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CJP1/2 RECEIVER

PART IV

ARU18A ADAPTOR, COMMON ANTENNA

5820-99-525-6192

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A B C
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REDIFON
ARU18

1 BRIEF DESCRIPTION AND SPECIFICATION

1.1 BRIEF DESCRIPTION

The ARU18A Adaptor, Common Antenna 5820-99-525-6192 enables the CJP2 Receiver to be operated from a common aerial outfit EAL over the frequency range 1·5 to 30MHz.

1.2 SPECIFICATION

Common Aerial System Line Impedance:
75Ω

VSWR at Common Aerial Output Socket SK2:
Less than 1·5 at any frequency more than 4% from tune frequency

Insertion loss to the Receiver:
Less than 7dB at tune frequency

Frequency Range:
1·5 to 30MHz in nine frequency bands

(a) 1·5 to 2·5MHz
(b) 2·5 to 3·5MHz
(c) 3·5 to 4·5MHz
(d) 4·5 to 7·0MHz
(e) 7·0 to 9·5MHz
(f) 9·5 to 12MHz
(g) 12 to 18MHz
(h) 18 to 24MHz
(i) 24 to 30MHz

Controls:

Frequency Range switch
Increment tuning

Dimensions:

Height	Width	Depth	Weight
$3\frac{11}{16}$in	$7\frac{23}{32}$in	$16\frac{49}{64}$in	5lb
94mm	196mm	426mm	2·27kg

2 INSTALLATION

2 INSTALLATION

The addition of an ARU18A Adaptor, Common Antenna unit to a CJP1 receiver, converts the receiver to a type CJP2.

(1) Unscrew six captive knurled fixing screws on R551N Receiver, Radio.

(2) Hold R551N Receiver by handles and slide out on runners to limit indicated by an audible click. In this condition the unit cannot be moved either inwards or further outwards.

(3) Unscrew and remove four 4BA round head chrome fixing screws, together with associated washers and nuts, securing the blank panel at the top left-hand corner of R551N Receiver and remove the panel.

(4) Fit ARU18A Adaptor, Common Antenna behind panel opening and secure to R551N Receiver front panel with four 4BA round head chrome screws and associated washers.

(5) Secure unit to R551N Receiver with two 4BA cheese head screws and washers, one screw on each side, at rear of ARU18A Adaptor, Common Antenna.

(6) Locate two unused coaxial cables, terminated by coaxial plugs, in the cable form near the rear of the ARU18A Adaptor, Common Antenna, labelled PL1 and PL2.

(7) Fit coaxial lead labelled PL1 to socket SK1, and lead labelled PL2 to socket SK2 on ARU18A Adaptor, Common Antenna.

(8) Locate miniature coaxial cables clipped to rear panel of R551N Receiver terminated by connectors plug PL5 and socket SK5.

(9) Disconnect connectors PL5 and SK5.

(10) Locate free miniature coaxial lead from ARU18A Adaptor, Common Antenna terminated by plug PL1 and connect it to socket SK5 from R551N Receiver, Radio.

(11) Locate free miniature coaxial lead from ARU18A Adaptor, Common Antenna terminated by socket SK3 and connect it to plug PL5 from R551N Receiver, Radio.

(12) Press downwards with thumbs on to catch release on each runner and push R551N Receiver inwards about 1in.

(13) Hold R551N Receiver by handles and slide home on runners.

(14) Secure R551N Receiver to Cabinet, Electrical Equipment 5820-99-525-6193 by the six captive knurled head fixing screws.

3 OPERATING INSTRUCTIONS

3 OPERATING INSTRUCTIONS

3.1 TUNING ARU18A ADAPTOR, COMMON ANTENNA

See Fig. 9.1 for Controls.

(1) Set the R551N Receiver to the required operating frequency.

(2) Set the ARU18A Adaptor, Common Antenna Frequency Range switch to position appropriate to required operating frequency.

(3) Note the code letter pertaining to the frequency range set in (2).

Code Letter	*Frequency Range*
	1·5 to 2·5MHz
A	2·5 to 3·5MHz
	3·5 to 4·5MHz
	4·5 to 7·0MHz
B	7·0 to 9·5MHz
	9·5 to 12·0MHz
	12 to 18MHz
C	18 to 24MHz
	24 to 30MHz

(4) Subtract the lower limit of the Frequency Range selected in (2) from the required operating frequency.

E.g. Required operating frequency: 6·7MHz
Lower frequency limit of Frequency Range: 4·5MHz

$$6{\cdot}7-4{\cdot}5=2{\cdot}2$$

(5) Set the Increment control cursor to number determined in (4) using the scale labelled with the code letter noted in (3). In the example, this letter would be B.

(6) Finally, adjust Increment control slowly for maximum signal to R551N Receiver, Radio.

3.2 LOCAL RECEIVER BY-PASS

When the Frequency Range switch is set to the LOCAL Rx BY-PASS position the Common Aerial input socket SK1 will be directly connected to the Common Aerial output socket SK2. Thus the local equipment is by-passed and the Common Aerial system connected to the next receiver.

Signal source for the local receiver is then the aerial connected to the R551N Receiver, Radio.

3.3 EMERGENCY AERIAL

To receive via the emergency aerial the Frequency Range switch must be in the LOCAL Rx BY-PASS position and the emergency aerial connected to socket SK3 on Cabinet, Electrical Equipment 5820-99-525-6193.

4 CIRCUIT DESCRIPTION

4 CIRCUIT DESCRIPTION

4.1 GENERAL

The ARU18A Adaptor, Common Antenna 5820-99-525-6192 enables an associated receiver to be tapped into a low impedance line Common Aerial system carrying signals in the HF spectrum 1·5 to 30MHz.

Fig. 4.1 shows how the unit is used to extract wanted signals from the line whilst providing minimum disturbance to the Common Aerial system and other receivers connected in the same way to it.

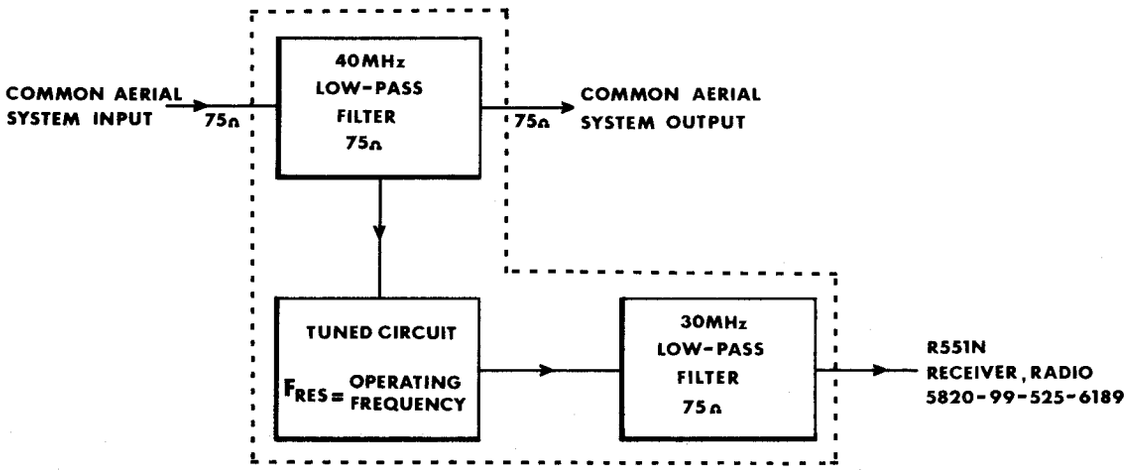


Fig. 4.1 Block Diagram of ARU18A Adaptor, Common Antenna

4.2 CIRCUIT DESCRIPTION

For circuit diagram, see Fig. 9.3.

The frequency range, 1·5 to 30MHz, is divided into nine bands, each band tunable by a variable filter. As each of these filters is similar, only one of the sections will be described in detail.

Signals from the Common Aerial system at the adaptor line input are fed through the balanced primary winding of RF transformer T1 (see Fig. 4.2) and out to the next receiver. The inductance of T1 primary, together with capacitors C1 and C2, provide a 75Ω low-pass π-section filter having a cut-off frequency of about 40MHz.

Signals in the wanted frequency band are inductively coupled to the secondary of T1, which is tuned to the operating frequency by capacitors C3 and C4 in series. The ratio of these capacitors, together with a 30MHz low-pass filter terminated at each end by m-derived half sections, provide impedance matching to the local receiver with high attenuation at the receiver first IF of 38MHz.

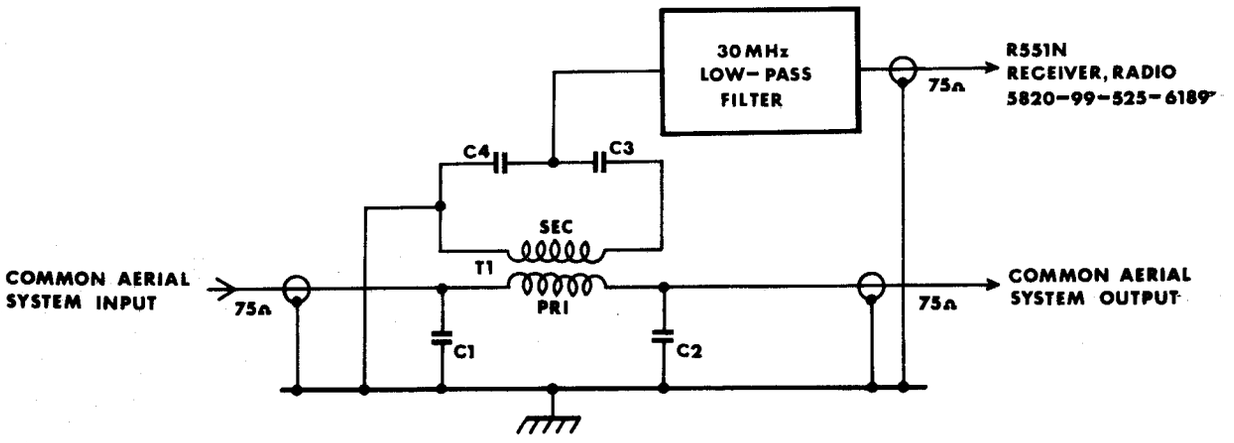


Fig. 4.2 Simplified Circuit of One Band Filter

The nine filter bands are divided into three groups of three bands.

Group A	1·5 to 2·5MHz
	2·5 to 3·5MHz
	3·5 to 4·5MHz
Group B	4·5 to 7·0MHz
	7·0 to 9·5MHz
	9·5 to 12·0MHz
Group C	12 to 18MHz
	18 to 24MHz
	24 to 30MHz

The lowest frequency band filter in each group is the pilot filter, the other two having trimming and tracking capacitors which are adjusted to provide optimum tracking with the Increment scale. On the three highest frequency bands only one section of the ganged tuning capacitor is used, both sections being paralleled for the other six bands.

When the Range switch is set to LOCAL Rx BY-PASS position the local receiver is disconnected from the Common Aerial system, and as sockets SK1 and SK2 are directly connected, the Common Aerial system by-passes the local installation. The local receiver input SK3 is then connected via the 30MHz low-pass filter, to the local receiver aerial filters at plug PL1.

5 MAINTENANCE

5 MAINTENANCE

(1) Remove top cover plate secured by eight 4BA fixing screws.

(2) Remove any dust with vacuum cleaner and Brush 0476-99-943-0408.

(3) Clean all wafer switch contacts with Switch Cleaning Fluid 044-99-9150-1253.

(4) Apply a small quantity of silicone grease, e.g. Midlands Silicones type MS4 0474-99-942-4829 to the switch index mechanism.

(5) The bearings of the mechanisms used for rotating the switch and the variable capacitor should not require attention.

(6) Refit top cover plate.

6 REPAIR AND REPLACEMENT

6 REPAIR AND REPLACEMENT

6.1 GENERAL

After any repairs or replacement of components, the relevant band or bands should be re-aligned as in para. 8.5.

6.2 REPAIRS TO TUNED CIRCUIT PCB ASSEMBLY 5820-99-527-1904

Remove four 4BA screws securing the bottom cover plate and lift off the plate. This will allow access to the component soldered connections.

6.3 REMOVAL OF TUNED CIRCUIT PCB ASSEMBLY 5820-99-527-1904

(1) Unsolder leads from switch wafers at pins 1 to 36 on the printed circuit board (see Fig. 9.2 for location of pins).

(2) Unsolder coaxial cable from switch S1dB, inner at pin 37 and screen at pin 38.

(3) Unsolder coaxial cable from socket SK3, inner at pin 39 and screen at pin 40.

(4) Remove five 4BA screws securing the printed circuit board and lift the board vertically taking care not to damage the leads still connected to the switch wafers.

(5) When rewiring the switch leads to the PCB pins, ensure correct connection by reference to Fig. 9.3.

7 FAULTFINDING

7 FAULTFINDING

7.1 LOW SENSITIVITY

Determine whether the sensitivity is low on all bands or only certain bands.

7.1.1 Low Sensitivity on All Nine Bands

(1) If sensitivity is higher at the HF end of all bands than at the LF end, check continuity of wipers on switch wafers S1aB and S1aF (see Fig. 9.3) and wiring to ganged variable capacitor C88, C93.

(2) Check wiper contacts for continuity on all switch wafers (see Fig. 9.3).

(3) Check attenuation of low-pass filter L1 to L4, C86, C87 and C91. Re-align, if necessary, as in para. 8.4.

7.1.2 Low Sensitivity on One to Eight Bands

(1) If sensitivity is higher at the HF end of faulty bands than at the LF end, check continuity of relevant switch contacts on wafers S1aB and S1aF (see Fig. 9.3).

(2) Check that switch contacts associated with faulty bands provide continuity or open circuit as required (see Fig. 9.3).

(3) Check alignment of faulty bands as in para. 8.5.

7.2 COMPLETE LOSS OF SIGNAL

Determine whether the loss occurs on all bands or only certain bands.

7.2.1 Complete Loss of Signal on All Nine Bands

(1) Check coaxial terminations, particularly to plugs and sockets (see Fig. 9.2).

(2) Check wiper contacts for continuity on all switch wafers (see Fig. 9.3).

(3) Check wiring to ganged variable capacitor C92, C93.

7.2.2 Complete Loss of Signal on One to Eight Bands

(1) Check that switch contacts associated with faulty bands provide continuity or open circuit as required (see Fig. 9.3).

(2) Check components associated with faulty bands.

8 PERFORMANCE CHECKS AND ADJUSTMENTS

8 PERFORMANCE CHECKS AND ADJUSTMENTS

8.1 GENERAL

This chapter provides information for testing the overall performance of the ARU18A Adaptor, Common Antenna and also for alignment of the band filters.

8.2 TEST EQUIPMENT REQUIRED

To complete all the performance checks detailed in this chapter, the following items of test equipment are required:

RF Signal Generator: CRETE CT452A with 75Ω adaptor

RF Valve Voltmeter: CRETE CT471 with 75Ω Probe 6625-99-195-1983

BNC Coaxial Plug: Greenpar GE35070C10 5935-99-106-8586 with 75Ω resistive load connected between inner and shell (e.g. two 150Ω resistors 5905-99-013-5974 in parallel)

8.3 OVERALL PERFORMANCE CHECKS

Test Equipment Required (For details see para. 8.2)
RF signal generator
RF valve voltmeter
BNC coaxial plug

(1) Connect RF signal generator 75Ω output to socket SK1.

(2) Set RF output level to minimum.

(3) Connect BNC coaxial plug terminated by 75Ω to socket SK2.

(4) Connect flying lead terminated by coaxial socket SK3 to 75Ω probe on RF valve voltmeter.

(5) Set RF signal generator output level to 1·0V rms emf and maintain it at this level when changing frequency.

(6) Set RF signal generator frequency, Range switch and Incremental control as in Table 8.1 below and then adjust the Incremental control for maximum indication on the RF valve voltmeter at each frequency.

Limit: not less than 250mV.

Table 8.1 ARU18A Adaptor, Common Antenna Control Settings for Overall Performance Checks

RF Signal Generator Frequency MHz	*Range Switch MHz*	*Increment Control*	
		Approx Cursor Setting	*Scale*
1·5	1·5–2·5	0	A
2·0	1·5–2·5	0·5	A
2·5	1·5–2·5	1·0	A
2·5	2·5–3·5	0	A
3·0	2·5–3·5	0·5	A
3·5	2·5–3·5	1·0	A
3·5	3·5–4·5	0	A
4·0	3·5–4·5	0·5	A
4·5	3·5–4·5	1·0	A
4·5	4·5–7	0	B
5·75	4·5–7	1·25	B
7·0	4·5–7	2·5	B
7·0	7–9·5	0	B
8·25	7–9·5	1·25	B
9·5	7–9·5	2·5	B
9·5	9·5–12	0	B
10·75	9·5–12	1·25	B
12·0	9·5–12	2·5	B
12·0	12–18	0	C
15·0	12–18	3·0	C
18·0	12–18	6·0	C
18·0	18–24	0	C
21·0	18–24	3·0	C
24·0	18–24	6·0	C
24·0	24–30	0	C
27·0	24–30	3·0	C
30·0	24–30	6·0	C

(7) Disconnect 75Ω probe on RF valve voltmeter from coaxial socket SK3.

(8) Disconnect BNC coaxial plug terminated by 75Ω from socket SK2.

(9) Connect flying lead terminated by coaxial socket SK3 to BNC coaxial plug terminated by 75Ω.

(10) Connect 75Ω probe on RF valve voltmeter to socket SK2.

(11) Set Range switch to 4·5—7MHz position.

(12) Set Increment control to 1·0 on scale B, i.e. tune frequency of 5·5MHz.

(13) Set RF signal generator frequency to 1·5MHz and output level to 1·0V rms emf.

(14) Observe RF valve voltmeter indication. Limit: not less than 400mV.

(15) Sweep RF signal generator frequency from 1·5 to 30MHz, maintaining output level at 1·0V rms emf and observing RF valve voltmeter indication. Limit: not less than 400mV except within a bandwidth of ±4% of the tune frequency of 5·5MHz.

(16) Disconnect test equipment.

8.4 ALIGNMENT OF LOW-PASS FILTER

Test Equipment Required (For details see para. 8.2)

RF signal generator

RF valve voltmeter

(1) Remove eight 4BA screws securing the top cover plate and lift off the plate.
(2) Connect flying lead terminated by coaxial socket SK3 to RF signal generator 75Ω output.
(3) Set RF output level to minimum.
(4) Connect flying lead terminated by coaxial plug PL1 to 75Ω probe on RF valve voltmeter.
(5) Set Range switch to LOCAL Rx BY-PASS position.
(6) Set RF signal generator frequency to 38·0MHz and output level to 2·0V rms emf.
(7) Adjust C86 and C91 (see Fig. 9.2 for location) for minimum indication on RF valve voltmeter.
Limit: at least 35dB below 1V rms.
(8) Sweep RF signal generator frequency from 1·5 to 30MHz, maintaining output level at 2·0V rms emf, and observe RF valve voltmeter indication.
Limit: not lower than 1dB below 1·0V rms.
(9) Disconnect test equipment.
(10) Refit top cover plate.

8.5 ALIGNMENT OF BAND FILTERS

Details are given below for alignment of all the nine band filters. When a new Tuned Circuit PCB Assembly 5820-99-527-1904 is fitted, all the filters should be aligned including the low-pass filter (see para. 8.4).

Following repairs to circuitry in specific bands, the alignment instructions relating to those bands only need be carried out.

Test Equipment Required (For details see para. 8.2)

RF signal generator

RF valve voltmeter

BNC coaxial plug

See Fig. 9.2 for location of components.

(1) Remove eight 4BA screws securing the top cover plate and lift off the plate.
(2) Rotate the Incremental control to maximum clockwise position, i.e. ganged variable capacitor C92, C93 at minimum capacitance.
(3) Check that cursor is aligned with horizontal line at the end of the scale.
If not, loosen the socket head grub screws on the ganged capacitor spindle coupling and adjust cursor position until it is set to horizontal line when capacitor is at minimum capacitance. Then tighten grub screws.
(4) Set the cores of the relevant RF transformers to the positions indicated in Table 8.2.

Table 8.2 Position of Cores in RF Transformers Before Alignment

Range Switch MHz	*RF Transformer*	*Position of Core in Former*
1·5–2·5	T1	Top
2·5–3·5	T2	Top
3·5–4·5	T3	Bottom
4·5–7	T4	Bottom
7–9·5	T5	Bottom
9·5–12	T6	Bottom
12–18	T7	Top
18–24	T8	Top
24–30	T9	Top

(5) Set trimmer capacitors C16, C26, C33, C44, C55, C73 and C85 to approximately mid-position.
(6) Connect RF signal generator 75Ω output to socket SK1.
(7) Set RF output level to minimum.
(8) Connect flying lead terminated by coaxial socket SK3 to 75Ω probe on RF valve voltmeter.
(9) Connect BNC coaxial plug terminated with 75Ω to socket SK2.
(10) Set Range switch to 12-18MHz position.
(11) Adjust Increment control until cursor indicates 0 on scale C.
(12) Set RF signal generator frequency to 12·0MHz and output level to 1·0V rms emf.
(13) Using a suitably insulated trimming tool, screw core of T7 inwards until RF valve voltmeter indication is at maximum. Do not continue to screw core inwards as a second, and incorrect, position may be found which also produces a maximum indication on the RF valve voltmeter.
(14) Set RF signal generator frequency to 18·0MHz.
(15) Adjust Increment control until cursor indicates 6·0 on scale C.
(16) Adjust C94 for maximum indication on the RF valve voltmeter.
(17) Repeat (11) to (16) until no further improvement can be made.
(18) Check that with the RF signal generator frequency set to 12·5, 13·0, 13·5, 14·0, 15·0, 16·0 and 17·0MHz the cursor indication, when tuned for maximum RF valve voltmeter indication, is within the width of the relevant scale C calibration mark (i.e. 0·5, 1·0, 1·5, 2·0, 3·0, 4·0 and 5·0 respectively).

(19) Repeat (10) to (18) setting Range switch and Increment control to appropriate positions and adjusting relevant components in the sequence shown in Table 8.3.

When adjusting RF transformer cores do not continue to screw core past the maximum indication on the RF valve voltmeter as a second, incorrect position may be found which also produces a maximum indication.

See Fig. 9.2 for location of components.

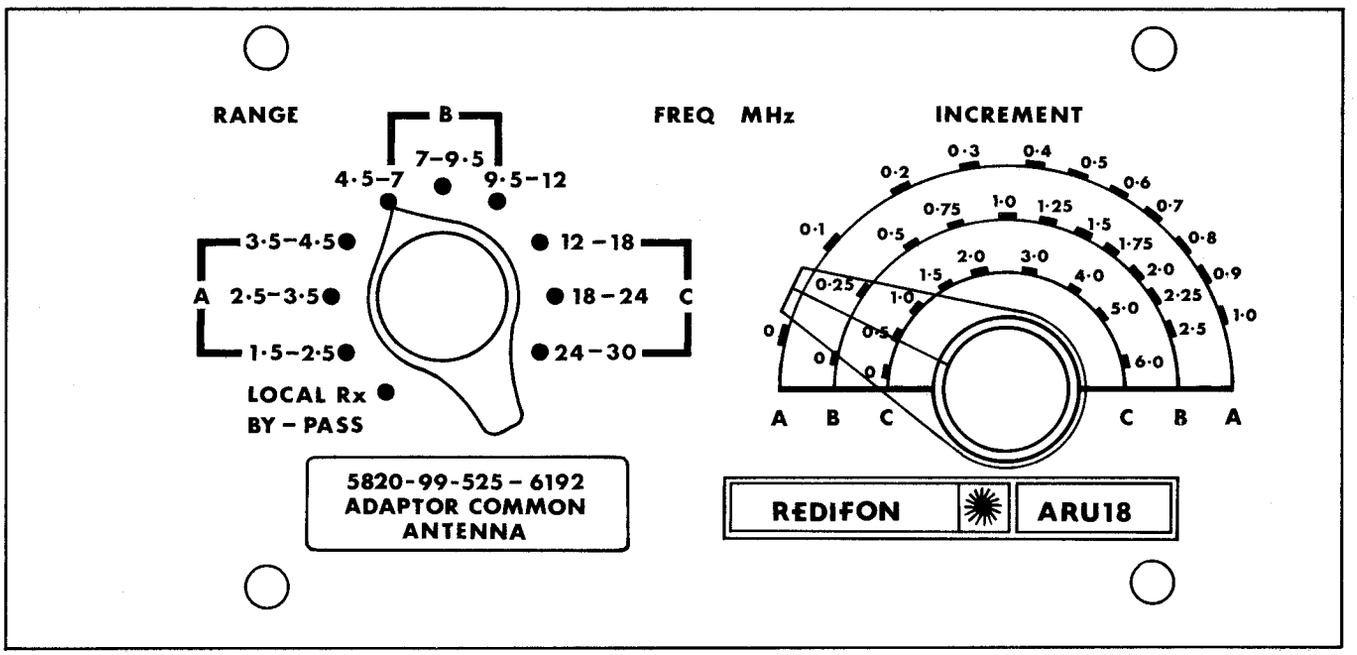
Table 8.3 Control Settings, Frequencies and Components Adjusted During Alignment

	Range Switch MHz	*Increment Control*		*RF Signal Generator Frequency MHz*	*RF Transformer*	*Direction to Screw RF Transformer Core*	*Capacitor Trimmer*
		Cursor Setting	*Scale*				
1	18–24	0	C	18·0	T8	Inwards	—
2	18–24	6·0	C	24·0	—	—	C73
3	24–30	0	C	24·0	T9	Inwards	—
4	24–30	6·0	C	30·0	—	—	C85
5	1·5–2·5	0	A	1·5	T1	Inwards	—
6	1·5–2·5	1·0	A	2·5	—	—	C88
7	2·5–3·5	0	A	2·5	T2	Inwards	—
8	2·5–3·5	1·0	A	3·5	—	—	C16
9	3·5–4·5	0	A	3·5	T3	Outwards	—
10	3·5–4·5	1·0	A	4·5	—	—	C26
11	4·5–7	0	B	4·5	T4	Outwards	—
12	4·5–7	2·5	B	7·0	—	—	C33
13	7–9·5	0	B	7·0	T5	Outwards	—
14	7–9·5	2·5	B	9·5	—	—	C44
15	9·5–12	0	B	9·5	T6	Outwards	—
16	9·5–12	2·5	B	12·0	—	—	C55

(20) Disconnect test equipment.

(21) Refit top cover plate.

ILLUSTRATIONS AND COMPONENT LISTS


RANGE
B
7-9·5
4·5-7
9·5-12
3·5-4·5
A 2·5-3·5
1·5-2·5
12-18
18-24
C
24-30
LOCAL Rx
BY-PASS
5820-99-525-6192
ADAPTOR COMMON
ANTENNA
FREQ MHz
INCREMENT
0·1
0·2
0·3
0·4
0·5
0·6
0·7
0·8
0·9
1·0
0·25
0·5
0·75
1·0
1·25
1·5
1·75
2·0
2·25
2·5
0
1·5
2·0
3·0
4·0
5·0
6·0
A B C C B A
REDIFON
ARU18

COMPONENT LIST

CAPACITORS

C1	10pF ±2pF 125V GEC PF/AA
C2	10pF ±2pF 125V GEC PF/AA
C3	100pF ±2% 350V Lemco MS611/I/R/100PG/350
C4	1000pF ±2% 125V GEC PF/AB
C5	18pF ±1pF 350V Lemco MS611/I/R/18PFP/350
C6	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C7	10pF ±2pF 125V GEC PF/AA
C8	10pF ±2pF 125V GEC PF/AA
C9	82pF ±2% 350V Lemco MS611/I/R/82PG/350
C10	820pF ±2% 125V GEC PF/AB 5910-99-580-7192
C11	22pF ±2% 350V Lemco MS611/I/R/22PFP/350
C12	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C13	560pF ±2% 125V GEC PF/AB 5910-99-946-9073
C14	390pF ±2% 125V GEC PF/AA 5910-99-913-6618
C15	39pF ±2% 350V Lemco MS611/I/R/39PFP/350
C16	4-40pF Mullard 809-08002
C17	27pF ±2pF 125V GEC PF/AA 5910-99-580-7199
C18	27pF ±2pF 125V GEC PF/AA 5910-99-580-7199
C19	100pF ±2% 350V Lemco MS611/I/R/100PG/350
C20	390pF ±2% 125V GEC PF/AA 5910-99-913-6618
C21	27pF ±1pF 350V Lemco MS611/I/R/27PFP/350
C22	560pF ±2% 125V GEC PF/AB 5910-99-946-9073
C23	270pF ±2% 125V GEC PF/AA 5910-99-913-6605
C24	270pF ±2% 125V GEC PF/AA 5910-99-913-6605
C25	47pF ±2% 350V Lemco MS611/I/R/47PFP/350
C26	4-40pF Mullard 809-08002
C27	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C28	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C29	100pF ±2% 350V Lemco MS611/I/R/100PG/350
C30	560pF ±2% 125V GEC PF/AB 5910-99-946-9073
C31	82pF ±2% 350V Lemco MS611/I/R/82PG/350
C32	560pF ±2% 125V GEC PF/AB 5910-99-946-9073
C33	4-40pF Mullard 809-08002
C34	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C35	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C36	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C37	470pF ±2% 125V GEC PF/AB 5910-99-945-6655
C38	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C39	180pF ±2% 125V GEC PF/AA 5910-99-945-8379
C40	330pF ±2% 125V GEC PF/AA 5910-99-915-0862
C41	390pF ±2% 125V GEC 5910-99-913-6618
C42	560pF ±2% 125V GEC PF/AB 5910-99-946-9073
C43	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C44	4-40pF Mullard 809-08002
C45	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C46	33pF ±2pF 125V GEC PF/AA 5910-99-945-1535
C47	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C48	470pF ±2% 125V GEC PF/AB 5910-99-945-6655
C49	120pF ±2% 125V GEC PF/AA
C50	390pF ±2% 125V GEC PF/AA 5910-99-913-6618
C51	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C52	270pF ±2% 125V GEC PF/AA 5910-99-913-6605
C53	270pF ±2% 125V GEC PF/AA 5910-99-913-6605
C54	68pF ±2% 125V GEC PF/AA 5910-99-945-1541
C55	4-40pF Mullard 809-08002
C56	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C57	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C58	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C59	390pF ±2% 125V GEC PF/AA 5910-99-913-6618
C60	68pF ±2% 125V GEC PF/AA 5910-99-945-1541
C61	330pF ±2% 125V GEC PF/AA 5910-99-915-0862
C62	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C63	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C64	82pF ±2pF 125V GEC PF/AA 5910-99-946-2785
C65	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C66	27pF ±2pF 125V GEC PF/AA 5910-99-580-7199
C67	150pF ±2% 125V GEC PF/AA 5910-99-580-0308
C68	270pF ±2% 125V GEC PF/AA 5910-99-913-6605
C69	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C70	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C71	180pF ±2% 125V GEC PF/AA 5910-99-945-8379
C72	47pF ±2pF 125V GEC PF/AA 5910-99-945-1537
C73	4-40pF Mullard 809-08002
C74	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C75	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C76	82pF ±2pF 125V GEC PF/AA 5910-99-946-2785
C77	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C78	10pF ±2pF 125V GEC PF/AA
C79	56pF ±2pF 125V GEC PF/AA 5910-99-945-1540
C80	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C81	120pF ±2% 125V GEC PF/AA
C82	120pF ±2% 125V GEC PF/AA
C83	150pF ±2% 125V GEC PF/AA 5910-99-580-0308
C84	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C85	4-40pF Mullard 809-08002
C86	4-40pF Mullard 809-08002
C87	91pF ±2pF 125V GEC PF/AA 5910-99-580-7197
C88	3-15pF Part of C92
C89	1800pF ±2% 125V GEC PF/AB 5910-99-580-7180
C90	2700pF ±2% 125V GEC PF/AB 5910-99-945-7937
C91	4-40pF Mullard 809-08002
C92	8·5-176pF } Redifon P44917/3 5910-99-622-9865
C93	10-208pF }
C94	3-15pF Part of C93

INDUCTORS

L1	Redifon 019/6818A/2
L2	Redifon 019/6818A/2
L3	Redifon 020/6818A/2
L4	Redifon 020/6818A/2

RF TRANSFORMERS

T1	Redifon 010/6818A/2
T2	Redifon 011/6818A/2
T3	Redifon 012/6818A/2
T4	Redifon 013/6818A/2
T5	Redifon 014/6818A/2
T6	Redifon 015/6818A/2
T7	Redifon 016/6818A/2
T8	Redifon 017/6818A/2
T9	Redifon 018/6818A/2

FERRITE BEAD

FT1	Seimens B62152/A0001X001

SOCKETS

SK1	Coaxial Greenpar GE37585H 75Ω
SK2	Coaxial Greenpar GE37585H 75Ω
SK3	Coaxial Sealectro 51-008-3196

PLUG

PL1	Coaxial Sealectro 51-007-3196

MPONENT LIST

C59	390pF ±2% 125V GEC PF/AA 5910-99-913-6618
C60	68pF ±2% 125V GEC PF/AA 5910-99-945-1541
C61	330pF ±2% 125V GEC PF/AA 5910-99-915-0862
C62	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C63	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C64	82pF ±2pF 125V GEC PF/AA 5910-99-946-2785
C65	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C66	27pF ±2pF 125V GEC PF/AA 5910-99-580-7199
C67	150pF ±2% 125V GEC PF/AA 5910-99-580-0308
C68	270pF ±2% 125V GEC PF/AA 5910-99-913-6605
C69	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C70	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C71	180pF ±2% 125V GEC PF/AA 5910-99-945-8379
C72	47pF ±2pF 125V GEC PF/AA 5910-99-945-1537
C73	4-40pF Mullard 809-08002
C74	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C75	22pF ±2pF 125V GEC PF/AA 5910-99-945-1534
C76	82pF ±2pF 125V GEC PF/AA 5910-99-946-2785
C77	220pF ±2% 125V GEC PF/AA 5910-99-915-0892
C78	10pF ±2pF 125V GEC PF/AA
C79	56pF ±2pF 125V GEC PF/AA 5910-99-945-1540
C80	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C81	120pF ±2% 125V GEC PF/AA
C82	120pF ±2% 125V GEC PF/AA
C83	150pF ±2% 125V GEC PF/AA 5910-99-580-0308
C84	100pF ±2% 125V GEC PF/AA 5910-99-913-6616
C85	4-40pF Mullard 809-08002
C86	4-40pF Mullard 809-08002
C87	91pF ±2pF 125V GEC PF/AA 5910-99-580-7197
C88	3-15pF Part of C92
C89	1800pF ±2% 125V GEC PF/AB 5910-99-580-7180
C90	2700pF ±2% 125V GEC PF/AB 5910-99-945-7937
C91	4-40pF Mullard 809-08002
C92	8·5-176pF } Redifon P44917/3 5910-99-622-9865
C93	10-208pF }
C94	3-15pF Part of C93

INDUCTORS

L1	Redifon 019/6818A/2
L2	Redifon 019/6818A/2
L3	Redifon 020/6818A/2
L4	Redifon 020/6818A/2

RF TRANSFORMERS

T1	Redifon 010/6818A/2
T2	Redifon 011/6818A/2
T3	Redifon 012/6818A/2
T4	Redifon 013/6818A/2
T5	Redifon 014/6818A/2
T6	Redifon 015/6818A/2
T7	Redifon 016/6818A/2
T8	Redifon 017/6818A/2
T9	Redifon 018/6818A/2

FERRITE BEAD

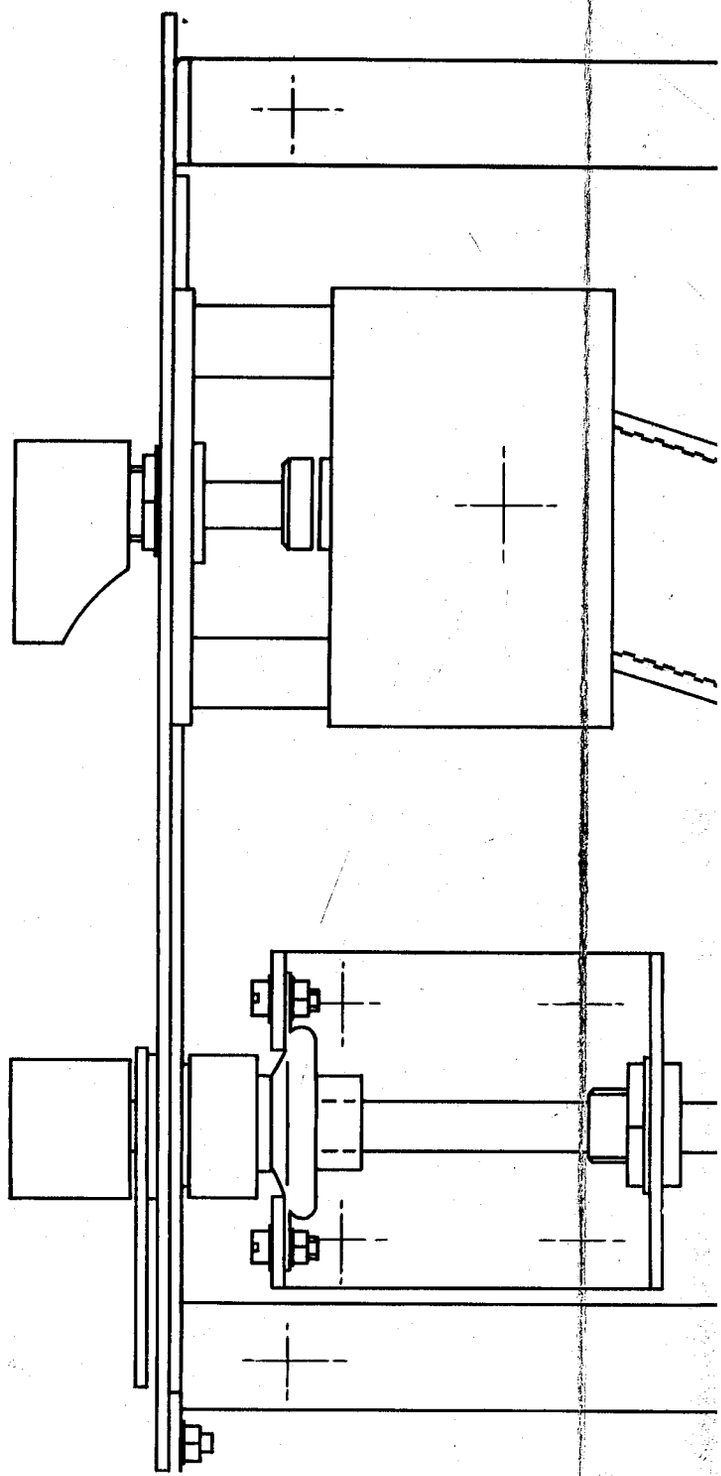
FT1	Seimens B62152/A0001X001

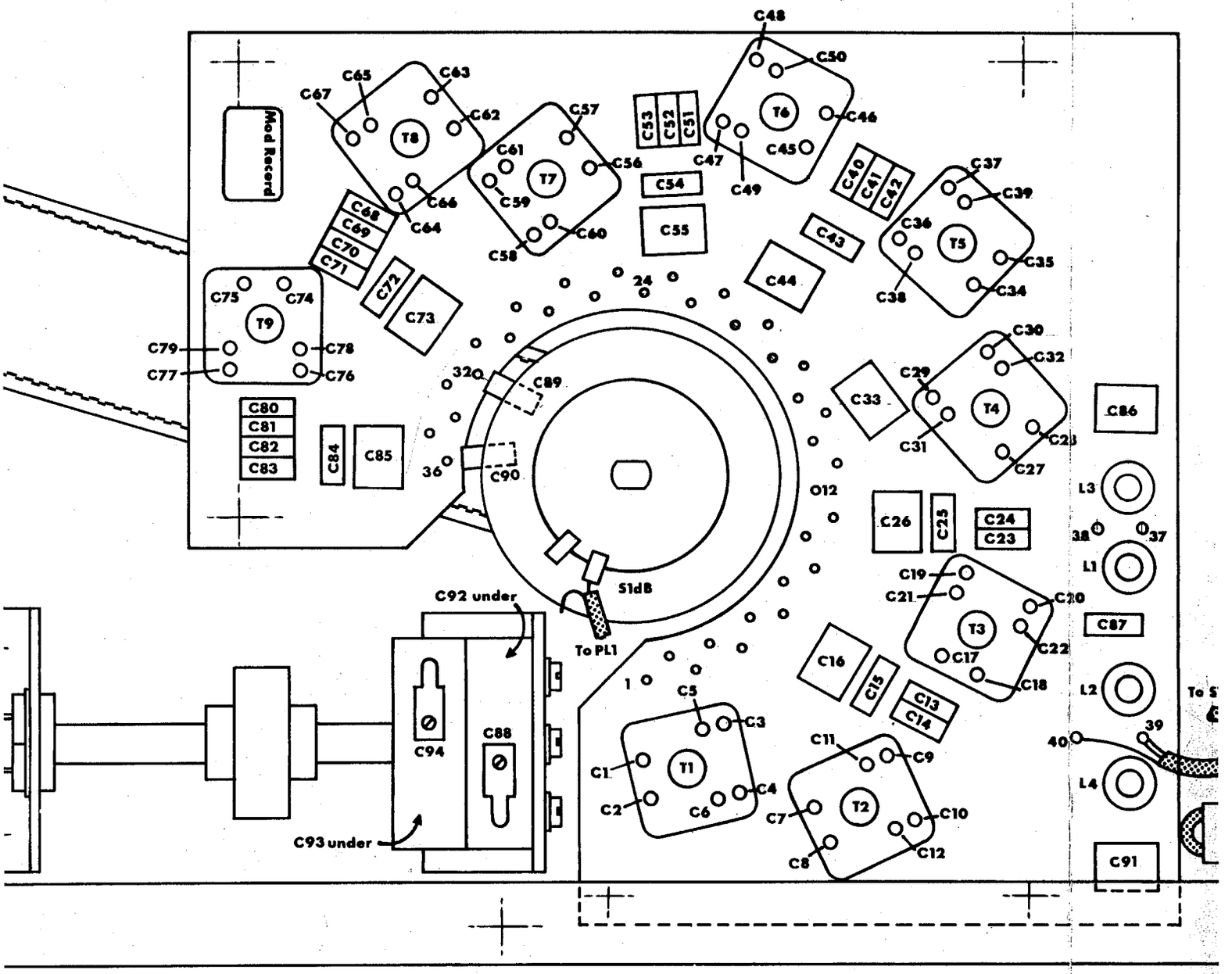
SOCKETS

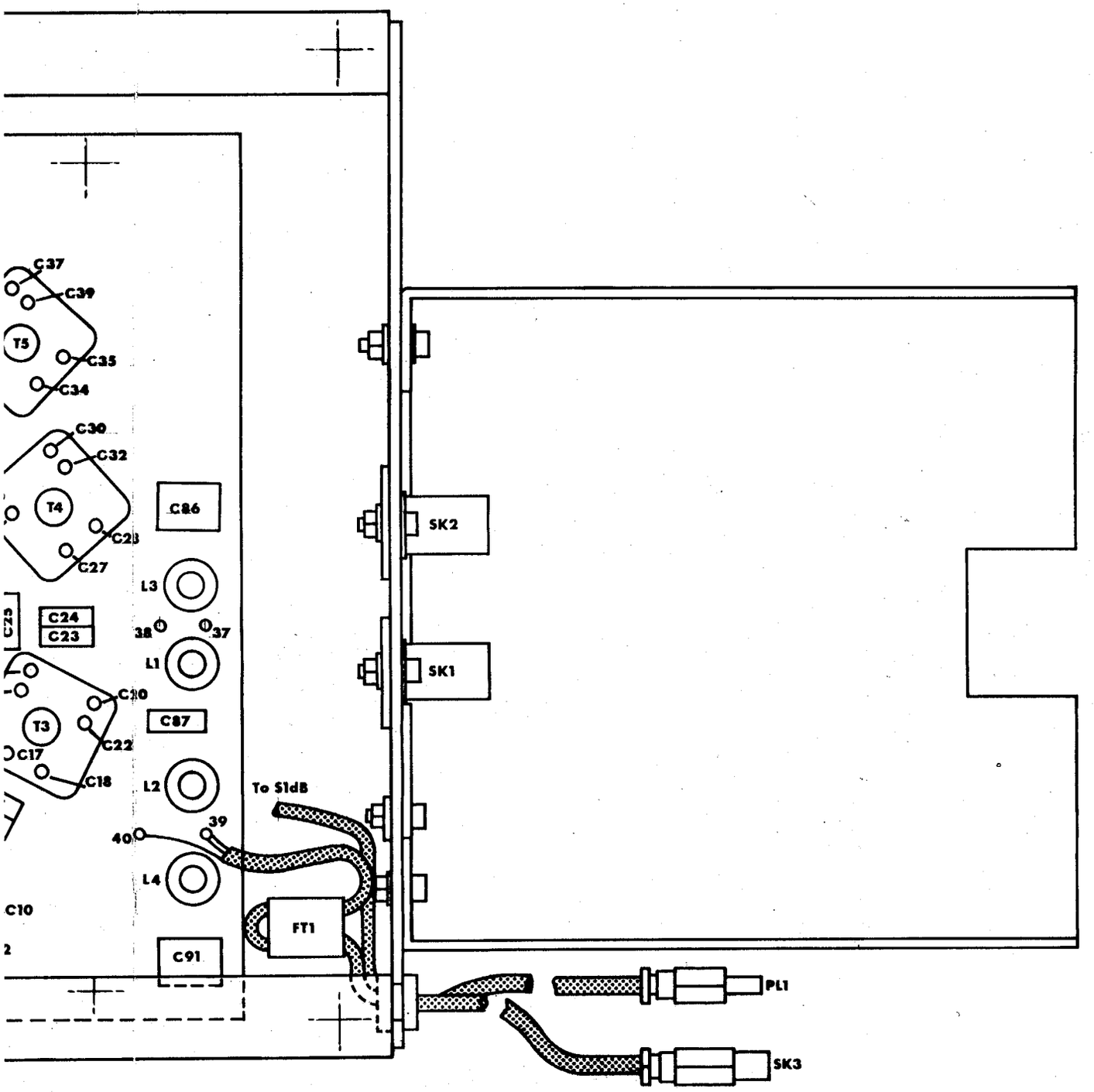
SK1	Coaxial Greenpar GE37585H 75Ω
SK2	Coaxial Greenpar GE37585H 75Ω
SK3	Coaxial Sealectro 51-008-3196

PLUG

PL1	Coaxial Sealectro 51-007-3196

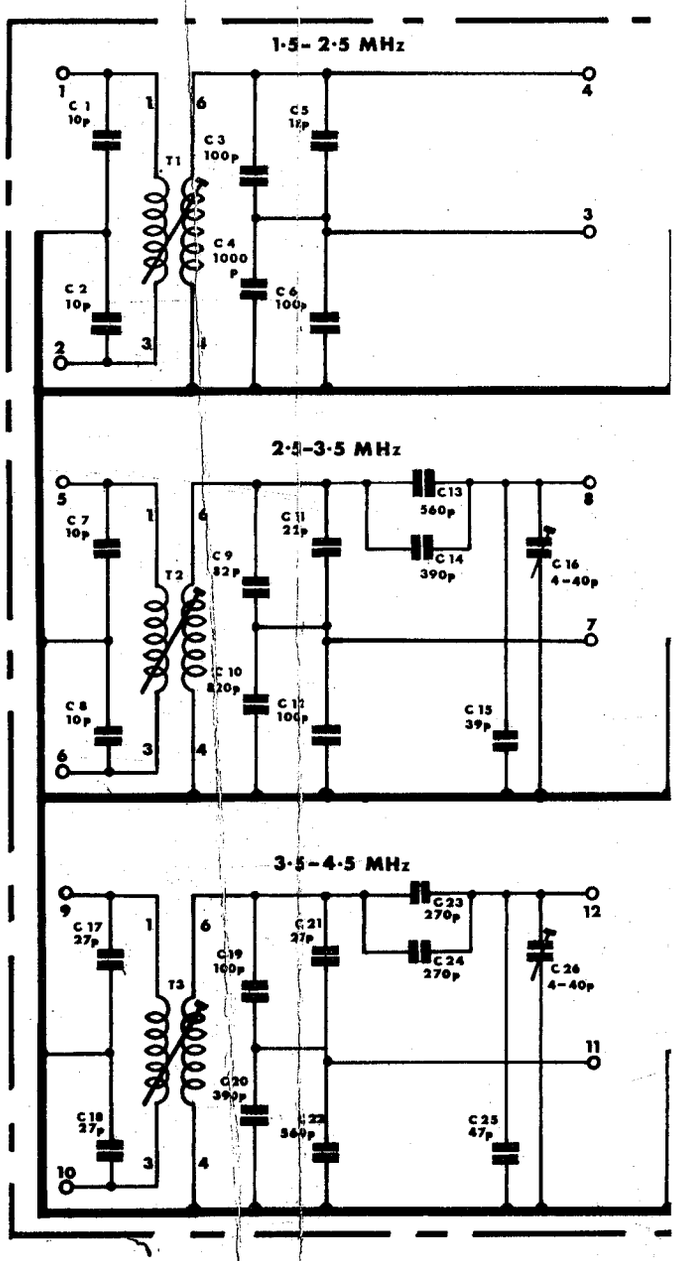



Mod Record
C48
C50
C65
C63
C67
C62
C57
C53
C52
C51
C61
C56
C54
C47
C49
C46
C45
C40
C41
C42
C37
C39
C68
C69
C70
C71
C66
C64
C59
C60
C58
C55
C43
C36
C35
C38
C34
C72
C73
C44
24
C75
C74
T9
C79
C78
C77
C76
32
C89
C33
C30
C32
C29
T4
C31
C28
C27
C80
C81
C82
C83
C84
C85
36
C90
C86
L3
C26
C25
C24
C23
38
37
L1
C19
C21
C20
T3
C17
C22
C18
C87
C16
C15
C13
C14
L2
To S
1
C5
C3
C1
T1
C2
C6
C4
C11
C9
C7
T2
C10
C8
C12
39
40
L4
C92 under
To PL1
C94
C88
C93 under
C91

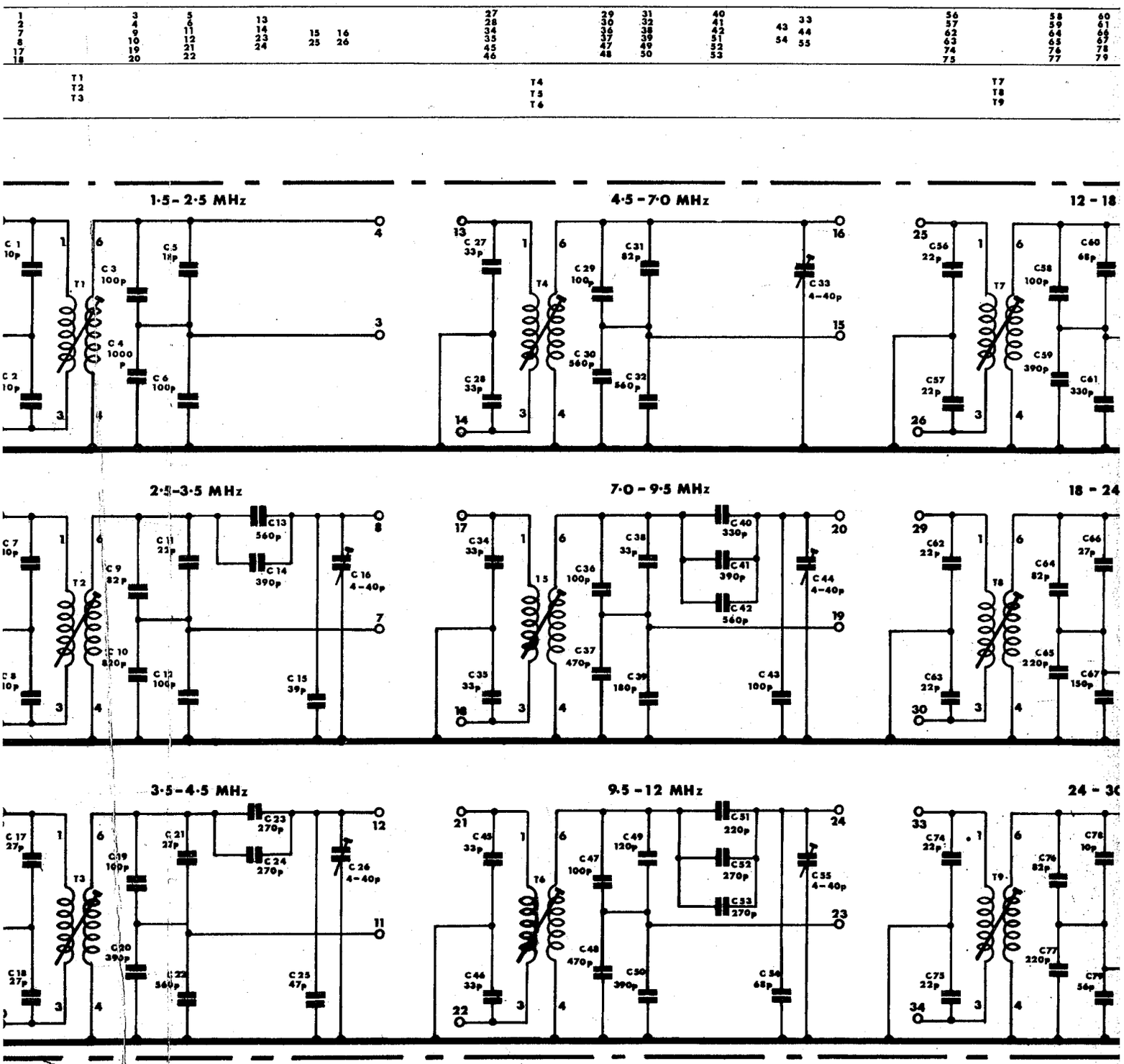


LAYOUT AND COMPONENT LIST FIG. 9.2

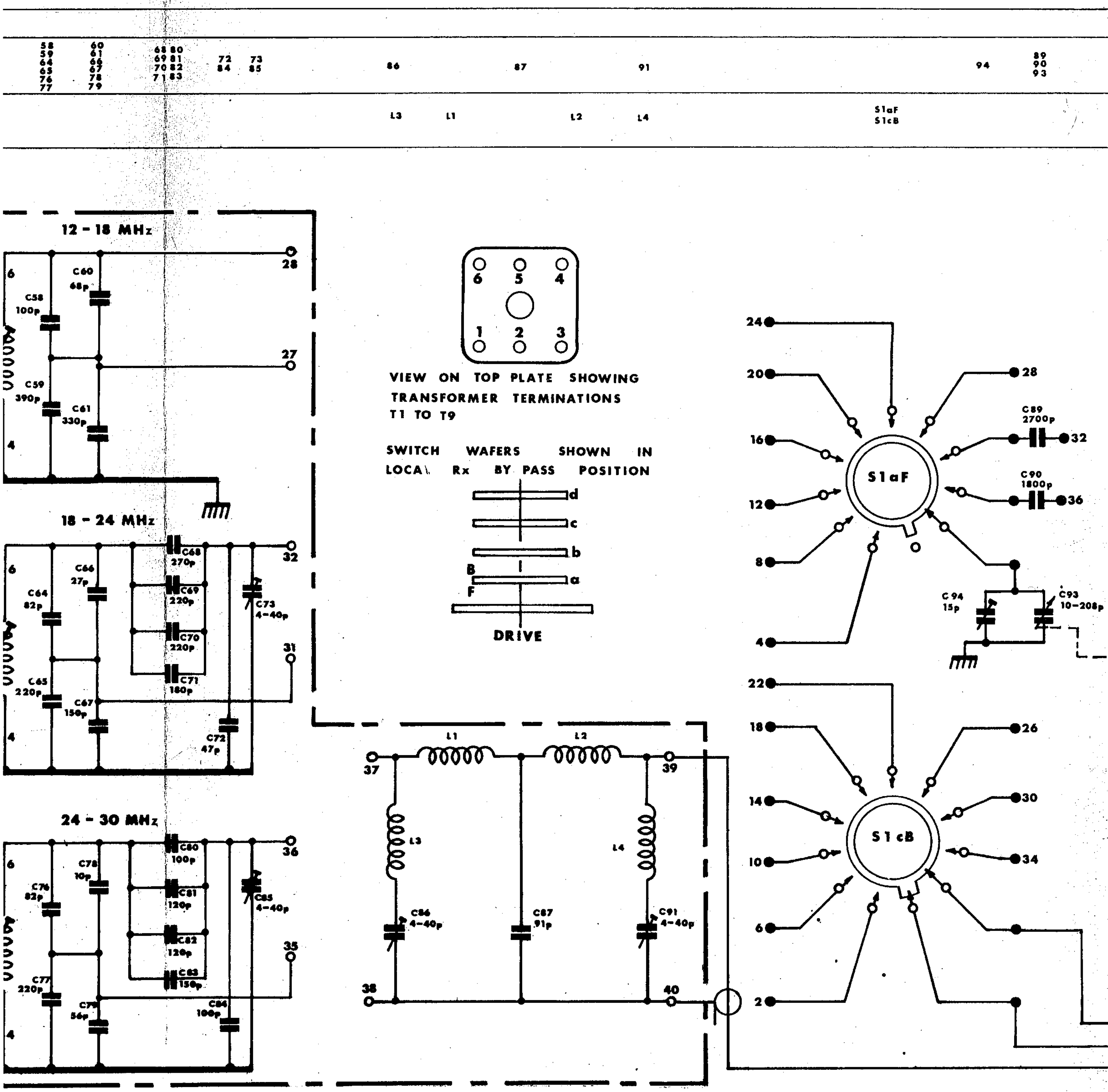
R	
C	1 2 7 8 17 18 3 4 9 10 19 20 5 6 11 12 21 22 13 14 23 24 15 25 16 26
Misc	T1 T2 T3



DWG No. OO2/6818A/O

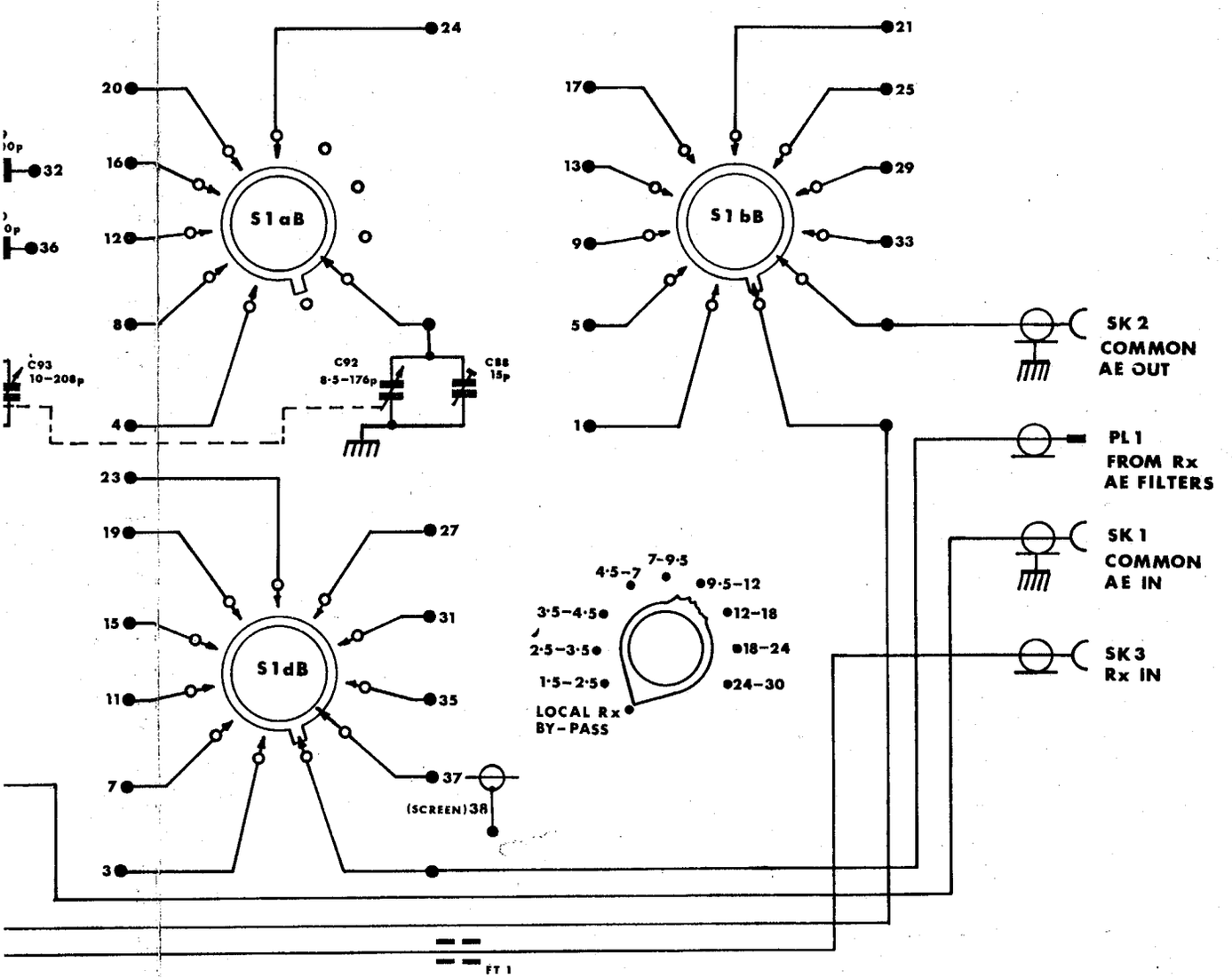

1 2 7 8 17 18
3 4 9 10 19 20
5 6 11 12 21 22
13 14 23 24
15 25
16 26
27 28 34 35 45 46
29 30 36 37 47 48
31 32 38 39 49 50
40 41 42 51 52 53
43 54
33 44 55
56 57 62 63 74 75
58 59 64 65 76 77
60 61 66 67 78 79
T1 T2 T3
T4 T5 T6
T7 T8 T9
1·5 – 2·5 MHz
C 1 10p
C 2 10p
C 3 100p
C 4 1000 p
C 5 18p
C 6 100p
T1
4·5 – 7·0 MHz
C 27 33p
C 28 33p
C 29 100p
C 30 560p
C 31 82p
C 32 560p
C 33 4–40p
T4
12 – 18
C 56 22p
C 57 22p
C 58 100p
C 59 390p
C 60 68p
C 61 330p
T7
2·5 – 3·5 MHz
C 7 10p
C 8 10p
C 9 82p
C 10 820p
C 11 22p
C 12 100p
C 13 560p
C 14 390p
C 15 39p
C 16 4–40p
T2
7·0 – 9·5 MHz
C 34 33p
C 35 33p
C 36 100p
C 37 470p
C 38 33p
C 39 180p
C 40 330p
C 41 390p
C 42 560p
C 43 100p
C 44 4–40p
T5
18 – 24
C 62 22p
C 63 22p
C 64 82p
C 65 220p
C 66 27p
C 67 150p
T8
3·5 – 4·5 MHz
C 17 27p
C 18 27p
C 19 100p
C 20 390p
C 21 27p
C 22 560p
C 23 270p
C 24 270p
C 25 47p
C 26 4–40p
T3
9·5 – 12 MHz
C 45 33p
C 46 33p
C 47 100p
C 48 470p
C 49 120p
C 50 390p
C 51 220p
C 52 270p
C 53 270p
C 54 68p
C 55 4–40p
T6
24 – 30
C 74 22p
C 75 22p
C 76 82p
C 77 220p
C 78 10p
C 79 56p
T9

02/6818A/O



58 59 64 65 76 77
60 61 66 67 78 79
68 80 69 81 70 82 71 83
72 84
73 85
86
87
91
94
89 90 93
L3
L1
L2
L4
S1aF S1cB
12 - 18 MHz
C58 100p
C59 390p
C60 68p
C61 330p
18 - 24 MHz
C64 82p
C65 220p
C66 27p
C67 150p
C68 270p
C69 220p
C70 220p
C71 180p
C72 47p
C73 4-40p
24 - 30 MHz
C76 82p
C77 220p
C78 10p
C79 56p
C80 100p
C81 120p
C82 120p
C83 150p
C84 100p
C85 4-40p
C86 4-40p
C87 91p
C91 4-40p
VIEW ON TOP PLATE SHOWING TRANSFORMER TERMINATIONS T1 TO T9
SWITCH WAFERS SHOWN IN LOCAL Rx BY PASS POSITION
DRIVE
S1aF
S1cB
C89 2700p
C90 1800p
C94 15p
C93 10-208p

							R
9 0 3			92	88			C
	S1aB S1dB		FT1		S1bB	SK2 PL1 SK1 SK3	Misc



CIRCUIT DIAGRAM

FIG. 9.3