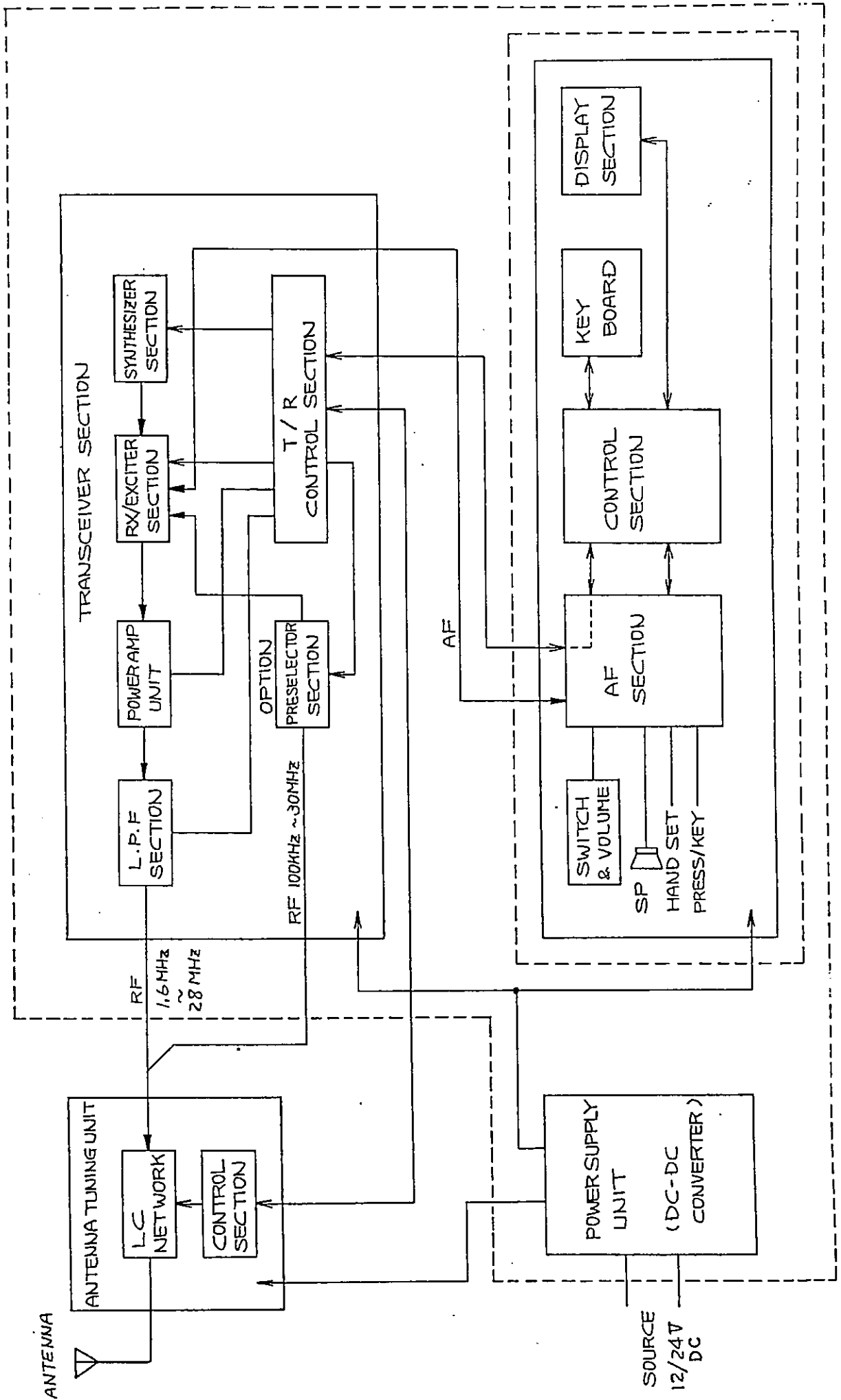


A P P E N D I X

List of Drawings

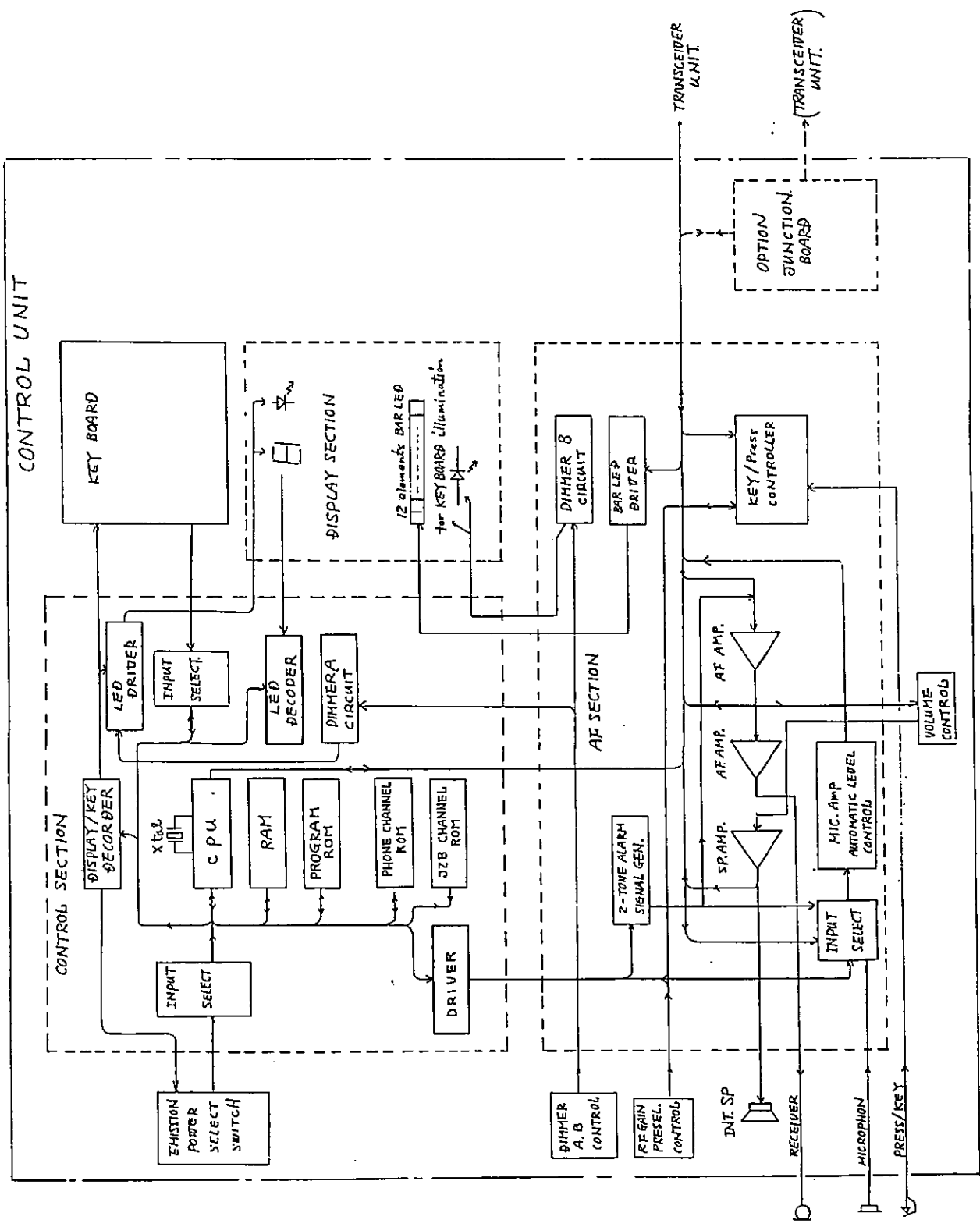
Block Diagrams:

System
Control Unit
T/R Control
RX/Exciter and Frequency Synthesizer
Power Amplifier and Low-Pass Filter
Power Supply Unit
Antenna Tuning Unit (ATU)
Circuit Diagram and PCB Layout
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General Diagram
Control Unit
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Control Section Circuit Diagram
AF Section 5P01545B Layout
AF Section Circuit Diagram
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Display Circuit Diagram
Handset Filter 5P02038 Layout
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Junction Board (for Remote Control) Circuit Diagram
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Control Panel
Front Case Rear Case 1
Front Case Rear Case 2
Front Case Rear Case 3
Antenna Tuning Unit
Power Supply 1
Power Supply 2
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Channel Table

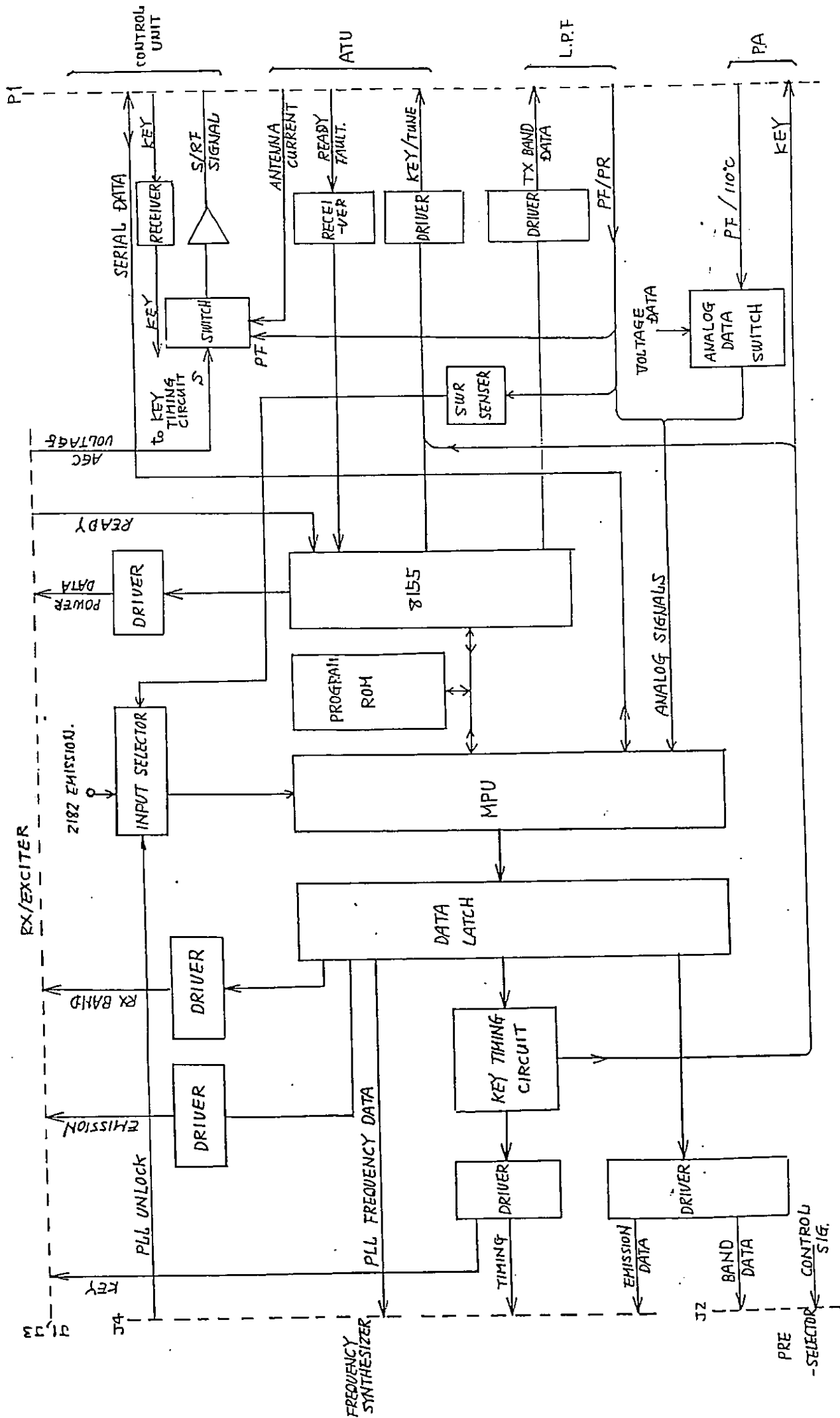


System Block Diagram

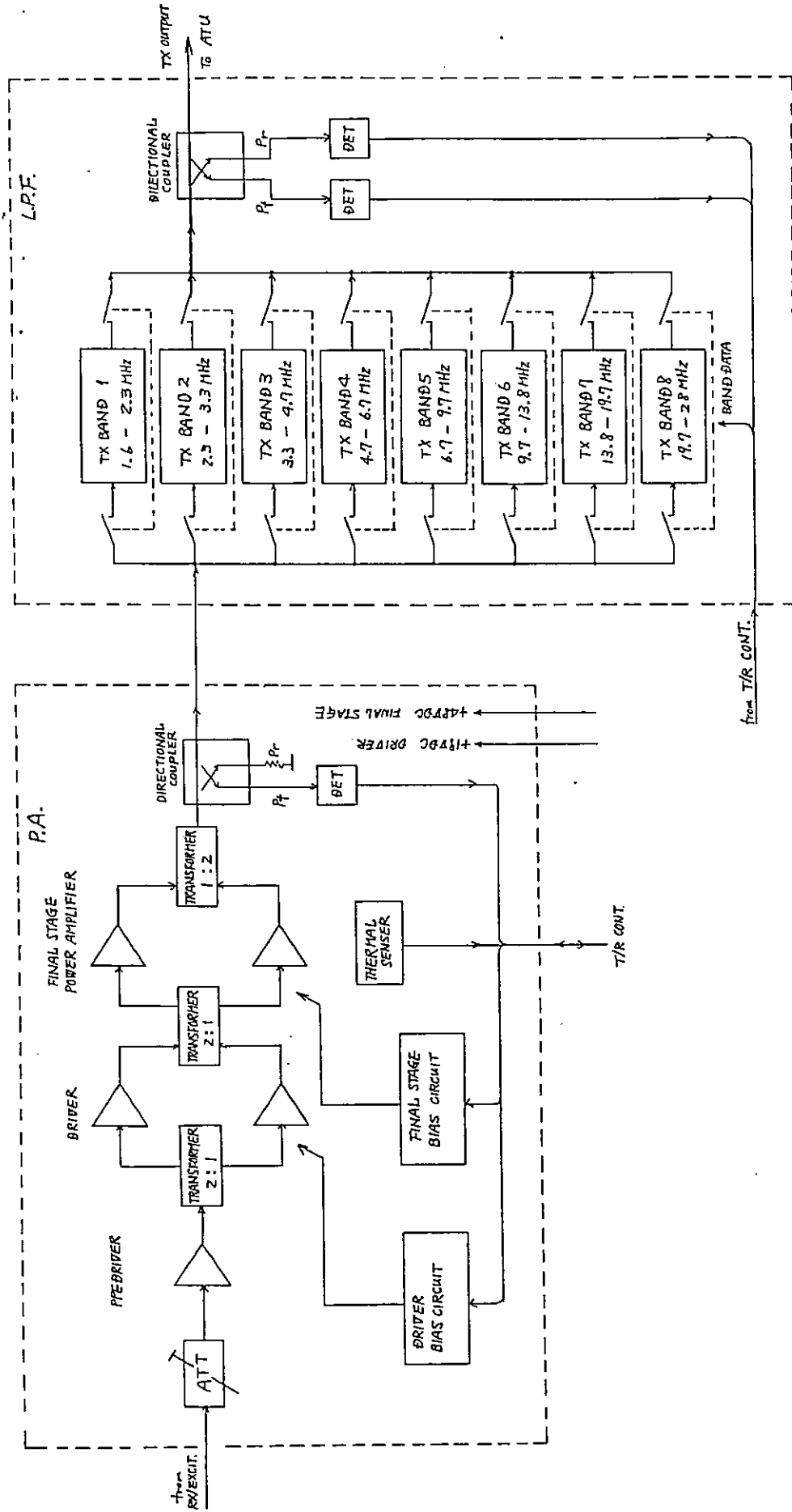
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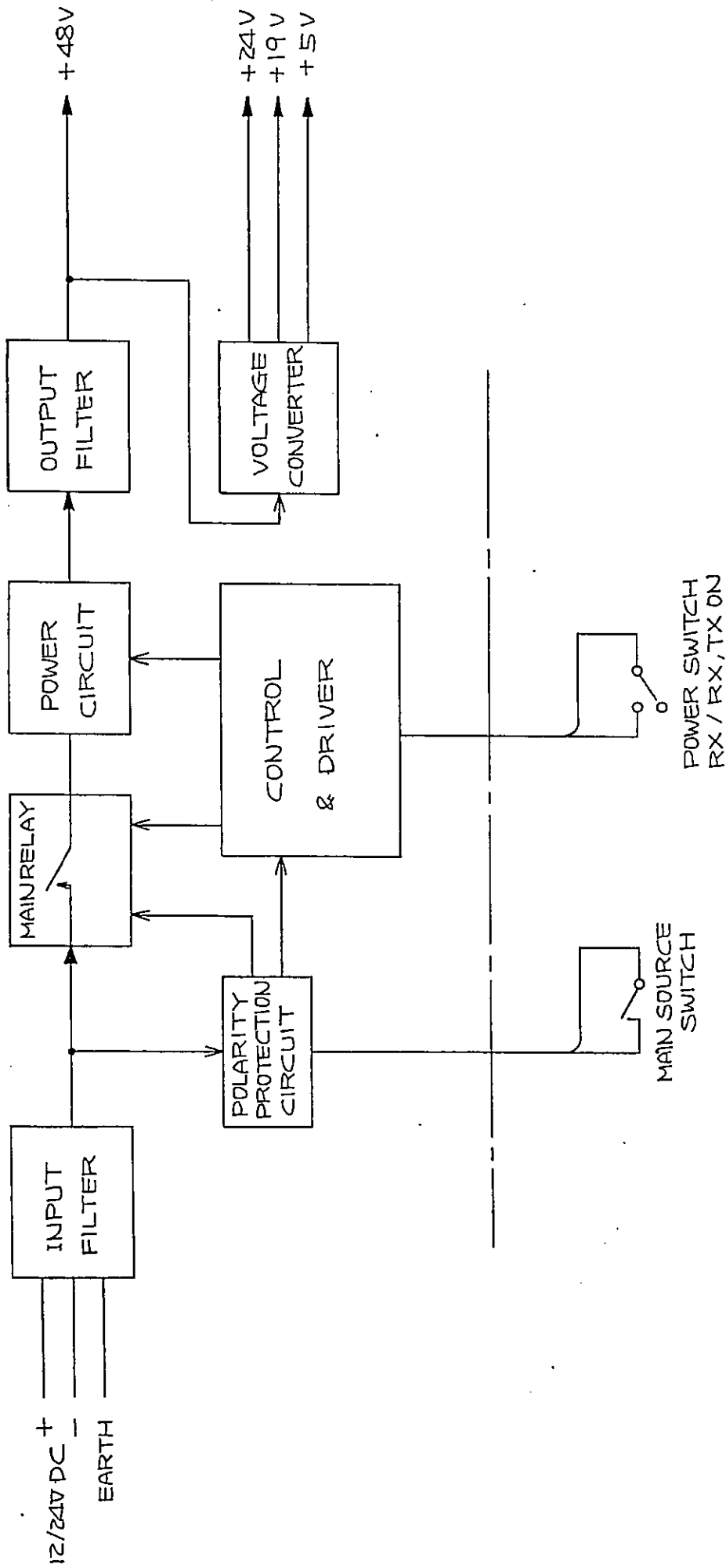


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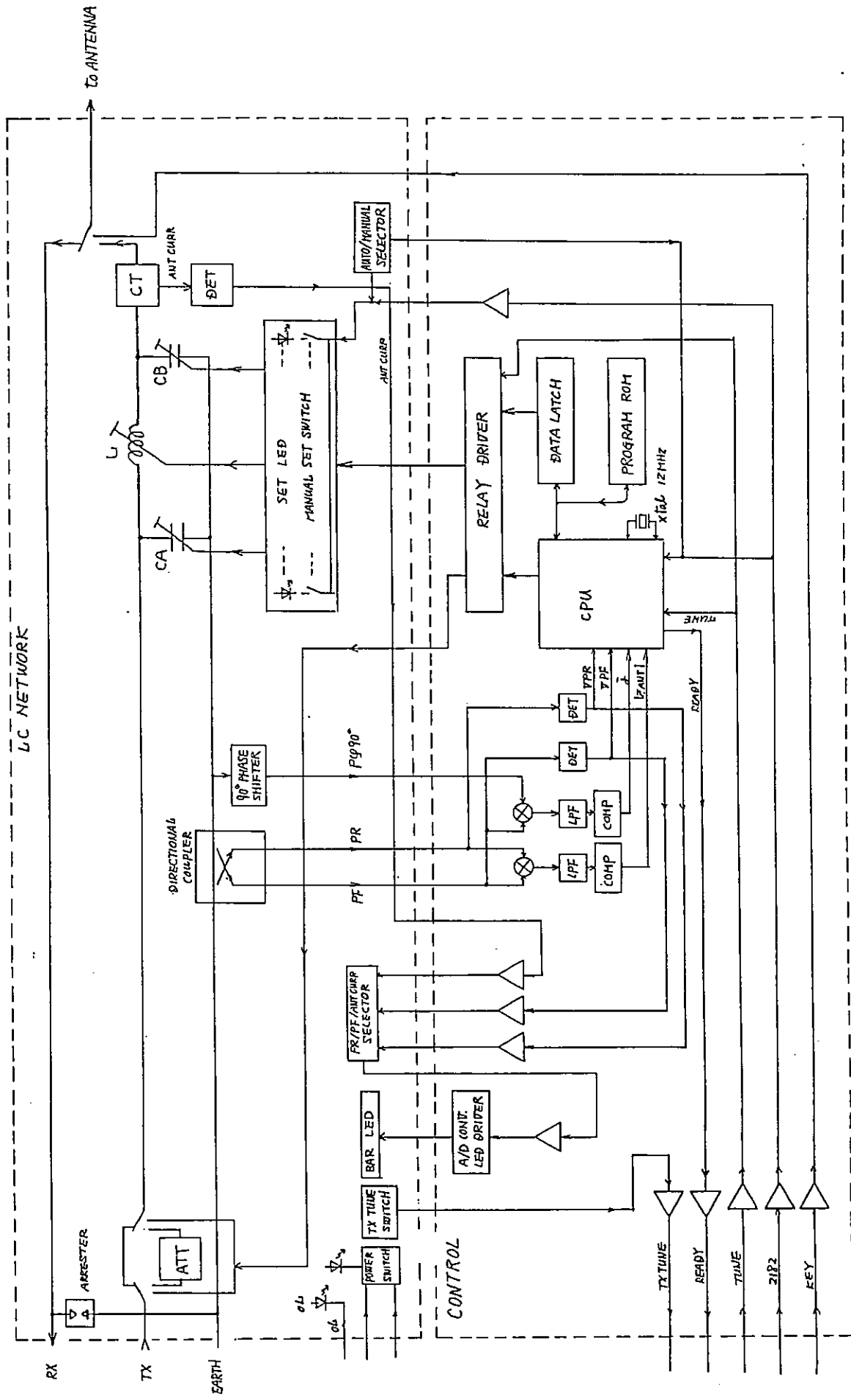


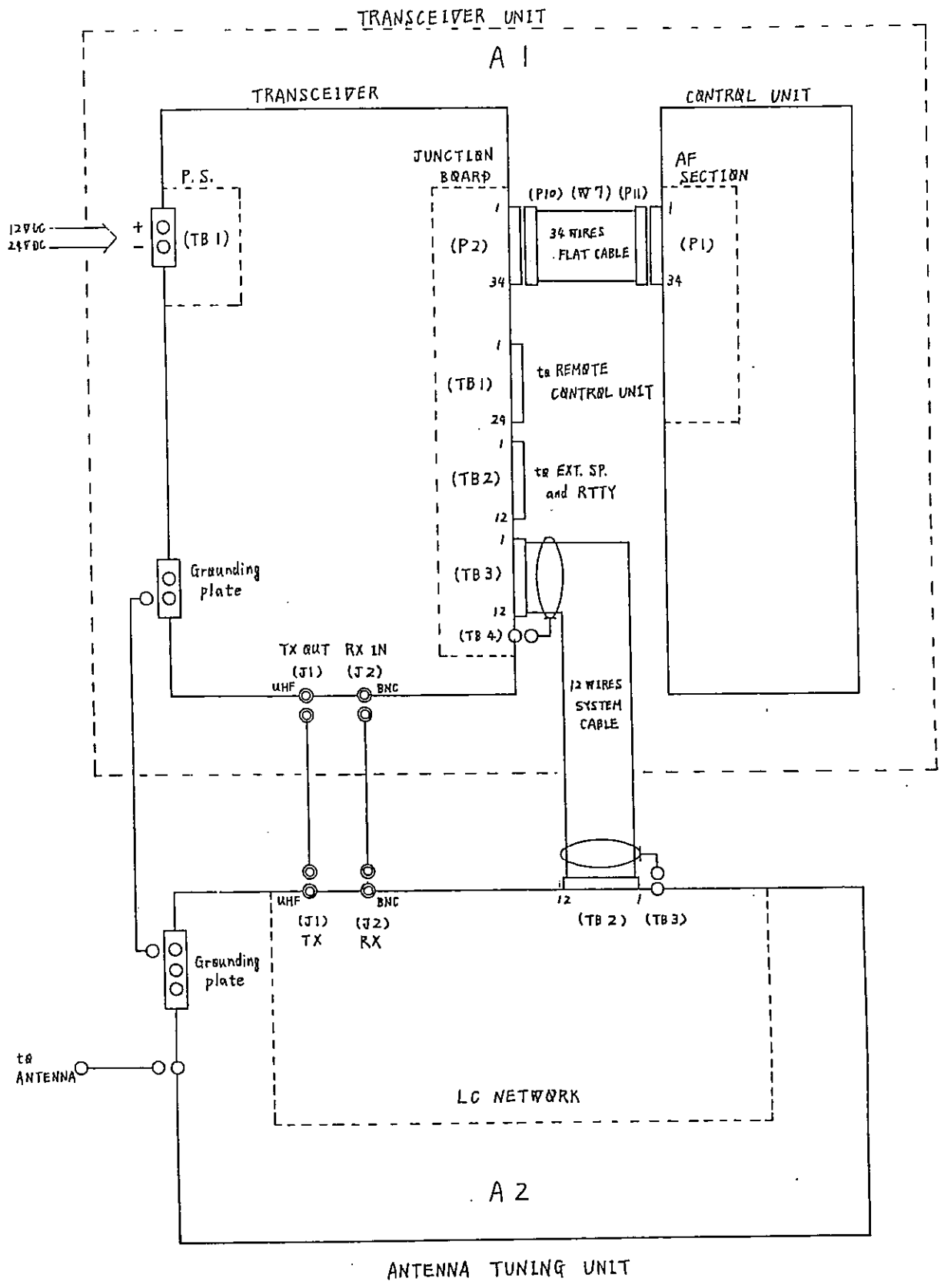
T/R CONTROL BLOCK DIAGRAM

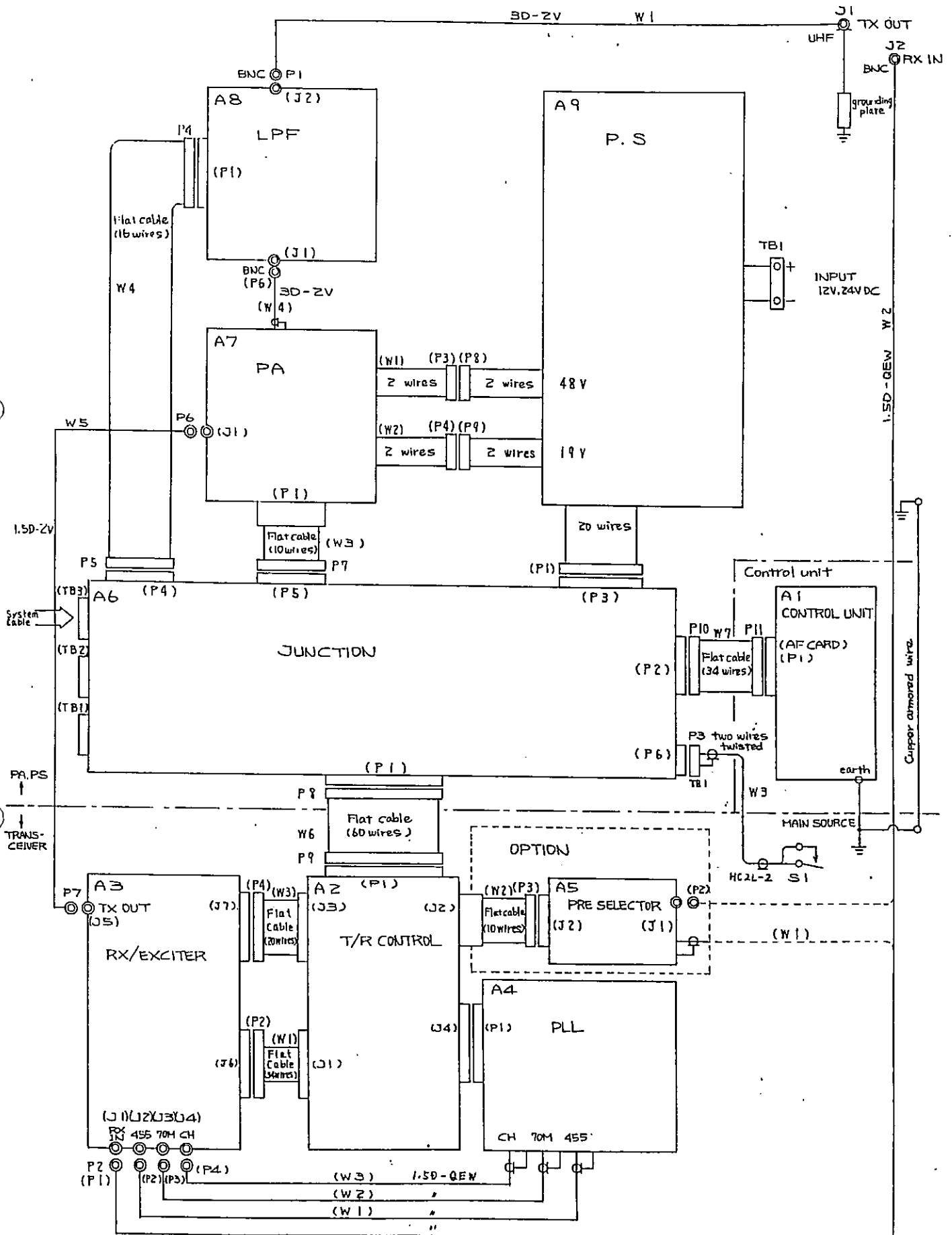




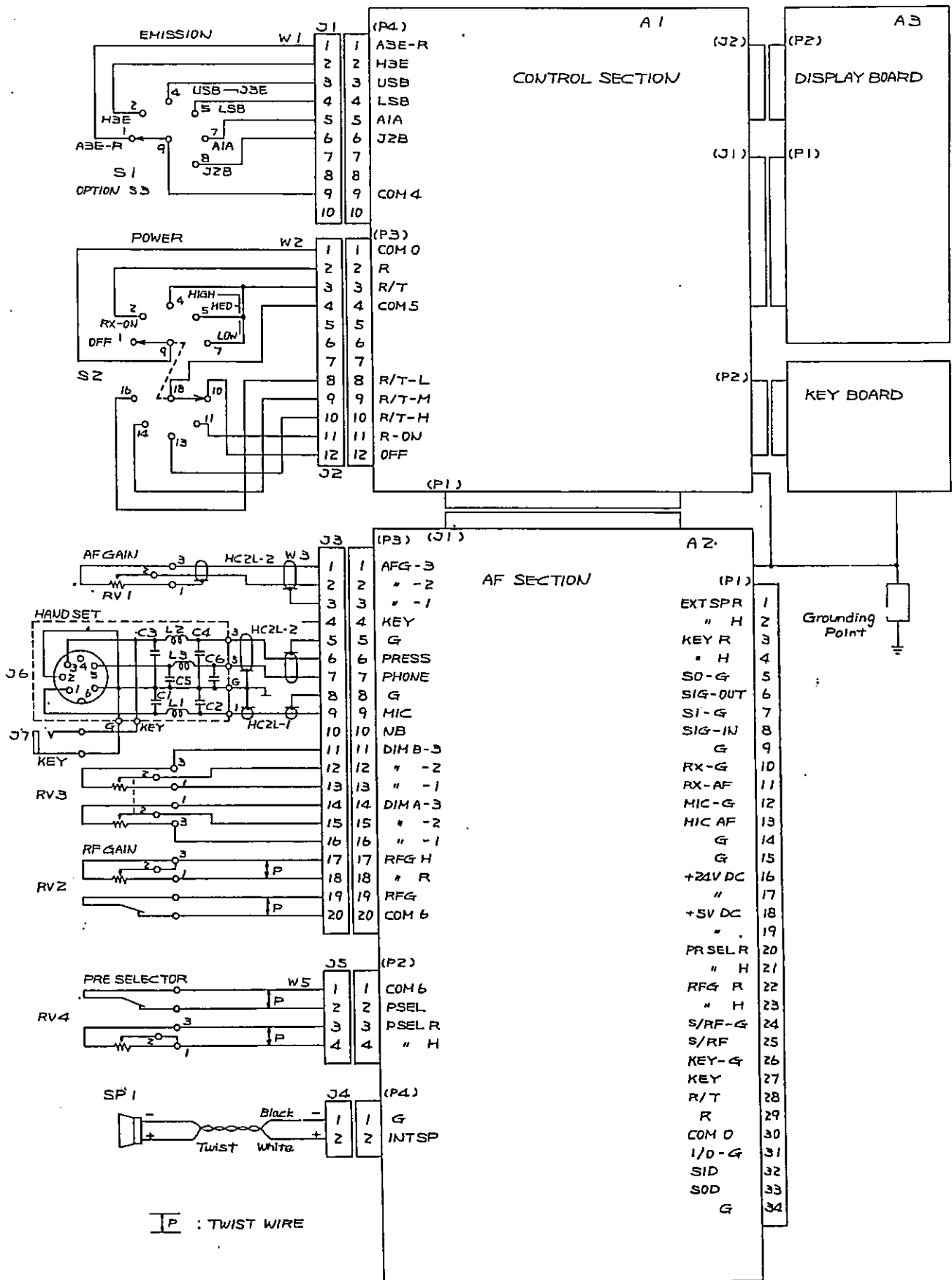
LC NETWORK



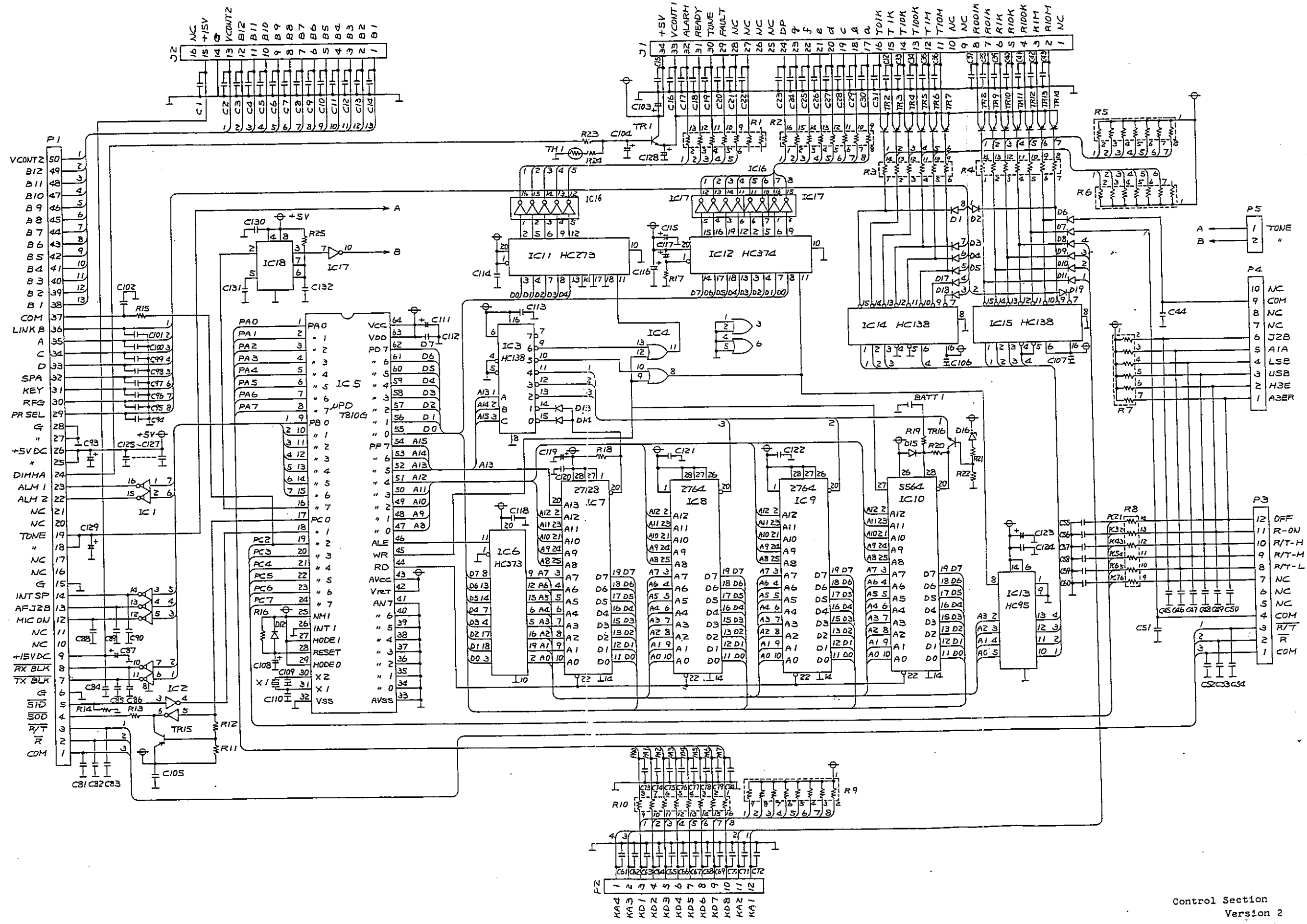




Symbol numbers in the parentheses are included in each block.

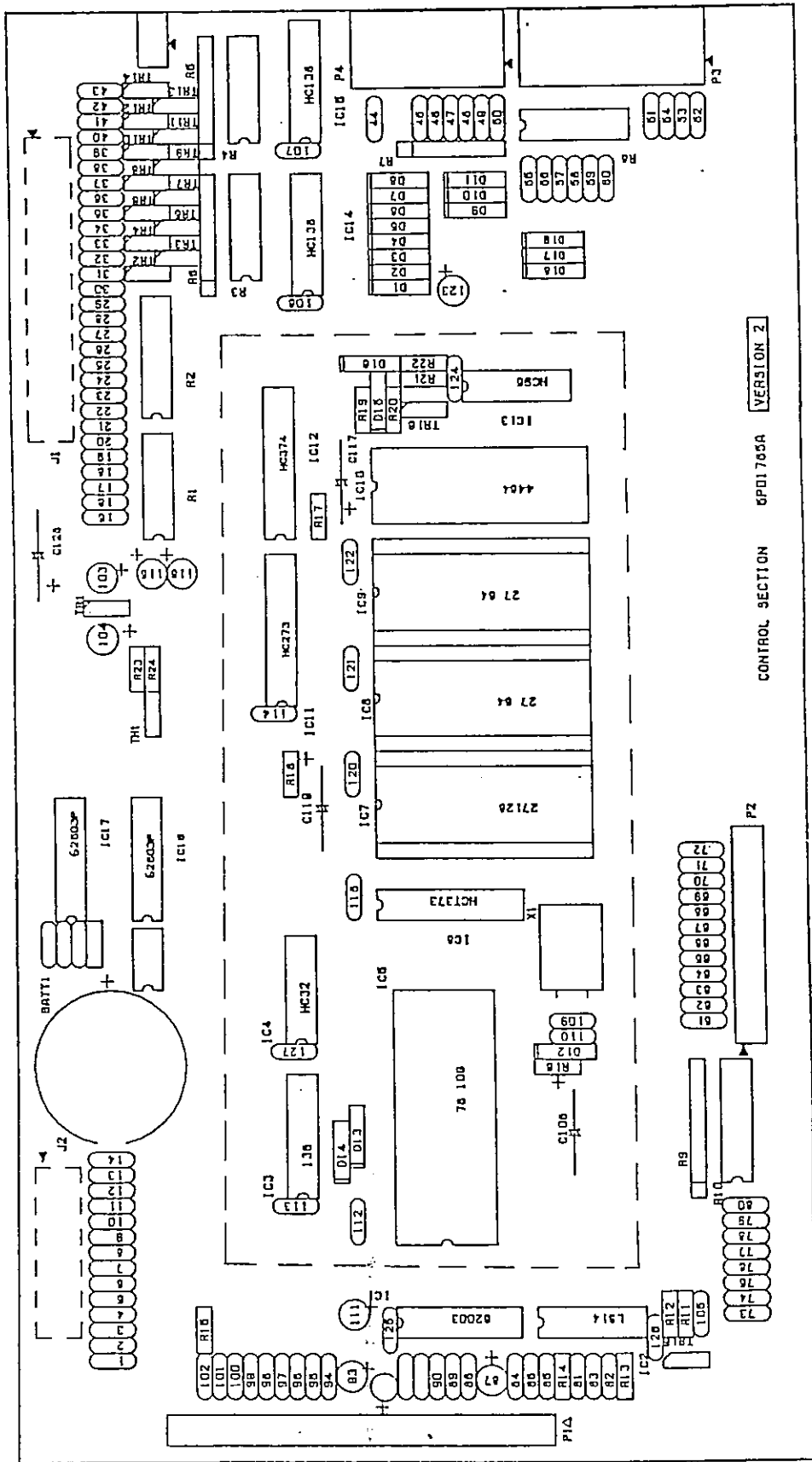


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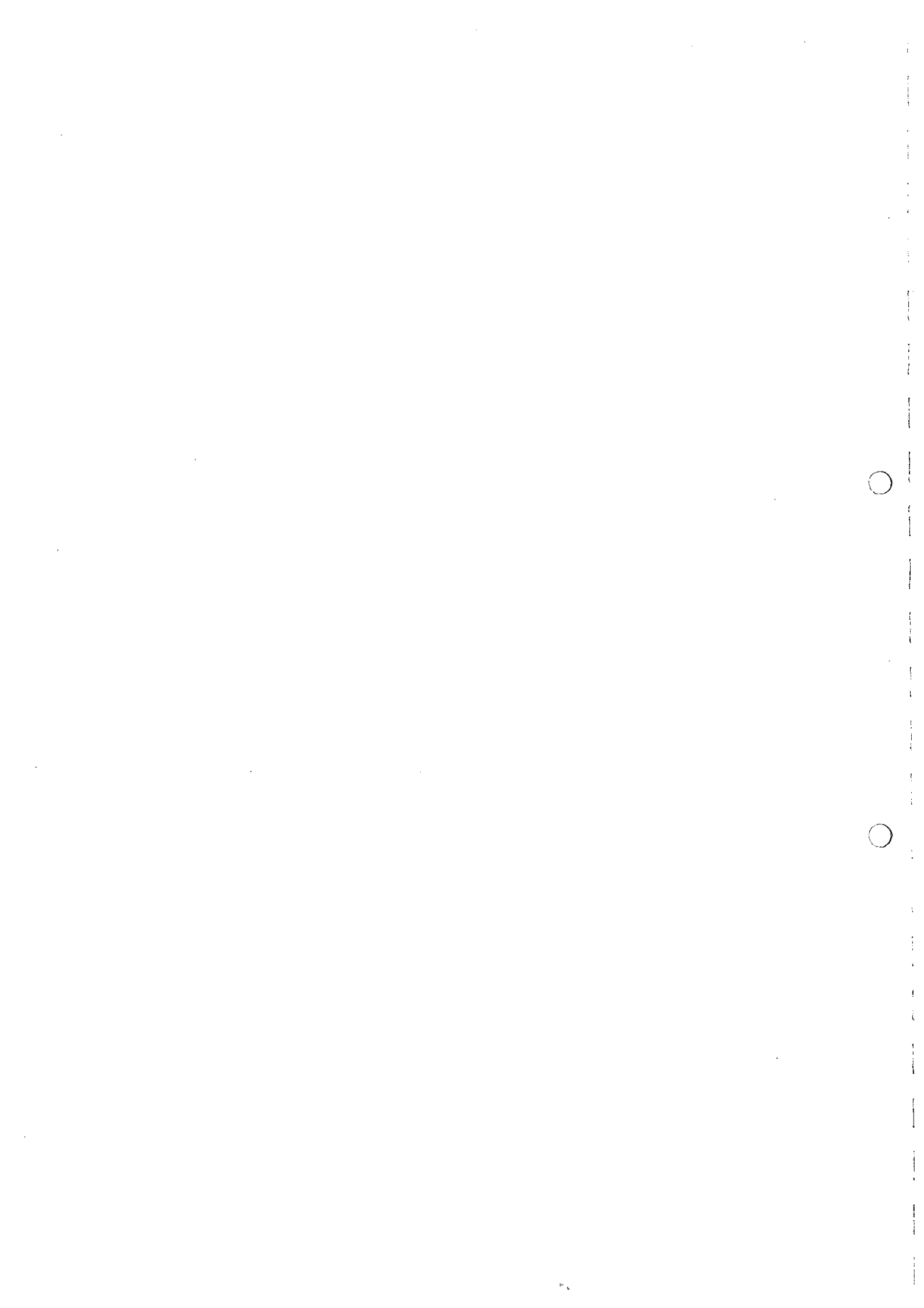


Control Section
Version 2

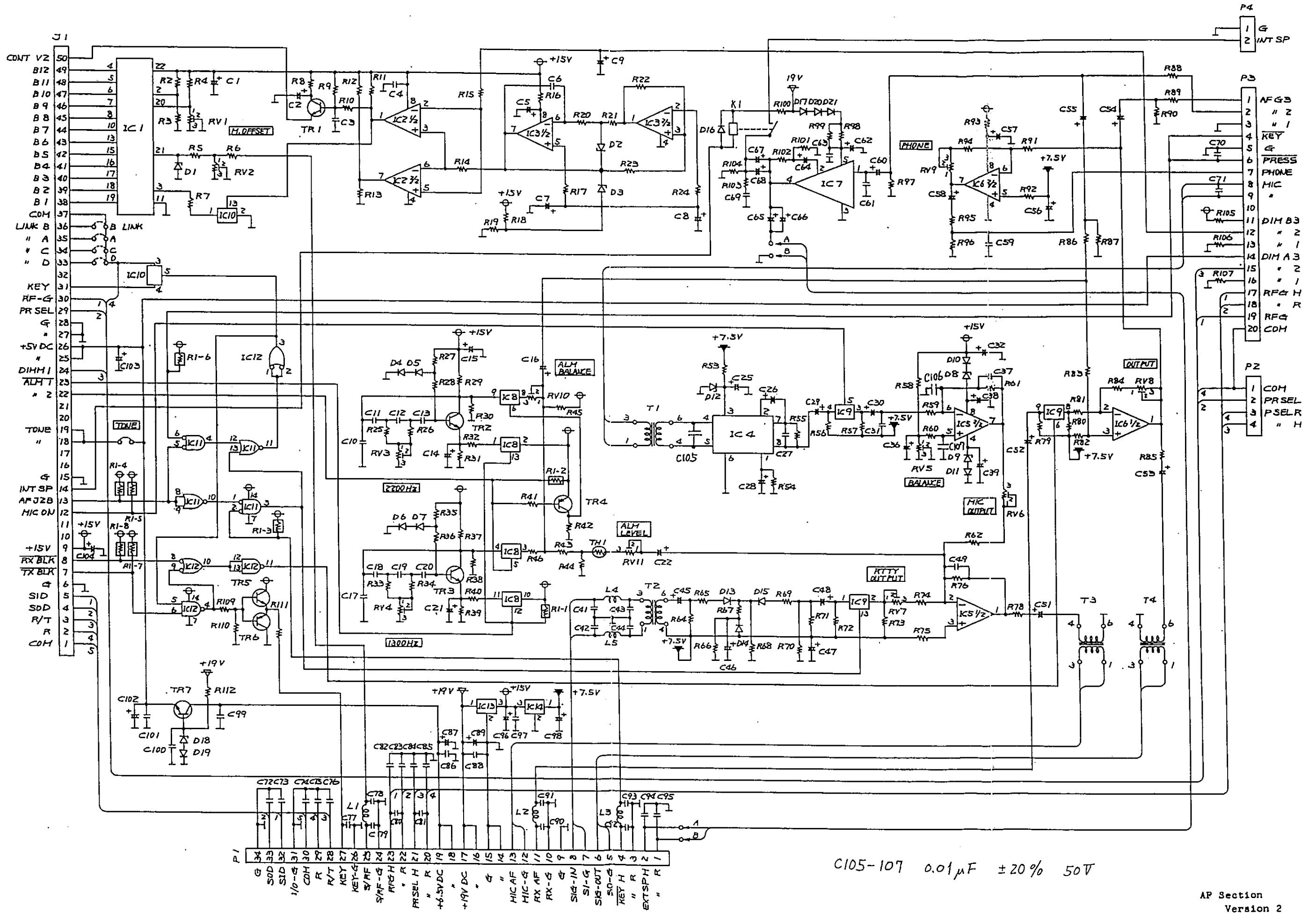




Control section
PCB lay-out

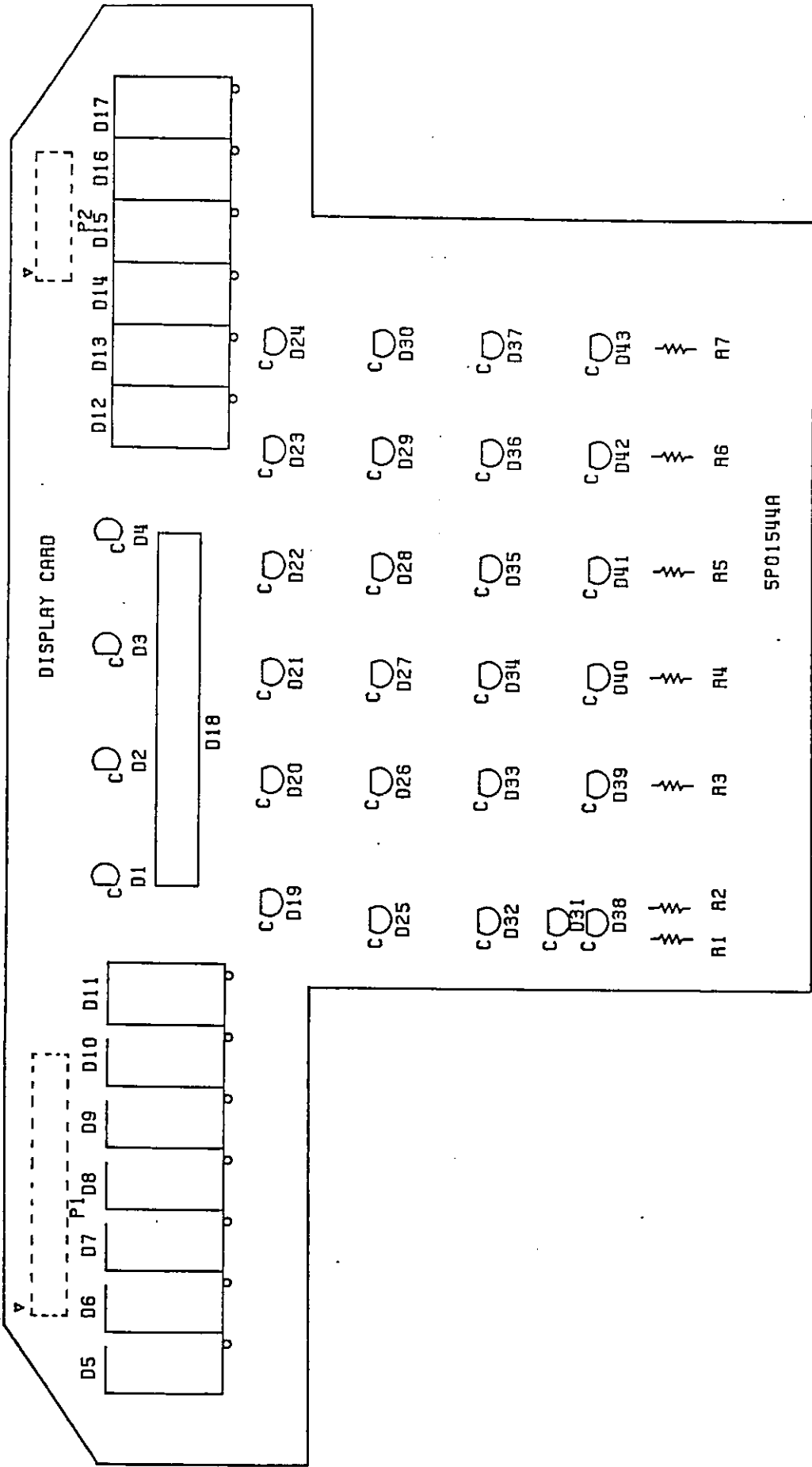






C105-107 0.01 μ F \pm 20% 50V

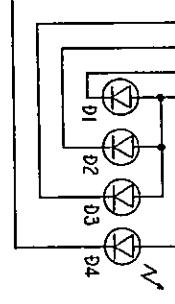




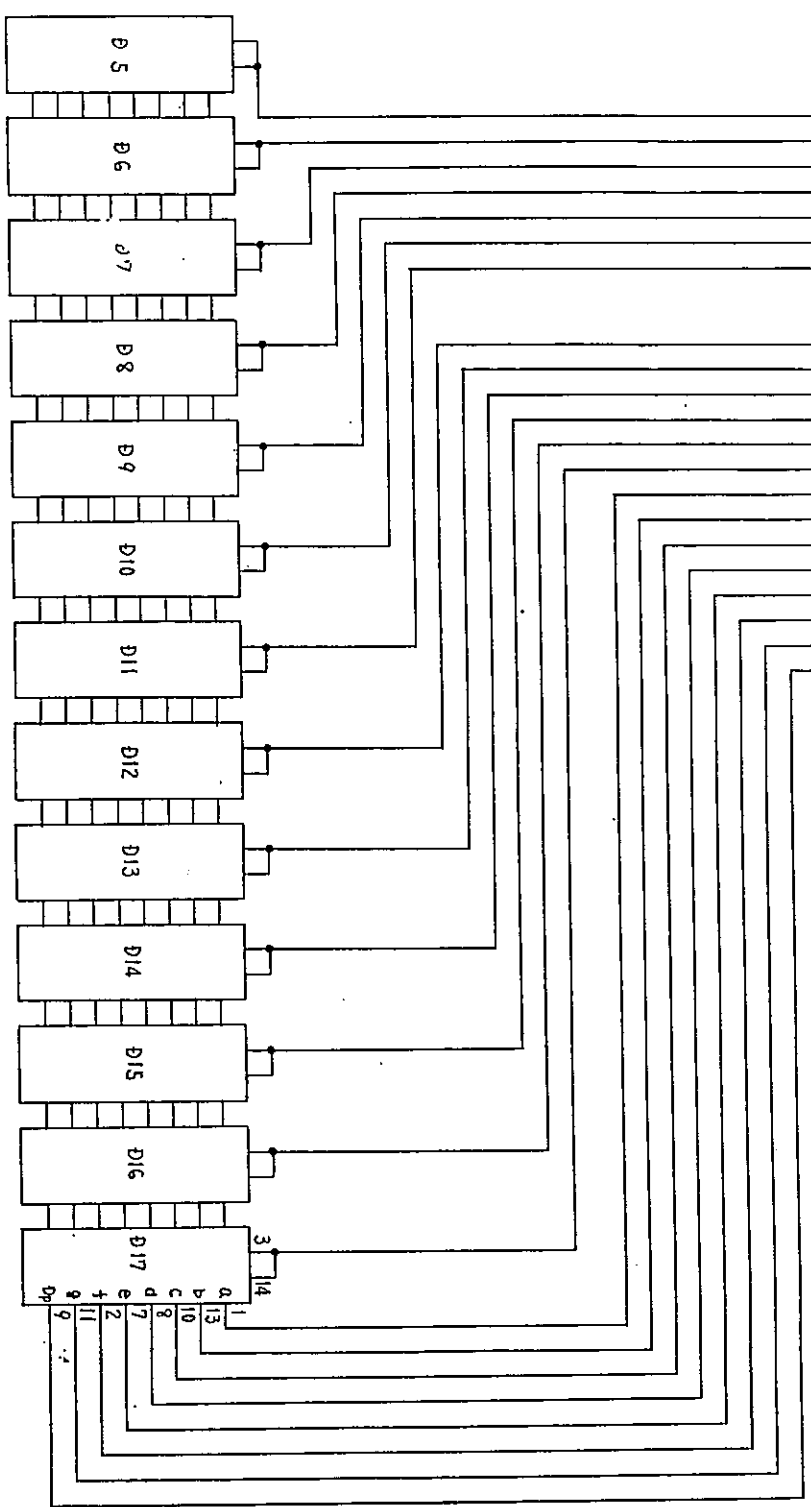
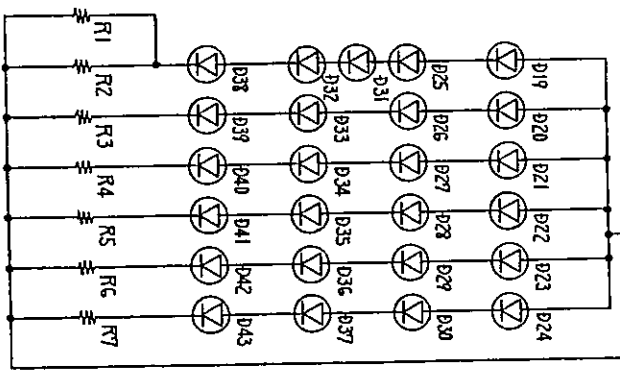
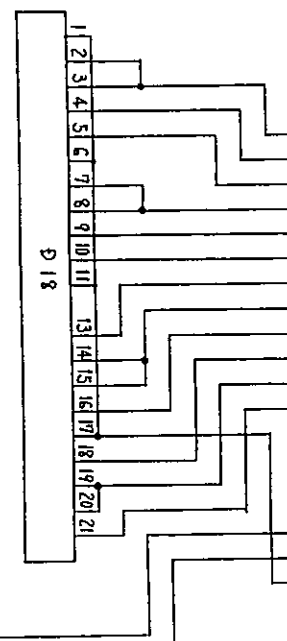
Display card
PCB lay-out



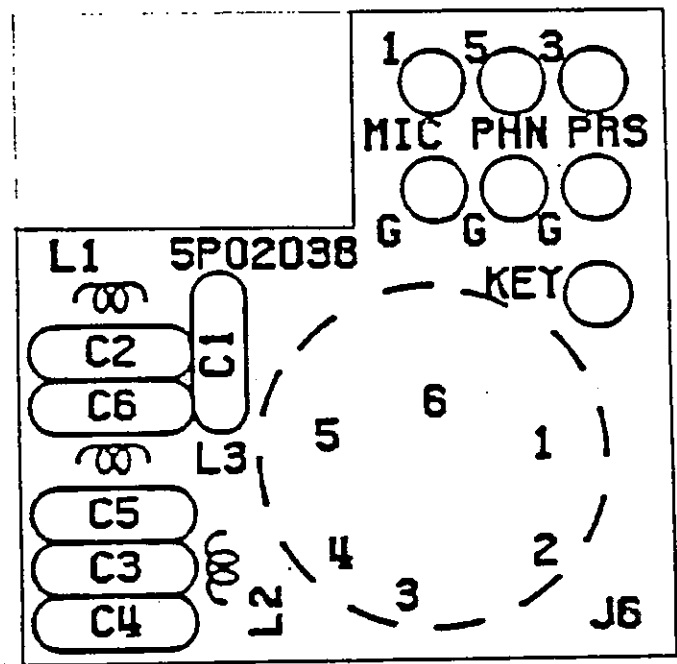
- P 1
- 1 SP7L3
 - 2 R10M
 - 3 R11M
 - 4 R100K
 - 5 R10K
 - 6 R1K
 - 7 R01K
 - 8 R001K
 - 9 SP7L1
 - 10 SP7L2
 - 11 T10M
 - 12 T11M
 - 13 T100K
 - 14 T10K
 - 15 T1K
 - 16 T01K
 - 17 a
 - 18 b
 - 19 c
 - 20 d
 - 21 e
 - 22 f
 - 23 g
 - 24 Dp
 - 25 SPL1
 - 26 " 2
 - 27 " 3
 - 28 " 4
 - 29 FOULT
 - 30 READY
 - 31 TUNE
 - 32 ALARM
 - 33 VCONT1
 - 34 +5V



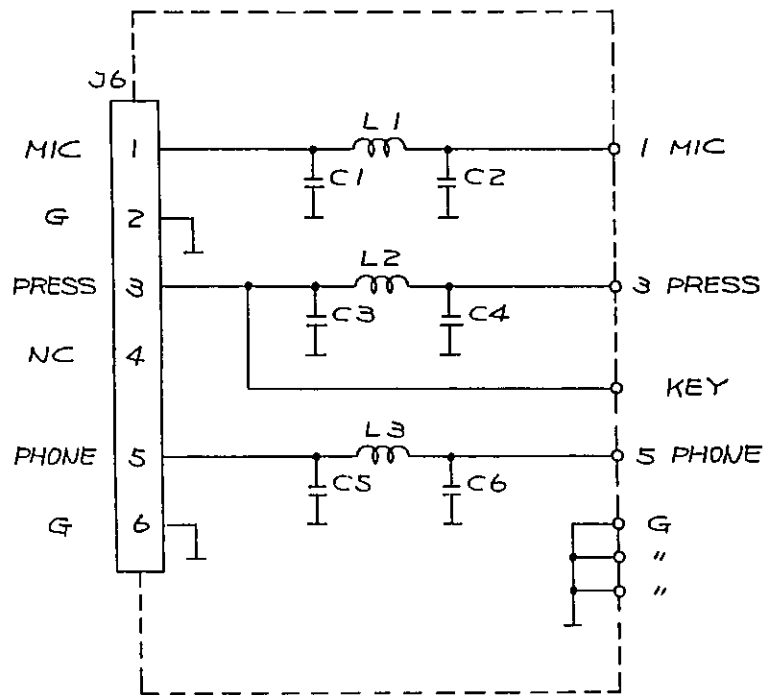
- P 2
- 1 B1
 - 2 B2
 - 3 B3
 - 4 B4
 - 5 B5
 - 6 B6
 - 7 B7
 - 8 B8
 - 9 B9
 - 10 B10
 - 11 B11
 - 12 B12
 - 13 VCONT2
 - 14 RLL
 - 15 +15V
 - 16



Display
Version 2



Handset filter
PCB lay-out

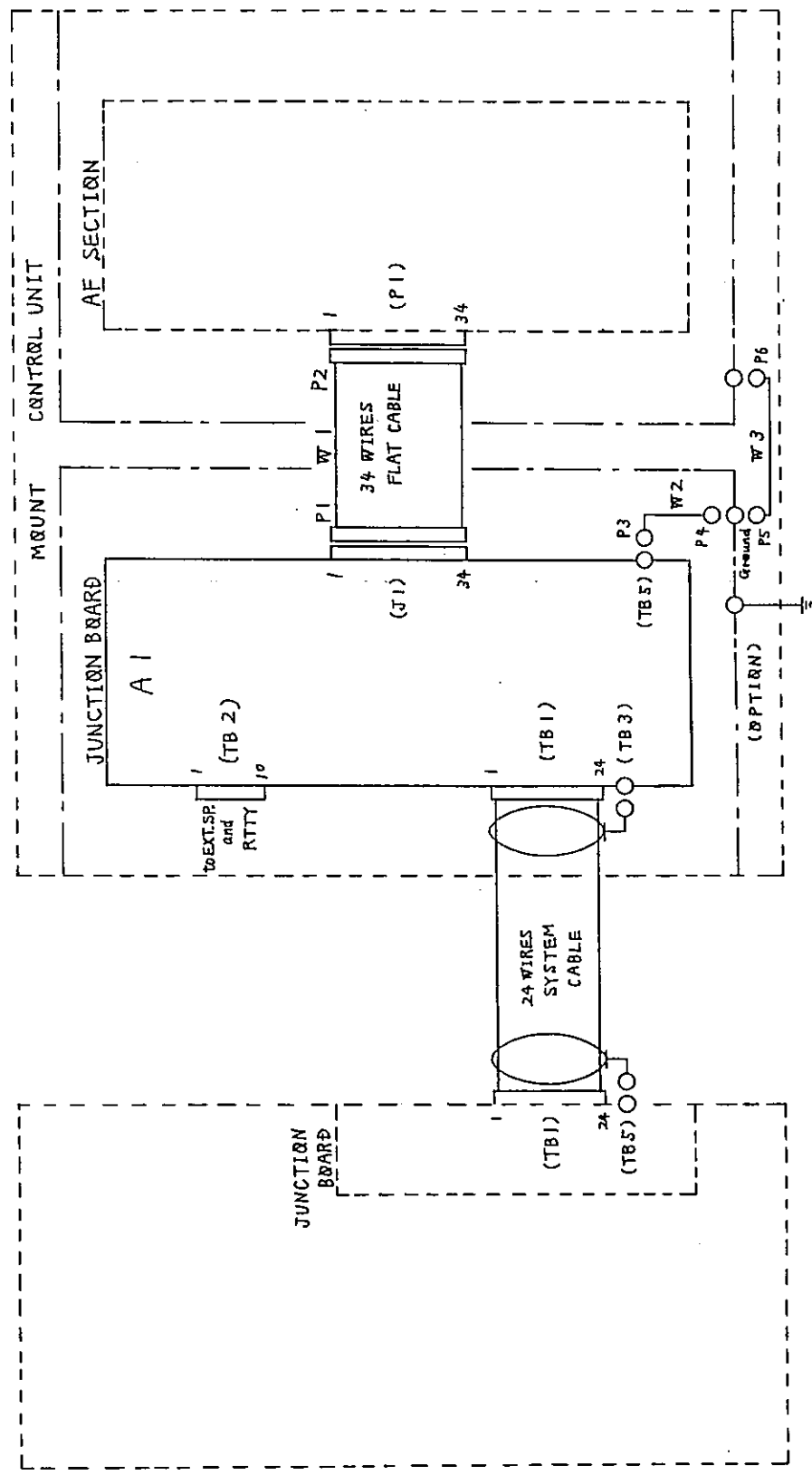


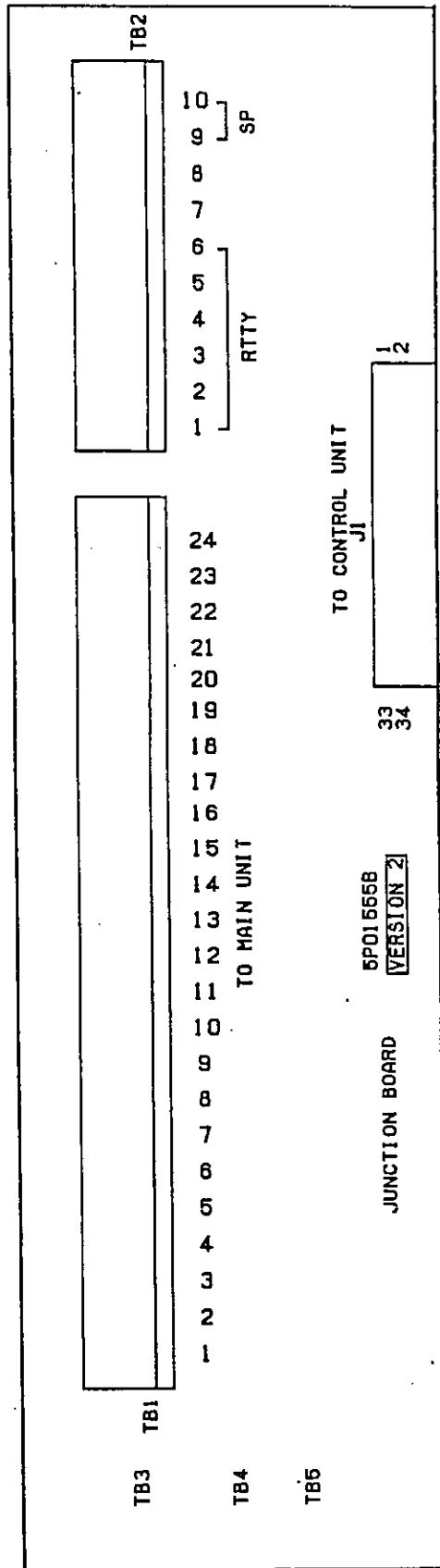
HANDSET Filter
Version 2

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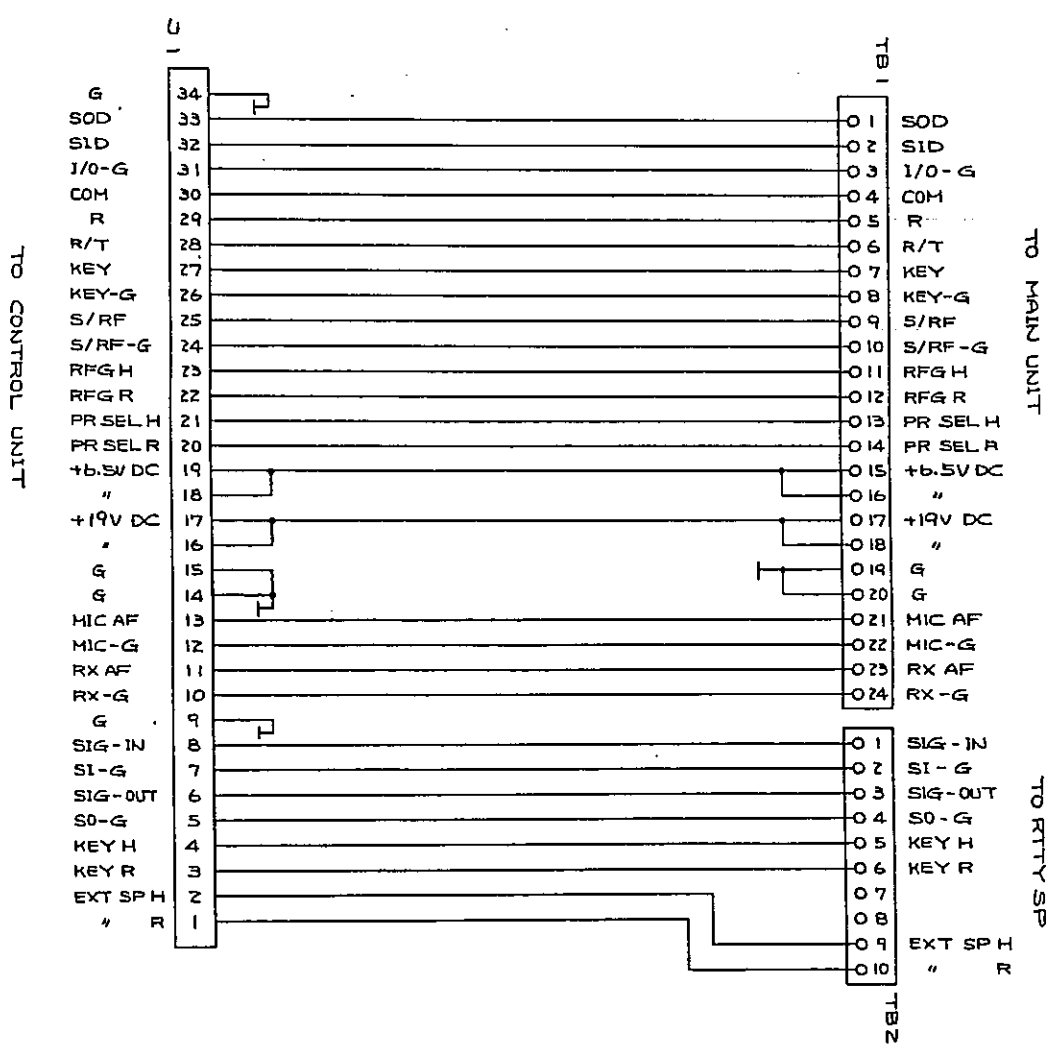
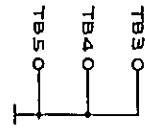
REMOTE CONTROL UNIT

TRANSCELDER

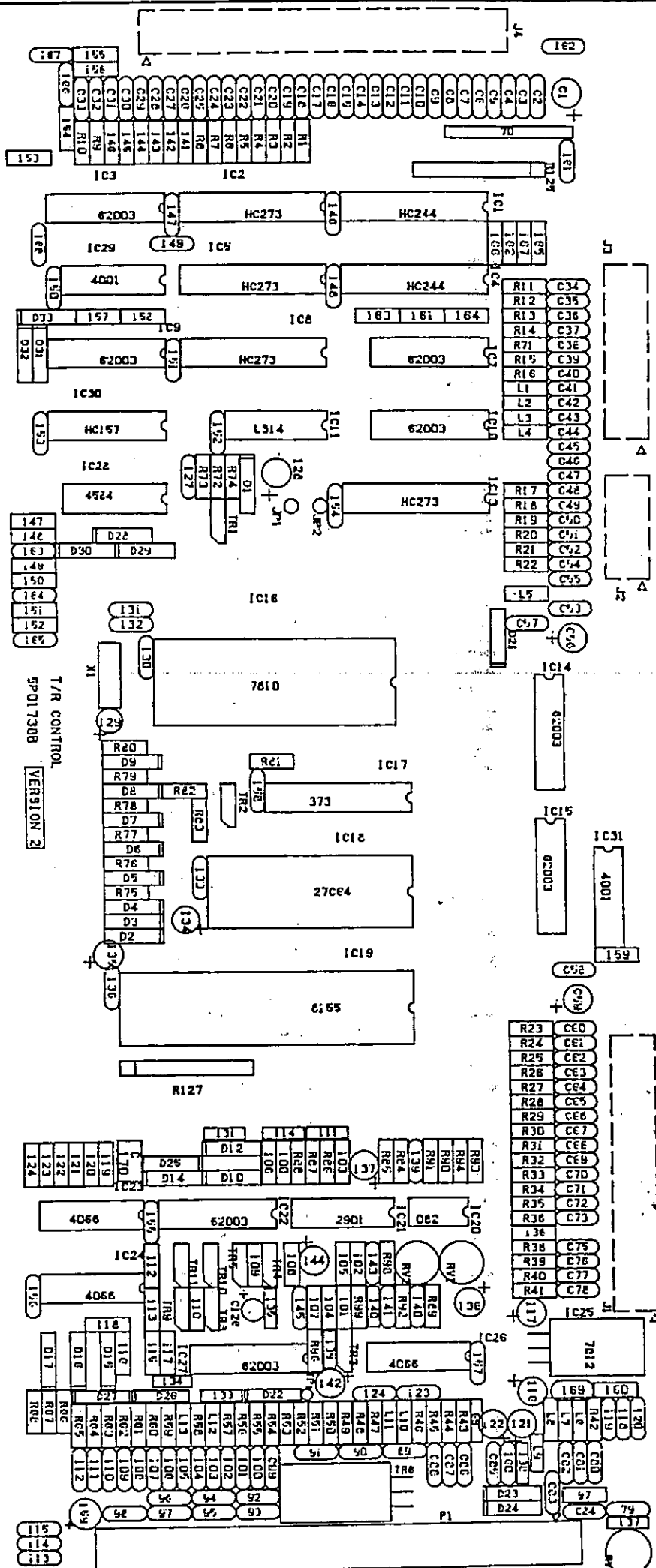




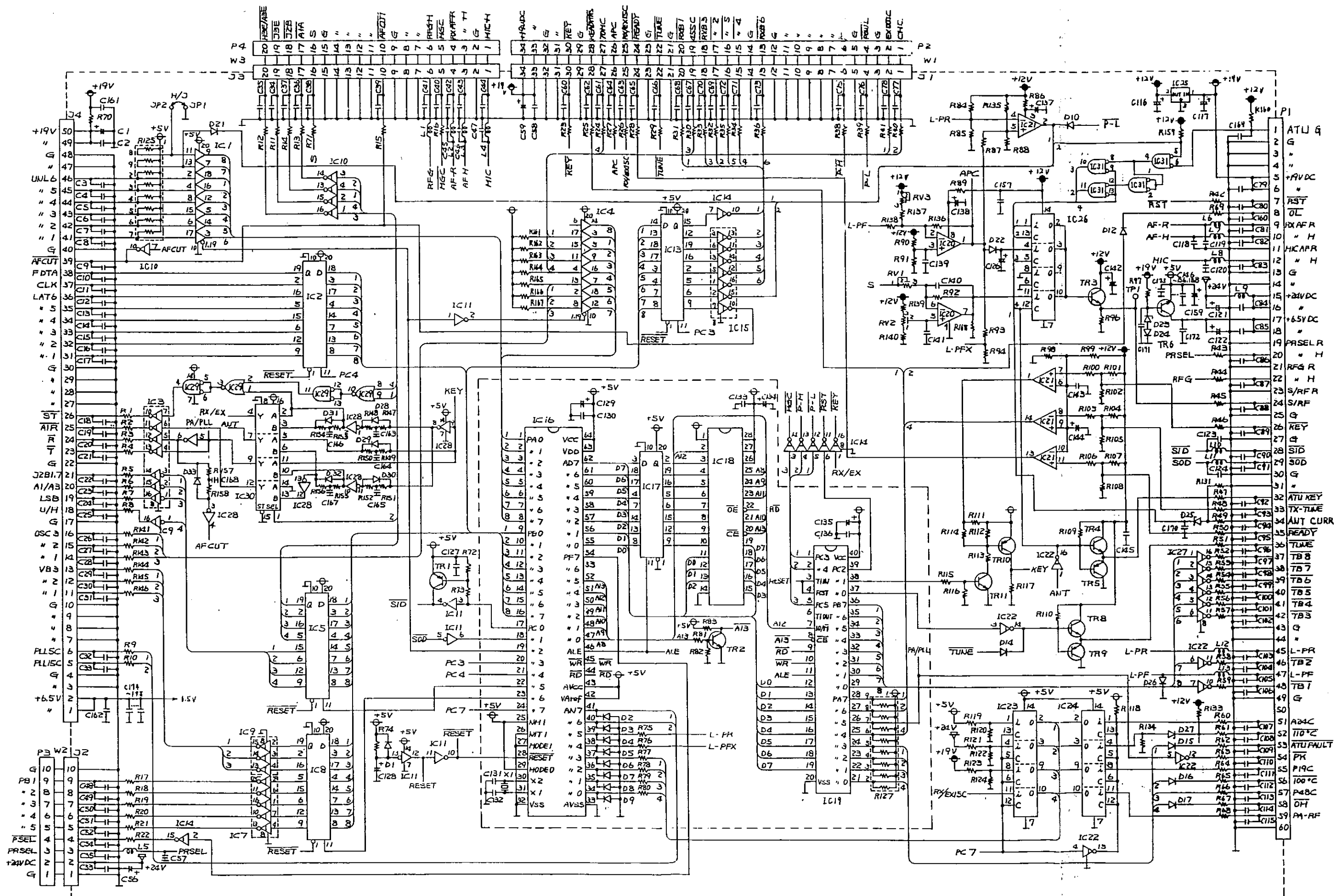
Junction board (for Remote control)
PCB lay-out



Junction (Remote Control)
Version 2

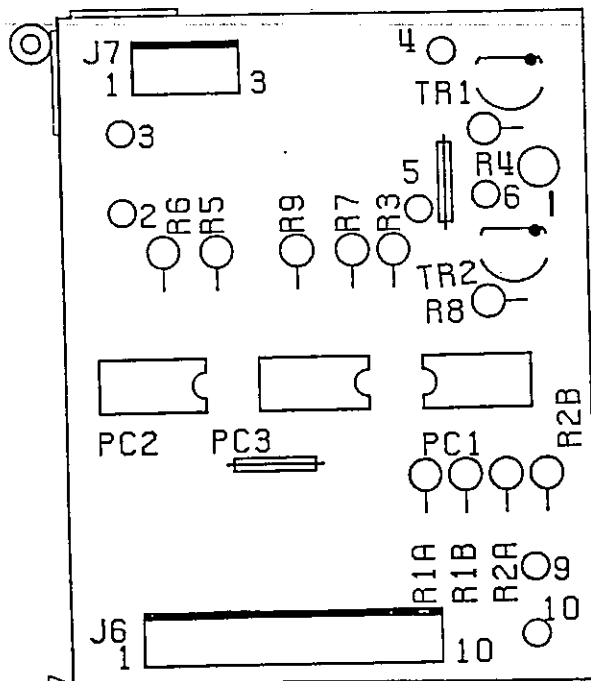


T/R control
PCB lay-out

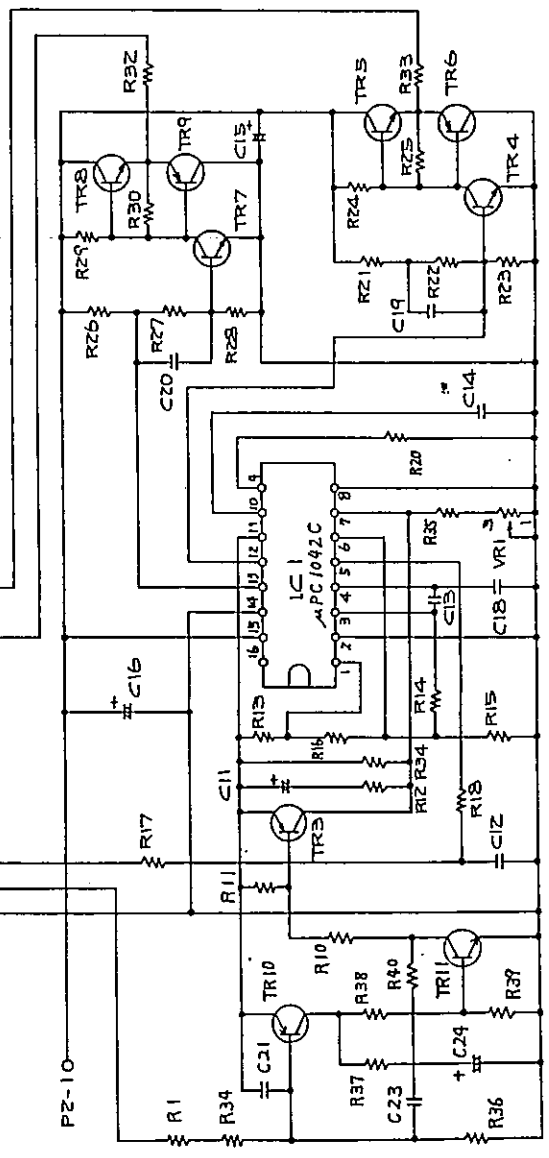
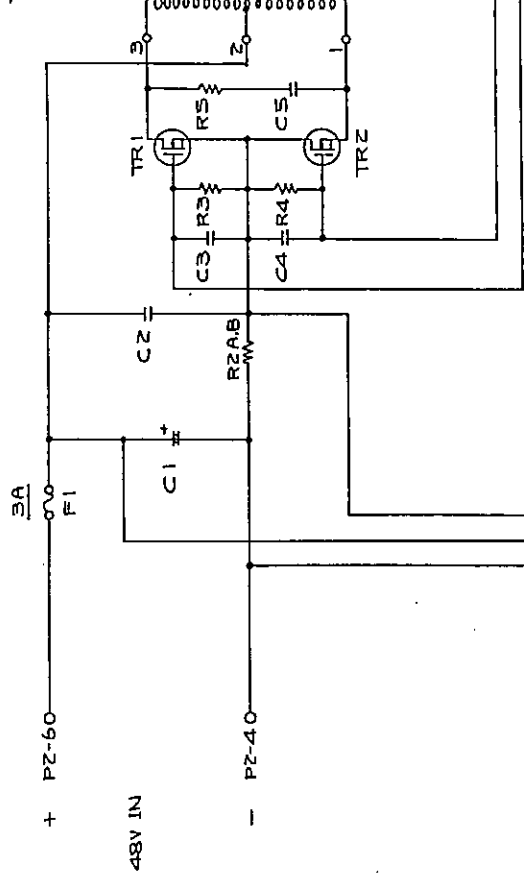
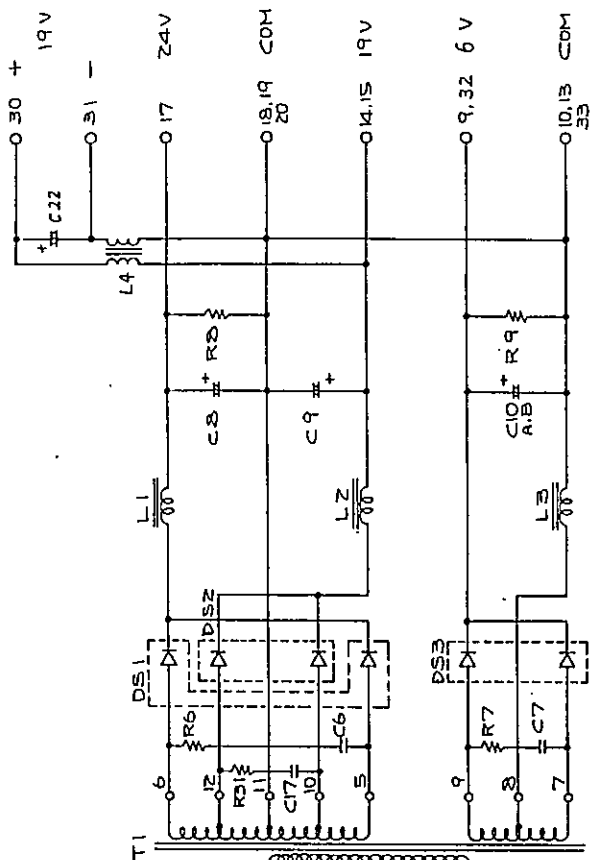


T/R Control
Version 2 A

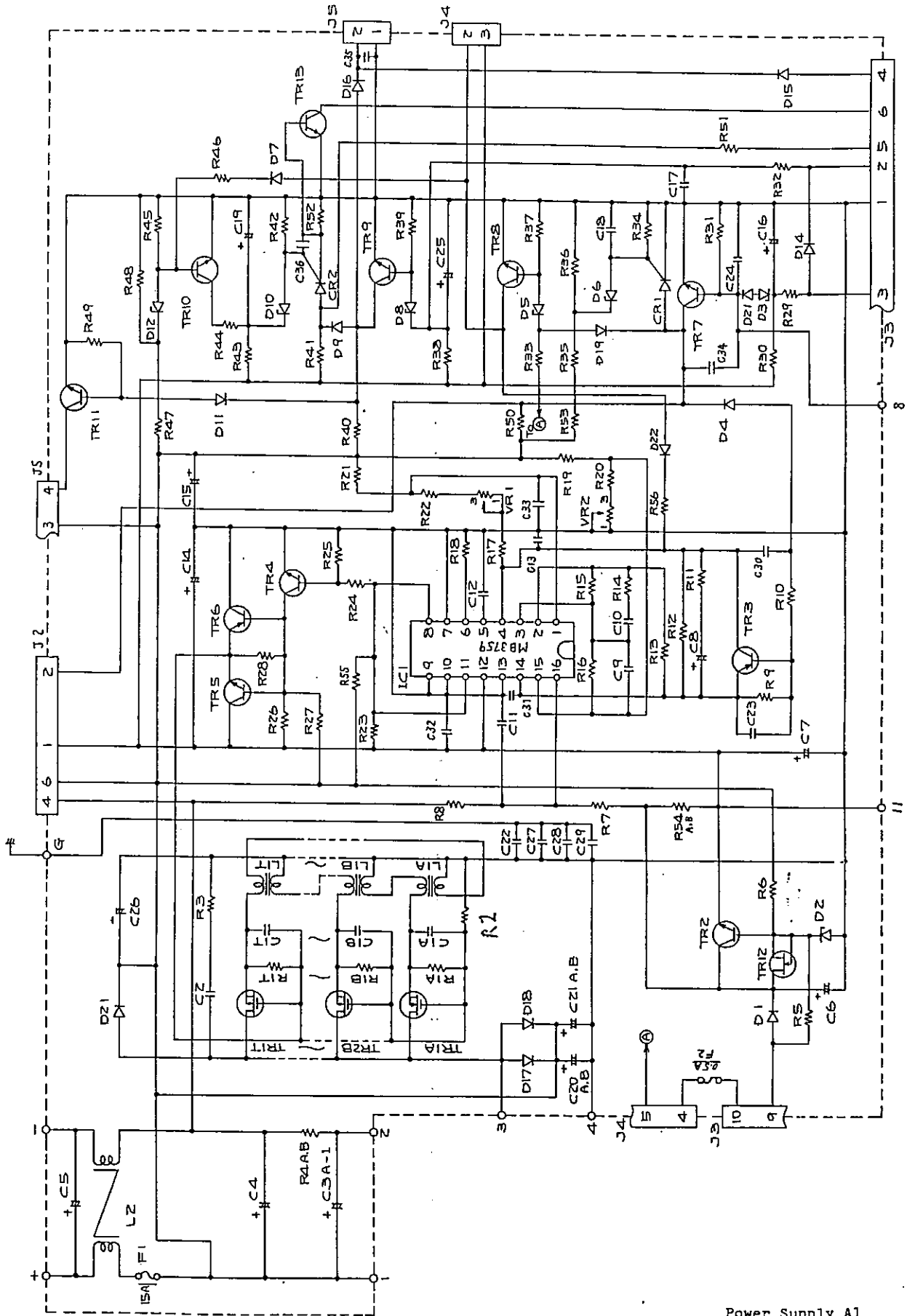




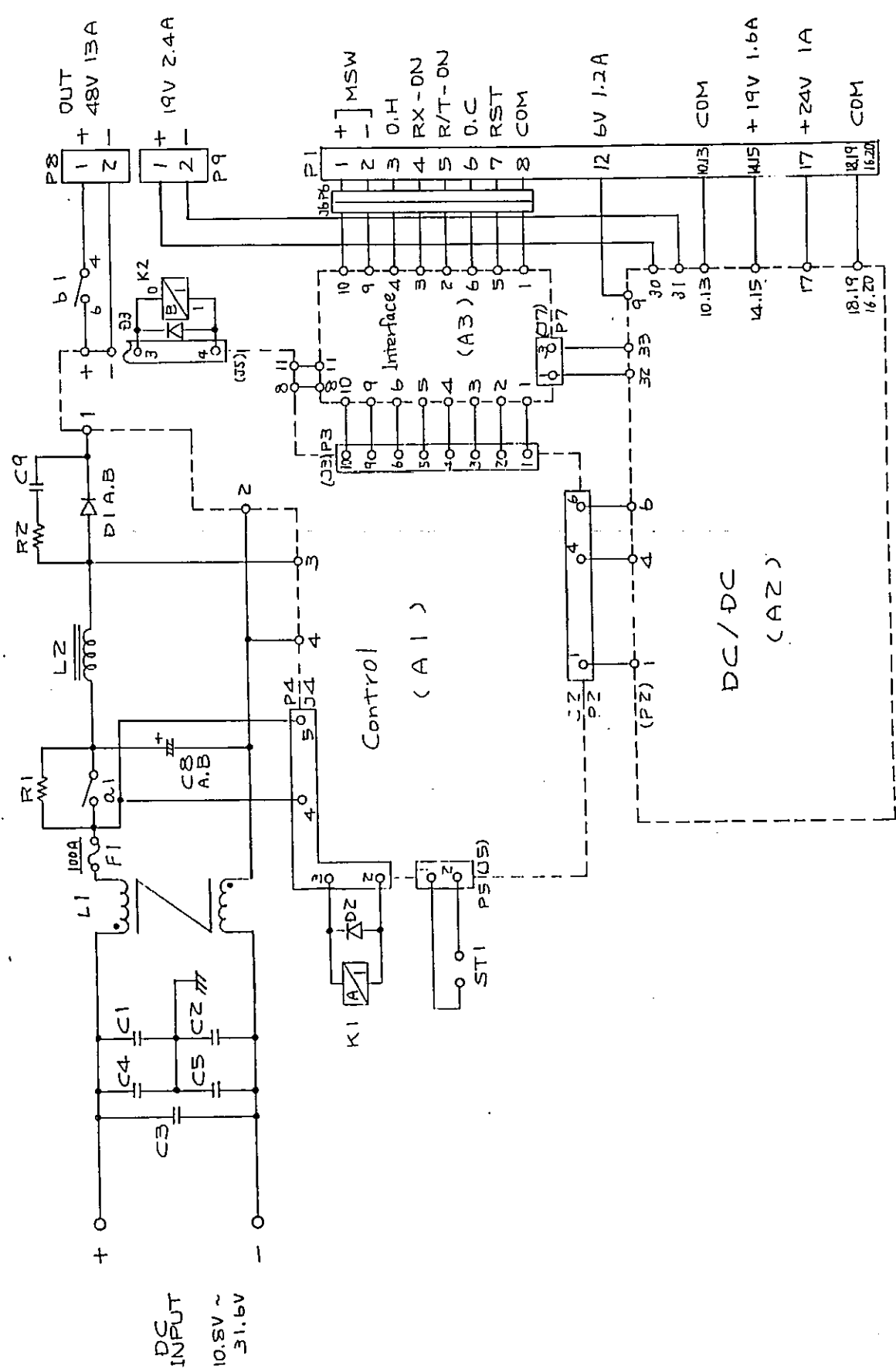
Power supply A3
PCB lay-out



Power Supply A2
DC/DC Converter
Version 2



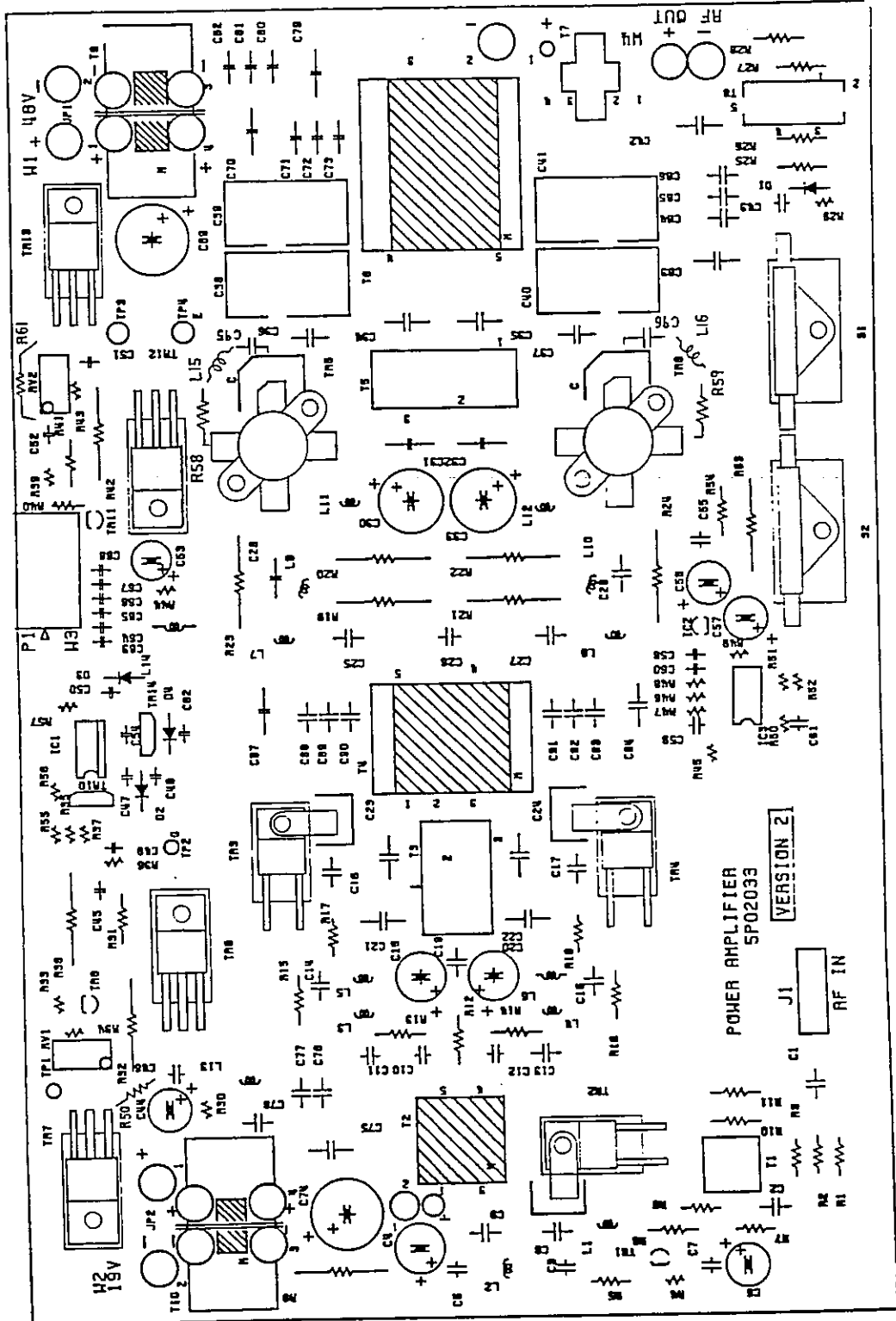
Power Supply A1
Control Board
Version 2



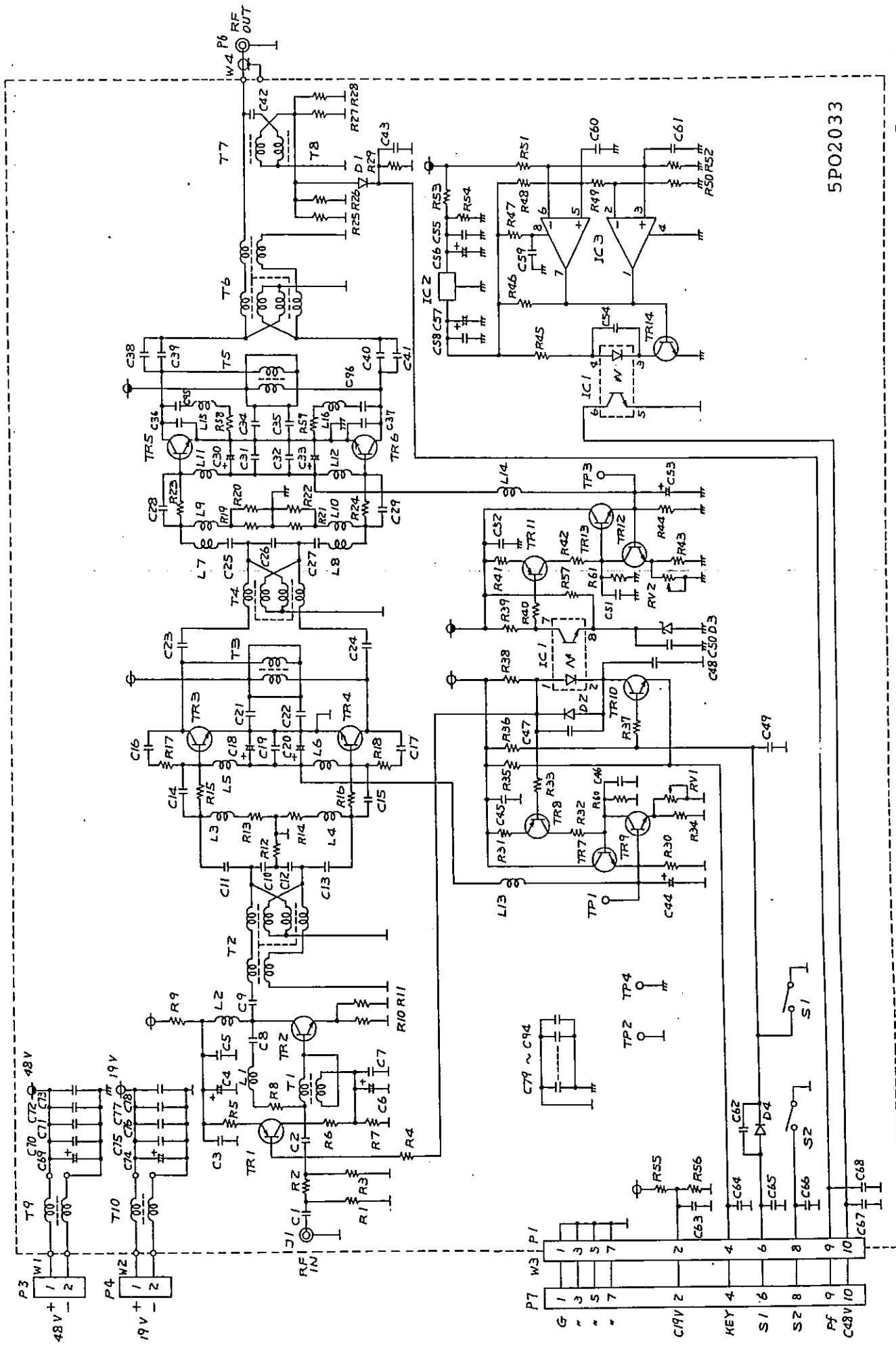
DC INPUT
10.8V ~
31.6V

Control (A1)

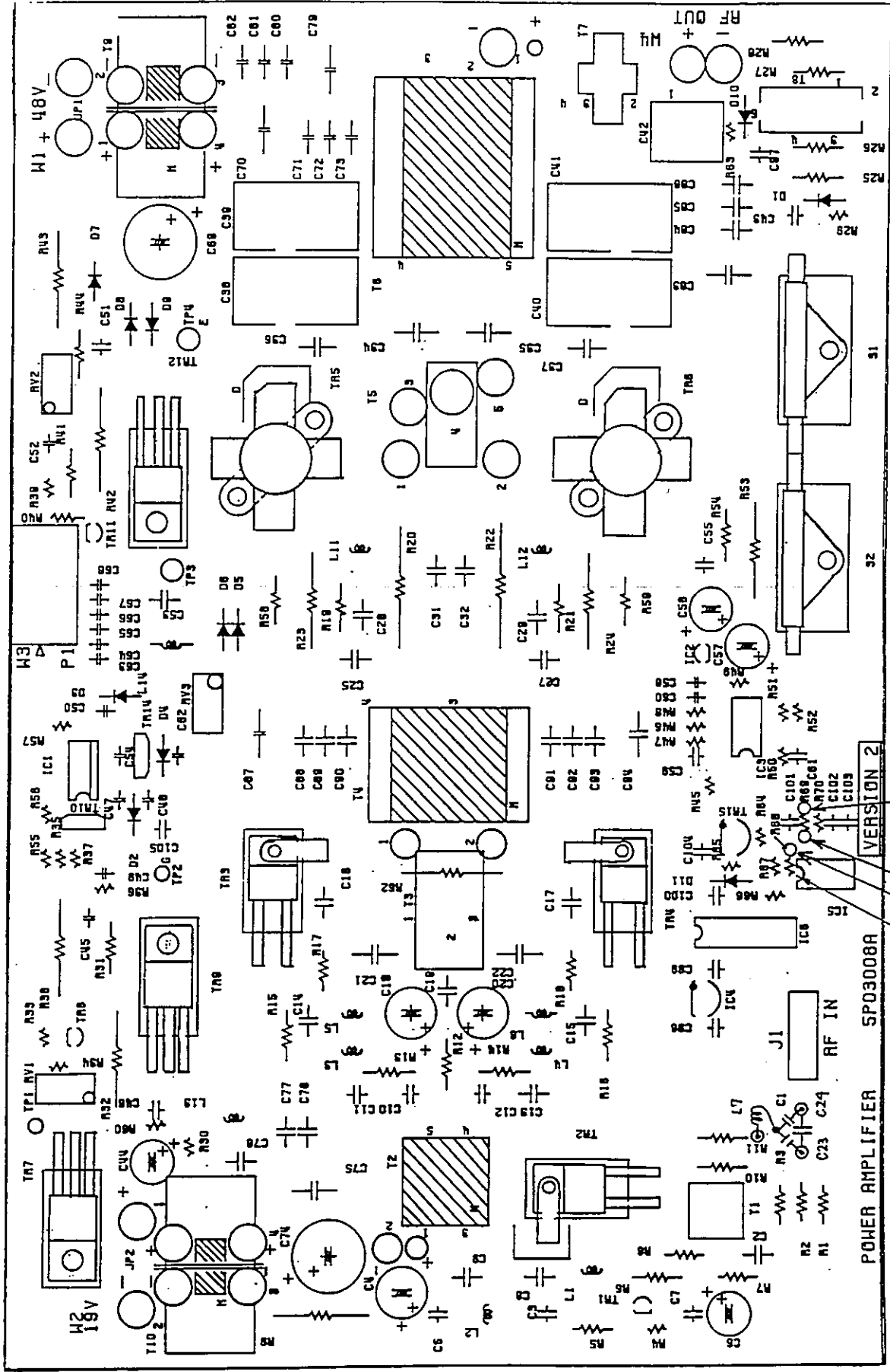
DC/DC (A2)



Power amplifier 5P02033
PCB lay-out



5P02033

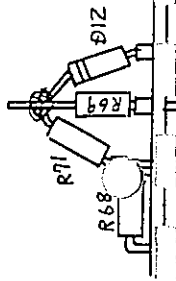


POWER AMPLIFIER SPO3008A

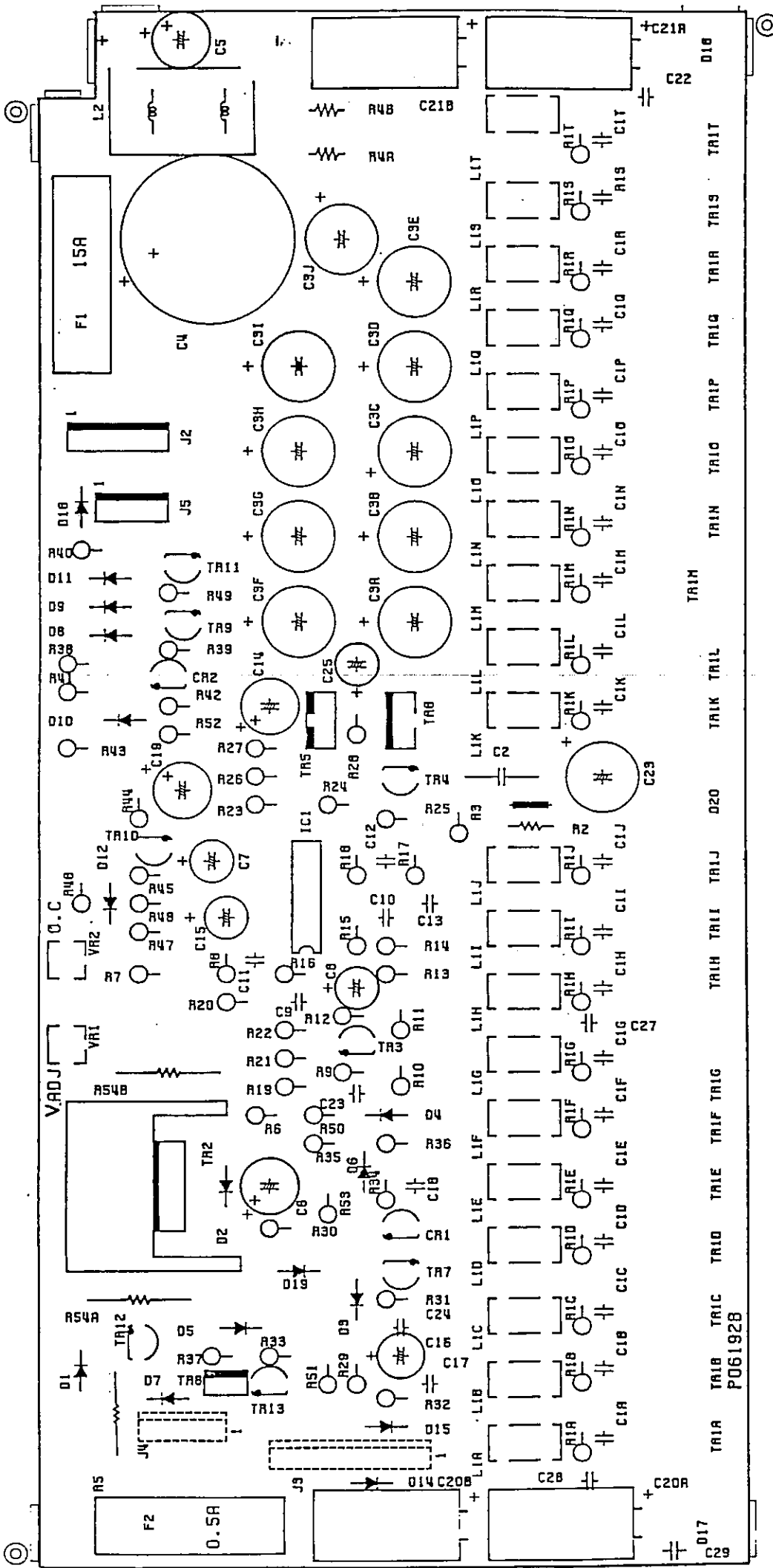
VERSION 2

POWER AMPLIFIER SPO3008A

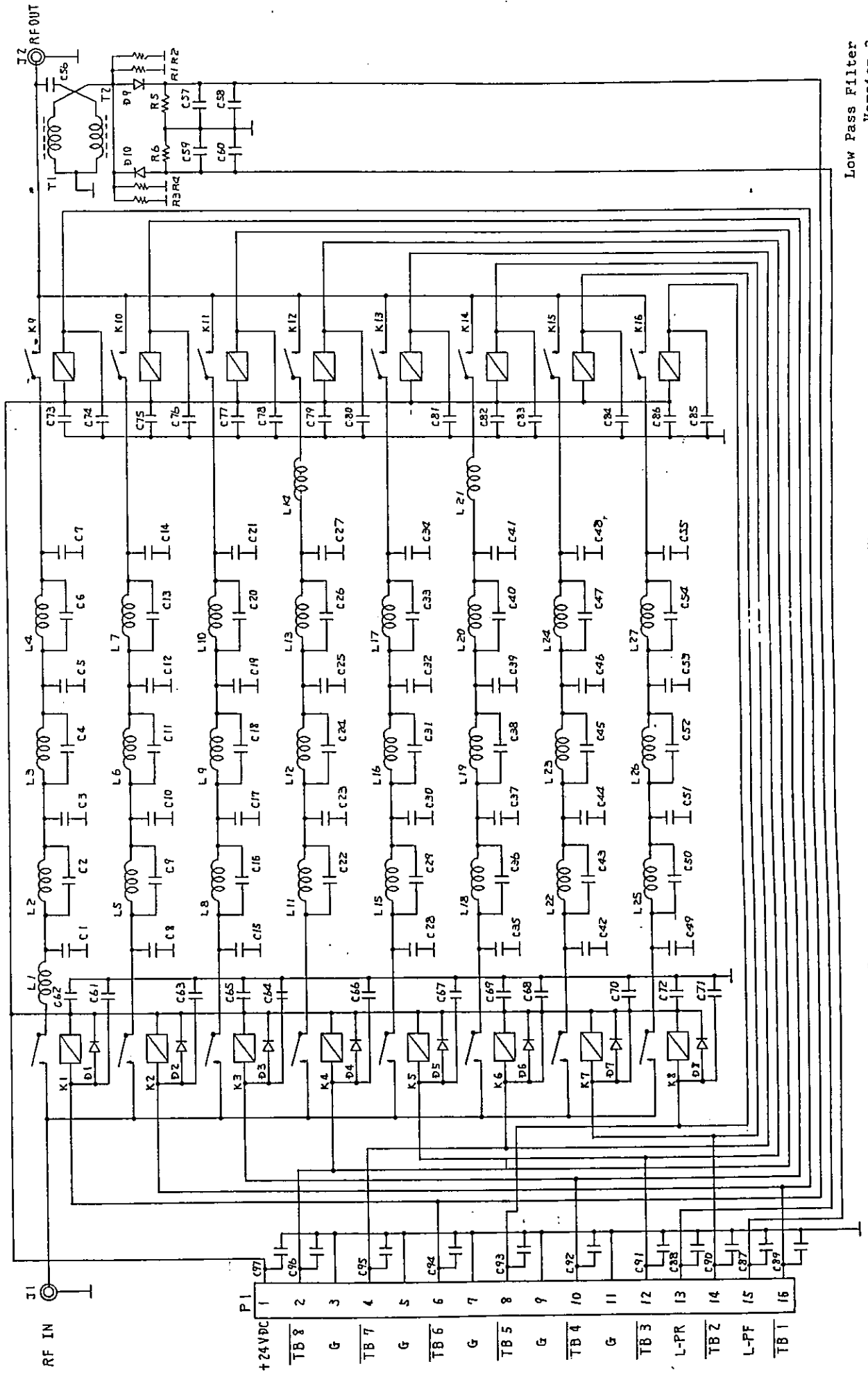
VERSION 2

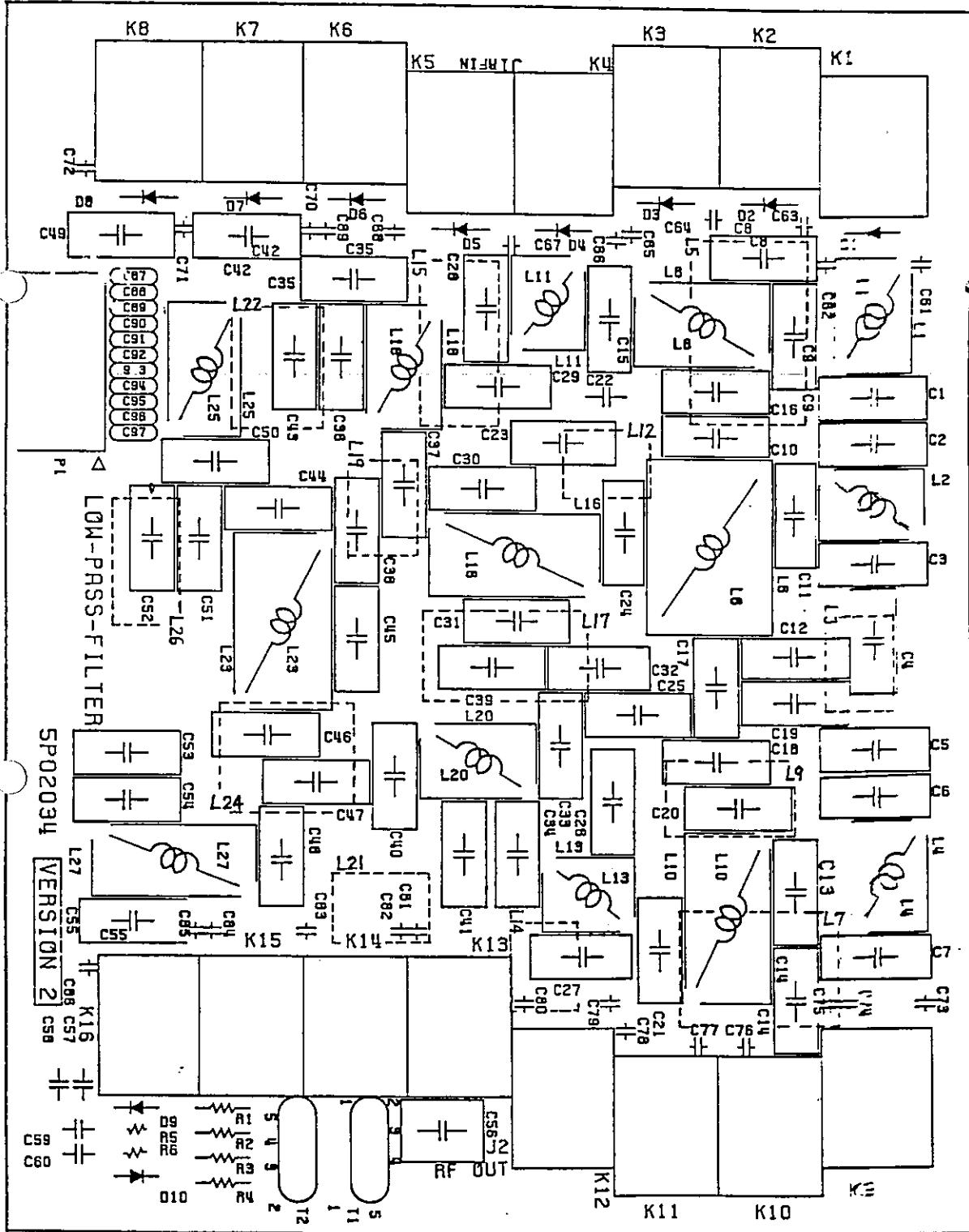


R68 R71
D/2
D/12

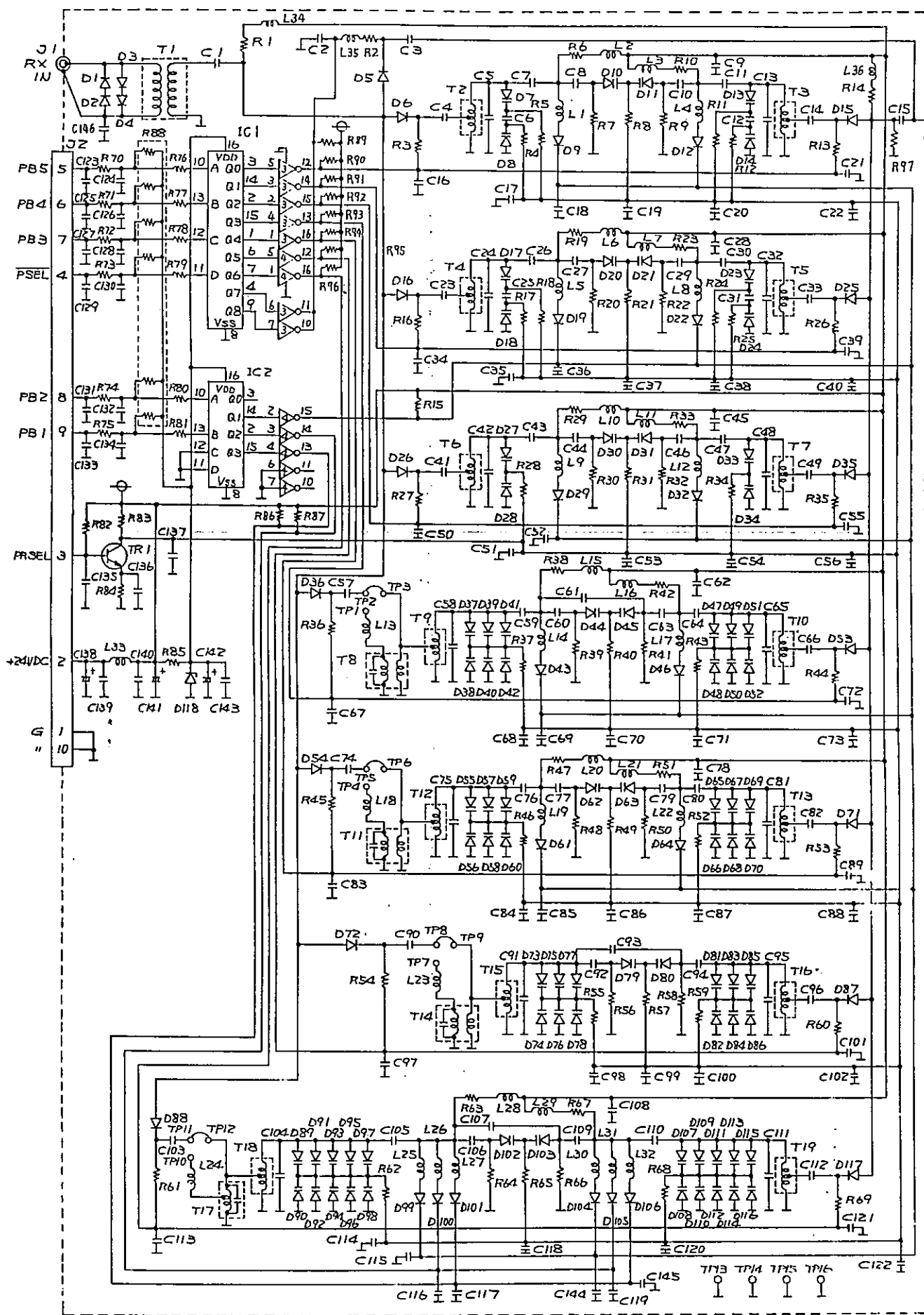


Power supply A1
PCB lay-out

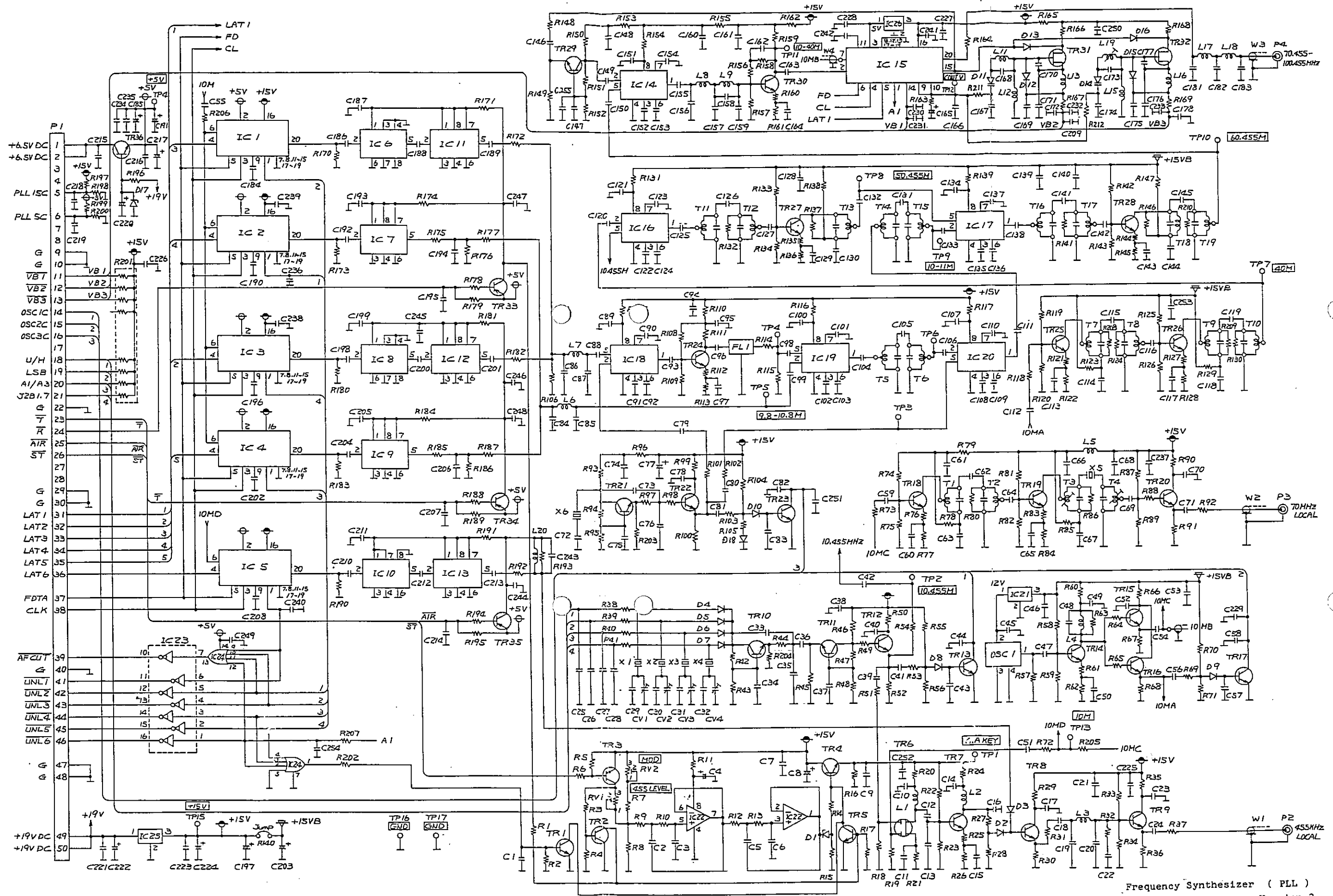




Low-pass filter
PCB lay-out



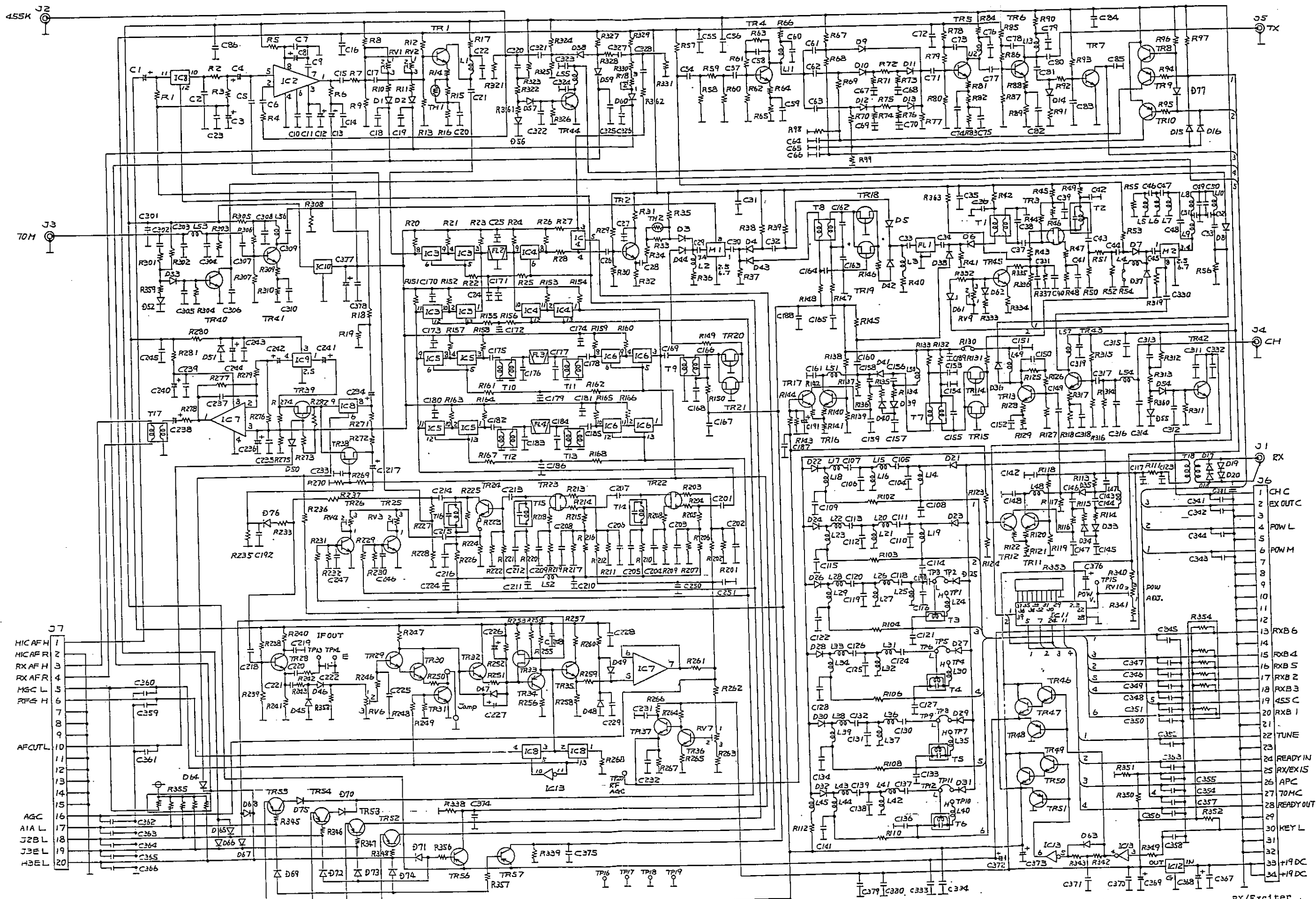




Frequency Synthesizer (PLL)
Version 2



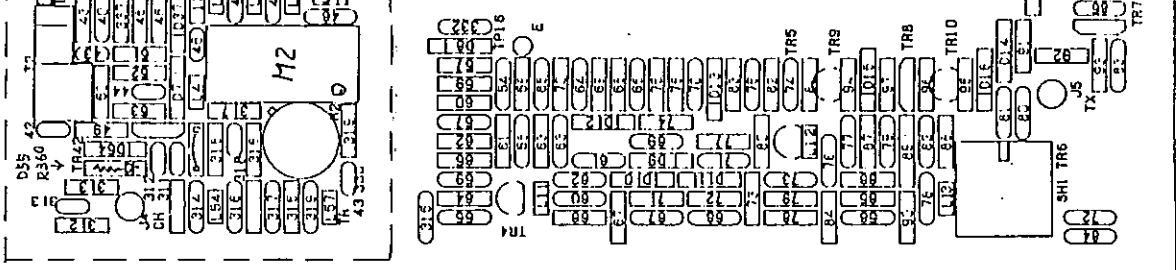
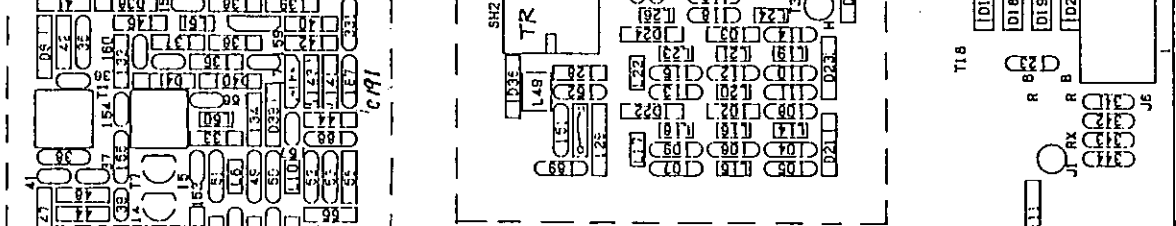
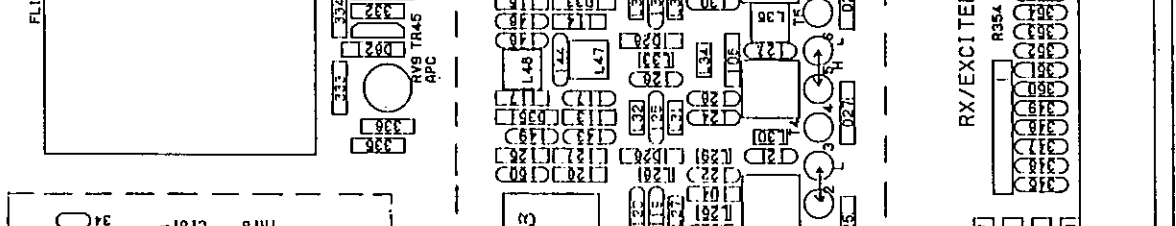
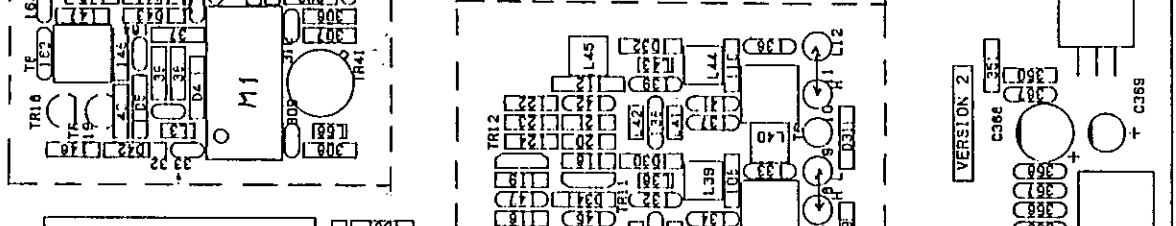
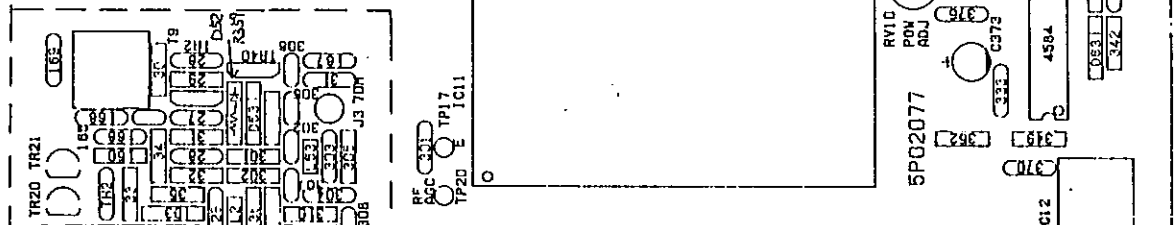
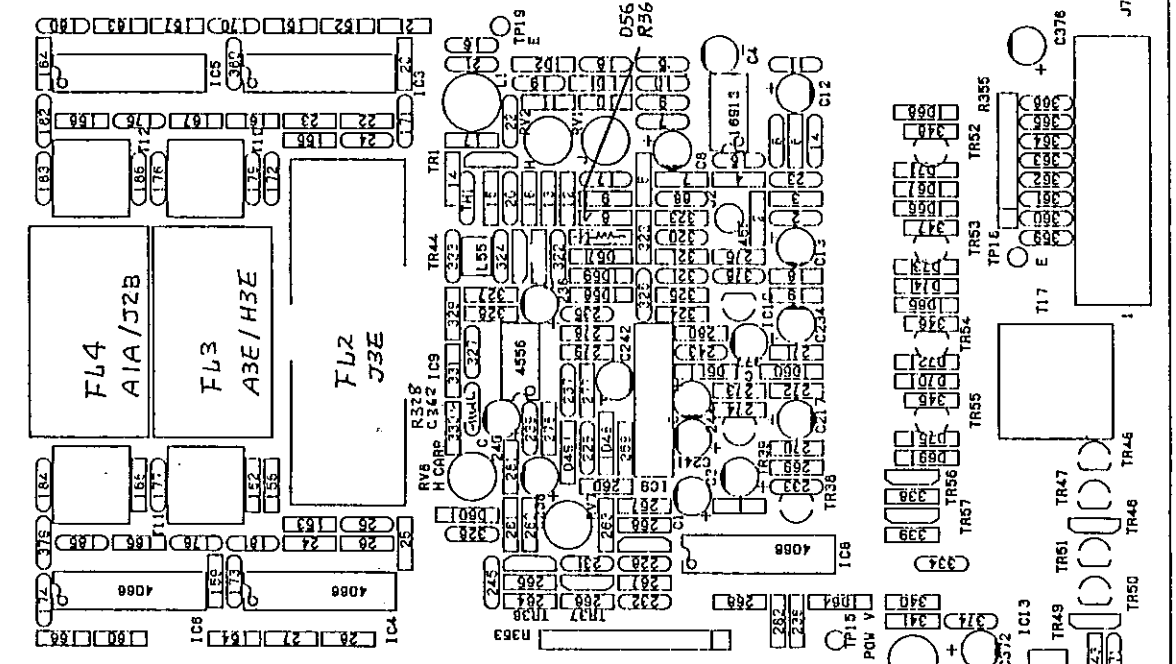
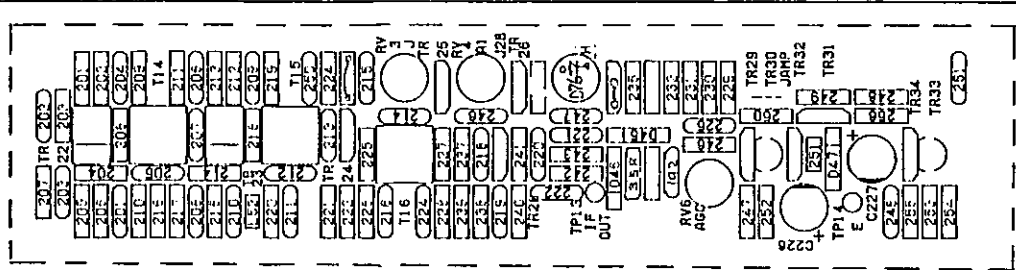
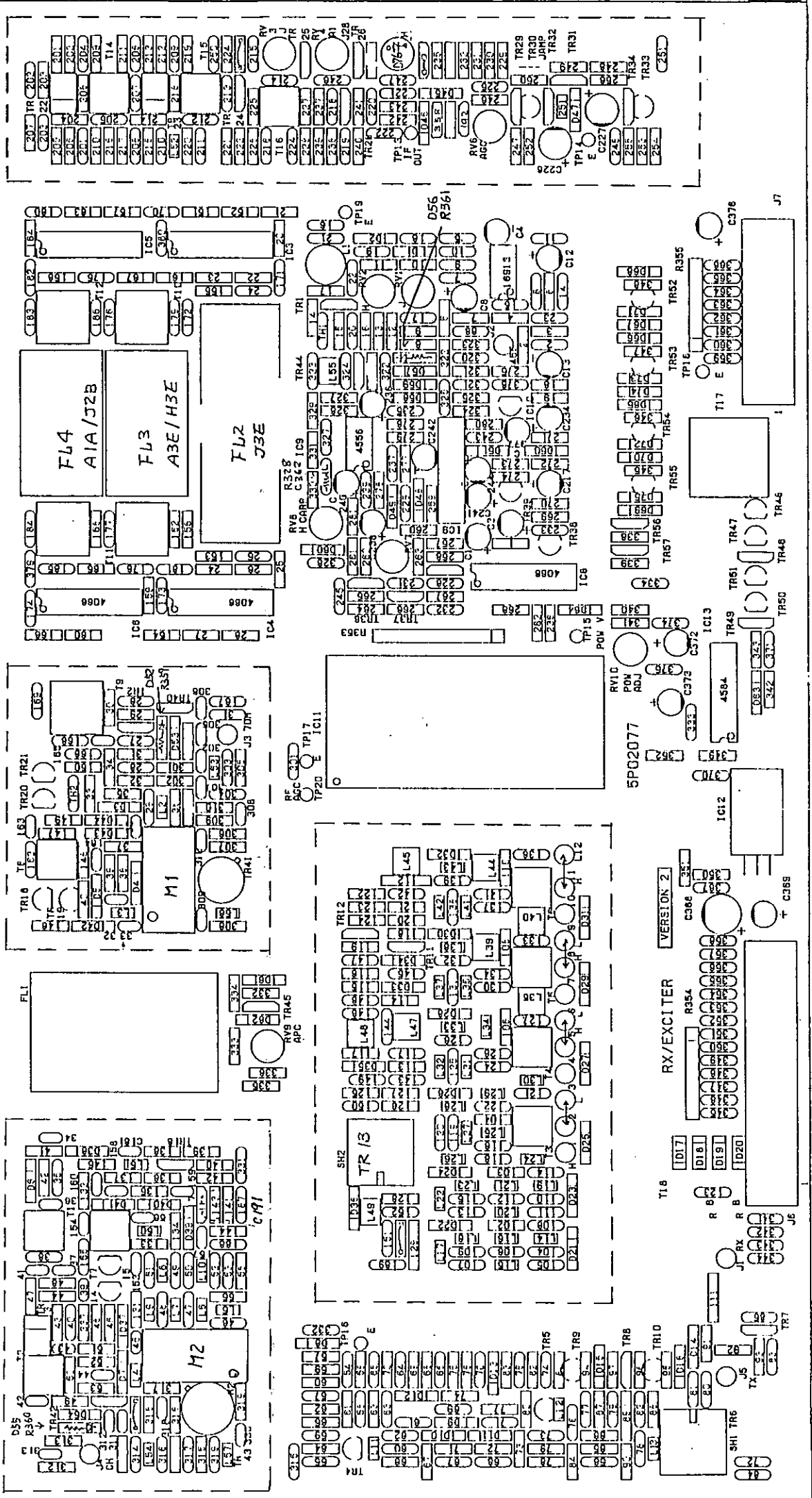




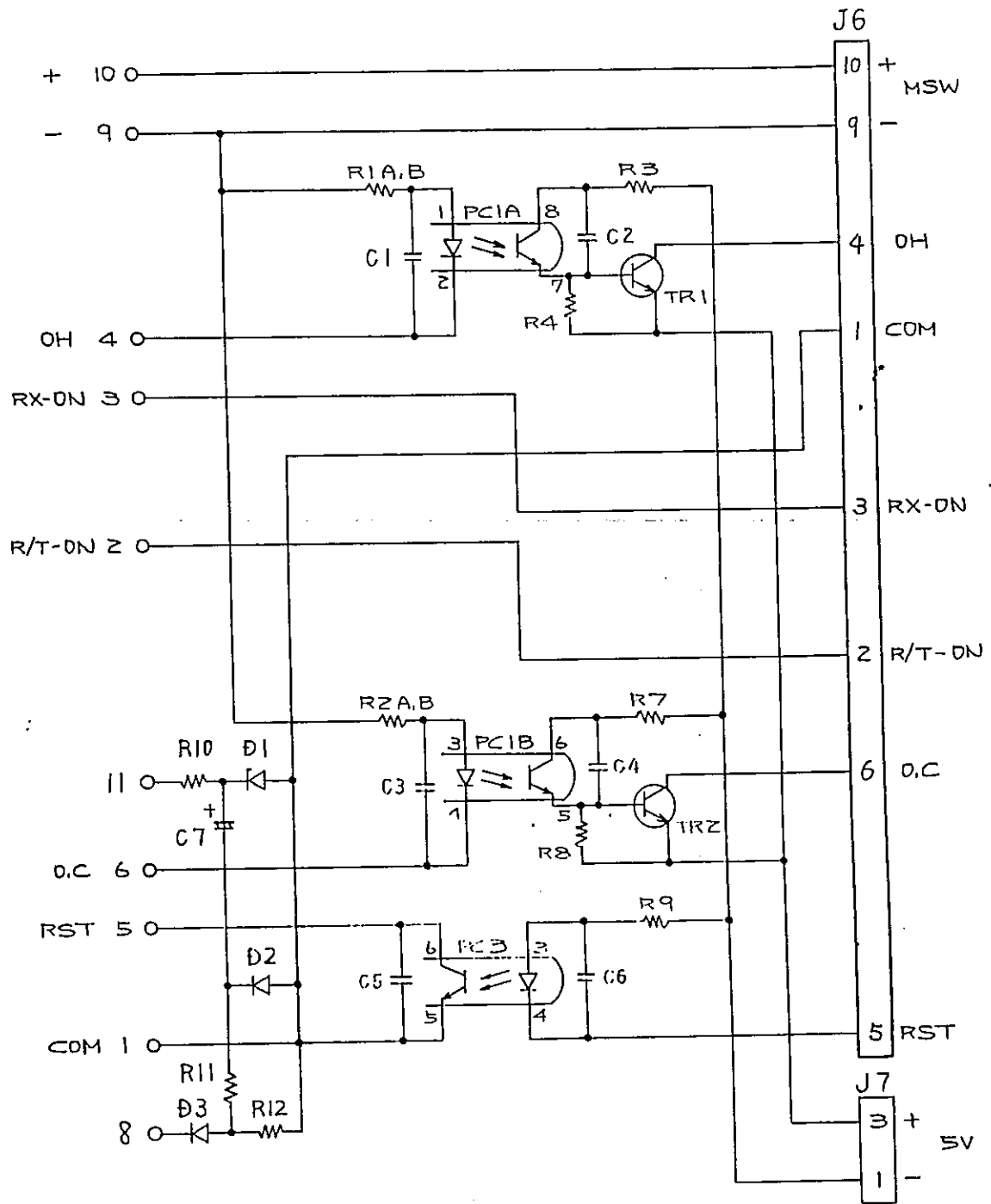
RX/Exciter
Version 2



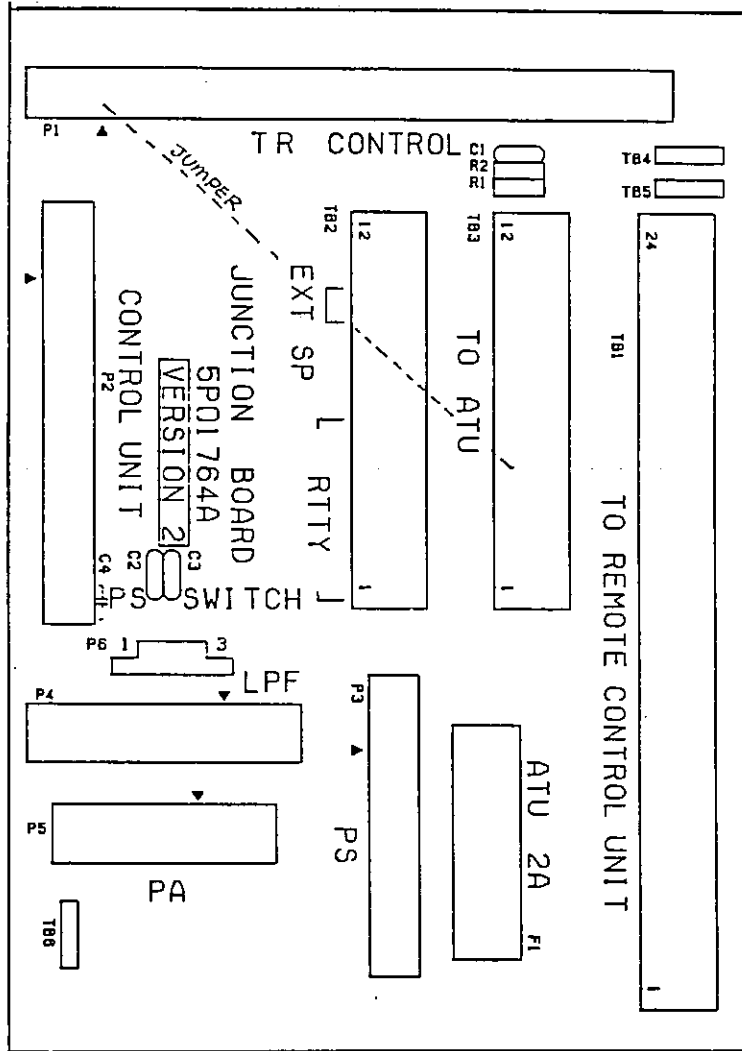
Pcb Lay-out;
RX/Exciter



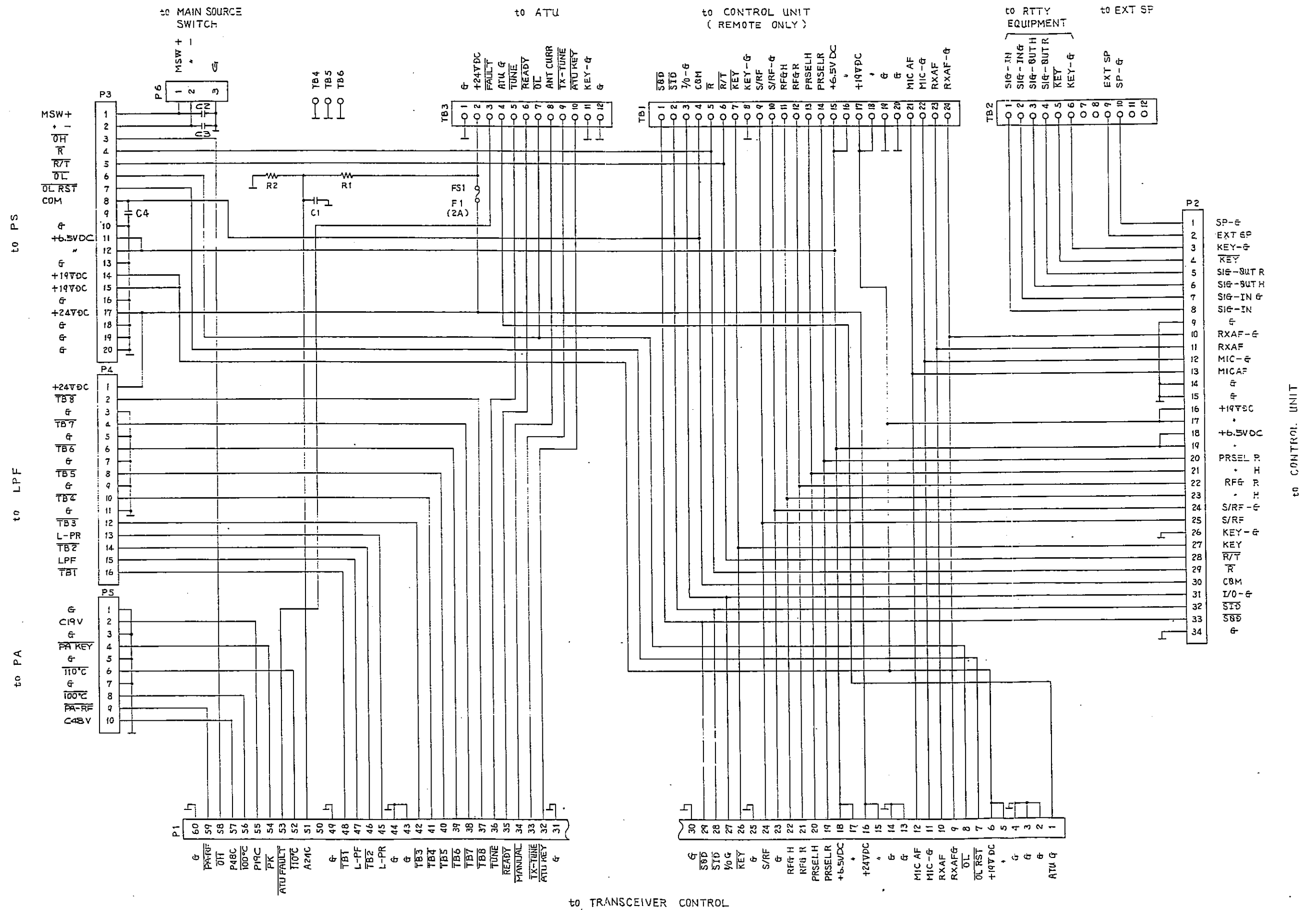




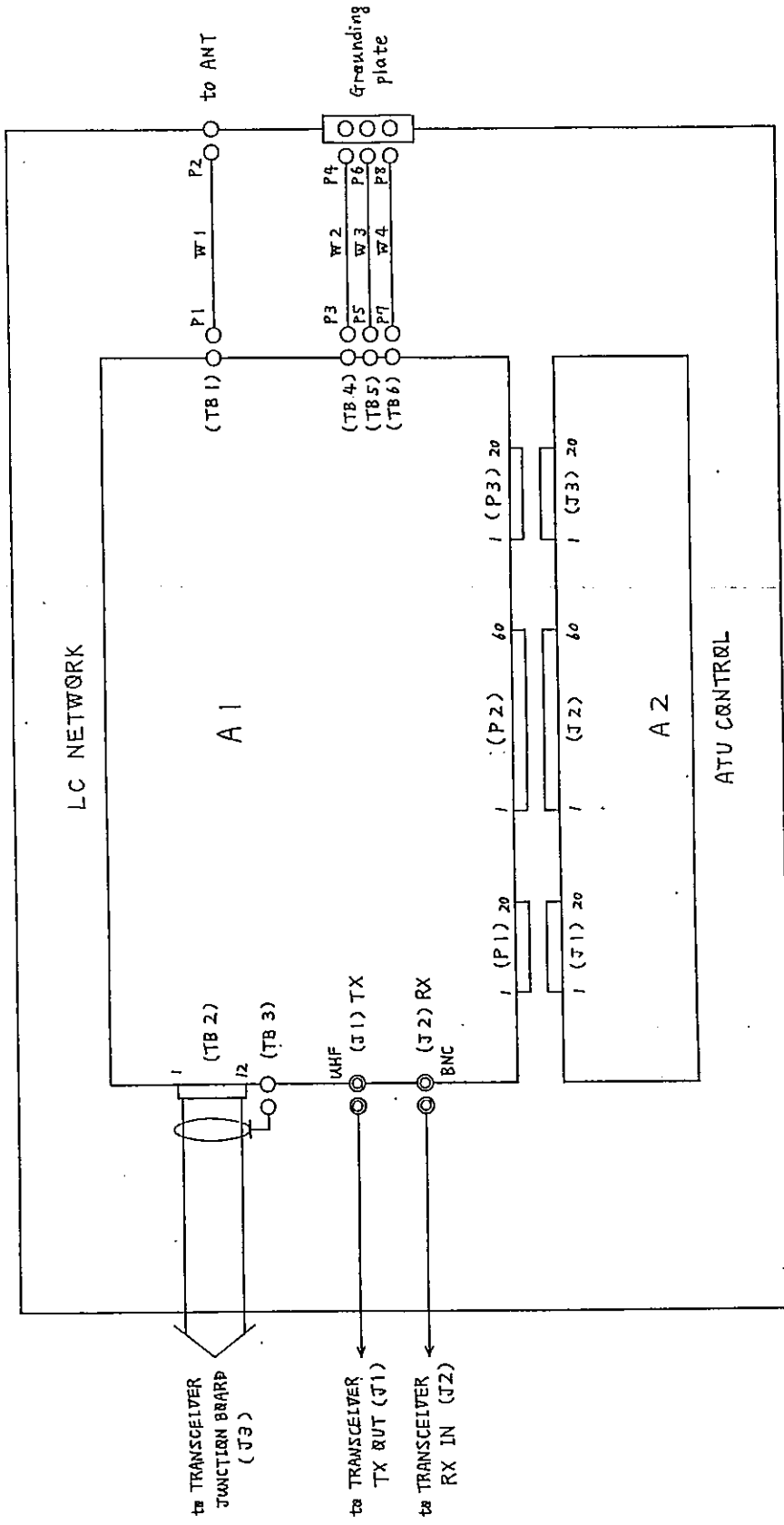
Power Supply A3
Line Interface
Version 2

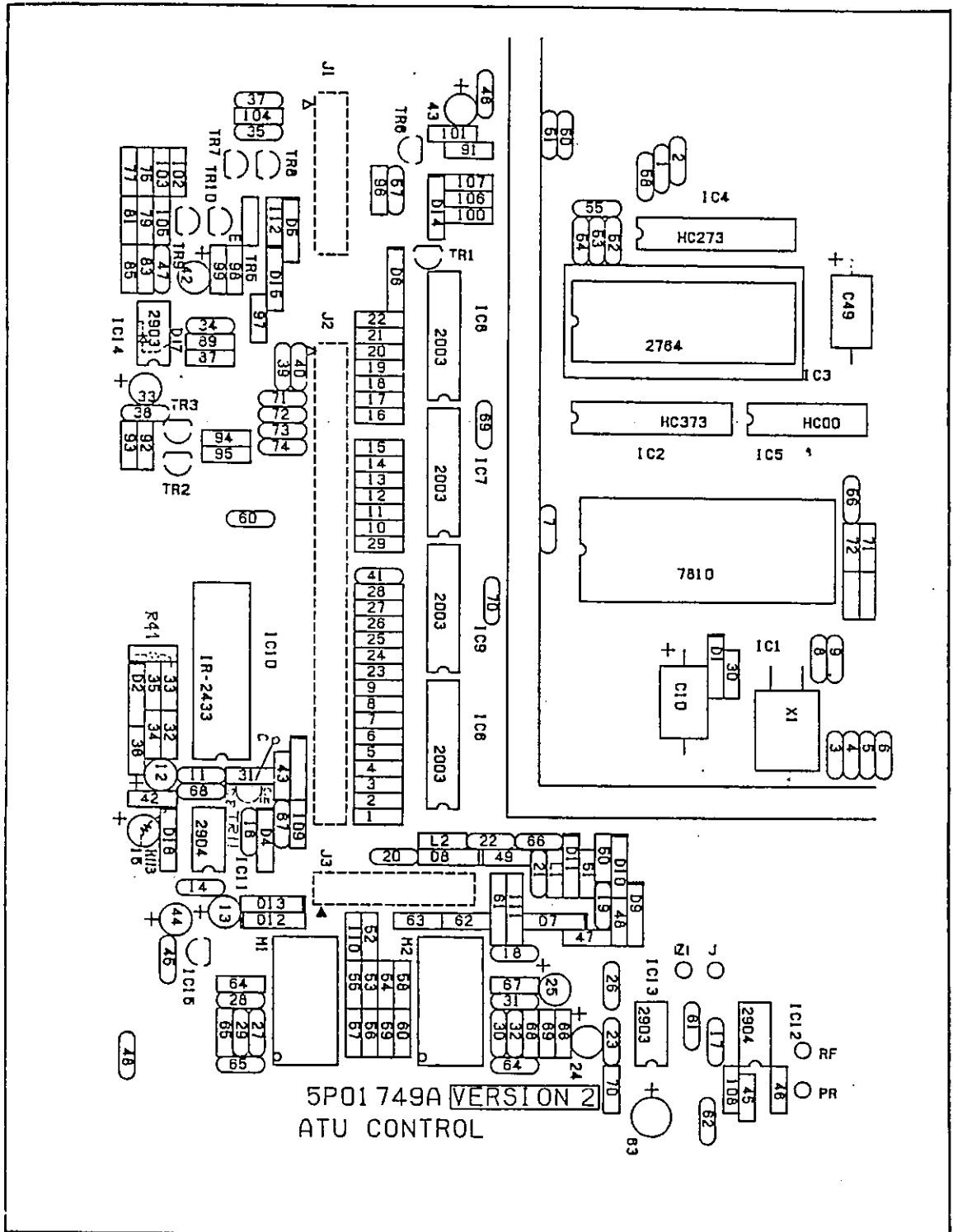


Junction board
PCB lay-out

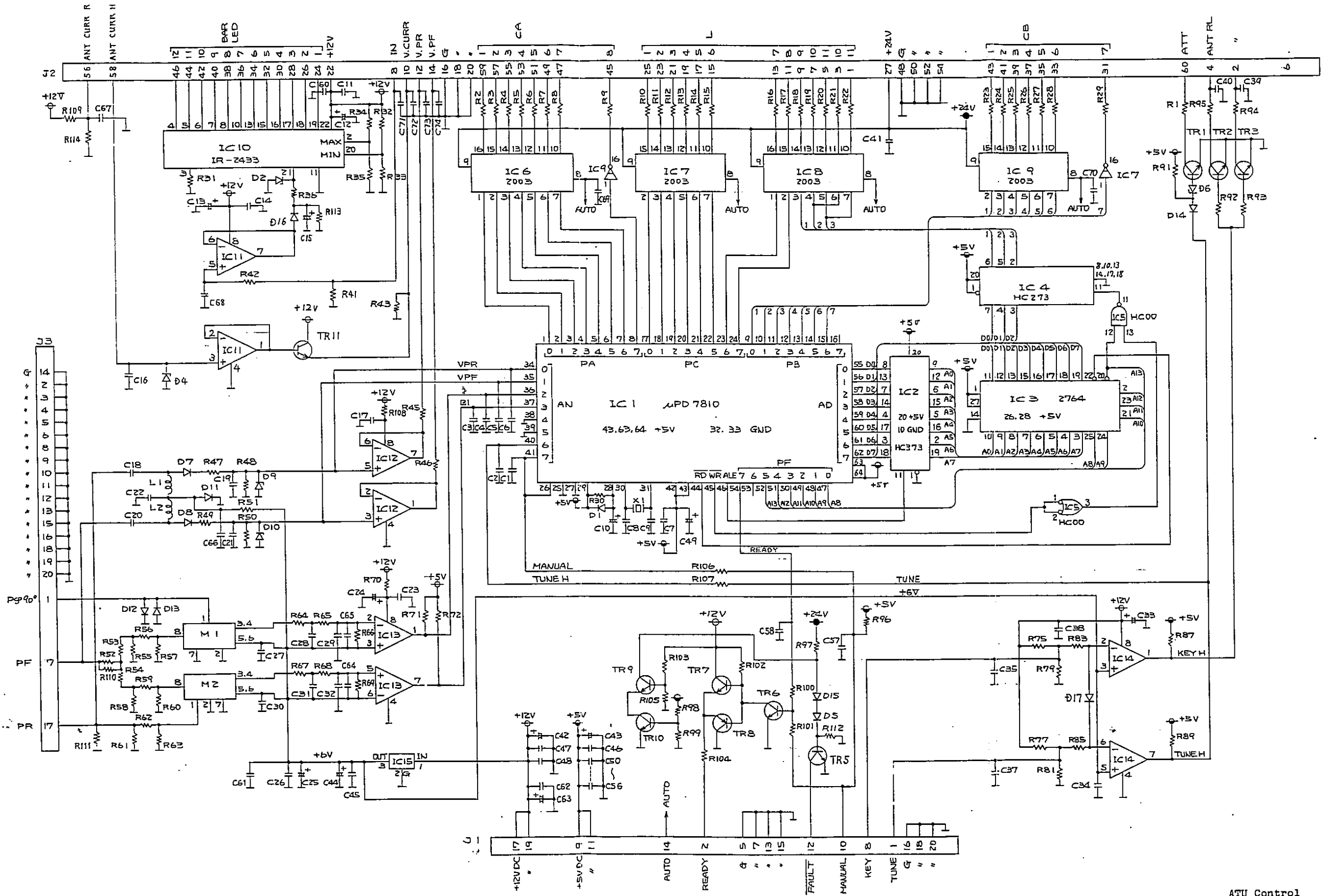


ANTENNA TUNING UNIT

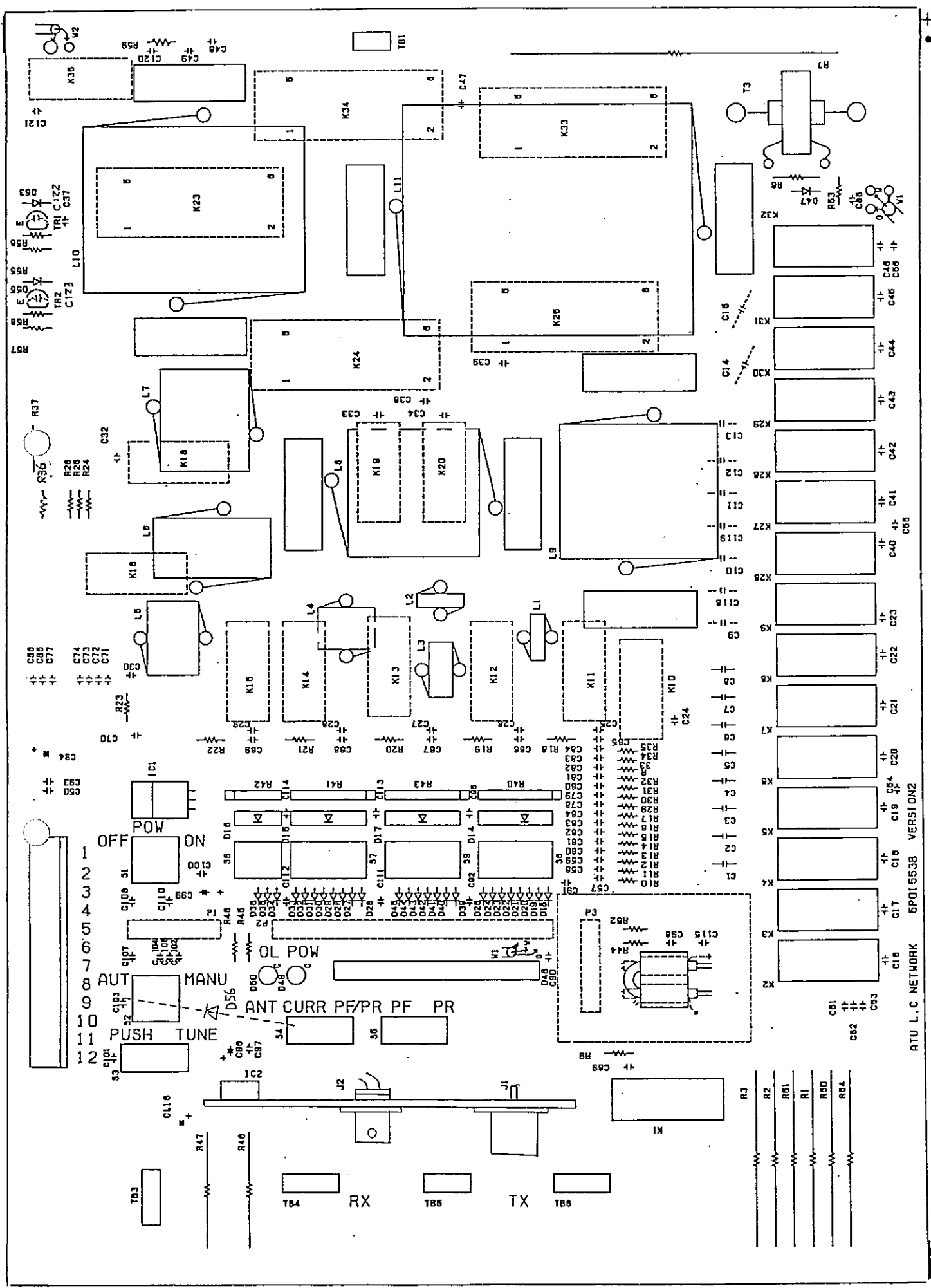




ATU control
PCB lay-out



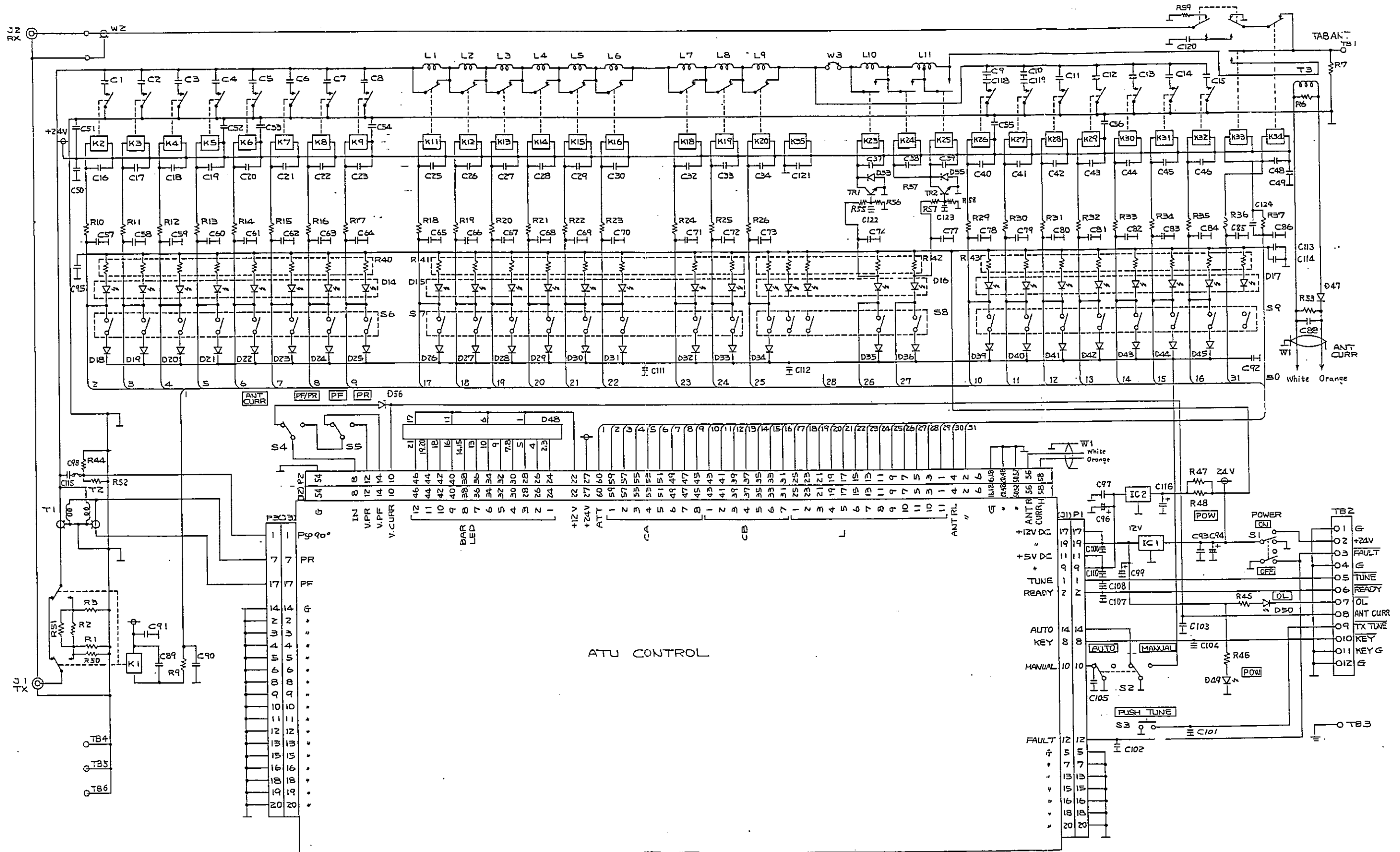




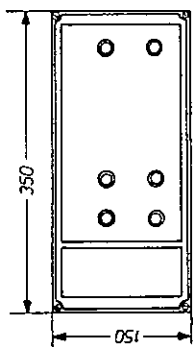
ATU L.C. NETWORK 5P01553B VERSION2

ATU L.C network
PCB lay-out

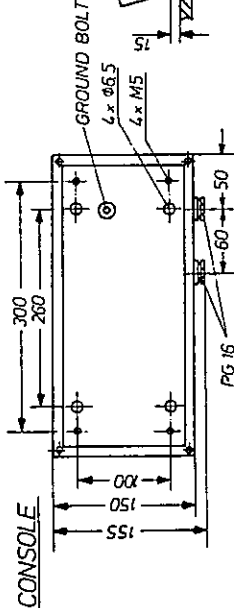




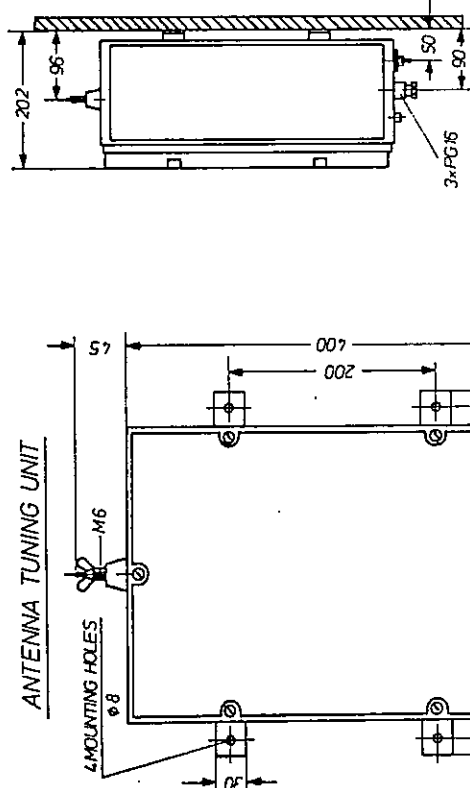
CONTROL UNIT WITH CONSOLE



C. U.

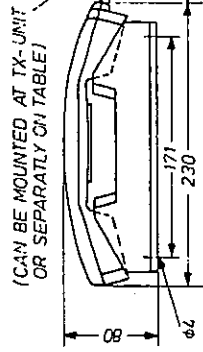


ANTENNA TUNING UNIT

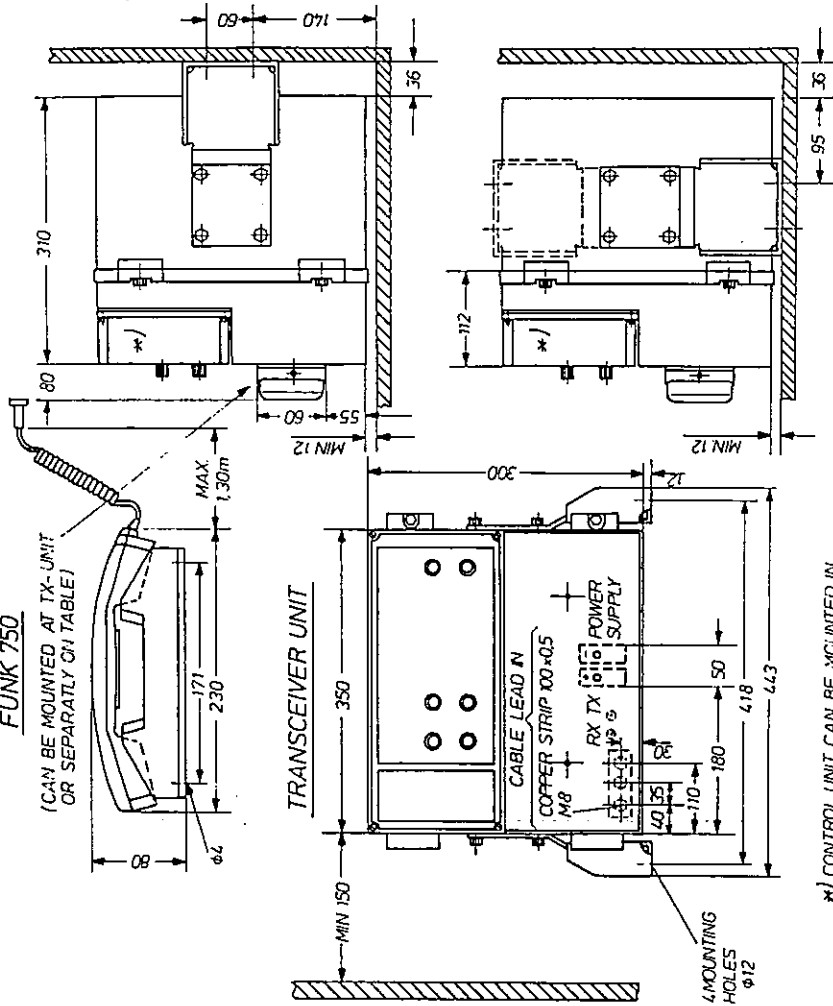


HANDSET WITH CRADLE

FUNK 750



TRANSCEIVER UNIT



* CONTROL UNIT CAN BE MOUNTED IN TRANSCEIVER UNIT OR SEPARATELY WITH CONSOLE

UNIT	APPR. WEIGHT
CONTROL UNIT	3 kg
ANTENNA TUNING UNIT	7 kg
TRANSCEIVER UNIT	23 kg
WITHOUT CU	

Magnet. Schutzabstände MAGN. SAFETY DISTANCE	deutsch GERMANY normal NORMAL	ausländisch vermindert FOREIGN REDUCED
Regelkomp. STANDARD		
Steuerkomp. STEERING		
Regelkomp. STANDARD		
Steuerkomp. STEERING		

ALL DIMENSIONS IN mm

MHF/HF RADIOTELEPHONE 3120

OUTLINE DIMENSIONS
CONTROL UNIT, TRANSCEIVER
UNIT AND ANTENNA TUNING
UNIT

DEBEG

2-3-56
H30

5447-3E

Unit
Unit

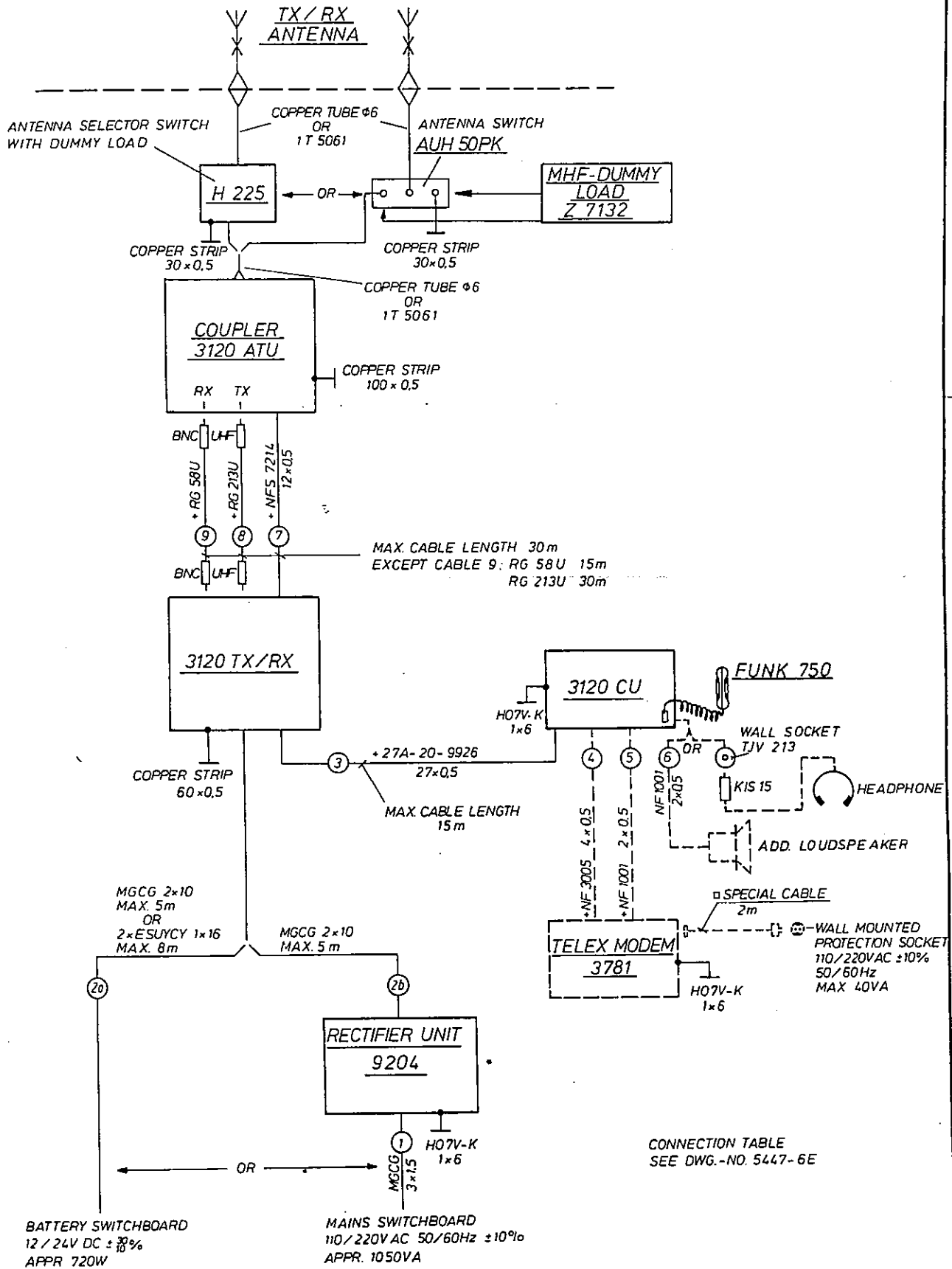
Start
Start

Blatt
Blatt

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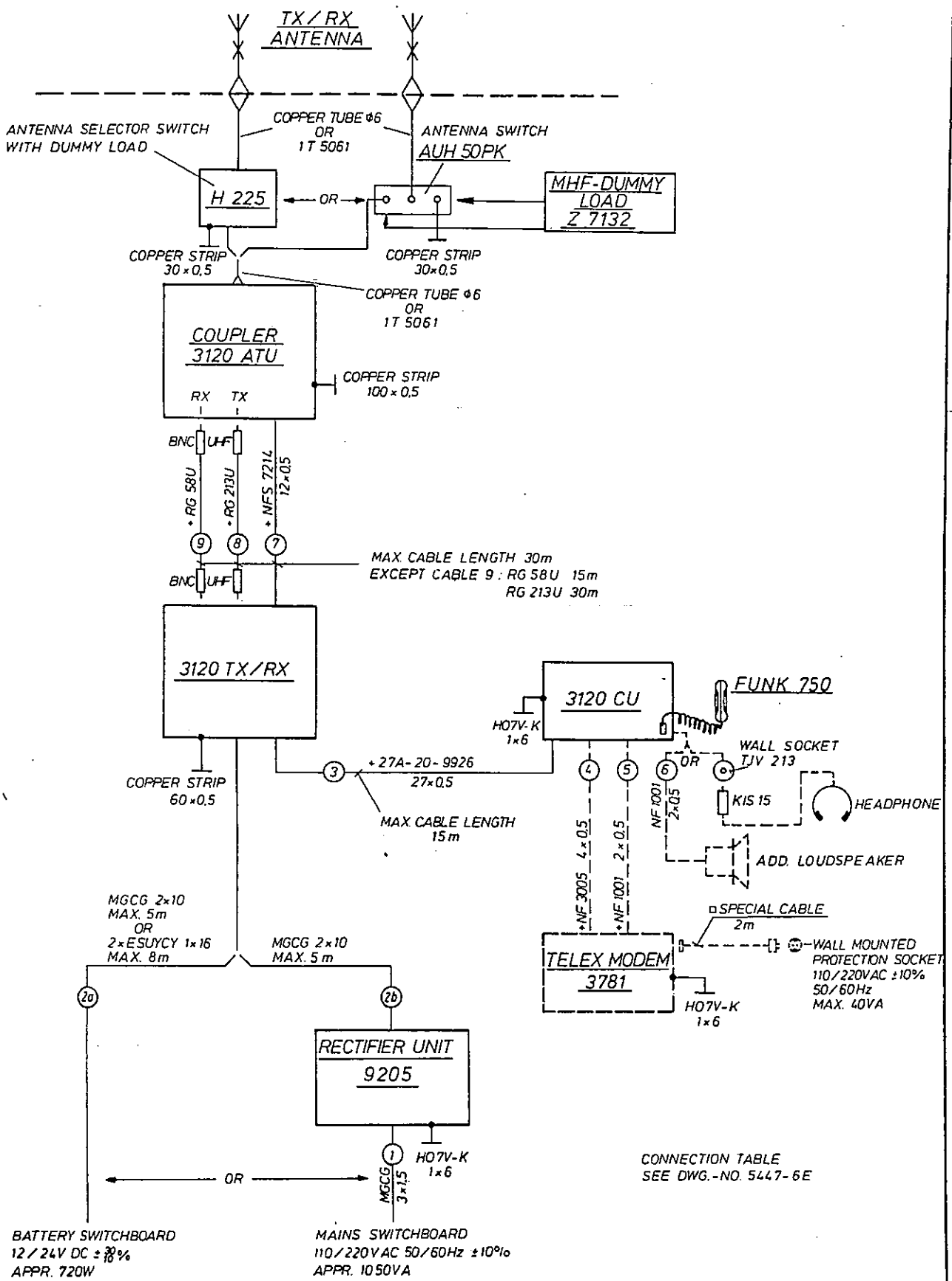
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 □ CABLE SUPPLIED WITH DEBEG EQUIPMENT.
 ALL CABLES TO BE INSTALLED BY THE SHIPYARD.
 * IN METALLIC CABLE CONDUIT.
 + IN METALLIC CABLE CONDUIT OR ON SEPARATE TRAY.

					Datum	Name	MHF/HF RADIOTELEPHONE 3120		
					Gezeichnet	25.6.86	Dröhne	CABLE DIAGRAM	Maßstab -
					Gepüft		Hta		
					Bearbeitet				
5	11598	4.11.87	Dr/La	Norm				Zchngs.-Nr. 5447-5E	Blatt -
4	11595	3.7.87	Dr/La						
3	11588	17.3.87	Dr/La						
2	13458	5.9.86	Li						
Ausgabe	Ander.-Nr.	Datum	Name	Ursprung	Ersatz Nr.	5447-1E	Ersatz durch:		Blätter

DEBEG

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CONNECTION TABLE
SEE DWG.-NO. 5447-6E

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 ALL CABLES TO BE INSTALLED BY THE SHIPYARD.
 * IN METALLIC CABLE CONDUIT.
 * IN METALLIC CABLE CONDUIT OR ON SEPARATE TRAY.

		Datum		Name		MHF/HF RADIOTELEPHONE 3120	
		Gezeichnet	17.3.87	Dröhne		CABLE DIAGRAM 12/24V DC OR 110/220V AC Maßstab -	
		Geprüft		Kaupe			
		Bearbeitet					
		Norm					
3	11598	4.11.87	Dr/La	DEBEG		Zchngs.-Nr.	5447-9E
2	11595	3.7.87	Dr/La			Blatt	-
Ausgabe	Änder.-Nr.	Datum	Name	Ursprung	Ersatz für	Ersetzt durch	- Blätter

CABLE TYPE: MGCG 3x1,5 CABLE NO.: 1 REMARKS: Cable Diagram see DWG. No. 5447-5E

FROM	TO
UNIT: MAINS Switch Board	UNIT: 9204 / 9205
PLUG CONSTRUCTION TYPE:	PLUG CONSTRUCTION TYPE:
PLUG TYPE:	PLUG TYPE:
PLUG POS. NO.:	PLUG POS. NO.:
TERMINAL POS. NO.:	TERMINAL POS. NO.:

CONTACT/TERMINAL NO.	CORE COLOUR	FUNCTION 9204	CONTACT/TERMINAL NO.
			+5V AC
	GR	0V AC	0V AC
			-5V AC
			210V AC
	BK	110/220V AC	220V AC
	RD	GROUND	GROUND
	SCREEN	GROUND	GROUND

CONTACT/TERMINAL NO.	CORE COLOUR	FUNCTION 9205	CONTACT/TERMINAL NO.
	GR	0V AC	2
	BK	110/220V AC	1
	RD	GROUND	GROUND
	SCREEN	GROUND	GROUND

		Datum	Name	MHFIHF RADIOTELEPHONE 3120	
		Gezeichnet	13.6.86	de	CONNECTION TABLE CABLE NO. 1
		Geprüft		Ha	
		Bearbeitet			
		Norm			
4	11598	4.11.87	Dr/La	DEBEG	Maßstab /
3	11588	17.3.87	Dr/La		
2	13458	2.9.86	Ha		
				Zchngs - Nr.	5447-6E
Ausgabe	Ander-Nr	Datum	Name	Ursprung	Ersetz für: 5447-4E / 5447-10E
				Ersetzt durch:	10 Blätter

code a 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



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CABLE TYPE: MGCG 2x10 OR 2xESUYCY 1x16	CABLE NO.: 2a	REMARKS: Cable length MGCG max. 5m, ESUYCY max. 8m. Cable Diagram see DWG No. 5447-5E	
FROM		TO	
UNIT: BATT. Switch board		UNIT: 3120 Tx/Rx	
PLUG CONSTRUCTION TYPE:		PLUG CONSTRUCTION TYPE:	
PLUG TYPE:		PLUG TYPE:	
PLUG POS. NO.:		PLUG POS. NO.:	
TERMINAL POS. NO.:		TERMINAL POS. NO.: P6	
CONTACT/TERMINAL NO.	CORE COLOUR	FUNCTION	CONTACT/TERMINAL NO.
	MGCG 2x10	GR	+12V/24V DC
		BK	-12V/24V DC
		SCREEN	GROUND
			1
			2
			GROUND
OR			
	2x ESUYCY 1x16	TRANSPARENT	+12V/24V DC
		SCREEN	GROUND
		TRANSPARENT	-12V/24V DC
		SCREEN	GROUND
			1
			GROUND
			2
			GROUND

CABLE TYPE: MGCG 2x10	CABLE NO.: 2b	REMARKS: Cable Length MGCG max. 5m, CABLE Diagram see DWG. No 5447-5E																																																				
FROM		TO																																																				
UNIT: 9204		UNIT: 3120 Tx/Rx																																																				
PLUG CONSTRUCTION TYPE:		PLUG CONSTRUCTION TYPE:																																																				
PLUG TYPE:		PLUG TYPE:																																																				
PLUG POS. NO.:		PLUG POS. NO.:																																																				
TERMINAL POS NO.:		TERMINAL POS. NO.: P6																																																				
CONTACT/TERMINAL NO.	CORE COLOUR	FUNCTION	CONTACT/TERMINAL NO.																																																			
+24V DC	GR	+24V DC	1																																																			
-24V DC	BK	-24V DC	2																																																			
GROUND	SCREEN	GROUND	GROUND																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;">Datum</td> <td style="width: 15%;">Name</td> <td colspan="2">MHFIHF RADIOTELEPHONE 3120</td> </tr> <tr> <td></td> <td></td> <td>Gezeichnet</td> <td>13.6.86</td> <td>li</td> <td rowspan="4" style="text-align: center; vertical-align: middle;"> CONNECTION TABLE CABLE NO. 2a/2b </td> </tr> <tr> <td></td> <td></td> <td>Geprüft</td> <td></td> <td>Ha</td> </tr> <tr> <td></td> <td></td> <td>Bearbeitet</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>Norm</td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: center;">DEBEG</td> <td>Zchns.-Nr.</td> <td>5447-6E</td> </tr> <tr> <td>2</td> <td>13458</td> <td>2.9.86</td> <td>Ha</td> <td></td> <td>Blatt 2</td> </tr> <tr> <td>Ausgabe</td> <td>Ander-Nr.</td> <td>Datum</td> <td>Name</td> <td>Ursprung</td> <td>Ersatz für 5447-4E</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Ersetzt durch</td> </tr> </table>						Datum	Name	MHFIHF RADIOTELEPHONE 3120				Gezeichnet	13.6.86	li	CONNECTION TABLE CABLE NO. 2a/2b			Geprüft		Ha			Bearbeitet					Norm			DEBEG				Zchns.-Nr.	5447-6E	2	13458	2.9.86	Ha		Blatt 2	Ausgabe	Ander-Nr.	Datum	Name	Ursprung	Ersatz für 5447-4E						Ersetzt durch
		Datum	Name	MHFIHF RADIOTELEPHONE 3120																																																		
		Gezeichnet	13.6.86	li	CONNECTION TABLE CABLE NO. 2a/2b																																																	
		Geprüft		Ha																																																		
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DEBEG				Zchns.-Nr.	5447-6E																																																	
2	13458	2.9.86	Ha		Blatt 2																																																	
Ausgabe	Ander-Nr.	Datum	Name	Ursprung	Ersatz für 5447-4E																																																	
					Ersetzt durch																																																	





CABLE TYPE: *NF 6007*
7x0.5

CABLE NO.: *4*

REMARKS: CONNECTION Diagram 3781 see
DWG NO. 5168-2E
Cable Diagram see DWG. No. 5447-5E

FROM

TO

UNIT: *3120 CU*
PLUG CONSTRUCTION TYPE:
PLUG TYPE:
PLUG POS NO.:
TERMINAL POS. NO.: *TB2*

UNIT: *TELEX MODEM 3781*
PLUG CONSTRUCTION TYPE: *LF-PLUG MALE*
PLUG TYPE: *DEM 9P*
PLUG POS. NO.: *BU101*
TERMINAL POS. NO.:

CONTACT/TERMINAL NO.	CORE COLOUR	FUNCTION	CONTACT/TERMINAL NO.
<i>1</i>	<i>BN</i>	<i>SIG-IN</i>	<i>2</i>
<i>2</i>	<i>BL</i>	<i>SI-G</i>	<i>6</i>
<i>5</i>	<i>GN</i>	<i>KEY-H</i>	<i>3</i>
<i>6</i>	<i>GR</i>	<i>KEY-R</i>	<i>5</i>
<i>GROUND</i>	<i>SCREEN</i>	<i>GROUND</i>	<i>7, 8, 9</i>
	<i>P</i>	<i>SPARE</i>	
	<i>WH</i>	<i>SPARE</i>	
	<i>YE</i>	<i>SPARE</i>	

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				Datum	Name	MHFIHF RADIOTELEPHONE 3120		
				Gezeichnet	<i>13 6 86</i>	<i>li</i>	CONNECTION TABLE CABLE NO. 4	
				Geprüft		<i>lta</i>		
				Bearbeitet				
				Norm				
DEBEG						Zchngs.-Nr.	<i>5447-6E</i>	Maßstab <i>/</i>
								Blatt <i>4</i>
<i>2</i>	<i>13458</i>	<i>2.9.86</i>	<i>lta</i>	Ursprung	Ersatz fur	<i>5447-4E</i>	Ersetzt durch	<i>9 Blätter</i>



