



# SUPERSTAR®



# HERCULE

# CRT HERCULE B2950 F

## GÉNÉRALITÉS :

Fréquences couvertes	:	28 0000 à 29 6999 Mhz	EXPORT 26.32 MHZ
Fonction Split	:	Semi duplex activé	
Pas d'incrémentation	:	100 Hz, 1 KHz, 10 KHz, 100 KHz, 1 Mhz	
Classes d'émission	:	USB, LSB (J3E) CW (A1A) AM (A3E) FM (F3E)	
Fréquence control	:	PLL synthétisé	
Fréquence tolérance	:	0,005 %	
Fréquence stabilité	:	0,001 %	
Température de fonctionnement	:	0°C à 40°C	
Antenne impédance	:	50 Ohms	
Haut parleur impédance	:	8 Ohms, 2 Watts	
Micro impédance	:	400 Ohms, pastille dynamique	
Affichage	:	Digital LCD	
Alimentation	:	220 V AC	

## ÉMETTEUR :

Puissance de sortie antenne	:	AM/FM : 12 W - USB/LSB/CW : 25 W
Fréquences parasites	:	- 50 Db
Suppression de la porteuse	:	- 50 Db
Connecteur antenne	:	UHF 50 (SO239)
Modes de transmission	:	USB, LSB, CW, AM, FM

## RÉCEPTEUR :

Réception pour 10 Db de signal/bruit AM	:	0,5 Microvolts USB/LSB/CW : 0,3 Microvolts FM : 1 Microvolt
Rejection image	:	65 Db
AGC Figure	:	SSB/CW/AM : 80 Db pour 50 Microvolts pour 10 Db change en BF sortie
Puissance BF à 10 % de distorsion	:	2,5 Watts
Principe de réception	:	Double changement de fréquence (10 695 Mhz et 455 KHz)

AGRÈMENT PTT : 910021 AMA 1



DISTRIBUTEUR AGRÉÉ :

**SECTION SUBJECT :**

SPECTIFICATION ..... 2

**1. OPERATION**

1.0 Introduction ..... 3

1.1 Control & Connections ..... 3

1.2 Rear Panel Connectors ..... 5

1.3 Microphone ..... 5

1.4 Operation ..... 5

**2. PROGRAMMING**

2.0 Introduction ..... 7

2.1 Frequency Selection ..... 7

2.2 Frequency Scanning ..... 8

2.3 Offset Frequency Operation ..... 9

**3. ALIGNMENT**

4.0 Test Equipment ..... 10

4.1 PLL Synthesizer & Oscillator Frequency Alignment ..... 10

4.2 Receiver Alignment ..... 11

4.3 Transmitter Alignment ..... 12

**4. BLOCK DIAGRAM** ..... 13

**5. SCHEMATICS & PCB LAUOUT** ..... 14

# CRT HERCULE B2950F

## SPECIFICATIONS

### GENERAL

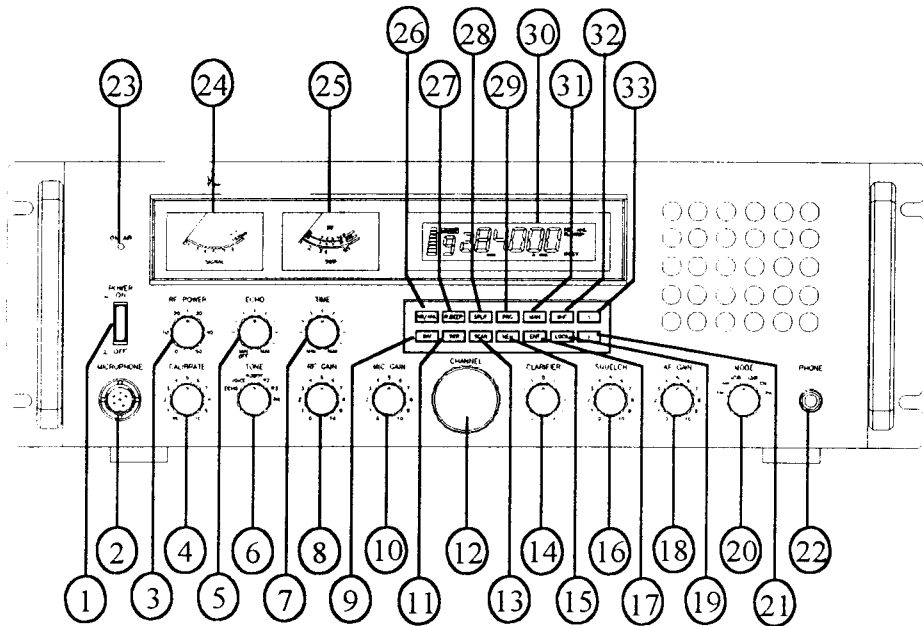
<b>Model</b>	<b>CRT HERCULE B2950F</b>
Frequency	28.000 -- 29.699MHz
Emission Steps	AM, FM, CW, USB, LSB
Frequency Control	Phase - Locked - Loop Synthesizer
Frequency Tolerance	0.005%
Frequency Stability	0.005%
Temperature Ranger	- 30°C to + 55°C
Antenna Impedance	50 Ohms
Meter Function	RF Output, RX Receive Signal Strength Modulation, SWR Calibration, SWR
Input Voltage	AC 110V,60Hz (AC 220V,50Hz)

### TRANSMITTER

RF Power Output	25W : USB, LSB 12W : CW 8W : AM/FM
RF Transmit Modes	AM, FM, CW, USB, LSB
Antenna Connector	UHF Type, 50 Ohms
Modulation	16F3
Spurious Emissions	-60dB
Carrier Suppression	-60dB

### RECEIVER

Sensitivity for 10dB S/N	AM 1.0uV
Sensitivity for 10dB S/N	USB/LSB/CW 0.2uV
Sensitivity for 20dB S/N	FM 1.0uV
Image Rejection Ratio	-65dB
AGC Figure of Merit	SSB/CW/AM : 80dB for 50mV for 10dB Change in Audio Output
Audio Output Power @ 10% THD	2.5W



**1.0 INTRODUCTION**

This section explains the basic operating procedures for the **HERCULE B2950F** Citizen's Band 11 meter mobile transceiver.

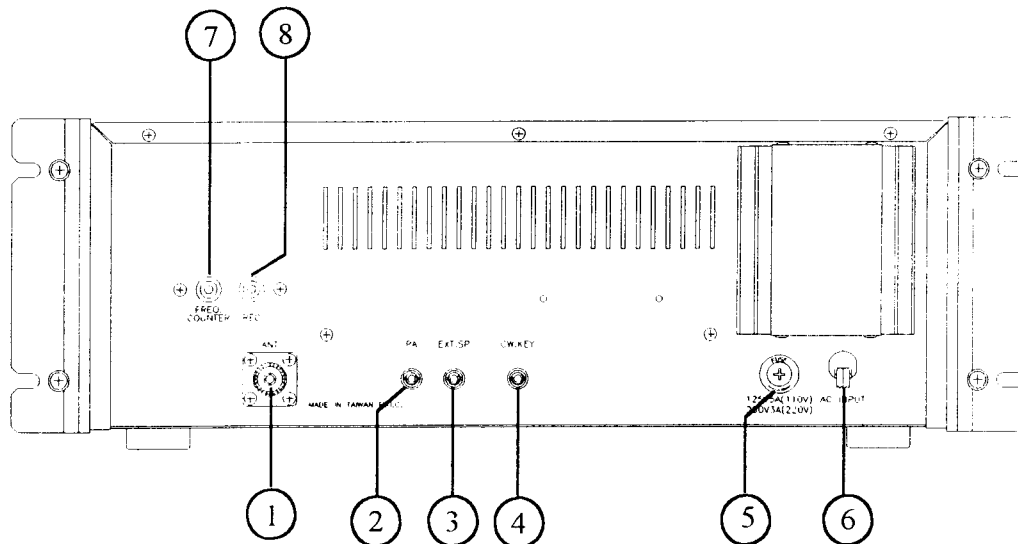
sound and voice change to change your tone.

**1.1 CONTROL & CONNECTIONS**

- 1. **POWER ON/OFF CONTROL** : Push on to apply power to the unit.
- 2. **MICROPHONE JACK** : Used to connect microphone for voice source.
- 3. **RF POWER CONTROL** : This control that to adjust the RF power output level you want in AM or FM transmission.
- 4. **CALIBRATE CONTROL** : This control allows the user to calibrate the SWR meter.
- 5. **ECHO** : This control is used to ECHO effect.
- 6. **ECHO/VOICE/ROBOT SWITCH** : This SW is used to select special sound effect, you can transmit your message in a echo, robot

- 7. **TIME** : Set this control to your desired echo delay .
- 8. **RF GAIN CONTROL** : This control is used to reduce the gain of the RF amplifier under strong signal conditions.
- 9. **DIM SWITCH** : This switch adjust the display backlighting in four different steps to best match environment.
- 10. **MIC GAIN CONTROL** : This control adjusts the microphone gain in the transmit mode. This feature is designed for use in a high-ambient noise environment or to maximize talk power.
- 11. **SWR SWITCH** : This switch is used to check SWR.
- 12. **CHANNEL SELECTOR** : This control is used to select a desired channel or frequency.

13. **SCAN SWITCH** : This switch is used to scan frequencies in each band segment. The operation section of this manual provides detailed information on using this scan control.
14. **CLARIFIER CONTROL** : Allows variation of the receiver operating frequency above and below the assigned frequency. Although this control is intended primarily to tune in SSB signal, it may be used to optimize AM/FM signals as described in the operating procedure paragraphs.
15. **MEMORY SWITCH** : This is used program memory channels.
16. **SQUELCH CONTROL** : This control is used to control or eliminate receiver background noise in the absence of incoming signal. For maximum receiver sensitivity, it is desired that the control be adjusted only to the point where the receiver background noise is eliminated. Turn fully counterclockwise, then slowly clockwise until the receiver noise disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong signal will be heard at a maximum clockwise setting.
17. **ENTER SWITCH** : This is used program frequencies in memory.
18. **AF GAIN** : Permits you to adjust the listening level when receiving.
19. **LOCK SWITCH** : This switch is used to lock a selected frequency.
20. **MODE CONTROL** : This control allows you to select one of six flowing operating modes : CW/FM/AM/LSB/USB/PA.
21. **▲ UP SWITCH** : This switch is used to move frequency upward to select a desired frequency.
22. **PHONE JACK** : Used to connect earphone to listening.
23. **POWER LED** : The RED LED indicate the unit is power on.
24. **SIGNAL METER** : The left hand meter provide indication of the signal strength of a received signal in S units during reception.
25. **RF/SWR METER** : Used for two purpose, to indicate relative transmitter power when transmitting and to indicate antenna SWR.
26. **NB/ANL SWITCH** : The noise blacker is very effective in eliminating repetitive impulse noise such as ignition interference. In the ANL position the automatic noise limiter in the audio circuits is activate.
27. **ROGER BEEP SWITCH** : When this switch is placed in the ROGER BEEP position, you radio automatically transmit the audio sign at the end of you transmission. The listener can note easily your transmission is over through the sign.
28. **SPLIT SWITCH** : This switch enables you to split and operating frequency for FM repeater operation.
29. **PROGRAM SWITCH** : This switch is used to program operating or scanning frequency into memory.
30. **FREQUENCY COUNTER** : The frequency counter indicates the frequency of the selected channel you wish to operate on.
31. **MANUAL SWITCH** : This is used to return to the manual mode.
32. **SHIFT SWITCH** : This is used to select 100 Hz, 1KHz, 10KHz, 100KHz or 1MHz frequency steps.
33. **▼ UP SWITCH** : This switch is used to move frequency down ward to select a desired frequency.



## 1.2 REAR PANEL CONNECTOR

1. **ANTENNA** : This jack accepts 50 ohm coaxial cable with a PL-259 type plug.
2. **PA SP** : Used to connect a PA speaker (8 ohm 4w) for PA operation. Before operating PA you must first connect a PA speaker to this jack.
3. **EXTERNAL SPEAKER** : This jack accepts 4 to 8 ohm, 5 watt external speaker. When the external speaker is connected to this jack, the built-in speaker will be disabled.
4. **CW KEY** : This is used for Morse Code operation. To operate this mode, connect a CW key to this jack and place the mode switch in the CW position.
5. **FUSE** : Accommodates a fuse for AC input circuit protection. Use 125V 7A or 250V 4A fuse for replacement.
6. **AC POWER CORD** : Connects to AC power outlet for AC mains supply.
7. **FREQUENCY COUNTER JACK** : The RCA-type jack is used to connect an optional frequency counter so that you can watch channel frequency digitally. The frequency counter readout will be possible on transmit only.

8. **RECORDING OUTPUT JACK** : The RCA-type jack provides output for connection to a tape recorder to permit recording of receiver signals or you modulating voice.

## 1.3 MICROPHONE

The receiver and transmitter are controlled by the push-to-talk switch on the microphone. Press the switch and the transmitter is activated, release switch to receive. When transmitting, hold the microphone two inches from the mouth and speak clearly in a normal "voice". The radios come complete with low-impedance dynamic microphone.

## 1.4 OPERATION

### A. PROCEDURE TO RECEIVE

1. Be sure that power source, microphone and antenna are connected to the proper connectors before going to the next step.
2. Turn unit on by running **VOL** knob clockwise on transceiver.
3. Set the **VOL** for a comfortable listening level.
4. Set the **MODE** switch to the desired mode.
5. Listen to the background noise from the speaker. Turn the **SQ** knob slowly clock-

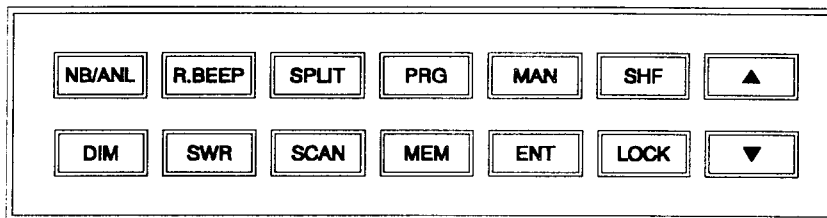
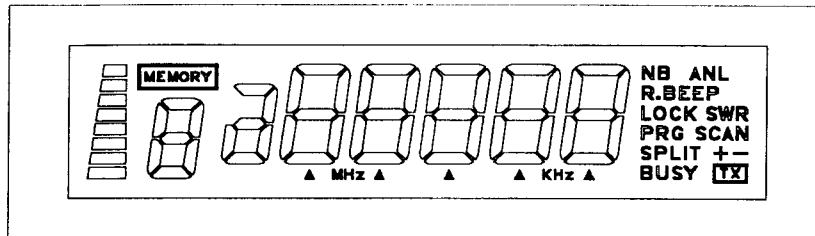
wise until the noise just disappear. Level the control at this setting. This **SQ** is now properly adjusted. The receiver will remain quiet until a signal is actually received. Do not advance the control too far, or some of weaker signals will not be heard.

6. Set the **CHANNEL** select or switch to the desired channel or frequency.
7. Set the **RF** gain control fully clockwise for maximum **RF** gain.
8. Adjust **CLARIFIER** control to clarify the SSB/CW signals or to optimize AM / FM signals.

## **B. PROCEDURE TO TRANSMIT**

1. Select the desired channel of transmission.
2. Set the **MIC GAIN** control fully clockwise.
3. If the channel is clear, depress the push-to talk switch on the microphone and speak in a normal voice.





## 2.0 INTRODUCTION

This section explains the basic programming procedures for the **HERCULE B2950F** III amateur 10 meter mobile transceiver.

### 2.1 FREQUENCY SELECTION

Frequency selection in the radio can be accomplished using three of the following methods :

1. The first method of frequency selection is through the use of the **SHF** key and the **UP** and **DOWN** arrows. To accomplish this, press the **SHF** button until the cursor arrow is position under the digit of the frequency that is to be changed. Then use the **UP** arrow to increase the number. If a decrease in frequency is desired, press the **DOWN** arrow. Perform the steps described above for each digit of the frequency until the desired frequency is displayed in the **LCD** display windows.
2. The second method of frequency selection is accomplished using the **SHF** button and

the channel select knob located above the front panel. Use the **SHF** button in the manner described above to select the digit to be changed. Then proceed to rotate the channel select knob clockwise to increase the frequency. Rotate the channel select knob counterclockwise to decrease the frequency.

3. The third method of selecting the operating frequency of the radio is through the use of the **SHF** button and the channel **UP** and **DOWN** button located on the microphone. Frequency selection by this method is accomplished in the same manner as with the **UP** and **DOWN** arrows on the key pad. The only difference is that the channel **UP** and **DOWN** buttons on the microphone are used.

While in receive mode, once a signal has been detected on a particular frequency, It may be necessary to slightly change the frequency to provide the best audio through the speaker. This can be accomplished by rotating the clarifier control to

the unit to the manual mode of operation by pressing the **MAN** key.

6. To initiate memory scanning, press **MEM** and then press **SCAN**. As previously discussed, the display will show "**SCAN +**" or "**SCAN -**" to indicate whether the radio is scanning from the lowest the highest memory location or vice versa.
7. To return the radio to normal (non-scanning) operation, press the **MAN** key.

## 2.3 OFFSET FREQ. OPERATION

The **GX-SATURN III** has an offset or split frequency feature that will permit the radio to be operated in a half-duplex mode. This will allow the user to talk on FM repeaters operating in the 10 meter band. This split frequency function offsets the transmitter frequency either above or below the receive frequency by a user programmable amount. In the following example, programming of a 100KHz offset will be described. Before attempting to program the offset frequency, ensure that the radio is operating in the manual mode by pressing the **MAN** key.

1. Press the **PRG** key.
2. Press the **SPLIT** key. The **LCD** display window will display "**00000**" with "**PRG**" and "**SPLIT**" being displayed in the lower left-hand corner.
3. Using the **SHF** key and the **UP** and **DOWN** arrows as described earlier, program the display to read "**01000**".
4. Press **ENT**. A 100KHz offset has now been programmed into the radio.
5. Return the radio to manual operation by pressing the **MAN** key.
6. Using the **SHF** key and the **UP** and **DOWN** arrows as described previously,

set the radio for the desired receive frequency.

7. Press **SPLIT**. In the lower right corner of the display, either "**SPLIT +**" or "**SPLIT -**" will be displayed. If **SPLIT +** is display, the transmitter will be offset 100KHz above the receive frequency when keyed. If **SPLIT -** is displayed, the transmitter will be offset 100KHz below the receive frequency.

**NOTE** : When the transmitter is keyed, the frequency display will change to show the frequency being transmitted.

8. To return the radio simplex operation (i.e, same transmit and receive frequency), press the **MAN** key.

<p><b>SECTION 3 ALIGNMENT</b></p>
---------------------------------------

**4.0 TEST EQUIPMENT**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. RF Power Meter (100MHz, 50W ).</li> <li>2. Multimeter.</li> <li>3. Deviation Meter.</li> <li>4. Audio Signal Generator.</li> <li>5. RF Signal Generator (100MHz).</li> </ul> | <ul style="list-style-type: none"> <li>6. Frequency Counter (100MHz ).</li> <li>7. Distortion Meter.</li> <li>8. Oscilloscope (50MHz).</li> <li>9. Spectrum Analyzer.</li> </ul> |
|--|--|

**4.1 PLL SYNTHESIZER / OSCILLATOR FREQUENCY ALIGNMENT**

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
VCO & OSC	Disconnect the "short PCB" from test point TP1,2 and TP3. Set radio to 28.000MHz, AM mode CLARIFIER Setting in 12 O'clock Connect Frequency Counter to L61	VC1	10.240MHz ± 10Hz
	Connect Oscilloscope to L61	L4	Maximum Output
	Connect Frequency Counter to pin3 of IC14	VC2	10.240MHz ± 10Hz
	Connect Volt Meter to R203,202	L21	2.0VDC
	Connect Frequency Counter to C169	L21	Lock on 11.10MHz
	Connect Frequency Counter to L26	L23	Lock on 1.135MHz
	Connect Frequency Counter to C188	L24,25	Lock on 11.375MHz
	Connect volt meter to JP13 and ground	L17	2.2VDC ± 0.1
	Connect Frequency Counter to J86	L17	Lock on 17.305MHz
	Connect Oscilloscope to L62	L19	Maximum Output
AM OSC	Connect Frequency Counter to L62, Then Key Transmitter	VR21	TX & RX same Frequency
	Set radio to 28.000MHz, AM mode Connect freq counter to D45 cathode	L27	10.695MHz ± 10Hz

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
USB OSC	Set radio to 28.000MHz, USB mode Connect freq counter to D45 cathode and short Q30 (collector, emitter).	L29	10.6925MHz ± 10Hz
LSB OSC	Set radio to 28.000MHz, LSB mode Connect freq counter to D45 cathode and short Q30 (collector, emitter).	L28	10.6975MHz ± 10Hz

#### 4.2 RECEIVER ALIGNMENT

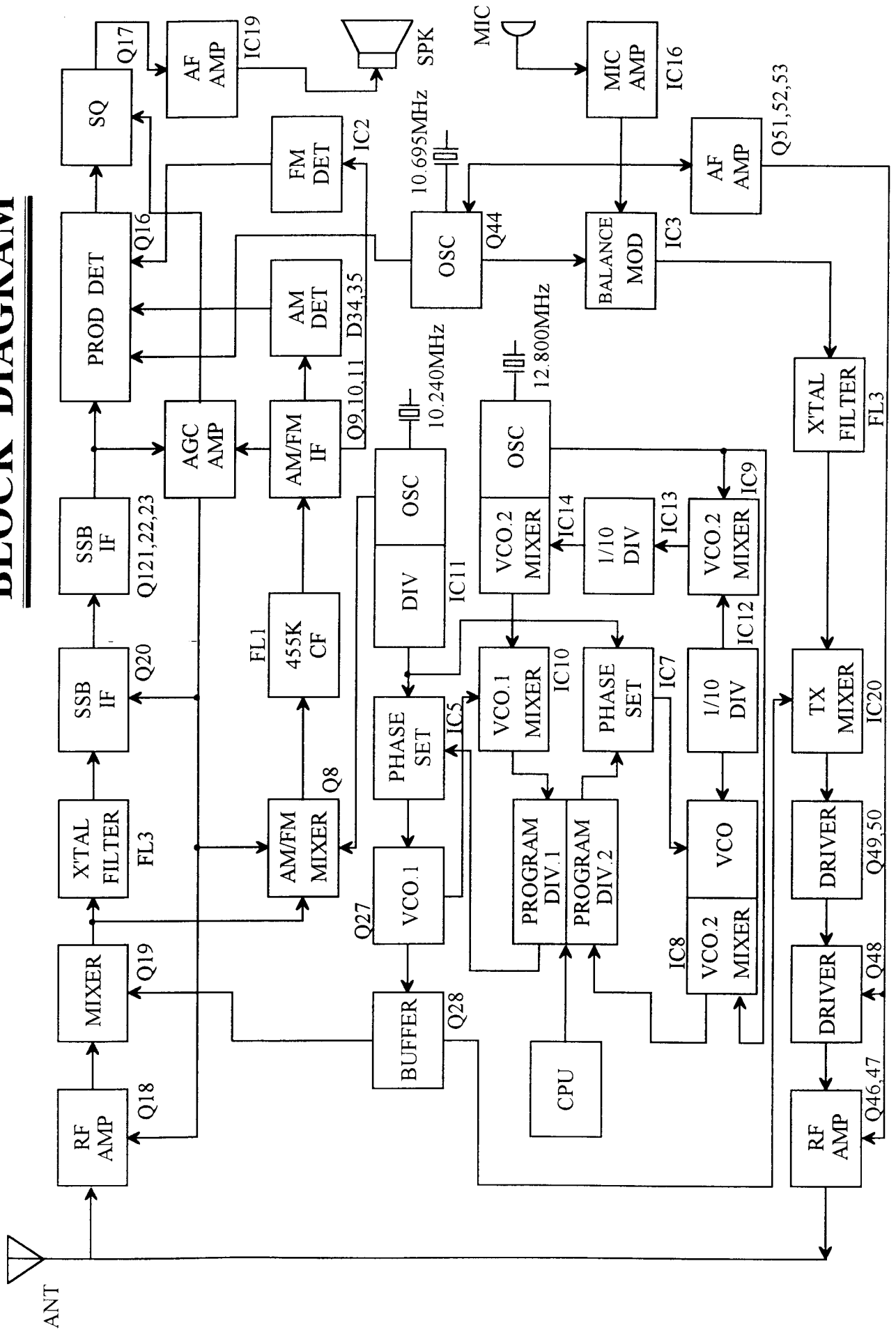
ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
AM SENSITIVITY	Set radio to 28.000MHz, AM mode CLARIFIER Setting in 12 O'clock RF Gain fully clockwise, SQ at mini- mum, VOL control at 2 O'clock. Connect RF SG to ANT jack and set- ting 28.000MHz, MOD 30%, 1.0uV Connect distortion meter to EXT SP jack	L8,9,11,12 13,14,3,4, 5,6	Audio output > 2V S/N 10dB
AM AF OUTPUT	Set radio to 28.000MHz, AM mode VOL control at fully clockwise. RF SG setting 28.000MHz, MOD 30%, 1mV	L5,6	Audio output > 5V Bast at distortion.
FM DISTORTION	Set radio to 28.000MHz, FM mode VOL control at fully clockwise. RF SG setting 28.000MHz, MOD 3KHz, 1mV	L7	Audio output > 5V Bast at distortion.
USB SENSITIVITY	Set radio to 28.000MHz, USB mode VOL control at fully clockwise. RF SG setting 28.001MHz, MOD off, 0.5uV	L15,16	Audio output > 3V S/N 10dB.
LSB SENSITIVITY	Set radio to 28.100MHz, LSB mode VOL control at fully clockwise. RF SG setting 28.099MHz, MOD off, 0.5uV	L15,16	Audio output > 3V S/N 10dB.
NB ADJUST	Set radio to 28.000MHz, AM mode RF SG setting 28.010MHz, MOD 30%, 1mV, NB/ANL switch on. Connect volt meter to D2 cathode.	L1,2	DC voltage to MAX (About > 2.5V)
AM SQUELCH	Set radio to 28.000MHz, AM mode SQ control at fully clockwise. RF SG setting 28.000MHz, MOD 30%, 1mV	VR4 Slowly	Adjust very slowly until squelch just open.

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
SSB SQUELCH	Set radio to 28.000MHz, USB mode SQ control at fully clockwise. RF SG setting 28.001MHz, MOD off, 1mV	VR3 Slowly	Adjust very slowly until squelch just open.
AM S/RF METER	Set radio to 28.000MHz, AM mode Meter switch at S/RF position. RF SG setting 28.000MHz, MOD 30%, 100uV	VR1	Meter needle to S9 on the S scale.
SSB S/RF METER	Set radio to 28.000MHz, USB mode S/RF switch at S/RF position. RF SG setting 28.001MHz, MOD off, 100uV	VR2	Meter needle to S9 on the S scale.

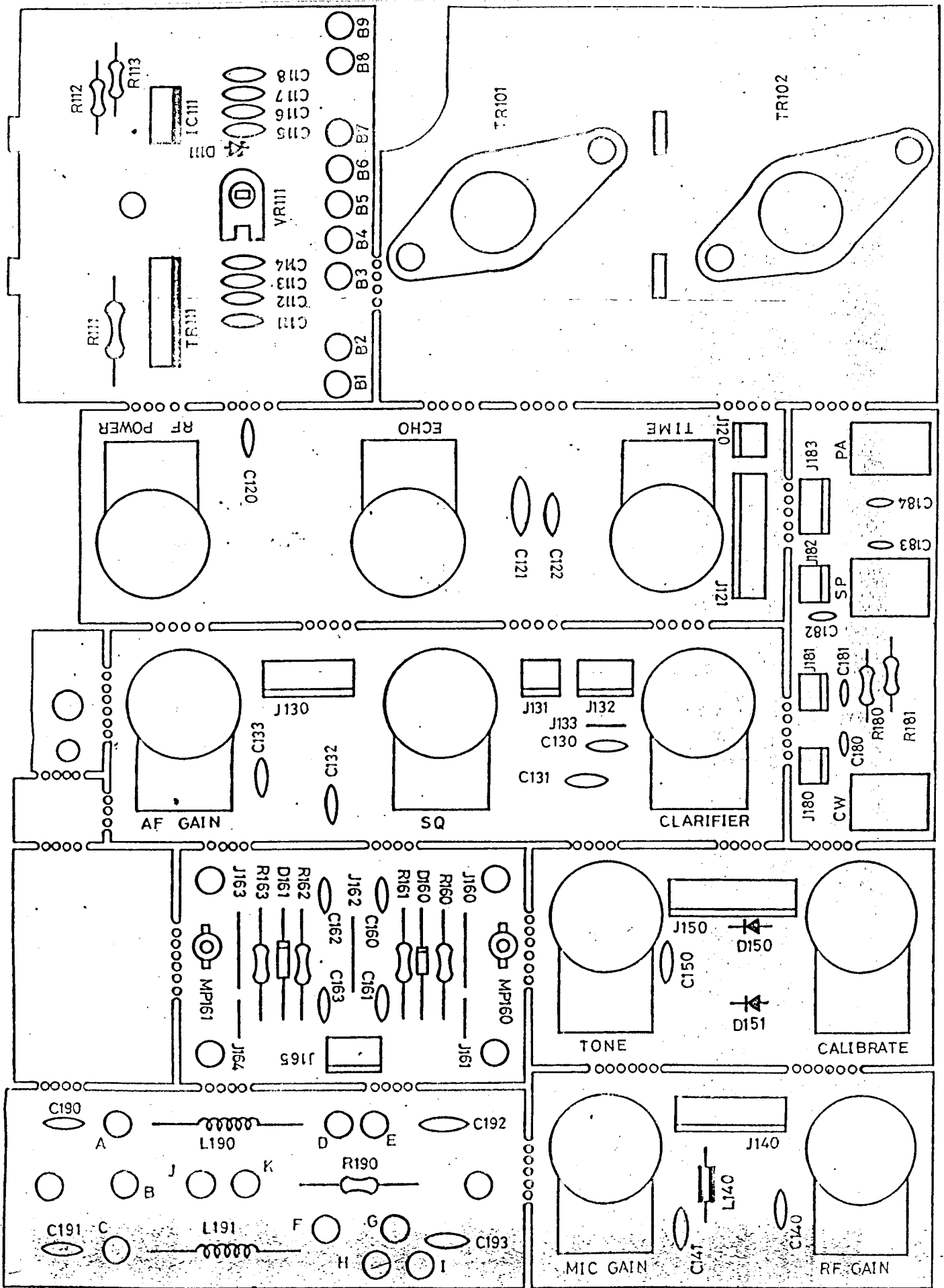
#### 4.3 TRANSMITTER ALIGNMENT

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
SSB TX POWER	Set radio to 28.000MHz, AM mode MIC, RF POWER Gain fully clockwise, Connect "short PCB" to TP1,2 and 3 Connect RF power meter to ANT jack Audio signal 30mV, 1KHz to MIC. Adjust VR12 fully clockwise. Connect Volt Meter to TP1.	VR13	DC6V
	Set radio to USB mode	L43,46,47, 48	Maximum output
	Set radio to 29.699MHz, USB mode	L19,43 L34	Maximum output Same as 28MHz power
	Set radio to 28.000MHz, USB mode	VR12	22 ~ 28W
	RF POWER Gain Counterclockwise	VR16	9 ~ 12W
AM TX POWER	Set radio to 28.000MHz, AM mode RF Gain fully clockwise, No MOD	VR13	7 ~ 11W
	RF POWER Gain Counterclockwise	VR15	0.7 ~ 1.3W
AM MODULATION	Set radio to 28.000MHz, AM mode Audio signal 30mV, 1KHz to MIC.	VR14	70 ~ 90%
TX S/RF METER	Set radio to 28.000MHz, AM mode MIC Gain at minimum position.	VR8	Meter needle to the same scale of the power meter readed.

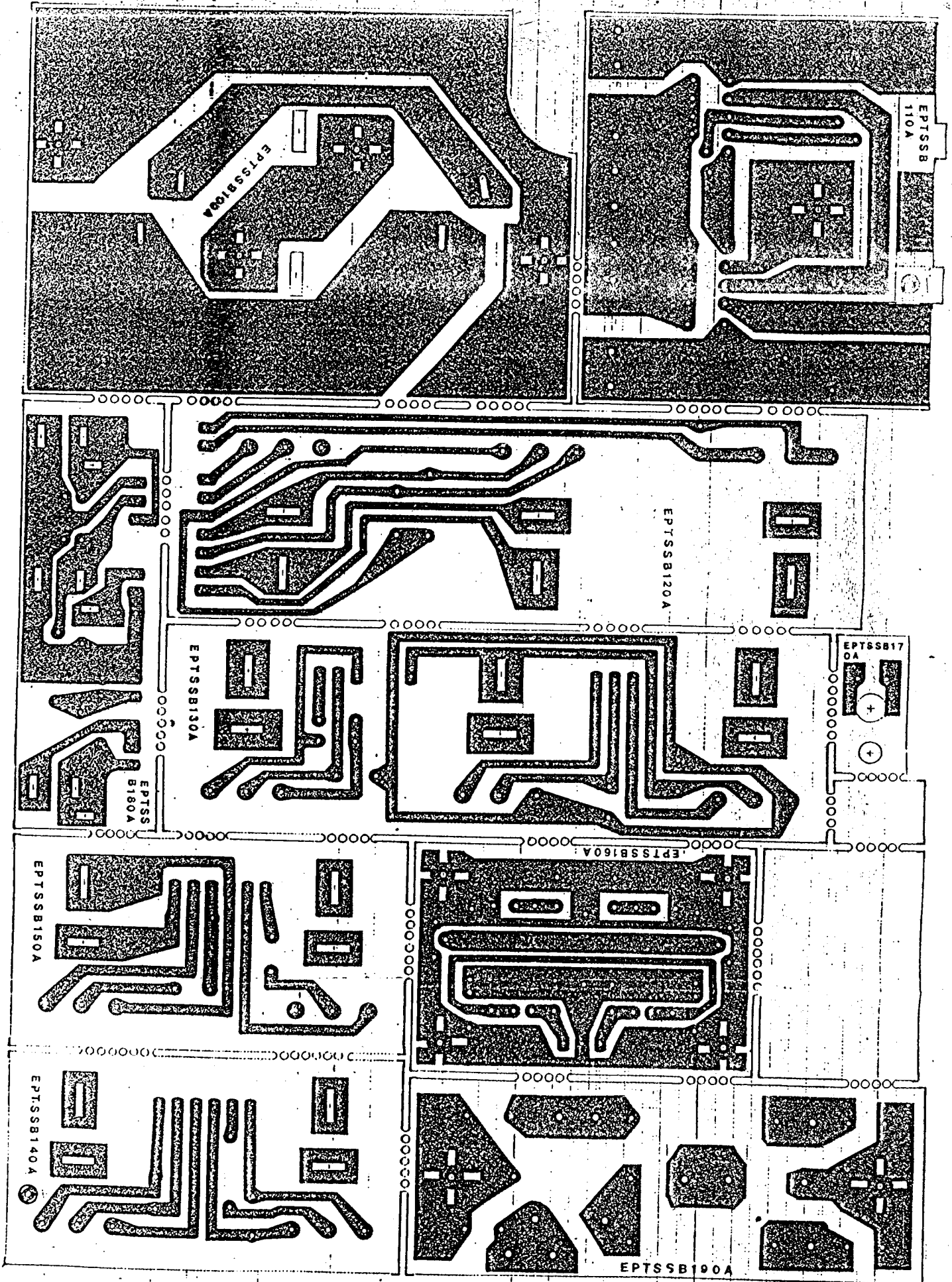
# BLOCK DIAGRAM



# POWER & FUNCTION PCB LAYOUT

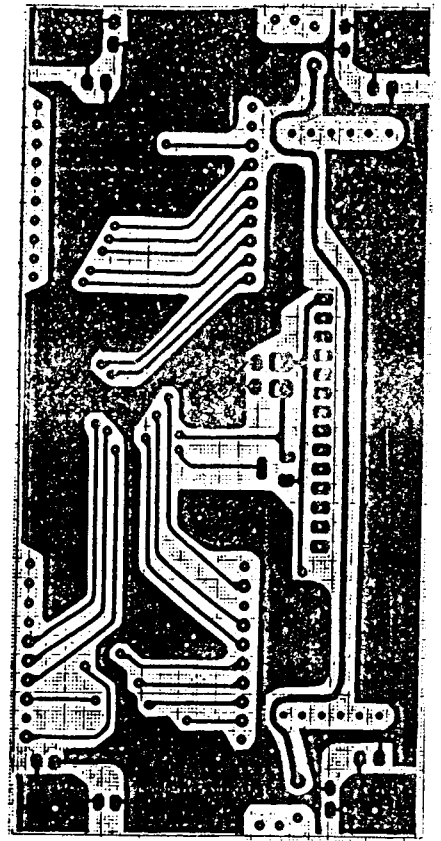
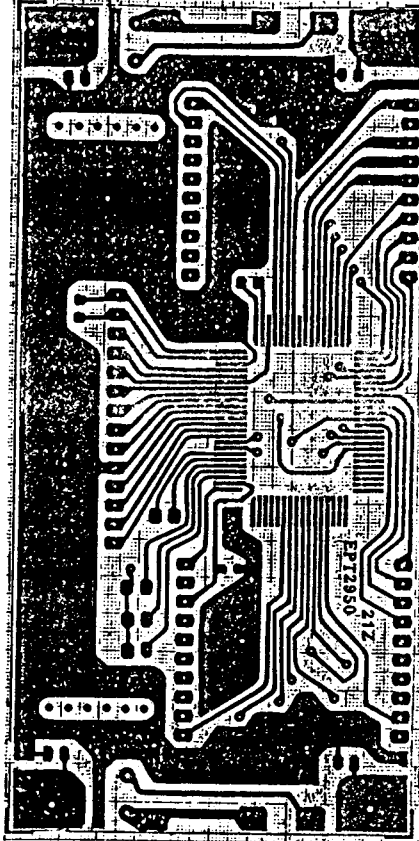
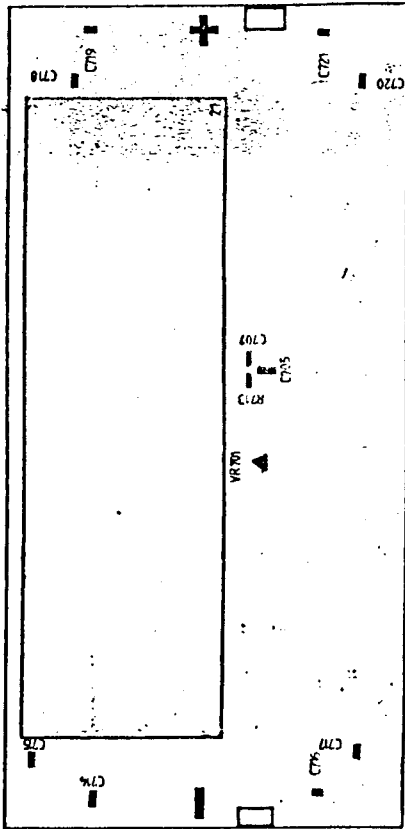


# POWER & FUNCTION PCB LAYOUT

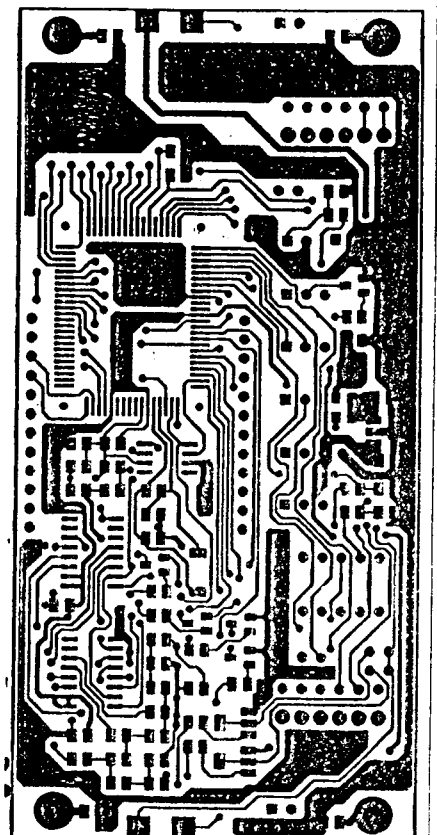
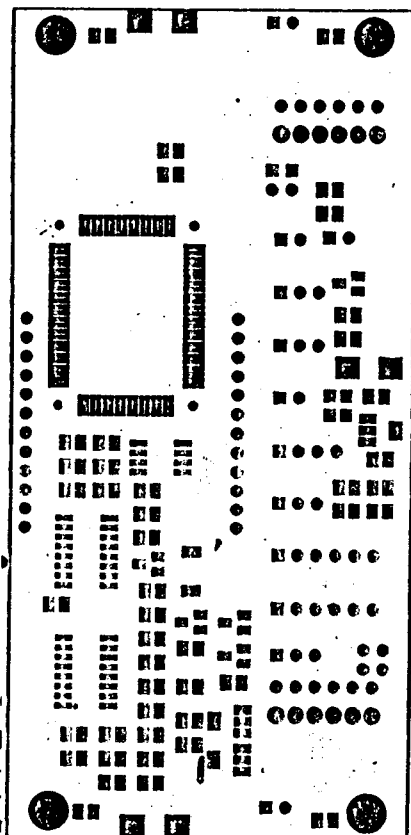
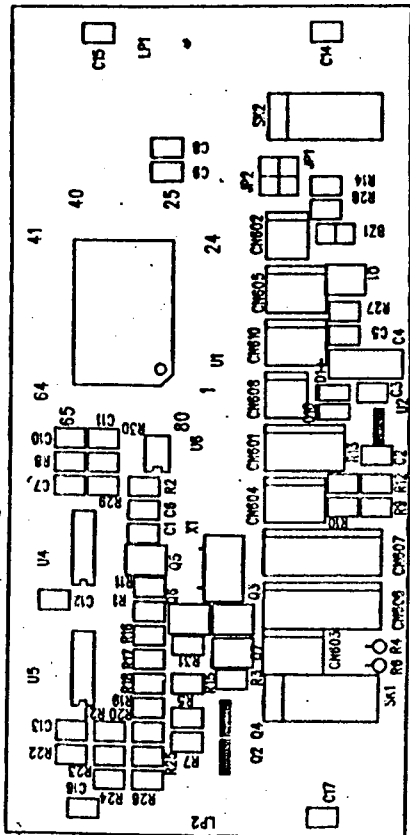


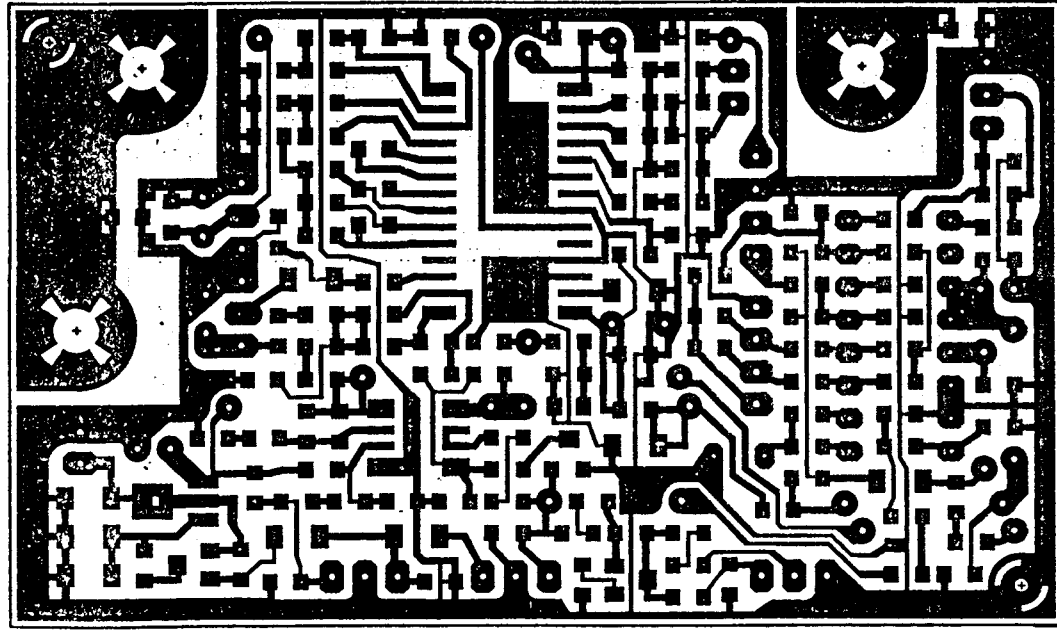
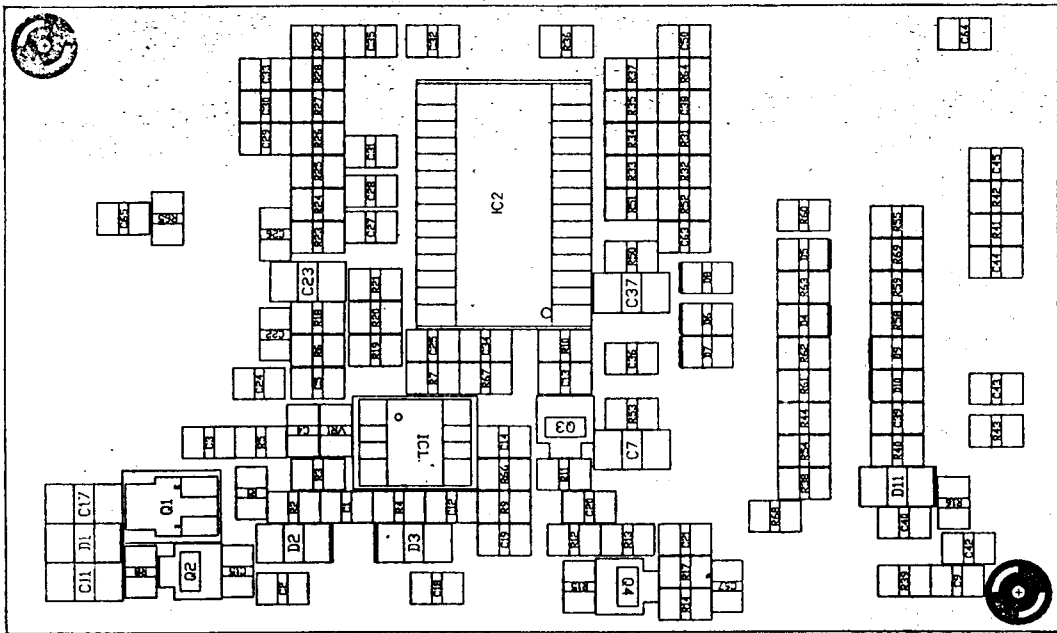
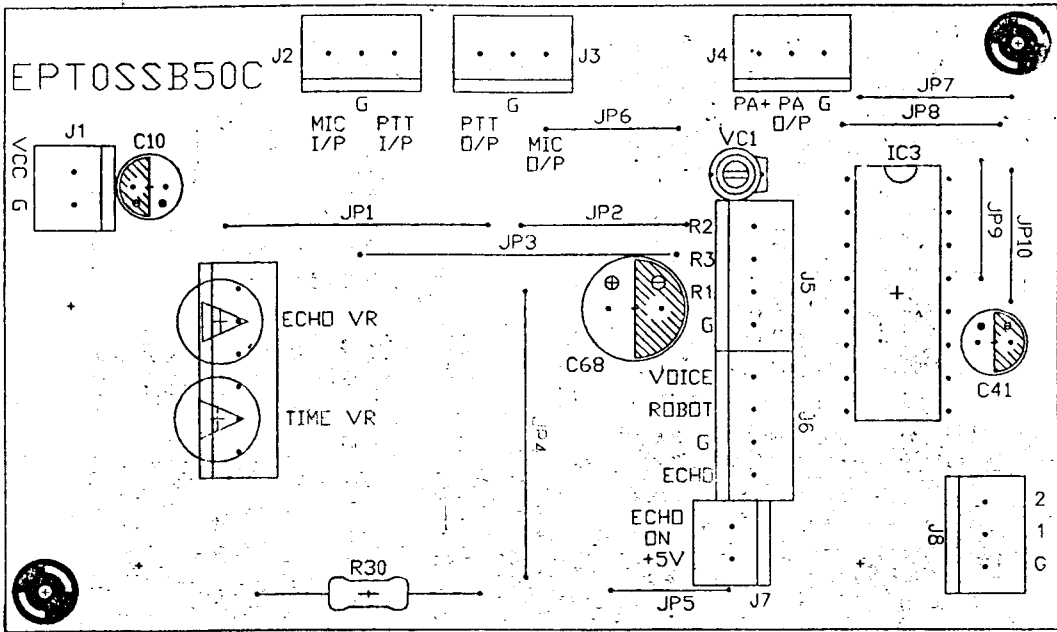


# LCD PCB LAYOUT

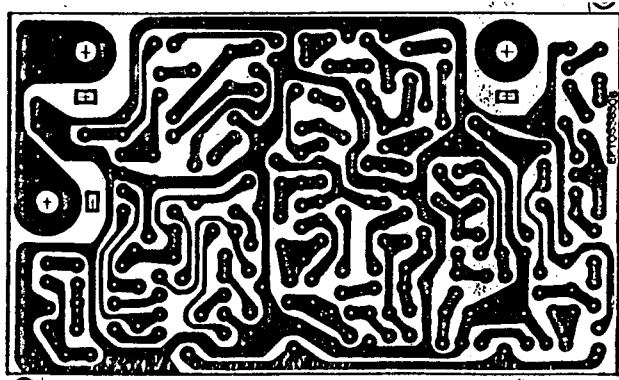
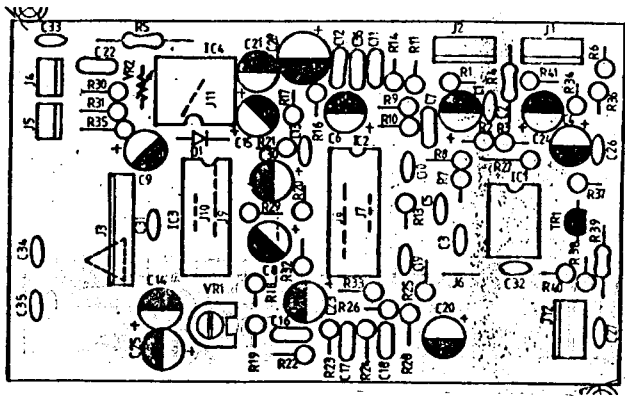


# CPU PCB LAYOUT

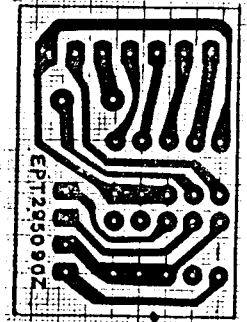
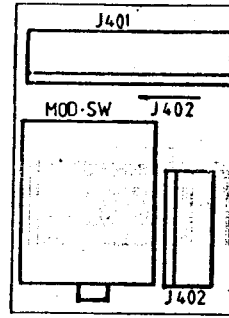




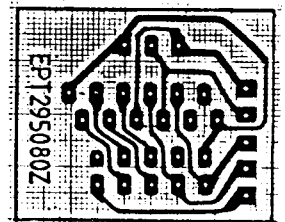
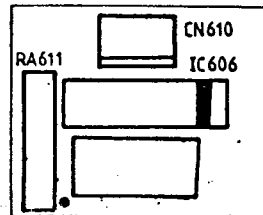
# ECHO PCB LAYOUT



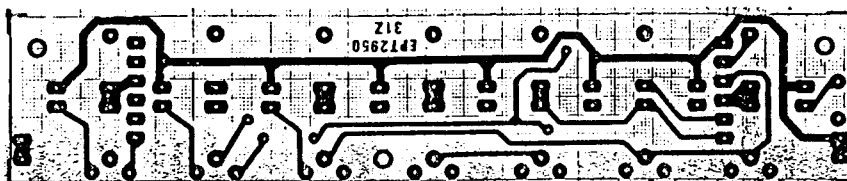
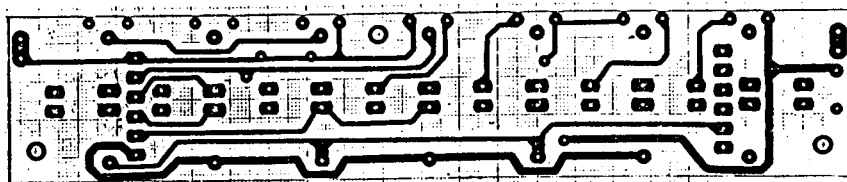
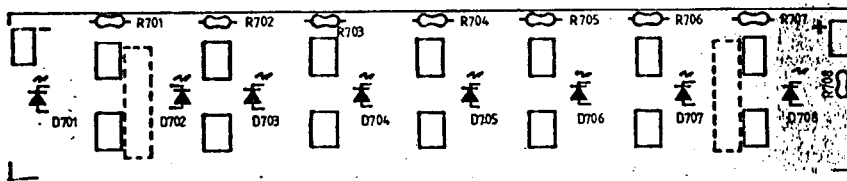
# BAND PCB LAYOUT

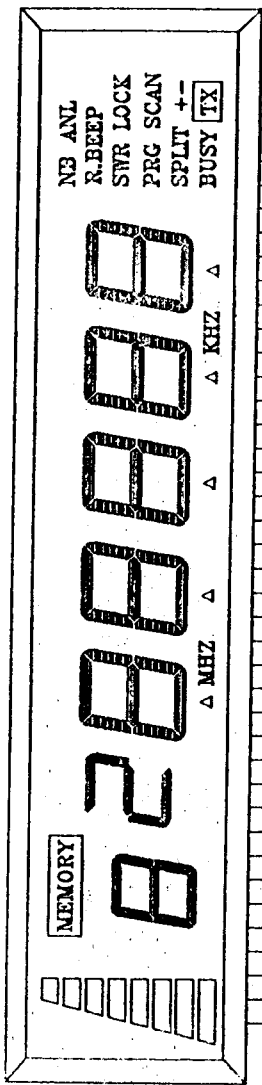


# MIC PCB LAYOUT

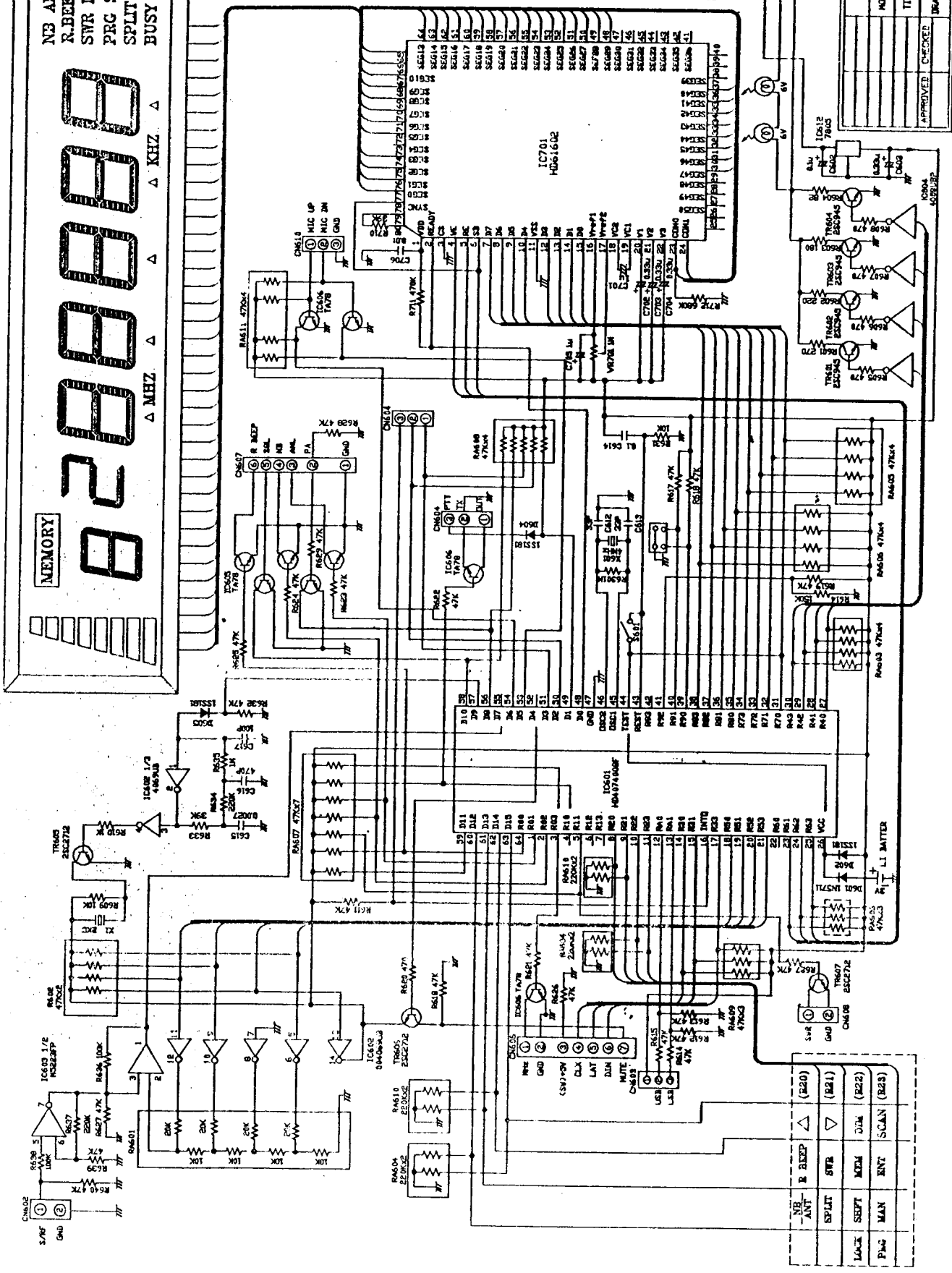


# KEY BOARD LAYOUT





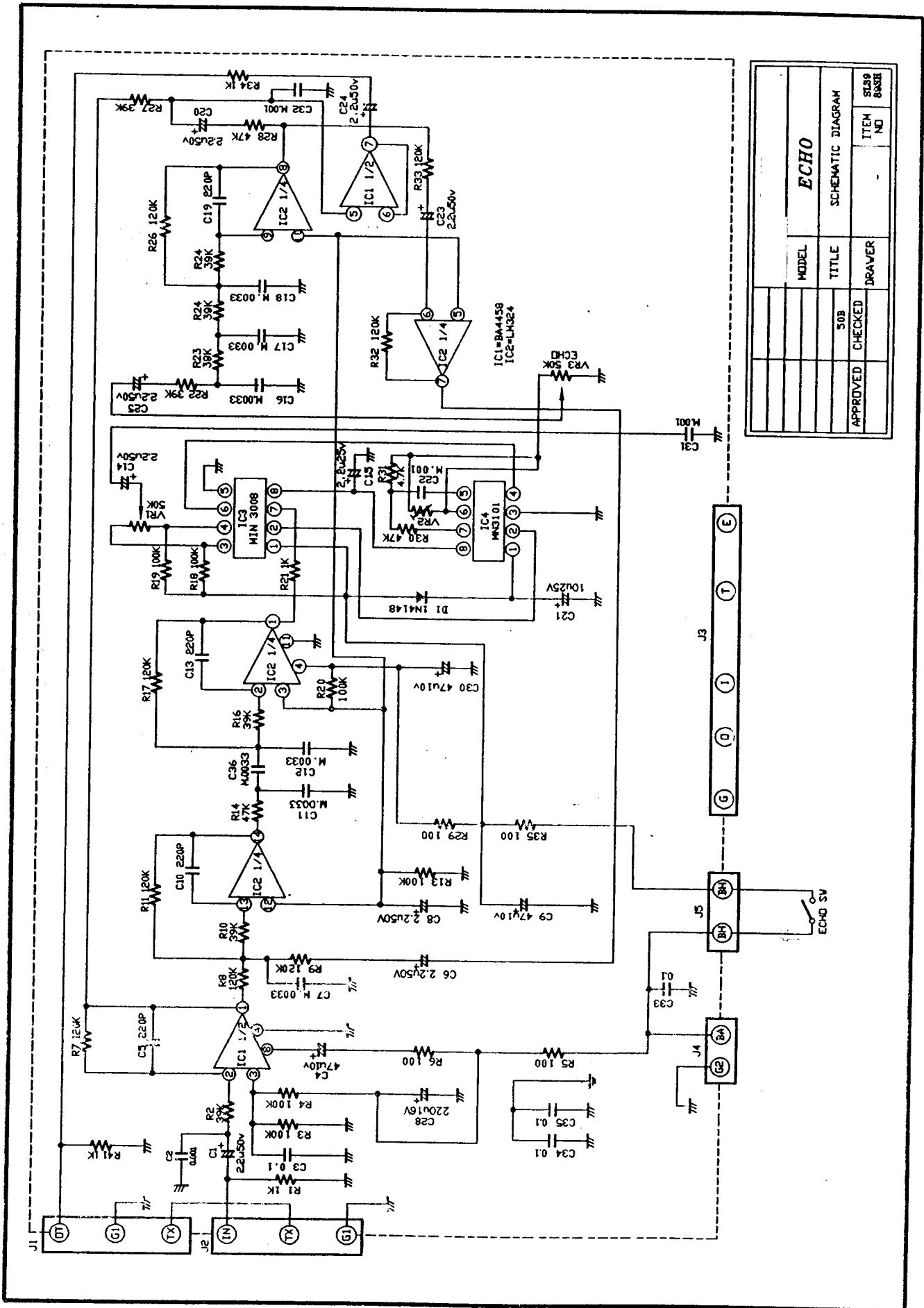
NO	COLOC	CON1
1	7C	7A
2	MEMORY	7B
3	7D	7E
4	8C	8E
5	8D	8F
6	8E	8G
7	8C	8D
8	8B	8A
9	4D	4A
10	4F	4A
11	5B	5D
12	5C	5E
13	2B	2E
14	2C	2F
15	1B	1F
16	1C	1E
17	PRG	LOCK
18	R.BEEP	ANL
19	---	---
20	SWR	SCAN
21	8A	8B
22	8B	8C
23	8A	8C
24	8B	8D
25	8C	8E
26	8D	8F
27	8A	8B
28	8B	8C
29	8C	8D
30	8D	8E
31	8E	8F
32	8F	8G
33	8G	8H
34	8H	8I
35	8I	8J
36	8J	8K
37	8K	8L
38	8L	8M
39	8M	8N
40	8N	8O
41	8O	8P
42	8P	8Q
43	8Q	8R
44	8R	8S
45	8S	8T
46	8T	8U
47	8U	8V
48	8V	8W
49	8W	8X
50	8X	8Y
51	8Y	8Z
52	8Z	8A
53	8A	8B
54	8B	8C
55	8C	8D
56	8D	8E
57	8E	8F
58	8F	8G
59	8G	8H
60	8H	8I
61	8I	8J
62	8J	8K
63	8K	8L
64	8L	8M
65	8M	8N
66	8N	8O
67	8O	8P
68	8P	8Q
69	8Q	8R
70	8R	8S
71	8S	8T
72	8T	8U
73	8U	8V
74	8V	8W
75	8W	8X
76	8X	8Y
77	8Y	8Z
78	8Z	8A
79	8A	8B
80	8B	8C
81	8C	8D
82	8D	8E
83	8E	8F
84	8F	8G
85	8G	8H
86	8H	8I
87	8I	8J
88	8J	8K
89	8K	8L
90	8L	8M
91	8M	8N
92	8N	8O
93	8O	8P
94	8P	8Q
95	8Q	8R
96	8R	8S
97	8S	8T
98	8T	8U
99	8U	8V
100	8V	8W



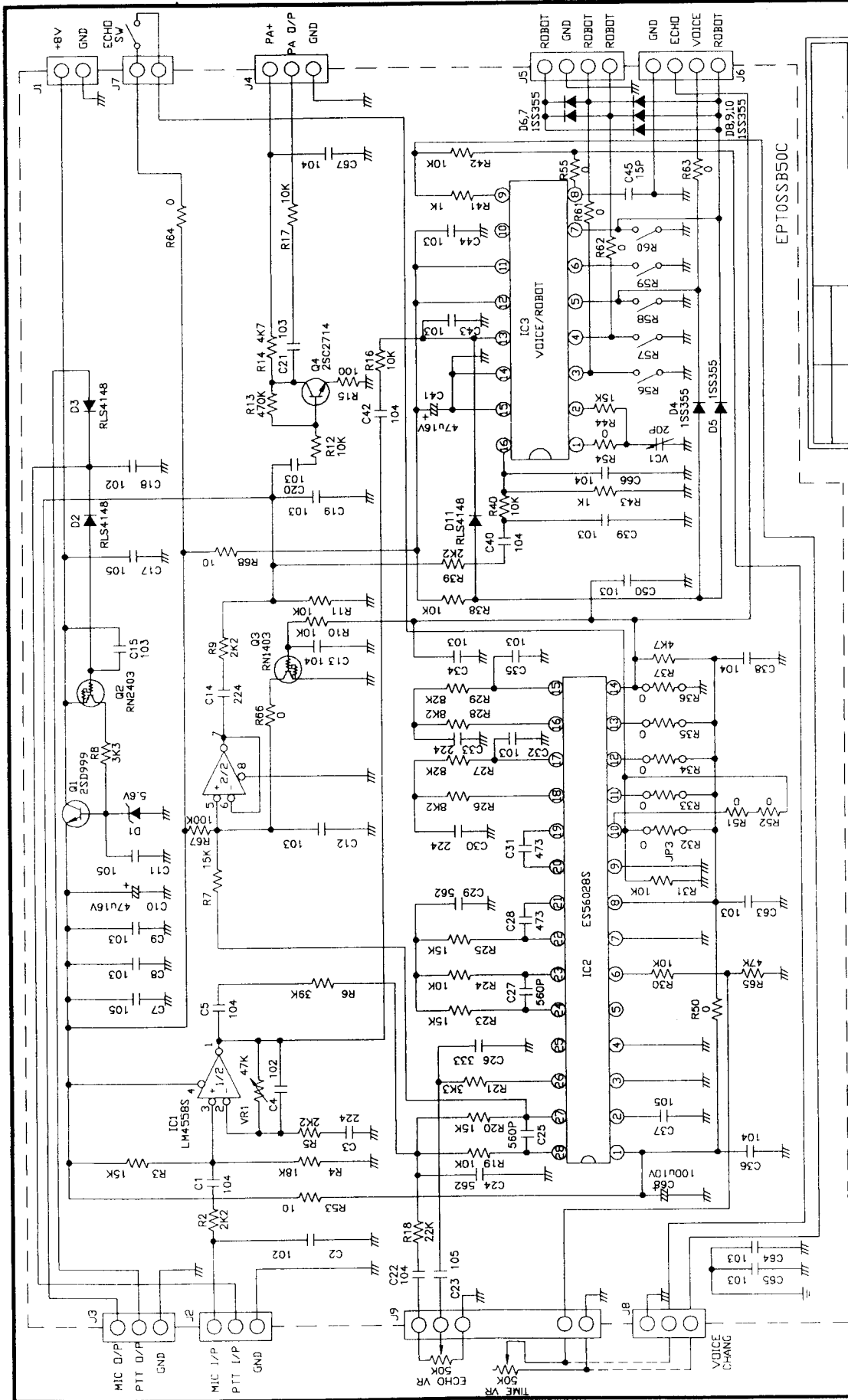
①	6V
②	12.6V
③	13.6V
④	21V

MODEL	BCT-2660 (CONTROL)
TITLE	SCHEMATIC DIAGRAM
APPROVED	DATE
CHECKED	DATE
DRAWN	DATE
ITEM NO.	
REV.	

①	NE ANT	△	(R20)
②	SPLIT	▽	(R11)
③	LOCK	□	(R22)
④	PRG	MAN	ENT
⑤	SCAN		(R23)

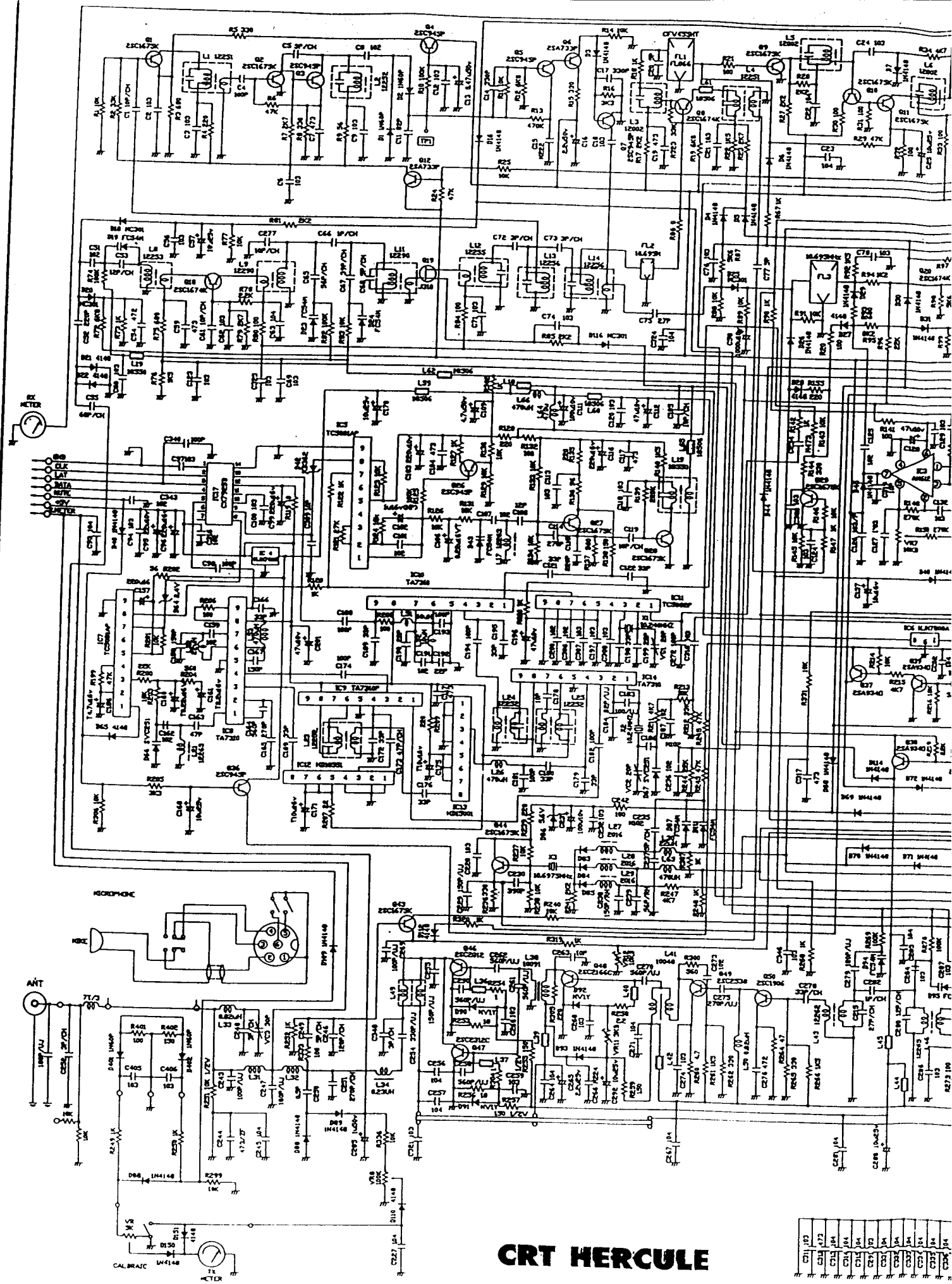


MODEL		TITLE		DRAWER		ITEM NO	
ECHO		SCHEMATIC DIAGRAM		50B		SL39 803E	
APPROVED		CHECKED					



EVRP BOARD		
MODEL	TITLE	ITEM NO.
	SCHMATIC DIAGRAM	
	DRAWER	
APPROVED	CHECKED	

# SCHEMA ELECTRONIQUE CRT HERCULE

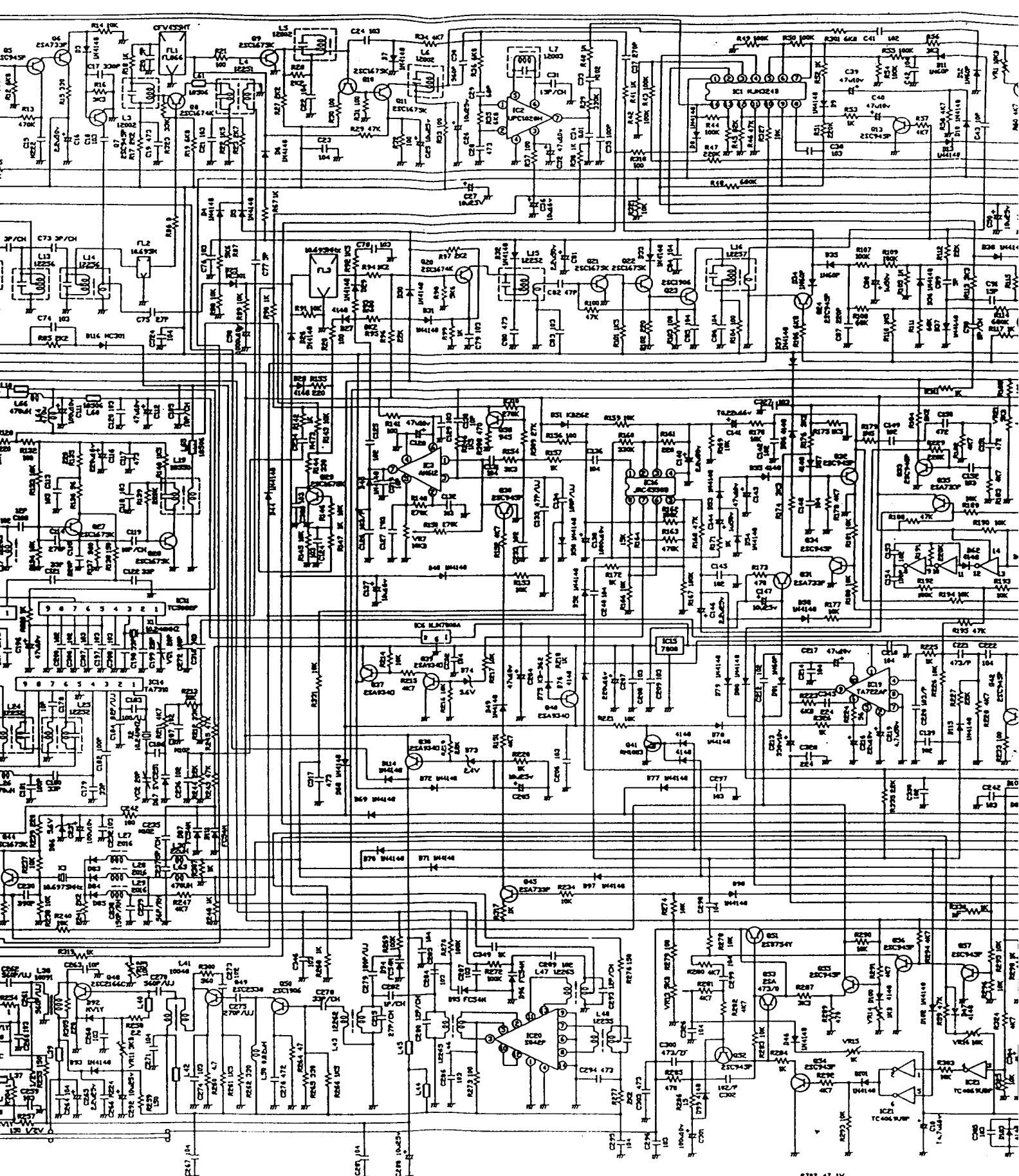


# CRT HERCULE

C11	100
C12	472
C13	104
C14	104
C15	104
C16	104
C17	104
C18	104
C19	104
C20	104
C21	104
C22	104
C23	104
C24	104
C25	104
C26	104
C27	104
C28	104
C29	104
C30	104
C31	104
C32	104
C33	104
C34	104
C35	104
C36	104
C37	104
C38	104
C39	104
C40	104
C41	104
C42	104
C43	104
C44	104
C45	104
C46	104
C47	104
C48	104
C49	104
C50	104
C51	104
C52	104
C53	104
C54	104
C55	104
C56	104
C57	104
C58	104
C59	104
C60	104
C61	104
C62	104
C63	104
C64	104
C65	104
C66	104
C67	104
C68	104
C69	104
C70	104
C71	104
C72	104
C73	104
C74	104
C75	104
C76	104
C77	104
C78	104
C79	104
C80	104
C81	104
C82	104
C83	104
C84	104
C85	104
C86	104
C87	104
C88	104
C89	104
C90	104
C91	104
C92	104
C93	104
C94	104
C95	104
C96	104
C97	104
C98	104
C99	104
C100	104

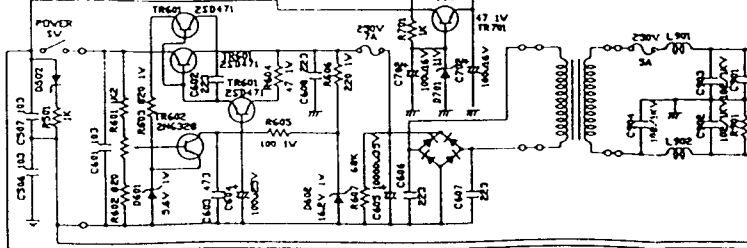
1A

1B



# CRT HERCULE

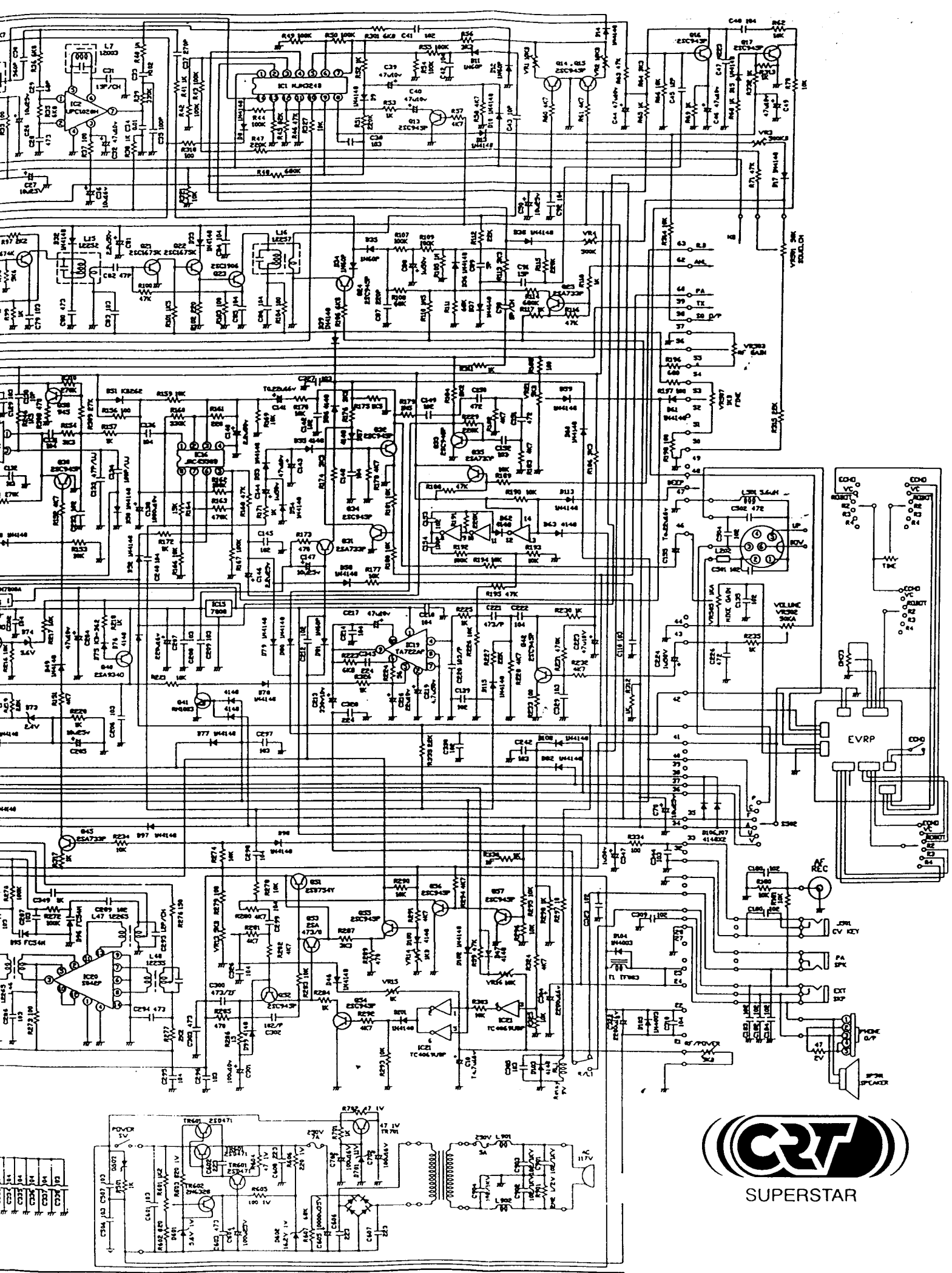
C101	100K
C102	100K
C103	100K
C104	100K
C105	100K
C106	100K
C107	100K
C108	100K
C109	100K
C110	100K
C111	100K
C112	100K
C113	100K
C114	100K
C115	100K
C116	100K
C117	100K
C118	100K
C119	100K
C120	100K
C121	100K
C122	100K
C123	100K
C124	100K
C125	100K
C126	100K
C127	100K
C128	100K
C129	100K
C130	100K
C131	100K
C132	100K
C133	100K
C134	100K
C135	100K
C136	100K
C137	100K
C138	100K
C139	100K
C140	100K
C141	100K
C142	100K
C143	100K
C144	100K
C145	100K
C146	100K
C147	100K
C148	100K
C149	100K
C150	100K



13

1C



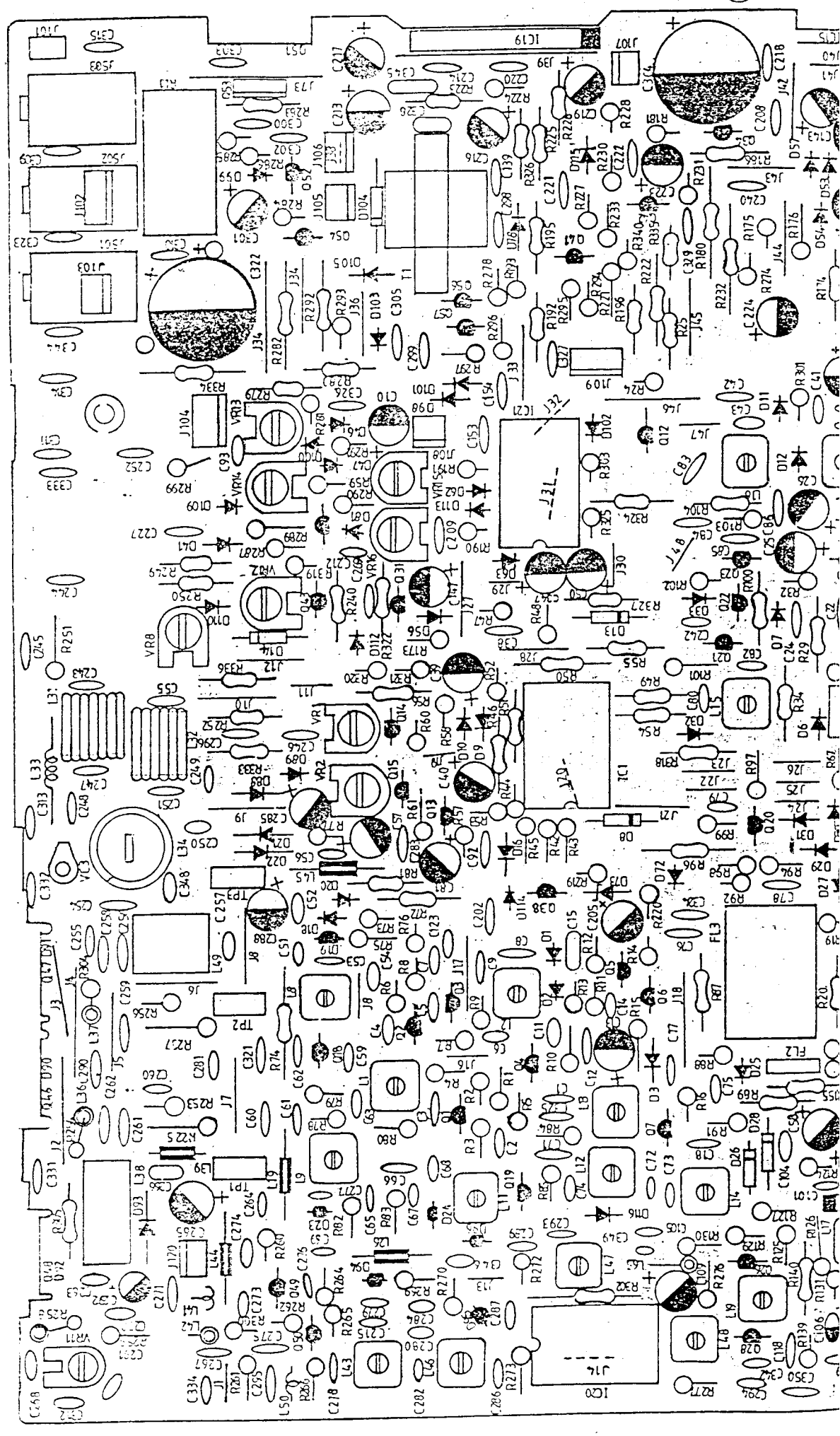


10

10

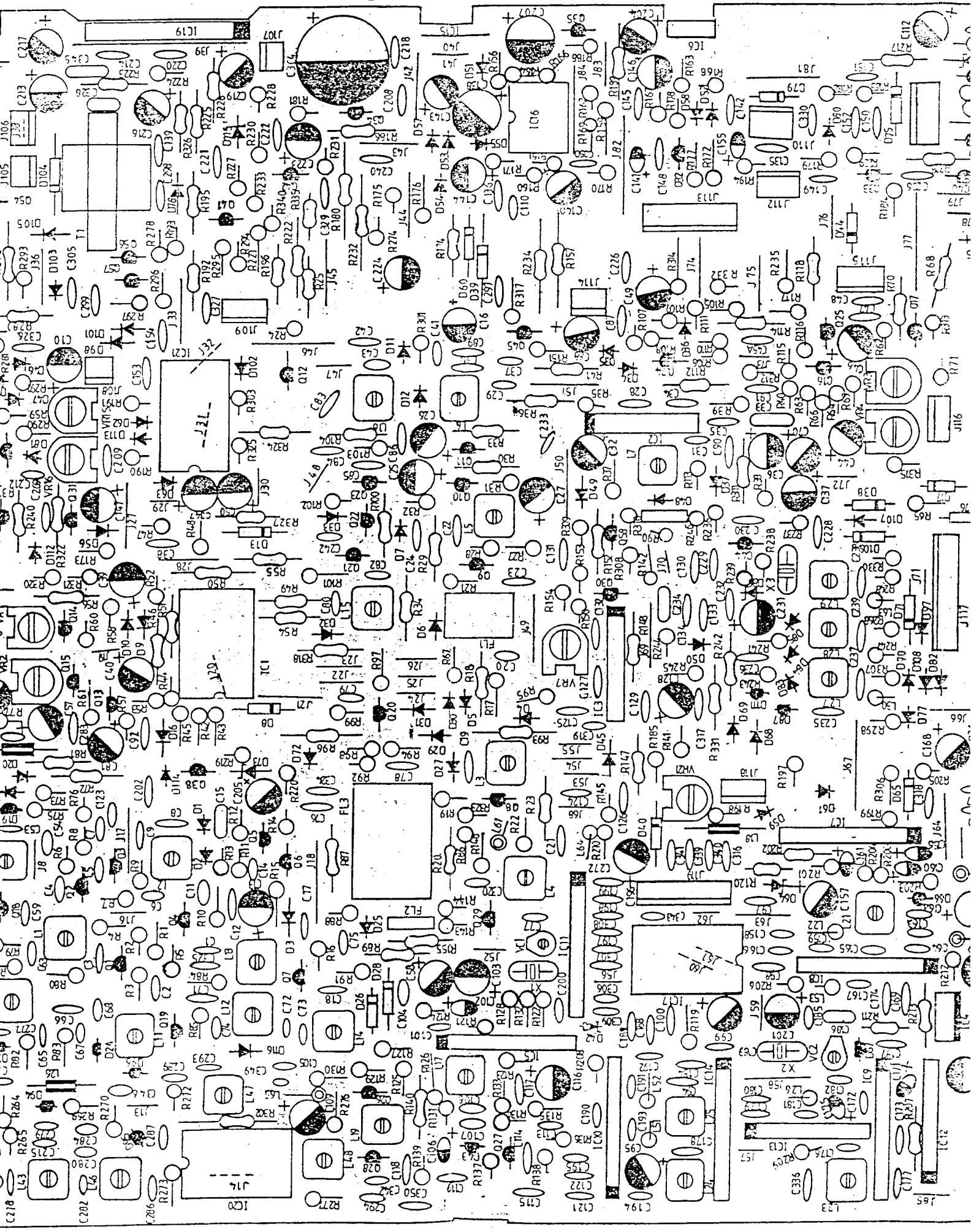
2A

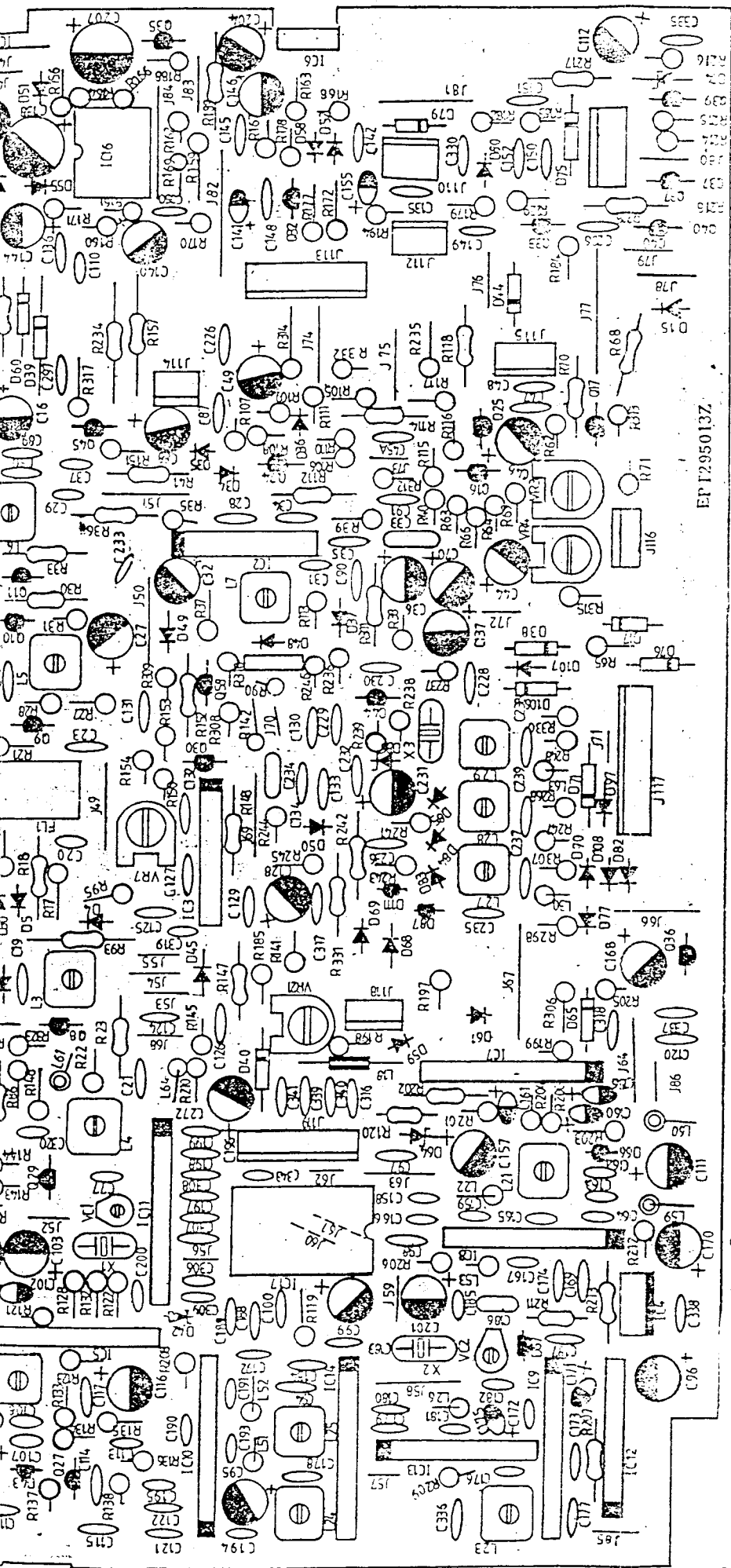
2B



2B

2C





EPT295013Z

NOTES:

- 1. S = 2.11
- 2. MODEL = RANGER 2950
- 3. TITLE = MAIN P.C.B.
- 4. DWG NO = EPT295013Z

中国·技术版

DATE = 78.7.5