

SONY®

MEMORY LABEL READER/WRITER

MLU-100A

 **Tele-File**

MAINTENANCE MANUAL

1st Edition

Serial No. 10001 and Higher

⚠ 警告

このマニュアルは、サービス専用です。
お客様が、このマニュアルに記載された設置や保守、点検、修理など行うと感電や火災、人身事故につながる可能性があります。
危険をさけるため、サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegebenen Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

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Manual Structure

Purpose of this manual

This manual is the maintenance manual for memory label reader/writer MLU-100A. This manual is intended for use by service engineers, and describes overall information about this unit's installation and maintenance based on the service at a component level.

Contents

This manual is organized by following sections.

Section 1 Installation

Describes the operating condition, power supply, recommended cables, connector input/output signal, external dimensions, switch settings on boards and LEDs.

Section 2 Service Overviews

Describes the board layout, removal/attachment of the external parts and electrical alignment.

Section 3 Trouble Shooting

Describes the power-on test, self-diagnosis and trouble shooting.

Section 4 Spare Parts

Describes the repair parts.

Section 5 Semiconductor Pin Assignments

Describes the semiconductor pin assignments used in this unit.

Section 6 Board Layouts

Describes the board layouts.

Section 7 Block Diagram

Describes the overall block diagram.

Section 8 Schematic Diagrams

Describes the schematic circuits diagrams.

Related Manuals

For this unit, following manual is provided apart from this maintenance manual.

- **Operation manual (supplied with this unit)**

This manual describes notes on operating and explanation of each configuration portion.

Section 1 Installation

1-1. Operating Conditions

WARNING

Do not install or use this unit in an area subject to oily gas, steam, humidity, or dust.

Using this unit in such an area may cause fire or an electric shock.

- To prevent the temperature in the unit from rising, fully ventilate the room where the unit is installed.
- The operating temperature of this unit is 5 °C to 40 °C. Do not place any heat source near the unit.

1-2. Power Supply

1-2-1. Power Supply Specification

Power voltage: 9 V dc
Power consumption: 400 mA

1-2-2. AC Adapter

WARNING

Although no adapter is contained in the MLU-100A package, be sure to use the AC adapter specified below. Using an AC adapter not specified may cause fire or an electric shock.

Do not damage the AC adapter.

Damaging the AC adapter may cause fire or an electric shock.

For United States of America and Canada use

AC adapter: AC-E90HG, 9V 800 mA (2 m)

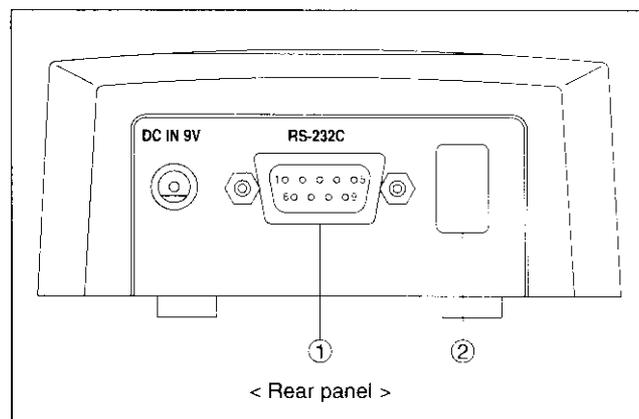
1-3. Recommended Cable

Use a cross cable type when connecting a cable to the RS-232C connector on the rear panel at installation or maintenance.

1-4. Signal Input/Output

The signal input/output connector is located on the rear panel as shown below.

For the pin assignment, see the table below.



① RS-232C^(※1): D-sub 9-pin Male

Pin No.	Signal	Description
1	DCD	Data carrier detect
2	RXD	Received data
3	TXD	Transmitted data
4	DTR	Data terminal ready
5	SG	Signal ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	RI	Call indication

Note

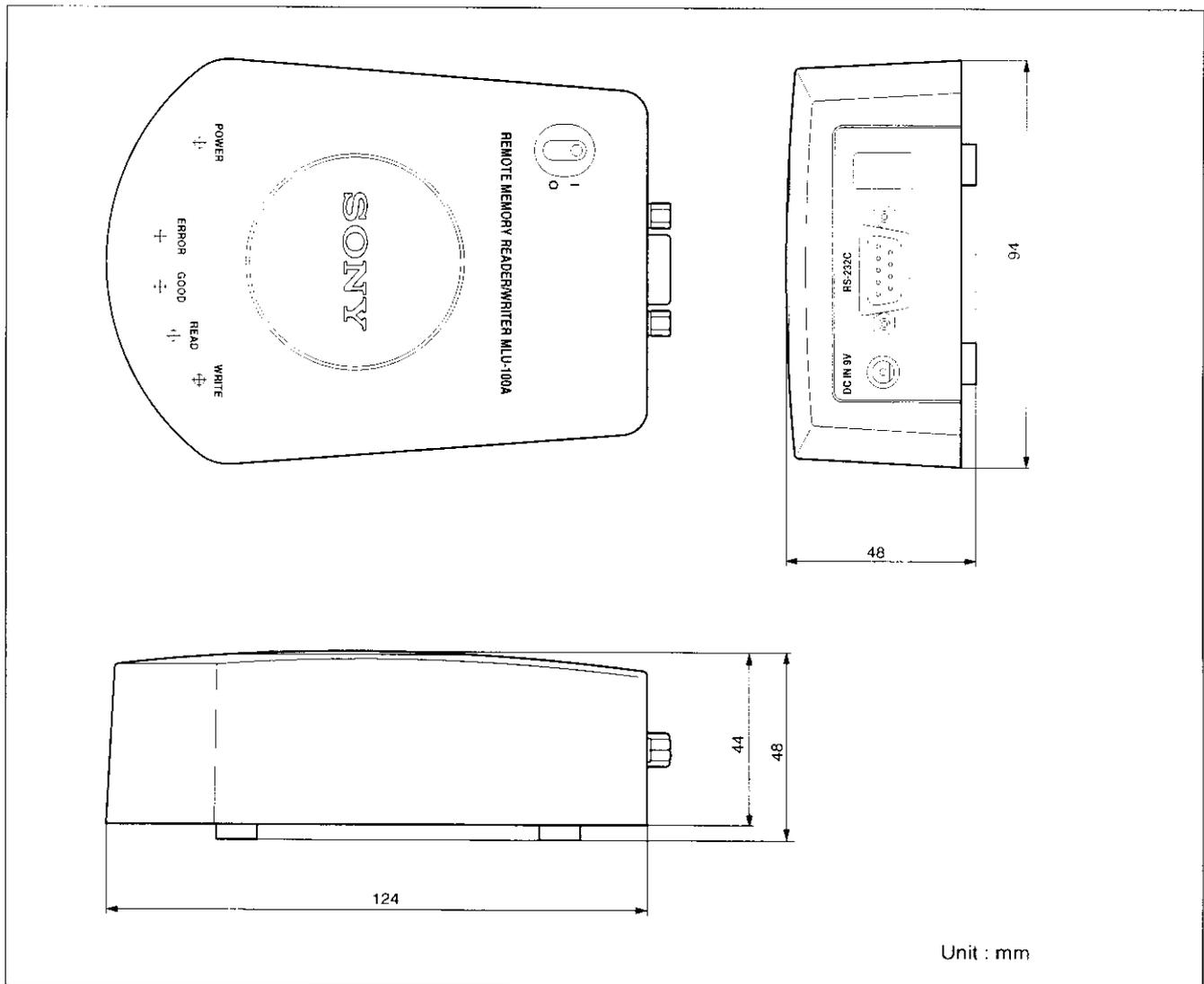
(※1): Conforms to RS-232C.

② Infrared communication:

Tele-File^{TM(※2)} communication format

(※2): Tele-File is a trademark of Sony Corporation.

1-5. External Dimensions

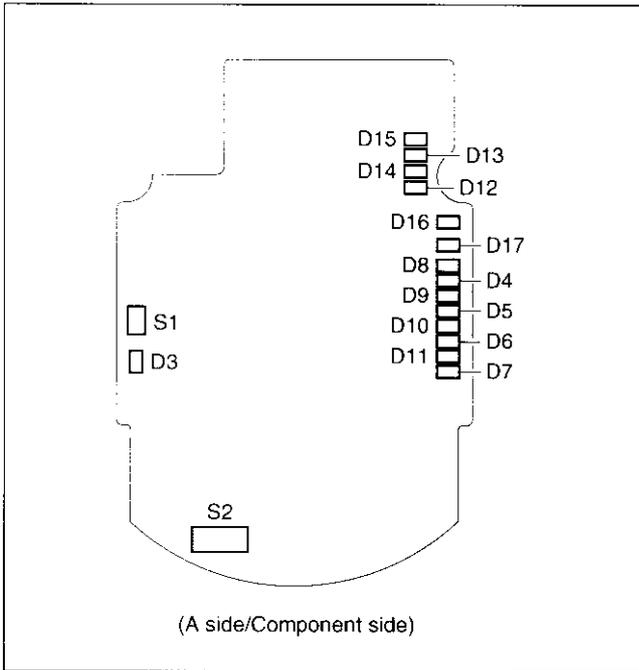


1-6. Switch Settings on the Boards and Description for the LEDs

Notes

- Do not change the settings of the switches for which "Factory use only" is indicated.
- The alphanumeric characters in the parentheses indicate the address on the board.

1. IF-691 Board

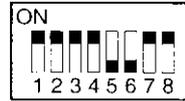


S1 (A3): Reset switch

Enables the S2 settings changed.

S2 (A4): Setting switches

Setting at shipment (■ indicates the position of the switch knob.)



S2-1, 2-2, 2-3: Factory use only

Always turn these switches on.

S2-4: Self-diagnosis mode selection

ON: Normal mode

OFF: Self-diagnosis mode

S2-5, 2-6, 2-8: RS-232C baud rate selection

Note

The rate is fixed at 9600 bps in self-diagnosis mode regardless of the settings below.

Switch setting S2-5	S2-6	S2-8	Baud rate (bps)
ON	ON	OFF	1,200
OFF	ON	OFF	2,400
ON	OFF	OFF	4,800
OFF	OFF	OFF	9,600
ON	ON	ON	19,200
OFF	ON	ON	38,400
ON	OFF	ON	57,600
OFF	OFF	ON	115,200

S2-7: PC connecting line selection

ON: RS-232C connector

OFF: Infrared communication

(Only Windows95 is supported)

Note

This setting is valid in self-diagnosis mode.

D3 (green) (A3): Pilot LED
Lights when the power is on.

D4 (green) (B2):
Unused.

D5, D6 (green) (B3):
Unused.

D7 (green) (B3): ISR LED
Lights 3 seconds when the ISR command is received.

D8 (green) (B2): Operation LED
Flashes when the unit is operating normally.
When the unit is waiting ready in communication, this LED flashes at a longer interval.

D9 (green) (B2):
Unused.

D10 (green) (B3):
Unused.

D11 (green) (B3): Buzzer LED
Lights when the buzzer beeps.

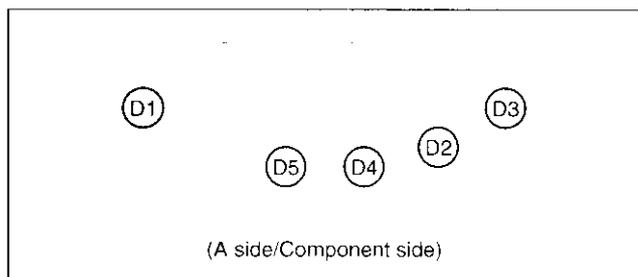
D12, D13, D14, D15 (yellow) (B1):
Communication status

LED				Description
D12	D13	D14	D15	
ON	ON	ON	OFF	Waiting for a response.
ON	ON	OFF	OFF	Transmitting ACK/NAK.
ON	OFF	ON	OFF	Creating response data.
ON	OFF	OFF	OFF	Waiting for STX.
OFF	ON	ON	OFF	Waiting for completion of transmission of response data.
OFF	ON	OFF	OFF	Waiting for ETX, SYM.
OFF	OFF	ON	OFF	Analyzing the command.
OFF	OFF	OFF	OFF	Standing by.

ON: The LED lights.
OFF: The LED does not light.

D16 (red) (B1). **D17** (green) (B2):
Infrared communication LED
Flashes while the unit is transmitting or receiving data with infrared communication.

2. LED-319 Board



D1 (green) (A1): POWER
Lights when the power is on.

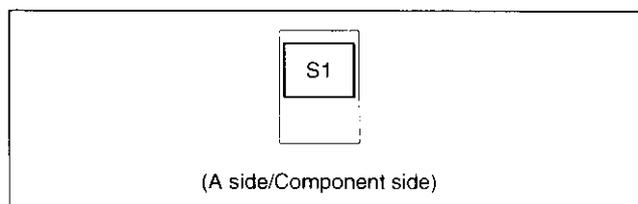
D2 (green) (A1): READ
Lights when the unit receives the Read command and stands ready for reading data.

D3 (amber) (A1): WRITE
Lights when the unit receives the Write command and stands ready for writing data.

D4 (green) (A1): GOOD
Lights when the unit successfully finishes reading/writing data.

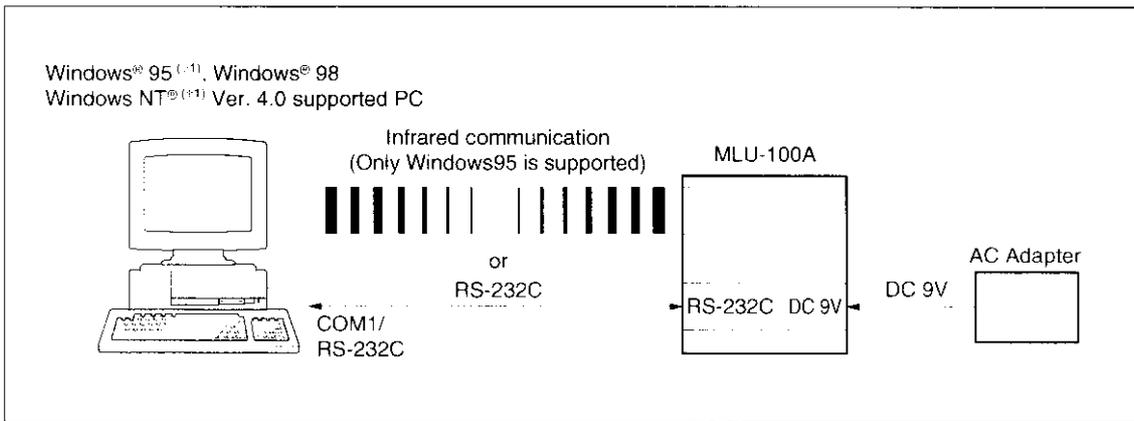
D5 (red) (A1): ERROR
Lights when a read/write error occurs.

3. PSW-64 Board



S1 (A1): Power switch
Turns the unit power ON/OFF.

1-7. Example of System Connection

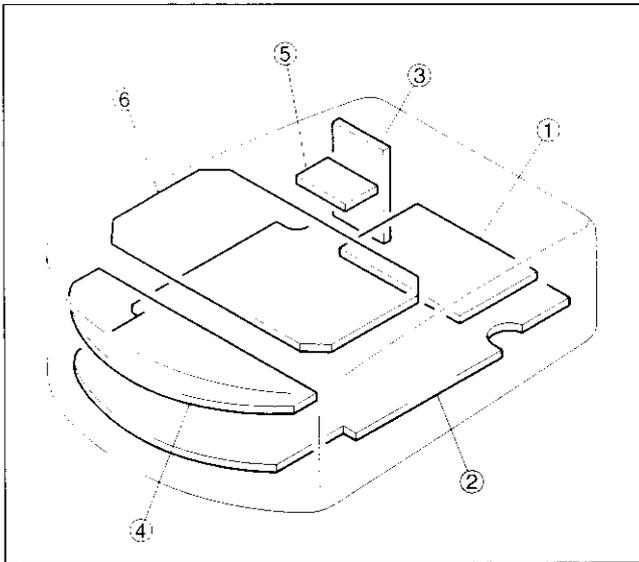


(*) Windows and Windows NT are registered trademarks of Microsoft Corporation.

Section 2

Service Overviews

2-1. Board Layout



- ① CCM-33 board: Tele-File™(*1) reader/writer board
- ② IF-691 board: Tele-File™(*1) interface board
- ③ IRC-3 board: Infrared communication board
- ④ LED-319 board: Display board
- ⑤ PSW-64 board: Power switch board
- ⑥ SE-480 board: Loop antenna board

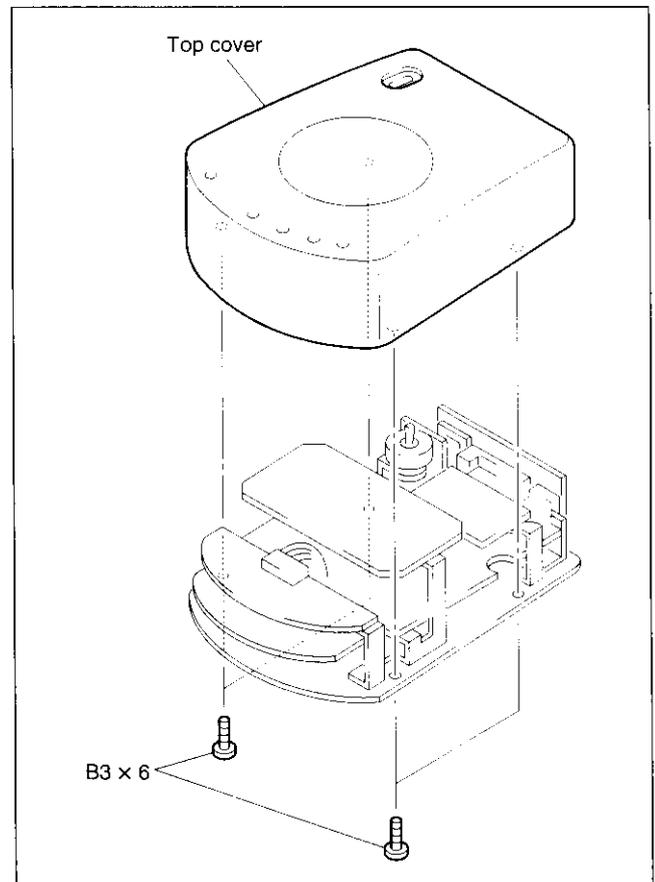
2-2. Removal or Attachment of Exterior Parts

Note

Turn off the power switch and disconnect the DC IN connector before removing or attaching the exterior parts. If an external part is removed or attached while the power is turned on, the boards in the unit may be damaged.

2-2-1. Top Cover

1. Turn off the power.
2. Remove the four screws, then remove the top cover.

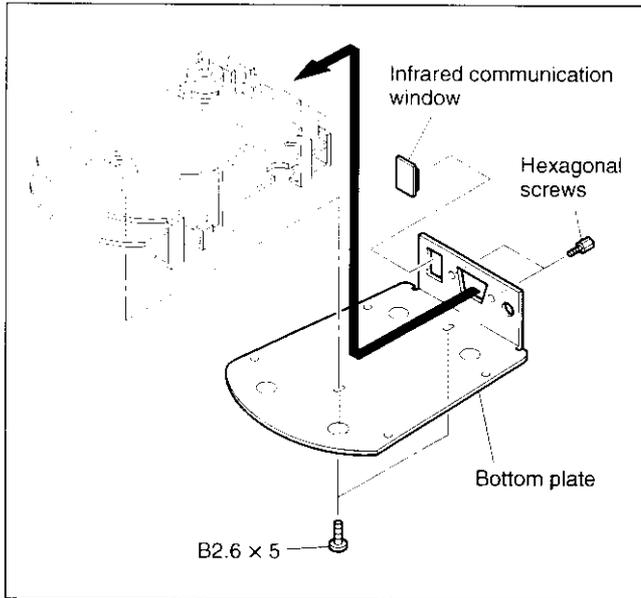


3. Install the new top cover in the reverse order of steps 1 to 2.

(*1): Tele-File is a trademark of Sony Corporation.

2-2-2. Bottom Plate

1. Turn off the power.
2. Remove the top cover. (Refer to Section 2-2-1.)
3. Remove the two screws (B2.6 × 5).
4. Remove the two hexagonal screws, then remove the bottom plate.



5. Install the new bottom cover in the reverse order of steps 1 to 4.

Note

When attaching the bottom plate, be sure to tighten the two screws (B2.6 × 5) tentatively first, then tighten the hexagonal screws.

2-3. Electrical Alignment

Note

After replacing the CCM-33 board or SE-480 board, be sure to perform the adjustment below.

2-3-1. Preparation

1. Equipment required

Item	Model	Remarks
Oscilloscope	Sony Tektronix 2445B or equivalent	
Adjustment screwdriver	—	Ceramic

2-3-2. Antenna Matching Adjustment (CCM-33)

Preparation

1. Turn off the power.
2. Remove the top cover. (Refer to Section 2-2-1.)

Adjustment Procedure

Note

Note the following to perform accurate adjustment:

- Do not use the SE-480 board on another MLU-100A for adjustment of your unit.
- Be sure to attach the SE-480 board on the unit.
- Do not place cassette tapes, memory labels, or metals (except for the chassis plate) near the SE-480 board.

1. Set up the oscilloscope.

VERTICAL

Ch1: 5V/DIV,DC

Ch2: 5V/DIV,DC

MODE: Ch2 INVERT, ADD, 20MHz BW LIMIT = OFF

HORIZONTAL

20 n SEC/DIV

TRIGGER

Ch1, DC

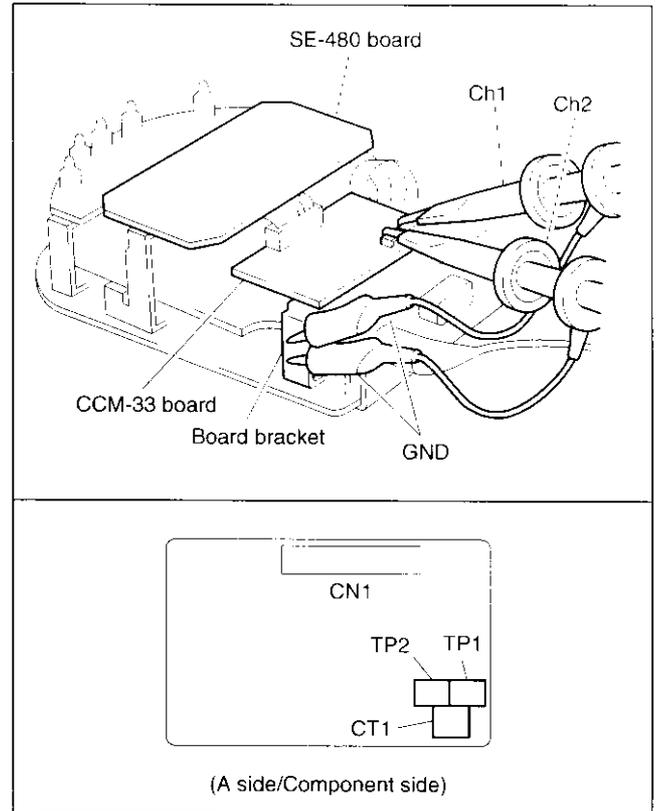
LEVEL: 5V

2. Connect the Ch1 GND and Ch2 GND with the board bracket as shown in the figure below.

Note

Keep away the probe GND from the CCM-33 board. Otherwise, the CCM-33 board may be damaged.

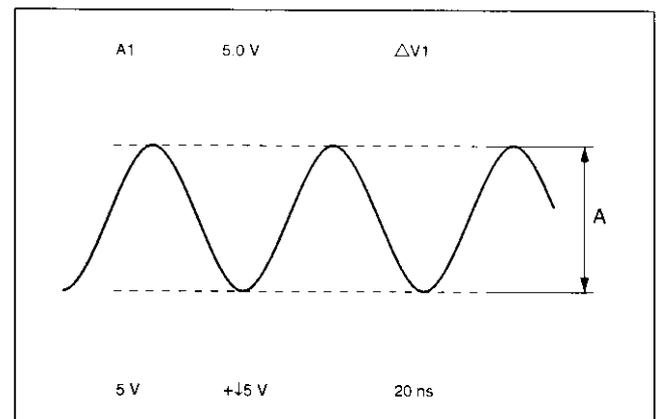
3. Connect Ch1 with TP1 and Ch2 with TP2.



4. Turn on the MLU-100A power, then start the adjustment.

Adjustment point: CT1

Specification: A = Maximum value
(The waveform must be the sine wave.)



Section 3 Troubleshooting

3-1. Normal Diagnosis Function (power-on test)

This unit performs the tests below when it is turned on.

1. CPU internal ROM (IC6) test (Error: "ERROR" LED)

The check sum test is performed for the CPU internal ROM.

If an error occurs, the "ERROR" LED flashes, then the unit stops. In this case, replace the CPU.

2. CPU internal RAM (IC6) test (Error: "ERROR," "READ" LEDs)

The read/write test is performed for the CPU internal ROM. (Cyclic data from "00" to "FF," and "FF" and "00" are written first, they are read out, then a comparison between the written data and read-out data is made.)

If an error occurs, the "ERROR" and "READ" LED flash, then the unit stops. In this case, replace the CPU.

3. Bank RAM (IC7) test (Error: "ERROR," "WRITE" LEDs)

The read/write test is performed for the bank RAM. (Cyclic data from "00" to "FF," and "FF" and "00" are written first, they are read out, then a comparison between the written data and read-out data is made.)

If an error occurs, the "ERROR" and "WRITE" LEDs flash, then the unit stops. In this case, replace the bank RAM.

3-2. Self-Diagnosis Mode

This unit supports the nine self-diagnosis tests below.

1. ROM version display

Displays the version of ROM used.

2. ROM test

Performs the ROM check sum test.

3. RAM test

Performs the RAM read/write test.

4. Bank RAM test

Performs the bank RAM read/write test.

5. LED test

Checks that the LEDs light (except for RX1: D16, RX2: D17 on the IF-691 board).

6. DIP switch test

Checks the DIP switch status.

7. Buzzer test

Checks that the buzzer beeps normally.

8. LABEL READ test

Performs the label read test for transmission of data that is read.

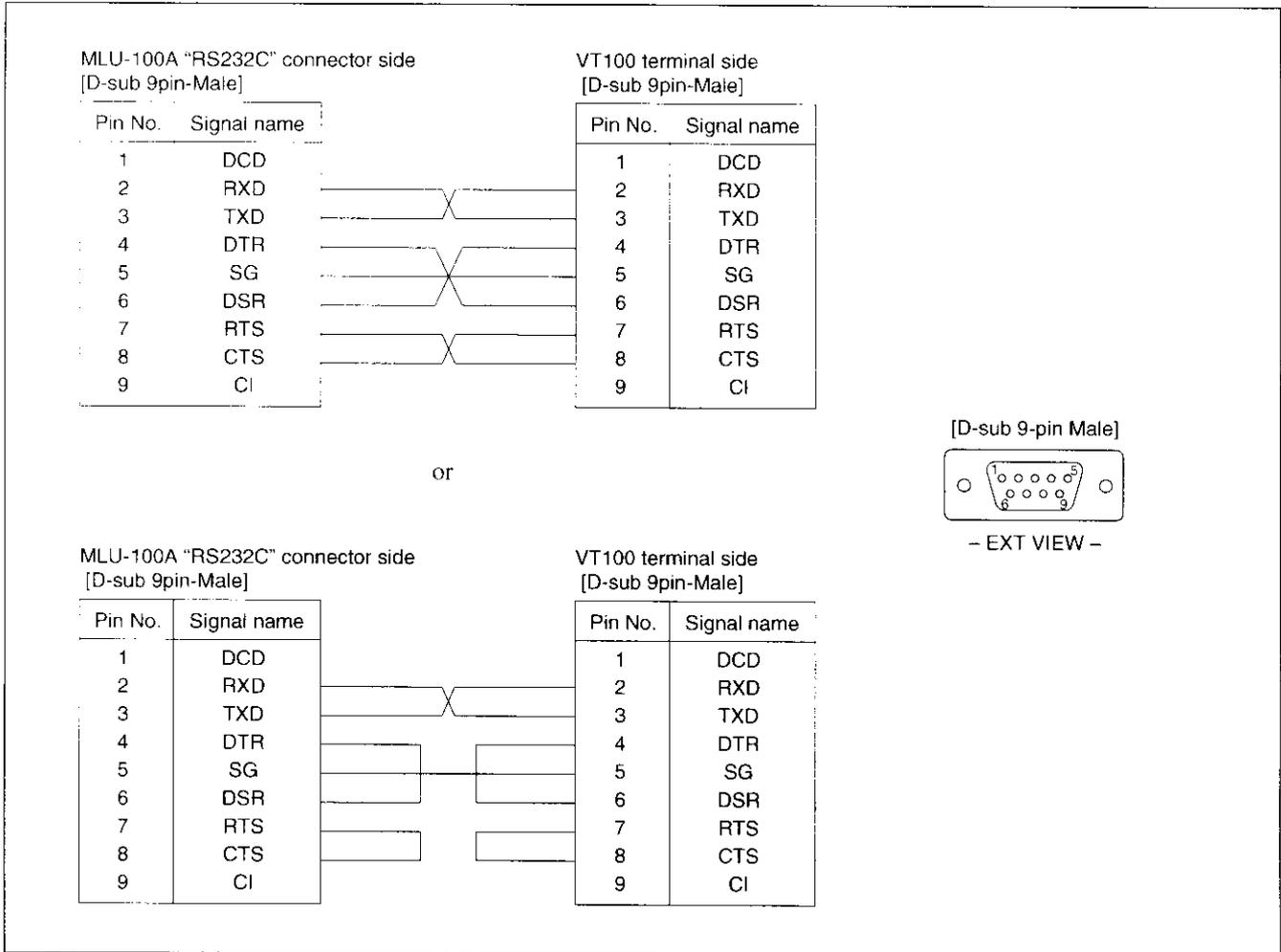
9. LABEL WRITE test

Performs the label write test for transmission of data that is written.

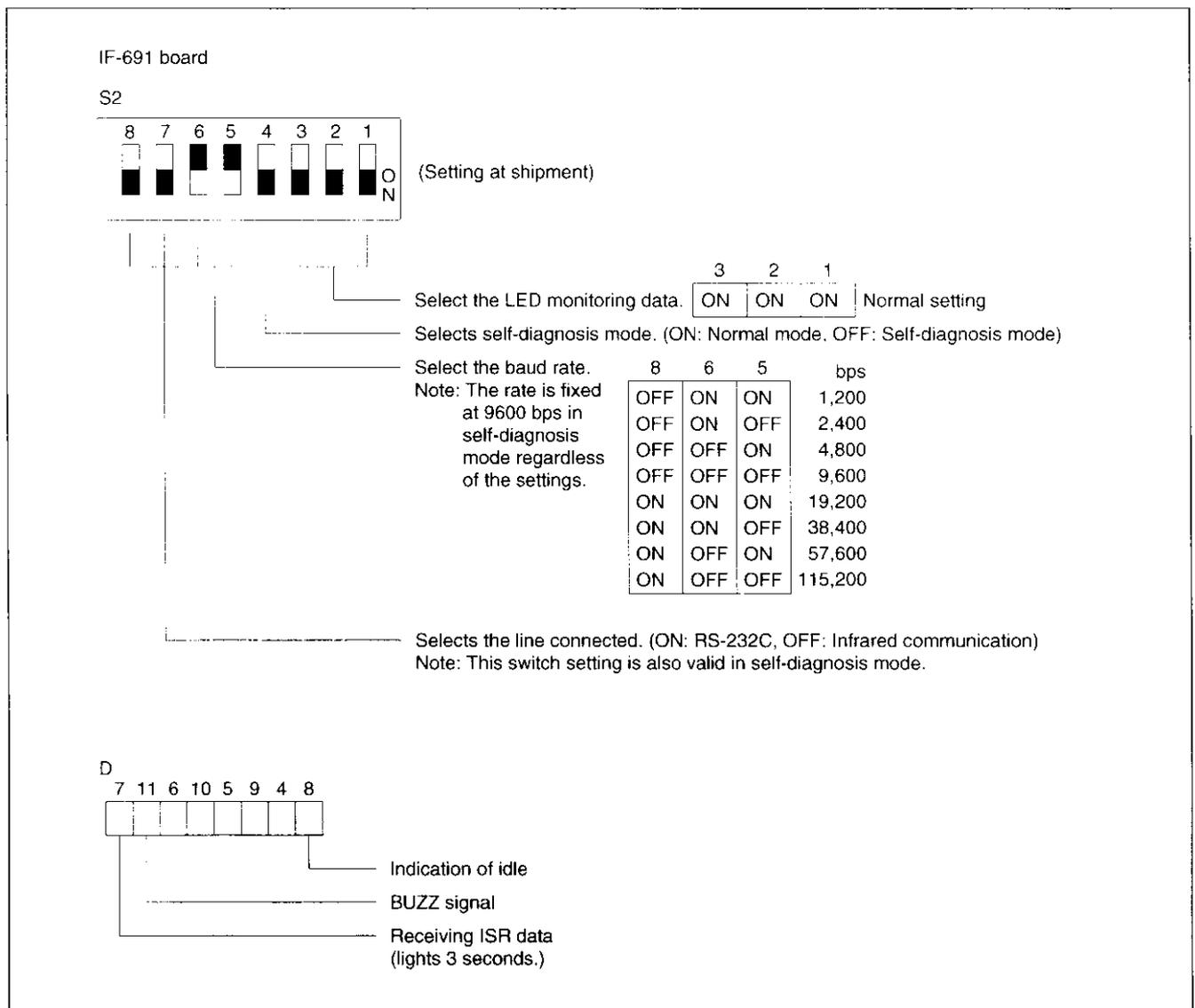
3-2-1. Tool for Diagnosis

1. Self-diagnosis terminal connection cable

To perform the self-diagnosis tests using the "RS-232C" connector, use either cables below. (When the infrared communication is used for the tests, no cable is needed.)



3-2-2. DIP Switch Settings and Description for the LEDs



3-2-3. Self-Diagnosis Mode Start Procedure

1. Turn off the power.
2. Remove the top cover. (Refer to Section 2-2-1.)
3. Set self-diagnosis mode. (Turn off switch 4 in dip switch S2 on the IF-691 board.)
4. Select the line connected. (Set switch 7 in dip switch S2 on the IF-691 board.)
5. Attach the top cover.
6. Connect the VT100 compatible terminal.
7. Turn on the power.
8. The terminal displays the self-diagnosis screen.

Note

The serial data transmission format between the unit and terminal is fixed as shown below.

Terminal mode: VT100 compatible mode
 Baud rate: 9600 bps
 Data length: 7 bits
 Parity: Odd
 Stop bit: 1

3-2-4. Test Procedure

This section describes the details of each test and how to determine whether the test result is acceptable or unacceptable. There is no fixed order of the tests, thus it is allowed to perform the tests selectively.

Usually, perform the tests in order of their numbers completes all the tests is completed.

1. ROM Version Display

Type "ver" on the terminal.

The version is displayed on the screen.

```
ROM Version x.xx
```

2. ROM Test

Type "rom" on the terminal.

The check sum in the ROM area is calculated, then it is compared with the check sum written in ROM.

When the check sums match, "ROM CHECK OK" is displayed. Otherwise, "ROM CHECK ERROR!" is displayed.

```
ROM CHECK OK
```

(When the check sums match)

```
ROM CHECK ERROR!
```

(When the check sums does not match)

3. RAM test

Type "ram" on the terminal.

"FFH" is written in all the areas in RAM, then it is checked that the written data is correctly read out. The check is also made with "AAH," "55H," and "00H."

When no error is found in the test, "RAM CHECK OK" is displayed. Otherwise, "RAM CHECK ERROR!" is displayed.

```
RAM CHECK OK
```

(When no error found)

```
RAM CHECK ERROR!
```

(When an error found)

4. Bank RAM Test

Type "bram" on the terminal.

"FFH" is written in all the areas in bank RAM, then it is checked that the written data is correctly read out. The check is also made with "AAH," "55H," and "00H."

When no error is found in the test, "BANK RAM CHECK OK" is displayed. Otherwise, "BANK RAM CHECK ERROR!" is displayed.

```
BANK RAM CHECK OK
```

(When no error found)

```
BANK RAM CHECK ERROR!
```

(When an error found)

5. LED Test

Type "led" on the terminal.

The LEDs sequentially start lighting at an interval of 0.3 seconds, all the LEDs light 1 second, then all the LEDs go off 0.3 seconds.

This cycle is performed three times, then the test ends.

Note

The LEDs RX1: D16 and RX2: D17 are not handled in this test.

6. DIP Switch Test

Type "dip" on the terminal.

The DIP switch status is displayed on the screen.

Change the switch settings to check that there is no shortcircuit or no soldered point.

To quit the test, type "s."

7. Buzzer Test

Type "bz" on the terminal.

The buzzer beeps 0.5 seconds, then stops 0.3 seconds.

This cycle is performed 3 times, then the test ends.

8. Label read test

Type "lr 10" on the terminal.

Issue the read command to the label to read data on it.

This action is performed 10 times, then the test ends.

While the test is performed, the number of test times and the number of errors are indicated.

To quit the test before completion, type "s."

9. Label Write Test

Type "lw 10" on the terminal.

Issue the write command to the label to write data on it.

This action is performed 10 times, then the test ends.

While the test is performed, the number of test times and the number of errors are indicated.

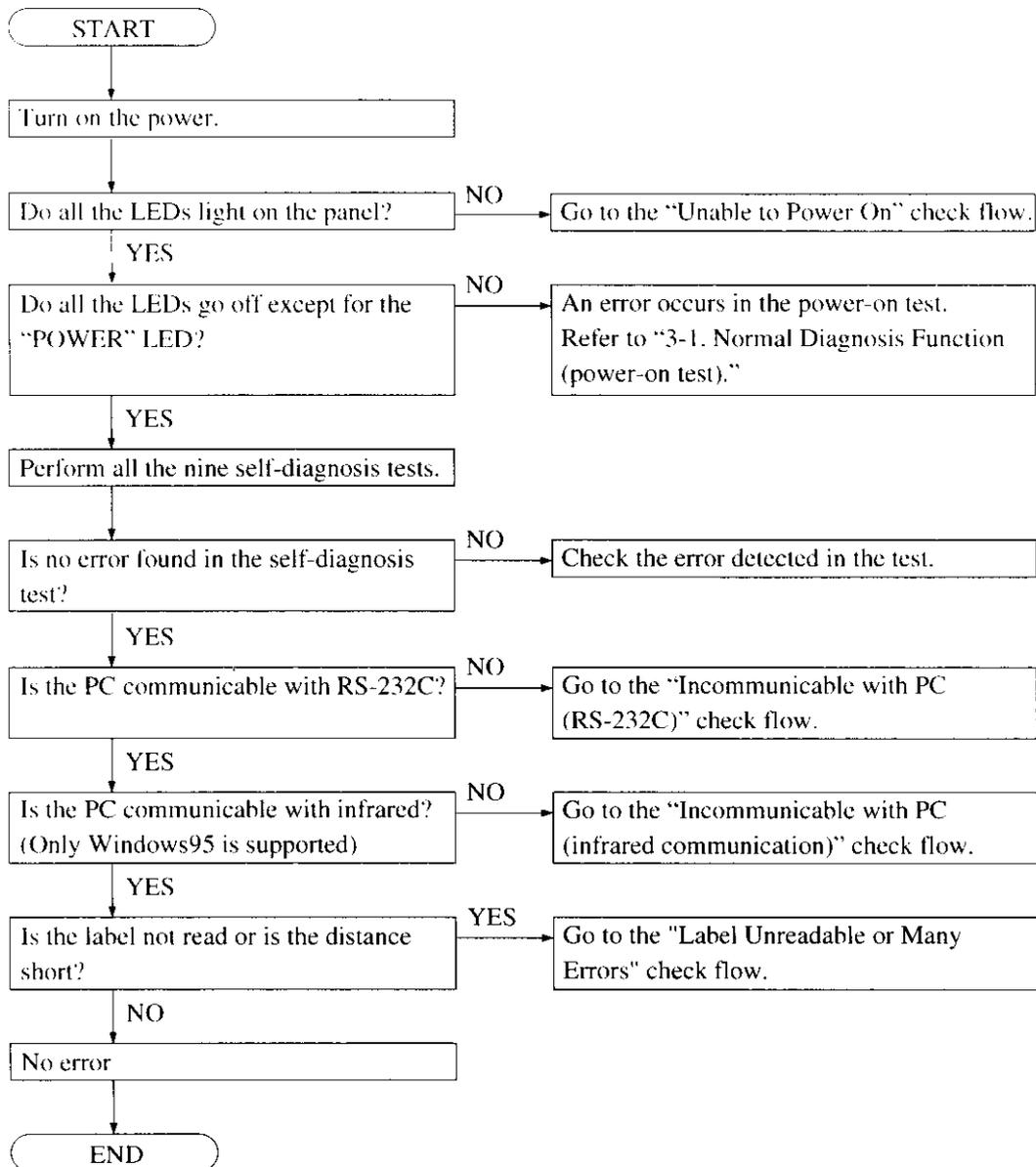
To quit the test before completion, type "s."

3-2-5. Self-Diagnosis Mode End Procedure

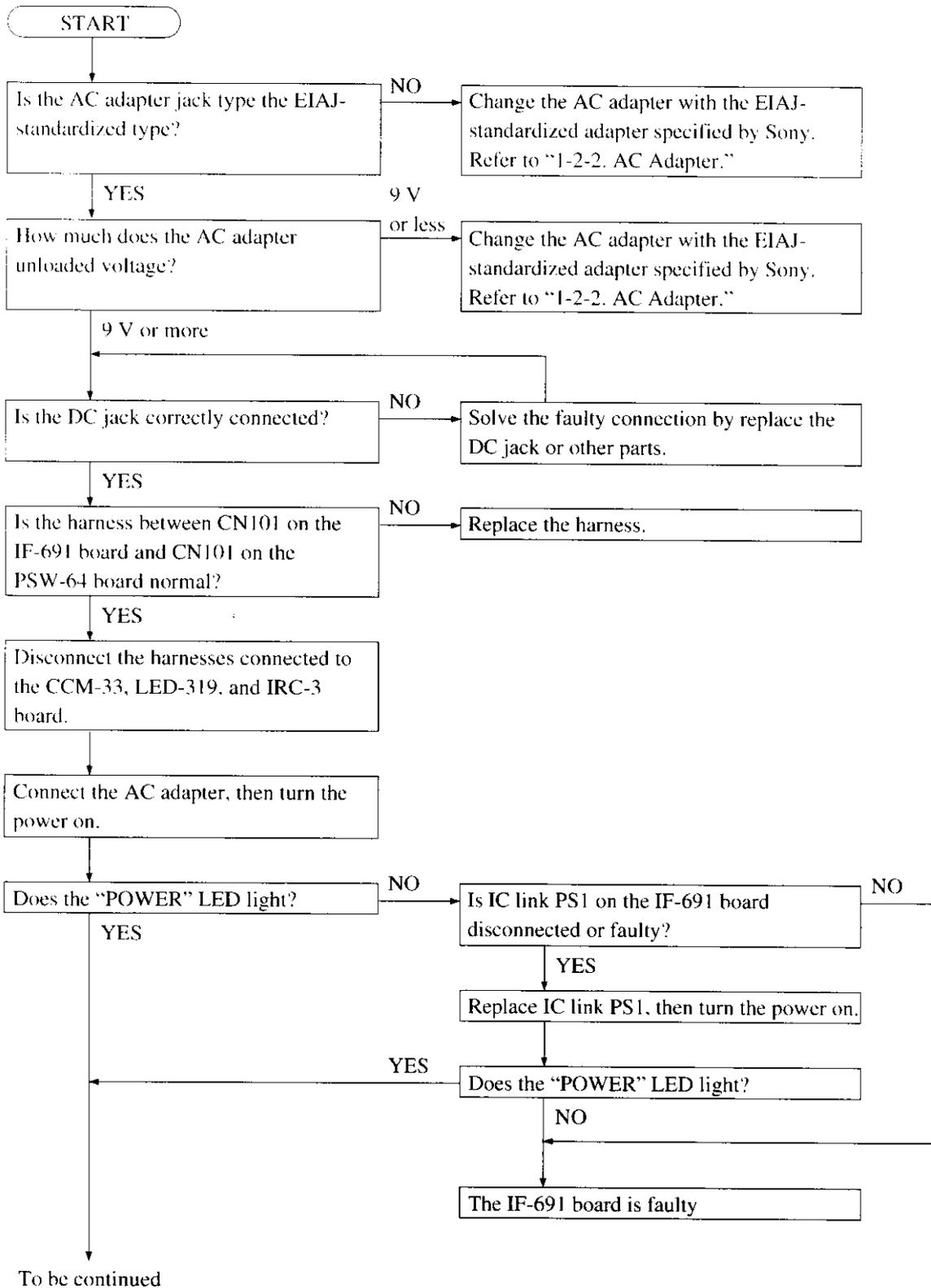
1. Turn off the power.
2. Remove the top cover. (Refer to Section 2-2-1.)
3. Set normal mode. (Turn on switch 4 in dip switch S2 on the IF-691 board.)
4. Select the line connected. (Set switch 7 in dip switch S2 on the IF-691 board.)
5. Attach the top cover.
6. Turn on the power.

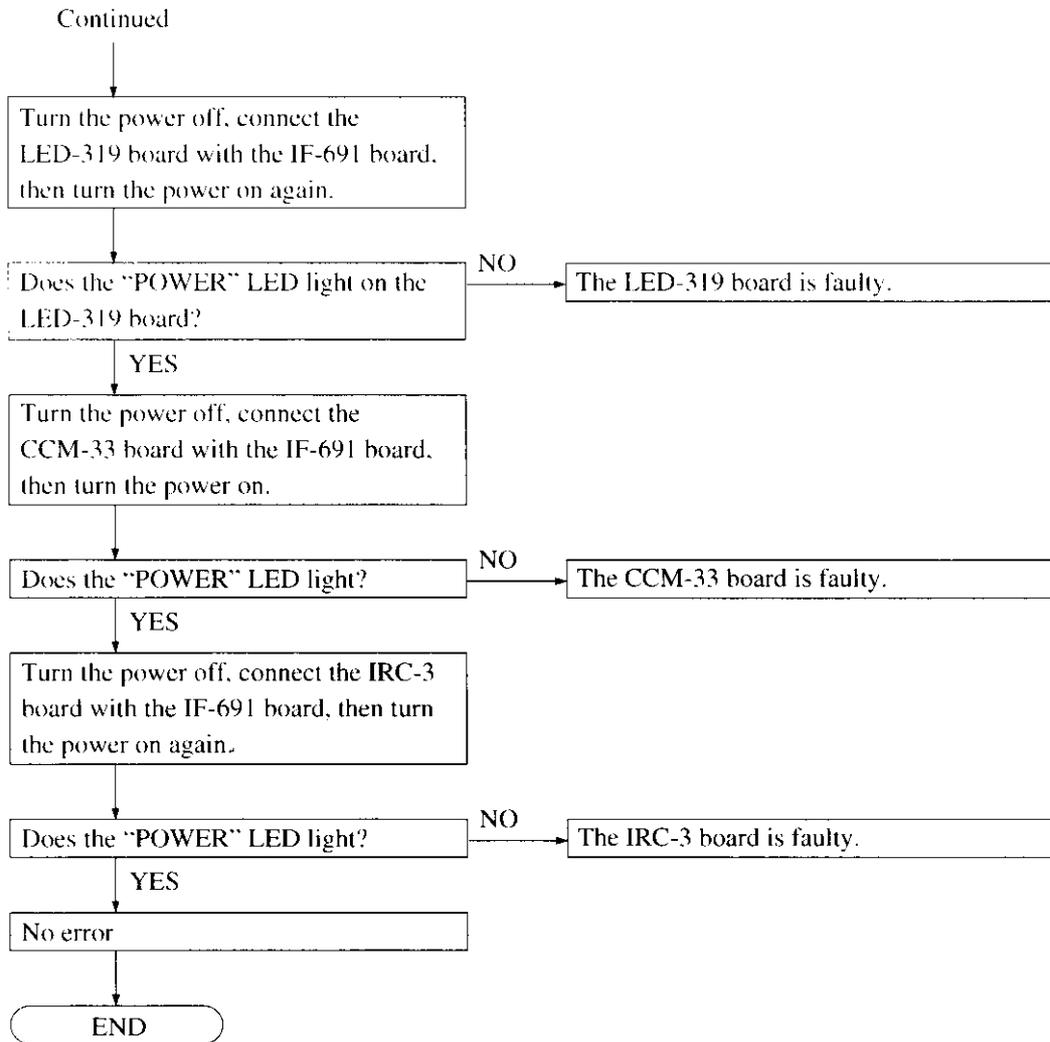
3-3. Troubleshooting

Diagnosis for the Entire Unit

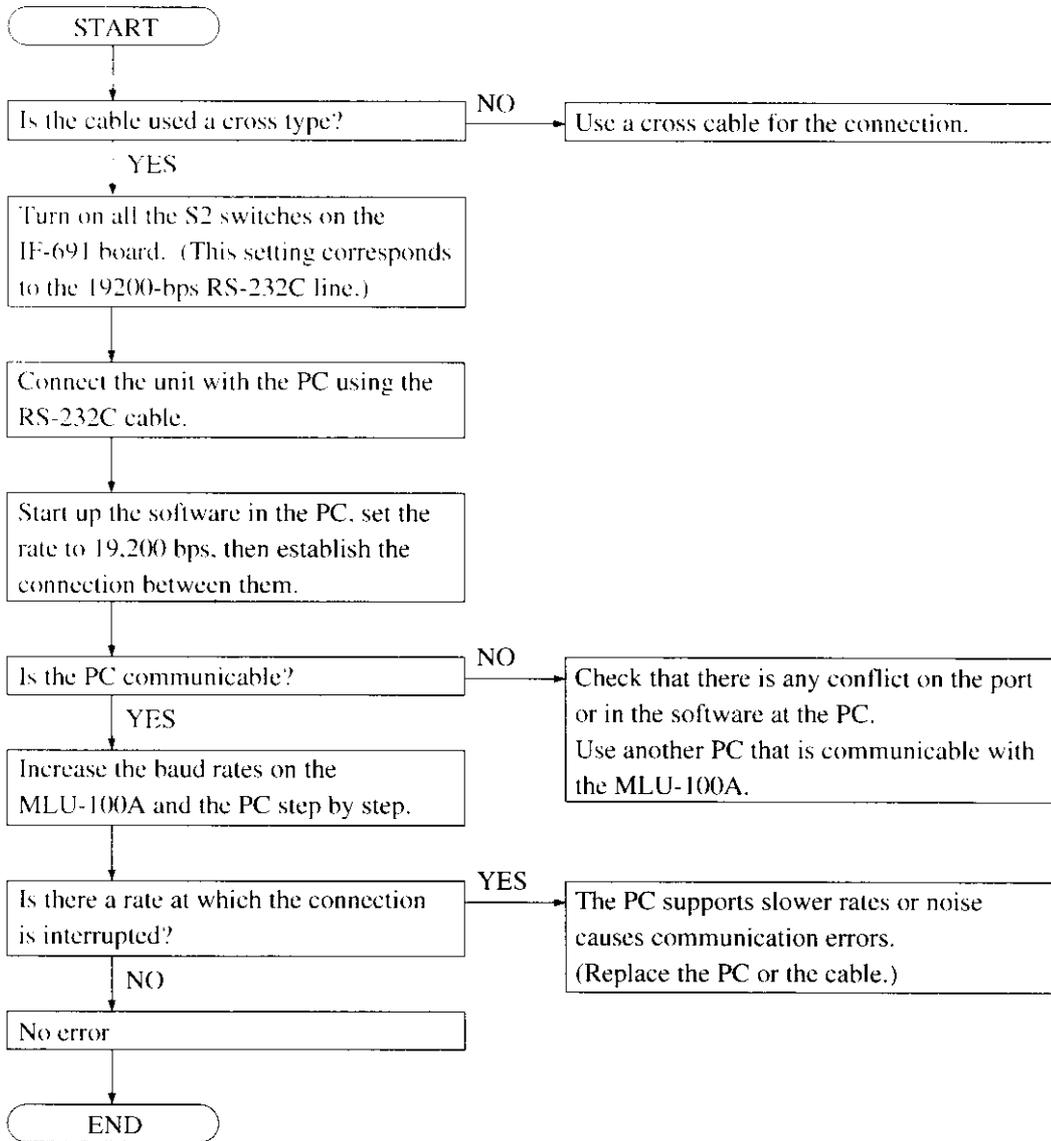


Unable to Power On

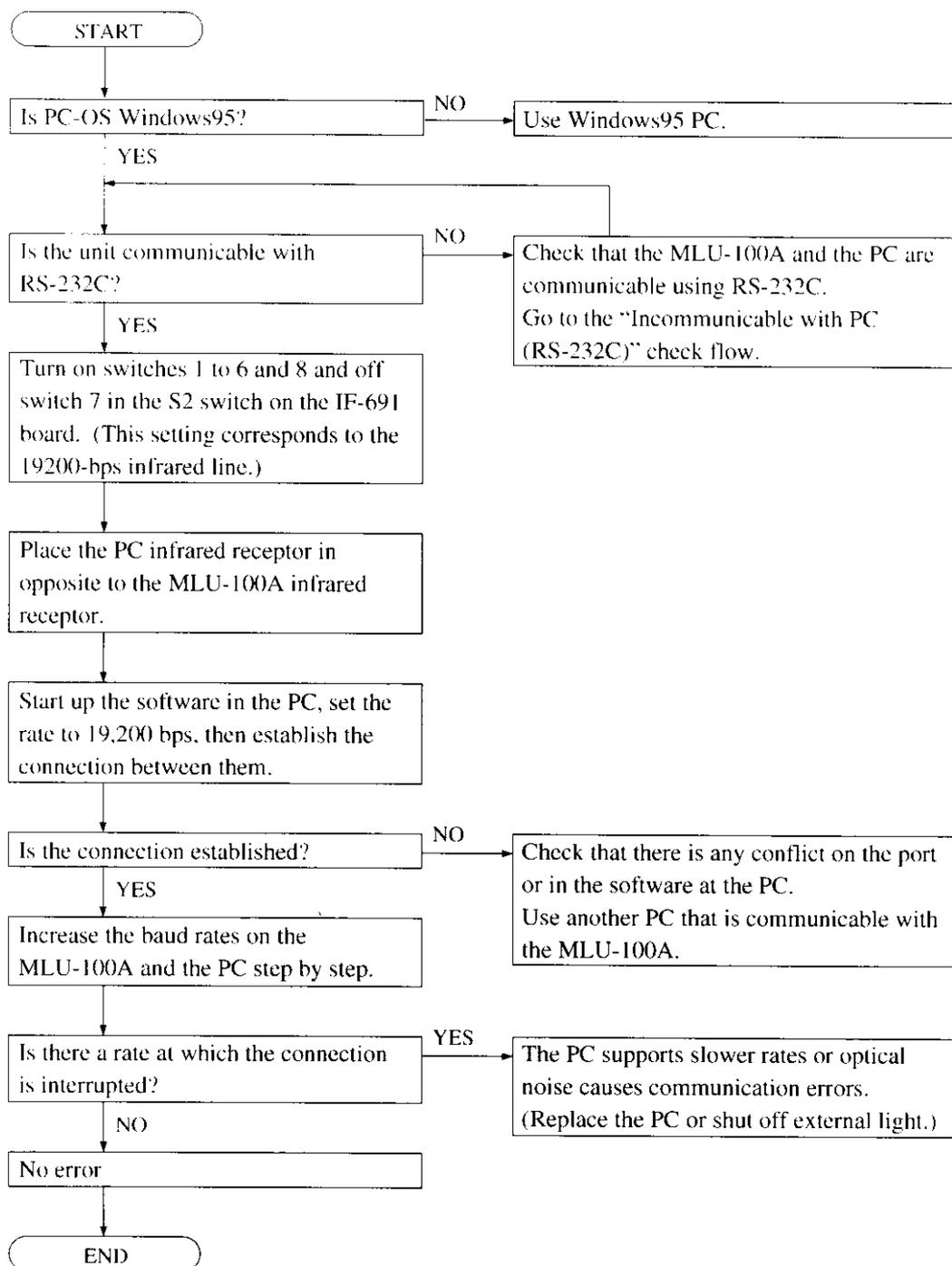




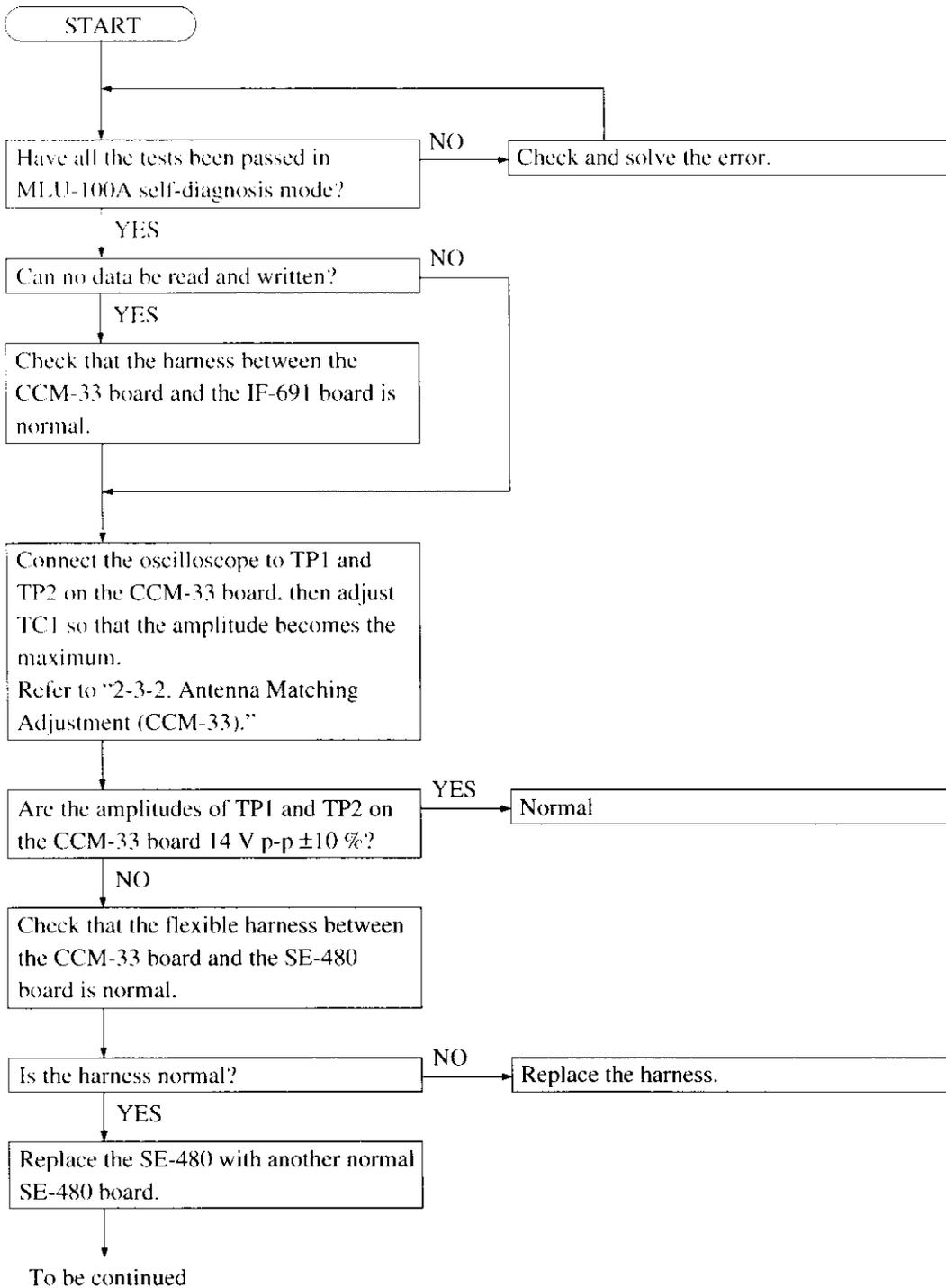
Incommunicable with PC (RS-232C)

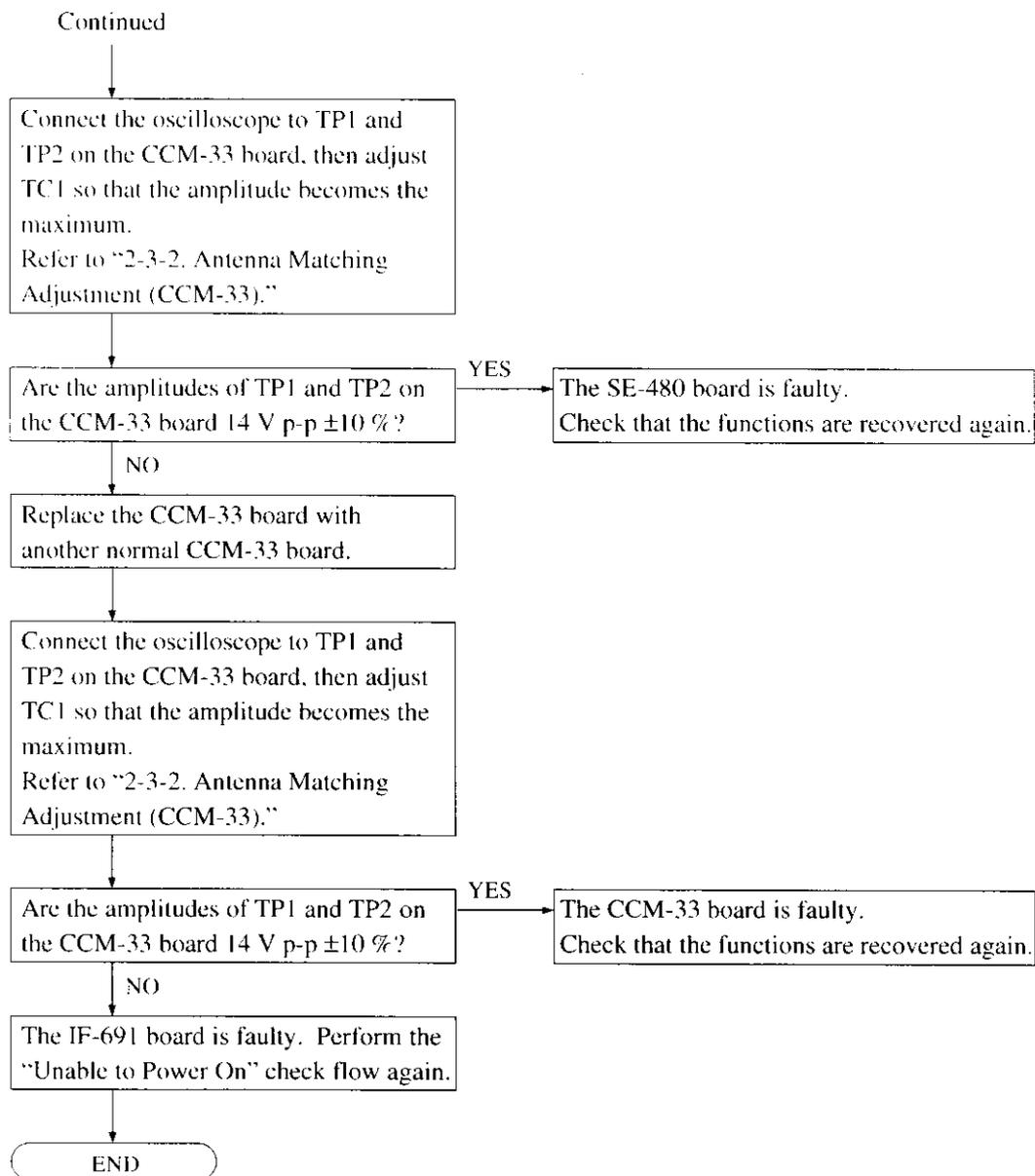


Incommunicable with PC (infrared communication)



Label Unreadable or Many Errors





Section 4

Spare Parts

4-1. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked \triangle are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.

Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with "o" at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

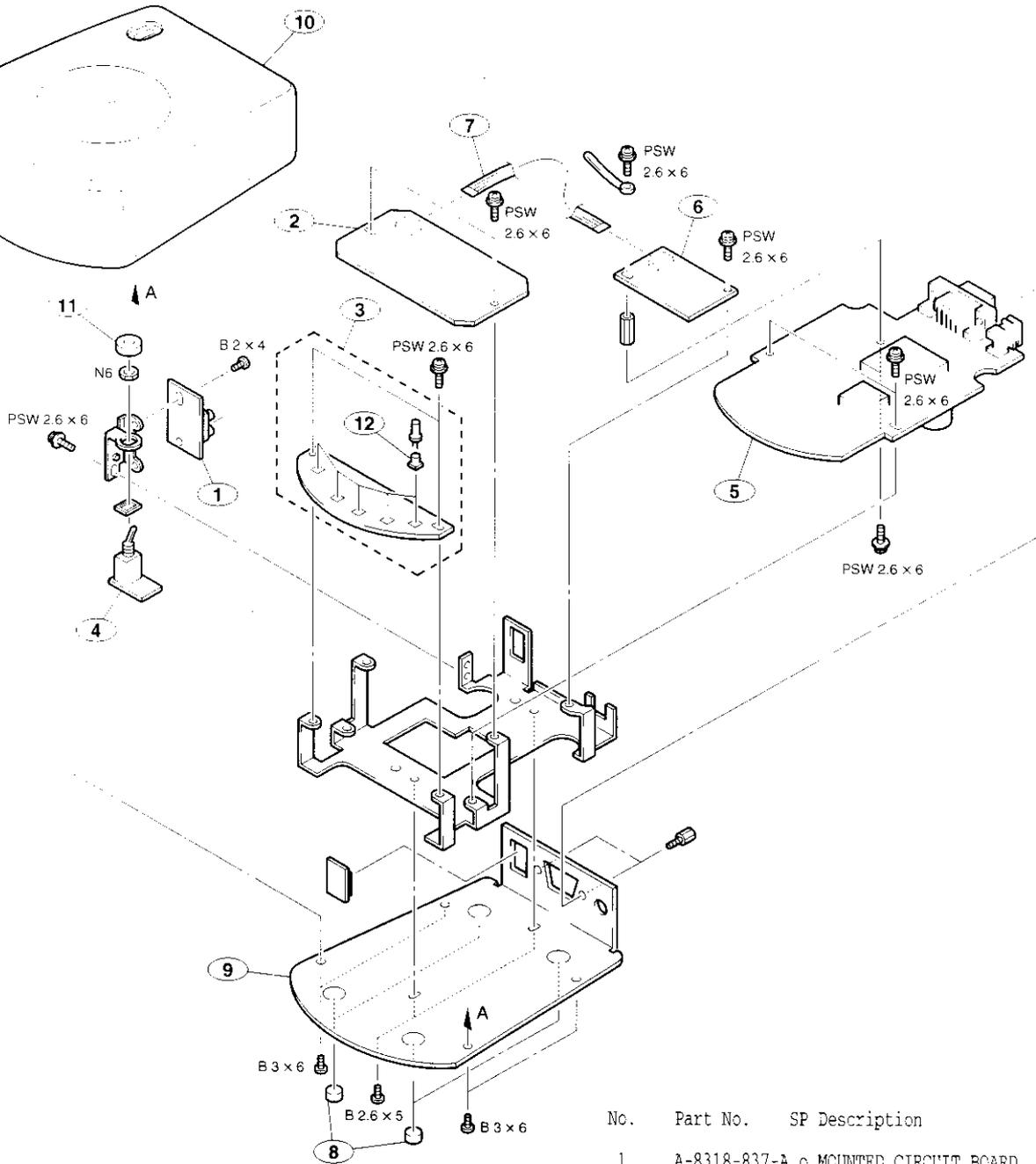
4. Harness

Harnesses with no part number are not registered as spare parts.

In need of repair, get components shown in the list and repair using them.

4-2. Exploded View

Overall Assy



No.	Part No.	SP Description
1	A-8318-837-A	o MOUNTED CIRCUIT BOARD, IRC-3
2	A-8318-838-A	o MOUNTED CIRCUIT BOARD, SE-480
3	A-8318-839-A	o MOUNTED CIRCUIT BOARD, LED-319
4	A-8318-840-A	o MOUNTED CIRCUIT BOARD, PSW-64
5	A-8318-944-A	o MOUNTED CIRCUIT BOARD, IF-691
6	A-8318-945-B	o MOUNTED CIRCUIT BOARD, CCM-33
7	1-690-131-11	s CORD (4 CORE), FLAT TYPE
8	3-571-485-00	s CUSHION
9	3-614-263-02	o PLATE, BOTTOM
10	3-614-264-11	o CASE, UPPER
11	3-729-007-01	o PLATE, ORNAMENTAL, TOGGLE SW
12	3-731-607-01	o HOLDER (S), LED

4-3. Electrical Parts List for Boards

IP-691 BOARD

Ref. No. or Qty	Part No.	SP Description
1pc	A-8918-944-A	o MOUNTED CIRCUIT BOARD, IP-691
BZ1	1-529-070-11	s BUZZER
C1	1-128-399-11	s ELECT 330uF 20% 16V
C2	1-128-399-11	s ELECT 330uF 20% 16V
C3	1-128-399-11	s ELECT 330uF 20% 16V
C4	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C5	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C6	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C7	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C8	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C9	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C10	1-128-396-11	s ELECT 470uF 20% 10V
C11	1-128-396-11	s ELECT 470uF 20% 10V
C12	1-128-400-11	s ELECT 47uF 20% 25V
C13	1-104-905-11	s DOUBLE LAYERS 0.22FARAD 5.5V
C14	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C15	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C16	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C17	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C18	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C19	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C20	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C21	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C22	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C23	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C24	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C25	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C26	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C27	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C28	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C29	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C30	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C31	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C32	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C33	1-135-177-21	s TANTALUM, CHIP 1uF 10% 25V
C34	1-115-156-11	s CERAMIC 1uF 10V
C35	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C36	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C37	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C38	1-115-156-11	s CERAMIC 1uF 10V
C39	1-165-176-11	s CERAMIC 0.047uF 10% 16V
C40	1-165-176-11	s CERAMIC 0.047uF 10% 16V
C41	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C42	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
CN1	1-695-565-11	s JACK, DC IN
CN101	1-695-320-21	o CONNECTOR 2P, MALE
CN201	1-766-382-11	o CONNECTOR 10P, MALE
CN202	1-566-318-11	s PLUG, CONNECTOR D-SUB 9P
CN203	1-691-591-11	s CONNECTOR 8P, MALE
CN204	1-691-591-11	s CONNECTOR 8P, MALE
CN303	1-573-290-21	s CONNECTOR 4P, MALE
D1	8-719-987-43	s DIODE U1FWJ44N(TE12R)
D2	8-719-987-43	s DIODE U1FWJ44N(TE12R)
D3	8-719-987-43	s LED CL-150PG-CD, GRN
D4	8-719-987-43	s LED CL-150PG-CD, GRN
D5	8-719-987-43	s LED CL-150PG-CD, GRN

(IP-691 BOARD)

Ref. No. or Qty	Part No.	SP Description
D6	8-719-987-43	s LED CL-150PG-CD, GRN
D7	8-719-987-43	s LED CL-150PG-CD, GRN
D8	8-719-987-43	s LED CL-150PG-CD, GRN
D9	8-719-987-43	s LED CL-150PG-CD, GRN
D10	8-719-987-43	s LED CL-150PG-CD, GRN
D11	8-719-987-43	s LED CL-150PG-CD, GRN
D12	8-719-987-41	s LED CL-150Y-CD, YEL
D13	8-719-987-41	s LED CL-150Y-CD, YEL
D14	8-719-987-41	s LED CL-150Y-CD, YEL
D15	8-719-987-41	s LED CL-150Y-CD, YEL
D16	8-719-989-22	s LED CL-150R-CD, RED
D17	8-719-987-43	s LED CL-150PG-CD, GRN
FL1	1-233-466-21	s FILTER, EMI
IC1	8-759-496-41	s IC TC74VHCT541AFT(EL)
IC2	8-759-491-50	s IC TC74VHCT244AFT(EL)
IC3	8-759-386-70	s IC LM2940CS-5.0
IC4	8-759-973-71	s IC TL7705CPS-B
IC5	8-759-491-55	s IC TC74VHCT74AFT(EL)
IC7	8-759-497-04	s IC LC361000AMLL-70-TLA
IC10	8-759-490-41	s IC TC74VHCT541AFT(EL)
IC11	8-759-491-51	s IC TC74VHCT245AFT(EL)
IC12	8-759-050-70	s IC SN74HCT573APW-E05
IC13	8-759-490-41	s IC TC74VHCT541AFT(EL)
IC14	8-759-524-75	s IC PC87108AVHG
IC15	8-759-256-28	s IC LT1237CG-E2
IC16	8-759-523-97	s IC TC74VHCT123AFT(EL)
ICS6	1-251-765-11	o SOCKET, IC (QFP) 80P
ICS8	1-251-047-11	s SOCKET, IC
L1	1-409-647-11	s COIL, CHOKE 22uH
L2	1-415-942-11	s COIL, CHOKE 220uH
PS1	Δ 1-533-282-21	s LINK, IC 2A
R1	1-218-652-11	s METAL, CHIP 22 0.50% 1/16W
R2	1-218-652-11	s METAL, CHIP 22 0.50% 1/16W
R3	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R4	1-218-652-11	s METAL, CHIP 22 0.50% 1/16W
R5	1-218-652-11	s METAL, CHIP 22 0.50% 1/16W
R6	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R7	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R8	1-218-656-11	s METAL, CHIP 33 0.50% 1/16W
R9	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R10	1-218-644-11	s METAL, CHIP 10 0.50% 1/16W
R11	1-218-684-11	s METAL, CHIP 470 0.50% 1/16W
R12	1-218-656-11	s METAL, CHIP 33 0.50% 1/16W
R13	1-218-656-11	s METAL, CHIP 33 0.50% 1/16W
R15	1-218-656-11	s METAL, CHIP 33 0.50% 1/16W
R16	1-218-668-11	s METAL, CHIP 100 0.50% 1/16W
R17	1-218-676-11	s METAL, CHIP 220 0.50% 1/16W
R18	1-218-692-11	s METAL, CHIP 1K 0.50% 1/16W
R19	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R20	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R21	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R22	1-218-656-11	s METAL, CHIP 33 0.50% 1/16W
R23	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R24	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R25	1-218-716-11	s METAL, CHIP 10K 0.50% 1/16W
R26	1-218-732-11	s METAL, CHIP 47K 0.50% 1/16W

IF-691 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
RE7	1-218-732-11	s METAL, CHIP 47K 0.50% 1/16W
RE8	1-218-696-11	s METAL, CHIP 1.5K 0.50% 1/16W
RE9	1-218-692-11	s METAL, CHIP 1K 0.50% 1/16W
RE1	1-236-904-11	s NETWORK RESISTOR (CHIP) 1K
RE2	1-236-908-11	s NETWORK RESISTOR (CHIP) 10K
RE3	1-236-908-11	s NETWORK RESISTOR (CHIP) 10K
RE4	1-236-908-11	s NETWORK RESISTOR (CHIP) 10K
RE5	1-236-908-11	s NETWORK RESISTOR (CHIP) 10K
RE6	1-239-390-11	s NETWORK RESISTOR (CHIP) 33
RE7	1-239-419-11	s NETWORK RESISTOR (CHIP) 470
RE8	1-239-419-11	s NETWORK RESISTOR (CHIP) 470
RE9	1-239-390-11	s NETWORK RESISTOR (CHIP) 33
RE10	1-239-419-11	s NETWORK RESISTOR (CHIP) 470
RE11	1-239-390-11	s NETWORK RESISTOR (CHIP) 33
S1	1-572-473-11	s SWITCH, PUSH
S2	1-692-271-31	s SWITCH, SLIDE
C1	1-464-686-11	s CONVETER (CPS1144), DC-DC
X1	1-767-139-21	s CRYSTAL 9.8304MHz
X2	1-767-972-11	s CRYSTAL 48.000MHz

IRC-3 BOARD

Ref. No. or Q'ty	Part No.	SP Description
lpc	A-8318-837-A	o MOUNTED CIRCUIT BOARD, IRC-3
C1	1-162-957-11	s CERAMIC, CHIP 220pF 5% 50V
C2	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C3	1-164-156-11	s CERAMIC, CHIP 0.1uF 25V
C4	1-115-156-11	s CERAMIC 1uF 10V
C5	1-115-156-11	s CERAMIC 1uF 10V
C7	1-115-156-11	s CERAMIC 1uF 10V
C8	1-115-156-11	s CERAMIC 1uF 10V
C10	1-115-156-11	s CERAMIC 1uF 10V
CN1	1-691-591-11	s CONNECTOR 8P, MALE
IC1	8-749-014-65	s IC HSDL-1100
L1	1-412-137-11	s MICRO INDUCTOR 10uH
R1	1-218-686-11	s METAL, CHIP 560 0.50% 1/16W
R2	1-218-644-11	s METAL, CHIP 10 0.50% 1/16W
R3	1-218-280-11	s METAL, CHIP 15 5% 1/2W
R4	1-218-280-11	s METAL, CHIP 15 5% 1/2W
R5	1-218-280-11	s METAL, CHIP 15 5% 1/2W

4-4. Parts List for Frame

LED-319 BOARD

Ref. No. or Qty	Part No.	SP Description
1pc	A-8318-839-A	c MOUNTED CIRCUIT BOARD, LED-319
CN1	1-565-880-11	s CONNECTOR 8P, MALE
D1	8-719-812-43	s LED TLG124A, GRN
D2	8-719-812-43	s LED TLG124A, GRN
D3	8-719-812-44	s LED TLO124, ORG
D4	8-719-812-43	s LED TLG124A, GRN
D5	8-719-812-41	s LED TLR124, RED
Q1	8-729-029-04	s TRANSISTOR DTC123JUA-T106
Q2	8-729-029-04	s TRANSISTOR DTC123JUA-T106
Q3	8-729-029-04	s TRANSISTOR DTC123JUA-T106
Q4	8-729-029-04	s TRANSISTOR DTC123JUA-T106
R1	1-216-029-00	s CARBON, CHIP 150 5% 1/10W
R2	1-216-029-00	s CARBON, CHIP 150 5% 1/10W
R3	1-216-031-00	s CARBON, CHIP 180 5% 1/10W
R4	1-216-029-00	s CARBON, CHIP 150 5% 1/10W
R5	1-216-031-00	s CARBON, CHIP 180 5% 1/10W

FRAME

Ref. No. or Qty	Part No.	SP Description
FROM CN1 ON SE-480 BOARD TO CN1 ON CCM-33 BOARD	1pc	1-690-131-11 s WIRE, FLEXIBLE CARD 4P
FROM CN101 ON PSW-64 BOARD TO CN101 ON IF-691 BOARD	1pc	1-958-846-11 o HARNESS, SUB (IF-PSW)
FROM CN2 ON CCM-33 BOARD TO CN201 ON IF-691 BOARD	1pc	1-958-847-11 o HARNESS, SUB (IF-RW)
FROM CN1 ON LED-319 BOARD TO CN203 ON IF-691 BOARD	1pc	1-958-848-11 o HARNESS, SUB (IF-LED)
FROM CN1 ON IRC-3 BOARD TO CN204 ON IF-691 BOARD	1pc	1-958-848-11 o HARNESS, SUB (IF-LED)

PSW-64 BOARD

Ref. No. or Qty	Part No.	SP Description
1pc	A-8318-840-A	o MOUNTED CIRCUIT BOARD, PSW-64
CN101	1-566-757-11	s CONNECTOR 2P, MALE
S1	1-762-002-11	s SWITCH, TOGGLE

SE-480 BOARD

Ref. No. or Qty	Part No.	SP Description
1pc	A-8318-838-A	o MOUNTED CIRCUIT BOARD, SE-480
C1	1-162-922-11	s CERAMIC, CHIP 39pF 5% 50V
C2	1-162-922-11	s CERAMIC, CHIP 39pF 5% 50V
C3	1-162-922-11	s CERAMIC, CHIP 39pF 5% 50V
C4	1-162-922-11	s CERAMIC, CHIP 39pF 5% 50V
CN1	1-774-792-21	s CONNECTOR, FPC/FPC 4P

Section 5

Semiconductor Pin Assignments

ここに記載されている半導体は、それぞれの機能を等価的に表したものです。なお、互換性のない型名を併記していることがありますので、部品を交換するときは、Spare Partsの章を参照してください。

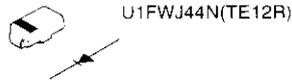
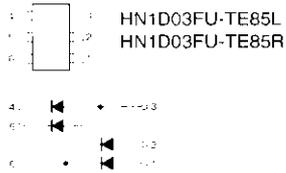
等価回路はICメーカーのデータブックに従いました。

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

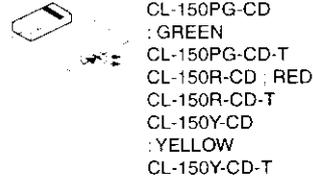
DIODE	Page	LED	Page	TRANSISTOR	Page	IC	Page
HN1D03FU-TE85L	5-2	CL-150PG-CD	5-2	2SA1611-M5M6	5-2	EPM7032LC44-15	5-2
HN1D03FU-TE85R	5-2	CL-150PG-CD-T	5-2	2SA1611T1-M5M6	5-2	HSDL-1100	5-2
U1FWJ44N(TE12R)	5-2	CL-150R-CD	5-2	2SC4177-L6	5-2	LC361000AMLL-70-TLA ..	5-3
		CL-150R-CD-T	5-2	2SC4177-T1L5L6	5-2	LM2940CS-5.0	5-3
		CL-150Y-CD	5-2	DTA123JUA-T106	5-2	LT1237CG	5-3
		CL-150Y-CD-T	5-2	DTC123JUA-T106	5-2	LT1237CG-E2	5-3
		TLG124A	5-2	SI6542DQ-T1	5-2	PC87108AVHG	5-4
		TLO124	5-2	SI6542DQ-TL	5-2	SN74HCT573APW-E05 ...	5-4
		TLR124	5-2			TC74VHC00FT(EL)	5-4
						TC74VHC123AFT(EL)	5-5
						TC74VHC244FT(EL)	5-5
						TC74VHCT244AFT(EL) ...	5-5
						TC74VHCT245AFT(EL) ...	5-5
						TC74VHCT541AFT(EL) ...	5-5
						TC74VHCT74AFT(EL)	5-5
						TL7705CPS-B	5-6
						TL7705CPS-B-E20	5-6
						UPD431000AGW-85LL-E2 ...	5-3
						UPD78P058GC-3B9	5-6

DIODE

—TOP VIEW—

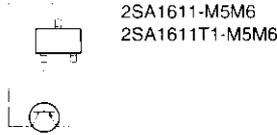


LED

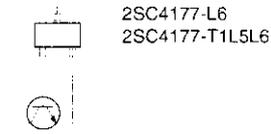


TRANSISTOR

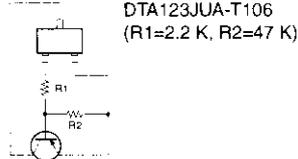
—TOP VIEW—



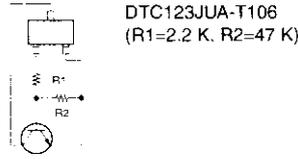
—TOP VIEW—



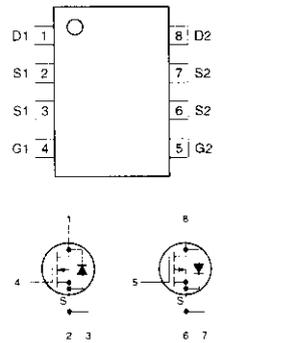
—TOP VIEW—



—TOP VIEW—



—TOP VIEW—

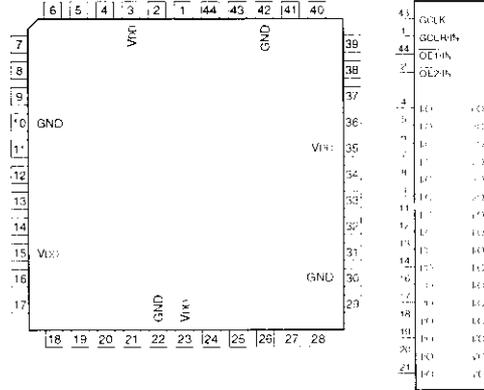


IC

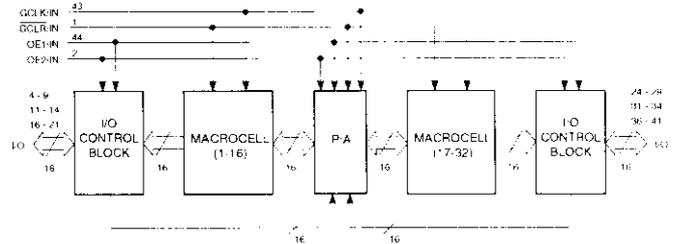
EPM7032LC44-15 (ALTERA)

C-MOS ERASABLE PLD

—TOP VIEW—



PIN NO	I/O	SIGNAL	PIN NO	I/O	SIGNAL	PIN NO	I/O	SIGNAL	PIN NO	I/O	SIGNAL
1	I	GCLK/IN	12	I/O	I/O	23	—	VDD1	34	I/O	I/O
2	I	OE2/IN	13	I/O	I/O	24	I/O	I/O	35	—	VDD2
3	—	VDD	14	I/O	I/O	25	I/O	I/O	36	I/O	I/O
4	I/O	I/O	15	—	VDD1	26	I/O	I/O	37	I/O	I/O
5	I/O	I/O	16	I/O	I/O	27	I/O	I/O	38	I/O	I/O
6	I/O	I/O	17	I/O	I/O	28	I/O	I/O	39	I/O	I/O
7	I/O	I/O	18	I/O	I/O	29	I/O	I/O	40	I/O	I/O
8	I/O	I/O	19	I/O	I/O	30	I/O	I/O	41	I/O	I/O
9	I/O	I/O	20	I/O	I/O	31	—	GND	42	—	GND
10	—	GND	21	I/O	I/O	32	I/O	I/O	43	I	GCLK/IN
11	I/O	I/O	22	—	GND	33	I/O	I/O	44	I	OE1/IN

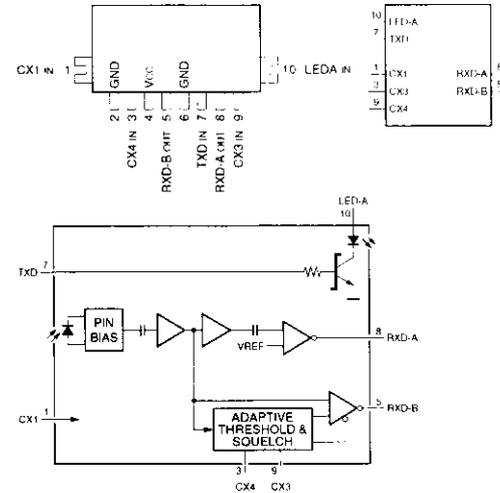


*ABOVE DIAGRAM SHOWS CONDITIONS BEFORE PROGRAMMING

HSDL-1100 (HP)

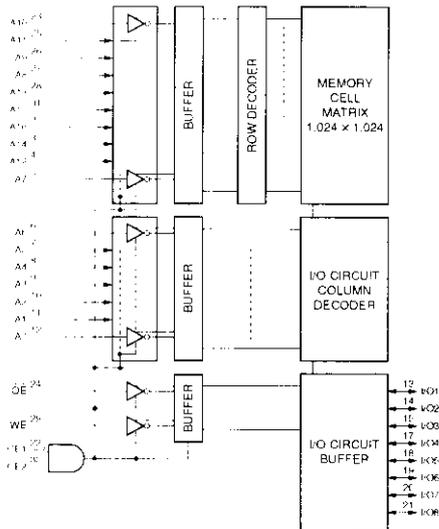
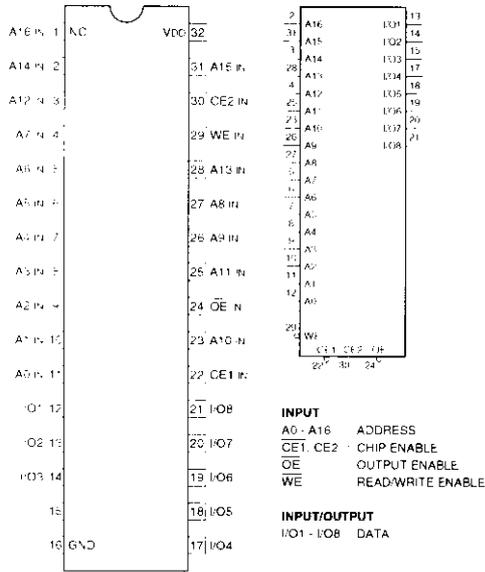
INFRARED RAYS MODULE

—TOP VIEW—



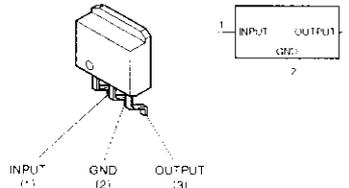
LC361000AMLL-70-TLA (SANYO) FLAT PACKAGE
 UPD431000AGW-85LL-E2

C-MOS 1 M (131.072 × 8)-BIT SRAM
 TOP VIEW



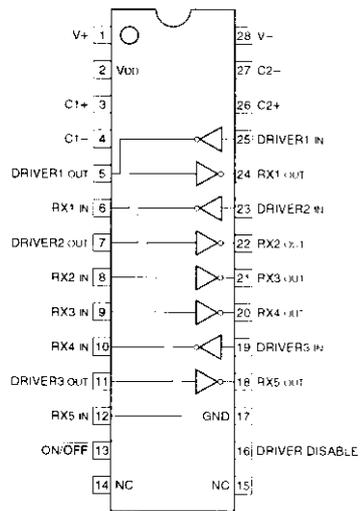
LM2940CS-5.0 (NS)

LOW DROPOUT TYPE VOLTAGE REGULATOR



LT1237CG (LINEAR TECH) FLAT PACKAGE
 LT1237CG-E2

RS232 TRANSCEIVER/RECEIVER
 TOP VIEW

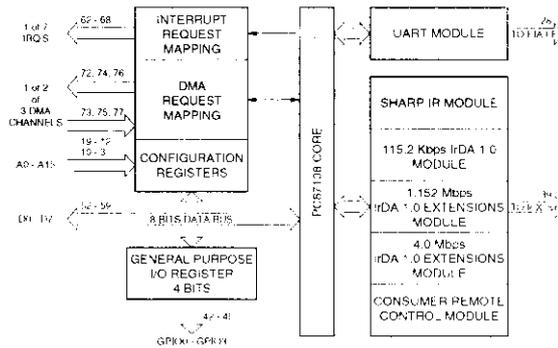
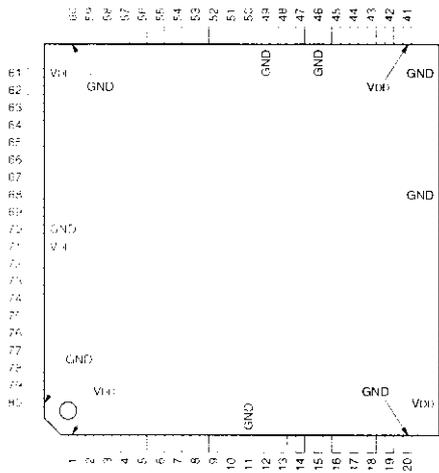


INPUT
 DRIVER1 - DRIVER3 RS-232 DRIVER
 RX1 - RX5 RECEIVER
 DRIVER DISABLE ALTERNATE CONTROL FOR THE CHARGE PUMP AND RS232 DRIVERS
 C1+, C1-, C2+, C2- EXTERNAL CAPACITORS

OUTPUT
 DRIVER1 - DRIVER3 RS-232 DRIVER
 RX1 - RX5 RECEIVER OUTPUTS WITH TTL/CMOS VOLTAGE LEVELS
 V+ POSITIVE SUPPLY (RS-232 DRIVERS)
 V- NEGATIVE SUPPLY (RS-232 DRIVERS)

PC87108AVHG (NS)

C-MOS INFRARED RAYS SERIAL COMMUNICATION DEVICE
—TOP VIEW—

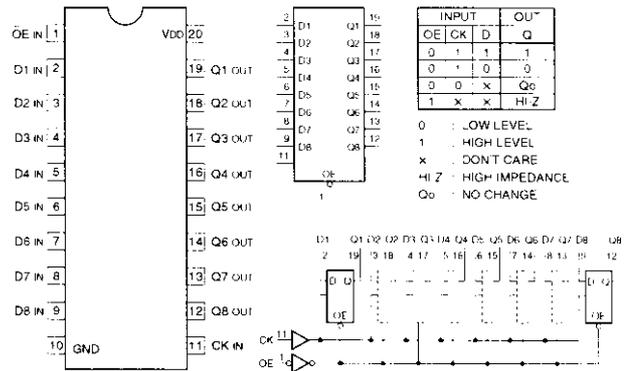


PIN NO	I/O	SIGNAL	PIN NO	I/O	SIGNAL	PIN NO	I/O	SIGNAL	PIN NO	I/O	SIGNAL
1	—	Vih	2	—	Vdd	41	—	Vdd	61	—	Vdd
2	I	AEN/CS	22	I	BADDR0	42	I/O	GPIO0	62	O	IRQ3
3	I	A*5	23	I	BADDR1	43	I/O	GPIO1	63	O	IRQ4
4	I	A*4	24	I	MR	44	I/O	GPIO2/AUXSL	64	O	IRQ6
7	I	A*3	25	I	ID3	45	I/O	GPIO3/BUSY	65	O	IRQ7
6	I	A*2	26	—	DCD	46	—	GND	66	O	IRQ9
7	I	A*1	27	I	SIN	47	I	CLKIN	67	O	IRQ11
8	I	A*0	28	O	SOUT	48	—	RESERVED	68	O	IRQ15
9	I	A9	29	—	DSR	49	—	GND	69	—	RESERVED
10	I	A8	30	O	DTR/BOLT	50	I	RD	70	—	GND
11	I	GND	31	I	CTS	51	I	WR	71	—	Vdd
12	I	A7	32	O	RTS	52	I/O	D0	72	O	DRQ0
13	I	A6	33	—	GND	53	I/O	D1	73	I	DACK0
14	I	A5	34	—	RI	54	I/O	D2	74	O	DRQ1
15	I	A4	35	I/O	ID2/IRSL2	55	I/O	D3	75	I	DACK1
16	I	A3	36	I/O	ID1/IRSL1	56	I/O	D4	76	O	DRQ3
17	I	A2	37	I/O	ID0/IRSL0/IRRX2	57	I/O	D5	77	I	DACK3
18	I	A1	38	—	IRRX1	58	I/O	D6	78	—	TC
19	I	AC	39	O	RTX	59	I/O	D7	79	I	IRRX3
20	I	GND	40	—	GND	60	—	GND	80	—	GND

- INPUT**
- AC, A15 ADDRESS BUS
 - AFN/CS ADDRESS ENABLE/CHIP SELECT
 - BADDR0, BADDR1 BASE ADDRESS
 - CLKIN CLOCK
 - CTS TRANSMISSION ENABLE
 - DACK0, DACK1, DACK3 DMA ACKNOWLEDGE
 - DCD DATA CARRIER DETECT
 - DSR DATA SET READY
 - ID3 TRANSCIEVER DISCRIMINATION
 - IRRX1 INFRARED RAYS RECEIVER
 - IRRX3 AUXILIARY INFRARED RAYS RECEIVER
 - MR MASTER RESET
 - RD READ
 - RI RING INDICATOR
 - SIN SERIAL DATA
 - TC TERMINAL COUNT
 - WR WRITE
- OUTPUT**
- DRQ0, DRQ1, DRQ3 DMA REQUEST
 - DTR/BOLT DATA TERMINAL READY/BAUD GENERATOR CLOCK
 - IRQ3, IRQ6, IRQ7 INTERRUPT REQUEST
 - IRQ9, IRQ11, IRQ15
 - IRTX INFRARED RAYS
 - RTS TRANSMISSION REQUEST
 - SOUT SERIAL DATA
- INPUT/OUTPUT**
- D0-D7 DATA BUS
 - ID0/IRSL0/IRRX2 TRANSCIEVER DISCRIMINATION/CONTROL OR SECONDARY IR RECEIVE
 - ID1/IRSL1, ID2/IRSL2 TRANSCIEVER DISCRIMINATION/CONTROL
 - GPIO0, GPIO1 PROGRAMMABLE I/O
 - GPIO2/AUXSL PROGRAMMABLE I/O OR AUXILIARY
 - GPIO3/BUSY PROGRAMMABLE I/O OR BUSY STATUS

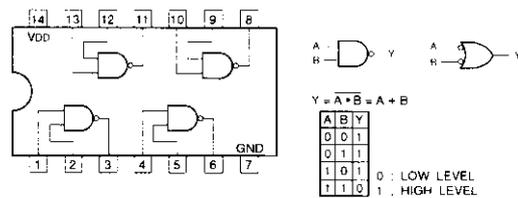
SN74HCT573APW-E05 (TI) FLAT PACKAGE

C-MOS 3-STATE OUTPUTS OCTAL LATCHES
—TOP VIEW—



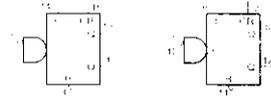
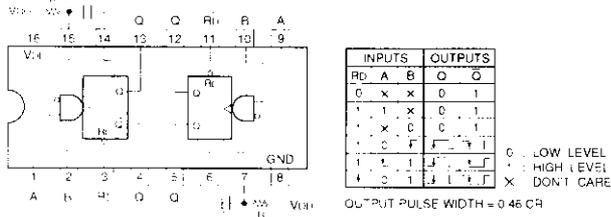
TC74VHC00FT (EL) (TOSHIBA) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATES
—TOP VIEW—



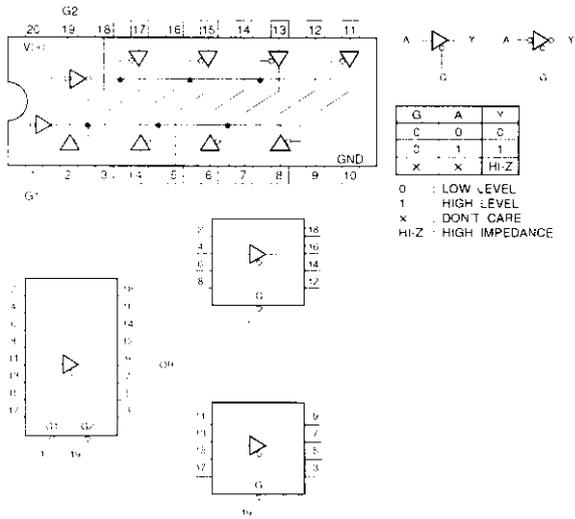
TC74VHC123AFT(EL) (TOSHIBA) FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
—TOP VIEW—



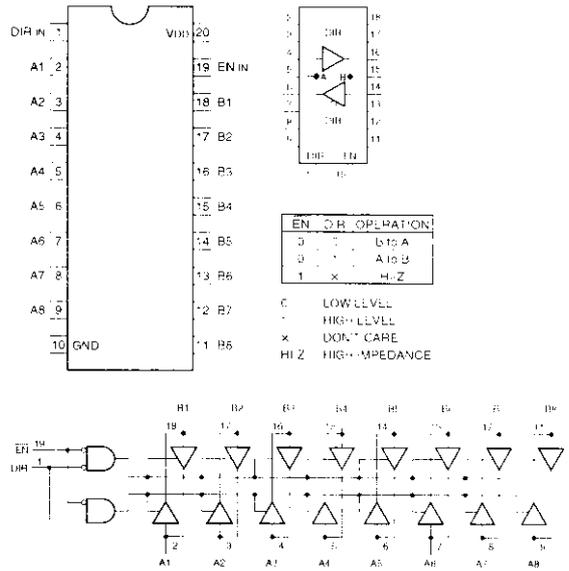
TC74VHC244FT(EL) (TOSHIBA) FLAT PACKAGE
TC74VHCT244AFT(EL) (TOSHIBA) FLAT PACKAGE

C-MOS BUS BUFFER WITH 3-STATE OUTPUTS
—TOP VIEW—



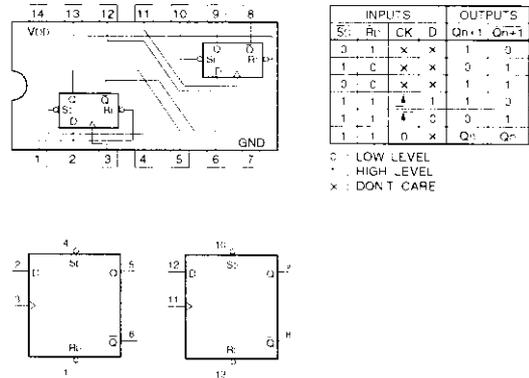
TC74VHCT245AFT(EL) (TOSHIBA) FLAT PACKAGE

C-MOS BILATERAL BUS TRANSCEIVERS WITH 3-STATE OUTPUTS
—TOP VIEW—



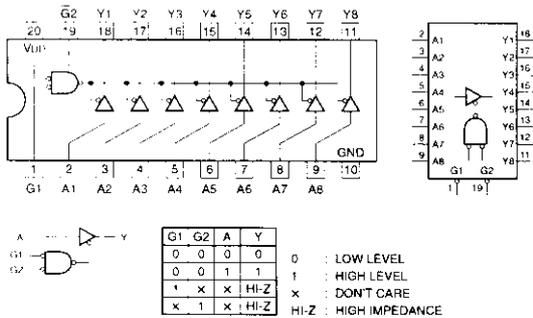
TC74VHCT74AFT(EL) (TOSHIBA) FLAT PACKAGE

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
—TOP VIEW—



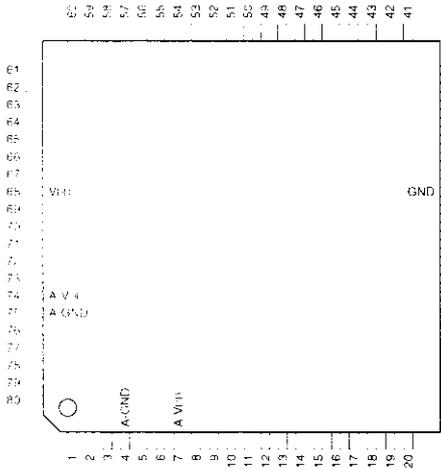
TC74VHCT541AFT(EL) (TOSHIBA) FLAT PACKAGE

C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS
—TOP VIEW—

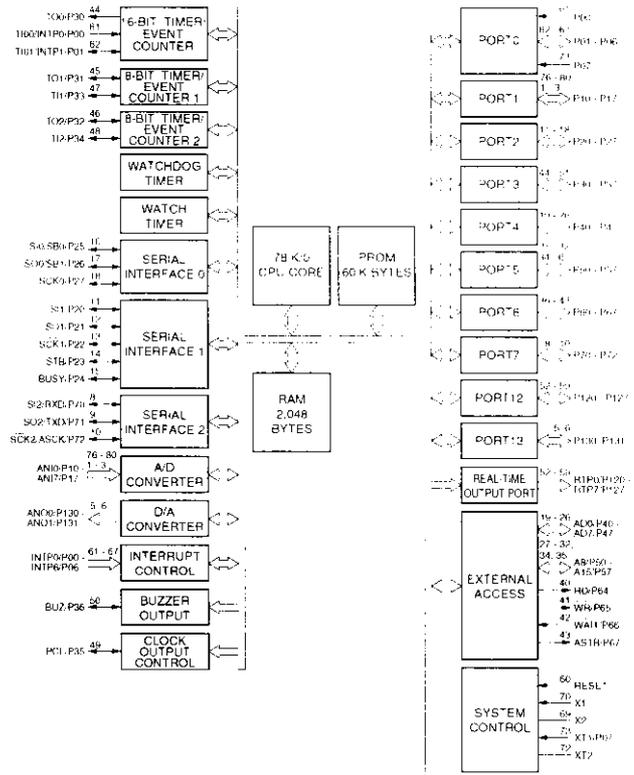


UPD78P058GC-3B9 (NEC)

C-MOS 8-BIT SINGLE-CHIP MICROCOMPUTER
—TOP VIEW—



PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I/O	P15-AN15	21	I/O	P42-AD2	41	I/O	P65-WR	61	I	P00-INTP0/TIO0
2	I/O	P16-AN16	22	I/O	P43-AD3	42	I/O	P66-WAIT	62	I/O	P01-INTP1/TIO1
3	I/O	P17-AN17	23	I/O	P44-AD4	43	I/O	P67-ASTB	63	I/O	P02-INTP2
4	—	A-GND	24	I/O	P45-AD5	44	I/O	P30-T00	64	I/O	P03-INTP3
5	I/O	P130-ANQ0	25	I/O	P46-AD6	45	I/O	P31-T01	65	I/O	P04-INTP4
6	I/O	P131-ANO1	26	I/O	P47-AD7	46	I/O	P32-T02	66	I/O	P05-INTP5
7	—	A-VH1	27	I/O	P50-A8	47	I/O	P33-T11	67	I/O	P06-INTP6
8	I/O	P70-S2-RXD	28	I/O	P51-A9	48	I/O	P34-T12	68	—	VDD
9	I/O	P71-SO2-TXD	29	I/O	P52-A10	49	I/O	P36-PCL	69	I	X2
10	I/O	P72-SCK2-ASCK	30	I/O	P53-A11	50	I/O	P36-BUZ	70	I	X1
11	I/O	P20-S11	31	I/O	P54-A12	51	I/O	P37	71	—	VPP
12	I/O	P21-SO1	32	I/O	P55-A13	52	I/O	P120-RTP0	72	I	XT2
13	I/O	P22-SCK1	33	—	GND	53	I/O	P121-RTP1	73	I	XT1/P07
14	I/O	P23-STB	34	I/O	P56-A14	54	I/O	P122-RTP2	74	—	A-VDD
15	I/O	P24-BUSY	35	I/O	P57-A15	55	I/O	P123-RTP3	75	—	A-VREF0
16	I/O	P25-SIO-SB0	36	I/O	P60	56	I/O	P124-RTP4	76	I/O	P10-ANI0
17	I/O	P26-SO0-SB1	37	I/O	P61	57	I/O	P125-RTP5	77	I/O	P11-ANI1
18	I/O	P27-SCK0	38	I/O	P62	58	I/O	P126-RTP6	78	I/O	P12-ANI2
19	I/O	P40-AD0	39	I/O	P63	59	I/O	P127-RTP7	79	I/O	P13-ANI3
20	I/O	P41-AD1	40	I/O	P64-RD	60	I	RESET	80	I/O	P14-ANI4



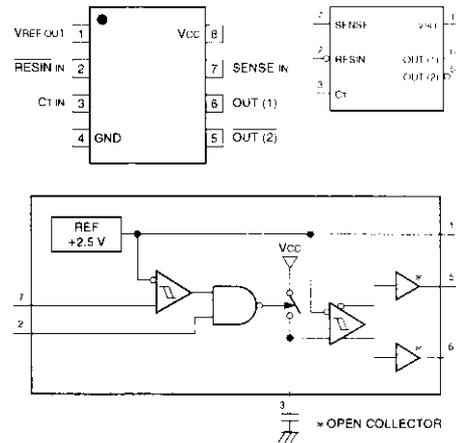
- INPUT**
- ANIC-ANI7 : ANALOG SIGNAL FOR ADC
 - ASCK : SERIAL CLOCK
 - BUSY : BUSY
 - INT0-INT6 : INTERRUPT
 - INTP0-INTP6 : INTERRUPT
 - P00-P07 : PORT
 - RESET : SYSTEM RESET
 - RXD : SERIAL DATA
 - SIC-S2 : SERIAL DATA
 - T00 : EXTERNAL COUNT CLOCK
 - T01, T12 : CAPTURE TRIGGER SIGNAL
 - T1, T2 : EXTERNAL COUNT CLOCK
 - WAIT : WAIT
 - X1, X2 : CRYSTAL OSCILLATOR FOR MAIN SYSTEM
 - XT1, XT2 : CRYSTAL OSCILLATOR FOR SUB SYSTEM

- OUTPUT**
- AR-A15 : UPPER ADDRESS BUS
 - AN00-AN01 : ANALOG SIGNAL FROM ADC
 - ASTB : STROBE
 - BUZ : BUZZER
 - PCL : CLOCK
 - RD : MEMORY READ STROBE
 - RTP0-RTP7 : REAL TIME OUTPUT PORT
 - S00-S07 : SERIAL DATA
 - STB : STROBE
 - T00 : 16-BIT TIMER
 - T01, T02 : 8-BIT TIMER
 - TXD : SERIAL DATA
 - WR : MEMORY WRITE STROBE

- INPUT/OUTPUT**
- AD0-AD7 : LOWER ADDRESS/DATA BUS
 - P01-P06, P10-P17 : PORT
 - P20-P27, P30-P37
 - P40-P47, P50-P57
 - P60-P67, P70-P72
 - P120-P127
 - P130-P131
 - SB0-SB1 : SERIAL DATA
 - SCK0-SCK2 : SERIAL CLOCK

TL7705CPS-B (T) FLAT PACKAGE
TL7705CPS-B-E20

POWER VOLTAGE SUPERVISOR
—TOP VIEW—



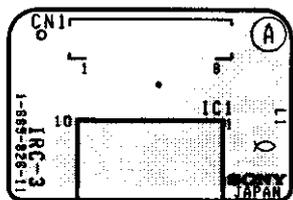
Section 6

Board Layouts

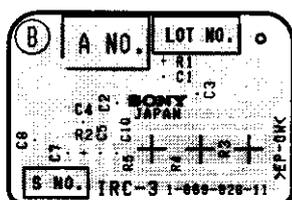
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IRC-3	Infrared communication board	6-3
LED-319	Display board	6-3
PSW-64	Power switch board	6-3
SE-480	Loop antenna board	6-4

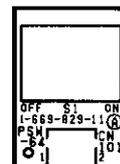
(†1) : Tele-File is a trademark of Sony Corporation.



IRC-3 -A SIDE-
SUFFIX : -11



IRC-3 -B SIDE-
SUFFIX : -11



PSW-64 -A SIDE-
SUFFIX : -11



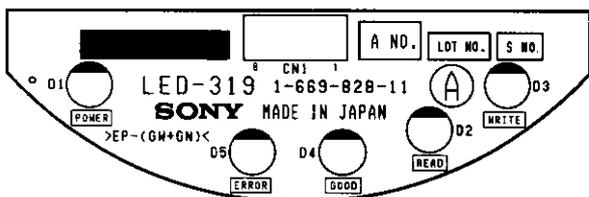
PSW-64 -B SIDE-
SUFFIX : -11

IRC-3(1-669-828-11)

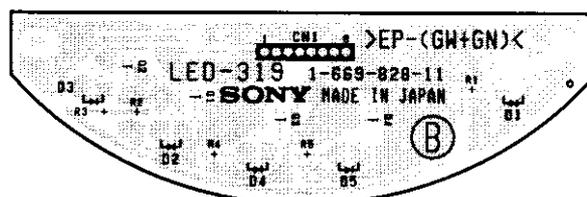
C1	*A1	L1	A1
C2	*A1		
C3	*A1	R1	*A1
C4	*A1	R2	*A1
C5	*A1	R3	*A1
C7	*A1	R4	*A1
C8	*A1	R5	*A1
C10	*A1		
		* :	B SIDE
CN1	A1		
IC1	A1		

PSW-64(1-669-829-11)

CN101	A1
S1	A1



LED-319 -A SIDE-
SUFFIX : -11

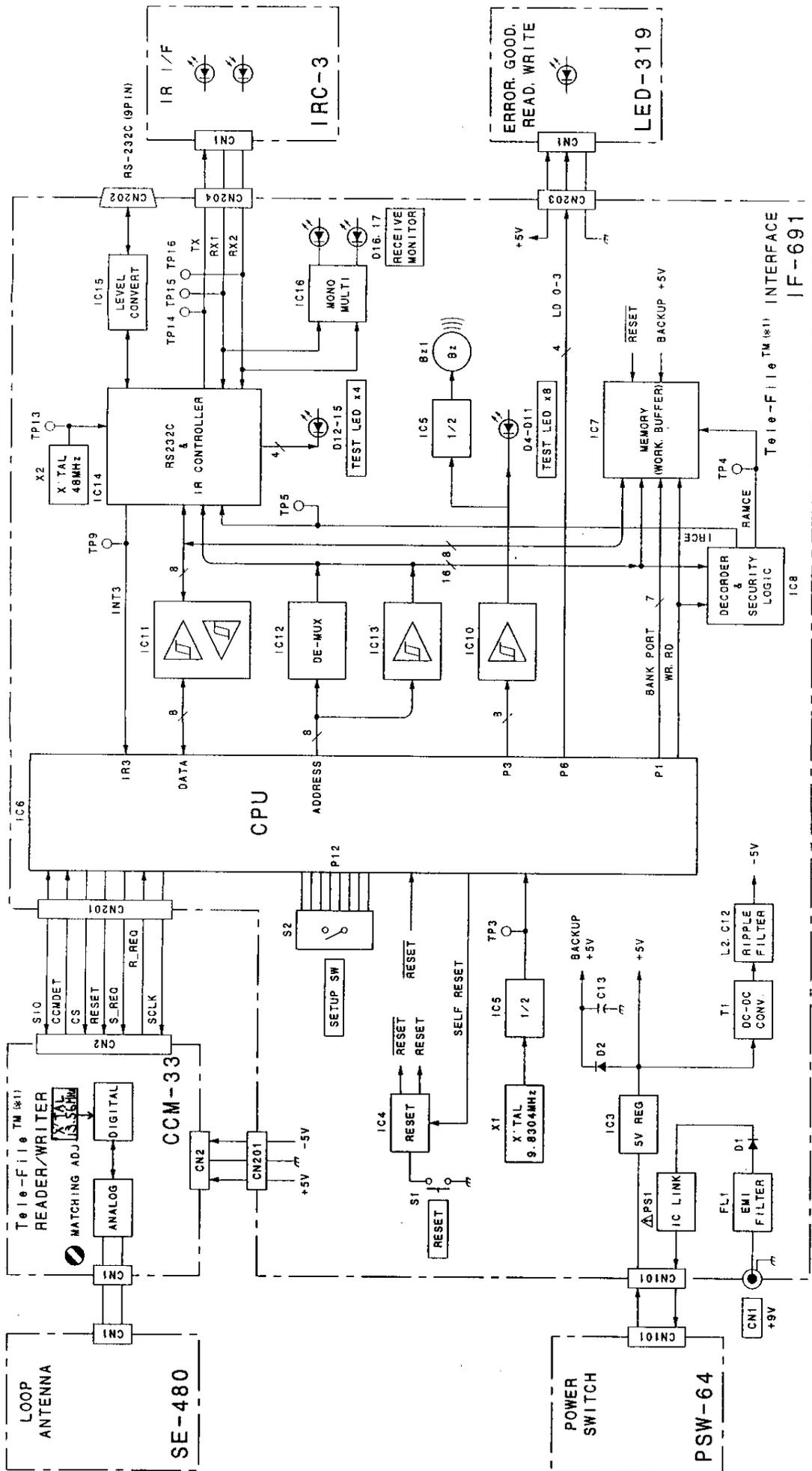


LED-319 -B SIDE-
SUFFIX : -11

LED-319(1-669-828-11)

CN1	A1	Q3	*A1
		Q4	*A1
D1	A1	R1	*A1
D2	A1	R2	*A1
D3	A1	R3	*A1
D4	A1	R4	*A1
D5	A1	R5	*A1
Q1	*A1		
Q2	*A1	* :	B SIDE

Section 7
Block Diagram



(*) : Tele-File is a trademark of Sony Corporation.

Section 8

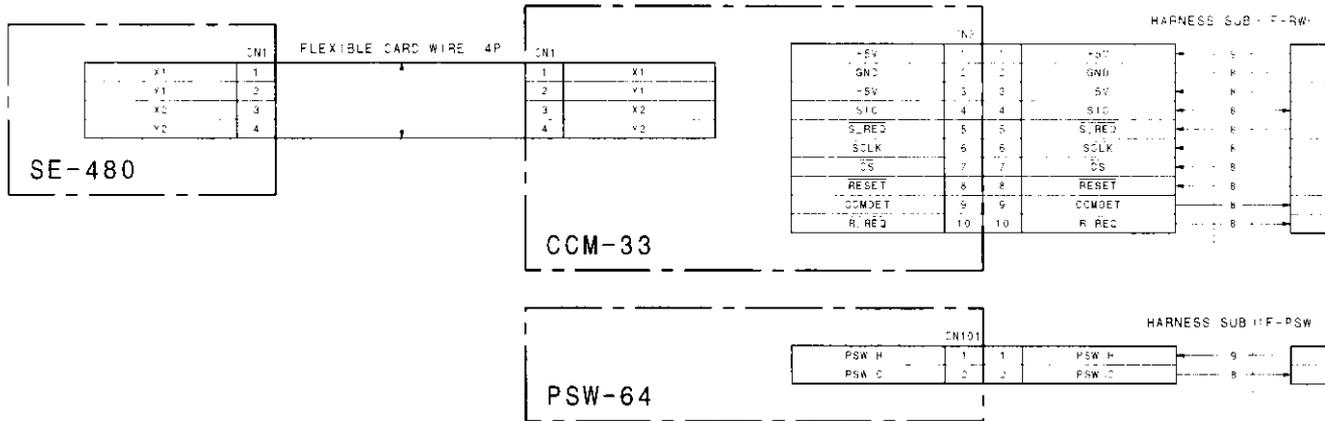
Schematic Diagrams

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LED-319	Display board	8-6
PSW-64	Power switch board	8-7
SE-480	Loop antenna board	8-7

(*) : Tele-File is a trademark of Sony Corporation.

8-1. Frame Wiring



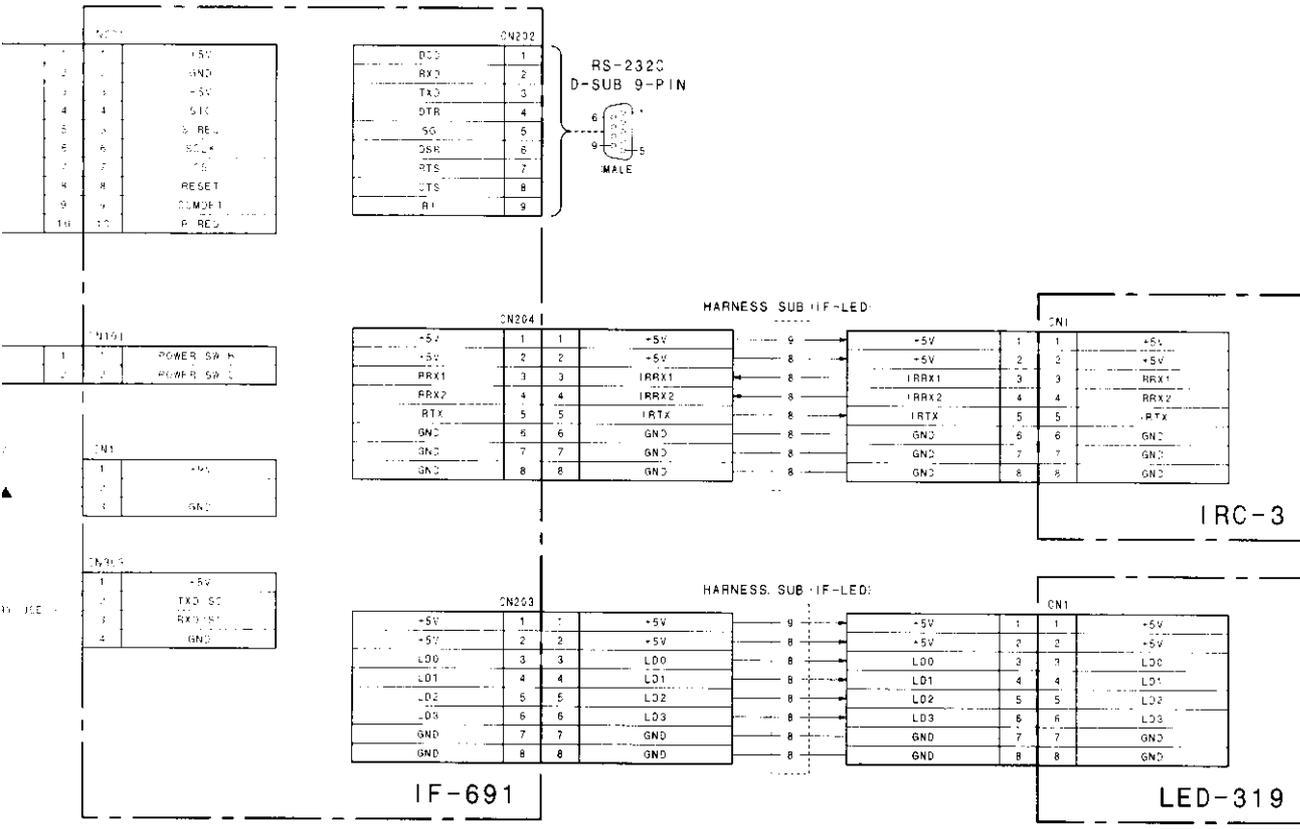
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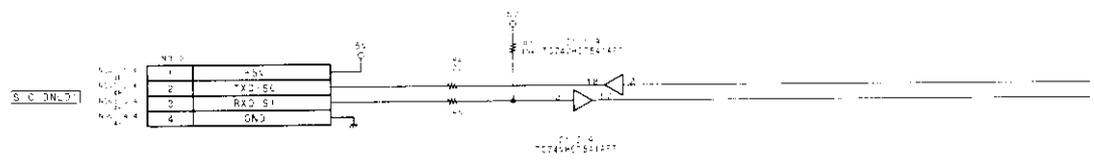
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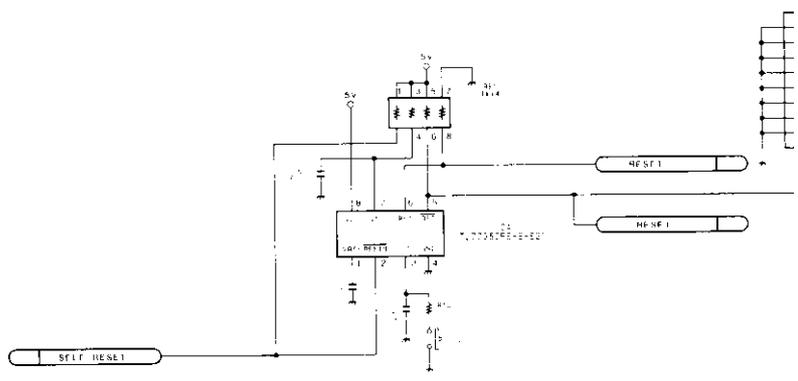
Frame

8-2. Schematic Diagrams

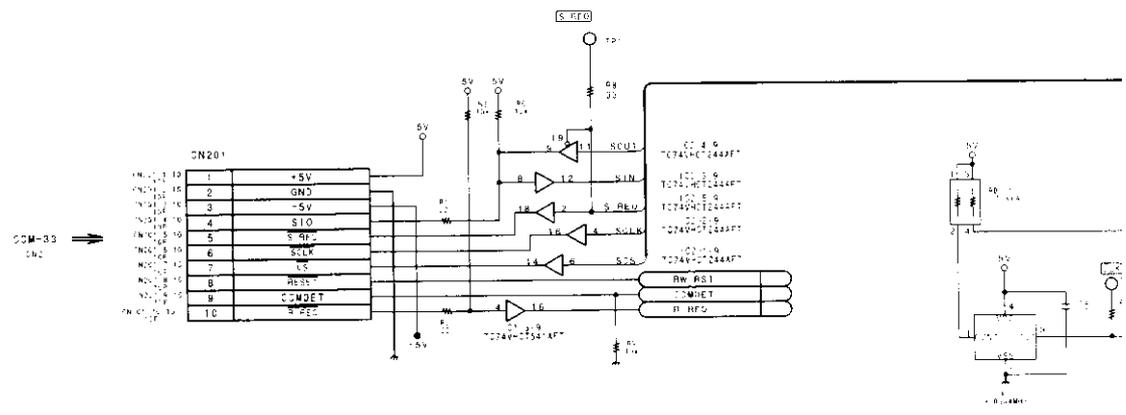
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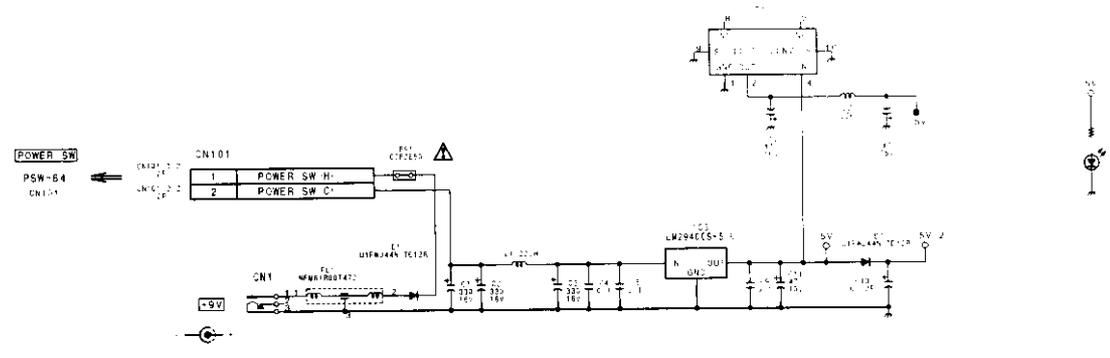
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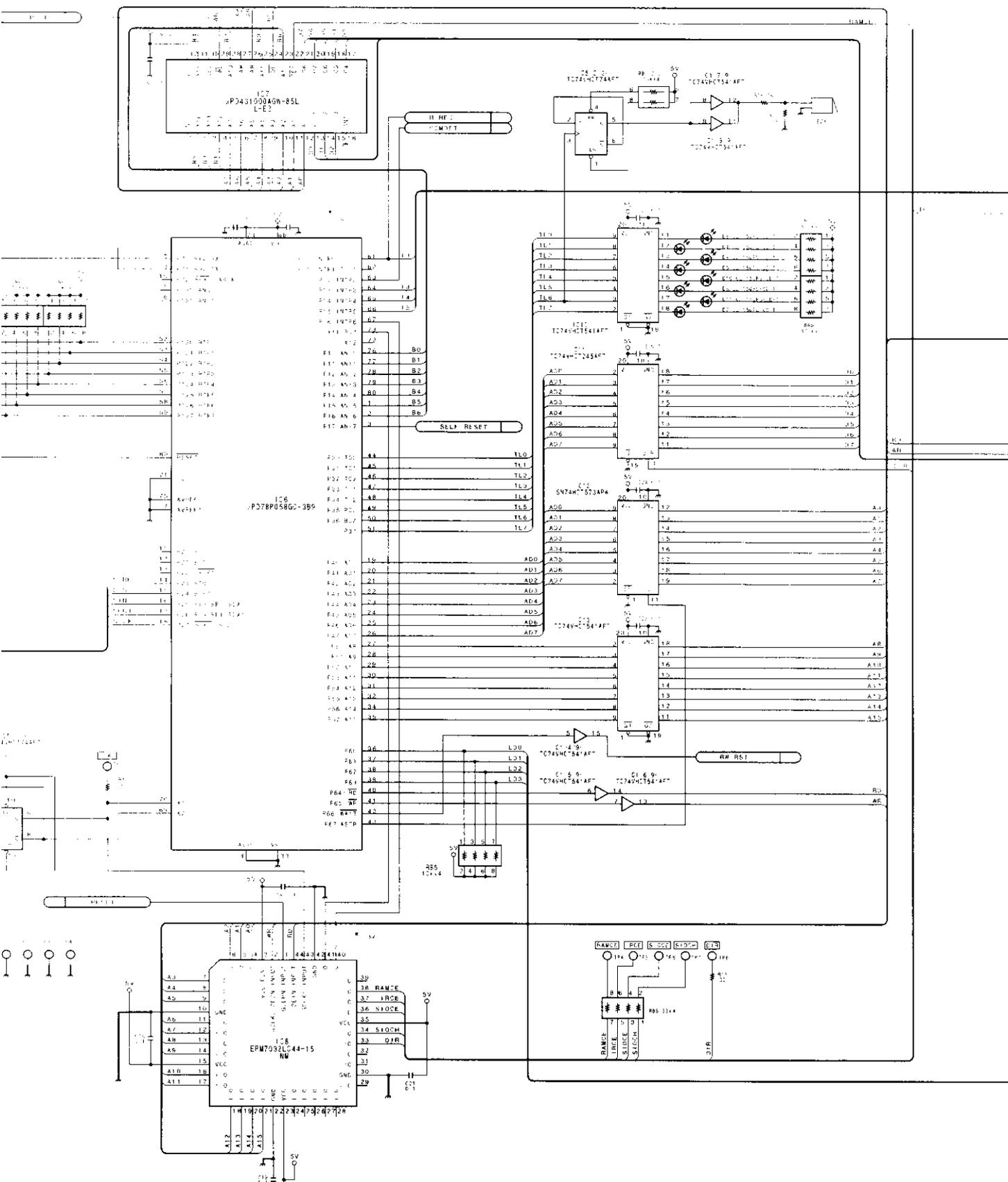


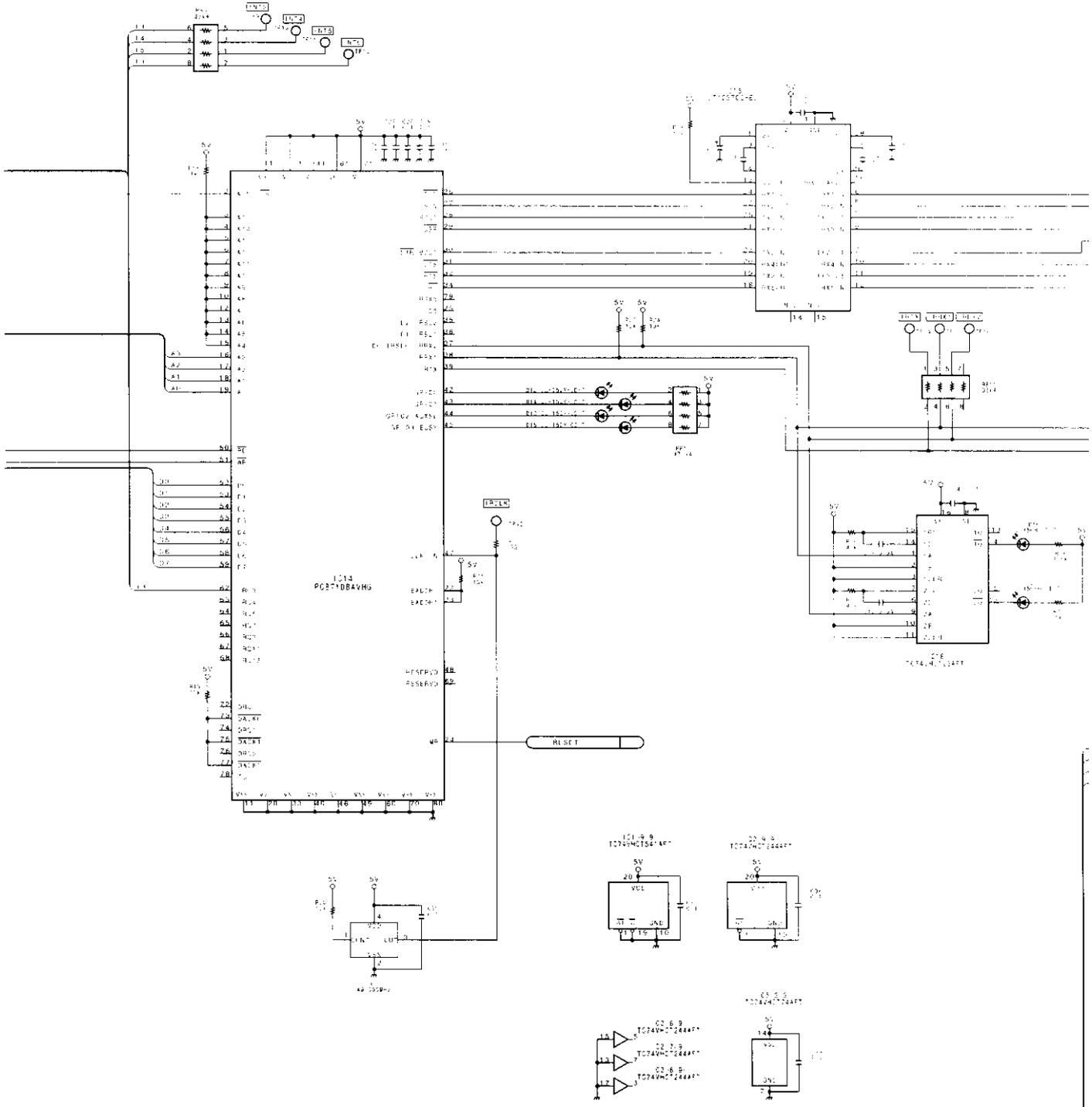
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A

B

C

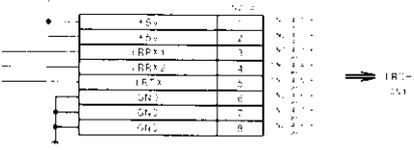




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2



3



4

Tele-File™ interface board

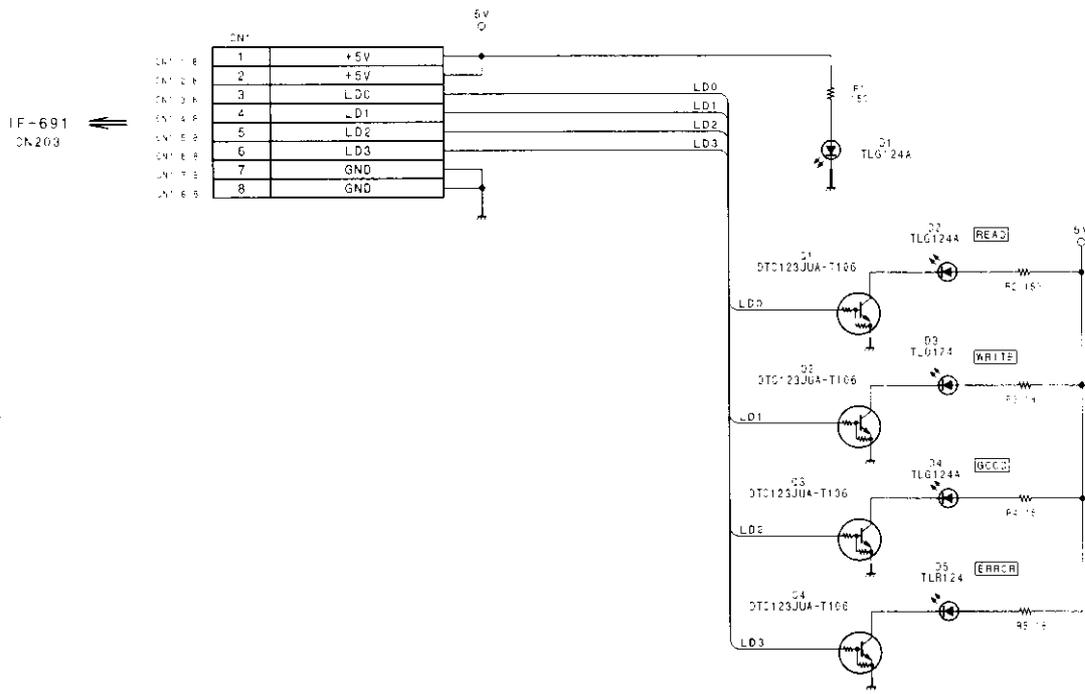
IF-691

BOARD NO. 1-669-825-12

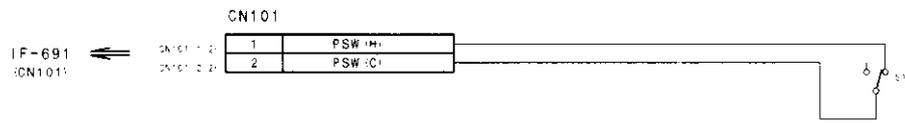
LOT NO. 802-

B-#MLU100-IF691-MANU-@

5



Display board
LED-319
 BOARD NO. 1-669-828-11
 LOT NO. 802-
 B-vMLU100-LED319-11-@



Power switch board
PSW-64
BOARD NO. 1-669-829-11
LOT NO. 802-
B-#MLU100-PSW64-11-0

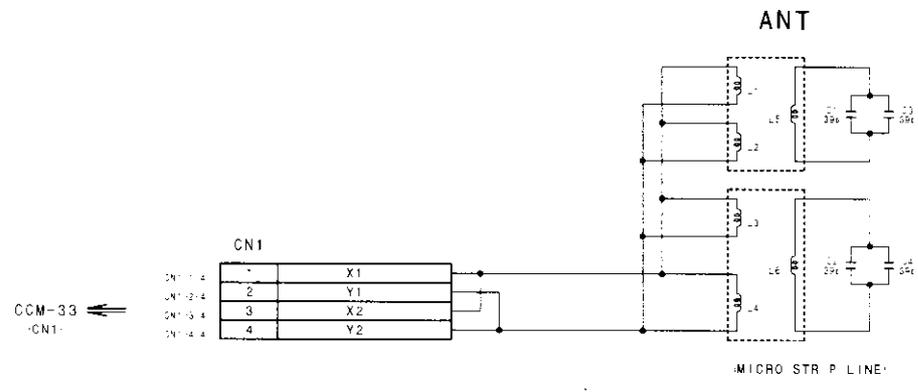
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2

3

4

5



Loop antenna board
SE-480
 BOARD NO. 1-669-827-11
 LOT NO. 802-
 B-YMLU100-SE480-MANU-Ⓢ

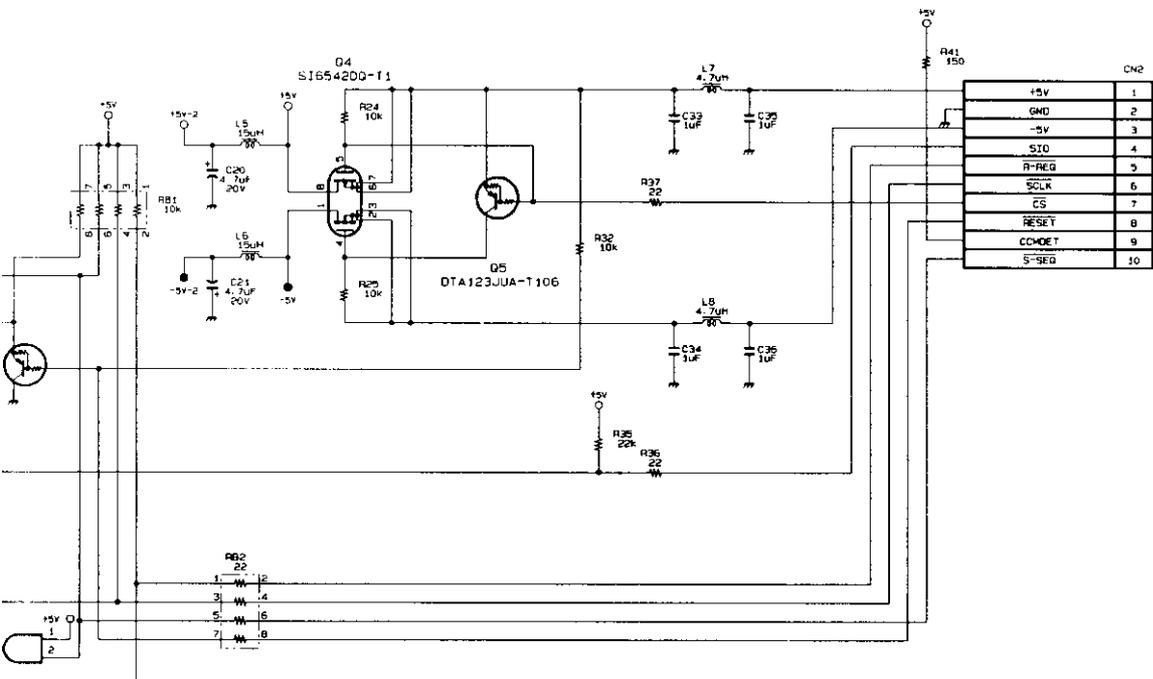
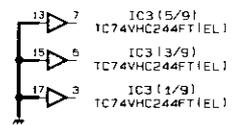
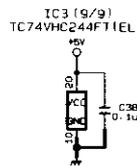
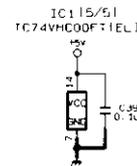
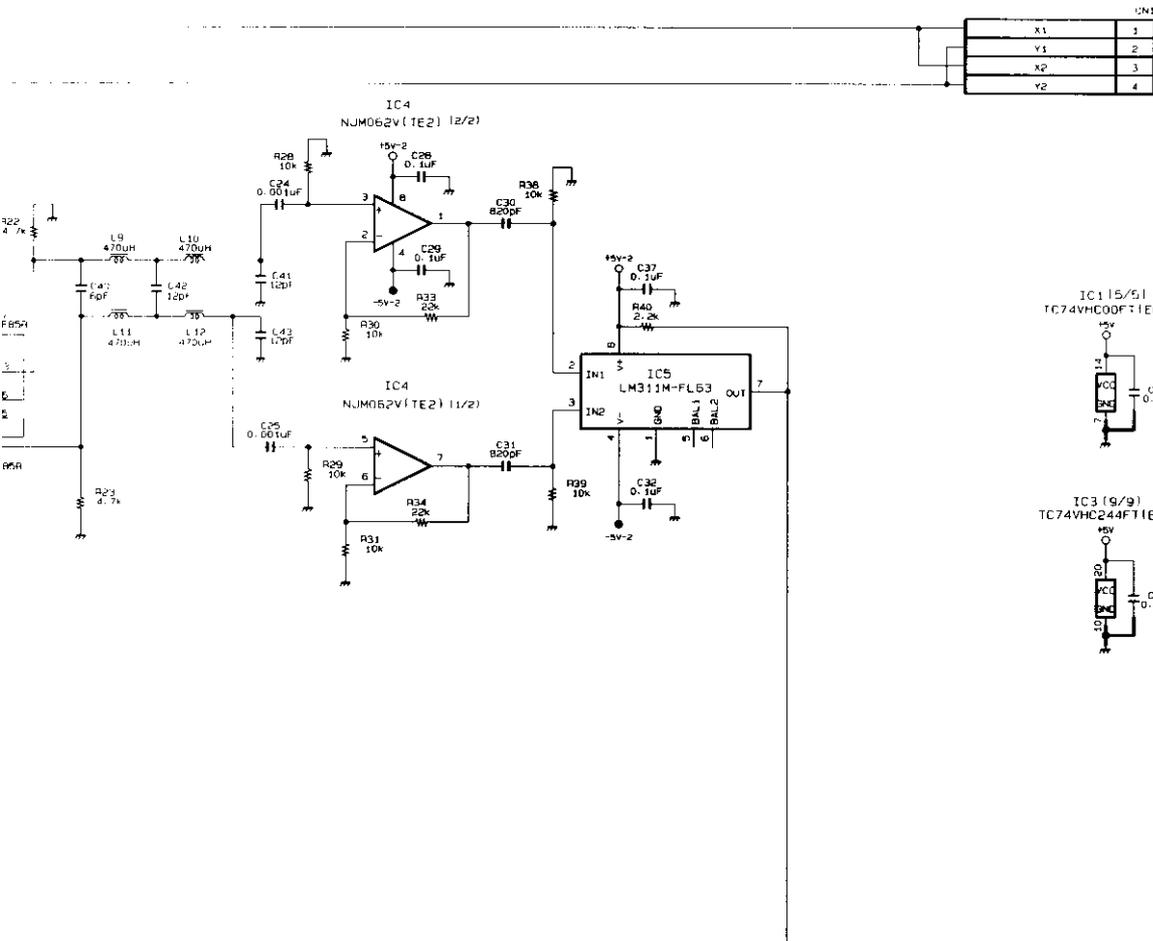
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E

F

G

H



MLU-100

1-669-822-12

0-275-393-01

A-8318-833-B

A-0225-535-A

基板名 CCM-33 (1/1)

機種名 : MLU-100 仕向 :
 Revision : 003
 作成者 : TSUNII
 更新日 : 2000/04/19

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3-XXX-XXX-XX

Sony Corporation
Communication System Solutions Network Company

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