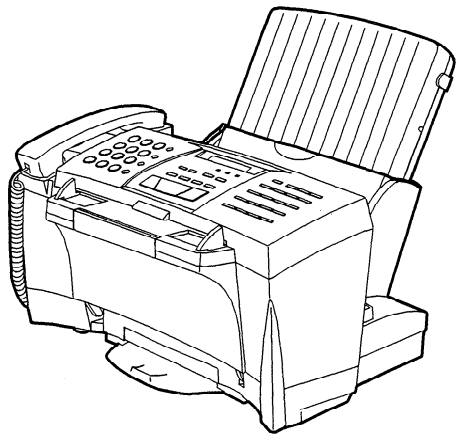
SHARP SERVICE MANUAL

No. 00ZU270CMUSME



FACSIMILE

MODEL UX-2700CM FO-2550CM

CONTENTS

Parts marked with "⚠" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

CAUTION FOR BATTERY REPLACEMENT

(Danish) ADVARSEL !
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandoren.

(English) Caution !
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's
instructions.

(Finnish) VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden
mukaisesti.

(French) ATTENTION
Il y a danger d'explosion s' il y a remplacement incorrect
de la batterie. Remplacer uniquement avec une batterie du
même type ou d'un type recommandé par le constructeur.
Mettre au rébut les batteries usagées conformément aux
instructions du fabricant.

(Swedish) VARNING
Explosionsfare vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

(German) Achtung
Explosionsgefahr bei Verwendung inkorrekter Batterien.
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder
vom Hersteller empfohlene Batterien verwendet werden.
Entsorgung der gebrauchten Batterien nur nach den vom
Hersteller angegebenen Anweisungen.

CHAPTER 1. GENERAL DESCRIPTION

[1] Specifications

Printing specifications

Print cartridges	**Color:** Sharp UX-27CC **Black:** Sharp UX-22BC
Print resolution	**High:** 600 x 600 dpi (both color and black) **Normal**: 300 x 300 dpi
Print speed	**Color:** Up to 2 pages per minute **Black:** Up to 3 pages per minute
Paper types	Index cards, envelopes, labels, transparencies, glossy film, greeting cards, iron-on transfers, plain, coated, and glossy paper.

Fax specifications

Automatic dialing	Rapid Key Dialing: 38 numbers Speed Dialing: 61 numbers
Memory size*:	512 KB (approx. 42 average pages)
Automatic document feeder	20 sheets max.
Modem speed	14400 bps with automatic fallback to 12000, 9600, 7200, 4800, or 2400 bps
Transmission time*	Approx. 6 seconds (Sharp special mode)
Display	16-digit LCD display
Reception modes	Auto/Manual

Resolution	**Horizontal:** 200 pels/inch **Vertical:** Standard: 100 lines/inch Fine /Halftone: 200 lines/inch Super fine (transmission only): 400 lines/inch
Halftone (grayscale)	64 levels
Applicable telephone line	Public switched telephone network
Compatibility	ITU-T (CCITT) G3 mode
Configuration	Half-duplex, desktop transceiver
Compression scheme	MH, MR, MMR
Scanning method	Sheet-feeder CIS (Contact Image Sensor)
Effective printing width	8" (203 mm) max.
Paper margins	**Top:** 5.5 mm **Bottom:** 23.7 mm
Input document size	**Automatic feeding:** Width: 5.8 to 8.5" (148 to 216 mm) Length: 5.5 to 11" (140 to 279 mm) **Manual feeding:** Width: 5.8 to 8.5" (148 to 216 mm) Length: 5.5 to 39.4" (140 to 1000 mm)
Effective scanning width	8.3" (210 mm) max.
Contrast control	Automatic/Dark selectable

NOTE: The Sharp Color MFP is not able to send or receive color faxes.

Copying specifications

Resolution	300 dpi
Multiple copies	Up to 99 (monochrome copying only)
Copy reduction/ enlargement	**Monochrome:** 50%, 75%, 120%, 150% **Color:** 50%, 200%

PC scanning specifications

Resolution	Enhanced 600 dpi
Scanning modes	Color/monochrome/grayscale(64 levels)

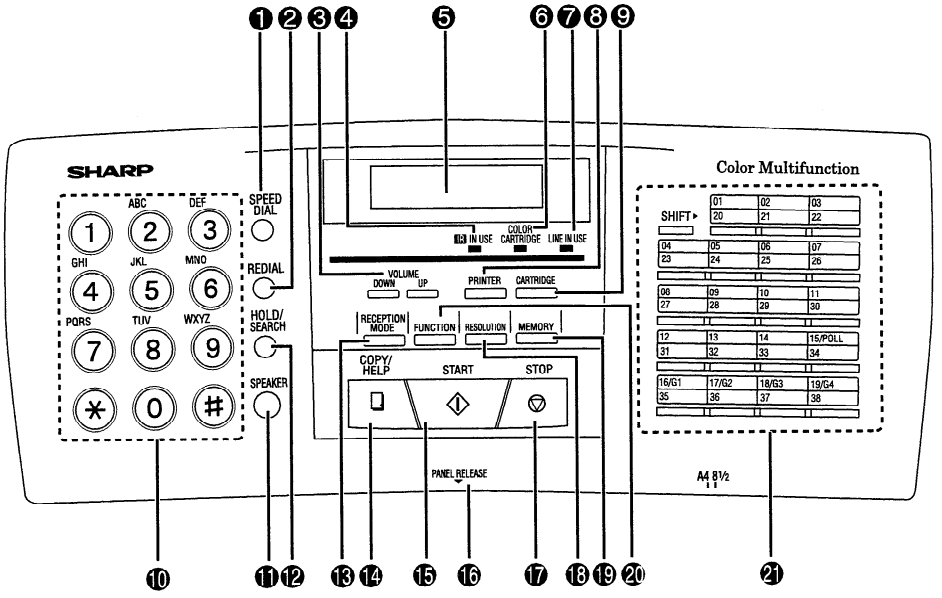
General specifications

Power requirements	120 V AC, 60 Hz
Operating temperature	50 to 100°F (10 to 35°C)
Operating humidity	30 - 80%RH
Power consumption	Stand-by: 8.5 W Maximum: 40 W
Dimensions	Width: 16.0" (406 mm) Depth: 12.0" (306 mm) Height: 10.0" (255 mm) (Without attachments)
Weight	Approx. 13.0 lbs. (5.9 kg) (without attachments)

* Based on ITU-T Test Chart #1 at standard resolution in Sharp special mode, excluding time for protocol signals (i.e., ITU-T phase C time only).

As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for procduct improvement without prior notice. The performance specifications figures indicated are nominal values of production units. There may be some deviation from these values in individual units.

[2] Operation panel



❶ SPEED DIAL key
Press this key to dial a 2-digit Speed Dial number.

❷ REDIAL key
Press this key to automatically redial the last number dialed.

❸ VOLUME keys
Press these keys to adjust the volume of the handset when the handset is lifted, the volume of the speaker when the **SPEAKER** key has been pressed, or the volume of the ringer at all other times.

❹ IR IN USE light
This blinks while the Sharp Color MFP is receiving data by infrared transmission from a notebook computer, digital camera, or Zaurus.

❺ Display
This displays messages and prompts during operation and programming.

❻ COLOR CARTRIDGE light
This lights when a color print cartridge is installed. Faxes are received to memory when this light is on.

❼ LINE IN USE light
This lights while the Sharp Color MFP is using the telephone line.

❽ PRINTER key
Press this key to eject paper from the machine, or reset the machine after clearing a paper jam or other printer error.

❾ CARTRIDGE key
Press this key to change a print cartridge or install a new print cartridge.

❿ Number keys
Use these keys to dial numbers, and enter numbers and letters during number/name storing procedures.

⓫ SPEAKER key
Press this key to hear the line and fax tones through the speaker when sending a document.
Note:**This is not a speakerphone** . You must pick up the handset to talk with the other party.

⓬ HOLD/SEARCH key
Press this key to search for an automatic dialing number, or, during a phone conversation, press this key to put the other party on hold.

⓭ RECEPTION MODE key
Press this key to select the reception mode. The selected mode will appear in the display.

⓮ COPY/HELP key
When a document is in the feeder, press this key to make a copy. At any other time, press this key to print out the Help List, a quick reference guide to the operation of your fax.

⓯ START key
Press this key to send or receive a document.

⓰ PANEL RELEASE
Pull this release up to open the operation panel.

⓱ STOP key
Press this key to stop operations before they are completed.

⓲ RESOLUTION key
Press this key to adjust the resolution and contrast before sending or copying a document.

⓳ MEMORY key
Press this key to scan a document into memory before transmitting it.

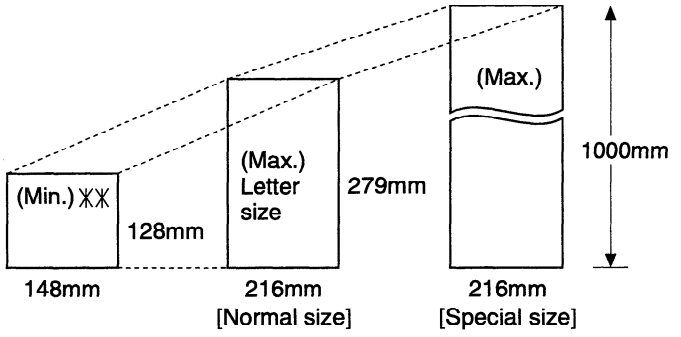
⓴ FUNCTION key
Press this key to select various special functions.

㉑ Rapid Dial Keys
Press one of these keys to dial a fax or voice number automatically. To dial the bottom number on a Rapid Key, press the **SHIFT** key before pressing the Rapid Key. (Note that you must attach the Rapid Key labels.)

[3] Transmittable documents

1. Document Sizes

Normal size	width	5.83"-8.5"(148 – 216 mm)
	length	5.04"-11"(128 – 297 mm)



※※ Use document carrier sheet for smaller documents.

* With special sizes, only one sheet can be fed into the machine at a time. Insert next page into feeder as current page is being scanned.

2. Paper Thickness & Weight

Normal size	ADF 10 sheets	Thickness	2.4×10^{-3} – 4.7×10^{-3} inch (0.06–0.12 mm)
		Weight	0.15×10^{-3} lbs/inch² (52–104g/ m²) (14–28 lbs)
	ADF 20 sheets	Thickness	2.4×10^{-3} – 3.5×10^{-3} inch (0.06–0.09 mm)
		Weight	0.77×10^{-3} – 0.11×10^{-3} inch (52–74.3g/ m²) (14–20 lbs)
Special size		Thickness	4.7×10^{-3} – 7.9×10^{-3} inch (0.12–0.20 mm)
		Weight	0.15×10^{-3} – 0.20×10^{-3} lbs/inch² (52–157g/ m²)

3. Document Types

- Normal paper

  Documents handwritten in pencil (No. 2 lead or softer), fountain pen, ball-point pen, or felt-tipped pen can be transmitted.

  Documents of normal contrast duplicated by a copying machine can also be transmitted.

- Diazo copy (blue print)

  Diazo copy documents of a normal contrast may be transmitted.

- Carbon copy

  A carbon copy may be transmitted if its contrast is normal.

4. Cautions on Transmitting Documents

- Documents written in yellow, greenish yellow, or light blue ink cannot be transmitted.
- Ink, glue, and correcting fluid on documents must be dry before the documents can be transmitted.
- All clips, staples and pins must be removed from documents before transmission.
- Patched (taped) documents should be copied first on a copier and then the copies used for transmission.
- All documents should be fanned before insertion into the feeder to prevent possible double feeds.

5. Automatic Document Feeder Capacity

Number of pages that can be placed into the feeder at anytime is as follows:

Normal size: max. ADF 20 sheets (14 lbs – 20 lbs)

Special size: single sheet only (manual feed)

NOTES:
- When you need to send or copy more pages than the feeder limit, place additional pages in feeder when last page in feeder is being scanned.
- Place additional pages carefully and gently in feeder. If force is used, double-feeding or a document jam may result.

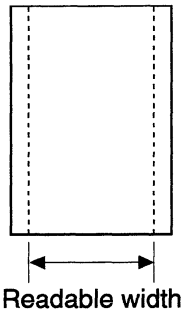
6. Readable Width & Length

The readable width and length of a document are slightly smaller than the actual document size.

Note that characters or graphics outside the effective document scanning range will not be read.

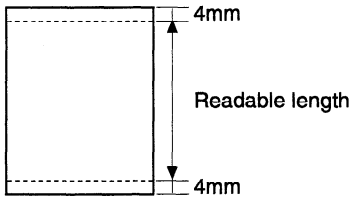
- **Readable width**

210 mm, max.



- **Readable length**

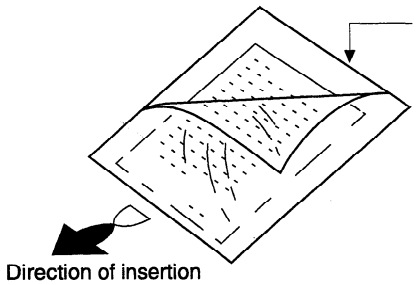
This is the length of the document sent minus 0.16" (4 mm) from the top and bottom edges.



7. Use of Document Carrier Sheet

A document carrier sheet must be used for the following documents.

- Those with tears.
- Those smaller than size 5.83"(W) x 5.04"(L) (148 mm (W) x 128 mm (L)).
- Carbon-backed documents



NOTE: To transmit a carbon-backed document, insert a white sheet of paper between the carbon back of the document and the document carrier.

- Those containing an easily separable writing substance (e.g., tracing paper written on with a soft, heavy lead pencil).

NOTES:
- When using the document carrier, carefully read the instructions written on the back.
- If the document carrier is dirty, clean it with a soft, moist cloth, and then dry it before using for transmission.
- Do not place more than one document in the carrier at a time.

[4] Installation

1. Site selection

Take the following points into consideration when selecting a site for this model.

ENVIRONMENT

- The machine must be installed on a level surface.
- Keep the machine away from air conditioners, heaters, direct sunlight, and dust.
- Provide easy access to the front, back, and sides of the machine. In particular, keep the area in front of the machine clear, or the original document may jam as it comes out after scanning.
- The temperature should be between 5° and 35°C.
- The humidity should be between 30% and 85% (without condensation).

ELECTRICITY

120V , 60Hz, grounded (3-prong) AC outlet is required.

Caution!

- Connection to a power source other than that specified will cause damage to the equipment and is not covered under the warranty.
- If your area experiences a high incidence of lightning or power surges, we recommend that you install a surge protector for the power and telephone lines. Surge protectors can be purchased at most telephone specialty stores.

If the machine is moved from a cold to a warm place...

If the machine is moved from a cold to a warm place, it is possible that the reading glass may fog up, preventing proper scanning of documents for transmission. To remove the fog, turn on the power and wait approximately 2 hours before using the machine.

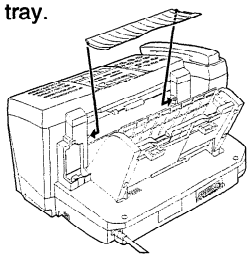
TELEPHONE JACK

A standard RJ11C telephone jack must be located near the machine. This is the telephone jack commonly used in most homes and offices.

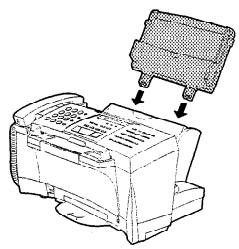
- Plugging the fax machine into a jack which is not an RJ11C jack may result in damage to the machine or your telephone system. If you do not know what kind of jack you have, or needed to have one installed, contact the telephone company.

2. Trays

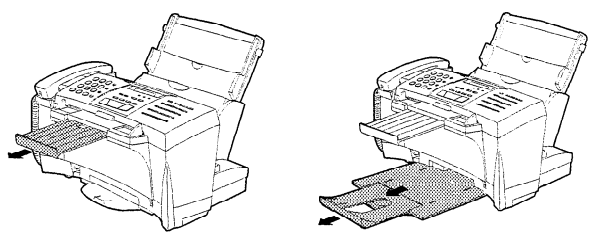
① Attach the document tray.



② Insert the paper tray into the back of the machine as shown.



③ Pull out the original document support and the output tray.



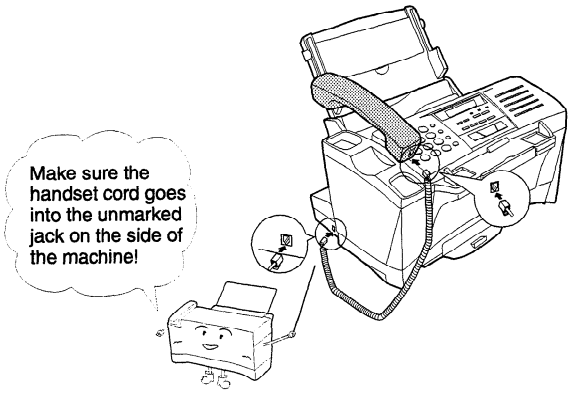
Note: When receiving faxes, copying or printing, do not let a large number of pages accumulate in the output tray. This may obstruct the outlet and cause paper jams.

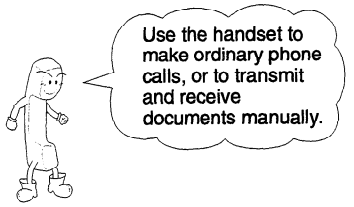
3. Connections

① Handset

Connect the handset as shown and place it on the handset rest.

- The ends of the handset cord are identical, so they will go into either jack.

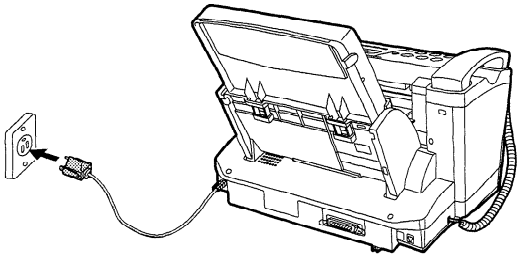


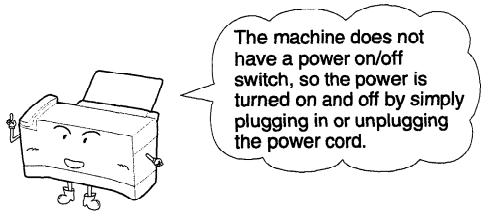


② Power cord

Plug the power cord into a 120 V, 60 Hz, grounded (3-prong) AC outlet.

Caution!
Do not plug the power cord into any other kind of outlet. This will damage the machine and is not covered under the warranty.

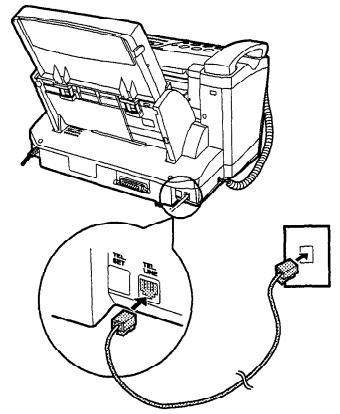


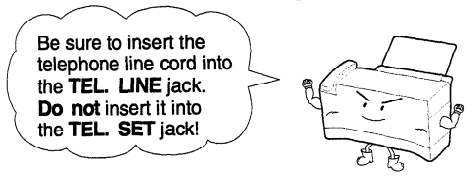


Note: If your area experiences a high incidence of lightning or power surges, we recommend that you install surge protectors for the power and telephone lines.
Surge protectors can be purchased at most telephone specialty stores.

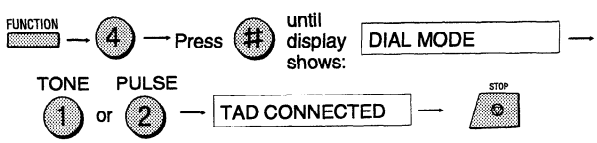
③ Telephone line cord

Insert one end of the line cord into the jack on the back of the machine marked **TEL. LINE**. Insert the other end into a standard (RJ11C) single-line wall telephone jack.

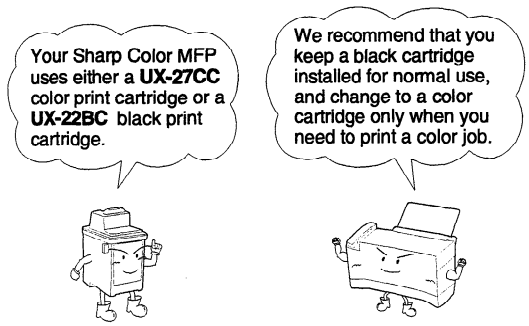




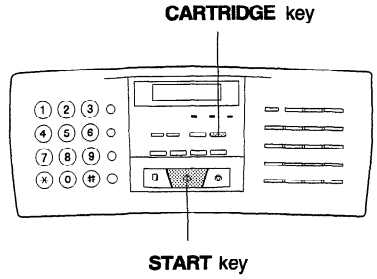
Note: The Sharp MFP is set for touch-tone dialing. If you are on a pulse dial (rotary) line, you must set the Sharp MFP for pulse dialing. Press the following keys on the operation panel:



4. Installing a Print Cartrige



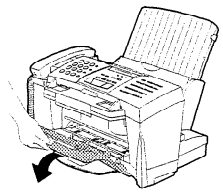
Note: If you receive a fax when a color print cartridge is installed, the fax will be held in memory and printed out when a black cartridge is installed.



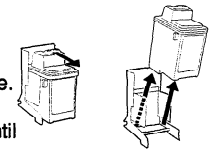
① Press the **CARTRIDGE** key.

- The cartridge carrier will move to the center of the print compartment.

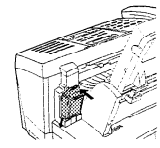
② Open the front cover of the Sharp Color MFP.



Note on changing cartridges:
When you need to change a print cartridge, remove the currently installed cartridge after Step 2 above. Remove the cartridge by pulling the knob on the cartridge toward you until you hear a click.

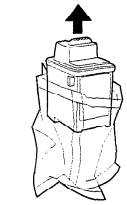


If the cartridge is still useable, insert it into the cartridge holder on the back of the machine. Push back on the cartridge until it snaps into place.

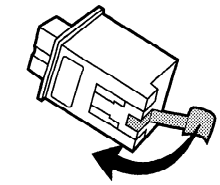


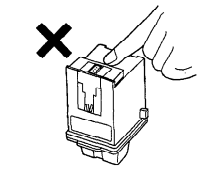
- To prevent the used print cartridge from drying out, be sure to store it in the cartridge holder.

③ Remove the new print cartridge from its packaging.

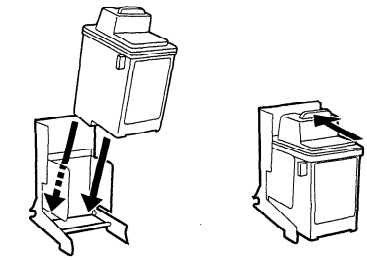


④ Gently remove the sticker and transparent tape covering the copper printhead.



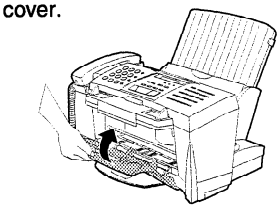


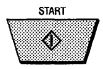
⑤ Insert the print cartridge into the cartridge carrier. Push back on the cartridge until it snaps into place.



Note: If the print cartridge moves loosely in the carrier, it is not locked into place. Repeat this step.

⑥ Close the front cover.



⑦ Press the **START** key. 

The display on the Sharp Color MFP will show:

SELECT CARTRIDGE

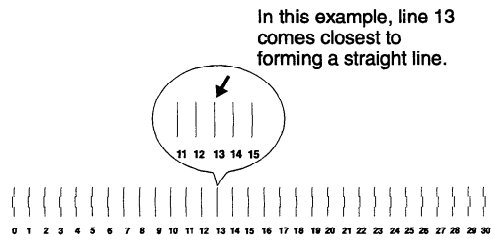
Press 1 if you installed a new cartridge, or 2 if you installed an old cartridge.

⑧ Press the **3** key if you installed a new black cartridge, or the **4** key if you installed a new color cartridge.
(When installing a previously used cartridge, press the **1** key for a used black cartridge or the **2** key for a used color cartridge.)

NEW BLACK CART. NEW COLOR CART.
(3) or (4)

- The cartridge will return to its home position. If you pressed **3** or **4** for a new cartridge, the Sharp MFP will print a test page for printhead alignment.

⑨ If you installed a new print cartridge, look at the test page and locate the line that comes closest to forming a perfectly straight line.



⑩ Press these keys on the Sharp MFP:

FUNCTION (6) (*) (*) (*) (*)

The display will show:
ALIGN CARTRIDGE
ENTER (00-30) 15
START: PRINT

⑪ Enter the two-digit number of the straightest line on the test page. (If the number is less than 10, enter a 0 before the number.)

Example: Line 13 (1) (3)

The display will show: CLEAN NOZZLES

⑫ Press the **STOP** key to return to the time and date display.

Note: If you have installed a color cartridge, the display will show the following alternating messages:

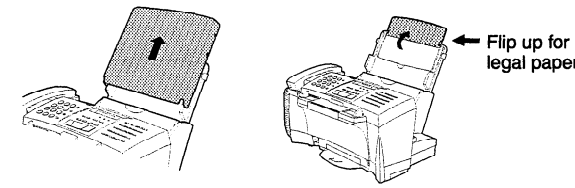
COLOR CARTRIDGE!
USE BLACK FOR RX

5. Loading Printing Paper

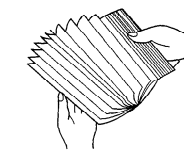
You can load letter or legal size paper in the paper tray. The maximum number of sheets is:

- **200** for paper from 16 to 20 lbs. (60 to 80 g/m^2)
- **150** for paper from 20 to 24 lbs. (90 g/m^2) (such as coated paper)

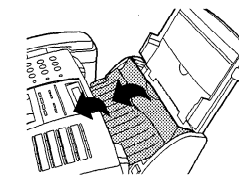
① Remove the paper cover if it is on the paper tray.
- If you are going to load legal size paper, flip up the paper tray extender.



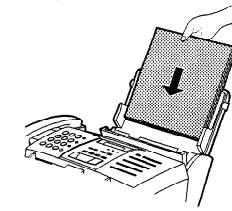
② Fan the paper, and then tap the edge against a flat surface to even the stack.



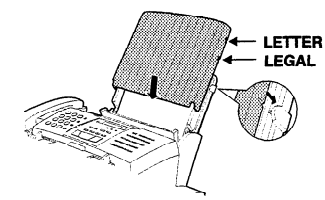
③ Pull the paper release plate toward you.



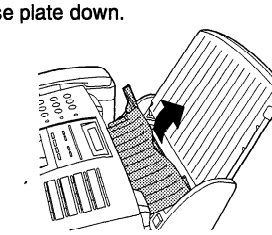
④ Insert the stack of paper into the tray, **print side up**
- If paper remains in the tray, take it out and combine it into a single stack with the new paper before adding the new paper.



⑤ Replace the paper cover on the paper tray.



⑥ Push the paper release plate back down.
- **Important** Be sure to replace the paper cover **before** you push the paper release plate down.



⑦ The Sharp Color MFP has been set at the factory to scale the size of received faxes to letter size paper. If you have loaded legal paper, you must change the paper size setting to legal. Press these keys:

FUNCTION 6 #

The display will show: PAPER SIZE

Press **1** to select LETTER, **2** to select LEGAL, or **3** to select A4.

LETTER: 1
LEGAL: 2
A4: 3

Press the **STOP** key to return to the date and time display.

STOP

Note: This setting is only for received faxes. To set the paper size for printing from your computer, see your online Operation Guide.

⑧ The Sharp Color MFP has been set at the factory to print on plain paper. If you have loaded coated paper, you must change the media type setting to COATED. Press these keys:

FUNCTION 6 # #

The display will show: MEDIA TYPE

Press **1** to select PLAIN or **2** to select COATED.

PLAIN COATED
1 or 2

Press the **STOP** key to return to the date and time display.

STOP

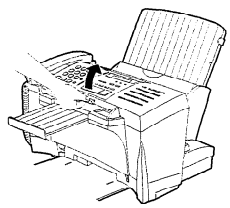
6. Clearing Paper Jams

Clearing a jammed document

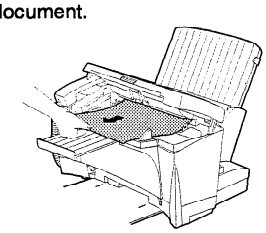
If the original document doesn't feed properly during transmission or copying, or DOCUMENT JAMMED appears in the display, first try pressing the **START** key. If the document doesn't feed out, open the operation panel and remove it.

Important
Do not try to remove a document without opening the operation panel. This may damage the feeder mechanism.

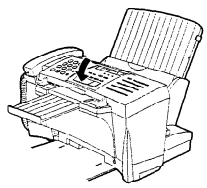
① Pull the release marked **PANEL RELEASE** up and open the operation panel.



② Remove the document.

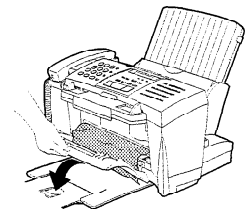


③ Close the operation panel, making sure it clicks into place.

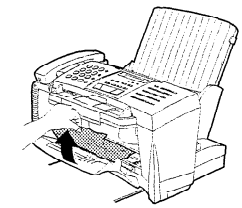


Clearing jammed prining paper

① Open the front cover of the Sharp MFP.



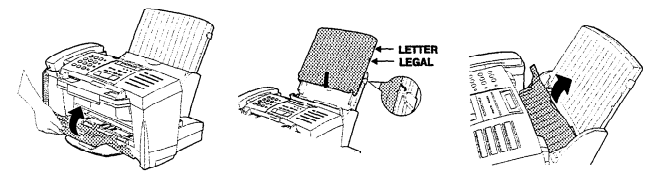
② Grasp the leading edge of the jammed paper and pull it out of the machine.



③ If it is too difficult to pull the jammed paper out from the front of the machine, remove the paper tray cover, pull the paper release plate toward you, and pull the jammed paper out from the back of the machine.

④ Make sure there are no torn pieces of paper remaining in the machine.

⑤ Close the front cover. Replace the paper tray cover (if removed), and then press the paper release plate back down.



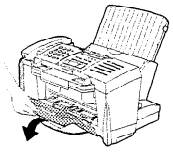
⑥ Press the **PRINTER** key to reset the Sharp MFP.

PRINTER

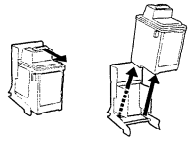
[5] Quick reference guide

CHANGING PRINT CARTRIDGES

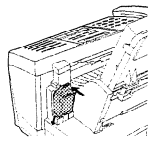
1. Press: CARTRIDGE



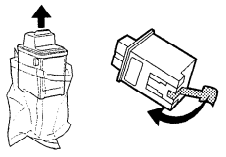
2. Open the front cover of the Sharp Color MFP.



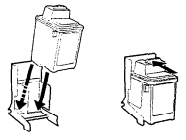
3. Remove the current print cartridge.
   - If the cartridge is still useable, insert it in the holder on the back of the machine. Push back on the cartridge until it snaps into place.



4. If you are installing a new print cartridge, remove the cartridge from its packaging. Remove the sticker and tape from the cartridge.



5. Insert the print cartridge into the cartridge carrier. Push back until it snaps into place.



6. Close the front cover

7. Enter a number to set the cartridge type:
   1:Old black cartridge
   2:Old color cartridge
   3:New black cartridge
   4:New color cartridge

   - If you pressed **3** or **4** for a new cartridge, the Sharp MFP will print a test page for printhead alignment.

8. If you installed a new print cartridge, press:

   FUNCTION 6 ✱ ✱ ✱ ✱

   Display shows:

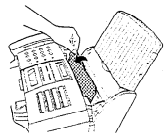
ALIGN CARTRIDGE

9. Enter the two-digit number of the straightest line on the test page.

10. Press: STOP

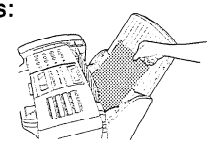
MAKING COPIES

1. If you are copying onto a transparency or special paper, flip up the document tray and insert the media into the manual paper feeder. Make sure the display shows:

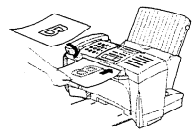


CHECK MAN FEEDER

USE AUTO FOR RX



2. Place the document (up to 20 pages) face down in the document feeder.



3. Press: COPY/HELP

4. Press **1** to use the preset copy settings, or **2** (MANU) to select each setting individually. (If you are making a color copy and selected **1**, copying will begin. If you selected **2**, go to Step 6.

5. If you are making one copy per original, press the **START** key. If you are making multiple copies per original, enter the number of copies per original (if the number is less than 10, enter a "0" before the number).
   - If you selected PRESET in Step 4, go to Step 10.

6. Enter a number for the size of the print media:
   1: LETTER
   2: LEGAL
   3: A4

7. Enter a number to select reduction/enlargement.

Black/white copy	Color copy
1: AUTO	**1**: 50%
2: 50%	**2**: 100%
3: 75%	**3**: 200%
4: 100%	
5: 120%	
6: 150%	

8. Select the type of media to be used:
   1: PLAIN PAPER
   2: COATED PAPER
   3: TRANSPARENCY
   4: GLOSSY PAPER
   (Note: Setting **3** and **4** only appears if you inserted a sheet of media in the manual feeder.)
   - If you are making a color copy, go to Step 11.

9. Select the copy print quality. Press **1** for NORMAL or **2** for DRAFT.

10. If desired, press the **RESOLUTION** key to adjust the resolution and/or contrast.

11. Press **START** to begin copying. START

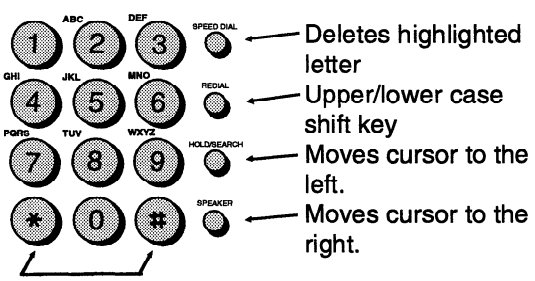
STORING AND CLEARING NUMBERS FOR AUTO DIALING

1. Press: FUNCTION 3 #

Display shows: FAX/TEL # MODE

2. Press **1** to store a number or **2** to clear a number.
3. Enter a 2-digit Speed Dial number (from 01 to 38 for Rapid Key Dialing, or 39 to 99 for Speed Dialing). (If you are clearing a number, go to Step 7.)
4. Enter the full telephone/fax number.
5. Press: START
6. Enter the name of the location by pressing number keys as shown below (max. of 20 characters).
   - To enter two letters in succession that require the same key, press the **SPEAKER** key after entering the first letter.

A = 2 2	J = 5 5	T = 8 8
B = 2 2 2	K = 5 5 5	U = 8 8 8
C = 2 2 2 2	L = 5 5 5 5	V = 8 8 4 4
D = 3 3	M = 6 6	W = 9 9
E = 3 3 3	N = 6 6 6	X = 9 9 9
F = 3 3 3 3	O = 6 6 6 6	Y = 9 9 9 9
G = 4 4	P = 7 7	Z = 9 9 9 9 9
H = 4 4 4	Q = 7 7 7	SPACE = 1 1
I = 4 4 4 4	R = 7 7 7 7	
	S = 7 7 7 7 7	



Deletes highlighted letter

Upper/lower case shift key

Moves cursor to the left.

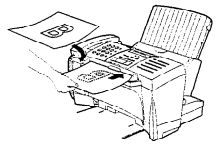
Moves cursor to the right.

Press either key one or more times to select and enter a symbol.

7. Press: START STOP

SENDING DOCUMENTS

Place the document (up to 20 pages) face down in the document feeder.



Normal Dialing

1. Lift the handset or press SPEAKER
2. Dial the fax number.
3. Wait for the reception tone (if a person answers, ask them to press their Start key).
4. Press: START

Rapid Key Dialing

Press the appropriate Rapid Key (if the Rapid Key is from 20 to 38, press the **SHIFT** key first). Transmission will begin automatically.

Speed Dialing

1. Press: SPEED DIAL
2. Enter 2-digit Speed Dial number.
3. Press: START

RECEIVING DOCUMENTS

Press: RECEPTION MODE

JAN05 10:41 AUTO
↓ ↑
JAN05 10:41 MANU

AUTO mode: The fax automatically answers on four rings and receives the incoming document.

MANU mode: → Fax tone → START → RECEIVING →

Selecting the receiving unit

1. Press: FUNCTION #
2. Press **1** for fax reception to the Sharp MFP, or **2** for fax reception to your computer.

Note: For your computer to receive faxes automatically, the Color MFP reception mode must be set to AUTO.

CHAPTER 2. ADJUSTMENTS

[1] Adjustments

General

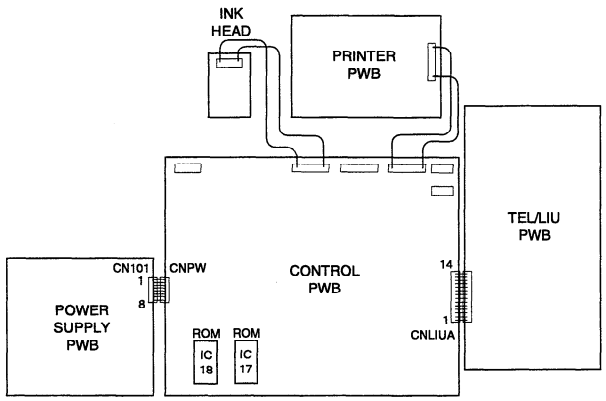
Since the following adjustments and settings are provided for this model, make adjustments and/or setup as necessary.

1. Adjustments

Adjustments of output voltage (FACTORY ONLY)

1. Install the power supply unit in the machine.
2. Set the recording paper and document.
3. When the document is loaded, power is supplied to the output lines. Confirm that outputs are within the limits below.

Output voltage settings



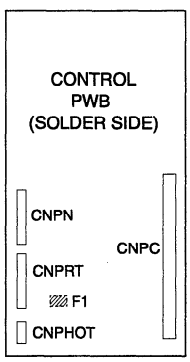
Output	Voltage limits
+5V	4.75V ~ 5.25V
V-REG	5.5V ~ 7.0V
+24V	23.52V ~ 24.48V

Connector No. / Pin No.	CNPW
1	MG
2	MG
3	+24V
4	+24V
5	DG
6	+5V
7	DG
8	VREG

2. IC protectors replacement

ICPs (IC Protectors) are installed to protect the motor driver circuit. ICPs protect various ICs and electronic circuits from an overcurrent condition.

The location of ICPs are shown below:



(1) F1 (ICP-S07) is installed in order to protect IC's from an over-current generated in the motor drive circuit. If F1 is open, replace it with a new one.

3. Settings

(1) Dial mode selector

DIAL mode (Soft Switch No. SW2 DATA No. 1)

(step 1) Select "OPTION SETTING".

KEY: [FUNCTION] (4)

DISPLAY: [OPTION SETTING] ⇔ [PRESS ✳ OR #]

(step 2) Select "DIAL MODE".

KEY: (#)(#)(#)(#)(#)(#)(#)(#)

Cursor
When initially registering, the mode shows 1=TONE.
When registering again, the mode which was registered formerly is shown.

DISPLAY: [DIAL MODE] ⇔ [1=TONE, 2=PULSE]

(step 3) Select, using "1" or "2".

KEY: (1)

DISPLAY: [TONE SELECTED]

KEY: (2)

DISPLAY: [PULSE SELECTED]

(step 4) End, using the "STOP" key.

KEY: [▽] STOP

[2] Diagnostics and service soft switch

1. Operating procedure

(1) Entering the diagnostic mode

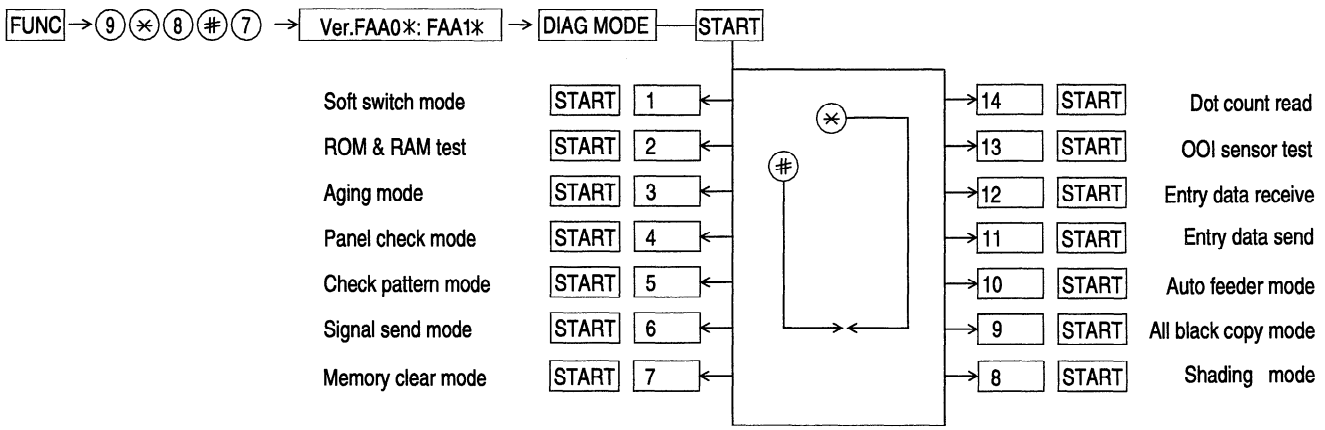
Press [FUNC] → [9] → [✳] → [8] → [#] → [7], and the following display will appear.

[ROM Ver. FAA0 ✳: FAA1 ✳] After 2 sec: [DIAG MODE]

FAA0 ✳ : FAA1 ✳ (UX-2700CMU)
FAB0 ✳ : FAB1 ✳ (UX-2700CMC)
FAC0 ✳ : FAC1 ✳ (UX-2550CMU)
FAD0 ✳ : FAD1 ✳ (UX-2550CMC)

Then press the [START] key and country name selected by country select will appear. Select the desired item with the [✳] key or the [#] key or select with the rapid key. Enter the mode with the START key.

(Diag•specifications)



If the dial mode cannot be set, repeat the dial mode operation, performing the following operation.

Memory clear when power is turned on

Pressing the START and STOP keys, turn on the main power, and the following message will be displayed.

MEMORY CLEAR ?

Press the START key when " MEMORY CLEAR? "appears.

START KEY + STOP KEY → "Power ON" → START

2. Diagnostic items

ITEM No.	DIRECT key	Contents	Function
1	1	SOFT SWITCH MODE	Soft switches are displayed and changed. List can be output.
2	2	ROM & RAM TEST	ROM is sum-checked, and RAM is matched. Result list is output.
3	3	AGING MODE	10 sheets of check patterns are output every 5 minutes per sheet.
4	4	PANEL CHECK MODE	Panel keys are tested.
5	5	CHECK PATTERN MODE	Check pattern is output.
6	6	SIGNAL SEND MODE	Various signals of FAX communication are output.
7	7	MEMORY CLEAR MODE	Back-up memory is cleared, and is set at delivery.
8	8	SHADING MODE	Store the shading waveform according to the specified shading document.
9	9	ALL BLACK COPY MODE	To check the print head, whole dots are printed over the interval of 2 m.
10	10	AUTO FEEDER MODE	Insertion and discharge of document are tested.
11	11	ENTRY DATA SEND	Resisterd content is sent.
12	12	ENTRY DATA RECEIVE	Resisterd content is received and its list is output.
13	13	OOI SENSOR TEST	Check whether the ink sensor can detect nonexistence of ink correctly.
14	14	DOT COUNT READ	Check the ink consumption count value.

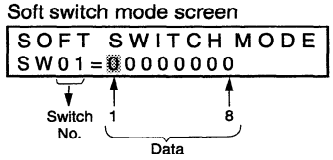
3. Diagnostic items description

3. 1. Soft switch mode

In this mode, the soft switch are set and the soft switch list is printed.

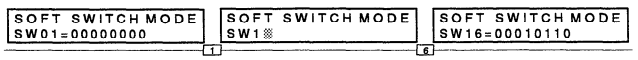
Soft switch mode screen.

Soft switch mode screen



① Switch number selection

- Press START key for setting of the next soft switch. If the soft switch number is the final, pressing START key will exit the soft switch mode.
- Enter two digits of a soft switch number to set the switch number. If a switch number of unexisting soft switch is en tered, key error buzzer sounds to reject the input.



② Data number selecton

The cursor position shows the data to be set.
Pressing # key moves the cursor to the right. If, however, the cursor is on data number 8, prssing # key shifts the cursor to data number 1 of the next switch number. If the switch number is the final , pressing # key will exit the soft switch mode.
Pressing ⋊ key moves the cursor to the left. If, however, the cursor is on data number 1,Pressing ⋊ key shifts the cursor to data number 1 of the former switch number. If the switch number is 1, pressing ⋊ key will not move the cursor.

③ Data setting method

Press the FUNCTION key, and the data at the position of the cursor will be reversed to 0 when it is 1,or to 1 when it is 0.

④ Outputting method of soft switch list

In the soft switch mode, press the REPORT key, and the soft switch list will be output.
If the recording paper runs out or is clogged, the key error buzzer will sound with the process not received.

⑤ Storage of data

In the following case, the data of the soft switches set will be stored.

- It is shifted to set the next soft switch by pressing the START switch.
- It is shifted to set the next soft switch with the # key
- It is shifted to set the last soft switch with the ⋊ key
- It is shifted to set another soft switch by inputting two digits as the switch number.(When 2 digits are completely input.)
- Output of the soft switch list is started.

3. 2. ROM & RAM test

ROM executes the sum check, and RAM executes the matching test.
The result will be notified with the number of short sounds of the buzzer as well as by printing the ROM & RAM check list.
If error does not occur, the buzzer does not sound.
(As for the print format refer to the list function specification.)

No.	Check device	Number of short sounds of buzzer
1	MAIN ROM1	1
2	MAIN ROM2	2
3	CPU ROM/RAM	3
4	S-RAM	4
5	D-RAM	5

The once buzzer sounding pattern is 0.25 sec. ON / 0.25 sec.OFF.

3. 3. Aging mode

If any document is first present, copying will be executed sheet by sheet. If no document is present, the check pattern will be printed sheet by sheet. This operation will be executed at a rate of one sheet per 5minutes, and will be ended at a total of 10 sheets.

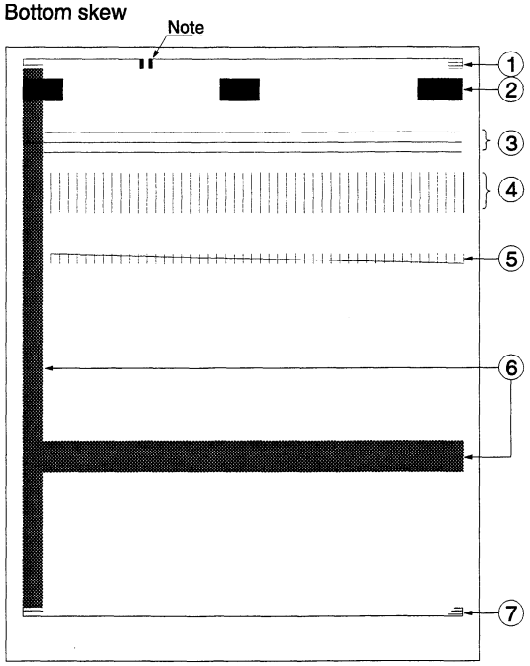
3. 4. Panel check mode

The mode is used to check whether each key properly operates or not. Since the key is displayed on LCD when the key on the operation panel is pressed, press all the keys. Here, finally press STOP key.
When STOP key is pressed, the keys not judged as "pressed" are output in the result list. Here, three LED ports can be turned on alternately during the time from the start of the panel check mode to the end with the stop key.

3. 5. Check pattern mode

The mode is used to check the state of the printing head. It is ended with the following pattern printed on one printing sheet.

① Top skew
② Black print
③ Horizontal lines
④ Vertical lines
⑤ Nozzle test (check of printer)
⑥ Even dots print
⑦ Bottom skew



3. 6. Signal send mode

The mode is used to send various signals to the circuit during FAX communication. Every push of START key sends a signal in the following sequence. Moreover, the signal sound is also output to the speaker when the line monitor of the soft switch is on.

[1] No signal (CML signal turned on)
[2] 14400BPS (V.33)
[3] 12000BPS (V.33)
[4] 14400BPS (V.17)
[5] 12000BPS (V.17)
[6] 9600BPS (V.17)
[7] 7200BPS (V.17)
[8] 9600BPS (V.29)
[9] 7200BPS (V.29)
[10] 4800BPS (V27 ter)
[11] 2400BPS (V27 ter)
[12] 300BPS (FLAG)
[13] 2100Hz(CED)
[14] 1100Hz(CNG)

3. 7. Memory clear mode

This mode is used to clear the backup memory and reset to the default settings.

3. 8. Shading mode

This mode is used to store the shading waveform according to the specified shading document.

3. 9. All black copy mode

This mode is used to check the state of the printing head and intentionally overheat it. Press STOP key for the end.

3. 10. Auto feeder mode

This mode is used to check the auto feed function by inserting and discharging the document. In this mode, the feed of the document will be automatically tested if the document is set. Moreover, the number of fed documents will be counted and be displayed on LCD.

3. 11. Entry data send

This mode is used to send the registered data to the remote machine and make the remote machine copy the registered information. When this mode is used for sending, the remote machine must be set to the entry data receive mode.

This information to be sent is as follows.

1. TELEPHONE NUMBER LIST
2. PASSCOD LIST
3. OPTION LIST
4. ANTI JUNK LIST
5. GROUP LIST
6. PRINT SET UP LIST
7. SOFT SW LIST

3. 12. Entry data receive

This mode is used to receive the registered data which is sent from the remote machine and to register the received data in the machine.When this mode is used to receive the information, the remote machine must be set to the entry data send mode

The information to be sent is as follows.

1. TELEPHONE NUMBER LIST
2. PASSCOD LIST
3. OPTION LIST
4. ANTI JUNK LIST
5. GROUP LIST
6. PRINT SET UP LIST
7. SOFT SW LIST

3. 13. OOI sensor test

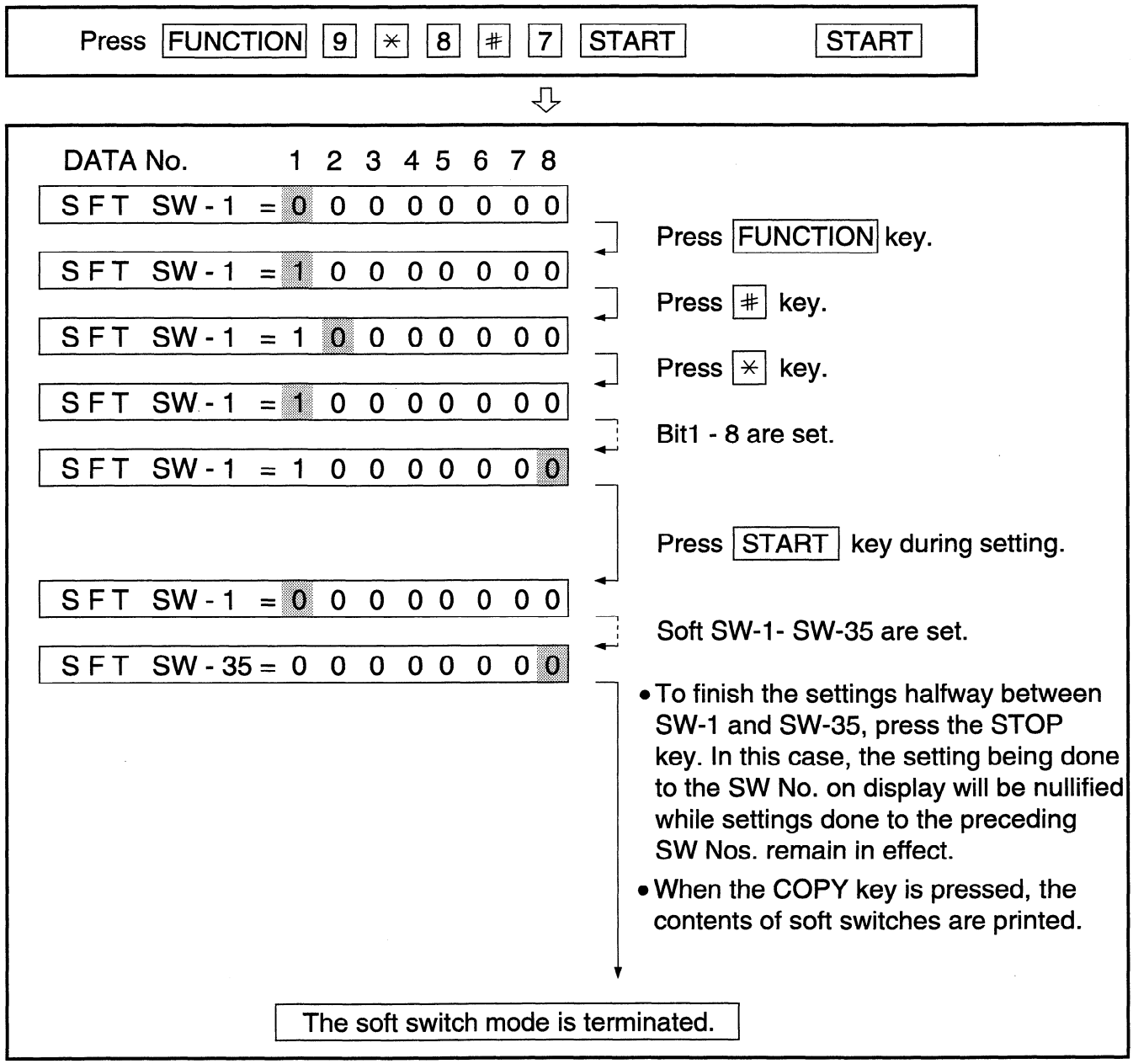
This mode is used to check whether the ink sensor can detect nonexistence of ink correctly.

3. 14. DOT COUNT READ

The black, cyan, magenta and yellow ink consumption counter value is indicated.

4. How to make soft switch setting

To enter the soft switch mode, make the following key entries in sequence.



5. Soft switch description

- **Soft switch**

SW NO.	DATA NO.	ITEM	Switch setting and function		Initial setting	Remarks
			1	0		
SW 1	1	Recall interval	Binary input 8 4 2 1 No. = 1 2 3 4 0 1 0 1 (5x60sec=5min)		0	OPTION
	2				1	(1~15)
	3				0	
	4				1	
	5	Recall times	Binary input 8 4 2 1 No. = 5 6 7 8 0 0 1 0 (Twice)		0	OPTION
	6				0	(0~10)
	7				1	
	8				0	
SW 2	1	Dial mode	Pulse	Tone	0	OPTION
	2	Reception mode	Auto	Manual	1	Recep key
	3	ECM mode	No	Yes	0	OPTION
	4	CNG detection in Standby mode	No	Yes	0	OPTION
	5	Polling Security	On	Off	0	FUNC+3
	6	Automatic Cover Sheet	No	Yes	1	OPTION
	7	Junk fax function in manual reception	Yes	No	0	
	8	Anti Junk fax function	Yes	No	0	OPTION
SW 3	1	Number of rings for auto receive	Binary input 8 4 2 1 No. = 1 2 3 4 0 1 0 0 (4 times)		0	OPTION
	2				1	(1~5)
	3				0	
	4				0	
	5	Automatic switching manual to auto receive mode (0:OFF)	Binary input 8 4 2 1 No. = 5 6 7 8 0 0 0 0 (Off)		0	
	6				0	
	7				0	
	8				0	
SW 4		Communication results printout				OPTION
	1	(Transaction report)	No.1: Error 0, Err/Tmr/Mem 0, Send only 0, No print 1, Always 1		0	
	2		No.2: Error 0, Err/Tmr/Mem 0, Send only 1, No print 0, Always 1		0	
	3		No.3: Error 1, Err/Tmr/Mem 0, Send only 0, No print 0, Always 0		1	
	4	Delay timer before line connect in auto dial	3sec	0sec	0	
		Delay timer of after line connect in		3.6sec / 3.0sec / 1.7sec / 3.0sec		
	5	auto dial	No.5: 1 / 1 / 0 / 0		0	
	6		No.6: 1 / 0 / 1 / 0		1	
		Number of CNG detect (STAND-BY mode)		1pulse / 2pulses / 3pulses / 4pulses		
	7		No.7: 0 / 0 / 1 / 1		0	
	8		No.8: 0 / 1 / 0 / 1		1	
SW 5	1	Time format	24-hours	12-hours	0	
	2	Date format	Month-Day-Year	Day-Month-Year	1	
	3	Sender's information transmit	Off	On	0	
	4	Footer Print	On	Off	0	
	5	Reserved	—	—	0	
	6	Substitute reception	Off	On	0	
	7	Substitute reception conditions	Reception disable without TSI	Reception enable without TSI	0	
	8	CSI transmission	Off	On	0	

SW NO.	DATA NO.	ITEM	Switch setting and function														Initial setting	Remarks
			1								0							
SW I 6	1	H2 mode	No								Yes						0	
	2	MH fixed	Yes								No (depend on remote machine)						0	
	3	Reserved	—								—						0	
	4	Reserved	—								—						0	
		Modem speed (DCS data reception speed)											V.33					
	5		No.5										0	0				
	6		No.6										1	1				
	7		No.7										0	1				
	8		No.8										0	0				
				V.17						V.29			V.27ter					
				14400		12000		9600	7200	9600		7200	4800		2400			
	5		No.5	1		1		1	1	0		0	0		0		1	
	6		No.6	0		0		0	0	0		0	0		0		0	
	7		No.7	0		1		0	1	0		1	1		0		0	
	8		No.8	0		0		1	1	1		1	0		0		0	
SW I 7		Reception speed fixed		NO			V.17-14400PS			V.29-9600BPS			V.27ter-4800BPS					When 14400BPS modem used, setting to 14400bps is ignored.
	1		No.1	0			1			0			1				0	
	2		No.2	0			1			1			0				0	
	3	DIS receive acknowledgement during G3 transmission	Twice							0							0	
	4	Non modulated carrier for V29 transmission	On							Off							0	
	5	EOL detect timer	25 sec							13sec							0	
	6	Reserved	—							—							0	
	7	Reserved	—							—							0	
	8	Length limitation of copy/send/receive	No limit							Copy/Send:1m Receive:1.5m							0	
SW I 8		Digital line equalization setting		0Km			1.8Km			3.6Km			7.2Km					
	1	(Reception)	No.1	0			0			1			1				0	
	2		No.2	0			1			0			1				1	
	3	Dial pausing(sec/pause)	2sec							4sec							1	
	4	Signal transmission level															0	
	5		Binary input 16 8 4 2 1														1	
	6		No. = 4 5 6 7 8														0	
	7		0 1 0 0 0 (-8dBm)														0	
	8																0	
SW I 9		CED tone signal interval		1000ms			750ms			500ms			75ms					
	1		No.1	1			1			0			0				0	
	2		No.2	1			0			1			0				0	
	3	Equalizer freeze control(MODEM)	On							Off							0	
	4	Equalizer freeze conditions	All							7200bps							0	
	5	CED detection time	500ms							1000ms							0	
	6	Reserved	—							—							0	
	7	Reserved	—							—							0	
	8	Busy tone detection (after auto dial)	Yes							No							0	U : 0 / C : 1
SW I 10	1	Reserved	—							—							0	
	2	Reserved	—							—							0	
		CI off detection timer		1200ms			1000ms			700ms			350ms					
	3	(Distinctive ring setting off only)	No.3	0			1			0			1				0	
	4		No.4	0			0			1			1				1	
		Distinctive ringing setting		OFF	STANDARD		RING1		RING2	RING3		RING4	RING5					OPTION
	5	Factory setting : OFF	No.5	0	0		1		0	1		0	1				0	RING5/RING6:
	6		No.6	0	0		0		1	1		0	0				0	CANADA ONLY
	7		No.7	0	0		0		0	0		1	1				0	
	8		No.8	0	1		0		0	0		0	0				0	

SW NO.	DATA NO.	ITEM	Switch setting and function					Initial setting	Remarks
			1			0			
SW I 11		END Buzzer		3sec		1sec	No BEEP	No BEEP	
	1		No.1	0		0	1	1	0	
	2		No.2	0		1	0	1	0	
	3	Communication error treatment in RTN sending mode (reception)	No communication error			Communication error			0	
	4	CNG transmission after auto dialing	No			Yes			0	
	5	Error criterion	10~20%			5~10%			0	
	6	Pulse to Tone change by ✳ key	On			Off			0	
	7	CNG transmission in manual trasmission.	No			Yes			0	
	8	Reserved	—			—			0	
SW I 12	1	DTMF signal transmission level (Low)	Binary input 16 8 4 2 1 No. = 1 2 3 4 5 0 1 0 1 0 (–5dBm)						0 1 0 1 0	
	6	not used	—			—			0	
	7	not used	—			—			0	
	8	not used	—			—			0	
SW I 13	1	DTMF signal transmission level (High)	Binary input 16 8 4 2 1 No. = 1 2 3 4 5 0 0 1 1 1 (–3.5dBm)						0 0 1 1 1	
	6	not used	—			—			0	
	7	not used	—			—			0	
	8	not used	—			—			0	
SW I 14	1	Reserved	—			—			0	
	2	Reserved	—			—			0	
	3	Reserved	—			—			0	
	4	Reserved	—			—			1	
	5	Reserved	—			—			1	
	6	Reserved	—			—			0	
	7	Reserved	—			—			0	
	8	Reserved	—			—			0	
SW I 15	1	Reserved	—			—			0	
	2	Reserved	—			—			0	
	3	Reserved	—			—			0	
	4	Reserved	—			—			0	
	5	Reserved	—			—			0	
	6	Reserved	—			—			0	
	7	Reserved	—			—			0	
	8	Reserved	—			—			0	
SW I 16	1	Reserved	—			—			1	
	2	Reserved	—			—			0	
	3	Reserved	—			—			0	
	4	Reserved	—			—			0	
	5	Reserved	—			—			1	
	6	Reserved	—			—			0	
	7	Reserved	—			—			0	
	8	Reserved	—			—			0	

SW NO.	DATA NO.	ITEM	Switch setting and function					Initial setting	Remarks
			1		0				
SW I 17		Speaker volume (3stages)		HIGH	HIGH	MIDDLE	LOW		
	1		NO.1	0	0	1	1	1	
	2		NO.2	0	1	0	1	0	
		Hand-set receiver volume (2stages)		HIGH	HIGH	LOW	LOW		
	3		NO.3	0	0	1	1	1	
	4		NO.4	0	1	0	1	0	
		Ringer volume (4stages)		Off	HIGH	MIDDLE	LOW		
	5		NO.5	0	0	1	1	1	
	6		NO.6	0	1	0	1	0	
	7	Reserved	—		—			0	
	8	Reserved	—		—			0	
SW I 18	1	PC I/F mode	Yes		No			1	
	2	Auto reception in PC I/F mode	FAX		PC			1	FUNC+#
	3	Summer time setting	No		Yes			1	FUNC+3
	4	Sender's phone number setting	Cannot change		Change allowed			0	
	5	Polling key	Yes		No			0	OPTION
	6	Activity report print	Automatic printout		No printout when memory full			0	OPTION
	7	Total communication hours and pages print	Off		On			0	
	8	Line density selecton	Fine		Standard			0	OPTION
SW I 19		Density adjustment		Normal	Faint	Deep	Deep(when Dark Mode)		
	1	(when Fine/STD mode)	No.1	0	0	1	1	0	
	2		No.2	0	1	0	1	0	
		Density adjustment		Normal	Faint	Deep	Deep(when Dark Mode)		
	3	(when Half-tone mode)	No.3	0	0	1	1	0	
	4		No.4	0	1	0	1	0	
	5	Reserved	—		—			0	
	6	Reserved	—		—			0	
	7	Reserved	—		—			0	
	8	Reserved	—		—			0	
SW I 20		Paper set size		LETTER	LEGAL	A4	Letter		
	1		No.1	0	0	1	1	0	FUNC+6
	2		No.2	0	1	0	1	0	
		Media type		Plain	Coated	—	—	—	
	3		No.3	0	0	—	—	—	0	FUNC+6
	4		No.4	0	0	—	—	—	0	
	5		No.5	0	1	—	—	—	0	
		Print quality when fax printing		—	Normal	Fast Draft	Normal		FUNC+6
	6		No.6	—	0	1	1	0	
	7		No.7	—	1	0	1	1	
	8	Reserved	—		—			0	
SW I 21	1	Reserved	—		—			0	
	2	Reserved	—		—			0	
	3	Reserved	—		—			0	
	4	Reserved	—		—			0	
	5	Reserved	—		—			0	
	6	Reserved	—		—			0	
	7	Reserved	—		—			1	
	8	Reserved	—		—			0	
SW I 22	1	Reserved	—		—			0	
	2	Reserved	—		—			1	
	3	Half tone Copy Resolution	200DPIX200DPI		203DPIX196DPI			0	
	4	Reserved	—		—			0	
	5	Reserved	—		—			0	
		Copy Ratio for B/W copy		AUTO		100%			FUNC+6
	6		No.6	0		0		0	
	7		No.7	0		0		1	
	8		No.8	0		1		1	

SW NO.	DATA NO.	ITEM	Switch setting and function		Initial setting	Remarks
			1	0		
SW I 23	1	Reserved	—	—	0	
	2	Reserved	—	—	0	
	3	Reserved	—	—	0	
	4	Reserved	—	—	0	
	5	Reserved	—	—	0	
	6	Reserved	—	—	0	
	7	Reserved	—	—	1	
	8	Reserved	—	—	0	
SW I 24	1	Align cartridge (1~30) for color cartridge	Binary input 16 8 4 2 1 No. = 1 2 3 4 5 0 1 1 1 1 (15)		0	FUNC+6
	2				1	
	3				1	
	4				1	
	5				1	
	6	FAX printing with paper from manual feeder	Yes	No	0	
	7	FAX printing with color cartridge	Yes	No	0	
	8	FAX printing when low ink detected	Yes	No	0	
SW I 25	1	Align cartridge (1~30) for black cartridge	Binary input 16 8 4 2 1 No. = 1 2 3 4 5 0 1 1 1 1 (15)		0	FUNC+6
	2				1	
	3				1	
	4				1	
	5				1	
	6	Cartridge alarm	Off	On	0	
	7	Low ink detection in black cartridge	Yes	No	1	
	8	Low ink detection in color cartridge	Yes	No	0	
SW I 26	1	Automatic Reduce of receive	Auto	100%	1	FUNC+6
	2	Cut off mode (COPY mode)	Continue	Cut-off	0	FUNC+6
	3	Reserved	—	—	0	
		IrDA selection	PCprint / ZAURUS print / File Transfer / DG camera / Off			OPTION
	4		No.4: 0 / 0 / 0 / 0 / 1		0	
	5		No.5: 0 / 0 / 1 / 1 / 0		0	
	6		No.6: 0 / 1 / 0 / 1 / 0		0	
	7	Reserved	—	—	0	
	8	Reserved	—	—	0	
SW I 27		DTMF detection time	50ms / 80ms / 100ms / 120ms			
	1		No.1: 0 / 0 / 1 / 1		0	
	2		No.2: 0 / 1 / 0 / 1		0	
	3	Protection of remote reception (5 ✳ ✳) detect	Yes	No	0	OPTION
	4	Remote reception with GE telephone	Compatible	Not compatible	1	
	5	Remote operation code figures by external tel (0~9)	Binary input 8 4 2 1 No. = 5 6 7 8 (Data No.) Ex 0 1 0 1		0	OPTION
	6				1	
	7				0	
	8				1	
SW I 28	1	Busy tone detection ON/OFF time (Shorter duration)	350ms	150ms	0	
		Busy tone detection ON/OFF time (Longer duration)	650ms / 900ms / 2700ms / 900ms			
	2		No.2: 0 / 0 / 1 / 1		0	
	3		No.3: 0 / 1 / 0 / 1		1	
	4	Busy tone continuous sound detect time	5sec	10sec	1	
	5	Busy tone detect continuation sound detect	No	Yes	0	
	6	Busy tone detect intermittent sound detect	No	Yes	0	
		Busy tone detection pulse number	2pulses / 4pulses / 6pulses / 10pulses			
	7		No.7: 0 / 0 / 1 / 1		0	
	8		No.8: 0 / 1 / 0 / 1		1	

SW NO.	DATA NO.	ITEM	Switch setting and function					Initial setting	Remarks
			1				0		
	1	TAD connect	Yes				No	0	OPTION
	2	Fax switching when A.M. full	Yes				No	0	OPTION
		Section time of quiet detection		30sec	40sec	50sec	60sec		
SW I 29	3		No.3	0	0	1	1	0	
	4		No.4	0	1	0	1	1	
		Number of CNG detect (AM mode)		1pulse	2pulses	3pulses	4pulses		
	5		No.5	0	0	1	1	0	
	6		No.6	0	1	0	1	1	
	7	Reserved	—				—	0	
	8	Reserved	—				—	0	
	1	Quiet detect time						0	OPTION
	2		Binary input 8 4 2 1					1	
	3		No. = 1 2 3 4					0	
SW I 30	4		0 1 0 0 (4sec)					0	
	5	Quiet detect start timing						0	
	6		Binary input 8 4 2 1					1	
	7		No. = 5 6 7 8					0	
	8		0 1 0 1 (5sec)					1	
	1	Reserved	—				—	0	
	2	Reserved	—				—	0	
SW I 31 ~ 33	3	Reserved	—				—	0	
	4	Reserved	—				—	0	
	5	Reserved	—				—	0	
	6	Reserved	—				—	0	
	7	Reserved	—				—	0	
	8	Reserved	—				—	0	
	1	Reserved	—				—	0	
	2	Reserved	—				—	0	
	3	Reserved	—				—	0	
SW I 34	4	Reserved	—				—	0	
	5	Reserved	—				—	0	
	6	Reserved	—				—	1	
	7	Reserved	—				—	0	
	8	Reserved	—				—	0	
	1	Reserved	—				—	0	
	2	Reserved	—				—	0	
	3	Reserved	—				—	0	
SW I 35	4	Reserved	—				—	1	
	5	Reserved	—				—	0	
	6	Reserved	—				—	0	
	7	Reserved	—				—	0	
	8	Reserved	—				—	0	
	1	Reserved	—				—	0	
	2	Reserved	—				—	0	
	3	Reserved	—				—	0	
SW I 36	4	Reserved	—				—	0	
	5	Reserved	—				—	0	
	6	Reserved	—				—	0	
	7	Reserved	—				—	0	
	8	Reserved	—				—	0	

• Soft switch function description

SW1 No. 1 ~ No. 4 Recall interval

Choice is made for a recall interval for speed and rapid dial-numbers. Use a binary number to program this. If set to 0 accidentally, 1 will be assumed.

SW1 No. 5 ~ No. 8 Recall times

Choice is made as to how many recall attempts should be made. Use a binary number to program this.

SW2 No. 1 Dial mode

Switch the type according to the telephone circuit connected to the facsimile.

1 : PULSE DIAL
0 : TONE DIAL

SW2 No. 2 Reception mode

Auto/manual receiving mode is set.

SW2 No. 3 ECM mode

Used to determine ECM mode function. Refer to the following table.

SW2- No. 3 ECM MODE		0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
SW6- No. 1 MH FIXED		0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
Compression method	ECM MMR mode	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No
	ECM MR mode	Yes	No	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No
	ECM MMH mode	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No
	ECM MH mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
	MR Mode	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	MH Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

(Depending on remote machine)

SW2 No. 4 CNG detection in Standby mode

When setting to "1", the CNG signal detection function during standby stops.

SW2 No. 5 Polling Security

This switch is employed to enable or disable the polling operation using the ID code verification function, in order to prevent unauthorized polling operation.

SW2 No. 6 Automatic Cover Sheet

When "0" (=YES) is selected, the cover sheet is automatically sent after transmission of the original to notify the receiver of the number of original sheets transmitted.

SW2 No. 7 Junk fax function in manual reception

It is set whether Junk fax is functioned in the manual receiving mode or not.

SW2 No. 8 Anti Junk fax function

This function is used to receive data from a specific remote machine (station registered in entry mode). It is the function that refused a reception in the case that TSI of remote machine mached with fax number of the station registered.

0 : No
1 : Yes

SW3 No. 1 ~ No. 4 Number of rings for auto receive (0 : No ring receive)

When the machine is set in the auto receive mode, the number of rings before answering can be selected. It may be set from one to nine rings using a binary number. If the soft switch was set to 1, a direct connection is made to the facsimile. If a facsimile. If it was set to 0 accidentally, receive ring is set to 1.

SW3 No. 5 ~ No. 8 Automatic switching manual to auto receive mode (0 : OFF)

Choice is made after how many rings in the manual receive mode it should be automatically change to auto answer mode or remain in the manual receive mode. Entering the binary number 0 forces the machine to remain in the manual answer mode. If a number between 1 and 9 is entered, the machine will go into the answer mode after the given number of rings. However, it can be used as an ordinary telephone if the handset is taken off the hook before this programmed number is finished.

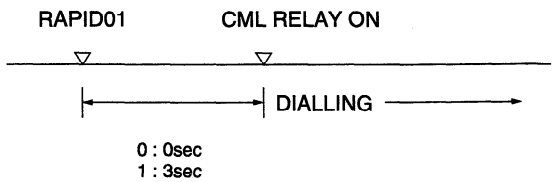
SW4 No. 1 ~ No. 3 Communication results printout (Transaction report)

Every communication, the result can be output. As usual, it is set to print the timer sending communication error alone. If No.1 : 0 No.2 : 0 No.3 : 1 are set, printing is always on (printed ever if it is normally ended).

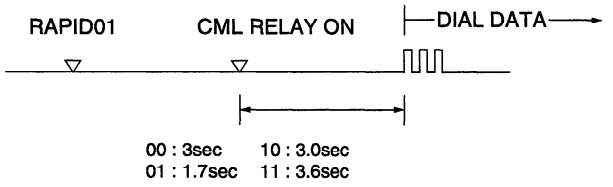
000 : Error, timer and memory sending/receiving
010 : Sending
110 : Continuous printing
100 : Not printed
001 : Communication error

SW4 No. 4 Delay timer before line connect in auto dial

Delay time between the dial key input and line connection under the auto dial mode.



SW4 No. 5, No. 6 Delay timer of after line connect in auto dial
Delay time between the line connection and dial data output under the auto dial mode.



SW4 No. 7, No. 8 Number of CNG detect (STAND-BY mode)

Used for detection of CNG in 1 to 4 pulses.

SW5 No. 1 Date format

Used to select date display/print formats.

SW5 No. 2 Time format

When this switch is set to "0", time is displayed in 12-hour system. When set to "1",24-hour system.

SW5 No. 3 Sender's information transmit

When it is set at 0, sender's name, sending page number and so on are automatically printed in the recording paper on the receiving side during transmission. Thus, the sender can be known on the receiving side.

0 : Applied.
1 : Not applide.

SW5 No. 4 Footer print

When set to "1", the date of reception, the sender machine No., and the page No. are automatically recorded at the end of reception.

SW5 No. 5 Reserved

Set to "0".

SW5 No. 6 Substitute reception

Selection of substitute reception in the case of recording paper exhausted or paper jam. If set to "NO", auto receive is disabled even when the receive memory is ready to receive.
Substitute reception is not performed even during receive operation.

SW5 No. 7 Substitute reception conditions

Selection of substitute reception according to existence of TEL number from transmitting side. Initial setting allows substitute reception without CSI. If set to "no", the receiver cannot receive any documents.

SW5 No. 8 CSI transmission

CSI signal contains the sender's phone number registered in the machine. If this switch is set to "1", no sender's name will be printed at the receiving side.

SW6 No. 1 H2 mode

Used to determine H2 mode (15 sec transmission mode). When set to OFF, H2 mode is inhibited even though the transmitting machine has H2 mode.

SW6 No. 2 MH fixed

Normally set to allow automatic selection of MH and MR mode according to the remote side.
If set to 1, the mode is fixed to MH and is useful if the remote side is a MH only unit ; or a lot of image distortion is met due to a bad line.

SW6 No. 3, No. 4 Reserved

Set to "0".

SW6 No. 5 ~ No. 8 Modem speed (DCS data reception speed)

Used to determine the initial modem speed. The default is 14400BPS (V17). It may be necessary to program it to a slower speed when frequent line fallback is encountered, in order to save the time required for the fallback procedure.

SW7 No. 1, No. 2 Reception speed fixed

The transferable speed of modem in the receiving mode is set.

SW7 No. 3 DIS receive acknowledgement during G3 transmission

Used to make a choice of whether reception of NSF (DIS) is acknowledged after receiving two NSFs (DISs) or receiving one NSF (two DISs). It may be usefull for overseas communication to avoid an echo suppression problem, if set to 1.

SW7 No. 4 Non modulated carrier in V29 transmission

Though transmission of a non-modulated carrier is not required for transmission by the V29 modem according to the CCITT Recommendation, it may be permitted to send a non-modulated carrier before the image signal to avoid an echo suppression problem.
It may be usefull for overseas communication to avoid an echo suppression problem, if set to 1.

SW7 No. 5 EOL detect timer

Used to make a choice of whether to use the 25-second or 13-second timer for detection of End of line.
This is effective to override communication failures with some facsimile models that have longer End of line detection.

SW7 No. 6, No. 7 Reserved

Set to "0".

SW7 No. 8 Length limitation of copy/send/receive

Used to set the maximum page length.
To avoid possible paper jam, the page length is normally limited to 1 meter for copy or transmit, and 1.5 meters for receive.
It is possible to set it to "No limit" to transmit a long document, such as a computer print form, etc. (In this case, the receiver must also be set to no limit.)

SW8 No. 1 , No. 2 Digital line equalization setting (Reception)

Needs to be set to the line characteristics. A guide line is the distance between the exchange office and the telephone terminal. Since it needs not to be set in the normal case since it has been set to 1.8Km, it should be corrected in case communication failures occur frequently.

SW8 No. 3 Dialing pausing (sec/pause)

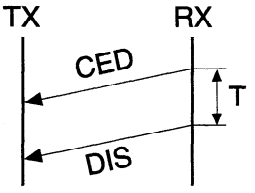
Pauses can be inserted between telephone numbers of direct dial connection. Selection of 4 sec or 2 sec pause is available.

SW8 No. 4 ~ No. 8 Signal transmission level

Used to control the signal transmission level in the range of-0dB to-31dB. The factory setting is at-10dB (MODEM output).

SW9 No. 1, No. 2 CED tone signal interval

For international communication, the 2100Hz CED tone may act as an echo suppression switch, causing a communication problem.
Though SW9 No.1 , No.2 are normally set to 0, it should be changed this time between the CED tone signal to eliminate the communication problem caused by echo.



SW9 No. 3 Equalizer freeze control (MODEM)

This switch is used to perform reception operation by fixing the equalizer control of modem for the line which is always in unfavorable state and picture cannnot be received.Usually, the control is executed according to the state of line where the equalizer setting is changed always.

SW9 No. 4 Equalizer freeze conditions

Setting which specifies SW9 No.3 control only in condition of 7200bps modem speed.

SW9 No. 5 CED detection time

The detection time of the CED signal from the called side in the auto calling mode is set.

SW9 No. 6, No. 7 Reserved

Set to "0".

SW9 No. 8 Busy tone detection (after auto dial)

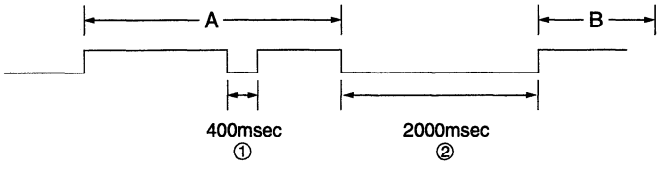
Use to set busy tone detection in auto dialing.

SW10 No. 1, No. 2 Reserved

Set to "0".

SW10 No. 3, No. 4 CI off detection timer (Distinctive ring setting off only)

Set the minimum time period of CI signal interruption which affords to be judged as a CI OFF section.

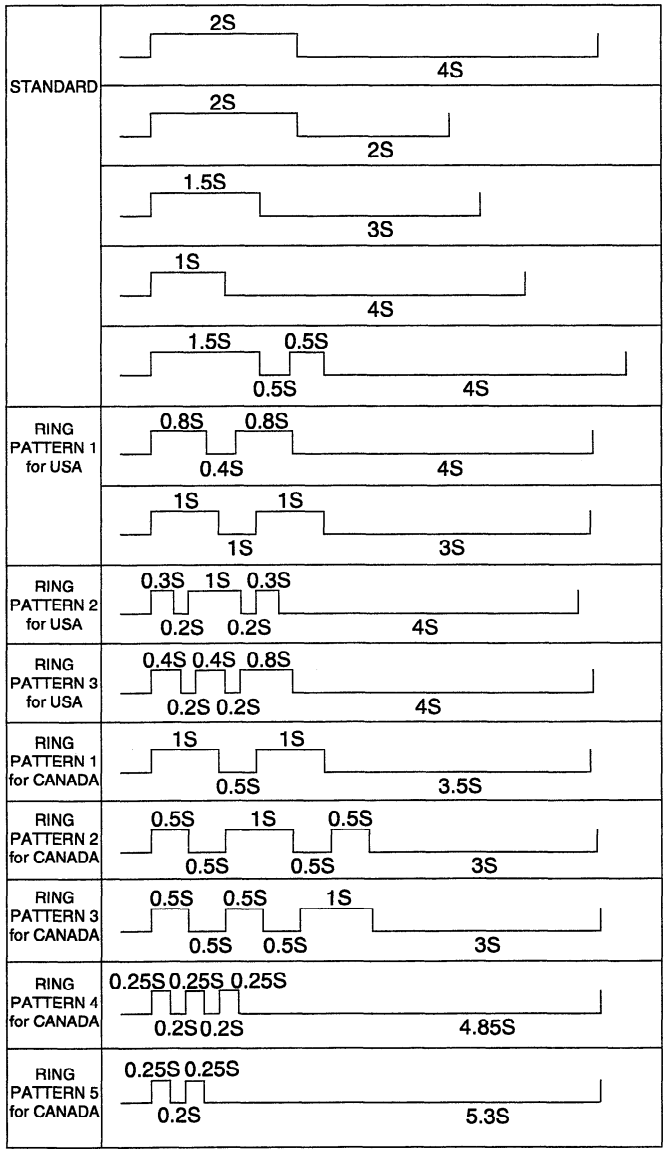


SW10 No. 5 ~ No. 8 Distinctive ringing setting (Factory setting:OFF)

When the ringing setting is turned off, all of the CI signal are received. When any of the standard, and ring patterns 1 through 3 is selected for the ringing setting, only the selected CI signal is received.

CI signal patterns

The CI signal patterns consists of the standard pattern, and ring patterns 1 through7. The standard pattern is the conventional one.



SW11 No. 1 , No. 2 End buzzer

The sounding length of the buzzer for normal end of operation is set.

SW11 No. 3 Communication error treatment in RTN sending mode (reception)

The operation is set when the RTN signal is received in the G3 transmission mode.

SW11 No. 4 CNG transmission after auto dialing

When set to "0", this model allows CNG transmission by pressing the Start key in the key pad dialing mode. When set to "1", CNG transmission in the key pad dialing mode cannot be performed. In either case. CNG transmission can be performed in the auto dial mode.

SW11 No. 5 Error criterion

Used to select error criterion for sending back RNT when receiving image data.

SW11 No. 6 Pulse to Tone change by ✳ key

When setting to 1, the mode is changed by pressing the ✳ key from the pulse dial mode to the tone dial mode.

SW11 No. 7 CNG transmission in manual transmission

In case of CCITT there is no need to send the CNG signal in manual transmission mode .This setting allows this signal to be sent in case of manual transmission so as to inform the other party's machine that the machine is FAX.

SW11 No. 8 Reserved

Set to "0".

SW12 No. 1 ~ No. 5 DTMF signal transmission level (Low)

The transmission level of DTMF signal is adjusted. (lower frequency)

00000 : 0 dBm

↓

11111 : -15.5 dBm

SW12 No. 6 ~ No. 8 not used

Set to "0".

SW13 No. 1 ~ No. 5 DTMF signal transmission level (High)

The transmission level of DTMF signal is adjusted. (higher frequency)

00000 : 0 dBm

↓

11111 : -15.5 dBm

SW13 No. 6 ~ No. 8 not used

Set to "0".

SW14 No. 1 ~ No. 3 Reserved

Set to "0".

SW14 No. 4 , No. 5 Reserved

Set to "1".

SW14 No. 6 ~ No. 8 Reserved

Set to "0".

SW15 No. 1 ~ No. 8 Reserved

Set to "0".

SW16 No. 1 Reserved

Set to "1".

SW16 No. 2 ~ No. 4 Reserved

Set to "0".

SW16 No. 5 Reserved

Set to "1".

SW16 No. 6 ~ No. 8 Reserved

Set to "0".

SW17 No. 1, No. 2 Speaker volume (3stages)

Speaker volume:
The sound volume of the speaker in the on-hook mode is set.

SW17 No. 3, No. 4 Hand-set receiver volume (2stages)

Handset volume:
The volume of sound heard from the receiver is set.

SW17 No. 5, No. 6 Ringer volume (4stages)

Ringer volume:
The calling sound volume of CI signal receiving is set.

SW17 No. 7, No. 8 Reserved

Set to "0".

SW18 No. 1 PC I/F mode

PC I/F mode:
The interface with the personal computer is selected.

SW18 No. 2 Auto reception in PC I/F mode

Automatic receiving of I/F mode:
Which receives the call is determined.

SW18 No. 3 Summer time setting

This is used to set YES/NO of automatic clock adjustment for summer time.

SW18 No. 4 Sender's phone number setting

Used to make a choice of whether the registered sender's phone number can be changed or not. If the switch is set to "1", new registration of the sender's phone number is disabled to prevent accidental wrong input.

SW18 No. 5 Polling key

If this switch is set to 1, the last of Rapid key works as polling key.

SW18 No. 6 Activity report print

This soft switch is used to select : whether or not to print out the activity report when the memory is full. An activity report can be printed when the following key entry command is made.

"FUNCTION", "2", "#", "START"

After producing the activity report, all the data in the memory will be cleared.
When the switch function is set to "0" (no), the data in the memory will be deleted from the oldest as it reaches the maximum memory capacity.

SW18 No. 7 Total communication hours and pages print

Used to make a choice of whether the total communication time and pages are recorded in the activity report.

SW18 No. 8 Line density selection

Used to set the transmission mode which is automatically selected when the Resolution key is not pressed. In the copy mode, however, the fine mode is automatically selected unless the Resolution key is manually set to another mode.

SW19 No. 1, No. 2 Density adjustment (when Fine/STD mode)

This is used for density adjustment in fine/standard mode. Adjust the density according to that of frequently used original.
Set to "Dark" for darker reading (either in the auto or the dark mode) of light original. Set to "Light" for lighter reading (either in the auto or the dark mode) of dark original.
Set to "Dark only in dark mode" for darker reading only in the dark mode.

SW19 No. 3, No. 4 Density adjustment (when Half-tone mode)

This is used for density adjustment in the half tone.

SW19 No. 5 ~ No. 8 Reserved

Set to "0".

SW20 No. 1, No. 2 Paper set size

Set the size of recording paper for reception and list print.

SW20 No. 3~ No. 5 Media type

Set the type of recording paper for reception and list print.

SW20 No. 6 , No.7 Print quality when fax printing

Set the printing method for reception and list print.

SW20 No. 8 Reserved

Set to "0".

SW21 No. 1 ~ No. 6 Reserved

Set to "0".

SW21 No. 7 Reserved

Set to "1".

SW21 No. 8 Reserved

Set to "0".

SW22 No. 1 Reserved

Set to "0".

SW22 No. 2 Reserved

Set to "1".

SW22 No. 3 Half tone copy resolution

The image resolution conversion rate is set in the copy mode.
0 : 203 DPI X 196 DPI (1.53 times X 1.47 times)
1 : 200 DPI X 200 DPI (1.50 times X 1.50 times)

SW22 No. 4, No. 5 Reserved

Set to "0".

SW22 No. 6 ~ No.8 Copy Ratio for B/W copy

Set the magnification when "PRESET" is selected in copy mode.

SW23 No. 1 ~ No. 6 Reserved

Set to "0".

SW23 No. 7 Reserved

Set to "1".

SW23 No. 8 Reserved

Set to "0".

SW24 No. 1 ~ No. 5 Align cartridge (1~30) for color cartridge

After the color cartridge has been mounted press

"FUNCTION", "6", "✂", "✂", "✂", "START"

to print Bidirectional Alignment Pattern.
On the printed test page, locate the number under the Bidirectional Alignment pattern that comes closest to forming a perfectly straight line.

SW24 No. 6 Fax printing with paper from manual feeder

To print the received picture in hand paper feed mode, set "1".

SW24 No. 7 Fax printing with color cartridge

To print the received picture with the color cartridge set "1".

SW24 No. 8 Fax printing when low ink detected

To print the received picture in "Low Ink" state, set "1'.

SW25 No. 1 ~ No. 5 Align cartridge (1~30) for black cartridge

After the black cartridge has been mounted press

"FUNCTION", "6", "✂", "✂", "✂", "START"

to print Bidirectional Alignment Pattern.
On the printed test page, locate the number under the Bidirectional Alignment pattern that comes closest to forming a perfectly straight line.

SW25 No. 6 Cartridge alarm

Set existence/nonexistence of alarm tone alarming the failure of return of cartridge to the home position.

SW25 No. 7 Low ink detection in black cartridge

Set detection/nondetection of black ink "Low ink".

SW25 No. 8 Low ink detection in color cartridge

Set detection/nondetection of color ink "Low ink".

SW26 No. 1 Automatic reduce of receive

If set to 1, it is reduced automatically when receiving.

SW26 No. 2 Cut off mode (COPY mode)

Whether the excessive part is printed on the next recording paper or discarded is selected to copy a document which is longer than the recording paper.

SW26 No. 3 Reserved

Set to "0".

SW26 No. 4 ~ No. 6 IrDA selection

Set the other party of Ir communication.

SW26 No. 7, No. 8 Reserved

Set to "0".

SW27 No. 1, No. 2 DTMF detection time

Used to set detect time of DTMF (Dual Tone Multi Frequency) used in remote reception (5 ✳ ✳).
The longer the detect time is, the less the error detection is caused by noises.

SW27 No. 3 Protection of remote reception (5 ✳ ✳) detect

Used to set the function of remote reception (5 ✳ ✳). When set to "1", the remote reception functon is disabled.

SW27 No. 4 Remote reception with GE telephone

(Corresponding to TEL made by GE) P.B.X.
"1": Compatible with TEL mode by GE
"0": Not compatible

- When sending (5 ✳ ✳) for remote reception with a GE manufactured telephone remote reception may not take place because of special specifications in their DTMF.
  To overcome this, a soft SW is provided to change the modem setting to allow for remote reception.
- If this soft SW is set to "1", other telephone sets may be adversely affected.

SW27 No. 5 ~ No. 8 Remote operation code figures by external tel (0~9)

Remote operation codes can be changes from 0 through 9. If set to greater than 9, it defaults to 9. The "5 ✳ ✳" is not changed.
Ex-7✳ ✳ (Default : 5 ✳ ✳).

SW28 No. 1 Busy tone detection ON/OFF time (Shorter duration)

The initial value of detection is set according to electric condition.
The set value is changed according to the local switch board. (Erroneous detection of sound is reduced.)
Normally the upper limit is set to 2700msec. and the lower limit to 150msec.
If erroneous detection is caused by sound, etc., adjust the detection range.
The lower limit can be set in the range of 350msec to 150msec.

SW28 No. 2, No. 3 Busy tone detection ON/OFF time (Longer duration)

Similarly to SW-28 No.1, the set value can be varied.
The upper limit can be set in the range of 650msec to 2700msec.

SW28 No. 4 Busy tone continuous sound detect time

Set detecting time busy tone for 5 seconds or as is PTT.

SW28 No. 5 Busy tone detect continuation sound detect

Used to select detection of the continuous sound of certain frequency.

SW28 No. 6 Busy tone detect intermittent sound detect

Used to select detection of the intermittent sound of certain frequency.

SW28 No. 7, No. 8 Busy tone detection pulse number

Used to set detection of Busy tone intermittent sounds.

SW29 No. 1 TAD connect

When connecting the answering machine to the extension telephone jack.
Set to "1".

SW29 No. 2 Fax switching when A.M.full

If the answering machine's memory (tape) is full and there is no response, the machine automatically switches to Fax reception.

SW29 No. 3, No. 4 Section time of quiet detection

The switch which sets the time from the start of detection function to the end of the function.

SW29 No. 5, No. 6 Number of CNG detect (AM mode)

Used for detection of CNG in 1 to 4 pulses.

SW29 No. 7, No. 8 Reserved

Set to "0".

SW30 No. 1 ~ No. 4 Quiet detect time

When an answering machine is connected, if a no sound state is detected for a certain period of time, the machine judges it as a transmission from a facsimile machine and automatically swiches to the Fax mode.

SW30 No. 5 ~ No. 8 Quiet detect start timing

Inserts a pause before commencing quiet detection.

SW31 No. 1 ~ No. 8 Reserved

Set to "0".

SW32 No. 1 ~ No. 8 Reserved

Set to "0".

SW33 No. 1 ~ No. 8 Reserved

Set to "0".

SW34 No. 1 ~ No. 8 Reserved

Set to "0".

SW35 No. 1 ~ No. 3 Reserved

Set to "0".

SW35 No. 4 Reserved

Set to "1".

SW35 No. 5 ~ No. 8 Reserved

Set to "0".

SW36 No. 1 ~ No. 8 Reserved

Set to "0".

[3] Troubleshooting

Refer to the following actions to troubleshoot any of problems mentioned in 1-4.

[1] A communication error occurs.

[2] Image distortion produced.

[3] Unable to do overseas communication.

[4] Communication speed slow due to FALLBACK.

- Increase the transmission level SOFT SWITCH 8-4, 5, 6, 7, 8.
  May be used in case [1] [2] [3].
- Decrease the transmission level SOFT SWITCH 8-4, 5, 6, 7, 8.
  5. May be used in case [3].
- Apply line equalization SOFT SWITCH 8-1, 2.
  May be used in case [1] [2] [3] [4].
- Slow down the transmission speed SOFT SWITCH 6-5, 6, 7, 8.
  May be used in case [2] [3].
- Replace the TEL/LIU PWB.
  May be used in all cases.
- Replace the control PWB.
  May be used in all cases.

* If transmission problems still exist on the machine, use the following format and check the related matters.

TO: ATT: Ref.No. :

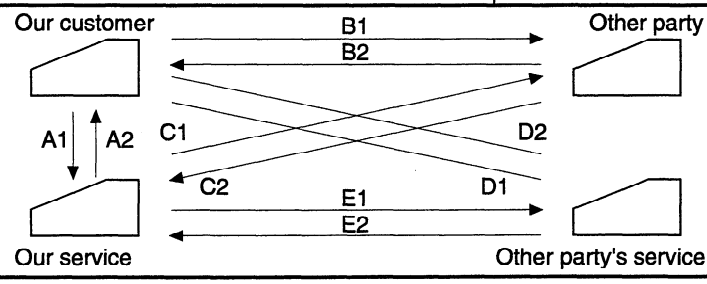
CC: ATT: Date :

FM: Dept :

Sign :

***** Facsimile communication problem *****			Ref.No.:
From: Mr.	Fax Tel No.:		Date:
Our customer	Name		Tel No.
	Address		Fax No.
	Contact person		Model name
Other party	Name		Tel No.
	Address		Fax No.
	Contact person		Model name
Problem mode	Line: Domestic / international	Model: G3	Phase: A, B, C, D.
	Reception / Transmission	Automatic reception / Manual reception	
		Automatic dialing / Manual dialing / Others	
Frequency:	%	ROM version:	

Confirmation item



Please mark problem with an X.
No problem is: 0.

A1	A2	B1	B2	C1	C2	D1	D2	E1	E2

Transmission level setting is ( ) dB at our customer

Transmission level ( ) dBm
Reception level ( ) dBm
By level meter at B1 and B2

Comment	
Countermeasure	

**** Please attach the G3 data and activity report on problem. ****

* Please complete this report before calling the "TAC" hotline if problem still occurs.

[4] Error code table

1. Communication error code table

G3 Transmission

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSF, DIS	Cannot recognize DCS signal by echo etc. Cannot recognize NSS signal (FIF code etc)
2	CFR	Disconnects line during reception (carrier missing etc)
3	FTT	Disconnects line by fall back
4	MCF	Disconnects line during reception of multi page Cannot recognize NSS, DCS signal in the case of mode change
5	PIP or PIN	The line is hung up without replying to telephone request from the receiving party.
6	RTN or RTP	Cannot recognize NSS, DCS signal after transmit RTN or RTP signal.
7	No signal or DCN	No response in receiver side or DCN signal received* (transmitter side)
8	–	Owing to error in some page the error could not be corrected although the specified number of error retransmission was at tempted.
11	–	Error occurred after or while reception by the remote (receiving) machine was revealed to be impossible.
12	–	Error occurred just after fallback.
13	–	Error occurred after a response to retransmission end command was received.

G3 Reception

Code	Final received signal	Error Condition (Receiver side)
0	Incomplete signal frame	Cannot recognize bit stream after flag
1	NSS, DCS	Cannot recognize CFR or FTT signal Disconnects line during transmission (line error)
2	NSC, DTC	Cannot recognize NSS signal (FIF code etc)
3	EOP	Cannot recognize MCF, PIP, PIN, RTN, RTP signal
4	EOM	Cannot recognize MCF, PIP, PIN, RTN, RTP signal in the case of mode change
5	MPS	The line is hung up without replying to communication request.
6	PR1-Q	Cannot recognize PIP, PIN signal in the case of TALK request
7	No signal or DCN	No response in transmitter (cannot recognize DIS signal) or DCN signal received* (receiver side)
8	–	Error occurred upon completion of reception of all pages.
9	–	Error occurred when mode was changed or Transmission/Reception switching was performed.
10	–	Error occurred during partial page or physical page reception.
11	–	Error occurred after or during inquiry from the remote (transmitting) machine as to whether reception is possible or not.
12	–	Error occurred during or just after fallback.
13	–	Error occurred after the retransmission end command was received.

CHAPTER 3. MECHANISM BLOCKS

[1] General description

1. Document feed block and diagram

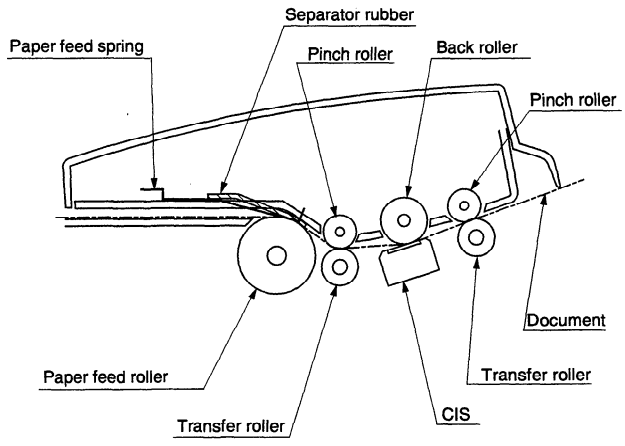


Fig. 1

2. Document feed operation

1) The document placed in the hopper actuates the document sensor. After one second, the pulse motor starts to the paper feed roller. The document is automatically taken up into the mashine, and stopped at the document sensor.
2) When a specified number of pulses are received from the document sensor after the document lead edge is sensed.scanning is started.
3) When a specified number of pulses are received from the document sensor after the document rear edge is sensed. Scanning is terminated and the document is fed through.
4) If the document sensor is active (i.e.,another document is in the hopper), when the preceding document scanning is completed and it is fed out, the next document is taken up into the machine. If the document sensor is not active (i.e.,there is no document in the hopper), when the document is fed out , the operation is terminated.

3. Hopper mechanism

3-1. General view

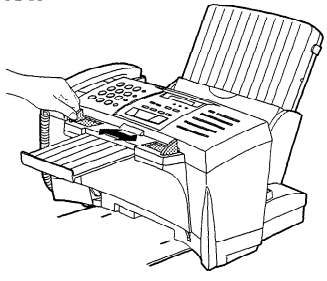


Fig. 2

The hopper is used to align documents with the document guides adjusted to the paper width.
NOTE: Adjust the document guide after setting up the document.

3-2. Automatic document feed

1) Use of the paper feed roller and separation rubber plate ensures error-free transport and separation of documents. The plate spring presses the document to the paper feed roller to assure smooth feeding of the document.
2) Document separation method: Separation rubber plate

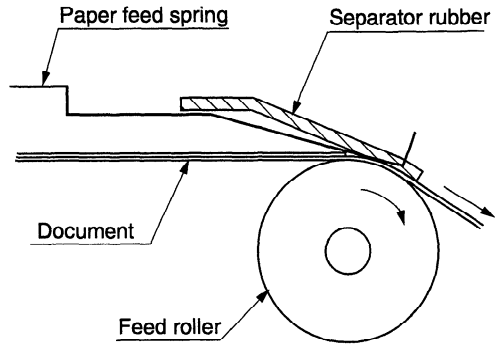


Fig. 3

3-3. Documents applicable for automatic feed

	Minimum	Maximum
Weight	45kg 52g/m² 14LB	70kg 80(81)g/m² 20(21.7)LB
Thickness	0.06mm 0.0024"	0.1(0.09)mm 0.0035"
Document size	B6(148mmx128mm) ~ LGL(216mmx355.6mm) A4(210mmx297mm) LTR(216mmx279mm)	
Capacity	B6 ~ LTR/A4	20sheets
Manual	More than 90kg(104g/m²)	1sheet
	Below 135kg(157kg/m²)	1sheet
	*One page is supported for 1m length paper max.(hold paper by hand)	

NOTE: Double-side coated documents and documents on facsimile recording paper should be inserted manually. The document feed quantity may be changed according to the document thickness.

Documents corresponding to a paper weight heavier than 64.3kg (74.3g/m²) and lighter than 135kg (157g/m²) are acceptable for manual feed.

Documents heavier than 135kg in terms of the paper weight must be duplicated on a copier to make it operative in the facsimile.

3-4. Loading the documents

1) Make sure that the documents are of suitable size and thickness, and free from creases, folds, curls, wet glue, wet ink, clips, staples and pins.
2) Place documents face down in the hopper.
   i) Adjust the document guides to the document size.
   ii) Align the top edge of documents and gently place them into the hopper. The first page under the stack will be taken up by the feed roller to get ready for transmission.

NOTES: 1) Curled edge of documents, if any, must be straighten out.
2) Do not load the documents of different sizes and/or thicknesses together.

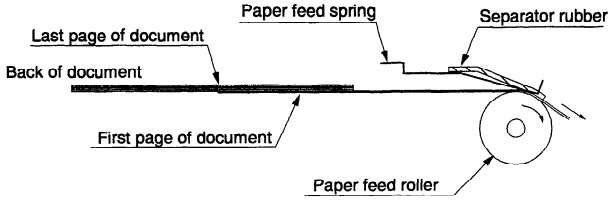


Fig. 4

3-5. Documents requiring use of document carrier

1) Documents smaller than B6 (128mm x 182mm).
2) Documents thinner than the thickness of 0.06mm.
3) Documents containing creases, folds, or curls, especially those whose surface is curled (maximum allowable curl is 5mm).
4) Documents containing tears.
5) Carbon-backed documents. (Insert a white sheet of paper between the carbon back and the document carrier to avoid transfer of carbon to the carrier.)
6) Documents containing an easily separable writing material (e.g., those written with a lead pencil).
7) Transparent documents.
8) Folded or glued documents.

Document in document carrier should be inserted manually into the feeder.

4. Document release

4-1. General

When the release lever is pulled by hand in the direction of arrow, the latch is released and the upper document guide moves on its axis in the derection of the arrow. The feed rollers, the separation rubber plate, and the pinch rollers become free to make it possible to remove the document.

4-2. Cross section view

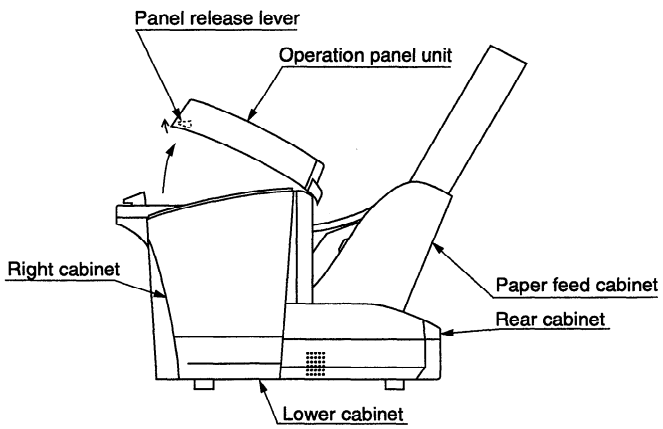


Fig. 5

5. Paper feed

5-1. ASF

As a result of reception motor drive the reduction gear, idler gear, planetary gear, and paper feed gear are synchronized. Since the Pu roller rotates, the paper sensor is turned on and advanced until it engages with the feed roller, Then, the motor is inverted to feed to the print position with the feed roller.

5-2. Manual paper feed

Insert the paper, aligning with the right side of paper feed cab until the paper sensor is turned on and the feed roller catches. It is sent to the print position by the feed roller.

5-3. Print

The ink cartridge is moved from the right side to the left side by the carriage motor. At this time ink is ejected from the ink cartridge to print on the paper.

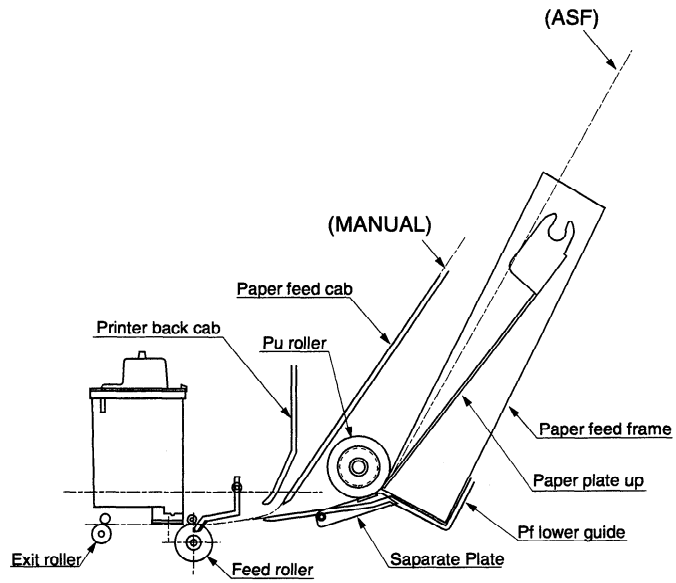


Fig. 6

5-4. ASF sequence

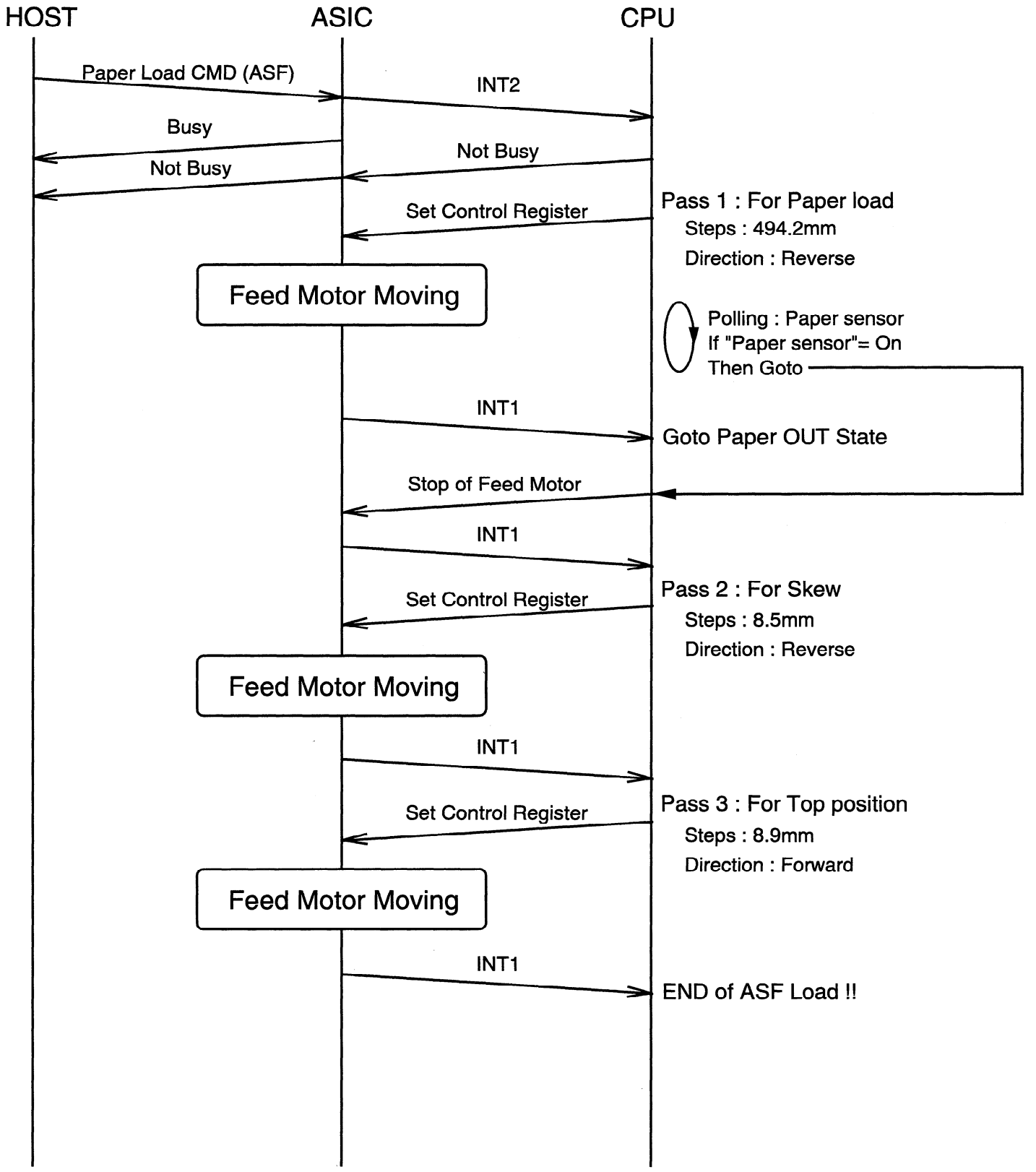


Fig. 7

[2] Disassembly and assembly procedures

- This chapter mainly describes the disassembly procedures. For the assembly procedures, reverse the disassembly procedures.
- Easy and simple disassembly/assembly procedures of some parts and units are omitted. For disassembly and assembly of such parts and units, refer to the Parts List.
- The numbers in the illustration, the parts list and the flowchart in a same section are common to each other.
- To assure reliability of the product, the disassembly and the assembly procedures should be performed carefully and deliberately.
- Note on changing cartridges : To prevent the used print cartridge from drying out, be sure to store it in the cartridge holder.

1 Rear Cabinet, Paper Feed Unit Handdet Holder,Printer Back Cabinet

Disassembly procedures (Fig. 1)

STEP	REMOVAL	PROCEDURE
1	Rear Cabinet	1. Screw (3x12) ..... (A1) x 2
2	Document Tray	1. Push inside the Document Tray arms ....ⓐ
3	Paper Feed Unit	1. Screw (3x6) ..... (B1) x 1
4	Handset Holder	1. Open the Operation Panel Unit 2. Screw (3x12) ..... (C1) x 1 3. Release the Handset Holder lock nails ...ⓑ
5	Printer Back Cabinet	1. Screw (3x10) ..... (D1) x 2

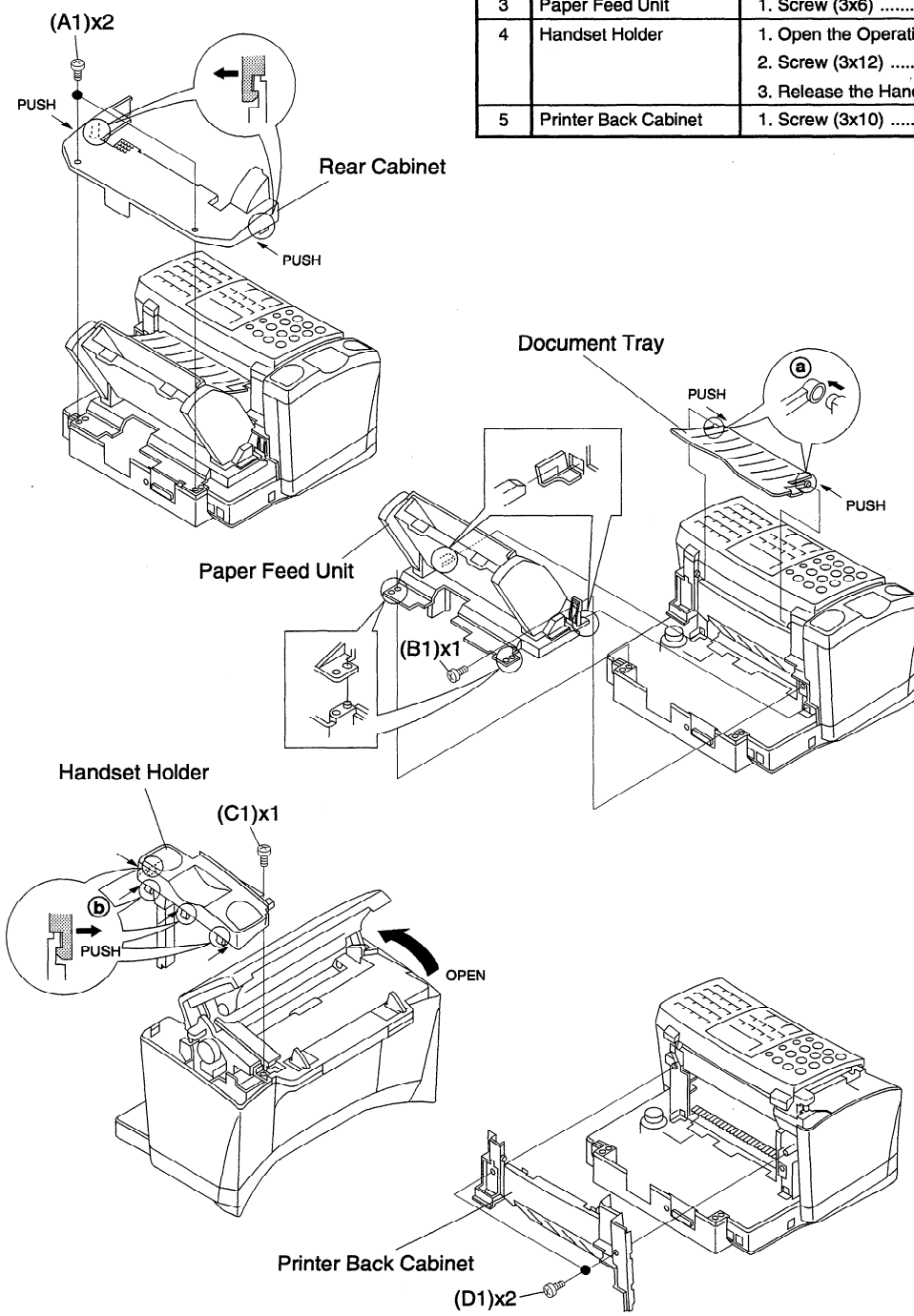


Fig. 1

2 Left Cabinet, Right Cabinet, Front cover

Disassembly procedures (Fig. 2)

STEP	REMOVAL	PROCEDURE
1	Left Cabinet	1. Screw (3x12) ..... (A1) x 2 2. Release the Left Cabinet lock nails .....ⓐ
2	Right Cabinet	1. Screw (3x12) ..... (B1) x 1 2. Release the Right Cabinet lock nails .....ⓑ
3	Front Cover	1. Push inside the Front Cover arms .....ⓒ

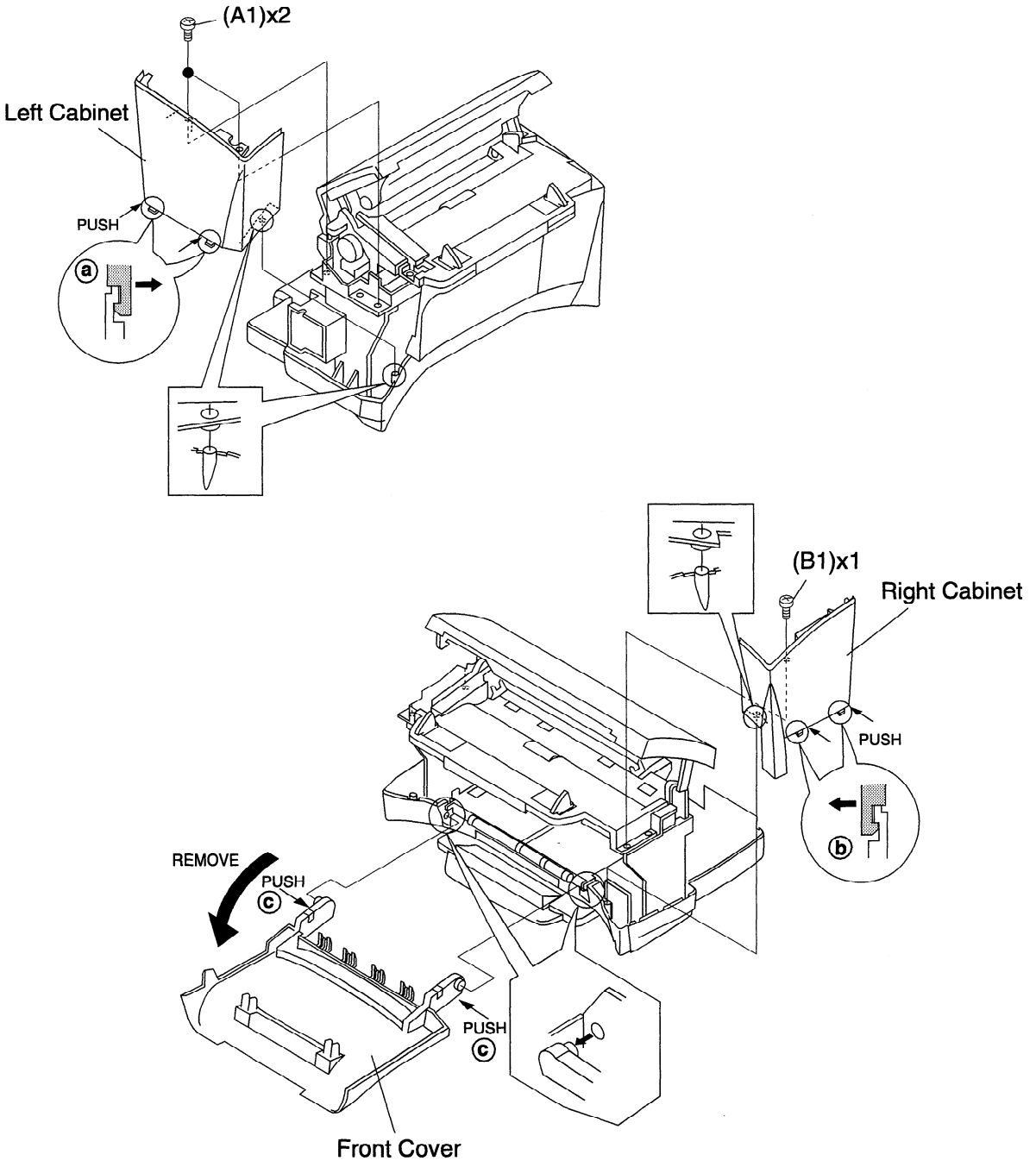


Fig. 2

3 Operation panel Unit

Disassembly procedures (Fig. 3)

STEP	REMOVAL	PROCEDURE
1	Operation Panel Unit	1. Push the Operation Panel Unit arms .....ⓐ
2	Panel Cabinet Upper Document Guide	1. Screw (3x10) ..... (B1) x 3 2. Socket ..... (B2) x 1 3. Push the Upper Document Guide arms .ⓑ
3	Panel PWB Unit, 12Key, Direct Key, Start Key, Stop Key, Mode Key, Insulation Sheet, LCD PWB Unit	1. Screw (2x6) ..... (C1) x 6 2. Push outside the LCD PWB Hook .....ⓒ

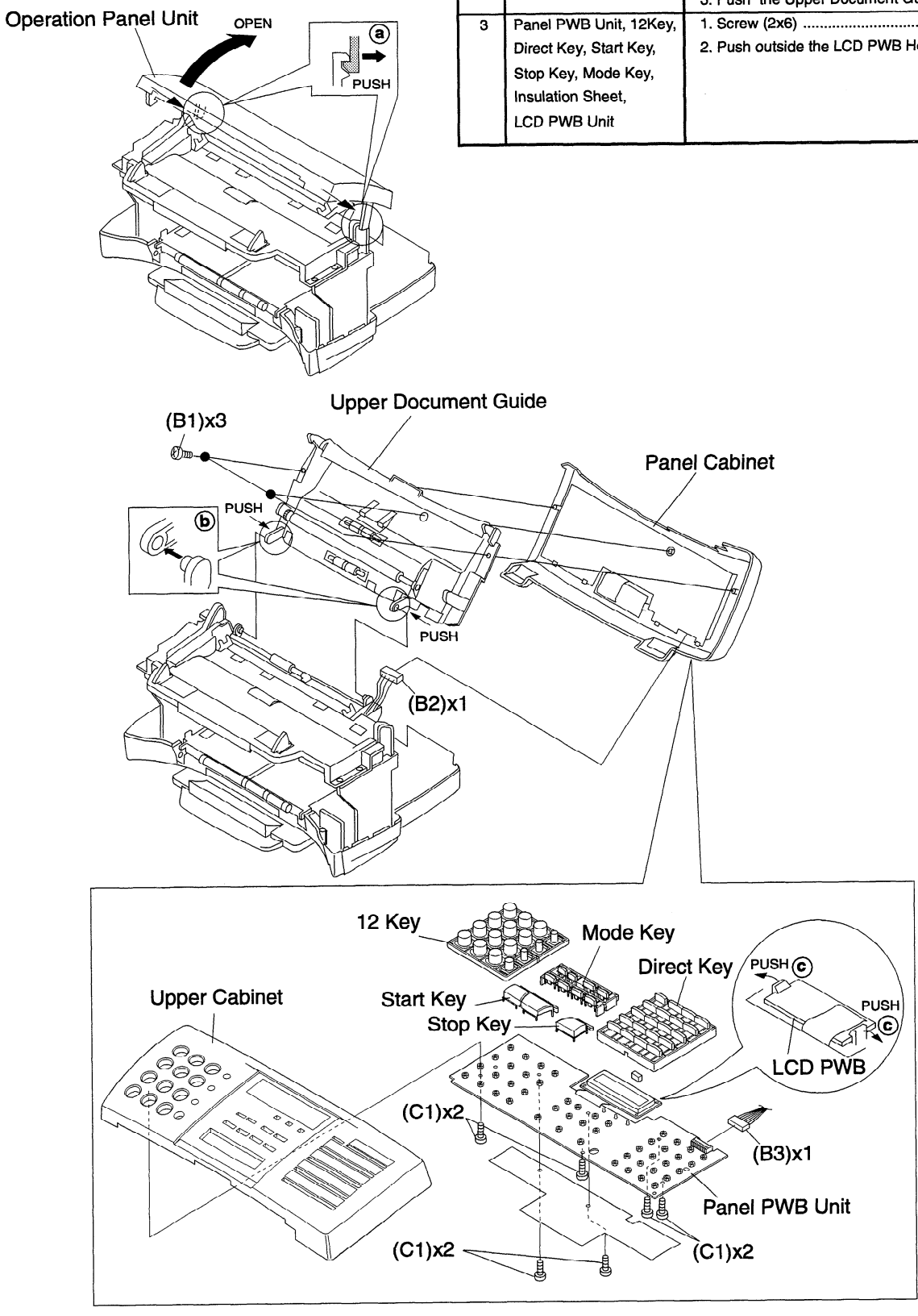


Fig. 3

4 Paper Feed Cabinet

Disassembly procedures (Fig. 4)

STEP	REMOVAL	PROCEDURE
1	Paper Feed Cabinet	1. Screw (3x10) ..... (A1) x 2
2	Paper Feed Roller Holder	1. Screw (3x10) ..... (B1) x 2
3	Paper Up Roller Ass'y	1. Remove the Paper Feed Gear 2. Pull forward the shaft holder ..... ⓐ 3. Remove the Paper Up Roller Shaft
4	Paper Feed Frame	1. Screw (3x10) ..... (C1) x 2 2. Screw (3x10) ..... (C2) x 2 3. Remove the RP Release Gear 4. Remove the RP Release Plate 5. Remove the Paper Up Plate

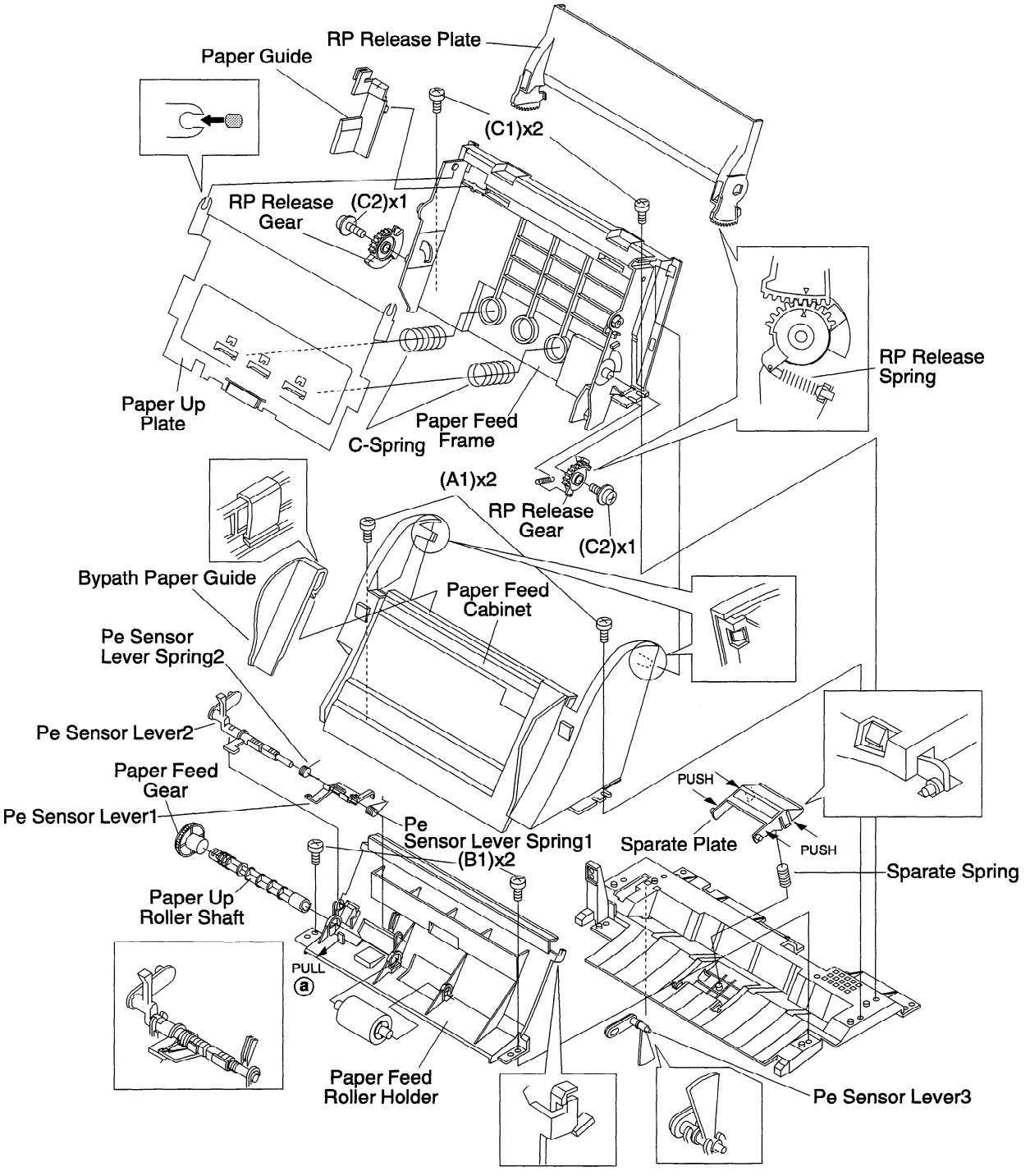


Fig. 4

5 Upper Document Guide

Disassembly procedures (Fig. 5)

STEP	REMOVAL	PROCEDURE
1	Strength Angle	1. Screw (3x10) ..... (A1) x 1 2. Screw (3x10) ..... (A2) x 1
2	Strengthen Plate	1. Screw (3x10) ..... (A3) x 2
3	Pinch Roller Shaft Pinch Roller	1. Remove springs ..... ⓐ
4	Document Out Spring	1. Screw (3x6) ..... (A4) x 1
5	Panel Lock Lever	1. Remove spring ..... ⓑ 2. Remove the Panel Lock Lever ..... ⓒ

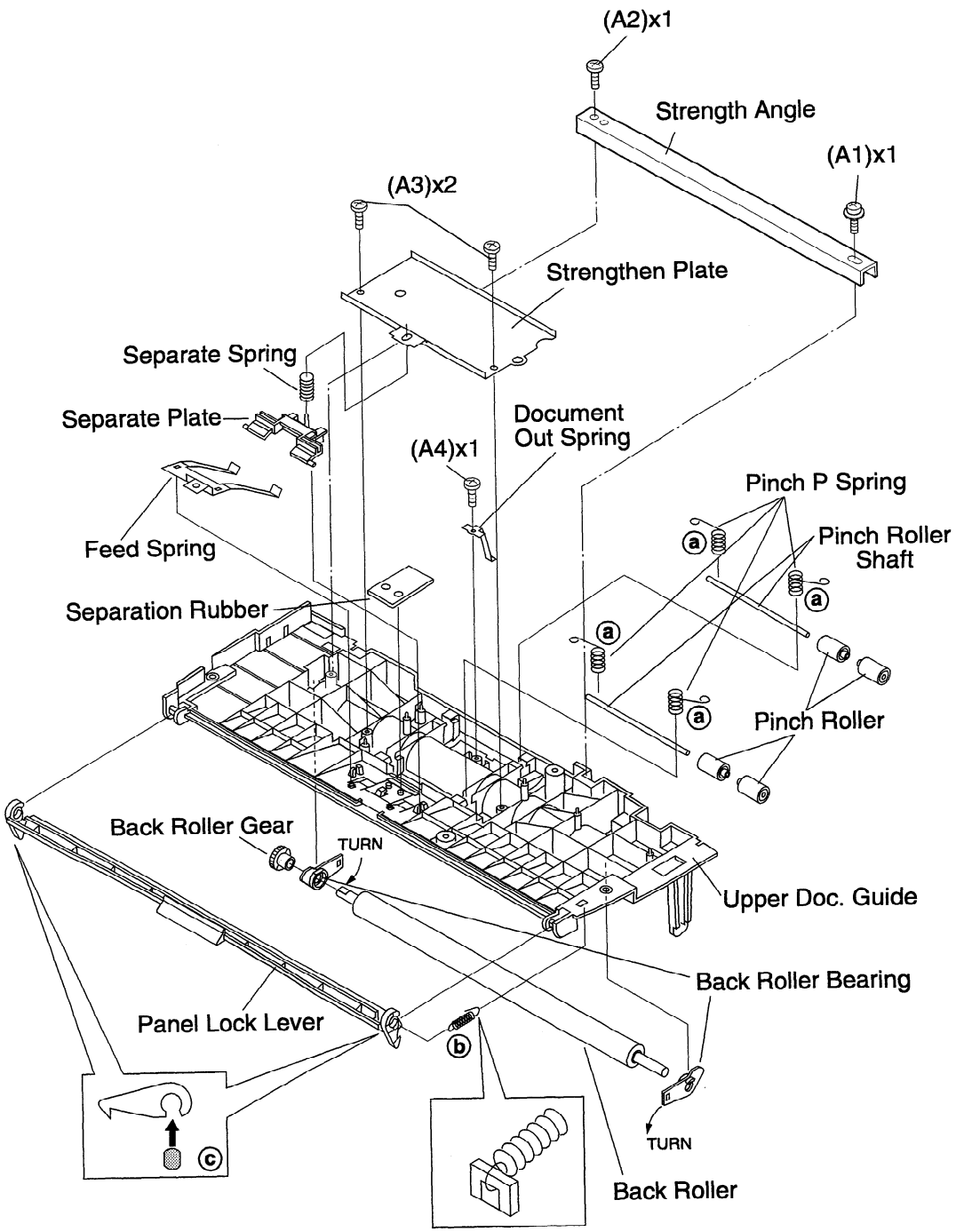
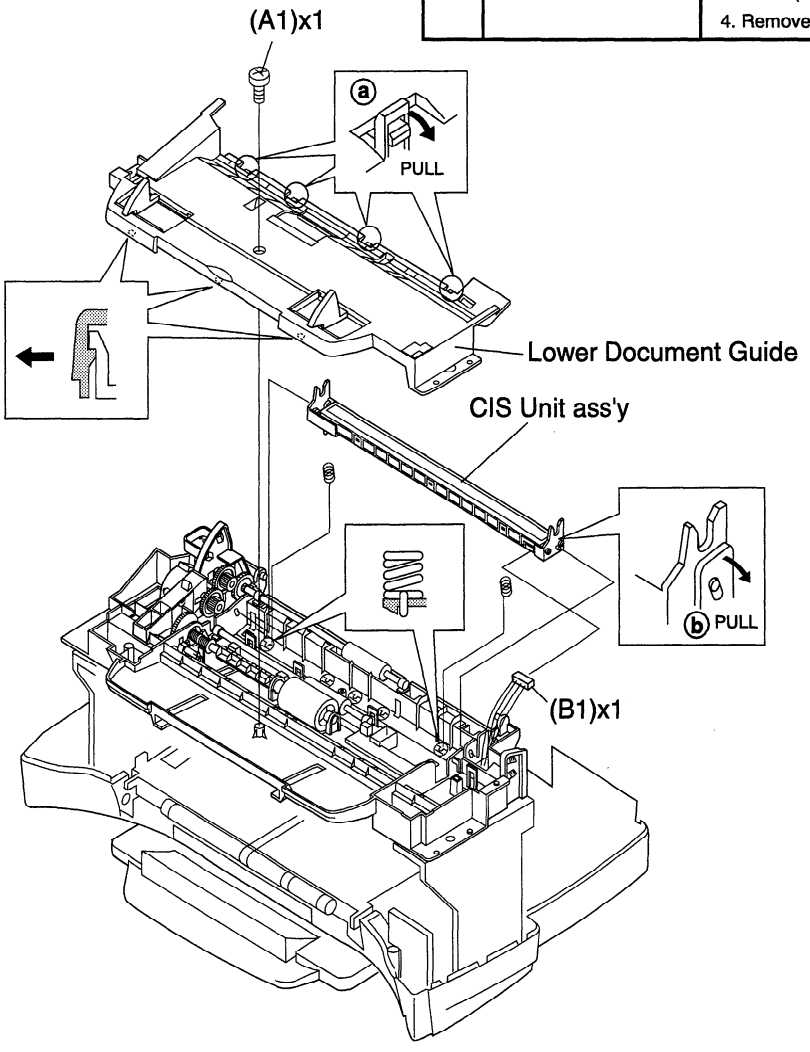


Fig. 5

6 Lower Document Guide, CIS Unit

Disassembly procedures (Fig. 6)

STEP	REMOVAL	PROCEDURE
1	Lower Document Guide	1. Screw (3x10) ..... (A1) x 1 2. Pull the Lower Document Guide latch ....ⓐ
2	CIS Unit Ass'y	1. Pull outside the CIS Unit hook .....ⓑ 2. Socket ..... (B1) x 1 3. Screw(2.6x6) ..... (B2) x 4 4. Remove the CIS Holder



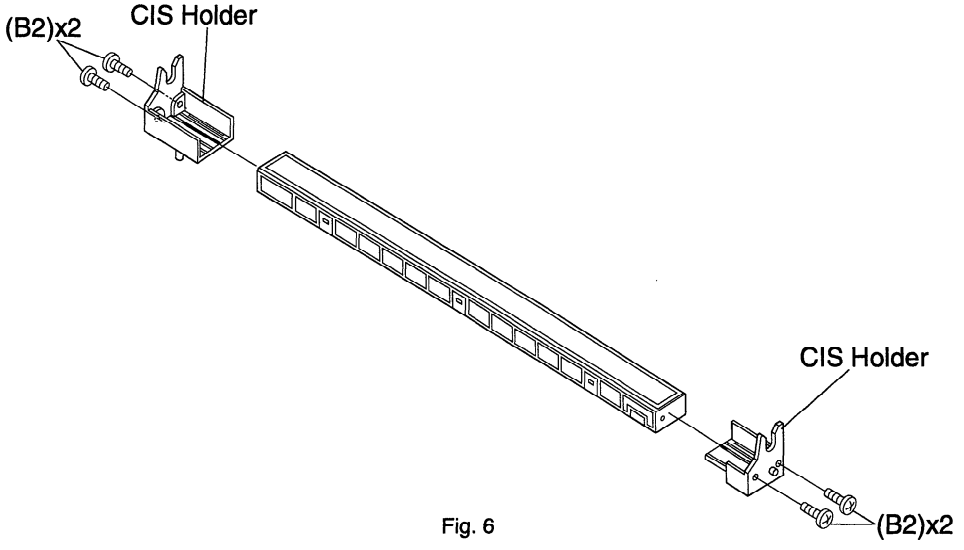
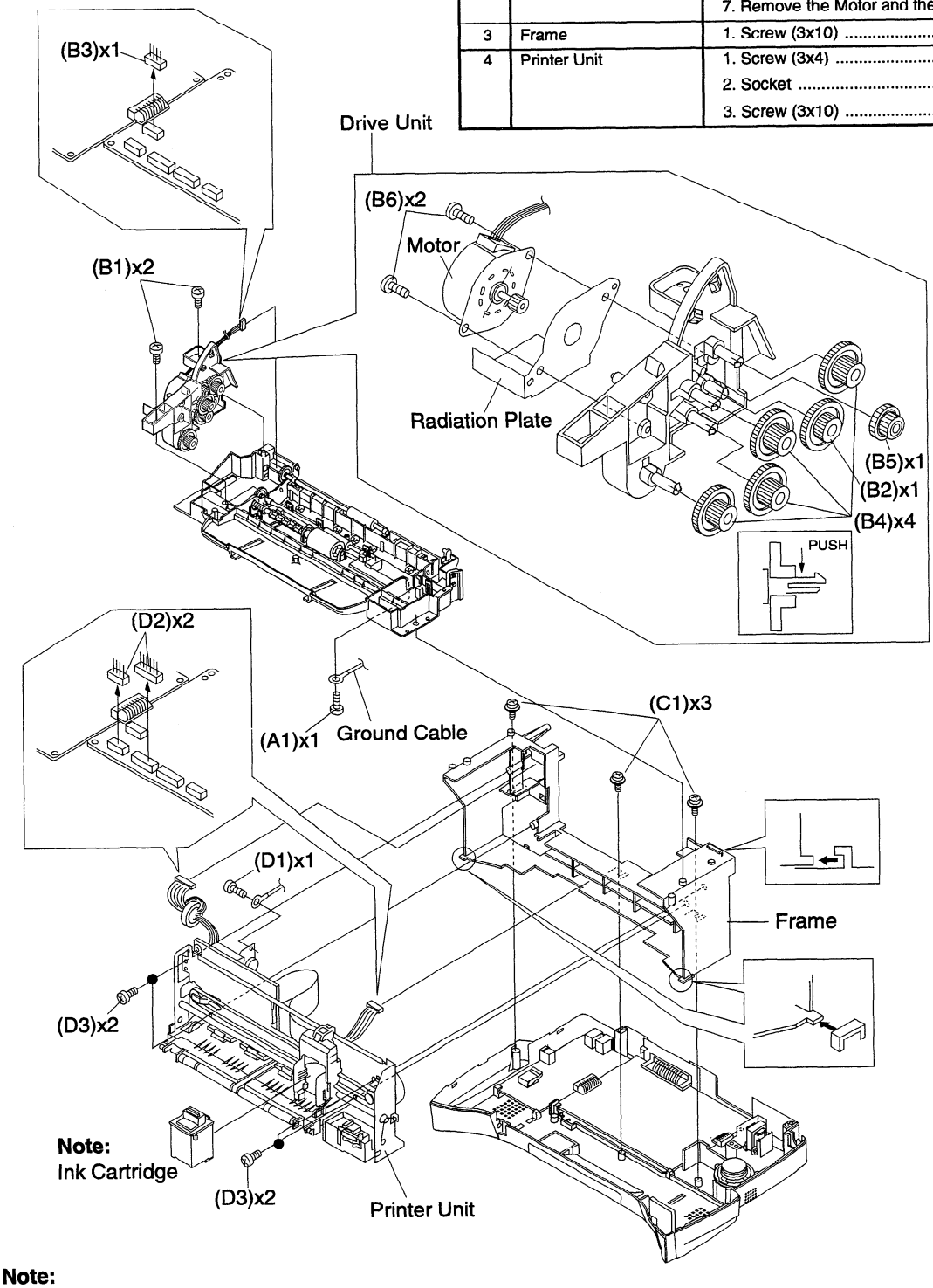


Fig. 6

7 Drive Unit, Printer Unit

Disassembly procedures (Fig. 7)

STEP	REMOVAL	PROCEDURE
1	Ground Cable	1. Screw (3x4) ..... (A1) x 1
2	Drive Unit	1. Screw (3x10) ..... (B1) x 2 2. Gear (18/35z) ..... (B2) x 1 3. Socket ..... (B3) x 1 4. Gear (18/36z) ..... (B4) x 4 5. Gear (15/23z) ..... (B5) x 1 6. Screw (3x10) ..... (B6) x 2 7. Remove the Motor and the Radiation Plate
3	Frame	1. Screw (3x10) ..... (C1) x 3
4	Printer Unit	1. Screw (3x4) ..... (D1) x 1 2. Socket ..... (D2) x 2 3. Screw (3x10) ..... (D3) x 4



Note:
To prevent the used print cartridge from drying out, be sure to store it in the cartridge holder.

Fig. 7

8 Scaner Unit

Disassembly procedures (Fig. 8)

STEP	REMOVAL	PROCEDURE
1	Transfer Roller	1. Remove the Transfer Roller
2	Feed Roller	1. Screw (3x30) ..... (A1) x 1
3	Extension Hopper	1. Slide the Extension Hopper
4	Sub Base Plate	1. Push the Sub Base Plate latch .....ⓐ 2. Slide the Sub Base Plate .....ⓑ

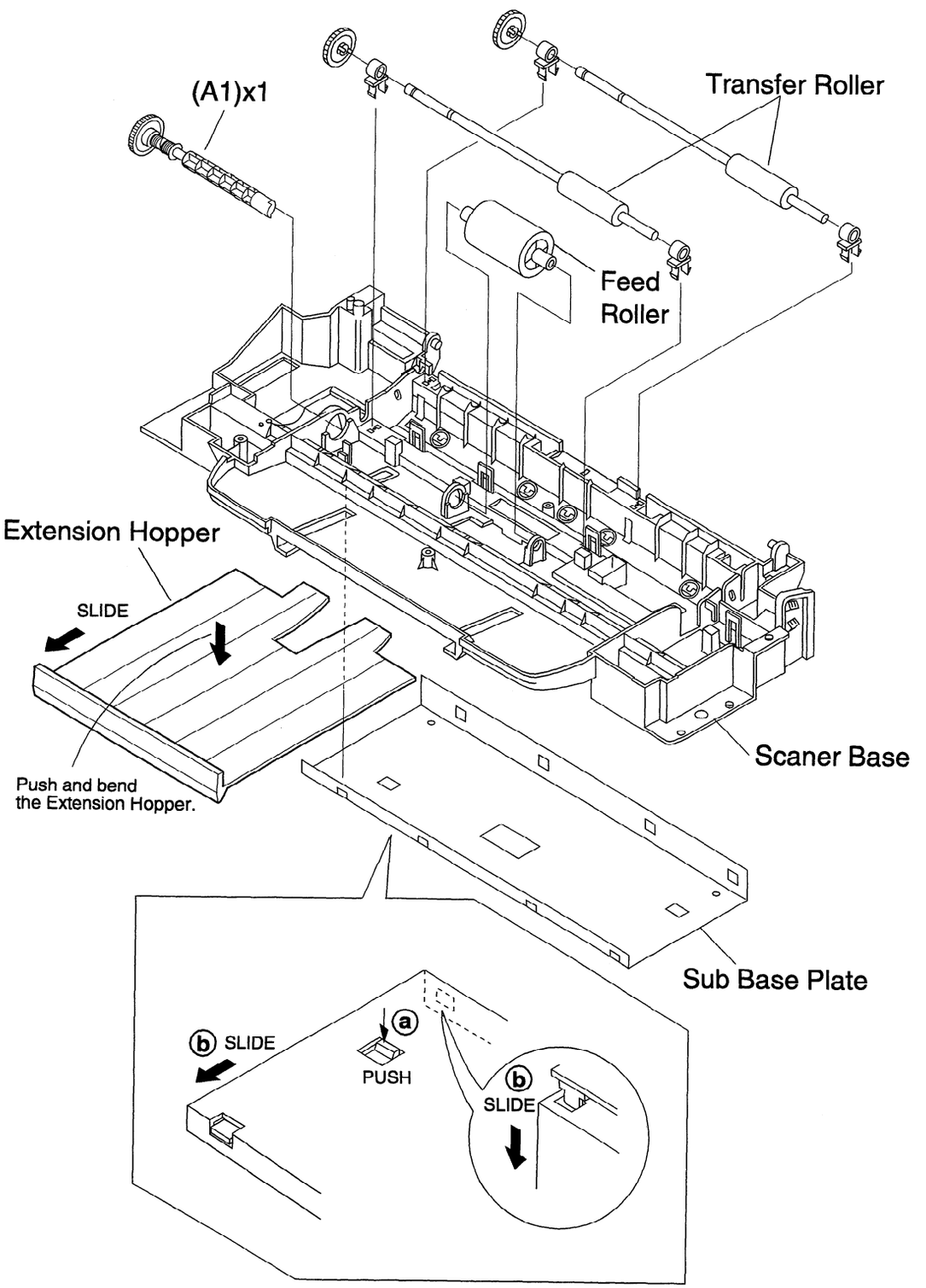


Fig. 8

9 Printer Unit

Disassembly procedures (Fig. 9)

STEP	REMOVAL	PROCEDURE
1	Steping CR Motor	1. Socket ..... (A1) x 1
		2. Screw (2x5) ..... (A2) x 2
2	Ink Carrier	1. Socket ..... (B1) x 2
		2. Holder ..... (B2) x 1
		3. Remove the Main Shaft
		4. Screw (2x5) ..... (B3) x 1
3	Paper Feed Motor	1. Socket ..... (C1) x 1
		2. Screw (3x4) ..... (C2) x 2
4	Maintenance Base	1. Screw (1x6) ..... (D1) x 1
5	Motor Bracket	1. Screw (3x6) ..... (E1) x 1
	Base Frame	2. Screw (3x4) ..... (E2) x 2
	INK PWB Unit	3. Remove Bearing ..... ⓐ
		4. Screw (3x10) ..... (E3) x 1
6	Printer PWB Unit	1. Screw (3x4) ..... (F1) x 3

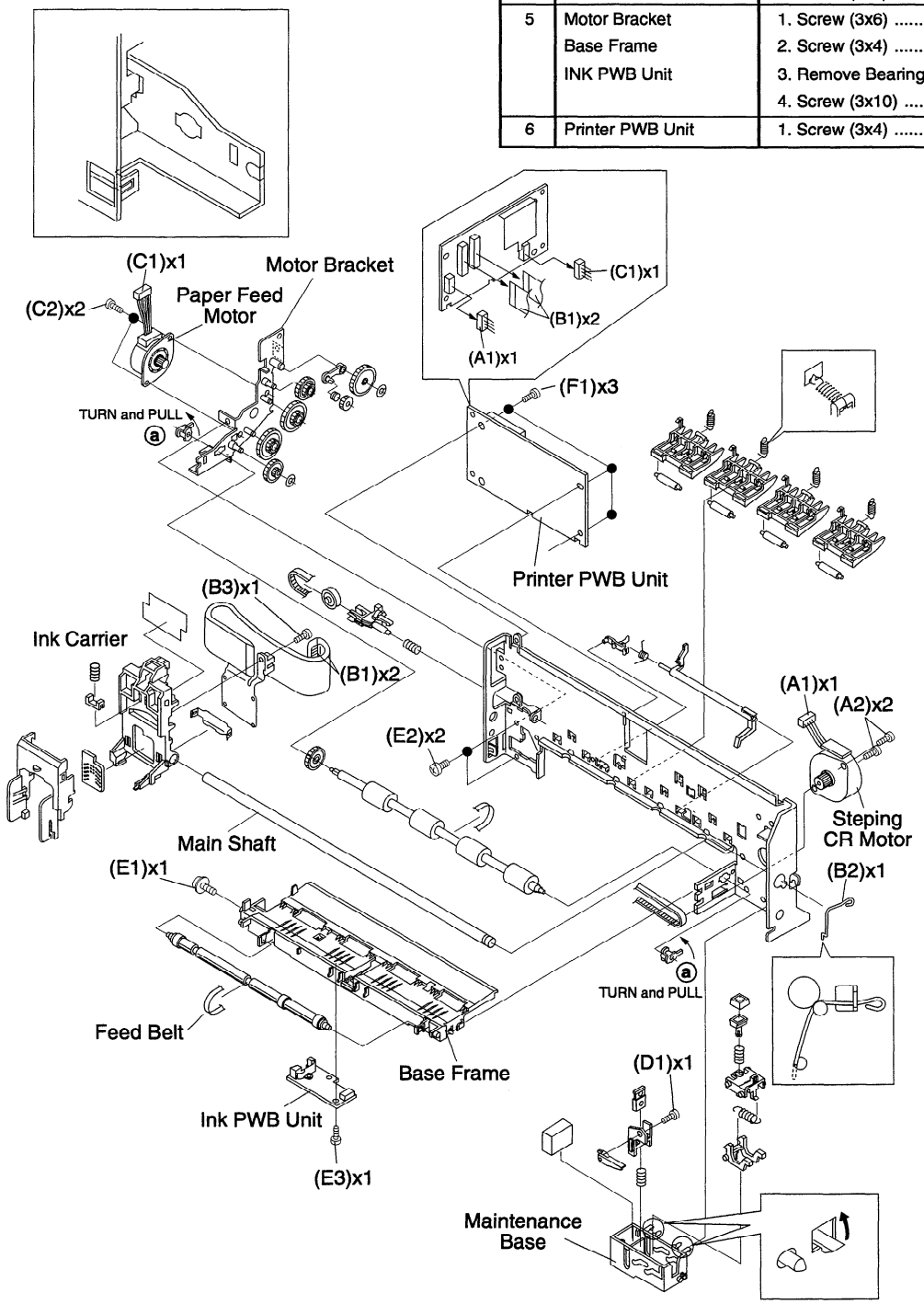


Fig. 9

10	**IrDA PWB Unit, Control PWB Unit, TEL/Liu PWB Unit, Power Supply PWB Unit**

Disassembly procedures (Fig. 10)

STEP	REMOVAL	PROCEDURE
1	IrDA PWB Unit	1. Socket ..... (A1) x 1
		2. Screw (3 x 10) ..... (A2) x 1
2	Speaker Ass'y	1. Socket ..... (B1) x 1
		2. Screw (3 x 10) ..... (B2) x 3
3	Control PWB Unit	1. Screw (3 x 10) ..... (C1) x 7
	TEL/Liu PWB Unit	2. Screw (3 x 6) ..... (C2) x 1
	Power Supply PWB Unit	3. Screw (3 x 6) ..... (C3) x 2
	Shield Plate	4. Screw (3 x 6) ..... (D1) x 1
		5. Screw (4 x 6) ..... (D2) x 1
		6. Screw (3 x 6) ..... (D3) x 1
		7. Socket ..... (D4) x 1

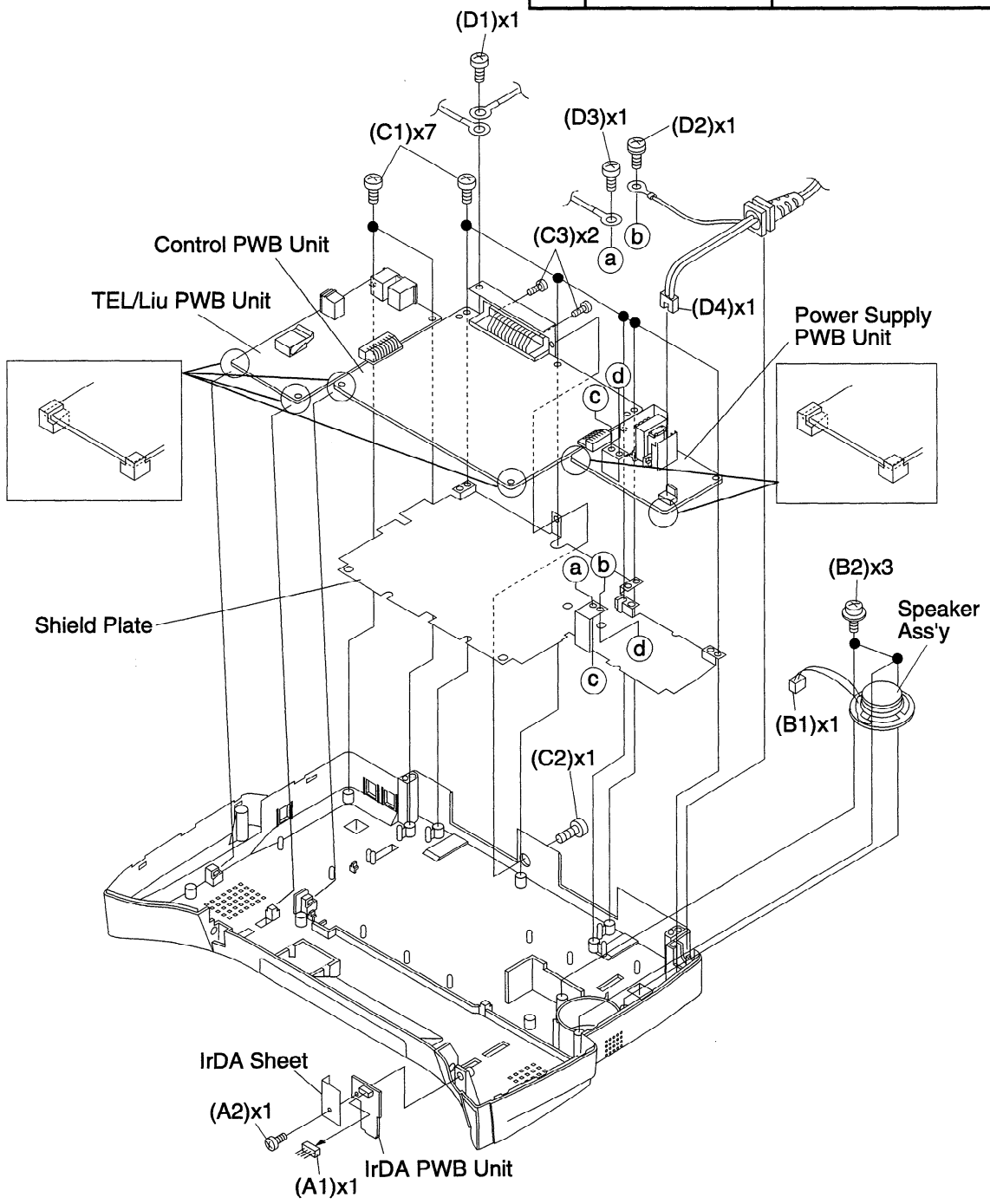


Fig. 10

11 Wire treatment

Parts list (Fig. 11)

No.	Part name	Q'ty
1	Band	3
2	Core (RCORF2064XHZZ)	2
3	Core (RCORF2096FFZZ)	1
4	Core (RCORF2063XHZZ)	2

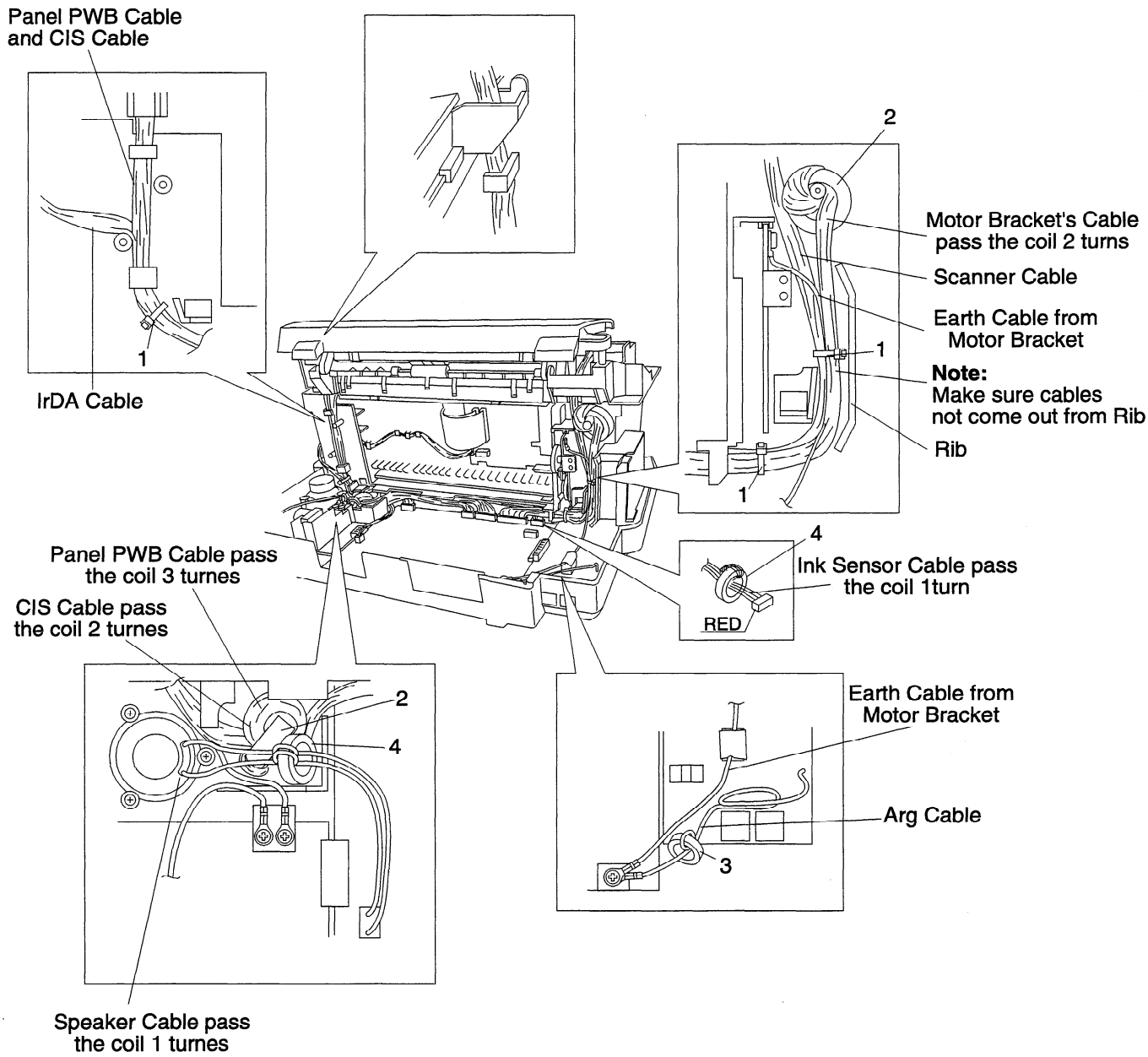
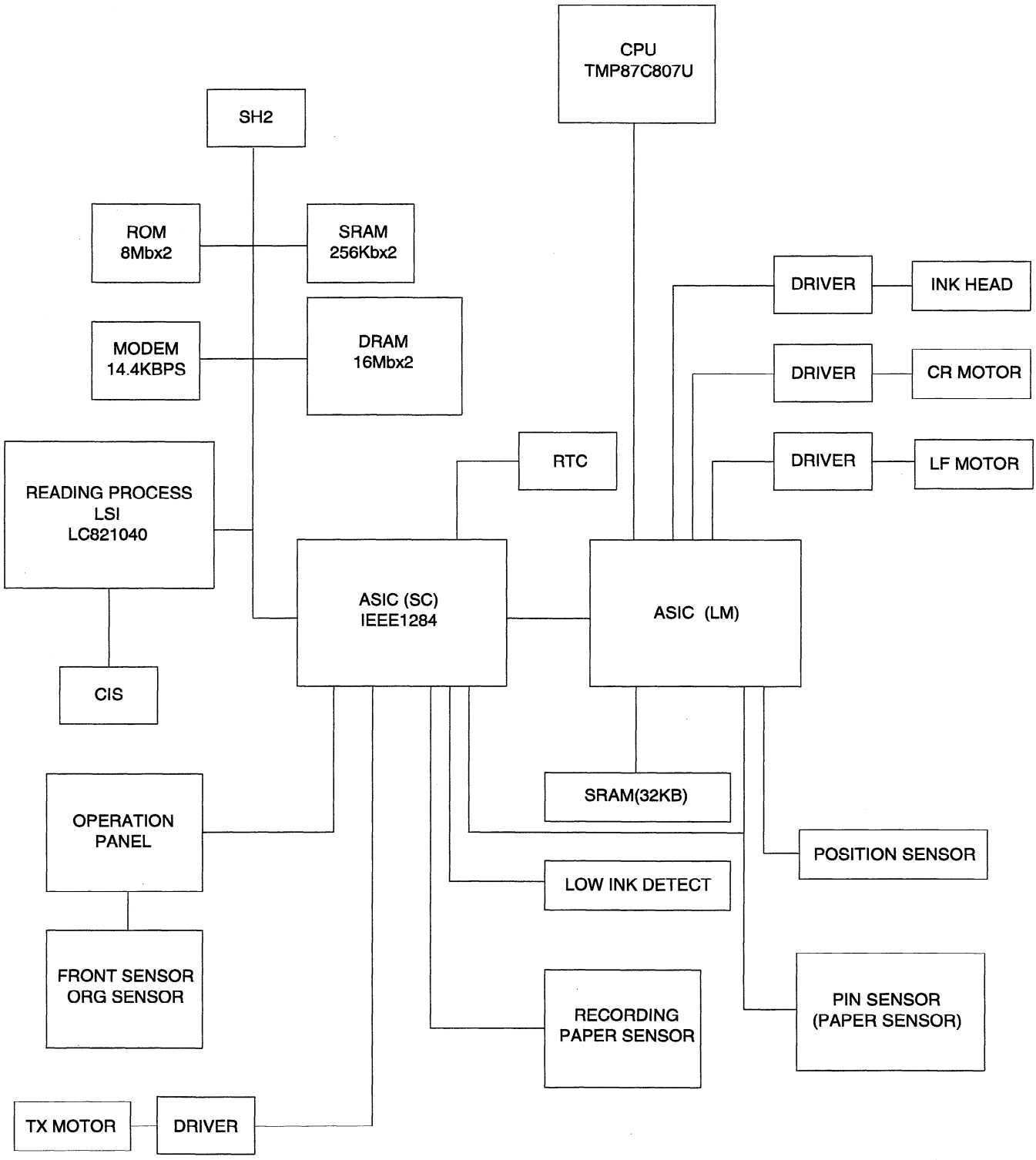


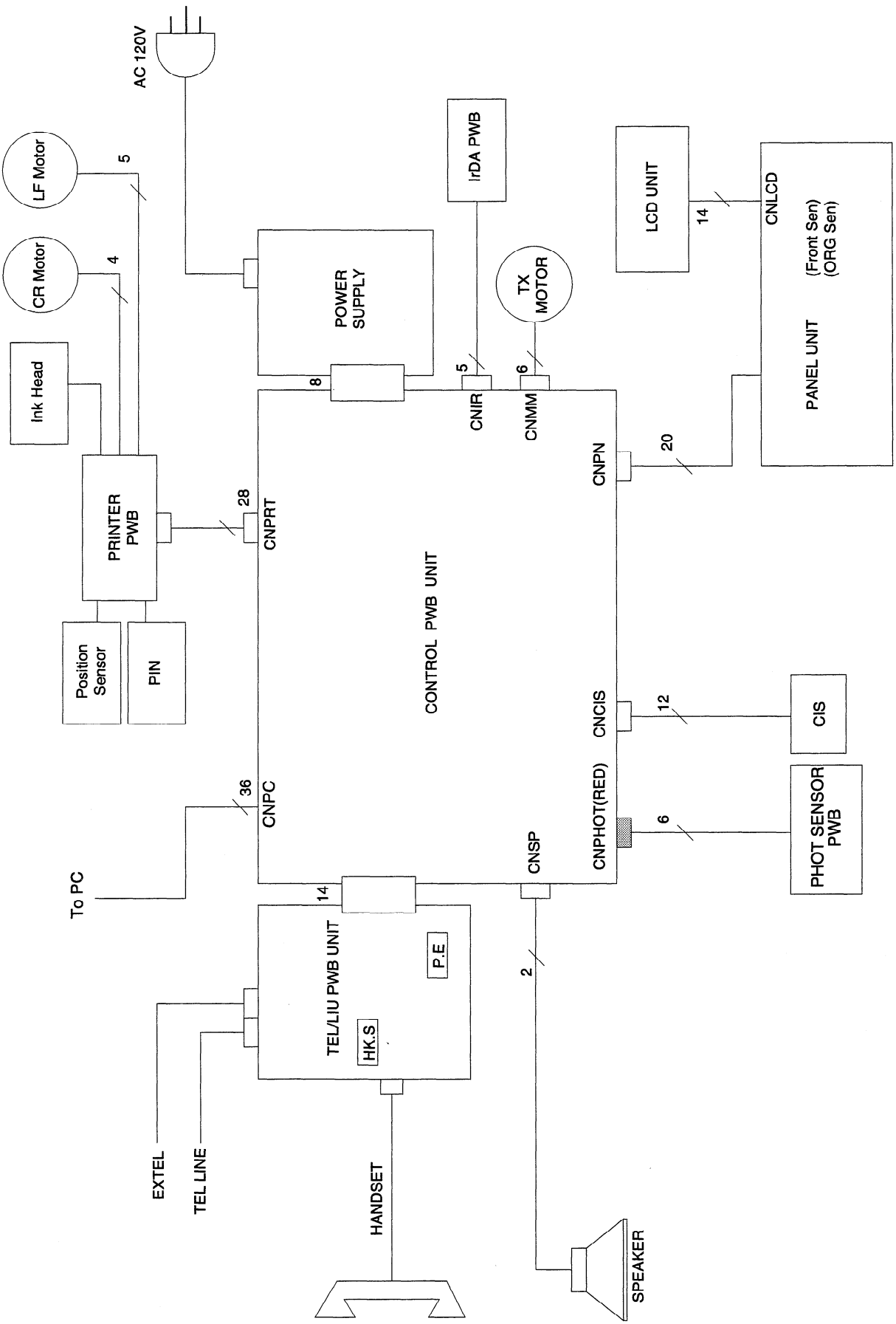
Fig. 11

CHAPTER 4. DIAGRAMS

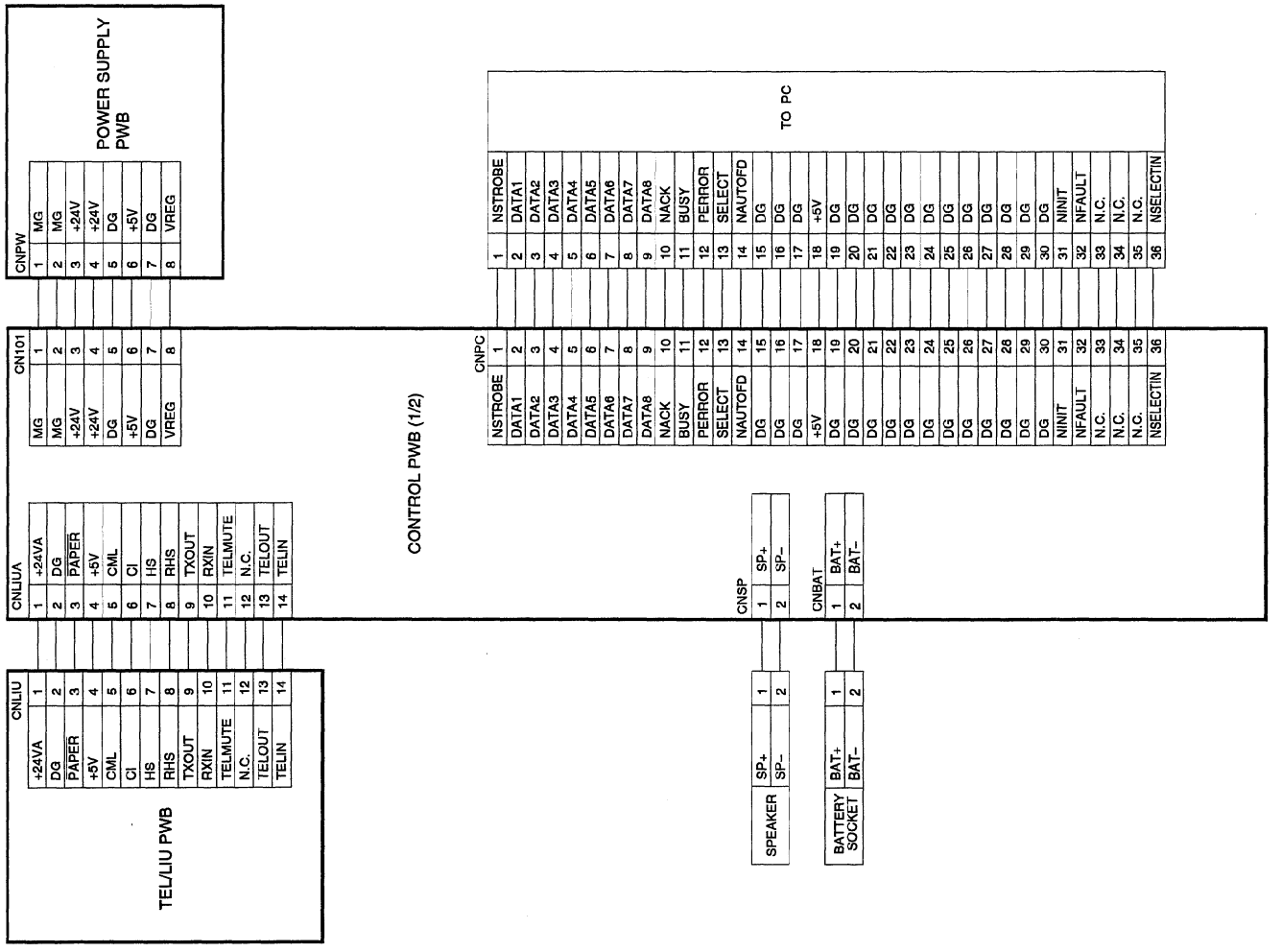
[1] Block diagram



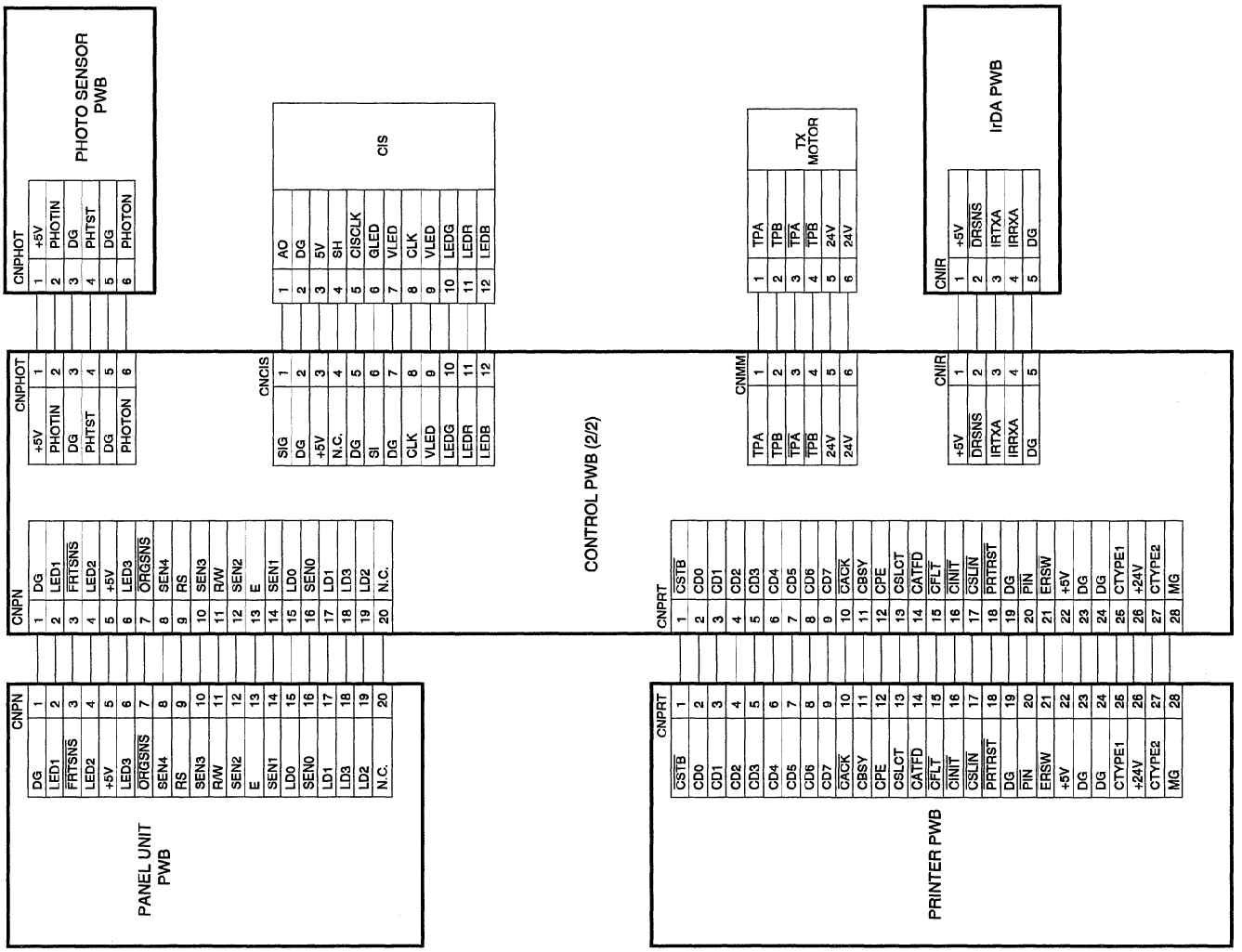
[2] Wiring diagram



[3] Point- to-point diagram



[3] Point- to-point diagram



CHAPTER 5. CIRCUIT DESCRIPTION

[1] Circuit description

1. General description

The compact design of the control PWB is obtained by using Risc Processor (CPU) in the main control section and high density printing of surface mounting parts. Each PWB is independent according to its function as shown in Fig. 1.

2. PWB configuration

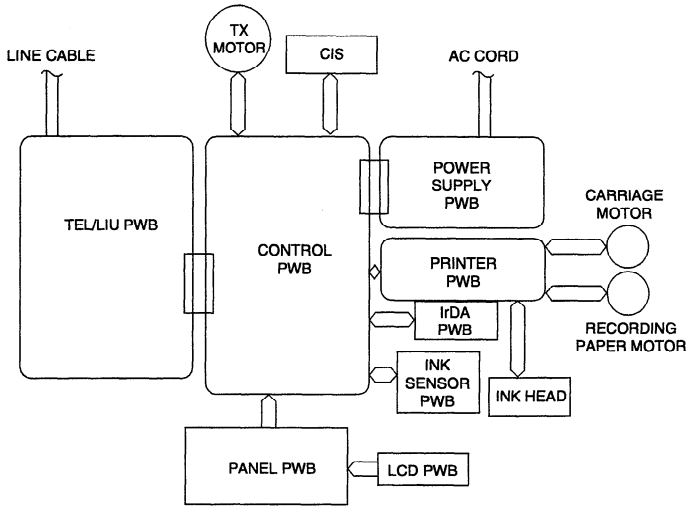


Fig. 1

1) Control PWB

The control PWB controls peripheral PWBs, mechanical parts, transmission, and performs overall control of the unit.
This machine employs a 1-chip modem (R144AFXL) which is in-stalled on the control PWB.

2) TEL/LIU PWB

This PWB controls connection of the telephone line to the unit.

3) Power supply PWB

This PWB provides voltages of +5V, VREG and +24V to the another PWB.

4) Panel PWB

The panel PWB allows input of the operation keys.

5) Printer PWB

This PWB controls the printer mechanical parts.
This PWB employs 8bit CPU that is installed on printer PWB.
This CPU control a printer mechanical parts.

6) LCD PWB

This PWB controls the LCD display.

7) IrDA PWB

This PWB employs led and sensor.

8)Ink sensor PWB

This PWB examine the ink level of the cartridge.

3. Operational description

Operational descriptions are given below:

- Transmission operation

  When a document is loaded in standby mode, the state of the document sensor is sensed via the CPU (SH2).
  If the sensor signal was on, the motor is started to bring the document into the standby position. With depression of the START key in the off-hook state, transmission takes place.

  Then, the procedure is sent out from the modem and the motor is rotated to move the document down to the scan line. In the scan processor, the signal scanned by the CIS is sent to the internal image processor and the AD converter to convert the analog signal into binary data. This binary data is transferred from the scan processor to the image buffer within the RAM and encoded and stored in the transmit buffer of the RAM. The data is then con-verted from parallel to serial form by the modem where the serial data is modulated and sent onto the line.

- Receive operation

  There are two ways of starting reception, manual and automatic. Depression of the START key in the off-hook mode in the case of manual receive mode, or CI signal detection by the LIU in the automatic receive mode.

  First, the CPU(SH2) controls the procedure signals from the modem to be ready to receive data. When the program goes into phase C, the serial data from the modem is converted to parallel form in the modem interface of the 1 fax CPU(SH2) which is stored in the receive buffer of the RAM. The data in the receive buffer is decoded software-wise to reproduce it as binary image data in the image buffer. The data is DMA transferred to the recording processor within the printer control gate array which is on printer PWB and sent to the ink head. The data is printed by printer gate arrey and fine signal.

- Copy operation

  To make a copy on this facsimile, the COPY key is pressed when the machine is in stand-by with a document on the document table and the telephone set is in the on-hook state.

  First, depression of the COPY key advances the document to the scan line. Similar to the transmitting operation, the image signal from the CIS is converted to a binary signal in the DMA mode via the reading processor which is then sent to the image buffer of the RAM. Next, the data is transferred to the recording processor in the DMA mode to send the image data to the ink head which is printed swath by swath. The copying takes place as the operation is repeated.

[2] Circuit description of control PWB

1. General description

Fig. 2 shows the functional blocks of the control PWB, which is composed of 5 blocks.

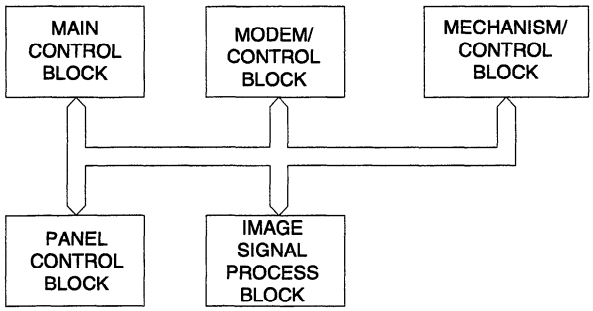


Fig. 2 Control PWB functional block diagram

2. Description of each block

(1) Main control block

The main control block is composed of HITACHI CPU (SH2), ROMX2 (256KByte), RAMX2 (32KByte), DRAMX2 (512KByte). Devices are connected to the bus to control the whole unit.

1) SH7040 (IC11) : pin-112 QFP (SH7040)

The CPU Integrated Facsimile Controllers.

SH7040(SH2), contains an internal 32 bit microprocessor with an external 16 bit address space and dedicated circuitry optimized for facsimile image processing and facsimile machine control and monitoring.

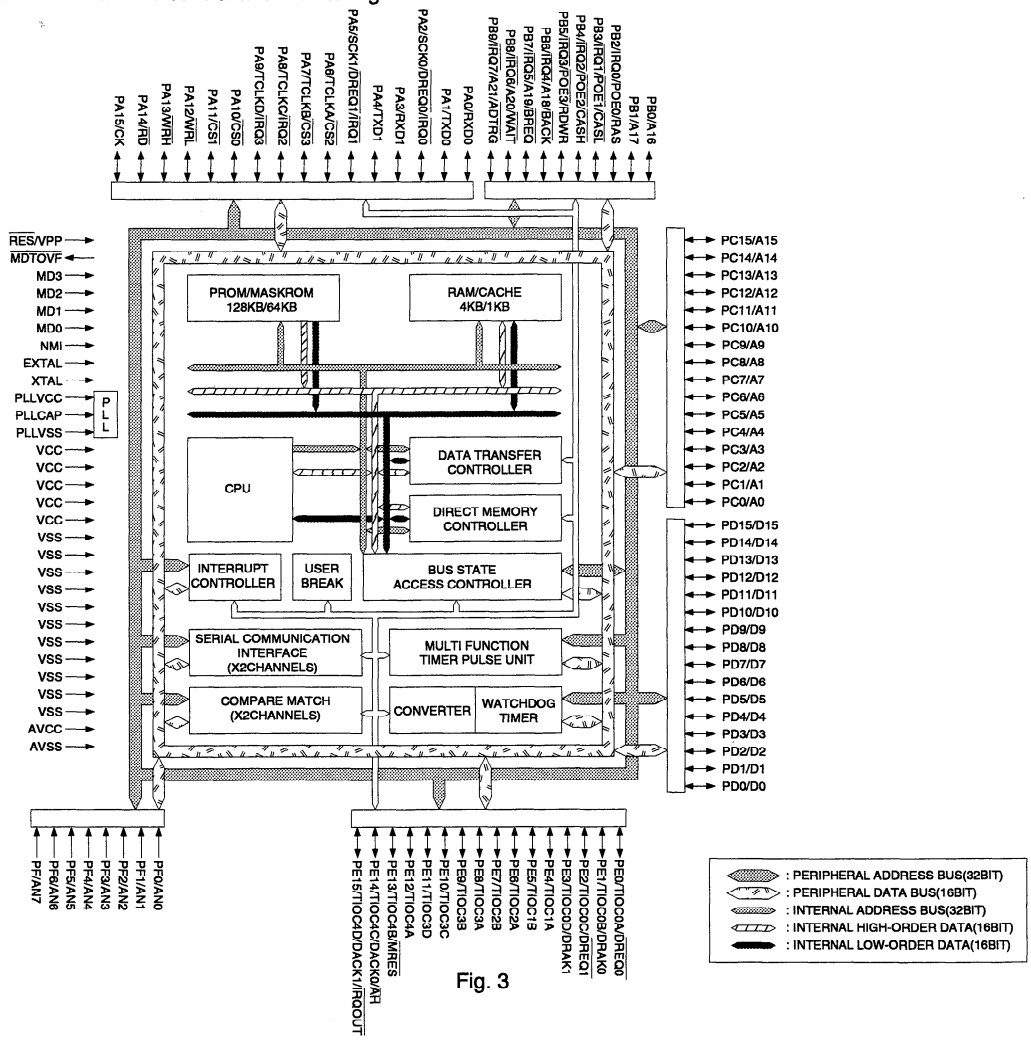


Fig. 3

2) M27C801F10 (IC17, IC18): pin-32 DIP (ROM)

EPROM of 2Mbit equipped with software for the main CPU.

3) SRM2B257SLMX70 (IC20, IC25): pin-28 SOP (RAM)

Line memory for the main CPU system RAM area and coding/decoding process. Used as the transmission buffer.

Memory of recorded data such as daily report and auto dials. When the power is turned off, this memory is backed up by the lithium battery.

4) MSM5118164C (IC19, IC24): pin-42 SOJ (RAM)

Image memory for recording process.

- Memory for recording pixel data at without paper.

SH7040 (IC11) Terminal list

QFP112 Pin No.	MCU MODE	PROM MODE
1	PE14/TIOC4C/DACK0/$\overline{AH}$	VCC
2	PE15/TIOC4D/DACK1/$\overline{IRQOUT}$	$\overline{CE}$
3	VSS	VSS
4	PC0/A0	A0
5	PC1/A1	A1
6	PC2/A2	A2
7	PC3/A3	A3
8	PC4/A4	A4
9	PC5/A5	A5
10	PC6/A6	A6
11	PC7/A7	A7
12	PC8/A8	A8
13	PC9/A9	N.C.
14	PC10/A10	A10
15	PC11/A11	A11
16	PC12/A12	A12
17	PC13/A13	A13
18	PC14/A14	A14
19	PC15/A15	A15
20	PB0/A16	A16
21	VCC	VCC
22	PB1/A17	N.C.
23	VSS	VSS
24	PB2/$\overline{IRQ0}$/$\overline{POE0}$/$\overline{RAS}$	N.C.
25	PB3/$\overline{IRQ1}$/$\overline{POE1}$/$\overline{CASL}$	$\overline{OE}$
26	PB4/$\overline{IRQ2}$/$\overline{POE2}$/$\overline{CASH}$	$\overline{PGM}$
27	VSS	VSS
28	PB5/$\overline{IRQ3}$/$\overline{POE3}$/RDWR	VCC
29	PB6/$\overline{IRQ4}$/A18/$\overline{BACK}$	N.C.
30	PB7/$\overline{IRQ5}$/A19/$\overline{BREQ}$	N.C.
31	PB8/$\overline{IRQ6}$/A20/$\overline{WAIT}$	N.C.
32	PB9/$\overline{IRQ7}$/A21/$\overline{ADTRG}$	N.C.
33	VSS	VSS
34	PA14/$\overline{RD}$	N.C.
35	$\overline{WDTOVF}$	N.C.
36	PA13/$\overline{WRH}$	N.C.
37	VCC	VCC
38	PA12/$\overline{WRL}$	N.C.
39	VSS	VSS
40	PA11/$\overline{CS1}$	N.C.
41	PA10/$\overline{CS0}$	N.C.
42	PA9/TCLKD/$\overline{IRQ3}$	N.C.
43	PA8/TCLKC/$\overline{IRQ2}$	N.C.
44	PA7/TCLKB/$\overline{CS3}$	N.C.
45	PA6/TCLKA/$\overline{CS2}$	N.C.
46	PA5/SCK1/$\overline{DREQ1}$/$\overline{IRQ1}$	N.C.
47	PA4/TXD1	N.C.
48	PA3/RXD1	N.C.
49	PA2/SCK0/$\overline{DREQ0}$/$\overline{IRQ0}$	N.C.
50	PA1/TXD0	N.C.
51	PA0/RXD0	N.C.
52	PD15/D15	N.C.
53	PD14/D14	N.C.
54	PD13/D13	N.C.
55	VSS	VSS
56	PD12/D12	N.C.
57	PD11/D11	N.C.
58	PD10/D10	N.C.
59	PD9/D9	N.C.

Pin No.	MCU MODE	PROM MODE
60	PD8/D8	N.C.
61	VSS	VSS
62	PD7/D7	D7
63	PD6/D6	D6
64	PD5/D5	D5
65	VCC	VCC
66	PD4/D4	D4
67	PD3/D3	D3
68	PD2/D2	D2
69	PD1/D1	D1
70	PD0/D0	D0
71	VSS	VSS
72	XTAL	N.C.
73	MD3	VCC
74	EXTAL	VSS
75	MD2	VCC
76	NMI	A9
77	VCC	VCC
78	MD1	VCC
79	MD0	VCC
80	PLLVCC	VCC
81	PLLCAP	VSS
82	PLLVSS	VSS
83	PA15/CK	N.C.
84	$\overline{RES}$	VPP
85	PE0/TIOC0A/$\overline{DREQ0}$	N.C.
86	PE1/TIOC0B/$\overline{DRAK0}$	N.C.
87	PE2/TIOC0C/$\overline{DREQ1}$	N.C.
88	PE3/TIOC0D/$\overline{DRAK1}$	N.C.
89	PE4/TIOC1A	N.C.
90	VSS	VSS
91	PF0/AN0	VSS
92	PF1/AN1	VSS
93	PF2/AN2	VSS
94	PF3/AN3	VSS
95	PF4/AN4	VSS
96	PF5/AN5	VSS
97	AVSS	VSS
98	PF6/AN6	VSS
99	PF7/AN7	VSS
100	AVCC	VCC
101	VSS	VSS
102	PE5/TIOC1B	N.C.
103	VCC	VCC
104	PE6/TIOC2A	N.C.
105	PE7/TIOC2B	N.C.
106	PE8/TIOC3A	N.C.
107	PE9/TIOC3B	N.C.
108	PE10/TIOC3C	N.C.
109	VSS	VSS
110	PE11/TIOC3D	N.C.
111	PE12/TIOC4A	N.C.
112	PE13/TIOC4B/$\overline{MRES}$	N.C.

SH7040 (IC11) Terminal function

Classification	Symbol	Input/Output	Name	Function
Power	Vcc	Input	Power	Connect the Vcc terminal to the power of all systems. Operation is not performed if there is open terminal.
	Vss	Input	Ground	Connect to the ground. Connect the Vss terminal to the ground of all systems. Operation is not performed if there is open terminal.
	Vpp	Input	Program power	In case of normal operation connect to the power (Vcc). In the PROM mode 12.5V is applied.
Clock	PLLVcc	Input	Power for PLL	Power for built-in PLL oscillator.
	PLLVss	Input	Ground for PLL	Ground for built-in PLL oscillator.
	PLLCAP	Input	Capacity for PLL	Externally provided capacity terminal for built-in PLL oscillator.
	EXTAL	Input	External clock	Connect the crystal oscillator. It is possible to input also the external clock to the EXTAL terminal.
	EXTAL	Input	Crystal	Connect the crystal oscillator.
	CK	Output	System clock	The system clock is supplied to the peripheral device.
System control	$\overline{RES}$	Input	Power-on reset	When Low Level is applied to this terminal, power-on reset state is generated.
	$\overline{MRES}$	Input	Manual reset	When Low Level is applied to this terminal, the manual reset state is generated.
	$\overline{WDTOVF}$	Output	Watch dog timer overflow	Overflow output signal from WDT.
	$\overline{BREQ}$	Input	Bus right request	Low level is generated when the external device requestes release of bus right.
	$\overline{BACK}$	Output	Bus right request acknowledge	It is indicated that the bus right has been released for the external device. The device whitch output the BREQ signal receives the BACK signal, thereby allowing to know that the bus right has been obtained.
Operation mode control	MD0 ~ MD3	Input	Mode setting	Terminal to decide the operation mode. During operation do not change the input value.
Interruption	NMI	Input	Nonmaskable interruption	Nonmaskable interruption request terminal. It is possible to select reception at rise edge or fall edge.
	$\overline{IRQ0}$ ~ $\overline{IRQ7}$	Input	Interruption request 0 to 7	Maskable interruption request terminal. It is possible to select level input and edge input.
	$\overline{IRQOUT}$	Output	Interruption request output	Indicates occurrence of interruption factor. Occurrence of interruption can be known also during bus release.
Address bus	A0 ~ A21	Output	Address bus	Address is output.
Data bus	D0 ~ D15 (QFP-112) D0 ~ D31 (QFP-144)	Output	Data bus	16-bit (QFP-112 pin type) or 32-bit (QFP-144 pin type) two-direction data bus.
Bus control	$\overline{CS0}$ ~ $\overline{CS3}$	Output	Chip selection 0 to 3	Chip selection signal for external memory or device.
	$\overline{RD}$	Output	Reading	Indicates reading from the external device.
	$\overline{WRH}$	Output	High-order side writing	Indicates writing into high-order 8 bits (bit 15 to 8) of external data.
	$\overline{WRL}$	Output	Low-order side writing	Indicates writing into Low-order 8 bits (bit 7 to 0) of external data.
	$\overline{WAIT}$	Input	Weight	Input to insert the weight cycle into bus cycle when access to the external space is made.
	$\overline{RAS}$	Output	Low address strobe	Dram low address strobe timing signal.

SH7040 (IC11) Terminal function

Classification	Symbol	Input/Output	Name	Function
Bus control	$\overline{CASH}$	Output	High-order column address strobe	DRAM column address strobe timing signal. It is output when access to high-order 8bits of data is made.
	$\overline{CASL}$	Output	Low order column address strobe	DRAM column address strobe timing signal.
	RDWR	Output	Dram reading/writing	DRAM writing strobe signal.
	$\overline{AH}$	Output	Address hold	Address hold timing signal for the device which used address/data multiplex bus.
	$\overline{WRHH}$(QFP-144)	Output	HHside writting	Indicates that bit 24 is written from bit 31 of external data.
	$\overline{WRHL}$(QFP-144)	Output	HLside writting	Indicates that bit 15 is written from bit 23 of external data.
	$\overline{CASHH}$(QFP-144)	Output	HH side column address strobe	DRAM column address strobe timing signal. It is output when access to bit 24 from bit 31 of data is made.
	$\overline{CASHL}$(QFP-144)	Output	HL side column address strobe	DRAM column address strobe timing signal. It is output when access to bit 16 from bit 23 of data is made.
Multifunction timer pulse unit	TCLKA TCLKB TCLKC TCLKD	Input	MTU timer clock input	MTU counter external clock input terminal.
	TIOC0A TIOC0B TIOC0C TIOC0D	Input/output	MTU input capture/ output conveyer (channel 0)	Channel 0 input capture input/output conveyer output/PWM output terminal.
	TIOC1A TIOC1B	Input/output	MTU input capture/ output conveyer (channel 1)	Channel 1 input capture input/output conveyer output/PWM output terminal.
	TIOC2A TIOC2B	Input/output	MTU input capture/ output conveyer (channel 2)	Channel 2 input capture input/output conveyer output/PWM output terminal.
	TIOC1A TIOC1B	Input/output	MTU input capture/ output conveyer (channel 3)	Channel 3 input capture input/output conveyer output/PWM output terminal.
	TIOC1A TIOC1B	Input/output	MTU input capture/ output conveyer (channel 4)	Channel 4 input capture input/output conveyer output/PWM output terminal.
Direct memory access controller (DMAC)	DREQ0 DREQ1	Input	DMA transfer request (channel 0,1)	From-external DMA transfer request input terminal.
	DRAK0 DRAK1	Output	DREQ request reception (channel 0,1)	From-external DMA transfer request input sampling reception is output.
	DACK0 DACK1	Output	DMA transfer strobe (channel 0,1)	From-external DMA transfer request external I/O strobe is output.
Serial communication interface (SCI)	TxD0 TxD1	Output	Transmission data (channel 0 to 1)	SCI 0 and 1 transmission data output terminal.
	RxD0 RxD1	Input	Reception data (channel 0 to 1)	SCI 0 and 1 reception data input terminal.
	SCK0 SCK1	Input/output	Serial clock (channel 0 to 1)	SCI 0 and 1 clock input/output terminal.
A.D converter	AVcc	Input	Analog power	Analog power Vcc potential is connected.
	AVss	Input	Analog ground	Analog power Vss potential is connected.
	AVref (QFP-144)	Input	Analog reference power	Analog reference power input terminal.
	AN0 ~ AN7	Input	Analog input	Analog signal input terminal.
	ADTRG	Input	A/D conversion trigger input	A/D conversion state external trigger input.

SH7040 (IC11) Terminal function

Classification	Symbol	Input/Output	Name	Function
I/O port	POE0 ~ POE3	Input	Port output enable	Input terminal to perform port terminal drive control when the general-use port is set to output.
	PA0 ~ PA15 (QFP-112) PA0 ~ PA23 (QFP-144)	Input/output	General use port	General-use input/output port terminal. It is possible to specify input/output for each bit.
	PB0 ~ PB9	Input/output	General use port	General-use input/output port terminal. It is possible to specify input/output for each bit.
	PC0 ~ PC15	Input/output	General use port	General-use input/output port terminal. It is possible to specify input/output for each bit.
	PD0 ~ PD15 (QFP-112) PD0 ~ PD31 (QFP-144)	Input/output	General use port	General-use input/output port terminal. It is possible to specify input/output for each bit.
	PE0 ~ PE15	Input/output	General use port	General-use input/output port terminal. It is possible to specify input/output for each bit.
	PF0 ~ PF7	Input	General use port	General-use input port terminal.

(2) Panel control block

The following controls are performed by the Gate array (LZ9FJ49).

- Operation panel key scanning
- Operation panel LCD display

(3) Mechanism/recording control block

The following controls are performed by Gate array (LZ9FJ49).

- TX Motor control

The following controls are performed by CPU (SH2).

- Sensor detection

The following controls are performed by Gate array (TC160G33:PRINTER PWB).

- Carrier Motor control
- Feed Motor control

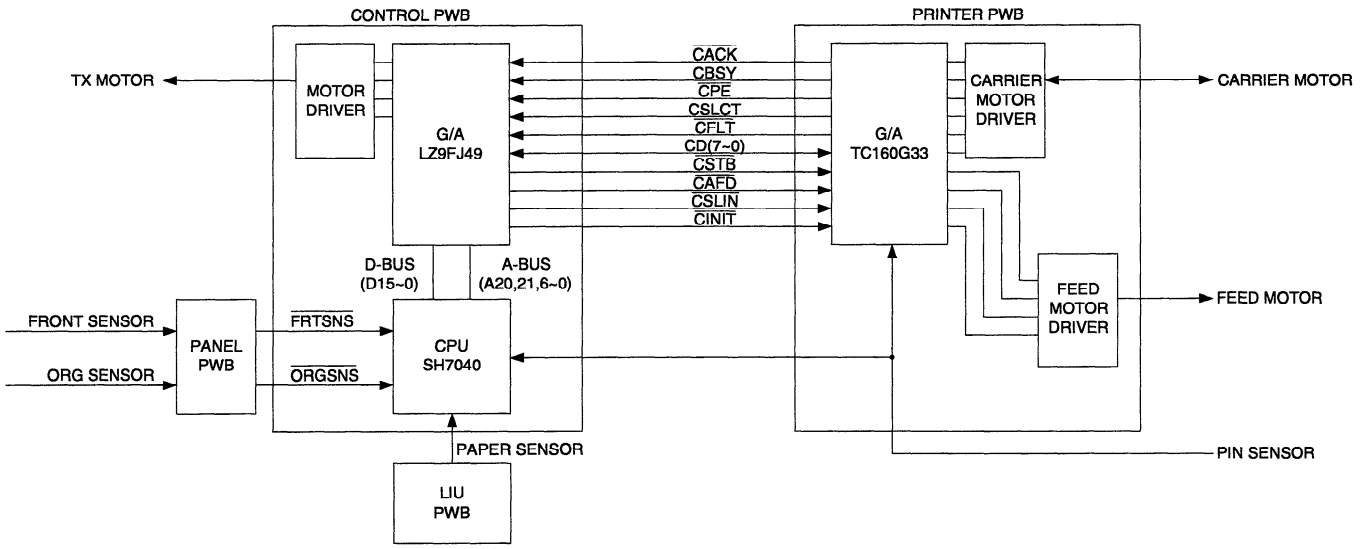


Fig. 4

(4) Modem (R144EFXL) block

INTRODUCTION

The Rockwell R144EFXL MONOFAX modem is a synchronous 14400 bits per second (bps) half-duplex modem with error detection and DTMF reception. It has low power consumption and requires only a single +5V DC power supply. The modem is housed in a single VLSI device package.
The modem can operate over the public switched telephone network (PSTN) through line terminations provided by a data access arrangement (DAA).
The R144EFXL is designed for use in Group 3 facsimile ma-chines.
The modem satisfies the requirements specified in CCITT recommendations V.29, V.27 ter, V.21 Channel 2 and T.4, and meets the binary signaling requirements of T.30.
The modem can operate at 14400, 9600, 7200, 4800, 2400, or 300 bps, and also includes the V.27 ter short training sequence option.
The modem can also perform HDLC framing according to T.30 at 14400, 9600, 7200, 4800, 2400, or 300 bps.
The modem features a programmable DTMF receiver and three programmable tone detectors which operate concurrently with the V.21 channel 2 receiver.
The voice mode allows the host computer to efficiently transmit and receive audio signals and messages.
The modem is available in either a 100-pin plastic quad flat pack (PQFP) or a 64-pin quad in-line package (QUIP).
General purpose input/output (GPIO) pins are available for host as signment in the 100-pin PQFP.
The modem's small size, single voltage supply, and low power consumption allow the design of compact system enclosures for use in both office and home environments.
MONOFAX is a registered trademark of Rockwell International.

FEATURES

- Group 3 facsimile transmission/reception
  - ITU-TS V.29, V.27 ter, T.30, V.21 Channel 2, T.4
  - HDLC Framing at all speeds
- V.27 ter short train
- Concurrent DTMF, FSK, and tone reception
- Voice mode transmission/reception
- Half-duplex (2-wire)
- Programmable maximum transmit level:
  0 dBm to –15 dBm
- Programmable transmit analog attenuation:
  0 dB to 14 dB in 2 dB steps
- Receive dynamic range: 0 dBm to –43 dBm
- Programmable dual tone generation
- Programmable tone detection
- Programmable turn-on and turn-off thresholds
- Programmable interface memory interrupt
- Diagnostic capability
  - Allows telephone line quality monitoring
- Equalization
  - Automatic adaptive equalizer
  - Fixed digital compromise equalizer
- DTE interface: two alternate ports
  - Selectable microprocessor bus (6500 or 8085)
  - CCITT V.24 (EIA-232-D compatible) interface
- TTL and CMOS compatible
- Low power consumption: 275 mW (typical)
- Single Package
  - 100-pin PQFP
  - 64-pin QUIP
- Single +5VDC power supply

R144EFXL (IC16) Hardware Interface Signals

Pin No.	Signal Name	I/O Type
1	GP03	IA/OB
2	GP04	IA/OB
3	GP05	IA/OB
4	GP06	IA/OB
5	GP07	IA/OB
6	0VD2	GND
7	0VD2	GND
8	D7	IA/OB
9	D6	IA/OB
10	D5	IA/OB
11	D4	IA/OB
12	D3	IA/OB
13	D2	IA/OB
14	D1	IA/OB
15	D0	IA/OB
16	0VD2	GND
17	0VA	GND
18	RAMPIN	R
19	NC	
20	NC	
21	0VA	GND
22	+5VD2	PWR
23	0VD1	GND
24	SWGAINI	R
25	ECLKIN1	R
26	SYNCIN1	R
27	NC	
28	NC	
29	NC	
30	0VA	GND
31	NC	
32	NC	
33	NC	
34	DAIN	R
35	ADOUT	R
36	BYPASS	IC
37	RCVI	R
38	TXLOSS3	IC
39	TXLOSS2	IC
40	TXLOSS1	IC
41	NC	
42	NC	
43	0VA	GND
44	TXOUT	AA
45	RXIN	AB
46	+5VA	PWR
47	0VA	GND
48	AGD	R
49	AOUT	R
50	0VD1	GND
51	NC	
52	$\overline{\text{IRQ}}$	OC
53	$\overline{\text{WRITE-R/W}}$	IA
54	$\overline{\text{CS}}$	IA
55	$\overline{\text{READ}}$-ϕ2	IA
56	RS4	IA
57	RS3	IA
58	RS2	IA
59	RS1	IA

Pin No.	Signal Name	I/O Type
60	RS0	IA
61	GP13	IA/OB
62	NC	
63	GP11	IA/OB
64	$\overline{\text{RTS}}$	IA
65	$\overline{\text{EN85}}$	R
66	0VD2	GND
67	$\overline{\text{PORI}}$	ID
68	XTLI	R
69	XTLO	R
70	XCLK	OD
71	YCLK	OD
72	+5VD1	PWR
73	DCLK1	R
74	SYNCIN2	R
75	GP16	IA/OB
76	GP17	IA/OB
77	0VD2	GND
78	$\overline{\text{CTS}}$	OA
79	TXD	IA
80	0VD2	GND
81	0VD2	GND
82	DCLK	OA
83	EYESYNC	OA
84	EYECLKX	OA
85	EYECLK	OA
86	EYEX	OA
87	ADIN	R
88	DAOUT	R
89	0VD2	GND
90	EYEY	OA
91	GP21	IA/OB
92	0VD2	GND
93	GP20	IA/OB
94	GP19	IA/OB
95	RXD	OA
96	$\overline{\text{RLSD}}$	OA
97	0VD2	GND
98	RCVO	R
99	SWGAINO	R
100	GP02	IA/OB

Notes:
1. NC = No connection; leave pin disconnected (open).
2. I/O Type: = Digital signals: see Table 9;
   Analog signals: see Table 10.
3. R = Required modem inter-connection; no connection to host equipment.

(5) Image signal process block

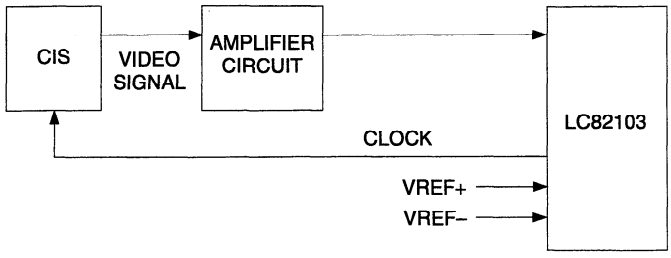


Fig. 5

The CIS is driven by the LSI (LC82103), and the output video signal from the CIS is input into the LC82103 through the amplifying circuit . The ADC and buffer are provided in the LC82103, and the digital image processing is performed.

(6) Speaker amplifier

The speaker amplifier monitors the line under the on-hook mode, outputs the buzzer sound generated from the SH7040, ringer sound, DTMF generated from the modem, and line sound.

(7) Adjustment of voice/ringer volume

The voice/ringer volume can be adjusted by using the panel bottons "UP" and "DOWN".

- The ringer volume can be adjusted in the Stand-by mode by pressing the UP/DOWN button.
- The reception level can be adjusted by pressing the UP/DOWN button when the handset is located in the off-hook state.
- The speaker volume can be adjusted by using the speaker key.

[3] Circuit description of TEL/LIU PWB

(1) TEL/LIU block operational description

1) Block diagram

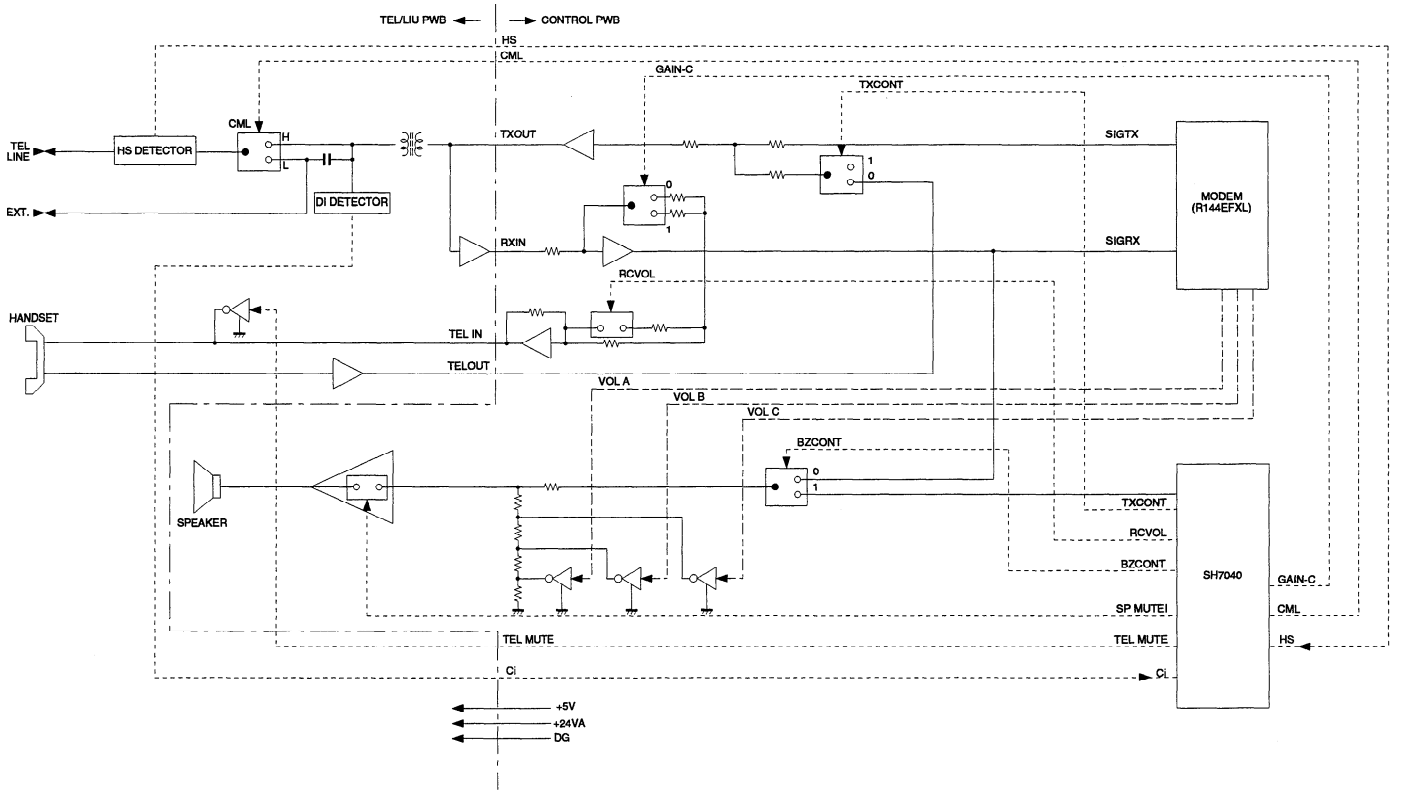


Fig. 6

2) Circuit description

The TEL/LIU PWB is composed of the following 10 blocks.

1. Surge protection circuit
2. On-hook status detection circuit
3. Dial pulse generation circuit
4. CML relay
5. Matching transformer
6. Hybrid circuit
7. Signal selection
8. Sensor circuit
9. CI detection circuit
10. Power supply and bias circuit

3) Block description

1. Surge Protection circuit

This circuit protects the circuit from the surge voltage occurring on the telephone line.

- The AR1 protects the circuit from the 390V or higher line surge voltages.
- The VA1 and VA2 protect the circuit from the 470V or higher vertical surge voltages.

2. On-hook status detection circuit

The on-hook status detection circuit detects the Status of the hook switch (RHS) of Built-in telephone, and the status of the hook of a telephone externally connected.

- The status of on-hook switch (RHS) is determined from the logical level of $\overline{RHS}$ signal.

  $\overline{RHS}$ LOW : ON-HOOK

  $\overline{RHS}$ HIGH : OFF-HOOK

- External telephone hook status detection circuit (HS)

This circuit comprises the photo-coupler PC1, resistors R3 and R4, Zener diodes ZD1 and ZD2.

When an external telephone is connected and enters the on-hook mode, the LED of photo-coupler PC1 emits light and the light receiv ing element turns on. The status signal HS is input to the pin 95 of (SH7040) (IC11: control PWB).

HS LOW : EXT. TEL OFF-HOOK

HS HIGH : EXT. TEL ON-HOOK

3. Dial pulse generation circuit

The pulse dial generation circuit comprises the CML relay.

4. CML relay

The CML relay switches over connection to the matching transformer T1 while the FAX or built-in telephone is being used.

5. Matching transformer

The matching transformer performs electrical insulation from the telephone line and impedance matching for transmitting the TEL/FAX signal.

6. Hybrid circuit

The hybrid circuit performs 2-wire-to-4-wire conversion using the IC2 of operational amplifier, transmits the voice transmission signal to the line, and feeds back the voice signal to the voice reception circuit as the side tone.

7. Signal selection

The following signals are used to control the transmission line of TEL/FAX signal. For details, refer to the signal selector matrix table.

[Control signals from output port]

<table>
<tr><th>Signal Name</th><th>Description</th></tr>
<tr><td>CML</td><td>Line connecting relay and DP generating relay
H: Line make
L: Line break</td></tr>
<tr><td>SP MUTE</td><td>Speaker tone mute control signal
H: Muting (Power down mode)
L: Muting cancel (Normal operation)</td></tr>
<tr><td>TEL MUTE</td><td>Handset reception mute control signal
H: Muting
L: Muting cancel</td></tr>
<tr><td>RCVOL

(The circuit is located in the control PWB.)</td><td>Handset receiver volume control signal
<table>
<tr><th>Volume</th><th>High</th><th>Middle</th><th>DTMF sending</th></tr>
<tr><td>RCVOL</td><td>H</td><td>L</td><td>L</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>
SIDE KICK is two-stage switching.
Note: The DTMF sending listed above is DTMF signal sending in the handset OFF-HOOK mode.</td></tr>
<tr><td>VOL A
VOL B
VOL C

(The circuit is located in the control PWB.)</td><td>Speaker volume control signal
VRSEL1 VRSEL2 matrix
<table>
<tr><th></th><th>VOL A</th><th>VOL B</th><th>VOL C</th><th>RING./ Receiving</th><th>Buzzer</th><th>DTMF</th></tr>
<tr><td></td><td>L</td><td>L</td><td>L</td><td>High</td><td>—</td><td>High</td></tr>
<tr><td></td><td>H</td><td>L</td><td>L</td><td>Middle</td><td>Fixed</td><td>Middle</td></tr>
<tr><td></td><td>L</td><td>L</td><td>H</td><td>Low</td><td>—</td><td>Low</td></tr>
</table></td></tr>
<tr><td>TXCONT
(The circuit is located in the control PWB.)</td><td>TXOUT mute signal
H: Signal sending, when transmitting
L: During reception, transmission mute, (during standby)</td></tr>
<tr><td>GAIN-C
(The circuit is located in the control PWB.)</td><td>Reception gain switching signal
L: When connected to line, 1: 1 gain
H: When not connected to line, HIGH gain</td></tr>
<tr><td>MPX A
(The circuit is located in the control PWB.)</td><td>Transmission/transfer switching signal
H: When transmitting modem signal (during standby)
L: When transferring</td></tr>
<tr><td>BZCONT
(The circuit is located in the control PWB.)</td><td>Speaker output signal switching
H: Buzzer signal output
L: When monitoring line signal</td></tr>
</table>

[Signals for status recognition according to input signals]

Signal Name	Function
$\overline{RHS}$	H: The handset is in the on-hook state. L: The handset is in the off-hook state.
CI	Incoming call (CI) detection signal.
$\overline{HS}$	H: The handset or external telephone is in the on-hook state. L: The handset or external telephone is in the off-hook state.
P.E	L: No recording paper. H: Recording paper exists.
DRSNS	H: Door open. L: Door close.

[Other signals]

Signal Name	Function
TEL IN	Receiving signal from line or modem
TEL OUT	Transfer signal to line
TXOUT	Transmission (DTMF) analog signal output from modem
RXIN	Reception (DTMF, others) analog signal input into modem

NO	Signal Name (CNLIU)	NO	Signal Name (CNLIU)
1	+24VA	8	RHS
2	DG	9	TXOUT
3	$\overline{PE}$	10	RXIN
4	+5V	11	TELMUTE
5	CML	12	N.C.
6	CI	13	TELOUT
7	HS	14	TELIN

8. Sensor circuit

For the recording paper sensor (P.E), when there is recording paper, the photo transistor in the light receiving side is ON and the detection level is LOW. When there is no recording paper, the photo transistor in the light receiving side is OFF and the detection level is HIGH.

9. CI detection circuit

The CI detection circuit detects the CI signals of 15.3Hz to 68Hz.
A CI signal, which is provided to the photo-coupler PC1 through the C1 (0.82 uF), R3 (22 K), and ZD3 when the ring signal is inputted from the telephone line.

10. Power supply and bias circuits

The voltages of +5V and +24VA are supplied from the control PWB unit.

(Example: Fax signal send)

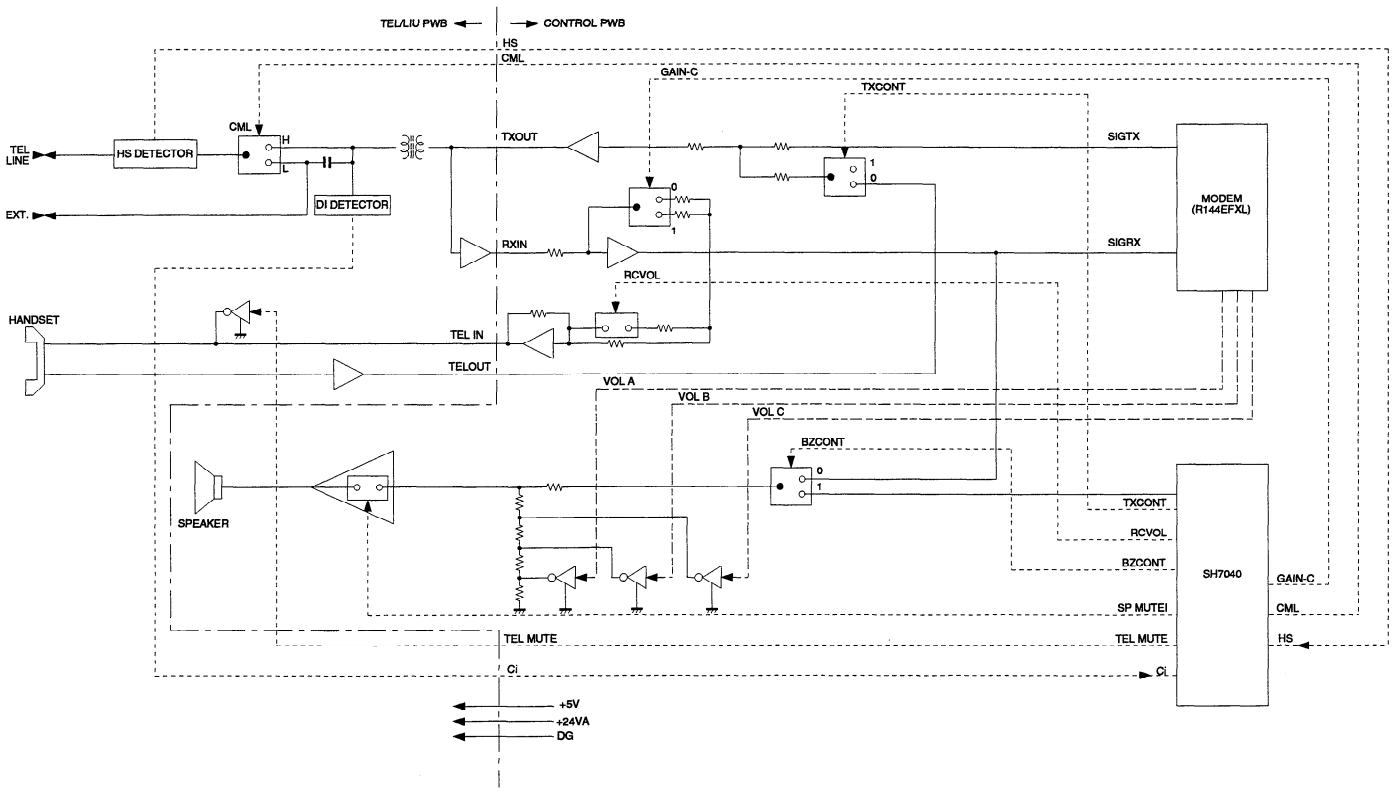


Fig. 7

[4] Circuit description of power supply PWB

(1) Block diagram

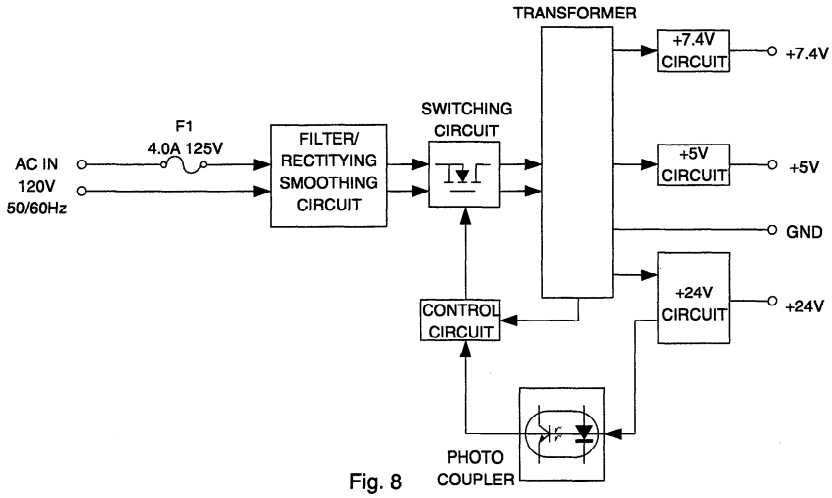


Fig. 8

The power unit intakes input of AC 120V, 50/60 Hz and supplies output of +24V, +7.4V and +5V as shown in the block diagram. (See Fig. 8.)

2-1. Filter, rectifying and smoothening circuit

In the filter section, the noise generated from the power unit is eliminated from being discharged to the external, and external noise is prevented from entering. Thunder or other excessive surge is prevented by the varistor Z1.
In the rectifying and smoothening section, AC input is rectified by the diodes D10, 11, 12 and 13, and is smoothened by the capacitor C5.
Thus, DC voltage is supplied to the switching section. Moreover, the thermistor NTC1 prevents surge current when the power is turned on.

2-2. Switching section

The circuit uses the ringing choke converter of a self-excited type.
Since MOS.
FETQ1 is repeatedly turned on and off in this system, the DC voltage supplied from the rectifying and smoothening section is converted into the high frequency pulses. While Q1 is on, energy is accumulated in the primary winding of the transformer T1, and while Q1 is off, energy is discharged to the secondary side. Thus, the power is supplied.
Moreover, the frequency is varied depending on the load of the output. As the load becomes the heavier, the frequency becomes the smaller to extend the ON period.
The constant voltage is controlled by applying the feedback to the control circuit through the photo coupler PC1 from +24V output. The overcurrent-protective circuit detects that the ON period becomes the wider as the output load becomes the heavier. For the control, the OFF period is extended by the control circuit to squeeze the energy which is accumulated in the primary winding of the transformer T1.
For protection against overvoltage, the rise of the output voltage of +24V on the secondary side is brought into the overcurrent state through the continuity of the power zener diode D104 between +24V output and GND. Thus, the overcurrent-protective circuit of the control circuit is activated for the protection.

2-3. +24V circuit

Output is supplied by rectifying and smoothening the output of the transformer T1 with the diode D101 and capacitor C101.

2-4. +5V circuit

+5 V output is generated by rectifying and smoothening the output of the transformer T1 with the diode D102 and capacitor C102 and stabilizing it with the 3-terminal regulator IC103.

2-5. +7.4V circuit

This circuit rectificats and smoothings the high-frequency pulse voltage, and output the DC +7.4V to the equipment.

[5] Circuit description of CIS PWB

The CIS board picks up optical information from the document, converts it into an electrical (analog) signal and transfers it to the control board.

(1) Block diagram

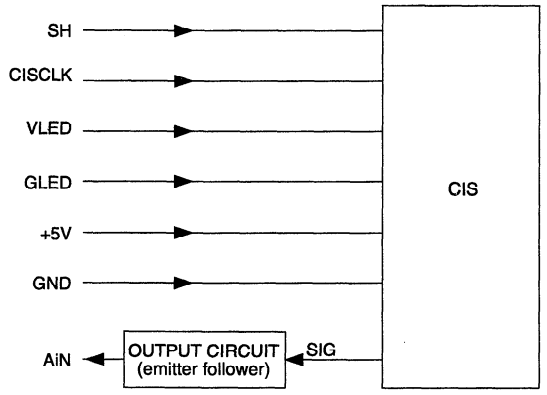


Fig. 9

(2) Description of blocks

1. CIS

The GK3R216SH is a highly sensitive charged coupled image sensor that consists of 2552 picture elements.

Receiving four drive signal (SI,CLK) from the control board, the tranferred photoelectric analog signal SIG is impedance converted, and the signal AiN, is supplied to the control board.

2. Waveforms

1. CLK, SI, SIG signals within the control board.

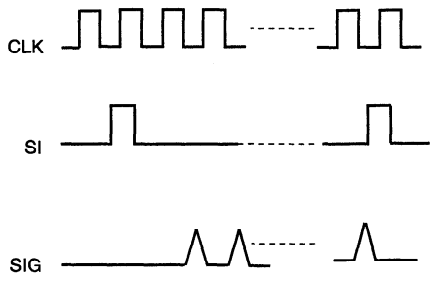
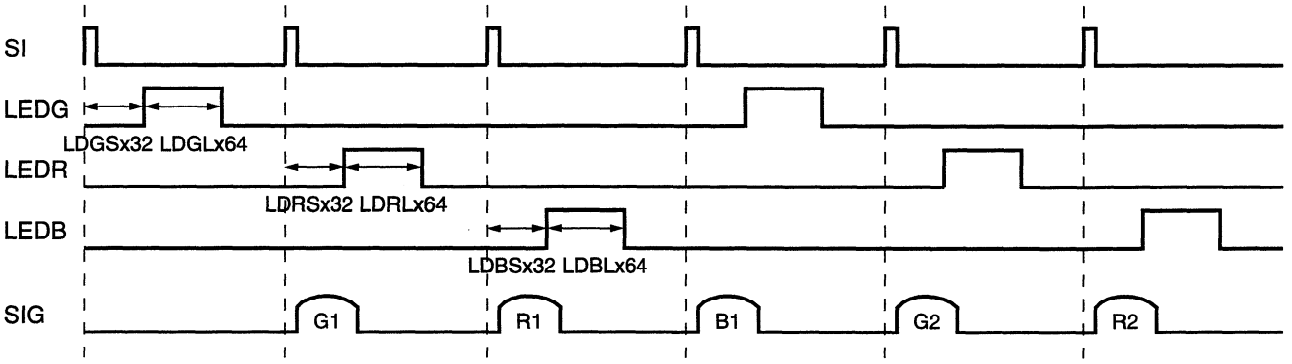


Fig. 10

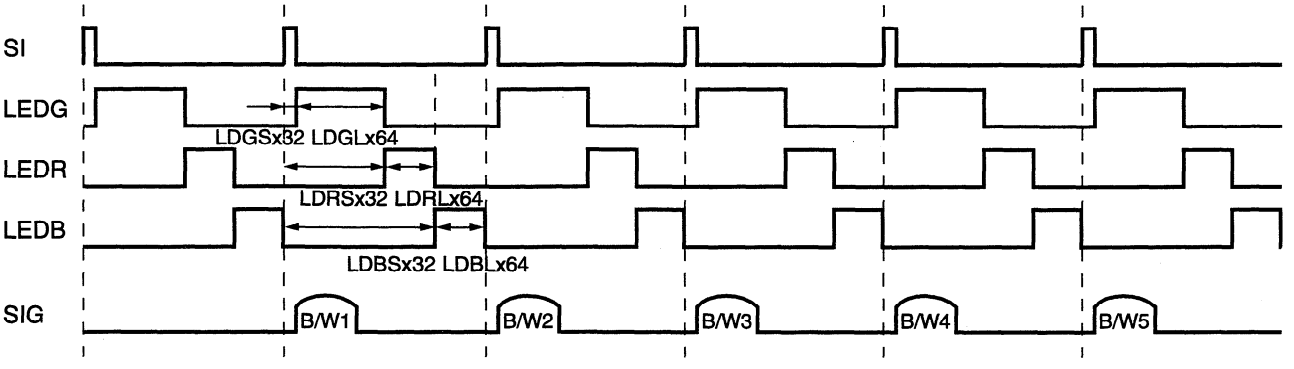
3. Wave level auto control

- When shading, each color (G,R,B) output level are checked, and adjust best level by its led on time.
- When color mode scanning, 3 colors on.
  When B/W mode scanning, G&R colors on.
  When B/W H-T mode scanning, 3 colors on.

COLOR MODE



B/W MODE



[6] Color scanner block

The block (Fig. 1) is composed of color contact image sensor (GK3R216SH). GK3R216SH is the color tight-contact type image sensor (CIS) with scanning width 216 mm which consists of rod lens array, LED light source and sensor PWB. The light source is composed of three-color (blue, green, red) LEDs.

(GK3R216SH)

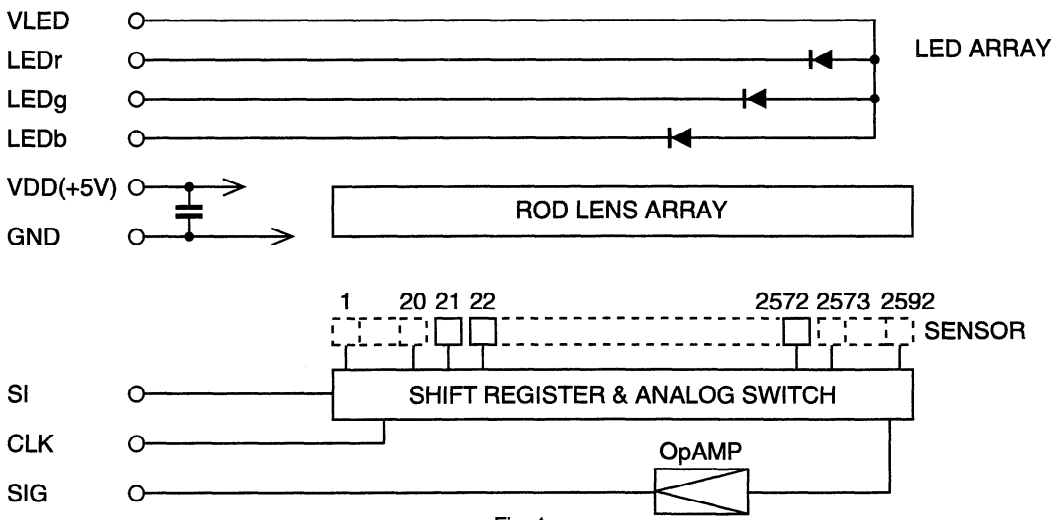


Fig. 1

Specification

Effective scanning width : 216 mm
Picture element density : 300 dpi
Number of effective picture elements : 2,552 dots
LED light source wavelength
Red : 640±15 nm (35 mA)
Green : 525±20 nm (50 mA)
Blue : 470±15 nm (50 mA)

The analog picture signal sig can be obtained by giving the signals clk, si, LEDr, LEDg, and LEDb to this CIS.
For detailed timing refer to Fig. 2 and Fig. 3.

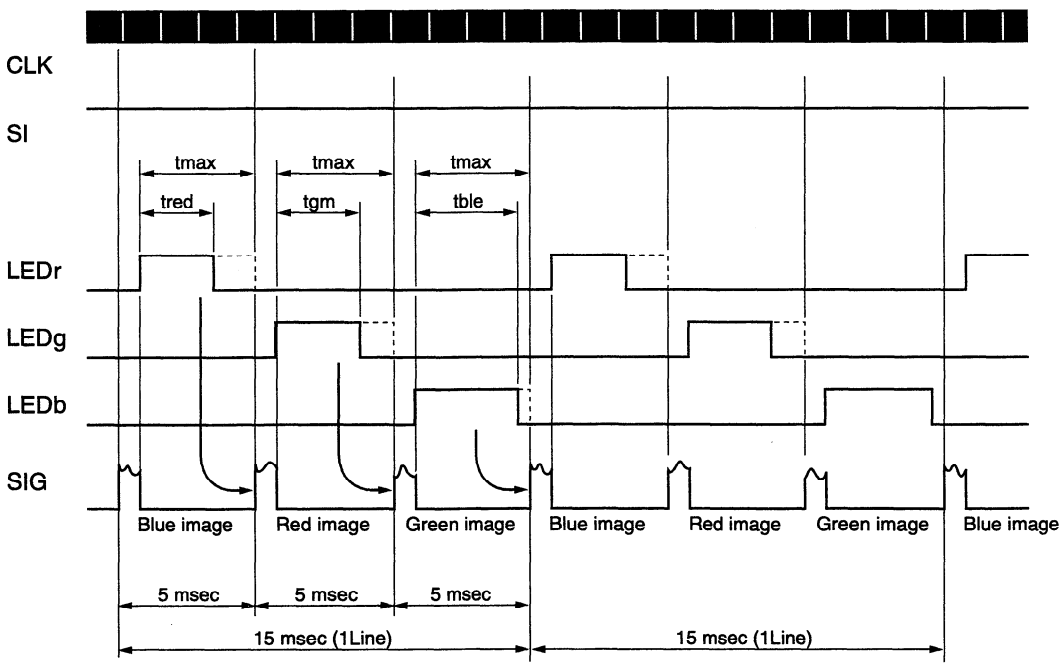
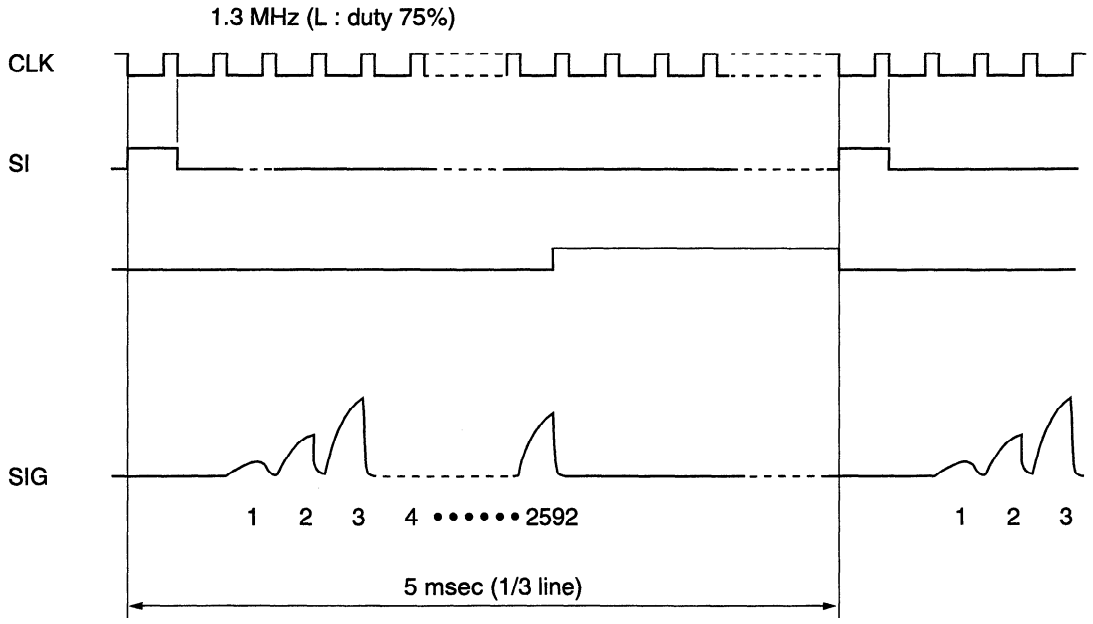


Fig. 2



※ The number of effective picture elements is from the 21st to the 2572nd picture elements, namely 2,552 picture elements.

Fig. 3

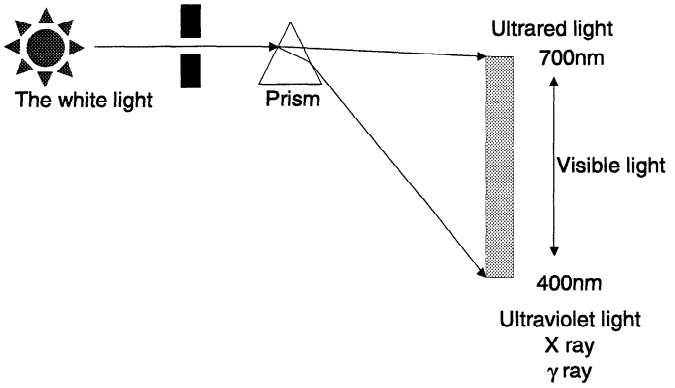
Shading Correcting Method

Shading Correction is enabled by the unit when scanning an image for transmitting,copying,or file transfers.
LEDr, LEDg and LEDb reference the factory default shading value.
However, if color balance is out of specification,use must perform Shading Correction Mode.
When performed, each variable of LEDr, LEDg and LEDb are stored and then combined to set the shading correction value.

[7] Basis of color

(1) Physical properties of light

The light is a kind of electromagnetic waves which are classified by wavelength. The white light such as sunlight is mixture of lights of different wavelengths which can be divided into monochromatic lights of different wavelength through the prism. The wavelength of visible light is from 400 nm to 700 nm.



Wavelength(nm)	Color name
380~430	Bluish violet
430~467	Violet blue
467~483	Blue
483~488	Greenish blue
488~493	Blue green
493~498	Bluish green
498~530	Green
530~558	Yellowish green
558~569	Yellow green
569~573	Greenish yellow
573~578	Yellow
578~586	Yellowish orange
586~597	Orange
597~640	Raddish orange
640~780	Red

Unit of scale

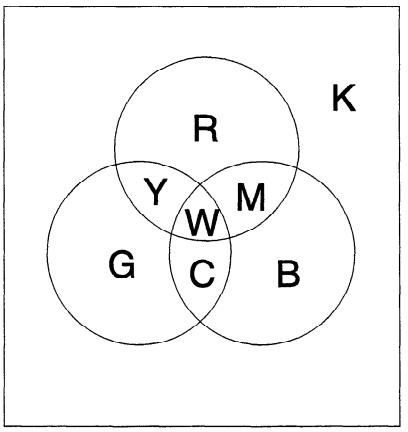
T(Tera)	$= 10^{12}$
G(Giga)	$= 10^{9}$
M(Mega)	$= 10^{6}$
K(Kilo)	$= 10^{3}$
m(Milli)	$= 10^{-3}$
μ(Micro)	$= 10^{-6}$
n(Nano)	$= 10^{-9}$
p(Pico)	$= 10^{-12}$

(2) Expression of colors

The visible colors can be expressed by combination of red R, green G and blue B. Various colors are obtained by making basic colors on the display or print. This effect is called the color mixture which divided into additive color mixture and subtractive color mixture.

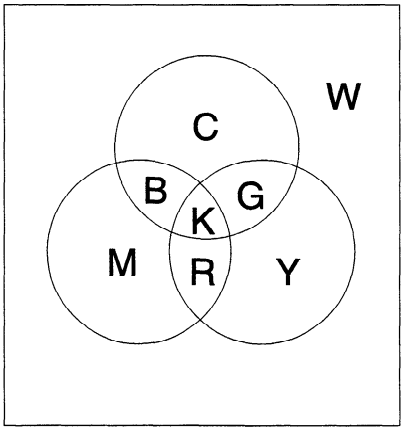
1. Additive color mixture

The R, G and B fluorescent paints are applied to the CRT display, and various colors are obtained with the aid of electron beam. Thus, the combination of R, G and B to get colors is called the additive color mixture. If R, G, and B of the same intensity are mixed, white color is obtained.



2. Subtractive color mixture

The basic colors of print inks are C, M and Y. C absorbs R, M absorbs G, and Y absorbs B. If an ink is applied to the white paper and is exposed to the light (R + G + B), the R, G and B components are absorbed depending on the concentration of CMY inks, and the reflected light appears as combination of RGB. Thus, the color expression based on the subtraction is called the subtractive color mixture.



Meaning of symbols

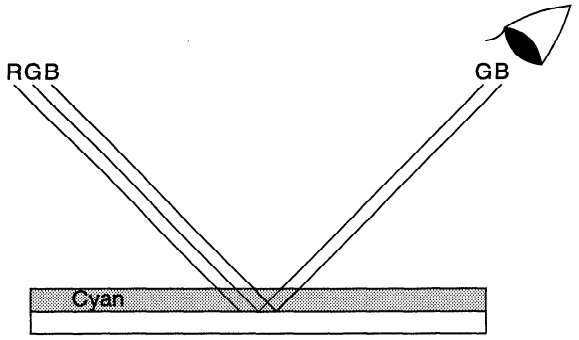
R	Red	C	Cyan
G	Green	M	Magenta
B	Blue	Y	Yellow
W	White	K	Black

(3) Ink coloring mechanism

Cyan

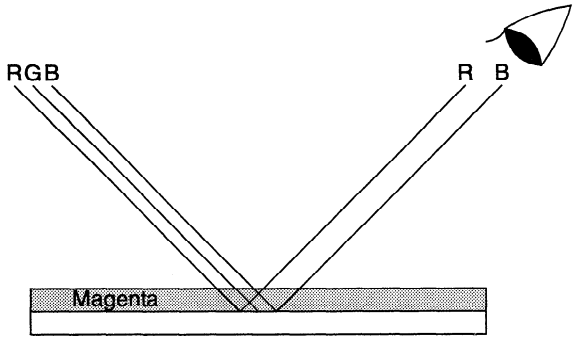
The cyan ink absorbs the R (red) light.

When the cyan ink is exposed to the white light composed of R, G and B, R is absorbed, but G + B is reflected and visible. When G and B are incident together, the cyan color appears.



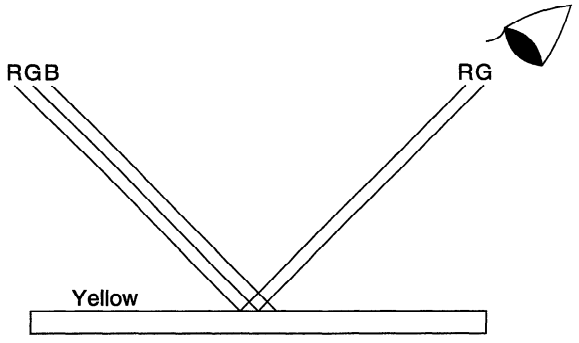
Magenta

The magenta ink absorbs the G (green) light. When the magenta ink is exposed to the white light composed of R, G and B, G is absorbed, but R + B is reflected and visible. When R and B are incident together, the magenta color appears.



Yellow

The yellow ink absorbs the B (blue) light. When the yellow ink is exposed to the white light composed of R, G and B, B is absorbed but R + G is reflected and visible. When R and G are incident together, the yellow color appears.

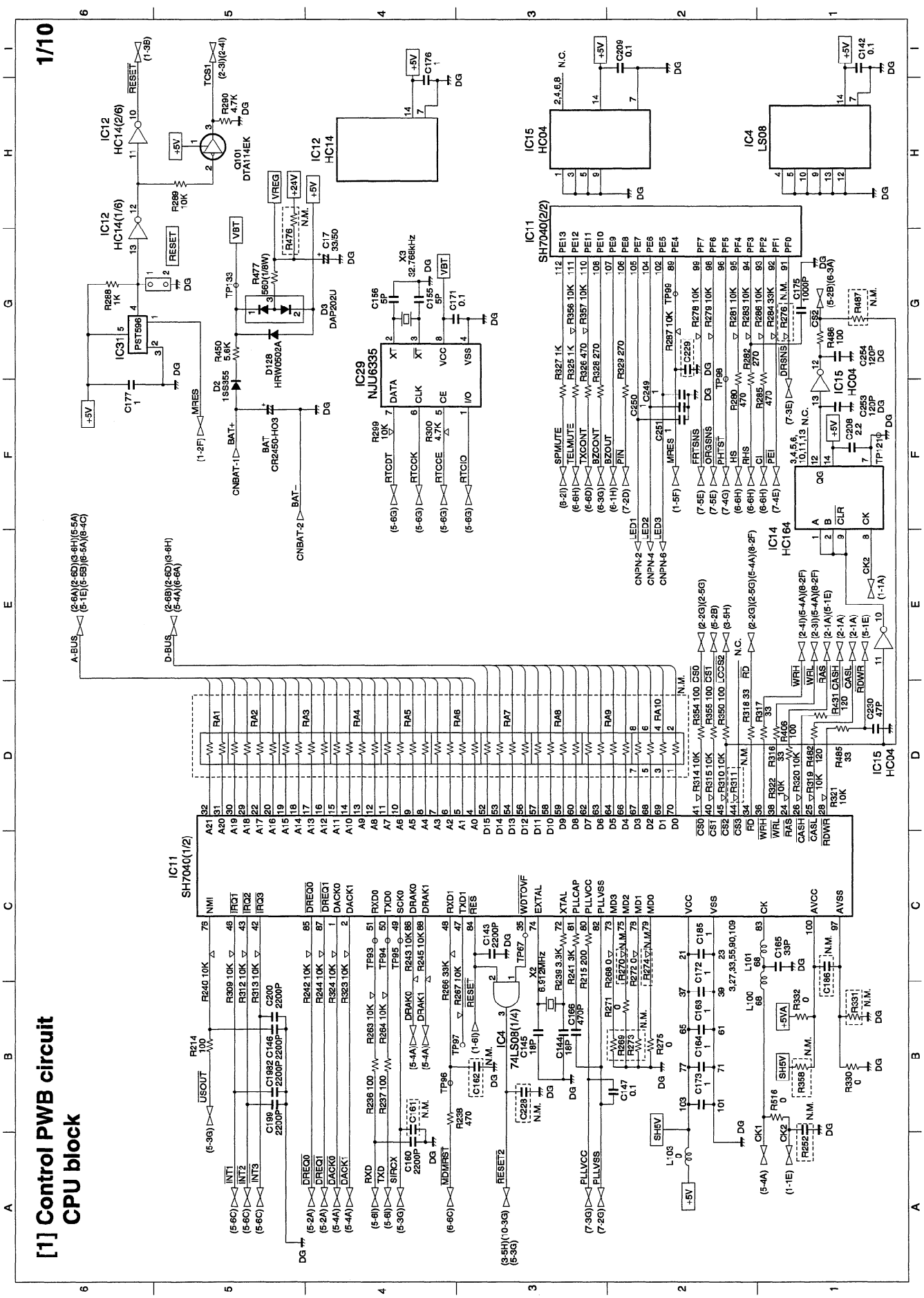


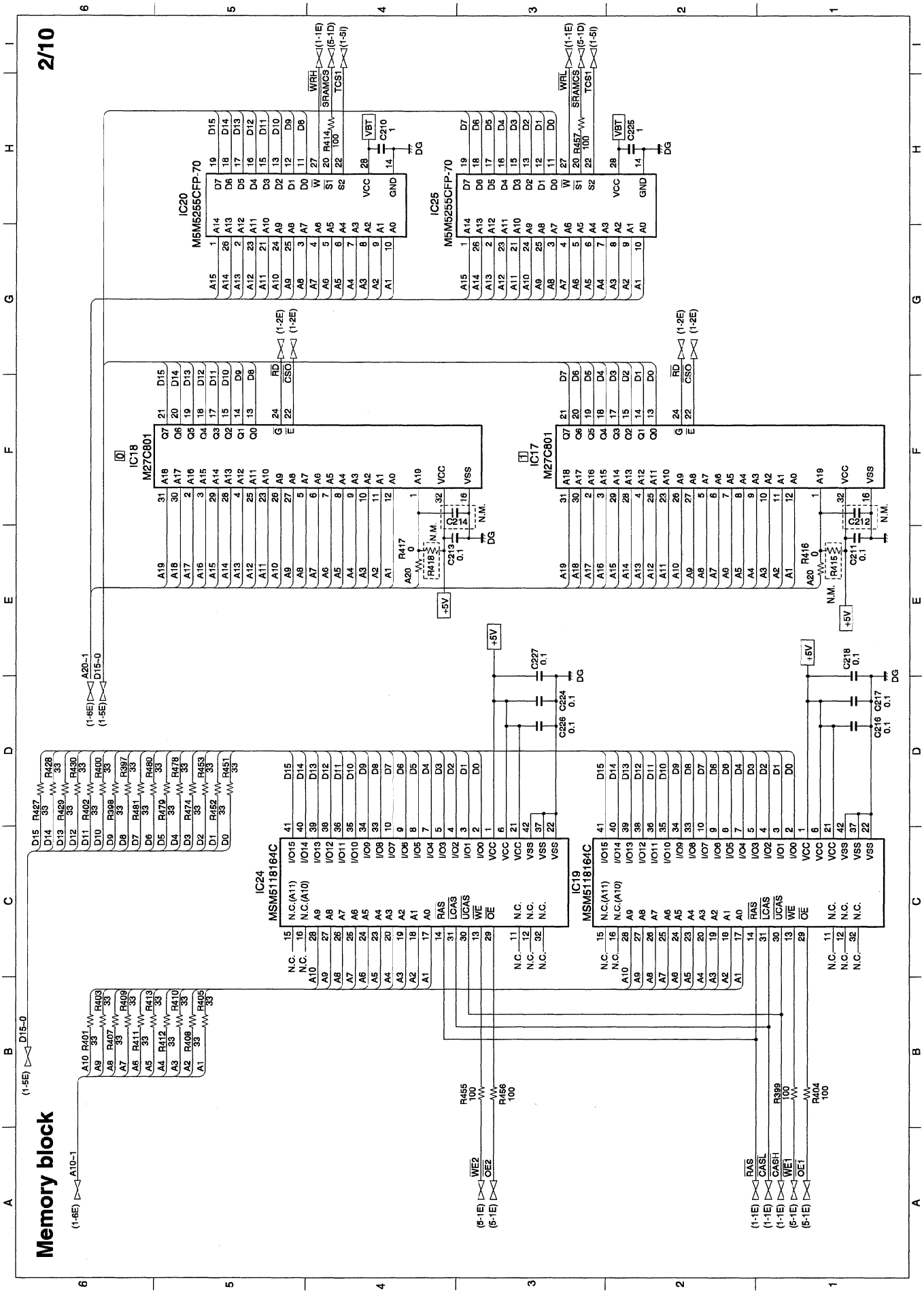
Basic print colors are CMYK

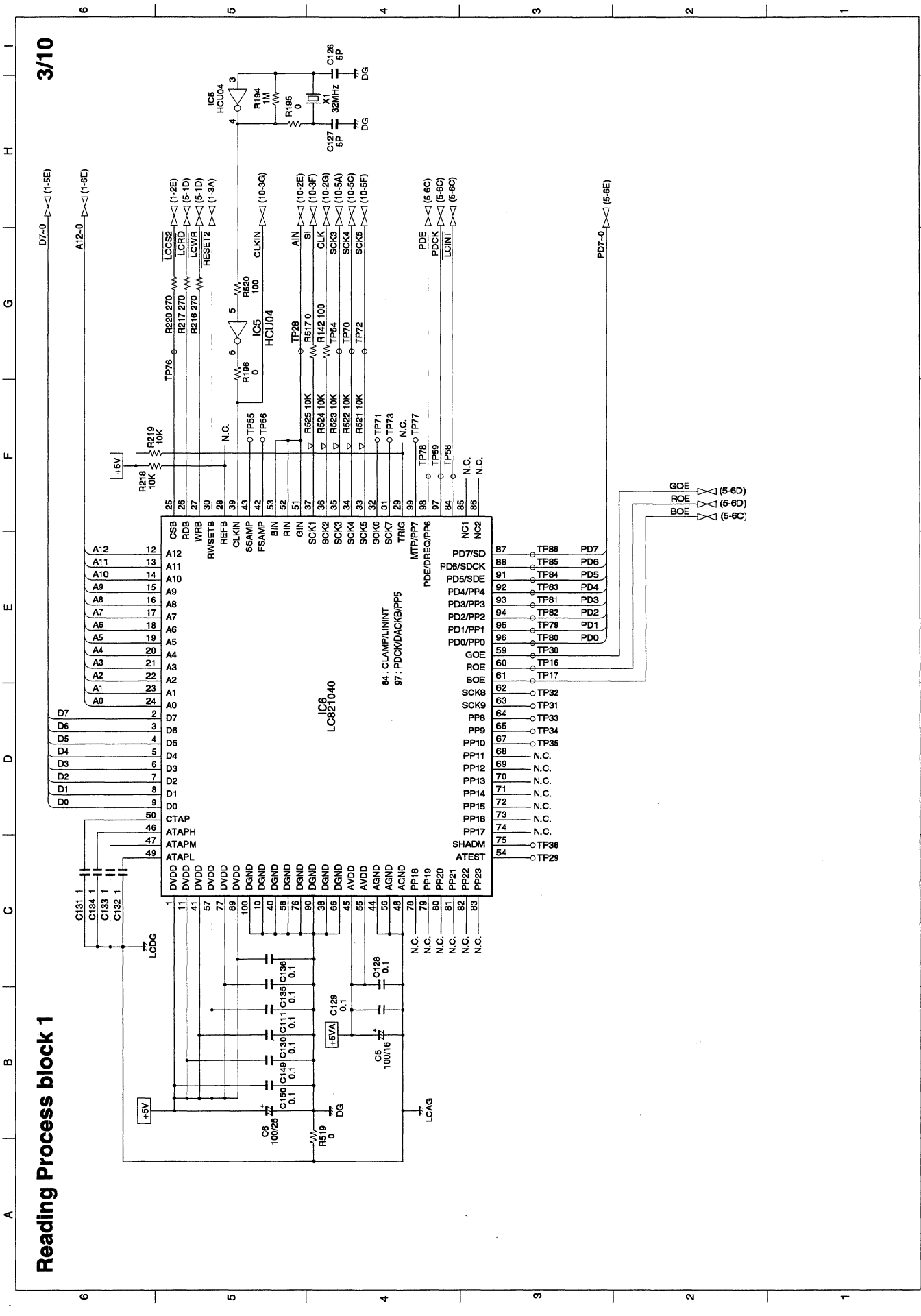
Actually, the perfect CMY ink does not exist. Even when C, M and Y are added, perfect black is not obtained but dark brown is obtained. Hence, in some cases the K (black) ink is added to get the deepness and detail.

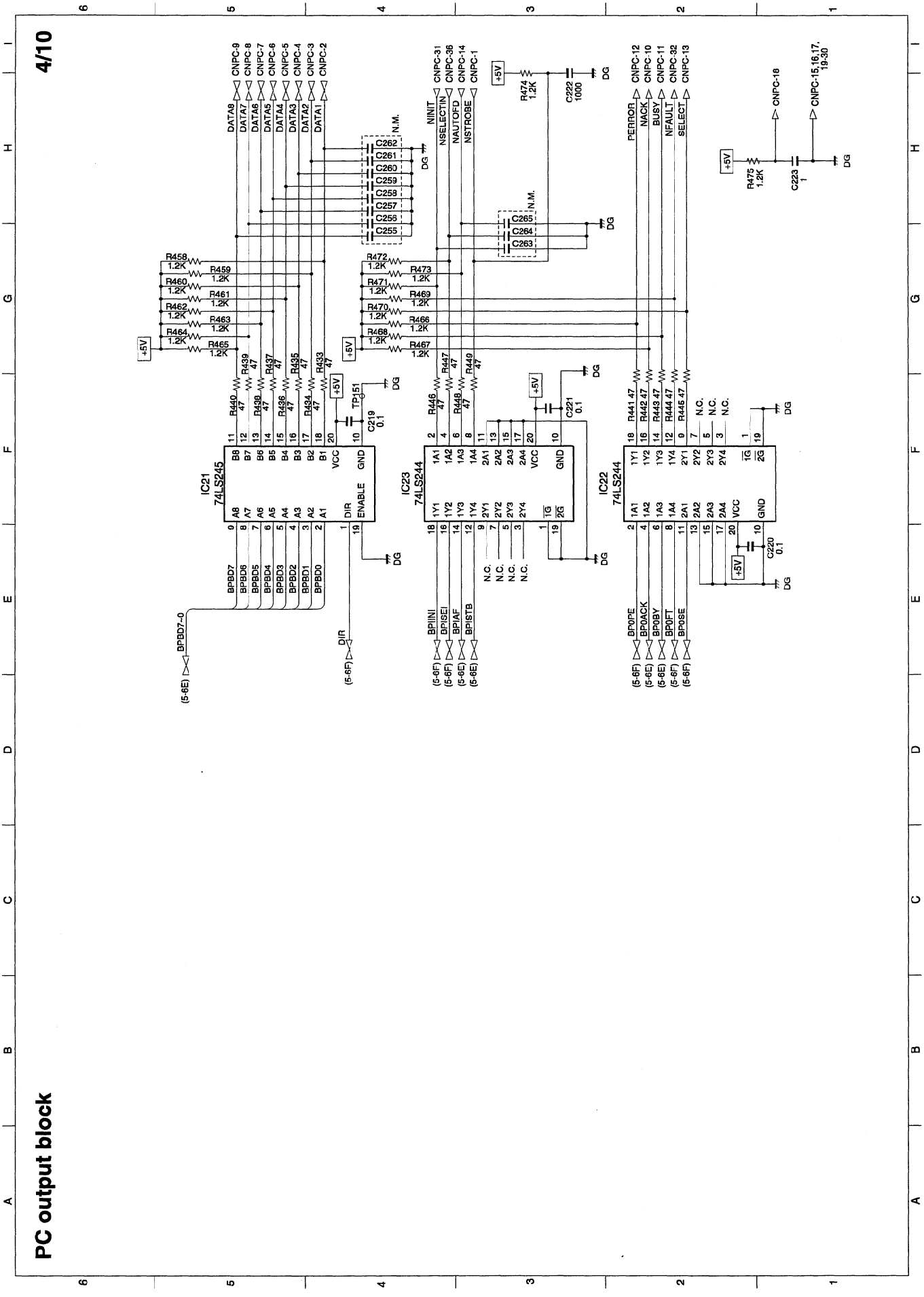
CHAPTER 6. CIRCUIT SCHEMATICS AND PARTS LAYOUT

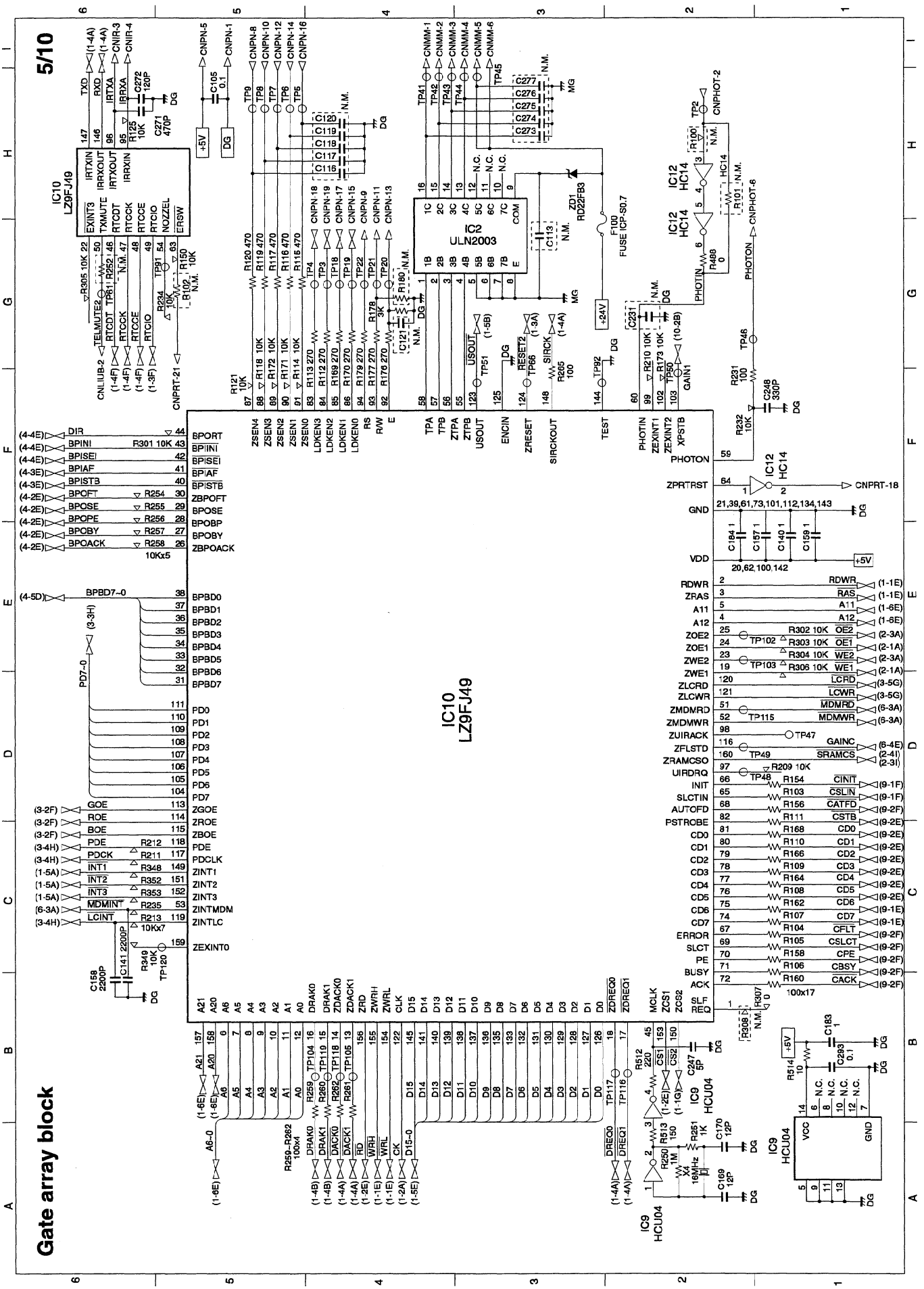
[1] Control PWB circuit
CPU block

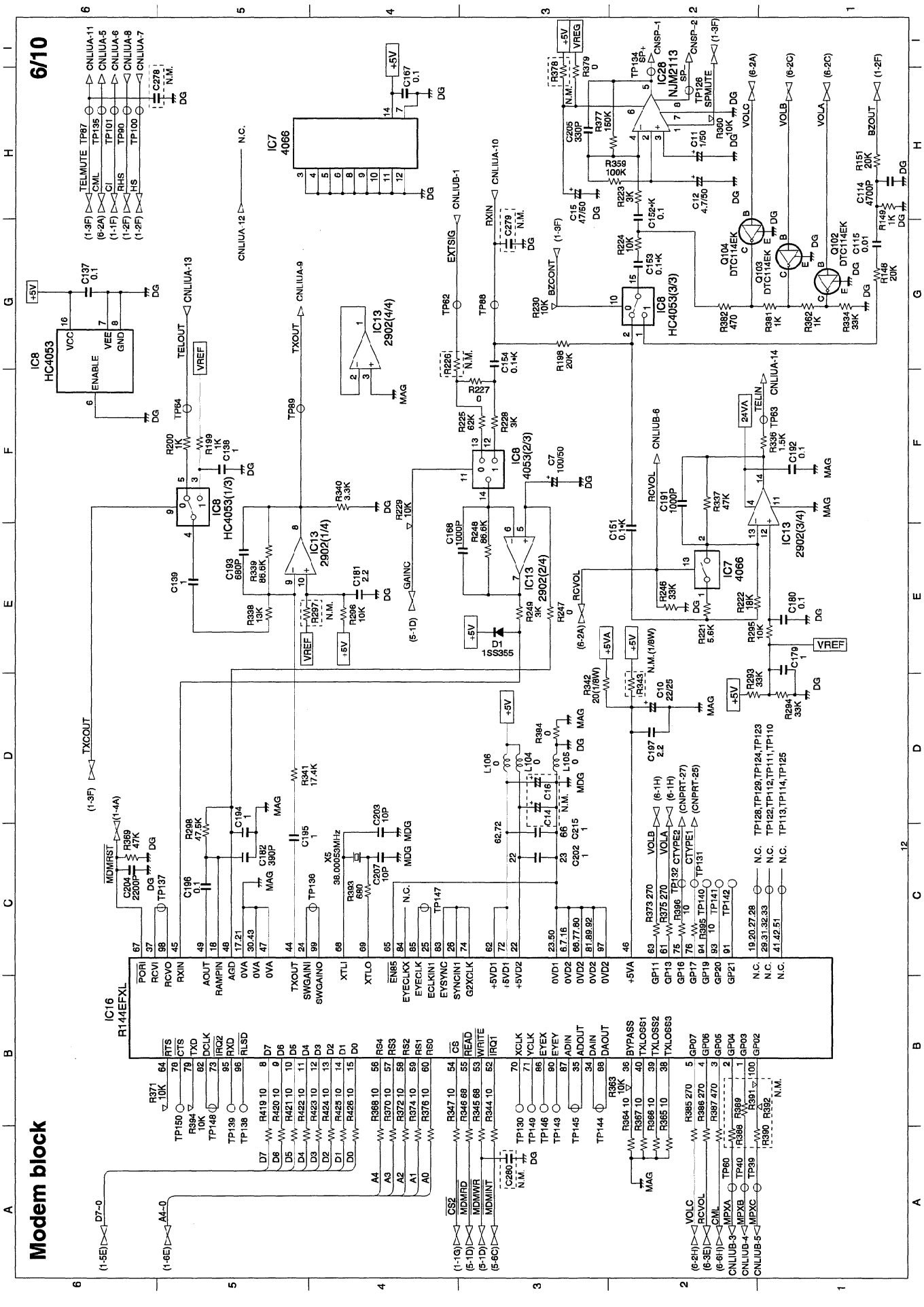


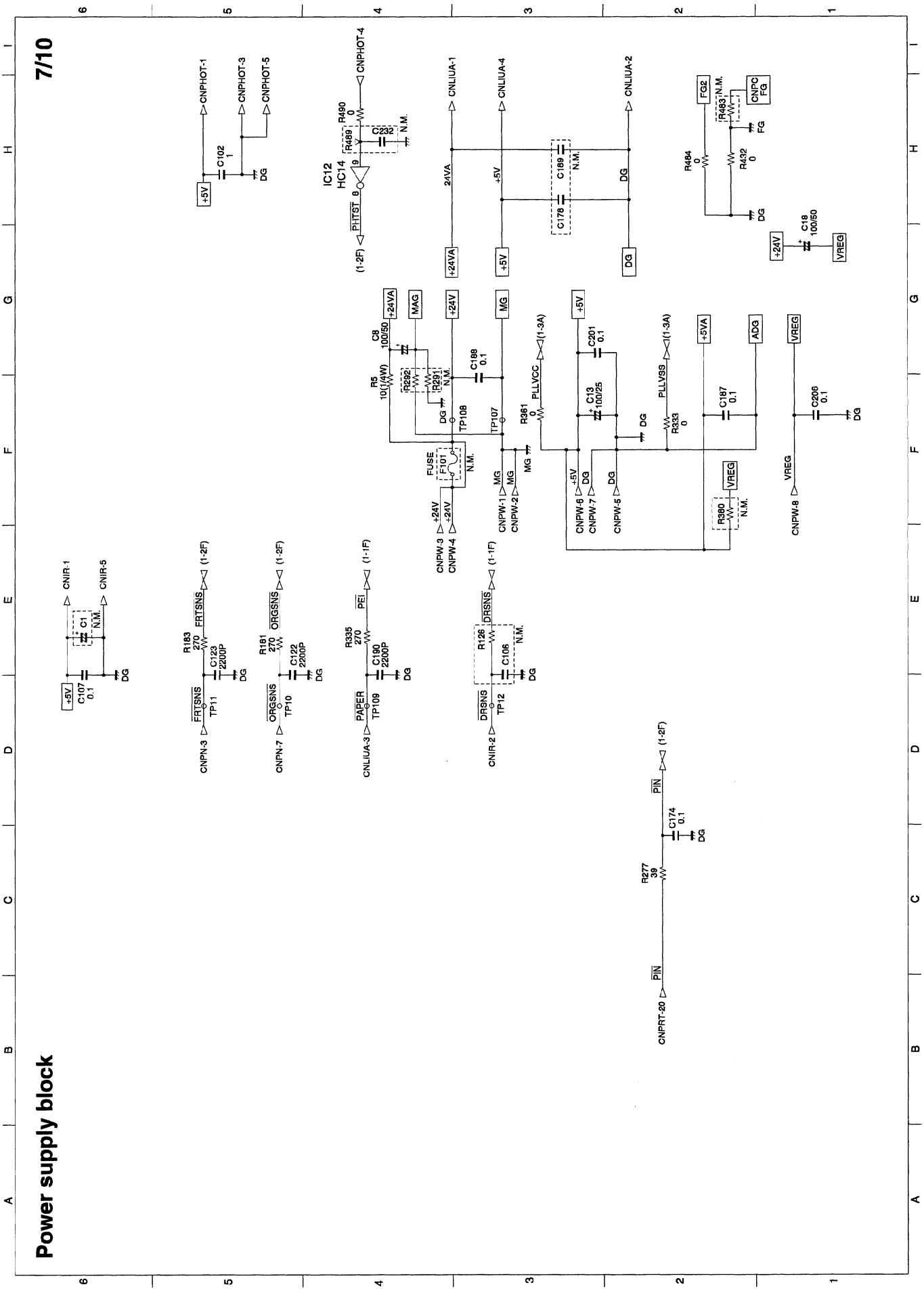

2/10
Memory block
IC20
M5M5255CFP-70
IC25
M5M5255CFP-70
IC18
M27C801
IC17
M27C801
IC24
MSM5118164C
IC19
MSM5118164C
WRH
WRL
SRAMCS
TCS1
VBT
C210
C225
R414
R457
R397
R398
R399
R400
R401
R402
R403
R404
R405
R407
R408
R409
R410
R411
R412
R413
R414
R415
R416
R417
R418
R451
R452
R453
R455
R456
R459
R460
R461
R462
R463
R464
R465
R466
R467
R468
R469
R470
R471
R472
R473
R474
R475
R476
R477
R478
R479
C211
C212
C213
C214
C216
C217
C218
C224
C226
C227
+5V
DG
N.M.
WE2
OE2
WE1
OE1
RAS
CASL
CASH
LCAS
UCAS
WE
OE
A20-1
D15-0
A10-1

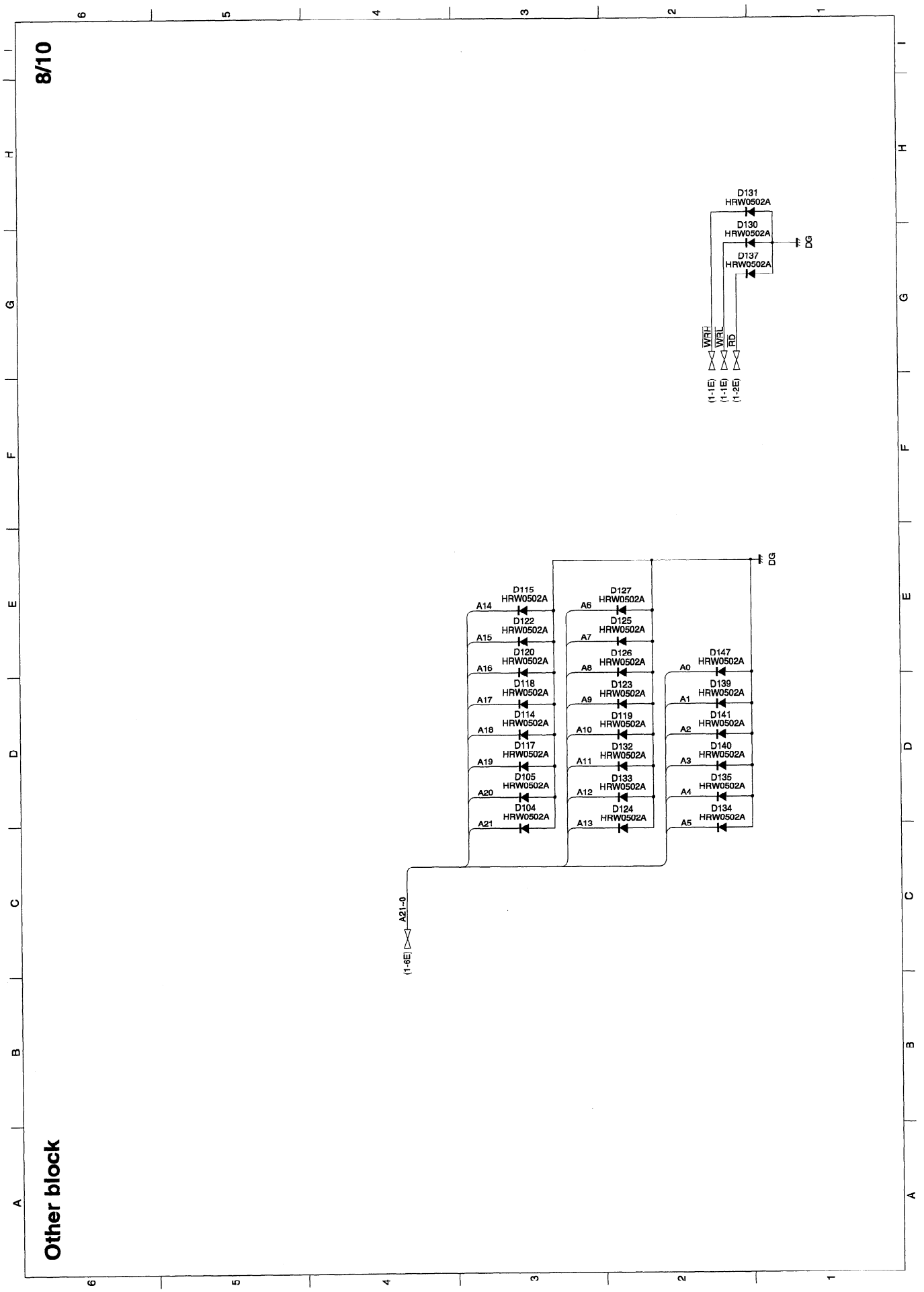

3/10
Reading Process block 1
IC6
LC821040
84 : CLAMP/LININT
97 : PDCK/DACKB/PP5
IC5
HCU04
X1
32MHz
R194
1M
R195
0
C126
5P
C127
5P
R520
100
R196
0
R219
10K
R218
10K
R220 270
R217 270
R216 270
R517 0
R142 100
R525 10K
R524 10K
R523 10K
R522 10K
R521 10K
C131 1
C134 1
C133 1
C132 1
C136
C135
C111
C130
C149
C150
C129
C128
C5
100/16
C6
100/25
R519
0
LCDG
LCAG
+5V
+5VA
DG
D7-0
A12-0
PD7-0
GOE
ROE
BOE
PDE
PDCK
LCINT
LCCS2
LCRD
LCWR
RESET2
CLKIN
AIN
SI
CLK
SCK3
SCK4
SCK5
CSB
RDB
WRB
RWSETB
REFB
CLKIN
SSAMP
FSAMP
BIN
RIN
GIN
SCK1
SCK2
SCK3
SCK4
SCK5
SCK6
SCK7
TRIG
MTP/PP7
PDE/DREQ/PP6
NC1
NC2
PD7/SD
PD6/SDCK
PD5/SDE
PD4/PP4
PD3/PP3
PD2/PP2
PD1/PP1
PD0/PP0
SCK8
SCK9
PP8
PP9
PP10
PP11
PP12
PP13
PP14
PP15
PP16
PP17
SHADM
ATEST
CTAP
ATAPH
ATAPM
ATAPL
DVDD
DGND
AVDD
AGND
PP18
PP19
PP20
PP21
PP22
PP23

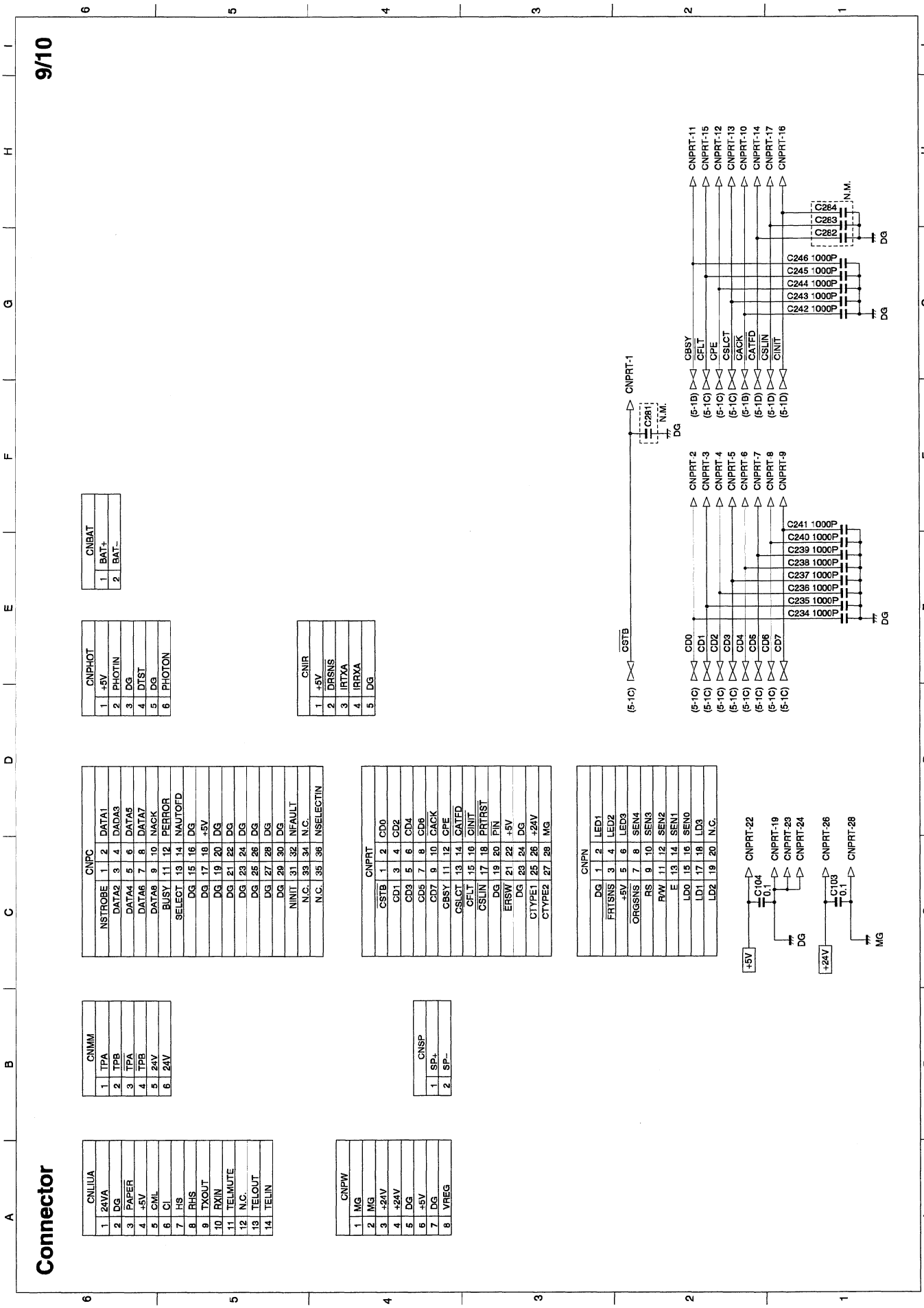

4/10
PC output block
IC21 74LS245
IC23 74LS244
IC22 74LS244
DATA9 DATA7 DATA6 DATA5 DATA4 DATA3 DATA2 DATA1
CNPC-9 CNPC-8 CNPC-7 CNPC-6 CNPC-5 CNPC-4 CNPC-3 CNPC-2
CNPC-31 CNPC-36 CNPC-14 CNPC-1
CNPC-12 CNPC-10 CNPC-11 CNPC-32 CNPC-13
CNPC-18
CNPC-15,16,17, 19-30
NINIT NSELECTIN NAUTOFD NSTROBE
PERROR NACK BUSY NFAULT SELECT
BPBD7 BPBD6 BPBD5 BPBD4 BPBD3 BPBD2 BPBD1 BPBD0
BPBD7~0
BPINI BPISEI BPIAF BPISTB
BPOPE BPOACK BPOBY BPOFT BPOSE
DIR
N.C.
+5V
DG
N.M.
TP151
C219 0.1
C220 0.1
C221 0.1
C222 1000
C223 1
C262 C261 C260 C259 C258 C257 C256 C255
C265 C264 C263
R458 R459 R460 R461 R462 R463 R464 R465 1.2K
R472 R473 R471 R469 R470 R466 R468 R467 1.2K
R474 1.2K
R475 1.2K
R439 R437 R435 R433 R440 R438 R436 R434 R447 R449 R446 R448 R441 R442 R443 R444 R445 47
(5-6E)
(5-6F)

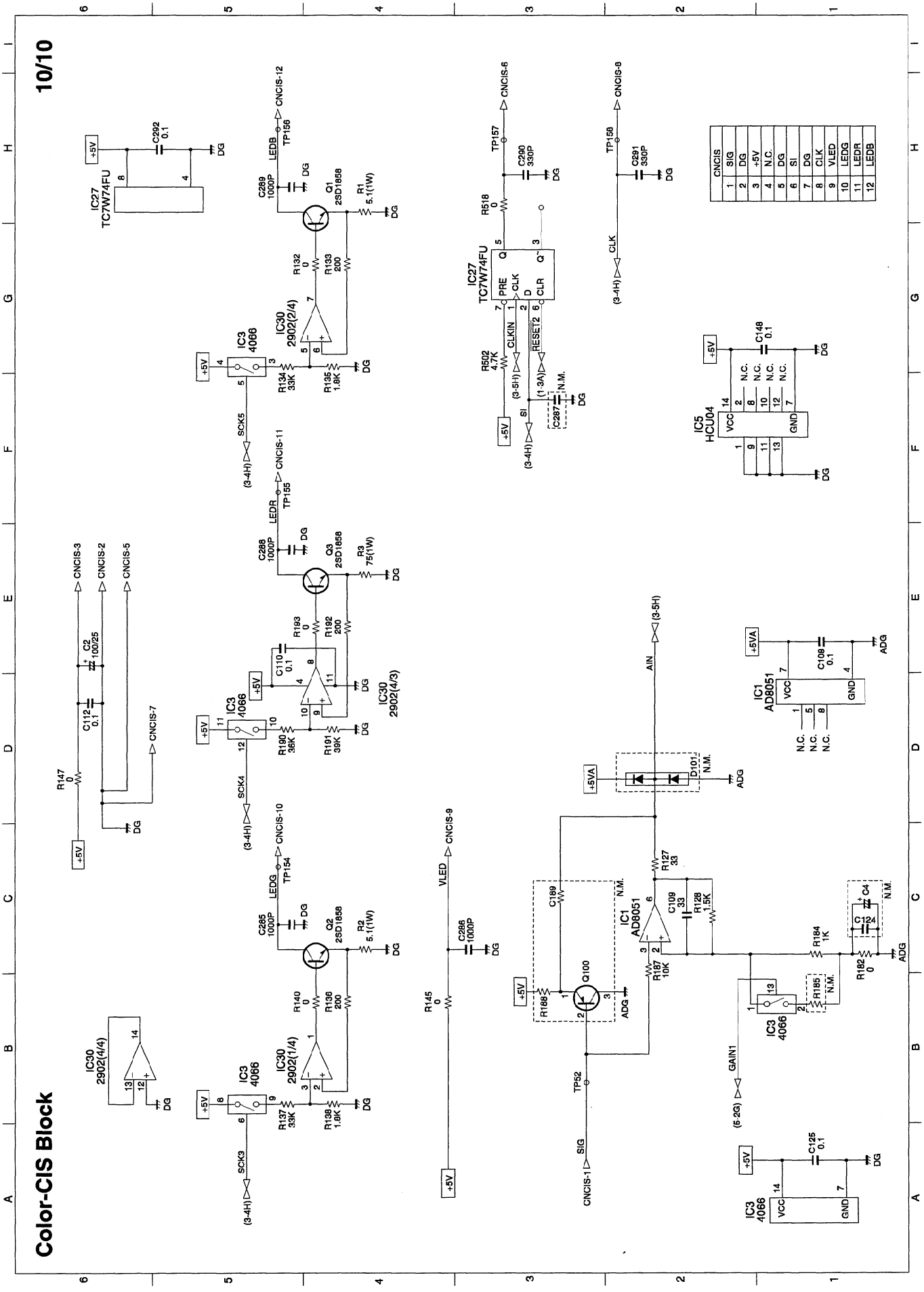

5/10
Gate array block
IC10
LZ9FJ49
IC2
ULN2003
IC9
HCU04
IC12
HC14
ZD1
RD22FB3
F100
FUSE ICP-80.7
CNLIUB-2
CNPRT-21
CNPRT-18
CNPHOT-2
CNPHOT-6
PHOTON
PHOTIN
GAIN1
GAINC
SRAMCS
CINIT
CSLIN
CATFD
CSTB
CFLT
CSLCT
CPE
CBSY
CACK
TELMUTE2
+5V
DG
-24V
MG
N.M.


Modem block
6/10
IC16
R144EFXL
IC8
HC4053
IC8
HC4053(1/3)
IC8
HC4053(2/3)
IC8
HC4053(3/3)
IC7
4066
IC7
4066
IC13
2902(1/4)
IC13
2902(2/4)
IC13
2902(3/4)
IC13
2902(4/4)
IC28
NJM2113
D1
1SS355
Q102
DTC114EK
Q103
DTC114EK
Q104
DTC114EK
X5
38.00053MHz
TXCOUT
TXOUT
RXIN
EXTSIG
RCVOL
GAING
MAG
VREF
MDMRST
TELOUT
TELIN
VOLA
VOLB
VOLC
BZOUT
BZCONT
SP-
SP+
SPMUTE
CNSP-1
CNSP-2
CNLIUA-5
CNLIUA-6
CNLIUA-7
CNLIUA-8
CNLIUA-10
CNLIUA-11
CNLIUA-12
CNLIUA-13
CNLIUB-1
CNLIUB-3
CNLIUB-4
CNLIUB-5
CNLIUB-6
TELMUTE
CML
CI
RHS
HS
D7-0
A4-0
CS2
MDMRD
MDMWR
MDMINT
CS
READ
WRITE
IRQ1
BYPASS
TXLOSS1
TXLOSS2
TXLOSS3
GP07
GP06
GP05
GP04
GP03
GP02
XCLK
YCLK
EYEX
EYEY
ADIN
ADOUT
DAIN
DAOUT
N.C.
TP128,TP129,TP124,TP123
TP122,TP112,TP111,TP110
TP113,TP114,TP125

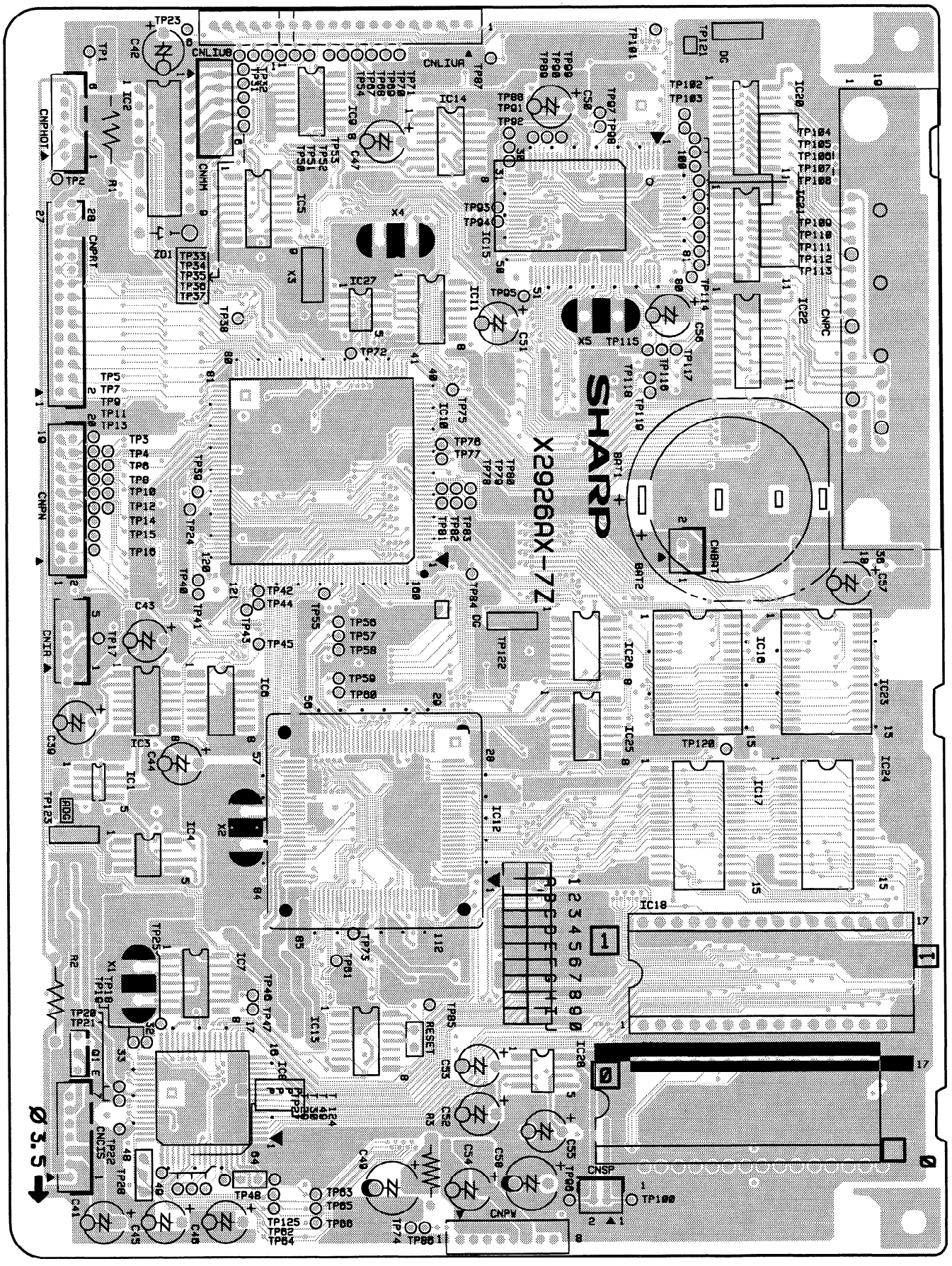

7/10
Power supply block
CNIR-1
CNIR-5
C1
N.M.
+5V
C107
0.1
DG
R183
270
FRTSNS
(1-2F)
C123
2200P
FRTSNS
TP11
CNPN-3
R161
270
ORGSNS
C122
2200P
ORGSNS
TP10
CNPN-7
R335
270
PEI
(1-1F)
C190
2200P
PAPER
TP109
CNLIUA-3
R126
DRSNS
C106
DRSNS
TP12
CNIR-2
CNPHOT-1
C102
1
CNPHOT-3
CNPHOT-5
IC12
HC14
R489
R490
0
C232
N.M.
P.HTST
(1-2F)
CNPHOT-4
CNLIUA-1
CNLIUA-4
CNLIUA-2
24VA
+5V
C178
C189
N.M.
DG
+24VA
FG2
R483
N.M.
R484
0
R432
0
CNPC
FG
C18
100/50
VREG
C8
100/50
MAG
R5
10(1/4W)
R292
R291
N.M.
C188
0.1
TP108
TP107
FUSE
F101
N.M.
+24V
MG
R361
0
PLLVCC
(1-3A)
C201
0.1
C13
100/25
PLLVSS
R333
0
+5VA
ADG
C187
0.1
R380
N.M.
C206
0.1
CNPW-3
CNPW-4
CNPW-1
CNPW-2
CNPW-6
CNPW-7
CNPW-5
CNPW-8
R277
39
PIN
C174
0.1
CNPRT-20


8/10
Other block
D131
HRW0502A
D130
HRW0502A
D137
HRW0502A
DG
WRH
WRL
RD
(1-1E)
(1-1E)
(1-2E)
D115
HRW0502A
A14
D122
HRW0502A
A15
D120
HRW0502A
A16
D118
HRW0502A
A17
D114
HRW0502A
A18
D117
HRW0502A
A19
D105
HRW0502A
A20
D104
HRW0502A
A21
D127
HRW0502A
A6
D125
HRW0502A
A7
D126
HRW0502A
A8
D123
HRW0502A
A9
D119
HRW0502A
A10
D132
HRW0502A
A11
D133
HRW0502A
A12
D124
HRW0502A
A13
D147
HRW0502A
A0
D139
HRW0502A
A1
D141
HRW0502A
A2
D140
HRW0502A
A3
D135
HRW0502A
A4
D134
HRW0502A
A5
DG
A21-0
(1-6E)

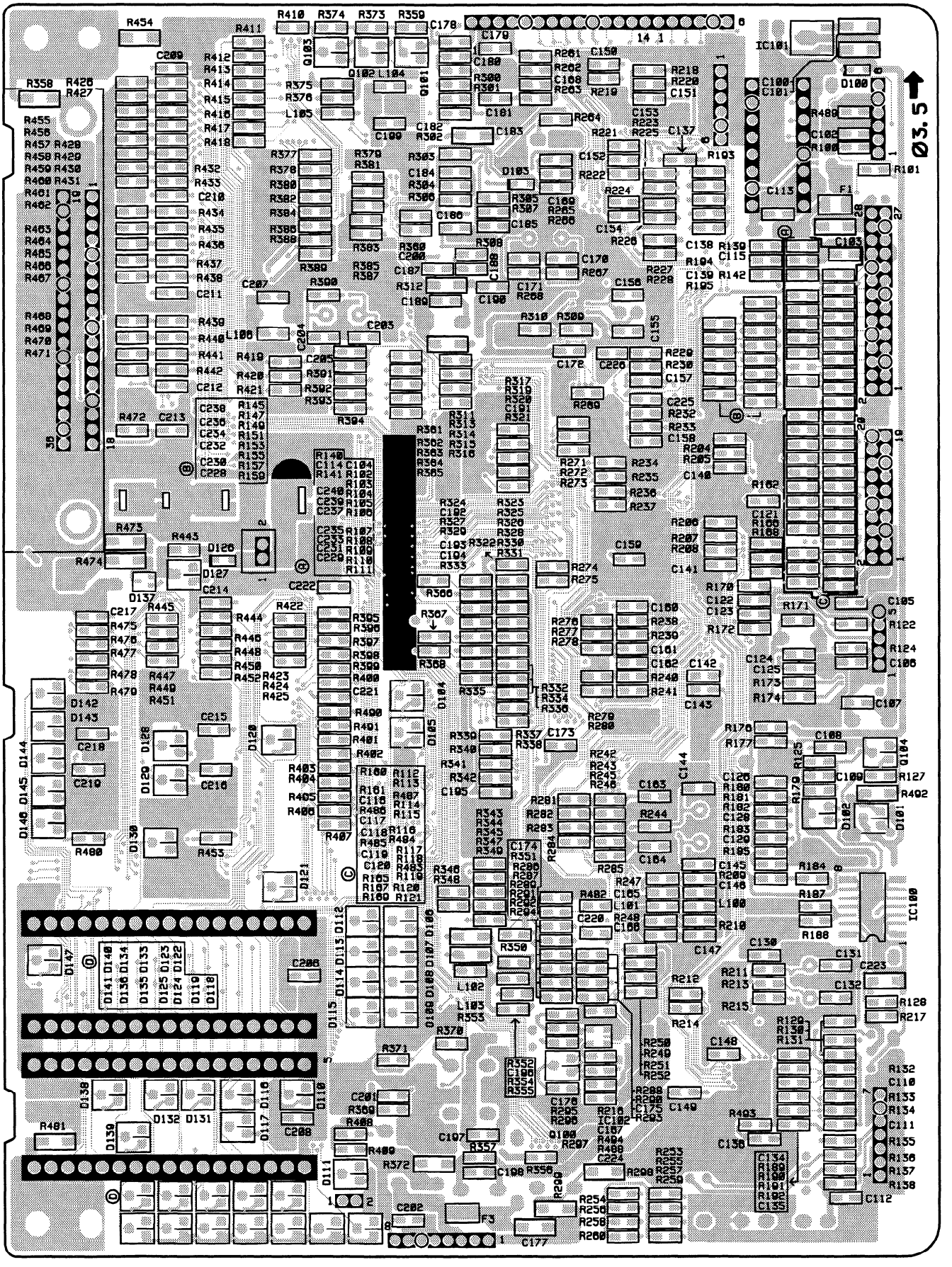

Connector
9/10
CNLIUA
1 24VA
2 DG
3 PAPER
4 +5V
5 CML
6 CI
7 HS
8 RHS
9 TXOUT
10 RXIN
11 TELMUTE
12 N.C.
13 TELOUT
14 TELIN
CNMM
1 TPA
2 TPB
3 TPA
4 TPB
5 24V
6 24V
CNSP
1 SP+
2 SP-
CNPW
1 MG
2 MG
3 -24V
4 +24V
5 DG
6 +5V
7 DG
8 VREG
CNPC
NSTROBE 1 2 DATA1
DATA2 3 4 DADA3
DATA4 5 6 DATA5
DATA6 7 8 DATA7
DATA8 9 10 NACK
BUSY 11 12 PERROR
SELECT 13 14 NAUTOFD
DG 15 16 DG
DG 17 18 +5V
DG 19 20 DG
DG 21 22 DG
DG 23 24 DG
DG 25 26 DG
DG 27 28 DG
DG 29 30 DG
NINIT 31 32 NFAULT
N.C. 33 34 N.C.
N.C. 35 36 NSELECTIN
CNPHOT
1 +5V
2 PHOTIN
3 DG
4 DTST
5 DG
6 PHOTON
CNBAT
1 BAT+
2 BAT-
CNIR
1 +5V
2 DRSNS
3 IRTXA
4 IRRXA
5 DG
CNPRT
CSTB 1 2 CD0
CD1 3 4 CD2
CD3 5 6 CD4
CD5 7 8 CD6
CD7 9 10 CACK
CBSY 11 12 CPE
CSLCT 13 14 CATFD
CFLT 15 16 CINIT
CSLIN 17 18 PRTRST
DG 19 20 PIN
ERSW 21 22 +5V
DG 23 24 DG
CTYPE1 25 26 +24V
CTYPE2 27 28 MG
CNPN
DG 1 2 LED1
FRTSNS 3 4 LED2
+5V 5 6 LED3
ORGSNS 7 8 SEN4
RS 9 10 SEN3
R/W 11 12 SEN2
E 13 14 SEN1
LD0 15 16 SEN0
LD1 17 18 LD3
LD2 19 20 N.C.
(5-1C) CSTB
CNPRT-1
C281
N.M.
DG
(5-1C) CD0
(5-1C) CD1
(5-1C) CD2
(5-1C) CD3
(5-1C) CD4
(5-1C) CD5
(5-1C) CD6
(5-1C) CD7
CNPRT-2
CNPRT-3
CNPRT-4
CNPRT-5
CNPRT-6
CNPRT-7
CNPRT-8
CNPRT-9
C241 1000P
C240 1000P
C239 1000P
C238 1000P
C237 1000P
C236 1000P
C235 1000P
C234 1000P
DG
(5-1B) CBSY
(5-1C) CFLT
(5-1C) CPE
(5-1C) CSLCT
(5-1C) CACK
(5-1B) CATFD
(5-1D) CSLIN
(5-1D) CINIT
CNPRT-11
CNPRT-15
CNPRT-12
CNPRT-13
CNPRT-10
CNPRT-14
CNPRT-17
CNPRT-16
C246 1000P
C245 1000P
C244 1000P
C243 1000P
C242 1000P
DG
C264
C263
C262
N.M.
DG
+5V
C104 0.1
CNPRT-22
CNPRT-19
CNPRT-23
CNPRT-24
DG
+24V
C103 0.1
CNPRT-26
CNPRT-28
MG


10/10
Color-CIS Block
IC27 TC7W74FU
IC30 2902(4/4)
IC30 2902(1/4)
IC30 2902(2/4)
IC30 2902(4/3)
IC3 4066
IC1 AD8051
IC5 HCU04
Q1 2SD1658
Q2 2SD1658
Q3 2SD1658
Q100
D101
CNCIS-1
CNCIS-2
CNCIS-3
CNCIS-5
CNCIS-6
CNCIS-7
CNCIS-8
CNCIS-9
CNCIS-10
CNCIS-11
CNCIS-12
SCK3
SCK4
SCK5
SIG
VLED
LEDG
LEDR
LEDB
AIN
GAIN1
CLK
SI
RESET2
CLKIN
+5V
+5VA
DG
ADG
N.M.
N.C.
(3-4H)
(3-5H)
(5-2G)
(3-5I)
(1-3A)
(3-4I)
(3-1H)
TP52
TP154
TP155
TP156
TP157
TP158
R1 5.1(1W)
R2 5.1(1W)
R3 75(1W)
R127 33
R128 1.5K
R134 33K
R135 1.8K
R136 200
R137 33K
R138 1.8K
R145 0
R147 0
R182 0
R184 1K
R187 10K
R188
R190 39K
R191 39K
R192 200
R193 0
R132 0
R133 200
R140 0
R502 4.7K
R518 0
C2 100/25
C4
C108 0.1
C109 33
C110 0.1
C112 0.1
C124
C125 0.1
C148 0.1
C189
C285 1000P
C286 1000P
C287
C288 1000P
C289 1000P
C290 330P
C291 330P
C292 0.1
CNCIS
1 SIG
2 DG
3 +5V
4 N.C.
5 DG
6 SI
7 DG
8 CLK
9 VLED
10 LEDG
11 LEDR
12 LEDB

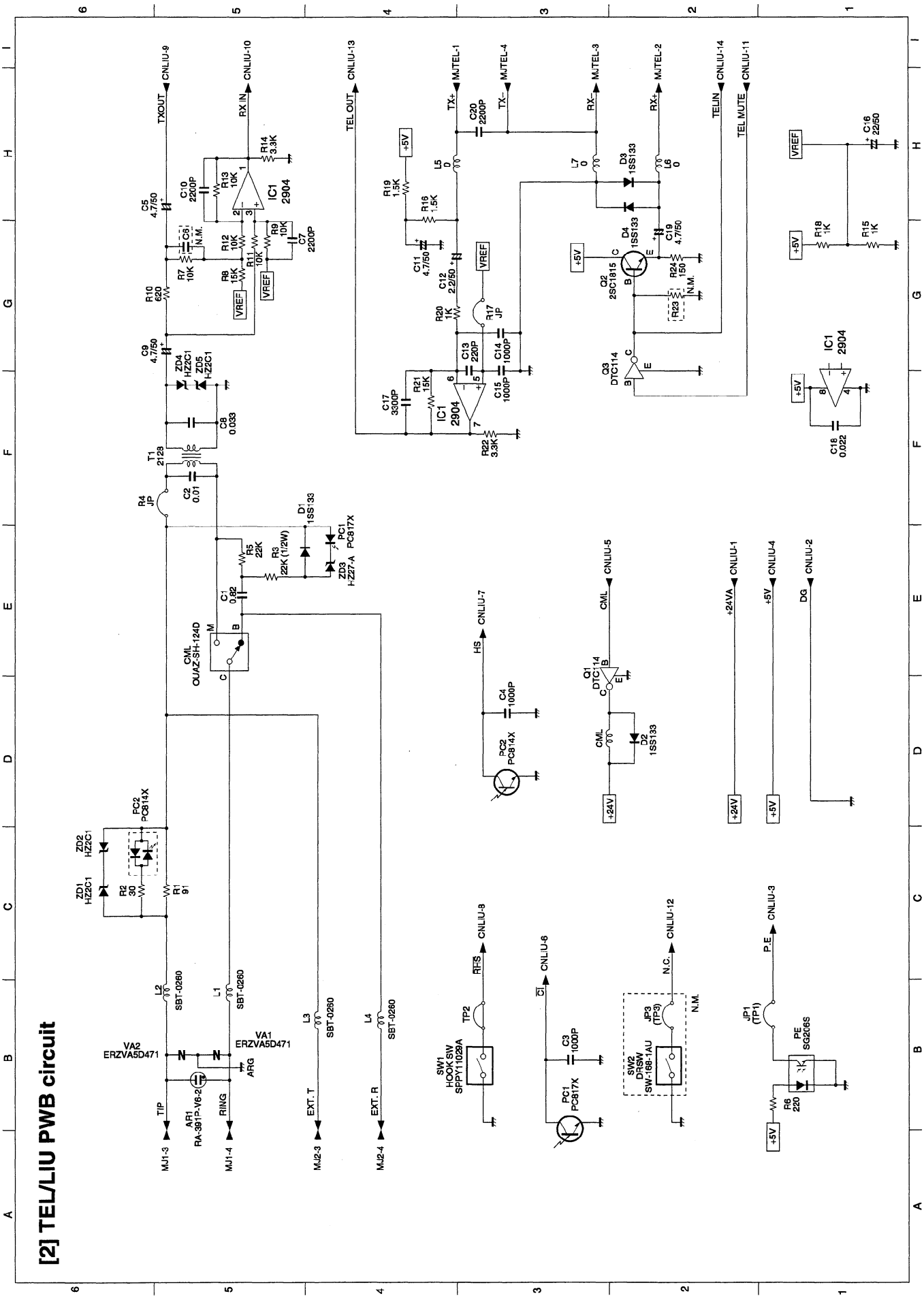
Control PWB parts layout (Top side)



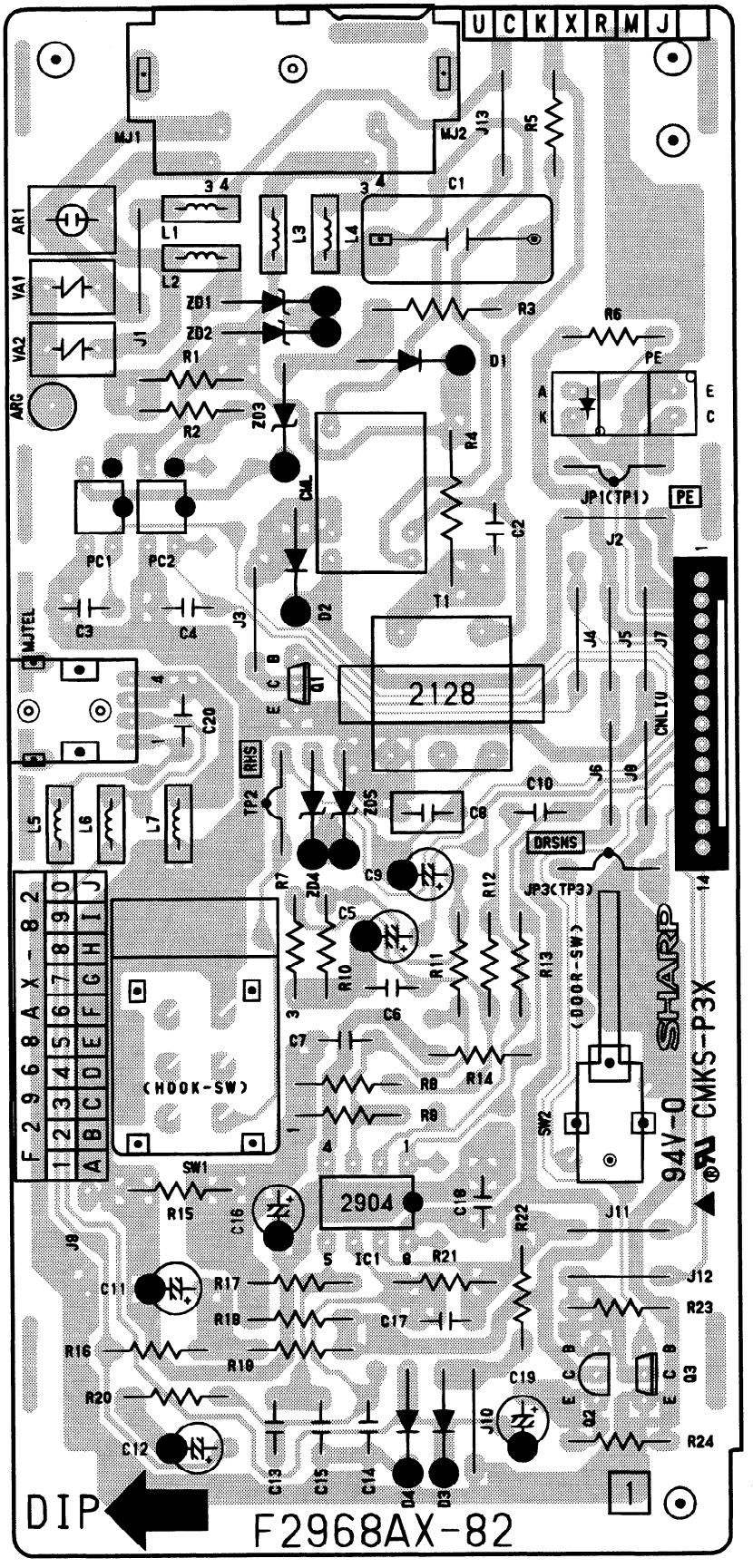
Control PWB parts layout (Bottom side)



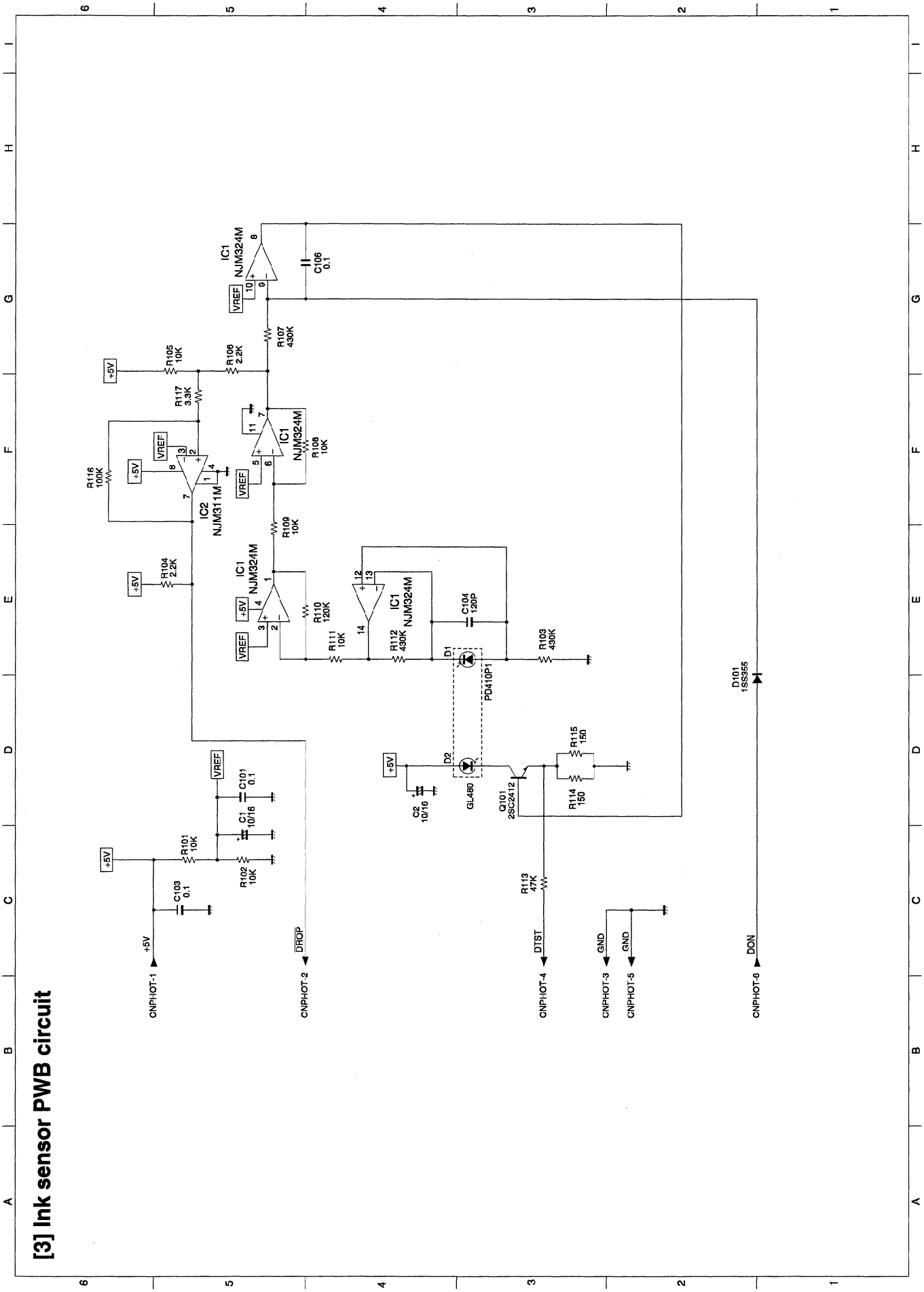
[2] TEL/LIU PWB circuit



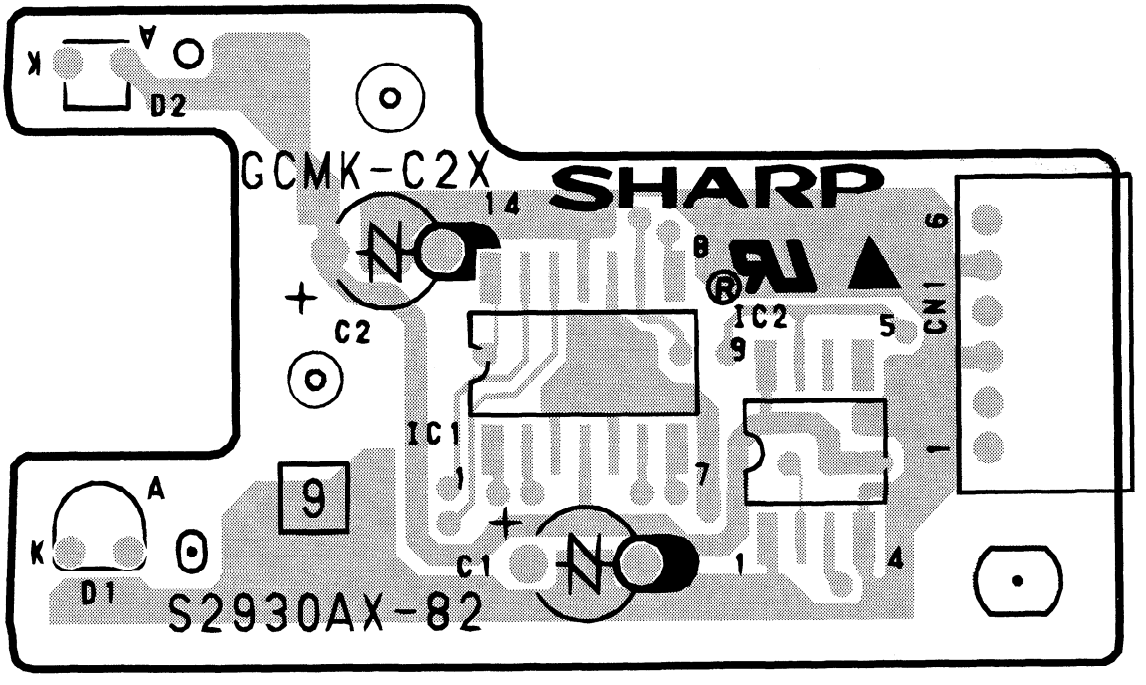
TEL/LIU PWB parts layout



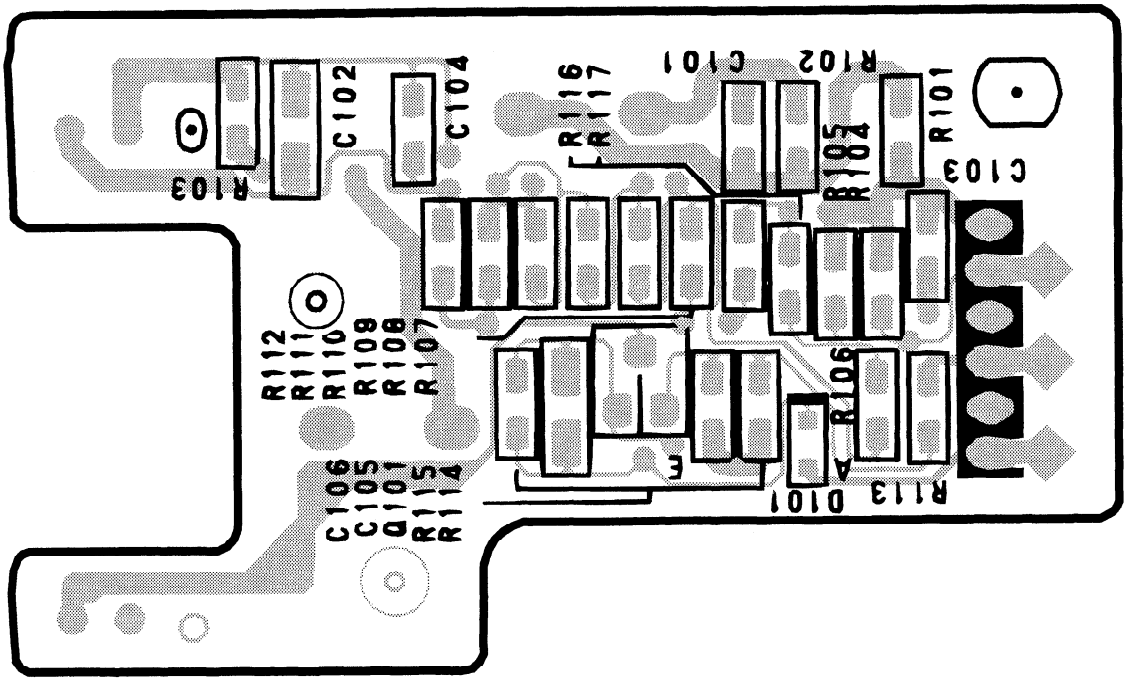
[3] Ink sensor PWB circuit

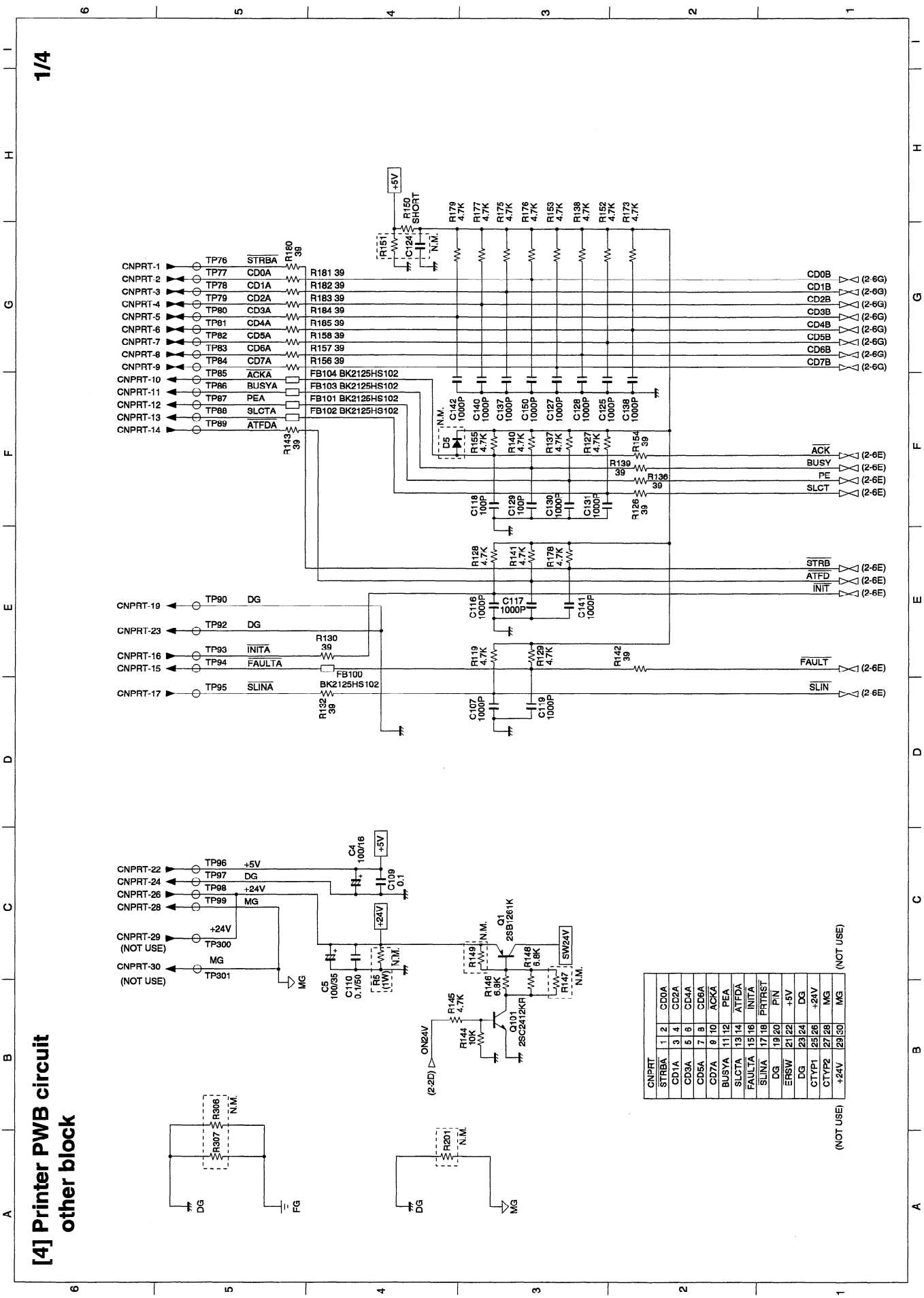


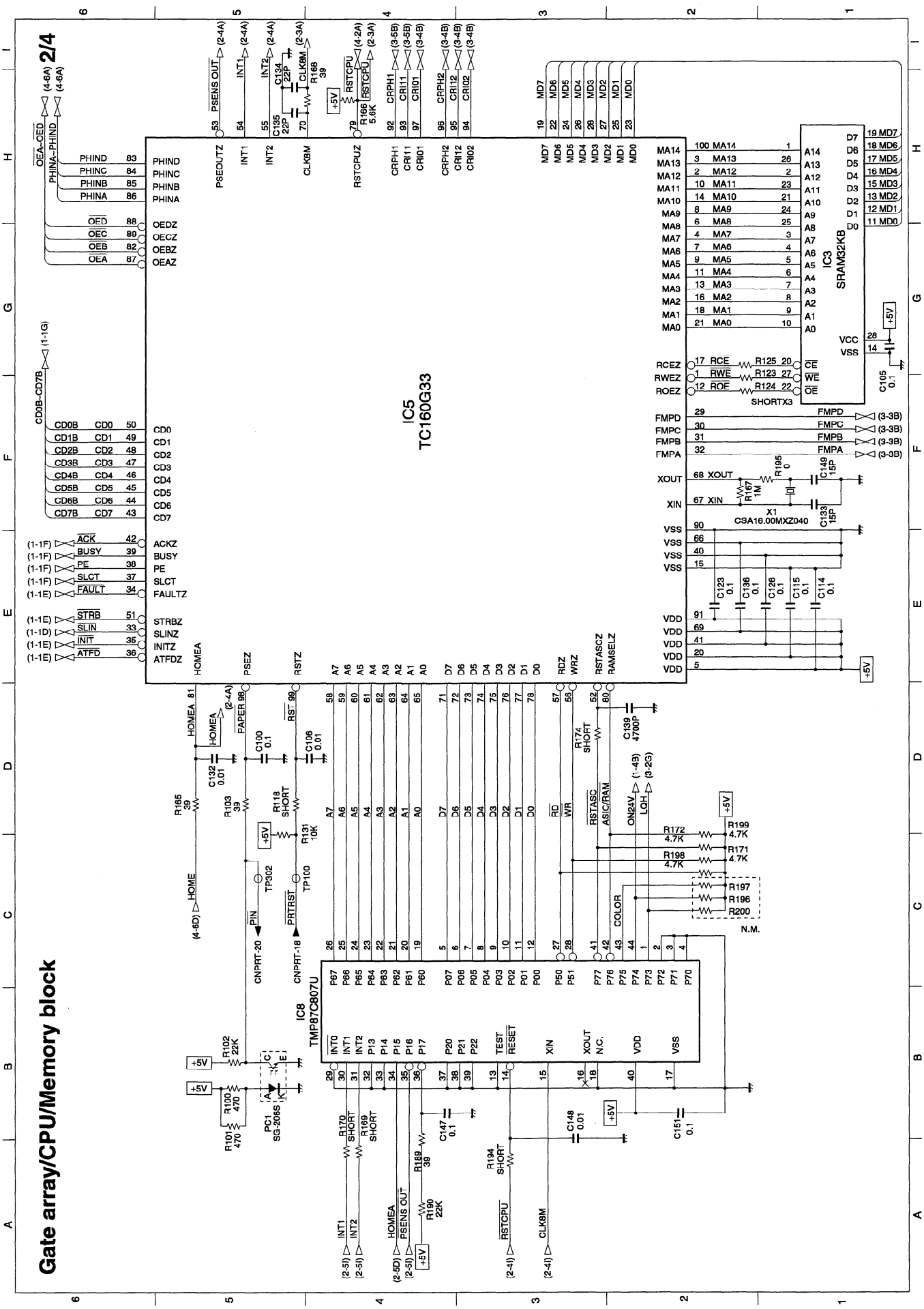
Ink sensor PWB parts layout (Top side)



Ink sensor PWB parts layout (Bottom side)

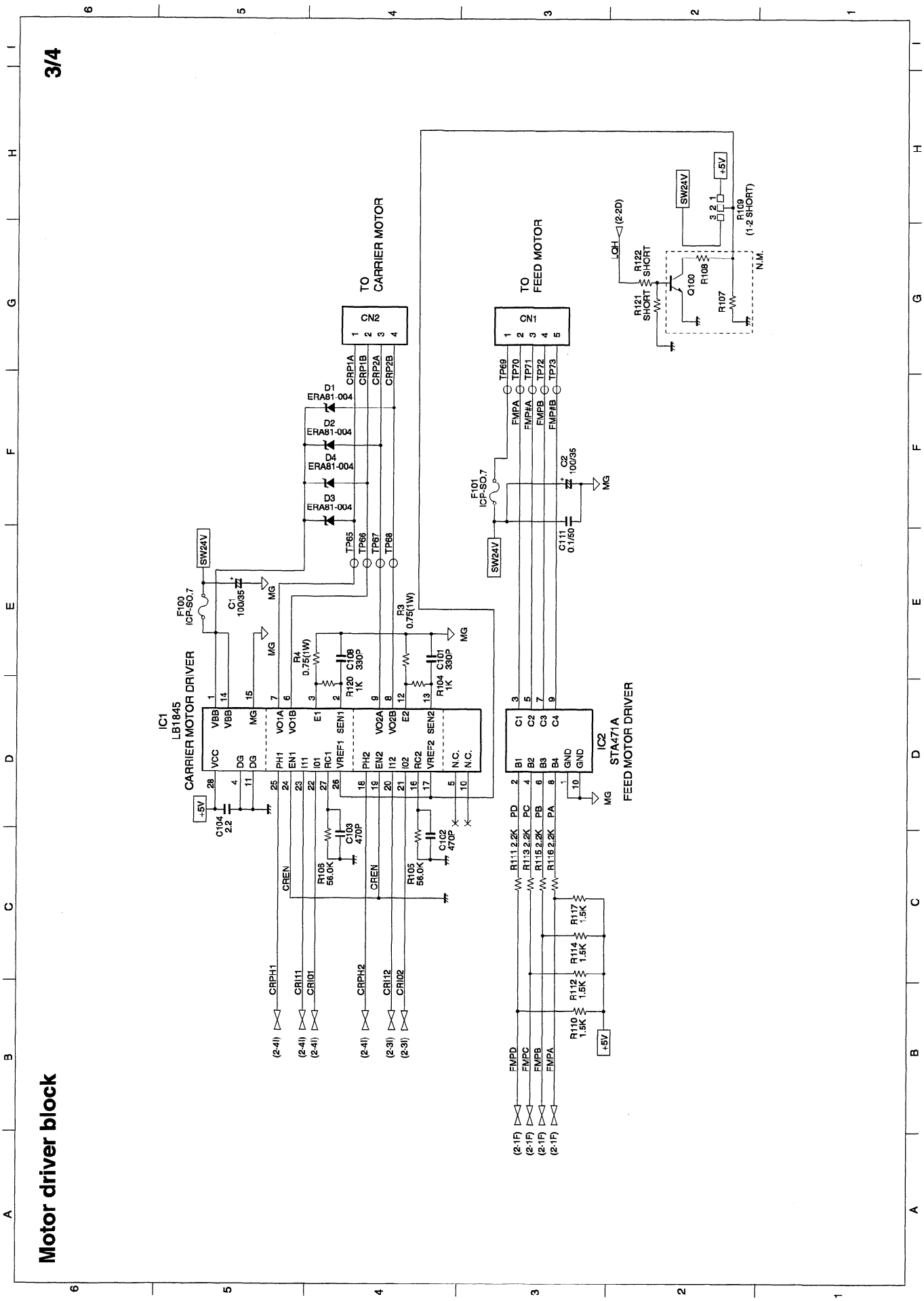


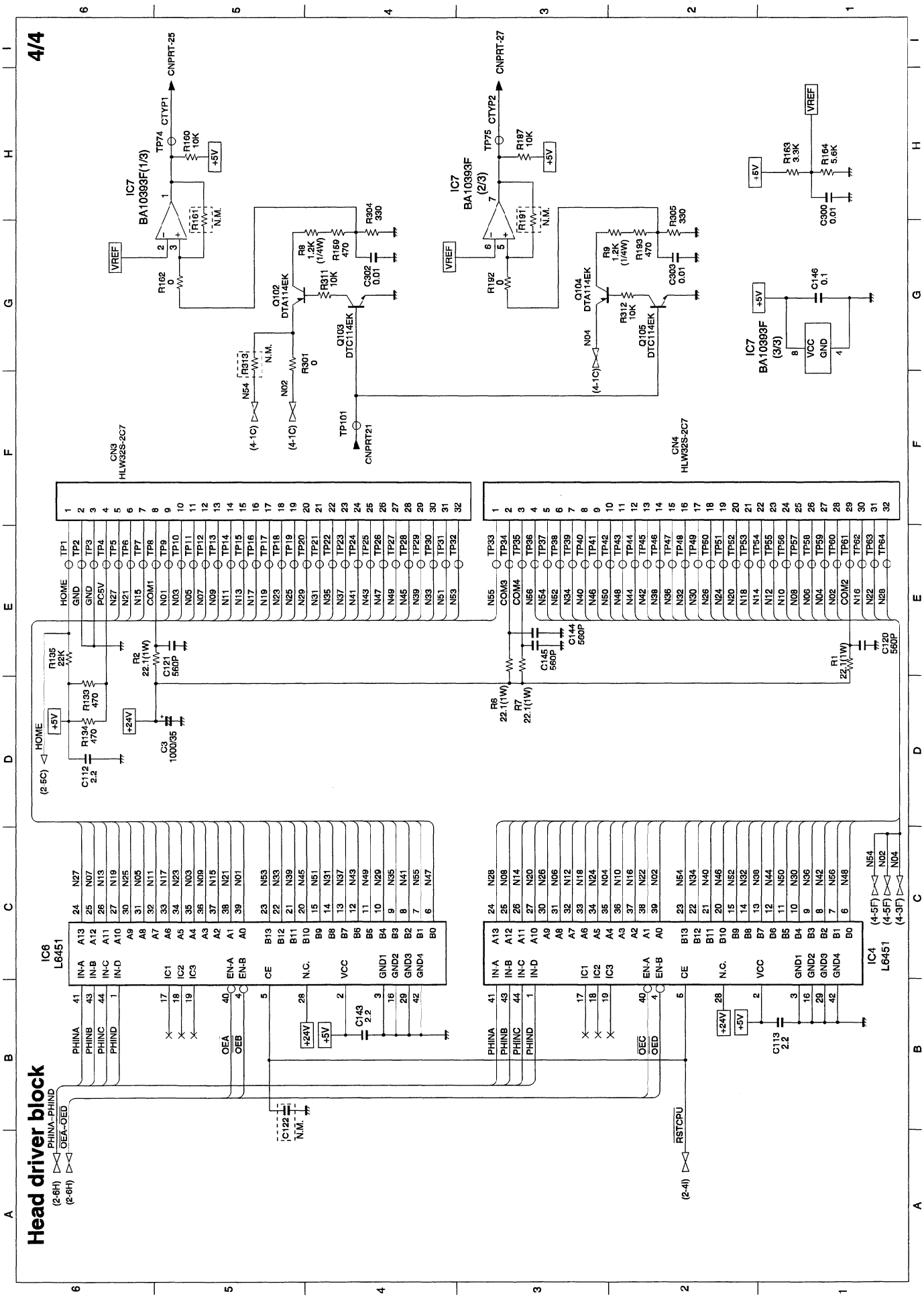

1/4
[4] Printer PWB circuit other block
CNPRT-1
CNPRT-2
CNPRT-3
CNPRT-4
CNPRT-5
CNPRT-6
CNPRT-7
CNPRT-8
CNPRT-9
CNPRT-10
CNPRT-11
CNPRT-12
CNPRT-13
CNPRT-14
TP76 STRBA
TP77 CD0A
TP78 CD1A
TP79 CD2A
TP80 CD3A
TP81 CD4A
TP82 CD5A
TP83 CD6A
TP84 CD7A
TP85 ACKA
TP86 BUSYA
TP87 PEA
TP88 SLCTA
TP89 ATFDA
R180 38
R181 39
R182 39
R183 39
R184 39
R185 39
R158 39
R157 39
R156 39
FB104 BK2125HS102
FB103 BK2125HS102
FB101 BK2125HS102
FB102 BK2125HS102
R143 39
CD0B
CD1B
CD2B
CD3B
CD4B
CD5B
CD6B
CD7B
(2-6G)
ACK
BUSY
PE
SLCT
(2-6E)
R139 39
R136 39
R126 39
R154 39
STRB
ATFD
INIT
CNPRT-19
CNPRT-23
CNPRT-16
CNPRT-15
CNPRT-17
TP90 DG
TP92 DG
TP93 INITA
TP94 FAULTA
TP95 SLINA
R130 39
FB100 BK2125HS102
R132 39
FAULT
SLIN
CNPRT-22
CNPRT-24
CNPRT-26
CNPRT-28
CNPRT-29 (NOT USE)
CNPRT-30 (NOT USE)
TP96 +5V
TP97 DG
TP98 +24V
TP99 MG
TP300
TP301
C4 100/16
C109 0.1
C5 100/35
C110 0.1/50
R5 (1W)
N.M.
SW24V
Q1 2SB1261K
R149
R148 6.8K
R147
R145 4.7K
R144 10K
Q101 2SC2412KR
ON24V
(2-2D)
R306
R307
R201
DG
FG
MG
CNPRT
STRBA 1 2 CD0A
CD1A 3 4 CD2A
CD3A 5 6 CD4A
CD5A 7 8 CD6A
CD7A 9 10 ACKA
BUSYA 11 12 PEA
SLCTA 13 14 ATFDA
FAULTA 15 16 INITA
SLINA 17 18 PRTRST
DG 19 20 PIN
ERSW 21 22 +5V
DG 23 24 DG
CTYP1 25 26 +24V
CTYP2 27 28 MG
+24V 29 30 MG
(NOT USE)


Gate array/CPU/Memory block
2/4
IC5
TC160G33
IC8
TMP87C807U
IC3
SRAM32KB
SHORTX3
X1
CSA16.00MXZ040
N.M.
PC1
SG-206S

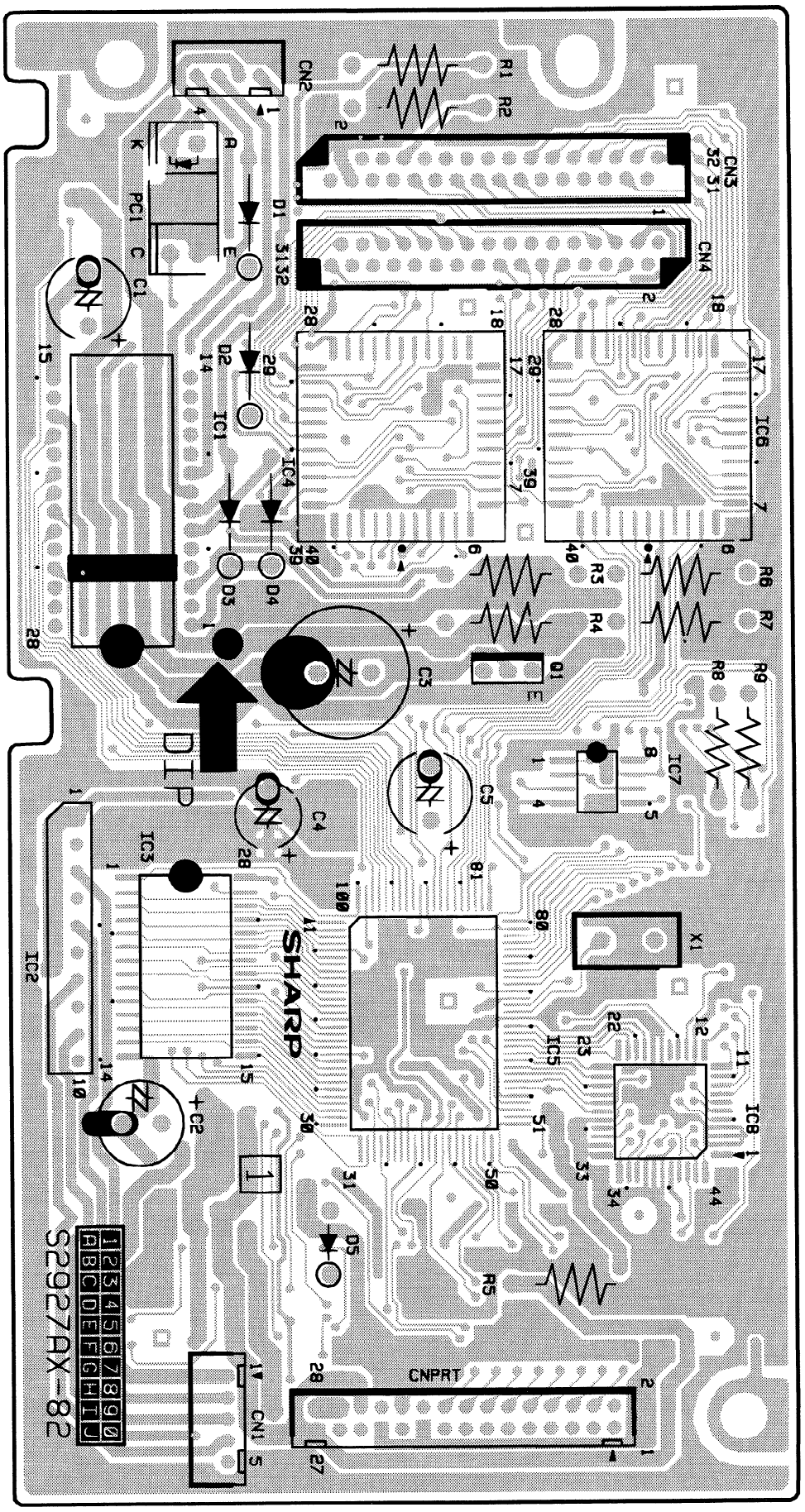
Motor driver block

3/4

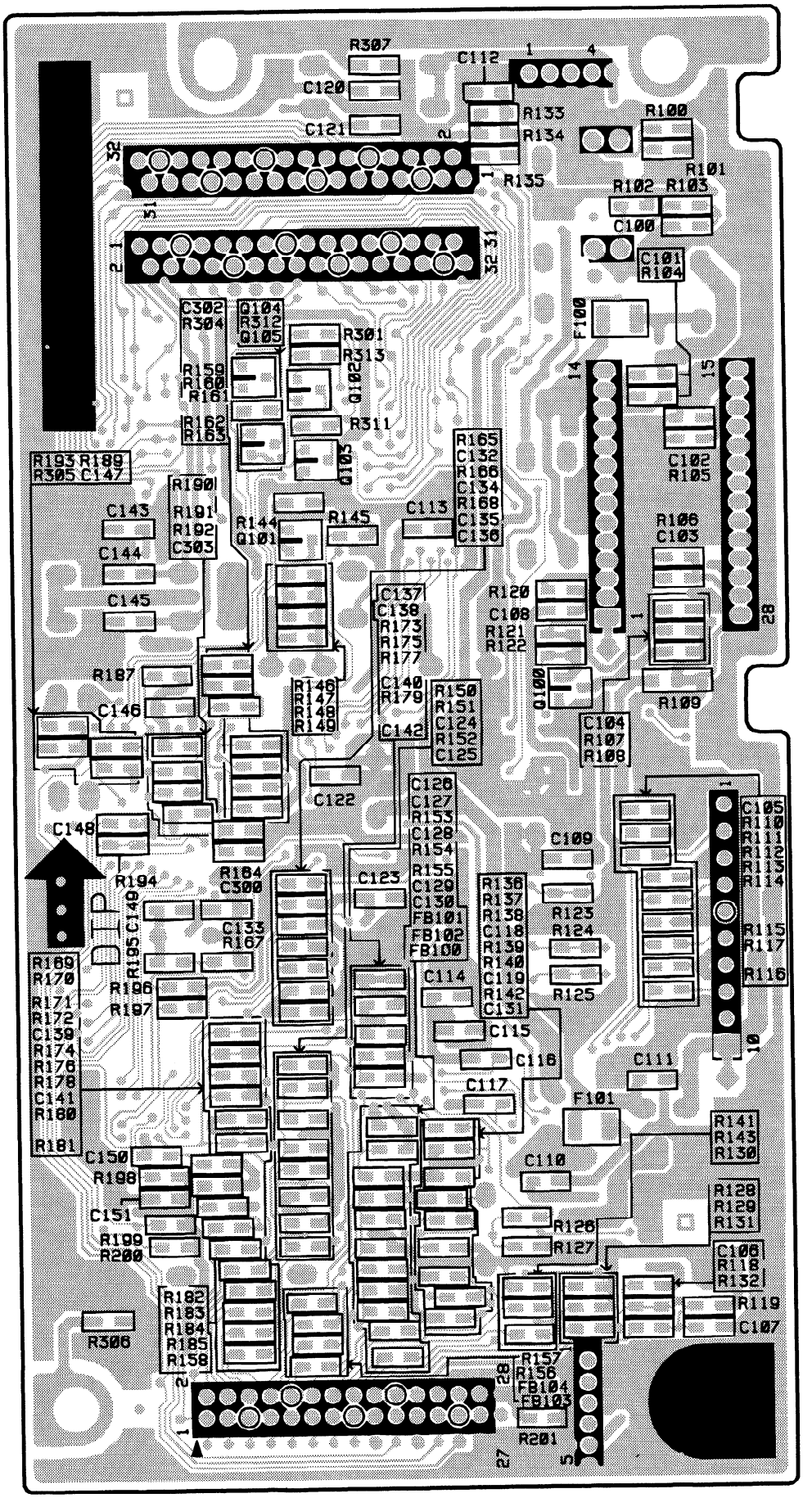



4/4
Head driver block
IC7
BA10393F(1/3)
IC7
BA10393F
(2/3)
IC7
BA10393F
(3/3)
CN3
HLW32S-2C7
CN4
HLW32S-2C7
IC6
L6451
IC4
L6451
CNPRT-25
CNPRT-27
CNPRT21
TP74 CTYP1
TP75 CTYP2
TP101
R160 10K
R187 10K
R161 N.M.
R191 N.M.
R162 0
R192 0
R8 1.2K (1/4W)
R9 1.2K (1/4W)
R159 470
R193 470
R304 330
R305 330
R311 10K
R312 10K
R313 N.M.
R301 0
Q102 DTA114EK
Q103 DTC114EK
Q104 DTA114EK
Q105 DTC114EK
C302 0.01
C303 0.01
R163 3.3K
R164 5.6K
C300 0.01
C146 0.1
R135 22K
R133 470
R134 470
C112 2.2
C3 1000/35
R2 22.1(1W)
C121 560P
R6 22.1(1W)
R7 22.1(1W)
C144 560P
C145 560P
R1 22.1(1W)
C120 560P
C143 2.2
C113 2.2
C122 N.M.
HOME
(2-5C)
PHINA-PHIND
OEA-OED
RSTCPU
(2-4I)
(2-6H)
(4-1C)
(4-5F)
(4-3F)
VREF
+5V
+24V

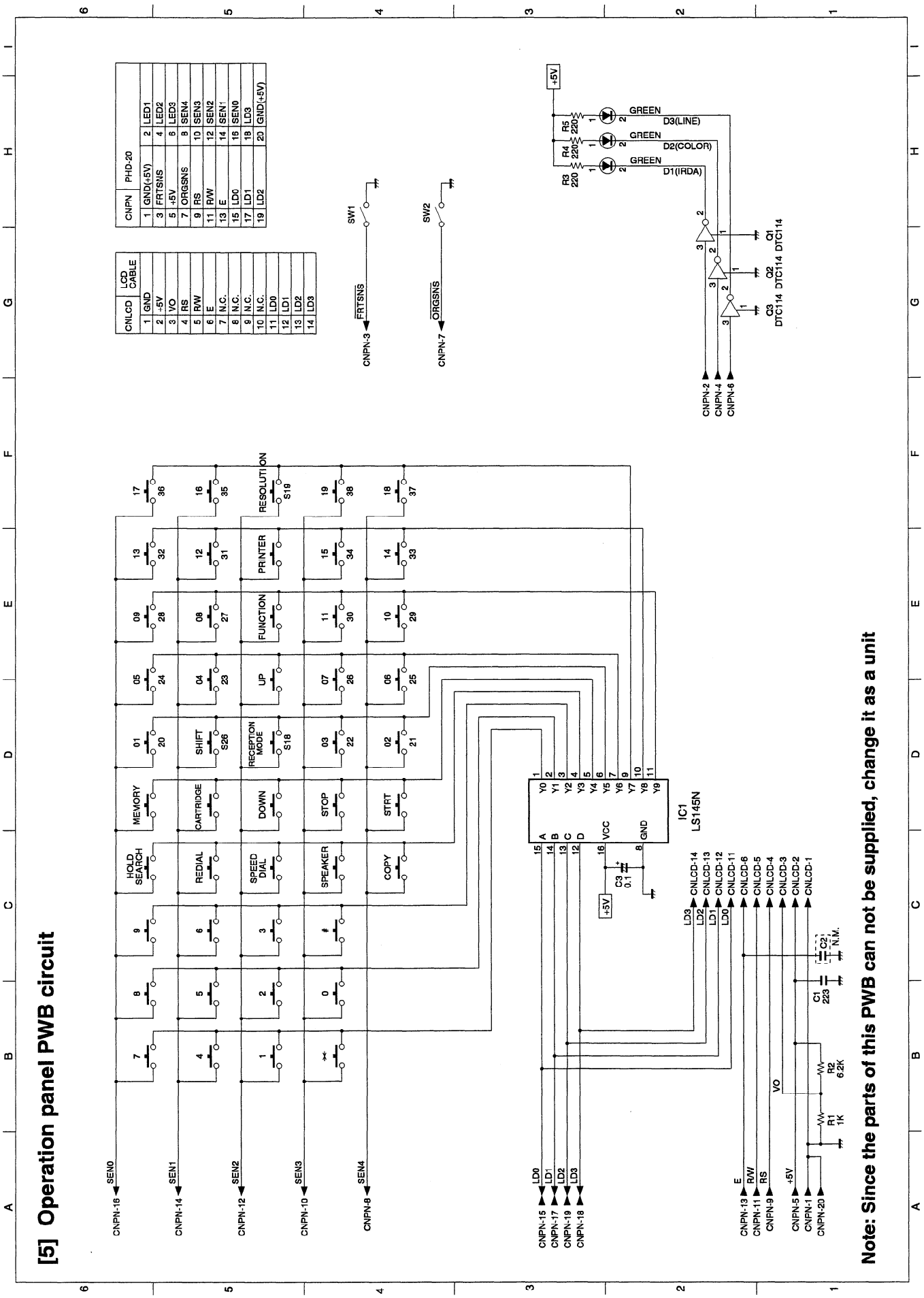
Printer PWB parts layout (Top side)



Printer PWB parts layout (Bottom side)

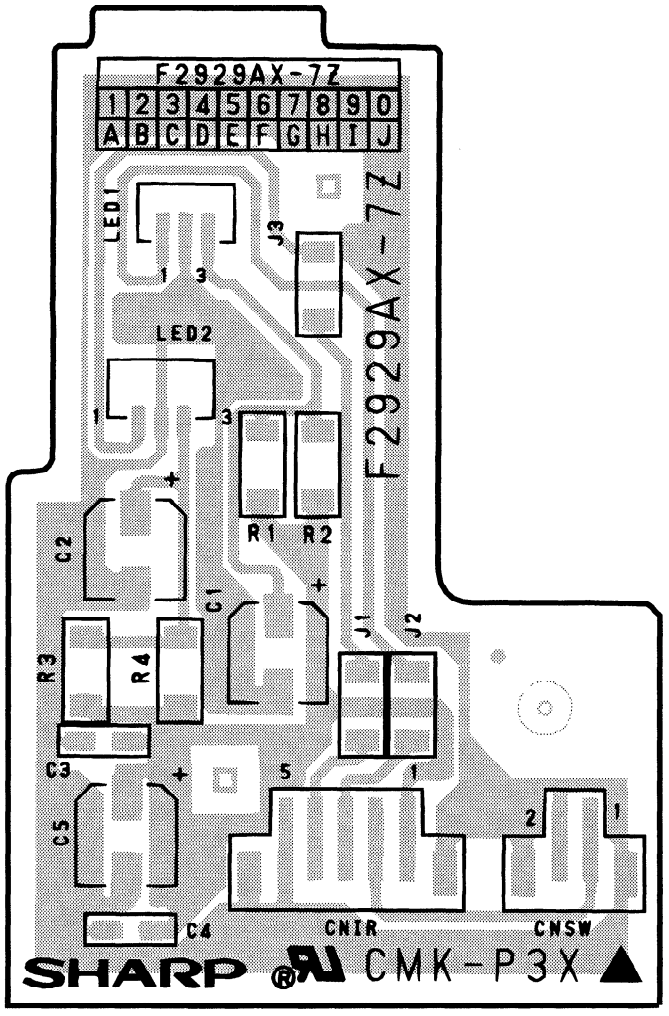


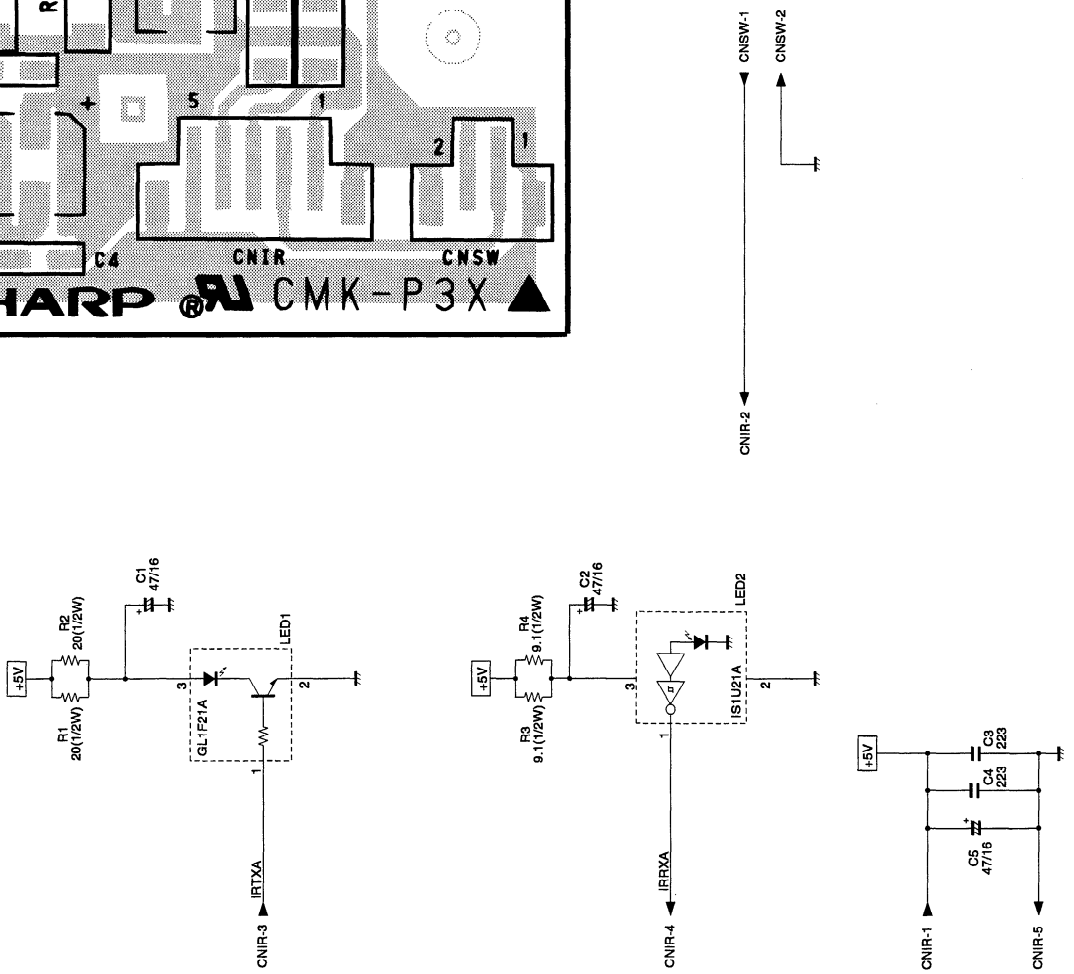
[5] Operation panel PWB circuit



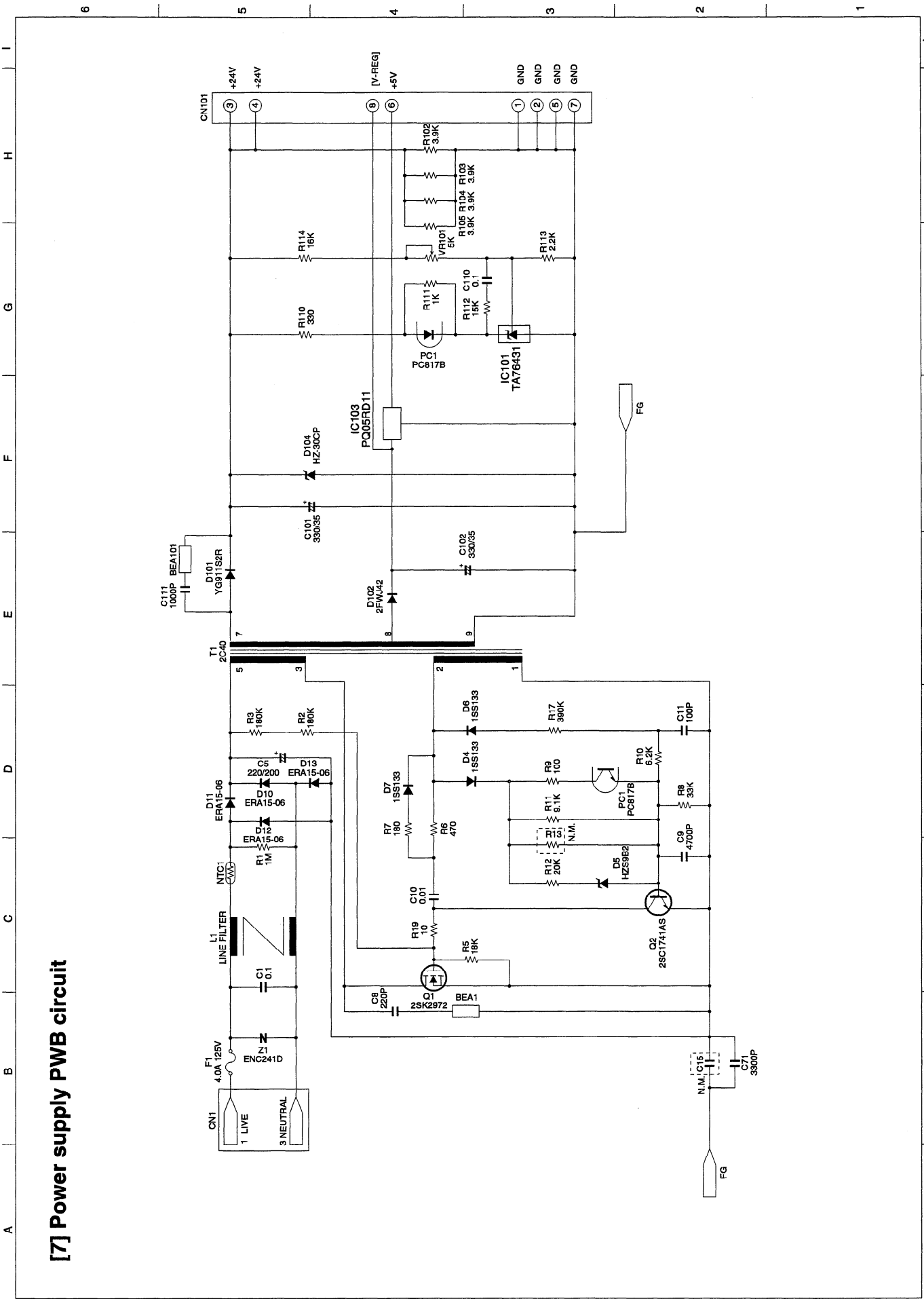
Note: Since the parts of this PWB can not be supplied, change it as a unit

[6] IrDA PWB circuit

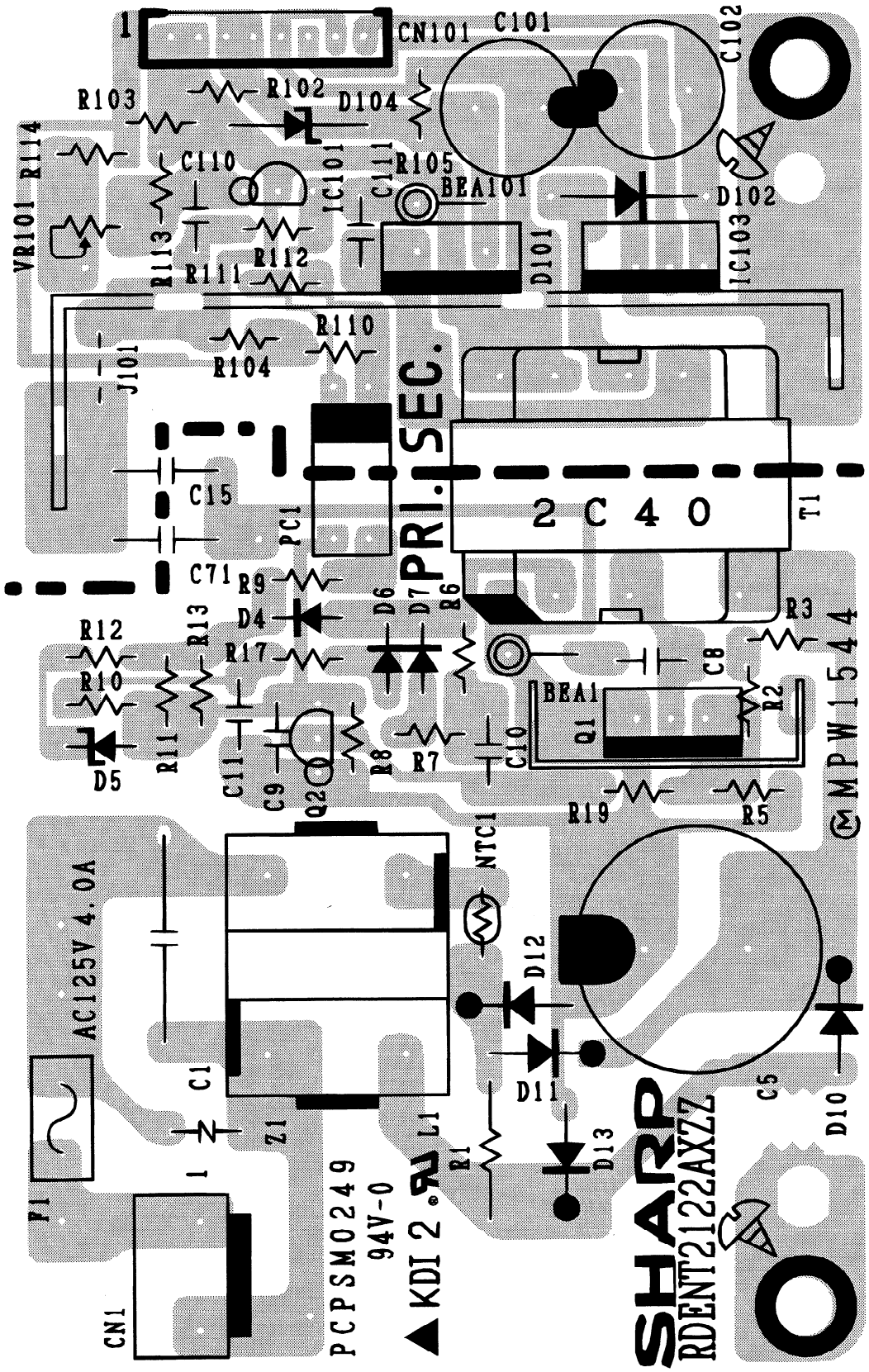




[7] Power supply PWB circuit

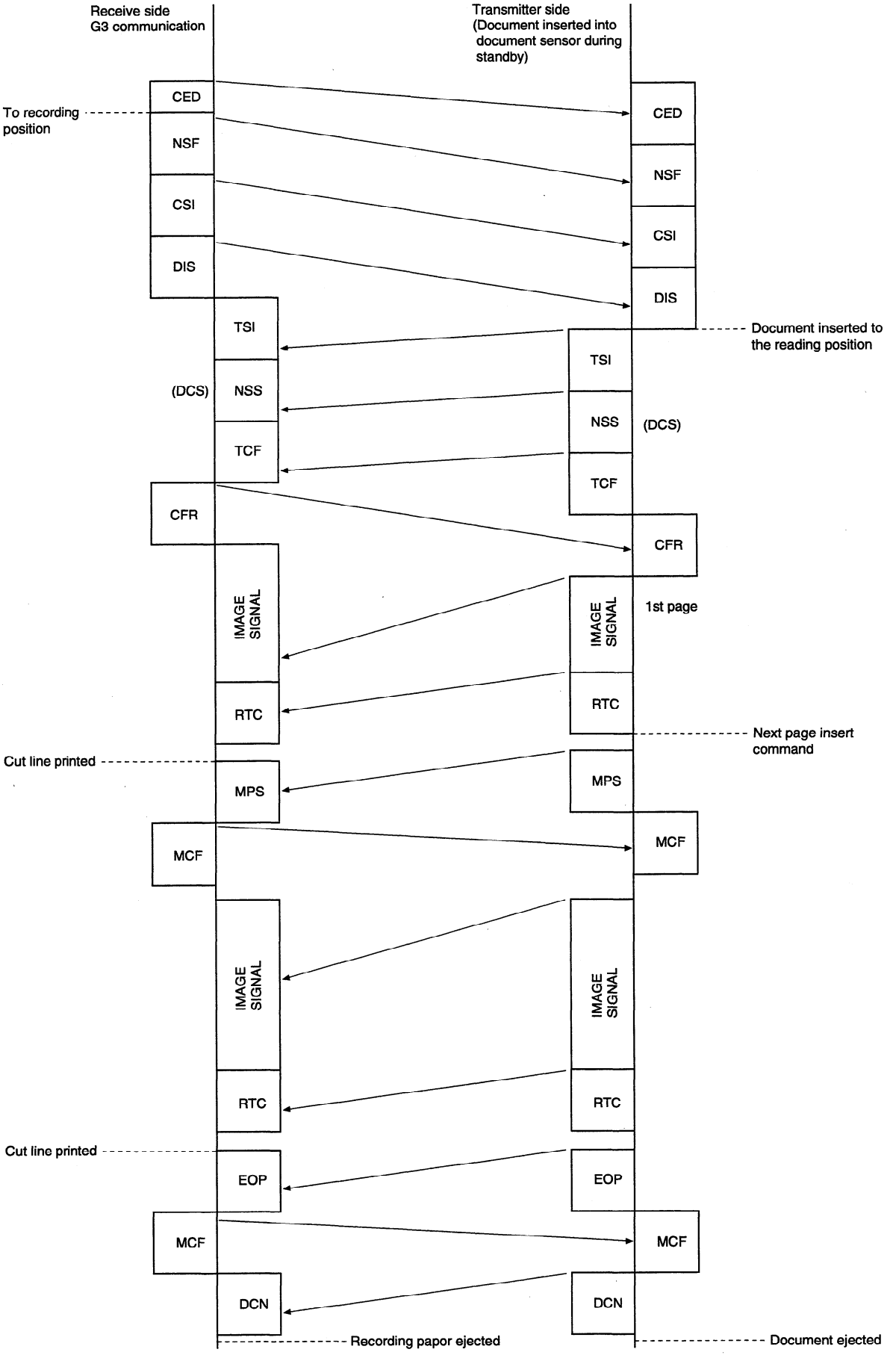


Power supply PWB parts layout

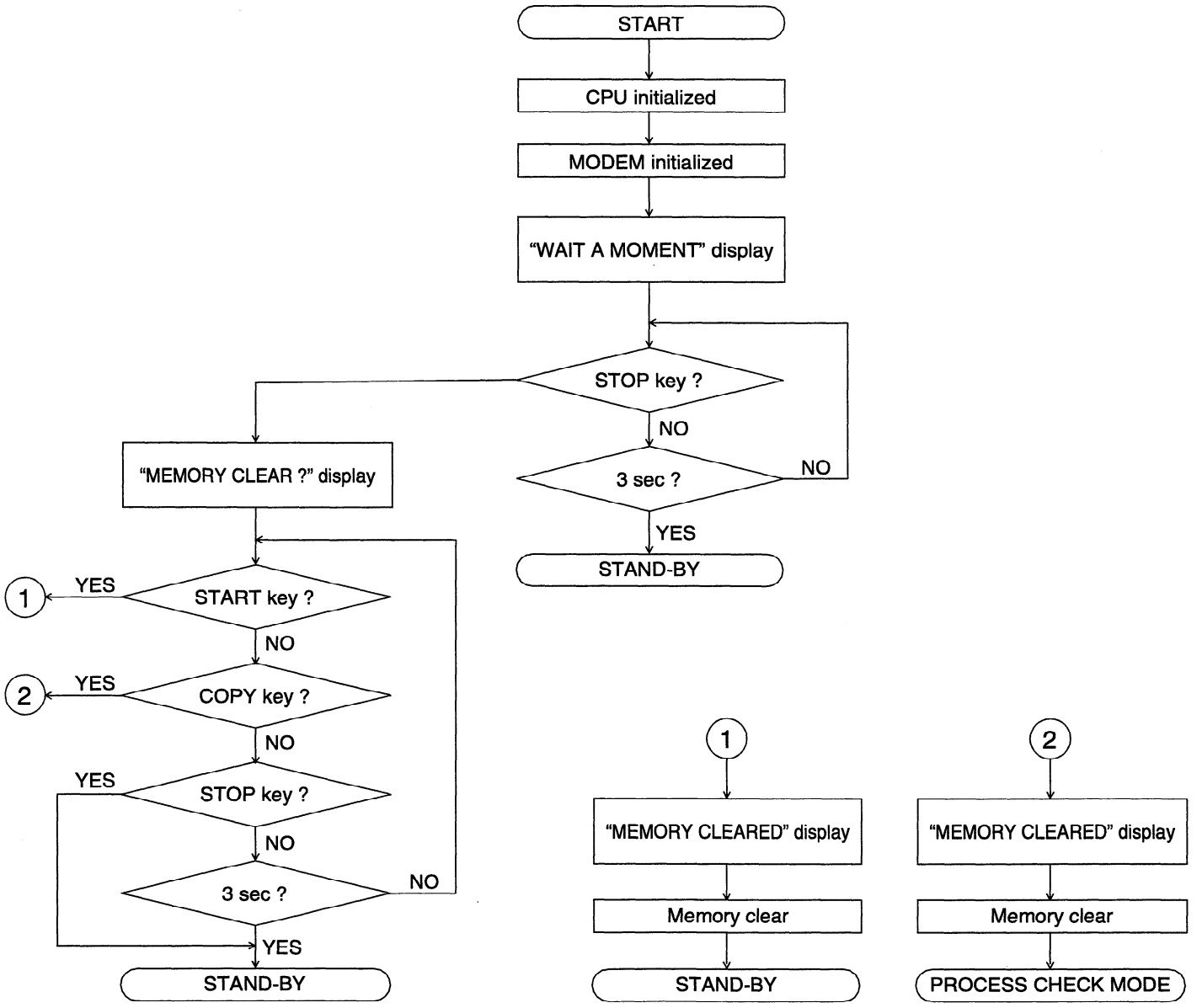


CHAPTER 7. OPERATION FLOWCHART

[1] Protocol



[2] Power on sequence



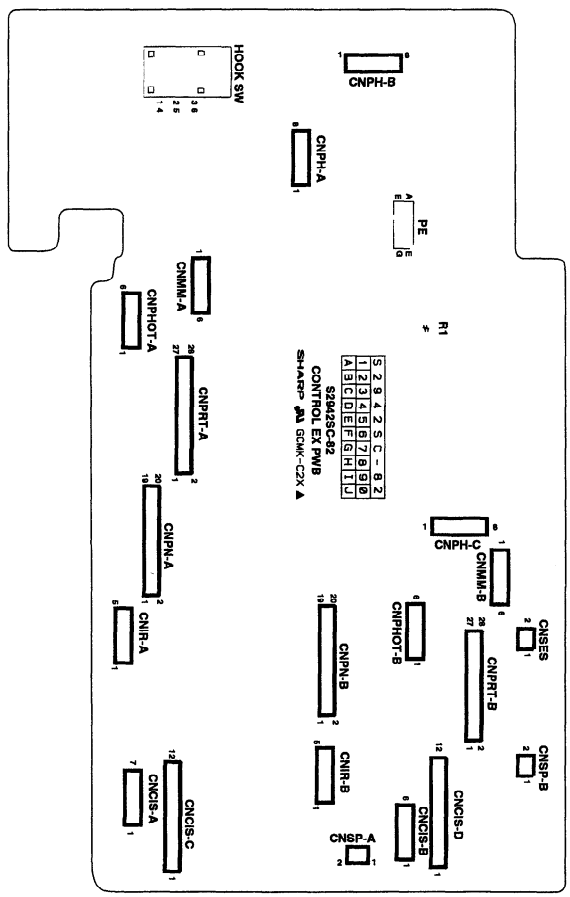
CHAPTER 8. OTHERS

[1] Service tools

1. List

NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	CPWBS2942SC02	Extension board unit	1	CE
2	PSHEZ3396SCZZ	Scanner calibration sheet (Shading sheet)	1	AE

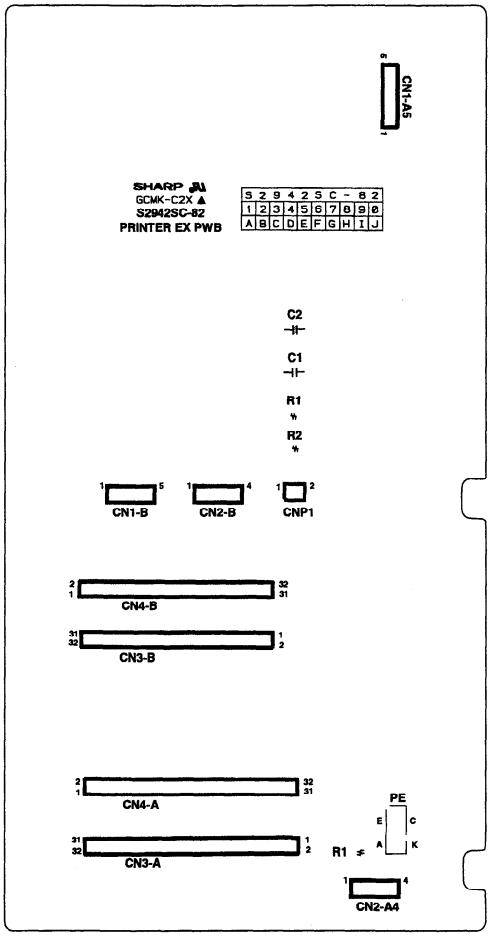
Extension control board unit



EXTENSION CONTROL PWB

NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	QCNW-4794SCZZ	CABLE [CNSPB]	1	AK
2	QCNW-4795SCZZ	CABLE [CNIRB]	1	AM
3	QCNW-4796SCZZ	CABLE [CNMMB]	1	AN
4	QCNW-4797SCZZ	CABLE [CNPHOTB]	1	AN
5	QCNW-4941SCZZ	CABLE [CNCISD]	1	AP
6	QCNW-4799SCZZ	CABLE [CNPNB]	1	AX
7	QCNW-4800SCZZ	CABLE [CNPRTB]	1	AZ
8	QCNW-4801SCZZ	CABLE [CNSES]	1	AU
9	QCNCM2401SC0B	CONNECTOR [CNSES]	1	AA
10	QCNCM2401SC0F	CONNECTOR [CNPHOTA,CNPHOTB]	2	AB
11	QCNCM2482SC2J	CONNECTOR [CNPNA,CNPNB]	2	AE
12	QCNCM2482SC2H	CONNECTOR [CNPRTA,CNPRTB]	2	AG
13	QCNCM7014SC0B	CONNECTOR [CNSPA,CNSPB]	2	AD
14	QCNCM7014SC0E	CONNECTOR [CNIRA,CNIRB]	2	AB
15	QCNCM7014SC0F	CONNECTOR [CNMMA,CNMMB]	2	AB
16	QCNCM7014SC1B	CONNECTOR [CNCISC,CNCISD]	2	AD
17	VHPSG206S//-1	PHOTO TRANSISTOR [PE]	1	AG
18	VRD-HT2EY221J	RESISTOR (1/4W 220Ω ±5%) [R1]	1	AA
19	QSW-Z2206SCZZ	HOOK SWITCH [HOOKSW]	1	AH

Extension printer board unit



EXTENSION PRINTER PWB

NO.	PARTS CODE	DESCRIPTION	Q'TY	PRICE RANK
1	QCNW-4802SCZZ	CABLE [CNP1]	1	AU
2	QCNW-4803SCZZ	CABLE [CN1-B]	1	AM
3	QCNW-4804SCZZ	CABLE [CN2-B]	1	AM
4	QCNW-4805SCZZ	CABLE [CN3-B],[CN4-B]	2	AW
5	QCNCM7014SC0B	CONNECTOR [CNPI]	1	AD
6	QCNCM7014SC0D	CONNECTOR [CN2-A],[CN2-B]	2	AB
7	QCNCM7014SC0E	CONNECTOR [CN1-A],[CN1-B]	2	AB
8	QCNCW2556SC3B	CONNECTOR [CN3-A],[CN3-B],[CN4-A],[CN4-B]	4	AG
9	VHPSG206S//-1	PHOT INTERRUPTER [PC1]	1	AG
10	VRD-HT2EY471J	RESISTOR (1/4W 470Ω ±5%) [R1],[R2]	2	AA

2. Description

2-1. Extension board unit

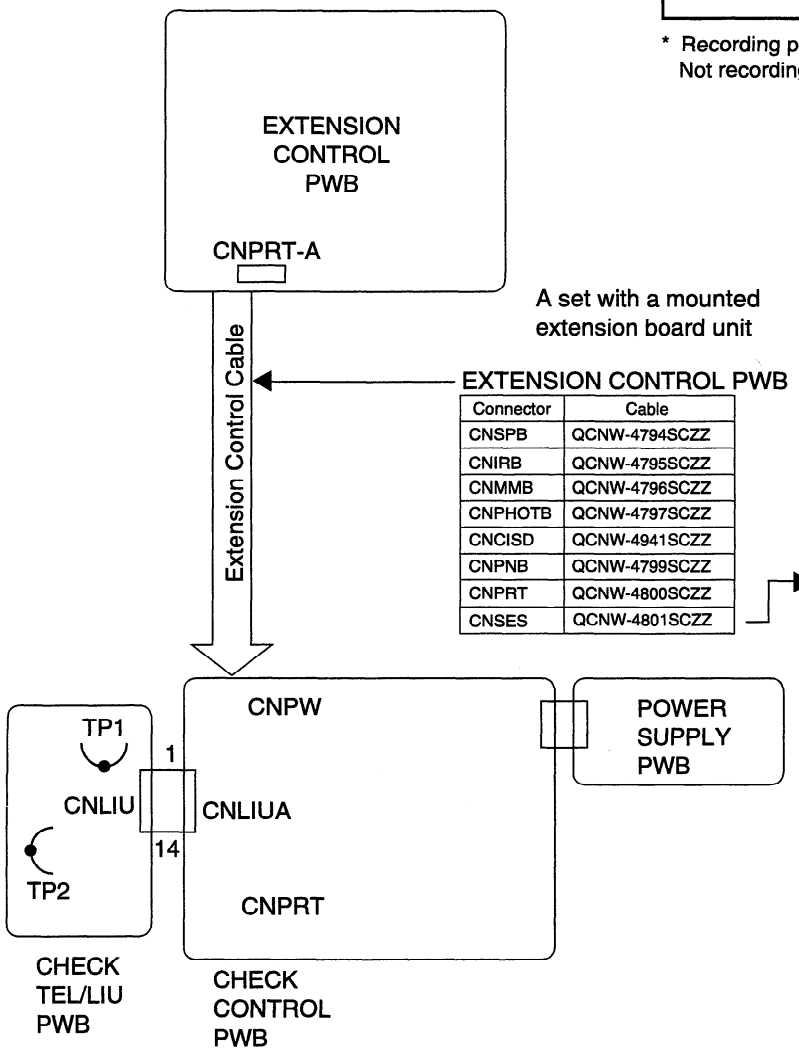
1. Remove the TEL/LIU PWB, control PWB and Power Supply PWB from this unit, and mount the extension board unit instead.
   - Before connecting the wiring to the extension board unit, set the test PWB switches to the fixed position.
2. The setting is as follows.

(1). Check Control PWB only

The paper-in sensor (PCI) is operated by OR of the mechanical unit switch and the test PWB switch.
When performing installation in the machine unit, set the test PWB switch to the fixed position.

	Mechanical unit	PWB to be tested
	Actual operation with mechanical unit	
Paper in sensor	ON/OFF operation	OFF (Photo interrupter is interrupted.)
	PWB sensor check	
Paper in sensor	OFF	ON/OFF operation

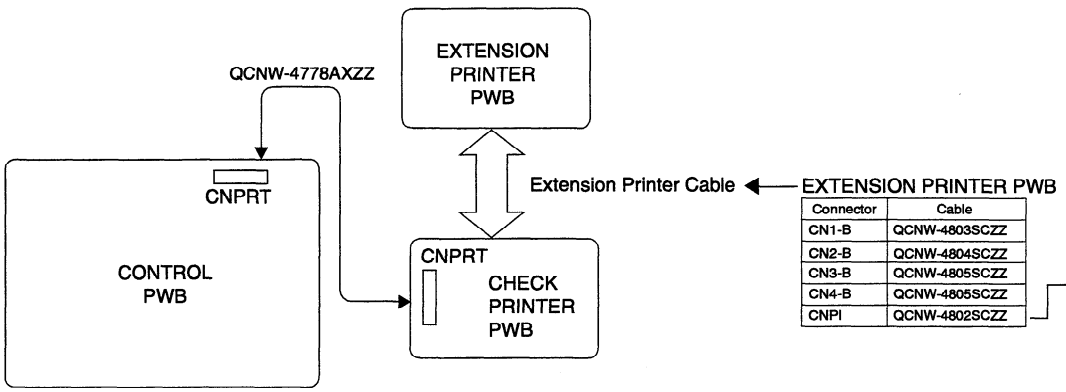
* Recording paper in: ON
Not recording paper in: OFF



Connector	Cable
CNSPB	QCNW-4794SCZZ
CNIRB	QCNW-4795SCZZ
CNMMB	QCNW-4796SCZZ
CNPHOTB	QCNW-4797SCZZ
CNCISD	QCNW-4941SCZZ
CNPNB	QCNW-4799SCZZ
CNPRT	QCNW-4800SCZZ
CNSES	QCNW-4801SCZZ

Cable color	CNSES	Connected to (PWB)
1.GREEN	PE	TP1 (TEL/LIU)
2.Red	RHS	TP2 (TEL/LIU)

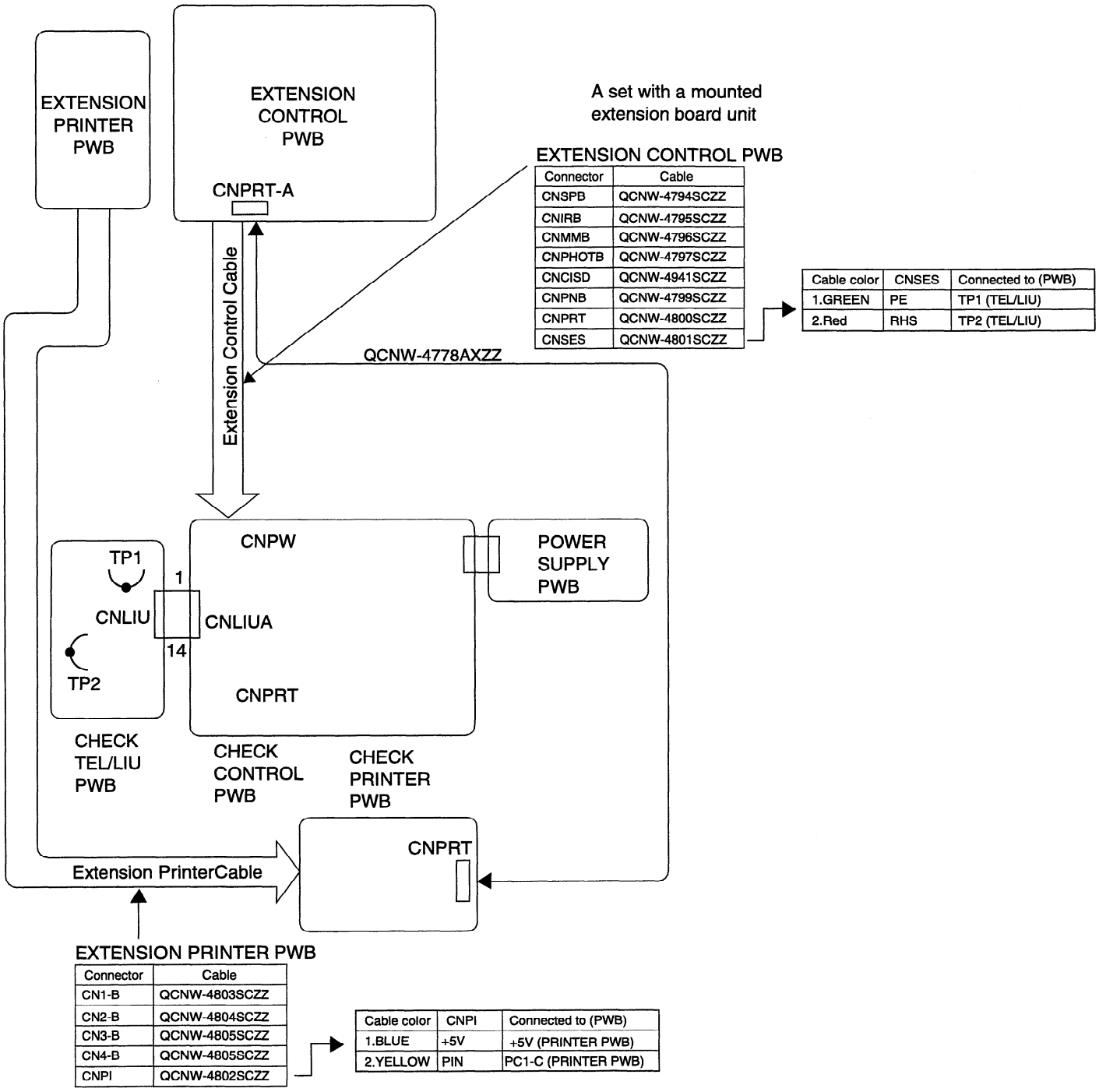
(2). Check Printer PWB only



Connector	Cable
CN1-B	QCNW-4803SCZZ
CN2-B	QCNW-4804SCZZ
CN3-B	QCNW-4805SCZZ
CN4-B	QCNW-4805SCZZ
CNPI	QCNW-4802SCZZ

Cable color	CNPI	Connected to (PWB)
1.BLUE	+5V	+5V (PRINTER PWB)
2.YELLOW	PIN	PC1-C (PRINTER PWB)

(3). Check Printer PWB and Control PWB



Connector	Cable
CNSPB	QCNW-4794SCZZ
CNIRB	QCNW-4795SCZZ
CNMMB	QCNW-4796SCZZ
CNPHOTB	QCNW-4797SCZZ
CNCISD	QCNW-4941SCZZ
CNPNB	QCNW-4799SCZZ
CNPRT	QCNW-4800SCZZ
CNSES	QCNW-4801SCZZ

Cable color	CNSES	Connected to (PWB)
1.GREEN	PE	TP1 (TEL/LIU)
2.Red	RHS	TP2 (TEL/LIU)

Connector	Cable
CN1-B	QCNW-4803SCZZ
CN2-B	QCNW-4804SCZZ
CN3-B	QCNW-4805SCZZ
CN4-B	QCNW-4805SCZZ
CNPI	QCNW-4802SCZZ

Cable color	CNPI	Connected to (PWB)
1.BLUE	+5V	+5V (PRINTER PWB)
2.YELLOW	PIN	PC1-C (PRINTER PWB)

3. Scanner calibration sheet (Shading sheet)

Be sure to perform this operation when replacing the battery or replacing the control PWB.Execute in the shading mode of DIAG mode.

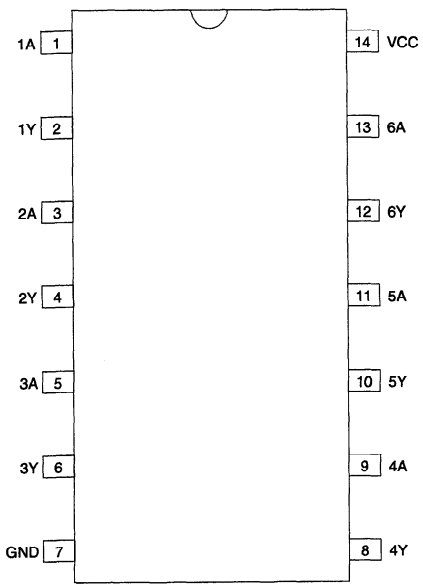
SCANNER CALIBRATION SHEET FOR FULL COLOR MFP (PSHEZ3396SCZZ)
INSERT WITH THIS SIDE UP. ▲

[2] IC signal name

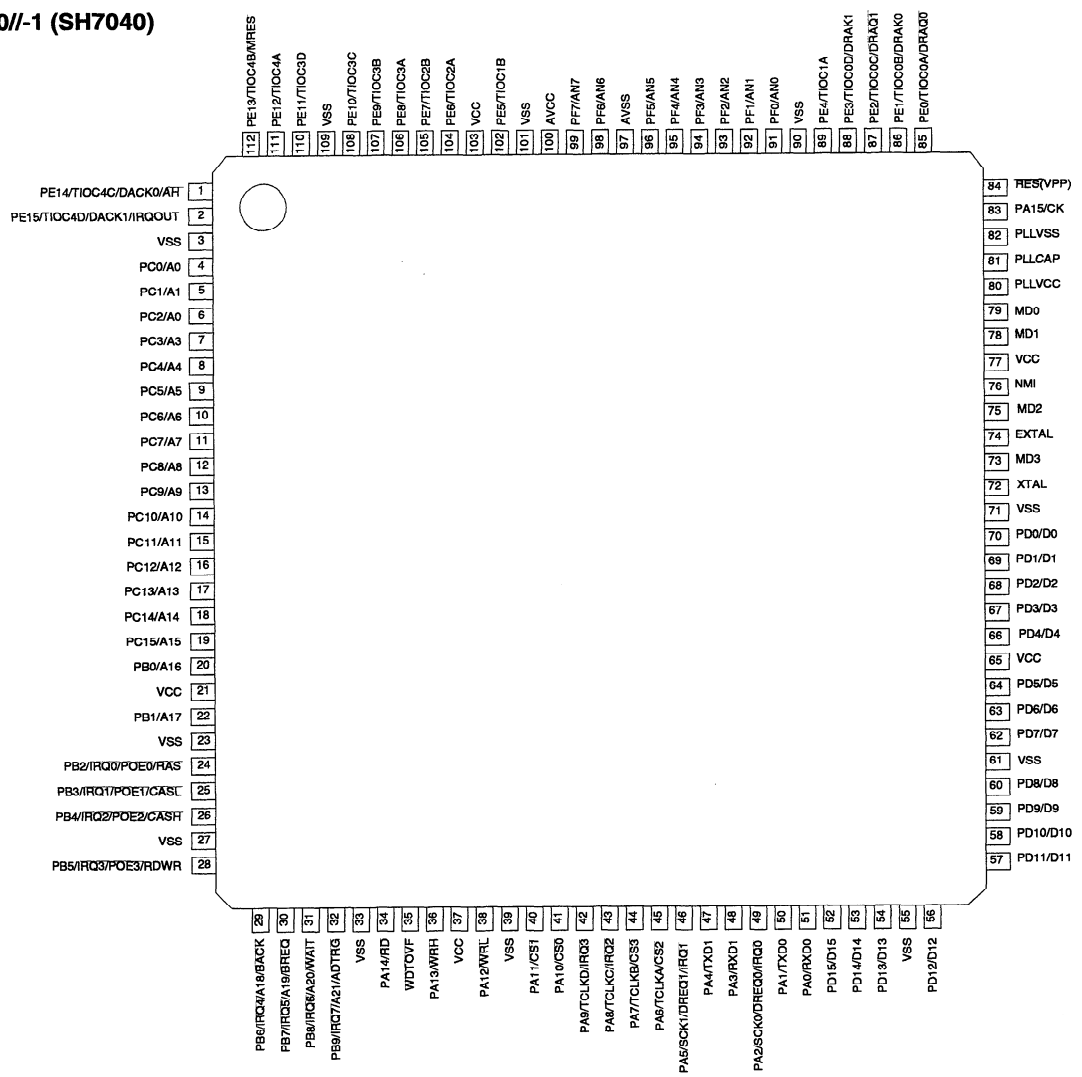
CONTROL PWB UNIT

IC5, IC9: VHi74HCU04S-1 (74HCU04)
IC12: VHiSN74HC14NSR (74HC14)
IC15: VHiSN74HCO4NSR (HC04)

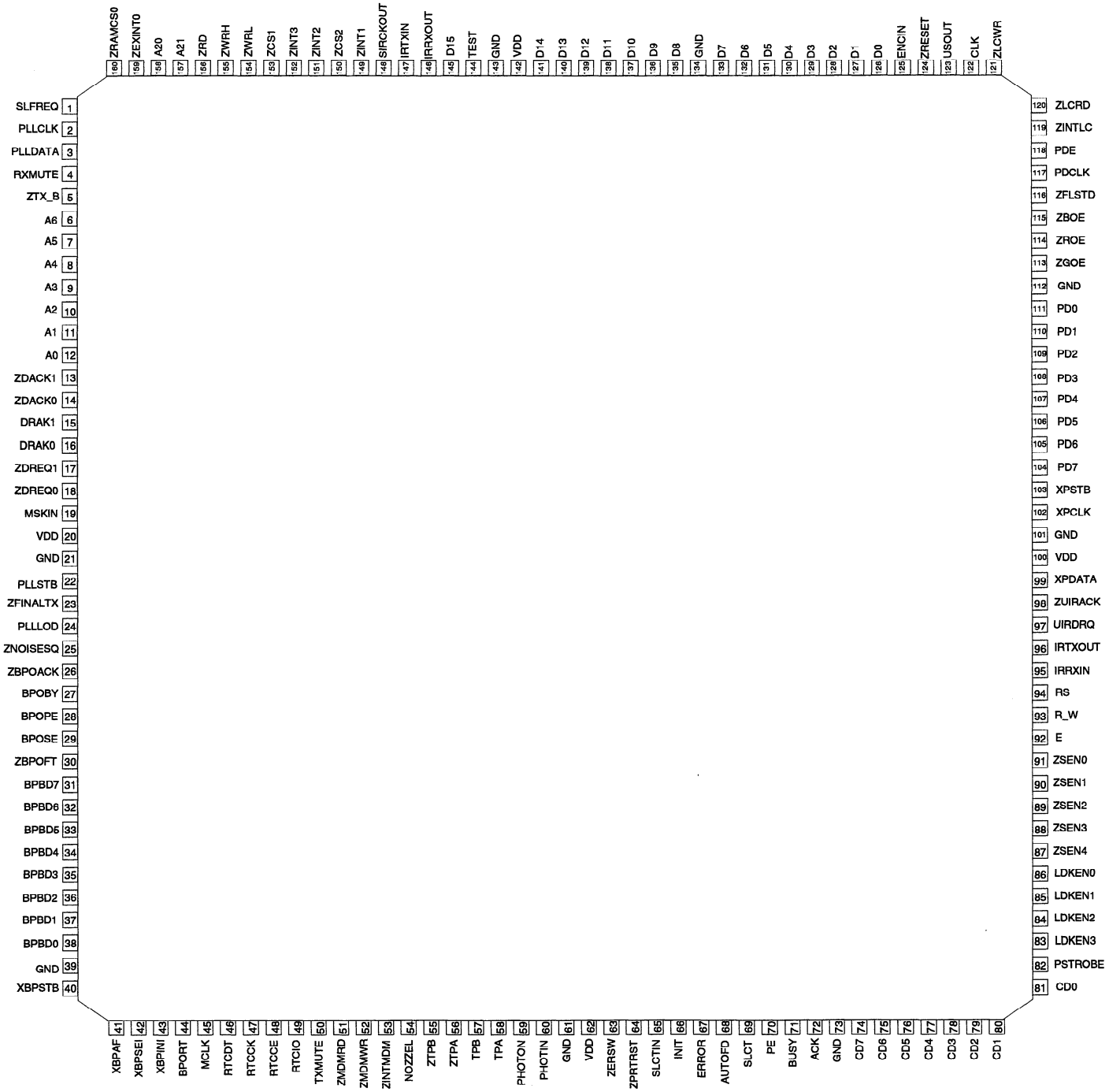
TOP VIEW



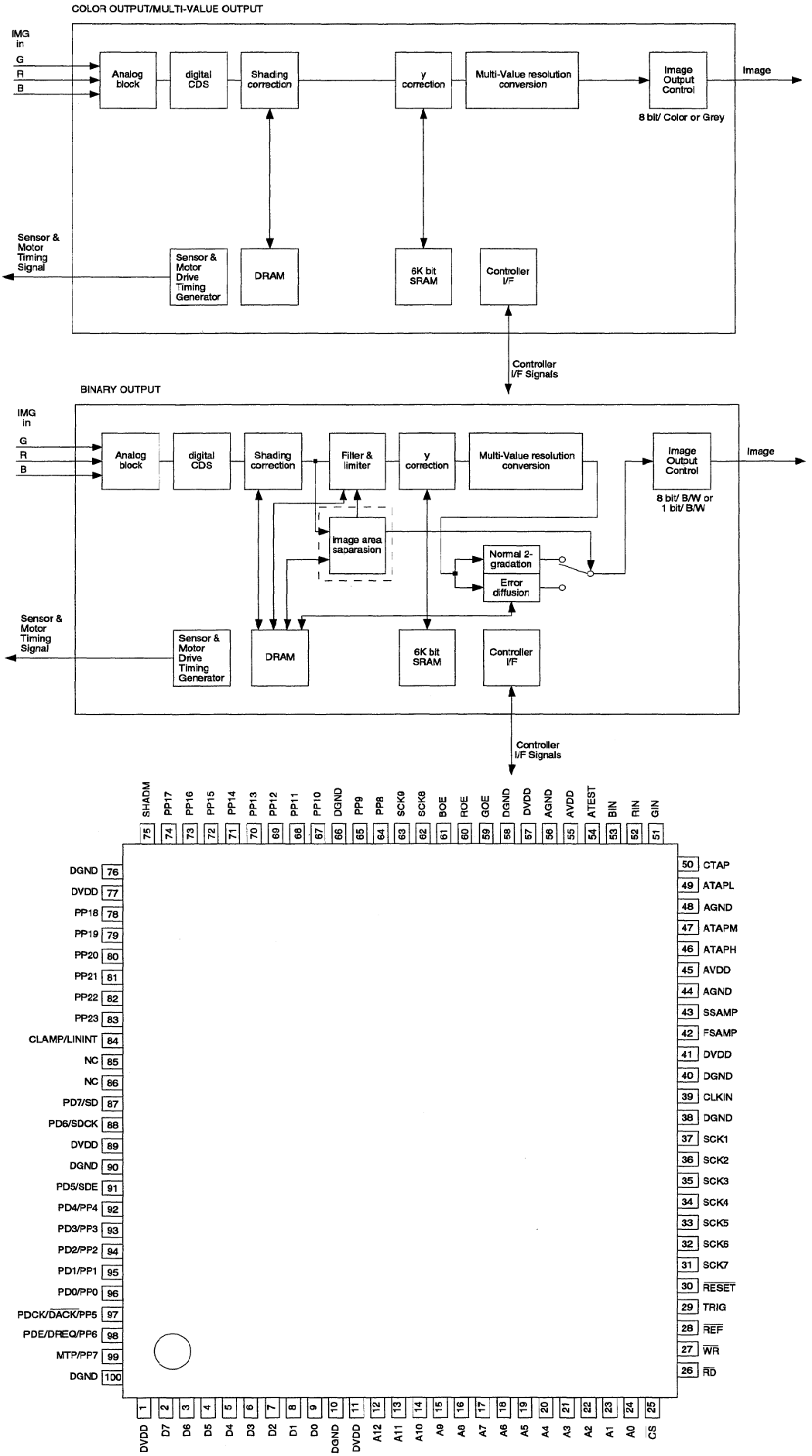
IC11: VHiSH7040//-1 (SH7040)



IC10: VHiLZ9FJ49/-1 (LZ9FJ49)



IC6: VHiLC821040-1 (LC82104)



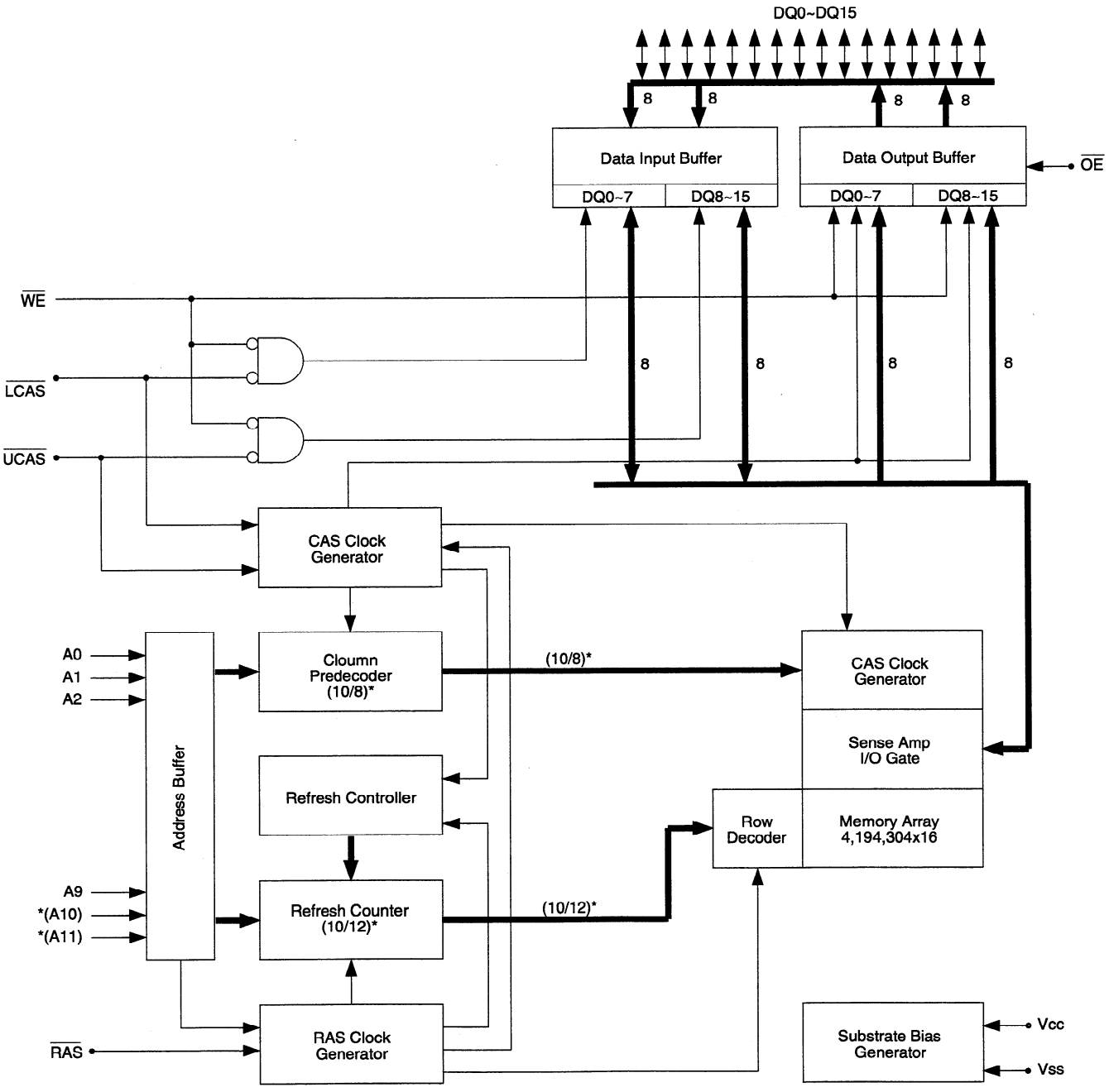
LC82104 (IC6) Terminal Function

Pin NO.	Signal Name	I/O	Function
1	DVDD	P	Digital power terminal
2	D7	B	CPU interface data bus terminal D7/MSB , D0/LSB terminal
3	D6	B	
4	D5	B	
5	D4	B	
6	D3	B	
7	D2	B	
8	D1	B	
9	D0	B	
10	DGND	P	Digital ground terminal
11	DVDD	P	Digital power terminal
12	A12	I	CPU interface address bus terminal A12/MSB , A0/LSB terminal
13	A11	I	
14	A10	I	
15	A9	I	
16	A8	I	
17	A7	I	
18	A6	I	
19	A5	I	
20	A4	I	
21	A3	I	
22	A2	I	
23	A1	I	
24	A0	I	
25	$\overline{CS}$	I	CPU interface chip selection signal terminal
26	$\overline{RD}$	I	CPU interface reading signal terminal
27	$\overline{WR}$	I	CPU interface writing signal terminal
28	$\overline{REF}$	I	DRAM refresh signal input terminal
29	TRIG	I	External trigger signal input terminal
30	$\overline{RESET}$	I	System reset terminal
31	SCK7	O	Sensor drive signal output terminal
32	SCK6	O	
33	SCK5	O	
34	SCK4	O	
35	SCK3	O	
36	SCK2	O	
37	SCK1	O	
38	DGND	P	Digital ground terminal
39	CLKIN	I	System clock input terminal
40	DGND	P	Digital ground terminal
41	DVDD	P	Digital power terminal
42	FSAMP	O	Floating point monitor signal output terminal
43	SSAMP	O	Sensor data point monitor signal output terminal
44	AGND	P	Analog ground terminal
45	AVDD	P	Analog power terminal
46	ATAPH	O	Analog intermediate terminal for A/D converter high reference
47	ATAPM	O	Analog intermediate terminal for A/D converter middle reference
48	AGND	P	Analog ground terminal
49	ATAPL	O	Analog intermediate terminal for A/D converter low reference
50	CTAP	O	Analog intermediate terminal for analog clamp
51	GIN	I	Green sensor signal input terminal
52	RIN	I	Red sensor signal input terminal
53	BIN	I	Blue sensor signal input terminal
54	ATEST	O	Analog test terminal (normal open)
55	AVDD	P	Analog power terminal
56	AGND	P	Analog ground terminal
57	DVDD	P	Digital power terminal
58	DGND	P	Digital ground terminal
59	GOE	O	Green data valid period signal terminal
60	ROE	O	Red data valid period signal terminal
61	BOE	O	Blue data valid period signal terminal

Pin NO.	Signal Name	I/O	Function
62	SCK8	O	Sensor drive signal output terminal
63	SCK9	O	
64	PP8	B	General input/output port terminal
65	PP9	B	
66	DGND	P	Digital ground terminal
67	PP10	B	General input/output port terminal
68	PP11	B	
69	PP12	B	
70	PP13	B	
71	PP14	B	
72	PP15	B	
73	PP16	B	
74	PP17	B	
75	SHADM	O	Distortion correction valid period signal output terminal
76	DGND	P	Digital ground terminal
77	DVDD	P	Digital power terminal
78	PP18	B	General input/output port terminal
79	PP19	B	
80	PP20	B	
81	PP21	B	
82	PP22	B	
83	PP23	B	
84	CLAMP/LININT	O	Clamp point monitor signal output/Line signal output terminal
85		NC	
86		NC	
87	PD7/SD	O	DMA output/Serial data output terminal
88	PD6/SDCK	O	DMA output/Serial transmission clock output terminal
89	DVDD	P	Digital power terminal
90	DGND	P	Digital ground terminal
91	PD5/SDE	O	DMA output/Serial data output valid period signal terminal
92	PD4/PP4	B	DMA output/General input/output port terminal
93	PD3/PP3	B	
94	PD2/PP2	B	
95	PD1/PP1	B	
96	PD0/PP0	B	
97	PDCK/$\overline{\text{DACK}}$/PP5	B	Parallel data transmission clock output/DMA data acknowledge signal input/ General input/output port terminal
98	PDE/DREQ/PP6	B	Parallel data output valid period signal terminal/DMA data request signaloutput/ General input/output port terminal
99	MTP/PP7	B	Motor drive timing signal output/General input/output port terminal
100	DGND	P	Digital ground terminal

TYPE					
I	INPUT	B	BIDIRECTION	NC	NOT CONNECT
O	OUTPUT	P	POWER		

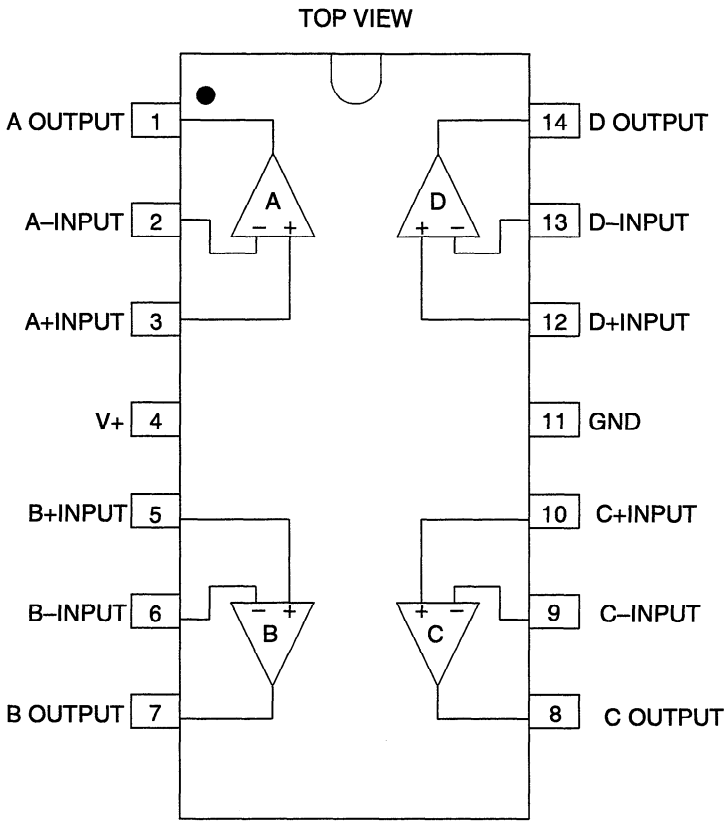
IC19 , 24: VHiHY18164CJ6 (MSM5118164C)



*(A10) and *(A11) for 4K refresh part
(1K Refresh / 4K Refresh)

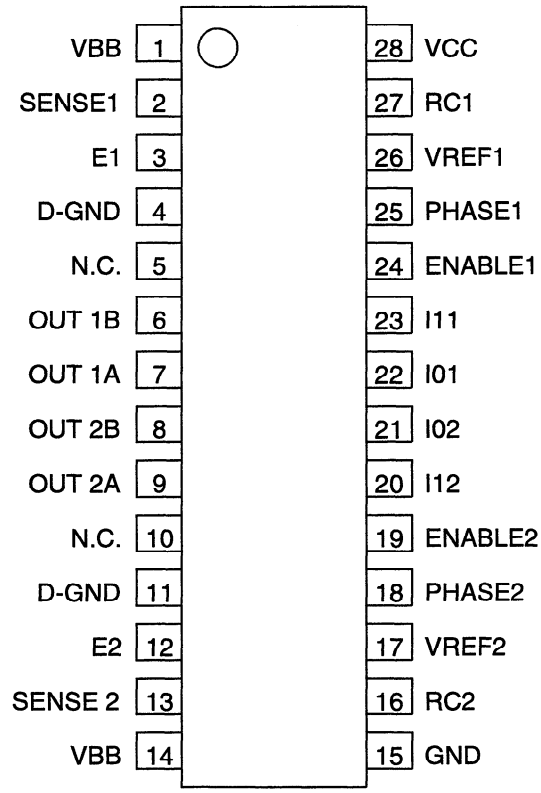
INK SENSOR PWB UNIT

IC1: VHiNJM324M/-1 (LM324M)



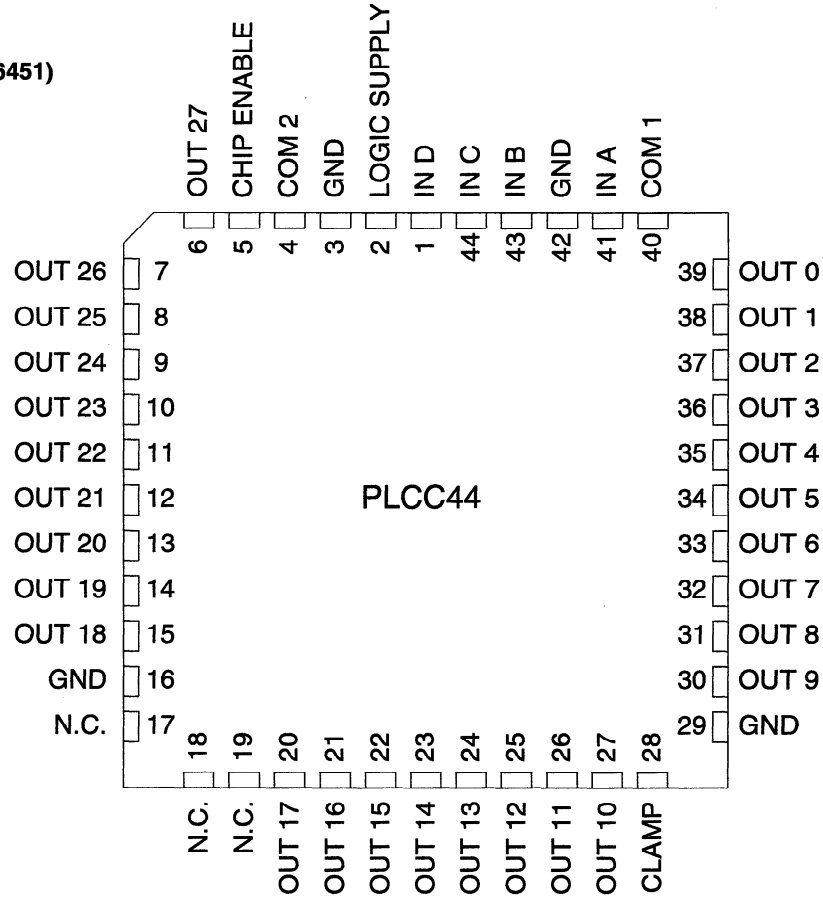
PRINTER PWB UNIT

IC1: VHiLB1845//-1 (LB1845)

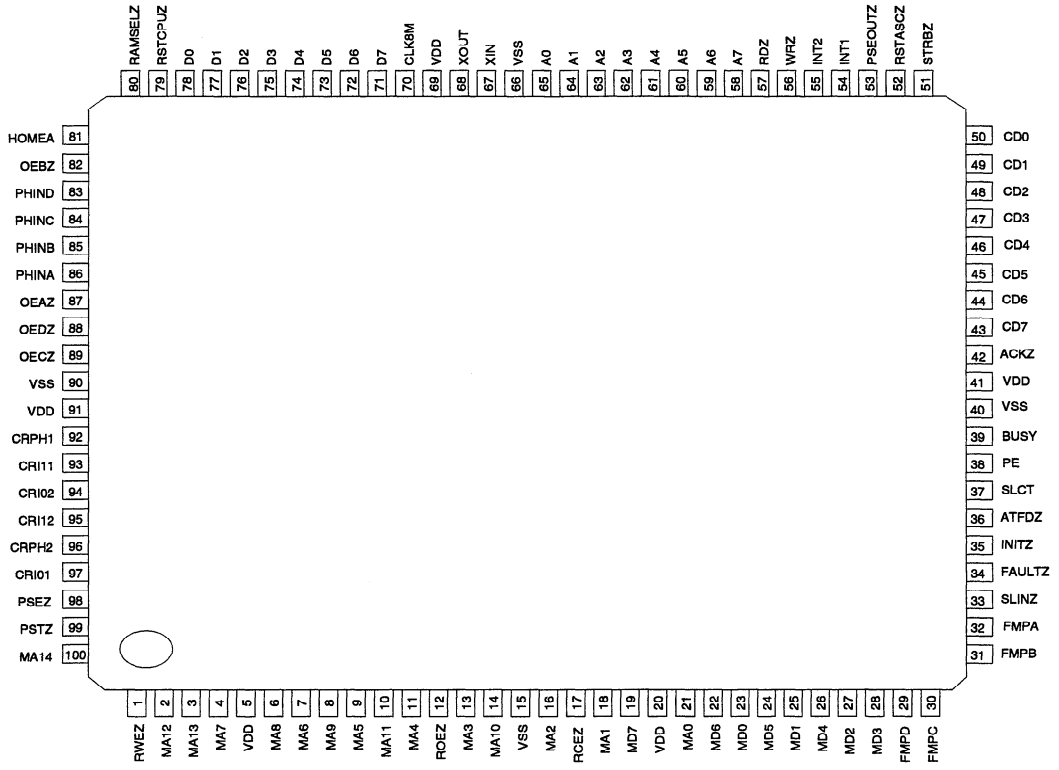


PRINTER PWB UNIT

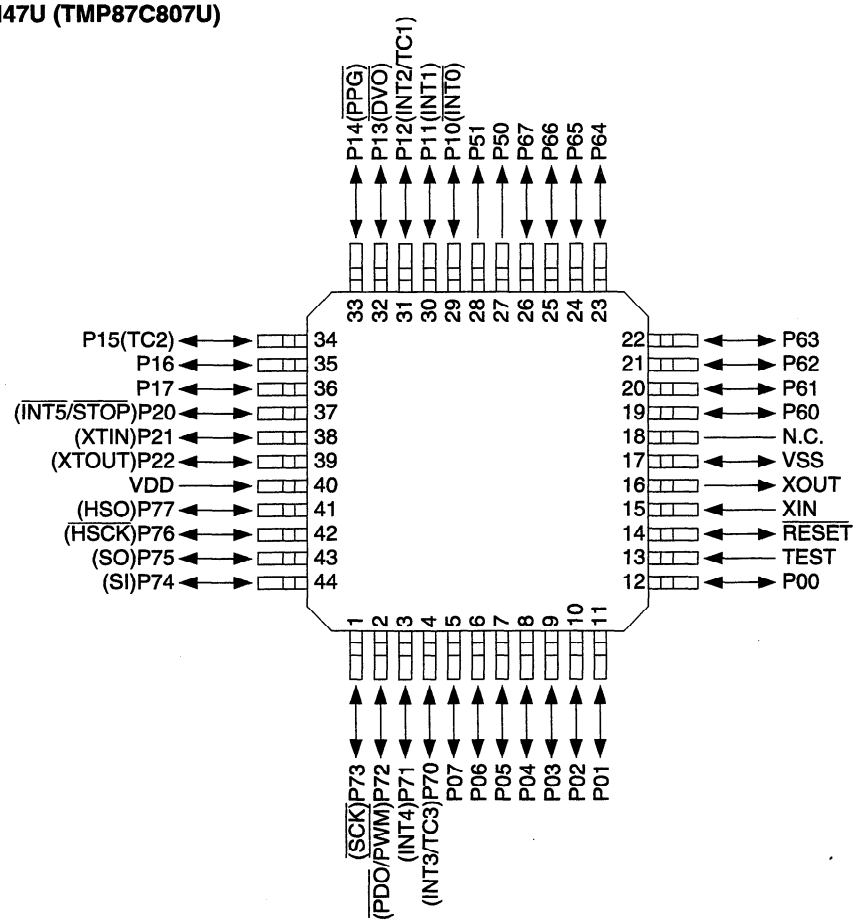
IC4, IC6: VHiL6451///-1 (L6451)



IC5: VHiTC16G331AF (TC160G331AF)



IC8: VHiTMP87PH47U (TMP87C807U)



CHAPTER 9. INK JET PRINTER

[1] Engine specifications

1. Mechanism

Resolution	: 600 dpi x 600 dpi addressability
Print Speed	: 3 PPM draft text with black cartridge
Print Swath	: 8 inches
Duty Cycle	: Up to 500 pages per month maximum, 170 pages per month average
Dimensions (approximate)	: 350mm x 125mm x 60mm
Weight (approximate)	: 1.2 pounds
Acoustics	: 45 dBA in letter quality mode (using Lexmark paper feed and covers which is not included)

2. Electrical

No electrical hardware included with the type B engine except for the carrier drive stepping motor and the Sensor FPC assembly whitch includes a photo interrupter for sensing home position, the carrier cables and the printhead cable.

3. Print Cartridges (Print Cartridges are supply items and sold separately)

Black Print Cartridge :	56 Nozzles Pigment based(water proof) High yield cartridge Up to 1000 pages at 5% coverage
Color Print Cartridge :	48 Nozzles(16 Nozzles each of cyan, magenta and yellow) Fade resistant ink 300 pages average at 15% coverage of 3 colors (5% coverage of each color)

[2] Abbreviations

EOF	End-of Form
ESD	Electrostatic Discharge
FRU	Field Replaceable Unit
HVPS	High Voltage Power Supply
LVPS	Low Voltage Power Supply
NVRAM	Nonvolatile Random Access Memory
OEM	Original Equipment Manufacturer
POST	Power-On Self Test
V ac	Volts alternating current
V dc	Volts direct current
ZIF	Zero Insertion Force

[3] Diagnostic information

Start

Power-OnSelf Test (POST) Sequence

When you turn the printer on it performs a POST. Turn the machine on and check for a correct POST operation by observing the following:

1. The carrier moves.
2. The paper feed gears turn.
3. After 30 seconds the carrier moves over the maintenance station and caps the printhead.
4. All motors stop.

[4] Circuit description

1. General description

The compact design of printer PWB is obtained by using 8 bit microprocessor(CPU) and ASIC in the printer control section.

2. Electrical System

The PWB provides mechanical control for Ink Jet Printer.
Figure 1 shows the interconnection of PWB and other electrical component in the print mechanism.

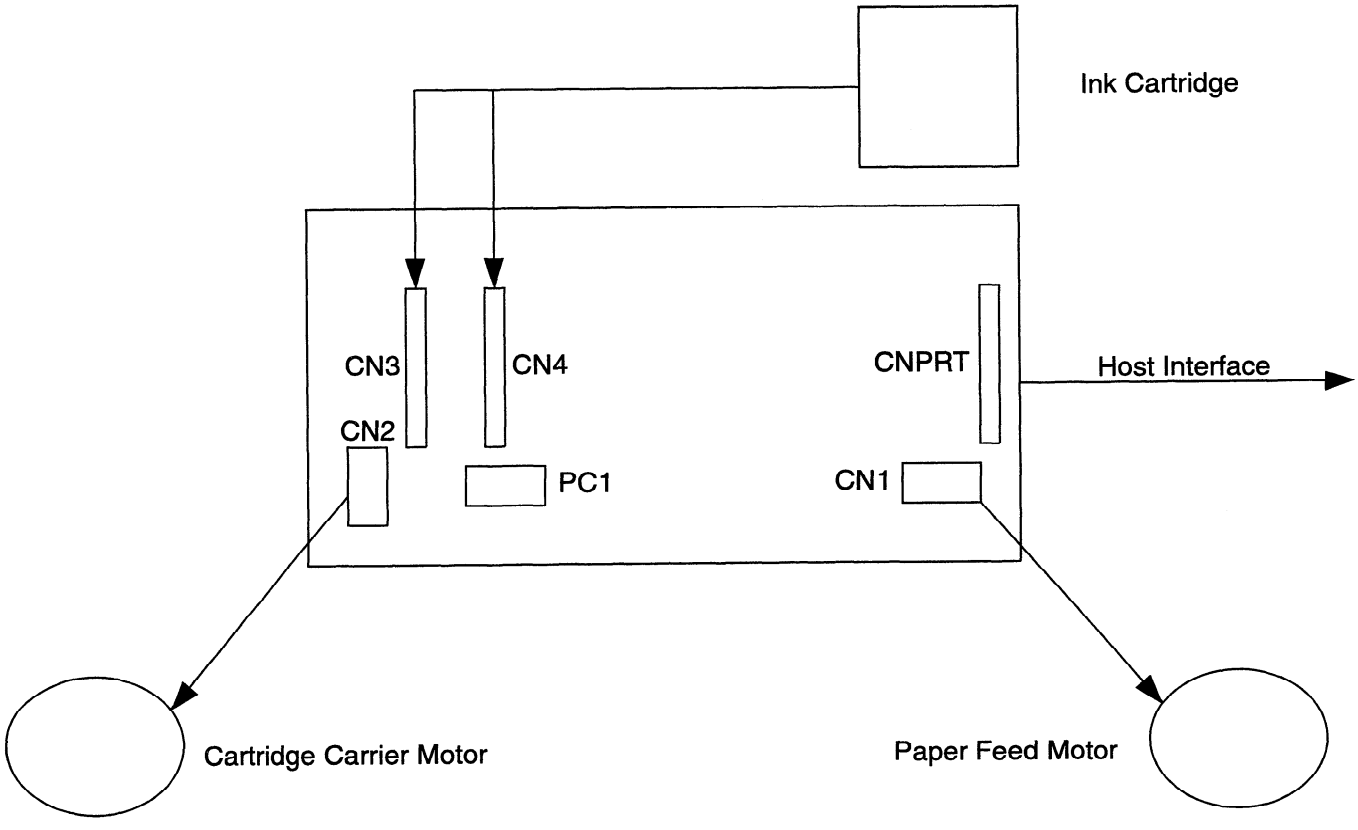


Figure 1

3. Electricai Overview

The information in this section appears in a sequence relative to the system diagram in the following figure.

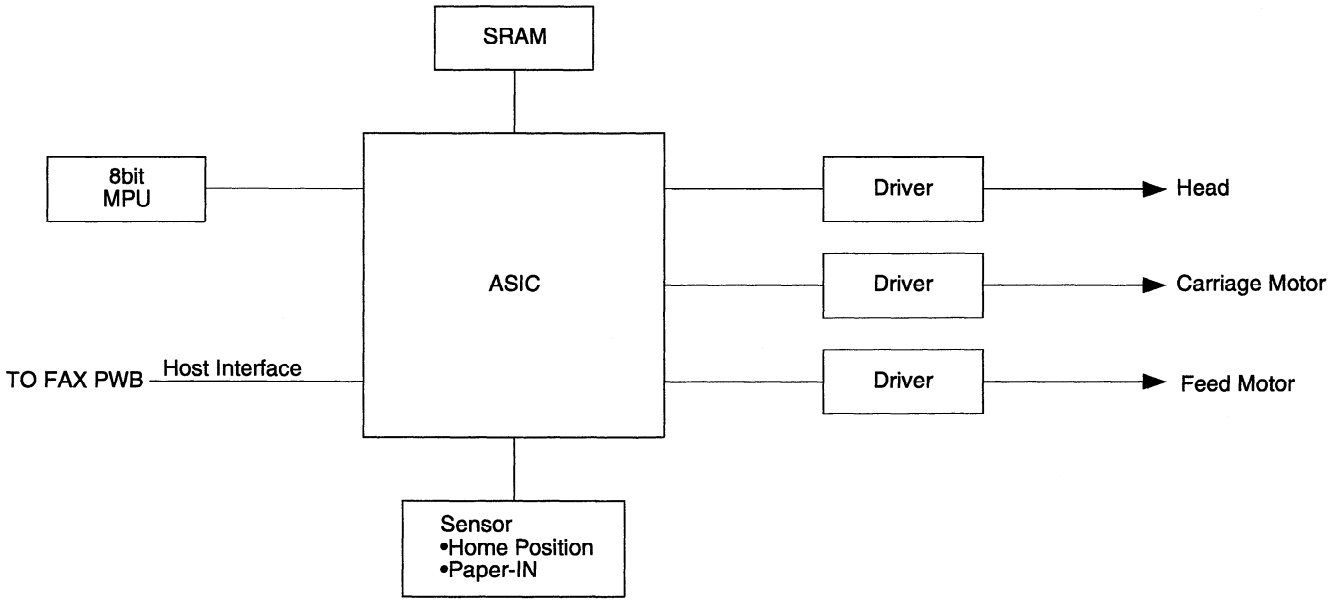


Figure 2 System of printer Block diagram

4. Power Supply Connector

The mechanism requires two voltages (+5V and +24V).
These two voltages supplied from CNPRT connector.

5. Host interface connector

Connector CNPRT on the printer PWB provides 28 lines from the host unit, for control of various operating options available to the host.
The two primary functions of the host interface are:
Printing data for the Ink Jet Printer.
Error status to the host.

6. ASIC, RAM, and CPU

The Application Specific Integrated Circuit(ASIC) combines several blocks of circuitry into one chip.
Descriptions of circuitry within the ASIC appear later in the section.
A microprocessor bus, which extends inside the ASIC, carries data among the CPU(include internal ROM), RAM, and ASIC circuitry.
The ROM (inside CPU) is a 8K Byte chip that contains the software code (firmware) for the Ink Jet Printer.
The RAM is a 32 K Byte chip that stores print data and other variable information.

7. Driver IC

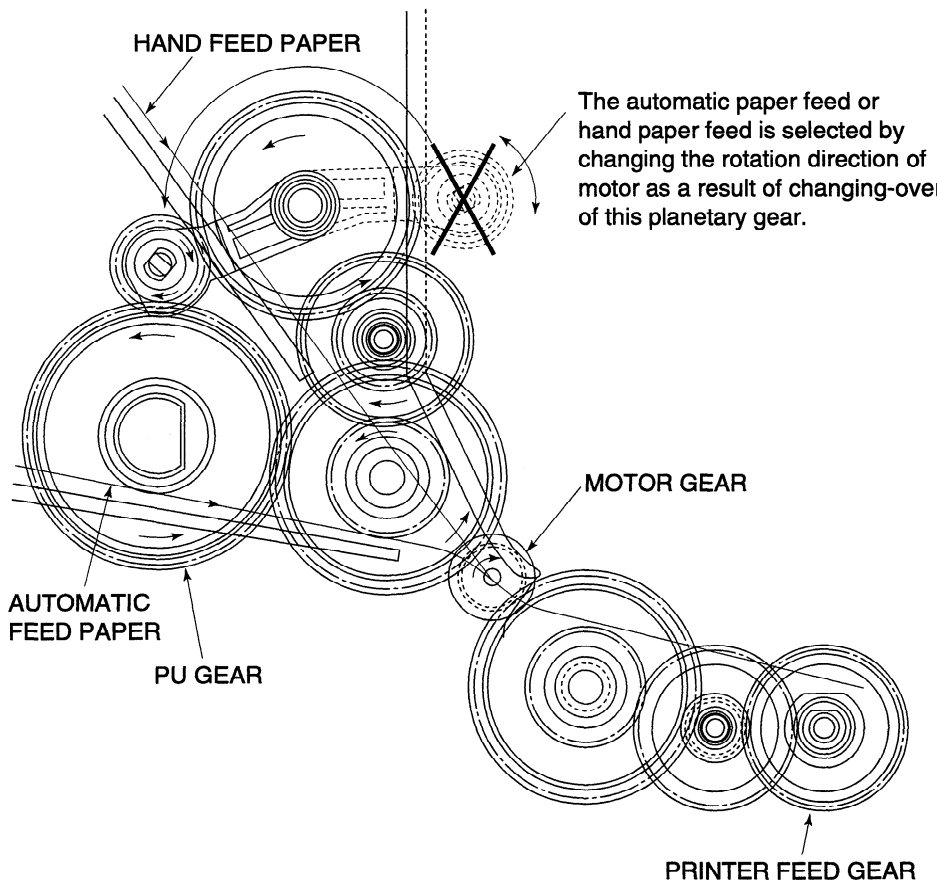
The paper motor and carriage motor require current that cannot be driven directly from ASIC chip.
Motor driver IC provide the additional current and voltage capability.
The driver IC (IC1 and IC2) located near the respective motor connector on the printer PWB also connect back to the ASIC.
Two additional drivers IC drive 56 nozzles on the cartridge.
These driver ICs , located between the two flex-circuit connector (CN3 and CN4) on the printer PWB , also connected back to the ASIC.
The out-of-paper sensor do not require drivers, and connect directly to the ASIC.
The Host interface also connects directory to the ASIC.

8. Paper Motor

The ASIC controls the paper motor, which is a stepper motor that connects via a 5 pin connector to CN1 on the printer PWB.
The stepper motor is a 4-coil motor, which must be stepped in proper sequence, requiring four signal lines to initiate each line.
This is an open-loop system that does not provide feedback to the logic circuit on printer PWB.
The Paper motor drives the recording paper movement.
The planetary gear is changed over according to the rotation direction of this motor.
Accordingly,hand paper feed or automatic paper feed is selected.

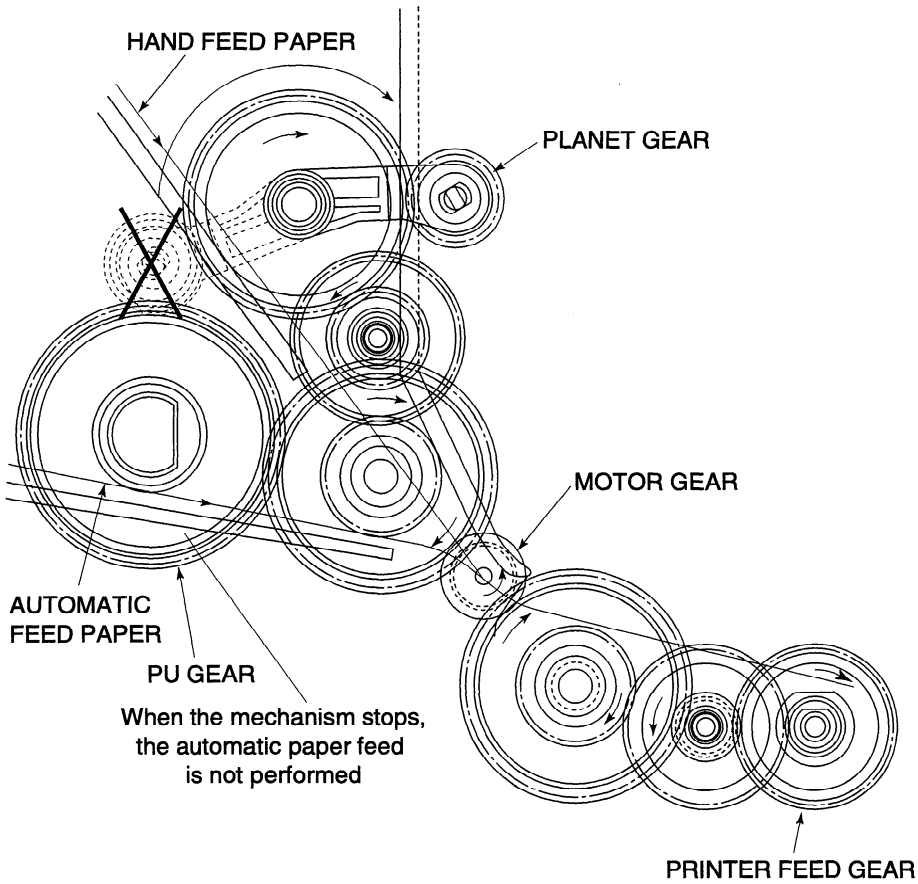
(1) Paper feed(paper feed from tray)

The planetary gear turns counterclockwise and is connected to the PU gear,so that paper is fed automatically.



(2) Print transfer

The planetary gear turns clockwise and is disconnected from the PU gear,so that the paper is not fed automati cally. In case of hand paper feed the paper is fed directly to the transfer roller.



9. Carriage Motor

The ASIC controls the carriage motor, which is a stepping motor that connects via a 4-pin connector to CN2 on the printer PWB.

10. INK Cartridge Carriage

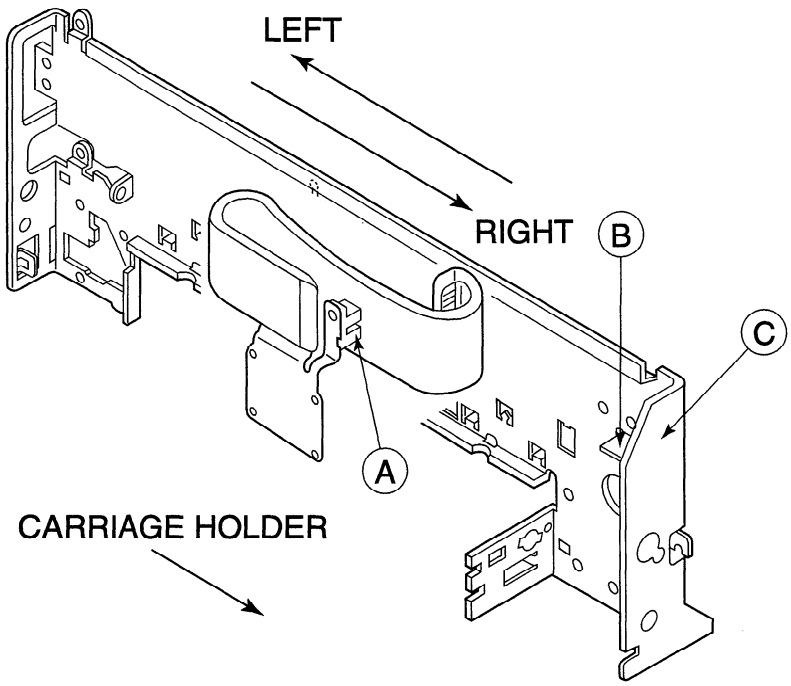
The carriage connects via a flex circuit that plugs into the 32 pin connectors, CN3 and CN4 on the printer PWB.
The ink cartridge contacts connect to the carriage contacts.
The ASIC controls the carriage , and ink cartridge.

11. Paper IN Sensor

The Peper-IN-Sensor exists on printer PWB.
This sensor is an optical sensor.If the optical route is interrupted,Collector PIN(pin-C)of this sensor indicates Hi-Level(5V).If the optical route is opend,pin-C indicates Low-Level(0V).
This sensor provides information of front and end edge location of recording paper and information of paper jam.
The change between Hi and Low of this sensor(PC1 pin-C)is used as follows.

1. In the case of manual paper feeds
   When the recording paper is inserted from By-pass route,the front edge of this recording paper pushes the lever,and this sensor indicates L.
   Paper feed action is happened by this change and recording paper is fed in constant length.
   As paper feeds out of paper path,the lever returns,this sensor indicates H and provides information of end edge of the recording paper.
2. In the case of auto paper feeds
   When printing action happens and there is no recording paper at By-pass route and there are some recording papers at auto paper providing unit,the feed motor is driven and the recording paper is fed from auto paper providing unit.
   At this time,the change from H to L of this sensor provides the front edge of the recording paper.And this sensor provides information of paper jam ,when this sensor DOES NOT change from H to L after some time.
   As paper feeds out of paper path,the lever returns,this sensor indicates H from L and provides the infomation of end edge of the recording paper.

12. Home Position Sensor



The home position of carriage is detected as a result of change of output of photointurrupter (A) which is caused due to shutting-off of optical path of photointerrupter (A) by the slit (B).
While the photointerrupter is shut off by the slit B, the output (pin 1 of CN3) of photointerrupter gets H level (+5V). If it is not shut off, the output gets L level (0V).
In the home position the output is L. In case of L direction movement the output is H during passing through the slit, and after passing the output gets again L level.
The operation logic is as follows.
Insignificant movement in L direction
(1) If in this case the output is L:
It is judged that the carriage exists in the L direction as compared to the slit (B). The carriage is moved in the R direction, so that the output changes from L to H (during passing through the slit (B)). Further the carriage is moved in the R direction. The position where H changes to L again is regarded as a home position.

(2) If in this case the output is H:
It is judged that the carriage exists near the home position, the carriage is moved in the R direction. The position where the output is changed from H to L is regarded as a home position.

Operation in case of malfunction of photointerrupter (A).
Case 1: When the output of photointerrupter remains H.

As is evident from the operation logic, the H output does not continue for a long time in case of normal operation. Hence, this state is judged to be abnormal. The carriage stops soon after it moves insignificantly.

Case 2: When the output of photointerrupter remains L.
The carriage is going to move according to the operation logic. Since the output remains L even when the sensor passes through the slit (B), the home position cannot be found, and the carriage moves continuously in the R direction. Finally, it contacts the frame (C), emitting an abnormal sound. The abnormal state is detected, and the motor stops.

[5] Overall troubleshooting of printer PWB

• BOTH CARRIAGE MOTOR AND FEED MOTOR ARE NG.

FUSE "F100" AND "F101" → OPEN → REPLACE F100 AND F101

OK ↓

+24V AT Q1-C (Figure 1) → NG → +24V AT Q1-E (Figure 1) → NG → CHECK RESISTANCE BETWEEN +24V AND GND. SHORT OR NOT → NO → CHECK +24V PATTERN

SHORT ↓

REPLACE PRINTER PWB

OK ↓

+5V AT Q101-B (Figure 2) → NG → CHECK IC5 AND IC8 AND R145,R144 → NG → REPLACE IC5 OR IC8

OK ↓

REPLACE PRINTER PWB

OK ↓

0V AT Q101-C (Figure 2) → NG → REPLACE Q101 (Figure 2)

OK ↓

REPLACE Q1 (Figure 1)

OK ↓

CHECK IC5 AND IC8 → NG → REPLACE IC5 OR IC8

OK ↓

REPLACE PRINTER PWB

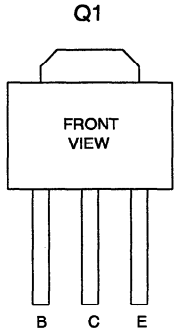


Figure 1

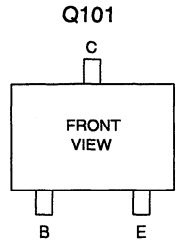
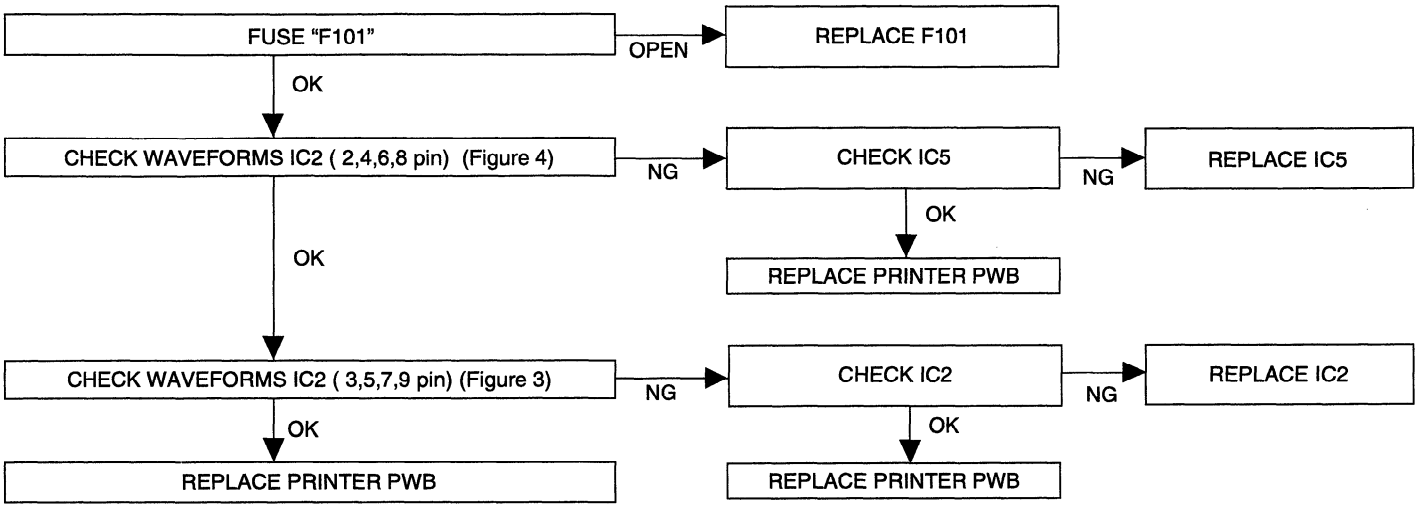


Figure 2

• FEED MOTOR IS NG (CARRIAGE MOTOR IS GOOD)



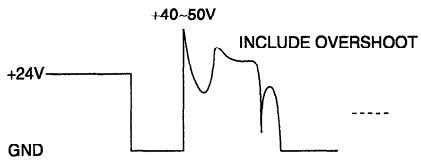


Figure 3

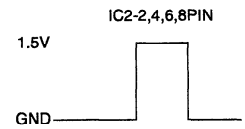
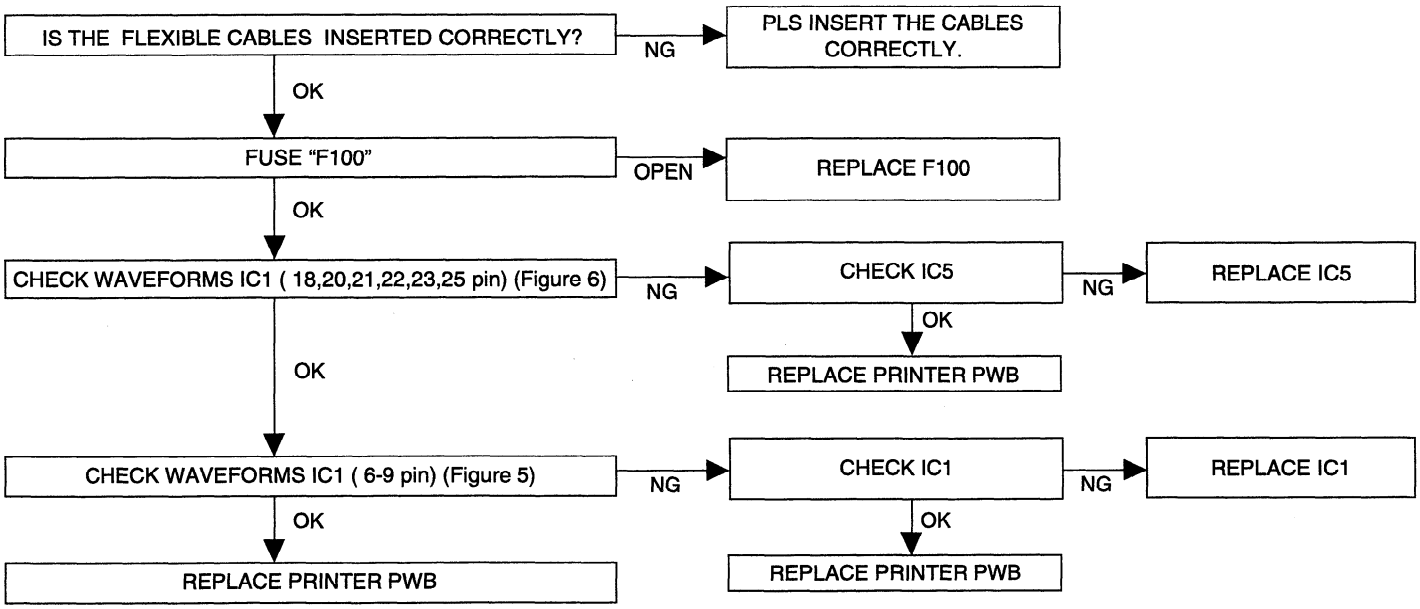


Figure 4

• CARRIAGE MOTOR IS NG (FEED MOTOR IS OK).



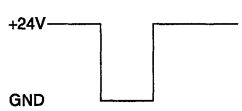


Figure 5

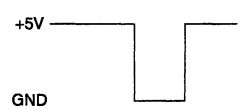
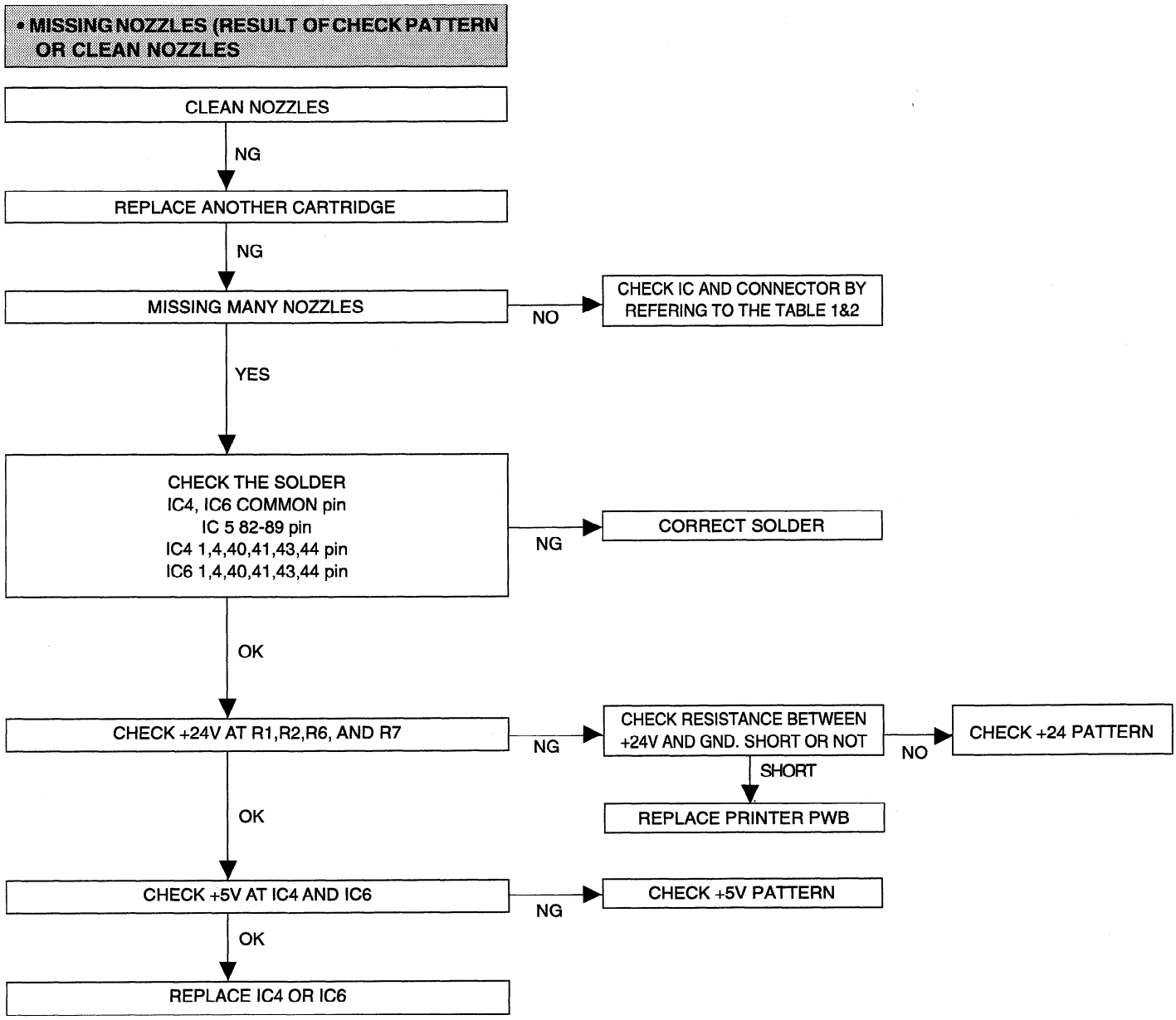
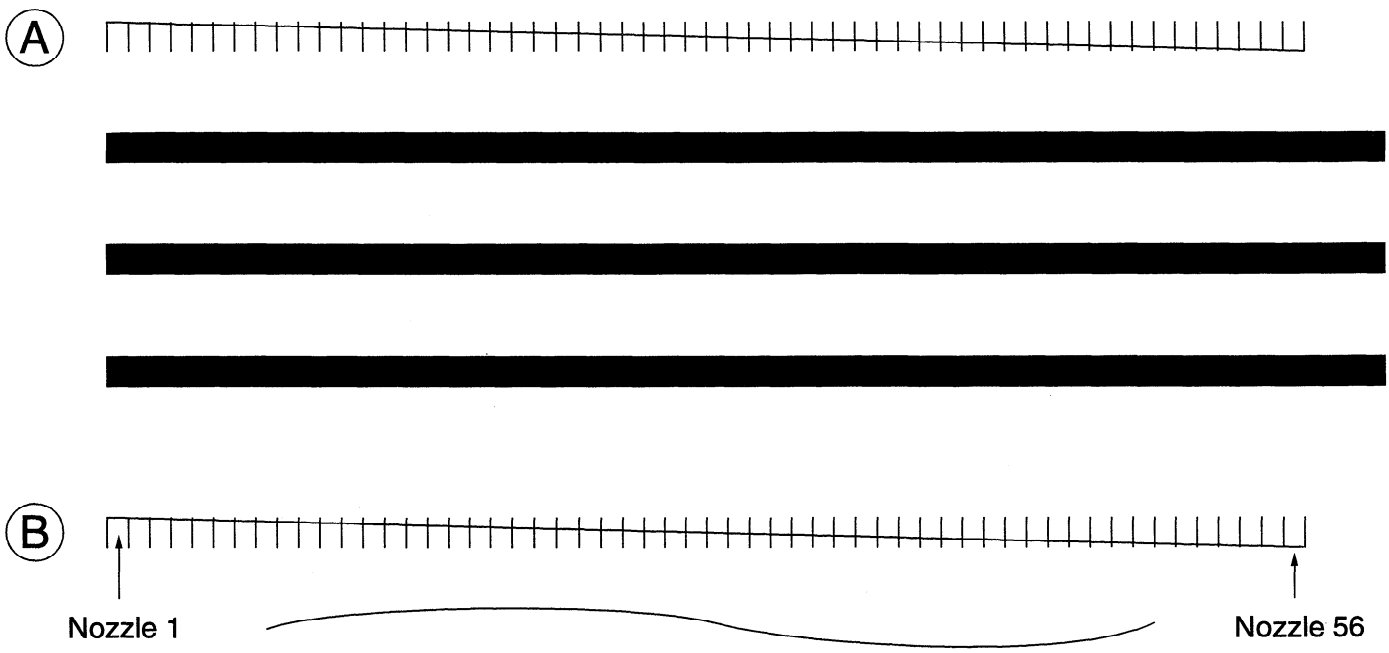


Figure 6


• MISSING NOZZLES (RESULT OF CHECK PATTERN OR CLEAN NOZZLES
CLEAN NOZZLES
NG
REPLACE ANOTHER CARTRIDGE
NG
MISSING MANY NOZZLES
NO
CHECK IC AND CONNECTOR BY REFERING TO THE TABLE 1&2
YES
CHECK THE SOLDER
IC4, IC6 COMMON pin
IC 5 82-89 pin
IC4 1,4,40,41,43,44 pin
IC6 1,4,40,41,43,44 pin
NG
CORRECT SOLDER
OK
CHECK +24V AT R1,R2,R6, AND R7
NG
CHECK RESISTANCE BETWEEN +24V AND GND. SHORT OR NOT
NO
CHECK +24 PATTERN
SHORT
REPLACE PRINTER PWB
OK
CHECK +5V AT IC4 AND IC6
NG
CHECK +5V PATTERN
OK
REPLACE IC4 OR IC6

[6]How to decide the number of the wrong nozzle

FUNC +(6)+(✳)+(✳) "CLEAN NOZZLES"



Horizontal lines on (A) and (B) correspond to nozzle #1,#2····#56 from left side to right side.
If there are missing horizontal lines, you can decide the number of wrong nozzle from pattern (A) or (B).

Note) Don't use the check pattern to decide the number of wrong nozzle.

TABLE 1.

(Nozzle# IC-PIN CONNECTOR-PIN)

Nozzle#	IC	PIN	CN	PIN	Nozzle#	IC	PIN	CN	PIN
1	6	39	3	9	29	6	10	3	20
2	4	39	4	28	30	4	10	4	17
3	6	35	3	10	31	6	14	3	21
4	4	35	4	27	32	4	14	4	16
5	6	31	3	11	33	6	22	3	30
6	4	31	4	26	34	4	22	4	7
7	6	25	3	12	35	6	9	3	22
8	4	25	4	25	36	4	9	4	15
9	6	36	3	13	37	6	13	3	23
10	4	36	4	24	38	4	13	4	14
11	6	32	3	14	39	6	21	3	29
12	4	32	4	23	40	4	21	4	8
13	6	26	3	15	41	6	8	3	24
14	4	26	4	22	42	4	8	4	13
15	6	37	3	7	43	6	12	3	25
16	4	37	4	30	44	4	12	4	12
17	6	33	3	16	45	6	20	3	28
18	4	33	4	21	46	4	20	4	9
19	6	27	3	17	47	6	6	3	26
20	4	27	4	20	48	4	6	4	11
21	6	38	3	6	49	6	11	3	27
22	4	38	4	31	50	4	11	4	10
23	6	34	3	18	51	6	15	3	31
24	4	34	4	19	52	4	15	4	6
25	6	30	3	19	53	6	23	3	32
26	4	30	4	18	54	4	23	4	5
27	6	24	3	5	55	6	7	4	1
28	4	24	4	32	56	4	7	4	4

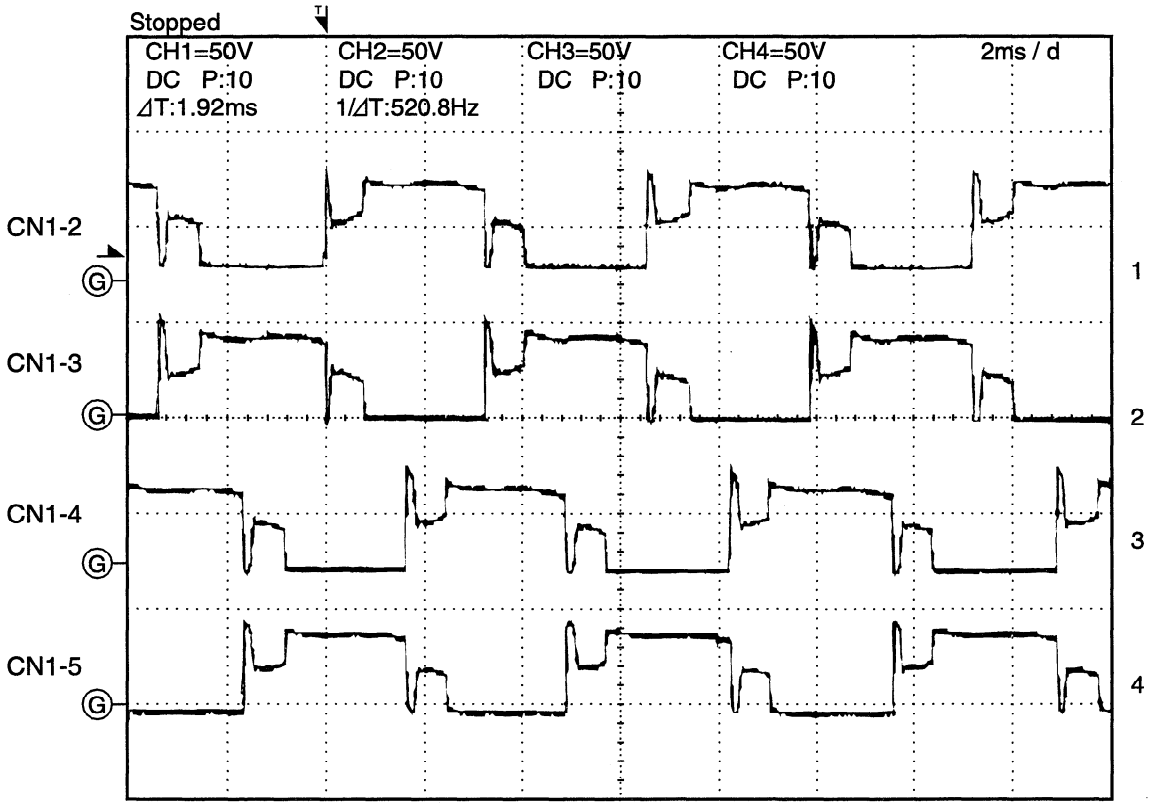
TABLE 2.

(Nozzle Common CN)

Nozzle#	PIN	CN	PIN
1,3,5,7,9,11,13,15, 17,19,21,23,25,27	1	3	8
2,4,6,8,10,12,14,16, 18,20,22,24,26,28	2	4	29
29,31,33,35,37,39,41, 43,45,47,49,51,53,55	3	4	2
30,32,34,36,38,40,42, 44,46,48,50,52,54,56	4	4	3

[7] Waveforms

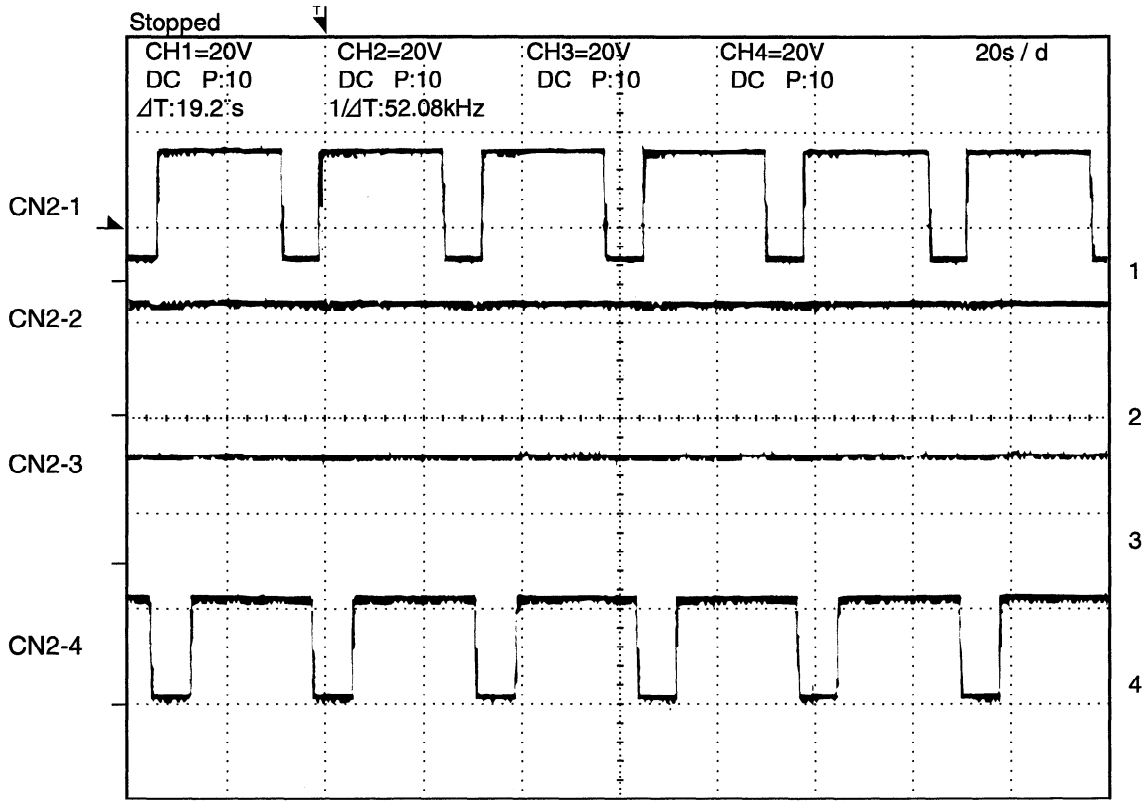
FEED MOTOR WAVEFORMS WHEN FEEDING PAPER



Ⓖ: 0V

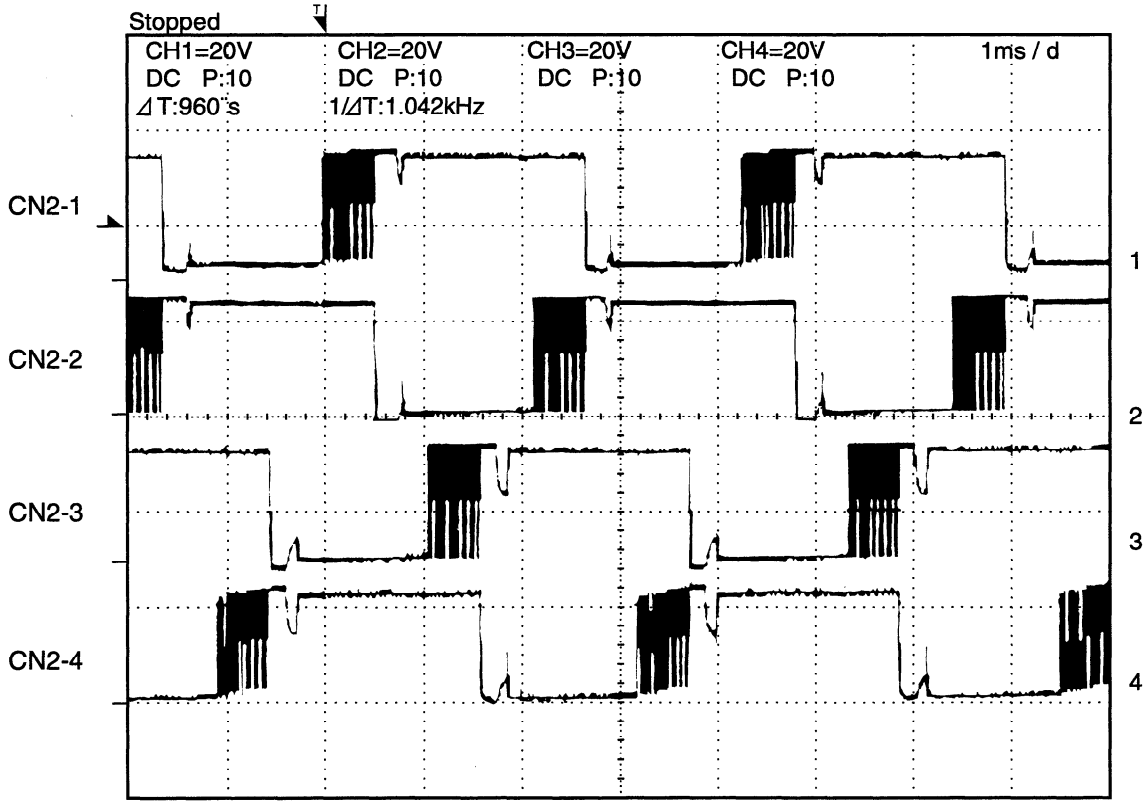
Figure 1

CARRIAGE MOTOR WAVEFORMS



When the cartridge holder is at the position of replacing cartridge.

Figure 2



Measured for printing check pattern

Figure 3

CARRIAGE MOTOR WAVEFORMS MEASURED FOR CHECKING OUT OF INK

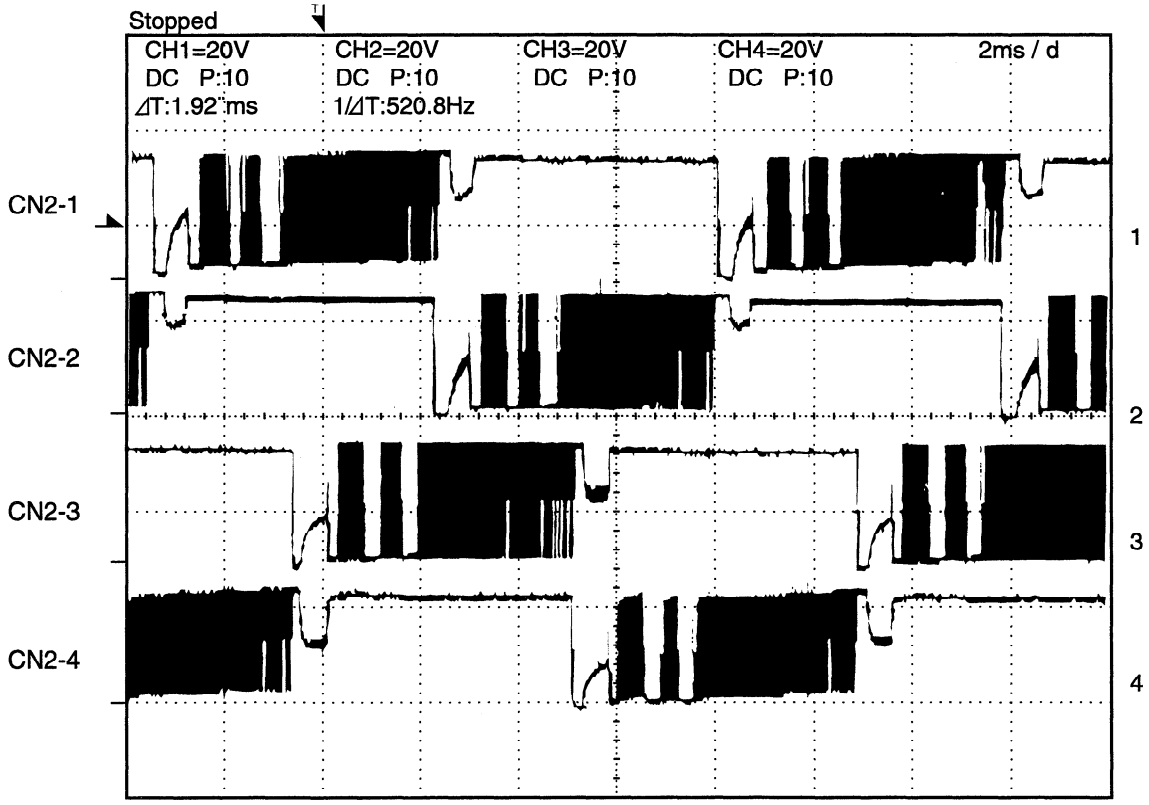


Figure 4

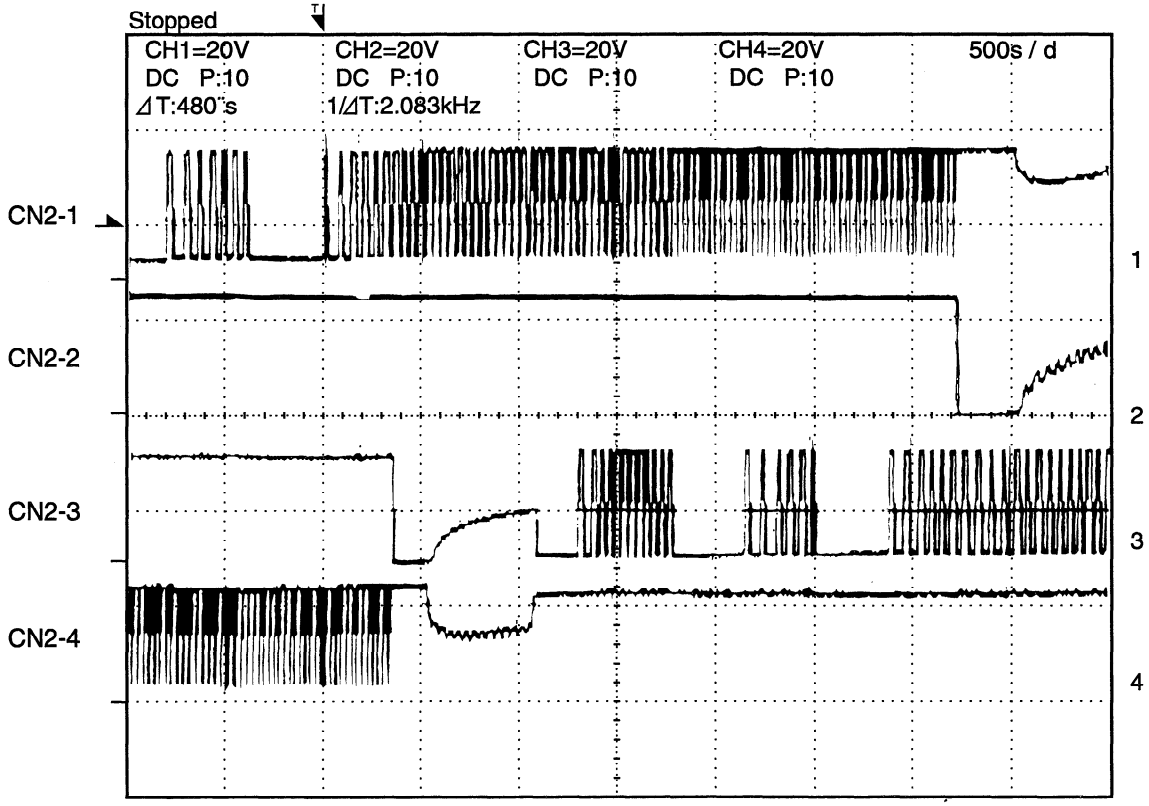


Figure 5

[8] Service checks

1. Carrier Transport Service Check

	FRU	Action
1	System Board	Check the motor for binds,or loose motor pulley. Turn the printer off and disconnect CN2 from the system board.Check for motor pins shorted to the motor housing.If you find a pin shorted to the housing,replace the motor. If the failure remains,replace the system board.
2	Carrier Transport Motor	A noisy or chattering motor or a motor that fails to turn can be caused by: • An open or short in the motor. • An open or short in the motor driver on the system board. • A bind in the carrier transport mechanism. With the carrier transport motor cable disconnected from the system board,check for zero to ten (0-10)ohms between the following pins on the motor: CN2-1 and CN2-2 CN2-3 and CN2-4 If the readings are incorrect,replace the motor.
3	Carrier Guide Rod	Clean the carrier rod. **Note**:Lubricate the carrier guide rod and the carrier rod bearing surface with grease.
4	Carrier Transport Belt Idler Pulley Parts Carrier Frame	Check for worn,loose or broken parts. Check for obstructions blocking carrier movement. Carrier to carrier frame engagement should be lubricated with grease.
5	Home Position Sensor	Be sure the carrier returns to the home position after turning the printer on. If the carrier moves half way,or if there is an abnormal sound,turn the printer off and disconnect CN3 from the system board. Turn the printer on and check for 5V dc between CN3-4 and CN3-2 on the system board. If the voltage is present,replace the home position sensor. If the voltage is not present,replace the system board.
6	Maintenance Station	A problem with the maintenance station can cause carrier movement problems at the right margin. Go to the 'Maintenance Station Service Check' on page 9-16.

2. Envelope Feed Service Check

	FRU	Action
1	Envelope Guide	Be sure the envelope guide has been turned to the envelope load position. Be sure the envelope guide is against the envelopes. Perform the 'Paper Feed Service Check'on page 9-17.

3. Maintenance Station Service Check

The maintenance station has two functions:

- Cleans the printhead nozzles during the print operation.
- Seals the printhead when it is not being used to prevent the nozzles from drying.

	FRU	Action
1	Maintenance Station Assembly	As the carrier moves to the right over the maintenance station,a slot on the bottom of the carrier engages a tab on the sled of the maintenance station causing the cap to rise and seal the printhead. Carrier movement to the left uncaps the printhead. The wiper cleans the printhead nozzles as the carrier leaves the maintenance station. The wiper cleans the printhead only when the carrier is moving to the left. There should be no wiping action of the printhead nozzles when the carrier is moving to the right. After the cleaning operation is complete,a tab on the maintenance station engages a tab on the carrier,causing the wiper to lower. Check the maintenance station for worn or broken parts.
2	Wiper	A worn wiper causes degraded print quality just after a maintenance cleaning. Check for a loose or worn wiper.
3	Cap	A worn cap causes the printhead nozzles to dry and clog. Check for a loose or worn cap.

4. Paper Feed Service Check

If your machine does not have paper jam problems, continue with the service check. If your machine does have a paper jam problem,examine it for the following before you begin the service check:

- Check the entire paper path for obstructions.
- Be sure there is not too much paper in the sheet feeder.
- Be sure the correct type of paper is being used.
- Check for static in the paper.

	FRU	Action
1	System Board	Turn the printer on and verify the paper feed motor activates. Be sure the end-of-form sensor lever is in the down position. Turn the printer off and disconnect CN1 from the system board. Check for motor pins shorted to the motor housing. If you find a shorted pin,replace the paper feed motor. If you still have a failure after replacing the paper feed motor,replace the system board.
2	Paper Feed Motor	A noisy or chattering motor or a motor that fails to turn,can be caused by an open or short in the motor,an open or short in the motor driver on the system board,or a bind in the paper feed mechanism. With the paper feed motor cable CN1 disconnected from the system board, check for 140 ohms(±7%)between the follwing pins on the motor : Pin 1 to Pin 2,Pin 1 to Pin 4 280 ohms(±7%)between pins 2 and 4. If the readings are incorrect,replace the paper feed motor and drive train assembly. Although the paper feeds in a forward direction only,the paper feed motor turns in two directions. If the paper feed motor turns in one direction only,replace the system board. Binds in the paper feed motor or gear train can cause intermittent false paper jam errors. Remove the paper feed motor and check the shaft for bins. Also check for loose or worn motor gear.
3	Drive Train Assembly	Check for binds in the gear train and paper feed machanism by removing the paper feed motor and rotating the large gear by hand . If you notice a bind,replace the drive train assembly. Check the feed clutch gear on the left side of the auto sheet feeder. Turn the clutch gear and check that it rotates freely in one direction and locks when turned in the opposite direction.
4	Auto Sheet Feeder	Check the pick rollers for wear.
5	Mid-Frame Asm Access Cover Asm	Check the following for wear: • Exit roller • Star rollers
6	End-of-Forms Flag and Spring	Check for binds or damage. If binds are found,replace the end-of-forms flag.
7	End-of-Forms Sensor	Check the sensor for birt. Be sure the sensor lever is in the down position. If the failure remains,replace the system board.

5. Paper Path Service Check

Examine the machine for the following before you being this service check:

- Check the entire paper path for obstructions
- Be sure the correct type of paper is being used.
- Be sure the printer is installed on a flat surface.

	FRU	Action
1	Large and Small Feed Rollers	Check for wear and binds.
2	Small Feed Roller Springs	Check for damage.
3	Auto Sheet Feeder	Check the pick rollers for wear.
4	Mid-Frame Asm Access Cover Asm	Check the following for wear: • Exit roller • Star rollers
5	End-of-Forms Flag	Check for binds or damage.

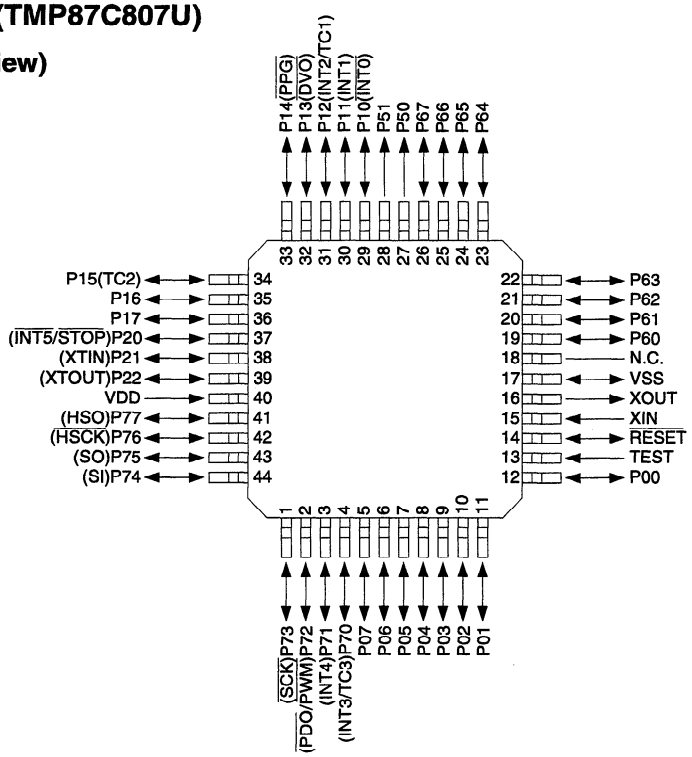
6. Power Service Check

	FRU	Action
1	Power Supply	Disconnect N1 from the system board and check the following voltages on the power supply cable: • CNPRT-22 to Gnd =+5V dc • CNPRT-26 to Gnd =+24V dc If you do not have correct voltage,replace the power supply. Be sure to unplug the machine before you reconnect the power supply to the system board.
2	Printhead Cable Carrier Home Sensor Parallel Cable	Turn off the printer.Disconnect one of the printhead cables and turn on the printer. Look for a symptom change. Check the failing part for shorts and replace as necessary. Repeat this procedure for the carrier home sensor and parallel cable.
3	System Board	If the symptom has not changed,replace the system board.

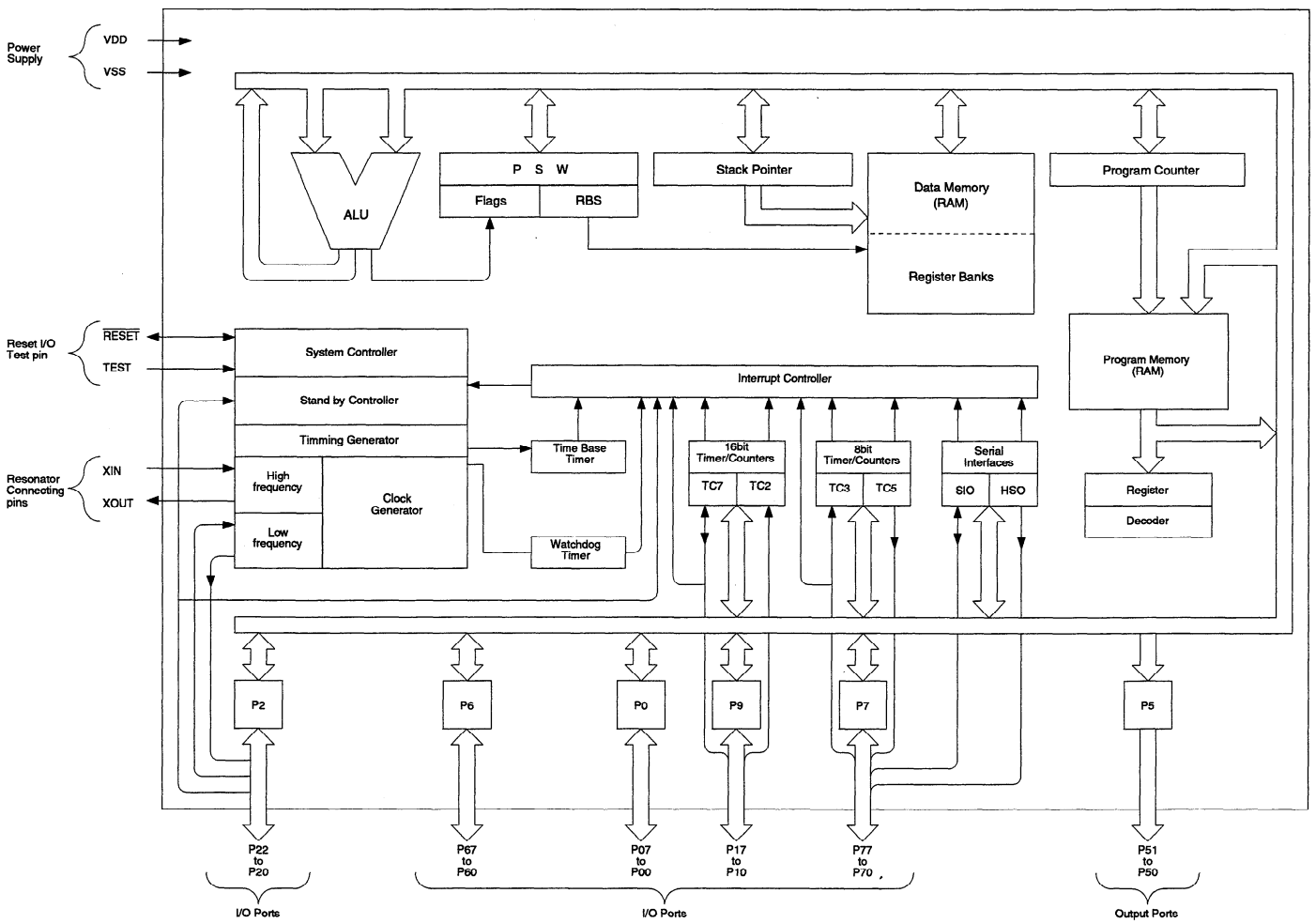
[9] IC signal name

IC 8 : VHiTMP87PH47U (TMP87C807U)

1. Pin Assignment (Top View)



2. Block Diagram

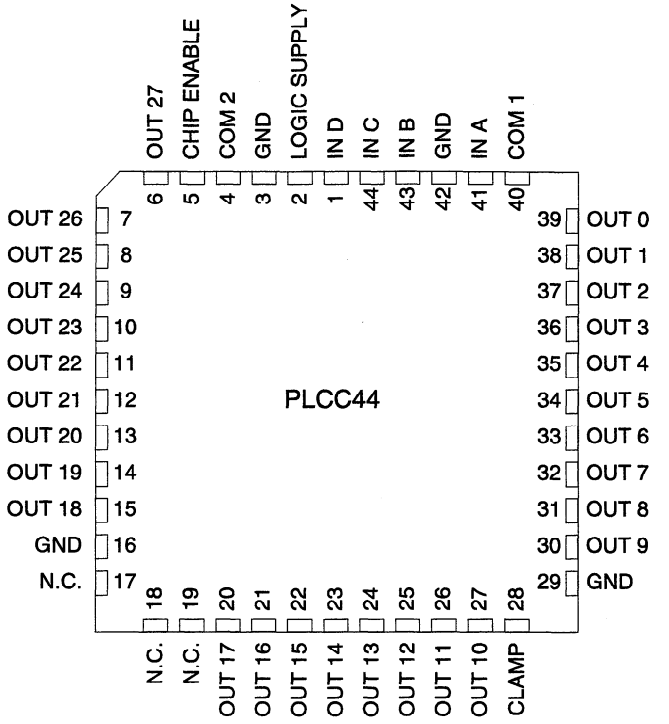


3. Pin Function

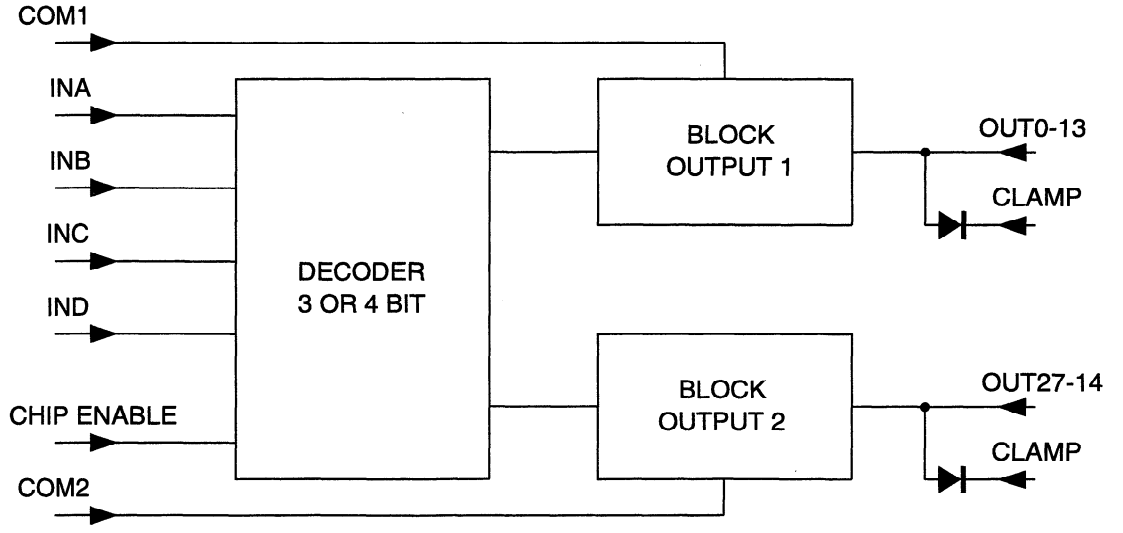
PIN Name	Input/Output	Function	
P07 to P00	I/O	Two 8-bit programmable input/output ports (tri-state).	
P17,P16	I/O		
P15(TC2)	I/O(Input)	Each bit of these ports can be individually configured as an input or an output under software control.	Timer/Counter 2 input
P14(PPG)	I/O(Output)		Programmsble pulse generator output
P13(OVO)			Divider output
P12(INT2/TC1)	I/O(Input)	During reset,all bits are configured as inputs.	External interrupt input 2 or Timer/Counter 1 input
P11(INT1)		When used as a divider output or a PPG output, the latch must be set to "1".	External interrupt input 1
P10(INT0)			External interrupt input 0
P22(XTOUT)	I/O(Output)	3-bit input/output port with latch.	Resonator connecting pins(32.8kHz). For inputting external clock,XTIN is used and XTOUT is opeded.
P21(XTIN)	I/O(Input)	When used as an input port,the latch must be set to "1".	
P20(INT5/STOP)			External interrupt input 5 or STOP mode retease signal input
P51,P50	Output	2-bit output port with latch.	
P67 to P60	I/O(Output)	8-bit programmable input/output port (tri-state). Each bit of the port can be individually configured as an input or an output under software control.	
P77(HSO)	I/O(Output)	8-bit programmable input/output port (tri-state).	HSO serial data output
P76(HSCK)			HSO serial clock output
P75(SO)			SIO serial data output
P74(SI)			SIO serial data input
P73(SCK)	I/O(I/O)	When used as an input port, a SIO input/output on external interrupt input or a PWM/PDO output, the latch must be set to "1".	SIO serial clock input/output
P72(PWM/PDO)	I/O(Output)		8-bit PWM output or 8-bit programmable divider output
P71(INT4)	I/O(Input)		External interrupt input 4
P70(INT3/TC3)			External interrupt input 3 or Timer/Counter 3 input
XIN/XOUT	Input,Output	Resonator connecting pins for high-frequency clock. For inputting external clock. XIN is used and XOUT is opend.	
RESET	I/O	Reset signal input or watchdog timer output/address-trap-reset output/system-clock-reset output.	
TEST	Input	Test pin for out-going test. Be tied to low.	
VDD,VSS	Power Supply	+5V,0V(GND)	
N.C.		Be tied to low.	

IC 4 , 6 : VHil6451///-1 (L6451)

1. Pin Connection (Top View)



2. Block Diagram (case of 4 bit)



3. Description

The L6451 is realized in Multipower BCD Technology which combines isolated DMOS power transistors with CMOS and Bipolar circuits on the same IC. By using mixed technology it has been possible to optimize the logic circuitry and the power stage to achieve the best possible performances.
Intended to be used in ink jet Printer Applications as 4 to 28 (2x14) lines selectable decoder/driver,the L6451 device driver has the advantages of low power CMOS input and logic, with 28 high current and high voltage DMOS outputs capable of sustaining a maximum of 40V.
On system power up the output drivers are locked out using the chip enable function : two enable inputs are available for the different driver banks.
An internal power-on system is implemented in order to avoid wrong output commutation during the supply voltage transients.
Using a mask option during manufacturing allows a different decoding.
Control of the energy delivered to the print head is made by means of a special circuitry.
All driver outputs are capable of withstanding a contact discharge of ±8kV with the IC biased.

4. Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
VOUT	Output voltage	40	V
VCLAMP	Output Clamping Voltage	40	V
IOUT	Output Continuous Current	0.8	A
IPEAK	Output Peak Current (with duty cycle = 10% TON = 4μs)	2	A
TJ	Junction Temperature	150	°C
VDD	Logic Supply Voltage	7	V
VIN	Input Voltage Range	-0.3V to Vs +0.3	V
TAMB	Operating Temperature Range	0 to 70	°C
TSTG	Storage Temperature Range	-55 to 150	°C

5. Pin Functions

Name	Function
VDD	5V Logic Supply.
GND	Logic and Power Ground.
OUT0 to OUT27	DMOS Output.
CLAMP	This pin has to be connected to the power supply voltage of the head resistors. Each of the output DMOS have their drain connected with the anode of a protection diode, all the cathodes of the protection diodes are connected to the clamp pin. In order to have the device supplied, the CLAMP pin needs to be connected to the power.
INA, INB, INC, IND	Decoder inputs.
$\overline{COM1}$, $\overline{COM2}$	A low logic input on these pins enables the outputs selected by the decoder inputs.
CHIP ENABLE	A logic high enable the chip.

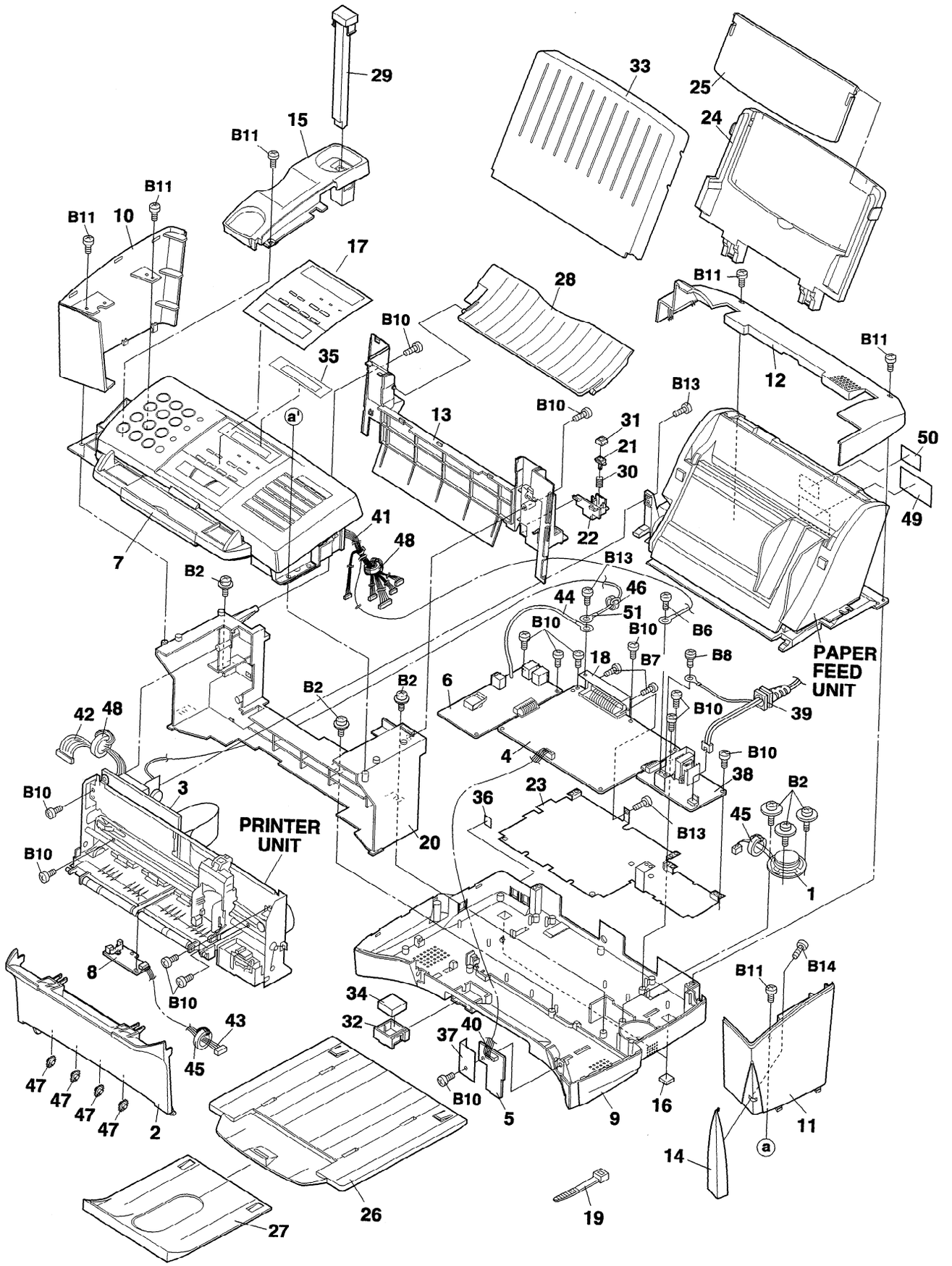
SHARP PARTS GUIDE

UX-2700CM
MODEL FO-2550CM

CONTENTS

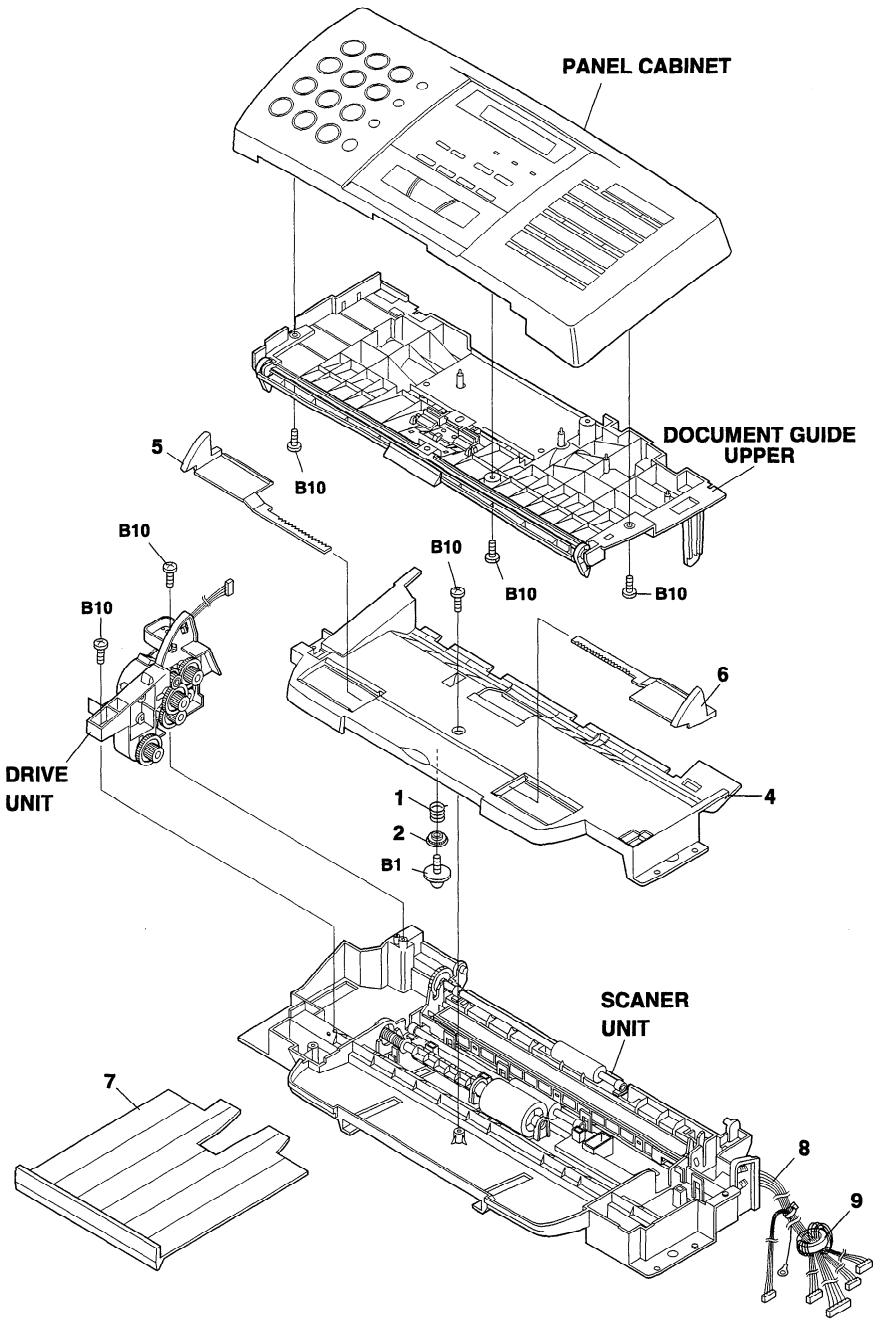
Because parts marked with "⚠" is indispensable for the machine safety maintenance and operation, it must be replaced with the parts specifi to the product specification.

1 Cabinet, etc.



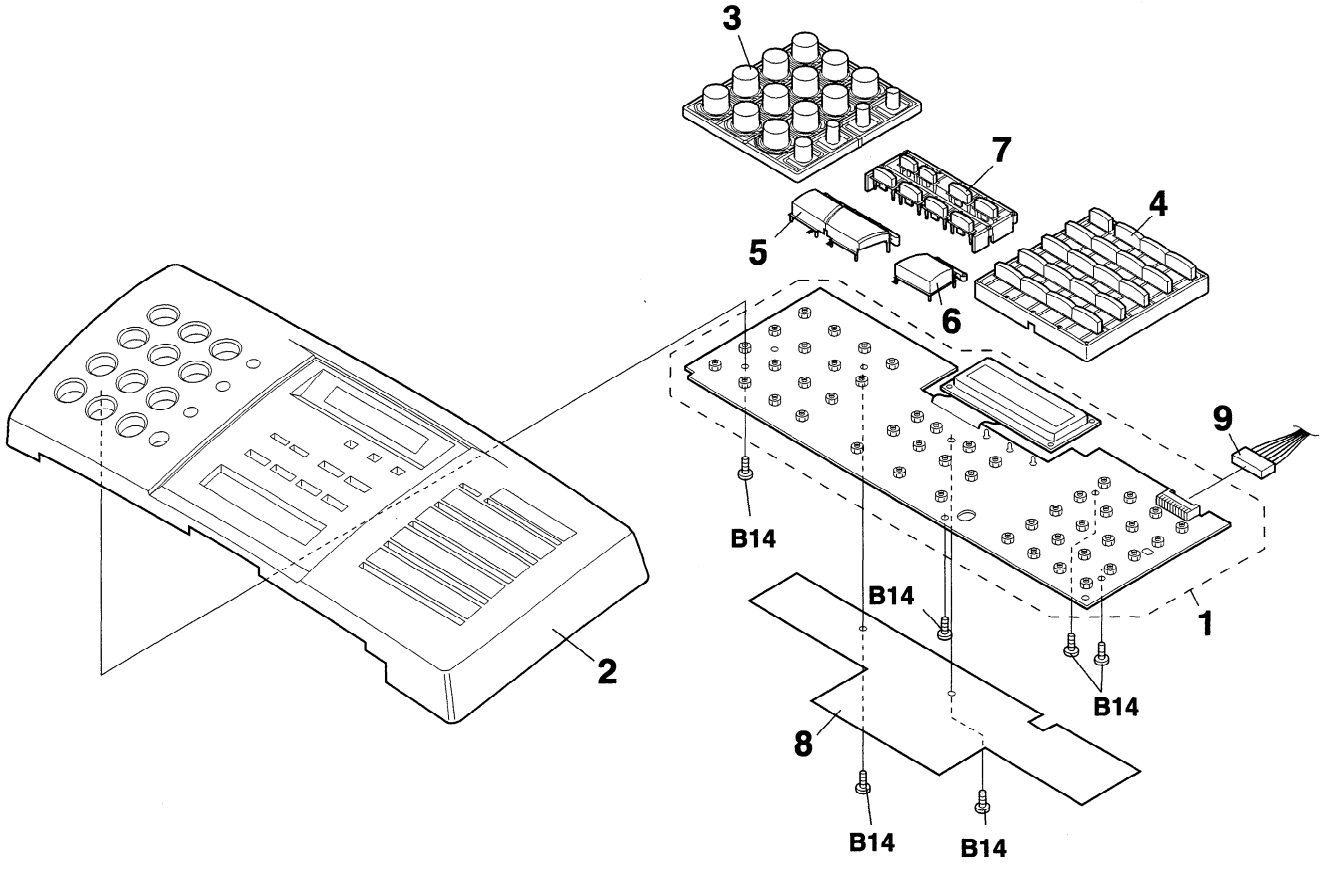
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[1] Cabinet,etc.						
1	CCNW-4772AX01	AL		C	Speaker ass'y	
2	GCOVA2381AXSA	BD		D	Front cover	[2700CMU/CMC]
	GCOVA2381AXSC	BD		D	Front cover	[2550CMU/CMC]
3	DCEKC395BAX01	BV		E	Printer PWB unit	
4	DCEKC381KAXZZ	CM	N	E	Control PWB unit	[2700CMU]
	DCEKC884KAXZZ	CM	N	E	Control PWB unit	[2700CMC]
	DCEKC383KAXZZ	CM	N	E	Control PWB unit	[2550CMU]
	DCEKC885KAXZZ	CM	N	E	Control PWB unit	[2550CMC]
5	DCEKI394BAX01	BB		E	IrDA PWB unit	
6	DCEKL391BAX01	BE		E	TEL/Liu PWB unit	
7	DCEKP390BAX04	BP	N	E	Operation panel unit	[2700CMU/CMC]
	DCEKP390BAX05	BP	N	E	Operation panel unit	[2550CMU/CMC]
8	DCEKS396BAX01	AZ		E	Ink sensor PWB	
9	GCABC2301AXSA	AX		D	Bottom cabinet	[2700CMU/CMC]
	GCABC2301AXSC	AZ		D	Bottom cabinet	[2550CMU/CMC]
10	GCABD2302AXSA	AM		D	Left cabinet	[2700CMU/CMC]
	GCABD2302AXSC	AM		D	Left cabinet	[2550CMU/CMC]
11	GCABE2303AXSA	AL		D	Right cabinet	[2700CMU/CMC]
	GCABE2303AXSC	AL		D	Right cabinet	[2550CMU/CMC]
12	GCABF2304AXSA	AP		D	Rear cabinet	[2700CMU/CMC]
	GCABF2304AXSC	AP		D	Rear cabinet	[2550CMU/CMC]
13	GCABG2305AXSA	AS		D	Printer back cabinet	[2700CMU/CMC]
	GCABG2305AXSC	AR		D	Printer back cabinet	[2550CMU/CMC]
14	GCOVA2382AXSA	AH		C	IRDA cover	
15	GDAI-2079AXSA	AL		C	Handset holder	[2700CMU/CMC]
	GDAI-2079AXSC	AN		C	Handset holder	[2550CMU/CMC]
16	GLEGG2063AXZZ	AC		C	Rubber leg	
17	HPNLH2385AXSD	AU	N	D	Decoration panel	
18	LANGF2812AXZZ	AG		C	232C Bracket	
19	LBNDJ2008SCZZ	AA		C	Band(GT-100M)	
20	LFRM-2190AXZZ	AX		C	Frame	
21	LHLDZ2166AXZZ	AD		C	Cap holder	
22	LHLDZ2171AXSA	AE		C	Back cabinet piece	[2700CMU/CMC]
	LHLDZ2171AXSC	AE		C	Back cabinet piece	[2550CMU/CMC]
23	LPLTM2923AXZA	AM		C	Shild plate	
24	LPLTP2889AXSD	AN		C	Paper tray A	[2700CMU/CMC]
	LPLTP2889AXSC	AK		C	Paper tray A	[2550CMU/CMC]
25	LPLTP2890AXSD	AG		C	Paper tray B	[2700CMU/CMC]
	LPLTP2890AXSC	AZ		C	Paper tray B	[2550CMU/CMC]
26	LPLTP2925AXSA	AQ		C	Paper out tray	[2700CMU/CMC]
	LPLTP2925AXSC	AQ		C	Paper out tray	[2550CMU/CMC]
27	LPLTP2926AXSA	AM		C	Extension paper out tray	[2700CMU/CMC]
	LPLTP2926AXSC	AM		C	Extension paperout tray	[2550CMU/CMC]
28	LPLTP2932AXSA	AK		C	Document tray	
29	MLEVP2278AXSA	AF		C	Hook switch lever	
30	MSPRC2973AXZZ	AC		C	Cap spring	
31	PCAPH2021AXZZ	AD		C	Cap gum	
32	PCASZ2034AXSA	AE		C	OOI-Case	[2700CMU/CMC]
	PCASZ2034AXSC	AE		C	OOI-case	[2550CMU/CMC]
33	PCOVA2115AXSA	AL		C	Paper cover	
34	PFLT-2015AXZZ	AG		C	Felt	
35	PSHEZ3345AXSA	AG		C	LCD sheet	
36	PSHEZ3356AXZZ	AC		C	Jack sheet	
37	PSHEZ3368AXZZ	AD		C	IrDA sheet	
⚠ 38	RDENT2122AXZZ	BN		E	Power supply PWB unit	
⚠ 39	QACCZ2012XHZZ	AT		B	AC cord ass'y	
40	QCNW-4773AXZZ	AG		D	IRDA cable	
41	QCNW-4777AXZZ	AU		C	Panel cable	
42	QCNW-4778AXZZ	AZ		C	Printer cable	
43	QCNW-4775AXZZ	AH		C	Ink out cable	
44	QCNW-4806AXZZ	AD		C	ARG cable	
45	RCORF2063XHZZ	AF		B	Core	
46	RCORF2096FFZZ	AD		B	Core	
47	NROLM2389AXZZ	AD		C	Star roller	
48	RCORF2064XHZZ	AF		B	Core	
49	TLABG4602AXZZ	AB		D	Noise label	[2700CMC/2550CMC]
50	TLABS4534SCZZ	AB		D	IC label	[2700CMC/2550CMC]
51	QCNW-4807AXZZ	AE		C	Ground cable	

2 Upper cabinet



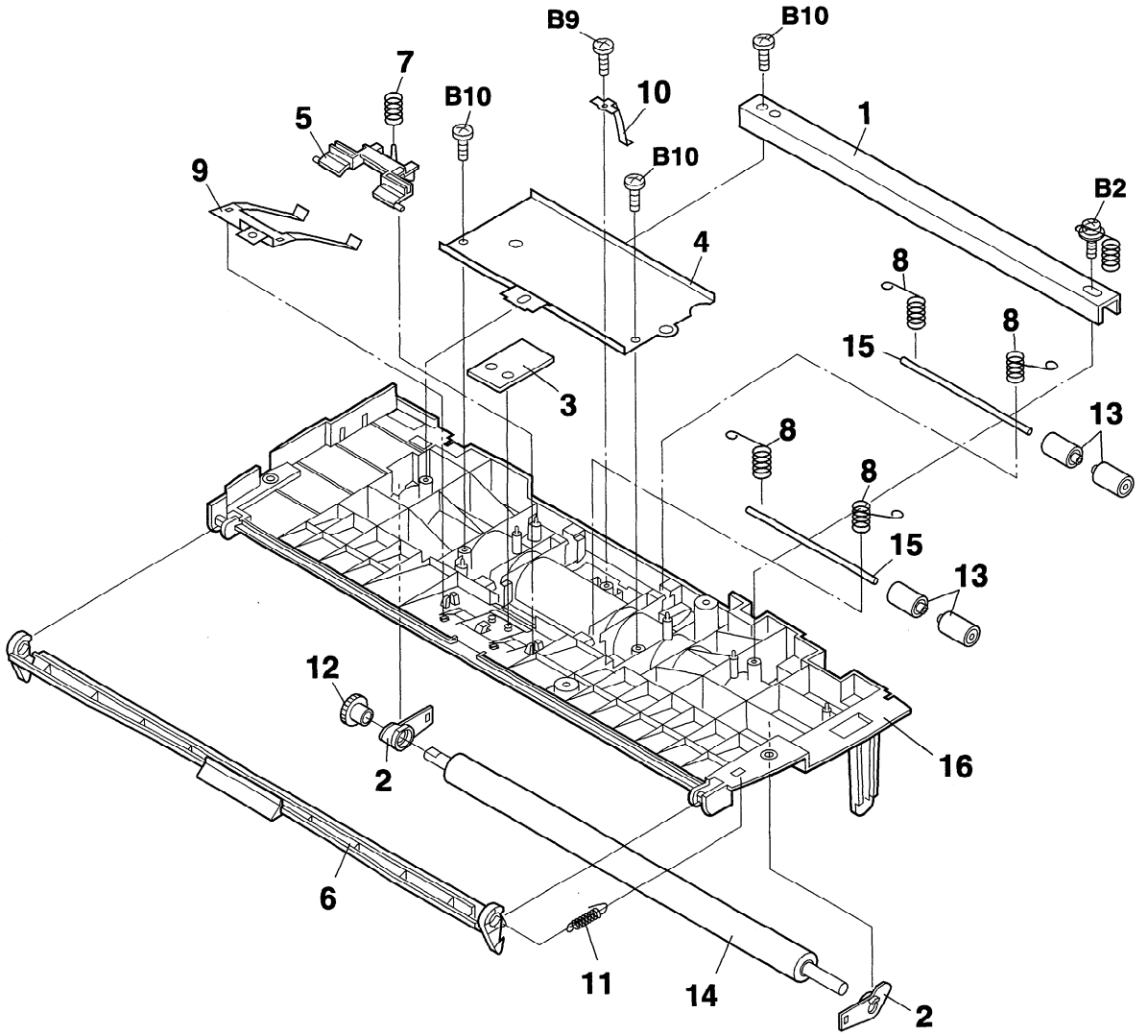
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[2] Upper cabinet						
1	MSPRC2832AXZZ	AC		C	Hopper spring	
2	NGERP2318XHZZ	AD		C	Pinion gear	
4	PGIDM2509AXSA	AR		C	Lower document guide	[2700CMU/CMC]
	PGIDM2509AXSC	AR		C	Lower document guide	[2550CMU/CMC]
5	PGIDM2510AXSA	AE		C	Hopper guide,left	[2700CMU/CMC]
	PGIDM2510AXSC	AE		C	Hopper guide,left	[2550CMU/CMC]
6	PGIDM2511AXSA	AE		C	Hopper guide,right	[2700CMU/CMC]
	PGIDM2511AXSC	AE		C	Hopper guide,right	[2550CMU/CMC]
7	PHOP-2097AXSA	AK		C	Extension hopper	[2700CMU/CMC]
	PHOP-2097AXSC	AK		C	Extension hopper	[2550CMU/CMC]
8	QCNW-4777AXZZ	AU		C	Panel cable	
9	RCORF2064XHZZ	AF		B	Core	

3 Panel cabinet



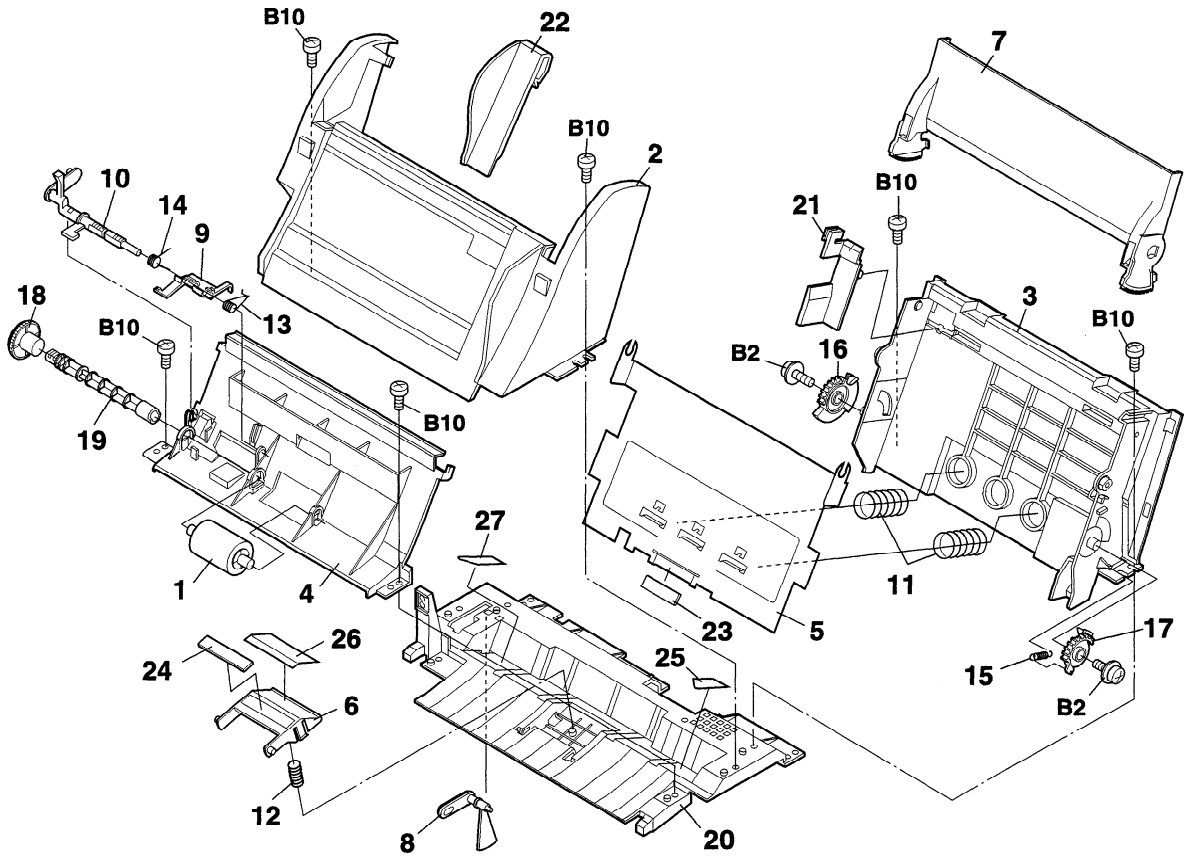
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[3] Panel cabinet						
1	DCEKP392BAX01	BL		E	Panel PWB unit	
2	GCABA2299AXSD	AS	N	D	Upper cabinet	[2700CMU/CMC]
	GCABA2299AXSE	AS	N	D	Upper cabinet	[2550CMU/CMC]
3	JBTN-2202AXSA	AG		C	12 key	[2700CMU/CMC]
	JBTN-2202AXSC	AG		C	12 key	[2550CMU/CMC]
4	JBTN-2203AXSA	AF		C	Direct key	[2700CMU/CMC]
	JBTN-2203AXSC	AF		C	Direct key	[2550CMU/CMC]
5	JBTN-2204AXSA	AD		C	Start key	[2700CMU/CMC]
	JBTN-2204AXSB	AD		C	Start key	[2550CMU/CMC]
6	JBTN-2205AXSA	AD		C	Stop key	[2700CMU/CMC]
	JBTN-2205AXSB	AD		C	Stop key	[2550CMU/CMC]
7	JBTN-2222AXSA	AE		C	Mode key	
8	PSHEZ3367AXZZ	AE		C	Insulation sheet	
9	QCNW-4777AXZZ	AU		C	Panel cable	
	(Unit)					
901	DCEKP390BAX04	BP	N	E	Operation panel unit	

[4] Document guide upper



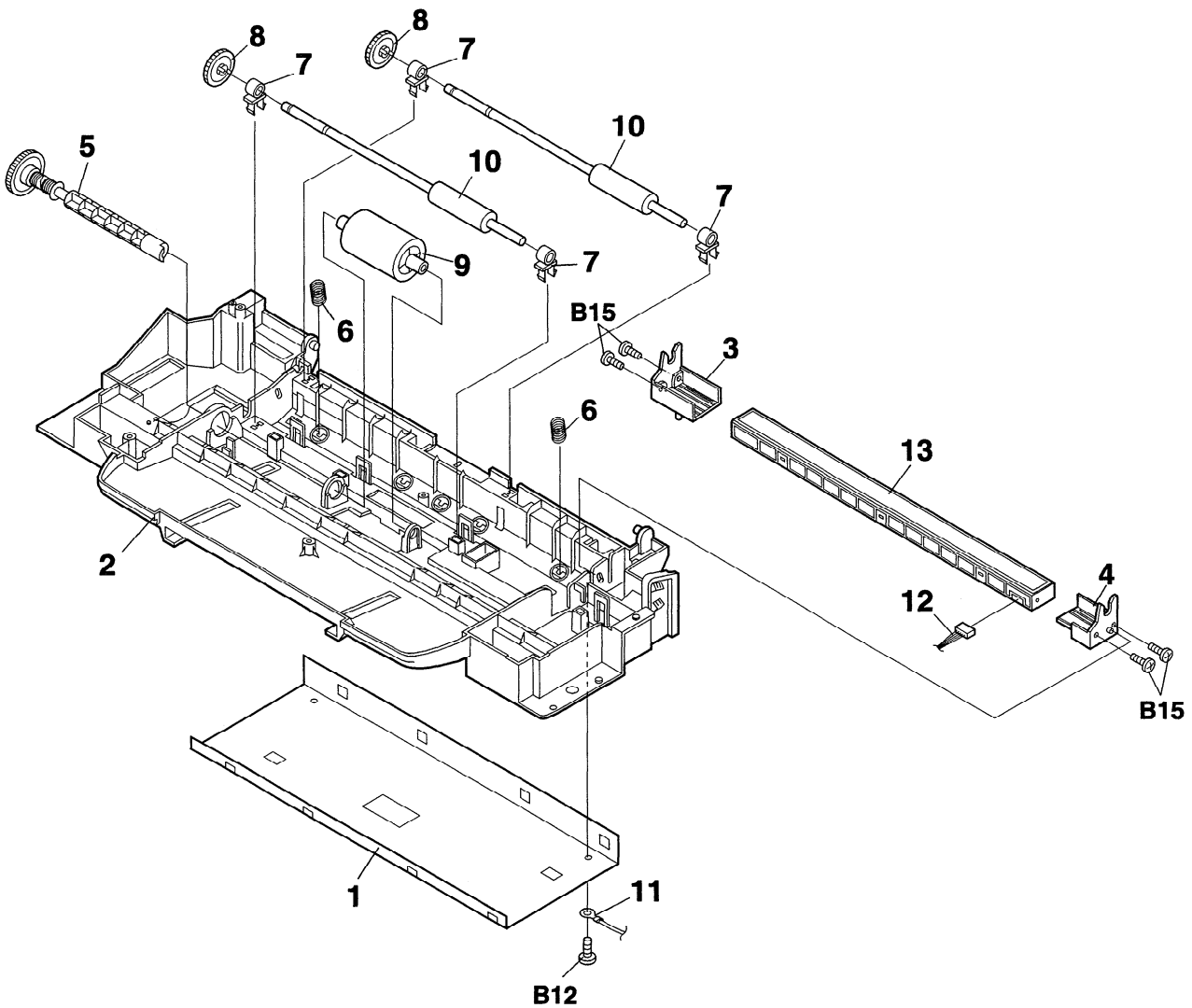
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[4] Document guide upper						
1	LANGF2815AXZZ	AE		C	Strength angle	
2	LBSHP2096AXZZ	AK		C	BR bearing	
3	LPLTG2707XHZZ	AE		C	Separation rubber	
4	LPLTM2917AXZZ	AH		C	Streng then plate	
5	LPLTP2916AXZZ	AE		C	Separate plate	
6	MLEVP2271AXSA	AH		C	Panel lock lever	[2700CMU/CMC]
	MLEVP2271AXSC	AH		C	Panel lock lever	[2550CMU/CMC]
7	MSPRC3010AXZZ	AE		C	Separate spring	
8	MSPRC3009AXZZ	AB		C	Pinch p spring	
9	MSPRP2812SCZZ	AE		C	Paper feed spring	
10	MSPRP3003AXZZ	AB		C	Document out spring	
11	MSPRT2923AXFJ	AC		C	Panel lock lever spring	
12	NGERH2403AXZZ	AD		C	Back roller gear	
13	NROLP2334AXZZ	AE		C	Pinch roller	
14	NROLR2379AXZZ	AZ		C	Back roller	
15	NSFTZ2257AXZZ	AE		C	Pinch roller shaft	
16	PGIDM2508AXZZ	AU		C	Upper document guide	

5 Paper feed unit



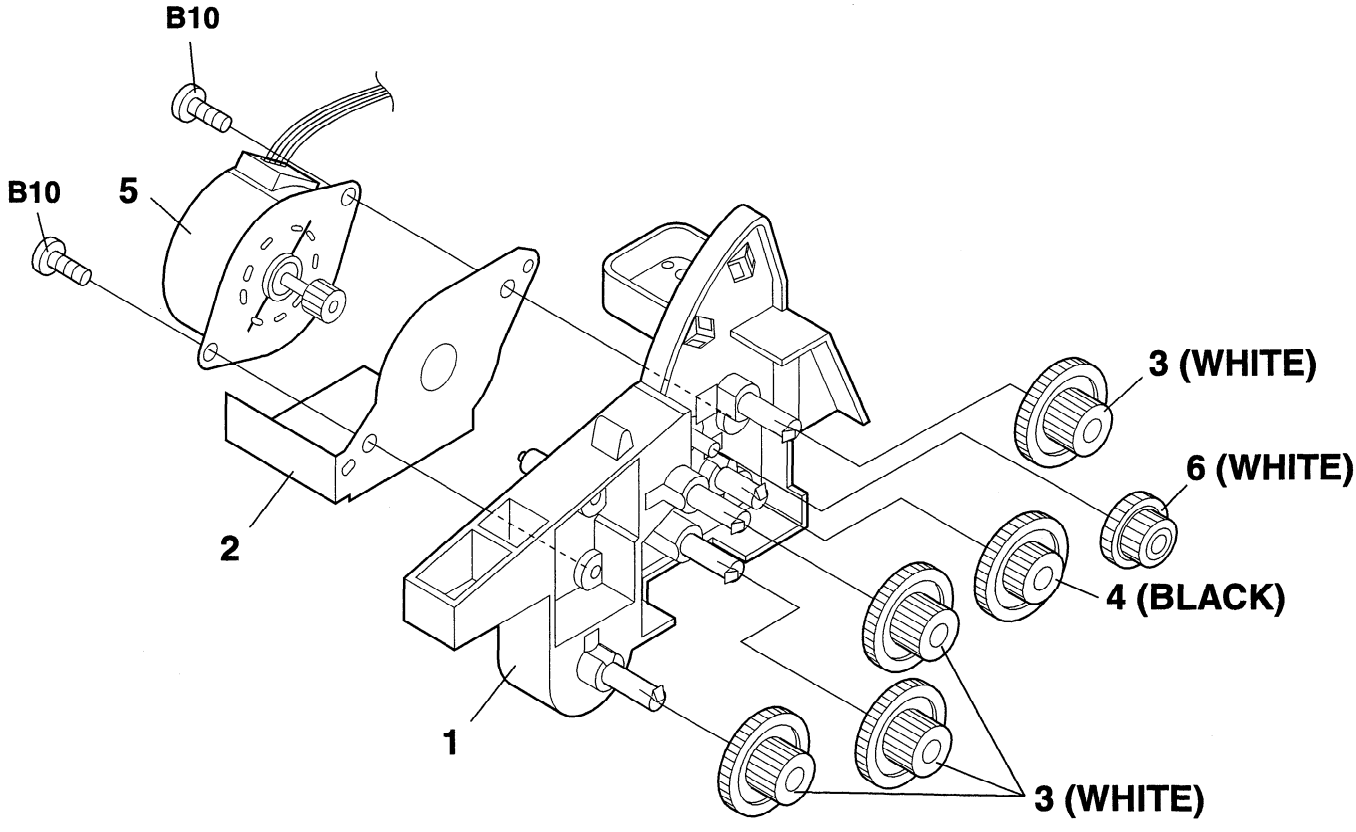
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[5] Paper feed unit						
1	CROLR2362AX01	AN		C	PU roller ass'y	
2	GCABB2300AXSA	AQ		D	Paper feed cabinet	[2700CMU/CMC]
	GCABB2300AXSC	AQ		D	Paper feed cabinet	[2550CMU/CMC]
3	LFRM-2189AXSA	AR		C	Paper feed frame	[2700CMU/CMC]
	LFRM-2189AXSC	AR		C	Paper feed frame	[2550CMU/CMC]
4	LHLDZ2165AXZZ	AN		C	Paper feed roller holder	
5	LPLTM2924AXZZ	AQ		C	Paper up plate	
6	LPLTP2884AXZZ	AP		C	Separate plate	
7	LPLTP2888AXSG	AL		C	RP release plate	[2700CMU/CMC]
	LPLTP2888AXSC	AP		C	RP release plate	[2550CMU/CMC]
8	MLEVP2275AXZZ	AE		C	PE sensor lever 3	
9	MLEVP2276AXZZ	AE		C	PE sensor lever 1	
10	MLEVP2277AXZZ	AE		C	PE sensor lever 2	
11	MSPRC3007AXZZ	AC		C	Cassette spring	
12	MSPRC2995AXFJ	AC		C	Separate plate spring	
13	MSPRD2998AXZZ	AC		C	Sensor lever spring 1	
14	MSPRD3004AXZZ	AB		C	Sensor lever spring 2	
15	MSPRT2932AXFJ	AC		C	RP release spring	
16	NGERH2365AXZZ	AD		C	RP release gear,left	
17	NGERH2366AXZZ	AD		C	RP release gear,right	
18	NGERH2401AXZZ	AF		C	Paper feed gear	
19	NSFTM2268AXZZ	AE		C	Paper up roller shaft	
20	PGIDM2512AXZZ	AS		C	Paper feed lower guide	
21	PHOP-2098AXSA	AG		C	Paper guide hopper	[2700CMU/CMC]
	PHOP-2098AXSC	AG		C	Paper guide hopper	[2550CMU/CMC]
22	PHOP-2099AXSA	AG		C	Bypath paper guide	[2700CMU/CMC]
	PHOP-2099AXSC	AG		C	Bypath paper guide	[2550CMU/CMC]
23	PSEL-2015SCZZ	AB		C	RP pad	
24	PSHEZ3293AXZZ	AH		C	Separate plate sheet	
25	PSHEZ3342AXZZ	AC		C	Guide sheet,right	
26	PSHEZ3344AXZZ	AD		C	Separate sheet	
27	PSHEZ3357AXZZ	AC		C	Guide sheet,Left	

6 Scaner unit



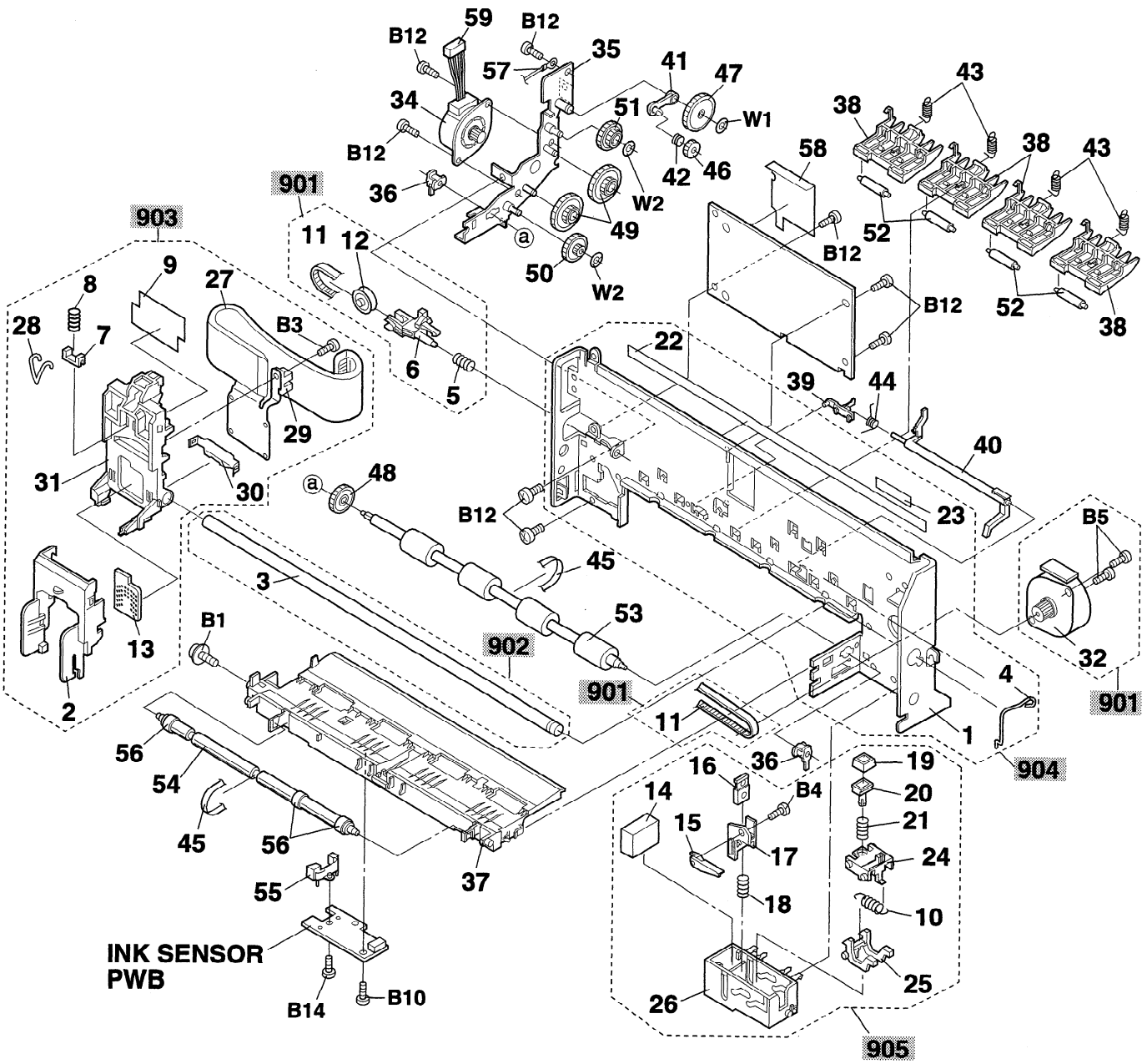
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[6] Scaner unit					
1	LPLTM2919AXZZ	AN		C	Sub base plate
2	LPLTP2918AXZZ	AW		C	Scaner base
3	LPLTP2930AXZZ	AE	N	C	CIS holder Left
4	LPLTP2931AXZZ	AE	N	C	CIS holder Right
5	CGERH2363AX01	AK		B	Feed gear ass'y
6	MSPRC2969AXZZ	AD		C	CIS spring
7	NBRGP2141AXZZ	AC		C	Transfer bearing
8	NGERH2275XHZZ	AC		C	Transfer gear 2
9	NROLR2333XHZZ	AP		C	Feed roller
10	NROLR2365AXZZ	AV		C	Transfer roller
11	QCNW-4855AXZZ	AD		C	Ground cable 2
12	QCNW-4827AXZZ	AR	N	C	CIS cable
13	RUNTZ2025SCZZ	BN	N	B	Color cis unit ass'y

[7] Drive unit



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[7] Drive unit					
1	LFRM-2188AXZZ	AP		C	Drive frame
2	LPLTM2922AXZZ	AF		C	Radiation plate
3	NGERH2393AXZZ	AD		C	Gear,White(18/36Z)
4	NGERH2394AXZZ	AD		C	Gear,Black(18/35Z)
5	RMOTZ2144AXZZ	AZ	N	B	Motor ass'y
6	NGERH2395AXZZ	AD	N	C	Gear,white(15/23Z)

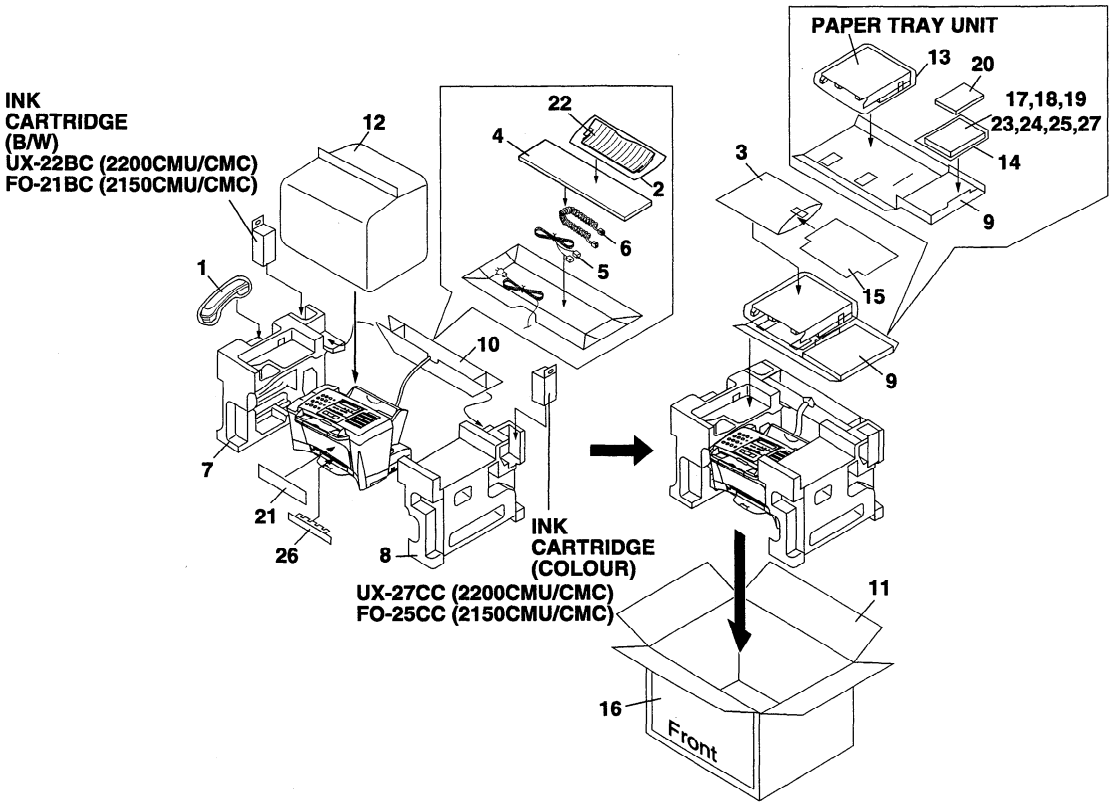
8 Printer unit



Note : Since the parts circled by dots can not be supplied, change it as a unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
[8] Printer unit					
1	-			C	Frame chassis
2	-			C	Carrier cover(K)
3	-			C	Main shaft
4	-			C	Main shaft holder
5	-			C	Belt tension spring
6	-			C	Idler pulley holder
7	-			C	Carrier latch
8	-			C	Carrier latch SP
9	-			C	FFC plate
10	-			C	Main spring B
11	-			C	Timing belt
12	-			C	Idler pulley
13	-			C	Contct pad
14	-			C	Ink felt
15	-			C	Wiper lever
16	-			C	Wiper
17	-			C	Wiper holder
18	-			C	Main spring A
19	-			C	Cap
20	-			C	Cap holder
21	-			C	Casp spring
22	-			D	Guide seal
23	-			D	Barcode label
24	-			C	Capslider
25	-			C	Maintenance lever
26	-			C	Maintenance base
27	-			C	Printer head cable
28	-			C	Main shaft stoper
29	-			B	Photo interrupter
30	-			C	Deflector A
31	-			C	Ink carrier
32	-			B	Steping CR motor
34	RMOTZ2137AXZZ	AZ		B	Paper feed motor
35	LBRC-2006AXZZ	AK		C	Motor braket
36	LBSHP2095AXZZ	AD		C	Bearing
37	LFRM-2192AXZZ	AL		C	Base frame
38	LHLDZ2168AXZZ	AS		C	Pinch roller holder
39	LHLDZ2169AXZZ	AD		C	Sensor lever holder
40	MLEVP2273AXZZ	AH		C	P-in sensor lever
41	MLEVP2274AXZZ	AD		C	Planet lever
42	MSPRC2735XHZZ	AC		C	Planet gear spring
43	MSPRC3008AXZZ	AC		C	Feed spring
44	MSPRD2975AXZZ	AC		C	Lever spring
45	NBLTK2056AXZZ	AF		C	Feed belt
46	NGERH2278XHZZ	AC		C	Planet gear
47	NGERH2279XHZZ	AC		C	Idler gear A
48	NGERH2396AXZZ	AD		C	PRT feed gear
49	NGERH2398AXZZ	AD		C	Secondry gear A
50	NGERH2399AXZZ	AD		C	Secondry gear B
51	NGERH2400AXZZ	AD		C	Secondry gear C
52	NROLP2382AXZZ	AC		C	Pinch roller
53	NROLR2380AXZZ	AX		C	PRT feed roller
54	NROLR2381AXZZ	AH		C	Exit roller
55	PCOVP2118AXZZ	AE		C	Sensor cover
56	PGUMM2152AXZZ	AD		C	Exit rubber
57	QCNW-4807AXZZ	AE		C	Ground cable
58	PSLDM2045AXZZ	AF		C	Print shield plate
59	QCNW-4778AXZZ	AZ		C	Printer cable
	(Unit)				
901	0MIMMM7E24MM0	BK		E	Carrier stepping motor with pulley ass'y
902	0MIOPM300356/	AY		C	Carrier shaft
903	0MIOPSA00195/	BS		E	Carrier asm,key"K"ass'y
904	0MIOPM100090/	AY		E	Frame chasis ass'y
905	0MIOPSA00100/	AV		E	Maintenance group ass'y

9 Packing material & Accessories



NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[9] Packing material & Accessories						
1	DUNTK307BAXOW	AZ		E	Handset unit	[2700CMU/CMC]
	DUNTK307BAXOG	AZ		E	Handset unit	[2550CMU/CMC]
2	SSAKA3001CCZZ	AA		D	Polyethylene bag,Document tray	
3	SSAKA3340QCZZ	AB		D	Polyethylene bag,Pop card	
4	SPAKA393AAXZZ	AC		C	Spacer	
5	QCNW-3975AXGY	AH		C	Telephone line cord	[2700CMU/2550CMU]
	QCNW-3247SCZZ	AH		C	Telephone line cord	[2700CMC/2550CMC]
6	QCNW-3976XHOW	AK		C	Handset cord	[2700CMU/CMC]
	QCNW-3976XHOG	AT		C	Handset cord	[2550CMU/CMC]
7	SPAKA220AAXZZ	AF		D	Add.,Left	
8	SPAKA221AAXZZ	AF		D	Add.,Right	
9	SPAKA222AAXZZ	AG		D	PLT-AD1	
10	SPAKA223AAXZZ	AF		D	PLT-AD2	
11	SPAKC326AAXZZ	AV	N	D	Packing case	[2700CMU]
	SPAKC328AAXZZ	AV	N	D	Packing case	[2550CMU]
	SPAKC442AAXZZ	AV	N	D	Packing case	[2700CMC]
	SPAKC444AAXZZ	AV	N	D	Packing case	[2550CMC]
12	SPAKP4381AXZZ	AG		D	Vinyl cover	
13	SSAKA2008AXZZ	AA		D	Vinyl bag	
14	SSAKA2344QCZZ	AB		D	Operation manual vinyl bag	
15	TCADZ2607AXZZ	AK	N	D	Pop card	[2700CMU]
	TCADZ2673AXZZ	AK	N	D	Pop card	[2700CMC]
16	TLABM4538AXZZ	AG	N	D	Box label	[2700CMU/CMC]
17	TCADZ2604AXZZ	AC	N	D	Quick reference guide	[2700CMU/2550CMU]
	TCADZ2674AXZZ	AC	N	D	Quick reference guide	[2700CMC/2550CMC]
18	TINSE3854AXZZ	AF	N	D	Operation manual	[2700CMU]
	TINSE3855AXZZ	AF	N	D	Operation manual	[2550CMU]
	TINSK3903AXZZ	AF	N	D	Operation manual	[2700CMC/2550CMC]
19	TLABH4496AXSA	AC		D	Rapid key label	[2700CMU/CMC]
	TLABH4496AXSC	AC		D	Rapid key label	[2550CMU/CMC]
20	UDSKA2009SCZZ	AQ	N	E	CD-ROM	[2700CMU]
	UDSKA2011SCZZ	AP	N	E	CD-ROM	[2700CMC/2550CMC]
	UDSKA2010SCZZ	AP	N	E	CD-ROM	[2550CMU]
21	TLABM4536AXZZ	AE	N	D	Pop label	[2700CMU]
	TLABM4709AXZZ	AG	N	D	Pop label	[2700CMC]
22	LPLTP2932AXSA	AK		C	Document tray	
23	TCADZ2631AXZZ	AC		D	Up grade coupon	
24	TLABH4238AXZG	AC		D	Paper set label	[2700CMC]
	TLABH4238AXZA	AC		D	Paper set label	[2550CMC]
25	TCADZ2608AXZZ	AF	N	D	Registration card	[2700CMU]
26	SPAKA417AAXZZ	AF		D	Roller protector	
27	PSHEZ3396SCZZ	AE	N	D	Scanner calibration sheet(Shading sheet)	

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
1	UBATL0011FCZZ	AM		B	Lithium battery	[BAT]
2	VCEAGA1EW107M	AB		C	Capacitor(25WV 100μF)	[C2]
3	RC-EZ107BRC1C	AH		C	Capacitor(16WV 100μF)	[C5]
4	VCEAGA1EW107M	AB		C	Capacitor(25WV 100μF)	[C6]
5	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μF)	[C7]
6	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μF)	[C8]
7	VCEAGA1EW226M	AB		C	Capacitor(25WV 22μF)	[C10]
8	VCEAGA1HW105M	AB		C	Capacitor(50WV 1μF)	[C11]
9	VCEAGA1HW475M	AA		C	Capacitor(50WV 4.7μF)	[C12]
10	VCEAGA1EW107M	AB		C	Capacitor(25WV 100μF)	[C13]
11	VCEAGA1HW476M	AB		C	Capacitor(50WV 47μF)	[C15]
12	VCEAGA1HW336M	AB		C	Capacitor(50WV 33μF)	[C17]
13	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μF)	[C18]
14	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C102]
15	VCKYTQ1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C103]
16	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C104]
17	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C105]
18	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C107]
19	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C108]
20	VCCCTV1HH330J	AA		C	Capacitor(50WV 33PF)	[C109]
21	VCKYTQ1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C110]
22	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C111]
23	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C112]
24	VCKYTV1HB472K	AA		C	Capacitor(50WV 4700PF)	[C114]
25	VCKYTV1HB103K	AB		C	Capacitor(50WV 0.01μF)	[C115]
26	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C116]
27	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C117]
28	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C118]
29	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C119]
30	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C120]
31	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C122]
32	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C123]
33	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C125]
34	VCCCTV1HH5R0J	AA		C	Capacitor(50WV 5PF)	[C126]
35	VCCCTV1HH5R0J	AA		C	Capacitor(50WV 5PF)	[C127]
36	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C128]
37	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C129]
38	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C130]
39	VCKYTV1CF105Z	AA		C	Capacitor(16WV 1μF)	[C131]
40	VCKYTV1CF105Z	AA		C	Capacitor(16WV 1μF)	[C132]
41	VCKYTV1CF105Z	AA		C	Capacitor(16WV 1μF)	[C133]
42	VCKYTV1CF105Z	AA		C	Capacitor(16WV 1μF)	[C134]
43	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C135]
44	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C136]
45	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C137]
46	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C138]
47	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C139]
48	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C140]
49	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C141]
50	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C142]
51	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C143]
52	VCCCTV1HH180J	AA		C	Capacitor(50WV 18PF)	[C144]
53	VCCCTV1HH180J	AA		C	Capacitor(50WV 18PF)	[C145]
54	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C146]
55	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C147]
56	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C148]
57	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C149]
58	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C150]
59	VCKYTV1EB104K	AA		C	Capacitor(25WV 0.1μF)	[C151]
60	VCKYTV1EB104K	AA		C	Capacitor(25WV 0.1μF)	[C152]
61	VCKYTV1EB104K	AA		C	Capacitor(25WV 0.1μF)	[C153]
62	VCKYTV1EB104K	AA		C	Capacitor(25WV 0.1μF)	[C154]
63	VCCCTV1HH5R0D	AA		C	Capacitor(50WV 5PF)	[C155]
64	VCCCTV1HH5R0D	AA		C	Capacitor(50WV 5PF)	[C156]
65	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C157]
66	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C158]
67	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C159]
68	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C160]
69	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C163]
70	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C164]
71	VCCCTV1HH330J	AA		C	Capacitor(50WV 33PF)	[C165]
72	VCCSTV1HL471J	AC		C	Capacitor(50WV 470PF)	[C166]
73	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C167]
74	VCCSTV1HL102J	AA		C	Capacitor(50WV 1000PF)	[C168]
75	VCCCTV1HH120J	AA		C	Capacitor(50WV 12PF)	[C169]
76	VCCCTV1HH120J	AA		C	Capacitor(50WV 12PF)	[C170]
77	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C171]
78	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C172]
79	VCKYTV1CF105Z	AB		C	Capacitor(25WV 1μF)	[C173]
80	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C174]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
81	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C175]
82	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C176]
83	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C177]
84	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C179]
85	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C180]
86	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C181]
87	VCCSTV1HL391J	AA		C	Capacitor(50WV 390PF)	[C182]
88	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C183]
89	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C184]
90	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C185]
91	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C187]
92	VCKYTQ1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C188]
93	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C190]
94	VCCSTV1HL102J	AA		C	Capacitor(50WV 1000PF)	[C191]
95	VCKYTQ1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C192]
96	VCCSTV1HL681J	AB		C	Capacitor(50WV 680PF)	[C193]
97	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C194]
98	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C195]
99	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C196]
100	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C197]
101	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C198]
102	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C199]
103	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C200]
104	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C201]
105	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C202]
106	VCCCTV1HH100D	AA		C	Capacitor(50WV 10PF)	[C203]
107	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF)	[C204]
108	VCCSTV1HL331J	AA		C	Capacitor(50WV 330PF)	[C205]
109	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C206]
110	VCCCTV1HH100D	AA		C	Capacitor(50WV 10PF)	[C207]
111	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C208]
112	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C209]
113	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C210]
114	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C211]
115	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C213]
116	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C215]
117	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C216]
118	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C217]
119	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C218]
120	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C219]
121	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C220]
122	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C221]
123	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C222]
124	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C223]
125	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C224]
126	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C225]
127	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C226]
128	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C227]
129	VCCCTV1HH470J	AA		C	Capacitor(50WV 47PF)	[C230]
130	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C234]
131	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C235]
132	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C236]
133	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C237]
134	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C238]
135	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C239]
136	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C240]
137	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C241]
138	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C242]
139	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C243]
140	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C244]
141	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C245]
142	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C246]
143	VCCCTV1HH5R0D	AA		C	Capacitor(50WV 5PF)	[C247]
144	VCCSTV1HL331J	AA		C	Capacitor(50WV 330PF)	[C248]
145	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C249]
146	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C250]
147	VCKYTV1CF105Z	AB		C	Capacitor(16WV 1μF)	[C251]
148	VCCSTV1HL121J	AC		C	Capacitor(50WV 120PF)	[C253]
149	VCCSTV1HL121J	AC		C	Capacitor(50WV 120PF)	[C254]
150	VCCSTV1HL471J	AC		C	Capacitor(50WV 470PF)	[C271]
151	VCCSTV1HL121J	AC		C	Capacitor(50WV 120PF)	[C272]
152	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C285]
153	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C286]
154	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C288]
155	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF)	[C289]
156	VCCSTV1HL331J	AA		C	Capacitor(50WV 330PF)	[C290]
157	VCCSTV1HL331J	AA		C	Capacitor(50WV 330PF)	[C291]
158	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C292]
159	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C293]
160	QCNCM7014SC1B	AD		C	Connector(12pin)	[CNCIS]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
161	QCNCM7014SC0E	AB		C	Connector(5pin)	[CNIR]
162	QCNCM2499SC1D	AG		C	Connector(14pin)	[CNLIUA]
163	QCNCM7014SC0F	AB		C	Connector(6pin)	[CNMM]
164	QCNCW0946FCZZ	AH		C	Connector(36pin)	[CNPC]
165	QCNCM2401SC0F	AB		C	Connector(6pin)	[CNPHOT]
166	QCNCM2482SC2J	AE		C	Connector(20pin)	[CNPN]
167	QCNCM2482SC2H	AG		C	Connector(28pin)	[CNPRT]
168	QCNCM2499SC0H	AE		C	Connector(8pin)	[CNPW]
169	QCNCM7014SC0B	AD		C	Connector(2pin)	[CNSP]
170	VHD1SS355//-1	AB		B	Diode(1SS355)	[D1]
171	VHD1SS355//-1	AB		B	Diode(1SS355)	[D2]
172	VHDDAP202U/-1	AB		B	Diode(DAP202U)	[D3]
173	VHDHRW0502A-1	AD		B	Diode	[D104]
174	VHDHRW0502A-1	AD		B	Diode	[D105]
175	VHDHRW0502A-1	AD		B	Diode	[D114]
176	VHDHRW0502A-1	AD		B	Diode	[D115]
177	VHDHRW0502A-1	AD		B	Diode	[D117]
178	VHDHRW0502A-1	AD		B	Diode	[D118]
179	VHDHRW0502A-1	AD		B	Diode	[D119]
180	VHDHRW0502A-1	AD		B	Diode	[D120]
181	VHDHRW0502A-1	AD		B	Diode	[D122]
182	VHDHRW0502A-1	AD		B	Diode	[D123]
183	VHDHRW0502A-1	AD		B	Diode	[D124]
184	VHDHRW0502A-1	AD		B	Diode	[D125]
185	VHDHRW0502A-1	AD		B	Diode	[D126]
186	VHDHRW0502A-1	AD		B	Diode	[D127]
187	VHDHRW0502A-1	AD		B	Diode	[D128]
188	VHDHRW0502A-1	AD		B	Diode	[D130]
189	VHDHRW0502A-1	AD		B	Diode	[D131]
190	VHDHRW0502A-1	AD		B	Diode	[D132]
191	VHDHRW0502A-1	AD		B	Diode	[D133]
192	VHDHRW0502A-1	AD		B	Diode	[D134]
193	VHDHRW0502A-1	AD		B	Diode	[D135]
194	VHDHRW0502A-1	AD		B	Diode	[D137]
195	VHDHRW0502A-1	AD		B	Diode	[D139]
196	VHDHRW0502A-1	AD		B	Diode	[D140]
197	VHDHRW0502A-1	AD		B	Diode	[D141]
198	VHDHRW0502A-1	AD		B	Diode	[D147]
199	VHVICPS07//-1	AA		B	Varistor(ICP-S07)	[F100]
200	VHIAD8051//-1	AN		B	IC(AD8051AR)	[IC1]
201	VHIULN2003AN/	AE		B	IC(ULN2003ANS)	[IC2]
202	VHIHECF4066BF	AF		B	IC(HECF4066)	[IC3]
203	VHIHD74LS08-1	AD		B	IC(HD74LS08)	[IC4]
204	VHI74HCU04S-1	AF		B	IC(74HCU04)	[IC5]
205	VHILC821040-1	AZ	N	B	IC(LC82104)	[IC6]
206	VHIHECF4066BF	AF		B	IC(HECF4066)	[IC7]
207	VHIMC14053DR2	AG		B	IC(MC14053DR2)	[IC8]
208	VHI74HCU04S-1	AF		B	IC(74HCU04)	[IC9]
209	VHILZ9FJ49/-1	AV		B	IC(LZ9FJ49)	[IC10]
210	VHISH7040//-2	BD	N	B	IC(SH7040)	[IC11]
211	VHISN74HC14NSR	AE		B	IC(74HC14)	[IC12]
212	VHINJM2902M-1	AF		B	IC(NJM2902M)	[IC13]
213	VHISN74HC164NR	AF		B	IC(HC164)	[IC14]
214	VHISN74HC04NSR	AE		B	IC(HC04)	[IC15]
215	VHIR144AFXL/1	BM		B	IC(R144EFXL)	[IC16]
216	QSOCZ2051SC32	AC		C	IC socket(32pin)	[IC17]
217	VHI27080FAD0A	BQ	N	B	IC,EP ROM(8Mbit)	[IC17][2550CMC]
218	VHI27080FAC0A	BQ	N	B	IC,EP ROM(8Mbit)	[IC17][2550CMU]
219	VHI27080FAB0C	BQ	N	B	IC,EP ROM(8Mbit)	[IC17][2700CMC]
220	VHI27080FAA0C	BQ	N	B	IC,EP ROM(8Mbit)	[IC17][2700CMU]
221	QSOCZ2051SC32	AC		C	IC socket(32pin)	[IC18]
222	VHI27080FAD1A	BQ	N	B	IC,EP ROM(8Mbit)	[IC18][2550CMC]
223	VHI27080FAC1A	BQ	N	B	IC,EP ROM(8Mbit)	[IC18][2550CMU]
224	VHI27080FAB1C	BQ	N	B	IC,EP ROM(8Mbit)	[IC18][2700CMC]
225	VHI27080FAA1C	BQ	N	B	IC,EP ROM(8Mbit)	[IC18][2700CMU]
226	VHIHY18164CJ6	AY	N	B	IC,DRAM(1Mx16bit)	[IC19]
227	VHIS2B257SL70	AL		B	IC,SRAM(256Kbit)	[IC20]
228	VHISN74LS245N	AR		B	IC(74LS245)	[IC21]
229	VHISN74LS244NR	AG		B	IC(SN74LS244)	[IC22]
230	VHISN74LS244NR	AG		B	IC(SN74LS244)	[IC23]
231	VHIHY18164CJ6	AY	N	B	IC,DRAM(1MX16bit)	[IC24]
232	VHIS2B257SL70	AL		B	IC,SRAM(256Kbit)	[IC25]
233	VHITC7W74FU-1	AD		B	IC(TC7W74FU)	[IC27]
234	VHINJM2113M-1	AG		B	IC(NJM2113M)	[IC28]
235	VHINJU6355E-1	AM		B	IC(NJU6355M)	[IC29]
236	VHINJM2902M-1	AF		B	IC(NJM2902M)	[IC30]
237	VHIPST596CMT1	AF		B	IC(PST596)	[IC31]
238	VRS-TV2AB680J	AA		C	Resistor(1/10W 68 ±5%)	[L100]
239	VRS-TV2AB680J	AA		C	Resistor(1/10W 68 ±5%)	[L101]
240	VRS-TQ2BB000J	AA		C	Resistor(1/8W 0 ±5%)	[L103]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
241	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[L104]
242	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[L105]
243	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[L106]
244	VS2SD1858R2-1	AC		B	Transistor(2SD1858)	[Q1]
245	VS2SD1858R2-1	AC		B	Transistor(2SD1858)	[Q2]
246	VS2SD1858R2-1	AC		B	Transistor(2SD1858)	[Q3]
247	VSDTA114EK/-1	AB		B	Transistor(QTA114EKA)	[Q101]
248	VSDTC114EK/-1	AB		B	Transistor(DTC114EK)	[Q102]
249	VSDTC114EK/-1	AB		B	Transistor(DTC114EK)	[Q103]
250	VSDTC114EK/-1	AB		B	Transistor(DTC114EK)	[Q104]
251	VRS-HT3AA5R1J	AB		C	Resistor(1W 5.1 ±5%)	[R1]
252	VRS-HT3AA5R1J	AB		C	Resistor(1W 5.1 ±5%)	[R2]
253	VRS-HT3AA750J	AA		C	Resistor(1W 75 ±5%)	[R3]
254	VRD-HT2EY100J	AA		C	Resistor(1/4W 10 ±5%)	[R5]
255	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R103]
256	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R104]
257	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R105]
258	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R106]
259	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R107]
260	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R108]
261	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R109]
262	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R110]
263	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R111]
264	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R112]
265	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R113]
266	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R114]
267	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R115]
268	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R116]
269	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R117]
270	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R118]
271	VRS-TV2AB471J	AA		C	Capacitor(1/10W 470 ±5%)	[R119]
272	VRS-TV2AB471J	AA		C	Capacitor(1/10W 470 ±5%)	[R120]
273	VRS-TV2AB103J	AA		C	Capacitor(1/10W 10K ±5%)	[R121]
274	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R125]
275	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R127]
276	VRS-TV2AB152J	AB		C	Resistor(1/10W 1.5K ±5%)	[R128]
277	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R132]
278	VRS-TV2AB201J	AA		C	Resistor(1/10W 200 ±5%)	[R133]
279	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R134]
280	VRS-TV2AB182J	AA		C	Resistor(1/10W 1.8K ±5%)	[R135]
281	VRS-TV2AB201J	AA		C	Resistor(1/10W 200 ±5%)	[R136]
282	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R137]
283	VRS-TV2AB182J	AA		C	Resistor(1/10W 1.8K ±5%)	[R138]
284	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R140]
285	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R142]
286	VRS-TQ2BB000J	AA		C	Resistor(1/8W 0 ±5%)	[R145]
287	VRS-TQ2BB000J	AA		C	Resistor(1/8W 0 ±5%)	[R147]
288	VRS-TV2AB203J	AA		C	Resistor(1/10W 20K ±5%)	[R148]
289	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R149]
290	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R150]
291	VRS-TV2AB203J	AA		C	Resistor(1/10W 20K ±5%)	[R151]
292	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R154]
293	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R156]
294	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R158]
295	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R160]
296	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R162]
297	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R164]
298	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R166]
299	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R168]
300	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R169]
301	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R170]
302	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R171]
303	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R172]
304	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R173]
305	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R176]
306	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R177]
307	VRS-TV2AB302J	AA		C	Resistor(1/10W 3K ±5%)	[R178]
308	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R179]
309	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R181]
310	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R182]
311	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R183]
312	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R184]
313	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R187]
314	VRS-TV2AB363J	AA		C	Resistor(1/10W 36K ±5%)	[R190]
315	VRS-TV2AB393J	AD		C	Resistor(1/10W 39K ±5%)	[R191]
316	VRS-TV2AB201J	AA		C	Resistor(1/10W 200 ±5%)	[R192]
317	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R193]
318	VRS-TV2AB105J	AA		C	Resistor(1/10W 1M ±5%)	[R194]
319	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R195]
320	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R196]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
321	VRS-TV2AB203J	AA		C	Resistor(1/10W 20K ±5%)	[R198]
322	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R199]
323	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R200]
324	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R209]
325	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R210]
326	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R211]
327	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R212]
328	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R213]
329	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R214]
330	VRS-TV2AB201J	AA		C	Resistor(1/10W 200 ±5%)	[R215]
331	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R216]
332	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R217]
333	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R218]
334	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R219]
335	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R220]
336	VRS-TV2AB562J	AA		C	Resistor(1/10W 5.6K ±5%)	[R221]
337	VRS-TV2AB183J	AD		C	Resistor(1/10W 18K ±5%)	[R222]
338	VRS-TV2AB302J	AA		C	Resistor(1/10W 3K ±5%)	[R223]
339	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R224]
340	VRS-TV2AB623J	AA		C	Resistor(1/10W 62K ±5%)	[R225]
341	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R227]
342	VRS-TV2AB332J	AA		C	Resistor(1/10W 3.3K ±5%)	[R228]
343	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R229]
344	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R230]
345	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R231]
346	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R232]
347	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R234]
348	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R235]
349	VRS-TV2AB101J	AA		C	Coil,Inductor(1/10W 100 ±5%)	[R236]
350	VRS-TV2AB101J	AA		C	Coil,Inductor(1/10W 100 ±5%)	[R237]
351	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R238]
352	VRS-TV2AB332J	AA		C	Resistor(1/10W 3.3K ±5%)	[R239]
353	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R240]
354	VRS-TV2AB302J	AA		C	Resistor(1/10W 3K ±5%)	[R241]
355	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R242]
356	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R243]
357	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R244]
358	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R245]
359	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R246]
360	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R247]
361	VRSTS2AD8662F	AA		C	Resistor(1/10W 86.6K ±1%)	[R248]
362	VRS-TV2AB302J	AA		C	Resistor(1/10W 3K ±5%)	[R249]
363	VRS-TV2AB105J	AA		C	Resistor(1/10W 1M ±5%)	[R250]
364	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R251]
365	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R254]
366	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R255]
367	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R256]
368	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R257]
369	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R258]
370	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R259]
371	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R260]
372	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R261]
373	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R262]
374	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R263]
375	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R264]
376	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±1%)	[R265]
377	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R266]
378	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R267]
379	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R268]
380	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R271]
381	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R272]
382	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R275]
383	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R277]
384	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R278]
385	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R279]
386	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R280]
387	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R281]
388	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R282]
389	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R283]
390	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R284]
391	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R285]
392	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R286]
393	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R287]
394	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R288]
395	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R289]
396	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R290]
397	VRS-TQ2BB000J	AA		C	Resistor(1/8W 0 ±5%)	[R291]
398	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R293]
399	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R294]
400	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R295]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
401	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R296]
402	VRSTS2AD4752F	AA		C	Resistor(1/10W 47.5K ±1%)	[R298]
403	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R299]
404	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R300]
405	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R301]
406	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R302]
407	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R303]
408	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R304]
409	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R305]
410	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R306]
411	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R307]
412	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R309]
413	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R310]
414	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R312]
415	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R313]
416	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R314]
417	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R315]
418	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R316]
419	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R317]
420	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R318]
421	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R319]
422	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R320]
423	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R321]
424	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R322]
425	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R323]
426	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R324]
427	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R325]
428	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R326]
429	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R327]
430	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R328]
431	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R329]
432	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R330]
433	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R332]
434	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R333]
435	VRS-TV2AB333J	AD		C	Resistor(1/10W 33K ±5%)	[R334]
436	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R335]
437	VRS-TV2AB152J	AB		C	Resistor(1/10W 1.5K ±5%)	[R336]
438	VRS-TV2AB473J	AA		C	Resistor(1/10W 47K ±5%)	[R337]
439	VRS-TV2AB133J	AA		C	Resistor(1/10W 13K ±5%)	[R338]
440	VRSTS2AD8662F	AA		C	Resistor(1/10W 86.6K ±1%)	[R339]
441	VRS-TV2AB332J	AA		C	Resistor(1/10W 3.3K ±5%)	[R340]
442	VRSTS2AD1742F	AA		C	Resistor(1/10W 17.4K ±1%)	[R341]
443	VRS-TQ2BB200J	AA		C	Resistor(1/8W 20 ±5%)	[R342]
444	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R344]
445	VRS-TV2AB680J	AA		C	Resistor(1/10W 68 ±5%)	[R345]
446	VRS-TV2AB680J	AA		C	Resistor(1/10W 68 ±5%)	[R346]
447	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R347]
448	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R348]
449	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R349]
450	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R350]
451	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R352]
452	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R353]
453	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R354]
454	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R355]
455	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R356]
456	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R357]
457	VRS-TV2AB104J	AA		C	Resistor(1/10W 100K ±5%)	[R359]
458	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±1%)	[R360]
459	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R361]
460	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R362]
461	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R363]
462	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R364]
463	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R365]
464	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R366]
465	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R367]
466	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R368]
467	VRS-TV2AB473J	AA		C	Resistor(1/10W 47K ±5%)	[R369]
468	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R370]
469	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R371]
470	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R372]
471	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R373]
472	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R374]
473	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R375]
474	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R376]
475	VRS-TV2AB154J	AB		C	Resistor(1/10W 150K ±5%)	[R377]
476	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R379]
477	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R381]
478	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R382]
479	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R384]
480	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R385]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
481	VRS-TV2AB271J	AA		C	Resistor(1/10W 270 ±5%)	[R386]
482	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R387]
483	VRS-TV2AB681J	AA		C	Resistor(1/10W 680 ±5%)	[R393]
484	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R394]
485	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R395]
486	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R396]
487	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R397]
488	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R398]
489	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R399]
490	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R400]
491	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R401]
492	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R402]
493	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R403]
494	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R404]
495	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R405]
496	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R406]
497	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R407]
498	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R408]
499	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R409]
500	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R410]
501	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R411]
502	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R412]
503	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R413]
504	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R414]
505	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R416]
506	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R417]
507	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R419]
508	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R420]
509	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R421]
510	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R422]
511	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R423]
512	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R424]
513	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R425]
514	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R426]
515	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R427]
516	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R428]
517	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R429]
518	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R430]
519	VRS-TV2AB121J	AA		C	Resistor(1/10W 120 ±5%)	[R431]
520	VRS-TQ2BB000J	AA		C	Resistor(1/8W 0 ±5%)	[R432]
521	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R433]
522	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R434]
523	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R435]
524	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R436]
525	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R437]
526	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R438]
527	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R439]
528	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R440]
529	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R441]
530	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R442]
531	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R443]
532	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R444]
533	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R445]
534	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R446]
535	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R447]
536	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R448]
537	VRS-TV2AB470J	AA		C	Resistor(1/10W 47 ±5%)	[R449]
538	VRS-TV2AB562J	AA		C	Resistor(1/10W 5.6K ±5%)	[R450]
539	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R451]
540	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R452]
541	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R453]
542	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R454]
543	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R455]
544	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R456]
545	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R457]
546	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R458]
547	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R459]
548	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R460]
549	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R461]
550	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R462]
551	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R463]
552	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R464]
553	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R465]
554	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R466]
555	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R467]
556	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R468]
557	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R469]
558	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R470]
559	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R471]
560	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R472]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[10] Control PWB unit						
561	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R473]
562	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R474]
563	VRS-TV2AB122J	AA		C	Resistor(1/10W 1.2K ±5%)	[R475]
564	VRS-TQ2BB561J	AA		C	Resistor(1/8W 560 ±5%)	[R477]
565	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R478]
566	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R479]
567	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R480]
568	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R481]
569	VRS-TV2AB121J	AA		C	Resistor(1/10W 120 ±5%)	[R482]
570	VRS-TQ2BB000J	AA		C	Resistor(1/8W 0 ±5%)	[R484]
571	VRS-TV2AB330J	AD		C	Resistor(1/10W 33 ±5%)	[R485]
572	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R486]
573	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R488]
574	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R490]
575	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R502]
576	VRS-TV2AB221J	AA		C	Resistor(1/10W 220 ±5%)	[R512]
577	VRS-TV2AB151J	AA		C	Resistor(1/10W 150 ±5%)	[R513]
578	VRS-TV2AB100J	AD		C	Resistor(1/10W 10 ±5%)	[R514]
579	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R516]
580	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R517]
581	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R518]
582	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R519]
583	VRS-TV2AB101J	AA		C	Resistor(1/10W 100 ±5%)	[R520]
584	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R521]
585	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R522]
586	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R523]
587	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R524]
588	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R525]
589	RCRSZ1017LCZZ	AF		B	Crystal(32MHZ)	[X1]
590	RCRSQ2123AXZZ	AL		B	Crystal(6.912MHZ)	[X2]
591	RCRSB0297AFZZ	AD		B	Crystal(32.768KHz)	[X3]
592	RCRSQ2124AXZZ	AL		B	Crystal(16MHZ)	[X4]
593	RCRSQ2109SCZZ	AL		B	Crystal(38.00053MHz)	[X5]
594	VHERD22FB3/-1	AC		B	Zener diode(RD22FB3)	[ZD1]
595	TLABN1235CCZZ	AA		D	EPROM label	
	(Unit)					
901	DCEKC381KAXZZ	CM	N	E	Control PWB unit	[2700CMU]
	DCEKC884KAXZZ	CM	N	E	Control PWB unit	[2700CMC]
	DCEKC383KAXZZ	CM	N	E	Control PWB unit	[2550CMU]
	DCEKC885KAXZZ	CM	N	E	Control PWB unit	[2550CMC]
[11] TEL-Liu PWB unit						
1	VHVRA391PV6-1	AE		B	Varistor(RA-391P-V6-2)	[AR1]
2	QCNW-4806AXZZ	AD		C	ARG cable	[ARG]
3	RC-FZ3024SCZZ	AG		C	Capacitor(250WV 0.82µF)	[C1]
4	VCKYPU1HB103K	AA		C	Capacitor(50WV 0.01µF)	[C2]
5	VCKYPU1HB102K	AA		C	Capacitor(50WV 1000PF)	[C3]
6	VCKYPU1HB102K	AA		C	Capacitor(50WV 1000PF)	[C4]
7	VCEAGA1HW475M	AA		C	Capacitor(50WV 4.7µF)	[C5]
8	VCKYPU1HB222K	AA		C	Capacitor(50WV 2200PF)	[C7]
9	VCQYNA1HM333K	AA		C	Capacitor(50WV 0.033µF)	[C8]
10	VCEAGA1HW475M	AA		C	Capacitor(50WV 4.7µF)	[C9]
11	VCKYPU1HB222K	AA		C	Capacitor(50WV 2200PF)	[C10]
12	VCEAGA1HW475M	AA		C	Capacitor(50WV 4.7µF)	[C11]
13	VCEAGA1HW225M	AA		C	Capacitor(50WV 2.2µF)	[C12]
14	VCKYPU1HB221K	AB		C	Capacitor(50WV 220PF)	[C13]
15	VCKYPU1HB102K	AA		C	Capacitor(50WV 1000PF)	[C14]
16	VCKYPU1HB102K	AA		C	Capacitor(50WV 1000PF)	[C15]
17	VCEAGA1HW226M	AB		C	Capacitor(50WV 22µF)	[C16]
18	VCKYPU1HB332K	AA		C	Capacitor(50WV 3300PF)	[C17]
19	VCKYPU1HF223Z	AA		C	Capacitor(50WV 0.022µF)	[C18]
20	VCEAGA1HW475M	AA		C	Capacitor(50WV 4.7µF)	[C19]
21	VCKYPU1HB222K	AA		C	Capacitor(50WV 2200PF)	[C20]
22	RRLYD3221SCZZ	AN		B	Relay(OUAZ-SH-124D)	[CML]
23	QCNCW2500SC1D	AG		C	Connector(14Pin)	[CNLIU]
24	VHD1SS133//-1	AA		B	Diode(1SS133)	[D1]
25	VHD1SS133//-1	AA		B	Diode(1SS133)	[D2]
26	VHD1SS133//-1	AA		B	Diode(1SS133)	[D3]
27	VHD1SS133//-1	AA		B	Diode(1SS133)	[D4]
28	VHINJM2904D-1	AG		B	IC(NJM2904D)	[IC1]
29	RFILN2011SCZZ	AC		C	Coil(SBT-0260)	[L1]
30	RFILN2011SCZZ	AC		C	Coil(SBT-0260)	[L2]
31	RFILN2011SCZZ	AC		C	Coil(SBT-0260)	[L3]
32	RFILN2011SCZZ	AC		C	Coil(SBT-0260)	[L4]
33	VRD-HT2EY000J	AA		C	Resistor(1/4W 0 ±5%)	[L5]
34	VRD-HT2EY000J	AA		C	Resistor(1/4W 0 ±5%)	[L6]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[11] TEL-Liu PWB unit						
35	VRD-HT2EY000J	AA		C	Resistor(1/4W 0 ±5%)	[L7]
36	QJAKZ2046SCBB	AH		C	Line-jack(2pin)	[MJ1-2]
37	QJAKZ2065SC0D	AG		C	Tell-jack(40-218A0-04BKA)	[MJTEL]
38	VHPPC817X7/-1	AD		B	Photo coupler(PC817X7)	[PC1]
39	VHPPC814X//-1	AE		B	Photo transistor(PC814X)	[PC2]
40	VHPSG206S//-1	AG		B	Photo transistor(SG206S)	[PE]
41	VSDTC114ES/-1	AB		B	Transistor(DTC114ES)	[Q1]
42	VS2SC1815GR-1	AB		B	Transistor(2SC1815GR)	[Q2]
43	VSDTC114ES/-1	AB		B	Transistor(DTC114ES)	[Q3]
44	VRD-HT2EY910J	AA		C	Resistor(1/4W 91 ±5%)	[R1]
45	VRD-HT2EY300J	AA		C	Resistor(1/4W 30 ±5%)	[R2]
46	VRD-HT2HY223J	AA		C	Resistor(1/2W 22K ±5%)	[R3]
47	VRD-HT2EY223J	AA		C	Resistor(1/4W 22K ±5%)	[R5]
48	VRD-HT2EY221J	AA		C	Resistor(1/4W 220 ±5%)	[R6]
49	VRD-HT2EY103J	AA		C	Resistor(1/4W 10K ±5%)	[R7]
50	VRD-HT2EY153J	AA		C	Resistor(1/4W 15K ±5%)	[R8]
51	VRD-HT2EY621J	AA		C	Resistor(1/4W 620 ±5%)	[R10]
52	VRD-HT2EY103J	AA		C	Resistor(1/4W 10K ±5%)	[R11]
53	VRD-HT2EY103J	AA		C	Resistor(1/4W 10K ±5%)	[R12]
54	VRD-HT2EY103J	AA		C	Resistor(1/4W 10K ±5%)	[R13]
55	VRD-HT2EY332J	AA		C	Resistor(1/4W 3.3K ±5%)	[R14]
56	VRD-HT2EY102J	AA		C	Resistor(1/4W 1.0K ±5%)	[R15]
57	VRD-HT2EY152J	AA		C	Resistor(1/4W 1.5K ±5%)	[R16]
58	VRD-HT2EY102J	AA		C	Resistor(1/4W 1.0K ±5%)	[R18]
59	VRD-HT2EY152J	AA		C	Resistor(1/4W 1.5K ±5%)	[R19]
60	VRD-HT2EY102J	AA		C	Resistor(1/4W 1.0K ±5%)	[R20]
61	VRD-HT2EY153J	AA		C	Resistor(1/4W 15K ±5%)	[R21]
62	VRD-HT2EY332J	AA		C	Resistor(1/4W 3.3K ±5%)	[R22]
63	VRD-HT2EY151J	AA		C	Resistor(1/4W 150 ±5%)	[R24]
64	QSW-Z2206SCZZ	AH		B	Hook switch(SPPY11-BM)	[SW1]
65	RTRNZ2128XH01	AP		B	Transformer(Z2128)	[T1]
66	VHVERZV5D471/	AC		B	Varistor(ERZV5D471)	[VA1]
67	VHVERZV5D471/	AC		B	Varistor(ERZV5D471)	[VA2]
68	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD1]
69	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD2]
70	VHEHZ27-1//-1	AB		B	Zener diode(HZ27)	[ZD3]
71	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD4]
72	VHEHZ2C1///-1	AA		B	Zener diode(HZ2C1)	[ZD5]
	(Unit)					
901	DCEKL391BAX01	BE		E	TEL/Liu PWB unit	
[12] Ink sensor PWB unit						
1	VCEAEA1CW106M	AC		C	Capacitor(16WV 10μF)	[C1]
2	VCEAEA1CW106M	AC		C	Capacitor(16WV 10μF)	[C2]
3	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C101]
4	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF)	[C103]
5	VCKYTV1HB121K	AA		C	Capacitor(50WV 120PF)	[C104]
6	VCKYTV1EB104K	AA		C	Capacitor(25WV 0.1μF)	[C106]
7	QCNCM704FAF02	AC		C	Connector(6pin)	[CNPHOTO]
8	VHPPD410PI/-1	AE		B	Photo transistor(PD410PI)	[D1]
9	VHPGL480///-1	AD		B	Photo transistor(GL480)	[D2]
10	VHD1SS355//-1	AB		B	Diode(1SS355)	[D101]
11	VHINJM324M/-1	AH		B	IC(NJM324M)	[IC1]
12	VHINJM311M/-1	AL		B	IC(NJM311M)	[IC2]
13	VS2SC2412KR-1	AD		B	Transistor(2SC2412K)	[Q101]
14	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R101]
15	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R102]
16	VRS-TV2AB434J	AA		C	Resistor(1/10W 430K ±5%)	[R103]
17	VRS-TV2AB222J	AA		C	Resistor(1/10W 2.2K ±5%)	[R104]
18	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R105]
19	VRS-TV2AB222J	AA		C	Resistor(1/10W 2.2K ±5%)	[R106]
20	VRS-TV2AB434J	AA		C	Resistor(1/10W 430K ±5%)	[R107]
21	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R108]
22	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R109]
23	VRS-TV2AB124J	AA		C	Resistor(1/10W 120K ±5%)	[R110]
24	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R111]
25	VRS-TV2AB434J	AA		C	Resistor(1/10W 430K ±5%)	[R112]
26	VRS-TV2AB473J	AA		C	Resistor(1/10W 47K ±5%)	[R113]
27	VRS-TV2AB151J	AA		C	Resistor(1/10W 150 ±5%)	[R114]
28	VRS-TV2AB151J	AA		C	Resistor(1/10W 150 ±5%)	[R115]
29	VRS-TV2AB104J	AA		C	Resistor(1/10W 100K ±5%)	[R116]
30	VRS-TV2AB332J	AA		C	Resistor(1/10W 3.3K ±5%)	[R117]
	(Unit)					
901	DCEKS396BAX01	AZ		E	Ink sensor PWB	

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[13] Printer PWB unit						
1	VCEAGU1VW107M	AB		C	Capacitor(35WV 100μF)	[C2]
2	VCEAZU1VJ108M	AG		C	Capacitor(35WV 1000μF)	[C3]
3	VCEAGA1CW107M	AC		C	Capacitor(16WV 100μF)	[C4]
4	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C100]
5	VCCCTV1HH331J	AA		C	Capacitor(50WV 330PF)	[C101]
6	VCCCTV1HH471J	AA		C	Capacitor(50WV 470PF)	[C102]
7	VCCCTV1HH471J	AA		C	Capacitor(50WV 470PF)	[C103]
8	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C104]
9	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C105]
10	VCKYTV1HB103K	AB		C	Capacitor(50WV 0.01μF)	[C106]
11	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C107]
12	VCCCTV1HH331J	AA		C	Capacitor(50WV 330PF)	[C108]
13	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C109]
14	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C110]
15	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C111]
16	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C112]
17	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C113]
18	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C114]
19	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C115]
20	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C116]
21	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C117]
22	VCCCTV1HH101J	AA		C	Capacitor(50WV 100PF)	[C118]
23	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C119]
24	VCCCTV1HH561J	AA		C	Capacitor(50WV 560PF)	[C120]
25	VCCCTV1HH561J	AA		C	Capacitor(50WV 560PF)	[C121]
26	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C123]
27	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C125]
28	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C126]
29	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C127]
30	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C128]
31	VCCCTV1HH101J	AA		C	Capacitor(50WV 100PF)	[C129]
32	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C130]
33	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C131]
34	VCKYTV1HF103Z	AA		C	Capacitor(50WV 0.010μF)	[C132]
35	VCCCTV1HH150J	AA		C	Capacitor(50WV 15PF)	[C133]
36	VCCCTV1HH220J	AA		C	Capacitor(50WV 22PF)	[C134]
37	VCCCTV1HH220J	AA		C	Capacitor(50WV 22PF)	[C135]
38	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C136]
39	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C137]
40	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C138]
41	VCKYTV1HB472K	AA		C	Capacitor(50WV 4700PF)	[C139]
42	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C140]
43	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C141]
44	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C142]
45	VCKYTV1CF225Z	AD		C	Capacitor(16WV 2.2μF)	[C143]
46	VCCCTV1HH561J	AA		C	Capacitor(50WV 560PF)	[C144]
47	VCCCTV1HH561J	AA		C	Capacitor(50WV 560PF)	[C145]
48	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C146]
49	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C147]
50	VCKYTV1HF103Z	AA		C	Capacitor(50WV 0.010μF)	[C148]
51	VCCCTV1HH150J	AA		C	Capacitor(50WV 15PF)	[C149]
52	VCCCTV1HH102J	AA		C	Capacitor(50WV 1000PF)	[C150]
53	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.1μF)	[C151]
54	VCKYTV1HB103K	AB		C	Capacitor(50WV 0.01μF)	[C300]
55	VCKYTV1HB103K	AB		C	Capacitor(50WV 0.01μF)	[C302]
56	VCKYTV1HB103K	AB		C	Capacitor(50WV 0.01μF)	[C303]
57	QCNCM7014SC0E	AB		C	Connector(5pin)	[CN1]
58	QCNCM7014SC0D	AB		C	Connector(4pin)	[CN2]
59	QCNCW2556SC3B	AG		C	Connector(32pin)	[CN3]
60	QCNCW2556SC3B	AG		C	Connector(32pin)	[CN4]
61	QCNCM2482SC2H	AG		C	Connector(28pin)	[CNPRT]
62	VHDERA81004-1	AE		B	Diode(ERA81-004)	[D1]
63	VHDERA81004-1	AE		B	Diode(ERA81-004)	[D2]
64	VHDERA81004-1	AE		B	Diode(ERA81-004)	[D3]
65	VHDERA81004-1	AE		B	Diode(ERA81-004)	[D4]
66	VHVICPS07//-1	AA		B	Varistor(ICP-S07)	[F100]
67	VHVICPS07//-1	AA		B	Varistor(ICP-S07)	[F101]
68	RCILZ2141AXZZ	AD		C	Bead coil	[FB100]
69	RCILZ2141AXZZ	AD		C	Bead coil	[FB101]
70	RCILZ2141AXZZ	AD		C	Bead coil	[FB102]
71	RCILZ2141AXZZ	AD		C	Bead coil	[FB103]
72	RCILZ2141AXZZ	AD		C	Bead coil	[FB104]
73	VHILB1845//-1	AY		B	IC(LB1845)	[IC1]
74	VHISTA471A/-1	AK		B	IC(STA471A)	[IC2]
75	VHIW24257S7LL	AP		B	IC(W24257)	[IC3]
76	VHIL6451///-1	AX		B	IC(L6451)	[IC4]
77	VHITC16G331AF	BG		B	IC(TC160G331AF)	[IC5]
78	VHIL6451///-1	AX		B	IC(L6451)	[IC6]
79	VHIBA10393F-1	AC		B	IC(BA10393F)	[IC7]
80	VHITMP87PH47U	AZ		B	IC(TMP87C807U)	[IC8]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[13] Printer PWB unit						
81	VHPSG206S//-1	AG		B	Photo transistor(SG206S)	[PC1]
82	PSLDM2045AXZZ	AF		C	Printer shield plate	[PLT]
83	VS2SB1261K/-1	AE		B	Transistor(2SB1261(K))	[Q1]
84	VS2SC2412KR-1	AD		B	Transistor(2SC2412K)	[Q101]
85	VSDTA114EK/-1	AB		B	Transistor(DTA114EKA)	[Q102]
86	VSDTA114EK/-1	AB		B	Transistor(DTA114EKA)	[Q103]
87	VSDTA114EK/-1	AB		B	Transistor(DTA114EKA)	[Q104]
88	VSDTA114EK/-1	AB		B	Transistor(DTA114EKA)	[Q105]
89	RR-SZ3013SCZZ	AC		C	Resistor(1W 22.1 ±1%)	[R1]
90	RR-SZ3013SCZZ	AC		C	Resistor(1W 22.1 ±1%)	[R2]
91	VRS-HT3AAR75J	AC		C	Resistor(1W 0.75 ±5%)	[R3]
92	VRS-HT3AAR75J	AC		C	Resistor(1W 0.75 ±5%)	[R4]
93	RR-SZ3013SCZZ	AC		C	Resistor(1W 22.1 ±1%)	[R6]
94	RR-SZ3013SCZZ	AC		C	Resistor(1W 22.1 ±1%)	[R7]
95	VRD-HT2EY122J	AA		C	Resistor(1/4W 1.2K ±5%)	[R8]
96	VRD-HT2EY122J	AA		C	Resistor(1/4W 1.2K ±5%)	[R9]
97	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R100]
98	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R101]
99	VRS-TV2AB223J	AA		C	Resistor(1/10W 22K ±5%)	[R102]
100	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R103]
101	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R104]
102	VRS-TV2AB563F	AB		C	Resistor(1/10W 56K ±1%)	[R105]
103	VRS-TV2AB563F	AB		C	Resistor(1/10W 56K ±1%)	[R106]
104	VRS-TV2AB152J	AB		C	Resistor(1/10W 1.5K ±5%)	[R110]
105	VRS-TV2AB222J	AA		C	Resistor(1/10W 2.2K ±5%)	[R111]
106	VRS-TV2AB152J	AB		C	Resistor(1/10W 1.5K ±5%)	[R112]
107	VRS-TV2AB222J	AA		C	Resistor(1/10W 2.2K ±5%)	[R113]
108	VRS-TV2AB152J	AB		C	Resistor(1/10W 1.5K ±5%)	[R114]
109	VRS-TV2AB222J	AA		C	Resistor(1/10W 2.2K ±5%)	[R115]
110	VRS-TV2AB222J	AA		C	Resistor(1/10W 2.2K ±5%)	[R116]
111	VRS-TV2AB152J	AB		C	Resistor(1/10W 1.5K ±5%)	[R117]
112	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R119]
113	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R120]
114	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R126]
115	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R127]
116	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R128]
117	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R129]
118	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R130]
119	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R131]
120	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R132]
121	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R133]
122	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R134]
123	VRS-TV2AB223J	AA		C	Resistor(1/10W 22K ±5%)	[R135]
124	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R136]
125	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R137]
126	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R138]
127	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R139]
128	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R140]
129	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R141]
130	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R142]
131	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R143]
132	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R144]
133	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R145]
134	VRS-TV2AB682J	AB		C	(1/10W 6.8K ±5%)	[R146]
135	VRS-TV2AB682J	AB		C	(1/10W 6.8K ±5%)	[R148]
136	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R152]
137	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R153]
138	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R154]
139	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R155]
140	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R156]
141	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R157]
142	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R158]
143	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R159]
144	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R160]
145	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R162]
146	VRS-TV2AB332J	AA		C	Resistor(1/10W 3.3K ±5%)	[R163]
147	VRS-TV2AB562J	AA		C	Resistor(1/10W 5.6K ±5%)	[R164]
148	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R165]
149	VRS-TV2AB562J	AA		C	Resistor(1/10W 5.6K ±5%)	[R166]
150	VRS-TV2AB105J	AA		C	Resistor(1/10W 1.0M ±5%)	[R167]
151	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R168]
152	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R171]
153	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R172]
154	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R173]
155	VRS-TV2AB102J	AA		C	Resistor(1/10W 1K ±5%)	[R175]
156	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R175]
157	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R176]
158	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R177]
159	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R178]
160	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R179]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[13] Printer PWB unit						
161	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R180]
162	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R181]
163	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R182]
164	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R183]
165	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R184]
166	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R185]
167	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R187]
168	VRS-TV2AB390J	AB		C	Resistor(1/10W 39 ±5%)	[R189]
169	VRS-TV2AB223J	AA		C	Resistor(1/10W 22K ±5%)	[R190]
170	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R192]
171	VRS-TV2AB471J	AA		C	Resistor(1/10W 470 ±5%)	[R193]
172	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R195]
173	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R198]
174	VRS-TV2AB472J	AA		C	Resistor(1/10W 4.7K ±5%)	[R199]
175	VRS-TV2AB000J	AA		C	Resistor(1/10W 0 ±5%)	[R301]
176	VRS-TV2AB331J	AD		C	Resistor(1/10W 330 ±5%)	[R304]
177	VRS-TV2AB331J	AD		C	Resistor(1/10W 330 ±5%)	[R305]
178	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R311]
179	VRS-TV2AB103J	AA		C	Resistor(1/10W 10K ±5%)	[R312]
180	RCRSZ7008SCZZ	AD		B	Crystal(16.0MHz)	[X1]
	(Unit)					
901	DCEKC395BAX01	BV		E	Printer PWB unit	
[14] Operation panel PWB unit						
901	DCEKP392BAX01	BL		E	Panel PWB unit	
[15] IrDA PWB unit						
1	VCEAPS476AF1C	AC		C	Capacitor(16WV 47µF)	[C1]
2	VCEAPS476AF1C	AC		C	Capacitor(16WV 47µF)	[C2]
3	VCKYTV1HF223Z	AA		C	Capacitor(50WV 0.022µF)	[C3]
4	VCKYTV1HF223Z	AA		C	Capacitor(50WV 0.022µF)	[C4]
5	VCEAPS476AF1C	AC		C	Capacitor(16WV 47µF)	[C5]
6	QCNCM2557SC0E	AE		C	Connector	[CNIR]
7	VRS-TW2HF000J	AC		C	Resistor(1/2W 0 ±5%)	[J1]
8	VRS-TW2HF000J	AC		C	Resistor(1/2W 0 ±5%)	[J2]
9	VRS-TW2HF000J	AC		C	Resistor(1/2W 0 ±5%)	[J3]
10	VHPGL1F21A/-1	AN		B	Photo transistor(GL1F21A)	[LED1]
11	VHPIS1U21A/-1	AP		B	Photo transistor(IS1U21A)	[LED2]
12	VRS-TW2HF200J	AC		C	Resistor(1/2W 20 ±5%)	[R1]
13	VRS-TW2HF200J	AC		C	Resistor(1/2W 20 ±5%)	[R2]
14	VRS-TW2HF910J	AC		C	Resistor(1/2W 91 ±5%)	[R3]
15	VRS-TW2HF910J	AC		C	Resistor(1/2W 91 ±5%)	[R4]
	(Unit)					
901	DCEKI394BAX01	BB		E	IrDA PWB unit	
[16] Power supply PWB unit						
1	0KY0L551A0010	AE		C	Beads inductor(BL02RN1)	[BEA1]
2	0KY0L551A0010	AE		C	Beads inductor(BL02RN1)	[BEA101]
3	0KY0C245Q1040	AM		C	Film capacitor(250WV 0.1µF)	[C1]
4	0KY0C3M1K2210	BA		C	Electrolytic capacitor(200WV 220µF)	[C5]
5	0KY0C1A9R2210	AG		C	Ceramic capacitor(1KWV 220PF)	[C8]
6	0KY0C251E4720	AE		C	Film capacitor(50WV 4700PF)	[C9]
7	0KY0C251E1030	AE		C	Film capacitor(50WV 0.01µF)	[C10]
8	0KY0C151E1010	AE		C	Ceramic capacitor(50WV 100PF)	[C11]
9	0KY0C176Q3320	AL		C	Ceramic capacitor(250WV 3300PF)	[C71]
10	0KY0C374D3310	AN		C	Electrolytic capacitor(35WV 330µF)	[C101]
11	0KY0C374D3310	AN		C	Electrolytic capacitor(35WV 330µF)	[C102]
12	0KY0C162E1040	AF		C	Ceramic capacitor(50WV 0.1µF)	[C110]
13	0KY0C1A9Y1020	AG		C	Ceramic capacitor(500WV 1000PF)	[C111]
14	0KY0K251A0020	AK		C	Connector(B2P3-VH)	[CN1]
15	0KY0K221B0080	AP		C	Connector(08R-FJ)	[CN101]
16	0KY0D251A0020	AD		B	Diode(1SS133)	[D4]
17	0KY0D466A0600	AE		B	Zener diode(HZS9B2)	[D5]
18	0KY0D251A0020	AD		B	Diode(1SS133)	[D6]
19	0KY0D251A0020	AD		B	Diode(1SS133)	[D7]
20	0KY0D157A0060	AG		B	Diode(ERA15-06)	[D10]
21	0KY0D157A0060	AG		B	Diode(ERA15-06)	[D11]
22	0KY0D157A0060	AG		B	Diode(ERA15-06)	[D12]

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION	
[16] Power supply PWB unit						
23	0KY0D157A0060	AG		B	Diode(ERA15-06)	[D13]
24	0KY0D221B0020	AT		B	Diode(YG911S2R)	[D101]
25	0KY0D272A0060	AP		B	Diode(2FWJ42)	[D102]
26	0KY0D461A3200	AL		B	Zener diode(HZ-30CP)	[D104]
27	0KY0K758A4R00	AT		A	Fuse(4.0A 125V)	[F1]
28	0KY0MPS029600	AP		C	Heat sink	[HS1]
29	0KY0MPH006900	AF		C	Heat sink	[HS2]
30	0KY1H153A0010	AP		B	IC(TA76431)	[IC101]
31	0KY0H135A5R00	AV		B	IC(PQ05RD11)	[IC103]
32	0KY0L113J1830	AQ		B	Line filter	[L1]
33	0KY0D763A4R00	AN		B	Thermistor	[NTC1]
34	0KY0H719A0010	AP		B	Photo coupler(PC817B)	[PC1]
35	0KY0T644A0010	AV		B	FET(2SK2972)	[Q1]
36	0KY0T358A0040	AG		B	Transistor(2SC1741AS)	[Q2]
37	0KY0R153U1050	AC		C	Resistor(1/4W 1M ±5%)	[R1]
38	0KY0R153U1840	AC		C	Resistor(1/4W 180K ±5%)	[R2]
39	0KY0R153U1840	AC		C	Resistor(1/4W 180K ±5%)	[R3]
40	0KY0R153U1830	AC		C	Resistor(1/4W 18K ±5%)	[R5]
41	0KY0R153U4710	AC		C	Resistor(1/4W 470 ±5%)	[R6]
42	0KY0R153U1810	AC		C	Resistor(1/4W 180 ±5%)	[R7]
43	0KY0R153U3330	AB		C	Resistor(1/4W 33K ±5%)	[R8]
44	0KY0R153U1010	AC		C	Resistor(1/4W 100 ±5%)	[R9]
45	0KY0R153U6220	AC		C	Resistor(1/4W 6.2K ±5%)	[R10]
46	0KY0R153U9120	AC		C	Resistor(1/4W 9.1K ±5%)	[R11]
47	0KY0R153U2030	AC		C	Resistor(1/4W 20K ±5%)	[R12]
48	0KY0R153U3910	AC		C	Resistor(1/4W 390 ±5%)	[R17]
49	0KY0R153U1000	AC		C	Resistor(1/4W 10 ±5%)	[R19]
50	0KY0R153U3920	AC		C	Resistor(1/4W 3.9K ±5%)	[R102]
51	0KY0R153U3920	AC		C	Resistor(1/4W 3.9K ±5%)	[R103]
52	0KY0R153U3920	AC		C	Resistor(1/4W 3.9K ±5%)	[R104]
53	0KY0R153U3920	AC		C	Resistor(1/4W 3.9K ±5%)	[R105]
54	0KY0R153U3310	AC		C	Resistor(1/4W 330 ±5%)	[R110]
55	0KY0R153U1020	AB		C	Resistor(1/4W 1K ±5%)	[R111]
56	0KY0R153U1530	AC		C	Resistor(1/4W 15K ±5%)	[R112]
57	0KY0R153U2220	AC		C	Resistor(1/4W 2.2K ±5%)	[R113]
58	0KY0R353U1630	AD		C	Resistor(1/4W 16K ±1%)	[R114]
59	0KY0M135A0050	AE		C	Screw(2x6)	
60	0KY0L200C0402	BA		B	Transformer	[T1]
61	0KY0R854E5020	AK		B	Trimmer potentiometer(1/10W 5K)	[VR101]
62	0KY0D754A2410	AL		B	Varistor(ENC241D)	[Z1]
	(Unit)					
⚠ 901	RDENT2122AXZZ	BN		E	Power supply PWB unit	
[50] Hardware parts						
B1	LX-BZ2138XHZZ	AB		C	Screw(2x6)	
B2	LX-BZ2222AXZZ	AC		C	Screw(3x10)	
B3	-			C	Screw P-Tight(2x5)	
B4	-			C	Screw(1x6)	
B5	-			C	Screw(2x5)	
B6	XBPSD30P06K00	AA		C	Screw(3x6)	
B7	XBPSE30P06K00	AA		C	Screw(3x6)	
B8	XBPSN40P06K00	AA		C	Screw(4x6)	
B9	XEBSD30P06000	AA		C	Screw(3x6)	
B10	XEBSD30P10000	AA		C	Screw(3x10)	
B11	XEBSE30P12000	AA		C	Screw(3x12)	
B12	XHBSD30P04000	AA		C	Screw(3x4)	
B13	XHBSE30P06000	AA		C	Screw(3x6)	
B14	XUBSD20P06000	AA		C	Screw(2x6)	
B15	LX-BZ2235AXZZ	AA	N	C	Screw(2.6x6)	
W1	LX-WZ2229AXZZ	AC		C	Washer	
W2	LX-WZ2230AXZZ	AC		C	Washer	

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PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
[C]				
CCNW-4772AX01	1-1	AL		C
CGERH2363AX01	6-5	AK		B
CROLR2362AX01	5-1	AN		C
[D]				
DCEKC381KAXZZ	1-4	CM	N	E
"	10-901	CM	N	E
DCEKC383KAXZZ	1-4	CM	N	E
"	10-901	CM	N	E
DCEKC395BAX01	1-3	BV		E
"	13-901	BV		E
DCEKC884KAXZZ	1-4	CM	N	E
"	10-901	CM	N	E
DCEKC885KAXZZ	1-4	CM	N	E
"	10-901	CM	N	E
DCEKI394BAX01	1-5	BB		E
"	15-901	BB		E
DCEKL391BAX01	1-6	BE		E
"	11-901	BE		E
DCEKP390BAX04	1-7	BP	N	E
"	3-901	BP	N	E
DCEKP390BAX05	1-7	BP	N	E
DCEKP392BAX01	3-1	BL		E
"	14-901	BL		E
DCEKS396BAX01	1-8	AZ		E
"	12-901	AZ		E
DUNTK307BAXOG	9-1	AZ		E
DUNTK307BAXOW	9-1	AZ		E
[G]				
GCABA2299AXSD	3-2	AS	N	D
GCABA2299AXSE	3-2	AS	N	D
GCABB2300AXSA	5-2	AQ		D
GCABB2300AXSC	5-2	AQ		D
GCABC2301AXSA	1-9	AX		D
GCABC2301AXSC	1-9	AZ		D
GCABD2302AXSA	1-10	AM		D
GCABD2302AXSC	1-10	AM		D
GCABE2303AXSA	1-11	AL		D
GCABE2303AXSC	1-11	AL		D
GCABF2304AXSA	1-12	AP		D
GCABF2304AXSC	1-12	AP		D
GCABG2305AXSA	1-13	AS		D
GCABG2305AXSC	1-13	AR		D
GCOVA2381AXSA	1-2	BD		D
GCOVA2381AXSC	1-2	BD		D
GCOVA2382AXSA	1-14	AH		C
GDAI-2079AXSA	1-15	AL		C
GDAI-2079AXSC	1-15	AN		C
GLEGG2063AXZZ	1-16	AC		C
[H]				
HPNLH2385AXSD	1-17	AU	N	D
[J]				
JBTN-2202AXSA	3-3	AG		C
JBTN-2202AXSC	3-3	AG		C
JBTN-2203AXSA	3-4	AF		C
JBTN-2203AXSC	3-4	AF		C
JBTN-2204AXSA	3-5	AD		C
JBTN-2204AXSB	3-5	AD		C
JBTN-2205AXSA	3-6	AD		C
JBTN-2205AXSB	3-6	AD		C
JBTN-2222AXSA	3-7	AE		C
[L]				
LANGF2812AXZZ	1-18	AG		C
LANGF2815AXZZ	4-1	AE		C
LBNDJ2008SCZZ	1-19	AA		C
LBRC-2006AXZZ	8-35	AK		C
LBSHP2095AXZZ	8-36	AD		C
LBSHP2096AXZZ	4-2	AK		C
LFRM-2188AXZZ	7-1	AP		C
LFRM-2189AXSA	5-3	AR		C
LFRM-2189AXSC	5-3	AR		C
LFRM-2190AXZZ	1-20	AX		C
LFRM-2192AXZZ	8-37	AL		C
LHLDZ2165AXZZ	5-4	AN		C
LHLDZ2166AXZZ	1-21	AD		C
LHLDZ2168AXZZ	8-38	AS		C
LHLDZ2169AXZZ	8-39	AD		C
LHLDZ2171AXSA	1-22	AE		C
LHLDZ2171AXSC	1-22	AE		C
LPLTG2707XHZZ	4-3	AE		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
LPLTM2917AXZZ	4-4	AH		C
LPLTM2919AXZZ	6-1	AN		C
LPLTM2922AXZZ	7-2	AF		C
LPLTM2923AXZA	1-23	AM		C
LPLTM2924AXZZ	5-5	AQ		C
LPLTP2884AXZZ	5-6	AP		C
LPLTP2888AXSC	5-7	AP		C
LPLTP2888AXSG	5-7	AL		C
LPLTP2889AXSC	1-24	AK		C
LPLTP2889AXSD	1-24	AN		C
LPLTP2890AXSC	1-25	AZ		C
LPLTP2890AXSD	1-25	AG		C
LPLTP2916AXZZ	4-5	AE		C
LPLTP2918AXZZ	6-2	AW		C
LPLTP2925AXSA	1-26	AQ		C
LPLTP2925AXSC	1-26	AQ		C
LPLTP2926AXSA	1-27	AM		C
LPLTP2926AXSC	1-27	AM		C
LPLTP2930AXZZ	6-3	AE	N	C
LPLTP2931AXZZ	6-4	AE	N	C
LPLTP2932AXSA	1-28	AK		C
"	9-22	AK		C
LX-BZ2138XHZZ	50-B1	AB		C
LX-BZ2222AXZZ	50-B2	AC		C
LX-BZ2235AXZZ	50-B15	AA	N	C
LX-WZ2229AXZZ	50-W1	AC		C
LX-WZ2230AXZZ	50-W2	AC		C
[M]				
MLEVP2271AXSA	4-6	AH		C
MLEVP2271AXSC	4-6	AH		C
MLEVP2273AXZZ	8-40	AH		C
MLEVP2274AXZZ	8-41	AD		C
MLEVP2275AXZZ	5-8	AE		C
MLEVP2276AXZZ	5-9	AE		C
MLEVP2277AXZZ	5-10	AE		C
MLEVP2278AXSA	1-29	AF		C
MSPRC2735XHZZ	8-42	AC		C
MSPRC2832AXZZ	2-1	AC		C
MSPRC2969AXZZ	6-6	AD		C
MSPRC2973AXZZ	1-30	AC		C
MSPRC2995AXFJ	5-12	AC		C
MSPRC3007AXZZ	5-11	AC		C
MSPRC3008AXZZ	8-43	AC		C
MSPRC3009AXZZ	4-8	AB		C
MSPRC3010AXZZ	4-7	AE		C
MSPRD2975AXZZ	8-44	AC		C
MSPRD2998AXZZ	5-13	AC		C
MSPRD3004AXZZ	5-14	AB		C
MSPRP2812SCZZ	4-9	AE		C
MSPRP3003AXZZ	4-10	AB		C
MSPRT2923AXFJ	4-11	AC		C
MSPRT2932AXFJ	5-15	AC		C
[N]				
NBLTK2056AXZZ	8-45	AF		C
NBRGP2141AXZZ	6-7	AC		C
NGERH2275XHZZ	6-8	AC		C
NGERH2278XHZZ	8-46	AC		C
NGERH2279XHZZ	8-47	AC		C
NGERH2365AXZZ	5-16	AD		C
NGERH2366AXZZ	5-17	AD		C
NGERH2393AXZZ	7-3	AD		C
NGERH2394AXZZ	7-4	AD		C
NGERH2395AXZZ	7-6	AD	N	C
NGERH2396AXZZ	8-48	AD		C
NGERH2398AXZZ	8-49	AD		C
NGERH2399AXZZ	8-50	AD		C
NGERH2400AXZZ	8-51	AD		C
NGERH2401AXZZ	5-18	AF		C
NGERH2403AXZZ	4-12	AD		C
NGERP2318XHZZ	2-2	AD		C
NROLM2389AXZZ	1-47	AD		C
NROLP2334AXZZ	4-13	AE		C
NROLP2382AXZZ	8-52	AC		C
NROLR2333XHZZ	6-9	AP		C
NROLR2365AXZZ	6-10	AV		C
NROLR2379AXZZ	4-14	AZ		C
NROLR2380AXZZ	8-53	AX		C
NROLR2381AXZZ	8-54	AH		C
NSFTM2268AXZZ	5-19	AE		C
NSFTZ2257AXZZ	4-15	AE		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
[P]				
PCAPH2021AXZZ	1-31	AD		C
PCASZ2034AXSA	1-32	AE		C
PCASZ2034AXSC	1-32	AE		C
PCOVA2115AXSA	1-33	AL		C
PCOVP2118AXZZ	8-55	AE		C
PFLT-2015AXZZ	1-34	AG		C
PGIDM2508AXZZ	4-16	AU		C
PGIDM2509AXSA	2-4	AR		C
PGIDM2509AXSC	2-4	AR		C
PGIDM2510AXSA	2-5	AE		C
PGIDM2510AXSC	2-5	AE		C
PGIDM2511AXSA	2-6	AE		C
PGIDM2511AXSC	2-6	AE		C
PGIDM2512AXZZ	5-20	AS		C
PGUMM2152AXZZ	8-56	AD		C
PHOP-2097AXSA	2-7	AK		C
PHOP-2097AXSC	2-7	AK		C
PHOP-2098AXSA	5-21	AG		C
PHOP-2098AXSC	5-21	AG		C
PHOP-2099AXSA	5-22	AG		C
PHOP-2099AXSC	5-22	AG		C
PSEL-2015SCZZ	5-23	AB		C
PSHEZ3293AXZZ	5-24	AH		C
PSHEZ3342AXZZ	5-25	AC		C
PSHEZ3344AXZZ	5-26	AD		C
PSHEZ3345AXSA	1-35	AG		C
PSHEZ3356AXZZ	1-36	AC		C
PSHEZ3357AXZZ	5-27	AC		C
PSHEZ3367AXZZ	3-8	AE		C
PSHEZ3368AXZZ	1-37	AD		C
PSHEZ3396SCZZ	9-27	AE	N	D
PSLDM2045AXZZ	8-58	AF		C
"	13-82	AF		C
[Q]				
QACCZ2012XHZZ	1-39	AT		B
QCNCM2401SC0F	10-165	AB		C
QCNCM2482SC2H	10-167	AG		C
"	13-61	AG		C
QCNCM2482SC2J	10-166	AE		C
QCNCM2499SC0H	10-168	AE		C
QCNCM2499SC1D	10-162	AG		C
QCNCM2557SC0E	15-6	AE		C
QCNCM7014SC0B	10-169	AD		C
QCNCM7014SC0D	13-58	AB		C
QCNCM7014SC0E	10-161	AB		C
"	13-57	AB		C
QCNCM7014SC0F	10-163	AB		C
QCNCM7014SC1B	10-160	AD		C
QCNCM704FAF02	12-7	AC		C
QCNCW0946FCZZ	10-164	AH		C
QCNCW2500SC1D	11-23	AG		C
QCNCW2556SC3B	13-59	AG		C
"	13-60	AG		C
QCNW-3247SCZZ	9-5	AH		C
QCNW-3975AXGY	9-5	AH		C
QCNW-3976XHOG	9-6	AT		C
QCNW-3976XHOW	9-6	AK		C
QCNW-4773AXZZ	1-40	AG		D
QCNW-4775AXZZ	1-43	AH		C
QCNW-4777AXZZ	1-41	AU		C
"	2-8	AU		C
"	3-9	AU		C
QCNW-4778AXZZ	1-42	AZ		C
"	8-59	AZ		C
QCNW-4806AXZZ	1-44	AD		C
"	11-2	AD		C
QCNW-4807AXZZ	1-51	AE		C
"	8-57	AE		C
QCNW-4827AXZZ	6-12	AR	N	C
QCNW-4855AXZZ	6-11	AD		C
QJAKZ2046SCBB	11-36	AH		C
QJAKZ2065SC0D	11-37	AG		C
QSOCZ2051SC32	10-216	AC		C
"	10-221	AC		C
QSW-Z2206SCZZ	11-64	AH		B
[R]				
RC-EZ107BRC1C	10-3	AH		C
RC-FZ3024SCZZ	11-3	AG		C
RCILZ2141AXZZ	13-68	AD		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
RCILZ2141AXZZ	13-69	AD		C
"	13-70	AD		C
"	13-71	AD		C
"	13-72	AD		C
RCORF2063XHZZ	1-45	AF		B
RCORF2064XHZZ	1-48	AF		B
"	2-9	AF		B
RCORF2096FFZZ	1-46	AD		B
RCRSB0297AFZZ	10-591	AD		B
RCRSQ2109SCZZ	10-593	AL		B
RCRSQ2123AXZZ	10-590	AL		B
RCRSQ2124AXZZ	10-592	AL		B
RCRSZ1017LCZZ	10-589	AF		B
RCRSZ7008SCZZ	13-180	AD		B
RDENT2122AXZZ	1-38	BN		E
"	16-901	BN		E
RFILN2011SCZZ	11-29	AC		C
"	11-30	AC		C
"	11-31	AC		C
"	11-32	AC		C
RMOTZ2137AXZZ	8-34	AZ		B
RMOTZ2144AXZZ	7-5	AZ	N	B
RR-SZ3013SCZZ	13-89	AC		C
"	13-90	AC		C
"	13-93	AC		C
"	13-94	AC		C
RRLYD3221SCZZ	11-22	AN		B
RTRNZ2128XH01	11-65	AP		B
RUNTZ2025SCZZ	6-13	BN	N	B
[S]				
SPAKA220AAXZZ	9-7	AF		D
SPAKA221AAXZZ	9-8	AF		D
SPAKA222AAXZZ	9-9	AG		D
SPAKA223AAXZZ	9-10	AF		D
SPAKA393AAXZZ	9-4	AC		C
SPAKA417AAXZZ	9-26	AF		D
SPAKC326AAXZZ	9-11	AV	N	D
SPAKC328AAXZZ	9-11	AV	N	D
SPAKC442AAXZZ	9-11	AV	N	D
SPAKC444AAXZZ	9-11	AV	N	D
SPAKP4381AXZZ	9-12	AG		D
SSAKA2008AXZZ	9-13	AA		D
SSAKA2344QCZZ	9-14	AB		D
SSAKA3001CCZZ	9-2	AA		D
SSAKA3340QCZZ	9-3	AB		D
[T]				
TCADZ2604AXZZ	9-17	AC	N	D
TCADZ2607AXZZ	9-15	AK	N	D
TCADZ2608AXZZ	9-25	AF	N	D
TCADZ2631AXZZ	9-23	AC		D
TCADZ2673AXZZ	9-15	AK	N	D
TCADZ2674AXZZ	9-17	AC	N	D
TINSE3854AXZZ	9-18	AF	N	D
TINSE3855AXZZ	9-18	AF	N	D
TINSK3903AXZZ	9-18	AF	N	D
TLABG4602AXZZ	1-49	AB		D
TLABH4238AXZA	9-24	AC		D
TLABH4238AXZG	9-24	AC		D
TLABH4496AXSA	9-19	AC		D
TLABH4496AXSC	9-19	AC		D
TLABM4536AXZZ	9-21	AE	N	D
TLABM4538AXZZ	9-16	AG	N	D
TLABM4709AXZZ	9-21	AG	N	D
TLABN1235CCZZ	10-595	AA		D
TLABS4534SCZZ	1-50	AB		D
[U]				
UBATL0011FCZZ	10-1	AM		B
UDSKA2009SCZZ	9-20	AQ	N	E
UDSKA2010SCZZ	9-20	AP	N	E
UDSKA2011SCZZ	9-20	AP	N	E
[V]				
VCCCTV1HH100D	10-106	AA		C
"	10-110	AA		C
VCCCTV1HH101J	13-22	AA		C
"	13-31	AA		C
VCCCTV1HH102J	13-11	AA		C
"	13-20	AA		C
"	13-21	AA		C
"	13-23	AA		C
"	13-27	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCCCTV1HH102J	13-29	AA		C
"	13-30	AA		C
"	13-32	AA		C
"	13-33	AA		C
"	13-39	AA		C
"	13-40	AA		C
"	13-42	AA		C
"	13-43	AA		C
"	13-44	AA		C
"	13-52	AA		C
VCCCTV1HH120J	10-75	AA		C
"	10-76	AA		C
VCCCTV1HH150J	13-35	AA		C
"	13-51	AA		C
VCCCTV1HH180J	10-52	AA		C
"	10-53	AA		C
VCCCTV1HH220J	13-36	AA		C
"	13-37	AA		C
VCCCTV1HH330J	10-20	AA		C
"	10-71	AA		C
VCCCTV1HH331J	13-5	AA		C
"	13-12	AA		C
VCCCTV1HH470J	10-129	AA		C
VCCCTV1HH471J	13-6	AA		C
"	13-7	AA		C
VCCCTV1HH5R0D	10-63	AA		C
"	10-64	AA		C
"	10-143	AA		C
VCCCTV1HH5R0J	10-34	AA		C
"	10-35	AA		C
VCCCTV1HH561J	13-24	AA		C
"	13-25	AA		C
"	13-46	AA		C
"	13-47	AA		C
VCCSTV1HL102J	10-74	AA		C
"	10-94	AA		C
VCCSTV1HL121J	10-148	AC		C
"	10-149	AC		C
"	10-151	AC		C
VCCSTV1HL331J	10-108	AA		C
"	10-144	AA		C
"	10-156	AA		C
"	10-157	AA		C
VCCSTV1HL391J	10-87	AA		C
VCCSTV1HL471J	10-72	AC		C
"	10-150	AC		C
VCCSTV1HL681J	10-96	AB		C
VCEAEA1CW106M	12-1	AC		C
"	12-2	AC		C
VCEAGA1CW107M	13-3	AC		C
VCEAGA1EW107M	10-2	AB		C
"	10-4	AB		C
"	10-10	AB		C
VCEAGA1EW226M	10-7	AB		C
VCEAGA1HW105M	10-8	AB		C
VCEAGA1HW107M	10-5	AA		C
"	10-6	AA		C
"	10-13	AA		C
VCEAGA1HW225M	11-13	AA		C
VCEAGA1HW226M	11-17	AB		C
VCEAGA1HW336M	10-12	AB		C
VCEAGA1HW475M	10-9	AA		C
"	11-7	AA		C
"	11-10	AA		C
"	11-12	AA		C
"	11-20	AA		C
VCEAGA1HW476M	10-11	AB		C
VCEAGU1VW107M	13-1	AB		C
VCEAPS476AF1C	15-1	AC		C
"	15-2	AC		C
"	15-5	AC		C
VCEAZU1VJ108M	13-2	AG		C
VCKYPU1HB102K	11-5	AA		C
"	11-6	AA		C
"	11-15	AA		C
"	11-16	AA		C
VCKYPU1HB103K	11-4	AA		C
VCKYPU1HB221K	11-14	AB		C
VCKYPU1HB222K	11-8	AA		C
"	11-11	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCKYPU1HB222K	11-21	AA		C
VCKYPU1HB332K	11-18	AA		C
VCKYPU1HF223Z	11-19	AA		C
VCKYTQ1HF104Z	10-15	AA		C
"	10-21	AA		C
"	10-92	AA		C
"	10-95	AA		C
VCKYTV1CF105Z	10-14	AB		C
"	10-18	AB		C
"	10-39	AA		C
"	10-40	AA		C
"	10-41	AA		C
"	10-42	AA		C
"	10-46	AB		C
"	10-47	AB		C
"	10-48	AB		C
"	10-65	AB		C
"	10-67	AB		C
"	10-69	AB		C
"	10-70	AB		C
"	10-78	AB		C
"	10-79	AB		C
"	10-82	AB		C
"	10-83	AB		C
"	10-84	AB		C
"	10-88	AB		C
"	10-89	AB		C
"	10-90	AB		C
"	10-97	AB		C
"	10-98	AB		C
"	10-105	AB		C
"	10-113	AB		C
"	10-116	AB		C
"	10-124	AB		C
"	10-126	AB		C
"	10-145	AB		C
"	10-146	AB		C
"	10-147	AB		C
VCKYTV1CF225Z	10-86	AD		C
"	10-100	AD		C
"	10-111	AD		C
"	13-8	AD		C
"	13-16	AD		C
"	13-17	AD		C
"	13-45	AD		C
VCKYTV1EB104K	10-59	AA		C
"	10-60	AA		C
"	10-61	AA		C
"	10-62	AA		C
"	12-6	AA		C
VCKYTV1EF104Z	10-16	AA		C
"	10-17	AA		C
"	10-19	AA		C
"	10-22	AA		C
"	10-23	AA		C
"	10-33	AA		C
"	10-36	AA		C
"	10-37	AA		C
"	10-38	AA		C
"	10-43	AA		C
"	10-44	AA		C
"	10-45	AA		C
"	10-50	AA		C
"	10-55	AA		C
"	10-56	AA		C
"	10-57	AA		C
"	10-58	AA		C
"	10-73	AA		C
"	10-77	AA		C
"	10-80	AA		C
"	10-85	AA		C
"	10-91	AA		C
"	10-99	AA		C
"	10-104	AA		C
"	10-109	AA		C
"	10-112	AA		C
"	10-114	AA		C
"	10-115	AA		C
"	10-117	AA		C
"	10-118	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCKYTV1EF104Z	10-119	AA		C
"	10-120	AA		C
"	10-121	AA		C
"	10-122	AA		C
"	10-125	AA		C
"	10-127	AA		C
"	10-128	AA		C
"	10-158	AA		C
"	10-159	AA		C
"	12-3	AA		C
"	12-4	AA		C
VCKYTV1HB102K	10-26	AA		C
"	10-27	AA		C
"	10-28	AA		C
"	10-29	AA		C
"	10-30	AA		C
"	10-81	AA		C
"	10-123	AA		C
"	10-130	AA		C
"	10-131	AA		C
"	10-132	AA		C
"	10-133	AA		C
"	10-134	AA		C
"	10-135	AA		C
"	10-136	AA		C
"	10-137	AA		C
"	10-138	AA		C
"	10-139	AA		C
"	10-140	AA		C
"	10-141	AA		C
"	10-142	AA		C
"	10-152	AA		C
"	10-153	AA		C
"	10-154	AA		C
"	10-155	AA		C
VCKYTV1HB103K	10-25	AB		C
"	13-10	AB		C
"	13-54	AB		C
"	13-55	AB		C
"	13-56	AB		C
VCKYTV1HB121K	12-5	AA		C
VCKYTV1HB222K	10-31	AA		C
"	10-32	AA		C
"	10-49	AA		C
"	10-51	AA		C
"	10-54	AA		C
"	10-66	AA		C
"	10-68	AA		C
"	10-93	AA		C
"	10-101	AA		C
"	10-102	AA		C
"	10-103	AA		C
"	10-107	AA		C
VCKYTV1HB472K	10-24	AA		C
"	13-41	AA		C
VCKYTV1HF103Z	13-34	AA		C
"	13-50	AA		C
VCKYTV1HF104Z	13-4	AA		C
"	13-9	AA		C
"	13-13	AA		C
"	13-14	AA		C
"	13-15	AA		C
"	13-18	AA		C
"	13-19	AA		C
"	13-26	AA		C
"	13-28	AA		C
"	13-38	AA		C
"	13-48	AA		C
"	13-49	AA		C
"	13-53	AA		C
VCKYTV1HF223Z	15-3	AA		C
"	15-4	AA		C
VCQYNA1HM333K	11-9	AA		C
VHDDAP202U/-1	10-172	AB		B
VHDERA81004-1	13-62	AE		B
"	13-63	AE		B
"	13-64	AE		B
"	13-65	AE		B
VHDHRW0502A-1	10-173	AD		B
"	10-174	AD		B

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VHDHRW0502A-1	10-175	AD		B
"	10-176	AD		B
"	10-177	AD		B
"	10-178	AD		B
"	10-179	AD		B
"	10-180	AD		B
"	10-181	AD		B
"	10-182	AD		B
"	10-183	AD		B
"	10-184	AD		B
"	10-185	AD		B
"	10-186	AD		B
"	10-187	AD		B
"	10-188	AD		B
"	10-189	AD		B
"	10-190	AD		B
"	10-191	AD		B
"	10-192	AD		B
"	10-193	AD		B
"	10-194	AD		B
"	10-195	AD		B
"	10-196	AD		B
"	10-197	AD		B
"	10-198	AD		B
VHD1SS133//-1	11-24	AA		B
"	11-25	AA		B
"	11-26	AA		B
"	11-27	AA		B
VHD1SS355//-1	10-170	AB		B
"	10-171	AB		B
"	12-10	AB		B
VHEHZ2C1///-1	11-68	AA		B
"	11-69	AA		B
"	11-71	AA		B
"	11-72	AA		B
VHEHZ27-1//-1	11-70	AB		B
VHERD22FB3/-1	10-594	AC		B
VHIAD8051//-1	10-200	AN		B
VHIBA10393F-1	13-79	AC		B
VHIHD74LS08-1	10-203	AD		B
VHIHECF4066BF	10-202	AF		B
"	10-206	AF		B
VHIHY18164CJ6	10-226	AY	N	B
"	10-231	AY	N	B
VHILB1845//-1	13-73	AY		B
VHILC821040-1	10-205	AZ	N	B
VHILZ9FJ49/-1	10-209	AV		B
VHIL6451///-1	13-76	AX		B
"	13-78	AX		B
VHIMC14053DR2	10-207	AG		B
VHINJM2113M-1	10-234	AG		B
VHINJM2902M-1	10-212	AF		B
"	10-236	AF		B
VHINJM2904D-1	11-28	AG		B
VHINJM311M/-1	12-12	AL		B
VHINJM324M/-1	12-11	AH		B
VHINJU6355E-1	10-235	AM		B
VHIPST596CMT1	10-237	AF		B
VHIR144AFXL/1	10-215	BM		B
VHISH7040//-2	10-210	BD	N	B
VHISN74HC04NSR	10-214	AE		B
VHISN74HC14NSR	10-211	AE		B
VHISN74HC164NR	10-213	AF		B
VHISN74LS244NR	10-229	AG		B
"	10-230	AG		B
VHISN74LS245N	10-228	AR		B
VHISTA471A/-1	13-74	AK		B
VHIS2B257SL70	10-227	AL		B
"	10-232	AL		B
VHITC16G331AF	13-77	BG		B
VHITC7W74FU-1	10-233	AD		B
VHITMP87PH47U	13-80	AZ		B
VHIULN2003AN/	10-201	AE		B
VHIW24257S7LL	13-75	AP		B
VHI27080FAA0C	10-220	BQ	N	B
VHI27080FAA1C	10-225	BQ	N	B
VHI27080FAB0C	10-219	BQ	N	B
VHI27080FAB1C	10-224	BQ	N	B
VHI27080FAC0A	10-218	BQ	N	B
VHI27080FAC1A	10-223	BQ	N	B

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VHI27080FAD0A	10-217	BQ	N	B
VHI27080FAD1A	10-222	BQ	N	B
VHI74HCU04S-1	10-204	AF		B
"	10-208	AF		B
VHPGL1F21A/-1	15-10	AN		B
VHPGL480///-1	12-9	AD		B
VHPIS1U21A/-1	15-11	AP		B
VHPPC814X//-1	11-39	AE		B
VHPPC817X7/-1	11-38	AD		B
VHPPD410PI/-1	12-8	AE		B
VHPSG206S//-1	11-40	AG		B
"	13-81	AG		B
VHVERZV5D471/	11-66	AC		B
"	11-67	AC		B
VHVICPS07//-1	10-199	AA		B
"	13-66	AA		B
"	13-67	AA		B
VHVRA391PV6-1	11-1	AE		B
VRD-HT2EY000J	11-33	AA		C
"	11-34	AA		C
"	11-35	AA		C
VRD-HT2EY100J	10-254	AA		C
VRD-HT2EY102J	11-56	AA		C
"	11-58	AA		C
"	11-60	AA		C
VRD-HT2EY103J	11-49	AA		C
"	11-52	AA		C
"	11-53	AA		C
"	11-54	AA		C
VRD-HT2EY122J	13-95	AA		C
"	13-96	AA		C
VRD-HT2EY151J	11-63	AA		C
VRD-HT2EY152J	11-57	AA		C
"	11-59	AA		C
VRD-HT2EY153J	11-50	AA		C
"	11-61	AA		C
VRD-HT2EY221J	11-48	AA		C
VRD-HT2EY223J	11-47	AA		C
VRD-HT2EY300J	11-45	AA		C
VRD-HT2EY332J	11-55	AA		C
"	11-62	AA		C
VRD-HT2EY621J	11-51	AA		C
VRD-HT2EY910J	11-44	AA		C
VRD-HT2HY223J	11-46	AA		C
VRS-HT3AAR75J	13-91	AC		C
"	13-92	AC		C
VRS-HT3AA5R1J	10-251	AB		C
"	10-252	AB		C
VRS-HT3AA750J	10-253	AA		C
VRS-TQ2BB000J	10-240	AA		C
"	10-286	AA		C
"	10-287	AA		C
"	10-397	AA		C
"	10-520	AA		C
"	10-570	AA		C
VRS-TQ2BB200J	10-443	AA		C
VRS-TQ2BB561J	10-564	AA		C
VRS-TV2AB000J	10-241	AA		C
"	10-242	AA		C
"	10-243	AA		C
"	10-277	AA		C
"	10-284	AA		C
"	10-310	AA		C
"	10-317	AA		C
"	10-319	AA		C
"	10-320	AA		C
"	10-341	AA		C
"	10-360	AA		C
"	10-379	AA		C
"	10-380	AA		C
"	10-381	AA		C
"	10-382	AA		C
"	10-411	AA		C
"	10-432	AA		C
"	10-433	AA		C
"	10-434	AA		C
"	10-459	AA		C
"	10-476	AA		C
"	10-479	AA		C
"	10-505	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TV2AB000J	10-506	AA		C
"	10-573	AA		C
"	10-574	AA		C
"	10-579	AA		C
"	10-580	AA		C
"	10-581	AA		C
"	10-582	AA		C
"	13-145	AA		C
"	13-170	AA		C
"	13-172	AA		C
"	13-175	AA		C
VRS-TV2AB100J	10-444	AD		C
"	10-447	AD		C
"	10-462	AD		C
"	10-463	AD		C
"	10-464	AD		C
"	10-465	AD		C
"	10-466	AD		C
"	10-468	AD		C
"	10-470	AD		C
"	10-472	AD		C
"	10-474	AD		C
"	10-485	AD		C
"	10-486	AD		C
"	10-507	AD		C
"	10-508	AD		C
"	10-509	AD		C
"	10-510	AD		C
"	10-511	AD		C
"	10-512	AD		C
"	10-513	AD		C
"	10-514	AD		C
"	10-578	AD		C
VRS-TV2AB101J	10-255	AA		C
"	10-256	AA		C
"	10-257	AA		C
"	10-258	AA		C
"	10-259	AA		C
"	10-260	AA		C
"	10-261	AA		C
"	10-262	AA		C
"	10-263	AA		C
"	10-285	AA		C
"	10-292	AA		C
"	10-293	AA		C
"	10-294	AA		C
"	10-295	AA		C
"	10-296	AA		C
"	10-297	AA		C
"	10-298	AA		C
"	10-299	AA		C
"	10-329	AA		C
"	10-345	AA		C
"	10-349	AA		C
"	10-350	AA		C
"	10-370	AA		C
"	10-371	AA		C
"	10-372	AA		C
"	10-373	AA		C
"	10-376	AA		C
"	10-450	AA		C
"	10-453	AA		C
"	10-454	AA		C
"	10-489	AA		C
"	10-494	AA		C
"	10-496	AA		C
"	10-504	AA		C
"	10-543	AA		C
"	10-544	AA		C
"	10-545	AA		C
"	10-572	AA		C
"	10-583	AA		C
VRS-TV2AB102J	10-289	AA		C
"	10-312	AA		C
"	10-322	AA		C
"	10-323	AA		C
"	10-364	AA		C
"	10-394	AA		C
"	10-427	AA		C
"	10-429	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TV2AB102J	10-460	AA		C
"	10-477	AA		C
"	13-101	AA		C
"	13-113	AA		C
"	13-155	AA		C
VRS-TV2AB103J	10-266	AA		C
"	10-270	AA		C
"	10-273	AA		C
"	10-274	AA		C
"	10-290	AA		C
"	10-302	AA		C
"	10-303	AA		C
"	10-304	AA		C
"	10-313	AA		C
"	10-324	AA		C
"	10-325	AA		C
"	10-326	AA		C
"	10-327	AA		C
"	10-328	AA		C
"	10-333	AA		C
"	10-334	AA		C
"	10-339	AA		C
"	10-343	AA		C
"	10-344	AA		C
"	10-346	AA		C
"	10-347	AA		C
"	10-348	AA		C
"	10-353	AA		C
"	10-355	AA		C
"	10-356	AA		C
"	10-357	AA		C
"	10-358	AA		C
"	10-365	AA		C
"	10-366	AA		C
"	10-367	AA		C
"	10-368	AA		C
"	10-369	AA		C
"	10-374	AA		C
"	10-375	AA		C
"	10-378	AA		C
"	10-384	AA		C
"	10-385	AA		C
"	10-387	AA		C
"	10-389	AA		C
"	10-392	AA		C
"	10-393	AA		C
"	10-395	AA		C
"	10-400	AA		C
"	10-401	AA		C
"	10-403	AA		C
"	10-405	AA		C
"	10-406	AA		C
"	10-407	AA		C
"	10-408	AA		C
"	10-409	AA		C
"	10-410	AA		C
"	10-412	AA		C
"	10-413	AA		C
"	10-414	AA		C
"	10-415	AA		C
"	10-416	AA		C
"	10-417	AA		C
"	10-421	AA		C
"	10-422	AA		C
"	10-423	AA		C
"	10-424	AA		C
"	10-425	AA		C
"	10-426	AA		C
"	10-448	AA		C
"	10-449	AA		C
"	10-451	AA		C
"	10-452	AA		C
"	10-455	AA		C
"	10-456	AA		C
"	10-458	AA		C
"	10-461	AA		C
"	10-469	AA		C
"	10-484	AA		C
"	10-584	AA		C
"	10-585	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TV2AB103J	10-586	AA		C
"	10-587	AA		C
"	10-588	AA		C
"	12-14	AA		C
"	12-15	AA		C
"	12-18	AA		C
"	12-21	AA		C
"	12-22	AA		C
"	12-24	AA		C
"	13-119	AA		C
"	13-132	AA		C
"	13-144	AA		C
"	13-167	AA		C
"	13-178	AA		C
"	13-179	AA		C
VRS-TV2AB104J	10-457	AA		C
"	12-29	AA		C
VRS-TV2AB105J	10-318	AA		C
"	10-363	AA		C
"	13-150	AA		C
VRS-TV2AB121J	10-519	AA		C
"	10-569	AA		C
VRS-TV2AB122J	10-546	AA		C
"	10-547	AA		C
"	10-548	AA		C
"	10-549	AA		C
"	10-550	AA		C
"	10-551	AA		C
"	10-552	AA		C
"	10-553	AA		C
"	10-554	AA		C
"	10-555	AA		C
"	10-556	AA		C
"	10-557	AA		C
"	10-558	AA		C
"	10-559	AA		C
"	10-560	AA		C
"	10-561	AA		C
"	10-562	AA		C
"	10-563	AA		C
VRS-TV2AB124J	12-23	AA		C
VRS-TV2AB133J	10-439	AA		C
VRS-TV2AB151J	10-577	AA		C
"	12-27	AA		C
"	12-28	AA		C
VRS-TV2AB152J	10-276	AB		C
"	10-437	AB		C
"	13-104	AB		C
"	13-106	AB		C
"	13-108	AB		C
"	13-111	AB		C
VRS-TV2AB154J	10-475	AB		C
VRS-TV2AB182J	10-280	AA		C
"	10-283	AA		C
VRS-TV2AB183J	10-337	AD		C
VRS-TV2AB201J	10-278	AA		C
"	10-281	AA		C
"	10-316	AA		C
"	10-330	AA		C
VRS-TV2AB203J	10-288	AA		C
"	10-291	AA		C
"	10-321	AA		C
VRS-TV2AB221J	10-576	AA		C
VRS-TV2AB222J	12-17	AA		C
"	12-19	AA		C
"	13-105	AA		C
"	13-107	AA		C
"	13-109	AA		C
"	13-110	AA		C
VRS-TV2AB223J	13-99	AA		C
"	13-123	AA		C
"	13-169	AA		C
VRS-TV2AB271J	10-264	AA		C
"	10-265	AA		C
"	10-300	AA		C
"	10-301	AA		C
"	10-305	AA		C
"	10-306	AA		C
"	10-308	AA		C
"	10-309	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TV2AB271J	10-311	AA		C
"	10-331	AA		C
"	10-332	AA		C
"	10-335	AA		C
"	10-388	AA		C
"	10-430	AA		C
"	10-431	AA		C
"	10-436	AA		C
"	10-471	AA		C
"	10-473	AA		C
"	10-480	AA		C
"	10-481	AA		C
VRS-TV2AB302J	10-307	AA		C
"	10-338	AA		C
"	10-354	AA		C
"	10-362	AA		C
VRS-TV2AB330J	10-275	AD		C
"	10-418	AD		C
"	10-419	AD		C
"	10-420	AD		C
"	10-487	AD		C
"	10-488	AD		C
"	10-490	AD		C
"	10-491	AD		C
"	10-492	AD		C
"	10-493	AD		C
"	10-495	AD		C
"	10-497	AD		C
"	10-498	AD		C
"	10-499	AD		C
"	10-500	AD		C
"	10-501	AD		C
"	10-502	AD		C
"	10-503	AD		C
"	10-515	AD		C
"	10-516	AD		C
"	10-517	AD		C
"	10-518	AD		C
"	10-539	AD		C
"	10-540	AD		C
"	10-541	AD		C
"	10-542	AD		C
"	10-565	AD		C
"	10-566	AD		C
"	10-567	AD		C
"	10-568	AD		C
"	10-571	AD		C
VRS-TV2AB331J	13-176	AD		C
"	13-177	AD		C
VRS-TV2AB332J	10-342	AA		C
"	10-352	AA		C
"	10-441	AA		C
"	12-30	AA		C
"	13-146	AA		C
VRS-TV2AB333J	10-279	AD		C
"	10-282	AD		C
"	10-359	AD		C
"	10-377	AD		C
"	10-390	AD		C
"	10-398	AD		C
"	10-399	AD		C
"	10-435	AD		C
VRS-TV2AB363J	10-314	AA		C
VRS-TV2AB390J	10-383	AB		C
"	13-100	AB		C
"	13-114	AB		C
"	13-118	AB		C
"	13-120	AB		C
"	13-124	AB		C
"	13-127	AB		C
"	13-130	AB		C
"	13-131	AB		C
"	13-138	AB		C
"	13-140	AB		C
"	13-141	AB		C
"	13-142	AB		C
"	13-148	AB		C
"	13-151	AB		C
"	13-161	AB		C
"	13-162	AB		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TV2AB390J	13-163	AB		C
"	13-164	AB		C
"	13-165	AB		C
"	13-166	AB		C
"	13-168	AB		C
VRS-TV2AB393J	10-315	AD		C
VRS-TV2AB434J	12-16	AA		C
"	12-20	AA		C
"	12-25	AA		C
VRS-TV2AB470J	10-521	AA		C
"	10-522	AA		C
"	10-523	AA		C
"	10-524	AA		C
"	10-525	AA		C
"	10-526	AA		C
"	10-527	AA		C
"	10-528	AA		C
"	10-529	AA		C
"	10-530	AA		C
"	10-531	AA		C
"	10-532	AA		C
"	10-533	AA		C
"	10-534	AA		C
"	10-535	AA		C
"	10-536	AA		C
"	10-537	AA		C
VRS-TV2AB471J	10-267	AA		C
"	10-268	AA		C
"	10-269	AA		C
"	10-271	AA		C
"	10-272	AA		C
"	10-351	AA		C
"	10-386	AA		C
"	10-391	AA		C
"	10-428	AA		C
"	10-478	AA		C
"	10-482	AA		C
"	13-97	AA		C
"	13-98	AA		C
"	13-121	AA		C
"	13-122	AA		C
"	13-143	AA		C
"	13-171	AA		C
VRS-TV2AB472J	10-396	AA		C
"	10-404	AA		C
"	10-575	AA		C
"	13-112	AA		C
"	13-115	AA		C
"	13-116	AA		C
"	13-117	AA		C
"	13-125	AA		C
"	13-126	AA		C
"	13-128	AA		C
"	13-129	AA		C
"	13-133	AA		C
"	13-136	AA		C
"	13-137	AA		C
"	13-139	AA		C
"	13-152	AA		C
"	13-153	AA		C
"	13-154	AA		C
"	13-156	AA		C
"	13-157	AA		C
"	13-158	AA		C
"	13-159	AA		C
"	13-160	AA		C
"	13-173	AA		C
"	13-174	AA		C
VRS-TV2AB473J	10-438	AA		C
"	10-467	AA		C
"	12-26	AA		C
VRS-TV2AB562J	10-336	AA		C
"	10-538	AA		C
"	13-147	AA		C
"	13-149	AA		C
VRS-TV2AB563F	13-102	AB		C
"	13-103	AB		C
VRS-TV2AB623J	10-340	AA		C
VRS-TV2AB680J	10-238	AA		C
"	10-239	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VRS-TV2AB680J	10-445	AA		C
"	10-446	AA		C
VRS-TV2AB681J	10-483	AA		C
VRS-TV2AB682J	13-134	AB		C
"	13-135	AB		C
VRS-TW2HF000J	15-7	AC		C
"	15-8	AC		C
"	15-9	AC		C
VRS-TW2HF200J	15-12	AC		C
"	15-13	AC		C
VRS-TW2HF910J	15-14	AC		C
"	15-15	AC		C
VRSTS2AD1742F	10-442	AA		C
VRSTS2AD4752F	10-402	AA		C
VRSTS2AD8662F	10-361	AA		C
"	10-440	AA		C
VSDTA114EK/-1	10-247	AB		B
"	13-85	AB		B
"	13-86	AB		B
"	13-87	AB		B
"	13-88	AB		B
VSDTC114EK/-1	10-248	AB		B
"	10-249	AB		B
"	10-250	AB		B
VSDTC114ES/-1	11-41	AB		B
"	11-43	AB		B
VS2SB1261K/-1	13-83	AE		B
VS2SC1815GR-1	11-42	AB		B
VS2SC2412KR-1	12-13	AD		B
"	13-84	AD		B
VS2SD1858R2-1	10-244	AC		B
"	10-245	AC		B
"	10-246	AC		B
[X]				
XBPSD30P06K00	50-B6	AA		C
XBPSE30P06K00	50-B7	AA		C
XBPSN40P06K00	50-B8	AA		C
XEBSD30P06000	50-B9	AA		C
XEBSD30P10000	50-B10	AA		C
XEBSE30P12000	50-B11	AA		C
XHBSD30P04000	50-B12	AA		C
XHBSE30P06000	50-B13	AA		C
XUBSD20P06000	50-B14	AA		C
[0]				
0KY0C1A9R2210	16-5	AG		C
0KY0C1A9Y1020	16-13	AG		C
0KY0C151E1010	16-8	AE		C
0KY0C162E1040	16-12	AF		C
0KY0C176Q3320	16-9	AL		C
0KY0C245Q1040	16-3	AM		C
0KY0C251E1030	16-7	AE		C
0KY0C251E4720	16-6	AE		C
0KY0C3M1K2210	16-4	BA		C
0KY0C374D3310	16-10	AN		C
"	16-11	AN		C
0KY0D157A0060	16-20	AG		B
"	16-21	AG		B
"	16-22	AG		B
"	16-23	AG		B
0KY0D221B0020	16-24	AT		B
0KY0D251A0020	16-16	AD		B
"	16-18	AD		B
"	16-19	AD		B
0KY0D272A0060	16-25	AP		B
0KY0D461A3200	16-26	AL		B
0KY0D466A0600	16-17	AE		B
0KY0D754A2410	16-62	AL		B
0KY0D763A4R00	16-33	AN		B
0KY0H135A5R00	16-31	AV		B
0KY0H719A0010	16-34	AP		B
0KY0K221B0080	16-15	AP		C
0KY0K251A0020	16-14	AK		C
0KY0K758A4R00	16-27	AT		A
0KY0L113J1830	16-32	AQ		B
0KY0L200C0402	16-60	BA		B
0KY0L551A0010	16-1	AE		C
"	16-2	AE		C
0KY0MPH006900	16-29	AF		C
0KY0MPS029600	16-28	AP		C
0KY0M135A0050	16-59	AE		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
0KY0R153U1000	16-49	AC		C
0KY0R153U1010	16-44	AC		C
0KY0R153U1020	16-55	AB		C
0KY0R153U1050	16-37	AC		C
0KY0R153U1530	16-56	AC		C
0KY0R153U1810	16-42	AC		C
0KY0R153U1830	16-40	AC		C
0KY0R153U1840	16-38	AC		C
〃	16-39	AC		C
0KY0R153U2030	16-47	AC		C
0KY0R153U2220	16-57	AC		C
0KY0R153U3310	16-54	AC		C
0KY0R153U3330	16-43	AB		C
0KY0R153U3910	16-48	AC		C
0KY0R153U3920	16-50	AC		C
〃	16-51	AC		C
〃	16-52	AC		C
〃	16-53	AC		C
0KY0R153U4710	16-41	AC		C
0KY0R153U6220	16-45	AC		C
0KY0R153U9120	16-46	AC		C
0KY0R353U1630	16-58	AD		C
0KY0R854E5020	16-61	AK		B
0KY0T358A0040	16-36	AG		B
0KY0T644A0010	16-35	AV		B
0KY1H153A0010	16-30	AP		B
0MIMMM7E24MM0	8-901	BK		E
0MIOPM100090/	8-904	AY		E
0MIOPM300356/	8-902	AY		C
0MIOPSA00100/	8-905	AV		E
0MIOPSA00195/	8-903	BS		E

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK

MEMO

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SHARP

SHARP CORPORATION
Communication Systems Group
Quality & Reliability Control Center
Higashihiroshima, Hiroshima 739-0192, Japan
Printed in U.S.A.

A9809-2106SS•IS•M