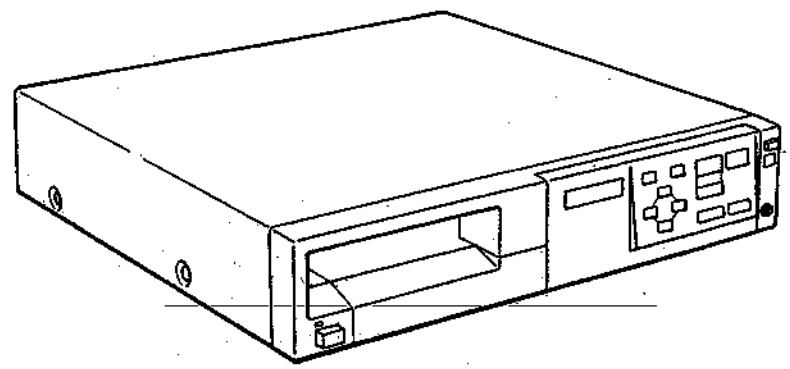
SONY

COLOR VIDEO PRINTER

UP-1800EPM
UP-1850EPM

SERVICE MANUAL



WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS INDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COPMONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

CONTENTS

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. SPECIFICATIONS

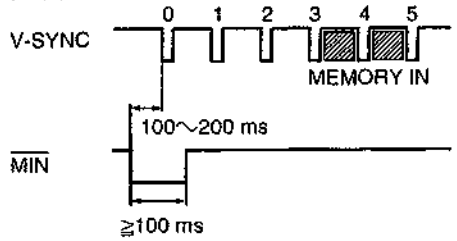
Power requirements
220 to 240 V AC, 50/60 Hz
Power consumption
1.0 A max.
at 25°C, 240 V AC (~)
Operating temperature
5°C to 40°C (41°F to 104°F)
Operating humidity
20% to 80% (no condensation allowed)
Storage and transport temperature
–20°C to 60°C (–4°F to 140°F)
Storage and transport humidity
20% to 90% (no condensation allowed)
Dimensions
About 424 × 91 × 397 mm
(w/h/d) (16 3/4 × 3 5/8 × 15 1/4 inches)
Mass
About 8.5 kg (18 lb 12 oz)
Printing system
Sublimination heat transfer printing
Thermal head
6.72 dot/mm (608 dots)
Total gradation
256 levels each for yellow, magenta, and cyan
Frame memory
UP-1800EPM: One frame memory
UP-1850EPM: Three frame memories
Printing time
Approximately 60 seconds (normal size color printing)
Approximately 30 seconds (monochrome printing)
TV system
PAL B.G.I. standards
Input connectors
RGB SYNC
(analog RGB signal): BNC connector
0.7 Vp-p, 75 ohms (75 ohm termination switch set to ON)
S-VIDEO (Separate luminance (Y) and chrominance (C) signals: 4-pin mini-DIN
Y: 1 Vp-p
C: 0.3 Vp-p color burst
75 ohms (75 ohm termination switch set to ON)
VIDEO (PAL composite video signal): BNC connector
1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
AC IN (for power input)
Output connectors
RGB SYNC (analog RGB signal): BNC connector
RGB: 0.7 Vp-p, 75 ohms
(75 ohm termination switch set to ON)
SYNC: 1 Vp-p
S-VIDEO (Separate luminance (Y) and chrominance (C) signals):
4-pin mini-DIN
Y: 1 Vp-p, 75 ohms
C: 0.3 Vp-p Color bust, 75 ohms (75 ohm termination switch set to ON)
VIDEO (PAL composite video signal): BNC connector
1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
Controls connectors
REMOTE 1 (front panel, for the supplied remote control unit only): special mini jack
REMOTE 2 (automatic printing connector): Stereo mini jack
(see "Using the automatic printing capabilities" page 92)
RS-232C (Computer control interface): D-SUB 25-pin connector
Ink ribbon cassette and paper sets
Color printing pack: UPC-1010 (100 sheets)
B & W printing pack:
UPC-1020 (100 sheets)
Self laminating color printing pack:
UPC-1040 (75 sheets)
Supplied accessories
Color printing pack UPC-1010 (1)
Paper tray (1)
Paper cover (1)
Remote control unit RM-5100 (1)
Connecting cable for the remote control unit (1)
Dry battery SUM-3 (NU) (2)
AC power cord (1)
Instructions For Use (1)

Using the automatic printing capabilities (REMOTE 2)

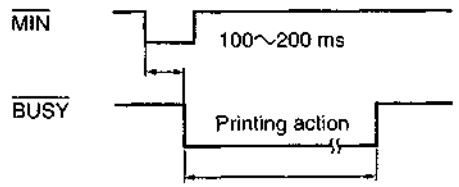
If you send the remote control pulse signals illustrated below through the REMOTE 2 connector, the printer is remotely controlled according to the remote control setting. (see page 78).
Turn on the power of the printer and select the input signal. Set the monitor display to the input signal.
Send a remote control pulse signal at timing shown below:

Regulations of remote control pulse

MEMORY IN TIMING



PRINT TIMING

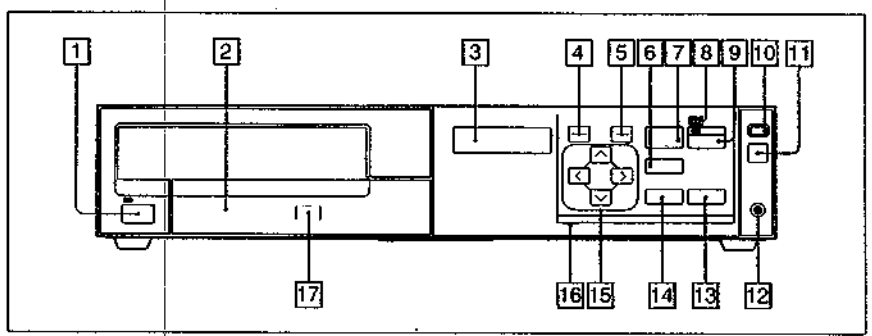


Design and specifications are subject to change without notice.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS

For details, refer to the pages indicated in (00).

Front



1 ⏻ POWER switch
Press to turn the printer on or off.

2 Paper tray/paper cover (54)
Paper tray: Load paper into this tray.
Paper cover: The printout is ejected to this tray

3 Printer window display (102)
This window displays the messages that also appear along the bottom edge of the monitor screen. It also displays the menu screen line to which the cursor is positioned. If an error occurs, corresponding error message is displayed.

4 MENU button
This button is used to display menus or to return to the regular screen from the main menu or sub menus.
The DIP switch setting allows you to make this MENU button disable to work.

5 EXEC button (31, 43, 47, 50)
Press this button to return to the previous menu. Also, this button is used to erase the memory image or enter characters for a caption.

6 SOURCE/MEMORY button (15, 32, 34, 45, 48, 64, 66, 71, 87)
Press to select which signal is to be output to the monitor.
The memory image and source image are changed whenever you press this button.

7 ⇨ MEMORY IN button (15, 32, 34)
Press to store an image into memory.

8 ALARM lamp (93)
This lamp lights, in orange, when the paper has jammed or another error occurs.

9 ❑ PRINT button (16, 17, 33, 34)
Press to make printouts.

10 PUSH OPEN button (8)
Press to open the right front panel door when loading an ink ribbon cassette.

11 Remote sensor (56)
Aim the head of the remote control unit toward this sensor.

12 REMOTE 1 connector (54)
Used to Connect the remote control unit (supplied) when being used as a wired type.

13 STOP button (16, 33, 82, 83, 87)
Press to stop printing midway.
Press this button when the message "STOP STOP STOP" appears.

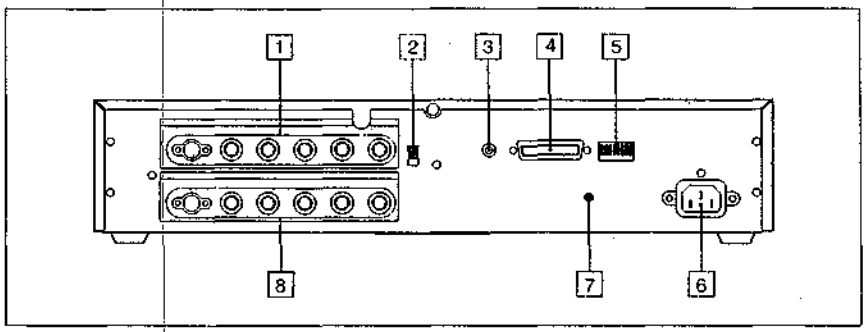
14 MEMORY PAGE button (25, 38, 47, 50)
Press to select the memory page.

15 Cursor keys
Press to position the cursor. Select a desired item from the menu by pressing the ∧ or ∨ button and set the value by pressing the < or > button.
Also, these keys are used to enter characters for a caption.

16 LCD control
Turn to adjust the contrast of the printer window display. To increase the contrast, turn the control clockwise. To reduce the contrast weaker, turn the control counterclockwise.

17 PUSH indication (10)
Press this position to remove the paper tray.

Rear



1 INPUT connectors (52)
Used to connect to the video equipment for source image.

Connector	Connectable equipment
S-VIDEO	Video equipment with a Y/C separated output
VIDEO	Video equipment with a composite video signal output
RGB SYNC	Video equipment with RGB/SYNC connectors

See "Important safeguards/notices for use in the medical environment" on page 2.

2 75-ohm termination switch (for RGB input signal and composite video signal) (52)
Normally, set this switch to ON. Set it to OFF if the input signal should drop when you connect additional equipment to the video equipment.

3 REMOTE 2 connector (54)
Used to connect the RM-91 remote commander (not supplied) or input remote control pulse signals for automatic printing.

4 RS-232C connector (54)
Used to connect the computer used to control the printer.
See "Important safeguards/notices for use in the medical environment" on page 2.

5 DIP switches (84)
Set the switches according to the printout size, baud rate setting for the RS-232C connector, MENU button enable/disable setting, whether locking/non-locking to an external synchronous signal, and whether the tones are turned on or off.

6 ~ AC IN connector (52, 53, 54)
Used to connect to a wall outlet with the supplied power cord.

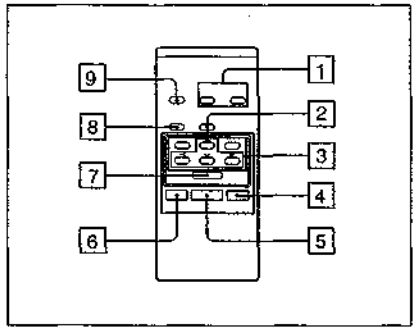
7 ⏚ Equipotential terminal
Used to connect to the equipotential plug to bring the various parts of a system to the same potential.

8 OUTPUT connectors (53)
Used to connect to the video monitor.

Connector	Connectable video monitor
S-VIDEO	Video monitor with a Y/C separated input
VIDEO	Video monitor with a composite video signal input
RGB SYNC	Video monitor with RGB/SYNC connectors

See "Important safeguards/notices for use in the medical environment" on page 2.

Remote control unit

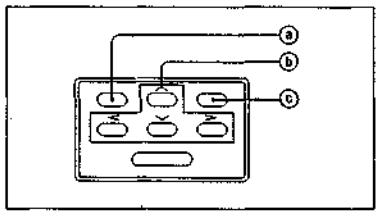


1 PRINT QTY + and – buttons (19)
Used to set the number of copies of one printout (on the regular screen).

Button	Operation
+	Increases the number of copies.
–	Reduces the number of copies.

2 MULTI PICTURE button (26)
Press to access the MULTI PICTURE sub menu directly from the any other screen.

3 Menu control keys



ⓐ MENU button
This button is used to display menus or to return to the regular screen from the main menu or sub menus.
The MENU button can be enabled/disabled by setting a DIP switch.

ⓑ Cursor keys
Press to position the cursor. Select a desired item from the menu by pressing the ∧ or ∨ button and set the value by pressing the < or > button.
Also, these keys are used to enter characters for a caption.

ⓒ EXEC button (31, 43, 47, 50)
Press this button to return to the previous menu. Also, this button is used to enter characters for a caption.

4 PRINT button (16, 17, 33, 34)
Press to make printouts.

5 MEMORY IN button (15, 32, 34)
Press to store an image into memory.

6 SOURCE/MEMORY button (15, 32, 34, 45, 48, 64, 66, 71, 87)
Press to select which signal is to be output to the monitor.
The memory image and source image are changed whenever you press this button.

7 STOP button (16, 33, 82, 83, 87)
Press to stop printing midway.
Press this button when the message "STOP STOP STOP" appears.

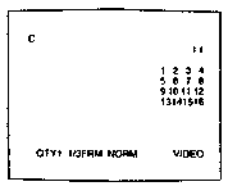
8 COLOR ADJUST button (59)
Press to access the COLOR ADJUST sub menu directly from any other screen.

9 MEMORY PAGE button (25, 38, 47, 50)
Press to select the memory page.

Comparing Printer Window Display with the Video Monitor Display

The printer window display differs from the monitor display in that the display range is narrower and the number of characters is limited. The displayed contents, however, are the same.
A brief explanation of the printer window display is given below, in comparison with the monitor screen.

Regular screen

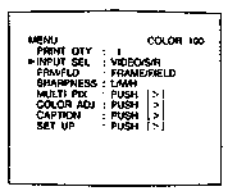


Displays a line of the numbers, one of which blinks in white in the multiple reduced-image area. < > is positioned on the number that blinks on the monitor display.

C<13>14 15 16 It
Q1 1/3FRM NORM V

Displays the bottom line of the monitor screen.

Main menu screen and sub menu screen



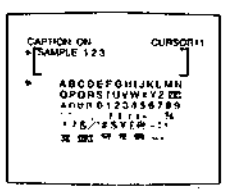
Displays the item to which the cursor is positioned on the monitor display

INPUT SEL :
<VIDEO>S/R

Displays the selections for the item to which the cursor is positioned on the monitor display

< > is positioned on the selected selection.

CAPTION sub menu screen



Displays the line to which the highlighted cursor is positioned in the character display area of the monitor display (▯ blinks in black)

SAMPLE 123
ABCDEFGHIJKLMN

Displays the line of the character entry area to which the highlighted cursor (selected character) is positioned.

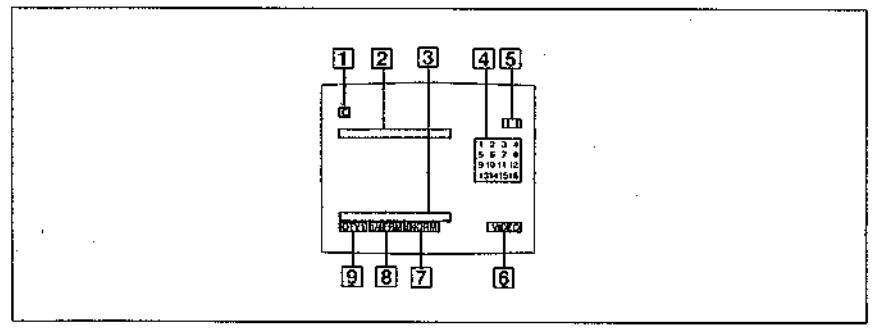
Displays a selected character (▯ blinks in black)

Monitor Display

There are two types of screen display; the regular screen display and the menu screen.

Regular screen message

When you first turn on the printer, the regular screen message appears.



1 C (Caption)
C is displayed in white when the printer is set to print a caption consisting of the date and/or comments.
C is displayed in dark blue when the printer is not set to print a caption consisting of the date and/or comments.
M is displayed in white when the printer is set to print a mirror caption.

2 Error message display area
Error messages are displayed.

3 Warning message display area
Warning messages are displayed.

4 Number of four or 16 reduced image area
When the printer is set to store multiple reduced images into memory, corresponding numbers appear to indicate the memory status.

5 11
Displayed when the printer is set to automatically store images at preset intervals. The number corresponds to the selection made with the INTERVAL item.

6 Image type display
This indicates the type of image shown on the monitor screen.
When the image being played back from print source equipment is displayed on the screen, the corresponding print source (the input signal connector name, for example VIDEO) appears.
When an image stored in memory is displayed on the screen, MEMORY appears.

7 Print mode display

This indicates the selected print mode.
Several examples are shown below:

Display	Print mode
NORM	Makes a printout of one normal image
N2	Makes a printout of two identical normal images
N1_M	Makes a printout of one normal image whose printout area size is reduced to 70%.
MIR	Makes a printout of one mirror image
M16	Makes a printout of 16 reduced mirror images

8 Memory page display

The memory page you select appears.
The memory page whose image is being printed blinks. A memory page whose image is queued for printing lights in green.
The following shows several examples.

Display	Meaning
1/3FRM (UP-1850EPM) 1/1FRM (UP-1800EPM)	The first page is selected in frame mode (UP-1850EPM). The frame mode is selected (UP-1800EPM).
2/6FLD (UP-1850EPM) 2/2FLD (UP-1800EPM)	The second page is selected in field mode.

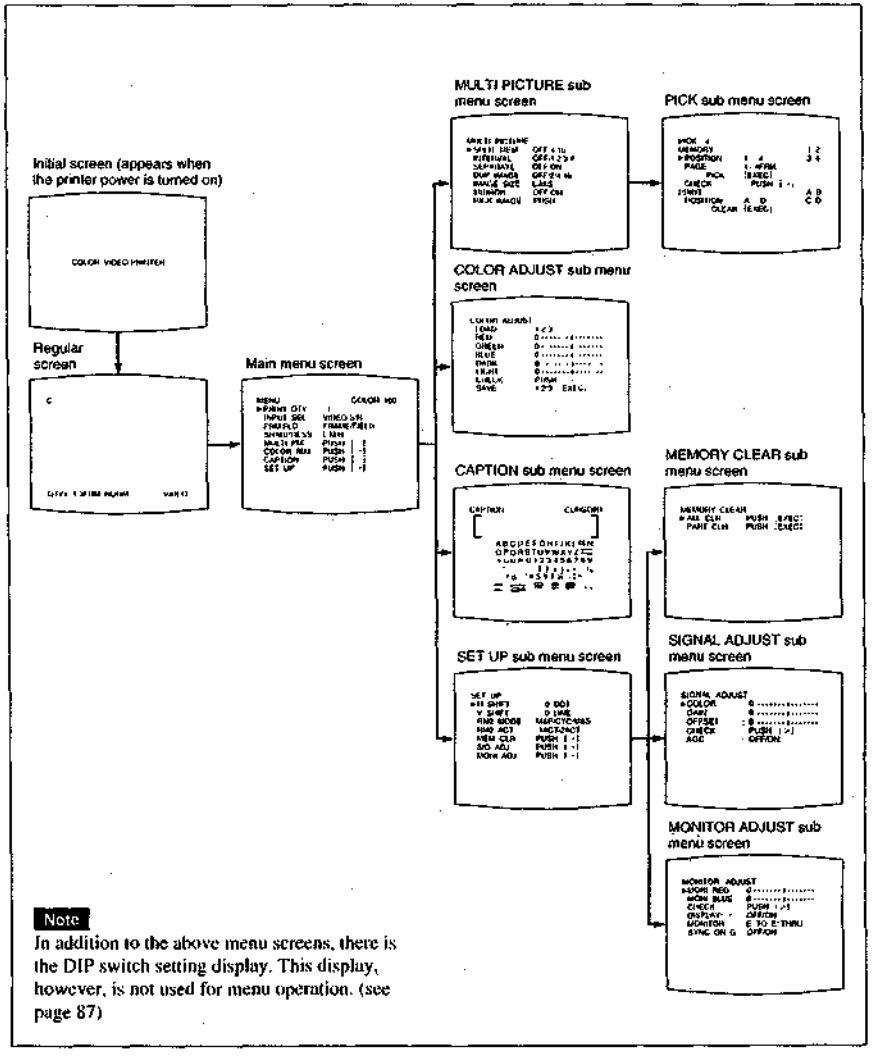
9 Number of copies to be printed

Indicates the number of copies to be printed.
This item blinks while the printer is busy. Also, the color changes to indicate the progress while making a color printout, as follows:
Printing start - yellow - magenta - cyan - printing end.
When making black and white printouts, this blinks in white.

Menu screen

Menu screen tree-chart

The menu screen configuration is shown using the tree-chart.



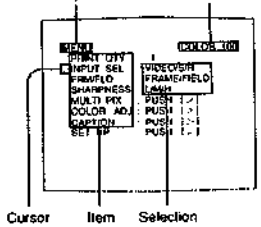
Note

In addition to the above menu screens, there is the DIP switch setting display. This display, however, is not used for menu operation. (see page 87)

Menu screen display

Menu name (in this case, main menu)

Type of ink ribbon cassette and remaining amount of ribbons (indicates the number of printouts that can be made)



About remaining amount of ribbons

- Use the remaining amount of ribbons as a guide. The printer may not display remaining amount of ribbons depending on the type of ribbons.
- The printer starts counting from 25 when remaining amount of ribbons is less than 36

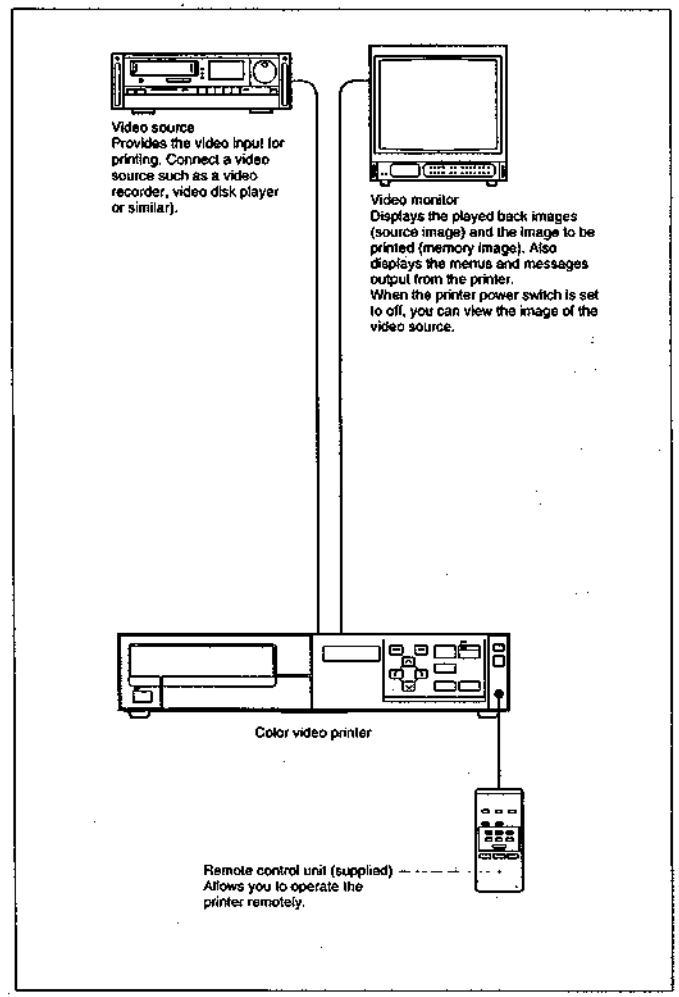
Display color

The color indicates the printer status.

Display color	Meaning
Light blue	Indicates the menu name.
Green	In the menu item column, indicates the selected item. In the selection column, indicates an item that has already been set or one that must be set.
White	In both the item and selection column, indicates that the item has not been selected or has not yet been set.
Dark blue	Indicates that this item or selection cannot be selected. They are functions which become effective depending on another item or selection settings.

System Configuration

The following shows an example printer system configuration.



1-4. BEFORE PRINTING

This section describes the following operations that must be made prior to start printing after installing the printer and making connections.

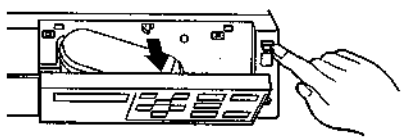
- Loading an ink ribbon cassette (see page 8)
- Loading paper (see page 10)
- Selecting the input signal (see page 12)

Once the above operations are done, there should be no need to subsequently perform in routine printing operations. Perform the above operations, if necessary.

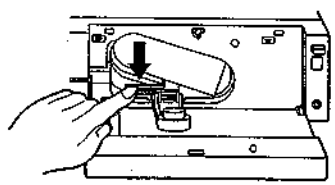
Loading an Ink Ribbon Cassette

To make printouts, an ink ribbon cassette and paper should be loaded. Both of those should be used in correct pairs. (see "Ink Ribbon Cassette and Paper" page 90)

1 Push in the PUSH OPEN button.
The front panel opens.

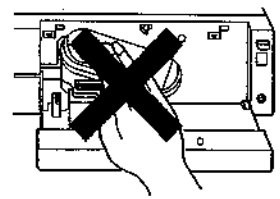


2 Remove the ink ribbon cassette by pulling down the EJECT lever.

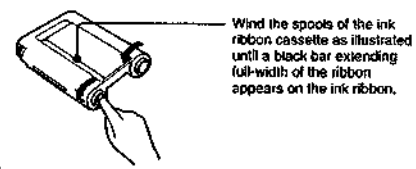


Note

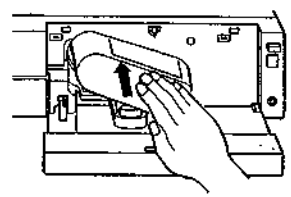
Never put your hand into the ink ribbon cassette dock. The thermal head becomes very hot. You may burn yourself if you touch it.



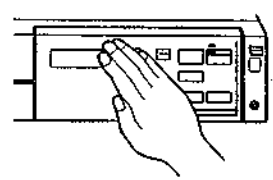
3 Take up any slack in the ink ribbon.
If the ribbon is left slack, it may be crumpled and damaged when inserted.



4 Insert the ink ribbon cassette firmly until it stops.



5 Close the front panel.



Notes

When using ink ribbon cassettes:

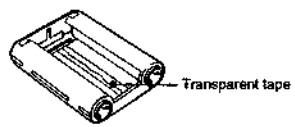
- Once an ink ribbon has been completely used, replace it. Ink ribbons are not reusable.
- Do not touch the ribbon or place the cassette in a dusty place. Body oils or dust stuck to the ink ribbon will cause imperfect printing.

When storing ink ribbon cassette:

- Avoid placing the ink ribbon cassette in a location subject:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- Store a partially used ink ribbon in its original bag.

If your ink ribbon should tear

Repair the tear with transparent tape. There should be no problem in using the remaining portion of the ribbon.



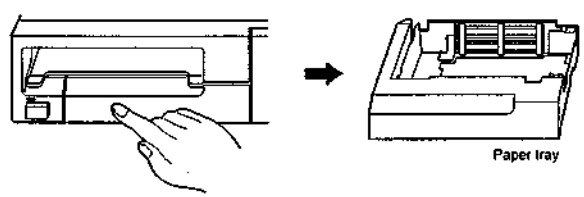
Loading Paper

Follow these steps to load paper in the printer. Use only the ink ribbon cassette and paper packed in the same carton, that is correctly in pairs. Be careful not to touch the printing surface.

Note

When loading the paper while the printer is operating, do not turn off the power. If you turn off the power, the image stored in memory will be lost.

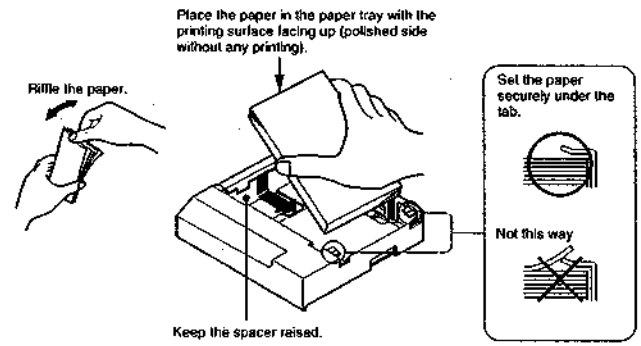
1 Push **PUSH** on the paper tray.
The paper tray is ejected.



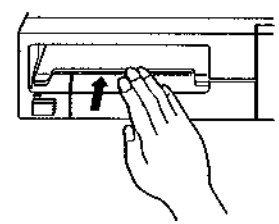
2 Place the paper into the paper tray.

Notes

- The paper tray holds up to 100 sheets. When you add paper to a partly-full tray, be careful that the total number of sheets does not exceed 100. If you exceed this limit, paper jams may occur.
- Load the paper so that it lays flat in the paper tray.
  If the paper is curled, it will overflow the paper tray and the printing position may shift. If this happens, load fewer sheets in the paper tray.



3 Slide the paper tray back into the printer until it clicks into place.



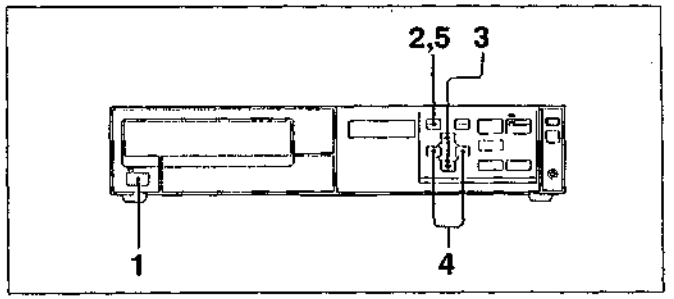
Notes

When storing paper:

- Avoid placing the paper subject to:
  - high temperatures
  - high humidity
  - excessive dust
  - direct sunlight
- Keep the package for storing unused paper.

Selecting the Input Signal

Before printing, select the input signal. Once you have selected the input signal, this setting remains as is until you select another source.



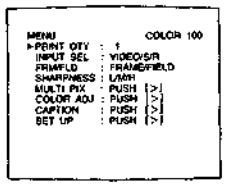
1 Turn on the video monitor and the printer.
The following message appears when the printer is ready to operate.

Video monitor screen

Printer window display

Q1 1/3FRM NORM V

2 Press the MENU button.
The following screen appears.

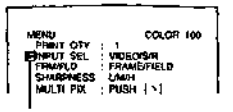


Main Menu screen

PRINT QTY :
1

Part of the main menu

3 Select INPUT SEL by pressing the ∧ or ∨ button.

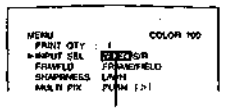


Move the cursor to INPUT SEL by pressing the ∧ or ∨ button.

INPUT SEL :
<VIDEO> S / R

Display this message by pressing the ∧ or ∨ button.

4 Select the desired input signal by pressing the < or > button.



Switch the desired input signal to green by pressing the < or > button.
The name of the selected input signal appears in green.

INPUT SEL :
<VIDEO> S / R

Position < > over the name of the desired input signal.

Source signal of the image to be printed	Video monitor and printer window display (The name of the selected input signal appear on the screen.)
Signal from the video equipment connected to the VIDEO INPUT connector	V → VIDEO
Signal from the video equipment connected to the S-VIDEO INPUT connector	S → S-VIDEO
Signal from the video equipment connected to the RGB/SYNC INPUT connectors	R → RGB

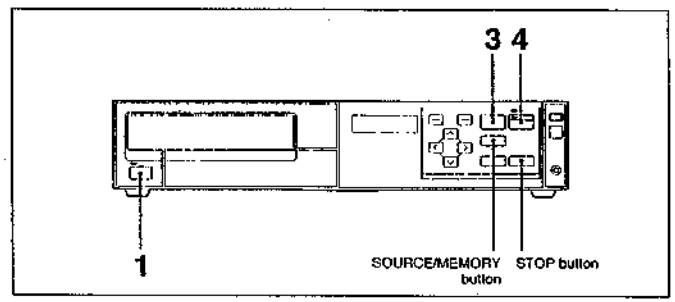
5 Press the MENU button.
The regular screen appears.

1-5. MAKING FULL-SIZE PRINTOUTS

This section explains how to make a full-size printout. The operations described here is the basic procedure for making a printout.

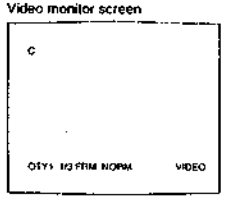
Before making a full-size printout

- All connections should have already been made. (see page 52)
- Ensure that the appropriate ink ribbon cassette/paper set is being used and that they are correctly loaded. (see pages 8, 10 and 90)
- Select the input signal to be used to make a printout. (see page 12)
- Set the memory mode to store one full-size image into memory. (see page 27)
- Select the appropriate memory page. (see page 25)

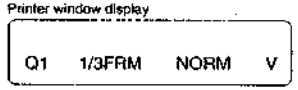


1 Turn on the video monitor and the printer.
The following message appears when the printer is ready to operate.

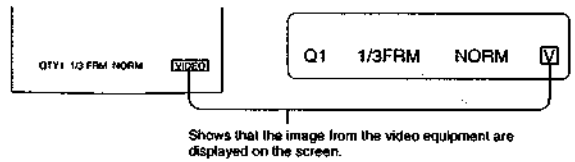
Video monitor screen



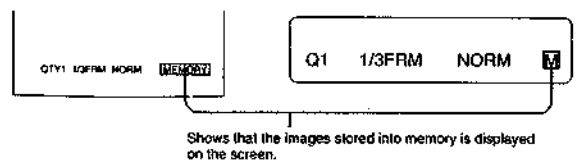
Printer window display



2 Start the video source.
(This operation is done using the controls of the video equipment acting as the source.)



3 Press the MEMORY IN button at the instant when the image you want to print appears on the screen.
That image is stored into memory.
The memory image (stored into memory) is displayed on the screen.



If the stored image is blurred

A quickly moving image may be blurred when it is printed. If this happens, switch the FRM/FLD (frame/field) mode setting to FLD on the main menu and perform printing again. This should eliminate blur from the printout. However, since printing in field mode has a lower resolution than in the frame mode, the ultimate print quality will be slightly degraded. (see "About Memory" page 22)

To change the stored image

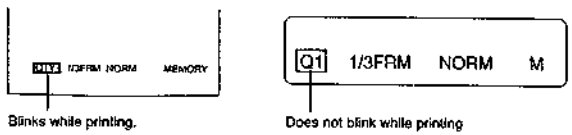
① Press the SOURCE/MEMORY button.
The image from the video source appears.
② Press the MEMORY IN button at the instant when the image you want to print appears.
The previous image is replaced.

Note

If you turn off the power, the image stored into memory will be lost. Thus, store the image into memory again when you turn on the power.

Continue to next page →

4 Press the PRINT button.
It takes about 60 seconds to make a color printout, or 30 seconds to make a black and white printout.



Blinks while printing.

Does not blink while printing

During color printing: Printing start - yellow - magenta - cyan - printing end
During black and white printing: Printing start - white - printing end

Note

Do not handle the paper until printing has been completed.

To stop printing before completion

Press the STOP button. Printing is abandoned and the paper is ejected to the print tray.

If the printer does not print

The printer will not print in the following case.
Wherever an error message is displayed on the video monitor and printer window display. (see "Error Messages" page 93)

If a black line appears on the printout

Sometimes, a black line appears on the printout, although it does not appear on the video monitor. You can eliminate the black line from the printout. (see "Changing the Printout Area" page 63)

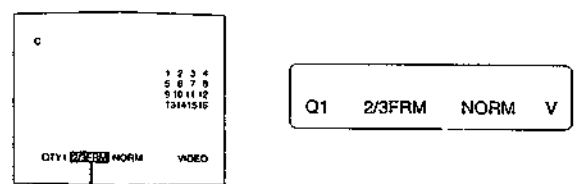
Notes

When preserving your printouts:
- Keep printouts in a dark and cool place.
- Do not to stick plastic tape to the print. Also avoid leaving plastic eraser on top of the printout or putting the printout between things which contain plasticizer (a desk mat, etc.).
- Do not to pour alcohol or other volatile organic solvents on the printouts.

Queuing images to be printed out

You can store other images to another memory to be printed out once the printer becomes free.
When using the UP-1800EPM printer, select field mode to queue an image for printing.

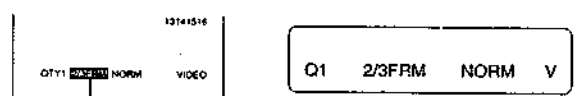
1 Select the memory page to be printed, by pressing the MEMORY PAGE button.



The available memory pages appear in white.

2 Press the MEMORY IN button at the instant when the image you want to print appears on the screen.

3 Press the PRINT button.
The image selected in step 2 is queued. The image is printed as soon as all previous printing jobs have been completed.



Memory page whose image have been queued for printing (lights in green)
The memory page display returns to white once printing has been completed.

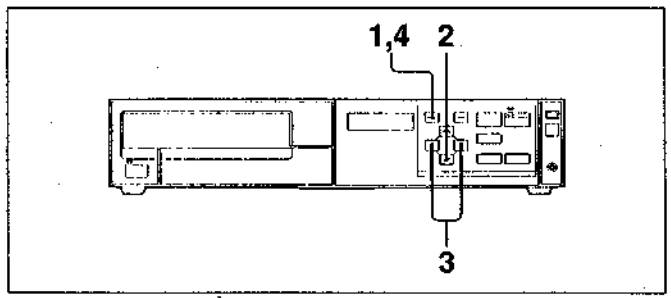
Note

Another image cannot be stored into a memory page whose image has been queued for printing.

4 To queue another memory page, repeat steps 1, 2 and 3.
(only for up-1850 EPM)

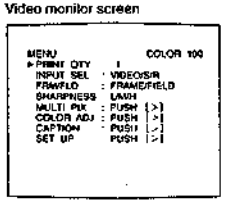
Making Multiple Copies of Identical Image

You can print up to 100 copies of a stored image.
Do the following steps before you start printing or while printing. You can change the designated number of copies any time during printing.



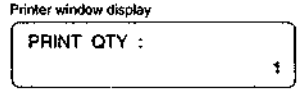
1 Press the MENU button.
The following screen appears.

Video monitor screen



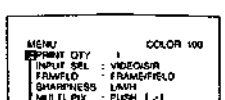
Main Menu screen

Printer window display

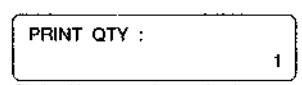


Part of the main menu

2 Select PRINT QTY by pressing the ∧ or ∨ button.



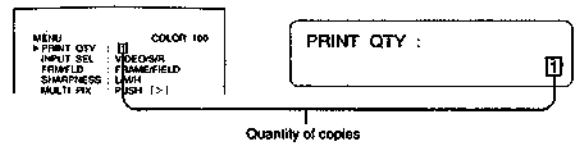
Move the cursor to PRINT QTY by pressing the ∧ or ∨ button.



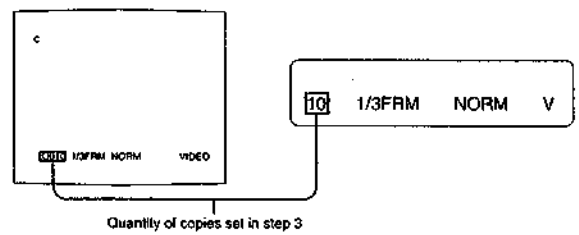
Display this message by pressing the ∧ or ∨ button.

3 Set the number of copies by pressing the < or > button.

When setting	Button
To decrease the quantity	<
To increase the quantity	>



4 Press the MENU button.
The regular screen appears.



When paper runs out during printing

Fill the paper tray with paper and press the PRINT button again. (see "Loading Paper" page 10)

Designating the number of copies by the remote control unit (supplied)

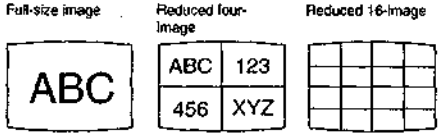
You can designate the number of copies directly on the regular screen by using PRINT QTY +/– buttons.

When setting	Button
To decrease the quantity	PRINT QTY –
To increase the quantity	PRINT QTY +

1-6. MAKING VARIATIONS OF PRINTOUTS

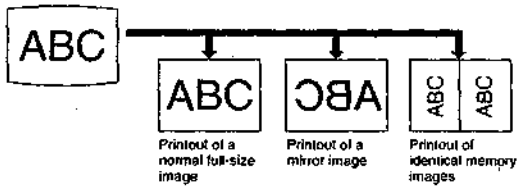
You can store various kinds of images into memory by changing the memory mode and can vary the printout of the stored images by changing the print mode.
This section explains how to set the memory mode and change the print mode.

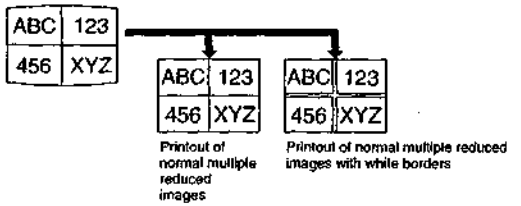
Types of images that can be stored into memory

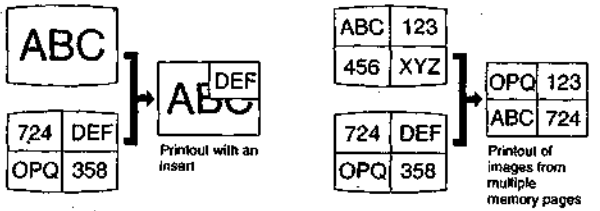


Types of printouts that the printer can produce

By varying the print mode, the following types of printout can be made using images stored in memory.



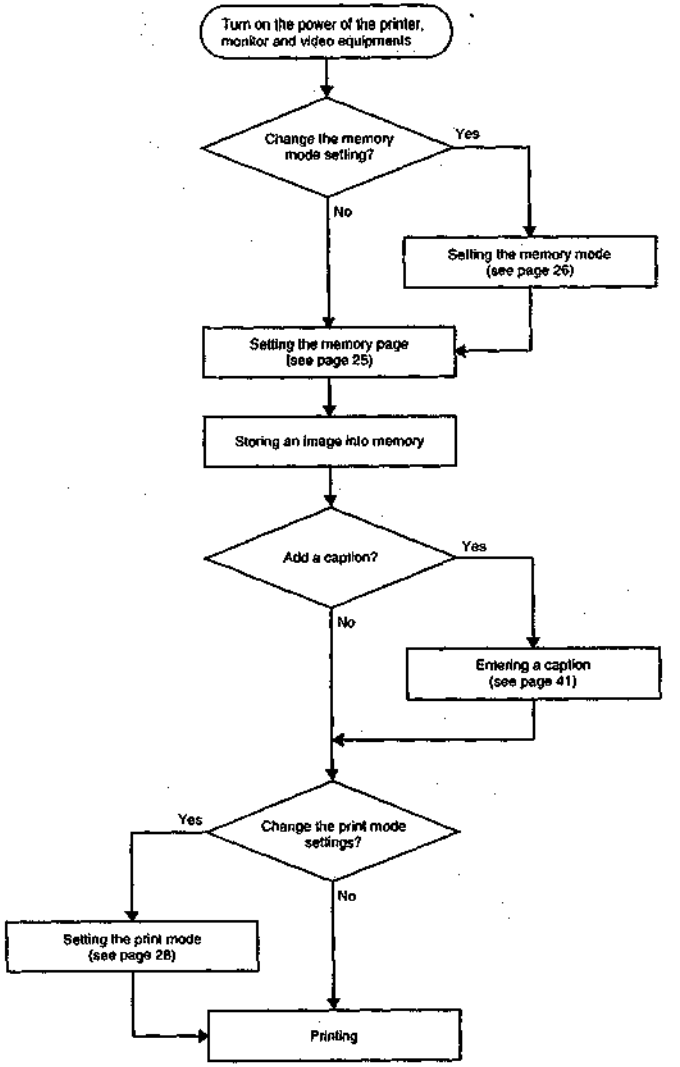




Also, you can adjust the size of the printouts. (see page 85)
However, the size of a printout of images from multiple memory pages and the size of a printout of multiple reduced image with white borders cannot be changed.
For the printout of multiple reduced images without white borders, you can make a printout of mirror multiple reduced image and a printout of identical multiple reduced images. You can also change its size.

Printing Operation Flowchart

The following flowchart shows the flow of a printing operation.



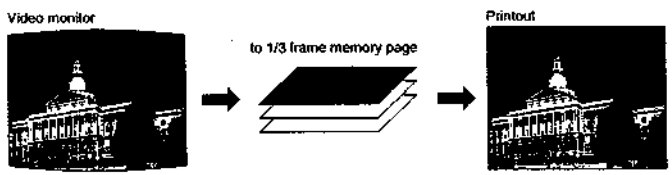
About Memory

To make a printout, it is first necessary to store the desired image into memory. The method of storing images into memory is called memory mode.
By setting memory mode, you can store a full-size image or multiple reduced images into memory. Also, the printer can automatically store images to its memory pages at preset intervals.
Also, you have to decide how to use the printer's memory to store images. Two methods of using memory are supported. One is frame mode, while the other is field mode. The number of memory images you can store depends on whether you select frame or field mode.

Frame mode and filed mode

Frame (FRM) mode

A image for one screen is stored in one memory.

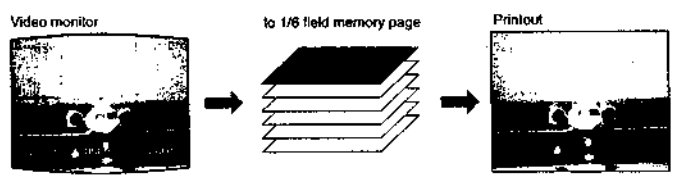


1/3FRM: The first page of three frame-mode memory pages

A still subject can be printed with high resolution.

Field (FLD) mode

One memory is divided into two, and images for the two screens are stored to the resulting memory pages.



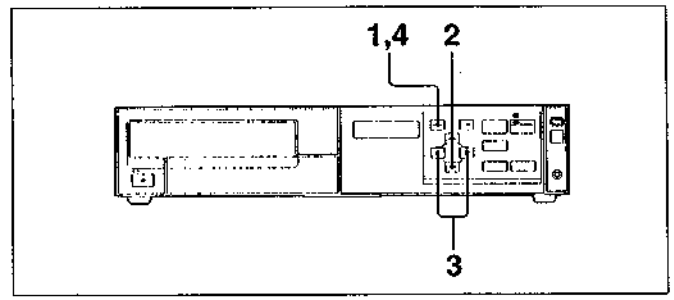
1/6FLD: The first memory page of six field-mode memory pages

A quickly moving subject can be prainted without blurring.

The above illustrations show the case of UP-1850EPM. In case of UP-1800EPM, there is one memory page in frame mode and two memory pages in field mode.

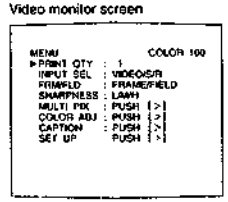
Selecting frame or field mode

Before storing an image, select frame or field mode.



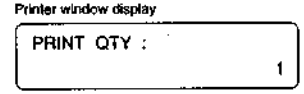
1 Press the MENU button.
The following screen appears.

Video monitor screen



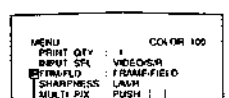
Main Menu screen

Printer window display

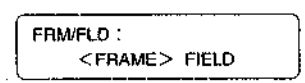


Part of the main menu

2 Select FRM/FLD by pressing the ∧ or ∨ button.



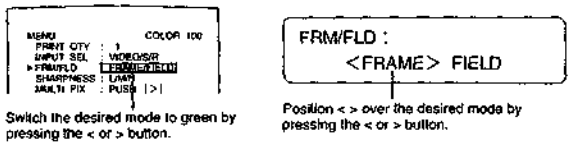
Move the cursor to FRM/FLD by pressing the ∧ or ∨ button.



Press the ∧ or ∨ buttons until FRM/FLD appears.

Continue to next page →

3 Select the desired mode by pressing the < or > button.



FRAME: We recommend that, whenever possible, you print in this mode.
FIELD: Select this mode to reduce blurring when you print a quickly moving image.

4 Press the MENU button.
The regular screen appears.

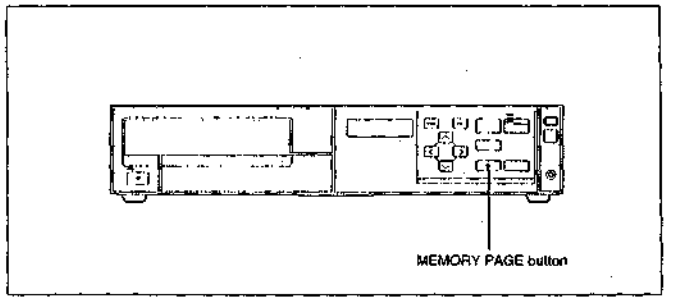
About memory pages

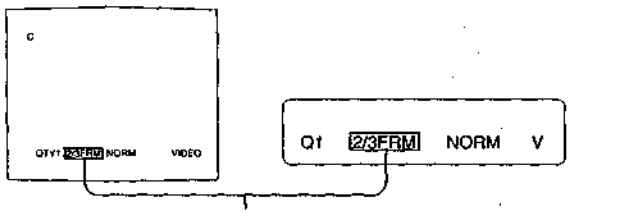
The UP-1800EPM has a single frame memory, enabling the unit to store one image in one memory page when FRM mode is selected, or two images in two memory pages when FLD mode is selected.
The UP-1850EPM has three frame memories, enabling the unit to store three images in three memory pages in frame mode and six images in six memory pages in field mode.
The memory used to store one screen image is called a memory page.

Selected memory mode	Number of usable memory pages		Usable memory pages	
	UP-1800EPM	UP-1850EPM	UP-1800EPM	UP-1850EPM
Frame mode (FRM)	1	3	1/1FRM	1/3FRM, 2/3FRM or 3/3FRM
Field mode (FLD)	2	6	1/2FLD 2/2FLD	1/6FLD, 2/6FLD, 3/6FLD, 4/6FLD, 5/6FLD or 6/6FLD

Selecting a memory page

To select a memory page, press the MEMORY PAGE button.

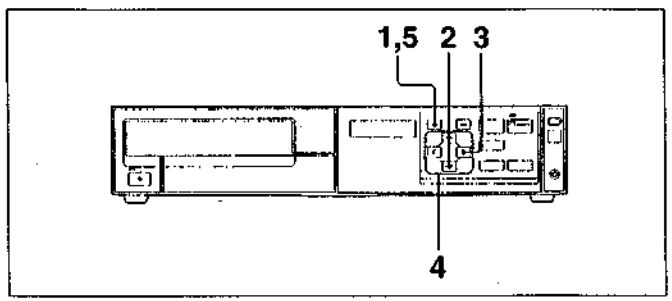




Selecting the Memory Mode

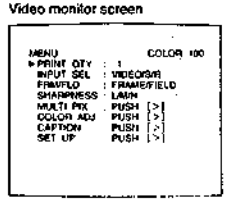
Decide the method for storing images in memory. Once you have selected memory mode, this setting remains as is until reset, even if you turn the power off.

When you use the remote control unit to control the printer
You can access the MULTI PICTURE sub menu by pressing the MULTI PICTURE button. Thus, press the MULTI PICTURE button to display the MULTI PICTURE sub menu. Then, follow the procedure below, starting from step 4.



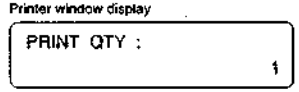
1 Press the MENU button.
The following screen appears.

Video monitor screen



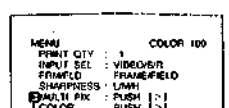
Main Menu screen

Printer window display

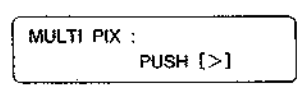


Part of the main menu

2 Select MULTI PIX by pressing the ∧ or ∨ button.

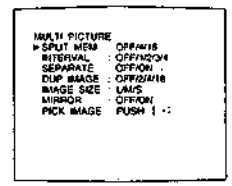


Move the cursor to MULTI PIX by pressing the ∧ or ∨ button.

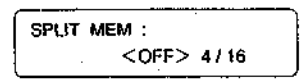


Press the ∧ or ∨ buttons until MULTI PIX appears.

3 Press the > button.
The following screen appears.

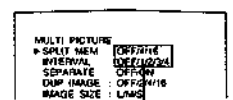


MULTI PICTURE sub menu

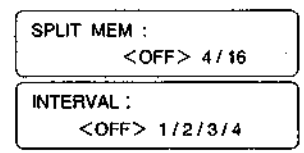


Part of the MULTI PICTURE sub menu

4 Set the memory mode.
① Select the item to be set by pressing the ∧ or ∨ button.
② Select the method for storing images by pressing the < or > button.



Switch the desired mode to green by pressing the < or > button.



Position < > over the desired mode by pressing the < or > button.

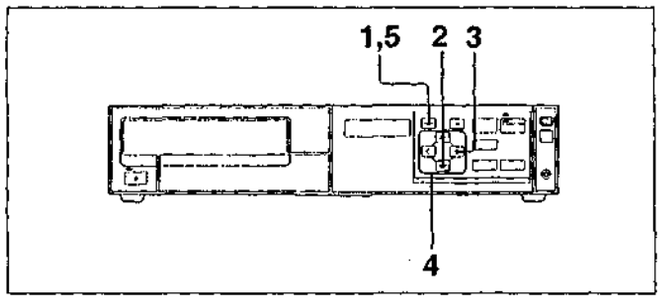
When you select	Item for memory mode	Settings	Contents of setting
To set the number of images to be stored in one memory page.	SPLIT MEM	OFF	Storing a full-size image
		4	Storing four reduced images
		16	Storing 16 reduced images
To set whether the printer automatically stores images into memory page at preset intervals.	INTERVAL	OFF	Storing only the image currently displayed on the screen by pressing the MEMORY IN button.
		1/2/3/4	Storing images sequentially to all memory pages at preset intervals. (1: about 1/60 seconds, 2: about 1/15 seconds, 3: about 1/4 seconds and 4: about 1/2 seconds)

5 Press the MENU button.
The regular screen appears.

Continue to next page →

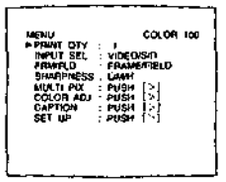
Selecting the Print Mode

You can make variations of printouts from the images stored in memory pages by changing the print mode. (see "Types of printouts that the printer can produce" page 20)
Once you have selected the print mode, this setting remains as is until you reset, even if you turn the power off.



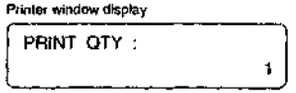
1 Press the MENU button.
The following screen appears.

Video monitor screen



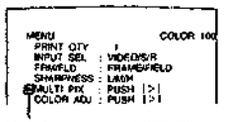
Main Menu screen

Printer window display

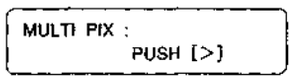


Part of the main menu

2 Select MULTI PIX by pressing the ∧ or ∨ button.

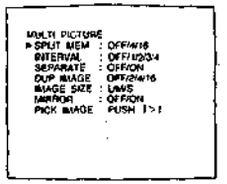


Move the cursor to MULTI PIX by pressing the ∧ or ∨ button.



Press the ∨ or ∧ buttons until MULTI PIX appears.

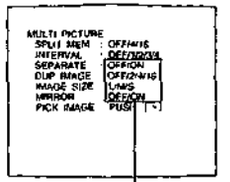
3 Press the > button.
The following screen appears.



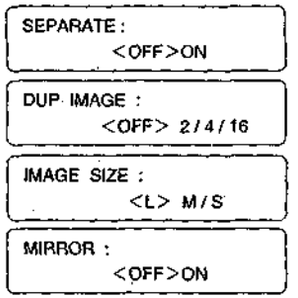
MULTI PICTURE sub menu

Part of the MULTI PICTURE sub menu

4 Set the print mode.
① Select the item to be set by pressing the ∧ or ∨ button.
② Select the method for making a printout by pressing the < or > button.



Switch the desired mode to green by pressing the < or > button.



Position < > over the desired mode by pressing the < or > button.

Continue to next page →

When you select	Item for print mode	Settings	Content of settings
To decide whether the images are printed with white borders	SEPARATE	OFF	without white borders a)
		ON	with white borders b)
To decide how many times identical images are printed in a single printout.	DUP IMAGE a)	OFF	Printing a memory image one time
		2	Printing a memory image twice
		4	Printing a memory image four times
		16	Printing a memory image 16 times.
To set the size of the image in a single printout.	IMAGE SIZE a)	L	Regular size
		M	About 70% of the L size
		S	About 50% of the L size
To rotate the image around its vertical axis (to make a mirror image printout)	MIRROR	OFF	Normal image
		ON	Mirror image
To make a printout consisting of multiple images, each from a same memory page or multiple memory pages.	PICK IMAGE	This item is effective only when the PICK sub menu is displayed.	

a) When SEPARATE is set to OFF (without white borders), the following items can be set.

DUP IMAGE	IMAGE SIZE		
	L	M	S
OFF	O	O	×
2	O	O	×
4	O	O	O
16	O	×	×

O: Size that can be set
×: Size that cannot be set

b) White borders can be added only for the following settings.
SPLIT MEM: Settings other than OFF
DUP IMAGE: OFF
IMAGE SIZE: L

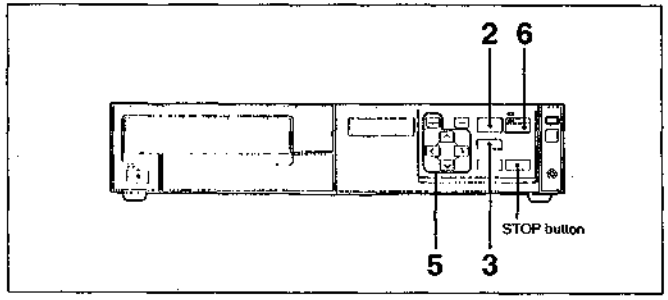
5 Press the MENU button.
The regular screen appears.

To return to the main menu from the sub menu screen
Press the EXEC button except when the SAVE item is selected on the COLOR ADJUST sub menu and when the cursor is position in the character entry area on the CAPTION sub menu.

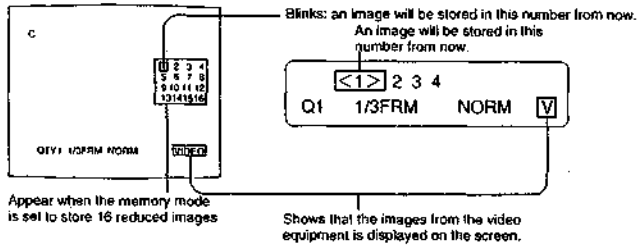
Making Printouts of Multiple Reduced Images

This subsection explains how to make printouts of multiple reduced images taking as an example, making a printout of 16 reduced images. (see "Selecting the Print Mode" page 28)

Before making printouts of 16 reduced images
- Set the memory mode to store 16 reduced images into memory. (see page 27)
- Select the appropriate memory page. (see page 25)

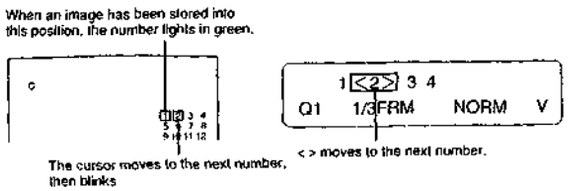


1 Start the video source.
(This operation is done using the controls of the video equipment acting as the source.)



Continue to next page →

2 Press the MEMORY IN button at the instant when the image you want to print appears on the screen.
The image is stored to the position for which the corresponding number blinks on the monitor display, and over which the corresponding number < > is positioned in the printer window display.
The cursor moves to the next number.



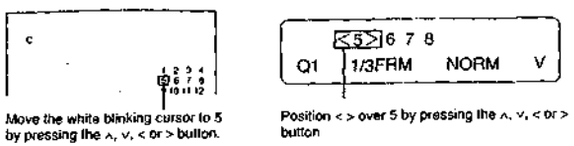
3 Press the SOURCE/MEMORY button.
The image from the video equipment appears on the monitor display.

4 Repeat steps 2 and 3 until you have stored 16 images.

To change a stored image

Example: When you want to change the image stored to the 5th position.

① Select 5 by pressing the ∧, ∨, < or > button.



② Press the SOURCE/MEMORY button.
The image from the video source appears.
③ Press the MEMORY IN button at the instant when the image you want to print appears.
The previously stored image is replaced with the newly selected image.

To skip a previously stored image

When an image has already been stored, the previously stored image can be replaced by pressing the MEMORY IN button.
Skip the number corresponding to the image to be skipped by pressing the ∧, ∨, < or > button.

5 Set the print mode. (see "Selecting the Print Mode" page 28)

6 Press the PRINT button.
The 16 reduced images are printed on one sheet of paper.

To stop printing midway

Press the STOP button. The printer stops printing and ejects paper to the paper cover.

To automatically store images into memory

Images can be automatically stored into all memory pages at preset intervals by using the INTERVAL item of the MULTI PICTURE sub menu, which is used to set the memory mode. (see "Selecting the Memory Mode" page 26)
While images are automatically being stored to all memory pages, "PLEASE WAIT" appears on the screen.

Making printouts with an insert

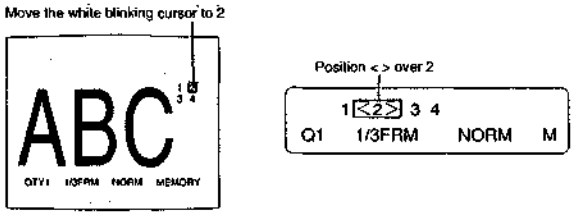
You can make printouts with an insert by using the four- or 16- reduced image memory mode.
Example: To make a printout with one of four reduced images inserted

1 Display the full-size image stored in memory. (Follow steps 1 to 3 of "Making Full-Size Printouts" on page 14.)

2 Set the memory mode to store four reduced images. (see "Selecting the Memory Mode" page 26)

Continue to next page →

3 Move the white blinking cursor to the position where a reduced image is to be inserted, by pressing the ∧, ∨, < or > button.
Example: To insert the image to 2



4 Press the SOURCE/MEMORY button to display the image from the video source, if necessary.

5 Press the MEMORY IN button at the instant when the image you want to print appears.
The image is stored to position 2.

6 Press the PRINT button.
An image with the insert is printed.

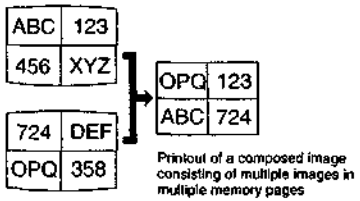
Note

If you insert a reduced image into an image stored in a different memory page, the printer can not make a printout of the image with an insert.

Making Printouts of Multiple Images in Multiple Memory Pages

You can make a single printout of multiple images stored in multiple memory pages. The number of images of a singe printout depends on the memory mode setting (the setting of SPLIT MEM from the MULTI PICTURE sub menu). In this manual, the type of printout described above is referred to as a composed image.

Type of memory images	Number of images in one composed image printout
Full-size image	2
Four reduced images	4
16 reduced images	16



Printout of a composed image consisting of multiple images in multiple memory pages

When using the UP-1800EPM, which has only a single frame memory, select field mode to make a printout of multiple images in multiple memory pages.

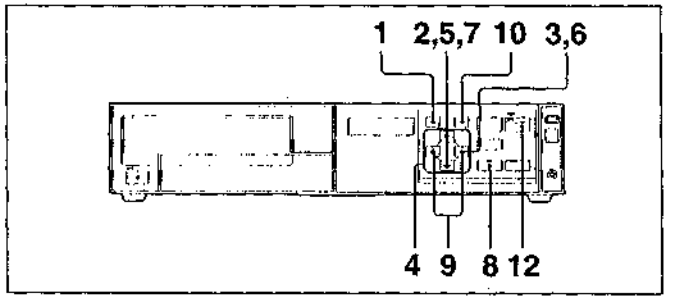
You can also exchange the position of multiple reduced images in the same memory page.

Before making printouts of images in multiple memory pages (composed image)

- Store images of the same type to each memory page.
- Display the images stored in memory on the screen.

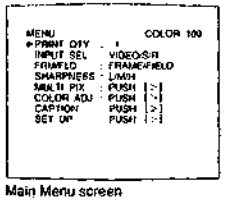
Note

Store the images of the same type to each memory page (one full-size image, four reduced images or 16 reduced images). Otherwise, the printout is likely to be unsatisfactory. For example, there may be whitish areas or different images may be overlapped.



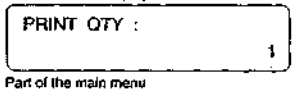
1 Press the MENU button.
The following screen appears.

Video monitor screen



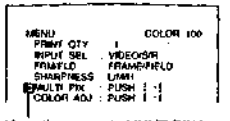
Main Menu screen

Printer window display

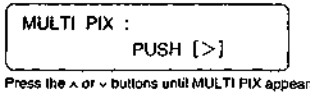


Part of the main menu

2 Select MULTI PIX by pressing the ∧ or ∨ button.

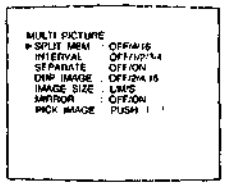


Move the cursor to MULTI PIX by pressing the ∧ or ∨ button.



Press the ∧ or ∨ buttons until MULTI PIX appears.

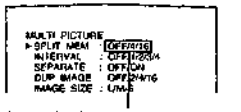
3 Press the > button.
The following screen appears.



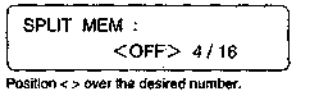
MULTI PICTURE sub menu

Part of the MULTI PICTURE sub menu

4 Select the type of the composed image.
① Select SPLIT MEM by pressing the ∧ or ∨button.
② Select the number of images in the composed image by pressing the < or > button.



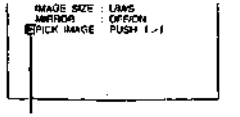
Switch the desired number to green.



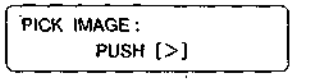
Position < > over the desired number.

Selection from SPLIT MEM	Number of images in one composed image printout
OFF	2
4	4
16	16

5 Select PICK IMAGE by pressing the ∧ or ∨ button.

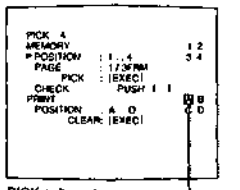


Move the cursor to PICK IMAGE by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until PICK IMAGE appears.

6 Press the > button.
The following screen appears.



PICK sub menu

Blinks: shows that the image will be inserted into A.

Part of the PICK sub menu

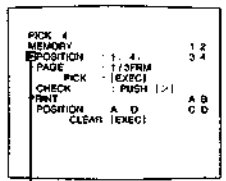
To store an image to a position other than A

Images are stored automatically in order of A, B, C, D..... You can select where each image is to be stored.

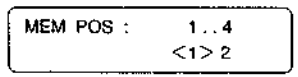
① Select PRINT POSITION by pressing the ∧ or ∨ button.
② Select the desired position by pressing the < or > button.

Continue to next page →

7 Select MEMORY POSITION by pressing the ∧ or ∨ button.

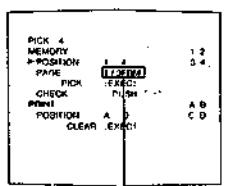


Move the cursor to POSITION by pressing the ∧ or ∨ button.

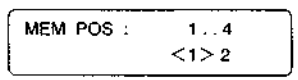


Press the ∧ or ∨ button until MEM POS appears.

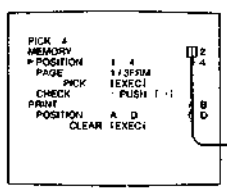
8 Select the memory page to which the desired image is stored, by pressing the MEMORY PAGE button.

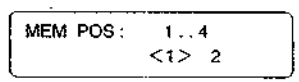


The memory page in which the image displayed on the video monitor is stored.



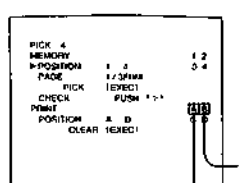
9 Select the image to be stored by pressing the < or > button.





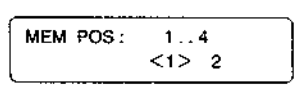
The selected image (that to which the cursor is positioned) blinks. This image will be stored to the position that is blinking in the PRINT POSITION item of the PICK sub menu.

10 Press the EXEC button.
The image selected in step 9 is stored.



Blinks (in the next step, the image to be stored here will be decided).

Lights in green (the image is stored).



11 Repeat steps 8, 9 and 10 until you have stored all the desired images.

To leave a position blank

A position can be left blank without inserting an image.

① Select PRINT POSITION by pressing the ∧ or ∨ button.
② Select the position that you want to leave blank, by pressing the < or > button.
③ Press the EXEC button.
Any image is not printed at that position.

To change a stored image

① Select PRINT POSITION by pressing the ∧ or ∨ button.
② Select the position of the image to be changed by pressing the < or > button.
③ Select MEMORY POSITION by pressing the ∧ or ∨ button.
④ Store a new image.
The previous image is replaced with the new one.

To check an image that is hidden below a screen message

You can check an image by temporarily deleting screen display.

① Select CHECK by pressing the ∧ or ∨ button.
② Press the > button.
For as long as you keep the > button held down, the display does not appear on the screen.

12 Press the PRINT button.
The composed images are printed on a single paper.

Note

To make a printout of a composed image, press the PRINT button on the PICK sub menu. The composed image can not be printed on the regular screen or main menu screen.

1-7. MAKING PRINTOUTS WITH A CAPTION

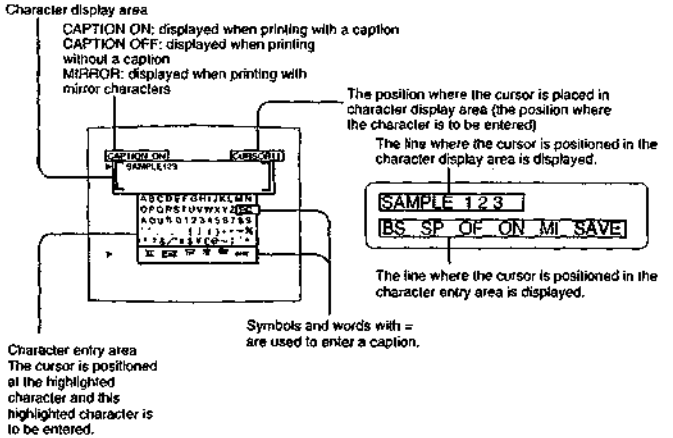
A caption, such as data or comments, can be added to a printout, using small characters below the image.
You can input up to 128 characters in NARROW size mode or NORMAL size mode, and up to 64 characters in WIDE size mode.

Note

When the printout is printed in field mode, characters may not be printed clearly.

About the CAPTION sub menu

A caption is entered from the CAPTION sub menu. A brief explanation of each item on the CAPTION sub menu, is given below before entering a caption.



Note

Lower-case ä, ö and ü are displayed instead of capital Ä, Ö and Ü even in the capital-letter setting and = is displayed instead of ~ on the printer window display. However, in actual printouts, those letters and the symbol are printed correctly according to the settings.

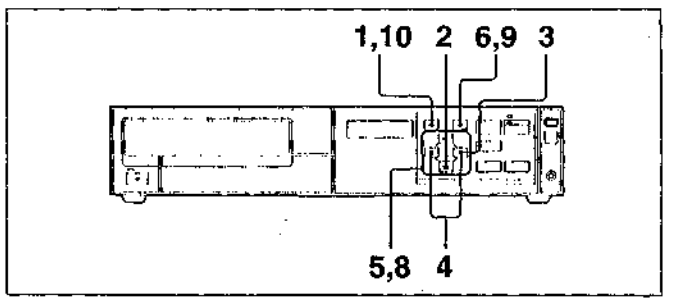
Symbols and words with = used to enter a caption

Monitor display	Printer window display	Function
SPACE	SP	One space
BS	BS	One backspace
OFF	OF	Selecting to print without a caption
ON	ON	Selecting to print with a caption
MIR	MI	Selecting to print with a mirror caption
SHIFT*	SF	Selecting either capital letters or lower-case letters
SAVE	SAVE	Storing the entered caption

a) By highlighting SHIFT and pressing the EXEC button, capital letters are changed to lower-case letters, or lower-case letters are changed to capital letters.

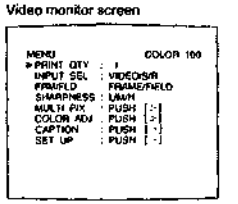
Entering a Caption

Enter a caption as follows. The setting remains valid until you enter a new setting - even if you turn the power off.



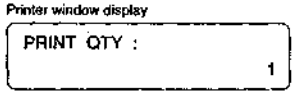
1 Press the MENU button.
The following screen appears.

Video monitor screen



Main menu screen

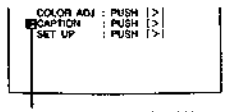
Printer window display



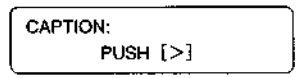
Part of the main menu

Continue to next page →

2 Select CAPTION by pressing the ∧ or ∨ button.

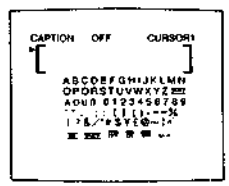


Move the cursor to CAPTION by pressing the ∧ or ∨ button.

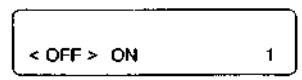


Press the ∧ or ∨ buttons until CAPTION appears.

3 Press the > button.
The following screen appears.

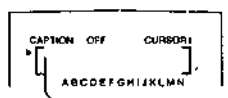


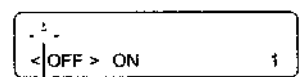
CAPTION sub menu



Part of the CAPTION sub menu

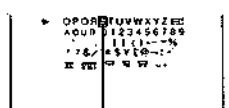
4 Select the position where you want to enter the character in the character display area by pressing the < or > button.



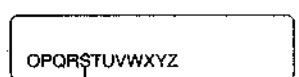


The cursor ☐ is highlighted at the selected position on the monitor display.
The cursor ☐ blinks in black at the selected position on the printer window display.

5 Select the character you want to enter by pressing the ∧, ∨, < or > button.
Example: To select S

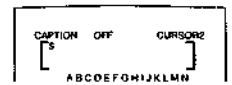


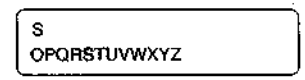
Highlight S.



Press the ∧ or ∨ button until this line appears, then press < or > buttons until S blinks.

6 Press the EXEC button.





The selected character appears at the position highlighted on the character display area, then the highlighted ☐ moves to the next position.

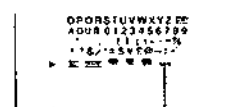
When you enter a wrong character
Select BS by pressing the ∧, ∨, < or > buttons, then press the EXEC button.
The character to the left of highlighted character will be deleted.

7 Repeat steps 4, 5 and 6 to enter the remaining characters of the caption.

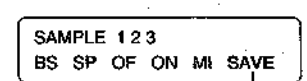
To make a space
① Move the highlighted ☐ to the position where you want to make a space.
② Select SPACE by pressing the ∧, ∨, < or > button.
③ Press the EXEC button.
The one space is made and the cursor moves to the next position.

To replace a previously entered character without changing the number of characters
You can replace a previously entered character with a new one.
① Move the cursor to the character which you want to replace by the operation in step 4.
② Enter the correct character over the wrong character by the operations in steps 5 and 6.
The previously entered character is replaced with the new one.

8 Select SAVE by pressing the ∧, ∨, < or > button.



Highlight SAVE.



Press the ∧ or ∨ button until this line appears, then press the < or > button until SAVE blinks.

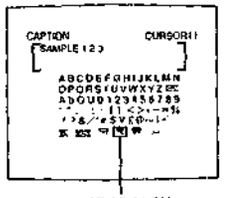
9 Press the EXEC button.
The message "PLEASE WAIT" appears while the entered characters are being stored. Once they have been stored, the message disappears and the CAPTION sub menu appears again.

10 Press the MENU button.
The regular screen appears.

Making printouts with a caption

Display the CAPTION input screen. (see "Entering a Caption" page 41)

1 Select ON by pressing the ∧, ∨, < or > button.



SAMPLE 123
BS SP OF [ON] MI SAVE

2 Press the EXEC button.

Making a printouts without a caption
Select OFF in the above step 1.

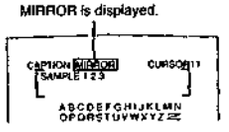
Making a printout with a mirror caption

Display the CAPTION input screen. (see "Entering a Caption" on page 41)

1 Select MIR by pressing the ∧, ∨, < or > button.

SAMPLE 123
BS SP OF ON [MI] SAVE

2 Press the EXEC button.



SAMPLE 123
BS SP OF ON [MI] SAVE

Note

To select MIR on the CAPTION sub menu, the setting of MIRROR on the MULTI PICTURE sub menu should be set to MIRROR ON. Otherwise, if you select MIR on the CAPTION sub menu with setting to MIRROR OFF on theMULTI PICTURE sub menu, error tone sounds.

To return the print mode to the one with normal caption

① Select ON by pressing the ∧, ∨, < or > button.
② Press the EXEC button.

To return to the regular screen

Press the MENU button.

— 29 —

1-8. DELETING THE IMAGES STORED INTO MEMORY PAGES

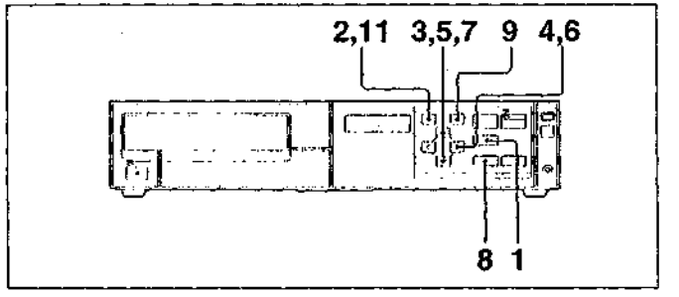
You can delete images stored to memory pages, either individually or all at once, from a menu.

Note

You cannot restore images once they have been deleted.

Simultaneously Deleting All Images in a Single Memory Page

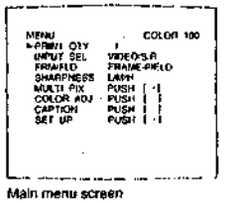
You can delete a full-size image or four or 16 reduced images from one memory page.



1 Press the SOURCE/MEMORY button when the image from the video equipment appears on the monitor display.

2 Press the MENU button.
The following screen appears.

Video monitor screen



Main menu screen

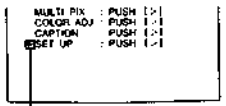
Printer window display

PRINT QTY :
1

Part of the main menu

Continue to next page →

3 Select SET UP by pressing the ∧ or ∨ button.

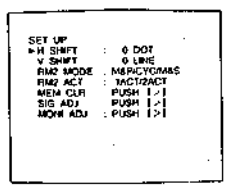


Move the cursor to SET UP by pressing the ∧ or ∨ button.

SET UP :
PUSH [>]

Press the ∧ or ∨ button until SET UP appears.

4 Press the > button.
The following screen appears.

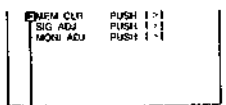


SET UP sub menu

H SHIFT :
0 DOT

Part of the SET UP sub menu

5 Select MEM CLR by pressing the ∧ or ∨ button.

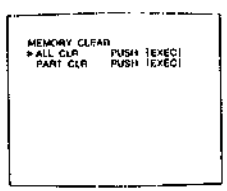


Move the cursor to MEM CLR by pressing the ∧ or ∨ button.

MEM CLR :
PUSH [>]

Press the ∧ or ∨ button until MEM CLR appears

6 Press the > button.
The following screen appears.

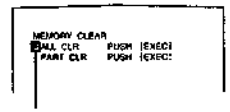


MEMORY CLEAR sub menu

ALL CLR :
PUSH [EXEC]

Part of MEMORY CLEAR sub menu

7 Select ALL CLR by pressing the ∧ or ∨ button.



Move the cursor to ALL CLR by pressing the ∧ or ∨ button.

ALL CLR :
PUSH [EXEC]

Press the ∧ or ∨ button until ALL CLR appears.

8 Select the memory page, in which the images to be deleted are stored, by pressing the MEMORY PAGE button.

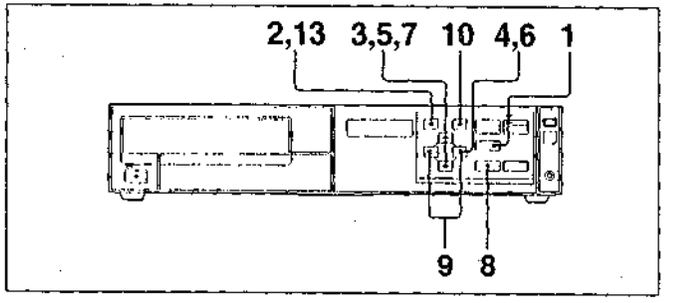
9 Press the EXEC button.
All images in the selected memory page are deleted.

10 Repeat steps 8 and 9 to delete the images in the remaining memory pages.

11 Press the MENU button.
The regular screen appears.

Deleting Part of Multiple Images in a Single Memory Page

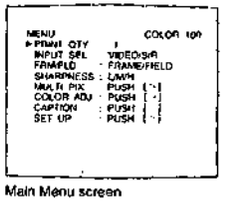
You can delete unnecessary images from a single memory page.



1 Press the SOURCE/MEMORY button when the source image from the video equipment appears on the monitor.
The memory image appears on the monitor.

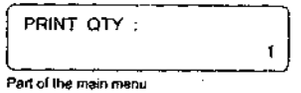
2 Press the MENU button.
The following screen appears.

Video monitor screen



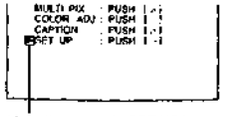
Main Menu screen

Printer window display

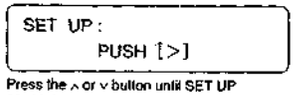


Part of the main menu

3 Select SET UP by pressing the ∧ or ∨ button.

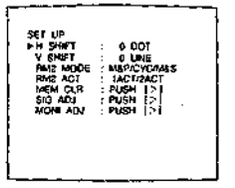


Move the cursor to SET UP by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until SET UP appears.

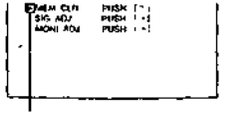
4 Press the > button.
The following screen appears.



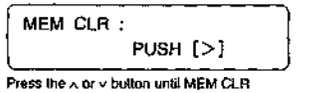
SET UP sub menu

Part of the SET UP sub menu

5 Select MEM CLR by pressing the ∧ or ∨ button.

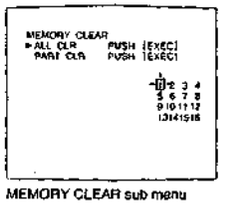


Move the cursor to MEM CLR by pressing the ∧ or ∨ button.

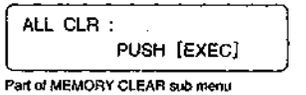


Press the ∧ or ∨ button until MEM CLR appears.

6 Press the > button.
The following screen appears.



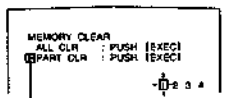
MEMORY CLEAR sub menu



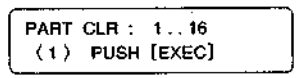
Part of MEMORY CLEAR sub menu

Continue to next page →

7 Select PART CLR by pressing the ∧ or ∨ button.



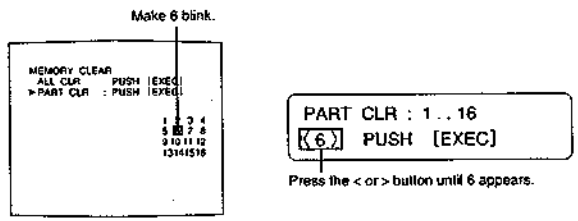
Move the cursor to PART CLR by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until PART CLR appears.

8 Select the memory page containing the images to be deleted stored by pressing the MEMORY PAGE button.

9 Select the image to be deleted by pressing the < or > button.
Example: Deleting the sixth image of 16 reduced images



10 Press the EXEC button.
The image selected in step 9 is deleted.

11 Repeat steps 9 and 10 to delete the remaining images.

12 To delete images in other memory pages, repeat steps 8, 9, 10 and 11.

13 Press the MENU button.
The regular screen appears.

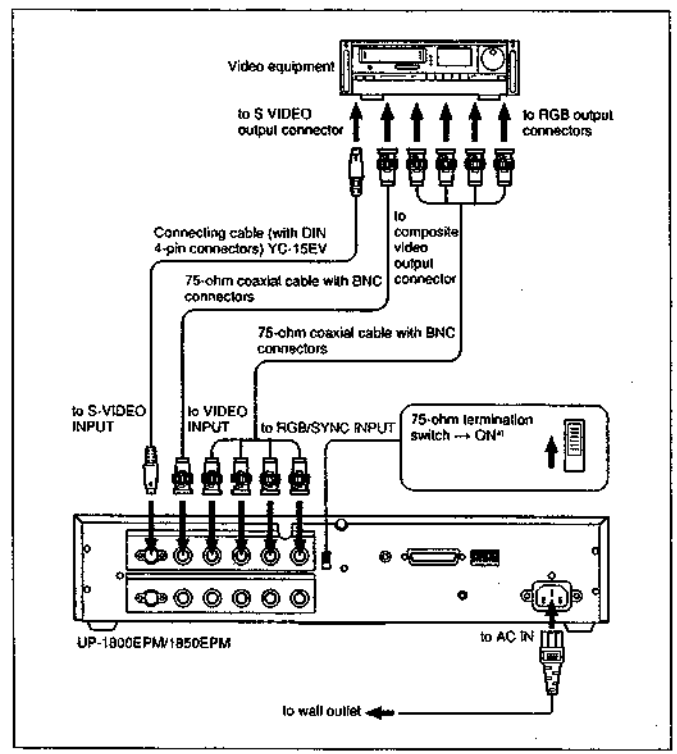
To enable printing, video equipment to act as an input signal source, and a video monitor to enable you to view images or menus, must be connected. The following diagrams illustrate how to make the input, output and remote control connections. Use as a guide when connecting the necessary signals to and from the equipment to be used for printing.

Notes

When connecting:
- Turn off the power of each device before attempting to make any connections.
- Connect the AC power cord last.

Making Connections for Storing Video Images

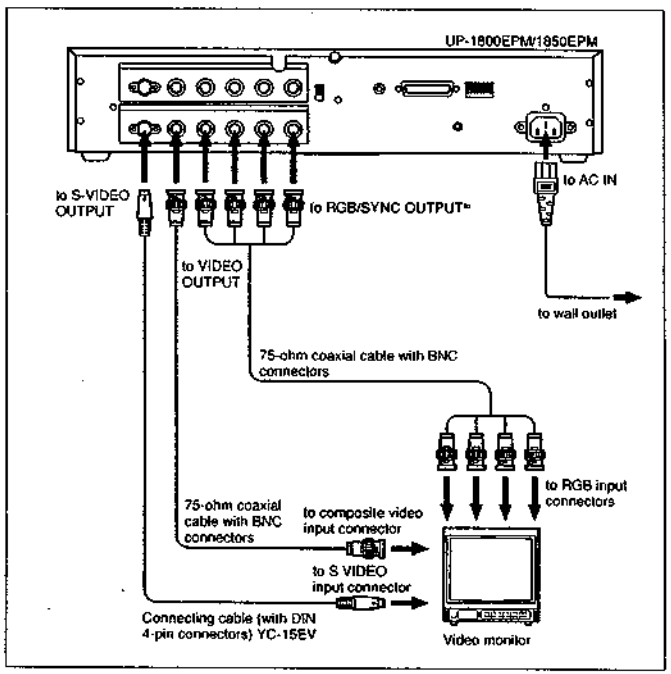
Connect the video equipment for storing the video images to be printed.
Connect the necessary video equipment which will be used in actual printing, using the following diagram as a guide.
Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.



a) Normally, set this switch to ON. Set it to OFF if the level of the input signal drops if you connect additional video equipment.

Making Connections for Viewing Images to be Printed on the Video Monitor

Connect a video monitor to view stored images and to check those to be printed. Connect the necessary video monitor which will be used in actual printing, using the following diagram as a guide.
Before connecting the video monitor, see "Important safeguards/notices for use in the medical environment" on page 2.



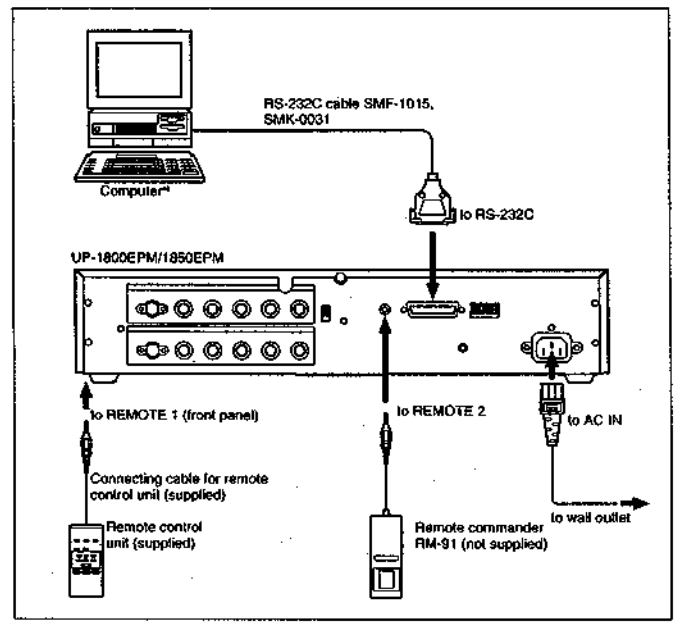
a) When you connect the video monitor to RGB/SYNC OUTPUT, set SYNC ON G of the MONITOR ADJUST sub menu to ON.

To set SYNC ON G to ON

1. To access the MONITOR ADJUST sub menu, perform steps 1 to 5 of "Matching the Video Monitor Color to the Printer Color" on page 69.
2. Select SYNC ON G by pressing the ∧ or ∨ button.
3. Set SYNC ON G to ON by pressing the < or > button.
4. Press the MENU button.
   The regular screen appears.

Making Connections to Enable Remote Control

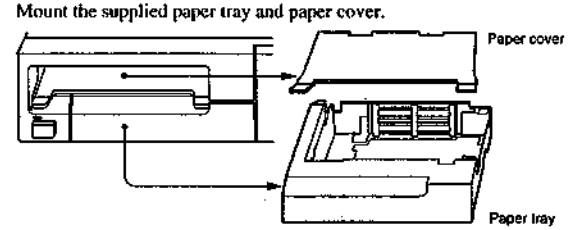
The printer can be controlled remotely by connecting the remote control unit (supplied), the RM-91 remote commander (see "Preparing the Remote Control Units" page 55), or a personal computer.
Before connecting the computer, see "Important safeguards/notices for use in the medical environment" on page 2.



a) When connecting a personal computer, select the appropriate baud rate by setting the DIP switches SW3 and SW4. (see "Setting the DIP switch" page 85)

Assembly

Mount the supplied paper tray and paper cover.



1-10. PREPARING THE REMOTE CONTROL UNITS

You can control the printer remotely by using the remote control unit (supplied) or the remote commander (not supplied).

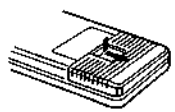
Using the Supplied Remote Control Unit

The remote control unit can be used either as a wireless type or wired type. The buttons on the remote control unit duplicate those on the front panel of the printer, except for the PRINT QTY button, COLOR ADJUST button and MULTI PICTURE button. (see "Remote Control Unit" page 101)

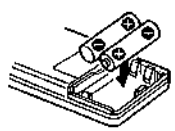
Inserting batteries

Install the batteries in the remote control unit before using it as a wireless unit.

1 Remove the battery compartment cover.



2 Insert the two supplied SUM-3 1.5 V batteries.
Note the polarity. Be careful to insert the batteries correctly.



3 Replace the cover.

Battery life

The battery life depends on how much you use the remote control unit. On average, batteries last for about 6 months. Install fresh batteries as soon as you notice the unit's range becoming shorter.

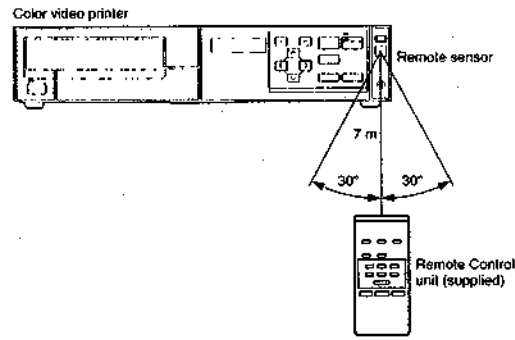
Notes

When using the batteries:

- Remove the batteries from the remote control unit if you do not intend to use it for an extended period of time. The batteries may leak if you leave them in the remote control unit.
- Should the batteries leak, clean the battery case thoroughly with a soft cloth and install fresh batteries.
- Be careful to insert the batteries correctly. Note the polarity, as indicated inside the battery compartment.
- Replace exhausted batteries with fresh ones. Never mix a fresh battery with a used battery or with a different kind of battery.

Using the supplied remote control unit as a wireless unit

When using the remote control unit as a wireless unit, aim the head of the remote control unit of the remote sensor on the printer. With fresh batteries, the range of the remote control unit is about 7 meters.



Using the Remote Commander

The RM-91 remote commander (not supplied) allows you to make prints remotely.

Operation

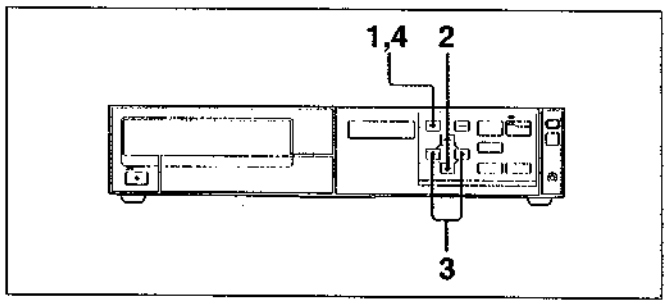
At the instant the image you want to print is displayed on the monitor, press the switch of the remote commander. The subsequent operation of the printer will depend on the remote operation setting with the corresponding menu. (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 78) The printer operation, also, can be controlled remotely by sending a pulse signal to the REMOTE 2 connector. (see "Specifications" page 92)

1-11. ADJUSTING THE PRINTOUT QUALITY

You can adjust the printout quality, including its sharpness and color (intensity and contrast) and store these settings by using the menu. The setting remains as is until reset - even if you turn off the power.

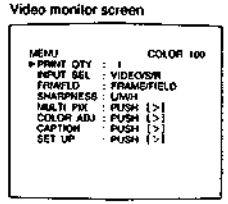
Adjusting the Sharpness

You can set the printout sharpness to one of three levels: L (Low), M (Medium) or H (High). A printout will appear softer or sharper depending on the definition of the subject outline. The image on the monitor is not affected by changing the sharpness setting. This adjustment affect only the quality of the printout. The setting remains as is until reset - even if you turn off the power.

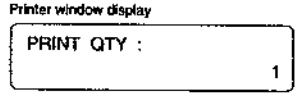


1 Press the MENU button.
The following screen appears.

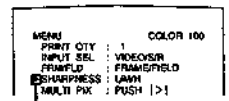
Video monitor screen



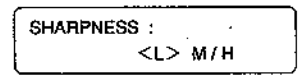
Printer window display



2 Select SHARPNESS by pressing the ∧ or ∨ button.

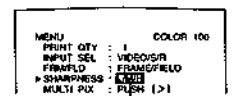


Move the cursor to SHARPNESS by pressing the ∧ or ∨ button.

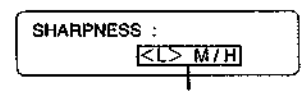


Display SHARPNESS by pressing the ∧ or ∨ button.

3 Select desired sharpness by pressing the < or > button.



Switch the desired sharpness to green by pressing the < or > button.



Position < > over the desired sharpness by pressing the < or > button.

Desired sharpness	Content of settings
L (Low)	Soft outline
M (Medium)	Normal outline
H (High)	sharp outline

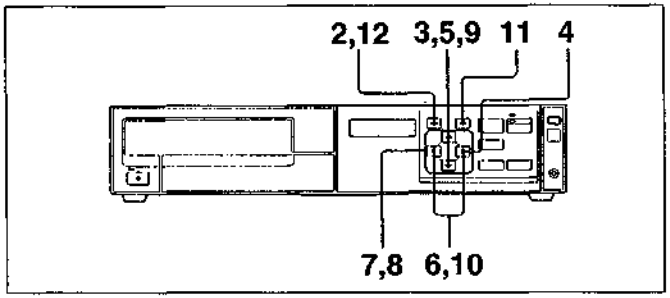
4 Press the MENU button.
The regular screen appears.

Adjusting the Printout Color

This subsection explains how to adjust the printout color.
You can adjust the color intensity (RED/GREEN/BLUE) and contrast (DARK/LIGHT). The new setting remains as is until reset - even if you turn off the power.

You can store up to three settings. These settings are managed according to a LOAD number. The color intensity and picture contrast of a printout are determined by recalling one of the three settings according to their LOAD numbers. The printer retains these settings even if you turn off the power.
This is useful when you are using more than one video equipment, each of a different quality, and when you want to print images having different color qualities and picture contrasts.
Also, you can make a printout using temporarily set values, without erasing the stored adjustment values.
Perform the adjustments while viewing the images stored in memory.
All values are factory-set to 0 for LOAD numbers 1, 2 and 3.

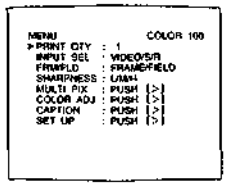
When you control the printer using the remote control unit (supplied)
You can directly access the COLOR ADJUST sub menu from the regular screen by pressing the COLOR ADJUST button. Therefore, press the COLOR ADJUST button first. Then, perform the operation from step 5 of the following procedure.



1 Display the image stored in monitor for adjustment.

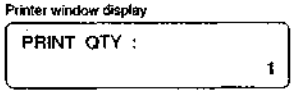
2 Press the MENU button.
The following screen appears.

Video monitor screen



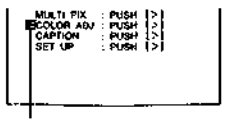
Main Menu screen

Printer window display

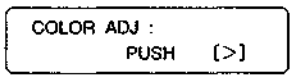


Part of the main menu

3 Select COLOR ADJ by pressing the ∧ or ∨ button.



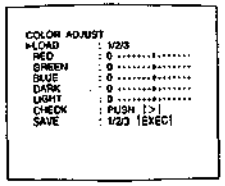
Move the cursor to COLOR ADJ by pressing the ∧ or ∨ button.



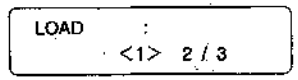
Press the ∧ or ∨ buttons until COLOR ADJ appears.

Continue to next page →

4 Press the > button.
The following screen appears.

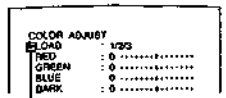


COLOR ADJUST sub menu

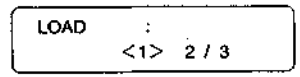


Part of the COLOR ADJUST sub menu

5 Select LOAD by pressing the ∧ or ∨ button.

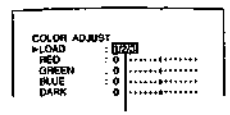


Move the cursor to LOAD by pressing the ∧ or ∨ button.

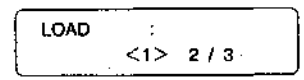


Press the ∧ or ∨ button until LOAD appears.

6 Select the LOAD number of the value to be adjusted or to be modified by pressing the < or > button.



Switch the desired LOAD number to green by pressing the < or > button.



Position < > over the desired LOAD number by pressing the < or > button.

When modifying, you can preserve the original settings. (see "To preserve the original set value" page 62)

7 Adjust the printout color.

① Select the item to be set by pressing the ∧ or ∨ button.
② Perform the adjustment by pressing the < or > button.

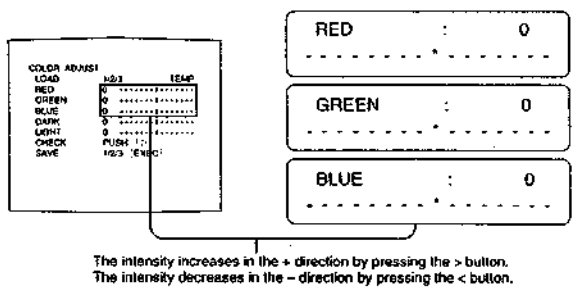
Adjustment item		Contents of setting
Color intensity	RED	Adjusting the red component of the image
	GREEN	Adjusting the green component of the image
	BLUE	Adjusting the blue component of the image
Color contrast	DARK	Adjusting the dark area of an image
	LIGHT	Adjusting the light area of an image

The RED, GREEN and BLUE color components and the contrast are divided into to 15 scales from –7 to +7, as indicated by a value and graph. And the center of the graph corresponds to the standard color.

Note

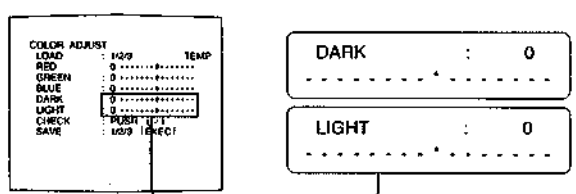
There is an unusable extra scale at the left end on the monitor display.

When adjusting RED/GREEN/BLUE



The intensity increases in the + direction by pressing the > button.
The intensity decreases in the – direction by pressing the < button.

When adjusting DARK/LIGHT



The contrast in the dark area or light area is strengthened in the + direction by pressing the > button. The contract in the dark area or light area is weakened in the – direction by pressing the < button.

Once you have changed the value

Once you have changed the value, TEMP (TEMPORARY) appears to the right of the LOAD item. TEMP indicates that the setting is temporary and not stored.

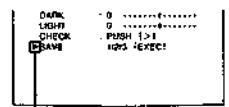
Continue to next page →

8 After you have made all necessary adjustments, check your presettings.

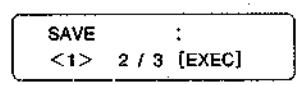
① Select CHECK by pressing the ∧ or ∨ button.
② Press the > button.
For as long as you keep the > button held down, the display does not appear on the screen.

You can make a printout with the settings made as above. Go to step 12 to make a printout. However, this setting is cleared when you turn the printer off or you select another preset. To store a new setting, go to the next step.

9 Select SAVE by pressing the ∧ or ∨ button.

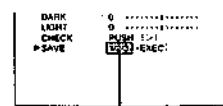


Move the cursor to SAVE by pressing the ∧ or ∨ button.

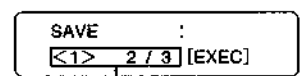


Press the ∧ or ∨ button until SAVE appears.

10 Select the SAVE number to which new settings are to be stored by pressing the < or > button.



Switch the desired SAVE number to green by pressing the < or > button.



Position < > over the desired SAVE number by pressing the < or > button.

To preserve the original set value

Select the SAVE number which is different from the LOAD number selected in step 6.

11 Press the EXEC button.

The settings have been registered to the SAVE number selected in step 10. When the LOAD number selected in step 6 and the SAVE number selected in step 10 are the same, TEMP disappears from the LOAD item.

12 Press the MENU button.

The regular screen appears.

To recall settings

You can recall previously set values by selecting the LOAD number. The values are stored as SAVE numbers in steps 10 and 11. This SAVE number is the LOAD number for this setting.

1-12. PRINTER INITIAL SETUP

You can set up the following, using the on-screen menu and the DIP switches on the rear panel.

Setup with the menu
- Changing the printout area (see page 63)
- Compensating for input signals (see page 66)
- Matching the video monitor color to the printer color (see page 69)
- Erasing the screen display (see page 75)
- Selecting the operation mode for automatic printing capabilities (see page 78)

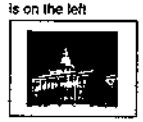
DIP switch settings
- Setting the printout size (see page 85)
- Setting the baud rate for computer communication (see page 85)
- MENU button function ON/OFF (see page 85)
- Selecting whether to lock to an external synchronous signal (GENLOCK) (see page 86)
- Selecting whether to enable the operation and error tones (see page 86)

Changing the Printout Area

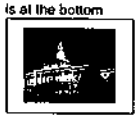
The black line may be printed on the printout although it does not appear on the video monitor. The portion where no video signal exists is printed in black. This may occur when you make printouts after you connect a different video source or play back different video software.
In such a case, you can adjust the printout area by moving the screen horizontally and vertically.

When the black line is on the right

When the black line is on the left

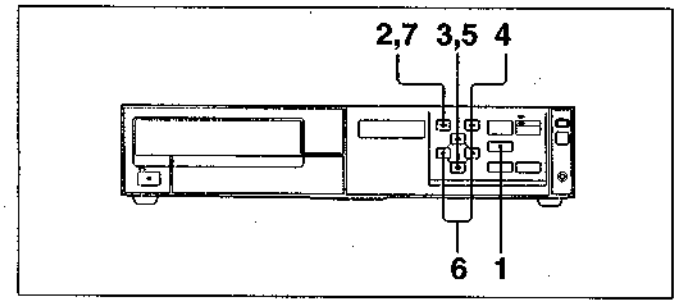


When the black line is at the bottom



When the black line is at the top

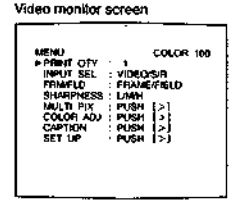
Note
When the printout size is set to WIDE, the screen size cannot be adjusted vertically. (see "Setting the DIP switches" page 84)



1 When the memory image is displayed on the screen, press the SOURCE/MEMORY button.
The image from the video source appears.

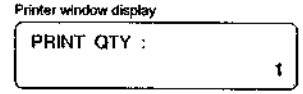
2 Press the MENU button.
The following screen appears.

Video monitor screen



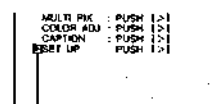
Main Menu screen

Printer window display

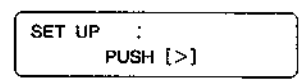


Part of the main menu

3 Select SET UP by pressing the ∧ or ∨ button.

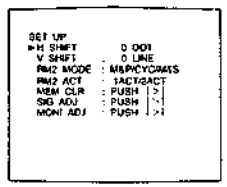


Move the cursor to SET UP by pressing the ∧ or ∨ button.

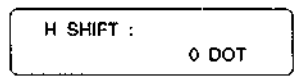


Press the ∧ or ∨ buttons until SET UP appears.

4 Press the > button.
The following screen appears.

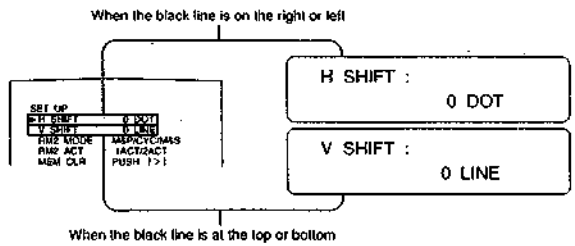


SET UP sub menu



Part of the SET UP sub menu

5 Select **H SHIFT** by pressing the ∧ or ∨ buttons, when the black line appears on the right or left.
Select V SHIFT by pressing ∧ or ∨ buttons, when the black line is at the top or bottom.



6 Adjust the horizontal value or vertical value by pressing the < or > button.

Item selected in step 5	The position where the black line appears	Button to be used	Operation
H SHIFT (horizontal direction)	On the right	> button	Shifting the image to the right by up to 14 dots in step 2 dots
	On the left	< button	Shifting the image to the left by up to 14 dots in step 2 dots
V SHIFT (vertical direction)	At the top	> button	In frame mode,shifting the image up by up to 6 lines in step 2 lines In field mode, shifting the image up by up to 3 lines in step 1 line
	At the bottom	< button	In frame mode, shifting the image down by up to 6 lines in step 2 lines In field mode, shifting the image down by up to 3 lines in step 1 line

7 Press the MENU button.
The regular screen appears.

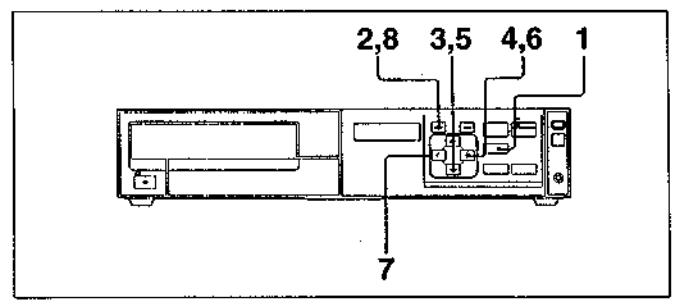
To check the adjustment result
Any black line is also stored in memory with the previous image. Thus, store a new image to the memory and print it to check whether the black line disappears.

Note
When a black line still remains even after adjusting **H SHIFT** or **V SHIFT**, change the screen size. (see "Setting the printout size" page 85)

Compensating for the Input Signals

Video image recorded under poor conditions may be of poor color quality. If the signal is an PAL composite video signal or separate luminance (Y) and chrominance (C) signals, you can correct the color of the input signal to a certain extent.

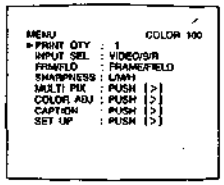
Note
You cannot adjust the image once it has been stored in memory. Make adjustments before storing the image or store an image after adjustment.



1 When the memory image is displayed on the screen, press the SOURCE/MEMORY button.
The image from the video source appears.

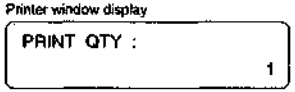
2 Press the MENU button.
The following screen appears.

Video monitor screen



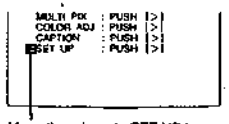
Main Menu screen

Printer window display

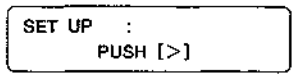


Part of the main menu

3 Select SET UP by pressing the ∧ or ∨ button.

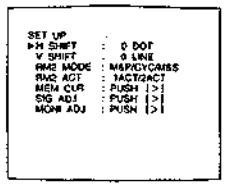


Move the cursor to SET UP by pressing the ∧ or ∨ button.

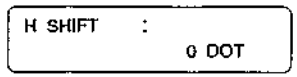


Press the ∧ or ∨ buttons until SET UP appears.

4 Press the > button.
The following screen appears.

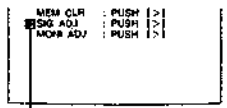


SET UP sub menu

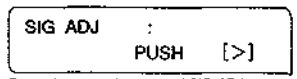


Part of the SET UP sub menu

5 Select SIG ADJ by pressing the ∧ or ∨ button.



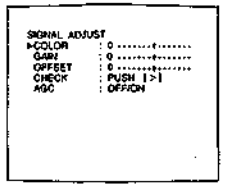
Move the cursor to SIG ADJ by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until SIG ADJ appears.

Continue to next page →

6 Press the > button.
The following screen appears.



SIGNAL ADJUST sub menu

Part of the SIGNAL ADJUST sub menu

7 Perform the adjustments as follows.
① Select the adjustment item by pressing the ∧ or ∨ button.
② Perform the adjustment by pressing the < or > button.

To adjust the color intensity, hue and contrast

Adjustment	Menu adjustment item	Button and operation result	
		> button	< button
Color intensity	COLOR[a]	The color intensity strengthens.	The color intensity weakens.
Contrast	GAIN	The contrast strengthens.	The contrast weakens.
Brightness	OFFSET	Becomes brighter	Becomes darker.

a) Adjust the color such that skin tones appear natural.

Note
When the black and white signal is input, set COLOR to –8. If COLOR is set to the value other than –8, display on the video monitor screen may not be colored.

When the printout or monitor image appears unnaturally bright
Adjust the input signal to the optimum level for printing.

Menu adjustment item	Selection	When selecting
AGC (Automatic gain control)	ON	Normal
	OFF	When the printout or monitor image appears unnaturally bright.

8 Press the MENU button.
The regular screen appears.

Matching the Video Monitor Color to the Printer Color

To match the color of the monitor image to that of the printout, adjust the monitor and printer colors such that the monitor color is the same as that of the printout. The printer outputs either of two kinds of video signals according to the MONITOR setting of the SET UP menu.

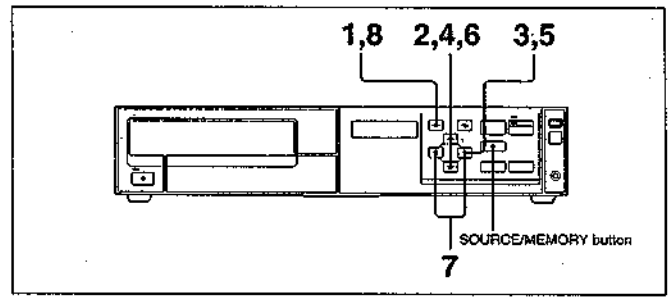
- E TO E: Signals are output to the monitor after being processed by the printer's circuitry.
- THRU (through): Signals are output to the monitor as is.

At the factory, the printer is adjusted such that the images for both signals appear identical. If they appear different, the video monitor may not be set correctly, even though the printer controls are set correctly. They may have been adjusted for another input signal. Adjust them to suit the new input signal.

First, adjust the monitor's color controls, then store and print an image. Compare the color on the monitor image with that of the printout.

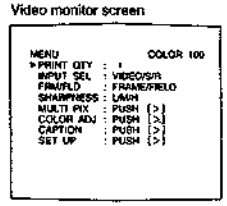
① Adjust the monitor color by selecting the THRU (THROUGH) signal.
② Adjust the printer color by selecting the E TO E signal.

Adjusting the monitor color



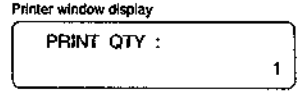
1 Press the MENU button.
The following screen appears.

Video monitor screen



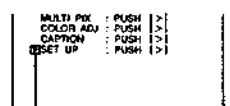
Main Menu screen

Printer window display

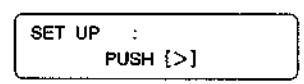


Part of the main menu

2 Select SET UP by pressing the ∧ or ∨ button.

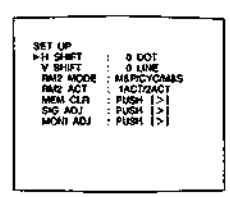


Move the cursor to SET UP by pressing the ∧ or ∨ button.

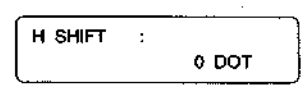


Press the ∧ or ∨ buttons until SET UP appears.

3 Press the > button.
The following screen appears.

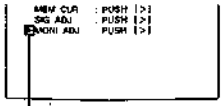


SET UP sub menu

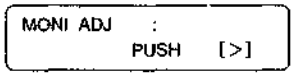


Part of the SET UP sub menu

4 Select MONI ADJ by pressing the ∧ or ∨ button.

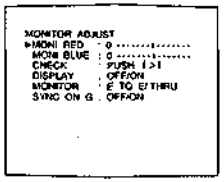


Move the cursor to MONI ADJ by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until MONI ADJ appears.

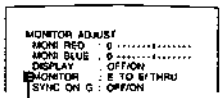
5 Press the > button.
The following screen appears.



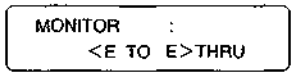
MONITOR ADJUST sub menu

Part of the MONITOR ADJUST sub menu

6 Select MONITOR by pressing the ∧ or ∨ button.

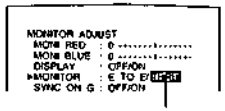


Move the cursor to MONITOR by pressing the ∧ or ∨ button.

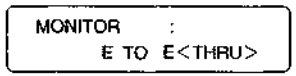


Press the ∧ or ∨ button until MONITOR appears.

7 Select THRU by pressing the < or > button.



Switch to green.



8 Press the MENU button.
The regular screen appears.
The image of the signal directly from the signal source, which does not pass through the printer circuit, is displayed on the video monitor.

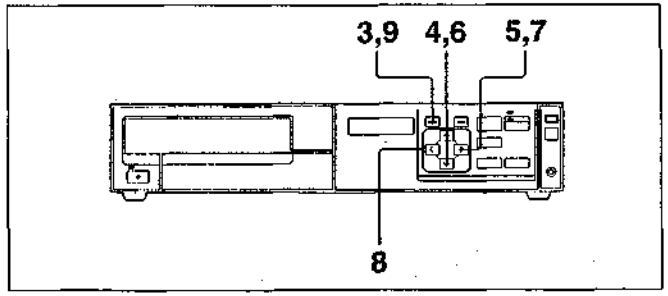
Note

When screen display appears on the video monitor, the memory image is displayed on the monitor. Display the image from the video equipment on the video monitor by pressing the SOURCE/MEMORY button.

9 Adjust the color of the video monitor by using the monitor controls.

Adjusting the color of the printer's output signal

After adjusting the color of the video monitor, adjust the color of the printer's output signal.

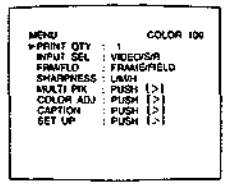


1 Set MONITOR ADJ to E TO E by performing steps 1 to 7 in "Adjusting the monitor color" on page 70.

2 Store a new image into memory and make a printout.
You will adjust the settings by comparing the printout with the image on the monitor.

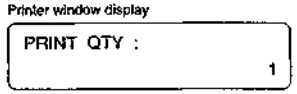
3 Press the MENU button.
The following screen appears.

Video monitor screen



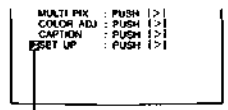
Main Menu screen

Printer window display

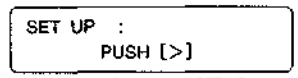


Part of the main menu

4 Select SET UP by pressing the ∧ or ∨ button.

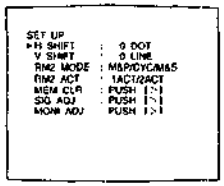


Move the cursor to SET UP by pressing the ∧ or ∨ button.



Press the ∧ or ∨ buttons until SET UP appears.

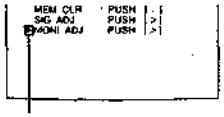
5 Press the > button.
The following screen appears.



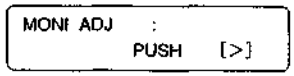
SET UP sub menu

Part of the SET UP sub menu

6 Select MONI ADJ by pressing the ∧ or ∨ button.



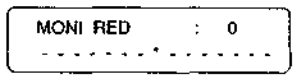
Move the cursor to MONI ADJ by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until MONI ADJ appears.

7 Press the > button.
The following screen appears.

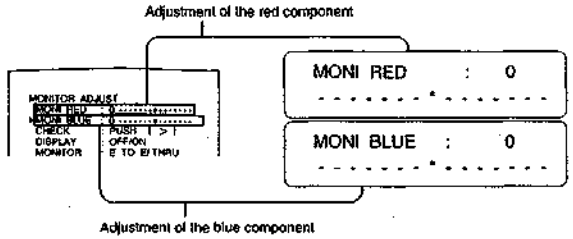
MONITOR ADJUST sub menu



Part of the MONITOR ADJUST sub menu

Continue to next page →

8 Adjust the monitor while comparing the printout with the image on the monitor.
① Select the adjustment item by pressing the ∧ or ∨ button.
② Perform the adjustment by pressing the < or > button.



Adjustment	Menu adjustment item	Button and operation result	
		> button	< button
Adjustment of the red component	MONI RED	The red intensity increases.	The red intensity decreases.
Adjustment of the blue component	MONI BLUE	The blue intensity increases.	The blue intensity decreases.

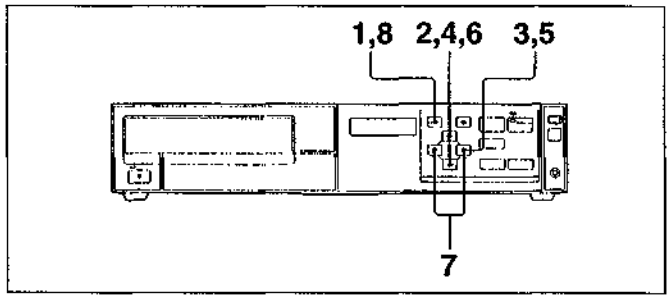
9 Press the MENU button.
The regular screen appears.

Note

This adjustment is performed to adjust the color of the printer output signal when the monitor color is unsatisfactory. This adjustment does not affect the printout itself. To adjust the color of the printouts, see "Adjusting the Printout Quality" on page 57.

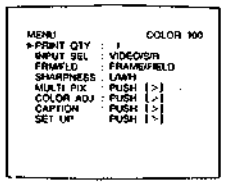
Erasing the Screen Display

You can erase a screen display with the menu, when, for example, it is hard to see the image that is hidden behind the screen display (C, QTY, VIDEO, and others). The printer operation is identical, regardless of whether screen display are displayed on the screen. You can always see same messages as the screen display on the printer display.



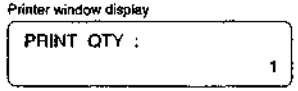
1 Press the MENU button.
The following screen appears.

Video monitor screen



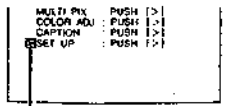
Main Menu screen

Printer window display

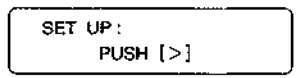


Part of the main menu

2 Select SET UP by pressing the ∧ or ∨ button.

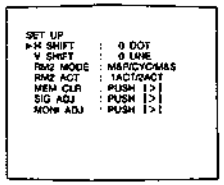


Move the cursor to SET UP by pressing the ∧ or ∨ button.

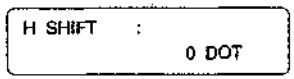


Press the ∧ or ∨ buttons until SET UP appears.

3 Press the > button.
The following screen appears.

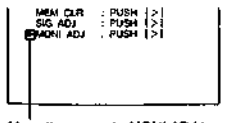


SET UP sub menu

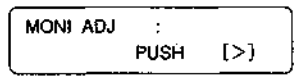


Part of the SET UP sub menu

4 Select MONI ADJ by pressing the ∧ or ∨ button.

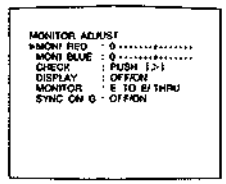


Move the cursor to MONI ADJ by pressing the ∧ or ∨ button.

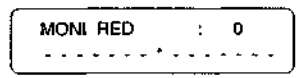


Press the ∧ or ∨ button until MONI ADJ appears.

5 Press the > button.
The following screen appears.

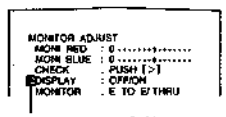


MONITOR ADJUST sub menu

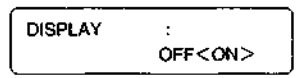


Part of the MONITOR ADJUST sub menu

6 Select DISPLAY by pressing the ∧ or ∨ button.

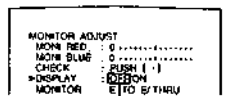


Move the cursor to DISPLAY by pressing the ∧ or ∨ button.



Press the ∧ or ∨ button until DISPLAY appears.

7 Select OFF by pressing the < or > button.



Switch to green.

DISPLAY :
<OFF > ON

To display screen message
In step 7, select ON.

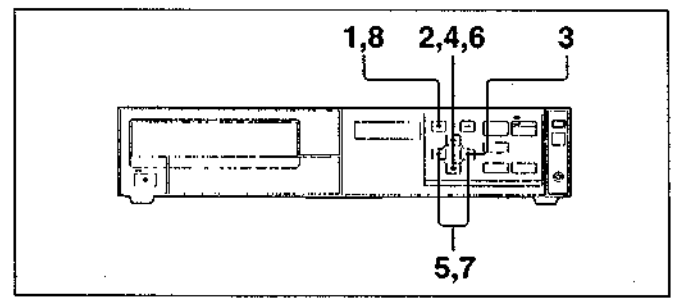
Note
If you set the printer output signal specification to THRU (through), screen display does not appear, even when you switch ON to green.

8 Press the MENU button.
The regular screen appears.

Selecting the Operation Mode for Automatic Printing Capabilities

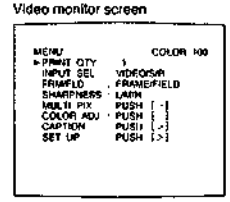
You can control the printer with the RM-91 remote commander connected to the REMOTE 2 connector on the rear panel.
In addition to the above, the printer can be controlled by the pulse signal input to REMOTE 2. (see page 92)

Note
When controlling the printer with the remote control unit, set INTERVAL of the memory mode to OFF. (see page 27)



1 Press the MENU button.
The following screen appears.

Video monitor screen



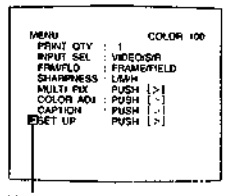
Main Menu screen

Printer window display

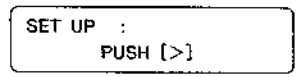
PRINT QTY :
1

Part of the main menu

2 Select SET UP by pressing the ∧ or ∨ button.

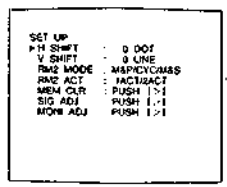


Move the cursor to SET UP by pressing the ∧ or ∨ button.

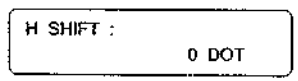


Press the ∧ or ∨ buttons until SET UP appears.

3 Press the > button.
The following screen appears.

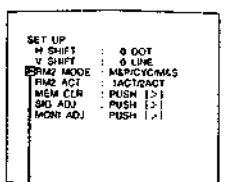


SET UP sub menu

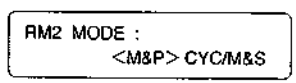


Part of the SET UP sub menu

4 Select RM2 MODE by pressing the ∧ or ∨ button.



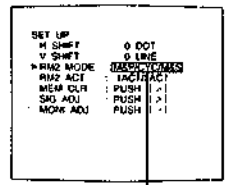
Move the cursor to RM2 MODE by pressing the ∧ or ∨ button



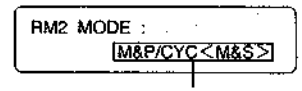
Press the ∧ or ∨ button until RM2 MODE appears.

Continue to next page →

5 Select the desired operation method by pressing the < or > button.



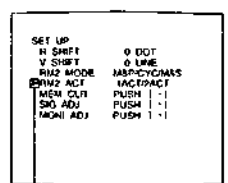
Switch the desired operation method to green.



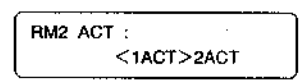
Position < > over the desired operation method.

Type of control operation	Operation method
M & P (MEMORY & PRINT)	Storing an image into memory page and printing memory image. If you press the switch of the remote commander while printing is being performed, the selected image is queued, with the queued image being printed once printing has been completed.
CYC (CYCLIC MEMORY)	Storing images to memory page cyclically whenever you press the switch of the remote commander. The printer continues to store images, replacing previously stored images with the new one.
M & S (MEMORY & STOP)	Storing an image to memory page whenever you press the switch of the remote commander. The printer stops storing images to memory page once images have been stored to all memory pages. The Message STOP STOP STOP appears.

6 Select RM2 ACT by pressing the ∧ or ∨ button.

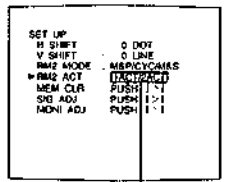


Move the cursor to RM2 ACT by pressing the ∧ or ∨ button

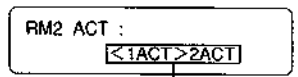


Press the ∧ or ∨ button until RM2 ACT appears

7 Select the desired operating condition by pressing the < or > button.



Switch the desired operating condition to green



Position < > over the desired operating condition

Type of operating condition	Operating condition
1ACT	Whenever you press the switch of the remote commander, the printer automatically stores the image into the next memory page. You cannot check an image to be next stored in memory.
2ACT	Whenever you press the switch of the remote commander, the printer automatically stores the image and you can check an image to be next stored in memory.

8 Press the MENU button.
The regular screen appears.

Controlling the printer by the remote commander

The printer is remotely controlled according to the RM2 ACT setting.

When ACT1 is selected

Operation method selected in step 5	Operation
M & P (MEMORY & PRINT)	Storing an image in free memory page and simultaneously printing it whenver you press the switch of the remote commander. If you press the switch of the remote commander while printing is being performed, the selected stored image is queued, with the queued image being printed, once printing has been completed.
CYC (CYCLIC MEMORY)	Storing an image to free memory page cyclically whenever you press the switch of the remote commander. The printer continues to store images, replacing previously stored images with the new one.
M & S (MEMORY & STOP)	Storing an image to free memory page whenever you press the switch of the remote commander. The printer stops storing images to memory page once images have been stored to all memory pages. The message STOP STOP STOP appears.

To make the message STOP STOP STOP disappear
Press the STOP button. The printer is reset to the normal printing mode.

When SPLIT MEM of the MULTI PICTURE sub menu is set to 4 or 16
For example, when the memory mode is set to store four reduced images in a memory page, press the switch of the remote commander to store one reduced image to each position. When M & P is selected, the printer stores the image for the fourth position and make a printout of four reduced images when you press the switch of the remote commander the fourth time.

Note
When the image in a memory page is queued for printing, that memory page is automatically skipped.

When ACT2 is selected

Display the video source image before starting operation.

Operation method selected in step 5	Operation
M & P (MEMORY & PRINT)	**When SPLIT MEM is set to OFF** ① Press the switch of the remote commander at the instant when the image you want to print appears. The image is stored in the free memory page. ② Press the switch of the remote commander. The image stored in step 1 is printed. The video source image appears on the video monitor. ③ Repeat steps 1 and 2. **When SPLIT MEM is set to 4 or 16** Once the printer have been stored the last reduced image, the printer makes a printout of multiple reduced images. For example, when 4 is selected, the fourth reduced image is stored after you press the switch of the remote commander the seventh time. When you press the switch of the remote commander the eighth time, the printer makes a printout of the four reduced images.
CYC (CYCLIC MEMORY)a)	① Press the switch of the remote commander at the instant when the image you want to print appears. The image is stored in the free memory page. ② Press the switch of the remote commander. The video source image appears on the video monitor. ③ Repeat steps 1 and 2. An image is stored to the memory page cyclically. The printer continues to store images, replacing previously stored images with the new one.
M & S (MEMORY & STOP)a)	① Press the switch of the remote commander at the instant when the image you want to print appears. The image is stored in the free memory page. ② Press the switch of the remote commander. The video source image appears on the video monitor. ③ Repeat steps 1 and 2. An image is stored to the memory page whenever you press the switch of the remote commander. The printer stops storing images to the memory page once images have been stored to all memory pages. The message STOP STOP STOP appears.

a) When SPLIT MEM is set to 4 or 16: The printer repeats the operation described above, whenever the printer stores one reduced image to each position.

To make the message STOP STOP STOP disappear

Press the STOP button. The printer is reset to the normal printing mode.

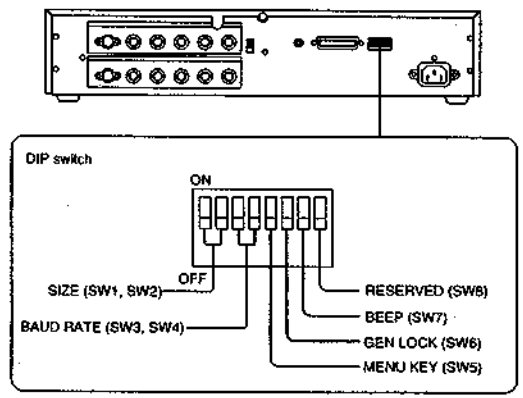
Note

When the image in a memory page is queued for printing, that memory page is automatically skipped.

Setting the DIP Switches

You can make the following five settings by using the DIP switches on the rear panel.

- Setting of the printout size (see page 85)
- Setting of the baud rate for computer communication (see page 85)
- Setting of the MENU button function ON/OFF (see page 85)
- Selecting whether lock to an external synchronous signal (GENLOCK) (see page 86)
- Selecting whether the operation and error tones sound (see page 86)



Note

Before changing the DIP switch setting, turn the printer power off. The former setting with the DIP switch remains if you change the switch settings with the power on.

Setting the printout size

When you print an image that is narrower or wider than the standard screen size, the black frame may be printed or the image may be partially cut. In such a case, you can change the screen size.
The printer supports the following three sizes, NA (NARROW), NO (NORMAL) and W (WIDE).
Use DIP switches SW1 and SW2 to set the printout size.

When changing	Printout size	Size (dots × line)	SW1 set position	SW2 set position
When a black frame is printed.	NA (NARROW)	708 (H) × 448 (V)	OFF	ON
Normal	NO (NORMAL)	720 (H) × 472 (V)	OFF	OFF
When an image is partially cut	W (WIDE)	772 (H) × 488 (V)	ON	OFF

Setting the baud rate for computer communication

When controlling the printer with a personal computer connected to the RS-232C connector, select the appropriate baud rate. Use DIP switches SW3 and SW4 to set the baud rate.

Baud rate (bps)	SW3 set position	SW4 set position
1200	OFF	OFF
2400	ON	OFF
4800	OFF	ON
9600	ON	ON

Selecting whether to enable the MENU button functions

You can inhibit the MENU button operation. To make printouts with fixed menu values without performing any menu operations during normal printing, set the MENU button function to OFF. Use DIP switch SW5 to select the MENU button function.

When changing	MENU button function	SW5 set position
To make the MENU button operable	OFF (NORMAL)	OFF
To inhibit MENU button operation	ON (INHIBIT)	ON

Selecting whether to lock to an external synchronous signal (GENLOCK)

You can select whether the printer is locked to the external synchronous signal when sending a video signal to the video monitor connected to the OUTPUT connectors on the rear panel.
Use DIP switch SW6 to set this item.

When changing	GENLOCK ON/OFF	SW6 set position
Not to be locked to the external synchronous signal	OFF (FREE)	OFF
To be locked to the external synchronous signal	ON (LOCK)	ON

Note

When GENLOCK is not to ON (LOCK), the printer may not work correctly if irregular signal (such as search mode or stop mode signal) is input to the printer.

Selecting whether the operation and error tones sound

Whenever you use the MEMORY IN, SOURCE/MEMORY, PRINT and STOP button on the front panel, the operation tone sounds (one time). When an error occurs, the alarm tone sounds (three times). You can turn these tones on and off.
Use DIP switch SW7 to set this item.

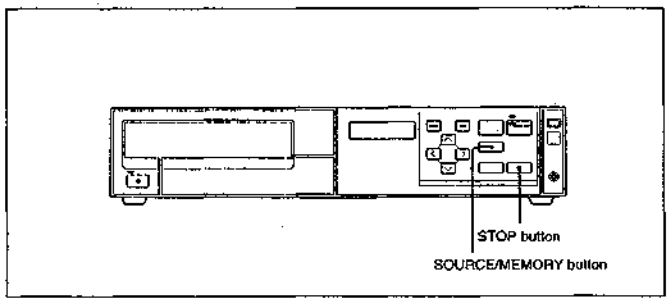
When changing	BEEP (tone) ON/OFF	SW7 set position
To sound the tones	ON (sounding)	OFF
To disable the tones	OFF (not sounding)	ON

Note

Even when BEEP is set to OFF (not sounding), operation tone or error tones sound when the printer power is turned on, or any error has occurred.

Displaying the DIP switch settings on the video monitor

You can check the DIP switch settings on the video monitor and printer window display.



Press the SOURCE/MEMORY button holding down the STOP button.
The following screen appears.

The selected setting is displayed in green.

SCAN SIZE :
NA<NORMAL>W

To return to the regular screen, press the MENU button.

Note

When displaying the DIP switch settings on the video monitor and in the printer window display:
Characters and numbers displayed on the video monitor display and in the printer window display are abbreviated. Note that some of the DIP switch settings on the rear panel of the printer differ from those displayed on the video monitor display and in the printer window display or those used for explanations of the DIP switch settings on pages 84 to 86 of this manual.
See the following table.

Indication on monitor display and in the printer window display		DIP switch setting on the rear panel
MENU	ALLOW	OFF (NORMAL)
	MASK	ON (INHIBIT)
BEEP	BEEP	ON (sounding)
	MASK	OFF (not sounding)

1-13. ERROR MESSAGES

If a problem occurs, the ALARM lamp lights in orange when an error message or a warning message appears. The message which states the problem appears on the monitor and in the printer window display. This section lists error and warning messages in alphabetical order, together with their possible causes and remedies. Note the message and act accordingly.

Error message	Possible causes and remedies
CHECK RIBBON SETTING	The front panel (on the right from the user's standpoint) opens accidentally during printing. → Close the front panel. (see page 9)
FEED ERROR	The paper jams as it is being fed into the ribbon area around the paper tray → Remove the jammed paper from the printer (see page 94)
HEAD IN COOLING	The thermal head has overheated. → Leave the printer idle and until the head cools and this message disappears
NO CARTRIDGE	The ink ribbon cassette is not correctly installed. → Insert the ink ribbon cassette correctly (see page 8)
NO PAPER	The paper has been exhausted. → Load paper. (see page 10)
PAPER ERROR	The paper that cannot be used with this printer has been loaded → Insert the appropriate paper. (see page 90)
PREHEATING	The thermal head is preheating. → Leave the printer until the head has preheated and this message disappears.
REMOVE PRINTS	The paper has jammed near the paper cover → Remove the jammed paper from the printer. (see page 94)
REMOVE STUCK PAPER	The paper has jammed during printing. → Remove the jammed paper from the printer. (see page 94)
RIBBON & PAPER MISMATCH	The ink ribbon cassette and paper are not compatible. → Use a compatible cassette/paper combination. (see page 90)
RIBBON DOOR OPEN	The front panel (on the right from the user's standpoint) is open → Close the front panel. (see page 9)
RIBBON END	The ink ribbon cassette has been exhausted → Insert a new ink ribbon cassette. (The ink ribbon cannot be reused.) (see page 8)
RIBBON ERROR	An ink ribbon cassette that cannot be used with this printer has been loaded → Insert the appropriate ink ribbon cassette. (see page 90)

If ERRORxx appears

If this message appears, perform the following.

1 Turn off the power of the printer.

2 Remove the ink ribbon cassette, paper cover and paper tray, and check for any paper jams inside the printer. (see "Loading an Ink Ribbon Cassette" page 8 and "Loading Paper" page 10)
If you find any jammed paper, remove it carefully.

If the ink ribbon cassette cannot be removed, or the jammed paper cannot be removed, contact your Sony service facility.

3 Insert the ink ribbon cassette, paper cover and paper tray to the printer.

4 Turn on the power of the printer.
When the message does not appear, you can use the printer as normal. However, the image stored to memory will have been cleared. Store the image to memory again.

If the same message appears again, the printer must not be operated. Turn off the power immediately and contact your Sony service facility.

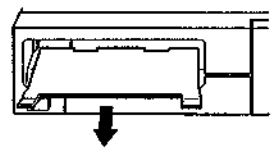
If the paper jams

If the paper jams as it is being fed into the ribbon area during printing, or when being fed into the paper cover area, printing stops and a message appears on the monitor and in the printer window display, according to where the jam has occurred.

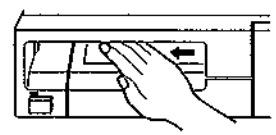
Message	Position where the paper has jammed
FEED ERROR	Before printing and being fed into the ribbon area
REMOVE STUCK PAPER	During printing, inside the printer
REMOVE PRINTS	Instantaneously before completing printing, near the paper cover

When FEED ERROR appears

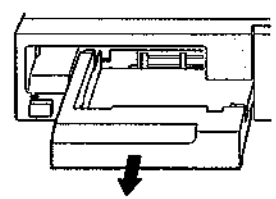
1 Remove the paper cover.
When any printouts have been ejected on the paper cover, remove those printouts first before removing the paper cover.



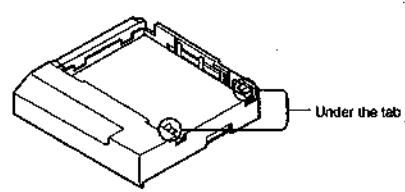
2 Check whether any paper is stuck inside the printer. If you find a jammed sheet, slowly pull it into the paper tray.



3 Remove the paper tray.

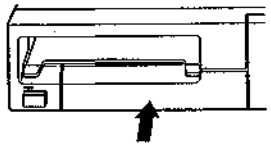


4 Load the paper into the paper tray correctly.
Discard the paper removed in step 2.



Continue to next page →

5 Slide the paper tray and paper cover back into the printer.



When REMOVE STUCK PAPER appears

Perform the same operation as that performed when FEED ERROR appears. When you cannot remove the jammed paper, remove the ink ribbon cassette, too. If you find a jammed sheet inside the printer, remove it carefully.

When REMOVE PRINTS appears

Carefully remove the jammed paper from near the paper cover.

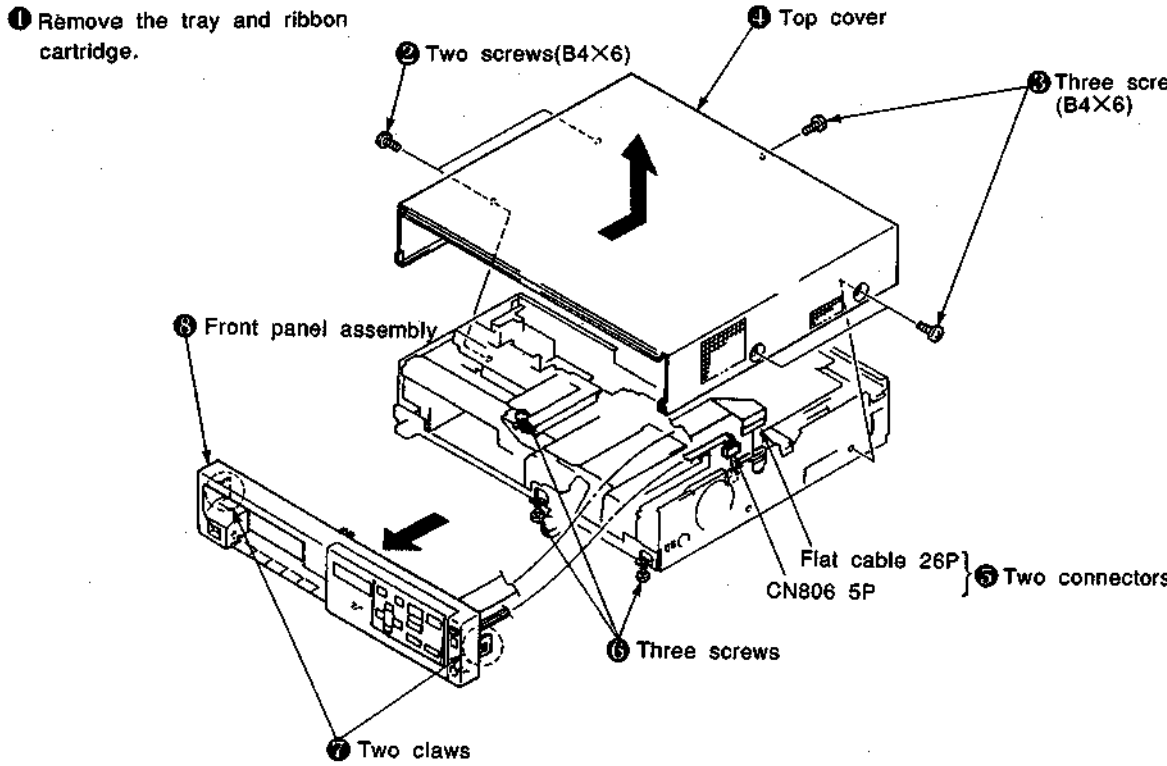
1-14. TROUBLESHOOTING

The following troubleshooting checks will help you correct the most common problems encountered with your unit. Before proceeding with these trouble checks, first check that the power cord is firmly connected. Should the problem persist, unplug the unit and contact your Sony dealer or local authorized Sony service facility.

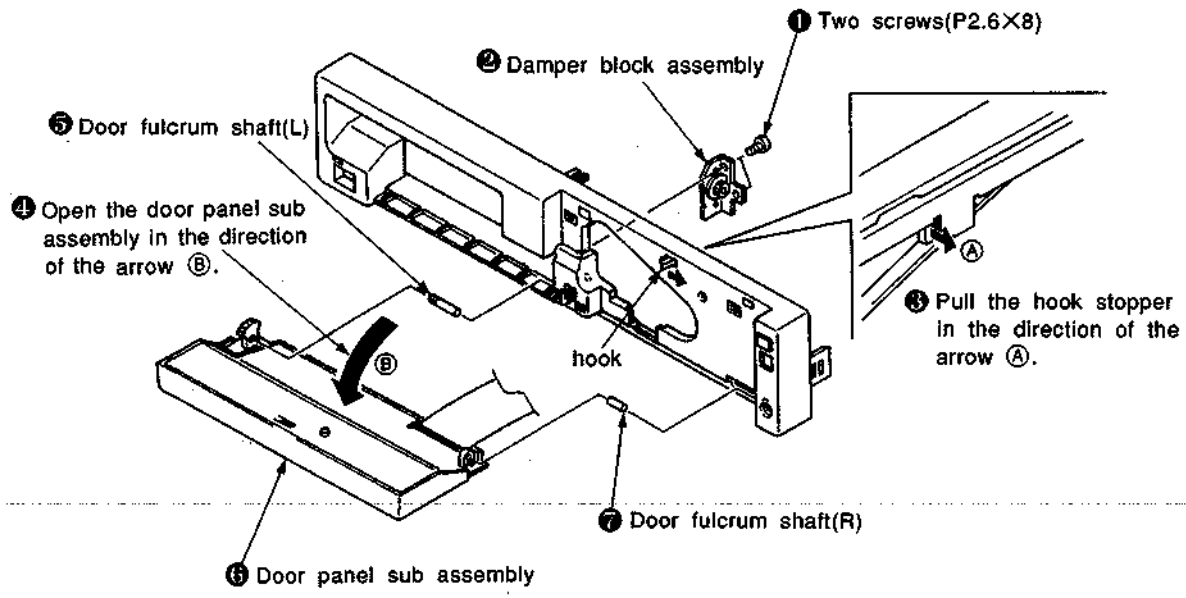
Symptom	Possible causes and remedies
Nothing appears on the monitor.	The POWER switch of the printer is not set to ON. → Set the POWER switch of the printer to ON. The POWER switch of the monitor is not set to ON. → Set the POWER switch of the monitor to ON. Connections may not be correct. → Make connections correctly. (see page 52)
Any message does not appear on the regular screen.	If an incorrect sync signal is input, nothing may appear on the monitor. → In this case, check the monitor first by pressing the SOURCE/MEMORY button to display the image stored in memory. If an image appears, the monitor is working correctly. Change the INPUT SEL settings on the menu screen. (see page 12) Or, set the connected video equipment to playback mode, if it is in another mode such as stop mode.
Any message and image do not appear on the regular screen.	If an image stored in memory appears when the SOURCE/MEMORY button is pressed, the MONITOR settings on the MONITOR ADJUST sub menu is set to THRU. → Change the MONITOR settings on the MONITOR ADJUST sub menu to E TO E. (see page 71)
The printer does not print.	An error message appears on the display.(see page 93)
A black line appears on the printout.	A portion corresponding to there being no signal is printed in black. → Shift the printout area. (see page 63) Store a new image and print it.
The printer makes a printout with black frame	A portion corresponding to there being no signal is printed in black. → Change the printout size to make it narrow. (see page 85) Store a new image and print it.
The printed image is partially cut out.	Only a part of video signal has been stored. → Change the printout size to make it wide. (see page 85) Store a new image and print it.
A caption is not printed clearly.	Printed in field mode. → Store the image in frame mode and print it in frame mode.
The printout is blurred.	The quickly moving image has been stored in frame mode. → Change the mode to field mode, then print it again.

SECTION 2
DISASSEMBLY

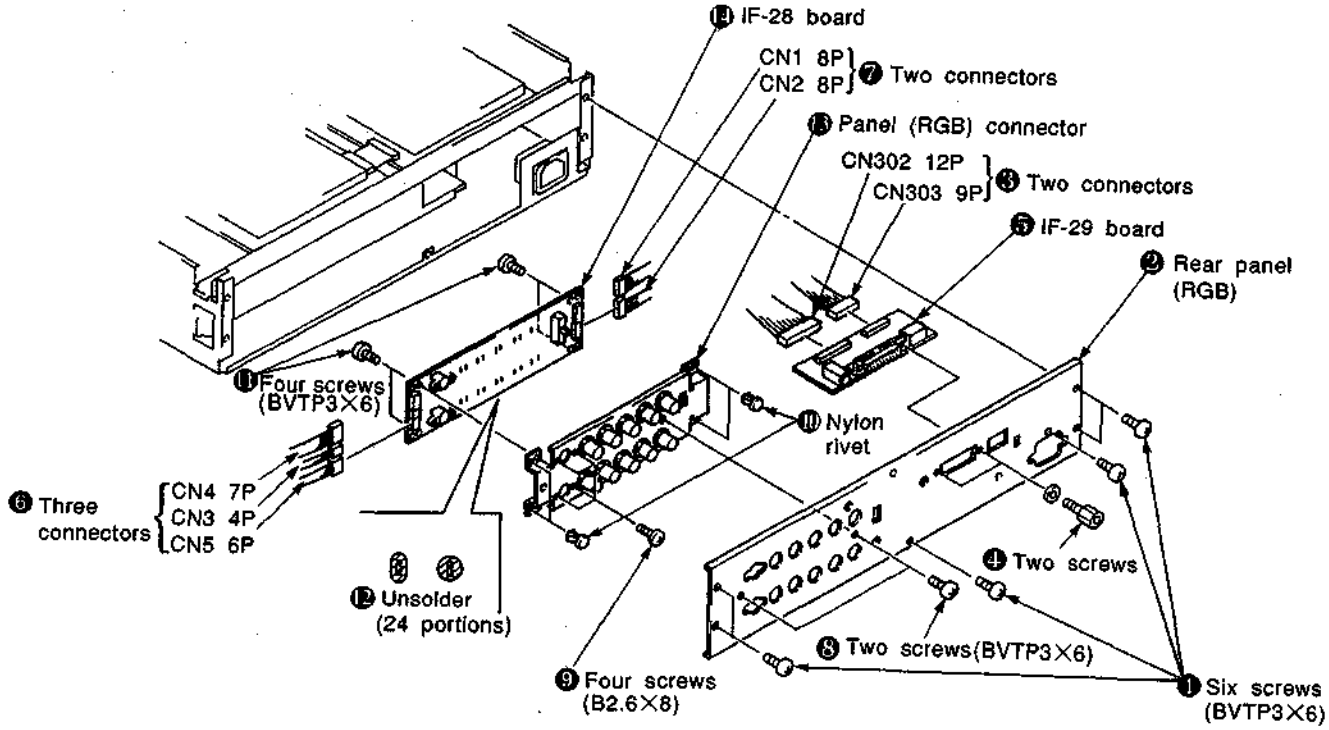
2-1. REMOVAL OF CABINET ASSEMBLY



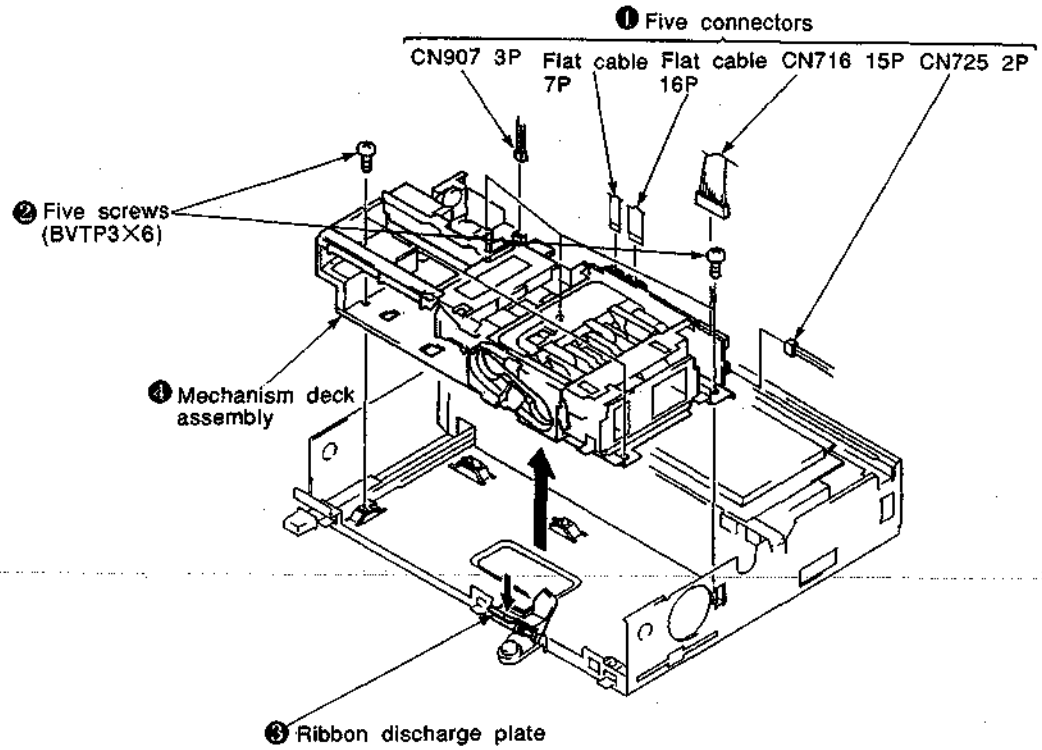
2-2. REMOVAL OF DOOR PANEL SUB ASSEMBLY



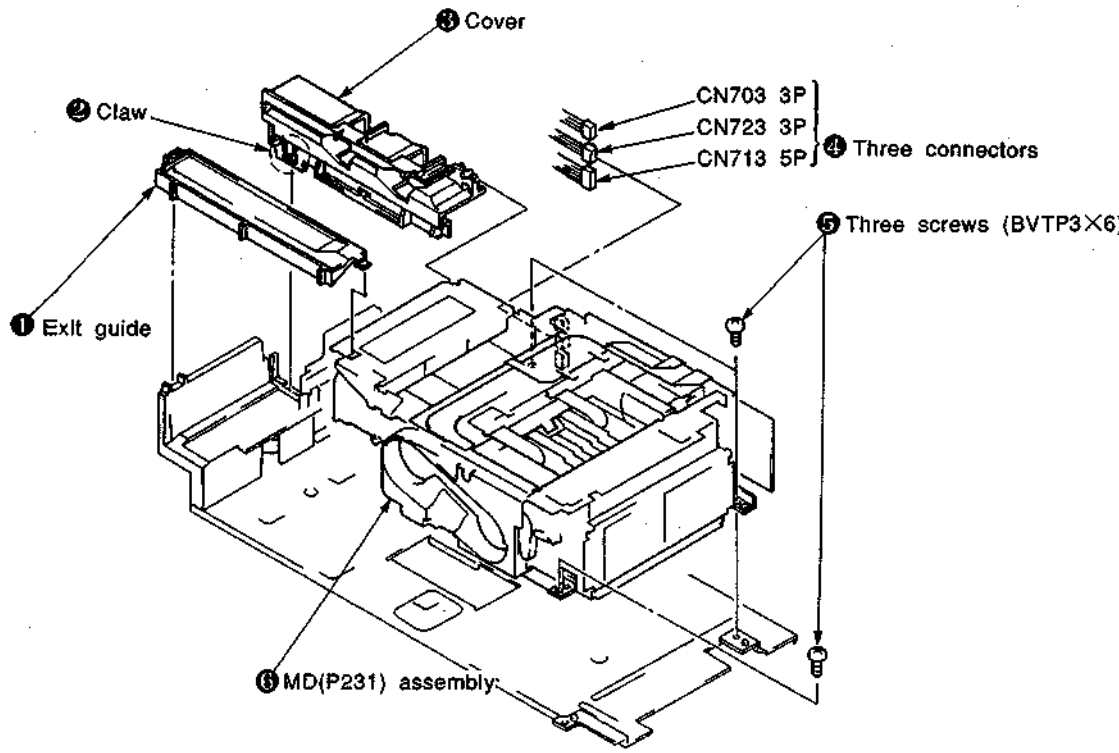
2-3. REMOVAL OF IF-29 AND IF-28 BOARDS



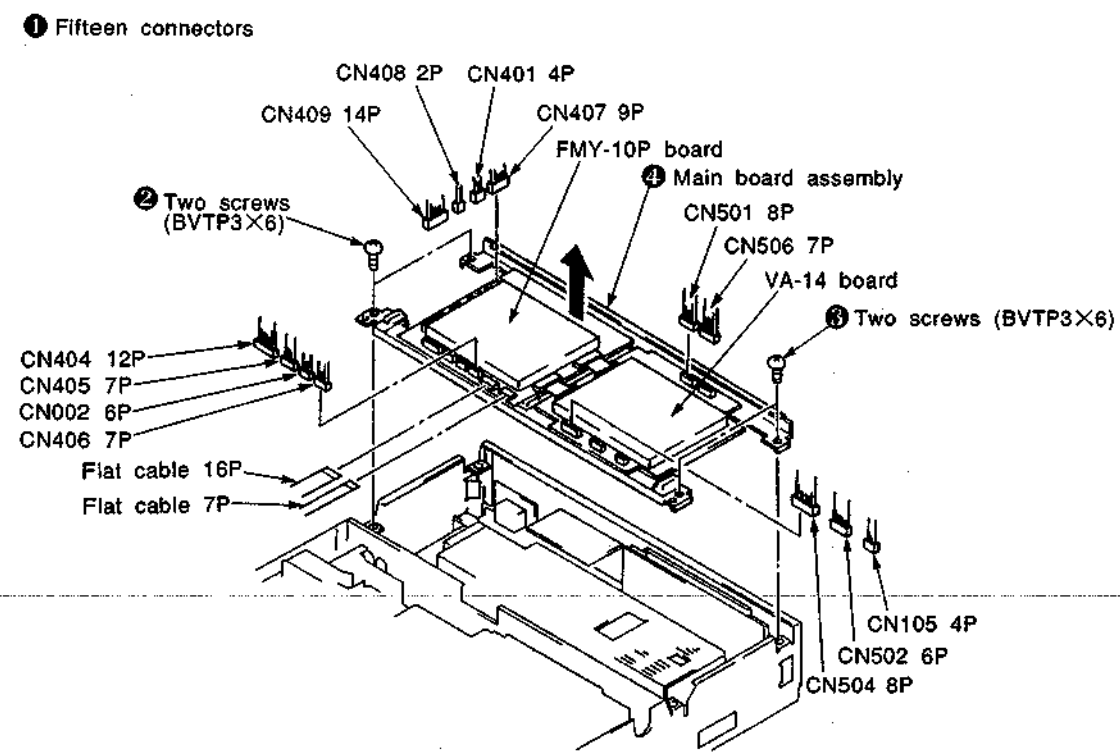
2-4. REMOVAL OF MECHANISM DECK ASSEMBLY



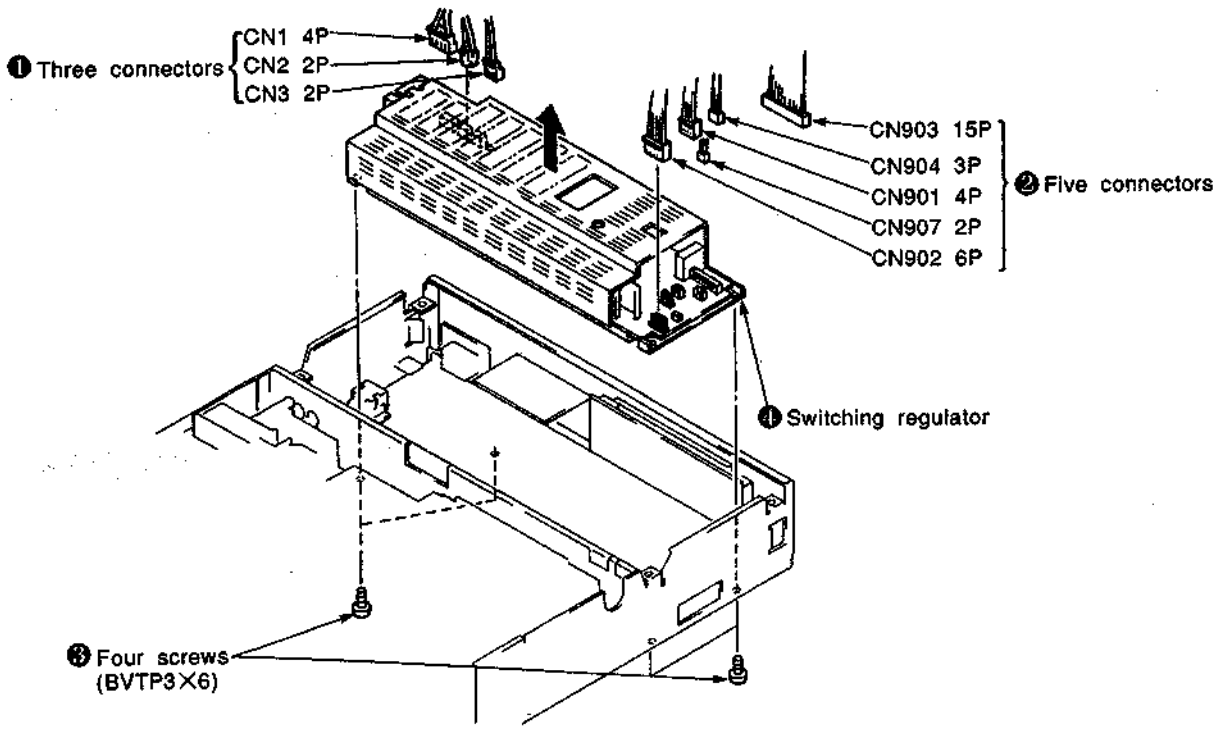
2-5. REMOVAL OF MD (P231) ASSEMBLY



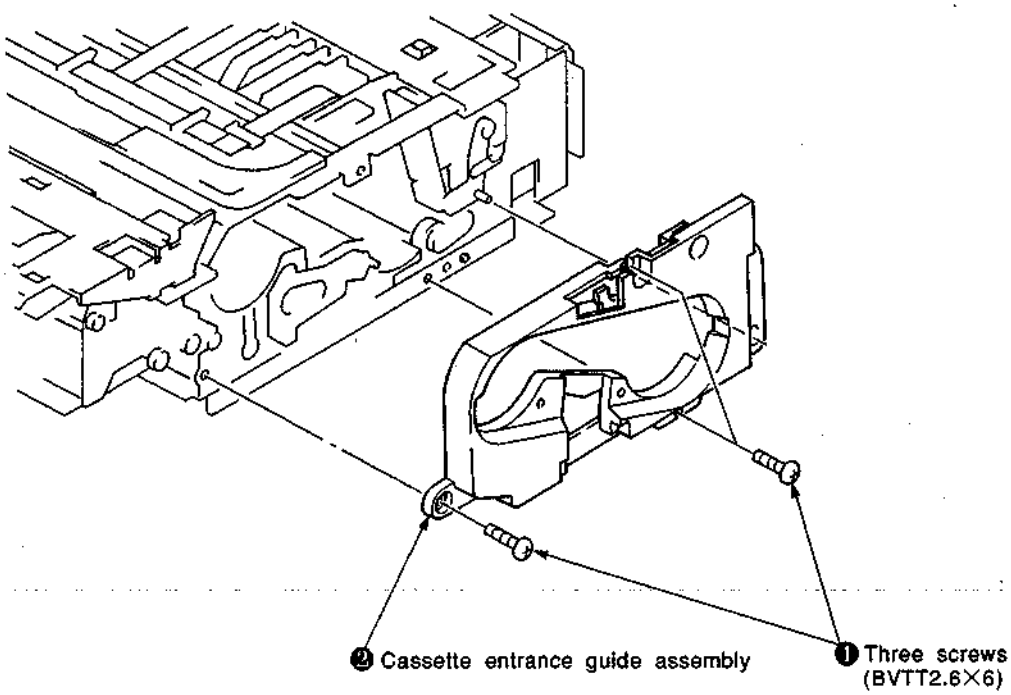
2-6. REMOVAL OF MAIN BOARD (FMY-10P BOARD, VA-14 BOARD) ASSEMBLY



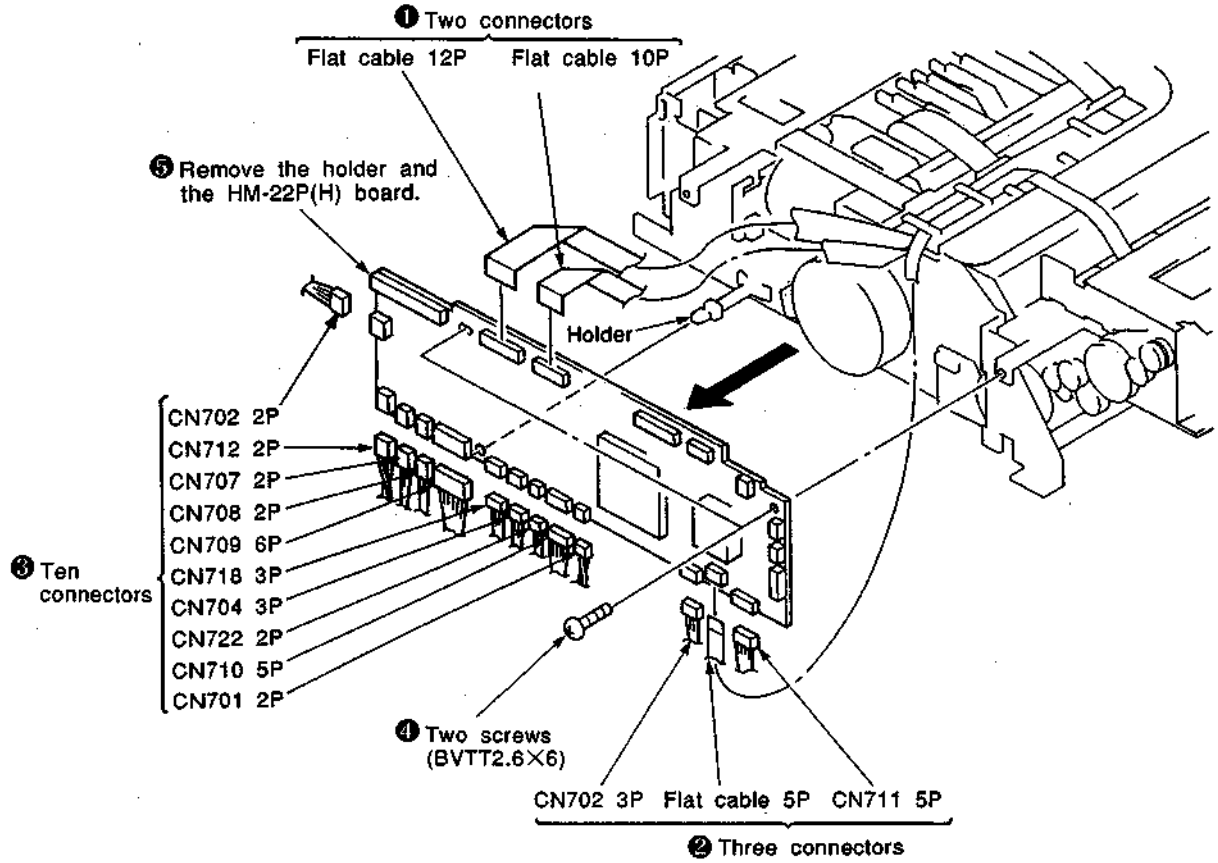
2-7. REMOVAL OF SWITCHING REGULATOR



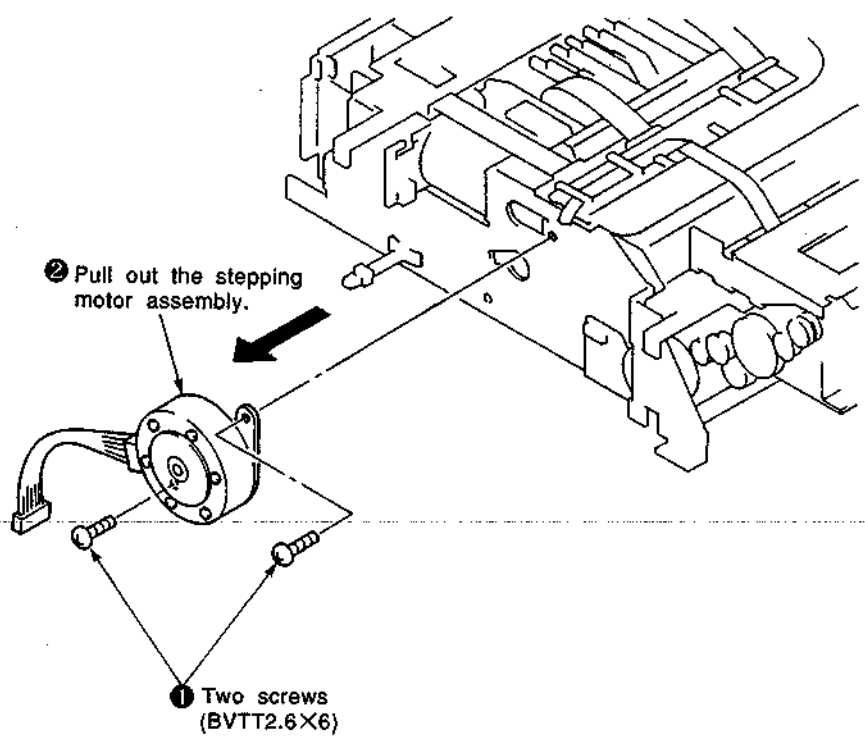
2-8. REMOVAL OF CASSETTE ENTRANCE GUIDE ASSEMBLY



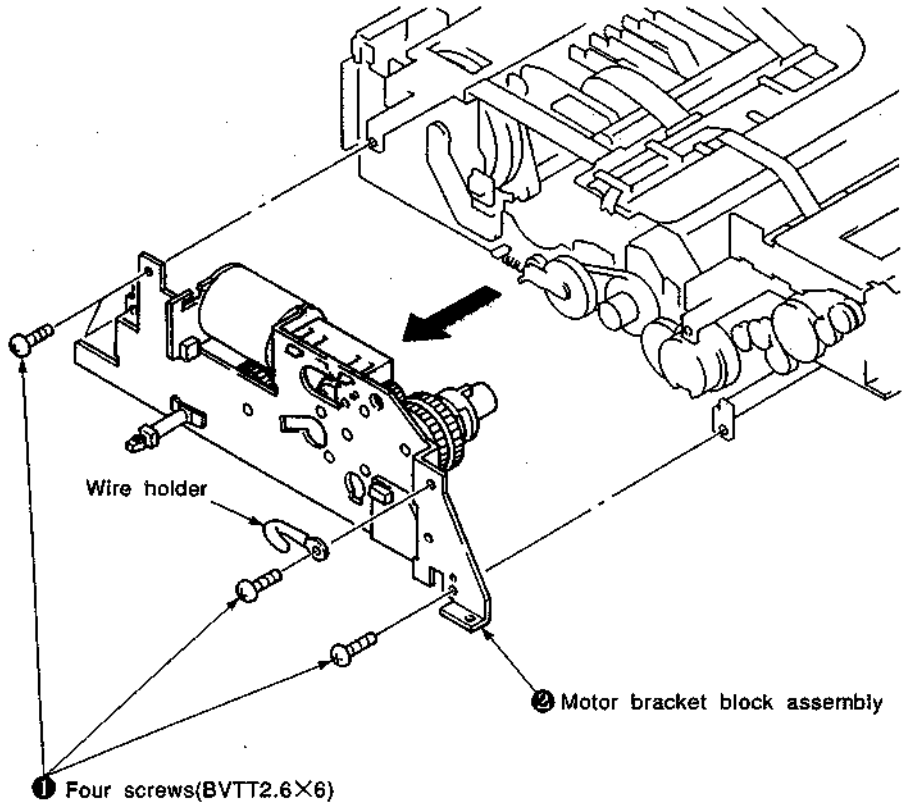
2-9. REMOVAL OF HM-22P(H) BOARD



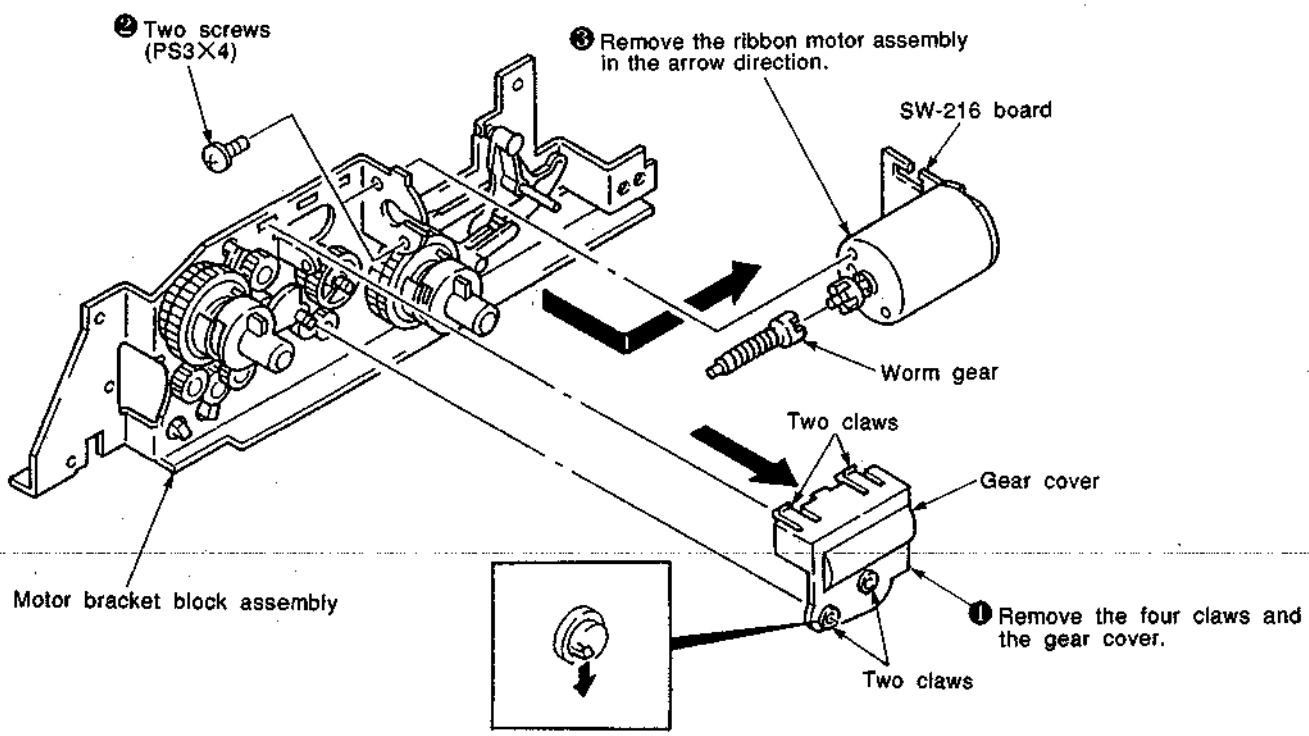
2-10. REMOVAL OF STEPPING MOTOR ASSEMBLY



2-11. REMOVAL OF MOTOR BRACKET BLOCK ASSEMBLY

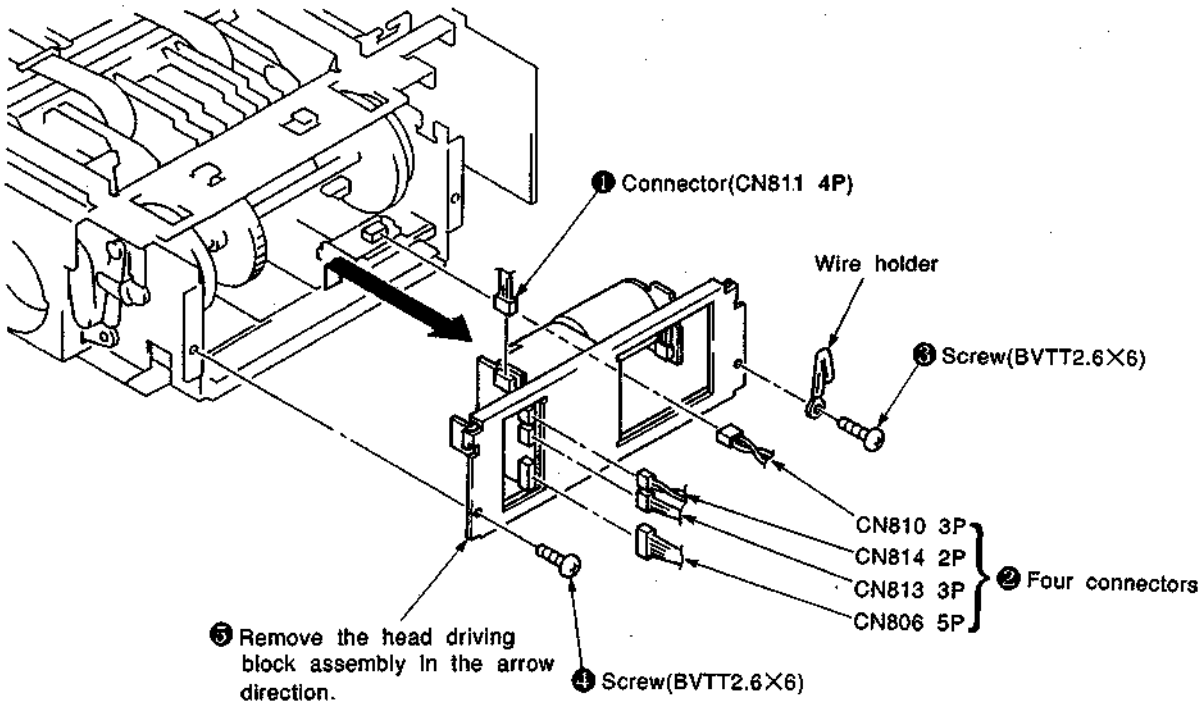


2-12. REMOVAL OF RIBBON MOTOR ASSEMBLY

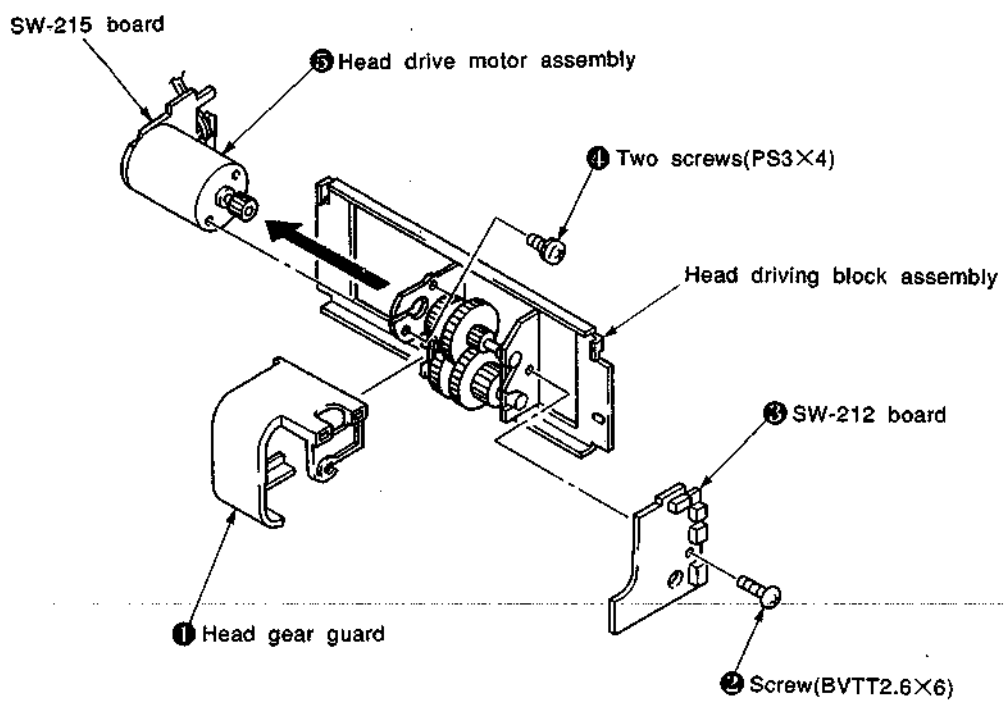


2-13. REMOVAL OF HEAD DRIVING BLOCK ASSEMBLY

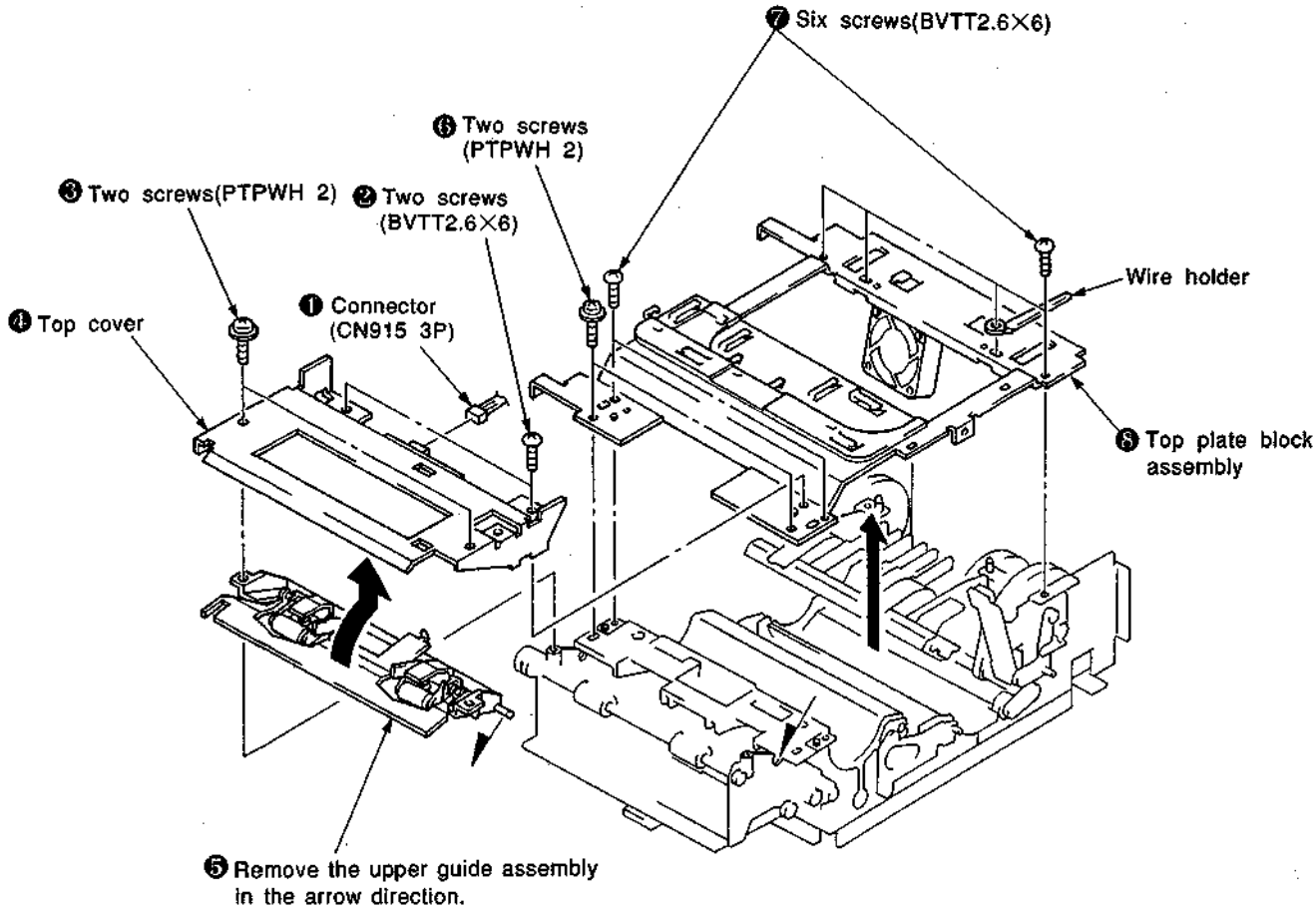
※ Perform this assembly after LARGE FAN BK is removed.



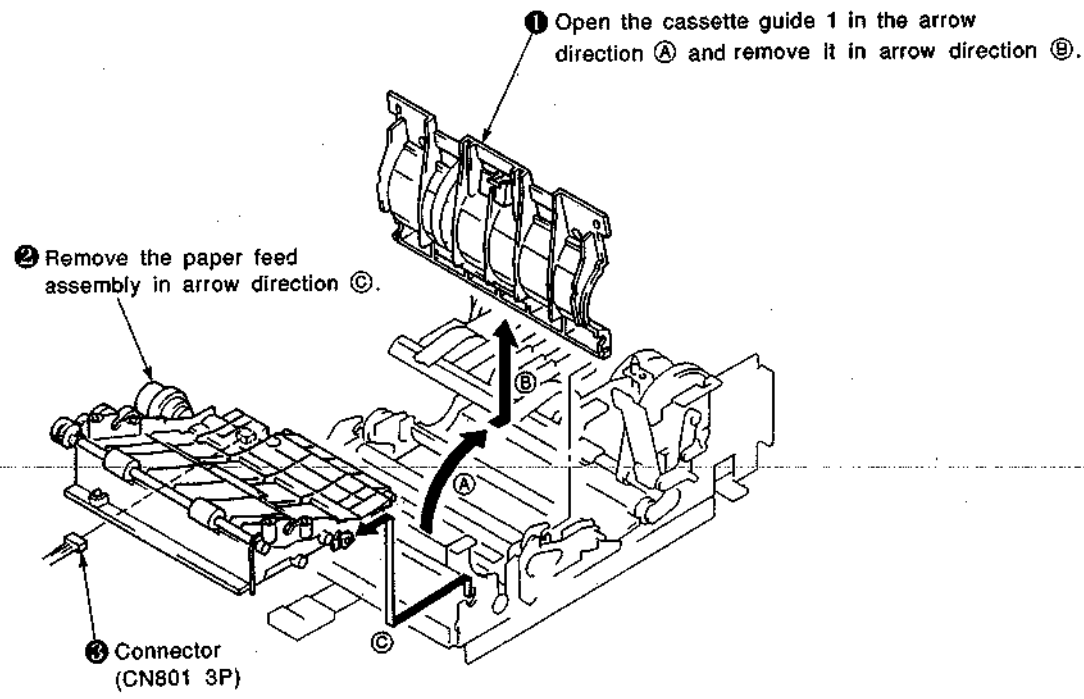
2-14. REMOVAL OF HEAD DRIVE MOTOR ASSEMBLY



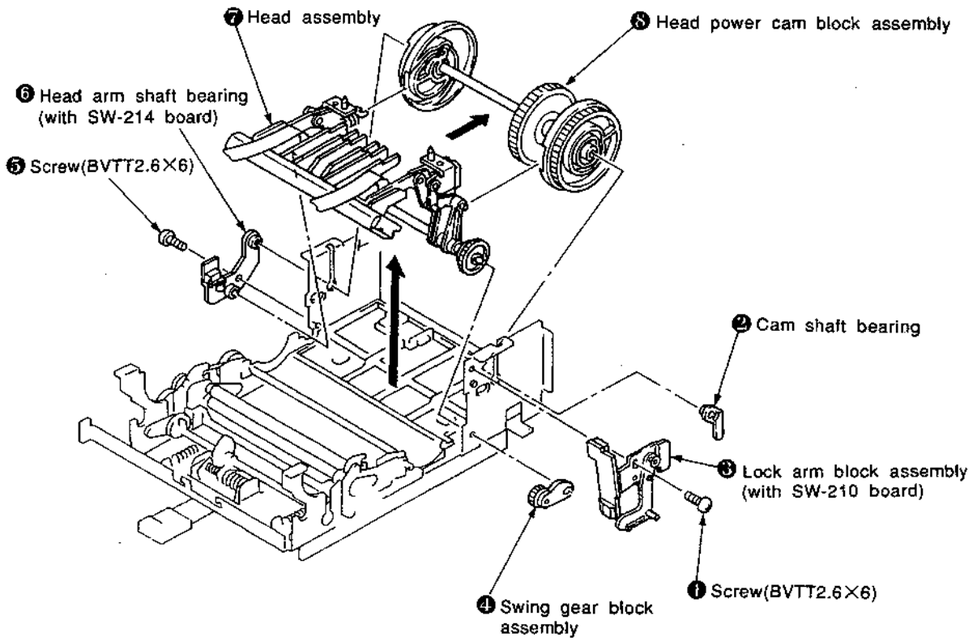
2-15. REMOVAL OF UPPER GUIDE ASSEMBLY AND TOP PLATE BLOCK ASSEMBLY



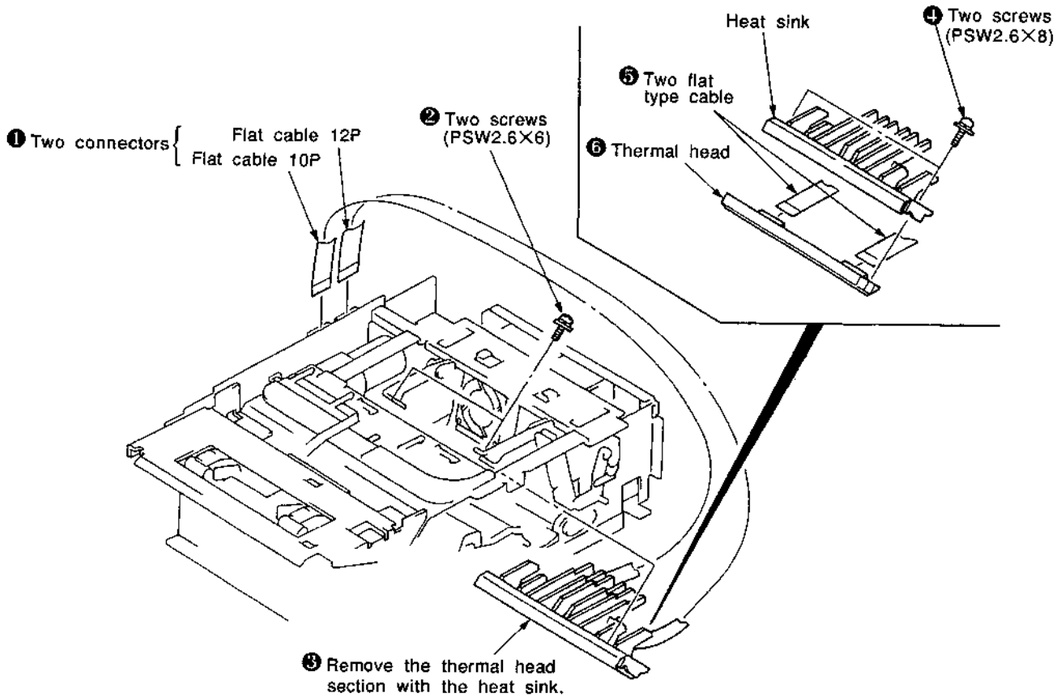
2-16. REMOVAL OF CASSETTE GUIDE 1 AND PAPER FEED ASSEMBLY



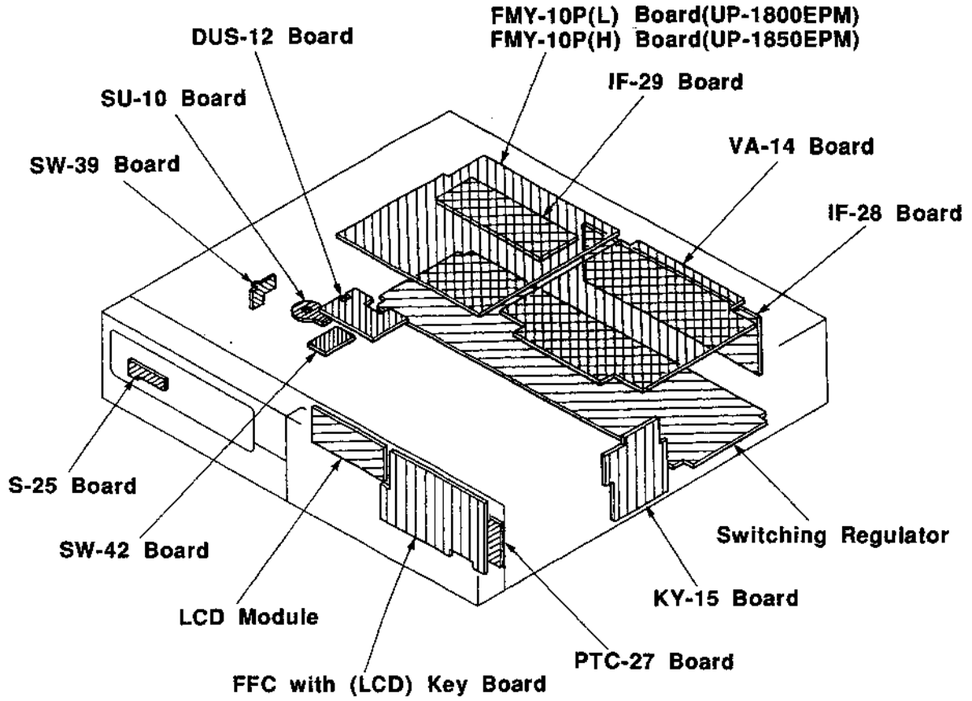
2-17. REMOVAL OF HEAD ASSEMBLY AND HEAD POWER CAM BLOCK ASSEMBLY

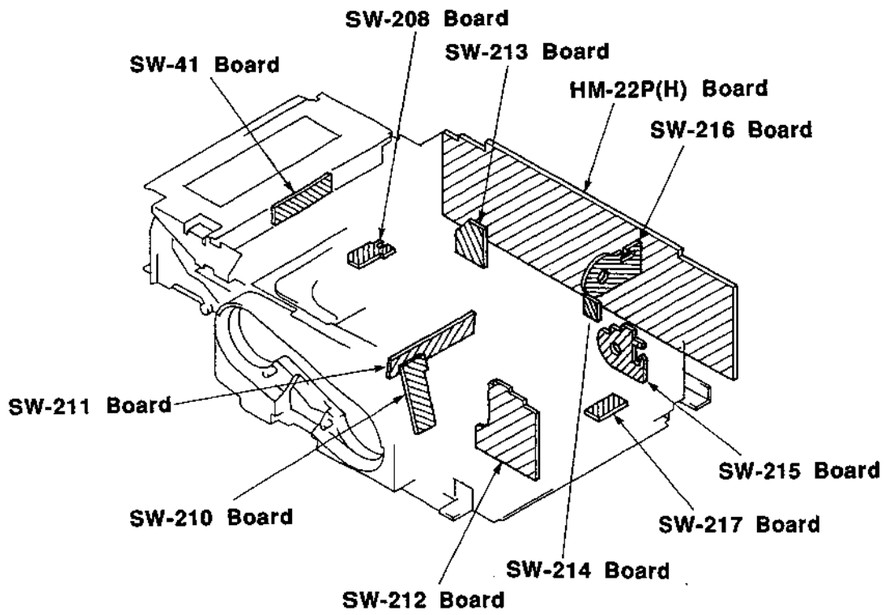


2-18. REMOVAL OF THERMAL HEAD



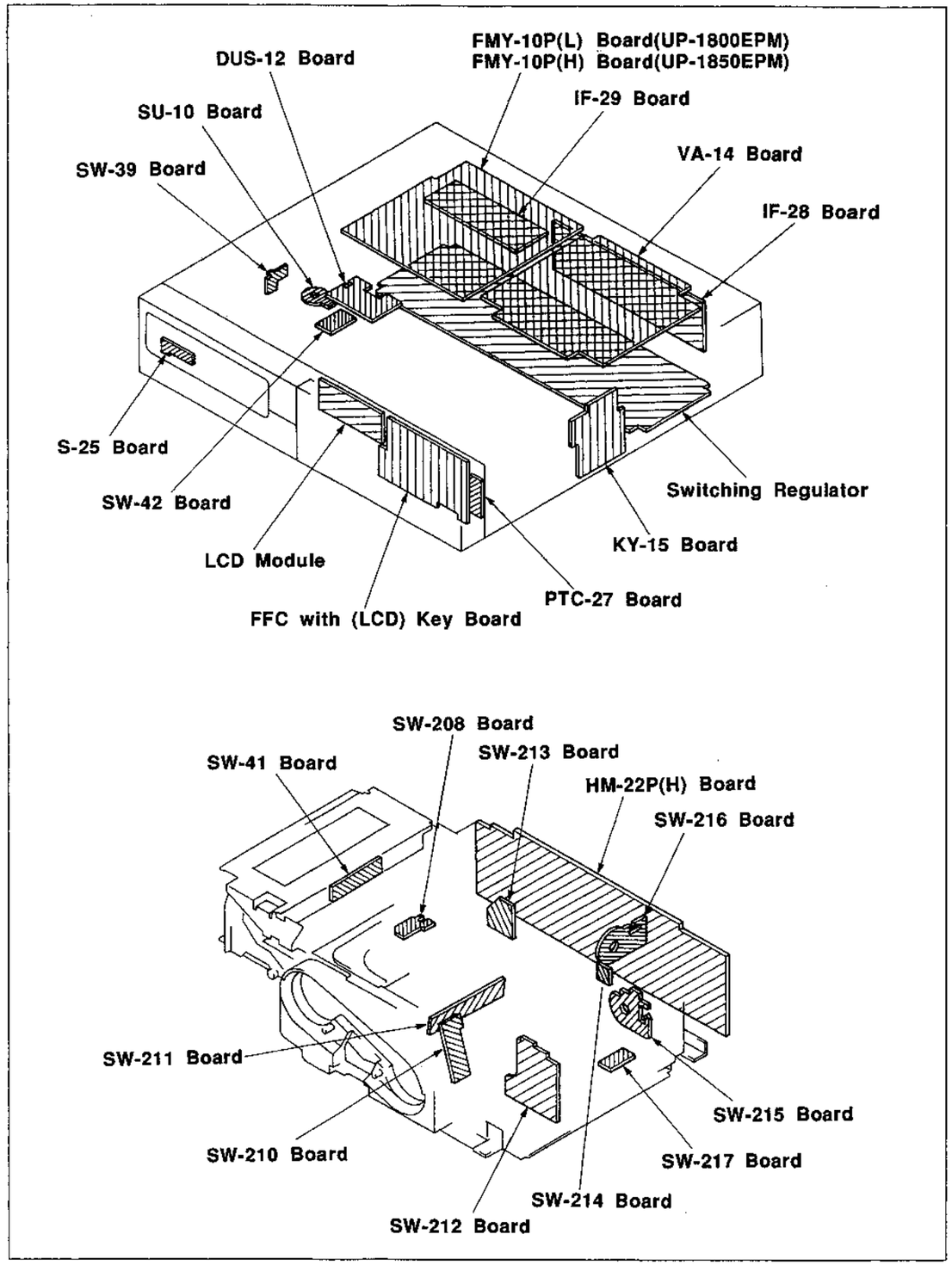
3-1. CIRCUIT BOARDS LOCATION



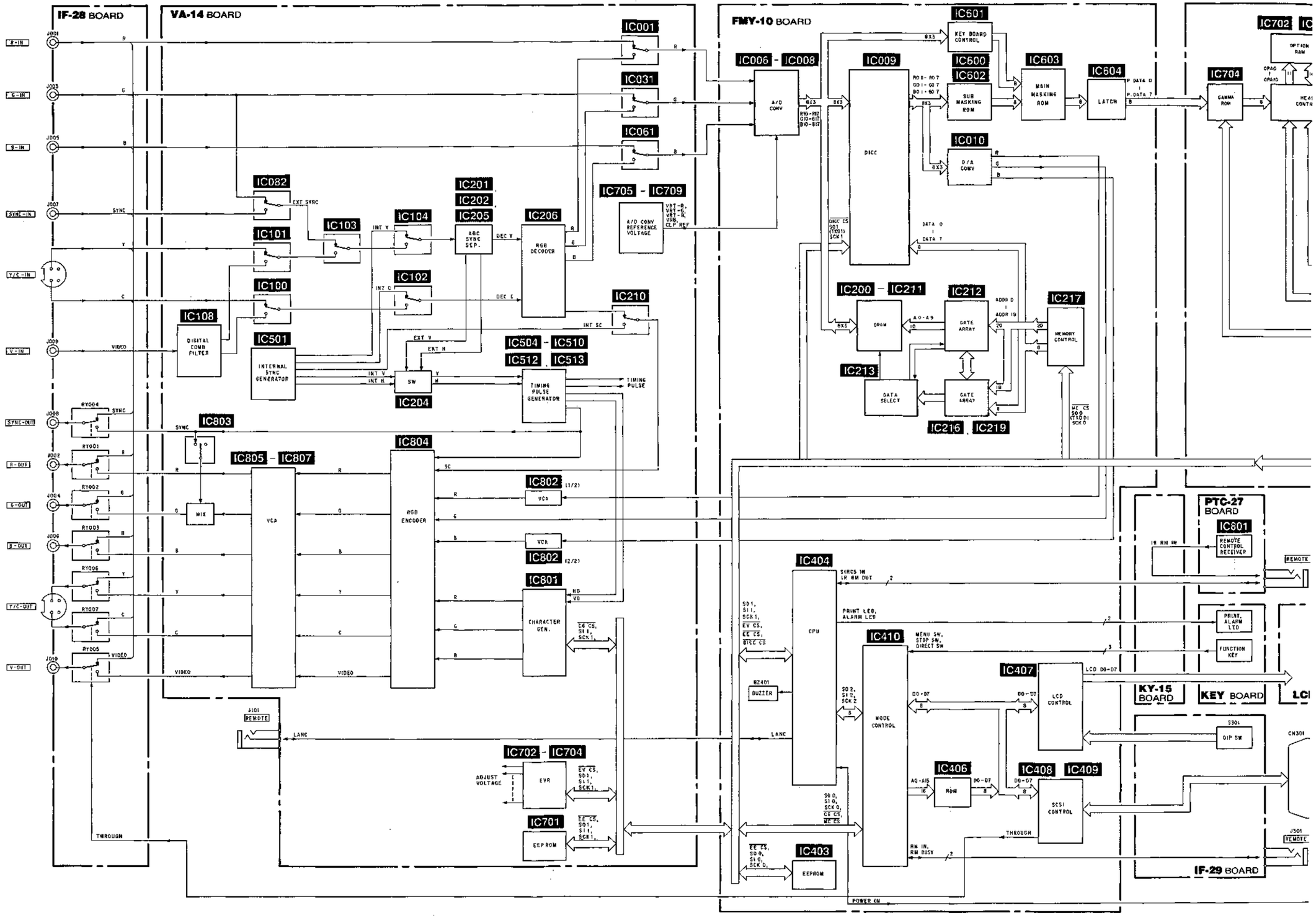


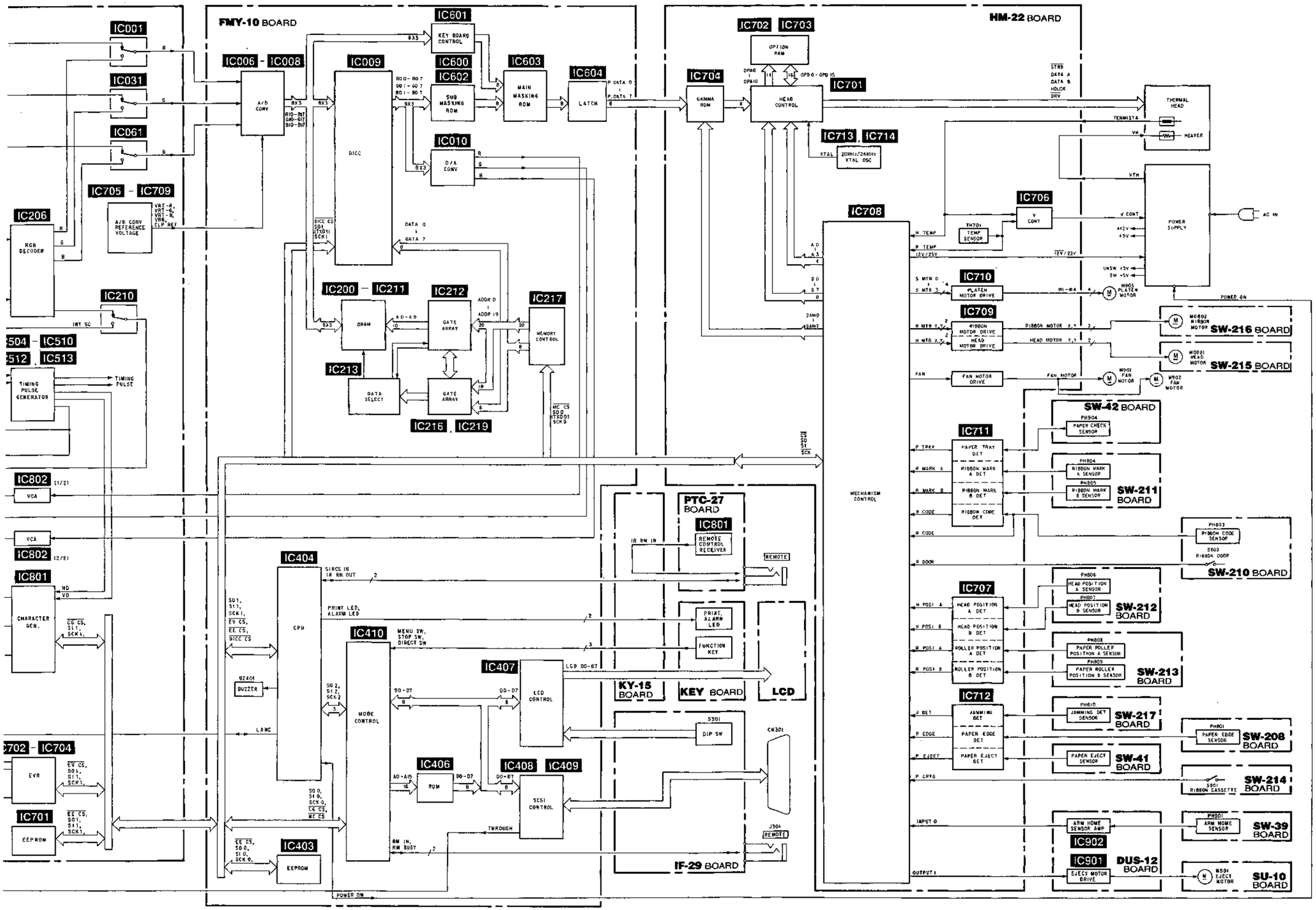
SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

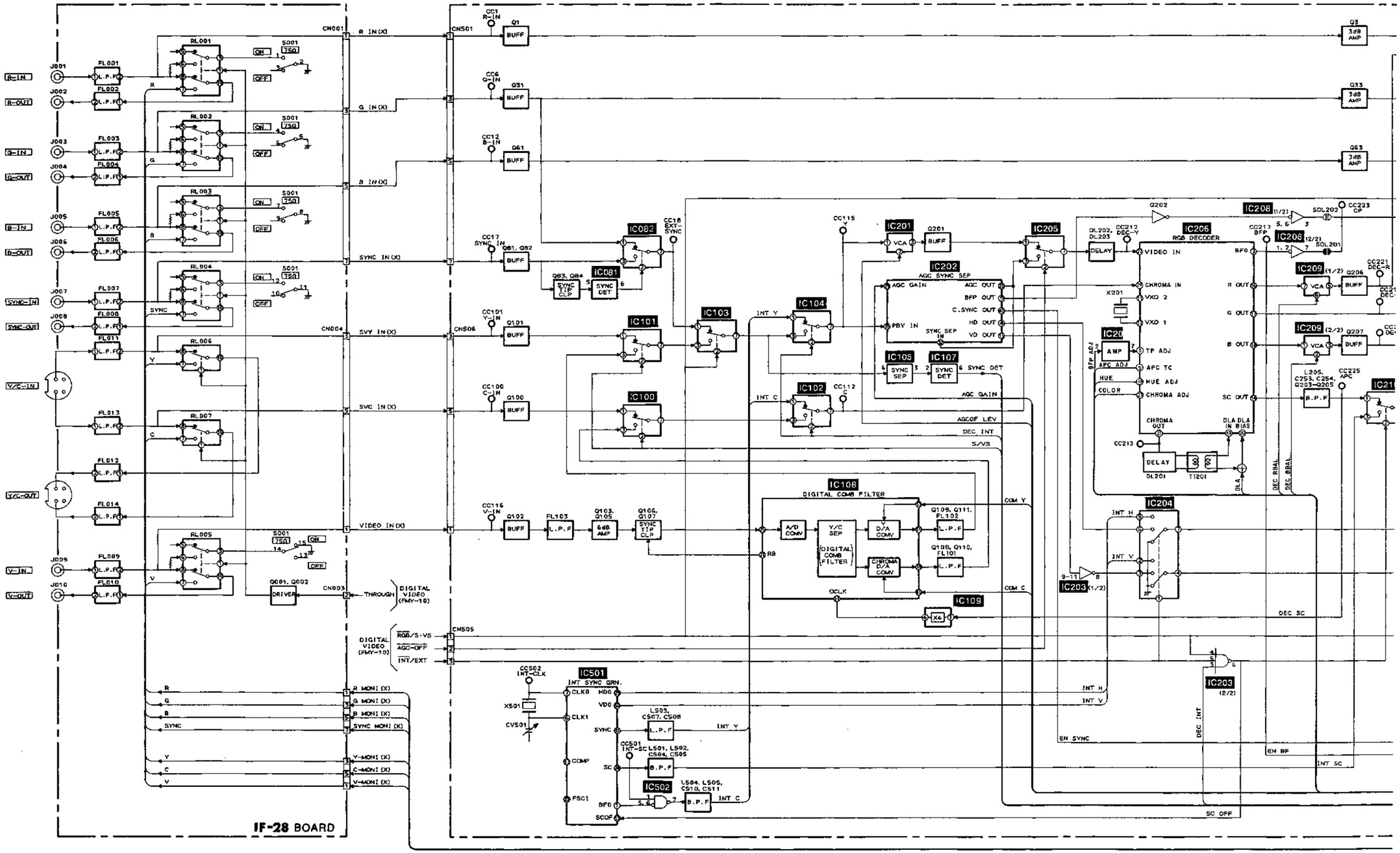


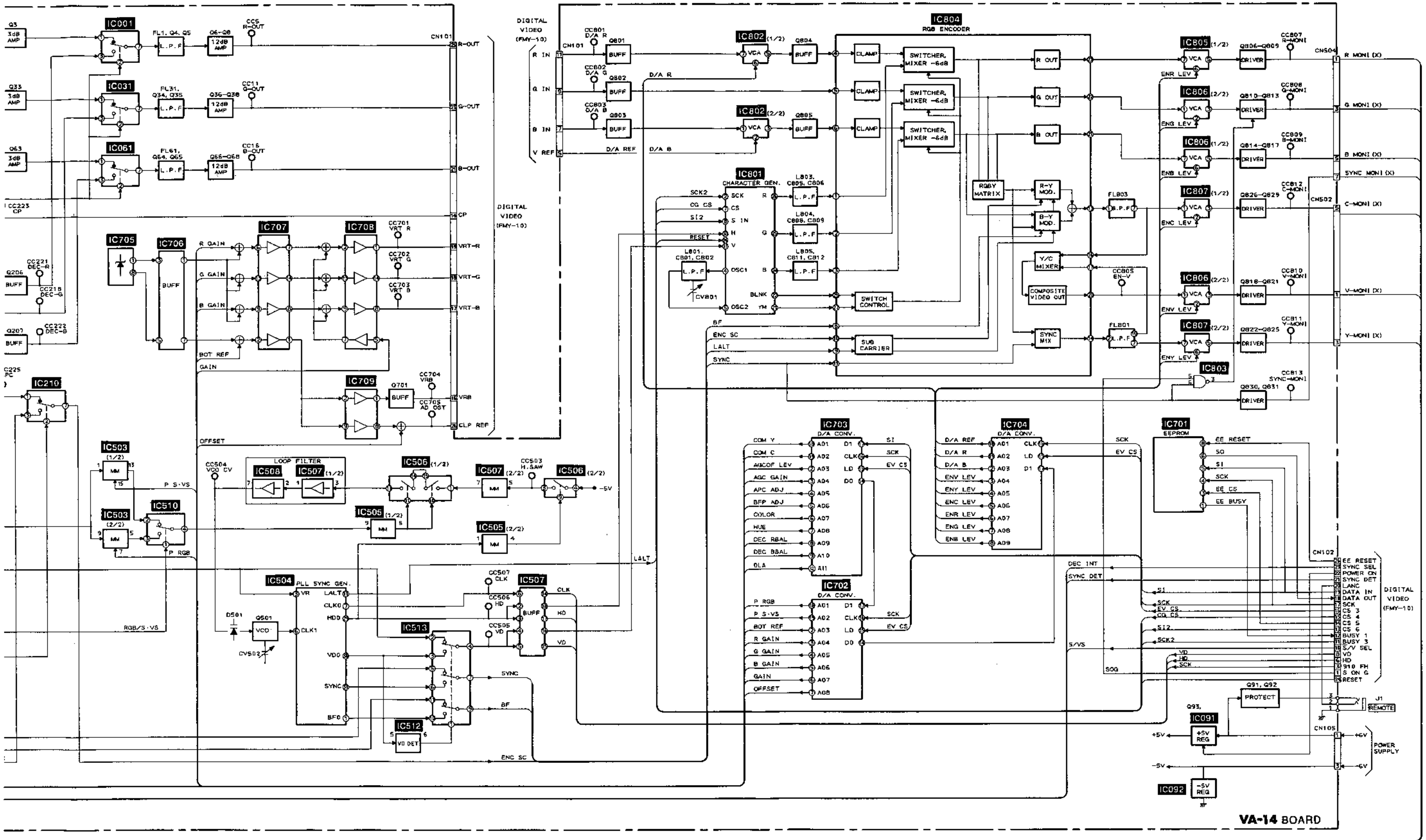
3-2. OVERALL BLOCK DIAGRAM



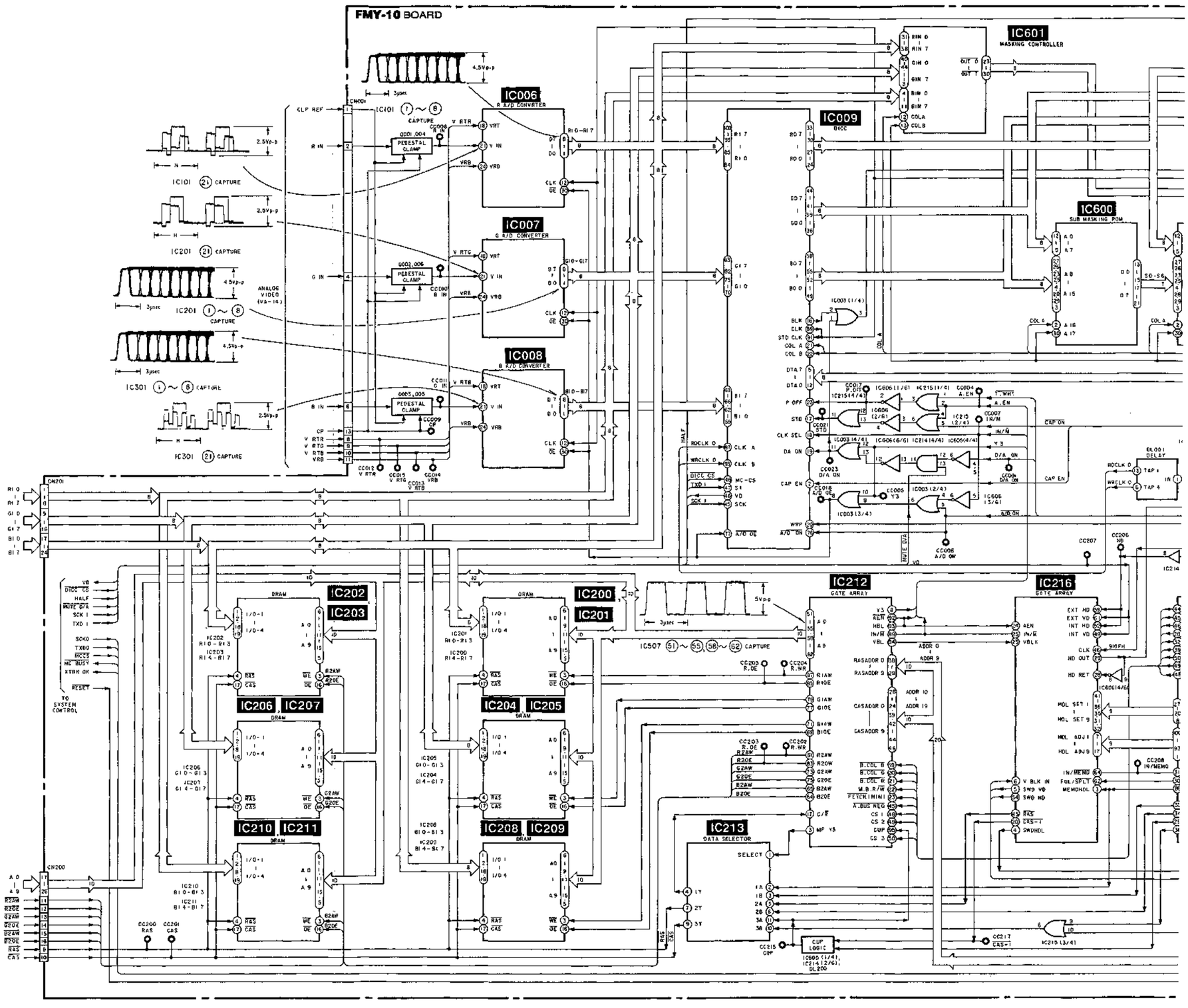

FMY-10 BOARD
HM-22 BOARD
IC001
IC031
IC061
IC206
RGB DECODER
IC705 - IC709
A/D CONV REFERENCE VOLTAGE
IC210
IC504 - IC510
IC512, IC513
TIMING PULSE GENERATOR
TIMING PULSE
IC802 (1/2)
VCA
VCA
IC802 (2/2)
IC801
CHARACTER GEN.
IC702 - IC704
EVR
IC701
EEPROM
IC601
KEY BOARD CONTROL
IC006 - IC008
A/D CONV
IC009
DICC
IC600
IC602
SUB MASKING ROM
IC603
MAIN MASKING ROM
IC604
LATCH
IC010
D/A CONV
IC200 - IC211
IC212
IC217
DRAM
GATE ARRAY
MEMORY CONTROL
IC213
DATA SELECT
GATE ARRAY
IC216, IC219
IC404
CPU
IC410
MODE CONTROL
IC407
LCD CONTROL
IC406
ROM
IC408
IC409
SCSI CONTROL
IC403
EEPROM
BZ401
BUZZER
IC704
GAMMA ROM
IC702
IC703
OPTION RAM
IC701
HEAD CONTROL
IC713, IC714
20MHz/24MHz XTAL OSC
IC708
IC706
V CONT
TH701 TEMP SENSOR
IC710
PLATEN MOTOR DRIVE
IC709
RIBBON MOTOR DRIVE
HEAD MOTOR DRIVE
FAN MOTOR DRIVE
IC711
PAPER TRAY DET
RIBBON MARK A DET
RIBBON MARK B DET
RIBBON CODE DET
IC707
HEAD POSITION A DET
HEAD POSITION B DET
ROLLER POSITION A DET
ROLLER POSITION B DET
IC712
JAMMING DET
PAPER EDGE DET
PAPER EJECT DET
IC902
IC901
EJECT MOTOR DRIVE
THERMAL HEAD
HEATER
POWER SUPPLY
AC IN
M902 RIBBON MOTOR
M901 HEAD MOTOR
M901 FAN MOTOR
M902 FAN MOTOR
M903 PLATEN MOTOR
SW-216 BOARD
SW-215 BOARD
SW-42 BOARD
PH804 PAPER CHECK SENSOR
PH804 RIBBON MARK A SENSOR
PH805 RIBBON MARK B SENSOR
SW-211 BOARD
PH803 RIBBON CODE SENSOR
S803 RIBBON DOOR
SW-210 BOARD
PH806 HEAD POSITION A SENSOR
PH807 HEAD POSITION B SENSOR
SW-212 BOARD
PH808 PAPER ROLLER POSITION A SENSOR
PH809 PAPER ROLLER POSITION B SENSOR
SW-213 BOARD
PH810 JAMMING DET SENSOR
SW-217 BOARD
PH801 PAPER EDGE SENSOR
SW-208 BOARD
PAPER EJECT SENSOR
SW-41 BOARD
S801 RIBBON CASSETTE
SW-214 BOARD
PH901 ARM HOME SENSOR
SW-39 BOARD
M901 EJECT MOTOR
SU-10 BOARD
DUS-12 BOARD
PTC-27 BOARD
IC801
REMOTE CONTROL RECEIVER
REMOTE
PRINT, ALARM LED
FUNCTION KEY
KY-15 BOARD
KEY BOARD
LCD
S301
DIP SW
CN301
J304 REMOTE
IF-29 BOARD
MECHANISM CONTROL
POWER ON

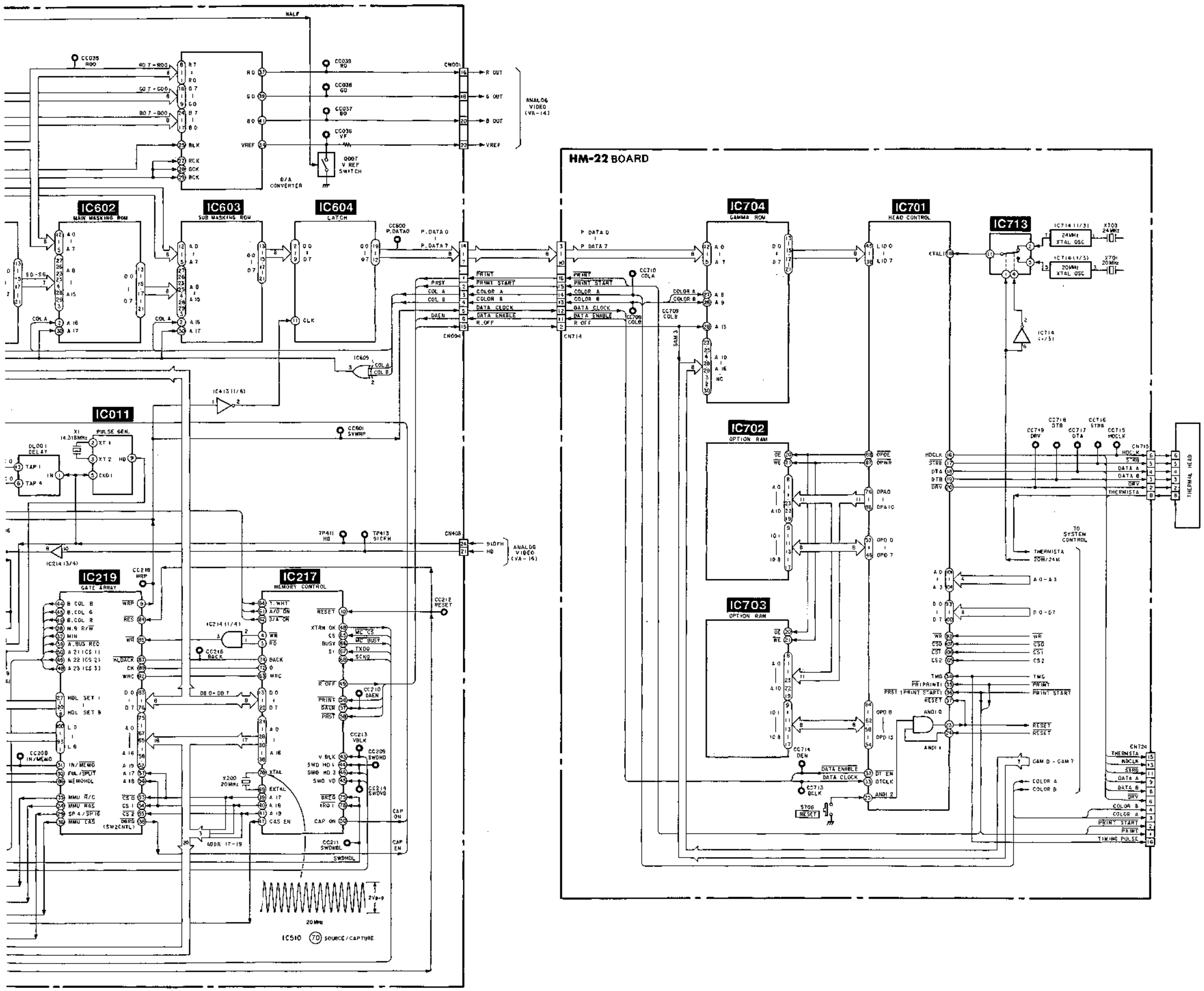
3-3. ANALOG BLOCK DIAGRAM




IC001
IC031
IC061
IC705
IC706
IC707
IC708
IC709
IC210
IC503
IC510
IC508
IC507
IC506
IC505
IC504
PLL SYNC GEN.
IC513
IC512
IC802
IC804
RGB ENCODER
IC601
CHARACTER GEN.
IC805
IC806
IC807
IC803
IC703
D/A CONV.
IC704
D/A CONV.
IC702
D/A CONV.
IC701
EEPROM
IC091
IC092
DIGITAL VIDEO (FMY-10)
POWER SUPPLY
REMOTE
VA-14 BOARD

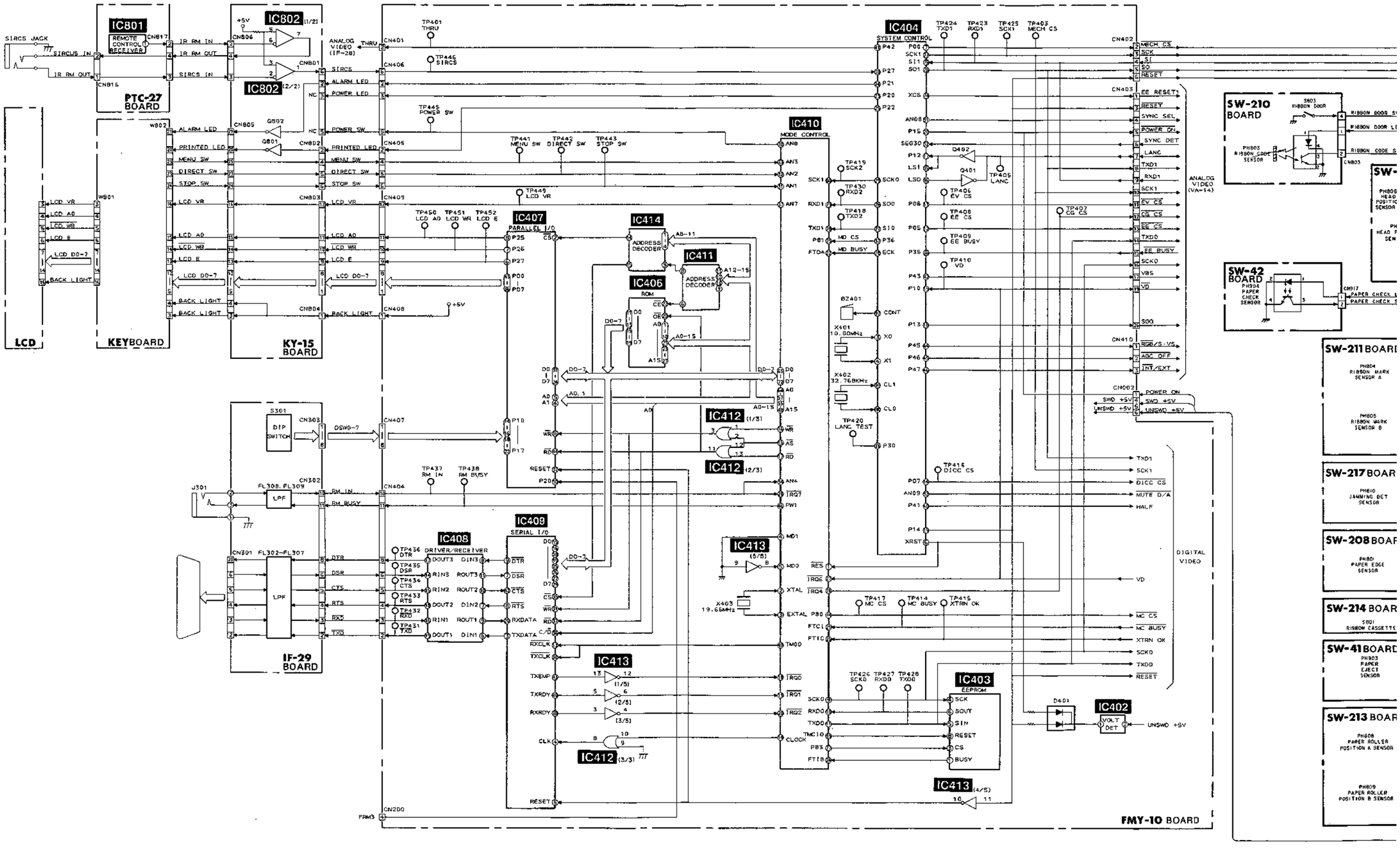
3-4. DIGITAL BLOCK DIAGRAM

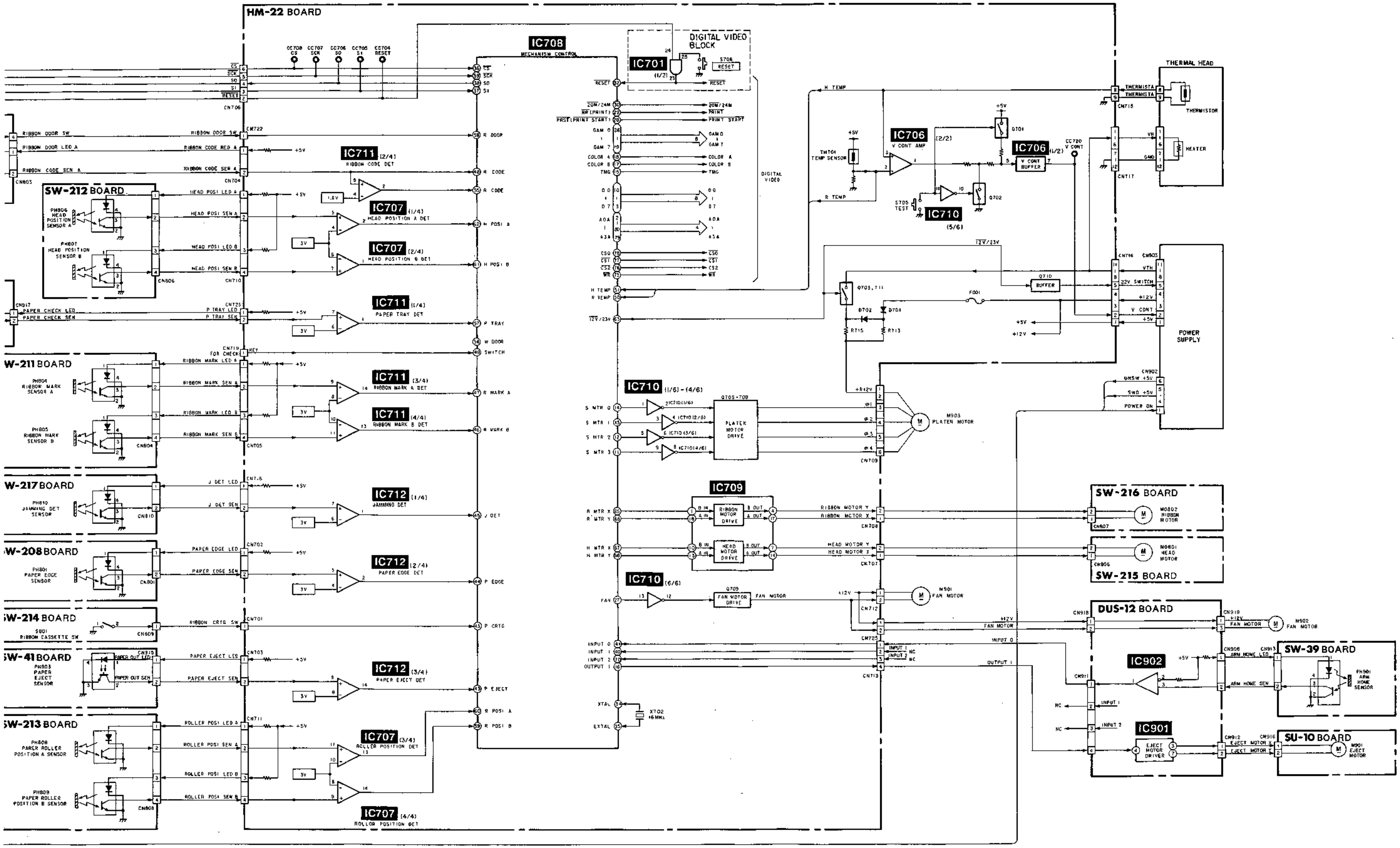




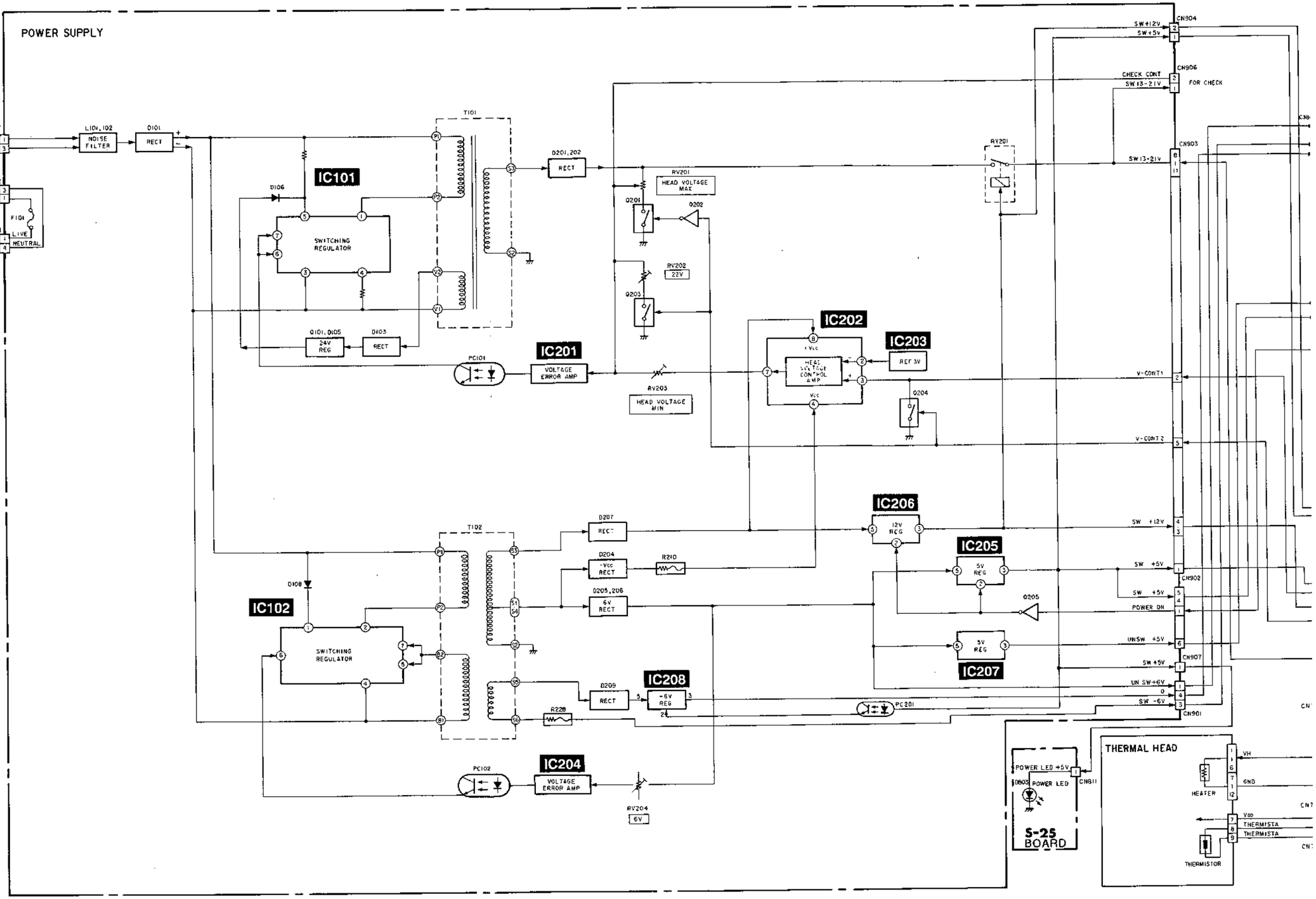
HM-22 BOARD
IC602
MAIN MASKING ROM
IC603
SUB MASKING ROM
IC604
LATCH
D/A CONVERTER
Q007 V REF SWITCH
ANALOG VIDEO (VA-14)
R OUT
G OUT
B OUT
VREF
IC011
PULSE GEN.
DL001 DELAY
IC219
GATE ARRAY
IC217
MEMORY CONTROL
IC704
GAMMA ROM
IC701
HEAD CONTROL
IC713
IC702
OPTION RAM
IC703
OPTION RAM
24MHz XTAL OSC
20MHz XTAL OSC
THERMAL HEAD
TO SYSTEM CONTROL
S706 RESET
IC510 (70) SOURCE/CAPTURE

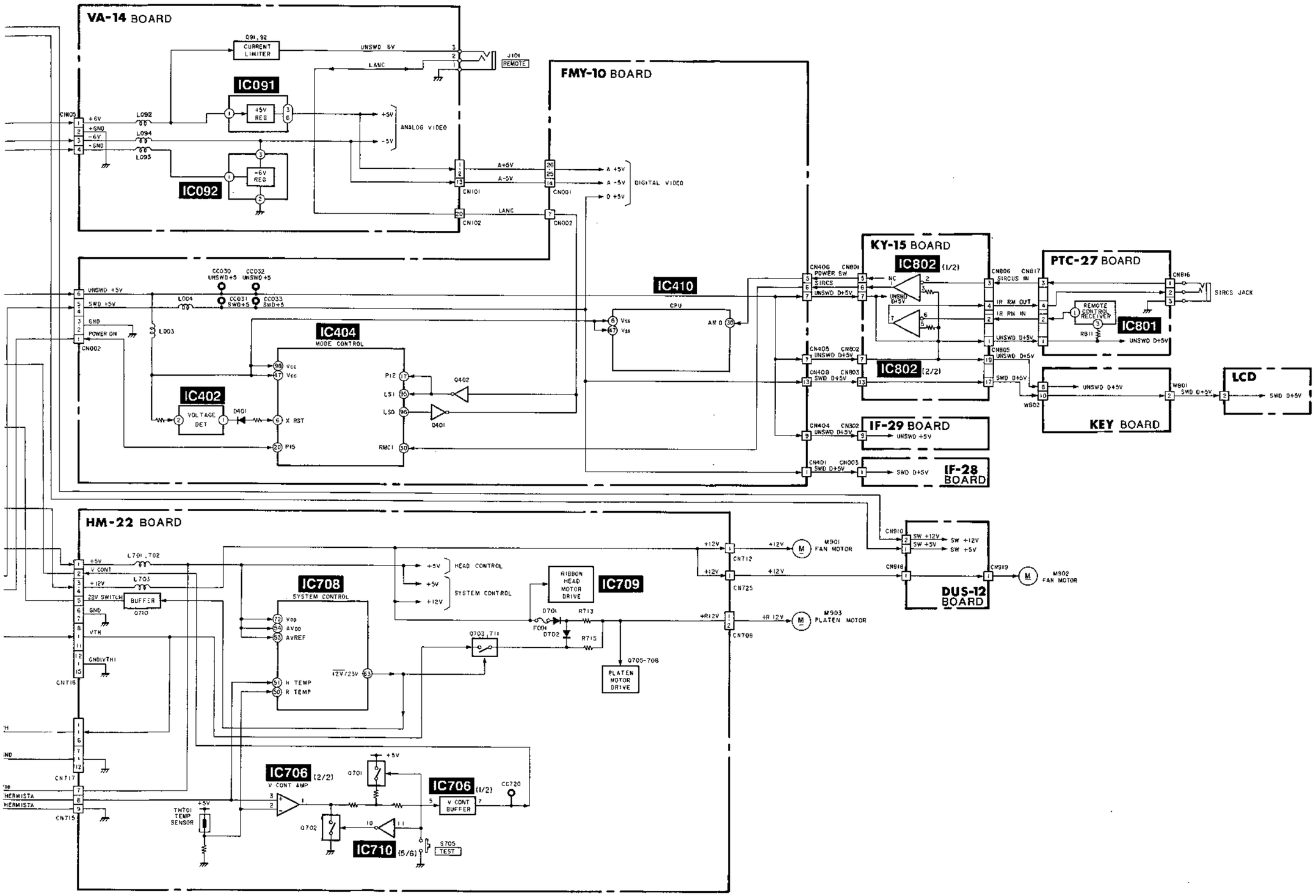
3-5. SYSTEM CONTROL BLOCK DIAGRAM




HM-22 BOARD
IC708
MECHANISM CONTROL
DIGITAL VIDEO BLOCK
IC701
IC711
IC707
IC712
IC710
IC709
IC706
THERMAL HEAD
POWER SUPPLY
SW-212 BOARD
W-211 BOARD
W-217 BOARD
W-208 BOARD
W-214 BOARD
W-41 BOARD
W-213 BOARD
SW-216 BOARD
SW-215 BOARD
DUS-12 BOARD
IC902
IC901
SW-39 BOARD
SU-10 BOARD

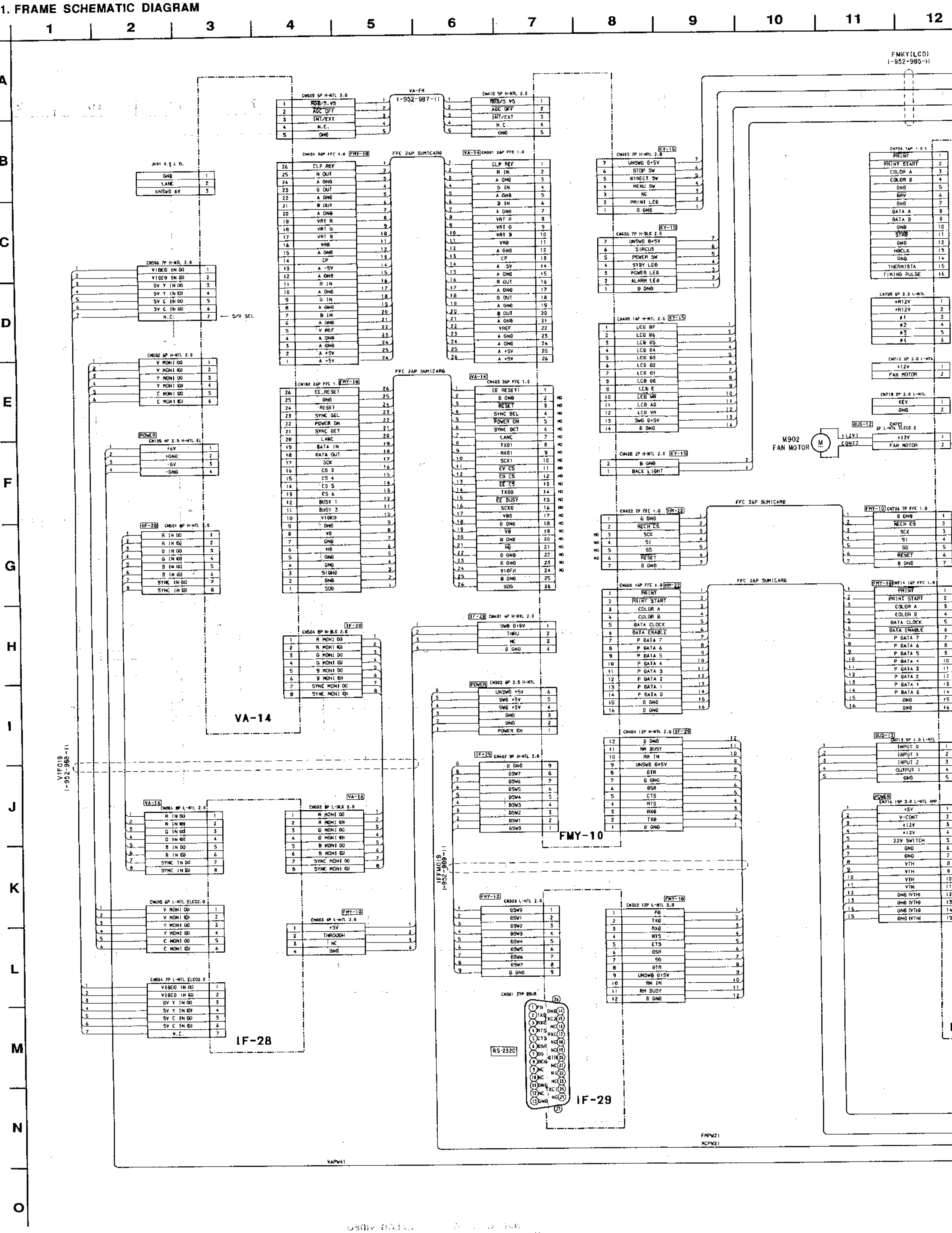
3-6. POWER SUPPLY BLOCK DIAGRAM




VA-14 BOARD
Q91, 92
CURRENT LIMITER
UNSWD 6V
LANC
J101
REMOTE
IC091
+5V REG
-6V REG
IC092
CN105
+6V
+GND
-6V
-GND
L092
L094
L093
+5V
-5V
ANALOG VIDEO
FMY-10 BOARD
A+5V
A-5V
CN101
CN102
A +5V
A -5V
D +5V
DIGITAL VIDEO
CN001
CN002
LANC
IC410
CPU
Vss
Vss
AN 0
KY-15 BOARD
IC802 (1/2)
IC802 (2/2)
CN406
POWER SW
CN801
SIRCS
UNSWD D+5V
NC
CN405
CN802
CN409
CN803
SWD D+5V
CN804
CN302
IF-29 BOARD
CN401
CN003
IF-28 BOARD
CN806
CN817
SIRCUS IN
IR RM OUT
IR RM IN
UNSWD D+5V
CN805
PTC-27 BOARD
CN816
SIRCS JACK
REMOTE CONTROL RECEIVER
IC801
R811
W801
W802
KEY BOARD
LCD
SWD D+5V
UNSWD +5V
SWD +5V
GND
POWER ON
CN002
L003
L004
CC030 UNSWD+5
CC032 UNSWD+5
CC031 SWD+5
CC033 SWD+5
IC404
MODE CONTROL
Vcc
Vcc
P12
LSI
LSO
RMCI
P15
Q402
Q401
IC402
VOLTAGE DET
D401
X RST
HM-22 BOARD
L701, 702
L703
+5V
V CONT
+12V
22V SWITCH
BUFFER
Q710
GND
VTH
GND/VTH
CN718
IC708
SYSTEM CONTROL
Vdd
AVDD
AVREF
12V/23V
H TEMP
R TEMP
HEAD CONTROL
SYSTEM CONTROL
RIBBON HEAD MOTOR DRIVE
IC709
D704
R713
F001
D702
R715
Q703, 711
Q705-708
PLATEN MOTOR DRIVE
+12V
CN712
CN725
CN709
M901 FAN MOTOR
M903 PLATEN MOTOR
CN910
CN918
CN919
SW +12V
SW +5V
DUS-12 BOARD
M902 FAN MOTOR
CN717
CN715
HERMISTA
HERMISTA
IC706 (2/2)
V CONT AMP
Q701
IC706 (1/2)
V CONT BUFFER
CC720
TH701 TEMP SENSOR
Q702
IC710 (5/6)
S705
TEST

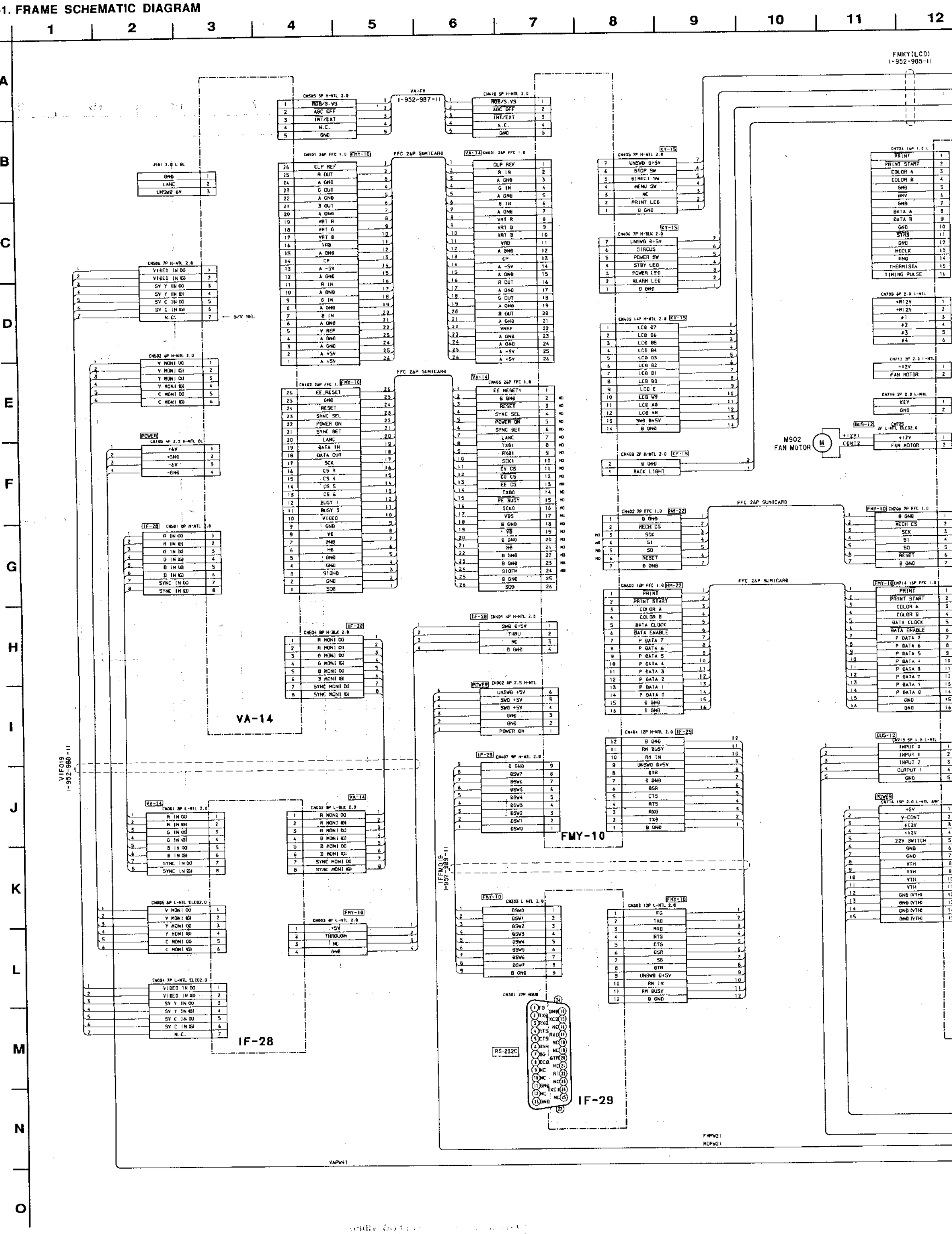
SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

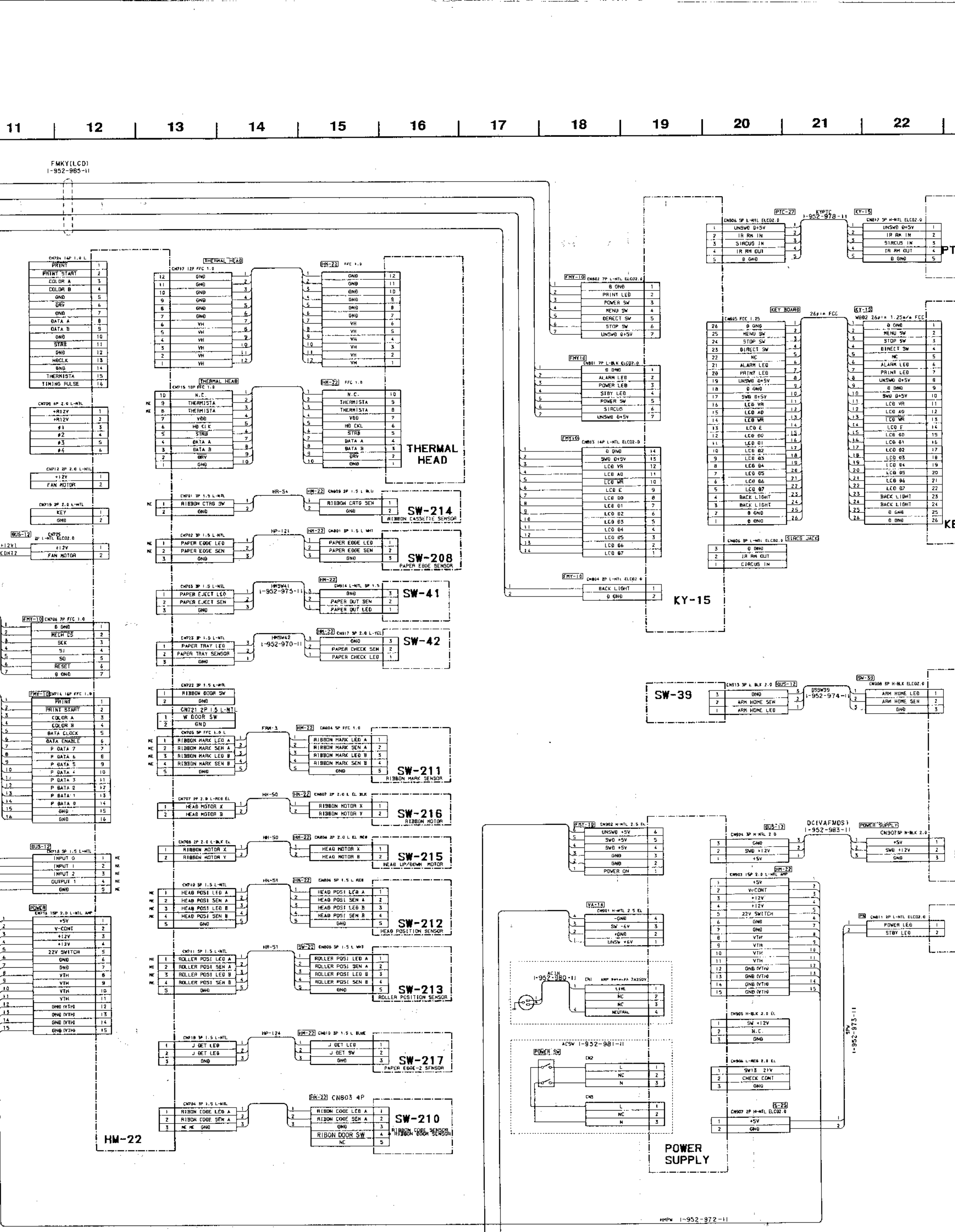
1. FRAME SCHEMATIC DIAGRAM

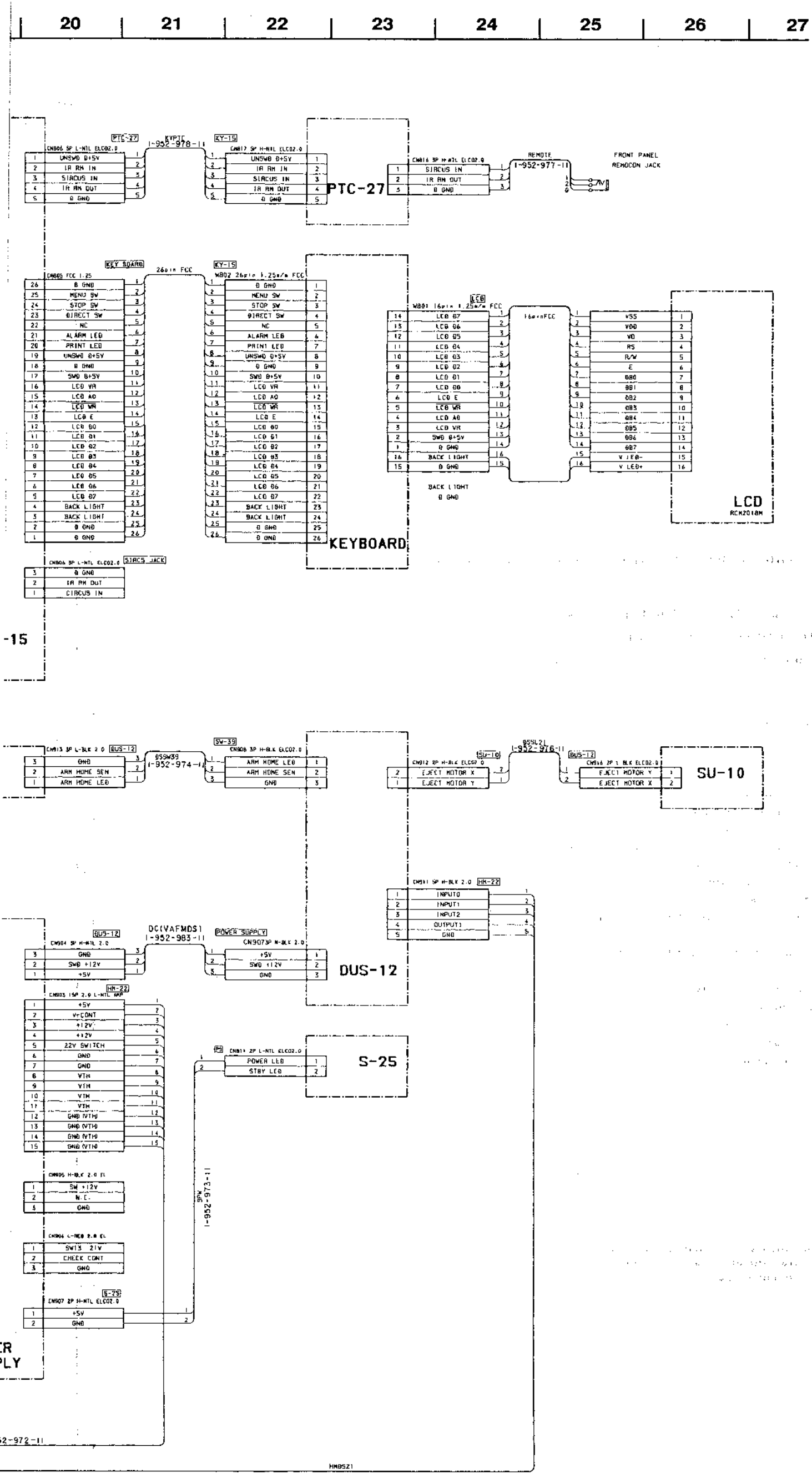


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM




11
12
13
14
15
16
17
18
19
20
21
22
FMKY(LCD)
1-952-983-11
THERMAL HEAD
SW-214
RIBBON CASSETTE SENSOR
SW-208
PAPER EDGE SENSOR
SW-41
SW-42
SW-211
RIBBON MARK SENSOR
SW-216
RIBBON MOTOR
SW-215
HEAD UP/DOWN MOTOR
SW-212
HEAD POSITION SENSOR
SW-213
ROLLER POSITION SENSOR
SW-217
PAPER EDGE-2 SENSOR
SW-210
RIBBON CODE SENSOR
RIBBON DOOR SENSOR
HM-22
KY-15
SW-39
POWER SUPPLY
PTC-27
KYPTC
1-952-978-11
KEY BOARD
26pin FCC
DC(VAFMDS)
1-952-983-11
ACIN
1-952-980-11
ACSW 1-952-981-11
POWER SW
DSSW39
1-952-974-11
SPW
1-952-973-11
HMPW 1-952-972-11


20
21
22
23
24
25
26
27
PTC-27
KYPTC
I-952-978-11
KY-15
CN806 3P L-NTL ELCO2.0
CN817 3P H-NTL ELCO2.0
UNSW0 0+5V
IR RM IN
SIRCUS IN
IR RM OUT
0 GND
PTC-27
CN816 3P H-NTL ELCO2.0
REMOTE
I-952-977-11
FRONT PANEL
REMOCON JACK
KEY BOARD
26pin FCC
W802 26pin 1.25m/m FCC
MENU SW
STOP SW
0IRECT SW
NC
ALARM LED
PRINT LED
SW0 0+5V
LCD VR
LCD A0
LCD WR
LCD E
LCD 00
LCD 01
LCD 02
LCD 03
LCD 04
LCD 05
LCD 06
LCD 07
BACK LIGHT
KEYBOARD
CN805 FCC 1.25
W801 16pin 1.25m/m FCC
16pinFCC
LCD
BACK LIGHT
VSS
VDD
VO
RS
R/W
E
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
V LED-
V LED+
LCD
RCM2018M
CN803 3P L-BLK 2.0
DUS-12
DSSW39
I-952-974-11
SW-39
CN806 3P H-BLK ELCO2.0
ARM HOME LED
ARM HOME SEN
GND
SU-10
BSSL2I
I-952-976-11
CN812 2P H-BLK ELCO2.0
EJECT MOTOR X
EJECT MOTOR Y
CN816 2P L-BLK ELCO2.0
SU-10
DC(VAFMDS)
I-952-983-11
POWER SUPPLY
CN907 3P H-BLK 2.0
+5V
SW0 +12V
GND
CN804 3P H-NTL 2.0
CN811 5P H-BLK 2.0
INPUT0
INPUT1
INPUT2
OUTPUT1
GND
HM-22
CN803 15P 2.0 L-NTL ANP
+5V
V-CONT
+12V
+12V
22V SWITCH
GND
GND
VTH
VTH
VTH
GND (VTH)
GND (VTH)
GND (VTH)
GND (VTH)
CN805 H-BLK 2.0 FL
SW +12V
N.C.
GND
CN804 L-REG 2.0 FL
SW13 21V
CHEEK CONT
GND
S-25
CN907 2P H-NTL ELCO2.0
S-25
CN811 2P L-NTL ELCO2.0
POWER LED
STBY LED
9PW
I-952-973-11
SIRCS JACK
CN806 3P L-NTL ELCO2.0
-15
ER
PLY
52-972-11
HM85Z1

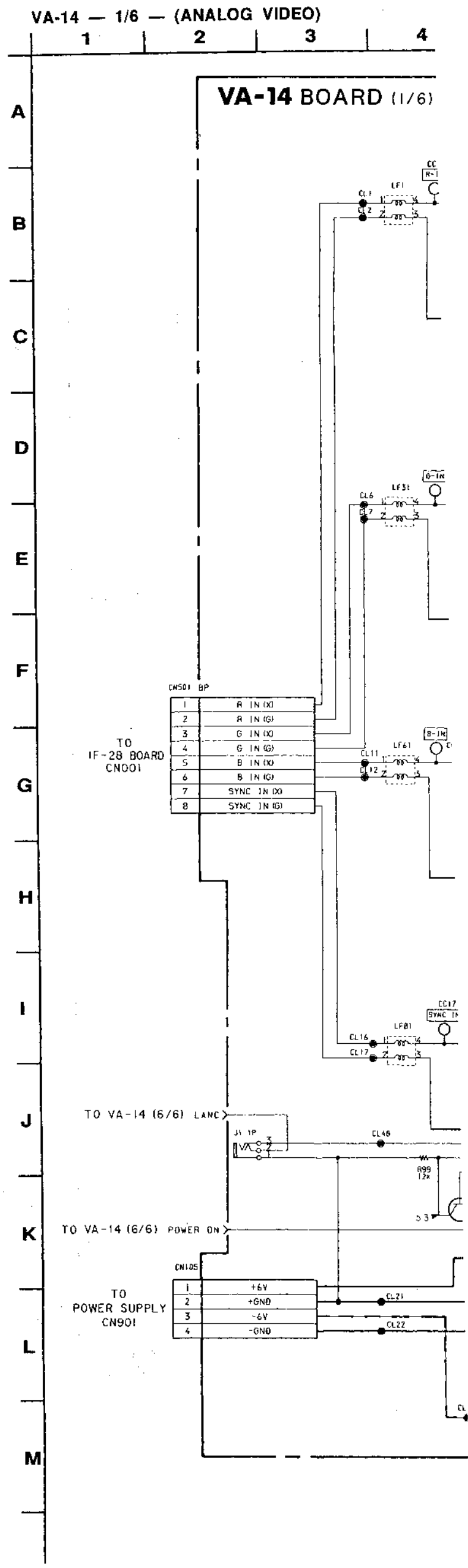
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

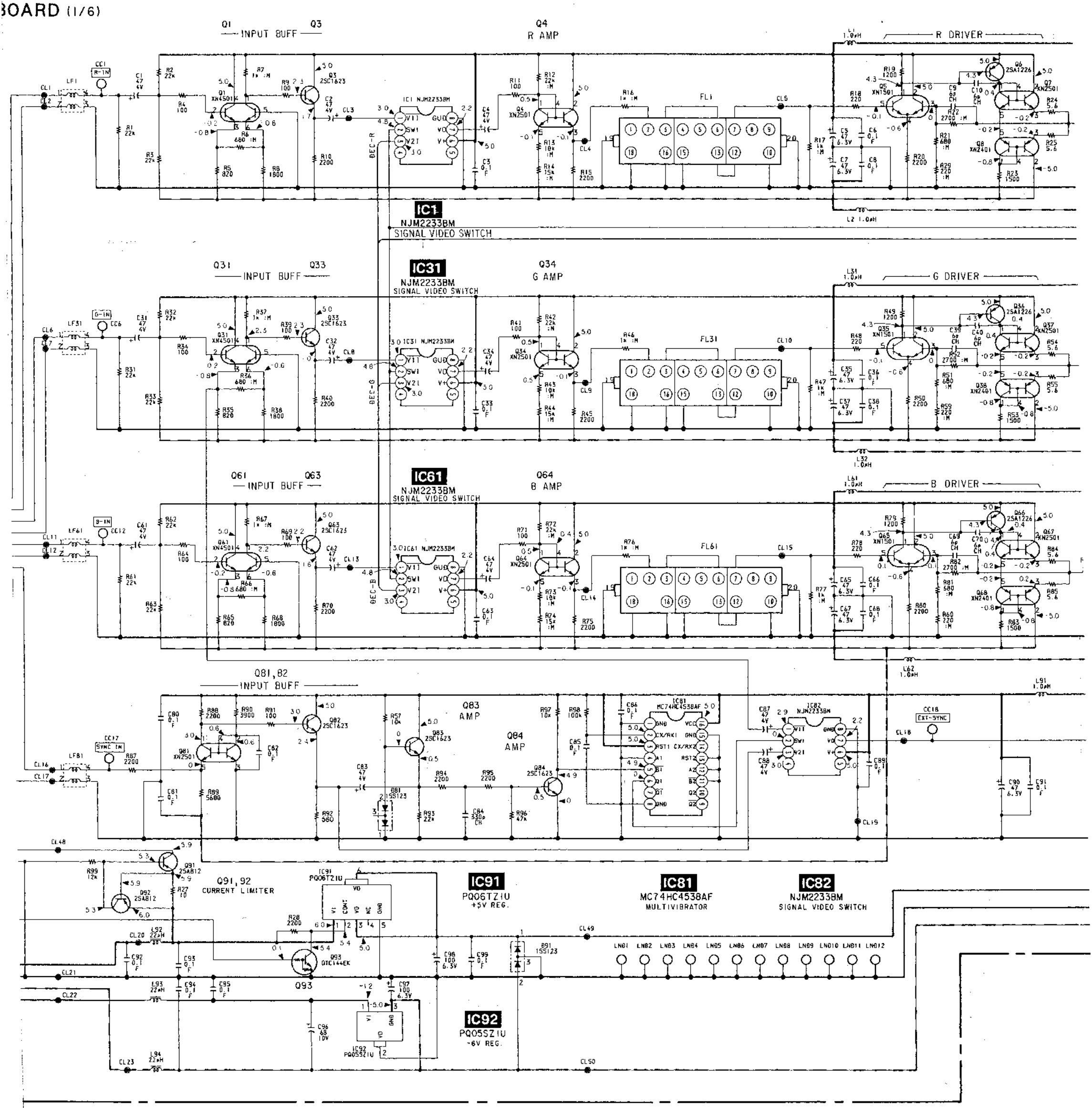
- **For Printed Wiring Boards.**
- ▬▬ : Soldering Side.
- ▬▬ : Component Side.

- **For Schematic Diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted.
  pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊣▭⊢ : nonflammable resistor.
- ⊣▭⊢ : fusibe resistor.
- ▭ : panel designation.
- ▭ : adjustment for repeair.
- ——— : B+ Line.
- – – – : B− Line.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

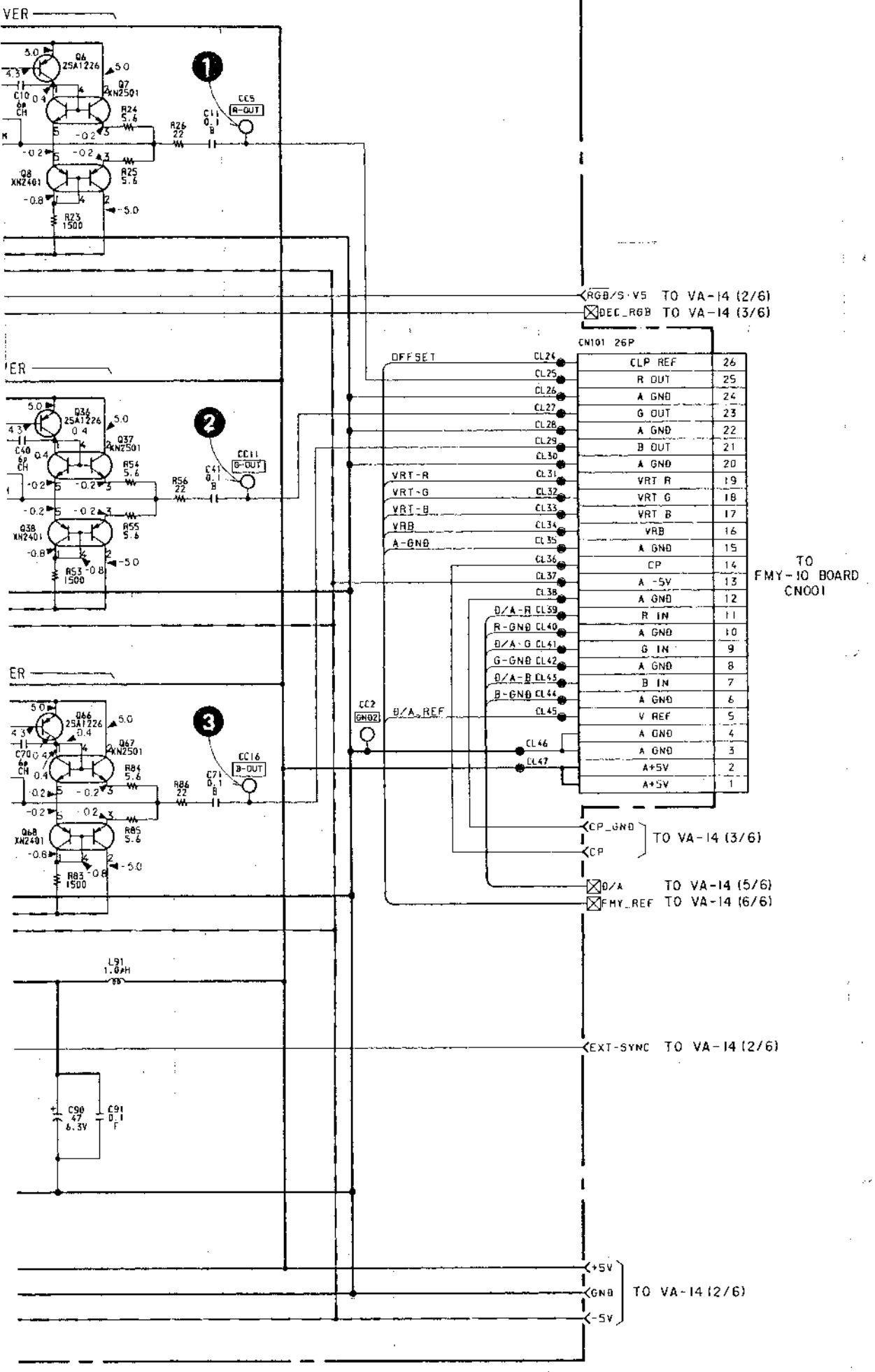
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



BOARD (1/6)

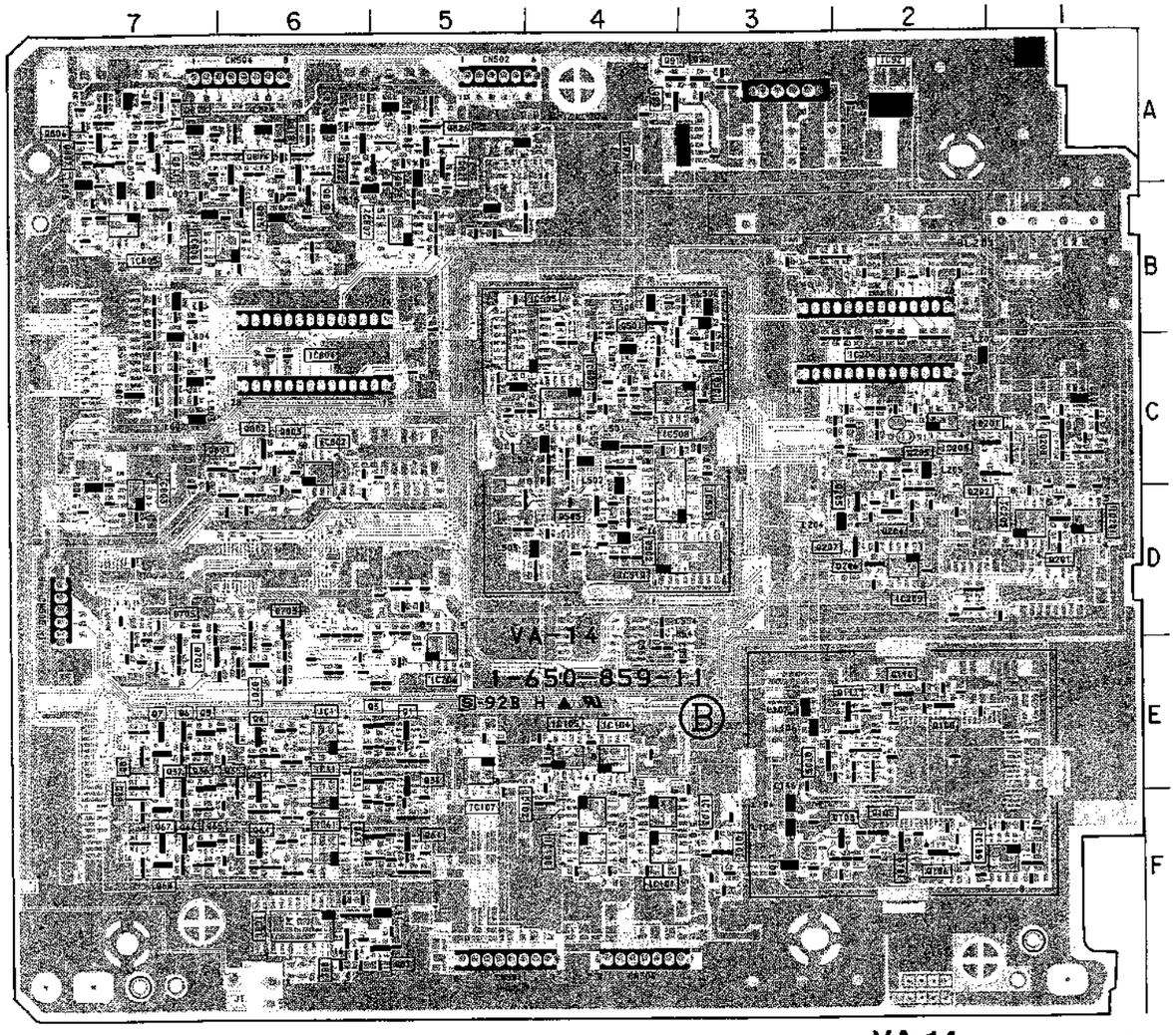

Q1
INPUT BUFF
Q3
Q4
R AMP
R DRIVER
IC1 NJM2233BM
FL1
IC1
NJM2233BM
SIGNAL VIDEO SWITCH
Q31
INPUT BUFF
Q33
IC31
NJM2233BM
SIGNAL VIDEO SWITCH
Q34
G AMP
G DRIVER
FL31
Q61
INPUT BUFF
Q63
IC61
NJM2233BM
SIGNAL VIDEO SWITCH
Q64
B AMP
B DRIVER
FL61
Q81,82
INPUT BUFF
Q83
AMP
Q84
AMP
Q91,92
CURRENT LIMITER
IC91
PQ06TZ1U
+5V REG.
IC81
MC74HC4538AF
MULTIVIBRATOR
IC82
NJM2233BM
SIGNAL VIDEO SWITCH
IC92
PQ05SZ1U
-6V REG.
R-IN
G-IN
B-IN
SYNC IN
EXT-SYNC
DEC-R
DEC-G
DEC-B
LN01 LN02 LN03 LN04 LN05 LN06 LN07 LN08 LN09 LN010 LN011 LN012

14 | 15 | 16 | 17 | 18 | 19 | 20

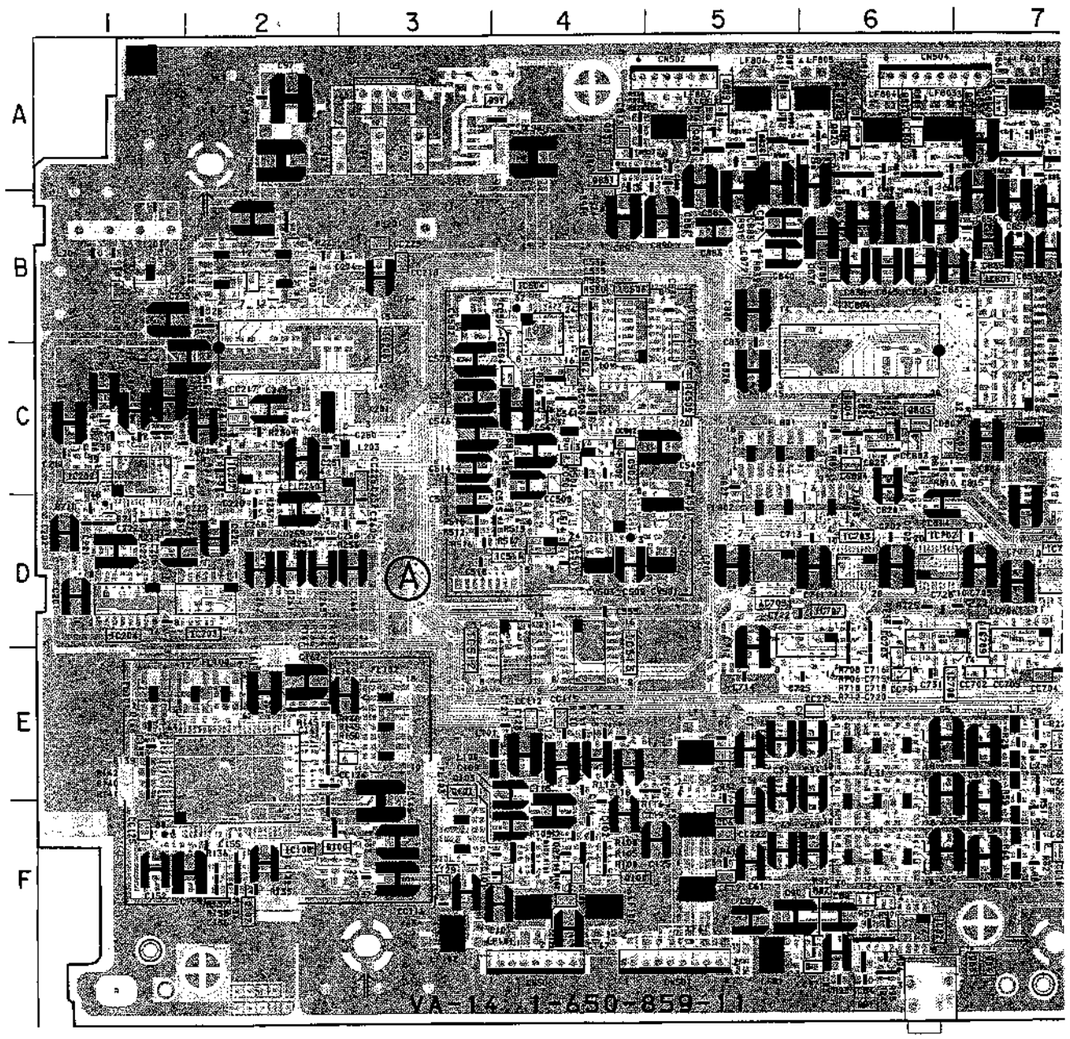


CLP REF	26
R OUT	25
A GND	24
G OUT	23
A GND	22
B OUT	21
A GND	20
VRT R	19
VRT G	18
VRT B	17
VRB	16
A GND	15
CP	14
A -5V	13
A GND	12
R IN	11
A GND	10
G IN	9
A GND	8
B IN	7
A GND	6
V REF	5
A GND	4
A GND	3
A+5V	2
A+5V	1

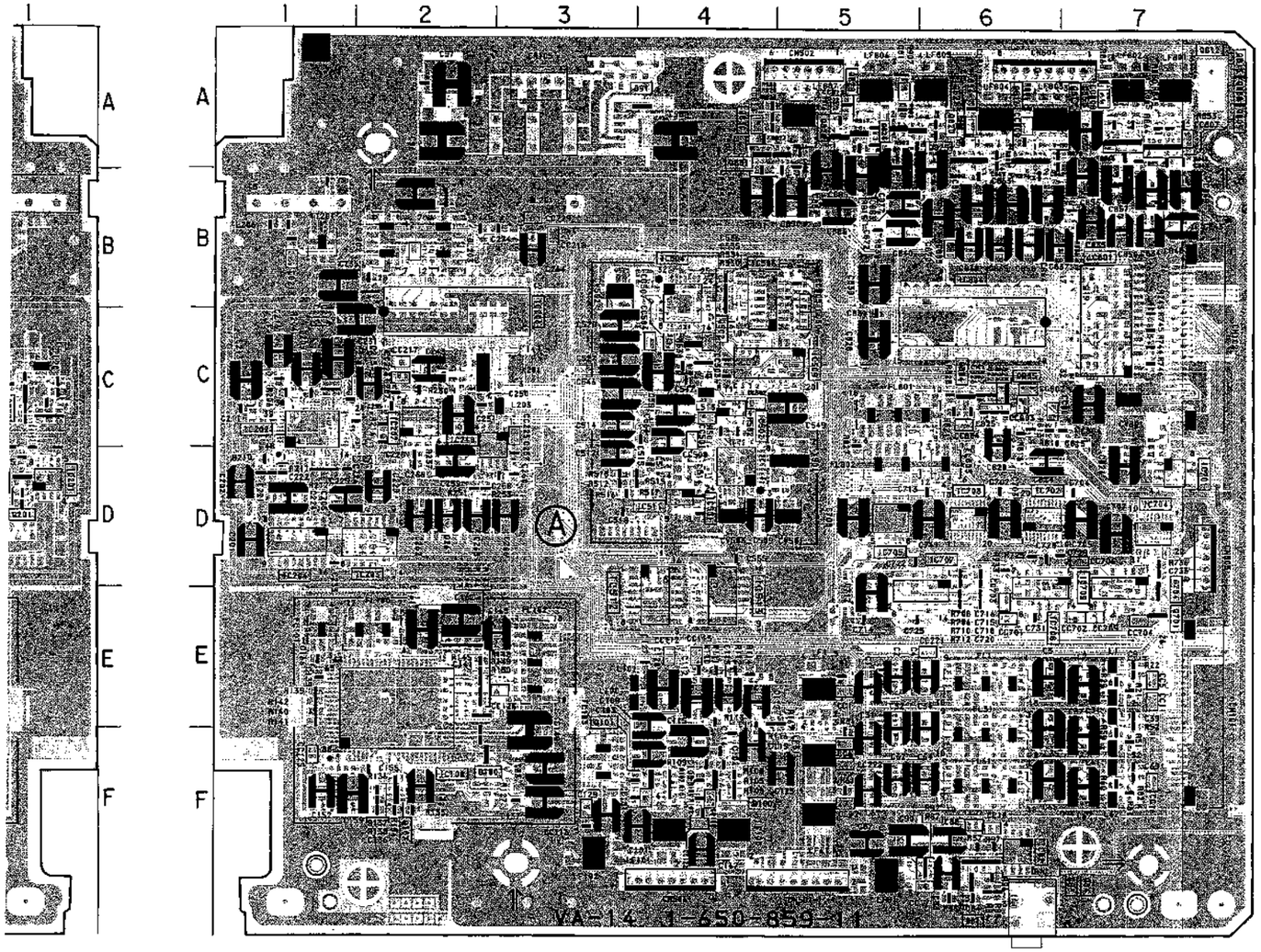
ANALOG VIDEO **ANALOG VIDEO**



VA-14 -SOLDERING SIDE-



VA-14 -COMPON



RING SIDE-

VA-14 -COMPONENT SIDE-

VA-14 BOARD

CN101	E-7		IC509	C-4		L811	B-7	S	Q502	C-4	
CN102	C-7		IC510	D-3	S	L812	A-7	S	Q701	E-7	
CN105	A-3		IC512	E-4		L813	B-6	S	Q801	C-7	S
CN501	F-5		IC513	E-4		L814	A-6	S	Q802	C-6	S
CN502	A-5		IC701	D-7		L815	B-6	S	Q803	C-6	S
CN504	A-6		IC702	D-6		L816	A-6	S	Q804	C-6	
CN505	D-7		IC703	D-6		L817	A-5	S	Q805	C-6	
CN506	F-4		IC704	D-7		L818	A-5	S	Q806	A-7	S
			IC705	D-5		L819	B-5	S	Q807	A-7	S
CV501	D-5		IC706	E-5	S	L820	A-5	S	Q808	A-7	
CV502	B-3		IC707	E-6					Q809	A-7	
CV801	C-7		IC708	D-6		LF001	E-5		Q810	A-7	S
			IC709	D-7		LF031	F-5		Q811	A-7	S
D081	F-6		IC801	C-7		LF061	F-5		Q812	A-7	
D091	A-4		IC802	C-6	S	LF081	F-5		Q813	A-7	
D100	F-2		IC803	C-7	S	LF100	F-4		Q814	A-6	S
D101	F-2	S	IC804	C-6		LF101	F-4		Q815	B-6	S
D201	C-2	S	IC805	B-7	S	LF102	F-3		Q816	A-6	
D501	B-3	S	IC806	B-6	S	LF801	A-7		Q817	A-6	
D701	E-6	S	IC807	B-5	S	LF802	A-7		Q818	A-6	S
D702	E-7	S				LF803	A-6		Q819	B-6	S
D703	D-6	S	IS406			LF804	A-6		Q820	A-6	
D704	E-7					FL805	A-6		Q821	A-6	
D705	D-7	S	J001			FL806	A-5		Q822	A-6	S
						FL807	A-5		Q823	A-5	S
DL202	B-2		JR240						Q824	A-5	
DL203	B-2					Q001	E-5	S	Q825	A-5	
			L001	E-7		Q003	E-6	S	Q826	A-5	S
FL001	E-6		L002	E-7		Q004	E-6	S	Q827	A-5	S
FL031	F-6		L031	E-7		Q005	E-7	S	Q828	A-5	
FL061	F-6		L032	F-7		Q008	E-7	S	Q829	A-5	
FL100	E-2		L061	F-7		Q031	E-5	S	Q830	A-4	
FL102	E-3		L062	F-7		Q033	E-6	S	Q831	A-4	
FL103	F-3		L091	F-5	S	Q034	E-6	S			
FL801	C-5		L092	A-3		Q035	E-7	S	X201	C-2	
FL802	D-5		L093	A-3		Q036	E-7	S	X501	D-5	
			L094	A-3		Q037	E-7	S			
IC001	E-6	S	L100	E-3		Q038	F-7	S			
IC031	E-6	S	L101	E-3		Q061	F-5	S			
IC061	F-6	S	L102	F-3	S	Q063	F-6	S			
IC081	F-6	S	L103	F-3	S	Q064	F-6	S			
IC082	F-6		L104	F-3	S	Q065	F-7	S			
IC091	A-3	S	L106	E-3	S	Q066	F-7	S			
IC092	A-2	S	L107	E-3	S	Q067	F-7	S			
IC100	F-4	S	L201	C-1	S	Q068	F-7	S			
IC101	F-4	S	L202	C-2	S	Q081	F-6	S			
IC102	F-4	S	L203	C-3		Q082	F-6	S			
IC103	F-4	S	L204	D-2	S	Q083	F-6				
IC104	E-4	S	L205	C-2	S	Q084	F-6				
IC105	E-5	S	L207	C-2		Q091	A-4	S			
IC107	E-5	S	L401			Q092	A-3	S			
IC108	E-2		L501	C-4	S	Q093	A-4	S			
IC109	F-1	S	L502	C-4	S	Q100	F-4				
IC201	D-1	S	L503	D-4	S	Q101	F-4				
IC202	C-1		L504	C-4	S	Q102	F-3	S			
IC203	D-2		L505	C-4	S	Q103	F-3	S			
IC204	D-1		L506	B-3	S	Q105	F-2	S			
IC205	D-1	S	L507	C-4	S	Q106	F-2	S			
IC206	C-2		L508	B-4	S	Q107	F-2				
IC207	C-2		L509	C-5	S	Q108	E-2	S			
IC208	C-2	S	L513	C-4		Q109	E-3	S			
IC209	D-2	S	L801	C-7	S	Q110	E-2	S			
IC210	C-2		L802	C-7	S	Q111	E-2	S			
IC501	D-4		L803	C-7	S	Q201	D-1	S			
IC502	C-4		L804	B-7	S	Q202	C-2	S			
IC503	D-4	S	L805	B-7	S	Q203	C-2	S			
IC504	B-4		L806	C-7	S	Q204	D-2	S			
IC505	C-5	S	L807	A-7	S	Q205	D-2	S			
IC506	B-4		L808	A-7	S	Q206	D-2	S			
IC507	C-4	S	L809	A-7	S	Q207	D-2	S			
IC508	C-4	S	L810	A-7	S	Q501	B-4	S			

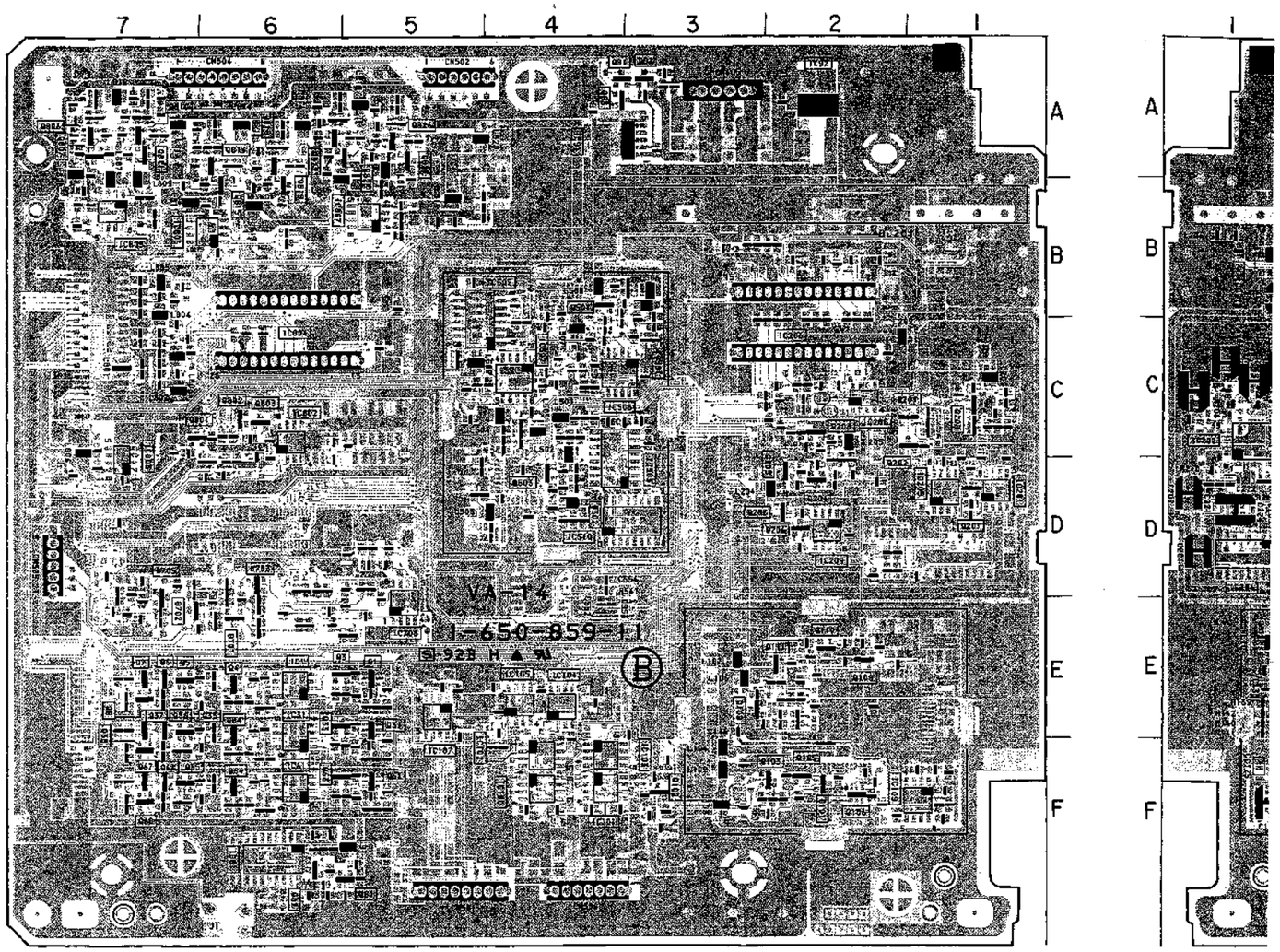
S:SOLDERING SIDE

VA-14 (ANALOG VIDEO)

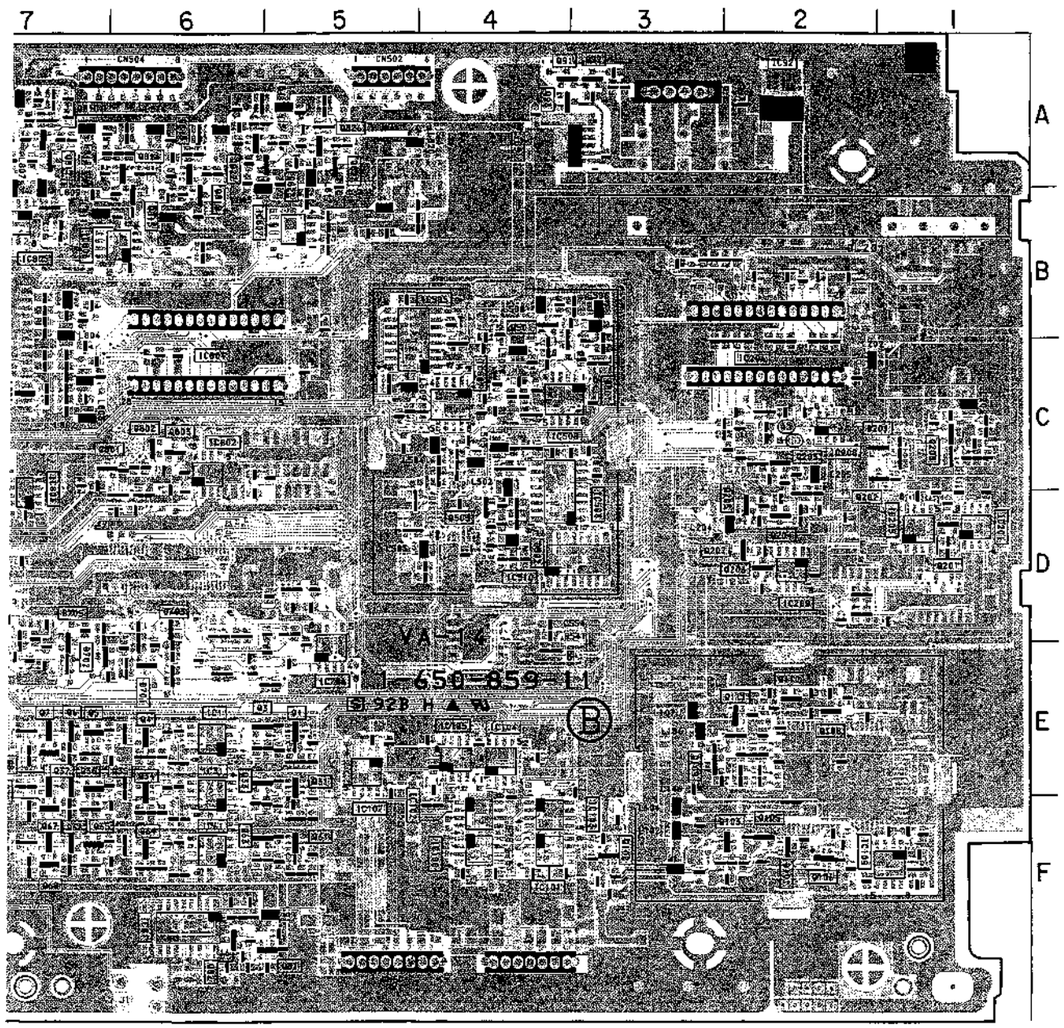
VA-14 BOARD

CN101	E-7		IC509	C-4		L811	B-7	S	Q502	C-4	
CN102	C-7		IC510	D-3	S	L812	A-7	S	Q701	E-7	
CN105	A-3		IC512	E-4		L813	B-6	S	Q801	C-7	S
CN501	F-5		IC513	E-4		L814	A-6	S	Q802	C-6	S
CN502	A-5		IC701	D-7		L815	B-6	S	Q803	C-6	S
CN504	A-6		IC702	D-6		L816	A-6	S	Q804	C-6	
CN505	D-7		IC703	D-6		L817	A-5	S	Q805	C-6	
CN506	F-4		IC704	D-7		L818	A-5	S	Q806	A-7	S
			IC705	D-5		L819	B-5	S	Q807	A-7	S
CV501	D-5		IC706	E-5	S	L820	A-5	S	Q808	A-7	
CV502	B-3		IC707	E-6					Q809	A-7	
CV801	C-7		IC708	D-6		LF001	E-5		Q810	A-7	S
			IC709	D-7		LF031	F-5		Q811	A-7	S
D081	F-6		IC801	C-7		LF061	F-5		Q812	A-7	
D091	A-4		IC802	C-6	S	LF081	F-5		Q813	A-7	
D100	F-2		IC803	C-7	S	LF100	F-4		Q814	A-6	S
D101	F-2	S	IC804	C-6		LF101	F-4		Q815	B-6	S
D201	C-2	S	IC805	B-7	S	LF102	F-3		Q816	A-6	
D501	B-3	S	IC806	B-6	S	LF801	A-7		Q817	A-6	
D701	E-6	S	IC807	B-5	S	LF802	A-7		Q818	A-6	S
D702	E-7	S				LF803	A-6		Q819	B-6	S
D703	D-6	S	IS406			LF804	A-6		Q820	A-6	
D704	E-7					FL805	A-6		Q821	A-6	
D705	D-7	S	J001			FL806	A-5		Q822	A-6	S
						FL807	A-5		Q823	A-5	S
DL202	B-2		JR240						Q824	A-5	
DL203	B-2					Q001	E-5	S	Q825	A-5	
			L001	E-7		Q003	E-6	S	Q826	A-5	S
FL001	E-6		L002	E-7		Q004	E-6	S	Q827	A-5	S
FL031	F-6		L031	E-7		Q005	E-7	S	Q828	A-5	
FL061	F-6		L032	F-7		Q008	E-7	S	Q829	A-5	
FL100	E-2		L061	F-7		Q031	E-5	S	Q830	A-4	
FL102	E-3		L062	F-7		Q033	E-6	S	Q831	A-4	
FL103	F-3		L091	F-5	S	Q034	E-6	S			
FL801	C-5		L092	A-3		Q035	E-7	S	X201	C-2	
FL802	D-5		L093	A-3		Q036	E-7	S	X501	D-5	
			L094	A-3		Q037	E-7	S			
IC001	E-6	S	L100	E-3		Q038	F-7	S			
IC031	E-6	S	L101	E-3		Q061	F-5	S			
IC061	F-6	S	L102	F-3	S	Q063	F-6	S			
IC081	F-6	S	L103	F-3	S	Q064	F-6	S			
IC082	F-6		L104	F-3	S	Q065	F-7	S			
IC091	A-3	S	L106	E-3	S	Q066	F-7	S			
IC092	A-2	S	L107	E-3	S	Q067	F-7	S			
IC100	F-4	S	L201	C-1	S	Q068	F-7	S			
IC101	F-4	S	L202	C-2	S	Q081	F-6	S			
IC102	F-4	S	L203	C-3		Q082	F-6	S			
IC103	F-4	S	L204	D-2	S	Q083	F-6				
IC104	E-4	S	L205	C-2	S	Q084	F-6				
IC105	E-5	S	L207	C-2		Q091	A-4	S			
IC107	E-5	S	L401			Q092	A-3	S			
IC108	E-2		L501	C-4	S	Q093	A-4	S			
IC109	F-1	S	L502	C-4	S	Q100	F-4				
IC201	D-1	S	L503	D-4	S	Q101	F-4				
IC202	C-1		L504	C-4	S	Q102	F-3	S			
IC203	D-2		L505	C-4	S	Q103	F-3	S			
IC204	D-1		L506	B-3	S	Q105	F-2	S			
IC205	D-1	S	L507	C-4	S	Q106	F-2	S			
IC206	C-2		L508	B-4	S	Q107	F-2				
IC207	C-2		L509	C-5	S	Q108	E-2	S			
IC208	C-2	S	L513	C-4		Q109	E-3	S			
IC209	D-2	S	L801	C-7	S	Q110	E-2	S			
IC210	C-2		L802	C-7	S	Q111	E-2	S			
IC501	D-4		L803	C-7	S	Q201	D-1	S			
IC502	C-4		L804	B-7	S	Q202	C-2	S			
IC503	D-4	S	L805	B-7	S	Q203	C-2	S			
IC504	B-4		L806	C-7	S	Q204	D-2	S			
IC505	C-5	S	L807	A-7	S	Q205	D-2	S			
IC506	B-4		L808	A-7	S	Q206	D-2	S			
IC507	C-4	S	L809	A-7	S	Q207	D-2	S			
IC508	C-4	S	L810	A-7	S	Q501	B-4	S			

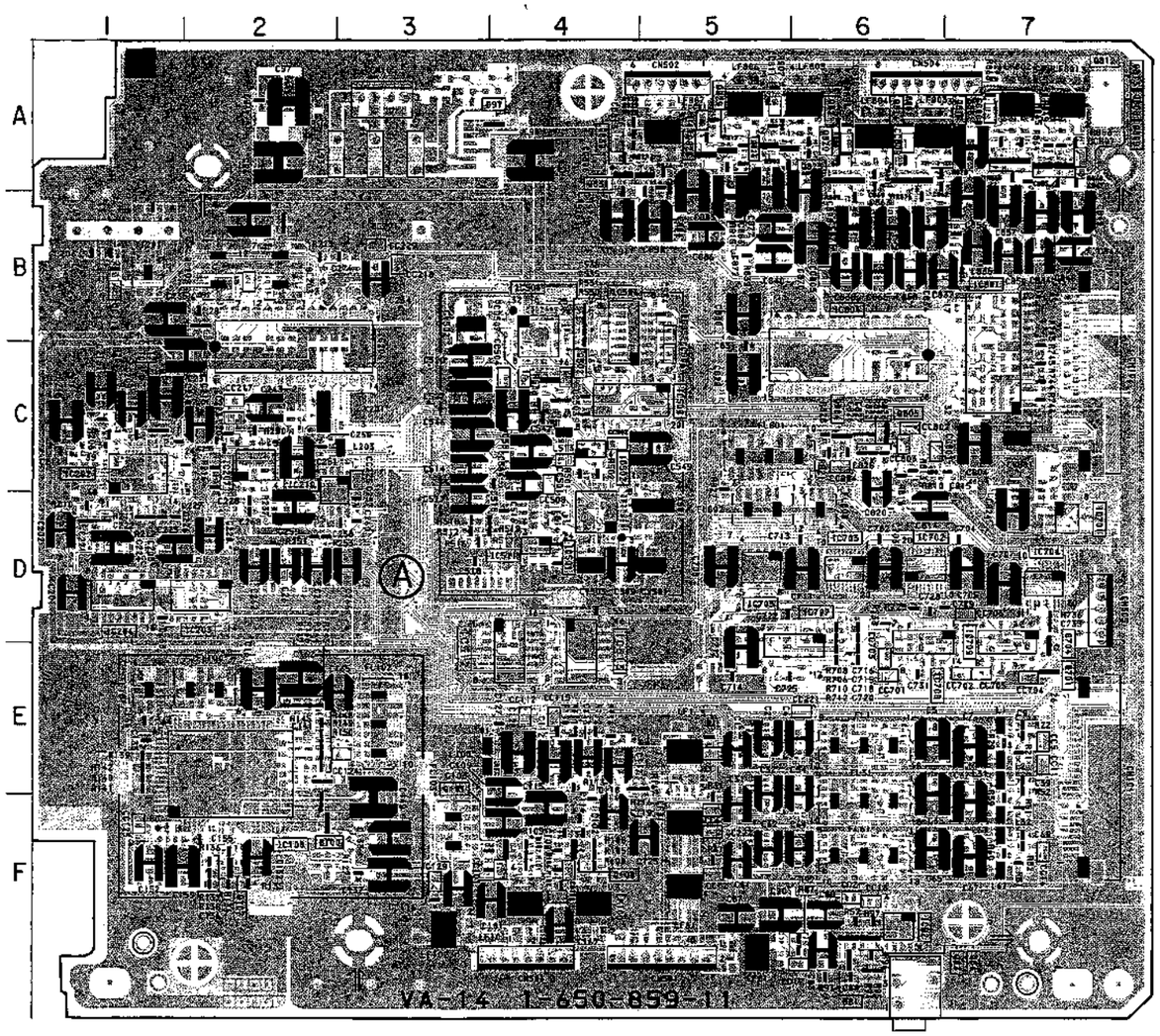
S:SOLDERING SIDE



VA-14 -SOLDERING SIDE-



VA-14 -SOLDERING SIDE-



VA-14 -COMPONENT SIDE-

VA-14 BOARD (2/6)

TO VA-14 (4/6) INT_C

Q100
C AMP

IC100 — IC104
NJM2233BM
C/Y OUT SWITCH

TO VA-14 (1/6) EXT-SYNC

TO VA-14 (6/6) S/VS

RGB/S-VS TO VA-14 (3/6)

Q101
Y AMP

IC108
CXD2024Q
DIGITAL COMB FILTER

TO IF-28 BOARD CN004

CN506	
1	VIDEO IN (X)
2	VIDEO IN (G)
3	SVY IN (X)
4	SVY IN (G)
5	SVC IN (X)
6	SVC IN (G)
7	N.C

Q102 VIDEO BUFF
Q103 — VIDEO AMP —
Q105
Q106 — SYNC TIP CLAMP —
Q107

10 11 12 13 14 15 16 17 18 19 20

IC100 — IC104
NJM2233BM
C/Y OUT SWITCH

IC105
8A7046F
SYNC SEPARATOR & AFC

IC017
NJM2230M
VIDEO SIGNAL DETECTOR

DEC_INT TO VA-14 (3/6)
SYNC_DET TO VA-14 (6/6)
+5V TO VA-14 (3/6)
GND TO VA-14 (3/6)
-5V TO VA-14 (1/6)
14 (3/6)

IC108
CXD2024Q
DIGITAL COMB FILTER

IC109
NJM2240M
FSC

COM_E
COM_EVR TO VA-14 (6/6)
+5V TO VA-14 (1/6)
DEC_SC
COM_Y
-5V TO VA-14 (3/6)

Q108
C AMP

Q110
C BUFFER

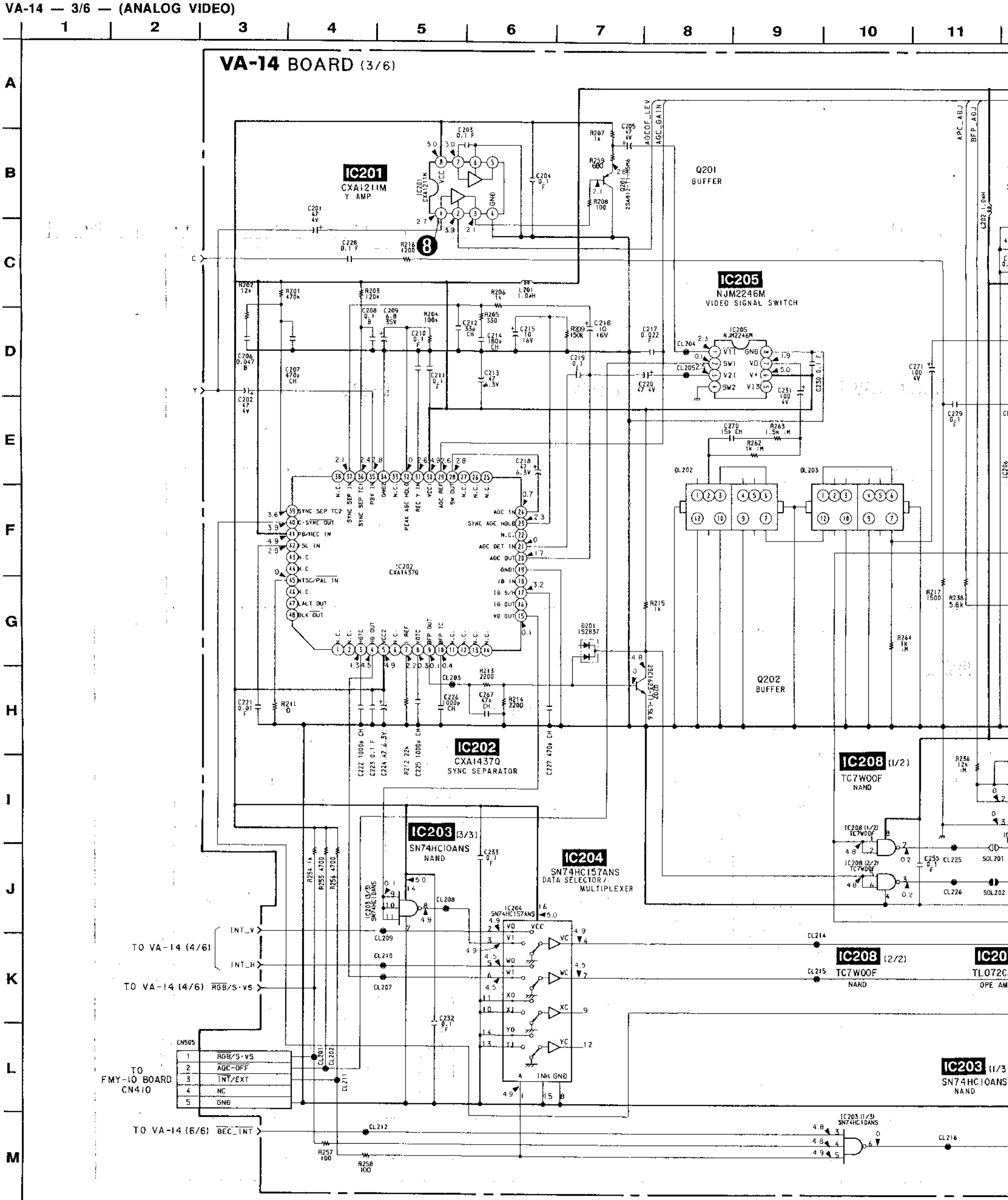
Q111
Y BUFFER

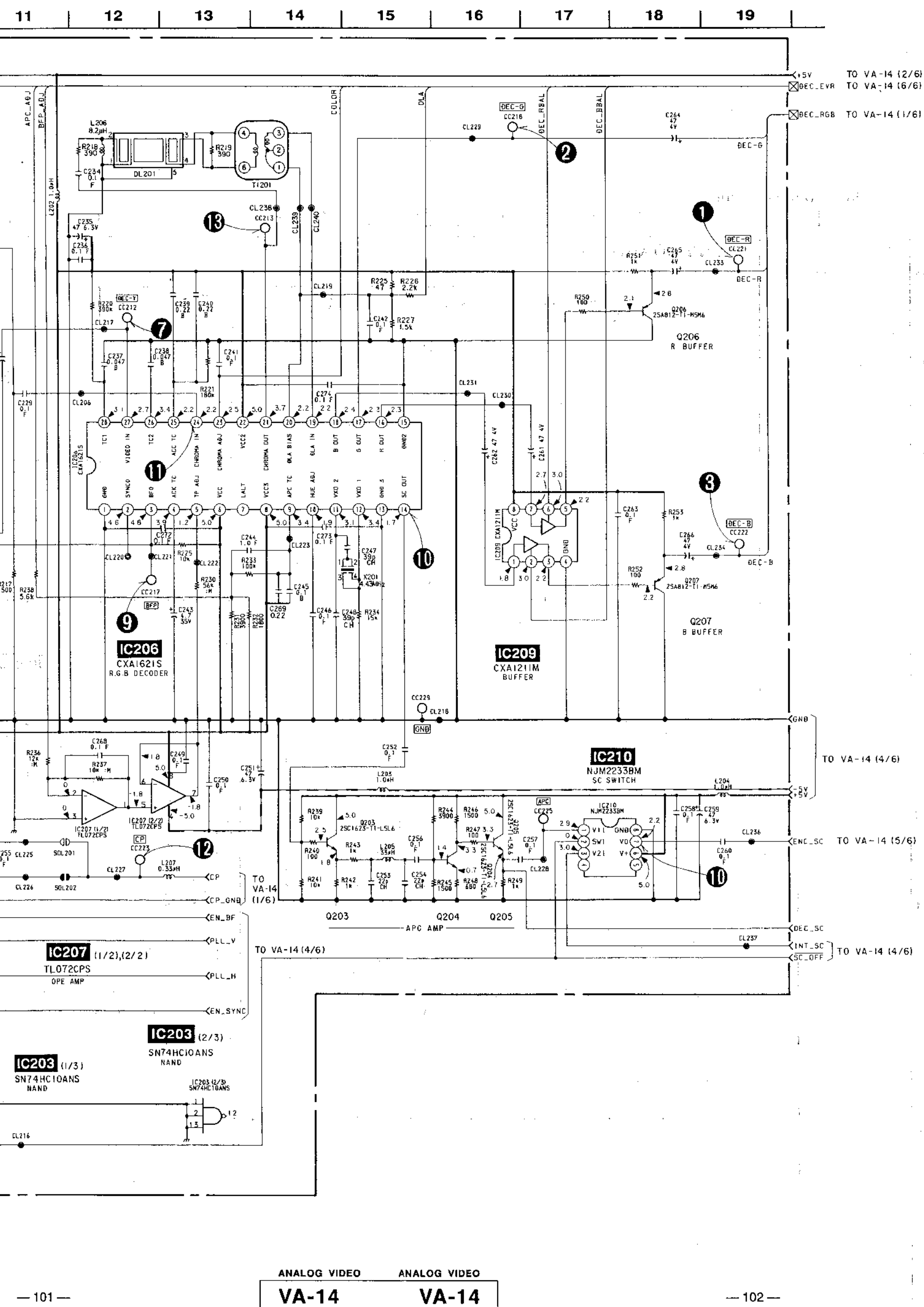
Q109
Y AMP

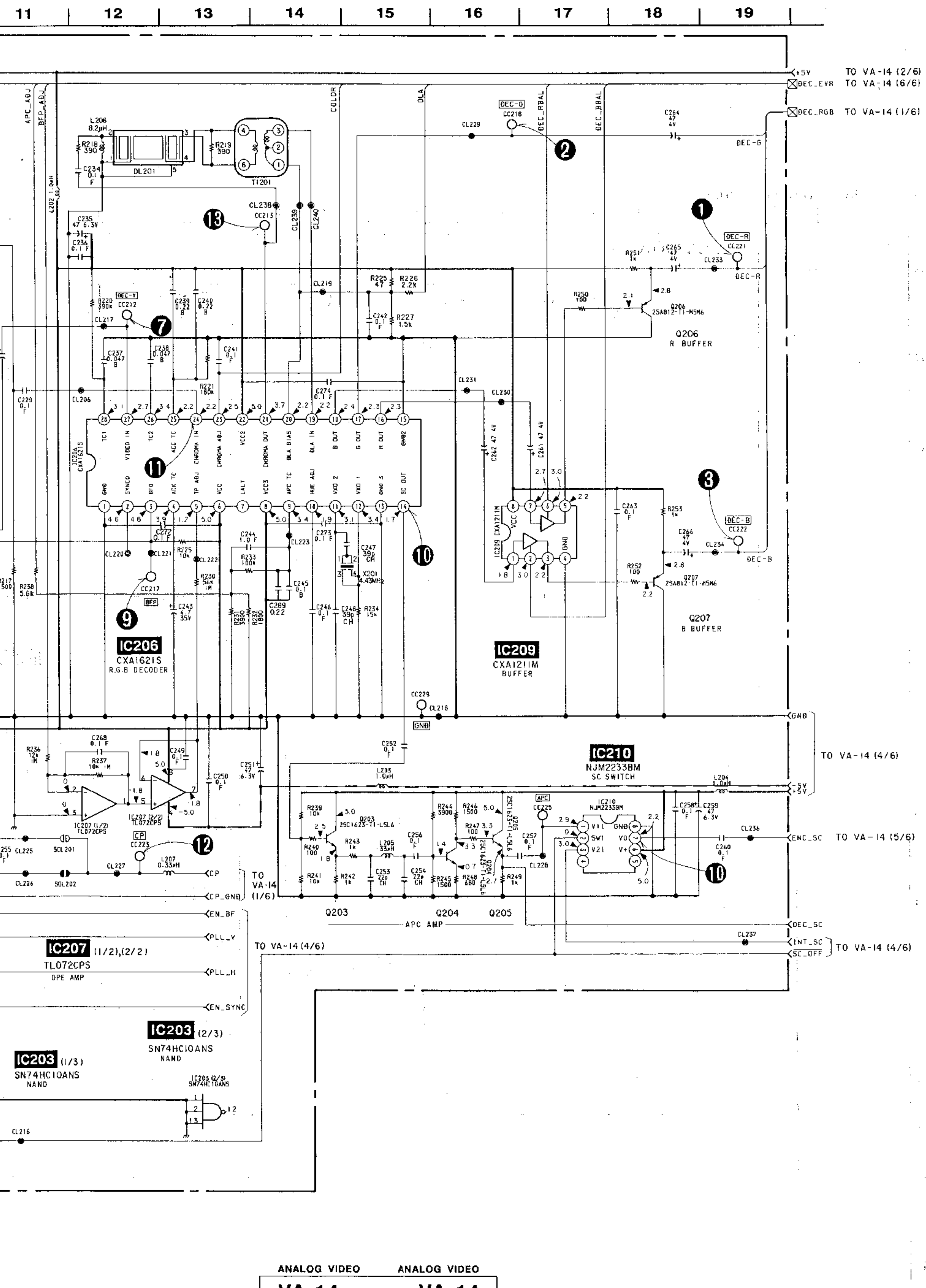
FL101
FL102

VA-14 — 3/6 — (ANALOG VIDEO)

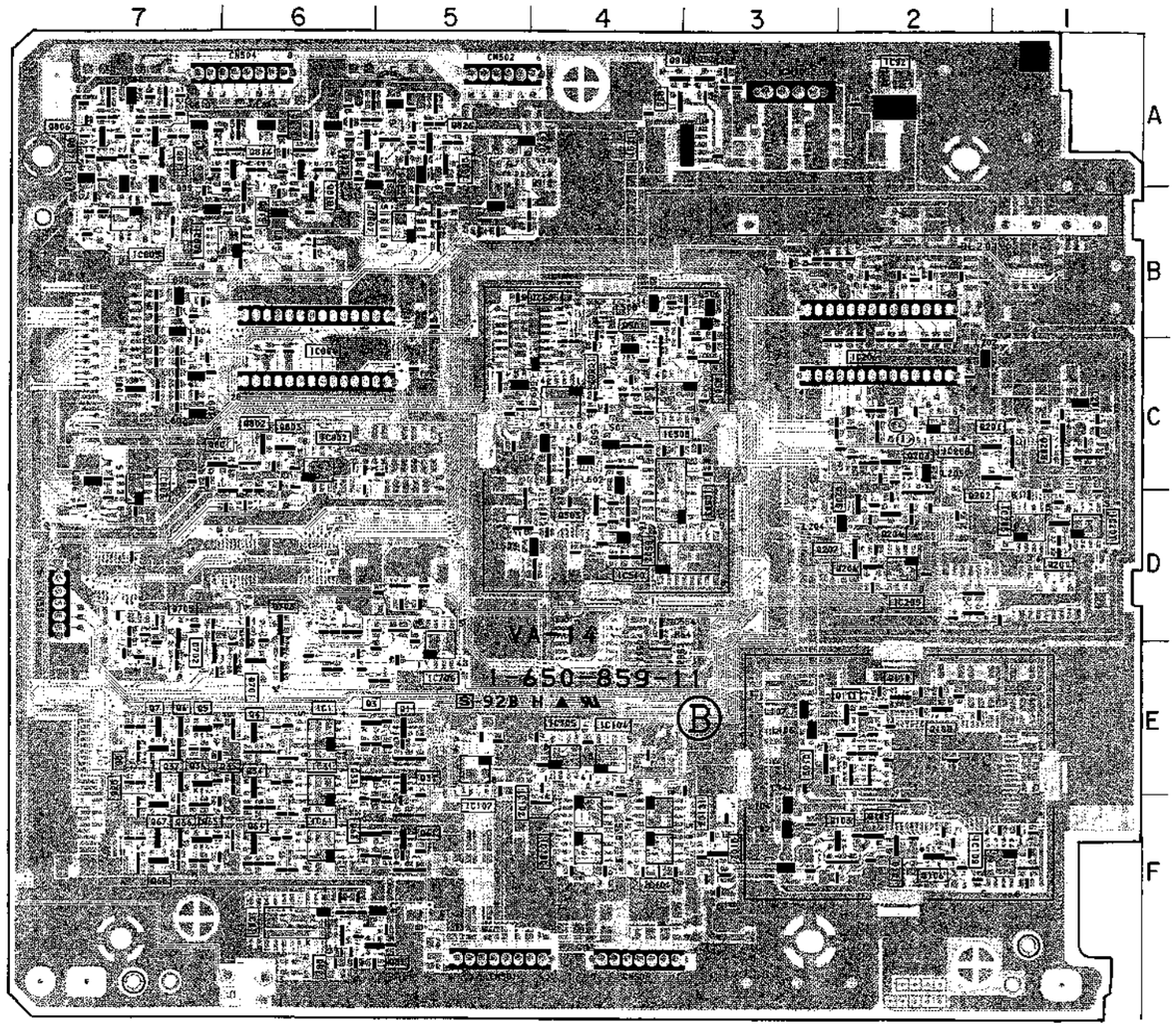
VA-14 BOARD (3/6)



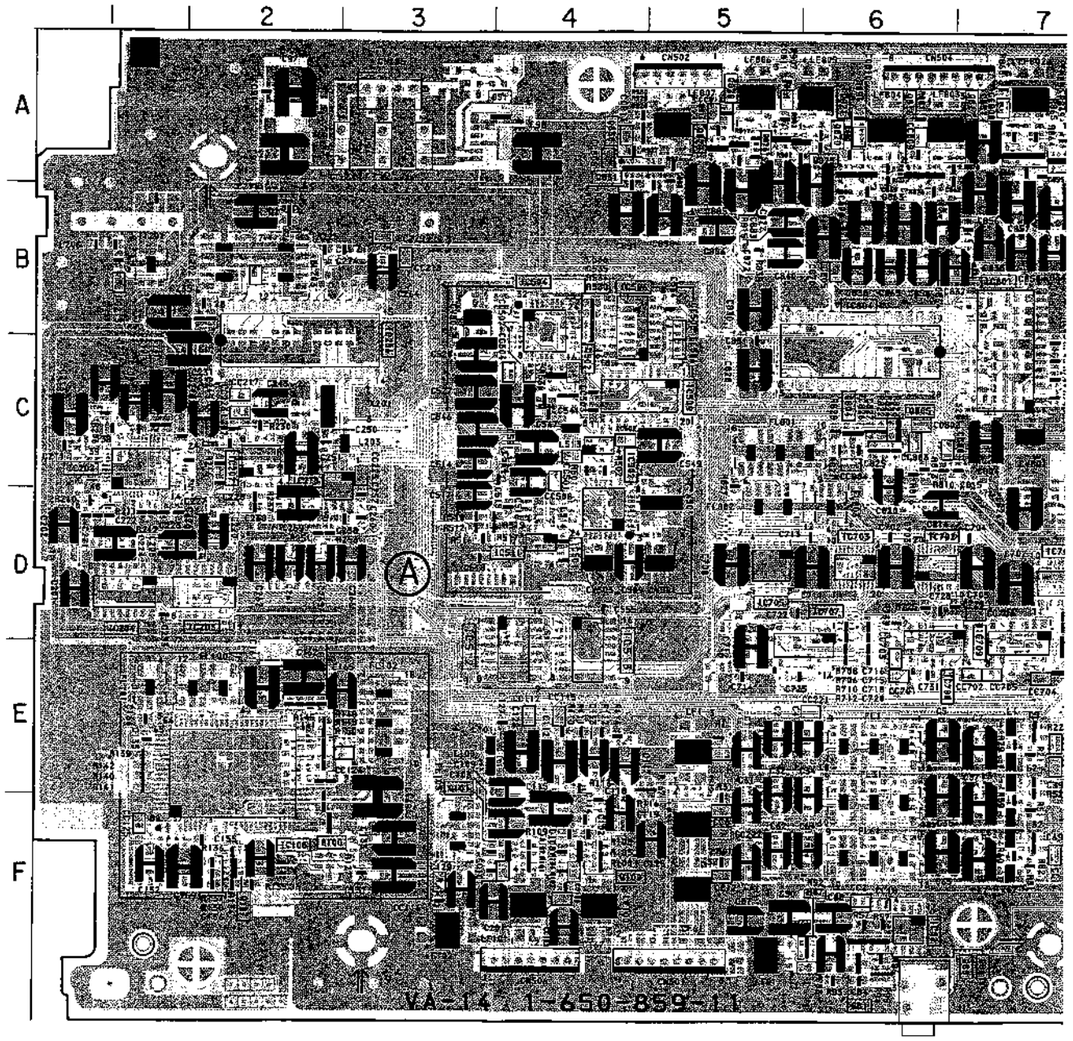

11
12
13
14
15
16
17
18
19
+5V
TO VA-14 (2/6)
DEC_EVR
TO VA-14 (6/6)
DEC_RGB
TO VA-14 (1/6)
APC_ADJ
BFP_ADJ
COLOR
DLA
DEC_RBAL
DEC_BBAL
L206 8.2μH
R218 390
R219 390
DL201
T1201
C234 0.1 F
C235 47 6.3V
C236 0.1 F
L202 1.0μH
CL238
CC213
CL239
CL240
DEC-G
CC216
CL229
C264 47 4V
DEC-R
CC221
CL233
C265 47 4V
R251 1k
R250 100
Q206 2SA812-T1-M5M6
Q206 R BUFFER
DEC-Y
CC212
R220 390k
C239 0.22 B
C240 0.22 B
CL217
C237 0.047 B
C238 0.047 B
C241 0.1 F
CL219
R225 47
R226 2.2k
C242 0.1 F
R227 1.5k
CL206
C229 0.1 F
R221 180k
C274 0.1 F
CL231
CL230
C262 47 4V
C261 47 4V
IC206 CXA1621S
TC1
VIDEO IN
TC2
ACK TC
CHROMA IN
CHROMA ADJ
VCC2
CHROMA OUT
BLA BIAS
BLA IN
B OUT
G OUT
R OUT
GND2
GND
SYNCO
BFO
ACK TC
TP ADJ
VCC
LALT
VCC3
APC TC
HUE ADJ
VXO 2
VXO 1
GND 3
SC OUT
C272 0.1 F
CL220
CL221
R225 10k
CL222
R230 56k
CC217
BFO
C243 4.7 35V
C244 1.0 F
R233 100k
C245 0.1 B
C269 0.22
CL223
C273 0.1 F
C247 39p CH
X201 4.43361 MHz
C246 0.1 F
C248 39p CH
R234 15k
R231 3900
R232 1800
IC206 CXA1621S R.G.B DECODER
IC209 CXA1211M
VCC
GND
BUFFER
C263 0.1 F
R253 1k
DEC-B
CC222
C266 47 4V
CL234
R252 100
Q207 2SA812-T1-M5M6
Q207 B BUFFER
CC229
CL218
GND
C268 0.1 F
R236 12k
R237 10k
C249 0.1 F
C250 0.1 F
C251 47 6.3V
IC207 (1/2) TL072CPS
IC207 (2/2) TL072CPS
CL225
SOL201
CL226
SOL202
CP
CC223
CL227
L207 0.33μH
CP_GND
TO VA-14 (1/6)
C252 0.1 F
L203 1.0μH
IC210 NJM2233BM
SC SWITCH
L204 1.0μH
-5V
+5V
TO VA-14 (4/6)
R239 10k
Q203 2SC1623-T1-L5L6
R240 100
R241 10k
R242 1k
R243 1k
L205 33μH
C253 22p CH
C256 0.1 F
C254 22p CH
R244 3900
R246 1500
R247 3.3
100
R245 1500
R248 680
R249 1k
2SC1623-T1-L5L6
2SC1623-T1-L5L6
APC
CC225
C257 0.1 F
CL228
IC210 NJM2233BM
GND
VO
V+
SW1
V21
V11
C258 0.1 F
C259 47 6.3V
C260 0.1 F
CL236
ENC_SC
TO VA-14 (5/6)
Q203
Q204
Q205
APC AMP
DEC_SC
CL237
INT_SC
SC_OFF
TO VA-14 (4/6)
EN_BF
PLL_V
PLL_H
EN_SYNC
IC207 (1/2),(2/2)
TL072CPS
OPE AMP
TO VA-14 (4/6)
IC203 (2/3)
SN74HC10ANS
NAND
IC203 (1/3)
SN74HC10ANS
NAND
IC203 (2/3) SN74HC10ANS
CL216



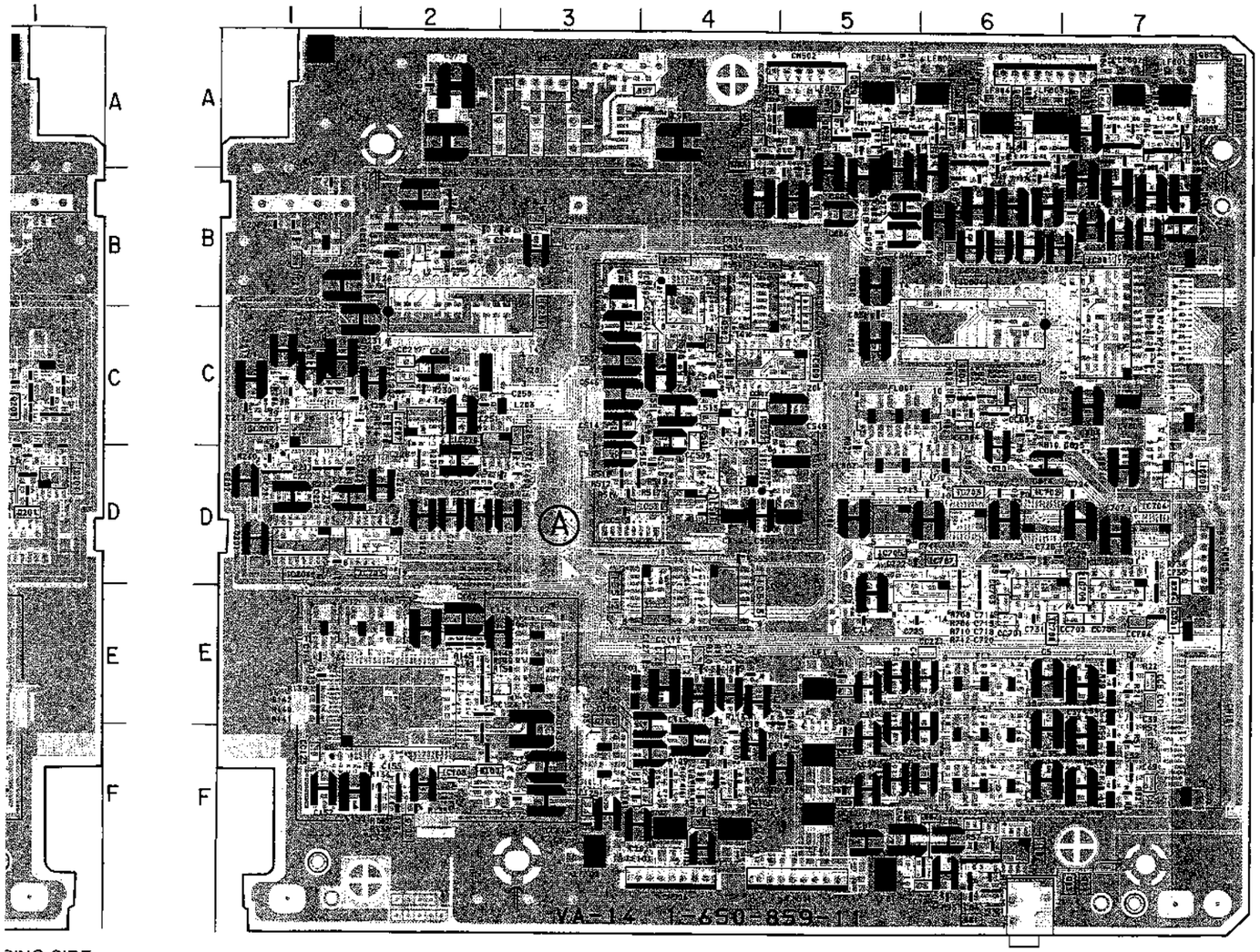
ANALOG VIDEO VA-14 ANALOG VIDEO VA-14



VA-14 -SOLDERING SIDE-



VA-14 -COMPON



RING SIDE-

VA-14 -COMPONENT SIDE-

VA-14 BOARD

CN101	E-7		IC509	C-4		L811	B-7	S	Q502	C-4	
CN102	C-7		IC510	D-3	S	L812	A-7	S	Q701	E-7	
CN105	A-3		IC512	E-4		L813	B-6	S	Q801	C-7	S
CN501	F-5		IC513	E-4		L814	A-6	S	Q802	C-6	S
CN502	A-5		IC701	D-7		L815	B-6	S	Q803	C-6	S
CN504	A-6		IC702	D-6		L816	A-6	S	Q804	C-6	
CN505	D-7		IC703	D-6		L817	A-5	S	Q805	C-6	
CN506	F-4		IC704	D-7		L818	A-5	S	Q806	A-7	S
			IC705	D-5		L819	B-5	S	Q807	A-7	S
CV501	D-5		IC706	E-5	S	L820	A-5	S	Q808	A-7	
CV502	B-3		IC707	E-6					Q809	A-7	
CV801	C-7		IC708	D-6		LF001	E-5		Q810	A-7	S
			IC709	D-7		LF031	F-5		Q811	A-7	S
D081	F-6		IC801	C-7		LF061	F-5		Q812	A-7	
D091	A-4		IC802	C-6	S	LF081	F-5		Q813	A-7	
D100	F-2		IC803	C-7	S	LF100	F-4		Q814	A-6	S
D101	F-2	S	IC804	C-6		LF101	F-4		Q815	B-6	S
D201	C-2	S	IC805	B-7	S	LF102	F-3		Q816	A-6	
D501	B-3	S	IC806	B-6	S	LF801	A-7		Q817	A-6	
D701	E-6	S	IC807	B-5	S	LF802	A-7		Q818	A-6	S
D702	E-7	S				LF803	A-6		Q819	B-6	S
D703	D-6	S	IS406			LF804	A-6		Q820	A-6	
D704	E-7					FL805	A-6		Q821	A-6	
D705	D-7	S	J001			FL806	A-5		Q822	A-6	S
						FL807	A-5		Q823	A-5	S
DL202	B-2		JR240						Q824	A-5	
DL203	B-2					Q001	E-5	S	Q825	A-5	
			L001	E-7		Q003	E-6	S	Q826	A-5	S
FL001	E-6		L002	E-7		Q004	E-6	S	Q827	A-5	S
FL031	F-6		L031	E-7		Q005	E-7	S	Q828	A-5	
FL061	F-6		L032	F-7		Q008	E-7	S	Q829	A-5	
FL100	E-2		L061	F-7		Q031	E-5	S	Q830	A-4	
FL102	E-3		L062	F-7		Q033	E-6	S	Q831	A-4	
FL103	F-3		L091	F-5	S	Q034	E-6	S			
FL801	C-5		L092	A-3		Q035	E-7	S	X201	C-2	
FL802	D-5		L093	A-3		Q036	E-7	S	X501	D-5	
			L094	A-3		Q037	E-7	S			
IC001	E-6	S	L100	E-3		Q038	F-7	S			
IC031	E-6	S	L101	E-3		Q061	F-5	S			
IC061	F-6	S	L102	F-3	S	Q063	F-6	S			
IC081	F-6	S	L103	F-3	S	Q064	F-6	S			
IC082	F-6		L104	F-3	S	Q065	F-7	S			
IC091	A-3	S	L106	E-3	S	Q066	F-7	S			
IC092	A-2	S	L107	E-3	S	Q067	F-7	S			
IC100	F-4	S	L201	C-1	S	Q068	F-7	S			
IC101	F-4	S	L202	C-2	S	Q081	F-6	S			
IC102	F-4	S	L203	C-3		Q082	F-6	S			
IC103	F-4	S	L204	D-2	S	Q083	F-6				
IC104	E-4	S	L205	C-2	S	Q084	F-6				
IC105	E-5	S	L207	C-2		Q091	A-4	S			
IC107	E-5	S	L401			Q092	A-3	S			
IC108	E-2		L501	C-4	S	Q093	A-4	S			
IC109	F-1	S	L502	C-4	S	Q100	F-4				
IC201	D-1	S	L503	D-4	S	Q101	F-4				
IC202	C-1		L504	C-4	S	Q102	F-3	S			
IC203	D-2		L505	C-4	S	Q103	F-3	S			
IC204	D-1		L506	B-3	S	Q105	F-2	S			
IC205	D-1	S	L507	C-4	S	Q106	F-2	S			
IC206	C-2		L508	B-4	S	Q107	F-2				
IC207	C-2		L509	C-5	S	Q108	E-2	S			
IC208	C-2	S	L513	C-4		Q109	E-3	S			
IC209	D-2	S	L801	C-7	S	Q110	E-2	S			
IC210	C-2		L802	C-7	S	Q111	E-2	S			
IC501	D-4		L803	C-7	S	Q201	D-1	S			
IC502	C-4		L804	B-7	S	Q202	C-2	S			
IC503	D-4	S	L805	B-7	S	Q203	C-2	S			
IC504	B-4		L806	C-7	S	Q204	D-2	S			
IC505	C-5	S	L807	A-7	S	Q205	D-2	S			
IC506	B-4		L808	A-7	S	Q206	D-2	S			
IC507	C-4	S	L809	A-7	S	Q207	D-2	S			
IC508	C-4	S	L810	A-7	S	Q501	B-4	S			

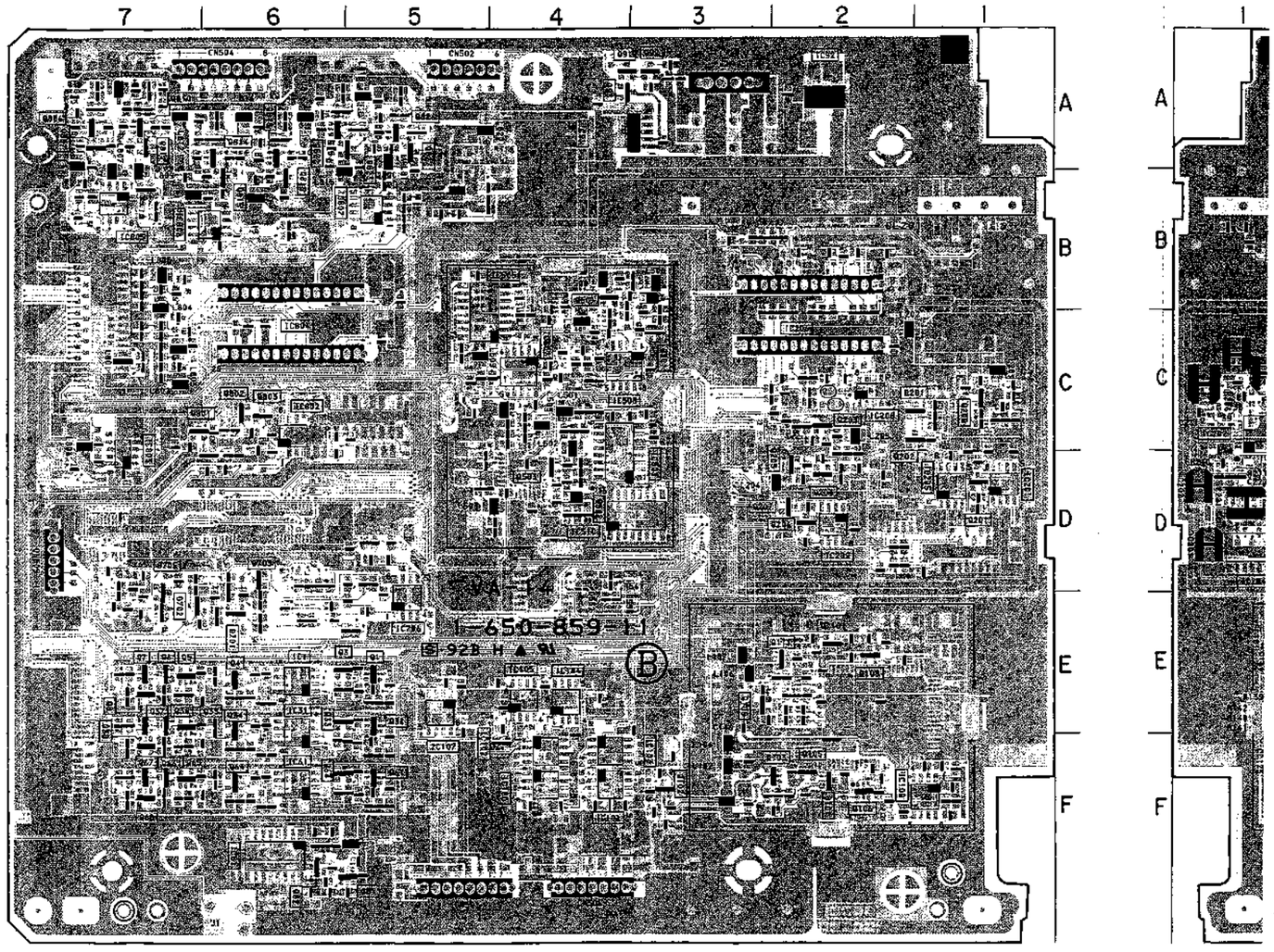
S:SOLDERING SIDE

VA-14 (ANALOG VIDEO)

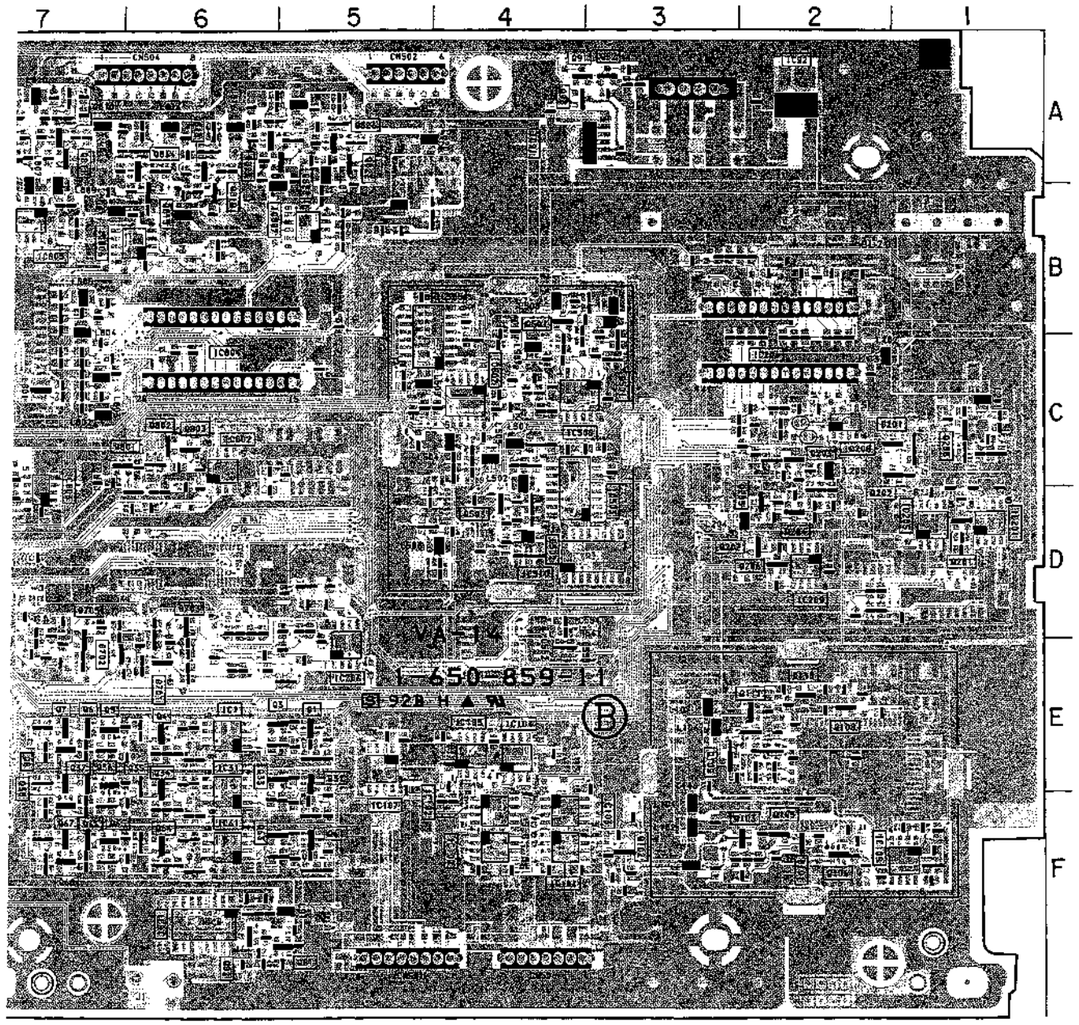
VA-14 BOARD

CN101	E-7		IC509	C-4		L811	B-7	S	Q502	C-4	
CN102	C-7		IC510	D-3	S	L812	A-7	S	Q701	E-7	
CN105	A-3		IC512	E-4		L813	B-6	S	Q801	C-7	S
CN501	F-5		IC513	E-4		L814	A-6	S	Q802	C-6	S
CN502	A-5		IC701	D-7		L815	B-6	S	Q803	C-6	S
CN504	A-6		IC702	D-6		L816	A-6	S	Q804	C-6	
CN505	D-7		IC703	D-6		L817	A-5	S	Q805	C-6	
CN506	F-4		IC704	D-7		L818	A-5	S	Q806	A-7	S
			IC705	D-5		L819	B-5	S	Q807	A-7	S
CV501	D-5		IC706	E-5	S	L820	A-5	S	Q808	A-7	
CV502	B-3		IC707	E-6					Q809	A-7	
CV801	C-7		IC708	D-6		LF001	E-5		Q810	A-7	S
			IC709	D-7		LF031	F-5		Q811	A-7	S
D081	F-6		IC801	C-7		LF061	F-5		Q812	A-7	
D091	A-4		IC802	C-6	S	LF081	F-5		Q813	A-7	
D100	F-2		IC803	C-7	S	LF100	F-4		Q814	A-6	S
D101	F-2	S	IC804	C-6		LF101	F-4		Q815	B-6	S
D201	C-2	S	IC805	B-7	S	LF102	F-3		Q816	A-6	
D501	B-3	S	IC806	B-6	S	LF801	A-7		Q817	A-6	
D701	E-6	S	IC807	B-5	S	LF802	A-7		Q818	A-6	S
D702	E-7	S				LF803	A-6		Q819	B-6	S
D703	D-6	S	IS406			LF804	A-6		Q820	A-6	
D704	E-7					FL805	A-6		Q821	A-6	
D705	D-7	S	J001			FL806	A-5		Q822	A-6	S
						FL807	A-5		Q823	A-5	S
DL202	B-2		JR240						Q824	A-5	
DL203	B-2					Q001	E-5	S	Q825	A-5	
			L001	E-7		Q003	E-6	S	Q826	A-5	S
FL001	E-6		L002	E-7		Q004	E-6	S	Q827	A-5	S
FL031	F-6		L031	E-7		Q005	E-7	S	Q828	A-5	
FL061	F-6		L032	F-7		Q008	E-7	S	Q829	A-5	
FL100	E-2		L061	F-7		Q031	E-5	S	Q830	A-4	
FL102	E-3		L062	F-7		Q033	E-6	S	Q831	A-4	
FL103	F-3		L091	F-5	S	Q034	E-6	S			
FL801	C-5		L092	A-3		Q035	E-7	S	X201	C-2	
FL802	D-5		L093	A-3		Q036	E-7	S	X501	D-5	
			L094	A-3		Q037	E-7	S			
IC001	E-6	S	L100	E-3		Q038	F-7	S			
IC031	E-6	S	L101	E-3		Q061	F-5	S			
IC061	F-6	S	L102	F-3	S	Q063	F-6	S			
IC081	F-6	S	L103	F-3	S	Q064	F-6	S			
IC082	F-6		L104	F-3	S	Q065	F-7	S			
IC091	A-3	S	L106	E-3	S	Q066	F-7	S			
IC092	A-2	S	L107	E-3	S	Q067	F-7	S			
IC100	F-4	S	L201	C-1	S	Q068	F-7	S			
IC101	F-4	S	L202	C-2	S	Q081	F-6	S			
IC102	F-4	S	L203	C-3		Q082	F-6	S			
IC103	F-4	S	L204	D-2	S	Q083	F-6				
IC104	E-4	S	L205	C-2	S	Q084	F-6				
IC105	E-5	S	L207	C-2		Q091	A-4	S			
IC107	E-5	S	L401			Q092	A-3	S			
IC108	E-2		L501	C-4	S	Q093	A-4	S			
IC109	F-1	S	L502	C-4	S	Q100	F-4				
IC201	D-1	S	L503	D-4	S	Q101	F-4				
IC202	C-1		L504	C-4	S	Q102	F-3	S			
IC203	D-2		L505	C-4	S	Q103	F-3	S			
IC204	D-1		L506	B-3	S	Q105	F-2	S			
IC205	D-1	S	L507	C-4	S	Q106	F-2	S			
IC206	C-2		L508	B-4	S	Q107	F-2				
IC207	C-2		L509	C-5	S	Q108	E-2	S			
IC208	C-2	S	L513	C-4		Q109	E-3	S			
IC209	D-2	S	L801	C-7	S	Q110	E-2	S			
IC210	C-2		L802	C-7	S	Q111	E-2	S			
IC501	D-4		L803	C-7	S	Q201	D-1	S			
IC502	C-4		L804	B-7	S	Q202	C-2	S			
IC503	D-4	S	L805	B-7	S	Q203	C-2	S			
IC504	B-4		L806	C-7	S	Q204	D-2	S			
IC505	C-5	S	L807	A-7	S	Q205	D-2	S			
IC506	B-4		L808	A-7	S	Q206	D-2	S			
IC507	C-4	S	L809	A-7	S	Q207	D-2	S			
IC508	C-4	S	L810	A-7	S	Q501	B-4	S			

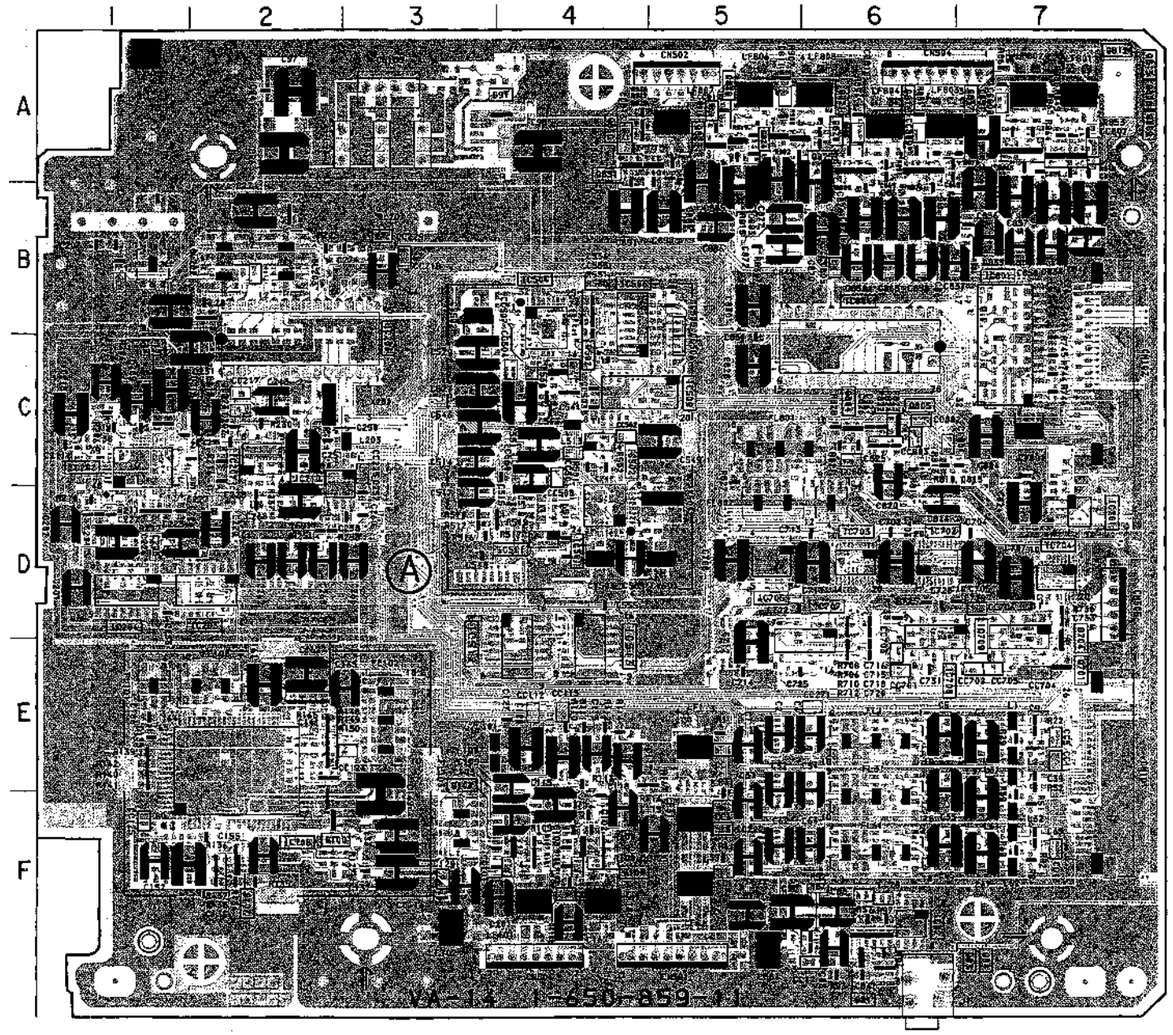
S:SOLDERING SIDE



VA-14 -SOLDERING SIDE-



VA-14 -SOLDERING SIDE-



VA-14 -COMPONENT SIDE-

VA-14 BOARD (4/6)

TO VA-14 (3/6) INT_H, INT_V
TO VA-14 (1/6) RGB/S·VS
TO VA-14 (3/6) PLL_H
TO VA-14 (6/6) PLL_EVR
TO VA-14 (3/6) PLL_V
TO VA-14 (5/6) +5V, -5V, GND
TO VA-14 (3/6) EN_SYNC, EN_BF

IC503 SN74LS221NS SCHMITT TRIGGER

IC510 SN74LS157NS DATA SELECTOR

IC504 CXD1159Q PLL SYNC GEN.

IC505 SN74LS221NS SCHMITT TRIGGER

IC513 SN74HC157ANS DATA SELECTOR

IC512 MC74HC4538AF MONOSTABLE MULTI VIBRATOR

IC509 SN74HC541ANS BUFF & LINE DRIVER

Q501 INVERTER 2SC1623

INT-SC CC501

CL503 CL506 CL507 CL508

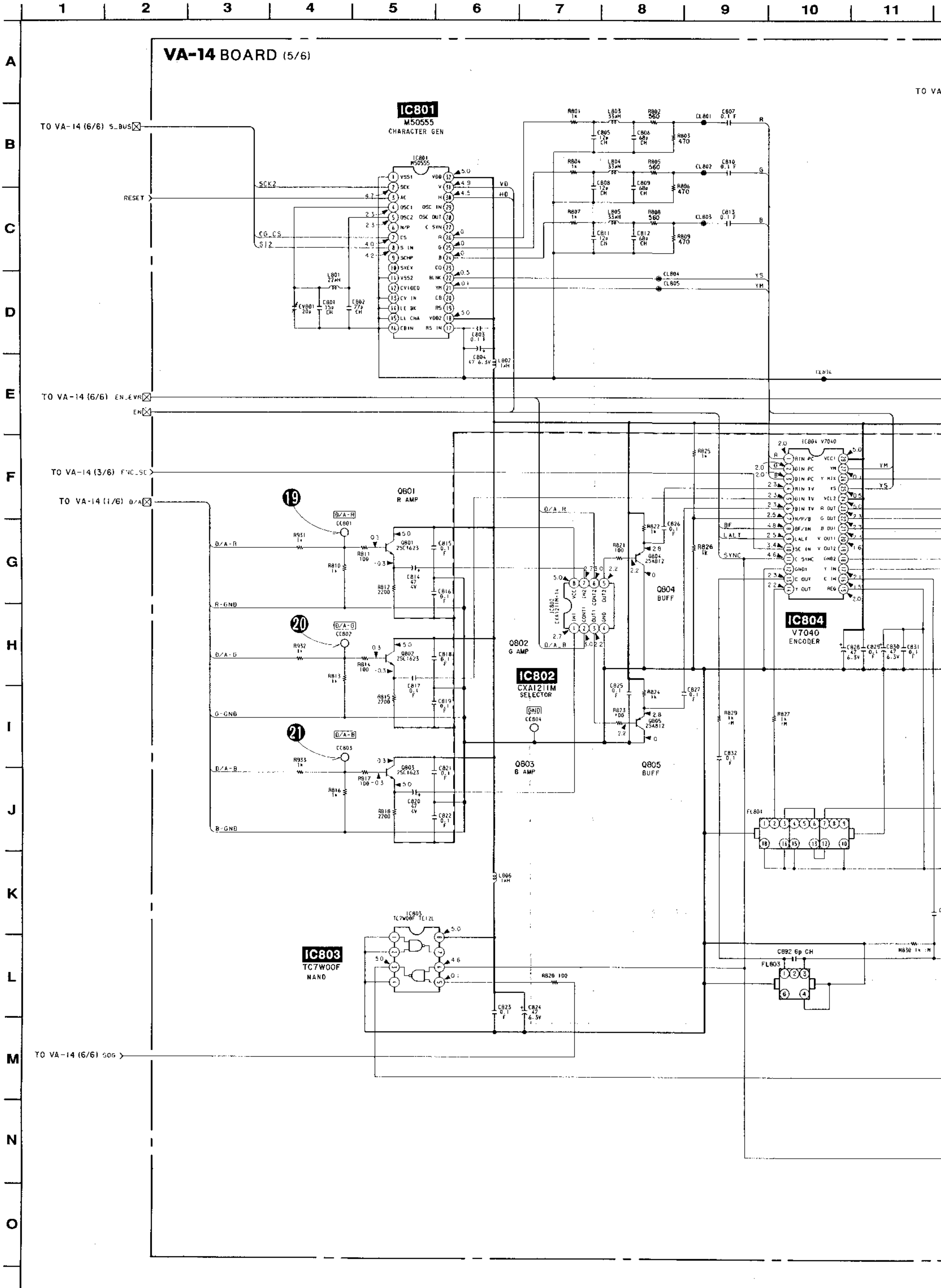
CC505 CC506 CC507

P_RGB P_S·VS SYNC BF LALT CLK

L506 1μH L507 4.7μ L508 1μH L509 1μH L513 1μH

11
12
13
14
15
16
17
18
19
20
INT-SC
CC501
CL501
R503 2200
C505 47p CH
L502 39μH
R504 2200
C506 0.1 F
INT_SC TO VA-14 (3/6)
L501 47μH
C504 39p CH
R505 1k
IC511(1/2) TC7W00F-TE12L
IC511(2/2) TC7W00F-TE12L
IC511
TC7W00F
C567 0.1 F
C563 0.1 F
PLL-CV
CC508
Q503 2SC1623
C561 10p CH
L514 2.7μ
C562 1000p CH
R562 100k
R564 4700
C564 1.5 50V
C565 0.1 F
R566 10k
CL509
D502 1T33C-TB-04
R563 10k
R565 220k
CV503 20p
C566 10p CH
IC501 CXD1159Q
INT SYNC GRN.
IC502 TC7W00F
NAND
R501 1k
WINDE
WIND
TEST
VDD
HDO
VDO
SYNC
BLKO
PSEL
VINIT
MODE
SCDF
VSS
LALT
NC
NC
SC FSCO FSC1 VSS A OUT A IN VDD COMP
BFO HR VR LR EXT CLKI CLKO FLD
INT-CLK
CC502
CL502
CY501 20p
X501 14.1875MHz
C502 33p
C551 47 6.3V
C503 0.1 F
SC_OFF TO VA-14 (3/6)
R506 1k
L503 33μH
R507 910 : M
C509 47 4V
C507 12p CH
C508 68p CH
R508 120
INT_Y
R509 2200
C511 47p CH
L505 39μH
R510 4700
C512 0.1 F
L504 47μ
C510 39p CH
R511 330
INT_C TO VA-14 (2/6)
CL503
Q502 CLAMP
IC505 SN74LS221NS
SCHMITT TRIGGER
IC505 SN74LS221NS-T1
IC506 MC74HC4053F
ANALOG MULTIPLEXER
IC506 MC74HC4053F-T1
IC507 TL082CPS
OPE AMP
IC507 TL082CPS-T1
R528 1800 :M
R529 47k
C531 1000p CH
C530 220p CH
C533 0.1 F
C534 0.1 F
C532 0.1 F
R530 1200
R531 33k
C535 1000p CH
C536 0.1 F
H.SAW
CC503
CL504
R535 220
R536 390
Q502 XN2401-TW
R532 120
R533 4800
C539 1000p CH
R537 3900
R534 15k
C538 0.1 F
C540 0.1 F
C541 0.1 F
R538 15k
R539 47k
C542 0.22 F
C543 1000p CH
R540 82k
VCO.CV
CC504
CL505
IC508 TL082CPS-T1
IC508
TL082CPS
OPE AMP
C544 0.1 F
C546 47 6.3V
C545 0.1 F
C547 47 6.3V
EN
SYNC
R568 220
R569 220
R570 56
HD
VD
CLK
C548 0.1 F
C549 47 6.3V
D_GND
IC509
4HC541ANS
F & LINE DRIVER

VA-14 — 5/6 — (ANALOG VIDEO)



VA-14 BOARD (5/6)

TO VA

TO VA-14 (6/6) S_BUS

RESET

SCK2

CG_CS

SI2

TO VA-14 (6/6) EN_EVR

EN

TO VA-14 (3/6) ENC_SC

TO VA-14 (1/6) D/A

TO VA-14 (6/6) SDA

IC801
M50555
CHARACTER GEN

IC801
M50555
1 VSS1
2 SCK
3 SC
4 OSC1
5 OSC2
6 N/P
7 CS
8 S IN
9 SCHP
10 SYEX
11 VSS2
12 CVIOED
13 CV IN
14 LE BK
15 LE CHA
16 CBEN
32 VDD
31 V
30 H
29 OSC IN
28 OSC OUT
27 C SYN
26 R
25 G
24 B
23 CO
22 BLNK
21 YM
20 CB
19 RS
18 VDD2
17 RS IN

L801 22μH
CV801 20p
C801 15p CH
C802 27p CH
C803 0.1 F
C804 47 6.3V
L802 1μH

R801 1k
L803 33μH
R802 560
C805 12p CH
C806 68p CH
R803 470
CL801
C807 0.1 F
R
R804 1k
L804 33μH
R805 560
C808 12p CH
C809 68p CH
R806 470
CL802
C810 0.1 F
G
R807 1k
L805 33μH
R808 560
C811 12p CH
C812 68p CH
R809 470
CL803
C813 0.1 F
B
CL804
CL805
YS
YM
CL806

19 D/A-R CC801
20 D/A-G CC802
21 D/A-B CC805

R931 1k
R810 1k
R811 100
Q801 2SC1623
C815 0.1 F
C814 47 4V
R812 2200
C816 0.1 F
D/A-R
R-GND

R932 1k
R813 1k
R814 100
Q802 2SC1623
C818 0.1 F
C817 0.1 F
R815 2200
C819 0.1 F
D/A-G
G-GND

R933 1k
R816 1k
R817 100
Q803 2SC1623
C821 0.1 F
C820 47 4V
R818 2200
C822 0.1 F
D/A-B
B-GND

Q801
R AMP
Q802
G AMP
Q803
B AMP

IC802
CXA1211M
SELECTOR
GND CC804

D/A_R
D/A_B

R821 100
Q804 2SA812
R822 1k
C826 0.1 F
Q804
BUFF

C825 0.1 F
R824 1k
R823 100
Q805 2SA812
C827 0.1 F
Q805
BUFF

R825 1k
R826 1k

IC804 V7040
R IN PC
G IN PC
B IN PC
R IN TV
G IN TV
B IN TV
N/P/B
BF/IN
LALT
SC IN
C SYNC
GND1
C OUT
Y OUT
VCC1
YM
Y MIX
YS
VCC2
R OUT
G OUT
B OUT
V OUT1
V OUT2
GND2
Y IN
C IN
REG
BF
LALT
SYNC

IC804
V7040
ENCODER

C828 47 6.3V
C829 0.1 F
C830 47 6.3V
C831 0.1 F

R829 1k :M
R827 1k :N
C832 0.1 F
FL801

IC803
TC7W00F
NAND

IC803
TC7W00F-TE12L
R828 100
C823 0.1 F
C824 47 6.3V
C892 6p CH
FL803
R830 1k :M

ANALOG VIDEO
VA-14

ANALOG VIDEO
VA-14

TO VA-14 (6/6)
-5V
GND
+5V

IC805
CXA1211M
VCA

IC806
CXA1211M
VCA

IC807
CXA1211M
VCA

IC804
V7040
ENCODER

IC802
CXA1211M
SELECTOR

Q802 G AMP
Q803 B AMP
Q804 BUFF
Q805 BUFF
Q806 DRIVER
Q807 DRIVER
Q808 DRIVER
Q809 DRIVER
Q810 DRIVER
Q811 DRIVER
Q812 DRIVER
Q813 DRIVER
Q814 DRIVER
Q815 DRIVER
Q816 DRIVER
Q817 DRIVER
Q818 DRIVER
Q819 DRIVER
Q820 DRIVER
Q821 DRIVER
Q822 DRIVER
Q823 DRIVER
Q824 DRIVER
Q825 DRIVER
Q826 DRIVER
Q827 DRIVER
Q828 DRIVER
Q829 DRIVER
Q830 DRIVER
Q831 DRIVER

ENR_LEV
ENG_LEV
ENB_LEV
ENG_LEV
ENV_LEV
ENC_LEV

TO VA-14 (6/6)
-5V
GND
+5V

IC804 V7040 ENCODER

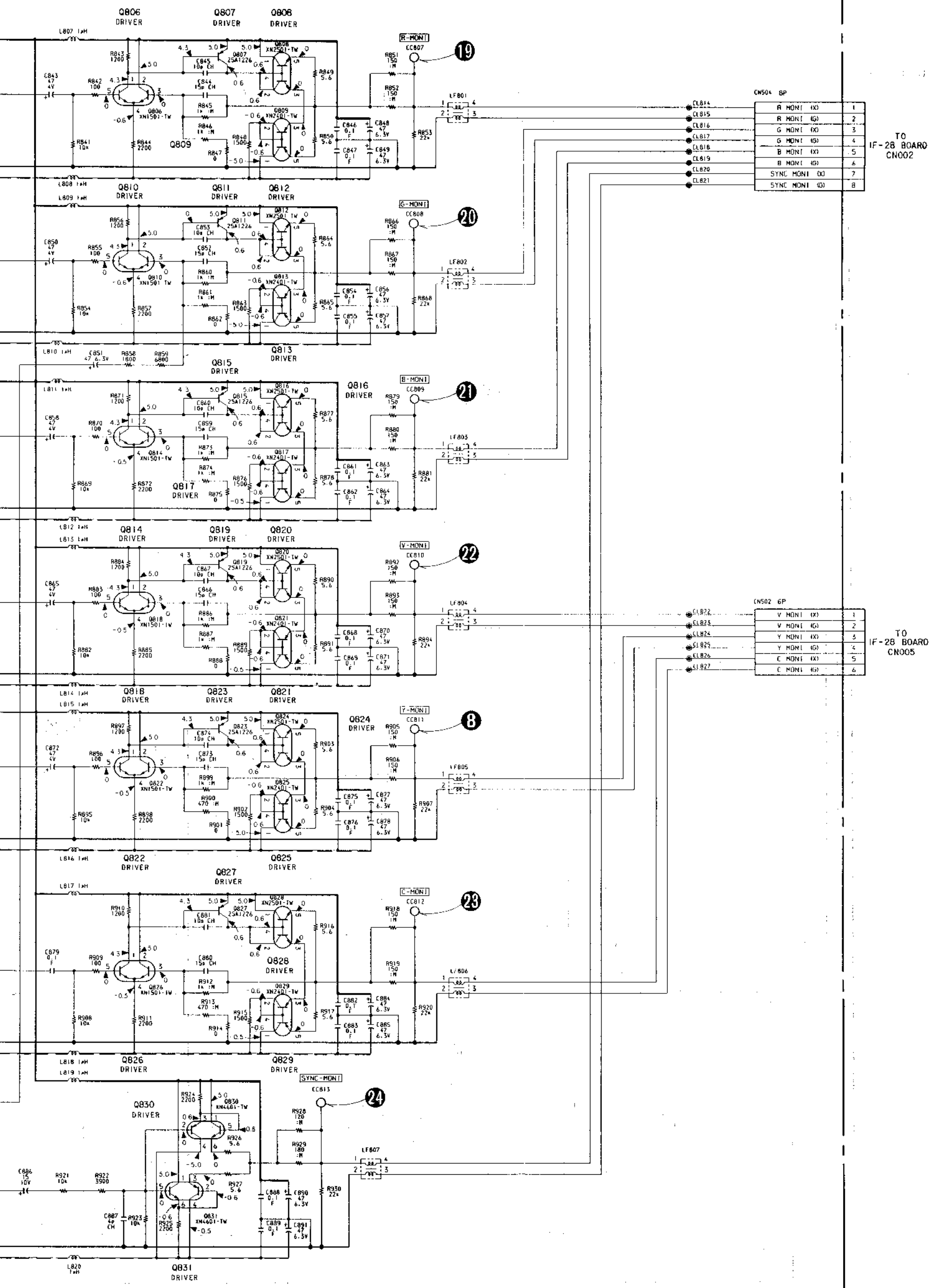
IC805 CXA1211M VCA

IC806 CXA1211M VCA

IC807 CXA1211M VCA

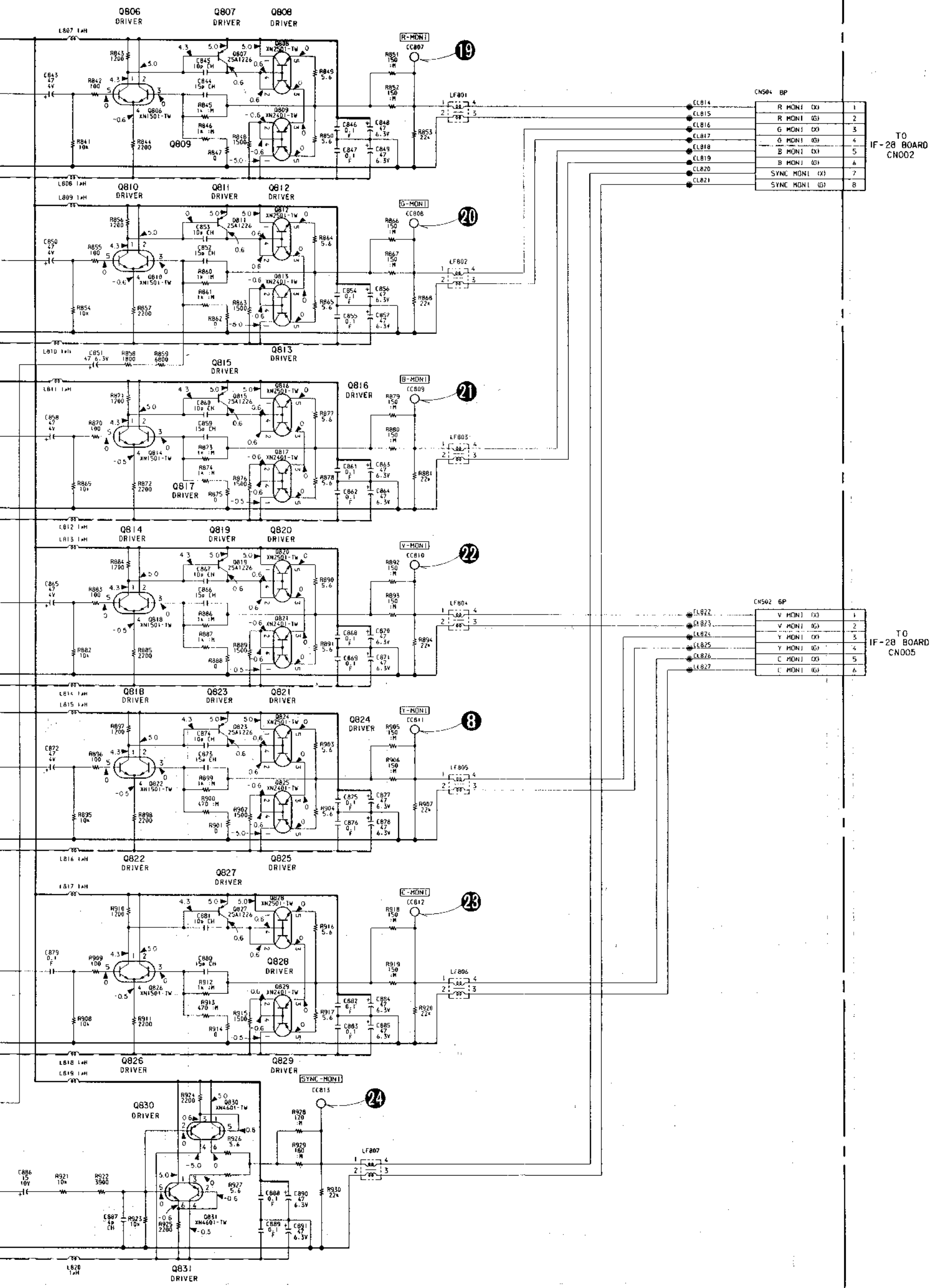
IC802 CXA1211M SELECTOR

Q802 G AMP
Q803 B AMP
Q804 BUFF
Q805 BUFF
Q806 DRIVER
Q807 DRIVER
Q808 DRIVER
Q809 DRIVER
Q810 DRIVER
Q811 DRIVER
Q812 DRIVER
Q813 DRIVER
Q814 DRIVER
Q815 DRIVER
Q816 DRIVER
Q817 DRIVER
Q818 DRIVER
Q819 DRIVER
Q820 DRIVER
Q821 DRIVER
Q822 DRIVER
Q823 DRIVER
Q824 DRIVER
Q825 DRIVER
Q826 DRIVER
Q827 DRIVER
Q828 DRIVER
Q829 DRIVER
Q830 DRIVER
Q831 DRIVER



ANALOG VIDEO

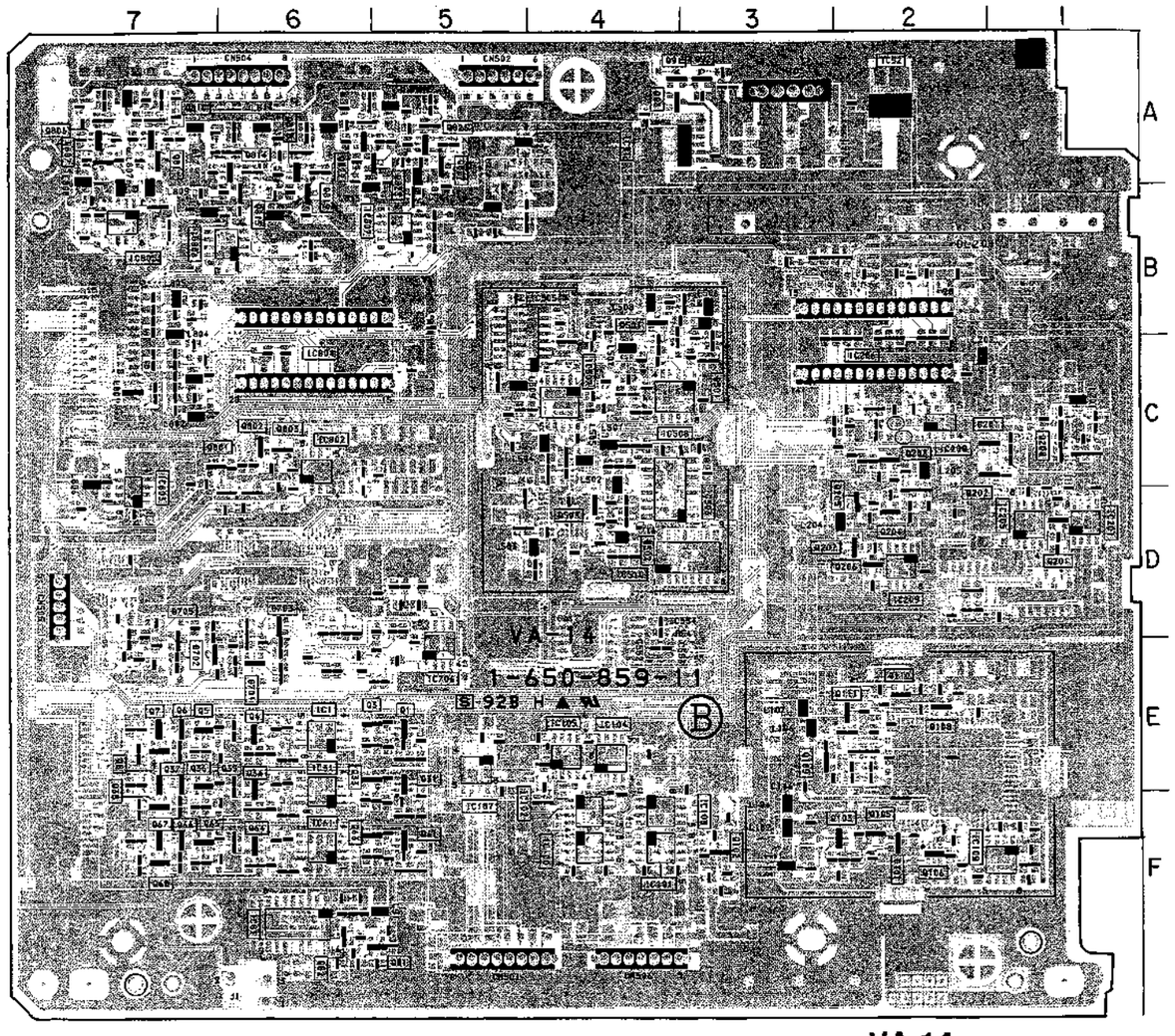
ANALOG VIDEO



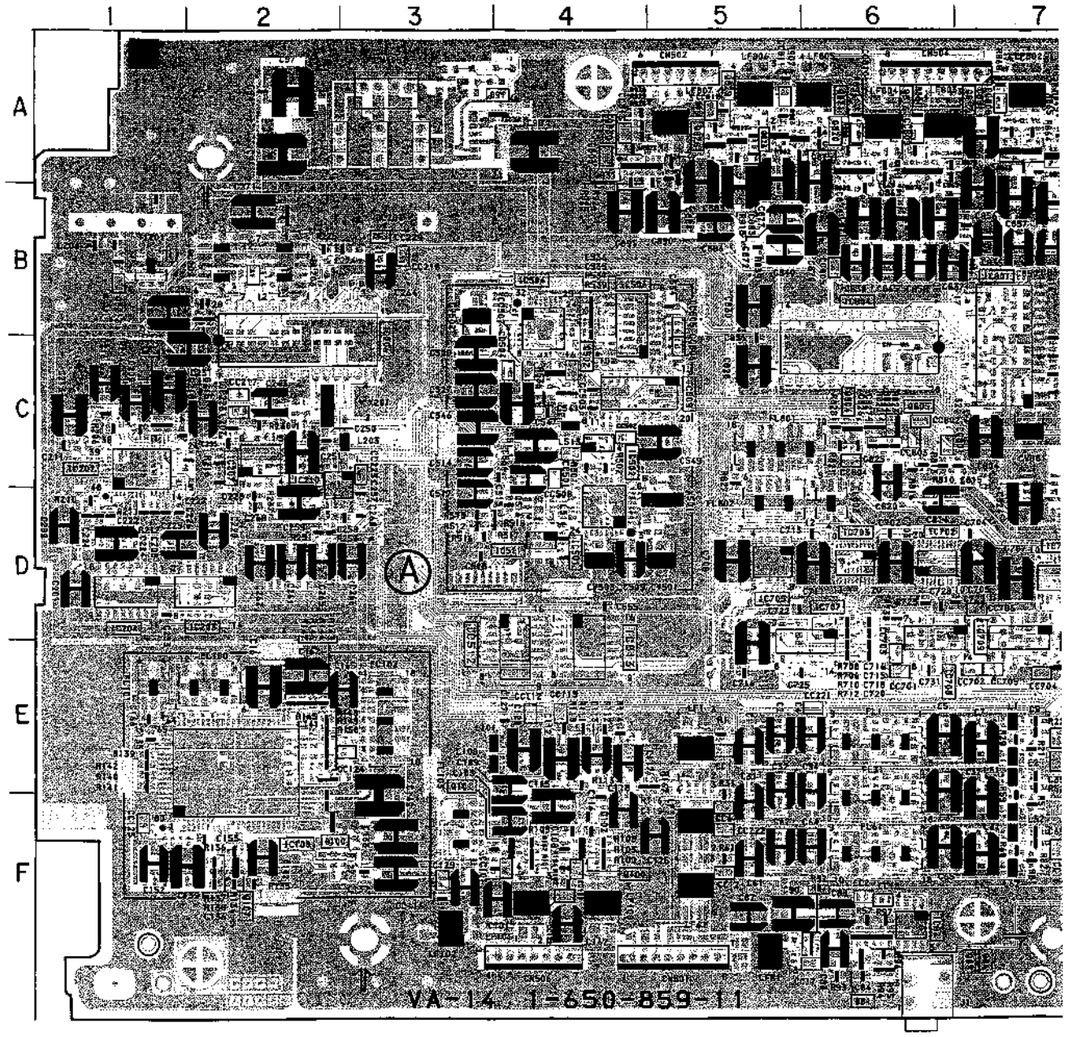
ANALOG VIDEO

ANALOG VIDEO

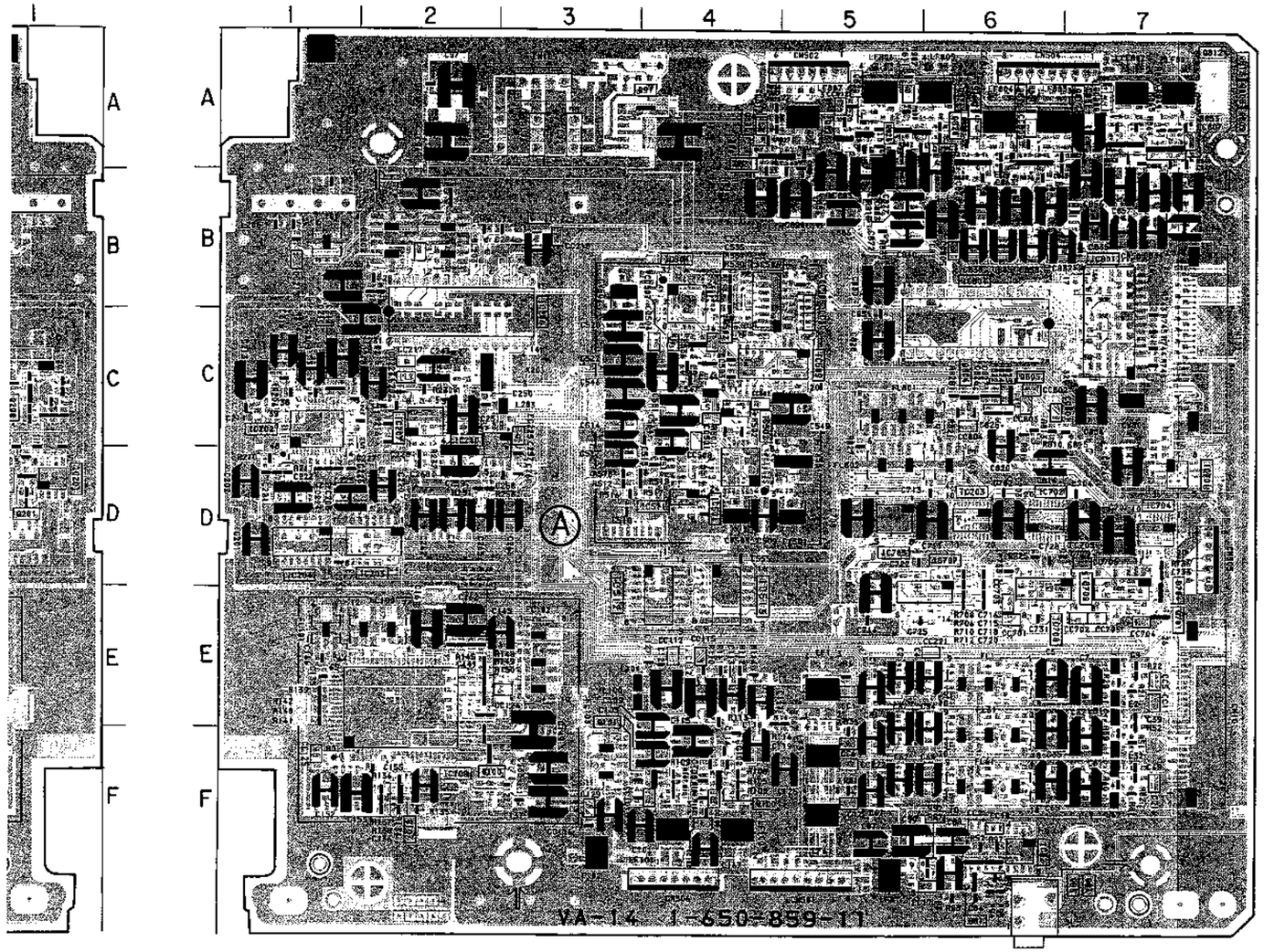
VA-14



VA-14 -SOLDERING SIDE-



VA-14 -COMPON



RING SIDE-

VA-14 -COMPONENT SIDE-

VA-14 BOARD

CN101	E-7		IC509	C-4		L811	B-7	S	Q502	C-4	
CN102	C-7		IC510	D-3	S	L812	A-7	S	Q701	E-7	
CN105	A-3		IC512	E-4		L813	B-6	S	Q801	C-7	S
CN501	F-5		IC513	E-4		L814	A-6	S	Q802	C-6	S
CN502	A-5		IC701	D-7		L815	B-6	S	Q803	C-6	S
CN504	A-6		IC702	D-6		L816	A-6	S	Q804	C-6	
CN505	D-7		IC703	D-6		L817	A-5	S	Q805	C-6	
CN506	F-4		IC704	D-7		L818	A-5	S	Q806	A-7	S
			IC705	D-5		L819	B-5	S	Q807	A-7	S
CV501	D-5		IC706	E-5	S	L820	A-5	S	Q808	A-7	
CV502	B-3		IC707	E-6					Q809	A-7	
CV801	C-7		IC708	D-6		LF001	E-5		Q810	A-7	S
			IC709	D-7		LF031	F-5		Q811	A-7	S
D081	F-6		IC801	C-7		LF061	F-5		Q812	A-7	
D091	A-4		IC802	C-6	S	LF081	F-5		Q813	A-7	
D100	F-2		IC803	C-7	S	LF100	F-4		Q814	A-6	S
D101	F-2	S	IC804	C-6		LF101	F-4		Q815	B-6	S
D201	C-2	S	IC805	B-7	S	LF102	F-3		Q816	A-6	
D501	B-3	S	IC806	B-6	S	LF801	A-7		Q817	A-6	
D701	E-6	S	IC807	B-5	S	LF802	A-7		Q818	A-6	S
D702	E-7	S				LF803	A-6		Q819	B-6	S
D703	D-6	S	IS406			LF804	A-6		Q820	A-6	
D704	E-7					FL805	A-6		Q821	A-6	
D705	D-7	S	J001			FL806	A-5		Q822	A-6	S
						FL807	A-5		Q823	A-5	S
DL202	B-2		JR240						Q824	A-5	
DL203	B-2					Q001	E-5	S	Q825	A-5	
			L001	E-7		Q003	E-6	S	Q826	A-5	S
FL001	E-6		L002	E-7		Q004	E-6	S	Q827	A-5	S
FL031	F-6		L031	E-7		Q005	E-7	S	Q828	A-5	
FL061	F-6		L032	F-7		Q008	E-7	S	Q829	A-5	
FL100	E-2		L061	F-7		Q031	E-5	S	Q830	A-4	
FL102	E-3		L062	F-7		Q033	E-6	S	Q831	A-4	
FL103	F-3		L091	F-5	S	Q034	E-6	S			
FL801	C-5		L092	A-3		Q035	E-7	S	X201	C-2	
FL802	D-5		L093	A-3		Q036	E-7	S	X501	D-5	
			L094	A-3		Q037	E-7	S			
IC001	E-6	S	L100	E-3		Q038	F-7	S			
IC031	E-6	S	L101	E-3		Q061	F-5	S			
IC061	F-6	S	L102	F-3	S	Q063	F-6	S			
IC081	F-6	S	L103	F-3	S	Q064	F-6	S			
IC082	F-6		L104	F-3	S	Q065	F-7	S			
IC091	A-3	S	L106	E-3	S	Q066	F-7	S			
IC092	A-2	S	L107	E-3	S	Q067	F-7	S			
IC100	F-4	S	L201	C-1	S	Q068	F-7	S			
IC101	F-4	S	L202	C-2	S	Q081	F-6	S			
IC102	F-4	S	L203	C-3		Q082	F-6	S			
IC103	F-4	S	L204	D-2	S	Q083	F-6				
IC104	E-4	S	L205	C-2	S	Q084	F-6				
IC105	E-5	S	L207	C-2		Q091	A-4	S			
IC107	E-5	S	L401			Q092	A-3	S			
IC108	E-2		L501	C-4	S	Q093	A-4	S			
IC109	F-1	S	L502	C-4	S	Q100	F-4				
IC201	D-1	S	L503	D-4	S	Q101	F-4				
IC202	C-1		L504	C-4	S	Q102	F-3	S			
IC203	D-2		L505	C-4	S	Q103	F-3	S			
IC204	D-1		L506	B-3	S	Q105	F-2	S			
IC205	D-1	S	L507	C-4	S	Q106	F-2	S			
IC206	C-2		L508	B-4	S	Q107	F-2				
IC207	C-2		L509	C-5	S	Q108	E-2	S			
IC208	C-2	S	L513	C-4		Q109	E-3	S			
IC209	D-2	S	L801	C-7	S	Q110	E-2	S			
IC210	C-2		L802	C-7	S	Q111	E-2	S			
IC501	D-4		L803	C-7	S	Q201	D-1	S			
IC502	C-4		L804	B-7	S	Q202	C-2	S			
IC503	D-4	S	L805	B-7	S	Q203	C-2	S			
IC504	B-4		L806	C-7	S	Q204	D-2	S			
IC505	C-5	S	L807	A-7	S	Q205	D-2	S			
IC506	B-4		L808	A-7	S	Q206	D-2	S			
IC507	C-4	S	L809	A-7	S	Q207	D-2	S			
IC508	C-4	S	L810	A-7	S	Q501	B-4	S			

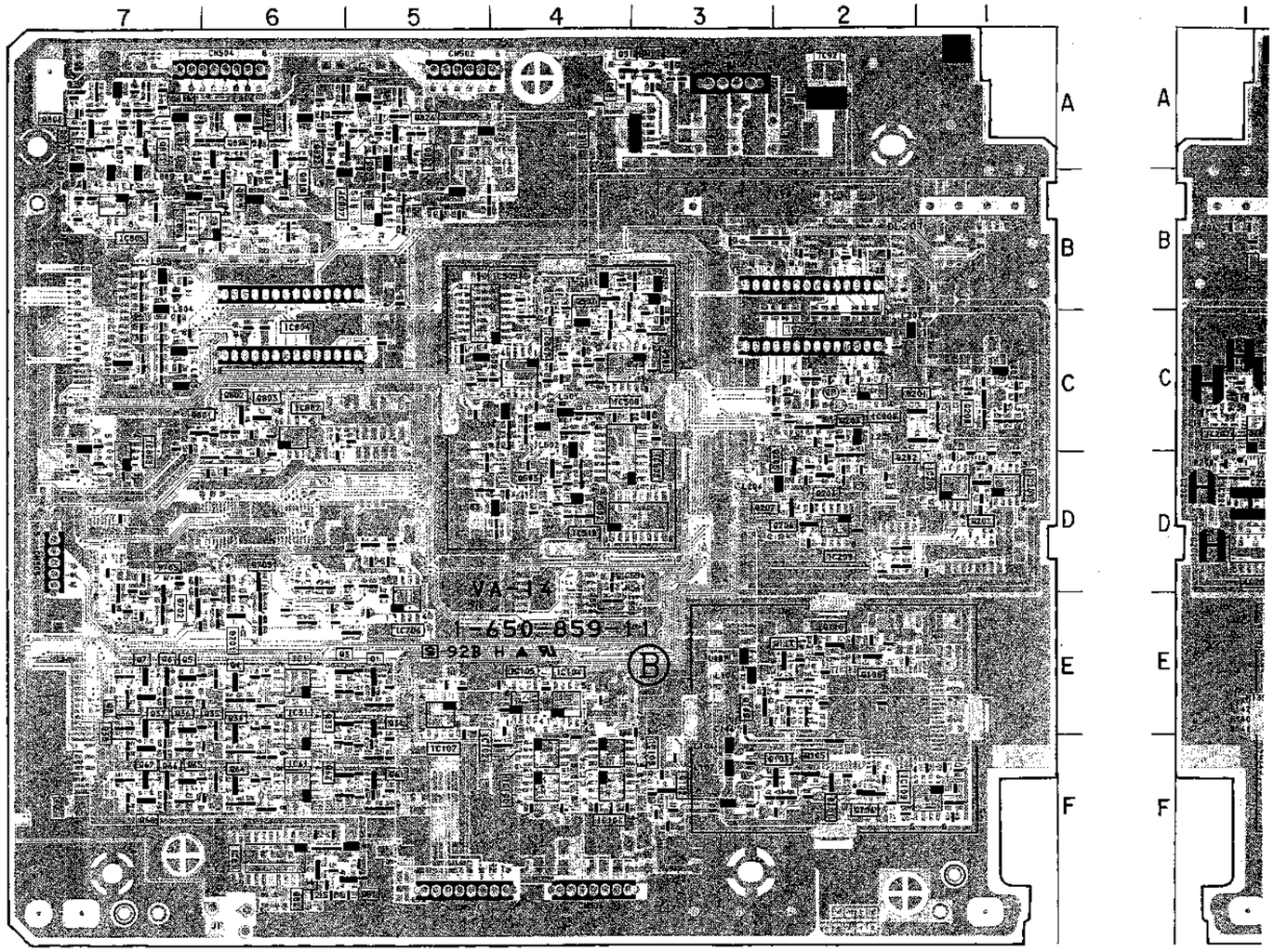
S:SOLDERING SIDE

VA-14 (ANALOG VIDEO)

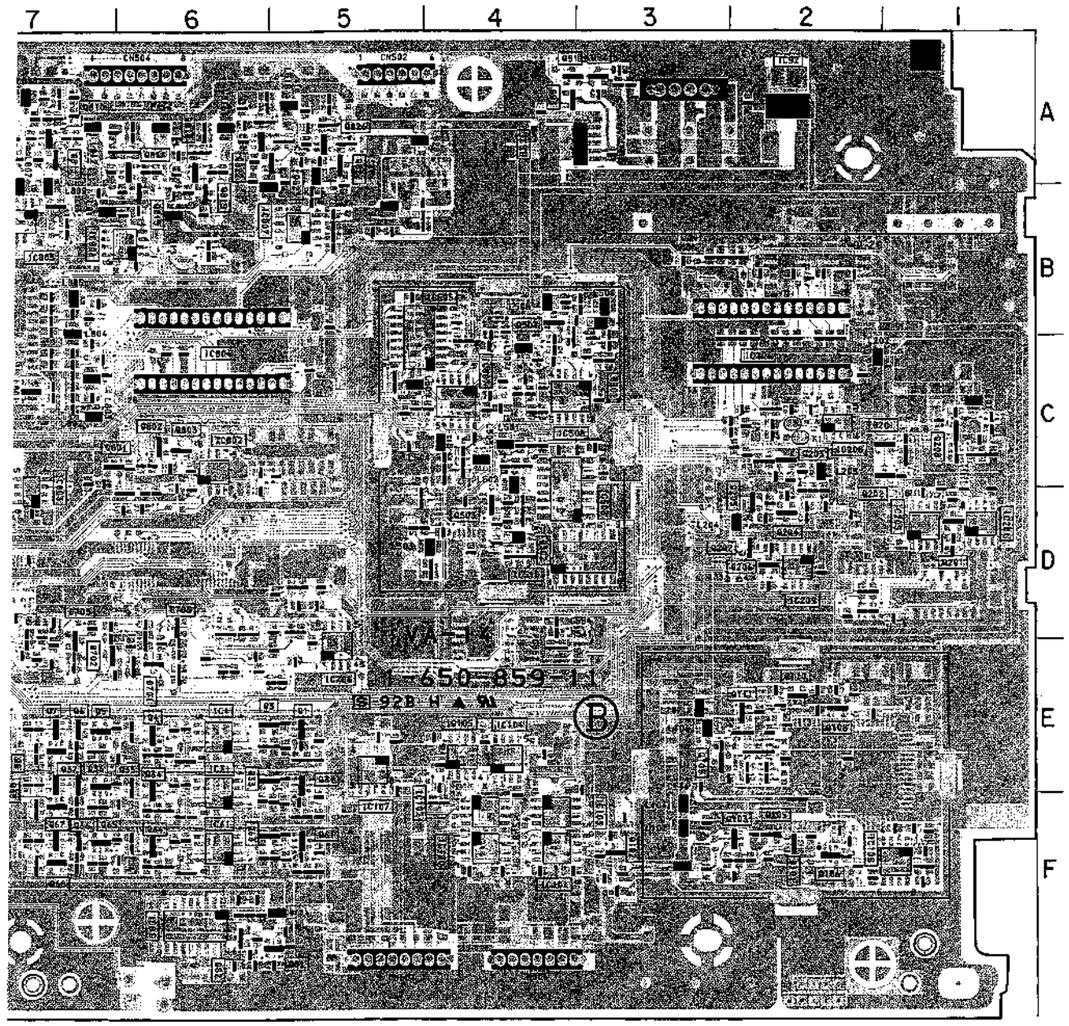
VA-14 BOARD

CN101	E-7		IC509	C-4		L811	B-7	S	Q502	C-4	
CN102	C-7		IC510	D-3	S	L812	A-7	S	Q701	E-7	
CN105	A-3		IC512	E-4		L813	B-6	S	Q801	C-7	S
CN501	F-5		IC513	E-4		L814	A-6	S	Q802	C-6	S
CN502	A-5		IC701	D-7		L815	B-6	S	Q803	C-6	S
CN504	A-6		IC702	D-6		L816	A-6	S	Q804	C-6	
CN505	D-7		IC703	D-6		L817	A-5	S	Q805	C-6	
CN506	F-4		IC704	D-7		L818	A-5	S	Q806	A-7	S
			IC705	D-5		L819	B-5	S	Q807	A-7	S
CV501	D-5		IC706	E-5	S	L820	A-5	S	Q808	A-7	
CV502	B-3		IC707	E-6					Q809	A-7	
CV801	C-7		IC708	D-6		LF001	E-5		Q810	A-7	S
			IC709	D-7		LF031	F-5		Q811	A-7	S
D081	F-6		IC801	C-7		LF061	F-5		Q812	A-7	
D091	A-4		IC802	C-6	S	LF081	F-5		Q813	A-7	
D100	F-2		IC803	C-7	S	LF100	F-4		Q814	A-6	S
D101	F-2	S	IC804	C-6		LF101	F-4		Q815	B-6	S
D201	C-2	S	IC805	B-7	S	LF102	F-3		Q816	A-6	
D501	B-3	S	IC806	B-6	S	LF801	A-7		Q817	A-6	
D701	E-6	S	IC807	B-5	S	LF802	A-7		Q818	A-6	S
D702	E-7	S				LF803	A-6		Q819	B-6	S
D703	D-6	S	IS406			LF804	A-6		Q820	A-6	
D704	E-7					FL805	A-6		Q821	A-6	
D705	D-7	S	J001			FL806	A-5		Q822	A-6	S
						FL807	A-5		Q823	A-5	S
DL202	B-2		JR240						Q824	A-5	
DL203	B-2					Q001	E-5	S	Q825	A-5	
			L001	E-7		Q003	E-6	S	Q826	A-5	S
FL001	E-6		L002	E-7		Q004	E-6	S	Q827	A-5	S
FL031	F-6		L031	E-7		Q005	E-7	S	Q828	A-5	
FL061	F-6		L032	F-7		Q008	E-7	S	Q829	A-5	
FL100	E-2		L061	F-7		Q031	E-5	S	Q830	A-4	
FL102	E-3		L062	F-7		Q033	E-6	S	Q831	A-4	
FL103	F-3		L091	F-5	S	Q034	E-6	S			
FL801	C-5		L092	A-3		Q035	E-7	S	X201	C-2	
FL802	D-5		L093	A-3		Q036	E-7	S	X501	D-5	
			L094	A-3		Q037	E-7	S			
IC001	E-6	S	L100	E-3		Q038	F-7	S			
IC031	E-6	S	L101	E-3		Q061	F-5	S			
IC061	F-6	S	L102	F-3	S	Q063	F-6	S			
IC081	F-6	S	L103	F-3	S	Q064	F-6	S			
IC082	F-6		L104	F-3	S	Q065	F-7	S			
IC091	A-3	S	L106	E-3	S	Q066	F-7	S			
IC092	A-2	S	L107	E-3	S	Q067	F-7	S			
IC100	F-4	S	L201	C-1	S	Q068	F-7	S			
IC101	F-4	S	L202	C-2	S	Q081	F-6	S			
IC102	F-4	S	L203	C-3		Q082	F-6	S			
IC103	F-4	S	L204	D-2	S	Q083	F-6				
IC104	E-4	S	L205	C-2	S	Q084	F-6				
IC105	E-5	S	L207	C-2		Q091	A-4	S			
IC107	E-5	S	L401			Q092	A-3	S			
IC108	E-2		L501	C-4	S	Q093	A-4	S			
IC109	F-1	S	L502	C-4	S	Q100	F-4				
IC201	D-1	S	L503	D-4	S	Q101	F-4				
IC202	C-1		L504	C-4	S	Q102	F-3	S			
IC203	D-2		L505	C-4	S	Q103	F-3	S			
IC204	D-1		L506	B-3	S	Q105	F-2	S			
IC205	D-1	S	L507	C-4	S	Q106	F-2	S			
IC206	C-2		L508	B-4	S	Q107	F-2				
IC207	C-2		L509	C-5	S	Q108	E-2	S			
IC208	C-2	S	L513	C-4		Q109	E-3	S			
IC209	D-2	S	L801	C-7	S	Q110	E-2	S			
IC210	C-2		L802	C-7	S	Q111	E-2	S			
IC501	D-4		L803	C-7	S	Q201	D-1	S			
IC502	C-4		L804	B-7	S	Q202	C-2	S			
IC503	D-4	S	L805	B-7	S	Q203	C-2	S			
IC504	B-4		L806	C-7	S	Q204	D-2	S			
IC505	C-5	S	L807	A-7	S	Q205	D-2	S			
IC506	B-4		L808	A-7	S	Q206	D-2	S			
IC507	C-4	S	L809	A-7	S	Q207	D-2	S			
IC508	C-4	S	L810	A-7	S	Q501	B-4	S			

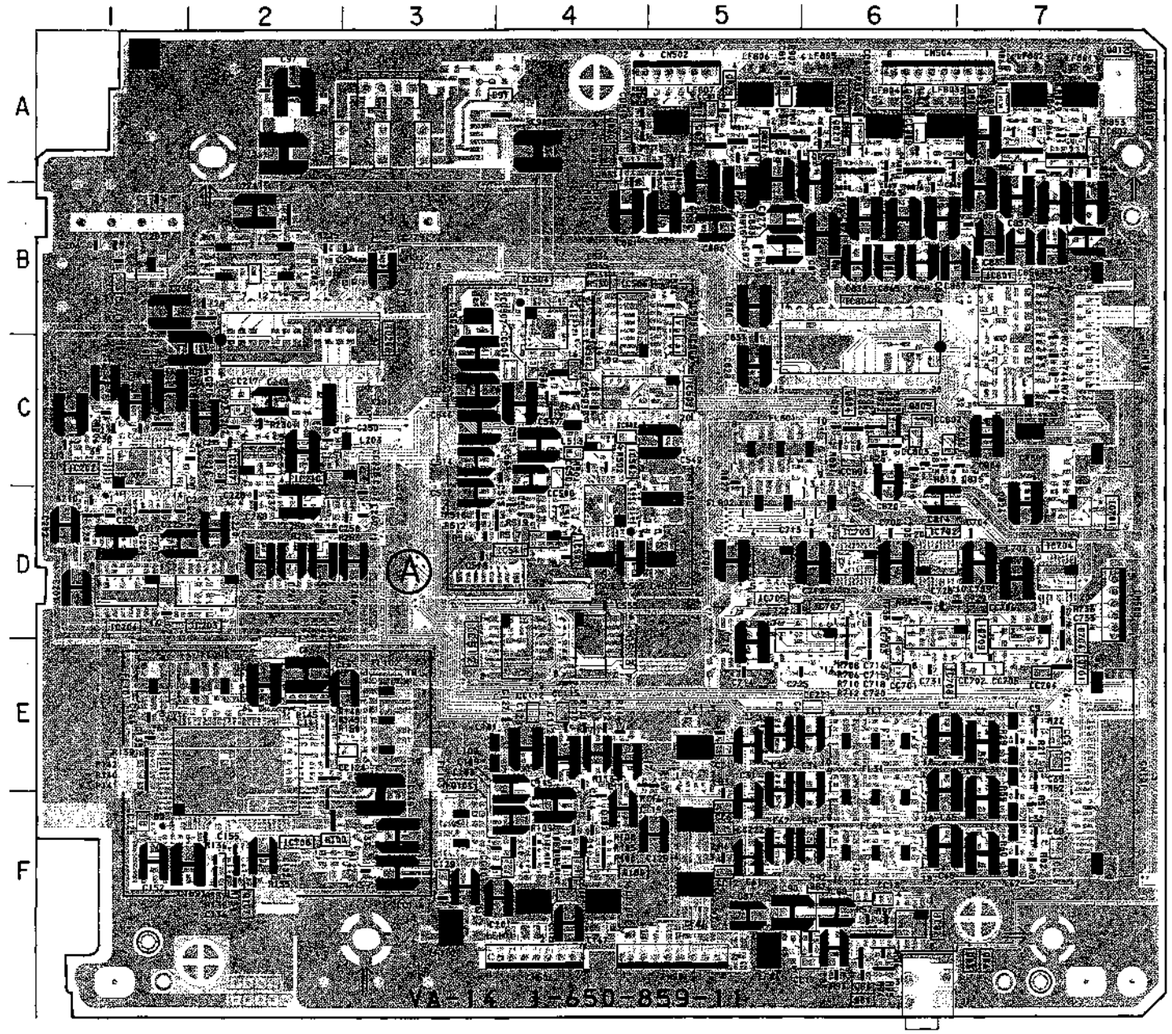
S:SOLDERING SIDE



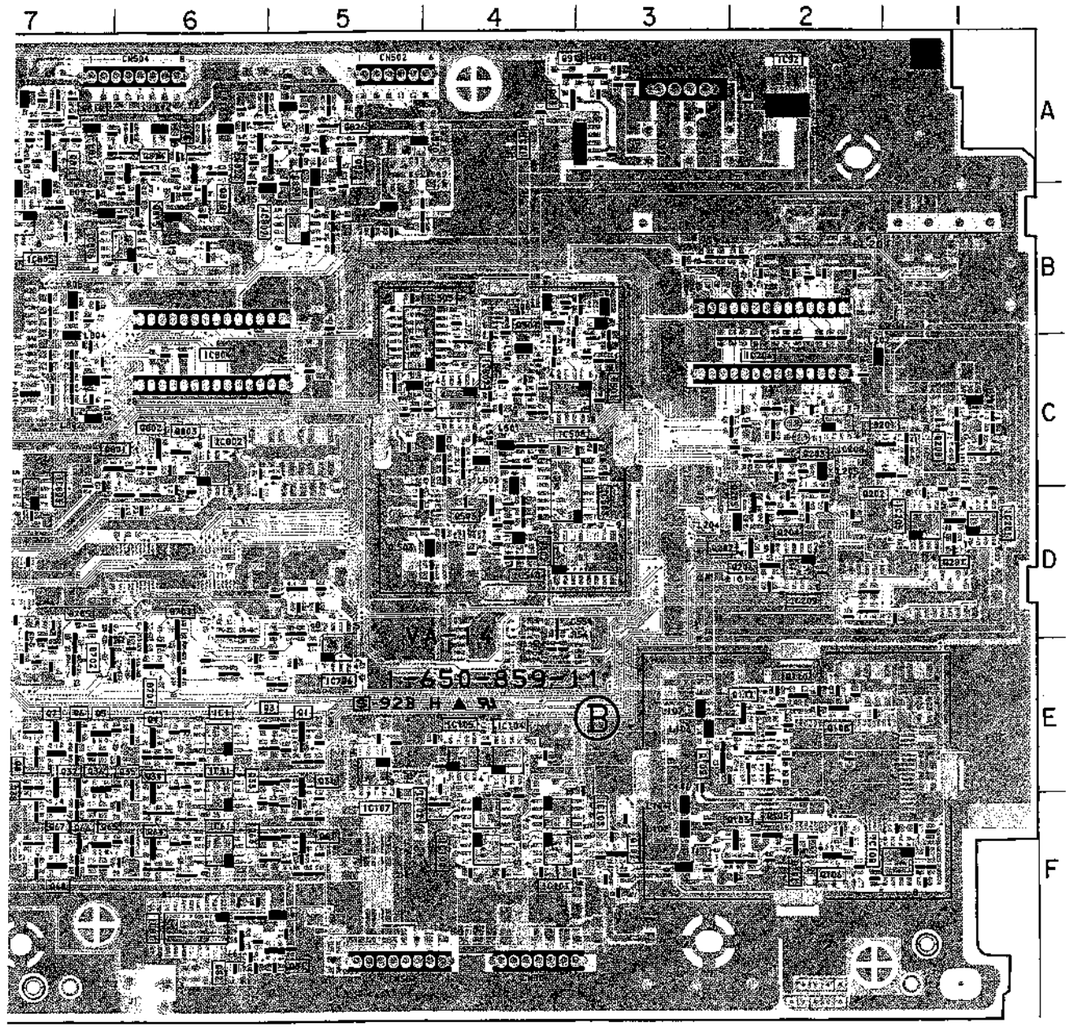
VA-14 -SOLDERING SIDE-



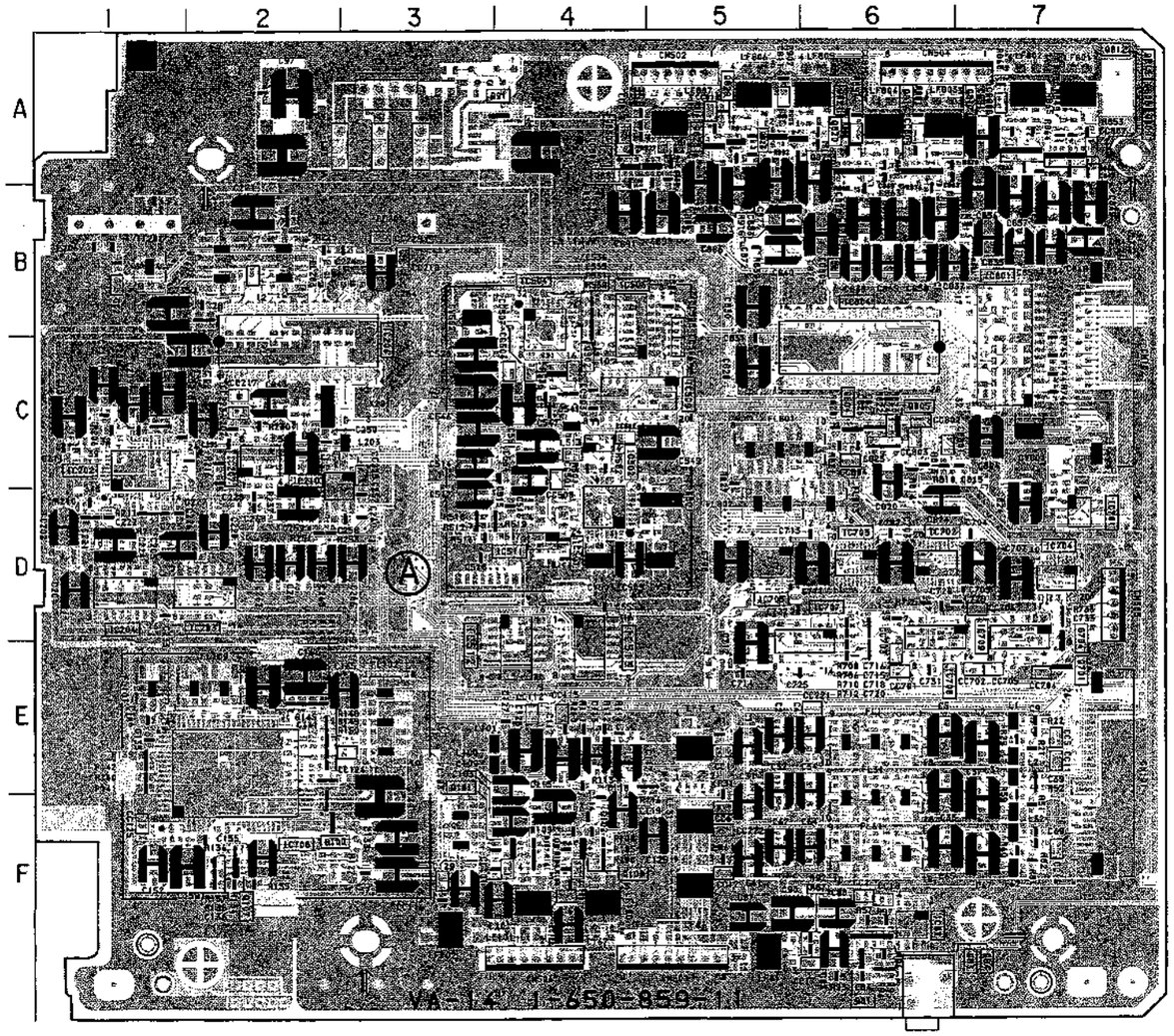
VA-14 -SOLDERING SIDE-



VA-14 -COMPONENT SIDE-



VA-14 -SOLDERING SIDE-



VA-14 -COMPONENT SIDE-

FMY-10P — 1/4 — (FRAME MEMORY)

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H I J K L M N O

FMY-10 BOARD (1/4)

TO FMY-10 (2/4)

TO FMY-10 (4/4) D+5V 80

A +5V

IC006 CXD1176Q R A/D CONVERTER

IC007 CXD1176Q G A/D CONVERTER

IC008 CXD1176Q B A/D CONVERTER

0001, 004 R PEDESTAL CLAMP

Q002, 006 G PEDESTAL CLAMP

Q003, 005 B PEDESTAL CLAMP

RIN

GIN

BIN

CN001 26P

CLP REF	1	
R in	2	
A GND	3	
G in	4	
A GND	5	
B in	6	
A GND	7	
V RTR	8	
V RTG	9	
V RTB	10	
VRB	11	
A GND	12	
CP	13	
A +5V	14	
A GND	15	
Rout	16	
A GND	17	
Gout	18	
A GND	19	
Bout	20	
A GND	21	
VREF	22	
A GND	23	
A GND	24	
A +5V	25	
A +5V	26	

TO VA-14 BOARD CN101

A GND

T.WHI 1

A.EN 2

CAP ON 3

CAP EN 4

TO FMY-10 (2/4)

Y3 5

IN/M 6

A/D ON 7

D/A ON 8

MUTE D/A 15

TO POWER SUPPLY CN902

CN902 6P

UN SWD +5V	6	
SWD +5V	5	
SWD +5V	4	
GND	3	
GND	2	
POWER ON	1	

TO FMY-10 (3/4) POWER ON 22

IC215 (1/4),(2/4) 74F32 SWITCH

IC606 (1/6) 74F04 INVERTER

IC215 (4/4) 74F32 INVERTER

IC606 (2/6),(3/6) 74F04 INVERTER

IC003 (2/4),(3/4) 74F32 SWITCH

IC606 (5/6) 74F04 INVERTER

IC606 (6/6) 74F04 INVERTER

IC605 (2/4) 74F86 SWITCH

IC214 (4/4) 74F08 SWITCH

IC003 (4/4) 74F32 SWITCH

DIGITAL VIDEO DIGITAL VIDEO

9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

TO FMY-10 (2/4)

TO FMY-10 (2/4)

IC007
CXD1176Q
G A/D CONVERTER

IC008
CXD1176Q
B A/D CONVERTER

IC009
CX08444Q
DICC

IC003
74F32
SWITCH

IC010
CXD1178Q
D/A CONVERTER

IC215 (4/4)
74F32
INVERTER

IC606 (5/6)
INVERTER

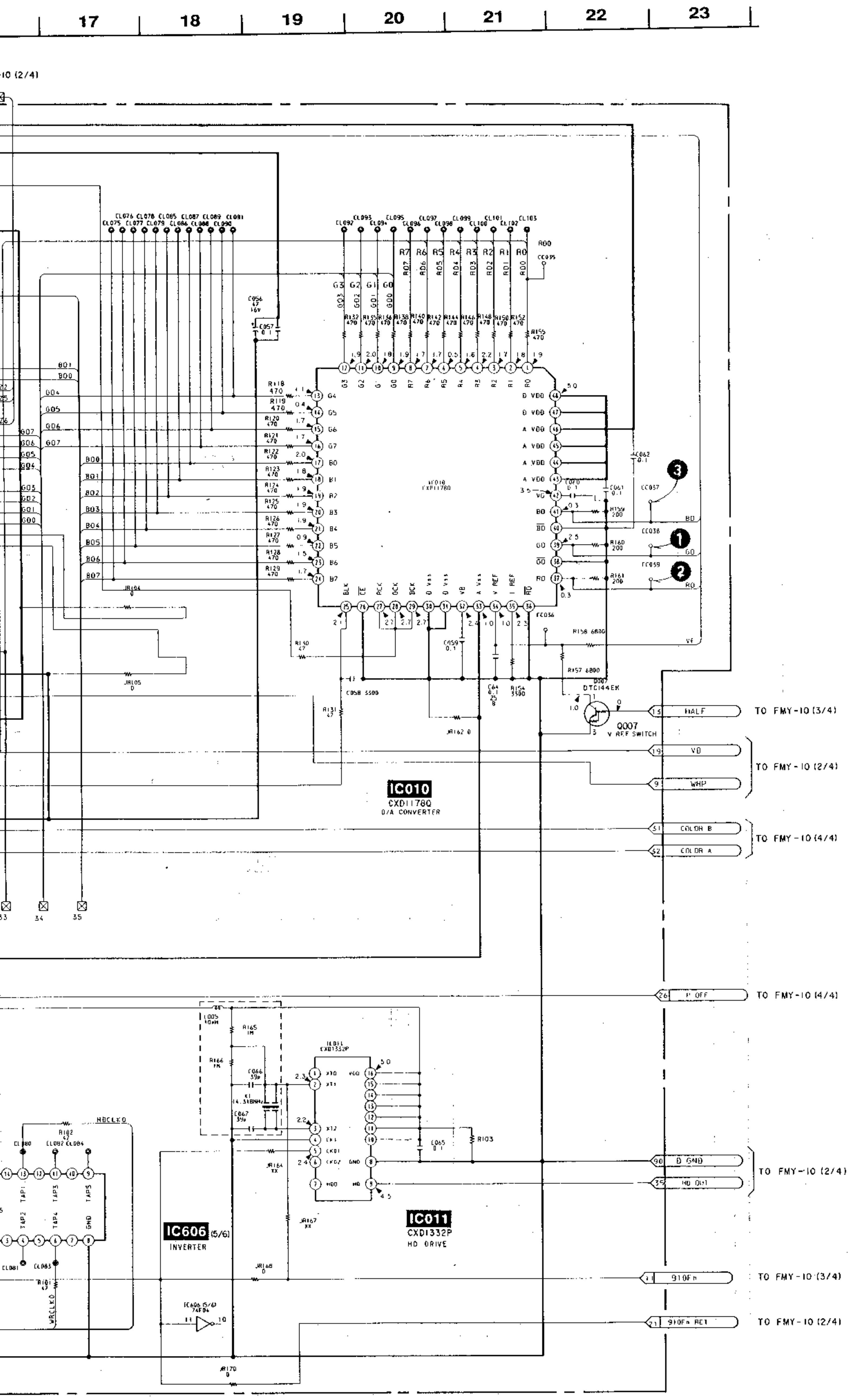
IC011
CXD1332P
HD DRIVE

: UP-1850EPM only

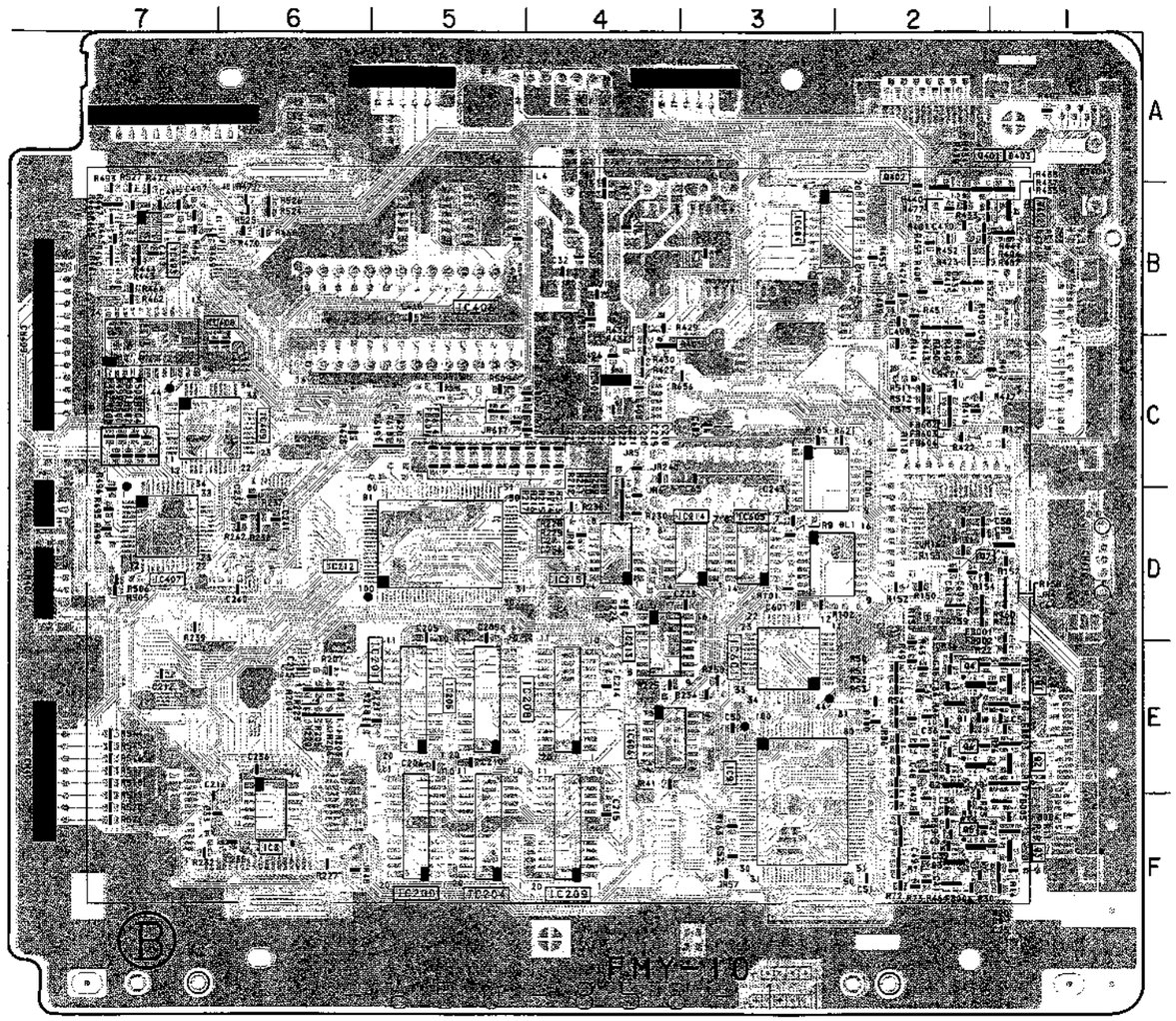
82 SWD+5V UN TO FMY-10 (3/4)

80 D+5V TO FMY-10 (2/4)

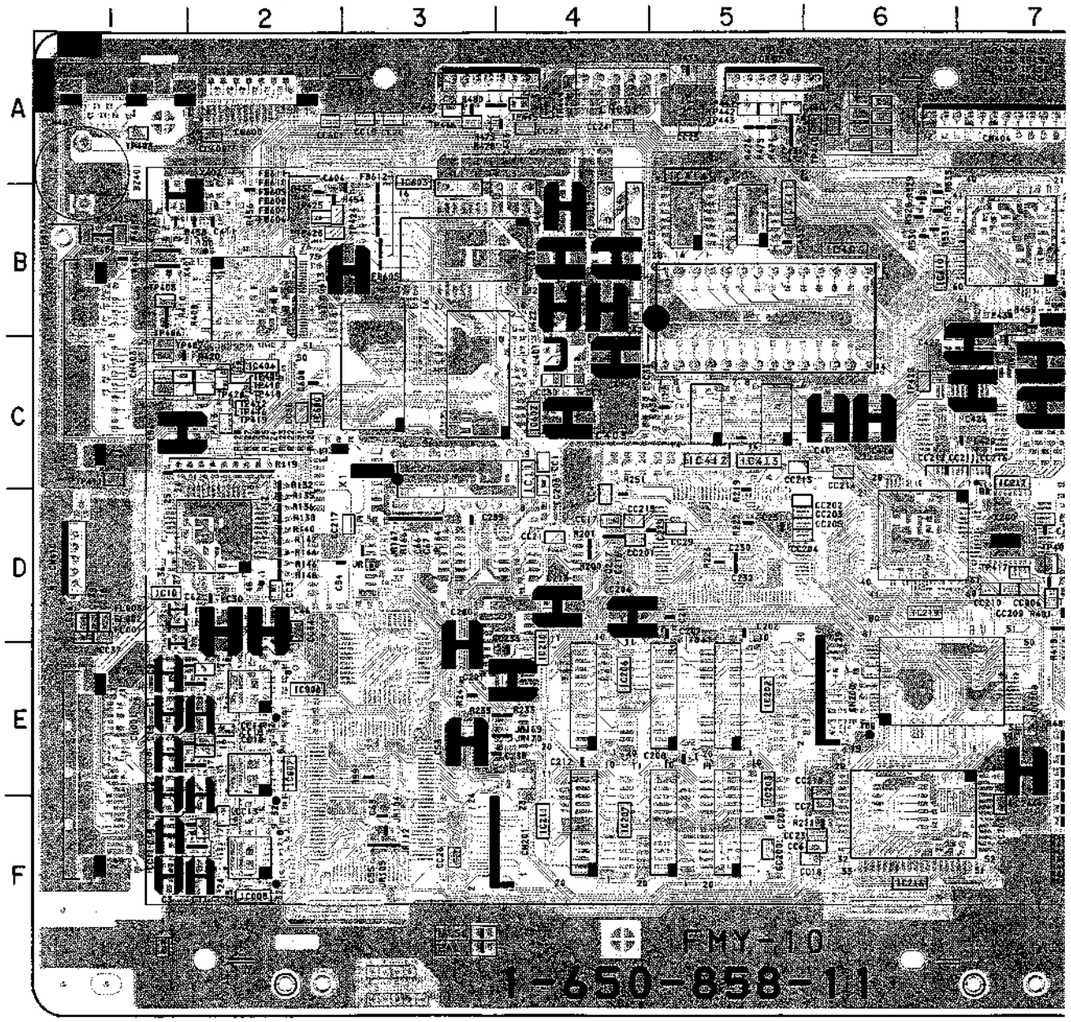
DIGITAL VIDEO	DIGITAL
FMY-10P	FMY


17
18
19
20
21
22
23
10 (2/4)
IC010
CXD1178Q
D/A CONVERTER
Q007
DTC144EK
V REF SWITCH
HALF
TO FMY-10 (3/4)
VD
WHP
TO FMY-10 (2/4)
COLOR B
COLOR A
TO FMY-10 (4/4)
P OFF
TO FMY-10 (4/4)
D GND
HD OUT
TO FMY-10 (2/4)
910Fn
TO FMY-10 (3/4)
910Fn RET
TO FMY-10 (2/4)
IC011
CXD1332P
HD DRIVE
IC606 (5/6)
INVERTER
HDCLKO
WRCLKO
R103
R102
47
R101
47
C065
0.1
C066
39p
C067
39p
L005
R165
1M
R166
1M
C056
47
16V
C057
0.1
C058 3300
C059
0.1
C061
0.1
C062
0.1
CC037
CC038
CC039
R156 6800
R157 6800
R154
3300
R130
47
R131
47
R159
200
R160
200
R161
200
JR104
0
JR105
0
JR162 0
JR164
XX
JR167
XX
JR168
0
JR170
0
33
34
35

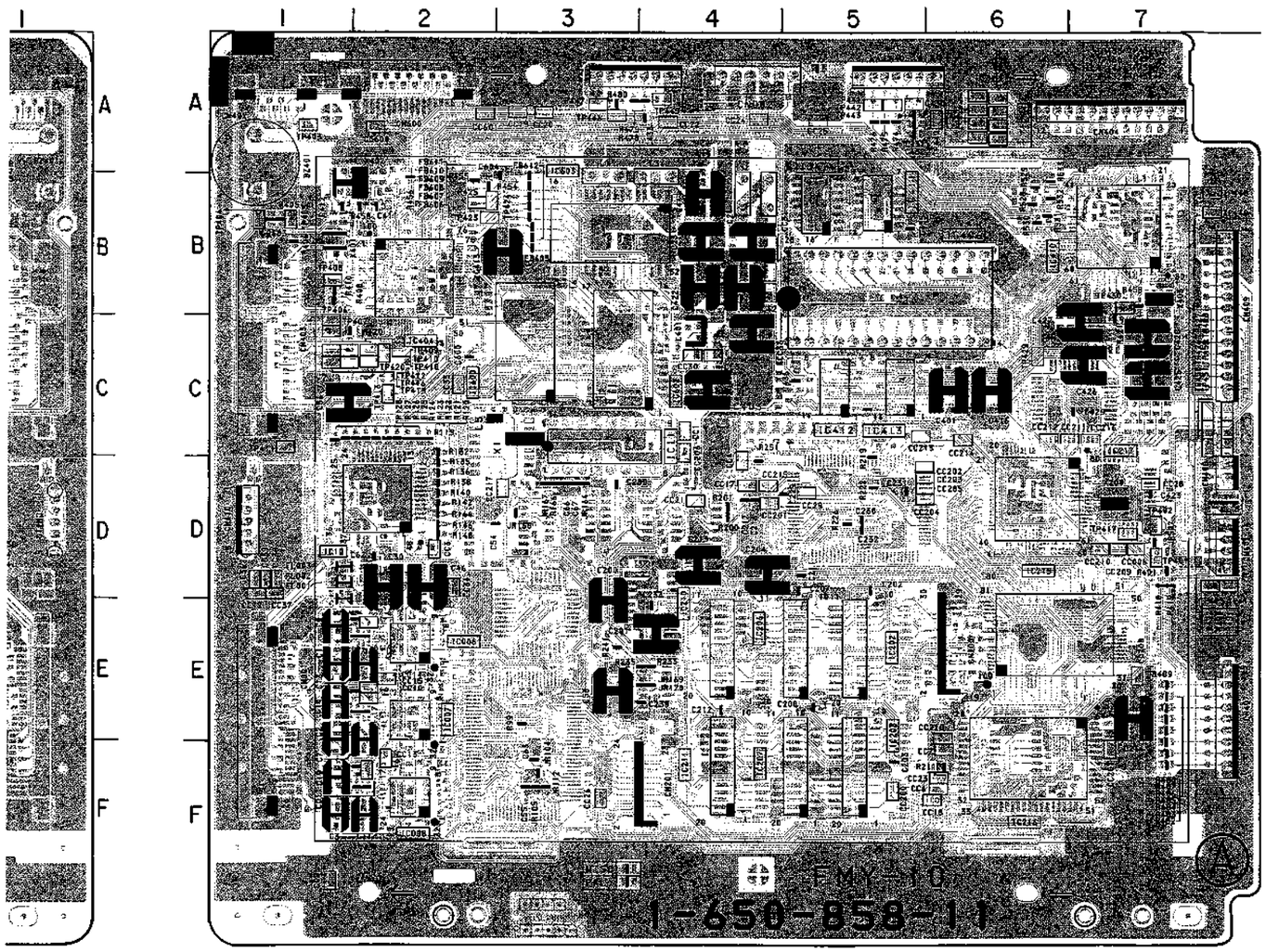
FMY-10P (FRAME MEMORY)



FMY-10 -SOLDERING SIDE-



FMY-10 -COMPONE



ERING SIDE-

FMY-10 -COMPONENT SIDE-

FMY-10P BOARD

BZ401	A-1		IC402	C-4	S
			IC403	B-7	S
CN001	E-1		IC404	B-2	
CN002	A-4		IC406	B-5	
CN401	D-7		IC407	D-7	S
CN402	A-1		IC408	C-7	S
CN403	C-1		IC409	C-7	S
CN404	A-7		IC410	B-7	
CN405	A-5		IC411	B-5	
CN406	A-3		IC412	C-5	
CN407	E-7		IC413	C-5	
CN408	D-7		IC414	B-5	
CN409	C-7		IC600	C-3	
CN410	D-1		IC601	E-3	S
CN600	A-6		IC602	C-3	
			IC603	B-3	
D001	E-2	S	IC604	B-2	S
D002	E-2	S	IC605	D-3	S
D003	F-2	S	IC606	E-4	S
D401	C-4	S			
D402	B-1	S	JR004	D-1	S
D403	B-1	S	JR005	C-4	S
			JR036	E-2	S
DL001	D-3	S	JR037	E-2	S
DL200	C-3	S	JR039	F-2	S
			JR040	D-4	S
FB001	D-1	S	JR048	F-6	S
FB002	E-1	S	JR104	F-3	
FB003	E-1	S	JR105	F-3	
FB004	F-1	S	JR162	D-2	S
FB005	F-1	S	JR168	D-3	
FB006	F-2	S	JR170	E-4	
FB600	C-4	S			
FB601	C-5	S	L001	B-3	
FB602	C-2	S	L002	B-4	
FB603	C-2	S	L003	B-4	
FB604	C-2	S	L004	B-4	
FB605	B-3				
FB606	B-3		Q001	E-1	S
FB607	B-3		Q002	E-1	S
FB608	B-3		Q003	F-1	S
FB609	B-3		Q004	E-2	S
FB610	B-3		Q005	F-2	S
FB611	B-3		Q006	E-2	S
FB612	B-3		Q007	D-1	S
FB613	C-4	S	Q401	B-2	S
FB614	C-5	S	Q402	B-2	S
FL001	D-1		X200	D-7	
FL002	D-1		X401	B-1	
FL003	D-1		X402	B-2	
			X403	B-7	
IC003	F-6	S			
IC006	E-2				
IC007	E-2				
IC008	F-2				
IC009	F-3	S			
IC010	D-2				
IC200	F-5	S			
IC201	E-5	S			
IC204	F-5	S			
IC205	E-5	S			
IC208	E-4	S			
IC209	F-4	S			
IC212	D-5	S			
IC213	E-4	S			
IC214	D-3	S			
IC215	D-4	S			
IC216	F-6				
IC217	D-6				
IC219	E-6				

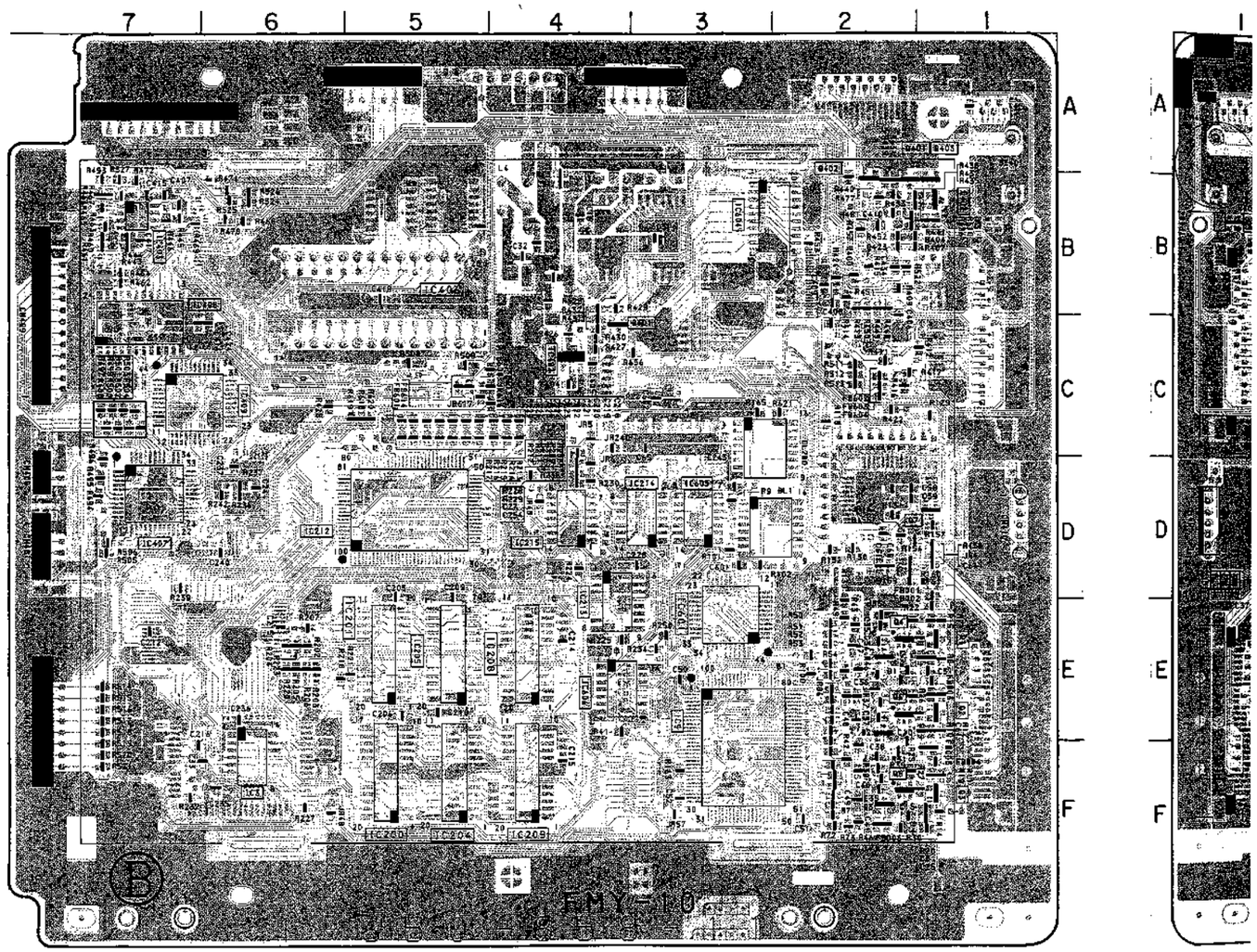
S:SOLDERING SIDE

FMY-10P (FRAME MEMORY)

FMY-10P BOARD

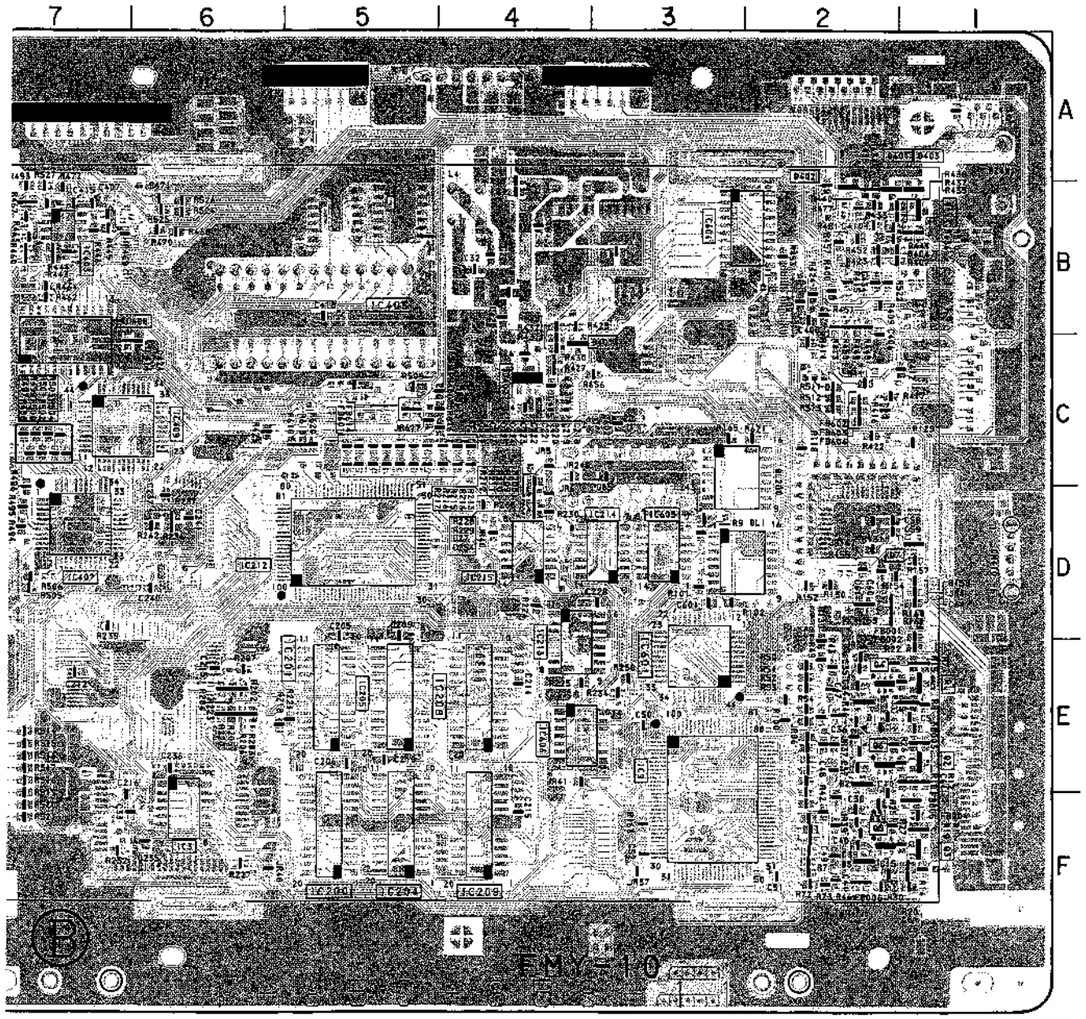
BZ401	A-1		IC402	C-4	S
			IC403	B-7	S
CN001	E-1		IC404	B-2	
CN002	A-4		IC406	B-5	
CN401	D-7		IC407	D-7	S
CN402	A-1		IC408	C-7	S
CN403	C-1		IC409	C-7	S
CN404	A-7		IC410	B-7	
CN405	A-5		IC411	B-5	
CN406	A-3		IC412	C-5	
CN407	E-7		IC413	C-5	
CN408	D-7		IC414	B-5	
CN409	C-7		IC600	C-3	
CN410	D-1		IC601	E-3	S
CN600	A-6		IC602	C-3	
			IC603	B-3	
D001	E-2	S	IC604	B-2	S
D002	E-2	S	IC605	D-3	S
D003	F-2	S	IC606	E-4	S
D401	C-4	S			
D402	B-1	S	JR004	D-1	S
D403	B-1	S	JR005	C-4	S
			JR036	E-2	S
DL001	D-3	S	JR037	E-2	S
DL200	C-3	S	JR039	F-2	S
			JR040	D-4	S
FB001	D-1	S	JR048	F-6	S
FB002	E-1	S	JR104	F-3	
FB003	E-1	S	JR105	F-3	
FB004	F-1	S	JR162	D-2	S
FB005	F-1	S	JR168	D-3	
FB006	F-2	S	JR170	E-4	
FB600	C-4	S			
FB601	C-5	S	L001	B-3	
FB602	C-2	S	L002	B-4	
FB603	C-2	S	L003	B-4	
FB604	C-2	S	L004	B-4	
FB605	B-3				
FB606	B-3		Q001	E-1	S
FB607	B-3		Q002	E-1	S
FB608	B-3		Q003	F-1	S
FB609	B-3		Q004	E-2	S
FB610	B-3		Q005	F-2	S
FB611	B-3		Q006	E-2	S
FB612	B-3		Q007	D-1	S
FB613	C-4	S	Q401	B-2	S
FB614	C-5	S	Q402	B-2	S
FL001	D-1		X200	D-7	
FL002	D-1		X401	B-1	
FL003	D-1		X402	B-2	
			X403	B-7	
IC003	F-6	S			
IC006	E-2				
IC007	E-2				
IC008	F-2				
IC009	F-3	S			
IC010	D-2				
IC200	F-5	S			
IC201	E-5	S			
IC204	F-5	S			
IC205	E-5	S			
IC208	E-4	S			
IC209	F-4	S			
IC212	D-5	S			
IC213	E-4	S			
IC214	D-3	S			
IC215	D-4	S			
IC216	F-6	S			
IC217	D-6				
IC219	E-6				

S:SOLDERING SIDE

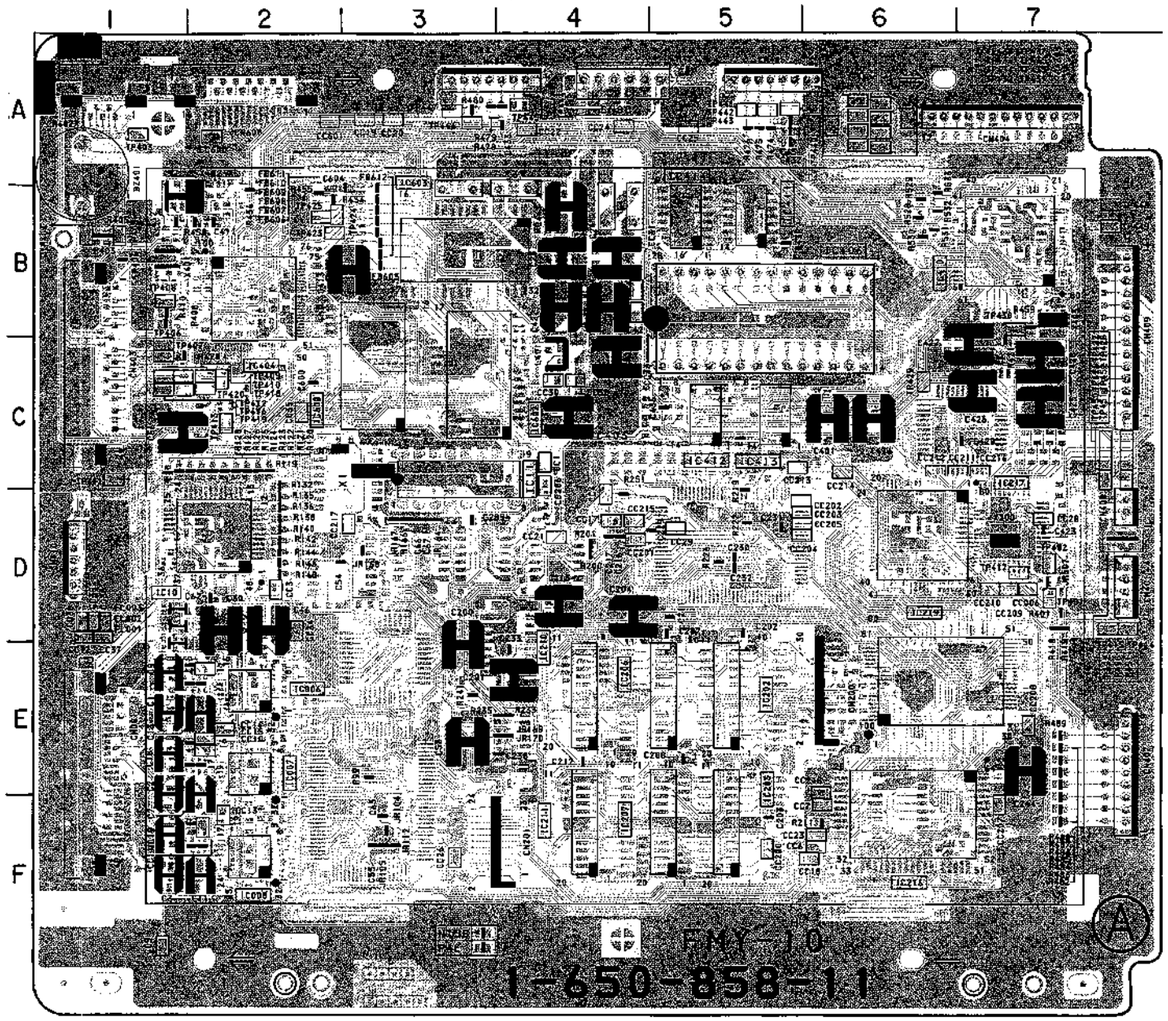


FMY-10 -SOLDERING SIDE-

ViDE-V03252 / Druck 27

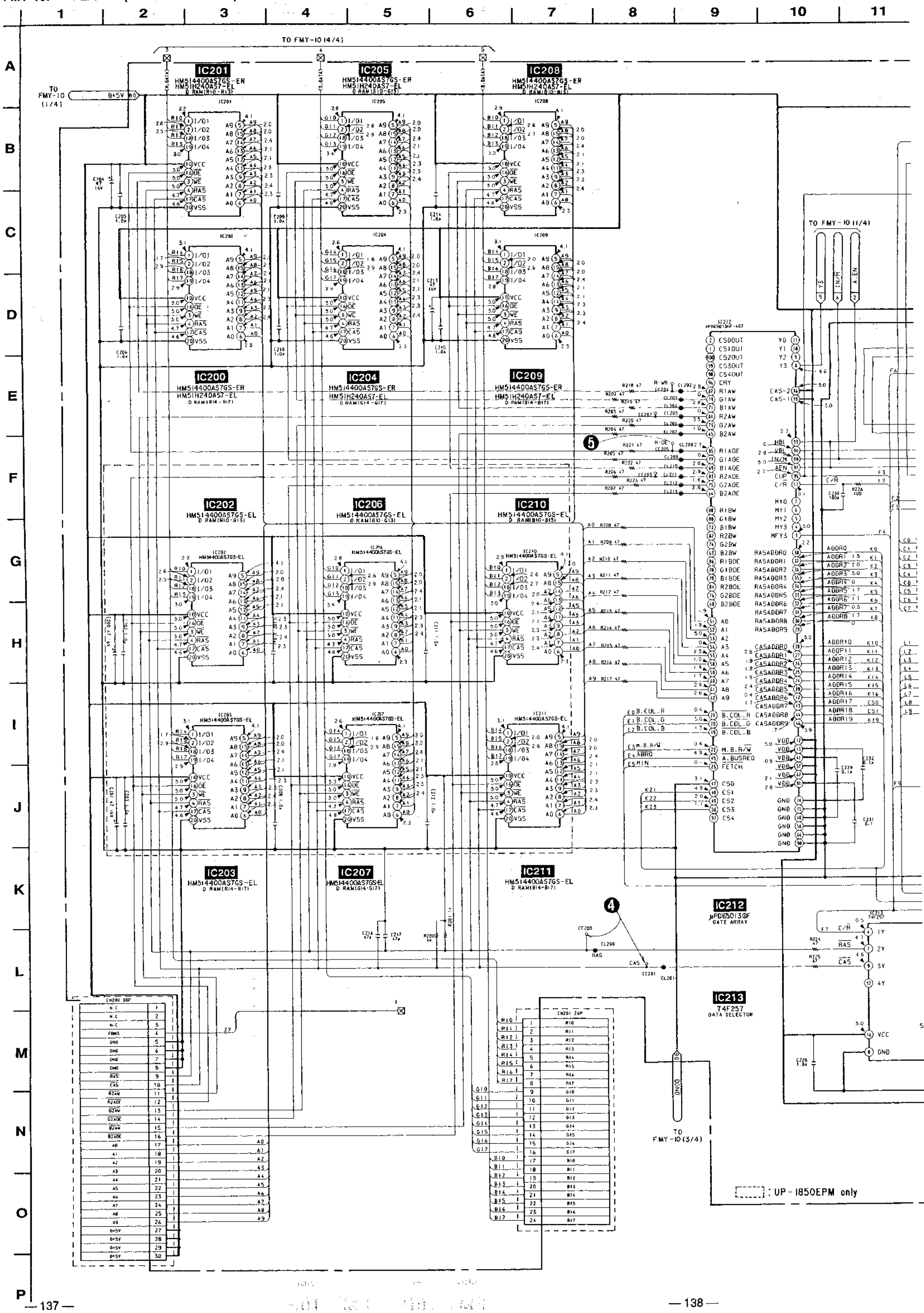


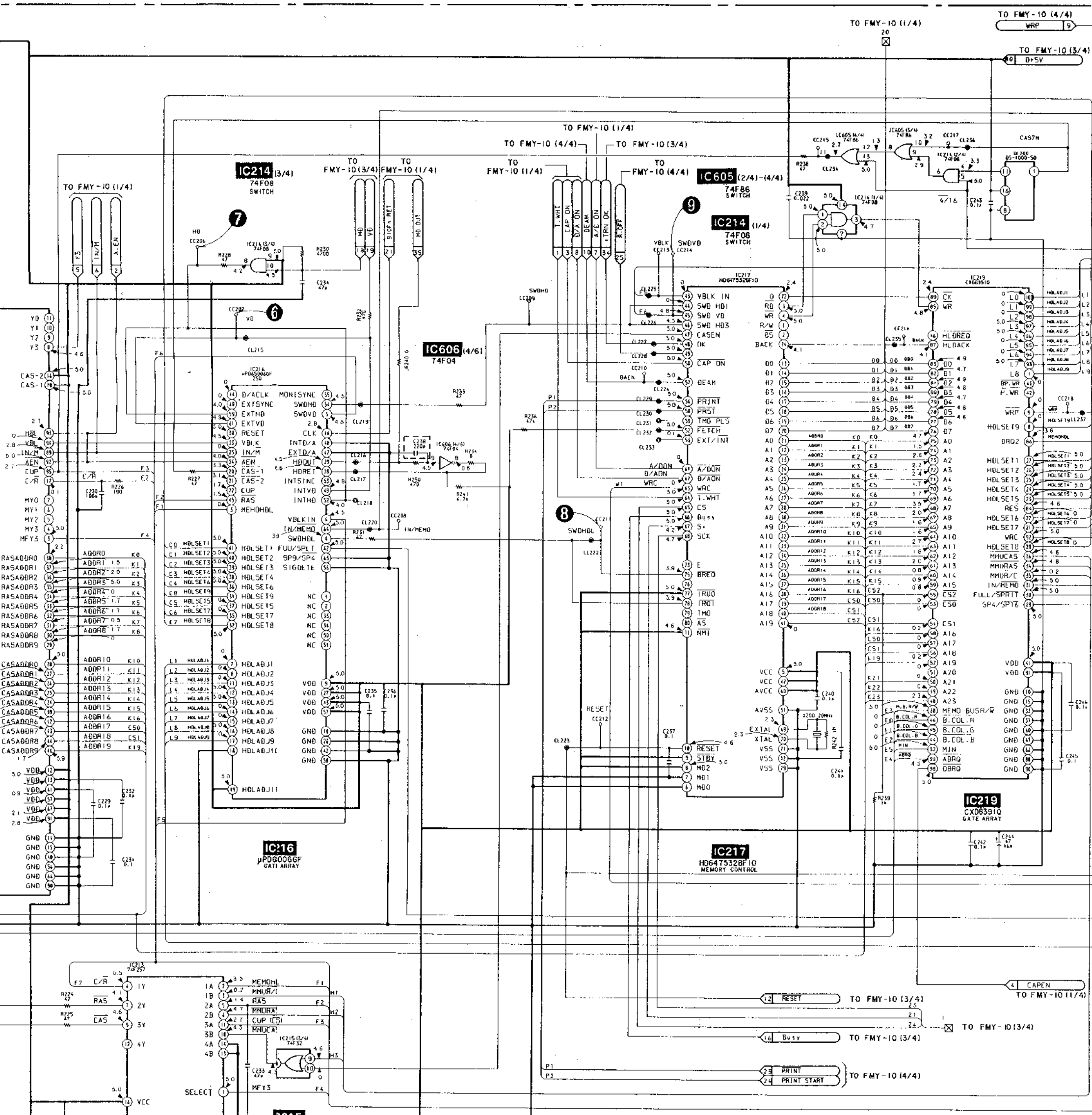
FMY-10 -SOLDERING SIDE-



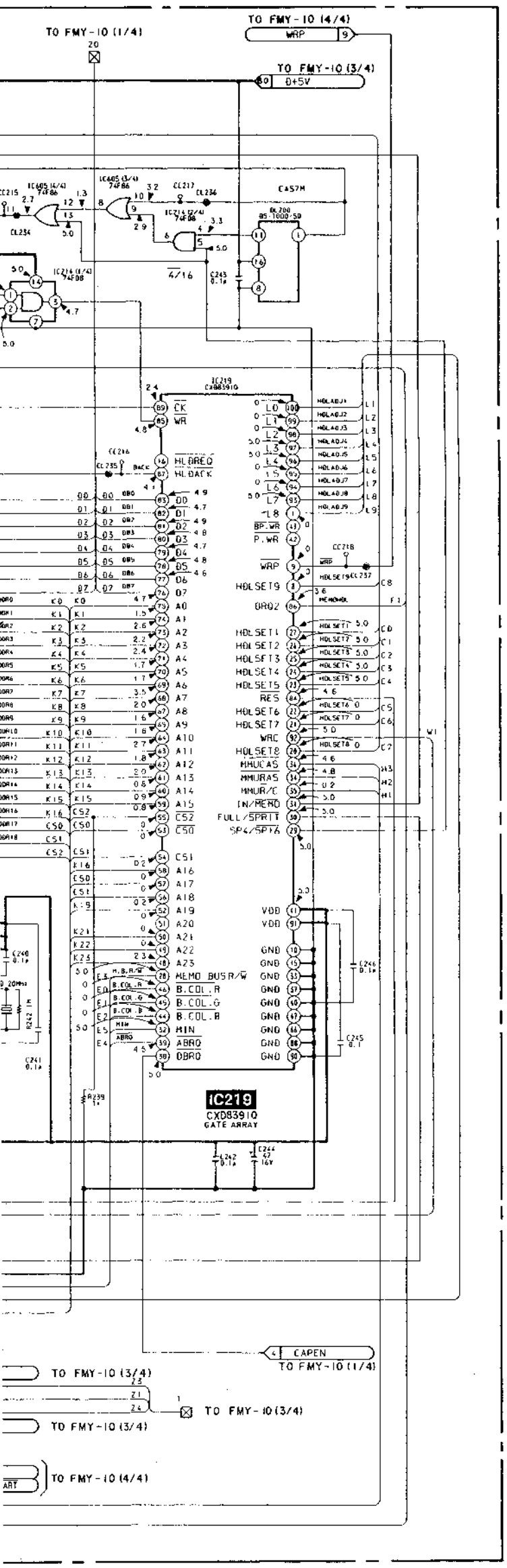
FMY-10 -COMPONENT SIDE-

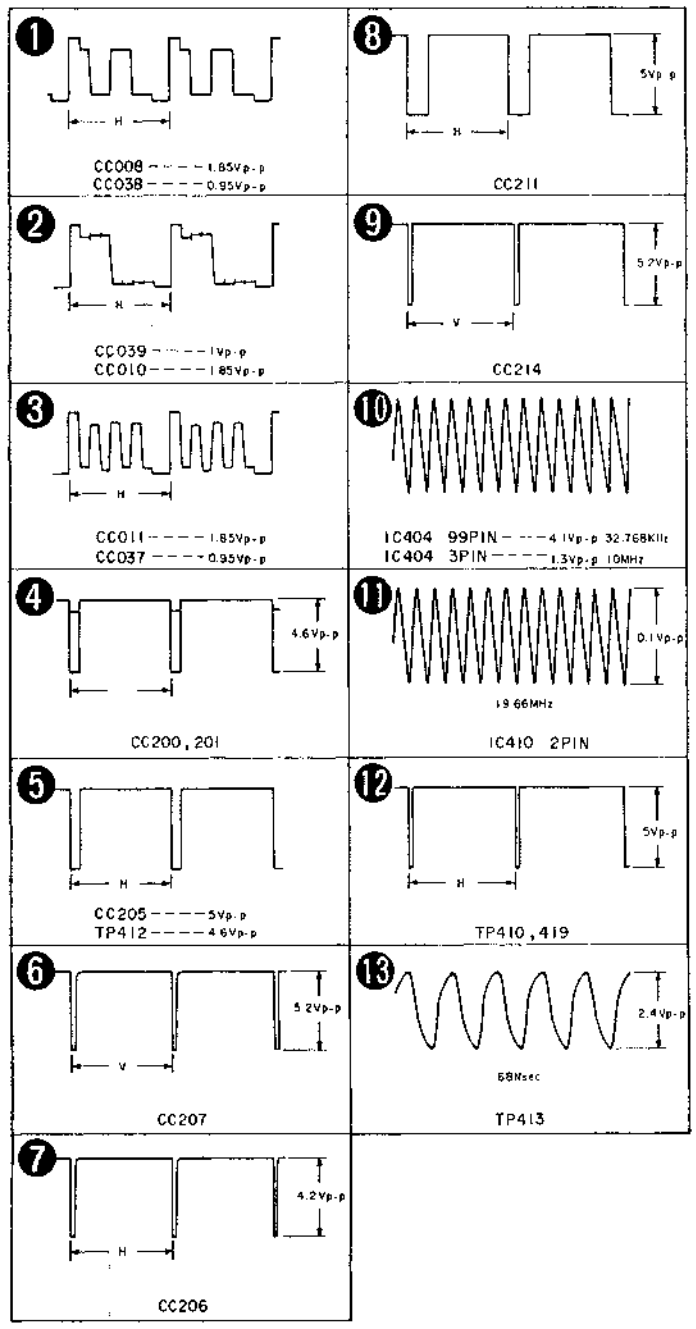
FMY-10P — 2/4 — (FRAME MEMORY)





: UP-1850EPM only


19
20
21
22
TO FMY-10 (1/4)
TO FMY-10 (4/4)
WRP
TO FMY-10 (3/4)
D+5V
CA57M
4/16
IC219
CXD8391Q
GATE ARRAY
CK
WR
HL.BREQ
HL.BACK
DD
DI
D2
D3
D4
D5
D6
D7
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
CS2
CS0
CS1
A16
A17
A18
A19
A20
A21
A22
A23
MEMO BUSR/W
B.COL.R
B.COL.G
B.COL.B
MIN
ABRQ
DBRQ
L0
L1
L2
L3
L4
L5
L6
L7
L8
BP.WR
P.WR
WRP
HDLSET9
HDLSET1
HDLSET2
HDLSET3
HDLSET4
HDLSET5
RES
HDLSET6
HDLSET7
WRC
HDLSET8
MMUCAS
MMURAS
MMUR/C
IN/MEMO
FULL/SPRIT
SP4/SPTA
VDD
GND
CAPEN
TO FMY-10 (3/4)
TO FMY-10 (1/4)
TO FMY-10 (3/4)
TO FMY-10 (3/4)
TO FMY-10 (4/4)


1
CC008 1.85Vp-p
CC038 0.95Vp-p
8
5Vp-p
CC211
2
CC039 1Vp-p
CC010 1.85Vp-p
9
5.2Vp-p
CC214
3
CC011 1.85Vp-p
CC037 0.95Vp-p
10
IC404 99PIN 4.1Vp-p 32.768KHz
IC404 3PIN 1.3Vp-p 10MHz
4
4.6Vp-p
CC200, 201
11
0.1Vp-p
19.66MHz
IC410 2PIN
5
CC205 5Vp-p
TP412 4.6Vp-p
12
5Vp-p
TP410, 419
6
5.2Vp-p
CC207
13
2.4Vp-p
68Nsec
TP413
7
4.2Vp-p
CC206

FMY-10P — 3/4 — (FRAME MEMORY)

1 2 3 4 5 6 7 8

A B C D E F G H I J K L M N O

FMY-10 BOARD (3/4)

TO IF-28 BOARD CN003

CN401 4P

SW8 0*5V	1	CL401
THRU	2	CL402
NC	3	CL403
Θ GNΘ	4	CL404

C438 0.01

TP401 THRU — R401 100 — THRU

TP402 Θ GNΘ

TO HM-22 BOARD CN706

CN402 7P

Θ GNΘ	1	CL405
MECH CS	2	CL406
SCK	3	CL407
SI	4	CL408
SO	5	CL409
RESET	6	CL410
Θ GNΘ	7	CL411

TP403 MECH CS — R402 220 — MECH CS

SCK1

RXD1

TXD1

TP404 Θ GNΘ — R403 220 — N_RESET

TO VA-14 BOARD CN102

CN403 26P

EE RESET1	1	CL412
Θ GNΘ	2	CL413
RESET	3	CL414
SYNC SEL	4	CL415
POWER ON	5	CL416
SYNC DET	6	CL417
LANC	7	CL418
TXD1	8	CL419
RXD1	9	CL420
SCK1	10	CL421
EV CS	11	CL422
CG CS	12	CL423
EE CS	13	CL424
TXD0	14	CL425
EE BUSY	15	CL426
SCK0	16	CL427
VBS	17	CL428
Θ GNΘ	18	CL429
VΘ	19	CL430
Θ GNΘ	20	CL431
HΘ	21	CL432
Θ GNΘ	22	CL433
Θ GNΘ	23	CL434
910FH	24	CL435
Θ GNΘ	25	CL436
SOG	26	CL437

R507 0 — LANC

TP405

TP406 EV CS — R408 100 — EV CS

TP407 CG CS — R409 100 — CG CS

TP408 EE CS — R410 100 — EE CS

TXD0

TP409 EE BUSY — R537 0 — EE BUSY1

SCK0

R411 100 — VBS

R536 0 — VB

TP410 Θ GNΘ

HB

R535 0

TP413 910FH — R534 0

R412 100 — SOG

TO FMY-10 (2/4) — VΘ 19

HB 18

TO FMY-10 (1/4) — 910FH 11

R413 47k R414 47k R415 47k R416 47k R417 47k

R418 47k R419 47k R505 47k R506 47k

TO FMY-10 (2/4) — MC BUSY 16 — CL438 TP414 — MC BUSY

XTAL OK 34 — TP415 — XTAL OK

TO FMY-10 (1/4)

Z1 TXD0

Z2 CL441 TP416 — R420 100 — BICC CS

Z3 SCK0

Z4 CL443 TP417 — R421 100 — MC CS

Z5 TXD1

Z6 SCK1

Z7 CL527

CL528

JA507 0

FRM3

FRM4

N_RESET

CL454

RESET

RXRDY

TXRDY

TXEMP

N_OE

N_WE

CKO

TO FMY-10 (1/4) — HALF 13 — CL446 — R422 100 — HALF

POWER ON 22 — R423 100 — POWER ON

MUTE O/A 15 — CL448 — R424 100 — MUTE O/A

TO FMY-10(2/4) — RESET 12 — R425 100 — N_RESET

: UP-1850EPM only

IC413 SN74HC04ANS INVERTER

IC414 SN74HC138ANS DECODER

IC403 AK6420F ERASABLE MEMORY

TX00

RX00

EE RESET0 — R446 100

TX01

SCK1

MB BUSY

SYNC SEL

MUTE O/A

EE BUSY0 — R442 100

EE CS0

SCK0

R443 47k R444 47k R445 47k R447 47k

R435 10k R437 10k R440 10k

R436 100 R438 100 R441 470k

Q401 DTC144EE-T146 — R434 470k R433 100 — Q402 1S2837-T1

R439 470k R438 100 — Q403 1S1835-T1 — Q403 DTC144EK-T146

C406 0.1 25V F

Q401 LANC OUT SWITCH

Q402 LANC IN SWITCH

IC402 S-8054ALB RESET

R426 470 — IC402 S-8054ALB-LM-T1 — Q402 1S2837-T1

R427 100 — CL589

C403 68 10V — C404 0.1 25V F — C405 0.1 25V F

R428 47k R429 100 R430 1k R431 100 R432 47k

CL585 CL586

SCK0 R462 100

RX00

TX00 R464 100

C414 0.1 25V

C437 0.1 25V F

C436 0.1 25V F

R508 0 — R509 10k

C401 47 10V — C402 0.1 25V F

N_CE_SIO

N_CE_PIO

N_CE_ROM

DIGITAL VIDEO

FMY-10P

DIGITAL VIDEO

FMY-10P

IC404
MB89092PFV
SYSTEM CONTROL

IC403
AK6420F
ERASABLE MEMORY

IC407
μP071055GB
PARALLE INTERFACE UNIT

IC408
μPD4713GT
DRIVER / RECEIVER

IC406
M27C512-UP18PSYVL00
RAM

IC402
S-8054ALB
RESET

IC412
SN74HC32ANS
OR

IC411
SN74HC32ANS
OR

IC410
HD6413378F10
8-BIT 1CHIP CPU

IC409
μPD71051GB
SERIAL CONTROLLER

Q401
LANC OUT SWITCH

Q402
LANC IN SWITCH

10

11

12

IC407
μPD71055GB
PARALLE INTERFACE UNIT

IC408
μPD4713GT
DRIVER / RECEIVER

IC409
μPD71051GB
SERIAL CONTROLLER

CN410 5P
RGB/S.YS1 R511 100 CL582
AGC.OFF1 R512 100 CL583
INT/EXT1 R513 100 CL584
1 RGB /S.YS
2 AGC_OFF
3 INT /EXT
4 N.C
5 GND
TO VA-14 BOARD CN505

CN409 14P
LCD7 R504 220 CL581
LCD6 R503 220 CL580
LCD5 R502 220 CL579
LCD4 R501 220 CL578
LCD3 R500 220 CL577
LCD2 R499 220 CL576
LCD1 R498 220 CL575
LCD0 R497 220 CL574
LCD_E R496 220 CL573
LCD_WR R495 220 CL572
LCD_A0 R494 220 CL571
LCD_VR R493 220 CL570
CL569
CL568
1 LCD D7
2 LCD D6
3 LCD D5
4 LCD D4
5 LCD D3
6 LCD D2
7 LCD D1
8 LCD D0
9 LCD E
10 LCD WR
11 LCD A0
12 LCD VR
13 SW8 8+5V
14 8 GND
TO KY-15 BOARD CN803

C439 0.01

C440 0.01
CN408 2P
CL567 2 8 GND
CL566 1 BACK LIGHT
TO KY-15 BOARD CN804

R492 10
R491 10
R490 10

80 8+5V TO FMY-10 (4/4)

CN407 9P
DSW7 R514 100 CL565 9 8 GND
DSW6 R515 100 CL564 8 DSW7
DSW5 R516 100 CL563 7 DSW6
DSW4 R517 100 CL562 6 DSW5
DSW3 R518 100 CL561 5 DSW4
DSW2 R519 100 CL560 4 DSW3
DSW1 R520 100 CL559 3 DSW2
DSW0 R521 100 CL558 2 DSW1
CL557 1 DSW0
TO IF-29 BOARD CN303

90 8 GND TO FMY-10 (4/4)

82 UNSW8 8+5V TO FMY-10 (1/4)

R482 47k R483 47k R484 47k R485 47k R486 47k R487 47k R488 47k R489 47k
R480 10k R481 10k

CN406 7P
STACUS R522 100 TP447 CL556 7 UNSW8 8+5V
POWER SW R523 100 STACUS TP446 CL555 6 STACUS
POWER LED R478 330 POWER SW TP445 CL554 5 POWER SW
ALARM LED R477 100 CL553 4 STBY LED
CL552 3 POWER LED
CL551 2 ALARM LED
8 GND TP444 CL550 1 8 GND
TO KY-15 BOARD CN801

CN405 7P
STOP SW R524 100 CL549 7 UNSW8 8+5V
DIRECT SW R525 100 STOP SW TP443 CL548 6 STOP SW
MENU SW R526 100 DIRECT SW TP442 CL547 5 DIRECT SW
PRINT LED R473 200 MENU SW TP441 CL546 4 MENU SW
CL545 3 NC
CL544 2 PRINT LED
8 GND TP440 CL543 1 8 GND
TO KY-15 BOARD CN802

C430 0.1 25V F
C431 0.1 25V F
C432 0.1 25V F
C433 0.1 25V F
C434 100p 50V SL

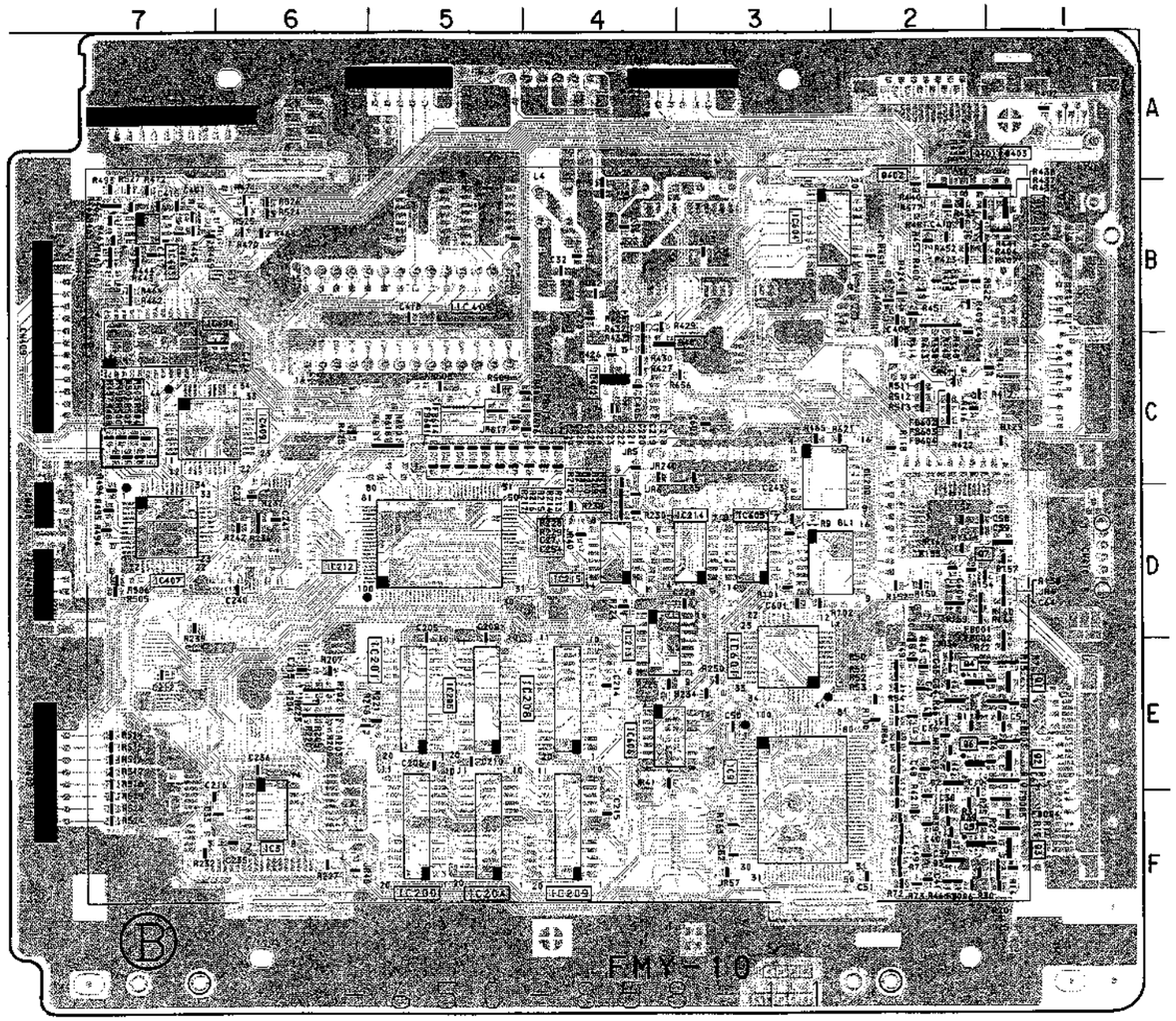
CN404 12P
RM BUSY R471 220 8 GND TP439 CL542 12 8 GND
RM IN R527 220 RM BUSY TP438 CL541 11 RM BUSY
RM IN TP437 CL540 10 RM IN
CL539 9 UNSW8 8+5V
RS RTR R528 220 RTR TP436 CL538 8 RTR
CL537 7 8 GND
RS DSR R529 220 DSR TP435 CL536 6 DSR
RS CTS R530 220 CTS TP434 CL535 5 CTS
RS RTS R531 220 RTS TP433 CL534 4 RTS
RS RXD R532 220 RXD TP432 CL533 3 RXD
RS TXD R533 220 TXD TP431 CL532 2 TXD
CL531 1 8 GND
TO IF-29 BOARD CN302

C423 0.1 25V F
C419 47 16V
C420 0.1 25V F
C421 0.1 25V F
C422 47 16V
L401 10uH
C424 0.1 25V F
C425 47 16V
C426 47 16V
C428 47 16V
C427 47 16V

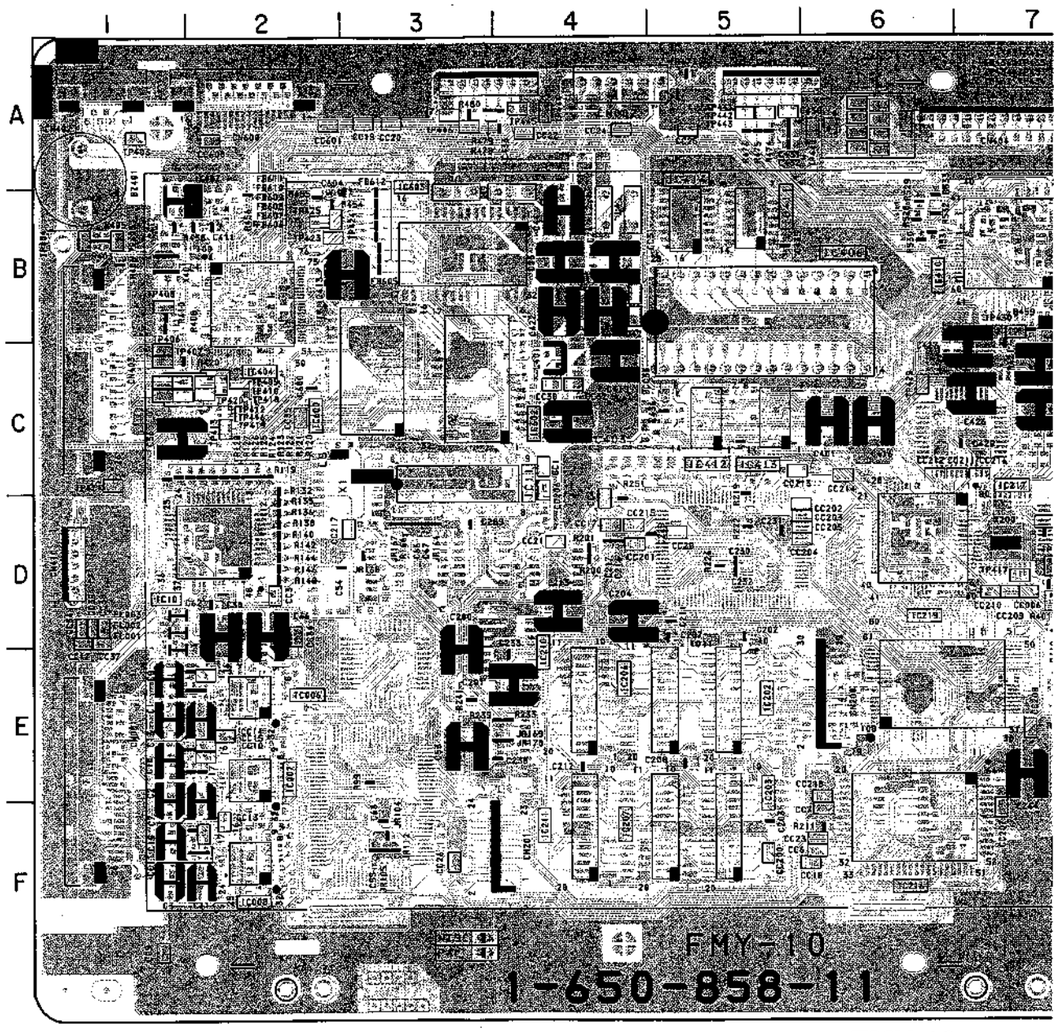
DIGITAL VIDEO
FMY-10P

DIGITAL VIDEO
FMY-10P

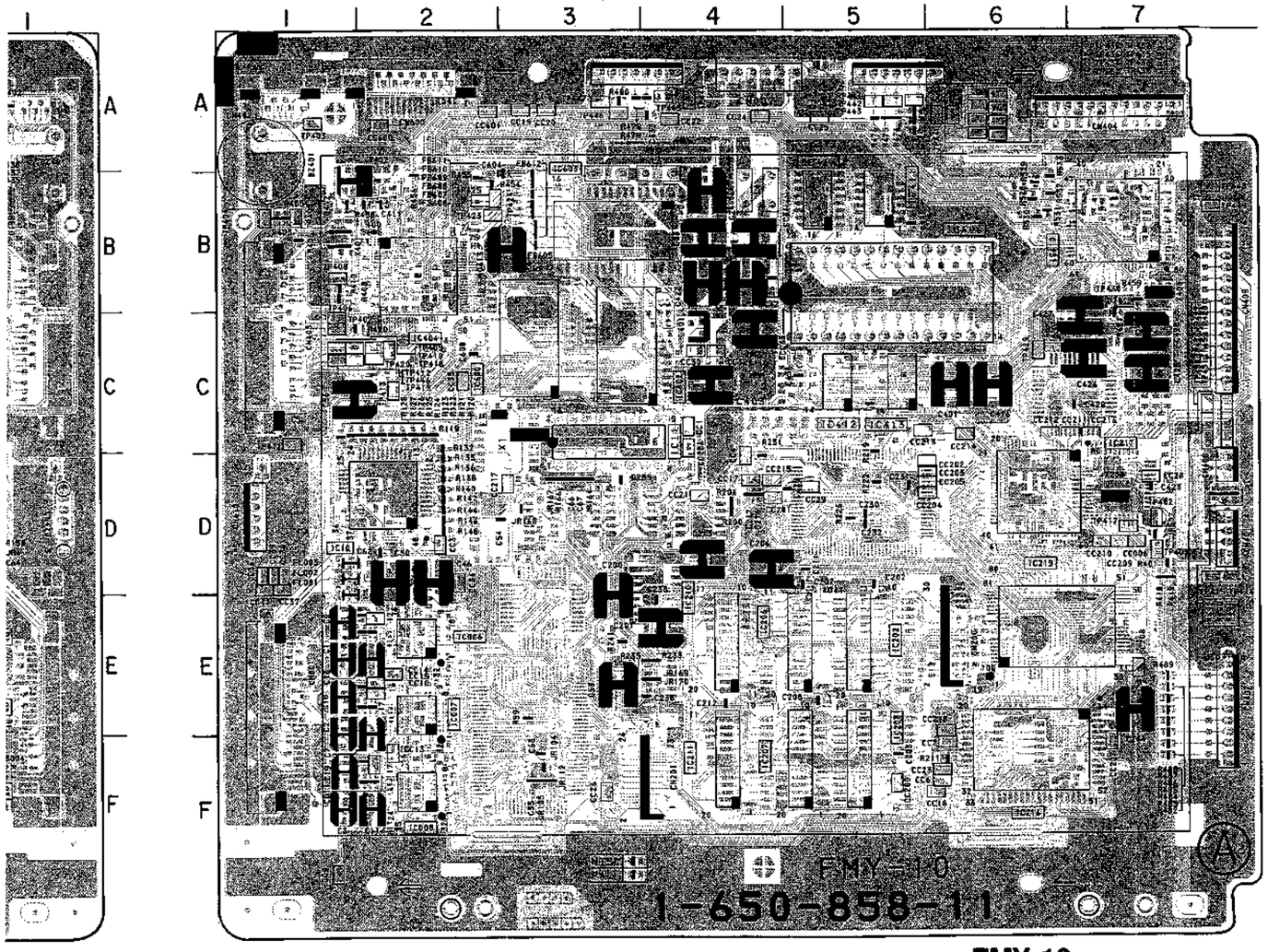
FMY-10P (FRAME MEMORY)



FMY-10 -SOLDERING SIDE-



FMY-10 -COMPON



DERING SIDE-

FMY-10 -COMPONENT SIDE-

FMY-10P BOARD

BZ401	A-1		IC402	C-4	S
			IC403	B-7	S
CN001	E-1		IC404	B-2	
CN002	A-4		IC406	B-5	
CN401	D-7		IC407	D-7	S
CN402	A-1		IC408	C-7	S
CN403	C-1		IC409	C-7	S
CN404	A-7		IC410	B-7	
CN405	A-5		IC411	B-5	
CN406	A-3		IC412	C-5	
CN407	E-7		IC413	C-5	
CN408	D-7		IC414	B-5	
CN409	C-7		IC600	C-3	
CN410	D-1		IC601	E-3	S
CN600	A-6		IC602	C-3	
			IC603	B-3	
D001	E-2	S	IC604	B-2	S
D002	E-2	S	IC605	D-3	S
D003	F-2	S	IC606	E-4	S
D401	C-4	S			
D402	B-1	S	JR004	D-1	S
D403	B-1	S	JR005	C-4	S
			JR036	E-2	S
DL001	D-3	S	JR037	E-2	S
DL200	C-3	S	JR039	F-2	S
			JR040	D-4	S
FB001	D-1	S	JR048	F-6	S
FB002	E-1	S	JR104	F-3	
FB003	E-1	S	JR105	F-3	
FB004	F-1	S	JR162	D-2	S
FB005	F-1	S	JR168	D-3	
FB006	F-2	S	JR170	E-4	
FB600	C-4	S			
FB601	C-5	S	L001	B-3	
FB602	C-2	S	L002	B-4	
FB603	C-2	S	L003	B-4	
FB604	C-2	S	L004	B-4	
FB605	B-3				
FB606	B-3		Q001	E-1	S
FB607	B-3		Q002	E-1	S
FB608	B-3		Q003	F-1	S
FB609	B-3		Q004	E-2	S
FB610	B-3		Q005	F-2	S
FB611	B-3		Q006	E-2	S
FB612	B-3		Q007	D-1	S
FB613	C-4	S	Q401	B-2	S
FB614	C-5	S	Q402	B-2	S
FL001	D-1		X200	D-7	
FL002	D-1		X401	B-1	
FL003	D-1		X402	B-2	
			X403	B-7	
IC003	F-6	S			
IC006	E-2				
IC007	E-2				
IC008	F-2				
IC009	F-3	S			
IC010	D-2				
IC200	F-5	S			
IC201	E-5	S			
IC204	F-5	S			
IC205	E-5	S			
IC208	E-4	S			
IC209	F-4	S			
IC212	D-5	S			
IC213	E-4	S			
IC214	D-3	S			
IC215	D-4	S			
IC216	F-6				
IC217	D-6				
IC219	E-6				

S:SOLDERING SIDE

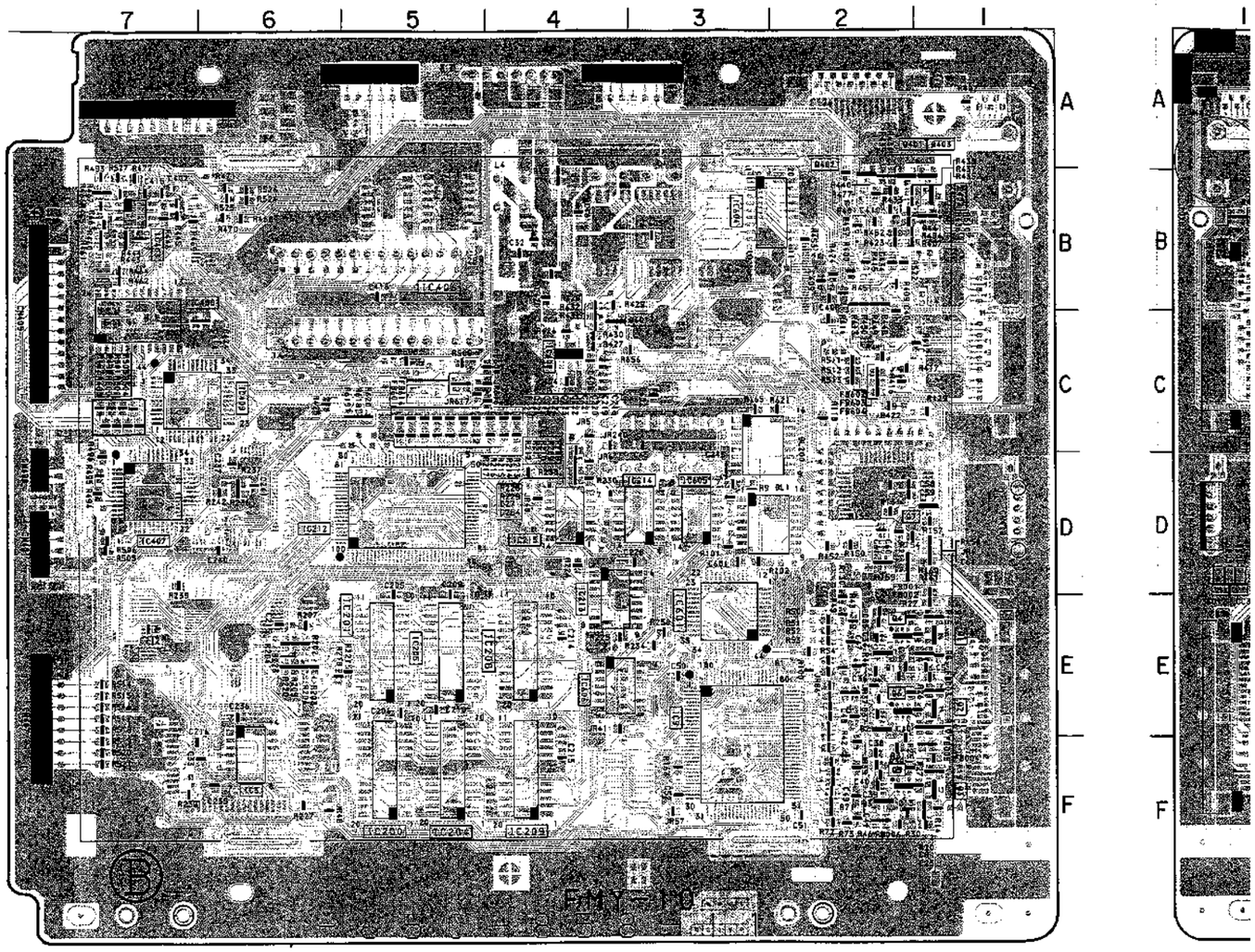
VIDE-V03252 / Druck 30

FMY-10P (FRAME MEMORY)

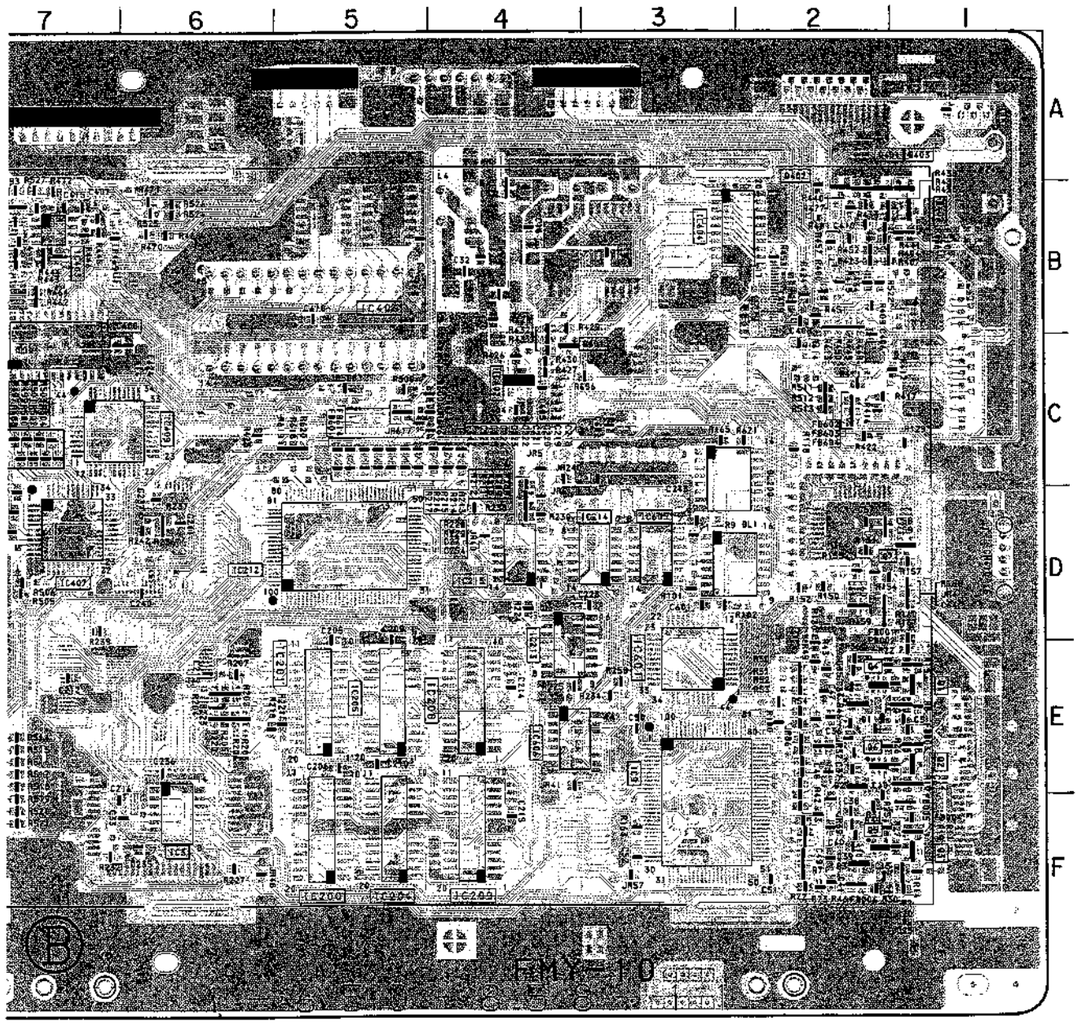
FMY-10P BOARD

BZ401	A-1		IC402	C-4	S
			IC403	B-7	S
CN001	E-1		IC404	B-2	
CN002	A-4		IC406	B-5	
CN401	D-7		IC407	D-7	S
CN402	A-1		IC408	C-7	S
CN403	C-1		IC409	C-7	S
CN404	A-7		IC410	B-7	
CN405	A-5		IC411	B-5	
CN406	A-3		IC412	C-5	
CN407	E-7		IC413	C-5	
CN408	D-7		IC414	B-5	
CN409	C-7		IC600	C-3	
CN410	D-1		IC601	E-3	S
CN600	A-6		IC602	C-3	
			IC603	B-3	
D001	E-2	S	IC604	B-2	S
D002	E-2	S	IC605	D-3	S
D003	F-2	S	IC606	E-4	S
D401	C-4	S			
D402	B-1	S	JR004	D-1	S
D403	B-1	S	JR005	C-4	S
			JR036	E-2	S
DL001	D-3	S	JR037	E-2	S
DL200	C-3	S	JR039	F-2	S
			JR040	D-4	S
FB001	D-1	S	JR048	F-6	S
FB002	E-1	S	JR104	F-3	
FB003	E-1	S	JR105	F-3	
FB004	F-1	S	JR162	D-2	S
FB005	F-1	S	JR168	D-3	
FB006	F-2	S	JR170	E-4	
FB600	C-4	S			
FB601	C-5	S	L001	B-3	
FB602	C-2	S	L002	B-4	
FB603	C-2	S	L003	B-4	
FB604	C-2	S	L004	B-4	
FB605	B-3				
FB606	B-3		Q001	E-1	S
FB607	B-3		Q002	E-1	S
FB608	B-3		Q003	F-1	S
FB609	B-3		Q004	E-2	S
FB610	B-3		Q005	F-2	S
FB611	B-3		Q006	E-2	S
FB612	B-3		Q007	D-1	S
FB613	C-4	S	Q401	B-2	S
FB614	C-5	S	Q402	B-2	S
FL001	D-1		X200	D-7	
FL002	D-1		X401	B-1	
FL003	D-1		X402	B-2	
			X403	B-7	
IC003	F-6	S			
IC006	E-2				
IC007	E-2				
IC008	F-2				
IC009	F-3	S			
IC010	D-2				
IC200	F-5	S			
IC201	E-5	S			
IC204	F-5	S			
IC205	E-5	S			
IC208	E-4	S			
IC209	F-4	S			
IC212	D-5	S			
IC213	E-4	S			
IC214	D-3	S			
IC215	D-4	S			
IC216	F-6				
IC217	D-6				
IC219	E-6				

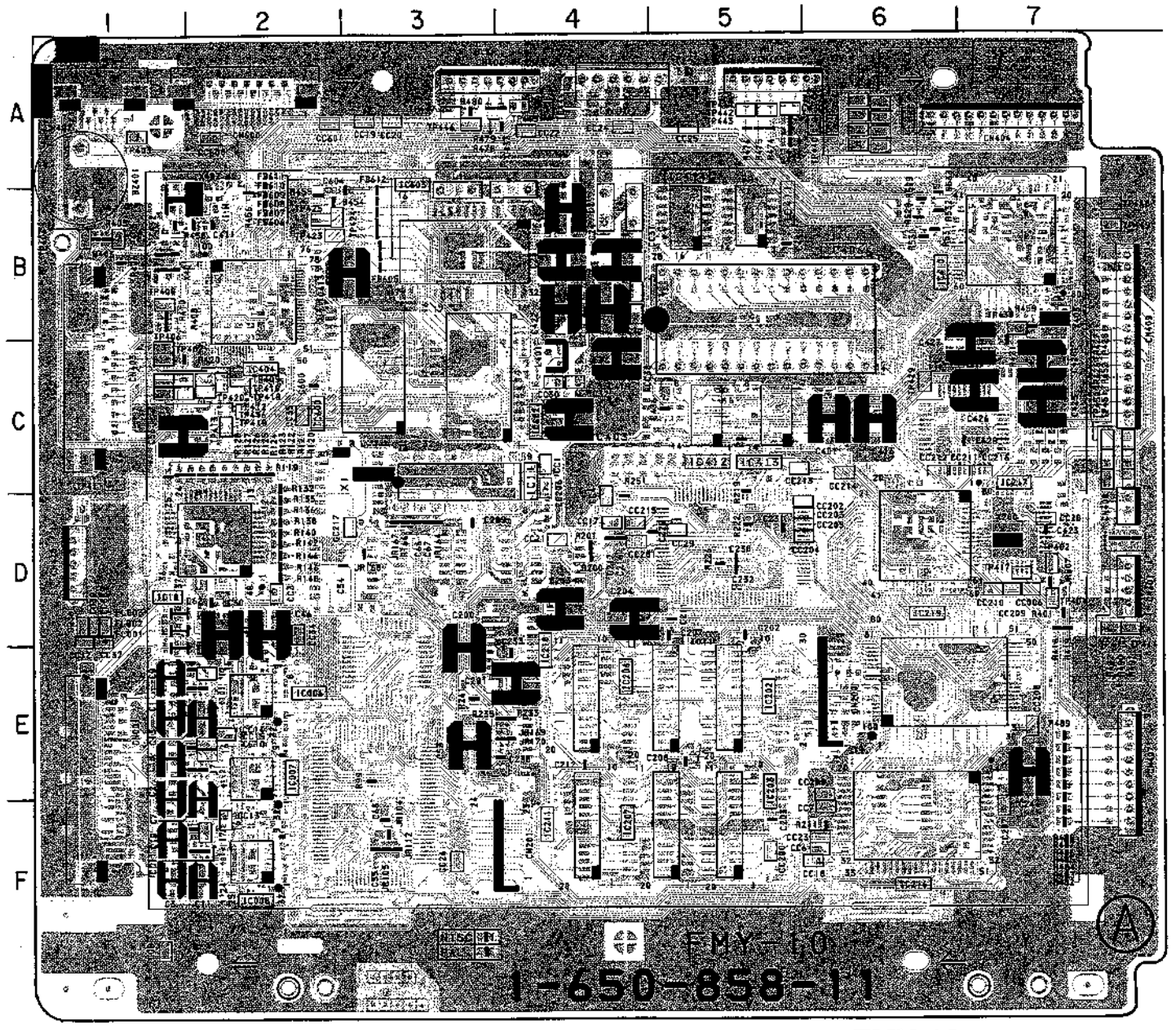
S:SOLDERING SIDE



FMY-10 -SOLDERING SIDE-



FMY-10 -SOLDERING SIDE-



FMY-10 -COMPONENT SIDE-

FMY-10 BOARD (4/4)

33

R00 R01 R02 R03 R04 R05 R06 R07

SUB0 SUB1 SUB2 SUB3 SUB4 SUB5 SUB6 SUB7

IC602 μPD27C2001-D11 32DIP

A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17

O0 O1 O2 O3 O4 O5 O6 O7

VCC VPP PGM OE CE GND

IC602
M5M27C201FP-UP18M-E2
SUB MASKING ROM

TO FMY-10 (1/4) 80 D+5V

34

G00 G01 G02 G03 G04 G05 G06 G07

B00 B01 B02 B03 B04 B05 B06 B07

IC600 μPD27C2001GW-012 32DIP

A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17

O0 O1 O2 O3 O4 O5 O6 O7

VCC VPP PGM OE CE GND

C600 0.1

IC600
M5M27C201FP-UP18S-E2
SUB MASKING ROM

35

IC601
CXD8398Q
KEYBOARD CONTROLLER

R10 R11 R12 R13 R14 R15 R16 R17

SUB10 SUB11 SUB12 SUB13 SUB14 SUB15 SUB16 SUB17

RIN0 RIN1 RIN2 RIN3 RIN4 RIN5 RIN6 RIN7 VDD GIN0 GIN1 GIN2 GIN3 GIN4 GIN5 GIN6 GIN7

OUT0 OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 OUT7

G10 G11 G12 G13 G14 G15 G16 G17

B10 B11 B12 B13 B14 B15 B16 B17

IC601
CXD8398Q

TO FMY-10 (1/4) 3 4 5

8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

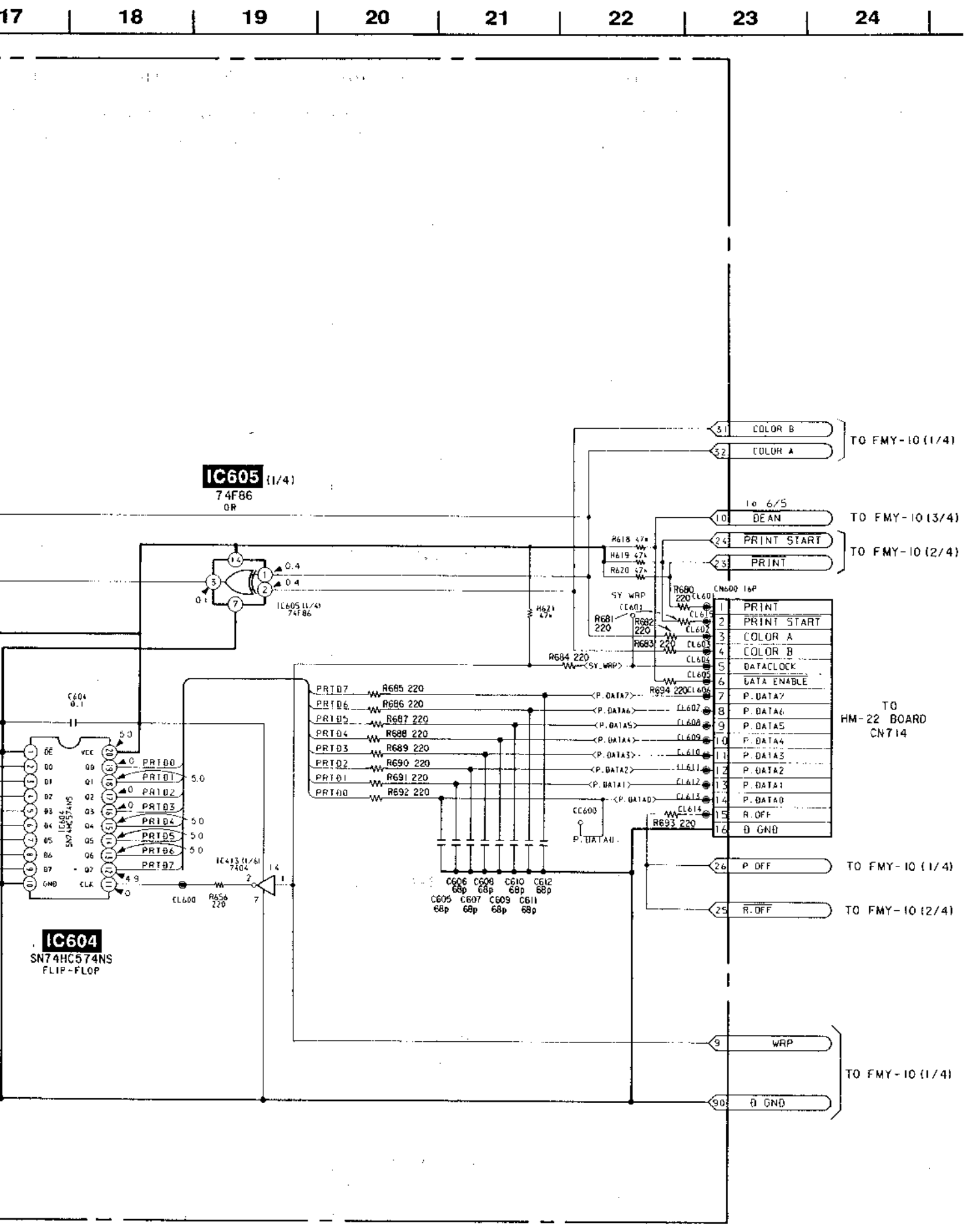
IC602
M5M27C201FP-UP18M-E2
SUB MASKING ROM

IC603
M5M27C201FP-UP18R-E2
MAIN MASKING ROM

IC601
CXD8398Q
KEYBOARD CONTROLLER

IC604
SN74HC574NS
FLIP-FLOP

IC605 (1/4)
74F86
OR


17
18
19
20
21
22
23
24
IC605 (1/4)
74F86
OR
IC605 (1/4)
74F86
IC604
SN74HC574NS
FLIP-FLOP
IC604
SN74HC574NS
IC613 (1/6)
7404
C604
0.1
CL600
R656
220
PRT00
PRT01
PRT02
PRT03
PRT04
PRT05
PRT06
PRT07
R685 220
R686 220
R687 220
R688 220
R689 220
R690 220
R691 220
R692 220
R684 220
(SY_WRP)
R618 47k
R619 47k
R620 47k
R621 47k
SY WRP
CC603
R680 220
R681 220
R682 220
R683 220
R694 220
R693 220
CL601
CL602
CL603
CL604
CL605
CL606
CL607
CL608
CL609
CL610
CL611
CL612
CL613
CL614
CN600 16P
1 PRINT
2 PRINT START
3 COLOR A
4 COLOR B
5 DATACLOCK
6 DATA ENABLE
7 P.DATA7
8 P.DATA6
9 P.DATA5
10 P.DATA4
11 P.DATA3
12 P.DATA2
13 P.DATA1
14 P.DATA0
15 R.OFF
16 0 GND
TO
HM-22 BOARD
CN714
CC600
P.DATA0
C606 68p
C608 68p
C610 68p
C612 68p
C605 68p
C607 68p
C609 68p
C611 68p
51 COLOR B
32 COLOR A
TO FMY-10 (1/4)
to 6/5
10 DEAN
TO FMY-10 (3/4)
24 PRINT START
23 PRINT
TO FMY-10 (2/4)
26 P OFF
TO FMY-10 (1/4)
25 R.OFF
TO FMY-10 (2/4)
9 WRP
90 0 GND
TO FMY-10 (1/4)

HM-22P (THERMAL HEAD CONTROL) DUS-12 (PAPER EJECT MOTOR CONTROL) SU-10 (EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-4
SW-212 (HEAD POSITION SENSOR) SW-213 (PAPER ROLLER POSITION SENSOR) SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR)

1 2 3 4 5 6 7 8 9 10 11

A B C D E F G H I J K L M

SW-41 BOARD
PAPER OUT SENSOR
CN915 5P L-TYPE ELCO2.0 HM-22
5 GND
2 PAPER OUT SEN
1 PAPER OUT LED

SW-42 BOARD
PAPER CHECK SENSOR
CN917 5P L-TYPE ELCO2.0 HM-22
3 GND
2 PAPER CHECK SEN
1 PAPER CHECK LED

SW-39 BOARD
ARM HOME POSITION SENSOR
CN911 3P L-TYPE ELCO2.0 DUS-12
3 GND
2 ARM HOME SEN
1 ARM HOME LED

SW-211 BOARD
PAPER MARK SENSOR A
CN804 5P FCC 1.0
1 RIBBON MARK LED A
2 RIBBON MARK SEN A
3 RIBBON MARK LED B
4 RIBBON MARK SEN B
5 GND
PH804 GP2S40
PH805 GP2S40 RIBBON MARK SENSOR B

SW-208 BOARD
CN801 5P 1.5 WTL
1 PAPER EDGE LED
2 PAPER EDGE SEN
3 GND
PH801 GP2S40 PAPER EDGE SENSOR

SW-210 BOARD
CN805 4P 1.5 WTL
1 RIBBON CODE LED
2 RIBBON CODE SEN
3 GND
4 RIBBON DOOR SW
PH803 GP2S40 RIBBON CODE SENSOR
S805 RIBBON DOOR SW

SW-213 BOARD
PAPER ROLLER POSITION A SENSOR
CN808 5P 1.5 WTL
1 P R POSI LED A
2 P R POSI SEN A
3 P R POSI LED B
4 P R POSI SEN B
5 GND
PH808 GP2S40
PH809 GP2S40 PAPER ROLLER POSITION B SENSOR

SW-214 BOARD
CN809 3P 1.5 BLU
1 RIBBON CASSETTE SW
2 GND
S801 RIBBON CASSETTE SW

SW-217 BOARD
CN810 3P 1.5 WTL
1 JAMMING DET LED
2 JAMMING DET SEN
3 GND
PH810 GP2S40 JAMMING DET SENSOR

SW-215 BOARD
CN806 2P 2.0 WTL
1 HEAD MOTOR X
2 HEAD MOTOR Y
M801 HEAD MOTOR

SW-216 BOARD
CN807 2P 2.0 BLK
1 RIBBON MOTOR X
2 RIBBON MOTOR Y
M802 RIBBON MOTOR

SW-212 BOARD
IC810 LM358DR RIBBON CODE SENSOR AMP
CN806 5P 1.5 RED
1 HEAD POSI LED A
2 HEAD POSI SEN A
3 HEAD POSI LED B
4 HEAD POSI SEN B
5 GND
PH806 GP2S40 HEAD POSITION A SENSOR
PH807 GP2S40 HEAD POSITION B SENSOR
CN813 3P 1.5 BLK
+5V
RIBBON CODE OUT
GND
CN814 2P 1.5 WTL
RIBBON DOOR SW
GND

DUS-12 BOARD
IC902 LM393PS ARM HOME POSITION SENSOR AMP
IC901 M54544AL EJECT MOTOR DRIVE
TO POWER SUPPLY CN904
CN907 3P M-WTL ELCO2.0
+5V
SND +12V
GND
CN908 3P M-BLK ELCO2.0 SW-39
ARM HOME LED
ARM HOME SEN
GND
CN916 2P L-BLK ELCO2.0 SU-10
EJECT MOTOR Y
EJECT MOTOR X
CN914 3P M-WTL ELCO2.0 HM-22
INPUT0
INPUT1
INPUT2
OUTPUT1
GND

SU-10 BOARD
EJECT MOTOR

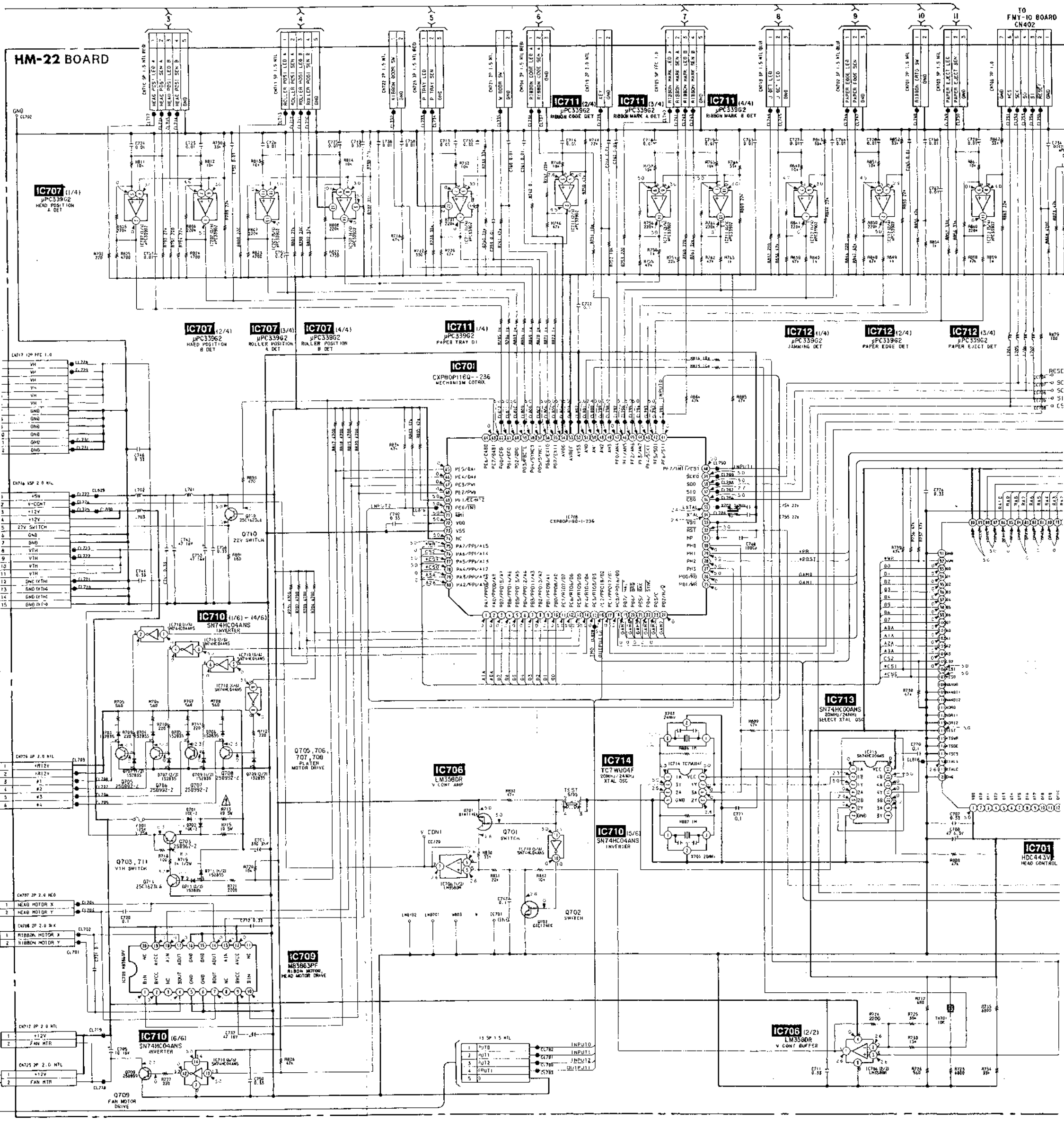
HM-22 BOARD
CN710 5P 1.5 WTL HEAD
HEAD POSI LED A
HEAD POSI SEN A
HEAD POSI LED B
HEAD POSI SEN B
GND
IC707 (1/4) µPC339G2 HEAD POSITION A DET
CN707 12P FFC 1.0
VH
GND
CN714 15P 2.0 WTL
+5V
V-CONT
+12V
22V SWITCH
GND
VTH
GND (VTH)
TO POWER SUPPLY CN903
M901 PLATEN MOTOR
CN709 4P 2.0 WTL
+R12V
#1
#2
#3
#4
Q703,711 VTH SWITCH
CN707 2P 2.0 RED
HEAD MOTOR X
HEAD MOTOR Y
CN708 2P 2.0 BLK
RIBBON MOTOR X
RIBBON MOTOR Y
IC710 (6/6) SN74HC04ANS INVERTER
CN712 2P 2.0 WTL
+12V
FAN MTR
CN725 2P 2.0 NTL
+12V
FAN MTR
M902 FAN MOTOR
Q709 FAN MOTOR DRIVE

HEAD CONTROL, SENSOR HEAD CONTROL, SENSOR

R TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SENSOR) SW-208 (PAPER EDGE SENSOR) SW-210 (RIBBON CODE SENS

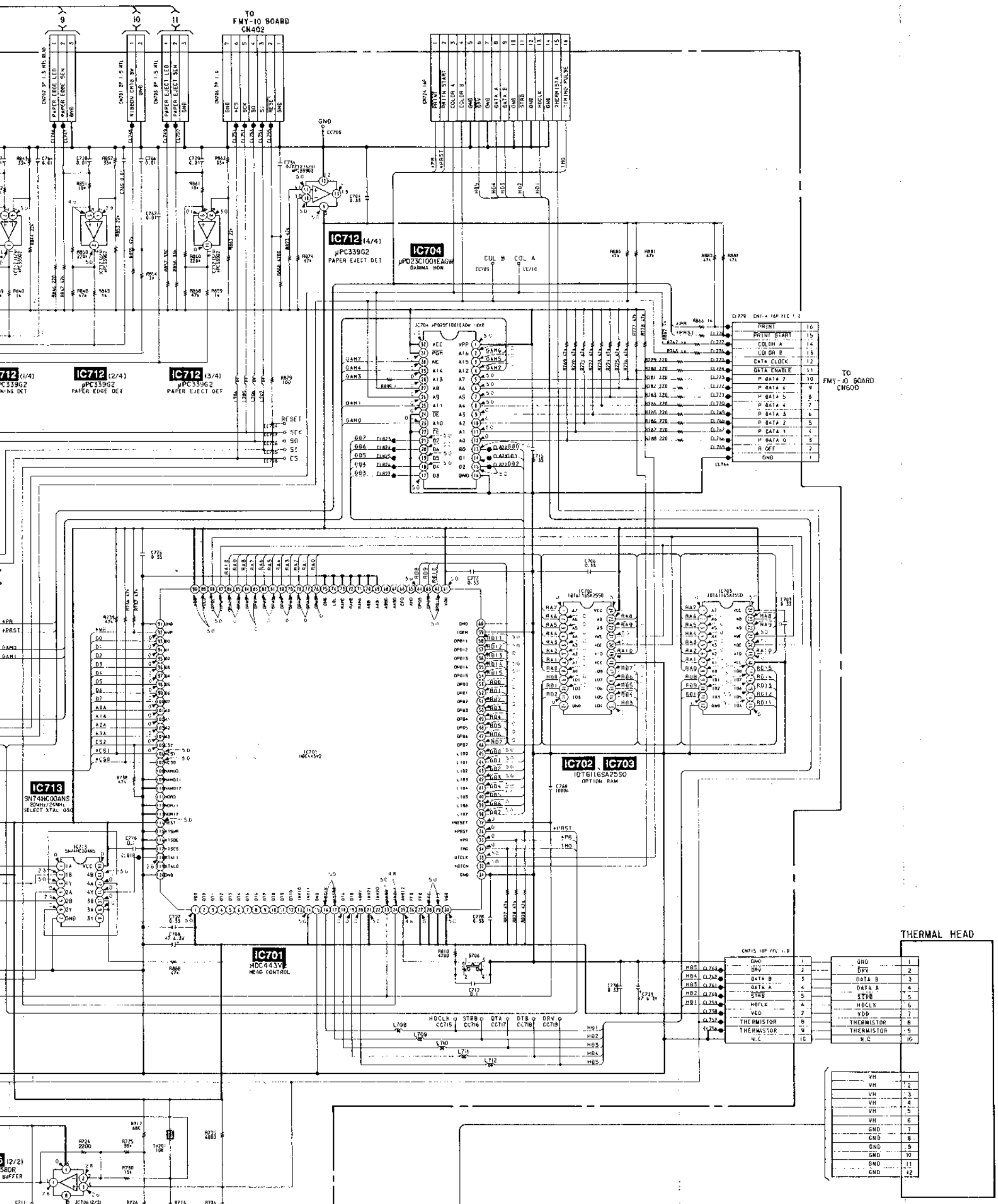
SW-215 (HEAD MOTOR) SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET SENSOR)

10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21



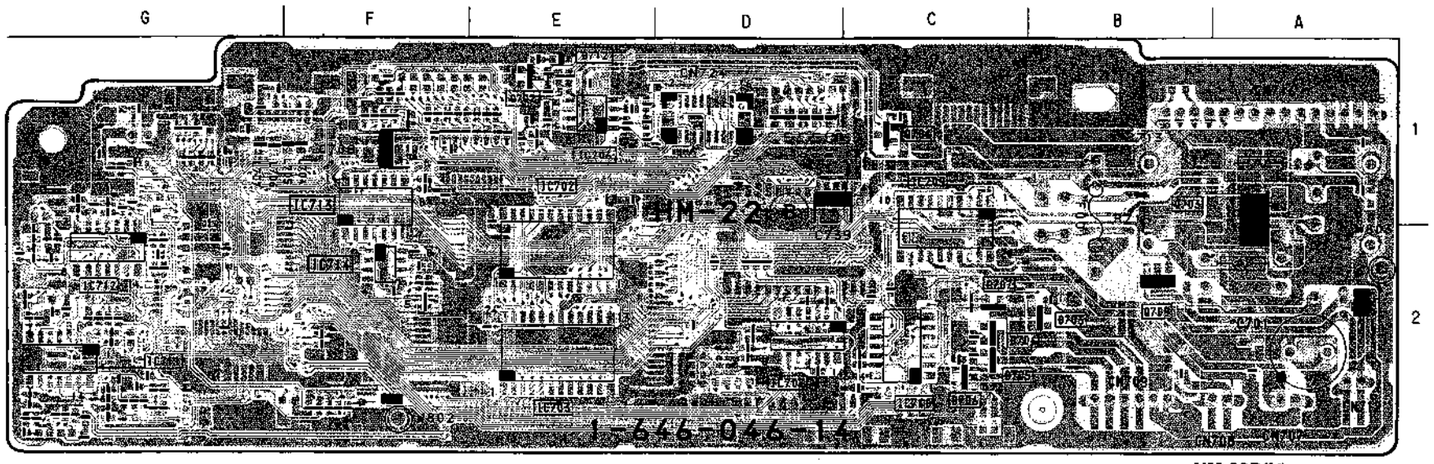
NSOR) SW-210 (RIBBON CODE SENSOR) SW-211 (RIBBON MARK SENSOR)

19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29

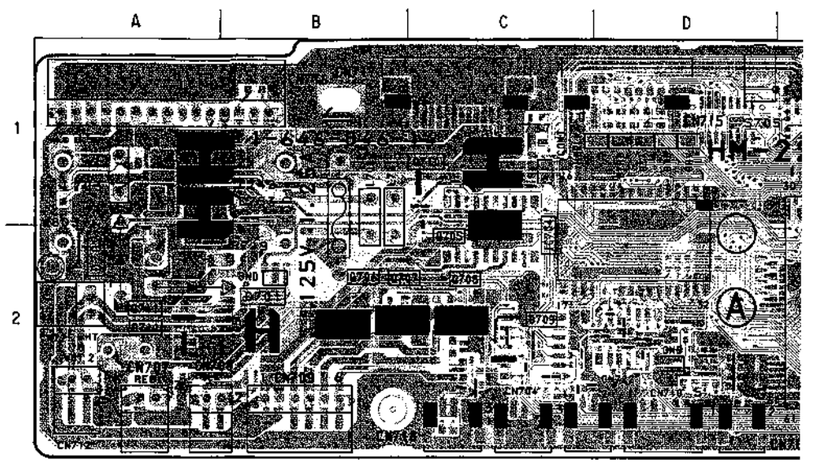


HEAD CONTROL, SENSOR HEAD CONTROL, SENSOR

HM-22P (THERMAL HEAD CONTROL) **DUS-12 (PAPER EJECT MOTOR CONTROL)** **SU-10 (EJECT MOTOR)** **SW-39 (PAPER TRAY SENSOR)** **SW-41 (PAPER OUT SENSOR)** **SW-42 (PAPER (**
SW-212 (HEAD POSITION SENSOR) **SW-213 (PAPER ROLLER POSITION SENSOR)** **SW-214 (RIBBON CASSETTE SWITCH)** **SW-215 (HEAD MOTOR)** **SW-216 (RIBBON MOTOR)** **SW-217 (JA**



HM-22P(H) -SOLDERING SIDE-



SW-211 -SOLDERING SIDE-

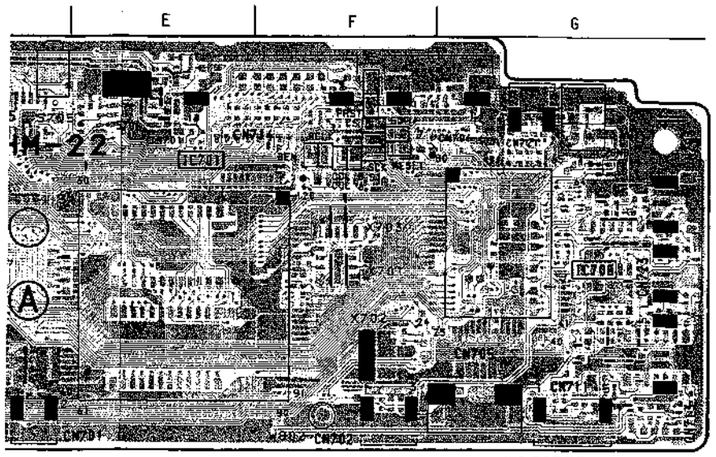
SW-211 -COMPONENT SIDE-

HM-22P BOARD

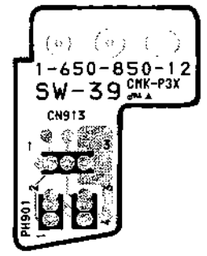
CN701	D-2		IC706	E-1	S
CN702	F-2		IC707	D-2	S
CN703	G-1		IC708	G-2	
CN704	C-2		IC709	C-2	S
CN705	G-2		IC710	D-2	S
CN706	G-1		IC711	G-2	S
CN707	A-2		IC712	G-2	S
CN708	A-2		IC713	F-1	S
CN709	B-2		IC714	F-2	S
CN710	D-2				
CN711	G-2		L701	B-1	
CN712	A-2		L702	B-1	
CN713	G-2		L703	A-1	
CN714	F-1		L704	F-1	S
CN715	D-1		L705	F-1	S
CN716	A-1		L706	G-1	S
CN717	C-1		L707	G-1	S
CN718	C-2		L708	D-1	S
CN719			L709	D-1	S
CN721	G-1		L710	D-1	S
CN722	C-2		L711	D-1	S
CN723	G-2		L712	D-1	S
CN724	D-1	S			
CN725	A-2		Q701	C-1	S
			Q702	E-1	S
D701	A-2		Q703	B-1	S
D702	A-2		Q705	C-2	
D703	B-2	S	Q706	B-2	
D704	C-2	S	Q707	B-2	
D705	C-2	S	Q708	C-2	
D706	C-2	S	Q709	B-2	S
D707	C-2	S	Q710	C-1	
D709	C-2		Q711	A-2	
D711	A-2				
D712	E-1	S	S705	D-1	
			S706	E-1	
F001	B-1	S			
			TH701	E-1	
IC701	E-2				
IC702	E-2	S	X701	F-2	
IC703	E-2	S	X702	F-2	
IC704	D-2		X703	F-2	

S:SOLDERING SIDE

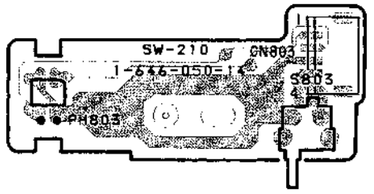
APER CHECK SENSOR) SW-208 (PAPER EDGE SENSOR) SW-210 (RIBBON CODE SENSOR) SW-211 (RIBBON MARK SENSOR)
217 (JAMMING DET SENSOR)



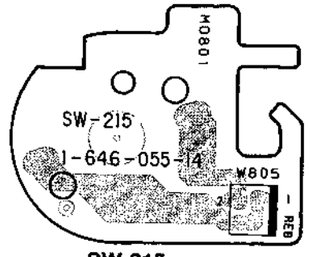
HM-22P(H) -COMPONENT SIDE-



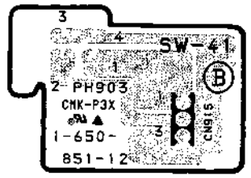
SW-39 -COMPONENT SIDE-



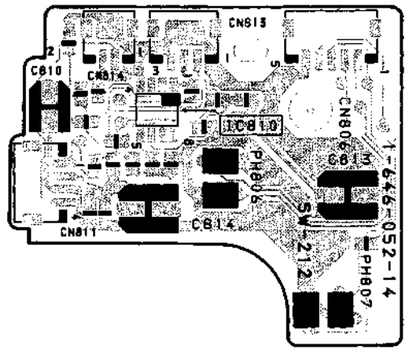
SW-210 -SOLDERING SIDE-



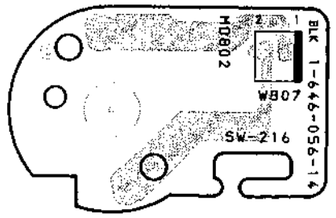
SW-215 -SOLDERING SIDE-



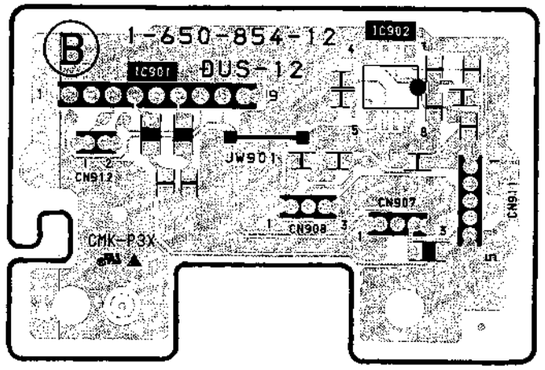
SW-41 -SOLDERING SIDE-



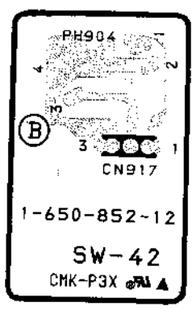
SW-212 -COMPONENT SIDE-



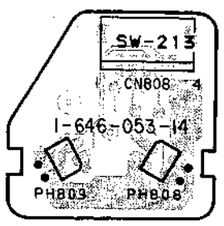
SW-216 -SOLDERING SIDE-



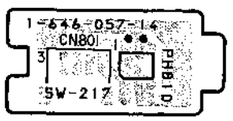
DUS-12 -SOLDERING SIDE-



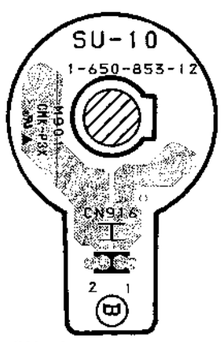
SW-42 -SOLDERING SIDE-



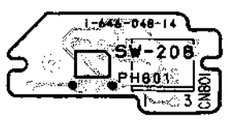
SW-213 -SOLDERING SIDE-



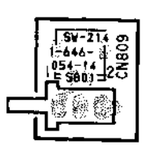
SW-217 -SOLDERING SIDE-



SU-10 -SOLDERING SIDE-

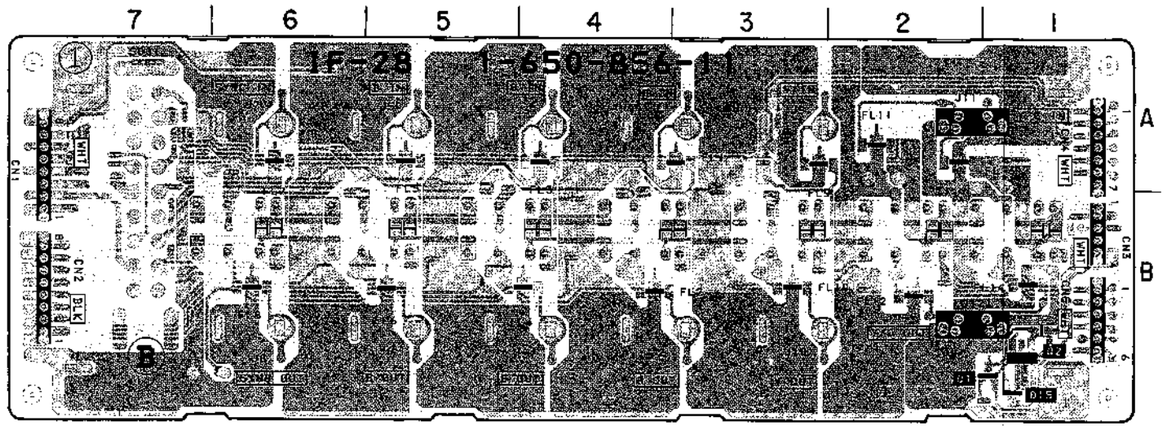


SW-208 -SOLDERING SIDE-

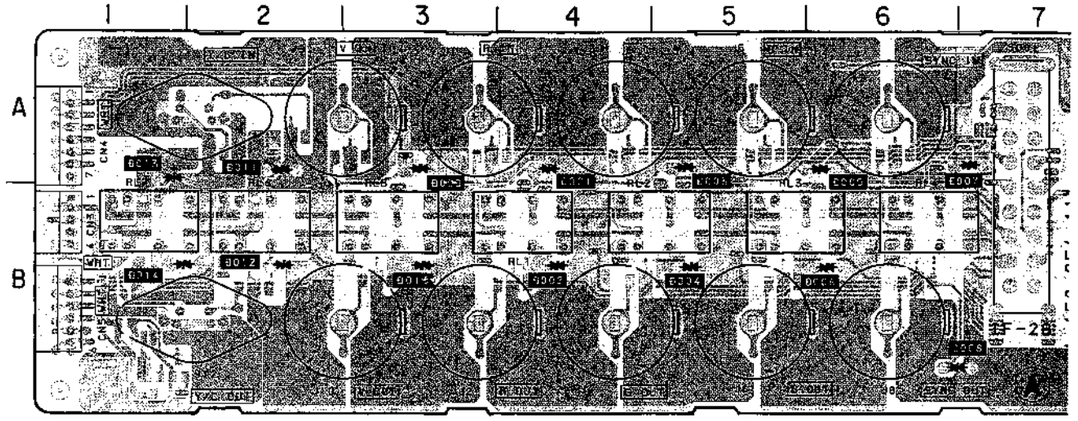


SW-214 -SOLDERING SIDE-

IF-28 (IN/OUT TERMINAL)

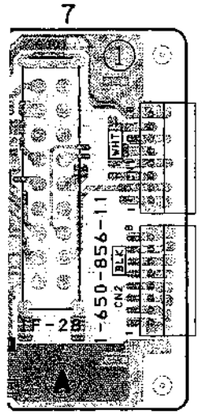


IF-28 -SOLDERING SIDE-



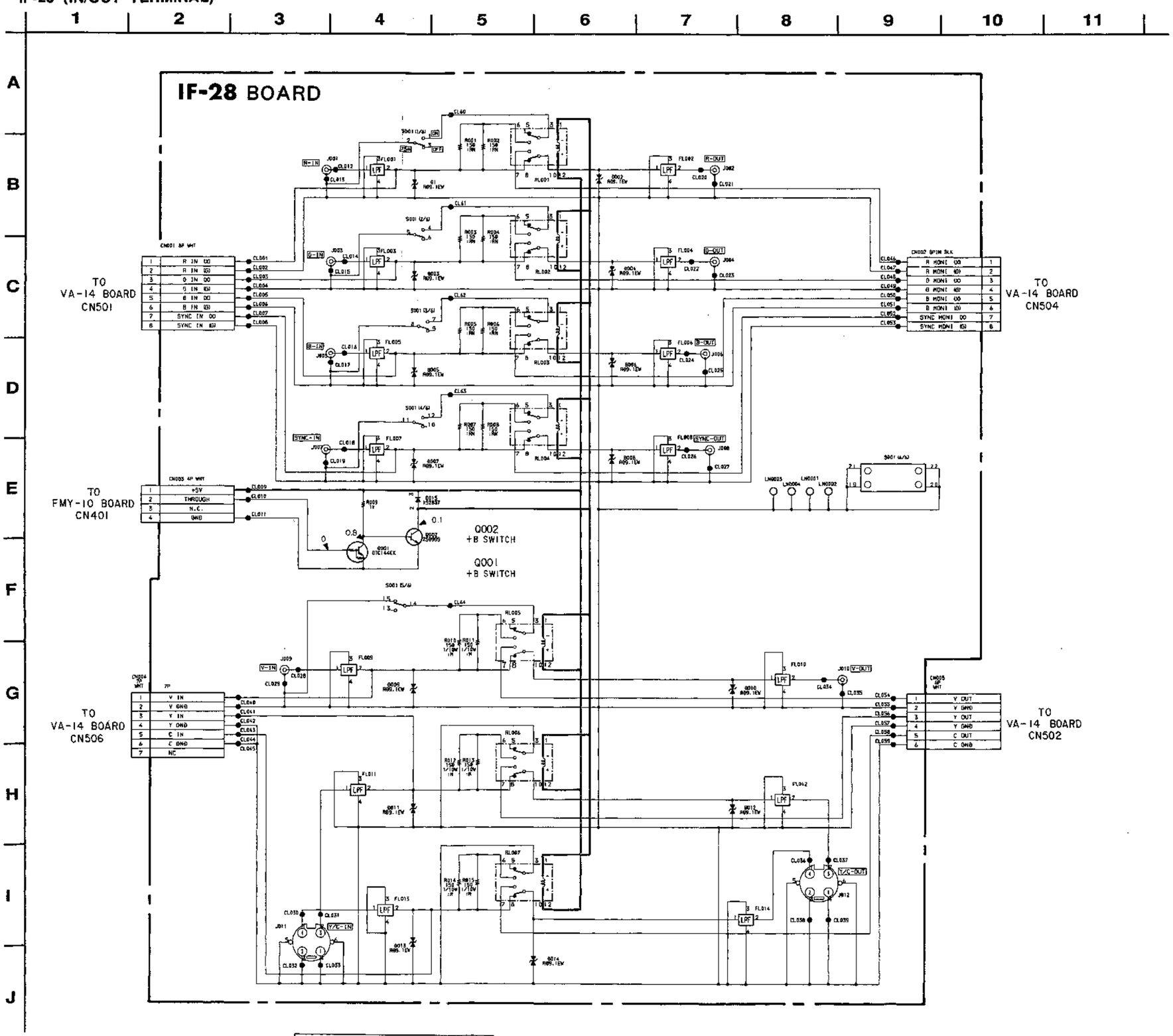
IF-28 -COMPONE

7

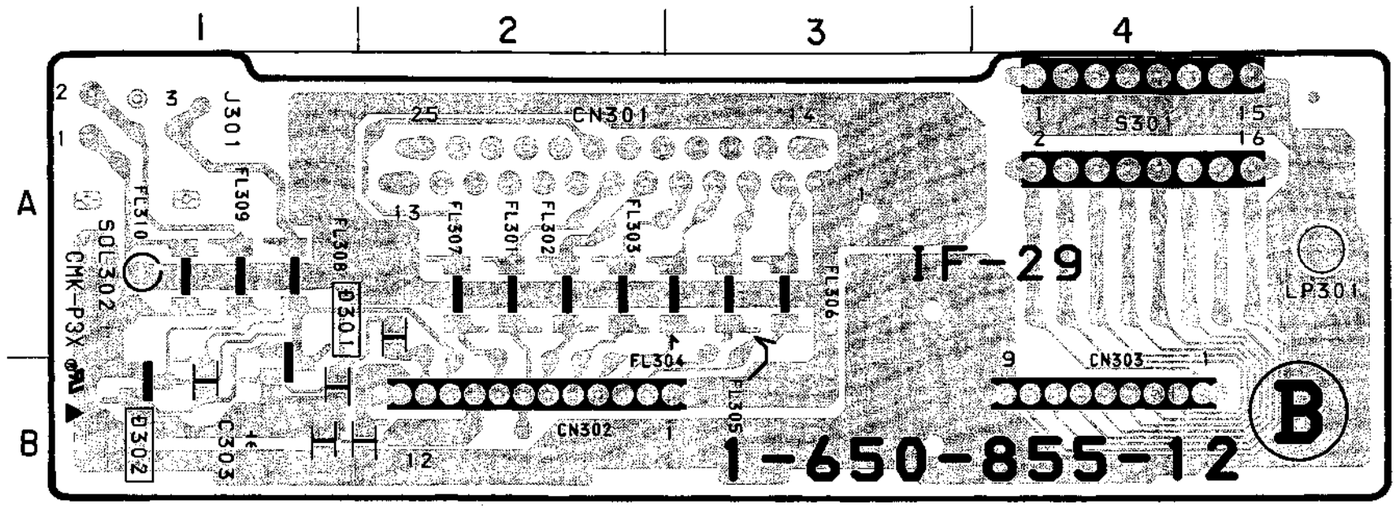


COMPONENT SIDE-

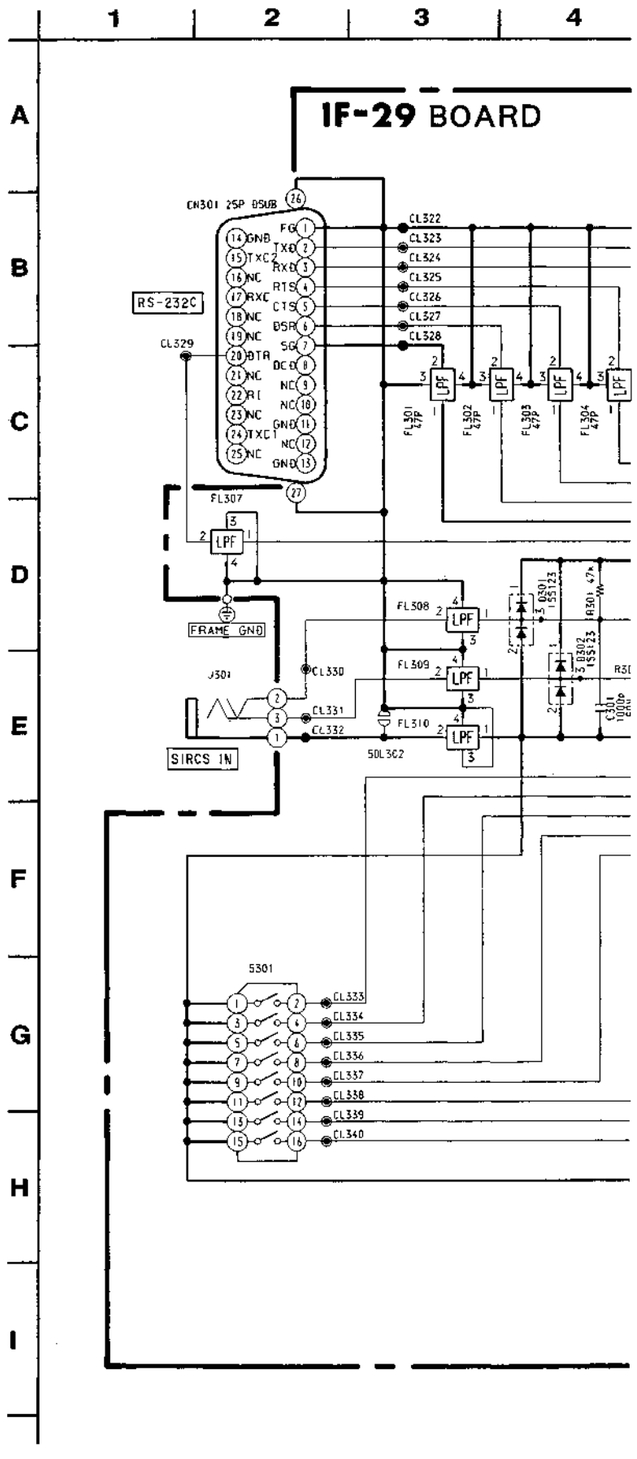
IF-28 (IN/OUT TERMINAL)

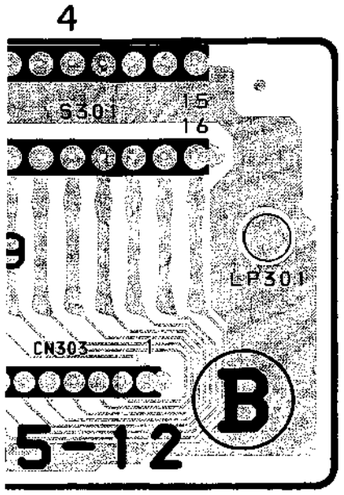


IF-28 IF-28



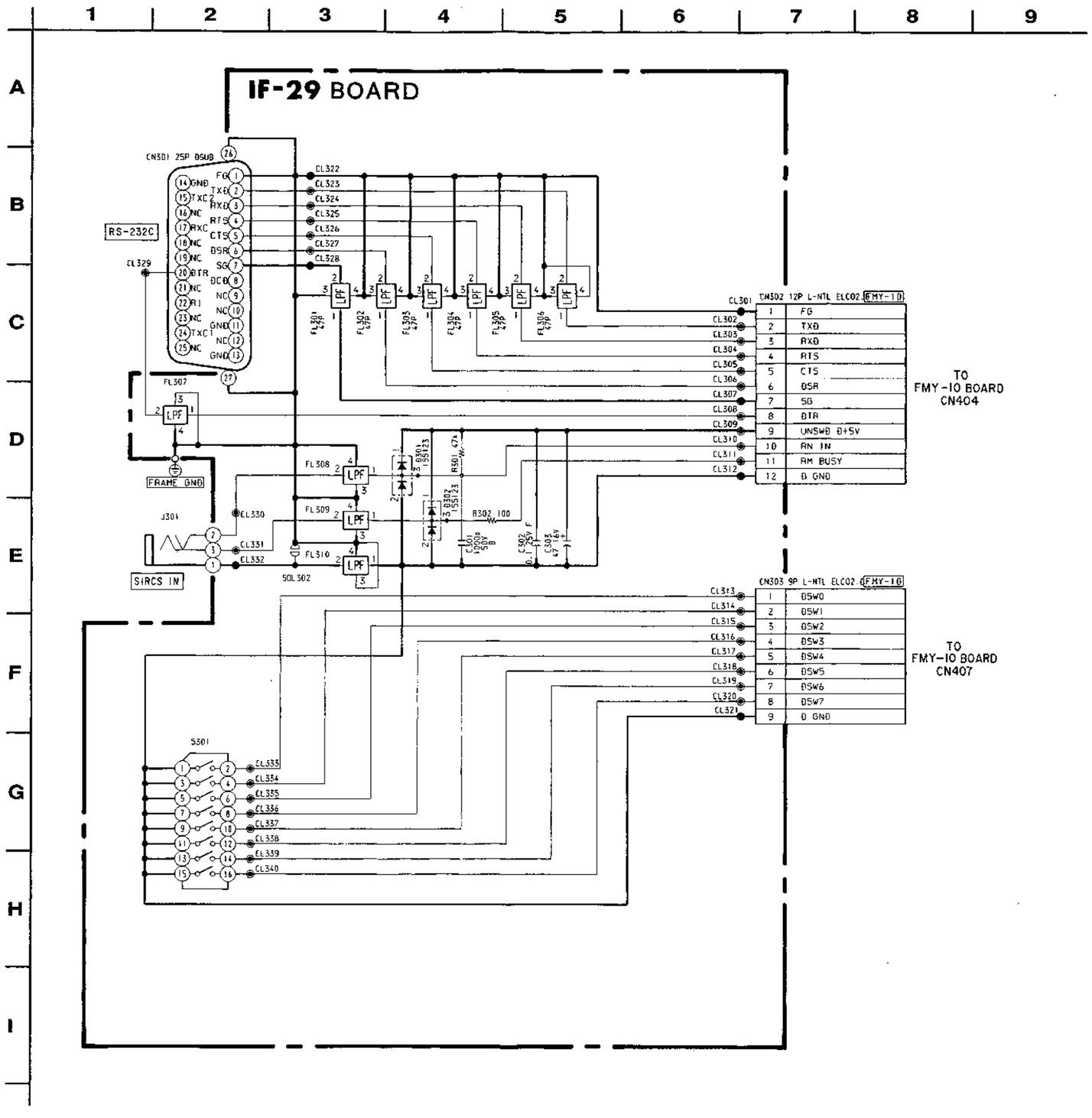
IF-29 -SOLDERING SIDE-



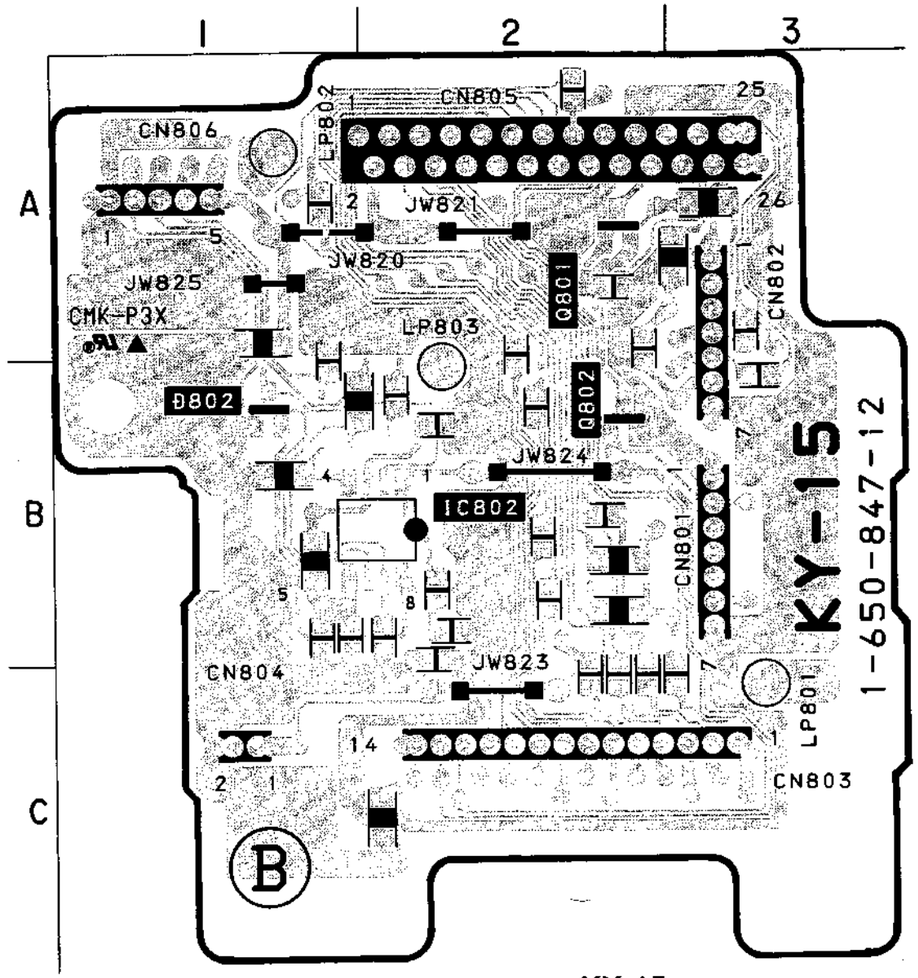


IF-29 -SOLDERING SIDE-

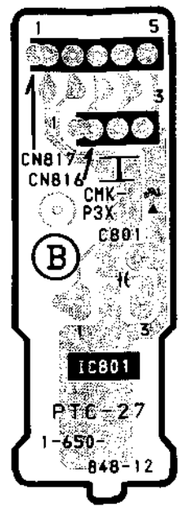
IF-29 (DIP SWITCH/RS-232C TERMINAL)



KY-15 (FUNCTION SWITCH) PTC-27 (REMOTE CONTROL SENSOR)

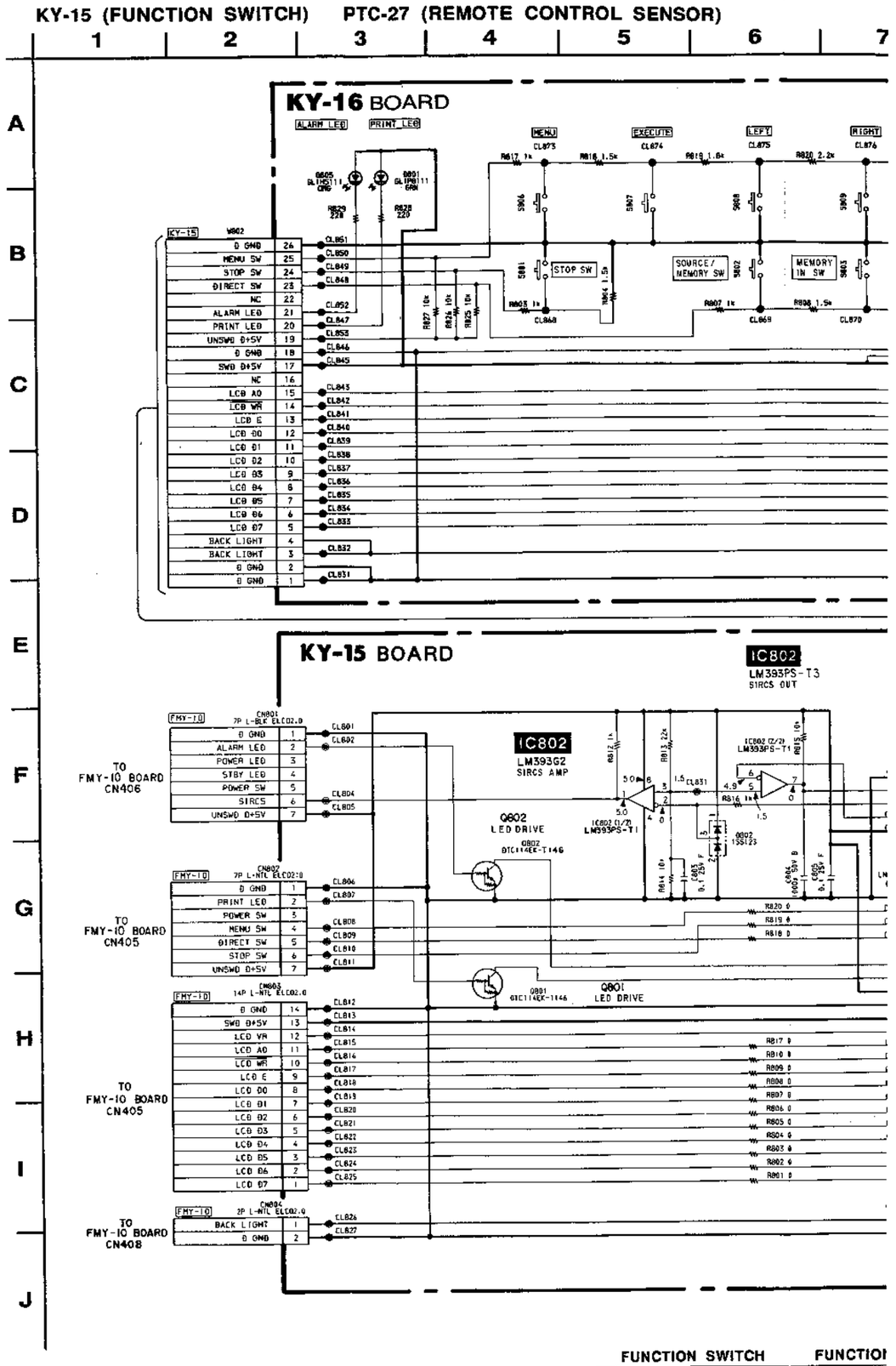


KY-15 -SOLDERING SIDE-



PTC-27 -SOLDERING SIDE-

KY-15 (FUNCTION SWITCH) PTC-27 (REMOTE CONTROL SENSOR)



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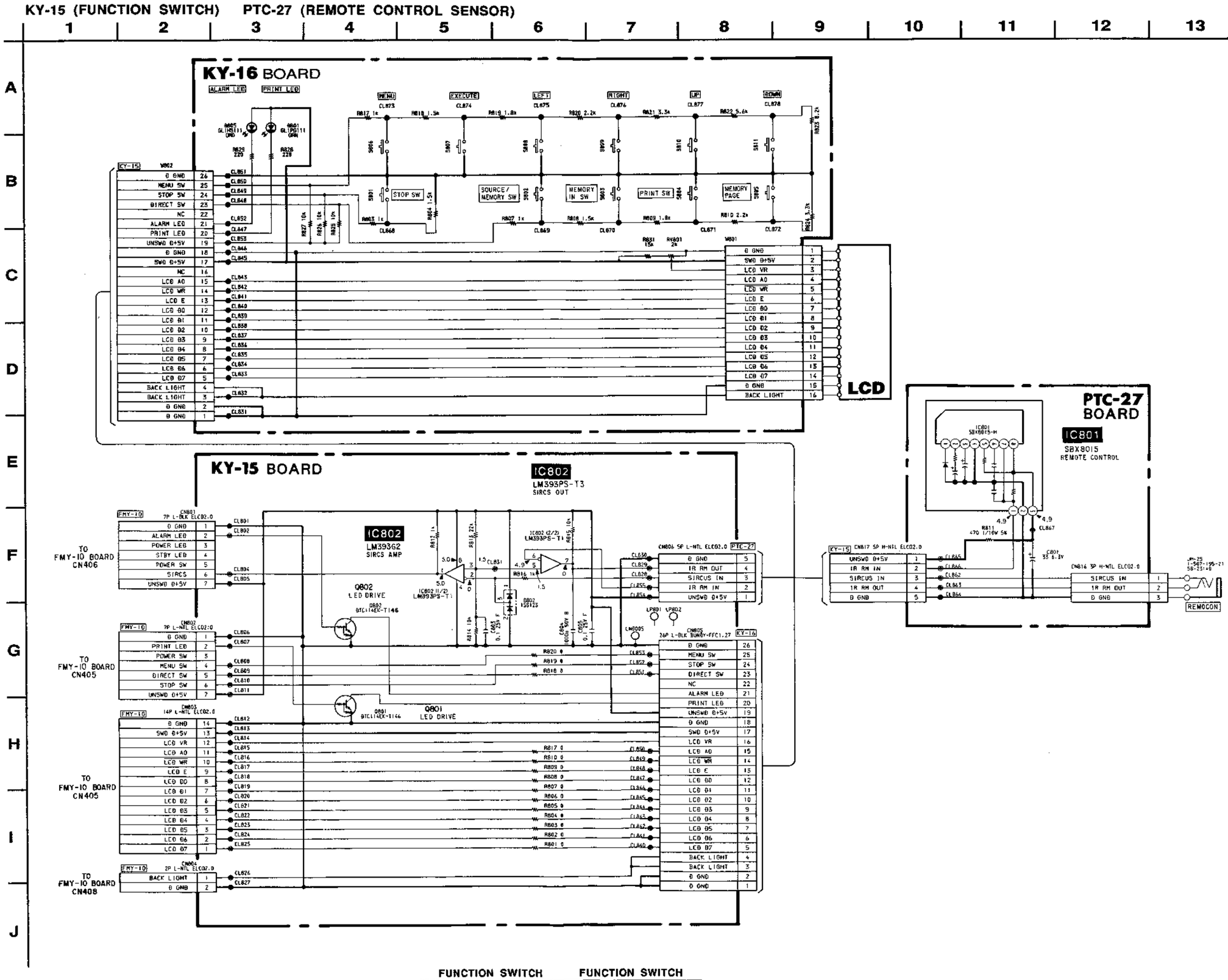
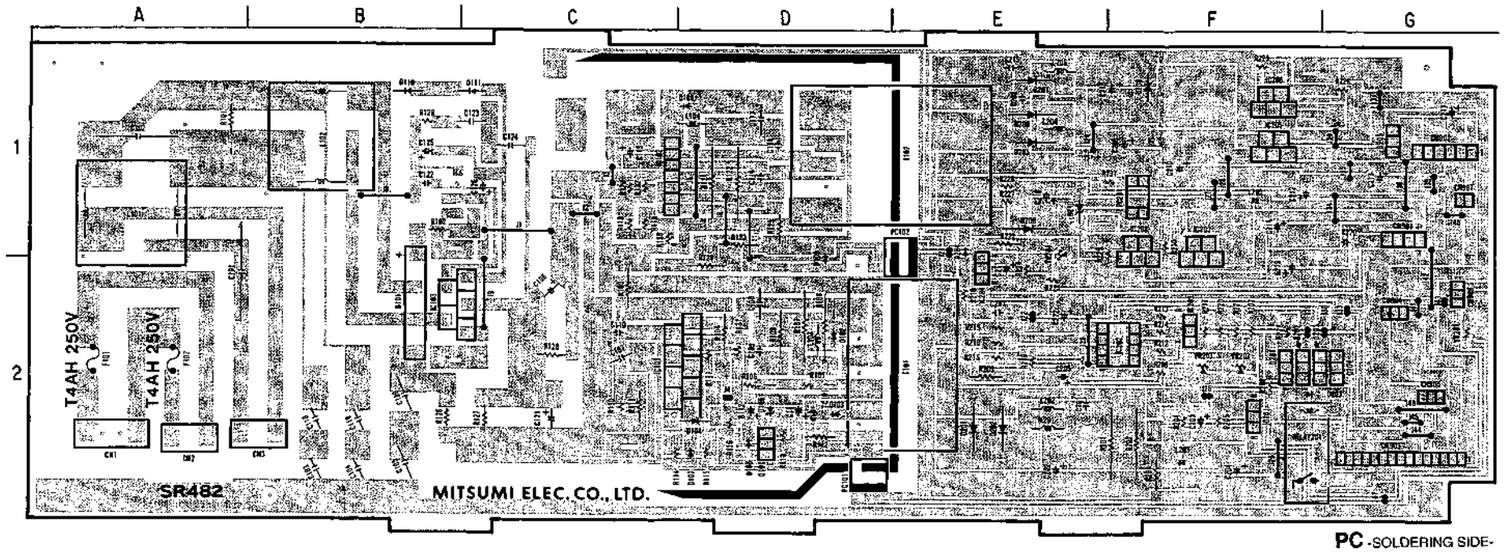
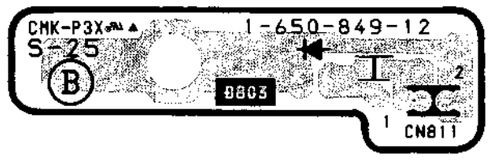




PC -SOLDERING SIDE-
9-907-119-01

SWITCHING REGULATOR

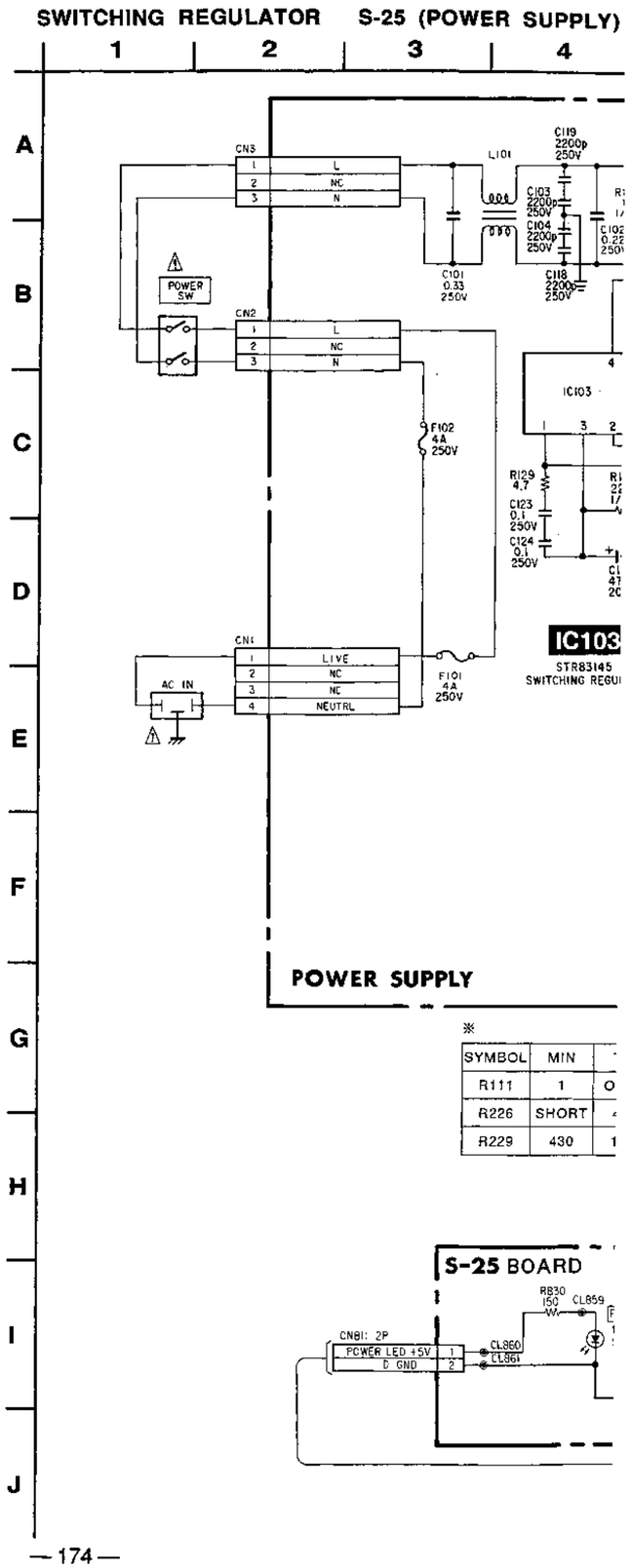
CN1	A-2	L101	A-1
CN2	A-2	L102	B-1
CN3	B-2	L103	D-1
CN901	G-1	L104	D-1
CN902	G-1	L201	E-2
CN903	G-2	L202	E-2
CN904	G-2	L203	F-1
CN905	G-2	L204	E-1
CN906	G-2	L205	F-1
CN907	G-1	L206	E-1
D101	B-2	PC101	D-2
D102	D-2	PC102	E-1
D103	D-2	PC201	F-1
D104	D-2		
D105	D-2	Q101	D-2
D106	D-2	Q202	F-2
D107	D-2	Q202	F-2
D108	D-1	Q203	F-2
D109	D-1	Q204	G-2
D201	E-2	Q205	G-1
D202	E-2		
D203	F-2	RL201	F-2
D204	E-1		
D205	E-1	T101	E-2
D206	E-1	T102	E-1
D207	E-1		
D208	F-1	RV201	G-2
D209	E-1	RV202	F-1
D210	E-1	RV203	F-1
		RV204	E-1
F101			
IC101	C-2		
IC102	C-1		
IC201	F-2		
IC202	F-2		
IC203	F-2		
IC204	E-2		
IC205	F-1		
IC206	F-1		
IC207	F-1		
IC208	F-1		



S-25 -SOLDERING SIDE-

VIDE-V03252 / Druck 41

SWITCHING REGULATOR S-25 (POWER SUPPLY)



POWER SUPPLY

※

SYMBOL	MIN	
R111	1	O
R226	SHORT	
R229	430	1

S-25 BOARD

JPPLY)

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

IC103
STR83145
/ITCHING REGULATOR

IC101
STR-S6525
SWITCHING REGULATOR

IC102
MA2430
SWITCHING
REGULATOR

IC201
AN1431T
VOLTAGE ERROR
AMP

IC206
S1-3120CA
12V REG

IC202
UPC358C
HEAD VOLTAGE
CONTROL AMP

IC203
AN1431T
REF 3V

IC207
S1-3050CA
5V REG.

IC204
AN1431T
VOLTAGE ERROR AMP

IC205
S1-3050CA
5V REG

IC208
S1-3050CA
-6V REG

MIN	TIP	MAX
1	OPEN	OPEN
SHORT	430	1.2k
430	1.3k	OPEN

ARD

R830 150 CL859 POWER LED
D803 SLP-255B-5I-A
LND003

CN901
UNSW 6V 1
GND 2
SW-6V 3
0 4
TO VA-14 BOARD CN105

CN902
POWER ON 1
GND 2
GND 3
SW 5V 4
SW 5V 5
UNSW 5V 6
TO FMY-10 BOARD CN002

CN903
SW 5V 1
V-CONT 1 2
SW 12V 3
SW 12V 4
V-CONT 2 5
GND 6
GND 7
SW 13-21V 8
SW 13-21V 9
SW 13-21V 10
SW 13-21V 11
GND 12
GND 13
GND 14
GND 15
TO HM-22 BOARD CN716

CN904
SW 5V 1
SW 12V 2
GND 3
TO DUS-12 BOARD CN910

CN905
SW 12V 1
NC 2
GND 3

CN906
SW 13-21V 1
CHECKCONT 2
GND 3

CN907
SW 5V 1
GND 2

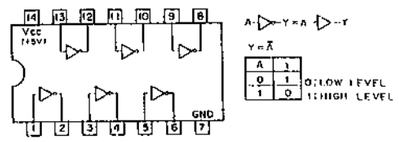
4-3. SEMICONDUCTORS

The chart in this section may sometimes show diodes, transistors, and ICs that are not interchangeable. When replacing a component, be sure to refer to the parts list. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

74F04SJ (NS) FLAT PACKAGE

TTL INVERTER

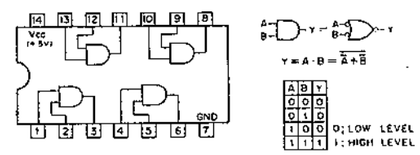
– TOP VIEW –



74F08SJ (NS) FLAT PACKAGE

TTL 2-INPUT POSITIVE-AND GATE

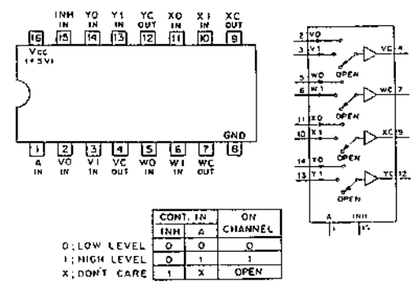
– TOP VIEW –



74F257ASJ (NS) FLAT PACKAGE

TTL 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER

– TOP VIEW –

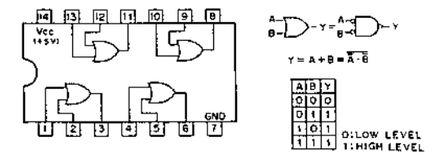


CONT. IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	OPEN

74F32SJ (NS) FLAT PACKAGE

TTL 2-INPUT POSITIVE-OR GATE

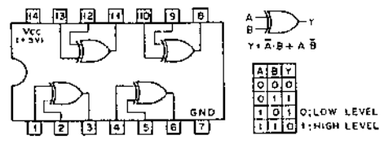
– TOP VIEW –



74F86SJ (NS) FLAT PACKAGE

TTL EXCLUSIVE OR GATE

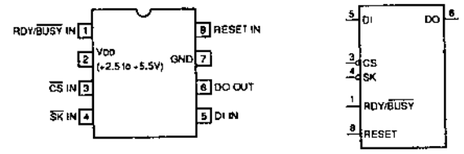
– TOP VIEW –



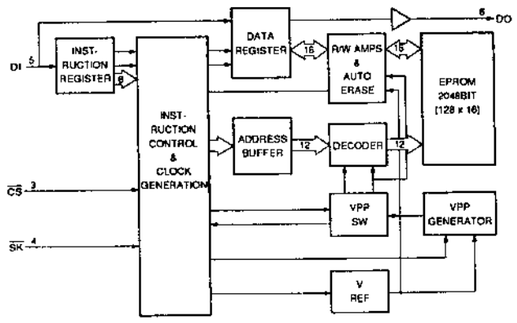
AK6420F (ASAHIKASEI ELECT) FLAT PACKAGE

C-MOS 2048 (128 x 16) - BIT ERASABLE MEMORY

-TOP VIEW-



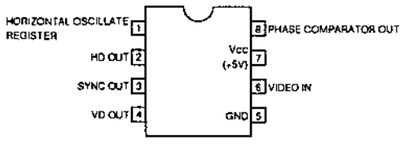
CS ; CHIP SELECT INPUT
DI ; SERIAL DATA INPUT
DO ; SERIAL DATA OUTPUT
RDY/BUSY ; READY /BUSY INPUT
RESET ; RESET INPUT
SK ; SERIAL DATA CLOCK INPUT

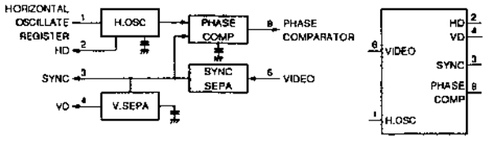


BA7046F (ROHM) FLAT PACKAGE

VIDEO SIGNAL SYNC SEPARATOR &AFC

-TOP VIEW-

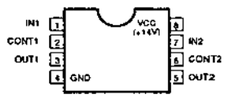


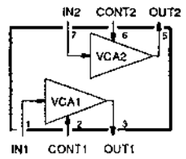


CXA1211 (SONY)

ELECTRONIC VOLUME

— TOP VIEW —

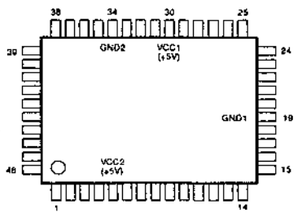




CXA1437Q (SONY)

C-MOS AGC PULSE GENERATOR

— TOP VIEW —

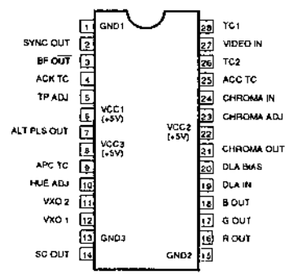


PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL
1	N.C	13	N.C	25	N.C	37	SYNC SEP TC1
2	N.C	14	N.C	26	N.C	38	N.C
3	HD TC	15	VD OUT	27	N.C	39	SYNC SEP TC2
4	HD OUT	16	ID OUT	28	SW OUT	40	L; C SYNC OUT
5	VCC2(+5V)	17	ID S/H	29	AGC REF	41	PB/REC IN
6	N.C	18	ID IN	30	VCC1(+5V)	42	FSC IN
7	I REF	19	GND1	31	REC Y IN	43	N.C
8	VD TC	20	AGC OUT	32	PEAK AGC HOLD	44	N.C
9	BFP OUT	21	AGC DET IN	33	N.C	45	NTSC/PAL IN
10	BFP TC	22	N.C	34	GND2	46	N.C
11	N.C	23	SYNC AGC HOLD	35	PB Y IN	47	L.ALT OUT
12	N.C	24	N.C	36		48	BLK OUT

CXA1621S (SONY)

C-MOS NTSC/PAL DECODER

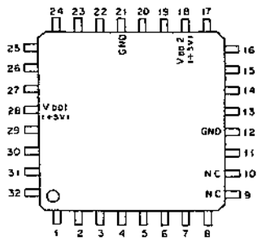
— TOP VIEW —

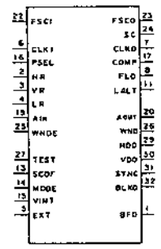


CXD1159Q (SONY)

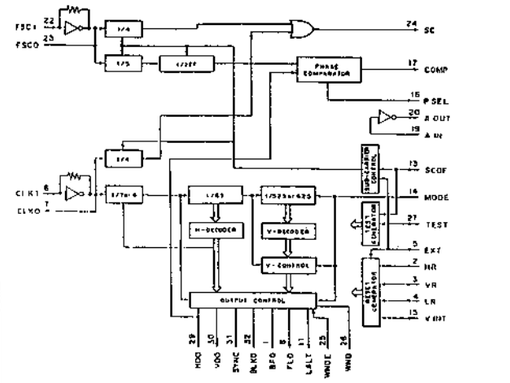
C-MOS SYNC GENERATOR

— TOP VIEW —





PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	BFO	9	–	NC	17	O	COMP	25	I	WNDE
2	I	HR	10	–	NC	18	–	VDD2(+5V)	26	O	WND
3	I	VR	11	O	LALT	19	I	AIN	27	I	TEST
4	I	LR	12	–	GND	20	O	AOUT	28	–	VDD1(+5V)
5	I	EXT	13	I	SCOF	21	–	GND	29	O	HDO
6	I	CLK1	14	I	MODE	22	I	FSCI	30	O	VDO
7	O	CLKO	15	I	VINT	23	O	FSCO	31	O	SYNC
8	O	FLD	16	I	PSEL	24	O	SC	32	O	BLKO



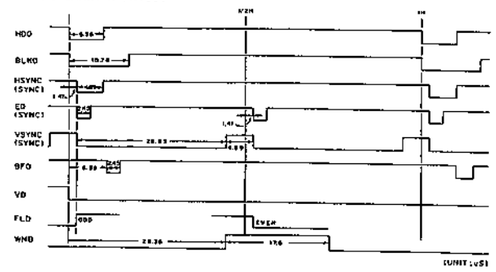
INPUT

AIN	: FILTER INVERTER INPUT
CLKI	: CLOCK INPUT (NTSC : 14.31818MHz, PAL : 14.1875MHz)
EXT	: INT./EXT (L : INT)
FSCI	: 4FSC CLOCK INPUT
HR	: H RESET
LD	: LALT RESET
MODE	: NTSC/PAL (L : NTSC)
PSEL	: POLARITY SELECT FOR PHASE COMP
SCOF	: SUBCARRIER OFF (L : OFF)
TEST	: TEST INPUT
VINT	: INITIALIZE
VR	: V RESET
WNDE	: WINDOW ENABLE

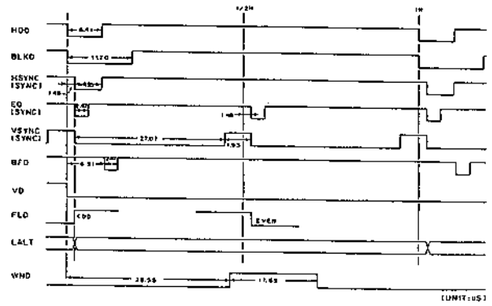
OUTPUT

AOUT	: FILTER INVERTER OUTPUT
BFO	: BURST FLAG PULSE
BLKO	: COMPOSITE BLANKING PULSE
CLKO	: CLOCK OUTPUT
COMP	: PHASE COMP
FLD	: FIELD PULSE
FSCO	: 4FSC CLOCK OUTPUT
HDO	: H DRIVE PULSE
LALT	: LINE ALTERNATE PULSE
SC	: SUBCARRIER
SYNC	: COMPOSITE SYNC PULSE
VDO	: V DRIVE PULSE
WND	: WINDOW

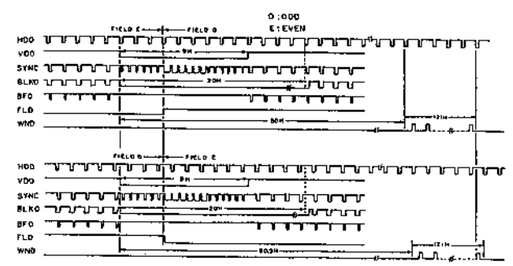
TIMING CHART H (NTSC)



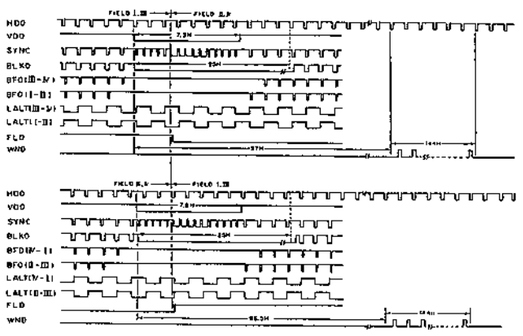
TIMING CHART H (PAL)



TIMING CHART V (NTSC)



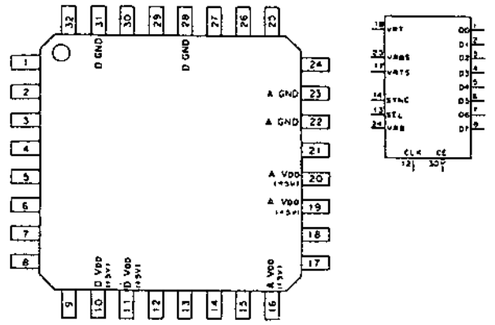
TIMING CHART V (PAL)



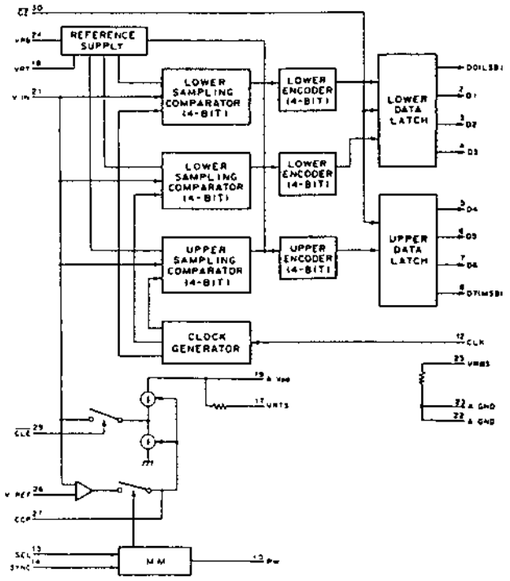
CXD1176Q (SONY)

C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER WITH CLAMP FUNCTION

– TOP VIEW –



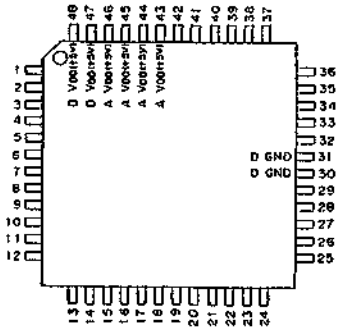
No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	O	D0(LSB)	9	–	N.C	17	O	VRTS	25	O	VRBS
2	O	D1	10	–	D VDD	18	O	VRT	26	I	VREF
3	O	D2	11	–	D VDD	19	–	A VDD	27	I/O	CCP
4	O	D3	12	I	CLK	20	–	D GND	28	–	D GND
5	O	D4	13	I	SEL	21	I	V IN	29	I	CLK
6	O	D5	14	I	SYNC	22	–	A GND	30	O	OE
7	O	D6	15	I/O	PW	23	–	A GND	31	–	D GND
8	O	D7(MSB)	16	–	A VDD	24	O	VRB	32	–	N.C

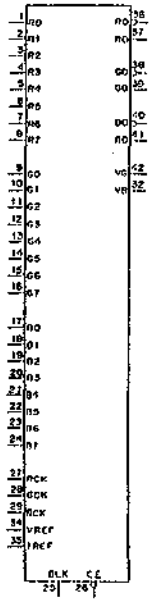


CXD1178Q (SONY) FLAT PACKAGE

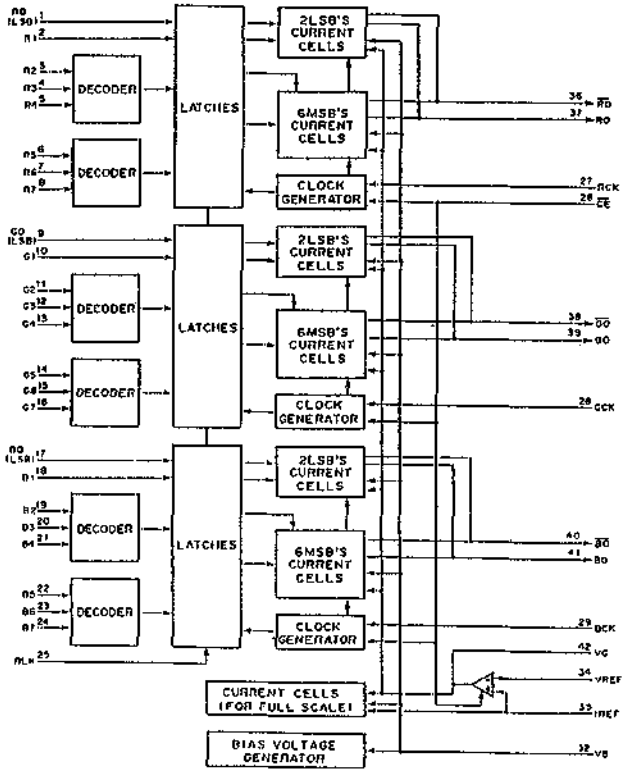
C-MOS 3CH 6-BIT 40MHz D/A CONVERTER

– TOP VIEW –





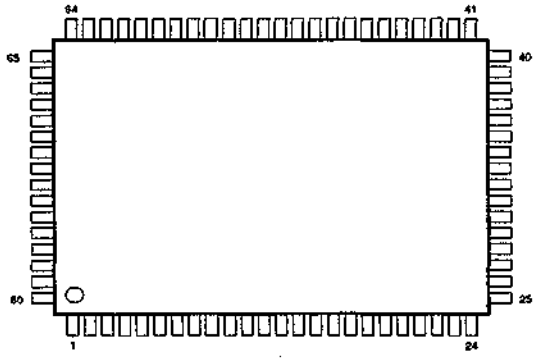
No.	I/O	SIGNAL	No	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	I	R0(LSB)	13	I	G4	25	I	BLK	37	O	RO
2	I	R1	14	I	G5	26	I	CE	38	O	GO
3	I	R2	15	I	G6	27	I	RCK	39	O	GO
4	I	R3	16	I	G7	28	I	GCK	40	O	BO
5	I	R4	17	I	B0(LSB)	29	I	BCK	41	O	BO
6	I	R5	18	I	B1	30	–	D GND	42	I	VG
7	I	R6	19	I	B2	31	–	D GND	43	–	A Vcc
8	I	R7	20	I	B3	32	I	VB	44	–	A Vcc
9	I	G0(LSB)	21	I	B4	33	–	A GND	45	–	A Vcc
10	I	G1	22	I	B5	34	I	VREF	46	–	A Vcc
11	I	G2	23	I	B6	35	I	IREF	47	–	A Vcc
12	I	G3	24	I	B7	36	O	RO	48	–	A Vcc

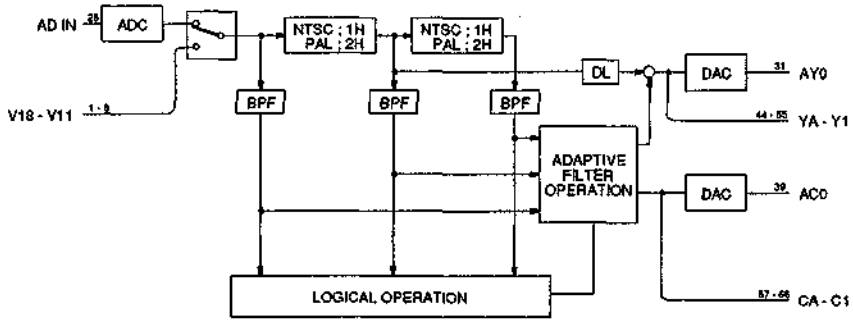


CXD2024Q (SONY)

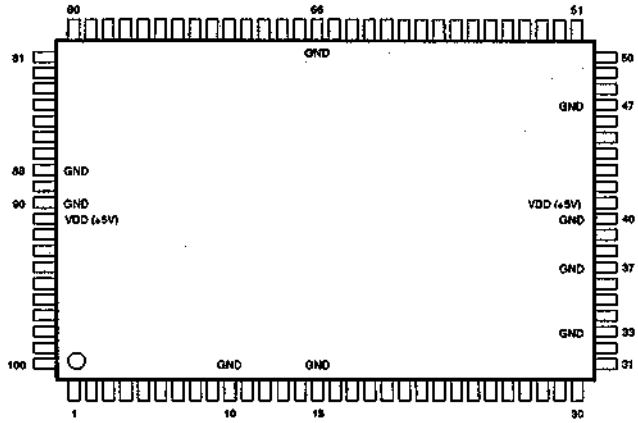
C-MOS DIGITAL COMB FILTER (NTSC/PAL)

– TOP VIEW –



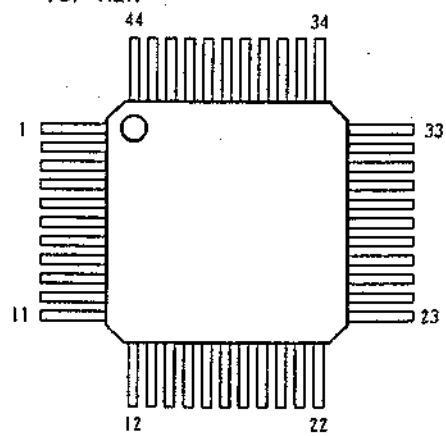


CXD8391Q (SONY)
C-MOS GATE ARRAY
— TOP VIEW —



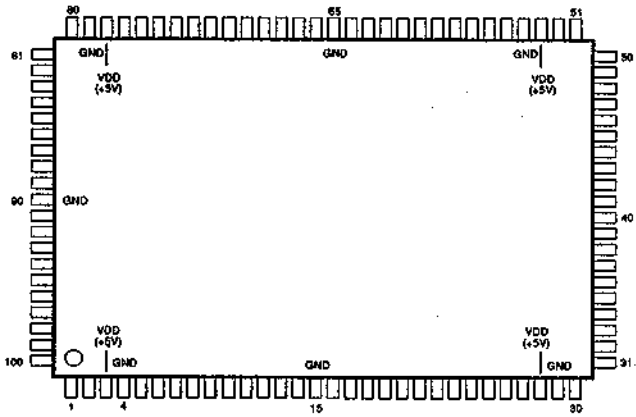
PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL
1	P47	26	P21	51	A20	76	D07
2	P46	27	P20	52	A19	77	D06
3	P45	28	P17	53	CS0	78	D05
4	P44	29	P16	54	CS1	79	D04
5	P43	30	P15	55	CS2	80	D03
6	P42	31	P14	56	A18	81	D02
7	P41	32	P13	57	A17	82	D01
8	P40	33	GND	58	A16	83	D00
9	WRP	34	RAS	59	A15	84	RES
10	GND	35	RC	60	A14	85	WR
11	P37	36	CAS	61	A13	86	DRQ2
12	P36	37	GND	62	A12	87	DRQ1
13	P35	38	DBRQ	63	A11	88	GND
14	P34	39	ABRQ	64	A10	89	CK
15	GND	40	GND	65	A09	90	GND
16	P33	41	VDD (+5V)	66	GND	91	VDD (+5V)
17	P32	42	PWR	67	A08	92	WRC
18	P31	43	SPWR	68	A07	93	P57
19	P30	44	P12	69	A06	94	P56
20	P27	45	P11	70	A05	95	P55
21	P26	46	P10	71	A04	96	P54
22	P25	47	GND	72	A03	97	P53
23	P24	48	A23	73	A02	98	P52
24	P23	49	A22	74	A01	99	P51
25	P22	50	A21	75	A00	100	P50

CXD8398Q (SONY)
C-MOS KEYBOARD CONTROLER
— TOP VIEW —



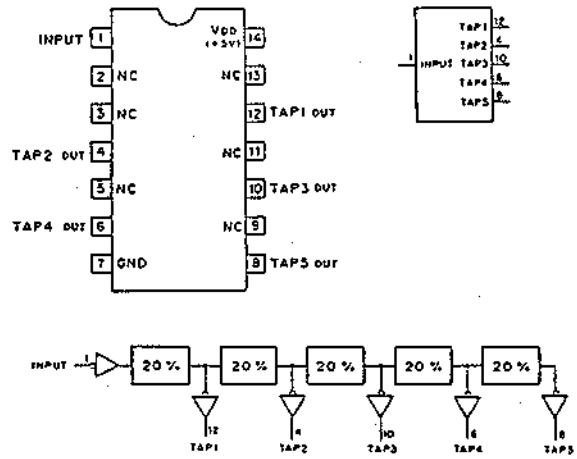
Pin No.	I/O	Pin Name	Pin No.	I/O	Pin Name
1	I	GIN5/DATKY	23	O	OUT0/STBVA
2	I	GIN6/STBPD	24	O	OUT1/CLKVA
3	I	GIN7/STBKY	25	O	OUT2/BSYKY
4	I	BIN0/CLKPD	26	O	OUT3/BSYPD
5	I	BIN1/CLKKY	27	O	OUT4/SYEKY
6	I	BIN2/BSYVA	28	O	OUT5/SYEPD
7	I	BIN3/SYESY	29	O	OUT6/RXDKY
8	I	BIN4/RXDSY	30	O	OUT7/RXDPD
9	I	BIN5/LOW	31	I	RIN0/LOW
10	I	BIN6/LOW	32	I	RIN1/LOW
11	I	BIN7/LOW	33	I	RIN2/LOW
12	I	COLA/RESET	34	I	RIN3/LOW
13	I	COLB/LOW	35	I	RIN4/LOW
14	-	N.C.	36	I	RIN5/LOW
15	I	INVI/PADKY	37	I	RIN6/LOW
16	I	SELECT	38	I	RIN7/LOW
17	-	GND	39	-	VDD
18	O	TP0/KYESY	40	I	GIN0/KYEPD
19	O	TP1/TXDSY	41	I	GIN1/KYEKY
20	O	TP2/DATVA	42	I	GIN2/TXDPD
21	-	N.C.	43	I	GIN3/TXDKY
22	I	OE/HIGH	44	I	GIN4/DATPD

CXD8444Q (SONY)
C-MOS GATE ARRAY
– TOP VIEW –



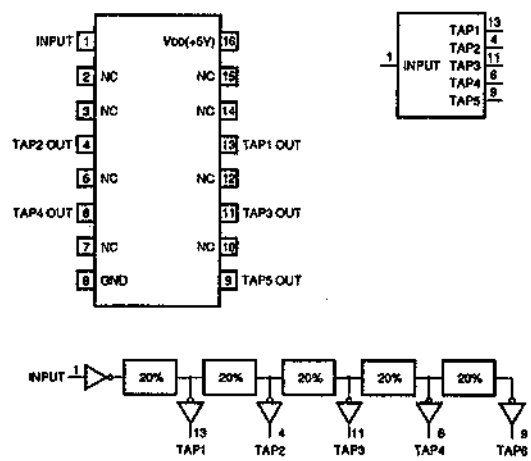
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	TRIM	26	O	RO2	51	O	BO2	76	I	ADON
2	I	CAPEN	27	O	RO3	52	O	BO3	77	O	ADOE
3	-	VDD (+5V)	28	-	VDD (+5V)	53	-	VDD (+5V)	78	-	VDD (+5V)
4	-	VSS	29	-	VSS	54	-	VSS	79	-	VSS
5	I/O	DBUS7	30	O	RO4	55	O	BO4	80	I	CLR
6	I/O	DBUS6	31	O	RO5	56	O	BO5	81	-	N.C
7	I/O	DBUS5	32	O	RO6	57	O	BO6	82	I/O	GBUS6
8	I/O	DBUS4	33	O	RO7	58	O	BO7	83	I/O	GBUS7
9	I/O	DBUS3	34	I	Y3A	59	I/O	BBUS0	84	I/O	RBUS0
10	I/O	DBUS2	35	I	Y3B	60	I/O	BBUS1	85	I/O	RBUS1
11	I/O	DBUS1	36	O	GO0	61	I/O	BBUS2	86	I	BXW
12	I/O	DBUS0	37	O	GO1	62	I/O	BBUS3	87	I	CLKA
13	O	XWRPD	38	O	GO2	63	O	ACK	88	I	OE1
14	O	WRPD	39	O	GO3	64	O	SO	89	I	CLK
15	-	VSS	40	-	VSS	65	-	VSS	90	-	VSS
16	O	BLK	41	O	GO4	66	I/O	BBUS4	91	O	STDCLK
17	I	STD	42	O	GO5	67	I/O	BBUS5	92	I	OE2
18	I	CLKSEL	43	O	GO6	68	I/O	BBUS6	93	I	CLKB
19	I	DAON	44	O	GO7	69	I/O	BBUS7	94	I	OE3
20	I	WRP	45	I	SCK	70	I/O	GBUS0	95	I/O	RBUS2
21	I	COLA	46	I	VD	71	I/O	GBUS1	96	I/O	RBUS3
22	I	COLB	47	I	SI	72	I/O	GBUS2	97	I/O	RBUS4
23	I	POFF	48	I	CS	73	I/O	GBUS3	98	I/O	RBUS5
24	O	RO0	49	O	BO0	74	I/O	GBUS4	99	I/O	RBUS6
25	O	RO1	50	O	BO1	75	I/O	GBUS5	100	I/O	RBUS7

DS1000S-50 (DALLAS SEMICONDUCTOR)(DELAY TIME=50 nS)
C-MOS DELAY LINE
– TOP VIEW –



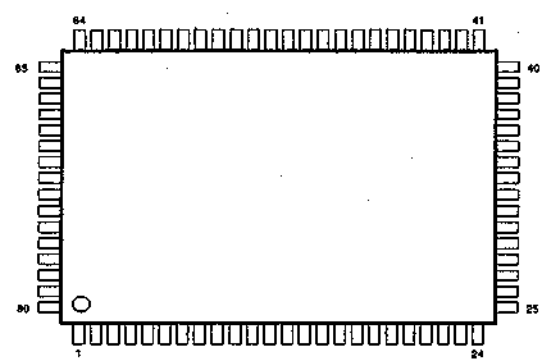
TYPE. NO.	DELAY TIME (nS)				
	TAP1	TAP2	TAP3	TAP4	TAP5
DS1000-50	10	20	30	40	50
DS1000-60	12	24	36	48	60
DS1000-75	15	30	45	60	75
DS1000-100	20	40	60	80	100
DS1000-125	25	50	75	100	125
DS1000-150	30	60	90	120	150
DS1000-175	35	70	105	140	175
DS1000-200	40	80	120	160	200
DS1000-250	50	100	150	200	250
DS1000-500	100	200	300	400	500

DS1000S-75 (DALLAS SEMICONDUCTOR)(DELAY TIME=75 nS)
C-MOS DELAY LINE
-TOP VIEW-



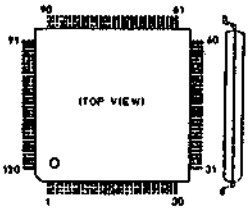
DELAY TIME (nS)				
TAP1	TAP2	TAP3	TAP4	TAP5
15	30	45	60	75

CXP80P116Q-1
CXP80P116Q-1-240
C-MOS 8-BIT MICRO PROCESSING UNIT
– TOP VIEW –



HDC443V2 (HITACHI)

— TOP VIEW —

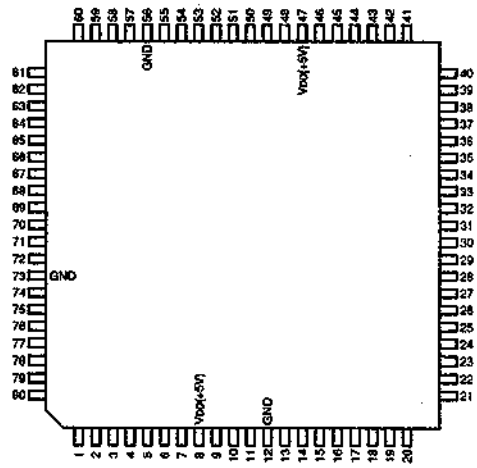


No.	I/O	Name	No.	I/O	Name	No.	I/O	Name	No.	I/O	Name
1	-	VDD	31	-	GND	61	-	VDD	91	-	GND
2	O	DTT0	32	O	DTE	62	I/O	DAA	92	I	WR
3	O	DTT1	33	I	DCK	63	I/O	DA9	93	I	DDD0
4	O	DTT2	34	I	TMGP	64	I/O	DA8	94	I	DDD1
5	O	DTT3	35	I	PRIN	65	O	CHOO	95	I	DDD2
6	O	DTT4	36	I	PRNS	66	O	AFOO	96	I	DDD3
7	O	DTT5	37	I	RESE	67	O	AAAB	97	I	DDD4
8	O	DTT6	38	I	LI7	68	O	ABBB	98	I	DDD5
9	O	DTT7	39	I	LI6	69	I	TSA	99	I	DDD6
10	O	DTT8	40	I	LI5	70	I	TSB	100	I	DDD7
11	O	DTT9	41	I	LI4	71	I	RWA	101	I	A0A
12	O	DTTA	42	I	LI3	72	I	RWB	102	I	A1A
13	I	TI07	43	I	LI2	73	I	RWC	103	I	A2A
14	O	TO04	44	I	LI1	74	I	LG	104	I	A3A
15	-	GND	45	I	LI0	75	-	GND	105	I	CS2
16	O	HDC	46	I/O	DA7	76	I/O	AD0	106	I	CS1
17	O	STOB	47	I/O	DA6	77	I/O	AD1	107	I	CS0
18	O	DATA	48	I/O	DA5	78	I/O	AD2	108	O	TO02
19	O	DATB	49	I/O	DA4	79	I/O	AD3	109	I	TI03
20	O	DRV	50	I/O	DA3	80	I/O	AD4	110	I	TI04
21	I	TI08	51	I/O	DA2	81	I/O	AD5	111	O	TO03
22	O	TO05	52	I/O	DA1	82	I/O	AD6	112	I	TI05
23	O	TO01	53	I/O	DA0	83	I/O	AD7	113	I	TI06
24	I	TI01	54	I/O	DAF	84	I/O	AD8	114	I	TSNR
25	I	TI02	55	I/O	DAE	85	I/O	AD9	115	I	TWEB
26	O	TO06	56	I/O	DAD	86	I/O	ADA	116	I	TTOE
27	I	TI10	57	I/O	DAC	87	O	OPTW	117	I	TTCS
28	I	TI11	58	I/O	DAB	88	O	OPTO	118	I	CLOK
29	I	TI09	59	I	IOEN	89	I	OLD	119	O	OSO
30	-	VDD	60	-	GND	90	-	VDD	120	-	GND

HD6413378F10 (HITACHI) FLAT PACKAGE

C-MOS 8-BIT 1CHIP CPU (ROM LESS)

-TOP VIEW-



(Vcc = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	RES	21	I/O	P60/FTCI	41	I/O	P42/TMRI0	61	I/O	P13/A3
2	I	XTAL	22	I/O	P61/FTOA	42	I/O	P43/TMCI1	62	I/O	P12/A2
3	I	EXTAL	23	I/O	P62/FTIA	43	I/O	P44/TMO1	63	I/O	P11/A1
4	I	MD1	24	I/O	P63/FTIB	44	I/O	P45/TMRI1	64	I/O	P10/A0
5	I	MD0	25	I/O	P64/FTIC	45	I/O	P46/PW0	65	I/O	P30/D0
6	I	NMI	26	I/O	P65/FTID	46	I/O	P47/PW1	66	I/O	P31/D1
7	I	STBY	27	I/O	P66/FTOB/IRQ6	47	—	Vcc	67	I/O	P32/D2
8	—	Vcc	28	I/O	P67/IRQ7	48	I/O	P27/A15	68	I/O	P33/D3
9	I/O	P52/SCK0	29	I	AVcc	49	I/O	P26/A14	69	I/O	P34/D4
10	I/O	P51/RXD0	30	I	P70/AN0	50	I/O	P25/A13	70	I/O	P35/D5
11	I/O	P50/TXD0	31	I	P71/AN1	51	I/O	P24/A12	71	I/O	P36/D6
12	—	GND	32	I	P72/AN2	52	I/O	P23/A11	72	I/O	P37/D7
13	I/O	P97/WAIT	33	I	P73/AN3	53	I/O	P22/A10	73	—	GND
14	I/O	P96/ϕ	34	I	P74/AN4	54	I/O	P21/A9	74	I/O	P80
15	I/O	P95/AS	35	I	P75/AN5	55	I/O	P20/A8	75	I/O	P81
16	I/O	P94/WR	36	I/O	P76/AN6/DA0	56	—	GND	76	I/O	P82
17	I/O	P93/RD	37	I/O	P77/AN7/DA1	57	I/O	P17/A7	77	I/O	P83
18	I/O	P92/IRQ0	38	I	AGND	58	I/O	P16/A6	78	I/O	P84/TXD1/IRQ3
19	I/O	P91/IRQ1	39	I/O	P40/TMCI0	59	I/O	P15/A5	79	I/O	P85/RXD1/IRQ4
20	I/O	P90/ADTRG/IRQ2	40	I/O	P41/TMO0	60	I/O	P14/A4	80	I/O	P86/SCK1/IRQ5

INPUT

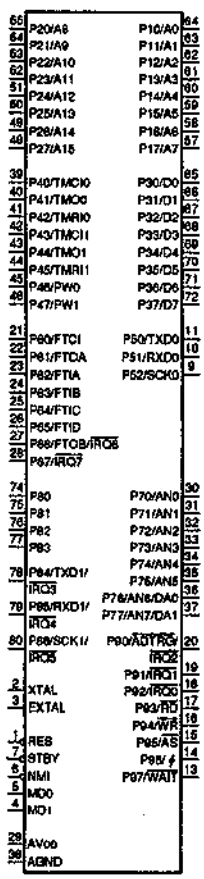
ADTRG	; TRIGGER FOR A/D CONVERTER
AGND	; GND FOR A/D CONVERTER
AN0-AN7	; ANALOG
AVcc	; REFERENCE VOLTAGE FOR A/D CONVERTER
EXTAL	; CRYSTAL OSCILLATOR & EXTERNAL CLOCK (ϕ CLOCK x 2)
FTCI	; FRT COUNTER CLOCK
FTIA-FTID	; FRT INPUT CAPTURE
IRQ0-IRQ7	; INTERRUPT REQUEST
MD0,MD1	; MODE SETTING
NMI	; NON-MASKABLE INTERRUPT
P70-P77	; PORT 7
RES	; RESET
RXD0,RXD1	; RECEIVE DATA
SCK0,SCK1	; SERIAL CLOCK
STBY	; STANDBY
TMCI0,TMCI1	; 8-BIT TIMER CLOCK
TMRI0,TMRI1	; 8-BIT TIMER COUNTER RESET
WAIT	; WAIT
XTAL	; CRYSTAL OSCILLATOR (ϕ CLOCK x 2)

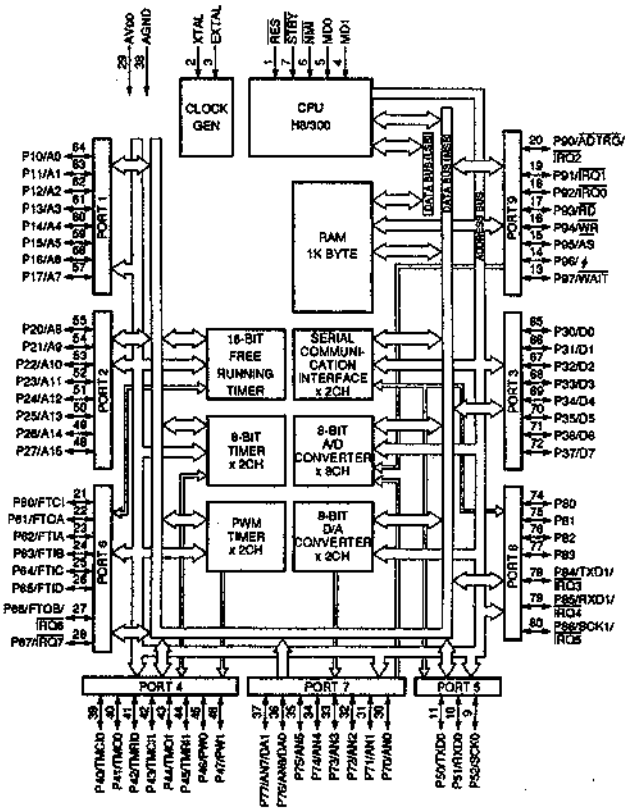
OUTPUT

ϕ	; SYSTEM CLOCK
A0-A15	; ADDRESS BUS
AS	; ADDRESS STROBE
DA0,DA1	; D/A CONVERTE DATA
FTOA,FTOB	; FRT OUTPUT COMPEA
PW0,PW1	; PWM TIME
RD	; READ
TMO0,TMO1	; 8-BIT TIMER
TXD0,TXD1	; TRANSCEIVE DATA
WR	; WRITE

INPUT/OUTPUT

D0-D7	; DATA BUS
P10-P17	; PORT 1
P20-P27	; PORT 2
P30-P37	; PORT 3
P40-P47	; PORT 4
P50-P52	; PORT 5
P60-P67	; PORT 6
P80-P86	; PORT 8
P90-P97	; PORT 9

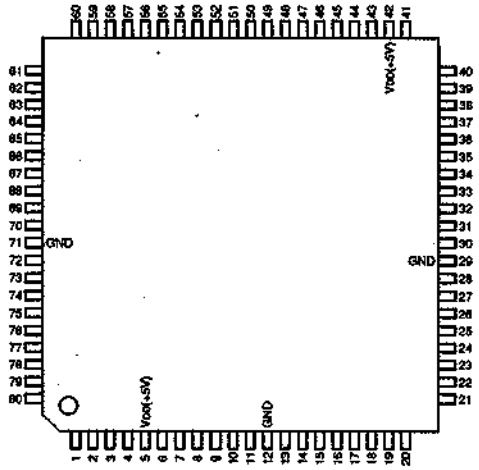




HD6475368F-FMY10-01 (HITACHI) FLAT PACKAGE

C-MOS MICRO COMPUTER UNIT

-TOP VIEW-



(Vcc = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	P21/R/W	21	I/O	P40/A0	41	I/O	P63/A19	61	I/O	P90/FTOA2
2	I/O	P22/DS	22	I/O	P41/A1	42	—	Vcc	62	I/O	P91/FTOA3
3	I/O	P23/RD	23	I/O	P42/A2	43	I/O	P70/TMC1	63	I/O	P92/PW1
4	I/O	P24/WR	24	I/O	P43/A3	44	I/O	P71/FTI1	64	I/O	P93/PW2
5	—	Vcc	25	I/O	P44/A4	45	I/O	P72/FTI2	65	I/O	P94/PW3
6	I	MD0	26	I/O	P45/A5	46	I/O	P73/FTI3/TMRI	66	I/O	P95/TXD
7	I	MD1	27	I/O	P46/A6	47	I/O	P74/FTOB1/FTCI1	67	I/O	P96/RXD
8	I	MD2	28	I/O	P47/A7	48	I/O	P75/FTOB2/FTCI2	68	I/O	P97/SCK
9	I	STBY	29	—	GND	49	I/O	P76/FTOB3/FTCI3	69	I	EXTAL
10	I	RES	30	I/O	P80/A8	50	I/O	P77/FTOA1	70	I	XTAL
11	I	NMI	31	I/O	P51/A9	51	I	AGND	71	—	GND
12	—	GND	32	I/O	P52/A10	52	I	P80/AN0	72	I/O	P10/ϕ
13	I/O	P30/D0	33	I/O	P53/A11	53	I	P81/AN1	73	I/O	P11/E
14	I/O	P31/D1	34	I/O	P54/A12	54	I	P82/AN2	74	I/O	P12/BACK
15	I/O	P32/D2	35	I/O	P55/A13	55	I	P83/AN3	75	I/O	P13/BREQ
16	I/O	P33/D3	36	I/O	P56/A14	56	I	P84/AN4	76	I/O	P14/WAIT
17	I/O	P34/D4	37	I/O	P57/A15	57	I	P85/AN5	77	I/O	P15/IRQ0
18	I/O	P35/D5	38	I/O	P60/A16	58	I	P86/AN6	78	I/O	P16/IRQ1
19	I/O	P36/D6	39	I/O	P61/A17	59	I	P87/AN7	79	I/O	P17/TMO
20	I/O	P37/D7	40	I/O	P62/A18	60	I	AVcc	80	I/O	P20/AS

INPUT

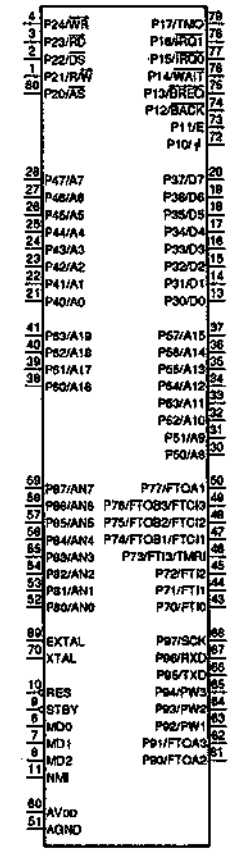
AGND	;	GND FOR A/D CONVERTER
AN0-AN7	;	ANALOG
AVcc	;	REFERENCE VOLTAGE FOR A/D CONVERTER
BREQ	;	BAS REQUEST
EXTAL	;	CRYSTAL OSCILLATOR & EXTERNAL CLOCK (ϕ CLOCK x 2)
FTCI1-FTCI3	;	FRT COUNTER CLOCK
FTI1-FTI3	;	FRT INPUT CAPTURE
IRQ0,IRQ1	;	INTERRUPT REQUEST
MD0-MD2	;	MODE SETTING
NMI	;	NON-MASKABLE INTERRUPT
P80-P87	;	PORT 8
RES	;	RESET
RXD	;	RECEIVE DATA
STBY	;	STANDBY
TMCI	;	8-BIT TIMER CLOCK
TMRI	;	8-BIT TIMER COUNTER RESET
WAIT	;	WAIT
XTAL	;	CRYSTAL OSCILLATOR (ϕ CLOCK x 2)

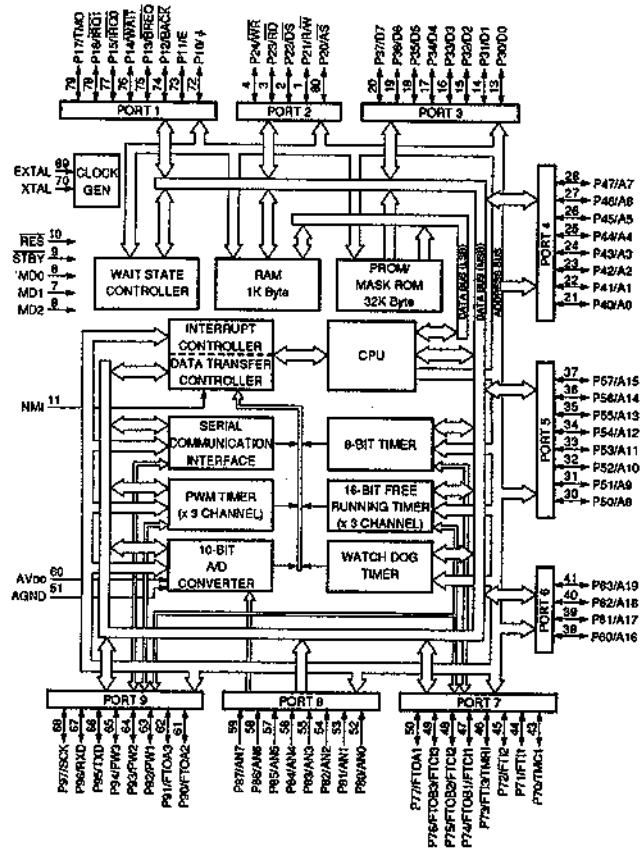
OUTPUT

ϕ	;	SYSTEM CLOCK
A0-A19	;	ADDRESS BUS
AS	;	ADDRESS STROBE
BACK	;	BAS REQUEST ACKNOWLEDGE
DS	;	DATA STROBE
E	;	ENABLE CLOCK
FTOA1-FTOA3	;	FRT OUTPUT COMPEA A
FTOB1-FTOB3	;	FRT OUTPUT COMPEA B
PW1-PW3	;	PWM TIME
RD	;	READ
R/W	;	READ/WRITE
TMO	;	8-BIT TIMER
TXD	;	TRANSCEIVE DATA
WR	;	WRITE

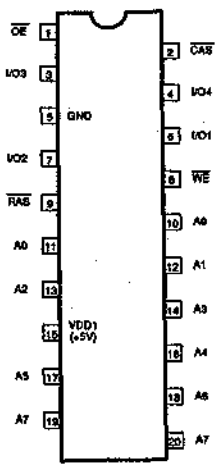
INPUT/OUTPUT

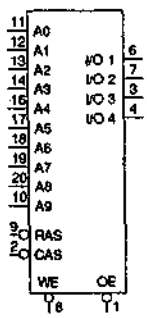
D0-D7	;	DATA BUS
P10-P17	;	PORT 1
P20-P24	;	PORT 2
P30-P37	;	PORT 3
P40-P47	;	PORT 4
P50-P57	;	PORT 5
P60-P63	;	PORT 6
P70-P77	;	PORT 7
P90-P97	;	PORT 9
SCK	;	SERIAL CLOCK



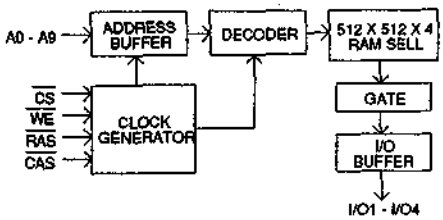


HM514400AS7GS-EL (HITACHI)
C-MOS 4 BIT DYNAMIC RAM
— TOP VIEW —

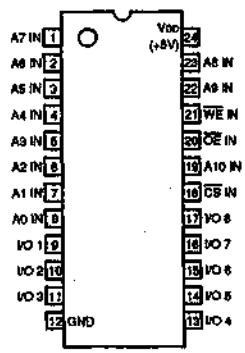


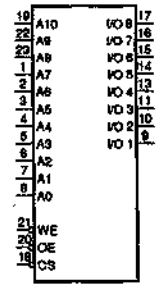


A0 - A9 ; ADDRESS INPUT
CAS ; COLUMN ADDRESS STROBE
I/O 1 - I/O 4 ; DATA INPUT/OUTPUT
RAS ; ROW ADDRES STROBE
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT



IDT6116SA25S0 (IDT) FLAT PACKAGE
C-MOS 16K (2K x 8) - BIT STATIC RAM
-TOP VIEW-

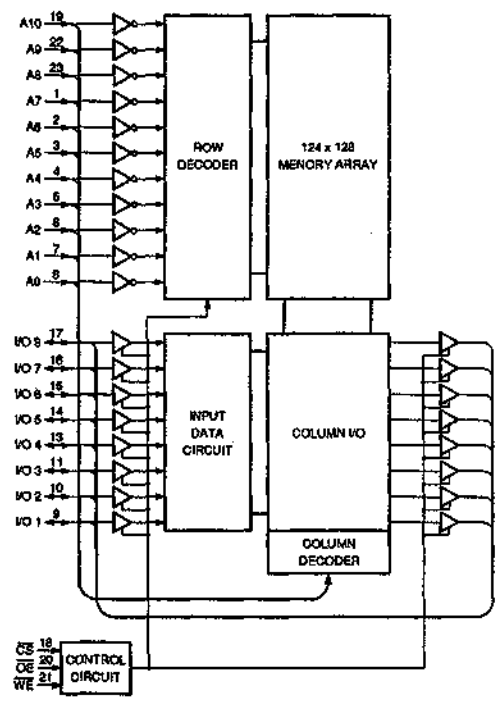




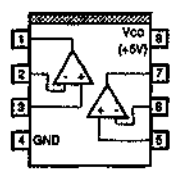
A0-A10 ; ADDRESS INPUTS
$\overline{CS}$; CHIP SELECT INPUT
I/O1-I/O8 ; DATA INPUTS/OUTPUTS
$\overline{OE}$; OUTPUT ENABLE INPUT
$\overline{WE}$; WRITE ENABLE INPUT

MODE	$\overline{CS}$	$\overline{OE}$	$\overline{WE}$	I/O
STANDBY	1	X	X	HI-Z
READ	0	0	1	DATA OUT
READ	0	1	1	HI-Z
WRITE	0	X	0	DATA IN

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

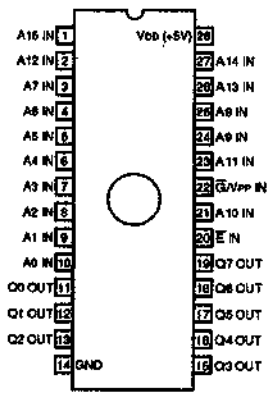


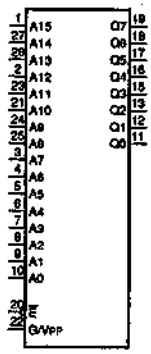
LM358D (TI) FLAT PACKAGE
OPERATIONAL AMPLIFIERS
-TOP VIEW-



M27C512-UP18PSYV1.00 (SGS)

C-MOS 512K UV EPROM
-TOP VIEW-

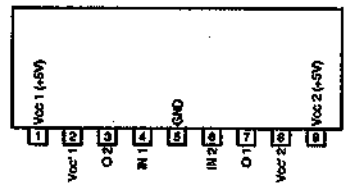


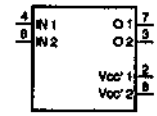


A0-A15 ; ADDRESS INPUTS
$\overline{E}$; CHIP ENABLE INPUT
$\overline{G}$/VPP ; OUTPUT ENABLE/PROGRAM SUPPLY INPUT
Q0-Q7 ; DATA OUTPUTS

M54544AL (MITSUBISHI)

BI-DIRECTIONAL MOTOR DRIVER WITH THERMAL SHUT DOWN FUNCTION
-PRINTED SIDE VIEW-

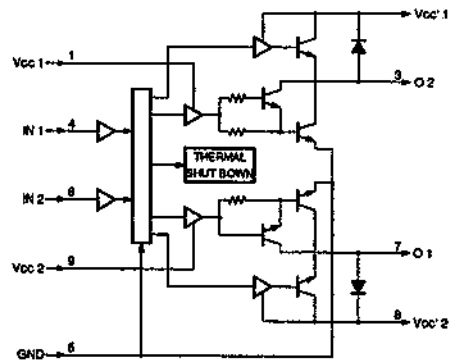




Vcc' 1,Vcc' 2 ; POWER SOURCE OUTPUT

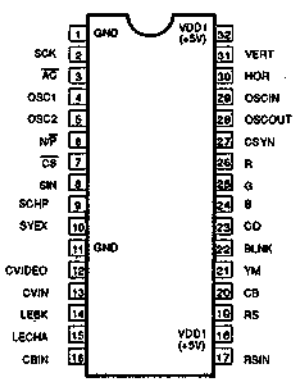
INPUT		OUTPUT		FUNCTION
IN 1	IN 2	O 1	O 2	
0	0	"OFF" STATE	"OFF" STATE	IC PASSIVITY
1	0	1	0	POSITIVE ROTATING
0	1	0	1	NEGATIVE ROTATING
1	1	0	0	BRAKE

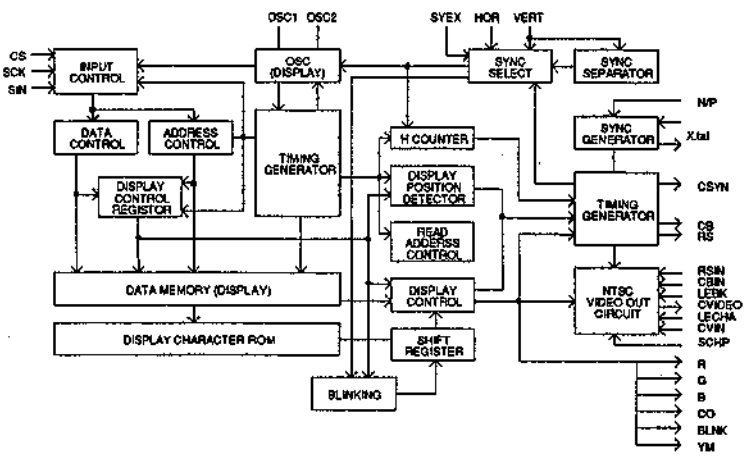
0 ; LOW LEVEL
1 ; HIGH LEVEL



M50555-218FP

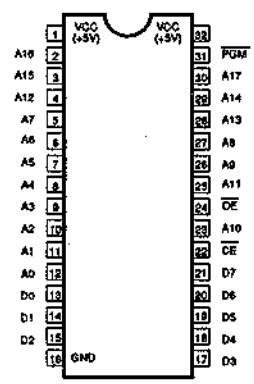
C-MOS TV DISPLAY CONTROLLER
— TOP VIEW —

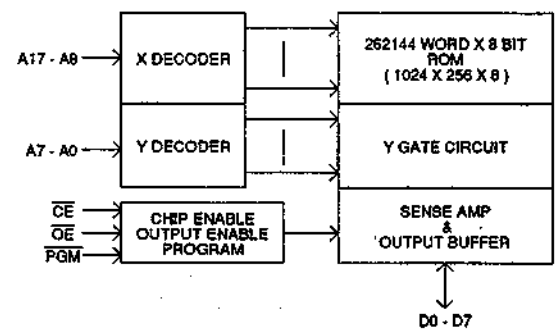




M5M27C201FP-S75M-E2
M5M27C201FP-UP18S-E2
M5M27C201FP-UP18R-E2

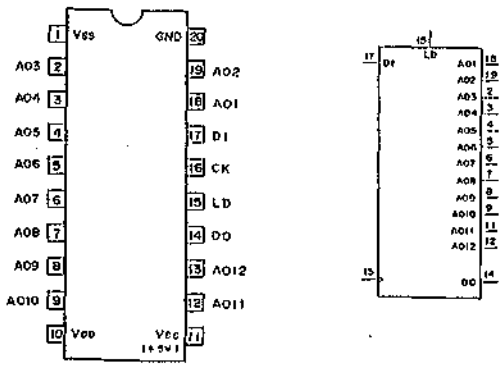
C-MOS ONE TIME PROGRAMMABLE ROM
— TOP VIEW —





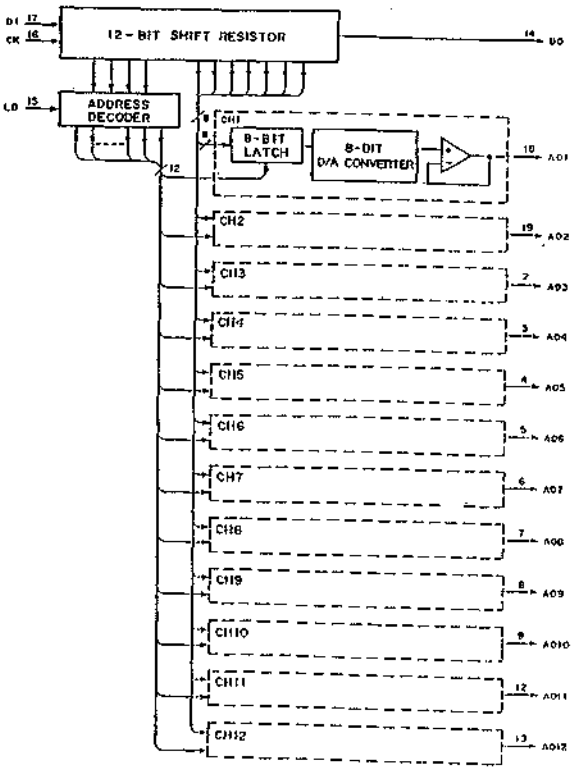
M62352GP (MITSUBISHI) FLAT PACKAGE

C-MOS 8-BIT×12 CHANNEL D/A CONVERTER
(WITH BUFFER OPERATIONAL AMPLIFIER)
– TOP VIEW –



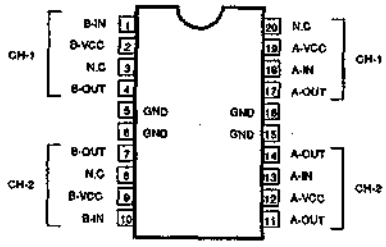
AO1 ~ AO12: 8-BIT D/A OUTPUT
CK : CLOCK INPUT
DI : SERIAL DATA INPUT
DO : DATA OUTPUT

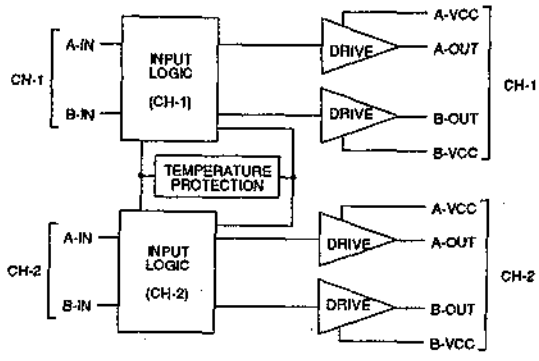
NOTE :
3.5V < Vdd < Vcc
– 3.5V < Vss < Vdd



MB3863PF-G-BND

DUAL MODE MOTOR DRIVER
– TOP VIEW –

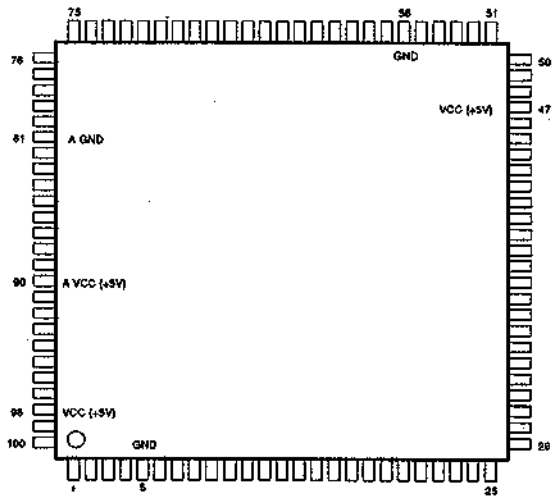




MB89093PFV-G122-BND

C-MOS 8 BIT MICROCOMPUTER

— TOP VIEW —

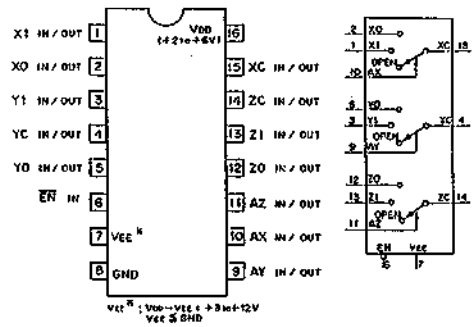


PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	MOD0	26	I/O	CMOD	51	O	SEG12	76	I/O	P83/SO1
2	I	MOD1	27	I/O	P24/SI0	52	O	SEG11	77	I/O	P84/SCK1
3	I	X0	28	I/O	P25/SO0	53	O	SEG10	78	I/O	P85/ECK
4	O	X1	29	I/O	P26/SCK0	54	O	SEG09	79	I/O	P86/TO1
5	-	VSS	30	I/O	P27/RMCI	55	O	SEG08	80	I/O	P87/TO2
6	I	XRST	31	I/O	P30/SEG31	56	-	VSS	81	-	A VSS
7	I/O	P00/E120	32	I/O	P31/SEG30	57	O	SEG07	82	I/O	P90/AN00
8	I/O	P01/E121	33	I/O	P32/SEG29	58	O	SEG06	83	I/O	P91/AN01
9	I/O	P02/E122	34	I/O	P33/SEG28	59	O	SEG05	84	I/O	P92/AN02
10	I/O	P03/E123	35	I/O	P34/SEG27	60	O	SEG04	85	I/O	P93/AN03
11	I/O	P04/E124	36	I/O	P35/SEG26	61	O	SEG03	86	I/O	P94/AN04
12	I/O	P05/E125	37	I/O	P36/SEG25	62	O	SEG02	87	I/O	P95/AN05
13	I/O	P06/E126	38	I/O	P37/SEG24	63	O	SEG01	88	I/O	P96/AN06
14	I/O	P07/E127	39	I/O	P40/SEG23	64	O	SEG00	89	I/O	P97/AN07
15	I/O	P10/E110	40	I/O	P41/SEG22	65	I	V3	90	-	VCC (+5V)
16	I/O	P11/E111	41	I/O	P42/SEG21	66	I	V2	91	I/O	PA0/AN08
17	I/O	P12/E112	42	I/O	P43/SEG20	67	I	V1	92	I/O	PA1/AN09
18	I/O	P13/E113	43	I/O	P44/SEG19	68	I	V0	93	I/O	PA2/AN10
19	I/O	P14	44	I/O	P45/SEG18	69	O	COM0	94	I/O	PA3/AN11
20	I/O	P15	45	I/O	P46/SEG17	70	O	COM1	95	I/O	PA4/LSI
21	I/O	P16	46	I/O	P47/SEG16	71	O	COM2	96	I/O	PA5/LSO
22	I/O	P17	47	-	VCC (+5V)	72	O	COM3	97	I/O	PA6/COUT
23	I/O	P20	48	O	SEG15	73	I/O	P80/STB	98	-	VCC (+5V)
24	I/O	P21	49	O	SEG14	74	I/O	P81/XCS	99	O	CL1
25	I/O	P22	50	O	SEG13	75	I/O	P82/SI1	100	I	CL0

MC74HC4053F (MOTOROLA) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

— TOP VIEW —



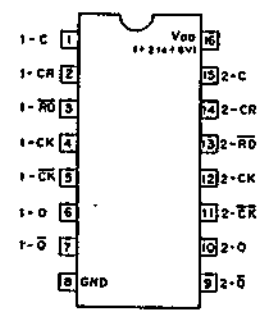
CONT. INPUTS		ON
EN	A (X,Y,Z)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

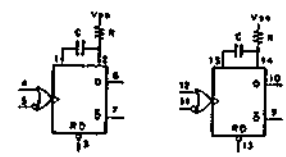
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

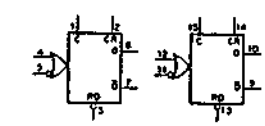
MC74HC4538F (MOTOROLA) FLAT PACKAGE

C - MOS DUAL RETRIGGERABLE / NON - RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

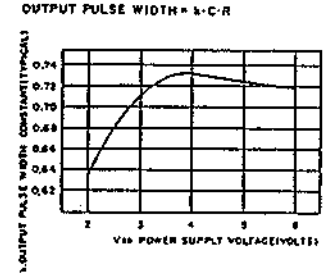
— TOP VIEW —



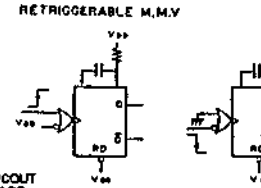




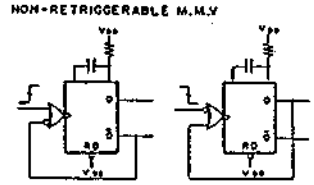
OUTPUT PULSE WIDTH = k·C·R

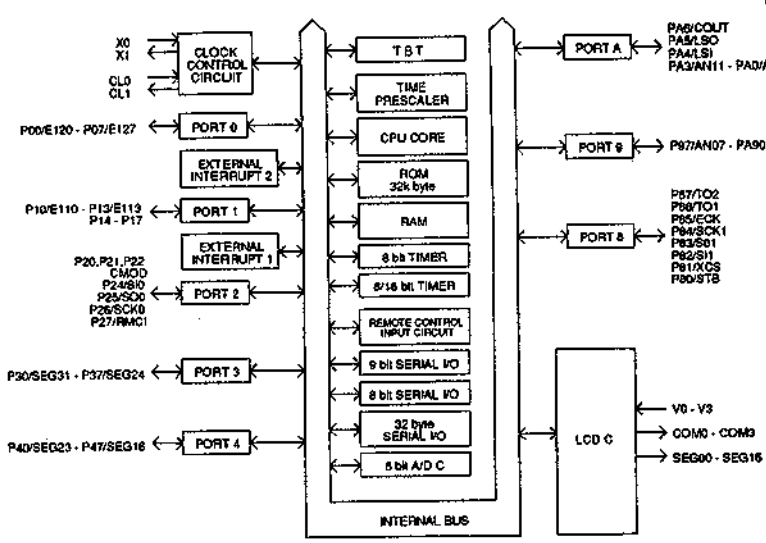


RETRIGGERABLE M.M.V

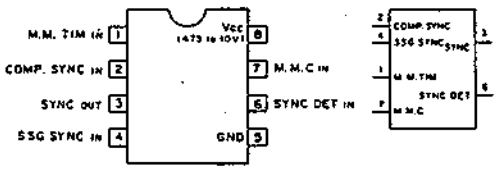


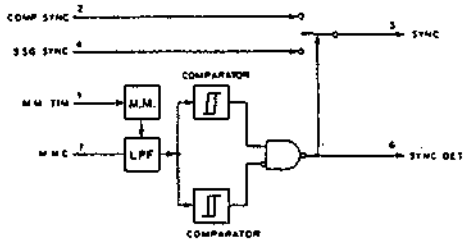
NON-RETRIGGERABLE M.M.V



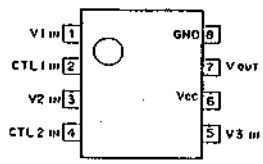


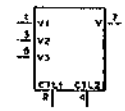
NJM2230M (JRC) FLAT PACKAGE
VIDEO SIGNAL DETECTOR
– TOP VIEW –





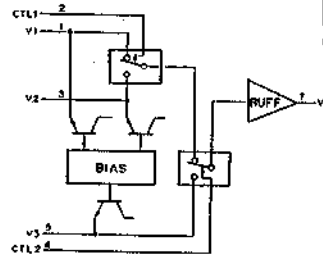
NJM2246M (JRC) FLAT PACKAGE
3-INPUT VIDEO SIGNAL SWITCH
– TOP VIEW –





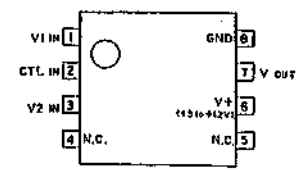
CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

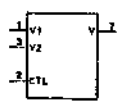
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

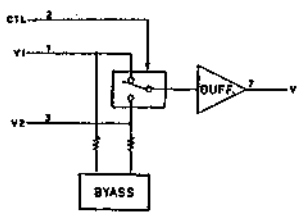


TYPE	GAIN	Vcc
NJM2235M	0dV	+5 to +15V
NJM2246D	+6dV	+4.75 to +13V
NJM2246M		

NJM2233BM (JRC) FLAT PACKAGE
2-INPUT SIGNAL VIDEO SWITCH
– TOP VIEW –



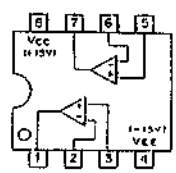




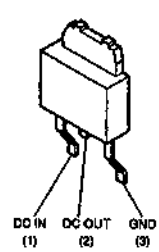
CTL	V
0	V1
1	V2

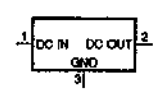
0 : LOW LEVEL
1 : HIGH LEVEL

NJM4560M (JRC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER
– TOP VIEW –

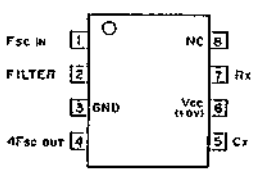


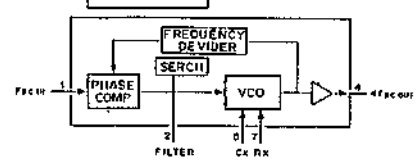
PQ05SZ1U (SHARP)
SERIES REGURATOR



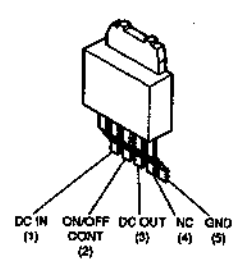


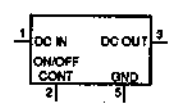
NJM2240M (JRC) FLAT PACKAGE
4-TIMES OSCILLATOR
– TOP VIEW –





PQ05TZ1U (SHARP)
SERIES REGURATOR

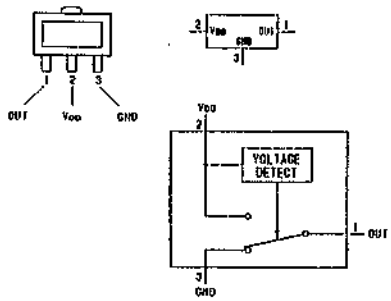




S-8054ALB-LM-S (SEKIO I AND E) 4.00-4.30V

C-MOS VOLTAGE DETECTOR

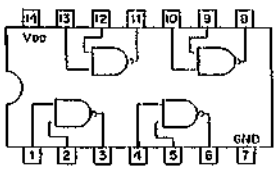
– TOP VIEW –

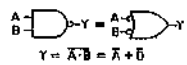


SN74HC00ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATE

– TOP VIEW –





$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

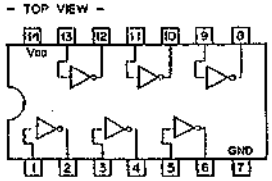
NOTE :

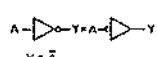
TYPE	Vᴅᴅ
TC74AC00P TC74AC00F	+2 to +5.5V
MG74HC100N 74ACT00PC	+5V
OTHER TYPES	+2 to +6V

SN74HC04ANS (TI) FLAT PACKAGE

C-MOS HEX INVERTERS

– TOP VIEW –





$Y = \overline{A}$

A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

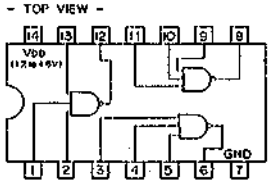
NOTE :

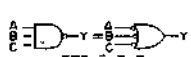
TYPE	Vᴅᴅ
74HCT04 TYPE	+5V
74VHC TC74AC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC10ANS (TI) FLAT PACKAGE

C-MOS 3-INPUT NAND GATE

– TOP VIEW –





$Y = \overline{A \cdot B \cdot C} = \overline{A} + \overline{B} + \overline{C}$

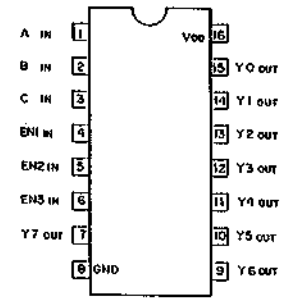
A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

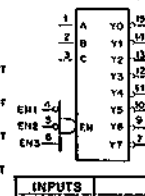
0 ; LOW LEVEL
1 ; HIGH LEVEL

SN74HC138ANS (TI) FLAT PACKAGE

C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER

– TOP VIEW –





INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

$EN = \overline{EN1} \cdot \overline{EN2} \cdot EN3$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

NOTE :

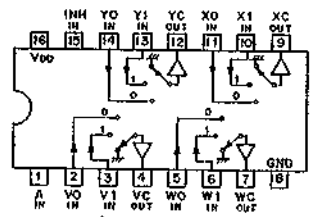
TYPE	Vᴅᴅ
74AC/74HC	+2 to +6V
74ACT/74HCT	+5V
TC74AC138	+2 to +5.5V

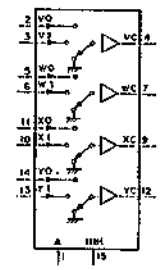
SN74HC157ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER

– TOP VIEW –

TC74HC157P





NOTE :

TYPE	Vᴅᴅ
74ACT157	+5V
TC74AC157P TC74AC157F	+2 to +5.5V
OTHER TYPES	+2 to +6V

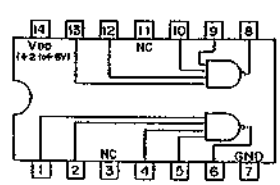
CONT. IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	GND

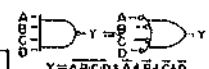
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC20ANS (TI) FLAT PACKAGE

C-MOS 4-INPUT POSITIVE-NAND GATE

– TOP VIEW –





$Y = \overline{A \cdot B \cdot C \cdot D} = \overline{A} + \overline{B} + \overline{C} + \overline{D}$

A	B	C	D	Y
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
:	:	:	:	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

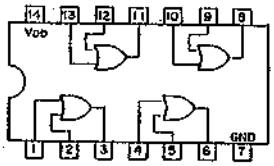
NOTE :

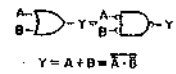
TYPE	Vᴅᴅ
TC74AC20	+2V to +5.5V
OTHER TYPES	+2V to +6V

SN74HC32ANS (TI) FLAT PACKAGE

C-MOS 2-INPUT OR GATE

– TOP VIEW –





A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0: LOW LEVEL
1: HIGH LEVEL

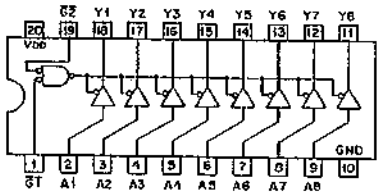
NOTE :

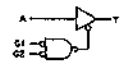
TYPE	Vdd
TC74AC32	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC541ANS (TI) FLAT PACKAGE

C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS

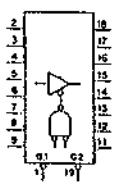
– TOP VIEW –





G1	G2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE



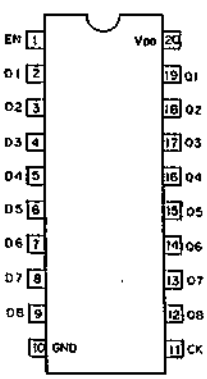
NOTE :

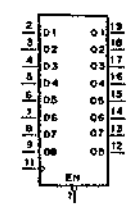
TYPE	Vdd
AC	+2 to +5.5V
HC	+2 to +6V
ACT/HCT	+5V

SN74HC574ANS (TI) FLAT PACKAGE

C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP

– TOP VIEW –

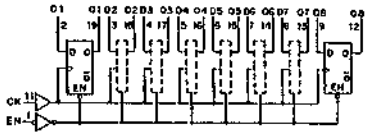




EACH FLIP-FLOP

INPUTS			OUT
EN	CK	D	Q
0	↑	1	1
0	↑	0	0
0	↓	X	Q0
1	X	X	HI-Z

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE
Q0 : NO CHANGE



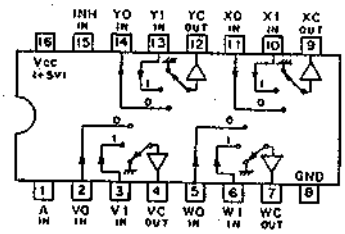
NOTE :

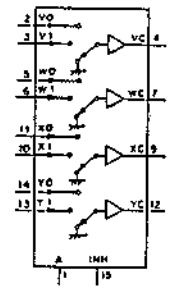
TYPE	Vdd
74AC/74HC	+2 to +6V
74ACT/74HCT	+5V
TC74AC574F	+2 to +5.5V

SN74LS157NS (TI)

C-MOS 2-INPUT OR GATE

– TOP VIEW –





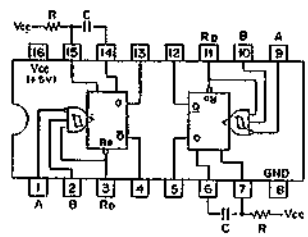
CONT. IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	GND

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74LS221NS (TI) FLAT PACKAGE

TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT

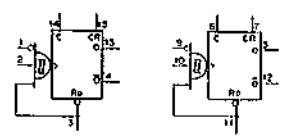
— TOP VIEW —



INPUTS			OUTPUTS	
Rd	A	B	Q	$\overline{Q}$
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
1	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

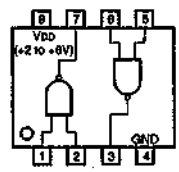
OUTPUT PULSE WIDTH = 0.7CR

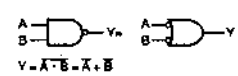


TC7W00F (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 2-INPUT NAND GATE

-TOP VIEW-



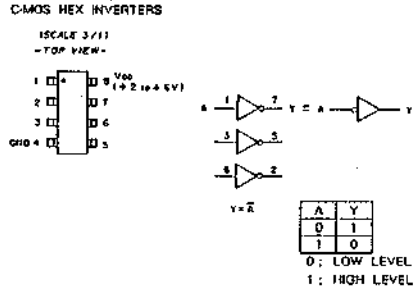


A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7WU04F (TOSHIBA) CHIP PACKAGE

C-MOS HEX INVERTERS

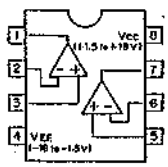


A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

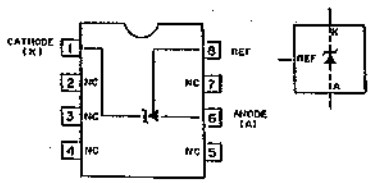
TL072CPS (TI) FLAT PACKAGE
TL082M (TI)

OPERATIONAL AMPLIFIER
(JFET INPUT)
– TOP VIEW –



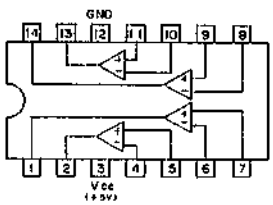
TL431CPS (TI) FLAT PACKAGE

ADJUSTABLE PRECISION SHUNT REGULATOR
– TOP VIEW –



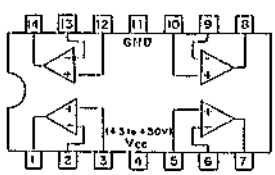
UPC339G2 (NEC) FLAT PACKAGE

QUAD COMPARATORS
– TOP VIEW –



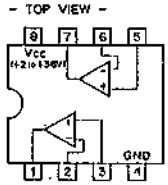
UPC324G2 (NEC) FLAT PACKAGE

QUAD OPERATIONAL AMPLIFIERS
– TOP VIEW –



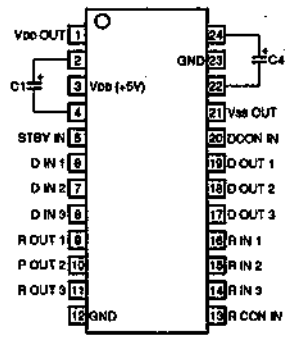
UPC393G2 (NEC) FLAT PACKAGE

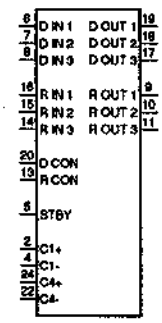
DUAL VOLTAGE COMPARATORS
– TOP VIEW –



UPD4713GT (NEC) FLAT PACKAGE

C-MOS RS-232D LINE DRIVER/RECEIVER
-TOP VIEW-



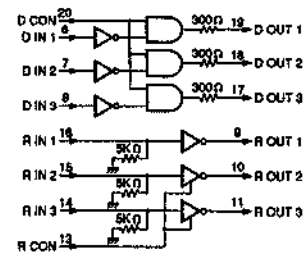


DRIVER					
STBY	DCON	D IN	D OUT	FUNCTION
1	X	X	HI-Z	STANDBY MODE (D/D CON OFF)
0	0	X	0	MARK LEVEL OUTPUT
0	1	0	1	SPACE LEVEL OUTPUT
0	1	1	0	MARK LEVEL OUTPUT

RECEIVER			
STBY	D IN	D OUT	FUNCTION
1	X	HI-Z	STANDBY MODE (D/D CON OFF)
0	0	1	MARK LEVEL INPUT
0	1	0	SPACE LEVEL INPUT

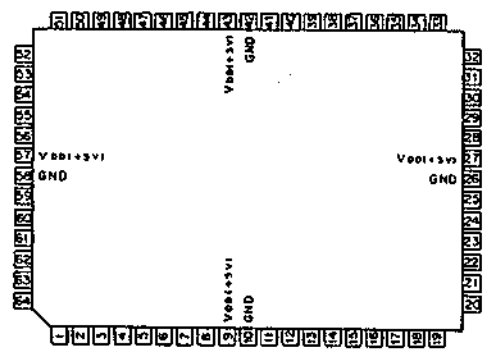
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

D IN 1-D IN 3 ; DRIVE DATA INPUTS
D OUT 1-D OUT 3 ; DRIVE DATA OUTPUTS
D CONT ; DRIVER CONTROL INPUT
R IN 1-R IN 3 ; RECEIVE DATA INPUTS
R OUT 1-R OUT 3 ; RECEIVE DATA OUTPUTS
R CONT ; RECEIVER CONTROL INPUT
STBY ; STANDBY



UPD65006GF-250-3B8 (NEC)

C-MOS
— TOP VIEW —

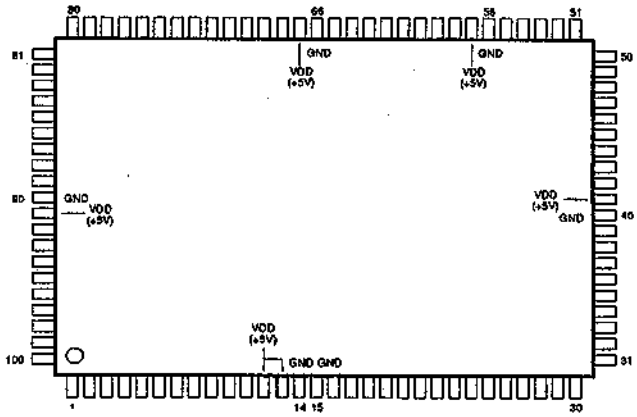


PIN NO	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME
1		17	P8	33		49	INT VD
2		18	P9	34		50	
3	MEMO HDL	19	P10	35	HDL7	51	
4	SMB HDL	20	CAS1	36	HDL6	52	INT HD
5	SWD VD	21	CAS2	37	HDL5	53	INT SYNC
6	VBLK	22	CUP	38	HDL4	54	SWD HD
7	P0	23	VBLK	39	HDL3	55	MONI SYNC
8	P1	24	&EN	40	HDL2	56	SHD DET
9	VDD	25	IN/M	41	HDL1	57	VDD
10	GND	26	GND	42	GND	58	GND
11	P2	27	VDD	43	VDD	59	HD
12	P3	28	HD REF	44	D/A CK	60	SYNC
13	P4	29	HD OUT	45	RAS	61	VD
14	P5	30	RES	46	CK	62	FIELD
15	P6	31	HDL9	47	EXT D/A	63	SMB/SP4
16	P7	32	HDL8	48	INT D/A	64	IN/SEMB

UPD65013GF-407-3BA

C-MOS GATE ARRAY

— TOP VIEW —

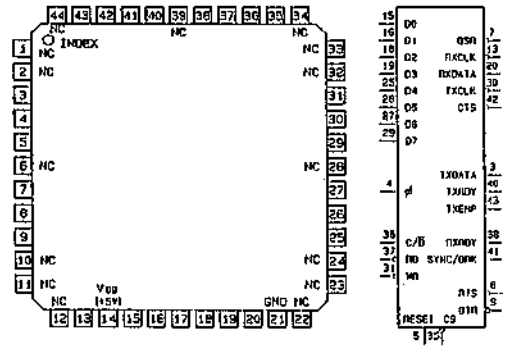


PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1		CS1O	26		CAS2	51		A0	76		G2BE
2		CS0O	27		CAS1	52		A1	77		G1AE
3		MFY3	28		CAS0	53		A2	78		G1BE
4		MY3	29		RAS9	54		A3	79		G1AW
5		MY2	30		RAS8	55		A4	80		G1BW
6		MY1	31		RAS7	56		GND	81		R2AW
7		MY0	32		RAS6	57		VDD (+5V)	82		R2BW
8		Y3	33		RAS5	58		A5	83		R2AE
9		Y2	34		RAS4	59		A6	84		R2BE
10		Y1	35		RAS3	60		A7	85		R1AE
11		Y0	36		RAS2	61		A8	86		R1BE
12		VDD (+5V)	37		RAS1	62		A9	87		R1AW
13		VDD (+5V)	38		RAS0	63		B2BW	88		R1BW
14		GND	39		CAS5	64		B2AE	89		INMB
15		GND	40		GND	65		B2AW	90		GND
16		CS2B	41		VDD (+5V)	66		GND	91		VDD (+5V)
17		CRB	42		CAS6	67		VDD (+5V)	92		AEN
18		CS1B	43		CAS7	68		B2BE	93		HBL
19		BCBB	44		CAS8	69		B1AE	94		VBL
20		BCGB	45		ABRB	70		B1BE	95		CUP
21		BCRB	46		CAS9	71		B1AW	96		CRY
22		MBRW	47		CS0	72		B1BW	97		CS4
23		FTHB	48		CS1	73		G2AW	98		CS4O
24		CAS4	49		CS2	74		G2BW	99		CS3O
25		CAS3	50		CS3	75		G2AE	100		CS2O

UPD71051GB-10-3B4 (NEC) FLAT PACKAGE

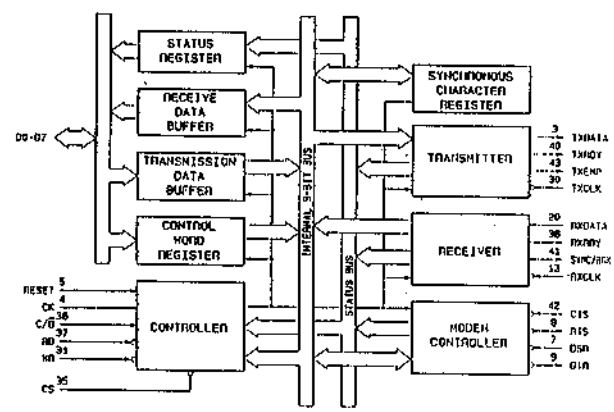
C-MOS SERIAL CONTROLLER

— TOP VIEW —



PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	—	NC	12	—	NC	23	—	NC	34	—	NC
2	—	NC	13	I	RXCLK	24	—	NC	35	I	CS
3	O	TXDATA	14	—	Vcc (+5V)	25	I/O	D4	36	I	C/D
4	I	CK	15	I/O	D0	26	I/O	D5	37	I	RD
5	I	RESET	16	I/O	D1	27	I/O	D6	38	O	RXRDY
6	—	NC	17	—	IC	28	—	NC	39	—	NC
7	I	DSR	18	I/O	D2	29	I/O	D7	40	O	TXRDY
8	O	RTS	19	I/O	D3	30	I	TXCLK	41	I/O	SYNC/BRK
9	O	DTR	20	I	RXDATA	31	I	WR	42	I	CTS
10	—	NC	21	—	GND	32	—	NC	43	O	TXEMP
11	—	NC	22	—	NC	33	—	NC	44	—	NC

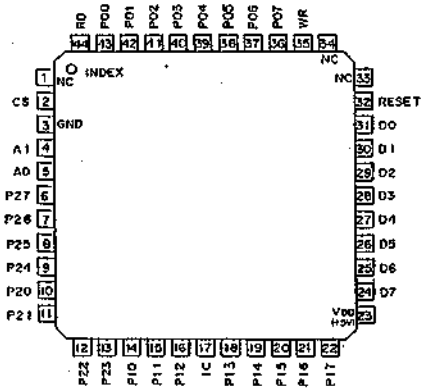
CS ; CHIP SELECT INPUT
CTS ; CLEAR TO SEND OUTPUT
C/D ; CONTROL/DATA SELECT INPUT
D0-D7 ; DATA INPUTS/OUTPUTS
DSR ; DATA SET READY INPUT
DTR ; DATA TERMINAL READY OUTPUT
TXCLK ; TRANSMITTER CLOCK INPUT
TXDATA; TRANSMIT DATA OUTPUT
TXEMP ; TRANSMITTER EMPTY OUTPUT
TXRDY ; TRANSMIT READY OUTPUT
RD ; READ STROBE INPUT
RESET ; RESET INPUT
RTS ; REQUEST TO SEND OUTPUT
RXCLK ; RECEIVER CLOCK INPUT
RXDATA ; RECEIVE DATA INPUT
RXRDY ; RECEIVER READY OUTPUT
SYNC/BRK; SYNCHRONIZATION/BREAK INPUT/OUTPUT
WR ; WRITE STROBE INPUT

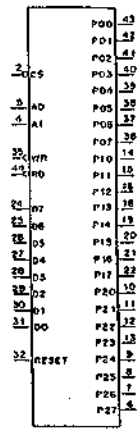


UPD71055GB-10-3B4 (NEC) FLAT PACKAGE

C-MOS PARALLEL INTERFACE UNIT

– TOP VIEW –





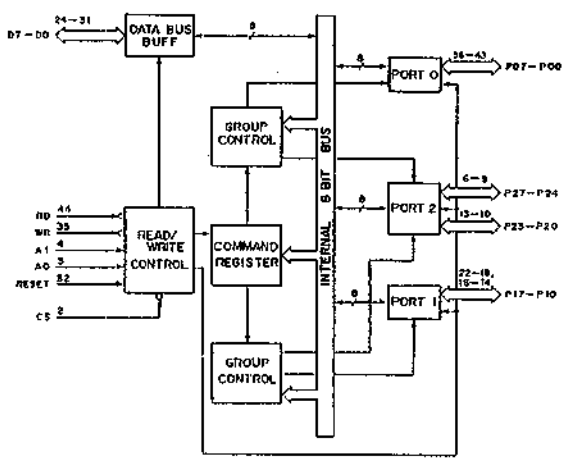
A1, A0 : ADDRESS
CS : CHIP SELECT
D7 – D0 : DATA BUS
P07 – P00 : PORT 0

P17 – P10 : PORT 1
P27 – P20 : PORT 2
RD : READ STROBE
WR : WRITE STROBE

IC : INTERNALLY CONNECTED

CS	RD	WR	A1	A0	OPERATION	CPU ACTION
0	0	1	0	0	PROT 0 → DATA-BUS	INPUT
0	0	1	0	1	PROT 1 → DATA-BUS	INPUT
0	0	1	1	0	PROT 2 → DATA-BUS	INPUT
0	0	1	1	1	DISABLE	
0	0	0	X	X		
0	1	0	0	0	DATA-BUS → PROT 0	OUTPUT
0	1	0	0	1	DATA-BUS → PROT 1	OUTPUT
0	1	0	1	0	DATA-BUS → PROT 2	OUTPUT
0	1	0	1	1	DATA-BUS → COMMAND REGISTER	OUTPUT
0	1	1	X	X	HIGH IMPEDANCE	
1	X	X	X	X		

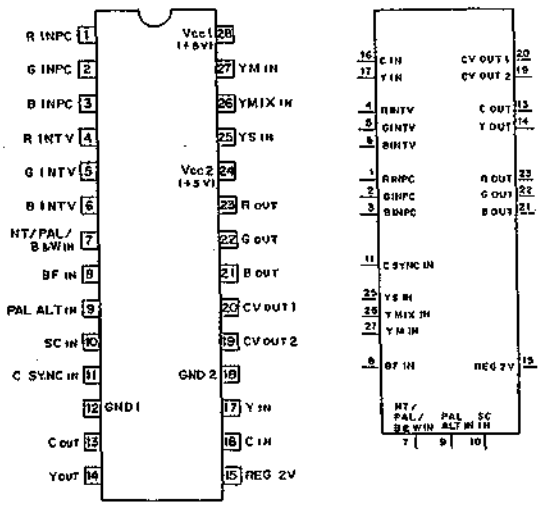
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

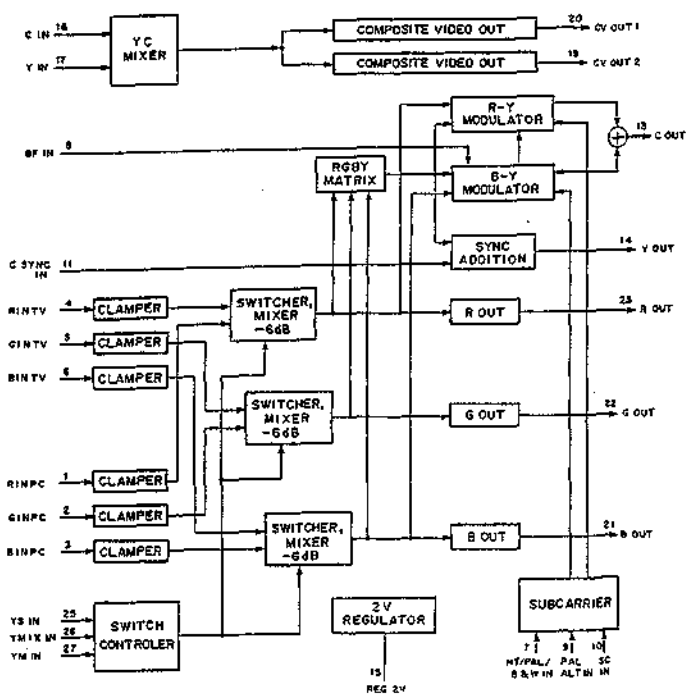


V7040(SONY)

NTSC/PAL ENCODER

— TOP VIEW —





FUNCTION TABLE

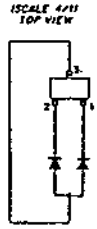
PIN NO.	SYMBOLIC NAME	DESCRIPTION
1	RINPC	RED INPUT FROM PERSONAL COMPUTER
2	GINPC	GREEN INPUT FROM PERSONAL COMPUTER
3	BINPC	BLUE INPUT FROM PERSONAL COMPUTER
4	RINTV	RED INPUT FROM TV
5	GINTV	GREEN INPUT FROM TV
6	BINTV	BLUE INPUT FROM TV
7	NT/PAL/B&W IN	MODE SELECTION VOLTAGE INPUT NTSC MODE: 4.0V ≅ V7 PAL MODE: 2.0V ≦ V7 ≦ 3.0V BLACK AND WHITE MODE: V7 ≦ 0.8V V7 IS THE VOLTAGE MUST BE APPLIED
8	BF IN	BURST FLAG SIGNAL INPUT
9	PAL ALT IN	PAL LINE ALTERNATION PULSE INPUT
10	SC IN	SUBCARRIER INPUT
11	C SYNC IN	COMPOSITE SYNCHRONIZING SIGNAL INPUT
12	GND1	GROUND EXCLUDED RGB OUT AND CV OUT
13	C OUT	CHROMA SIGNAL OUTPUT
14	Y OUT	Y SIGNAL OUTPUT
15	REG 2V	REFERENCE VOLTAGE
16	C IN	CHROMA SIGNAL INPUT
17	Y IN	Y SIGNAL INPUT
18	GND2	GROUND FOR RGB OUT AND CV OUT STAGES
19	CV OUT2	
20	CV OUT1	COMPOSITE VIDEO SIGNAL OUTPUT
21	B OUT	BLUE SIGNAL OUTPUT
22	G OUT	GREEN SIGNAL OUTPUT
23	R OUT	RED SIGNAL OUTPUT
24	Vcc2	Vcc FOR RGB OUT AND CV OUT STAGES
25	YS IN	See below table.
26	YMIX IN	
27	YM IN	
28	Vcc1	Vcc EXCLUDED RGB OUT AND CV OUT STAGES

YS/YMIX/YM SWITCH TABLE

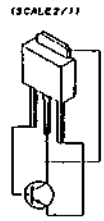
YS	YMIX	YM	MODE
L	L	L	TV
L	L	H	HALF TONE
L	H	L	TV
L	H	H	HALF TONE
H	L	L	PC
H	L	H	PC
H	H	L	MIX
H	H	H	MIX

L ≦ 0.8V
H ≧ 2.0V

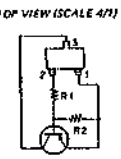
1S2836



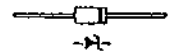
2SB962



DTA114EK



RD9.1EW



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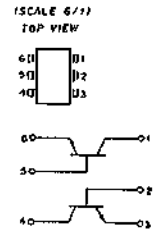

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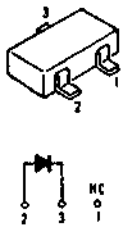

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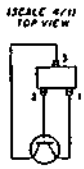
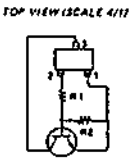
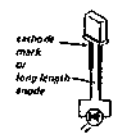


DTC114EK
DTC124EK
DTC144EK



SLP-255B



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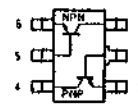

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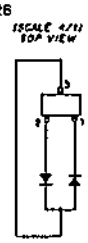

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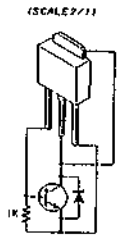
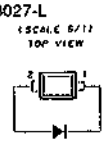


MA8027-L



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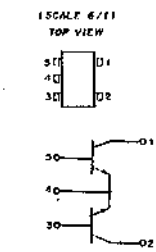

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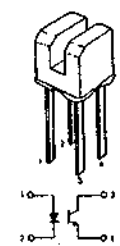

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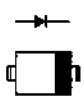

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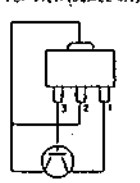
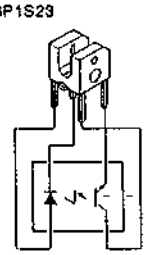


GP1S23



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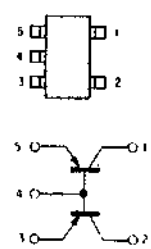

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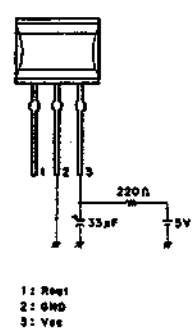

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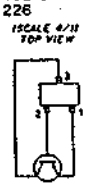
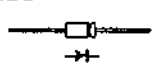
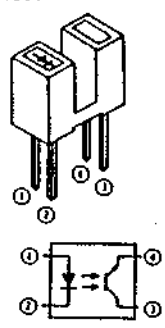


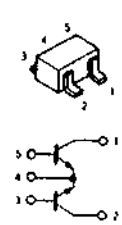
10E-2



GP1S54



XN2501



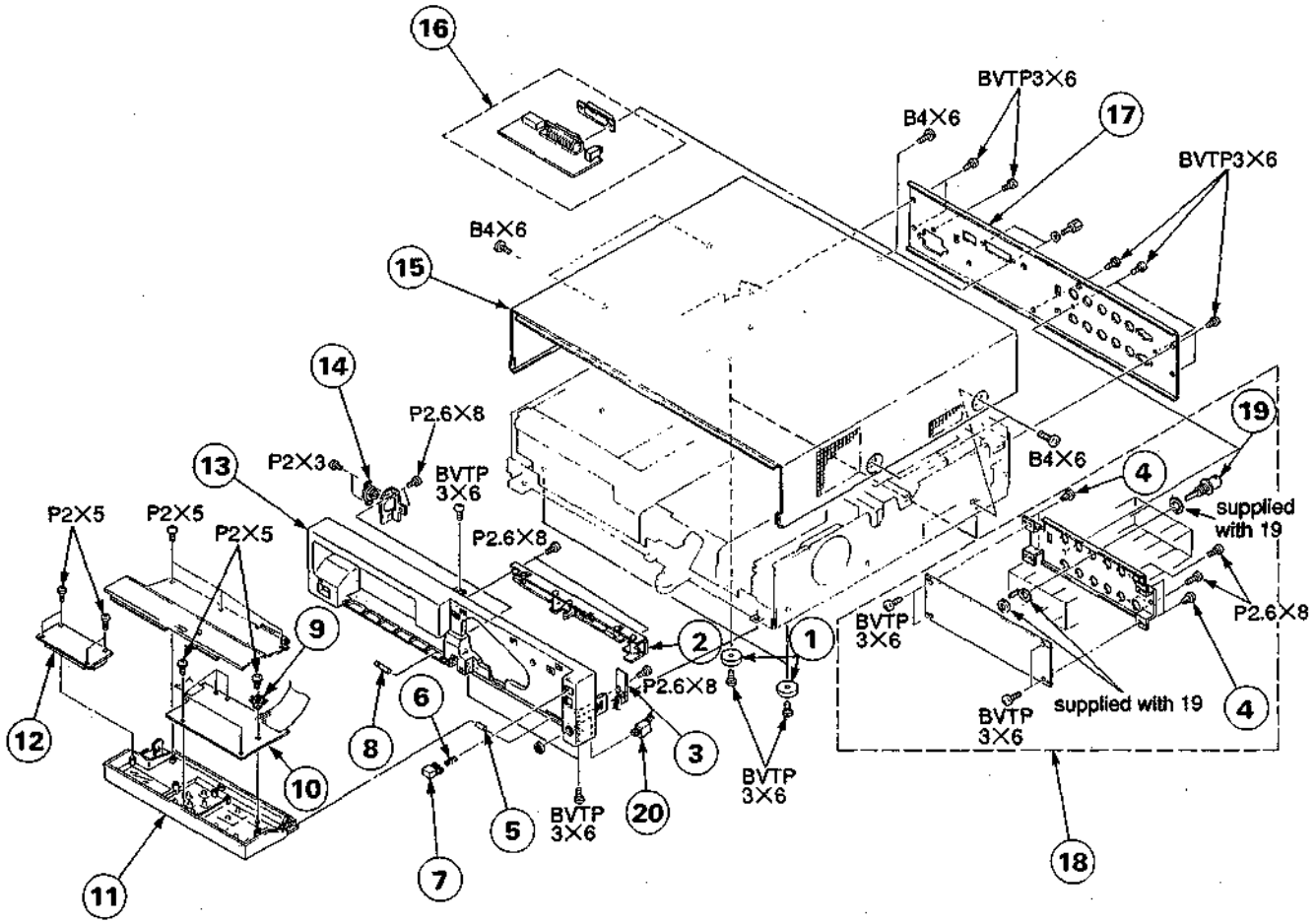
SECTION 5
EXPLODED VIEWS

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " * " are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

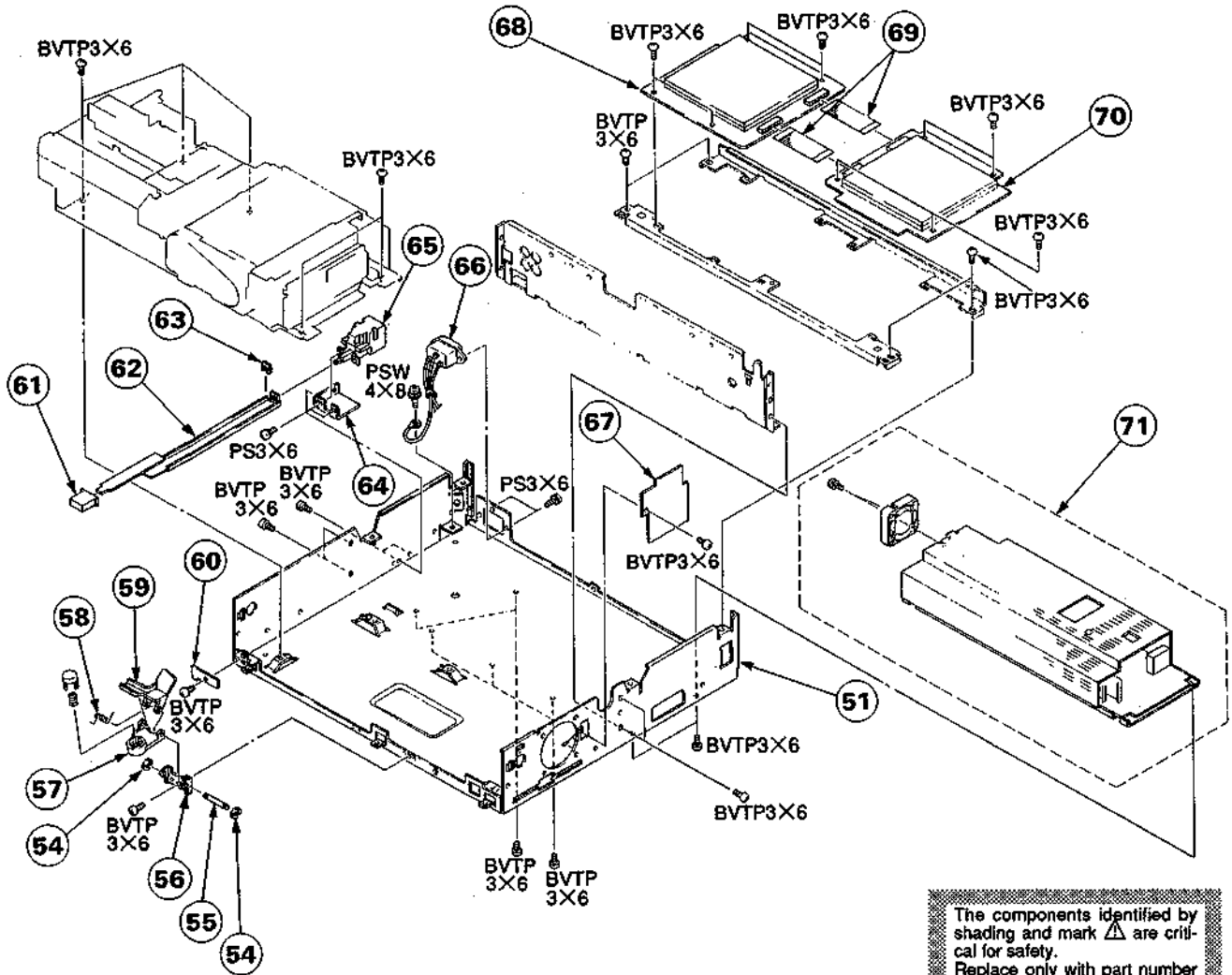
The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET ASSEMBLY



Ref.No	Part No.	Description	Remark
1	X-4816-109-1	FOOT ASSY, MINI	
2	A-8267-875-C	CLOSE ASSY, DOOR OPEN	
3	*A-8275-451-A	PTC-27 BOARD, COMPLETE	
4	1-562-261-41	CONNECTOR, COAXIAL (BNC)	
5	3-183-189-01	SHAFT (R), DOOR FULCRUM	
6	3-183-581-02	SPRING, COMPRESSION COIL	
7	3-183-186-03	BUTTON, OPEN	
8	3-183-188-01	SHAFT (L), DOOR FULCRUM	
9	3-183-656-01	SPRING (KY), PLATE	
10	1-692-855-11	(LCD) KEYBOARD, FFC WITH	
11	X-3167-376-1	PANEL SUB ASSY, DOOR (UP-1800EPM)	
	X-3167-378-1	PANEL SUB ASSY, DOOR (UP-1850EPM)	
12	1-810-412-11	LCD MODULE	
13	X-3167-373-1	PANEL, FRONT SUB ASSY	
14	3-712-786-21	DUMPER, OIL	
15	*3-183-254-01	COVER, TOP	
16	*A-8275-461-A	IF-29 BOARD, COMPLETE	
17	*3-183-627-01	PANEL (RGB), REAR	
18	*A-8275-454-A	IF-28 BOARD, COMPLETE	
19	3-531-576-11	RIVET, NYLON	
20	1-507-195-21	SPECIAL REMOTE CONTROL JACK	

5-2. CHASSIS ASSEMBLY(1)

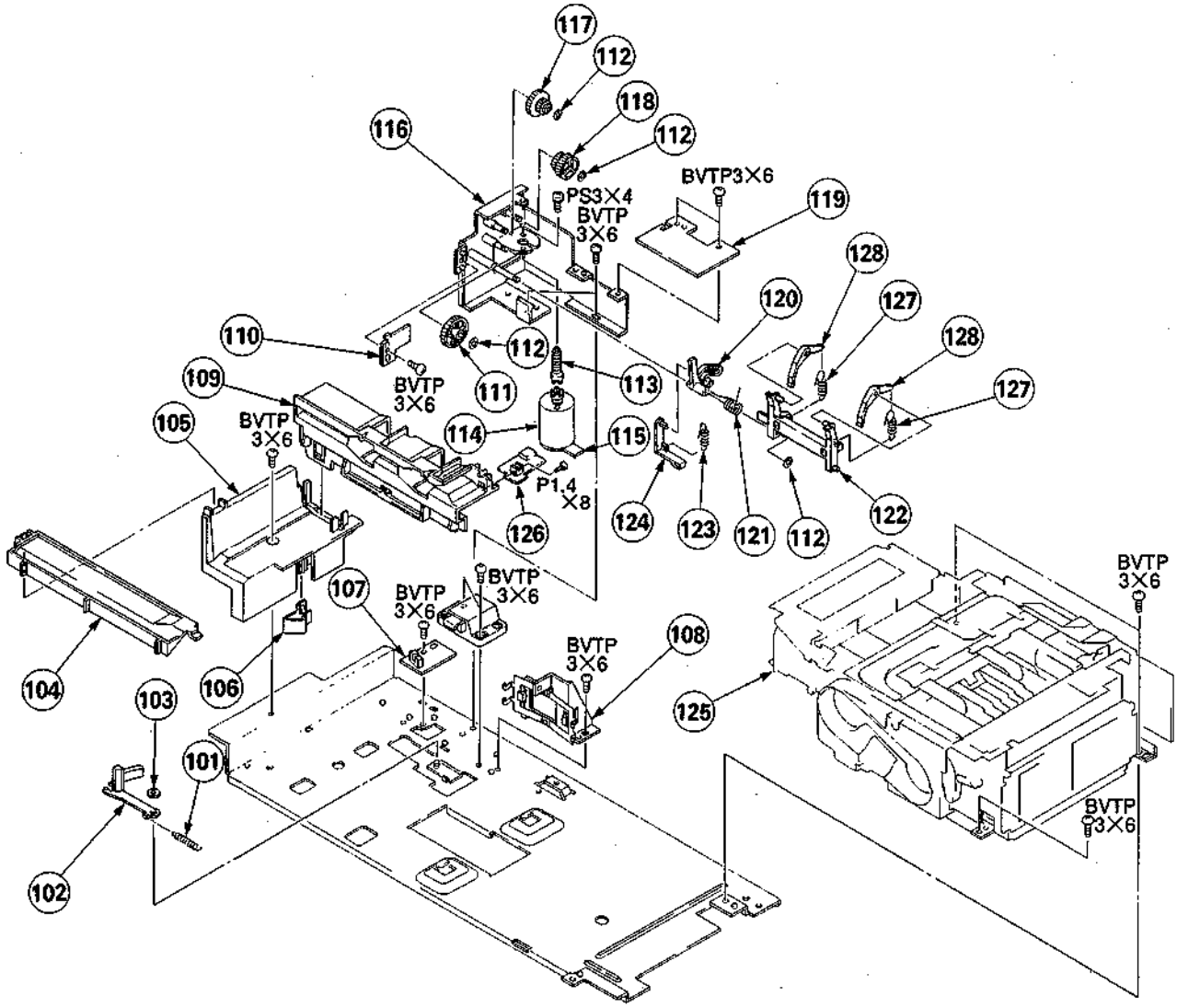


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description	Remark
51	*3-183-255-01	CHASSIS	
54	4-926-219-02	RING (DIA.2.3), RETAINING	
55	3-183-200-01	SHAFT, RIBBON PUSH	
56	3-183-187-01	PLATE, FULCRUM	
57	3-183-239-01	PLATE PUSH RIBBON	
58	3-183-183-02	SPRING, TORSION	
59	3-183-238-01	DISCHARGE PLATE, RIBBON	
60	*A-8275-437-A	S-25 BOARD, COMPLETE	
61	2-431-568-31	BUTTON, POWER	
62	*3-183-226-01	ROD, SWITCH	

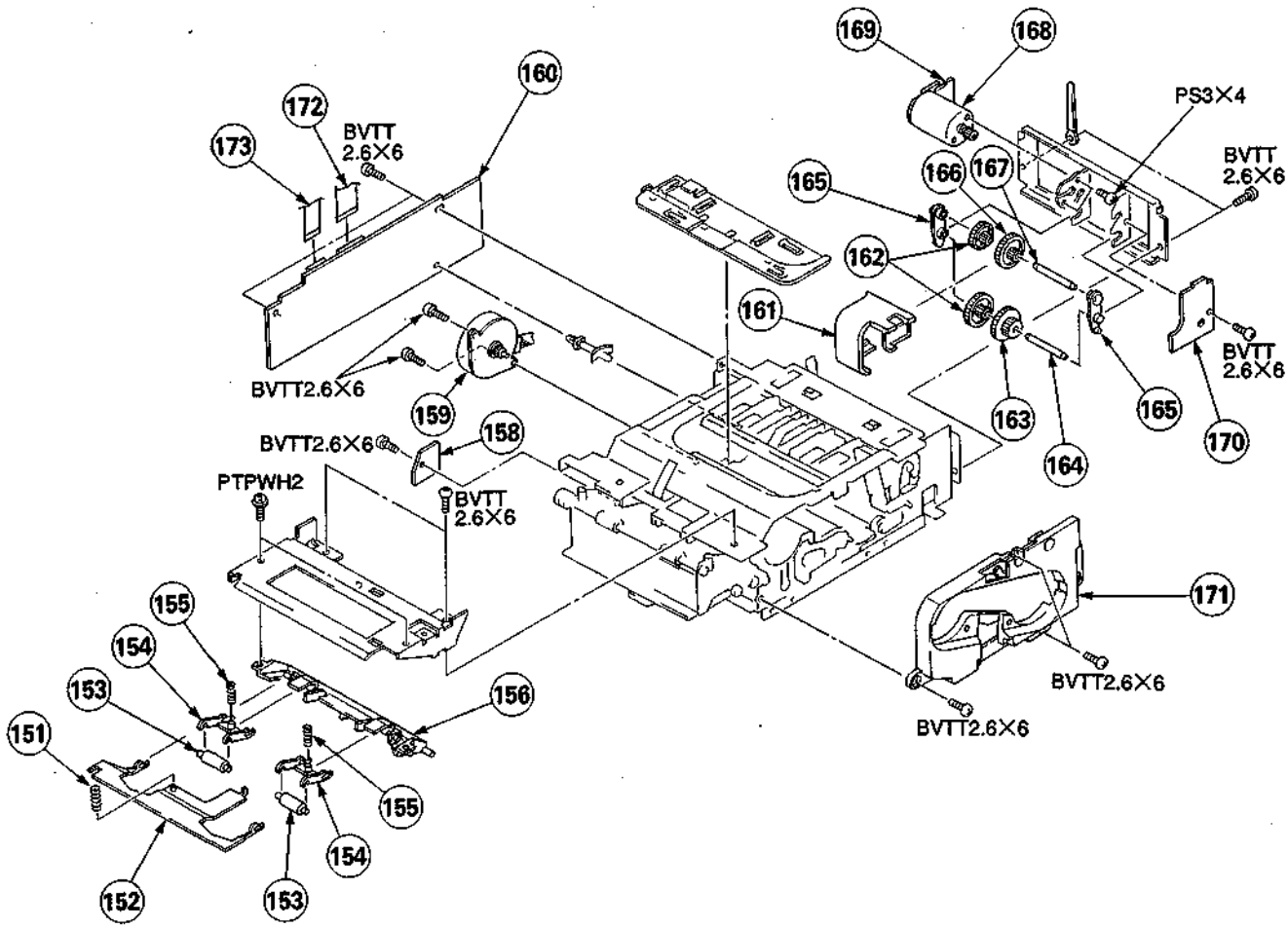
Ref.No	Part No.	Description	Remark
63	3-725-616-01	STOPPER, ROD	
64	*3-183-178-01	BRACKET, SWITCH	
65	⚠1-554-880-12	SWITCH, PUSH (AC POWER) (1 KEY)	
66	⚠1-580-375-11	INLET 3P	
67	*A-8275-438-A	KY-15 BOARD, COMPLETE	
68	*A-8275-528-A	FMY-10P(L) BOARD, COMPLETE (UP-1800EPM)	
	*A-8275-495-A	FMY-10P(H) BOARD, COMPLETE (UP-1850EPM)	
69	1-751-235-11	CABLE, FLAT (FVM-2)	
70	*A-8275-527-A	VA-14 BOARD, COMPLETE	
71	⚠*1-413-946-11	SWITCHING REGULATOR	

5-3. CHASSIS ASSEMBLY(2)



Ref.No	Part No.	Description	Remark
101	3-183-184-01	SPRING, EXTENSION	
102	3-183-185-02	LEVER, PAPER SENSOR	
103	3-325-697-01	WASHER	
104	3-183-240-01	GUIDE, EXIT	
105	3-183-253-01	GUIDE, TRAY	
106	3-183-181-01	SPRING, TRAY	
107	*A-8275-444-A	SW-42 BOARD, COMPLETE	
108	X-3167-310-1	COUNTREMEASURE ASSY	
109	3-183-610-01	COVER	
110	*A-8275-443-A	SW-39 BOARD, COMPLETE	
111	X-3167-307-1	SUB GEAR ASSY, BOSS	
112	4-926-219-02	RING (DIA.2.3), RETAINING	
113	3-950-038-01	GEAR, WORM	
114	X-3942-172-1	MOTOR ASSY, RIBBON	
115	*1-650-853-12	SU-10 BOARD	
116	X-3167-308-2	SUB ASSY, MOTOR BRACKET	
117	3-950-040-01	GEAR (2), RD	
118	3-950-039-01	GEAR (1), RD	
119	*A-8275-445-A	DUS-12 BOARD, COMPLETE	
120	3-183-228-02	LINK	
121	3-183-218-02	SPRING, TORSION	
122	3-183-251-02	ARM	
123	3-183-176-01	SPRING, EXTENSION	
124	3-183-229-02	LEVER, TRAY LOCK	
125	*A-8267-804-A	MD (P231) ASSY	
126	*A-8275-442-A	SW-41 BOARD, COMPLETE	
127	3-183-602-01	SPRING, TENSION COIL	
128	3-183-603-02	LEVER, SUPPORT	

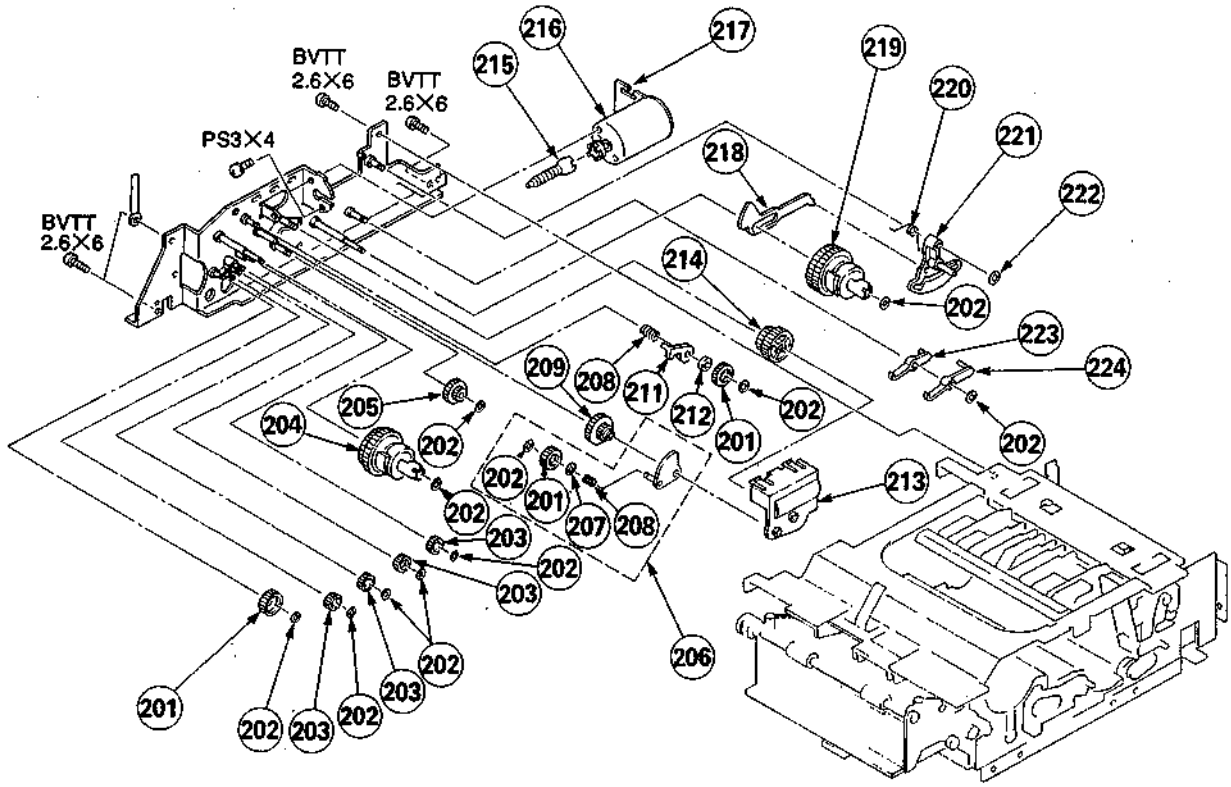
5-4. MECHANISM DECK ASSEMBLY(1)



Ref.No	Part No.	Description	Remark
151	3-183-629-01	SPRING, COMPRESSION (PAPER A)	
152	3-183-605-01	SENSOR LEVER	
153	3-950-009-01	ROLLER, PAPER	
154	3-950-010-01	ARM, PAPER ROLLER	
155	3-950-013-01	SPRING, COMPRESSION	
156	3-183-609-02	GUIDE, UPPER	
158	*A-8275-441-A	SW-213 BOARD, COMPLETE	
159	X-3942-126-1	MOTOR ASSY, STEPPING	
160	*A-8275-496-A	HM-22P(H) BOARD, COMPLETE	
161	*3-952-505-01	GUARD, HEAD GEAR	
162	3-950-019-01	GEAR (A), HEAD DRIVE	

Ref.No	Part No.	Description	Remark
163	3-950-015-01	GEAR (B), HEAD DRIVE	
164	*3-950-020-01	SHAFT, HEAD DRIVE GEAR	
165	*3-950-017-01	HOLDER, HEAD DRIVE GEAR	
166	3-956-727-01	GEAR (E), HEAD DRIVE	
167	*3-950-214-01	SHAFT (S), HEAD DRIVE GEAR	
168	X-3942-122-1	MOTOR, HEAD DRIVE GEAR ASSY	
169	*A-8275-435-A	SW-215 BOARD, COMPLETE	
170	*A-8275-436-A	SW-212 BOARD, COMPLETE	
171	X-3167-377-1	GUIDE ASSY, CASSETTE ENTRANCE	
172	1-765-052-11	WIRE, FLAT TYPE (16 CORE)	
173	1-765-051-11	WIRE, FLAT TYPE (7 CORE)	

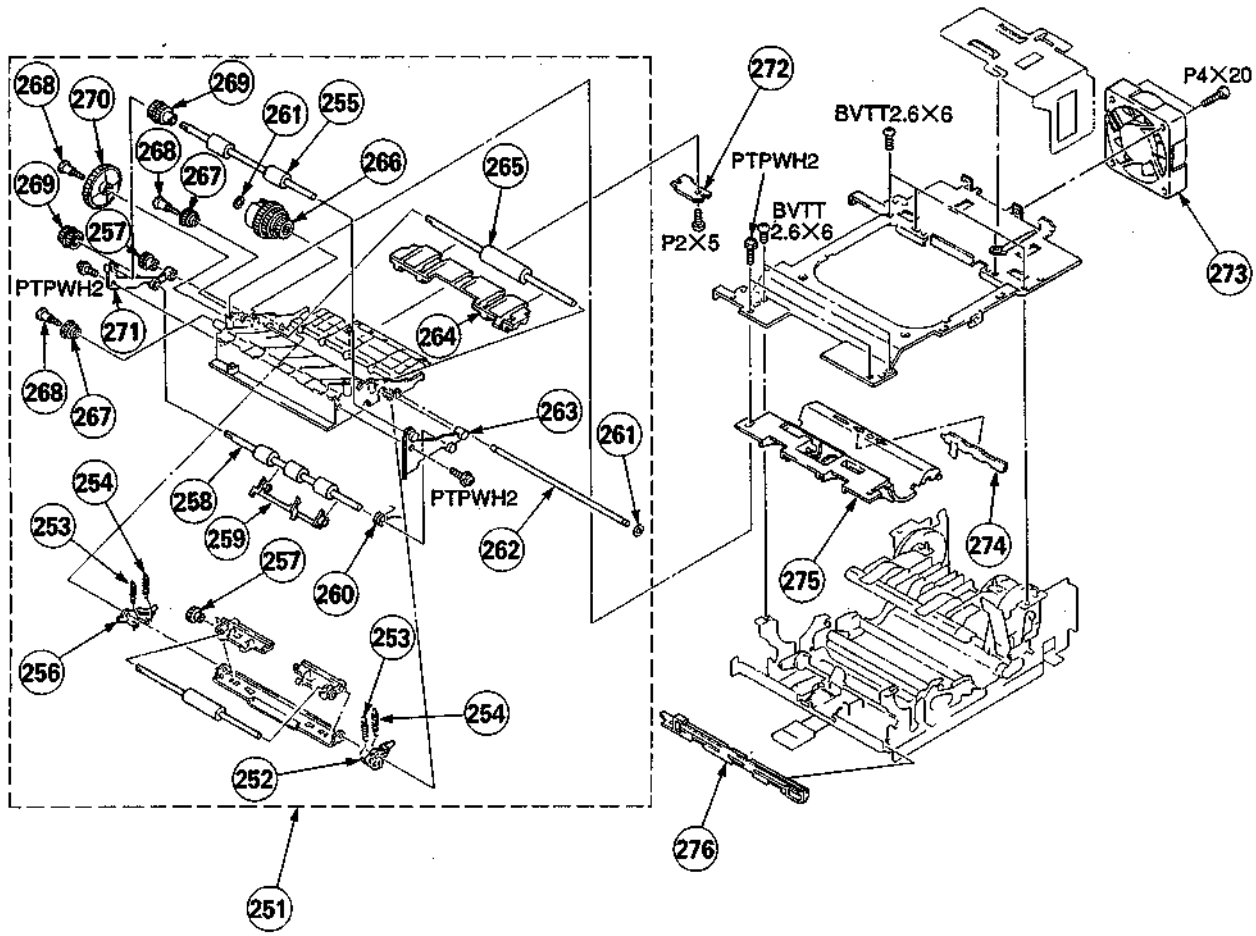
5-5. MECHANISM DECK ASSEMBLY(2)



Ref.No	Part No.	Description	Remark
201	3-950-045-01	GEAR (20)	
202	3-681-678-00	WASHER, STOPPER	
203	3-949-935-01	GEAR (16)	
204	A-7018-137-A	REEL (T) BLOCK ASSY, RIBBON	
205	3-950-048-01	GEAR, SPM IDLER	
206	*A-7018-136-A	ARM BLOCK ASSY, PENDULUM	
207	3-701-441-01	WASHER	
208	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
209	3-950-040-01	GEAR (2), RD	
211	*3-950-046-01	ARM, T LOCK	
212	3-950-051-01	FELT, T LOCK	
213	3-950-049-01	COVER, GEAR	

Ref.No	Part No.	Description	Remark
214	3-950-039-01	GEAR (1), RD	
215	3-183-992-01	GEAR, WORM	
216	X-3942-172-1	MOTOR ASSY, RIBBON	
217	*A-8275-440-A	SW-216 BOARD, COMPLETE	
218	*3-950-035-01	PLATE, SLIDE	
219	A-7018-138-A	REEL (S) BLOCK ASSY, RIBBON	
220	3-950-050-01	SPRING, TORSION	
221	*X-3942-127-1	ARM ASSY, SLIDE	
222	4-926-219-02	RING (DIA.2.3), RETAINING	
223	*3-950-037-01	CLAW, RIBBON BRAKE	
224	*3-950-036-01	CLAW, RIBBON LOCK	

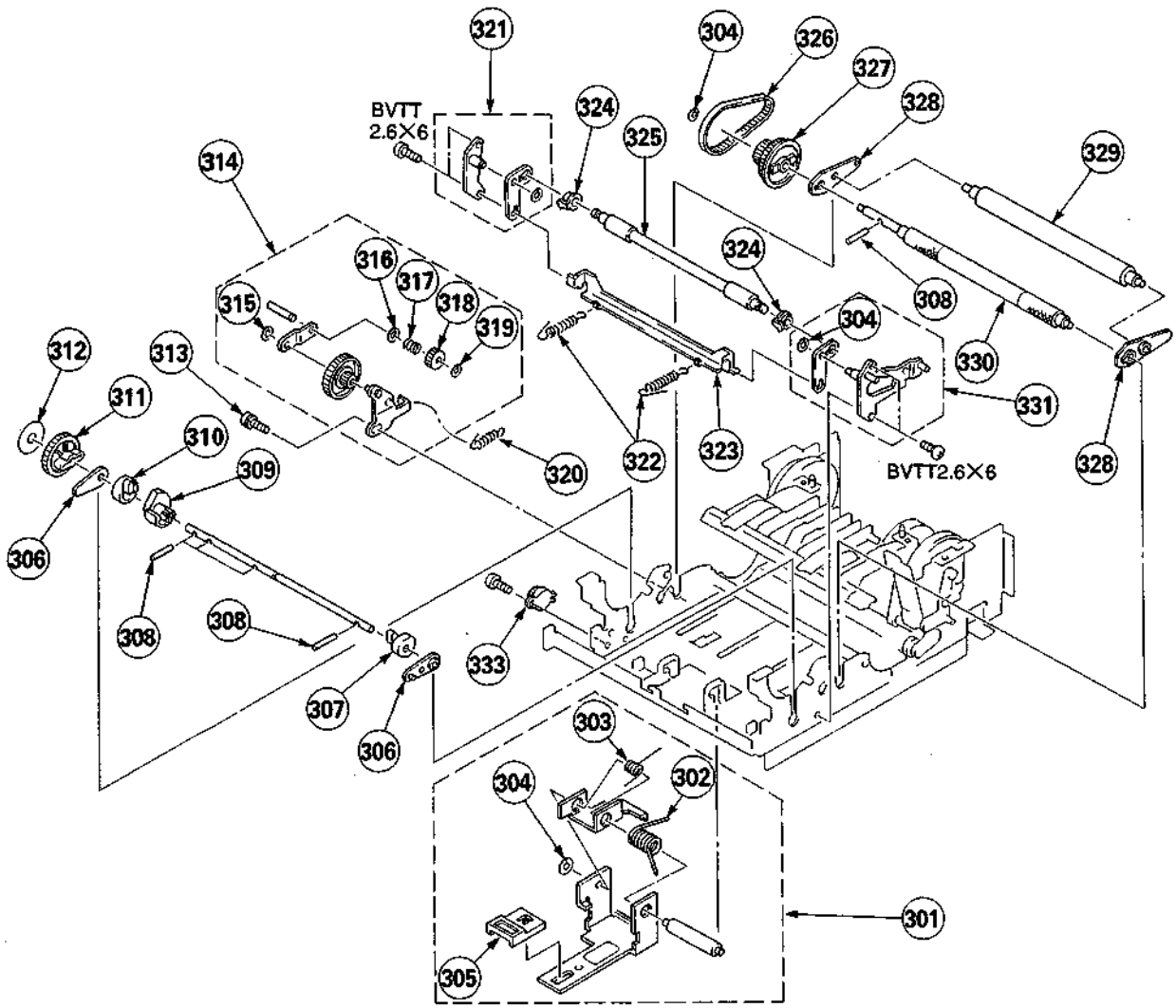
5-6. MECHANISM DECK ASSEMBLY(3)



Ref.No	Part No.	Description	Remark
251	*A-8267-975-B	PAPER ASSY	
252	*3-949-984-11	LEVER (R), RELEASE	
253	3-949-994-01	SPRING, TENSION	
254	3-949-996-01	SPRING (RELEASE LEVER), TENSION	
255	3-183-205-01	ROLLER	
256	*3-949-983-11	LEVER (L), RELEASE	
257	3-949-987-01	GEAR (16D)	
258	3-183-607-01	ROLLER K	
259	*3-949-986-01	RETAINER, PAPER	
260	3-183-204-01	SP (EP), RETAINER	
261	4-926-219-02	RING (DIA. 2. 3), RETAINING	
262	*3-949-990-01	SHAFT, LIMITER	
263	3-183-230-01	SHAFT RETAINER R (EP)	

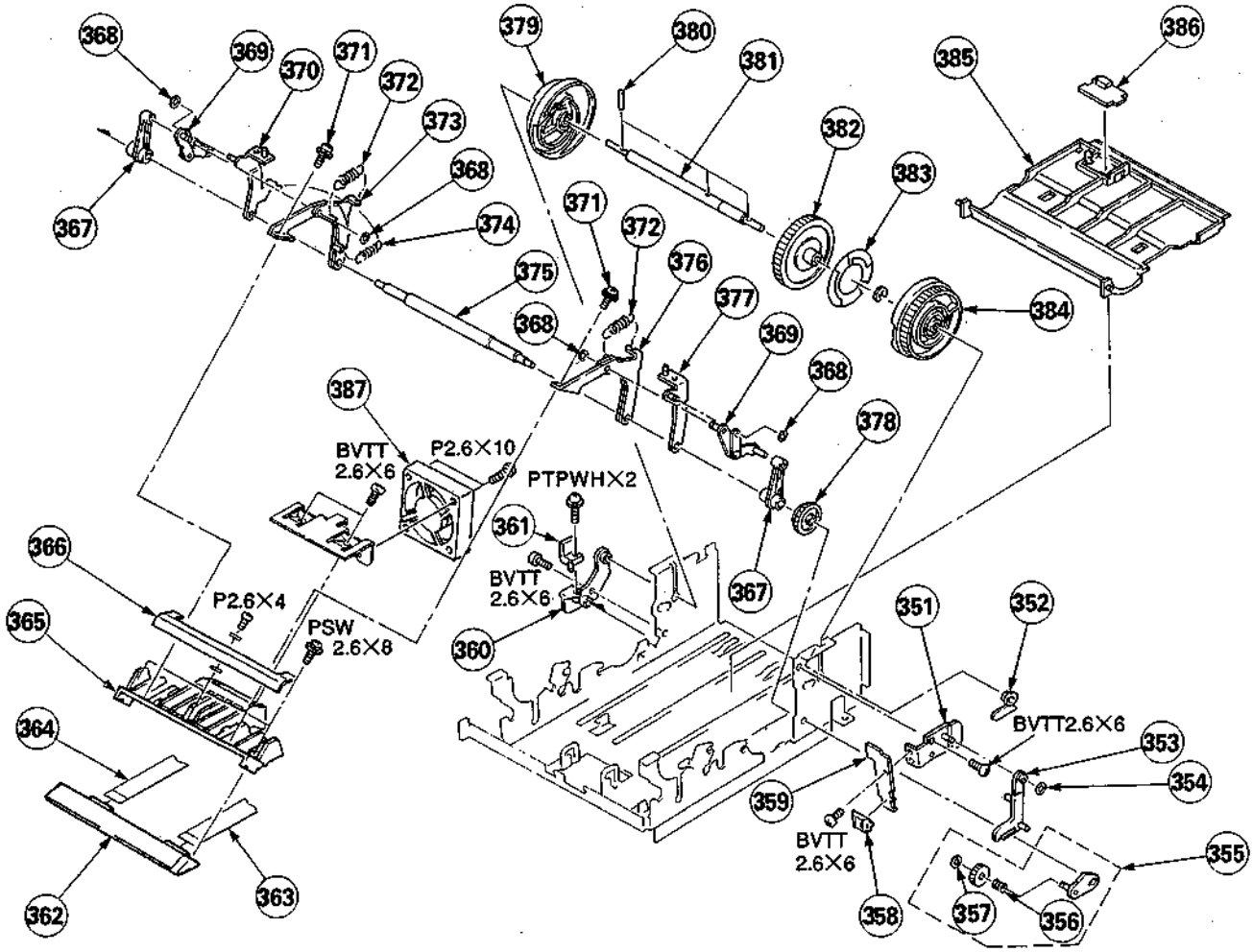
Ref.No	Part No.	Description	Remark
264	*3-949-985-01	SHUTTER, PAPER	
265	3-949-982-01	ROLLER (F)	
266	A-7018-141-A	LIMITER BLOCK ASSY	
267	3-949-989-01	GEAR (16F)	
268	3-950-001-01	SCREW, STEP	
269	3-949-988-01	GEAR (20-21)	
270	3-183-206-01	GEAR	
271	3-183-231-01	SHAFT RETAINER L (EP)	
272	*A-8275-433-A	COMPLETE PCB, SW-208	
273	1-541-684-41	MOTOR, DC	
274	*A-8275-434-A	SW-211 BOARD, COMPLETE	
275	*3-950-003-01	GUIDE (1), CASSETTE	
276	3-183-232-01	GUIDE, TRAY	

5-7. MECHANISM DECK ASSEMBLY(4)



Ref.No	Part No.	Description	Remark
301	*A-8267-878-C	ARM ASSY	
302	3-183-212-02	TORSION SPRING	
303	3-183-213-03	TORSION SPRING	
304	4-926-219-02	RING (DIA.2.3), RETAINING	
305	3-183-209-02	LEVER	
306	*3-949-912-01	BEARING, PRESS	
307	*3-950-308-01	CAM (R), RETAINER ROLLER PRESS	
308	3-949-911-01	PIN	
309	3-183-216-01	CAM	
310	*3-949-948-01	CAM (L), RETAINER ROLLER PRESS	
311	3-949-951-01	GEAR, P DRIVING	
312	3-949-952-01	REFLECTOR, P SENSOR	
313	3-951-872-01	SCREW (2.6X6)	
314	A-7018-148-A	ARM BLOCK ASSY, TENSION	
315	3-669-596-01	WASHER (2. 3), STOPPER	
316	3-701-441-01	WASHER	
317	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
318	3-949-935-01	GEAR (16)	
319	3-681-678-00	WASHER, STOP	
320	3-954-567-01	SPRING (TENSION PLATE), TENSION	
321	*A-7018-157-A	ARM (L) BLOCK ASSY, ROLLER	
322	3-955-157-01	SPRING, TENSION	
323	*3-949-939-01	PRESSURE, CAP	
324	3-949-937-01	BEARING, RETAINER ROLLER	
325	3-183-606-01	ROLLER, RETAINER	
326	3-949-915-01	BELT	
327	3-949-918-01	GEAR, CAPSTAN	
328	3-949-910-01	BEARING, PLATEN	
329	*3-949-908-01	ROLLER, PLATEN	
330	*3-949-907-01	ROLLER, CAPSTAN	
331	*A-7018-156-A	ARM (R) BLOCK ASSY, ROLLER	
333	4-036-880-01	DAMPER	

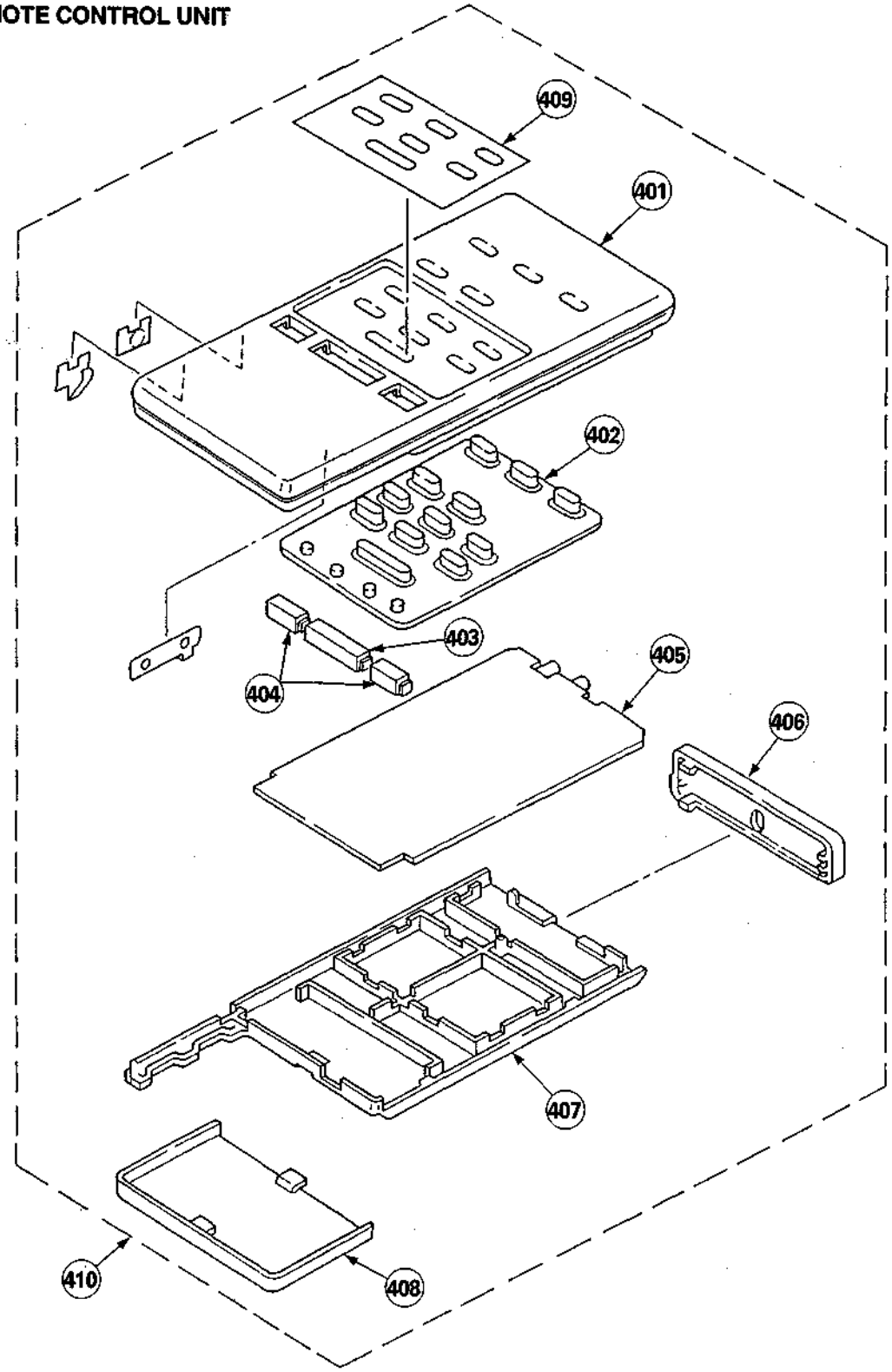
5-8. MECHANISM DECK ASSEMBLY(5)



Ref.No	Part No.	Description	Remark
351	*X-3942-121-1	ARM ASSY, LOCK	
352	3-949-916-01	BEARING, CAM SHAFT	
353	*3-950-022-01	ARM, LOCK	
354	3-669-596-01	WASHER (2. 3), STOPPER	
355	A-7018-146-A	GEAR BLOCK ASSY, SWING	
356	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
357	3-681-678-00	WASHER, STOP	
358	*3-952-169-01	COVER, SENSOR	
359	*A-8275-439-A	SW-210 BOARD, COMPLETE	
360	*3-949-974-01	BEARING, HEAD ARM SHAFT	
361	*A-8275-453-A	SW-214 BOARD, COMPLETE	
362	1-500-114-11	HEAD, THERMAL	
363	1-751-238-11	CABLE, FLAT (FHH-1)	
364	1-751-239-11	CABLE, FLAT (FHH-2)	
365	*3-183-612-01	HEAT SINK	
366	*3-950-142-01	GUIDE, RIBBON	
367	3-949-917-01	LEVER, POWER	
368	4-926-219-02	RING (DIA.2.3), RETAINING	

Ref.No	Part No.	Description	Remark
369	*X-3942-117-1	LINK ASSY	
370	*X-3942-119-1	FULCRUM (L) ASSY, LINK	
371	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
372	3-954-605-01	SPRING (HEAD), TENSION	
373	*X-3942-160-1	ARM ASSY (L), POWER	
374	3-949-973-01	SPRING, TENSION	
375	*3-949-950-01	SHAFT, POWER ARM	
376	*X-3942-159-1	ARM ASSY (R), POWER	
377	*X-3942-118-1	FULCRUM (R) ASSY, LINK	
378	3-950-077-01	GEAR (A), RING SWING	
379	3-949-971-01	CAM (L), HEAD POWER"	
380	3-949-911-01	PIN	
381	*3-949-968-01	SHAFT, CAM	
382	3-949-969-01	GEAR (C), HEAD DRIVE	
383	3-949-972-01	PLATE, POSITION, HEAD	
384	3-949-970-01	CAM (R), HEAD POWER	
385	*3-949-909-01	GUIDE (2), CASSETTE	
386	*A-8275-452-A	SW-217 BOARD, COMPLETE	
387	1-698-019-31	MOTOR, DC (FAN)	

5-9. REMOTE CONTROL UNIT



Ref.No	Part No.	Description	Remark
401	9-901-744-01	ORNAMENTAL, PANEL	
402	9-901-745-01	SHEET, RUBBER	
403	2-290-632-00	BUTTON, PUSH (L)	
404	2-290-633-00	BUTTON, PUSH (R)	
405	9-997-457-01	SR-W2 BOARD	
406	9-997-453-01	PANEL, FRONT	
407	2-290-611-00	CASE, BOTTOM	
408	2-290-606-51	COVER, BATTERY	
409	9-997-456-01	LABEL, MODEL NUMBER	
410	1-465-508-21	COMMANDER, REMOTE	

SECTION 6
ELECTRICAL PARTS LIST

VA-14

NOTE:
- Items marked "*" are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise stated.

RESISTORS
- All resistors are in ohms.
- F:non-flammable

When indicating part by reference number, please include the board name.

CAPACITORS
- MF: μF, PF: μμF

COILS
- MMH: mH, UH: μH

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description			Remark
	*A-8275-527-A	VA-14 BOARD, COMPLETE **********			
		<CAPACITOR>			
C1	1-126-607-11	ELECT	47uF	20%	4V
C2	1-126-607-11	ELECT	47uF	20%	4V
C3	1-163-038-00	CERAMIC	0.1uF		25V
C4	1-126-607-11	ELECT	47uF	20%	4V
C5	1-126-205-11	ELECT	47uF	20%	6.3V
C6	1-163-038-00	CERAMIC	0.1uF		25V
C7	1-126-205-11	ELECT	47uF	20%	6.3V
C8	1-163-038-00	CERAMIC	0.1uF		25V
C9	1-163-089-00	CERAMIC	6PF		50V
C10	1-163-089-00	CERAMIC	6PF		50V
C11	1-164-004-11	CERAMIC	0.1uF	10%	25V
C31	1-126-607-11	ELECT	47uF	20%	4V
C32	1-126-607-11	ELECT	47uF	20%	4V
C33	1-163-038-00	CERAMIC	0.1uF		25V
C34	1-126-607-11	ELECT	47uF	20%	4V
C35	1-126-205-11	ELECT	47uF	20%	6.3V
C36	1-163-038-00	CERAMIC	0.1uF		25V
C37	1-126-205-11	ELECT	47uF	20%	6.3V
C38	1-163-038-00	CERAMIC	0.1uF		25V
C39	1-163-089-00	CERAMIC	6PF	0.5PF	50V
C40	1-163-089-00	CERAMIC	6PF	0.5PF	50V
C41	1-164-004-11	CERAMIC	0.1uF	10%	25V
C61	1-126-607-11	ELECT	47uF	20%	4V
C62	1-126-607-11	ELECT	47uF	20%	4V
C63	1-163-038-00	CERAMIC	0.1uF		25V
C64	1-126-607-11	ELECT	47uF	20%	4V
C65	1-126-205-11	ELECT	47uF	20%	6.3V
C66	1-163-038-00	CERAMIC	0.1uF		25V
C67	1-126-205-11	ELECT	47uF	20%	6.3V
C68	1-163-038-00	CERAMIC	0.1uF		25V
C69	1-163-089-00	CERAMIC	6PF		50V
C70	1-163-089-00	CERAMIC	6PF		50V
C71	1-164-004-11	CERAMIC	0.1uF	10%	25V
C80	1-163-038-00	CERAMIC	0.1uF		25V
C81	1-163-038-00	CERAMIC	0.1uF		25V
C82	1-163-038-00	CERAMIC	0.1uF		25V
C83	1-126-607-11	ELECT	47uF	20%	4V
C84	1-163-263-11	CERAMIC	330PF	5%	50V
C85	1-163-038-00	CERAMIC	0.1uF		25V
C86	1-163-038-00	CERAMIC	0.1uF		25V
C87	1-126-607-11	ELECT	47uF	20%	4V
C88	1-126-607-11	ELECT	47uF	20%	4V
C89	1-163-038-00	CERAMIC	0.1uF		25V
C90	1-126-205-11	ELECT	47uF	20%	6.3V
C91	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C92	1-163-038-00	CERAMIC	0.1uF		25V
C93	1-163-038-00	CERAMIC	0.1uF		25V
C94	1-163-038-00	CERAMIC	0.1uF		25V
C95	1-163-038-00	CERAMIC	0.1uF		25V
C96	1-128-065-11	ELECT	68uF	20%	10V
C97	1-126-206-11	ELECT	100uF	20%	6.3V
C98	1-126-206-11	ELECT	100uF	20%	6.3V
C99	1-163-038-00	CERAMIC	0.1uF		25V
C100	1-163-031-11	CERAMIC	0.01uF		50V
C101	1-126-607-11	ELECT	47uF	20%	4V
C102	1-163-031-11	CERAMIC	0.01uF		50V
C103	1-126-607-11	ELECT	47uF	20%	4V
C104	1-163-038-00	CERAMIC	0.1uF		25V
C105	1-163-038-00	CERAMIC	0.1uF		25V
C106	1-163-038-00	CERAMIC	0.1uF		25V
C107	1-163-038-00	CERAMIC	0.1uF		25V
C108	1-163-031-11	CERAMIC	0.01uF		50V
C109	1-126-607-11	ELECT	47uF	20%	4V
C110	1-163-038-00	CERAMIC	0.1uF		25V
C111	1-163-038-00	CERAMIC	0.1uF		25V
C112	1-126-209-11	ELECT	100uF	20%	4V
C113	1-126-607-11	ELECT	47uF	20%	4V
C114	1-163-038-00	CERAMIC	0.1uF		25V
C115	1-126-205-11	ELECT	47uF	20%	6.3V
C116	1-163-038-00	CERAMIC	0.1uF		25V
C117	1-126-193-11	ELECT	1uF	20%	50V
C118	1-163-263-11	CERAMIC	330PF	5%	50V
C119	1-126-193-11	ELECT	1uF	20%	50V
C120	1-164-161-11	CERAMIC	0.0022uF	10%	50V
C121	1-163-038-00	CERAMIC	0.1uF		25V
C122	1-163-251-11	CERAMIC	100PF	5%	50V
C124	1-163-275-11	CERAMIC	0.001uF	5%	50V
C125	1-126-602-11	ELECT	3.3uF	20%	50V
C126	1-163-038-00	CERAMIC	0.1uF		25V
C127	1-163-038-00	CERAMIC	0.1uF		25V
C128	1-126-205-11	ELECT	47uF	20%	6.3V
C129	1-126-607-11	ELECT	47uF	20%	4V
C130	1-163-087-00	CERAMIC	4PF		50V
C131	1-164-222-11	CERAMIC	0.22uF		25V
C132	1-126-193-11	ELECT	1uF	20%	50V
C133	1-126-205-11	ELECT	47uF	20%	6.3V
C134	1-163-038-00	CERAMIC	0.1uF		25V
C135	1-163-038-00	CERAMIC	0.1uF		25V
C136	1-163-227-11	CERAMIC	10PF		50V
C137	1-126-205-11	ELECT	47uF	20%	6.3V
C138	1-163-038-00	CERAMIC	0.1uF		25V
C139	1-163-038-00	CERAMIC	0.1uF		25V
C140	1-163-038-00	CERAMIC	0.1uF		25V
C141	1-163-038-00	CERAMIC	0.1uF		25V
C142	1-163-038-00	CERAMIC	0.1uF		25V

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Ref.No	Part No.	Description			Remark
C143	1-163-038-00	CERAMIC	0.1uF		25V
C144	1-163-038-00	CERAMIC	0.1uF		25V
C145	1-163-038-00	CERAMIC	0.1uF		25V
C146	1-163-038-00	CERAMIC	0.1uF		25V
C147	1-163-038-00	CERAMIC	0.1uF		25V
C148	1-163-038-00	CERAMIC	0.1uF		25V
C149	1-126-206-11	ELECT	100uF	20%	6.3V
C150	1-163-038-00	CERAMIC	0.1uF		25V
C152	1-126-603-11	ELECT	4.7uF	20%	35V
C153	1-163-031-11	CERAMIC	0.01uF		50V
C154	1-163-275-11	CERAMIC	0.001uF	5%	50V
C155	1-163-031-11	CERAMIC	0.01uF		50V
C156	1-163-031-11	CERAMIC	0.01uF		50V
C157	1-163-222-00	CERAMIC	5PF		50V
C158	1-163-031-11	CERAMIC	0.01uF		50V
C159	1-126-205-11	ELECT	47uF	20%	6.3V
C160	1-163-038-00	CERAMIC	0.1uF		25V
C161	1-126-205-11	ELECT	47uF	20%	6.3V
C162	1-126-205-11	ELECT	47uF	20%	6.3V
C163	1-163-038-00	CERAMIC	0.1uF		25V
C164	1-163-031-11	CERAMIC	0.01uF		50V
C165	1-126-607-11	ELECT	47uF	20%	4V
C166	1-163-089-00	CERAMIC	6PF		50V
C167	1-126-607-11	ELECT	47uF	20%	4V
C201	1-126-607-11	ELECT	47uF	20%	4V
C202	1-126-607-11	ELECT	47uF	20%	4V
C203	1-163-038-00	CERAMIC	0.1uF		25V
C204	1-163-038-00	CERAMIC	0.1uF		25V
C205	1-126-607-11	ELECT	47uF	20%	4V
C206	1-163-809-11	CERAMIC	0.047uF	10%	25V
C207	1-163-133-00	CERAMIC	470PF	5%	50V
C208	1-164-004-11	CERAMIC	0.1uF	10%	25V
C209	1-126-199-11	ELECT	6.8uF	20%	35V
C210	1-163-038-00	CERAMIC	0.1uF		25V
C211	1-163-038-00	CERAMIC	0.1uF		25V
C212	1-163-239-11	CERAMIC	33PF	5%	50V
C213	1-126-205-11	ELECT	47uF	20%	6.3V
C214	1-163-257-11	CERAMIC	180PF	5%	50V
C215	1-124-779-00	ELECT	10uF	20%	16V
C216	1-124-779-00	ELECT	10uF	20%	16V
C217	1-163-033-00	CERAMIC	0.022uF		50V
C218	1-126-205-11	ELECT	47uF	20%	6.3V
C219	1-163-038-00	CERAMIC	0.1uF		25V
C220	1-126-607-11	ELECT	47uF	20%	4V
C221	1-163-031-11	CERAMIC	0.01uF		50V
C222	1-163-275-11	CERAMIC	0.001uF	5%	50V
C223	1-163-038-00	CERAMIC	0.1uF		25V
C224	1-126-205-11	ELECT	47uF	20%	6.3V
C225	1-163-275-11	CERAMIC	0.001uF	5%	50V
C226	1-163-275-11	CERAMIC	0.001uF	5%	50V
C227	1-163-133-00	CERAMIC	470PF	5%	50V
C228	1-163-038-00	CERAMIC	0.1uF		25V
C229	1-163-038-00	CERAMIC	0.1uF		25V
C230	1-163-038-00	CERAMIC	0.1uF		25V
C231	1-126-209-11	ELECT	100uF	20%	4V
C232	1-163-038-00	CERAMIC	0.1uF		25V
C233	1-163-038-00	CERAMIC	0.1uF		25V
C234	1-163-038-00	CERAMIC	0.1uF		25V
C235	1-126-205-11	ELECT	47uF	20%	6.3V
C236	1-163-038-00	CERAMIC	0.1uF		25V
C237	1-163-809-11	CERAMIC	0.047uF	10%	25V
C238	1-163-809-11	CERAMIC	0.047uF	10%	25V
C239	1-164-489-11	CERAMIC	0.22uF	10%	16V
C240	1-164-489-11	CERAMIC	0.22uF	10%	16V
C241	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C242	1-163-038-00	CERAMIC	0.1uF		25V
C243	1-126-603-11	ELECT	4.7uF	20%	35V
C244	1-164-346-11	CERAMIC	1uF		16V
C245	1-163-038-00	CERAMIC	0.1uF		25V
C246	1-163-038-00	CERAMIC	0.1uF		25V
C247	1-163-241-11	CERAMIC	39PF	5%	50V
C248	1-163-241-11	CERAMIC	39PF	5%	50V
C249	1-163-038-00	CERAMIC	0.1uF		25V
C250	1-163-038-00	CERAMIC	0.1uF		25V
C251	1-126-205-11	ELECT	47uF	20%	6.3V
C252	1-163-038-00	CERAMIC	0.1uF		25V
C253	1-163-235-11	CERAMIC	22PF	5%	50V
C254	1-163-235-11	CERAMIC	22PF	5%	50V
C255	1-163-038-00	CERAMIC	0.1uF		25V
C256	1-163-038-00	CERAMIC	0.1uF		25V
C257	1-163-038-00	CERAMIC	0.1uF		25V
C258	1-163-038-00	CERAMIC	0.1uF		25V
C259	1-126-205-11	ELECT	47uF	20%	6.3V
C260	1-163-038-00	CERAMIC	0.1uF		25V
C261	1-126-607-11	ELECT	47uF	20%	4V
C262	1-126-607-11	ELECT	47uF	20%	4V
C263	1-163-038-00	CERAMIC	0.1uF		25V
C264	1-126-607-11	ELECT	47uF	20%	4V
C265	1-126-607-11	ELECT	47uF	20%	4V
C266	1-126-607-11	ELECT	47uF	20%	4V
C267	1-163-243-11	CERAMIC	47PF	5%	50V
C268	1-163-038-00	CERAMIC	0.1uF		25V
C269	1-164-222-11	CERAMIC	0.22uF		25V
C270	1-163-097-00	CERAMIC	15PF	5%	50V
C271	1-126-209-11	ELECT	100uF	20%	4V
C272	1-163-038-00	CERAMIC	0.1uF		25V
C273	1-163-038-00	CERAMIC	0.1uF		25V
C274	1-163-038-00	CERAMIC	0.1uF		25V
C502	1-163-239-11	CERAMIC	33PF	5%	50V
C503	1-163-038-00	CERAMIC	0.1uF		25V
C504	1-163-241-11	CERAMIC	39PF	5%	50V
C505	1-163-243-11	CERAMIC	47PF	5%	50V
C506	1-163-038-00	CERAMIC	0.1uF		25V
C507	1-163-229-11	CERAMIC	12PF	5%	50V
C508	1-163-113-00	CERAMIC	68PF	5%	50V
C509	1-126-607-11	ELECT	47uF	20%	4V
C510	1-163-241-11	CERAMIC	39PF	5%	50V
C511	1-163-243-11	CERAMIC	47PF	5%	50V
C512	1-163-038-00	CERAMIC	0.1uF		25V
C513	1-163-135-00	CERAMIC	560PF	5%	50V
C514	1-126-217-11	ELECT	15uF	20%	10V
C515	1-163-038-00	CERAMIC	0.1uF		25V
C516	1-163-251-11	CERAMIC	100PF	5%	50V
C517	1-126-217-11	ELECT	15uF	20%	10V
C518	1-163-038-00	CERAMIC	0.1uF		25V
C519	1-163-009-11	CERAMIC	0.001uF	10%	50V
C520	1-126-205-11	ELECT	47uF	20%	6.3V
C521	1-163-038-00	CERAMIC	0.1uF		25V
C522	1-163-275-11	CERAMIC	0.001uF	5%	50V
C523	1-163-245-11	CERAMIC	56PF	5%	50V
C524	1-163-097-00	CERAMIC	15PF	5%	50V
C525	1-163-243-11	CERAMIC	47PF	5%	50V
C526	1-163-038-00	CERAMIC	0.1uF		25V
C527	1-126-205-11	ELECT	47uF	20%	6.3V
C528	1-163-275-11	CERAMIC	0.001uF	5%	50V
C529	1-163-038-00	CERAMIC	0.1uF		25V
C530	1-163-125-00	CERAMIC	220PF	5%	50V
C531	1-163-275-11	CERAMIC	0.001uF	5%	50V
C532	1-163-038-00	CERAMIC	0.1uF		25V
C533	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C534	1-163-038-00	CERAMIC	0.1uF		25V
C535	1-163-275-11	CERAMIC	0.001uF	5%	50V
C536	1-164-004-11	CERAMIC	0.1uF	10%	25V
C537	1-163-038-00	CERAMIC	0.1uF		25V
C538	1-163-038-00	CERAMIC	0.1uF		25V
C539	1-163-275-11	CERAMIC	0.001uF	5%	50V
C540	1-163-038-00	CERAMIC	0.1uF		25V
C541	1-163-038-00	CERAMIC	0.1uF		25V
C542	1-164-489-11	CERAMIC	0.22uF	10%	16V
C543	1-163-275-11	CERAMIC	0.001uF	5%	50V
C544	1-163-038-00	CERAMIC	0.1uF		25V
C545	1-163-038-00	CERAMIC	0.1uF		25V
C546	1-126-205-11	ELECT	47uF	20%	6.3V
C547	1-126-205-11	ELECT	47uF	20%	6.3V
C548	1-163-038-00	CERAMIC	0.1uF		25V
C549	1-126-205-11	ELECT	47uF	20%	6.3V
C550	1-163-038-00	CERAMIC	0.1uF		25V
C551	1-126-205-11	ELECT	47uF	20%	6.3V
C552	1-164-489-11	CERAMIC	0.22uF	10%	16V
C554	1-163-038-00	CERAMIC	0.1uF		25V
C555	1-163-038-00	CERAMIC	0.1uF		25V
C561	1-163-227-11	CERAMIC	10PF		50V
C562	1-163-275-11	CERAMIC	0.001uF		50V
C563	1-163-038-00	CERAMIC	0.1uF		25V
C564	1-126-194-21	ELECT	1.5uF	20%	50V
C565	1-163-038-00	CERAMIC	0.1uF		25V
C566	1-163-227-11	CERAMIC	10PF		50V
C567	1-163-038-00	CERAMIC	0.1uF		25V
C701	1-163-038-00	CERAMIC	0.1uF		25V
C702	1-163-038-00	CERAMIC	0.1uF		25V
C703	1-126-205-11	ELECT	47uF	20%	6.3V
C704	1-163-038-00	CERAMIC	0.1uF		25V
C705	1-126-205-11	ELECT	47uF	20%	6.3V
C706	1-163-038-00	CERAMIC	0.1uF		25V
C707	1-126-205-11	ELECT	47uF	20%	6.3V
C708	1-126-205-11	ELECT	47uF	20%	6.3V
C709	1-163-038-00	CERAMIC	0.1uF		25V
C710	1-163-038-00	CERAMIC	0.1uF		25V
C711	1-126-205-11	ELECT	47uF	20%	6.3V
C712	1-126-205-11	ELECT	47uF	20%	6.3V
C713	1-163-038-00	CERAMIC	0.1uF		25V
C714	1-163-038-00	CERAMIC	0.1uF		25V
C715	1-163-038-00	CERAMIC	0.1uF		25V
C716	1-163-038-00	CERAMIC	0.1uF		25V
C718	1-163-038-00	CERAMIC	0.1uF		25V
C720	1-163-038-00	CERAMIC	0.1uF		25V
C721	1-164-232-11	CERAMIC	0.01uF	10%	50V
C722	1-163-038-00	CERAMIC	0.1uF		25V
C723	1-164-232-11	CERAMIC	0.01uF	10%	50V
C724	1-164-232-11	CERAMIC	0.01uF	10%	50V
C725	1-163-038-00	CERAMIC	0.1uF		25V
C726	1-164-232-11	CERAMIC	0.01uF	10%	50V
C727	1-164-232-11	CERAMIC	0.01uF	10%	50V
C728	1-163-038-00	CERAMIC	0.1uF		25V
C729	1-163-038-00	CERAMIC	0.1uF		25V
C730	1-164-232-11	CERAMIC	0.01uF	10%	50V
C731	1-163-038-00	CERAMIC	0.1uF		25V
C732	1-164-232-11	CERAMIC	0.01uF	10%	50V
C733	1-164-232-11	CERAMIC	0.01uF	10%	50V
C734	1-163-038-00	CERAMIC	0.1uF		25V
C735	1-163-038-00	CERAMIC	0.1uF		25V
C736	1-164-232-11	CERAMIC	0.01uF	10%	50V
C737	1-164-232-11	CERAMIC	0.01uF	10%	50V
C801	1-163-097-00	CERAMIC	15PF	5%	50V
C802	1-163-237-11	CERAMIC	27PF	5%	50V

Ref.No	Part No.	Description			Remark
C803	1-163-038-00	CERAMIC	0.1uF		25V
C804	1-126-205-11	ELECT	47uF	20%	6.3V
C805	1-163-229-11	CERAMIC	12PF	5%	50V
C806	1-163-113-00	CERAMIC	68PF	5%	50V
C807	1-163-038-00	CERAMIC	0.1uF		25V
C808	1-163-229-11	CERAMIC	12PF	5%	50V
C809	1-163-113-00	CERAMIC	68PF	5%	50V
C810	1-163-038-00	CERAMIC	0.1uF		25V
C811	1-163-229-11	CERAMIC	12PF	5%	50V
C812	1-163-113-00	CERAMIC	68PF	5%	50V
C813	1-163-038-00	CERAMIC	0.1uF		25V
C814	1-126-607-11	ELECT	47uF	20%	4V
C815	1-163-038-00	CERAMIC	0.1uF		25V
C816	1-163-038-00	CERAMIC	0.1uF		25V
C817	1-163-038-00	CERAMIC	0.1uF		25V
C818	1-163-038-00	CERAMIC	0.1uF		25V
C819	1-163-038-00	CERAMIC	0.1uF		25V
C820	1-126-607-11	ELECT	47uF	20%	4V
C821	1-163-038-00	CERAMIC	0.1uF		25V
C822	1-163-038-00	CERAMIC	0.1uF		25V
C823	1-163-038-00	CERAMIC	0.1uF		25V
C824	1-126-205-11	ELECT	47uF	20%	6.3V
C825	1-163-038-00	CERAMIC	0.1uF		25V
C826	1-163-038-00	CERAMIC	0.1uF		25V
C827	1-163-038-00	CERAMIC	0.1uF		25V
C828	1-126-205-11	ELECT	47uF	20%	6.3V
C829	1-163-038-00	CERAMIC	0.1uF		25V
C830	1-126-205-11	ELECT	47uF	20%	6.3V
C831	1-163-038-00	CERAMIC	0.1uF		25V
C832	1-163-038-00	CERAMIC	0.1uF		25V
C833	1-163-038-00	CERAMIC	0.1uF		25V
C834	1-126-607-11	ELECT	47uF	20%	4V
C835	1-126-607-11	ELECT	47uF	20%	4V
C836	1-163-038-00	CERAMIC	0.1uF		25V
C837	1-126-607-11	ELECT	47uF	20%	4V
C838	1-126-607-11	ELECT	47uF	20%	4V
C839	1-163-038-00	CERAMIC	0.1uF		25V
C840	1-126-607-11	ELECT	47uF	20%	4V
C841	1-163-038-00	CERAMIC	0.1uF		25V
C842	1-163-038-00	CERAMIC	0.1uF		25V
C843	1-126-607-11	ELECT	47uF	20%	4V
C844	1-163-097-00	CERAMIC	15PF	5%	50V
C845	1-163-227-11	CERAMIC	10PF		50V
C846	1-163-038-00	CERAMIC	0.1uF		25V
C847	1-163-038-00	CERAMIC	0.1uF		25V
C848	1-126-205-11	ELECT	47uF	20%	6.3V
C849	1-126-205-11	ELECT	47uF	20%	6.3V
C850	1-126-607-11	ELECT	47uF	20%	4V
C851	1-126-205-11	ELECT	47uF	20%	6.3V
C852	1-163-097-00	CERAMIC	15PF	5%	50V
C853	1-163-227-11	CERAMIC	10PF		50V
C854	1-163-038-00	CERAMIC	0.1uF		25V
C855	1-163-038-00	CERAMIC	0.1uF		25V
C856	1-126-205-11	ELECT	47uF	20%	6.3V
C857	1-126-205-11	ELECT	47uF	20%	6.3V
C858	1-126-607-11	ELECT	47uF	20%	4V
C859	1-163-097-00	CERAMIC	15PF	5%	50V
C860	1-163-227-11	CERAMIC	10PF		50V
C861	1-163-038-00	CERAMIC	0.1uF		25V
C862	1-163-038-00	CERAMIC	0.1uF		25V
C863	1-126-205-11	ELECT	47uF	20%	6.3V
C864	1-126-205-11	ELECT	47uF	20%	6.3V
C865	1-126-607-11	ELECT	47uF	20%	4V
C866	1-163-097-00	CERAMIC	15PF	5%	50V
C867	1-163-227-11	CERAMIC	10PF		50V

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Ref.No	Part No.	Description			Remark
C868	1-163-038-00	CERAMIC	0.1uF		25V
C869	1-163-038-00	CERAMIC	0.1uF		25V
C870	1-126-205-11	ELECT	47uF	20%	6.3V
C871	1-126-205-11	ELECT	47uF	20%	6.3V
C872	1-126-607-11	ELECT	47uF	20%	4V
C873	1-163-097-00	CERAMIC	15PF	5%	50V
C874	1-163-227-11	CERAMIC	10PF		50V
C875	1-163-038-00	CERAMIC	0.1uF		25V
C876	1-163-038-00	CERAMIC	0.1uF		25V
C877	1-126-205-11	ELECT	47uF	20%	6.3V
C878	1-126-205-11	ELECT	47uF	20%	6.3V
C879	1-163-038-00	CERAMIC	0.1uF		25V
C880	1-163-097-00	CERAMIC	15PF	5%	50V
C881	1-163-227-11	CERAMIC	10PF		50V
C882	1-163-038-00	CERAMIC	0.1uF		25V
C883	1-163-038-00	CERAMIC	0.1uF		25V
C884	1-126-205-11	ELECT	47uF	20%	6.3V
C885	1-126-205-11	ELECT	47uF	20%	6.3V
C886	1-126-217-11	ELECT	15uF	20%	10V
C887	1-163-087-00	CERAMIC	4PF		50V
C888	1-163-038-00	CERAMIC	0.1uF		25V
C889	1-163-038-00	CERAMIC	0.1uF		25V
C890	1-126-205-11	ELECT	47uF	20%	6.3V
C891	1-126-205-11	ELECT	47uF	20%	6.3V
C892	1-163-089-00	CERAMIC	6PF		50V
		<CONNECTOR>			
CN101	1-565-212-11	CONNECTOR, FPC (ZIF) 26P			
CN102	1-565-212-11	CONNECTOR, FPC (ZIF) 26P			
CN105	*1-560-892-00	PIN, CONNECTOR 4P			
CN501	1-506-473-11	PIN, CONNECTOR 8P			
CN502	1-506-471-11	PIN, CONNECTOR 6P			
CN504	1-506-473-11	PIN, CONNECTOR 8P			
CN505	1-506-470-11	PIN, CONNECTOR 5P			
CN506	1-506-472-11	PIN, CONNECTOR 7P			
		<CERAMIC, TRIMMER>			
CV501	1-141-423-61	CAP, ADJ			
CV502	1-141-423-61	CAP, ADJ			
CV503	1-141-423-61	CAP, ADJ			
CV801	1-141-423-61	CAP, ADJ			
		<DIODE>			
D81	8-719-800-76	DIODE 1SS226			
D91	8-719-800-76	DIODE 1SS226			
D100	8-719-800-76	DIODE 1SS226			
D101	8-719-800-76	DIODE 1SS226			
D201	8-719-400-18	DIODE 1SS184			
D501	8-713-300-88	DIODE 1T33C-01			
D502	8-713-300-88	DIODE 1T33C-01			
D701	8-719-400-18	DIODE 1SS184			
D702	8-719-400-18	DIODE 1SS184			
D703	8-719-400-18	DIODE 1SS184			
D704	8-719-400-18	DIODE 1SS184			
D705	8-719-400-18	DIODE 1SS184			
		<DELAY>			
DL201	1-415-313-00	DELAY LINE (1H)			
DL202	1-415-761-11	DELAY LINE, LC			
DL203	1-415-760-11	DELAY LINE, LC			
		<FILTER>			
FL1	1-239-564-11	FILTER, LOW PASS			
FL31	1-239-564-11	FILTER, LOW PASS			
FL61	1-239-564-11	FILTER, LOW PASS			

Ref.No	Part No.	Description	Remark
FL101	1-239-386-21	FILTER, BAND PASS (PAL, JOG)	
FL102	1-239-564-11	FILTER, LOW PASS	
FL103	1-239-563-11	FILTER, LOW PASS	
FL801	1-239-564-11	FILTER, LOW PASS	
FL803	1-239-386-21	FILTER, BAND PASS (PAL, JOG)	
		<IC>	
IC1	8-759-710-86	IC NJM2233BM	
IC31	8-759-710-86	IC NJM2233BM	
IC61	8-759-710-86	IC NJM2233BM	
IC81	8-759-008-45	IC MC74HC4538F	
IC82	8-759-710-86	IC NJM2233BM	
IC91	8-759-157-22	IC PQ06TZ1U	
IC92	8-759-157-17	IC PQ05SZ1U	
IC100	8-759-710-86	IC NJM2233BM	
IC101	8-759-710-86	IC NJM2233BM	
IC102	8-759-710-86	IC NJM2233BM	
IC103	8-759-710-86	IC NJM2233BM	
IC104	8-759-710-86	IC NJM2233BM	
IC105	8-759-514-57	IC BA7046F	
IC107	8-759-710-12	IC NJM2230M	
IC108	8-752-352-21	IC CXD2024Q	
IC109	8-759-711-62	IC NJM2240M	
IC201	8-752-053-21	IC CXA1211M	
IC202	8-752-039-91	IC CXA1437Q	
IC203	8-759-925-78	IC SN74HC10ANS	
IC204	8-759-926-18	IC SN74HC157ANS	
IC205	8-759-710-62	IC NJM2246M	
IC206	8-752-058-94	IC CXA1621S	
IC207	8-759-908-16	IC TL072CPS	
IC208	8-759-242-72	IC TC7W00F	
IC209	8-752-053-21	IC CXA1211M	
IC210	8-759-710-86	IC NJM2233BM	
IC501	8-752-326-08	IC CXD1159Q	
IC502	8-759-242-72	IC TC7W00F	
IC503	8-759-907-81	IC SN74LS221NS	
IC504	8-752-326-08	IC CXD1159Q	
IC505	8-759-907-81	IC SN74LS221NS	
IC506	8-759-011-65	IC MC74HC4053F	
IC507	8-759-981-48	IC TL082M	
IC508	8-759-981-48	IC TL082M	
IC509	8-759-926-77	IC SN74HC541ANS	
IC510	8-759-930-50	IC SN74LS157NS	
IC511	8-759-242-72	IC TC7W00F	
IC512	8-759-008-45	IC MC74HC4538F	
IC513	8-759-926-18	IC SN74HC157NS	
IC701	8-759-044-78	IC AK6420F	
IC702	8-759-635-27	IC M62352GP	
IC703	8-759-635-27	IC M62352GP	
IC704	8-759-635-27	IC M62352GP	
IC705	8-759-929-26	IC TL431CPS	
IC706	8-759-745-64	IC NJM4560M	
IC707	8-759-150-05	IC UPC324G2-E1	
IC708	8-759-150-05	IC UPC324G2-E1	
IC709	8-759-150-05	IC UPC324G2-E1	
IC801	8-759-254-98	IC M50555-218FP-TE2	
IC802	8-752-053-21	IC CXA1211M	
IC803	8-759-242-72	IC TC7W00F	
IC804	8-752-033-58	IC V7040	
IC805	8-752-053-21	IC CXA1211M	
IC806	8-752-053-21	IC CXA1211M	
IC807	8-752-053-21	IC CXA1211M	
IS406	*1-526-659-00	SOCKET, IC (DP) 28P	

Ref.No	Part No.	Description	Remark
		<JACK>	
J1	1-565-276-21	JACK,ULTRA SMALL 1P	
		<INDUCTOR>	
L1	1-410-369-11	INDUCTOR CHIP 1UH	
L2	1-410-369-11	INDUCTOR CHIP 1UH	
L31	1-410-369-11	INDUCTOR CHIP 1UH	
L32	1-410-369-11	INDUCTOR CHIP 1UH	
L61	1-410-369-11	INDUCTOR CHIP 1UH	
L62	1-410-369-11	INDUCTOR CHIP 1UH	
L91	1-410-369-11	INDUCTOR CHIP 1UH	
L92	1-424-090-11	COIL, LINE FILTER	
L93	1-424-090-11	COIL, LINE FILTER	
L94	1-424-090-11	COIL, LINE FILTER	
L100	1-410-369-11	INDUCTOR CHIP 1UH	
L101	1-410-369-11	INDUCTOR CHIP 1UH	
L102	1-410-369-11	INDUCTOR CHIP 1UH	
L103	1-410-369-11	INDUCTOR CHIP 1UH	
L104	1-410-369-11	INDUCTOR CHIP 1UH	
L106	1-410-369-11	INDUCTOR CHIP 1UH	
L107	1-410-369-11	INDUCTOR CHIP 1UH	
L201	1-410-369-11	INDUCTOR CHIP 1UH	
L202	1-410-369-11	INDUCTOR CHIP 1UH	
L203	1-410-369-11	INDUCTOR CHIP 1UH	
L204	1-410-369-11	INDUCTOR CHIP 1UH	
L205	1-410-387-21	INDUCTOR CHIP 33UH	
L206	1-412-005-11	INDUCTOR CHIP 8.2UH	
L207	1-410-987-11	INDUCTOR CHIP 0.33UH	
L501	1-410-389-31	INDUCTOR CHIP 47UH	
L502	1-410-388-21	INDUCTOR CHIP 39UH	
L503	1-410-387-21	INDUCTOR CHIP 33UH	
L504	1-410-389-31	INDUCTOR CHIP 47UH	
L505	1-410-388-21	INDUCTOR CHIP 39UH	
L506	1-410-369-11	INDUCTOR CHIP 1UH	
L507	1-410-377-31	INDUCTOR CHIP 4.7UH	
L508	1-410-369-11	INDUCTOR CHIP 1UH	
L509	1-410-369-11	INDUCTOR CHIP 1UH	
L513	1-410-369-11	INDUCTOR CHIP 1UH	
L514	1-414-439-11	INDUCTOR CHIP 2.7UH	
L802	1-410-369-11	INDUCTOR CHIP 1UH	
L806	1-410-369-11	INDUCTOR CHIP 1UH	
L807	1-410-369-11	INDUCTOR CHIP 1UH	
L808	1-410-369-11	INDUCTOR CHIP 1UH	
L809	1-410-369-11	INDUCTOR CHIP 1UH	
L810	1-410-369-11	INDUCTOR CHIP 1UH	
L811	1-410-369-11	INDUCTOR CHIP 1UH	
L812	1-410-369-11	INDUCTOR CHIP 1UH	
L813	1-410-369-11	INDUCTOR CHIP 1UH	
L814	1-410-369-11	INDUCTOR CHIP 1UH	
L815	1-410-369-11	INDUCTOR CHIP 1UH	
L816	1-410-369-11	INDUCTOR CHIP 1UH	
L817	1-410-369-11	INDUCTOR CHIP 1UH	
L818	1-410-369-11	INDUCTOR CHIP 1UH	
L819	1-410-369-11	INDUCTOR CHIP 1UH	
L820	1-410-369-11	INDUCTOR CHIP 1UH	
		<FILTER>	
LF1	1-239-581-21	FILTER, EMI	
LF31	1-239-581-21	FILTER, EMI	
LF61	1-239-581-21	FILTER, EMI	
LF81	1-239-581-21	FILTER, EMI	
LF100	1-239-581-21	FILTER, EMI	
LF101	1-239-581-21	FILTER, EMI	
LF102	1-239-581-21	FILTER, EMI	
LF801	1-239-581-21	FILTER, EMI	
LF802	1-239-581-21	FILTER, EMI	
LF803	1-239-581-21	FILTER, EMI	
LF804	1-239-581-21	FILTER, EMI	
LF805	1-239-581-21	FILTER, EMI	
LF806	1-239-581-21	FILTER, EMI	
LF807	1-239-581-21	FILTER, EMI	
		<TRANSISTOR>	
Q1	8-729-402-81	TRANSISTOR XN4501	
Q3	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q4	8-729-420-36	TRANSISTOR XN2501	
Q5	8-729-402-84	TRANSISTOR XN4601	
Q6	8-729-122-63	TRANSISTOR 2SA1226	
Q7	8-729-420-36	TRANSISTOR XN2501	
Q8	8-729-402-87	TRANSISTOR XN2401	
Q31	8-729-402-81	TRANSISTOR XN4501	
Q33	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q34	8-729-420-36	TRANSISTOR XN2501	
Q35	8-729-402-13	TRANSISTOR XN1501	
Q36	8-729-122-63	TRANSISTOR 2SA1226	
Q37	8-729-420-36	TRANSISTOR XN2501	
Q38	8-729-402-87	TRANSISTOR XN2401	
Q61	8-729-402-81	TRANSISTOR XN4501	
Q63	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q64	8-729-420-36	TRANSISTOR XN2501	
Q65	8-729-402-13	TRANSISTOR XN1501	
Q66	8-729-122-63	TRANSISTOR 2SA1226	
Q67	8-729-420-36	TRANSISTOR XN2501	
Q68	8-729-402-87	TRANSISTOR XN2401	
Q81	8-729-420-36	TRANSISTOR XN2501	
Q82	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q83	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q84	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q91	8-729-216-22	TRANSISTOR 2SA1162-G	
Q92	8-729-216-22	TRANSISTOR 2SA1162-G	
Q93	8-729-901-01	TRANSISTOR DTC144EK	
Q100	8-729-420-36	TRANSISTOR XN2501	
Q101	8-729-420-36	TRANSISTOR XN2501	
Q102	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q103	8-729-402-13	TRANSISTOR XN1501	
Q105	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q106	8-729-402-84	TRANSISTOR XN4601	
Q107	8-729-402-84	TRANSISTOR XN4601	
Q108	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q109	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q110	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q201	8-729-216-22	TRANSISTOR 2SA1162-G	
Q202	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q203	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q204	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q205	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q502	8-729-402-87	TRANSISTOR XN2401	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q701	8-729-216-22	TRANSISTOR 2SA1162-G	
Q801	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q802	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q803	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q804	8-729-216-22	TRANSISTOR 2SA1162-G	
Q805	8-729-216-22	TRANSISTOR 2SA1162-G	

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Ref.No	Part No.	Description	Remark
Q806	8-729-402-13	TRANSISTOR XN1501	
Q807	8-729-122-63	TRANSISTOR 2SA1226	
Q808	8-729-420-36	TRANSISTOR XN2501	
Q809	8-729-402-87	TRANSISTOR XN2401	
Q810	8-729-402-13	TRANSISTOR XN1501	
Q811	8-729-122-63	TRANSISTOR 2SA1226	
Q812	8-729-420-36	TRANSISTOR XN2501	
Q813	8-729-402-87	TRANSISTOR XN2401	
Q814	8-729-402-13	TRANSISTOR XN1501	
Q815	8-729-122-63	TRANSISTOR 2SA1226	
Q816	8-729-420-36	TRANSISTOR XN2501	
Q817	8-729-402-87	TRANSISTOR XN2401	
Q818	8-729-402-13	TRANSISTOR XN1501	
Q819	8-729-122-63	TRANSISTOR 2SA1226	
Q820	8-729-420-36	TRANSISTOR XN2501	
Q821	8-729-402-87	TRANSISTOR XN2401	
Q822	8-729-402-13	TRANSISTOR XN1501	
Q823	8-729-122-63	TRANSISTOR 2SA1226	
Q824	8-729-420-36	TRANSISTOR XN2501	
Q825	8-729-402-87	TRANSISTOR XN2401	
Q826	8-729-402-13	TRANSISTOR XN1501	
Q827	8-729-122-63	TRANSISTOR 2SA1226	
Q828	8-729-420-36	TRANSISTOR XN2501	
Q829	8-729-402-87	TRANSISTOR XN2401	
Q830	8-729-402-84	TRANSISTOR XN4601	
Q831	8-729-402-84	TRANSISTOR XN4601	

<RESISTOR>

R1	1-216-081-00	METAL	22K	5%	1/10W
R2	1-216-081-00	METAL	22K	5%	1/10W
R3	1-216-081-00	METAL	22K	5%	1/10W
R4	1-216-025-00	METAL	100	5%	1/10W
R5	1-216-047-00	METAL	820	5%	1/10W
R6	1-216-647-11	METAL	680	0.50%	1/10W
R7	1-216-651-11	METAL	1K	0.50%	1/10W
R8	1-216-055-00	METAL	1.8K	5%	1/10W
R9	1-216-025-00	METAL	100	5%	1/10W
R10	1-216-057-00	METAL	2.2K	5%	1/10W
R11	1-216-025-00	METAL	100	5%	1/10W
R12	1-216-683-11	METAL	22K	0.50%	1/10W
R13	1-216-675-11	METAL	10K	0.50%	1/10W
R14	1-216-679-11	METAL	15K	0.50%	1/10W
R15	1-216-057-00	METAL	2.2K	5%	1/10W
R16	1-216-651-11	METAL	1K	0.50%	1/10W
R17	1-216-651-11	METAL	1K	0.50%	1/10W
R18	1-216-033-00	METAL	220	5%	1/10W
R19	1-216-051-00	METAL	1.2K	5%	1/10W
R20	1-216-057-00	METAL	2.2K	5%	1/10W
R21	1-216-647-11	METAL	680	0.50%	1/10W
R22	1-216-661-11	METAL	2.7K	0.50%	1/10W
R23	1-216-053-00	METAL	1.5K	5%	1/10W
R24	1-216-309-00	METAL	5.6	5%	1/10W
R25	1-216-309-00	METAL	5.6	5%	1/10W
R26	1-216-009-00	METAL	22	5%	1/10W
R27	1-216-001-00	METAL	10	5%	1/10W
R28	1-216-057-00	METAL	2.2K	5%	1/10W
R29	1-216-033-00	METAL	220	5%	1/10W
R31	1-216-081-00	METAL	22K	5%	1/10W
R32	1-216-081-00	METAL	22K	5%	1/10W
R33	1-216-081-00	METAL	22K	5%	1/10W
R34	1-216-025-00	METAL	100	5%	1/10W
R35	1-216-047-00	METAL	820	5%	1/10W
R36	1-216-647-11	METAL	680	0.50%	1/10W

Ref.No	Part No.	Description			Remark
R37	1-216-651-11	METAL	1K	0.50%	1/10W
R38	1-216-055-00	METAL	1.8K	5%	1/10W
R39	1-216-025-00	METAL	100	5%	1/10W
R40	1-216-057-00	METAL	2.2K	5%	1/10W
R41	1-216-025-00	METAL	100	5%	1/10W
R42	1-216-683-11	METAL	22K	0.50%	1/10W
R43	1-216-675-11	METAL	10K	0.50%	1/10W
R44	1-216-679-11	METAL	15K	0.50%	1/10W
R45	1-216-057-00	METAL	2.2K	5%	1/10W
R46	1-216-651-11	METAL	1K	0.50%	1/10W
R47	1-216-651-11	METAL	1K	0.50%	1/10W
R48	1-216-033-00	METAL	220	5%	1/10W
R49	1-216-051-00	METAL	1.2K	5%	1/10W
R50	1-216-057-00	METAL	2.2K	5%	1/10W
R51	1-216-647-11	METAL	680	0.50%	1/10W
R52	1-216-661-11	METAL	2.7K	0.50%	1/10W
R53	1-216-053-00	METAL	1.5K	5%	1/10W
R54	1-216-309-00	METAL	5.6	5%	1/10W
R55	1-216-309-00	METAL	5.6	5%	1/10W
R56	1-216-009-00	METAL	22	5%	1/10W
R57	1-216-073-00	METAL	10K	5%	1/10W
R59	1-216-033-00	METAL	220	5%	1/10W
R60	1-216-033-00	METAL	220	5%	1/10W
R61	1-216-081-00	METAL	22K	5%	1/10W
R62	1-216-081-00	METAL	22K	5%	1/10W
R63	1-216-081-00	METAL	22K	5%	1/10W
R64	1-216-025-00	METAL	100	5%	1/10W
R65	1-216-047-00	METAL	820	5%	1/10W
R66	1-216-647-11	METAL	680	0.50%	1/10W
R67	1-216-651-11	METAL	1K	0.50%	1/10W
R68	1-216-055-00	METAL	1.8K	5%	1/10W
R69	1-216-025-00	METAL	100	5%	1/10W
R70	1-216-057-00	METAL	2.2K	5%	1/10W
R71	1-216-025-00	METAL	100	5%	1/10W
R72	1-216-683-11	METAL	22K	0.50%	1/10W
R73	1-216-675-11	METAL	10K	0.50%	1/10W
R74	1-216-679-11	METAL	15K	0.50%	1/10W
R75	1-216-057-00	METAL	2.2K	5%	1/10W
R76	1-216-651-11	METAL	1K	0.50%	1/10W
R77	1-216-651-11	METAL	1K	0.50%	1/10W
R78	1-216-033-00	METAL	220	5%	1/10W
R79	1-216-051-00	METAL	1.2K	5%	1/10W
R80	1-216-057-00	METAL	2.2K	5%	1/10W
R81	1-216-647-11	METAL	680	0.50%	1/10W
R82	1-216-661-11	METAL	2.7K	0.50%	1/10W
R83	1-216-053-00	METAL	1.5K	5%	1/10W
R84	1-216-309-00	METAL	5.6	5%	1/10W
R85	1-216-309-00	METAL	5.6	5%	1/10W
R86	1-216-009-00	METAL	22	5%	1/10W
R87	1-216-057-00	METAL	2.2K	5%	1/10W
R88	1-216-057-00	METAL	2.2K	5%	1/10W
R89	1-216-067-00	METAL	5.6K	5%	1/10W
R90	1-216-063-00	METAL	3.9K	5%	1/10W
R91	1-216-025-00	METAL	100	5%	1/10W
R92	1-216-043-00	METAL	560	5%	1/10W
R93	1-216-081-00	METAL	22K	5%	1/10W
R94	1-216-057-00	METAL	2.2K	5%	1/10W
R95	1-216-057-00	METAL	2.2K	5%	1/10W
R96	1-216-089-91	METAL	47K	5%	1/10W
R97	1-216-073-00	METAL	10K	5%	1/10W
R98	1-216-097-00	METAL	100K	5%	1/10W
R99	1-216-075-00	METAL	12K	5%	1/10W
R100	1-216-081-00	METAL	22K	5%	1/10W
R101	1-216-081-00	METAL	22K	5%	1/10W
R102	1-216-025-00	METAL	100	5%	1/10W

Ref.No	Part No.	Description			Remark
R103	1-216-025-00	METAL	100	5%	1/10W
R104	1-216-077-00	METAL	15K	5%	1/10W
R105	1-216-083-00	METAL	27K	5%	1/10W
R106	1-216-077-00	METAL	15K	5%	1/10W
R107	1-216-083-00	METAL	27K	5%	1/10W
R108	1-216-057-00	METAL	2.2K	5%	1/10W
R109	1-216-057-00	METAL	2.2K	5%	1/10W
R110	1-216-047-00	METAL	820	5%	1/10W
R111	1-216-027-00	METAL	120	5%	1/10W
R112	1-216-051-00	METAL	1.2K	5%	1/10W
R113	1-216-037-00	METAL	330	5%	1/10W
R114	1-216-113-00	METAL	470K	5%	1/10W
R115	1-216-073-00	METAL	10K	5%	1/10W
R116	1-216-073-00	METAL	10K	5%	1/10W
R117	1-216-113-00	METAL	470K	5%	1/10W
R118	1-216-099-00	METAL	120K	5%	1/10W
R119	1-216-081-00	METAL	22K	5%	1/10W
R120	1-216-025-00	METAL	100	5%	1/10W
R121	1-216-083-00	METAL	27K	5%	1/10W
R122	1-216-073-00	METAL	10K	5%	1/10W
R123	1-216-049-00	METAL	1K	5%	1/10W
R124	1-216-651-11	METAL	1K	0.50%	1/10W
R125	1-216-651-11	METAL	1K	0.50%	1/10W
R126	1-216-057-00	METAL	2.2K	5%	1/10W
R127	1-216-053-00	METAL	1.5K	5%	1/10W
R128	1-216-049-00	METAL	1K	5%	1/10W
R129	1-216-051-00	METAL	1.2K	5%	1/10W
R130	1-216-039-00	METAL	390	5%	1/10W
R131	1-216-057-00	METAL	2.2K	5%	1/10W
R132	1-216-025-00	METAL	100	5%	1/10W
R133	1-216-017-00	METAL	47	5%	1/10W
R134	1-216-025-00	METAL	100	5%	1/10W
R135	1-216-057-00	METAL	2.2K	5%	1/10W
R136	1-216-057-00	METAL	2.2K	5%	1/10W
R137	1-216-029-00	METAL	150	5%	1/10W
R138	1-216-029-00	METAL	150	5%	1/10W
R139	1-216-295-11	METAL	0	5%	1/10W
R140	1-216-295-11	METAL	0	5%	1/10W
R143	1-216-057-00	METAL	2.2K	5%	1/10W
R144	1-216-055-00	METAL	1.8K	5%	1/10W
R145	1-216-055-00	METAL	1.8K	5%	1/10W
R146	1-216-057-00	METAL	2.2K	5%	1/10W
R147	1-216-061-00	METAL	3.3K	5%	1/10W
R148	1-216-041-00	METAL	470	5%	1/10W
R149	1-216-025-00	METAL	100	5%	1/10W
R150	1-216-061-00	METAL	3.3K	5%	1/10W
R151	1-216-025-00	METAL	100	5%	1/10W
R152	1-216-025-00	METAL	100	5%	1/10W
R153	1-216-055-00	METAL	1.8K	5%	1/10W
R154	1-216-043-00	METAL	560	5%	1/10W
R155	1-216-043-00	METAL	560	5%	1/10W
R156	1-216-059-00	METAL	2.7K	5%	1/10W
R157	1-216-038-00	METAL	360	5%	1/10W
R158	1-216-651-11	METAL	1K	0.50%	1/10W
R159	1-216-057-00	METAL	2.2K	5%	1/10W
R160	1-216-651-11	METAL	1K	0.50%	1/10W
R161	1-216-057-00	METAL	2.2K	5%	1/10W
R162	1-216-651-11	METAL	1K	0.50%	1/10W
R163	1-216-057-00	METAL	2.2K	5%	1/10W
R164	1-216-651-11	METAL	1K	0.50%	1/10W
R165	1-216-057-00	METAL	2.2K	5%	1/10W
R166	1-216-083-00	METAL	27K	5%	1/10W
R168	1-216-295-11	METAL	0K	5%	1/10W
R169	1-216-061-00	METAL	3.3K	5%	1/10W
R170	1-216-025-00	METAL	100	5%	1/10W

Ref.No	Part No.	Description			Remark
R171	1-216-025-00	METAL	100	5%	1/10W
R172	1-216-025-00	METAL	100	5%	1/10W
R173	1-216-025-00	METAL	100	5%	1/10W
R201	1-216-113-00	METAL	470K	5%	1/10W
R202	1-216-075-00	METAL	12K	5%	1/10W
R203	1-216-099-00	METAL	120K	5%	1/10W
R204	1-216-097-00	METAL	100K	5%	1/10W
R205	1-216-037-00	METAL	330	5%	1/10W
R206	1-216-049-00	METAL	1K	5%	1/10W
R207	1-216-049-00	METAL	1K	5%	1/10W
R208	1-216-025-00	METAL	100	5%	1/10W
R209	1-216-101-00	METAL	150K	5%	1/10W
R211	1-216-295-11	METAL	0	5%	1/10W
R212	1-216-081-00	METAL	22K	5%	1/10W
R213	1-216-057-00	METAL	2.2K	5%	1/10W
R214	1-216-057-00	METAL	2.2K	5%	1/10W
R215	1-216-049-00	METAL	1K	5%	1/10W
R216	1-216-051-00	METAL	1.2K	5%	1/10W
R217	1-216-053-00	METAL	1.5K	5%	1/10W
R218	1-216-039-00	METAL	390	5%	1/10W
R219	1-216-039-00	METAL	390	5%	1/10W
R220	1-216-111-00	METAL	390K	5%	1/10W
R221	1-216-103-91	METAL	180K	5%	1/10W
R225	1-216-017-00	METAL	47	5%	1/10W
R226	1-216-057-00	METAL	2.2K	5%	1/10W
R227	1-216-053-00	METAL	1.5K	5%	1/10W
R229	1-216-073-00	METAL	10K	5%	1/10W
R230	1-216-693-11	METAL	56K	0.50%	1/10W
R231	1-216-063-00	METAL	3.9K	5%	1/10W
R232	1-216-055-00	METAL	1.8K	5%	1/10W
R233	1-216-097-00	METAL	100K	5%	1/10W
R234	1-216-077-00	METAL	15K	5%	1/10W
R236	1-216-677-11	METAL	12K	0.50%	1/10W
R237	1-216-675-11	METAL	10K	0.50%	1/10W
R238	1-216-067-00	METAL	5.6K	5%	1/10W
R239	1-216-073-00	METAL	10K	5%	1/10W
R240	1-216-025-00	METAL	100	5%	1/10W
R241	1-216-073-00	METAL	10K	5%	1/10W
R242	1-216-049-00	METAL	1K	5%	1/10W
R243	1-216-049-00	METAL	1K	5%	1/10W
R244	1-216-063-00	METAL	3.9K	5%	1/10W
R245	1-216-053-00	METAL	1.5K	5%	1/10W
R246	1-216-053-00	METAL	1.5K	5%	1/10W
R247	1-216-025-00	METAL	100	5%	1/10W
R248	1-216-045-00	METAL	680	5%	1/10W
R249	1-216-049-00	METAL	1K	5%	1/10W
R250	1-216-025-00	METAL	100	5%	1/10W
R251	1-216-049-00	METAL	1K	5%	1/10W
R252	1-216-025-00	METAL	100	5%	1/10W
R253	1-216-049-00	METAL	1K	5%	1/10W
R254	1-216-049-00	METAL	1K	5%	1/10W
R255	1-216-065-00	METAL	4.7K	5%	1/10W
R256	1-216-065-00	METAL	4.7K	5%	1/10W
R257	1-216-025-00	METAL	100	5%	1/10W
R258	1-216-025-00	METAL	100	5%	1/10W
R259	1-216-045-00	METAL	680	5%	1/10W
R262	1-216-651-11	METAL	1K	0.50%	1/10W
R263	1-216-655-11	METAL	1.5K	0.50%	1/10W
R264	1-216-651-11	METAL	1K	0.50%	1/10W
R501	1-216-049-00	METAL	1K	5%	1/10W
R503	1-216-057-00	METAL	2.2K	5%	1/10W
R504	1-216-057-00	METAL	2.2K	5%	1/10W
R505	1-216-049-00	METAL	1K	5%	1/10W
R506	1-216-049-00	METAL	1K	5%	1/10W
R507	1-216-048-00	METAL	910	5%	1/10W

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Ref.No	Part No.	Description			Remark
R508	1-216-027-00	METAL	120	5%	1/10W
R509	1-216-057-00	METAL	2.2K	5%	1/10W
R510	1-216-065-00	METAL	4.7K	5%	1/10W
R511	1-216-037-00	METAL	330	5%	1/10W
R512	1-216-065-00	METAL	4.7K	5%	1/10W
R513	1-216-057-00	METAL	2.2K	5%	1/10W
R514	1-216-073-00	METAL	10K	5%	1/10W
R515	1-216-049-00	METAL	1K	5%	1/10W
R516	1-216-025-00	METAL	100	5%	1/10W
R517	1-216-057-00	METAL	2.2K	5%	1/10W
R518	1-216-073-00	METAL	10K	5%	1/10W
R519	1-216-049-00	METAL	1K	5%	1/10W
R520	1-216-053-00	METAL	1.5K	5%	1/10W
R521	1-216-073-00	METAL	10K	5%	1/10W
R522	1-216-085-00	METAL	33K	5%	1/10W
R523	1-216-081-00	METAL	22K	5%	1/10W
R524	1-216-033-00	METAL	220	5%	1/10W
R525	1-216-049-00	METAL	1K	5%	1/10W
R526	1-216-049-00	METAL	1K	5%	1/10W
R528	1-216-657-11	METAL	1.8K	0.50%	1/10W
R529	1-216-089-91	METAL	47K	5%	1/10W
R530	1-216-051-00	METAL	1.2K	5%	1/10W
R531	1-216-085-00	METAL	33K	5%	1/10W
R532	1-216-027-00	METAL	120	5%	1/10W
R533	1-216-069-00	METAL	6.8K	5%	1/10W
R534	1-216-077-00	METAL	15K	5%	1/10W
R535	1-216-033-00	METAL	220	5%	1/10W
R536	1-216-039-00	METAL	390	5%	1/10W
R537	1-216-063-00	METAL	3.9K	5%	1/10W
R538	1-216-077-00	METAL	15K	5%	1/10W
R539	1-216-089-91	METAL	47K	5%	1/10W
R540	1-216-095-91	METAL	82K	5%	1/10W
R541	1-216-097-00	METAL	100K	5%	1/10W
R562	1-216-097-00	METAL	100K	5%	1/10W
R563	1-216-073-00	METAL	10K	5%	1/10W
R565	1-216-105-00	METAL	220K	5%	1/10W
R566	1-216-073-00	METAL	10K	5%	1/10W
R567	1-216-295-11	METAL	0	5%	1/10W
R568	1-216-033-00	METAL	220	5%	1/10W
R569	1-216-033-00	METAL	220	5%	1/10W
R570	1-216-019-00	METAL	56	5%	1/10W
R701	1-216-025-00	METAL	100	5%	1/10W
R702	1-216-625-11	METAL	82	0.50%	1/10W
R703	1-216-629-11	METAL	120	0.50%	1/10W
R704	1-216-631-11	METAL	150	0.50%	1/10W
R705	1-216-651-11	METAL	1K	0.50%	1/10W
R706	1-216-081-00	METAL	22K	5%	1/10W
R707	1-216-651-11	METAL	1K	0.50%	1/10W
R708	1-216-081-00	METAL	22K	5%	1/10W
R709	1-216-651-11	METAL	1K	0.50%	1/10W
R710	1-216-081-00	METAL	22K	5%	1/10W
R711	1-216-651-11	METAL	1K	0.50%	1/10W
R712	1-216-081-00	METAL	22K	5%	1/10W
R713	1-216-691-11	METAL	47K	0.50%	1/10W
R714	1-216-675-11	METAL	10K	0.50%	1/10W
R715	1-216-691-11	METAL	47K	0.50%	1/10W
R716	1-216-693-11	METAL	56K	0.50%	1/10W
R717	1-216-691-11	METAL	47K	0.50%	1/10W
R718	1-216-693-11	METAL	56K	0.50%	1/10W
R719	1-216-691-11	METAL	47K	0.50%	1/10W
R720	1-216-693-11	METAL	56K	0.50%	1/10W
R721	1-216-655-11	METAL	1.5K	0.50%	1/10W
R722	1-216-049-00	METAL	1K	5%	1/10W
R723	1-216-659-11	METAL	2.2K	0.50%	1/10W
R724	1-216-660-11	METAL	2.4K	0.50%	1/10W
R725	1-216-049-00	METAL	1K	5%	1/10W
R726	1-216-049-00	METAL	1K	5%	1/10W
R727	1-216-659-11	METAL	2.2K	0.50%	1/10W
R728	1-216-660-11	METAL	2.4K	0.50%	1/10W
R729	1-216-655-11	METAL	1.5K	0.50%	1/10W
R730	1-216-655-11	METAL	1.5K	0.50%	1/10W
R731	1-216-659-11	METAL	2.2K	0.50%	1/10W
R732	1-216-660-11	METAL	2.4K	0.50%	1/10W
R733	1-216-049-00	METAL	1K	5%	1/10W
R734	1-216-081-00	METAL	22K	5%	1/10W
R735	1-216-073-00	METAL	10K	5%	1/10W
R736	1-216-073-00	METAL	10K	5%	1/10W
R737	1-216-073-00	METAL	10K	5%	1/10W
R738	1-216-687-11	METAL	33K	0.50%	1/10W
R739	1-216-073-00	METAL	10K	5%	1/10W
R740	1-216-687-11	METAL	33K	0.50%	1/10W
R741	1-216-085-00	METAL	33K	5%	1/10W
R742	1-216-073-00	METAL	10K	5%	1/10W
R745	1-216-295-11	METAL	0	5%	1/10W
R746	1-216-295-11	METAL	0	5%	1/10W
R747	1-216-687-11	METAL	33K	0.50%	1/10W
R801	1-216-049-00	METAL	1K	5%	1/10W
R802	1-216-043-00	METAL	560	5%	1/10W
R803	1-216-041-00	METAL	470	5%	1/10W
R804	1-216-049-00	METAL	1K	5%	1/10W
R805	1-216-043-00	METAL	560	5%	1/10W
R806	1-216-041-00	METAL	470	5%	1/10W
R807	1-216-049-00	METAL	1K	5%	1/10W
R808	1-216-043-00	METAL	560	5%	1/10W
R809	1-216-041-00	METAL	470	5%	1/10W
R810	1-216-049-00	METAL	1K	5%	1/10W
R811	1-216-025-00	METAL	100	5%	1/10W
R812	1-216-057-00	METAL	2.2K	5%	1/10W
R813	1-216-049-00	METAL	1K	5%	1/10W
R814	1-216-025-00	METAL	100	5%	1/10W
R815	1-216-057-00	METAL	2.2K	5%	1/10W
R816	1-216-049-00	METAL	1K	5%	1/10W
R817	1-216-025-00	METAL	100	5%	1/10W
R818	1-216-057-00	METAL	2.2K	5%	1/10W
R820	1-216-025-00	METAL	100	5%	1/10W
R821	1-216-025-00	METAL	100	5%	1/10W
R822	1-216-049-00	METAL	1K	5%	1/10W
R823	1-216-025-00	METAL	100	5%	1/10W
R824	1-216-049-00	METAL	1K	5%	1/10W
R825	1-216-049-00	METAL	1K	5%	1/10W
R826	1-216-049-00	METAL	1K	5%	1/10W
R827	1-216-651-11	METAL	1K	0.50%	1/10W
R828	1-216-651-11	METAL	1K	0.50%	1/10W
R829	1-216-651-11	METAL	1K	0.50%	1/10W
R830	1-216-651-11	METAL	1K	0.50%	1/10W
R831	1-216-659-11	METAL	2.2K	0.50%	1/10W
R832	1-216-659-11	METAL	2.2K	0.50%	1/10W
R833	1-216-659-11	METAL	2.2K	0.50%	1/10W
R834	1-216-659-11	METAL	2.2K	0.50%	1/10W
R835	1-216-659-11	METAL	2.2K	0.50%	1/10W
R836	1-216-659-11	METAL	2.2K	0.50%	1/10W
R837	1-216-659-11	METAL	2.2K	0.50%	1/10W
R838	1-216-659-11	METAL	2.2K	0.50%	1/10W
R839	1-216-025-00	METAL	100	5%	1/10W
R840	1-216-025-00	METAL	100	5%	1/10W
R841	1-216-073-00	METAL	10K	5%	1/10W
R842	1-216-025-00	METAL	100	5%	1/10W
R843	1-216-051-00	METAL	1.2K	5%	1/10W
R844	1-216-057-00	METAL	2.2K	5%	1/10W
R845	1-216-651-11	METAL	1K	0.50%	1/10W

Ref.No	Part No.	Description			Remark
R846	1-216-651-11	METAL	1K	0.50%	1/10W
R847	1-216-295-11	METAL	0	5%	1/10W
R848	1-216-053-00	METAL	1.5K	5%	1/10W
R849	1-216-309-00	METAL	5.6	5%	1/10W
R850	1-216-309-00	METAL	5.6	5%	1/10W
R851	1-216-631-11	METAL	150	0.50%	1/10W
R852	1-216-631-11	METAL	150	0.50%	1/10W
R853	1-216-081-00	METAL	22K	5%	1/10W
R854	1-216-073-00	METAL	10K	5%	1/10W
R855	1-216-025-00	METAL	100	5%	1/10W
R856	1-216-051-00	METAL	1.2K	5%	1/10W
R857	1-216-057-00	METAL	2.2K	5%	1/10W
R858	1-216-055-00	METAL	1.8K	5%	1/10W
R859	1-216-069-00	METAL	6.8K	5%	1/10W
R860	1-216-651-11	METAL	1K	0.50%	1/10W
R861	1-216-651-11	METAL	1K	0.50%	1/10W
R862	1-216-295-11	METAL	0	5%	1/10W
R863	1-216-053-00	METAL	1.5K	5%	1/10W
R864	1-216-309-00	METAL	5.6	5%	1/10W
R865	1-216-309-00	METAL	5.6	5%	1/10W
R866	1-216-631-11	METAL	150	0.50%	1/10W
R867	1-216-631-11	METAL	150	0.50%	1/10W
R868	1-216-081-00	METAL	22K	5%	1/10W
R869	1-216-073-00	METAL	10K	5%	1/10W
R870	1-216-025-00	METAL	100	5%	1/10W
R871	1-216-051-00	METAL	1.2K	5%	1/10W
R872	1-216-057-00	METAL	2.2K	5%	1/10W
R873	1-216-651-11	METAL	1K	0.50%	1/10W
R874	1-216-651-11	METAL	1K	0.50%	1/10W
R875	1-216-295-11	METAL	0	5%	1/10W
R876	1-216-053-00	METAL	1.5K	5%	1/10W
R877	1-216-309-00	METAL	5.6	5%	1/10W
R878	1-216-309-00	METAL	5.6	5%	1/10W
R879	1-216-631-11	METAL	150	0.50%	1/10W
R880	1-216-631-11	METAL	150	0.50%	1/10W
R881	1-216-081-00	METAL	22K	5%	1/10W
R882	1-216-073-00	METAL	10K	5%	1/10W
R883	1-216-025-00	METAL	100	5%	1/10W
R884	1-216-051-00	METAL	1.2K	5%	1/10W
R885	1-216-057-00	METAL	2.2K	5%	1/10W
R886	1-216-651-11	METAL	1K	0.50%	1/10W
R887	1-216-651-11	METAL	1K	0.50%	1/10W
R888	1-216-295-11	METAL	0	5%	1/10W
R889	1-216-053-00	METAL	1.5K	5%	1/10W
R890	1-216-309-00	METAL	5.6	5%	1/10W
R891	1-216-309-00	METAL	5.6	5%	1/10W
R892	1-216-631-11	METAL	150	0.50%	1/10W
R893	1-216-631-11	METAL	150	0.50%	1/10W
R894	1-216-081-00	METAL	22K	5%	1/10W
R895	1-216-073-00	METAL	10K	5%	1/10W
R896	1-216-025-00	METAL	100	5%	1/10W
R897	1-216-051-00	METAL	1.2K	5%	1/10W
R898	1-216-057-00	METAL	2.2K	5%	1/10W
R899	1-216-651-11	METAL	1K	0.50%	1/10W
R900	1-216-643-11	METAL	470	0.50%	1/10W
R901	1-216-295-11	METAL	0	5%	1/10W
R902	1-216-053-00	METAL	1.5K	5%	1/10W
R903	1-216-309-00	METAL	5.6	5%	1/10W
R904	1-216-309-00	METAL	5.6	5%	1/10W
R905	1-216-631-11	METAL	150	0.50%	1/10W
R906	1-216-631-11	METAL	150	0.50%	1/10W
R907	1-216-081-00	METAL	22K	5%	1/10W
R908	1-216-073-00	METAL	10K	5%	1/10W
R909	1-216-025-00	METAL	100	5%	1/10W
R910	1-216-051-00	METAL	1.2K	5%	1/10W
R911	1-216-057-00	METAL	2.2K	5%	1/10W
R912	1-216-651-11	METAL	1K	0.50%	1/10W
R913	1-216-643-11	METAL	470	0.50%	1/10W
R914	1-216-295-11	METAL	0	5%	1/10W
R915	1-216-053-00	METAL	1.5K	5%	1/10W
R916	1-216-309-00	METAL	5.6	5%	1/10W
R917	1-216-309-00	METAL	5.6	5%	1/10W
R918	1-216-631-11	METAL	150	0.50%	1/10W
R919	1-216-631-11	METAL	150	0.50%	1/10W
R920	1-216-081-00	METAL	22K	5%	1/10W
R921	1-216-073-00	METAL	10K	5%	1/10W
R922	1-216-063-00	METAL	3.9K	5%	1/10W
R923	1-216-073-00	METAL	10K	5%	1/10W
R924	1-216-057-00	METAL	2.2K	5%	1/10W
R925	1-216-057-00	METAL	2.2K	5%	1/10W
R926	1-216-309-00	METAL	5.6	5%	1/10W
R927	1-216-309-00	METAL	5.6	5%	1/10W
R928	1-216-629-11	METAL	120	0.50%	1/10W
R929	1-216-633-11	METAL	180	0.50%	1/10W
R930	1-216-081-00	METAL	22K	5%	1/10W
R931	1-216-049-00	METAL	1K	5%	1/10W
R932	1-216-049-00	METAL	1K	5%	1/10W
R933	1-216-049-00	METAL	1K	5%	1/10W
R934	1-216-049-00	METAL	1K	5%	1/10W
		<CRYSTAL>			
X201	1-579-466-11	VIBRATOR, CRYSTAL			
X501	1-579-738-21	VIBRATOR, CRYSTAL			

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	*A-8275-528-A	FMY-10P(L) BOARD, COMPLETE(UP-1800EPM)			
	*A-8275-495-A	FMY-10P(H) BOARD, COMPLETE(UP-1850EPM)			
		**********			
		<BUZZER>			
BZ401	1-529-069-11	BUZZER, PIEZOELECTRIC			
		<CAPACITOR>			
C1	1-126-217-11	ELECT	15uF	20%	10V
C2	1-126-217-11	ELECT	15uF	20%	10V
C3	1-126-217-11	ELECT	15uF	20%	10V
C4	1-163-117-00	CERAMIC	100PF	5%	50V
C5	1-163-038-00	CERAMIC	0.1uF		25V
C6	1-163-117-00	CERAMIC	100PF	5%	50V
C7	1-126-217-11	ELECT	15uF	20%	10V
C8	1-163-117-00	CERAMIC	100PF	5%	50V
C9	1-126-217-11	ELECT	15uF	20%	10V
C10	1-163-038-00	CERAMIC	0.1uF		25V
C11	1-126-217-11	ELECT	15uF	20%	10V
C12	1-163-038-00	CERAMIC	0.1uF		25V
C13	1-126-217-11	ELECT	15uF	20%	10V
C14	1-163-038-00	CERAMIC	0.1uF		25V
C15	1-163-038-00	CERAMIC	0.1uF		25V
C16	1-163-037-11	CERAMIC	0.022uF	10%	25V
C17	1-163-038-00	CERAMIC	0.1uF		25V
C18	1-126-217-11	ELECT	15uF	20%	10V
C19	1-126-217-11	ELECT	15uF	20%	10V
C20	1-163-038-00	CERAMIC	0.1uF		25V
C21	1-163-038-00	CERAMIC	0.1uF		25V
C22	1-163-037-11	CERAMIC	0.022uF	10%	25V
C23	1-128-065-11	ELECT	68uF	20%	10V
C24	1-128-065-11	ELECT	68uF	20%	10V
C25	1-163-038-00	CERAMIC	0.1uF		25V

FMY-10P

Ref.No	Part No.	Description			Remark
C26	1-163-227-11	CERAMIC	10PF		50V
C27	1-163-038-00	CERAMIC	0.1uF		25V
C28	1-163-227-11	CERAMIC	10PF		50V
C29	1-163-227-11	CERAMIC	10PF		50V
C30	1-126-204-11	ELECT	47uF	20%	16V
C31	1-163-037-11	CERAMIC	0.022uF	10%	25V
C32	1-163-037-11	CERAMIC	0.022uF	10%	25V
C33	1-163-038-00	CERAMIC	0.1uF		25V
C34	1-163-038-00	CERAMIC	0.1uF		25V
C35	1-163-038-00	CERAMIC	0.1uF		25V
C36	1-163-038-00	CERAMIC	0.1uF		25V
C37	1-163-038-00	CERAMIC	0.1uF		25V
C38	1-163-038-00	CERAMIC	0.1uF		25V
C39	1-163-038-00	CERAMIC	0.1uF		25V
C40	1-163-038-00	CERAMIC	0.1uF		25V
C41	1-163-038-00	CERAMIC	0.1uF		25V
C42	1-126-204-11	ELECT	47uF	20%	16V
C43	1-163-038-00	CERAMIC	0.1uF		25V
C44	1-126-204-11	ELECT	47uF	20%	16V
C45	1-163-038-00	CERAMIC	0.1uF		25V
C46	1-126-204-11	ELECT	47uF	20%	16V
C47	1-163-038-00	CERAMIC	0.1uF		25V
C48	1-163-038-00	CERAMIC	0.1uF		25V
C49	1-163-038-00	CERAMIC	0.1uF		25V
C50	1-163-038-00	CERAMIC	0.1uF		25V
C51	1-163-038-00	CERAMIC	0.1uF		25V
C52	1-163-038-00	CERAMIC	0.1uF		25V
C53	1-126-204-11	ELECT	47uF	20%	16V
C54	1-163-038-00	CERAMIC	0.1uF		25V
C55	1-163-038-00	CERAMIC	0.1uF		25V
C56	1-126-204-11	ELECT	47uF	20%	16V
C57	1-163-038-00	CERAMIC	0.1uF		25V
C58	1-164-699-11	CERAMIC	0.0033uF	5%	50V
C59	1-163-038-00	CERAMIC	0.1uF		25V
C60	1-163-038-00	CERAMIC	0.1uF		25V
C61	1-163-038-00	CERAMIC	0.1uF		25V
C62	1-163-038-00	CERAMIC	0.1uF		25V
C63	1-163-132-00	CERAMIC	430PF	5%	50V
C64	1-164-004-11	CERAMIC	0.1uF	10%	25V
C200	1-126-204-11	ELECT	47uF	20%	16V (UP-1850EPM)
C201	1-126-607-11	ELECT	47uF	20%	4V (UP-1850EPM)
C202	1-126-607-11	ELECT	47uF	20%	4V (UP-1850EPM)
C203	1-163-038-00	CERAMIC	0.1uF		25V (UP-1850EPM)
C204	1-126-204-11	ELECT	47uF	20%	16V
C205	1-164-346-11	CERAMIC	1uF		16V
C206	1-164-346-11	CERAMIC	1uF		16V
C207	1-163-133-00	CERAMIC	470PF	5%	50V
C208	1-164-004-11	CERAMIC	0.1uF	10%	25V
C209	1-164-346-11	CERAMIC	1uF		16V
C210	1-164-346-11	CERAMIC	1uF		16V
C211	1-163-038-00	CERAMIC	0.1uF		25V
C212	1-163-239-11	CERAMIC	33PF	5%	50V
C213	1-126-204-11	ELECT	47uF	20%	16V
C214	1-164-346-11	CERAMIC	1uF		16V
C215	1-164-346-11	CERAMIC	1uF		16V
C216	1-163-109-00	CERAMIC	47PF	5%	50V
C217	1-163-109-00	CERAMIC	47PF	5%	50V
C228	1-164-346-11	CERAMIC	1uF		16V
C229	1-163-038-00	CERAMIC	0.1uF		25V
C230	1-163-117-00	CERAMIC	100PF	5%	50V
C231	1-163-038-00	CERAMIC	0.1uF		25V
C232	1-163-038-00	CERAMIC	0.1uF		25V
C233	1-163-109-00	CERAMIC	47PF	5%	50V
C234	1-163-109-00	CERAMIC	47PF	5%	50V
C235	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C236	1-163-038-00	CERAMIC	0.1uF		25V
C237	1-163-038-00	CERAMIC	0.1uF		25V
C239	1-163-037-11	CERAMIC	0.022uF	10%	25V
C240	1-163-038-00	CERAMIC	0.1uF		25V
C241	1-163-038-00	CERAMIC	0.1uF		25V
C242	1-163-038-00	CERAMIC	0.1uF		25V
C243	1-163-038-00	CERAMIC	0.1uF		25V
C244	1-126-204-11	ELECT	47uF	20%	16V
C245	1-163-038-00	CERAMIC	0.1uF		25V
C246	1-163-038-00	CERAMIC	0.1uF		25V
C401	1-126-204-11	ELECT	47uF	20%	16V
C402	1-163-038-00	CERAMIC	0.1uF		25V
C403	1-128-065-11	ELECT	68uF	20%	10V
C404	1-163-038-00	CERAMIC	0.1uF		25V
C405	1-163-038-00	CERAMIC	0.1uF		25V
C406	1-163-038-00	CERAMIC	0.1uF		25V
C407	1-163-038-00	CERAMIC	0.1uF		25V
C408	1-163-038-00	CERAMIC	0.1uF		25V
C409	1-163-038-00	CERAMIC	0.1uF		25V
C410	1-163-038-00	CERAMIC	0.1uF		25V
C411	1-163-097-00	CERAMIC	15PF	5%	50V
C412	1-163-097-00	CERAMIC	15PF	5%	50V
C413	1-126-204-11	ELECT	47uF	20%	16V
C414	1-163-038-00	CERAMIC	0.1uF		25V
C415	1-163-038-00	CERAMIC	0.1uF		25V
C416	1-126-204-11	ELECT	47uF	20%	16V
C417	1-163-038-00	CERAMIC	0.1uF		25V
C418	1-163-038-00	CERAMIC	0.1uF		25V
C419	1-126-204-11	ELECT	47uF	20%	16V
C420	1-163-038-00	CERAMIC	0.1uF		25V
C421	1-163-038-00	CERAMIC	0.1uF		25V
C422	1-126-204-11	ELECT	47uF	20%	16V
C423	1-163-038-00	CERAMIC	0.1uF		25V
C424	1-163-038-00	CERAMIC	0.1uF		25V
C425	1-126-204-11	ELECT	47uF	20%	16V
C426	1-126-204-11	ELECT	47uF	20%	16V
C427	1-126-204-11	ELECT	47uF	20%	16V
C428	1-126-204-11	ELECT	47uF	20%	16V
C429	1-163-038-00	CERAMIC	0.1uF		25V
C430	1-163-038-00	CERAMIC	0.1uF		25V
C431	1-163-038-00	CERAMIC	0.1uF		25V
C432	1-163-038-00	CERAMIC	0.1uF		25V
C433	1-163-038-00	CERAMIC	0.1uF		25V
C434	1-163-038-00	CERAMIC	0.1uF		25V
C435	1-163-038-00	CERAMIC	0.1uF		25V
C436	1-163-038-00	CERAMIC	0.1uF		25V
C437	1-163-038-00	CERAMIC	0.1uF		25V
C438	1-164-232-11	CERAMIC	0.01uF	10%	50V
C439	1-164-232-11	CERAMIC	0.01uF	10%	50V
C440	1-164-232-11	CERAMIC	0.01uF	10%	50V
C600	1-163-038-00	CERAMIC	0.1uF		25V
C601	1-163-038-00	CERAMIC	0.1uF		25V
C602	1-163-038-00	CERAMIC	0.1uF		25V
C603	1-163-038-00	CERAMIC	0.1uF		25V
C604	1-163-038-00	CERAMIC	0.1uF		25V
C605	1-163-113-00	CERAMIC	68PF	5%	50V
C606	1-163-113-00	CERAMIC	68PF	5%	50V
C607	1-163-113-00	CERAMIC	68PF	5%	50V
C608	1-163-113-00	CERAMIC	68PF	5%	50V
C609	1-163-113-00	CERAMIC	68PF	5%	50V
C610	1-163-113-00	CERAMIC	68PF	5%	50V
C611	1-163-113-00	CERAMIC	68PF	5%	50V
C612	1-163-113-00	CERAMIC	68PF	5%	50V

Ref.No	Part No.	Description	Remark
		<CONNECTOR>	
CN1	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
CN2	*1-560-894-00	PIN, CONNECTOR 6P	
CN401	1-506-469-11	PIN, CONNECTOR 4P	
CN402	1-566-523-11	CONNECTOR, FPC (ZIF) 7P	
CN403	1-565-212-11	CONNECTOR, FPC (ZIF) 26P	
CN404	1-506-477-11	PIN, CONNECTOR 12P	
CN405	1-506-472-11	PIN, CONNECTOR 7P	
CN406	1-506-472-11	PIN, CONNECTOR 7P	
CN407	1-506-474-11	PIN, CONNECTOR 9P	
CN408	1-506-467-11	PIN, CONNECTOR 2P	
CN409	1-506-479-11	PIN, CONNECTOR 14P	
CN410	*1-564-004-11	PIN, CONNECTOR 5P	
CN600	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
		<DIODE>	
D1	8-719-800-76	DIODE 1SS226	
D2	8-719-800-76	DIODE 1SS226	
D3	8-719-800-76	DIODE 1SS226	
D401	8-719-400-18	DIODE 1SS184	
D402	8-719-400-18	DIODE 1SS184	
D403	8-719-104-34	DIODE 1S2836	
DL1	8-759-507-10	IC DS1000S-75	
DL200	8-759-503-50	IC DS1000S-50	
		<FILTER>	
FL1	1-236-738-11	FILTER, EMI	
FL2	1-236-738-11	FILTER, EMI	
FL3	1-236-738-11	FILTER, EMI	
		<IC>	
IC3	8-759-989-03	IC 74F32SJ	
IC6	8-752-337-04	IC CXD1176Q	
IC7	8-752-337-04	IC CXD1176Q	
IC8	8-752-337-04	IC CXD1176Q	
IC9	8-759-093-19	IC CXD8444Q	
IC10	8-752-338-46	IC CXD1178Q	
IC200	8-759-093-63	IC HM51H240AS7-EL(UP-1800EPM)	
IC200	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC201	8-759-093-63	IC HM51H240AS7-EL(UP-1800EPM)	
IC201	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC202	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC203	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC204	8-759-093-63	IC HM51H240AS7-EL(UP-1800EPM)	
IC204	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC205	8-759-093-63	IC HM51H240AS7-EL(UP-1800EPM)	
IC205	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC206	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC207	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC208	8-759-093-63	IC HM51H240AS7-EL(UP-1800EPM)	
IC209	8-759-093-63	IC HM51H240AS7-EL(UP-1800EPM)	
IC209	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC210	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC211	8-759-255-89	IC HM514400AS7GS(UP-1850EPM)	
IC212	8-759-114-07	IC UPD65013GF-407-3BA	
IC213	8-759-992-78	IC 74F257ASJ	
IC214	8-759-989-01	IC 74F08SJ	
IC215	8-759-989-03	IC 74F32SJ	
IC216	8-759-114-09	IC UPD65006GF-250-3B8	
IC217	*8-759-254-92	IC HD6475328F-FMY10-01	
IC219	8-759-084-15	IC CXD8391Q	
IC402	8-759-937-56	IC S-8054ALB-LM-S	
IC403	8-759-044-78	IC AK6420F	
IC404	8-759-254-44	IC MB89093PFV-G-122-BND	
IC406	*8-759-257-13	IC M27C512-UP18PSYV1.00	
IC407	8-759-154-60	IC UPD71055GB-10-3B4	
IC408	8-759-047-38	IC UPD4713GT	
IC409	8-759-149-05	IC UPD71051GB-10-3B4	
IC410	8-759-254-94	IC HD6413378F10	
IC411	8-759-925-81	IC SN74HC20ANS	
IC412	8-759-925-85	IC SN74HC32ANS	
IC413	8-759-925-74	IC SN74HC04ANS	
IC414	8-759-926-11	IC SN74HC138ANS	
IC600	8-759-257-07	IC M5M27C201FP-UP18S-E2	
IC601	8-759-088-02	IC CXD8398Q	
IC602	8-759-257-06	IC M5M27C201FP-UP18M-E2	
IC603	8-759-257-05	IC M5M27C201FP-UP18R-E2	
IC604	8-759-926-82	IC SN74HC574ANS	
IC605	8-759-948-02	IC 74F86SJ	
IC606	8-759-948-01	IC 74F04SJ	
		<JUMPER>	
JR4	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR5	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR36	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR37	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR39	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR40	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR48	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR104	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR105	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR162	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR168	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR170	1-216-295-11	METAL GLAZE 0 5% 1/10W	
JR240	1-216-295-11	METAL GLAZE 0 5% 1/10W	
		<LINE FILTER>	
L1	1-424-090-11	COIL, LINE FILTER	
L2	1-424-090-11	COIL, LINE FILTER	
L3	1-424-090-11	COIL, LINE FILTER	
L4	1-424-090-11	COIL, LINE FILTER	
L401	1-424-643-11	COIL, CHOKE 10UH	
		<TRANSISTOR>	
Q1	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q2	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q3	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q4	8-729-402-84	TRANSISTOR XN4601	
Q5	8-729-402-84	TRANSISTOR XN4601	
Q6	8-729-402-84	TRANSISTOR XN4601	
Q7	8-729-901-01	TRANSISTOR DTC144EK	
Q401	8-729-901-01	TRANSISTOR DTC144EK	
Q402	8-729-901-01	TRANSISTOR DTC144EK	
		<RESISTOR>	
R7	1-216-009-00	METAL 22 5% 1/10W	
R8	1-216-073-00	METAL 10K 5% 1/10W	
R9	1-216-089-91	METAL 47K 5% 1/10W	
R10	1-216-009-00	METAL 22 5% 1/10W	
R11	1-216-009-00	METAL 22 5% 1/10W	
R12	1-216-073-00	METAL 10K 5% 1/10W	
R13	1-216-049-11	METAL 1K 5% 1/10W	
R14	1-216-073-00	METAL 10K 5% 1/10W	
R15	1-216-025-00	METAL 100 5% 1/10W	
R16	1-216-073-00	METAL 10K 5% 1/10W	
R17	1-216-025-00	METAL 100 5% 1/10W	
R18	1-216-073-00	METAL 10K 5% 1/10W	
R19	1-216-025-00	METAL 100 5% 1/10W	
R20	1-216-073-00	METAL 10K 5% 1/10W	
R22	1-216-053-00	METAL 1.5K 5% 1/10W	

FMY-10P

Ref.No	Part No.	Description			Remark
R23	1-216-033-00	METAL	220	5%	1/10W
R24	1-216-053-00	METAL	1.5K	5%	1/10W
R25	1-216-053-00	METAL	1.5K	5%	1/10W
R26	1-216-053-00	METAL	1.5K	5%	1/10W
R27	1-216-033-00	METAL	220	5%	1/10W
R29	1-216-635-11	METAL	220	0.50%	1/10W
R30	1-216-053-00	METAL	1.5K	5%	1/10W
R31	1-216-053-00	METAL	1.5K	5%	1/10W
R32	1-216-022-00	METAL	75	5%	1/10W
R33	1-216-022-00	METAL	75	5%	1/10W
R34	1-216-022-00	METAL	75	5%	1/10W
R42	1-216-033-00	METAL	220	5%	1/10W
R43	1-216-017-00	METAL	47	5%	1/10W
R44	1-216-033-00	METAL	220	5%	1/10W
R45	1-216-017-00	METAL	47	5%	1/10W
R46	1-216-033-00	METAL	220	5%	1/10W
R47	1-216-017-00	METAL	47	5%	1/10W
R49	1-216-033-00	METAL	220	5%	1/10W
R50	1-216-033-00	METAL	220	5%	1/10W
R51	1-216-033-00	METAL	220	5%	1/10W
R52	1-216-033-00	METAL	220	5%	1/10W
R53	1-216-033-00	METAL	220	5%	1/10W
R54	1-216-033-00	METAL	220	5%	1/10W
R55	1-216-033-00	METAL	220	5%	1/10W
R56	1-216-033-00	METAL	220	5%	1/10W
R58	1-216-033-00	METAL	220	5%	1/10W
R59	1-216-635-11	METAL	220	0.50%	1/10W
R60	1-216-635-11	METAL	220	0.50%	1/10W
R61	1-216-033-00	METAL	220	5%	1/10W
R62	1-216-033-00	METAL	220	5%	1/10W
R63	1-216-033-00	METAL	220	5%	1/10W
R64	1-216-033-00	METAL	220	5%	1/10W
R65	1-216-033-00	METAL	220	5%	1/10W
R66	1-216-033-00	METAL	220	5%	1/10W
R67	1-216-033-00	METAL	220	5%	1/10W
R68	1-216-033-00	METAL	220	5%	1/10W
R69	1-216-033-00	METAL	220	5%	1/10W
R70	1-216-033-00	METAL	220	5%	1/10W
R71	1-216-033-00	METAL	220	5%	1/10W
R72	1-216-033-00	METAL	220	5%	1/10W
R73	1-216-033-00	METAL	220	5%	1/10W
R99	1-216-065-00	METAL	4.7K	5%	1/10W
R100	1-216-017-00	METAL	47	5%	1/10W
R101	1-216-017-00	METAL	47	5%	1/10W
R102	1-216-017-00	METAL	47	5%	1/10W
R103	1-216-025-00	METAL	100	5%	1/10W
R118	1-216-041-00	METAL	470	5%	1/10W
R119	1-216-041-00	METAL	470	5%	1/10W
R120	1-216-041-00	METAL	470	5%	1/10W
R121	1-216-041-00	METAL	470	5%	1/10W
R122	1-216-041-00	METAL	470	5%	1/10W
R123	1-216-041-00	METAL	470	5%	1/10W
R124	1-216-041-00	METAL	470	5%	1/10W
R125	1-216-041-00	METAL	470	5%	1/10W
R126	1-216-041-00	METAL	470	5%	1/10W
R127	1-216-041-00	METAL	470	5%	1/10W
R128	1-216-041-00	METAL	470	5%	1/10W
R129	1-216-041-00	METAL	470	5%	1/10W
R130	1-216-017-00	METAL	47	5%	1/10W
R131	1-216-017-00	METAL	47	5%	1/10W
R132	1-216-041-00	METAL	470	5%	1/10W
R135	1-216-041-00	METAL	470	5%	1/10W
R136	1-216-041-00	METAL	470	5%	1/10W
R138	1-216-041-00	METAL	470	5%	1/10W
R140	1-216-041-00	METAL	470	5%	1/10W
R142	1-216-041-00	METAL	470	5%	1/10W
R144	1-216-041-00	METAL	470	5%	1/10W
R146	1-216-041-00	METAL	470	5%	1/10W
R148	1-216-041-00	METAL	470	5%	1/10W
R150	1-216-041-00	METAL	470	5%	1/10W
R152	1-216-041-00	METAL	470	5%	1/10W
R154	1-216-061-00	METAL	3.3K	5%	1/10W
R155	1-216-041-00	METAL	470	5%	1/10W
R157	1-216-069-00	METAL	6.8K	5%	1/10W
R158	1-216-069-00	METAL	6.8K	5%	1/10W
R159	1-216-032-00	METAL	200	5%	1/10W
R160	1-216-032-00	METAL	200	5%	1/10W
R161	1-216-032-00	METAL	200	5%	1/10W
R163	1-216-049-00	METAL	1K	5%	1/10W
R171	1-216-295-00	METAL	0	5%	1/10W
R172	1-216-295-00	METAL	0	5%	1/10W
R173	1-216-295-00	METAL	0	5%	1/10W
R174	1-216-295-00	METAL	0	5%	1/10W
R175	1-216-295-00	METAL	0	5%	1/10W
R176	1-216-295-00	METAL	0	5%	1/10W
R200	1-216-049-00	METAL	1K	5%	1/10W
R201	1-216-049-00	METAL	1K	5%	1/10W
R202	1-216-017-00	METAL	47	5%	1/10W
R203	1-216-017-00	METAL	47	5%	1/10W
R204	1-216-017-00	METAL	47	5%	1/10W
R205	1-216-017-00	METAL	47	5%	1/10W
R206	1-216-017-00	METAL	47	5%	1/10W
R207	1-216-017-00	METAL	47	5%	1/10W
R208	1-216-017-00	METAL	47	5%	1/10W
R209	1-216-017-00	METAL	47	5%	1/10W
R210	1-216-017-00	METAL	47	5%	1/10W
R211	1-216-017-00	METAL	47	5%	1/10W
R212	1-216-017-00	METAL	47	5%	1/10W
R213	1-216-017-00	METAL	47	5%	1/10W
R214	1-216-017-00	METAL	47	5%	1/10W
R215	1-216-017-00	METAL	47	5%	1/10W
R216	1-216-017-00	METAL	47	5%	1/10W
R217	1-216-017-00	METAL	47	5%	1/10W
R218	1-216-017-00	METAL	47	5%	1/10W
R219	1-216-017-00	METAL	47	5%	1/10W
R220	1-216-017-00	METAL	47	5%	1/10W
R221	1-216-017-00	METAL	47	5%	1/10W
R222	1-216-017-00	METAL	47	5%	1/10W
R223	1-216-017-00	METAL	47	5%	1/10W
R224	1-216-017-00	METAL	47	5%	1/10W
R225	1-216-017-00	METAL	47	5%	1/10W
R226	1-216-025-00	METAL	100	5%	1/10W
R227	1-216-017-00	METAL	47	5%	1/10W
R228	1-216-017-00	METAL	47	5%	1/10W
R230	1-216-065-00	METAL	4.7K	5%	1/10W
R231	1-216-017-00	METAL	47	5%	1/10W
R232	1-216-041-00	METAL	470	5%	1/10W
R233	1-216-017-00	METAL	47	5%	1/10W
R234	1-216-295-11	METAL	0	5%	1/10W
R236	1-216-089-91	METAL	47K	5%	1/10W
R238	1-216-017-00	METAL	47	5%	1/10W
R239	1-216-049-00	METAL	1K	5%	1/10W
R241	1-216-065-00	METAL	4.7K	5%	1/10W
R242	1-216-121-00	METAL	1M	5%	1/10W
R250	1-216-295-11	METAL	0	5%	1/10W
R400	1-216-052-00	METAL	1.3K	5%	1/10W
R401	1-216-033-00	METAL	220	5%	1/10W
R402	1-216-033-00	METAL	220	5%	1/10W
R403	1-216-025-00	METAL	100	5%	1/10W
R404	1-216-025-00	METAL	100	5%	1/10W

Ref.No	Part No.	Description			Remark
R405	1-216-025-00	METAL	100	5%	1/10W
R406	1-216-025-00	METAL	100	5%	1/10W
R407	1-216-025-00	METAL	100	5%	1/10W
R408	1-216-025-00	METAL	100	5%	1/10W
R409	1-216-025-00	METAL	100	5%	1/10W
R410	1-216-025-00	METAL	100	5%	1/10W
R411	1-216-025-00	METAL	100	5%	1/10W
R412	1-216-025-00	METAL	100	5%	1/10W
R413	1-216-089-91	METAL	47K	5%	1/10W
R414	1-216-089-91	METAL	47K	5%	1/10W
R415	1-216-089-91	METAL	47K	5%	1/10W
R416	1-216-089-91	METAL	47K	5%	1/10W
R417	1-216-089-91	METAL	47K	5%	1/10W
R418	1-216-089-91	METAL	47K	5%	1/10W
R419	1-216-089-91	METAL	47K	5%	1/10W
R420	1-216-025-00	METAL	100	5%	1/10W
R421	1-216-025-00	METAL	100	5%	1/10W
R422	1-216-025-00	METAL	100	5%	1/10W
R423	1-216-025-00	METAL	100	5%	1/10W
R424	1-216-025-00	METAL	100	5%	1/10W
R425	1-216-025-00	METAL	100	5%	1/10W
R426	1-216-041-00	METAL	470	5%	1/10W
R427	1-216-097-00	METAL	100K	5%	1/10W
R428	1-216-089-91	METAL	47K	5%	1/10W
R429	1-216-025-00	METAL	100	5%	1/10W
R430	1-216-049-00	METAL	1K	5%	1/10W
R431	1-216-025-00	METAL	100	5%	1/10W
R432	1-216-089-91	METAL	47K	5%	1/10W
R433	1-216-025-00	METAL	100	5%	1/10W
R434	1-216-113-00	METAL	470K	5%	1/10W
R435	1-216-073-00	METAL	10K	5%	1/10W
R436	1-216-025-00	METAL	100	5%	1/10W
R437	1-216-073-00	METAL	10K	5%	1/10W
R438	1-216-025-00	METAL	100	5%	1/10W
R439	1-216-113-00	METAL	470K	5%	1/10W
R440	1-216-073-00	METAL	10K	5%	1/10W
R441	1-216-113-00	METAL	470K	5%	1/10W
R442	1-216-025-00	METAL	100	5%	1/10W
R443	1-216-089-91	METAL	47K	5%	1/10W
R444	1-216-089-91	METAL	47K	5%	1/10W
R445	1-216-089-91	METAL	47K	5%	1/10W
R446	1-216-025-00	METAL	100	5%	1/10W
R447	1-216-089-91	METAL	47K	5%	1/10W
R448	1-216-089-91	METAL	47K	5%	1/10W
R449	1-216-089-91	METAL	47K	5%	1/10W
R450	1-216-089-91	METAL	47K	5%	1/10W
R451	1-216-089-91	METAL	47K	5%	1/10W
R452	1-216-025-00	METAL	100	5%	1/10W
R453	1-216-089-91	METAL	47K	5%	1/10W
R454	1-216-033-00	METAL	220	5%	1/10W
R455	1-216-033-00	METAL	220	5%	1/10W
R456	1-216-025-00	METAL	100	5%	1/10W
R457	1-216-025-00	METAL	100	5%	1/10W
R458	1-216-109-00	METAL	330K	5%	1/10W
R459	1-216-121-00	METAL	1M	5%	1/10W
R460	1-216-089-91	METAL	47K	5%	1/10W
R461	1-216-089-91	METAL	47K	5%	1/10W
R462	1-216-025-00	METAL	100	5%	1/10W
R463	1-216-089-91	METAL	47K	5%	1/10W
R464	1-216-025-00	METAL	100	5%	1/10W
R465	1-216-089-91	METAL	47K	5%	1/10W
R466	1-216-089-91	METAL	47K	5%	1/10W
R467	1-216-089-91	METAL	47K	5%	1/10W
R468	1-216-025-00	METAL	100	5%	1/10W
R469	1-216-089-91	METAL	47K	5%	1/10W

Ref.No	Part No.	Description			Remark
R470	1-216-025-00	METAL	100	5%	1/10W
R471	1-216-033-00	METAL	220	5%	1/10W
R472	1-216-089-91	METAL	47K	5%	1/10W
R473	1-216-032-00	METAL	200	5%	1/10W
R477	1-216-025-00	METAL	100	5%	1/10W
R478	1-216-037-00	METAL	330	5%	1/10W
R480	1-216-073-00	METAL	10K	5%	1/10W
R481	1-216-073-00	METAL	10K	5%	1/10W
R482	1-216-089-91	METAL	47K	5%	1/10W
R483	1-216-089-91	METAL	47K	5%	1/10W
R484	1-216-089-91	METAL	47K	5%	1/10W
R485	1-216-089-91	METAL	47K	5%	1/10W
R486	1-216-089-91	METAL	47K	5%	1/10W
R487	1-216-089-91	METAL	47K	5%	1/10W
R488	1-216-089-91	METAL	47K	5%	1/10W
R489	1-216-089-91	METAL	47K	5%	1/10W
R490	1-216-001-00	METAL	10	5%	1/10W
R491	1-216-001-00	METAL	10	5%	1/10W
R492	1-216-001-00	METAL	10	5%	1/10W
R493	1-216-033-00	METAL	220	5%	1/10W
R494	1-216-033-00	METAL	220	5%	1/10W
R495	1-216-033-00	METAL	220	5%	1/10W
R496	1-216-033-00	METAL	220	5%	1/10W
R497	1-216-033-00	METAL	220	5%	1/10W
R498	1-216-033-00	METAL	220	5%	1/10W
R499	1-216-033-00	METAL	220	5%	1/10W
R500	1-216-033-00	METAL	220	5%	1/10W
R501	1-216-033-00	METAL	220	5%	1/10W
R502	1-216-033-00	METAL	220	5%	1/10W
R503	1-216-033-00	METAL	220	5%	1/10W
R504	1-216-033-00	METAL	220	5%	1/10W
R505	1-216-089-91	METAL	47K	5%	1/10W
R506	1-216-089-91	METAL	47K	5%	1/10W
R508	1-216-295-11	METAL	0	5%	1/10W
R509	1-216-073-00	METAL	10K	5%	1/10W
R510	1-216-025-00	METAL	100	5%	1/10W
R511	1-216-033-00	METAL	220	5%	1/10W
R512	1-216-033-00	METAL	220	5%	1/10W
R513	1-216-033-00	METAL	220	5%	1/10W
R514	1-216-033-00	METAL	220	5%	1/10W
R515	1-216-033-00	METAL	220	5%	1/10W
R516	1-216-033-00	METAL	220	5%	1/10W
R517	1-216-033-00	METAL	220	5%	1/10W
R518	1-216-033-00	METAL	220	5%	1/10W
R519	1-216-033-00	METAL	220	5%	1/10W
R520	1-216-033-00	METAL	220	5%	1/10W
R521	1-216-033-00	METAL	220	5%	1/10W
R522	1-216-025-00	METAL	100	5%	1/10W
R523	1-216-025-00	METAL	100	5%	1/10W
R524	1-216-025-00	METAL	100	5%	1/10W
R525	1-216-025-00	METAL	100	5%	1/10W
R526	1-216-025-00	METAL	100	5%	1/10W
R527	1-216-033-00	METAL	220	5%	1/10W
R528	1-216-033-00	METAL	220	5%	1/10W
R529	1-216-033-00	METAL	220	5%	1/10W
R530	1-216-033-00	METAL	220	5%	1/10W
R531	1-216-033-00	METAL	220	5%	1/10W
R532	1-216-033-00	METAL	220	5%	1/10W
R533	1-216-033-00	METAL	220	5%	1/10W
R534	1-216-295-00	METAL	0	5%	1/10W
R535	1-216-295-00	METAL	0	5%	1/10W
R536	1-216-295-00	METAL	0	5%	1/10W
R537	1-216-295-00	METAL	0	5%	1/10W
R538	1-216-033-00	METAL	220	5%	1/10W
R618	1-216-089-91	METAL	47K	5%	1/10W

FMY-10P DUS-12 HM-22P(H)

Ref.No	Part No.	Description			Remark
R619	1-216-089-91	METAL	47K	5%	1/10W
R620	1-216-089-91	METAL	47K	5%	1/10W
R621	1-216-089-91	METAL	47K	5%	1/10W
R656	1-216-033-00	METAL	220	5%	1/10W
R657	1-216-295-00	METAL	0	5%	1/10W
R680	1-216-033-00	METAL	220	5%	1/10W
R681	1-216-033-00	METAL	220	5%	1/10W
R682	1-216-033-00	METAL	220	5%	1/10W
R683	1-216-033-00	METAL	220	5%	1/10W
R684	1-216-033-00	METAL	220	5%	1/10W
R685	1-216-033-00	METAL	220	5%	1/10W
R686	1-216-033-00	METAL	220	5%	1/10W
R687	1-216-033-00	METAL	220	5%	1/10W
R688	1-216-033-00	METAL	220	5%	1/10W
R689	1-216-033-00	METAL	220	5%	1/10W
R690	1-216-033-00	METAL	220	5%	1/10W
R691	1-216-033-00	METAL	220	5%	1/10W
R692	1-216-033-00	METAL	220	5%	1/10W
R693	1-216-033-00	METAL	220	5%	1/10W
R694	1-216-033-00	METAL	220	5%	1/10W
		<CRYSTAL>			
X200	1-760-150-21	VIBRATOR, CERAMIC			
X401	1-579-369-21	VIBRATOR			
X402	1-579-550-11	VIBRATOR, CRYSTAL			
X403	1-760-224-21	VIBRATOR, CERAMIC			
**********					
	*A-8275-445-A	DUS-12 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C901	1-165-319-11	CERAMIC	0.1uF		50V
		<CONNECTOR>			
CN907	1-506-468-11	PIN, CONNECTOR 3P			
CN908	1-506-468-11	PIN, CONNECTOR 3P			
CN911	1-506-470-11	PIN, CONNECTOR 5P			
CN912	1-506-467-11	PIN, CONNECTOR 2P			
CN918	1-506-467-11	PIN, CONNECTOR 2P			
CN919	1-506-468-11	PIN, CONNECTOR 3P			
		<IC>			
IC901	8-759-633-10	IC M54544AL			
IC902	8-759-100-93	IC UPC393G2			
		<JUMPER>			
JR900	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR901	1-216-295-11	METAL GLAZE	0	5%	1/10W
JR903	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR904	1-216-296-00	METAL GLAZE	0	5%	1/8W
		<RESISTOR>			
R901	1-216-037-00	METAL	330	5%	1/10W
R902	1-216-085-00	METAL	33K	5%	1/10W
R903	1-216-085-00	METAL	33K	5%	1/10W
R904	1-216-081-00	METAL	22K	5%	1/10W
R905	1-216-073-00	METAL	10K	5%	1/10W
R906	1-216-105-00	METAL	220K	5%	1/10W
R907	1-216-089-91	METAL	47K	5%	1/10W
R908	1-216-097-00	METAL	100K	5%	1/10W
R909	1-216-097-00	METAL	100K	5%	1/10W
R924	1-216-041-00	METAL	470	5%	1/10W
R925	1-216-041-00	METAL	470	5%	1/10W
**********					

Ref.No	Part No.	Description			Remark
	*A-8275-496-A	HM-22P(H) BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C701	1-126-950-11	ELECT	330uF	20%	35V
C703	1-165-112-11	CERAMIC	0.33uF		16V
C704	1-165-112-11	CERAMIC	0.33uF		16V
C705	1-124-779-00	ELECT	10uF	20%	16V
C706	1-165-112-11	CERAMIC	0.33uF		16V
C707	1-165-112-11	CERAMIC	0.33uF		16V
C708	1-135-166-21	TANTALUM	47uF	20%	6.3V
C711	1-165-112-11	CERAMIC	0.33uF		16V
C712	1-165-112-11	CERAMIC	0.33uF		16V
C713	1-162-970-11	CERAMIC	0.01uF	10%	25V
C714	1-162-970-11	CERAMIC	0.01uF	10%	25V
C715	1-165-112-11	CERAMIC	0.33uF		16V
C716	1-162-970-11	CERAMIC	0.01uF	10%	25V
C717	1-164-360-11	CERAMIC	0.1uF		16V
C718	1-162-970-11	CERAMIC	0.01uF	10%	25V
C719	1-162-970-11	CERAMIC	0.01uF	10%	25V
C720	1-164-360-11	CERAMIC	0.1uF		16V
C721	1-164-360-11	CERAMIC	0.1uF		16V
C722	1-164-360-11	CERAMIC	0.1uF		16V
C723	1-162-970-11	CERAMIC	0.01uF	10%	25V
C724	1-162-970-11	CERAMIC	0.01uF	10%	25V
C725	1-162-970-11	CERAMIC	0.01uF	10%	25V
C726	1-162-970-11	CERAMIC	0.01uF	10%	25V
C727	1-162-970-11	CERAMIC	0.01uF	10%	25V
C728	1-162-970-11	CERAMIC	0.01uF	10%	25V
C729	1-162-970-11	CERAMIC	0.01uF	10%	25V
C734	1-164-360-11	CERAMIC	0.1uF		16V
C735	1-165-112-11	CERAMIC	0.33uF		16V
C736	1-162-970-11	CERAMIC	0.01uF	10%	25V
C737	1-126-204-11	ELECT	47uF	20%	16V
C738	1-165-112-11	CERAMIC	0.33uF		16V
C739	1-135-166-21	TANTALUM	47uF	20%	6.3V
C740	1-165-112-11	CERAMIC	0.33uF		16V
C741	1-165-112-11	CERAMIC	0.33uF		16V
C742	1-126-204-11	ELECT	47uF	20%	16V
C744	1-165-112-11	CERAMIC	0.33uF		16V
C746	1-165-112-11	CERAMIC	0.33uF		16V
C747	1-164-360-11	CERAMIC	0.1uF		16V
C749	1-165-112-11	CERAMIC	0.33uF		16V
C750	1-165-112-11	CERAMIC	0.33uF		16V
C751	1-162-970-11	CERAMIC	0.01uF	10%	25V
C752	1-162-970-11	CERAMIC	0.01uF	10%	25V
C753	1-126-204-11	ELECT	47uF	20%	16V
C754	1-162-945-11	CERAMIC	22PF	5%	50V
C755	1-162-945-11	CERAMIC	22PF	5%	50V
C756	1-165-112-11	CERAMIC	0.33uF		16V
C757	1-162-970-11	CERAMIC	0.01uF	10%	25V
C758	1-162-970-11	CERAMIC	0.01uF	10%	25V
C759	1-162-970-11	CERAMIC	0.01uF	10%	25V
C760	1-162-970-11	CERAMIC	0.01uF	10%	25V
C761	1-162-970-11	CERAMIC	0.01uF	10%	25V
C762	1-162-970-11	CERAMIC	0.01uF	10%	25V
C763	1-162-970-11	CERAMIC	0.01uF	10%	25V
C764	1-162-970-11	CERAMIC	0.01uF	10%	25V
C765	1-162-970-11	CERAMIC	0.01uF	10%	25V
C766	1-162-970-11	CERAMIC	0.01uF	10%	25V
C767	1-162-970-11	CERAMIC	0.01uF	10%	25V
C768	1-164-357-11	CERAMIC	1000PF	5%	50V
C769	1-164-357-11	CERAMIC	1000PF	5%	50V
C770	1-164-360-11	CERAMIC	0.1uF		16V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

HM-22P(H)

Ref.No	Part No.	Description		Remark
C771	1-164-360-11	CERAMIC	0.1uF	16V
C776	1-165-112-11	CERAMIC	0.33uF	16V
C777	1-165-112-11	CERAMIC	0.33uF	16V
C778	1-165-112-11	CERAMIC	0.33uF	16V
		<CONNECTOR>		
CN701	*1-580-055-21	PIN, CONNECTOR 2P		
CN702	*1-580-056-21	PIN, CONNECTOR 3P		
CN703	*1-580-056-21	PIN, CONNECTOR 3P		
CN704	*1-580-056-21	PIN, CONNECTOR 3P		
CN705	1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P		
CN706	1-566-523-11	CONNECTOR, FPC (ZIF) 7P		
CN707	1-506-481-11	PIN, CONNECTOR 2P		
CN708	1-506-481-11	PIN, CONNECTOR 2P		
CN709	1-506-485-11	PIN, CONNECTOR 6P		
CN710	1-569-775-21	PIN, CONNECTOR 5P		
CN711	1-569-775-21	PIN, CONNECTOR 5P		
CN712	1-506-481-11	PIN, CONNECTOR 2P		
CN713	1-569-775-21	PIN, CONNECTOR 5P		
CN714	1-566-532-11	CONNECTOR, FPC (ZIF) 16P		
CN715	1-566-526-11	CONNECTOR, FPC (ZIF) 10P		
CN716	1-506-494-11	PIN, CONNECTOR 15P		
CN717	1-566-528-21	CONNECTOR, FPC (ZIF) 12P		
CN718	*1-580-056-21	PIN, CONNECTOR 3P		
CN719	1-506-481-11	PIN, CONNECTOR 2P		
CN721	1-506-481-11	PIN, CONNECTOR 2P		
CN722	*1-580-055-21	PIN, CONNECTOR 2P		
CN723	*1-580-056-21	PIN, CONNECTOR 3P		
CN724	1-580-265-11	CONNECTOR, BOARD TO BOARD 16P		
CN725	1-506-481-11	PIN, CONNECTOR 2P		
		<DIODE>		
D701	8-719-200-02	DIODE 10E2		
D702	8-719-200-02	DIODE 10E2		
D703	8-719-104-34	DIODE 1S2836		
D704	8-719-104-34	DIODE 1S2836		
D705	8-719-104-34	DIODE 1S2836		
D706	8-719-104-34	DIODE 1S2836		
D707	8-719-104-34	DIODE 1S2836		
D709	8-719-104-34	DIODE 1S2836		
D711	8-719-104-34	DIODE 1S2836		
		<FUSE>		
F001	1-532-777-21	FUSE, MICRO (SECONDARY) 125V 1.25A		
		<IC>		
IC701	8-759-154-84	IC HDC443V2		
IC702	8-759-053-58	IC IDT6116SA25SO		
IC703	8-759-053-58	IC IDT6116SA25SO		
IC706	8-759-998-98	IC LM358DR-E1		
IC707	8-759-100-97	IC UPC339G2		
IC708	*8-752-838-99	IC CXP80P116Q-1-240		
IC709	8-759-157-19	IC MB3863PF-G-BND-ER		
IC710	8-759-925-74	IC SN74HC04ANS		
IC711	8-759-100-97	IC UPC339G2		
IC712	8-759-100-97	IC UPC339G2		
IC713	8-759-927-46	IC SN74HC04ANS		
IC714	8-759-242-70	IC TC7WU04F		
		<INDUCTOR>		
L701	1-424-090-11	COIL, LINE FILTER		
L702	1-424-090-11	COIL, LINE FILTER		
L703	1-424-090-11	COIL, LINE FILTER		
L704	1-412-390-21	INDUCTOR CHIP 0UH		
L705	1-412-390-21	INDUCTOR CHIP 0UH		
L706	1-412-390-21	INDUCTOR CHIP 0UH		
L707	1-412-390-21	INDUCTOR CHIP 0UH		
L708	1-412-390-21	INDUCTOR CHIP 0UH		
L709	1-412-390-21	INDUCTOR CHIP 0UH		
L710	1-412-390-21	INDUCTOR CHIP 0UH		
L711	1-412-390-21	INDUCTOR CHIP 0UH		
L712	1-412-390-21	INDUCTOR CHIP 0UH		
		<TRANSISTOR>		
Q701	8-729-901-04	TRANSISTOR DTA114EK		
Q702	8-729-901-00	TRANSISTOR DTC124EK		
Q703	8-729-114-48	TRANSISTOR 2SB962Z-Z-P		
Q705	8-729-017-80	TRANSISTOR 2SD992-Z-E2		
Q706	8-729-017-80	TRANSISTOR 2SD992-Z-E2		
Q707	8-729-017-80	TRANSISTOR 2SD992-Z-E2		
Q708	8-729-017-80	TRANSISTOR 2SD992-Z-E2		
Q709	8-729-140-75	TRANSISTOR 2SD999-CLCK		
Q710	8-729-120-28	TRANSISTOR 2SC1623-L5L6		
Q711	8-729-120-28	TRANSISTOR 2SC1623-L5L6		
		<RESISTOR>		
R701	1-216-829-11	METAL	4.7K 5%	1/16W
R702	1-216-829-11	METAL	4.7K 5%	1/16W
R703	1-216-829-11	METAL	4.7K 5%	1/16W
R704	1-216-829-11	METAL	4.7K 5%	1/16W
R705	1-216-818-11	METAL	560 5%	1/16W
R706	1-216-818-11	METAL	560 5%	1/16W
R707	1-216-818-11	METAL	560 5%	1/16W
R708	1-216-818-11	METAL	560 5%	1/16W
R709	1-216-813-11	METAL	220 5%	1/16W
R710	1-216-813-11	METAL	220 5%	1/16W
R711	1-216-813-11	METAL	220 5%	1/16W
R712	1-216-813-11	METAL	220 5%	1/16W
R713	⚠1-215-930-11	METAL	10 5%	5W
R715	⚠1-215-930-11	METAL	10 5%	5W
R716	1-216-841-11	METAL	47K 5%	1/16W
R717	1-216-819-11	METAL	680 5%	1/16W
R718	1-216-809-11	METAL	100 5%	1/16W
R719	1-260-099-11	CARBON	1K 5%	1/2W
R720	1-216-833-11	METAL	10K 5%	1/16W
R721	1-216-825-11	METAL	2.2K 5%	1/16W
R722	1-216-815-11	METAL	330 5%	1/16W
R723	1-216-831-11	METAL	6.8K 5%	1/16W
R724	1-216-825-11	METAL	2.2K 5%	1/16W
R725	1-216-840-11	METAL	39K 5%	1/16W
R726	1-216-818-11	METAL	560 5%	1/16W
R727	1-216-813-11	METAL	220 5%	1/16W
R728	1-216-839-11	METAL	33K 5%	1/16W
R729	1-216-841-11	METAL	47K 5%	1/16W
R730	1-216-835-11	METAL	15K 5%	1/16W
R731	1-216-849-11	METAL	220K 5%	1/16W
R732	1-216-833-11	METAL	10K 5%	1/16W
R733	1-216-839-11	METAL	33K 5%	1/16W
R734	1-216-840-11	METAL	39K 5%	1/16W
R735	1-216-831-11	METAL	6.8K 5%	1/16W
R736	1-216-841-11	METAL	47K 5%	1/16W
R737	1-216-841-11	METAL	47K 5%	1/16W
R738	1-216-841-11	METAL	47K 5%	1/16W
R739	1-216-841-11	METAL	47K 5%	1/16W
R740	1-216-837-11	METAL	22K 5%	1/16W
R741	1-216-841-11	METAL	47K 5%	1/16W
R742	1-216-864-11	METAL	0 5%	1/16W
R744	1-216-837-11	METAL	22K 5%	1/16W
R746	1-216-841-11	METAL	47K 5%	1/16W
R747	1-216-849-11	METAL	220K 5%	1/16W
R748	1-216-833-11	METAL	10K 5%	1/16W

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Ref.No	Part No.	Description			Remark
R750	1-216-841-11	METAL	47K	5%	1/16W
R751	1-216-833-11	METAL	10K	5%	1/16W
R752	1-216-833-11	METAL	10K	5%	1/16W
R753	1-216-813-11	METAL	220	5%	1/16W
R754	1-216-837-11	METAL	22K	5%	1/16W
R755	1-216-841-11	METAL	47K	5%	1/16W
R756	1-216-849-11	METAL	220K	5%	1/16W
R758	1-216-821-11	METAL	1K	5%	1/16W
R760	1-216-813-11	METAL	220	5%	1/16W
R761	1-216-837-11	METAL	22K	5%	1/16W
R762	1-216-841-11	METAL	47K	5%	1/16W
R763	1-216-821-11	METAL	1K	5%	1/16W
R764	1-216-849-11	METAL	220K	5%	1/16W
R765	1-216-833-11	METAL	10K	5%	1/16W
R766	1-216-839-11	METAL	33K	5%	1/16W
R767	1-216-821-11	METAL	1K	5%	1/16W
R768	1-216-821-11	METAL	1K	5%	1/16W
R769	1-216-841-11	METAL	47K	5%	1/16W
R770	1-216-841-11	METAL	47K	5%	1/16W
R771	1-216-841-11	METAL	47K	5%	1/16W
R772	1-216-841-11	METAL	47K	5%	1/16W
R773	1-216-841-11	METAL	47K	5%	1/16W
R774	1-216-841-11	METAL	47K	5%	1/16W
R775	1-216-841-11	METAL	47K	5%	1/16W
R776	1-216-841-11	METAL	47K	5%	1/16W
R777	1-216-841-11	METAL	47K	5%	1/16W
R778	1-216-841-11	METAL	47K	5%	1/16W
R779	1-216-813-11	METAL	220	5%	1/16W
R780	1-216-813-11	METAL	220	5%	1/16W
R781	1-216-813-11	METAL	220	5%	1/16W
R782	1-216-813-11	METAL	220	5%	1/16W
R783	1-216-813-11	METAL	220	5%	1/16W
R784	1-216-813-11	METAL	220	5%	1/16W
R785	1-216-813-11	METAL	220	5%	1/16W
R786	1-216-813-11	METAL	220	5%	1/16W
R787	1-216-813-11	METAL	220	5%	1/16W
R788	1-216-813-11	METAL	220	5%	1/16W
R789	1-216-837-11	METAL	22K	5%	1/16W
R790	1-216-839-11	METAL	33K	5%	1/16W
R791	1-216-813-11	METAL	220	5%	1/16W
R792	1-216-813-11	METAL	220	5%	1/16W
R793	1-216-838-11	METAL	27K	5%	1/16W
R794	1-216-838-11	METAL	27K	5%	1/16W
R795	1-216-821-11	METAL	1K	5%	1/16W
R796	1-216-821-11	METAL	1K	5%	1/16W
R797	1-216-837-11	METAL	22K	5%	1/16W
R798	1-216-839-11	METAL	33K	5%	1/16W
R799	1-216-813-11	METAL	220	5%	1/16W
R800	1-216-813-11	METAL	220	5%	1/16W
R801	1-216-838-11	METAL	27K	5%	1/16W
R802	1-216-838-11	METAL	27K	5%	1/16W
R803	1-216-821-11	METAL	1K	5%	1/16W
R804	1-216-821-11	METAL	1K	5%	1/16W
R805	1-216-849-11	METAL	220K	5%	1/16W
R806	1-216-849-11	METAL	220K	5%	1/16W
R807	1-216-849-11	METAL	220K	5%	1/16W
R808	1-216-849-11	METAL	220K	5%	1/16W
R809	1-216-837-11	METAL	22K	5%	1/16W
R810	1-216-829-11	METAL	4.7K	5%	1/16W
R811	1-216-833-11	METAL	10K	5%	1/16W
R812	1-216-833-11	METAL	10K	5%	1/16W
R813	1-216-833-11	METAL	10K	5%	1/16W
R814	1-216-833-11	METAL	10K	5%	1/16W
R815	1-216-833-11	METAL	10K	5%	1/16W
R816	1-216-833-11	METAL	10K	5%	1/16W
R817	1-216-829-11	METAL	4.7K	5%	1/16W
R818	1-216-829-11	METAL	4.7K	5%	1/16W
R819	1-216-829-11	METAL	4.7K	5%	1/16W
R820	1-216-829-11	METAL	4.7K	5%	1/16W
R822	1-216-829-11	METAL	4.7K	5%	1/16W
R823	1-216-829-11	METAL	4.7K	5%	1/16W
R824	1-216-829-11	METAL	4.7K	5%	1/16W
R825	1-216-829-11	METAL	4.7K	5%	1/16W
R826	1-216-841-11	METAL	47K	5%	1/16W
R827	1-216-841-11	METAL	47K	5%	1/16W
R828	1-216-841-11	METAL	47K	5%	1/16W
R829	1-216-841-11	METAL	47K	5%	1/16W
R830	1-216-839-11	METAL	33K	5%	1/16W
R831	1-216-837-11	METAL	22K	5%	1/16W
R832	1-216-833-11	METAL	10K	5%	1/16W
R833	1-216-841-11	METAL	47K	5%	1/16W
R834	1-216-841-11	METAL	47K	5%	1/16W
R835	1-216-841-11	METAL	47K	5%	1/16W
R837	1-216-813-11	METAL	220	5%	1/16W
R838	1-216-841-11	METAL	47K	5%	1/16W
R839	1-216-841-11	METAL	47K	5%	1/16W
R840	1-216-821-11	METAL	1K	5%	1/16W
R841	1-216-849-11	METAL	220K	5%	1/16W
R842	1-216-833-11	METAL	10K	5%	1/16W
R843	1-216-839-11	METAL	33K	5%	1/16W
R844	1-216-837-11	METAL	22K	5%	1/16W
R846	1-216-813-11	METAL	220	5%	1/16W
R847	1-216-841-11	METAL	47K	5%	1/16W
R848	1-216-841-11	METAL	47K	5%	1/16W
R849	1-216-821-11	METAL	1K	5%	1/16W
R850	1-216-849-11	METAL	220K	5%	1/16W
R851	1-216-833-11	METAL	10K	5%	1/16W
R852	1-216-839-11	METAL	33K	5%	1/16W
R853	1-216-837-11	METAL	22K	5%	1/16W
R854	1-216-821-11	METAL	1K	5%	1/16W
R855	1-216-841-11	METAL	47K	5%	1/16W
R856	1-216-839-11	METAL	33K	5%	1/16W
R857	1-216-815-11	METAL	330	5%	1/16W
R858	1-216-841-11	METAL	47K	5%	1/16W
R859	1-216-821-11	METAL	1K	5%	1/16W
R860	1-216-849-11	METAL	220K	5%	1/16W
R861	1-216-833-11	METAL	10K	5%	1/16W
R862	1-216-839-11	METAL	33K	5%	1/16W
R863	1-216-837-11	METAL	22K	5%	1/16W
R866	1-216-821-11	METAL	1K	5%	1/16W
R867	1-216-821-11	METAL	1K	5%	1/16W
R868	1-216-829-11	METAL	4.7K	5%	1/16W
R869	1-216-821-11	METAL	1K	5%	1/16W
R870	1-216-821-11	METAL	1K	5%	1/16W
R871	1-216-821-11	METAL	1K	5%	1/16W
R872	1-216-821-11	METAL	1K	5%	1/16W
R873	1-216-841-11	METAL	47K	5%	1/16W
R874	1-216-841-11	METAL	47K	5%	1/16W
R879	1-216-809-11	METAL	100	5%	1/16W
R880	1-216-841-11	METAL	47K	5%	1/16W
R881	1-216-841-11	METAL	47K	5%	1/16W
R882	1-216-841-11	METAL	47K	5%	1/16W
R883	1-216-841-11	METAL	47K	5%	1/16W
R884	1-216-841-11	METAL	47K	5%	1/16W
R885	1-216-841-11	METAL	47K	5%	1/16W
R886	1-216-857-11	METAL	1M	5%	1/16W
R887	1-216-857-11	METAL	1M	5%	1/16W
R888	1-216-841-11	METAL	47K	5%	1/16W
R889	1-216-841-11	METAL	47K	5%	1/16W
R891	1-216-819-11	METAL	680	5%	1/16W

Ref.No	Part No.	Description			Remark
R892	1-216-841-11	METAL	47K	5%	1/16W
R893	1-216-817-11	METAL	470	5%	1/16W
R895	1-216-864-11	METAL	0	5%	1/16W
		<SWITCH>			
S705	1-692-088-41	SWITCH, TACTILE			
S706	1-571-684-11	SWITCH, TACTILE			
		<THERMISTOR>			
TH701	1-809-357-21	THERMISTOR, NTC (2125)			
		<CRYSTAL>			
X701	1-579-907-21	VIBRATOR, CERAMIC			
X702	1-579-070-41	VIBRATOR, CRYSTAL			
X703	1-579-906-21	VIBRATOR, CERAMIC			
**********					
	*A-8275-454-A	IF-28 BOARD, COMPLETE			
		**********			
	1-562-261-41	CONNECTOR, COAXIAL (BNC)			
		<CONNECTOR>			
CN1	1-506-487-11	PIN, CONNECTOR 8P			
CN2	1-506-487-11	PIN, CONNECTOR 8P			
CN3	1-564-014-11	PIN, CONNECTOR 4P			
CN4	1-506-486-11	PIN, CONNECTOR 7P			
CN5	1-506-485-11	PIN, CONNECTOR 6P			
		<DIODE>			
D1	8-719-108-12	DIODE RD9.1E-W			
D2	8-719-108-12	DIODE RD9.1E-W			
D3	8-719-108-12	DIODE RD9.1E-W			
D4	8-719-108-12	DIODE RD9.1E-W			
D5	8-719-108-12	DIODE RD9.1E-W			
D6	8-719-108-12	DIODE RD9.1E-W			
D7	8-719-108-12	DIODE RD9.1E-W			
D8	8-719-108-12	DIODE RD9.1E-W			
D9	8-719-108-12	DIODE RD9.1E-W			
D10	8-719-108-12	DIODE RD9.1E-W			
D11	8-719-108-12	DIODE RD9.1E-W			
D12	8-719-108-12	DIODE RD9.1E-W			
D13	8-719-108-12	DIODE RD9.1E-W			
D14	8-719-108-12	DIODE RD9.1E-W			
D15	8-719-400-18	DIODE MA152WK			
		<FILTER>			
FL1	1-236-738-11	FILTER, EMI			
FL2	1-236-738-11	FILTER, EMI			
FL3	1-236-738-11	FILTER, EMI			
FL4	1-236-738-11	FILTER, EMI			
FL5	1-236-738-11	FILTER, EMI			
FL6	1-236-738-11	FILTER, EMI			
FL7	1-236-738-11	FILTER, EMI			
FL8	1-236-738-11	FILTER, EMI			
FL9	1-236-738-11	FILTER, EMI			
FL10	1-236-738-11	FILTER, EMI			
FL11	1-236-738-11	FILTER, EMI			
FL12	1-236-738-11	FILTER, EMI			
FL13	1-236-738-11	FILTER, EMI			
FL14	1-236-738-11	FILTER, EMI			
		<JACK>			
J11	1-569-803-11	CONNECTOR, (S) TERMINAL 4P			
J12	1-569-803-11	CONNECTOR, (S) TERMINAL 4P			

Ref.No	Part No.	Description			Remark
		<TRANSISTOR>			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
Q2	8-729-140-75	TRANSISTOR 2SD999-CLCK			
		<RESISTOR>			
R1	1-216-631-11	METAL	150	0.50%	1/10W
R2	1-216-631-11	METAL	150	0.50%	1/10W
R3	1-216-631-11	METAL	150	0.50%	1/10W
R4	1-216-631-11	METAL	150	0.50%	1/10W
R5	1-216-631-11	METAL	150	0.50%	1/10W
R6	1-216-631-11	METAL	150	0.50%	1/10W
R7	1-216-631-11	METAL	150	0.50%	1/10W
R8	1-216-631-11	METAL	150	0.50%	1/10W
R9	1-216-049-00	METAL	1K	5%	1/10W
R10	1-216-631-11	METAL	150	0.50%	1/10W
R11	1-216-631-11	METAL	150	0.50%	1/10W
R12	1-216-631-11	METAL	150	0.50%	1/10W
R13	1-216-631-11	METAL	150	0.50%	1/10W
R14	1-216-631-11	METAL	150	0.50%	1/10W
R15	1-216-631-11	METAL	150	0.50%	1/10W
		<RELAY>			
RL1	1-515-622-11	RELAY			
RL2	1-515-622-11	RELAY			
RL3	1-515-622-11	RELAY			
RL4	1-515-622-11	RELAY			
RL5	1-515-622-11	RELAY			
RL6	1-515-622-11	RELAY			
RL7	1-515-622-11	RELAY			
		<SWITCH>			
S1	1-516-789-XX	SLIDE SWITCH			
**********					
	*A-8275-461-A	IF-29 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C301	1-163-009-11	CERAMIC	0.001uF	10%	50V
C303	1-124-589-11	ELECT	47uF	20%	16V
		<CONNECTOR>			
CN301	1-563-161-11	CONNECTOR,D-SUB(MOUNT TYPE)25P			
CN302	1-506-491-11	PIN, CONNECTOR 12P			
CN303	*1-506-488-11	PIN, CONNECTOR 9P			
		<DIODE>			
D301	8-719-800-76	DIODE 1SS226			
D302	8-719-800-76	DIODE 1SS226			
		<FILTER>			
FL301	1-236-738-11	FILTER, EMI			
FL302	1-236-738-11	FILTER, EMI			
FL303	1-236-738-11	FILTER, EMI			
FL304	1-236-738-11	FILTER, EMI			
FL305	1-236-738-11	FILTER, EMI			
FL306	1-236-738-11	FILTER, EMI			
FL307	1-236-738-11	FILTER, EMI			
FL308	1-236-738-11	FILTER, EMI			
FL309	1-236-738-11	FILTER, EMI			
FL310	1-236-738-11	FILTER, EMI			

Ref.No	Part No.	Description			Remark
		<JACK>			
J301	1-507-967-11	JACK			
		<JUMPER>			
JR301	1-216-295-11	METAL GLAZE	0	5%	1/10W
		<RESISTOR>			
R301	1-216-089-91	METAL	47K	5%	1/10W
R302	1-216-025-00	METAL	100	5%	1/10W
		<SWITCH>			
S301	1-571-790-11	SWITCH, DIP 8P			
**********					
	*A-8275-438-A	KY-15 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C803	1-163-038-00	CERAMIC	0.1uF		25V
C804	1-163-009-11	CERAMIC	0.001uF	10%	50V
C805	1-163-038-00	CERAMIC	0.1uF		25V
		<CONNECTOR>			
CN801	*1-506-486-11	PIN, CONNECTOR 7P			
CN802	*1-506-486-11	PIN, CONNECTOR 7P			
CN803	1-506-493-11	PIN, CONNECTOR 14P			
CN804	*1-506-481-11	PIN, CONNECTOR 2P			
CN805	*1-563-863-21	SOCKET, CONNECTOR 26P			
CN806	1-506-484-11	PIN, CONNECTOR 5P			
		<DIODE>			
D802	8-719-800-76	DIODE 1SS226			
		<IC>			
IC802	8-759-988-13	IC LM393PS			
		<JUMPER>			
JR821	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR822	1-216-295-11	METAL GLAZE	0	5%	1/10W
JR824	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR825	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR828	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR829	1-216-295-11	METAL GLAZE	0	5%	1/10W
JR831	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR832	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR833	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR834	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR835	1-216-296-00	METAL GLAZE	0	5%	1/8W
		<TRANSISTOR>			
Q801	8-729-900-53	TRANSISTOR DTC114EK			
Q802	8-729-900-53	TRANSISTOR DTC114EK			
		<RESISTOR>			
R801	1-216-295-11	METAL	0	5%	1/10W
R802	1-216-295-11	METAL	0	5%	1/10W
R803	1-216-295-11	METAL	0	5%	1/10W
R804	1-216-295-11	METAL	0	5%	1/10W
R805	1-216-295-11	METAL	0	5%	1/10W
R806	1-216-295-11	METAL	0	5%	1/10W
R807	1-216-295-11	METAL	0	5%	1/10W
R808	1-216-295-11	METAL	0	5%	1/10W
R809	1-216-295-11	METAL	0	5%	1/10W
R810	1-216-295-11	METAL	0	5%	1/10W
R812	1-216-049-00	METAL	1K	5%	1/10W
R813	1-216-081-00	METAL	22K	5%	1/10W
R814	1-216-073-00	METAL	10K	5%	1/10W
R815	1-216-073-00	METAL	10K	5%	1/10W
R816	1-216-049-00	METAL	1K	5%	1/10W
R817	1-216-295-11	METAL	0	5%	1/10W
R818	1-216-295-11	METAL	0	5%	1/10W
R819	1-216-295-11	METAL	0	5%	1/10W
R820	1-216-295-11	METAL	0	5%	1/10W
**********					
	*A-8275-451-A	PTC-27 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C801	1-124-229-00	ELECT	33uF	20%	6.3V
		<CONNECTOR>			
CN816	1-506-468-11	PIN, CONNECTOR 3P			
CN817	1-506-470-11	PIN, CONNECTOR 5P			
		<IC>			
IC801	8-748-015-08	RAY CATCHER ELEMENT SBX8015-H			
		<RESISTOR>			
R811	1-216-029-00	METAL	150	5%	1/10W
**********					
	*1-650-853-11	SU-10 BOARD			
		**********			
		<CAPACITOR>			
C905	1-165-319-11	CERAMIC	0.1uF		50V
		<CONNECTOR>			
CN916	*1-506-481-11	PIN, CONNECTOR 2P			
		<MOTOR>			
M901	1-541-309-11	MOTOR, L (RF-370C)			
**********					
	*A-8275-437-A	S-25 BOARD, COMPLETE			
		**********			
		<CONNECTOR>			
CN811	*1-506-481-11	PIN, CONNECTOR 2P			
		<DIODE>			
D803	8-719-975-79	DIODE SLP255B-51-A			
		<RESISTOR>			
R830	1-216-029-00	METAL	150	5%	1/10W
**********					

SW-39 SW-41 SW-42 SW-208 SW-210 SW-211 SW-212 SW-213

Ref.No	Part No.	Description	Remark
	*A-8275-443-A	SW-39 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN913	1-506-482-11	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH901	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
**********			
	*A-8275-442-A	SW-41 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN915	1-506-482-11	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH903	8-719-991-24	PHOTO TRANSISTOR GP1S23	
**********			
	*A-8275-444-A	SW-42 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN917	1-506-482-11	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH904	8-719-939-05	PHOTO INTERRUPTER GP1S54	
**********			
	*A-8275-433-A	SW-208 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN801	*1-580-056-21	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH801	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
**********			
	*A-8275-439-A	SW-210 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN803	1-580-057-11	PIN, CONNECTOR 4P	
		<PHOTO INTERRUPTER>	
PH803	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
		<SWITCH>	
S803	1-572-126-21	SWITCH, PUSH (1 KEY)	
**********			
	*A-8275-434-A	SW-211 BOARD, COMPLETE	
		**********	
		<PHOTO INTERRUPTER>	
PH804	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
PH805	8-749-923-97	PHOTO INTERRUPTER GP2S40K	

Ref.No	Part No.	Description			Remark
		<HARNESS>			
W801	1-648-128-11	PC BOARD, FP-38 FLEXIBLE			
**********					
	*A-8275-436-A	SW-212 BOARD, COMPLETE			
		**********			
		<CONNECTOR>			
C810	1-124-779-00	ELECT	10uF	20%	16V
C811	1-164-004-11	CERAMIC	0.1uF	10%	25V
C812	1-163-038-00	CERAMIC	0.1uF		25V
C813	1-128-530-11	ELECT	33uF	20%	10V
C814	1-126-200-11	ELECT	10uF	20%	16V
C815	1-164-004-11	CERAMIC	0.1uF	10%	25V
		<CONNECTOR>			
CN806	1-569-775-11	PIN, CONNECTOR (SMD) 5P			
CN811	1-580-057-11	PIN, CONNECTOR 4P			
CN813	*1-580-056-21	PIN, CONNECTOR (SMD) 3P			
CN814	*1-580-055-21	PIN, CONNECTOR 2P			
		<DIODE>			
D802	8-719-421-15	DIODE MA8027-L			
		<IC>			
IC810	8-759-998-98	IC LM358DR-E1			
		<PHOTO INTERRUPTER>			
PH806	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
PH807	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
		<RESISTOR>			
R802	1-216-295-11	METAL	0	5%	1/10W
R810	1-216-073-00	METAL	10K	5%	1/10W
R811	1-216-065-00	METAL	4.7K	5%	1/10W
R812	1-216-073-00	METAL	10K	5%	1/10W
R813	1-216-089-91	METAL	47K	5%	1/10W
R814	1-216-089-91	METAL	47K	5%	1/10W
R815	1-216-065-00	METAL	4.7K	5%	1/10W
R816	1-216-073-00	METAL	10K	5%	1/10W
R817	1-216-089-91	METAL	47K	5%	1/10W
R818	1-216-089-91	METAL	47K	5%	1/10W
R819	1-216-083-00	METAL	27K	5%	1/10W
R820	1-216-033-00	METAL	220	5%	1/10W
R821	1-216-295-11	METAL	0	5%	1/10W
**********					
	*A-8275-441-A	SW-213 BOARD, COMPLETE			
		**********			
	*3-949-924-01	HOLDER, P SENSOR			
		<CONNECTOR>			
CN808	1-569-775-21	PIN, CONNECTOR 5P			
		<PHOTO INTERRUPTER>			
PH808	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
PH809	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
**********					

SW-214 SW-215 SW-216 SW-217 SWITCHING REGULATOR

Ref.No	Part No.	Description		Remark
	*A-8275-453-A	SW-214 BOARD, COMPLETE		
		**********		
		<CONNECTOR>		
CN809	1-580-055-21	PIN, CONNECTOR 2P		
		<SWITCH>		
S801	1-570-407-11	SWITCH, SLIDE		
**********				
	*A-8275-435-A	SW-215 BOARD, COMPLETE		
		**********		
**********				
	*A-8275-440-A	SW-216 BOARD, COMPLETE		
		**********		
**********				
	*A-8275-452-A	SW-217 BOARD, COMPLETE		
		**********		
		<CONNECTOR>		
CN810	*1-580-056-21	PIN, CONNECTOR (SMD) 3P		
		<PHOTO INTERRUPTER>		
PH810	8-749-923-97	PHOTO INTERRUPTER GP2S40K		
**********				
	⚠*1-413-946-11	SWITCHING, REGULATOR		
		**********		
	9-904-821-01	FUSE CLIP		
	*9-907-116-01	HEAT SINK (IC101, IC102)		
	*9-907-117-01	HEAT SINK (IC103)		
	*9-907-118-01	HEAT SINK (IC205-IC208)		
	*9-907-119-01	PC BOARD		
	9-907-120-01	SPACER		
	*9-907-121-01	SHEET, INSULATING		
	*9-907-122-01	SHEET, INSULATING		
		<CAPACITOR>		
C101	1-136-192-11	CERAMIC	0.33MF	250V
C102	9-902-038-01	CERAMIC	0.22MF	250V
C103	9-907-095-01	CERAMIC	2200PF	2500
C104	9-907-095-01	CERAMIC	2200PF	2500
C105	9-907-096-01	CERAMIC	4700PF	250V
C106	9-907-097-01	ELECT	470MF	200V
C107	9-900-522-01	CERAMIC	2200PF	250V
C108	9-900-525-01	CERAMIC	0.047MF	400V
C109	9-907-098-01	CERAMIC	220PF	1KV
C110	1-130-491-00	CERAMIC	0.047MF	50V
C111	1-124-122-11	ELECT	100MF	50V
C112	1-126-967-11	ELECT	47MF	50V
C113	9-900-525-01	CERAMIC	0.047MF	400V
C114	9-907-098-01	CERAMIC	220PF	1KV
C115	1-128-578-91	ELECT	1MF	100V
C116	1-130-495-00	FILM	0.1MF	50V
C118	9-907-095-01	CERAMIC	2200PF	250V
C119	9-907-095-01	CERAMIC	2200PF	250V
C120	9-907-096-01	CERAMIC	4700PF	250V
C121	9-907-097-01	ELECT	470MF	200V

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description		Remark
C122	1-130-491-00	CERAMIC	0.047MF	50V
C123	1-136-189-00	CERAMIC	0.1MF	250V
C124	1-136-189-00	CERAMIC	0.1MF	250V
C125	9-907-099-01	ELECT	4.7MF	400V
C126	1-124-903-11	ELECT	1MF	50V
C201	9-907-113-01	CERAMIC	1000PF	1KV
C202	9-907-114-01	ELECT	1000MF	35V
C203	1-124-906-11	ELECT	4.7MF	50V
C204	9-907-114-01	ELECT	1000MF	35V
C205	1-126-965-51	ELECT	22MF	50V
C207	1-130-483-00	FILM	0.01MF	50V
C208	9-907-113-01	CERAMIC	1000PF	1KV
C209	1-126-927-11	ELECT	2200MF	10V
C210	1-126-927-11	ELECT	2200MF	10V
C211	1-124-903-11	ELECT	1MF	50V
C212	1-126-926-11	ELECT	1000MF	10V
C213	1-126-933-11	ELECT	100MF	10V
C214	1-126-933-11	ELECT	100MF	10V
C215	9-907-113-01	CERAMIC	1000PF	1KV
C216	1-124-557-11	ELECT	1000MF	25V
C217	1-216-933-11	ELECT	100MF	16V
C218	1-126-926-11	ELECT	1000MF	10V
C219	1-126-933-11	ELECT	100MF	10V
C220	1-130-483-00	FILM	0.01MF	50V
C222	1-124-122-11	ELECT	100MF	50V
		<CONNECTOR>		
CN1	9-907-104-01	CONNECTOR 4P		
CN2	9-907-105-01	CONNECTOR 2P		
CN3	9-907-105-01	CONNECTOR 2P		
CN901	1-560-892-00	CONNECTOR 4P		
CN902	1-560-894-00	CONNECTOR 6P		
CN903	1-568-792-11	CONNECTOR 15P		
CN904	1-506-468-11	CONNECTOR 3P		
CN905	1-506-468-11	CONNECTOR 3P		
CN906	1-564-013-31	CONNECTOR 3P		
CN907	1-568-779-11	CONNECTOR 2P		
		<DIODE>		
D101	8-719-500-58	DIODE D3SBA60		
D102	8-719-030-25	DIODE AG01A		
D103	9-904-898-01	DIODE AU02A		
D104	9-907-090-01	DIODE RD47E		
D105	8-719-116-86	DIODE RD24JSB		
D106	8-719-200-02	DIODE 10E-2		
D107	9-900-514-01	DIODE MA165		
D108	9-902-050-01	DIODE ERA15-16		
D109	9-900-514-01	DIODE MA165		
D110	9-902-050-01	DIODE ERA15-16		
D111	9-902-050-01	DIODE ERA15-16		
D201	8-719-501-34	DIODE S3VC40R		
D202	8-719-501-34	DIODE S3VC40R		
D203	8-719-200-02	DIODE 10E-2		
D204	9-900-535-01	DIODE AU02Z		
D205	9-904-797-01	DIODE RK44		
D206	9-904-797-01	DIODE RK44		
D207	8-719-501-34	DIODE S3VC40R		
D208	8-719-160-68	DIODE RD18F		
D209	8-719-982-04	DIODE ERB81-004		
D210	9-904-799-01	DIODE MA2120		
		<FUSE>		
F101	9-907-103-01	FUSE 4A 250V		
F102	9-907-103-01	FUSE 4A 250V		

SWITCHING REGULATOR

Ref.No	Part No.	Description		Remark
		<IC>		
IC101	9-904-782-01	IC STR-S6525		
IC102	8-759-977-63	IC MA2830		
IC103	8-749-923-66	IC STR83145		
IC201	8-759-420-19	IC AN1431T		
IC202	8-759-135-80	IC UPC358C		
IC203	8-759-420-19	IC AN1431T		
IC204	8-759-420-19	IC AN1431T		
IC205	8-749-920-43	IC SI-3050CA		
IC206	8-749-921-21	IC SI-3120C		
IC207	8-749-920-43	IC SI-3050CA		
IC208	8-749-920-43	IC SI-3050CA		
		<COIL>		
L101	9-907-102-01	FILTER		
L102	9-907-102-01	FILTER		
L103	9-904-796-01	BEAD CORE		
L104	9-904-796-01	BEAD CORE		
L201	9-902-553-01	BEAD CORE		
L202	9-902-553-01	BEAD CORE		
L203	9-907-112-01	CHOKE COIL		
L204	9-902-553-01	BEAD CORE		
L205	9-907-112-01	CHOKE COIL		
L206	9-902-553-01	BEAD CORE		
		<PHOTO COUPLER>		
PC101	9-907-091-01	PHOTO COUPLER PC111		
PC102	9-907-091-01	PHOTO COUPLER PC111		
PC201	8-719-161-00	PHOTO COUPLER PS2501		
		<TRANSISTOR>		
Q101	9-904-781-01	TRANSISTOR 2SC2061		
Q201	8-729-900-80	TRANSISTOR DTC114ES		
Q202	8-729-900-80	TRANSISTOR DTC114ES		
Q203	8-729-900-80	TRANSISTOR DTC114ES		
Q204	8-729-900-80	TRANSISTOR DTC114ES		
Q205	8-729-900-80	TRANSISTOR DTC114ES		
		<RESISTOR>		
R101	1-202-719-00	SOLID	1M	1/2W
R102	9-904-783-01	THERMISTOR	5	25℃
R103	1-218-642-11	FILM	100K	1W
R104	1-218-642-11	FILM	100K	1W
R105	1-260-127-11	CARBON	220K	1/2W
R106	1-260-127-11	CARBON	220K	1/2W
R107	1-215-925-11	FILM	22K	3W
R108	1-215-925-11	FILM	22K	3W
R109	1-215-882-00	FILM	22	2W
R110	9-907-093-01	CEMENT	0.15	2W
R111	9-907-094-01	CARBON	1	1/2W
R112	1-260-080-11	CARBON	27	1/2W
R113	1-247-855-31	CARBON	10K	1/4W
R114	1-249-412-11	CARBON	390	1/4W
R115	1-249-437-11	CARBON	47K	1/4W
R116	1-249-411-11	CARBON	330	1/4W
R117	1-249-423-11	CARBON	3.3K	1/4W
R118	1-247-883-00	CARBON	150K	1/4W
R119	1-247-883-00	CARBON	150K	1/4W
R120	1-249-441-11	CARBON	100K	1/4W
R121	1-215-928-11	FILM	68K	3W
R122	1-215-928-11	FILM	68K	3W
R123	1-215-863-11	CARBON	100	1W
R124	1-215-863-11	CARBON	100	1W
R125	1-260-091-11	CARBON	220	1/2W

Ref.No	Part No.	Description		Remark
R126	9-904-783-01	THERMISTOR	5	25℃
R127	1-260-127-11	CARBON	220K	1/2W
R128	1-260-127-11	CARBON	220K	1/2W
R129	1-249-389-11	CARBON	4.7	1/4W
R130	1-247-883-00	CARBON	150K	1/4W
R131	1-249-408-11	CARBON	180	1/4W
R132	1-249-441-11	CARBON	100K	1/4W
R201	1-215-916-00	FILM	680	3W
R202	1-215-916-00	FILM	680	3W
R203	1-260-099-11	CARBON	1K	1/2W
R204	1-247-855-31	CARBON	10K	1/4W
R205	1-247-855-31	CARBON	10K	1/4W
R206	1-249-420-11	CARBON	1.8K	1/4W
R207	1-244-417-11	CARBON	1K	1/4W
R208	1-249-423-11	CARBON	3.3K	1/4W
R209	1-249-415-11	CARBON	680	1/2W
R210	9-902-556-01	METAL	1	1/4W
R211	1-247-855-31	CARBON	10K	1/4W
R212	9-904-801-01	FILM	8.25K	1/4W
R213	1-247-855-31	CARBON	10K	1/4W
R214	1-247-855-31	CARBON	10K	1/4W
R215	1-247-855-31	CARBON	10K	1/4W
R216	1-247-855-31	CARBON	10K	1/4W
R217	1-249-425-11	CARBON	4.7K	1/4W
R218	1-247-855-31	CARBON	10K	1/4W
R219	1-247-855-31	CARBON	10K	1/4W
R220	1-214-736-00	FILM	2K	1/4W
R221	1-214-753-00	FILM	10K	1/4W
R222	1-260-083-11	CARBON	47	1/2W
R223	1-244-417-11	CARBON	1K	1/4W
R224	1-249-419-11	CARBON	1.5K	1/4W
R225	1-247-855-31	CARBON	10K	1/4W
R226	9-907-107-01	METAL OXIDE	430	1/4W
	9-907-094-01	METAL OXIDE	1.2K	1/4W
R227	9-907-108-01	CARBON	0.22	1/4W
R228	9-907-108-01	CARBON	0.22	1/4W
R229	9-907-109-01	METAL OXIDE	1.3K	1/4W
	9-907-107-01	METAL OXIDE	430	1/4W
R230	1-249-416-11	CARBON	820	1/4W
R231	1-249-414-11	CARBON	560	1/4W
		<RELAY>		
RL201	9-907-115-01	RELAY		
		<TRANSFORMER>		
T101	9-907-100-01	SWITCHING		
T102	9-907-101-01	SWITCHING		
		<VARIABLE RESISTOR>		
VR201	9-907-110-01	RES, VER, CARBON	2K	
VR202	9-907-111-01	RES, VER, CARBON	500	
VR203	1-238-570-11	RES, VER, CARBON	2K	
VR204	1-238-570-11	RES, VER, CARBON	2K	
		<MISCELLANEOUS>		
TC101	9-907-092-01	THERMAL CUT OFF		

****

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
⚠	*1-413-946-11	SWITCHING REGULATOR	
	1-507-195-21	SPECIAL REMOTE CONTROL JACK	
	1-541-684-41	MOTOR, DC	
	1-500-114-11	HEAD, THERMAL	
⚠	1-554-880-12	SWITCH, PUSH (AC POWER) (1 KEY)	
⚠	1-580-375-11	INLET 3P	
	1-692-855-11	(LCD) KEYBOARD, FFC WITH	
	1-698-019-31	MOTOR, DC (FAN)	
	1-751-235-11	CABLE, FLAT (FVM-2)	
	1-751-238-11	CABLE, FLAT (FHH-1)	
	1-751-239-11	CABLE, FLAT (FHH-2)	
	1-765-051-11	WIRE, FLAT TYPE (7 CORE)	
	1-765-052-11	WIRE, FLAT TYPE (16 CORE)	
	1-810-412-11	LCD MODULE	
	*1-952-970-11	HARNESS, SUB (HMSW42)	
	*1-952-971-11	HARNESS, SUB (HMDS)	
	*1-952-972-11	HARNESS, SUB (HMPW)	
	*1-952-973-11	HARNESS, SUB (SPW)	
	*1-952-974-11	HARNESS, SUB (DSSW39)	
	*1-952-975-11	HARNESS, SUB (HMSW41)	
	1-952-976-11	HARNESS, SUB (DSSU10)	
	1-952-977-11	HARNESS, SUB (REMOTE)	
	*1-952-978-11	HARNESS, SUB (KYPTC)	
	1-952-980-11	HARNESS, SUB (AC(IN))	
	1-952-981-11	HARNESS, SUB (AC(SW))	
	*1-952-983-11	HARNESS (DC (VAFMDS))	
	*1-952-985-11	HARNESS (FMKY(LCD))	
	*1-952-987-11	HARNESS, SUB (VAFM)	
	*1-952-988-11	HARNESS (VIF019)	
	*1-952-989-11	HARNESS (IFFM019)	
		**********	
		ACCESSORY & PACKING MATERIALS	
		**********	
	A-8310-002-B	TRAY ASSY, PAPER	
	1-465-508-21	COMMANDER, REMOTE	
⚠	1-551-631-41	CORD, POWER	
	1-557-637-11	CABLE, COMMANDER	
	3-183-201-01	ADJUSTMENT BOARD, LENGTH	
	*3-183-227-02	TRAY	
	*3-183-920-01	INDIVIDUAL CARTON (UP-1800EPM)	
	*3-183-924-01	INDIVIDUAL CARTON (UP-1850EPM)	
	*3-183-929-01	CUSHION (UPPER)	
	*3-183-930-01	CUSHION (LOWER)	
⚠	3-758-133-11	MANUAL, INSTRUCTION	
	*3-694-922-01	SHEET, PROTECTION	
		**********	

Ref.No	Part No.	Description	Remark
		HARDWARE LIST	
		**********	
	7-621-255-15	SCREW +P 2X3	
	7-621-259-35	SCREW +P 2.6X5	
	7-621-284-40	SCREW +P 2.6X10	
	7-621-759-75	+PSW, 2.6X10	
	7-682-166-01	SCREW +P 4X20	
	7-682-645-01	SCREW +PS 3X4	
	7-682-647-09	SCREW +PS 3X6	
	7-685-103-19	SCREW +P 2X5 TYPE2 NON-S	
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
	7-685-852-01	SCREW +BVTT 2X5 (S)	
	7-685-862-01	SCREW +BVTT 2.6X6 (S)	
		**********	

SECTION 7
ELECTRICAL ADJUSTMENT

7-1. PREPARATION BEFORE ADJUSTMENT

The measurement equipment below is used for adjustment.

7-1-1. Equipment Required

1) Monitor television
2) Signal generator TSG-131, TSG-131A or 1411
   RGB sync (Full field 75% white, and color-bar 100% white)
3) Dual-trace oscilloscope with band of more than 30 MHz and delay mode
   (Use a 10:1 probe unless otherwise specified.)
4) Frequency counter
5) Vectorscope
6) Digital voltmeter
7) Video print paper
8) Video print cartridge

7-1-2. Connection of the Equipment

As shown in Fig. 7-1, each measurement equipment is connected according to instructions from the input terminal (S video or video R.G.B) to perform the adjustment. Each input terminal is specified in a signal column by parentheses. If not specified, either input terminal can be used.

Note: For the adjustment specified as an S video input terminal, the product specifications of this unit may not be satisfied when the adjustment is performed by a video input terminal. Be sure to perform the adjustment according to instructions.
When the adjustment is performed using the VTR with an S video output terminal as a signal source, the performance of this unit varies depending on the VTR. Use the pattern generator with a Y/C separation output terminal as far as possible.

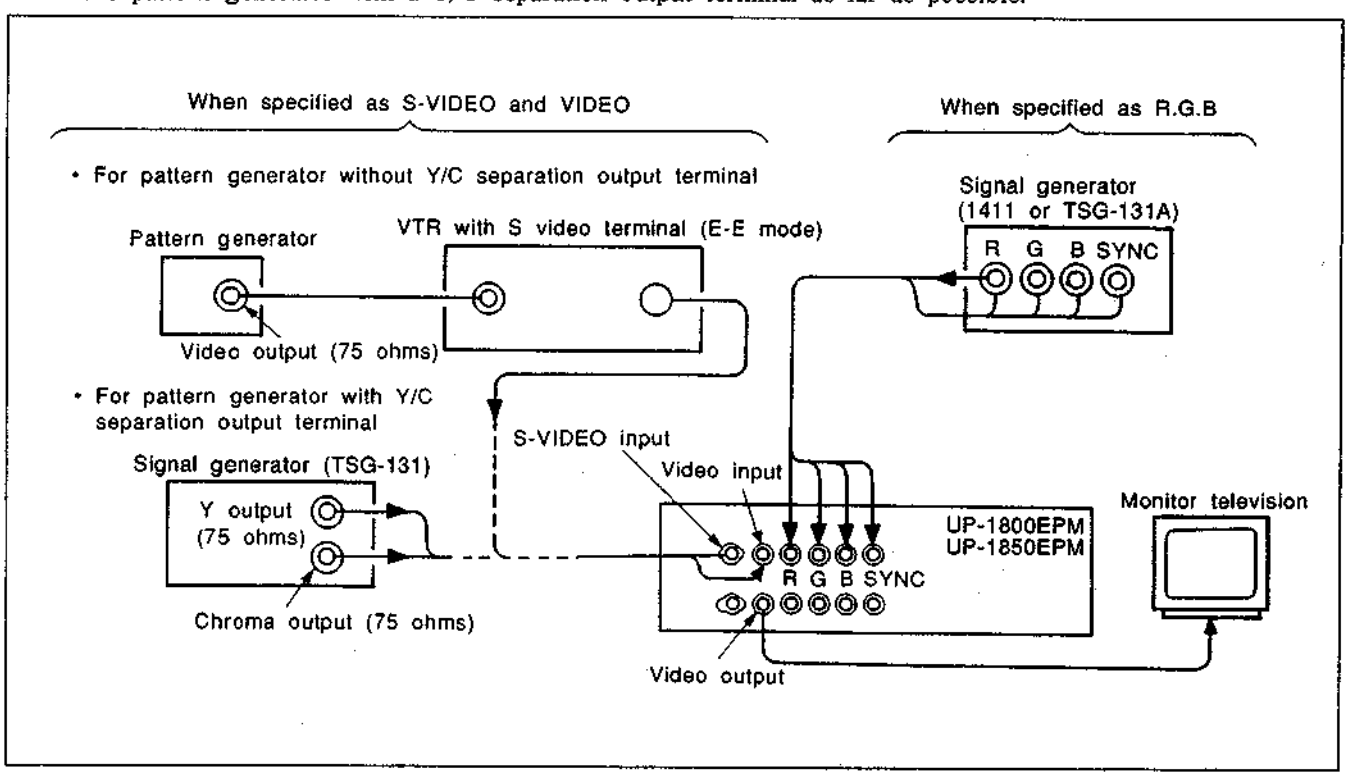


Fig. 7-1.

7-1-3. Confirmation of the Input Signal

The video signal generated from a pattern generator is used for video circuit adjustment as an adjustment signal. Therefore, it is necessary that this video output signal satisfies the required specification.

1. During S video (S VIDEO) input

Connect an oscilloscope to the Y signal terminal of the S video input terminal, and confirm that the sync signal of a Y signal is 286 mV, the amplitude of the video portion is 714 mV, and the setup level is 0 mV. (When the VTR with an S video output terminal is used, confirm that no chroma signal and burst signal remain.) Moreover, connect an oscilloscope to the chroma signal terminal of the S video input terminal, and confirm that the burst signal amplitude of a chroma signal is flat (286 mV) and that the amplitude ratio of a burst signal to a chroma signal is 0.30 : 0.66. The Y signal and chroma signal used for the adjustment are shown in Fig. 7-2.

The setup level is the potential difference between the black and pedestal levels.

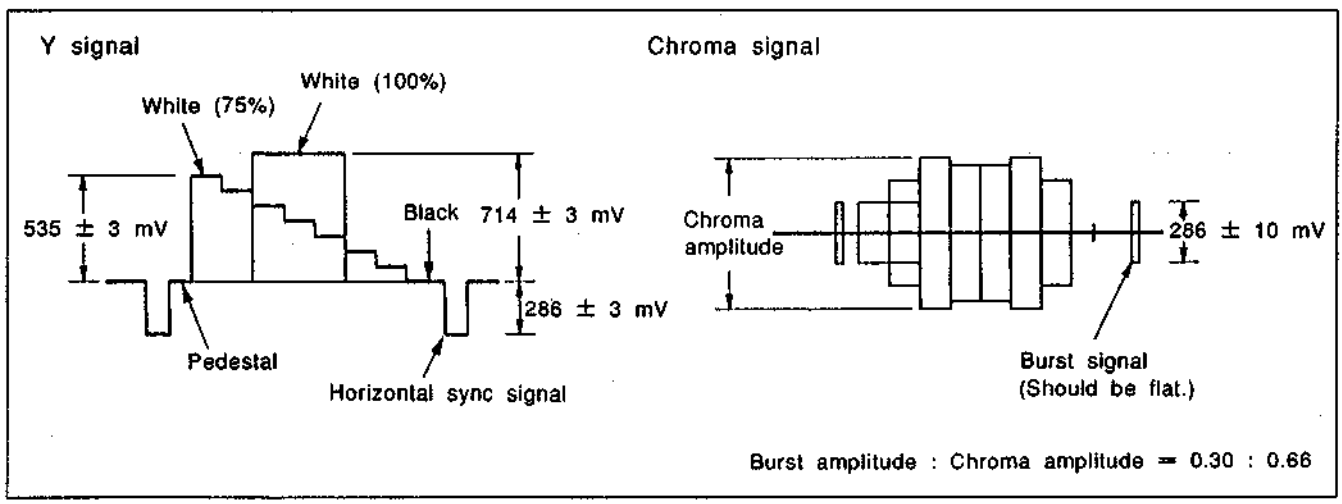


Fig. 7-2. Color-Bar Signal in Pattern Generator (during 75-Ohm Termination)

2. During video (VIDEO) input

Connect an oscilloscope to the video input terminal, and confirm that the sync signal amplitude of a video signal is 286 mV, the amplitude of the video portion is 714 mV, the setup level is 0 mV, the amplitude of a burst signal is flat (286 mV), and the level ratio of a burst signal to a "red" signal is 0.30 : 0.66.

The video signal (color-bar) used for the adjustment is shown in Fig. 7-3.

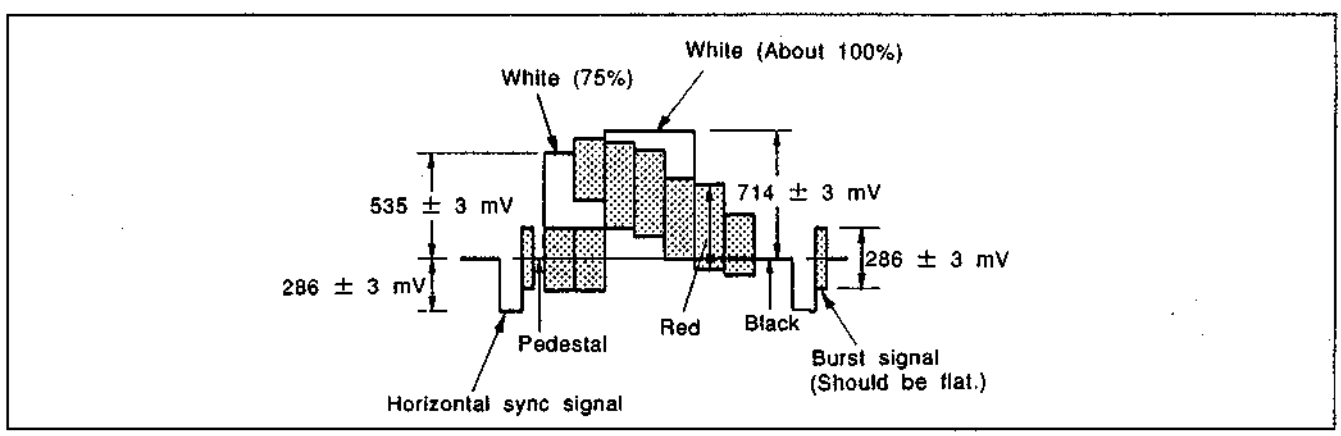


Fig. 7-3. Color-Bar Signal in Pattern Generator (during 75-Ohm Termination)

7-1-4. How to Operate Adjustment Remote Controller RM-95 (J-6082-053-A)

Insert the RM-95 terminal into J1 LANC jack on the VA-14 board.

Before performing each adjustment, reset the corresponding protector as shown in the table below.

Page	6	Data	80	Address	00

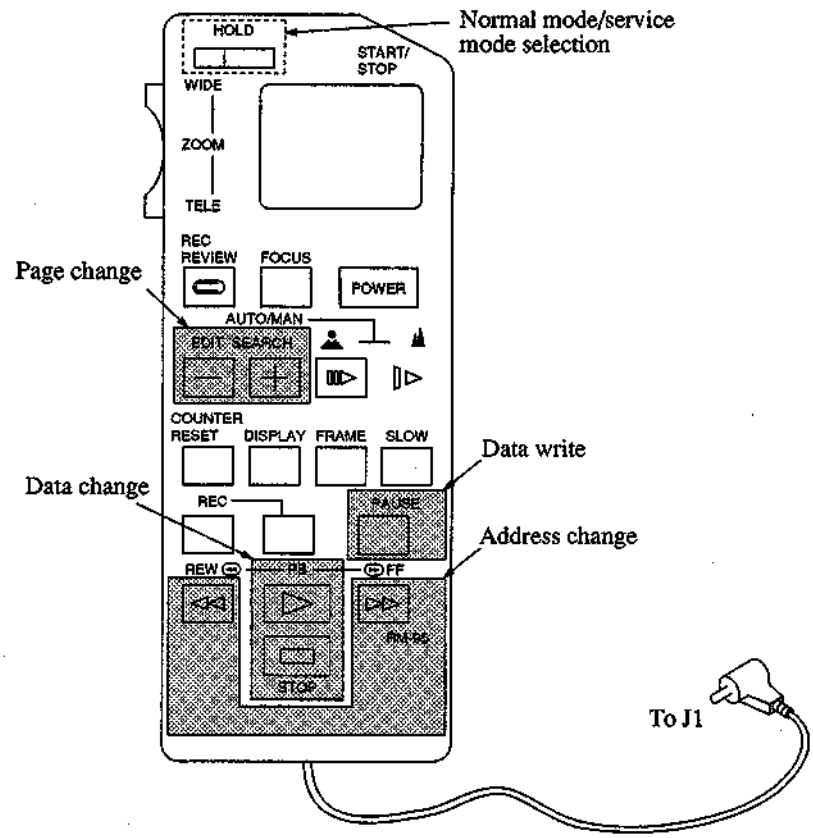
However, any reset is not required during continuous adjustment.
Press the PAUSE button for every adjustment item and write each data.

1. Menu setting

The menu is set in the initial state (refer to the table below).

Number of prints	1
Memo	No memo print
Memory setting	Standard
Print setting	Standard
Picture quality setting	Standard

Adjustment remote controller RM-95 (J-6082-053-A)

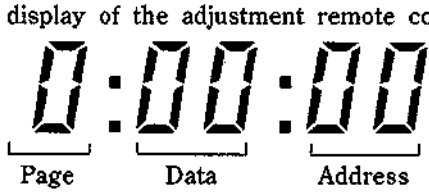


7-1-5. Service Mode

1. Setting the service mode

The service mode is classified into an adjustment mode that adjusts the EVR and a test mode that displays the state of the unit.
The test mode and adjustment mode are entered if the adjustment remote controller (with the HOLD switch set to HOLD) is connected.

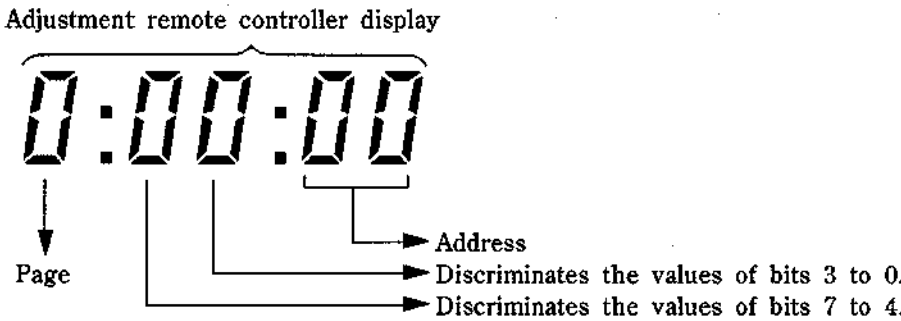
LCD display of the adjustment remote controller



2. Discrimination of the bit value

In subsequent items, it is necessary to discriminate the bit value by the display data of an adjustment remote controller.

On whether the bit value is "1" or "0", discriminate according to the data shown in the table below.



	Remote controller display	Bit value			
		Bit 3 or 7	Bit 2 or 6	Bit 1 or 5	Bit 0 or 4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ→	8	1	0	0	0
	9	1	0	0	1
	A(*A*)	1	0	1	0
	B(*b*)	1	0	1	1
	C(*c*)	1	1	0	0
	D(*d*)	1	1	0	1
Ⓑ→	E(*E*)	1	1	1	0
	F(*F*)	1	1	1	1

(Example) When the display data of the remote controller is "8E", the values of bits 7 to 4 can be discriminated by column Ⓐ, and the values of bits 3 to 0 can be discriminated by column Ⓑ.

Command name	Function	Command button
Page Up	Increments the page by one.	Edit Search (+)
Page Down	Decrements the page by one.	Edit Search (−)
Address Up	Increments the address by one.	Fast Forward (▷▷)
Address Down	Decrements the address by one.	Rewind (◁◁)
Data Up	Increments the data by one.	Play Back (▷)
Data Down	Decrements the data by one.	Stop (□)
Store	Writes data in an EE-PROM RAM.	Pause (II)

3. Entering the test signal (Transmission to memory control)

LCD display of the adjustment remote controller

1) Insert the RM-95 into the control terminal (J-1 on the VA-14 board).
2) Set the HOLD switch of the RM-95 to the service mode. (Usually set to the service mode.)
3) Turn on the power of the UP-1800EPM/1850EPM and set each signal as shown below.

※ The input signal is a non-signal.

[Color-bar signal]

Page	A	Data	2b	Address	16

[Stairstep signal (H)]

Page	A	Data	27	Address	16

[Stairstep signal (V)]

Page	A	Data	28	Address	16

[Ramp signal (H)]

Page	A	Data	29	Address	16
Page	A	Data	2C	Address	16

[Ramp signal(V)]

Page	A	Data	20	Address	16

4. Infrared remote controller check

Page	7	Data		Address	07

※ The reception-time state of an infrared remote controller can be confirmed by the number of display data items.

Data	Reception-time state	Data	Reception-time state
10	SOURCE/MEMORY	43	EXEC
11	Memory	14	STOP
13	Print	49	MEMORY PAGE
30	UP	5D	Print quantity +
31	DOWN	5E	Print quantity −
32	LEFT	3C	Color adjustment
33	RIGHT	4B	MULTI PICTURE
42	MENU		

5. Key input control check (1)

Page	A	Data		Address	15

※ Write the data below and press the (PAUSE(II) button).
The state obtained when the key was pressed is then entered.

Data	Key input	Data	Key input
02	STOP	0A	MEMORY PAGE
08	PRINT	10	COLOR ADJUST
0E	PRINT QTY−	16	EXEC
0C	PRINT QTY+	1C	UP
14	MENU	24	SERVICE OFF
1A	RIGHT	06	MEMORY IN
22	SERVICE ON	12	MULTI PICTURE
04	SOURCE/MEMORY	18	LEFT

6. Key input control check (2)

Page	A	Data		Address	15

※ Write the data below and press the (PAUSE(II) button).
The state obtained when the key was pressed is then entered.

Data	Key input
1E	DOWN
26	DIP SWITCH

7. LED control check

Page	7	Data		Address	14

※ The LED is made turned on forcibly.

Data	Operation
00	Normal
01	Only the error LED ( ) lights.
02	Only the print LED ( ) lights.

8. A/D conversion data check

Page	8	Data		Address	08 to 0A

Address	
08	Head Temp (IC708 (51) pin)
09	Room Temp (IC708 (50) pin)
0A	SWITCH (IC708 (49) pin)

9. Buzzer sound check

Page	7	Data		Address	16

※ Write any data and press the PAUSE button. The buzzer sounds three times.

10. Sharpness adjustment

Page	7	Data		Address	40

Data	Level position
F9	MIN
00	CENTER
07	MAX

※ Write the above data and press the PAUSE button. The sharpness data is then changed.

11. Picture quality set check

Page	7	Data		Address	45 to 4A

Offset data	Level position	Gain data
C8	MIN	3F
00	CENTER	80
38	MAX	E3

Address		
45	B	Offset level
46	G	
47	R	
48	B	GAIN
49	G	
4A	R	

12. Paper delivery arm position check

Page	8	Data		Address	05

Data	Position
0E	NULL
00	Home position
01	Print position

13. SIRCS code check

Page	A	Data		Address	07

※ The SIRCS code that is currently received can be confirmed.

Data		Data	
00	No input	32	LEFT
13	PRINT	42	MENU
31	DOWN	4B	MULTI PICTURE
3C	COLOR, ADJUST	5D	PRINT QTY+
49	MEMORY, PAGE	11	MEMORY IN
5E	PRINT QTY−	30	UP
10	SOURSE/MEMORY	33	RIGHT
14	STOP	43	EXEC

14. System control ROM version check

Page	A	Data		Address	01

※ The numeric value displayed in data is the ROM version at that time.
※ The write operation (PAUSE) is impossible.

15. Picture quality size check

Page	7	Data		Address	70

Data	Size
00	NARROW
01	NORMAL
02	WIDE

16. Input signal selection check

Page	7	Data		Address	71

Data	Input signal
00	VIDEO
01	S-VIDEO
02	R.G.B

※ An input signal can be set when the PAUSE key is set to ON.

17. THRU/E-E check

Page	7	Data		Address	72

Data	
00	EE
01	THRU

※ An input signal can be set when the PAUSE key is set to ON.

18. AGC ON/OFF check

Page	7	Data		Address	73

Data	
00	OFF
01	ON

※ The AGC can be turned ON and OFF when the PAUSE key is set to ON.

19. SYNC selection check

Page	7	Data		Address	74

Data	
00	Internal SYNC
01	External SYNC

※ A SYNC signal can be selected when the PAUSE key is set to ON.

20. SYNC ON GREEN check

Page	7	Data		Address	74

Data	
00	OFF
01	ON

※ A SYNC ON GREEN signal can be set when the PAUSE key is set to ON.

21. Error code check

Page	A	Data		Address	12

※ Trouble data (contents) detected by system control

Data	Contents of trouble	Data	Contents of trouble
00	Mechanical control communication is impossible.	01	Initialization time is exceeded.
02	Print time is exceeded.	03	Mechanical control communication error
04	Liquid-crystal initialization error	05	Mode control communication error
06	Memory control initialization error	07	Liquid-crystal initialization error
08	Mode control initialization error	09	RS-232C communication error
11	Head position error/during initialization	12	Head position error/during stop
13	Head position error/during paper supply	14	Head position error/during print
15	Head position error/during paper delivery	21	Roller position error/during initialization
22	Roller position error/during stop	23	Roller position error/during paper supply
24	Roller position error/during print	25	Roller position error/during paper delivery
31	Paper jamming/during initialization	32	Paper jamming/during stop
33	Paper jamming/during paper supply	34	Paper jamming/during print
35	Paper jamming/during paper delivery	41	Ribbon door open
51	Muting time is exceeded.	52	Memory control communication error
53	EE-PROM write/read error	81	Paper supply error
82	Printing paper is too short/paper delivery is impossible.	83	Paper delivery error
84	Printing paper is too short/paper delivery is possible.	85	Printing paper is too long/paper delivery is impossible.
86	Printing paper is too long/paper delivery is possible.	87	Ribbon and printing paper are combined badly.
91	Ribbon code is incorrect.	92	Ribbon was used to the end.
93	Ribbon is not wound.	94	Ribbon error/during print
95	Ribbon error/during paper delivery	EO	Mechanical transition time is exceeded.
FD	Key harness abnormal/ground short-circuited	FD	Key harness abnormal/open
FF	No emergency		

22. Head position data check

Page	8	Data		Address	03

※ The current head position is displayed in a data list.

Data	
E0	NULL
00	H0 position
02	H1 position
03	H2 position
04	H3 position
05	H4 position
FB	H−1 position

23. Roller position data check

Page	8	Data		Address	04

※ The current roller position is displayed in a data list.

Data	
E0	NULL
00	P0 Position
02	P1 Position
04	P2 Position

24. Mode control ROM version check

Page	7	Data		Address	01

※ The numeric value displayed in data is the ROM version at that time.

25. Mechanical control ROM version check

Page	8	Data		Address	01

※ The numeric value displayed in data is the ROM version at that time.
※ No data can be written using the PAUSE key.

26. Motor single-drive check

(1) Head motor

Page	8	Data		Address	1A

Data	
00	Stop
01※1	Head position UP
02※2	Head position DOWN
08	Home position

※1 The head position changes by one step every time the PAUSE button of the RM-95 is pressed.

※2 Do not perform the DOWN operation in head position-1. This may destroy the unit. If so, turn off the AC power immediately.

(2) Ribbon motor (Roller motor)

Page	8	Data		Address	1A

Data	
00	Stop
03※1	Roller position UP
04※2	Ribbon winding (continuous)

※1 The roller position changes by one step every time the PAUSE button of the RM-95 is pressed.

※2 The data 04 changes by one step the PAUSE button is continuous-drive.

(3) Stepping motor, fan motor, delivery arm position

Page	8	Data		Address	1A

Data	
00	Stop
05	Stepping motor rotation (continuous)
06	Stepping motor reverse-rotation (continuous)
09	Fan motor rotation
0B	Delivery arm position UP※

※ The delivery arm position changes by one step every time the PAUSE button is pressed.

27. F page address book

Adjustment address	Name	Function ( ) is the adjustment voltage output terminal.	
30	COM-Y	Y/C separation and Y adjustment	(CC115)
31	COM-C	Y/C separation and C adjustment	(CC112)
32	AGCOF-LEV	AGC level adjustment	(CC11)
33	AGC-GAIN		
34	APC-ADJ	APC free-running adjustment	(CC225)
35	BFP-ADJ	Decoder (Y) level adjustment	(CC212) (CC217)
36	COLOR	Color adjustment	(CC16)
37	HUE	DAT adjustment	(CC16)
38	DEC R-BAL	DEC R-BAL adjustment	(CC5)
39	DEC B-BAL	DEC B-BAL adjustment	(CC16)
3A	DLA	DLA adjustment	(CC11)
3B			
3C	Check sam (L)		
3D	Check sam (H)		
3E			
3F			
40	P-RGB		
41	P-S·VS		
42	BOT-REF	BOT-REF level adjustment	(CC704)
43	R-GAIN	R gain level adjustment	(CC701) (CC5)
44	G-GAIN	G gain level adjustment	(CC702) (CC11)
45	B-GAIN	B gain level adjustment	(CC703) (CC16)
46	GAIN		
47	OFFSET	Offset level adjustment	(CC705)
48			
49			
4A			
4B			
4C	Check sam (L)		
4D	Check sam (H)		
4E			
4F			
50	D/A-REF	D/A REF adjustment	(IC704 ⑱, CN101 ⑤)
51	D/A-R	D/A-R level adjustment	(VIDEO OUT)
52	D/A-B	D/A-B level adjustment	(VIDEO OUT)
53	ENV-LEV	Encoder V level adjustment	(CC810)
54	ENY-LEV	B encoder Y level adjustment	(CC811)
55	ENC-LEV	Encoder chroma level adjustment	(CC812)
56	ENR-LEV	Encoder R level adjustment	(CC807)
57	ENG-LEV	Encoder G level adjustment	(CC808)
58	ENB-LEV	Encoder B level adjustment	(CC809)
59			
5A			
5B			
5C	Check sam(L)		
5D	Check sam(L)		
5E			
5F			

7-2. VIDEO CIRCUIT ADJUSTMENT (VA-14 BOARD)

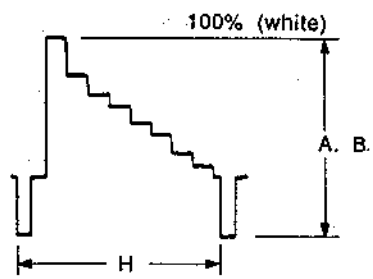
7-2-1. PLL Free-Running Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: S VIDEO · Measurement equipment: Digital voltmeter	Measurement point: CC504 (VCO.CV) 0.0 ± 0.2 V DC	◐ CV502

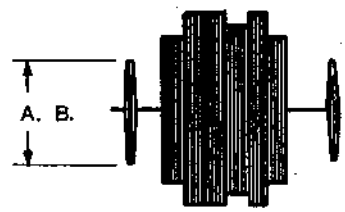
7-2-2. INT SYNC GEN Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Non-signal · Measurement equipment: Frequency counter Digital voltmeter	· Measurement point: CC502 (INT CLK) f = 14.18713 MHz ± 10 Hz	◐ CV501
	· Measurement point: CC508 (PLL CV) 2.5 ± 1.5 V DC (MIN)	◐ CV503

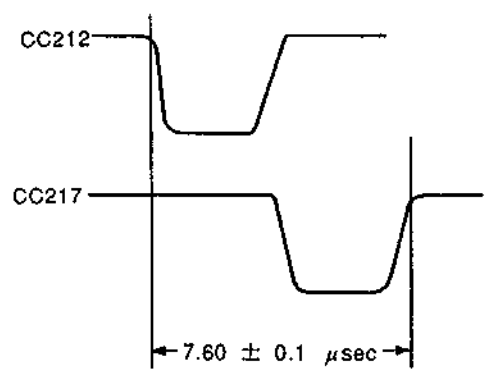
7-2-3. Y/C Separation and Y Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC115 (Y)  A ≒ 0.52 V p-p S VIDEO: Measure the level at CC115 (Y). The amplitude of A.(Vp-p) is approximately 0.52 V p-p. VIDEO: Adjust so that B is equal to A. A−B = ± 0.01 V p-p	Adjustment page	F
		Adjustment address	30 (COM-Y)

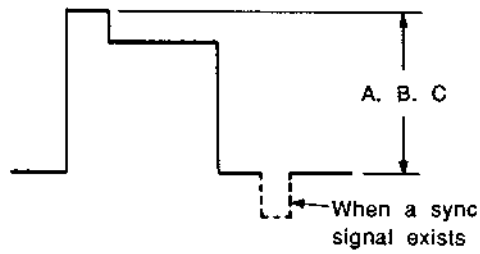
7-2-4. Y/C Separation and C Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar · Measurement equipment: Oscilloscope	Measurement point: CC112 (C)  A ≒ 300 mV p-p S VIDEO: Measure the burst level at CC112 (C). The amplitude of A.(Vp-p) is approximately 300 mV. VIDEO: Adjust so that B is equal to A. A−B = ± 10 mV p-p	Adjustment page: F Adjustment address: 31 (COM-C)

7-2-5. Decoder (Y) Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: S VIDEO · Measurement equipment: Oscilloscope	Measurement point: CC212, CC217  Adjust the time between the falling edge of an H sync signal at CC212 (DEC-Y) and the rising edge of a BF pulse at CC217 (BFP).	Adjustment page: F Adjustment address: 35 (BFP-ADJ)

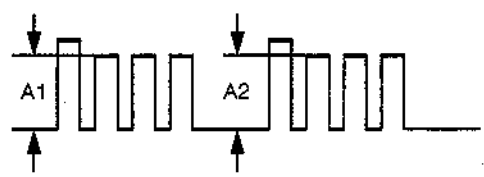
7-2-6. AGC Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar · Measurement equipment: Oscilloscope	Measurement point: CC11 (G OUT)  AGC OFF level, R.G.B input: Address 00 A = About 1.9 V p-p S VIDEO input: AGC OFF level in address(32) A−B = ± 0.05 V p-p (Adjust so that A is equal to B.) : AGC gain level in address(33) AGC ON level, R.G.B input: Address 00 A−C = ± 0.05 V p-p (Adjust so that A is equal to C.)	Adjustment page: F Adjustment address: After this adjustment, address 36(COLOR) is written by pressing PAUSE key.

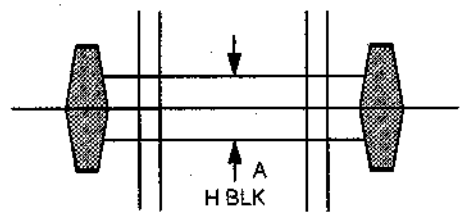
7-2-7. APC Free-Running Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Frequency counter	Measurement point: CC225 (APC) f = 4.433619 MHz ± 20 Hz	Adjustment page: A Adjustment address: 34 (APC-ADJ)

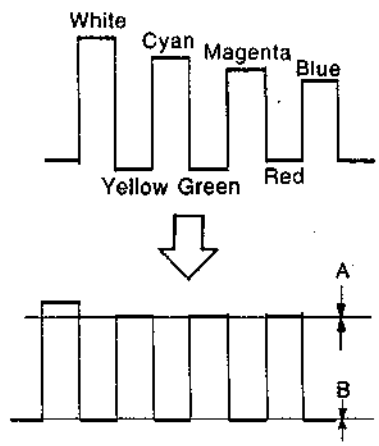
7-2-8. DAT Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC16 (B OUT)  A1 = A2 ± 125 mV White, cyan, magenta, and blue should be flat and linear. Adjust so that the bottom value is equal.	Adjustment page: F Adjustment address: TI201

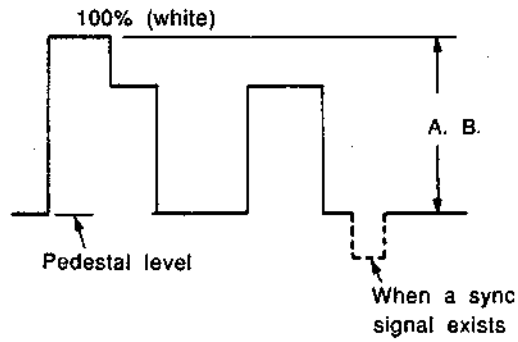
7-2-9. DLA Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Special color-bar · Measurement equipment: Oscilloscope	Measurement point: CC11 (G OUT)  A < 120 mV p-p If the difference in level exists in each color, readjust the hue.	Adjustment page Adjustment address Adjust so that portion A is minimum.	F 3A (DLA)

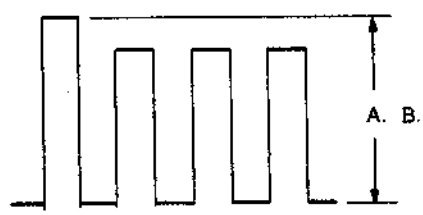
7-2-10. COLOR Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC16 (B OUT)  A < 100 mV p-p B < 100 mV p-p	Adjustment page Adjustment address Adjust portions A and B to the minimum level so that each color level is linear.	F 36 (COLOR)

7-2-11. DEC R-BAL Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar · Measurement equipment: Oscilloscope	Measurement point: CC5 (R OUT)  Adjust so that levels B and A at CC5 (R OUT) are equal. RGB input: A ≒ 1.9 V p-p S VIDEO input: A − B = ±0.05 V p-p	Adjustment page: F Adjustment address: 38 (DEC-R BAL)

7-2-12. DEC B-BAL Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar · Measurement equipment: Oscilloscope	Measurement point: CC16 (B OUT)  Adjust so that levels B and A at CC16 (B OUT) are equal. RGB input: A ≒ 1.9 V p-p S VIDEO input: A − B = ±0.05 V p-p	Adjustment page: F Adjustment address: 39 (DEC-B BAL)

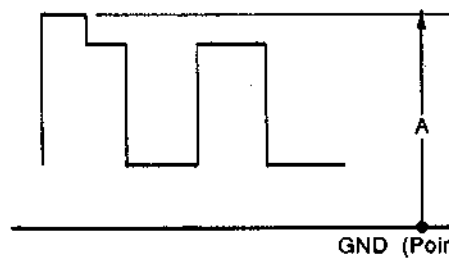
7-2-13. BOT-REF Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Measurement equipment: Digital voltmeter	Measurement point: CC704 (VRB) 1.000 V ± 0.005 V DC	Adjustment page: F Adjustment address: 42 (BOT-REF)

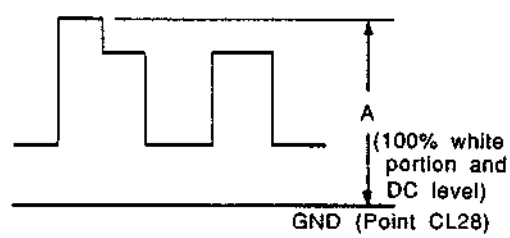
7-2-14. Offset Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Measurement equipment: Digital voltmeter	Measurement point: CC705 (AD OST) 1.000 V ± 0.005 V DC	Adjustment page F Adjustment address 47 (OFFSET)

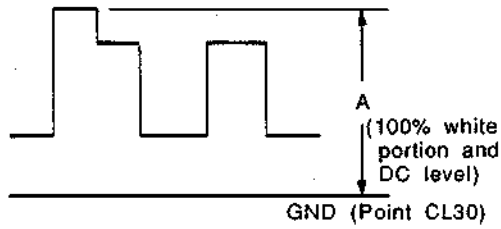
7-2-15. R Gain Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (RGB) · Measurement equipment: Oscilloscope Digital voltmeter	Measurement point: CC5 (R OUT)  A ≒ 2.9 V DC (100% white portion and DC level) Adjust so that DC voltage B at CC701 (VRT-R) is equal to A. A − B = − 70 ± 25 mV DC.	Adjustment page F Adjustment address 43 (R-GAIN)

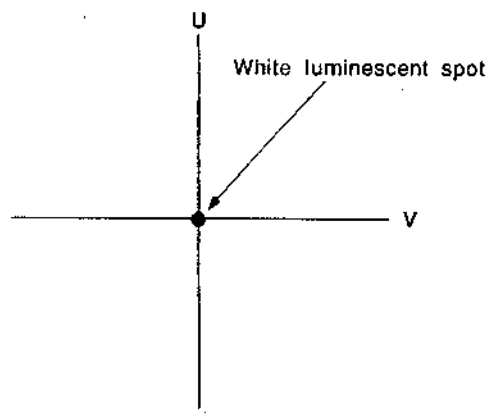
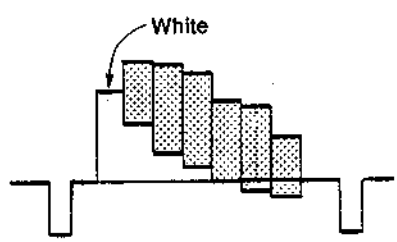
7-2-16. G Gain Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (RGB) · Measurement equipment: Oscilloscope Digital voltmeter	Measurement point: CC11 (G OUT)  A ≒ 2.9 V DC (100% white portion and DC level) Adjust so that DC voltage B at CC702 (VRT-G) is equal to A. A − B = − 70 ± 25 mV DC	Adjustment page F Adjustment address 44 (G-GAIN)

7-2-17. B Gain Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (RGB) · Measurement equipment: Oscilloscope Digital voltmeter	Measurement point: CC16 (B OUT)  A ≒ 2.9 V DC (100% white portion and DC level) Adjust so that DC voltage B at CC703 (VRT-B) is equal to A. A − B = − 75 ± 25 mV DC	Adjustment page	F
		Adjustment address	45 (B-GAIN)

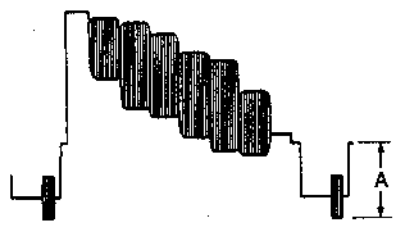
7-2-18. D/A (R), (B) Level Adjustment (IF-28 Board)

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Vectorscope Oscilloscope	Measurement point: VIDEO output terminal (J010)  The white luminescent spot coincides with the origin. · Set the gain of the vectorscope to the maximum position. · Adjust so that the luminescent spot gets nearest the intersection point of U and V axes.	Adjustment page	F
		Adjustment address	51 (D/A-R) 52 (D/A-B)
For oscilloscope	 Adjust so that the chroma signal component leaking to the white-level portion of a video output signal waveform is minmum.		

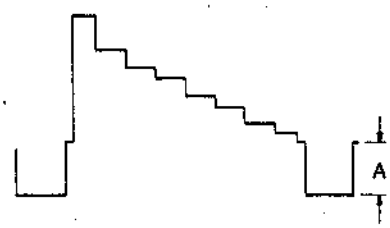
7-2-19. D/A REF Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Digital voltmeter	Measurement point: IC704 ⑱ or CN101 ⑤ 2.3 ± 0.1 V DC	Adjustment page: F Adjustment address: 50 (D/A REF)

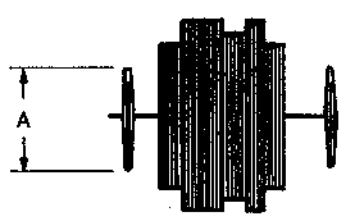
7-2-20. Encoder V Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC810 (V-MONI)  A = 300 ± 10 mV p-p	Adjustment page: F Adjustment address: 53 (ENV-LEV)

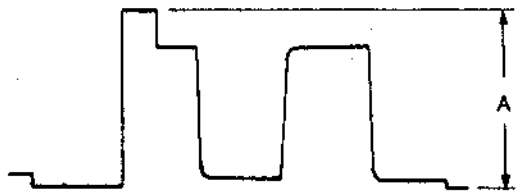
7-2-21. Encoder Y Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC811 (Y-MONI)  A = 300 ± 10 m V p-p	Adjustment page: F Adjustment address: 54 (ENY-LEV)

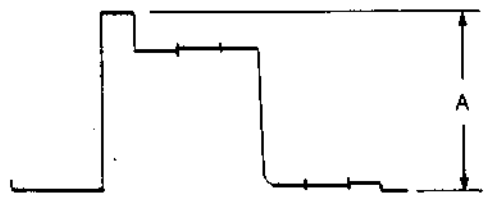
7-2-22. Encoder Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC812 (C-MONI)  Adjust the burst level. A (burst level) = 300 ± 10 mV p-p	Adjustment page: F Adjustment address: 55 (ENC-LEV)

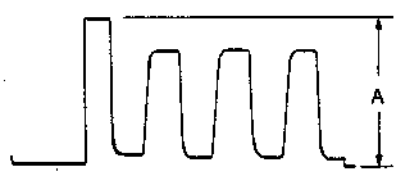
7-2-23. Encoder R level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC807 (R-MONI)  A = 0.700 ± 0.01 V p-p	Adjustment page: F Adjustment address: 56 (ENR-LEV)

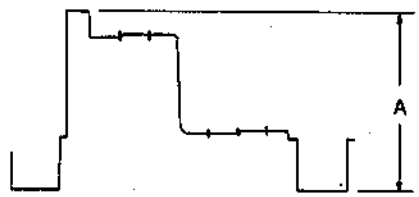
7-2-24. Encoder G Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC808 (G-MONI)  A = 0.700 ± 0.01 V p-p	Adjustment page: F Adjustment address: 57 (ENG-LEV)

7-2-25. Encoder B Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC809 (B-MONI)  A = 0.700 ± 0.01 V p-p	Adjustment page: F Adjustment address: 58 (ENB-LEV)

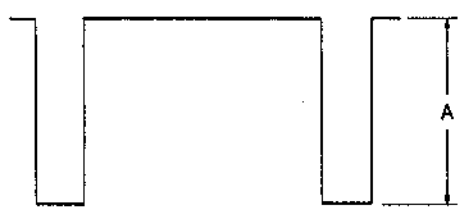
7-2-26. Output Sync ON G Confirmation

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC808 (G-MONI)  A = 1.0 ± 0.1 V p-p	

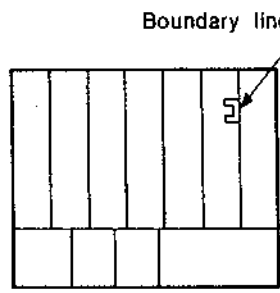
7-2-27. Input Sync ON G Confirmation

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (RGB) · Measurement equipment: · Sync ON G	※ The monitor screen display should be normal.	

7-2-28. Output Sync Confirmation

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CC813 (SYNC-MONI)  A = 1.0 ± 0.1 V p-p	

7-2-29. Monitor Display Position Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar	Measurement point: Check the monitor visually.  · Align the most right character ("ㅋ") on the monitor display with the position shown in the figure.	❶ CV801

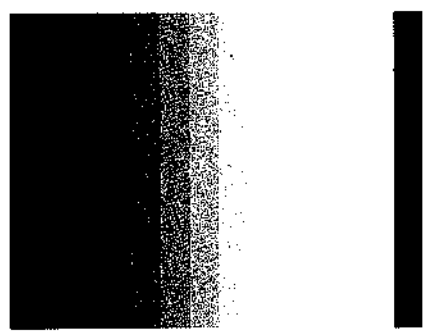
7-3. HEAD REPLACEMENT

7-3-1. Adjustment

1) Mechanical block

Thermal head replacement (Refer to "Printing the Test Signal by RM-95*".)

(1) Print two sheets of paper via the defective head using a stairstep signal (H) before replacing the thermal head. Use the second sheet of paper for comparison of uneven image density.
After the thermal head was replaced, print two sheets of paper using a stairstep signal(H). Adjust so that the second sheet of printed paper is equal in density to the second sheet of paper printed before replacement.

Conditions for adjustment	Spec.	Adjustment
· Mode: Memory picture※1 · Input signal: Stairstep signal (H)※2	Should be equal to the sample image. 	VR201※3

※1 Press the MEMORY IN or SOURCE/MEMORY button of the unit.
※2 Refer to the stairstep signal (H) in "Entering the Test Signal".
※3 Adjust using VR201 on the power board while pressing switch S705 on the HM board.
[Voltage ⊕(thick); voltage ⊖(thin)]

SONY

COLOR VIDEO PRINTER

UP-1800EPM
UP-1850EPM

SERVICE MANUAL

SUPPLEMENT-2

Please add and replace your manual with this SUPPLEMENT-2.

SUBJECT

- SCHEMATIC DIAGRAM
- EXPLODED VIEWS
- ELECTRICAL PARTS LIST

1. CORRECT FOLLOWING ITEMS IN THE SERVICE MANUAL.

Page		Incorrect		Correct
222	R789	1-216-837-11 METAL 22k 5% 1/16W	⇨	1-216-839-11 METAL 33k 5% 1/16W
	R797	1-216-837-11 METAL 22k 5% 1/16W	⇨	1-216-839-11 METAL 33k 5% 1/16W
	R809	1-216-837-11 METAL 22k 5% 1/16W	⇨	1-216-839-11 METAL 33k 5% 1/16W
	R844	1-216-837-11 METAL 22k 5% 1/16W	⇨	1-216-839-11 METAL 33k 5% 1/16W
	R853	1-216-837-11 METAL 22k 5% 1/16W	⇨	1-216-839-11 METAL 33k 5% 1/16W
225	R818	1-216-089-91 METAL 47k 5% 1/10W	⇨	1-216-083-00 METAL 27k 5% 1/10W
242	7-2-2.	INT SYNC GEN Frequency Adjustment		
		• In case board suffix number -11 and -21		• In case board suffix number -31 and -32
		Measurement point : CC502 (INT CLK)	⇨	Measurement point : CC501 (INT SC)
		f = 14.18713 ± 0.00001 MHz		f = 4.433619 ± 0.00001 MHz
		Measurement point : CC508 (PLL CV)	⇨	Measurement point : CC508 (PLL CV)
		2.5 ± 1.5 V DC (MIN)		1.5 ± 0.7 V DC (MIN)

: changed portion

VIDE-V03252 / Druck 45

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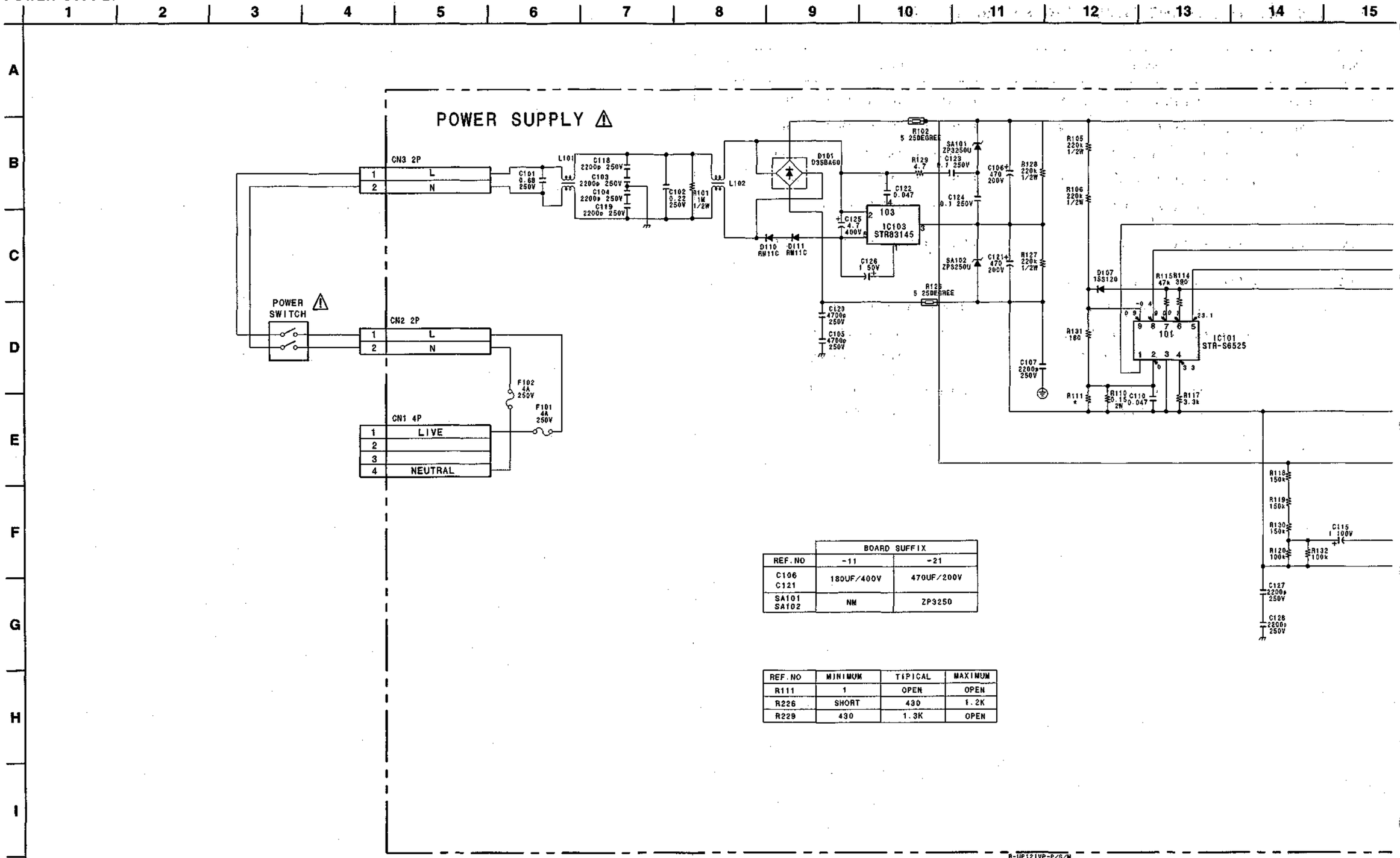
Correct the power supply circuit as follow.

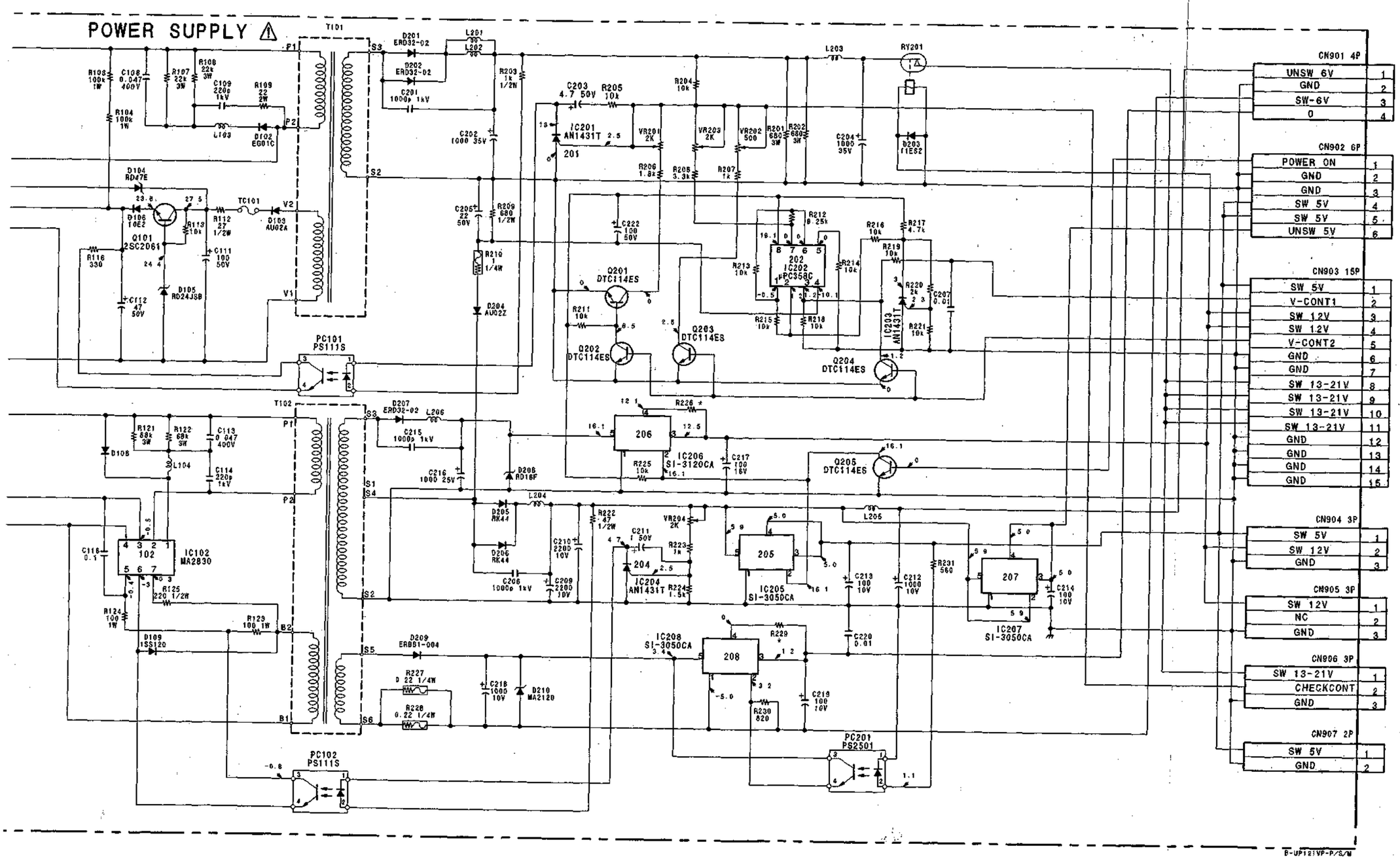
POWER SUPPLY



	BOARD SUFFIX	
REF.NO	-11	-21
C106 C121	180UF/400V	470UF/200V
SA101 SA102	NM	ZP3250

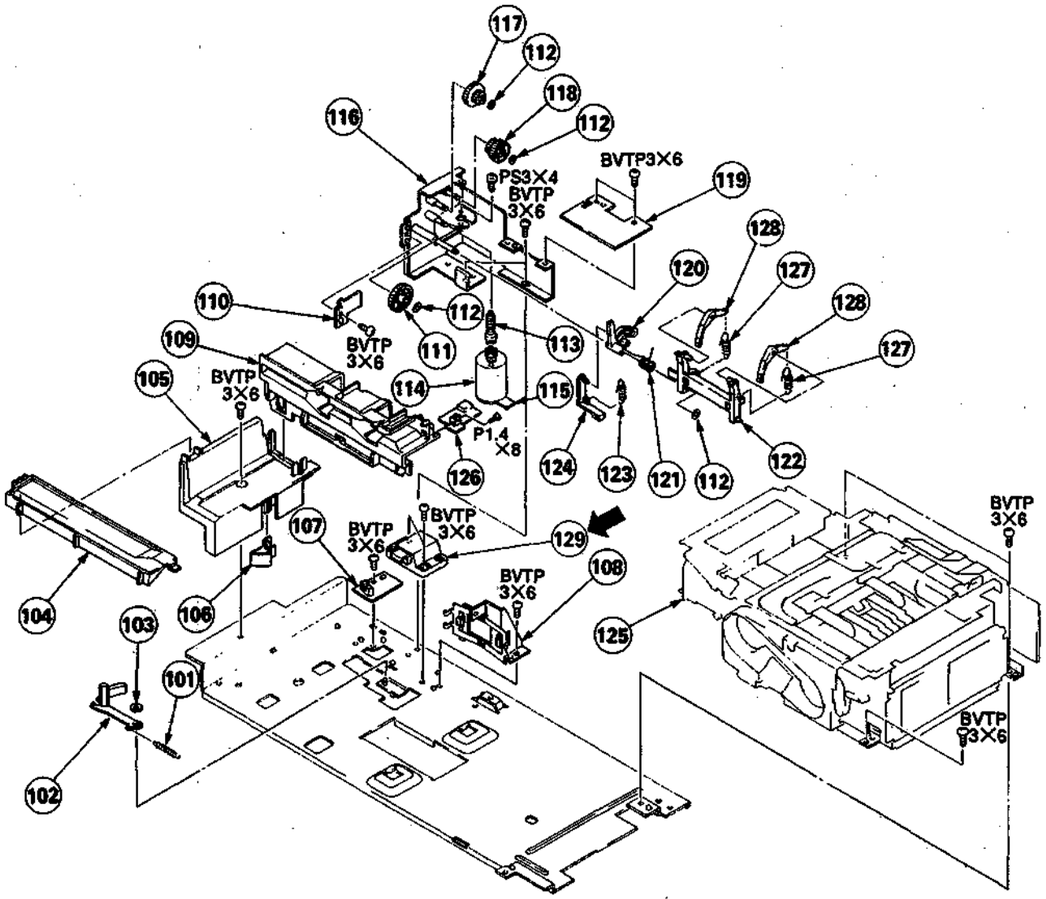
REF.NO	MINIMUM	TYPICAL	MAXIMUM
R111	1	OPEN	OPEN
R226	SHORT	430	1.2K
R229	430	1.3K	OPEN

B-UP121VP-P/S/M


POWER SUPPLY ⚠
T101
T102
IC102 MA2830
IC201 AN1431T
IC202 μPC358C
IC203 AN1431T
IC204 AN1431T
IC205 SI-3050CA
IC206 SI-3120CA
IC207 SI-3050CA
IC208 SI-3050CA
Q101 2SC2061
Q201 DTC114ES
Q202 DTC114ES
Q203 DTC114ES
Q204 DTC114ES
Q205 DTC114ES
PC101 PS111S
PC102 PS111S
PC201 PS2501
D104 RD47E
D105 RD24JSB
D106 10E2
D108
D109 1SS120
D201 ERD32-02
D202 ERD32-02
D203 f1ES2
D204 AU02Z
D205 RK44
D206 RK44
D207 ERD32-02
D208 RD16F
D209 ERB81-004
D210 MA2120
RV201
CN901 4P
UNSW 6V 1
GND 2
SW-6V 3
0 4
CN902 6P
POWER ON 1
GND 2
GND 3
SW 5V 4
SW 5V 5
UNSW 5V 6
CN903 15P
SW 5V 1
V-CONT1 2
SW 1.2V 3
SW 1.2V 4
V-CONT2 5
GND 6
GND 7
SW 13-21V 8
SW 13-21V 9
SW 13-21V 10
SW 13-21V 11
GND 12
GND 13
GND 14
GND 15
CN904 3P
SW 5V 1
SW 12V 2
GND 3
CN905 3P
SW 12V 1
NC 2
GND 3
CN906 3P
SW 13-21V 1
CHECKCONT 2
GND 3
CN907 2P
SW 5V 1
GND 2
B-UP121VP-P/S/M

: added portion

5-3. CHASSIS ASSEMBLY(2)

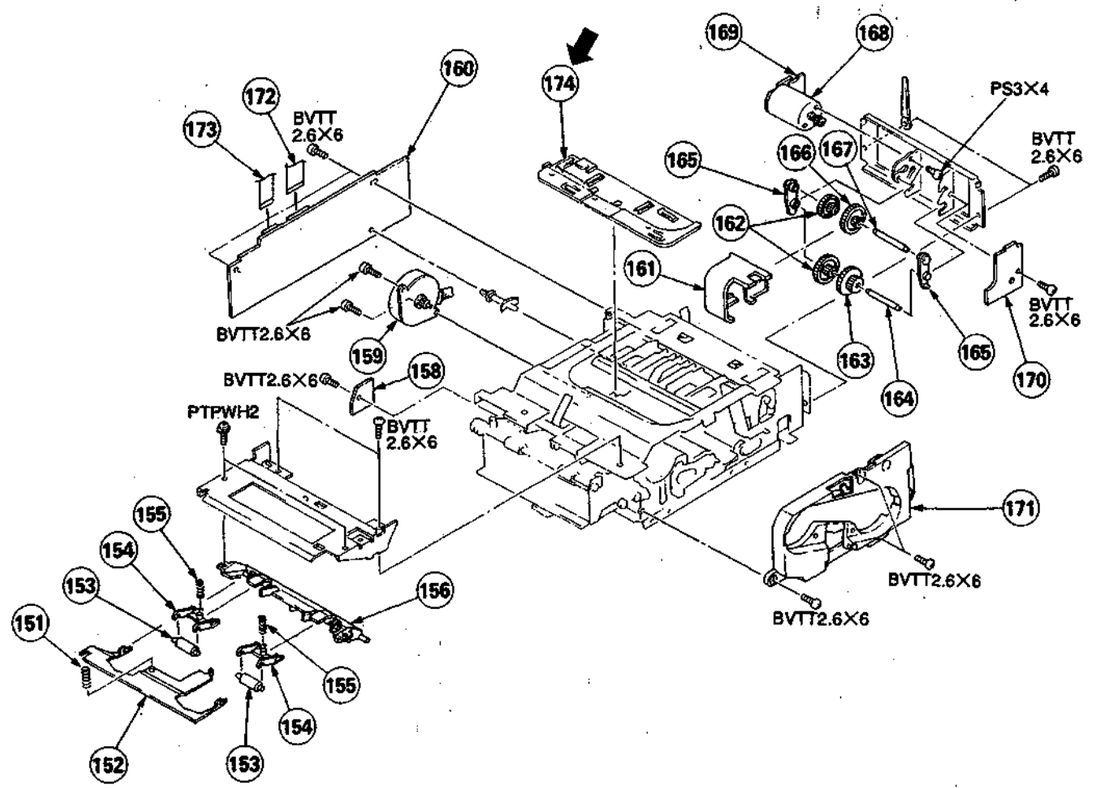


Ref.No	PartNo.	Description	Remark
101	3-183-184-01	SPRING, EXTENSION	
102	3-183-185-02	LEVER, PAPER SENSOR	
103	3-325-697-01	WASHER	
104	3-183-240-01	GUIDE, EXIT	
105	3-183-253-01	GUIDE, TRAY	
106	3-183-181-01	SPRING, TRAY	
107	*A-8275-444-A	SW-42 BOARD, COMPLETE	
108	X-3167-310-1	COUNTREMEASURE ASSY	
109	3-183-610-01	COVER	
110	*A-8275-443-A	SW-39 BOARD, COMPLETE	
111	X-3167-307-1	SUB GEAR ASSY, BOSS	
112	4-926-219-02	RING (DIA.2.3), RETAINING	
113	3-950-038-01	GEAR, WORM	
114	X-3942-172-1	MOTOR ASSY, RIBBON	
115	*1-650-853-12	SU-10 BOARD	

Ref.No	PartNo.	Description	Remark
116	X-3167-308-2	SUB ASSY, MOTOR BRACKET	
117	3-950-040-01	GEAR (2), RD	
118	3-950-039-01	GEAR (1), RD	
119	*A-8275-445-A	DUS-12 BOARD, COMPLETE	
120	3-183-228-02	LINK	
121	3-183-218-02	SPRING, TORSION	
122	3-183-251-02	ARM	
123	3-183-176-01	SPRING, EXTENSION	
124	3-183-229-02	LEVER, TRAY LOCK	
125	*A-8267-804-A	MD (P231) ASSY	
126	*A-8275-442-A	SW-41 BOARD, COMPLETE	
127	3-183-602-01	SPRING, TENSION COIL	
128	3-183-603-02	LEVER, SUPPORT	
129	3-183-659-02	LOCK PUSH LATCH	

: added portion

5-4. MECHANISM DECK ASSEMBLY(1)

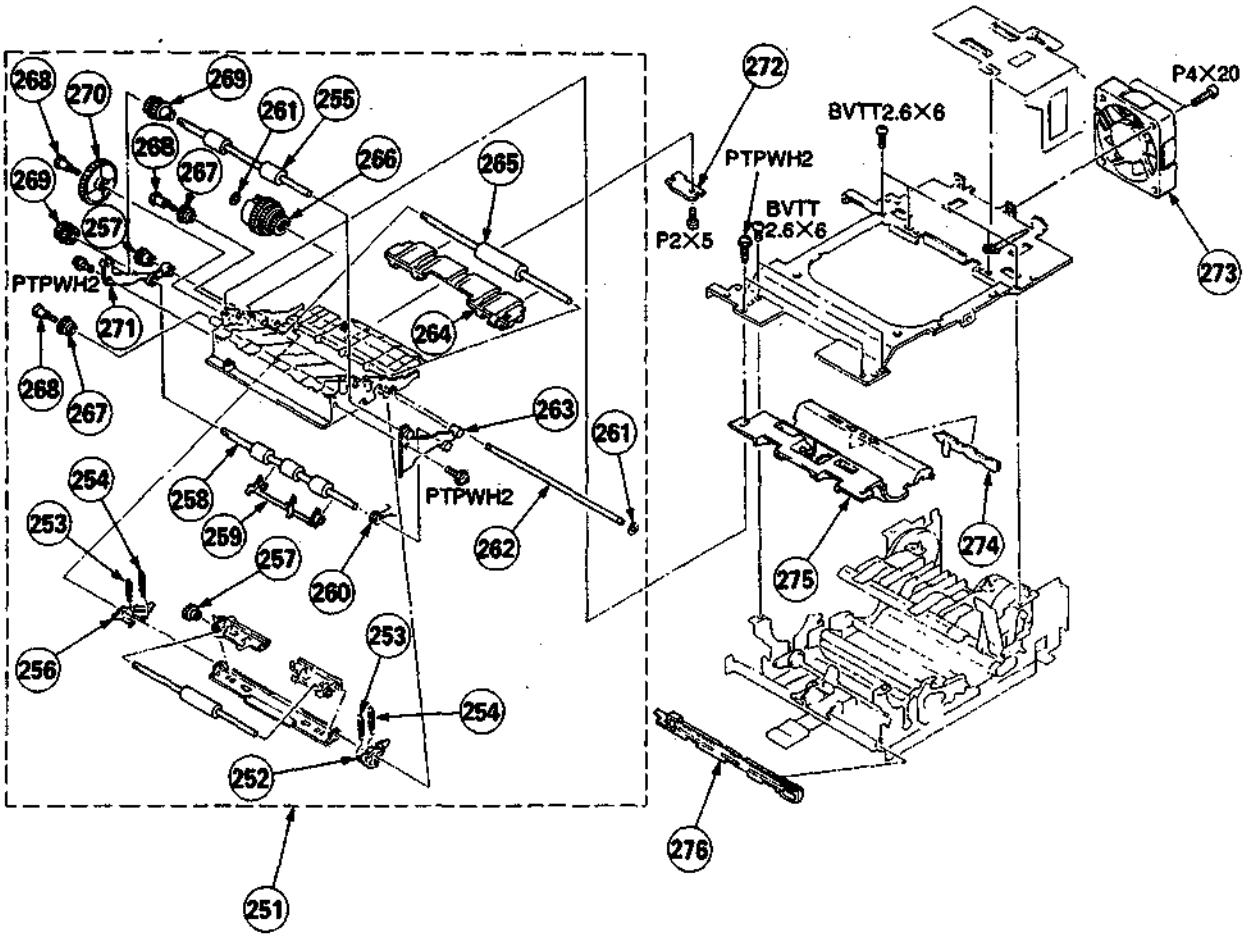


Ref.No	PartNo.	Description	Remark
151	3-183-629-01	SPRING, COMPRESSION (PAPER A)	
152	3-183-605-01	SENSOR LEVER	
153	3-950-009-01	ROLLER, PAPER	
154	3-950-010-01	ARM, PAPER ROLLER	
155	3-950-013-01	SPRING, COMPRESSION	
156	3-183-609-02	GUIDE, UPPER	
158	*A-8275-441-A	SW-213 BOARD, COMPLETE	
159	X-3942-126-1	MOTOR ASSY, STEPPING	
160	*A-8275-496-A	HM-22P(H) BOARD, COMPLETE	
161	*3-952-505-01	GUARD, HEAD GEAR	
162	3-950-019-01	GEAR (A), HEAD DRIVE	

Ref.No	PartNo.	Description	Remark
163	3-950-015-01	GEAR (B), HEAD DRIVE	
164	*3-950-020-01	SHAFT, HEAD DRIVE GEAR	
165	*3-950-017-01	HOLDER, HEAD DRIVE GEAR	
166	3-956-727-01	GEAR (E), HEAD DRIVE	
167	*3-950-214-01	SHAFT (S), HEAD DRIVE GEAR	
168	X-3942-122-1	MOTOR, HEAD DRIVE GEAR ASSY	
169	*A-8275-435-A	SW-215 BOARD, COMPLETE	
170	*A-8275-436-A	SW-212 BOARD, COMPLETE	
171	X-3167-377-1	GUIDE ASSY, CASSETTE ENTRANCE	
172	1-765-052-11	WIRE, FLAT TYPE (16 CORE)	
173	1-765-051-11	WIRE, FLAT TYPE (7 CORE)	
174	3-952-129-02	CLAMP, HEAD HARNESS	

: added portion

5-6. MECHANISM DECK ASSEMBLY(3)



Ref.No	Part No.	Description	Remark
251	*A-8267-975-B	PAPER ASSY	
252	*3-949-984-11	LEVER (R), RELEASE	
253	3-949-994-01	SPRING, TENSION	
254	3-949-996-01	SPRING (RELEASE LEVER), TENSION	
255	3-183-205-01	ROLLER	
256	*3-949-983-11	LEVER (L), RELEASE	
257	3-949-987-01	GEAR (16D)	
258	3-183-607-01	ROLLER K	
259	*3-949-986-01	RETAINER, PAPER	
260	3-183-204-01	SP (EP), RETAINER	
261	4-926-219-02	RING (DIA. 2. 3), RETAINING	
262	*3-949-990-01	SHAFT, LIMITER	
263	3-183-230-01	SHAFT RETAINER R (EP)	

Ref.No	PartNo.	Description	Remark
264	*3-949-985-01	SHUTTER, PAPER	
265	3-949-982-01	ROLLER (F)	
266	A-7018-141-A	LIMITER BLOCK ASSY	
267	3-949-989-01	GEAR (16F)	
268	3-950-001-01	SCREW, STEP	
269	3-949-988-01	GEAR (20-21)	
270	3-183-206-01	GEAR	
271	3-183-231-01	SHAFT RETAINER L (EP)	
272	*A-8275-433-A	SW-208 BOARD, COMPLETE	
273	1-541-684-41	MOTOR, DC	
274	*A-8275-434-A	SW-211 BOARD, COMPLETE	
275	*3-191-701-01	GUIDE (PRT1), CASSETTE	
276	3-183-232-01	GUIDE, TRAY	

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There are many mistakes in Switching Regulator part list.
Therefore, use the following Switching regulator part list instead.

SWITCHING REGULATOR

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-413-946-21	o	SWITCHING REGULATOR
2pcs	9-904-821-01	s	FUSE CLIP
1pc	9-907-116-01	o	HEAT SINK (IC101, IC102)
1pc	9-907-117-01	o	HEAT SINK (IC103)
3pcs	9-907-118-01	o	HEAT SINK (IC205, IC206, IC207, IC208)
1pc	9-907-119-01	o	PRINTED CIRCUIT BOARD
1pc	9-907-120-01	s	SPACER
2pcs	9-907-121-01	o	SHEET, INSULATING
1pc	9-907-122-01	o	SHEET, INSULATING
C101	1-137-472-11	s	FILM 0.68uF 250V
C102	9-902-038-01	s	FILM 0.22uF 250V
C103	9-909-242-01	s	CERAMIC 1000PF 250V
C104	9-909-242-01	s	CERAMIC 1000PF 250V
C105	9-907-096-01	s	CERAMIC 4700PF 250V
C106		s	ELECT 220uF 400V
C107	9-900-522-01	s	CERAMIC 2200PF 250V
C108	9-900-525-01	s	FILM 0.047uF 630V
C109	9-907-098-01	s	CERAMIC 220PF 1KV
C110	1-130-491-00	s	FILM 0.047uF 50V
C111	1-124-122-11	s	ELECT 100uF 50V
C112	1-126-967-11	s	ELECT 47uF 50V
C113	9-900-525-01	s	FILM 0.047uF 630V
C114	9-907-098-01	s	CERAMIC 220PF 1KV
C115	1-126-964-11	s	ELECT 10uF 50V
C116	1-130-495-00	s	FILM 0.1uF 50V
C118	9-909-242-01	s	CERAMIC 1000PF 250V
C119	9-909-242-01	s	CERAMIC 1000PF 250V
C120	9-907-096-01	s	CERAMIC 4700PF 250V
C121		s	ELECT 220uF 400V
C122	1-130-491-00	s	FILM 0.047uF 50V
C123	1-136-189-00	s	FILM 0.1uF 250V
C124	1-136-189-00	s	FILM 0.1uF 250V
C125	9-907-099-01	s	FILM 4.7uF 400V
C126	1-124-903-11	s	FILM 1uF 50V
C201	9-907-113-01	s	CERAMIC 1000PF 1KV
C202	9-907-114-01	s	ELECT 1000uF 35V
C203	1-124-927-11	s	ELECT 4.7uF 100V
C204	9-907-114-01	s	ELECT 1000uF 35V
C205	1-126-233-11	s	ELECT 22uF 50V
C207	1-130-483-00	s	FILM 0.01uF 50V
C208	9-907-113-01	s	CERAMIC 1000PF 1KV
C209	1-126-927-11	s	ELECT 2200uF 10V
C210	1-126-927-11	s	ELECT 2200uF 10V
C211	1-124-903-11	s	ELECT 1uF 50V
C212	1-126-926-11	s	ELECT 1000uF 10V
C213	1-126-933-11	s	ELECT 100uF 16V
C214	1-126-933-11	s	ELECT 100uF 16V
C215	9-907-113-01	s	CERAMIC 1000PF 1KV
C216	1-124-557-11	s	ELECT 1000uF 25V
C217	1-126-933-11	s	ELECT 100uF 16V
C218	1-126-926-11	s	ELECT 1000uF 10V
C219	1-126-933-11	s	ELECT 100uF 16V
C220	1-130-483-00	s	FILM 0.01uF 50V
C222	1-124-122-11	s	ELECT 100uF 50V
CN1	9-907-104-01	s	CONNECTOR 4P
CN2	9-907-105-01	s	CONNECTOR 2P
CN3	9-907-105-01	s	CONNECTOR 2P
CN901	1-560-892-00	s	CONNECTOR 4P
CN902	1-560-894-00	s	CONNECTOR 6P
CN903	1-568-702-11	s	CONNECTOR 15P
CN904	1-506-468-11	s	CONNECTOR 3P

(SWITCHING REGULATOR)

Ref. No. or Q'ty	Part No.	SP	Description
CN905	1-506-468-11	s	CONNECTOR 3P, BLACK
CN906	1-564-013-31	s	CONNECTOR 3P, RED
CN907	1-568-779-11	s	CONNECTOR 2P
D101	8-719-500-58	s	BRIGE DIODE D3SBA60
D102	8-719-030-25	s	DIODE EG01C-V0
D103	8-719-313-16	s	DIODE AU02A
D104	9-907-090-01	s	DIODE RD47E
D105	8-719-114-97	s	DIODE RD24JSB
D106	8-719-200-82	s	DIODE 11ES2
D107	1-806-836-11	s	DIODE MA165
D108	8-719-304-63	s	DIODE RM11C
D109	1-806-836-11	s	DIODE MA165
D110	8-719-304-63	s	DIODE RM11C
D111	8-719-304-63	s	DIODE RM11C
D201	8-719-501-34	s	DIODE S3VC40R
D202	8-719-501-34	s	DIODE S3VC40R
D203	8-719-200-82	s	DIODE 11ES2
D204	8-719-313-16	s	DIODE AU02A
D205	9-903-219-01	s	DIODE RK44
D206	9-903-219-01	s	DIODE RK44
D207	8-719-501-34	s	DIODE S3VC40R
D208	8-719-160-68	s	DIODE RD18FB2
D209	8-719-981-00	s	DIODE ERC81-004
D210	9-904-799-01	s	DIODE MA2120
F101	9-907-103-01	s	FUSE 4A 250V
F102	9-907-103-01	s	FUSE 4A 250V
IC101	8-749-924-40	s	IC STR-S6525
IC102	8-759-977-63	s	IC MA2830
IC103	8-749-923-66	s	IC STR-83145
IC201	8-759-420-19	s	IC AN1431T25
IC202	8-759-135-80	s	IC UPC358C
IC203	8-759-420-19	s	IC AN1431T25
IC204	8-759-420-19	s	IC AN1431T25
IC205	8-749-920-43	s	IC SI-3050CA
IC206	8-749-921-21	s	IC SI-3120CA
IC207	8-749-920-43	s	IC SI-3050CA
IC208	8-749-920-43	s	IC SI-3050CA
L101	9-907-102-01	s	FILTER, LINE
L102	9-907-102-01	s	FILTER, LINE
L103	9-904-796-01	s	BEAD CORE
L104	9-904-796-01	s	BEAD CORE
L201	9-902-553-01	s	BEAD CORE
L202	9-902-553-01	s	BEAD CORE
L203	9-907-112-01	s	COIL, CHOKE 10uH
L204	9-902-553-01	s	BEAD CORE
L205	9-907-112-01	s	COIL, CHOKE 10uH
L206	9-902-553-01	s	BEAD CORE
PC101	8-749-923-50	s	PHOTOCOUPLER PC111YS
PC102	8-749-923-50	s	PHOTOCOUPLER PC111YS
PC201	8-719-161-00	s	PHOTOCOUPLER PS2501-1-H
Q101	9-904-781-01	s	TRANSISTOR 2SC2061
Q201	8-729-900-80	s	TRANSISTOR DTC114ES
Q202	8-729-900-80	s	TRANSISTOR DTC114ES
Q203	8-729-900-80	s	TRANSISTOR DTC114ES
Q204	8-729-900-80	s	TRANSISTOR DTC114ES
Q205	8-729-900-80	s	TRANSISTOR DTC114ES
R101	1-202-719-00	s	COMP 1M 1/2W
R102	9-904-783-01	s	THERMISTOR 5

(SWITCHING REGULATOR)

Ref. No. or Q'ty	Part No.	SP	Description
R103	1-218-642-11	s	METAL 100K 1W
R104	1-218-642-11	s	METAL 100K 1W
R105	1-260-127-11	s	CARBON 220K 1/2W
R106	1-260-127-11	s	CARBON 220K 1/2W
R107	1-215-925-11	s	METAL 22K 3W
R108	1-215-925-11	s	METAL 22K 3W
R109	1-215-882-00	s	METAL 22 2W
R110	9-907-093-01	s	WIREWOUND 0.15 2W
R111	9-907-094-01	s	RESISTOR 1/2W
R112	1-260-080-11	s	CARBON 27 1/2W
R113	1-247-855-31	s	CARBON 10K 1/4W
R114	1-249-412-11	s	CARBON 390 1/4W
R115	1-247-871-11	s	CARBON 47K 1/4W
R116	1-249-411-11	s	CARBON 330 1/4W
R117	1-249-423-11	s	CARBON 3.3K 1/4W
R118	1-247-883-00	s	CARBON 150K 1/4W
R119	1-247-883-00	s	CARBON 150K 1/4W
R120	1-240-441-11	s	CARBON 100K 1/4W
R121	1-215-928-11	s	METAL 68K 3W
R122	1-215-928-11	s	METAL 68K 3W
R123	1-215-863-11	s	METAL 100 1W
R124	1-215-863-11	s	METAL 100 1W
R125	1-260-091-11	s	CARBON 220 1/2W
R126	9-904-783-01	s	THERMISTOR 5
R127	1-260-127-11	s	CARBON 220K 1/2W
R128	1-260-127-11	s	CARBON 220K 1/2W
R129	2-249-389-11	s	CARBON 4.7 1/4W
R130	1-247-883-00	s	CARBON 150K 1/4W
R131	1-249-408-11	s	CARBON 180 1/4W
R132	1-240-441-11	s	CARBON 100K 1/4W
R201	1-215-916-00	s	METAL 680 3W
R202	1-215-916-00	s	METAL 680 3W
R203	1-260-099-11	s	CARBON 1K 1/2W
R204	1-247-855-31	s	CARBON 10K 1/4W
R205	1-247-855-31	s	CARBON 10K 1/4W
R206	1-249-420-11	s	CARBON 1.8K 1/4W
R207	1-249-417-11	s	CARBON 1K 1/4W
R208	1-249-423-11	s	CARBON 3.3K 1/4W
R209	1-249-415-11	s	CARBON 680 1/2W
R210	9-902-556-01	s	RES, FUSIBLE 1 1/4W
R211	1-247-855-31	s	CARBON 10K 1/4W
R212	9-904-801-01	s	METAL 8.25K 1/4W
R213	1-247-855-31	s	CARBON 10K 1/4W
R214	1-247-855-31	s	CARBON 10K 1/4W
R215	1-247-855-31	s	CARBON 10K 1/4W
R216	1-247-855-31	s	CARBON 10K 1/4W
R217	1-249-425-11	s	CARBON 4.7K 1/4W
R218	1-247-855-31	s	CARBON 10K 1/4W
R219	1-247-855-31	s	CARBON 10K 1/4W
R220	1-215-428-00	s	METAL 2K 1/4W
R221	1-214-753-00	s	METAL 10K 1/4W
R222	1-260-083-11	s	CARBON 47K 1/2W
R223	1-249-417-11	s	CARBON 1K 1/4W
R224	1-249-419-11	s	CARBON 1.5K 1/4W
R225	1-247-855-31	s	CARBON 10K 1/4W
R226	9-907-107-01	s	RESISTOR 430 14W
R227	9-907-108-01	s	RES, FUSIBLE 0.22 14W
R228	9-907-108-01	s	RES, FUSIBLE 0.22 14W
R229	9-907-109-01	s	RESISTOR 1.3K 14W
R230	1-249-416-11	s	CARBON 820 1/4W
R231	1-249-414-11	s	CARBON 560 1/4W

(SWITCHING REGULATOR)

Ref. No. or Q'ty	Part No.	SP	Description
RY201	9-907-115-01	s	RELAY
T101	9-907-100-01	s	SWITCHING
T102	9-907-101-01	s	SWITCHING
TC101	9-907-092-01	s	THERMAL CUT OFF M135
VR201	9-907-110-01	s	RES, VAR CARBON 2K
VR202	9-907-111-01	s	RES, VAR CARBON 500
VR203	1-238-570-11	s	RES, VAR CARBON 2.2K
VR204	1-238-570-11	s	RES, VAR CARBON 2.2K