

RS-4 VHF Repeater

RS-5 UHF Repeater

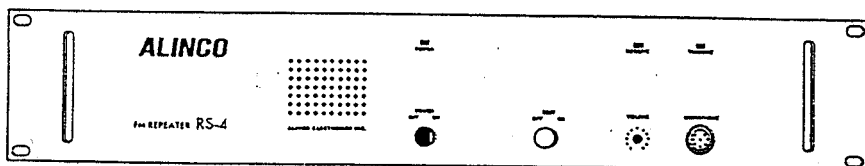
VHF: TE1/136 ~ 155MHz TE2*/150 ~ 174MHz

UHF: TE1/400 ~ 420MHz TE2/450 ~ 470MHz

CROSSBAND RS-5₄ Tx: 450 ~ 470MHz/Rx: 150 ~ 174MHz

CROSSBAND RS-4₅ Tx: 136 ~ 155MHz/Rx: 400 ~ 420MHz

*Serial No. 57051 ~



INSTRUCTION MANUAL

Thank you for purchasing this ALINCO RS-4/RS-5 Repeater. This instruction manual contains important safety and operating instructions. Please read it carefully before using the transceiver and conserve for future reference.

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INTRODUCTION AND PRECAUTIONS

Thank you very much for purchasing the ALINCO repeater RS-4/5. ALINCO repeater and other products are ranked as some of the finest in the world. Your repeater RS-4/5 has been manufactured and tested very carefully at the factory and will give you satisfactory operation for many years. We are confident that you will be very satisfied with your choice of this fine ALINCO repeater.

In order to maintain the fine specifications of this repeater, please read the followings carefully:

- 1) Do not try to touch components inside unless this manual specifies. Eventual attempt may void the warranty and may cause serious damage to the repeater.
- 2) Do not expose the repeater to direct sun-light or to source of heat. Avoid installing the repeater in extremely dusty and/or humid environment.
- 3) Do not place anything which might spill over on top of the repeater.
- 4) For good ventilation allow at least 10 cm space behind the repeater from the wall.
- 5) Beware of moisture condensation. If condensation forms on the repeater, wipe and let dry. Do not turn on the repeater for a while.
- 6) If the unit ever emits smoke or strange smells, turn off the repeater immediately and contact an authorized ALINCO dealer.

1. GENERAL

1-1 SPECIFICATIONS

General

Frequency Range (Versions):	VHF: 136 ~ 155MHz (TE1), 150 ~ 174MHz (TE2) UHF: 400 ~ 420MHz (TE1), 450 ~ 470MHz (TE2)
Maximum Channel Spread:	VHF: 19MHz (TE1), 24MHz (TE2) UHF: 20MHz
Number of Channels:	1
Channel Spacing:	25kHz (12.5kHz as option)
Frequency Stability:	± 5 ppm (VHF), ± 3 ppm (UHF)
Voltage Requirement:	13.8VDC negative ground
Current Consumption:	10ADC TX / 500mADC standby
Operating Temperature Range:	- 10°C ~ + 60°C
Duty Cycle:	Continuous
Dimensions (approx.):	481(W) × 88(H) × 403(D) mm
Weight (approx.):	7kg
Panel:	19" × 2U

Transmitter

RF Power Output:	35 Watts (VHF), 25 Watts (UHF) continuous-duty
FM Noise:	better than 40dB @ 1kHz
Modulations System:	Variable Reactance Modulation
Maximum Deviation:	± 5 kHz (25kHz spacing)
Transmit Activation System:	Carrier
Audio Response Characteristic:	6dB/octave pre-emphasis from 300Hz ~ 3kHz
Audio Distortion:	Less than 5% @ 1kHz
Spurious Emission:	better than 65dB (below carrier without duplexer)

Receiver

Circuit Type:	Double-Conversion Superheterodyne
	VHF: 17.2MHz & 455kHz UHF: 30.85MHz & 455kHz
Sensitivity:	0.35 μ V for 12dB SINAD
Spurious Rejection:	better than 75dB
Adjacent Channel Selectivity:	better than 70dB
Intermodulation Response:	better than 70dB
Receiver S/N Ratio:	better than 40dB

Control Unit

Tone Encoder (CTCSS):	50 tones
Tone Decoder (CTCSS):	50 tones (Option EJ-20U)
Response Time:	250msec. or less
Hang-Up Timer:	0 ~ 7 second. 1 sec. step
Time-Out-Timer:	Off or 30 ~ 450 sec. 30 sec. step
Number of Channel:	1

1-2 FEATURES

Standard 19-inches rack-in type x 2U dimensions with carry-handles on both sides of front-panel permit easy installation.

High 35 Watts output power for VHF RS-4 and 25 Watts for UHF RS-5.

Enough space is available inside for optional accessories such as duplexer and CTCSS decoder unit.

Features Time-Out-Timer, Hang-Up-Timer and 50 sub-tones CTCSS encoder as standard functions. A variety of optional accessories such as trunking controller and emergency power switch kit are also available to satisfy most-advanced users as well.

Volume control and microphone connector are provided on the front-panel for base-station use. Squelch level can be adjusted by VR inside with option to position it on the front-panel.

Frequency synthesized computer programmable.

1-3 ACCESSORIES — STANDARDS AND OPTIONS

A) STANDARD ACCESSORIES — Check if all below are packed.

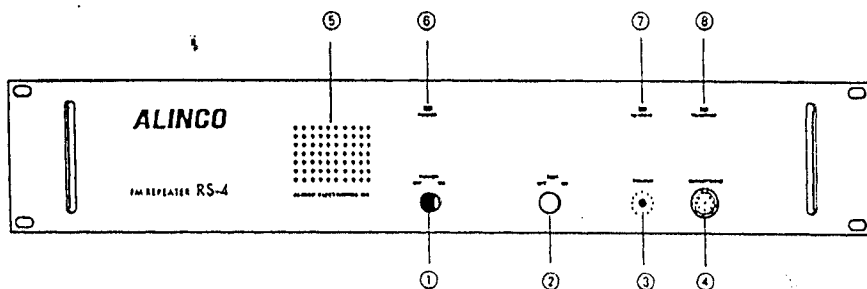
Instruction Manual (this leaflet)	1 pc.
Fuse 4A and 15A	1 pc. each
DC power cable (2 Mts.)	1 pc.
BNC-P connector for co-ax cable equivalent to 3D2V.....	2 pcs.
Wire set for optional DP-2D	1 set

B) OPTIONS

DP-2D	Radiotelephone Trunking Controller
EJ-29U	Emergency Power Switch Kit
EJ-20U	CTCSS Decoder Unit
EJ-30U	External Squelch Volume
EMS-14	Desktop Microphone (w/out DTMF Key-Pad)
EMS-12	Handheld Microphone with DTMF Key-pad
EM0093	Handheld Microphone Hanger
ERW-2B	PC Programmable EEPROM Writer
RCS-3U	19" Rack (accommodates one RS-4 or RS-5 and one DP-2D trunking controller)
SSQ-2A	Duplexer (VHF: 138 ~ 170MHz offset 4 ~ 10MHz) (UHF: 400 ~ 470MHz offset 7 ~ 15MHz)
DM-1350Z	Regulated DC Power Supply in: 220VAC/out: 13.8VDC
DM-1350T	Regulated DC Power Supply in: 120VAC/out: 13.8VDC
EMP3401.24.A	Lightening Protector (Swiss made) (fuse not incl) max 150W @ VSWR < 1.2
73Z-0-0-47	Fuse ("Capsule") for EMP3401.24.A

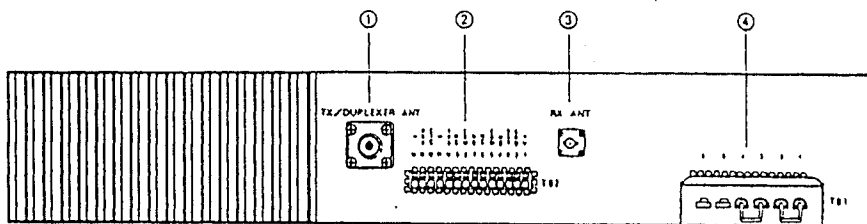
2. CONTROL

2-1 FRONT PANEL



- ① Power Switch: Press to turn the power ON and OFF.
- ② Test Switch: Press to transmit (this position may be replaced with the squelch volume, see Section 4-5 Optional Accessories).
- ③ Volume Control: Adjust the audio output.
- ④ MIC connector: Connect optional microphone to operate as a base-station.
- ⑤ Speaker: Built-in speaker for monitoring.
- ⑥ Power Indicator: Lights when the repeater is turned ON.
- ⑦ RX Indicator: Lights when a signal is received.
- ⑧ TX Indicator: Lights during transmission.

2-2 REAR PANEL



- ① TX/Duplexer antenna connector: Connect TX antenna here.
- ② Accessory terminals: To connect optional control panels, DP-2D, etc.
- ③ RX antenna connector: Connect RX antenna here.
- ④ DC power supply terminals: For DC power supply input. Connect a 13.8VDC regulated source capable of 20A continuous duty. If the option EJ-29U is used, connect a 14.4VDC regulated source capable of 20A continuous duty, and a 12VDC battery as a back-up source (See Section 4-3).



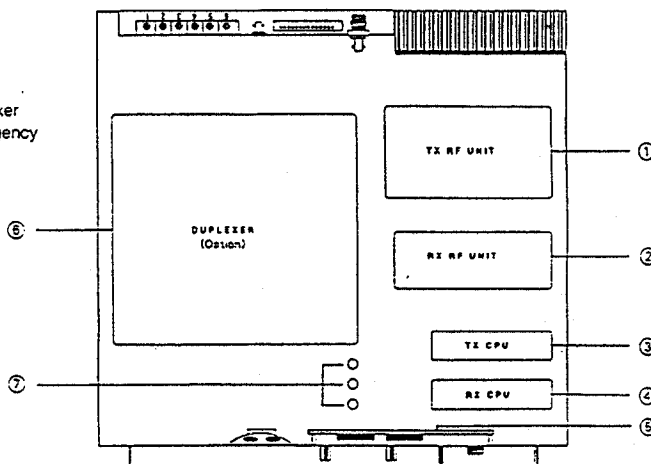
2-2-1 ACCESSORY TERMINAL BLOCK ASSIGNMENTS

No.	Title	Description
1	+V	13.8VDC output. Max. 3 Amps. (Connect with terminal No. 1 of DP-2D).
2	GND	Ground (Connect with terminal No. 2 of DP-2D).
3	BSY	NC
4	NO	Ground
5	COM	TX PTT input; normally 5VDC, pull down to ground to key transmitter (Connect with terminal No. 5 of DP-2D).
6	NC	NC
7	NO	NC
8	COM	NC
9	NC	NC
10	TXA	Audio input to transmitter microphone. Input level 600mVp-p (100k Ω , 5kHz Dev). (Connect with terminal No. 10 of DP-2D).
11	—	Ground (Can be used to connect with the shielding of the lines connected to No. 10 and No. 11).
12	CTC	CTCSS Tone Encoder input (Connect with terminal No. 12 of DP-2D).
13	RXA	Audio output from receiver discriminator, before de-emphasis. 600mVp-p (1.5k Ω , 5kHz Dev) (Connect with terminal No. 12 of DP-2D).
14	—	Ground (Can be used to connect with the shielding of the line connected to No. 13).

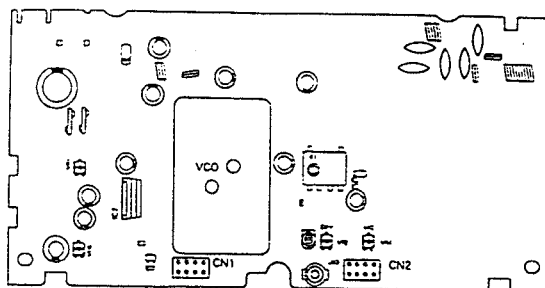
2-3 INSIDE — COMPONENTS LOCATION DIAGRAM

To remove the upper cover, remove 8 screws, three each are located on both sides and two in the rear.

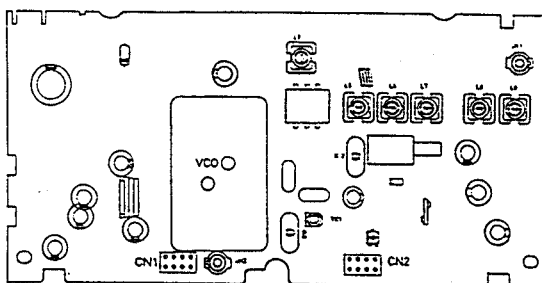
- ① TX RF Unit
- ② RX RF Unit
- ③ TX CPU Unit
- ④ RX CPU Unit
- ⑤ Operation Unit
- ⑥ Space to install an optional duplexer
- ⑦ Space to install an optional emergency power switch kit EJ-29U



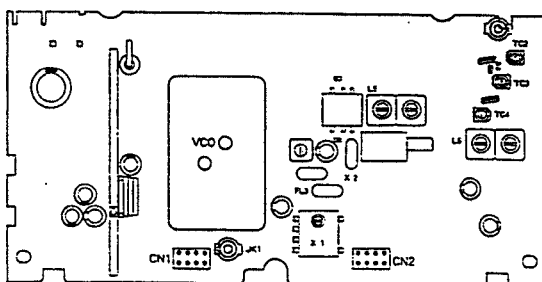
TX RF Unit (VHF/UHF)



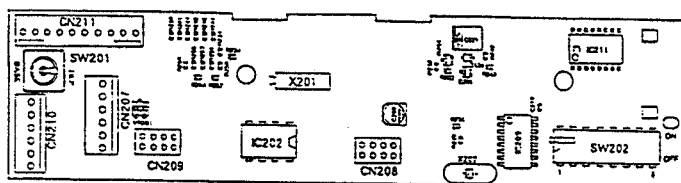
RX RF Unit (VHF)



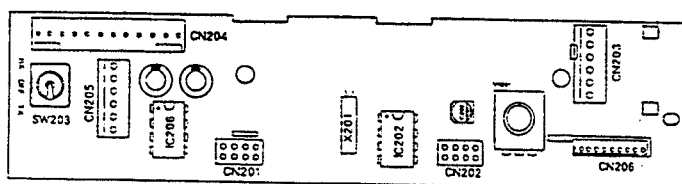
RX RF Unit (UHF)



TX CPU Unit



RX CPU Unit



3. PROGRAMMING AND MODE SET-UP

3-1 Programming EEPROM

Remove the upper case of the repeater by unscrewing 8 screws located around the unit. Connect Mic connector of ERW-2 with the Mic connector of the repeater. Connect ERW-2 and the PC with a printer cable. Run the "RS-****" software. In programming the receiver and transmitter of the repeater, always select Channel 00 on your computer screen. On your computer the software runs as follow:

To program the receiver data, press RETURN key to choose Channel 00.

Press TAB key to go to next field.

Press Shift & TAB keys to go back to previous field.

Input the RECEIVING frequency; ignore "OFFSET".

To activate the tone squelch, select "Tone Squelch" in the CTCSS field, and choose the tone freq in the TONE field (Tone squelch unit EJ-20U is an option).

Now toggle the repeater's SW203 (RX CPU Unit) to position "RX". Then on your computer:

Press ALT + R to select the Radio pull-down menu;

Move the cursor on "WRITE" and press RETURN key: the data will be written into the repeater (RX).

Now, to program transmitter data, on your computer:

Press RETURN key to choose Channel 00.

Input the TRANSMITTING frequency;

Ignore "OFFSET": If any data is in the offset it should be 00.000MHz

To activate the CTCSS tone encoder, select "Tone" in the CTCSS field, and choose the tone frequency.

To activate the Time-Out-Timer, press ALT + O to select the Option pull-down menu, and select TOT;

This will let you scroll TOT timer in seconds. Note TOT = 0 means TOT = off.

Now toggle the repeater's SW203 to position "TX". Then on your computer:

Press ALT + R to select the Radio pull-down menu;

Move the cursor on "WRITE" and press RETURN key: the data will be written into the repeater (TX).

Upon completion, toggle the SW203 to position "OFF" (centre), and take out the ERW-2 cable from the Mic connector of the repeater. Test the repeater for the programmed settings before subjecting it to normal duty.

3-2 SET-UP

A) TO ADJUST SQUELCH LEVEL

The squelch VR can be found on the RX CPU board, VR201. Turn VR201 to set the squelch level.

The optional EJ-30U (squelch kit) will let you have the squelch control on the repeater's front panel.

B) TO ADJUST HANG-UP-TIMER LEVEL

The Hang-Up-Timer can be set from 0 to 7 second with 1 second step. The DIP switch on the TX CPU Unit SW202 sets the Hang-Up time. Each DIP position "1" to "8" correspond with 0 to 7 second hang time. For example, if Hang-up time desired is 4 second, positions the DIP switch "5" to ON with all others remaining at OFF position. If two or more switches are toggled ON, the repeater gives the priority to the shortest second selected and the others will be ignored. (NOTE: If Hang-up time is 0 second, the

C) CABLE CONNECTION

Connect the supplied DC cable to the DC terminal on the rear-panel as shown below. Pay attention to the polarity and connect another end to the DC power supply. Regulated supply 13.8VDC with 20A continuous duty is required. ALINCO recommends DM-1350Z/1350T as a power source.

D) ANTENNA CABLE CONNECTION

***In case of using Two separate antennas for TX and RX**

Connect receiving antenna cable with BNC-P to the RX connector on the rear panel. Connect Transmission antenna cable with PL-259 to the TX connector on the rear panel.

***In case of using a duplexer**

Connect the antenna cable with PL-259 to the TX connector on the rear panel. See section 4-1 INSTALLATION OF OPTIONAL ACCESSORIES for the installation of a duplexer.

E) REPEATER MODE

Toggle the SW201 on the TX CPU Board towards "REP" side to operate the RS-4/5 as a repeater. Pressing PTT switch on an optional microphone connected with RS-4/5 will allow operator to transmit on the downlink frequency.

F) BASE MODE

Toggle the SW201 on the TX CPU Board towards "BASE" side to operate the RS-4/5 as a base transceiver with an optional microphone. When the RS-4/5 is used with the DP-2D Trunking Controller, the RS-4/5 must be operated in the BASE mode.

4. INSTALLATION OF OPTIONAL ACCESSORIES

4-1 DUPLEXER SSQ-2A

SSQ-2A must be preset to precise TX/RX frequencies.

Adjustable range: VHF/135 ~ 170MHz offset 4 ~ 10MHz

UHF/400 ~ 470MHz offset 7 ~ 15MHz

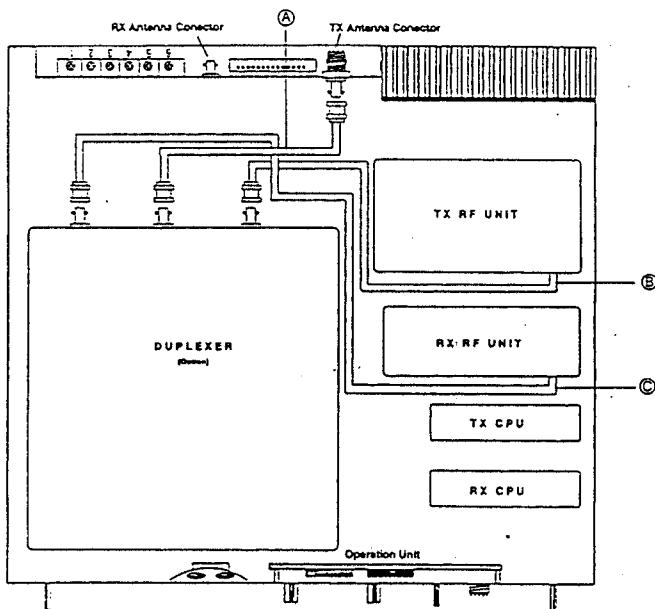
An optional SSQ-2A duplexer can be mounted inside the repeater.

Connect the co-ax cables as shown below in the diagram.

Ⓐ: Cable for Duplexer

Ⓑ: Cable for TX RF Unit

Ⓒ: Cable for RX RF Unit



4-2 TRUNKING CONTROLLER DP-2D

Toggle the SW201 of TX CPU Unit to "BASE" side. Set the hang-up-timer to 0.

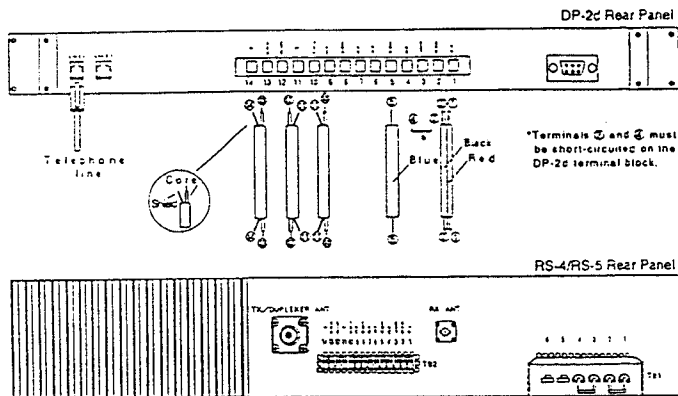
Do not program CTCSS encoder or decoder.

Following the diagram shown below, make wire-connections.

Use cables provided with RS-4/5 as standard accessory.

For adjustments in the DP-2d, see the DP-2d manual.

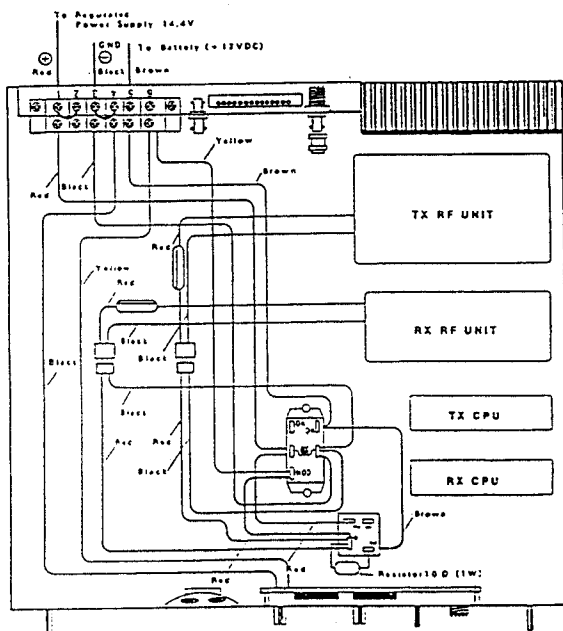
NOTE: In event of RF feed-back during the trunked operation, check ground loop effects caused by wirings; A use of RF-Choke on GND cable may be helpful to resolve the problem.



4-3 EMERGENCY POWER SWITCH KIT EJ-29U

The EJ-29U automatically switches the regular power source to a Back-Up power source in event of power failure.

Connect wires following as diagram shown below.

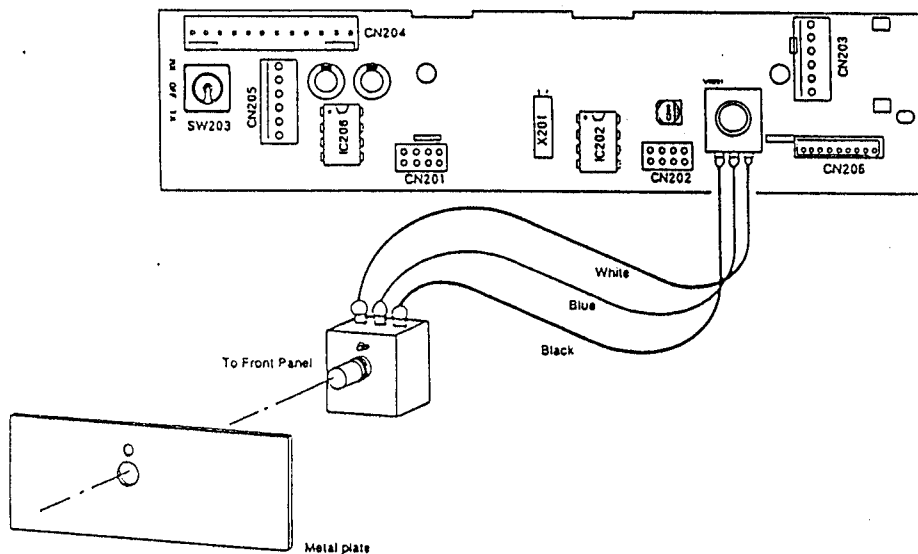


4-4 CTCSS DECODER UNIT EJ-20U

Connect EJ-20U's connector to CN206 connector on RX CPU Board. Using the double-face adhesive tape provided, attach EJ-20U unit neatly on RX CPU Board.

4-5 EXTERNAL SQUELCH VOLUME

1. Take off the front panel and remove the operation unit.
2. Remove the "TEST" switch from the panel.
3. Insert the EJ-30U volume into the hole of metal plate provided with the EJ-30U, then attach to the front panel.
4. Free RX CPU Board from the repeater's chassis by disconnecting cables and unscrewing fixing-screws. Take VR201 off the board (solder/disolder-iron required).
5. Solder EJ-30U's wires to RX CPU Board according to the diagram shown below.
6. Place RX CPU Board on the repeater's chassis. Replace EJ-30U's squelch volume with the TEST SWITCH located on the front-panel. Cut TEST SWITCH's wire and remove it from the OPERATION Board.



5. ALIGNMENT

CAUTION: Following alignments must be done by qualified personnel in adequate laboratory **ONLY**. Damages caused by unnecessary alignments void the warranty.

5-1 RX SENSITIVITY

Align L3, L5, L6, L7, L8 and L9 on VHF RX RF Board to obtain the best 12dB SINAD Value.

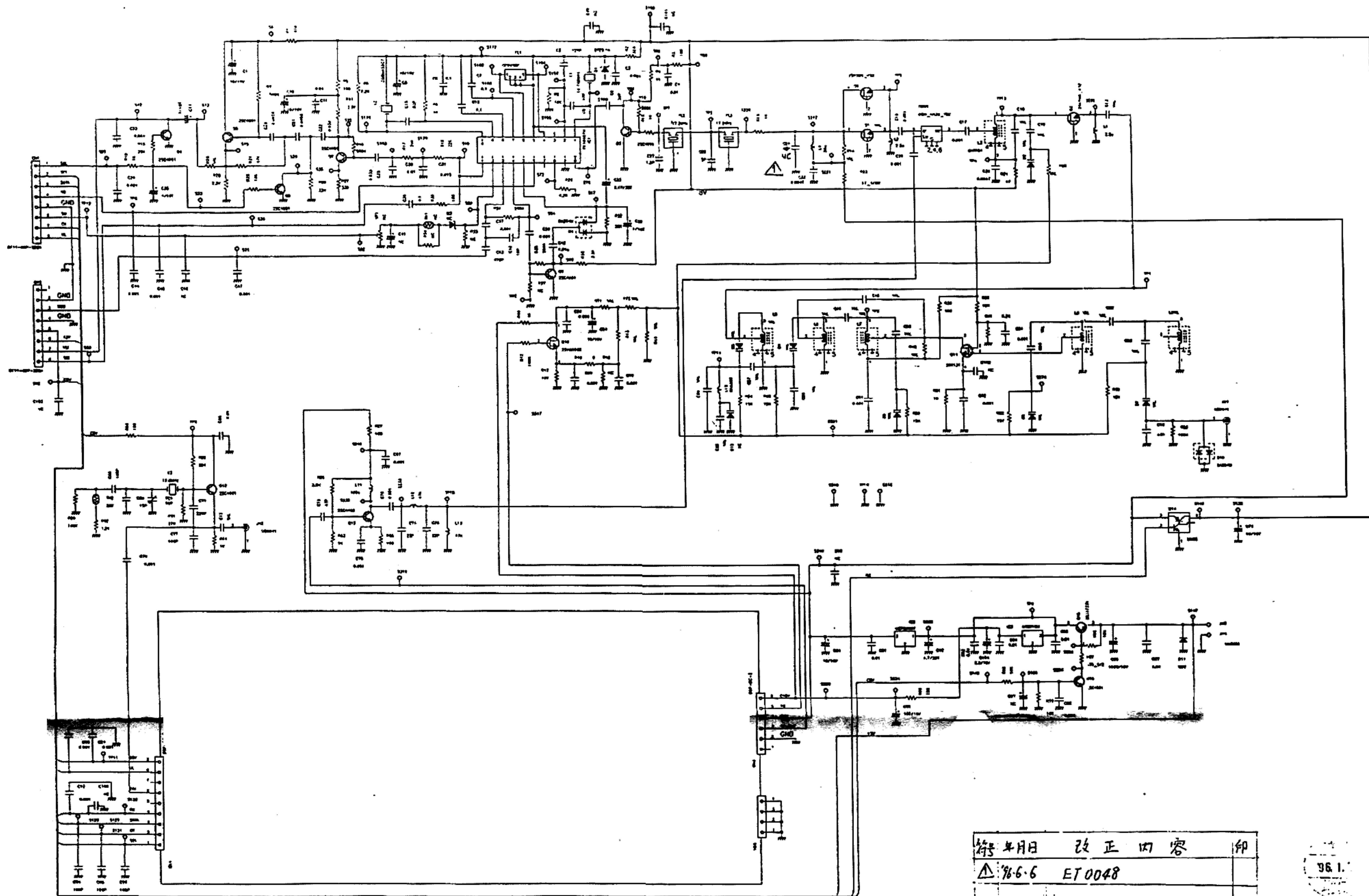
Align TC2, TC3, TC4, L5, and L6 on UHF RX RF Board to obtain the best 12dB SINAD Value.

5-2 TX DEVIATION

Using an audio-generator, feed to MIC at 1kHz $-30\text{dB}\mu$ and measuring on the desired TX frequency adjust VR2 to $4.8 \pm 0.2\text{kHz}$.

5-3 MIC GAIN

Using an audio-generator, feed to MIC at 1kHz $-45\text{dB}\mu$ and measuring on the desired TX frequency adjust VR4 to $3.5 \pm 0.2\text{kHz}$.



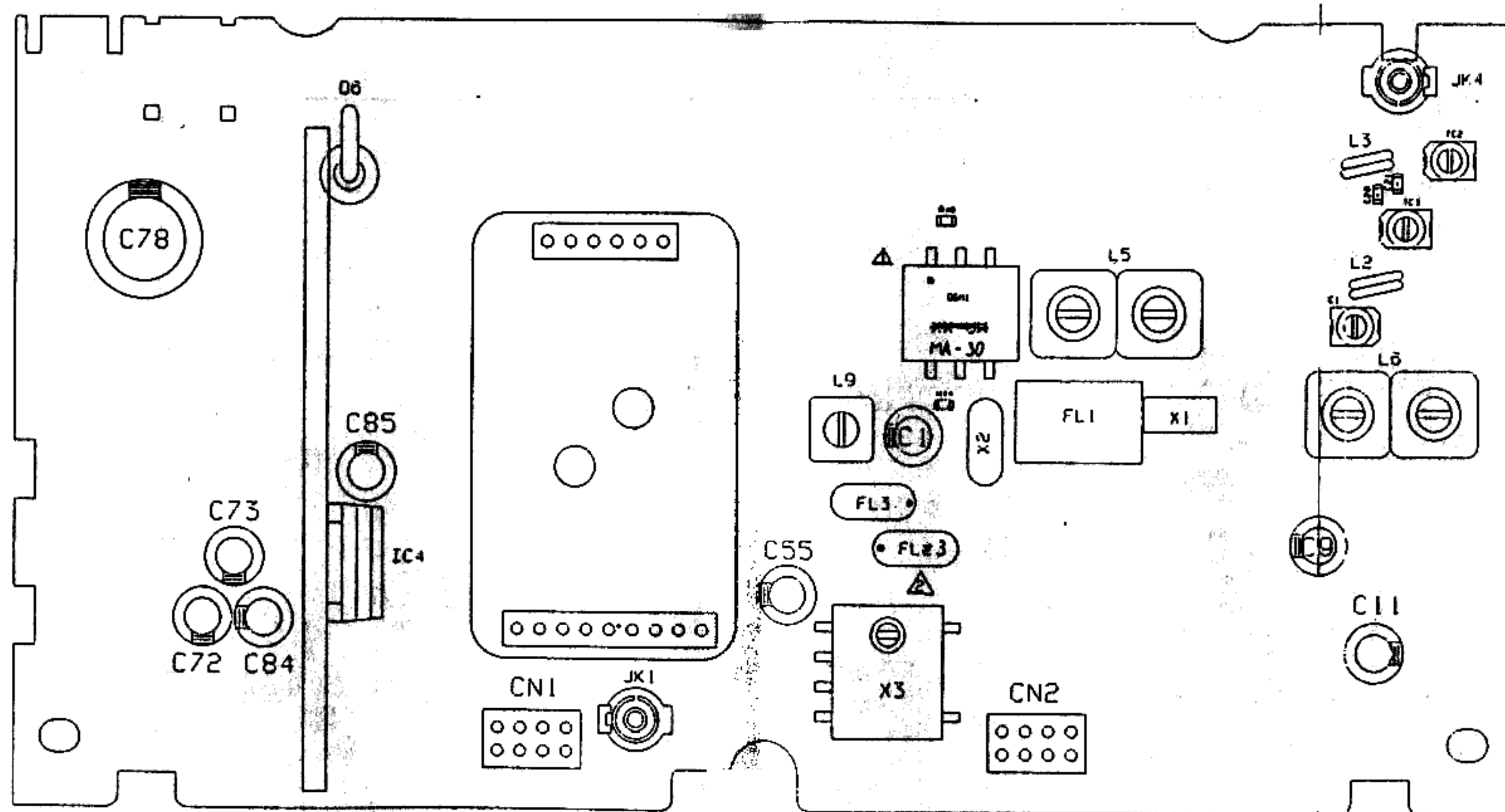
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TE1	100K	100P	SP	9P	NC	SP	NC	1P	47P	39P	39P	4P	39P	39P	NC	3.9K	NC	0	15K	47K	100K	10K	NC	1SV215	1SV215	1SV215	1SV215	1SV215	2SK508	OA0084	OA0084	OA0084	3A0084	OA0084
TE2	15K	1000P	15P	NC	33P	NC	1.5P	1.5P	1000P	1000P	182P	33P	33P	NC	33P	3.3K	15K	10K	3.9K	680	NC	0	1SV214	1SV214	1SV214	1SV214	1SV214	1SV214	NC	OA0100	OA0100	OA0100	3A0100	OA0100

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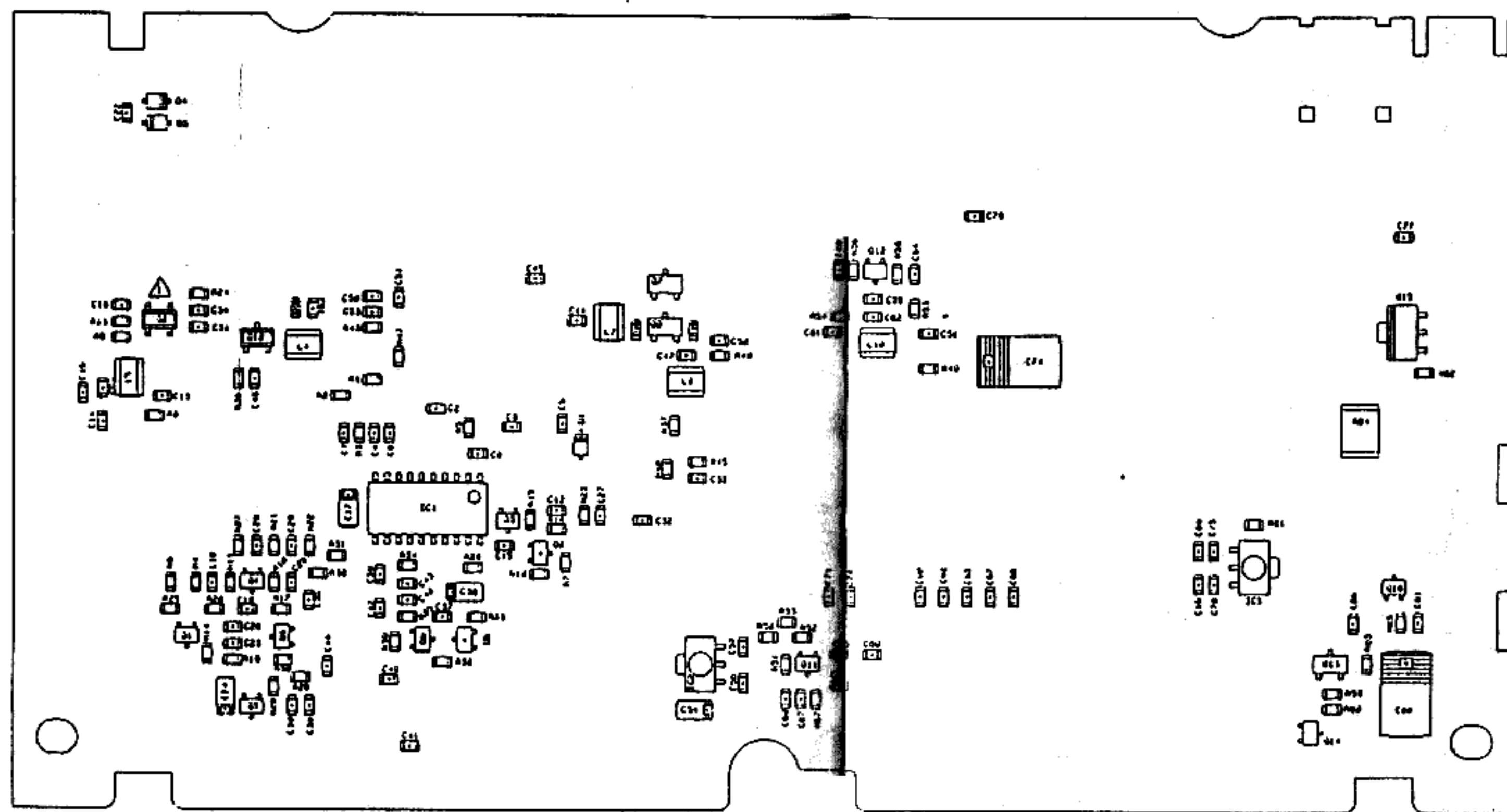
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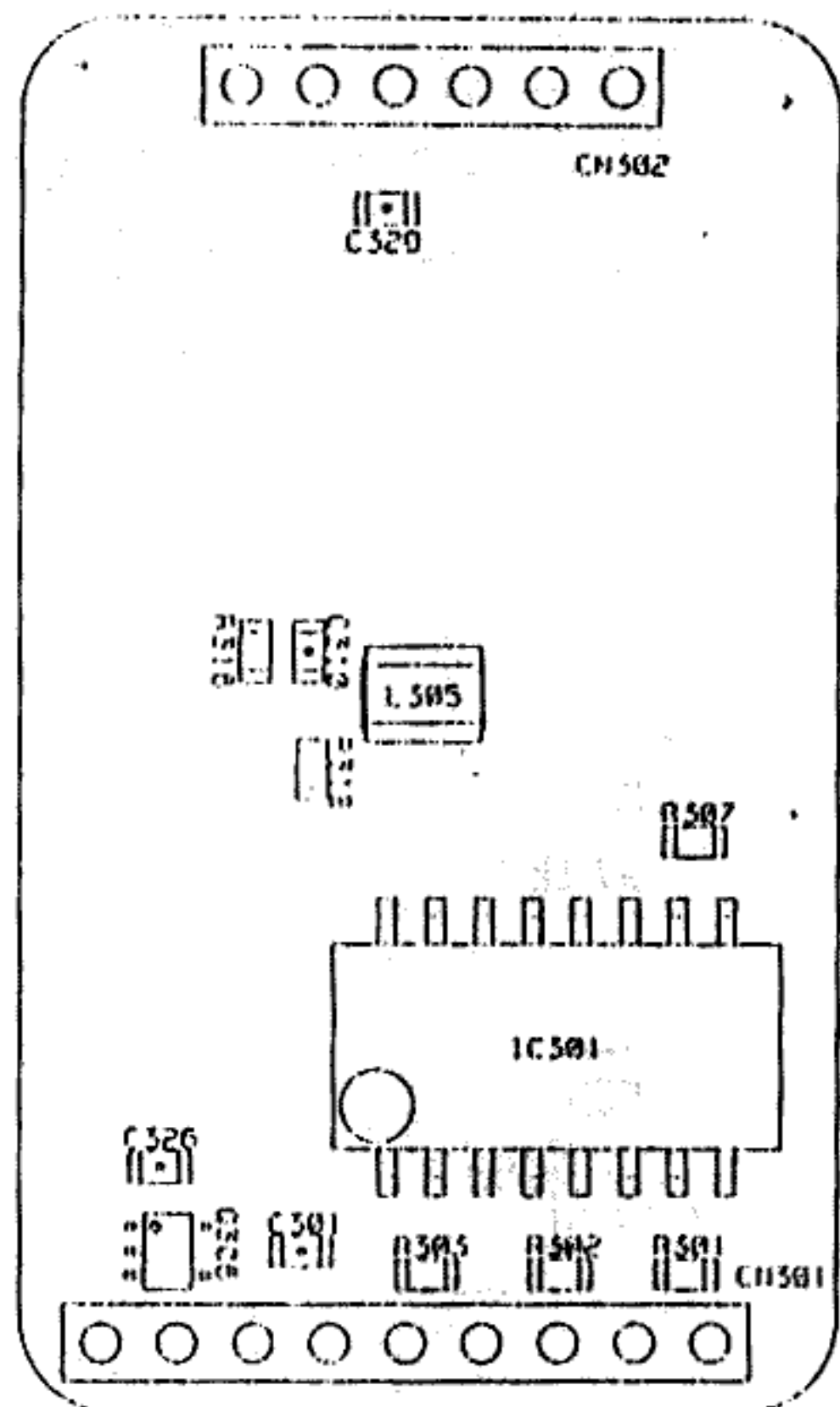
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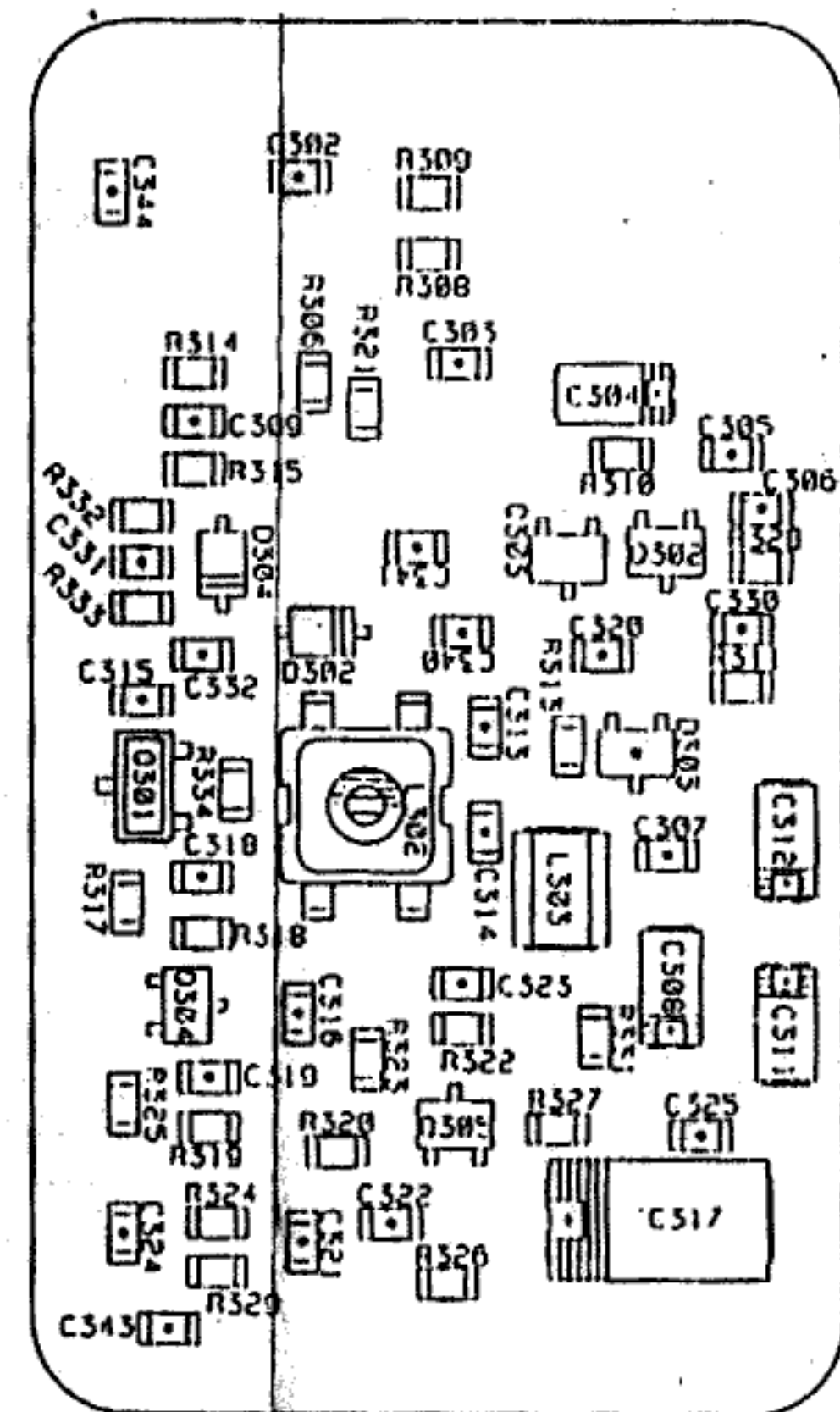
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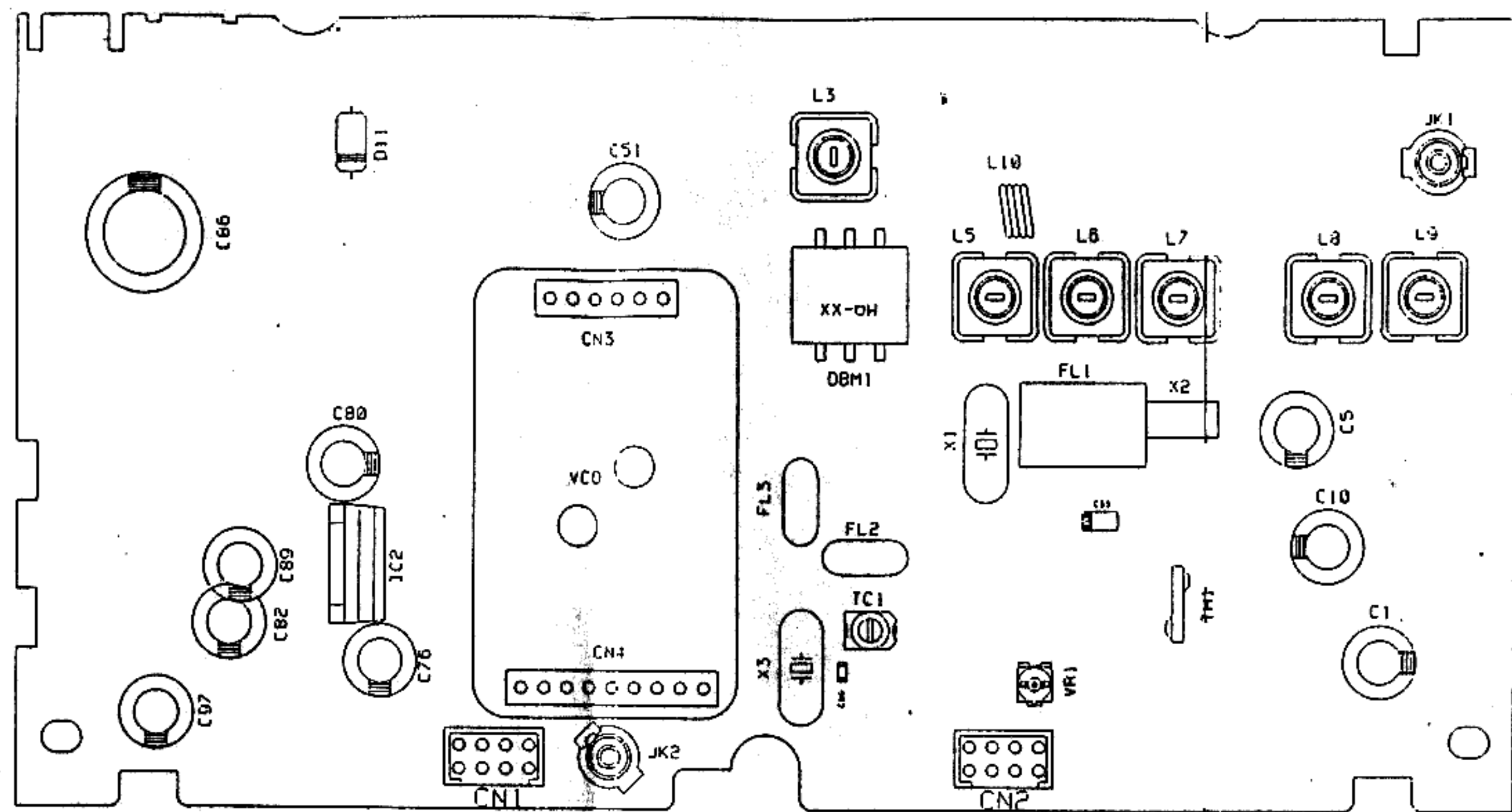
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	...						R -355 T N		
	...						R -360 T N		
	...						R -365 T N		
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	...						R -405 T N		
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	...						R -415 T N		
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	...						R -475 T N		
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	...						R -485 T N		
	...						R -490 T N		
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	...						R -1250 T N		
	...						R -1255 T N		
	...						R -1260 T N		
	...						R -1265 T N		
	...						R -1270 T N		



品名(品番)		規格	数量	単位	備考
RS4	RX VCD	1.7%	1	個	1.2
REF	A面				



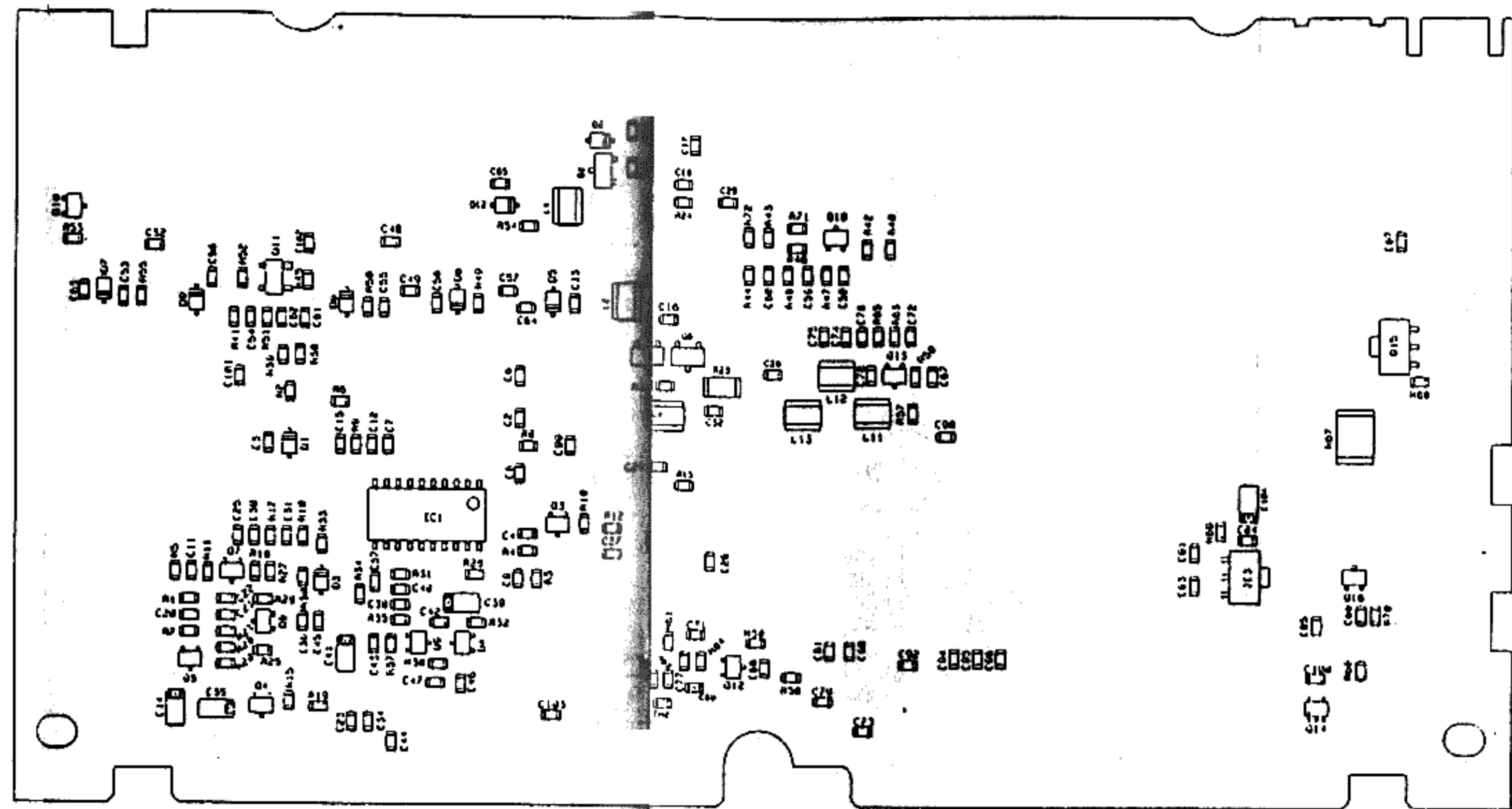
品名(品番)		規格	数量	単位	備考
RS1	RX VCD	1.7%	1	個	1.2
REF	B面				



- 100Ω CHIP RESISTOR
- 100pF CHIP CERAMIC CAPACITOR
- 0.500E
- USM TRANSISTOR
- S-MINI TRANSISTOR
- CHIP TANTALUM CAPACITOR

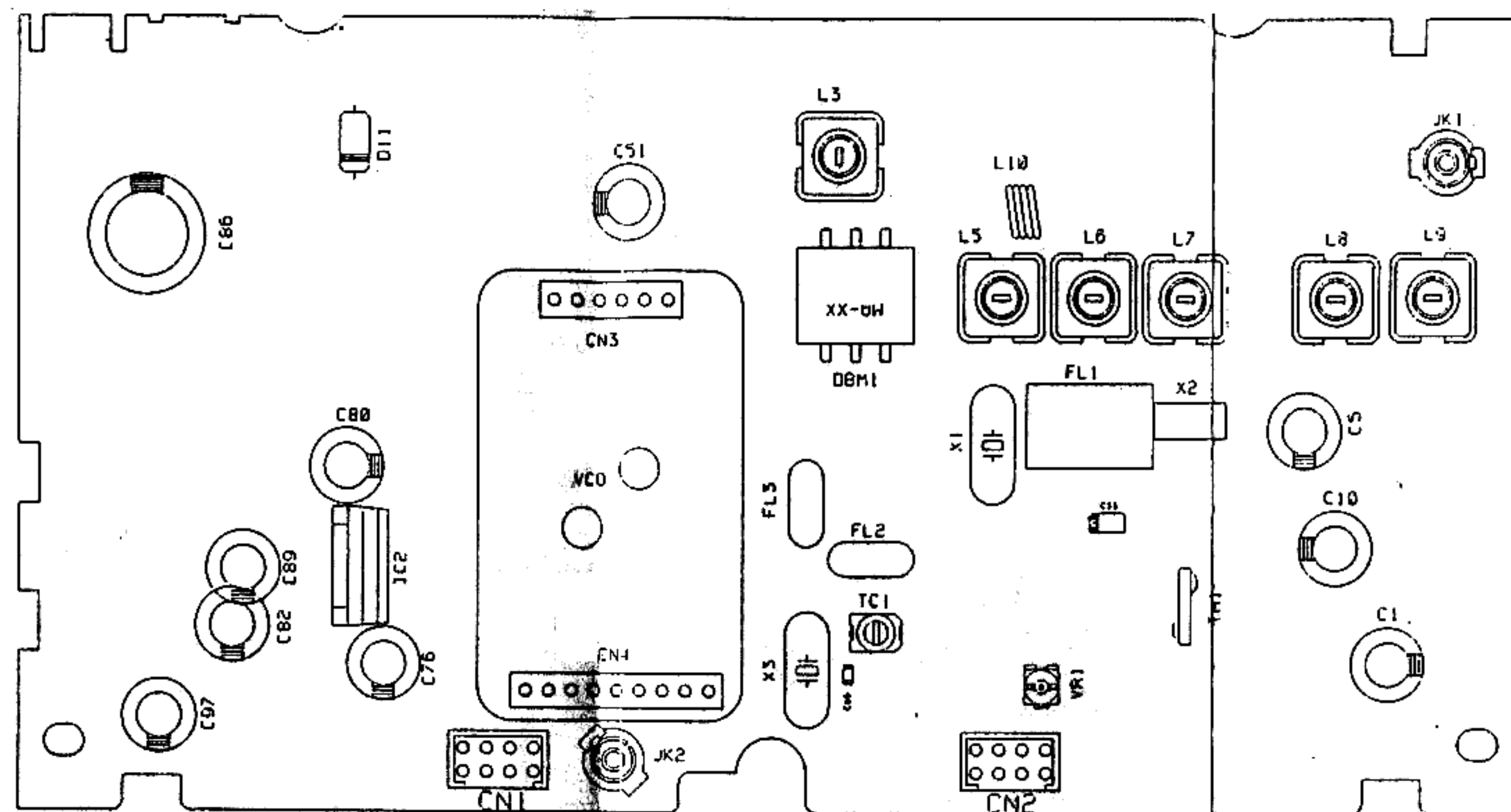
指示する部分/寸法単位				JOB			
図	寸	法	単位	品名(品番)	数量	単位	備考
1	1	1	1	RESISTOR	100	個	100
2	2	2	2	CAPACITOR	100	個	100
3	3	3	3	TRANSISTOR	100	個	100
4	4	4	4	IC	100	個	100
5	5	5	5	CONNECTOR	100	個	100
6	6	6	6	INDUCTOR	100	個	100
7	7	7	7	DIODE	100	個	100
8	8	8	8	VR	100	個	100
9	9	9	9	FL	100	個	100
10	10	10	10	X	100	個	100
11	11	11	11	CN	100	個	100
12	12	12	12	JK	100	個	100
13	13	13	13	VR	100	個	100
14	14	14	14	FL	100	個	100
15	15	15	15	X	100	個	100
16	16	16	16	CN	100	個	100
17	17	17	17	JK	100	個	100
18	18	18	18	VR	100	個	100
19	19	19	19	FL	100	個	100
20	20	20	20	X	100	個	100
21	21	21	21	CN	100	個	100
22	22	22	22	JK	100	個	100
23	23	23	23	VR	100	個	100
24	24	24	24	FL	100	個	100
25	25	25	25	X	100	個	100
26	26	26	26	CN	100	個	100
27	27	27	27	JK	100	個	100
28	28	28	28	VR	100	個	100
29	29	29	29	FL	100	個	100
30	30	30	30	X	100	個	100
31	31	31	31	CN	100	個	100
32	32	32	32	JK	100	個	100
33	33	33	33	VR	100	個	100
34	34	34	34	FL	100	個	100
35	35	35	35	X	100	個	100
36	36	36	36	CN	100	個	100
37	37	37	37	JK	100	個	100
38	38	38	38	VR	100	個	100
39	39	39	39	FL	100	個	100
40	40	40	40	X	100	個	100
41	41	41	41	CN	100	個	100
42	42	42	42	JK	100	個	100
43	43	43	43	VR	100	個	100
44	44	44	44	FL	100	個	100
45	45	45	45	X	100	個	100
46	46	46	46	CN	100	個	100
47	47	47	47	JK	100	個	100
48	48	48	48	VR	100	個	100
49	49	49	49	FL	100	個	100
50	50	50	50	X	100	個	100
51	51	51	51	CN	100	個	100
52	52	52	52	JK	100	個	100
53	53	53	53	VR	100	個	100
54	54	54	54	FL	100	個	100
55	55	55	55	X	100	個	100
56	56	56	56	CN	100	個	100
57	57	57	57	JK	100	個	100
58	58	58	58	VR	100	個	100
59	59	59	59	FL	100	個	100
60	60	60	60	X	100	個	100
61	61	61	61	CN	100	個	100
62	62	62	62	JK	100	個	100
63	63	63	63	VR	100	個	100
64	64	64	64	FL	100	個	100
65	65	65	65	X	100	個	100
66	66	66	66	CN	100	個	100
67	67	67	67	JK	100	個	100
68	68	68	68	VR	100	個	100
69	69	69	69	FL	100	個	100
70	70	70	70	X	100	個	100
71	71	71	71	CN	100	個	100
72	72	72	72	JK	100	個	100
73	73	73	73	VR	100	個	100
74	74	74	74	FL	100	個	100
75	75	75	75	X	100	個	100
76	76	76	76	CN	100	個	100
77	77	77	77	JK	100	個	100
78	78	78	78	VR	100	個	100
79	79	79	79	FL	100	個	100
80	80	80	80	X	100	個	100
81	81	81	81	CN	100	個	100
82	82	82	82	JK	100	個	100
83	83	83	83	VR	100	個	100
84	84	84	84	FL	100	個	100
85	85	85	85	X	100	個	100
86	86	86	86	CN	100	個	100
87	87	87	87	JK	100	個	100
88	88	88	88	VR	100	個	100
89	89	89	89	FL	100	個	100
90	90	90	90	X	100	個	100
91	91	91	91	CN	100	個	100
92	92	92	92	JK	100	個	100
93	93	93	93	VR	100	個	100
94	94	94	94	FL	100	個	100
95	95	95	95	X	100	個	100
96	96	96	96	CN	100	個	100
97	97	97	97	JK	100	個	100
98	98	98	98	VR	100	個	100
99	99	99	99	FL	100	個	100
100	100	100	100	X	100	個	100

アルインコ株式会社



-  1608 CHIP RESISTOR
-  1608 CHIP CERAMIC CAPACITOR
-  DIODE
-  USM TRANSISTOR
-  S-MINI TRANSISTOR
-  CHIP TANTALUM CAPACITOR

指示すべき部分/寸法公差								2011		商標	
								品名(品番)			
								RS1 GN MAIN			
								REP 日産			
								448			
図号				年月日				改 正 内 容			
								アルインコ株式会社			



- | | |
|---|-----------------------------|
|  | 1000 CHIP RESISTOR |
|  | 1000 CHIP CERAMIC CAPASITOR |
|  | DIODE |
|  | USM TRANSISTOR |
|  | S-MINI TRANSISTOR |
|  | CHIP TANTALUM CAPASITOR |

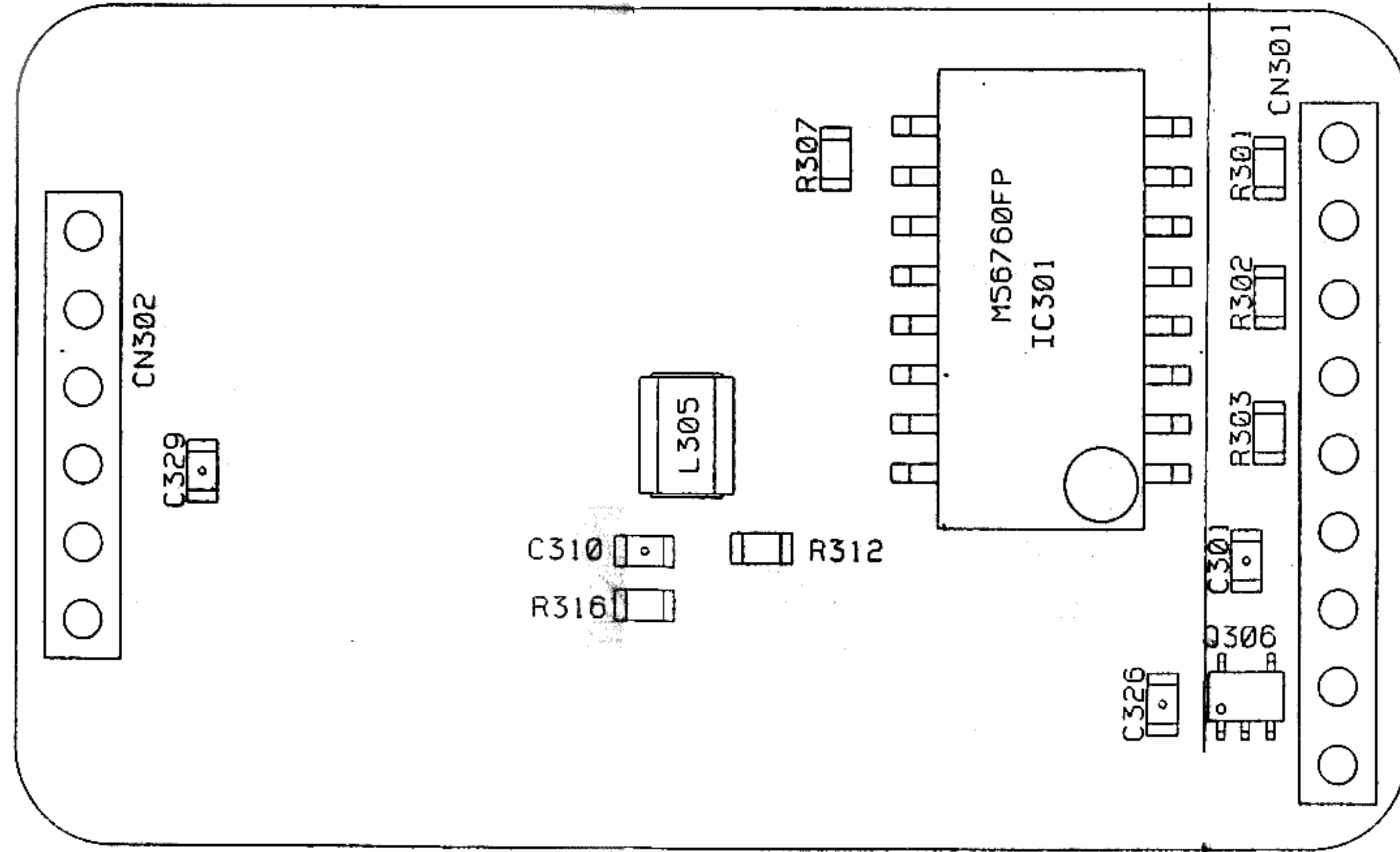
指示卡身圖分ノ可読性

[illegible]

材 質		外 装	
政 計	作 業 機	照 射 機	に 対 し
98.1.7	1.7		

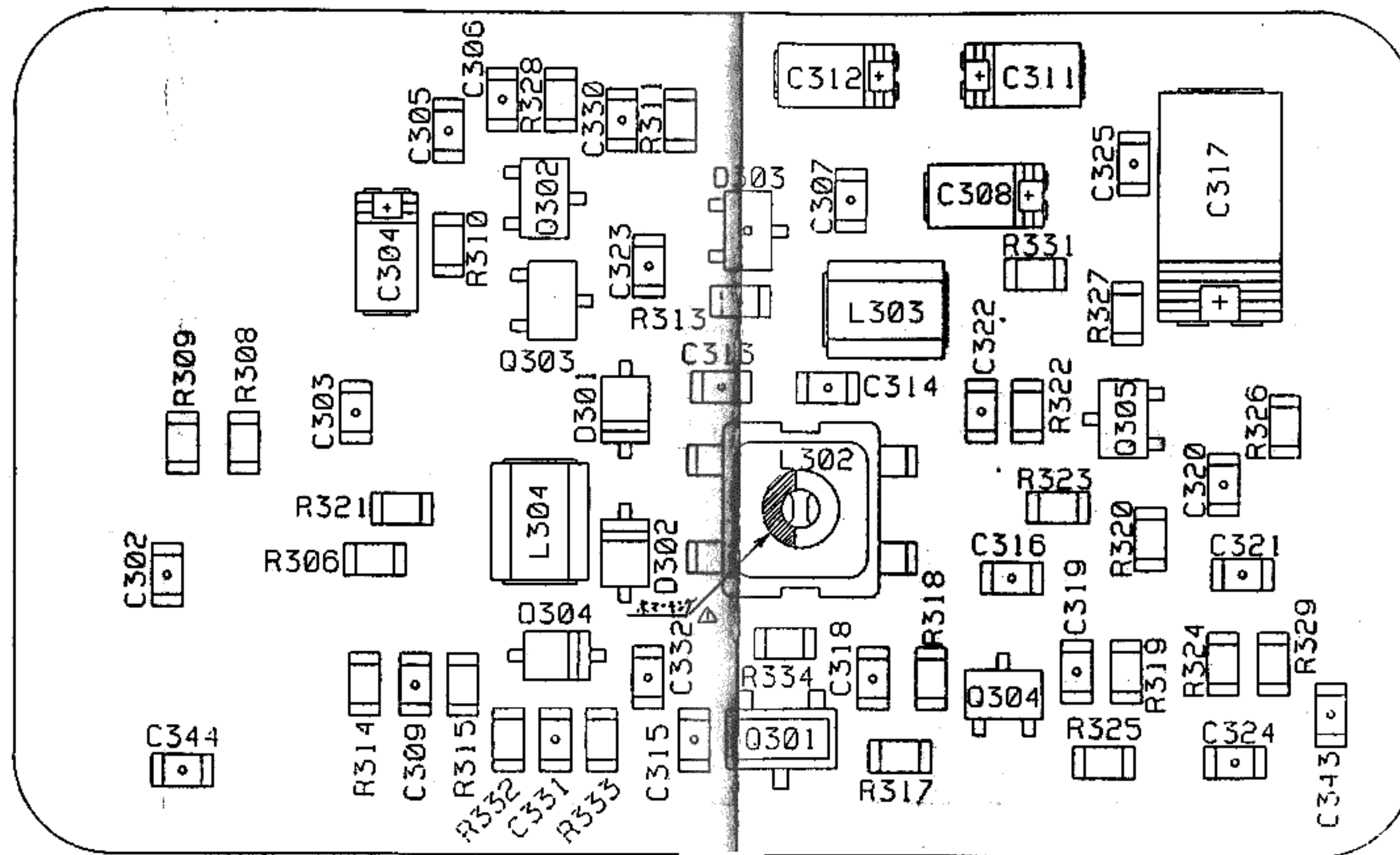
アルインコ株式会社

月日	或種		
品名(品番)		100	100
B S I R N M A I N		100	100
B E F A 面		100	100
数量			

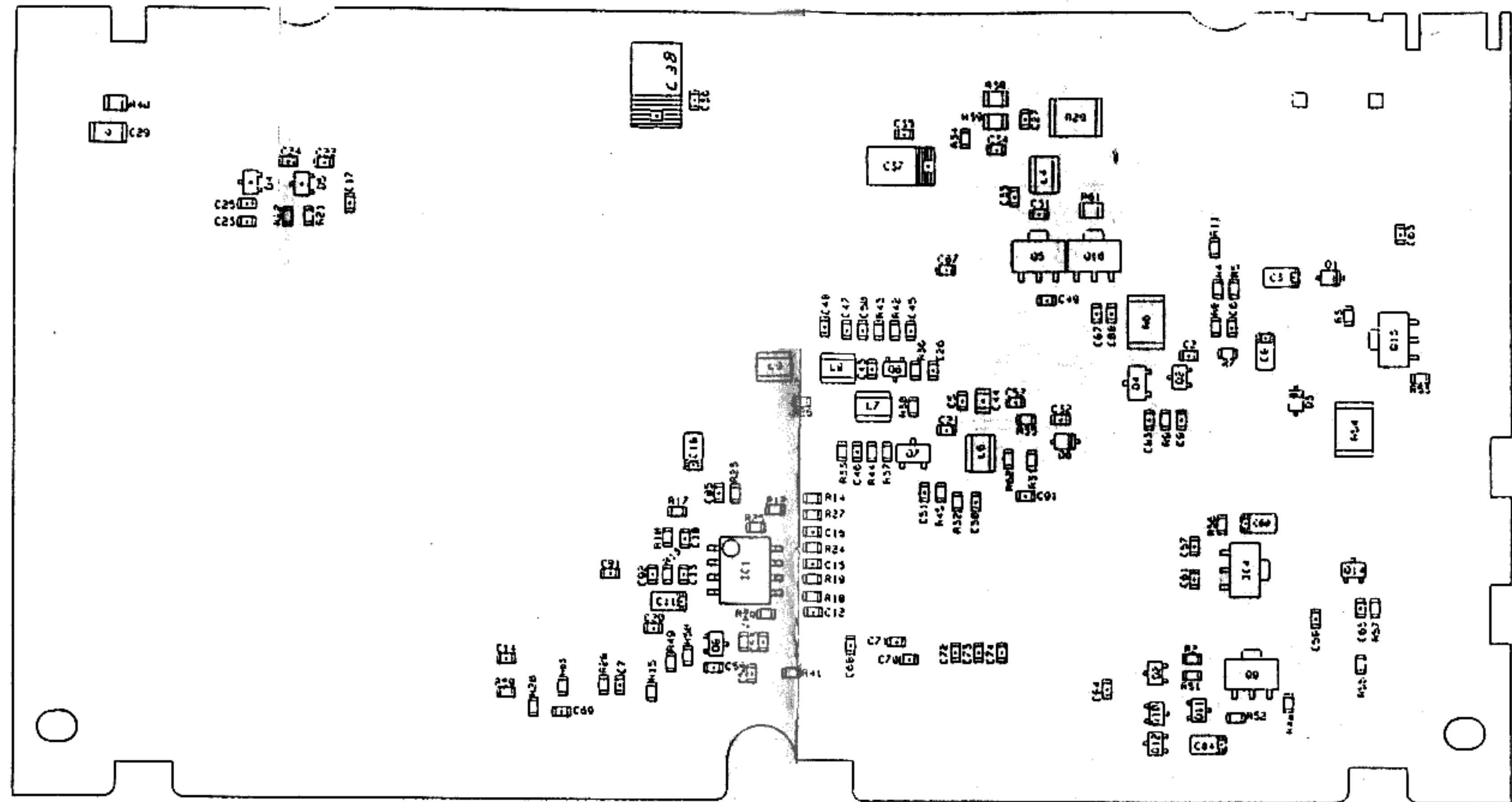


指示番号と部品ノリ位置			
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

部品名			
品名(品番)	RS4A TX VCO UNIT	REF A 面	
図号	207		

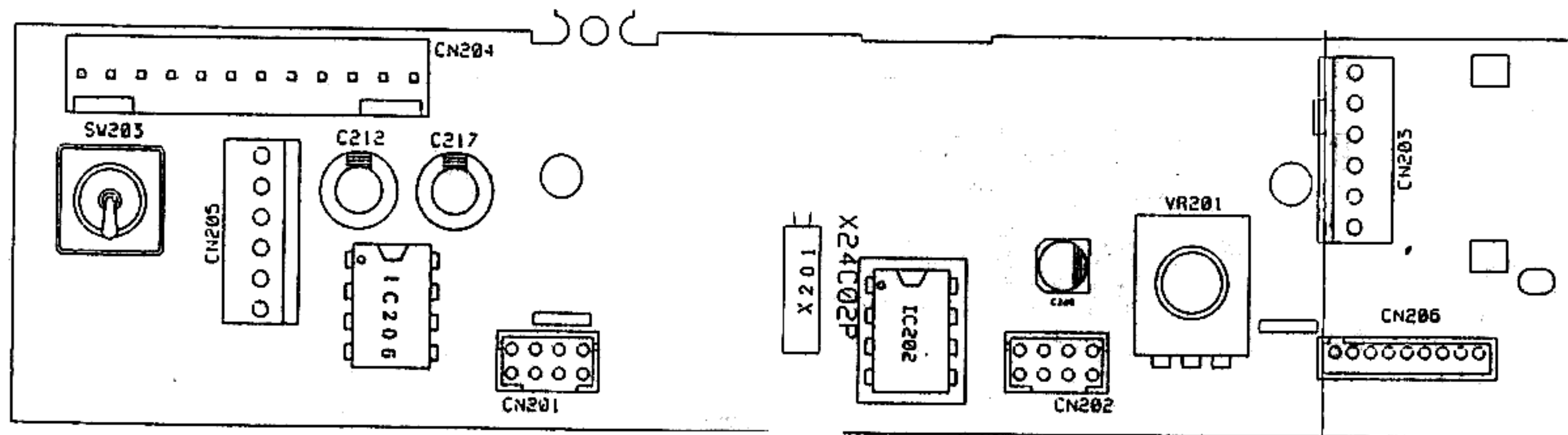


指示ナキ部分ノ取扱方						JOB		RM	
15-76-J 30 10/16						品名(品番)			
						RS4A TX VCO UNIT			
						REF B 面			
						43			
印記 本付日 改訂		1/ 76		印		アールエフエス株式会社		310	



- 1608 CHIP RESISTOR
- 1608 CHIP CERAMIC CAPACITOR
- DIODE
- USM TRANSISTOR
- S-MINI TRANSISTOR
- CHIP TANTALUM CAPACITOR

指示ナキ部分ノ寸法公差						JOB		品名
△	4.6-6	±100-13						RS4A TX
			品名	数量	単位	品名(品番)		
			品名	数量	単位	RS4A TX ハ=700 REF		
			アルインコ株式会社					



- 1608 CHIP RESISTOR
- 1608 CHIP CERAMIC CAPASITOR
- DIODE
- USM TRANSISTOR
- S-MINI TRANSISTOR
- CHIP TANTALUM CAPASITOR

指示ナキ部分 / 寸法単位

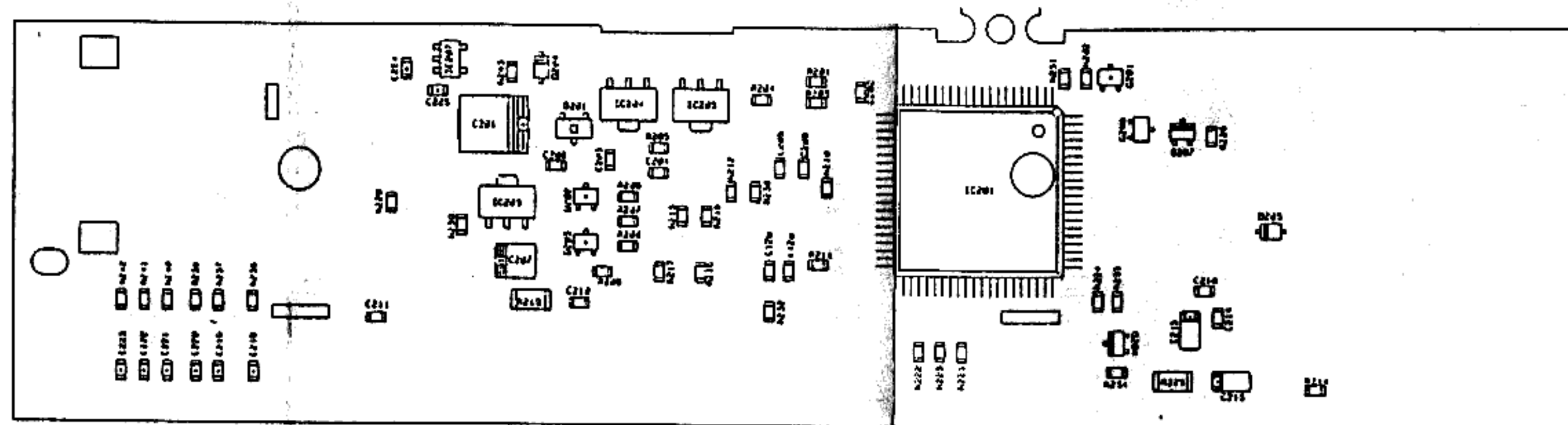
図号	材料	数量	単位	備考

図号	材料	数量	単位	備考

図号	材料	数量	単位	備考

アルインコ株式会社

RS * RX CPU UNIT
REF A 面

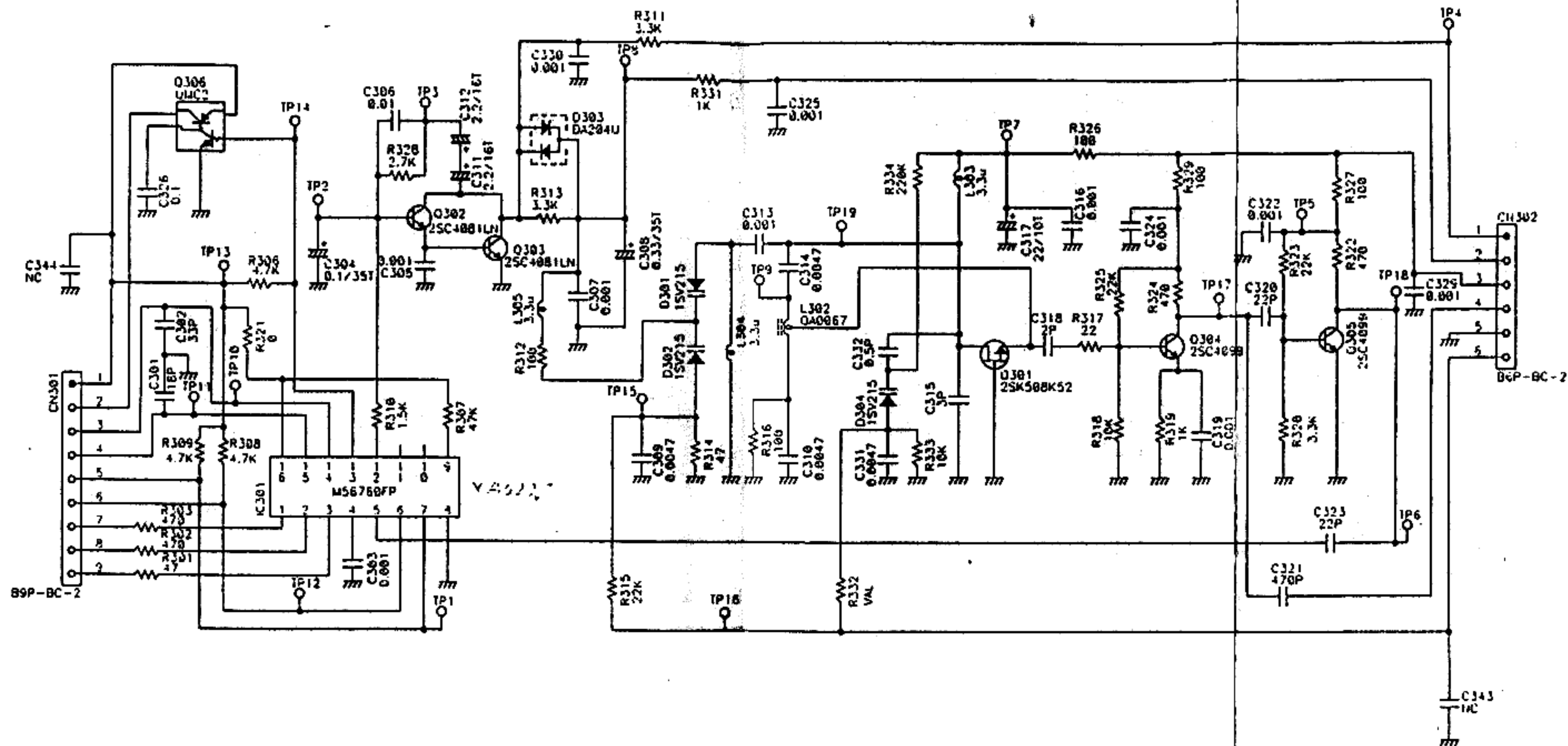


- | | |
|---|-----------------------------|
|  | 1608 CHIP RESISTOR |
|  | 1608 CHIP CERAMIC CAPASITOR |
|  | DIODE |
|  | USM TRANSISTOR |
|  | S-MINI TRANSISTOR |
|  | CHIP TANTALUM CAPASITOR |

指示ナキ部分ノ手法公衆						20日		既得	
						品名(品多)			
						RS * RX CPU UNIT			
						REF B 面			
						43			
08	180	08	180	アルインコ株式会社					

- | | |
|---|-----------------------------|
|  | 1608 CHIP RESISTOR |
|  | 1608 CHIP CERAMIC CAPASITOR |
|  | DIODE |
|  | USM TRANSISTOR |
|  | S-MINI TRANSISTOR |
|  | CHIP TANTALUM CAPASITOR |

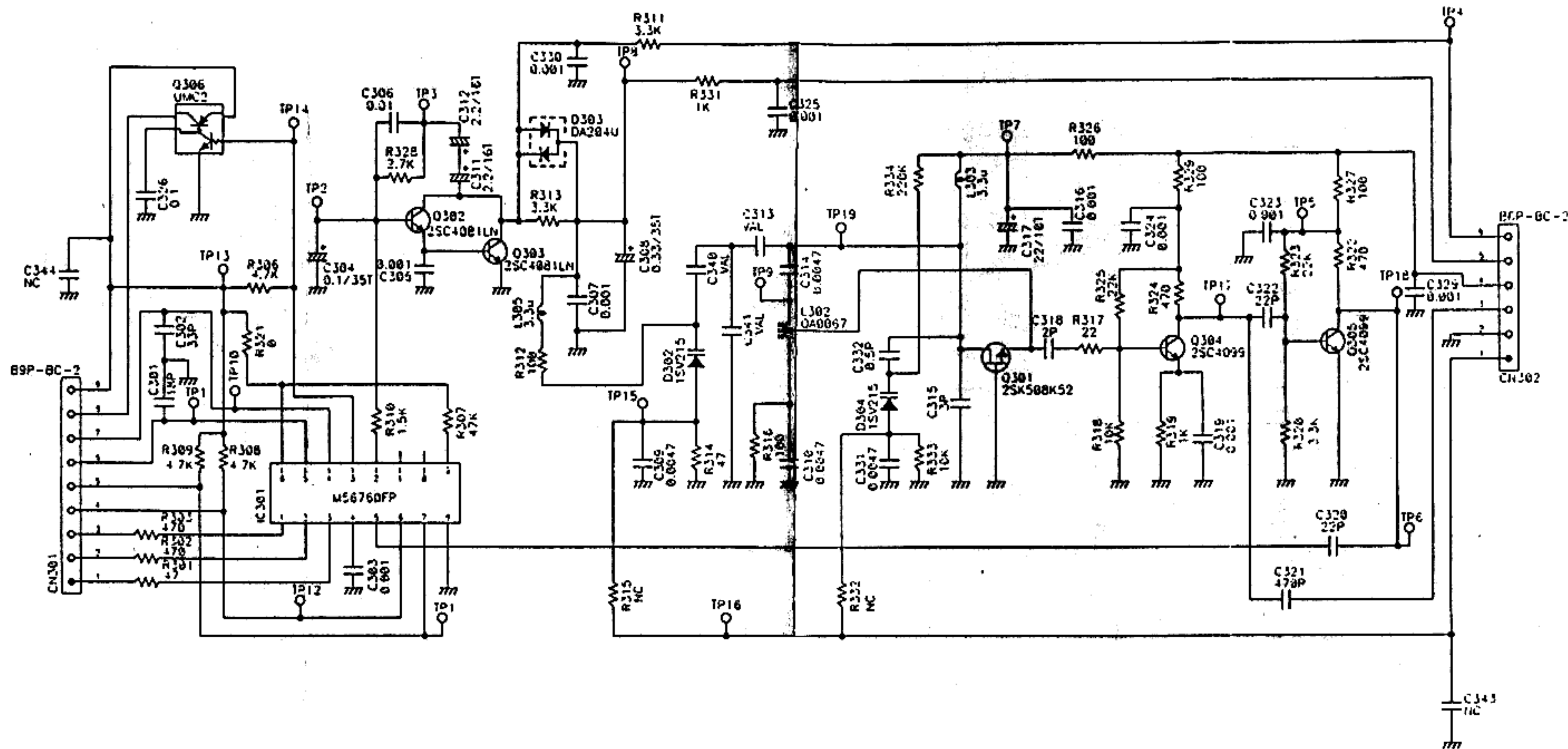
[illegible]



	R332				
TE1	8.2K				
TE2	10K				

Title			ALINCO	156
Size	Number	Rev		
A3	RS4A TX VCO Unit	01		
Date	08-Apr-1996	Drawn by		
Filename		Sheet		1 of 1

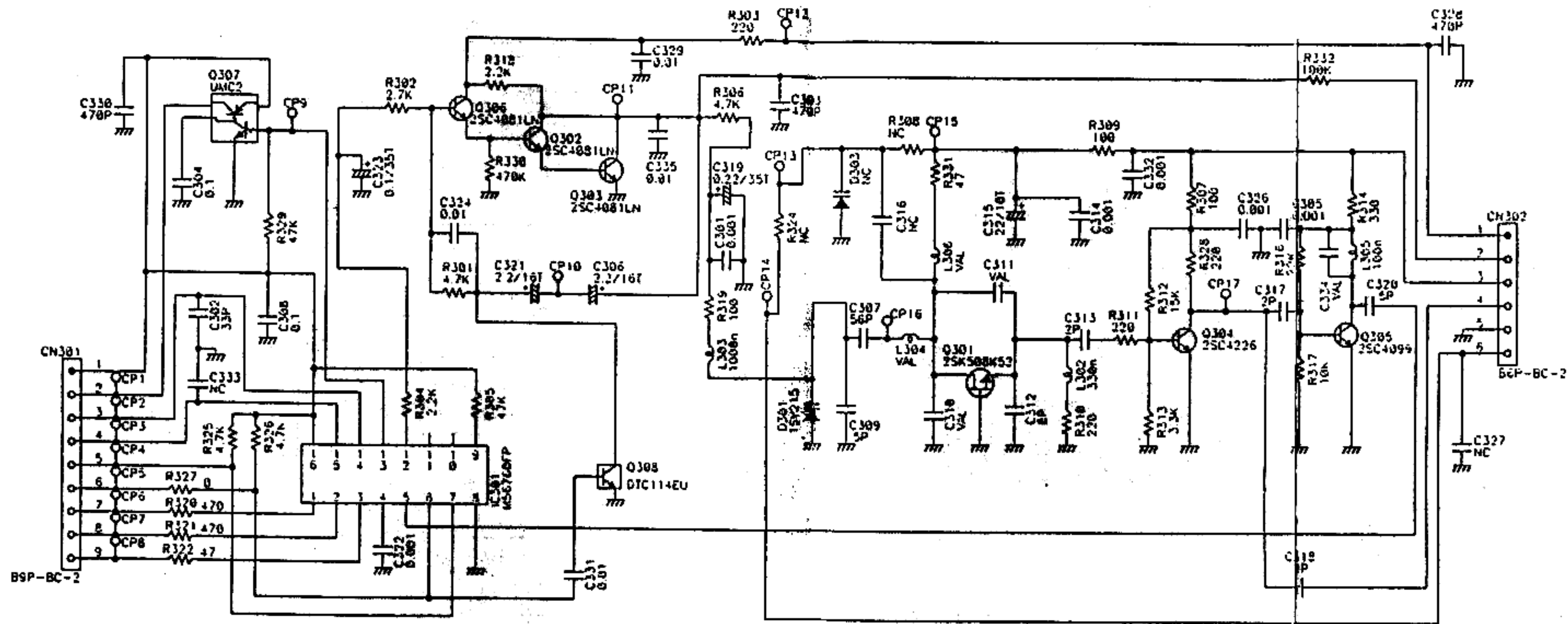
ATTRIBUTE HEIGHT 0mil



	R332	C313	C340	C341
TE1	NC	0.001	33P	3P
TE2	NC	220P	27P	NC

Title		ALINCO		188
Size	Number	RS4A RX VCO UNIT		Rev
A3				
Date	12-10-1996	Drawn By		
File name	RS4A RX VCO UNIT	Sheet		of

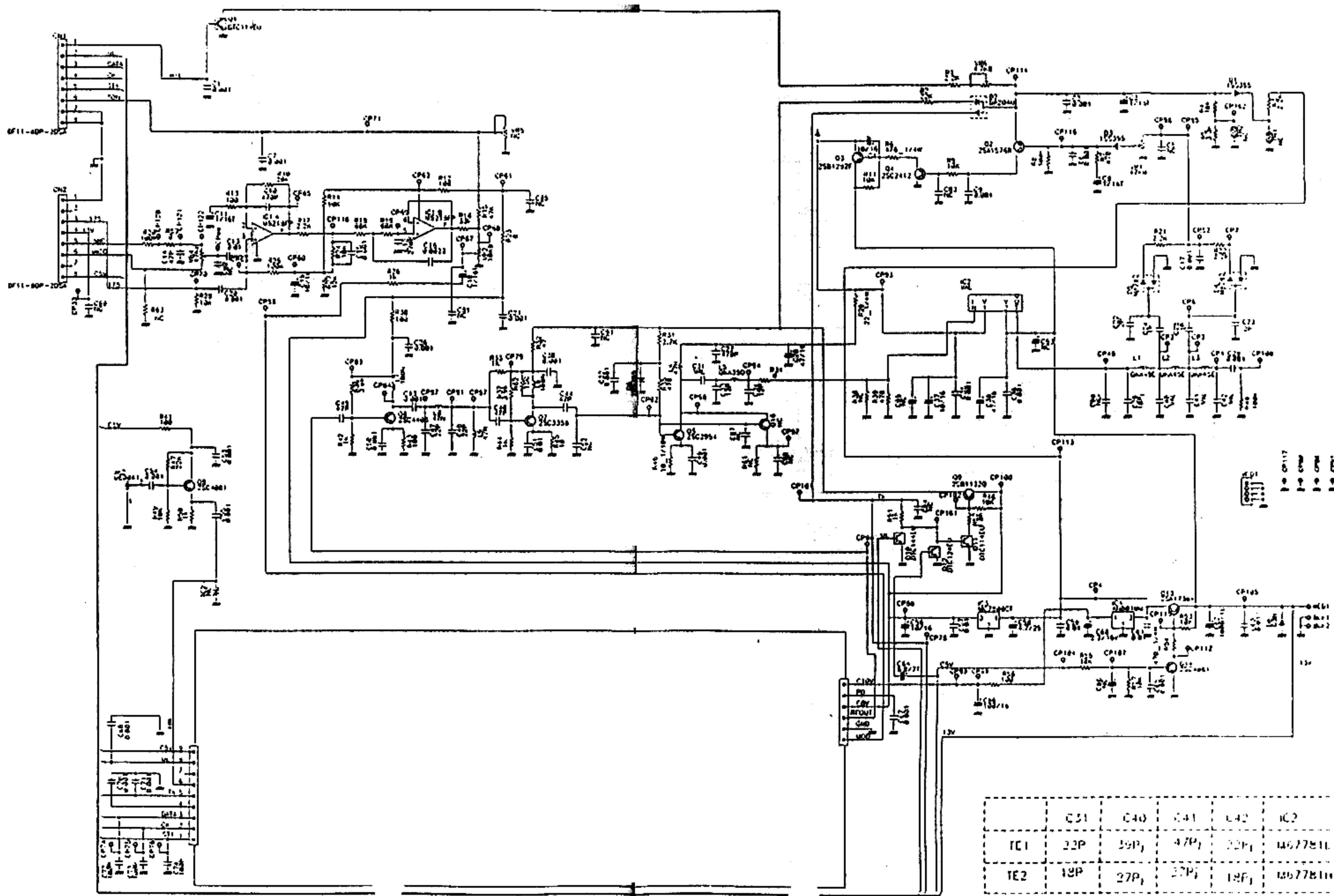
ATTRIBUTE HIGH 70mm



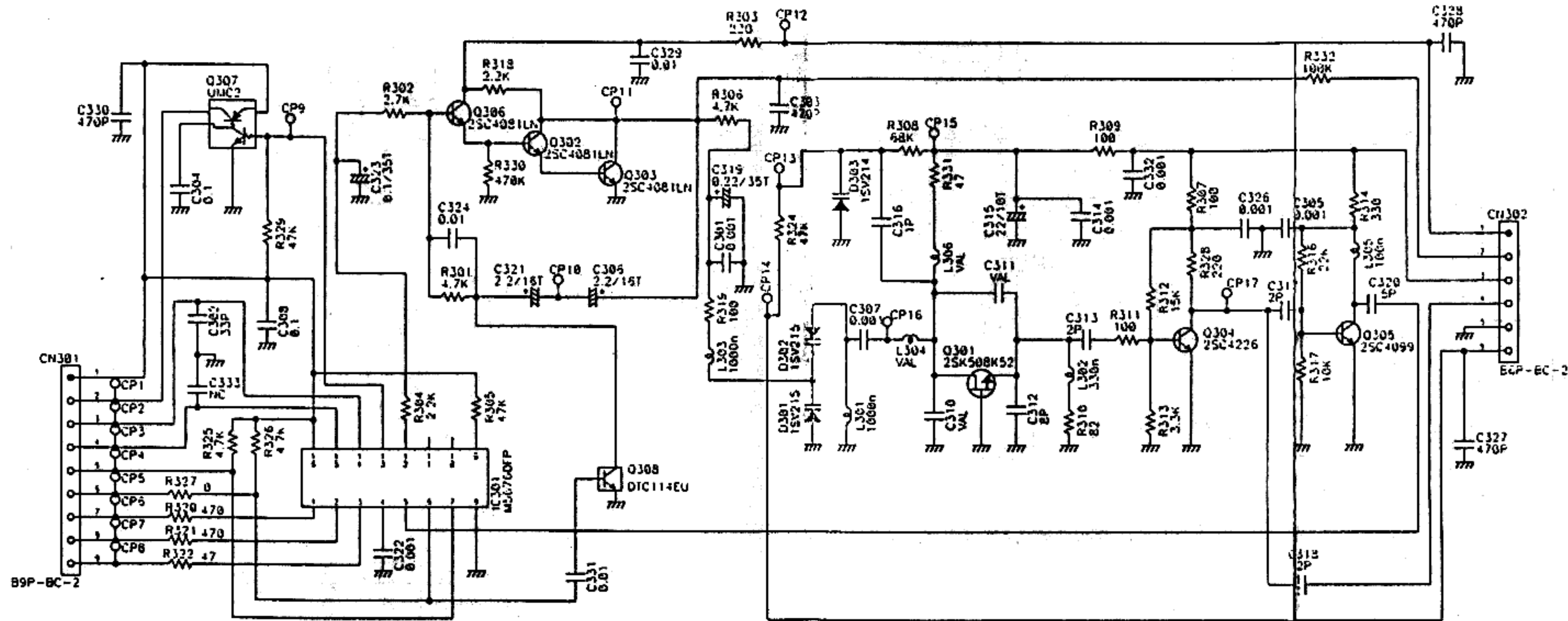
	C310	C311	L304	L306	C334	
IE1	NC	5P	0N435E	500H	8P	
IE2	0.5M	7P	0N425C	500H	4P	

Title			ALINCO	6.7
Size	Number	Rev		
A3	RS5 RX VCO Unit	01		
Date	08-Apr-1975	Drawn by		
Designed by		Tested by		

ATTENTION: RIGHT



	C31	C40	C41	C42	IC2
IC1	22P	10P	47P	22P	LM7781U
IC2	10P	27P	22P	10P	LM7781U



	C310	C311	L304	L306		
IE1	100	0P	0KA25D	330Hm		
IE2	0.25	4P	0KA25C	560Hm		

Title			ALINCO		162
Size	Number		Rev		
A3	RS5 TX VCO UNIT				
Date	12-10-1996		Drawn by		
Filename	RS5TXVCO.CAT		Sheet		1 of 1

2ND MIXER, DET & AUDIO AMP

1ST RF AMP

IF FILTER

MIXER

2ND RF AMP

1ST IF AMP

2ND RF FILTER

1ST RF FILTER

OSC OUT

VCO

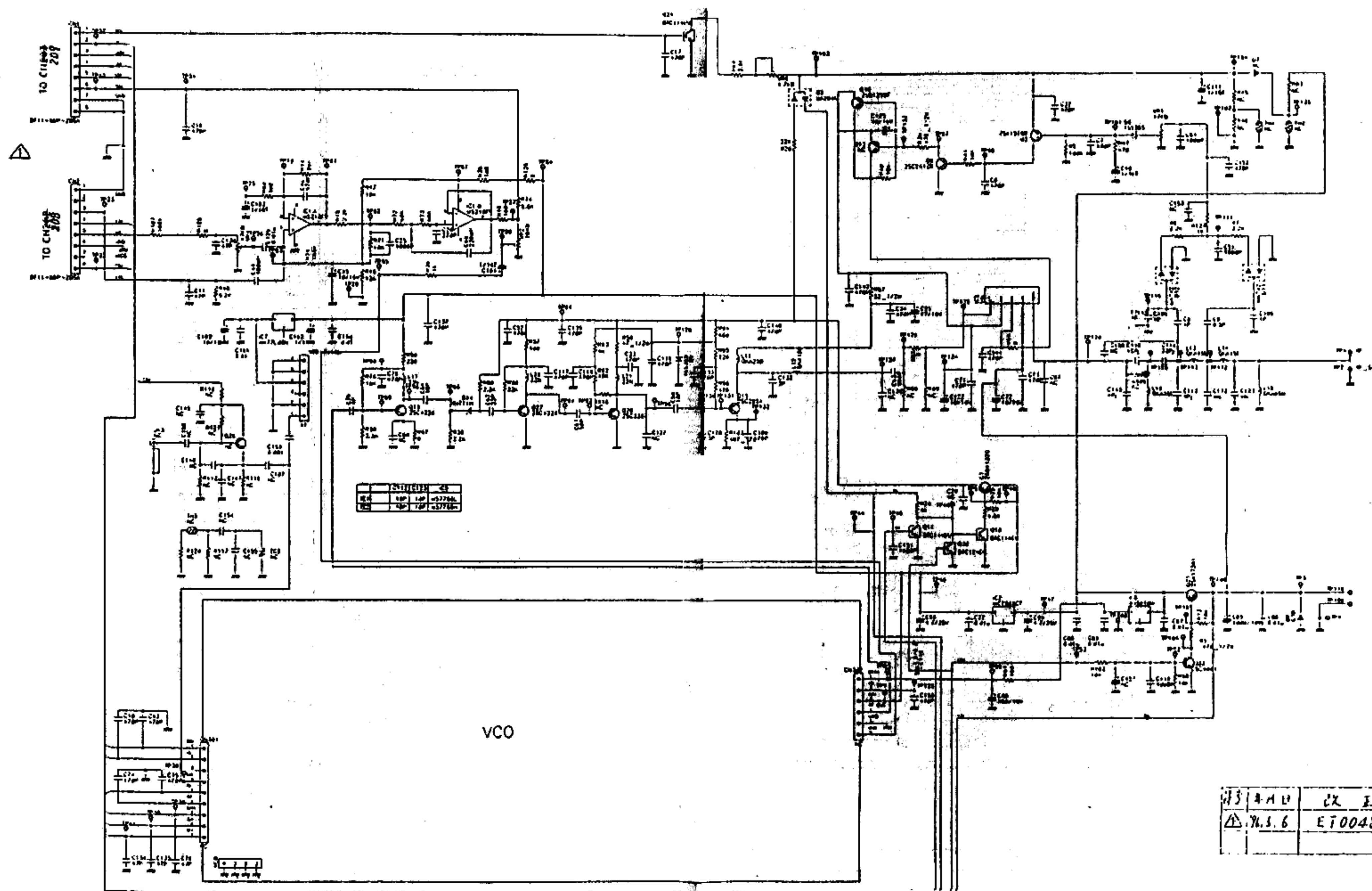
POWER

	C91	C92	L5, L6	C20	C21				
TE1	NC	1P	QA0009	1P	2P				
TE2	0.5P	1K	QA0050	0.5P	1K				

REV	DATE	BY	CHK	Q	SP
1	76.6.5	ET0049			
2	76.6.5	ET0049			
3	76.6.5	ET0048			
4	76.7.7	ET0052			

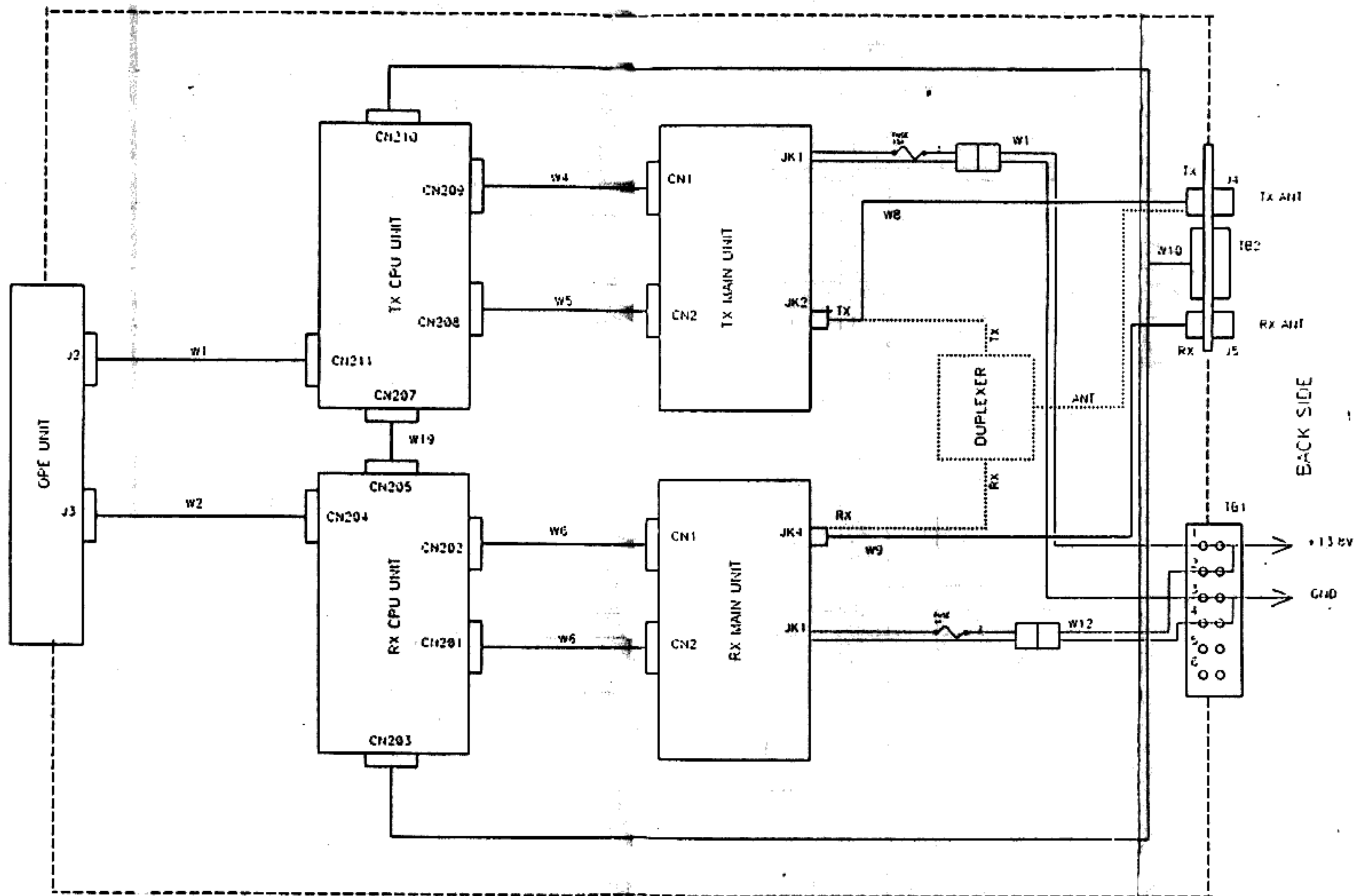
RS5 RECIEVE MAIN UNIT

Title	ALINCO			57
Size	Number	RS5 RX MAIN Unit		Rev
A2				01
Date	08-24-1976	Drawn by		
Filename		Sheet		1 of 1



4344	2X	I
4346	ET0048	

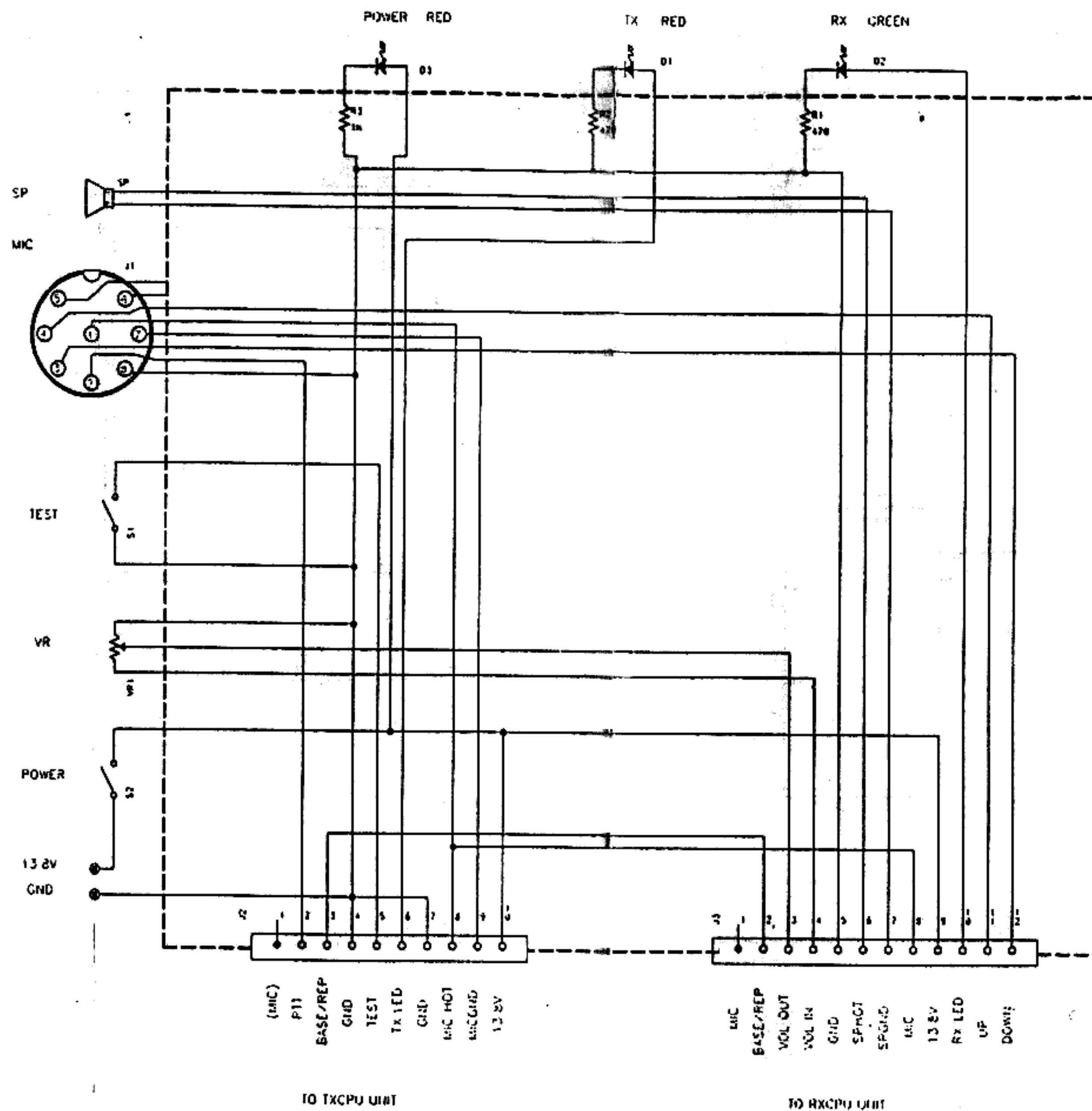
FRONT PANNEL



BACK SIDE

Title		
Size	Number	Rev.
A2	154A ALL UNIT CONNECTION	
Date	10/1/55	Drawn by
Filename	Sheet	of

FRONT PANEL



Title			178
Size	Number	Rev	
A3	RS4A OPE PCB		
Date	DEC 25, 1995	Drawn by	CM
Filename	Sheet	1 of 1	