

**SLV-760HF/760HFPX/761HF/790HF/960HF/960HFCS/960HFMX/  
960HFPX/L5CS/L5MX/L5PA/L7HFCS/L7HFMX/L7HFPA  
RMT-V158C/V161A/V181K/V184A/V186/V186A**

# SERVICE MANUAL



Photo: SLV-960HF

**US Model**

SLV-760HF/761HF/790HF/960HF

**Canadian Model**

SLV-760HF/790HF/960HF

**PX Model**

SLV-760HFPX, 960HFPX

**Chielean Model**

SLV-960HFCS/L5CS/L7HFCS

**Mexican Model**

SLV-960HFMX/L5MX/L7HFMX

**Panamanian Model**

SLV-L5PAL7HFPX

**H MECHANISM**

- Refer to the **SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS IV** for **MECHANICAL ADJUSTMENTS**. (9-973-823-11)

\* The abbreviations of 760, 761, 790, 960, L5 and L7 contained in this service manual are indicated when these models are common to all their corresponding models as given below.

| Abbreviated model name | 760                                       | 761   | 790                            | 960   | L5                   | L7                         |
|------------------------|---|-------|--------------------------------|---|----------------------|----------------------------|
| All model names SLV-   | 760HF (US)<br>760HF (Canadian)<br>760HFPX | 761HF | 790HF (US)<br>790HF (Canadian) | 960HF (US)<br>960HF (Canadian)<br>960HFCS<br>960HFMX<br>960HFPX | L5CS<br>L5MX<br>L5PA | L7HFCS<br>L7HFMX<br>L7HFPA |

## SPECIFICATIONS

### System

**Format**  
VHS NTSC standard

**Video recording system**  
Rotary head helical scanning FM system

**Video heads**  
Double azimuth four heads

**Video signal**  
NTSC color, EIA standards

**Tape Speed**  
SP: 33.35 mm/s (1 3/8 inches/s)  
EP: 11.11 mm/s (7/16 inches/s)  
LP: 16.67 mm/s (1 1/16 inches/s),  
playback only

**Maximum recording/playback time**  
8 hrs. in EP mode (with T-160 tape)

**Fast-forward and rewind time**  
Approx. 3 min. (with T-120 tape)

### Tuner section

**Channel coverage**  
VHF 2 to 13  
UHF 14 to 69  
CATV A-8 to A-1, A to W, W+1 to W+84

**Antenna**  
75-ohm antenna terminal for VHF/UHF

### Inputs and outputs

**LINE-1 IN and -2 IN (SLV-760/761/790/960)**  
VIDEO IN, phono jack (1 each)  
Input signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative  
AUDIO IN, phono jack (2 each)  
Input level: 327 mVrms  
Input Impedance: more than 47 kilohms

### LINE-1 IN (SLV-L5/L7)

VIDEO IN, phono jack (1)  
Input signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative  
AUDIO IN, phono jack (1)  
(SLV-L5)  
Input level: 327 mVrms  
Input impedance: more than 47 kilohms  
AUDIO IN, phono jack (2 each) (SLV-L7)  
Input level: 327 mVrms  
Input impedance: more than 47 kilohms

**LINE OUT (SLV-760/761/790/960/L5/L7)**  
VIDEO OUT, phono jack (1)  
Output signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative

- Continued on next page -



**VHS Hi-Fi VIDEO CASSETTE RECORDER**  
*VCR plus+*  
**SONY®**

AUDIO OUT, phonojack (2)  
 Standard output: 327 mVrms  
 Load impedance: 47 kilohms  
 Output impedance: less than 10 kilohms  
 SYSTEMLINK (CONTROL S IN)  
 (SLV-790/960)  
 Mini jack (1)  
 CABLE BOX CONTROL (CONTROL S OUT)  
 (SLV-790/960)  
 stereo mini jack (plug in power) (1)

**Timer section**

Clock  
 Quarts locked  
 Timer indication  
 12-hour cycle  
 Timer setting  
 8 programs per month (max.)  
 Power back-up  
 Built-in self-charging capacitor  
 Back-up duration: up to 3 hours at a time

**General**

**Power requirements**  
 120 V AC, 60 Hz (SLV-760HF/790/960HF/  
 960HFMX/L5MX/L5PA/L7HFMX/  
 L7HFPA)  
 110 V AC to 240 V AC, 50/60 Hz  
 (SLV-760HFPX/960HFPX/960HFCS/  
 L5CS/L7HFCS)  
**Power consumption**  
 18 W (max.) (SLV-L5)  
 24 W (max.) (SLV-760HFPX/960HFCS/  
 960HFMX/960HFPX/L7)  
 27 W (max.) (SLV-760HF/761HF/790/  
 960HFMX)  
**Operating temperature**  
 5 °C to 40 °C (41 °F to 104 °F)  
**Storage temperature**  
 -20 °C to -60 °C (-4 °F to 140 °F)  
**Dimensions**  
 Approx. (17×4<sup>3</sup>/<sub>8</sub>×12<sup>1</sup>/<sub>8</sub> inches) including  
 projecting parts and controls  
 Approx. 430×109×310 mm (w/h/d)  
 (SLV-760/761/L5/L7)  
 Approx. (17×4<sup>3</sup>/<sub>8</sub>×12<sup>1</sup>/<sub>8</sub> inches) including  
 projecting parts and controls  
 Approx. 430×109×323 mm (w/h/d)  
 (SLV-790/960)  
 Approx. (17×4<sup>3</sup>/<sub>8</sub>×12<sup>3</sup>/<sub>8</sub> inches) including  
 projecting parts and controls

**Mass**

Approx. 4.3 kg (9 lb 8 oz)  
 (SLV-760/761/L5/L7)  
 Approx. 4.5 kg (9 lb oz) (SLV-790/960)

**Supplied accessories**

Remote commander (1)  
 Size AA (R6) batteries (2)  
 75-ohm coaxial cable with F-type connectors (1)  
 AC power cord (1)  
 Audio/video cable (3 phono, 1 mini to 3 phono,  
 1 mini) (1) (SLV-790/960)  
 Audio/video cable (3 phono to 3 phono) (1)  
 (SLV-760/761/L7)  
 Cable Mouse (cable box controller) (1) (SLV-  
 790/960)  
 Plug adaptor (1) (SLV-760HFPX/960HFPX/  
 960HFCS/L5CS/L7HFCS)

Design and specifications are subject to change  
 without notice.

• **Feature Difference**

| SLV-<br>FEATURE        | 760,<br>761 | 790   | 960   | L5    | L7   |
|------------------------|-------------|-------|-------|-------|------|
| AUDIO SYSTEM           | HIFI        | HIFI  | HIFI  | MONO  | HIFI |
| OPERATING SWITCH BLOCK | X           | O     | O     | X     | X    |
| FRONT LINE-2IN         | O           | O     | O     | X     | X    |
| CONTROL S IN/OUT       | X           | O     | O     | X     | X    |
| DUAL MODE SHUTTLE      | O           | O     | O     | O     | O    |
| REMOTE COMMANDER RMT-  | V184A       | V161A | V158C | V186A | V186 |

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\Delta$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SAFETY CHECK-OUT

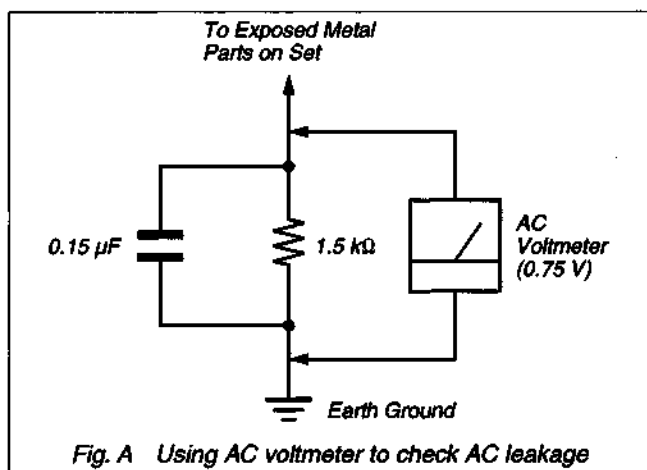
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
6. Check the B+ voltage to see it is at the values specified.
7. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



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## SERVICE NOTE

### 1. UPPER DRUM REPLACEMENT (EXCEPT L5)

#### 1-1. Removal of Upper Drum

- 1) Remove the screw ① (BV3 × 8) and take out the ground shaft assembly ②. (See Fig. 1.)
- 2) Completely remove the rotary upper drum board and desolder the soldering indicated by the arrows.
- 3) Remove two screw ③ (PSW3 × 8) and take out the rotary upper drum in the arrow direction ④. (See Fig. 2.)  
If it difficult, remove by shaking the rotary upper drum gradually.

**Note:** If the drum can not be removed, check whether the solders have been removed or not again.

Drum viewed from up

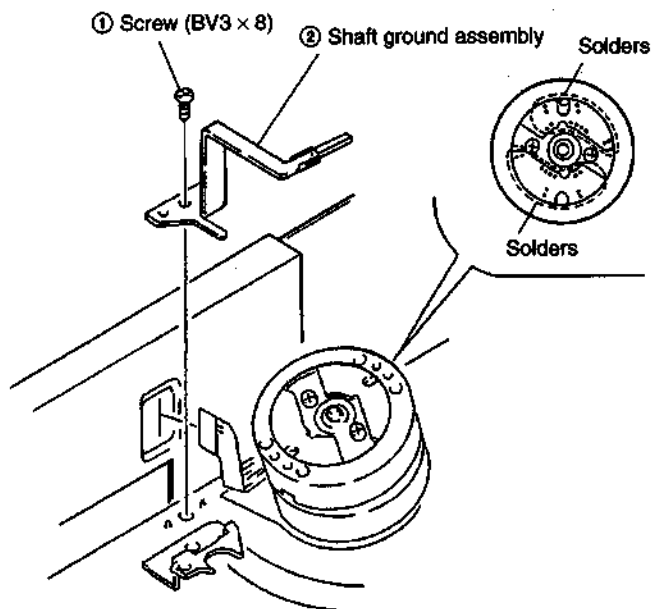


Fig. 1

#### 1-2. Mounting Upper Drum

- 1) When inserting the rotary drum into the lower drum, be careful not to blur the contacting surface with fingerprint or the like.
- 2) Mount the rotary upper drum board so that the screw holes of both upper and lower drums match. (See Fig. 2.)
- 3) If it is difficult, mount the upper drum by shaking it gradually.  
**Note:** Be careful not to damage the head. Make sure that the upper drum is tightly inserted.
- 4) Tighten two screws ③ (PSW3 × 8). (See Fig. 2.)  
**Note:** Temporary tighten two screws. After making sure that upper drum is tightly inserted, tighten the screws.
- 5) Solder points on the board of the rotary upper drum.
- 6) Fix the ground shaft assembly ② using the screw ① (BV3 × 8) so that the protrusion of ground shaft assembly end contacts the center of the drum shaft.

**Note:** When attaching the ground shaft assembly ②, be careful not to apply force to the spring section of it.

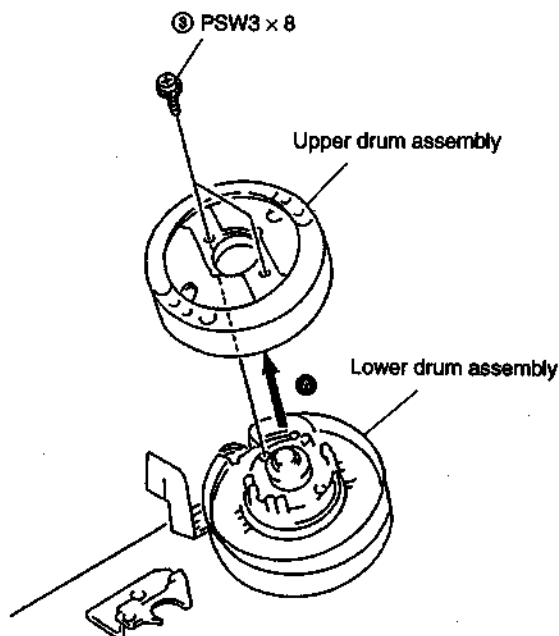
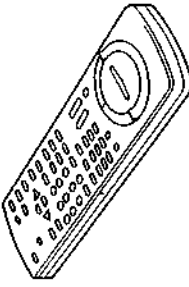

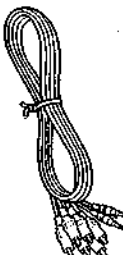

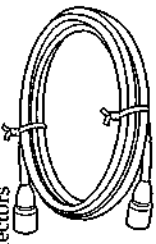
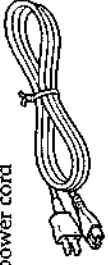




Fig. 2

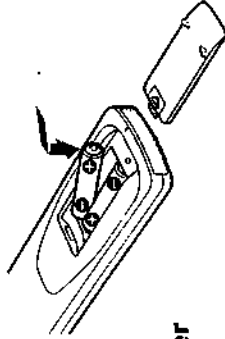
**Step 1****Unpacking**

Check that you have received the following items with the VCR:

- Remote commander 
- Size AA (R6) batteries 
- Audio/video cable (3-phono, 1 mini to 3-phono, 1-mini) 
- Cable Mouse (cable box controller) 
- 75-ohm coaxial cable with F-type connectors 
- AC power cord  (SLV-960HF/960HF MX)
- Plug adaptor (SLV-960HF PX/960HF CS)  (SLV-960HF PX/960HF CS)
- Plug adaptor (SLV-960HF PX/960HF CS) 

**Step 2****Setting up the remote commander****Getting Started****Inserting the batteries**

Insert two size AA (R6) batteries by matching the + and - on the batteries to the diagram inside the battery compartment.

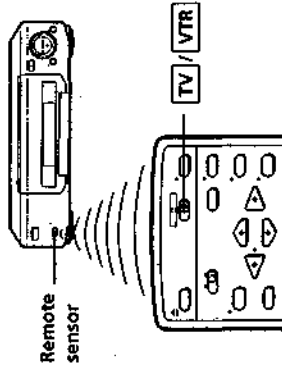
**Using the remote commander**

You can use this remote commander to operate this VCR and a Sony TV. The POWER, VOL +/-, CH +/-, TV/VTR, channel number, ENTER, DISPLAY, and AUDIO MONITOR buttons on the remote commander can be used to operate your Sony TV.

To operate Set [TV]/[VTR] to

the VCR [VTR] and point at the remote sensor on the VCR

a Sony TV [TV] and point at the remote sensor on the TV

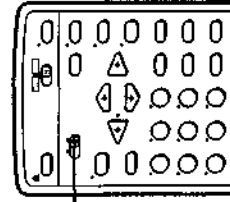
**Notes**

- With normal use, the batteries should last for approximately three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery-leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

**Setting the COMMAND MODE switch**

To remotely control the VCR with the commander, set COMMAND MODE on the remote commander to the same position as that on the VCR. Usually set to VTR 3. Change the position as shown below to control other Sony VCRs:

- VTR 1: For Sony Betamax format VCRs
- VTR 2: For Sony 8mm format VCRs
- VTR 3: For Sony VHS format VCRs



continued

**SECTION 1  
GENERAL**

This section is extracted from SLV-960HF/960HFCS, 960HFMX, 960HF PX instruction manual.

## Step 2: Setting up the remote commander (continued)

### Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.

- 1 Set **[TV/VTR]** at the top of the remote commander to **[TV]**.
- 2 Hold down **POWER**, and enter your TV's code number(s) using the number buttons. Then release **POWER**.

Now you can use the **POWER**, **VOL +/-**, **CH +/-** and **TV/VTR** buttons to control your TV. You can also use the buttons marked with a dot (•) to control a Sony TV. To control the VCR, reset **[TV/VTR]** to **[VTR]**.

#### Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

| Manufacturer     | Code number | Manufacturer   | Code number | Manufacturer | Code number |
|------------------|-------------|----------------|-------------|--------------|-------------|
| Sony             | 01          | KMC            | 03          | RCA          | 04,10       |
| Akat             | 04          | Magnavox       | 03,08,12    | Sampo        | 12          |
| AOC              | 04          | Marantz        | 04,13       | Sanyo        | 11          |
| Centurion        | 12          | MGA/Mitsubishi | 04,12,13,17 | Scott        | 12          |
| Coronado         | 03          | NEC            | 04,12       | Sears        | 07,10,11    |
| Curis-Mathes     | 12          | Panasonic      | 06,19       | Sharp        | 03,05,18    |
| Daytron          | 12          | Philco         | 03,04       | Sylvania     | 08,12       |
| Fisher           | 11          | Philips        | 08          | Teknika      | 03,08,14    |
| General Electric | 06,10       | Pioneer        | 16          | Toshiba      | 07          |
| Hitachi          | 02,03       | Portland       | 03          | Wards        | 03,04,12    |
| J.C.Penny        | 04,12       | Quasar         | 06,18       | Yorx         | 12          |
| JVC              | 09          | Radio Shack    | 05,14       | Zenith       | 15          |

#### Notes

- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote commander, the code number automatically resets to 1 (Sony). Reset the appropriate code number.

## Step 3

### Hookups

#### Selecting the best hookup option

There are many ways in which your VCR can be hooked up. To hook up your VCR so that it works best for you, first scan through the table below. Then use the accompanying diagrams and procedures on the following pages to set up your VCR.

| If you have  | Use   | Refer to       |
|--|---|----------------|
| TV that has audio/video inputs   | Audio/video (A/V) hookup, then follow one of the hookups below. | Pages 8 to 9   |
| Cable box that is compatible with the VCR's cable box control feature          | Hookup 1  | Pages 10 to 12 |
| No cable box or incompatible cable box with only a few scrambled channels      | Hookup 2  | Pages 13 to 15 |
| Antenna only, no cable TV  | Hookup 3  | Pages 16 to 18 |
| Incompatible cable box with many scrambled channels                            | Hookup 4  | Pages 19 to 21 |
| DSS* receiver  | Hookup 5  | Pages 22 to 24 |
| Incompatible cable box with only a few scrambled channels, using an A/B switch | Hookup 6  | Pages 25 to 28 |

After you've completed the connections, follow the instructions for setup. During setup, if you need more details on the procedure described, page numbers are provided where you can find complete, step-by-step instructions.

After you've completed the setup, you're ready to use your VCR. Procedures differ depending on the hookup you used. For an overview, refer to "Quick reference to using the VCR" on the back cover.

#### Before you get started

- Turn off the power to all equipment.
- Do not connect the AC power cords until all of the connections are completed.
- Be sure you make connections firmly. Loose connections may cause picture distortion.
- If your TV doesn't match any of the examples provided, see your nearest Sony dealer or qualified technician.

\* DSS is a registered trademark of DIRECTV, Inc., a unit of Hughes Electronics Corporation.

continued



Audio/Video (A/V) hookup

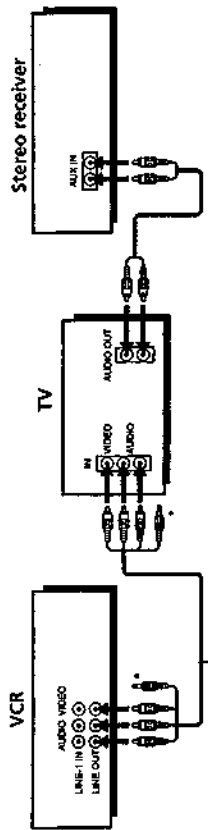
Pages 8 to 9

If your TV has audio/video (A/V) input jacks, you will get a better picture and sound if you hook up your VCR using these connections. In addition, for a true "home theater" experience, you should connect the audio outputs of your VCR or TV to your stereo system. If your TV doesn't have A/V inputs, see the following pages for antenna or cable hookups.

If your TV has the SystemLink (A/V bus control) function, hook up your VCR using the connection shown on page 9. Your TV will automatically switch to the A/V inputs for your VCR when you play back or operate menu on the VCR.

If you're not planning to use your VCR to record programs, you're finished setting up the VCR after you've made the connections shown on pages 8 and 9. If you want to record off-air or off your cable TV system, complete these connections first, and then go to the following pages for antenna or cable hookups.

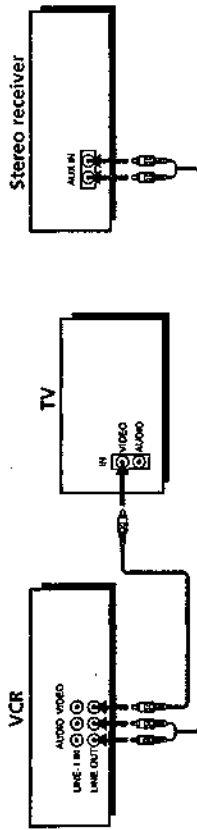
**A** Use this hookup if your TV has stereo jacks



Audio/video cable (supplied)

\* Do not connect the miniplugs for this hookup.

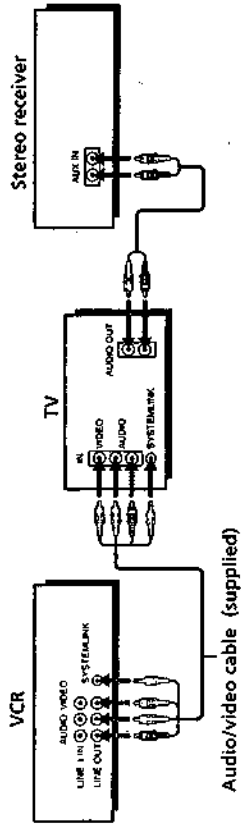
**B** Use this hookup if your TV doesn't have stereo jacks



Note

To play a tape in stereo, you must use the A/V connection.

**C** Use this hookup if your TV has the SystemLink function

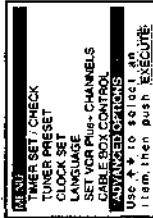


Audio/video cable (supplied)

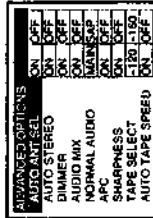
**AV hookup: VCR setup**

After you've connected your TV and completed antenna or cable hookup, use the following procedure to set up the VCR.

Press MENU and select ADVANCED OPTIONS.



Set AUTO ANT SEL to OFF and press EXECUTE.



For details, see page 66.

Caution

Connections between the VCR's VHF/UHF connector and the antenna terminals of the TV receiver should be made only as shown in the following instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of RF devices. Never connect the output of the VCR to an antenna or make simultaneous (parallel) antenna and VCR connections at the antenna terminals of your receiver.

Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

**Hookup 1**

Pages 10 to 12

**Using cable box control**

**Recommended use**

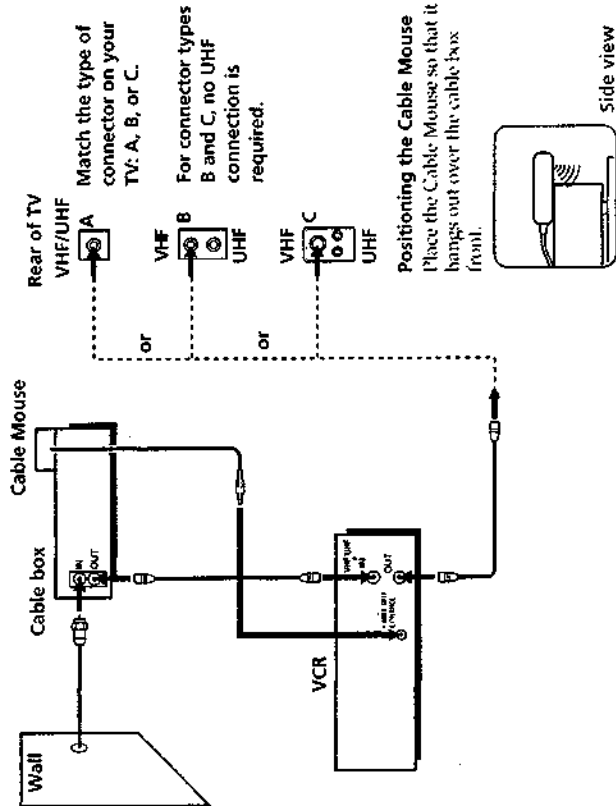
You should use this hookup if you have a cable box, especially if your cable system scrambles all or most channels. This hookup allows the VCR's cable box control feature to control the channel on the cable box, simplifying the recording process. A list of compatible cable boxes is on page 37.

**What you can do with this hookup**

- Record any channel using the VCR's cable box control feature to select channels on the cable box

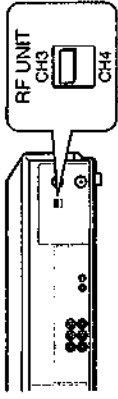
**What you can't do**

- Record with the cable box turned off
- Record one channel while watching another channel



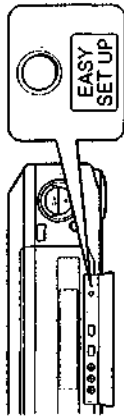
**Hookup 1: VCR setup**

- 1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.



For details, see page 72.

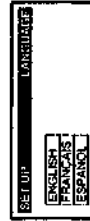
- If you made A/V connections (from page 8), you can skip this step.



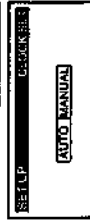
- 2 Turn on your cable box.

- 3 Press EASY SET UP on the VCR.

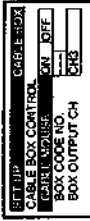
- 1 The LANGUAGE menu appears. Change the on-screen display language to French (FRANÇAIS) or Spanish (ESPAÑOL) if desired, and press EXECUTE. For details, see page 29.



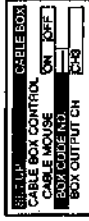
- 2 The CLOCK SET menu appears. Select AUTO and press EXECUTE. For details, see page 30.



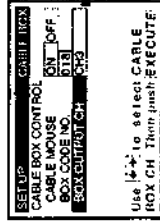
- 3 The CABLE BOX CONTROL menu appears. Select ON.



- 4 Enter your cable box number and press CURSOR.



- 5 Select your cable box output channel and press EXECUTE.

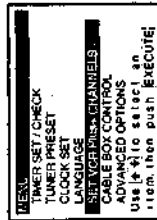


Normal display

continued

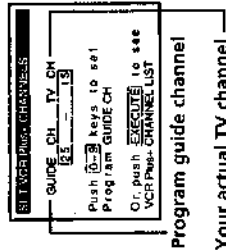
**Hookup 1: VCR Plus+ channel setup**

- 1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 45.
- 2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 46.



- 3 Enter the program guide channel, then the channel you use on your TV.

4 Press EXECUTE.



Program guide channel  
Your actual TV channel

**Automatic clock setting**

Once you've set up the VCR, it automatically sets the clock the first time you turn off the VCR. After that, whenever you turn off the VCR, it checks the time and adjusts the clock, even for Daylight Saving Time. The VCR sets the clock by picking up a time signal provided by some TV channels.

If you want to use the timer to record right away, or if the channels in your area do not carry time signals, set the clock manually. For details, see pages 34–35.

**Note**

To use the automatic clock setting feature, leave the cable box on.

**Hookup 2**

**No cable box, or incompatible cable box with only a few scrambled channels**

**Recommended use**

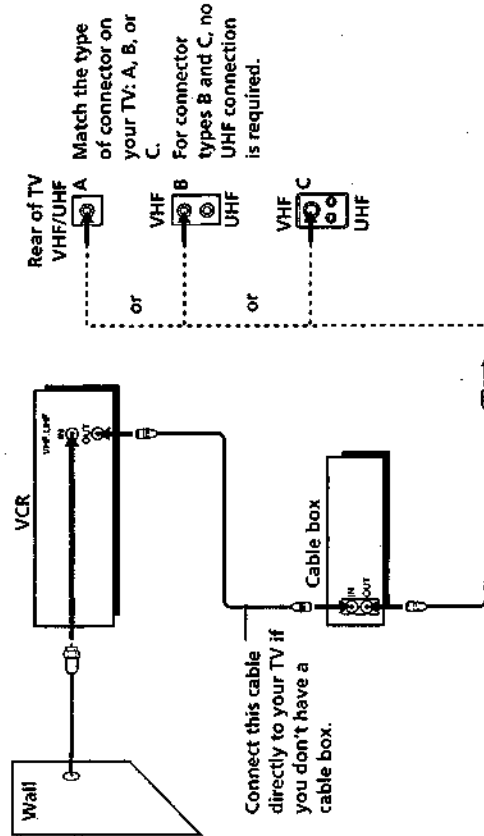
Use this hookup if you do not have a cable box. Also use this hookup if your cable company cannot supply a cable box that is compatible with the VCR's cable box control feature, and your cable system scrambles only a few channels.

**What you can do with this hookup**

- Record any unscrambled channel by selecting the channel on the VCR

**What you can't do**

- Record scrambled channels that require a cable box

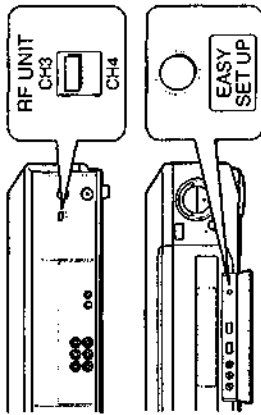


continued

### Step 3: Hookups (continued)

#### Hookup 2: VCR setup

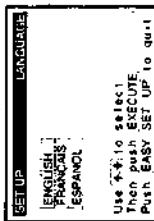
- 1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.



For details, see page 72. If you made A/V connections (from page 8), you can skip this step.

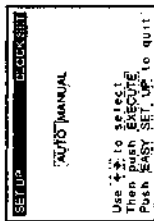
- 2 Press EASY SET UP on the VCR.

1 The LANGUAGE menu appears. Change the on-screen display language to French (FRANÇAIS) or Spanish (ESPAÑOL) if desired, and press EXECUTE. For details, see page 29.



Use  $\leftarrow$  to select. Then push EXECUTE. Push EASY SET UP to quit.

- 2 The CLOCK SET menu appears. Select AUTO and press EXECUTE. For details, see page 30.



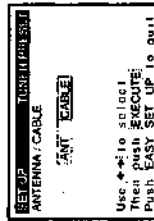
Use  $\leftarrow$  to select. Then push EXECUTE. Push EASY SET UP to quit.

- 3 The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 36.



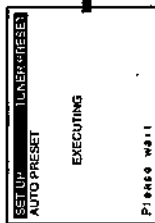
Use  $\leftarrow$  to select. Push EASY SET UP to quit.

- 4 The TUNER PRESET menu appears. Set ANTENNA/CABLE and press EXECUTE. For details, see page 41.



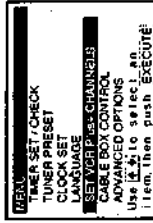
Use  $\leftarrow$  to select. Then push EXECUTE. Push EASY SET UP to quit.

- 5 The AUTO PRESET starts.



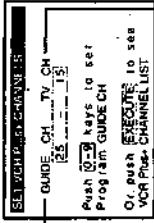
#### Hookup 2: VCR Plus+ channel setup

- 1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 45.
- 2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 46.



Use  $\leftarrow$  to select. Then push EXECUTE.

- 2 Enter the program guide channel, then the channel you use on your TV.



- 3 Press EXECUTE.

Program guide channel  
Your actual TV channel

#### Automatic clock setting

Once you've set up the VCR, it automatically sets the clock the first time you turn off the VCR. After that, whenever you turn off the VCR, it checks the time and adjusts the clock, even for Daylight Saving Time. The VCR sets the clock by picking up a time signal provided by some TV channels. If you want to use the timer to record right away, or if the channels in your area do not carry time signals, set the clock manually. For details, see pages 34-35.

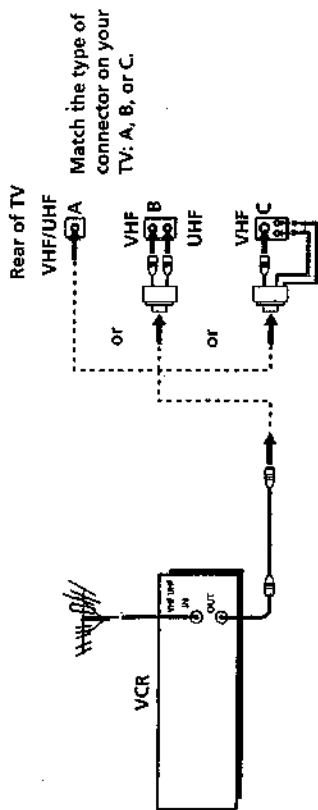
**Hookup 3**

Pages 16 to 18

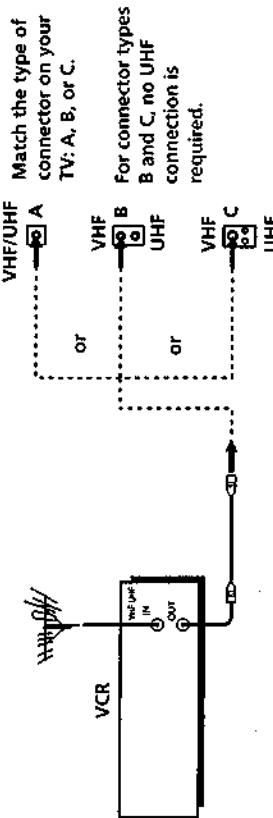
**Antenna hookup**

Make the following connections if you're using an antenna (if you don't have cable TV).

- A** Use this hookup if you're using:
  - VHF/UHF antenna (you get channels 2-13 and channels 14 and higher)
  - UHF-only antenna (you get channels 14 and higher)
  - Separate VHF and UHF antennas



- B** Use this hookup if you're using a VHF-only antenna (you get channels 2-13 only)

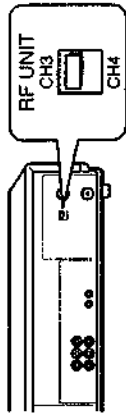


If you cannot connect your antenna cable to the VCR directly

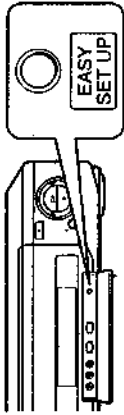
If your antenna cable is a flat cable (300-ohm twin lead cable), attach an external antenna connector (not supplied) so you can connect the cable to the VHF/UHF IN connector. If you have separate cables for VHF and UHF antennas, you should use a U/V band mixer (not supplied). For details, see page 72.

**Hookup 3: VCR setup**

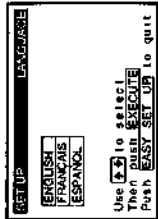
- 1 Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.



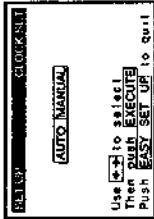
- 2 For details, see page 72. If you made A/V connections (from page 8), you can skip this step.



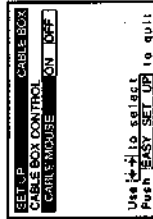
- 3 Press EASY SET UP on the VCR.
  - 1 The LANGUAGE menu appears. Change the on-screen display language to French (FRANÇAIS) or Spanish (ESPAÑOL) if desired, and press EXECUTE. For details, see page 29.



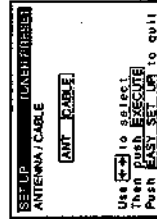
- 2 The CLOCK SET menu appears. Select AUTO and press EXECUTE. For details, see page 30.



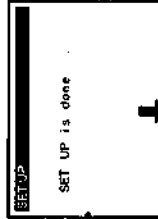
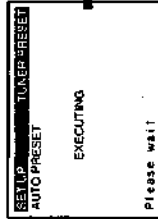
- 3 The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 36.



- 4 The TUNER PRESET menu appears. Set ANTENNA/CABLE to ANT and press EXECUTE. For details, see page 41.



- 5 The AUTO PRESET starts.

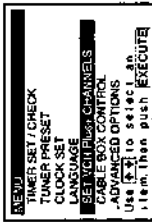


Normal display

continued  
Getting Started

**Hookup 3: VCR Plus+ channel setup**

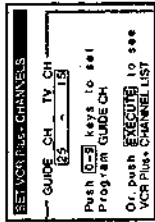
- 1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 45.
- 2 If the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 46.



- 1 Press MENU and select SET VCR Plus+ CHANNELS.

- 2 Enter the program guide channel, then the channel you use on your TV.

- 3 Press EXECUTE.



Program guide channel  
Your actual TV channel

**Automatic clock setting**

Once you've set up the VCR, it automatically sets the clock the first time you turn off the VCR. After that, whenever you turn off the VCR, it checks the time and adjusts the clock, even for Daylight Saving Time. The VCR sets the clock by picking up a time signal provided by some TV channels.

If you want to use the timer to record right away, or if the channels in your area do not carry time signals, set the clock manually. For details, see pages 34–35.

**Hookup 4**

**Incompatible cable box with many scrambled channels**

**Recommended use**

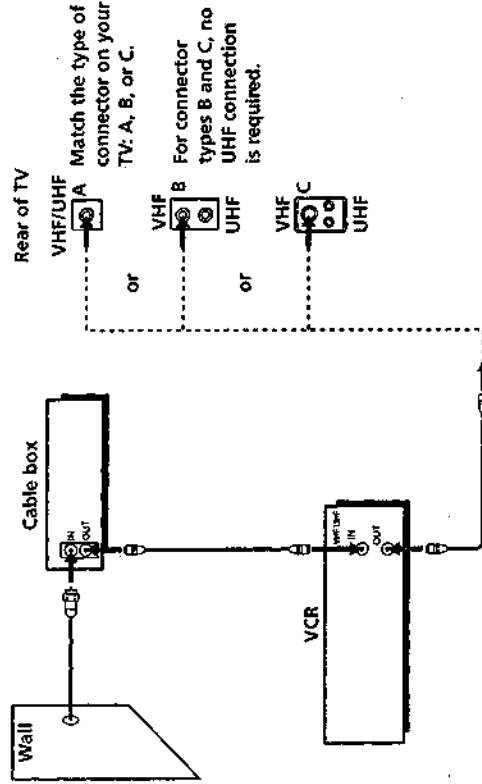
Use this hookup if your cable company cannot supply a cable box that is compatible with the VCR's cable box control feature, and your cable system scrambles all or most channels.

**What you can do with this hookup**

- Record any channel by selecting the channel on the cable box

**What you can't do**

- Record with the cable box turned off
- Record one channel while watching another channel
- Select channels directly on the VCR

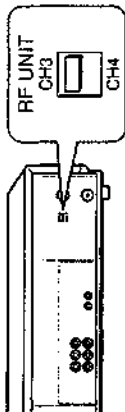


continued

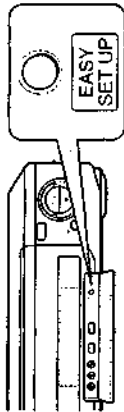
**Step 3: Hookups (continued)**

**Hookup 4: VCR setup**

**1** Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.



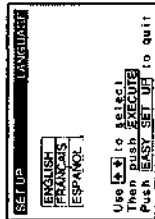
For details, see page 72. If you made A/V connections (from page 8), you can skip this step.



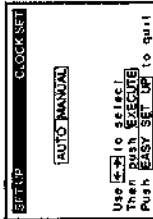
**2** Turn on your cable box.

**3** Press EASY SET UP on the VCR.

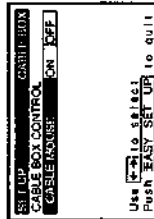
**4** The LANGUAGE menu appears. Change the on-screen display language to French (FRANÇAIS) or Spanish (ESPAÑOL) if desired, and press EXECUTE. For details, see page 29.



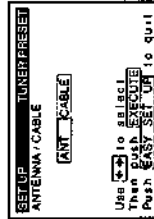
**5** The CLOCK SET menu appears. Select MANUAL and press EXECUTE. For details, see page 30.



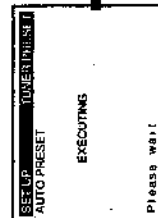
**6** The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 36.



**7** The TUNER PRESET menu appears. Set ANTENNA/CABLE and press EXECUTE. For details, see page 41.



**8** The AUTO PRESET starts.



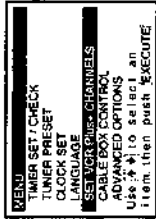
Normal display

**Getting Started**

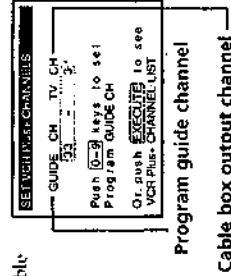
**Hookup 4: VCR Plus+ channel setup**

- Find the VCR Plus+ Channel Listing in your program guide. For details, see page 45.
- Enter all the channels you want to record and the cable box output channel (usually 2, 3, or 4). For details, see page 46.

**1** Press MENU and select SET VCR Plus+ CHANNELS.



**2** Enter the program guide channel, then the cable box output channel.



**3** Press EXECUTE.

Program guide channel  
Cable box output channel

**Automatic clock setting**

To use the Auto Clock Set feature with this hookup, you need to manually select a channel that carries a time signal:

- Tune the cable box to a channel that carries a time signal.
- Select AUTO in the CLOCK SET menu to turn on the Auto Clock Set feature.
- Turn off the VCR. It automatically sets the clock and adjusts for Daylight Saving Time by picking up the time signal.

If you want to use the timer to record right away, or if the channels in your area do not carry time signals, set the clock manually. For details, see pages 34-35.

**Note**

To use the automatic clock setting feature, leave the cable box on.

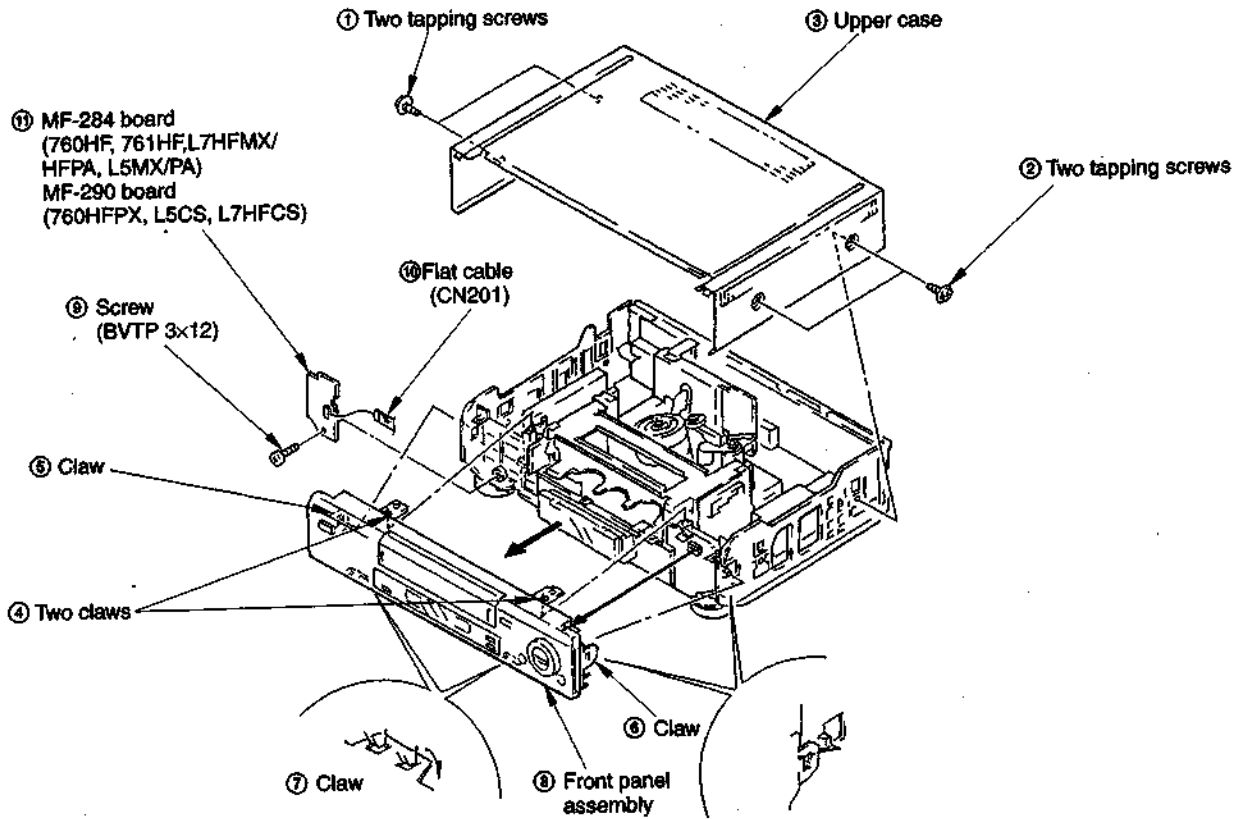




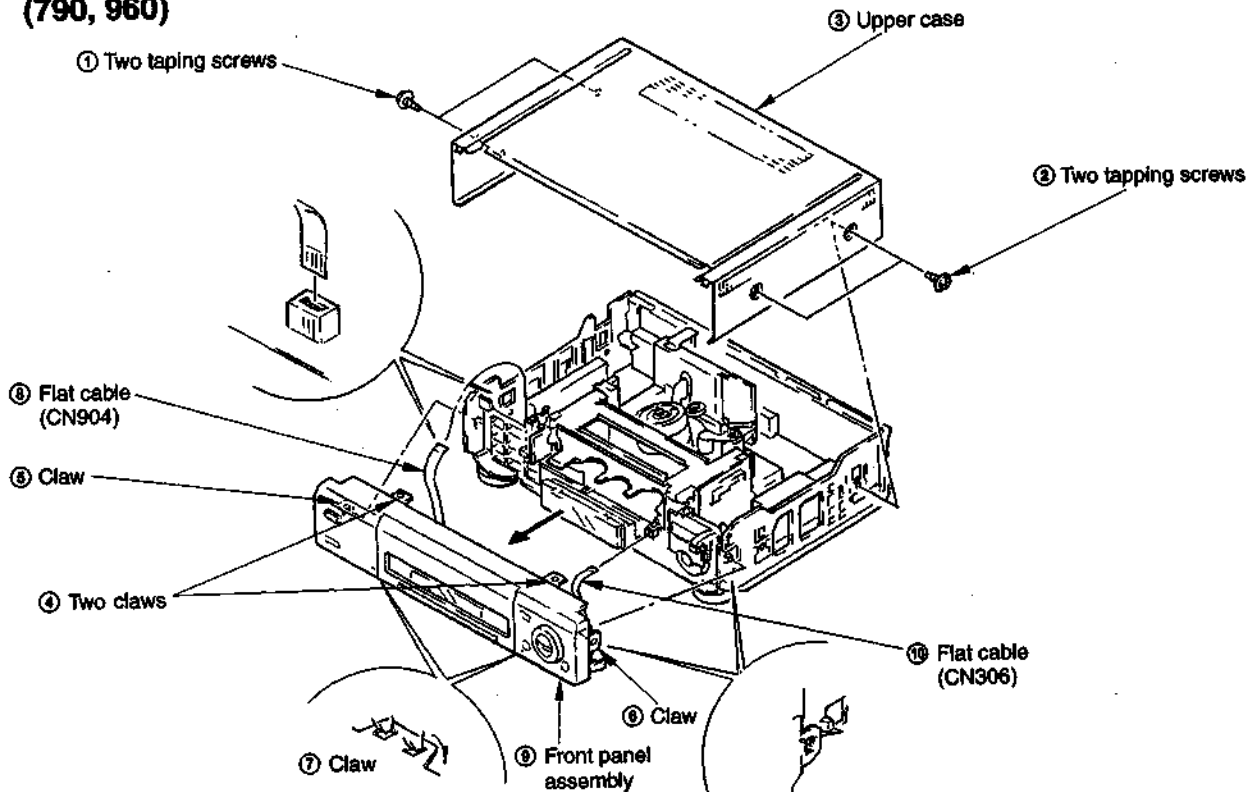
## SECTION 2 DISASSEMBLY

**Note:** Follow the disassembly procedure in the numerical order given.

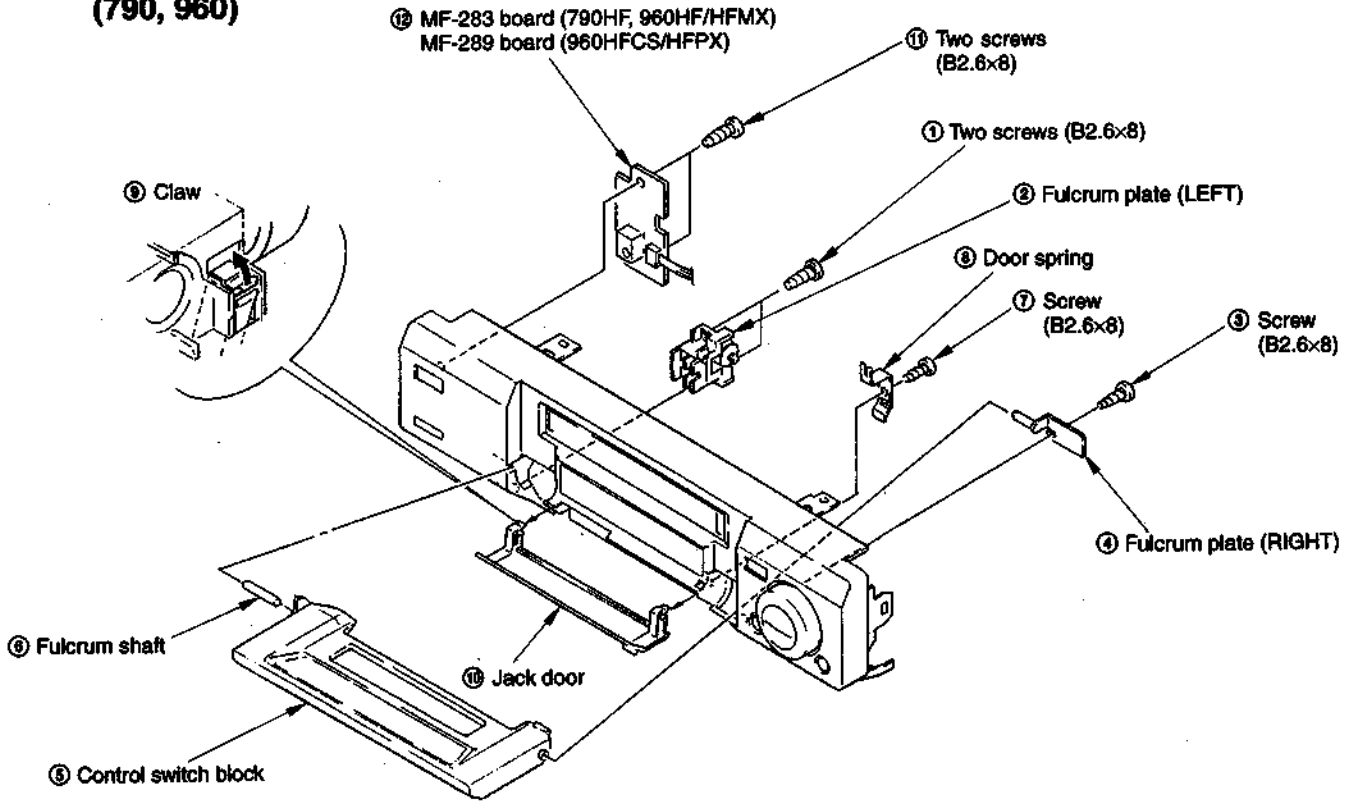
### 2-1. FRONT PANEL ASSEMBLY, CASE AND MF-284/290 BOARD (760, 761, L5, L7)



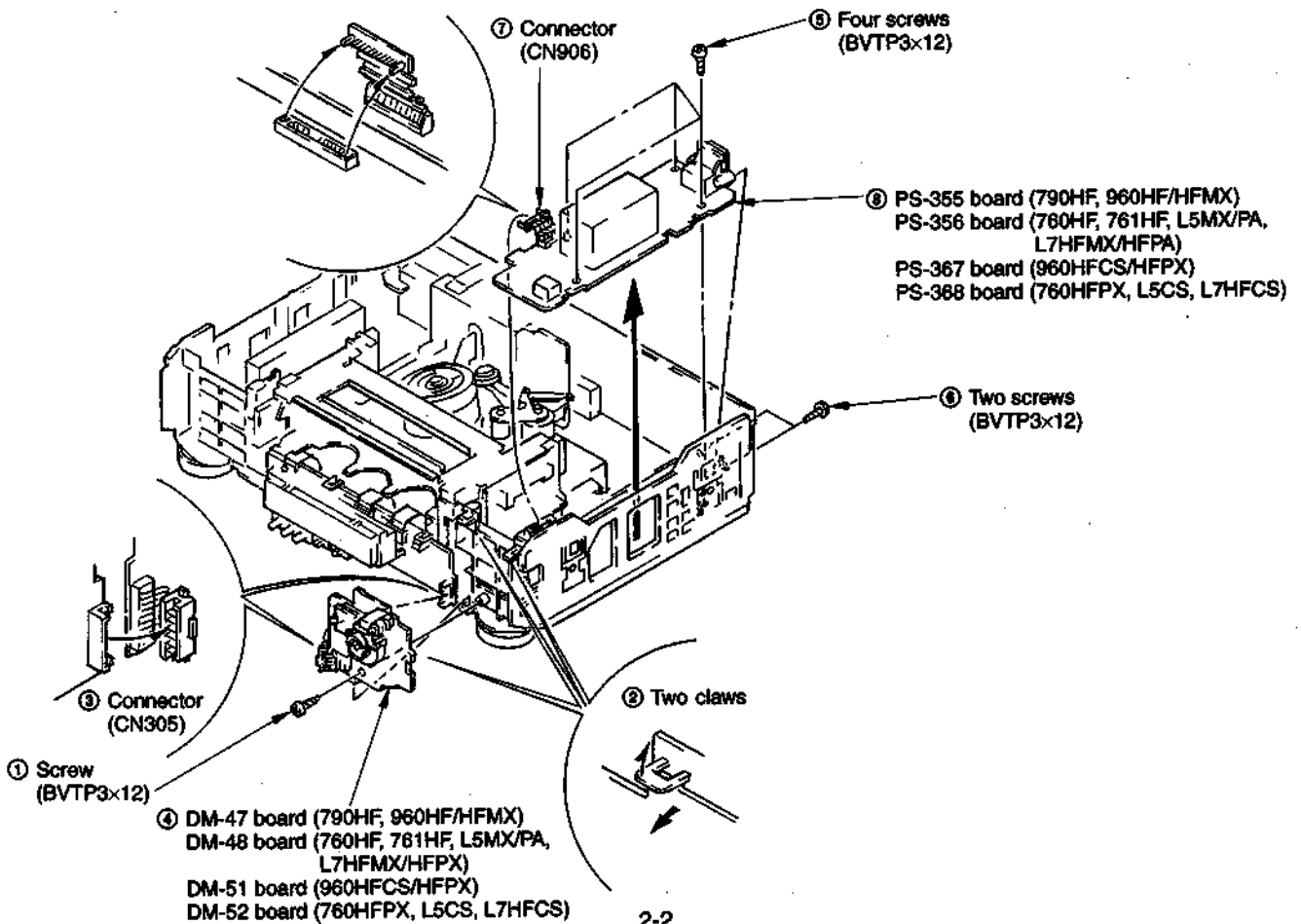
### 2-2. FRONT PANEL ASSEMBLY AND CASE (790, 960)



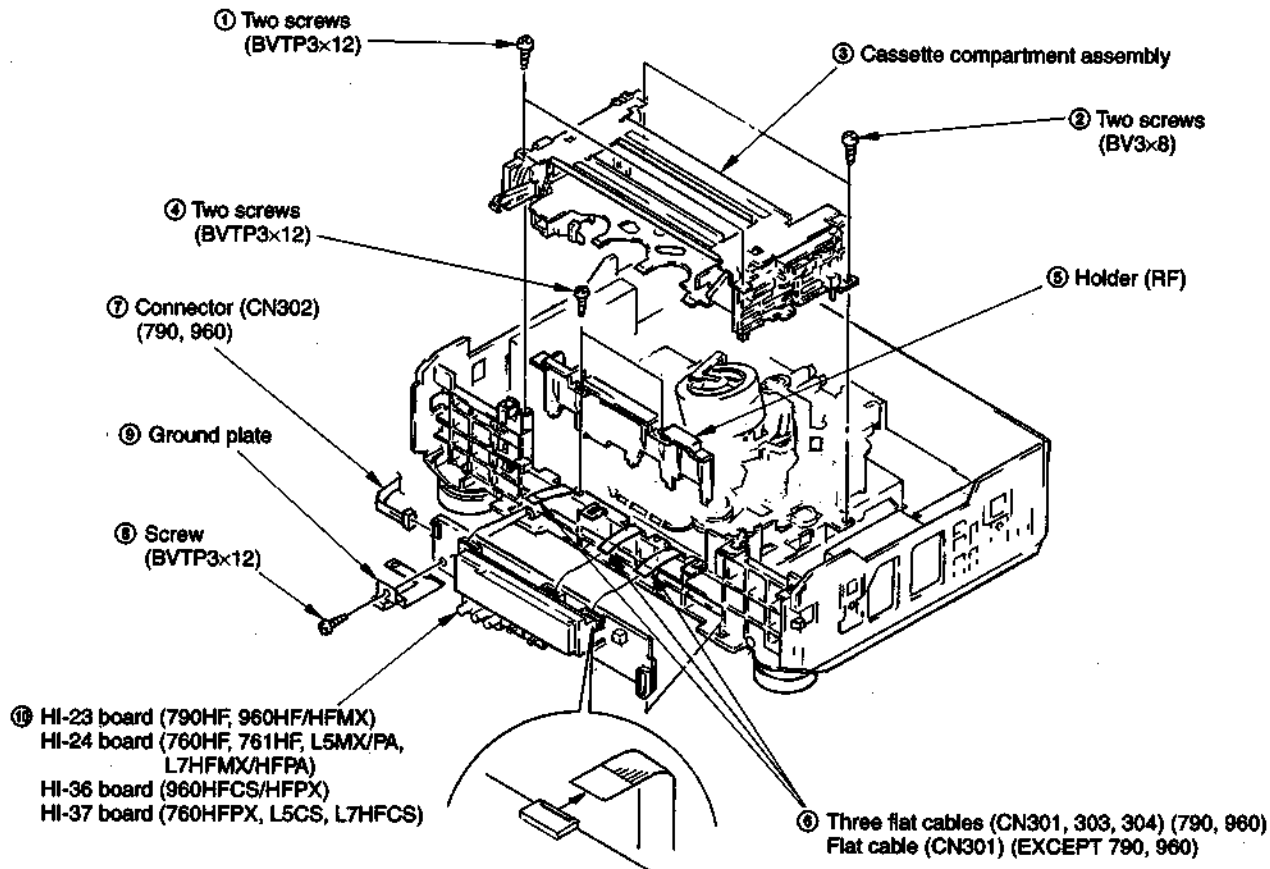
**2-3. CONTROL SWITCH BLOCK AND MF-283/289 BOARD (790, 960)**



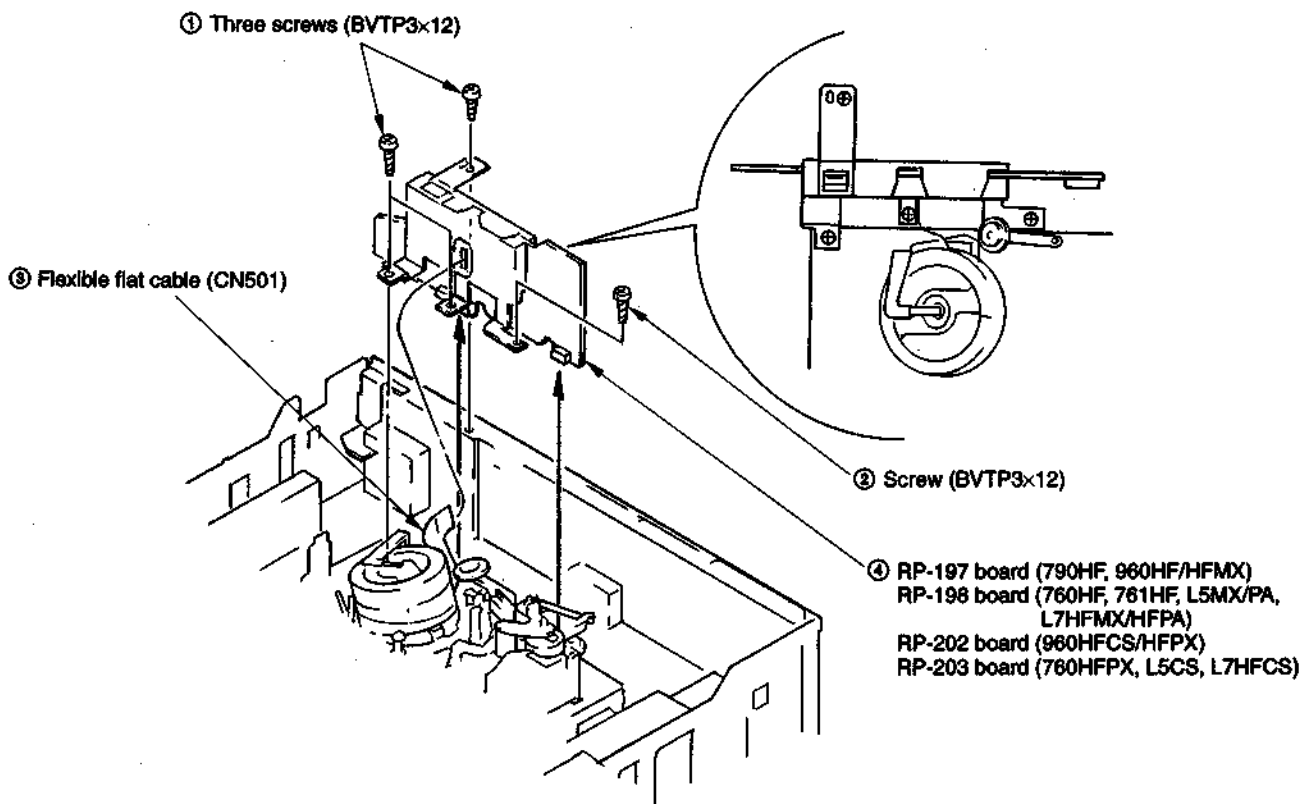
**2-4. DM-47/48/51/52 BOARD AND PS-355, 356, 367, 368 BOARD**



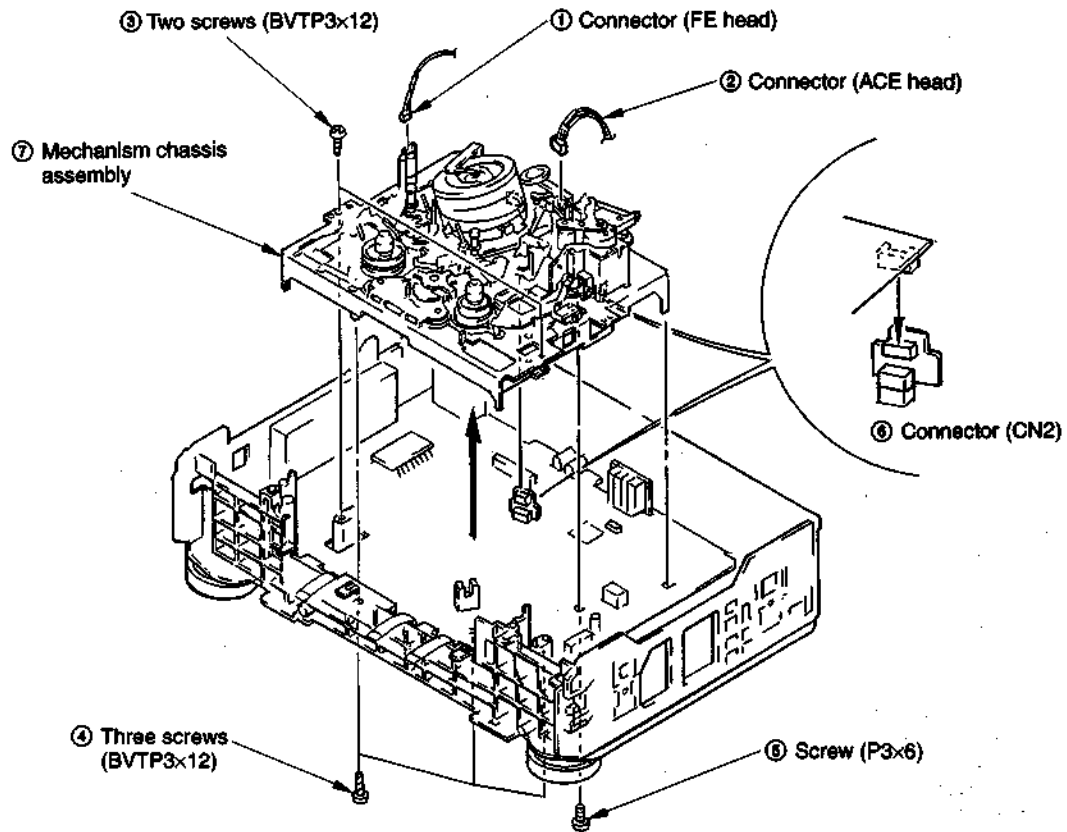
## 2-5. CASSETTE COMPARTMENT ASSEMBLY AND HI-23/24/36/37 BOARD



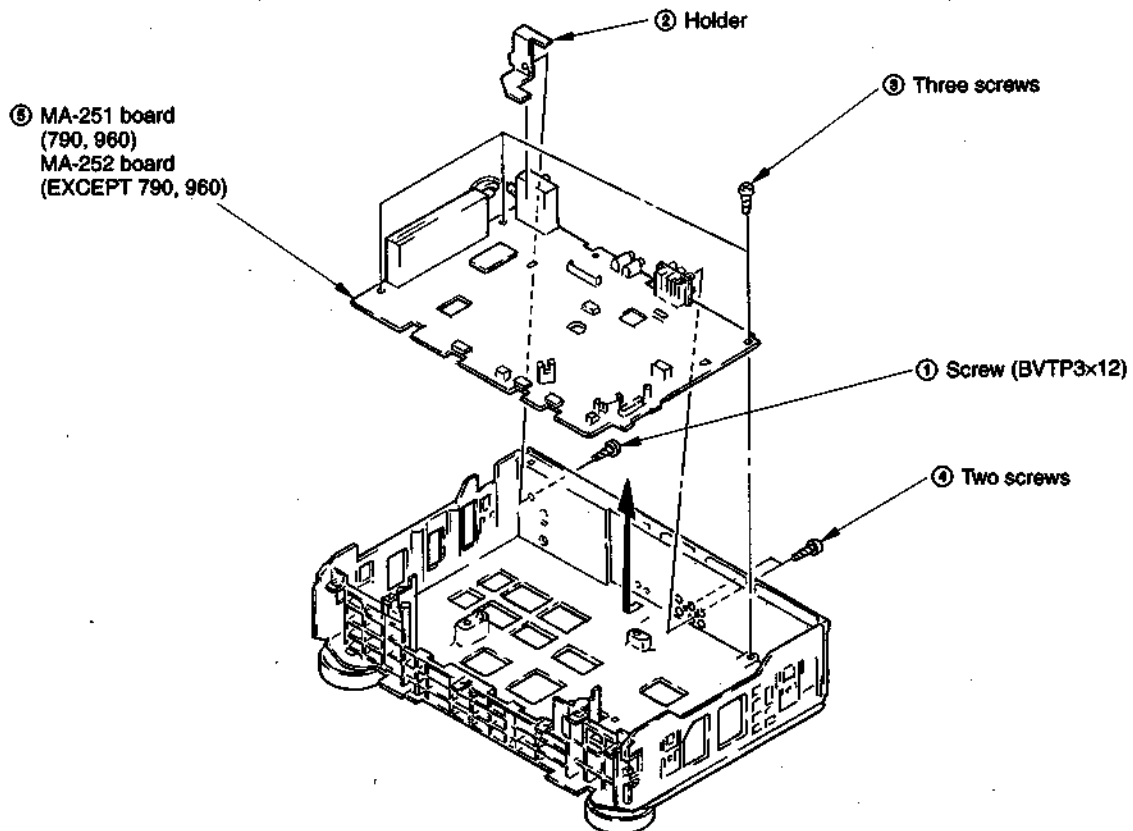
## 2-6. RP-197/198/202/203 BOARD



## 2-7. MECHANISM CHASSIS ASSEMBLY



## 2-8. MA-251/252 BOARD



## 2-9. INTERNAL VIEWS

Rotary upper drum assembly  
(DZR-45-R) 8-848-576-02  
(760, 761, 790, L7)

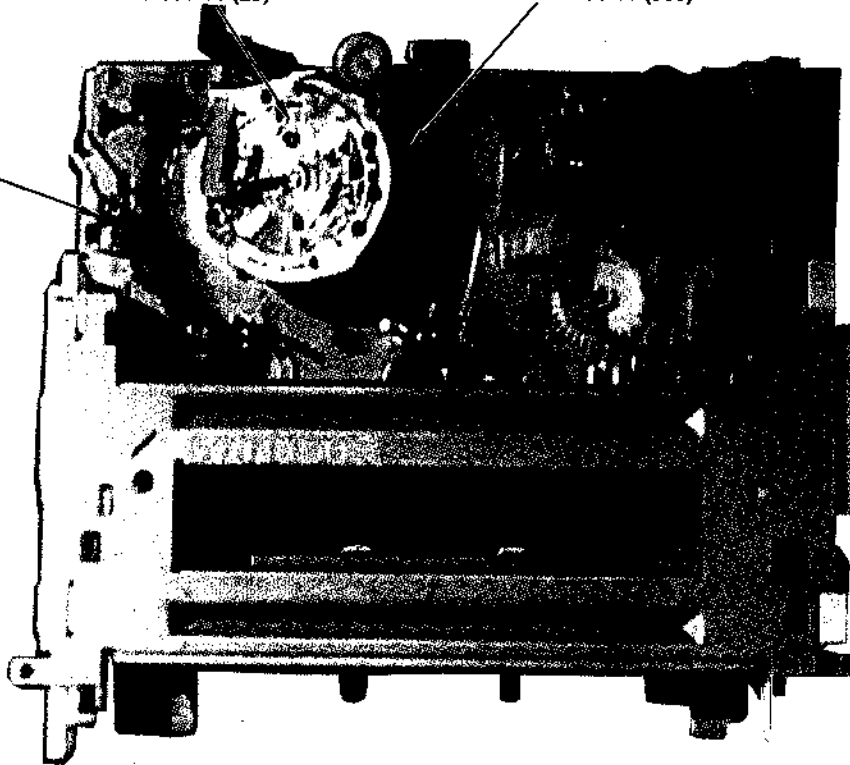
Rotary upper drum assembly (DZR-51-R)  
8-848-594-02 (960)

Drum assembly  
(DZH-73B/Q-RP)  
8-848-681-11 (L5)

Lower drum assembly (DZL-45B/J-RP)  
8-848-658-11 (760, 761, 790, L7)

Lower drum assembly (DZH-51B/J-RP)  
8-848-666-11 (960)

FE head  
1-500-144-11



M902  
Capstan motor (SCV-0801A/Z-NP)  
1-698-409-11

Lower drum assembly (DZL-45B/J-RP)  
8-848-658-11 (760, 761, 790, L7)

Lower drum assembly (DZH-51B/J-RP)  
8-848-666-11 (960)

Drum assembly (DZH-73B/Q-RP)  
8-848-681-11

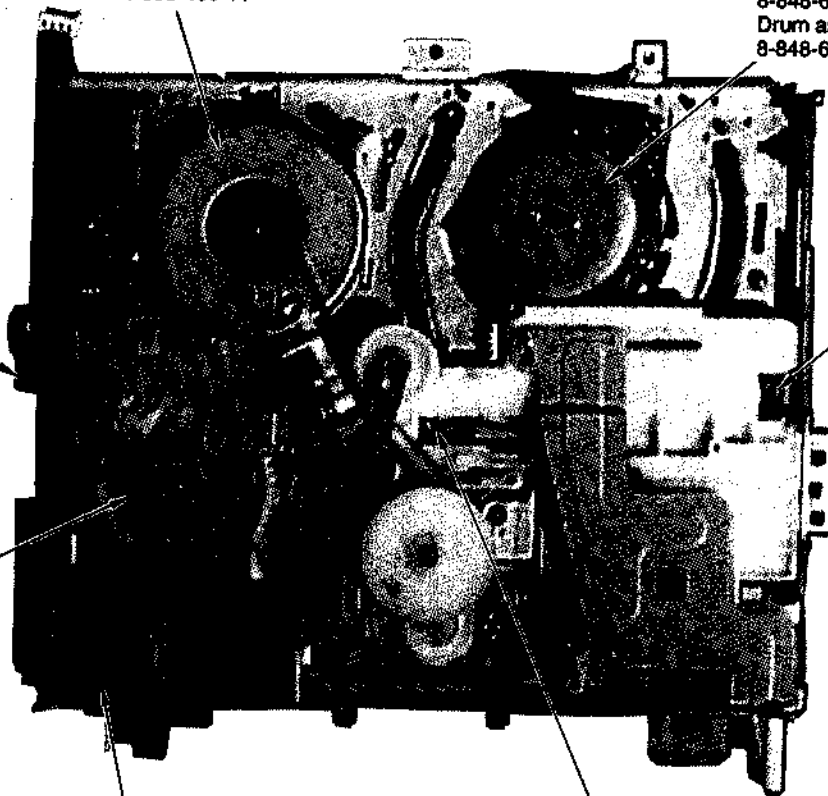
Q261  
Tape top sensor  
8-729-025-92

Q262  
Tape end sensor  
8-729-025-92

Rotary switch  
1-762-076-11

M903  
cam motor assembly  
X-3943-883-1

D261  
Tape top/end LED  
8-719-048-26



## 2-10. CIRCUIT BOARDS LOCATION

MA-251 (790, 960)

(SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL,  
VIDEO, AUDIO, TUNER, LINE IO)

MA-252 (EXCEPT 790, 960)

(SERVO/SYSTEM CONTROL, VIDEO,  
AUDIO, TUNER, LINE IO)

RP-197 (790, 960HF/HFMX)

RP-198 (760HF, 761, L5MX/PA,  
L7HFMX/HFPA)

RP-202 (960HFCS/HFPX)

RP-203 (760HFPX, L5CS, L7HFCS)  
(HEAD AMP)

DRUM ASSEMBLY

DC-68 (790, 960HF/HFMX)

DC-69 (760HF, 761, L5MX/PA, L7HFMX/HFPA)

DC-77 (960HFCS/HFPX)

DC-78 (760HFPX, L5CS, L7HFCS)  
(RELAY)

ACE HEAD

CAPSTAN MOTOR

CAM MOTOR  
ASSEMBLY

MF-283 (790, 960HF/HFMX)

MF-284 (760HF, 761,  
L5MX/PA, L7HFMX/HFPA)

MF-289 (960HFCS/HFPX)

MF-290 (760HFPX, L5CS, L7HFCS)  
(POWER SWITCH)

PS-355 (790, 960HF/HFMX)

PS-356 (760HF, 761, L5MX/PA,  
L7HFMX/HFPA)

PS-367 (960HFCS/HFPX)

PS-368 (760HFPX, L5CS, L7HFCS)  
(POWER SUPPLY)

HI-23 (790, 960HF/HFMX)

HI-24 (760HF, 761, L5MX/PA,  
L7HFMX/HFPA)

HI-36 (960HFCS/HFPX)

HI-37 (760HFPX, L5CS, L7HFCS)  
(FL DRIVER)

DM-47 (790, 960HF/HFMX)

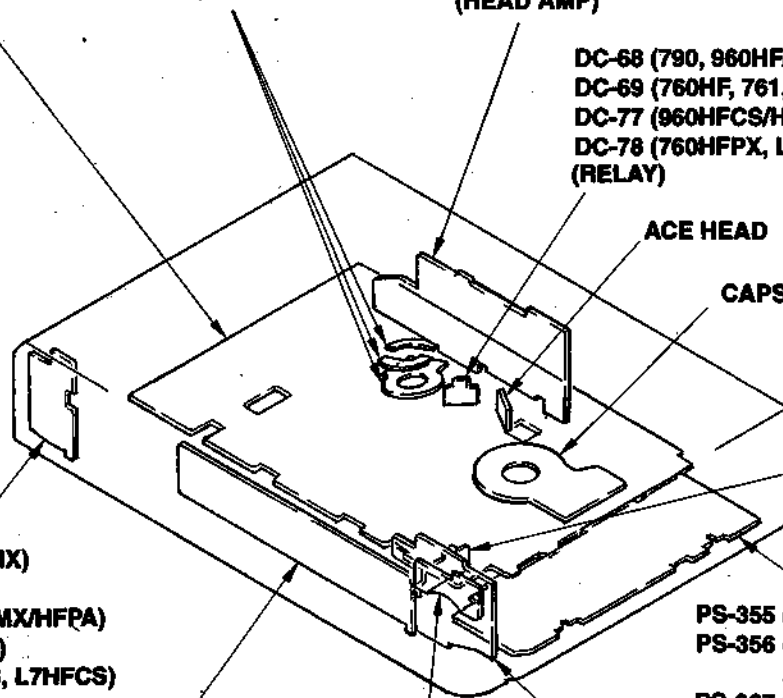
DM-48 (760HF, 761, L5MX/PA,  
L7HFMX/HFPX)

DM-51 (960HFCS/HFPX)

DM-52 (760HFPX, L5CS, L7HFCS)  
(MODE CONTROL)

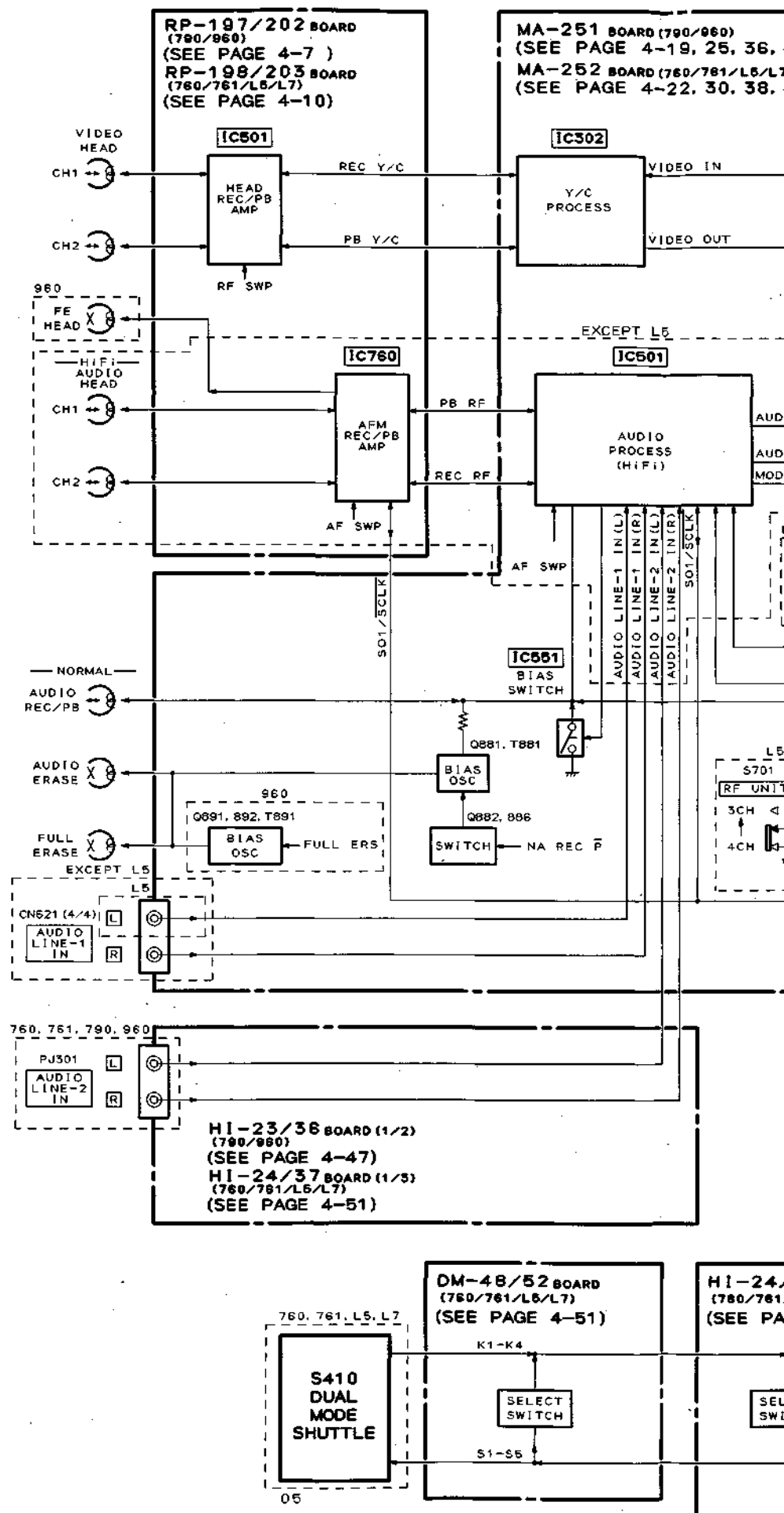
LE-12 (790, 960HF/HFMX)

LE-15 (960HFCS/HFPX)  
(LED)



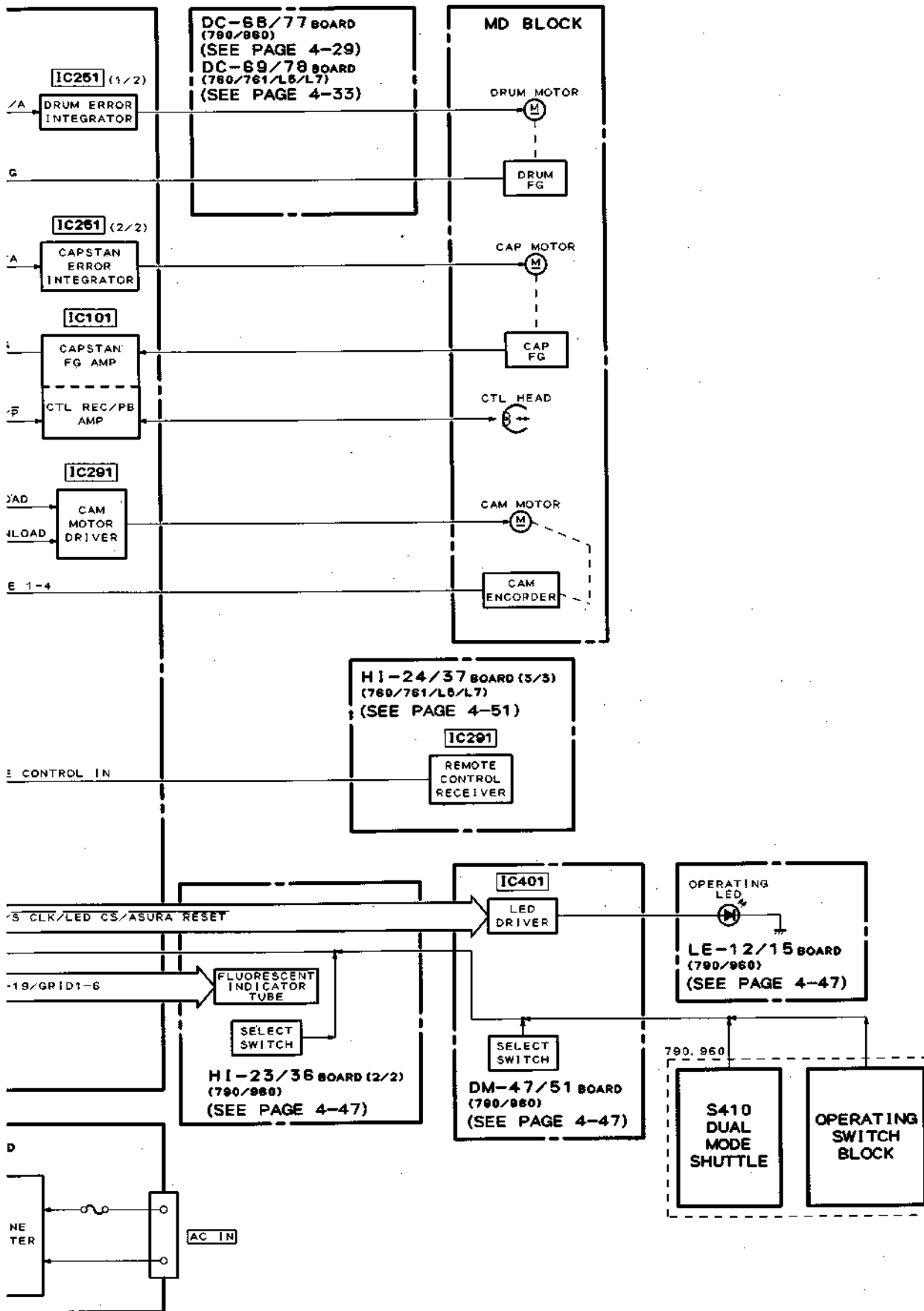
# SECTION 3 BLOCK DIAGRAMS

## 3-1. OVERALL BLOCK DIAGRAM

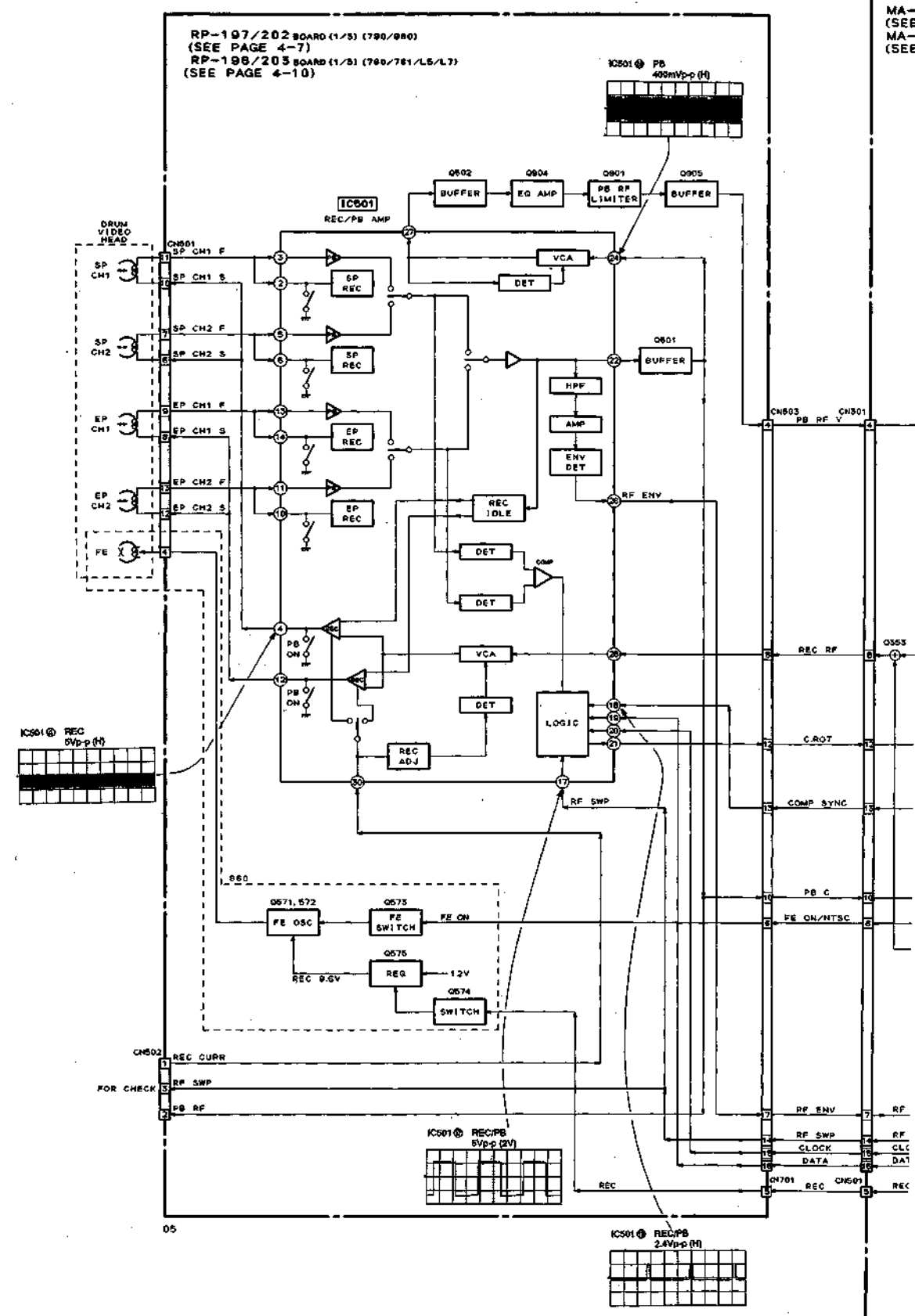






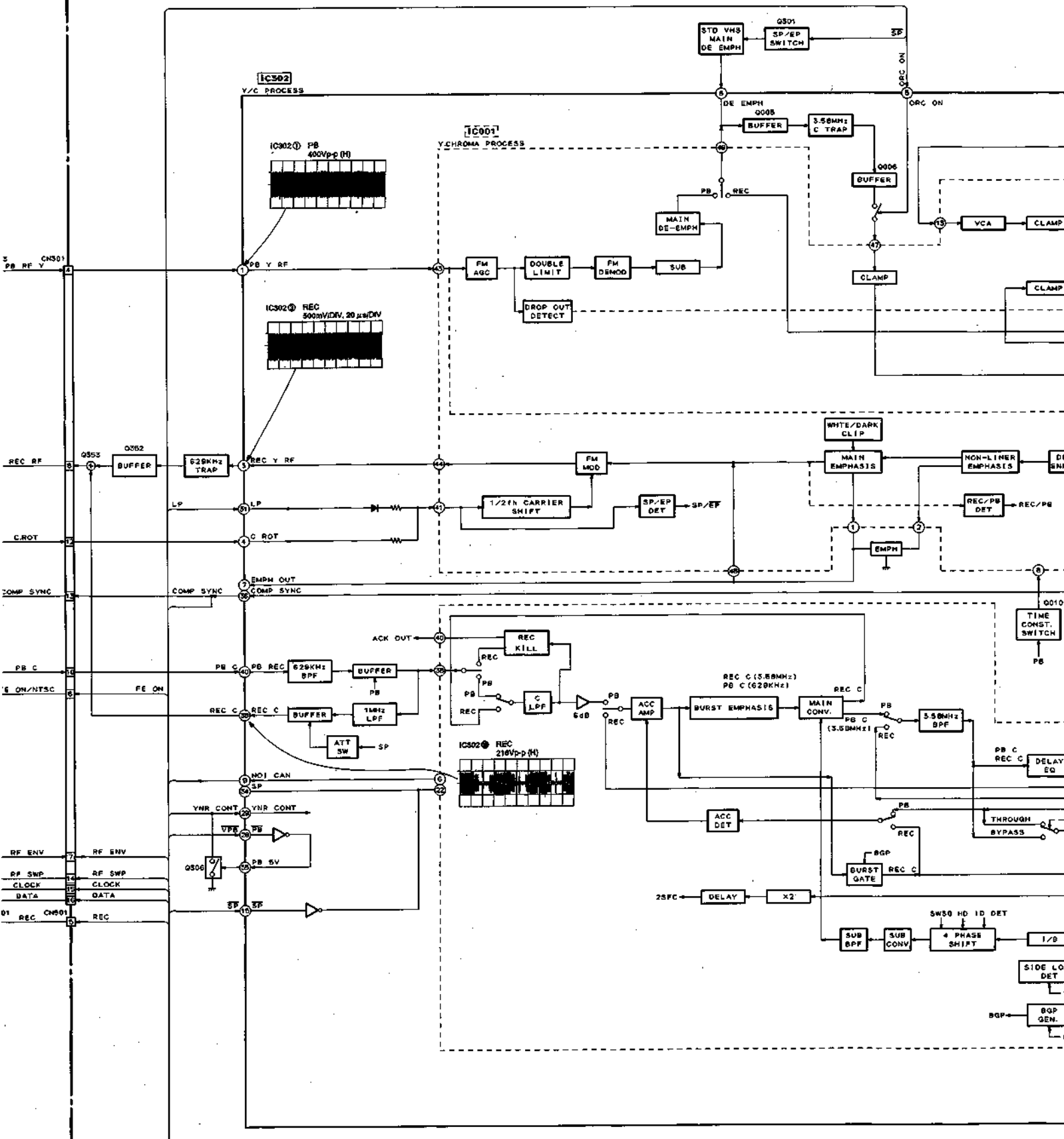


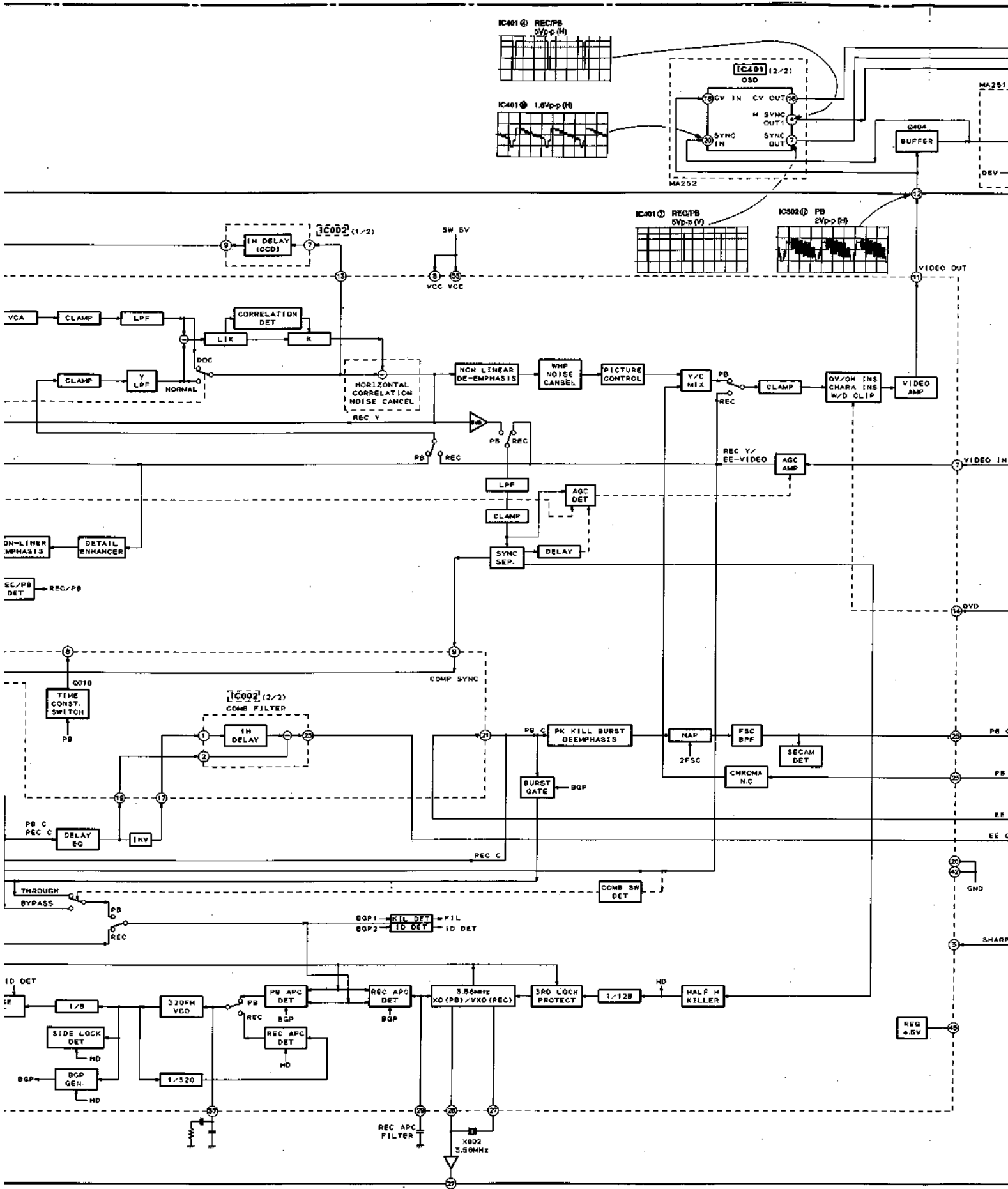
3-2. VIDEO BLOCK DIAGRAM

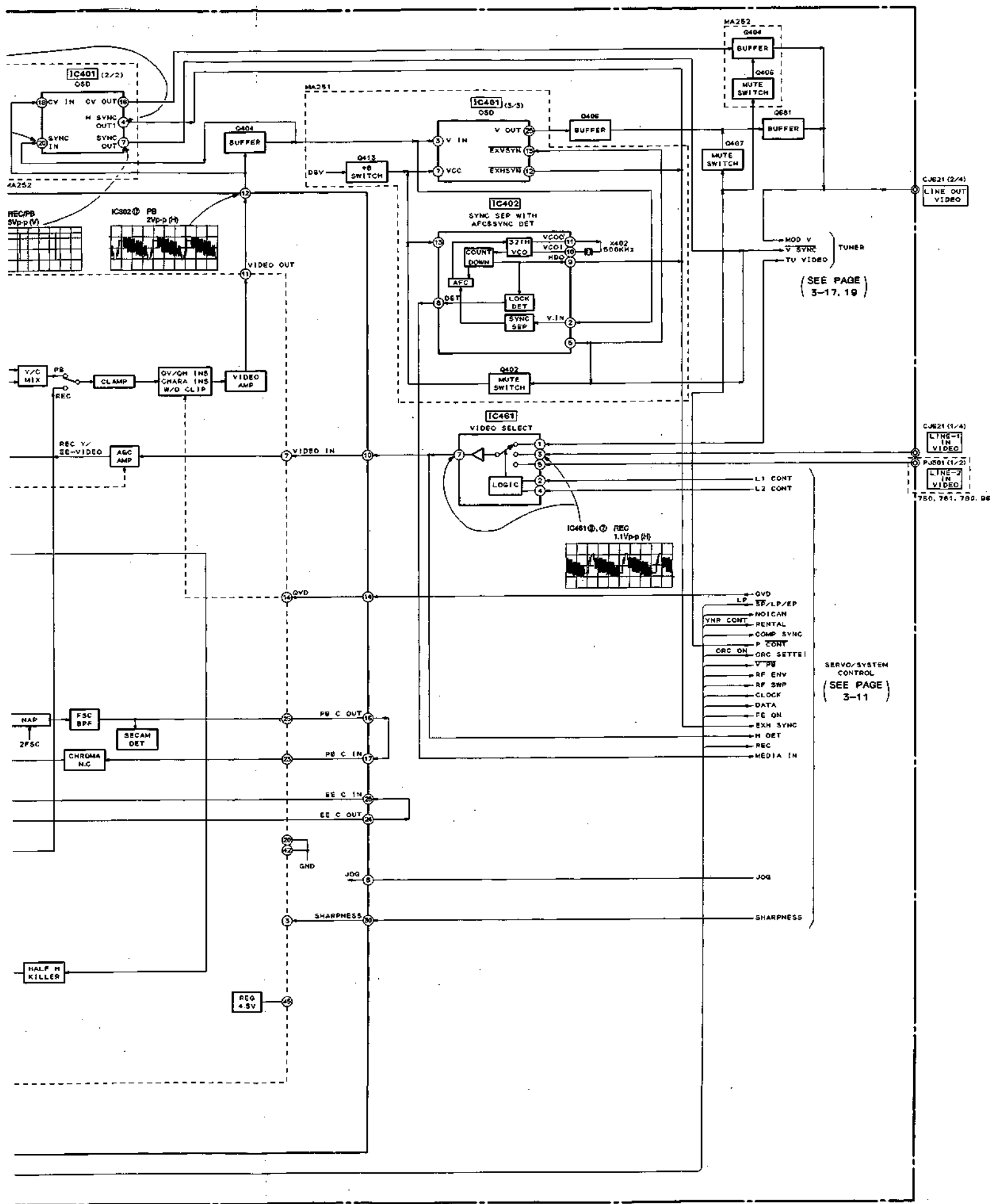


MA-2 (SEE MA-2 (SEE

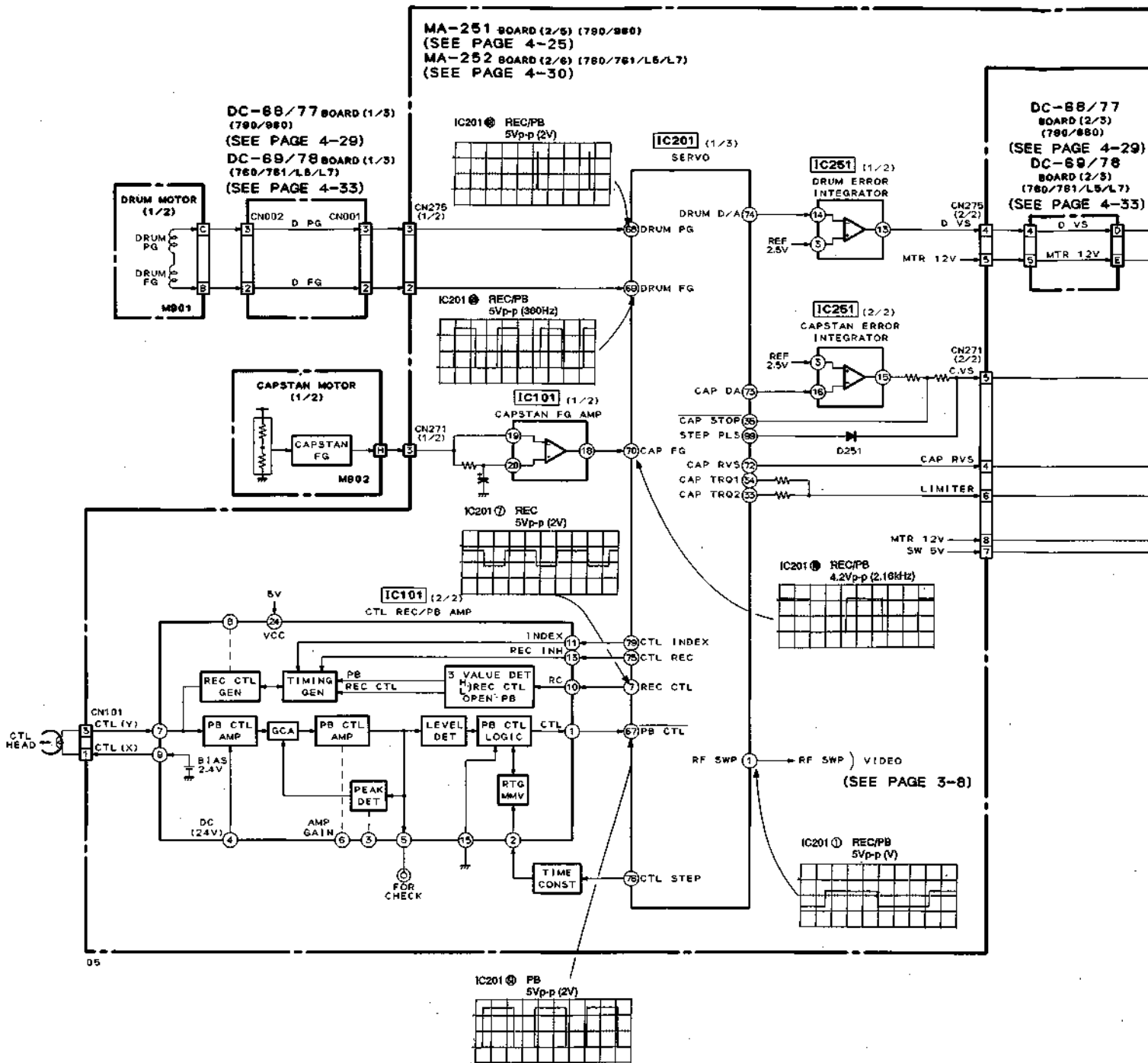
MA-251 BOARD (1/8) (790/000)  
 (SEE PAGE 4-19)  
 MA-252 BOARD (1/8) (760/761/LS/L7)  
 (SEE PAGE 4-22)



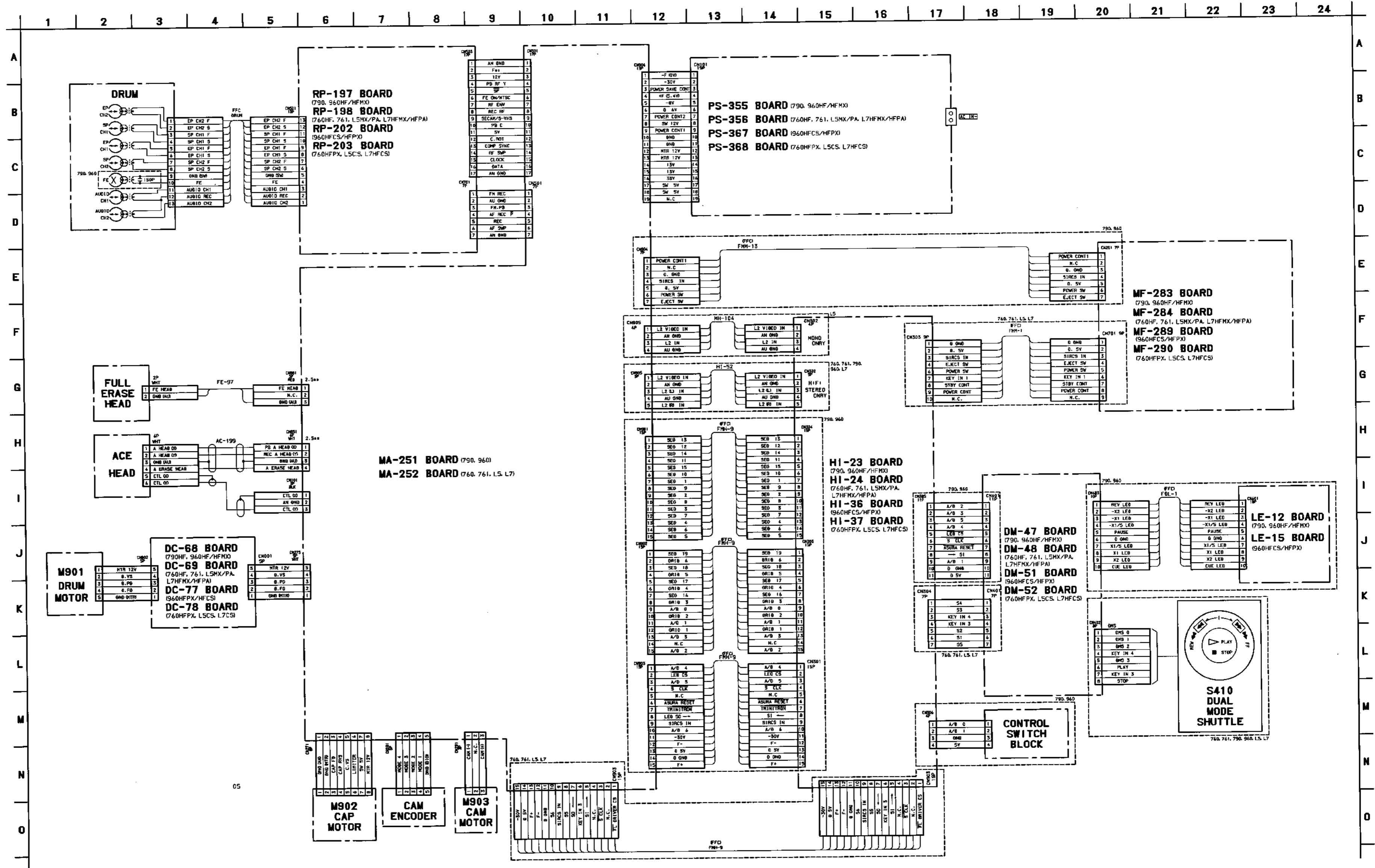




### 3-3. SERVO SYSTEM CONTROL BLOCK DIAGRAM



4-1. FRAME SCHEMATIC DIAGRAM



**SECTIONN 4  
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:**
- : indicates a lead wire mounted on the component side.
  - : indicates a lead wire mounted on the printed side.
  - : Through hole.
  - : Parts mounted on the conductor side.
  - ▨ : Pattern on the side which enables seeing.
  - ▩ : Pattern of the rear side.\*
  - (with number) : Circled numbers refer to waveforms.

**Caution:**  
Pattern face side: Parts on the pattern face side seen from the (Conductor Side) are indicated.  
Parts face side: Parts on the parts face side seen from the (Component Side) are indicated.

- For schematic diagram:**
- 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, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  - kΩ: 1000Ω, MΩ: 1000kΩ.
  - All capacitors are in μF unless otherwise noted. pF: μF/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.
  - ▨ : fusible resistor.
  - ▩ : panel designation.
  - ▩ : internal component.
  - △ : adjustment for repair.\*
  - : B + Line.\*
  - : B - Line.\*
  - ↔ : IN/OUT direction of B line (+, -).\*
  - Circled numbers refer to waveforms.\*
  - Voltages are dc between measurement point.\*
  - 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 mark △ or dotted line with mark ▨ are critical for safety. Replace only with part number specified.

**Note:**  
Les composants identifiés par une marque ▨ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

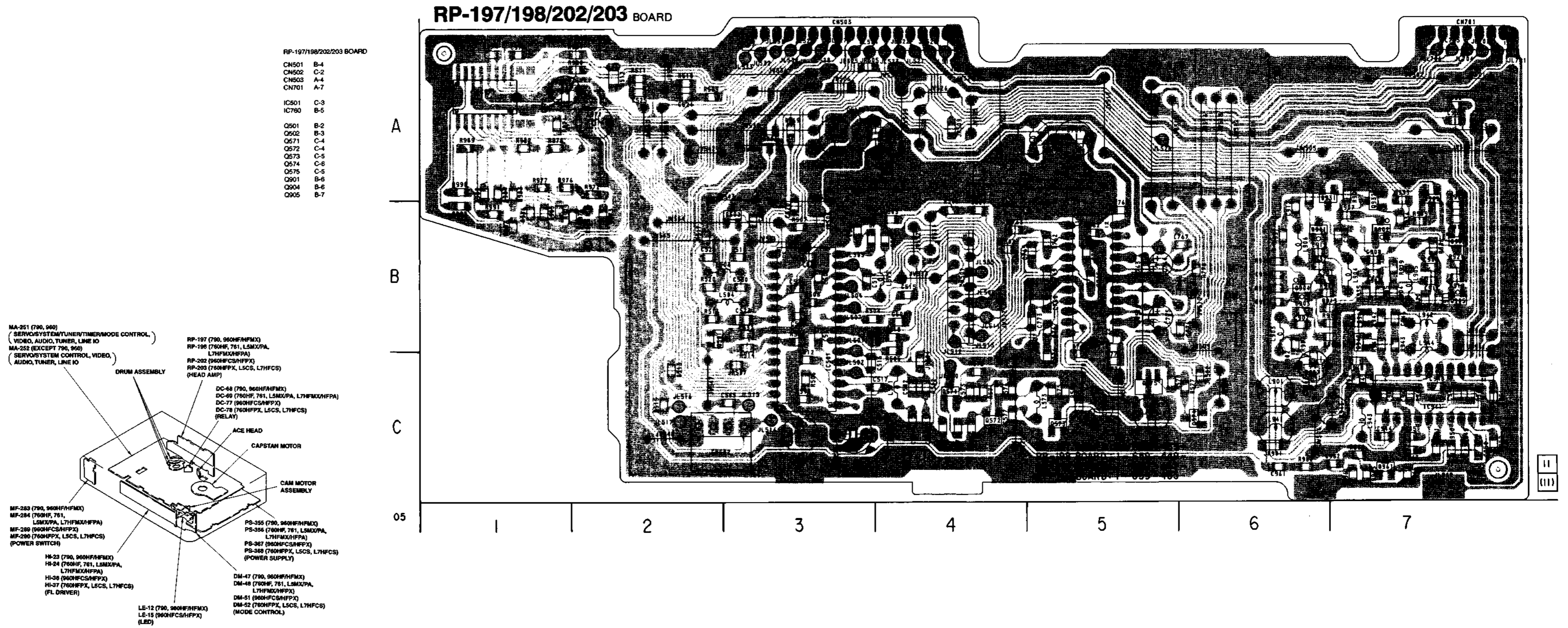
When indicating parts by reference number, please include the board name.

\* : Indicated by the color red.

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

There are cases that the part isn't mounted in this model is printed on this diagram.

RP-197/198/202/203 (HEAD AMP) PRINTED WIRING BOARD  
 - Ref. No.: RP-197/202 Board; 1,000 series, RP-198/203 Board; 2,000 series -





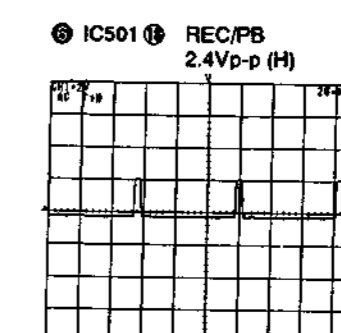
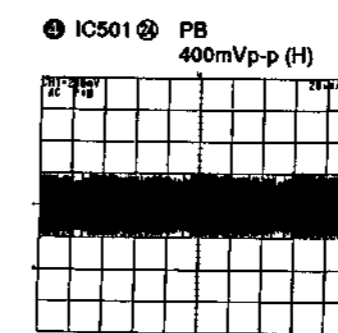
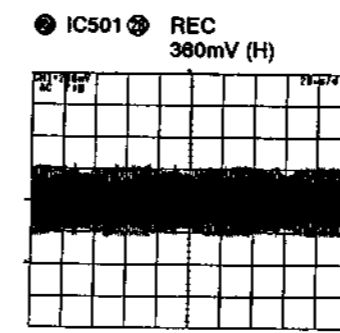
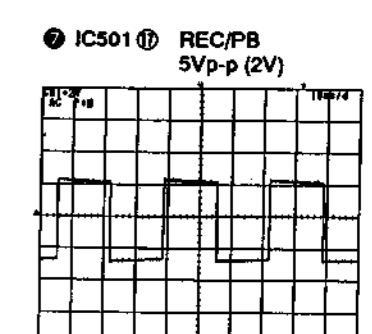
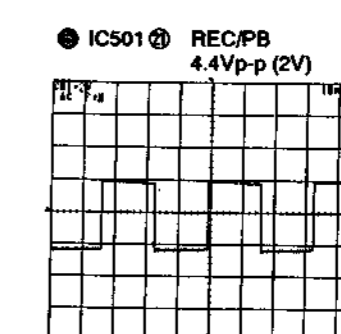
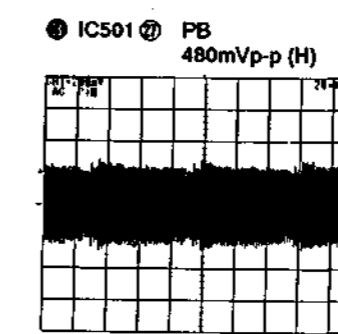
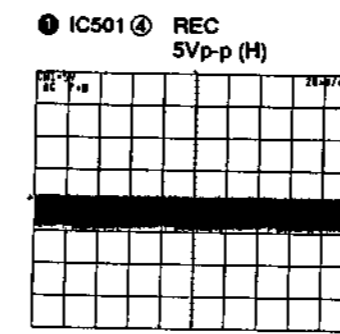
• Signal path

|     | VIDEO SIGNAL |   |          | AUDIO  |
|-----|--------------|---|----------|--------|
|     | CHROMA       | Y | Y/CHROMA | SIGNAL |
| REC | →            | → | →        | →      |
| PB  | →            | → | →        | →      |

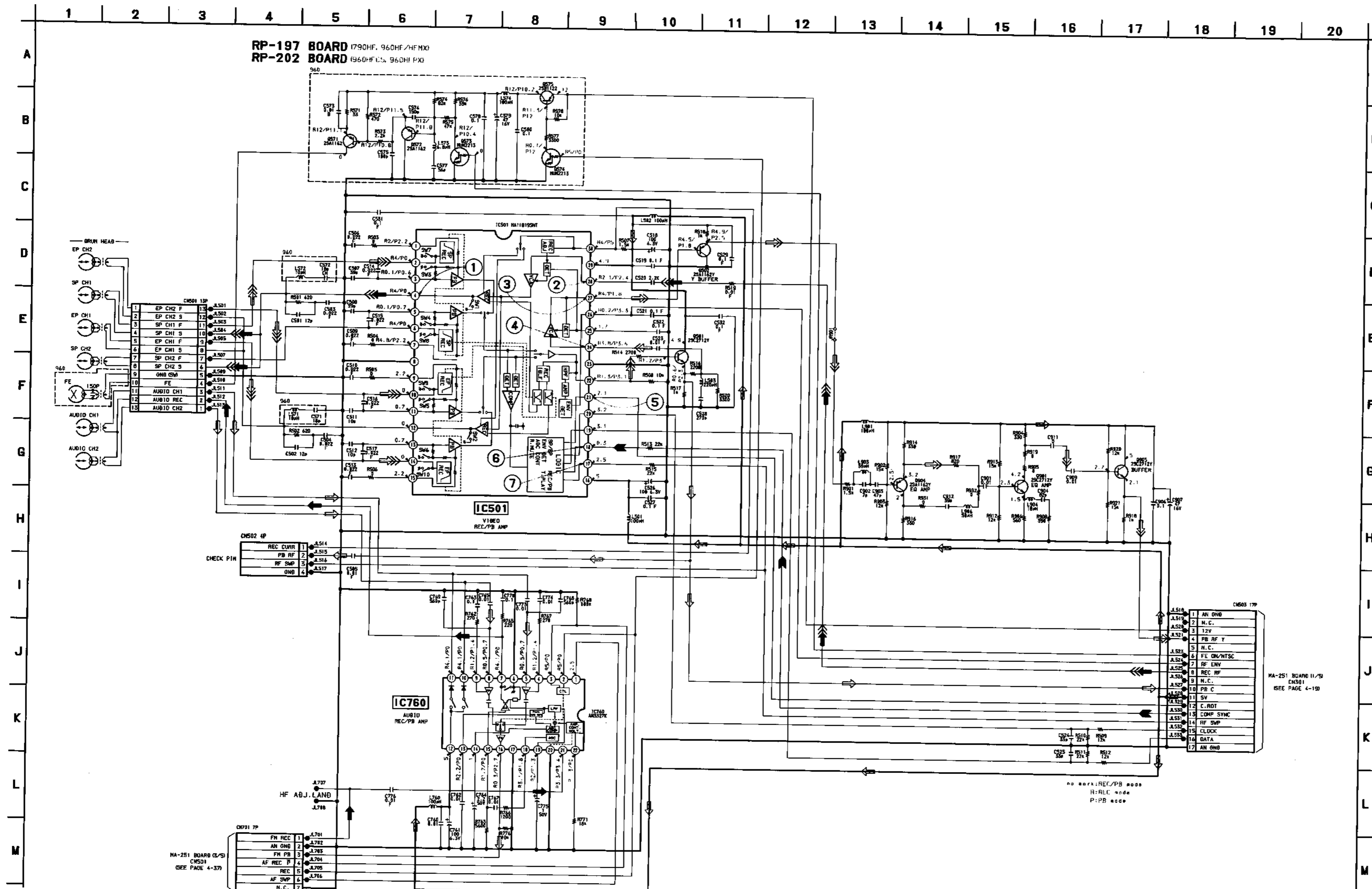
• Signal path

|             | REC | REC/PB | PB |
|-------------|-----|--------|----|
| Ref. signal | →   | →      | →  |

• Waveforms



PR-197/202 (HEAD AMP) (SLV-790/960) SCHEMATIC DIAGRAM  
- Ref. No.: RP-197/202 Board; 1,000 series -



# SECTION 5

## REPAIR PARTS LIST

### 5-1. EXPLODED VIEWS

**NOTE:**

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) ... (RED)

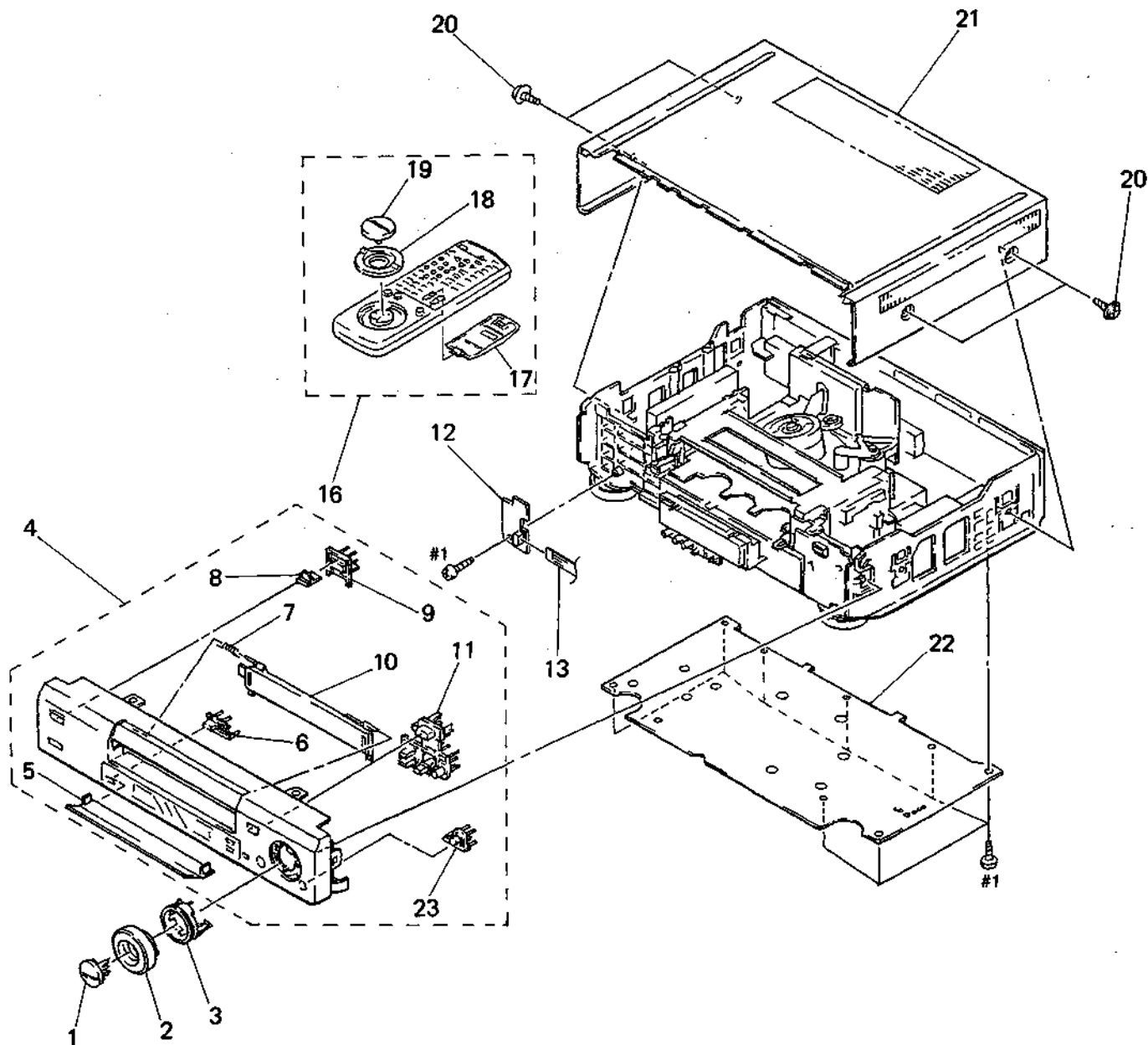


- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

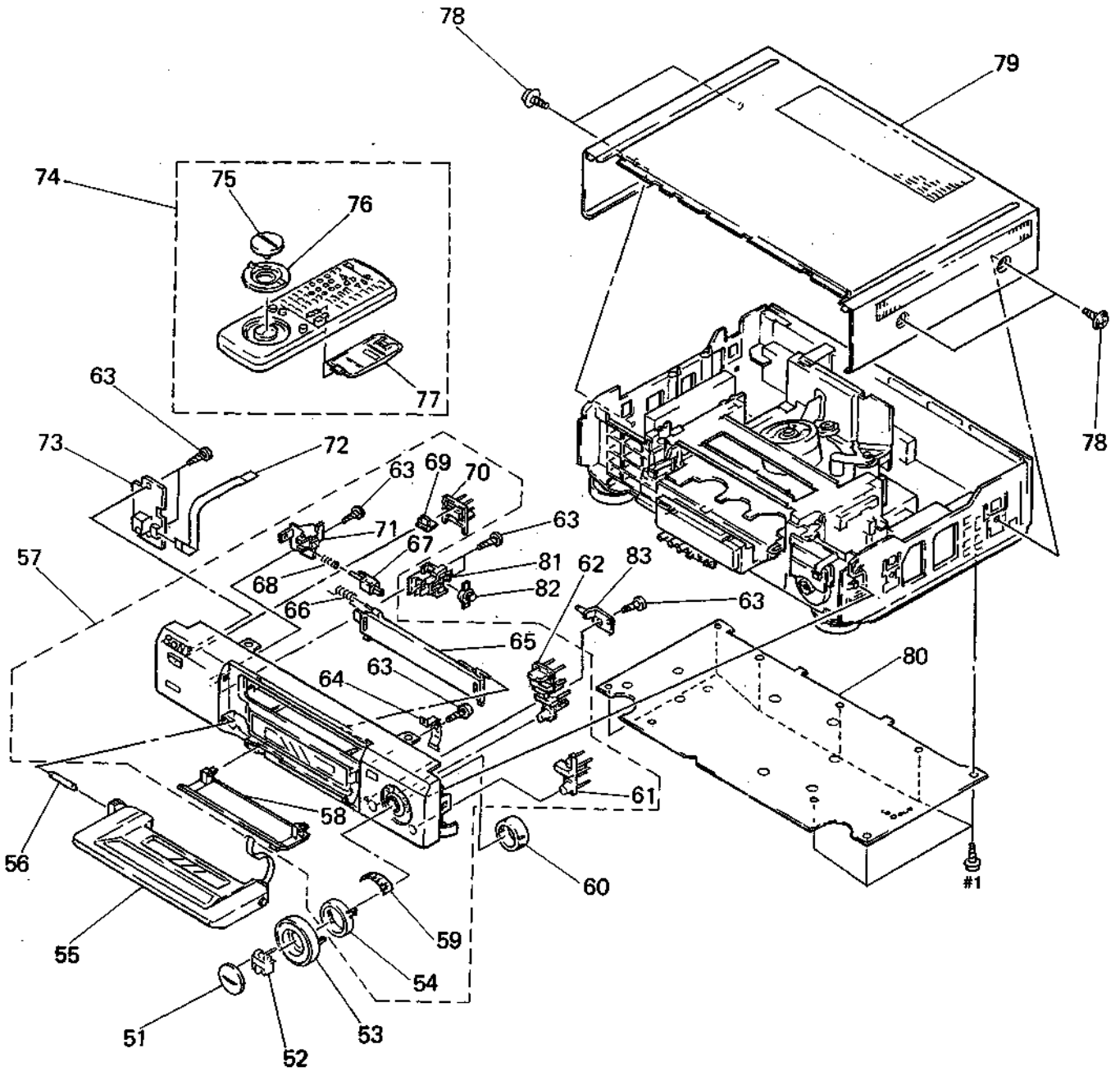
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### 5-1-1. FRONT PANEL AND CABINET ASSEMBLIES (760, 761, L5, L7)



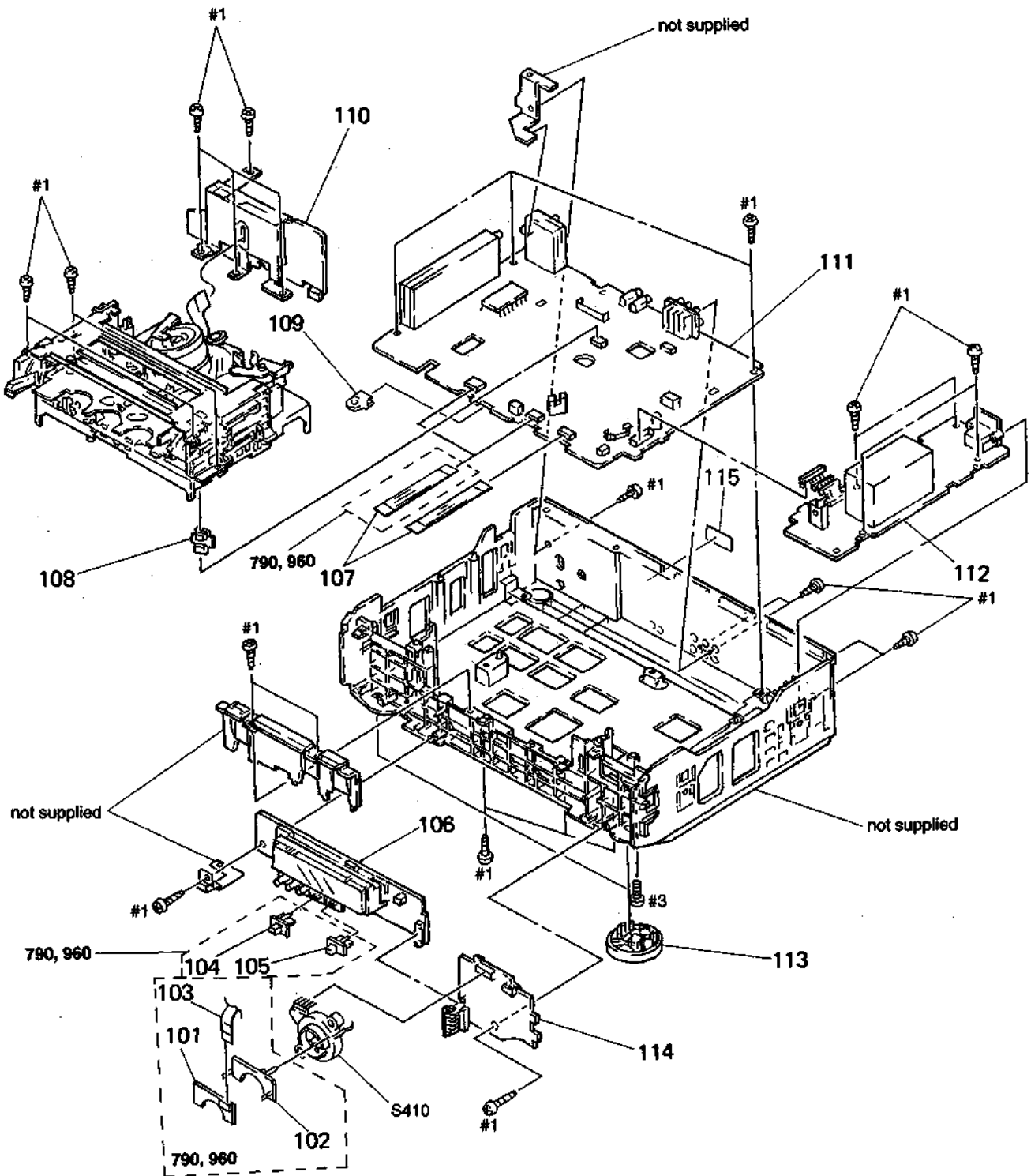
| Ref. No. | Part No.     | Description                            | Remark | Ref. No. | Part No.     | Description  | Remark |
|----------|--------------|--|--------|----------|--------------|--|--------|
| 1        | X-3945-621-1 | BUTTON ASSY, FUNCTION (TITANIUM) (761) |        | 11       | 3-966-217-01 | BUTTON (A), EP (760)   |        |
| 1        | X-3945-890-1 | BUTTON ASSY, FUNCTION (760, L5, L7)    |        | 11       | 3-966-217-11 | BUTTON (A), EP (L5, L7)                                      |        |
| 2        | 3-966-886-01 | RING, SHUTTLE (TITANIUM) (761)         |        | 11       | 3-966-217-21 | BUTTON (A), EP (TITANIUM) (761)                              |        |
| 2        | 3-966-886-31 | RING, SHUTTLE (EXCEPT 761)             |        | * 12     | A-6782-794-A | MF-284 BOARD, COMPLETE<br>(760HF, 761, L5MX/PA, L7HFMX/HFPA) |        |
| 3        | 3-966-890-01 | RING, MODE (760, 761)                  |        | * 12     | A-6782-795-A | MF-290 BOARD, COMPLETE<br>(760HFPX, L5CS, L7HFCS)            |        |
| 3        | 3-966-890-41 | RING, MODE (L5, L7)                    |        | 13       | 1-776-226-11 | CABLE, FLAT (FHM-1) 9P                                       |        |
| 4        | X-3945-518-1 | PANEL ASSY, FRONT (760)                |        | 16       | 1-473-487-11 | REMOTE COMMANDER (RMT-V186) (L7)                             |        |
| 4        | X-3945-689-1 | PANEL ASSY, FRONT (TITANIUM) (761)     |        | 16       | 1-473-487-21 | REMOTE COMMANDER (RMT-V186) (L5)                             |        |
| 4        | X-3945-699-1 | PANEL ASSY, FRONT (L5)                 |        | 16       | 1-473-515-11 | REMOTE COMMANDER (RMT-V184A) (760, 761)                      |        |
| 4        | X-3945-715-1 | PANEL ASSY, FRONT (L7)                 |        | 17       | 3-708-817-01 | COVER, BATTERY (V184A, V186)                                 |        |
| 5        | 3-966-214-01 | DOOR (A), JACK (EXCEPT 761)            |        | 18       | 3-957-513-11 | RING, SHUTTLE (V184A, V186)                                  |        |
| 5        | 3-966-214-11 | DOOR (A), JACK (TITANIUM) (761)        |        | 19       | X-3944-446-2 | BUTTON ASSY (C) (V184A, V186)                                |        |
| 6        | 3-966-216-01 | BUTTON, TV (EXCEPT 761)                |        | 20       | 3-710-901-11 | SCREW, TAPPING   |        |
| 6        | 3-966-216-11 | BUTTON, TV (TITANIUM) (761)            |        | * 21     | 3-966-225-21 | CASE, UPPER (760)  |        |
| 7        | 3-953-432-01 | SPRING (GE), FL                        |        | * 21     | 3-966-225-31 | CASE, UPPER (L5, L7)   |        |
| 8        | 3-946-611-01 | TIP, POWER BUTTON                      |        | * 21     | 3-966-225-61 | CASE, UPPER (TITANIUM) (761)                                 |        |
| 9        | 3-966-213-01 | BUTTON, POWER (EXCEPT 761)             |        | * 22     | 3-966-226-02 | PLATE, BOTTOM  |        |
| 9        | 3-966-213-11 | BUTTON, POWER (TITANIUM) (761)         |        | 23       | 3-966-219-01 | BUTTON (A), REC (EXCEPT 761)                                 |        |
| 10       | 3-966-858-01 | DOOR, CASSETTE (L5)                    |        | 23       | 3-966-219-11 | BUTTON (A), REC (TITANIUM) (761)                             |        |
| 10       | 3-966-858-11 | DOOR, CASSETTE (760, L7)               |        |          |              |  |        |
| 10       | 3-966-858-31 | DOOR, CASSETTE (TITANIUM) (761)        |        |          |              |  |        |

5-1-2. FRONT PANEL AND CABINET ASSEMBLIES  
(790, 960)



| Ref. No. | Part No.     | Description                   | Remark | Ref. No. | Part No.     | Description                              | Remark |
|----------|--------------|-------------------------------|--------|----------|--------------|--|--------|
| 51       | 3-966-252-01 | BUTTON, PB/STOP               |        | 67       | 3-944-564-01 | CLAW, LOCK                               |        |
| 52       | 3-966-251-01 | BASE, BUTTON                  |        | 68       | 3-957-388-01 | SPRING, COMPRESSION                      |        |
| 53       | 3-966-253-01 | RING, SHUTTLE                 |        | 69       | 3-946-611-01 | TIP, POWER BUTTON                        |        |
| 54       | 3-966-807-01 | PLATE, INDICATION, SHUTTLE    |        | 70       | 3-966-213-01 | BUTTON, POWER                            |        |
| 55       | 1-473-518-11 | SWITCH BLOCK, CONTROL (790)   |        | * 71     | 3-957-548-01 | HOLDER, LOCK CLAW                        |        |
| 55       | 1-473-518-21 | SWITCH BLOCK, CONTROL (960)   |        | 72       | 1-776-227-11 | CABLE, FLAT (FMM-13) 7P                  |        |
| * 56     | 3-960-077-01 | SHAFT (LEFT), FULCRUM         |        | * 73     | A-6782-798-A | MF-283 BOARD, COMPLETE (790, 960HF/HFMX) |        |
| 57       | X-3945-519-1 | PANEL ASSY, FRONT (790)       |        | * 73     | A-6782-806-A | MF-289 BOARD, COMPLETE (960HFCS/HFPX)    |        |
| 57       | X-3945-717-1 | PANEL ASSY, FRONT (960)       |        | 74       | 1-473-483-11 | REMOTE COMMANDER (RMT-V158C) (960)       |        |
| 58       | 3-966-244-01 | DOOR (B), JACK (790)          |        | 74       | 1-473-483-21 | REMOTE COMMANDER (RMT-V161A) (790)       |        |
| 58       | 3-966-244-11 | DOOR (B), JACK (960)          |        | 75       | X-3944-446-2 | BUTTON ASSY (C) (V158C, V161A)           |        |
| 59       | 3-966-241-01 | PLATE, LIGHT GUIDE, SHUTTLE   |        | 76       | 3-957-513-11 | RING, SHUTTLE (V158C, V161A)             |        |
| 60       | 3-966-250-01 | BASE, SHUTTLE RING            |        | 77       | 3-708-817-01 | COVER, BATTERY (V158C, V161A)            |        |
| 61       | 3-966-242-01 | BUTTON (B), REC               |        | 78       | 3-710-901-11 | SCREW, TAPPING                           |        |
| 62       | 3-966-245-01 | BUTTON (B), EP                |        | 79       | 3-966-255-21 | CASE, UPPER                              |        |
| 63       | 4-921-277-41 | SCREW (B2 6X8), TAPPING, BIND |        | * 80     | 3-966-226-02 | PLATE, BOTTOM                            |        |
| * 64     | 3-960-556-01 | SPRING, DOOR LOCK             |        | * 81     | 3-960-076-01 | PLATE (LEFT), FULCRUM, DOOR              |        |
| 65       | 3-960-094-01 | DOOR, CASSETTE                |        | 82       | 3-961-745-01 | DAMPER, OIL                              |        |
| 66       | 3-953-432-01 | SPRING (GE), FL               |        | 83       | X-3944-447-1 | PLATE (RIGHT) ASSY, FULCRUM, DOOR        |        |

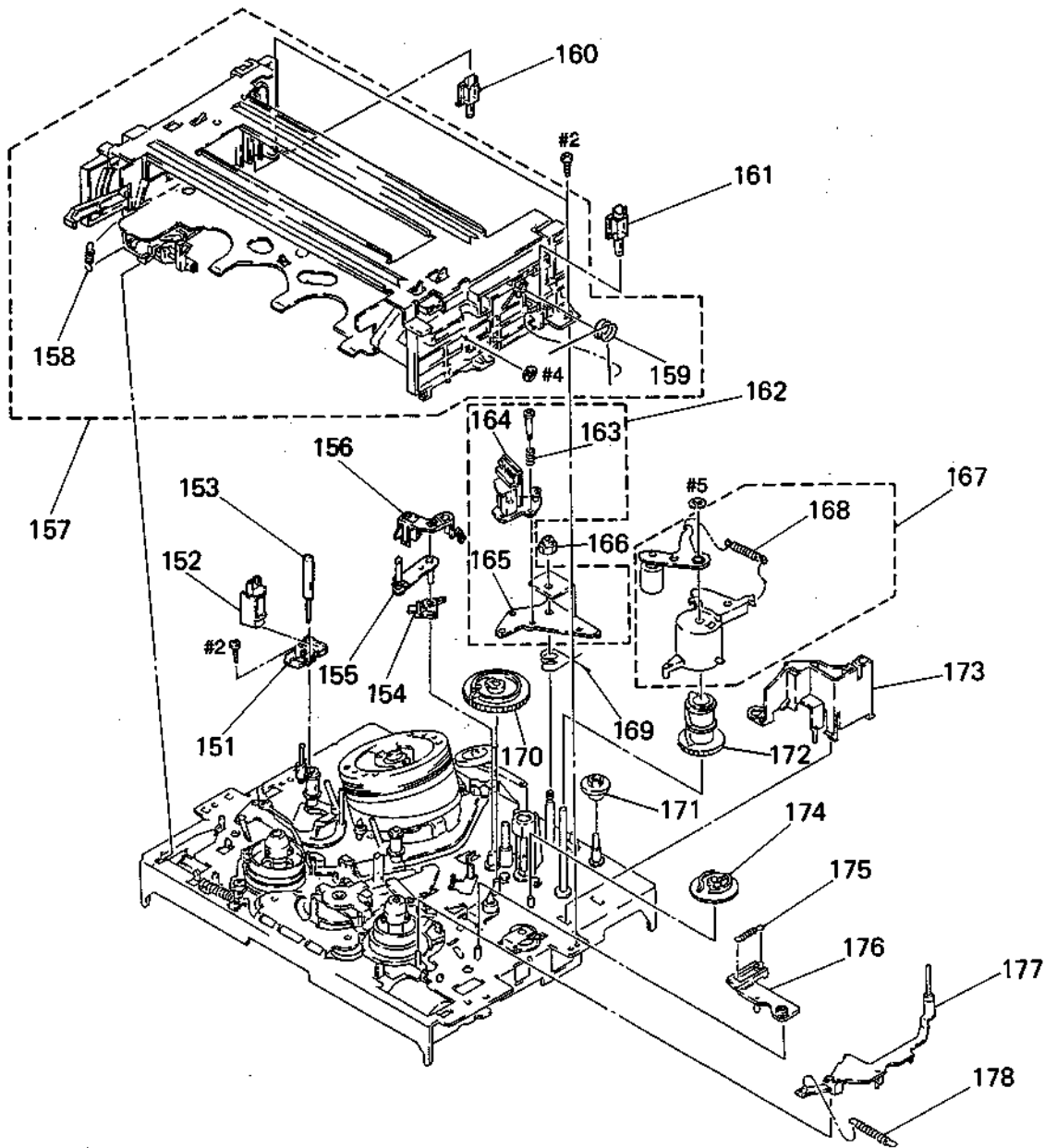
### 5-1-3. CHASSIS ASSEMBLY



| Ref. No. | Part No.     | Description  | Remark |
|----------|--------------|--|--------|
| * 101    | A-6794-139-A | LE-12 BOARD, COMPLETE (790, 960HF/HFMX)                  |        |
| * 101    | A-6794-141-A | LE-15 BOARD, COMPLETE (960HFCS/HFPX)                     |        |
| * 102    | 3-966-254-01 | HOLDER, LE PC BOARD (790, 960)                           |        |
| 103      | 1-776-228-11 | CABLE, FLAT (FDL-1) 10P (790, 960)                       |        |
| 104      | 3-966-255-01 | KNOB (3P), SLIDE (790, 960)                              |        |
| 105      | 3-966-256-01 | KNOB (4P), SLIDE (790, 960)                              |        |
| * 106    | A-6782-790-A | HI-24 BOARD, COMPLETE (760HF, 761)                       |        |
| * 106    | A-6782-797-A | HI-37 BOARD, COMPLETE (L7HFCS)                           |        |
| * 106    | A-6782-801-A | HI-24 BOARD, COMPLETE (L5MX/PA)                          |        |
| * 106    | A-6782-805-A | HI-37 BOARD, COMPLETE (760HFPX)                          |        |
| * 106    | A-6782-807-A | HI-36 BOARD, COMPLETE (960HFCS/HFPX)                     |        |
| * 106    | A-6782-810-A | HI-23 BOARD, COMPLETE (960HF/HFMX)                       |        |
| * 106    | A-6782-813-A | HI-23 BOARD, COMPLETE (790)                              |        |
| * 106    | A-6782-816-A | HI-24 BOARD, COMPLETE (L7HFMX/HFPA)                      |        |
| * 106    | A-6782-822-A | HI-37 BOARD, COMPLETE (L5CS)                             |        |
| 107      | 1-776-225-11 | CABLE, FLAT (FMH-9) 15P                                  |        |
| * 108    | A-6794-137-A | DC-68 BOARD, COMPLETE (790, 960HF/HFMX)                  |        |
| * 108    | A-6794-137-A | DC-69 BOARD, COMPLETE (760HF, 761, L5MX/PA, L7HFMX/HFPA) |        |
| * 108    | A-6794-137-A | DC-77 BOARD, COMPLETE (960HFCS/HFPX)                     |        |
| * 108    | A-6794-137-A | DC-78 BOARD, COMPLETE (760HFPX, L5CS, L7HFCS)            |        |
| * 109    | 3-966-237-01 | HOLDER (ST), MA  |        |
| * 110    | A-6782-791-A | RP-198 BOARD, COMPLETE (760HF, 761, L7HFMX/HFPA)         |        |
| * 110    | A-6782-796-A | RP-203 BOARD, COMPLETE (760HFPX, L7HFCS)                 |        |
| * 110    | A-6782-799-A | RP-197 BOARD, COMPLETE (790)                             |        |

| Ref. No. | Part No.     | Description  | Remark |
|----------|--------------|--|--------|
| * 110    | A-6782-808-A | RP-202 BOARD, COMPLETE (960HFCS/HFPX)                    |        |
| * 110    | A-6782-811-A | RP-197 BOARD, COMPLETE (960HF/HFMX)                      |        |
| * 110    | A-6782-821-A | RP-203 BOARD, COMPLETE (L5CS)                            |        |
| * 110    | A-6782-832-A | RP-198 BOARD, COMPLETE (L5MX/PA)                         |        |
| * 111    | A-6782-792-A | MA-252 BOARD, COMPLETE (760, 761)                        |        |
| * 111    | A-6782-800-A | MA-251 BOARD, COMPLETE (790)                             |        |
| * 111    | A-6782-802-A | MA-252 BOARD, COMPLETE (L5)                              |        |
| * 111    | A-6782-815-A | MA-251 BOARD, COMPLETE (960)                             |        |
| * 111    | A-6782-817-A | MA-252 BOARD, COMPLETE (L7)                              |        |
| * 112    | A-6782-789-A | PS-356 BOARD, COMPLETE (760HF, 761, L7HFMX/HFPA)         |        |
| * 112    | A-6782-804-A | PS-367 BOARD, COMPLETE (960HFCS/HFPX)                    |        |
| * 112    | A-6782-812-A | PS-355 BOARD, COMPLETE (790, 960HF/HFMX)                 |        |
| * 112    | A-6782-819-A | PS-368 BOARD, COMPLETE (760HFPX, L7HFCS)                 |        |
| * 112    | A-6782-820-A | PS-368 BOARD, COMPLETE (L5CS)                            |        |
| * 112    | A-6782-830-A | PS-356 BOARD, COMPLETE (L5MX/PA)                         |        |
| 113      | 3-966-229-01 | INSULATOR (ST) (EXCEPT 761)                              |        |
| 113      | 3-966-229-31 | INSULATOR (ST) (TITANIUM) (761)                          |        |
| * 114    | A-6782-788-A | DM-48 BOARD, COMPLETE (760HF, 761, L5MX/PA, L7HFMX/HFPA) |        |
| * 114    | A-6782-803-A | DM-51 BOARD, COMPLETE (960HFCS/HFPX)                     |        |
| * 114    | A-6782-809-A | DM-47 BOARD, COMPLETE (790HF, 960HF/HFMX)                |        |
| * 114    | A-6782-818-A | DM-52 BOARD, COMPLETE (760HFPX, L5CS, L7HFCS)            |        |
| * 115    | 3-704-386-11 | LABEL, TELESONIC (790, 960)                              |        |
| S410     | 1-572-662-11 | SWITCH, ROTARY (DUAL MODE SHUTTLE)                       |        |

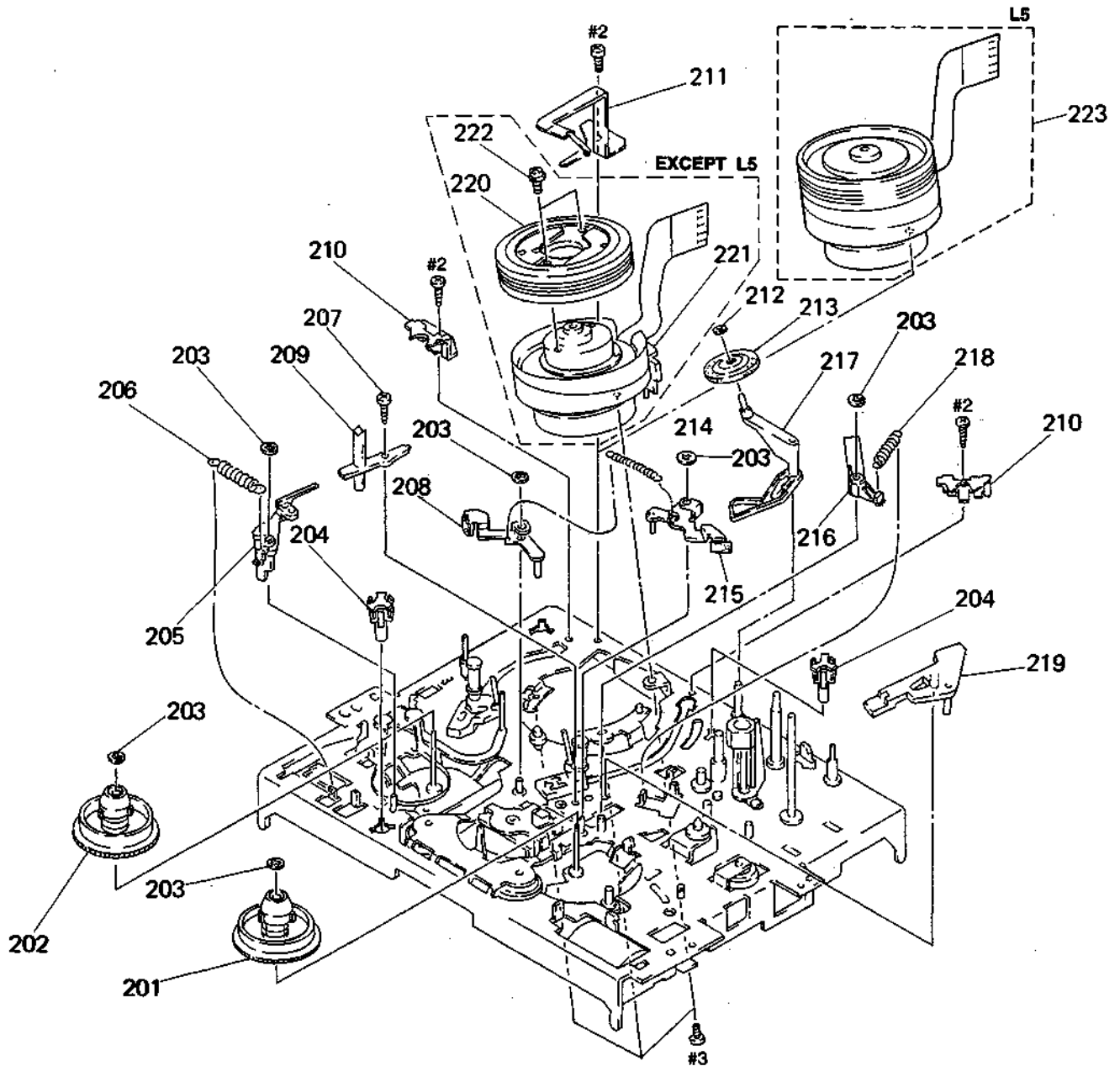
### 5-1-4. MECHANISM CHASSIS ASSEMBLY (1)



| Ref. No. | Part No.     | Description                    | Remark | Ref. No. | Part No.     | Description                    | Remark |
|----------|--------------|--------------------------------|--------|----------|--------------|--------------------------------|--------|
| 151      | X-3945-348-1 | FEH ASSY                       |        | 165      | 3-958-491-01 | BASE, ACE                      |        |
| 152      | 1-500-144-11 | HEAD, FE                       |        | 166      | 3-942-867-01 | NUT, AC HEIGHT ADJUSTMENT      |        |
| 153      | X-3944-460-1 | ROLLER ASSY, TG2               |        | 167      | A-6746-072-A | PRESS BLOCK ASSY, PINCH        |        |
| 154      | 3-958-421-01 | HOLDER, TG8                    |        | 168      | 3-958-455-01 | SPRING (PINCH), TENSION        |        |
| 155      | X-3944-797-1 | TG8 ASSY                       |        | 169      | 3-958-487-01 | SPRING, (AEC) TORSION COIL     |        |
| 156      | 3-962-298-01 | BRACKET, TG7 TAPE              |        | 170      | 3-958-152-01 | GEAR, TG8                      |        |
| 157      | A-6751-496-C | FL BLOCK ASSY                  |        | 171      | 3-958-501-01 | SCREW, ACE ADJUSTMENT          |        |
| 158      | 3-958-467-01 | SPRING, TENSION COIL           |        | 172      | 3-958-151-01 | GEAR, ELEVATOR                 |        |
| 159      | 3-958-195-01 | SPRING, TORSION                |        | 173      | 3-958-454-01 | OPNER, LID                     |        |
| 160      | 3-960-215-01 | PLATE, LIGHT GUIDE, END SENSOR |        | 174      | 3-958-153-01 | GEAR, PRESS                    |        |
| 161      | 3-960-216-01 | PLATE, LIGHT GUIDE, TOP SENSOR |        | 175      | 3-958-462-01 | SPRING (RVS BRAKE), TENSION    |        |
| 162      | A-6736-103-A | ACE BLOCK ASSY                 |        | 176      | X-3943-885-1 | ARM ASSY, RVS BRAKE            |        |
| 163      | 3-960-439-02 | SPRING (ACE), COMPRESSION      |        | 177      | X-3943-882-1 | BRAKE (T) ASSY, SOFT           |        |
| 164      | 1-506-485-11 | PIN, CONNECTOR 6P              |        | 178      | 3-958-505-01 | SPRING (SOFT BRAKE T), TENSION |        |

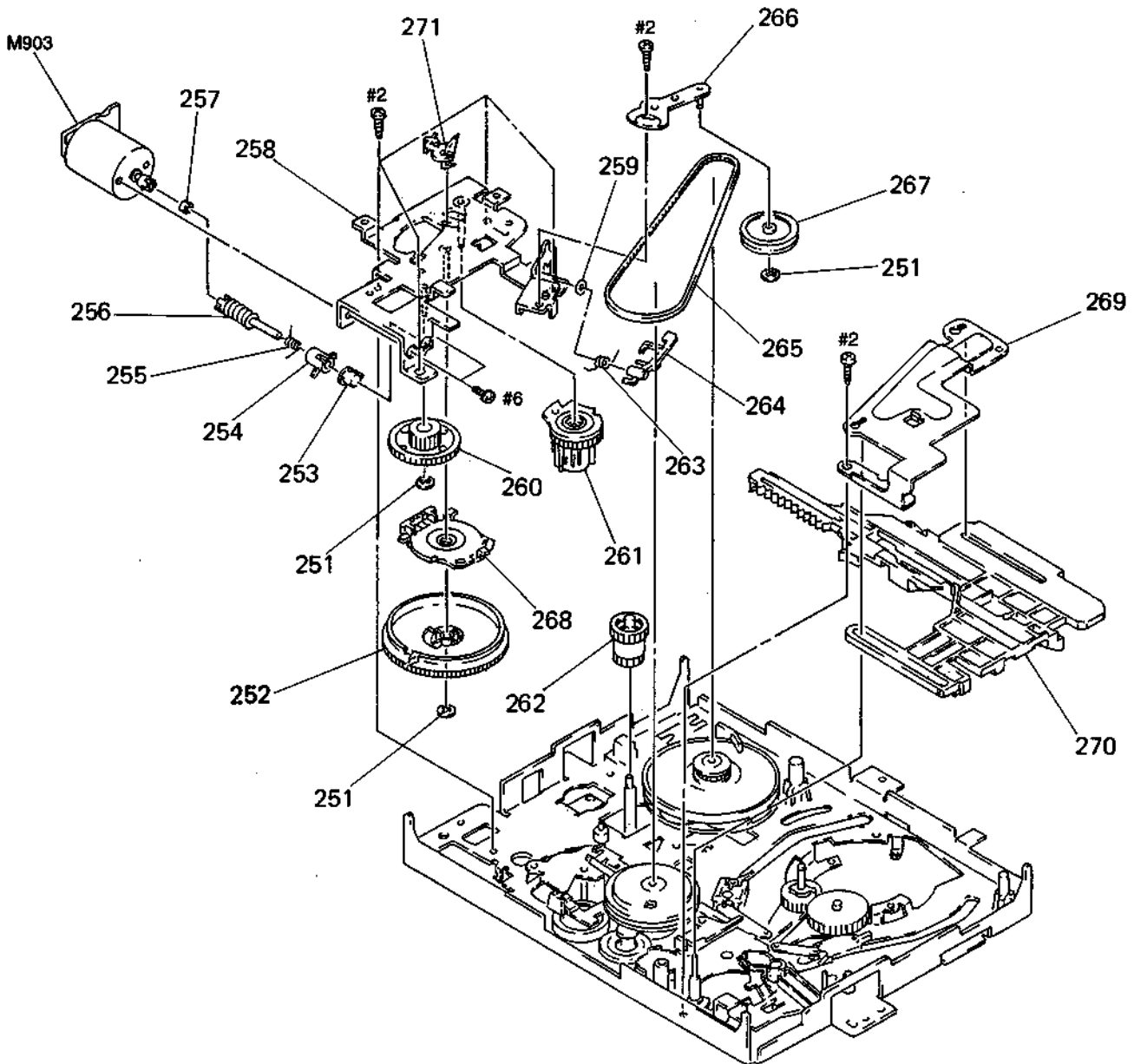


### 5-1-5. MECHANISM CHASSIS ASSEMBLY (2)



| Ref. No. | Part No.     | Description                 | Remark | Ref. No. | Part No.     | Description                              | Remark              |
|----------|--------------|-----------------------------|--------|----------|--------------|--|---------------------|
| 201      | X-3943-903-1 | TABLE, REEL (T) ASSY        |        | 215      | X-3945-651-1 | ARM (T) ASSY, MAIN BRAKE                 |                     |
| 202      | X-3943-902-1 | TABLE, REEL (S) ASSY        |        | 216      | 3-960-139-01 | ARM, NEUTRALITY                          |                     |
| 203      | 3-669-595-00 | WASHER (2), STOPPER         |        | 217      | X-3943-896-1 | ARM ASSY, HC                             |                     |
| 204      | 3-958-390-01 | SHAFT, PC BOARD             |        | 218      | 3-958-535-01 | SPRING, TENSION                          |                     |
| 205      | 3-958-450-01 | BRAKE (S), SOFT             |        | 219      | 3-960-138-01 | ARM, PENDULUM COMPUSTION                 |                     |
| 206      | 3-958-443-01 | SPRING, STRETCH COIL SPRING |        | 220      | 8-848-576-02 | DRUM ASSY, ROTARY UPPER (DZR-45-R)       | (760, 761, 790, L7) |
| 207      | 3-961-441-01 | SCREW (3X8)                 |        | 220      | 8-848-594-02 | DRUM ASSY, ROTARY UPPER (DZR-51-R) (960) |                     |
| 208      | X-3945-650-1 | BRAKE (S) ASSY, MAIN        |        | 221      | 8-848-658-11 | DRUM ASSY, LOWER (DZL-45B/J-RP)          | (760, 761, 790, L7) |
| 209      | 3-958-391-01 | PLATE, LIGHT GUIDE, LED     |        |          |              |  |                     |
| 210      | 3-958-389-01 | CATCHER                     |        | 221      | 8-848-666-11 | DRUM ASSY, LOWER (DZH-51B/J-RP) (960)    |                     |
| 211      | X-3943-899-5 | GROUND ASSY, SHAFT          |        | 222      | 2-643-205-01 | SCREW, +PW 3X8                           |                     |
| 212      | 3-321-393-01 | WASHER, STOPPER             |        | 223      | 8-848-681-11 | DRUM ASSY (DZH-73B/Q-RP) (L5)            |                     |
| 213      | X-3944-363-1 | ROLLER ASSY, HC             |        |          |              |  |                     |
| 214      | 3-958-517-01 | SPRING, TENSIONCOIL         |        |          |              |  |                     |

### 5-1-6. MECHANISM CHASSIS ASSEMBLY (3)



| Ref. No. | Part No.     | Description             | Remark | Ref. No. | Part No.     | Description                     | Remark |
|----------|--------------|-------------------------|--------|----------|--------------|---------------------------------|--------|
| 251      | 3-669-595-00 | WASHER (2), STOPPER     |        | 262      | 3-958-162-01 | GEAR, UPPER/LOWER COMMUNICATION |        |
| 252      | 3-958-161-04 | GEAR, CAM               |        | 263      | 3-958-445-01 | SPRING, TORSIONCOIL (CAP BRAKE) |        |
| 253      | 3-958-155-01 | BEARING, CAM MOTOR      |        | 264      | X-3943-888-1 | BRAKE ASSY, CAP                 |        |
| 254      | 3-958-160-01 | PROPELLOR               |        | 265      | 3-958-361-01 | BELT, TIMING                    |        |
| 255      | 3-958-460-01 | SPRING, ONE-WAY         |        | 266      | X-3943-889-1 | ARM ASSY, TENSION VEHICLE       |        |
| 256      | 3-958-159-01 | WORM                    |        | 267      | 3-958-448-01 | WHEEL, TENSION                  |        |
| 257      | 3-959-840-11 | RUBBER, JOINT           |        | 268      | 1-762-076-11 | SWITCH, ROTARY                  |        |
| * 258    | X-3943-884-1 | CHASSIS ASSY, CAM MOTOR |        | * 269    | 3-959-763-01 | RETAINER                        |        |
| 259      | 3-701-439-21 | WASHER                  |        | 270      | 3-958-163-04 | SLIDER, MAIN                    |        |
| 260      | 3-958-157-01 | WHEEL, WORM             |        | 271      | 3-965-977-01 | RETAINER, CAM GEAR              |        |
| 261      | 3-958-156-02 | GEAR, FL DRIVING        |        | M903     | X-3943-883-1 | MOTOR ASSY, CAM                 |        |

SECTION 6  
INTERFACE, ICPIN FUNCTION DESCRIPTION

6-1. SYSTEM CONTROL - VIDEO BLOCK INTERFACE (MA-251 BOARD IC201)

| Signal           | Pin No.          | I/O | STOP<br>FF/<br>REW | TAPE<br>THREAD-<br>ING | TAPE<br>UNTREAD-<br>ING | PB | PB •<br>PAUSE | SLOW | ×2 | CUE | REVIEW | REC | REC •<br>PAUSE |
|------------------|------------------|-----|--------------------|------------------------|-------------------------|----|---------------|------|----|-----|--------|-----|----------------|
| V PB             | MA-251<br>IC201⑤ | O   | H                  | H                      | H                       | L  | L             | L    | L  | L   | L      | H   | H              |
| RF SWP<br>(SW30) | MA-251<br>IC201① | O   | *2                 | *2                     | *2                      | *2 | *2            | *2   | *2 | *2  | *2     | *2  | *2             |
| QVD              | MA-251<br>IC201③ | O   | L                  | L                      | L                       | *3 | *4            | *4   | *4 | *4  | *4     | L   | L              |
| SP               | MA-251<br>IC201④ | O   | *6                 | *6                     | *6                      | *7 | *7            | *7   | *7 | *7  | *7     | *8  | *6             |
| SP/EP: HI - IMP  | MA-251<br>IC201⑨ | O   | *12                | *12                    | *12                     | *7 | *7            | *7   | *7 | *7  | *7     | *12 | *12            |
| V SYNC           | MA-251<br>IC201⑥ | I   | *8                 | *8                     | *8                      | *8 | *8            | *8   | *8 | *8  | *8     | *8  | *8             |
| CTL REC          | MA-251<br>IC201⑦ | O   | L                  | L                      | L                       | L  | L             | L    | L  | L   | L      | H   | L              |
| LINE 1           | MA-251<br>IC201⑩ | O   | L                  | L                      | L                       | L  | L             | L    | L  | L   | L      | L   | L              |
| JOG              | MA-251<br>IC201⑧ | O   | L                  | L                      | L                       | L  | H             | H    | H  | H   | H      | L   | L              |
| ORC SETTEI       | MA-251<br>IC201⑪ | O   | L                  | L                      | L                       | L  | L             | L    | L  | L   | L      | *13 | *13            |

- \*1. Forward slow mode: "H-Z (2.5 V)" in tape stop, "L" in tape running (approx. 40 msec.).  
Forward slow mode: "H-Z (2.5 V)" in tape stop, "H" in tape running SP mode (approx. 40 msec.).
- \*2. Synchronized with drum rotation, 30 Hz 50% duty pulse.
- \*3. Normally "L", "H" when CTL signal is not generated.
- \*4. V period "H" pulse.
- \*5. "H" in SP mode, "L" in LP/EP mode.
- \*6. Selected by REC mode. SP mode: "L".  
Selected by tape recording mode.
- \*7. Composite Sync signal (positive).
- \*8. "H" when menu screen or blue back screen.
- \*9. "H-Z (2.5 V)" in LP/EP mode, "H" in SP mode.
- \*10. Selected by REC mode: "H" EP mode.
- \*11. Selected by REC mode: "H" LP mode.
- \*12. Selected by REC mode: "H" LP mode.
- \*13. "H" during APC measurement.

| Mode   | SP | LP | EP |
|--------|----|----|----|
| Signal |    |    |    |
| SP ①   | L  | H  | H  |
| LP ②   | L  | H  | L  |

## 6-2. SYSTEM CONTROL - SERVO PERIPHERAL CIRCUIT INTERFACE (MA-251 BOARD IC201)

| Signal    | Pin No.          | I/O        | STOP | FF            | REW           | TAPE<br>TH-READ<br>-ING | TAPE<br>UNTH-READ<br>-ING | PB<br>PAUSE | SLOW | CUE           | x 2           | REVIEW        | REC           | REC •<br>PAUSE | PB<br>INDEX<br>WRITERS |
|-----------|------------------|------------|------|---------------|---------------|-------------------------|---------------------------|-------------|------|---------------|---------------|---------------|---------------|----------------|------------------------|
| REC CTL   | MA-251<br>IC201① | O          | *1   | *1            | *1            | *1                      | *1                        | *1          | *1   | *1            | *1            | *1            | *1            | *1             |                        |
| CAP STOP  | MA-251<br>IC201② | O<br>(O.D) | L    | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D)           | HI-Z<br>(O.D)             | L           | *3   | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D)  |                        |
| STEP PLS  | MA-251<br>IC201③ | O          | L    | L             | L             | L                       | L                         | L           | *2   | L             | L             | L             | L             | L              |                        |
| CTL REC   | MA-251<br>IC201④ | O          | L    | L             | L             | L                       | L                         | L           | L    | L             | L             | L             | H             | L              | H                      |
| CTL-INDEX | MA-251<br>IC201⑤ | O          | L    | L             | L             | L                       | L                         | L           | L    | L             | L             | L             | L             | L              | H                      |
| PB CTL    | MA-251<br>IC201⑥ | I          | H    | *6            | *6            |                         |                           | *1          | *2   | *6            | *6            | *6            | *1            | H              |                        |
| DRM PG    | MA-251<br>IC201⑦ | I          | *4   | *7            | *7            | *5                      | *5                        | *7          | *7   | *7            | *7            | *7            | *7            | *7             |                        |
| DRM FG    | MA-251<br>IC201⑧ | I          | *4   | *8            | *8            | *5                      | *5                        | *8          | *8   | *8            | *8            | *8            | *8            | *8             |                        |
| CAP FG    | MA-251<br>IC201⑨ | I          | H/L  | *6            | *6            | *5                      | *5                        | *6          | *9   | *6            | *6            | *6            | *6            | H/L            |                        |
| CAP DA    | MA-251<br>IC201⑩ | O          | *10  | *10           | *10           | *10                     | *10                       | *11         | *10  | *11           | *11           | *11           | *11           | *10            |                        |
| DRM DA    | MA-251<br>IC201⑪ | O          | *12  | *12           | *12           | *12                     | *12                       | *12         | *12  | *12           | *12           | *12           | *12           | *12            |                        |
| CTL STEP  | MA-251<br>IC201⑫ | O          | L    | L             | L             | L                       | L                         | L           | *13  | L             | L             | L             | L             | L              |                        |

\*1. 30 Hz or 25 Hz pulse.

\*2. Pulse at tape running.

\*3. Reverse logic pulse of STEP PLS.

\*4. "L" when drum rotation stop.

\*5. Unstable period pulse.

\*6. Pulse of period in proportion to tape speed.

\*7. 30 Hz or 25 Hz pulse.

\*8. 360 Hz or 300 Hz or 180/150 Hz pulse.

\*9. Pulse at tape running.

\*10. Approx. 2 msec period "H" or "L" pulse.

\*11. Approx. 1.5 msec period "H" or "L" pulse.

\*12. Approx. 3 msec period "H" or "L" pulse.

\*13. "H" when FWD direction STEP drive.

### 6-3. SYSTEM CONTROL - MECHANISM INTERFACE (MA-251 BOARD IC201)

| Signal     | Pin No.       | IVO | EJECTED | CASSETTE LOADING | CASSETTE UNLOADING | TAPE THREADING | TAPE UNTHREADING | STOP | FF | REW | PB | PB PAUSE | SLOW | x 2 | CUE | REVIEW | REC | REC PAUSE |
|------------|---------------|-----|---------|------------------|--------------------|----------------|------------------|------|----|-----|----|----------|------|-----|-----|--------|-----|-----------|
| CAM LOAD   | MA-251 IC201④ | O   | L       | H                | L                  | H              | L                | L    | L  | L   | L  | L        | L    | L   | L   | L      | L   | L         |
| CAM UNLOAD | MA-251 IC201④ | O   | L       | L                | H                  | L              | H                | L    | L  | L   | L  | L        | L    | L   | L   | L      | L   | L         |
| CAM 12V    | MA-251 IC201⑤ | O   |         | H                | L                  | H              | L                |      |    |     |    |          |      |     |     |        |     |           |
| MODE 1     | MA-251 IC201⑥ | I   | H       | L                | L                  | *8             | *8               | H    | H  | H   | H  | H        | H    | H   | H   | L      | H   | H         |
| MODE 2     | MA-251 IC201⑥ | I   | L       | L                | L                  | *8             | *8               | L    | L  | L   | H  | H        | H    | H   | H   | H      | H   | H         |
| MODE 3     | MA-251 IC201⑥ | I   | L       | L                | L                  | *8             | *8               | H    | H  | H   | L  | H        | H    | L   | L   | H      | L   | H         |
| MODE 4     | MA-251 IC201⑥ | I   | L       | H                | H                  | *8             | *8               | H    | L  | L   | L  | L        | L    | L   | L   | L      | L   | L         |
| REC PRF    | MA-251 IC201⑦ | I   | L       | *2               | *2                 | *2             | *2               | *2   | *2 | *2  | *2 | *2       | *2   | *2  | *2  | *2     | *2  | *2        |
| TREEL FG   | MA-251 IC201⑧ | I   | H/L     | H/L              | H/L                | H/L            | H/L              | H/L  | *3 | *3  | *3 | H/L      | *3   | *3  | *3  | *3     | *3  | H/L       |
| SREEL FG   | MA-251 IC201⑧ | I   | H/L     | H/L              | H/L                | *3             | *3               | H/L  | *3 | *3  | *3 | H/L      | *3   | *3  | *3  | *3     | *3  | H/L       |
| T/E LED    | MA-251 IC201⑨ | O   | *4      | *4               | *4                 | *4             | *4               | *4   | *4 | *4  | *4 | *4       | *4   | *4  | *4  | *4     | *4  | *4        |
| CAP TRQ 1  | MA-251 IC201⑩ | O   |         |                  |                    |                |                  |      |    |     |    |          | *8   |     |     |        |     |           |
| CAP TRQ 2  | MA-251 IC201⑩ | O   |         |                  |                    |                |                  |      |    |     |    | L        | *8   |     |     |        |     | L         |
| CAP TRQ 3  | MA-251 IC201⑩ | O   |         |                  |                    |                |                  |      | H  | H   |    |          | *8   |     | H   | H      |     |           |
| CAP STOP   | MA-251 IC201⑪ | O   | L       | L                | L                  | H              | H                | L    | H  | H   | H  | L        | *5   | H   | H   | H      | H   | L         |
| CAP RVS    | MA-251 IC201⑫ | O   | H       | L                | L                  | L              | H                | H/L  | L  | H   | L  | L        | L/*5 | L   | L   | H      | L   | L         |
| CAP DA     | MA-251 IC201⑬ | O   |         |                  |                    |                |                  |      |    |     |    |          |      |     |     |        |     |           |
| T SENS     | MA-251 IC201⑭ | I   | *4      | *4               | *4                 | *7             | *7               | *7   | *7 | *7  | *7 | *7       | *7   | *7  | *7  | *7     | *7  | *7        |
| S SENS     | MA-251 IC201⑮ | I   | *4      | *4               | *4                 | *7             | *7               | *7   | *7 | *7  | *7 | *7       | *7   | *7  | *7  | *7     | *7  | *7        |

\*1. "H" when mechanism mode transition.  
 \*2. "L" when erasing protection tab is bent, "H" when not bent.  
 \*3. Pause of period in proportion to reel rotating speed.  
 \*4. Approx. 2 msec period "H" pulse.  
 \*5. Pulse at tape running.  
 \*6. "L" when tape running and CAP RVS is "H".  
 \*7. Normally "L". 2 msec period "H" pulses when tape top or tape end is detected.  
 \*8. Uncertainty.

### 6-4. SYSTEM CONTROL - SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-251 BOARD IC201)

| Signal      | Pin No.      | I/O | I/O level   |
|-------------|--------------|-----|---|
| ASURA RESET | MA-251 IC201 | I   | Normally "H", "L" when service interruption is detected or restored.      |
| ASURA CS    | MA-251 IC201 | I   | Chip select signal from timer microprocessor. V period "L" pulse.         |
| S IN 0      | MA-251 IC201 | I   | Serial communication data from timer microprocessor. V period "L" pulse.  |
| S OUT 0     | MA-251 IC201 | O   | Serial communication data to timer microprocessor. V period "L" pulse.    |
| S CLK       | MA-251 IC201 | I   | Serial communication clock with timer microprocessor. V period "L" pulse. |

### 6-5. SYSTEM CONTROL - AUDIO BLOCK INTERFACE (MA-251 BOARD IC201)

| Signal   | Pin No.             | I/O | STOP/FF/REW  | TAPE LOADING | TAPE UNLOADING | PB | PB PAUSE | SLOW | x 2 | CUE | REVIEW | REC | REC PAUSE |
|----------|---------------------|-----|--|--------------|----------------|----|----------|------|-----|-----|--------|-----|-----------|
| AF ENV   | MA-251 IC201        | I   | AF RF envelope signal input terminal for automatic tracking. |              |                |    |          |      |     |     |        |     |           |
| A MUTE   | MA-251 IC201 (O.D.) | O   | L  | L            | L              | *1 | H        | H    | H   | H   | H      | L   | L         |
| NA REC P | MA-251 IC201        | O   | L  | L            | L              | L  | L        | L    | L   | L   | L      | H   | L         |
| AF REC P | MA-251 IC201        | O   | L  | L            | L              | L  | L        | L    | L   | L   | L      | H   | L         |
| AF SWP   | MA-251 IC201        | O   | *1   | *1           | *1             | *1 | *1       | *1   | *1  | *1  | *1     | *1  | *1        |
| FULLERS  | MA-251 IC201 (O.D.) | O   | H  | H            | H              | H  | H        | H    | H   | H   | H      | L   | H         |

\*1. 30 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.

\*2. Selected by REC mode selector. SP mode: "L".

\*3. Selected by tape recording mode. SP mode: "L".

### 6-6. SYSTEM CONTROL AND RF MODULATOR - INPUT SELECTION BLOCK INTERFACE

| Signal | Pin No.      | I/O | I/O level                        |
|--------|--------------|-----|----------------------------------|
| LINE 1 | MA-251 IC201 | O   | *1. Input select control signal. |
| LINE 2 | MA-251 IC201 | O   |                                  |

| Input Signal | Tuner | LINE 1 | LINE 2 |
|--------------|-------|--------|--------|
| LINE 1       | L     | H      | L      |
| LINE 2       | L     | L      | H      |

\*1.

**6-7. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION  
(MA-251 BOARD IC201 CXP-87248A-008Q: SLV-790, 960)**

| Pin No. | Pin name      | IO | Function  |
|---------|---------------|----|---|
| 1       | RF SWP        | O  | RF switching pulse output   |
| 2       | DVD           | O  | Quasi I/O pulse output  |
| 3       | CHD ENABLE    | O  | Quasi I/O voltage level control   |
| 4       | AF REC P      | O  | "H" output when Hi-Fi audio REC   |
| 5       | NTSC          | O  | "H" PNL "L" when NTSC mode  |
| 6       | FE ON         | O  | Flying erase ON/OFF   |
| 7       | REC CTL       | O  | REC CTL signal output   |
| 8       | CAP TR02      | O  | Capstan current control   |
| 9       | APC2          | O  | APC control input terminal 2  |
| 10      | APC1          | O  | APC control input terminal 1  |
| 11      | NA REC P      | IO | Normal audio recording mode H: recording mode<br>"L" when SP mode "H" when EPALP mode |
| 12      | SPEALP        | O  | Leading motor rotating direction control  |
| 13      | CAM LOAD      | I  | Leading motor rotating direction control  |
| 14      | CAM UNLOAD    | I  | Leading motor rotating direction control  |
| 15      | CLK (REC PRF) | I  | Erasing protection lead, cassette IN detection input                                  |
| 16      | RENTAL        | IO | YNR control   |
| 17      | NC            | O  | Not used  |
| 18      | 359 NTSC      | I  | Tuner audio selection signal H: 3.59 XTAL   |
| 20      | HT JUDGE      | I  | 4.095 MHz judge input   |
| 21      | BACK ON       | O  | Not used  |
| 22      | PAL 60        | O  | NTSC PB control signal "H" when NTSC PB on pal TV                                     |
| 23      | TV/ATR        | O  | "L" when VTR mode "H" when TV mode  |
| 24      | AV CONT       | O  | ON/OFF control  |
| 25      | MESOCAM       | IO | "L" in AT mode  |
| 26      | CBC ON        | O  | Cable box control bit   |
| 27      | MODE 4        | I  | Mechanism section CAM encoder input   |
| 28      | MODE 3        | I  | Mechanism section CAM encoder input   |
| 29      | MODE 2        | I  | Mechanism section CAM encoder input   |
| 30      | MODE 1        | I  | Mechanism section CAM encoder input   |
| 31      | CAM TV        | O  | CAM motor reference voltage   |
| 32      | VE LED        | O  | VE LED output   |
| 33      | CAP TR02      | O  | Capstan current control signal 2 L: FF/REW to STOP                                    |
| 34      | CAP TR01      | O  | Capstan current control signal 1 L: SLOW speed down                                   |
| 35      | CAP STOP      | O  | Capstan STOP signal output  |
| 36      | FULLERS       | O  | Full erase control  |
| 37      | NC            | O  | Not used  |
| 38      | NC            | O  | Not used  |
| 39      | AP            | I  | Fixed to L  |
| 40      | ASURA RESET   | I  | System reset input  |
| 41      | VSS           | -  | GND   |
| 42      | XTAL          | -  | System clock 16 MHz   |
| 43      | EXTRAL        | -  | System clock 16 MHz   |
| 44      | ASURA CS      | I  | S/S microcomputer chip select signal  |
| 45      | S IN 0        | I  | Serial communication signal   |
| 46      | S OUT 0       | O  | Serial communication signal   |
| 47      | SCLK          | O  | Serial communication signal   |
| 48      | MICOL ON      | O  | ?   |
| 49      | F MONO        | O  | Tuner Audio Select  |
| 50      | EDIT          | O  | EDIT control  |

| Pin No. | Pin name        | IO | Function   |
|---------|-----------------|----|--|
| 51      | LINE 3 CONT     | O  | Input selection control signal 3                         |
| 52      | AVSS            | -  | UNSW GND   |
| 53      | AVREF           | -  | AD port reference input UNSW 5V                          |
| 54      | AVCO            | -  | UNSW 5V  |
| 55      | APC ERROR       | I  | APC error input  |
| 56      | NTPB SW         | I  | NTSC PB switch   |
| 57      | DESTE DEW       | I  | DEW sensor input Not used                                |
| 58      | VA ADJ          | I  | ADJ mode ON: SWP Adj 2.5V: HRT Adj                       |
| 59      | AF SW           | I  | Hi-Fi audio playback signal envelope                     |
| 60      | RF SW           | I  | Video playback signal envelope                           |
| 61      | T SENS          | I  | Tape up and sensor input                                 |
| 62      | S SENS          | I  | Supply end sensor input                                  |
| 63      | S REEL FG       | I  | S side reel FG input                                     |
| 64      | T REEL FG       | I  | T side reel FG input                                     |
| 65      | VDD             | I  | 5V   |
| 66      | V SYNC          | I  | Composite sync input                                     |
| 67      | PB CTL          | I  | Playback CTL input                                       |
| 68      | DRM PG          | I  | Drum PG input  |
| 69      | DRM FG          | I  | Drum FG input  |
| 70      | CAP FG          | I  | Capstan FG input   |
| 71      | POWER SAVE CONT | O  | Power save control signal output                         |
| 72      | CAP RV5         | O  | Capstan reverse control H when Reverse                   |
| 73      | CAP DA          | O  | Capstan error D/A output                                 |
| 74      | DRUM DA         | O  | Drum PG input  |
| 75      | CTL RED         | O  | "H" CTL write  |
| 76      | CTL STEP        | O  | CTL emp. STEP operation control                          |
| 77      | VDD             | I  | 5V   |
| 78      | VDD             | O  | 5V   |
| 79      | CTL INDEX       | O  | CTL INDEX signal input                                   |
| 80      | S01             | IO | Signal for serial communication                          |
| 81      | S02             | IO | Signal for serial communication                          |
| 82      | LINE 2 CONT     | I  | Input selection control signal 2                         |
| 83      | LINE 1 CONT     | O  | Input selection control signal                           |
| 84      | APC PWM         | O  | PWM output for APC                                       |
| 85      | NC              | I  | Not used   |
| 86      | NC              | -  | Not used   |
| 87      | NC              | -  | Not used   |
| 88      | VSS             | -  | GND  |
| 89      | VDD             | -  | 5V   |
| 90      | NC              | -  | Not used   |
| 91      | ORC SETTEI      | O  | H when ORC measurement                                   |
| 92      | A MUTE          | O  | "H" when audio mute                                      |
| 93      | SP              | O  | Tape speed Select  |
| 94      | POWER CONT 2    | O  | Power control signal 2                                   |
| 95      | NA PB           | O  | Audio output control signal H when normal audio playback |
| 96      | AF REC          | O  | "H" output when Hi-Fi audio REC                          |
| 97      | JO3             | O  | "H" when this play mode                                  |
| 98      | V PB            | O  | Video system playback mode "L" when playback             |
| 99      | STEP PLS        | O  | Step pulse H when Capstan stop driving                   |
| 100     | AF SWP          | O  | AF switching pulse output                                |

# 6-8. TUNER/TIMER MODE CONTROL PIN FUNCTION (MA-251 BOARD IC151 CXP82948-002Q)

| Pin No. | Pin Name   | IO | Function   |
|---------|------------|----|--|
| 1       | EDS DV1    | 1  | Line 21H output pulse. Pulse signal synchronized with line 21 of input video signal. |
| 2       | POWER FAIL | 1  | Power failure detect signal input.   |
| 3       | H DET      | 1  | Video signal detect signal input   |
| 4       | SIRCS IN   | 1  | SIRCS signal input   |
| 5       | EEP BUSY   | 1  | EEP Busy signal input  |
| 6       | SIRCS OUT  | 0  | SIRCS signal output  |
| 7       | BUZZER     | 0  | Buzzer output  |
| 8       | STEREO     | 0  | Tuner audio mode input (stereo)  |
| 9       | EEP RET    | 0  | EEP ROM test signal output (beep)  |
| 10      | SOCK0      | 0  | Clock for serial communication   |
| 11      | S0         | 1  | Serial data input  |
| 12      | SO0        | 0  | Serial data output   |
| 13      | EEP CS     | 0  | EEP ROM chip select signal output  |
| 14      | LANC IN    | 1  | LANC input   |
| 15      | LANCE OUT  | 0  | LANC output  |
| 16      | A00        | 1  | Key reading A/D input  |
| 17      | A01        | 1  | Key reading A/D input  |
| 18      | A02        | 1  | Key reading A/D input  |
| 19      | A03        | 1  | Key reading A/D input  |
| 20      | A04        | 1  | Key reading A/D input  |
| 21      | A05        | 1  | Key reading A/D input  |
| 22      | A06        | 1  | Key reading A/D input  |
| 23      | A07        | 1  | Key reading A/D input  |
| 24      | A000       | -  | UNSW SV  |
| 25      | AV REF     | -  | AD port reference input UNSW SV  |
| 26      | SCLO       | 0  | PC BUS (clock)   |
| 27      | CG CS      | 0  | Character generator chip select signal   |
| 28      | SDA0       | 0  | PC BUS (data)  |
| 29      | LED CS     | 0  | LED driver chip select signal  |
| 30      | AVSS       | -  | UNSW GND   |
| 31      | EXTAL      | -  | System clock Not used  |
| 32      | XTAL       | -  | GND  |
| 33      | VSS        | -  | GND  |
| 34      | RST        | 1  | Reset signal in  |
| 35      | PLL CLK    | 0  | Tuner clock signal   |
| 36      | PLL DATA   | 0  | Tuner data signal  |
| 37      | PLL ENABLE | 0  | Tuner enable signal  |
| 38      | MANVSRP    | 0  | Normal audio MANVSRP select control  |
| 39      | SAP        | 1  | MANVSRP logic input  |
| 40      | EDS CS     | 0  | EDS microcomputer chip select  |

| Pin No. | Pin Name     | IO | Function                                   |
|---------|--------------|----|--|
| 41      | TA MUTE      | 0  | Tuner audio mode control signal            |
| 42      | AUTO RESET   | 0  | T1' during auto preset                     |
| 43      | VFDP         | -  | -30V                                       |
| 44-42   | SEG 1-19     | 0  | LCD segment output                         |
| 53      | N.C.         | -  | Not used                                   |
| 54      | N.C.         | -  | Not used                                   |
| 55      | N.C.         | -  | Not used                                   |
| 56-71   | GRID 0-1     | 0  | LCD grid output                            |
| 72      | VDD          | -  | UNSW SV                                    |
| 73      | TX           | -  | Connected to oscillator for clock          |
| 74      | TEX          | -  | Connected to -5V                           |
| 75      | NCVPP        | -  | Connected to -5V                           |
| 76      | ASUPA CS     | 0  | S/S microcomputer chip select              |
| 77      | SYS RESET    | 0  | System reset signal output                 |
| 78      | POWER CONT 1 | 0  | Power supply control signal output         |
| 79      | POWER CONT 2 | 0  | Power supply control signal output for EDS |
| 80      | CG V         | 1  | Vertical sync signal input                 |



## 6-9. SYSTEM CONTROL - VIDEO BLOCK INTERFACE (MA-252 BOARD IC201)

| Signal           | Pin No.          | VO | STOP<br>FF/<br>REW | TAPE<br>THREAD-<br>ING | TAPE<br>UNTHREAD-<br>ING | PB | PB •<br>PAUSE | SLOW | × 2 | CUE | REVIEW | REC | REC •<br>PAUSE |
|------------------|------------------|----|--------------------|------------------------|--------------------------|----|---------------|------|-----|-----|--------|-----|----------------|
| V PB             | MA-252<br>IC201⑤ | O  | H                  | H                      | H                        | L  | L             | L    | L   | L   | L      | H   | H              |
| RF SWP<br>(SW30) | MA-252<br>IC201① | O  | *2                 | *2                     | *2                       | *2 | *2            | *2   | *2  | *2  | *2     | *2  | *2             |
| QVD              | MA-252<br>IC201② | O  | L                  | L                      | L                        | *3 | *4            | *4   | *4  | *4  | *4     | L   | L              |
| SP               | MA-252<br>IC201③ | O  | *6                 | *6                     | *6                       | *7 | *7            | *7   | *7  | *7  | *7     | *6  | *6             |
| SP/EP            | MA-252<br>IC201④ | O  | *12                | *12                    | *12                      | *7 | *7            | *7   | *7  | *7  | *7     | *12 | *12            |
| V SYNC           | MA-252<br>IC201⑥ | I  | *9                 | *8                     | *8                       | *8 | *8            | *8   | *8  | *8  | *8     | *8  | *8             |
| CTL REC          | MA-252<br>IC201⑦ | O  | L                  | L                      | L                        | L  | L             | L    | L   | L   | L      | H   | L              |
| LINE 1           | MA-252<br>IC201⑧ | O  | L                  | L                      | L                        | L  | L             | L    | L   | L   | L      | L   | L              |
| JOG              | MA-252<br>IC201⑨ | O  | L                  | L                      | L                        | L  | H             | H    | H   | H   | H      | L   | L              |
| ORC SETTEI       | MA-252<br>IC201⑩ | O  | L                  | L                      | L                        | L  | L             | L    | L   | L   | L      | *13 | *13            |

\*1. Forward slow mode: "H-Z (2.5 V)" in tape stop, "L" in tape running (approx. 40 msec.).

Forward slow mode: "H-Z (2.5 V)" in tape stop, "H" in tape running SP mode (approx. 40 msec.).

"L" in tape running EP mode (approx. 40 msec.).

\*2. Synchronized with drum rotation, 30 Hz 50% duty pulse.

\*3. Normally "L", "H" when CTL signal is not generated.

\*4. V period "H" pulse.

\*5. "H" in SP mode, "L" in LP/EP mode.

\*6. Selected by REC mode. SP mode: "L"

\*7. Selected by tape recording mode.

\*8. Composite Sync signal (positive).

\*9. "H" when menu screen or blue back screen.

\*10. "H-Z (2.5 V)" in LP/EP mode, "H" in SP mode.

\*11. Selected by REC mode: "H" EP mode.

\*12. Selected by REC mode: "H" LP mode.

\*13. "H" during APC measurement.

| Mode   | SP | LP | EP |
|--------|----|----|----|
| Signal |    |    |    |
| SP ①   | L  | H  | H  |
| LP ②   | L  | H  | L  |

## 6-10. SYSTEM CONTROL - SERVO PERIPHERAL CIRCUIT INTERFACE (MA-252 BOARD IC201)

| Signal    | Pin No.          | VO      | STOP | FF            | REW           | TAPE<br>THREAD<br>-ING | TAPE<br>UNTHREAD<br>-ING | PB            | PB *<br>PAUSE | SLOW | CUE           | x 2           | REVIEW        | REC           | REC *<br>PAUSE | PB<br>INDEX<br>WRITERS |
|-----------|------------------|---------|------|---------------|---------------|------------------------|--------------------------|---------------|---------------|------|---------------|---------------|---------------|---------------|----------------|------------------------|
| REC CTL   | MA-252<br>IC201① | O       | *1   | *1            | *1            | *1                     | *1                       | *1            | *1            | *1   | *1            | *1            | *1            | *1            | *1             |                        |
| CAP STOP  | MA-252<br>IC201② | O (O.D) | L    | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D)          | HI-Z<br>(O.D)            | HI-Z<br>(O.D) | L             | *3   | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D) | HI-Z<br>(O.D)  |                        |
| STEP PLS  | MA-252<br>IC201③ | O       | L    | L             | L             | L                      | L                        | L             | L             | *2   | L             | L             | L             | L             | L              |                        |
| CTL REC   | MA-252<br>IC201④ | O       | L    | L             | L             | L                      | L                        | L             | L             | L    | L             | L             | L             | H             | L              | H                      |
| CTL-INDEX | MA-252<br>IC201⑤ | O       | L    | L             | L             | L                      | L                        | L             | L             | L    | L             | L             | L             | L             | L              | H                      |
| PB CTL    | MA-252<br>IC201⑥ | I       | H    | *6            | *6            |                        |                          | *1            | H/L           | *2   | *6            | *6            | *6            | *1            | H              |                        |
| DRM PG    | MA-252<br>IC201⑦ | I       | *4   | *7            | *7            | *5                     | *5                       | *7            | *7            | *7   | *7            | *7            | *7            | *7            | *7             |                        |
| DRM FG    | MA-252<br>IC201⑧ | I       | *4   | *8            | *8            | *5                     | *5                       | *8            | *8            | *8   | *8            | *8            | *8            | *8            | *8             |                        |
| CAP FG    | MA-252<br>IC201⑨ | I       | H/L  | *6            | *6            | *5                     | *5                       | *6            | H/L           | *9   | *6            | *6            | *6            | *6            | H/L            |                        |
| CAP DA    | MA-252<br>IC201⑩ | O       | *10  | *10           | *10           | *10                    | *10                      | *11           | *10           | *10  | *11           | *11           | *11           | *11           | *10            |                        |
| DRM DA    | MA-252<br>IC201⑪ | O       | *12  | *12           | *12           | *12                    | *12                      | *12           | *12           | *12  | *12           | *12           | *12           | *12           | *12            |                        |
| CTL STEP  | MA-252<br>IC201⑫ | O       | L    | L             | L             | L                      | L                        | L             | L             | *13  | L             | L             | L             | L             | L              |                        |

\*1. 30 Hz or 25 Hz pulse.

\*2. Pulse at tape running.

\*3. Reverse logic pulse of STEP PLS.

\*4. "L" when drum rotation stop.

\*5. Unstable period pulse.

\*6. Pulse of period in proportion to tape speed.

\*7. 30 Hz or 25 Hz pulse.

\*8. 390 Hz or 300 Hz or 180/150 Hz pulse.

\*9. Pulse at tape running.

\*10. Approx. 2 msec period "H" or "L" pulse.

\*11. Approx. 1.5 msec period "H" or "L" pulse.

\*12. Approx. 3 msec period "H" or "L" pulse.

\*13. "H" when FWD direction STEP drive.

### 6-11. SYSTEM CONTROL - MECHANISM INTERFACE (MA-252 BOARD IC201)

| Signal         | Pin No.       | IO | EJECTED | CASSETTE LOADING | CASSETTE UNLOADING | TEPE THREAD-ING | TAPE UNTHREAD-ING | STOP | FF | REW | PB | PB PAUSE | SLOW | x2 | CUE | REVIEW | REC | REC PAUSE |
|----------------|---------------|----|---------|------------------|--------------------|-----------------|-------------------|------|----|-----|----|----------|------|----|-----|--------|-----|-----------|
| CAM LOAD       | MA-252 IC201⑬ | O  | L       | H                | L                  | H               | L                 | L    | L  | L   | L  | L        | L    | L  | L   | L      | L   | L         |
| CAM UNLOAD     | MA-252 IC201⑭ | O  | L       | L                | H                  | L               | H                 | L    | L  | L   | L  | L        | L    | L  | L   | L      | L   | L         |
| CAM 12V        | MA-252 IC201⑮ | O  |         | H                | L                  | H               | L                 |      |    |     |    |          |      |    |     |        |     |           |
| MODE 1         | MA-252 IC201⑯ | I  | H       | L                | L                  | *8              | *8                | H    | H  | H   | H  | H        | H    | H  | H   | L      | H   | H         |
| MODE 2         | MA-252 IC201⑰ | I  | L       | L                | L                  | *8              | *8                | L    | L  | L   | H  | H        | H    | H  | H   | H      | H   | H         |
| MODE 3         | MA-252 IC201⑱ | I  | L       | L                | L                  | *8              | *8                | H    | H  | H   | L  | H        | H    | L  | L   | H      | L   | H         |
| MODE 4         | MA-252 IC201⑲ | I  | L       | H                | H                  | *8              | *8                | H    | L  | L   | L  | L        | L    | L  | L   | L      | L   | L         |
| C IN (REC PRF) | MA-252 IC201⑳ | I  | L       | *2               | *2                 | *2              | *2                | *2   | *2 | *2  | *2 | *2       | *2   | *2 | *2  | *2     | *2  | *2        |
| TREEL FG       | MA-252 IC201㉑ | I  | H/L     | H/L              | H/L                | H/L             | H/L               | H/L  | *3 | *3  | *3 | H/L      | *3   | *3 | *3  | *3     | *3  | H/L       |
| SREEL FG       | MA-252 IC201㉒ | I  | H/L     | H/L              | H/L                | *3              | *3                | H/L  | *3 | *3  | *3 | H/L      | *3   | *3 | *3  | *3     | *3  | H/L       |
| T/IE LED       | MA-252 IC201㉓ | O  | *4      | *4               | *4                 | *4              | *4                | *4   | *4 | *4  | *4 | *4       | *4   | *4 | *4  | *4     | *4  | *4        |
| CAP TRQ 1      | MA-252 IC201㉔ | O  |         |                  |                    |                 |                   |      |    |     |    |          | *8   |    |     |        |     |           |
| CAP TRQ 2      | MA-252 IC201㉕ | O  |         |                  |                    |                 |                   |      |    |     |    |          | *8   |    |     |        |     | L         |
| CAP TRQ 3      | MA-252 IC201㉖ | O  |         |                  |                    |                 |                   |      | H  | H   |    |          | *8   |    | H   | H      |     |           |
| CAP STOP       | MA-252 IC201㉗ | O  | L       | L                | L                  | H               | H                 | L    | H  | H   | H  | L        | *5   | H  | H   | H      | H   | L         |
| CAP RVS        | MA-252 IC201㉘ | O  | H       |                  |                    | L               | H                 | H/L  | L  | H   | L  | L        | L/*5 | L  | H   | L      | L   | L         |
| CAP DA         | MA-252 IC201㉙ | O  |         |                  |                    |                 |                   |      |    |     |    |          |      |    |     |        |     |           |
| T SENS         | MA-252 IC201㉚ | I  | *4      | *4               | *4                 | *7              | *7                | *7   | *7 | *7  | *7 | *7       | *7   | *7 | *7  | *7     | *7  | *7        |
| S SENS         | MA-252 IC201㉛ | I  | *4      | *4               | *4                 | *7              | *7                | *7   | *7 | *7  | *7 | *7       | *7   | *7 | *7  | *7     | *7  | *7        |

\*1. "H" when mechanism mode transition.  
 \*2. "L" when erasing protection tab is bent. "H" when not bent.  
 \*3. Pause of period in proportion to reel rotating speed.  
 \*4. Approx. 2 msec period "H" pulse.  
 \*5. Pulse at tape running.  
 \*6. "L" when tape running and CAP RVS is "H".  
 \*7. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.  
 \*8. Uncertainty.

## SECTION 7 ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram for Adjustment on page 7-10.

### 7-1. MECHANICAL ADJUSTMENTS

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT IV.

### 7-2. ELECTRICAL ADJUSTMENTS

#### 2-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

##### 2-1-1. Instruments to be Used.

- 1) Color TV
- 2) Oscilloscope for 2 phenomena, band more than 30 MHz, deley mode, as provided.
- 3) Frequency counter (min. 8 digits)
- 4) NTSC pattern generator
- 5) Digital voltmeter
- 6) Audio level meter
- 7) Audio generator
- 8) Modulation Analyzer
- 9) Distortion factor meter
- 10) Attenuator
- 11) Alignmeter tape  
Part Code: 8-192-605-32 (KRV-51N2)
- 13) Extension cable (13P)  
Part code: J-6090-054-A  
RP-197/198/202/203 (CN501) ↔ DRUM

#### 2-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

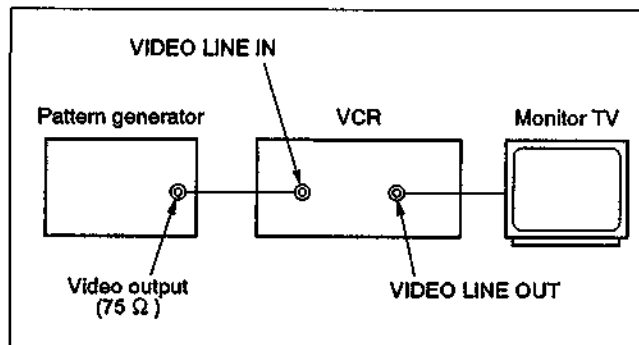


Fig. 7-2-1

#### 2-1-3. Set-up of Adjustment

In this adjustment, NTSC pattern generator is connected with LINE input signal terminal. When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal NTSC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30: 0.66. Fig. 7-2-2. shows video signals (color bars) used in adjusting the video section.

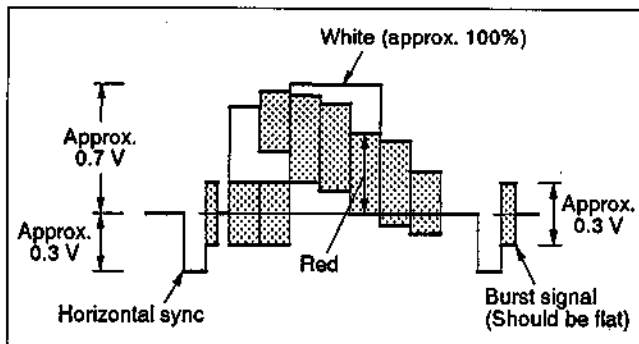


Fig. 7-2-2.

#### 2-1-4. Alignment Tape

[Alignment Tape (KRV-51N2) ]

|   | Mode | Time          | Video signal | Audio signal (HiFi/Normal) |
|---|------|---------------|--------------|----------------------------|
| 1 | SP   | Seven minutes | Color bar    | 400Hz                      |
| 2 |      | Three minutes | Monoscope    | 400Hz                      |
| 3 | EP   | Seven minutes | Color bar    | 400Hz                      |
| 4 |      | Three minutes | Monoscope    | —                          |

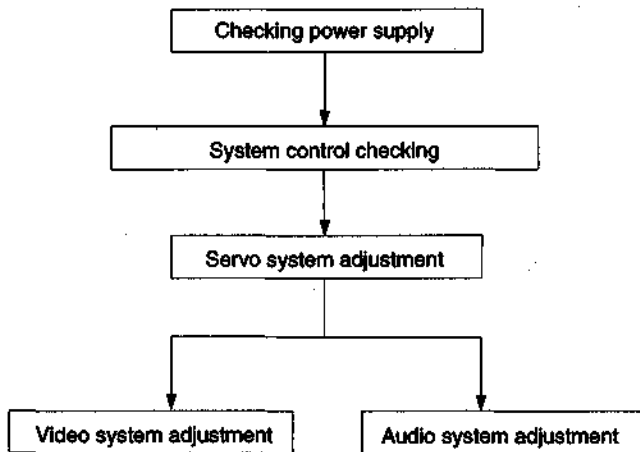
### 2-1-5. Specified I/O Level and Impedance

#### Input/output terminal

|               |   |
|---------------|---|
| Video inputs  | LINE IN : phono jack<br>1 Vp-p, 75Ω, unbalanced, sync negative                                |
| Audio inputs  | LINE IN : phono jacks<br>47 kΩ, -7.5 dBs (0 dBs = 0.775 Vrms)<br>More than 10 kΩ+, -4 dBs     |
| Video outputs | LINE OUT : phono jack<br>1 Vp-p, 75Ω, unbalanced, sync negative                               |
| Audio outputs | LINE OUT : phono jacks<br>-7.5 dBs at load impedance 47kΩ<br>Output impedance : less than 10Ω |

### 2-1-6. Adjusting Sequence

Make the electrical adjustment in the following sequence.



### 2-2. POWER SUPPLY CHECK (PS-355/356/367/368 BOARD)

|                      |                          |
|----------------------|--------------------------|
| Mode                 | E-E                      |
| Measuring Instrument | Digital voltmeter        |
| +F, -F check         |                          |
| Measurement Point    | Pin ④ (+), ①(-) of CN101 |
| Specified Value      | 4.3±1Vdc                 |
| -30V check           |                          |
| Measurement Point    | Pin ② of , CN101         |
| Specified Value      | -30±3Vdc                 |
| -8V check            |                          |
| Measurement Point    | Pin ⑤ of CN101           |
| Specified Value      | 13.5±2Vdc                |
| D6V check            |                          |
| Measurement Point    | Pin ⑥ of CN101           |
| Specified Value      | 5.9±0.5V                 |
| SW12V                |                          |
| Measurement Point    | Pin ⑧ of CN101           |
| Specified Value      | 12±1Vdc                  |
| MTR12V check         |                          |
| Measurement Point    | Pin ⑫ of CN101           |
| Specified Value      | 12±0.5Vdc                |
| 13 V check           |                          |
| Measurement Point    | Pin ⑭ of CN101           |
| Specified Value      | 13±1Vdc                  |
| +38V check           |                          |
| Measurement Point    | Pin ⑯ of CN101           |
| Specified Value      | 38.0±3Vdc                |
| SW5 V check          |                          |
| Measurement Point    | Pin ⑰ of CN101           |
| Specified Value      | 5 ±0.5 Vdc               |

#### Checking Method:

- 1) Confirm that each voltage meets its specified value.

## 2-3. SYSTEM CONTROL CHECK

### 2-3-1. Clock Check (MA-251/252)

#### Purpose:

Adjust to improve the clock precision. When it is out of order, errors gradually increases.

|                       |  |
|-----------------------|--|
| Measurement point     | Pin ⑦ of IC151<br>: MA-251 Board<br>Pin ⑧ of IC201<br>: MA-252 Board |
| Measurement Equipment | Frequency counter<br>(Interval counter mode)                         |
| Specified Value       | 0.1249995±0.0000005 sec  |

#### Confirmation Method:

- 1) Connect to the GND from IC151 pin ⑧ through a resistor 22kΩ (1-249-489-00): MA-251 board
- 2) Connect Pin ④ of IC401 to ground. (The set goes to adjusting mode.): MA-252 Board
- 3) Connect the frequency counter as shown below.
- 4) Confirm that the oscillation frequency is the specified value.

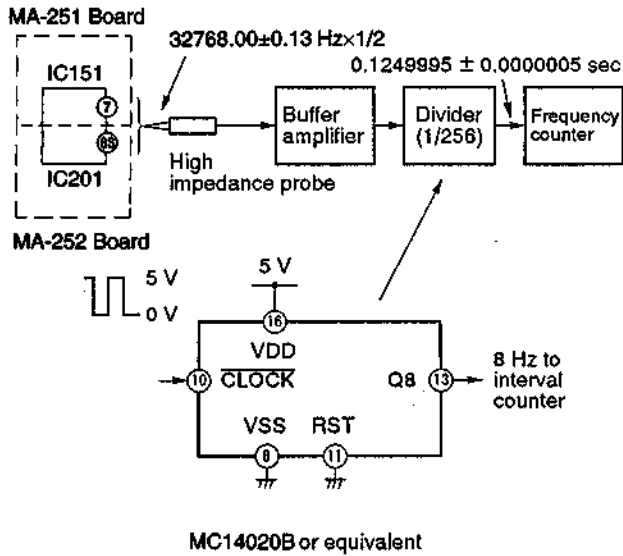


Fig. 7-2-3.

## 2-4. SERVO SYSTEM Adjustment

### 2-4-1. Switching Position Adjustment (MA-251/252 Board)

#### Purpose:

Adjust the interval between A ch and B ch of tape playback output. Improve the interchangeability with other tapes and sets.

When it is out of order, the interval appears on the screen, the screen is disturbed.

|                      |   |
|----------------------|---|
| Mode                 | PB  |
| Signal               | Alignment tape SP mode<br>color bar   |
| Measurement Point    | CH1: VIDEO LINE OUT<br>CH2: Pin ③ of CN502 (RP-197/198/202/203 board)<br>(RF SWP) |
| Measuring Instrument | Oscilloscope  |
| Specified Value      | 6.5±0.5H (410±32μsec)   |

#### Adjusting Method:

- 1) Connect IC201 pin ⑧ to the GND for about 1 second to activate the RF switching position adjustment mode.
- 2) Using the channel + and - buttons, adjust to 410±32μsec (6.5±0.5H).

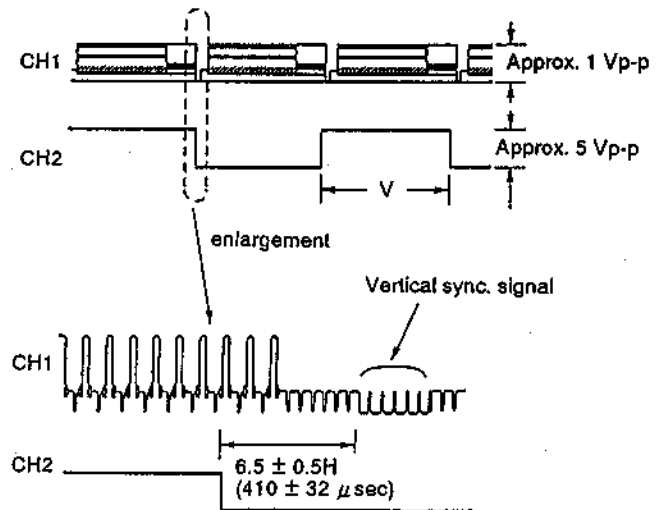


Fig. 7-2-4.

## 2-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following sequence as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode. Make sure that sync. and color burst signals meet requirements specified at set up of adjustment shown in Fig. 7-2-1.

### [Adjustment Sequence]

- 2-5-1. Recording Y Signal Level Check
- 2-5-2. White Clip, Dark Clip Check
- 2-5-3. Playback Y Signal Level Check
- 2-5-4. Recording Chroma Level Check
- 2-5-5. Sync. AGC Check
- 2-5-6. X'tal Oscillation Frequency Check
- 2-5-7. VCO Oscillation Frequency Adjustment

### 2-5-1. Recording Y Signal Level Check (MA-251/252 Board)

#### Purpose:

Check the brightness signal level after passing through the V/C separating circuit.

|                       |                            |
|-----------------------|----------------------------|
| Mode                  | E-E                        |
| Signal                | Color bar                  |
| Measurement point     | Emitter of Q352            |
| Measurement equipment | Oscilloscope               |
| Specified value       | $950 \pm 100 \text{mVp-p}$ |

#### Confirmation Method:

- 1) Confirm that the record Y level is  $950 \pm 100 \text{mVp-p}$ .

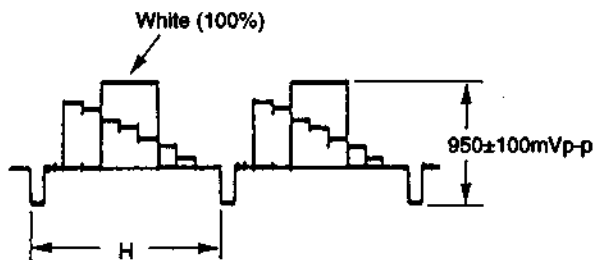


Fig. 7-2-5.

### 2-5-2. White Clip, Dark Clip Check (MA-251/252 Board)

#### Purpose:

Confirm that no overshoot is generated by the pre-emphasis circuit. If shifted, the signals are overmodulated, thus causing a noise in the images.

|                       |  |
|-----------------------|--|
| Mode                  | E-E  |
| Signal                | Color bar  |
| Measurement point     | Pin 7 of IC302   |
| Measurement equipment | Oscilloscope   |
| Specified value       | White clip: $190 \pm 15\%$<br>Dark clip: $52 \pm 10\%$ |

#### Confirmation Method:

- 1) Confirm that the white clip is  $190 \pm 15\%$ , on condition that the level between white and sync. is 100%.
- 2) Confirm that the dark clip is  $52 \pm 10\%$ , on condition that the level between white and sync. is 100%

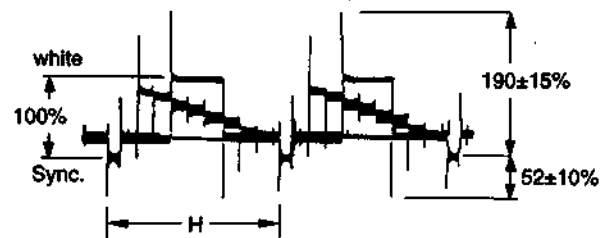


Fig. 7-2-6.

### 2-5-3. Playback Y Signal Level Check (MA-251/252 Board)

#### Purpose:

Confirm that the playback Y signal level is correct.

|                       |                             |
|-----------------------|-----------------------------|
| Mode                  | PB                          |
| Signal                | Alignment tape SP color bar |
| Measurement point     | VIDEO LINE OUT              |
| Measurement equipment | Oscilloscope                |
| Specified value       | $2.05 \pm 0.18 \text{Vp-p}$ |

**Note:** Make this adjustment with the EDIT switch turned off.  
(MA-251 Board)

#### Confirmation Method:

- 1) Confirm that the play Y level is  $2.05 \pm 0.18 \text{Vp-p}$ .

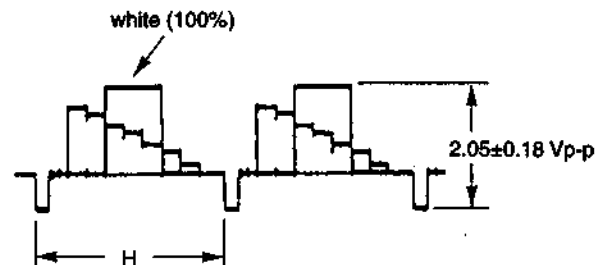


Fig. 7-2-7.

**2-5-4. Recording Chroma Level Check  
(MA-251/252 Board)**

**Purpose:**

Check the chroma signal level after passing through the Y/C separating circuit.

If shifted, the image is roughened and another color may appear on the edges.

|                       |                |
|-----------------------|----------------|
| Mode                  | E-E            |
| Signal                | Color bar      |
| Measurement point     | Pin ② of IC302 |
| Measurement equipment | Oscilloscope   |
| Specified value       | 190±30mVp-p    |

**Confirmation Method:**

- 1) Confirm that the record chroma level is 190±30mVp-p.



Fig. 7-2-8.

**2-5-5. Sync. AGC Check  
(MA-251/252 Board)**

**Purpose:**

Confirm that the video level is correct.

|                       |                |
|-----------------------|----------------|
| Mode                  | E-E            |
| Signal                | Color bar      |
| Measurement point     | VIDEO LINE OUT |
| Measurement equipment | Oscilloscope   |
| Specified value       | 2.05±0.14Vp-p  |

**Note:** Video output terminal must be terminated at 75Ω.

**Confirmation Method:**

- 1) Confirm that the sync. AGC level is 2.05±0.14Vp-p.

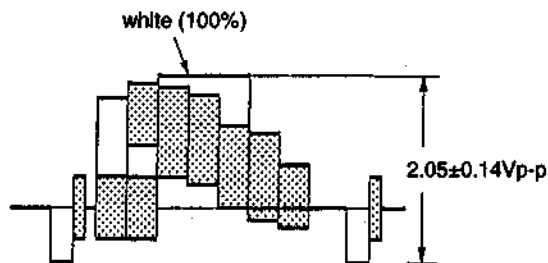


Fig. 7-2-9.

**2-5-6. X'tal Oscillation Frequency Check  
(MA-251/252)**

**Purpose:**

Confirm that the fsc is correct.

|                       |                                 |
|-----------------------|---------------------------------|
| Mode                  | PB                              |
| Signal                | Alignment tape SP color bar     |
| Measurement point     | Pin ② of IC302                  |
| Measurement equipment | Frequency counter, Oscilloscope |
| Specified value       | 3,579,545±82Hz                  |

**Note:** connect the frequency counter through a probe of high input impedance (about 10MΩ) and low capacity (10pF or less).

**Confirmation Method:**

- 1) Confirm that the frequency is 3,579,545±82Hz
- 2) Confirm that the amplitude is 450±200mVp-p.

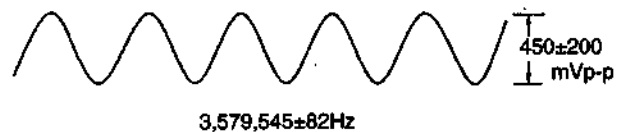


Fig. 7-2-10.

**2-5-7. VCO Oscillation Frequency Adjustment  
(MA-252 Board)**

**Purpose:**

Adjust to set the character position on the screen.

|                      |                        |
|----------------------|------------------------|
| Mode                 | E-E                    |
| Signal               | Color bar              |
| Measurement point    | Pin ② of IC401         |
| Measuring Instrument | Oscilloscope (DC mode) |
| Adjusting Element    | CT401                  |
| Specified value      | +2.75±0.05 V           |



Fig. 7-2-11.



## 2-6. AUDIO SYSTEM ADJUSTMENTS

Adjust both Lch and Rch.

### [Connection]

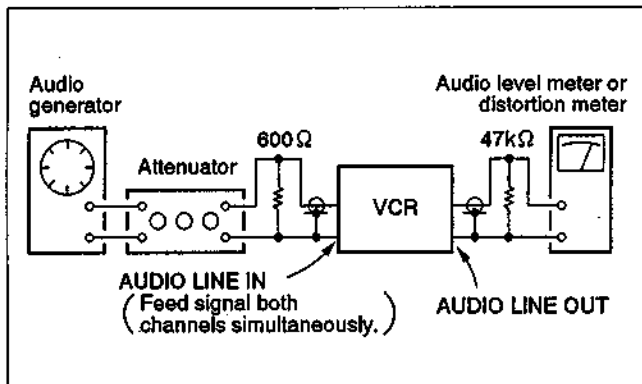


Fig. 7-2-12

### 2-6-1. Hi-Fi Audio System Adjustment

Set switches and knobs to the following positions to make adjustment unless otherwise specified.

INPUT SELECT switch ..... LINE  
AUDIO MONITOR ..... STEREO

### [Adjusting Sequence]

1. VCO  $f_0$  adjustment
2. Deviation check
3. BPF  $f_0$  adjustment
4. AF switching position

#### 1. VCO $f_0$ Adjustment (MA-251/252 Board)

##### Purpose:

Adjust to have interchangeability in HiFi audio.  
When it is out of order, the sound is distorted.

| Mode                 | REC  |
|----------------------|--|
| Signal               | No signal  |
| Measuring Instrument | Frequency counter                                      |
| 1.3 MHz Adjustment   |  |
| Measurement Point    | Pin ① of CN501<br>Auto tracking ON (Remote commander)  |
| Adjusting Element    | RV521 (R CH)   |
| Specified Value      | 1.3 MHz $\pm$ 1 kHz                                    |
| 1.7 MHz Adjustment   |  |
| Measurement Point    | Pin ① of CN501<br>Auto tracking OFF (Remote commander) |
| Adjusting Element    | RV531 (R CH)   |
| Specified Value      | 1.7 MHz $\pm$ 1 kHz                                    |

**Note:** Connect the frequency counter through a probe of high input impedance (more than 1 M $\Omega$ ) and low capacity (10 pF or less).

##### Connection:

Connect pin ② and ③ of CN881 with a jumper wire.

##### Adjusting Method:

- 1) Connect the frequency counter to pin ① of CN501.
- 2) Adjust each volume so that each frequency meets its specified value.

#### 2. Deviation Check (MA-251/252 Board)

##### Purpose:

Set the HiFi audio signal level to specified value.  
Adjust to have interchangeability with other tapes and sets.  
When it is out of order, the volume of sound is different on playback.

| Mode                  | REC   |
|-----------------------|---|
| Signal                | Pin ② (Lch), ① (Rch) of IC501 400Hz -7.5 dBs (920m Vp-p)  |
| Measurement Point     | pin ① of CN501<br>Lch: Auto tracking ON (Remote commander)<br>Rch: Auto tracking OFF (Remote commander) |
| Measurement Equipment | Modulation analyzer   |
| Specified Value       | 50 $\pm$ 5kHz   |

##### Connection:

Connect pin ② and ③ of CN881 with a jumper wire.

#### 3. BPF $f_0$ Adjustment (MA-251/252 Board)

##### Purpose:

Adjust to separate carrier component precisely and to operate normally the filter for cutting video signal.  
When it is out of order, the sound is distorted.

| Mode                 | PB  |
|----------------------|---|
| Signal               | 1.505 MHz<br>Input 200 mVp-p:<br>Pin ③ of CN501 |
| Measurement point    | Pin ① of CN501                                  |
| Measuring Instrument | Oscilloscope                                    |
| Adjusting Element    | RV541   |

**Note:** Take a trigger from AF SWP (Pin ⑥ of CN501).

##### Connection:

- 1) Feed 1.505 MHz, 200 mVp-p sine wave to Pin ③ of CN501.

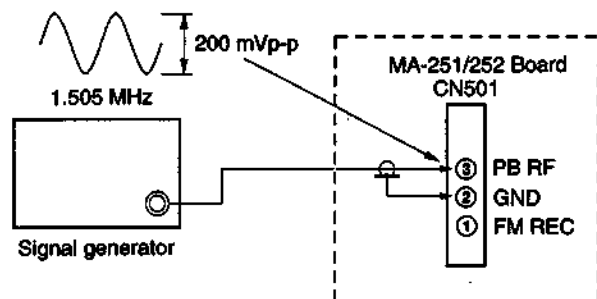
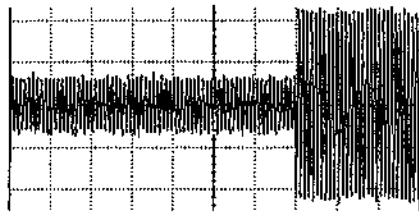


Fig. 7-2-13.

**Adjusting method:**

- 1) In the play mode, turn off the auto tracking from the remote controller.
- 2) Adjust RV541 so that the amplitudes of A and B are on the same level ( $\pm 2\text{mVp-p}$ ).



Disordered condition



Adjusted condition

Fig. 7-2-14

**4. AF Switching Position Adjustment (MA-251/252 Board)**

**Purpose:**

Adjust the interval between A CH and B CH of tape playback output. Improve the interchangeability with other tapes and sets. When it is out of order, noisy sound is increased and big noise is heard.

|                      |  |
|----------------------|--|
| Mode                 | PB   |
| Signal               | Alignment tape SP mode color bar   |
| Measurement point    | CH1: Pin ③ of CN502 (RP-197/198/201/202 Board)<br>CH2: Pin ① of CN707 (RP-197/198/201/202 Board) |
| Measuring Instrument | Oscilloscope   |
| Specified Value      | Fig. 7-2-15  |

**Adjusting method:**

- 1) Connect IC201 pin 58 to the GND for about 1 second to activate the RF switching position adjustment mode.
- 2) Press the record button to activate the AF switching position adjustment mode.
- 3) Using the channels + and - buttons, minimize a chipped portion. At this time, confirm that a noisy sound is not heard.

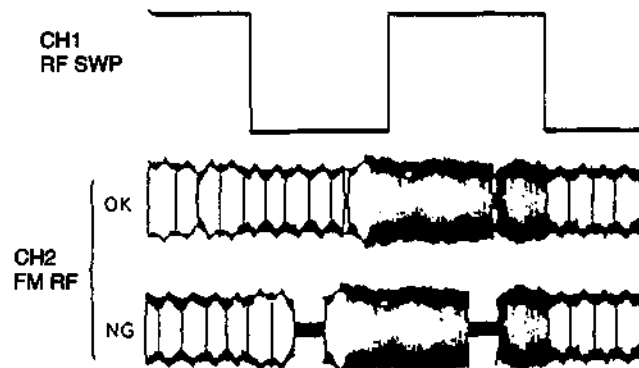


Fig. 7-2-15.

**2-6-2. Normal Audio System Adjustment**

- Make adjustment in the SP mode, unless otherwise specified.
- Use a normal VHS cassette for an adjustment tape.
- Set AUDIO MONITOR to normal.

**[Adjustment Sequence]**

1. ACE Head Adjustment
2. E-E Output Level Check
3. Recording Bias Adjustment
4. Overall Level Characteristic and Distortion Factor Check
5. Overall S/N Check

**1. ACE Head Adjustment**

Refer to the service manual of VHS MECHANICAL ADJUSTMENT IV.

**2. E-E Output Level Check**

**Purpose:**

Confirm that the output level against the reference input is within the specification.

|                       |                       |
|-----------------------|-----------------------|
| Mode                  | E-E                   |
| Signal                | L, R: 400Hz, -7.5 dBs |
| Measurement point     | Audio output terminal |
| Measurement equipment | Audio level meter     |
| Specified value       | -7.5 $\pm$ 2dBs       |

**Confirmation Method:**

- 1) Simultaneously input a signal of 400Hz, -7.5dBs to both L and R channels of Audio Line Input.
- 2) Confirm that the audio output level is -7.5 $\pm$ 2dBs.

**3. Recording Bias Check (MA-251/252 Board)**

**Purpose:**

Confirm that the frequency characteristic is within the specification.

|                       |                                     |
|-----------------------|-------------------------------------|
| Mode                  | REC and PB (SP mode)                |
| Signal                | 400Hz, -27.5 dBs<br>7kHz, -27.5 dBs |
| Measurement point     | Audio output terminal               |
| Measurement equipment | Audio level meter                   |
| Specified value       | 0 $\pm$ 3dB                         |

**Note:** Tape path adjustment must have been completed.

**Confirmation Method:**

- 1) Supply a signal of 400 Hz, -27.5 dBs to both L and R channels of Audio Line Input.
- 2) Connect the audio level meter to the Audio Line Output.
- 3) Adjust the attenuator so that the audio level meter will indicate -27.5 dBs.
- 4) Make recording in the SP mode.
- 5) Set an audio line input signal to 7 kHz and make recording.
- 6) Playback a recorded portion, and measure output levels at 400 Hz and 7 kHz.
- 7) Confirm that the 7 kHz playback output level within a range of the 400 Hz playback output level 0 $\pm$ 1 dB.

#### 4. Overall Level Characteristic and Distortion Factor Check

**Purpose:**

Check the record level, play level, and distortion factor against the reference input.

|                       |   |
|-----------------------|---|
| Mode                  | REC and PB (SP mode)  |
| Signal                | 400Hz, -7.5 dBs   |
| Measurement point     | Audio output terminal   |
| Measurement equipment | Audio level meter and distortion factor meter                     |
| Specified value       | Playback level: $-7.5 \pm 3$ dBs<br>Distortion factor: 4% or less |

**Confirmation Method:**

- 1) Supply an audio signal of 400Hz, -7.5 dBs simultaneously to both L and R channels of Audio Line Input.
- 2) Make recording
- 3) Play back a recorded portion.
- 4) Confirm that a playback level is  $-7.5 \pm 3$ dBs.
- 5) Confirm that a distortion factor is within 4%.

#### 5. Overall S/N Check

**Purpose:**

Confirm that the S/N is within the specification.

|                       |                       |
|-----------------------|-----------------------|
| Mode                  | REC and PB (SP mode)  |
| Signal                | No signal             |
| Measurement point     | Audio output terminal |
| Measurement equipment | Audio level meter     |
| Specified value       | -46dB or more         |

**Confirmation Method:**

- 1) Connect both L and R channels of audio line input to the GND.
- 2) Start recording.
- 3) Play the recorded part to confirm that the noise is below -46dB.

**Hookup 5**

**DSS (Digital Satellite System) receiver**

**Recommended use**

Use this hookup if you have a DSS receiver. It allows the VCR's cable box control feature to control the channel on the DSS receiver, simplifying the recording process. A list of compatible DSS receivers is on page 38.

DSS (Digital Satellite System) is a satellite broadcast that provides superior digital-quality video and crisp digital-quality audio. A variety of program packages are available through your program providers. It also has program guides that are sorted by program categories.

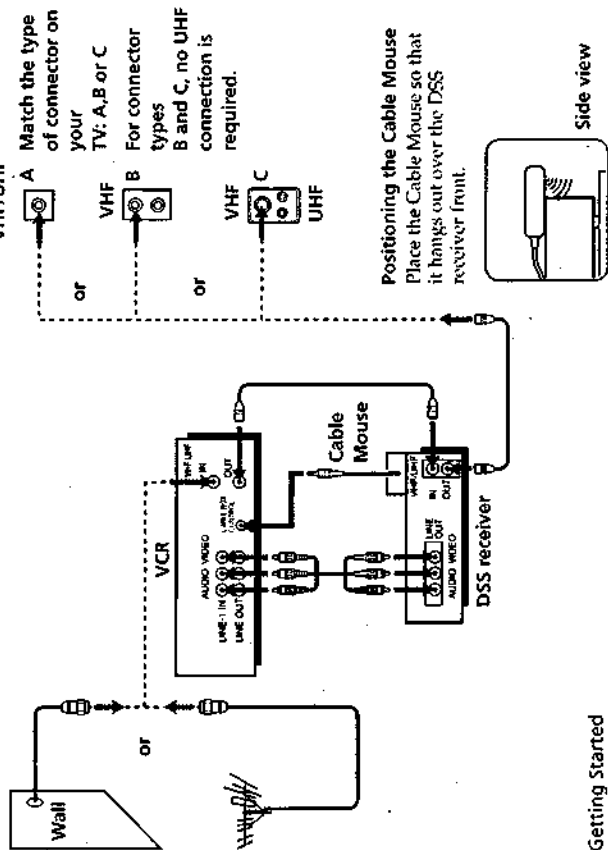
**What you can do with this hookup**

- Record any channels using the VCR's cable box control feature to select channels on the DSS receiver.

**What you can't do**

- Record with the DSS receiver turned off
- Record any channels from cable or an antenna (To record channels from cable or an antenna, turn off the cable box control feature.)

- Use a cable box
- Record programs with VCR Plus+



**Hookup 5: VCR setup**

- 1 Set the RF UNIT switch to CH3 or CH4, whichever channel is not used in your area. If both are used, set the switch to either channel.

For details, see page 72.

- 2 If you made A/V connections (from page 8), you can skip this step.

- 3 Turn on your DSS receiver.

- 4 Press EASY SET UP on the VCR.

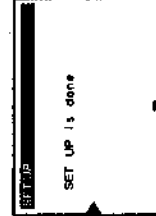
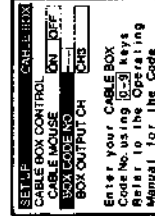
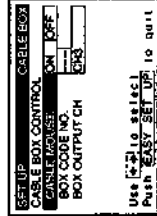
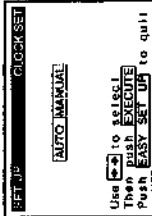
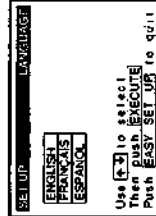
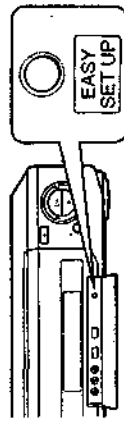
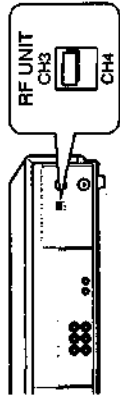
The LANGUAGE menu appears. Change the on-screen display language to French (FRANCAIS) or Spanish (ESPAÑOL) if desired, and press EXECUTE. For details, see page 29.

- 5 The CLOCK SET menu appears. Select AUTO and press EXECUTE. For details, see page 30.

- 6 The CABLE BOX CONTROL menu appears. Select ON. For details, see page 36.

- 7 Enter your DSS receiver code number and press CURSOR. For details, see page 36.

- 8 Set your DSS receiver output channel (BOX OUTPUT CH) to LINE and press EXECUTE.



Normal display

**Hookup 5: VCR setup**

**Automatic clock setting**

Once you've set up the VCR, it automatically sets the clock the first time you turn off the VCR. After that, whenever you turn off the VCR, it checks the time and adjusts the clock, even for Daylight Saving Time. The VCR sets the clock by picking up a time signal provided by some TV channels.

If you want to use the timer to record right away, or if the channels in your area do not carry time signals, set the clock manually. For details, see pages 34-35.

**Notes**

- To successfully record a program from the DSS receiver, proceed as follows:
  - Leave the DSS receiver on all the time.
  - Turn off the display (menu screen, channel number, etc.) of the DSS receiver.
  - To record or receive locked channels, unlock the channel before the VCR starts recording.
  - To set pay-per-view programs in the timer setting, order the pay-per-view program before the VCR starts recording.
  - Some programs are copy protected. You cannot record these programs.

**Getting Started**

**Incompatible cable box with only a few scrambled channels, using an A/B switch**

**Recommended use**

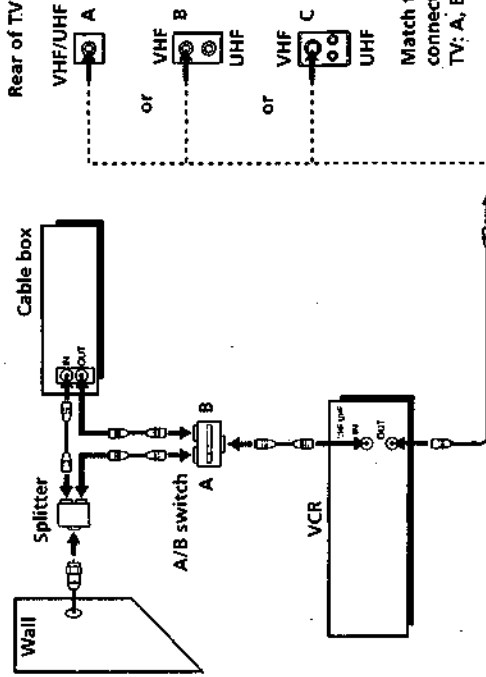
By using an A/B switch (not supplied), this hookup allows you to record both scrambled and unscrambled channels conveniently.

**What you can do with this hookup**

- Record any unscrambled channel by selecting the channel directly on the VCR (the A/B switch is set to A)
- Record any scrambled channel by selecting the channel on the cable box (the A/B switch is set to B)

**What you can't do**

- Record one scrambled channel while watching another channel (the A/B switch is set to B)

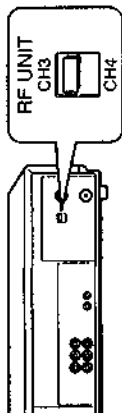


continued

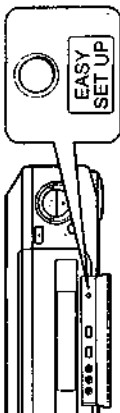
**Step 3: Hookups (continued)**

**Hookup 6: VCR setup**

**1** Set the RF UNIT switch to CH 3 or CH 4, whichever channel is not used in your area. If both are used, set the switch to either channel.



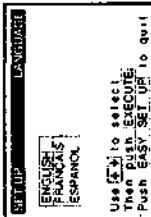
For details, see page 72. If you made A/V connections (from page 8), you can skip this step.



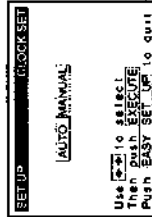
**2** Set the A/B switch to "A."

**3** Press EASY SET UP on the VCR.

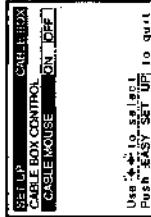
**1** The LANGUAGE menu appears. Change the on-screen display language to French (FRANÇAIS) or Spanish (ESPAÑOL) if desired, and press EXECUTE. For details, see page 29.



**2** The CLOCK SET menu appears. Select AUTO and press EXECUTE. For details, see page 30.



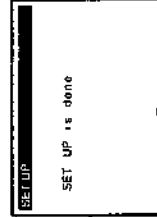
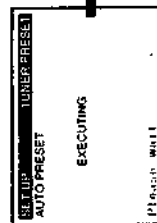
**3** The CABLE BOX CONTROL menu appears. Select OFF and press EXECUTE. For details, see page 36.



**4** The TUNER PRESET menu appears. Set ANTENNA/CABLE to CABLE and press EXECUTE. For details, see page 41.

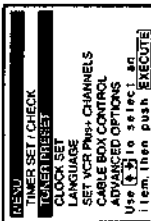


**5** The AUTO PRESET starts.

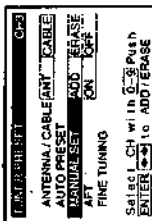


**4** Preset the cable box output channel (usually 2, 3 or 4). For details, see page 36.

**1** Press MENU and select TUNER PRESET.



**2** Enter the cable box output channel. Set MANUAL SET to ADD and press EXECUTE.

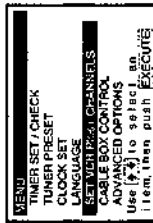


### Step 3: Hookups (continued)

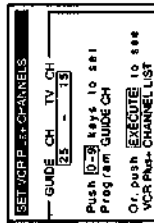
#### Hookup 6: VCR Plus+ channel setup

- 1 Find the VCR Plus+ Channel Listing in your program guide. For details, see page 45.
- 2 For unscrambled channels, if the channels in the program guide are different from the channels that you actually use on your TV, set the channels that are different as follows. For details, see page 46.

- 1 Press MENU and select SET VCR Plus+ CHANNELS.



- 2 Enter the program guide channel, then the channel you use on your TV.



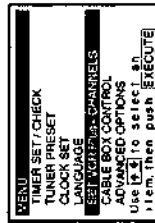
- 3 Press EXECUTE.

Program guide channel

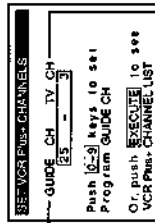
Your actual TV channel

- 3 For scrambled channels, enter all the scrambled channels you want to record and the cable box output channel (usually 2, 3, or 4). For details, see page 46.

- 1 Press MENU and select SET VCR Plus+ CHANNELS.



- 2 Enter the program guide channel, then the cable box output channel.

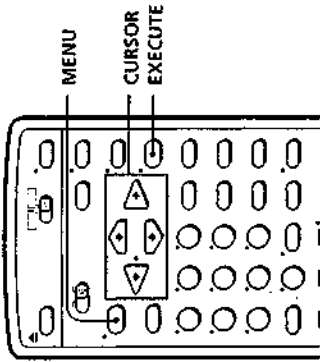


Program guide channel

Cable box output channel

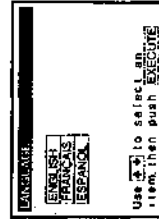
## Selecting a language

If you prefer French or Spanish to English, you can change the on-screen display language.



- 1 Press MENU, then press CURSOR  $\uparrow/\downarrow$  to move the cursor (0) to LANGUAGE and press EXECUTE.

When using the EASY SET UP procedure, skip this step.



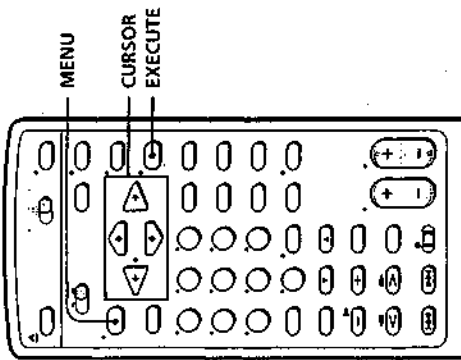
- 2 Press CURSOR  $\uparrow/\downarrow$  to select ENGLISH, FRANCAIS or ESPAÑOL, then press EXECUTE.

# Setting the clock

## Using the Auto Clock Set feature

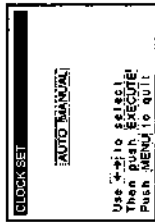
Some TV and cable channels transmit time signals with their broadcasts. Your VCR can pick up this time signal to automatically set the clock.

The Auto Clock Set feature works only if a channel in your area is broadcasting a time signal. If broadcasters in your area are not yet sending time signals, set the time manually (page 34).

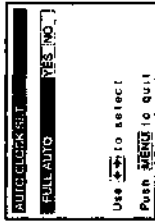


**1** Press **MENU**, then press **CURSOR**  $\uparrow/\downarrow$  to move the cursor (0) to **CLOCK SET** and press **EXECUTE**.

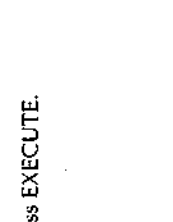
When using the **EASY SET UP** procedure, skip this step.



**2** Press **CURSOR**  $\leftarrow/\rightarrow$  to select **AUTO**, then press **EXECUTE**.



**3** Press **CURSOR**  $\leftarrow/\rightarrow$  to select **YES**, then press **EXECUTE**.



**4**

To activate the Auto Clock Set function, turn off the VCR.

The VCR automatically sets the clock by searching for a channel that carries a time signal and sets your time zone and Daylight Saving Time (if applicable).

If your clock is set to the wrong time zone or Daylight Saving Time, you can adjust these settings without turning off the Auto Clock Set feature (page 32).

### Notes

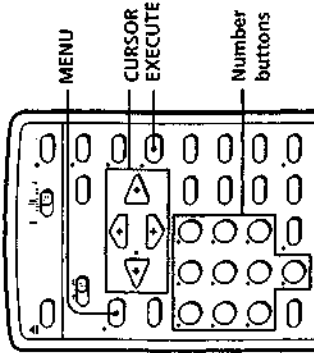
- The clock cannot be set automatically if you don't receive a channel that carries a time signal in your area. If so, set the clock manually.
- If there are only a few channels in your area that carry time signals, setting the clock automatically may take up to about 30 minutes. If nothing happens even after you wait about 30 minutes, set the clock manually.
- If you use Hookup 1 or Hookup 4, make sure you leave the cable box on.

*continued*

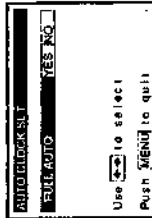


**Setting the clock (continued)**

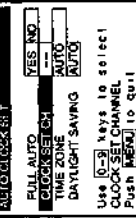
**If the clock is not activated**



**1** Follow steps 1 and 2 in "Using the Auto Clock Set feature." The AUTO CLOCK SET menu is displayed.



**2** Press CURSOR ←/→ to select NO for FULL AUTO.

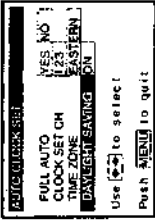


**Getting Started**

**3** Press CURSOR ↑/↓ to highlight the item you want to set, then press CURSOR ←/→ to make the setting.




- For CLOCK SET CH Leave the setting to "—" to have the VCR automatically search for a channel that carries a time signal. Press the number buttons to select a channel that carries a time signal. Use this option if you know of a channel that carries a time signal. Most PBS member stations broadcast a time signal. For the fastest response, select your local PBS station.



- For TIME ZONE Select the time zone of your area, or select AUTO to have the VCR automatically set your time zone. The options are: AUTO → ATLANTIC → EASTERN → CENTRAL → MOUNTAIN → PACIFIC → ALASKA → HAWAII → AUTO.

- For DAYLIGHT SAVING Select ON or OFF (standard time), or AUTO to have the VCR automatically set the daylight saving time.

**4** EXECUTE  Press EXECUTE that carries a time signal.

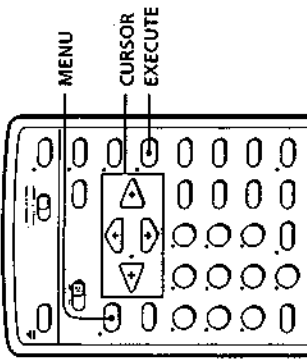
**5** To activate the Auto Clock Set function, turn off the VCR.

**Note**

- If you use both the cable box control feature and the Auto Clock Set feature, the VCR automatically changes channels on the cable box until a channel that carries a time signal is found, whenever you turn off the VCR. If you want to stop the search, change the channel on the cable box with the channel buttons either on the VCR or on the remote commander.

Setting the clock (continued)

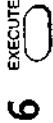
Using Manual Clock Set



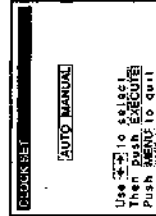
5 Set the year, hour and minutes in the same way as the day.



6 Press EXECUTE to start the clock.

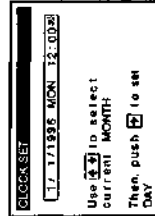


1 Press MENU, then press CURSOR  $\uparrow/\downarrow$  to move the cursor (I) to CLOCK SET and press EXECUTE.

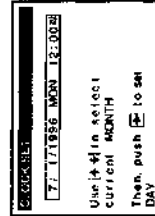


When using the EASY SET UP procedure, skip this step.

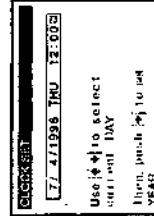
2 Press CURSOR  $\leftarrow/\rightarrow$  to select MANUAL, then press EXECUTE.



3 Press CURSOR  $\uparrow/\downarrow$  to set the month.



4 Press CURSOR  $\rightarrow$  to highlight the day and press CURSOR  $\uparrow/\downarrow$  to set the day. The day of the week is set automatically.

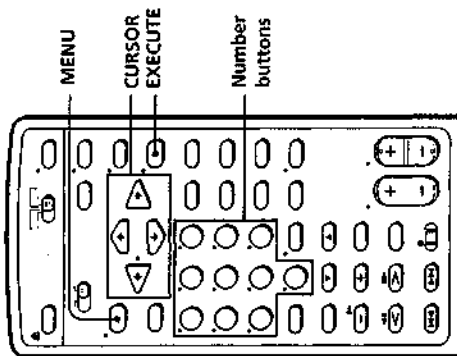


## Setting up cable box control

(Skip this section if you are using Hookup 2, 3, 4 or 6.)

Your VCR includes a cable box control feature that allows the VCR to control most brands of cable boxes/DSS receivers via the Cable Mouse. With cable box control, the VCR controls channels on the cable box/DSS receiver for timer recording. You can also use the VCR's remote commander to change channels on the cable box/DSS receiver whenever the cable box/DSS receiver is turned on even if the VCR is turned off. To use cable box control, you need to connect the Cable Mouse (pages 10 and 22) and set the code number and output channel.

This VCR is programmed with codes necessary to control channel selection on most brands of cable boxes at the time this VCR was manufactured. It is possible that new cable boxes may be introduced that cannot be controlled with this VCR's Cable Mouse. If you have a cable box that is incompatible with this VCR, contact your cable operator — they may be able to provide you with a compatible cable box.



- 3 Press the number buttons to enter the cable box/DSS receiver code number, then press CURSOR →
- Find your cable box/DSS receiver code number from the chart below.



- 4 If you want to control a cable box, press CURSOR ←/→ to select the output channel for the cable box, then press EXECUTE.
- If you want to control a DSS receiver, select LINE, then press EXECUTE.



**Cable box and DSS receiver brand and the corresponding code numbers**  
If more than one code number is listed, try entering them one by one, until you come to the correct code for your equipment.

| Cable box brand   | Code numbers            |
|-------------------|-------------------------|
| ABC               | 018, 022, 024, 028, 217 |
| Antronix          | 218                     |
| Archer            | 033, 050, 164, 218      |
| BBT               | 278                     |
| Cable Star        | 067                     |
| Cabletenna        | 033                     |
| Cable time        | 172, 282, 388, 459      |
| Century           | 164                     |
| Citizen           | 164, 326, 327           |
| Clyde Cablevision | 097                     |
| Colour Voice      | 036, 042                |
| Comband           | 243, 244                |
| Comtronics        | 051, 071                |
| Decsat            | 434                     |
| Diamond           | 046                     |
| Eagle Comtronics  | 051                     |

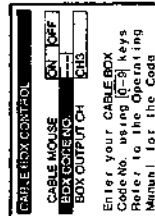
| Cable box brand    | Code numbers                                     |
|--------------------|--|
| Eastern            | 013, 285   |
| Electricord        | 089  |
| Electus            | 055  |
| Filmnet            | 454  |
| Focus              | 411  |
| Garrard            | 164  |
| GC Electronics     | 027, 067, 341                                    |
| GE                 | 243, 244   |
| CEC                | 097  |
| Gemini             | 026, 068, 081, 253                               |
| General Instrument | 022, 287, 487                                    |
| Hamlin             | 020, 031, 045, 270, 284                          |
| Hitachi            | 022  |
| Jasco              | 164, 326   |
| Jerrold            | 014, 022, 025, 026, 035, 037, 058, 109, 287, 487 |

- 1 Press MENU, then press CURSOR ↑/↓ to move the cursor (0) to CABLE BOX CONTROL and press EXECUTE.

When using the EASY SET UP procedure, skip this step.



- 2 Press CURSOR ←/→ to select ON.



continued

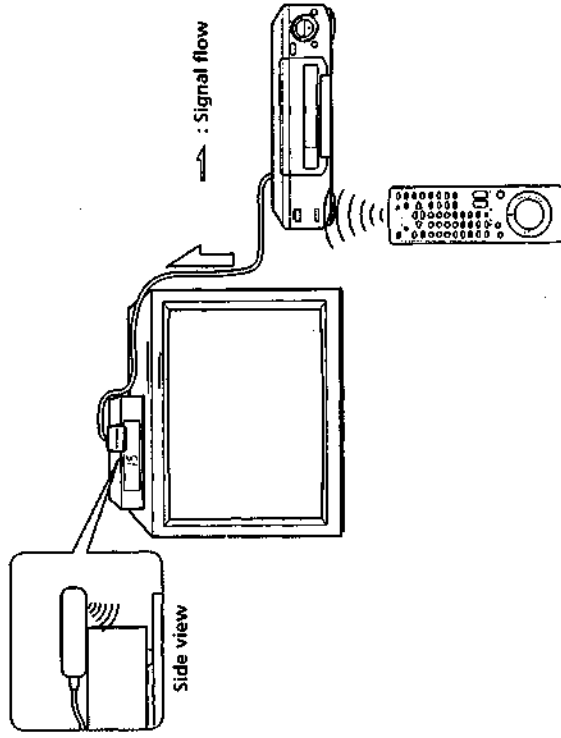
### Setting up cable box control (continued)

| Cable box brand     | Code numbers                                | Cable box brand           | Code numbers                                |
|---------------------|---|---------------------------|---|
| Linsay              | 451   | Stargate                  | 026, 051                                    |
| Macomb              | 044   | STS                       | 167   |
| Magnavox            | 038, 043, 080, 345                          | Sylvania                  | 012   |
| Memorex             | 011   | T-Cable Teletext          | 116   |
| Movie Time          | 089, 167, 214                               | Tandy                     | 269   |
| Northcruz           | 325   | Tatung                    | 108   |
| Novaplex            | 629   | Teknica                   | 157   |
| NSC                 | 074, 081, 167, 214                          | Tele +1                   | 454   |
| Oak                 | 018, 030, 259                               | TeleCaption               | 232   |
| Omniview            | 382   | Teleservice               | 242   |
| Panasonic           | 032, 118                                    | Texascan                  | 012, 107                                    |
| Paragon             | 011   | TFC                       | 321   |
| Philips             | 036, 038, 039, 040, 041, 042, 071, 301, 345 | Timeless                  | 429   |
| Philips ECC         | 253   | Txcom                     | 023, 024, 070                               |
| Pioneer             | 034, 155, 271, 544                          | Toshiba                   | 011   |
| Popular Mechanics   | 411   | Tudi                      | 247   |
| Pulsar              | 011   | TV86                      | 074   |
| RCA                 | 032   | TV COM                    | 018, 030, 259                               |
| Realistic           | 218   | Uniden                    | 236   |
| Reconon             | 411   | Unika                     | 033, 164, 218                               |
| Regal               | 031, 270, 284, 290                          | United Artists            | 018   |
| Regency             | 013   | United Cable              | 014   |
| Rembrandt           | 081   | Universal                 | 033, 050, 067, 088, 089, 164, 202, 218, 333 |
| RK                  | 315, 317, 490                               | Videoway                  | 261   |
| Samsung             | 051, 155                                    | Vidtech                   | 255   |
| Satbax              | 386   | Viewstar                  | 038, 071, 074, 122, 222, 269, 300           |
| Scientific Atlanta  | 017, 019, 028, 288, 338                     | Westminster cable         | 116   |
| Seam                | 521   | Zenith                    | 011, 065, 536                               |
| Sharp               | 324   | Zontek                    | 411   |
| Signal              | 051   | Wave Master               | 576   |
| Signature           | 022   |                           |   |
| SL Marx             | 051   | <b>DSS receiver brand</b> | <b>Code numbers</b>                         |
| SpectraVision       | 049   | Sony                      | 650   |
| Sprucer             | 032, 318                                    | RCA                       | 577   |
| Standard Components | 107, 166                                    |                           |   |
| Starcom             | 014, 026, 058, 109                          |                           |   |

### Getting Started

#### To ensure correct operation

- Place the Cable Mouse so that it hangs out over the cable box/DSS receiver front.
- Do not place the cable box/DSS receiver on top of the VCR.
- Position the cable box/DSS receiver away from the VCR.
- Point the remote commander at the VCR, not at the cable box/DSS receiver.



#### To check the cable box control setting

- Press CH +/- on the remote commander. Does the channel indicator on the cable box/DSS receiver change? (Point the remote commander at the VCR, not at the cable box/DSS receiver.)
- Press all 10 number buttons (0 to 9) on the remote commander. Does the channel indicator on the cable box/DSS receiver change? If the answer to both 1 and 2 is "yes," you have made the correct setting.

continued

## Setting up cable box control (continued)

If you cannot get your VCR to control the cable box/DSS receiver

- Check that the Cable Mouse is connected to the CABLE BOX CONTROL jack on the VCR.
- Check the position of the Cable Mouse.
- Place the cable box/DSS receiver and VCR away from each other. Do not place the cable box/DSS receiver on top of the VCR.
- Try the setup again making sure to use the correct control code. If the cable box still does not respond, try the other codes that are listed.

If your cable box still does not operate with the Cable Mouse, contact your cable company to see if they can provide you with a compatible cable box.

### Note

- Make sure you turn off the VCR when you plug in or unplug the Cable Mouse. If you unplug the Cable Mouse and plug it in again, turn on the VCR before you use the cable box/DSS receiver control feature.

## Presetting channels

(Skip this section if you are using cable box/DSS receiver control.)

This VCR is capable of receiving VHF channels 2 to 13, UHF channels 14 to 69 and unscrambled CATV channels 1 to 125. First, we recommend that you preset the receivable channels in your area using automatic presetting. Then, if there are any unwanted channels, disable them manually. If you have decided which channels you wish to preset, set them directly using manual presetting.

### Before you start...

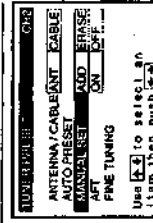
- Turn on the VCR and the TV.
- Set the TV to the VCR channel (channel 3 or 4). If your TV is connected to the VCR using A/V connections, set the TV to video input.
- Press TV/VTR to display the VTR indicator in the VCR's display window.
- Press INPUT SELECT so that a channel number appears in the VCR's display window.

## Presetting all receivable channels automatically

**1** MENU 

Press MENU, then press CURSOR  $\uparrow/\downarrow$  to move the cursor (0) to TUNER PRESET and press EXECUTE.

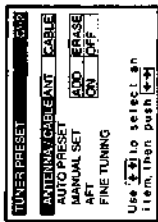
When using the EASY SET UP procedure, skip this step.



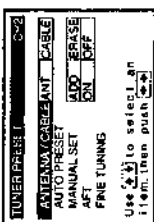
continued

## Presetting channels (continued)

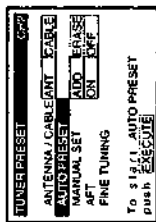
- 2
- To preset cable TV channels:  
Press CURSOR  $\leftarrow/\rightarrow$  to set ANTENNA/CABLE to CABLE.



- To preset VHF and UHF channels:  
Press CURSOR  $\leftarrow/\rightarrow$  to set ANTENNA/CABLE to ANT.

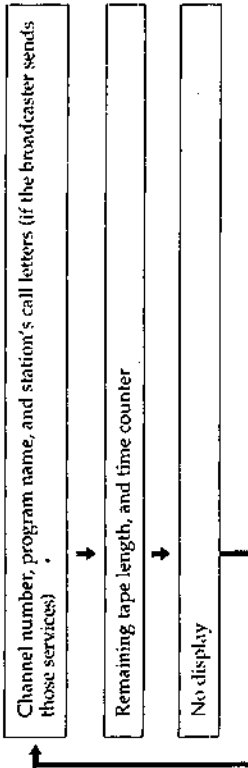


- 3
- Press CURSOR  $\uparrow/\downarrow$  to select AUTO PRESET then press EXECUTE.
- All receivable channels are preset in numerical sequence. When no more receivable channels can be found, presetting stops and the picture from the lowest numbered channel is displayed on the TV screen.

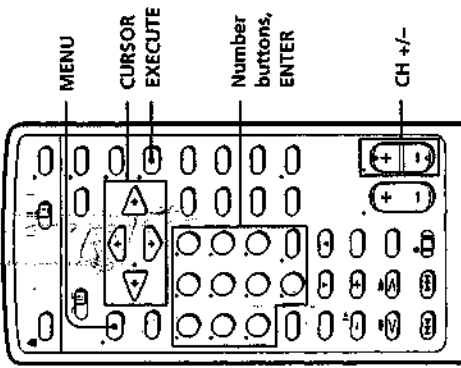


### Tip

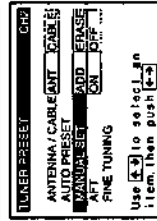
- When receiving a VHF, UHF or CATV channel, the display changes as follows each time you press the DISPLAY button.



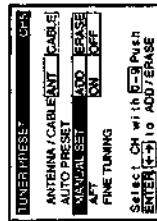
## Presetting/disabling channels manually



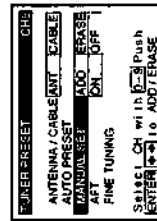
- 1 Press MENU and select TUNER/PRESET.



- 2
- To preset a channel:  
1 Press the number buttons to enter the channel number, then press ENTER.  
2 Press CURSOR  $\leftarrow/\rightarrow$  to set MANUAL SET to ADD.



- To disable a channel:  
1 Press CH +/- to select the channel number.  
2 Press CURSOR  $\leftarrow/\rightarrow$  to set MANUAL SET to ERASE.



- 3 Repeat step 2 to preset or disable channels as required, then press EXECUTE.



## Setting up VCR Plus+

### How VCR Plus+ works

Whenever you want to record a TV program, all you need to do is look up the program's "PlusCode," a number assigned to each program that's published in the TV section of most newspapers, cable TV listings, and even TV GUIDE magazine. Then, just enter the PlusCode of the program you want and the VCR is automatically programmed to record that show. It's that simple.

#### Example of "PlusCode"

|      |                                      |       |          |
|------|--------------------------------------|-------|----------|
| 5:30 | MOVIE - Musical (2hrs.)              | 53034 | PlusCode |
| 6:30 | SPORT - Golf (1hr. 25min.)           | 42080 |          |
|      | NEWS - WS 9974                       |       |          |
|      | DRAMA - Comedy (2hrs.)               | 17390 |          |
|      | SCIENCE AND TECHNOLOGY (1hr. 15min.) | 73457 |          |

#### Example of "Channel Line-up Chart"

| CABLE CH | CABLE TV                      | VCR Plus+ GUIDE CH |
|----------|-------------------------------|--------------------|
| 16       | AMC American Movie Classics   | 35                 |
| 17       | ABC News (program grid only)  | 54                 |
| 20       | CNN Cable News Network        | 42                 |
| 21       | CSPAN C-SPAN                  | 28                 |
| 22       | DIS The Disney Channel        | 53                 |
| 25       | DISC The Discovery Channel    | 37                 |
| 34       | ESPN ESPN                     | 34                 |
| 35       | FAM The Family Channel        | 47                 |
| 5        | HBO Home Box Office           | 33                 |
| 27       | LIF Lifetime                  | 48                 |
| 29       | MAX Max                       | 45                 |
| 30       | MUSC Music Television         | 49                 |
| 31       | NICK Nickelodeon              | 36                 |
| 38       | SPC Sports Channel            | 59                 |
| 39       | SQA Sports Channel Antenna    | 70                 |
| 45       | SHO Showtime                  | 41                 |
| 17       | TBS TBS SuperStation          | 43                 |
| 44       | TNN The Movie Channel         | 56                 |
| 49       | TNN The Nashville Network     | 49                 |
| 50       | TNT Turner Network Television | 52                 |
| 51       | USA USA Network               | 44                 |

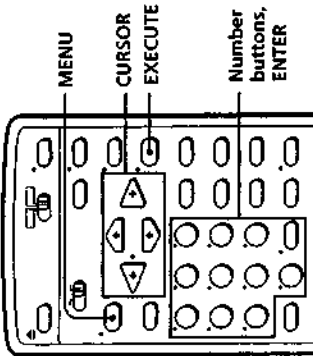
### How to set up your VCR

Setting up your VCR involves coordinating the TV channel number (the number you turn on your TV or VCR to watch a program) with the guide channel (the number that's assigned to that channel in your program guide). To get the guide channel numbers, find the "Channel Line-up Chart" in the program guide for your area that features VCR PlusCodes. It usually looks like the example to the right.

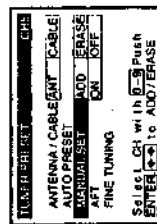
For each channel your VCR receives, use the Channel Line-up Chart to check that the channel numbers match. For example, if HBO is listed in the Channel Line-up Chart on channel 33, and your VCR receives HBO on channel 5, you need to coordinate these numbers using the following procedure. For channels in which the numbers are the same, you can skip this procedure.

### If the picture is not clear

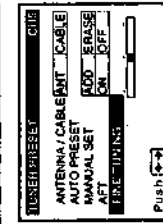
Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture of a channel is not clear, you can also use the manual tuning function.



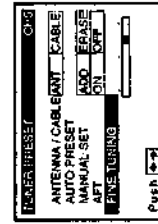
1 Press MENU and select TUNER/PRESET.



2 Press the number buttons to select the channel you want to fine-tune, then press ENTER.

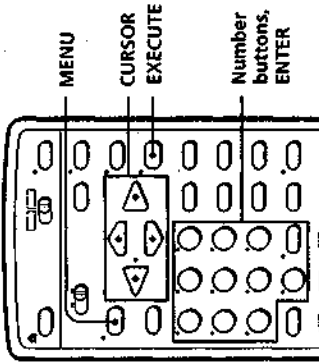



3 Press CURSOR  $\uparrow/\downarrow$  to select FINE TUNING. The fine tuning meter appears.

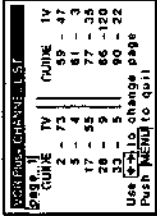



4 Press CURSOR  $\leftarrow/\rightarrow$  to adjust to a clearer picture. Note that the AFT setting switches to OFF.

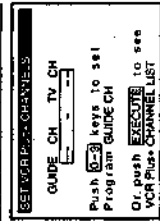








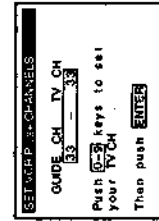
**5** EXECUTE  When you have set all channels, press EXECUTE to confirm your channel settings.














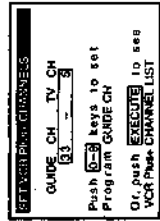
**6** MENU  When you've finished, press MENU to exit.






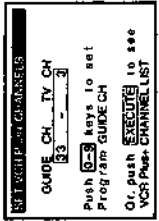
**1** MENU  CURSOR  Press MENU, then press CURSOR  /  to move the cursor (0) to SET VCR Plus+ CHANNELS and press EXECUTE.



**2**           ENTER  Enter the channel number assigned in the program guide and press ENTER.



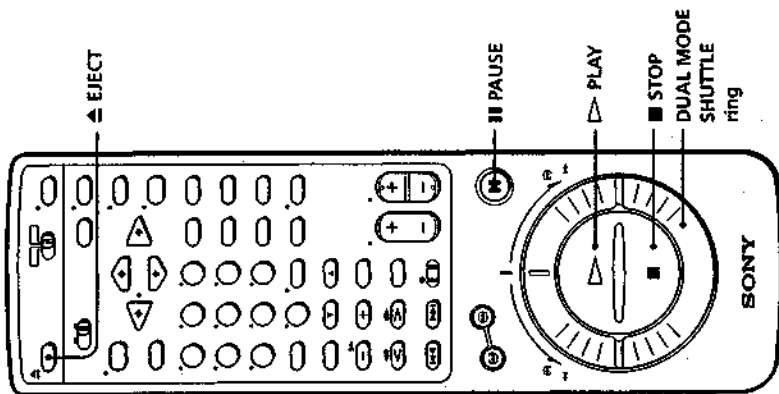
**3** ENTER  ENTER  ENTER  If you made Hookup 1, 2 or 3: Enter the actual number on your TV (and VCR) and press ENTER.  
If you made Hookup 4: Enter the cable output channel (usually 2, 3 or 4) and press ENTER.  
If you made Hookup 6: Enter the actual number on your TV (and VCR) for an unscrambled channel and press ENTER. For a scrambled channel, enter the cable box output channel (usually 2, 3 or 4) and press ENTER.




**4** Repeat steps 2 and 3 for each channel whose numbers don't match.



# Playing a tape



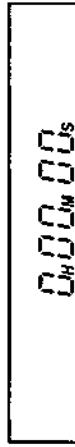
- 1 Turn on your TV and set it to the video channel.
- 2 Open the drop down panel and insert a tape.  
The VCR turns on and starts playing automatically if you insert a tape with its safety tab removed.
- 3 Press  **PLAY**.  
When the tape reaches the end, it will rewind automatically.

## Additional tasks

| To                      | Press  |
|-------------------------|--|
| Stop play               | ■ STOP   |
| Pause play              | ▯ PAUSE  |
| Resume play after pause | ▯ PAUSE or ▷ PLAY  |
| Search forward          | Turn the DUAL MODE SHUTTLE (DMS) ring to Ⓜ during playback |
| Search backward         | Turn the DMS ring to Ⓜ during playback                     |
| Fast-forward the tape   | Turn the DMS ring to ►► FF during stop                     |
| Rewind the tape         | Turn the DMS ring to ◄◄ REW during stop                    |
| Eject the tape          | ➡ EJECT  |

### To use the time counter

At the point on the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for the point afterwards by referring to the counter.

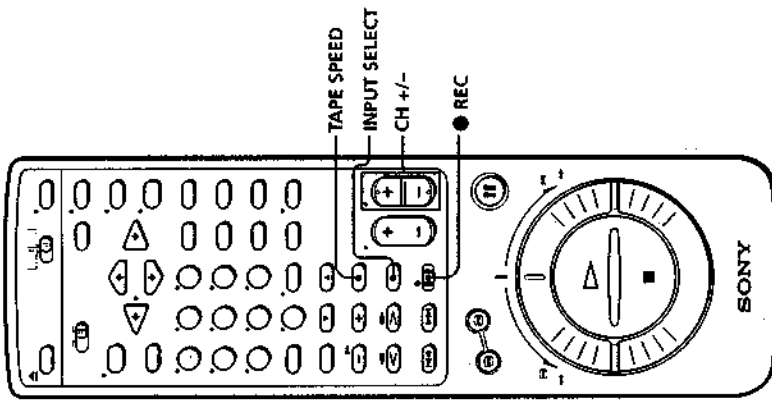


To display the counter on the TV screen, press DISPLAY.

### Notes

- Tapes recorded in the LP mode on other VCRs can be played back on this VCR but the picture quality cannot be guaranteed.
- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.

# Recording TV programs



**5** Press TAPE SPEED to select the tape speed, SP or EP. EP provides recording time three times as long as SP, however, SP produces better picture quality.



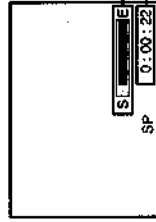
**6** Press ●REC to start recording.



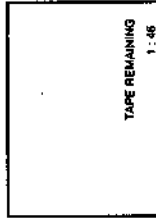
**To stop recording**  
Press ■ STOP.

**To check the remaining tape length**

Press DISPLAY. The white bar indicates the approximate length of tape remaining. With the display on, press COUNTER/REMAIN to check the remaining time. Each time you press COUNTER/REMAIN, the time counter and the remaining time appear alternately. The remaining time also appears in the display window.



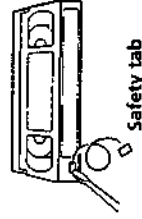
Remaining tape length  
Time counter



To check the remaining time of a tape more than two hours long, set TAPE SELECT in the ADVANCED OPTIONS menu to “-160.” (For details, see page 66.)

**To watch another TV program while recording**

- 1 Press TV/VTR to turn off the VTR indicator in the display window.
- 2 If the TV is connected to the VCR's LINE OUT jacks, set the TV to TV input; if not, skip this step.
- 3 Select another channel on the TV.



**To save a recording**

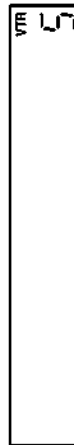
To prevent accidental erasure, break off the safety tab as illustrated. To record on a tape again, cover the tab hole with adhesive tape.

continued

**1** Turn on your TV and set it to the video channel. To record from a cable box, turn it on.

**2** Insert a tape with its safety tab in place.

**3** Press INPUT-SELECT until a channel number appears in the display window.



**4** Press CH +/- to select the channel you want to record.

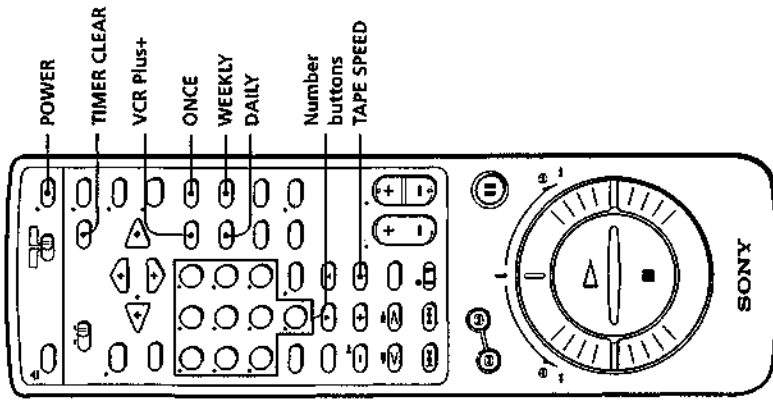


# Recording TV programs using VCR Plus+

Just enter the program's PlusCode listed in the TV program guide. The date, times and channel number of that program are set automatically. You can preset up to eight programs at a time.

### Before you start...

- Check that the VCR clock is set to the correct time.
- Turn on your TV and set it to the video channel. When using a cable box, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.



## Recording TV programs (continued)

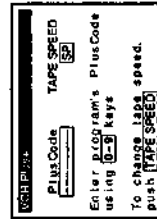
### Tips

- To select a channel, you can use the number buttons on the remote commander. Enter the channel number, then press ENTER.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV. When using a cable box, make sure to leave it on.

### Notes

- The remaining time may not be indicated accurately for short tapes such as T-20 or T-30, or tapes recorded in the LP mode.
- The display does not appear during still mode or slow-motion playback.

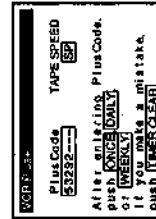
1 VCR Plus+ Press VCR Plus+.



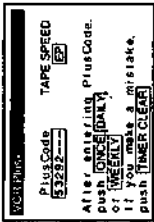
2 Press the number buttons to enter the program's PlusCode.

If you make a mistake, press TIMER CLEAR and re-enter the correct number.

- ①
- ②
- ③
- ④
- ⑤
- ⑥
- ⑦
- ⑧
- ⑨
- ⑩

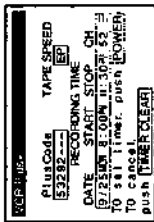


**3** Press TAPE SPEED to select SP or EP.



**4** Press ONCE, DAILY or WEEKLY:

|        |                           |
|--------|---------------------------|
| ONCE   | Press                     |
| or     | ONCE                      |
| DAILY  | Everyday Monday to Friday |
| or     | DAILY                     |
| WEEKLY | Once a week               |
|        | WEEKLY                    |



The date, start and stop times, channel number and tape speed appear on the TV screen. If the information is not correct, press **TIMER CLEAR** to cancel the setting.

**5** To enter another setting, repeat steps 1 to 4.

**6** Press **POWER** to turn off the VCR.



The **TIMER** indicator on the VCR lights up and the VCR stands by for recording. When using a cable box, leave it on.

**To stop recording**

To stop the VCR while recording, press **STOP**.

**To use the VCR after setting the timer**

To use the VCR before a timer recording begins, just press **POWER**. The "TIMER" indicator turns off and the VCR switches on. Remember to press **POWER** to reset the VCR in timer recording standby after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV program.

**To lock the VCR after setting the timer**

Hold down **POWER** on the VCR until the VCR beeps. The VCR turns off and the "LOC" indicator appears on the display window. The VCR will not work except for timer recording.

To unlock the VCR, hold down **POWER** on the VCR until the VCR beeps.

**Tips**

- To cancel the procedure, press **VCR Plus+** before pressing **ONCE**, **DAILY** or **WEEKLY**.
- When you are recording a program in the **SP** mode and the remaining tape becomes shorter than the recording time, the tape speed is automatically changed to the **EP** mode. Note that some noises will appear on the picture when the tape speed is changed. If you want to keep the tape speed, set **AUTO TAPE SPEED** to **OFF** in the **ADVANCED OPTIONS** menu (page 66).

**Notes**

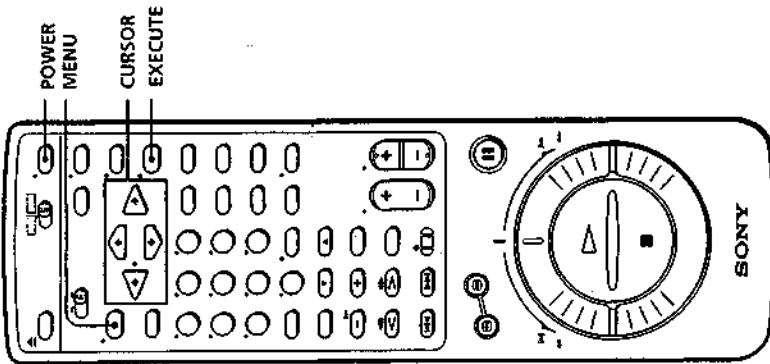
- If the VCR beeps, this means that:
  - The PlusCode is incorrect.
  - **ONCE**, **DAILY** or **WEEKLY** was selected incorrectly. You cannot select **DAILY** or **WEEKLY** for a program that airs more than seven days ahead.
- The VCR will be unlocked when:
  - you stop timer recording by pressing **STOP**
  - you insert a tape
  - the AC power cord is disconnected or power supply stops

## Setting the timer manually

If VCR Plus+ is not available in your area, follow the instructions below to set the timer to record programs.

### Before you start...

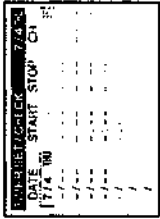
- Check that the VCR clock is set to the correct time.
- Turn on your TV and set it to the video channel. When using a cable box, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.



2

Set the date, start and stop times, channel number and tape speed:

- 1 Press CURSOR → to highlight each item in turn.
- 2 Press CURSOR ↓/↑ to set each item. To correct a setting, press CURSOR ← to return to that setting and reset.



To record the same program every day or the same day every week, press CURSOR ↓. For details, see "Daily/weekly recording" on page 55.

To record from a source connected to the LINE -1 IN or LINE -2 IN jacks, press INPUT SELECT to display "L1" or "L2" in the "CH" position.

3

- Press CURSOR → to confirm the setting. The cursor (I) appears at the top of the line. To enter another setting, move the cursor to the next line and repeat step 2.

4

Press EXECUTE.

5

- Press POWER to turn off the VCR. The TIMER indicator on the VCR lights up and the VCR stands by for recording. When using a cable box, leave it on.

### Daily/weekly recording

In step 2 above, press CURSOR ↓ to select the recording pattern. Each time you press CURSOR ↓, the indication changes as shown below. Press CURSOR ↑ to change the indication in reverse order.

the current date → SUN-SAT → MON-SAT → MON-FRI → EVERY SAT .....  
→ EVERY MON → EVERY SUN → 1 month later → (cycles backward) →  
the current date

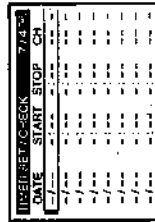
### Tips

- To set the channel, you can also use the CH+/- or number buttons.
- To set the tape speed, you can also use TAPE SPEED.
- When you are recording a program in the SP mode and the remaining tape becomes shorter than the recording time, the tape speed is automatically changed to the EP mode. Note that some noises will appear on the picture when the tape speed is changed. If you want to keep the tape speed, set AUTO TAPE SPEED to OFF in the ADVANCED OPTIONS menu (page 66).
- To lock the VCR after setting the timer, see page 54.

### Note

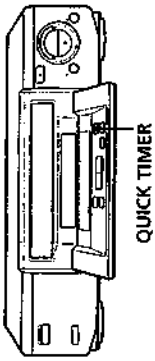
- If you are using cable box control, you cannot select "L1" or "L2."

- 1 MENU Press MENU and select TIMER SET/CHECK.





## Recording TV programs using the quick timer



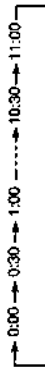
After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.

- 1 While recording, press QUICK TIMER once.



- 2 Press QUICK TIMER repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.



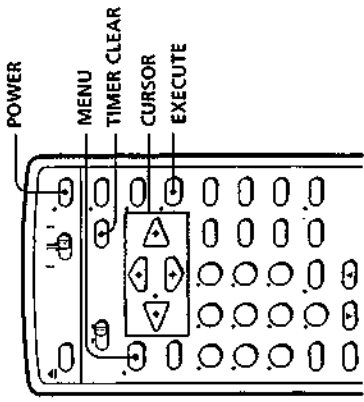
### To check or extend the duration

Press QUICK TIMER once. The duration is displayed for 10 seconds. If you want to extend the time, press QUICK TIMER within 10 seconds to set to the new duration.

### To stop while recording

Press ■STOP.

## Checking/ changing/ cancelling timer settings



### Before you start...

- Turn on your TV and set it to the video channel.

- 1 Press POWER to turn on the VCR.
- 2 Press MENU and select TIMER SET/CHECK:

- If you want to change a setting, go on to the next step.

- If you do not need to change the settings, press EXECUTE, then turn off the VCR to return to recording standby.

| DATE      | START | STOP  | CH    |
|-----------|-------|-------|-------|
| 7/5       | 7:00  | 8:00  | 6     |
| 7/12      | 10:30 | 11:30 | 5     |
| MON - SUN | 1:00  | 3:00  | JM    |
| OPER      | 8     | 1:30  | 12    |
| - / -     | - / - | - / - | - / - |
| - / -     | - / - | - / - | - / - |
| - / -     | - / - | - / - | - / - |

- 3 Press CURSOR ↓/↑ to select the setting you want to change:

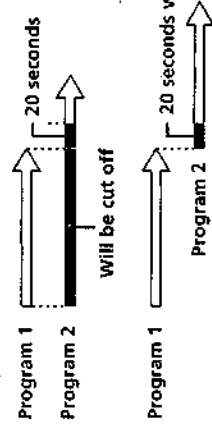
- To change the setting, press CURSOR ←/→ to highlight the item you want to change, and press CURSOR ↓/↑ to reset it. Then, press CURSOR → repeatedly until the cursor (I) appears at the top of the line.

- 4 To cancel the setting, press TIMER CLEAR.
- Press EXECUTE.

If any timer settings remain, turn off the VCR to return to recording standby.

### When the timer settings overlap

The program that starts first has priority and the second program starts recording only after the first program has finished. If the programs start at the same time, the program listed first in the menu has priority.



## Recording stereo and bilingual programs

### Recording stereo programs

This VCR automatically receives and records stereo programs. When a stereo program is received, the STEREO indicator lights up. If there is noise in the stereo program, set AUTO STEREO in the ADVANCED OPTIONS menu to OFF. The sound will be recorded in monaural (on both hi-fi and normal audio tracks) but with less noise. For details, see page 66.

### Recording bilingual programs

Normally, this VCR records only the main sound on both hi-fi and normal audio tracks. To record SAP (Second Audio Program) sound on the normal audio track, set NORMAL AUDIO in the ADVANCED OPTIONS menu to SAP (the SAP indicator lights up). For details, see page 66.

### To select the bilingual sound while recording

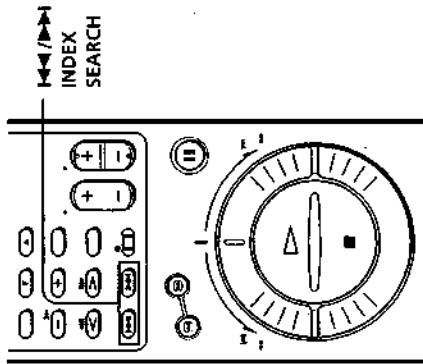
Press AUDIO MONITOR to select the sound you want.

### Selecting the sound during playback

Press AUDIO MONITOR to select the sound you want.

| To listen to                          | On-screen display | Display window |
|---------------------------------------|-------------------|----------------|
| Stereo/main (left and right channels) | STEREO            | STEREO         |
| Left channel only                     | LEFT CH           | STEREO         |
| Right channel only                    | RIGHT CH          | STEREO         |
| Monaural (SAP)                        | No indicator      | No indicator   |

## Searching using the index function



The VCR marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording. The VCR can search up to 99 index signals ahead of or behind the current position.

- 1 Insert an indexed tape into the VCR.
- 2 Press **INDEX SEARCH** repeatedly to specify how many index signals ahead or behind you want to search:

- To search ahead, press **INDEX SEARCH**.
- To search backwards, press **INDEX SEARCH**.

The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

### To stop searching

Press **STOP**.

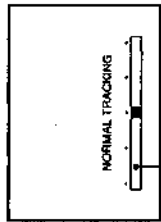


## Adjusting the picture

### Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape (the AUTO TRACKING indicator flashes in the display window, then lights steadily), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking.

Press the **▼/▲** TRACKING NORMAL/SLOW buttons to display the tracking meter. The distortion should disappear as you press one of the two buttons. If you cannot get a clear picture with manual adjustment, press TRACKING AUTO/MANUAL to return to automatic adjustment.



Tracking meter

### About Adaptive Picture Control (APC)

Adaptive Picture Control (APC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set APC to ON in the **ADVANCED OPTIONS** menu (with the APC indicator in the display window lit).

#### APC playback

The APC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with APC.

#### APC recording

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the APC function (the APC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

#### Notes

- Auto tracking adjustment cannot be used on tapes recorded in the LP mode on other VCRs.
  - The APC function does not work if the tape speed is automatically changed from the SP to EP mode during a timer recording, unless the tape has been recorded in the EP mode with the APC function.
  - There is a delay of a few seconds before the VCR actually starts recording while the VCR analyzes the tape. To avoid the delay, first set the VCR to recording pause (the APC indicator flashes slowly) and press **●** REC to have the VCR analyze the tape (the APC indicator flashes rapidly). After the APC indicator stops flashing, press **■** PAUSE to start recording immediately.
- If you want to start recording quickly without using the APC function, first set the VCR to recording pause (the APC indicator flashes slowly) and press **■** PAUSE to start recording.

## Changing menu options

- 1 Press **MENU** and select **ADVANCED OPTIONS**.

| ADVANCED OPTIONS |           |
|------------------|-----------|
| AUTO ANT SEL     | ON OFF    |
| AUTO STEREO      | ON OFF    |
| AUDIO MIX        | ON OFF    |
| NORMAL AUDIO     | ON OFF    |
| APC              | ON OFF    |
| SHARPNESS        | ON OFF    |
| TAPE SELECT      | -120 -160 |
| AUTO TAPE SPEED  | ON OFF    |

- 2 Press **CURSOR** **↑/↓** to select the option to change, then press **CURSOR** **←/→** to change the setting.
- 3 Press **EXECUTE** to return to the original screen.

#### Menu choices

Initial settings are indicated in bold print.

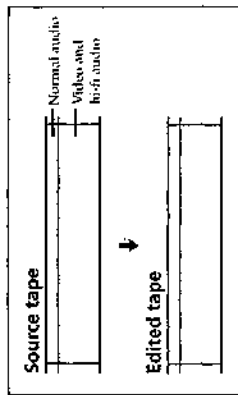
| Menu option     | Set this option to   |
|-----------------|--|
| AUTO ANT SEL    | <b>ON</b> if your TV is connected only to VHF/UHF OUT on the VCR. To play a tape, set the TV to the VCR channel (channel 3 or 4).<br><b>OFF</b> if your TV is connected to both VHF/UHF OUT and LINE OUT on the VCR. To play a tape, set the TV to the VCR input.            |
| AUTO STEREO     | <b>ON</b> to receive stereo programs, <b>OFF</b> to reduce noise. The sound changes to monaural.   |
| DIMMER          | <b>ON</b> to make the display window dim, <b>OFF</b> to make it brighter.  |
| AUDIO MIX       | <b>ON</b> to listen to the sound recorded on hi-fi and normal audio tracks at the same time. The <b>AUDIO MONITOR</b> button will not function.<br><b>OFF</b> to listen to hi-fi and normal audio tracks separately. Select the sound using the <b>AUDIO MONITOR</b> button. |
| NORMAL AUDIO    | <b>MAIN</b> to record the main sound on both hi-fi and normal audio tracks.<br><b>SAP</b> to record the SAP (Second Audio Program) sound on the normal audio track. The main sound is recorded on the hi-fi audio track.   |
| APC             | <b>ON</b> to switch on the APC (Adaptive Picture Control) function and improve picture quality, <b>OFF</b> to switch off APC.  |
| SHARPNESS       | <b>ON</b> to get a sharp picture, <b>OFF</b> to clear the sharpness control.   |
| TAPE SELECT     | "-120" or "-160" to select the tape length and display the remaining time correctly.   |
| AUTO TAPE SPEED | <b>ON</b> to change the timer recording tape speed automatically to the EP mode when the remaining tape becomes shorter than the recording time, <b>OFF</b> to keep the tape speed.  |

## Editing methods

This section introduces you to various ways to edit tape recordings.

### Basic editing

You can make a copy of a tape.



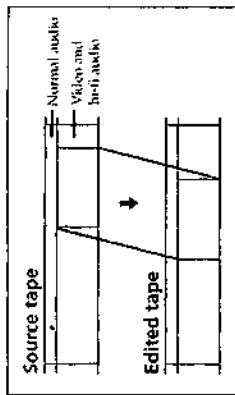
### Insert editing

You can replace an existing scene with material from another recording. There are three kinds of insert editing.

#### Video insert

Replaces the original video and hi-fi audio. The monaural sound on the normal audio track is retained.

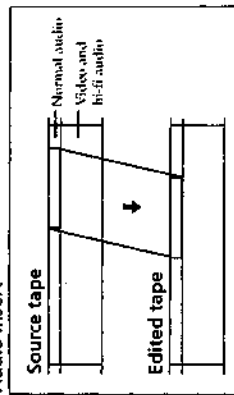
#### Video insert



#### Audio insert

Replaces the original monaural sound on the normal audio track. The video and hi-fi sound are left intact. For example, you can use this feature to add commentary to a tape recorded on a camcorder.

#### Audio insert

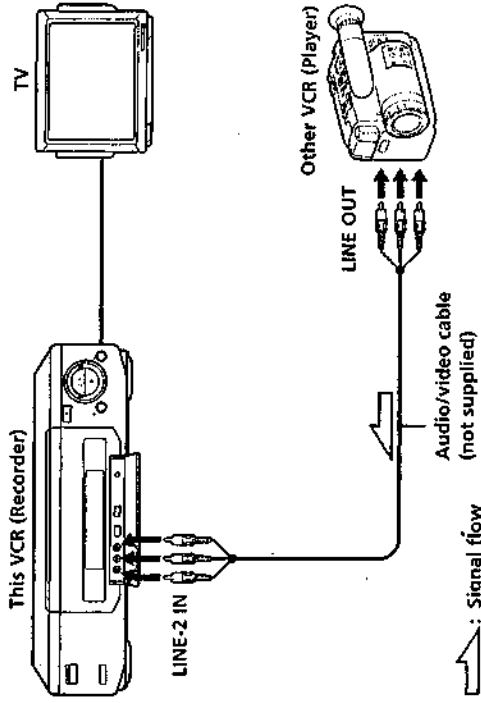


#### A/V insert

Replaces the original video and both hi-fi and monaural sound.

## Hooking up to a VCR or stereo system

### How to hook up to record on this VCR



If the other VCR has a **CONTROL S OUT** jack for synchronized editing Hook up to record on the other VCR, then connect the VCRs via the **CONTROL S** jacks. The **CONTROL S** connection lets you control (pause and release pause) both VCRs from the recording VCR.

#### Notes

- Make sure you connect the plugs to jacks of the same color.
- If the other VCR is a monaural type, leave the red plugs unconnected.
- If you connected this VCR to both the **LINE IN** and **LINE OUT** jacks of the other VCR, select the input correctly to prevent a humming noise.
- If the **CONTROL S IN** jack is used for SystemLink (A/V bus control) with a TV, the **CONTROL S** connection cannot be used for editing.

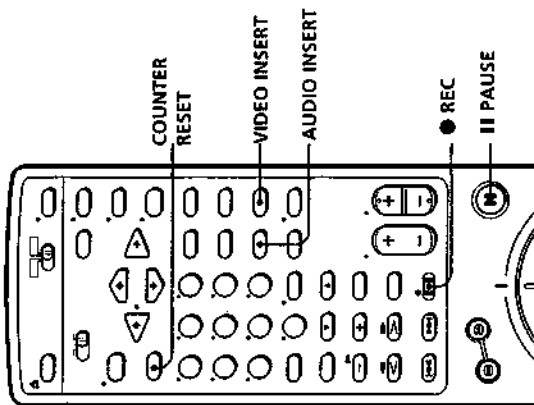
### How to hook up to a stereo system

Connect **LINE-2 IN AUDIO** on this VCR to the audio output jacks on the stereo system, using the RK-C510KS audio cable (not supplied).

## Insert editing

### Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" in the display window.
- Press TAPE SPEED on the remote commander to select the tape speed, SP or EP.
- On this VCR, set the EDIT switch to ON. If the other VCR has a similar switch, set it to ON as well.



### To stop editing

Press the **STOP** buttons on this VCR and the other VCR (or stereo system).

### To listen to both the hi-fi and normal audio

Set AUDIO MIX to ON in the ADVANCED OPTIONS menu (page 66). Use this feature to listen to inserted audio together with the original hi-fi audio. When AUDIO MIX is set to ON, the AUDIO MONITOR button does not function. Remember to reset AUDIO MIX to OFF after playing the tape.

### Note

- To use the INSERT function, this VCR must be set to playback pause, not recording pause.

- 1 Insert a source tape into the playback VCR or the stereo system. Search for the point to start playback and set it to playback pause.
  - 2 Insert a prerecorded tape into this (recording) VCR. Search for the end of the scene to be replaced and press **PAUSE**.
  - 3 Press COUNTER RESET on this VCR to reset the counter to "0H00M00S."
  - 4 Rewind the prerecorded tape to the beginning of the scene to be replaced.
- The VCR pauses.
- 5 Press the INSERT buttons:

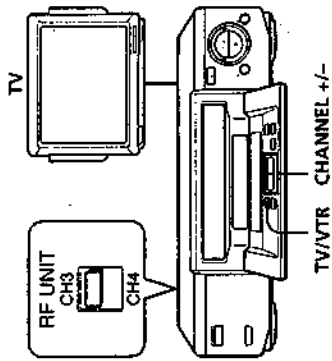
| To replace                        | Press   |
|-----------------------------------|---|
| Picture and hi-fi sound           | INSERT VIDEO<br>"VID INSE" appears on the TV screen and "V INSERT" appears in the display window.                     |
| Monaural sound only               | INSERT AUDIO<br>"A INSE" appears in the display window.   |
| Picture, hi-fi and monaural sound | INSERT AUDIO, then INSERT VIDEO<br>"A/V INSE" appears on the TV screen and "AV INSERT" appears in the display window. |

- 6 To start editing, press the **PAUSE** buttons on this VCR and the other VCR (or stereo system) at the same time.

## General setup information

### Setting the RF unit

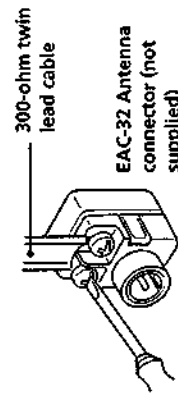
When connecting the VCR to the TV using only the antenna cable, you must set the RF UNIT switch on the rear of the VCR so that the TV can receive the correct signal from the VCR.



- 1 Set the RF UNIT switch on the rear of the VCR to CH3 or CH4, whichever channel is not used in your area. If both are used, set the switch to either channel.
  - 2 Press POWER to turn on the VCR.
  - 3 Press TV/VTR to turn on the VTR indicator in the VCR's display window.
  - 4 Press CHANNEL +/- to display a channel number in the display window. Select an active channel number in your area.
  - 5 Turn on your TV and set it to the channel you selected in step 1 (channel 3 or 4).
- The selected TV channel broadcast appears on the TV screen. If the channels change when you press CHANNEL +/- on the VTR, you have made the correct setting.
- Whenever you use the VCR, set the TV to the channel selected in step 1.

### Attaching the external antenna connector

When using a 300-ohm twin lead cable for VHF/UHF antenna, use the EAC-32 antenna connector (not supplied) to connect the antenna to the VCR.

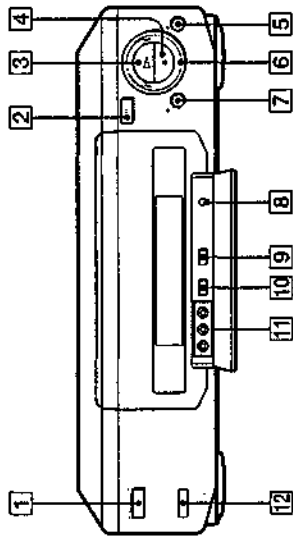


- 1 Loosen the screws on the antenna connector.
- 2 Wind the twin leads around the screws on the antenna connector.
- 3 Retighten the screws.

## Index to parts and controls

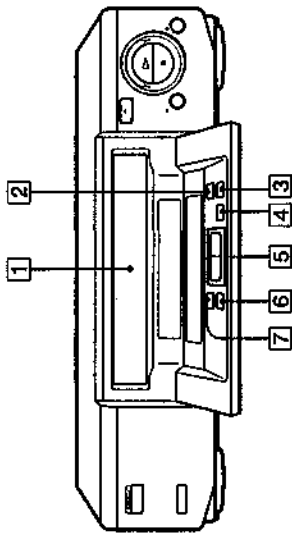
Refer to the pages indicated in parentheses ( ) for details.

### Front panel



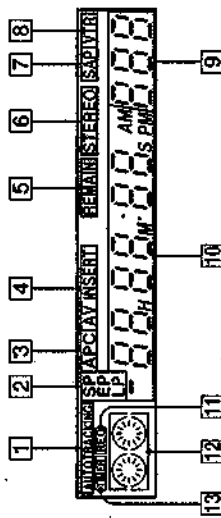
- |                                   |   |
|-----------------------------------|---|
| 1 POWER switch/indicator          | 8 EASY SET UP button (11, 14, 17, 20, 23) |
| 2 EJECT button (49)               | 9 COMMAND MODE switch (5)                 |
| 3 PLAY button (49)                | 10 EDIT switch (69)                       |
| 4 STOP button (49)                | 11 LINE-2 IN VIDEO/AUDIO L/R jacks (68)   |
| 5 REC button (50)                 | 12 Remote sensor                          |
| 6 DUAL MODE SHUTTLE ring (49, 58) |   |
| 7 PAUSE button (49)               |   |

### Front panel, with cover opened



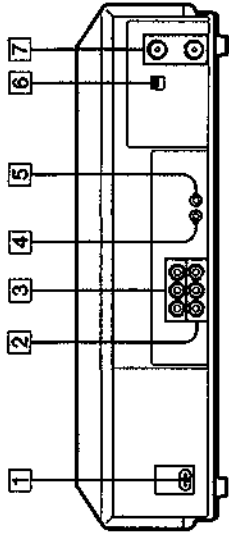
- 1 Tape compartment
- 2 QUICK TIMER button (60)
- 3 TAPE SPEED (SP/EP) button (51)
- 4 COUNTER RESET button (49)
- 5 CHANNEL +/- buttons (50)
- 6 INPUT SELECT button (50, 69)
- 7 TV/VTR button (51)

### Display window



- 1 AUTO TRACKING indicator (65)
- 2 Tape speed indicator (51)
- 3 APC indicator (65)
- 4 AV INSERT indicator (70)
- 5 REMAIN indicator (51)
- 6 STEREO indicator (62)
- 7 SAP indicator (62)
- 8 VTR indicator (51)
- 9 Line/channel indicator (50, 69)
- 10 Time counter/remaining time counter/clock
- 11 REC indicator
- 12 Tape indicator
- 13 TIMER indicator

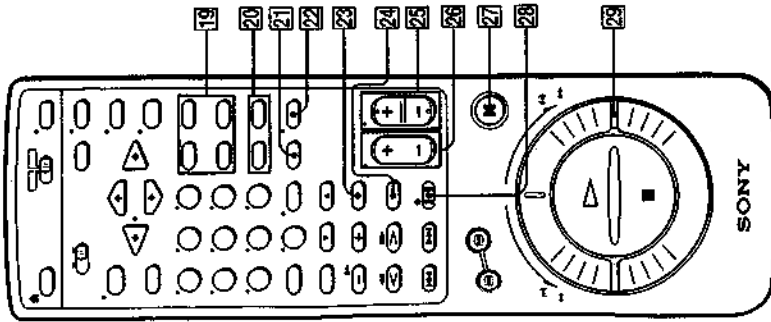
### Rear panel



- 1 AC IN connector
- 2 LINE OUT AUDIO L/R/VIDEO jacks (8)
- 3 LINE-1 IN AUDIO L/R/VIDEO jacks (68)
- 4 SYSTEMLINK (CONTROLS IN) jack (9, 68)
- 5 CABLE BOX CONTROL (CONTROL S OUT) jack (10, 22)
- 6 RF UNIT switch (72)
- 7 VHF/UHF IN/OUT connectors (10, 13, 16, 19, 22, 25)

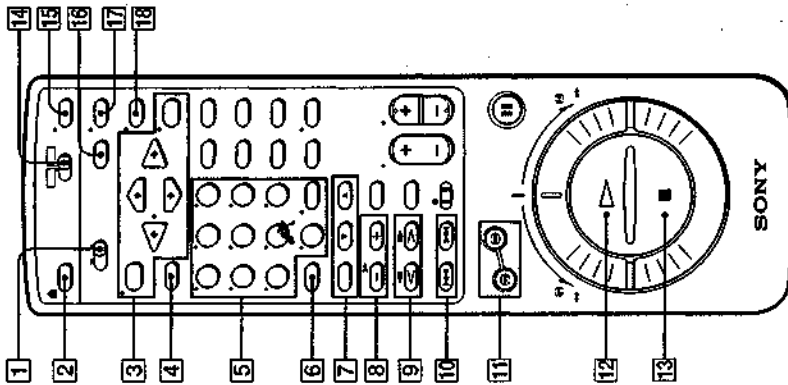
**Index to parts and controls (continued)**

- 19 VCR Plus+ buttons (53)
- VCR Plus+ button
- ONCE button
- DAILY button
- WEEKLY button
- 20 AUDIO/VIDEO INSERT buttons (70)
- 21 COUNTER/REMAIN button (51)
- 22 DISPLAY button (51)
- 23 TAPE SPEED button (51)
- 24 INPUT SELECT button (50, 69)
- 25 CH +/- buttons (50)
- 26 VOL +/- buttons (5)
- 27 PAUSE button (49)
- 28 REC button (50)
- 29 DUAL MODE SHUTTLE ring (49, 58)

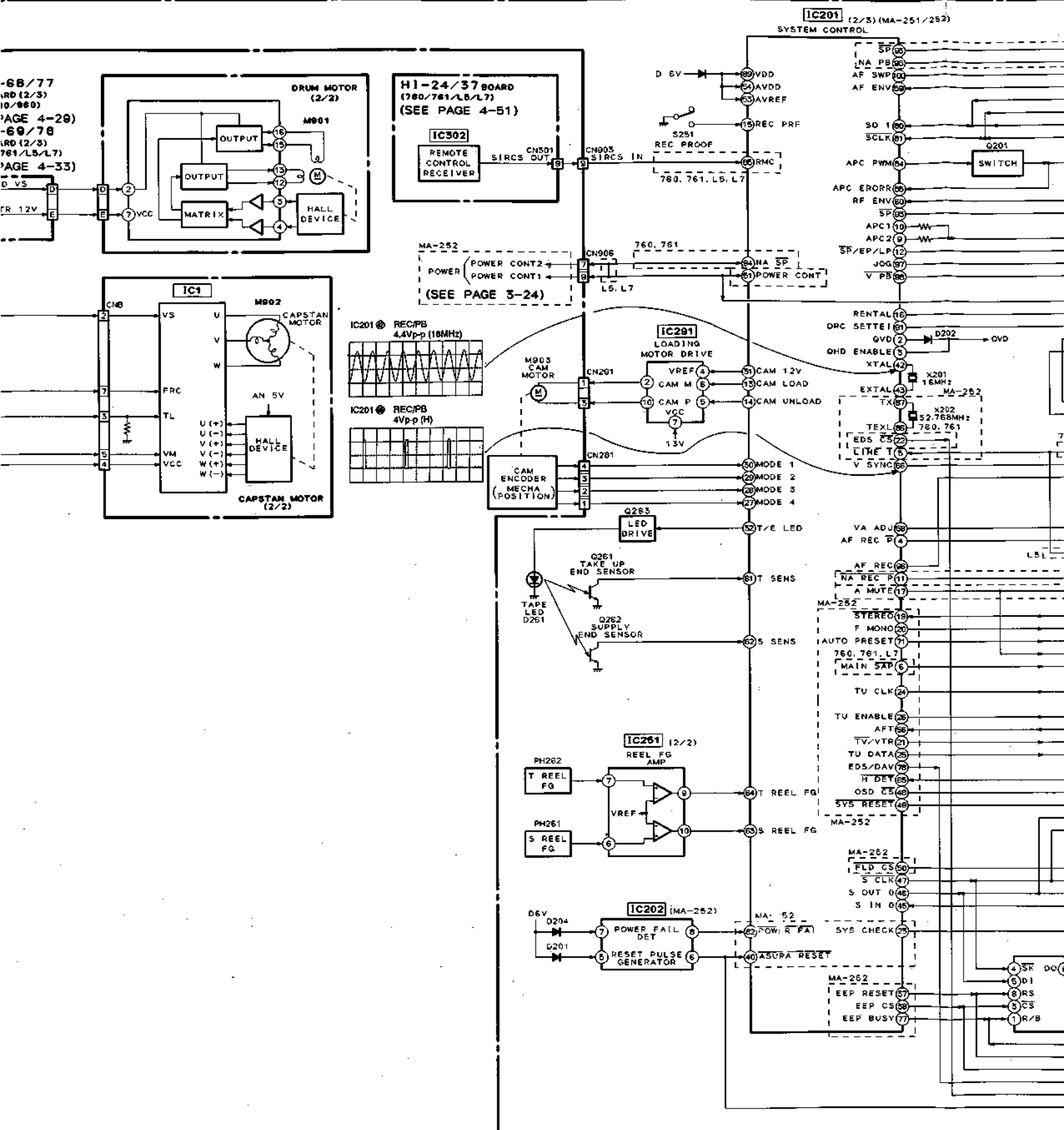


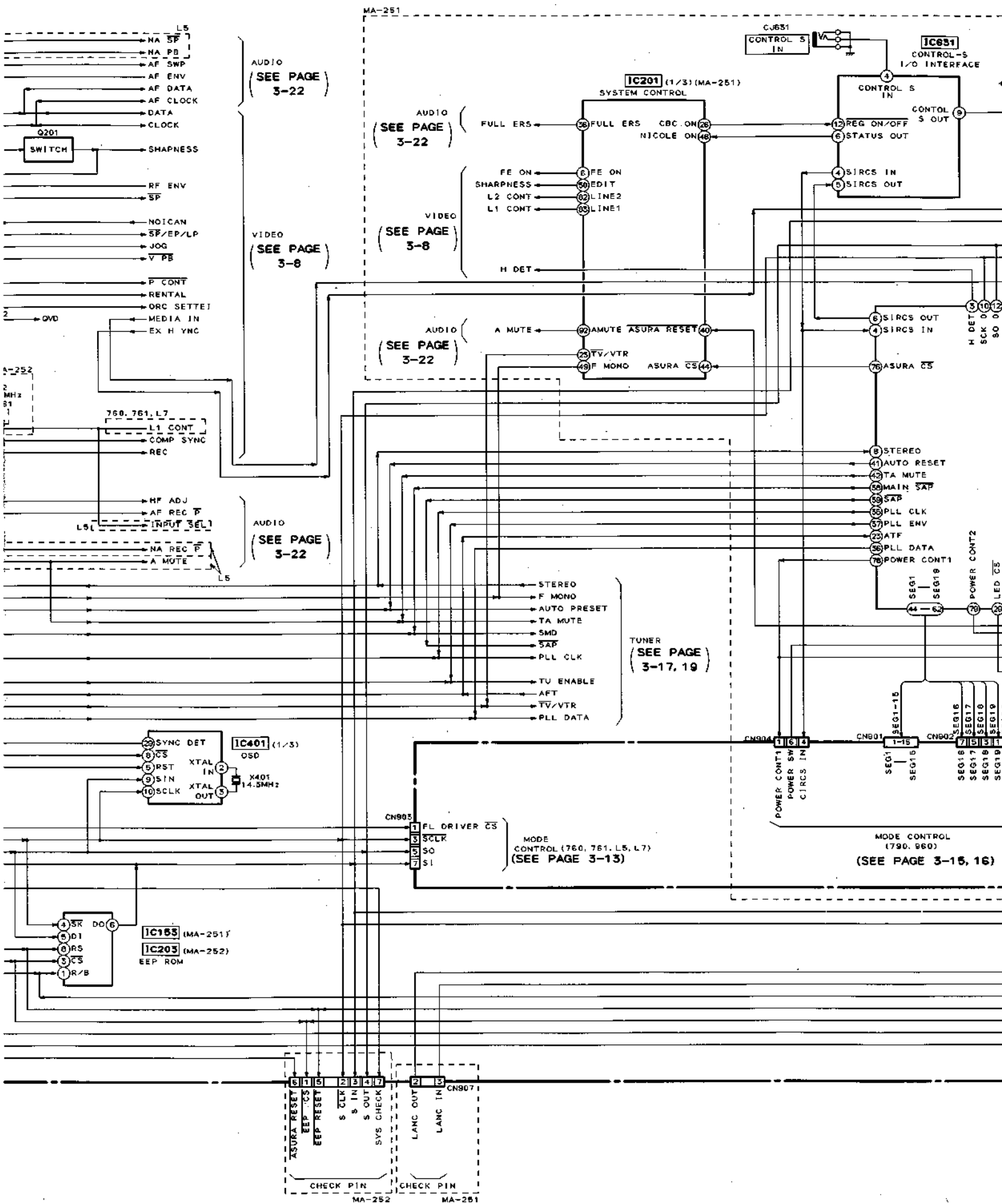
**Remote commander**

- 1 COMMAND MODE switch (5)
- 2 EJECT button (49)
- 3 Menu operation buttons (29)
- MENU button
- CURSOR  $\uparrow/\downarrow/\leftarrow/\rightarrow$  buttons
- EXECUTE button
- 4 COUNTER RESET button (49)
- 5 Channel number buttons and ENTER button (43, 46)
- 6 SKIP button (58)
- 7 TRACKING buttons (65)
- $\nabla/\blacktriangle$  NORMAL/SLOW (STILL) ADJUST buttons
- AUTO/MANUAL button
- 8 SLOW buttons (58)
- 9  $\lll/\lll$  FRAME buttons (58)
- 10  $\lll/\lll$  INDEX SEARCH buttons (64)
- 11  $\text{TV}/\text{VTR}$  SEARCH buttons (58)
- 12 PLAY button (58)
- 13 STOP button (49)
- 14  $\text{TV}/\text{VTR}$  remote control switch (5)
- 15 POWER button
- 16 TIMER CLEAR button (53)
- 17  $\text{TV}/\text{VTR}$  button (51)
- 18 AUDIO MONITOR button (62)

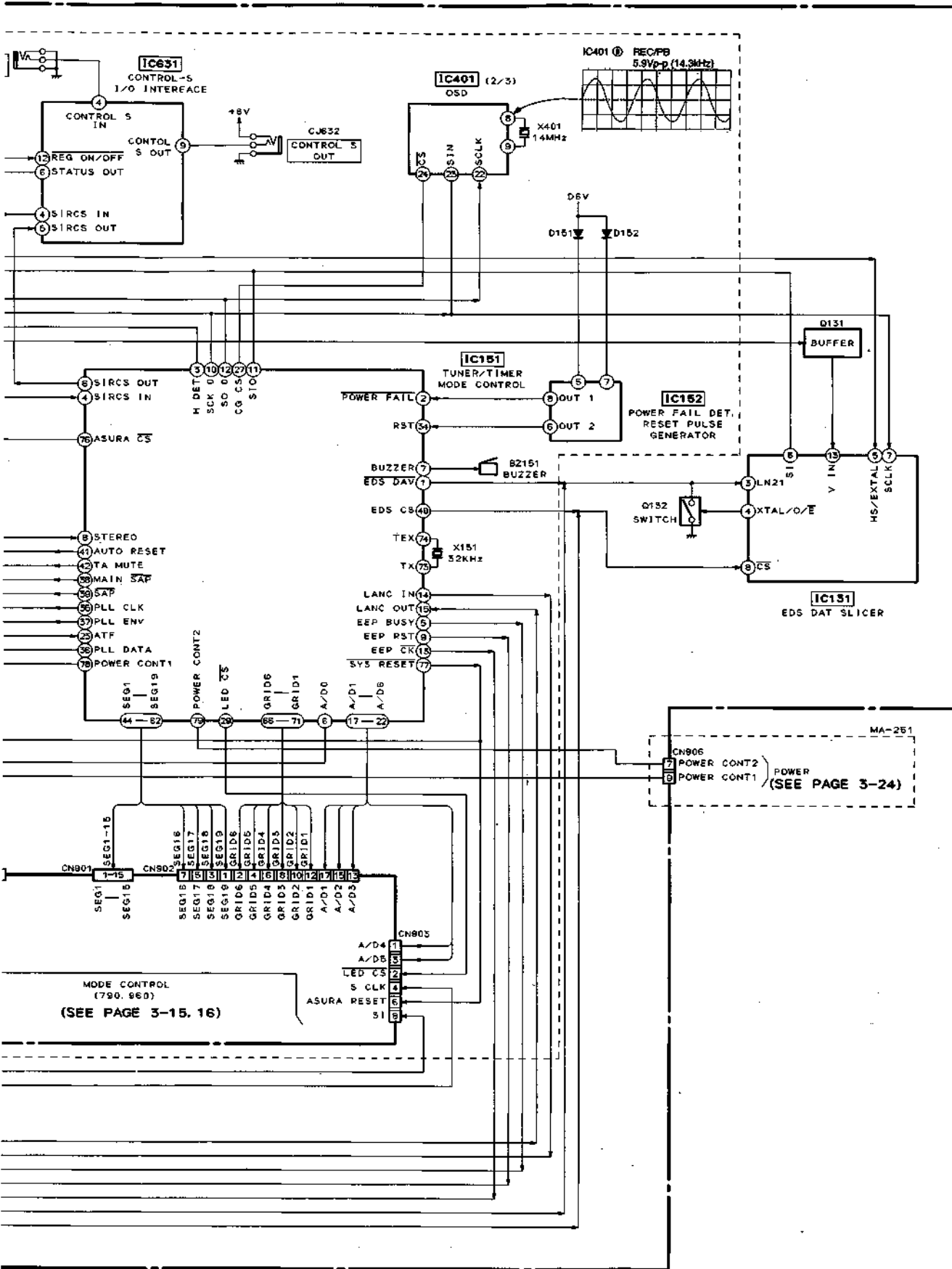


continued



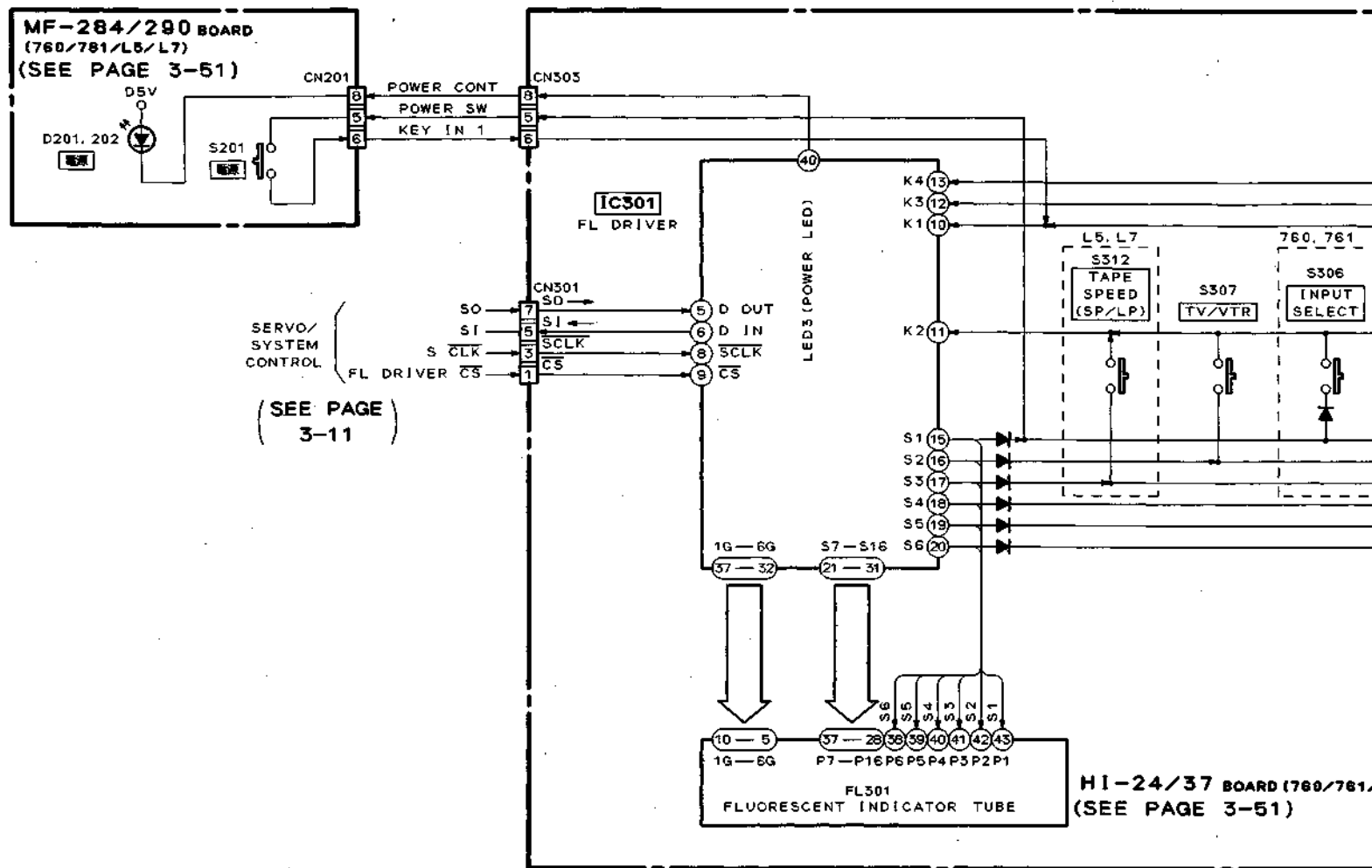




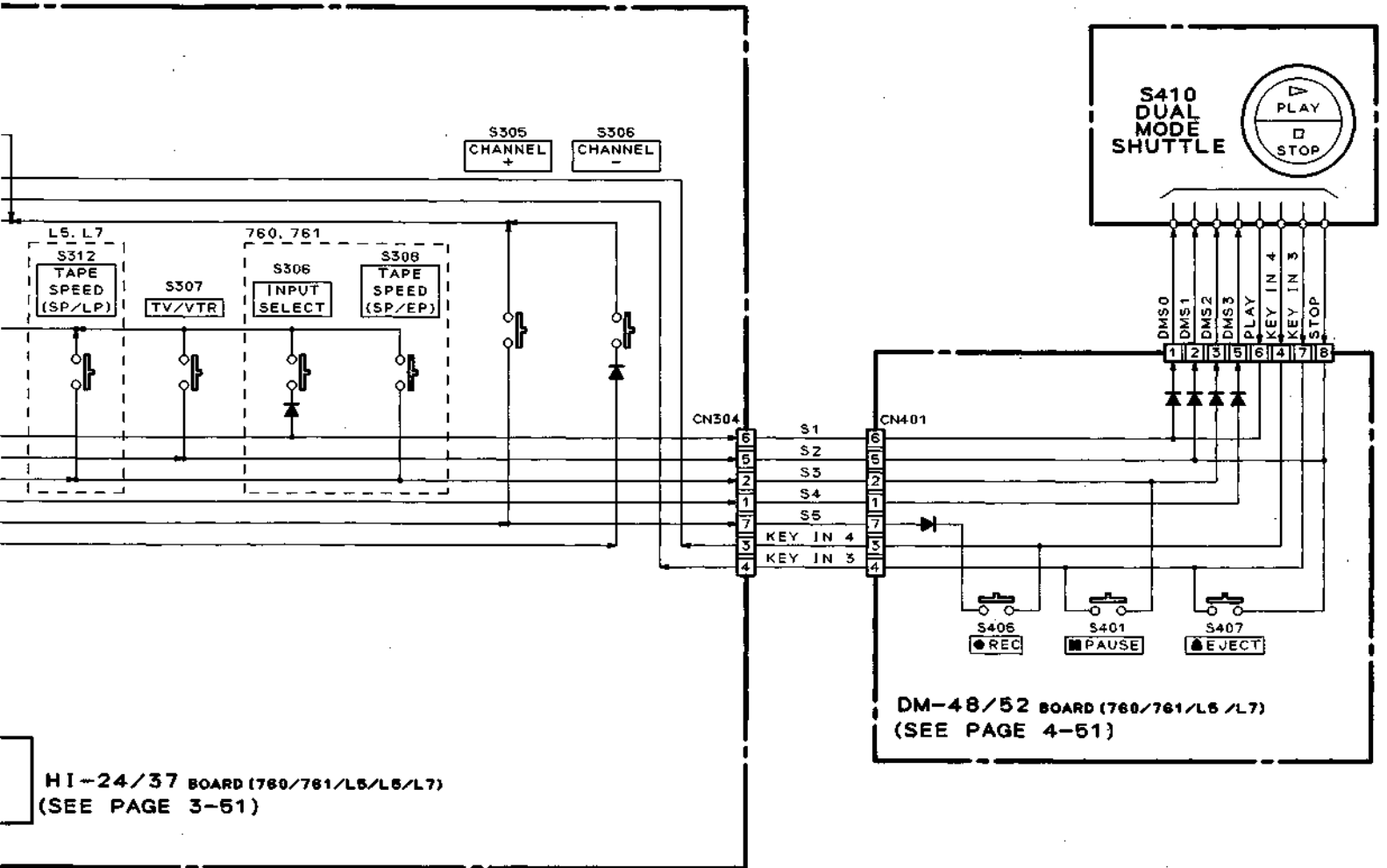


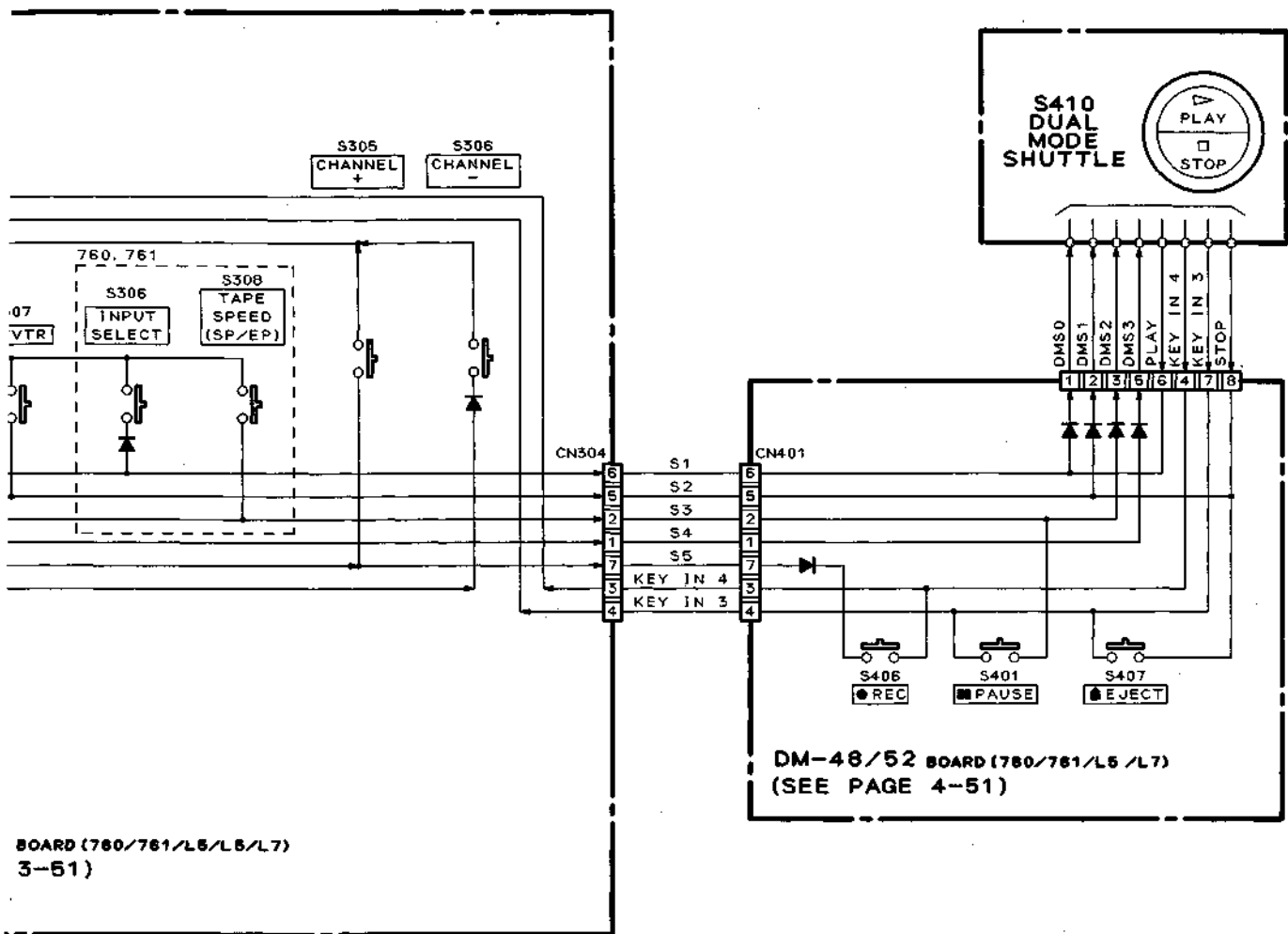
3-4. MODE CONTROL BLOCK DIAGRAM

—SLV-760/761/L5/L7—



05

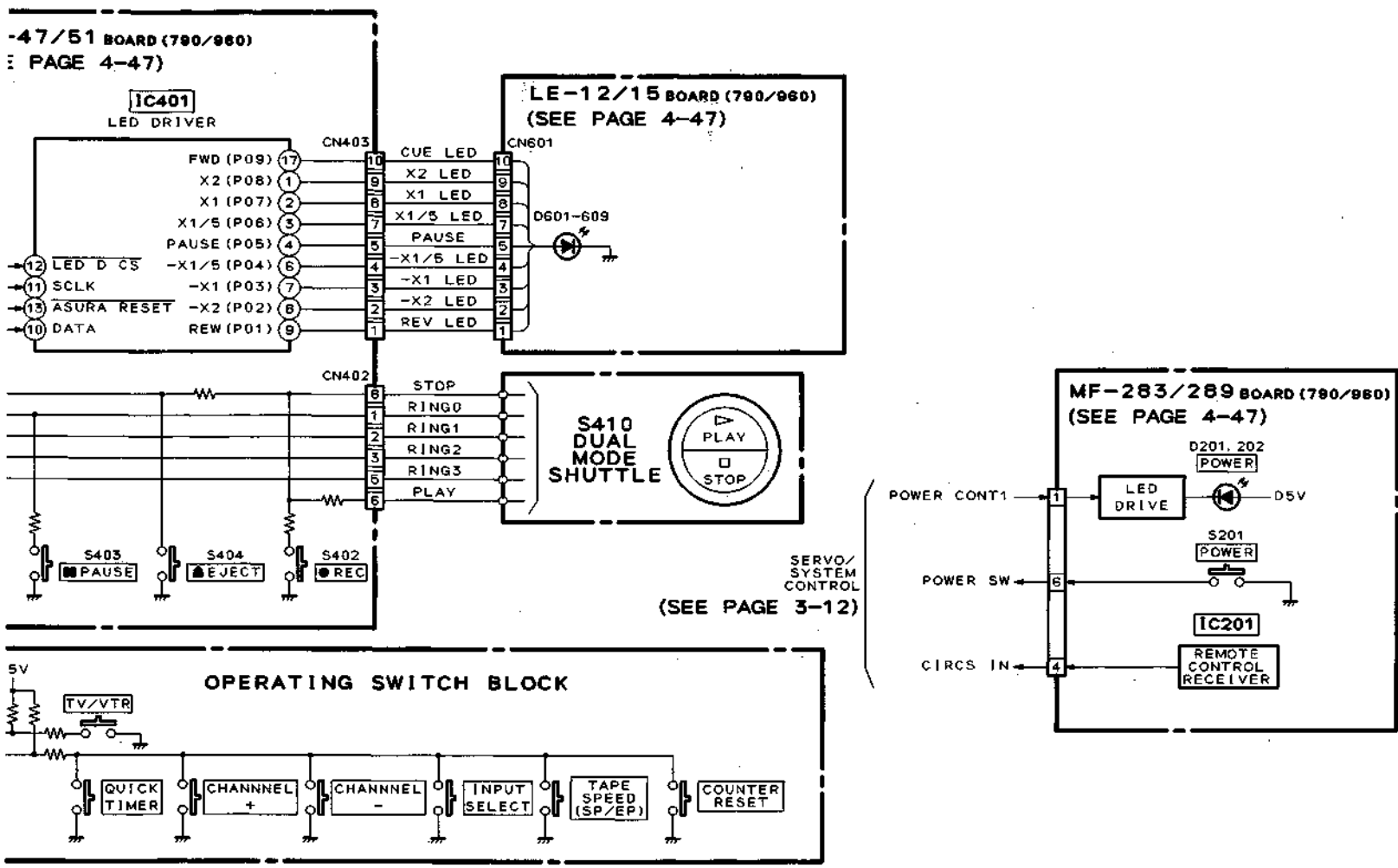




BOARD (760/761/L5/L6/L7)  
3-51)

DM-48/52 BOARD (760/761/L5/L7)  
(SEE PAGE 4-51)

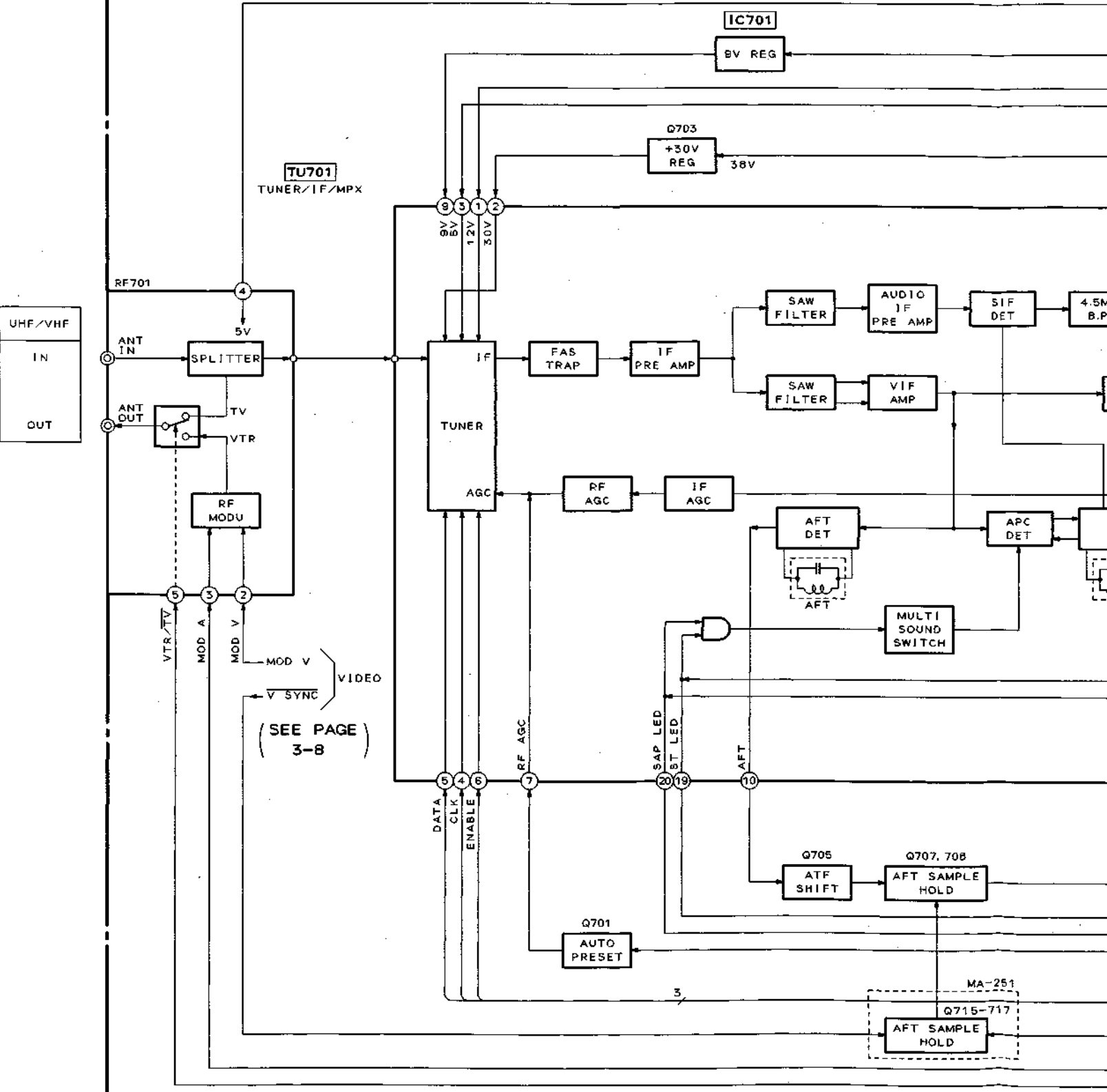
HI-23/3  
(SEE PAGE

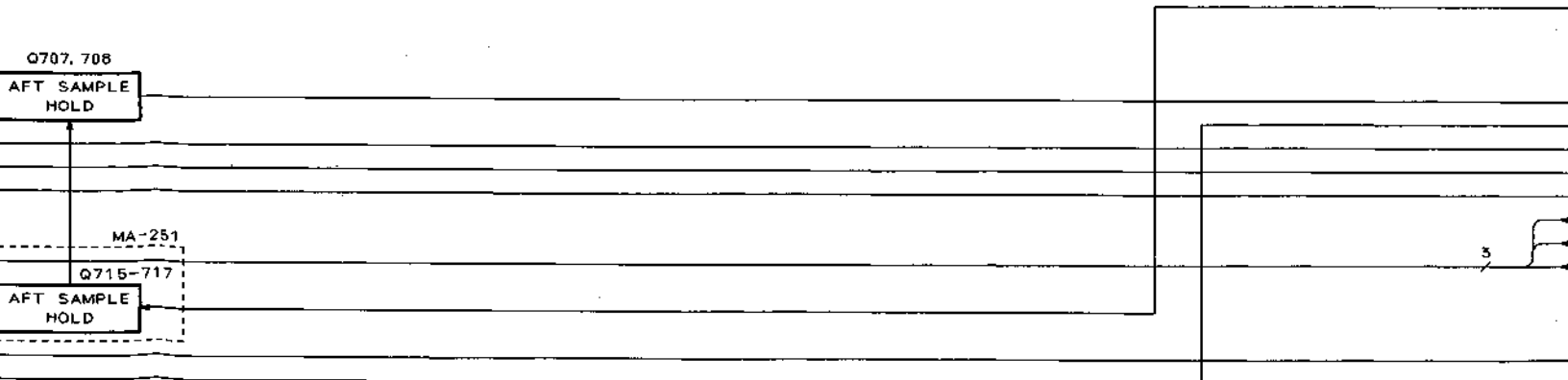
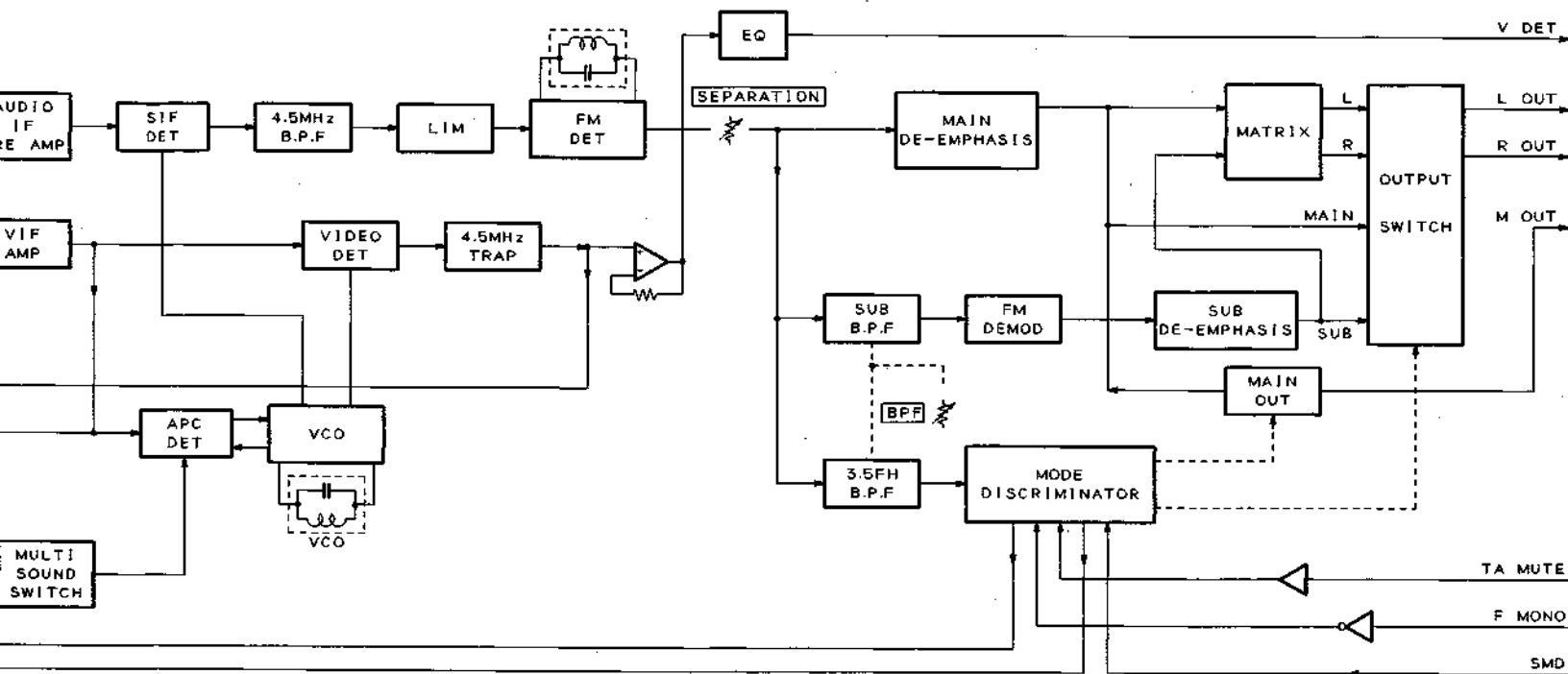


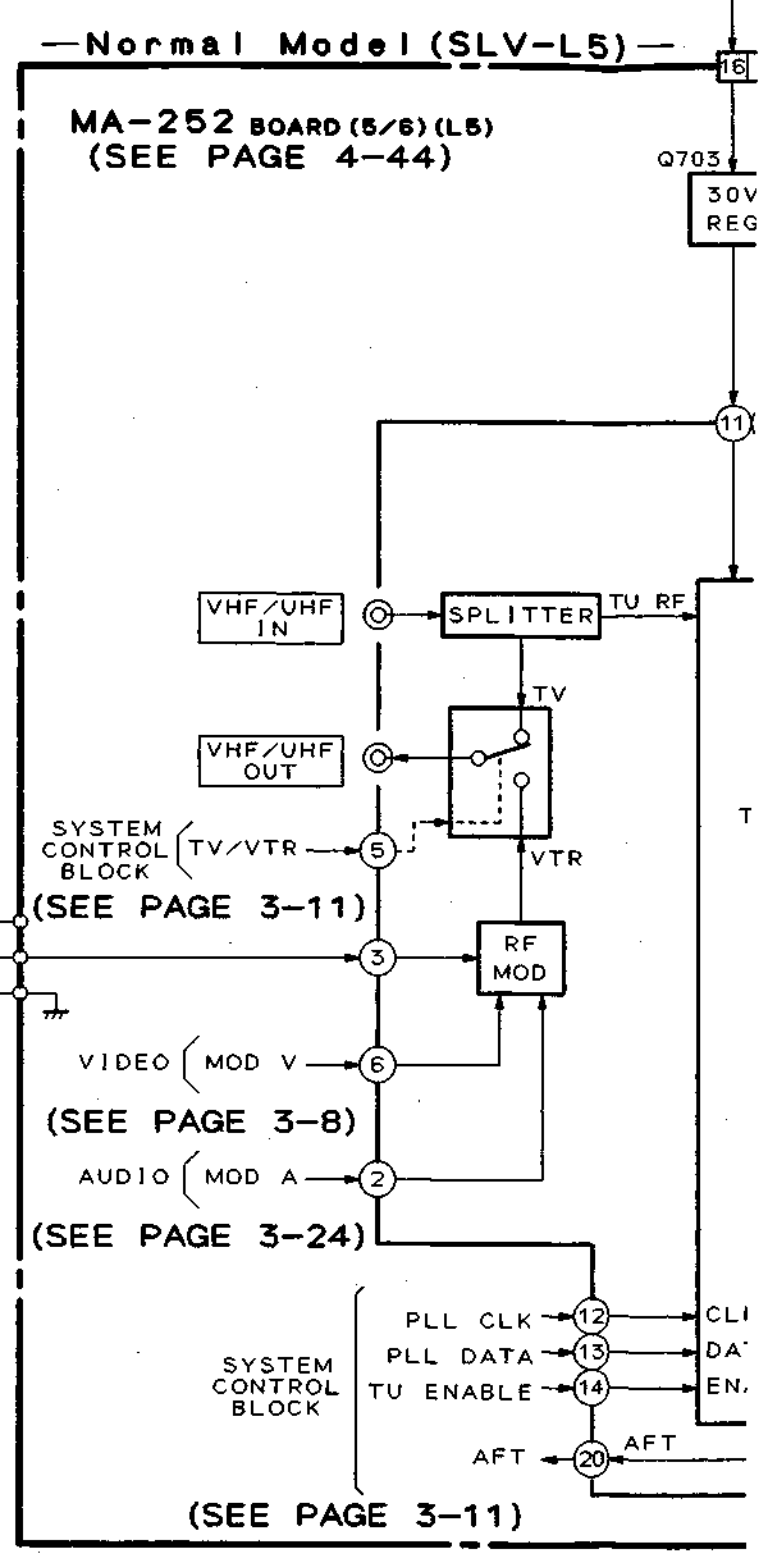
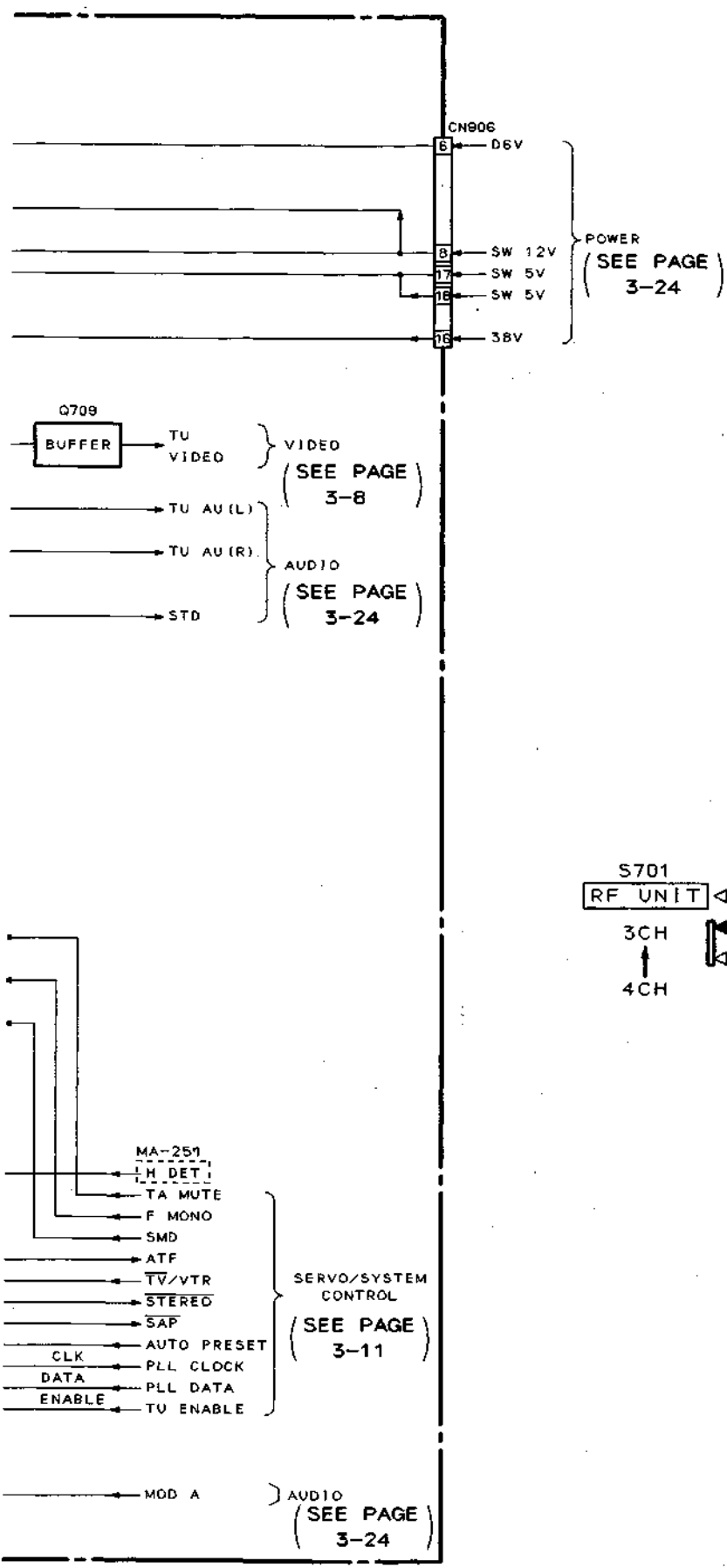
### 3-5. TUNER BLOCK DIAGRAM

—HI-FI Model (SLV-760/761/790/960/L7)—

MA-251 BOARD (4/8) (790/960)  
 (SEE PAGE 4-41)  
 MA-252 BOARD (4/8) (760/761/L7)  
 (SEE PAGE 4-44)

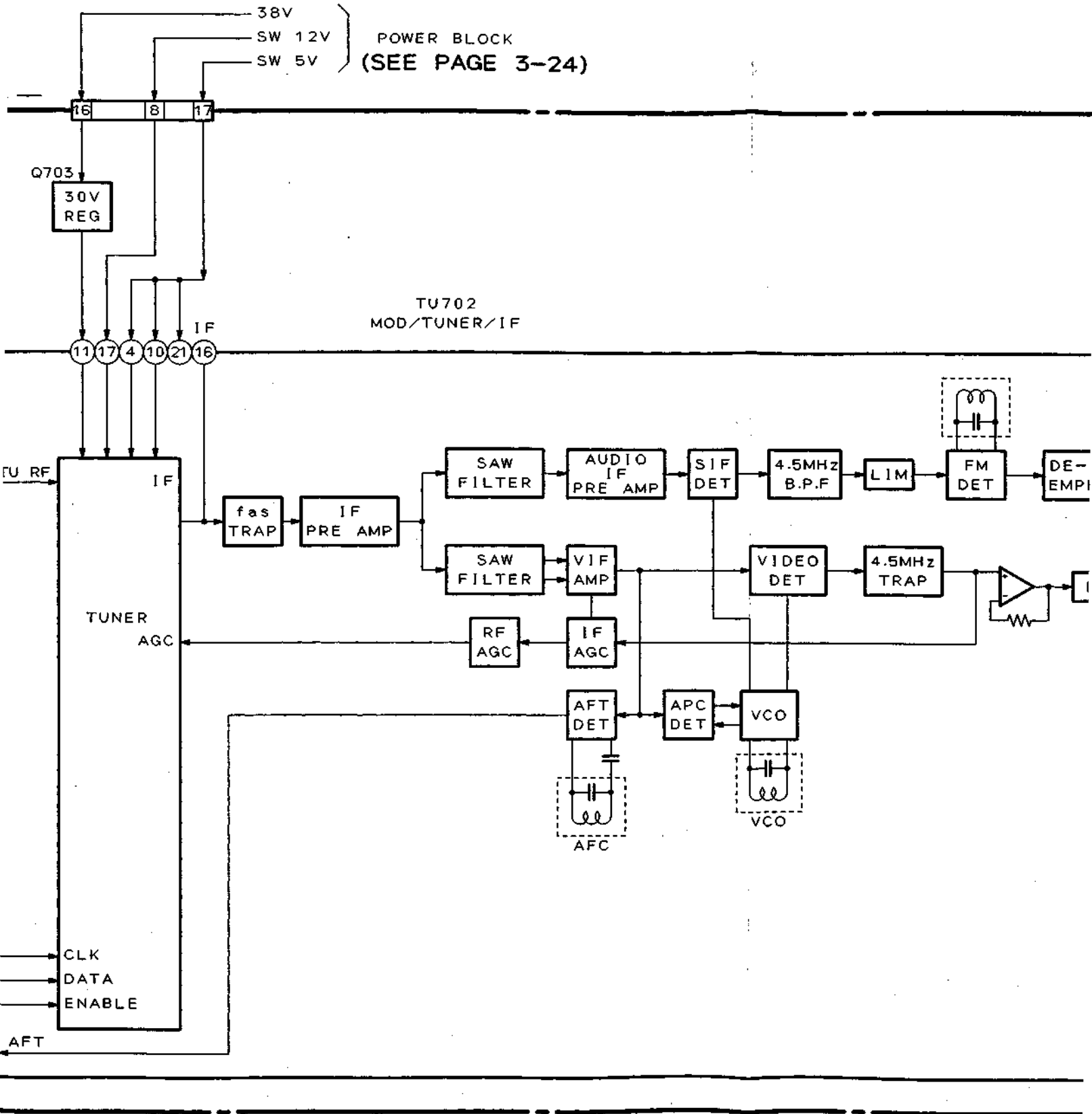




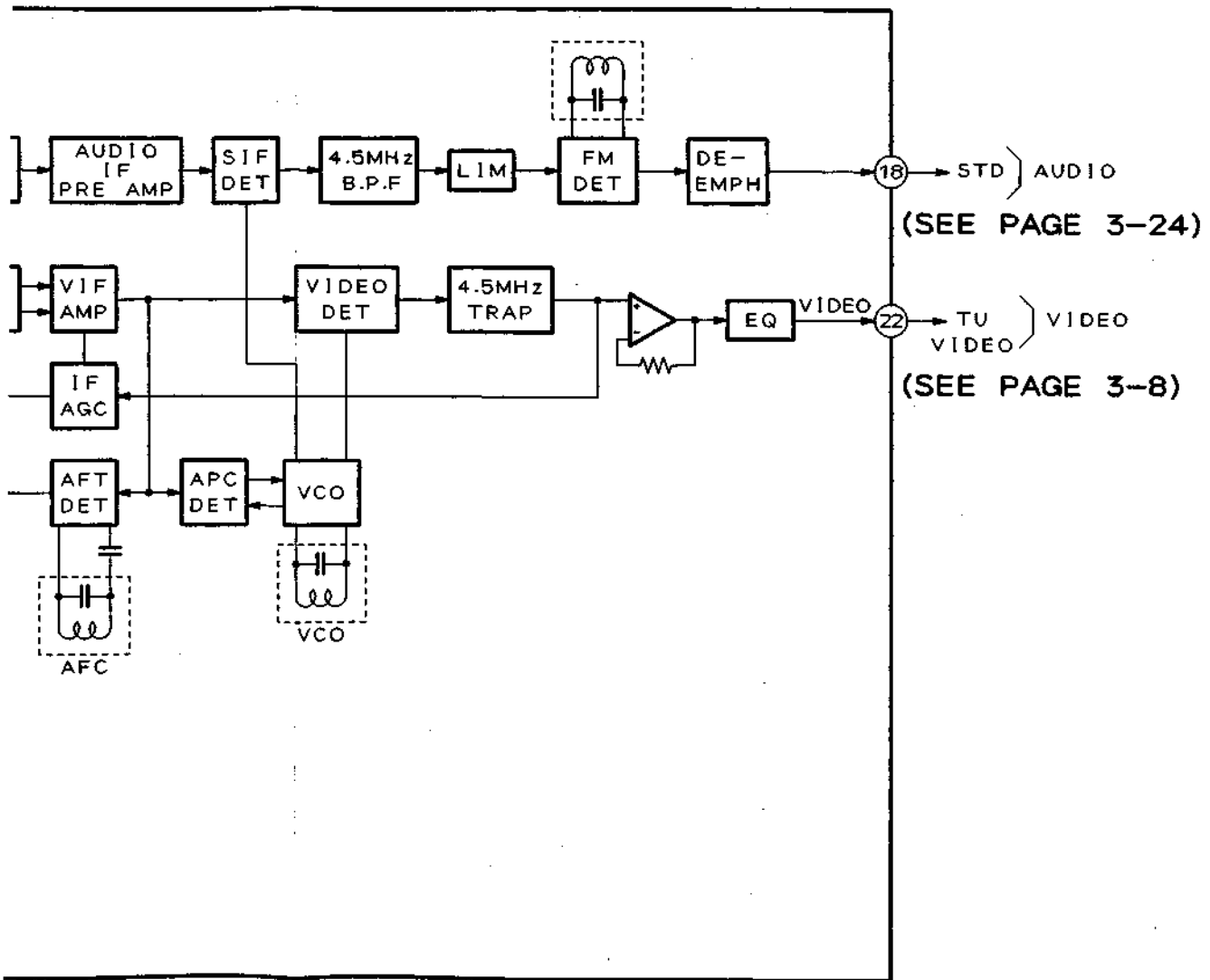


05

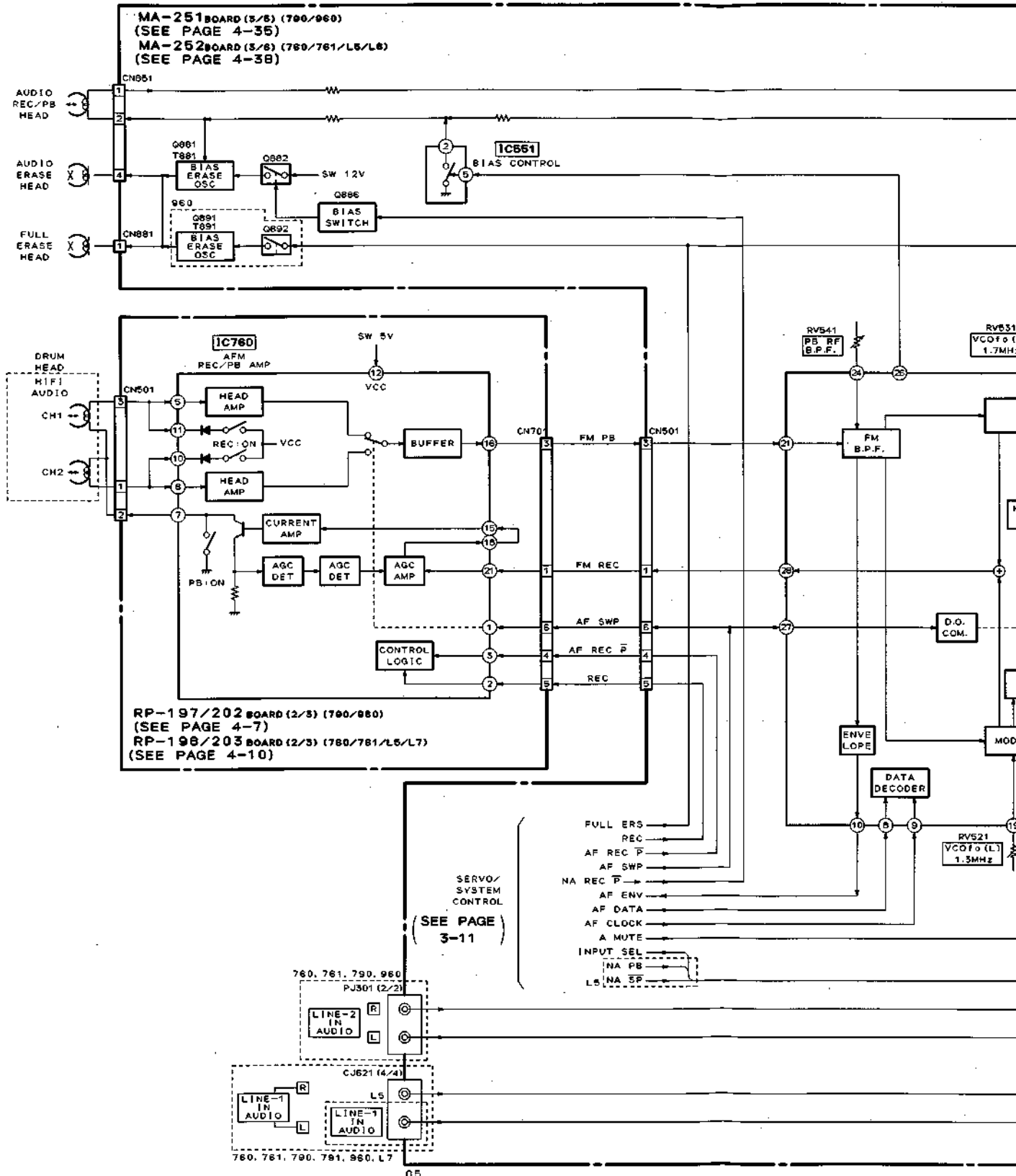


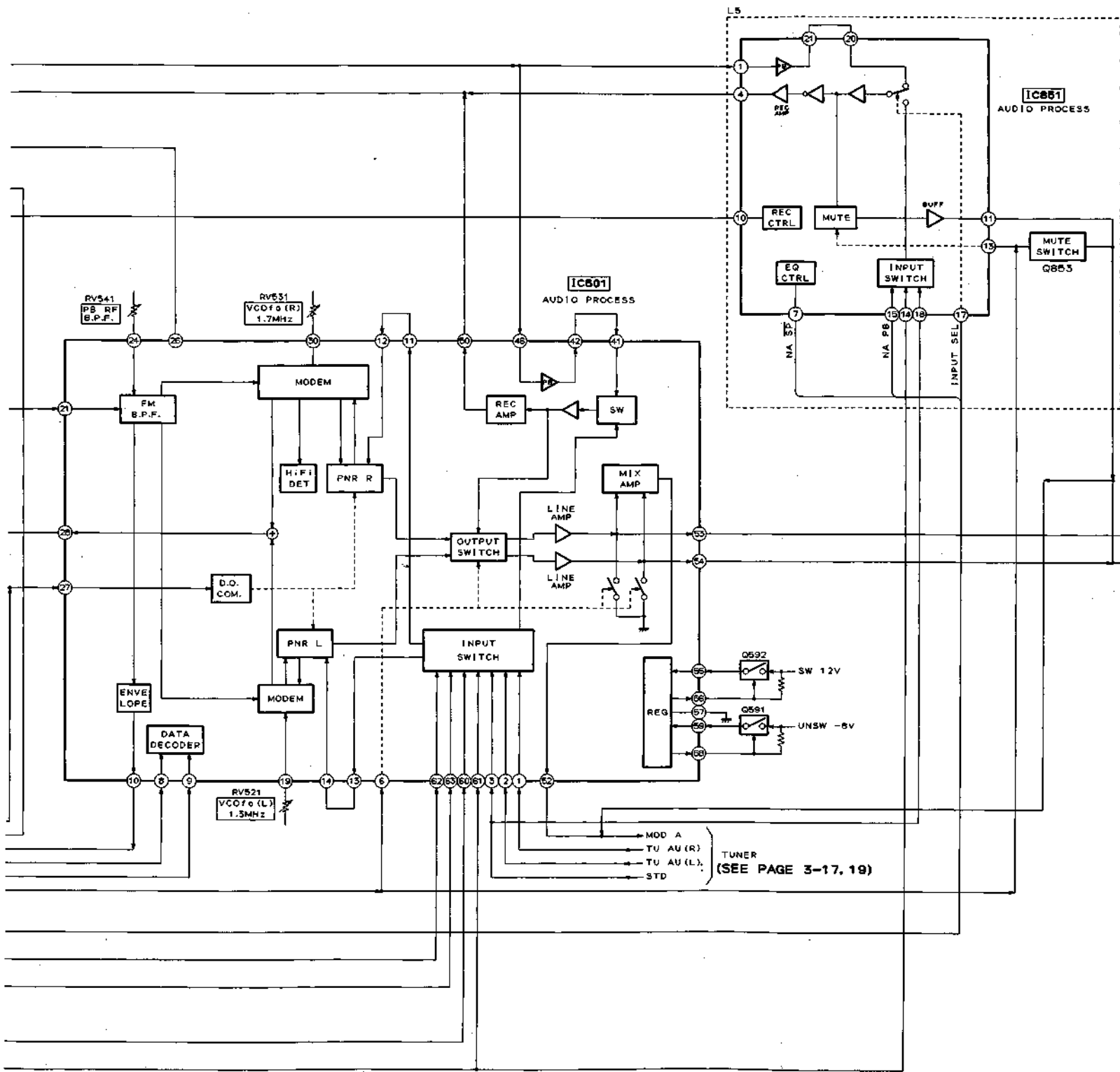


24)

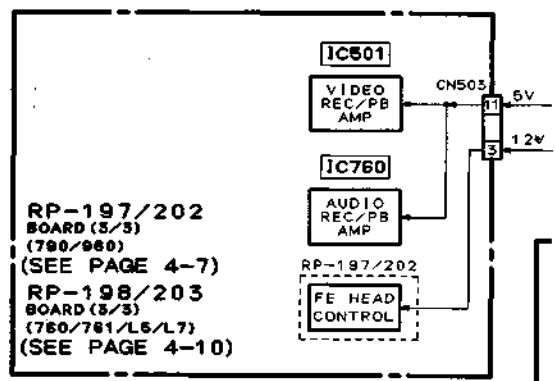
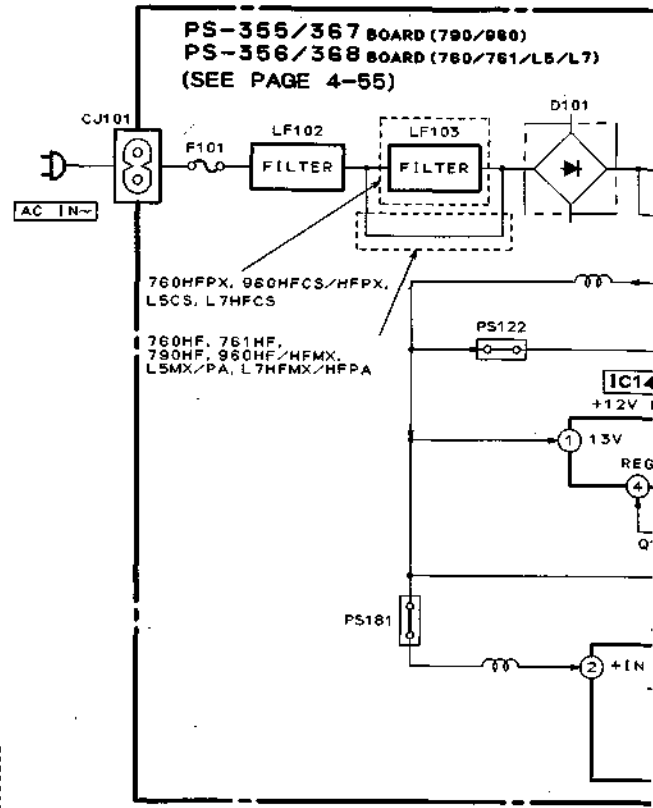
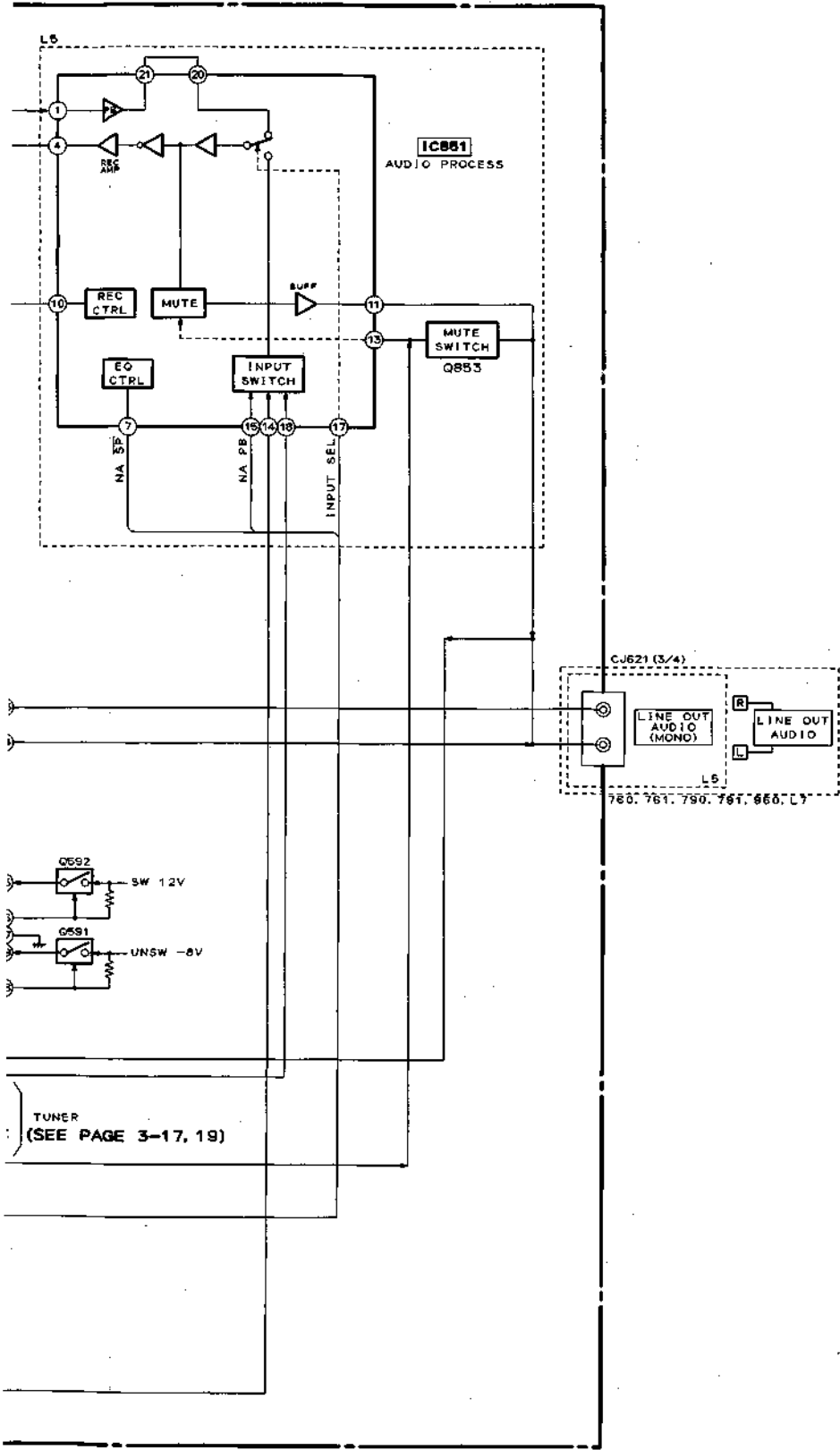


3-6. AUDIO/IO BLOCK DIAGRAM

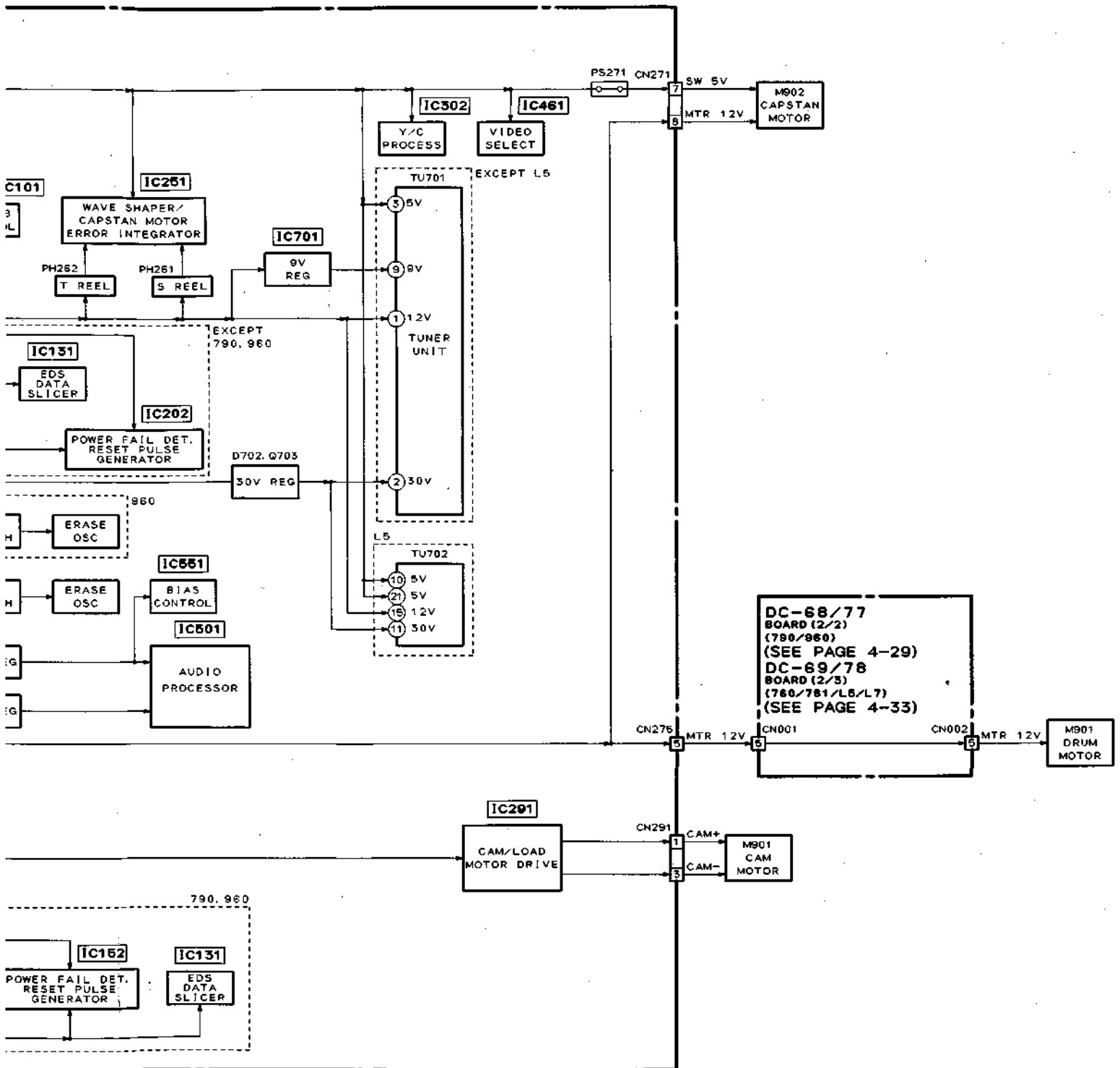




### 3-7. POWER SUPPLY BLOCK DIAGRAM







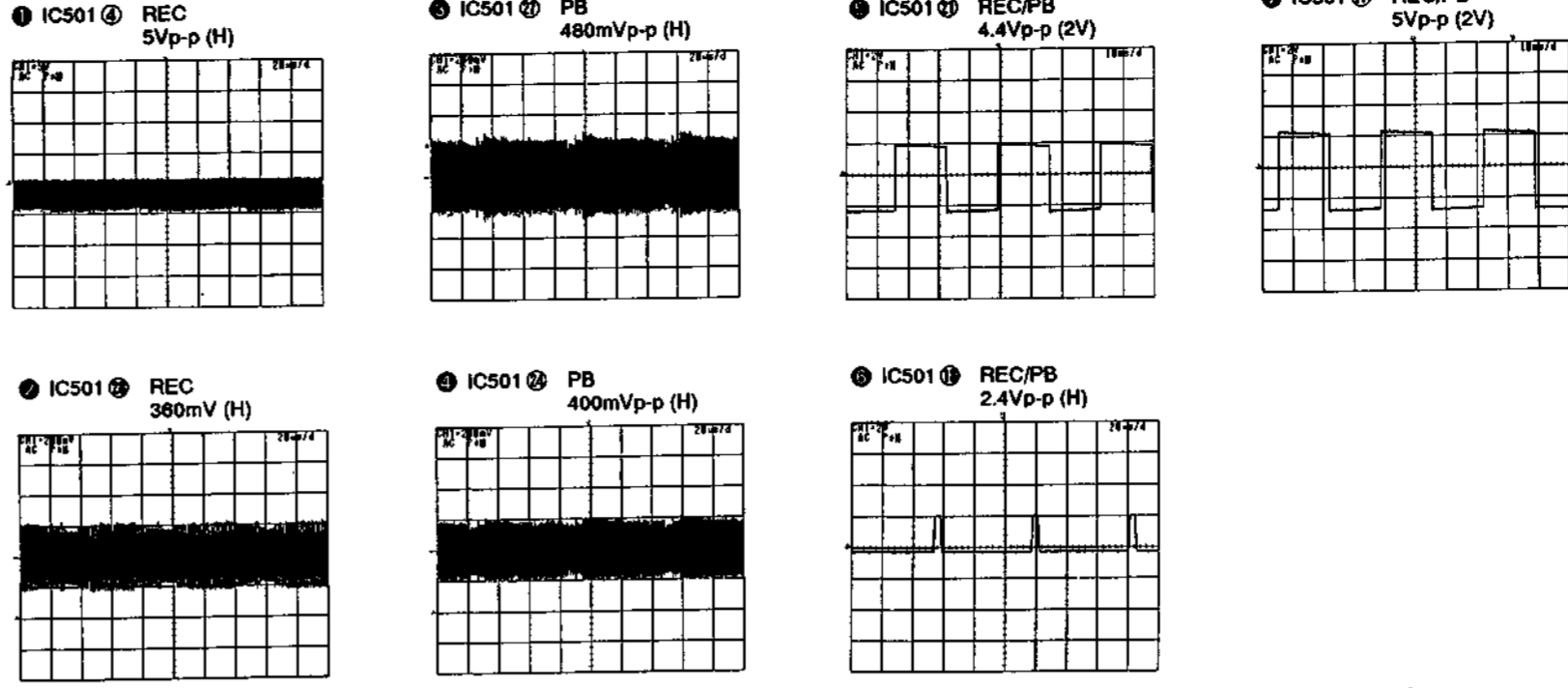
• Waveforms

• Signal path

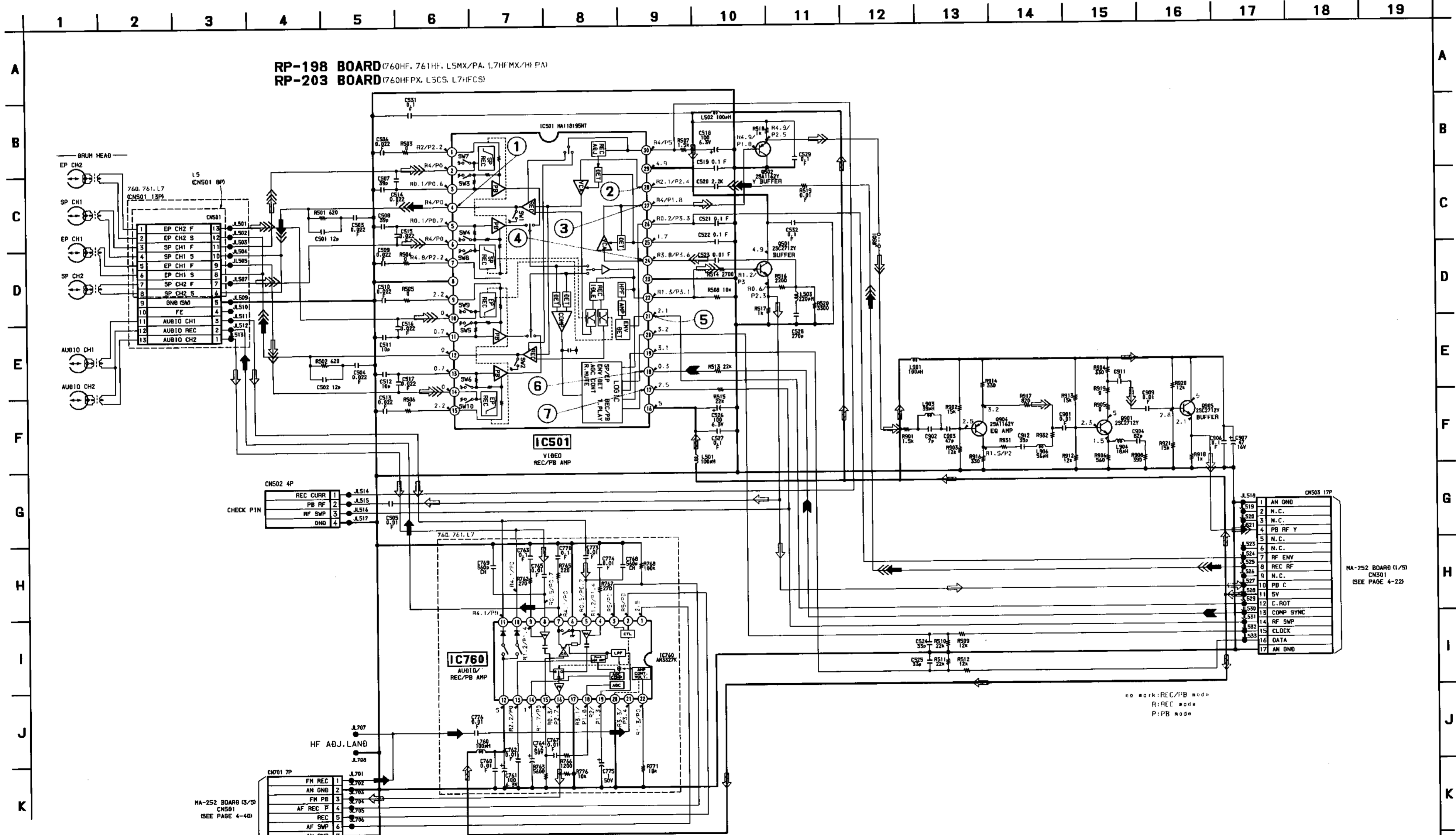
|     | VIDEO SIGNAL |   |          | AUDIO SIGNAL |
|-----|--------------|---|----------|--------------|
|     | CHROMA       | Y | Y/CHROMA |              |
| REC | →            | → | →        | →            |
| PB  | →            | → | →        | →            |

• Signal path

|             | REC | REC/PB | PB |
|-------------|-----|--------|----|
| Ref. signal | →   | →      | →  |



RP-198/203 (HEAD AMP) (SLV-760/761/L5/L7) SCHEMATIC DIAGRAM • See page 4-4 to 4-6 for printed wiring board.  
- Ref. No.: RP-198/203 Board; 2,000 series -



MA-252 BOARD (1/5)  
CN501  
SEE PAGE 4-22

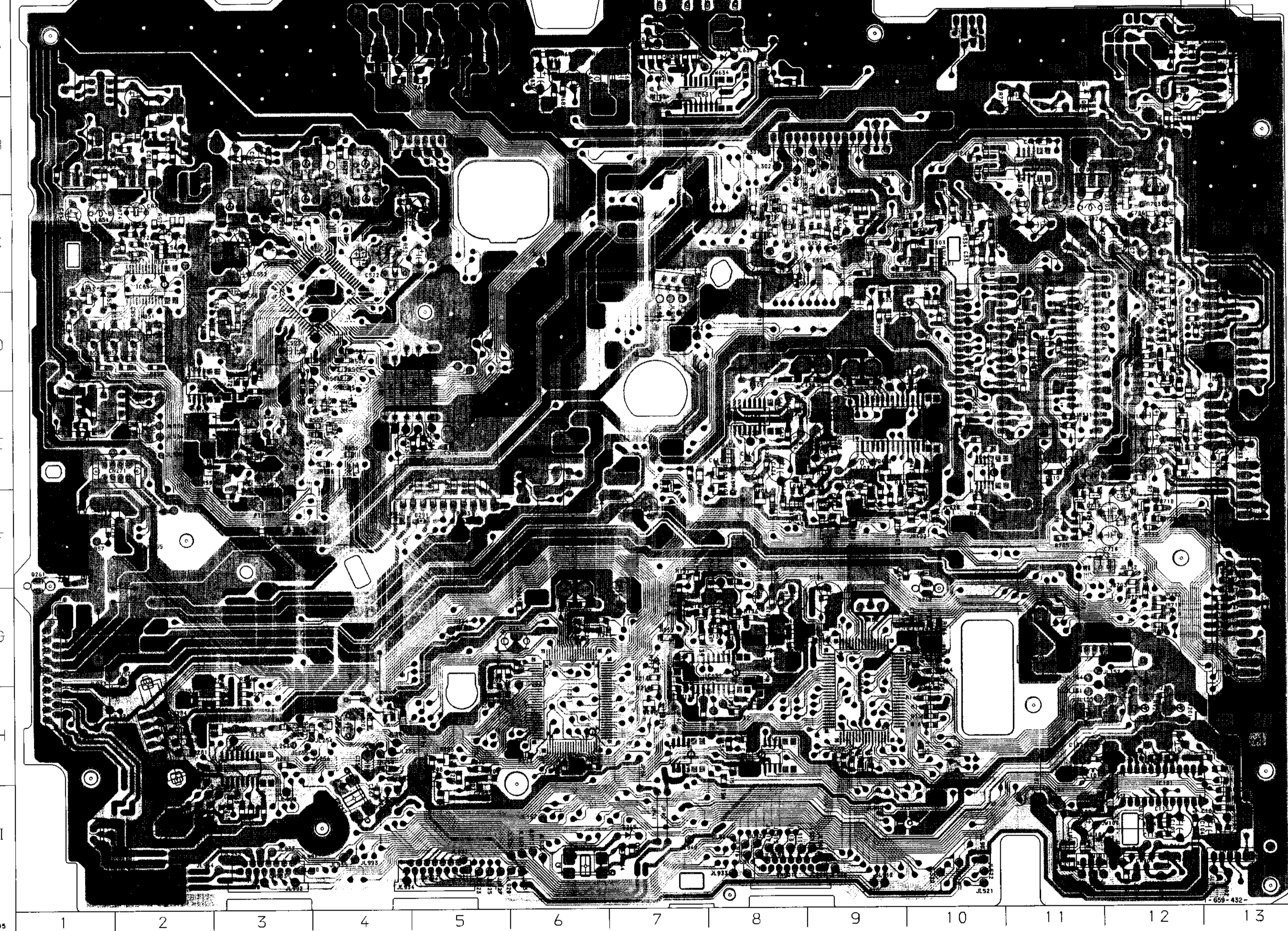
no mark: REC/PB mode  
R: REC mode  
P: PB mode



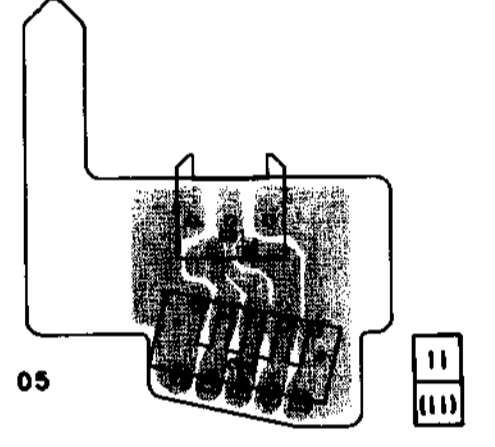
There are cases that the part isn't mounted in this model is printed on this diagram.

MA-251 (SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL, VIDEO, AUDIO, IO, TUNER) (SLV-790/960), DC-68/77 (REALY) PRINTED WIRING BOARDS  
- Ref. No.: MA-251 Board: 3,000 series, DC-68/77 Board: 1,000 series -

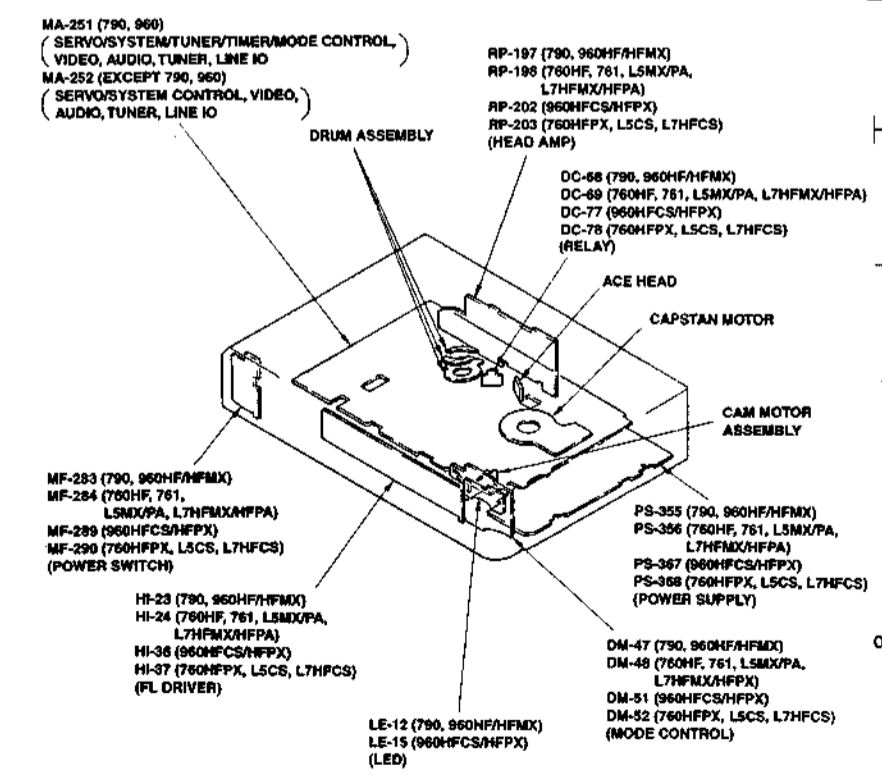
MA-251 BOARD



- |       |      |
|-------|------|
| CN101 | I-11 |
| CN271 | E-2  |
| CN276 | C-7  |
| CN281 | H-2  |
| CN291 | I-1  |
| CN301 | B-9  |
| CN501 | B-5  |
| CN511 | B-2  |
| CN581 | B-1  |
| CN601 | H-8  |
| CN602 | I-5  |
| CN603 | I-3  |
| CN606 | G-1  |
| CN807 | G-11 |
|       |      |
| D151  | G-8  |
| D152  | G-8  |
| D201  | F-6  |
| D202  | H-7  |
| D251  | H-9  |
| D251  | G-6  |
| D266  | I-7  |
| D267  | I-4  |
| D291  | F-5  |
| D301  | C-9  |
| D402  | F-8  |
| D403  | F-8  |
| D581  | E-3  |
| D610  | A-5  |
| D631  | A-7  |
| D632  | A-8  |
| D633  | A-8  |
| D635  | A-7  |
|       |      |
| D701  | B-11 |
| D702  | C-12 |
| D703  | C-12 |
| D902  | H-4  |
|       |      |
| IC101 | I-12 |
| IC131 | G-8  |
| IC151 | H-9  |
| IC152 | H-7  |
| IC153 | H-8  |
| IC201 | H-6  |
| IC251 | I-2  |
| IC291 | E-5  |
| IC302 | D-11 |
| IC401 | E-8  |
| IC402 | E-8  |
| IC461 | B-11 |
| IC501 | D-4  |
| IC511 | D-2  |
| IC631 | B-7  |
| IC701 | D-11 |
|       |      |
| Q131  | G-8  |
| Q132  | G-7  |
| Q201  | I-5  |
| Q202  | H-4  |
| Q261  | F-1  |
| Q262  | G-10 |
| Q263  | E-6  |
| Q301  | C-9  |
| Q306  | D-11 |
| Q323  | C-8  |
| Q353  | C-8  |
| Q402  | E-8  |
| Q404  | E-8  |
| Q406  | F-9  |
| Q407  | I-10 |
| Q413  | E-9  |
| Q501  | E-3  |
| Q502  | E-2  |
| Q581  | A-6  |
| Q701  | E-12 |
| Q703  | C-12 |
| Q705  | E-12 |
| Q707  | D-12 |
| Q708  | D-12 |
| Q709  | E-12 |
| Q715  | D-12 |
| Q716  | D-12 |
| Q717  | C-12 |
| Q811  | B-2  |
| Q812  | B-2  |
| Q866  | B-2  |
| Q891  | E-2  |
| Q892  | E-2  |

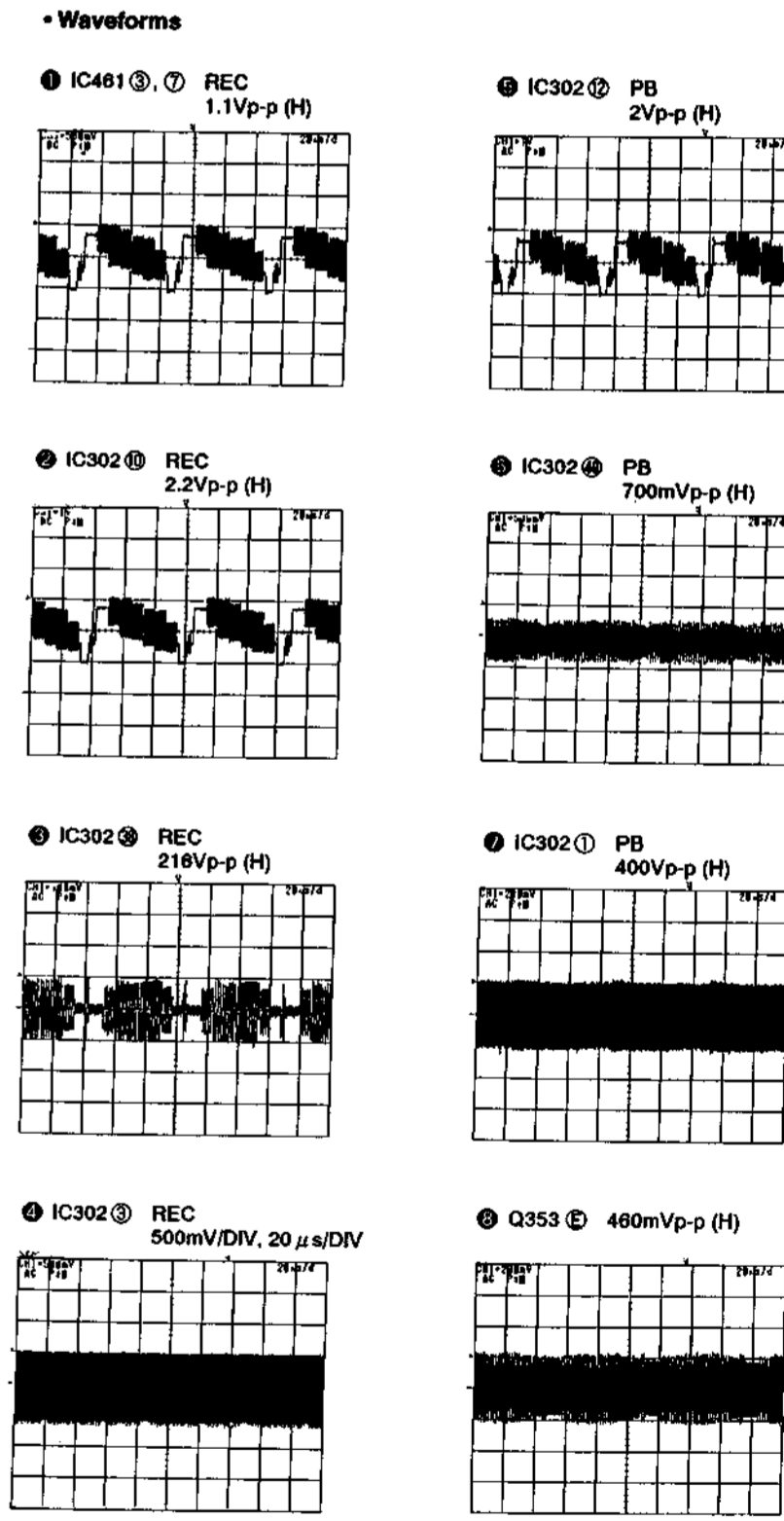
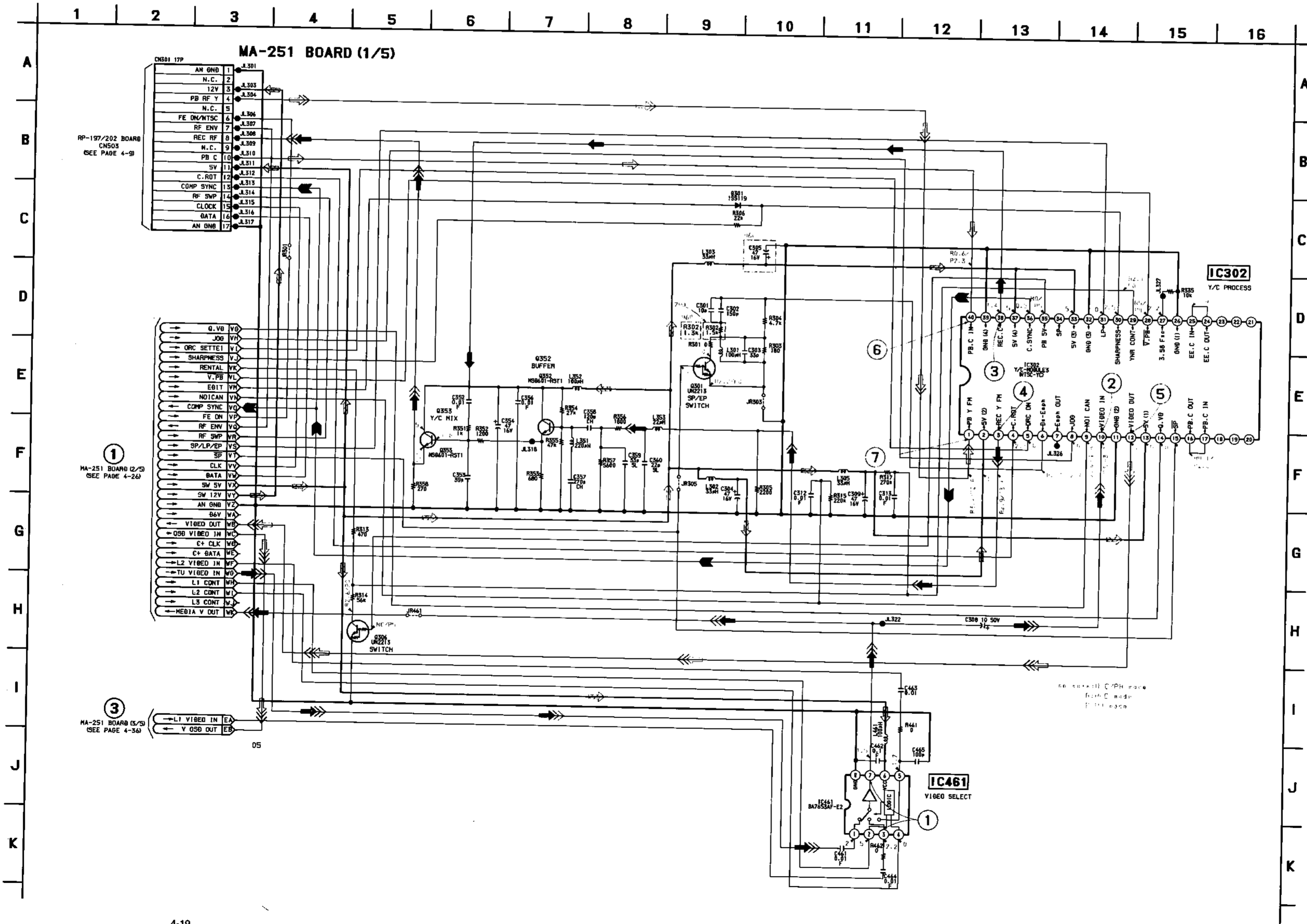


- DC-68 BOARD: 1-659-441-
- DC-69 BOARD: 1-659-454-
- DC-77 BOARD: 1-659-448-
- DC-78 BOARD: 1-659-460-





MA-251 (VIDEO) (SLV-790/960) SCHEMATIC DIAGRAM • See page 4-13 to 4-15 for printed wiring board.  
 - Ref. No.: MA-251 Board; 3,000 series -



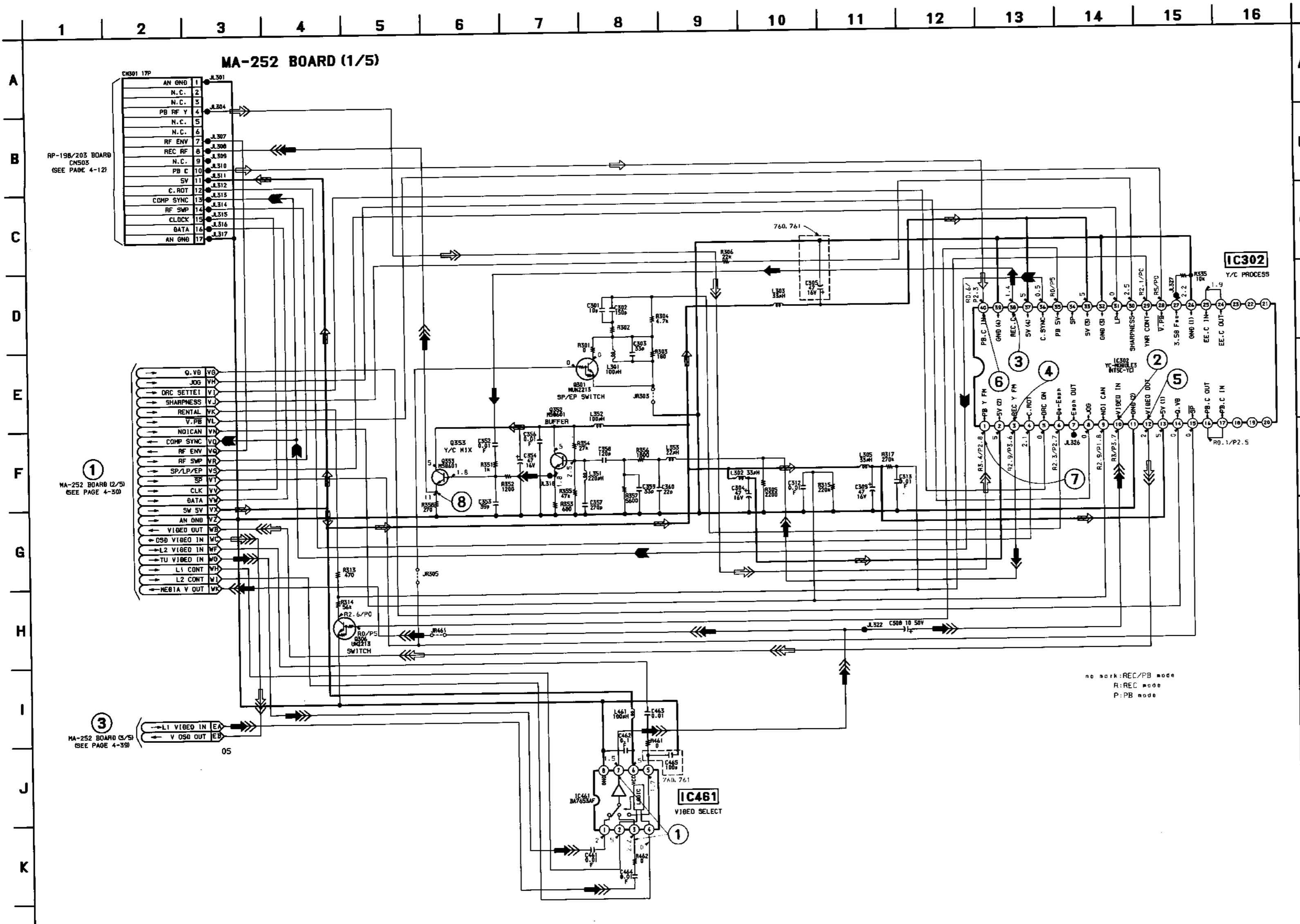
• Signal path

|     | VIDEO SIGNAL |    |          |
|-----|--------------|----|----------|
|     | CHROMA       | Y  | Y/CHROMA |
| REC | →            | ⇒  | ⇒⇒       |
| PB  | ⇨            | ⇨⇨ | ⇨⇨⇨      |

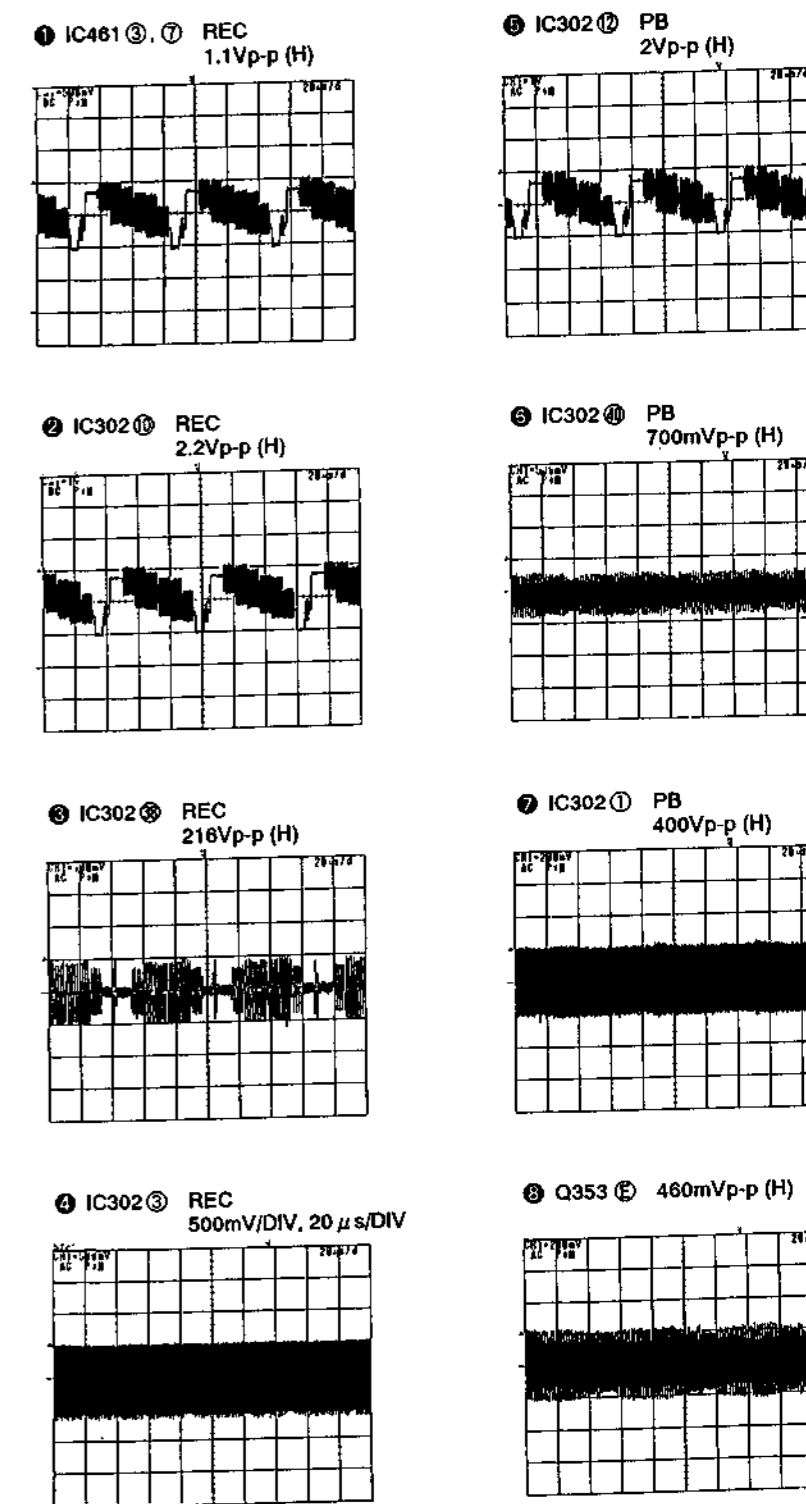
• Signal path

| Ref. signal | REC | REC/PB | PB |
|-------------|-----|--------|----|
|             |     | →      | ⇒  |

MA-252 (VIDEO) (SLV-760/761/L5/L7) SCHEMATIC DIAGRAM • See page 4-16 to 4-18 for printed wiring board.  
 - Ref. No.: MA-252 Board; 4,000 series -



• Waveforms



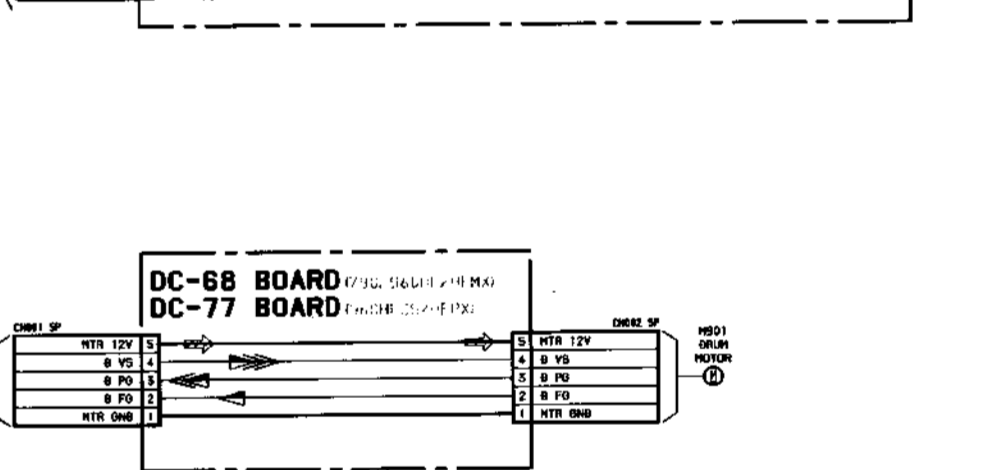
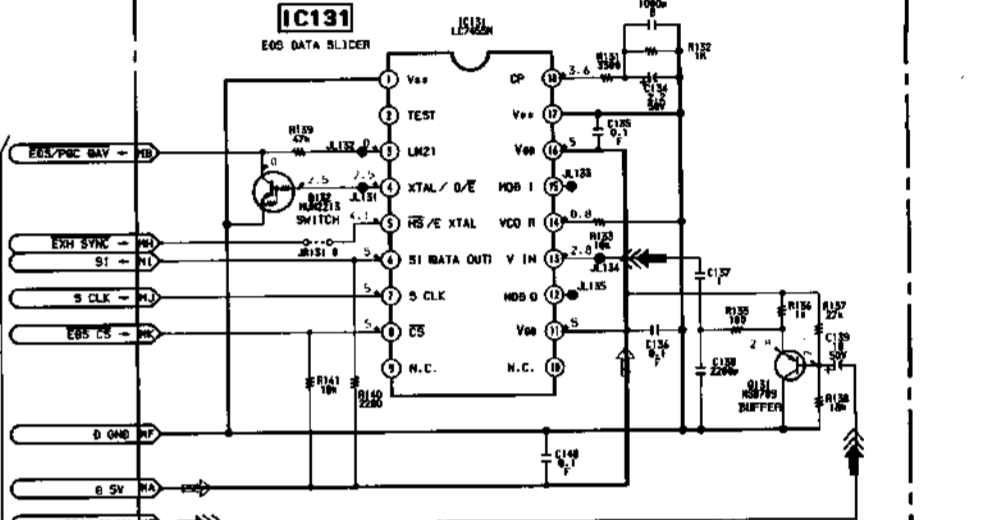
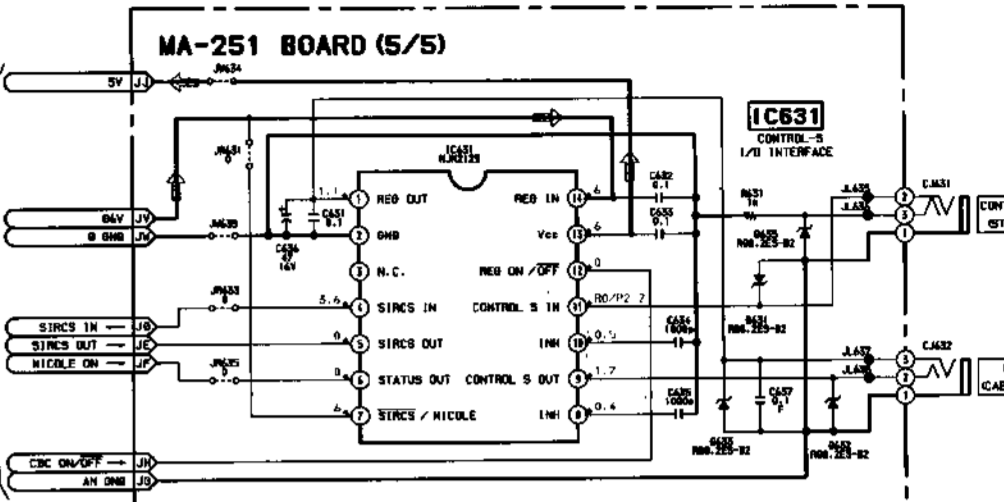
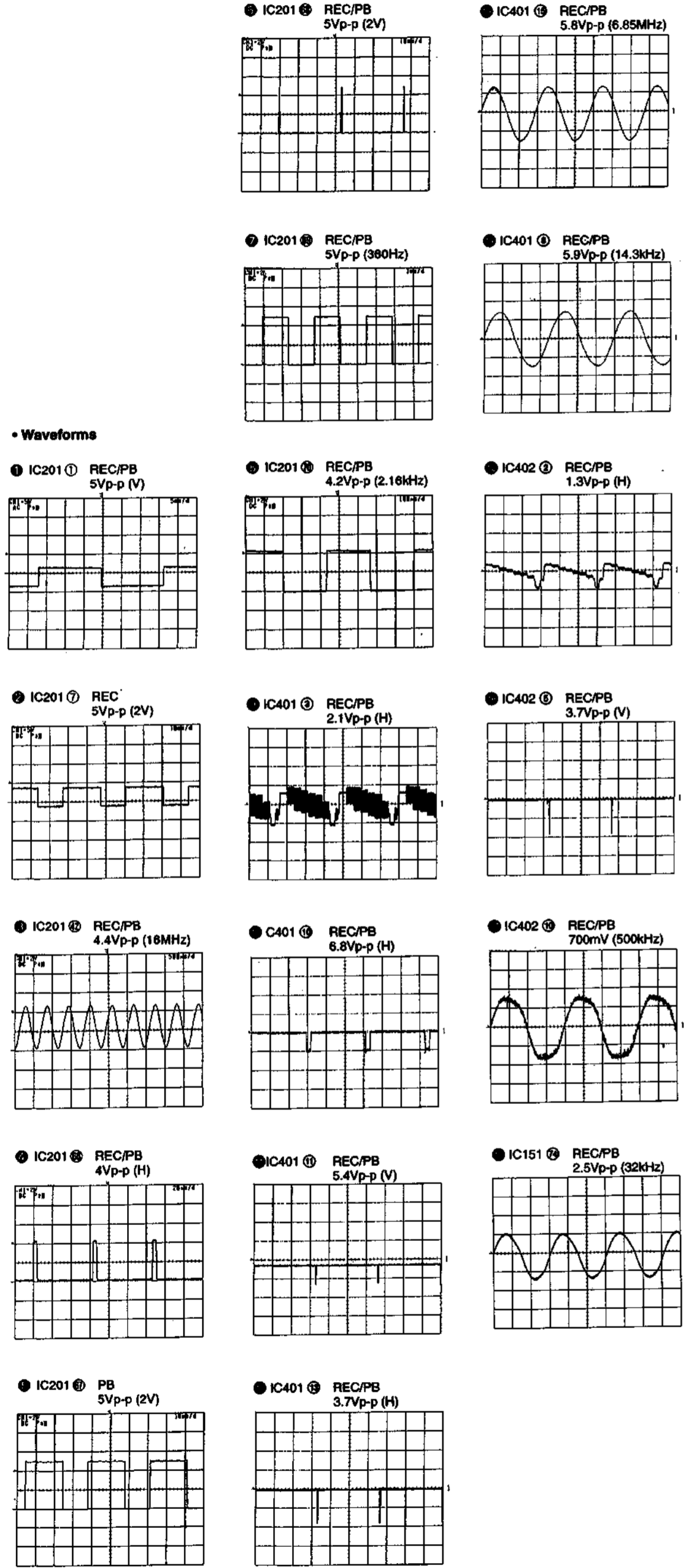
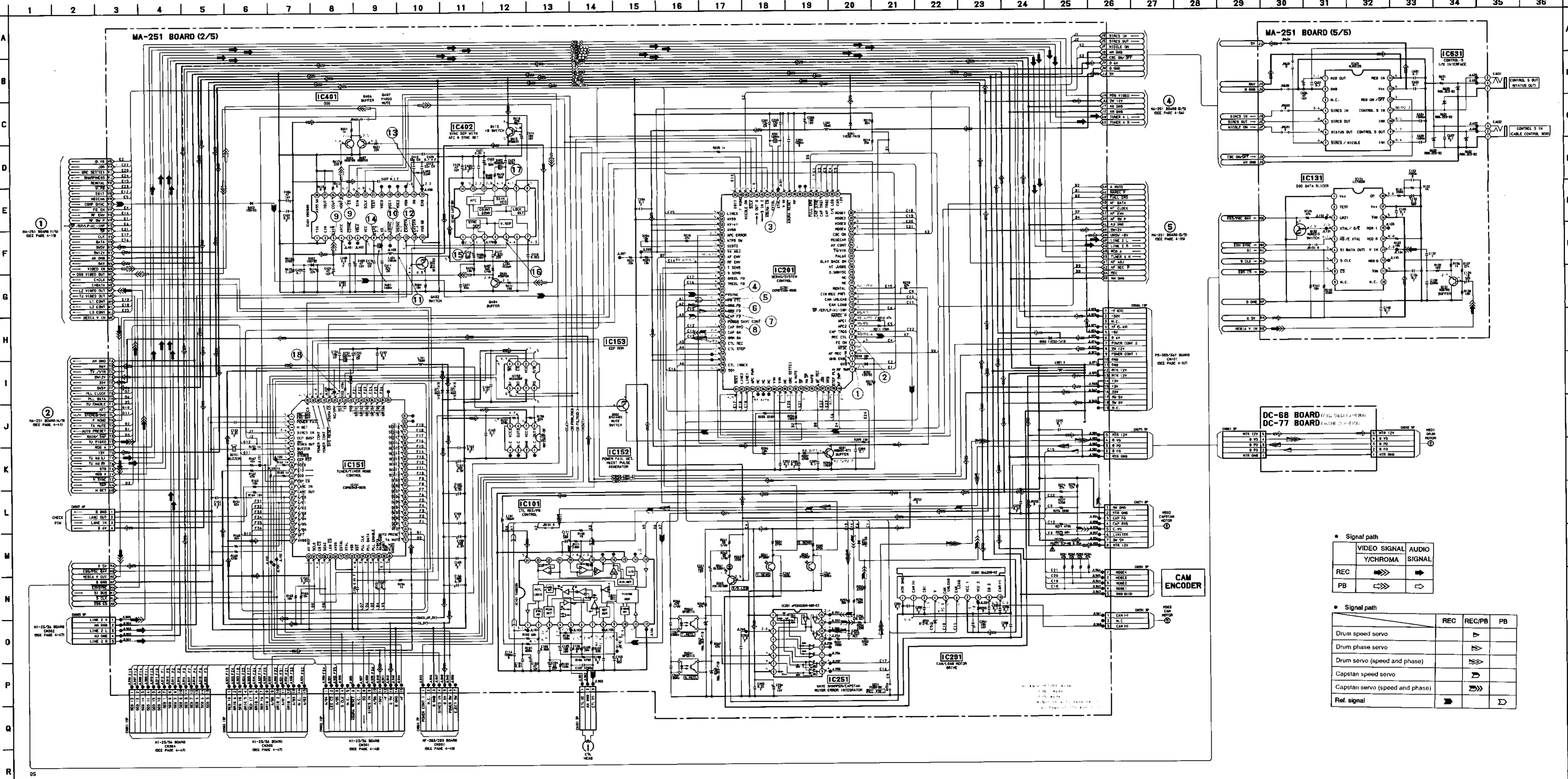
• Signal path

|     | VIDEO SIGNAL |   |          |
|-----|--------------|---|----------|
|     | CHROMA       | Y | Y/CHROMA |
| REC | ➔            | ➔ | ➔        |
| PB  | ➔            | ➔ | ➔        |

• Signal path

| Ref. signal | REC | REC/PB | PB |
|-------------|-----|--------|----|
|             |     | ➔      | ➔  |

**MA-251 (SERVO/SYSTEM/TUNER/TIMER/MODE CONTROL) (SLV-790/960), DC-68/77 (REALY) SCHEMATIC DIAGRAM** • See page 4-13 to 4-15 for printed wiring board.  
 - Ref. No.: MA-251 Board: 3,000 series, DC-68/77 Board: 1,000 series -

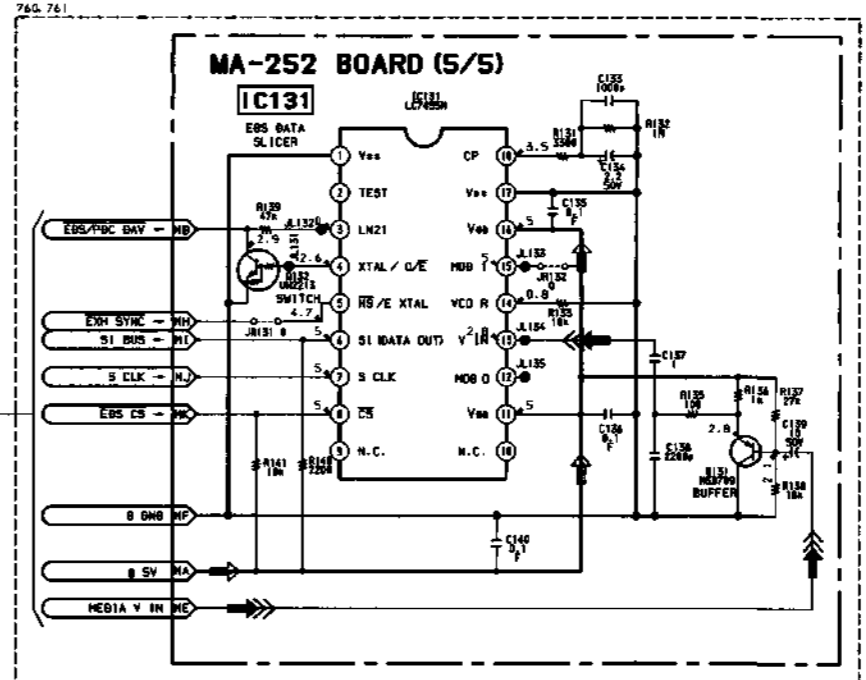
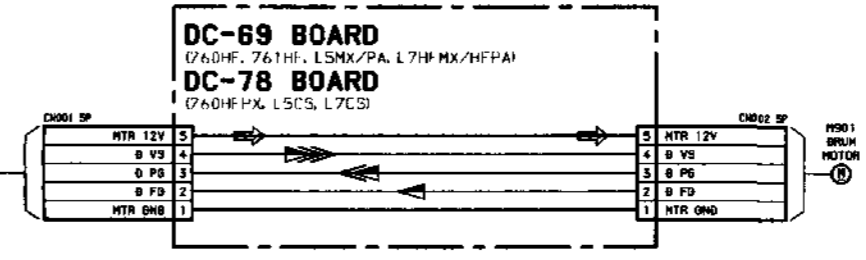
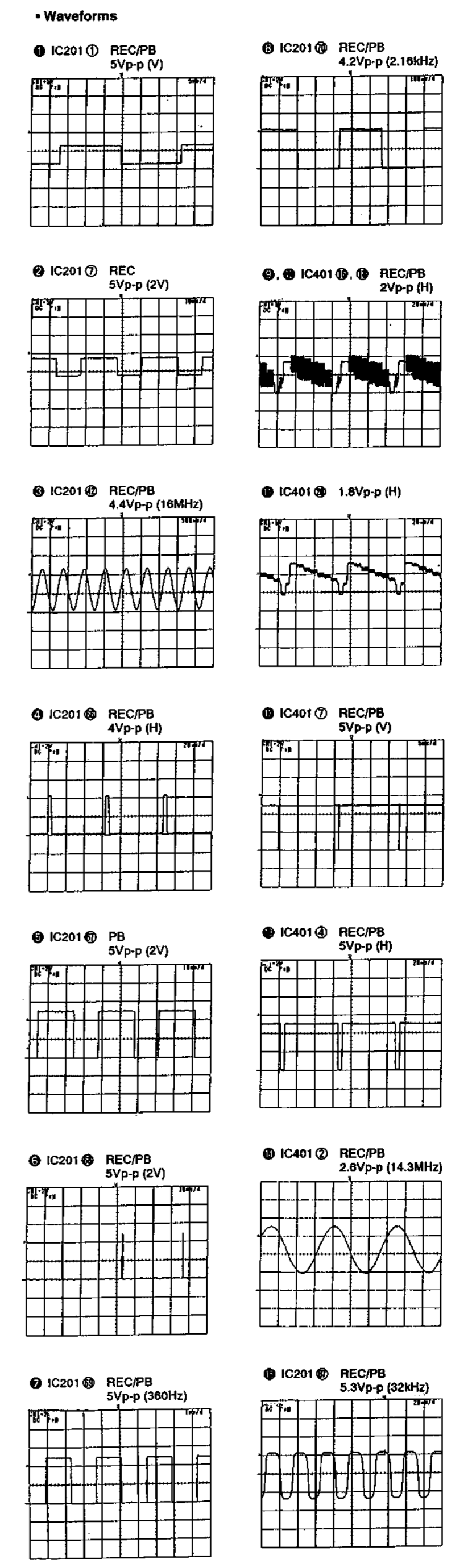
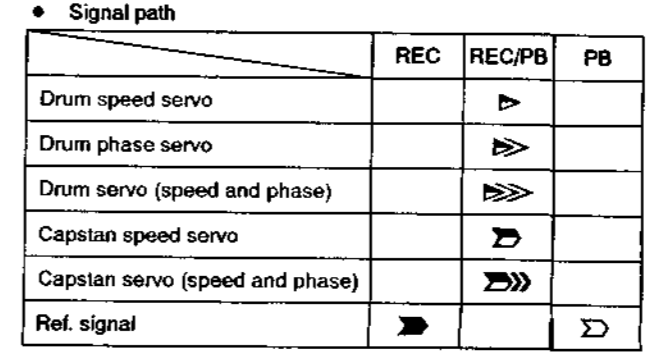
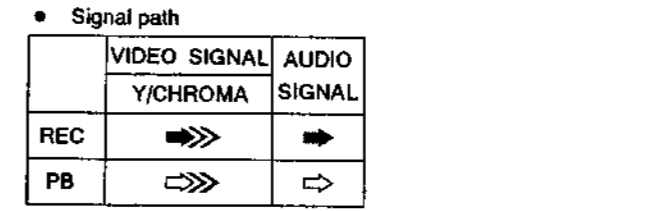
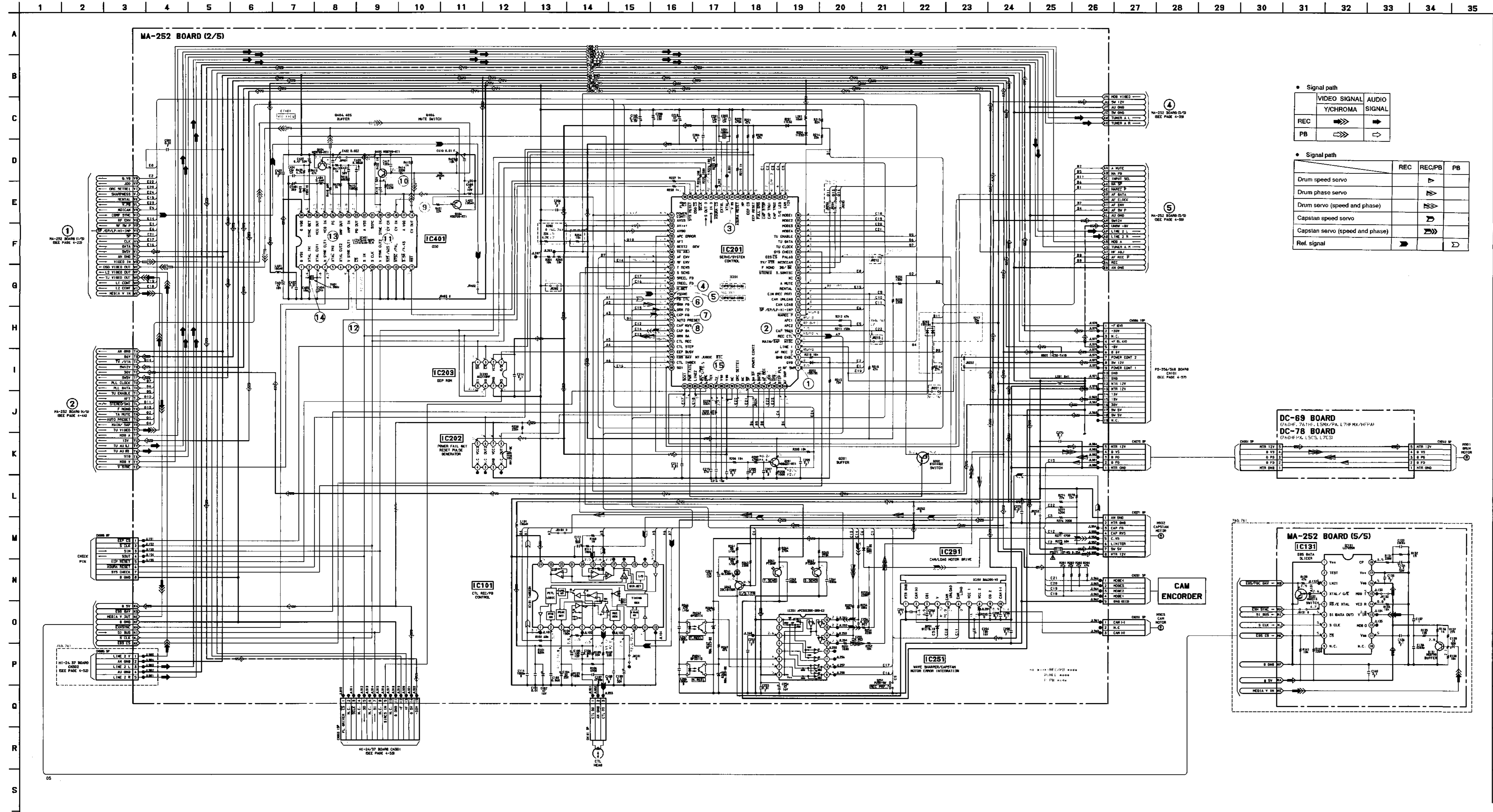


**Signal path**

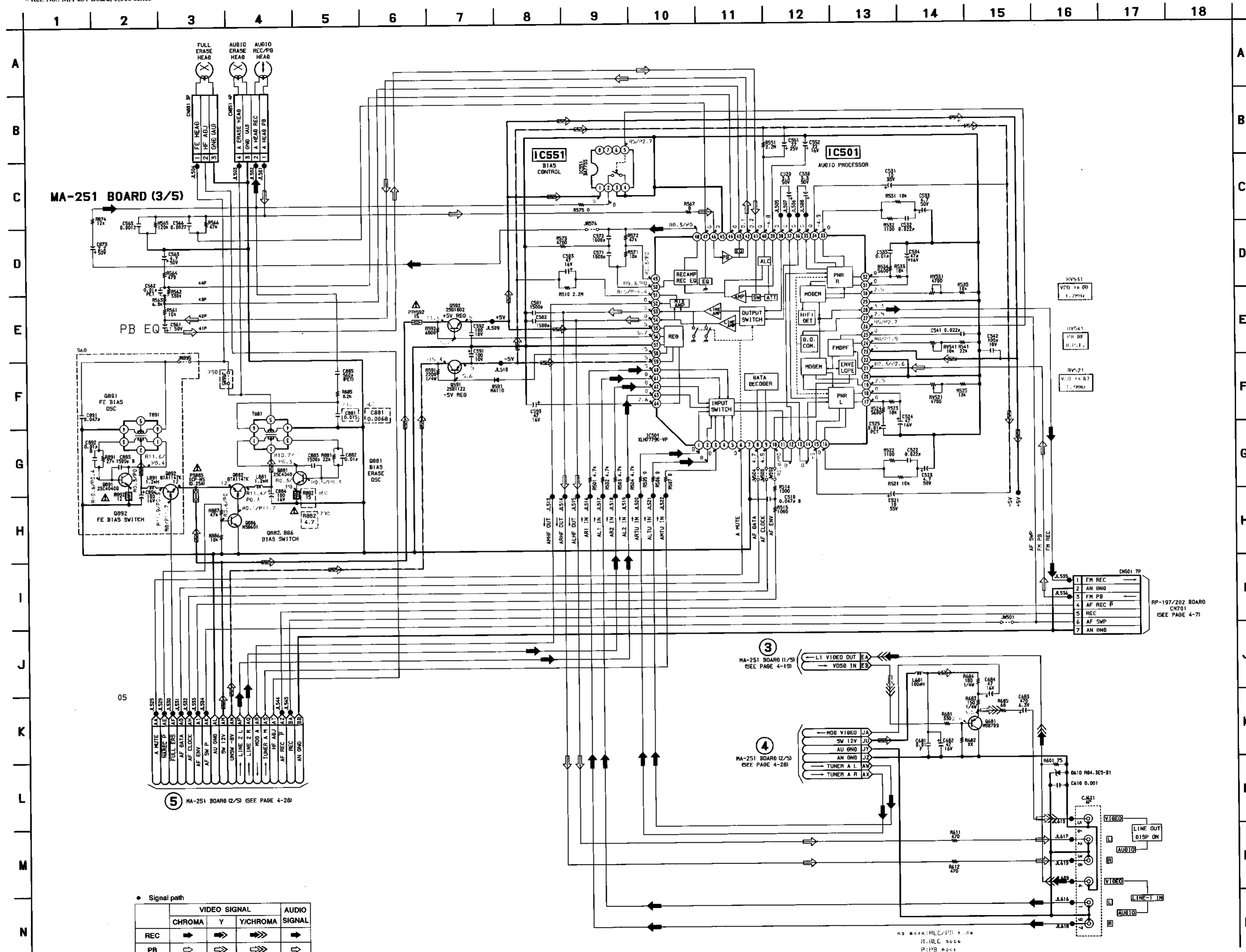
|     | VIDEO SIGNAL | AUDIO | Y/CHROMA SIGNAL |
|-----|--------------|-------|-----------------|
| REC | →            | →     | →               |
| PB  | →            | →     | →               |

**Signal path**

|                                 | REC | REC/PB | PB |
|---------------------------------|-----|--------|----|
| Drum speed servo                | →   | →      | →  |
| Drum phase servo                | →   | →      | →  |
| Drum servo (speed and phase)    | →   | →      | →  |
| Capstan speed servo             | →   | →      | →  |
| Capstan servo (speed and phase) | →   | →      | →  |
| Ref. signal                     | →   | →      | →  |



MA-251 (AUDIO, IO) (SLV-790/960) SCHEMATIC DIAGRAM • See page 4-13 to 4-15 for printed wiring board.  
 - Ref. No.: MA-251 Board; 3,000 series -



MA-251 BOARD (3/5)

PB EQ

05

MA-251 BOARD (2/5) (SEE PAGE 4-28)

MA-251 BOARD (1/5) (SEE PAGE 4-13)

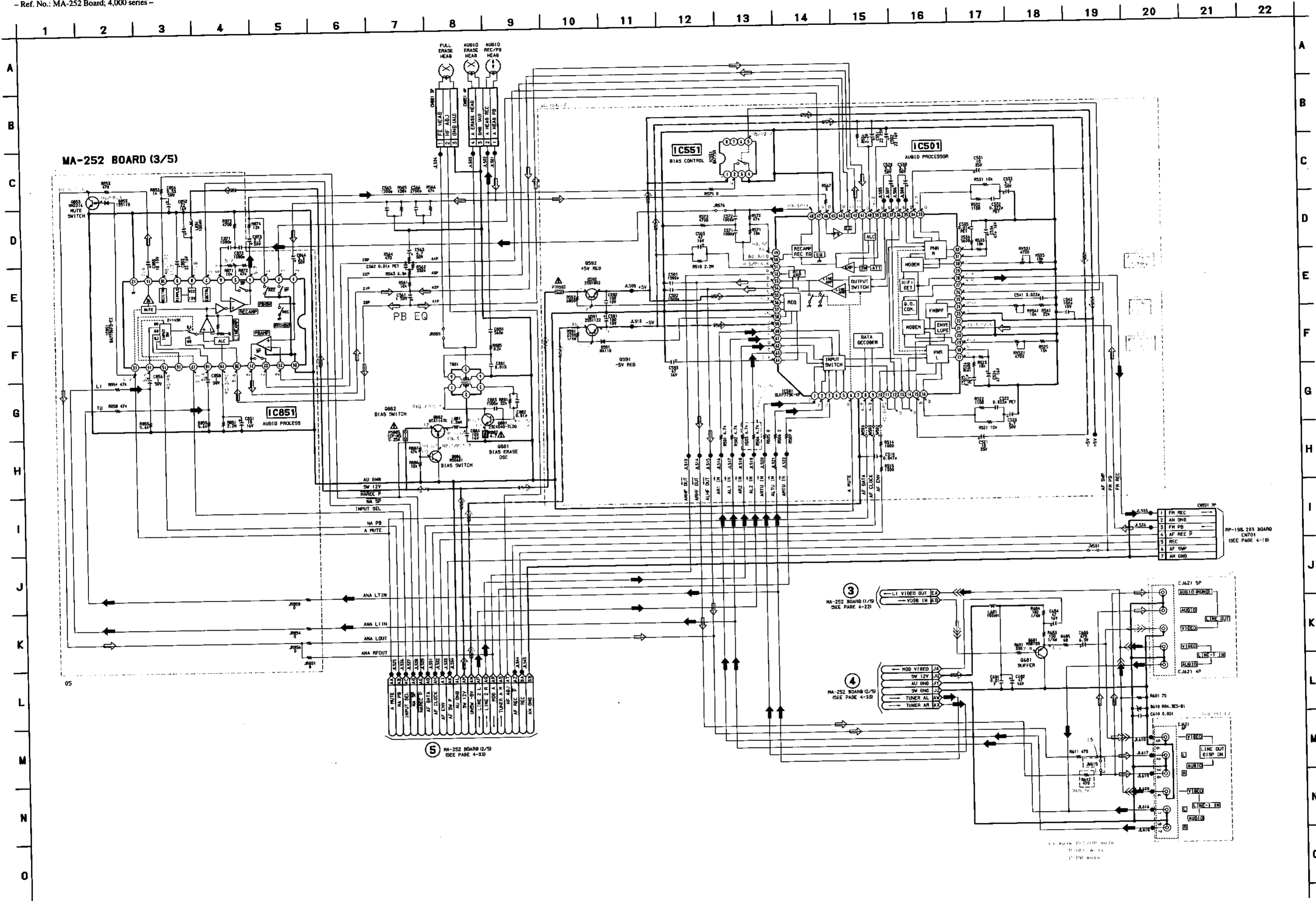
MA-251 BOARD (2/5) (SEE PAGE 4-28)

RP-197/202 BOARD CN701 (SEE PAGE 4-7)

• Signal path

|     | VIDEO SIGNAL |   |          | AUDIO SIGNAL |
|-----|--------------|---|----------|--------------|
|     | CHROMA       | Y | Y/CHROMA |              |
| REC | →            | → | →        | →            |
| PB  | ⇨            | ⇨ | ⇨        | ⇨            |

no mark REC/PB: r.d.a  
 R: REC mode  
 P: PB mode



• Signal path

|     | VIDEO SIGNAL |   |          | AUDIO SIGNAL |
|-----|--------------|---|----------|--------------|
|     | CHROMA       | Y | Y/CHROMA |              |
| REC | →            | → | →        | →            |
| PB  | ⇨            | ⇨ | ⇨        | ⇨            |

RP-198, 203 BOARD  
 CN701  
 SEE PAGE 4-18

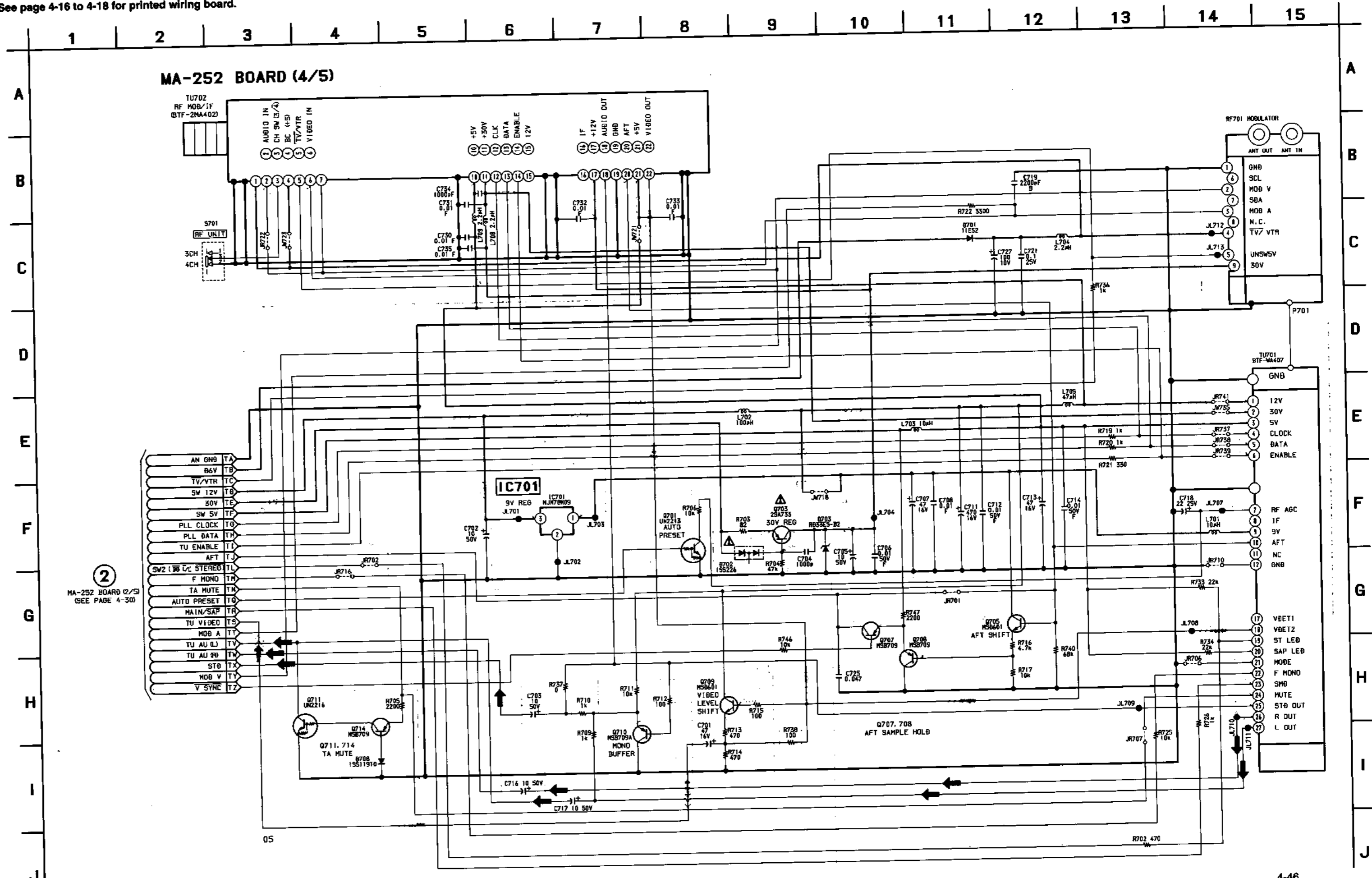
3 MA-252 BOARD (1/5)  
 SEE PAGE 4-22

4 MA-252 BOARD (2/5)  
 SEE PAGE 4-23

5 MA-252 BOARD (3/5)  
 SEE PAGE 4-33







2  
 MA-252 BOARD (2/5)  
 (SEE PAGE 4-30)

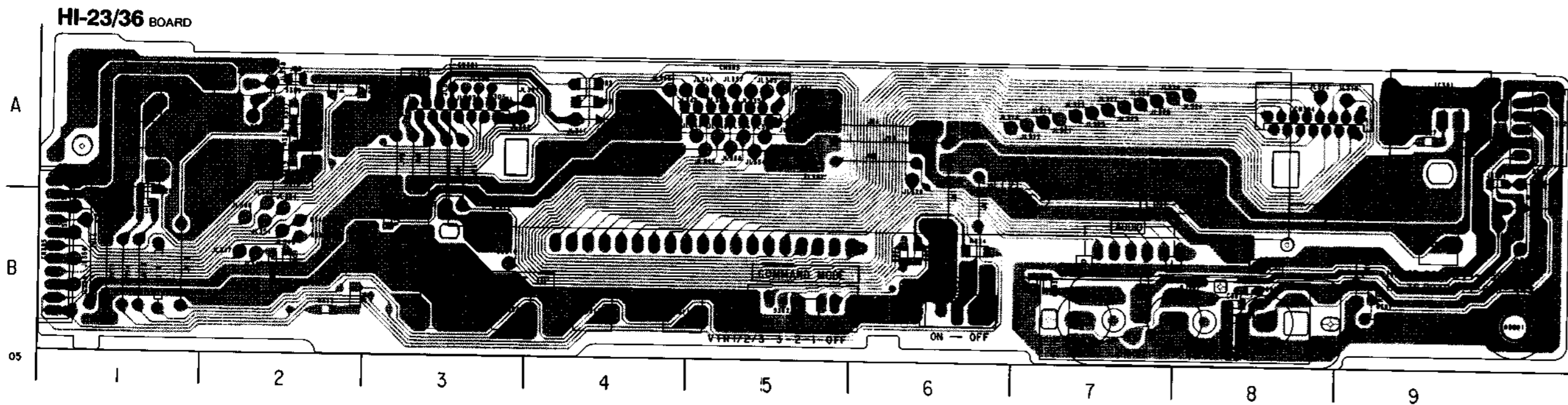
• Signal path

|     | VIDEO SIGNAL |   |          | AUDIO SIGNAL |
|-----|--------------|---|----------|--------------|
|     | CHROMA       | Y | Y/CHROMA |              |
| REC | →            | → | →        | →            |
| PB  | →            | → | →        | →            |

There are cases that the part isn't mounted in this model is printed on this diagram.

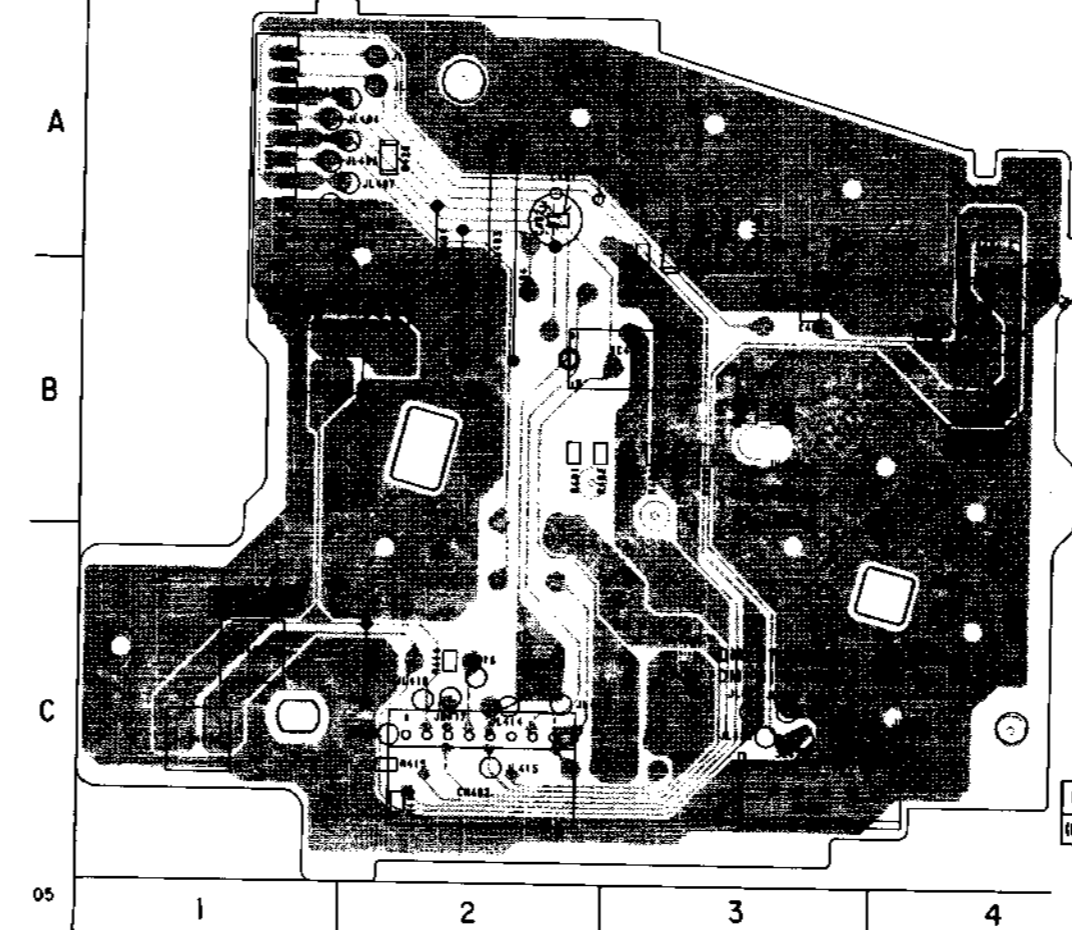
DM-47/51 (MODE CONTROL), HI-23/36 (FL DRIVER), MF-283/289 (POWER SWITCH),  
LE-12/15 (LED) (SLV-790/960) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM  
- Ref. No.: DM-47/51 Board, HI-23/36, MF-283/289 Board and LE-12/15 Board; 1,000 series -

SLV-760/761/790/960/L5/L7



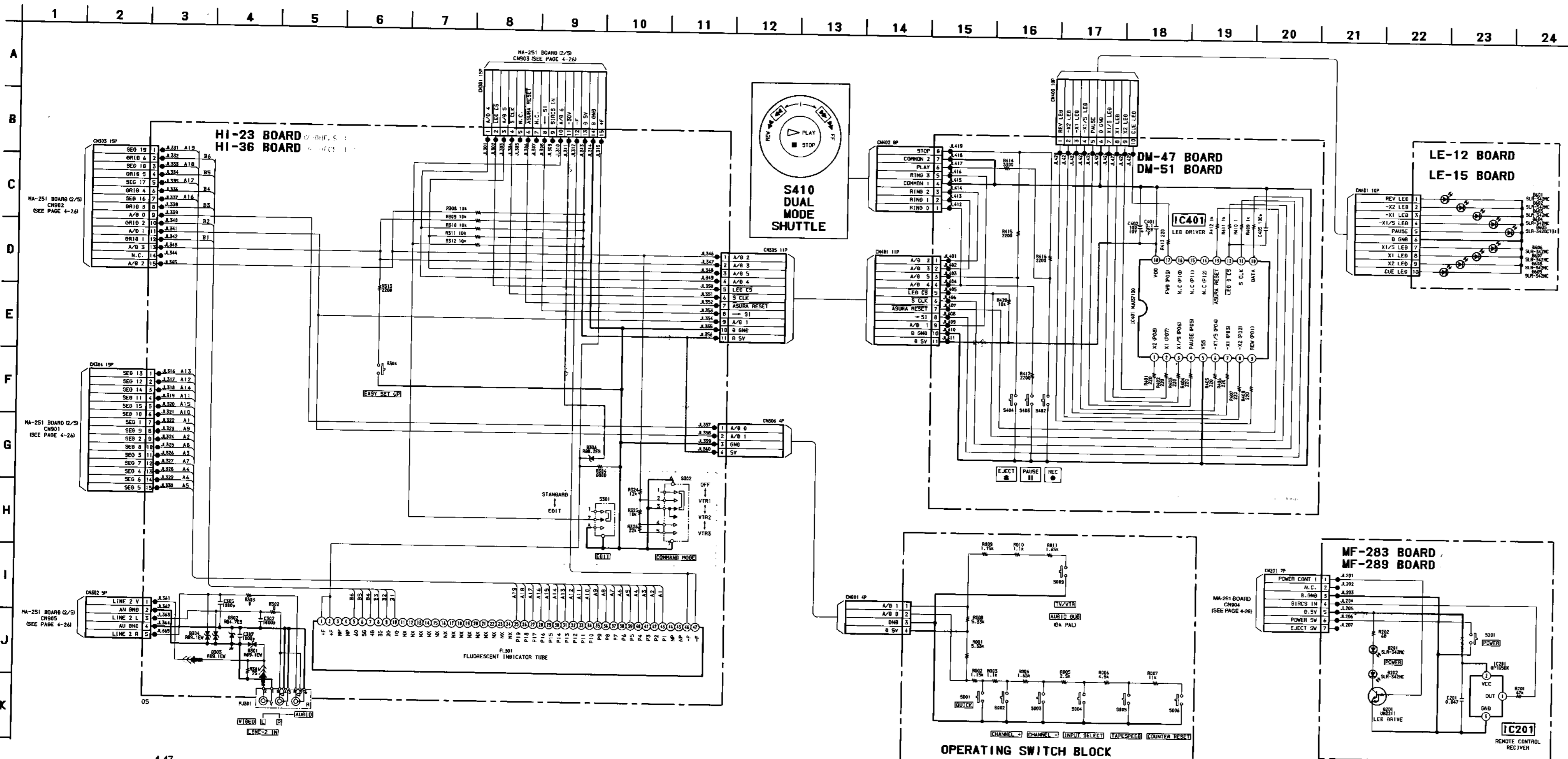
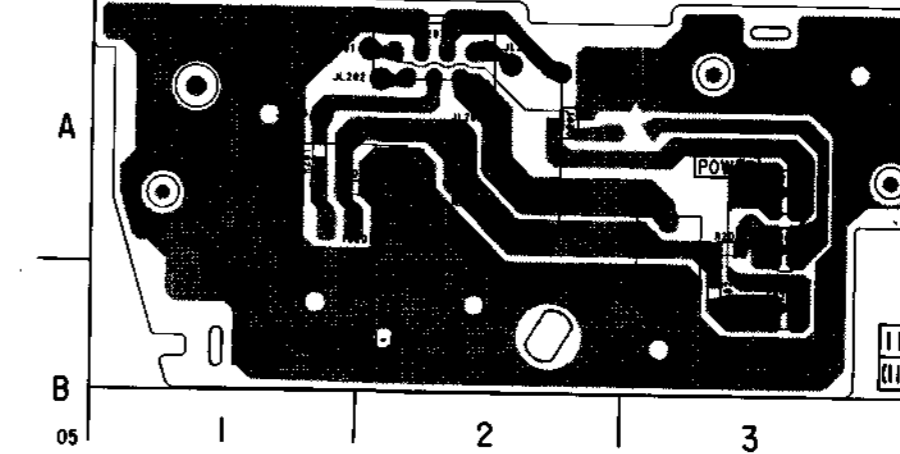
HI-23/36 BOARD  
CN301 A-3  
CN302 A-9  
CN303 A-5  
CN304 A-6  
CN305 B-1  
CN306 A-2  
D301 B-9  
D302 B-9  
D303 A-9  
D304 A-9  
D305 A-4

DM-47/51 BOARD

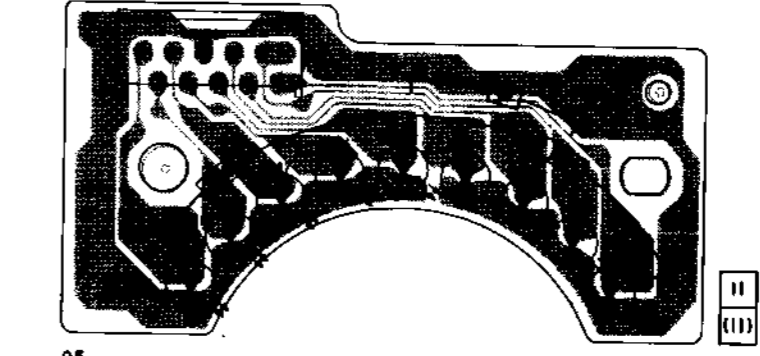


DM-47/51 BOARD  
CN401 A-1  
CN402 C-2  
CN403 C-3  
IC401 B-3

MF-283/289 BOARD



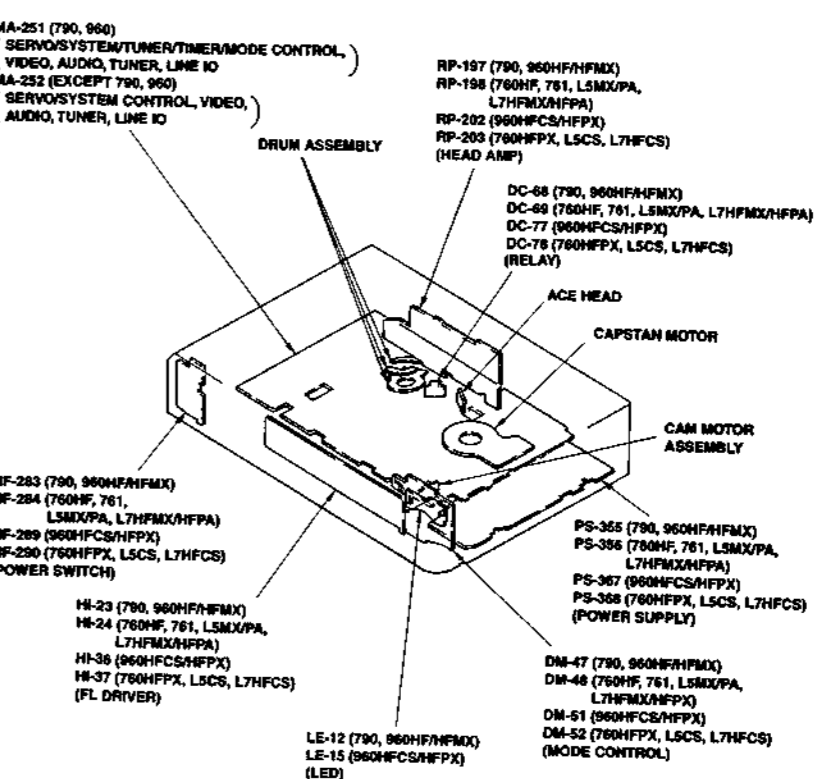
LE-12/15 BOARD



LE-12 BOARD : 1-659-440-  
LE-15 BOARD : 1-659-447-

Signal path

|     | VIDEO SIGNAL |   |          | AUDIO SIGNAL |
|-----|--------------|---|----------|--------------|
|     | CHROMA       | Y | Y/CHROMA |              |
| REC |              |   |          | →            |
| PB  |              |   |          | →            |

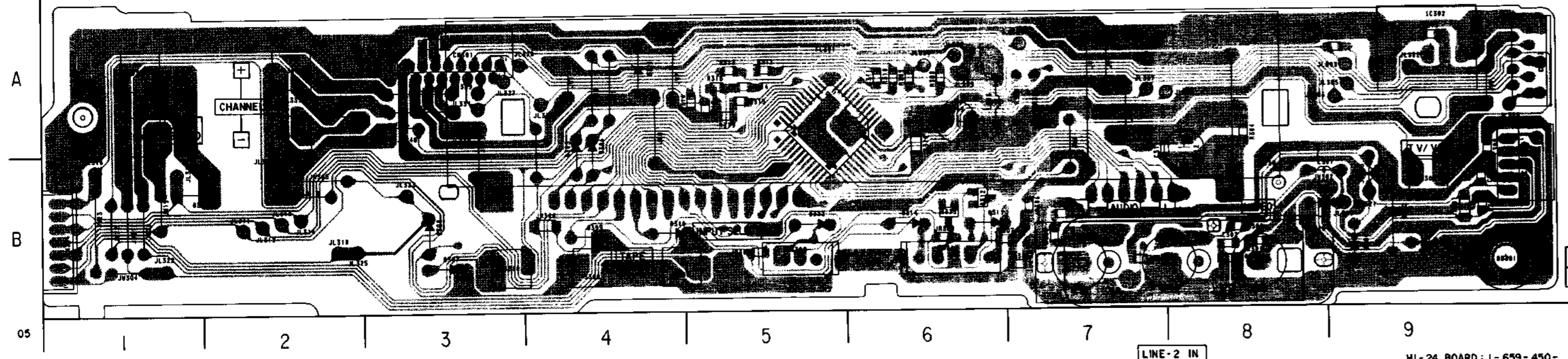


There are cases that the part isn't mounted in this model is printed on this diagram.

**DM-48/52 (MODE CONTROL), HI-24/37 (FL DRIVER), MF-284/290 (POWER SWITCH)**  
 (SLV-760/761/L5/L7) PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

- Ref. No.: DM-48/52 Board, HI-24/37 Board and MF-284/290 Board; 2,000 series -

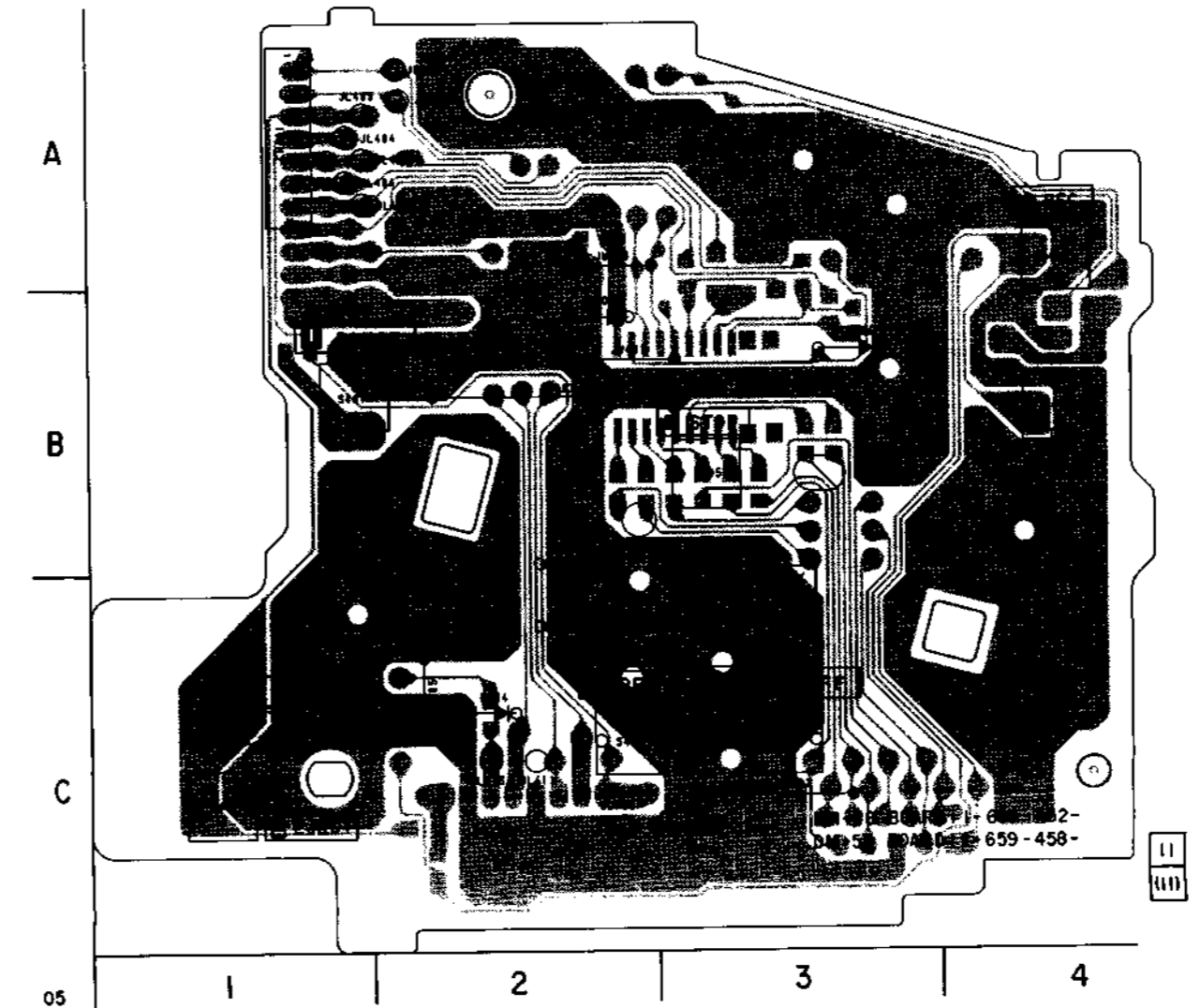
**HI-24/37 BOARD**



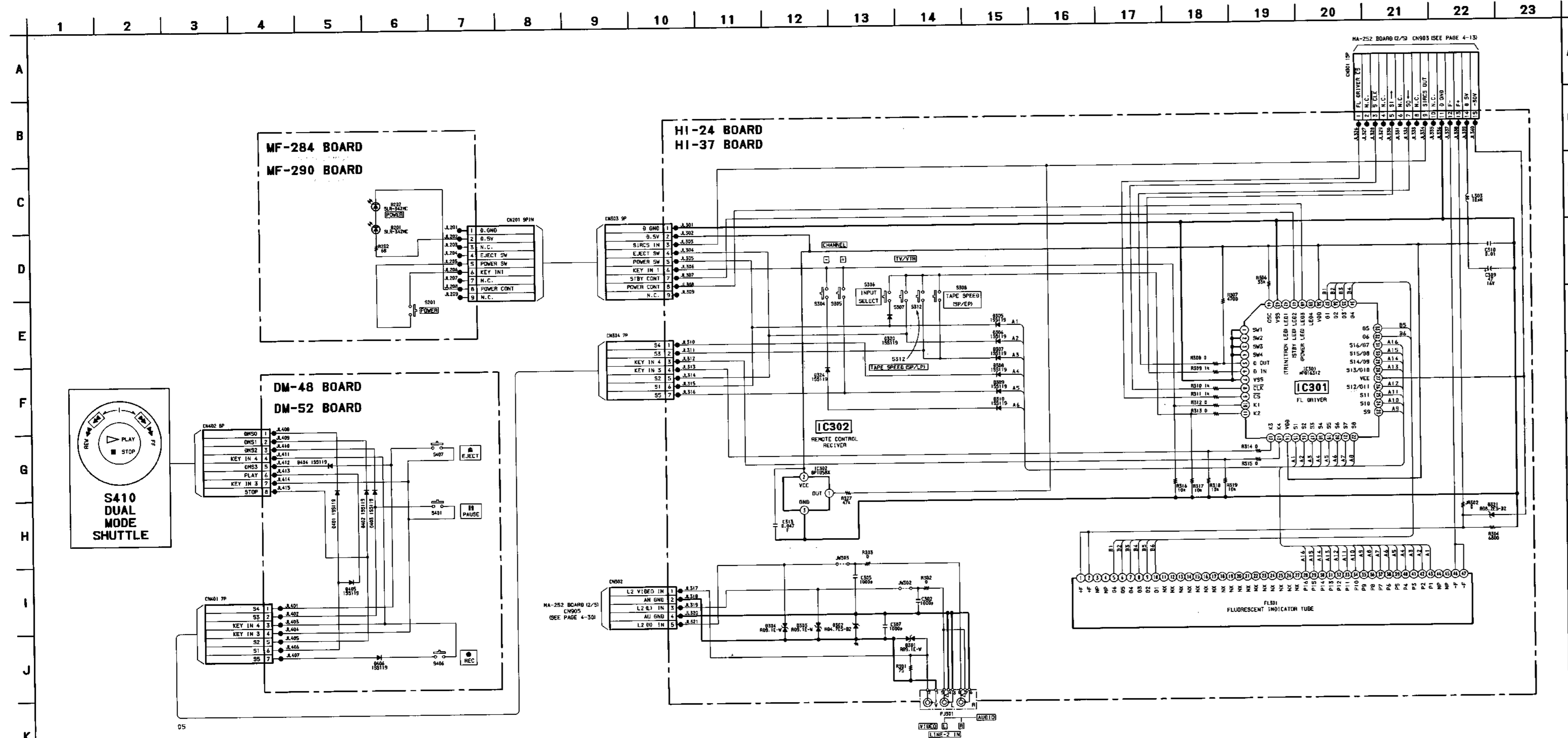
- HI-24/37 BOARD**
- CN301 A-3
  - CN302 B-10
  - CN303 A-10
  - CN304 B-1
  - D301 B-9
  - D302 B-9
  - D303 B-9
  - D304 B-9
  - D305 A-4
  - D306 A-4
  - D307 B-3
  - D308 B-3
  - D309 B-4
  - D310 B-4
  - D320 B-1
  - D321 A-4
  - D324 A-2
  - IC301 A-6
  - IC302 A-6

HI-24 BOARD: 1-659-450-  
 HI-37 BOARD: 1-659-456-

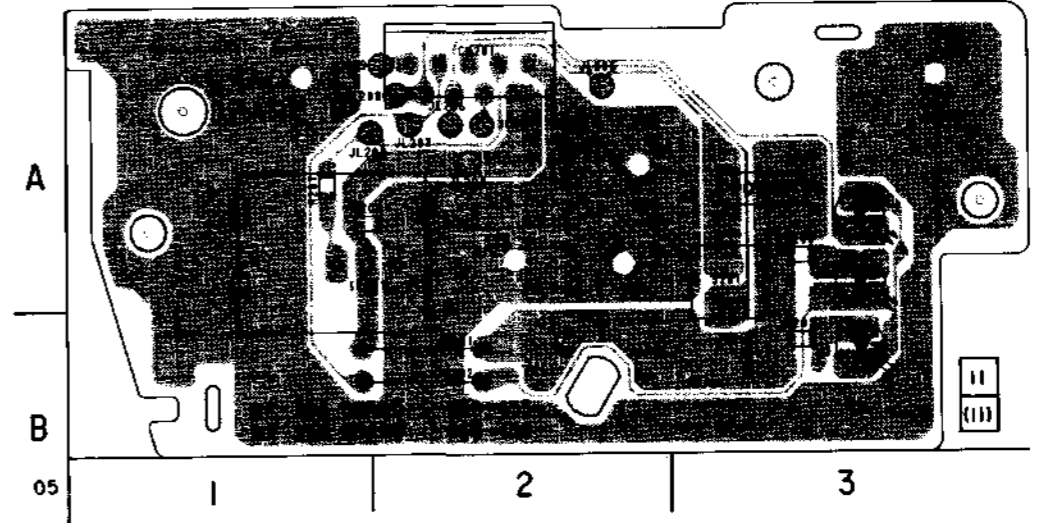
**DM-48/52 BOARD**



- DM-48/52 BOARD**
- CN401 A-1
  - CN402 C-2
  - D401 C-2
  - D402 B-2
  - D403 C-3
  - D404 C-2
  - D405 B-2
  - D406 B-3

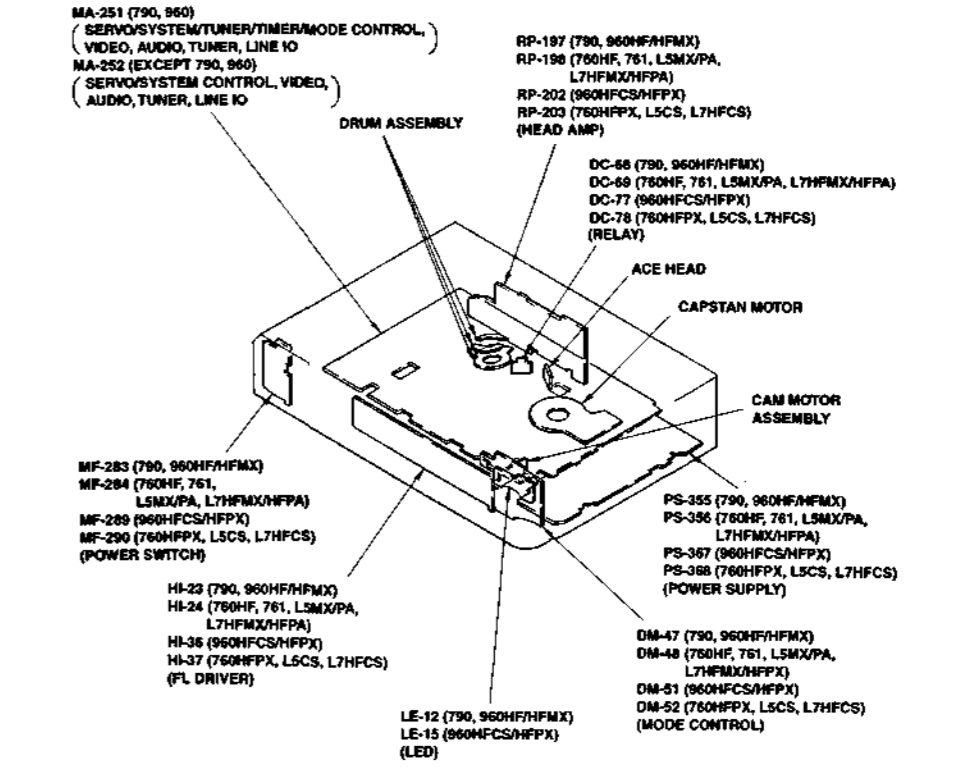


**MF-284/290 BOARD**



• Signal path

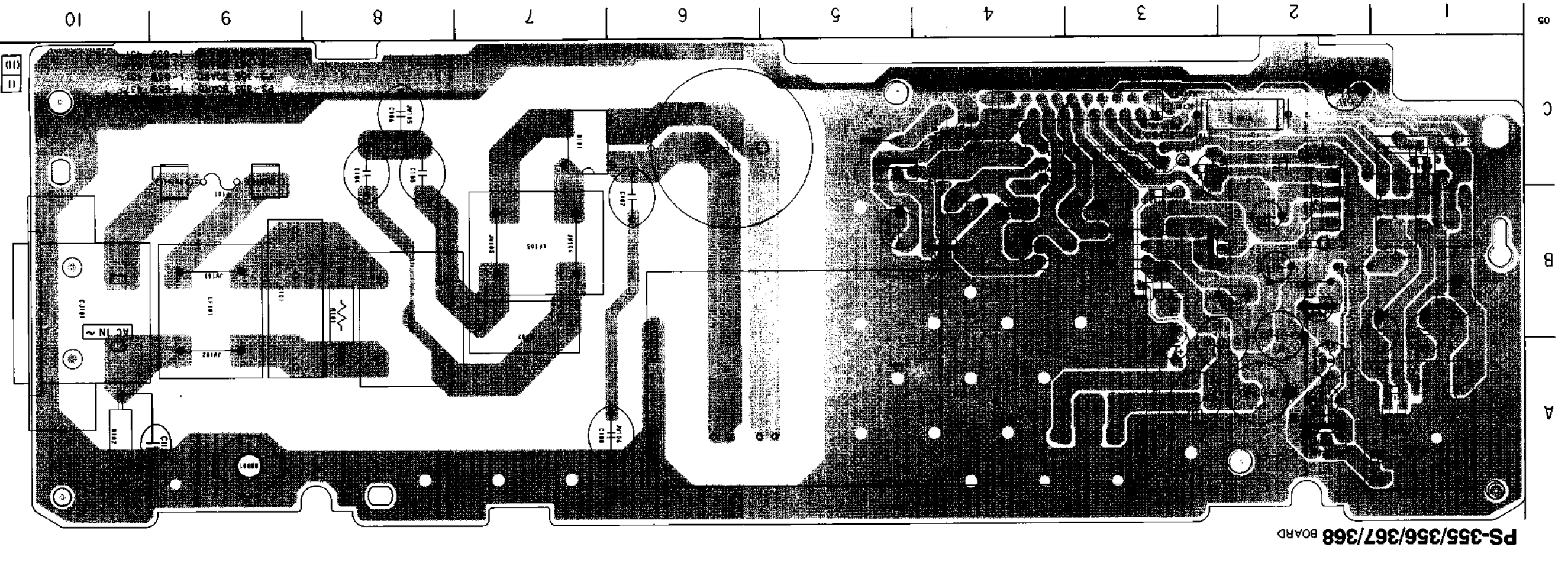
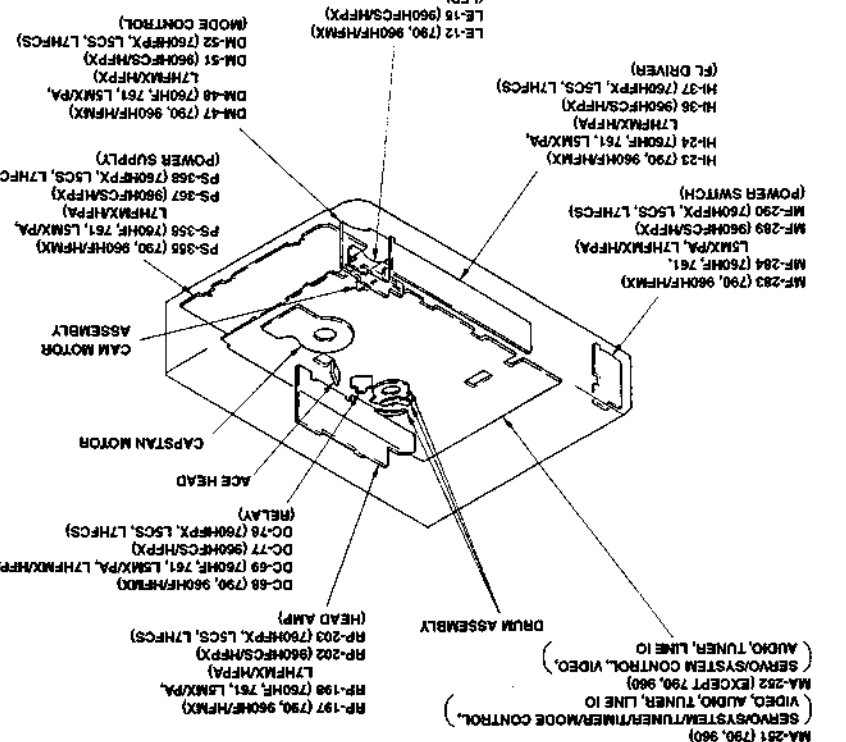
|     | VIDEO SIGNAL |   |         | AUDIO SIGNAL |
|-----|--------------|---|---------|--------------|
|     | CHROMA       | Y | YCHROMA |              |
| REC | 1            | 1 | 1       | 1            |
| PB  |              |   |         | 1            |



There are cases that the part not mounted in this model is printed on the diagram.

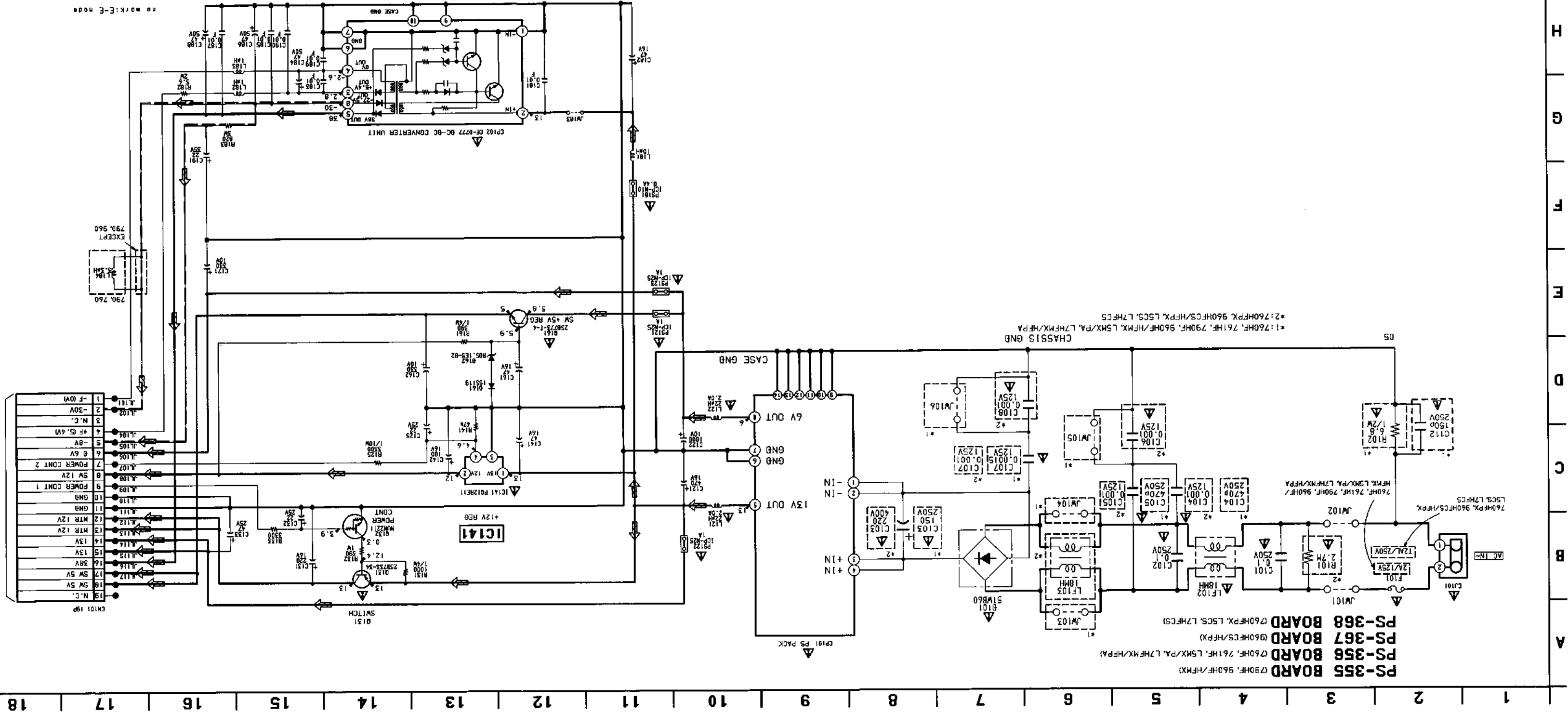
PS-355/367/368 (POWER SUPPLY) PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

Ref. No. PS-155/156 Model 1700 when PS-367/368 Model 2000 when.



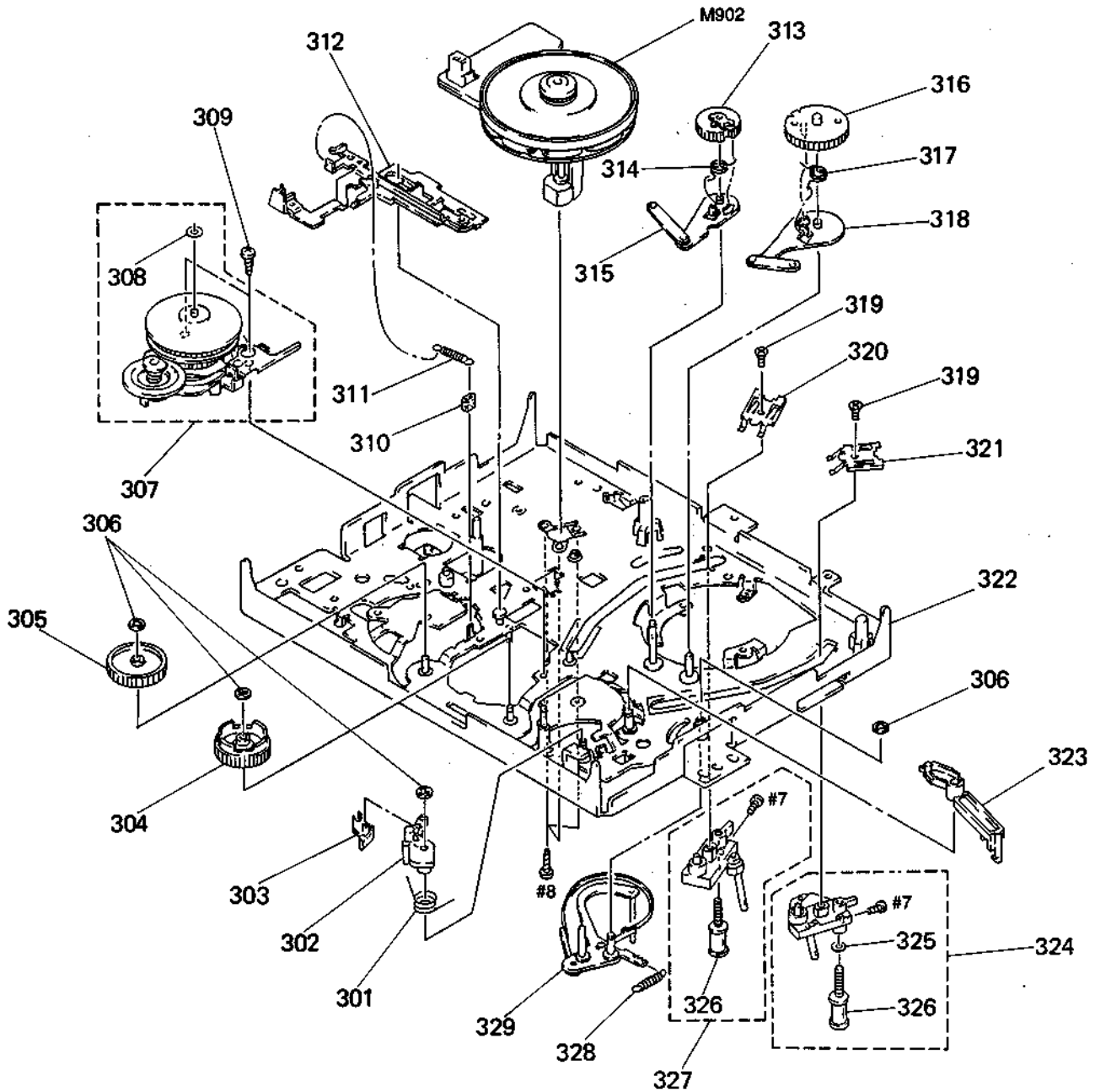
PS-355/367/368 BOARD

Grid coordinates: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.



Grid coordinates: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

### 5-1-7. MECHANISM CHASSIS ASSEMBLY (4)



| Ref. No. | Part No.     | Description                  | Remark | Ref. No. | Part No.     | Description                        | Remark |
|----------|--------------|------------------------------|--------|----------|--------------|------------------------------------|--------|
| 301      | 3-958-534-01 | SPRING, TORSION              |        | 316      | 3-958-476-01 | GEAR (S), LOADING                  |        |
| 302      | 3-958-532-01 | ARM, S WINDING               |        | 317      | 3-960-448-01 | SPRING (S), TORSION COIL           |        |
| 303      | 3-958-533-01 | CLAW, S WINDING              |        | 318      | X-3943-890-1 | LEVER (S) ASSY, LOADING            |        |
| 304      | 3-962-959-01 | GEAR (S-K), IDLER            |        | 319      | 3-960-720-01 | SCREW                              |        |
| 305      | 3-962-960-01 | GEAR (T-K), IDLER            |        | 320      | 3-960-688-01 | SPRING, LEAF (T), LOADING          |        |
| 306      | 3-669-595-00 | WASHER (2), STOPPER          |        | 321      | 3-960-687-01 | SPRING, LEAF (S), LOADING          |        |
| 307      | A-6739-102-A | RKB BLOCK ASSY               |        | 322      | X-3945-485-1 | CHASSIS ASSY, MECHANICAL           |        |
| 308      | 3-966-092-01 | RING, RETAINING, SLIT WASHER |        | 323      | 3-958-504-01 | ARM, FIXED RELEASE                 |        |
| 309      | 3-961-441-01 | SCREW (3X8)                  |        | 324      | A-6750-316-A | SHUTTLE (S) BLOCK ASSY             |        |
| 310      | 3-959-840-11 | RUBBER, JOINT                |        | 325      | 3-962-874-01 | O-RING                             |        |
| 311      | 3-958-529-01 | SPRING (MOMENT), TENSION     |        | 326      | X-3944-378-1 | ROLLER ASSY, GUIDE                 |        |
| 312      | X-3943-897-1 | LEVER ASSY, TRIGGER          |        | 327      | A-6750-314-A | T BLOCK ASSY, SHUTTLE              |        |
| 313      | 3-958-485-02 | GEAR (T), LOADING            |        | 328      | 3-958-492-01 | SPRING (TG1), TENSION COIL         |        |
| 314      | 3-960-449-01 | SPRING (T), TORSION COIL     |        | 329      | X-3943-886-1 | TG1 ASSY                           |        |
| 315      | X-3943-891-1 | LEVER (T) ASSY, LOADING      |        | M902     | 1-698-409-11 | MOTOR, DC SCV-0801A/2-NP (CAPSTAN) |        |

## 5-2. ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, -so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA ..:  $\mu$ A.    uPA ..:  $\mu$ PA.  
uPB ..:  $\mu$ PB.    uPC ..:  $\mu$ PC.    uPD ..:  $\mu$ PD.
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

| Ref. No.                 | Part No.     | Description  | Remark |
|--------------------------|--------------|--|--------|
|                          | A-6794-137-A | DC-68 BOARD, COMPLETE (790, 960HF/HFMC)                |        |
| *                        | A-6794-137-A | DC-69 BOARD, COMPLETE (760, 761, L5MX/PA, L7HFMC/HFPA) |        |
|                          | A-6794-137-A | DC-77 BOARD, COMPLETE (960HFCS/HFPX)                   |        |
|                          | A-6794-137-A | DC-78 BOARD, COMPLETE (760HFPX, L5CS, L7HFCS)          |        |
| *****                    |              |  |        |
| (Ref. No. 1, 000 Series) |              |  |        |
| < CONNECTOR >            |              |  |        |
| * CN001                  | 1-766-714-11 | CONNECTOR, BOARD TO BOAR 5P                            |        |
| * CN002                  | 1-766-713-11 | CONNECTOR, BOARD TO BOAR 5P                            |        |
| *****                    |              |  |        |
|                          | A-6782-809-A | DM-47 BOARD, COMPLETE (790, 960HF/HFMC)                |        |
| *                        | A-6782-803-A | DM-51 BOARD, COMPLETE (960HFCS/HFPX)                   |        |
| *****                    |              |  |        |
| (Ref. No. 1, 000 Series) |              |  |        |
| < CAPACITOR >            |              |  |        |
| C401                     | 1-163-038-91 | CERAMIC CHIP    0.1uF    25V                           |        |
| C402                     | 1-126-933-11 | ELECT    100uF    20%    10V                           |        |
| C405                     | 1-163-181-00 | CERAMIC CHIP    100PF    5%    50V                     |        |
| < CONNECTOR >            |              |  |        |
| CN401                    | 1-568-665-11 | CONNECTOR, BOARD TO BOARD 11P                          |        |
| CN402                    | 1-580-850-11 | CONNECTOR (DMS) 8P                                     |        |
| CN403                    | 1-695-371-31 | CONNECTOR, FFC/FPC 10P                                 |        |
| < IC >                   |              |  |        |
| IC401                    | 8-759-366-45 | IC    NJU3713G(TE2)                                    |        |
| < RESISTOR >             |              |  |        |
| R401                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R402                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R403                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R404                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R405                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R406                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R407                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |
| R408                     | 1-216-033-00 | METAL CHIP    220    5%    1/10W                       |        |

| Ref. No.                 | Part No.     | Description  | Remark |
|--------------------------|--------------|--|--------|
| R409                     | 1-216-049-91 | METAL GLAZE    1K    5%    1/10W                       |        |
| R410                     | 1-216-049-91 | METAL GLAZE    1K    5%    1/10W                       |        |
| R411                     | 1-216-198-91 | METAL GLAZE    1K    5%    1/8W                        |        |
| R412                     | 1-216-049-91 | METAL GLAZE    1K    5%    1/10W                       |        |
| R413                     | 1-247-815-91 | CARBON    220    5%    1/4W                            |        |
| R414                     | 1-216-061-00 | METAL CHIP    3.3K    5%    1/10W                      |        |
| R415                     | 1-216-057-00 | METAL CHIP    2.2K    5%    1/10W                      |        |
| R416                     | 1-216-057-00 | METAL CHIP    2.2K    5%    1/10W                      |        |
| R417                     | 1-216-057-00 | METAL CHIP    2.2K    5%    1/10W                      |        |
| R420                     | 1-216-222-00 | METAL GLAZE    10K    5%    1/8W                       |        |
| < SWITCH >               |              |  |        |
| S402                     | 1-571-977-11 | SWITCH, TACTIL (● REC)                                 |        |
| S403                     | 1-571-977-11 | SWITCH, TACTIL (■ PAUSE)                               |        |
| S404                     | 1-571-977-11 | SWITCH, TACTIL ( $\Delta$ EJECT)                       |        |
| S410                     | 1-572-662-11 | SWITCH, ROTARY (DUAL MODE SHUTTLE)                     |        |
| *****                    |              |  |        |
|                          | A-6782-788-A | DM-48 BOARD, COMPLETE (760, 761, L5MX/PA, L7HFMC/HFPA) |        |
| *                        | A-6782-818-A | DM-52 BOARD, COMPLETE (760HFPX, L5CS, L7HFCS)          |        |
| *****                    |              |  |        |
| (Ref. No. 2, 000 Series) |              |  |        |
| < CONNECTOR >            |              |  |        |
| CN401                    | 1-770-031-11 | CONNECTOR, BOARD TO BOARD 7P                           |        |
| CN402                    | 1-580-850-11 | CONNECTOR (DMS) 8P                                     |        |
| < DIODE >                |              |  |        |
| D401                     | 8-719-911-19 | DIODE    1SS119-25                                     |        |
| D402                     | 8-719-911-19 | DIODE    1SS119-25                                     |        |
| D403                     | 8-719-911-19 | DIODE    1SS119-25                                     |        |
| D404                     | 8-719-911-19 | DIODE    1SS119-25                                     |        |
| D405                     | 8-719-911-19 | DIODE    1SS119-25                                     |        |
| D406                     | 8-719-911-19 | DIODE    1SS119-25                                     |        |

**DM-48****DM-52****HI-23****HI-36****HI-24****HI-37**

| Ref. No.                       | Part No.     | Description                          | Remark      |     |       |
|--------------------------------|--------------|--------------------------------------|-------------|-----|-------|
| < SWITCH >                     |              |                                      |             |     |       |
| S401                           | 1-571-977-11 | SWITCH, TACTIL (■ PAUSE)             |             |     |       |
| S406                           | 1-571-977-11 | SWITCH, TACTIL (● REC)               |             |     |       |
| S407                           | 1-571-977-11 | SWITCH, TACTIL (▲ EJECT)             |             |     |       |
| S410                           | 1-572-662-11 | SWITCH, ROTARY (DUAL MODE SHRITTLE)  |             |     |       |
| <hr/>                          |              |                                      |             |     |       |
| *                              | A-6782-813-A | HI-23 BOARD, COMPLETE (790)          |             |     |       |
| *                              | A-6782-810-A | HI-23 BOARD, COMPLETE (960HF/HFEX)   |             |     |       |
| *                              | A-6782-807-A | HI-36 BOARD, COMPLETE (960HFCS/HFPX) |             |     |       |
| *****                          |              |                                      |             |     |       |
| (Ref. No. 1,000 Series)        |              |                                      |             |     |       |
| < CAPACITOR >                  |              |                                      |             |     |       |
| C302                           | 1-163-009-11 | CERAMIC CHIP                         | 0.001uF     | 10% | 50V   |
| C305                           | 1-163-009-11 | CERAMIC CHIP                         | 0.001uF     | 10% | 50V   |
| C307                           | 1-163-009-11 | CERAMIC CHIP                         | 0.001uF     | 10% | 50V   |
| < CONNECTOR >                  |              |                                      |             |     |       |
| CN301                          | 1-774-461-11 | CONNECTOR, FFC/FPC 15P               |             |     |       |
| CN302                          | 1-506-484-11 | PIN, CONNECTOR 5P                    |             |     |       |
| CN303                          | 1-774-461-11 | CONNECTOR, FFC/FPC 15P               |             |     |       |
| CN304                          | 1-774-461-11 | CONNECTOR, FFC/FPC 15P               |             |     |       |
| CN305                          | 1-568-671-11 | CONNECTOR, BOARD TO BOARD 11P        |             |     |       |
| CN306                          | 1-691-036-21 | PIN, CONNECTOR (PC BOARD) 4P         |             |     |       |
| < DIODE >                      |              |                                      |             |     |       |
| D301                           | 8-719-108-12 | DIODE                                | RD9. 1E-W   |     |       |
| D302                           | 8-719-109-81 | DIODE                                | RD4. 7ES-B2 |     |       |
| D303                           | 8-719-108-12 | DIODE                                | RD9. 1E-W   |     |       |
| D304                           | 8-719-108-12 | DIODE                                | RD9. 1E-W   |     |       |
| D306                           | 8-719-110-08 | DIODE                                | RD8. 2ES-B2 |     |       |
| < FLUORESCENT INDICATOR TUBE > |              |                                      |             |     |       |
| FL301                          | 1-517-477-11 | TUBE, FLUORESCENT INDICATOR          |             |     |       |
| < JUMPER RESISTOR >            |              |                                      |             |     |       |
| JR001                          | 1-216-295-00 | METAL CHIP                           | 0           | 5%  | 1/10W |
| JR002                          | 1-216-296-00 | METAL CHIP                           | 0           | 5%  | 1/8W  |
| JR003                          | 1-216-296-00 | METAL CHIP                           | 0           | 5%  | 1/8W  |
| JR004                          | 1-216-296-00 | METAL CHIP                           | 0           | 5%  | 1/8W  |
| JR005                          | 1-216-295-00 | METAL CHIP                           | 0           | 5%  | 1/10W |
| < JACK >                       |              |                                      |             |     |       |
| PJ301                          | 1-766-861-11 | JACK, PIN (3P) (LINE-2 IN)           |             |     |       |
| < RESISTOR >                   |              |                                      |             |     |       |
| R301                           | 1-216-022-00 | METAL CHIP                           | 75          | 5%  | 1/10W |
| R302                           | 1-216-295-00 | METAL CHIP                           | 0           | 5%  | 1/10W |

| Ref. No.                | Part No.     | Description                         | Remark      |     |                   |
|-------------------------|--------------|-------------------------------------|-------------|-----|-------------------|
| R303                    | 1-216-295-00 | METAL CHIP                          | 0           | 5%  | 1/10W             |
| R304                    | 1-216-069-00 | METAL CHIP                          | 6.8K        | 5%  | 1/10W             |
| R308                    | 1-216-073-00 | METAL CHIP                          | 10K         | 5%  | 1/10W             |
| R309                    | 1-216-073-00 | METAL CHIP                          | 10K         | 5%  | 1/10W             |
| R310                    | 1-249-429-11 | CARBON                              | 10K         | 5%  | 1/4W              |
| R311                    | 1-249-429-11 | CARBON                              | 10K         | 5%  | 1/4W              |
| R312                    | 1-216-073-00 | METAL CHIP                          | 10K         | 5%  | 1/10W             |
| R313                    | 1-216-057-00 | METAL CHIP                          | 2.2K        | 5%  | 1/10W             |
| R324                    | 1-216-224-91 | METAL GLAZE                         | 12K         | 5%  | 1/8W (960)        |
| R325                    | 1-216-073-00 | METAL CHIP                          | 10K         | 5%  | 1/10W (960)       |
| R326                    | 1-216-081-00 | METAL CHIP                          | 22K         | 5%  | 1/10W (960)       |
| < SWITCH >              |              |                                     |             |     |                   |
| S301                    | 1-572-908-11 | SWITCH, SLIDE (EDIT)                |             |     | (960)             |
| S302                    | 1-762-171-11 | SWITCH, SLIDE (COMMAND MODE)        |             |     | (960)             |
| S304                    | 1-571-977-11 | SWITCH, TACTIL (EASY SET UP)        |             |     |                   |
| <hr/>                   |              |                                     |             |     |                   |
| *                       | A-6782-790-A | HI-24 BOARD, COMPLETE (760, 761)    |             |     |                   |
| *                       | A-6782-801-A | HI-24 BOARD, COMPLETE (L5MX/PA)     |             |     |                   |
| *                       | A-6782-816-A | HI-24 BOARD, COMPLETE (L7HFHX/HFPA) |             |     |                   |
| <hr/>                   |              |                                     |             |     |                   |
| *                       | A-6782-805-A | HI-37 BOARD, COMPLETE (760HFPX)     |             |     |                   |
| *                       | A-6782-822-A | HI-37 BOARD, COMPLETE (L5CS)        |             |     |                   |
| *                       | A-6782-797-A | HI-37 BOARD, COMPLETE (L7HFCS)      |             |     |                   |
| *****                   |              |                                     |             |     |                   |
| (Ref. No. 2,000 Series) |              |                                     |             |     |                   |
| *                       | 3-966-234-01 | HOLDER (A), FL                      |             |     |                   |
| < CAPACITOR >           |              |                                     |             |     |                   |
| C302                    | 1-163-009-11 | CERAMIC CHIP                        | 0.001uF     | 10% | 50V<br>(760, 761) |
| C305                    | 1-163-009-11 | CERAMIC CHIP                        | 0.001uF     | 10% | 50V<br>(760, 761) |
| C307                    | 1-163-009-11 | CERAMIC CHIP                        | 0.001uF     | 10% | 50V<br>(760, 761) |
| C309                    | 1-126-967-11 | ELECT                               | 47uF        | 20% | 16V               |
| C310                    | 1-163-059-00 | CERAMIC CHIP                        | 0.01uF      | 10% | 50V               |
| C313                    | 1-163-035-00 | CERAMIC CHIP                        | 0.047uF     |     | 50V               |
| < CONNECTOR >           |              |                                     |             |     |                   |
| CN301                   | 1-774-461-11 | CONNECTOR, FFC/FPC 15P              |             |     |                   |
| CN302                   | 1-506-484-11 | PIN, CONNECTOR 5P                   |             |     | (760, 761)        |
| CN303                   | 1-691-068-21 | HOUSING, CONNECTOR 9P               |             |     |                   |
| * CN304                 | 1-691-406-11 | CONNECTOR, BOARD TO BOARD 7P        |             |     |                   |
| < DIODE >               |              |                                     |             |     |                   |
| D301                    | 8-719-108-12 | DIODE                               | RD9. 1E-W   |     | (760, 761)        |
| D302                    | 8-719-109-81 | DIODE                               | RD4. 7ES-B2 |     | (760, 761)        |
| D303                    | 8-719-108-12 | DIODE                               | RD9. 1E-W   |     | (760, 761)        |



HI-24
HI-37
LE-12
LE-15
MA-251

| Ref. No.                       | Part No.     | Description                         | Remark     |
|--------------------------------|--------------|-------------------------------------|------------|
| D304                           | 8-719-108-12 | DIODE RD9. 1E-W                     | (760, 761) |
| D305                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D306                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D307                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D308                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D309                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D310                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D320                           | 8-719-911-19 | DIODE 1SS119-25                     |            |
| D321                           | 8-719-110-08 | DIODE RD8. 2ES-B2                   |            |
| D324                           | 8-719-911-19 | DIODE 1SS119                        |            |
| < FLUORESCENT INDICATOR TUBE > |              |                                     |            |
| FL301                          | 1-517-478-11 | TUBE, FLUORESCENT INDICATOR         |            |
| < IC >                         |              |                                     |            |
| IC301                          | 8-759-366-44 | IC uPD16312GB-3B4                   |            |
| IC302                          | 1-466-833-11 | IC RAY-CATCHER BLOCK, REMOCAN       |            |
| < JUMPER RESISTOR >            |              |                                     |            |
| JR001                          | 1-216-295-00 | METAL CHIP 0 5% 1/10W               | (760, 761) |
| JR302                          | 1-216-296-00 | METAL CHIP 0 5% 1/10W               |            |
| < COIL >                       |              |                                     |            |
| L303                           | 1-410-509-11 | INDUCTOR 10uH                       |            |
| < JACK >                       |              |                                     |            |
| PJ301                          | 1-774-509-11 | JACK, PIN 3P (LINE-2 IN) (760, 761) |            |
| < RESISTOR >                   |              |                                     |            |
| R301                           | 1-216-022-00 | METAL CHIP 75 5% 1/10W              | (760, 761) |
| R302                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               | (760, 761) |
| R303                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               | (760, 761) |
| R304                           | 1-216-069-00 | METAL CHIP 6.8K 5% 1/10W            |            |
| R306                           | 1-249-435-11 | CARBON 33K 5% 1/4W                  |            |
| R307                           | 1-249-425-11 | CARBON 4.7K 5% 1/4W                 |            |
| R308                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               |            |
| R309                           | 1-216-049-91 | METAL GLAZE 1K 5% 1/10W             |            |
| R310                           | 1-216-049-91 | METAL GLAZE 1K 5% 1/10W             |            |
| R311                           | 1-216-049-91 | METAL GLAZE 1K 5% 1/10W             |            |
| R312                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               |            |
| R313                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               |            |
| R314                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               |            |
| R315                           | 1-216-295-00 | METAL CHIP 0 5% 1/10W               |            |

| Ref. No.                | Part No.     | Description                              | Remark  |
|-------------------------|--------------|--|---------|
| R316                    | 1-216-073-00 | METAL CHIP 10K 5% 1/10W                  |         |
| R317                    | 1-216-073-00 | METAL CHIP 10K 5% 1/10W                  |         |
| R318                    | 1-216-073-00 | METAL CHIP 10K 5% 1/10W                  |         |
| R319                    | 1-216-073-00 | METAL CHIP 10K 5% 1/10W                  |         |
| R327                    | 1-216-089-91 | METAL GLAZE 47K 5% 1/10W                 |         |
| < SWITCH >              |              |  |         |
| S304                    | 1-571-977-11 | SWITCH, TACTIL (CHANNEL -)               |         |
| S305                    | 1-571-977-11 | SWITCH, TACTIL (CHANNEL +)               |         |
| S306                    | 1-571-977-11 | SWITCH, TACTIL (INPUT SELECT) (760, 761) |         |
| S307                    | 1-571-977-11 | SWITCH, TACTIL (TV/VTR)                  |         |
| S308                    | 1-571-977-11 | SWITCH, TACTIL (TAPE SPEED) (760, 761)   |         |
| S312                    | 1-571-977-11 | SWITCH, TACTIL (TAPE SPEED) (L5, L7)     |         |
| *****                   |              |  |         |
| *                       | A-6794-139-A | LE-12 BOARD, COMPLETE (790, 960HF/HFMX)  |         |
| *                       | A-6794-141-A | LE-15 BOARD, COMPLETE (960HFCS/HFPX)     |         |
| *****                   |              |  |         |
| (Ref. No. 1,000 Series) |              |  |         |
| < CONNECTOR >           |              |  |         |
| CN601                   | 1-691-069-11 | HOUSING, CONNECTOR 10P                   |         |
| < LED >                 |              |  |         |
| D601                    | 8-719-056-07 | LED SLR-342MC3F (REW)                    |         |
| D602                    | 8-719-056-07 | LED SLR-342MC3F (REW)                    |         |
| D603                    | 8-719-056-07 | LED SLR-342MC3F (REW)                    |         |
| D604                    | 8-719-056-07 | LED SLR-342MCF3F (REW)                   |         |
| D605                    | 8-719-056-06 | LED SLR-342DCT31 (PLAY/FF/REW)           |         |
| D606                    | 8-719-056-07 | LED SLR-342MC3F (PLAY/FF)                |         |
| D607                    | 8-719-056-07 | LED SLR-342MC3F (PLAY/FF)                |         |
| D608                    | 8-719-056-07 | LED SLR-342MC3F (FF)                     |         |
| D609                    | 8-719-056-07 | LED SLR-342MC3F (FF)                     |         |
| *****                   |              |  |         |
| *                       | A-6782-800-A | MA-251 BOARD, COMPLETE (790)             |         |
| *                       | A-6782-815-A | MA-251 BOARD, COMPLETE (960)             |         |
| *****                   |              |  |         |
| (Ref. No. 3,000 Series) |              |  |         |
| *                       | 3-960-273-01 | SPACER, TOP END                          |         |
| *                       | 3-960-274-01 | SPACER, LED                              |         |
| < BUZZER >              |              |  |         |
| BZ151                   | 1-529-104-11 | BUZZER, PIEZOELECTRIC                    |         |
| < CAPACITOR >           |              |  |         |
| C101                    | 1-164-232-11 | CERAMIC CHIP 0.01uF                      | 50V     |
| C102                    | 1-126-967-11 | ELECT 47uF                               | 20% 16V |
| C103                    | 1-164-344-11 | CERAMIC CHIP 0.068uF                     | 10% 25V |

| Ref. No. | Part No.     | Description  |          | Remark   |
|----------|--------------|--------------|----------|----------|
| C104     | 1-124-248-00 | ELECT        | 22uF     | 20% 35V  |
| C105     | 1-124-584-00 | ELECT        | 100uF    | 20% 10V  |
| C106     | 1-163-009-11 | CERAMIC CHIP | 0.001uF  | 10% 50V  |
| C107     | 1-163-017-00 | CERAMIC CHIP | 0.0047uF | 5% 50V   |
| C108     | 1-163-077-00 | CERAMIC CHIP | 0.1uF    | 10% 25V  |
| C109     | 1-124-257-00 | ELECT        | 2.2uF    | 20% 50V  |
| C111     | 1-124-257-00 | ELECT        | 2.2uF    | 20% 50V  |
| C114     | 1-163-009-11 | CERAMIC CHIP | 0.001uF  | 10% 50V  |
| C133     | 1-163-009-11 | CERAMIC CHIP | 0.001uF  | 10% 50V  |
| C134     | 1-124-257-00 | ELECT        | 2.2uF    | 20% 50V  |
| C135     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C136     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C137     | 1-109-982-11 | CERAMIC CHIP | 1uF      | 10% 10V  |
| C138     | 1-164-161-11 | CERAMIC CHIP | 0.0022uF | 10% 100V |
| C139     | 1-126-964-11 | ELECT        | 10uF     | 20% 50V  |
| C140     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C151     | 1-163-031-11 | CERAMIC CHIP | 0.01uF   | 50V      |
| C152     | 1-163-031-11 | CERAMIC CHIP | 0.01uF   | 50V      |
| C153     | 1-163-031-11 | CERAMIC CHIP | 0.01uF   | 50V      |
| C154     | 1-163-099-00 | CERAMIC CHIP | 18PF     | 5% 50V   |
| C155     | 1-163-231-11 | CERAMIC CHIP | 15PF     | 5% 50V   |
| C156     | 1-163-031-11 | CERAMIC CHIP | 0.01uF   | 50V      |
| C157     | 1-164-004-11 | CERAMIC CHIP | 0.1uF    | 10% 25V  |
| C158     | 1-128-057-11 | ELECT        | 330uF    | 20% 6.3V |
| C159     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C160     | 1-125-507-11 | CAPACITOR    | 0.22F    | 5.5V     |
| C161     | 1-128-057-11 | ELECT        | 330uF    | 20% 6.3V |
| C162     | 1-163-031-11 | CERAMIC CHIP | 0.01uF   | 50V      |
| C163     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C164     | 1-163-059-00 | CERAMIC CHIP | 0.01uF   | 10% 50V  |
| C165     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C166     | 1-126-916-11 | ELECT        | 1000uF   | 20% 6.3V |
| C201     | 1-163-229-11 | CERAMIC CHIP | 12PF     | 5% 50V   |
| C202     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C203     | 1-163-229-11 | CERAMIC CHIP | 12PF     | 5% 50V   |
| C204     | 1-163-009-11 | CERAMIC CHIP | 0.001uF  | 10% 50V  |
| C205     | 1-163-081-00 | CERAMIC CHIP | 0.22uF   | 25V      |
| C206     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C207     | 1-164-004-11 | CERAMIC CHIP | 0.1uF    | 10% 25V  |
| C208     | 1-124-584-00 | ELECT        | 100uF    | 20% 10V  |
| C209     | 1-163-038-91 | CERAMIC CHIP | 0.1uF    | 25V      |
| C252     | 1-162-638-11 | CERAMIC CHIP | 1uF      | 16V      |
| C253     | 1-163-031-11 | CERAMIC CHIP | 0.01uF   | 50V      |
| C254     | 1-124-589-11 | ELECT        | 47uF     | 20% 16V  |
| C255     | 1-137-372-11 | FILM         | 0.022uF  | 5% 50V   |
| C256     | 1-137-441-11 | FILM         | 0.027uF  | 5% 50V   |
| C261     | 1-126-176-11 | ELECT        | 220uF    | 20% 10V  |
| C262     | 1-163-009-11 | CERAMIC CHIP | 0.001uF  | 10% 50V  |

| Ref. No. | Part No.     | Description  |         | Remark       |
|----------|--------------|--------------|---------|--------------|
| C264     | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% 50V      |
| C266     | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% 50V      |
| C267     | 1-163-009-11 | CERAMIC CHIP | 0.001uF | 10% 50V      |
| C273     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C275     | 1-163-038-91 | CERAMIC CHIP | 0.1uF   | 25V          |
| C291     | 1-163-077-00 | CERAMIC CHIP | 0.1uF   | 10% 25V      |
| C292     | 1-163-077-00 | CERAMIC CHIP | 0.1uF   | 10% 25V      |
| C294     | 1-124-455-00 | ELECT        | 100uF   | 20% 16V      |
| C295     | 1-163-077-00 | CERAMIC CHIP | 0.1uF   | 10% 25V      |
| C296     | 1-163-077-00 | CERAMIC CHIP | 0.1uF   | 10% 25V      |
| C298     | 1-163-038-91 | CERAMIC CHIP | 0.1uF   | 25V          |
| C301     | 1-163-227-11 | CERAMIC CHIP | 10PF    | 0.5PF 50V    |
| C302     | 1-163-121-00 | CERAMIC CHIP | 150PF   | 5% 50V       |
| C303     | 1-163-239-11 | CERAMIC CHIP | 33PF    | 5% 50V       |
| C304     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C305     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V(960) |
| C308     | 1-126-964-11 | ELECT        | 10uF    | 20% 50V      |
| C309     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C312     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C313     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C352     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C353     | 1-163-241-11 | CERAMIC CHIP | 39PF    | 5% 50V       |
| C354     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C356     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C357     | 1-163-127-00 | CERAMIC CHIP | 270PF   | 5% 50V       |
| C358     | 1-163-253-11 | CERAMIC CHIP | 120PF   | 5% 50V       |
| C359     | 1-163-239-11 | CERAMIC CHIP | 33PF    | 5% 50V       |
| C360     | 1-163-235-11 | CERAMIC CHIP | 22PF    | 5% 50V       |
| C401     | 1-163-239-11 | CERAMIC CHIP | 33PF    | 5% 50V       |
| C402     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C406     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C407     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C408     | 1-164-505-11 | CERAMIC CHIP | 2.2uF   | 16V          |
| C409     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C410     | 1-163-227-11 | CERAMIC CHIP | 10PF    | 0.5PF 50V    |
| C411     | 1-163-235-11 | CERAMIC CHIP | 22PF    | 5% 50V       |
| C412     | 1-163-239-11 | CERAMIC CHIP | 33PF    | 5% 50V       |
| C413     | 1-163-235-11 | CERAMIC CHIP | 22PF    | 5% 50V       |
| C414     | 1-124-584-00 | ELECT        | 100uF   | 20% 10V      |
| C416     | 1-124-257-00 | ELECT        | 2.2uF   | 20% 50V      |
| C417     | 1-163-037-11 | CERAMIC CHIP | 0.022uF | 10% 25V      |
| C418     | 1-163-037-11 | CERAMIC CHIP | 0.022uF | 10% 25V      |
| C419     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C420     | 1-163-031-11 | CERAMIC CHIP | 0.01uF  | 50V          |
| C421     | 1-162-306-11 | CERAMIC      | 0.01uF  | 20% 16V      |
| C422     | 1-126-160-11 | ELECT        | 1uF     | 20% 50V      |
| C423     | 1-163-139-00 | CERAMIC CHIP | 820PF   | 5% 50V       |
| C424     | 1-124-589-11 | ELECT        | 47uF    | 20% 16V      |
| C425     | 1-164-004-11 | CERAMIC CHIP | 0.1uF   | 10% 25V      |

| Ref. No. | Part No.     | Description  | Remark            |
|----------|--------------|--------------|-------------------|
| C427     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C428     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C461     | 1-163-031-11 | CERAMIC CHIP | 0. 01uF 50V       |
| C462     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C463     | 1-163-031-11 | CERAMIC CHIP | 0. 01uF 50V       |
| C464     | 1-163-031-11 | CERAMIC CHIP | 0. 01uF 50V       |
| C465     | 1-163-251-11 | CERAMIC CHIP | 100PF 5% 50V      |
| C501     | 1-163-011-11 | CERAMIC CHIP | 0. 0015uF 10% 50V |
| C502     | 1-163-011-11 | CERAMIC CHIP | 0. 0015uF 10% 50V |
| C503     | 1-124-589-11 | ELECT        | 47uF 20% 16V      |
| C510     | 1-104-760-11 | CERAMIC CHIP | 0. 047uF 10% 50V  |
| C520     | 1-126-162-11 | ELECT        | 3. 3uF 20% 50V    |
| C521     | 1-126-096-11 | ELECT        | 10uF 20% 35V      |
| C522     | 1-137-372-11 | FILM         | 0. 022uF 5% 50V   |
| C523     | 1-126-163-11 | ELECT        | 4. 7uF 20% 50V    |
| C524     | 1-124-589-11 | ELECT        | 47uF 20% 16V      |
| C525     | 1-137-370-11 | FILM         | 0. 01uF 5% 50V    |
| C530     | 1-126-162-11 | ELECT        | 3. 3uF 20% 50V    |
| C531     | 1-126-096-11 | ELECT        | 10uF 20% 35V      |
| C532     | 1-137-372-11 | FILM         | 0. 022uF 5% 50V   |
| C533     | 1-126-963-11 | ELECT        | 4. 7uF 20% 50V    |
| C534     | 1-124-589-11 | ELECT        | 47uF 20% 16V      |
| C535     | 1-137-370-11 | FILM         | 0. 01uF 5% 50V    |
| C541     | 1-137-372-11 | FILM         | 0. 022uF 5% 50V   |
| C542     | 1-115-438-91 | ELECT        | 100uF 20% 10V     |
| C551     | 1-124-248-00 | ELECT        | 22uF 20% 35V      |
| C552     | 1-124-234-00 | ELECT        | 22uF 20% 16V      |
| C561     | 1-126-160-11 | ELECT        | 1uF 20% 50V       |
| C562     | 1-137-370-11 | FILM         | 0. 01uF 5% 50V    |
| C563     | 1-126-163-11 | ELECT        | 4. 7uF 20% 50V    |
| C565     | 1-163-143-00 | CERAMIC CHIP | 0. 0012uF 5% 50V  |
| C566     | 1-163-014-00 | CERAMIC CHIP | 0. 0027uF 5% 50V  |
| C571     | 1-163-141-00 | CERAMIC CHIP | 0. 001uF 5% 50V   |
| C572     | 1-163-141-00 | CERAMIC CHIP | 0. 001uF 5% 50V   |
| C591     | 1-124-584-00 | ELECT        | 100uF 20% 10V     |
| C592     | 1-115-438-91 | ELECT        | 100uF 20% 10V     |
| C593     | 1-124-589-11 | ELECT        | 47uF 20% 16V      |
| C610     | 1-163-009-11 | CERAMIC CHIP | 0. 001uF 10% 50V  |
| C631     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C632     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C633     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C634     | 1-163-009-11 | CERAMIC CHIP | 0. 001uF 10% 50V  |
| C635     | 1-163-009-11 | CERAMIC CHIP | 0. 001uF 10% 50V  |
| C636     | 1-126-967-11 | ELECT        | 47uF 20% 16V      |
| C637     | 1-163-038-91 | CERAMIC CHIP | 0. 1uF 25V        |
| C681     | 1-163-031-11 | CERAMIC CHIP | 0. 01uF 50V       |
| C682     | 1-126-967-11 | ELECT        | 47uF 20% 16V      |
| C683     | 1-126-935-11 | ELECT        | 470uF 20% 6. 3V   |
| C684     | 1-126-967-11 | ELECT        | 47uF 20% 16V      |

| Ref. No.      | Part No.     | Description                       | Remark                 |
|---------------|--------------|-----------------------------------|------------------------|
| C701          | 1-126-967-11 | ELECT                             | 47uF 20% 16V           |
| C702          | 1-126-964-11 | ELECT                             | 10uF 20% 50V           |
| C703          | 1-126-964-11 | ELECT                             | 10uF 20% 50V           |
| C704          | 1-163-009-11 | CERAMIC CHIP                      | 0. 001uF 10% 50V       |
| C705          | 1-126-964-11 | ELECT                             | 10uF 20% 50V           |
| C706          | 1-163-031-11 | CERAMIC CHIP                      | 0. 01uF 50V            |
| C707          | 1-126-967-11 | ELECT                             | 47uF 20% 16V           |
| C708          | 1-163-031-11 | CERAMIC CHIP                      | 0. 01uF 50V            |
| C711          | 1-126-935-11 | ELECT                             | 470uF 20% 16V          |
| C712          | 1-163-031-11 | CERAMIC CHIP                      | 0. 01uF 50V            |
| C713          | 1-126-967-11 | ELECT                             | 47uF 20% 16V           |
| C714          | 1-163-031-11 | CERAMIC CHIP                      | 0. 01uF 50V            |
| C716          | 1-126-964-11 | ELECT                             | 10uF 20% 50V           |
| C717          | 1-126-964-11 | ELECT                             | 10uF 20% 50V           |
| C718          | 1-128-551-11 | ELECT                             | 22uF 20% 25V           |
| C719          | 1-164-161-11 | CERAMIC CHIP                      | 0. 0022uF 10% 100V     |
| C721          | 1-164-004-11 | CERAMIC CHIP                      | 0. 1uF 10% 25V         |
| C725          | 1-163-809-11 | CERAMIC CHIP                      | 0. 047uF 10% 25V       |
| C727          | 1-126-933-11 | ELECT                             | 100uF 20% 10V          |
| C873          | 1-124-257-00 | ELECT                             | 2. 2uF 20% 50V         |
| C881          | 1-104-696-11 | FILM                              | 0. 015uF 5% 100V(790)  |
| C881          | 1-137-612-11 | FILM                              | 0. 0068uF 5% 100V(960) |
| C882          | 1-164-232-11 | CERAMIC CHIP                      | 0. 01uF 50V            |
| C883          | 1-163-011-11 | CERAMIC CHIP                      | 0. 0015uF 10% 50V      |
| C884          | 1-126-933-11 | ELECT                             | 100uF 20% 16V          |
| C885          | 1-137-431-11 | FILM                              | 560PF 5% 50V           |
| C891          | 1-104-697-11 | FILM                              | 0. 047uF 5% 100V(960)  |
| C892          | 1-164-232-11 | CERAMIC CHIP                      | 0. 01uF 50V(960)       |
| C893          | 1-163-011-11 | CERAMIC CHIP                      | 0. 0015uF 10% 50V(960) |
| C894          | 1-124-455-00 | ELECT                             | 100uF 20% 16V(960)     |
| < JACK >      |              |                                   |                        |
| CJ621         | 1-764-222-11 | JACK, PIN 6P (LINE-1 IN/LINE OUT) |                        |
| CJ631         | 1-563-330-11 | JACK (CONTROL S IN)               |                        |
| CJ632         | 1-566-822-21 | JACK (CONTROL S OUT)              |                        |
| < CONNECTOR > |              |                                   |                        |
| CN101         | 1-506-468-11 | PIN, CONNECTOR 3P                 |                        |
| * CN271       | 1-766-538-11 | CONNECTOR, BOARD TO BOARD 8P      |                        |
| * CN275       | 1-766-717-11 | CONNECTOR, BOARD TO BOARD 5P      |                        |
| * CN281       | 1-766-537-11 | CONNECTOR (HMD) 5P                |                        |
| * CN291       | 1-766-716-11 | CONNECTOR, BOARD TO BOARD 3P      |                        |
| CN301         | 1-766-718-11 | CONNECTOR, BOARD TO BOARD 17P     |                        |
| * CN501       | 1-766-600-11 | CONNECTOR, BOARD TO BOARD 7P      |                        |
| * CN851       | 1-560-892-00 | PIN, CONNECTOR 4P                 |                        |
| * CN881       | 1-560-891-00 | PIN, CONNECTOR 3P                 |                        |
| CN901         | 1-774-461-11 | CONNECTOR, FFC/FPC 15P            |                        |
| CN902         | 1-774-461-11 | CONNECTOR, FFC/FPC 15P            |                        |

| Ref. No.  | Part No.     | Description                   | Remark |
|-----------|--------------|-------------------------------|--------|
| CN903     | 1-774-461-11 | CONNECTOR, FFC/FPC 15P        |        |
| CN904     | 1-766-980-71 | CONNECTOR, FFC/FPC 7P         |        |
| CN905     | 1-506-470-11 | PIN, CONNECTOR 5P             |        |
| CN906     | 1-569-338-11 | CONNECTOR, BOARD TO BOARD 19P |        |
| CN907     | 1-506-469-11 | PIN, CONNECTOR 4P             |        |
| < DIODE > |              |                               |        |
| D151      | 8-719-200-82 | DIODE 11ES2                   |        |
| D152      | 8-719-200-82 | DIODE 11ES2                   |        |
| D201      | 8-719-200-82 | DIODE 11ES2                   |        |
| D202      | 8-719-801-48 | DIODE 1SS193                  |        |
| D251      | 8-719-801-48 | DIODE 1SS193                  |        |
| D261      | 8-719-048-26 | LED GL528V1                   |        |
| D265      | 8-719-109-93 | DIODE RD6. 2ES-B2             |        |
| D267      | 8-719-109-93 | DIODE RD6. 2ES-B2             |        |
| D291      | 8-719-977-24 | DIODE DTZ9. 1B                |        |
| D301      | 8-719-911-19 | DIODE 1SS119-25               |        |
| D402      | 8-719-801-48 | DIODE 1SS193                  |        |
| D403      | 8-719-801-48 | DIODE 1SS193                  |        |
| D591      | 8-719-404-46 | DIODE MA110                   |        |
| D610      | 8-719-109-74 | DIODE RD4. 3ES-B1             |        |
| D631      | 8-719-110-08 | DIODE RD8. 2ES-B2             |        |
| D632      | 8-719-110-08 | DIODE RD8. 2ES-B2             |        |
| D633      | 8-719-110-08 | DIODE RD8. 2ES-B2             |        |
| D635      | 8-719-110-08 | DIODE RD8. 2ES-B2             |        |
| D701      | 8-719-200-82 | DIODE 11ES2                   |        |
| △D702     | 8-719-800-76 | DIODE 1SS226                  |        |
| D703      | 8-719-110-78 | DIODE RB33ES-B2               |        |
| D902      | 8-719-200-82 | DIODE 11ES2                   |        |
| < IC >    |              |                               |        |
| IC101     | 8-759-246-14 | IC TA8823N                    |        |
| IC131     | 8-759-364-14 | IC LC7455M-TLM                |        |
| IC151     | 8-752-868-41 | IC CXP82948-002Q              |        |
| IC152     | 8-759-248-87 | IC MM1256XF-BE                |        |
| IC153     | 8-759-278-56 | IC AK6440HF-E2                |        |
| IC201     | 8-752-871-05 | IC CXP87248A-008Q             |        |
| IC251     | 8-759-335-76 | IC uPC5023GR-089-E2           |        |
| IC291     | 8-759-294-26 | IC BA6209-V2                  |        |
| IC302     | 1-801-097-11 | IC YC MODULE 3 (NTSC-YC)      |        |
| IC401     | 8-759-288-96 | IC MB90089PFG-118R            |        |
| IC402     | 8-759-164-09 | IC LA7218M                    |        |
| IC461     | 8-759-295-66 | IC BA7653AF-E2                |        |
| IC501     | 8-759-365-32 | IC XLH7779K-VP                |        |
| IC551     | 8-759-089-84 | IC BA7755AF                   |        |
| IC631     | 8-759-356-27 | IC NJM2129M-TE2               |        |
| IC701     | 8-759-701-59 | IC NJM78M09FA                 |        |

| Ref. No.            | Part No.     | Description | Remark           |
|---------------------|--------------|-------------|------------------|
| < JUMPER RESISTOR > |              |             |                  |
| JP1                 | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP14                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP17                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP31                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP43                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP45                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP53                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP54                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP56                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP77                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP78                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP81                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP82                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP90                | 1-216-296-00 | METAL CHIP  | 0 5% 1/8W        |
| JP049               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JP083               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| < JUMPER RESISTOR > |              |             |                  |
| JR101               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR131               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR132               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR151               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR152               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR252               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR253               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR301               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR303               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR305               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR404               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR461               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR576               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR631               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR633               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR635               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR702               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR703               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR706               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR707               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR710               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR716               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W       |
| JR885               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (790) |
| JR895               | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (960) |
| < COIL >            |              |             |                  |
| L101                | 1-408-421-00 | INDUCTOR    | 100uH            |
| L151                | 1-408-970-21 | INDUCTOR    | 10uH             |
| L201                | 1-408-970-21 | INDUCTOR    | 10uH             |

|  |  |
|--|--|
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|--|--|

| Ref. No.              | Part No.     | Description               | Remark       |
|-----------------------|--------------|---------------------------|--------------|
| L301                  | 1-410-521-11 | INDUCTOR                  | 100uH        |
| L302                  | 1-414-186-31 | INDUCTOR                  | 33uH         |
| L303                  | 1-414-186-31 | INDUCTOR                  | 33uH         |
| L305                  | 1-414-186-31 | INDUCTOR                  | 33uH         |
| L351                  | 1-410-525-11 | INDUCTOR                  | 220uH        |
| L352                  | 1-414-189-31 | INDUCTOR                  | 100uH        |
| L353                  | 1-410-513-11 | INDUCTOR                  | 22uH         |
| L401                  | 1-408-421-00 | INDUCTOR                  | 100uH        |
| L403                  | 1-408-974-21 | INDUCTOR                  | 22uH         |
| L404                  | 1-408-421-00 | INDUCTOR                  | 100uH        |
| L461                  | 1-414-189-31 | INDUCTOR                  | 100uH        |
| L681                  | 1-410-482-31 | INDUCTOR                  | 100uH        |
| L701                  | 1-414-183-41 | INDUCTOR                  | 10uH         |
| L702                  | 1-414-189-31 | INDUCTOR                  | 100uH        |
| L703                  | 1-414-183-41 | INDUCTOR                  | 10uH         |
| L704                  | 1-410-501-11 | INDUCTOR                  | 2. 2uH       |
| L705                  | 1-414-187-11 | INDUCTOR                  | 47uH         |
| L881                  | 1-410-687-11 | INDUCTOR                  | 1. 2mH       |
| L891                  | 1-410-687-11 | INDUCTOR                  | 1. 2mH (960) |
| L901                  | 1-412-364-11 | INDUCTOR                  | 0uH          |
| < PIN CABLE >         |              |                           |              |
| P701                  | 1-555-110-00 | CABLE, PIN                |              |
| < PHOTO INTERRUPTER > |              |                           |              |
| PH261                 | 8-749-010-19 | PHOTO INTERRUPTER GP3S113 |              |
| PH262                 | 8-749-010-20 | PHOTO INTERRUPTER GP3S114 |              |
| < IC LINK >           |              |                           |              |
| △PS271                | 1-532-727-11 | LINK, IC ICP-N5 (0. 25A)  |              |
| △PS885                | 1-532-727-11 | LINK, IC ICP-N5 (0. 25A)  |              |
| < THERMISTOR >        |              |                           |              |
| △PTH592               | 1-202-855-00 | THERMISTOR, POSITIVE      |              |
| < TRANSISTOR >        |              |                           |              |
| Q131                  | 8-729-010-05 | TRANSISTOR                | MSB709-RT1   |
| Q132                  | 8-729-421-19 | TRANSISTOR                | UN2213       |
| Q201                  | 8-729-010-25 | TRANSISTOR                | MSD601-RT1   |
| Q202                  | 8-729-901-06 | TRANSISTOR                | DTA144EK     |
| Q261                  | 8-729-025-92 | PHOTO TRANSISTOR          | PT380F       |
| Q262                  | 8-729-025-92 | PHOTO TRANSISTOR          | PT380F       |
| Q263                  | 8-729-281-53 | TRANSISTOR                | 2SC1815-GR   |
| Q301                  | 8-729-421-19 | TRANSISTOR                | UN2213       |
| Q306                  | 8-729-421-19 | TRANSISTOR                | UN2213       |
| Q352                  | 8-729-010-29 | TRANSISTOR                | MSD601-RST1  |
| Q353                  | 8-729-010-29 | TRANSISTOR                | MSD601-RST1  |

| Ref. No.     | Part No.     | Description | Remark              |
|--------------|--------------|-------------|---------------------|
| Q402         | 8-729-901-06 | TRANSISTOR  | DTA144EK            |
| Q404         | 8-729-010-05 | TRANSISTOR  | MSB709-RT1          |
| Q406         | 8-729-010-05 | TRANSISTOR  | MSB709-RT1          |
| Q407         | 8-729-010-05 | TRANSISTOR  | MSB709-RT1          |
| Q413         | 8-729-010-25 | TRANSISTOR  | MSD601-RT1          |
| Q591         | 8-729-804-41 | TRANSISTOR  | 2SB1122-S           |
| Q592         | 8-729-820-68 | TRANSISTOR  | 2SD1802FA-S         |
| Q681         | 8-729-010-05 | TRANSISTOR  | MSB709-RT1          |
| Q701         | 8-729-421-19 | TRANSISTOR  | UN2213              |
| △Q703        | 8-729-173-38 | TRANSISTOR  | 2SA733-K            |
| Q705         | 8-729-010-29 | TRANSISTOR  | MSD601-RST1         |
| Q707         | 8-729-010-05 | TRANSISTOR  | MSB709-RT1          |
| Q708         | 8-729-010-05 | TRANSISTOR  | MSB709-RT1          |
| Q709         | 8-729-010-29 | TRANSISTOR  | MSD601-RST1         |
| Q715         | 8-729-901-06 | TRANSISTOR  | DTA144EK            |
| Q716         | 8-729-901-06 | TRANSISTOR  | DTA144EK            |
| Q717         | 8-729-421-19 | TRANSISTOR  | UN2213              |
| Q881         | 8-729-012-31 | TRANSISTOR  | 2SC4040-TL2-Q       |
| Q882         | 8-729-900-51 | TRANSISTOR  | DTA114TK            |
| Q886         | 8-729-010-29 | TRANSISTOR  | MSD601-RST1         |
| Q891         | 8-729-012-31 | TRANSISTOR  | 2SC4040-TL2-Q (960) |
| Q892         | 8-729-900-51 | TRANSISTOR  | DTA114TK (960)      |
| < RESISTOR > |              |             |                     |
| R101         | 1-216-119-00 | METAL CHIP  | 820K 5% 1/10W       |
| R102         | 1-216-093-00 | METAL CHIP  | 68K 5% 1/10W        |
| R103         | 1-216-097-91 | METAL GLAZE | 100K 5% 1/10W       |
| R104         | 1-216-097-91 | METAL GLAZE | 100K 5% 1/10W       |
| R105         | 1-216-085-00 | METAL CHIP  | 33K 5% 1/10W        |
| R106         | 1-216-065-00 | METAL CHIP  | 4. 7K 5% 1/10W      |
| R107         | 1-216-186-00 | METAL GLAZE | 330 5% 1/8W         |
| R108         | 1-216-121-91 | METAL GLAZE | 1M 5% 1/10W         |
| R111         | 1-216-097-91 | METAL GLAZE | 100K 5% 1/10W       |
| R131         | 1-216-061-00 | METAL CHIP  | 3. 3K 5% 1/10W      |
| R132         | 1-216-121-91 | METAL GLAZE | 1M 5% 1/10W         |
| R133         | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W        |
| R135         | 1-216-025-91 | METAL GLAZE | 100 5% 1/10W        |
| R136         | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W         |
| R137         | 1-216-083-00 | METAL CHIP  | 27K 5% 1/10W        |
| R138         | 1-216-079-00 | METAL CHIP  | 18K 5% 1/10W        |
| R139         | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W        |
| R140         | 1-216-206-00 | METAL GLAZE | 2. 2K 5% 1/8W       |
| R141         | 1-216-222-00 | METAL GLAZE | 10K 5% 1/8W         |
| R151         | 1-216-095-00 | METAL CHIP  | 82K 5% 1/10W        |
| R152         | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W         |
| R153         | 1-216-113-00 | METAL CHIP  | 470K 5% 1/10W       |
| R154         | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W         |
| R157         | 1-216-113-00 | METAL CHIP  | 470K 5% 1/10W       |
| R158         | 1-216-095-00 | METAL CHIP  | 82K 5% 1/10W        |

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| Ref. No. | Part No.     | Description | Remark         |
|----------|--------------|-------------|----------------|
| R159     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R160     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R161     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R162     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W   |
| R163     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R164     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R165     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R166     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R167     | 1-216-222-00 | METAL GLAZE | 10K 5% 1/8W    |
| R168     | 1-216-095-00 | METAL CHIP  | 82K 5% 1/10W   |
| R169     | 1-216-113-00 | METAL CHIP  | 470K 5% 1/10W  |
| R201     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R203     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R204     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R205     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R206     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R207     | 1-216-065-00 | METAL CHIP  | 4.7K 5% 1/10W  |
| R208     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R209     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R210     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W   |
| R211     | 1-216-101-00 | METAL CHIP  | 150K 5% 1/10W  |
| R212     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W   |
| R213     | 1-216-077-00 | METAL CHIP  | 15K 5% 1/10W   |
| R214     | 1-216-085-00 | METAL CHIP  | 33K 5% 1/10W   |
| R215     | 1-216-095-00 | METAL CHIP  | 82K 5% 1/10W   |
| R218     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W   |
| R219     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W   |
| R233     | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W  |
| R234     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R251     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W    |
| R252     | 1-216-079-00 | METAL CHIP  | 18K 5% 1/10W   |
| R253     | 1-216-689-11 | METAL CHIP  | 39K 0.5% 1/10W |
| R254     | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W  |
| R255     | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W  |
| R256     | 1-216-103-91 | METAL GLAZE | 180K 5% 1/10W  |
| R261     | 1-249-400-11 | CARBON      | 39 5% 1/4W     |
| R262     | 1-249-400-11 | CARBON      | 39 5% 1/4W     |
| R263     | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W  |
| R264     | 1-216-107-00 | METAL CHIP  | 270K 5% 1/10W  |
| R265     | 1-216-107-00 | METAL CHIP  | 270K 5% 1/10W  |
| R266     | 1-249-413-11 | CARBON      | 470 5% 1/4W    |
| R267     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W   |
| R268     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W   |
| R271     | 1-216-065-00 | METAL CHIP  | 4.7K 5% 1/10W  |
| R274     | 1-216-083-00 | METAL CHIP  | 27K 5% 1/10W   |
| R275     | 1-216-093-00 | METAL CHIP  | 68K 5% 1/10W   |
| R276     | 1-216-056-00 | METAL GLAZE | 2K 5% 1/10W    |
| R277     | 1-216-068-00 | METAL CHIP  | 6.2K 5% 1/10W  |
| R278     | 1-216-075-00 | METAL CHIP  | 12K 5% 1/10W   |

| Ref. No. | Part No.     | Description | Remark              |
|----------|--------------|-------------|---------------------|
| R281     | 1-216-238-91 | METAL GLAZE | 47K 5% 1/8W         |
| R282     | 1-216-238-91 | METAL GLAZE | 47K 5% 1/8W         |
| R283     | 1-216-238-91 | METAL GLAZE | 47K 5% 1/8W         |
| R284     | 1-216-238-91 | METAL GLAZE | 47K 5% 1/8W         |
| R293     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |
| R301     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |
| R302     | 1-216-053-00 | METAL CHIP  | 1.5K 5% 1/10W (790) |
| R302     | 1-216-052-00 | METAL CHIP  | 1.3K 5% 1/10W (960) |
| R303     | 1-216-031-00 | METAL CHIP  | 180 5% 1/10W        |
| R304     | 1-208-798-11 | METAL GLAZE | 4.7K 0.50% 1/10W    |
| R305     | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W       |
| R306     | 1-216-081-00 | METAL CHIP  | 22K 5% 1/10W        |
| R313     | 1-216-041-00 | METAL CHIP  | 470 5% 1/10W        |
| R314     | 1-216-240-00 | METAL GLAZE | 56K 5% 1/8W         |
| R315     | 1-216-105-91 | METAL GLAZE | 220K 5% 1/10W       |
| R317     | 1-216-107-00 | METAL CHIP  | 270K 5% 1/10W       |
| R335     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W        |
| R351     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W         |
| R352     | 1-216-051-00 | METAL CHIP  | 1.2K 5% 1/10W       |
| R353     | 1-216-045-00 | METAL CHIP  | 680 5% 1/10W        |
| R354     | 1-216-083-00 | METAL CHIP  | 27K 5% 1/10W        |
| R355     | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W        |
| R356     | 1-216-055-00 | METAL CHIP  | 1.8K 5% 1/10W       |
| R357     | 1-216-067-00 | METAL CHIP  | 5.6K 5% 1/10W       |
| R358     | 1-216-035-00 | METAL CHIP  | 270 5% 1/10W        |
| R401     | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W         |
| R404     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W        |
| R407     | 1-249-414-11 | CARBON      | 560 5% 1/4W         |
| R408     | 1-216-101-00 | METAL CHIP  | 150K 5% 1/10W       |
| R409     | 1-216-063-91 | METAL GLAZE | 3.9K 5% 1/10W       |
| R410     | 1-216-043-91 | METAL GLAZE | 560 5% 1/10W        |
| R411     | 1-216-025-91 | METAL GLAZE | 100 5% 1/10W        |
| R412     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |
| R413     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |
| R414     | 1-216-081-00 | METAL CHIP  | 22K 5% 1/10W        |
| R415     | 1-216-051-00 | METAL CHIP  | 1.2K 5% 1/10W       |
| R416     | 1-216-059-00 | METAL CHIP  | 2.7K 5% 1/10W       |
| R417     | 1-216-033-00 | METAL CHIP  | 220 5% 1/10W        |
| R418     | 1-216-033-00 | METAL CHIP  | 220 5% 1/10W        |
| R421     | 1-216-230-00 | METAL GLAZE | 22K 5% 1/8W         |
| R423     | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W        |
| R461     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |
| R462     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |
| R501     | 1-216-065-00 | METAL CHIP  | 4.7K 5% 1/10W       |
| R502     | 1-216-065-00 | METAL CHIP  | 4.7K 5% 1/10W       |
| R503     | 1-216-065-00 | METAL CHIP  | 4.7K 5% 1/10W       |
| R504     | 1-216-065-00 | METAL CHIP  | 4.7K 5% 1/10W       |
| R505     | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W          |

| Ref. No. | Part No.     | Description | Remark |        |       |
|----------|--------------|-------------|--------|--------|-------|
| R506     | 1-216-295-00 | METAL CHIP  | 0      | 5%     | 1/10W |
| R507     | 1-216-295-00 | METAL CHIP  | 0      | 5%     | 1/10W |
| R510     | 1-216-129-00 | METAL CHIP  | 2. 2M  | 5%     | 1/10W |
| R514     | 1-216-049-91 | METAL GLAZE | 1K     | 5%     | 1/10W |
| R515     | 1-216-049-91 | METAL GLAZE | 1K     | 5%     | 1/10W |
| R521     | 1-216-073-00 | METAL CHIP  | 10K    | 5%     | 1/10W |
| R522     | 1-216-050-00 | METAL GLAZE | 1. 1K  | 5%     | 1/10W |
| R523     | 1-216-079-00 | METAL CHIP  | 18K    | 5%     | 1/10W |
| R524     | 1-216-067-00 | METAL CHIP  | 5. 6K  | 5%     | 1/10W |
| R525     | 1-208-809-11 | METAL GLAZE | 13K    | 0. 50% | 1/10W |
| R531     | 1-216-073-00 | METAL CHIP  | 10K    | 5%     | 1/10W |
| R532     | 1-216-050-00 | METAL GLAZE | 1. 1K  | 5%     | 1/10W |
| R533     | 1-216-079-00 | METAL CHIP  | 18K    | 5%     | 1/10W |
| R534     | 1-216-067-00 | METAL CHIP  | 5. 6K  | 5%     | 1/10W |
| R535     | 1-208-806-11 | METAL GLAZE | 10K    | 0. 50% | 1/10W |
| R541     | 1-216-081-00 | METAL CHIP  | 22K    | 5%     | 1/10W |
| R551     | 1-216-129-00 | METAL CHIP  | 2. 2M  | 5%     | 1/10W |
| R561     | 1-216-073-00 | METAL CHIP  | 10K    | 5%     | 1/10W |
| R562     | 1-216-109-00 | METAL CHIP  | 330K   | 5%     | 1/10W |
| R563     | 1-216-069-00 | METAL CHIP  | 6. 8K  | 5%     | 1/10W |
| R564     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R565     | 1-216-099-00 | METAL CHIP  | 120K   | 5%     | 1/10W |
| R566     | 1-216-089-91 | METAL GLAZE | 47K    | 5%     | 1/10W |
| R567     | 1-216-295-00 | METAL CHIP  | 0      | 5%     | 1/10W |
| R571     | 1-216-073-00 | METAL CHIP  | 10K    | 5%     | 1/10W |
| R572     | 1-216-089-91 | METAL GLAZE | 47K    | 5%     | 1/10W |
| R573     | 1-216-214-00 | METAL GLAZE | 4. 7K  | 5%     | 1/8W  |
| R575     | 1-216-295-00 | METAL CHIP  | 0      | 5%     | 1/10W |
| R591     | 1-249-421-11 | CARBON      | 2. 2K  | 5%     | 1/4W  |
| R592     | 1-216-069-00 | METAL CHIP  | 6. 8K  | 5%     | 1/10W |
| R601     | 1-216-022-00 | METAL CHIP  | 75     | 5%     | 1/10W |
| R611     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R612     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R631     | 1-216-049-91 | METAL GLAZE | 1K     | 5%     | 1/10W |
| R681     | 1-216-037-00 | METAL CHIP  | 330    | 5%     | 1/10W |
| R683     | 1-249-407-11 | CARBON      | 150    | 5%     | 1/4W  |
| R684     | 1-249-408-11 | CARBON      | 180    | 5%     | 1/4W  |
| R685     | 1-216-021-00 | METAL CHIP  | 68     | 5%     | 1/10W |
| R701     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R702     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R703     | 1-249-404-00 | CARBON      | 82     | 5%     | 1/4W  |
| R704     | 1-216-089-91 | METAL GLAZE | 47K    | 5%     | 1/10W |
| R706     | 1-216-073-00 | METAL CHIP  | 10K    | 5%     | 1/10W |
| R713     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R714     | 1-216-041-00 | METAL CHIP  | 470    | 5%     | 1/10W |
| R715     | 1-216-025-91 | METAL GLAZE | 100    | 5%     | 1/10W |
| R716     | 1-216-065-00 | METAL CHIP  | 4. 7K  | 5%     | 1/10W |
| R717     | 1-216-073-00 | METAL CHIP  | 10K    | 5%     | 1/10W |

| Ref. No.              | Part No.     | Description                    | Remark |    |             |
|-----------------------|--------------|--------------------------------|--------|----|-------------|
| R719                  | 1-216-049-91 | METAL GLAZE                    | 1K     | 5% | 1/10W       |
| R720                  | 1-216-049-91 | METAL GLAZE                    | 1K     | 5% | 1/10W       |
| R721                  | 1-216-037-00 | METAL CHIP                     | 330    | 5% | 1/10W       |
| R722                  | 1-216-061-00 | METAL CHIP                     | 3. 3K  | 5% | 1/10W       |
| R725                  | 1-216-049-91 | METAL GLAZE                    | 1K     | 5% | 1/10W       |
| R726                  | 1-216-049-91 | METAL GLAZE                    | 1K     | 5% | 1/10W       |
| R733                  | 1-216-081-00 | METAL CHIP                     | 22K    | 5% | 1/10W       |
| R734                  | 1-216-081-00 | METAL CHIP                     | 22K    | 5% | 1/10W       |
| R736                  | 1-216-049-91 | METAL GLAZE                    | 1K     | 5% | 1/10W       |
| R737                  | 1-216-295-00 | METAL CHIP                     | 0      | 5% | 1/10W       |
| R740                  | 1-216-093-00 | METAL CHIP                     | 68K    | 5% | 1/10W       |
| R747                  | 1-249-421-11 | CARBON                         | 2. 2K  | 5% | 1/4W        |
| R748                  | 1-216-081-00 | METAL CHIP                     | 22K    | 5% | 1/10W       |
| R749                  | 1-249-437-11 | CARBON                         | 47K    | 5% | 1/4W        |
| R874                  | 1-216-075-00 | METAL CHIP                     | 12K    | 5% | 1/10W       |
| R881                  | 1-216-081-00 | METAL CHIP                     | 22K    | 5% | 1/10W       |
| △R882                 | 1-249-389-11 | CARBON                         | 4. 7   | 5% | 1/4W F(790) |
| △R882                 | 1-249-395-11 | CARBON                         | 15     | 5% | 1/4W F(960) |
| R885                  | 1-216-071-00 | METAL CHIP                     | 8. 2K  | 5% | 1/10W       |
| R886                  | 1-216-073-00 | METAL CHIP                     | 10K    | 5% | 1/10W       |
| R887                  | 1-216-089-91 | METAL GLAZE                    | 47K    | 5% | 1/10W       |
| R891                  | 1-216-083-00 | METAL CHIP                     | 27K    | 5% | 1/10W (960) |
| △R892                 | 1-249-394-11 | CARBON                         | 12     | 5% | 1/4W F(960) |
| < RF MODULATOR >      |              |                                |        |    |             |
| △RF701                | 1-466-989-11 | MODULATOR, RF                  |        |    |             |
| < VARIABLE RESISTOR > |              |                                |        |    |             |
| RV521                 | 1-241-763-11 | RES, ADJ, CERMET 4.7K          |        |    |             |
| RV531                 | 1-241-763-11 | RES, ADJ, CERMET 4.7K          |        |    |             |
| RV541                 | 1-241-764-11 | RES, ADJ, CERMET 10K           |        |    |             |
| < SWITCH >            |              |                                |        |    |             |
| S251                  | 1-570-953-11 | SWITCH, PUSH (1 KEY) (REC PRE) |        |    |             |
| < TRANSFORMER >       |              |                                |        |    |             |
| T881                  | 1-423-414-11 | TRANSFORMER, BIAS OSCILLATION  | (790)  |    |             |
| T881                  | 1-423-413-11 | TRANSFORMER, BIAS OSCILLATION  | (960)  |    |             |
| T891                  | 1-423-415-11 | TRANSFORMER, BIAS OSCILLATION  | (960)  |    |             |
| < TUNER >             |              |                                |        |    |             |
| △TU701                | 8-598-342-00 | TUNER BTF-WA406                |        |    |             |
| < VIBRATOR >          |              |                                |        |    |             |
| X151                  | 1-579-463-11 | VIBRATOR, CRYSTAL (32.768kHz)  |        |    |             |
| X201                  | 1-760-494-11 | VIBRATOR, CRYSTAL (16MHz)      |        |    |             |
| X401                  | 1-577-381-11 | VIBRATOR, CRYSTAL (14MHz)      |        |    |             |

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No.                 | Part No.     | Description                       | Remark                          |
|--------------------------|--------------|-----------------------------------|---------------------------------|
| X402                     | 1-577-165-11 | VIBLATOR, CERAMIC (500kHz)        |                                 |
| <hr/>                    |              |                                   |                                 |
| *                        | A-6782-792-A | MA-252 BOARD, COMPLETE (760, 761) |                                 |
| *                        | A-6782-802-A | MA-252 BOARD, COMPLETE (L5)       |                                 |
| *                        | A-6782-817-A | MA-252 BOARD, COMPLETE (L7)       |                                 |
| *****                    |              |                                   |                                 |
| (Ref. No. 4, 000 Series) |              |                                   |                                 |
| *                        | 3-960-273-01 | SPACER, TOP END                   |                                 |
| *                        | 3-960-274-01 | SPACER, LED                       |                                 |
| < CAPACITOR >            |              |                                   |                                 |
| C101                     | 1-164-232-11 | CERAMIC CHIP                      | 0.01uF 50V                      |
| C102                     | 1-126-967-11 | ELECT                             | 47uF 20% 16V                    |
| C103                     | 1-164-344-11 | CERAMIC CHIP                      | 0.068uF 10% 25V                 |
| C104                     | 1-124-248-00 | ELECT                             | 22uF 20% 35V                    |
| C105                     | 1-124-584-00 | ELECT                             | 100uF 20% 10V                   |
| C106                     | 1-163-009-11 | CERAMIC CHIP                      | 0.001uF 10% 50V                 |
| C107                     | 1-163-017-00 | CERAMIC CHIP                      | 0.0047uF 5% 50V                 |
| C108                     | 1-163-077-00 | CERAMIC CHIP                      | 0.1uF 10% 25V                   |
| C109                     | 1-124-257-00 | ELECT                             | 2.2uF 20% 50V                   |
| C111                     | 1-124-257-00 | ELECT                             | 2.2uF 20% 50V                   |
| C114                     | 1-163-009-11 | CERAMIC CHIP                      | 0.001uF 10% 50V                 |
| C133                     | 1-163-009-11 | CERAMIC CHIP                      | 0.001uF 10% 50V<br>(760, 761)   |
| C134                     | 1-124-257-00 | ELECT                             | 2.2uF 20% 50V<br>(760, 761)     |
| C135                     | 1-163-077-00 | CERAMIC CHIP                      | 0.1uF 10% 25V<br>(760, 761)     |
| C136                     | 1-163-077-00 | CERAMIC CHIP                      | 0.1uF 10% 25V<br>(760, 761)     |
| C137                     | 1-109-982-11 | CERAMIC CHIP                      | 1uF 10% 10V<br>(760, 761)       |
| C138                     | 1-164-161-11 | CERAMIC CHIP                      | 0.0022uF 10% 100V<br>(760, 761) |
| C139                     | 1-126-964-11 | ELECT                             | 10uF 20% 50V<br>(760, 761)      |
| C140                     | 1-163-038-91 | CERAMIC CHIP                      | 0.1uF 25V<br>(760, 761)         |
| C160                     | 1-125-507-11 | CAPACITOR                         | 0.22F 5.5V                      |
| C201                     | 1-163-229-11 | CERAMIC CHIP                      | 12PF 5% 50V                     |
| C202                     | 1-163-038-91 | CERAMIC CHIP                      | 0.1uF 25V                       |
| C203                     | 1-163-229-11 | CERAMIC CHIP                      | 12PF 5% 50V                     |
| C204                     | 1-164-004-11 | CERAMIC CHIP                      | 0.1uF 10% 25V                   |
| C205                     | 1-163-081-00 | CERAMIC CHIP                      | 0.22uF 25V                      |
| C206                     | 1-163-038-91 | CERAMIC CHIP                      | 0.1uF 25V                       |
| C207                     | 1-164-004-11 | CERAMIC CHIP                      | 0.1uF 10% 25V                   |
| C208                     | 1-124-584-00 | ELECT                             | 100uF 20% 10V                   |
| C209                     | 1-163-038-91 | CERAMIC CHIP                      | 0.1uF 25V                       |

| Ref. No. | Part No.     | Description  | Remark                     |
|----------|--------------|--------------|----------------------------|
| C210     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C211     | 1-163-059-00 | CERAMIC CHIP | 0.01uF 10% 50V             |
| C214     | 1-163-038-91 | CERAMIC CHIP | 0.1uF 25V                  |
| C215     | 1-163-237-11 | CERAMIC CHIP | 27PF 5% 50V                |
| C216     | 1-163-231-11 | CERAMIC CHIP | 15PF 5% 50V                |
| C252     | 1-162-638-11 | CERAMIC CHIP | 1uF 16V                    |
| C253     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C254     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C255     | 1-137-372-11 | FILM         | 0.022uF 5% 50V             |
| C256     | 1-137-441-11 | FILM         | 0.027uF 5% 50V             |
| C261     | 1-126-176-11 | ELECT        | 220uF 20% 10V              |
| C262     | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V            |
| C264     | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V            |
| C266     | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V            |
| C267     | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V            |
| C273     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C275     | 1-163-038-91 | CERAMIC CHIP | 0.1uF 25V                  |
| C291     | 1-163-077-00 | CERAMIC CHIP | 0.1uF 10% 25V              |
| C292     | 1-163-077-00 | CERAMIC CHIP | 0.1uF 10% 25V              |
| C294     | 1-124-455-00 | ELECT        | 100uF 20% 16V              |
| C295     | 1-163-077-00 | CERAMIC CHIP | 0.1uF 10% 25V              |
| C296     | 1-163-077-00 | CERAMIC CHIP | 0.1uF 10% 25V              |
| C298     | 1-163-038-91 | CERAMIC CHIP | 0.1uF 25V                  |
| C301     | 1-163-227-11 | CERAMIC CHIP | 10PF 0.5PF 50V             |
| C302     | 1-163-121-00 | CERAMIC CHIP | 150PF 5% 50V               |
| C303     | 1-163-239-11 | CERAMIC CHIP | 33PF 5% 50V                |
| C304     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C305     | 1-124-589-11 | ELECT        | 47uF 20% 16V<br>(760, 761) |
| C308     | 1-126-964-11 | ELECT        | 10uF 20% 50V               |
| C309     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C312     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C313     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C352     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C353     | 1-163-241-11 | CERAMIC CHIP | 39PF 5% 50V                |
| C354     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C356     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C357     | 1-163-127-00 | CERAMIC CHIP | 270PF 5% 50V               |
| C358     | 1-163-253-11 | CERAMIC CHIP | 120PF 5% 50V               |
| C359     | 1-163-239-11 | CERAMIC CHIP | 33PF 5% 50V                |
| C360     | 1-163-235-11 | CERAMIC CHIP | 22PF 5% 50V                |
| C401     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C402     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C403     | 1-163-099-00 | CERAMIC CHIP | 18PF 5% 50V                |
| C404     | 1-163-102-00 | CERAMIC CHIP | 24PF 5% 50V                |
| C409     | 1-124-589-11 | ELECT        | 47uF 20% 16V               |
| C410     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                 |
| C417     | 1-163-119-00 | CERAMIC CHIP | 120PF 5% 50V               |
| C418     | 1-126-160-11 | ELECT        | 1uF 20% 50V                |



| Ref. No. | Part No.     | Description     | Remark                             |
|----------|--------------|-----------------|------------------------------------|
| C420     | 1-130-481-00 | MYLAR           | 0.0068uF 5% 50V                    |
| C421     | 1-124-499-11 | ELECT. NONPOLAR | 1uF 20% 50V                        |
| C422     | 1-130-487-00 | MYLAR           | 0.022uF 5% 50V                     |
| C423     | 1-124-465-00 | ELECT           | 0.47uF 20% 50V                     |
| C424     | 1-163-102-00 | CERAMIC CHIP    | 24PF 5% 50V                        |
| C427     | 1-163-031-11 | CERAMIC CHIP    | 0.01uF 50V                         |
| C461     | 1-163-031-11 | CERAMIC CHIP    | 0.01uF 50V                         |
| C462     | 1-163-038-91 | CERAMIC CHIP    | 0.1uF 25V                          |
| C463     | 1-163-031-11 | CERAMIC CHIP    | 0.01uF 50V                         |
| C464     | 1-163-031-11 | CERAMIC CHIP    | 0.01uF 50V                         |
| C465     | 1-163-251-11 | CERAMIC CHIP    | 100PF 5% 50V<br>(760, 761)         |
| C501     | 1-163-011-11 | CERAMIC CHIP    | 0.0015uF 10% 50V<br>(760, 761, L7) |
| C502     | 1-163-011-11 | CERAMIC CHIP    | 0.0015uF 10% 50V<br>(760, 761, L7) |
| C503     | 1-124-589-11 | ELECT           | 47uF 20% 16V<br>(760, 761, L7)     |
| C510     | 1-104-760-11 | CERAMIC CHIP    | 0.047uF 10% 50V<br>(760, 761, L5)  |
| C520     | 1-126-162-11 | ELECT           | 3.3uF 20% 50V<br>(760, 761, L7)    |
| C521     | 1-126-096-11 | ELECT           | 10uF 20% 35V<br>(760, 761, L7)     |
| C522     | 1-137-372-11 | FILM            | 0.022uF 5% 50V<br>(760, 761, L7)   |
| C523     | 1-126-163-11 | ELECT           | 4.7uF 20% 50V<br>(760, 761, L7)    |
| C524     | 1-124-589-11 | ELECT           | 47uF 20% 16V<br>(760, 761, L7)     |
| C525     | 1-137-370-11 | FILM            | 0.01uF 5% 50V<br>(760, 761, L7)    |
| C530     | 1-126-162-11 | ELECT           | 3.3uF 20% 50V<br>(760, 761, L7)    |
| C531     | 1-126-096-11 | ELECT           | 10uF 20% 35V<br>(760, 761, L7)     |
| C532     | 1-137-372-11 | FILM            | 0.022uF 5% 50V<br>(760, 761, L7)   |
| C533     | 1-126-963-11 | ELECT           | 4.7uF 20% 50V<br>(760, 761, L7)    |
| C534     | 1-124-589-11 | ELECT           | 47uF 20% 16V<br>(760, 761, L7)     |
| C535     | 1-137-370-11 | FILM            | 0.01uF 5% 50V<br>(760, 761, L7)    |
| C541     | 1-137-372-11 | FILM            | 0.022uF 5% 50V<br>(760, 761, L7)   |

| Ref. No. | Part No.     | Description  | Remark                            |
|----------|--------------|--------------|-----------------------------------|
| C542     | 1-115-438-91 | ELECT        | 100uF 20% 10V<br>(760, 761, L7)   |
| C551     | 1-124-248-00 | ELECT        | 22uF 20% 35V<br>(760, 761, L7)    |
| C552     | 1-124-234-00 | ELECT        | 22uF 20% 16V<br>(760, 761, L7)    |
| C561     | 1-126-160-11 | ELECT        | 1uF 20% 50V                       |
| C562     | 1-137-370-11 | FILM         | 0.01uF 5% 50V                     |
| C563     | 1-126-163-11 | ELECT        | 4.7uF 20% 50V                     |
| C565     | 1-163-143-00 | CERAMIC CHIP | 0.0012uF 5% 50V                   |
| C566     | 1-163-014-00 | CERAMIC CHIP | 0.0027uF 5% 50V                   |
| C571     | 1-163-141-00 | CERAMIC CHIP | 0.001uF 5% 50V<br>(760, 761, L7)  |
| C572     | 1-163-141-00 | CERAMIC CHIP | 0.001uF 5% 50V<br>(760, 761, L7)  |
| C591     | 1-124-584-00 | ELECT        | 100uF 20% 10V<br>(760, 761, L7)   |
| C592     | 1-115-438-91 | ELECT        | 100uF 20% 10V<br>(760, 761, L7)   |
| C593     | 1-124-589-11 | ELECT        | 47uF 20% 16V<br>(760, 761, L7)    |
| C610     | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V                   |
| C681     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                        |
| C682     | 1-126-967-11 | ELECT        | 47uF 20% 16V                      |
| C683     | 1-126-935-11 | ELECT        | 470uF 20% 6.3V                    |
| C684     | 1-126-967-11 | ELECT        | 47uF 20% 16V                      |
| C701     | 1-126-967-11 | ELECT        | 47uF 20% 16V                      |
| C702     | 1-126-964-11 | ELECT        | 10uF 20% 50V                      |
| C703     | 1-126-964-11 | ELECT        | 10uF 20% 50V<br>(760, 761, L7)    |
| C704     | 1-163-009-11 | CERAMIC CHIP | 0.001uF 10% 50V                   |
| C705     | 1-126-964-11 | ELECT        | 10uF 20% 50V                      |
| C706     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                        |
| C707     | 1-126-967-11 | ELECT        | 47uF 20% 16V                      |
| C708     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                        |
| C711     | 1-126-935-11 | ELECT        | 470uF 20% 16V                     |
| C712     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                        |
| C713     | 1-126-967-11 | ELECT        | 47uF 20% 16V                      |
| C714     | 1-163-031-11 | CERAMIC CHIP | 0.01uF 50V                        |
| C716     | 1-126-964-11 | ELECT        | 10uF 20% 50V<br>(760, 761, L7)    |
| C717     | 1-126-964-11 | ELECT        | 10uF 20% 50V                      |
| C718     | 1-128-551-11 | ELECT        | 22uF 20% 25V<br>(760, 761, L7)    |
| C719     | 1-164-161-11 | CERAMIC CHIP | 0.0022uF 10% 100V                 |
| C721     | 1-164-004-11 | CERAMIC CHIP | 0.1uF 10% 25V                     |
| C725     | 1-163-809-11 | CERAMIC CHIP | 0.047uF 10% 25V<br>(760, 761, L7) |

**MA-252**

| Ref. No. | Part No.     | Description                       | Remark               |
|----------|--------------|-----------------------------------|----------------------|
| C727     | 1-126-933-11 | ELECT                             | 100uF 20% 10V        |
| C730     | 1-163-031-11 | CERAMIC CHIP                      | 0.01uF 50V (L5)      |
| C731     | 1-163-031-11 | CERAMIC CHIP                      | 0.01uF 50V (L5)      |
| C732     | 1-163-031-11 | CERAMIC CHIP                      | 0.01uF 50V (L5)      |
| C733     | 1-163-031-11 | CERAMIC CHIP                      | 0.01uF 50V (L5)      |
| C734     | 1-163-009-11 | CERAMIC CHIP                      | 0.001uF 10% 50V (L5) |
| C735     | 1-163-031-11 | CERAMIC CHIP                      | 0.01uF 50V (L5)      |
| C851     | 1-126-157-11 | ELECT                             | 10uF 20% 16V (L5)    |
| C852     | 1-124-234-00 | ELECT                             | 22uF 20% 16V (L5)    |
| C853     | 1-124-234-00 | ELECT                             | 22uF 20% 16V (L5)    |
| C854     | 1-124-252-00 | ELECT                             | 0.33uF 20% 50V (L5)  |
| C855     | 1-126-157-11 | ELECT                             | 10uF 20% 16V (L5)    |
| C856     | 1-126-160-11 | ELECT                             | 1uF 20% 50V (L5)     |
| C858     | 1-126-160-11 | ELECT                             | 1uF 20% 50V (L5)     |
| C864     | 1-126-162-11 | ELECT                             | 3.3uF 20% 50V (L5)   |
| C871     | 1-163-141-00 | CERAMIC CHIP                      | 0.001uF 5% 50V (L5)  |
| C872     | 1-163-141-00 | CERAMIC CHIP                      | 0.001uF 5% 50V (L5)  |
| C873     | 1-124-257-00 | ELECT                             | 2.2uF 20% 50V        |
| C881     | 1-104-696-11 | FILM                              | 0.015uF 5% 100V      |
| C882     | 1-164-232-11 | CERAMIC CHIP                      | 0.01uF 50V           |
| C883     | 1-163-011-11 | CERAMIC CHIP                      | 0.0015uF 10% 50V     |
| C884     | 1-126-933-11 | ELECT                             | 100uF 20% 16V        |
| C885     | 1-137-431-11 | FILM                              | 560PF 5% 50V         |
| < JACK > |              |                                   |                      |
| CJ621    | 1-764-222-11 | JACK, PIN 6P (LINE-1 IN/LINE OUT) | (760, 761, L7)       |
| CJ621    | 1-764-801-11 | JACK, PIN 5P (LINE-1 IN/LINE OUT) | (L5)                 |

| Ref. No.      | Part No.     | Description               | Remark                   |
|---------------|--------------|---------------------------|--------------------------|
| < CONNECTOR > |              |                           |                          |
| CN101         | 1-506-468-11 | PIN, CONNECTOR            | 3P                       |
| * CN271       | 1-766-538-11 | CONNECTOR, BOARD TO BOARD | 8P                       |
| * CN275       | 1-766-717-11 | CONNECTOR, BOARD TO BOARD | 5P                       |
| * CN281       | 1-766-537-11 | CONNECTOR (HMD)           | 5P                       |
| * CN291       | 1-766-716-11 | CONNECTOR, BOARD TO BOARD | 3P                       |
| CN301         | 1-766-718-11 | CONNECTOR, BOARD TO BOARD | 17P                      |
| * CN501       | 1-766-600-11 | CONNECTOR, BOARD TO BOARD | 7P                       |
| * CN851       | 1-560-892-00 | PIN, CONNECTOR            | 4P                       |
| * CN881       | 1-560-891-00 | PIN, CONNECTOR            | 3P                       |
| CN903         | 1-774-461-11 | CONNECTOR, FFC/FPC        | 15P                      |
| CN905         | 1-506-470-11 | PIN, CONNECTOR            | 5P (760, 761)            |
| CN906         | 1-569-338-11 | CONNECTOR, BOARD TO BOARD | 19P                      |
| CN908         | 1-506-473-11 | PIN, CONNECTOR            | 8P                       |
| < TRIMMER >   |              |                           |                          |
| CT401         | 1-141-334-11 | CAP, VAR, TRIMMER         |                          |
| < DIODE >     |              |                           |                          |
| D201          | 8-719-200-82 | DIODE                     | 11ES2                    |
| D202          | 8-719-801-48 | DIODE                     | 1SS193                   |
| D203          | 8-719-801-78 | DIODE                     | 1SS184 (L5)              |
| D204          | 8-719-200-82 | DIODE                     | 11ES2                    |
| D251          | 8-719-801-48 | DIODE                     | 1SS193                   |
| D261          | 8-719-048-26 | LED                       | GL528V1                  |
| D265          | 8-719-109-93 | DIODE                     | RD6. 2ES-B2              |
| D267          | 8-719-109-93 | DIODE                     | RD6. 2ES-B2              |
| D291          | 8-719-977-24 | DIODE                     | DTZ9. 1B                 |
| D403          | 8-719-801-48 | DIODE                     | 1SS193                   |
| D591          | 8-719-404-46 | DIODE                     | MA110 (760, 761, L7)     |
| D610          | 8-719-109-74 | DIODE                     | RD4. 3ES-B1              |
| D701          | 8-719-200-82 | DIODE                     | 11ES2                    |
| △D702         | 8-719-800-76 | DIODE                     | 1SS226                   |
| D703          | 8-719-110-78 | DIODE                     | RD33ES-B2                |
| D708          | 8-719-911-19 | DIODE                     | 1SS119-25 (L5)           |
| D853          | 8-719-911-19 | DIODE                     | 1SS119-25 (L5)           |
| D902          | 8-719-200-82 | DIODE                     | 11ES2                    |
| < IC >        |              |                           |                          |
| IC101         | 8-759-246-14 | IC                        | TA8823N                  |
| IC131         | 8-759-364-14 | IC                        | LC7455M-TLM (760, 761)   |
| IC201         | 8-752-869-65 | IC                        | CXP87360-040Q (L5, L7)   |
| IC201         | 8-752-869-64 | IC                        | CXP87360-039Q (760, 761) |
| IC202         | 8-759-248-87 | IC                        | MM1256XF-BE              |
| IC203         | 8-759-278-56 | IC                        | AK6440HF-E2              |
| IC251         | 8-759-335-76 | IC                        | uPC5023GR-089-E2         |
| IC291         | 8-759-294-26 | IC                        | BA6209-V2                |

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No.            | Part No.     | Description              | Remark                       |
|---------------------|--------------|--------------------------|------------------------------|
| IC302               | 1-801-097-11 | IC YC MODULE 3 (NTSC-YC) |                              |
| IC401               | 8-759-289-30 | IC LC74761M-9075-TLM     |                              |
| IC461               | 8-759-295-66 | IC BA7653AF-E2           |                              |
| IC501               | 8-759-365-32 | IC XLN7779K-VP           | (760, 761, L7)               |
| IC551               | 8-759-089-84 | IC BA7755AF              | (760, 761, L7)               |
| IC701               | 8-759-701-59 | IC NJM78M09FA            | (760, 761, L7)               |
| IC851               | 8-759-268-02 | IC BA7796FS-E2           | (L5)                         |
| < JUMPER RESISTOR > |              |                          |                              |
| JP21                | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W (L5)              |
| JP22                | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W (L5)              |
| JP95                | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W (L5)              |
| JP96                | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W (L5)              |
| JP001               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W                    |
| JP014               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W                    |
| JP017               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W                    |
| JP021               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761, L7) |
| JP022               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761, L7) |
| JP031               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W                    |
| JP045               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W                    |
| JP057               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W                    |
| < JUMPER RESISTOR > |              |                          |                              |
| JR101               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W                   |
| JR131               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761)     |
| JR132               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W<br>(760, 761)      |
| JR202               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W (L5)              |
| JR203               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761, L7) |
| JR204               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761, L7) |
| JR205               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W                   |
| JR212               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761)     |
| JR213               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761, L7) |
| JR221               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W<br>(760, 761)     |
| JR222               | 1-216-296-00 | METAL CHIP               | 0 5% 1/8W (L5, L7)           |
| JR224               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W                   |
| JR252               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W                   |
| JR253               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W                   |
| JR301               | 1-216-295-00 | METAL CHIP               | 0 5% 1/10W                   |

| Ref. No. | Part No.     | Description | Remark                       |
|----------|--------------|-------------|------------------------------|
| JR303    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| JR305    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| JR402    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| JR403    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| JR404    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| JR461    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| JR576    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR701    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (L5)              |
| JR702    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR706    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR707    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR710    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR716    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR722    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (L5)              |
| JR737    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR738    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR739    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR741    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W<br>(760, 761, L7) |
| JR851    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (L5)              |
| JR854    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (L5)              |
| JR856    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (L5)              |
| JR859    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W (L5)              |
| JR885    | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W                   |
| < COIL > |              |             |                              |
| L101     | 1-408-421-00 | INDUCTOR    | 100uH                        |
| L201     | 1-408-970-21 | INDUCTOR    | 10uH                         |
| L301     | 1-410-521-11 | INDUCTOR    | 100uH                        |
| L302     | 1-414-186-31 | INDUCTOR    | 33uH                         |
| L303     | 1-414-186-31 | INDUCTOR    | 33uH                         |
| L305     | 1-414-186-31 | INDUCTOR    | 33uH                         |
| L351     | 1-410-525-11 | INDUCTOR    | 220uH                        |
| L352     | 1-414-189-31 | INDUCTOR    | 100uH                        |
| L353     | 1-410-513-11 | INDUCTOR    | 22uH                         |
| L401     | 1-408-421-00 | INDUCTOR    | 100uH                        |

| Ref. No.              | Part No.     | Description               | Remark         |
|-----------------------|--------------|---------------------------|----------------|
| L402                  | 1-408-421-00 | INDUCTOR 100uH            |                |
| L404                  | 1-410-506-11 | INDUCTOR 5.6uH            |                |
| L461                  | 1-414-189-31 | INDUCTOR 100uH            |                |
| L681                  | 1-410-482-31 | INDUCTOR 100uH            |                |
| L701                  | 1-414-183-41 | INDUCTOR 10uH             | (760, 761, L7) |
| L702                  | 1-414-189-31 | INDUCTOR 100uH            |                |
| L703                  | 1-414-183-41 | INDUCTOR 10uH             |                |
| L704                  | 1-410-501-11 | INDUCTOR 2.2uH            |                |
| L705                  | 1-414-187-11 | INDUCTOR 47uH             |                |
| L708                  | 1-410-501-11 | INDUCTOR 2.2uH            | (L5)           |
| L709                  | 1-410-501-11 | INDUCTOR 2.2uH            | (L5)           |
| L851                  | 1-410-482-31 | INDUCTOR 100uH            | (L5)           |
| L881                  | 1-410-687-11 | INDUCTOR 1.2mH            |                |
| L901                  | 1-412-364-11 | INDUCTOR 0uH              |                |
| < PIN CABLE >         |              |                           |                |
| P701                  | 1-555-110-00 | CABLE, PIN                | (760, 761, L7) |
| < PHOTO INTERRUPTER > |              |                           |                |
| PH261                 | 8-749-010-19 | PHOTO INTERRUPTER GP3S113 |                |
| PH262                 | 8-749-010-20 | PHOTO INTERRUPTER GP3S114 |                |
| < IC LINK >           |              |                           |                |
| △PS271                | 1-532-727-11 | LINK, IC ICP-N5 (0.25A)   |                |
| △PS885                | 1-532-727-11 | LINK, IC ICP-N5 (0.25A)   |                |
| < THERMISTOR >        |              |                           |                |
| △PTH592               | 1-202-855-00 | THERMISTOR, POSITIVE      | (760, 761, L7) |
| < TRANSISTOR >        |              |                           |                |
| Q131                  | 8-729-010-05 | TRANSISTOR MSB709-RT1     | (760, 761)     |
| Q132                  | 8-729-421-19 | TRANSISTOR UN2213         | (760, 761)     |
| Q201                  | 8-729-010-25 | TRANSISTOR MSD601-RT1     |                |
| Q202                  | 8-729-901-06 | TRANSISTOR DTA144EK       |                |
| Q261                  | 8-729-025-92 | PHOTO TRANSISTOR PT380F   |                |
| Q262                  | 8-729-025-92 | PHOTO TRANSISTOR PT380F   |                |
| Q263                  | 8-729-281-53 | TRANSISTOR 2SC1815-GR     |                |
| Q301                  | 8-729-421-19 | TRANSISTOR UN2213         |                |
| Q306                  | 8-729-421-19 | TRANSISTOR UN2213         |                |
| Q352                  | 8-729-010-29 | TRANSISTOR MSD601-RST1    |                |
| Q353                  | 8-729-010-29 | TRANSISTOR MSD601-RST1    |                |
| Q404                  | 8-729-010-05 | TRANSISTOR MSB709-RT1     |                |
| Q405                  | 8-729-010-05 | TRANSISTOR MSB709-RT1     |                |
| Q406                  | 8-729-010-05 | TRANSISTOR MSB709-RT1     |                |
| Q591                  | 8-729-804-41 | TRANSISTOR 2SB1122-S      | (760, 761, L7) |
| Q592                  | 8-729-820-68 | TRANSISTOR 2SD1802FA-S    | (760, 761, L7) |
| Q681                  | 8-729-010-05 | TRANSISTOR MSB709-RT1     |                |
| Q701                  | 8-729-421-19 | TRANSISTOR UN2213         | (760, 761, L7) |

| Ref. No.     | Part No.     | Description              | Remark              |
|--------------|--------------|--------------------------|---------------------|
| △Q703        | 8-729-173-38 | TRANSISTOR 2SA733-K      |                     |
| Q705         | 8-729-010-29 | TRANSISTOR MSD601-RST1   | (760, 761, L7)      |
| Q707         | 8-729-010-05 | TRANSISTOR MSB709-RT1    | (760, 761, L7)      |
| Q708         | 8-729-010-05 | TRANSISTOR MSB709-RT1    | (760, 761, L7)      |
| Q709         | 8-729-010-29 | TRANSISTOR MSD601-RST1   | (760, 761, L7)      |
| Q710         | 8-729-010-05 | TRANSISTOR MSB709-RT1    | (L5)                |
| Q711         | 8-729-424-67 | TRANSISTOR UN2216        | (L5)                |
| Q714         | 8-729-010-05 | TRANSISTOR MSB709-RT1    | (L5)                |
| Q853         | 8-729-424-67 | TRANSISTOR UN2216        | (L5)                |
| Q881         | 8-729-012-31 | TRANSISTOR 2SC4040-TL2-Q |                     |
| Q882         | 8-729-900-51 | TRANSISTOR DTA114TK      |                     |
| Q886         | 8-729-010-29 | TRANSISTOR MSD601-RST1   |                     |
| < RESISTOR > |              |                          |                     |
| R101         | 1-216-119-00 | METAL CHIP 820K 5%       | 1/10W               |
| R102         | 1-216-093-00 | METAL CHIP 68K 5%        | 1/10W               |
| R103         | 1-216-097-91 | METAL GLAZE 100K 5%      | 1/10W               |
| R104         | 1-216-097-91 | METAL GLAZE 100K 5%      | 1/10W               |
| R105         | 1-216-085-00 | METAL CHIP 33K 5%        | 1/10W               |
| R106         | 1-216-065-00 | METAL CHIP 4.7K 5%       | 1/10W               |
| R107         | 1-216-186-00 | METAL GLAZE 330 5%       | 1/8W                |
| R108         | 1-216-121-91 | METAL GLAZE 1M 5%        | 1/10W               |
| R111         | 1-216-097-91 | METAL GLAZE 100K 5%      | 1/10W               |
| R131         | 1-216-061-00 | METAL CHIP 3.3K 5%       | 1/10W<br>(760, 761) |
| R132         | 1-216-121-91 | METAL GLAZE 1M 5%        | 1/10W<br>(760, 761) |
| R133         | 1-216-222-00 | METAL GLAZE 10K 5%       | 1/8W<br>(760, 761)  |
| R135         | 1-216-025-91 | METAL GLAZE 100 5%       | 1/10W<br>(760, 761) |
| R136         | 1-216-049-91 | METAL GLAZE 1K 5%        | 1/10W<br>(760, 761) |
| R137         | 1-216-083-00 | METAL CHIP 27K 5%        | 1/10W<br>(760, 761) |
| R138         | 1-216-079-00 | METAL CHIP 18K 5%        | 1/10W<br>(760, 761) |
| R139         | 1-216-238-91 | METAL GLAZE 47K 5%       | 1/8W<br>(760, 761)  |
| R140         | 1-216-057-00 | METAL CHIP 2.2K 5%       | 1/10W<br>(760, 761) |
| R141         | 1-216-073-00 | METAL CHIP 10K 5%        | 1/10W<br>(760, 761) |
| R201         | 1-216-073-00 | METAL CHIP 10K 5%        | 1/10W               |
| R202         | 1-216-295-00 | METAL CHIP 0 5%          | 1/10W<br>(760, 761) |
| R202         | 1-216-081-00 | METAL CHIP 22K 5%        | 1/10W (L5)          |
| R202         | 1-216-065-00 | METAL CHIP 4.7K 5%       | 1/10W (L7)          |

|   |   |
|---|---|
| <p>The components identified by mark <math>\Delta</math> or dotted line with mark <math>\Delta</math> are critical for safety. Replace only with part number specified.</p> | <p>Les composants identifiés par une marque <math>\Delta</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p> |
|---|---|

| Ref. No. | Part No.     | Description | Remark |      |                   |
|----------|--------------|-------------|--------|------|-------------------|
| R203     | 1-216-073-00 | METAL CHIP  | 10K    | 5%   | 1/10W             |
| R204     | 1-216-073-00 | METAL CHIP  | 10K    | 5%   | 1/10W<br>(L5, L7) |
| R206     | 1-216-073-00 | METAL CHIP  | 10K    | 5%   | 1/10W             |
| R207     | 1-216-065-00 | METAL CHIP  | 4.7K   | 5%   | 1/10W             |
| R208     | 1-216-049-91 | METAL GLAZE | 1K     | 5%   | 1/10W             |
| R209     | 1-216-073-00 | METAL CHIP  | 10K    | 5%   | 1/10W             |
| R210     | 1-216-073-00 | METAL CHIP  | 10K    | 5%   | 1/10W             |
| R211     | 1-216-101-00 | METAL CHIP  | 150K   | 5%   | 1/10W             |
| R212     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R213     | 1-216-077-00 | METAL CHIP  | 15K    | 5%   | 1/10W             |
| R214     | 1-216-085-00 | METAL CHIP  | 33K    | 5%   | 1/10W             |
| R215     | 1-216-095-00 | METAL CHIP  | 82K    | 5%   | 1/10W             |
| R216     | 1-216-083-00 | METAL CHIP  | 27K    | 5%   | 1/10W (L5)        |
| R217     | 1-216-085-00 | METAL CHIP  | 33K    | 5%   | 1/10W (L5)        |
| R218     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R219     | 1-216-049-91 | METAL GLAZE | 1K     | 5%   | 1/10W             |
| R220     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R221     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R222     | 1-216-113-00 | METAL CHIP  | 470K   | 5%   | 1/10W             |
| R223     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R224     | 1-216-025-91 | METAL GLAZE | 100    | 5%   | 1/10W             |
| R225     | 1-216-053-00 | METAL CHIP  | 1.5K   | 5%   | 1/10W             |
| R226     | 1-216-025-91 | METAL GLAZE | 100    | 5%   | 1/10W             |
| R227     | 1-216-049-91 | METAL GLAZE | 1K     | 5%   | 1/10W             |
| R228     | 1-216-049-91 | METAL GLAZE | 1K     | 5%   | 1/10W             |
| R229     | 1-216-109-00 | METAL CHIP  | 330K   | 5%   | 1/10W             |
| R230     | 1-216-105-91 | METAL GLAZE | 220K   | 5%   | 1/10W             |
| R233     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%   | 1/10W             |
| R234     | 1-216-049-91 | METAL GLAZE | 1K     | 5%   | 1/10W             |
| R251     | 1-216-049-91 | METAL GLAZE | 1K     | 5%   | 1/10W             |
| R252     | 1-216-079-00 | METAL CHIP  | 18K    | 5%   | 1/10W             |
| R253     | 1-216-689-11 | METAL CHIP  | 39K    | 0.5% | 1/10W             |
| R254     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%   | 1/10W             |
| R255     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%   | 1/10W             |
| R256     | 1-216-103-91 | METAL GLAZE | 180K   | 5%   | 1/10W             |
| R261     | 1-249-400-11 | CARBON      | 39     | 5%   | 1/4W              |
| R262     | 1-249-400-11 | CARBON      | 39     | 5%   | 1/4W              |
| R263     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%   | 1/10W             |
| R264     | 1-216-107-00 | METAL CHIP  | 270K   | 5%   | 1/10W             |
| R265     | 1-216-107-00 | METAL CHIP  | 270K   | 5%   | 1/10W             |
| R266     | 1-249-413-11 | CARBON      | 470    | 5%   | 1/4W              |
| R267     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R268     | 1-216-089-91 | METAL GLAZE | 47K    | 5%   | 1/10W             |
| R271     | 1-216-065-00 | METAL CHIP  | 4.7K   | 5%   | 1/10W             |
| R274     | 1-216-083-00 | METAL CHIP  | 27K    | 5%   | 1/10W             |
| R275     | 1-216-093-00 | METAL CHIP  | 68K    | 5%   | 1/10W             |
| R276     | 1-216-056-00 | METAL GLAZE | 2K     | 5%   | 1/10W             |

| Ref. No. | Part No.     | Description | Remark |       |                         |
|----------|--------------|-------------|--------|-------|-------------------------|
| R277     | 1-216-068-00 | METAL CHIP  | 6.2K   | 5%    | 1/10W                   |
| R278     | 1-216-075-00 | METAL CHIP  | 12K    | 5%    | 1/10W                   |
| R281     | 1-216-238-91 | METAL GLAZE | 47K    | 5%    | 1/8W                    |
| R282     | 1-216-238-91 | METAL GLAZE | 47K    | 5%    | 1/8W                    |
| R283     | 1-216-238-91 | METAL GLAZE | 47K    | 5%    | 1/8W                    |
| R284     | 1-216-238-91 | METAL GLAZE | 47K    | 5%    | 1/8W                    |
| R293     | 1-216-295-00 | METAL CHIP  | 0      | 5%    | 1/10W                   |
| R301     | 1-216-295-00 | METAL CHIP  | 0      | 5%    | 1/10W                   |
| R302     | 1-216-052-00 | METAL CHIP  | 1.3K   | 5%    | 1/10W (L5)              |
| R302     | 1-216-053-00 | METAL CHIP  | 1.5K   | 5%    | 1/10W<br>(760, 761, L7) |
| R303     | 1-216-031-00 | METAL CHIP  | 180    | 5%    | 1/10W                   |
| R304     | 1-208-798-11 | METAL GLAZE | 4.7K   | 0.50% | 1/10W                   |
| R305     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%    | 1/10W                   |
| R306     | 1-216-081-00 | METAL CHIP  | 22K    | 5%    | 1/10W                   |
| R313     | 1-216-041-00 | METAL CHIP  | 470    | 5%    | 1/10W                   |
| R314     | 1-216-240-00 | METAL GLAZE | 56K    | 5%    | 1/8W                    |
| R315     | 1-216-105-91 | METAL GLAZE | 220K   | 5%    | 1/10W                   |
| R317     | 1-247-889-00 | CARBON      | 270K   | 5%    | 1/4W                    |
| R335     | 1-216-073-00 | METAL CHIP  | 10K    | 5%    | 1/10W                   |
| R351     | 1-216-049-91 | METAL GLAZE | 1K     | 5%    | 1/10W                   |
| R352     | 1-216-051-00 | METAL CHIP  | 1.2K   | 5%    | 1/10W                   |
| R353     | 1-216-045-00 | METAL CHIP  | 680    | 5%    | 1/10W                   |
| R354     | 1-216-083-00 | METAL CHIP  | 27K    | 5%    | 1/10W                   |
| R355     | 1-216-089-91 | METAL GLAZE | 47K    | 5%    | 1/10W                   |
| R356     | 1-216-055-00 | METAL CHIP  | 1.8K   | 5%    | 1/10W                   |
| R357     | 1-216-067-00 | METAL CHIP  | 5.6K   | 5%    | 1/10W                   |
| R358     | 1-216-035-00 | METAL CHIP  | 270    | 5%    | 1/10W                   |
| R413     | 1-216-049-91 | METAL GLAZE | 1K     | 5%    | 1/10W                   |
| R414     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%    | 1/10W                   |
| R415     | 1-216-053-00 | METAL CHIP  | 1.5K   | 5%    | 1/10W                   |
| R416     | 1-216-069-00 | METAL CHIP  | 6.8K   | 5%    | 1/10W                   |
| R417     | 1-216-049-91 | METAL GLAZE | 1K     | 5%    | 1/10W                   |
| R418     | 1-216-045-00 | METAL CHIP  | 680    | 5%    | 1/10W                   |
| R419     | 1-216-089-91 | METAL GLAZE | 47K    | 5%    | 1/10W                   |
| R420     | 1-216-065-00 | METAL CHIP  | 4.7K   | 5%    | 1/10W                   |
| R421     | 1-216-057-00 | METAL CHIP  | 2.2K   | 5%    | 1/10W                   |
| R423     | 1-216-073-00 | METAL CHIP  | 10K    | 5%    | 1/10W                   |
| R425     | 1-216-049-91 | METAL GLAZE | 1K     | 5%    | 1/10W                   |
| R431     | 1-216-081-00 | METAL CHIP  | 22K    | 5%    | 1/10W                   |
| R432     | 1-216-121-91 | METAL GLAZE | 1M     | 5%    | 1/10W                   |
| R461     | 1-216-295-00 | METAL CHIP  | 0      | 5%    | 1/10W                   |
| R462     | 1-216-295-00 | METAL CHIP  | 0      | 5%    | 1/10W                   |
| R501     | 1-216-065-00 | METAL CHIP  | 4.7K   | 5%    | 1/10W<br>(760, 761, L7) |
| R502     | 1-216-065-00 | METAL CHIP  | 4.7K   | 5%    | 1/10W<br>(760, 761, L7) |

**MA-252**

| Ref. No. | Part No.     | Description |      |       | Remark                  | Ref. No. | Part No.     | Description |      |    | Remark                  |
|----------|--------------|-------------|------|-------|-------------------------|----------|--------------|-------------|------|----|-------------------------|
| R505     | 1-216-295-00 | METAL CHIP  | 0    | 5%    | 1/10W<br>(760, 761, L7) | R572     | 1-216-089-91 | METAL GLAZE | 47K  | 5% | 1/10W<br>(760, 761, L7) |
| R506     | 1-216-295-00 | METAL CHIP  | 0    | 5%    | 1/10W<br>(760, 761, L7) | R573     | 1-216-214-00 | METAL GLAZE | 4.7K | 5% | 1/8W<br>(760, 761, L7)  |
| R507     | 1-216-295-00 | METAL CHIP  | 0    | 5%    | 1/10W<br>(760, 761, L7) | R575     | 1-216-295-00 | METAL CHIP  | 0    | 5% | 1/10W<br>(760, 761, L7) |
| R510     | 1-216-129-00 | METAL CHIP  | 2.2M | 5%    | 1/10W<br>(760, 761, L7) | R591     | 1-249-421-11 | CARBON      | 2.2K | 5% | 1/4W<br>(760, 761, L7)  |
| R514     | 1-216-049-91 | METAL GLAZE | 1K   | 5%    | 1/10W<br>(760, 761, L7) | R592     | 1-216-069-00 | METAL CHIP  | 6.8K | 5% | 1/10W<br>(760, 761, L7) |
| R515     | 1-216-049-91 | METAL GLAZE | 1K   | 5%    | 1/10W<br>(760, 761, L7) | R601     | 1-216-022-00 | METAL CHIP  | 75   | 5% | 1/10W                   |
| R521     | 1-216-073-00 | METAL CHIP  | 10K  | 5%    | 1/10W<br>(760, 761, L7) | R611     | 1-216-041-00 | METAL CHIP  | 470  | 5% | 1/10W                   |
| R522     | 1-216-050-00 | METAL GLAZE | 1.1K | 5%    | 1/10W<br>(760, 761, L7) | R612     | 1-216-041-00 | METAL CHIP  | 470  | 5% | 1/10W<br>(760, 761, L7) |
| R523     | 1-216-079-00 | METAL CHIP  | 18K  | 5%    | 1/10W<br>(760, 761, L7) | R681     | 1-216-037-00 | METAL CHIP  | 330  | 5% | 1/10W                   |
| R524     | 1-216-067-00 | METAL CHIP  | 5.6K | 5%    | 1/10W<br>(760, 761, L7) | R683     | 1-249-407-11 | CARBON      | 150  | 5% | 1/4W                    |
| R525     | 1-208-809-11 | METAL GLAZE | 13K  | 0.50% | 1/10W<br>(760, 761, L7) | R684     | 1-249-408-11 | CARBON      | 180  | 5% | 1/4W                    |
| R531     | 1-216-073-00 | METAL CHIP  | 10K  | 5%    | 1/10W<br>(760, 761, L7) | R685     | 1-216-021-00 | METAL CHIP  | 68   | 5% | 1/10W                   |
| R532     | 1-216-050-00 | METAL GLAZE | 1.1K | 5%    | 1/10W<br>(760, 761, L7) | R702     | 1-216-041-00 | METAL CHIP  | 470  | 5% | 1/10W<br>(760, 761, L7) |
| R533     | 1-216-079-00 | METAL CHIP  | 18K  | 5%    | 1/10W<br>(760, 761, L7) | R703     | 1-249-404-00 | CARBON      | 82   | 5% | 1/4W                    |
| R534     | 1-216-067-00 | METAL CHIP  | 5.6K | 5%    | 1/10W<br>(760, 761, L7) | R704     | 1-216-089-91 | METAL GLAZE | 47K  | 5% | 1/10W                   |
| R535     | 1-208-806-11 | METAL GLAZE | 10K  | 0.50% | 1/10W<br>(760, 761, L7) | R705     | 1-216-057-00 | METAL CHIP  | 2.2K | 5% | 1/10W (L5)              |
| R541     | 1-216-081-00 | METAL CHIP  | 22K  | 5%    | 1/10W<br>(760, 761, L7) | R706     | 1-216-073-00 | METAL CHIP  | 10K  | 5% | 1/10W<br>(760, 761, L7) |
| R551     | 1-216-129-00 | METAL CHIP  | 2.2M | 5%    | 1/10W<br>(760, 761, L7) | R709     | 1-216-049-91 | METAL GLAZE | 1K   | 5% | 1/10W (L5)              |
| R561     | 1-216-073-00 | METAL CHIP  | 10K  | 5%    | 1/10W                   | R711     | 1-216-073-00 | METAL CHIP  | 10K  | 5% | 1/10W (L5)              |
| R562     | 1-216-109-00 | METAL CHIP  | 330K | 5%    | 1/10W                   | R712     | 1-216-025-91 | METAL GLAZE | 100  | 5% | 1/10W (L5)              |
| R563     | 1-216-069-00 | METAL CHIP  | 6.8K | 5%    | 1/10W                   | R713     | 1-216-041-00 | METAL CHIP  | 470  | 5% | 1/10W<br>(760, 761, L7) |
| R564     | 1-216-041-00 | METAL CHIP  | 470  | 5%    | 1/10W                   | R714     | 1-216-041-00 | METAL CHIP  | 470  | 5% | 1/10W<br>(760, 761, L7) |
| R565     | 1-216-099-00 | METAL CHIP  | 120K | 5%    | 1/10W                   | R715     | 1-216-025-91 | METAL GLAZE | 100  | 5% | 1/10W<br>(760, 761, L7) |
| R566     | 1-216-089-91 | METAL GLAZE | 47K  | 5%    | 1/10W                   | R716     | 1-216-065-00 | METAL CHIP  | 4.7K | 5% | 1/10W<br>(760, 761, L7) |
| R567     | 1-216-295-00 | METAL CHIP  | 0    | 5%    | 1/10W<br>(760, 761, L7) | R717     | 1-216-073-00 | METAL CHIP  | 10K  | 5% | 1/10W<br>(760, 761, L7) |
| R571     | 1-216-073-00 | METAL CHIP  | 10K  | 5%    | 1/10W<br>(760, 761, L7) | R719     | 1-216-049-91 | METAL GLAZE | 1K   | 5% | 1/10W                   |
|          |              |             |      |       |                         | R720     | 1-216-049-91 | METAL GLAZE | 1K   | 5% | 1/10W                   |
|          |              |             |      |       |                         | R721     | 1-216-037-00 | METAL CHIP  | 330  | 5% | 1/10W                   |
|          |              |             |      |       |                         | R722     | 1-216-061-00 | METAL CHIP  | 3.3K | 5% | 1/10W                   |
|          |              |             |      |       |                         | R725     | 1-216-049-91 | METAL GLAZE | 1K   | 5% | 1/10W<br>(760, 761, L7) |

| Ref. No.              | Part No.     | Description                     |      |    | Remark                      |
|-----------------------|--------------|---------------------------------|------|----|-----------------------------|
| R726                  | 1-216-049-91 | METAL GLAZE                     | 1K   | 5% | 1/10W<br>(760, 761, L7)     |
| R733                  | 1-216-081-00 | METAL CHIP                      | 22K  | 5% | 1/10W<br>(760, 761, L7)     |
| R734                  | 1-216-081-00 | METAL CHIP                      | 22K  | 5% | 1/10W<br>(760, 761, L7)     |
| R736                  | 1-216-049-91 | METAL GLAZE                     | 1K   | 5% | 1/10W                       |
| R737                  | 1-216-295-00 | METAL CHIP                      | 0    | 5% | 1/10W<br><br>(760, 761, L7) |
| R738                  | 1-216-025-91 | METAL GLAZE                     | 100  | 5% | 1/10W (L5)                  |
| R740                  | 1-216-093-00 | METAL CHIP                      | 68K  | 5% | 1/10W<br>(760, 761, L7)     |
| R746                  | 1-216-073-00 | METAL CHIP                      | 10K  | 5% | 1/10W<br>(760, 761, L7)     |
| R747                  | 1-249-421-11 | CARBON                          | 2.2K | 5% | 1/4W F<br>(760, 761, L7)    |
| R851                  | 1-216-129-00 | METAL CHIP                      | 2.2M | 5% | 1/10W (L5)                  |
| R852                  | 1-216-049-91 | METAL GLAZE                     | 1K   | 5% | 1/10W (L5)                  |
| R853                  | 1-216-041-00 | METAL CHIP                      | 470  | 5% | 1/10W (L5)                  |
| R854                  | 1-216-089-91 | METAL GLAZE                     | 47K  | 5% | 1/10W (L5)                  |
| R855                  | 1-216-067-00 | METAL CHIP                      | 5.6K | 5% | 1/10W (L5)                  |
| R858                  | 1-216-089-91 | METAL GLAZE                     | 47K  | 5% | 1/10W (L5)                  |
| R859                  | 1-216-067-00 | METAL CHIP                      | 5.6K | 5% | 1/10W (L5)                  |
| R871                  | 1-216-073-00 | METAL CHIP                      | 10K  | 5% | 1/10W (L5)                  |
| R872                  | 1-216-089-91 | METAL GLAZE                     | 47K  | 5% | 1/10W (L5)                  |
| R873                  | 1-216-065-00 | METAL CHIP                      | 4.7K | 5% | 1/10W (L5)                  |
| R874                  | 1-216-075-00 | METAL CHIP                      | 12K  | 5% | 1/10W                       |
| R881                  | 1-216-081-00 | METAL CHIP                      | 22K  | 5% | 1/10W                       |
| △R882                 | 1-249-389-11 | CARBON                          | 4.7  | 5% | 1/4W F                      |
| R885                  | 1-216-071-00 | METAL CHIP                      | 8.2K | 5% | 1/10W                       |
| R886                  | 1-216-073-00 | METAL CHIP                      | 10K  | 5% | 1/10W                       |
| R887                  | 1-216-089-91 | METAL GLAZE                     | 47K  | 5% | 1/10W                       |
| < RF MODULATOR >      |              |                                 |      |    |                             |
| △RF701                | 1-466-989-11 | MODULATOR, RF                   |      |    | (760, 761, L7)              |
| < VARIABLE RESISTOR > |              |                                 |      |    |                             |
| RV521                 | 1-241-763-11 | RES, ADJ, CERMET 4.7K           |      |    | (760, 761, L7)              |
| RV531                 | 1-241-763-11 | RES, ADJ, CERMET 4.7K           |      |    | (760, 761, L7)              |
| RV541                 | 1-241-764-11 | RES, ADJ, CERMET 10K            |      |    | (760, 761, L7)              |
| < SWITCH >            |              |                                 |      |    |                             |
| S251                  | 1-570-953-11 | SWITCH, PUSH (1 KEY) (REC PRF)  |      |    |                             |
| S701                  | 1-571-588-11 | SWITCH, SLIDE (RF UNIT CH3/CH4) |      |    | (L5)                        |

| Ref. No.                 | Part No.     | Description                              |         |    | Remark         |
|--------------------------|--------------|--|---------|----|----------------|
| < TRANSFORMER >          |              |  |         |    |                |
| T881                     | 1-423-414-11 | TRANSFORMER, BIAS OSCILLATION            |         |    |                |
| < TUNER >                |              |  |         |    |                |
| △TU701                   | 8-598-345-00 | TUNER, BTf-WA407                         |         |    | (760, 761, L7) |
| △TU702                   | 1-693-318-11 | TUNER, RF MOD/IF (BTf-2MA402)            |         |    | (L5)           |
| < VIBRATOR >             |              |  |         |    |                |
| X201                     | 1-760-494-11 | VIBRATOR, CRYSTAL (16MHz)                |         |    |                |
| X202                     | 1-579-463-11 | VIBRATOR, CRYSTAL (32.768kHz)            |         |    |                |
| X401                     | 1-577-381-11 | VIBRATOR, CRYSTAL (14MHz)                |         |    |                |
| *****                    |              |  |         |    |                |
| *                        | A-6782-798-A | MF-283 BOARD, COMPLETE (790, 960HF/HFMX) |         |    |                |
| *                        | A-6782-806-A | MF-289 BOARD, COMPLETE (960HFCS/HFPX)    |         |    |                |
| *****                    |              |  |         |    |                |
| (Ref. No. 1, 000 Series) |              |  |         |    |                |
| < CAPACITOR >            |              |  |         |    |                |
| C201                     | 1-163-035-00 | CERAMIC CHIP                             | 0.047uF |    | 50V            |
| < CONNECTOR >            |              |  |         |    |                |
| CN201                    | 1-695-368-31 | CONNECTOR, FPC/FPC 7P                    |         |    |                |
| < LED >                  |              |  |         |    |                |
| D201                     | 8-719-056-07 | LED SLR-342MC3F                          |         |    | (POWER)        |
| D202                     | 8-719-056-07 | LED SLR-342MC3F                          |         |    | (POWER)        |
| < IC >                   |              |  |         |    |                |
| IC201                    | 1-466-833-11 | IC RAY-CATCHER BLOCK, REMOCON            |         |    |                |
| < TRANSISTOR >           |              |  |         |    |                |
| Q201                     | 8-729-421-22 | TRANSISTOR UN2211                        |         |    |                |
| < RESISTOR >             |              |  |         |    |                |
| R201                     | 1-216-089-91 | METAL GLAZE                              | 47K     | 5% | 1/10W          |
| R202                     | 1-216-021-00 | METAL CHIP                               | 68      | 5% | 1/10W          |
| < SWITCH >               |              |  |         |    |                |
| S201                     | 1-571-977-11 | SWITCH, TACTIL (POWER)                   |         |    |                |

|   |   |
|---|---|
| <p>The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p> | <p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p> |
|---|---|

## MF-284

## MF-290

## PS-355

## PS-356

| Ref. No.                  | Part No.     | Description   | Remark |
|---------------------------|--------------|---|--------|
| *                         | A-6782-794-A | MF-284 BOARD, COMPLETE (760, 761, L5MX/PA, L7HFMX/HFPA) |        |
| *                         | A-6782-795-A | MF-290 BOARD, COMPLETE (760HFPX, L5CS, L7HFGS)          |        |
| *****                     |              |   |        |
| (Ref. No. 2, 000 Series)  |              |   |        |
| < CONNECTOR >             |              |   |        |
| CN201                     | 1-691-068-21 | HOUSING, CONNECTOR 9P                                   |        |
| < LED >                   |              |   |        |
| D201                      | 8-719-056-07 | LED SLR-342MC3F (POWER)                                 |        |
| D202                      | 8-719-056-07 | LED SLR-342MC3F (POWER)                                 |        |
| < RESISTOR >              |              |   |        |
| R202                      | 1-216-021-00 | METAL CHIP 68 5% 1/10W                                  |        |
| < SWITCH >                |              |   |        |
| S201                      | 1-571-977-11 | SWITCH, TACTIL (POWER)                                  |        |
| *****                     |              |   |        |
| (Ref. No. 1, 000 Series)  |              |   |        |
| 1-533-223-11 HOLDER, FUSE |              |   |        |
| *                         | 3-951-893-01 | HEAT SINK   |        |
| *                         | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 IT-3                              |        |
| < CAPACITOR >             |              |   |        |
| △C101                     | 1-104-705-11 | FILM 0.1uF 20% 250V                                     |        |
| △C102                     | 1-104-705-11 | FILM 0.1uF 20% 250V                                     |        |
| △C103                     | 1-107-401-11 | ELECT 150uF 20% 200V                                    |        |
| △C104                     | 1-113-900-11 | ELECT 470PF 10% 250V                                    |        |
| △C105                     | 1-113-900-11 | ELECT 470PF 10% 250V                                    |        |
| △C107                     | 1-113-919-11 | ELECT 0.0015uF 99% 125V                                 |        |
| C121                      | 1-126-935-11 | ELECT 470uF 20% 16V                                     |        |
| C122                      | 1-126-926-11 | ELECT 1000uF 20% 10V                                    |        |
| C125                      | 1-128-551-11 | ELECT 22uF 20% 25V                                      |        |
| C131                      | 1-128-499-11 | ELECT 220uF 20% 16V                                     |        |
| C132                      | 1-128-551-11 | ELECT 22uF 20% 25V                                      |        |
| C133                      | 1-104-664-11 | ELECT 47uF 20% 25V                                      |        |
| C141                      | 1-126-967-11 | ELECT 47uF 20% 16V                                      |        |
| C142                      | 1-126-933-11 | ELECT 100uF 20% 16V                                     |        |
| C161                      | 1-126-967-11 | ELECT 47uF 20% 16V                                      |        |
| C162                      | 1-126-924-11 | ELECT 330uF 20% 10V                                     |        |

| Ref. No.        | Part No.     | Description                                | Remark |
|-----------------|--------------|--|--------|
| C171            | 1-126-924-11 | ELECT 330uF 20% 10V                        |        |
| C181            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V                    |        |
| C182            | 1-126-967-11 | ELECT 47uF 20% 16V                         |        |
| C183            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V                    |        |
| C184            | 1-126-967-11 | ELECT 47uF 20% 50V                         |        |
| C185            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V                    |        |
| C186            | 1-126-967-11 | ELECT 47uF 20% 50V                         |        |
| C187            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V                    |        |
| C188            | 1-126-967-11 | ELECT 47uF 20% 50V                         |        |
| C189            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V                    |        |
| C190            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V                    |        |
| C191            | 1-124-248-00 | ELECT 22uF 20% 35V                         |        |
| < AC INLET >    |              |  |        |
| △CJ101          | 1-251-135-11 | INLET, AC. (AC IN ~)                       |        |
| < CONNECTOR >   |              |  |        |
| CN101           | 1-569-341-11 | CONNECTOR, BOARD TO BOARD 19P              |        |
| < POWER BLOCK > |              |  |        |
| △CP101          | 1-468-086-11 | POWER BLOCK                                |        |
| △CP102          | 1-467-811-12 | UNIT, DC-DC CONVERTER                      |        |
| < DIODE >       |              |  |        |
| △D101           | 8-719-510-06 | DIODE S1WB60                               |        |
| D161            | 8-719-911-19 | DIODE 1SS119-25                            |        |
| D162            | 8-719-109-85 | DIODE RD5.1ES-B2                           |        |
| < FUSE >        |              |  |        |
| △F101           | 1-532-743-11 | FUSE, GLASS CYLINDRICAL (DIA. 5) (2A/125V) |        |
| < IC >          |              |  |        |
| △IC141          | 8-759-189-48 | IC PQ12RE11                                |        |
| < COIL >        |              |  |        |
| △L121           | 1-403-588-11 | CIL, CHOKE 22uH                            |        |
| △L122           | 1-403-588-11 | CIL, CHOKE 22uH                            |        |
| L181            | 1-408-970-21 | INDUCTOR 10uH                              |        |
| L182            | 1-414-142-11 | INDUCTOR 1uH                               |        |
| L183            | 1-414-142-11 | INDUCTOR 1uH                               |        |
| L184            | 1-410-322-11 | INDUCTOR 3.3UH(790, 960HF/HFMX)            |        |
| < LINE FILTER > |              |  |        |
| △LF102          | 1-424-117-11 | FILTER, LINE 18mA                          |        |

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## PS-355

## PS-356

## PS-367

## PS-368

| Ref. No.  | Part No.     | Description              | Remark |
|---|--------------|--------------------------|--------|
| < IC LINK >   |              |                          |        |
| △PS121  | 1-532-637-00 | LINK, IC ICP-N25 (1.0A)  |        |
| △PS122  | 1-532-637-00 | LINK, IC ICP-N25 (1.0A)  |        |
| △PS123  | 1-532-637-00 | LINK, IC ICP-N25 (1.0A)  |        |
| △PS181  | 1-532-605-00 | LINK, IC ICP-N10 (0.4A)  |        |
| < TRANSISTOR >  |              |                          |        |
| △Q131   | 8-729-140-93 | TRANSISTOR 2SB733-34     |        |
| Q132  | 8-729-421-22 | TRANSISTOR UN2211        |        |
| △Q161   | 8-729-140-98 | TRANSISTOR 2SD773-34     |        |
| < RESISTOR >  |              |                          |        |
| △R102   | 1-202-729-00 | SOLID 6.8M 20% 1/2W      |        |
| △R102   | 1-202-729-00 | SOLID 6.8M 20% 1/2W      |        |
| △R102   | 1-202-729-00 | SOLID 6.8M 20% 1/2W      |        |
| R102  | 1-202-729-00 | SOLID 6.8M 20% 1/2W      |        |
| R125  | 1-216-061-00 | METAL CHIP 3.3K 5% 1/10W |        |
| R131  | 1-249-417-11 | CARBON 1K 5% 1/4W        |        |
| R132  | 1-216-430-11 | METAL OXIDE 390 5% 1W    |        |
| R133  | 1-216-061-00 | METAL CHIP 3.3K 5% 1/10W |        |
| R141  | 1-216-089-91 | METAL GLAZE 47K 5% 1/10W |        |
| R161  | 1-249-412-11 | CARBON 390 5% 1/4W       |        |
| R182  | 1-216-378-11 | METAL OXIDE 5.6 5% 2W    |        |
| R183  | 1-216-480-11 | METAL OXIDE 820 5% 3W    |        |
| <p>* A-6782-804-A PS-367 BOARD, COMPLETE (960HFC5/HFPX)</p> <p>* A-6782-819-A PS-368 BOARD, COMPLETE (760HFPX/HFCS)</p> <p>* A-6782-820-A PS-368 BOARD, COMPLETE (L5CS)</p> <p style="text-align: center;">*****</p> <p style="text-align: center;">(Ref. No. 2,000 Series)</p> |              |                          |        |
| <p>1-533-223-11 HOLDER, FUSE</p> <p>* 3-951-893-01 HEAT SINK</p> <p>7-685-646-79 SCREW +BVTIP 3X8 TYPE2 IT-3</p>  |              |                          |        |
| < CAPACITOR >   |              |                          |        |
| △C101   | 1-104-705-11 | FILM 0.1uF 20% 250V      |        |
| △C102   | 1-104-705-11 | FILM 0.1uF 20% 250V      |        |
| △C103   | 1-107-414-11 | ELECT 220uF 20% 400V     |        |
| △C104   | 1-113-935-11 | ELECT 0.001uF 99% 125V   |        |
| △C105   | 1-113-935-11 | ELECT 0.001uF 99% 125V   |        |
| △C106   | 1-113-935-11 | ELECT 0.001uF 99% 125V   |        |
| △C107   | 1-113-935-11 | ELECT 0.001uF 99% 125V   |        |
| △C108   | 1-113-935-11 | ELECT 0.001uF 99% 125V   |        |
| △C112   | 1-113-895-11 | CERAMIC 150PF 10% 250V   |        |
| C121  | 1-126-935-11 | ELECT 470uF 20% 16V      |        |
| C122  | 1-126-926-11 | ELECT 1000uF 20% 10V     |        |
| C125  | 1-128-551-11 | ELECT 22uF 20% 25V       |        |
| C131  | 1-128-499-11 | ELECT 220uF 20% 16V      |        |
| C132  | 1-128-551-11 | ELECT 22uF 20% 25V       |        |

| Ref. No.        | Part No.     | Description                    | Remark |
|-----------------|--------------|--------------------------------|--------|
| C133            | 1-104-664-11 | ELECT 47uF 20% 25V             |        |
| C141            | 1-126-967-11 | ELECT 47uF 20% 16V             |        |
| C142            | 1-126-933-11 | ELECT 100uF 20% 16V            |        |
| C161            | 1-126-967-11 | ELECT 47uF 20% 16V             |        |
| C162            | 1-126-924-11 | ELECT 330uF 20% 10V            |        |
| C171            | 1-126-924-11 | ELECT 330uF 20% 10V            |        |
| C181            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |
| C182            | 1-126-967-11 | ELECT 47uF 20% 16V             |        |
| C183            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |
| C184            | 1-126-967-11 | ELECT 47uF 20% 50V             |        |
| C185            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |
| C186            | 1-126-967-11 | ELECT 47uF 20% 50V             |        |
| C187            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |
| C188            | 1-126-967-11 | ELECT 47uF 20% 50V             |        |
| C189            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |
| C190            | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |
| C191            | 1-124-248-00 | ELECT 22uF 20% 35V             |        |
| < AC INLET >    |              |                                |        |
| △CJ101          | 1-251-134-11 | INLET, AC (NONPOLAR) (AC IN ~) |        |
| < CONNECTOR >   |              |                                |        |
| CN101           | 1-569-341-11 | CONNECTOR, BOARD TO BOARD 19P  |        |
| < POWER BLOCK > |              |                                |        |
| △CP101          | 1-468-083-11 | POWER BLOCK                    |        |
| △CP101          | 1-468-083-11 | POWER BLOCK                    |        |
| CP102           | 1-467-811-12 | UNIT, DC-DC CONVERTER          |        |
| < DIODE >       |              |                                |        |
| △D101           | 8-719-510-06 | DIODE S1WB60                   |        |
| D161            | 8-719-911-19 | DIODE 1SS119-25                |        |
| D162            | 8-719-109-85 | DIODE RD5.1ES-B2               |        |
| < FUSE >        |              |                                |        |
| △F101           | 1-532-203-00 | FUSE (T2AL/250V)               |        |
| < IC >          |              |                                |        |
| △IC141          | 8-759-189-48 | IC PQ12RE11                    |        |
| < COIL >        |              |                                |        |
| △L121           | 1-403-588-11 | CIL, CHOKE 22uH                |        |
| △L122           | 1-403-588-11 | CIL, CHOKE 22uH                |        |
| L181            | 1-408-970-21 | INDUCTOR 10uH                  |        |
| L182            | 1-414-142-11 | INDUCTOR 1uH                   |        |
| L183            | 1-414-142-11 | INDUCTOR 1uH                   |        |
| L184            | 1-410-322-11 | INDUCTOR 3.3UH (960HFC5/HFPX)  |        |

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**PS-367**

**PS-368**

**RP-197**

**RP-202**

| Ref. No.  | Part No.     | Description                 | Remark |  |  |
|---|--------------|-----------------------------|--------|--|--|
| < LINE FILTER >   |              |                             |        |  |  |
| △LF102  | 1-424-117-11 | FILTER, LINE 18mH           |        |  |  |
| △LF103  | 1-424-117-11 | FILTER, LINE 18mH           |        |  |  |
| < IC LINK >   |              |                             |        |  |  |
| △PS121  | 1-532-637-00 | LINK, IC ICP-N25 (1.0A)     |        |  |  |
| △PS122  | 1-532-637-00 | LINK, IC ICP-N25 (1.0A)     |        |  |  |
| △PS123  | 1-532-637-00 | LINK, IC ICP-N25 (1.0A)     |        |  |  |
| △PS181  | 1-532-605-00 | LINK, IC ICP-N10 (0.4A)     |        |  |  |
| < TRANSISTOR >  |              |                             |        |  |  |
| △Q131   | 8-729-140-93 | TRANSISTOR 2SB733-34        |        |  |  |
| Q132  | 8-729-421-22 | TRANSISTOR UN2211           |        |  |  |
| △Q161   | 8-729-140-98 | TRANSISTOR 2SD773-34        |        |  |  |
| < RESISTOR >  |              |                             |        |  |  |
| △R101   | 1-214-947-00 | METAL 2.7M 1% 1/2W          |        |  |  |
| R125  | 1-216-061-00 | METAL CHIP 3.3K 5% 1/10W    |        |  |  |
| R131  | 1-249-417-11 | CARBON 1K 5% 1/4W           |        |  |  |
| R132  | 1-216-430-11 | METAL OXIDE 390 5% 1W       |        |  |  |
| R133  | 1-216-061-00 | METAL CHIP 3.3K 5% 1/10W    |        |  |  |
| R141  | 1-216-089-91 | METAL GLAZE 47K 5% 1/10W    |        |  |  |
| R161  | 1-249-412-11 | CARBON 390 5% 1/4W          |        |  |  |
| R182  | 1-216-378-11 | METAL OXIDE 5.6 5% 2W       |        |  |  |
| R183  | 1-216-480-11 | METAL OXIDE 820 5% 3W       |        |  |  |
| <p>* A-6782-799-A RP-197 BOARD, COMPLETE (790)</p> <p>* A-6782-811-A RP-197 BOARD, COMPLETE (960HF/HFMX)</p> <p>* A-6782-808-A RP-202 BOARD, COMPLETE (960HFC/S/HFPX)</p> <p>*****</p> <p style="text-align: center;">(Ref. No. 1,000 Series)</p> |              |                             |        |  |  |
| < CAPACITOR >   |              |                             |        |  |  |
| C501  | 1-163-229-11 | CERAMIC CHIP 12PF 5% 50V    |        |  |  |
| C502  | 1-163-229-11 | CERAMIC CHIP 12PF 5% 50V    |        |  |  |
| C503  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C504  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C505  | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V     |        |  |  |
| C506  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C507  | 1-163-241-11 | CERAMIC CHIP 39PF 5% 50V    |        |  |  |
| C508  | 1-163-241-11 | CERAMIC CHIP 39PF 5% 50V    |        |  |  |
| C509  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C510  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C511  | 1-163-227-11 | CERAMIC CHIP 10PF 0.5PF 50V |        |  |  |
| C512  | 1-163-227-11 | CERAMIC CHIP 10PF 0.5PF 50V |        |  |  |
| C513  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C514  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |
| C515  | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V    |        |  |  |

| Ref. No. | Part No.     | Description                    | Remark |  |  |
|----------|--------------|--------------------------------|--------|--|--|
| C516     | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V       |        |  |  |
| C517     | 1-163-033-91 | CERAMIC CHIP 0.022uF 50V       |        |  |  |
| C518     | 1-124-584-00 | ELECT 100uF 20% 10V            |        |  |  |
| C519     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C521     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C522     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C523     | 1-163-059-00 | CERAMIC CHIP 0.01uF 10% 50V    |        |  |  |
| C524     | 1-163-239-11 | CERAMIC CHIP 33PF 5% 50V       |        |  |  |
| C525     | 1-163-239-11 | CERAMIC CHIP 33PF 5% 50V       |        |  |  |
| C526     | 1-124-584-00 | ELECT 100uF 20% 10V            |        |  |  |
| C527     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C528     | 1-163-127-00 | CERAMIC CHIP 270PF 5% 50V      |        |  |  |
| C529     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C531     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C532     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C571     | 1-163-099-00 | CERAMIC CHIP 18PF 5% 50V(960)  |        |  |  |
| C572     | 1-163-099-00 | CERAMIC CHIP 18PF 5% 50V(960)  |        |  |  |
| C573     | 1-164-232-11 | CERAMIC CHIP 0.01uF 50V(960)   |        |  |  |
| C575     | 1-163-251-11 | CERAMIC CHIP 100PF 5% 50V(960) |        |  |  |
| C576     | 1-163-121-00 | CERAMIC CHIP 150PF 5% 50V(960) |        |  |  |
| C577     | 1-163-245-11 | CERAMIC CHIP 56PF 5% 50V(960)  |        |  |  |
| C578     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V(960)    |        |  |  |
| C579     | 1-124-589-11 | ELECT 47uF 20% 16V(960)        |        |  |  |
| C580     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V(960)    |        |  |  |
| C760     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C761     | 1-124-584-00 | ELECT 100uF 20% 10V            |        |  |  |
| C762     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C763     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C764     | 1-124-257-00 | ELECT 2.2uF 20% 50V            |        |  |  |
| C765     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C766     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C768     | 1-163-135-00 | CERAMIC CHIP 560PF 5% 50V      |        |  |  |
| C769     | 1-163-135-00 | CERAMIC CHIP 560PF 5% 50V      |        |  |  |
| C770     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C773     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C774     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C775     | 1-126-160-11 | ELECT 1uF 20% 50V              |        |  |  |
| C776     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C901     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C902     | 1-163-224-11 | CERAMIC CHIP 7PF 0.25PF 50V    |        |  |  |
| C903     | 1-163-243-11 | CERAMIC CHIP 47PF 5% 50V       |        |  |  |
| C904     | 1-163-249-11 | CERAMIC CHIP 82PF 5% 50V       |        |  |  |
| C906     | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V         |        |  |  |
| C907     | 1-126-967-11 | ELECT 47uF 20% 16V             |        |  |  |
| C909     | 1-163-031-11 | CERAMIC CHIP 0.01uF 50V        |        |  |  |
| C912     | 1-163-241-11 | CERAMIC CHIP 39PF 5% 50V       |        |  |  |
| R519     | 1-163-031-11 | CERAMIC CHIP 0.01MF 50V        |        |  |  |

|   |   |
|---|---|
| <p>The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p> | <p>Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p> |
|---|---|

| Ref. No.            | Part No.     | Description                   | Remark          |
|---------------------|--------------|-------------------------------|-----------------|
| < CONNECTOR >       |              |                               |                 |
| CN501               | 1-766-986-11 | CONNECTOR, FFC/FPC 13P        |                 |
| * CN502             | 1-564-029-00 | PIN, CONNECTOR 4P             |                 |
| CN503               | 1-766-720-11 | CONNECTOR, BOARD TO BOARD 17P |                 |
| CN701               | 1-766-724-11 | CONNECTOR, BOARD TO BOAR 7P   |                 |
| < IC >              |              |                               |                 |
| IC501               | 8-759-352-17 | IC HA118195NT                 |                 |
| IC760               | 8-759-055-49 | IC AN3327K                    |                 |
| < JUMPER RESISTOR > |              |                               |                 |
| JR502               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR503               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR504               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR505               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR506               | 1-216-296-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR507               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR508               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR509               | 1-216-295-00 | METAL CHIP                    | 0 5% 1/10W      |
| JR901               | 1-216-296-00 | METAL CHIP                    | 0 5% 1/10W      |
| < COIL >            |              |                               |                 |
| L501                | 1-414-189-31 | INDUCTOR                      | 100uH           |
| L502                | 1-414-189-31 | INDUCTOR                      | 100uH           |
| L503                | 1-410-525-11 | INDUCTOR                      | 220uH           |
| L571                | 1-410-509-11 | INDUCTOR                      | 10uH (960)      |
| L572                | 1-410-509-11 | INDUCTOR                      | 10uH (960)      |
| L573                | 1-410-507-11 | INDUCTOR                      | 6.8uH (960)     |
| L574                | 1-414-189-31 | INDUCTOR                      | 100uH (960)     |
| L760                | 1-414-189-31 | INDUCTOR                      | 100uH           |
| L901                | 1-414-189-31 | INDUCTOR                      | 100uH           |
| L903                | 1-410-516-11 | INDUCTOR                      | 39uH            |
| L904                | 1-410-512-11 | INDUCTOR                      | 18uH            |
| L906                | 1-410-518-41 | INDUCTOR                      | 56uH            |
| < TRANSISTOR >      |              |                               |                 |
| Q501                | 8-729-271-21 | TRANSISTOR                    | 2SC2712Y        |
| Q502                | 8-729-216-21 | TRANSISTOR                    | 2SA1162Y        |
| Q571                | 8-729-216-22 | TRANSISTOR                    | 2SA1162-G (960) |
| Q572                | 8-729-216-22 | TRANSISTOR                    | 2SA1162-G (960) |
| Q573                | 8-729-421-19 | TRANSISTOR                    | UN2213 (960)    |
| Q574                | 8-729-421-19 | TRANSISTOR                    | UN2213 (960)    |
| Q575                | 8-729-804-41 | TRANSISTOR                    | 2SB1122-S (960) |
| Q901                | 8-729-271-21 | TRANSISTOR                    | 2SC2712Y        |
| Q904                | 8-729-216-21 | TRANSISTOR                    | 2SA1162Y        |
| Q905                | 8-729-271-21 | TRANSISTOR                    | 2SC2712Y        |

| Ref. No.     | Part No.     | Description | Remark               |
|--------------|--------------|-------------|----------------------|
| < RESISTOR > |              |             |                      |
| C520         | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W        |
| C911         | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W           |
| R501         | 1-216-044-00 | METAL CHIP  | 620 5% 1/10W         |
| R502         | 1-216-044-00 | METAL CHIP  | 620 5% 1/10W         |
| R503         | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W           |
| R504         | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W           |
| R505         | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W           |
| R506         | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W           |
| R507         | 1-216-053-00 | METAL CHIP  | 1.5K 5% 1/10W        |
| R508         | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W         |
| R509         | 1-216-075-00 | METAL CHIP  | 12K 5% 1/10W         |
| R510         | 1-216-081-00 | METAL CHIP  | 22K 5% 1/10W         |
| R511         | 1-216-081-00 | METAL CHIP  | 22K 5% 1/10W         |
| R512         | 1-216-224-91 | METAL GLAZE | 12K 5% 1/8W          |
| R513         | 1-216-081-00 | METAL CHIP  | 22K 5% 1/10W         |
| R514         | 1-216-059-00 | METAL CHIP  | 2.7K 5% 1/10W        |
| R515         | 1-216-081-00 | METAL CHIP  | 22K 5% 1/10W         |
| R516         | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W        |
| R517         | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W          |
| R518         | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W          |
| R520         | 1-216-061-00 | METAL CHIP  | 3.3K 5% 1/10W        |
| R571         | 1-216-013-00 | METAL CHIP  | 33 5% 1/10W (960)    |
| R572         | 1-216-041-00 | METAL CHIP  | 470 5% 1/10W (960)   |
| R573         | 1-216-057-00 | METAL CHIP  | 2.2K 5% 1/10W (960)  |
| R574         | 1-216-095-00 | METAL CHIP  | 82K 5% 1/10W (960)   |
| R575         | 1-216-089-91 | METAL GLAZE | 47K 5% 1/10W (960)   |
| R576         | 1-216-689-11 | METAL CHIP  | 39K 0.5% 1/10W (960) |
| R577         | 1-216-061-00 | METAL CHIP  | 3.3K 5% 1/10W (960)  |
| R578         | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W (960)   |
| R762         | 1-216-035-00 | METAL CHIP  | 270 5% 1/10W         |
| R763         | 1-216-067-00 | METAL CHIP  | 5.6K 5% 1/10W        |
| R765         | 1-216-033-00 | METAL CHIP  | 220 5% 1/10W         |
| R766         | 1-249-418-11 | CARBON      | 1.2K 5% 1/4W         |
| R767         | 1-216-035-00 | METAL CHIP  | 270 5% 1/10W         |
| R768         | 1-216-097-91 | METAL GLAZE | 100K 5% 1/10W        |
| R771         | 1-216-079-00 | METAL CHIP  | 18K 5% 1/10W         |
| R776         | 1-216-073-00 | METAL CHIP  | 10K 5% 1/10W         |
| R901         | 1-216-053-00 | METAL CHIP  | 1.5K 5% 1/10W        |
| R902         | 1-216-077-00 | METAL CHIP  | 15K 5% 1/10W         |
| R903         | 1-216-075-00 | METAL CHIP  | 12K 5% 1/10W         |
| R904         | 1-216-037-00 | METAL CHIP  | 330 5% 1/10W         |
| R905         | 1-216-295-00 | METAL CHIP  | 0 5% 1/10W           |
| R906         | 1-216-043-91 | METAL GLAZE | 560 5% 1/10W         |
| R908         | 1-216-039-00 | METAL CHIP  | 390 5% 1/10W         |
| R912         | 1-216-075-00 | METAL CHIP  | 12K 5% 1/10W         |
| R913         | 1-216-077-00 | METAL CHIP  | 15K 5% 1/10W         |
| R914         | 1-216-037-00 | METAL CHIP  | 330 5% 1/10W         |

**RP-197**

**RP-202**

**RP-198**

**RP-203**

| Ref. No. | Part No.     | Description | Remark |    |       |
|----------|--------------|-------------|--------|----|-------|
| R916     | 1-216-037-00 | METAL CHIP  | 330    | 5% | 1/10W |
| R917     | 1-216-047-91 | METAL GLAZE | 820    | 5% | 1/10W |
| R918     | 1-216-049-91 | METAL GLAZE | 1K     | 5% | 1/10W |
| R919     | 1-216-295-00 | METAL CHIP  | 0      | 5% | 1/10W |
| R920     | 1-216-075-00 | METAL CHIP  | 12K    | 5% | 1/10W |
| R921     | 1-216-077-00 | METAL CHIP  | 15K    | 5% | 1/10W |
| R931     | 1-216-295-00 | METAL CHIP  | 0      | 5% | 1/10W |
| R932     | 1-216-295-00 | METAL CHIP  | 0      | 5% | 1/10W |

- \* A-6782-832-A RP-198 BOARD, COMPLETE (L5MX/PA)
  - \* A-6782-791-A RP-198 BOARD, COMPLETE (760, 761, L7HFMX/HFPA)
  - \* A-6782-796-A RP-203 BOARD, COMPLETE (760HFPX, L7HFCS)
  - \* A-6782-821-A RP-203 BOARD, COMPLETE (L5CS)
- \*\*\*\*\*  
(Ref. No. 2, 000 Series)

< CAPACITOR >

|      |              |              |         |       |     |
|------|--------------|--------------|---------|-------|-----|
| C501 | 1-163-229-11 | CERAMIC CHIP | 12PF    | 5%    | 50V |
| C502 | 1-163-229-11 | CERAMIC CHIP | 12PF    | 5%    | 50V |
| C503 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C504 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C505 | 1-163-031-11 | CERAMIC CHIP | 0.01uF  |       | 50V |
| C506 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C507 | 1-163-241-11 | CERAMIC CHIP | 39PF    | 5%    | 50V |
| C508 | 1-163-241-11 | CERAMIC CHIP | 39PF    | 5%    | 50V |
| C509 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C510 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C511 | 1-163-227-11 | CERAMIC CHIP | 10PF    | 0.5PF | 50V |
| C512 | 1-163-227-11 | CERAMIC CHIP | 10PF    | 0.5PF | 50V |
| C513 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C514 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C515 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C516 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C517 | 1-163-033-91 | CERAMIC CHIP | 0.022uF |       | 50V |
| C518 | 1-124-584-00 | ELECT        | 100uF   | 20%   | 10V |
| C519 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C521 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C522 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C523 | 1-163-059-00 | CERAMIC CHIP | 0.01uF  | 10%   | 50V |
| C524 | 1-163-239-11 | CERAMIC CHIP | 33PF    | 5%    | 50V |
| C525 | 1-163-239-11 | CERAMIC CHIP | 33PF    | 5%    | 50V |
| C526 | 1-124-584-00 | ELECT        | 100uF   | 20%   | 10V |
| C527 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C528 | 1-163-127-00 | CERAMIC CHIP | 270PF   | 5%    | 50V |
| C529 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C531 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C532 | 1-163-038-91 | CERAMIC CHIP | 0.1uF   |       | 25V |
| C760 | 1-163-031-11 | CERAMIC CHIP | 0.01uF  |       | 50V |

| Ref. No. | Part No.     | Description  | Remark |     |                       |
|----------|--------------|--------------|--------|-----|-----------------------|
| C761     | 1-124-584-00 | ELECT        | 100uF  | 20% | 10V<br>(760, 761, L7) |
| C762     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V<br>(760, 761, L7) |
| C763     | 1-163-038-91 | CERAMIC CHIP | 0.1uF  |     | 25V<br>(760, 761, L7) |
| C764     | 1-124-257-00 | ELECT        | 2.2uF  | 20% | 50V<br>(760, 761, L7) |
| C765     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V<br>(760, 761, L7) |
| C767     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V<br>(760, 761, L7) |
| C768     | 1-163-135-00 | CERAMIC CHIP | 560PF  | 5%  | 50V<br>(760, 761, L7) |
| C769     | 1-163-135-00 | CERAMIC CHIP | 560PF  | 5%  | 50V<br>(760, 761, L7) |
| C770     | 1-163-038-91 | CERAMIC CHIP | 0.1uF  |     | 25V<br>(760, 761, L7) |
| C773     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V<br>(760, 761, L7) |
| C774     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V<br>(760, 761, L7) |
| C775     | 1-126-160-11 | ELECT        | 1uF    | 20% | 50V<br>(760, 761, L7) |
| C776     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V<br>(760, 761, L7) |
| C901     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V                   |
| C902     | 1-163-224-11 | CERAMIC CHIP | 7PF    |     | 0.25PF 50V            |
| C903     | 1-163-243-11 | CERAMIC CHIP | 47PF   | 5%  | 50V                   |
| C904     | 1-163-249-11 | CERAMIC CHIP | 82PF   | 5%  | 50V                   |
| C906     | 1-163-038-91 | CERAMIC CHIP | 0.1uF  |     | 25V                   |
| C907     | 1-126-967-11 | ELECT        | 47uF   | 20% | 16V                   |
| C909     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V                   |
| C912     | 1-163-241-11 | CERAMIC CHIP | 39PF   | 5%  | 50V                   |
| R519     | 1-163-031-11 | CERAMIC CHIP | 0.01uF |     | 50V                   |

< CONNECTOR >

|         |              |                               |  |  |                |
|---------|--------------|-------------------------------|--|--|----------------|
| CN501   | 1-563-585-11 | CONNECTOR, FLEXIBLE 8P        |  |  | (L5)           |
| CN501   | 1-766-986-11 | CONNECTOR, FFC/FPC 13P        |  |  | (760, 761, L7) |
| * CN502 | 1-564-029-00 | PIN, CONNECTOR 4P             |  |  |                |
| CN503   | 1-766-720-11 | CONNECTOR, BOARD TO BOARD 17P |  |  |                |
| CN701   | 1-766-724-11 | CONNECTOR, BOARD TO BOAR 7P   |  |  |                |

< IC >

|       |              |    |            |  |                |
|-------|--------------|----|------------|--|----------------|
| IC501 | 8-759-352-17 | IC | HA118195NT |  |                |
| IC760 | 8-759-055-49 | IC | AN3327K    |  | (760, 761, L7) |

| Ref. No.            | Part No.     | Description         | Remark         |
|---------------------|--------------|---------------------|----------------|
| < JUMPER RESISTOR > |              |                     |                |
| JR502               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR503               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR504               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR505               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR506               | 1-216-296-00 | METAL CHIP 0 5%     | 1/8W           |
| JR507               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR508               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR509               | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| JR901               | 1-216-296-00 | METAL CHIP 0 5%     | 1/8W           |
| < COIL >            |              |                     |                |
| L501                | 1-414-189-31 | INDUCTOR 100uH      |                |
| L502                | 1-414-189-31 | INDUCTOR 100uH      |                |
| L503                | 1-410-525-11 | INDUCTOR 220uH      |                |
| L760                | 1-414-189-31 | INDUCTOR 100uH      | (760, 761, L7) |
| L901                | 1-414-189-31 | INDUCTOR 100uH      |                |
| L903                | 1-410-516-11 | INDUCTOR 39uH       |                |
| L904                | 1-410-512-11 | INDUCTOR 18uH       |                |
| L906                | 1-410-518-41 | INDUCTOR 56uH       |                |
| < TRANSISTOR >      |              |                     |                |
| Q501                | 8-729-271-21 | TRANSISTOR 2SC2712Y |                |
| Q502                | 8-729-216-21 | TRANSISTOR 2SA1162Y |                |
| Q901                | 8-729-271-21 | TRANSISTOR 2SC2712Y |                |
| Q904                | 8-729-216-21 | TRANSISTOR 2SA1162Y |                |
| Q905                | 8-729-271-21 | TRANSISTOR 2SC2712Y |                |
| < RESISTOR >        |              |                     |                |
| C520                | 1-216-057-00 | METAL CHIP 2.2K 5%  | 1/10W          |
| C911                | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| R501                | 1-216-044-00 | METAL CHIP 620 5%   | 1/10W          |
| R502                | 1-216-044-00 | METAL CHIP 620 5%   | 1/10W          |
| R503                | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| R504                | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| R505                | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| R506                | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W          |
| R507                | 1-216-053-00 | METAL CHIP 1.5K 5%  | 1/10W          |
| R508                | 1-216-073-00 | METAL CHIP 10K 5%   | 1/10W          |
| R509                | 1-216-075-00 | METAL CHIP 12K 5%   | 1/10W          |
| R510                | 1-216-081-00 | METAL CHIP 22K 5%   | 1/10W          |
| R511                | 1-216-081-00 | METAL CHIP 22K 5%   | 1/10W          |
| R512                | 1-216-224-91 | METAL GLAZE 12K 5%  | 1/8W           |
| R513                | 1-216-081-00 | METAL CHIP 22K 5%   | 1/10W          |
| R514                | 1-216-059-00 | METAL CHIP 2.7K 5%  | 1/10W          |
| R515                | 1-216-081-00 | METAL CHIP 22K 5%   | 1/10W          |
| R516                | 1-216-057-00 | METAL CHIP 2.2K 5%  | 1/10W          |
| R517                | 1-216-049-91 | METAL GLAZE 1K 5%   | 1/10W          |
| R518                | 1-216-049-91 | METAL GLAZE 1K 5%   | 1/10W          |

| Ref. No. | Part No.     | Description         | Remark                   |
|----------|--------------|---------------------|--------------------------|
| R520     | 1-216-061-00 | METAL CHIP 3.3K 5%  | 1/10W                    |
| R762     | 1-216-035-00 | METAL CHIP 270 5%   | 1/10W<br>(760, 761, L7)  |
| R763     | 1-216-067-00 | METAL CHIP 5.6K 5%  | 1/10W<br>(760, 761, L7)  |
| R765     | 1-216-033-00 | METAL CHIP 220 5%   | 1/10W<br>(760, 761, L7)  |
| R766     | 1-249-418-11 | CARBON 1.2K 5%      | 1/4W F<br>(760, 761, L7) |
| R767     | 1-216-035-00 | METAL CHIP 270 5%   | 1/10W<br>(760, 761, L7)  |
| R768     | 1-216-097-91 | METAL GLAZE 100K 5% | 1/10W<br>(760, 761, L7)  |
| R771     | 1-216-079-00 | METAL CHIP 18K 5%   | 1/10W<br>(760, 761, L7)  |
| R776     | 1-216-073-00 | METAL CHIP 10K 5%   | 1/10W<br>(760, 761, L7)  |
| R901     | 1-216-053-00 | METAL CHIP 1.5K 5%  | 1/10W                    |
| R902     | 1-216-077-00 | METAL CHIP 15K 5%   | 1/10W                    |
| R903     | 1-216-075-00 | METAL CHIP 12K 5%   | 1/10W                    |
| R904     | 1-216-037-00 | METAL CHIP 330 5%   | 1/10W                    |
| R905     | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W                    |
| R906     | 1-216-043-91 | METAL GLAZE 560 5%  | 1/10W                    |
| R908     | 1-216-039-00 | METAL CHIP 390 5%   | 1/10W                    |
| R912     | 1-216-075-00 | METAL CHIP 12K 5%   | 1/10W                    |
| R913     | 1-216-077-00 | METAL CHIP 15K 5%   | 1/10W                    |
| R914     | 1-216-037-00 | METAL CHIP 330 5%   | 1/10W                    |
| R916     | 1-216-037-00 | METAL CHIP 330 5%   | 1/10W                    |
| R917     | 1-216-047-91 | METAL GLAZE 820 5%  | 1/10W                    |
| R918     | 1-216-049-91 | METAL GLAZE 1K 5%   | 1/10W                    |
| R919     | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W                    |
| R920     | 1-216-075-00 | METAL CHIP 12K 5%   | 1/10W                    |
| R921     | 1-216-077-00 | METAL CHIP 15K 5%   | 1/10W                    |
| R931     | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W                    |
| R932     | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W                    |
| R933     | 1-216-295-00 | METAL CHIP 0 5%     | 1/10W                    |

MISCELLANEOUS

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|     |              |                                    |
|-----|--------------|------------------------------------|
| 13  | 1-776-226-11 | CABLE, FLAT (FMH-1) 9P             |
| 55  | 1-473-518-11 | SWITCH BLOCK, CONTROL (790)        |
| 55  | 1-473-518-21 | SWITCH BLOCK, CONTROL (960)        |
| 72  | 1-776-227-11 | CABLE, FLAT (FMH-13) 7P            |
| 103 | 1-776-228-11 | CABLE, FLAT (FDL-1) 10P (790, 960) |
| 107 | 1-776-225-11 | CABLE, FLAT (FMH-9) 15P            |
| 152 | 1-500-144-11 | HEAD, FE                           |
| 162 | A-6739-103-A | ACE BLOCK ASSY                     |

| Ref. No. | Part No.     | Description                        | Remark              |
|----------|--------------|------------------------------------|---------------------|
| 164      | 1-506-485-11 | PIN, CONNECTOR 6P                  |                     |
| 220      | 8-848-576-02 | DRUM ASSY, ROTARY UPPER (DZR-45-R) | (760, 761, 790, L7) |
| 220      | 8-848-594-02 | DRUM ASSY, ROTARY UPPER (DZR-51-R) | (960)               |
| 221      | 8-848-658-11 | DRUM ASSY, LOWER (DZL-45B/J-RP)    | (760, 761, 790, L7) |
| 221      | 8-848-666-11 | DRUM ASSY, LOWER (DZL-51B/J-RP)    | (960)               |
| 223      | 8-848-681-11 | DRUM ASSY, (DZH-73B/Q-RP)          | (L5)                |
| M902     | 1-698-409-11 | MOTOR, DC SCV-0801A/Z-NP (CAPSTAN) |                     |
| M903     | X-3943-883-1 | MOTOR ASSY, CAM                    |                     |
| S410     | 1-572-662-11 | SWITCH, ROTARY (DUAL MODE SHUTTLE) |                     |

ACCESSORIES & PACKING MATERIALS

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|   |              |  |  |
|---|--------------|--|--|
|   | 1-473-483-11 | REMOTE COMMANDER (RMT-V158C)                       | (960)  |
|   | 1-473-483-21 | REMOTE COMMANDER (RMT-V161A)                       | (790)  |
|   | 1-473-487-11 | REMOTE COMMANDER (RMT-V186)                        | (L7)   |
|   | 1-473-487-21 | REMOTE COMMANDER (RMT-V186A)                       | (L5)   |
|   | 1-473-515-11 | REMOTE COMMANDER (RMT-V184A)                       | (760, 761)                                   |
| △ | 1-569-008-11 | ADAPTER, CONVERSION 2P                             | (760HFPX, 960HFCS/HFPX, L5CS, L7HFCS)        |
| △ | 1-575-131-11 | CORD, POWER SUPPLY                                 | (760HFPX, 960HFCS/HFPX, L5CS, L7HFCS)        |
|   | 1-575-334-11 | CORD, CONNECTION                                   | (AUDIO, VIDEO) (760, 761, L7)                |
|   | 1-696-592-11 | CORD, CONNECTION (NTSC) (ANT)                      |  |
| △ | 1-751-676-11 | CORD, POWER  | (EXCEPT 760HFPX, 960HFCS/HFPX, L5CS, L7HFCS) |
|   | 1-769-181-21 | MOUSE, INTERIJENT CABLE                            | (790, 960)                                   |
|   | 1-776-258-11 | CORD, AVC CONNECTION                               | (790, 960)                                   |
|   | 3-708-817-01 | COVER, BATTERY (V-158C, V161A, V184A, V186, V186A) |  |
|   | 3-800-533-11 | MANUAL, INSTRUCTION (ENGLISH)                      | (960HFPX)                                    |
|   | 3-800-552-11 | MANUAL, INSTRUCTION (ENGLISH)                      | (760HF/HFPX, 761)                            |
|   | 3-800-552-21 | MANUAL, INSTRUCTION (FRENCH)                       | (760HF)                                      |
|   | 3-800-553-11 | MANUAL, INSTRUCTION (ENGLISH)                      | (960HF)                                      |
|   | 3-800-553-21 | MANUAL, INSTRUCTION (FRENCH)                       | (960HF)                                      |
|   | 3-800-553-31 | MANUAL, INSTRUCTION (SPANISH)                      | (960HFCS/HFMX)                               |
|   | 3-810-205-11 | MANUAL, INSTRUCTION (SPANISH)                      | (L7)   |
|   | 3-810-206-11 | MANUAL, INSTRUCTION (SPANISH)                      | (L5)   |
|   | 3-810-321-11 | MANUAL, INSTRUCTION (ENGLISH)                      | (790)  |
|   | 3-810-321-21 | MANUAL, INSTRUCTION (FRENCH)                       | (790)  |
|   | 3-957-513-11 | RING, SHUTTLE                                      | (V-158C, V161A, V184A, V186, V186A)          |
| * | 3-966-238-01 | INDIVIDUAL CARTON                                  | (760)  |

| Ref. No. | Part No.     | Description   | Remark         |
|----------|--------------|---|----------------|
| *        | 3-966-238-21 | INDIVIDUAL CARTON                                   | (761)          |
| *        | 3-966-258-01 | INDIVIDUAL CARTON                                   | (790)          |
| *        | 3-966-258-11 | INDIVIDUAL CARTON                                   | (960HF/HFPX)   |
| *        | 3-967-323-01 | CUSHION   | (790, 960)     |
| *        | 3-967-324-01 | CUSHION (EXCEPT 790, 960)                           |                |
| *        | 3-967-421-01 | INDIVIDUAL CARTON                                   | (960HFCS/HFMX) |
| *        | 3-967-422-01 | INDIVIDUAL CARTON                                   | (L7)           |
| *        | 3-967-422-11 | INDIVIDUAL CARTON                                   | (L5)           |
|          | X-3944-446-2 | BUTTON ASSY (C) (V-158C, V161A, V184A, V186, V186A) |                |

\*\*\*\*\*  
HARDWARE LIST  
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|    |              |                             |
|----|--------------|-----------------------------|
| #1 | 7-685-648-79 | SCREW +BVTP 3X12 TYPE2 IT-3 |
| #2 | 7-685-646-79 | SCREW (3X6)                 |
| #3 | 7-682-547-04 | SCREW +P 3X6                |
| #4 | 7-624-190-61 | STOP RING 2.4, TYPE-CS      |
| #5 | 7-624-106-04 | STOP RING 3.0, TYPE-E       |
| #6 | 7-682-645-01 | SCREW +PS 3X4               |
| #7 | 7-621-772-08 | SCREW +B 2X3                |
| #8 | 7-628-254-10 | SCREW +PS 2.6X6             |

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 6-12. SYSTEM CONTROL - SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-252 BOARD IC201)

| Signal      | Pin No.          | I/O | I/O level   |
|-------------|------------------|-----|---|
| ASURA RESET | MA-252<br>IC201⑥ | I   | Normally "H", "L" when service interruption is detected or restored.      |
| ASURA CS    | MA-252<br>IC201⑦ | I   | Chip select signal from timer microprocessor. V period "L" pulse.         |
| S IN 0      | MA-252<br>IC201⑧ | I   | Serial communication data from timer microprocessor. V period "L" pulse.  |
| S OUT 0     | MA-252<br>IC201⑨ | O   | Serial communication data to timer microprocessor. V period "L" pulse.    |
| S CLK       | MA-252<br>IC201⑩ | I   | Serial communication clock with timer microprocessor. V period "L" pulse. |

### 6-13. SYSTEM CONTROL - HI-FI AUDIO BLOCK INTERFACE (MA-252 BOARD IC201)

| Signal   | Pin No.          | I/O        | STOP/<br>FF/<br>REW | TAPE<br>LOADING | TAPE<br>UNLOADING | PB | PB *<br>PAUSE | SLOW | x 2 | CUE | REVIEW | REC | REC *<br>PAUSE |
|----------|------------------|------------|---------------------|-----------------|-------------------|----|---------------|------|-----|-----|--------|-----|----------------|
| AF ENV   | MA-252<br>IC201⑪ | I          |                     |                 |                   |    |               |      |     |     |        |     |                |
| A MUTE   | MA-252<br>IC201⑫ | O<br>(O.D) | L                   | L               | L                 | *1 | H             | H    | H   | H   | H      | L   | L              |
| NA REC P | MA-252<br>IC201⑬ | O          | L                   | L               | L                 | L  | L             | L    | L   | L   | L      | H   | L              |
| AF REC P | MA-252<br>IC201⑭ | O          | L                   | L               | L                 | L  | L             | L    | L   | L   | L      | H   | L              |
| AF SWP   | MA-252<br>IC201⑮ | O          | *1                  | L               | L                 | *1 | *1            | *1   | *1  | *1  | *1     | *1  | *1             |
| FULL ERS | MA-252<br>IC201⑯ | O<br>(O.D) | H                   | H               | H                 | H  | H             | H    | H   | H   | H      | L   | H              |

\*1. 30 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.

### 6-14. SYSTEM CONTROL - NORMAL AUDIO BLOCK INTERFACE (MA-252 BOARD IC201)

| Signal               | Pin No.         | I/O      | STOP/<br>FF/<br>REW | TAPE<br>LOADING | TAPE<br>UNLOADING | PB | PB •<br>PAUSE | SLOW | × 2 | CUE | REVIEW | REC | REC •<br>PAUSE |
|----------------------|-----------------|----------|---------------------|-----------------|-------------------|----|---------------|------|-----|-----|--------|-----|----------------|
| AF ENV               | MA-252<br>IC201 | I        |                     |                 |                   |    |               |      |     |     |        |     |                |
| NA PB                | MA-252<br>IC201 | O        | L                   | L               | L                 | H  | H             | H    | H   | H   | H      | L   | L              |
| A MUTE               | MA-252<br>IC201 | O (O.D.) | L                   | L               | L                 | *1 | H             | H    | H   | H   | H      | L   | L              |
| NA SP<br>POWER CONT2 | MA-252<br>IC201 | O        | *2                  | *2              | *2                | *3 | *3            | *3   | *3  | *3  | *2     | *2  | *2             |
| NA REC P             | MA-252<br>IC201 | O        | L                   | L               | L                 | L  | L             | L    | L   | L   | L      | H   | L              |
| AF REC P             | MA-252<br>IC201 | O        | L                   | L               | L                 | L  | L             | L    | L   | L   | L      | H   | L              |
| AF SWP               | MA-252<br>IC201 | O        | *1                  | *1              | *1                | *1 | *1            | *1   | *1  | *1  | *1     | *1  | *1             |
| FULL ERS             | MA-252<br>IC201 | O (O.D.) | H                   | H               | H                 | H  | H             | H    | H   | H   | H      | L   | H              |

AF RF envelope signal input terminal for automatic tracking.

\*1. 30 Hz 50% duty pulse approx. 5 msec delayed from RF SW P.

\*2. Selected by REC mode selector. SP mode: "L".

\*3. Selected by tape recording mode. SP mode: "L".

### 6-15. SYSTEM CONTROL AND RF MODULATOR - INPUT SELECTION BLOCK INTERFACE

| Signal | Pin No.         | I/O | I/O level                        |
|--------|-----------------|-----|----------------------------------|
| LINE 1 | MA-252<br>IC201 | O   | *1. Input select control signal. |
| LINE 2 | MA-252<br>IC201 | O   |                                  |

\*1.

| Input<br>Signal | Tuner | LINE 1 | LINE 2 |
|-----------------|-------|--------|--------|
| LINE 1          | L     | H      | L      |
| LINE 2          | L     | L      | H      |



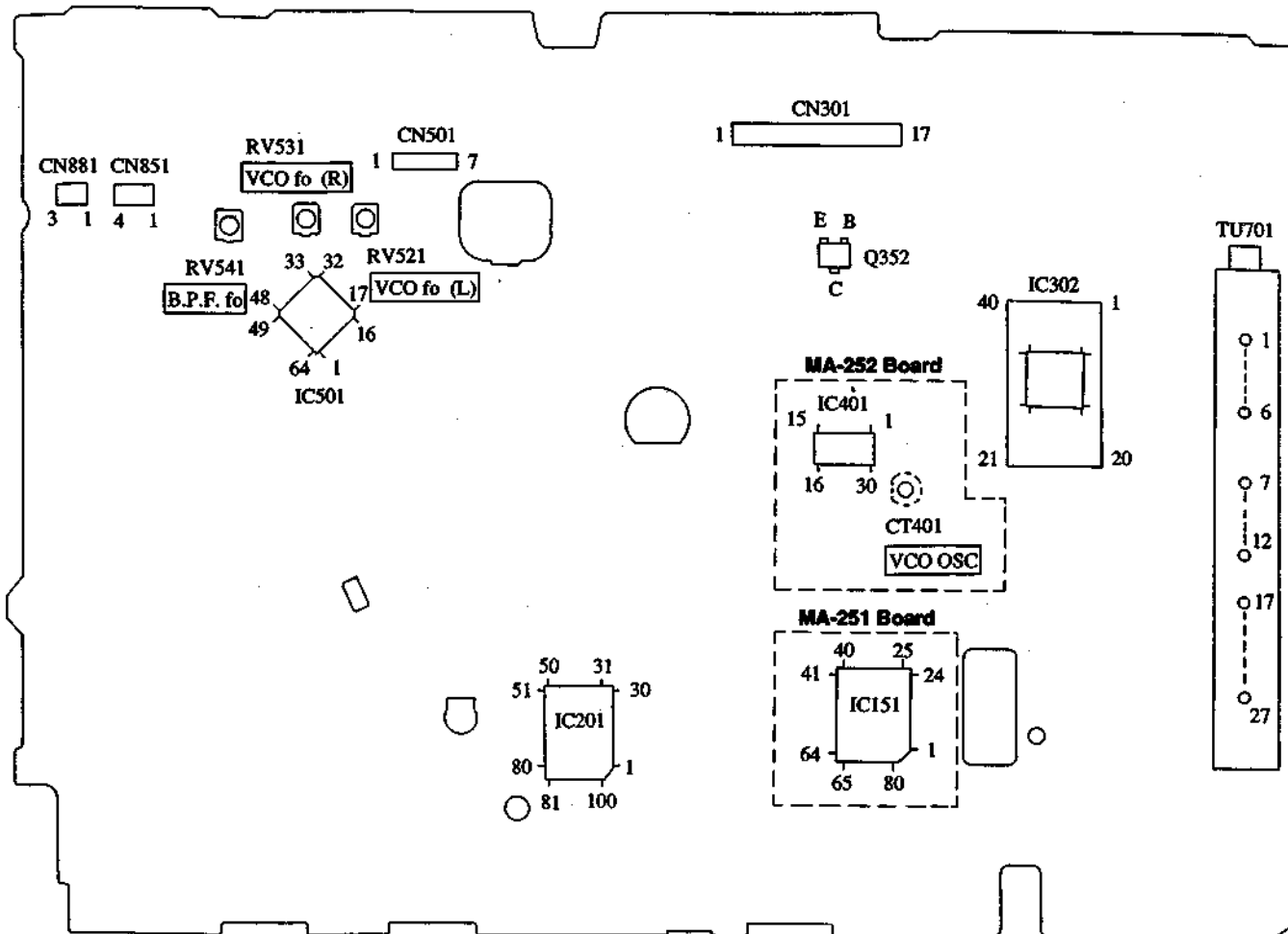
**6-16. SERVO/SYSTEM CONTROL MICROPROCESSOR PIN FUNCTION  
(MA-252 BOARD IC201 CXP87360-040Q: SLV-L5, L7/CXP87360-039Q: SLV-760,761)**

| Pin No. | Pin name       | IO | Function  |
|---------|----------------|----|---|
| 1       | RF SWP         | 0  | RF switching pulse output   |
| 2       | QVD            | 0  | Quasi V0 pulse output   |
| 3       | QHD ENABLE     | 0  | Quasi HD voltage level control  |
| 4       | AF REC P       | 0  | "H" output when hi-fi audio REC input selection control signal                    |
| 5       | LINE 1         | 0  | MAINSAP logic signal output   |
| 6       | MAINSAP        | 0  | REC CTL signal output   |
| 7       | REC CTL        | 0  | Captain current control   |
| 8       | CAP TRC2       | 0  | APC control input terminal 2  |
| 9       | APC2           | 0  | APC control input terminal 1  |
| 10      | APC1           | 1  | APC control input terminal 1  |
| 11      | NR REC P       | 0  | Normal audio recording mode H, recording mode L, when SP mode "H" when EP/LP mode |
| 12      | SP/EP/LP       | 0  | Leading motor rotating direction control  |
| 13      | CAM LOAD       | 1  | Leading motor rotating direction control  |
| 14      | CAM UNLOAD     | 1  | Leading motor rotating direction control  |
| 15      | C IN (REC PRF) | 1  | Erasing protection (be), cassette IN detection input                              |
| 16      | RENTAL         | 0  | YNR control   |
| 17      | A MUTE         | 0  | "H" when audio mute   |
| 18      | NC             | -  | Not used  |
| 19      | STEREO         | 1  | Tuner audio mode input (stereo)   |
| 20      | F MAND         | 0  | Tuner audio select signal   |
| 21      | TVTR           | 0  | "H" when TV mode "L" when VTR mode  |
| 22      | SYS CHECK      | 0  | System check control signal   |
| 23      | EP/CS          | 0  | EP/CS chip select signal  |
| 24      | TU CLOCK       | 0  | Tuner PLL clock   |
| 25      | TU DATA        | 0  | Tuner PLL data  |
| 26      | TU ENABLE      | 0  | Tuner chip select   |
| 27      | MODE 4         | 1  | Mechanism section CAM encoder input   |
| 28      | MODE 3         | 1  | Mechanism section CAM encoder input   |
| 29      | MODE 2         | 1  | Mechanism section CAM encoder input   |
| 30      | MODE 1         | 1  | Mechanism section CAM encoder input   |
| 31      | CAM 1PV        | 0  | CAM motor reference voltage   |
| 32      | TVE LED        | 0  | TVE LED output  |
| 33      | CAP TRC2       | 0  | Captain current control signal 2 L: FEEDW to STOP                                 |
| 34      | CAP TRC1       | 0  | Captain current control signal 1 L: SLOW speed down                               |
| 35      | CAP STOP       | 0  | Captain STOP signal output  |
| 36      | FULL ER5       | 0  | Full erase control  |
| 37      | EEP RESET      | 0  | EEP ROM reset output  |
| 38      | MP             | 0  | EEP ROM select  |
| 39      | ASURR RESET    | 1  | System reset input  |
| 40      | VSS            | -  | GND   |
| 41      | XTAL           | -  | System clock 16 MHz   |
| 42      | EXTAL          | -  | System clock 16 MHz   |
| 43      | ASURR CS       | 1  | S/S microcomputer chip select signal  |
| 44      | S IN 0         | 1  | Serial communication signal   |
| 45      | S IN 1         | 1  | Serial communication signal   |
| 46      | S OUT 0        | 0  | Serial communication signal   |
| 47      | S OUT 1        | 0  | Serial communication signal   |
| 48      | OSD CS         | 0  | OSD chip select signal  |
| 49      | SYS RESET      | 0  | System reset output   |
| 50      | FLD CS         | 0  | FLD chip select signal  |

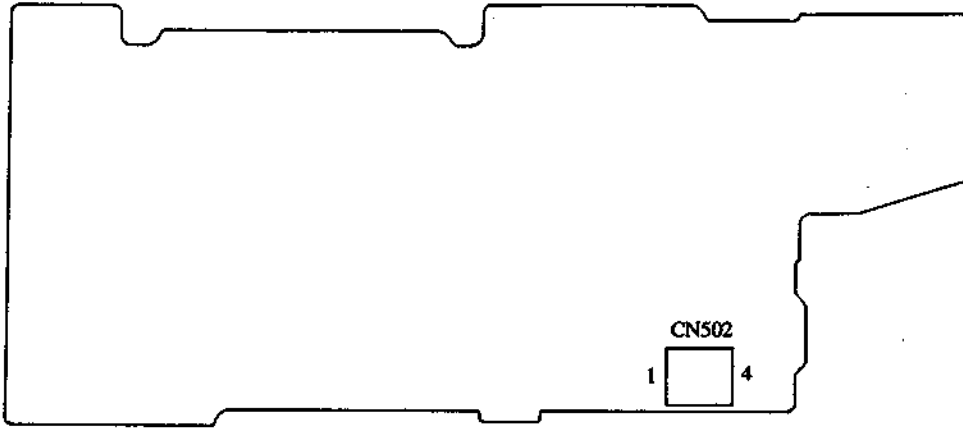
| Pin No. | Pin name     | IO | Function   |
|---------|--------------|----|--|
| 51      | POWER CONT1  | 0  | Power control signal 1                                   |
| 52      | AVSW         | -  | UNSW GND   |
| 53      | AVREF        | -  | AD port reference input UNSW SV                          |
| 54      | AVDD         | -  | UNSW SV  |
| 55      | APC ERROR    | 1  | APC error input  |
| 56      | DEST2 DEW    | 1  | DEW sensor input (Not used)                              |
| 57      | VAUX1        | 1  | ADU mode DC SWP Adj 2.5V; Hi-Fi Adj                      |
| 58      | RF ENV       | 1  | Hi-Fi audio playback signal envelope                     |
| 59      | T SENS       | 1  | Video playback signal envelope                           |
| 60      | S REEL FG    | 1  | Take up and sensor input                                 |
| 61      | T REEL FG    | 1  | Supply and sensor input                                  |
| 62      | H DET        | 1  | S side reel FG input                                     |
| 63      | V SYNC       | 1  | H side reel FG input                                     |
| 64      | FB CTL       | 1  | H sync separation input                                  |
| 65      | DIRM FG      | 1  | Composite sync input                                     |
| 66      | DIRM FG      | 1  | Feedback CTL input                                       |
| 67      | CAP FG       | 1  | Drum FG input  |
| 68      | CAP FG       | 1  | Capstan FG input   |
| 69      | AUTOPHRESET  | 0  | Capstan FG input   |
| 70      | CAP RVS      | 0  | Autopreset on display                                    |
| 71      | CAP DA       | 0  | Capstan reverse control H when Reverse                   |
| 72      | DIRM DA      | 0  | Capstan error D/A output                                 |
| 73      | CTL STEP     | 0  | Drum FG input  |
| 74      | CTL REED     | 0  | "H" CTL wette  |
| 75      | EEP BUSHY    | 1  | CTL wdr. STEP operation control                          |
| 76      | EDS DAV      | 0  | EEP ROM busy signal input                                |
| 77      | CTL INDEX    | 0  | Not used   |
| 78      | SO1          | 0  | Signal for serial communication                          |
| 79      | SO2          | 0  | Signal for serial communication                          |
| 80      | POWER FAIL   | 1  | Power voltage drop detection terminal                    |
| 81      | LINE 2 CONT  | 0  | Input selection control signal                           |
| 82      | APC PWM      | 0  | PWM output for APC                                       |
| 83      | RMC          | 1  | Remote control signal input                              |
| 84      | TEX          | -  | Liquid crystal oscillation terminal (327kHz)             |
| 85      | TX           | -  | Liquid crystal oscillation terminal (327kHz)             |
| 86      | VSS          | -  | GND  |
| 87      | VDD          | -  | SV   |
| 88      | NC           | -  | Not used   |
| 89      | ORC SETTEI   | 0  | H when ORC measurement                                   |
| 90      | NC           | -  | Not used   |
| 91      | SIF          | 0  | Time speed select  |
| 92      | POWER CONT 2 | 0  | Power control signal 2                                   |
| 93      | MA PB        | 0  | Audio output control signal H when normal audio playback |
| 94      | AF REC       | 0  | "H" output when hi-fi audio REC                          |
| 95      | JOG          | 0  | "H" when track play mode                                 |
| 96      | V PB         | 0  | Video system playback mode "L" when playback             |
| 97      | STEP PLS     | 0  | Step pulse H when Capstan stop driving                   |
| 98      | AF SWP       | 0  | AF emitting pulse output                                 |

2-7. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS

MA-251/252 BOARD (CONDUCTOR SIDE)



**RP-197/198/202/203 BOARD (COMPONENT SIDE)**



**PS-355/356/367/368 BOARD (COMPONENT SIDE)**

