 4.5125	8.4525						

Note: These Pages 1042A - 1042C, are to be filed immediately after Page 1042, Issue 2 dated Sep 71. Tables 2513A, 2513B, and 2513C are additional.

Table 2513A - Operating frequencies, type C

Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts	Operating freq MHz	Offset Crystal MHz	Basic crystal MHz	Tuning volts
1A 3.7075	8.4575			7A 5.9025	8.4575		
1B 3.7087	8.4563			7B 5.9037	8.4563		
10 3.7100	8.4550	11.7100	94.98	70 5.9050	8.4550	13.9050	40.61
1C 3.7113	8.4537			7C 5.9063	8.4537		
1D 3.7125	8.4525			7D 5.9075	8.4525		
2A 4.0375	8.4575			8A 6.7675	8.4575		
2B 4.0387	8.4563			8B 6.7687	8.4563		
20 4.0400	8.4550	12.0400	6.117	80 6.7700	8.4550	14.7700	82.20
2C 4.0413	8.4537			8C 6.7713	8.4537		
2D 4.0425	8.4525			8D 6.7725	8.4525		
3A 4.4875	8.4575			9A 6.9475	8.4575		
3B 4.4887	8.4563			9B 6.9487	8.4563		
30 4.4900	8.4550	12.4900	10.40	90 6.9550	8.4550	14.9550	94.80
3C 4.4913	8.4537			9C 6.9563	8.4537		
3D 4.4925	8.4525			9D 6.9575	8.4525		
4A 4.5715	8.4575						
4B 4.5727	8.4563						
40 4.5740	8.4550	12.5740	11.41				
4C 4.5753	8.4537						
4D 4.5765	8.4525						
5A 4.9475	8.4575						
5B 4.9487	8.4563						
50 4.9500	8.4550	12.9500	16.86				
5C 4.9513	8.4537						
5D 4.9525	8.4525						
6A 5.0875	8.4575						
6B 5.0887	8.4563						
60 5.0900	8.4550	13.0900	19.36				
6C 5.0913	8.4537						
6D 5.0925	8.4525						

Table 2513B - Operating frequencies, type D

Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts	Operating freq MHz	Offset Crystal MHz	Basic crystal MHz	Tuning volts
1A 3.2025	8.4575			7A 5.9225	8.4575		
1B 3.2037	8.4563			7B 5.9237	8.4563		
10 3.2050	8.4550	11.2050	44.37	70 5.9250	8.4550	13.9250	41.30
1C 3.2063	8.4537			7C 5.9263	8.4537		
1D 3.2075	8.4525			7D 5.9275	8.4525		
2A 3.7075	8.4575			8A 6.7675	8.4575		
2B 3.7087	8.4563			8B 6.7687	8.4563		
20 3.7100	8.4550	11.7100	94.98	80 6.7700	8.4550	14.7700	82.20
2C 3.7113	8.4537			8C 6.7713	8.4537		
2D 3.7125	8.4525			8D 6.7725	8.4525		
3A 3.9675	8.4575			9A 6.9525	8.4575		
3B 3.9687	8.4563			9B 6.9537	8.4563		
30 3.9700	8.4550	11.9700	5.59	90 6.9550	8.4550	14.9550	94.80
3C 3.9713	8.4537			9C 6.9563	8.4537		
3D 3.9725	8.4525			9D 6.9575	8.4525		
4A 4.0375	8.4575						
4B 4.0387	8.4563						
40 4.0400	8.4550	12.0400	6.117				
4C 4.0413	8.4537						
4D 4.0425	8.4525						
5A 4.5925	8.4575						
5B 4.5937	8.4563						
50 4.5950	8.4550	12.5950	11.68				
5C 4.5963	8.4537						
5D 4.5975	8.4525						
6A 5.0875	8.4575						
6B 5.0887	8.4563						
60 5.0900	8.4550	13.0900	19.36				
6C 5.0913	8.4537						
6D 5.0925	8.4525						

Table 2513C - Operating frequencies type E

Operating freq MHz	Offset crystal MHz	Basic crystal MHz	Tuning volts	Operating freq MHz	Offset Crystal MHz	Basic Crystal MHz	Tuning Volts
1A 2.1305	8.4575			7A 6.6055	8.4575		
1B 2.1317	8.4563			7B 6.6067	8.4563		
10 2.1330	8.4550	10.1330	5.813	70 6.6080	8.4550	14.6080	72.37
1C 2.1343	8.4537			7C 6.6093	8.4537		
1D 2.1355	8.4525			7D 6.6105	8.4525		
2A 3.1675	8.4575			8A 6.7675	8.4575		
2B 3.1687	8.4563			8B 6.7687	8.4563		
20 3.1700	8.4550	11.1700	41.96	80 6.7700	8.4550	14.7700	82.20
2C 3.1713	8.4537			8C 6.7713	8.4537		
2D 3.1725	8.4525			8D 6.7725	8.4525		
3A 3.8985	8.4575			9A 6.9525	8.4575		
3B 3.8997	8.4563			9B 6.9537	8.4563		
30 3.9010	8.4550	11.9010	5.109	90 6.9550	8.4550	14.9550	94.80
3C 3.9023	8.4537			9C 6.9563	8.4537		
3D 3.9035	8.4525			9D 6.9575	8.4525		
4A 4.6565	8.4575						
4B 4.6577	8.4563						
40 4.6590	8.4550	12.6590	12.49				
4C 4.6603	8.4537						
4D 4.6615	8.4525						
5A 4.8675	8.4575						
5B 4.8687	8.4563						
50 4.8700	8.4550	12.8700	15.50				
5C 4.8713	8.4537						
5D 4.8725	8.4525						
6A 5.1995	8.4575						
6B 5.2007	8.4563						
60 5.2020	8.4550	13.2020	21.55				
6C 5.2033	8.4537						
6D 5.2045	8.4525						

Table 2514 - Battery voltage switching

Board	Function	Mode	Condition	Test points	Remarks
A	High band amp	KBV	T & R	A1-6	Channels 5 6 7 8 9 only
	Low band amp	KBV	T & R	A1-5	Channels 1 2 3 4 only
	Voltage ref	KBV	T & R	A2-6	
	1st Mixer	KBV	T	A1-1	
B	Mixer	K	T	B1-12	
	Mixer	BV	T & R	B-9	
C	456kHz Osc	KB	T & R	C1-3	Osc. inhibited on T
	I.F. amp	KBV	R	C1-7	
D	Freq gen	KBV	T & R	D-43	
	T/R relay	KBV	T	D2-3	RLB operated
E	A.F. amp	KBV	T & R	E-8	
	Mic amp	KBV	T	E-18	Amp inhibited on K and B
F	Meter cct	B	T & R	F3-12	
	PA	KBV	T & R	F2-2	
	Peak rect cct	KBV	T & R	F3-13	
	S/R relay	KBV	T & R	F4-8	
	Phase splitter and driver	KBV	T	F1-7	
J	Xtal osc	KBV	T & R	JR & JL	J3 above 3.75MHz J4 below 3.75MHz

K = Key, B = Battery, V = Voice, T = Transmit, R = Receive

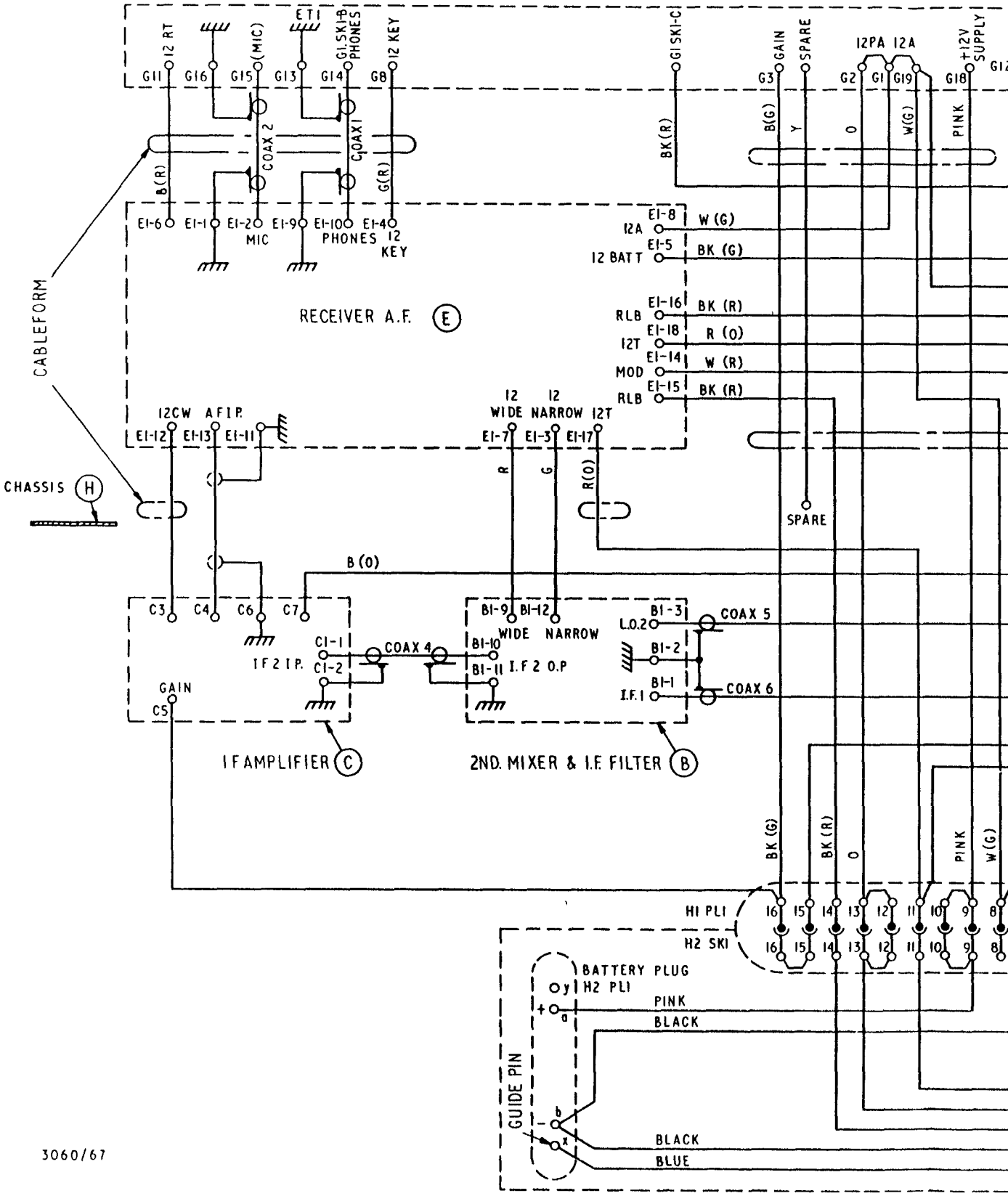
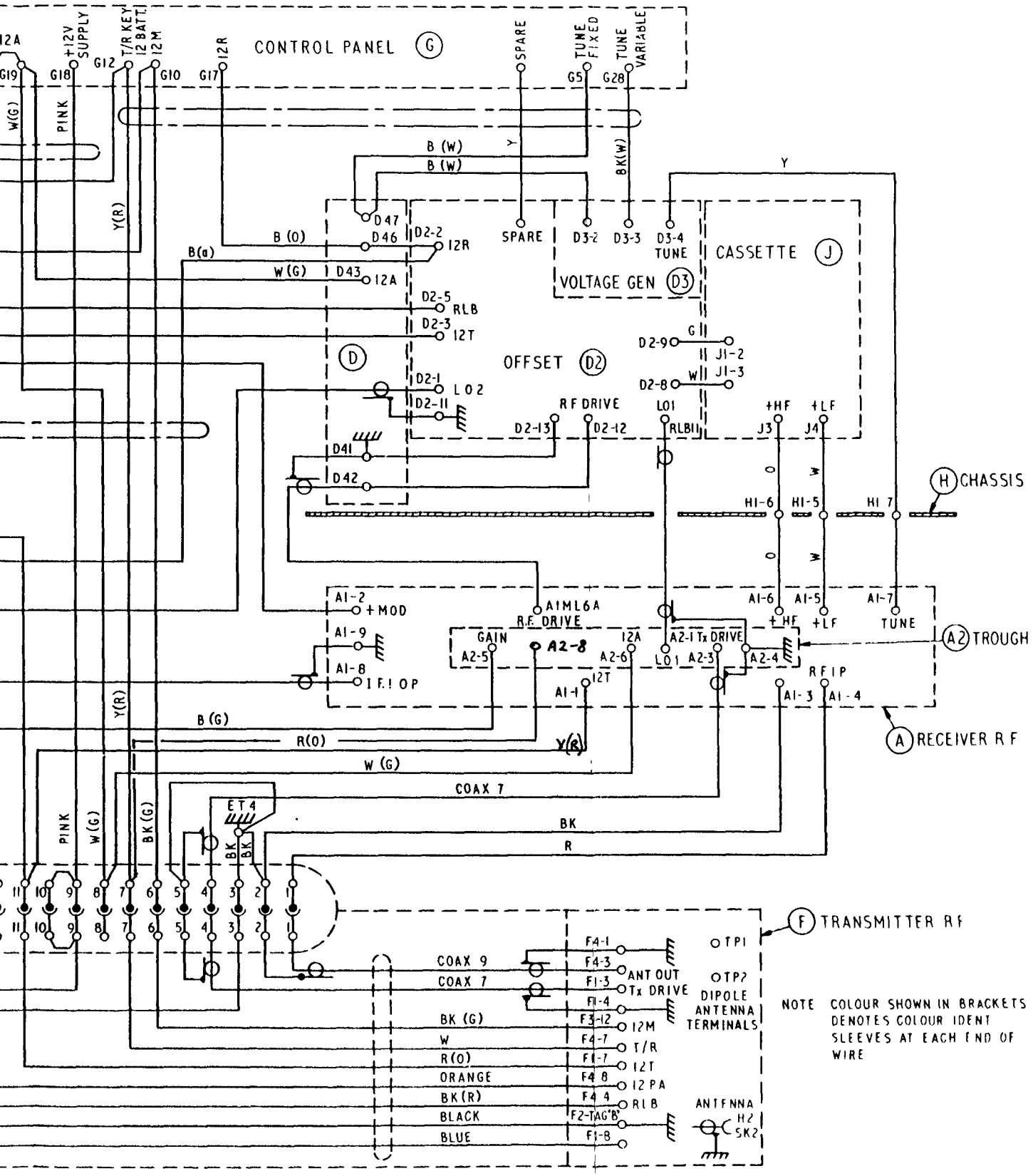


Fig 2525 - Inter-unit c



ter-unit connection wiring

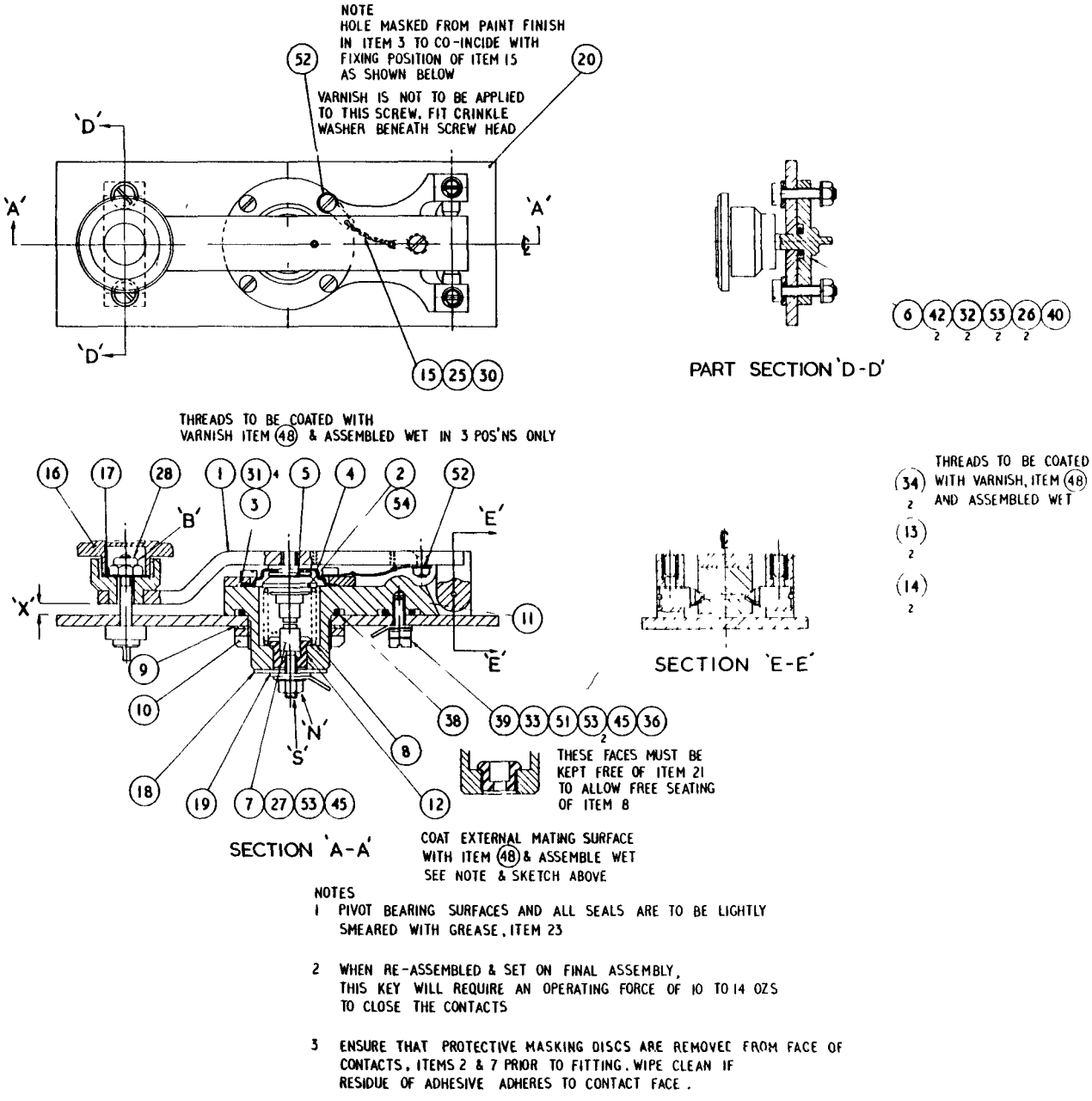


Fig 2526 - Key, telegraph, connections

Note: This Page 1046, Issue 3, supersedes Page 1046, Issue 2, dated Sep 71. Items 15, 21, 34, 36, 37, 38, 41 and 45 have been amended.

Table 2515 - Key, Telegraph, component schedule (Fig 2506)

Item	Description	Item	Description
1	Arm and pivot assy	28	Nut, hex, Nyloc, 6 BA M.S.
2	Contact, electrical	29	Spare
3	Plate clamp	30	Screw, csk hd, 8 BA x 7/32 s.t.
4	Diaphragm, telegraph key	31	Screw, ch hd, 8 BA x 3/16 s.t.
5	Washer, flat	32	Screw, ch hd, 6 BA x 1/2 s.t.
6	Plate and stud assy	33	Screw, ch hd, 6 BA x 3/8 s.t.
7	Contact assy, key	34	Screw, set, hex socket, 4 BA x 3/16 flat point
8	Spring, helical, compression		
9	Washer, flat	35	Spare
10	Nut, plain, round	36	Washer, packing
11	Body, telegraph, round	37	Spare
12	Insulator, bushing	38	Ring, sealing, toroidal
13	Plug, protective	39	Ring, sealing, toroidal
14	Pivot, screw	40	Ring, sealing, toroidal
15	Lead, electrical	41	Spare
16	Cap, plug protective	42	Seal, bonded, 6 BA
17	Washer, non-metallic	43	) Spare
18	Insulator, washer	44	)
19	Washer, flat	45	Tag, solder, 6 BA
20	Plate transit/assy stage	46	) Spare
21	Araldite	47	)
22	Spare	48	Varnish, Dulux, anti-tracking
23	Grease, XG271 (Aero shell No 6)	49	) Spare
24	Spare	50	)
25	Nut, lock, 8 BA s.t.	51	Washer, plain, 6 BA
26	Nut, ordinary, 6 BA s.t.	52	Washer, crinkle, 8 BA
27	Nut, ordinary, 6 BA B.R.	53	Washer, crinkle, 6 BA
		54	Washer, crinkle, 4 BA

T/8/3060 (Tels)

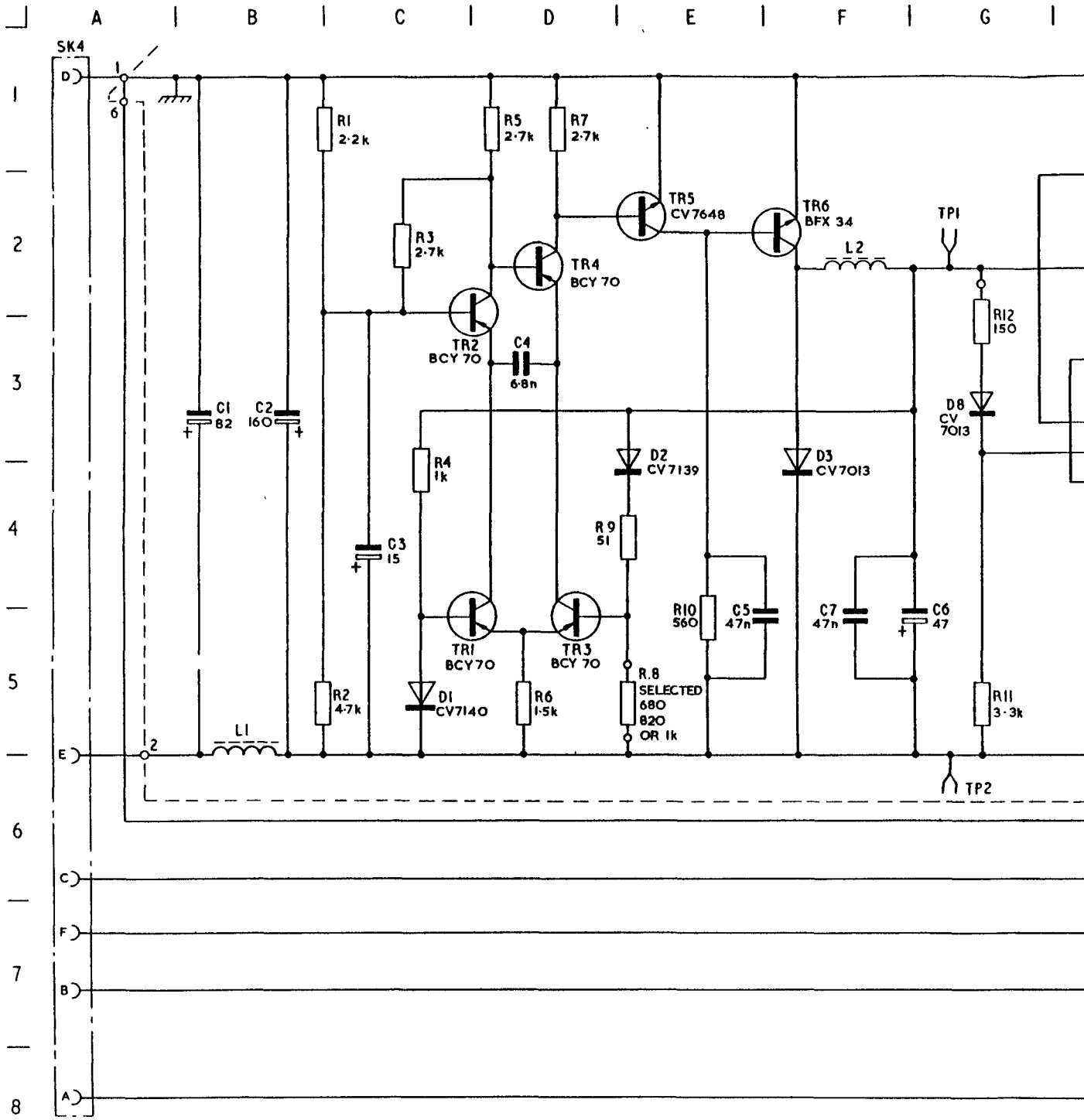
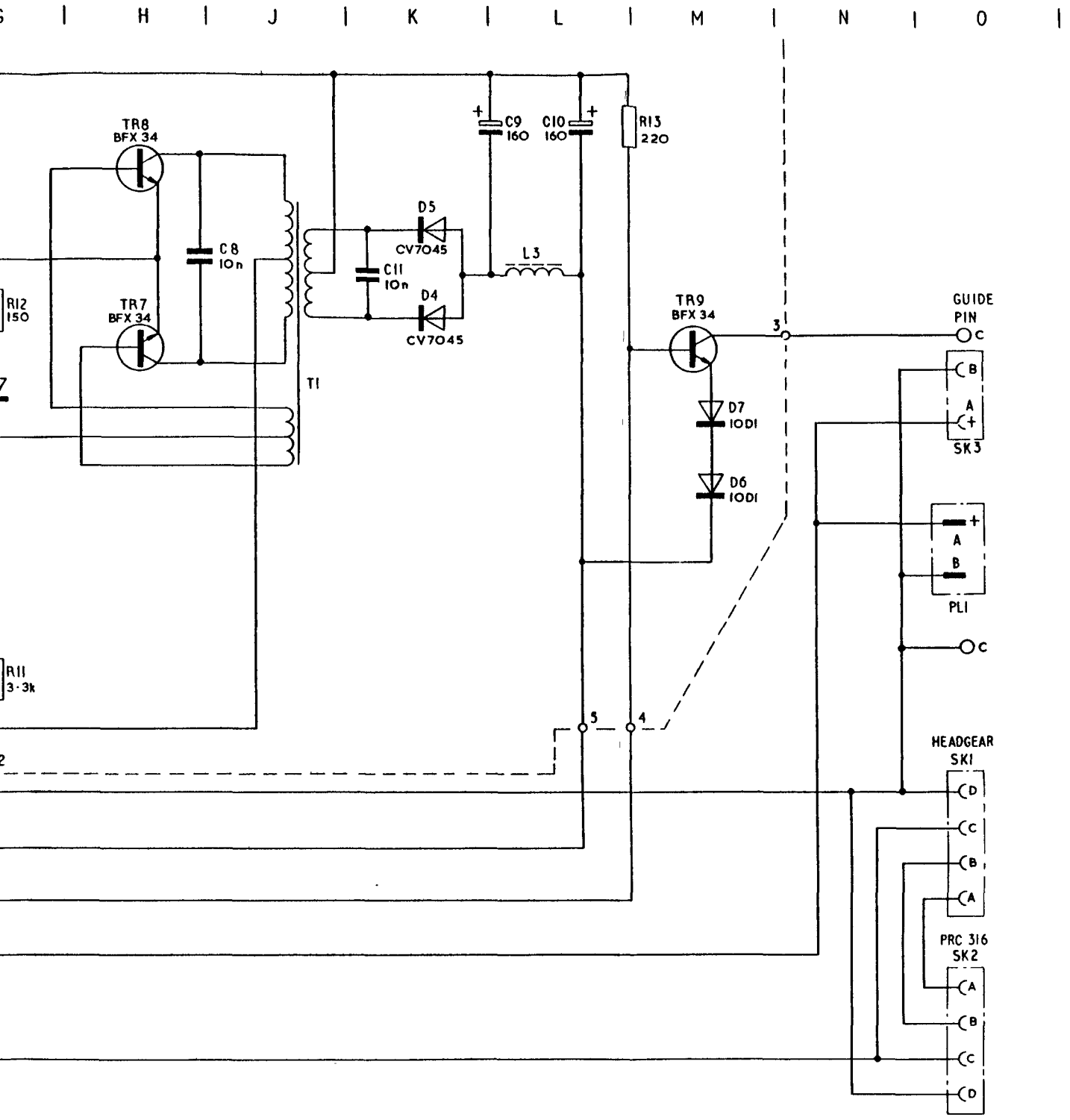
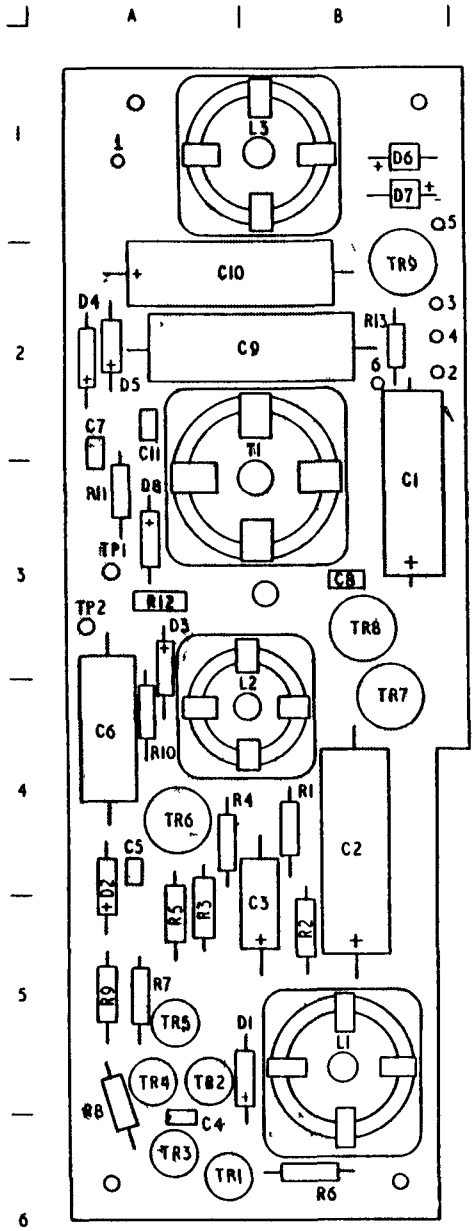


Fig 2527 - Adaptor unit, AN

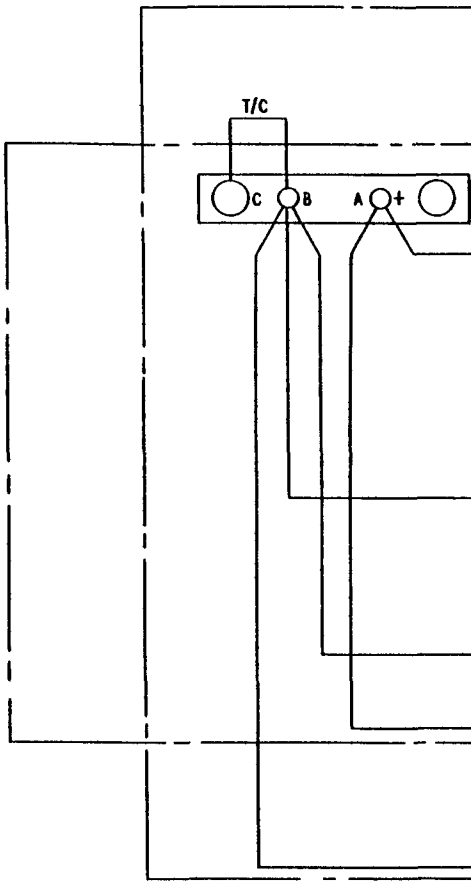


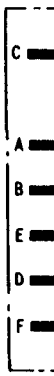
unit, AN/GRA71, circuit diagram



PRINTED CIRCUIT BOARD
INTERFACE UNIT

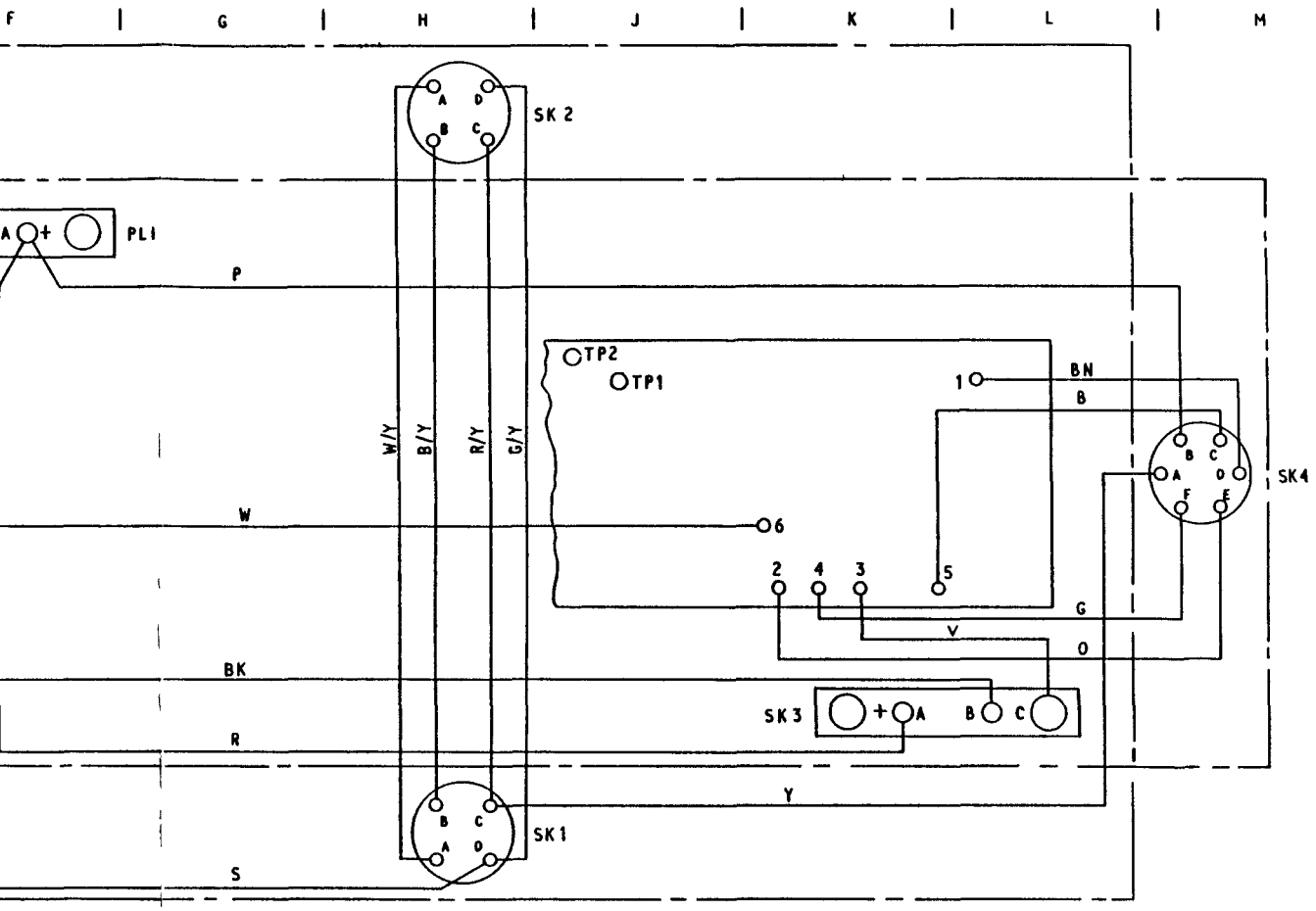
3060/80



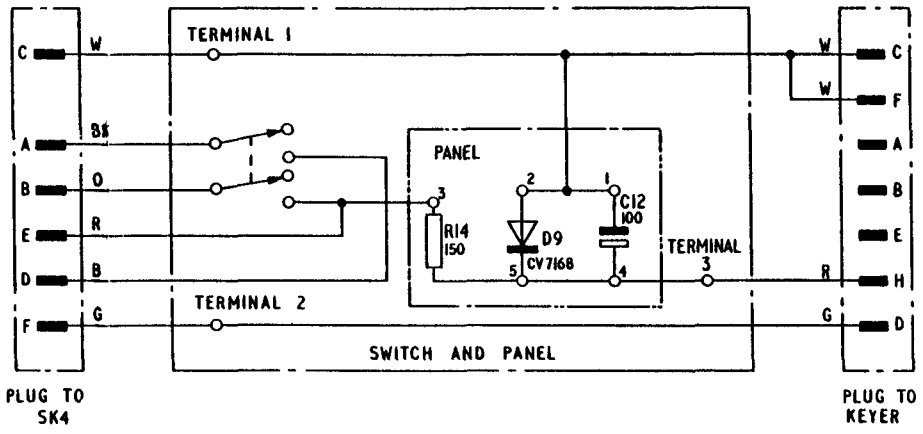


PLUG
SK

Fig 2528 - Adaptor unit, lay



WIRING DIAGRAM INTERFACE UNIT



CABLE ASSY SWITCH ELECTRICAL
5820-99-110-6652

nit, layout and connector circuit

Table 2516 - Adaptor unit AN/GRA71 - PRC316, component schedule

Cct ref	Component location		Value	Rating	Type	NATO Part No
	Fig 2527	Fig 2528				
RESISTORS						
R1	C1	B4	2.2k	1/16W	±5% met film ins	5905-99-013-6447
R2	C5	B5	4.7k	1/16W	±5% met film ins	5905-99-013-6455
R3	C2	A5	2.7k	1/16W	±5% met film ins	5905-99-013-6449
R4	C4	A4	1k	1/16W	±5% met film ins	5905-99-013-6439
R5	D1	A5	2.7k	1/16W	±5% met film ins	5905-99-013-6449
R6	D5	B6	1.5k	1/16W	±5% met film ins	5905-99-013-6443
R7	D1	A5	2.7k	1/16W	±5% met film ins	5905-99-013-6449
R8	E5	A5	680	1/16W	±5% met film ins	5905-99-013-6435
or			820	1/16W	±5% met film ins	5905-99-013-6437
or			1k	1/16W	±5% met film ins	5905-99-013-6439
R9	E4	A5	51	1/16W	±5% met film ins	5905-99-013-6408
R10	E5	A4	560	1/16W	±5% met film ins	5905-99-013-6433
R11	G5	A3	33k	1/16W	±5% met film ins	5905-99-013-6451
R12	G3	A3	150	1/16W	±5% met film ins	5905-99-013-6419
R13	L1	B2	220	1/16W	±5% met film ins	5905-99-013-6423
R14			150	1/16W	±5% met film ins	5905-99-013-5726
CAPACITORS						
C1	B3	B3	82µ	30V	Tant tub -15 +75%	5910-99-114-2722
C2	B3	B4	160µ	30V	Tant tub -15 +75%	5910-99-114-2723
C3	C4	B5	15µ		Tant tub ±20%	5910-99-013-0498
C4	D3	A6	68n			
C5	E5	A4	47n			
C6	F5	A4	47n		Tant tub -15 +75%	5910-99-114-2721
C7	F5	A2	47n			
C8	H2	B3	10n			
C9	L1	A2	160µ	30V	Tant tub -15 +75%	5910-99-114-2723
C10	L1	A2	160µ	30V	Tant tub -15 +75%	5910-99-114-2723
C11	K2	A2	10n			
C12			100µ	15V	Tant tub -15 +75%	5910-99-114-266
INDUCTORS						
L1	B5	B5	15mH	-	Inductor, a.f.	5950-99-114-2225
L2	F2	A4	250µH	-	Inductor, a.f.	5950-99-114-2226
L3	L2	B1	250µH	-	Inductor, a.f.	5950-99-114-2227
T1	J3	B3	-	-	Transformer, a.f.	5950-99-114-2228

Table 2516 - (cont)

Cct ref	Component location		Description	NATO Part No
	Unit cct	Unit layout		
			MISCELLANEOUS	
D1	C5	B7	Valve, electronic, CV7140	5961-99-037-2390
D2	E3	A5	Valve, electronic, CV7139	5961-99-037-2389
D3	F3	A5	Valve, electronic, CV7013	5961-99-037-2000
D4	K3	B3	Valve, electronic, CV7045	5961-99-037-2036
D5	K2	B3	Valve, electronic, CV7045	5961-99-037-2036
D6	M4	C2	Diode semiconductor	5961-99-118-1243
D7	M3	C2	Diode semiconductor	5961-99-118-1243
TR1	D5	B7	Transistor, CV10990	5961-99-037-5807
TR2	D3	B6	Transistor, CV10990	5961-99-037-5807
TR3	D5	A7	Transistor CV10990	5961-99-037-5807
TR4	D2	A6	Transistor, CV10990	5961-99-037-5807
TR5	E2	B6	Valve, electronic, CV7648	5961-99-037-4295
TR6	F2	A5	Transistor (BFX34)	5961-99-118-1244
TR7	H3	C5	Transistor (BFX34)	5961-99-118-1244
TR8	H1	C5	Transistor (BFX34)	5961-99-118-1244
TR9	M3	C2	Transistor (BFX34)	5961-99-118-1244
SK1	06	D3	Socket, 4-pole	5935-99-193-5741
SK2	03	E4	Socket, 4-pole	5935-99-193-5741
SK3	07	G3	Socket, battery electrical 2-pole	5935-99-114-2287
SK4	A1	F5	Socket, 6-pole	5935-99-149-3145
			Panel, electronic	5820-99-114-2290

T/8/3060/Tels

END

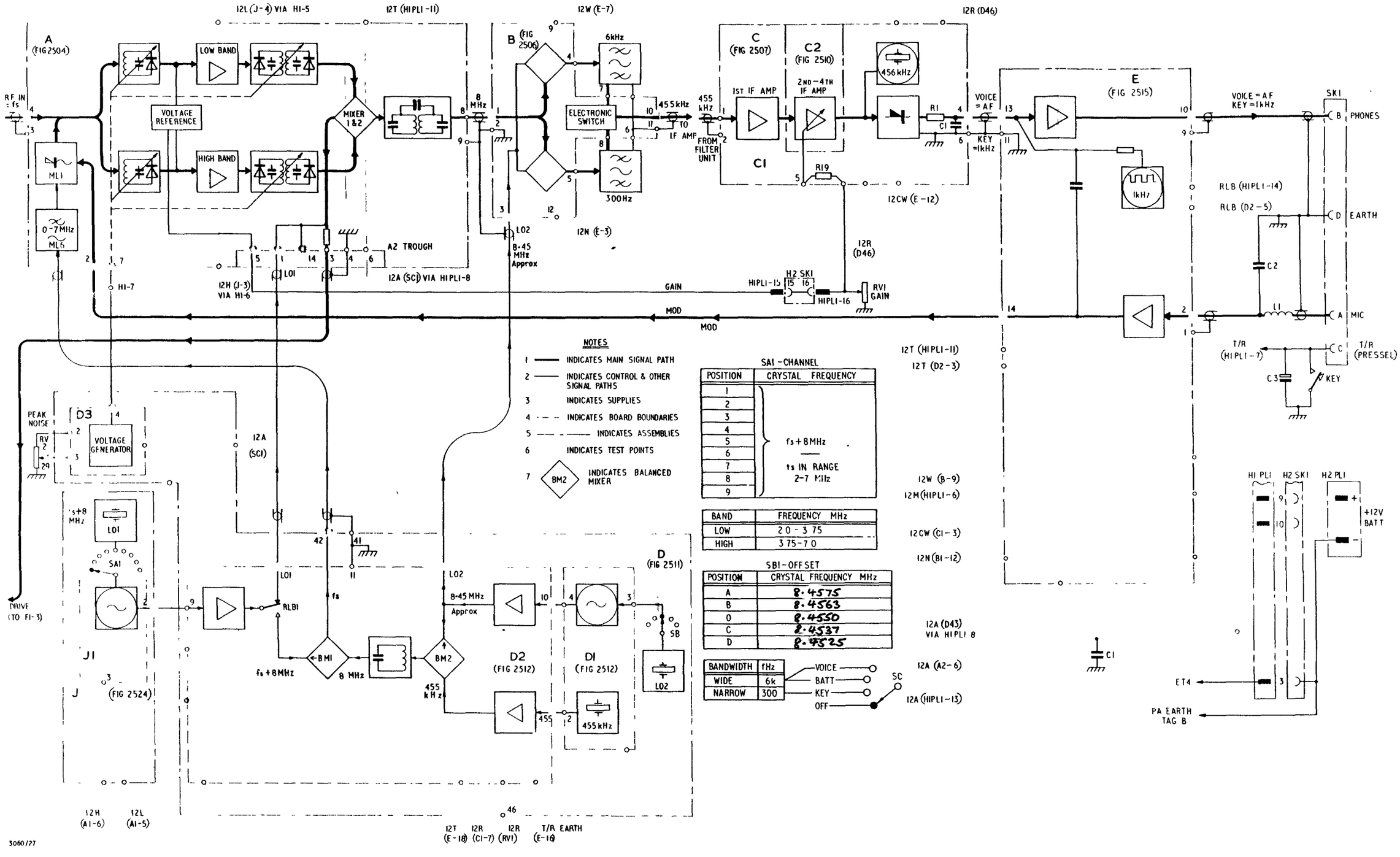
STATION, RADIO, UK/PRC-316

FORWARD CODING

Note: The following list of Assembly codes must be used in conjunction with EMER Mgmt J 021 Part 4.

Assembly Code	Designation
1100	RT-316, type A and B
1200	Antenna, reel and throwing cord assembly, type A and B
1300	Headset, single transducer
1400	Bag, carrying, plastic
1500	Adaptor, battery, remote
1600	Headset, earphones and microphone
1700	Board, antenna junction
1800	Cable assembly r.f.
1900	Cable assembly special purpose (2)
2000	Transmitter unit
2001	Panel electronic circuit assembly, board F1
2002	Bracket assembly, board F2
2003	Panel electronic circuit assembly, board F3
2004	Panel electronic circuit assembly, board F4
2100	Control panel assembly
2200	Chassis assembly, type A and B
2201	Panel electronic circuit assembly, board A
2202	Panel electronic circuit assembly, board B
2300	Amplifier r.f. assembly C
2301	Panel electronic circuit assembly, board C1
2302	Panel electronic circuit assembly, board C2
2400	Offset unit assembly D
2401	Panel electronic circuit assembly, board D1
2402	Panel electronic circuit assembly, board D2
2403	Panel electronic circuit assembly, board D3
2404	Chassis and switch assembly, unit D4
2405	Panel electronic circuit assembly, board E
2406	Crystal cassette, assembly J, type A
2407	Crystal cassette, assembly J, type B
2408	Panel electronic circuit assembly, board J1

END



NOTES

1 —— INDICATES MAIN SIGNAL PATH
2 —— INDICATES CONTROL & OTHER SIGNAL PATHS
3 INDICATES SUPPLIES
4 - - - INDICATES BOARD BOUNDARIES
5 —— - - —— INDICATES ASSEMBLIES
6 INDICATES TEST POINTS
7 BM2 INDICATES BALANCED MIXER

SA1 - CHANNEL

POSITION	CRYSTAL FREQUENCY
1	fs+8MHz — fs IN RANGE 2-7 MHz
2	
3	
4	
5	
6	
7	
8	
9	

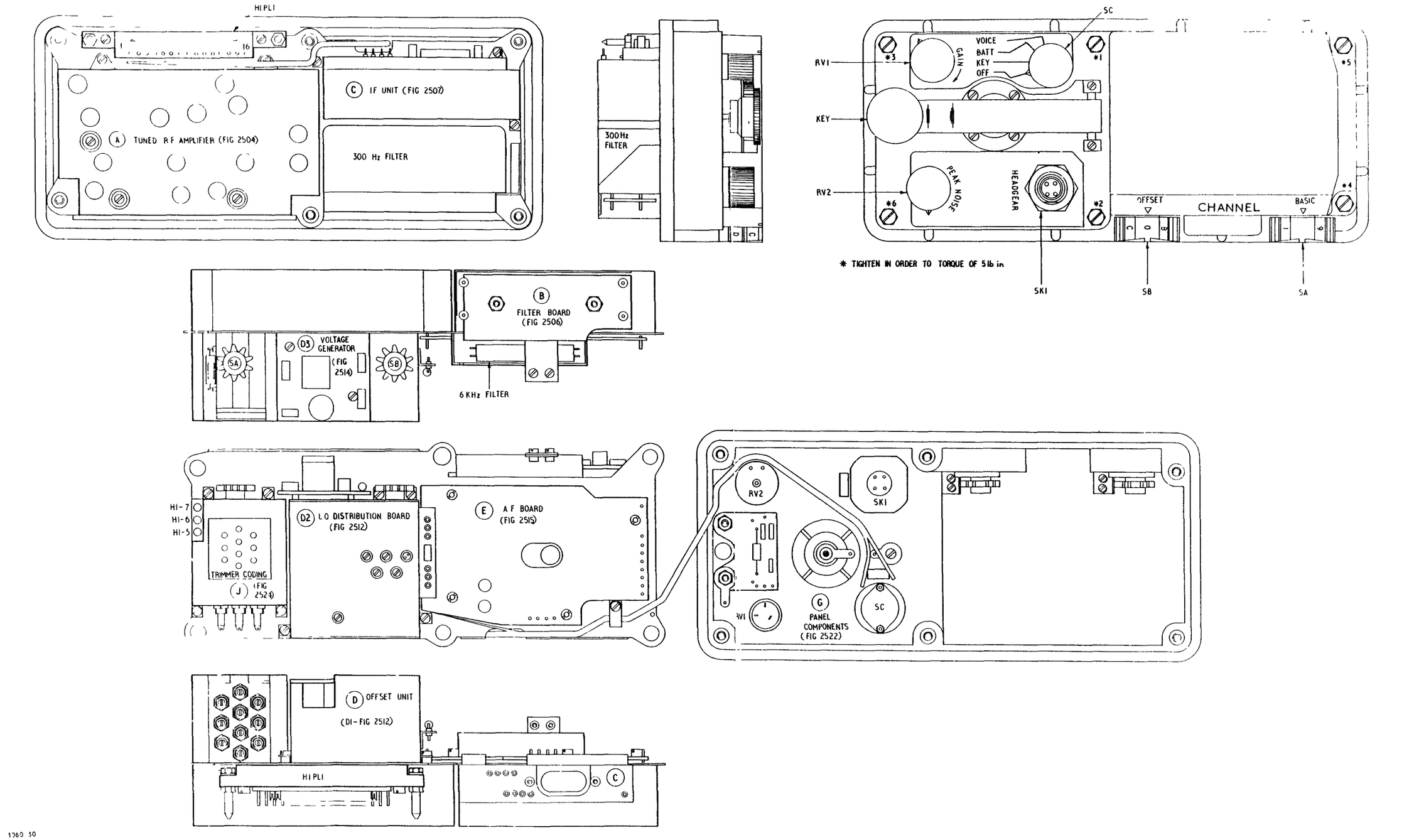
BAND	FREQUENCY MHz
LOW	2·0 - 3·75
HIGH	3·75 - 7·0

SB1 - OFFSET

POSITION	CRYSTAL FREQUENCY MHz
A	8·4575
B	8·4563
0	8·4550
C	8·4537
D	8·4525

BANDWIDTH	fHz
WIDE	6k
NARROW	300

Fig 2502 - Block diagram, receiver



5360 30

Fig 2503 - Layout of sub-units

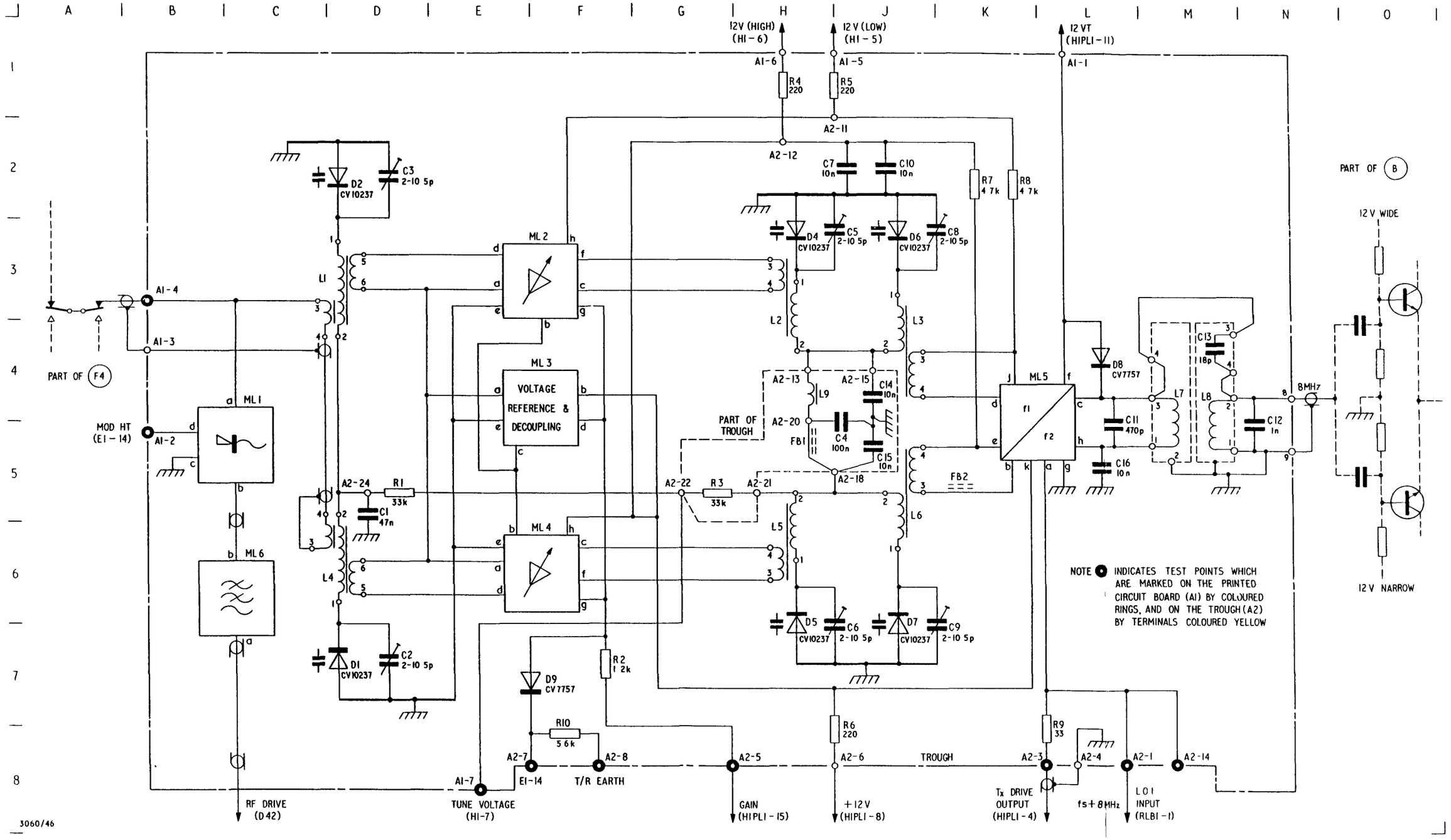


Fig 2504 - Board A, and trough A2 r.f. unit, circuit diagram

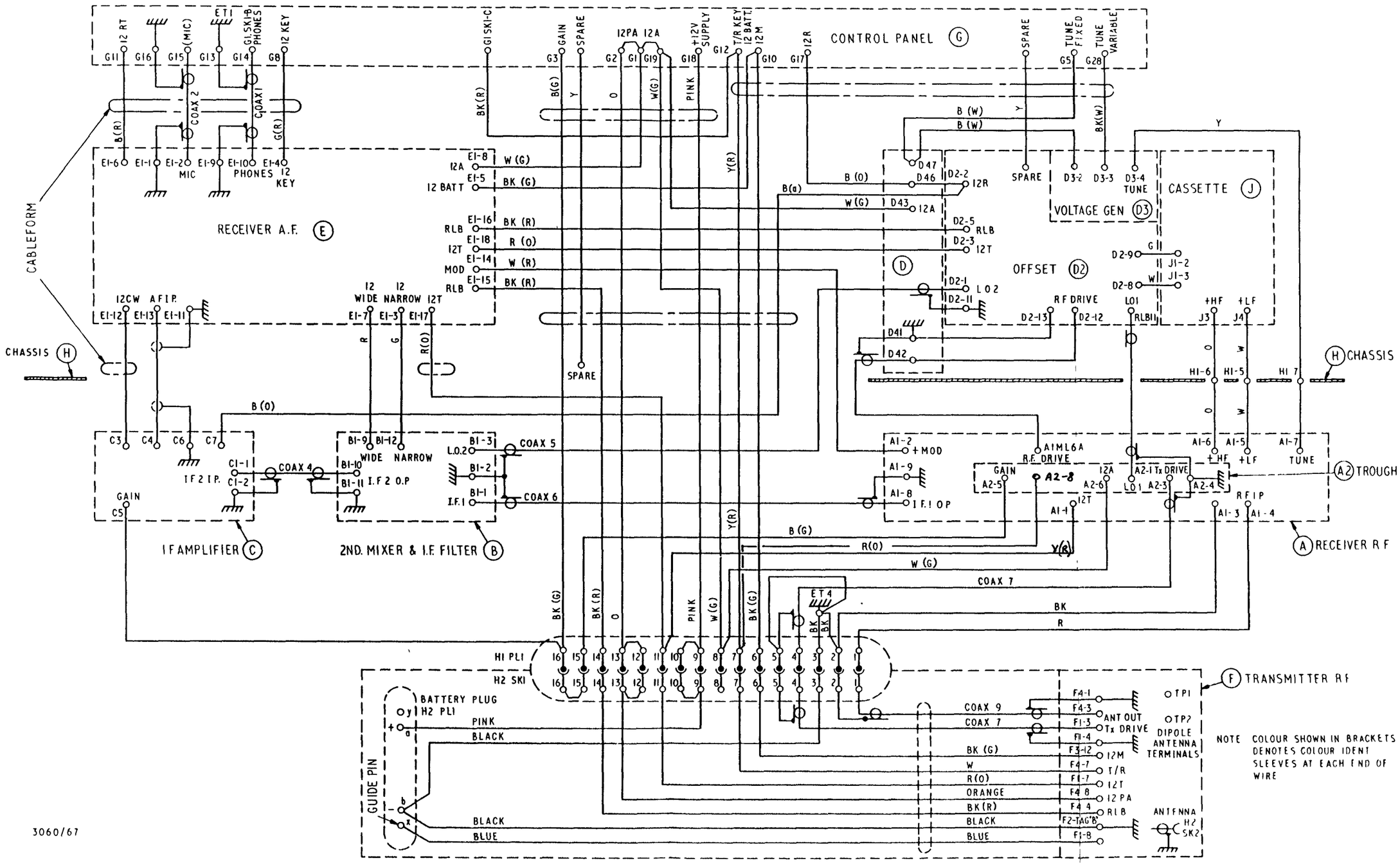


Fig 2525 - Inter-unit connection wiring

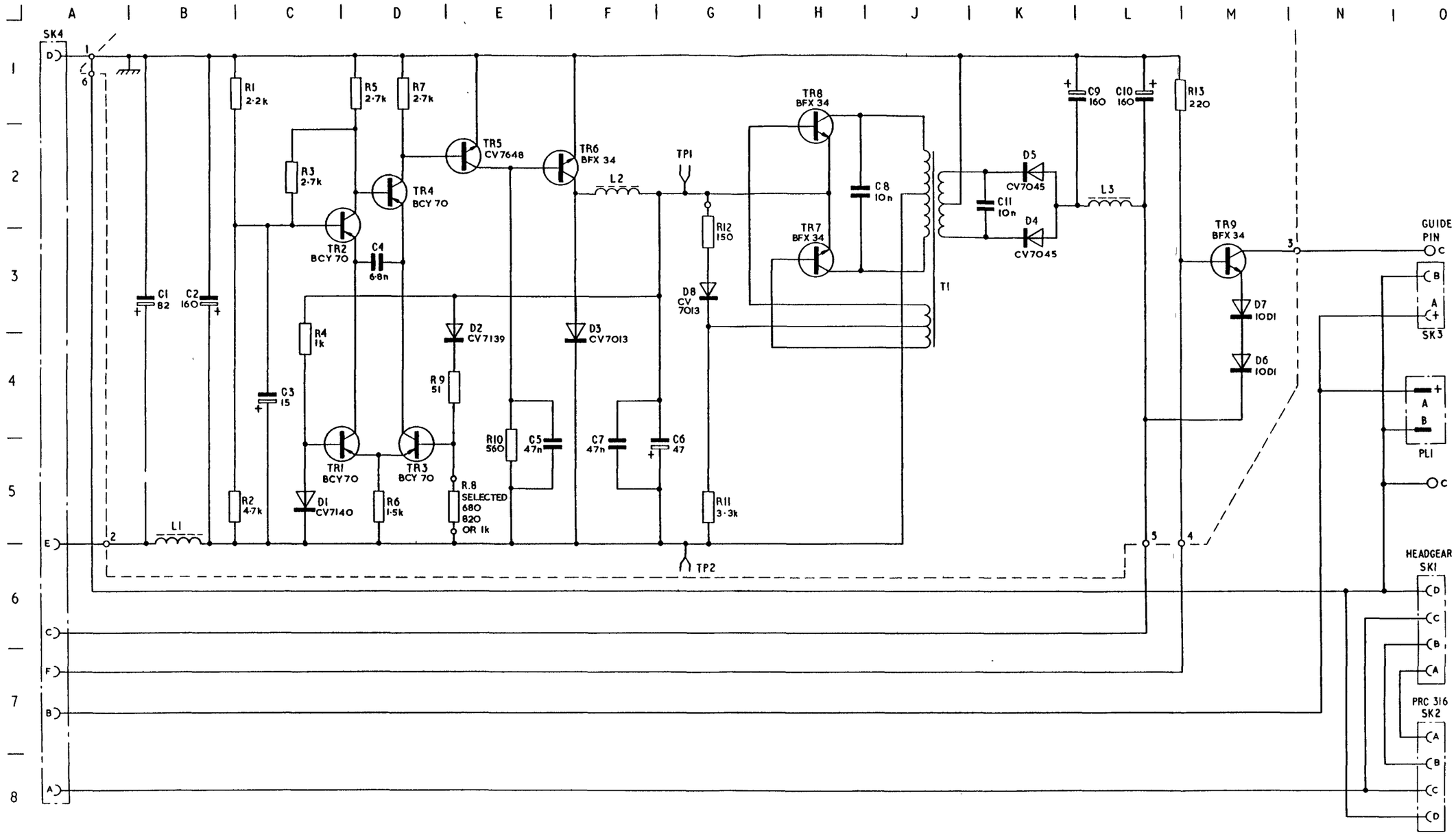
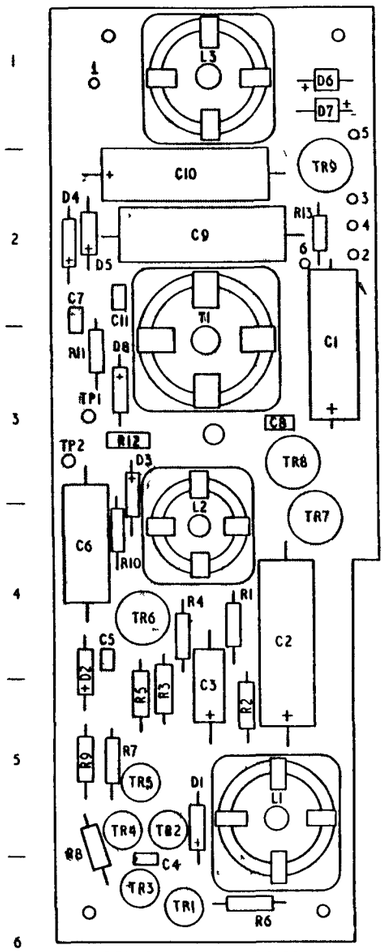
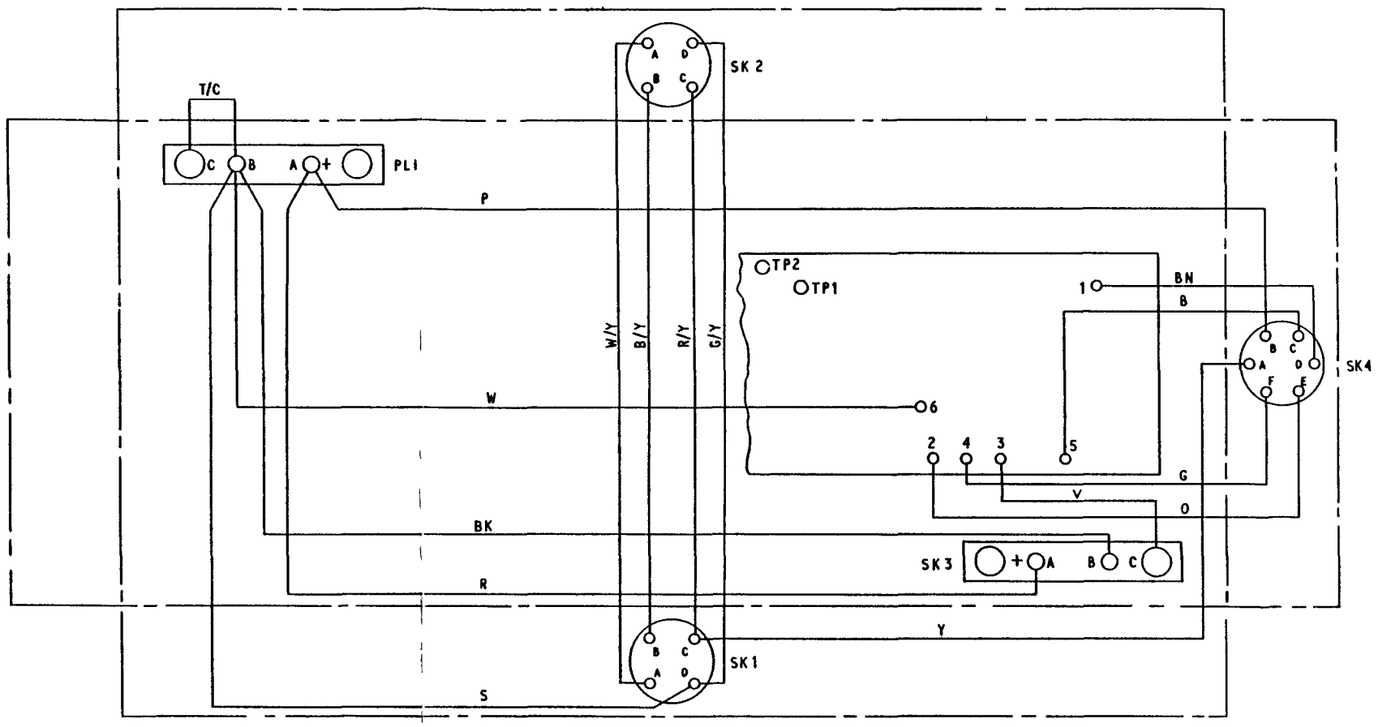


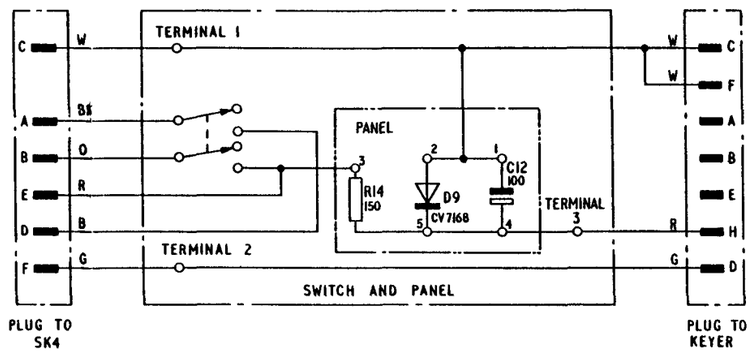
Fig 2527 - Adaptor unit, AN/GRA71, circuit diagram



PRINTED CIRCUIT BOARD
INTERFACE UNIT



WIRING DIAGRAM INTERFACE UNIT



CABLE ASSY SWITCH ELECTRICAL
5820-99-110-6652

Fig 2528 - Adaptor unit, layout and connector circuit

3060/80