EV-C500E
RMT-V124C

SERVICE MANUAL

AEP Model
UK Model

Remote commander is available as a unit, See page 95 for repair parts.

video Hi8

U' MECHANISM

For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11).

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning FM system
Audio recording	Rotary head, AFM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassettes
Tape speed	SP: approx. 20.051mm/sec. LP: approx. 10.058mm/sec.
Maximum recording time	SP: 1 hour 30 minutes (with Sony E5/P5-90 cassette)
Fast-forward and rewind time	Approx. 4.5 minutes (with Sony E5/P5-90 cassette)

Inputs and outputs

Video input	LINE IN VIDEO (phono jack) (1) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Video output	LINE OUT1/2 VIDEO (phono jack) (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative EURO-AV (21-pin) (1) Output signal: pin 19 1 Vp-p, 75 ohms unbalanced, sync negative
S VIDEO input	LINE IN S VIDEO (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohm, unbalanced
S VIDEO output	LINE OUT1 S VIDEO (4-pin, mini-DIN) (1) Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced EURO-AV (S) 21-pin (pins 15 and 19)
Audio input	LINE IN AUDIO (phono jack) (2) Input level: –7.5 dBs Input impedance: more than 47 kilohms
Audio output	LINE OUT1 AUDIO (phono jack) (2) LINE OUT2 AUDIO (phono jack) (1) Standard impedance: –7.5 dBs at load impedance 47 kilohms Output impedance: less than 10 kilohms EURO-AV (21 pin) (1) Standard impedance: –6 dBs at load impedance 1 kilohm Output impedance: less than 10 kilohms
CONTROL S IN	Mini jack
CONTROL L	Stereo mini-mini jack

—continued on next page—

MICROFILM

Hi 8 VIDEO CASSETTE RECORDER

SONY

General

Power requirements
UK model: 240 V AC, 50Hz
Models for other countries:
220 – 240 V AC, 50 Hz
Power consumption
13 W (max.)
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. 225 x 75 x 252 mm (w/h/d)
Approx. 8 7/8 x 3 x 10 inch
Mass Approx. 2.1 Kg (4 lb 10 oz)

Remote Commander RMT-V124C

Remote control system
Infrared control
Power requirements
3V DC (2 IEC designation R6 batteries)

Supplied accessories, see page 5.

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

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. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

TABLE OF CONTENTS

SECTION 1
SERVICE NOTE

1-1. REMOVAL OF CASSETTE AT FAILURE WITH CASSETTE INSERTED

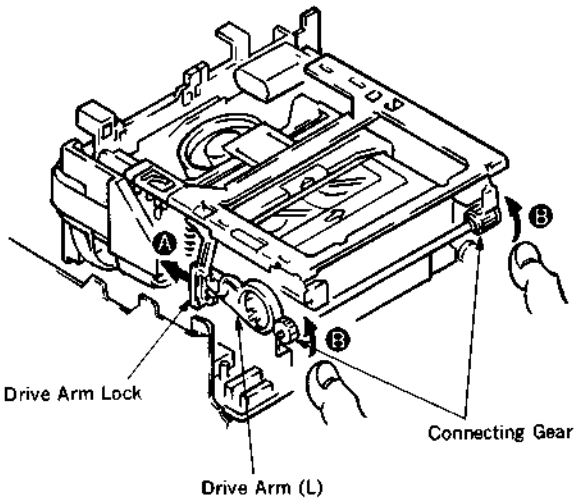
Ⓐ If tape is wounded on the drum and it cannot be removed: Rotate the capstan motor wheel in either direction and rotate the S or R reel to house the tape. Then, perform Procedure Ⓑ.

Ⓑ If tape is housed in the cassette half and cannot be removed:

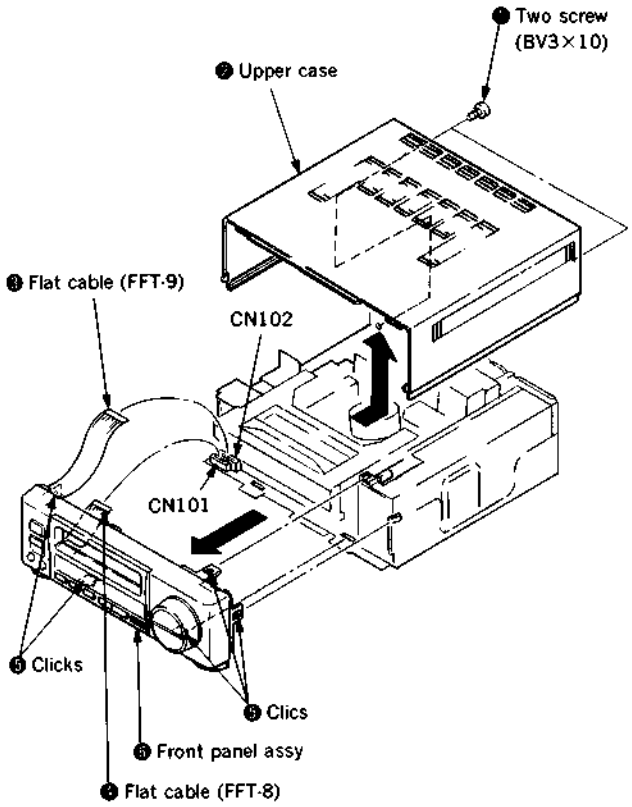
① Remove the MD block. (For removal, refer to Section 3-3.)

② Release the drive arm lock from the drive arm (L) located between the L frame and the left side of the cassette controller in the arrow direction Ⓐ.

③ Rotate the connecting gear in the arrow direction Ⓑ with both the thumbs.

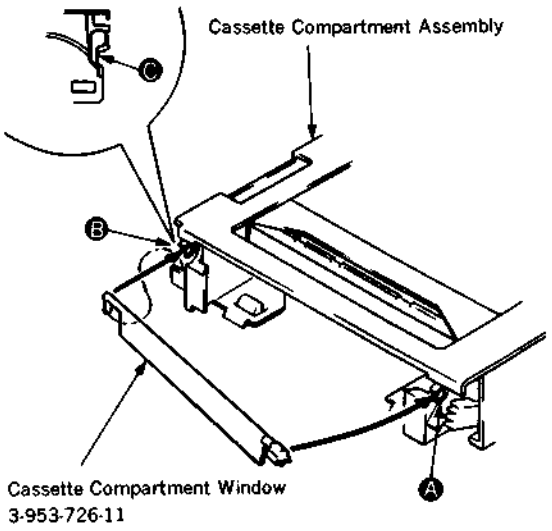


1-2. REPLACEMENT OF EXTERNAL PARTS



1-3. REPLACEMENT OF CASSETTE DOOR ASSEMBLY

1) Remove the front panel.
2) First undo Ⓐ portion toward you and then undo Ⓑ.



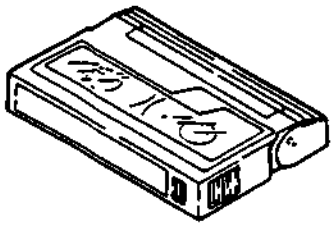
3) When installing, as shown above, first put in Ⓑ portion by setting the claw Ⓒ. Then, put in Ⓐ portion and install so that the door hangs almost vertically.

1-4. CLEANING OF VIDEO HEAD AND RUN SYSTEM

Method 1

(Cleaning Method with Cleaning Tape)

- A cleaning cassette should be used. (When using, the attached manual for the cleaning cassette should be thoroughly read.)



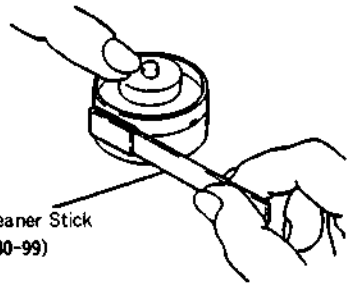
Method 2

(Cleaning Method with Cleaning Liquid)

①Remove the upper case of the video deck.

②Apply cleaning liquid to a head cleaner stick.

③As shown in the right figure, press the head cleaner stick lightly. Turn the rubber of the rotary upper drum gradually and clean the video deck.



(Cleaning Method for Run System)

①Apply cleaning liquid to a head cleaner stick.

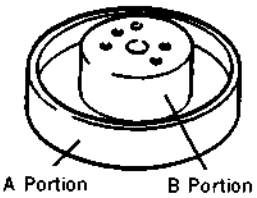
②Clean the guides which tape touches directly and the pinch roller with the head cleaner.

1-5. REPLACEMENT OF UPPER ROTARY DRUM

Method 3

Caution

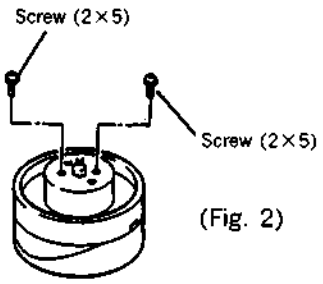
- Particular care must be taken when handling the video head and the terminals
- When handling the rotary upper drum, do not touch the side (A portion) and hold the top (B portion) (See Fig. 1)



(Fig. 1)

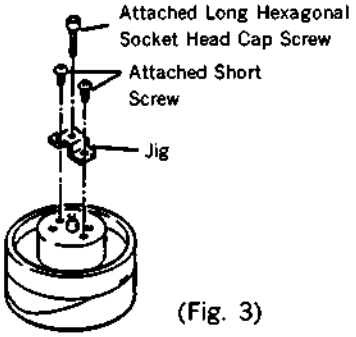
Removal of Rotary Upper Drum

①Remove two screws (2×5) (See Fig. 2).



(Fig. 2)

②Fix the jig (supplied with the spare rotary upper drum) with the two attached short screws. Then, put the attached long screw into the jig until the rotary upper drum may be removed (See Fig. 3).

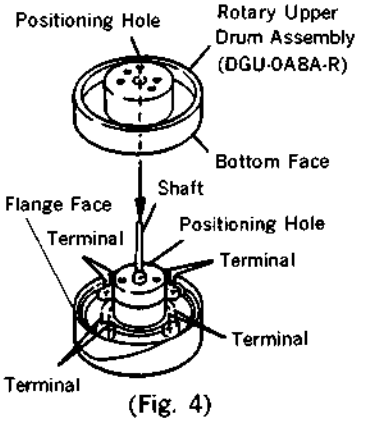


(Fig. 3)

Installation of New Rotary Upper drum

①Clean the flange face and the bottom face of the new rotary upper drum (See Fig. 4).

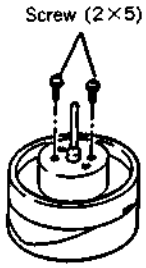
②Insert the shaft attached to the jig into the positioning hole in the lower drum. Then, put the shaft through the positioning hole in the new rotary upper drum and set the drum lightly.



(Fig. 4)

③With the shaft inserted into the positioning hole, push into the upper drum lightly with a hand. If the drum is not allowed to be bottomed, alternately tighten two screws (2×5) gradually and install the drum (See Fig. 5)

④Pull out the shaft inserted. If the shaft is not allowed to be withdrawn smoothly, go back to Step ② and redo the procedure.



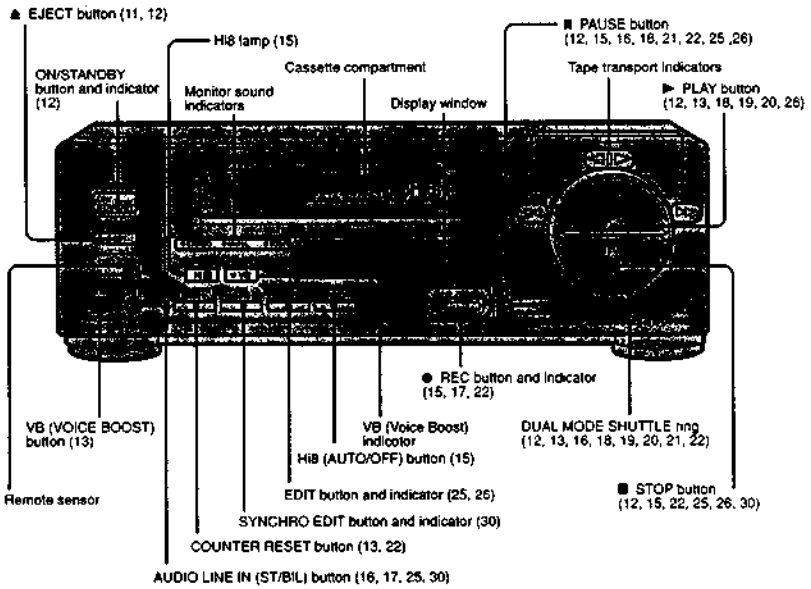
(Fig. 5)

⑤Once the drum has been replaced, clean the video head and the run system with a head cleaner stick (See "Cleaning Method 2 for Video Head and Run System).

Identifying the Parts and Controls

Front Panel

The function of each control is explained on the page indicated in parentheses ( ).

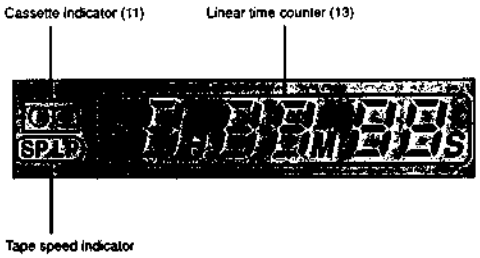


Tape transport indicators

No indicator lit	Recording	⏸	Recording pause
◄	Playback, double speed playback (reverse), Slow motion playback (reverse)	►	Playback, double speed playback (forward), Slow motion playback (forward)
◄ ⏸	Play pause (reverse)	⏸ ►	Play pause (forward)
◄◄	Rewind	►►	Fast forward
◄◄ ►	Picture search, locked picture search (reverse)	► ►►	Picture search, locked picture search (forward)
◄	Frame-by-frame picture (reverse)	►	Frame-by-frame picture (forward)
◄◄	Auto play		

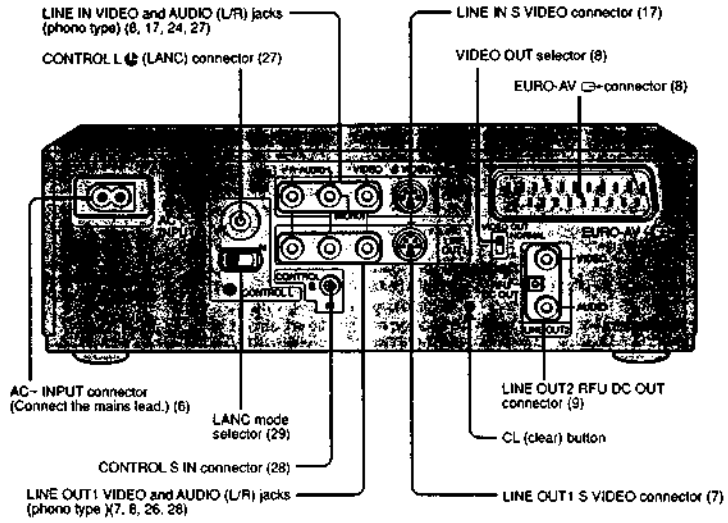
Display Window

Each indicator is explained on the page indicated in parentheses ( ).



Rear Panel

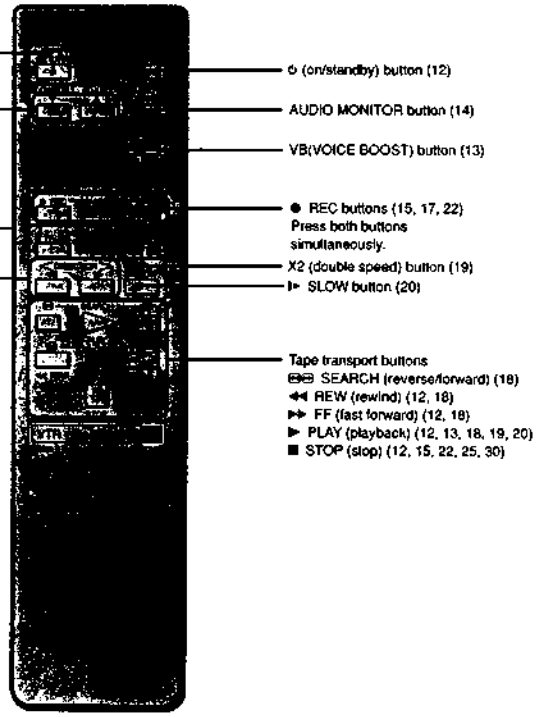
The function of each control is explained on the page indicated in parentheses ( ).



This section is extracted from instruction manual.

Remote Commander

The function of each control is explained on the page indicated in parentheses ( ).



Features

High quality picture and sound

- **Hi8 video system**
  The Hi8 video format features 400 lines of horizontal resolution, giving you a high video quality.
- **AFM Hi-Fi stereo system**
  You can record Hi-Fi sound with a live stereo sound atmosphere.

Editing

- **DUAL MODE SHUTTLE ring**
  Allows quick access to the desired scene and playback at various speeds in both forward and reverse directions.
- **CONTROL L ⏻ (LANC) connector**
  Allows easy connection to another piece of equipment such as a video camera recorder (camcorder). This lets you control tape transport of both devices from one set of controls. With this simultaneous control you can use bi-directional synchronized editing.
- **CONTROL S IN connector**
  Allows remote control of this VCR by other Sony video equipment with a CONTROL S OUT connector.
- **S VIDEO IN/OUT connector**
  Allows clear picture by separating colour signal from luminance signal.

Function

- **Voice boost function**
  When playing back a tape recorded with a video camera recorder (camcorder), voice boost enhances the voice portion of the sound and reduces "unwanted" background noise like wind so that it is easier to listen to conversation.

How to Use This Manual

This manual is divided into the following six chapters: **Chapter 1** Introduction, **Chapter 2** Preparation, **Chapter 3** Basic Operations, **Chapter 4** Advanced Operations, **Chapter 5** Editing and **Chapter 6** Additional Information.
If you are already familiar with the basic operations, skip **Chapter 3** Basic Operations and see **Chapter 4** Advanced Operations.
If you have any problems with installing or operating the EV-C500E, refer to the troubleshooting section first before calling your local Sony dealer.

When you are reading through the manual, remember:
- Buttons and switches on the VCR to be used in operating the VCR are called out and shown in uppercase letters in the illustrations.
- Buttons and switches on the Remote Commander to be used for operating the VCR are called out and enlarged in the illustrations.

Conventions

This indicates a function operated only with the buttons on the VCR itself, but not with those on the Remote Commander.

This indicates a function operated only with the buttons on the Remote Commander, but not with those on the VCR itself.

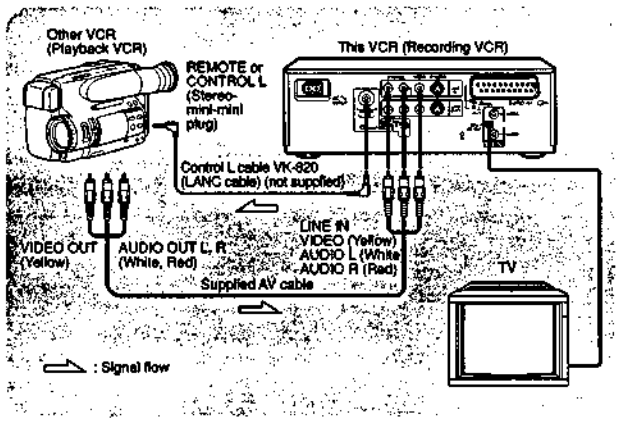
Unpacking

Unpack all the items and check to confirm that you have everything listed below.
- Remote Commander RMT-V124C (1)
- R6 (size AA) batteries (2)
- AV (audio/video) cable (3 phono to 3 phono) (1)
- Mains lead (1)

Synchronized Editing

If your other VCR has a control L ⇳ or control S connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when SYNCHRO EDIT is pressed. To use this function, you must connect a designated control cable (Control L or S cable) in addition to the connections of the audio and video cables.
There are two types of control cables: control L (REMOTE) cable and control S cable according to the type of connectors of the VCRs.
After you have made the connections on this and following pages, you must set the LANC mode. For details, see page 29.

Connecting Video Equipment with the LANC Connector

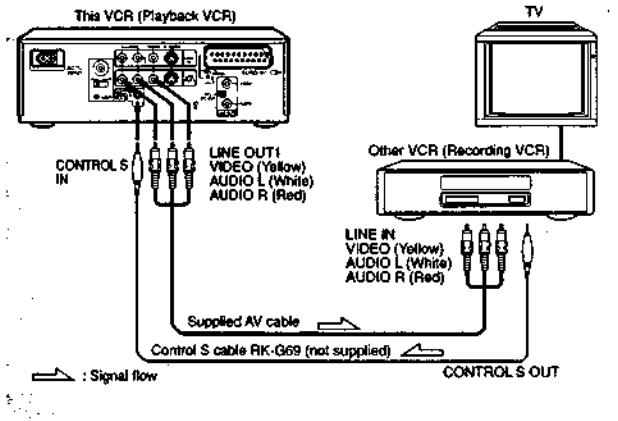


Notes

- When connecting two VCRs, do not connect them so that both VCRs are used as a recording VCR and a playback VCR simultaneously. Doing so may cause a humming noise.
- If your playback VCR is equipped with the S VIDEO output connector, you can use the S VIDEO cable (not supplied) to connect to the LINE IN S VIDEO connector on this VCR. This connection gives you a higher quality picture than using the video cable.
- When you use the LINE IN VIDEO jack and the LINE IN S VIDEO connector at the same time, the LINE IN S VIDEO connector has priority.
- If your playback VCR is a monaural unit, connect the white plug to LINE IN AUDIO L on this VCR and leave the red plug unplugged. This lets you record the sound of the playback VCR on both channels of this VCR. Do not connect the white plug to LINE IN AUDIO R.
- If your playback VCR is a EURO 21-pin type, use the VMC-216 cable (not supplied).
- If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.

About the ⇳ (LANC)
LANC stands for Local Application Control System.
The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it. This connector *has the same function as the* connectors indicated as CONTROL L or REMOTE.

Connecting Video Equipment with the CONTROL S Connector

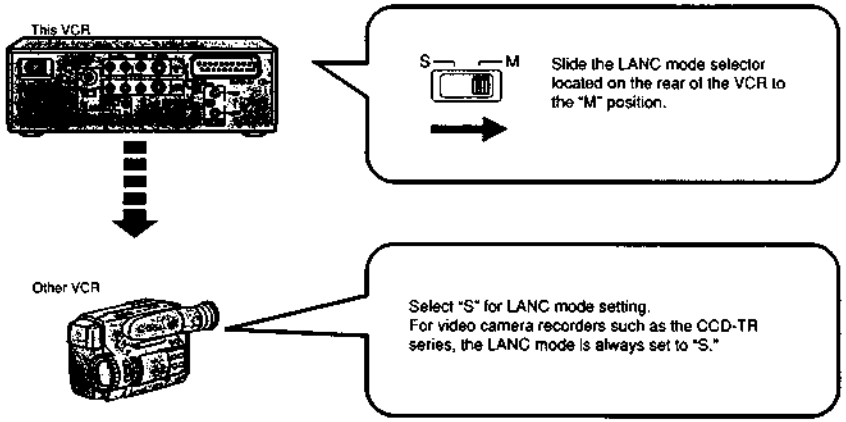


When using the Control S cable
The synchronized editing using the CONTROL S connector is the same as the synchronized editing using the LANC connector. This enables you to pause both VCRs and release pause mode of both VCRs.
You can only perform synchronized editing using the CONTROL S IN connector when the other VCR has the CONTROL S OUT connector.
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on the other equipment.
Set the command mode of this VCR and the other video equipment to the same position.

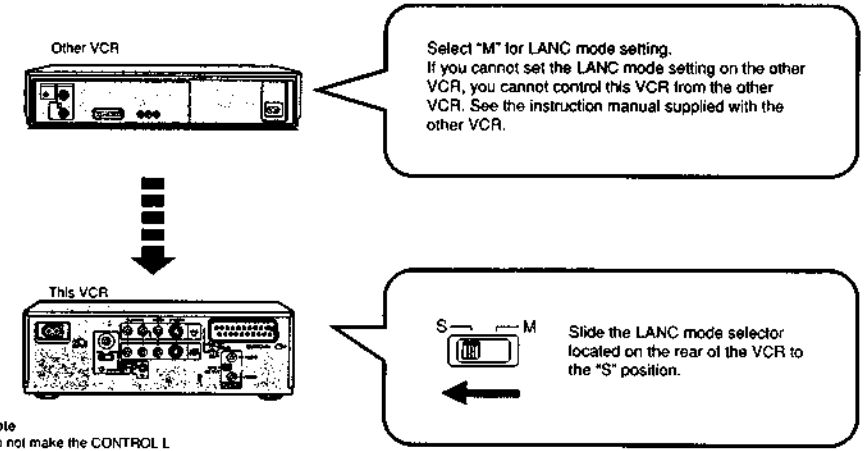
LANC Mode Setting

When you perform synchronized editing, remember to set the LANC mode as described bellow:

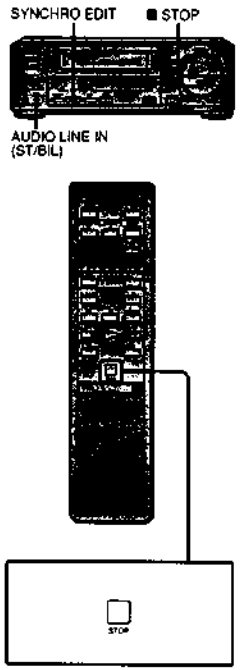
When you want to control the other VCR from this VCR



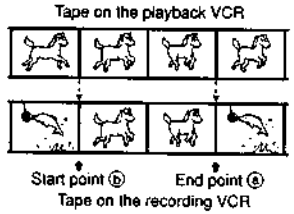
When you want to control this VCR from the other VCR



Note
Do not make the CONTROL L connection between this VCR and the other VCR with the LANC mode settings of both VCRs set to the same position.



During synchronized editing
- The EDIT function is activated automatically.
- If the linear time counter reaches zero, synchronized editing stops.
- The COUNTER RESET button does not function.



Synchronized Assemble Editing

Before You Begin

- Press AUDIO LINE IN (ST/BIL) to select the sound to be recorded if you record a stereo or bilingual tape.
- Check the LANC mode setting (see page 29).

Operation

1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.

2 Locate the recording starting point on this VCR and put the VCR in recording pause mode.

3 Locate the beginning of the scene to be edited out on the other VCR and put the VCR in playback pause mode.

4 Press SYNCHRO EDIT on this VCR. The SYNCHRO EDIT indicator lights up.
Pause mode of both the recording VCR and the playback VCR is released to start editing.

5 Press SYNCHRO EDIT on this VCR at the point where you want to stop recording.
This VCR enters recording pause mode, and the other VCR enters playback pause mode.

6 If you have another scene you want to edit, repeat steps 3 to 5.

7 After editing has been completed, press ■ STOP on both VCRs.

To make use of the linear time counter "0H00M00S" (zero) for synchronized editing
You can perform synchronized insert editing when this VCR is used as the recording VCR and the LANC mode is set to "M."
When the linear time counter on this (recording) VCR reaches zero during synchronized editing, the other (playback) VCR enters playback pause mode and this VCR enters recording pause mode.

See the instructions below for operation.
1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.
2 Locate the editing end point (ⓐ) by playing back the cassette on this (recording) VCR and press COUNTER RESET on this VCR.
The counter resets to "0H00M00S."
3 Rewind the tape on this VCR and put the VCR in recording pause mode at the editing start point (ⓑ).
4 Press SYNCHRO EDIT on this VCR to start editing.

When the linear time counter reaches zero, the other VCR enters playback pause mode and this VCR enters recording pause mode.

Technical Information

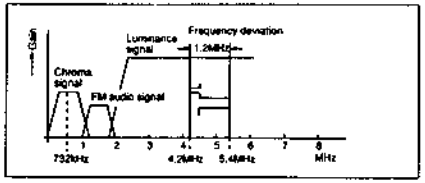
Hi8 (High Eight) Video System

The 8 mm video system employs a metal power tape. This means the video recorder is capable of recording a large amount of information (enhances picture quality). The Hi8 video system was developed utilizing the advantages of the 8 mm video system. (See the diagrams below.) The main characteristics of the Hi8 video system are as follows:

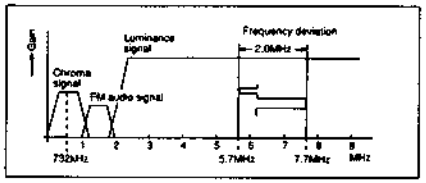
Characteristics of Hi8 System

- **Super high quality picture**
  The information capacity, a key element for picture improvement, is increased by shifting up the FM carrier frequency range. In the Hi8 video system, the FM carrier frequency range of the luminance signal has been shifted up to 5.7 – 7.7 MHz. This is higher than the 4.2 – 5.4 MHz range of the standard 8 mm video system.
  Consequently, the horizontal resolution is improved to 400 lines.

Frequency allocation of the standard 8 mm video system



Frequency allocation of the Hi8 video system



- **Use of high grade tape to match the Hi8 video system**
  Metal tape for the Hi8 video system is ideal because it has greater magnetism which permits high-density recording. The Hi8 VCR uses such high-grade tapes for the Hi8 video system, covering a wide frequency range, to achieve a high-quality video signal for recording/playback.

- **S VIDEO (separate luminance/chroma signal) input/output connectors**
  Conventionally, the video signal exchanged between the TV set and video equipment or among several video devices is called a composite video signal, in which the luminance (Y) and chroma (C) signals are mixed. In this system the composite video signal is liable to produce interference, resulting in a reduction of picture quality. To avoid this quality reduction, an S VIDEO connector is used to transmit and receive the video signal separated into the luminance signal and the chroma signal. With the separated video signal, flicker and colour blur in the picture are minimized and sharpness is enhanced to such an extent that hair and fine stripes are clearly visible. The S VIDEO connector also assures excellent editing quality with a minimum loss of picture quality.

- **Tape speed**
  The Hi8 video system uses the same tape speed as the standard 8 mm video system. An E5-120 tape allows four hours of playback in LP mode.

Recording and Playback in the Hi8 Video System

To take advantage of the EV-C500E Hi8 video system, you must use Hi8 video tapes for recording and playback.

You can use the EV-C500E to record and playback standard 8 mm video tapes if Hi8 quality is not necessary. (The Video 8 and standard 8 mm systems are often referred to as "normal" mode.)
The EV-C500E automatically detects the type of video system (standard or Hi8) in which the tape was recorded and plays the tape back accordingly.

To make the most of the Hi8 video system, set the Hi8 setting with the Hi8 (AUTO/OFF) button to "AUTO." In this way, EV-C500E records in the Hi8 video system. (See page 15.)

Compatibility with conventional video recorder decks

Tapes recorded using the Hi8 video system cannot be played back on conventional 8 mm video equipment (standard 8 mm video system).

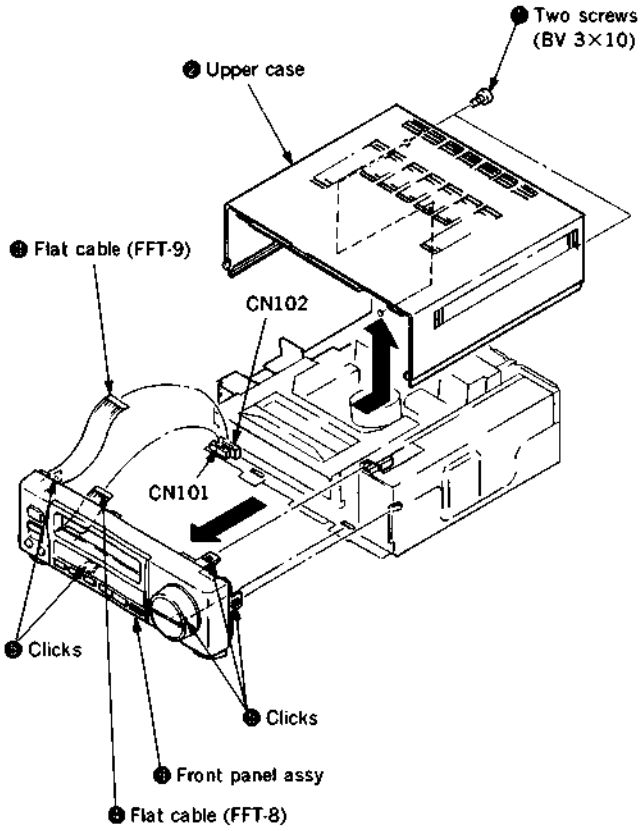
Troubleshooting

If you have a problem with your VCR, first check the mains lead connection, then go through the following list. Should the difficulty persist, unplug the unit and contact your Sony dealer or local authorized Sony Service Centre facility.

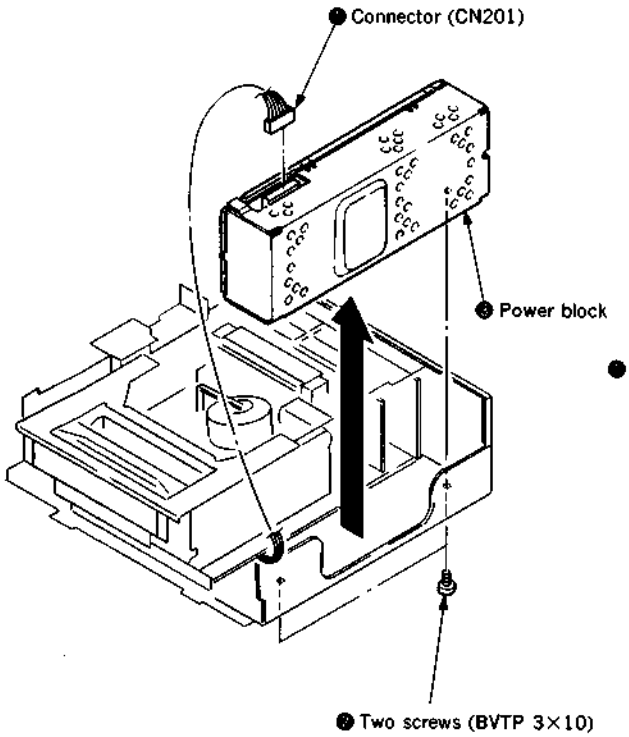
	Symptom	Possible causes and remedies
Power	The ON/STANDBY button does not work.	• The mains lead is disconnected.
Playback	The VCR does not play.	• The tape is at its end.
	No picture on the TV screen	• The correct programme position for the VCR has not been selected on the RFU adaptor, or video input has not been selected on the monitor. • Make sure that S VIDEO connection is tight. • Clean the video head. (See page 36.)
	The playback picture is not clear.	• The correct programme position for the VCR has not been selected on the RFU adaptor. • The video heads are dirty. Clean the heads using the Sony V8-25CLH video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If a cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony Service Centre facility. (Do not use a commercially available wet-typed cleaning cassette. It may damage the video heads.) • The video heads are worn out.
	Noisy picture	• Place the VCR away from a TV. • Tape is defective. Use a new cassette.
	The picture moves vertically during picture search mode.	• Adjust the vertical hold control on the TV or colour monitor.
	The sound drops out.	• The cassette is defective. Use a new video cassette.
Recording	A cassette is ejected when ● REC is pressed.	• Check the safety tab.
	The VCR does not record.	• Remove the S VIDEO cable from the LINE IN S VIDEO connector when the cable is not used. • No cassette has been inserted. • The cassette is at its end.
Others	A cassette cannot be inserted.	• A cassette has already been inserted.
	The Remote Commander cannot be operated.	• The batteries are low.
	The VCR does not respond when you press any button.	• The built-in microprocessor may be defective. Pressing the CL (clear) button on the rear panel, with a pointed object such as a ball-point pen, may fix the problem.
	When you perform synchronized editing, you cannot control this VCR from the other VCR.	• The LANC mode of the other VCR is set to "S" (See page 29). • The LANC mode of this VCR is set to "M" (See page 29).

SECTION 3
DISASSEMBLY

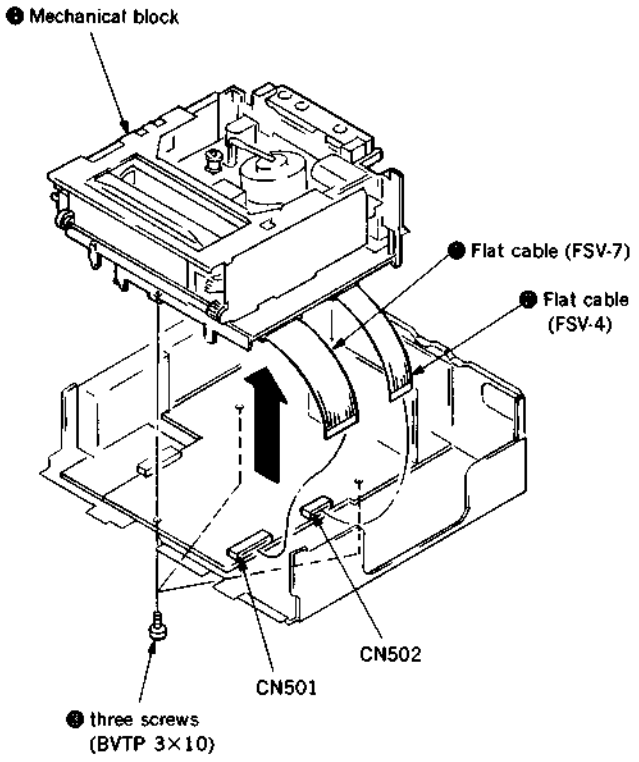
3-1. REMOVAL OF FRONT PANEL AND UPPER CASE



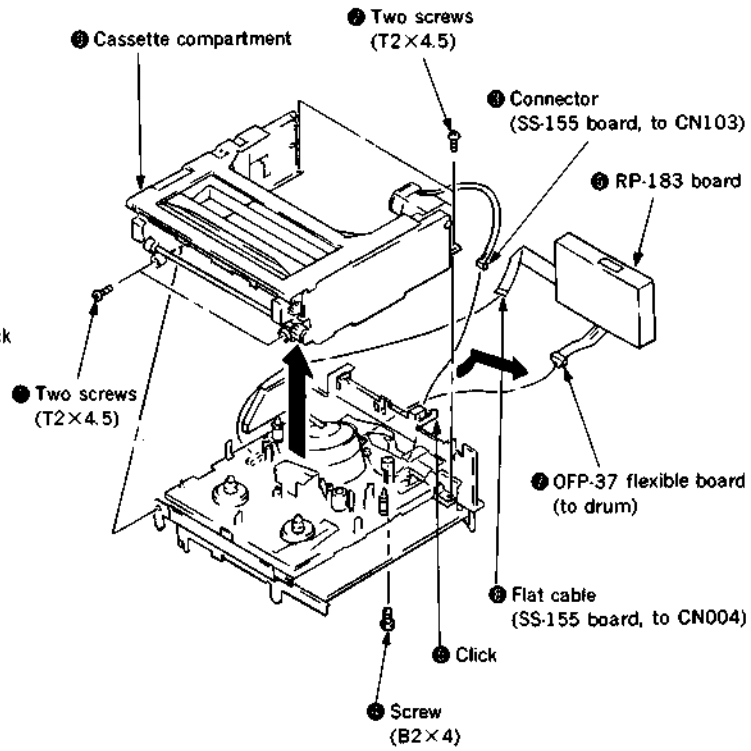
3-2. REMOVAL OF POWER BLOCK



3-3. REMOVAL OF MECHANICAL BLOCK

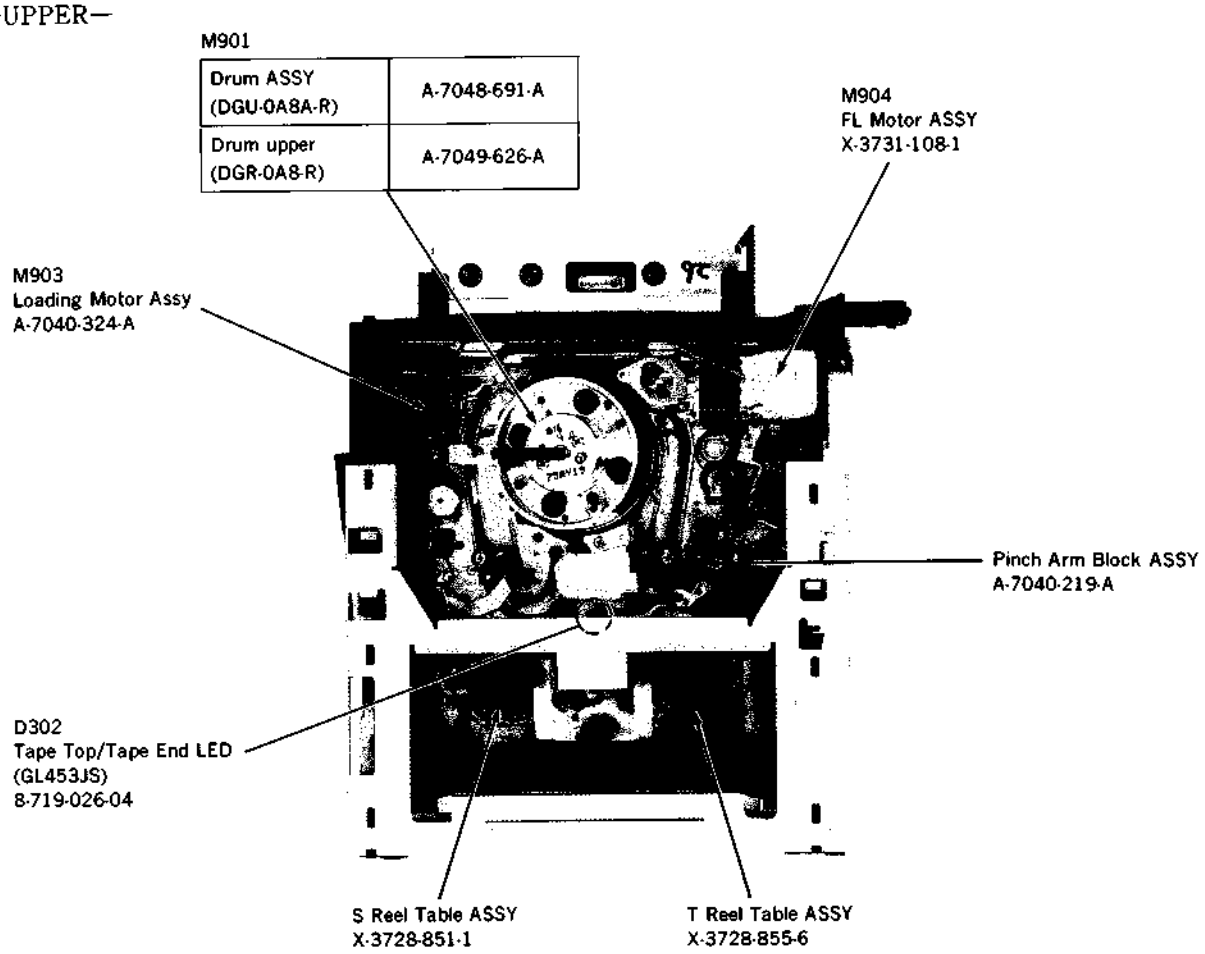


3-4. REMOVAL OF CASSETTE COMPARTMENT

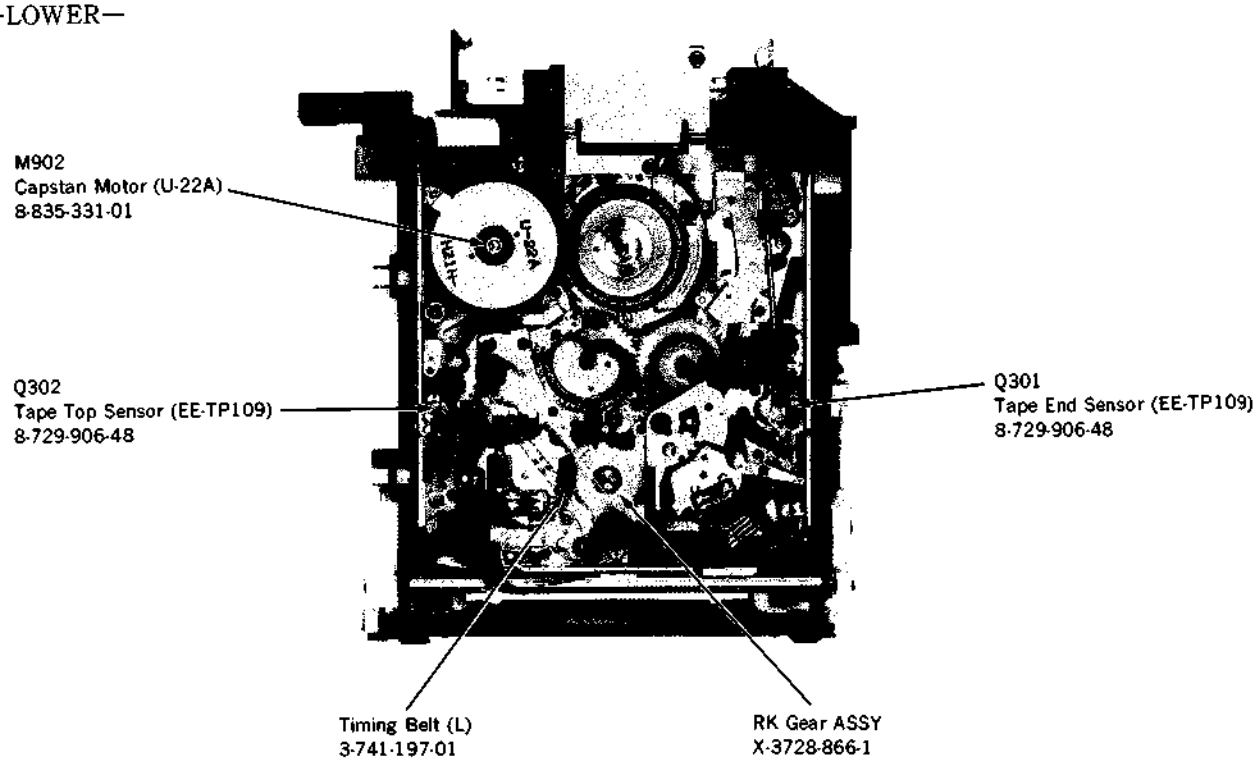


3-5. MECHANICAL INTERNAL VIEWS

—UPPER—

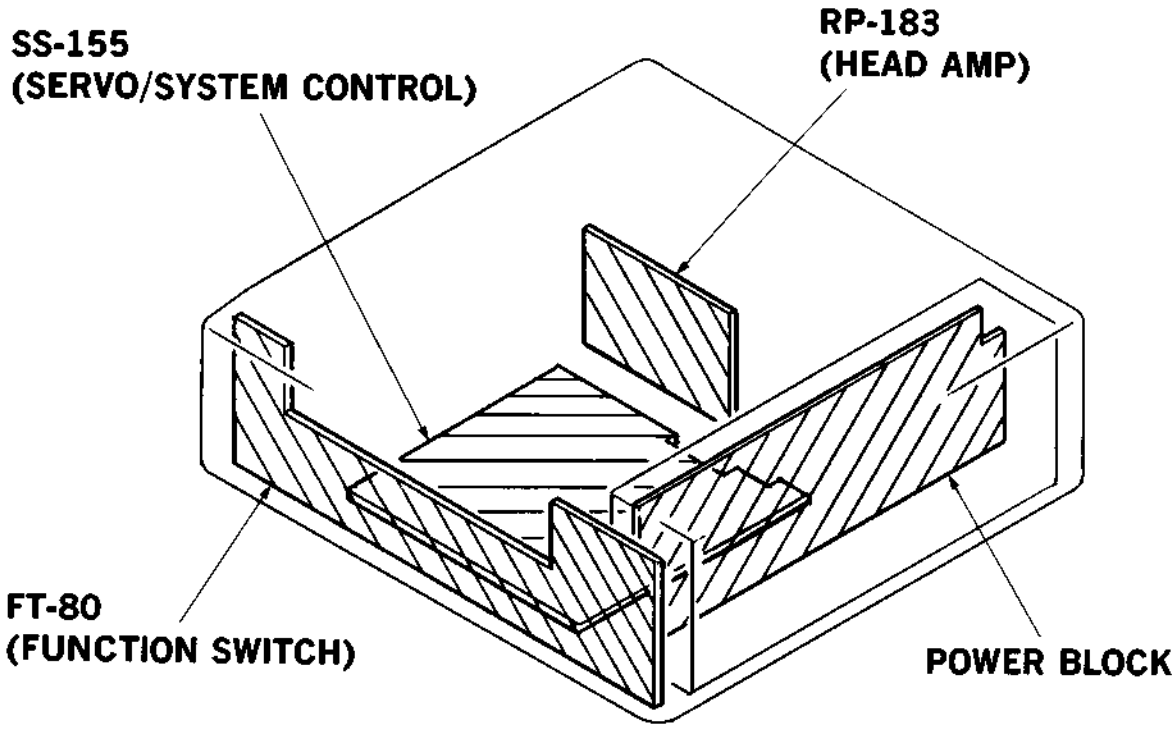


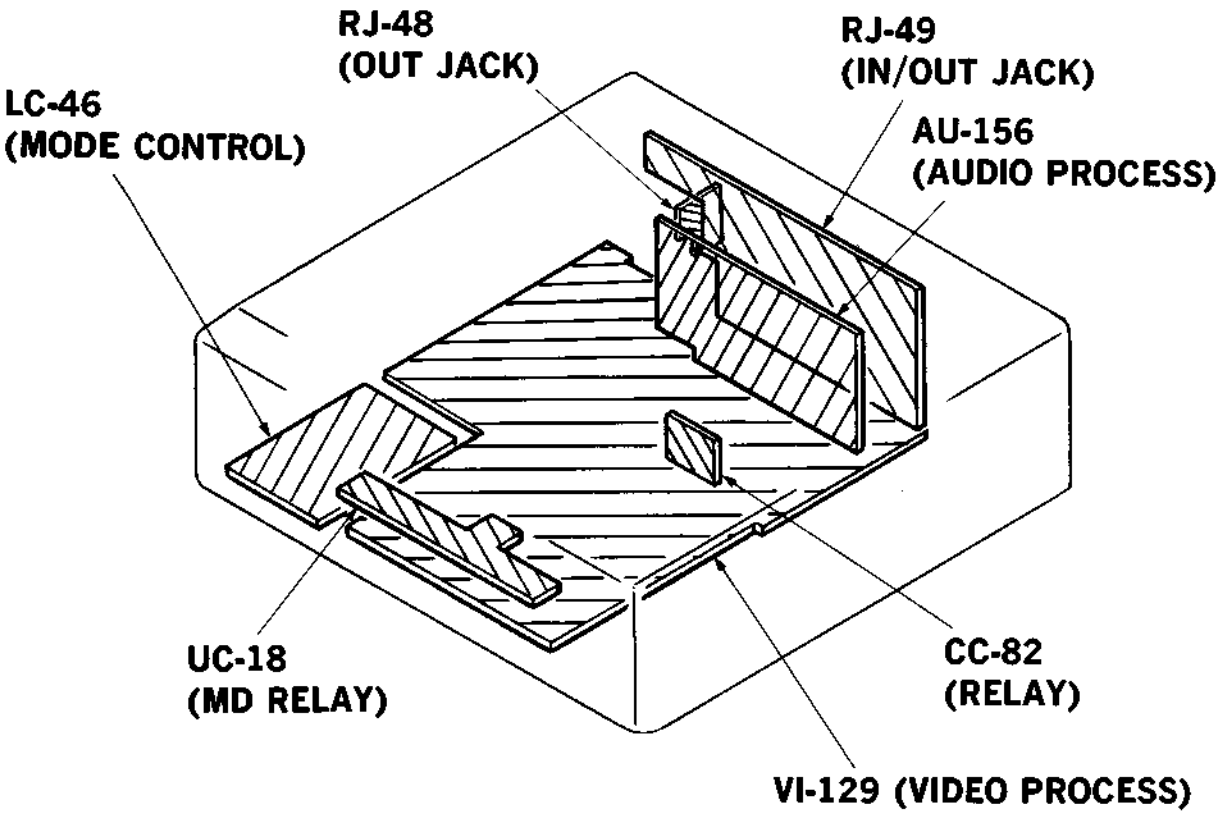
—LOWER—



SECTION 4
DIAGRAMS

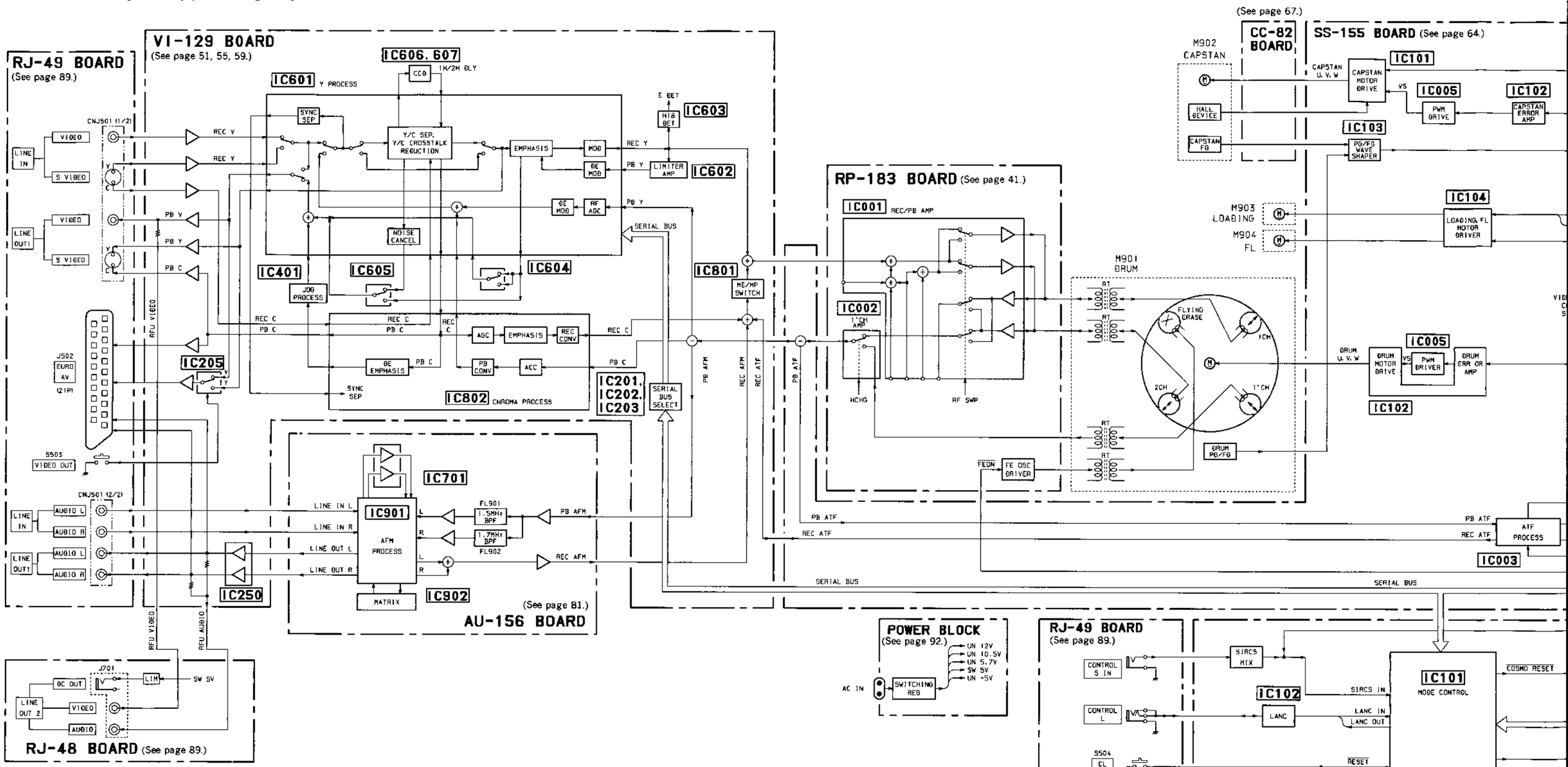
4-1. CIRCUIT BOARDS LOCATION

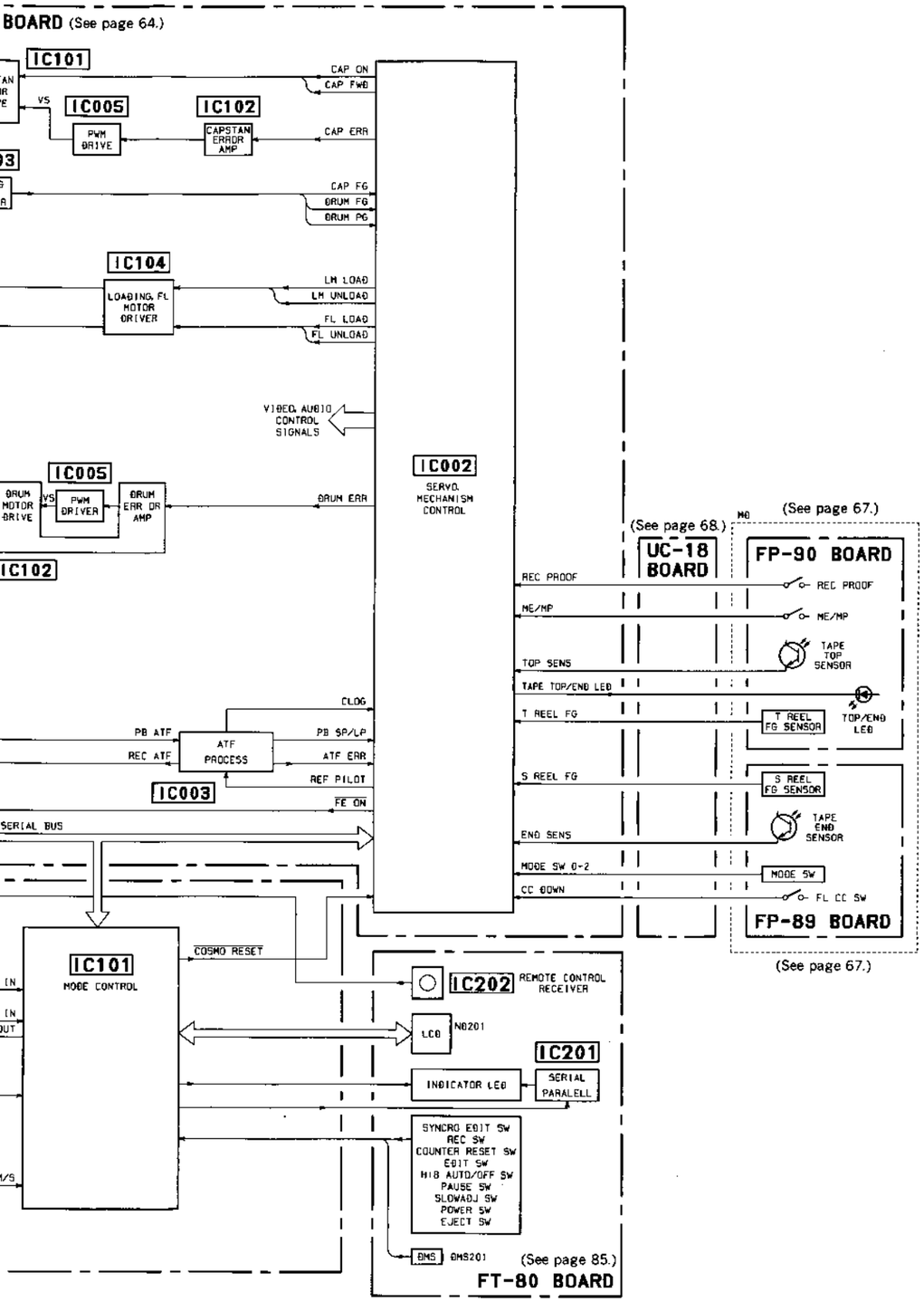




4-2. OVERALL BLOCK DIAGRAM

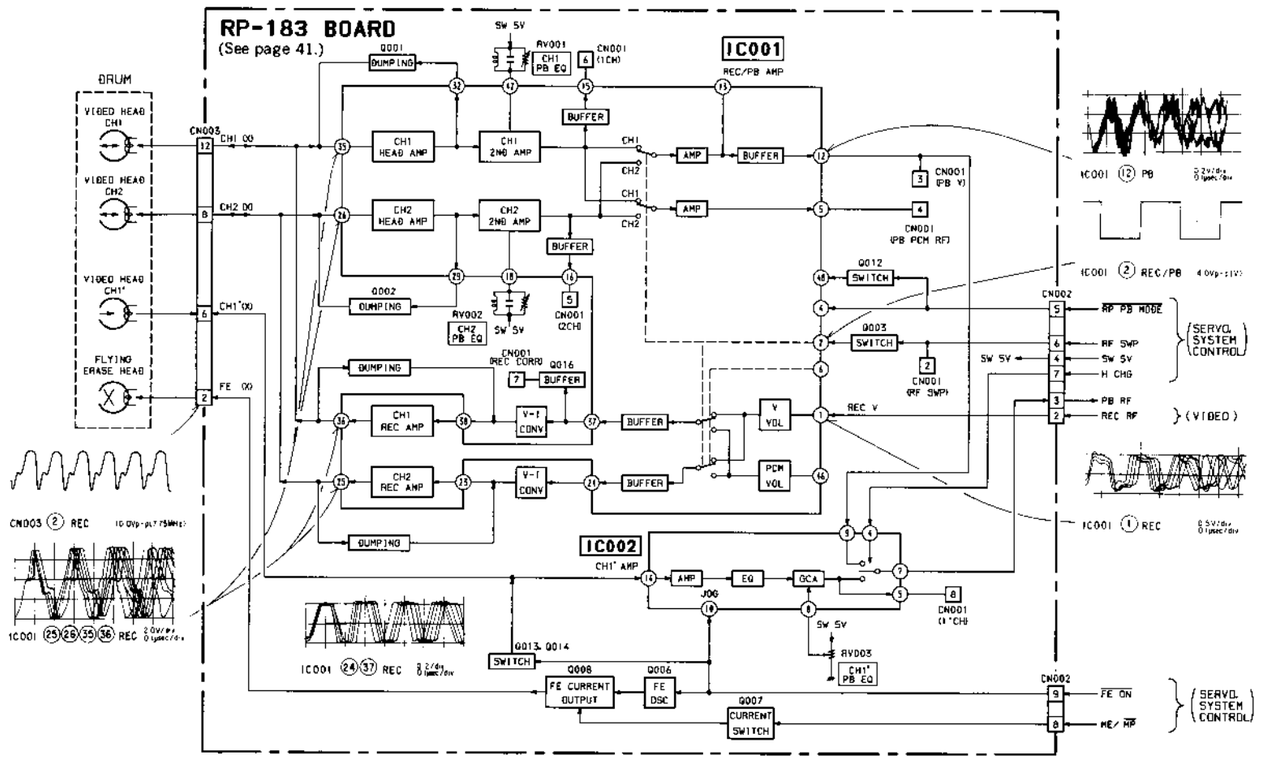
- **The boards which signals only pass through may be omitted.**





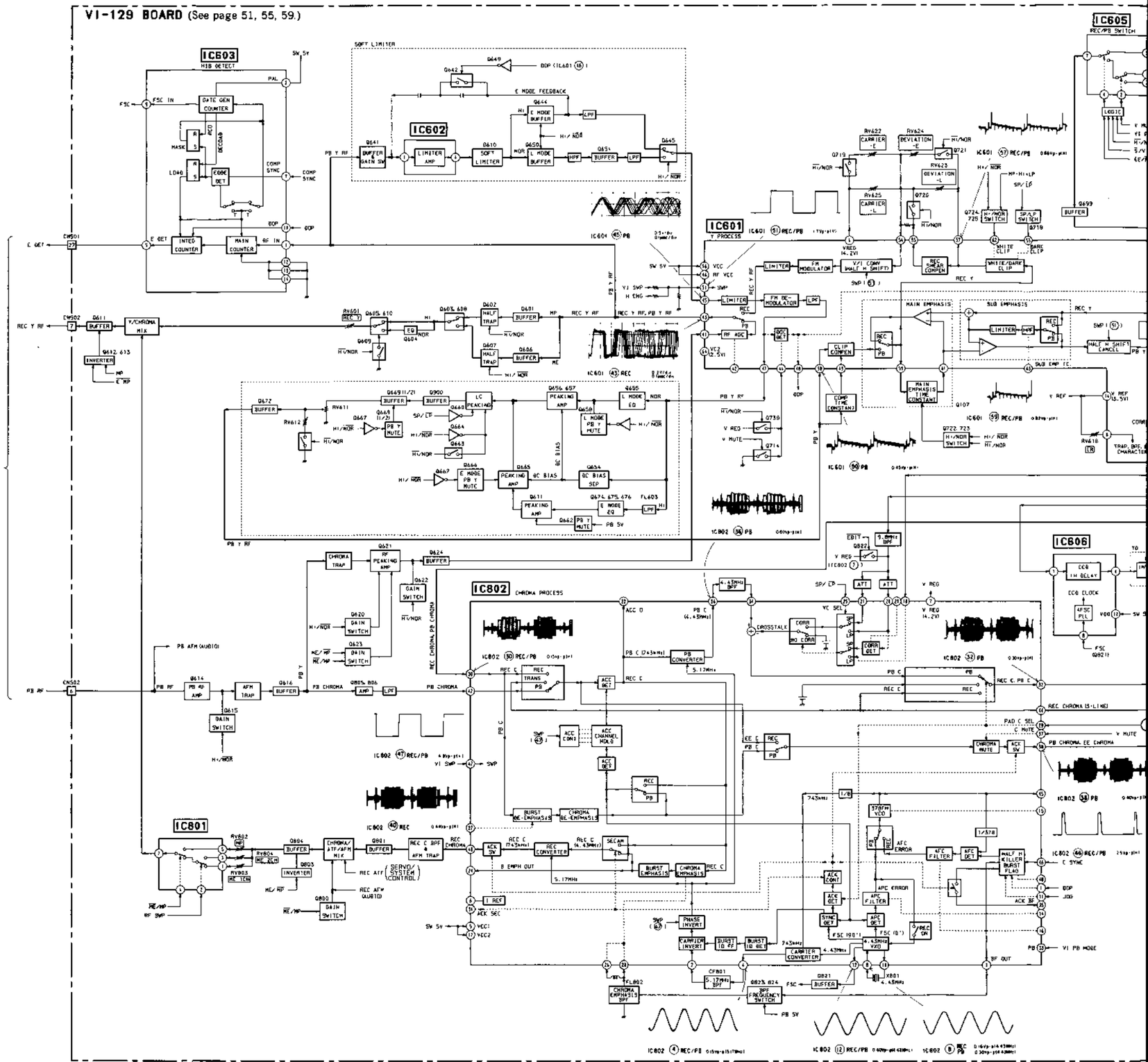
4-3. HEAD AMP BLOCK DIAGRAM

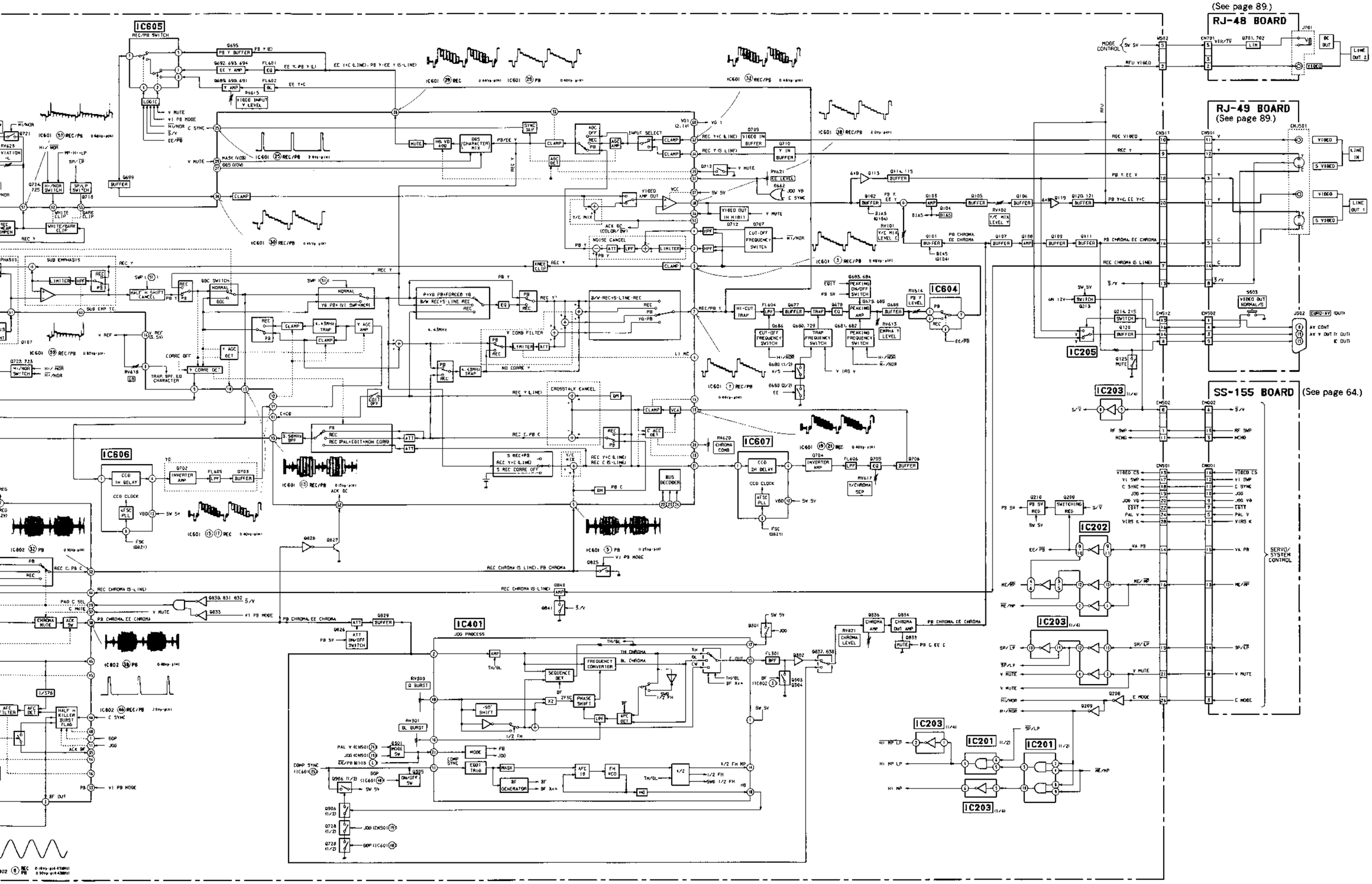
- The boards which signals only pass through may be omitted.



4-4. VIDEO BLOCK DIAGRAM

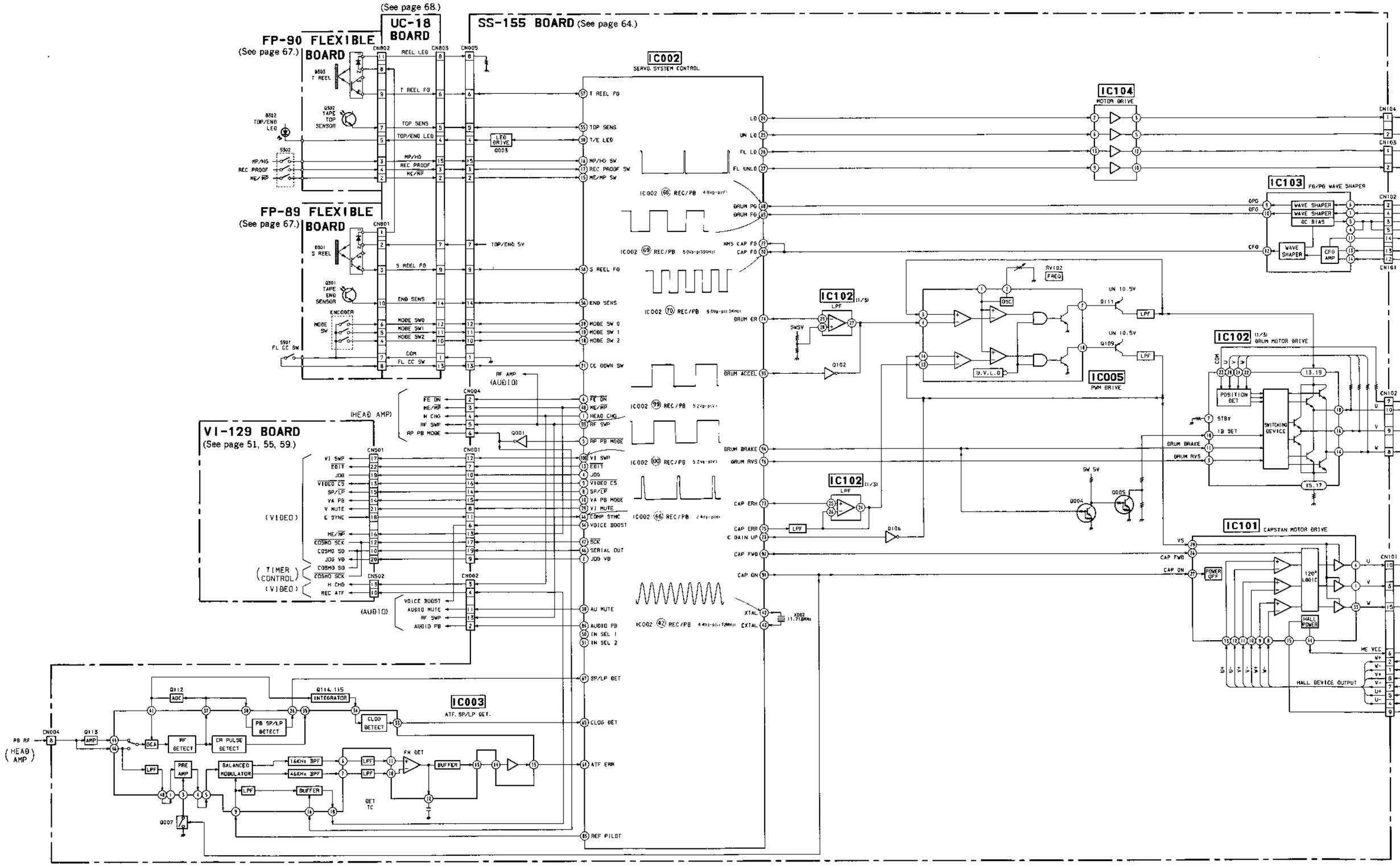
- **The boards which signals only pass through may be omitted.**



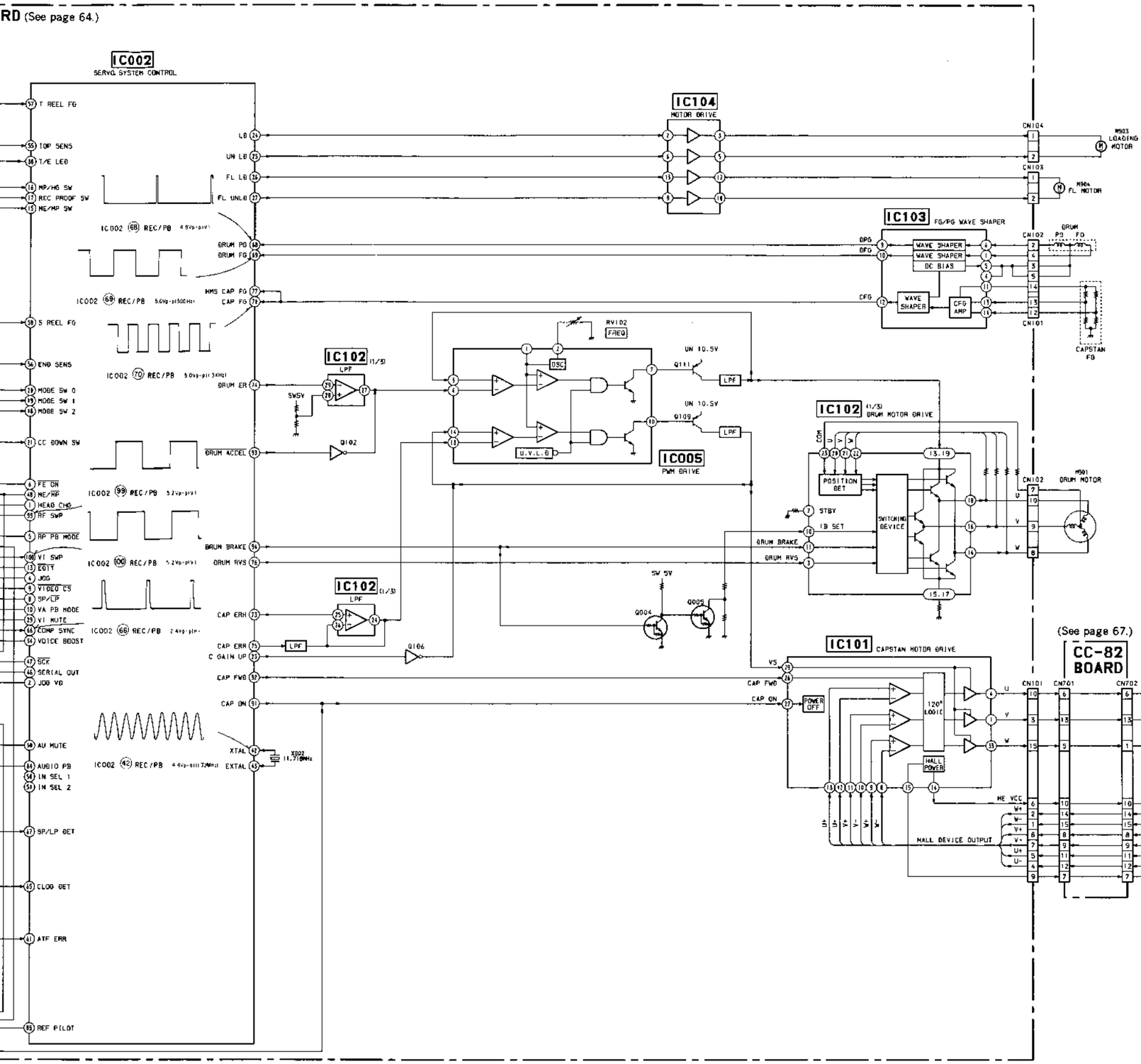

IC605
REC/PB SWITCH
LOGIC
V MUTE
V1 PB MODE
HI/NOR
C SYNC
5/V
EE/PB
MASK (VOB)
OSD (VOW)
BUFFER
CLAMP
SUB EMPHASIS
LIMITER
HPF
REC
PB
SUB EMP TC
SW (51)
HALF H SHIFT CANCEL
BDC SWITCH
NORMAL
BDC
V REF
V REC (S. SW)
CORNR OFF
V AGC DET
TRAP, BPF, EQ CHARACTER
4.43MHz TRAP
V AGC AMP
Y COMB FILTER
NO CORNR Y
3.58MHz BPF
REC PB+EDIT+MON CORR
ATT
C+CO
EDIT OFF
CROSSTALK CANCEL
SM
VCA
C ACC DET
C MUTE
PAD C SEL
CHROMA MUTE
ACK SW
PB CHROMA, EE CHROMA
REC CHROMA (S-LINE)
PB CHROMA, EE CHROMA
ATT ON/OFF SWITCH
IC606
CCD 1H DELAY
CCD CLOCK
4FSC PLL
VBD
SW 5V
FSC (Q821)
INVERTER AMP
FL605
LPF
BUFFER
IC602 (32) PB
IC602 (9) REC/PB
IC602 (66) REC/PB
C SYNC
BDP
JOG
ACK DF
BF OUT
V1 PB MODE
IC401
JOG PROCESS
AMP
TH/BL
SEQUENCE DET
FREQUENCY CONVERTER
TH CHROMA
BL CHROMA
PHASE SHIFT
X2 FSC
APC DET
LPF
-90° SHIFT
1/2 FH
RV503
Q BURST
RV501
BL BURST
Q501 MODE SW
MODE
PB
JOG
COMP SYNC
EDIT TRIG
MASK
BF GENERATOR
AFC 1/8
FM VCO
1/2
1/2 FH MP
1/2 FH
SW5 1/2 FH
TH/BL
HB
Q506 (1/2)
ON/OFF SW
Q508
Q728 (1/2)
Q728 (2/2)
IC607
CCD 2H DELAY
Q704
INVERTER AMP
FL606
Q705
EQ
Q706
BUFFER
RV617
Y/CHROMA SEP
RV620
CHROMA COMB
Y/C MIX
BUS DECODER
IC604
EDIT
PEAKING ON/OFF SWITCH
PEAKING AMP
RV614
PB Y LEVEL
RV613
EMPHA Y LEVEL
FL604
LPF
Q677
BUFFER
Q678
EQ
Q688
BUFFER
HI-CUT TRAP
CUT-OFF FREQUENCY SWITCH
TRAP FREQUENCY SWITCH
PEAKING FREQUENCY SWITCH
Q686
Q680, 729
Q681, 682
Q680 (1/2)
Q680 (2/2)
V IAS V
REC/PB Y
REC Y (S-LINE)
REC Y C (S-LINE)
REC C PB C
REC CHROMA (S-LINE), PB CHROMA
REC Y C (S-LINE)
REC C (S-LINE)
PB C
REC Y
PB Y
REC C
REC/PB C
REC Y (S-LINE)
REC/PB Y
REC Y C (S-LINE)
REC C PB C
S REC/PB
S REC CORNR OFF
IC601 (1) REC/PB
IC601 (2) PB
IC601 (3) REC/PB
IC601 (5) PB
IC601 (7) REC/PB
IC601 (13) REC/PB
IC601 (15) (17) REC
IC601 (19) (21) REC
IC601 (25) REC/PB
IC601 (26) PB
IC601 (28) REC
IC601 (30) REC/PB
IC601 (32) REC/PB
IC601 (38) REC/PB
V1 PB MODE
Q825
Q826
Q827
Q828
Q829
Q830, 831, 832
Q833
Q840
Q841
Q836
CHROMA AMP
Q834
CHROMA OUT AMP
Q835
MUTE
RV621
EE LEVEL
RV621
CHROMA LEVEL
Q836, 837
Q838, 839
Q301
BPF
Q302
Q303, 304
IC802 (3) BF
BF Xch
TH/BL BF Xch
IC802 (66) REC/PB
IC802 (9) REC PB
IC802 (32) PB
IC802 (38) PB
IC802 (66) REC/PB
IC203 (1/4)
IC201 (1/2)
IC201 (2/2)
IC203 (3/4)
IC203 (4/4)
41 MP LP
Hi MP LP
Hi MP
RE/MP
SP/LP
IC205
Q213
Q214, 215
Q120
Q125
MUTE
IC202
Q210
PB 5V REG
Q200
SWITCHING REG
S/V
SW 5V
EE/PB
VA PB
RE/RP
RE/MP
SP/LP
V MUTE
E MODE
Q208
Q209
(See page 89.)
RJ-48 BOARD
J701
BC OUT
LINE OUT 2
VIDEO
CN701
VER/TV
Q701, 702
LIN
W502
MODE CONTROL
5V 5V
RFU VIDEO
RFU
RJ-49 BOARD
(See page 89.)
CN501
CN502
CN503
CNJ501
REC VIDEO
REC Y
PB Y, EE Y
PB Y+C, EE Y+C
PB CHROMA, EE CHROMA
REC CHROMA (S-LINE)
VIDEO
S VIDEO
LINE IN
LINE OUT 1
VIDEO OUT NORMAL/S
J502
EURO-AV (OUT)
AV CONT
AV Y OUT (Y OUT)
AV C OUT
SS-155 BOARD
(See page 64.)
CN902
CN901
RF SWP
HCMD
VTBED CS
V1 SWP
C SYNC
JOG
JOG VD
EDIT
PAL Y
VIRS K
SERVO/ SYSTEM CONTROL

4-5. SERVO, SYSTEM CONTROL BLOCK DIAGRAM

- **The boards which signals only pass through may be omitted.**

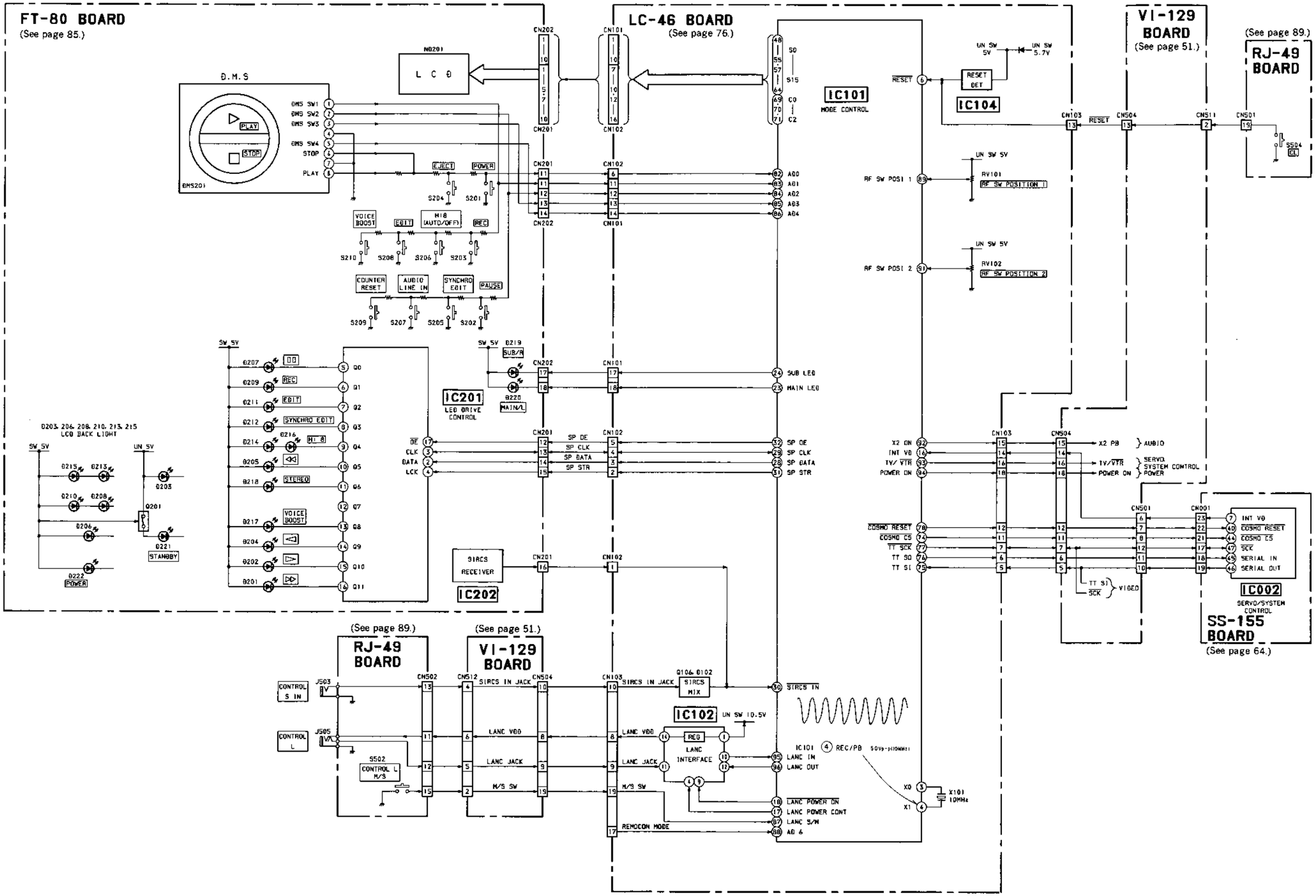


RD (See page 64.)



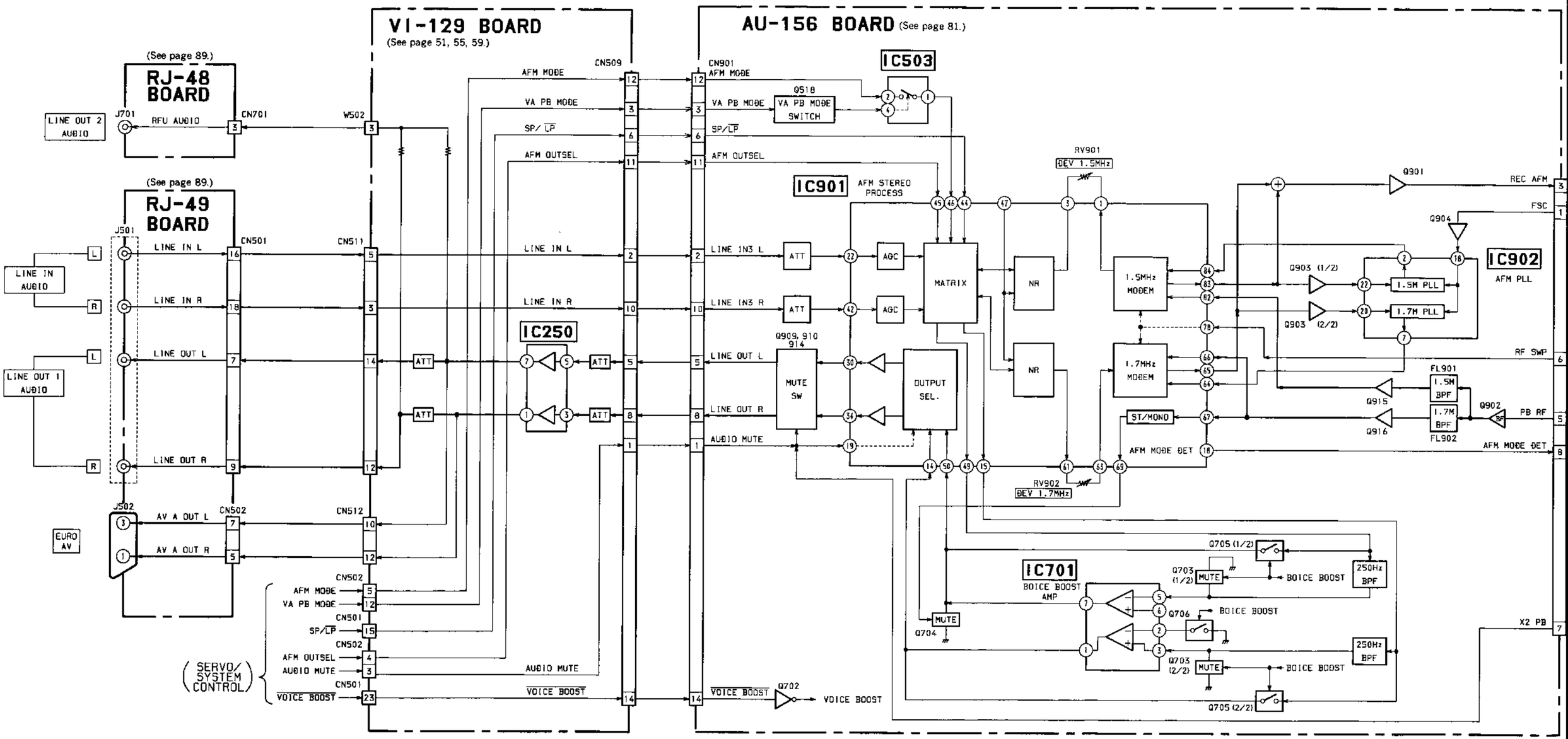
4-6. MODE CONTROL BLOCK DIAGRAM

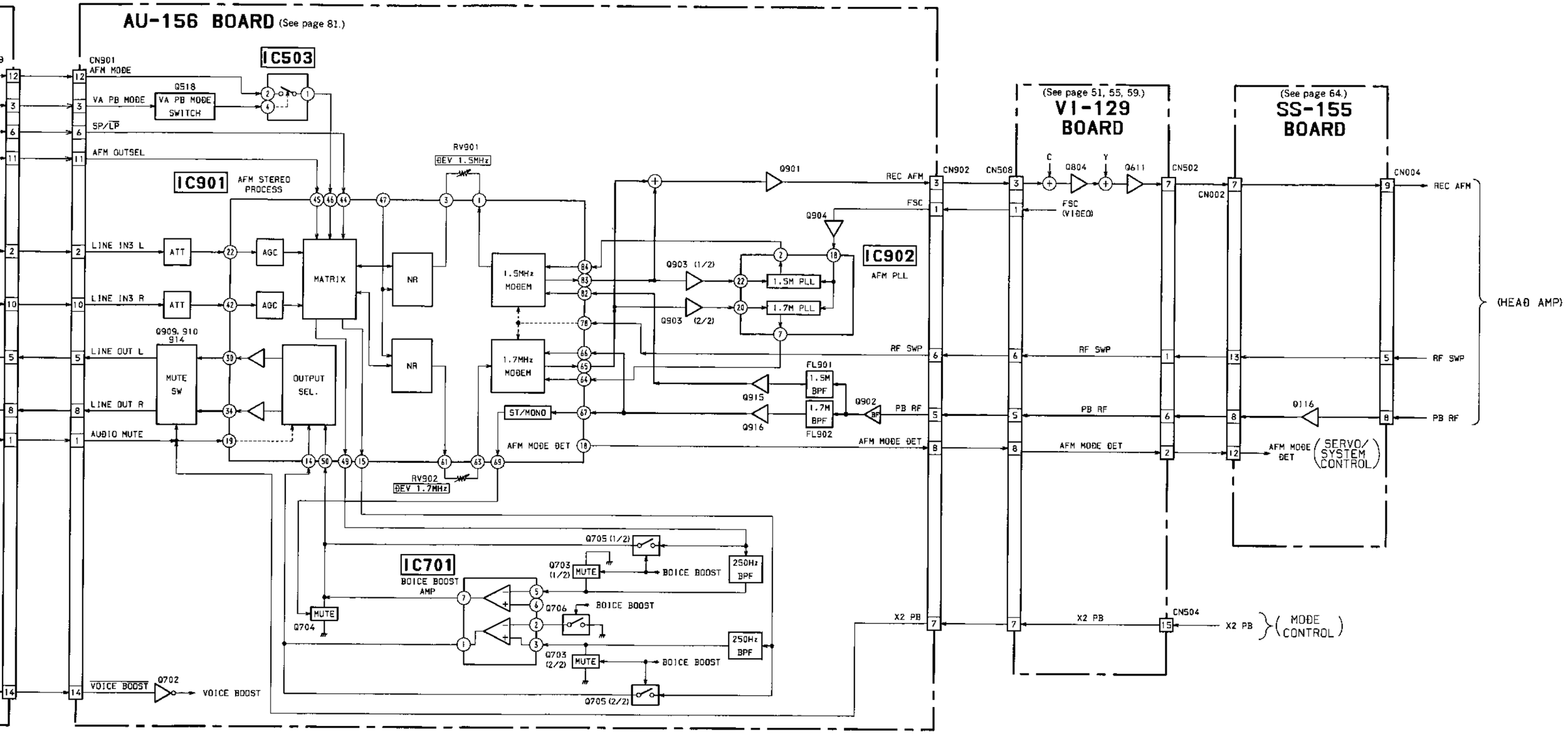
- **The boards which signals only pass through may be omitted.**



4-7. AUDIO BLOCK DIAGRAM

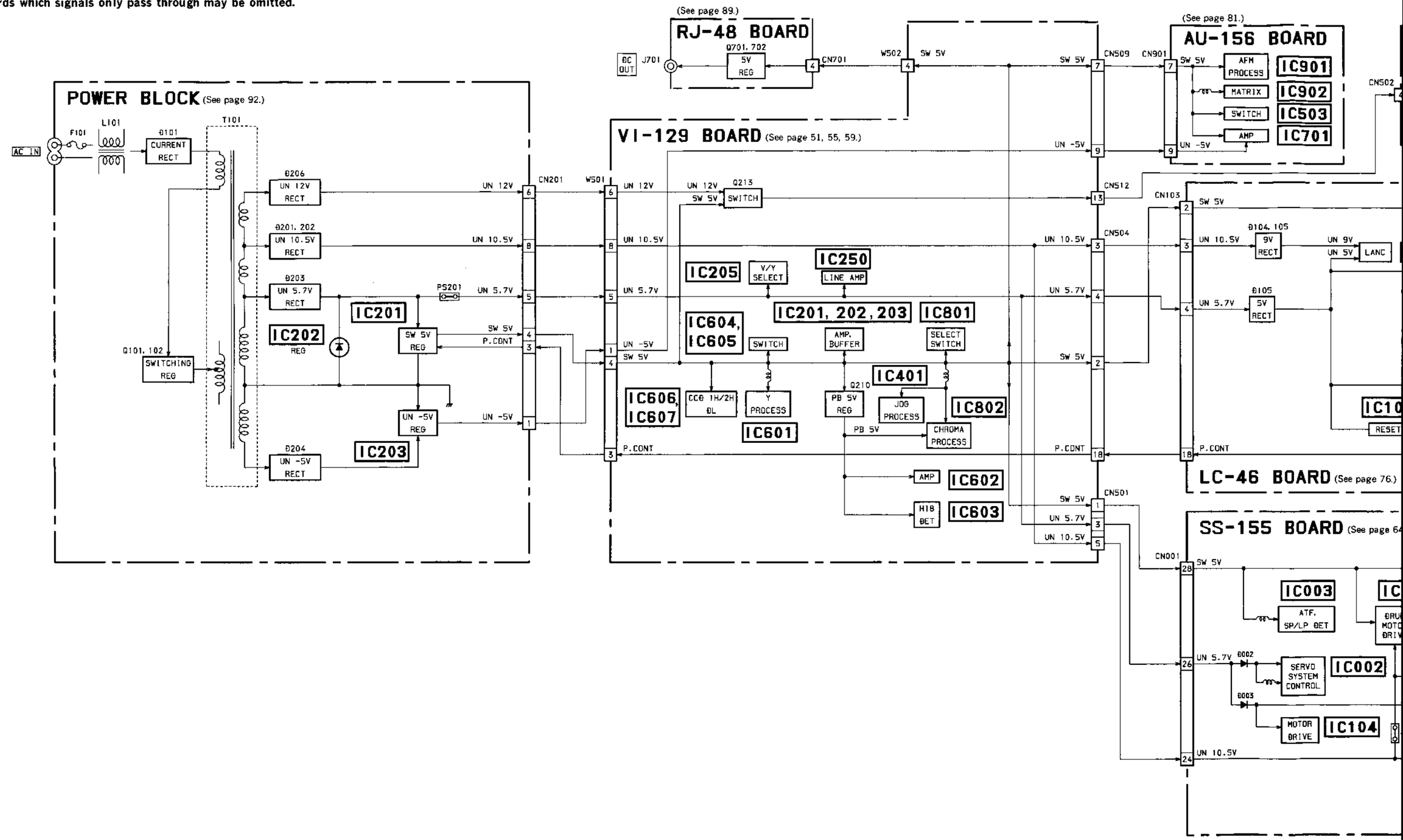
- **The boards which signals only pass through may be omitted.**

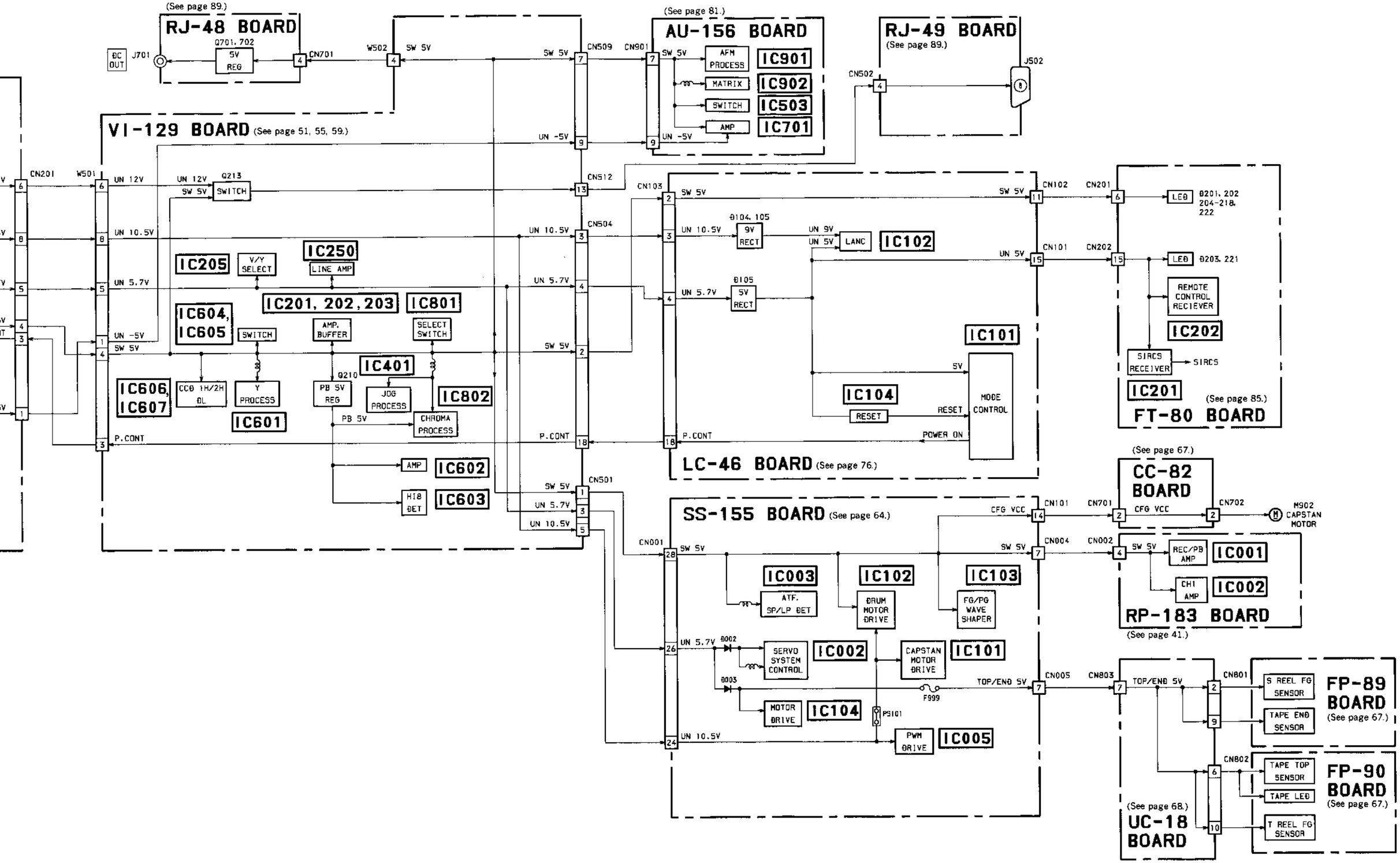



AU-156 BOARD (See page 81.)
CN901
AFM MODE
VA PB MODE
SP/LP
AFM OUTSEL
IC503
Q518
VA PB MODE SWITCH
IC901
AFM STEREO PROCESS
RV901
DEV 1.5MHz
LINE IN3 L
LINE IN3 R
ATT
AGC
MATRIX
NR
1.5MHz MODEM
1.7MHz MODEM
Q909, 910 914
LINE OUT L
LINE OUT R
MUTE SW
OUTPUT SEL.
AUDIO MUTE
ST/MONO
AFM MODE DET
RV902
DEV 1.7MHz
Q901
REC AFM
FSC
Q904
IC902
AFM PLL
Q903 (1/2)
Q903 (2/2)
1.5M PLL
1.7M PLL
Q915
Q916
FL901
1.5M BPF
1.7M BPF
FL902
Q902
RF SWP
PB RF
AFM MODE DET
CN902
CN508
(See page 51, 55, 59.)
VI-129 BOARD
C
Q804
Y
Q611
FSC (VIDEO)
CN502
CN002
(See page 64.)
SS-155 BOARD
CN004
REC AFM
RF SWP
PB RF
(HEAD AMP)
Q116
AFM MODE DET
SERVO/ SYSTEM CONTROL
IC701
BOICE BOOST AMP
Q705 (1/2)
Q703 (1/2)
MUTE
BOICE BOOST
250Hz BPF
Q706
Q704
Q703 (2/2)
Q705 (2/2)
X2 PB
CN504
MODE CONTROL
VOICE BOOST
Q702

4-8. POWER BLOCK DIAGRAM

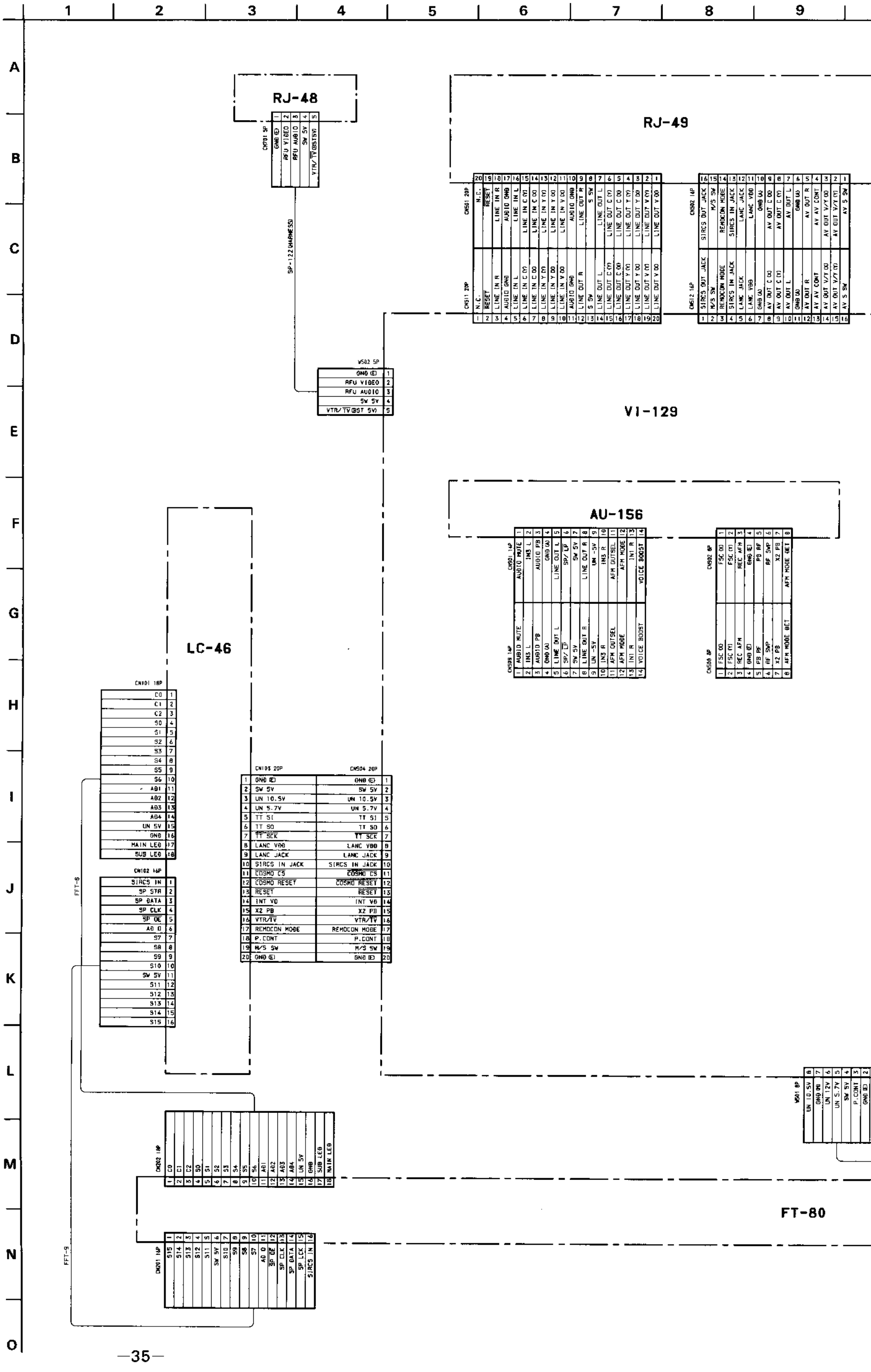
• The boards which signals only pass through may be omitted.

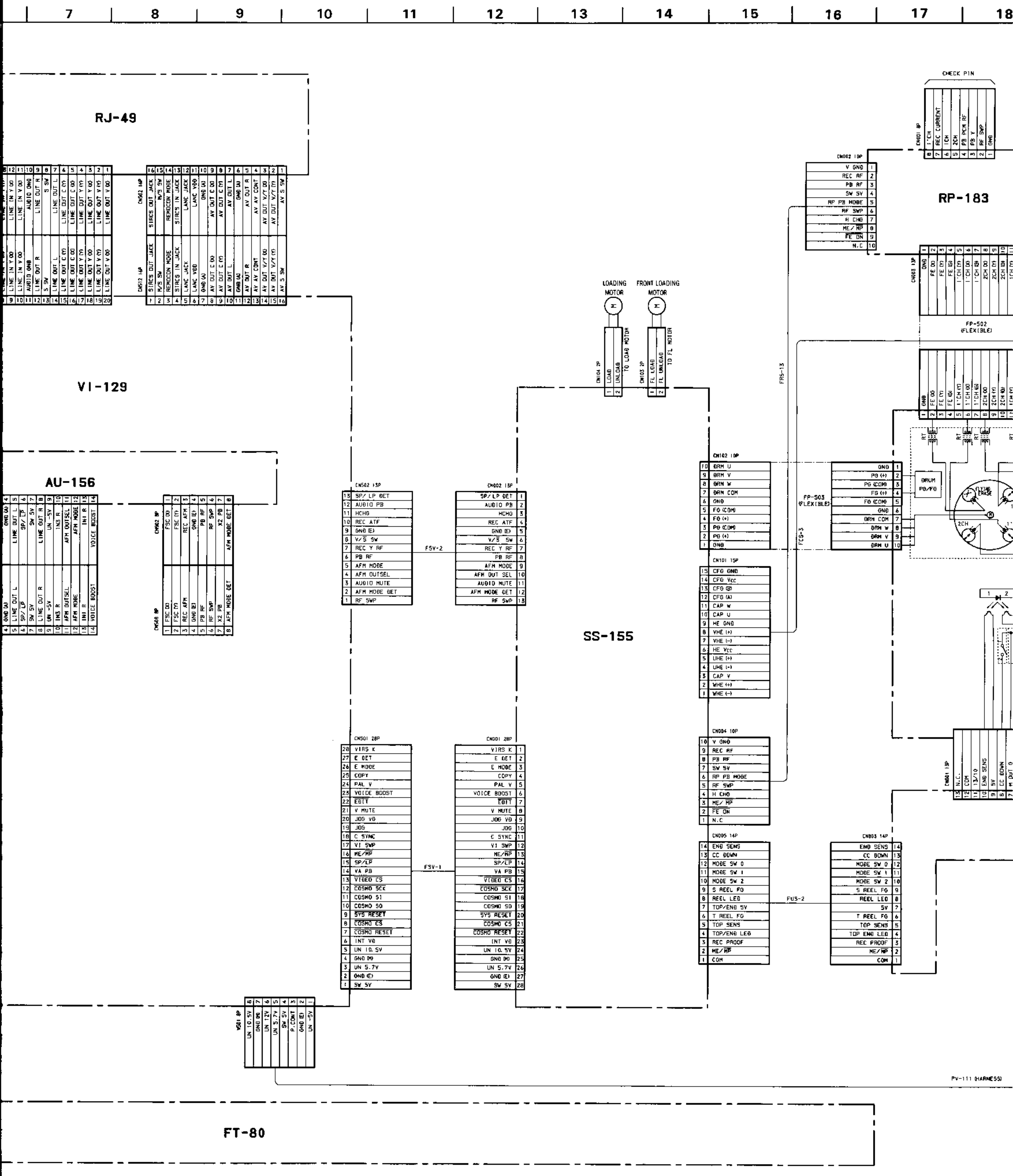


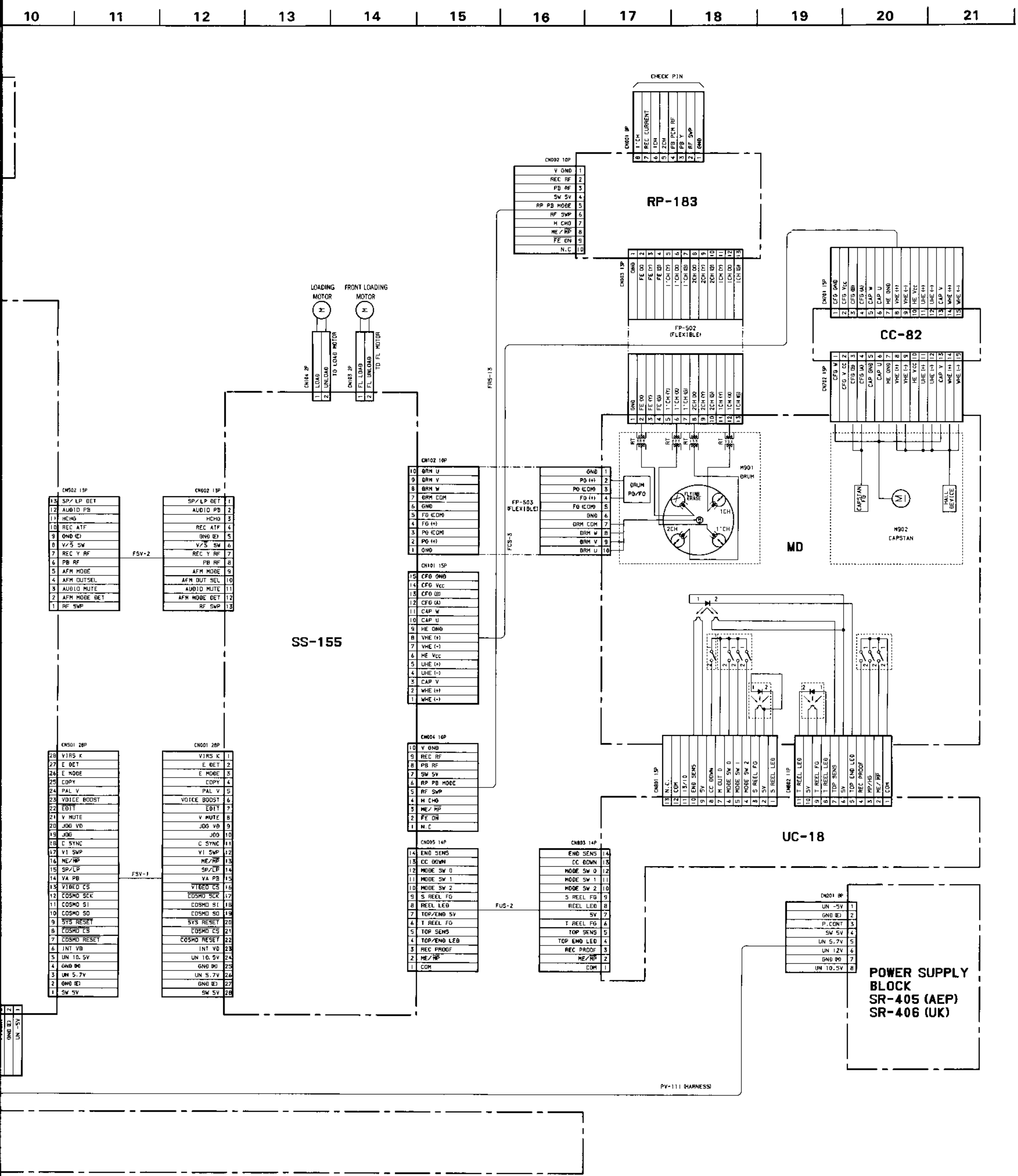

(See page 89.)
RJ-48 BOARD
Q701, 702
5V REG
DC OUT
J701
CN701
W502
SW 5V
CN509
CN901
(See page 81.)
AU-156 BOARD
AFM PROCESS
IC901
MATRIX
IC902
SWITCH
IC503
AMP
IC701
UN -5V
RJ-49 BOARD
(See page 89.)
CN502
J502
VI-129 BOARD (See page 51, 55, 59.)
CN201
W501
UN 12V
Q213
SWITCH
CN512
UN 10.5V
CN504
IC205
V/Y SELECT
IC250
LINE AMP
UN 5.7V
IC201, 202, 203
IC801
IC604, IC605
SWITCH
AMP, BUFFER
SELECT SWITCH
IC401
IC606, IC607
CCD 1H/2H DL
Y PROCESS
IC601
Q210
PB 5V REG
JOG PROCESS
IC802
CHROMA PROCESS
PB 5V
P.CONT
AMP
IC602
HI8 DET
IC603
CN501
CN103
CN102
CN201
CN101
CN202
Q104, 105
9V RECT
LANC
IC102
Q105
5V RECT
IC101
IC104
RESET
MODE CONTROL
POWER ON
LC-46 BOARD (See page 76.)
LED Q201, 202 204-218, 222
LED Q203, 221
REMOTE CONTROL RECIEVER
IC202
SIRCS RECEIVER
SIRCS
IC201
FT-80 BOARD
(See page 85.)
(See page 67.)
CC-82 BOARD
CN702
M902 CAPSTAN MOTOR
SS-155 BOARD (See page 64.)
CFG VCC
CN001
CN101
CN701
CN004
CN002
REC/PB AMP
IC001
CH1 AMP
IC002
RP-183 BOARD
(See page 41.)
IC003
ATF, SP/LP DET
IC102
DRUM MOTOR DRIVE
IC103
FG/PG WAVE SHAPER
D002
D003
SERVO SYSTEM CONTROL
IC002
CAPSTAN MOTOR DRIVE
IC101
TOP/END 5V
F999
CN005
CN803
CN801
S REEL FG SENSOR
TAPE END SENSOR
FP-89 BOARD
(See page 67.)
MOTOR DRIVE
IC104
PS101
PWM DRIVE
IC005
CN802
TAPE TOP SENSOR
TAPE LED
T REEL FG SENSOR
FP-90 BOARD
(See page 67.)
(See page 68.)
UC-18 BOARD

SECTION 5
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

5-1. FRAME SCHEMATIC DIAGRAM




7
8
9
10
11
12
13
14
15
16
17
18
RJ-49
VI-129
AU-156
SS-155
RP-183
FT-80
CN502 16P
CN512 16P
SIRCS OUT JACK
M/S SW
REMOCON MODE
SIRCS IN JACK
LANC JACK
LANC VDD
GND (A)
AV OUT C (X)
AV OUT C (Y)
AV OUT L
AV OUT R
AV AV CONT
AV OUT V/Y (X)
AV OUT V/Y (Y)
AV S SW
LINE IN Y (X)
LINE IN V (X)
AUDIO GND
LINE OUT R
S SW
LINE OUT L
LINE OUT C (Y)
LINE OUT C (X)
LINE OUT Y (Y)
LINE OUT Y (X)
LINE OUT V (Y)
LINE OUT V (X)
CN902 8P
CN508 8P
FSC (X)
FSC (Y)
REC AFM
GND (E)
PB RF
RF SWP
X2 PB
AFM MODE DET
GND (A)
LINE OUT L
SP/LP
SW 5V
LINE OUT R
UN -5V
IN3 R
AFM OUTSEL
AFM MODE
INI R
VOICE BOOST
CN502 13P
CN002 13P
SP/LP DET
AUDIO PB
HCHG
REC ATF
GND (E)
V/S SW
REC Y RF
PB RF
AFM MODE
AFM OUTSEL
AUDIO MUTE
AFM MODE DET
RF SWP
FSV-2
CN501 28P
CN001 28P
VIRS K
E DET
E MODE
COPY
PAL V
VOICE BOOST
EDIT
V MUTE
JOG VD
JOG
C SYNC
VI SWP
ME/MP
SP/LP
VA PB
VIDEO CS
COSMO SCK
COSMO SI
COSMO SO
SYS RESET
COSMO CS
COSMO RESET
INT VD
UN 10.5V
GND (M)
UN 5.7V
GND (E)
SW 5V
FSV-1
V501 8P
UN 10.5V
GND (M)
UN 12V
UN 5.7V
SW 5V
P.CONT
GND (E)
UN -5V
LOADING MOTOR
FRONT LOADING MOTOR
CN104 2P
LOAD
UNLOAD
TO LOAD MOTOR
CN103 2P
FL LOAD
FL UNLOAD
TO FL MOTOR
FRS-13
CN102 10P
DRM U
DRM V
DRM W
DRM COM
GND
FG (COM)
FG (+)
PG (COM)
PG (+)
FP-503
(FLEXIBLE)
FCS-3
DRUM
PG/FG
FLYING ERASE
2CH
CN101 15P
CFG GND
CFG Vcc
CFG (B)
CFG (A)
CAP W
CAP U
HE GND
VHE (+)
VHE (-)
HE Vcc
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
CN004 10P
CN002 10P
V GND
REC RF
PB RF
SW 5V
RP PB MODE
RF SWP
H CHG
ME/MP
FE ON
N.C
CHECK PIN
CN001 8P
1'CH
REC CURRENT
1CH
2CH
PB PCM RF
PB Y
RF SWP
GND
CN003 13P
FE (X)
FE (Y)
FE (G)
1'CH (Y)
1'CH (X)
1'CH (G)
2CH (X)
2CH (Y)
2CH (G)
FP-502
(FLEXIBLE)
RT
CN005 14P
CN803 14P
END SENS
CC DOWN
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
REEL LED
TOP/END 5V
5V
T REEL FG
TOP SENS
TOP/END LED
TOP END LED
REC PROOF
COM
FUS-2
CN801 13P
N.C.
13/10
END SENS
CC DOWN
M OUT 0
PV-111 (HARNESS)


10 11 12 13 14 15 16 17 18 19 20 21
CHECK PIN
CN001 8P
1'CH
REC CURRENT
1CH
2CH
PB PCM RF
PB Y
RF SWP
GND
CN002 10P
V GND
REC RF
PB RF
SW 5V
RP PB MODE
RF SWP
H CHG
ME/MP
FE ON
N.C
RP-183
CN003 13P
GND
FE (X)
FE (Y)
FE (G)
1'CH (Y)
1'CH (X)
1'CH (G)
2CH (X)
2CH (Y)
2CH (G)
1CH (Y)
1CH (X)
1CH (G)
FP-502 (FLEXIBLE)
CN701 15P
CFG GND
CFG Vcc
CFG (B)
CFG (A)
CAP W
CAP U
HE GND
VHE (+)
VHE (-)
HE Vcc
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
CC-82
CN702 15P
CFG W
CFG V CC
CFG (B)
CFG (A)
CAP GND
CAP U
HE GND
VHE (+)
VHE (-)
HE VCC
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
LOADING MOTOR
FRONT LOADING MOTOR
CN104 2P
LOAD
UNLOAD
TO LOAD MOTOR
CN103 2P
FL LOAD
FL UNLOAD
TO FL MOTOR
FRS-13
RT
M901 DRUM
DRUM PG/FG
FLYING ERASE
1CH
2CH
1'CH
CAPSTAN FG
HALL DEVICE
M902 CAPSTAN
MD
FP-503 (FLEXIBLE)
FCS-3
GND
PG (+)
PG (COM)
FG (+)
FG (COM)
GND
DRM COM
DRM W
DRM V
DRM U
CN102 10P
DRM U
DRM V
DRM W
DRM COM
GND
FG (COM)
FG (+)
PG (COM)
PG (+)
GND
CN101 15P
CFG GND
CFG Vcc
CFG (B)
CFG (A)
CAP W
CAP U
HE GND
VHE (+)
VHE (-)
HE Vcc
UHE (+)
UHE (-)
CAP V
WHE (+)
WHE (-)
SS-155
CN502 13P
SP/LP DET
AUDIO PB
HCHG
REC ATF
GND (E)
V/S SW
REC Y RF
PB RF
AFM MODE
AFM OUTSEL
AUDIO MUTE
AFM MODE DET
RF SWP
FSV-2
CN002 13P
SP/LP DET
AUDIO PB
HCHG
REC ATF
GND (E)
V/S SW
REC Y RF
PB RF
AFM MODE
AFM OUT SEL
AUDIO MUTE
AFM MODE DET
RF SWP
CN501 28P
VIRS K
E DET
E MODE
COPY
PAL V
VOICE BOOST
EDIT
V MUTE
JOG VD
JOG
C SYNC
VI SWP
ME/MP
SP/LP
VA PB
VIDEO CS
COSMO SCK
COSMO SI
COSMO SO
SYS RESET
COSMO CS
COSMO RESET
INT VD
UN 10.5V
GND (M)
UN 5.7V
GND (E)
SW 5V
FSV-1
CN001 28P
CN004 10P
V GND
REC RF
PB RF
SW 5V
RP PB MODE
RF SWP
H CHG
ME/MP
FE ON
N.C
CN005 14P
END SENS
CC DOWN
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
REEL LED
TOP/END 5V
T REEL FG
TOP SENS
TOP/END LED
REC PROOF
ME/MP
COM
FUS-2
CN803 14P
END SENS
CC DOWN
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
REEL LED
5V
T REEL FG
TOP SENS
TOP END LED
REC PROOF
ME/MP
COM
CN801 15P
N.C.
COM
13/10
END SENS
5V
CC DOWN
M OUT D
MODE SW 0
MODE SW 1
MODE SW 2
S REEL FG
5V
S REEL LED
CN802 11P
T REEL LED
5V
T REEL FG
T REEL LED
TOP SENS
5V
TOP END LED
REC PROOF
MP/HG
ME/MP
COM
UC-18
CN201 8P
UN -5V
GND (E)
P.CONT
SW 5V
UN 5.7V
UN 12V
GND (M)
UN 10.5V
POWER SUPPLY BLOCK
SR-405 (AEP)
SR-406 (UK)
GND (E)
UN -5V
PV-111 (HARNESS)

FRAME

RP-183 BOARD

CN001	A-3
CN002	B-1
CN003	C-3
D001	C-4
D002	C-3
IC001	B-3
IC002	B-2
Q001	E-4
Q002	E-3
Q003	A-4
Q006	E-1
Q007	C-1
Q008	D-2
Q012	F-3
Q013	D-3
Q014	D-2
Q016	F-4

5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

● For printed wiring boards.

- ○ : Through hole.
- ▩ : Pattern from the side which enables seeing.
- ▩ : Pattern of the rear side. *
- Circled numbers refer to waveforms.
- Chip diode anode/cathode indication.
  A : anode, C : cathode

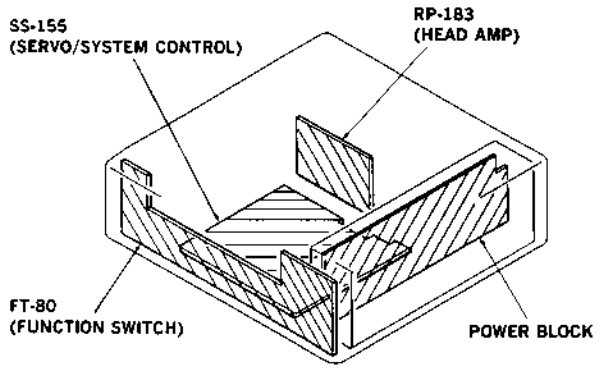
● For schematic diagram.

- 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 unless otherwise noted.
- Chip resistor are 1/8W or 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊣▭⊢ : nonflammable resistor.
- ⊣≈⊢ : 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 ground and measurement points. *
- Readings are taken with a color-bar signal input. *
- Readings are taken with a digital multimeter (DC10MΩ). *
- Voltage variations may be noted due to normal production tolerances. *

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

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

*: indicated by the color red.



SCHEMATIC DIAGRAMS

RED WIRING BOARDS

note is

seeing.

of chip.
of tantalum capacitor,

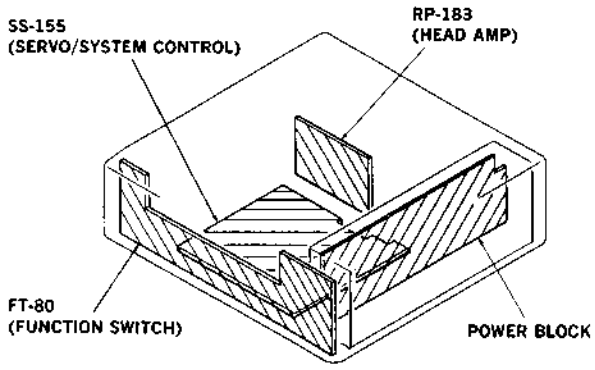
herwise noted.
herwise noted.

oted. pF : μμF.
lectrolytics and

characteristic curve B,

urement points. *
nput. *
ter (DC10MΩ). *
to normal production

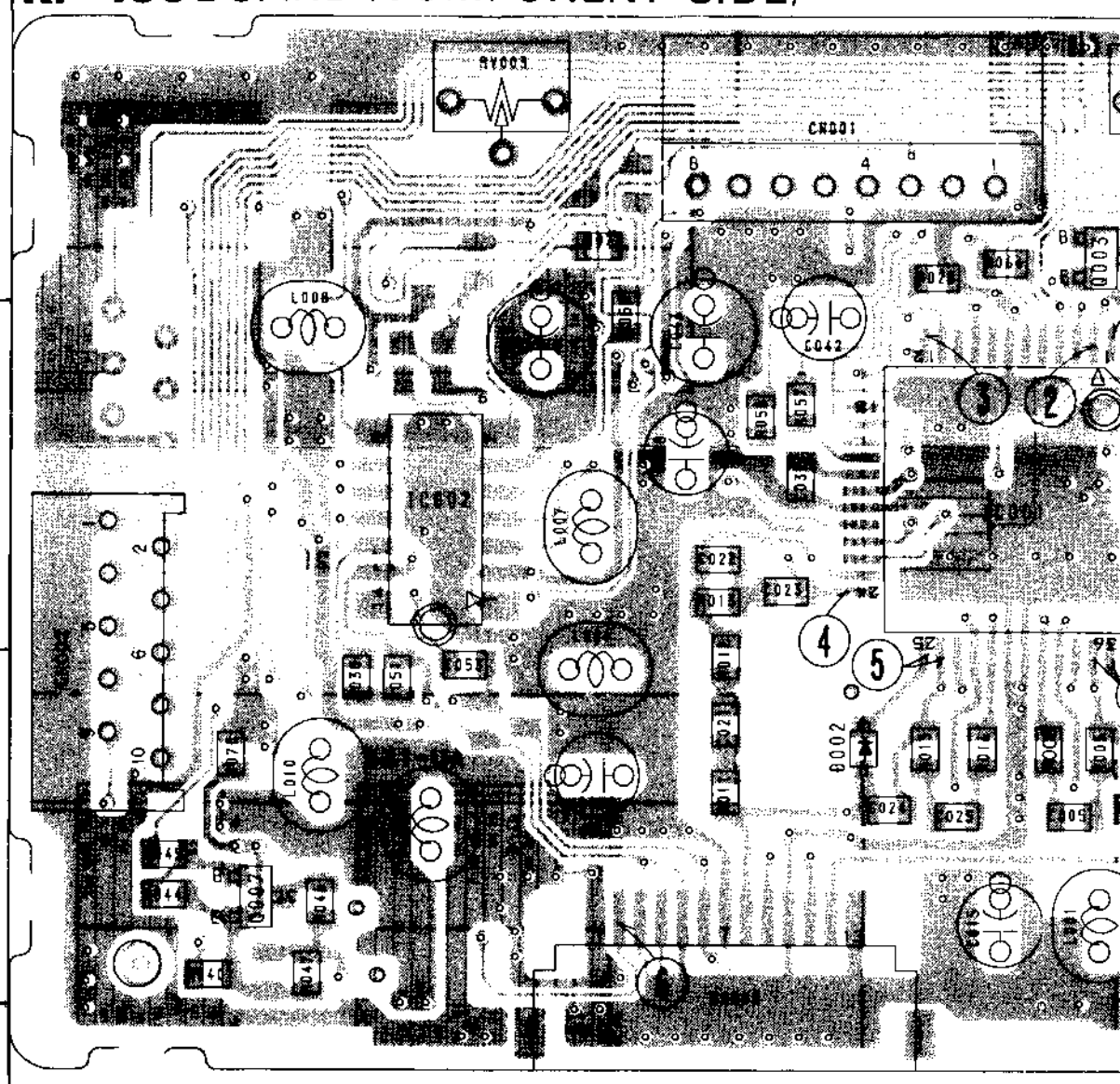
⚠ or dotted
ty.
ied.



RP-183 (REC/PB AMP) PRINTED WIRING BOARD
—Ref. No. RP-183 BOARD : 1000 series—

RP-183 BOARD	
CN001	A-3
CN002	B-1
CN003	C-3
D001	C-4
D002	C-3
IC001	B-3
IC002	B-2
Q001	E-4
Q002	E-3
Q003	A-4
Q006	E-1
Q007	C-1
Q008	D-2
Q012	F-3
Q013	D-3
Q014	D-2
Q016	F-4

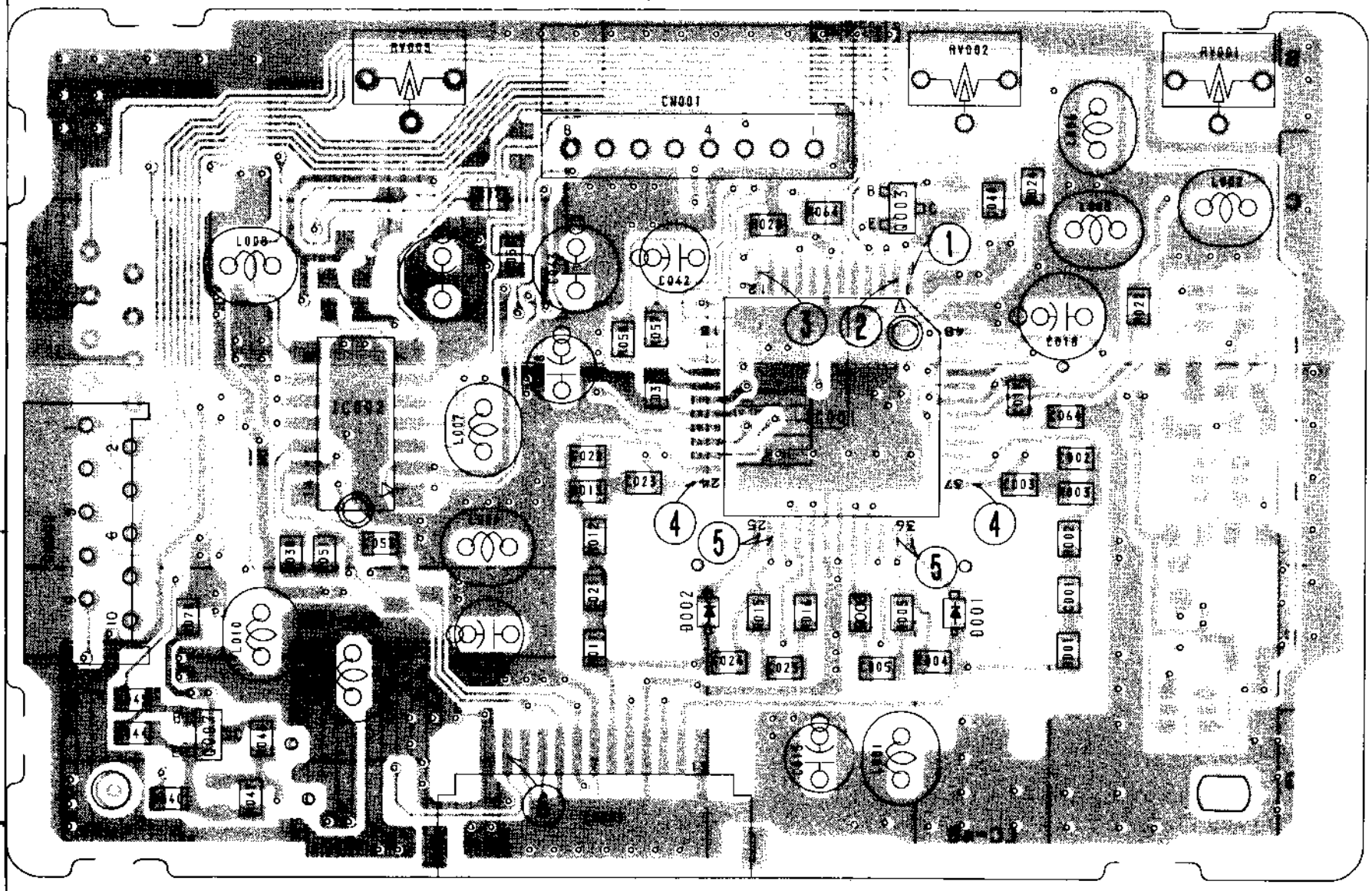
RP-183 BOARD (COMPONENT SIDE)



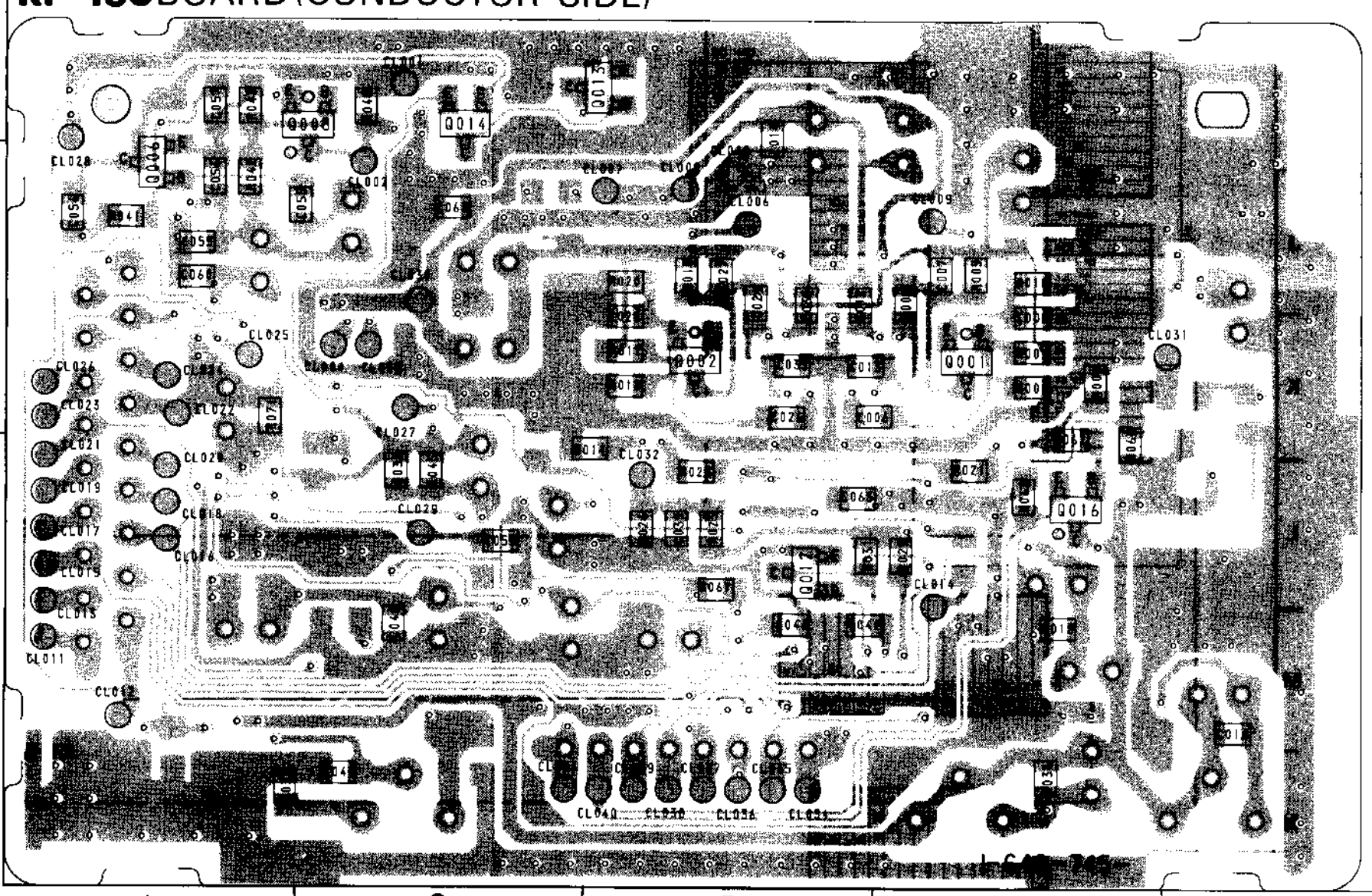
RP-183 BOARD (CONDUCTOR SIDE)

RP-183 (REC/PB AMP) PRINTED WIRING BOARD
—Ref. No. RP-183 BOARD : 1000 series—

RP-183 BOARD (COMPONENT SIDE)



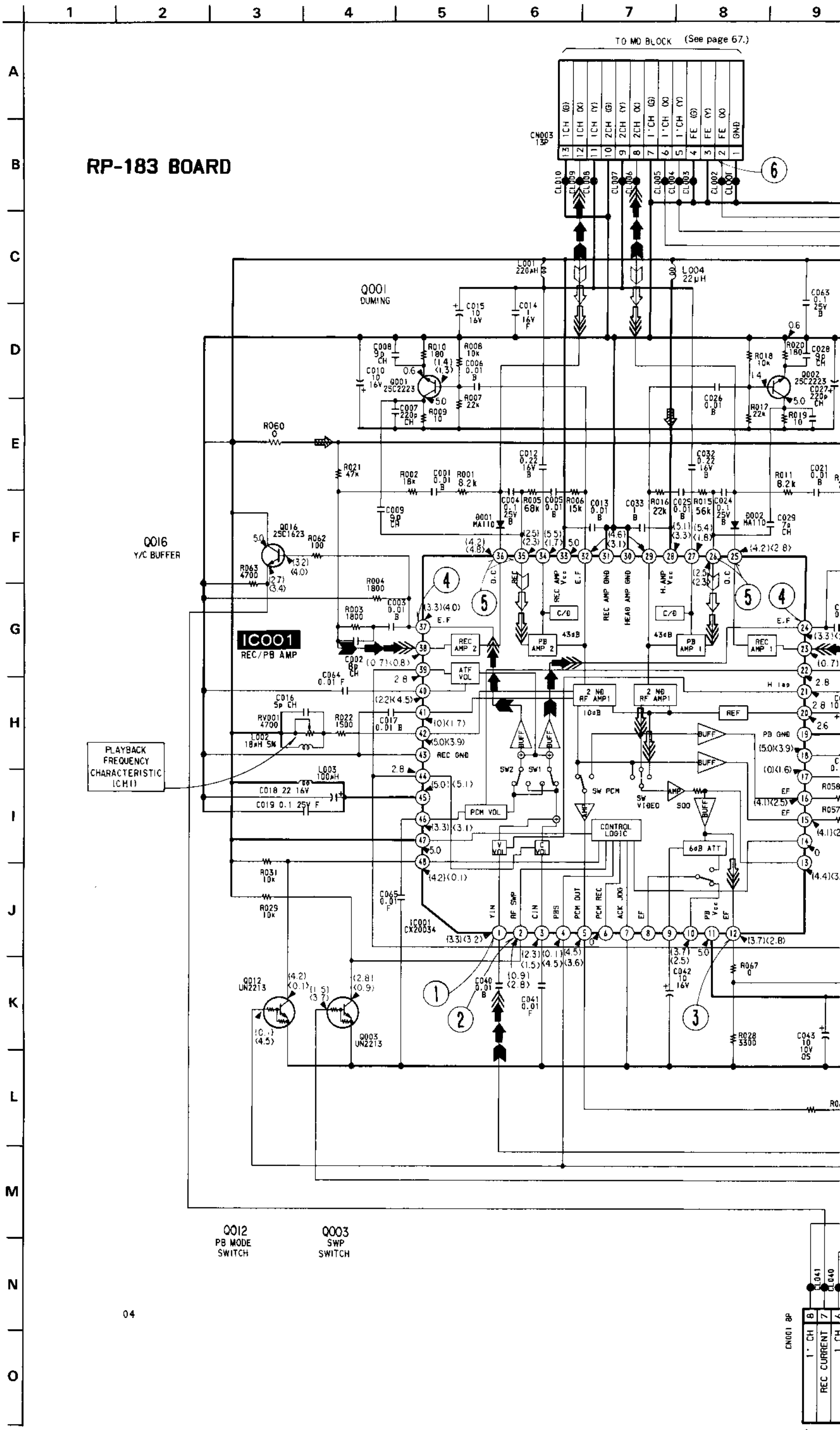
RP-183 BOARD (CONDUCTOR SIDE)



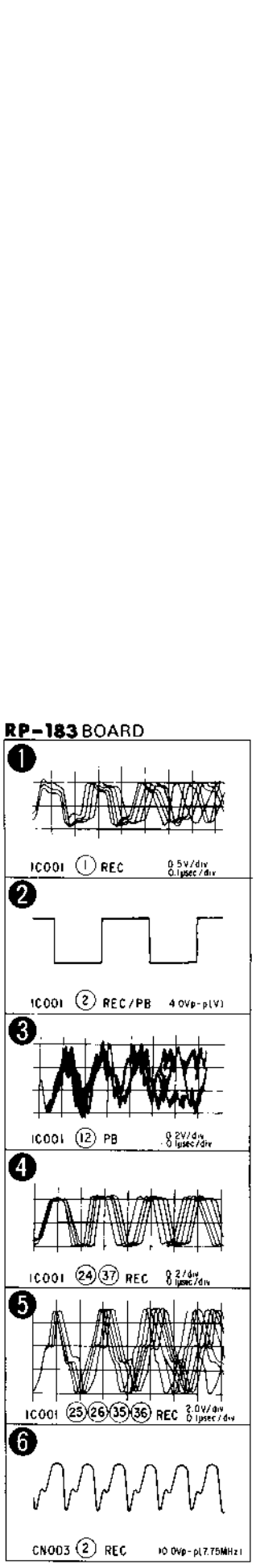
04 1 2 3 4 12

RP-183 (REC/PB AMP) SCHEMATIC DIAGRAM

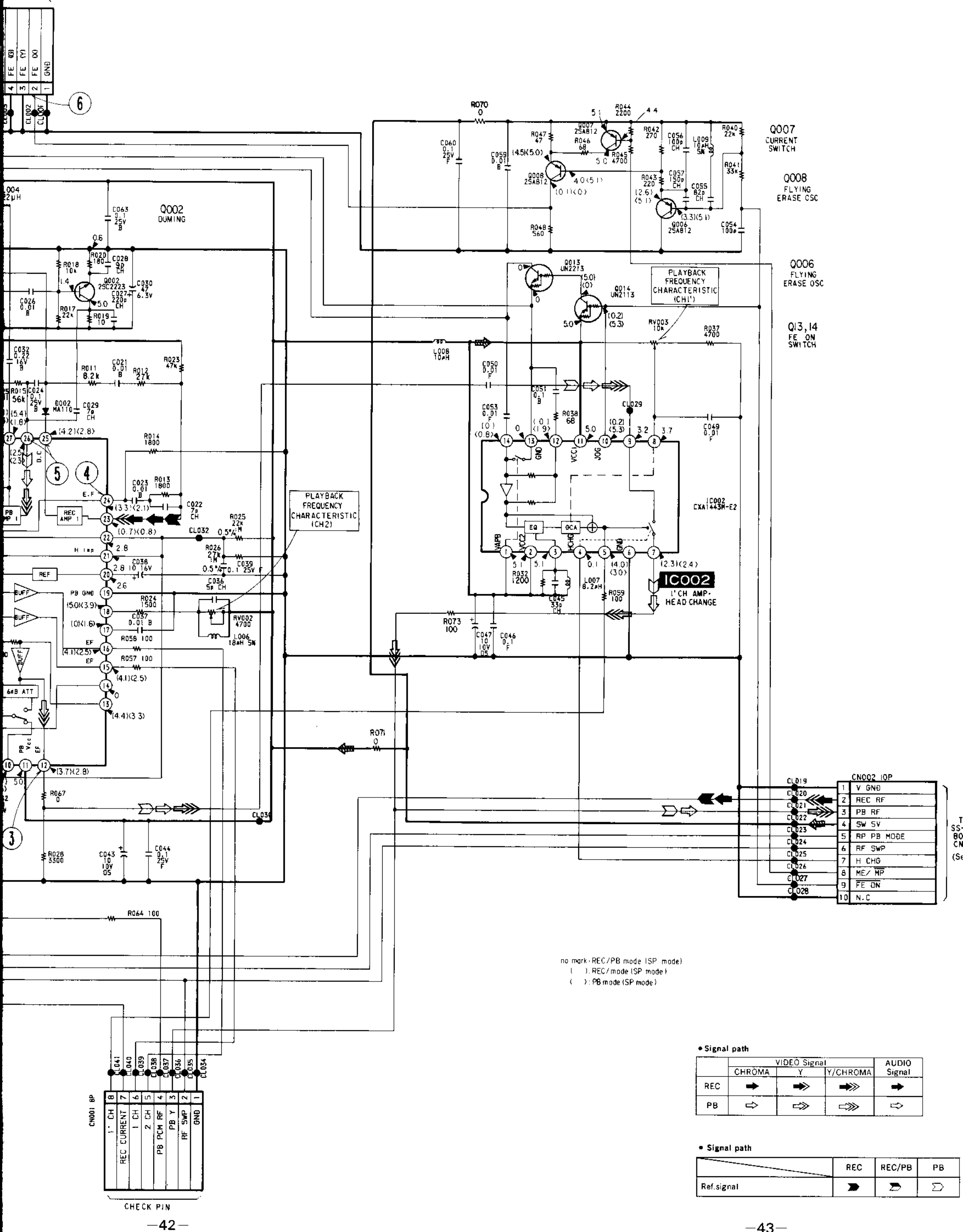
—Ref. No. RP-183 BOARD : 1000 series—



RP-183 BOARD



(See page 67.)



no mark : REC/PB mode (SP mode)
( ) : REC/mode (SP mode)
( ) : PB mode (SP mode)

• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• **Signal path**

	REC	REC/PB	PB
Ref.signal	➡	➡	⇨

Q007
CURRENT
SWITCH

Q008
FLYING
ERASE OSC

Q006
FLYING
ERASE OSC

Q13,14
FE ON
SWITCH

CN002 IOP

CL019	1	V GND
CL020	2	REC RF
CL021	3	PB RF
CL022	4	SW 5V
CL023	5	RP PB MODE
CL024	6	RF SWP
CL025	7	H CHG
CL026	8	ME/ $\overline{MP}$
CL027	9	$\overline{FE\ ON}$
CL028	10	N.C

TO
SS-155
BOARD
CN004
(See page 65.)

ath

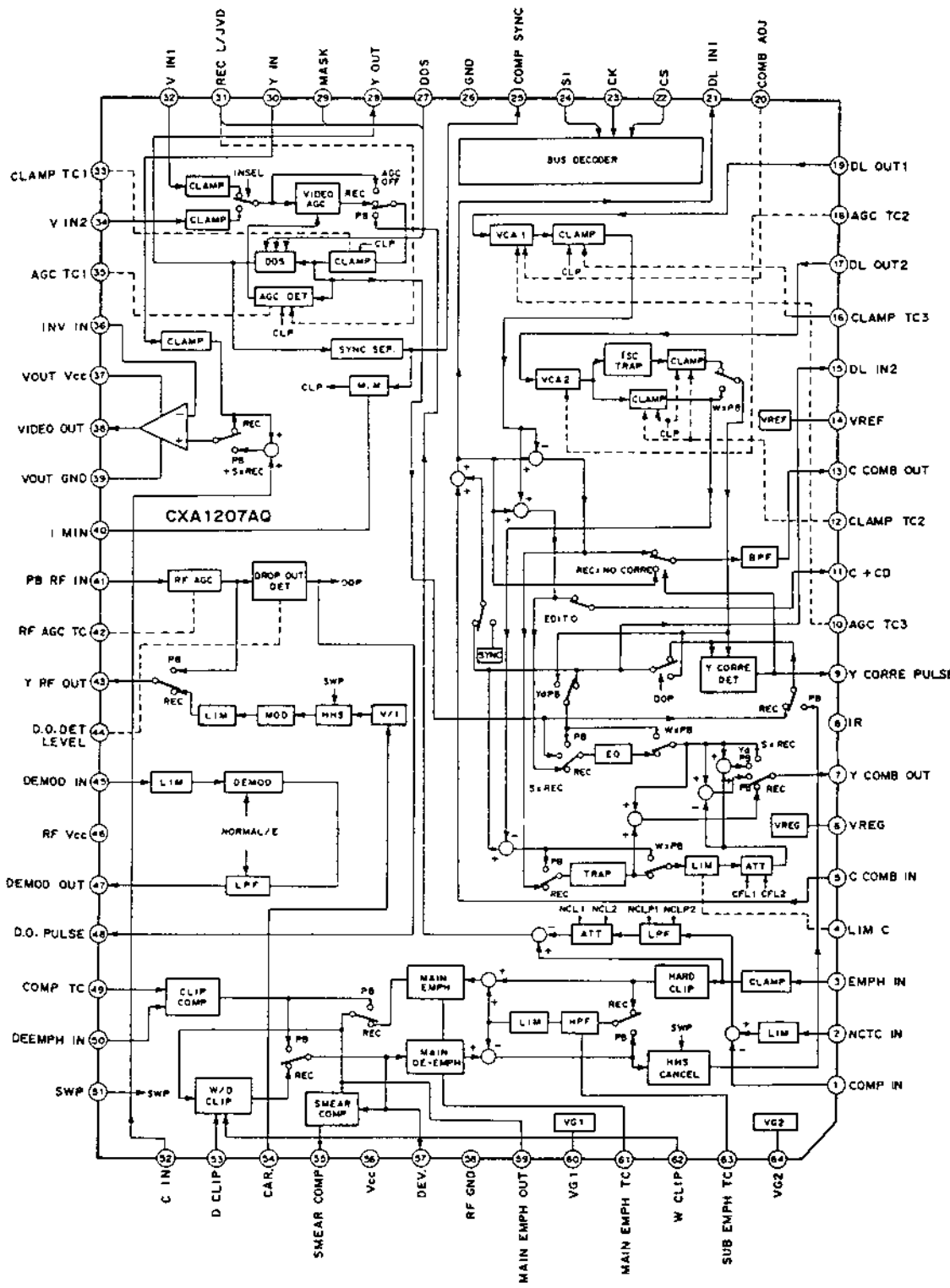
	VIDEO Signal		AUDIO
HROMA	Y	Y/CHROMA	Signal
➡	➡	➡	➡
⇨	⇨	⇨	⇨

ath

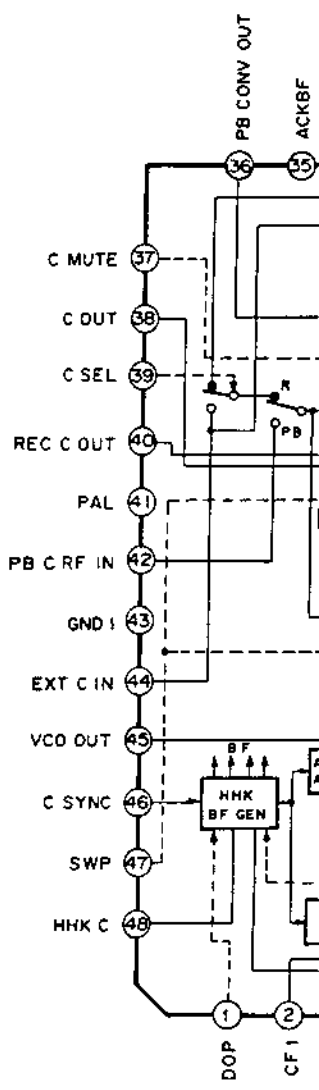
	REC	REC/PB	PB
	➡	➡	⇨

• VI-129 BOARD IC BLOCK DIAGRAMS

IC601 CXA1207AQ
Y PROCESS

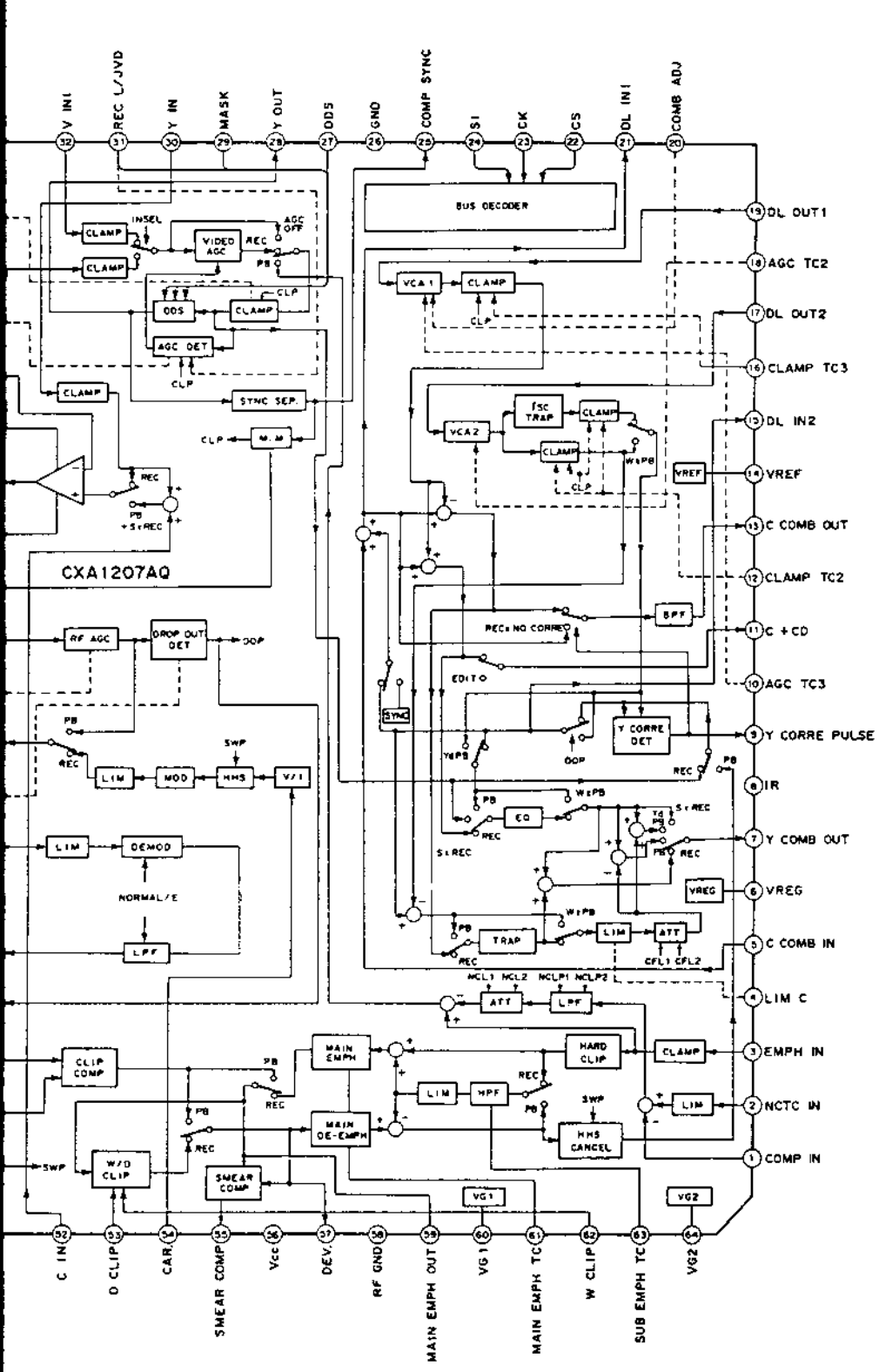


IC802 CXA1208Q
CHROMA PROCESS

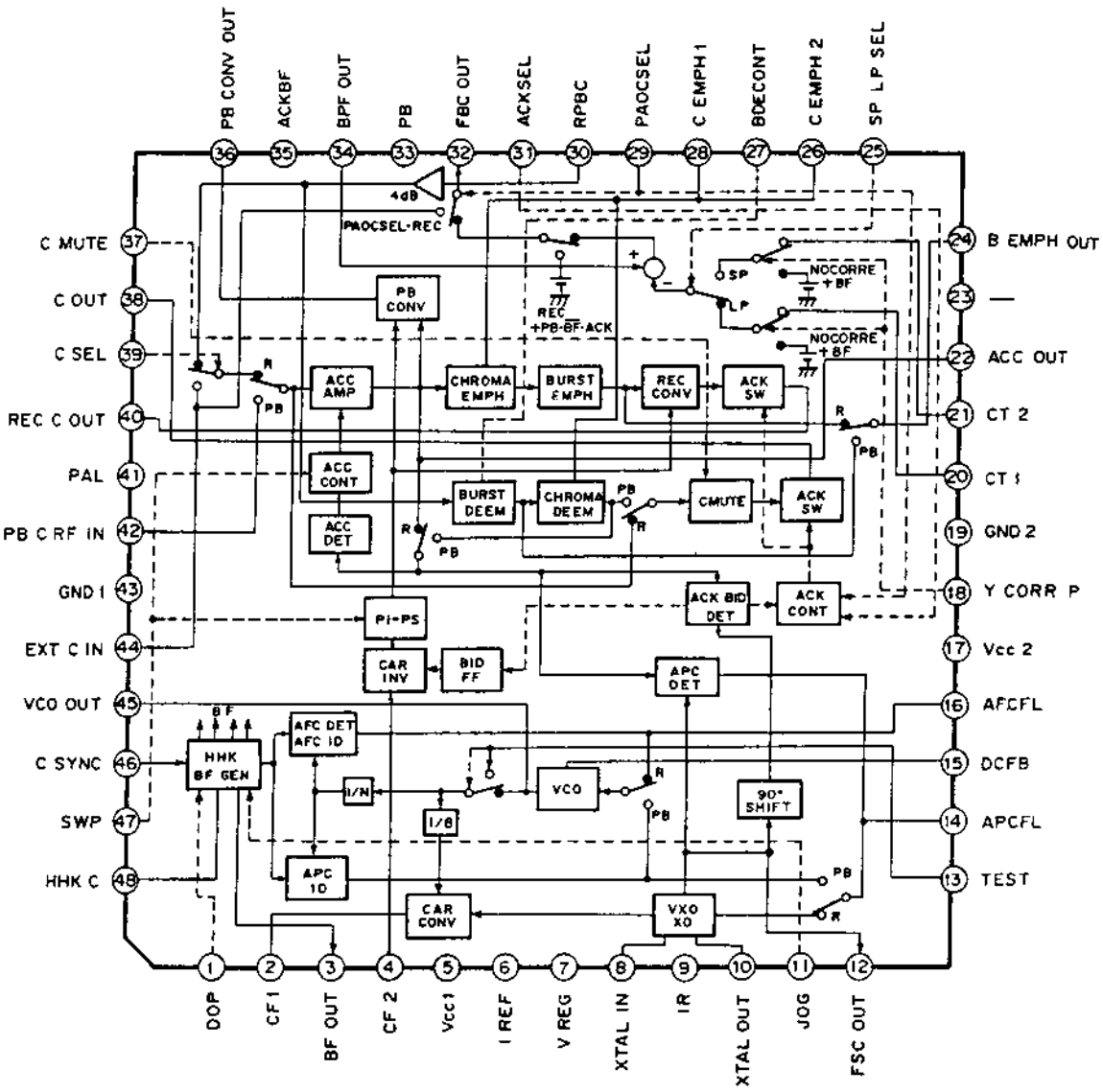


DARD IC BLOCK DIAGRAMS

XA1207AQ
PROCESS

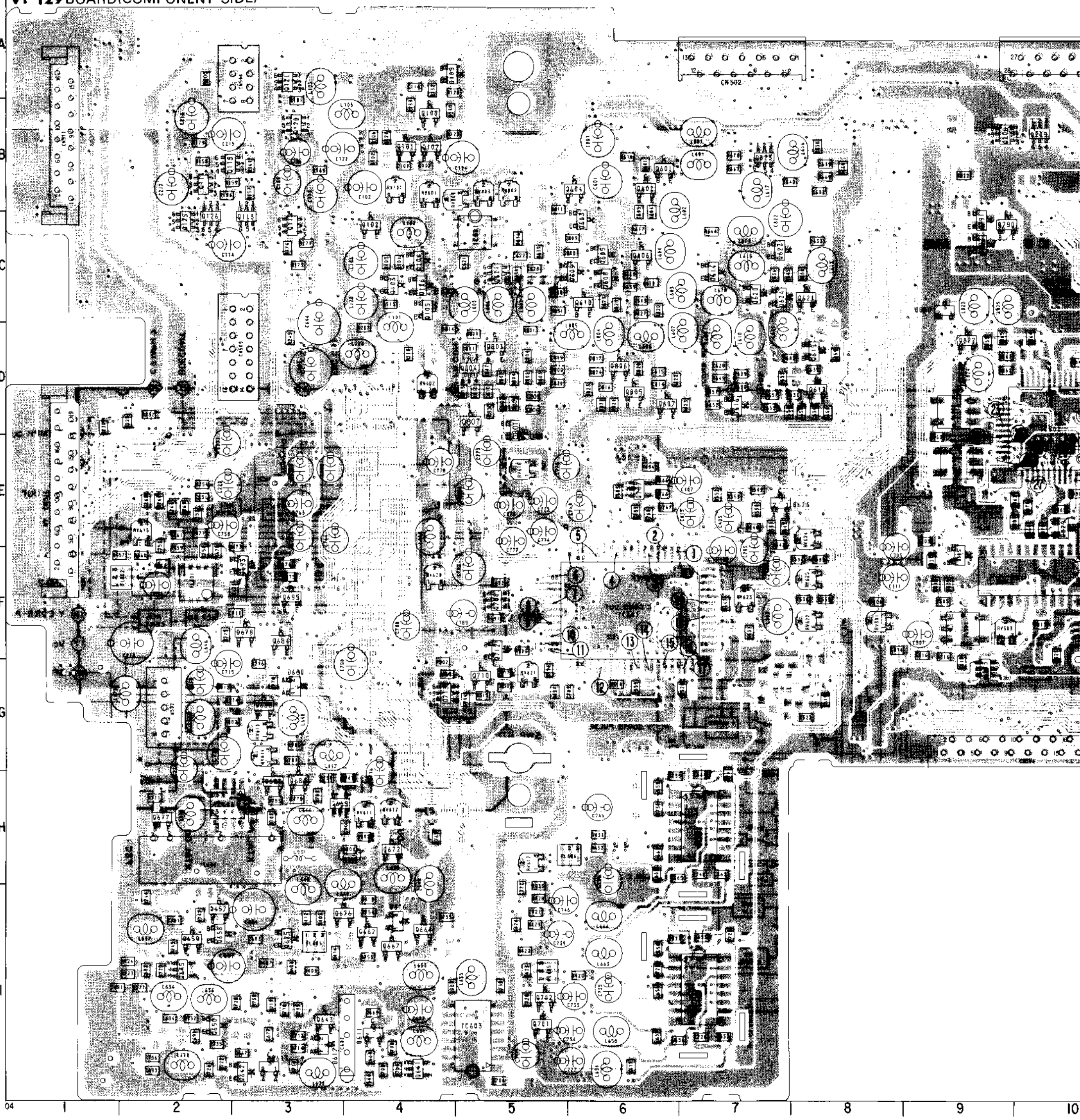


IC802 CXA1208Q
CHROMA PROCESS



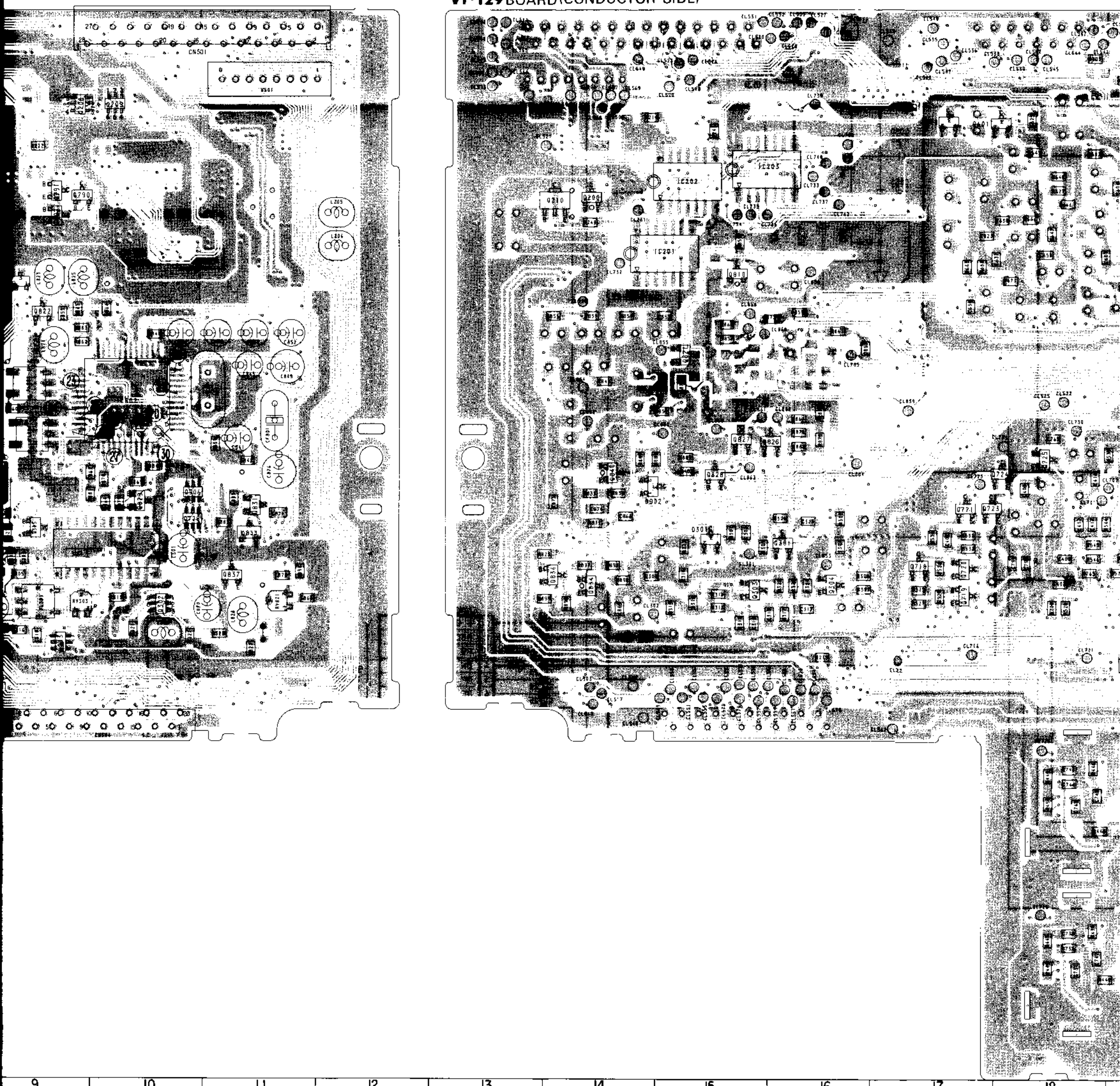
VI-129 (VIDEO IN/OUT) PRINTED WIRING BOARD
—Ref. No. VI-129 BOARD : 1000 series—

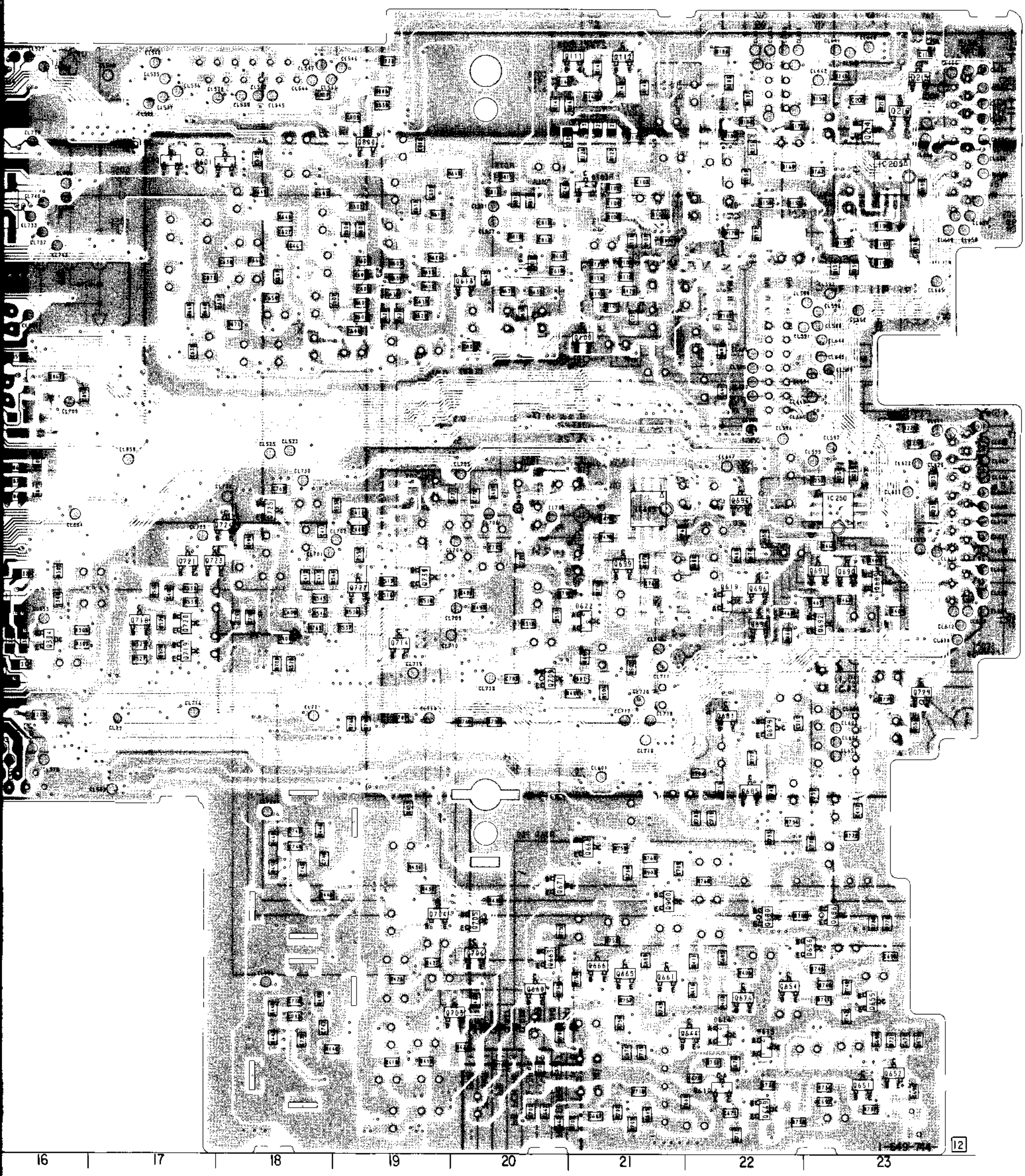
VI-129 BOARD(COMPONENT SIDE)



VIDEO IN/OUT

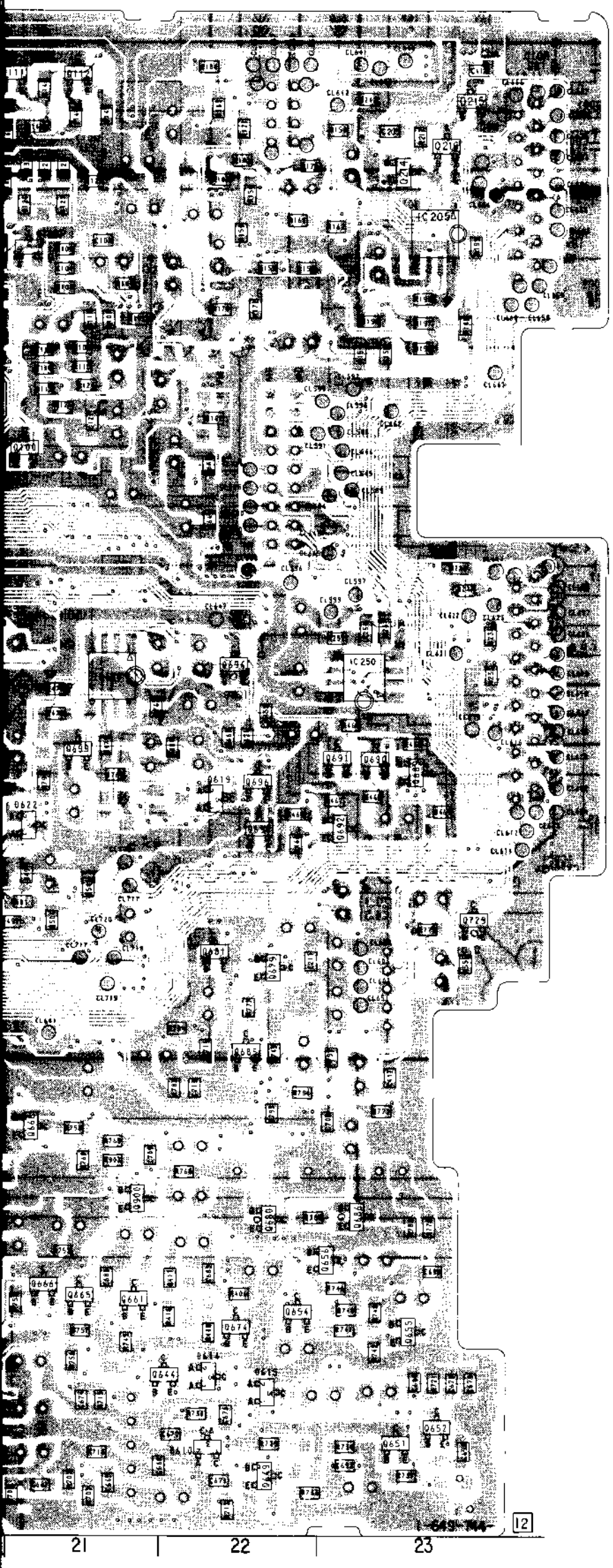
VI-129 BOARD (CONDUCTOR SIDE)





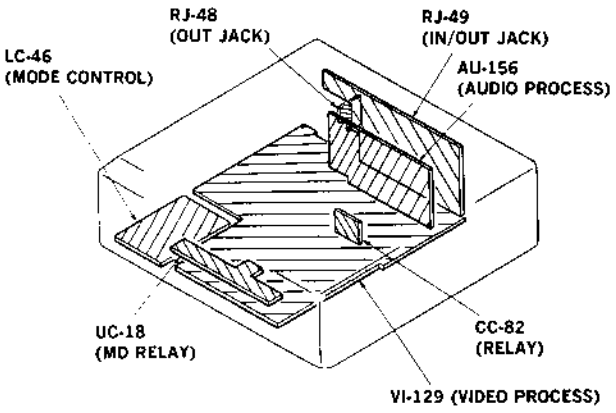
VI-129 BOARD

CN501	A-10	Q620
CN502	A-7	Q621
CN504	G-10	Q622
CN508	A-3	Q623
CN509	D-3	Q624
CN511	E-1	Q641
CN512	B-1	Q642
		Q643
D101	B-21	Q644
D301	F-15	Q645
D601	B-17	Q649
D602	B-17	Q650
D610	I-22	Q651
D611	I-4	Q652
D612	I-3	Q654
D613	I-3	Q655
D614	I-22	Q656
D615	I-22	Q657
D616	I-4	Q658
D619	F-22	Q659
D622	F-21	Q660
D626	E-7	Q661
D680	G-3	Q662
D800	C-9	Q663
D902	E-14	Q664
		Q665
IC201	C-15	Q666
IC202	B-15	Q667
IC203	B-15	Q668
IC205	B-23	Q669
IC250	E-23	Q671
IC401	F-10	Q672
IC601	F-6	Q674
IC602	J-4	Q675
IC603	J-5	Q676
IC604	H-2	Q677
IC605	E-21	Q678
IC606	I-7	Q679
IC607	H-7	Q680
IC801	C-5	Q681
IC802	D-10	Q682
		Q683
Q100	C-21	Q684
Q101	B-4	Q685
Q102	C-4	Q686
Q103	C-4	Q688
Q104	C-4	Q689
Q105	C-4	Q690
Q106	C-4	Q691
Q107	B-4	Q692
Q108	B-4	Q693
Q109	A-4	Q694
Q111	A-21	Q695
Q112	A-21	Q696
Q113	C-3	Q697
Q114	B-2	Q698
Q115	B-2	Q699
Q119	C-3	Q701
Q120	B-3	Q702
Q121	A-3	Q703
Q125	C-2	Q704
Q126	C-2	Q705
Q200	C-14	Q706
Q208	B-9	Q707
Q209	B-10	Q708
Q210	C-14	Q709
Q213	G-9	Q710
Q214	B-23	Q712
Q215	A-23	Q713
Q216	B-23	Q714
Q301	F-16	Q718
Q302	F-10	Q719
Q303	F-15	Q720
Q304	F-16	Q721
Q305	F-9	Q722
Q601	B-6	Q723
Q602	B-6	Q724
Q603	B-6	Q725
Q604	B-6	Q728
Q605	C-6	Q729
Q606	C-6	Q739
Q607	D-6	Q790
Q608	C-6	Q791
Q609	C-6	Q800
Q610	C-6	Q801
Q611	C-5	Q803
Q613	C-20	Q804
Q614	C-7	Q805
Q616	D-7	Q806
Q617	D-8	Q807
Q619	D-8	Q810

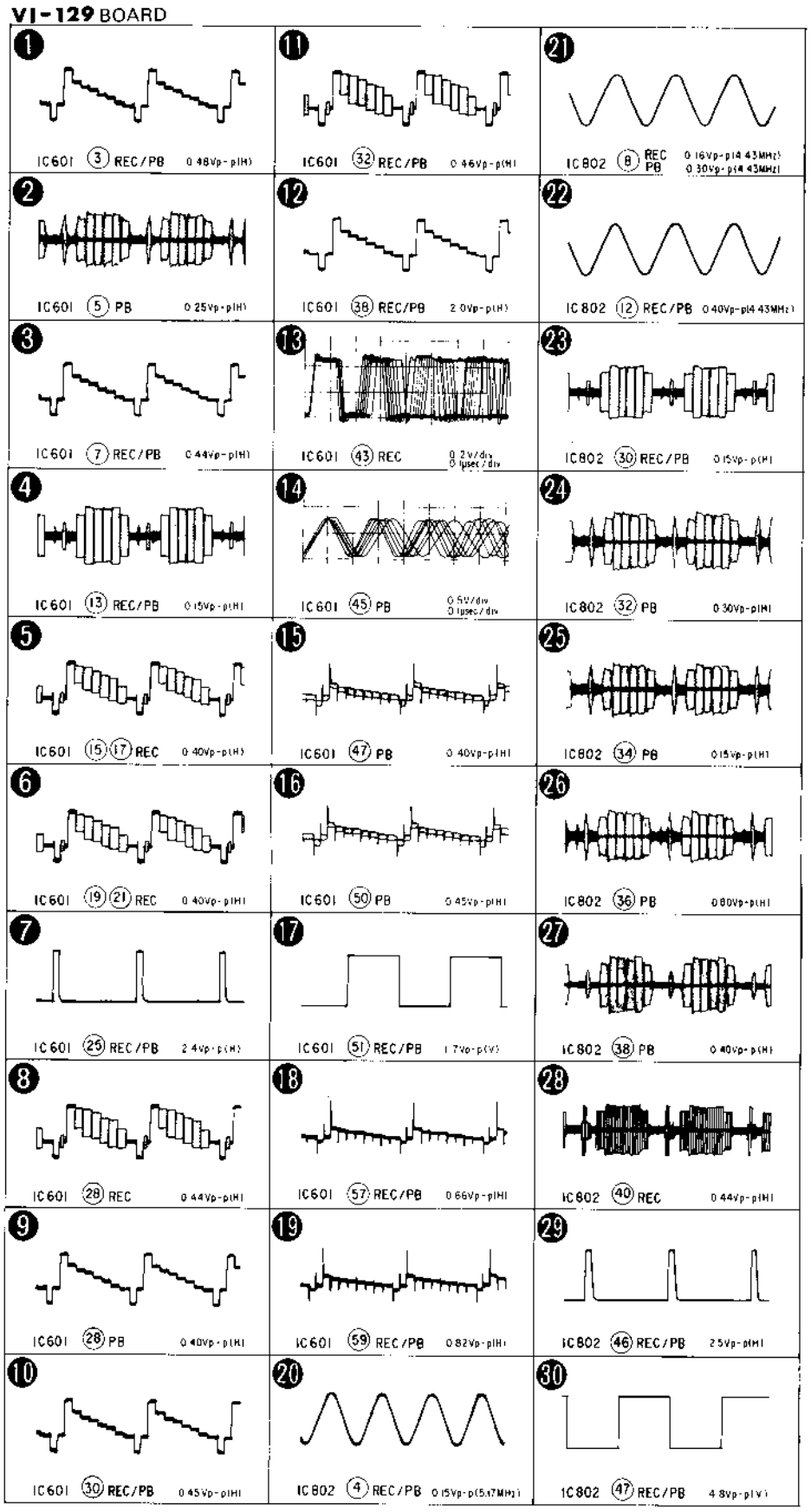


VI-129 BOARD

CN501	A-10	Q620	C-7	Q821	D-15
CN502	A-7	Q621	C-8	Q822	D-9
CN504	G-10	Q622	C-7	Q826	E-16
CN508	A-3	Q623	B-7	Q827	E-15
CN509	D-3	Q624	C-7	Q828	E-15
CN511	E-1	Q641	I-4	Q829	E-10
CN512	B-1	Q642	I-3	Q831	E-11
		Q643	I-3	Q833	F-11
D101	B-21	Q644	I-22	Q834	F-14
D301	F-15	Q645	I-2	Q836	F-14
D601	B-17	Q649	J-22	Q837	F-11
D602	B-17	Q650	I-2	Q840	E-14
D610	I-22	Q651	I-23	Q900	H-21
D611	I-4	Q652	I-23	Q905	E-10
D612	I-3	Q654	I-22		
D613	I-3	Q655	I-23		
D614	I-22	Q656	I-23		
D615	I-22	Q657	I-2		
D616	I-4	Q658	I-2		
D619	F-22	Q659	I-2		
D622	F-21	Q660	I-20		
D626	E-7	Q661	I-21		
D680	G-3	Q662	I-4		
D800	C-9	Q663	I-20		
D902	E-14	Q664	I-4		
		Q665	I-21		
IC201	C-15	Q666	I-21		
IC202	B-15	Q667	I-4		
IC203	B-15	Q668	H-21		
IC205	B-23	Q669	H-3		
IC250	E-23	Q671	H-20		
IC401	F-10	Q672	H-4		
IC601	F-6	Q674	I-22		
IC602	J-4	Q675	I-3		
IC603	J-5	Q676	I-4		
IC604	H-2	Q677	H-2		
IC605	E-21	Q678	F-3		
IC606	I-7	Q679	G-22		
IC607	H-7	Q680	H-22		
IC801	C-5	Q681	G-22		
IC802	D-10	Q682	H-3		
		Q683	H-3		
Q100	C-21	Q684	F-3		
Q101	B-4	Q685	G-22		
Q102	C-4	Q686	H-23		
Q103	C-4	Q688	G-3		
Q104	C-4	Q689	F-23		
Q105	C-4	Q690	E-23		
Q106	C-4	Q691	E-23		
Q107	B-4	Q692	F-23		
Q108	B-4	Q693	F-3		
Q109	A-4	Q694	E-22		
Q111	A-21	Q695	F-3		
Q112	A-21	Q696	F-22		
Q113	C-3	Q697	C-8		
Q114	B-2	Q698	F-22		
Q115	B-2	Q699	E-21		
Q119	C-3	Q701	I-5		
Q120	B-3	Q702	I-5		
Q121	A-3	Q703	I-20		
Q125	C-2	Q704	H-19		
Q126	C-2	Q705	H-20		
Q200	C-14	Q706	I-20		
Q208	B-9	Q707	E-5		
Q209	B-10	Q708	F-5		
Q210	C-14	Q709	F-20		
Q213	G-9	Q710	G-5		
Q214	B-23	Q712	F-5		
Q215	A-23	Q713	G-4		
Q216	B-23	Q714	F-19		
Q301	F-16	Q718	F-17		
Q302	F-10	Q719	F-17		
Q303	F-15	Q720	F-17		
Q304	F-16	Q721	E-17		
Q305	F-9	Q722	F-19		
Q601	B-6	Q723	E-17		
Q602	B-6	Q724	E-18		
Q603	B-6	Q725	E-18		
Q604	B-6	Q728	E-10		
Q605	C-6	Q729	F-23		
Q606	C-6	Q739	E-19		
Q607	D-6	Q790	C-9		
Q608	C-6	Q791	C-9		
Q609	C-6	Q800	B-19		
Q610	C-6	Q801	D-5		
Q611	C-5	Q803	D-5		
Q613	C-20	Q804	D-5		
Q614	C-7	Q805	D-6		
Q616	D-7	Q806	D-6		
Q617	D-8	Q807	D-5		
Q619	D-8	Q810	C-15		



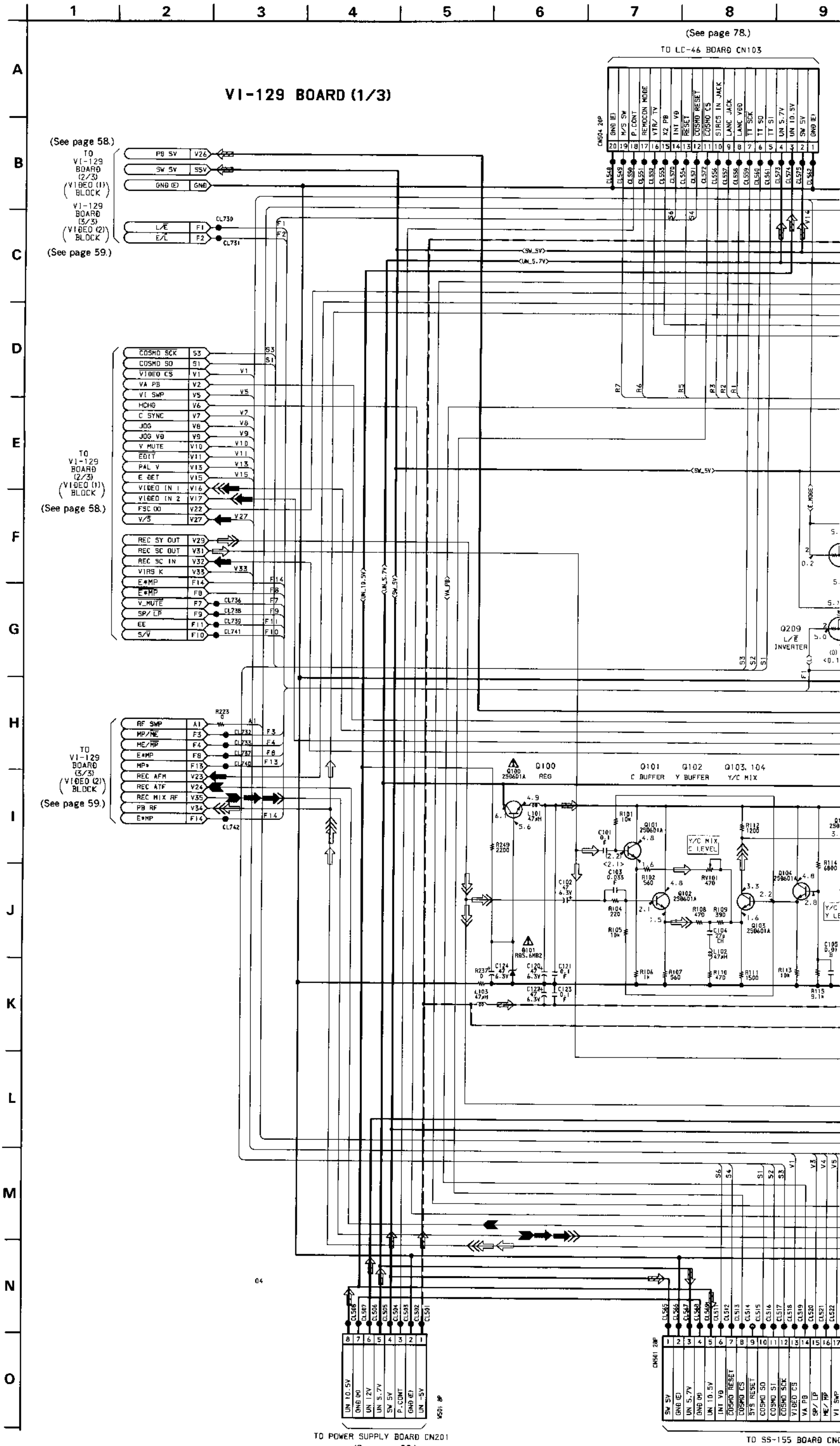
VI-129 BOARD



VI-129 (VIDEO IN/OUT) SCHEMATIC DIAGRAM

—Ref. No. VI-129 BOARD : 1000 series—

• Refer to page 46 for Printed Wiring Board.



(See page 78.)

TO LC-46 BOARD CN103

(See page 82.)

TO AU-156 BOARD CN902

CN503 8P: 1 FSC (X) / 2 FSC (Y) / 3 REC AFM / 4 GND (E) / 5 PB RF / 6 RF SWP / 7 X2 PB / 8 AFM MODE DET

CN509 14P: 1 AUDIO MUTE / 2 IN3 L

IC201 MODE MIX

IC202 MODE INVERTER

IC203 MODE INVERTER

Q208 E/E INVERTER

Q209 E/E INVERTER

Q210 PB 5V REG

Q200 EE SWITCH

Q102 Y BUFFER

Q103, 104 Y/C MIX

Q105 PRE GAIN

Q106 Y/C BUFFER

Q107, 108 C BUFFER

Q109 FILTER

Q111, 112 C BUFFER

Q113 Y BUFFER

Q114 AMP·BUFFER

Q115 AMP·BUFFER

Q119 VIDEO BUFFER

Q120 AMP·BUFFER

Q121 AMP·BUFFER

Q214 SWITCH

Q125 C MUTE

IC205 VIDEO/Y SELECT

TO SS-155 BOARD CN001: 1 SW 5V / 2 GND (E) / 3 UN 5.7V / 4 GND (M) / 5 UN 10.5V / 6 INT VD / 7 COSMO RESET / 8 COSMO CS / 9 SYS RESET / 10 COSMO SO / 11 COSMO SI / 12 COSMO SCK / 13 VIDEO CS / 14 YA PB / 15 SP/ LP / 16 ME/ MP / 17 V1 SWP / 18 C SYNC / 19 JOG / 20 JOG VD / 21 V MUTE / 22 EDIT / 23 VOICE BOOST / 24 PAL V / 25 COPY / 26 E MODE / 27 E DET / 28 VIRS K

(See page 64.)

TO SS-155 BOARD CN002: 1 RF SWP / 2 AFM MODE DET / 3 AUDIO MUTE / 4 AFM OUTSEL / 5 AFM MODE / 6 PB RF / 7 REC Y RF / 8 V/S SW / 9 GND (E) / 10 REC ATF / 11 MCHG / 12 AUDIO PB / 13 SP/LP DET

(See page 64.)

(See page 82.)

(See page 82.)

TO AU-156 BOARD CN902

CN508 8P

1	FSC (X)
2	FSC (Y)
3	REC AFM
4	GND (E)
5	PB RF
6	RF SWP
7	X2 PB
8	AFM MODE DET

TO AU-156 BOARD CN901

CN509 14P

1	AUDIO MUTE
2	IN3 L
3	AUDIO PB
4	GND (A)
5	LINE OUT L
6	SP/LP
7	SW 5V
8	LINE OUT R
9	UN -5V
10	IN3 R
11	AFM OUTSEL
12	AFM MODE
13	IN1 R
14	VOICE VDOST

W502 5P

5	VTR/ TV (BST 5V)
4	SW 5V
3	RFU AUDIO
2	RFU VIDEO
1	GND (E)

TO RJ-48 BOARD CN701

(See page 89.)

IC203 MODE INVERTER

IC250 APC455802 AUDIO AMP

Q200 EE SWITCH

Q210 2SB798 PB 5V REG

Q214 SWITCH

Q125 C MUTE

IC205 VIDEO/Y SELECT

Q213 AV CONTROL

Q113 Y BUFFER

Q114 AMP·BUFFER

Q115 AMP·BUFFER

Q119 VIDEO BUFFER

Q120 AMP·BUFFER

Q121 AMP·BUFFER

Q125 AMP·BUFFER

Q126 AMP·BUFFER

CN511 20P

1	N.C
2	RESET
3	LINE IN R
4	AUDIO GND
5	LINE IN L
6	LINE IN C (Y)
7	LINE IN C (X)
8	LINE IN Y (Y)
9	LINE IN Y (X)
10	LINE IN V (X)
11	AUDIO GND
12	LINE OUT R
13	S SW
14	LINE OUT L
15	LINE OUT C (Y)
16	LINE OUT C (X)
17	LINE OUT Y (Y)
18	LINE OUT Y (X)
19	LINE OUT V (Y)
20	LINE OUT V (X)

TO RJ-49 BOARD CN501

(See page 90.)

CN512 16P

1	SIRCS OUT JACK
2	M/S SW
3	REMOCON MODE
4	SIRCS IN JACK
5	LANC JACK
6	LANC VDD
7	GND (A)
8	AV OUT C (X)
9	AV OUT C (Y)
10	AV OUT L
11	GND (A)
12	AV OUT R
13	AV AV CONT
14	AV OUT V/Y (X)
15	AV OUT V/Y (Y)
16	AV S SW

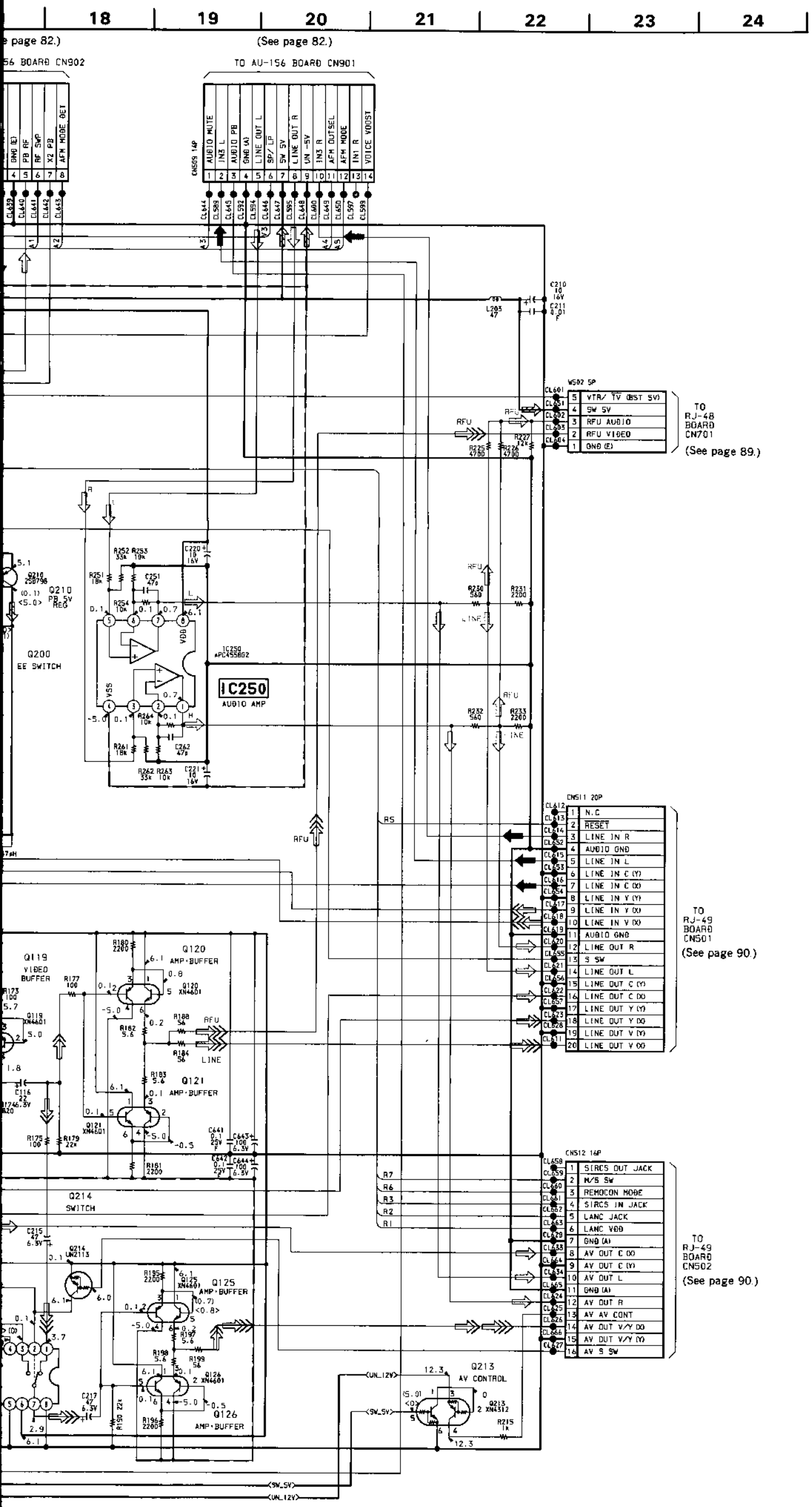
TO RJ-49 BOARD CN502

(See page 90.)

CN502 13P

12	AUDIO PB
13	SP/LP DET

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
< > : PB mode (SP mode)



• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• **Signal path**

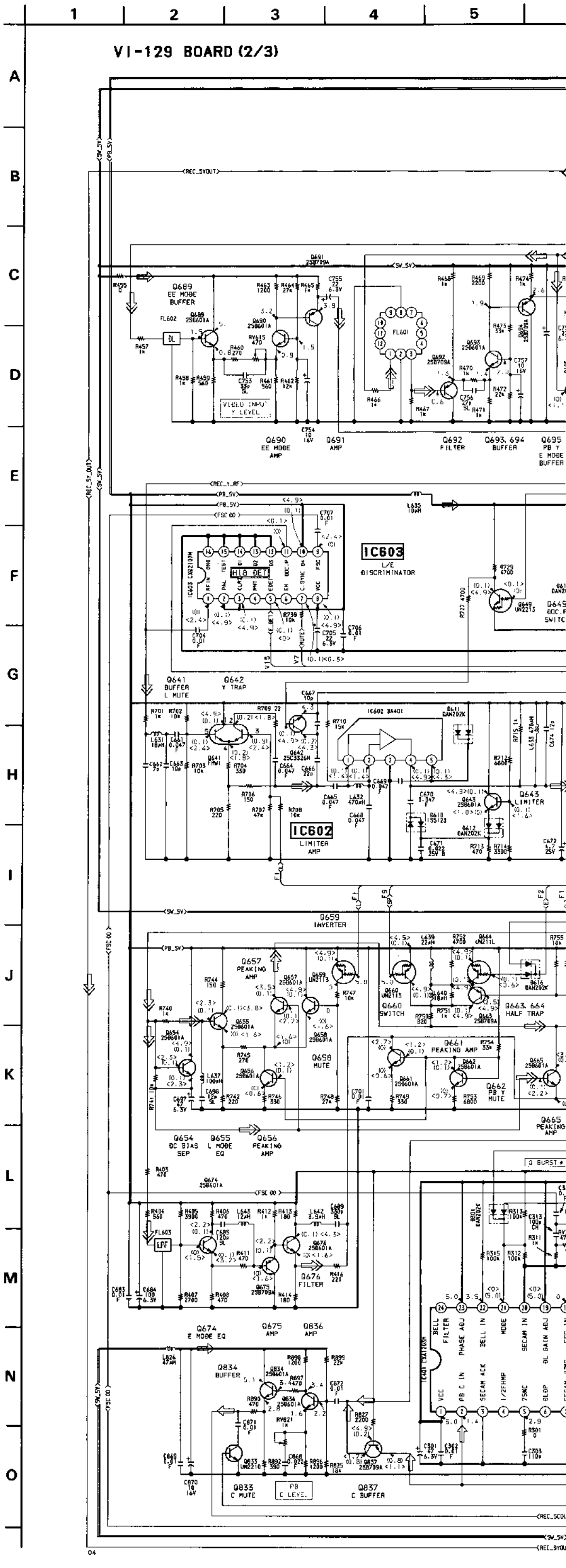
	REC	REC/PB	PB
Ref.signal	▰	▱	▱

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

VI-129 (VIDEO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. VI-129 BOARD : 1000 series—

• Refer to page 46 for Printed Wir
• Refer to page 44 to 45 for IC blo



page 46 for Printed Wiring Board.
page 44 to 45 for IC block diagrams of IC601 and IC802 on VI-129 board.

5 6 7 8 9 10 11 12 13 14 15 16

IC605
REC/PB SELECT

IC601
CXA1207AQ
Y PROCESS

IC802
CXA1208Q
CHROMA PROCESS

IC401
CHROMA
JDG PROSESS

Q692 FILTER
Q693, 694 BUFFER
Q695 PB Y E MODE BUFFER
Q790, 791 E SWITCH
Q696, 698 L SWITCH
Q697 INVERTER
Q699 AMP
Q709, 710 AMP
Q712 MUTE
Q713 SWITCH
Q739 L SWITCH
Q714 MUTE
Q708 INVERTER
Y/C SEP (GAIN)
Q707 L SWITCH
Q718 L SWITCH
Q719 L SWITCH
Q720 L SWITCH
Q721 L SWITCH
Q722, 723 SWITCH
Q724, 725 E SWITCH
Q650 L MODE BUFFER
Q651 FILTER
Q652 JOG SWITCH
Q649 DOC.P SWITCH
Q644 E MODE BUFFER
Q645 BUFFER L MUTE
Q643 LIMITER
Q663, 664 HALF TRAP
Q661 PEAKING AMP
Q662 PB Y MUTE
Q665 PEAKING AMP
Q666 PB Y MUTE
Q667 SWITCH
Q669 BUFFER PB SWITCH
Q672 BUFFER
Q668 PB SWITCH
Q900 FILTER
Q671 L/E SWITCH
Q826 MUTE
Q827, 828 C AMP
Q829 C BUFFER
Q728 SWITCH
Q906 SWITCH
Q301 SWITCH
Q302 BUFFER AMP
Q303 MUTE
Q304 INVERTER
Q305 SWITCH
Q810 LIMITER
Q822 SWITCH
Q840 C AMP
Q821 FSC BUFFER
CHROMA EMP-NSIS
L MODE CARRIER FREQUENCY
L MODE DEVIATION
E MODE DEVIATION
E MODE CARRIER FREQUENCY

IC601
(IC601)
CXA1207AQ
Y PROCESS

IC606
CCD 1H
DELAY LINE

IC607
CCD 2H
DELAY LINE

IC802
IC802
CXA1208Q
CHROMA PROCESS

IC604
SWITCH

Q709, 710 AMP

Q708 INVERTER

Q712 MUTE

Q714 MUTE

Q739 L SWITCH

Q718 L SWITCH

Q719 L SWITCH

Q720 L SWITCH

Q721 L SWITCH

Q722, 723 SWITCH

Q724, 725 E SWITCH

Q701 MUTE

Q702 HPF

Q703 BUFFER

Q704 LPF

Q705, Q706 BUFFER

Q677 BUFFER

Q678 EQ

Q679 PEAKING AMP

Q680 FILTER

Q729 FILTER

Q681, 682 Y TRAP

Q685 PEAKING AMP

Q686 SWITCH

Q688 BUFFER

Q707 L SWITCH

Q810 LIMITER

Q826 MUTE

Q827

Q828

Q829 C BUFFER

Q906 SWITCH

Q821 FSC BUFFER

Q822 SWITCH

Q831 SELECTER

Q840 C AMP

(SHIELD CASE)

Y_COMB

C_COMB

CHROMA EMPHASIS

EMPHASIS Y LEVEL

PB Y LEVEL

Y/C SEP (GAIN)

Y/C SEP (PHASE)

CC LEVEL

L MODE CARRIER FREQUENCY

E MODE CARRIER FREQUENCY

L MODE DEVIATION

E MODE DEVIATION

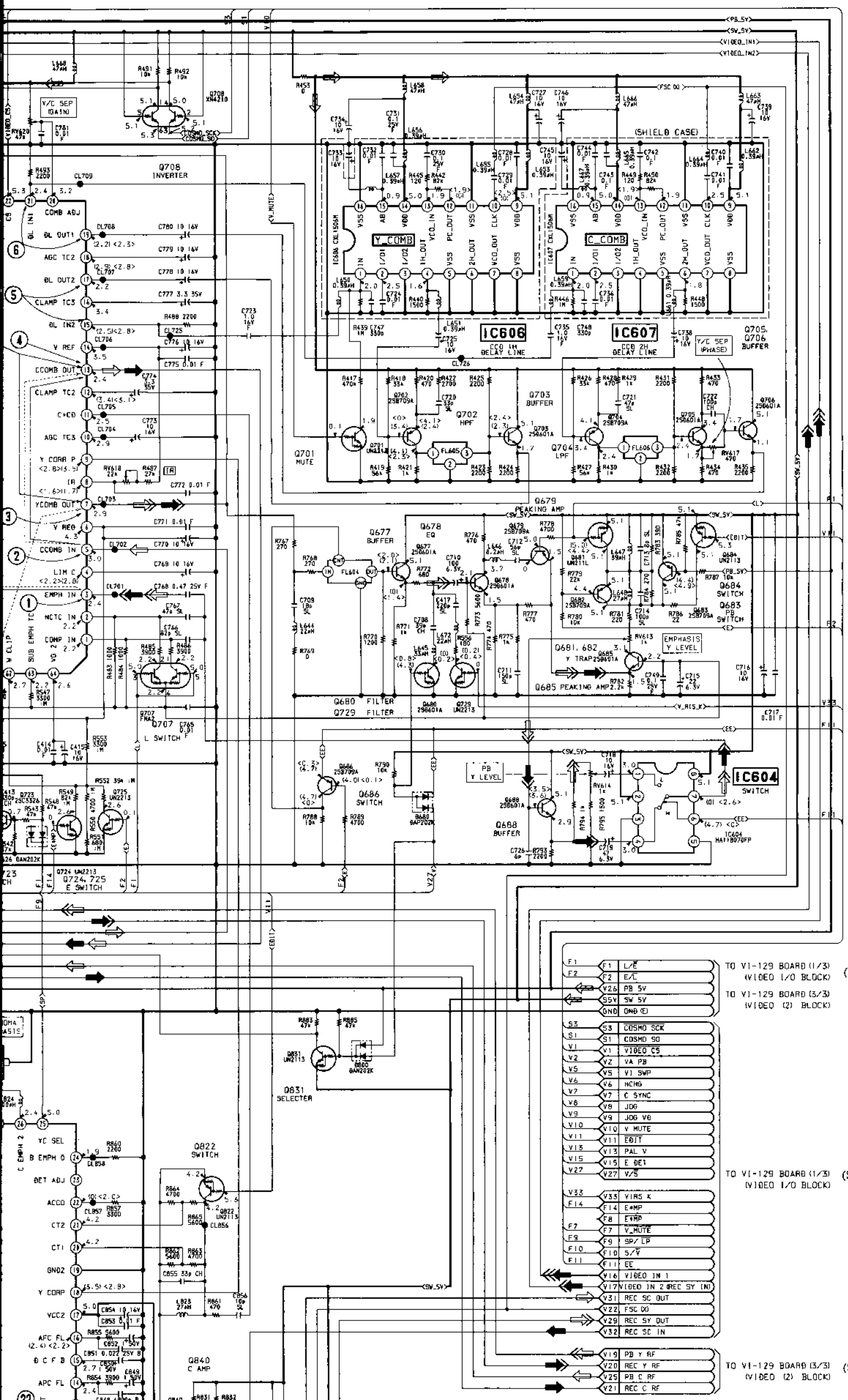
TO V1-129 BOARD (1/4) (VIDEO I/O BLOCK)

TO V1-129 BOARD (3/4) (VIDEO (2) BLOCK)

TO V1-129 BOARD (1/4) (VIDEO I/O BLOCK)

TO V1-129 BOARD (3/4) (VIDEO (2) BLOCK)

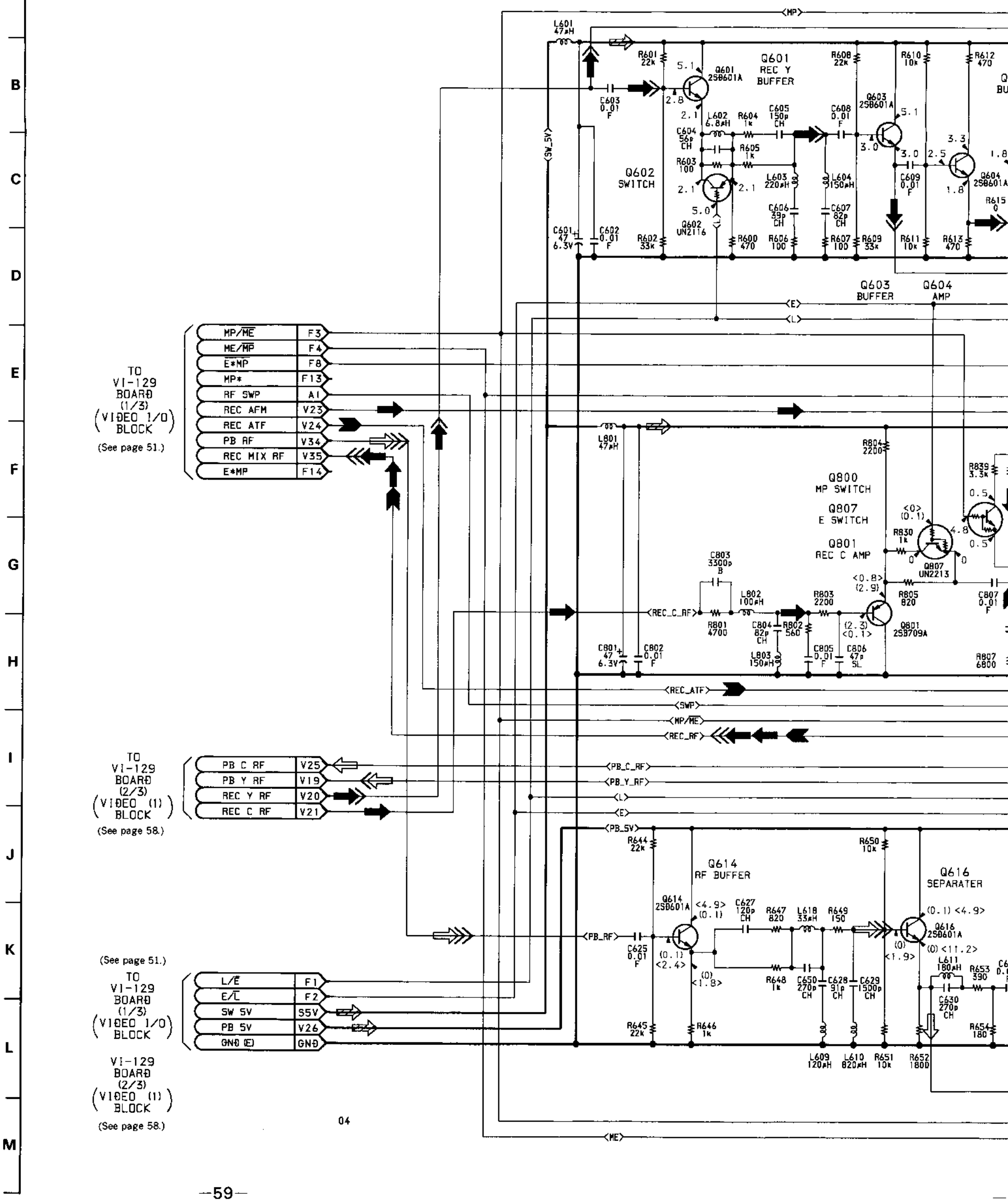
no mark: REC/PB mode (SP mode)
( ): REC mode (SP mode)
< >: PB mode (SP mode)


15
16
17
18
19
20
21
22
Q708 INVERTER
Y_COMB
C_COMB
IC606 CCD 1H DELAY LINE
IC607 CCD 2H DELAY LINE
Q705, Q706 BUFFER
Q703 BUFFER
Q702 HPF
Q701 MUTE
Q704 LPF
Q679 PEAKING AMP
Q677 BUFFER
Q678 EQ
Q680 FILTER
Q729 FILTER
Q685 PEAKING AMP
Q681, 682 Y TRAP
Q686 SWITCH
Q688 BUFFER
IC604 SWITCH
Q707 L SWITCH
Q724, 725 E SWITCH
Q831 SELECTER
Q822 SWITCH
Q840 C AMP
Q821 FSC BUFFER
Q684 SWITCH
Q683 PB SWITCH
(SHIELD CASE)
COMB ADJ
EMPHASIS Y LEVEL
PB Y LEVEL
TO V1-129 BOARD (1/3) (VIDEO I/O BLOCK)
TO V1-129 BOARD (3/3) (VIDEO (2) BLOCK)
(See page 51.)
(See page 59.)
F1 L/E
F2 E/L
V26 PB 5V
S5V SW 5V
GND GND (E)
S3 COSMO SCK
S1 COSMO SO
V1 VIDEO CS
V2 VA PB
V5 V1 SWP
V6 HCHG
V7 C SYNC
V8 JDG
V9 JDG V0
V10 V MUTE
V11 E/OIT
V13 PAL V
V15 E DET
V27 V/S
V33 V1RS K
F14 E*MP
F8 E*MP
F7 V_MUTE
F9 SP/LP
F10 S/V
F11 EE
V16 VIDEO IN 1
V17 VIDEO IN 2 (REC SY IN)
V31 REC SC OUT
V22 FSC (X)
V29 REC SY OUT
V32 REC SC IN
V19 PB Y RF
V20 REC Y RF
V25 PB C RF
V21 REC C RF
no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
< > : PB mode (SP mode)
• Signal path
VIDEO Signal
CHROMA
Y
Y/CHROMA
REC
PB

VI-129 (VIDEO PROCESS) SCHEMATIC DIAGRAM
—Ref. No. VI-129 BOARD : 1000 series—

• Refer to page 46 for Printed Wiring Board.

VI-129 BOARD (3/3)

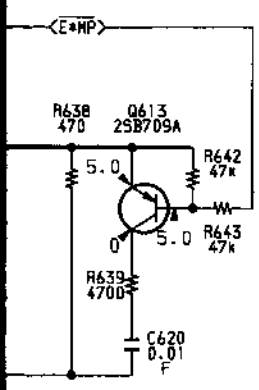


10 11 12 13 14 15 16 17 18 19 20

Q603 BUFFER
Q604 AMP
Q605 BUFFER
Q606 FILTER
Q607 FILTER SWITCH
Q608 BUFFER
Q609 L SWITCH
Q610 BUFFER
Q611 MIX AMP
Q612, 613 FILTER SWITCH
IC801 SELECT SWITCH
Q803 SWITCH
Q804 AMP·BUFFER
REC CHROMA L MODE MP
REC CHROMA E MODE ME 2CH
REC Y LEVEL
Q616 SEPARATER
Q617 AMP
Q619 BUFFER
Q620 L SWITCH
Q621 FILTER
Q622 L SWITCH
Q623 E·MP FILTER SWITCH
Q624 Y BUFFER
Q805 C BUFFER
Q806 FILTER

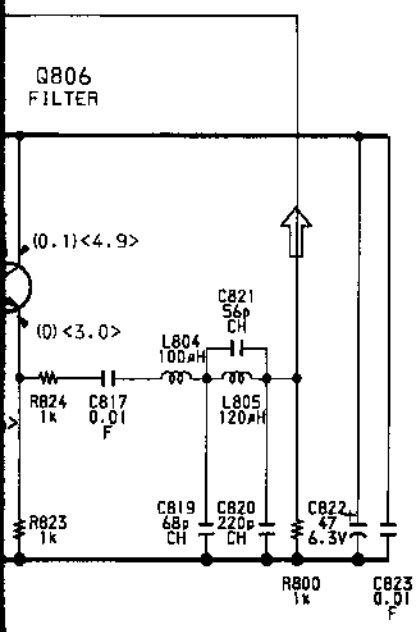
no mark:REC/PB mode (SP mode)
( ):REC mode (SP mode)
< >:PB mode (SP mode)

18 | 19 | 20



Q611
X AMP

Q612, 613
FILTER SWITCH



b mark: REC/PB mode (SP mode)
( ): REC mode (SP mode)
< >: PB mode (SP mode)

• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• **Signal path**

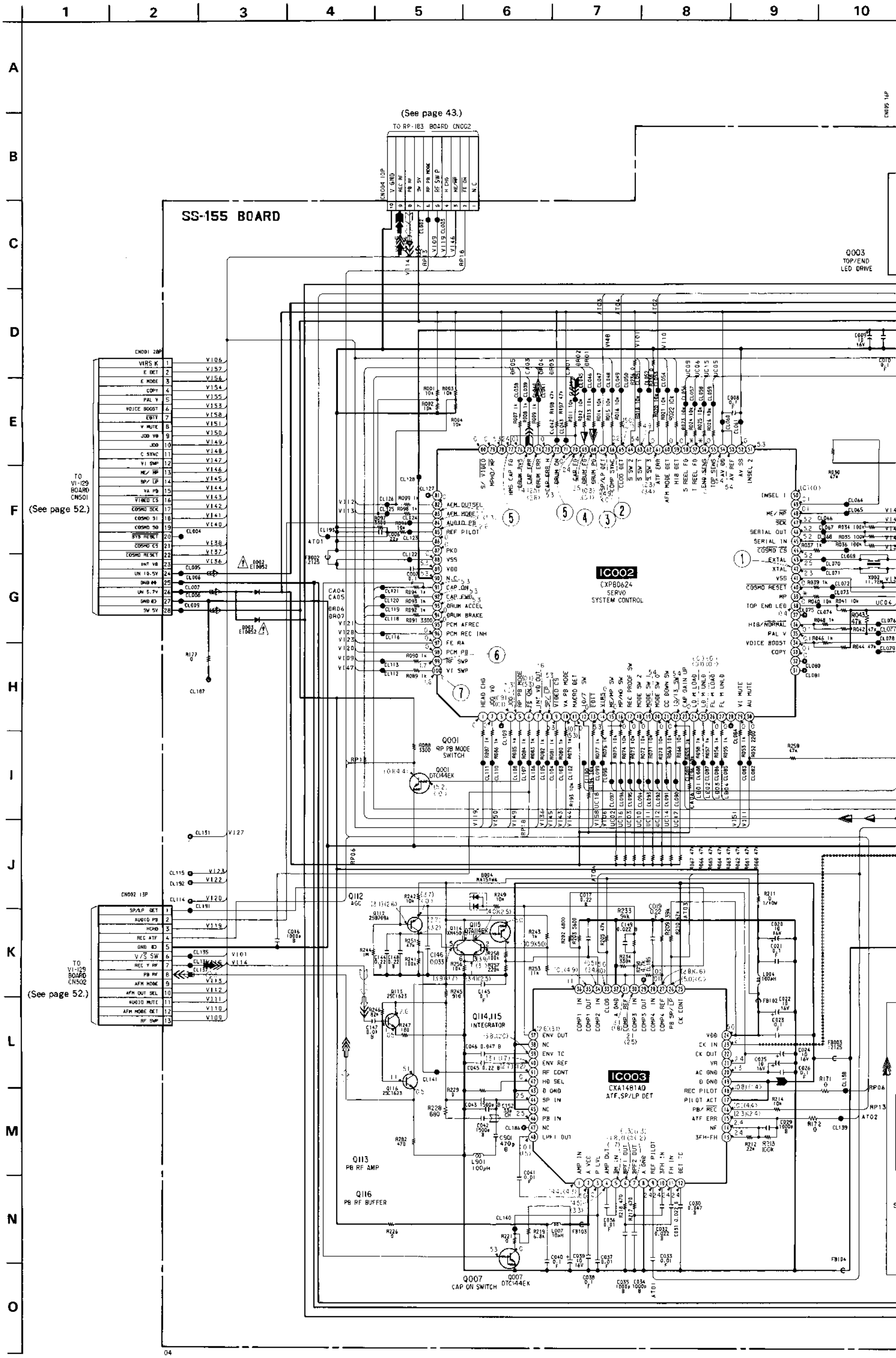
	REC	REC/PB	PB
Ref.signal	➡	➡	➡

/CHROMA	AUDIO Signal
➡⋙	➡
⇨⋙	⇨

REC	REC/PB	PB
➡	⇨	⇨

SS-155 (SERVO/SYSTEM CONTROL), CC-82 (RELAY), UC-18 (MD RELAY), FP-89, FP-90 (MECHADECK FLEXIBLE) SCHEMATIC DIAGRAMS

—Ref. No. SS-155, CC-82, UC-18, FP-89 and FP-90 BOARDS : 2000 series—



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

Q003
TOP/END
LED DRIVE

IC101
CAPSTAN
MOTOR
DRIVE

IC102
DRUM MOTOR
DRIVE

IC103
FG/PG
WAVE
SHAPER

IC104
LOADING MOTOR DRIVE /
FRONT LOADING MOTOR DR

IC005
CAPSTAN/DRUM
DRIVE

Q004
DRUM
SWITCH

Q102
SWITCH

Q104
DRIVER

Q105
SWITCH

Q106
SWITCH

Q109
CAPSTAN VS

Q111
DRUM VS

no mark : REC/PB mode ISP
( ) : REC mode ISP
< > : PB mode ISP
* Impossible to measure
voltage at the mar

14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25

IC101
CAPSTAN MOTOR DRIVE

IC101 MCD002BM

IC102
DRUM MOTOR DRIVE

IC102 CXA8006M

IC103
FG/PG WAVE SHAPER

IC103 CXA8011M

IC005
CAPSTAN/DRUM DRIVE

IC104
LOADING MOTOR DRIVE / FRONT LOADING MOTOR DRIVE

IC104 LB1836M

Q005 DTC144EK

Q109 CAPSTAN VS 2SB1121

Q111 DRUM VS 2SB1121

CM101 15P → TO CAP MOTOR

CN102 10P → TO DRUM MOTOR

CN103 2P
CL150 FL LOAD
CL151 FL UNLOAD
→ TO FL MOTOR
M904 FRONT LOADING MOTER

CN104 2P
CL152 LOAD
CL153 UNLOAD
→ TO LOAD MOTOR
M903 LOADING MOTOR

CN701 15P

CC-82 BOARD

CN702 15P

(See page 42.)

TO RP-183 BOARD CN003

M901 DRUM

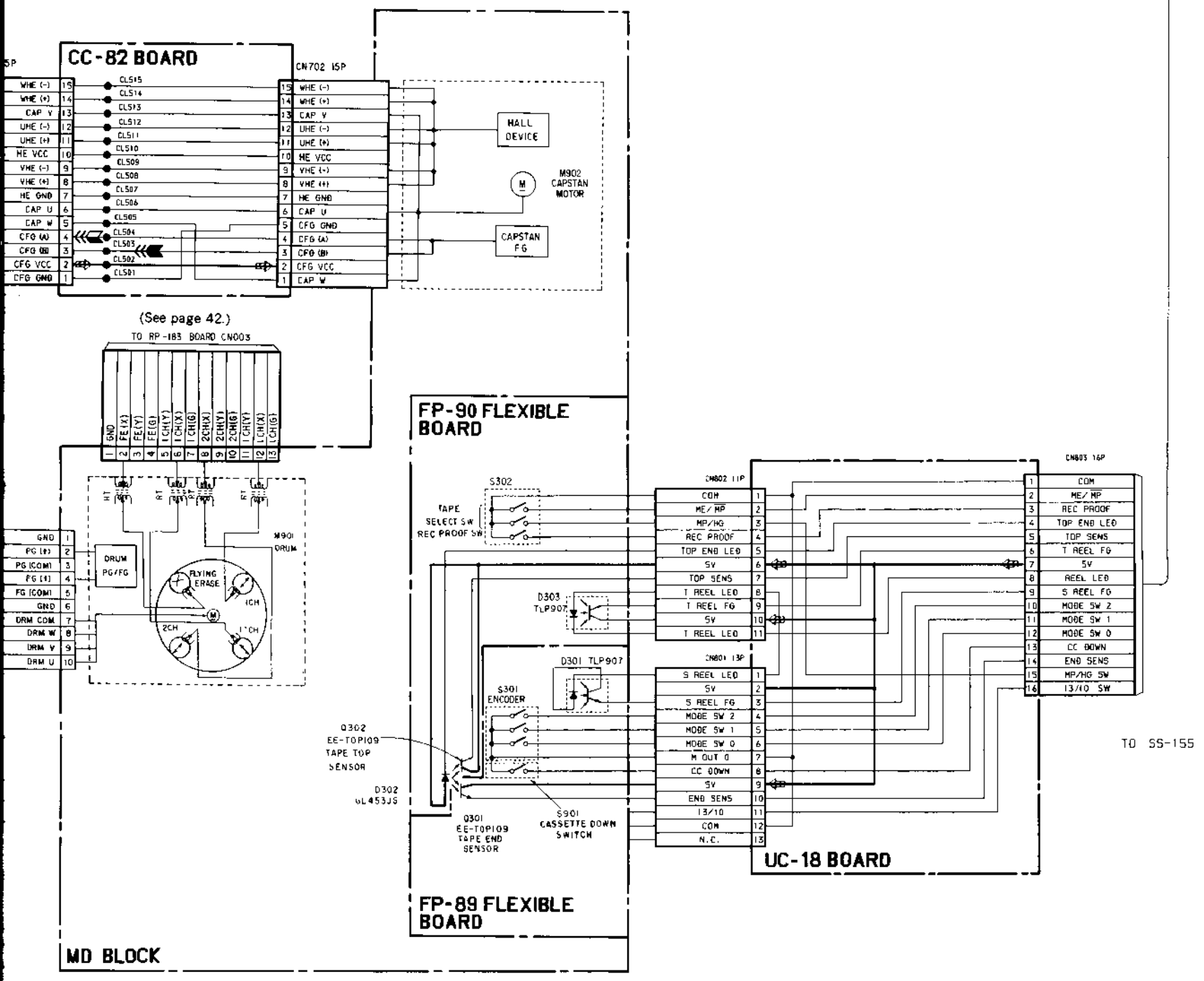
DRUM FG/PG

FLYING ERASE

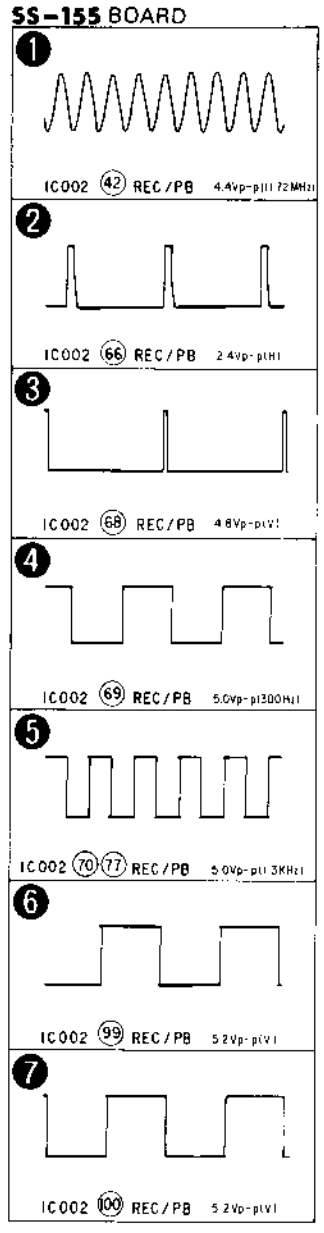
Q302 EE-TOP109 TAPE TOP SENSOR

MD BLOCK

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
( ) : PB mode (SP mode)
* Impossible to measure the voltage at the marked points



SS-155 BOARD



• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨

• **Signal path**

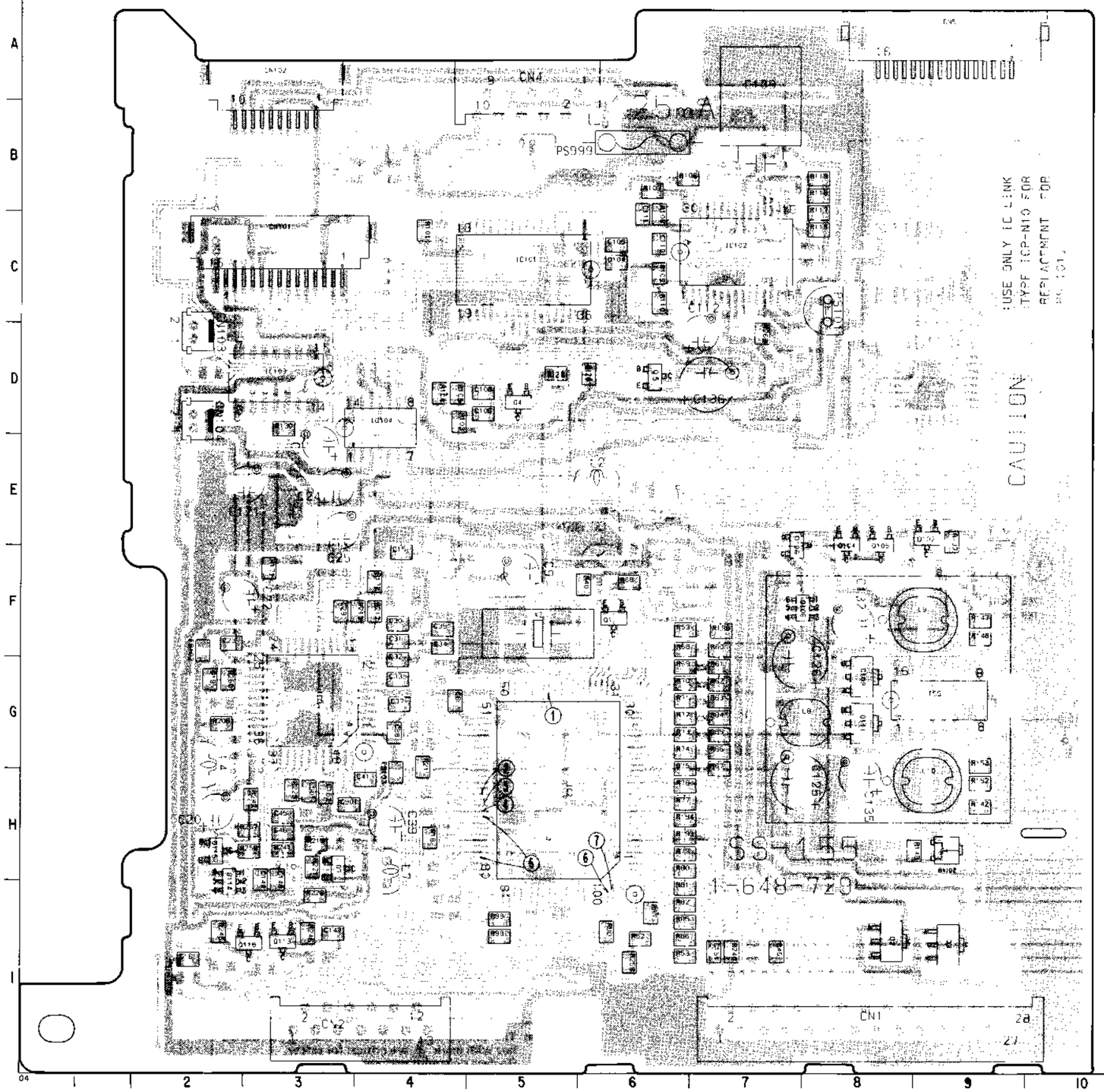
	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷	
Drum servo(speed and phase)		▷	
Capstan speed servo		▷	
Capstan phase servo	▶	▷	▷
Capstan servo(speed and phase)		▷	
Ref.signal	▶	▷	▷

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

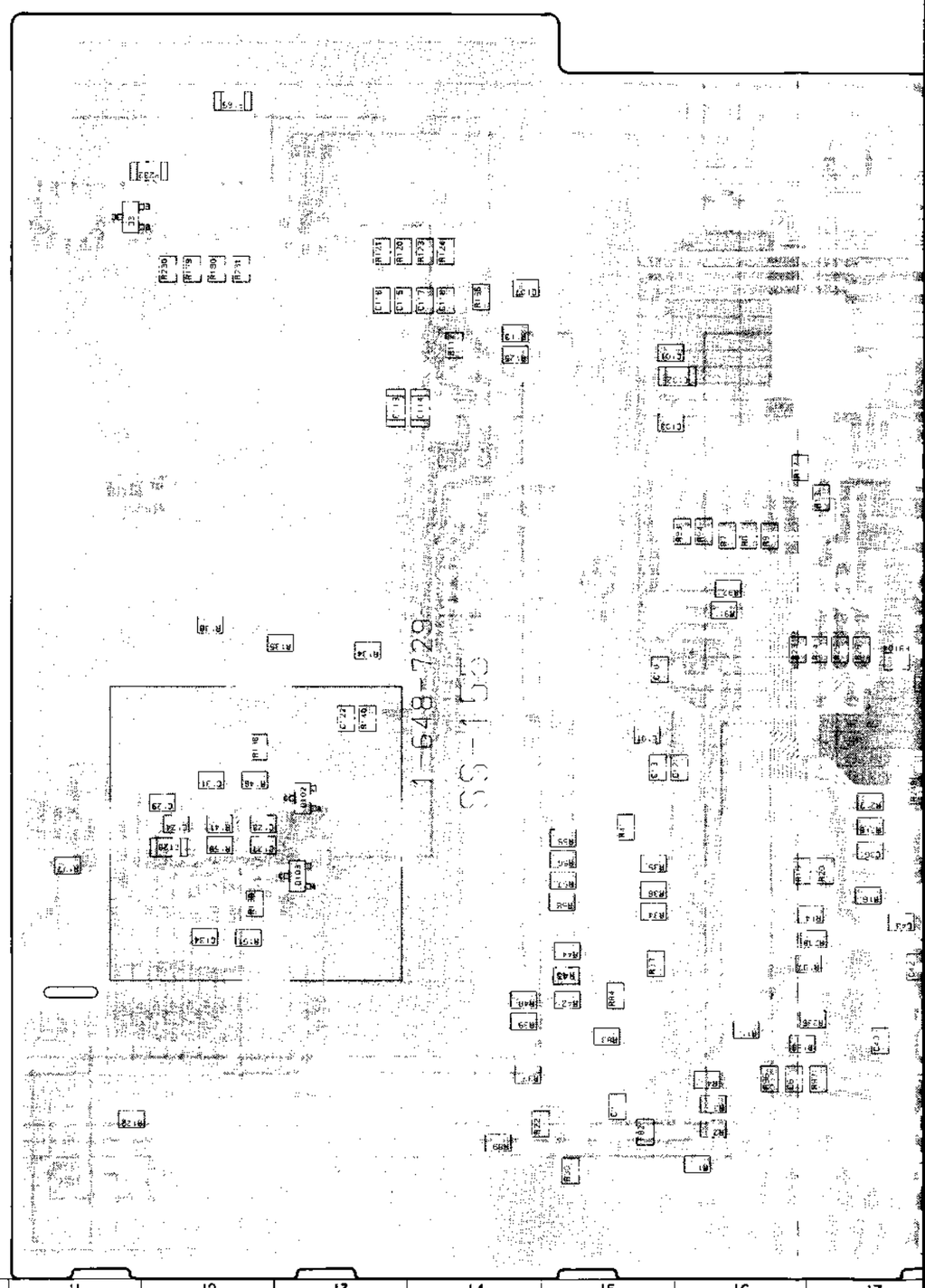
SS-155 (SERVO/SYSTEM CONTROL), CC-82 (RELAY), UC-18 (MD RELAY), FP-89, FP-90 (MECHADECK FLEXIBLE) PRINTED WIRING BOARDS

—Ref. No. SS-155, CC-82, UC-18, FP-89 and FP-90 BOARDS : 2000 series—

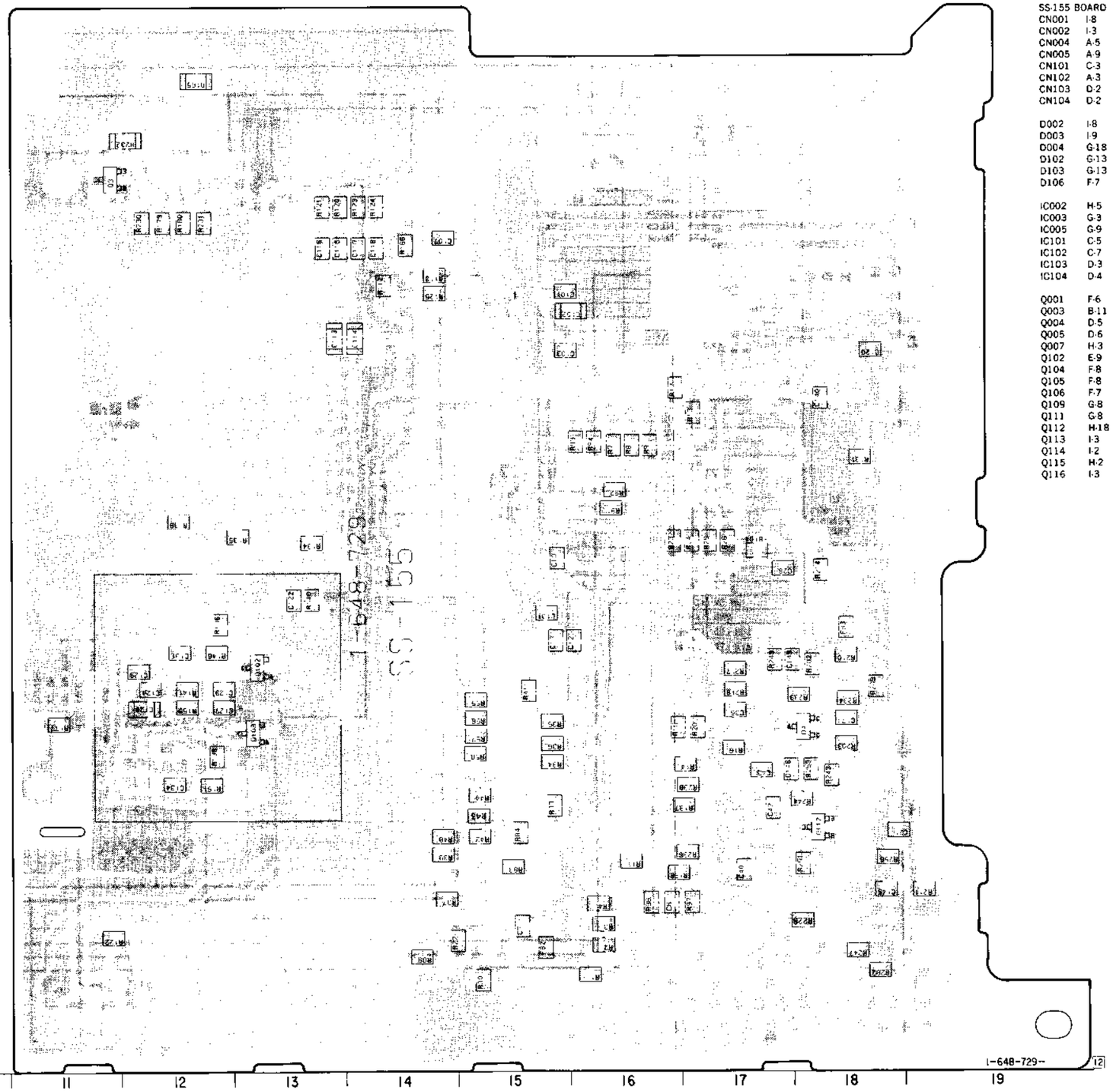
SS-155 BOARD(COMPONENT SIDE)



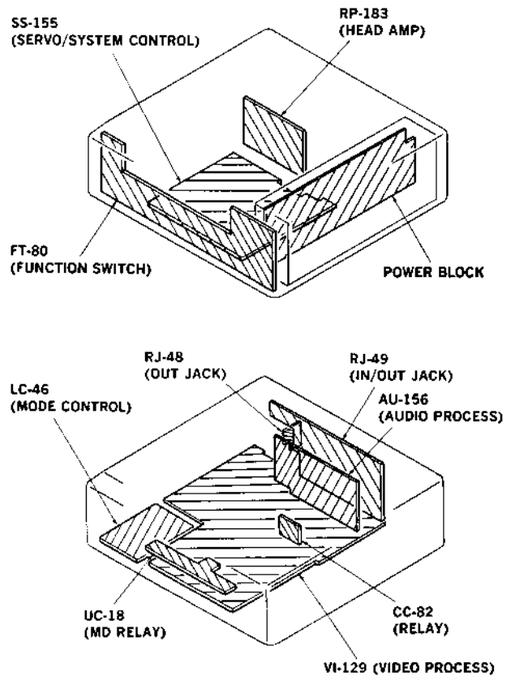
SS-155 BOARD(CONDUCTOR SIDE)



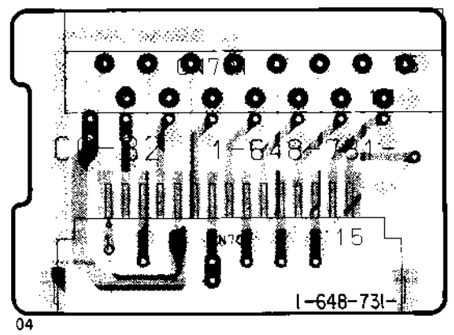
SS-155 BOARD(CONDUCTOR SIDE)

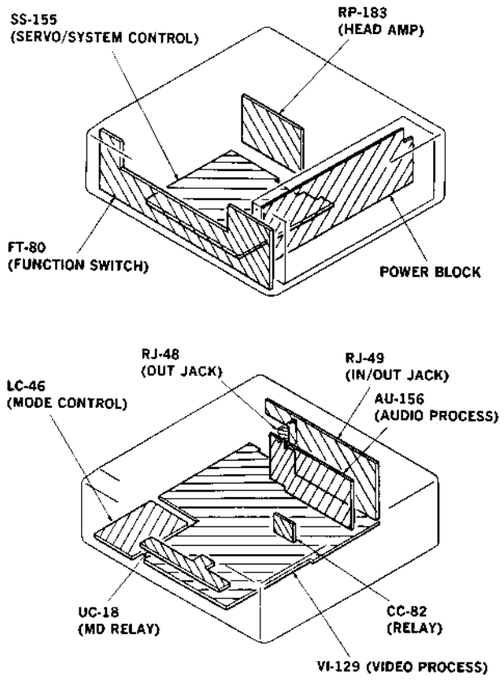


SS-155 BOARD	
CN001	I-8
CN002	I-3
CN004	A-5
CN005	A-9
CN101	C-3
CN102	A-3
CN103	D-2
CN104	D-2
D002	I-8
D003	I-9
D004	G-18
D102	G-13
D103	G-13
D106	F-7
IC002	H-5
IC003	G-9
IC005	G-9
IC101	C-5
IC102	C-7
IC103	D-3
IC104	D-4
Q001	F-6
Q003	B-11
Q004	D-5
Q005	D-6
Q007	H-3
Q102	E-9
Q104	F-8
Q105	F-8
Q106	F-7
Q109	G-8
Q111	G-8
Q112	H-18
Q113	I-3
Q114	I-2
Q115	H-2
Q116	I-3

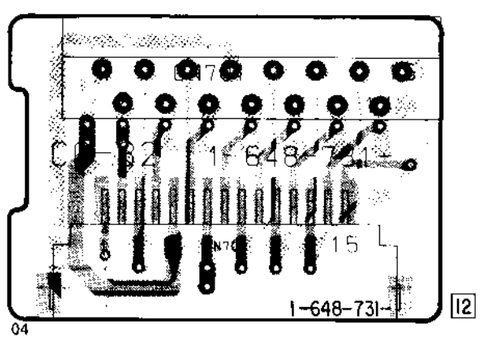


CC-82 BOARD

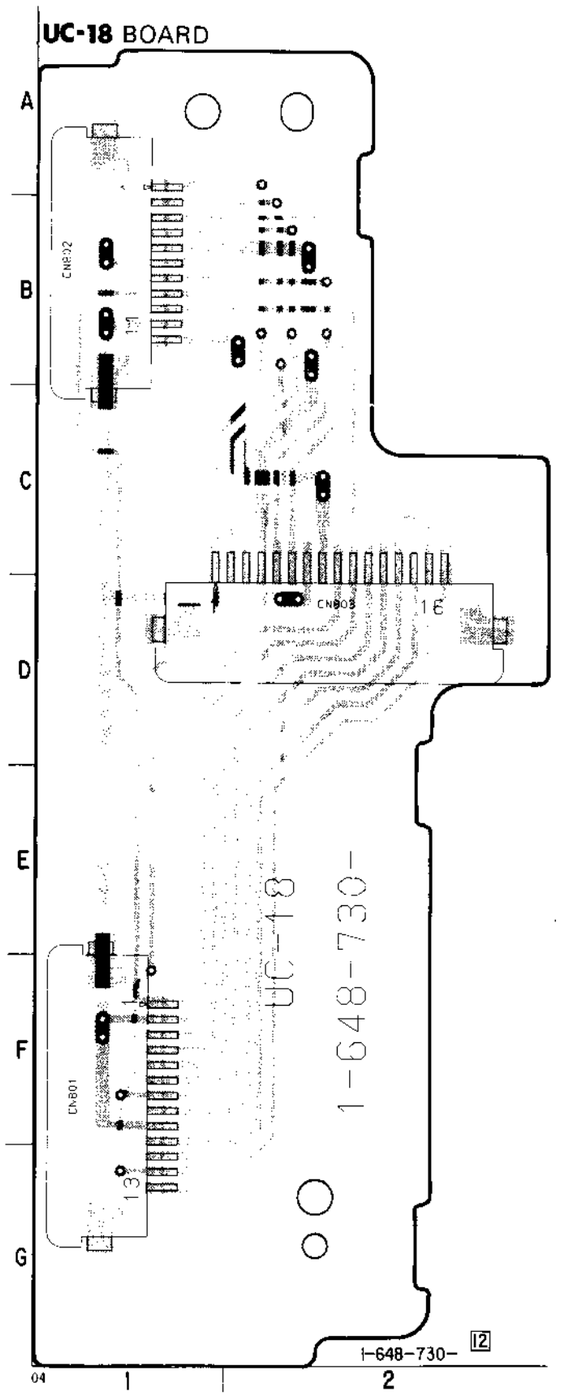




CC-82 BOARD

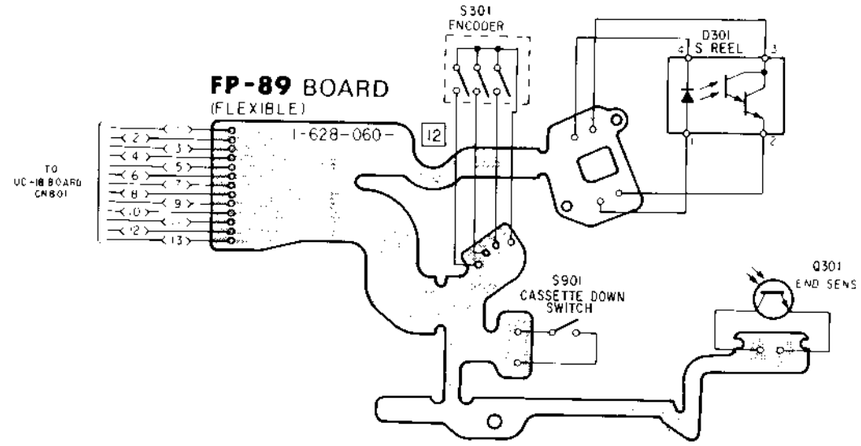


UC-18 BOARD

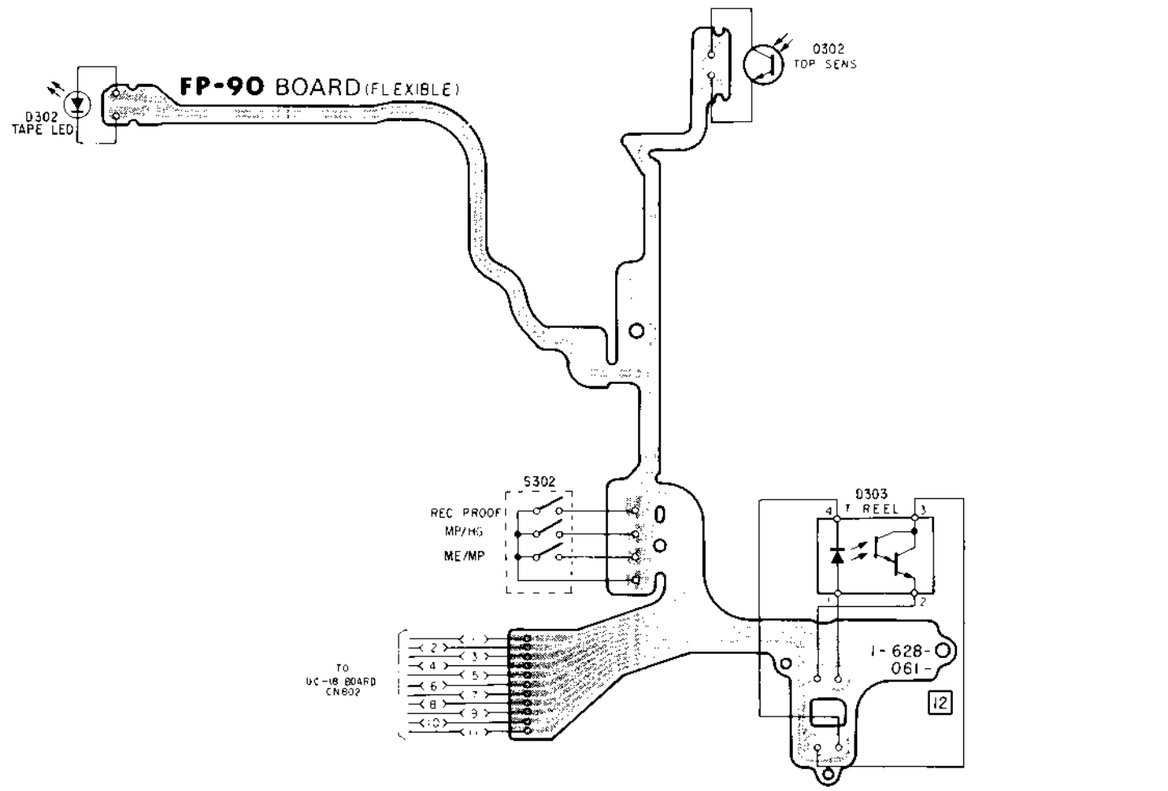


• ▒▒ : Pattern of the rear side.

FP-89 BOARD
(FLEXIBLE)



FP-90 BOARD (FLEXIBLE)



LC-46 (MODE CONTROL) PRINTED WIRING BOARD
—Ref. No. LC-46 BOARD : 3000 series—

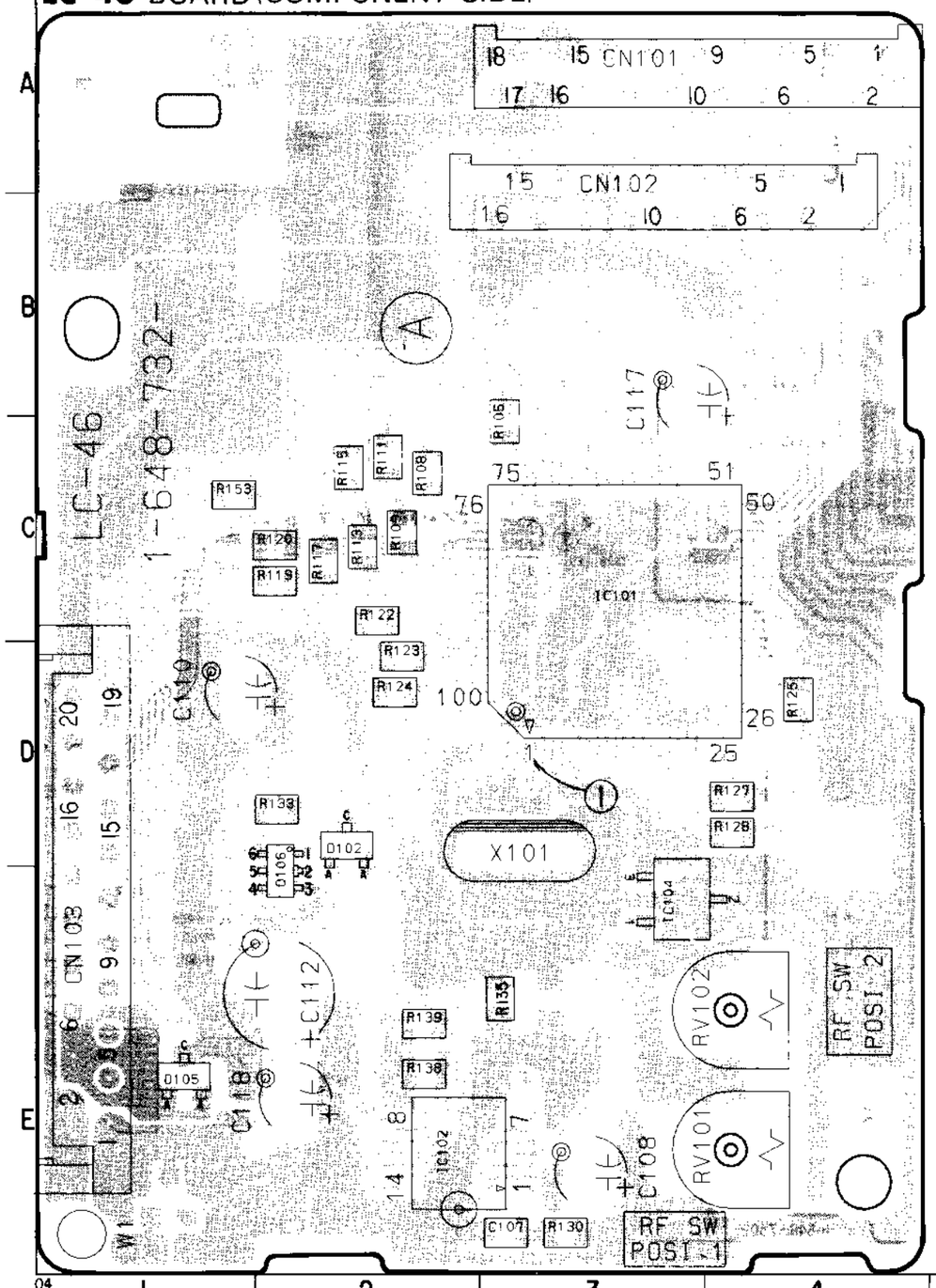
LC-46 BOARD
CN101 A-3
CN102 B-3
CN103 E-1

D101 F-7
D102 D-4
D103 F-8
D104 E-6
D105 F-1

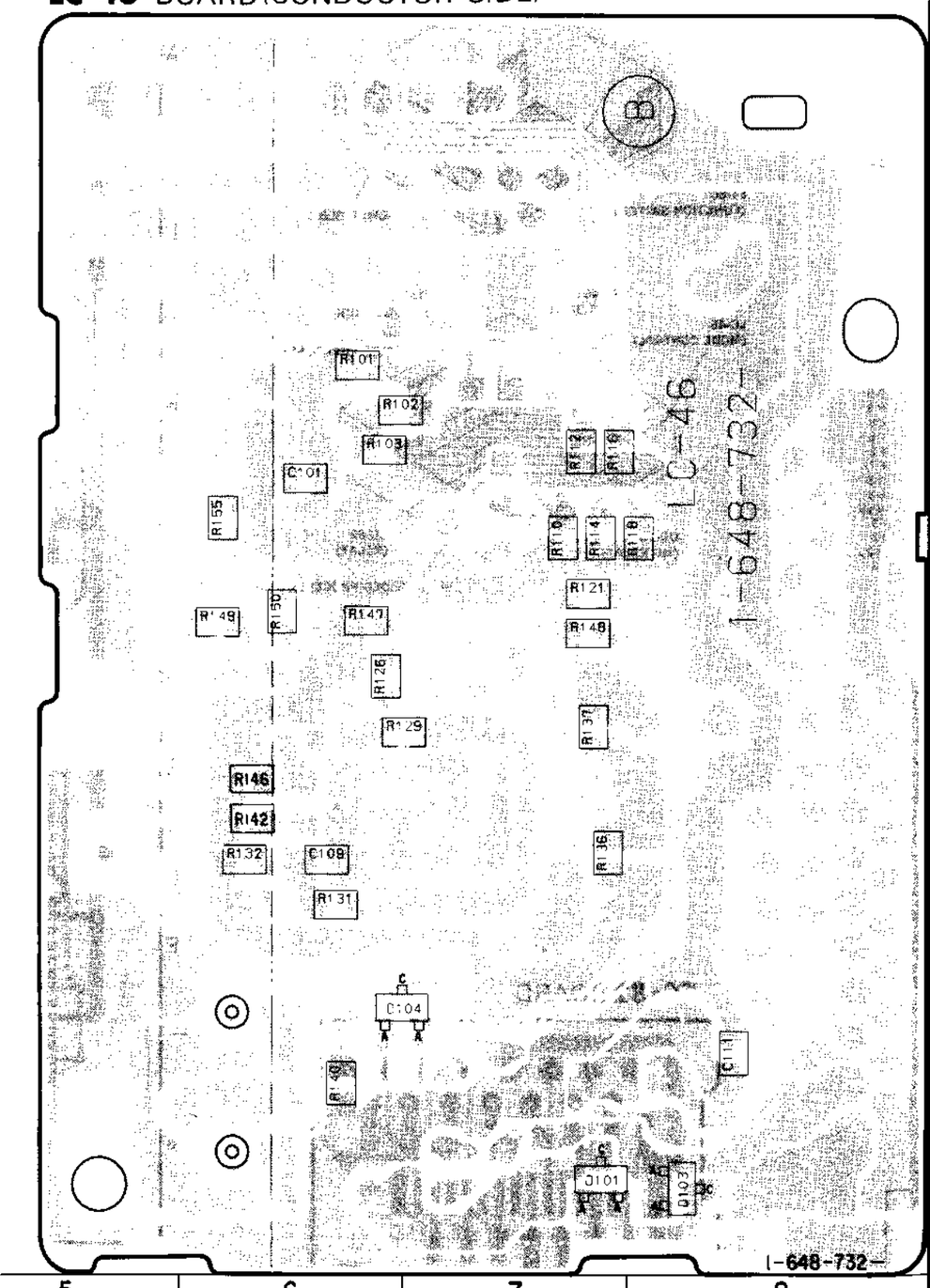
IC101 C-3
IC102 F-2
IC104 E-3

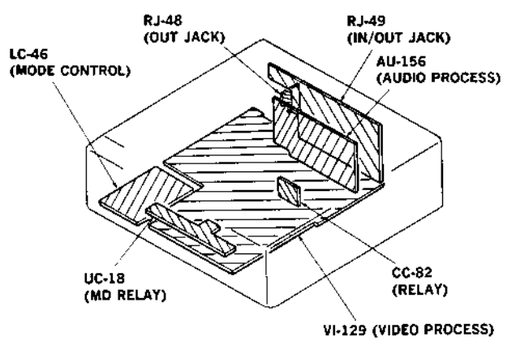
Q106 E-2

LC-46 BOARD(COMPONENT SIDE)



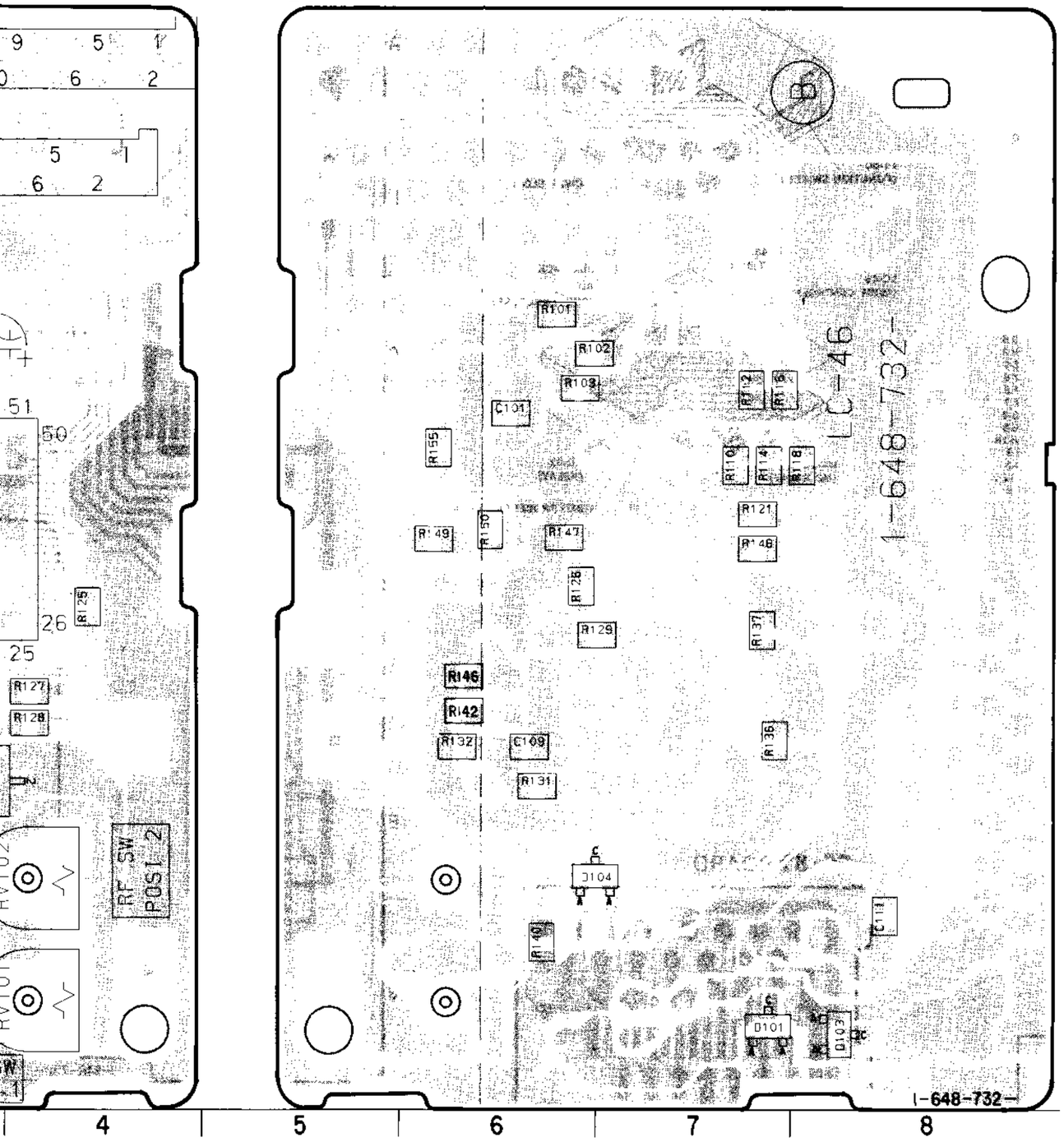
LC-46 BOARD(CONDUCTOR SIDE)





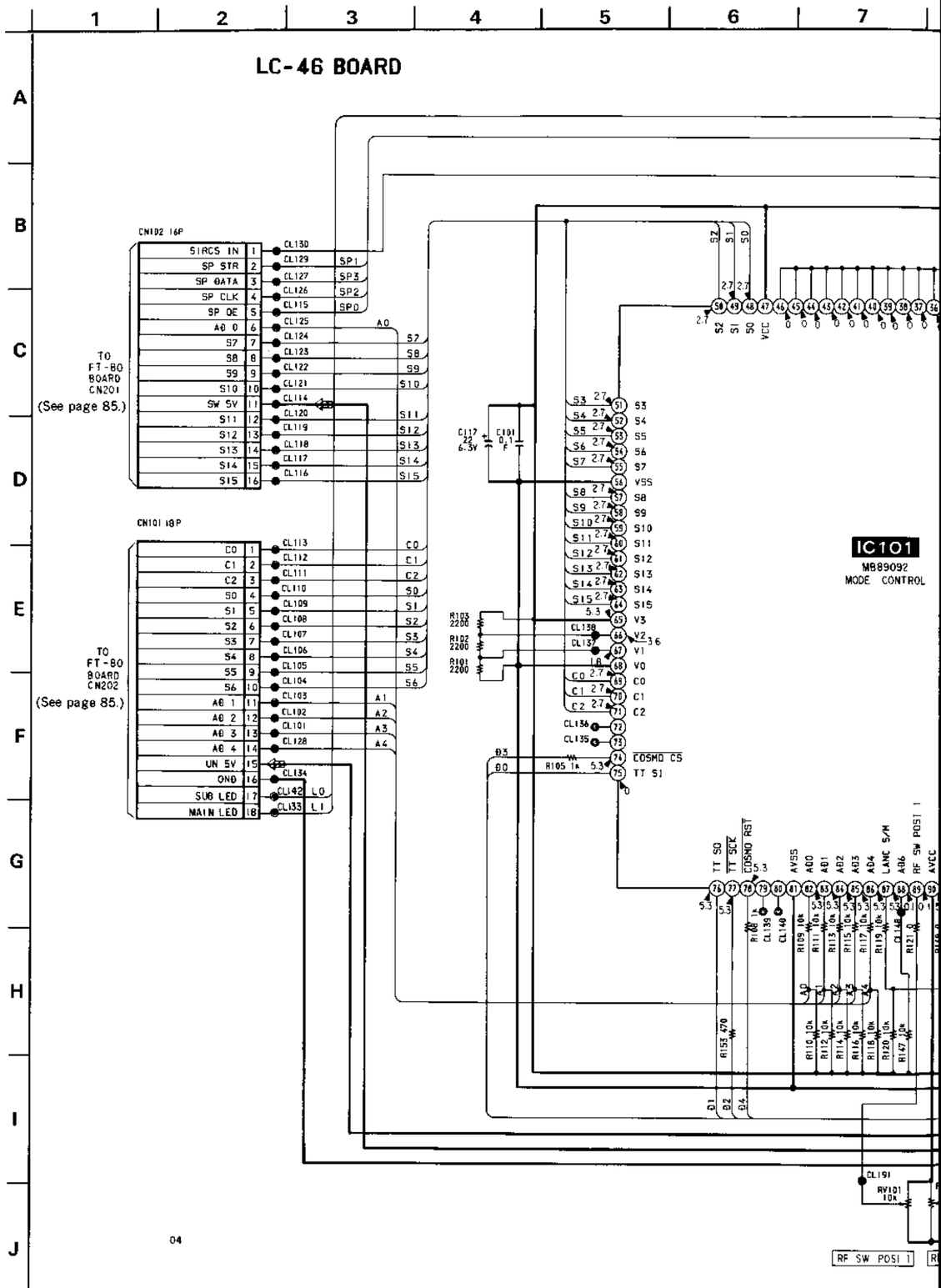
MODE CONTROL

LC-46 BOARD(CONDUCTOR SIDE)



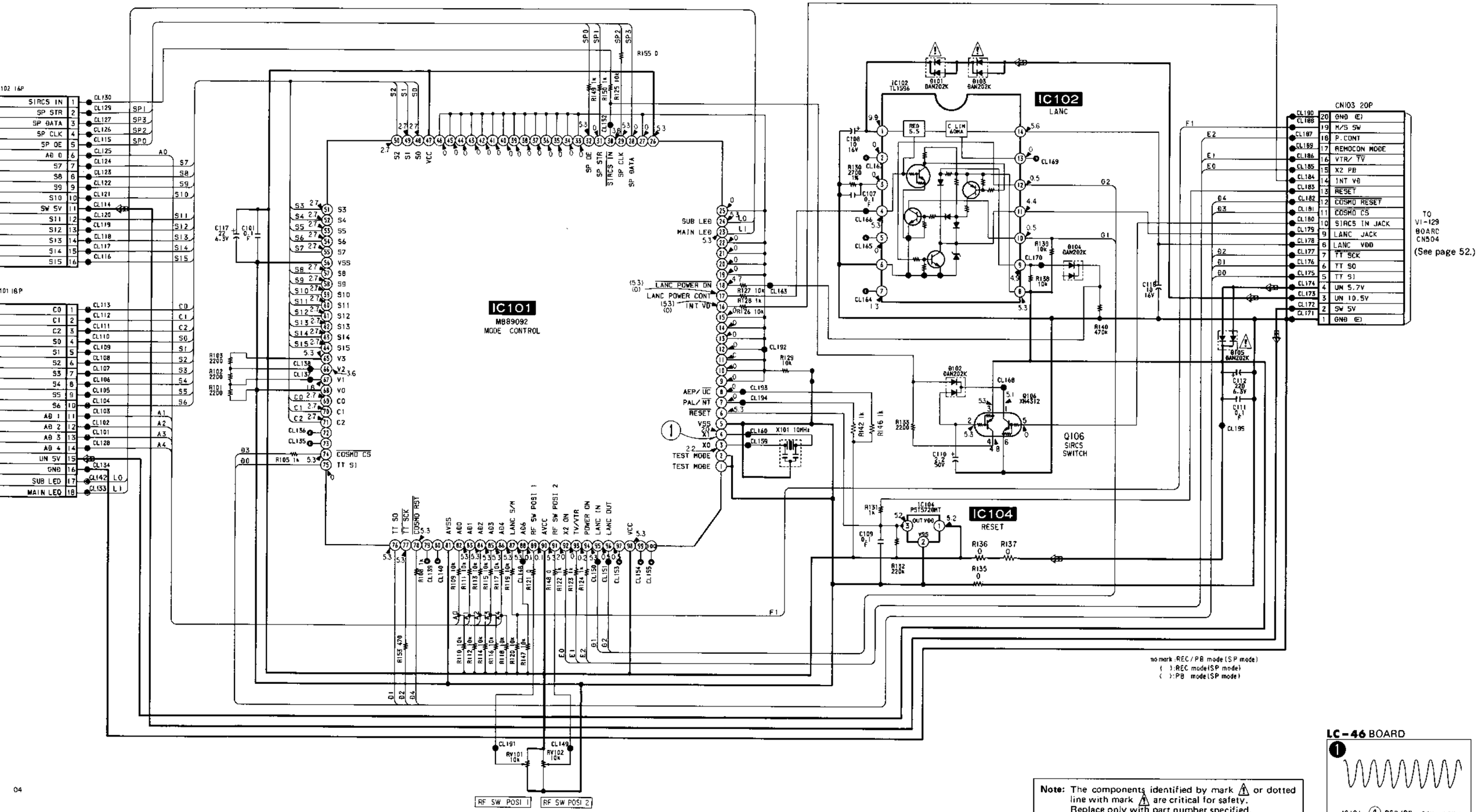
LC-46 (MODE CONTROL) SCHEMATIC DIAGRAM

—Ref. No. LC-46 BOARD : 3000 series—



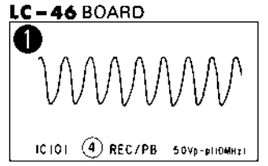
2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18

LC-46 BOARD



Note: The components identified by mark ⚠1 or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

LC-46 BOARD

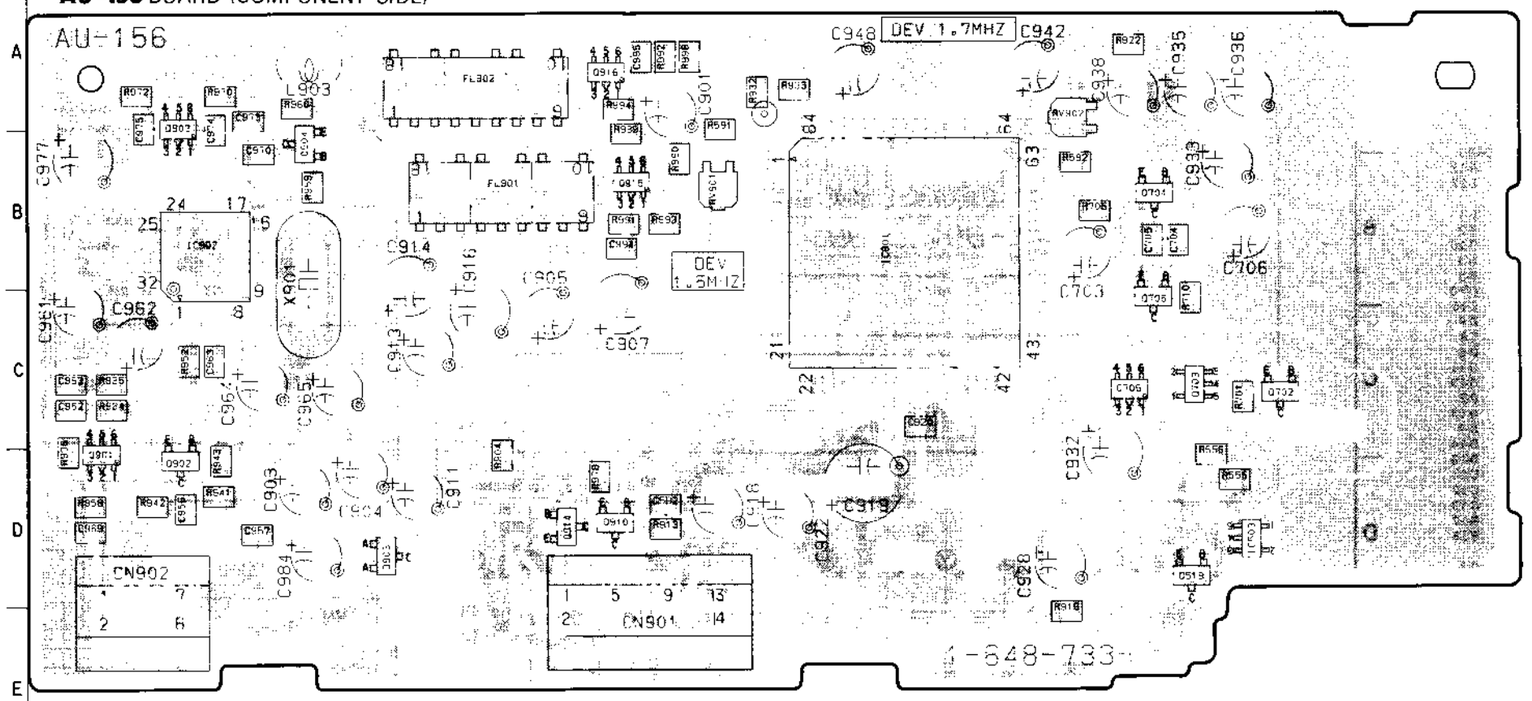


AU-156 (AUDIO PROCESS) PRINTED WIRING BOARD

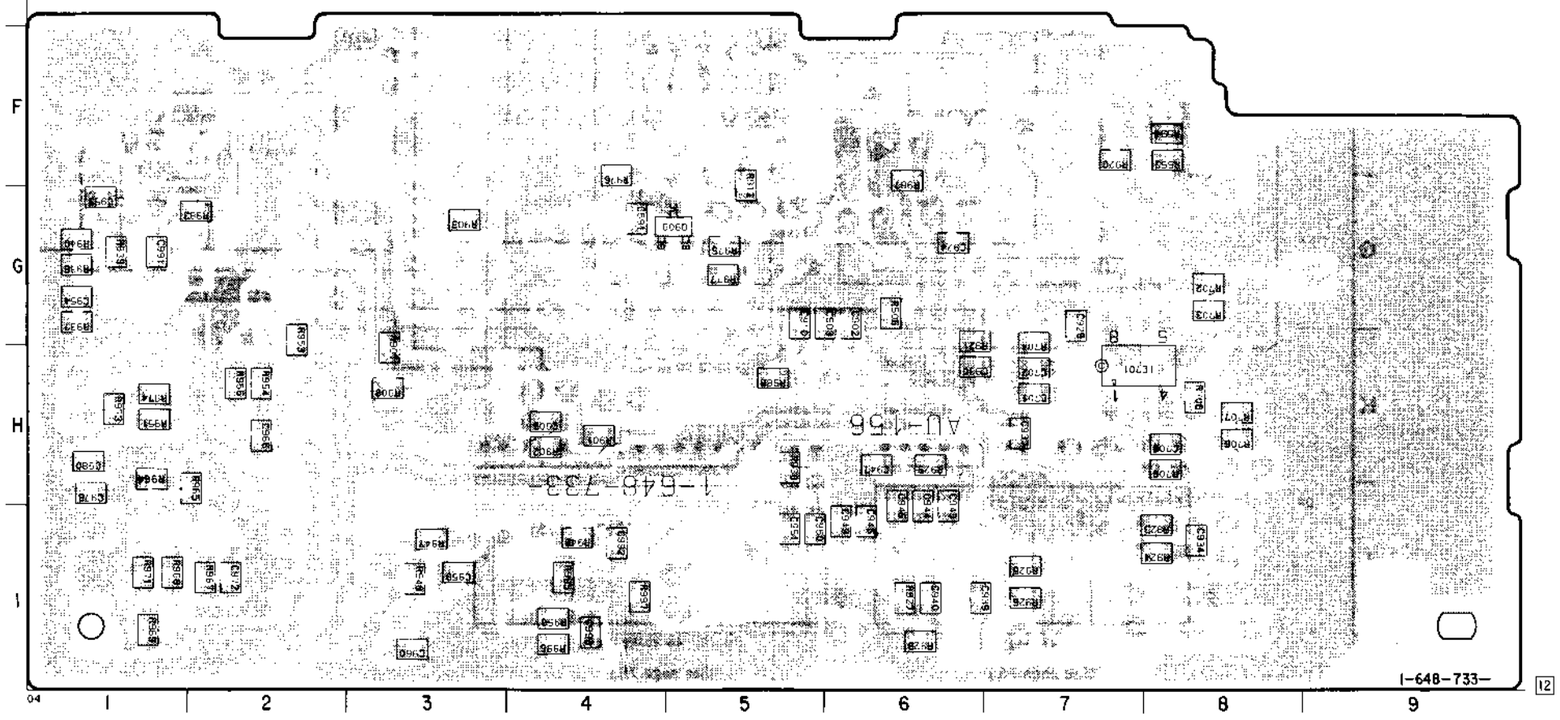
—Ref. No. AU-156 BOARD : 4000 series—

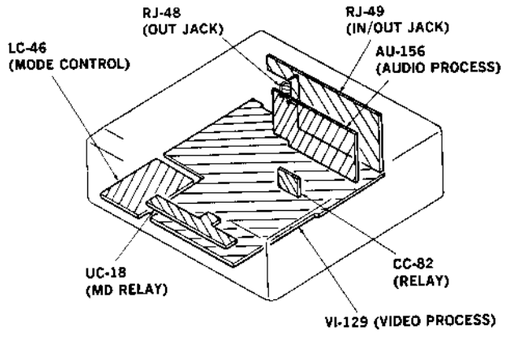
AU-156 BOARD	
CN901	E-4
CN902	D-1
D903	D-3
IC503	D-8
IC701	H-7
IC901	B-6
IC902	B-2
Q518	D-8
Q702	C-8
Q703	C-8
Q704	B-8
Q705	C-7
Q706	C-8
Q901	D-1
Q902	D-1
Q903	A-1
Q904	B-2
Q909	G-5
Q910	D-4
Q914	D-4
Q915	B-4
Q916	A-4

AU-156 BOARD (COMPONENT SIDE)



AU-156 BOARD (CONDUCTOR SIDE)

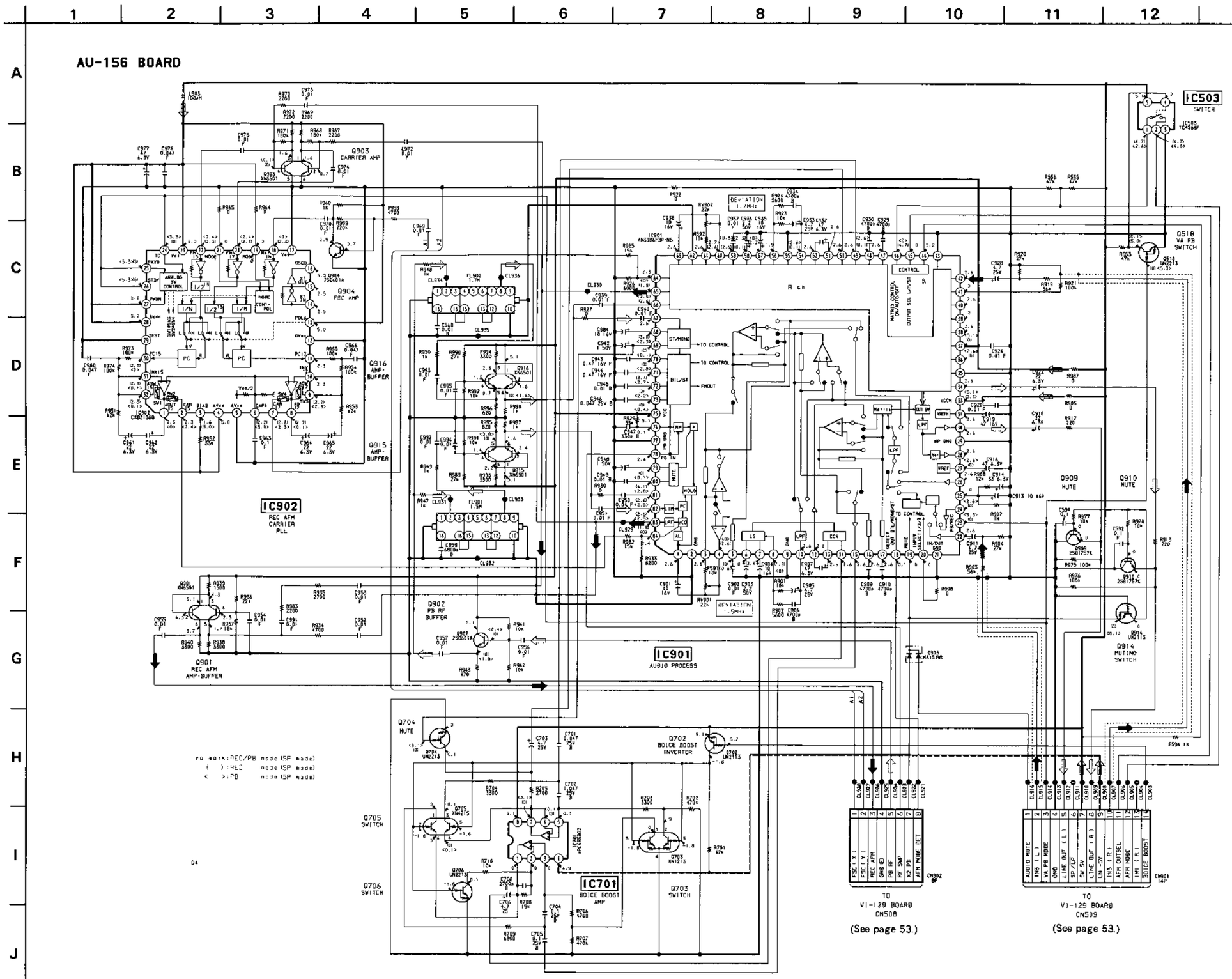




AU-156 (AUDIO PROCESS) SCHEMATIC DIAGRAM

—Ref. No. AU-156 BOARD : 4000 series—

AU-156 BOARD

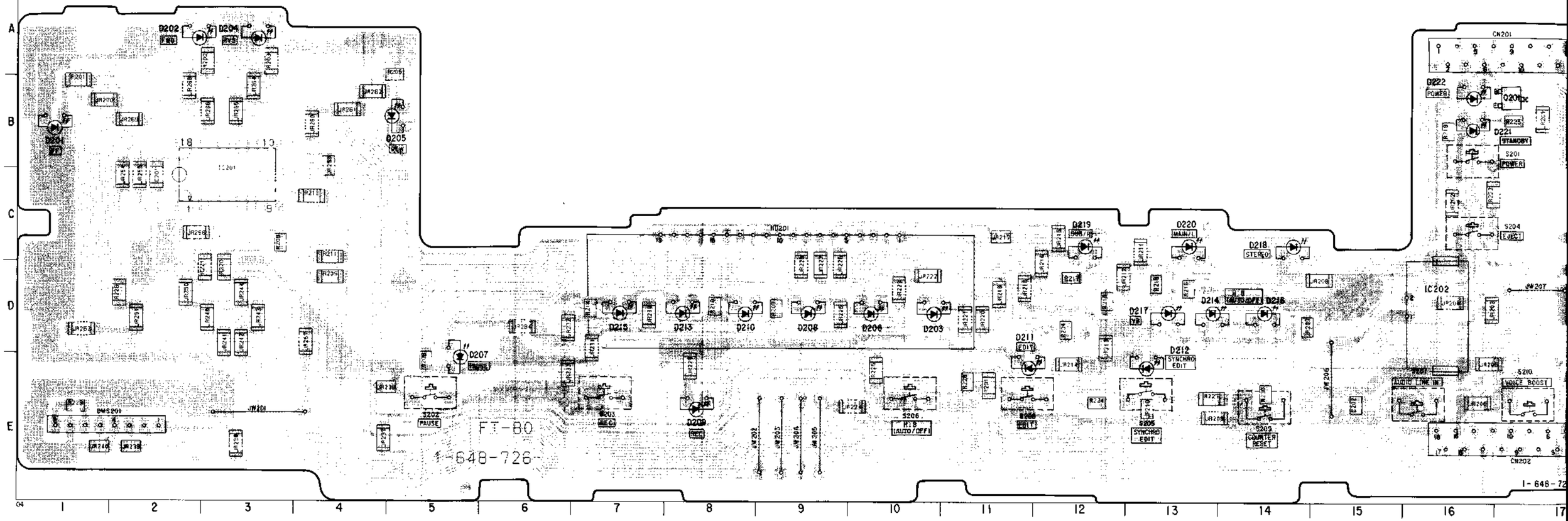


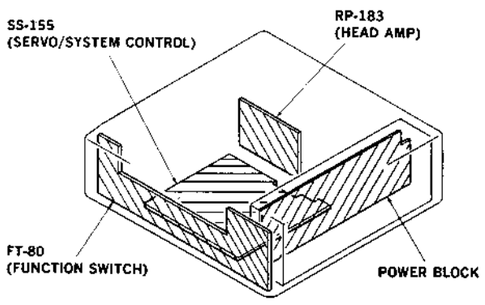
• Signal path

	AUDIO Signal
REC	➡
PB	⇨

FT-80 (FUNCTION SWITCH) PRINTED WIRING BOARD
—Ref. No. FT-80 BOARD : 5000 series—

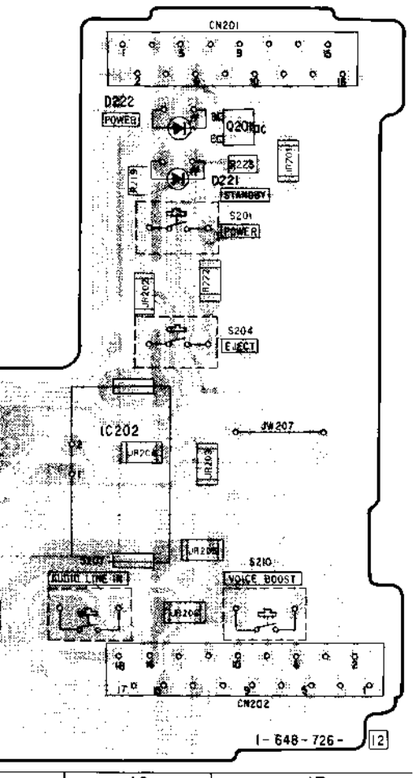
FT-80 BOARD



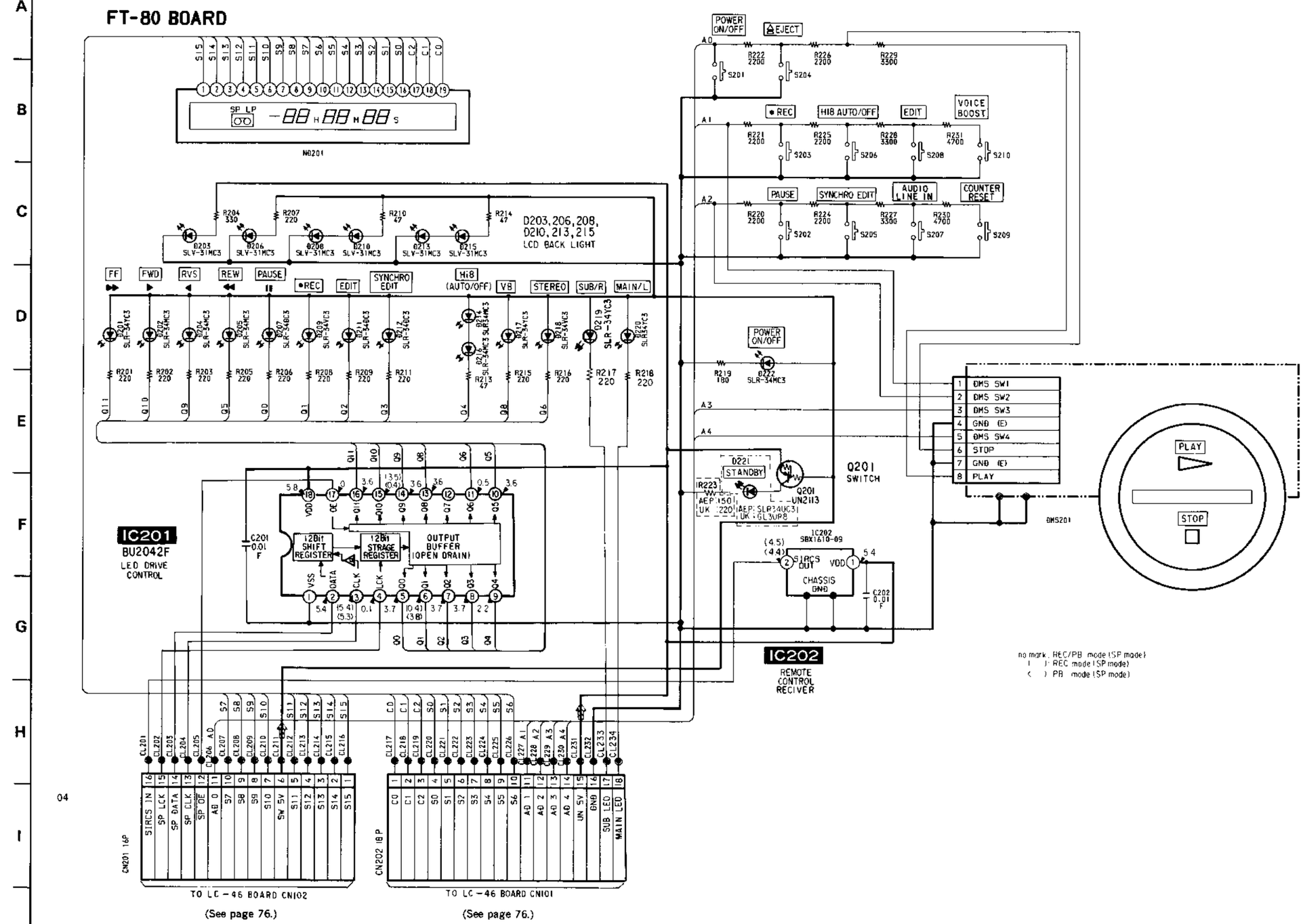


FT-80 (FUNCTION SWITCH) SCHEMATIC DIAGRAM

—Ref. No. FT-80 BOARD : 5000 series—

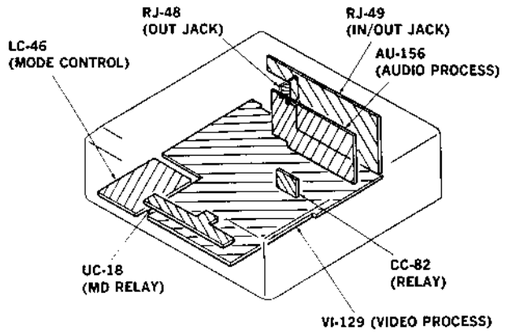


FT-80 BOARD	
CN201	A-17
CN202	E-17
D201	B-1
D202	A-2
D203	D-10
D204	A-3
D205	B-5
D206	D-10
D207	E-15
D208	D-9
D209	E-8
D210	D-8
D211	D-11
D212	D-13
D213	D-8
D214	D-13
D215	D-7
D216	D-14
D217	D-13
D218	C-14
D219	C-12
D220	C-13
D221	B-17
D222	B-16
IC201	C-3
IC202	D-16

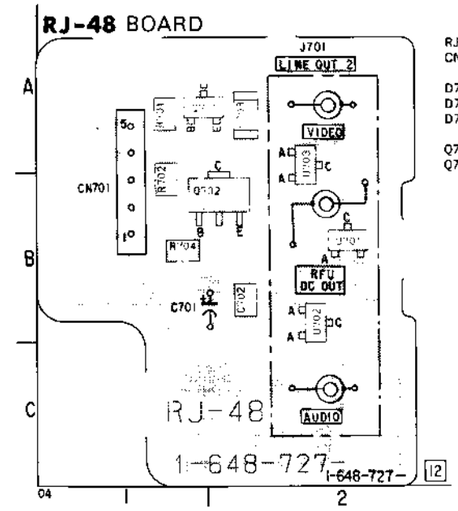


RJ-48 (OUT JACK), RJ-49 (IN/OUT JACK) PRINTED WIRING BOARDS

—Ref. No. RJ-48 and RJ-49 BOARDS : 5000 series—



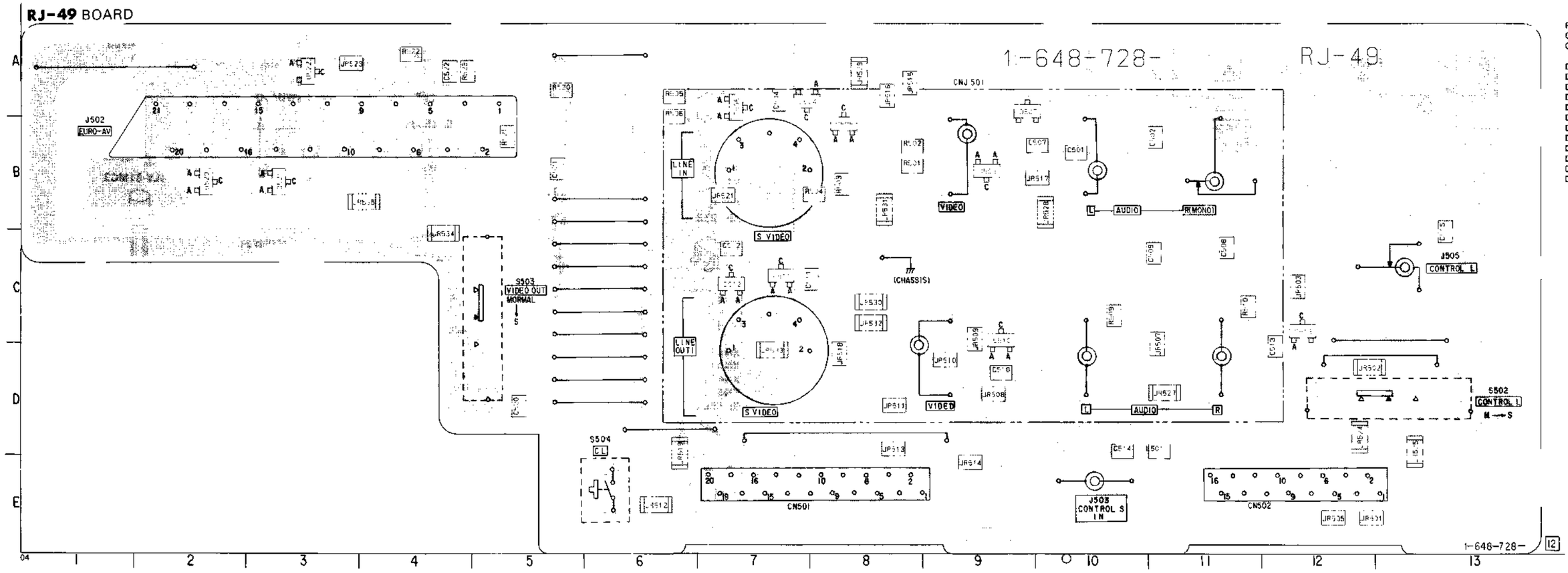
RJ-48 BOARD



RJ-48 BOARD

CN701	B-1
D701	B-2
D702	B-2
D703	A-2
Q701	A-1
Q702	B-2

RJ-49 BOARD



RJ-49 BOARD

CN501	E-7
CN502	E-12
D503	B-9
D504	A-8
D505	B-8
D506	A-7
D507	A-9
D510	C-9
D511	C-7
D512	C-7
D513	C-12
D520	B-2
D521	B-3
D522	A-3

RJ-48 (OUT JACK), RJ-49 (IN/OUT JACK) SCHEMATIC DIAGRAMS

—Ref. No. RJ-48 and RJ-49 BOARDS : 5000 series—

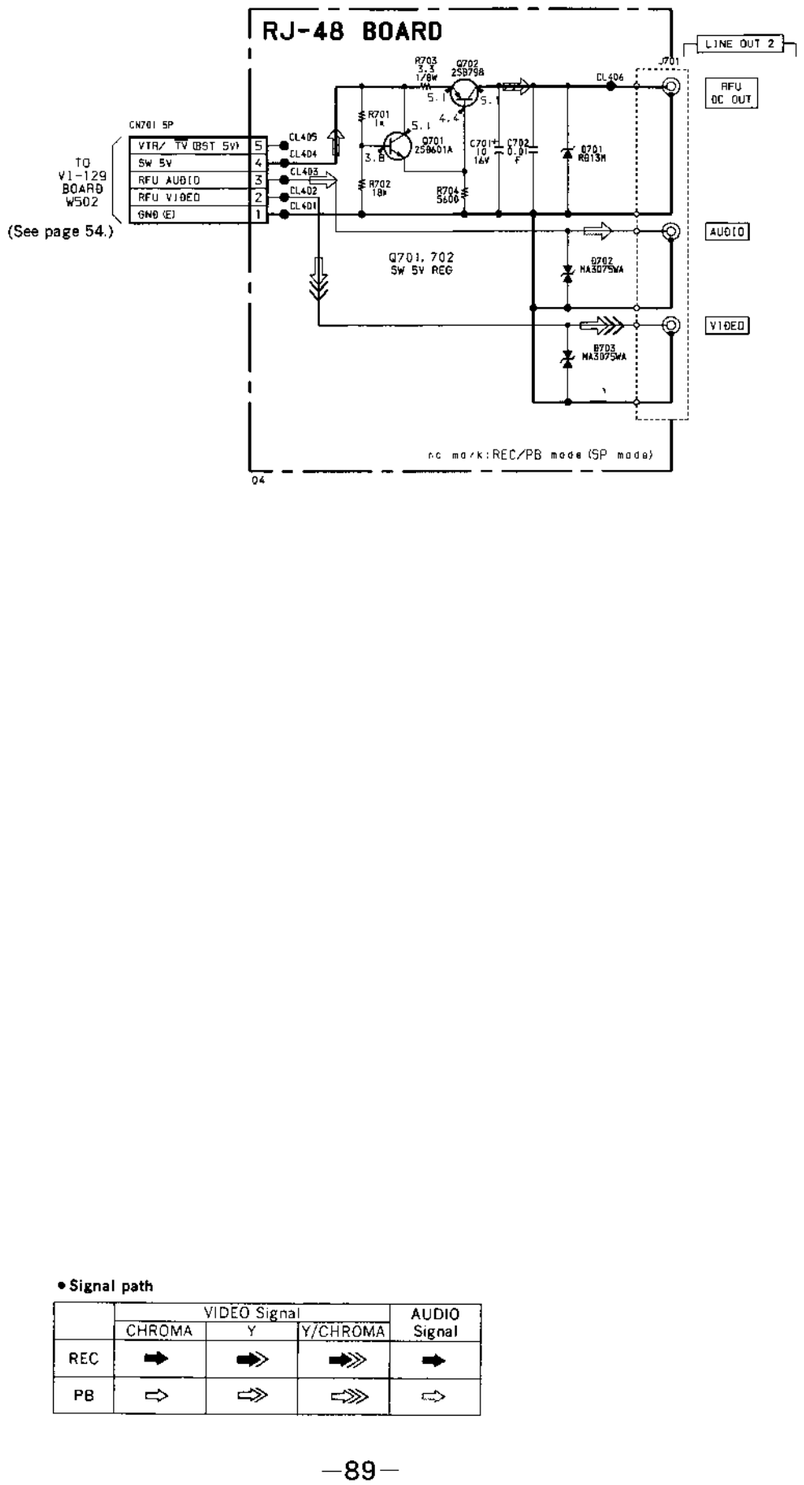
RJ-48 BOARD
CN701 B-1

D701 B-2
D702 B-2
D703 A-2

Q701 A-1
Q702 B-2

RJ-49 BOARD
CN501 E-7
CN502 E-12

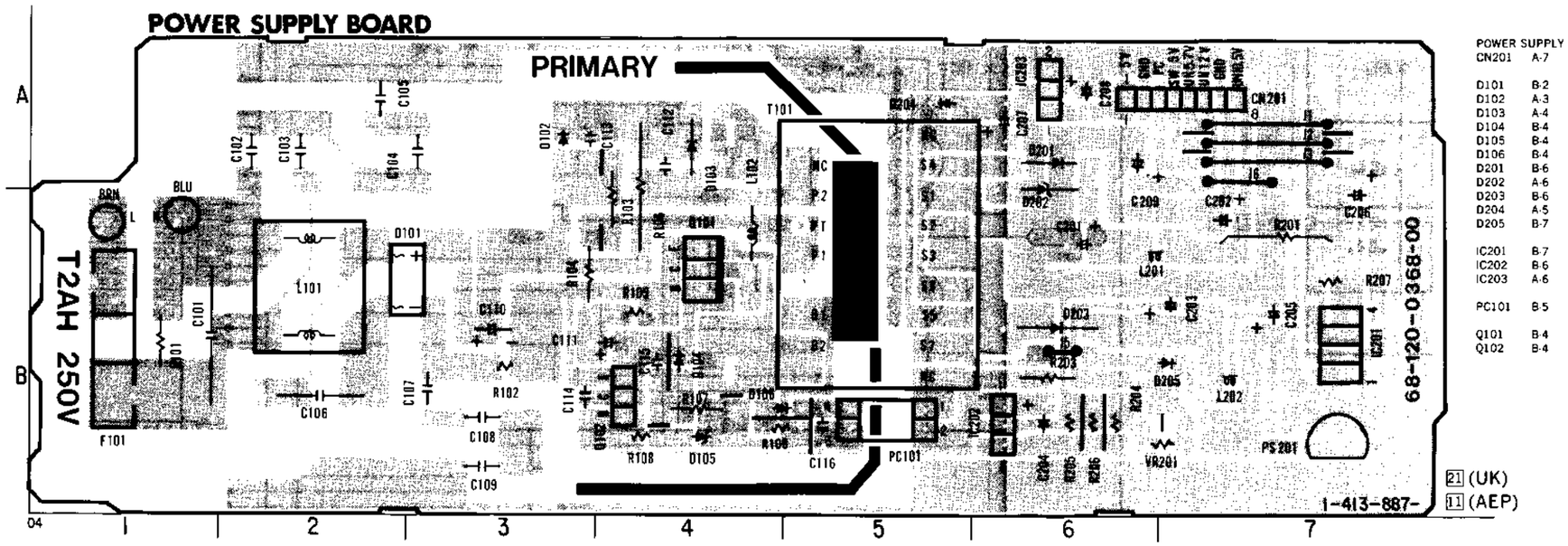
D503 B-9
D504 A-8
D505 B-8
D506 A-7
D507 A-9
D510 C-9
D511 C-7
D512 C-7
D513 C-12
D520 B-2
D521 B-3
D522 A-3



• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	⇛	➡⇛	➡
PB	⇨	⇨	⇨⇨	⇨

POWER SUPPLY (POWER) PRINTED WIRING BOARD
—Ref. No. POWER SUPPLY BOARD: 6000 series—



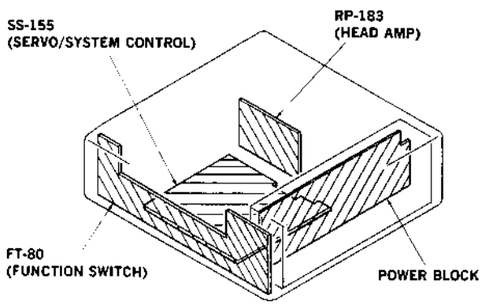
POWER SUPPLY
CN201 A-7

D101 B-2
D102 A-3
D103 A-4
D104 B-4
D105 B-4
D106 B-4
D201 B-6
D202 A-6
D203 B-6
D204 A-5
D205 B-7

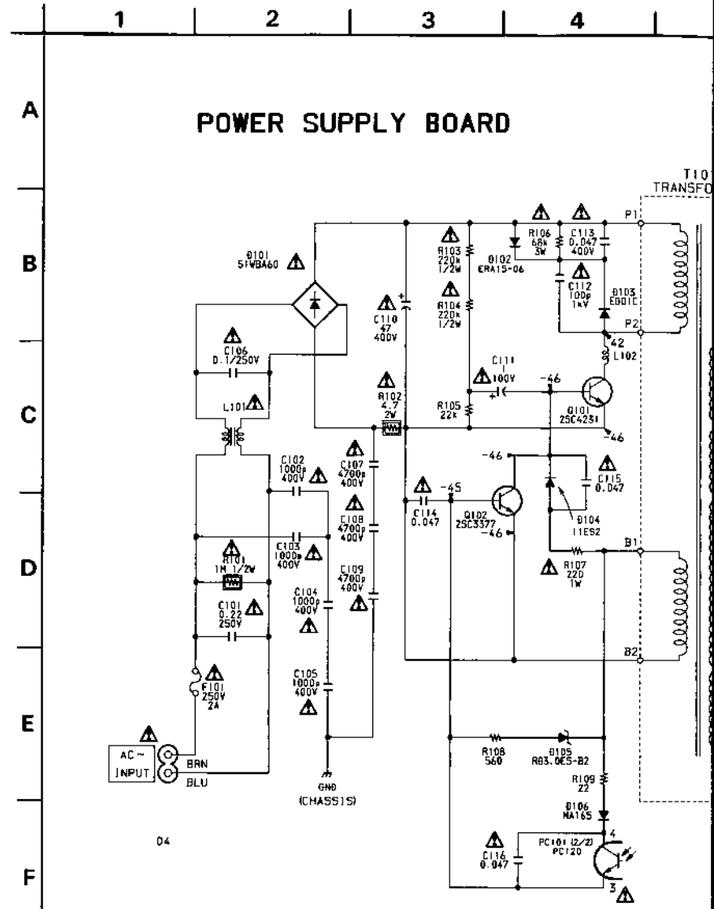
IC201 B-7
IC202 B-6
IC203 A-6

PC101 B-5

Q101 B-4
Q102 B-4



POWER SUPPLY (POWER) SCHEMATIC DIAGRAM
—Ref. No. POWER SUPPLY BOARD: 6000 series—

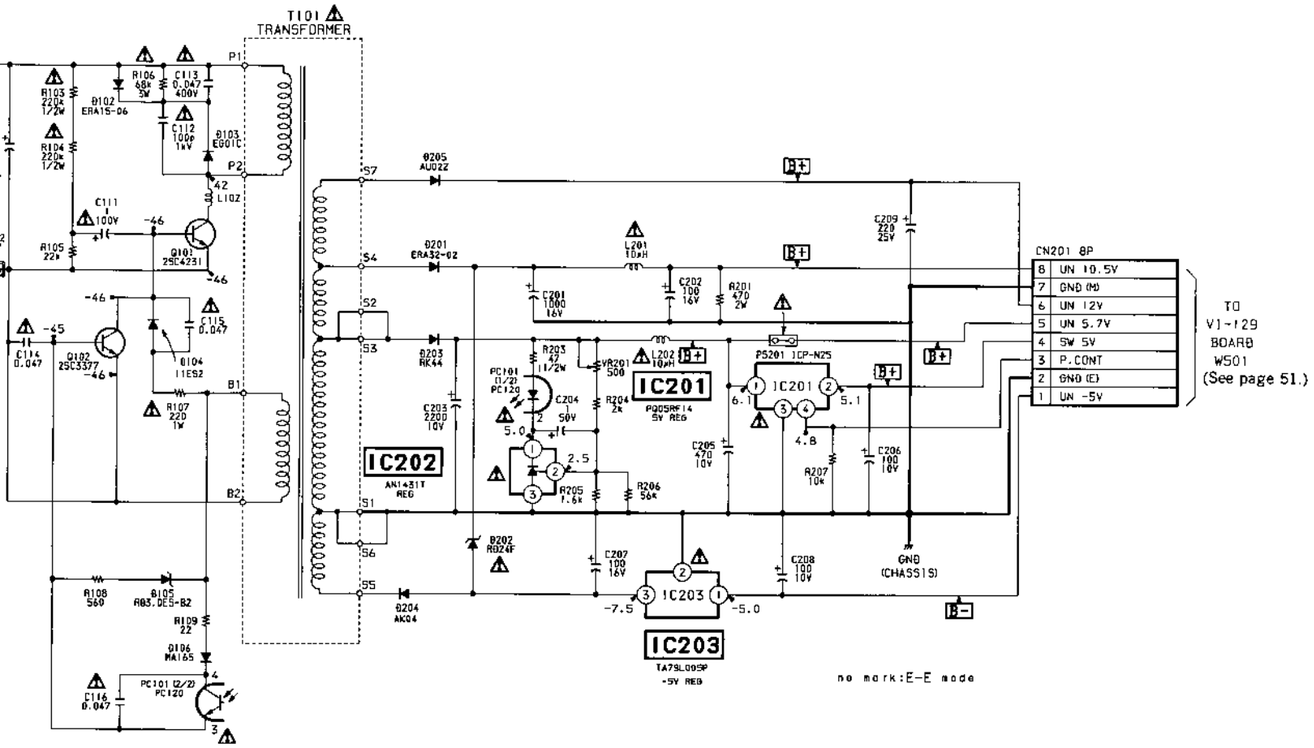


DIAGRAM

6000 series—

3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

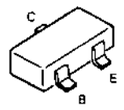
Y BOARD



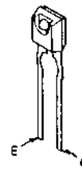
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-3. SEMICONDUCTORS

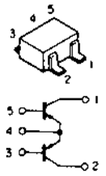
DTA114EK
DTA143EK
DTA144EK
DTC144EK
UN2116
UN2210
UN2213
2SA1162-G
2SB709A-Q
2SC1623-L5L6
2SC2223-F13
2SC3326N
2SD601A-Q
2SD1757K-RS



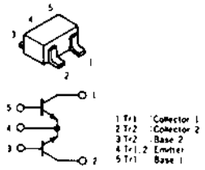
EE-TP109



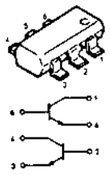
FMA2



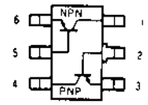
FMW1
XN1213



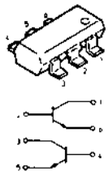
XN4210
XN4212
XN4213
XN4215
XN4501



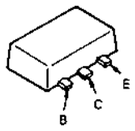
XN4312
XN4601



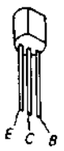
XN6501



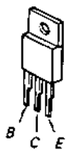
2SB798-DL
2SB1121



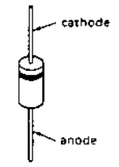
2SC2001-LK



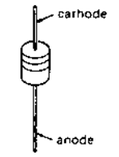
2SC4231



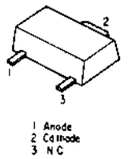
AK04-V2
EG01
ERA32-02
RD24F-B2
RK44



AU02Z
RD3.0ES-B2
1SS120
11ES2

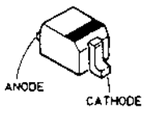


E10DS2

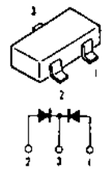


GL453JS

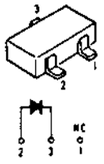
MA110



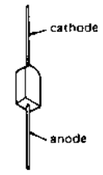
MA152WK
MA3130WA-TX



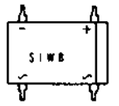
RD5.6M-B1
RD5.6M-B2
RD9.1M-B1
SB05-05CP
1SS193



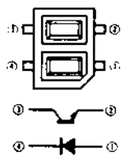
RM11C



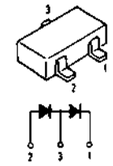
S1WBA60



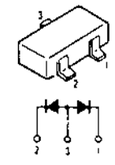
TLP907-0
(SONY2)



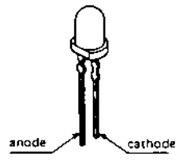
1SS226



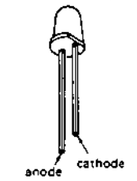
1S2836



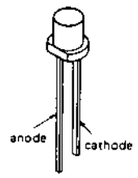
SLR-34DC3



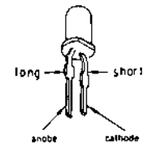
SLR-34MC3
SLR-34VC3



SLV-31MC3



TLY123

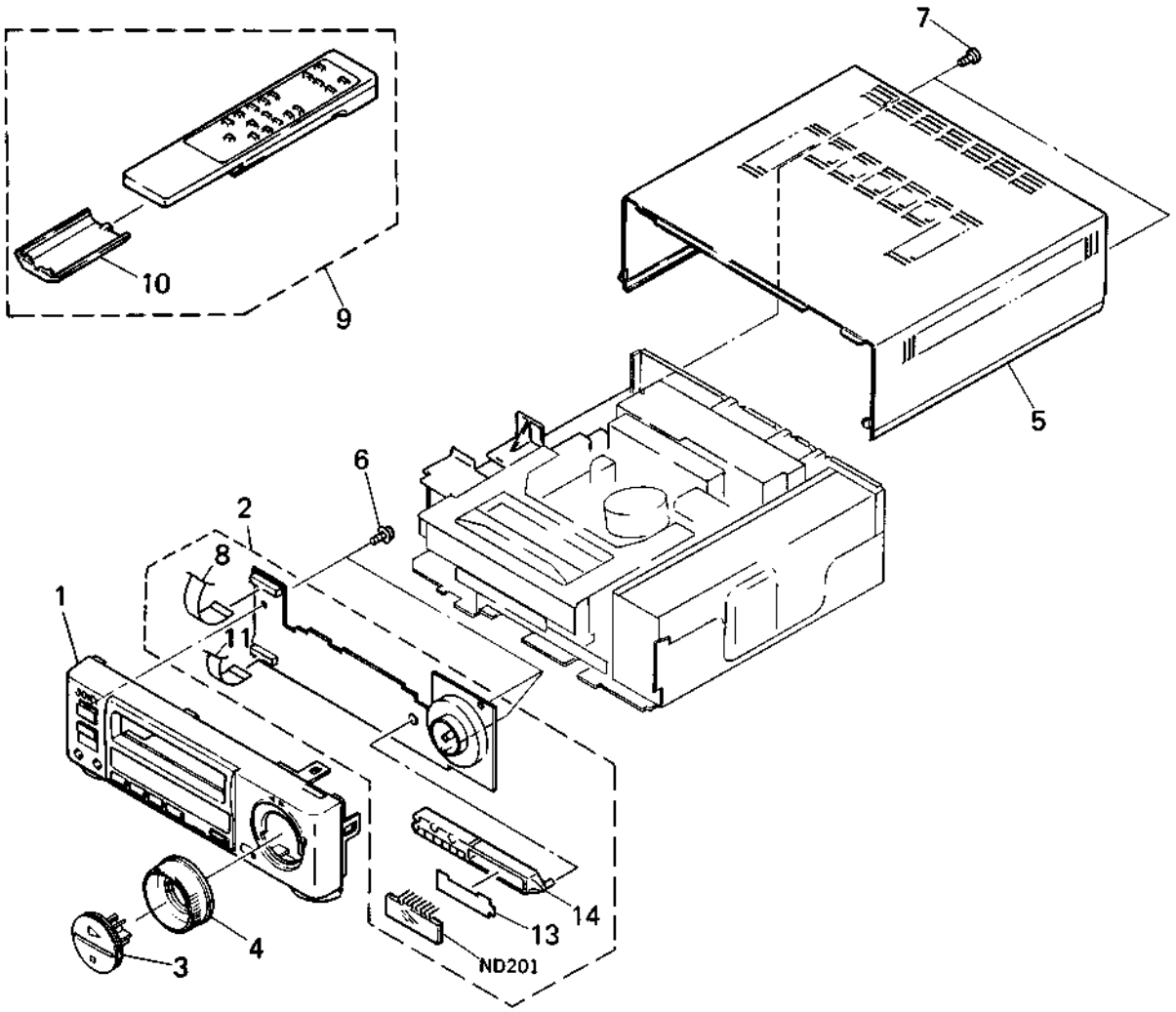


SECTION 6
EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

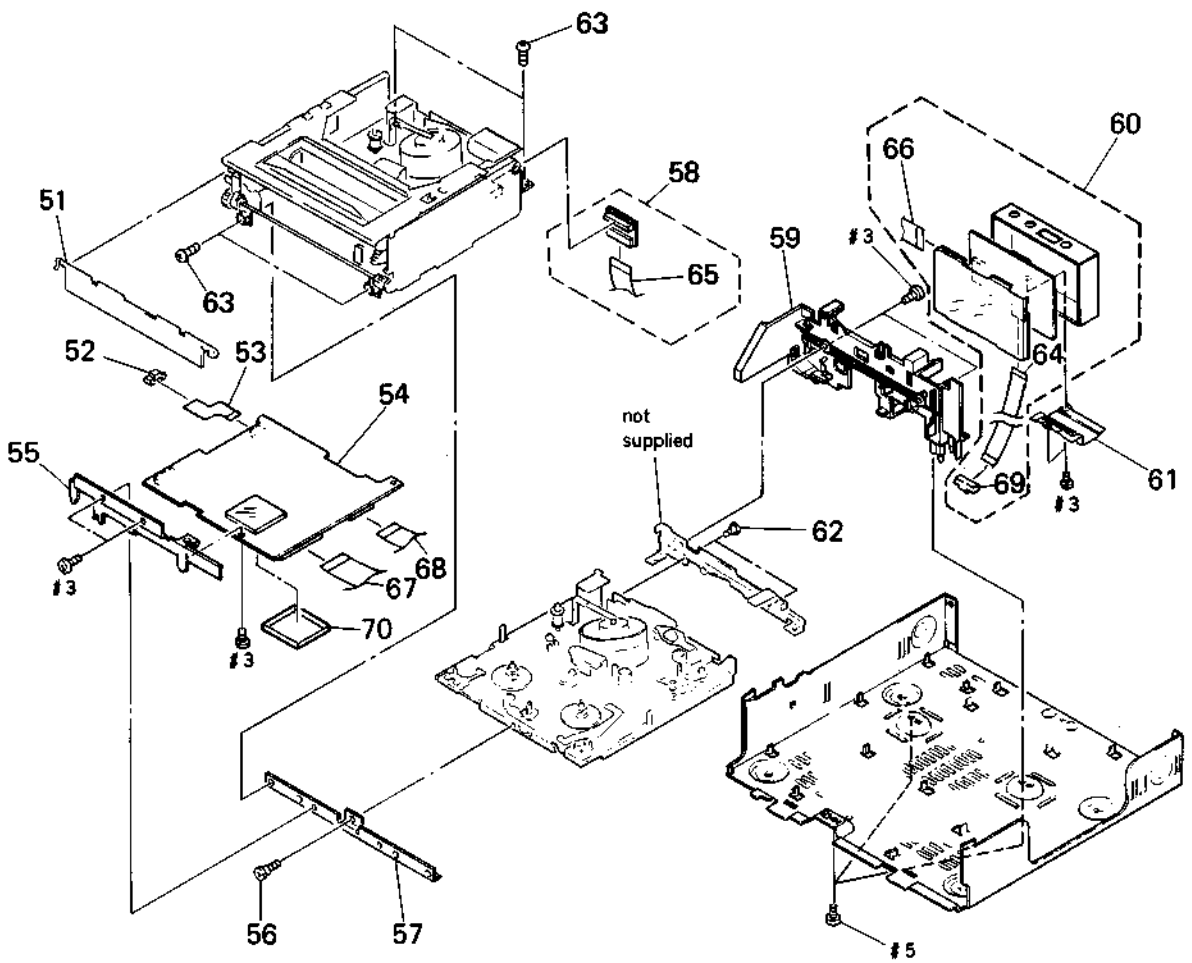
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-1. FRONT PANEL AND CASE ASSEMBLIES



Ref. No.	Part No.	Description	Remark
1	X-3943-322-1	PANEL ASSY, FRONT	
* 2	A-7053-731-A	FT-80 (B) BOARD, COMPLETE (AEP)	
* 2	A-7053-854-A	FT-80 (C) BOARD, COMPLETE (UK)	
3	X-3943-039-1	BUTTON ASSY, FUNCTION	
4	3-947-284-21	RING, SHUTTLE	
* 5	3-947-291-41	CASE, UPPER	
6	3-669-480-21	+ PTPWH 2	
7	3-948-500-01	SCREW, BV (3X10) RING	
8	1-751-367-11	CABLE, FLAT (FFT-9) 16P	
9	1-467-302-11	REMOTE COMMANDER (RMT-V124C)	
10	2-181-754-01	COVER, BATTERY	
11	1-696-411-11	CABLE, FLAT (FFT-8) 18P	
* 13	3-948-365-01	ILLUMINATOR (CX)	
* 14	3-948-364-01	HOLDER (CX), INDICATION TUBE	
ND201	1-809-727-11	DISPLAY PANEL, LIQUID CRYSTAL	

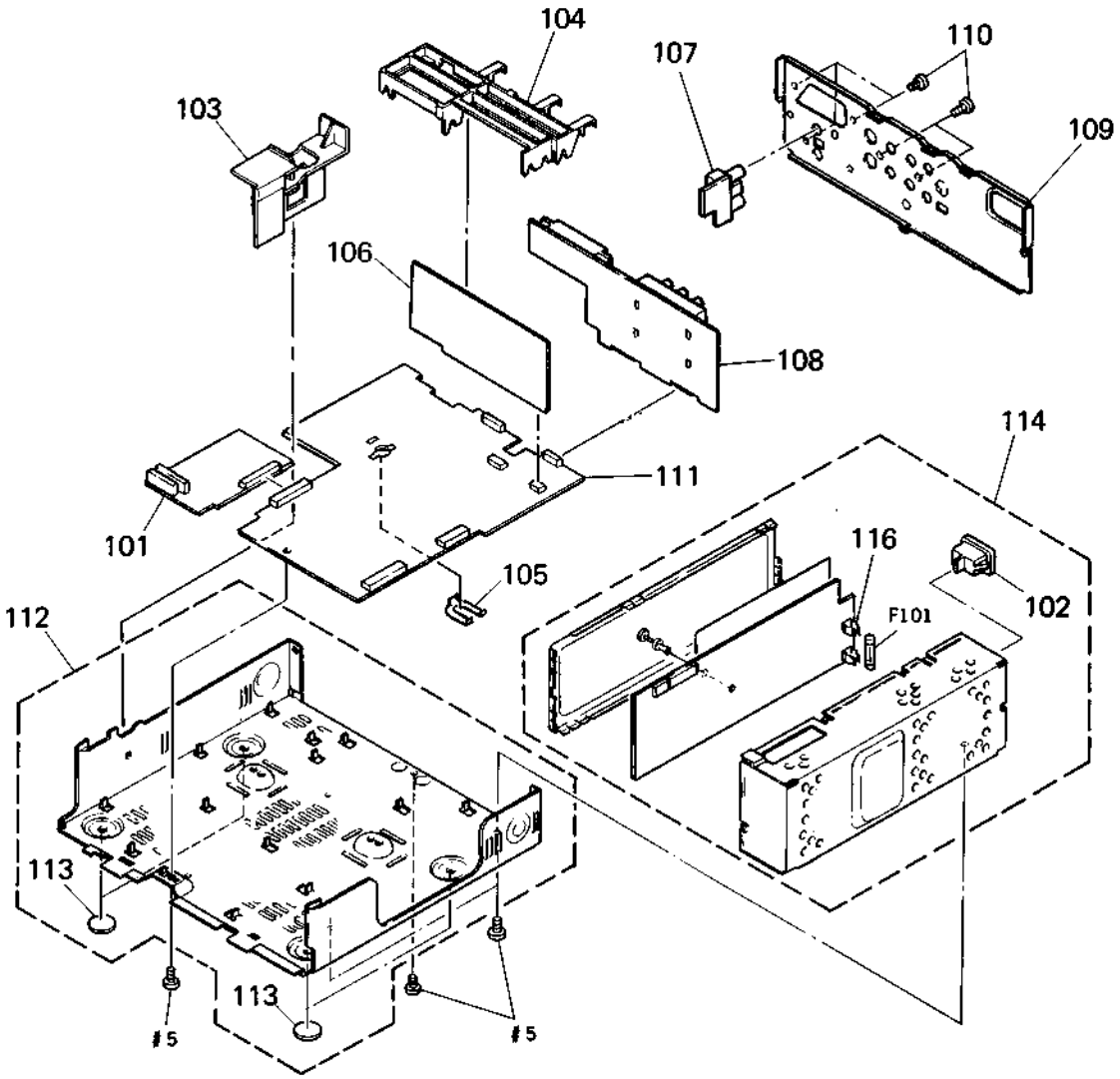
6-2. CHASSIS FRAME ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	3-953-726-11	WINDOW, CASSETTE COMPARTMENT	
52	1-569-346-11	CONNECTOR, FPC (TRANSLATION) 10P	
53	1-643-189-11	FP-503 FLEXIBLE BOARD	
* 54	A-7053-730-A	SS-155 (B) BOARD, COMPLETE	
* 55	3-947-273-01	FRAME (FRONT), MD	
56	3-732-816-21	SCREW, STEP	
* 57	3-732-810-02	BRACKET (FRONT)	
* 58	A-7063-829-A	CC-82 (B) BOARD, COMPLETE	
* 59	3-947-275-03	FRAME, RP	
* 60	A-7063-728-A	RP-183 (A) BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
* 61	3-947-276-01	PLATE (MD), GROUND	
62	3-732-816-01	SCREW, STEP	
63	3-732-817-01	SCREW (2X4.5), TAPPING	
64	1-751-375-11	OFP-37 FLEXIBLE BOARD	
65	1-751-009-11	CABLE, FLAT (FSC-4) 15P	
66	1-751-366-11	CABLE, FLAT (FRS-13) 10P	
67	1-696-605-11	CABLE, FLAT (FSV-7) 28P	
68	1-696-042-11	CABLE, FLAT (FSV-4) 13P	
69	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P	
* 70	3-947-505-01	CASE, SHIELD, PWM	

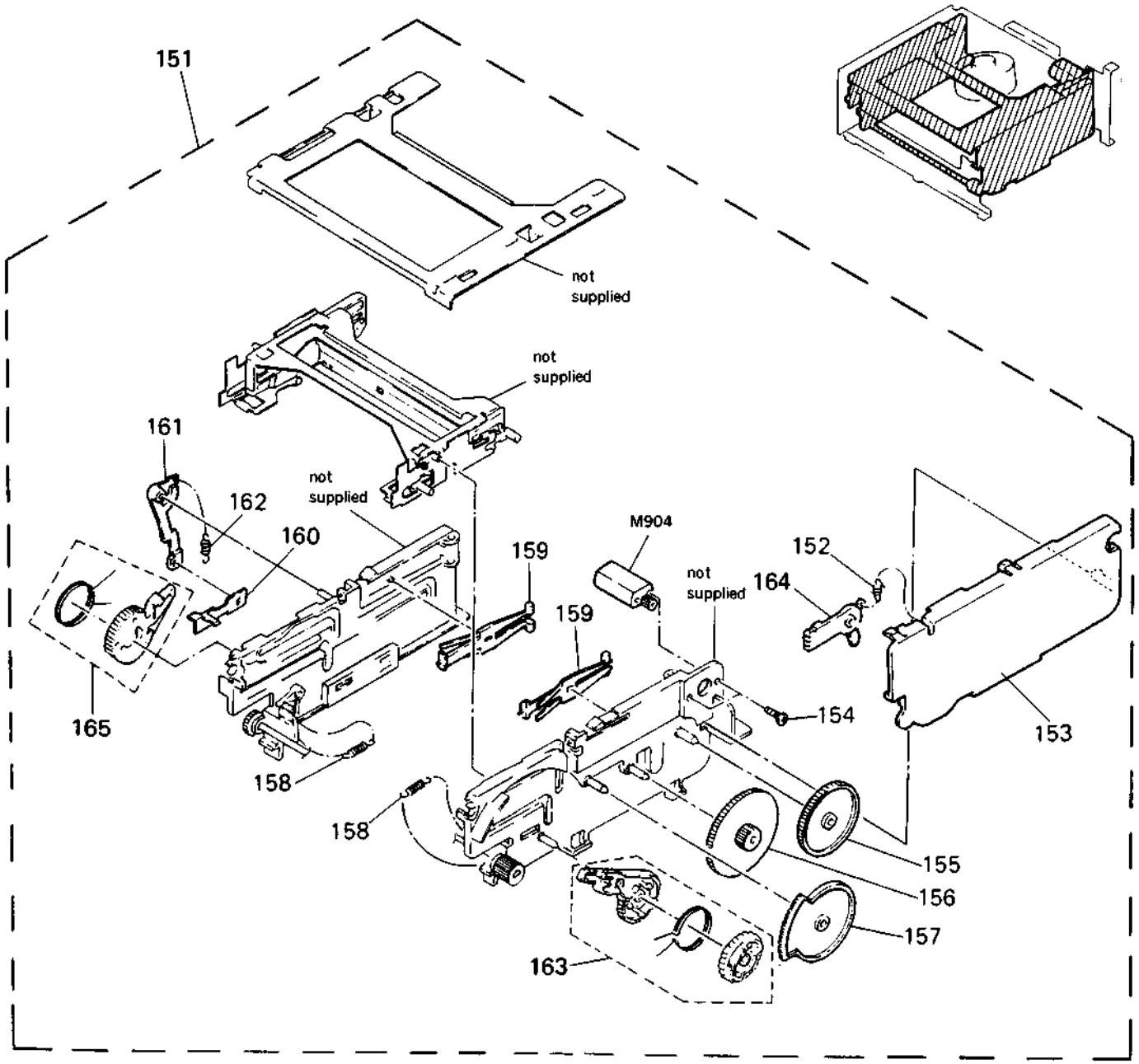
6-3. MAIN BOARDS AND POWER BLOCK ASSEMBLIES



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

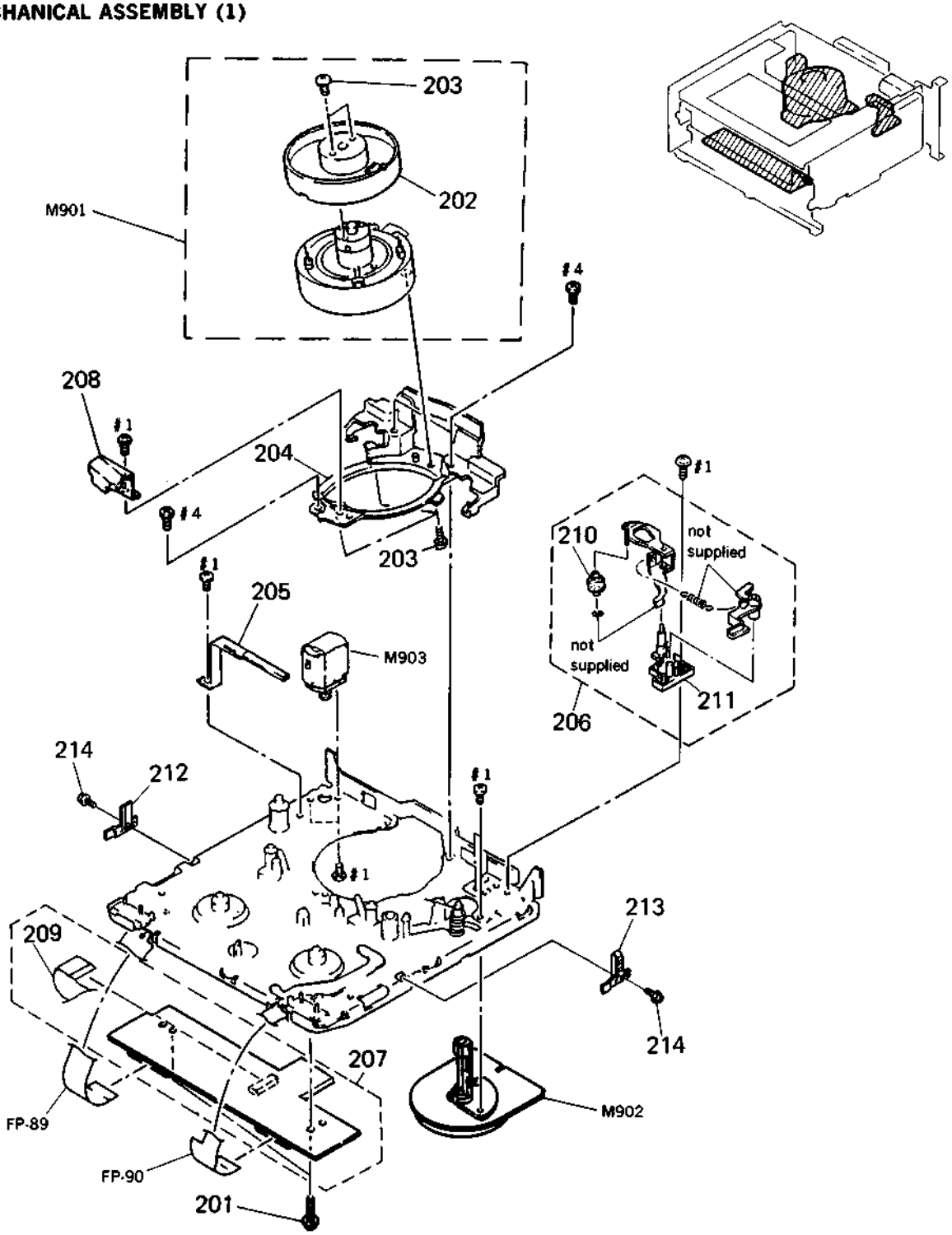
Ref. No.	Part No.	Description	Remark
* 101	A-7063-732-A	LC-46 (B) BOARD, COMPLETE	
⚠102	9-903-247-01	AC INLET 2P (250V/2.5A)	
103	3-947-283-01	HOLDER, MAC	
* 104	3-947-294-01	HOLDER, PC BOARD	
* 105	3-954-375-01	PLATE, GROUND, VI	
* 106	A-7063-736-A	AU-156 (B) BOARD, COMPLETE	
* 107	A-7063-735-A	RJ-48 (A) BOARD, COMPLETE	
* 108	A-7063-734-A	RJ-49 (B) BOARD, COMPLETE	
* 109	3-954-373-11	FRAME, REAR	
110	3-948-500-01	SCREW, BV (3X10) RING	
* 111	A-7063-733-A	VI-129 (A) BOARD, COMPLETE	
* 112	X-3941-463-2	PLATE ASSY, BOTTOM	
113	3-940-657-01	FOOT (FELT)	
114	1-413-887-11	POWER BLOCK	
116	9-902-059-01	HOLDER, FUSE	
⚠F101	9-903-925-01	FUSE, TIMER-LAG (250V/2A)	

6-4. CASSETTE COMPARTMENT ASSEMBLY



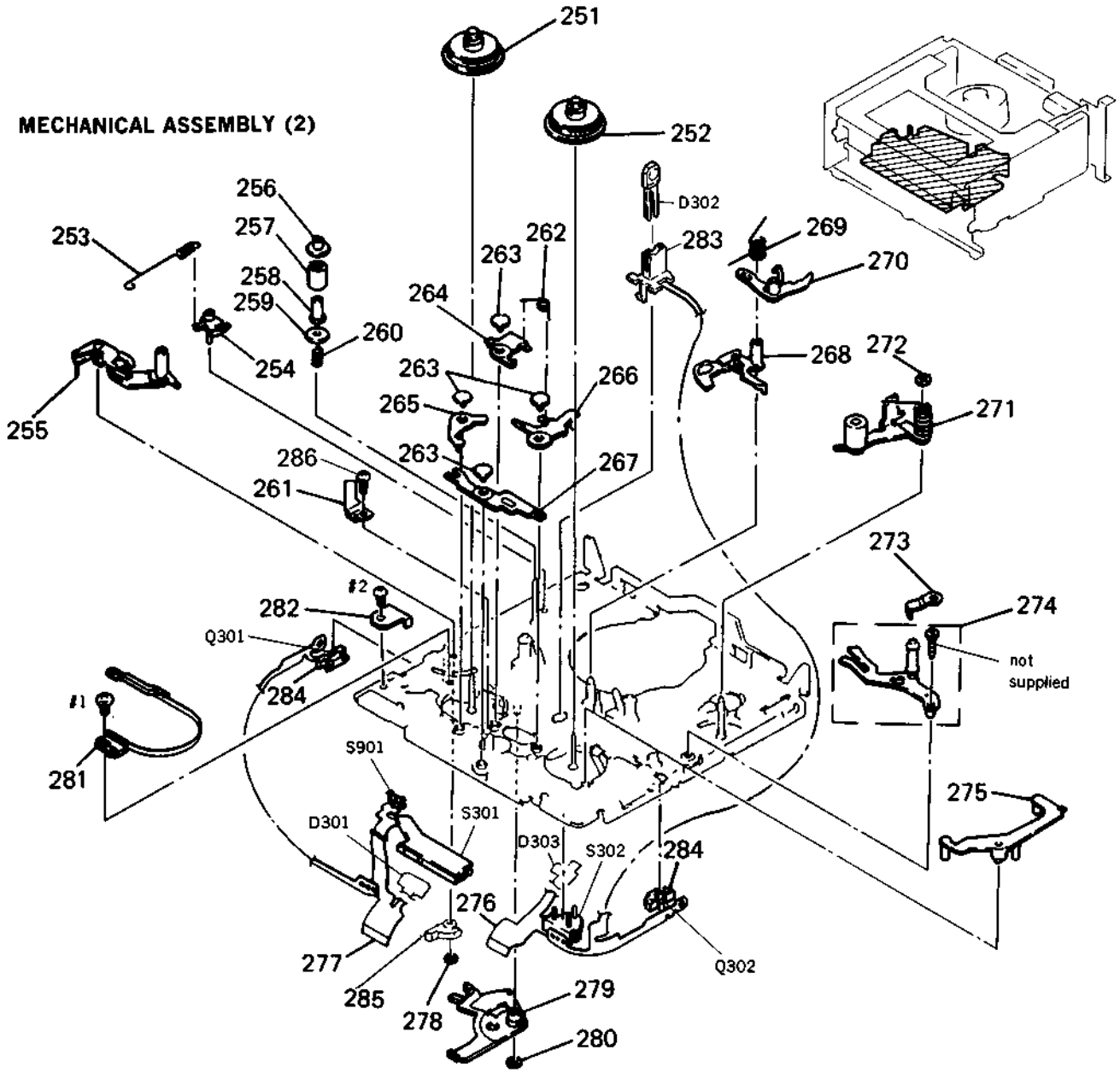
Ref. No.	Part No.	Description	Remark
* 151	A-7091-647-D	CASSETTE COMPARTMENT ASSY, FL	
152	3-731-175-02	SPRING, TENSION	
153	3-732-804-03	COVER, GEAR	
154	3-730-141-01	SCREW (PSW) (2X4)	
155	3-731-182-01	GEAR (B), DECELERATION	
156	3-731-181-01	GEAR (A), DECELERATION	
157	3-731-192-01	GEAR, MIDWAY	
158	3-731-176-02	SPRING, TENSION	
159	3-731-184-02	HOLDER LOCK	
160	3-731-189-01	SLIDER, LOCK	
161	3-731-188-01	ARM LOCK, DRIVING	
162	3-731-174-01	SPRING, TENSION	
163	X-3731-109-2	ARM (RIGHT) ASSY, DRIVING	
164	3-731-185-01	LINK, SWITCHING, DOOR	
165	X-3731-111-1	ARM (LEFT) ASSY, DRIVING	
M904	X-3731-108-1	FL MOTOR ASSY	

6-5. MECHANICAL ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
201	3-713-790-21	SCREW (M2X6), TAPPING, P3	
202	A-7049-626-A	DRUM ASSY, ROTARY (UPPER) (DGR-0A8-R)	
203	3-686-493-01	SCREW (M2X5), P1	
204	X-3686-482-5	BASE ASSY, DRUM	
205	X-3728-864-1	GROUND ASSY, SHAFT	
206	A-7040-207-A	ROLLER BLOCK ASSY, HC	
* 207	A-7063-830-A	UC-16 (B) BOARD, COMPLETE	
208	3-728-868-01	GUARD, GUIDE	
209	1-751-368-11	CABLE, FLAT (FUS-4) 16P	
210	X-3728-861-1	ROLLER ASSY, HC	
211	3-741-198-01	PLATE, HC	
212	X-3726-867-1	PRISM (LEFT) ASSY	
213	X-3726-866-1	PRISM (RIGHT) ASSY	
214	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	
M901	A-7048-691-A	DRUM ASSY (DGU-0A8A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-324-A	MOTOR ASSY (M), THREADING (LOADING)	

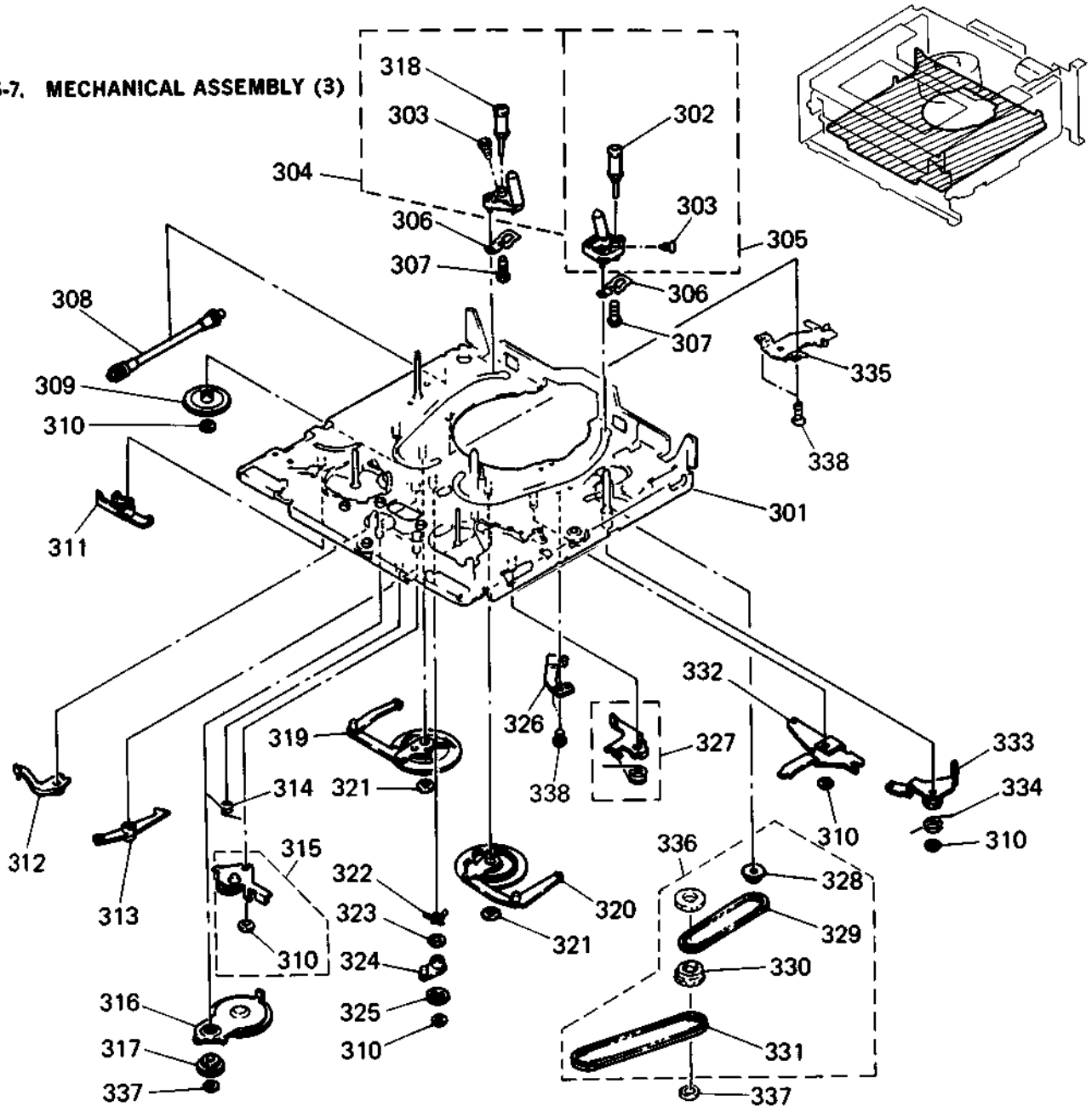
6-6. MECHANICAL ASSEMBLY (2)



Ref. No.	Part No.	Description	Remark
251	X-3728-851-1	TABLE ASSY, REEL, S	
252	X-3728-855-6	TABLE ASSY, REEL, T	
253	3-736-414-01	SPRING, TENSION	
254	3-728-855-03	ARM, ADJUSTMENT	
255	X-3728-867-1	ARM ASSY (S), TENSION REGULATOR	
256	3-726-884-01	FLANGE, UPPER, TG2	
257	3-726-883-21	ROLLER, TG2	
258	3-726-885-01	SLEEVE, TG2	
259	3-726-882-02	FLANGE, LOWER, TG2	
260	3-726-886-01	SPRING, COMPRESSION	
261	3-726-848-01	RETAINER, TL	
262	3-726-866-01	SPRING (ST), TORSION	
263	3-726-858-01	PIN, SHAFT RETAINER	
264	3-728-849-01	BRAKE, S	
265	3-726-852-01	BRAKE, LB	
266	3-728-850-01	BRAKE, T	
267	3-726-853-01	LEVER, LB	
268	3-728-875-01	STOPPER, RK	
269	3-726-864-01	SPRING (RK), TORSION	
270	3-728-852-02	ARM, RK STOPPER	
271	A-7040-219-A	ARM BLOCK ASSY, PINCH	
272	3-669-465-00	WASHER (1.5), STOPPER	

Ref. No.	Part No.	Description	Remark
273	3-728-808-01	SPRING, LEAF	
274	X-3728-869-1	ARM ASSY, TG7	
275	3-728-848-01	ARM, LB RELEASE	
276	1-628-061-12	FP-90 FLEXIBLE BOARD	
277	1-628-060-12	FP-89 FLEXIBLE BOARD	
278	3-321-393-11	WASHER, STOPPER	
279	X-3728-863-1	LEVER ASSY, SW	
280	3-726-829-01	WASHER, STOPPER	
281	X-3728-859-1	BAND ASSY, TENSION REGULATOR	
282	3-730-125-01	RETAINER, SW	
* 283	3-948-326-01	HOLDER (N), LED	
284	3-728-869-02	HOLDER, SENSOR	
285	X-3728-857-1	STOPPER ASSY, TENSION REGULATOR	
286	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	
D301	8-719-820-44	DIODE TLP907-0 (SONY2) (S REEL)	
D302	8-719-026-04	DIODE GL453JS (TAPE LED)	
D303	8-719-820-44	DIODE TLP907-0 (SONY 2) (T REEL)	
Q301	8-729-906-48	TRANSISTOR EE-TP109 (END SENS)	
Q302	8-729-906-48	TRANSISTOR EE-TP109 (TOP SENS)	
S301	1-572-173-11	SWITCH, SLIDE (ENCODER)	
S302	1-572-298-11	SWITCH, PUSH (REC PROOF/TAPE SELECT)	
S901	1-571-099-11	SWITCH (CC DOWN)	

6-7. MECHANICAL ASSEMBLY (3)



Ref. No.	Part No.	Description	Remark
301	X-3728-862-1	CHASSIS ASSY, MECHANICAL	
302	X-3728-808-4	ROLLER ASSY (U) (PLATING), GUIDE	
303	3-726-822-03	SCREW (M1.4X2) (STEP), HEAD	
304	A-7040-204-H	COASTER (LEFT) BLOCK ASSY	
305	A-7040-217-E	COASTER (RIGHT) BLOCK ASSY (N1P)	
306	3-736-485-01	SPRING, LEAF, COSTER	
307	3-726-830-01	SCREW (M1.4X4) (THREE LOCK)	
308	X-3940-276-2	WORM ASSY	
309	3-744-109-01	GEAR, WHEEL	
310	3-726-829-01	WASHER, STOPPER	
311	3-728-842-01	LEVER, EJECT	
312	3-728-851-01	BRAKE, UL	
313	3-726-854-01	ARM, BRAKE RELEASE	
314	3-726-865-01	SPRING (LB), TORSION	
315	A-7040-225-A	GEAR BLOCK ASSY (N), LB	
316	X-3728-866-1	GEAR ASSY, RK	
317	X-3728-858-2	GEAR ASSY, RC	
318	X-3726-879-5	ROLLER ASSY ((U)-NB), GUIDE	
319	X-3728-842-1	GEAR (LEFT) ASSY, DRIVE	

Ref. No.	Part No.	Description	Remark
320	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE	
321	3-669-465-00	WASHER (1.5), STOPPER	
322	3-726-867-01	SPRING, LEAF	
323	3-701-436-21	WASHER, POLYEHTHYLENE	
324	3-726-857-03	ARM, UL	
325	3-726-856-04	GEAR, UL	
* 326	3-726-805-01	REINFORCEMENT (TT)	
327	X-3726-808-3	BRAKE ASSY, TS	
328	X-3726-805-1	GEAR ASSY, JOINT	
329	3-728-866-11	BELT (S), TIMING	
330	3-741-196-02	PULLEY (LOWER), BELT MIDWAY	
331	3-741-197-01	BELT (L), TIMING	
332	3-941-322-01	LEVER, LOADING	
333	X-3940-279-1	ARM ASSY, PINCH SUB	
334	3-726-895-01	SPRING	
335	X-3940-278-1	REINFORCEMENT (SS) ASSY	
336	X-3726-813-4	PULLEY (UPPER) ASSY, MIDWAY	
337	3-321-393-11	WASHER, STOPPER	
338	3-732-087-31	SCREW (M1.4X1.8), SPECIAL HEAD	

AU-156

SECTION 7
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:μ, for example:
  uA ..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

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

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

Ref. No.	Part No.	Description			Remark
*	A-7063-736-A	AU-156 (B) BOARD, COMPLETE			
		**********			
		(Ref. No. 4000 series)			
		< CAPACITOR >			
C591	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C592	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C701	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C702	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C703	1-126-163-11	ELECT	4.7uF	20%	50V
C704	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C705	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C706	1-126-163-11	ELECT	4.7uF	20%	50V
C708	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C901	1-126-157-11	ELECT	10uF	20%	16V
C902	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C903	1-124-257-00	ELECT	2.2uF	20%	50V
C904	1-126-157-11	ELECT	10uF	20%	16V
C905	1-126-163-11	ELECT	4.7uF	20%	50V
C906	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C907	1-126-154-11	ELECT	47uF	20%	6.3V
C909	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C910	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C911	1-126-163-11	ELECT	4.7uF	20%	50V
C913	1-126-157-11	ELECT	10uF	20%	16V
C914	1-124-229-00	ELECT	33uF	20%	10V
C916	1-126-154-11	ELECT	47uF	20%	6.3V
C918	1-124-638-11	ELECT	22uF	20%	10V
C919	1-124-589-11	ELECT	47uF	20%	16V
C920	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C922	1-124-638-11	ELECT	22uF	20%	10V
C924	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C928	1-126-163-11	ELECT	4.7uF	20%	50V
C929	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C930	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C932	1-126-154-11	ELECT	47uF	20%	6.3V
C933	1-126-163-11	ELECT	4.7uF	20%	50V
C934	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C935	1-126-157-11	ELECT	10uF	20%	16V
C936	1-124-257-00	ELECT	2.2uF	20%	50V
C937	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C938	1-126-157-11	ELECT	10uF	20%	16V
C939	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C940	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C942	1-126-301-11	ELECT	1uF	20%	50V
C943	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C944	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C945	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C946	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C947	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C948	1-126-301-11	ELECT	1uF	20%	50V
C949	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C950	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C951	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C952	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C953	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C954	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C955	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C956	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C957	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C959	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C960	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C961	1-124-638-11	ELECT	22uF	20%	10V
C962	1-124-638-11	ELECT	22uF	20%	10V
C963	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C964	1-124-638-11	ELECT	22uF	20%	10V
C965	1-124-638-11	ELECT	22uF	20%	10V
C966	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C969	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C970	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C972	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C973	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C974	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C975	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C976	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C977	1-126-154-11	ELECT	47uF	20%	6.3V
C980	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C984	1-126-157-11	ELECT	10uF	20%	16V
C991	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C992	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C993	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C994	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C995	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN901	1-562-895-11	SOCKET, CONNECTOR 14P			
* CN902	1-562-638-11	SOCKET, CONNECTOR 8P			
		< DIODE >			
D903	8-719-801-48	DIODE	1SS193		
		< FILTER >			
FL901	1-236-837-21	FILTER, BAND PASS			
FL902	1-236-838-21	FILTER, BAND PASS			
		< IC >			
IC503	8-759-234-77	IC	TC4S66F		
IC701	8-759-100-96	IC	uPC4558G2		
IC901	8-759-169-76	IC	AN3986FBP-NS		
IC902	8-752-334-42	IC	CXD2106Q		
		< COIL >			
L903	1-407-169-XX	INDUCTOR	100uH		
		< TRANSISTOR >			
Q518	8-729-421-19	TRANSISTOR	UN2213		
Q702	8-729-901-06	TRANSISTOR	DTA144EK		
Q703	8-729-403-07	TRANSISTOR	XN1213		
Q704	8-729-421-19	TRANSISTOR	UN2213		
Q705	8-729-422-54	TRANSISTOR	XN4215		
Q706	8-729-421-19	TRANSISTOR	UN2213		
Q901	8-729-402-19	TRANSISTOR	XN6501		
Q902	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q903	8-729-402-19	TRANSISTOR	XN6501		
Q904	8-729-422-27	TRANSISTOR	2SD601A-Q		
Q909	8-729-922-87	TRANSISTOR	2SD1757K-RS		
Q910	8-729-922-87	TRANSISTOR	2SD1757K-RS		
Q914	8-729-901-06	TRANSISTOR	DTA144EK		
Q915	8-729-402-19	TRANSISTOR	XN6501		
Q916	8-729-402-19	TRANSISTOR	XN6501		
		< RESISTOR >			
R505	1-216-295-00	METAL CHIP	0	5%	1/10W
R553	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R555	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R556	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R591	1-216-073-00	METAL CHIP	10K	5%	1/10W
R592	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R594	1-216-049-00	METAL CHIP	1K	5%	1/10W
R701	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R702	1-216-113-00	METAL CHIP	470K	5%	1/10W
R703	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R704	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R705	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R706	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R707	1-216-113-00	METAL CHIP	470K	5%	1/10W
R708	1-216-077-00	METAL CHIP	15K	5%	1/10W
R709	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R903	1-216-091-00	METAL CHIP	56K	5%	1/10W
R904	1-216-083-00	METAL CHIP	27K	5%	1/10W
R907	1-216-121-00	METAL CHIP	1M	5%	1/10W
R908	1-216-075-00	METAL CHIP	12K	5%	1/10W
R912	1-216-033-00	METAL CHIP	220	5%	1/10W
R913	1-216-033-00	METAL CHIP	220	5%	1/10W
R919	1-216-091-00	METAL CHIP	56K	5%	1/10W
R920	1-216-083-00	METAL CHIP	27K	5%	1/10W
R921	1-216-097-00	METAL CHIP	100K	5%	1/10W
R922	1-216-295-00	METAL CHIP	0	5%	1/10W
R923	1-216-073-00	METAL CHIP	10K	5%	1/10W
R924	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R925	1-216-077-00	METAL CHIP	15K	5%	1/10W
R926	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R927	1-216-295-00	METAL CHIP	0	5%	1/10W
R929	1-216-085-00	METAL CHIP	33K	5%	1/10W
R930	1-216-295-00	METAL CHIP	0	5%	1/10W
R932	1-216-077-00	METAL CHIP	15K	5%	1/10W
R933	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R934	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R935	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R936	1-216-081-00	METAL CHIP	22K	5%	1/10W
R937	1-216-079-00	METAL CHIP	18K	5%	1/10W
R938	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R939	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R940	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R941	1-216-073-00	METAL CHIP	10K	5%	1/10W
R942	1-216-073-00	METAL CHIP	10K	5%	1/10W
R943	1-216-041-00	METAL CHIP	470	5%	1/10W
R947	1-216-049-00	METAL CHIP	1K	5%	1/10W
R948	1-216-049-00	METAL CHIP	1K	5%	1/10W
R949	1-216-049-00	METAL CHIP	1K	5%	1/10W
R950	1-216-049-00	METAL CHIP	1K	5%	1/10W
R951	1-216-075-00	METAL CHIP	12K	5%	1/10W
R952	1-216-085-00	METAL CHIP	33K	5%	1/10W
R953	1-216-075-00	METAL CHIP	12K	5%	1/10W

AU-156 **CC-82** **FP-89** **FP-90** **FT-80**

Ref. No.	Part No.	Description			Remark
R954	1-216-097-00	METAL CHIP	100K	5%	1/10W
R955	1-216-097-00	METAL CHIP	100K	5%	1/10W
R958	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R959	1-216-105-00	METAL CHIP	220K	5%	1/10W
R960	1-216-049-00	METAL CHIP	1K	5%	1/10W
R964	1-216-295-00	METAL CHIP	0	5%	1/10W
R965	1-216-295-00	METAL CHIP	0	5%	1/10W
R967	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R968	1-216-103-00	METAL CHIP	180K	5%	1/10W
R969	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R970	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R971	1-216-103-00	METAL CHIP	180K	5%	1/10W
R972	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R973	1-216-097-00	METAL CHIP	100K	5%	1/10W
R974	1-216-097-00	METAL CHIP	100K	5%	1/10W
R975	1-216-097-00	METAL CHIP	100K	5%	1/10W
R976	1-216-097-00	METAL CHIP	100K	5%	1/10W
R977	1-216-073-00	METAL CHIP	10K	5%	1/10W
R978	1-216-073-00	METAL CHIP	10K	5%	1/10W
R983	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R987	1-216-295-00	METAL CHIP	0	5%	1/10W
R988	1-216-295-00	METAL CHIP	0	5%	1/10W
R989	1-216-083-00	METAL CHIP	27K	5%	1/10W
R990	1-216-083-00	METAL CHIP	27K	5%	1/10W
R991	1-216-073-00	METAL CHIP	10K	5%	1/10W
R992	1-216-073-00	METAL CHIP	10K	5%	1/10W
R993	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R994	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R995	1-216-047-00	METAL CHIP	820	5%	1/10W
R996	1-216-047-00	METAL CHIP	820	5%	1/10W
R997	1-216-049-00	METAL CHIP	1K	5%	1/10W
R998	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< VARIABLE RESISTOR >			
RV901	1-238-857-11	RES, ADJ, CERMET 22K			
RV902	1-238-857-11	RES, ADJ, CERMET 22K			
**********					
*	A-7063-829-A	CC-82 (B) BOARD, COMPLETE			
		**********			
		(Ref. No. 2000 series)			
	1-751-009-11	CABLE, FLAT (FCS-4)			
		< CONNECTOR >			
CN701	1-562-880-21	CONNECOTR, CARD EDGE 15P			
CN702	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P			
**********					

Ref. No.	Part No.	Description			Remark
*	1-628-060-12	FP-89 FLEXIBLE BOARD			
		**********			
		(Ref. No. 2000 series)			
	3-728-869-02	HOLDER SENSOR			
		< DIODE >			
D301	8-719-820-44	DIODE TLP907-0 (SONY2) (S REEL)			
		< TRANSISTOR >			
Q301	8-729-906-48	TRANSISTOR EE-TP109 (END SENS)			
		< SWITCH >			
S301	1-572-173-11	SWITCH SLIDE (ENCODER)			
S901	1-571-099-11	SWITCH (CC DOWN)			
**********					
*	1-628-061-12	FP-90 FLEXIBLE BOARD			
		**********			
		(Ref. No. 2000 series)			
	3-728-869-02	HOLDER SENSOR			
		< DIODE >			
D302	8-719-026-04	DIODE GL453JS (TAPE LED)			
D303	8-719-820-44	DIODE TLP907-0 (SONY2) (T REEL)			
		< TRANSISTOR >			
Q302	8-729-906-48	TRANSISTOR EE-TP109 (TOP SENS)			
		< SWITCH >			
S302	1-572-298-11	SWITCH PUSH (REC PROOF/TAPE SELECT)			
**********					
*	A-7053-731-A	FT-80 (B) BOARD, COMPLETE (AEP)			
*	A-7053-854-A	FT-80 (C) BOARD, COMPLETE (UK)			
		**********			
		(Ref. No. 5000 series)			
	1-696-411-11	CABLE, FLAT (FFT-8)			
	1-751-367-11	CABLE, FLAT (FFT-9)			
*	3-948-364-01	HOLDER (CX), INDICATION TUBE			
*	3-948-365-01	ILLUMINATOR (CX)			
		< CAPACITOR >			
C201	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C202	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN201	1-569-933-11	HOUSING, CONNECTOR 16P			

Ref. No.	Part No.	Description	Remark
* CN202	1-691-050-21	HOUSING, CONNECTOR 18P	
		< DIODE >	
D201	8-719-812-32	LED TLY123 (FF)	
D202	8-719-940-82	LED SLR34MC3 (FWD)	
D203	8-719-951-35	DIODE SLV31MC3	
D204	8-719-940-82	LED SLR34MC3 (RVS)	
D205	8-719-812-32	LED TLY123 (REW)	
D206	8-719-951-35	DIODE SLV31MC3	
D207	8-719-946-30	LED SLR34DC3 (PAUSE)	
D208	8-719-951-35	DIODE SLV31MC3	
D209	8-719-940-99	LED SLR34VC3 (REC)	
D210	8-719-951-35	DIODE SLV31MC3	
D211	8-719-946-30	LED SLR34DC3 (EDIT)	
D212	8-719-946-30	LED SLR34DC3 (SYNCHRO EDIT)	
D213	8-719-951-35	DIODE SLV31MC3	
D214	8-719-940-82	LED SLR34MC3 (Hi8)	
D215	8-719-951-35	DIODE SLV31MC3	
D216	8-719-940-82	LED SLR34MC3 (Hi8)	
D217	8-719-812-32	LED TLY123 (VOICE BOOST)	
D218	8-719-940-99	LED SLR34VC3 (STEREO)	
D219	8-719-812-32	LED TLY123 (SUB/R)	
D220	8-719-812-32	LED TLY123 (MAIN/L)	
D221	8-719-940-99	LED SLR34VC3 (STANDBY) (AEP)	
D221	8-719-032-78	LED GL3UR8 (STANDBY) (UK)	
D222	8-719-940-82	LED SLR34MC3 (POWER)	
		< SWITCH >	
DMS201	1-572-662-21	SWITCH, ROTARY (PLAY/STOP/FORWARD/REVERSE)	
		< IC >	
IC201	8-759-171-92	IC BU2042F-T2	
IC202	8-741-100-47	IC SBX1610-09	
		< JUMPER RESISTOR >	
JR201	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR202	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR203	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR204	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR205	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR206	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR207	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR208	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR209	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR210	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR211	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR212	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR213	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR214	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR215	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR216	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR217	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR218	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR219	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR220	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR221	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR222	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR223	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR224	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR225	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR226	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR227	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR228	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR229	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR230	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR231	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR232	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR233	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR234	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR236	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR237	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR238	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR239	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR240	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR241	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR242	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR243	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR244	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR248	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR250	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR251	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR252	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR254	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR255	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR256	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR257	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR259	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR260	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR261	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR262	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR264	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR265	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR266	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR268	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR269	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR270	1-216-296-00	METAL CHIP 0 5% 1/8W	

FT-80 **LC-46**

Ref. No.	Part No.	Description			Remark
		< FLUORESCENT INDICATOR >			
ND201	1-809-727-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q201	8-729-424-18	TRANSISTOR UN2113			
		< RESISTOR >			
R201	1-216-182-91	METAL GLAZE	220	5%	1/8W
R202	1-216-182-91	METAL GLAZE	220	5%	1/8W
R203	1-216-182-91	METAL GLAZE	220	5%	1/8W
R204	1-216-037-00	METAL CHIP	330	5%	1/10W
R205	1-216-033-00	METAL CHIP	220	5%	1/10W
R206	1-216-033-00	METAL CHIP	220	5%	1/10W
R207	1-216-033-00	METAL CHIP	220	5%	1/10W
R208	1-216-033-00	METAL CHIP	220	5%	1/10W
R209	1-216-182-91	METAL GLAZE	220	5%	1/8W
R210	1-216-017-00	METAL CHIP	47	5%	1/10W
R211	1-216-182-91	METAL GLAZE	220	5%	1/8W
R213	1-216-166-00	METAL GLAZE	47	5%	1/8W
R214	1-216-017-00	METAL CHIP	47	5%	1/10W
R215	1-216-033-00	METAL CHIP	220	5%	1/10W
R216	1-216-033-00	METAL CHIP	220	5%	1/10W
R217	1-216-033-00	METAL CHIP	220	5%	1/10W
R218	1-216-033-00	METAL CHIP	220	5%	1/10W
R219	1-216-031-00	METAL CHIP	180	5%	1/10W
R220	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R221	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R222	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R223	1-216-029-00	METAL CHIP	150	5%	1/10W (AEP)
R223	1-216-033-00	METAL CHIP	220	5%	1/10W (UK)
R224	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R225	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R226	1-216-206-00	METAL GLAZE	2.2K	5%	1/8W
R227	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W
R228	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R229	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R230	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R231	1-216-214-00	METAL GLAZE	4.7K	5%	1/8W
		< SWITCH >			
S201	1-571-977-11	SWITCH, TACTIL (POWER)			
S202	1-571-977-11	SWITCH, TACTIL (PAUSE)			
S203	1-571-977-11	SWITCH, TACTIL (REC)			
S204	1-571-977-11	SWITCH, TACTIL (EJECT)			
S205	1-571-977-11	SWITCH, TACTIL (SYNCHRO EDIT)			
S206	1-571-977-11	SWITCH, TACTIL (Hi8 AUTO/OFF)			
S207	1-571-977-11	SWITCH, TACTIL (AUDIO LINE IN)			
S208	1-571-977-11	SWITCH, TACTIL (EDIT)			
S209	1-571-977-11	SWITCH, TACTIL (COUNTER RESET)			
S210	1-571-977-11	SWITCH, TACTIL (VOICE BOOST)			
*	A-7063-732-A	LC-46 (B) BOARD, COMPLETE			
		**********			
		(Ref. No. 3000 series)			
		< CAPACITOR >			
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C107	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C108	1-126-157-11	ELECT	10uF	20%	16V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-124-257-00	ELECT	2.2uF	20%	50V
C111	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C112	1-124-635-00	ELECT	220uF	20%	6.3V
C117	1-124-638-11	ELECT	22uF	20%	10V
C118	1-126-157-11	ELECT	10uF	20%	16V
		< CONNECTOR >			
* CN101	1-691-050-21	HOUSING, CONNECTOR 18P			
CN102	1-569-933-11	HOUSING, CONNECTOR 16P			
CN103	1-568-093-11	CONNECTOR (PLUG) 20P			
		< DIODE >			
⚠D101	8-719-914-43	DIODE DAN202K			
D102	8-719-914-43	DIODE DAN202K			
⚠D103	8-719-914-43	DIODE DAN202K			
D104	8-719-914-43	DIODE DAN202K			
⚠D105	8-719-914-43	DIODE DAN202K			
		< IC >			
IC101	8-759-186-35	IC MB89092PFV-G-127A			
IC102	8-759-999-02	IC TL1596CDB			
IC104	8-759-074-40	IC PST572DMT-T1			
		< TRANSISTOR >			
Q106	8-729-420-20	TRANSISTOR XN4312			
		< RESISTOR >			
R101	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R102	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R103	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W
R108	1-216-049-00	METAL CHIP	1K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W

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

Ref. No.	Part No.	Description			Remark
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W
R116	1-216-073-00	METAL CHIP	10K	5%	1/10W
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
R118	1-216-073-00	METAL CHIP	10K	5%	1/10W
R119	1-216-073-00	METAL CHIP	10K	5%	1/10W
R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
R121	1-216-295-00	METAL CHIP	0	5%	1/10W
R122	1-216-049-00	METAL CHIP	1K	5%	1/10W
R123	1-216-049-00	METAL CHIP	1K	5%	1/10W
R124	1-216-049-00	METAL CHIP	1K	5%	1/10W
R125	1-216-073-00	METAL CHIP	10K	5%	1/10W
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W
R127	1-216-073-00	METAL CHIP	10K	5%	1/10W
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W
R129	1-216-073-00	METAL CHIP	10K	5%	1/10W
R130	1-216-596-11	METAL GLAZE	2.7K	1%	1/10W
R131	1-216-049-00	METAL CHIP	1K	5%	1/10W
R132	1-216-105-00	METAL CHIP	220K	5%	1/10W
R133	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R135	1-216-295-00	METAL CHIP	0	5%	1/10W
R136	1-216-295-00	METAL CHIP	0	5%	1/10W
R137	1-216-295-00	METAL CHIP	0	5%	1/10W
R138	1-216-073-00	METAL CHIP	10K	5%	1/10W
R139	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-113-00	METAL CHIP	470K	5%	1/10W
R142	1-216-049-00	METAL CHIP	1K	5%	1/10W
R146	1-216-049-00	METAL CHIP	1K	5%	1/10W
R147	1-216-073-00	METAL CHIP	10K	5%	1/10W
R148	1-216-295-00	METAL CHIP	0	5%	1/10W
R149	1-216-049-00	METAL CHIP	1K	5%	1/10W
R150	1-216-049-00	METAL CHIP	1K	5%	1/10W
R153	1-216-041-00	METAL CHIP	470	5%	1/10W
R155	1-216-295-00	METAL CHIP	0	5%	1/10W

< VARIABLE RESISTOR >

RV101	1-228-994-00	RES, ADJ, METAL 10K
RV102	1-228-994-00	RES, ADJ, METAL 10K

< VIBRATOR >

X101	1-579-175-11	VIBRATOR, CERAMIC (10MHz)

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Ref. No.	Part No.	Description			Remark
*	1-413-887-11	POWER BLOCK (AEP)			
*	1-413-887-21	POWER BLOCK (UK)			
		**********			

(Ref. No. 6000 series)

< CAPACITOR >

⚠C101	1-130-711-00	MYLAR	0.22uF	20%	250V
⚠C102	9-905-596-01	CERAMIC	1000PF	20%	400V
⚠C103	9-905-596-01	CERAMIC	1000PF	20%	400V
⚠C104	9-905-596-01	CERAMIC	1000PF	20%	400V
⚠C105	9-905-596-01	CERAMIC	1000PF	20%	400V
⚠C106	9-902-039-01	MYLAR	0.1uF		250V
⚠C107	1-162-599-12	CERAMIC	4700PF		400V
⚠C108	1-162-599-12	CERAMIC	4700PF		400V
⚠C109	1-162-599-12	CERAMIC	4700uF		400V
⚠C110	9-903-197-01	ELECT	47uF		400V
⚠C111	1-124-791-11	ELECT	1uF	20%	100V
⚠C112	9-902-055-01	CERAMIC	100PF		1KV
⚠C113	1-136-207-11	MYLAR	0.047uF		400V
⚠C114	1-130-491-00	FILM	0.047uF		50V
⚠C115	1-130-491-00	FILM	0.047uF		50V
⚠C116	1-130-491-00	FILM	0.047uF		50V
C201	1-124-360-00	ELECT	1000uF		16V
C202	1-126-101-11	ELECT	100uF		16V
C203	1-126-589-11	ELECT	2200uF		10V
C204	1-124-791-11	ELECT	1uF	20%	100V
C205	1-124-472-11	ELECT	470uF	20%	10V
C206	1-124-443-00	ELECT	100uF	20%	10V
C207	1-126-101-11	ELECT	100uF	20%	16V
C208	1-124-443-00	ELECT	100uF	20%	10V
C209	1-124-120-51	ELECT	220uF	20%	25V

< CONNECTOR >

* CN201	1-564-018-51	PIN, CONNECTOR 8P

< DIODE >

⚠D101	1-809-505-11	DIODE	S1WBA60
D102	8-719-304-63	DIODE	RM11C
D103	8-719-312-26	DIODE	EG01
D104	8-719-200-82	DIODE	11ES2
D105	8-719-109-63	DIODE	RD3.0ES-B2
D106	8-719-912-20	DIODE	1SS120
D201	9-903-218-01	DIODE	ERA32-02
⚠D202	8-719-160-78	DIODE	RD24F-B2
D203	9-903-219-01	DIODE	RK44
D204	8-719-975-85	DIODE	AK04
D205	8-719-313-16	DIODE	AU02Z

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

POWER **RJ-48** **RJ-49**

Ref. No.	Part No.	Description			Remark
		< FUSE >			
⚠F101	1-532-203-11	FUSE, TIMER-LAG 2A 250V			
		< IC >			
⚠IC201	9-903-221-01	IC PQ05RF14			
⚠IC202	8-759-420-19	IC AN1431T			
⚠IC203	9-903-223-01	IC TA79L005P			
		< COIL >			
⚠L101	9-900-520-01	FILTER, LINE			
L102	9-903-997-01	CORE, BEAD			
⚠L201	9-900-539-01	CHOKE COIL 10uH			
⚠L202	9-900-539-01	CHOKE COIL 10uH			
		< IC LINK >			
⚠PS201	1-532-637-21	IC LINK ICP-N25 1.0A			
		< PHOTO COUPLER >			
⚠PC101	9-903-965-01	PHOTO COUPLER PC120			
		< TRANSISTOR >			
Q101	9-902-497-11	TRANSISTOR 2SC4231			
Q102	8-729-142-46	TRANSISTOR 2SC2001-LK			
		< RESISTOR >			
⚠R101	9-902-945-11	CARBON	1M	1/2W	F
⚠R102	9-904-186-01	CEMENT	4.7	2W	
⚠R103	9-903-208-01	CARBON	220K 5%	1/2W	
⚠R104	9-903-208-01	CARBON	220K 5%	1/2W	
R105	1-249-433-11	CARBON	22K 5%	1/4W	
⚠R106	9-903-211-01	METAL OXIED	68K	3W	
⚠R107	9-903-213-01	CARBON	220	1/2W	F
R108	1-249-414-11	CARBON	560	1/4W	
R109	1-249-397-11	CARBON	22	1/4W	
R201	9-903-534-01	METAL OXIED	470	2W	
R203	1-247-735-11	CARBON	47 5%	1/2W	
R204	1-247-838-00	METAL	2K 1%	1/4W	
R205	9-903-480-01	METAL	1.6K 1%	1/4W	
R206	9-903-481-01	METAL	56K 1%	1/4W	
R207	1-249-429-11	CARBON	10K 5%	1/4W	
		< TRANSFORMER >			
⚠T101	9-905-595-01	TRANSFORMER			
		< VARIABLE RESISTOR >			
VR201	9-903-244-01	RES, ADJ, CERMET 500			

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Ref. No.	Part No.	Description			Remark
*	A-7063-735-A	RJ-48 (A) BOARD, COMPLETE			
		**********			
		(Ref. No. 5000 series)			
		< CAPACITOR >			
C701	1-126-157-11	ELECT	10uF	20% 16V	
C702	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
		< CONNECTOR >			
* CN701	1-564-004-11	PIN, CONNECTOR 5P			
		< DIODE >			
D701	8-719-106-79	DIODE RD13M-B1			
D702	8-719-421-59	DIODE MA3130WA-TX			
D703	8-719-421-59	DIODE MA3130WA-TX			
		< JACK >			
J701	1-537-431-11	TERMINAL BOARD (LINE OUT2)			
		< TRANSISTOR >			
Q701	8-729-422-27	TRANSISTOR 2SD601A-Q			
Q702	8-729-101-07	TRANSISTOR 2SB798-DL			
		< RESISTOR >			
R701	1-216-049-00	METAL CHIP	1K 5%	1/10W	
R702	1-216-079-00	METAL CHIP	18K 5%	1/10W	
R703	1-216-138-00	METAL CHIP	3.3 5%	1/8W	
R704	1-216-067-00	METAL CHIP	5.6K 5%	1/10W	

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Ref. No.	Part No.	Description			Remark
*	A-7063-734-A	RJ-49 (B) BOARD, COMPLETE			
		**********			
		(Ref. No. 5000 series)			
		< CAPACITOR >			
C501	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C502	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C504	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C507	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	
C508	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	
C509	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	
C510	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C511	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C512	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C513	1-163-141-00	CERAMIC CHIP	0.001uF	5% 50V	
C514	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C515	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C520	1-163-117-00	CERAMIC CHIP	100PF	5% 50V	
C521	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	

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

Ref. No.	Part No.	Description			Remark
C522	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN501	1-568-079-11	CONNECTOR (RECEPTALE) 20P			
CN502	1-568-077-11	CONNECTOR (RECEPTALE) 16P			
		< JACK >			
CNJ501	1-750-664-11	TERMINAL BLOCK, S (LINE IN, LINE OUT1)			
		< DIODE >			
D503	8-719-421-59	DIODE	MA3130WA-TX		
D504	8-719-105-90	DIODE	RD5.6M-B1		
D505	8-719-421-59	DIODE	MA3130WA-TX		
D506	8-719-421-59	DIODE	MA3130WA-TX		
D507	8-719-106-43	DIODE	RD9.1M-B1		
D510	8-719-421-59	DIODE	MA3130WA-TX		
D511	8-719-421-59	DIODE	MA3130WA-TX		
D512	8-719-421-59	DIODE	MA3130WA-TX		
D513	8-719-106-43	DIODE	RD9.1M-B1		
D520	8-719-421-59	DIODE	MA3130WA-TX		
D521	8-719-421-59	DIODE	MA3130WA-TX		
D522	8-719-106-80	DIODE	RD13M-B2		
		< JACK >			
J502	1-568-016-11	SOCKET, PIN 21P (EURO-AV)			
J503	1-507-792-31	JACK (CONTROL S IN)			
J505	1-568-800-11	JACK, ULTRA SMALL (CONTROL L)			
		< JUMPER RESISTOR >			
JR501	1-216-295-00	METAL CHIP	0	5%	1/10W
JR502	1-216-296-00	METAL CHIP	0	5%	1/8W
JR503	1-216-295-00	METAL CHIP	0	5%	1/10W
JR505	1-216-295-00	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
JR510	1-216-295-00	METAL CHIP	0	5%	1/10W
JR511	1-216-295-00	METAL CHIP	0	5%	1/10W
JR512	1-216-296-00	METAL CHIP	0	5%	1/8W
JR513	1-216-295-00	METAL CHIP	0	5%	1/10W
JR514	1-216-295-00	METAL CHIP	0	5%	1/10W
JR515	1-216-295-00	METAL CHIP	0	5%	1/10W
JR516	1-216-295-00	METAL CHIP	0	5%	1/10W
JR517	1-216-295-00	METAL CHIP	0	5%	1/10W
JR518	1-216-295-00	METAL CHIP	0	5%	1/10W
JR519	1-216-296-00	METAL CHIP	0	5%	1/8W
JR521	1-216-295-00	METAL CHIP	0	5%	1/10W
JR523	1-216-295-00	METAL CHIP	0	5%	1/10W
JR524	1-216-296-00	METAL CHIP	0	5%	1/8W
JR525	1-216-296-00	METAL CHIP	0	5%	1/8W
JR527	1-216-296-00	METAL CHIP	0	5%	1/8W
JR528	1-216-296-00	METAL CHIP	0	5%	1/8W
JR529	1-216-296-00	METAL CHIP	0	5%	1/8W
JR530	1-216-296-00	METAL CHIP	0	5%	1/8W
JR531	1-216-296-00	METAL CHIP	0	5%	1/8W
JR532	1-216-296-00	METAL CHIP	0	5%	1/8W
JR533	1-216-296-00	METAL CHIP	0	5%	1/8W
JR534	1-216-296-00	METAL CHIP	0	5%	1/8W
JR535	1-216-296-00	METAL CHIP	0	5%	1/8W
		< COIL >			
L501	1-412-390-21	INDUCTOR CHIP	0uH		
		< RESISTOR >			
R501	1-216-295-00	METAL CHIP	0	5%	1/10W
R502	1-216-022-00	METAL CHIP	75	5%	1/10W
R503	1-216-015-00	METAL CHIP	39	5%	1/10W
R504	1-216-017-00	METAL CHIP	47	5%	1/10W
R505	1-216-022-00	METAL CHIP	75	5%	1/10W
R506	1-216-295-00	METAL CHIP	0	5%	1/10W
R509	1-216-039-00	METAL CHIP	390	5%	1/10W
R510	1-216-039-00	METAL CHIP	390	5%	1/10W
R520	1-216-295-00	METAL CHIP	0	5%	1/10W
R521	1-216-049-00	METAL CHIP	1K	5%	1/10W
R522	1-216-295-00	METAL CHIP	0	5%	1/10W
R523	1-216-049-00	METAL CHIP	1K	5%	1/10W
		< SWITCH >			
S502	1-570-157-21	SWITCH, SLIDE (CONTROL L)			
S503	1-570-157-21	SWITCH, SLIDE (VIDEO OUT)			
S504	1-692-539-11	SWITCH, KEYBOARD (CL)			

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*	A-7063-728-A	RP-183 (A) BOARD, COMPLETE			
		**********			
		(Ref. No. 1000 series)			
	1-569-347-11	CONNECTOR, FPC (TRANSLATION) 13P			
	1-751-366-11	CABLE, FLAT (FRS-13)			
	1-751-375-11	FP-37 FLEXIBLE BOARD			
		< CAPACITOR >			
C001	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C002	1-163-091-00	CERAMIC CHIP	8PF		50V
C003	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C004	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C005	1-164-232-11	CERAMIC CHIP	0.01uF		50V

RP-183

Ref. No.	Part No.	Description			Remark
C006	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C007	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C008	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
C009	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
C010	1-126-157-11	ELECT	10uF	20%	16V
C012	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C013	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C014	1-164-634-11	CERAMIC CHIP	1uF		16V
C015	1-126-157-11	ELECT	10uF	20%	16V
C016	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C017	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C018	1-124-234-00	ELECT	22uF	20%	16V
C019	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C021	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C022	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C023	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C024	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C025	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C026	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C027	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C028	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
C029	1-163-224-11	CERAMIC CHIP	7PF	0.25PF	50V
C030	1-126-154-11	ELECT	47uF	20%	6.3V
C032	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C033	1-164-634-11	CERAMIC CHIP	1uF		16V
C036	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C037	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C038	1-126-157-11	ELECT	10uF	20%	16V
C039	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C040	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C041	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C042	1-126-157-11	ELECT	10uF	20%	16V
C043	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C044	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C045	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C046	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C047	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C049	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C050	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C051	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C053	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C054	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C055	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C056	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C057	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C059	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C060	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C063	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C064	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C065	1-163-031-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CN001	1-506-487-11	PIN, CONNECTOR 8P			
CN002	1-691-069-21	HOUSING, CONNECTOR 10P			
CN003	1-566-545-41	CONNECTOR, FPC (NON ZIF) 13P			
		< DIODE >			
D001	8-719-404-46	DIODE MA110			
D002	8-719-404-46	DIODE MA110			
		< IC >			
IC001	8-752-003-44	IC CX20034			
IC002	8-759-062-51	IC CXA1443M			
		< COIL >			
L001	1-408-948-00	INDUCTOR	220uH		
L002	1-408-973-21	INDUCTOR	18uH		
L003	1-407-169-XX	INDUCTOR	100uH		
L004	1-408-974-21	INDUCTOR	22uH		
L006	1-408-973-21	INDUCTOR	18uH		
L007	1-408-969-21	INDUCTOR	8.2uH		
L008	1-408-970-21	INDUCTOR	10uH		
L009	1-408-970-21	INDUCTOR	10uH		
		< TRANSISTOR >			
Q001	8-729-102-07	TRANSISTOR	2SC2223-F13		
Q002	8-729-102-07	TRANSISTOR	2SC2223-F13		
Q003	8-729-421-19	TRANSISTOR	UN2213		
Q006	8-729-216-22	TRANSISTOR	2SA1162-G		
Q007	8-729-216-22	TRANSISTOR	2SA1162-G		
Q008	8-729-216-22	TRANSISTOR	2SA1162-G		
Q012	8-729-421-19	TRANSISTOR	UN2213		
Q013	8-729-421-19	TRANSISTOR	UN2213		
Q014	8-729-424-18	TRANSISTOR	UN2113		
Q016	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R001	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R002	1-216-083-00	METAL CHIP	27K	5%	1/10W
R003	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R004	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R005	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R006	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R007	1-216-081-00	METAL CHIP	22K	5%	1/10W
R008	1-216-073-00	METAL CHIP	10K	5%	1/10W
R009	1-216-001-00	METAL CHIP	10	5%	1/10W
R010	1-216-031-00	METAL CHIP	180	5%	1/10W

Ref. No.	Part No.	Description			Remark
R011	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R012	1-216-083-00	METAL CHIP	27K	5%	1/10W
R013	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R014	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R015	1-216-091-00	METAL CHIP	56K	0.5%	1/10W
R016	1-216-081-00	METAL CHIP	22K	0.5%	1/10W
R017	1-216-081-00	METAL CHIP	22K	5%	1/10W
R018	1-216-073-00	METAL CHIP	10K	5%	1/10W
R019	1-216-001-00	METAL CHIP	10	5%	1/10W
R020	1-216-031-00	METAL CHIP	180	5%	1/10W
R021	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R022	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R023	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R024	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R025	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R026	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R028	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R029	1-216-073-00	METAL CHIP	10K	5%	1/10W
R031	1-216-073-00	METAL CHIP	10K	5%	1/10W
R032	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R037	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R038	1-216-021-00	METAL CHIP	68	5%	1/10W
R040	1-216-081-00	METAL CHIP	22K	5%	1/10W
R041	1-216-085-00	METAL CHIP	33K	5%	1/10W
R042	1-216-035-00	METAL CHIP	270	5%	1/10W
R043	1-216-033-00	METAL CHIP	220	5%	1/10W
R044	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R045	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R046	1-216-021-00	METAL CHIP	68	5%	1/10W
R047	1-216-017-00	METAL CHIP	47	5%	1/10W
R048	1-216-043-00	METAL CHIP	560	5%	1/10W
R057	1-216-025-00	METAL CHIP	100	5%	1/10W
R058	1-216-025-00	METAL CHIP	100	5%	1/10W
R059	1-216-025-00	METAL CHIP	100	5%	1/10W
R060	1-216-295-00	METAL CHIP	0	5%	1/10W
R062	1-216-025-00	METAL CHIP	100	5%	1/10W
R063	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R064	1-216-025-00	METAL CHIP	100	5%	1/10W
R067	1-216-295-00	METAL CHIP	0	5%	1/10W
R070	1-216-295-00	METAL CHIP	0	5%	1/10W
R071	1-216-295-00	METAL CHIP	0	5%	1/10W
R073	1-216-025-00	METAL CHIP	100	5%	1/10W

< VARIABLE RESISTOR >

RV001	1-230-720-11	RES. ADJ, CARBON	4.7K
RV002	1-230-720-11	RES. ADJ, CARBON	4.7K
RV003	1-230-721-11	RES. ADJ, CARBON	10K

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Ref. No.	Part No.	Description			Remark
*	A-7053-730-A	SS-155 (B) BOARD, COMPLETE			
		**********			
		(Ref. No. 2000 series)			
	1-696-042-11	CABLE, FLAT (FSV-4)			
	1-696-605-11	CABLE, FLAT (FSV-7) 28P			
*	3-947-505-01	CASE, SHIELD, PWM			

< CAPACITOR >

C006	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C007	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C008	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C009	1-126-157-11	ELECT	10uF	20%	16V
C010	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C012	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C013	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C015	1-163-087-00	CERAMIC CHIP	4PF		50V
C016	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C017	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C019	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C020	1-126-157-11	ELECT	10uF	20%	16V
C021	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C022	1-126-157-11	ELECT	10uF	20%	16V
C023	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C024	1-126-157-11	ELECT	10uF	20%	16V
C025	1-126-157-11	ELECT	10uF	20%	16V
C026	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C029	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C030	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C031	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C032	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C033	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C034	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C035	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C036	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C037	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C038	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C039	1-126-157-11	ELECT	10uF	20%	16V
C040	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C041	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C042	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C043	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C045	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C046	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C101	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C102	1-162-638-11	CERAMIC CHIP	1uF		16V
C103	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C104	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C105	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V

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Ref. No.	Part No.	Description			Remark
C106	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C107	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C108	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C109	1-130-495-00	MYLAR	0.1uF	5%	50V
C110	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C111	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C112	1-126-163-11	ELECT	4.7uF	20%	50V
C113	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C114	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V
C115	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C116	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C117	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C118	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C120	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C121	1-126-301-11	ELECT	1uF	20%	50V
C122	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C123	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C125	1-124-589-11	ELECT	47uF	20%	16V
C126	1-127-498-00	ELECT(SOLID)	15uF	20%	16V
C127	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C128	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C129	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C131	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C132	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C134	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C135	1-127-558-11	ELECT(SOLID)	10uF	20%	10V
C136	1-127-512-00	ELECT(SOLID)	10uF	20%	16V
C137	1-126-157-11	ELECT	10uF	20%	16V
C140	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C145	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C146	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C147	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C148	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C149	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C151	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C152	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C901	1-163-005-11	CERAMIC CHIP	470PF	10%	50V

< CONNECTOR >

* CN001	1-691-087-21	HOUSING, CONNECTOR 28P	
* CN002	1-691-072-11	HOUSING, CONNECTOR 13P	
CN004	1-691-069-21	HOUSING, CONNECTOR 10P	
CN005	1-566-532-11	CONNECTOR, FPC (ZIF) 16P	
CN101	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P	
CN102	1-566-542-31	CONNECTOR, FPC (NON ZIF) 10P	
* CN103	1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN104	1-565-541-11	PIN, CONNECTOR (PC BOARD) 2P	

Ref. No.	Part No.	Description		Remark
		< DIODE >		
⚠D002	8-719-200-27	DIODE	E10DS2	
⚠D003	8-719-200-27	DIODE	E10DS2	
D004	8-719-104-34	DIODE	1S2836	
D102	8-719-938-75	DIODE	SB05-05CP	
D103	8-719-938-75	DIODE	SB05-05CP	
D106	8-719-914-44	DIODE	DAP202K	
		< FERRITE BEAD >		
FB002	1-412-390-21	INDUCTOR CHIP	0uH	
FB003	1-412-390-21	INDUCTOR CHIP	0uH	
FB102	1-412-390-21	INDUCTOR CHIP	0uH	
FB103	1-412-390-21	INDUCTOR CHIP	0uH	
FB104	1-412-390-21	INDUCTOR CHIP	0uH	
		< IC >		
IC002	8-752-844-24	IC	CXP80624-469Q	
IC003	8-759-070-96	IC	CXA1481AQ	
IC005	8-759-945-17	IC	MB3775PF	
IC101	8-759-164-58	IC	MCD002BM-TLM	
IC102	8-759-166-78	IC	CXA8006BM-ELL1000	
IC103	8-759-148-05	IC	CXA8010M	
IC104	8-759-823-94	IC	LB1836M	
		< COIL >		
L002	1-408-978-21	INDUCTOR	47uH	
L004	1-407-169-XX	INDUCTOR	100uH	
L007	1-408-970-21	INDUCTOR	10uH	
L008	1-424-522-21	COIL, CHOKE	10uH	
L009	1-424-524-21	COIL, CHOKE	47uH	
L010	1-424-524-21	COIL, CHOKE	47uH	
L101	1-412-010-41	INDUCTOR CHIP	22uH	
L901	1-414-170-11	INDUCTOR CHIP	100uH	
		< IC LINK >		
⚠PS101	1-532-605-00	LINK, IC	0.4A (ICP-N10)	
⚠PS999	1-532-833-21	LINK, IC	0.25A (PRF 250)	
		< TRANSISTOR >		
Q001	8-729-901-01	TRANSISTOR	DTC144EK	
Q003	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q004	8-729-901-01	TRANSISTOR	DTC144EK	
Q005	8-729-901-01	TRANSISTOR	DTC144EK	
Q007	8-729-901-01	TRANSISTOR	DTC144EK	
Q102	8-729-901-06	TRANSISTOR	DTA144EK	
Q104	8-729-424-76	TRANSISTOR	UN2210	
Q105	8-729-424-76	TRANSISTOR	UN2210	
Q106	8-729-420-12	TRANSISTOR	XN4213	

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

Ref. No.	Part No.	Description			Remark
⚠Q109	8-729-805-25	TRANSISTOR	2SB1121-S		
⚠Q111	8-729-805-25	TRANSISTOR	2SB1121-S		
Q112	8-729-216-22	TRANSISTOR	2SA1162-G		
Q113	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q114	8-729-402-81	TRANSISTOR	XN4501		
Q115	8-729-901-04	TRANSISTOR	DTA114EK		
Q116	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R001	1-216-073-00	METAL CHIP	10K	5%	1/10W
R002	1-216-073-00	METAL CHIP	10K	5%	1/10W
R003	1-216-073-00	METAL CHIP	10K	5%	1/10W
R004	1-216-073-00	METAL CHIP	10K	5%	1/10W
R007	1-216-049-00	METAL CHIP	1K	5%	1/10W
R008	1-216-049-00	METAL CHIP	1K	5%	1/10W
R009	1-216-049-00	METAL CHIP	1K	5%	1/10W
R011	1-216-073-00	METAL CHIP	10K	5%	1/10W
R012	1-216-073-00	METAL CHIP	10K	5%	1/10W
R013	1-216-073-00	METAL CHIP	10K	5%	1/10W
R014	1-216-073-00	METAL CHIP	10K	5%	1/10W
R015	1-216-073-00	METAL CHIP	10K	5%	1/10W
R016	1-216-073-00	METAL CHIP	10K	5%	1/10W
R018	1-216-073-00	METAL CHIP	10K	5%	1/10W
R020	1-216-073-00	METAL CHIP	10K	5%	1/10W
R021	1-216-073-00	METAL CHIP	10K	5%	1/10W
R022	1-216-073-00	METAL CHIP	10K	5%	1/10W
R023	1-216-073-00	METAL CHIP	10K	5%	1/10W
R024	1-216-073-00	METAL CHIP	10K	5%	1/10W
R025	1-216-073-00	METAL CHIP	10K	5%	1/10W
R026	1-216-073-00	METAL CHIP	10K	5%	1/10W
R030	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R033	1-216-049-00	METAL CHIP	1K	5%	1/10W
R034	1-216-097-00	METAL CHIP	100K	5%	1/10W
R035	1-216-097-00	METAL CHIP	100K	5%	1/10W
R036	1-216-097-00	METAL CHIP	100K	5%	1/10W
R037	1-216-049-00	METAL CHIP	1K	5%	1/10W
R039	1-216-049-00	METAL CHIP	1K	5%	1/10W
R040	1-216-073-00	METAL CHIP	10K	5%	1/10W
R041	1-216-073-00	METAL CHIP	10K	5%	1/10W
R042	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R043	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R044	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R046	1-216-049-00	METAL CHIP	1K	5%	1/10W
R048	1-216-049-00	METAL CHIP	1K	5%	1/10W
R052	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R053	1-216-049-00	METAL CHIP	1K	5%	1/10W
R055	1-216-049-00	METAL CHIP	1K	5%	1/10W
R056	1-216-049-00	METAL CHIP	1K	5%	1/10W
R057	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R058	1-216-049-00	METAL CHIP	1K	5%	1/10W
R059	1-216-049-00	METAL CHIP	1K	5%	1/10W
R060	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R061	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R062	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R063	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R064	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R065	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R066	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R067	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R068	1-216-073-00	METAL CHIP	10K	5%	1/10W
R069	1-216-073-00	METAL CHIP	10K	5%	1/10W
R070	1-216-073-00	METAL CHIP	10K	5%	1/10W
R071	1-216-073-00	METAL CHIP	10K	5%	1/10W
R072	1-216-073-00	METAL CHIP	10K	5%	1/10W
R073	1-216-073-00	METAL CHIP	10K	5%	1/10W
R074	1-216-073-00	METAL CHIP	10K	5%	1/10W
R075	1-216-073-00	METAL CHIP	10K	5%	1/10W
R076	1-216-049-00	METAL CHIP	1K	5%	1/10W
R077	1-216-049-00	METAL CHIP	1K	5%	1/10W
R079	1-216-049-00	METAL CHIP	1K	5%	1/10W
R080	1-216-049-00	METAL CHIP	1K	5%	1/10W
R081	1-216-049-00	METAL CHIP	1K	5%	1/10W
R082	1-216-049-00	METAL CHIP	1K	5%	1/10W
R083	1-216-049-00	METAL CHIP	1K	5%	1/10W
R084	1-216-049-00	METAL CHIP	1K	5%	1/10W
R085	1-216-049-00	METAL CHIP	1K	5%	1/10W
R086	1-216-049-00	METAL CHIP	1K	5%	1/10W
R087	1-216-049-00	METAL CHIP	1K	5%	1/10W
R088	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R089	1-216-049-00	METAL CHIP	1K	5%	1/10W
R090	1-216-049-00	METAL CHIP	1K	5%	1/10W
R091	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R092	1-216-049-00	METAL CHIP	1K	5%	1/10W
R093	1-216-049-00	METAL CHIP	1K	5%	1/10W
R094	1-216-049-00	METAL CHIP	1K	5%	1/10W
R096	1-216-073-00	METAL CHIP	10K	5%	1/10W
R097	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R098	1-216-049-00	METAL CHIP	1K	5%	1/10W
R099	1-216-049-00	METAL CHIP	1K	5%	1/10W
R101	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-097-00	METAL CHIP	100K	5%	1/10W
R107	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R108	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R109	1-216-097-00	METAL CHIP	100K	5%	1/10W
R110	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

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

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Ref. No.	Part No.	Description			Remark
R112	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R113	1-216-037-00	METAL CHIP	330	5%	1/10W
R116	1-217-671-11	METAL CHIP	1	5%	1/10W
R117	1-217-671-11	METAL CHIP	1	5%	1/10W
R118	1-217-671-11	METAL CHIP	1	5%	1/10W
R119	1-217-671-11	METAL CHIP	1	5%	1/10W
R120	1-216-083-00	METAL CHIP	27K	5%	1/10W
R121	1-216-083-00	METAL CHIP	27K	5%	1/10W
R122	1-216-295-00	METAL CHIP	0	5%	1/10W
R123	1-216-083-00	METAL CHIP	27K	5%	1/10W
R124	1-216-073-00	METAL CHIP	10K	5%	1/10W
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W
R126	1-216-073-00	METAL CHIP	10K	5%	1/10W
R128	1-216-295-00	METAL CHIP	0	5%	1/10W
R130	1-216-121-00	METAL CHIP	1M	5%	1/10W
R131	1-216-121-00	METAL CHIP	1M	5%	1/10W
R134	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R135	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R136	1-216-025-00	METAL CHIP	100	5%	1/10W
R137	1-216-083-00	METAL CHIP	27K	5%	1/10W
R138	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R139	1-216-025-00	METAL CHIP	100	5%	1/10W
R140	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R141	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R142	1-216-033-00	METAL CHIP	220	5%	1/10W
R143	1-216-069-00	METAL CHIP	6.8K	0.5%	1/10W
R146	1-216-045-00	METAL CHIP	680	5%	1/10W
R147	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R148	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R151	1-216-045-00	METAL CHIP	680	5%	1/10W
R152	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R153	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R159	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R165	1-216-192-00	METAL CHIP	560	5%	1/8W
R166	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R171	1-216-295-00	METAL CHIP	0	5%	1/10W
R172	1-216-295-00	METAL CHIP	0	5%	1/10W
R177	1-216-295-00	METAL CHIP	0	5%	1/10W
R179	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R180	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R193	1-216-073-00	METAL CHIP	10K	5%	1/10W
R194	1-216-073-00	METAL CHIP	10K	5%	1/10W
R196	1-216-073-00	METAL CHIP	10K	5%	1/10W
R197	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R198	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R202	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R203	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R205	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R209	1-216-689-11	METAL CHIP	39K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R210	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R211	1-216-295-00	METAL CHIP	0	5%	1/10W
R212	1-216-081-00	METAL CHIP	22K	5%	1/10W
R213	1-216-097-00	METAL CHIP	100K	5%	1/10W
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W
R217	1-216-041-00	METAL CHIP	470	5%	1/10W
R218	1-216-041-00	METAL CHIP	470	5%	1/10W
R219	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R221	1-216-295-00	METAL CHIP	0	5%	1/10W
R226	1-216-295-00	METAL CHIP	0	5%	1/10W
R228	1-216-045-00	METAL CHIP	680	5%	1/10W
R229	1-216-295-00	METAL CHIP	0	5%	1/10W
R230	1-216-099-00	METAL CHIP	120K	5%	1/10W
R231	1-216-099-00	METAL CHIP	120K	5%	1/10W
R232	1-216-172-00	METAL CHIP	82	5%	1/8W
R233	1-216-096-00	METAL GLAZE	91K	5%	1/10W
R234	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R236	1-216-295-00	METAL CHIP	0	5%	1/10W
R238	1-216-295-00	METAL CHIP	0	5%	1/10W
R240	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R241	1-216-097-00	METAL CHIP	100K	5%	1/10W
R242	1-216-073-00	METAL CHIP	10K	5%	1/10W
R243	1-216-049-00	METAL CHIP	1K	5%	1/10W
R244	1-216-121-00	METAL CHIP	1M	5%	1/10W
R245	1-216-048-00	METAL CHIP	910	5%	1/10W
R246	1-216-095-00	METAL CHIP	82K	5%	1/10W
R247	1-216-031-00	METAL CHIP	180	5%	1/10W
R249	1-216-073-00	METAL CHIP	10K	5%	1/10W
R250	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R251	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R253	1-216-074-00	METAL CHIP	11K	5%	1/10W
R256	1-216-073-00	METAL CHIP	10K	5%	1/10W
R257	1-216-105-00	METAL CHIP	220K	5%	1/10W
R258	1-216-097-00	METAL CHIP	100K	5%	1/10W
R259	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R263	1-216-295-00	METAL CHIP	0	5%	1/10W
R282	1-216-041-00	METAL CHIP	470	5%	1/10W

< VARIABLE RESISTOR >

RV102	1-241-593-11	RES, ADJ, METAL GRAZE 4.7K

< VIBRATOR >

X002	1-579-368-31	VIBRATOR, CRYSTAL (11.72MHz)

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Ref. No.	Part No.	Description			Remark
*	A-7063-830-A	UC-18 (B) BOARD, COMPLETE			
		**********			
		(Ref. No. 2000 series)			
	1-751-368-11	CABLE, FLAT (FUS-4)			
		< CONNECTOR >			
CN801	1-566-529-11	CONNECTOR, FPC (ZIF) 13P			
CN802	1-566-527-11	CONNECTOR, FPC (ZIF) 11P			
CN803	1-566-532-11	CONNECTOR, FPC (ZIF) 16P			
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*	A-7063-733-A	VI-129 (A) BOARD, COMPLETE			
		**********			
		(Ref. No. 1000 series)			
		< CAPACITOR >			
C100	1-124-638-11	ELECT	22uF	20%	10V
C101	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C102	1-126-154-11	ELECT	47uF	20%	6.3V
C103	1-163-034-00	CERAMIC CHIP	0.033uF		50V
C104	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C106	1-126-154-11	ELECT	47uF	20%	6.3V
C107	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C109	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C110	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C112	1-126-154-11	ELECT	47uF	20%	6.3V
C113	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C114	1-126-154-11	ELECT	47uF	20%	6.3V
C116	1-124-638-11	ELECT	22uF	20%	10V
C120	1-126-154-11	ELECT	47uF	20%	6.3V
C121	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C122	1-126-154-11	ELECT	47uF	20%	6.3V
C123	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C124	1-126-154-11	ELECT	47uF	20%	6.3V
C205	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C210	1-126-157-11	ELECT	10uF	20%	16V
C211	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C215	1-126-154-11	ELECT	47uF	20%	6.3V
C216	1-126-154-11	ELECT	47uF	20%	6.3V
C217	1-126-154-11	ELECT	47uF	20%	6.3V
C220	1-126-157-11	ELECT	10uF	20%	16V
C221	1-126-157-11	ELECT	10uF	20%	16V
C251	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C262	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C301	1-126-154-11	ELECT	47uF	20%	6.3V
C302	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C303	1-163-118-00	CERAMIC CHIP	110PF	5%	50V
C304	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C305	1-124-257-00	ELECT	2.2uF	20%	50V
C307	1-126-163-11	ELECT	4.7uF	20%	50V
C308	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C309	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C310	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C311	1-126-301-11	ELECT	1uF	20%	50V
C312	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C313	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C314	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C316	1-163-085-00	CERAMIC CHIP	2PF		50V
C317	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C318	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C328	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C402	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C403	1-126-157-11	ELECT	10uF	20%	16V
C404	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C405	1-124-638-11	ELECT	22uF	20%	10V
C406	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C407	1-126-157-11	ELECT	10uF	20%	16V
C408	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C409	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C411	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C412	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C413	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C414	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C415	1-126-157-11	ELECT	10uF	20%	16V
C417	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C600	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C601	1-126-154-11	ELECT	47uF	20%	6.3V
C602	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C603	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C604	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C605	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C606	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C607	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C608	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C609	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C613	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C614	1-163-114-00	CERAMIC CHIP	75PF	5%	50V
C615	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C616	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C617	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C618	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C620	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C621	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C622	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C625	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C627	1-163-253-11	CERAMIC CHIP	120PF	5%	50V

Ref. No.	Part No.	Description			Remark
C628	1-163-116-00	CERAMIC CHIP	91PF	5%	50V
C629	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C630	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C631	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C633	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C634	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C635	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C636	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C637	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C638	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C639	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C640	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C641	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C642	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C643	1-126-177-11	ELECT	100uF	20%	10V
C644	1-126-177-11	ELECT	100uF	20%	10V
C650	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C661	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C662	1-163-090-00	CERAMIC CHIP	7PF		50V
C663	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C664	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C665	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C666	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C667	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C668	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C669	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C670	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C671	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C672	1-126-163-11	ELECT	4.7uF	20%	50V
C673	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C674	1-163-095-00	CERAMIC CHIP	12PF	5%	50V
C676	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C677	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C678	1-163-090-00	CERAMIC CHIP	7PF		50V
C679	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C680	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C681	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C682	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C683	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C684	1-126-177-11	ELECT	100uF	20%	10V
C685	1-163-119-00	CERAMIC CHIP	120PF	5%	50V
C689	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C691	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C692	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C693	1-163-089-00	CERAMIC CHIP	6PF		50V
C694	1-163-091-00	CERAMIC CHIP	15PF	5%	50V
C696	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C697	1-126-154-11	ELECT	47uF	20%	6.3V
C698	1-163-095-00	CERAMIC CHIP	12PF	5%	50V

Ref. No.	Part No.	Description			Remark
C701	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C704	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C705	1-124-638-11	ELECT	22uF	20%	10V
C706	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C707	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C708	1-163-241-11	CERAMIC CHIP	39PF	5%	50V
C709	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C710	1-126-177-11	ELECT	100uF	20%	10V
C711	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C712	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C713	1-163-091-00	CERAMIC CHIP	8PF		50V
C714	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C715	1-124-638-11	ELECT	22uF	20%	10V
C716	1-126-157-11	ELECT	10uF	20%	16V
C717	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C718	1-126-157-11	ELECT	10uF	20%	16V
C719	1-126-154-11	ELECT	47uF	20%	6.3V
C720	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C721	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C722	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C723	1-164-346-11	CERAMIC CHIP	1uF		16V
C724	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C725	1-126-157-11	ELECT	10uF	20%	16V
C726	1-163-089-00	CERAMIC CHIP	6PF	5%	50V
C727	1-126-157-11	ELECT	10uF	20%	16V
C728	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C729	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C730	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C731	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C732	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C733	1-126-157-11	ELECT	10uF	20%	16V
C734	1-126-157-11	ELECT	10uF	20%	16V
C735	1-164-346-11	CERAMIC CHIP	1uF		16V
C736	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C738	1-126-157-11	ELECT	10uF	20%	16V
C739	1-126-157-11	ELECT	10uF	20%	16V
C740	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C741	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C742	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C743	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C744	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C745	1-126-157-11	ELECT	10uF	20%	16V
C746	1-126-157-11	ELECT	10uF	20%	16V
C747	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C748	1-163-129-00	CERAMIC CHIP	330PF	5%	50V
C749	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C753	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C754	1-126-157-11	ELECT	10uF	20%	16V
C755	1-124-638-11	ELECT	22uF	20%	10V

Ref. No.	Part No.	Description			Remark
C756	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C757	1-126-157-11	ELECT	10uF	20%	16V
C758	1-124-638-11	ELECT	22uF	20%	10V
C759	1-124-638-11	ELECT	22uF	20%	10V
C760	1-164-633-11	CERAMIC CHIP	0.1uF	10%	25V
C762	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C763	1-126-157-11	ELECT	10uF	20%	16V
C764	1-124-638-11	ELECT	22uF	20%	10V
C765	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C766	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C767	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C768	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C769	1-126-157-11	ELECT	10uF	20%	16V
C770	1-126-157-11	ELECT	10uF	20%	16V
C771	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C772	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C773	1-126-157-11	ELECT	10uF	20%	16V
C774	1-126-162-11	ELECT	3.3uF	20%	50V
C775	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C776	1-126-157-11	ELECT	10uF	20%	16V
C777	1-126-162-11	ELECT	3.3uF	20%	50V
C778	1-126-157-11	ELECT	10uF	20%	16V
C779	1-126-157-11	ELECT	10uF	20%	16V
C780	1-126-157-11	ELECT	10uF	20%	16V
C781	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C783	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C785	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C787	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C788	1-126-157-11	ELECT	10uF	20%	16V
C789	1-126-163-11	ELECT	4.7uF	20%	50V
C790	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C791	1-126-157-11	ELECT	10uF	20%	16V
C792	1-126-154-11	ELECT	47uF	20%	6.3V
C793	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C794	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C795	1-126-157-11	ELECT	10uF	20%	16V
C796	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C797	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C798	1-126-154-11	ELECT	47uF	20%	6.3V
C799	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C801	1-126-154-11	ELECT	47uF	20%	6.3V
C802	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C803	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C804	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C805	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C806	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C807	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C809	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C810	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description			Remark
C811	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C812	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C813	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C814	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C815	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C816	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C817	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C819	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C820	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C821	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C822	1-126-154-11	ELECT	47uF	20%	6.3V
C823	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C841	1-126-157-11	ELECT	10uF	20%	16V
C842	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C843	1-126-157-11	ELECT	10uF	20%	16V
C844	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C845	1-126-154-11	ELECT	47uF	20%	6.3V
C848	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C849	1-126-301-11	ELECT	1uF	20%	50V
C850	1-126-301-11	ELECT	1uF	20%	50V
C851	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C852	1-126-301-11	ELECT	1uF	20%	50V
C853	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C854	1-126-157-11	ELECT	10uF	20%	16V
C855	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C856	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C859	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C860	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C861	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C862	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C863	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C864	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C865	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C866	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C868	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C869	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C870	1-126-157-11	ELECT	10uF	20%	16V
C871	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C872	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C874	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C875	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C876	1-126-154-11	ELECT	47uF	20%	6.3V
C877	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C901	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C902	1-163-109-00	CERAMIC CHIP	47PF	5%	50V

< FILTER >

CF801	1-579-371-11	FILTER, CERAMIC (5.17MHz)	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN501	1-691-087-21	HOUSING, CONNECTOR 28P	
* CN502	1-691-072-11	HOUSING, CONNECTOR 13P	
CN504	1-568-079-11	CONNECTOR (RECEPTALE) 20P	
* CN508	1-564-679-11	PIN, CONNECTOR 8P	
* CN509	1-564-988-11	PIN, CONNECTOR 14P	
CN511	1-568-093-11	CONNECTOR (PLUG) 20P	
* CN512	1-568-091-11	CONNECTOR (PLUG) 16P	
		< DIODE >	
⚠D101	8-719-105-91	DIODE RD5.6M-B2	
D301	8-719-914-43	DIODE DAN202K	
D601	8-719-914-43	DIODE DAN202K	
D602	8-719-914-43	DIODE DAN202K	
D610	8-719-800-76	DIODE 1SS226	
D611	8-719-914-43	DIODE DAN202K	
D612	8-719-914-43	DIODE DAN202K	
D613	8-719-914-43	DIODE DAN202K	
D614	8-719-914-43	DIODE DAN202K	
D615	8-719-914-43	DIODE DAN202K	
D616	8-719-914-43	DIODE DAN202K	
D619	8-719-914-43	DIODE DAN202K	
D622	8-719-914-43	DIODE DAN202K	
D626	8-719-914-43	DIODE DAN202K	
D680	8-719-914-44	DIODE DAP202K	
D800	8-719-914-43	DIODE DAN202K	
D902	8-719-914-43	DIODE DAN202K	
		< FILTER >	
FL301	1-236-188-11	FILTER, BAND PASS	
FL601	1-415-729-21	DELAY LINE, LC (Y)	
FL602	1-415-775-21	DELAY LINE, LC	
FL603	1-236-775-11	FILTER, LOW PASS (DEM)	
FL604	1-236-774-11	FILTER, LOW PASS (Y)	
FL605	1-239-055-21	FILTER, LOW PASS (CCD. PAL. Y)	
FL606	1-236-848-21	FILTER, LOW PASS	
FL801	1-236-849-21	FILTER, BAND PASS	
FL802	1-236-186-11	FILTER, BAND PASS	
		< IC >	
IC201	8-759-009-19	IC MC14081BF	
IC202	8-759-009-10	IC MC14069UBF	
IC203	8-759-009-10	IC MC14069UBF	
IC205	8-759-710-86	IC NJM2233BM	
IC250	8-759-100-96	IC uPC4558G2-E1	
IC401	8-752-031-49	IC CXA1203M	
IC601	8-752-054-87	IC CXA1207AQ	
IC602	8-759-925-60	IC BA401	

Ref. No.	Part No.	Description	Remark
IC603	8-759-998-32	IC CXD-2107M	
IC604	8-759-320-76	IC HA118070FP	
IC605	8-759-710-07	IC NJM2234M	
IC606	8-752-333-24	IC CXL1506M	
IC607	8-752-333-24	IC CXL1506M	
IC801	8-759-710-07	IC NJM2234M	
IC802	8-752-039-34	IC CXA1208Q	
		< COIL >	
L101	1-408-978-21	INDUCTOR 47uH	
L102	1-408-978-21	INDUCTOR 47uH	
L103	1-408-978-21	INDUCTOR 47uH	
L104	1-408-978-21	INDUCTOR 47uH	
L105	1-408-978-21	INDUCTOR 47uH	
L203	1-408-978-21	INDUCTOR 47uH	
L205	1-408-978-21	INDUCTOR 47uH	
L206	1-408-978-21	INDUCTOR 47uH	
L601	1-408-978-21	INDUCTOR 47uH	
L602	1-408-968-21	INDUCTOR 6.8uH	
L603	1-408-948-00	INDUCTOR 220uH	
L604	1-408-984-21	INDUCTOR 150uH	
L606	1-408-983-21	INDUCTOR 120uH	
L607	1-408-987-21	INDUCTOR 330uH	
L609	1-408-983-21	INDUCTOR 120uH	
L610	1-410-072-21	INDUCTOR 820uH	
L611	1-408-985-21	INDUCTOR 180uH	
L613	1-408-976-21	INDUCTOR 33uH	
L614	1-408-970-21	INDUCTOR 10uH	
L615	1-408-963-11	INDUCTOR 2.7uH	
L616	1-408-969-21	INDUCTOR 8.2uH	
L617	1-408-968-21	INDUCTOR 6.8uH	
L618	1-408-976-21	INDUCTOR 33uH	
L631	1-408-973-21	INDUCTOR 18uH	
L632	1-408-989-21	INDUCTOR 470uH	
L633	1-408-989-21	INDUCTOR 470uH	
L634	1-408-973-21	INDUCTOR 18uH	
L635	1-408-970-21	INDUCTOR 10uH	
L636	1-408-975-21	INDUCTOR 27uH	
L637	1-407-169-XX	INDUCTOR 100uH	
L639	1-408-974-21	INDUCTOR 22uH	
L640	1-408-973-21	INDUCTOR 18uH	
L642	1-408-965-21	INDUCTOR 3.9uH	
L643	1-408-971-21	INDUCTOR 12uH	
L644	1-408-974-21	INDUCTOR 22uH	
L645	1-408-976-21	INDUCTOR 33uH	
L646	1-408-969-21	INDUCTOR 8.2uH	
L647	1-408-977-21	INDUCTOR 39uH	
L648	1-408-975-21	INDUCTOR 27uH	
L650	1-410-988-11	INDUCTOR CHIP 0.39uH	

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

Ref. No.	Part No.	Description		Remark
L651	1-410-988-11	INDUCTOR CHIP	0.39uH	
L653	1-410-988-11	INDUCTOR CHIP	0.39uH	
L654	1-408-978-21	INDUCTOR	47uH	
L655	1-410-988-11	INDUCTOR CHIP	0.39uH	
L656	1-410-988-11	INDUCTOR CHIP	0.39uH	
L657	1-410-988-11	INDUCTOR CHIP	0.39uH	
L658	1-408-978-21	INDUCTOR	47uH	
L659	1-410-988-11	INDUCTOR CHIP	0.39uH	
L661	1-410-988-11	INDUCTOR CHIP	0.39uH	
L662	1-410-988-11	INDUCTOR CHIP	0.39uH	
L663	1-408-978-21	INDUCTOR	47uH	
L664	1-410-988-11	INDUCTOR CHIP	0.39uH	
L665	1-410-988-11	INDUCTOR CHIP	0.39uH	
L666	1-408-978-21	INDUCTOR	47uH	
L667	1-410-988-11	INDUCTOR CHIP	0.39uH	
L668	1-408-978-21	INDUCTOR	47uH	
L669	1-408-978-21	INDUCTOR	47uH	
L670	1-408-973-21	INDUCTOR	18uH	
L672	1-408-974-21	INDUCTOR	22uH	
L801	1-408-978-21	INDUCTOR	47uH	
L802	1-407-169-XX	INDUCTOR	100uH	
L803	1-408-984-21	INDUCTOR	150uH	
L804	1-407-169-XX	INDUCTOR	100uH	
L805	1-408-983-21	INDUCTOR	120uH	
L821	1-408-978-21	INDUCTOR	47uH	
L823	1-408-975-21	INDUCTOR	27uH	
L824	1-407-169-XX	INDUCTOR	100uH	
L825	1-408-966-21	INDUCTOR	4.7uH	
L826	1-408-978-21	INDUCTOR	47uH	
L901	1-408-973-21	INDUCTOR	18uH	
		< TRANSISTOR >		
⚠Q100	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q101	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q102	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q103	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q104	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q105	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q106	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q107	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q108	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q109	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q111	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q112	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q113	8-729-402-84	TRANSISTOR	XN4601	
Q114	8-729-402-84	TRANSISTOR	XN4601	
Q115	8-729-402-84	TRANSISTOR	XN4601	
Q119	8-729-402-84	TRANSISTOR	XN4601	
Q120	8-729-402-84	TRANSISTOR	XN4601	

Ref. No.	Part No.	Description		Remark
Q121	8-729-402-84	TRANSISTOR	XN4601	
Q125	8-729-402-84	TRANSISTOR	XN4601	
Q126	8-729-402-84	TRANSISTOR	XN4601	
Q200	8-729-421-19	TRANSISTOR	UN2213	
Q208	8-729-420-20	TRANSISTOR	XN4312	
Q209	8-729-420-20	TRANSISTOR	XN4312	
Q210	8-729-101-07	TRANSISTOR	2SB798-DL	
Q213	8-729-420-20	TRANSISTOR	XN4312	
Q214	8-729-424-18	TRANSISTOR	UN2113	
Q215	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q216	8-729-421-19	TRANSISTOR	UN2213	
Q301	8-729-424-18	TRANSISTOR	UN2113	
Q302	8-729-402-81	TRANSISTOR	XN4501	
Q303	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q304	8-729-421-19	TRANSISTOR	UN2213	
Q305	8-729-421-19	TRANSISTOR	UN2213	
Q601	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q602	8-729-424-28	TRANSISTOR	UN2116	
Q603	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q604	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q605	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q606	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q607	8-729-424-76	TRANSISTOR	UN2210	
Q608	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q609	8-729-421-19	TRANSISTOR	UN2213	
Q610	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q611	8-729-402-19	TRANSISTOR	XN6501	
Q613	8-729-216-22	TRANSISTOR	2SA1162-G	
Q614	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q616	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q617	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q619	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q620	8-729-421-19	TRANSISTOR	UN2213	
Q621	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q622	8-729-424-18	TRANSISTOR	UN2113	
Q623	8-729-403-02	TRANSISTOR	XN4212	
Q624	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q641	8-729-903-10	TRANSISTOR	FMW1	
Q642	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q643	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q644	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q645	8-729-903-10	TRANSISTOR	FMW1	
Q649	8-729-421-19	TRANSISTOR	UN2213	
Q650	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q651	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q652	8-729-424-18	TRANSISTOR	UN2113	
Q654	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q655	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q656	8-729-422-27	TRANSISTOR	2SD601A-Q	

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

Ref. No.	Part No.	Description		Remark
Q657	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q658	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q659	8-729-424-18	TRANSISTOR	UN2113	
Q660	8-729-424-18	TRANSISTOR	UN2113	
Q661	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q662	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q663	8-729-216-22	TRANSISTOR	2SA1162-G	
Q664	8-729-424-56	TRANSISTOR	UN211L	
Q665	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q666	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q667	8-729-424-18	TRANSISTOR	UN2113	
Q668	8-729-424-18	TRANSISTOR	UN2113	
Q669	8-729-903-10	TRANSISTOR	FMW1	
Q671	8-729-421-19	TRANSISTOR	UN2213	
Q672	8-729-216-22	TRANSISTOR	2SA1162-G	
Q674	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q675	8-729-216-22	TRANSISTOR	2SA1162-G	
Q676	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q677	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q678	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q679	8-729-216-22	TRANSISTOR	2SA1162-G	
Q680	8-729-421-19	TRANSISTOR	2UN2213	
Q681	8-729-424-56	TRANSISTOR	UN211L	
Q682	8-729-216-22	TRANSISTOR	2SA1162-G	
Q683	8-729-216-22	TRANSISTOR	2SA1162-G	
Q684	8-729-424-18	TRANSISTOR	UN2113	
Q685	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q686	8-729-216-22	TRANSISTOR	2SA1162-G	
Q688	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q689	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q690	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q691	8-729-216-22	TRANSISTOR	2SA1162-G	
Q692	8-729-216-22	TRANSISTOR	2SA1162-G	
Q693	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q694	8-729-216-22	TRANSISTOR	2SA1162-G	
Q695	8-729-216-22	TRANSISTOR	2SA1162-G	
Q696	8-729-421-19	TRANSISTOR	UN2213	
Q697	8-729-421-19	TRANSISTOR	UN2213	
Q698	8-729-421-19	TRANSISTOR	UN2213	
Q699	8-729-216-22	TRANSISTOR	2SA1162-G	
Q701	8-729-421-19	TRANSISTOR	UN2213	
Q702	8-729-216-22	TRANSISTOR	2SA1162-G	
Q703	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q704	8-729-216-22	TRANSISTOR	2SA1162-G	
Q705	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q706	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q707	8-729-904-20	TRANSISTOR	FMA2	
Q708	8-729-403-24	TRANSISTOR	XN4210	
Q709	8-729-216-22	TRANSISTOR	2SA1162-G	
Q710	8-729-216-22	TRANSISTOR	2SA1162-G	
Q712	8-729-421-19	TRANSISTOR	UN2213	
Q713	8-729-420-20	TRANSISTOR	XN4312	
Q714	8-729-421-19	TRANSISTOR	UN2213	
Q718	8-729-421-19	TRANSISTOR	UN2213	
Q719	8-729-216-22	TRANSISTOR	2SA1162-G	
Q720	8-729-424-18	TRANSISTOR	UN2113	
Q721	8-729-216-22	TRANSISTOR	2SA1162-G	
Q722	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q723	8-729-202-38	TRANSISTOR	2SC3326N-A	
Q724	8-729-421-19	TRANSISTOR	UN2213	
Q725	8-729-421-19	TRANSISTOR	UN2213	
Q728	8-729-420-12	TRANSISTOR	XN4213	
Q729	8-729-421-19	TRANSISTOR	UN2213	
Q739	8-729-424-18	TRANSISTOR	UN2113	
Q790	8-729-421-19	TRANSISTOR	UN2213	
Q791	8-729-421-19	TRANSISTOR	UN2213	
Q800	8-729-421-19	TRANSISTOR	UN2213	
Q801	8-729-216-22	TRANSISTOR	2SA1162-G	
Q803	8-729-424-18	TRANSISTOR	UN2113	
Q804	8-729-402-81	TRANSISTOR	XN4501	
Q805	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q806	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q807	8-729-421-19	TRANSISTOR	UN2213	
Q810	8-729-421-19	TRANSISTOR	UN2213	
Q821	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q822	8-729-424-18	TRANSISTOR	UN2113	
Q826	8-729-421-19	TRANSISTOR	UN2213	
Q827	8-729-424-76	TRANSISTOR	UN2210	
Q828	8-729-421-19	TRANSISTOR	UN2213	
Q829	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q831	8-729-424-18	TRANSISTOR	UN2113	
Q833	8-729-424-76	TRANSISTOR	UN2210	
Q834	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q836	8-729-422-27	TRANSISTOR	2SD601A-Q	
Q837	8-729-216-22	TRANSISTOR	2SA1162-G	
Q840	8-729-216-22	TRANSISTOR	2SA1162-G	
Q900	8-729-216-22	TRANSISTOR	2SA1162-G	
Q906	8-729-420-20	TRANSISTOR	XN4312	

< RESISTOR >

R101	1-216-073-00	METAL CHIP	10K	5%	1/10W
R102	1-216-043-00	METAL CHIP	560	5%	1/10W
R104	1-216-033-00	METAL CHIP	220	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-049-00	METAL CHIP	1K	5%	1/10W
R107	1-216-043-00	METAL CHIP	560	5%	1/10W
R108	1-216-041-00	METAL CHIP	470	5%	1/10W
R109	1-216-039-00	METAL CHIP	390	5%	1/10W

Ref. No.	Part No.	Description			Remark
R110	1-216-041-00	METAL CHIP	470	5%	1/10W
R111	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R112	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R115	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R118	1-216-049-00	METAL CHIP	1K	5%	1/10W
R119	1-216-081-00	METAL CHIP	22K	5%	1/10W
R120	1-216-085-00	METAL CHIP	33K	5%	1/10W
R121	1-216-041-00	METAL CHIP	470	5%	1/10W
R123	1-216-081-00	METAL CHIP	22K	5%	1/10W
R124	1-216-075-00	METAL CHIP	12K	5%	1/10W
R125	1-216-041-00	METAL CHIP	470	5%	1/10W
R126	1-216-039-00	METAL CHIP	390	5%	1/10W
R127	1-216-009-00	METAL CHIP	22	5%	1/10W
R128	1-216-049-00	METAL CHIP	1K	5%	1/10W
R129	1-216-043-00	METAL CHIP	560	5%	1/10W
R130	1-216-081-00	METAL CHIP	22K	5%	1/10W
R131	1-216-075-00	METAL CHIP	12K	5%	1/10W
R132	1-216-037-00	METAL CHIP	330	5%	1/10W
R133	1-216-049-00	METAL CHIP	1K	5%	1/10W
R140	1-216-025-00	METAL CHIP	100	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-079-00	METAL CHIP	18K	5%	1/10W
R143	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R144	1-216-022-00	METAL CHIP	75	5%	1/10W
R145	1-216-025-00	METAL CHIP	100	5%	1/10W
R148	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R150	1-216-075-00	METAL CHIP	12K	5%	1/10W
R151	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R152	1-216-049-00	METAL CHIP	1K	5%	1/10W
R153	1-216-047-00	METAL CHIP	820	5%	1/10W
R154	1-216-025-00	METAL CHIP	100	5%	1/10W
R155	1-216-047-00	METAL CHIP	820	5%	1/10W
R156	1-216-025-00	METAL CHIP	100	5%	1/10W
R157	1-216-025-00	METAL CHIP	100	5%	1/10W
R158	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R159	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R160	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R161	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R162	1-216-019-00	METAL CHIP	56	5%	1/10W
R167	1-216-295-00	METAL CHIP	0	5%	1/10W
R169	1-216-075-00	METAL CHIP	12K	5%	1/10W
R170	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R171	1-216-049-00	METAL CHIP	1K	5%	1/10W
R172	1-216-047-00	METAL CHIP	820	5%	1/10W
R173	1-216-025-00	METAL CHIP	100	5%	1/10W
R174	1-216-047-00	METAL CHIP	820	5%	1/10W
R175	1-216-025-00	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R177	1-216-025-00	METAL CHIP	100	5%	1/10W
R179	1-216-081-00	METAL CHIP	22K	5%	1/10W
R180	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R181	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R182	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R183	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R184	1-216-019-00	METAL CHIP	56	5%	1/10W
R188	1-216-019-00	METAL CHIP	56	5%	1/10W
R190	1-216-081-00	METAL CHIP	22K	5%	1/10W
R195	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R196	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R197	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R198	1-216-309-00	METAL CHIP	5.6	5%	1/10W
R199	1-216-019-00	METAL CHIP	56	5%	1/10W
R200	1-216-037-00	METAL CHIP	330	5%	1/10W
R214	1-216-049-00	METAL CHIP	1K	5%	1/10W
R215	1-216-049-00	METAL CHIP	1K	5%	1/10W
R216	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R217	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R222	1-216-295-00	METAL CHIP	0	5%	1/10W
R223	1-216-295-00	METAL CHIP	0	5%	1/10W
R225	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R226	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R227	1-216-075-00	METAL CHIP	12K	5%	1/10W
R230	1-216-043-00	METAL CHIP	560	5%	1/10W
R231	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R232	1-216-043-00	METAL CHIP	560	5%	1/10W
R233	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R237	1-216-295-00	METAL CHIP	0	5%	1/10W
R241	1-216-073-00	METAL CHIP	10K	5%	1/10W
R242	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R243	1-216-081-00	METAL CHIP	22K	5%	1/10W
R245	1-216-295-00	METAL CHIP	0	5%	1/10W
R249	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R251	1-216-079-00	METAL CHIP	18K	5%	1/10W
R252	1-216-085-00	METAL CHIP	33K	5%	1/10W
R253	1-216-073-00	METAL CHIP	10K	5%	1/10W
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W
R261	1-216-079-00	METAL CHIP	18K	5%	1/10W
R262	1-216-085-00	METAL CHIP	33K	5%	1/10W
R263	1-216-073-00	METAL CHIP	10K	5%	1/10W
R264	1-216-073-00	METAL CHIP	10K	5%	1/10W
R301	1-216-295-00	METAL CHIP	0	5%	1/10W
R302	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R303	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R304	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R305	1-216-097-00	METAL CHIP	100K	5%	1/10W
R306	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R307	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R308	1-216-097-00	METAL CHIP	100K	5%	1/10W
R309	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W
R311	1-216-049-00	METAL CHIP	1K	5%	1/10W
R312	1-216-097-00	METAL CHIP	100K	5%	1/10W
R313	1-216-097-00	METAL CHIP	100K	5%	1/10W
R315	1-216-097-00	METAL CHIP	100K	5%	1/10W
R316	1-216-049-00	METAL CHIP	1K	5%	1/10W
R317	1-216-049-00	METAL CHIP	1K	5%	1/10W
R318	1-216-081-00	METAL CHIP	22K	5%	1/10W
R319	1-216-041-00	METAL CHIP	470	5%	1/10W
R320	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R321	1-216-089-91	METAL CHIP	47K	5%	1/10W
R322	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R323	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R324	1-216-085-00	METAL CHIP	33K	5%	1/10W
R326	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R327	1-216-295-00	METAL CHIP	0	5%	1/10W
R403	1-216-041-00	METAL CHIP	470	5%	1/10W
R404	1-216-043-00	METAL CHIP	560	5%	1/10W
R405	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R406	1-216-041-00	METAL CHIP	470	5%	1/10W
R407	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R408	1-216-041-00	METAL CHIP	470	5%	1/10W
R411	1-216-041-00	METAL CHIP	470	5%	1/10W
R412	1-216-049-00	METAL CHIP	1K	5%	1/10W
R413	1-216-031-00	METAL CHIP	180	5%	1/10W
R414	1-216-031-00	METAL CHIP	180	5%	1/10W
R416	1-216-033-00	METAL CHIP	220	5%	1/10W
R417	1-216-113-00	METAL CHIP	470K	5%	1/10W
R418	1-216-085-00	METAL CHIP	33K	5%	1/10W
R419	1-216-091-00	METAL CHIP	56K	5%	1/10W
R420	1-216-041-00	METAL CHIP	470	5%	1/10W
R421	1-216-049-00	METAL CHIP	1K	5%	1/10W
R422	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R423	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R424	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R425	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R426	1-216-085-00	METAL CHIP	33K	5%	1/10W
R427	1-216-091-00	METAL CHIP	56K	5%	1/10W
R428	1-216-041-00	METAL CHIP	470	5%	1/10W
R429	1-216-049-00	METAL CHIP	1K	5%	1/10W
R430	1-216-049-00	METAL CHIP	1K	5%	1/10W
R431	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R432	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R433	1-216-041-00	METAL CHIP	470	5%	1/10W
R434	1-216-041-00	METAL CHIP	470	5%	1/10W
R435	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R439	1-216-121-00	METAL CHIP	1M	5%	1/10W

Ref. No.	Part No.	Description			Remark
R440	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R442	1-216-095-00	METAL CHIP	82K	5%	1/10W
R445	1-216-027-00	METAL CHIP	120	5%	1/10W
R446	1-216-121-00	METAL CHIP	1M	5%	1/10W
R448	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R449	1-216-027-00	METAL CHIP	120	5%	1/10W
R450	1-216-095-00	METAL CHIP	82K	5%	1/10W
R453	1-216-295-00	METAL CHIP	0	5%	1/10W
R455	1-216-295-00	METAL CHIP	0	5%	1/10W
R457	1-216-049-00	METAL CHIP	1K	5%	1/10W
R458	1-216-049-00	METAL CHIP	1K	5%	1/10W
R459	1-216-043-00	METAL CHIP	560	5%	1/10W
R460	1-216-035-00	METAL CHIP	270	5%	1/10W
R461	1-216-043-00	METAL CHIP	560	5%	1/10W
R462	1-216-075-00	METAL CHIP	12K	5%	1/10W
R463	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R464	1-216-083-00	METAL CHIP	27K	5%	1/10W
R465	1-216-049-00	METAL CHIP	1K	5%	1/10W
R466	1-216-049-00	METAL CHIP	1K	5%	1/10W
R467	1-216-049-00	METAL CHIP	1K	5%	1/10W
R468	1-216-049-00	METAL CHIP	1K	5%	1/10W
R469	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R470	1-216-049-00	METAL CHIP	1K	5%	1/10W
R471	1-216-049-00	METAL CHIP	1K	5%	1/10W
R472	1-216-081-00	METAL CHIP	22K	5%	1/10W
R473	1-216-085-00	METAL CHIP	33K	5%	1/10W
R474	1-216-049-00	METAL CHIP	1K	5%	1/10W
R475	1-216-049-00	METAL CHIP	1K	5%	1/10W
R476	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R477	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R478	1-216-041-00	METAL CHIP	470	5%	1/10W
R479	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R480	1-216-101-00	METAL CHIP	150K	5%	1/10W
R482	1-216-073-00	METAL CHIP	10K	5%	1/10W
R483	1-216-049-00	METAL CHIP	1K	5%	1/10W
R484	1-216-049-00	METAL CHIP	1K	5%	1/10W
R485	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R486	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R487	1-216-083-00	METAL CHIP	27K	5%	1/10W
R488	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R491	1-216-073-00	METAL CHIP	10K	5%	1/10W
R492	1-216-073-00	METAL CHIP	10K	5%	1/10W
R493	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R494	1-216-073-00	METAL CHIP	10K	5%	1/10W
R495	1-216-073-00	METAL CHIP	10K	5%	1/10W
R496	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R497	1-216-081-00	METAL CHIP	22K	5%	1/10W
R499	1-216-049-00	METAL CHIP	1K	5%	1/10W
R501	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-049-00	METAL CHIP	1K	5%	1/10W
R505	1-216-049-00	METAL CHIP	1K	5%	1/10W
R509	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R510	1-216-049-00	METAL CHIP	1K	5%	1/10W
R511	1-216-049-00	METAL CHIP	1K	5%	1/10W
R514	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R515	1-216-113-00	METAL CHIP	470K	5%	1/10W
R516	1-216-121-00	METAL CHIP	1M	5%	1/10W
R517	1-216-107-00	METAL CHIP	270K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-073-00	METAL CHIP	10K	5%	1/10W
R520	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-216-295-00	METAL CHIP	0	5%	1/10W
R525	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R526	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R527	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R528	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R529	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R530	1-216-079-00	METAL CHIP	18K	5%	1/10W
R531	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R532	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R533	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R534	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W
R535	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R536	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R537	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R538	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R539	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R542	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R543	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R544	1-216-641-11	METAL CHIP	390	0.5%	1/10W
R545	1-216-643-11	METAL CHIP	470	0.5%	1/10W
R546	1-216-653-11	METAL CHIP	1.2K	0.5%	1/10W
R547	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R548	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R549	1-216-697-11	METAL CHIP	82K	0.50%	1/10W
R550	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R551	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R552	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R553	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W
R555	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R556	1-216-031-00	METAL CHIP	180	5%	1/10W
R559	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R600	1-216-041-00	METAL CHIP	470	5%	1/10W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W
R602	1-216-085-00	METAL CHIP	33K	5%	1/10W
R603	1-216-025-00	METAL GLAZE	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R604	1-216-049-00	METAL CHIP	1K	5%	1/10W
R605	1-216-049-00	METAL CHIP	1K	5%	1/10W
R606	1-216-025-00	METAL CHIP	100	5%	1/10W
R607	1-216-025-00	METAL CHIP	100	5%	1/10W
R608	1-216-081-00	METAL CHIP	22K	5%	1/10W
R609	1-216-085-00	METAL CHIP	33K	5%	1/10W
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W
R611	1-216-073-00	METAL CHIP	10K	5%	1/10W
R612	1-216-041-00	METAL CHIP	470	5%	1/10W
R613	1-216-041-00	METAL CHIP	470	5%	1/10W
R615	1-216-295-00	METAL CHIP	0	5%	1/10W
R616	1-216-025-00	METAL CHIP	100	5%	1/10W
R617	1-216-073-00	METAL CHIP	10K	5%	1/10W
R618	1-216-073-00	METAL CHIP	10K	5%	1/10W
R619	1-216-049-00	METAL CHIP	1K	5%	1/10W
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W
R621	1-216-049-00	METAL CHIP	1K	5%	1/10W
R622	1-216-079-00	METAL CHIP	18K	5%	1/10W
R623	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R624	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R625	1-216-081-00	METAL CHIP	22K	5%	1/10W
R626	1-216-049-00	METAL CHIP	1K	5%	1/10W
R627	1-216-037-00	METAL CHIP	330	5%	1/10W
R628	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R629	1-216-081-00	METAL CHIP	22K	5%	1/10W
R630	1-216-083-00	METAL CHIP	27K	5%	1/10W
R631	1-216-049-00	METAL CHIP	1K	5%	1/10W
R632	1-216-049-00	METAL CHIP	1K	5%	1/10W
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W
R634	1-216-073-00	METAL CHIP	10K	5%	1/10W
R635	1-216-049-00	METAL CHIP	1K	5%	1/10W
R636	1-216-295-00	METAL CHIP	0	5%	1/10W
R638	1-216-041-00	METAL CHIP	470	5%	1/10W
R639	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R642	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R643	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R644	1-216-081-00	METAL CHIP	22K	5%	1/10W
R645	1-216-081-00	METAL CHIP	22K	5%	1/10W
R646	1-216-049-00	METAL CHIP	1K	5%	1/10W
R647	1-216-047-00	METAL CHIP	820	5%	1/10W
R648	1-216-049-00	METAL CHIP	1K	5%	1/10W
R649	1-216-029-00	METAL CHIP	150	5%	1/10W
R650	1-216-073-00	METAL CHIP	10K	5%	1/10W
R651	1-216-073-00	METAL CHIP	10K	5%	1/10W
R652	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R653	1-216-039-00	METAL CHIP	390	5%	1/10W
R654	1-216-031-00	METAL CHIP	180	5%	1/10W
R655	1-216-079-00	METAL CHIP	18K	5%	1/10W
R656	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R657	1-216-041-00	METAL CHIP	470	5%	1/10W
R658	1-216-041-00	METAL CHIP	470	5%	1/10W
R659	1-216-049-00	METAL CHIP	1K	5%	1/10W
R660	1-216-041-00	METAL CHIP	470	5%	1/10W
R662	1-216-081-00	METAL CHIP	22K	5%	1/10W
R663	1-216-081-00	METAL CHIP	22K	5%	1/10W
R664	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R665	1-216-041-00	METAL CHIP	470	5%	1/10W
R666	1-216-041-00	METAL CHIP	470	5%	1/10W
R667	1-216-073-00	METAL CHIP	10K	5%	1/10W
R668	1-216-035-00	METAL CHIP	270	5%	1/10W
R669	1-216-039-00	METAL CHIP	390	5%	1/10W
R670	1-216-073-00	METAL CHIP	10K	5%	1/10W
R671	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R700	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R701	1-216-049-00	METAL CHIP	1K	5%	1/10W
R702	1-216-073-00	METAL CHIP	10K	5%	1/10W
R703	1-216-073-00	METAL CHIP	10K	5%	1/10W
R704	1-216-037-00	METAL CHIP	330	5%	1/10W
R705	1-216-033-00	METAL CHIP	220	5%	1/10W
R706	1-216-029-00	METAL CHIP	150	5%	1/10W
R707	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R708	1-216-073-00	METAL CHIP	10K	5%	1/10W
R709	1-216-009-00	METAL CHIP	22	5%	1/10W
R710	1-216-077-00	METAL CHIP	15K	5%	1/10W
R712	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R713	1-216-041-00	METAL CHIP	470	5%	1/10W
R714	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R715	1-216-049-00	METAL CHIP	1K	5%	1/10W
R716	1-216-073-00	METAL CHIP	10K	5%	1/10W
R717	1-216-073-00	METAL CHIP	10K	5%	1/10W
R718	1-216-043-00	METAL CHIP	560	5%	1/10W
R719	1-216-037-00	METAL CHIP	330	5%	1/10W
R720	1-216-047-00	METAL CHIP	820	5%	1/10W
R721	1-216-073-00	METAL CHIP	10K	5%	1/10W
R722	1-216-073-00	METAL CHIP	10K	5%	1/10W
R723	1-216-049-00	METAL CHIP	1K	5%	1/10W
R724	1-216-083-00	METAL CHIP	27K	5%	1/10W
R725	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R727	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R729	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R730	1-216-073-00	METAL CHIP	10K	5%	1/10W
R731	1-216-073-00	METAL CHIP	10K	5%	1/10W
R732	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R733	1-216-043-00	METAL CHIP	560	5%	1/10W
R734	1-216-081-00	METAL CHIP	22K	5%	1/10W
R735	1-216-081-00	METAL CHIP	22K	5%	1/10W
R736	1-216-049-00	METAL CHIP	1K	5%	1/10W
R737	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R739	1-216-073-00	METAL CHIP	10K	5%	1/10W
R740	1-216-049-00	METAL CHIP	1K	5%	1/10W
R741	1-216-073-00	METAL CHIP	10K	5%	1/10W
R742	1-216-033-00	METAL CHIP	220	5%	1/10W
R744	1-216-029-00	METAL CHIP	150	5%	1/10W
R745	1-216-035-00	METAL CHIP	270	5%	1/10W
R746	1-216-037-00	METAL CHIP	330	5%	1/10W
R747	1-216-073-00	METAL CHIP	10K	5%	1/10W
R748	1-216-083-00	METAL CHIP	27K	5%	1/10W
R749	1-216-037-00	METAL CHIP	330	5%	1/10W
R750	1-216-047-00	METAL CHIP	820	5%	1/10W
R751	1-216-049-00	METAL CHIP	1K	5%	1/10W
R752	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R753	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R754	1-216-085-00	METAL CHIP	33K	5%	1/10W
R755	1-216-073-00	METAL CHIP	10K	5%	1/10W
R756	1-216-073-00	METAL CHIP	10K	5%	1/10W
R757	1-216-083-00	METAL CHIP	27K	5%	1/10W
R758	1-216-073-00	METAL CHIP	10K	5%	1/10W
R759	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R760	1-216-083-00	METAL CHIP	27K	5%	1/10W
R763	1-216-049-00	METAL CHIP	1K	5%	1/10W
R764	1-216-049-00	METAL CHIP	1K	5%	1/10W
R765	1-216-049-00	METAL CHIP	1K	5%	1/10W
R766	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R767	1-216-035-00	METAL CHIP	270	5%	1/10W
R768	1-216-035-00	METAL CHIP	270	5%	1/10W
R769	1-216-295-00	METAL CHIP	0	5%	1/10W
R770	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R771	1-216-049-00	METAL CHIP	1K	5%	1/10W
R772	1-216-045-00	METAL CHIP	680	5%	1/10W
R773	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R774	1-216-041-00	METAL CHIP	470	5%	1/10W
R775	1-216-049-00	METAL CHIP	1K	5%	1/10W
R776	1-216-041-00	METAL CHIP	470	5%	1/10W
R777	1-216-041-00	METAL CHIP	470	5%	1/10W
R778	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R779	1-216-081-00	METAL CHIP	22K	5%	1/10W
R780	1-216-073-00	METAL CHIP	10K	5%	1/10W
R781	1-216-033-00	METAL CHIP	220	5%	1/10W
R782	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R783	1-216-039-00	METAL CHIP	390	5%	1/10W
R784	1-216-035-00	METAL CHIP	270	5%	1/10W
R785	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R786	1-216-009-00	METAL CHIP	22	5%	1/10W
R787	1-216-073-00	METAL CHIP	10K	5%	1/10W
R788	1-216-073-00	METAL CHIP	10K	5%	1/10W
R789	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R790	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R793	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R794	1-216-049-00	METAL CHIP	1K	5%	1/10W
R795	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R796	1-216-041-00	METAL CHIP	470	5%	1/10W
R797	1-216-043-00	METAL CHIP	560	5%	1/10W
R800	1-216-049-00	METAL CHIP	1K	5%	1/10W
R801	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R802	1-216-043-00	METAL CHIP	560	5%	1/10W
R803	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R804	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R805	1-216-047-00	METAL CHIP	820	5%	1/10W
R806	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R807	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R809	1-216-689-00	METAL CHIP	39K	5%	1/10W
R810	1-216-073-00	METAL CHIP	10K	5%	1/10W
R811	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R812	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R813	1-216-043-00	METAL CHIP	560	5%	1/10W
R814	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R815	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R816	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R817	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R819	1-216-049-00	METAL CHIP	1K	5%	1/10W
R820	1-216-049-00	METAL CHIP	1K	5%	1/10W
R821	1-216-041-00	METAL CHIP	470	5%	1/10W
R822	1-216-041-00	METAL CHIP	470	5%	1/10W
R823	1-216-049-00	METAL CHIP	1K	5%	1/10W
R824	1-216-049-00	METAL CHIP	1K	5%	1/10W
R825	1-216-079-00	METAL CHIP	18K	5%	1/10W
R827	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R830	1-216-049-00	METAL CHIP	1K	5%	1/10W
R831	1-216-049-00	METAL CHIP	1K	5%	1/10W
R832	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R833	1-216-097-00	METAL CHIP	100K	5%	1/10W
R838	1-216-295-00	METAL CHIP	0	5%	1/10W
R839	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R851	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R852	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R853	1-216-049-00	METAL CHIP	1K	5%	1/10W
R854	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R855	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R857	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R860	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R861	1-216-041-00	METAL CHIP	470	5%	1/10W
R862	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R863	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R864	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R865	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R872	1-216-025-00	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R874	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R875	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R876	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R878	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R879	1-216-041-00	METAL CHIP	470	5%	1/10W
R880	1-216-073-00	METAL CHIP	10K	5%	1/10W
R881	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R883	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R884	1-216-295-00	METAL CHIP	0	5%	1/10W
R885	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R888	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R889	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R890	1-216-041-00	METAL CHIP	470	5%	1/10W
R892	1-216-039-00	METAL CHIP	390	5%	1/10W
R896	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R897	1-216-041-00	METAL CHIP	470	5%	1/10W
R898	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R899	1-216-081-00	METAL CHIP	22K	5%	1/10W
R901	1-216-043-00	METAL CHIP	560	5%	1/10W
R902	1-216-045-00	METAL CHIP	680	5%	1/10W
R903	1-216-043-00	METAL CHIP	560	5%	1/10W

< VARIABLE RESISTOR >

RV101	1-238-852-11	RES, ADJ, CERMET 470
RV102	1-238-852-11	RES, ADJ, CERMET 470
RV301	1-238-856-11	RES, ADJ, CERMET 10K
RV303	1-238-855-11	RES, ADJ, CERMET 4.7K
RV601	1-238-853-11	RES, ADJ, CERMET 1K
RV611	1-238-854-11	RES, ADJ, CERMET 2.2K
RV612	1-238-854-11	RES, ADJ, CERMET 2.2K
RV613	1-238-853-11	RES, ADJ, CERMET 1K
RV614	1-238-853-11	RES, ADJ, CERMET 1K
RV615	1-238-852-11	RES, ADJ, CERMET 470
RV617	1-238-852-11	RES, ADJ, CERMET 470
RV618	1-238-857-11	RES, ADJ, CERMET 22K
RV620	1-238-858-11	RES, ADJ, CERMET 47K
RV621	1-238-857-11	RES, ADJ, CERMET 22K
RV622	1-238-857-11	RES, ADJ, CERMET 22K
RV623	1-238-855-11	RES, ADJ, CERMET 4.7K
RV624	1-238-855-11	RES, ADJ, CERMET 4.7K
RV625	1-238-855-11	RES, ADJ, CERMET 4.7K
RV802	1-238-854-11	RES, ADJ, CERMET 2.2K
RV803	1-238-854-11	RES, ADJ, CERMET 2.2K
RV804	1-238-854-11	RES, ADJ, CERMET 2.2K
RV821	1-238-853-11	RES, ADJ, CERMET 1K

< VIBRATOR >

X801	1-577-117-21	OSCILLATOR, CRYSTAL (4.433619MHz)

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
52	1-569-346-11	CONNECTOR, FPC(TRANSLATION)10P	
53	1-643-189-11	FP-503 FLEXIBLE BOARD	
⚠102	9-903-247-01	AC INLET 2P (250V/2.5V)	
⚠F101	9-903-925-01	FUSE, TIMER-LAG (250V/2A)	
M901	A-7048-691-A	DRUM ASSY (DGU-0A8A-R)	
M902	8-835-331-01	MOTOR, DC U-22A (CAPSTAN)	
M903	A-7040-324-A	MOTOR ASSY (N), THREADING (LOADING)	
M904	X-3731-108-1	FL MOTOR ASSY	

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ACCESSORIES & PACKING MATERIALS

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	1-467-302-11	REMOTE COMMANDER (RMT-V124C)	
⚠	1-574-056-11	CORD, POWER (AEP)	
	1-575-334-11	CORD (WITH CONNECTOR) (AV CABLE)	
⚠	1-590-866-11	CORD, POWER (UK)	
	3-757-506-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-757-506-41	MANUAL, INSTRUCTION (GERMAN, FRENCH, SPANISH) (AEP)	
	3-757-506-51	MANUAL, INSTRUCTION (DUTCH, SWEDISH, ITALIAN) (AEP)	
*	3-947-296-91	INDIVIDUAL CARTON	
*	3-947-297-01	CUSHION (RIGHT)	
*	3-947-298-01	CUSHION (LEFT)	

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HARDWARE LIST

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#1	7-627-553-37	SCREW (M2X3), SPECIAL HEAD
#2	7-627-555-88	SCREW (M1.4X1.8)
#3	7-621-772-10	SCREW +B 2X4
#4	7-627-553-68	SCREW, PRECISION +P 2X6 TYPE3
#5	7-685-647-79	SCREW +BVTP 3X10 TYPE2

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

SECTION 8
SERVICE MODE

☆This unit uses the EVR (Electronic Variable Resistor) for performing adjustments and tests. These functions are implemented by the SENSER LANC system.

8-1. SENSER LANC

SENSER LANC is the LANC format designed to perform EVR (electronic variable resistor) adjustments and various tests for this 8mm VTR by using the LANC (Control L). The SENSER LANC is synonymous with the old SERVICE LANC. But there have been enhancements and the SENSER LANC is now used as a unified word.

8-2. HOW TO USE THE RM-95 JIG (ADJUSTMENT REMOTE CONTROL)

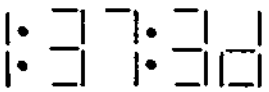
The RM-95 jig is used to operate the SENSER LANC. This jig will create the SENSER LANC Mode. Because of this, the HOLD switch has been modified for service purpose.
Note that the old models of the RM-95 have no page display function and it is needed to replace their microcomputers within these old models.

Old	UPD7503G-A71-12 UPD7503G-C23-12	8-759-142-56 8-759-146-77	No Page display (The microcomputer must be replaced.)
New	UPD7503G-C56-12	8-759-148-35	Page display

LCD Display of RM-95

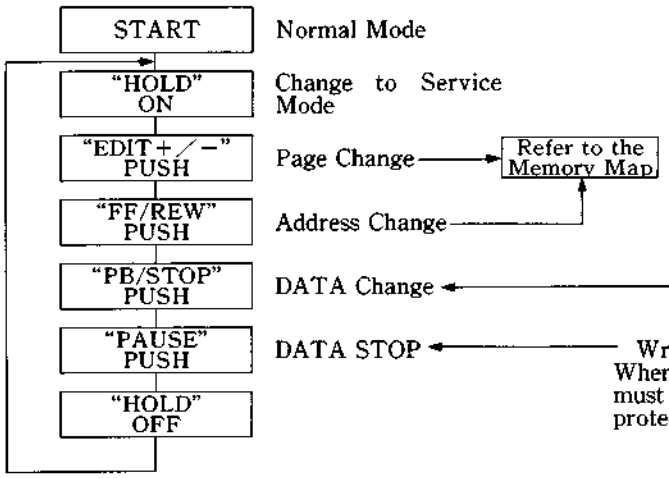
Page Data Address

Example



This means that the data on page 1, address 3D is 37.

8-3. HOW TO CHANGE THE SERVICE MODE WITH RM-95



LCD Display (Hexadecimal form) P : DD : AA (F : 00 : 00) ← Display Data
The data at the selected address will be displayed. The page entered first from Normal mode is 0.

P : 00 : 00 ← If a selected page is not incorporated, the preset data value will be indefinite. When a change is made within an incorporated page, the address will remain intact.

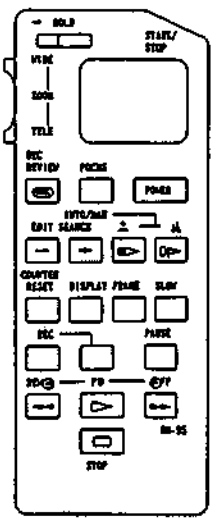
P : DD : AA

<When ADJ Data Has Been Changed>
The EVR value (RAM) will be renewed by changed data. (This data will not be written to EE PROM.)

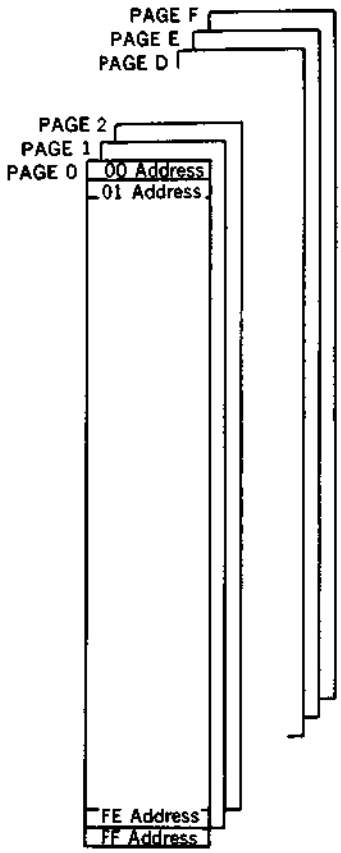
Write to EE PROM.
When writing changed data to EEPROM, WRITE PROTECT must be released before it cannot be written. To release this protect, the data on page 0, address 00 must be set to 01 first.

RM-95 (J-6082-053-B)

Command	Action	RM-95 Control Button Pushed
Page Up	Page+1	Edit Search+
Page Down	Page−1	Edit Search−
Direct Page Set	Sets to specified page.	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address−1	Rewind
Data Up	Data+1	Play Back
Data Down	Data−1	Stop
Store	Writes data to EEPROM. RAM	Pause



8-4. SENSER LANC MEMORY MAP



This unit has pages 0 to F allocated as listed below.

PAGE	Page Allocation
0	Service
1	
2	System Controler
3	System Controler
4	System Controler
5	
6	
7	Timer/Tuner Controler
8	Timer/Tuner Controler
9	Timer/Tuner Controler
A	
B	
C	
D	
E	
F	

Note : This set has no EE-PROM built-in and so it has no "D page"

8-5. TEST MODE SETTING

Variety of test modes are established and changed as listed below.

Page 0	Address 02

Data	Function
00	Normal
01	Test Mode 1 Various Emergencies, Inhibit and Release Drum, Capstan, Loading Motor, Reel, Tape Top and End, DEW SP/LP Automatic Discrimination Inhibit, Manual Changeover
02	Test Mode 2 • Playback Frequency Characteristic 1'ch Adjustment With the ATF servo shifted one track, playback tape and allow taking RF on 1 channel. (This is valid only in playback mode.) SP/LP is protected from being distinguished and REC SP/LP followed.
03	Test Mode 3 Track Shift Playback • With a forward shift of 1/3 to 1/4 track, playback tape. (This is valid only in playback mode.) SP/LP is protected from being distinguished and REC SP/LP is followed.

* After completing necessary adjustments/repairs, be sure to return the data at this address to 00.

8-6. EMERGENCY CODES

These codes can be used to check the condition of failure (abnormality) that occurred.

Page 0	Address 07

Last Emergency Code

. . . . The code of the last failure that occurred (This data will be renewed each time a failure occurs.

* When the RESET button on the main body is pressed and when the AC power is disconnected, the emergency code data will be reset to "00".

Code	Condition of Failure
00	No Failure
01	Loading Motor Failure
02	Reel Failure during Unloading
03	Reel Failure during operation other than unloading
04	Capstan Failure
05	FG Failure at Start of Drum
06	PG no Failure at Start of Drum
07	FG Failure when Drum is Stationary
08	FG Failure at Start of Drum during loading
09	PG no Failure at Start of Drum during loading
0A	FG Failure when Drum is Stationary during loading
0B	FG Failure at Start of Drum during unloading
0C	PG no Failure at Start of Drum during unloading
0D	FG Failure when Drum is Stationary during unloading

8-7. EMERGENCY MODE

This mode allows you to check the mode of operation in which the VTR was placed when failure occurred.

Page 0	Address 09

Last Emergency Code

....The code of the last failure that occurred
(This data will be renewed each time a failure occurs.)

* When the RESET button on the main body is pressed and when the AC power is disconnected, the emergency code data will be reset to "00".

Code	Condition of Failure
10	EJECTED
20	STOP
26	STOP TAPE END
27	STOP TAPE TOP
29	STOP ZERO
30	FF
33	FF ZERO PB
34	FF ZERO STOP
38	REW
3A	REW PB
3B	REW ZERO PB
3C	REW ZERO STOP
40	REC
41	REC PAUSE
42	TIMER REC
43	TIMER REC PAUSE
48	A INSERT
49	A INSERT PAUSE
60	PB
62	+1
63	−1
64	CUE
65	REVIEW
66	+2
67	−1
68	LOCKED CUE
69	LOCKED REVIEW
70	+STILL
71	−STILL
72	+SLOW, +SLOW 1/5
73	−SLOW, −SLOW 1/5
74	+SLOW 1/10
75	−SLOW 1/10
76	+FRAME
77	−FRAME

8-8. RF SWITCHING POSITION ADJUSTMENT MODE

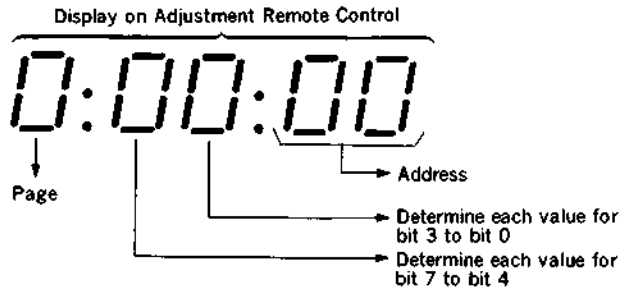
When adjusting the RF switching position, set up as follows:

Page 7	Address 80

Data	Function
00	Normal
05	Switching position adjustment mode

8-9. DETERMINATION OF BIT VALUE

For the following items, the data displayed on the adjustment remote control is used to determine the bit ralue. The list below should be checked to determine whether the bit value is "1" or "0".



Display on Remote Control	Bit Value			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ→ 8	1	0	0	0

	Display on Remote Control	Bit Value			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	9	1	0	0	1
	A (日)	1	0	1	0
	B (㇆)	1	0	1	1
	C (匚)	1	1	0	0
	D (匸)	1	1	0	1
Ⓑ→	E (Ε)	1	1	1	0
	F (Ꮀ)	1	1	1	1

(Example) If the data displayed on the remote control is "8E", the values for bit 7 to bit 4 can be determined from the values in the column Ⓐ. The value for bit 3 to bit 0 can be determined from the values in the column Ⓑ.

8-10. 0 PAGE MEMORY MAP

Adjustment Address	Contents	Remarks
00	Not used	
01	Not used	
02	Test Mode (COSMO)	
03	Switching Position Data (LOW)	Read only
04	Switching Position Data (HIGH)	Read only
05		
06		
07	Emergency Code (LAST)	
08		
09	Emergency Mode (LAST)	
0A		
0B		
0C		
0D		
0E		
0F		

9-1. SYSTEM CONTROL — VIDEO · AUDIO BLOCK INTERFACE (SS-155 BOARD)

Signal	Pin No.	I/O	VTR MODE												
			STOP	FF	REW	×2	−×2	PB	PICTURE SEARCH		PB · PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE
									CUE	REVIEW					
SP/$\overline{LP}$	IC002 ⑧	O	* 1	H	H	* 1	* 2	* 2	* 2	* 2	* 1	* 1	* 1	* 11	H/L
V PB MODE	IC002 ⑩	O	L	L	L	H	H	H	H	H	H	H	H	L	L
JOG VD	IC002 ②	O	L	L	L	* 3	* 3	L	* 3	* 3	* 3	* 3	* 3	L	L
$\overline{RP\ PB\ MODE}$	IC002 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L
$\overline{FE\ ON}$	IC002 ⑥	O	H	H	H	H	H	H	H	H	H	H	H	L	H
HEAD CHANGE	IC002 ①	O	L	L	L	* 4	* 4	L	L	L	* 4	* 4	* 4	L	L
VI SWP	IC002 ⑩⓪	O	L	* 6	* 6	* 5	* 5	* 6	* 6	* 6	* 5	* 5	* 5	* 6	* 6
RF SWP	IC002 ⑨⑨	O	L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
JOG	IC002 ④	O	L	L	L	H	H	L	H	H	H	H	H	L	L
SP/$\overline{LP}$ DET	IC002 ⑰	I	L	* 7	* 7	* 7	* 7	L	* 7	* 7	* 7	—	—	H	H
CLOG DET	IC002 ⑮	I	H	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	H	* 8
COMP SYNC	IC002 ⑯	I	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
AUDIO PB	IC002 ⑭	O	L	L	L	* 10	* 10	H	* 10	* 10	H	* 10	* 10	L	L
AU MUTE	IC002 ⑳	O	L	L	L	H	H	L	H	H	H	H	H	L	L
$\overline{VIDEO\ CS}$	IC002 ⑨	O	V-cycle"Low"pulse												
SO BUS	IC002 ㊻	O	V-cycle pulse rank												
SCK	IC002 ㊼	O	V-cycle"Low"pulse rank												

* 1. This outputs the result of determining what was the previous mode. "High" output in SP mode, "Low" output in LP mode.
* 2. This outputs the result of determining which record mode the playback tape has.
* 3. Pseudo VD signal
* 4. "High" when the HEAD for special playback is selected.
* 5. Output pulse to supply the OR of HEAD CHANGE and RF SWP.
* 6. Pulse of 25Hz, 50% duty (synchronized with the rotation of the drum).
* 7. "High" at the SP record portion and "Low" at the LP record portion of tape.
* 8. "High" at the blank portion or at any drop out portion of tape. Head clogging detection input.
* 9. Composite synch signal input separated from line input video signal, camera video signal or playback video signal. (This signal has positive polarity).
* 10. "Low" during shuttle editing from REC PAUSE, "High" while in any other mode.
* 11. This varies according to SP/LP switching. It becomes "High" when SP mode is entered and "Low" when LP mode is entered.

9-2. MECHANICAL CONTROL — SERVO BLOCK INTERFACE (SS-155 BOARD)

Signal	Pin No.	I/O	VTR MODE												
			STOP	FF	REW	×2	-×2	PB	PICTURE SEARCH		PB・PAUSE	SLOW	REVERSE SLOW	REC	REC PAUSE
									CUE	REVIEW					
T.REEL FG	IC002 ⑰	I	—	* 1	* 1	* 1	* 1	* 1	* 1	* 1	—	* 1	* 1	* 1	—
S.REEL FG	IC002 ⑱	I	—	* 1	* 1	* 1	* 1	* 1	* 1	* 1	—	* 1	* 1	* 1	—
ATF ERROR	IC002 ⑪	I	—	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2
DRUM PG	IC002 ⑱	I	—	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3
DRUM FG	IC002 ⑲	I	—	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
CAP FG/HMS CAP FG	IC002 ⑩⑰	I	—	* 5	* 5	* 5	* 5	* 5	* 5	* 5	—	* 5	* 5	* 5	—
CAP ON	IC002 ⑨	O	L	H	H	H	H	H	H	H	L	* 8	* 8	H	L
REF PILOT	IC002 ⑧	O	* 7	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
$\overline{\text{RP PB MODE}}$	IC002 ⑤	O	L	L	L	L	L	L	L	L	L	L	L	H	L
DRUM FWD/$\overline{\text{RVS}}$ * 11	IC002 ⑯	O	H	H	H	H	H	H	H	H	H	H	H	H	H
CAP FWD/$\overline{\text{RVS}}$	IC002 ⑫	O	L	H	L	H	L	H	H	L	L	* 8	* 9	H	L
DRUM ERR	IC002 ⑭	O	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10
CAP ERR	IC002 ⑮	O	L	* 10	* 10	* 10	* 10	* 10	* 10	* 10	L	* 10	* 10	* 10	L
DRUM ON * 12	IC002 ⑫	O	L	H	H	H	H	H	H	H	H	H	H	H	H

* 1. The amplitude modulated pulse is input by the rotation of the reel. (200msec period during REC/PB mode)
* 2. ATF error voltage input.
* 3. One PG pulse is input by one rotation of the drum. Approximately 25Hz.
* 4. Six FG pulses are input by one rotation of the drum. Approximately 150Hz.
* 5. 520 FG pulses are input by one rotation of the capstan. Approximately 1325Hz during REC/PB (SP) mode.
* 6. Four frequencies are output as synchronized with the rotation of the drum. f1=101.02kHz, f2=117.19kHz, f3=162.76kHz, f4=146.48kHz
* 7. f2 (117.19kHz) is output.
* 8. "High" pulse when tape is delivered.
* 9. "Low" pulse when tape is delivered.
* 10. PWM signal with a period of 21.5 μ sec.
* 11. Normally "High". Temporarily "Low" when a full top cassette is loaded (drum reverse rotation).
* 12. The "High" level is at approximately 1.3Vdc.

9-3. MECHANICAL CONTROL MICROCOMPUTER CXP80624 (SS-155 BOARD IC002) PORT FUNCTION DESCRIPTION

Pin No.	Signal	I/O	Function
1	HEAD CHG	O	HEAD CHANGE Signal.
2	JOG VD	O	Pseudo VD signal to be inserted into playback video signal when speed change playback is performed.
3	N. C.	—	Not used.
4	JOG	O	Speed change playback/normal playback select signal for the video circuit. "High" to select speed change playback.
5	$\overline{\text{RP PB MODE}}$	O	REC/PB select signal for REC/PB amplifier (RP-183 board IC001) and ATF servo IC (SS-155 board IC003). "Low" to select PB mode.
6	$\overline{\text{FE ON}}$	O	Flying erase oscillation ON/OFF control signal. "Low" to activate the oscillation.
7	INT VD OUT	O	Timing reference for serial data communication. V-cycle "Low" pulse.
8	SP/$\overline{\text{LP}}$	O	SP/LP select signal. "Low" to select LP.
9	$\overline{\text{VIDEO CS}}$	O	Serial data communication chip select signal to the video IC. V-cycle "Low" pulse.
10	VA PB MODE	O	REC/PB select signal for the video circuit. "High" for PB mode.
11	MACRO DET	I	Not used.
12	10/7 SW	I	Not used.
13	$\overline{\text{EDIT}}$	O	Video circuit characteristic select signal.
14	VIRS	O	Teletex aria mask circuit.
15	ME/$\overline{\text{MP}}$ SW	I	ME/MP switch input. "Low" for MP, "High" for ME.
16	MP/HG SW	I	MP/HG switch input. "Low" for MP, "High" for HG.
17	REC PROOF SW	I	REC PROOF switch input. "High" for protected REC.
18	MODE SW 2	I	Mechanical deck MATRIX input.
19	MODE SW 1	I	Mechanical deck MATRIX input.
20	MODE SW 0	I	Mechanical deck MATRIX input.
21	CC DOWN SW	I	Cassette compartment clock switch input. "Low" for lock.
22	10/13 SW	I	Not used.
23	CAP GAIN UP	O	Capstan speed control signal ("High" during FF/REW mode).
24	LOAD	O	Loading motor control signal. "High" or "High" pulse output to allow loading.
25	UNLOAD	O	Loading motor control signal. "High" or "High" pulse output to allow unloading.
26	FL M LOAD	O	Front loading motor control signal. "High" or "High" pulse output to allow loading.
27	FL M UNLD	O	Front loading motor control signal. "High" or "High" pulse output to allow unloading.
28	N. C.	—	Not used.
29	VI MUTE	O	Video mute signal.
30	AUDIO MUTE	O	Audio mute signal.
31	N.C.	—	Not used.
32	N.C.	—	Not used.
33	$\overline{\text{COPY}}$	O	Not used.
34	$\overline{\text{CAM POS}}$	O	Voice boost select signal. "Low" to turn on.
35	PAL V	O	Not used.
36	$\overline{\text{HI8/NORMAL}}$	O	Hi8/$\overline{\text{NORMAL}}$ select signal (On play, Auto).
37	N.C.	—	Not used.
38	TOP END LED	O	ON/OFF signal for TAPE TOP/END LED.
39	$\overline{\text{MP}}$	—	Connected to GND.
40	$\overline{\text{COSMO RESET}}$	I	Reset signal. "Low" to reset.
41	VSS	—	GND
42	XTAL	O	11.718MHz clock oscillation circuit.
43	EXTAL	I	
44	$\overline{\text{COSMO CS}}$	I	Clip select signal from the mode control microcomputer. V-cycle "Low" pulse.
45	SERIAL IN	I	Serial date input.
46	SERIAL OUT	O	Serial date output.
47	$\overline{\text{SCK}}$	O	Serial clock output.
48	ME/$\overline{\text{MP}}$	O	ME/MP select signal output. "Low" when MP Tape is used.
49	N. C.	—	GND
50	INSEL 1	O	Not used.
51	INSEL 2	O	Not used.
52	A VSS	—	GND
53	AVREF	—	Analog board reference voltage. Connected to +5V.
54	AVDD	—	Analog board power (+5V).
55	TOP SENS	I	Tape top sensing signal. This is normally "Low" and switches to "High" pulse input at tape top.
56	END SENS	I	Tape end sensing signal. This is normally "Low" and switches to "High" pulse input at tape end.
57	T REEL FG	I	T reel FG signal input.
58	S REEL FG	I	S reel FG signal input.
59	HI8 DET	I	Video Hi8 discrimination signal input.
60	AFM MODE DET	I	Audio multiplex discrimination input.
61	ATF ERROR	I	ATF error, ATF lock error input.
62	$\overline{\text{S SW 3}}$	I	Not used.
63	$\overline{\text{S SW 1}}$	I	S terminal switch detection input. "Low" for S terminal input.
64	$\overline{\text{S SW 2}}$	I	Not used.
65	CLOG DET	I	This determines whether playback RF is present or not. "Low" under normal condition.
66	COMP SYNC	I	Composite sync signal separated form record/playback Y signal.
67	SP/$\overline{\text{LP}}$ DET	I	This determines which record mode the playback tape has when CUE/REVIEW/FF/REW mode is entered.
68	DRUM PG	I	Drum PG signal input. Used for the drum phase servo. 40msec periodic "High" pulse.
69	DRUM FG	I	Drum FG signal input. Used for the drum speed servo. 6.7msec periodic pulse.
70	CAP FG	I	Capstan FG signal input. Approximately 1325Hz during REC/PB mode for the capstan speed servo.
71	N. C.	—	+5V power.
72	DRUM ON	O	Not used.
73	CAP ERR H	O	Not used.
74	DRUM ERR	O	Drum error signal output.
75	CAP ERR	O	Capstan error signal output. 20.15μsec PWM signal.
76	DRUM FWD/$\overline{\text{RVS}}$	O	Drum rotational direction control signal. Normally "Low".

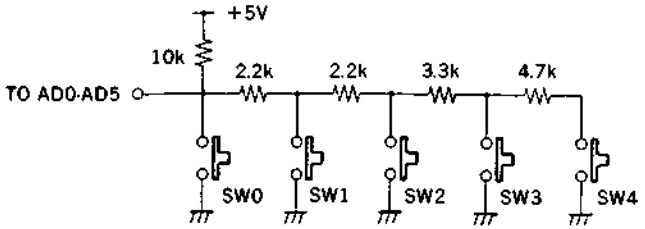
Pin No.	Signal	I/O	Function
77	HMS CAP FG	O	Capstan FG signal input. Used tape counter.
78	N.C.	I	+5V power.
79	MPHG/$\overline{\text{MP}}$	O	Not used.
80	S/$\overline{\text{VIDEO}}$	O	Not used.
81	N.C.	—	Not used.
82	AFM OUTSEL	O	L/R select signal.
83	AFM MODE	O	Audio multiplex discrimination output.
84	AUDIO PB	O	REC/PB select signal for the audio circuit. "High" for PB mode.
85	REF PILOT	O	Reference pilot signal for the ATF servo. Four frequencies are selectively switched from one to another as synchronized with the rotation of the drum. f_1=101.02kHz, f_2=117.19kHz, f_3=162.76kHz, f_4=146.48kHz.
86	N. C.	—	N. C
87	N. C.	—	Connected to GND.
88	VSS	—	GND.
89	VDD	—	+5V power.
90	VPP	—	+5V power.
91	CAP ON	O	Capstan driver ON/OFF control signal. "High" to turn capstan ON.
92	CAP FWD/RVS	O	Capstan rotational direction control signal. "High" for FWD. "Low" for RVS.
93	DRUM ACCEL	O	Drum acceleration pulse.
94	DRUM BRAKE	O	Drum deceleration pulse.
95	PCM AFREC	O	Not used.
96	PCM REC INH	O	Not used.
97	FE RA	O	Not used.
98	PCM PB	O	Not used.
99	RF SWP	O	RF switching pulse signal. 25Hz, 50% duty pulse.
100	VI SWP	O	Video switching pulse.

9-4. MODE CONTROL MICRO COMPUTER MB89092 OR MB89093 (LC-46 BOARD IC101) PORT FUNCTION DESCRIPTION

Pin No.	Signal	I/O	Function
1	TEST MODE 1	I	Connected to GND.
2	TEST MODE 2	I	Connected to GND.
3	X0		System clock (10MHz).
4	X1		System clock (10MHz).
5	VSS	I	+5V power.
6	$\overline{\text{RESET}}$	I	Reset input.
7	PAL/$\overline{\text{NT}}$	I	PAL/NTSC select. "Low" for NTSC.
8	AEP/$\overline{\text{UC}}$	I	AEP/UC select. "Low" for UC.
9—15	N.C.	I	No connected.
16	INT V	I	V synchronization signal input.
17	LANC POWER CONT	O	"Low" output when power off, LANC M.
18	$\overline{\text{LANC POWER ON}}$	I	LANC POWER control signal input.
19—22	N.C.	I	No connected.
23	MAIN LED	O	Not used.
24	SUB LED	O	Not used.
25	N.C.	O	No connected.
26	———	I	Connected to VCC.
27	N.C.	I	No connected.
28	SP DATA	O	Sift register. Data output.
29	SP CLK	O	Sift register. Clock output.
30	$\overline{\text{SIRCS IN}}$	I	SIRCS input.
31	SP STR	O	Sift register. Strobe output.
32	SP OE	O	Sift register. OE output.
33—46	N.C.	I	No connected.
47	VCC	I	+5V power.
48—55	S0—S7	O	LCD display SEGMENT signal output. 0—7
56	VSS	—	GND
57—64	S8—S15	O	LCD display SEGMENT signal output. 8—15
65—68	V3—V0	I	LCD drive power terminal.
69—71	C0—C2	O	LCD display common signal. 0—2
72	———	O	No connected.
73	N.C.	—	No connected.
74	$\overline{\text{COSMO CS}}$	O	Serial communication BUS.
75	TT SI	I	Serial communication BUS.
76	TT SO	O	Serial communication BUS.
77	$\overline{\text{TT SCK}}$	O	Serial communication BUS.
78	$\overline{\text{COSMO RST}}$	O	Serial communication BUS.
79	N.C.	—	No connect.
80	N.C.	—	No connect.
81	AVSS	—	Analog GND.
82—86	AD0—AD4	I	KEY input.
87	LANC S/M	I	LANC mode slave/master select. "Low" for slave.
88	AD6	I	Not used.
89	RF SW POSI 1	I	RF SWP position adjustment VR1 input.
90	AVCC	—	Analog power.
91	RF SW POSI 2	I	RF SWP position adjustment VR2 input.
92	×2 ON	O	Not used.
93	TV/VTR	O	TV/VTR ANT select. "H" when VTR.
94	POWER ON	O	Power control signal. "H" when power is on.
95	LANC IN	I	LANC DATA input.
96	LANC OUT	O	LANC DATA output.
97	N.C.	—	No connected.
98	VCC	—	+5V power.
99	———	—	No connected.
100	———	—	No connected.

● A/D PORT ALLOCATION

- The A/D ports are allocated as shown below.



AD \ SW	Pin No.	SW0 0.01 [V]	SW1 0.9 [V]	SW2 1.5 [V]	SW3 2.2 [V]	SW4 2.8 [V]	NO INPUT 5.0 [V]
AD0	82	POWER	EJECT	STOP	PLAY	——	——
AD1	83	DMS SW1	REC	Hi8 AUTO/OFF	EDIT	VOICE BOOST	——
AD2	84	DMS SW2	PAUSE	SYNCHRO EDIT	AUDIO LINE IN	COUNTER RESET	——
AD3	85	DMS SW3	——	——	——	——	——
AD4	86	DMS SW4	——	——	——	——	——
AD5	87	CONTROL L S	——	——	——	——	CONTROL L M

- KEY input signals pass through the A/D ports as shown above.

SECTION 10
MECHANICAL ADJUSTMENTS

For Mechanical Adjustments

For the procedures how to adjust and check the mechanism, as well as how to replace mechanical parts, refer to the separate 8mm Video Mechanical Adjustment Manual III (9-972-732-01).

However, for the procedures how to set the Track Shift mode, refer to the following text.

10-1. TAPE PASS ADJUSTMENT

(TRACK SHIFT)

The 8mm Video Tape Recorder system uses the ATF (Automatic Track Finding) function in which four different pilot signals are used for controlling the tape speed instantaneously to provide high precision tracking. This eliminates the Tracking Adjustment control, thus allowing accurate tracing.

In spite of its advantageous feature, the ATF system may have a difficulty in adjusting the tape pass system. The ATF will automatically corrects tracing even if the head has only a little tracing distortion. This may make it impossible to perform a complete adjustment.

Therefore, when performing a fine adjustment for tracking, the Track Shift mode should be entered before starting this adjustment. This mode will force to operate the ATF to shift the amount of tracking by a given quantity (approximately 1/4), so that tracking can be easily fine adjusted. Furthermore, no track shift jig is needed.

10-1-1. Setting the Track Shift Mode

1) Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
2) Operate the EDIT +/— button to select adjustment page 0.
3) Operate the FF/REW button to select adjustment address 02.
4) Operate the PB/STOP button to set to adjustment data 03. (This will go to the Test Mode 3 (Pass Adjustment).)

Note 1 : For details of the Test Mode, refer to "SECTION 8. SERVICE MODE."

Note 2 : If the LP mode is recognized by the system wrongly, operate the Recording Time SP/LP button to enter the SP mode.

Note 3 : After adjustment, operate the PB/STOP button to reset to adjustment data 00. Place the remote control in the HOLD OFF position to return to the normal mode.

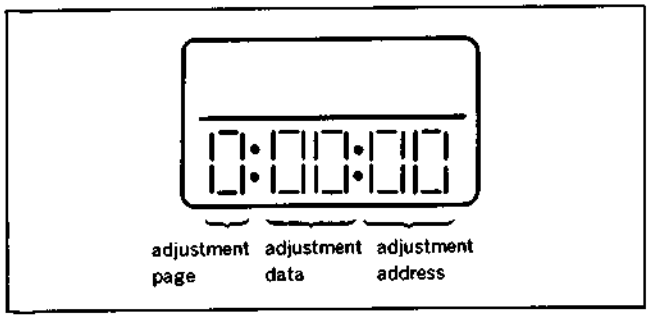


Fig. 10-1.

10-1-2. Preparation before Adjustment

1) Clean the surfaces over which tape moves past (of the tape guides, drum, capstan shaft and pinch rollers).
2) Oscilloscope Connection and Waveform Output:
   1 ch: Drum head's RF signal output, RP-183 board CN001 pin ③ (PB Y)
   External trigger input: RP-183 board CN001 pin ② (RF SWP)
   GND: RP-183 board CN001 pin ① (GND)
3) Play back alignment tape for tracking (WR5-1CP).
4) Check that RF waveform observed on the oscilloscope is flat on both entrance and exit sides.
   If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment III.

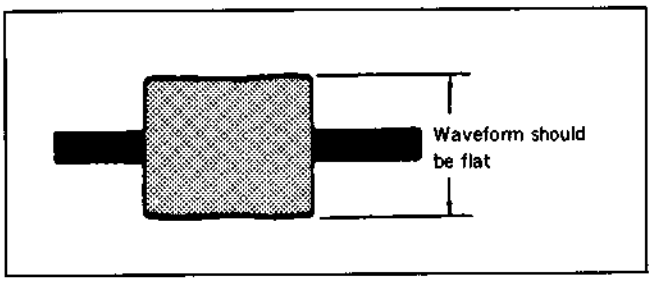


Fig. 10-2.

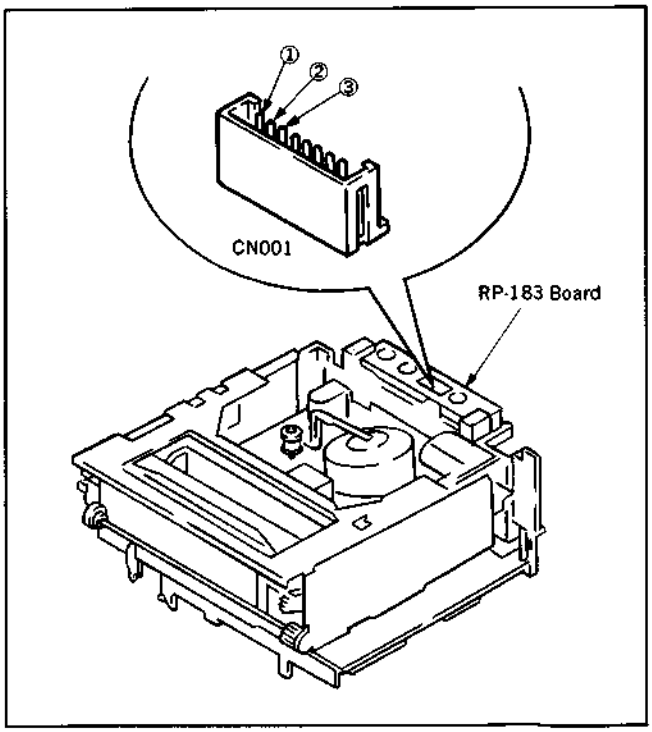


Fig. 10-3.

SECTION 11
ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 160 for the adjustment.

For details of the SENSER LANC , refer to "SECTION 8. SERVICE MODE".

11-1. PREPARATION BEFORE ADJUSTMENT

11-1-1. Equipment Required

The measuring instruments used for this alignment include :

1) Monitor TV
2) Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10:1 should be used unless otherwise specified.)
3) Frequency counter
4) Pattern generator (with Video Output terminal; refer to Section 11-1-2. Equipment Connection.)
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Vector scope
11) Alignment tapes
    - For tracking adjustment
      (WR5-1CP) Part No. : 8-967-995-07
    - For video frequency characteristic adjustment
      (WR5-7CE) Part No. : 8-967-995-18
    - For L mode operation check
      - For SP (WR5-5CSP) Part No. : 8-967-995-46
        (WR5-4CSP) Part No. : 8-967-995-47
      - For LP (WR5-4CL) Part No. : 8-967-995-56
    - For E mode operation check (ME tape)
      - For SP (WR5-8CSE) Part No. : 8-967-995-48
      - For LP (WR5-8CLE) Part No. : 8-967-995-57
    - For Checking of AFM stereo operation
      (WR5-9CS) Part No. : 8-967-995-28
12) Adjustment remote control (J-6082-053-B)

11-1-2. Equipment Connection

According to the specification of the input terminal (S VIDEO or VIDEO), connect required measuring instruments as shown in Fig. 10-1. and perform adjustment. The input terminal is specified in the parentheses ( ) in the signal column. Unless otherwise specified, either terminal may be used. Note that the S VIDEO input terminal takes precedence. When performing adjustment with the VIDEO input terminal, pull out the connector from the S VIDEO input terminal.

Note 1 : When S VIDEO input is specified for a specific adjustment, if the adjustment is performed with VIDEO input, the product specifications for this unit may not be satisfied. The specified input must be always used.

Note 2 : If an adjustment is performed by using a VTR with S Video output terminal as a signal source, the performance of this unit will be affected by that VTR. A pattern generator with Y/C separation output terminal should be used wherever possible.

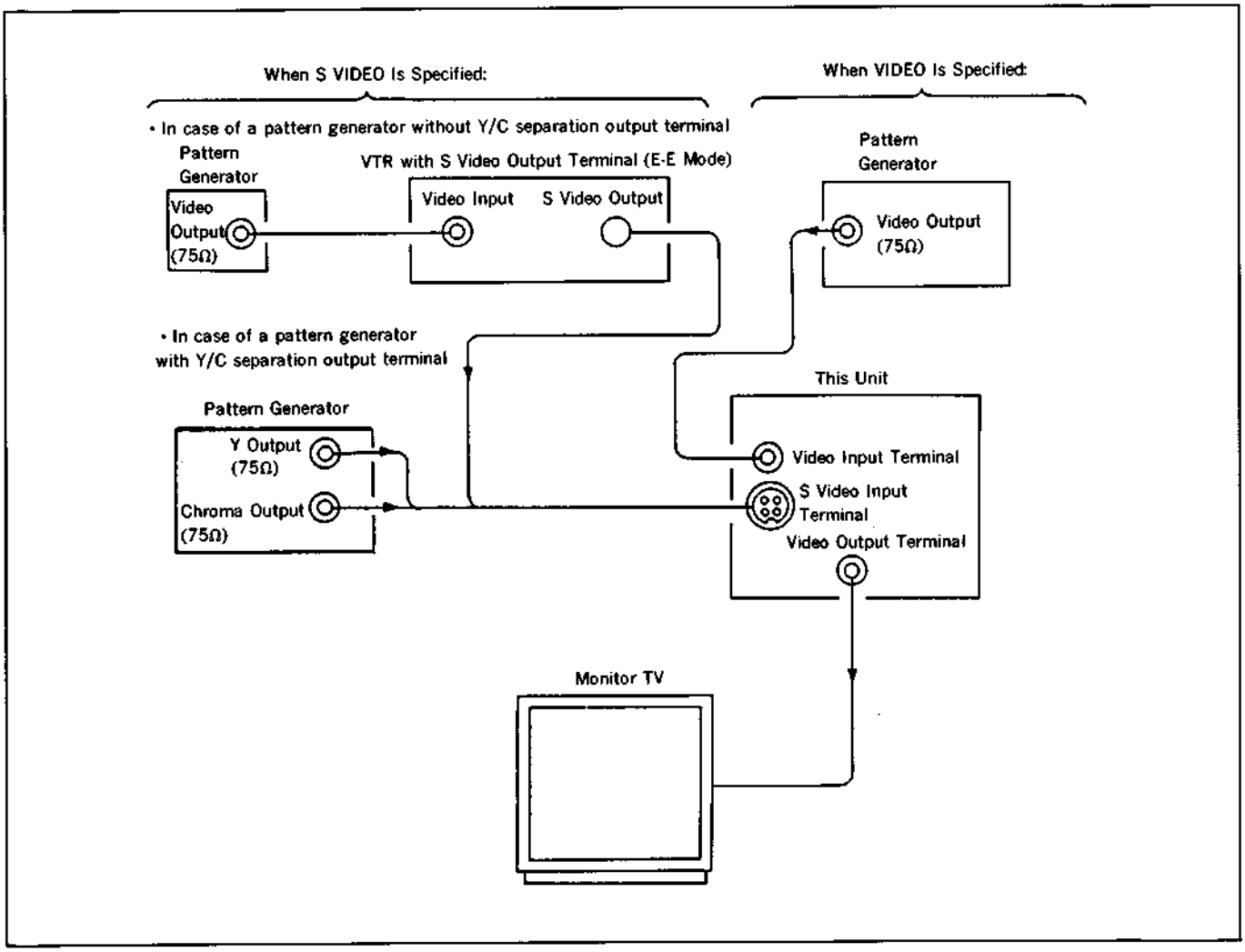


Fig. 11-1.

11-1-3. Input Signal Check

Video signal produced by a pattern generator is used as an adjustment signal to perform electrical alignment for this unit. This video signal must satisfy the specification.

1) S VIDEO Input

Connect an oscilloscope to the Y Signal terminal of the S Video Input terminal. Check that the synchronizing signal of the Y signal is approximately at 0.3Vp-p and that its video portion has an amplitude of approximately 0.7Vp-p. (When a VTR with S video output terminal is used, in addition to these checks, make sure that there are no residual chroma and burst signals.) Then, connect the scope to the Chroma signal terminal of the S Video Input terminal and check that the chroma signal has a burst signal amplitude of 0.3Vp-p and the burst signal waveform is flat. And check that the amplitude ratio of burst signal to chroma signal is 0.30 : 0.66. The Y and chroma signals used for electrical alignment are shown in Fig. 11-2.

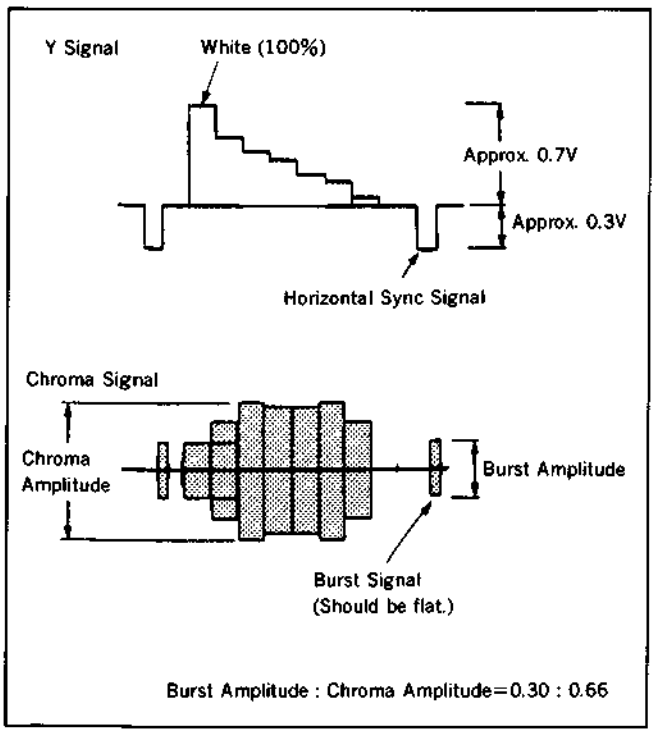


Fig. 11-2. Color Bar Signals of Pattern Generator

2) VIDEO Input

Connect an oscilloscope to the Video Input terminal. Check that the synchronizing signal of the Y signal has an amplitude of approximately 0.7V and that the burst signal has an amplitude of approximately 0.3V and its waveform is flat. And check that the level ratio of burst signal to "red" signal is 0.30 : 0.66.

The video signal (color bar) used for electrical aligning this unit is shown in Fig. 11-3.

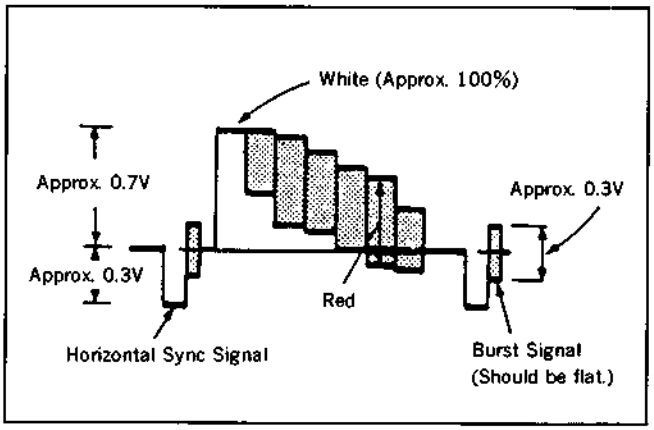


Fig. 11-3. Color Bar Signals of Pattern Generator

11-1-4. Alignment Tapes

The following alignment tapes are available.
The tape specified in the signal column for the adjustment to be performed should be used.

Note that if no tape code is specificed for the adjustments in which alignment tapes for operation check are used, any tape for operation check may be used.

Alignment Tape	Record Mode	Tape Type	Tape Speed	Contents of Record		Applications
				Video Area	PCM Area	
Tracking WR5-1CP	L	MP	SP	CH2 : 1MHz tape pass adjustment signal Switching position adjustment marker (CH1 : 9MHz)		Tape pass adjustment, Switching position adjustment
Video frequency characteristic WR5-7CE	E	ME	SP	RF sweep 0~15MHz Marker 2, 4.5, 7, 8.5, 10MHz		Frequency characteristic adjustment
Operation check WR5-4CSP or WR5-5CSP	L	MP	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) 400Hz, 60% modulated	● Audio signal (PCM) Monoscope portion 20Hz 20sec. 400Hz 20sec. 14kHz 20sec. } This cycle is repeated 4 times Color bar portion 1kHz, 4min.	Operation check
WR5-8CSE	E	ME	SP		400Hz, 8 min.	
WR5-4CL	L	MP	LP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) 400Hz, 60% modulated		
WR5-3CL	L	MP	LP		● Audio signal (PCM) 400Hz, 8 min.	
WR5-8CLE	E	ME	LP			
AFM stereo operation check WR5-9CS	L	MP	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) Stereo portion (color bar) Lch : 400Hz Rch : 1kHz (L+R : 1.5MHz±60kHz DEV) (L−R : 1.7MHz±30kHz DEV) Bilingual portion (monoscope) MAIN : 400Hz (1.5MHz±60kHz DEV) SUB : 1kHz (1.7MHz±30kHz DEV)	● Audio signal (PCM) 400Hz, 8 min.	AFM stereo operation check

Note : Recording Mode
L ..... Conventional mode
E ..... Hi 8 (High Band) mode

Tape Type
MP ..... Metal powder tape
ME ..... Metal evaporated tape

The color bar signal recorded on these alignment tapes are shown in Fig. 11-4.

Note : This waveform is measured at the VIDEO OUT terminal (terminated at 75Ω).

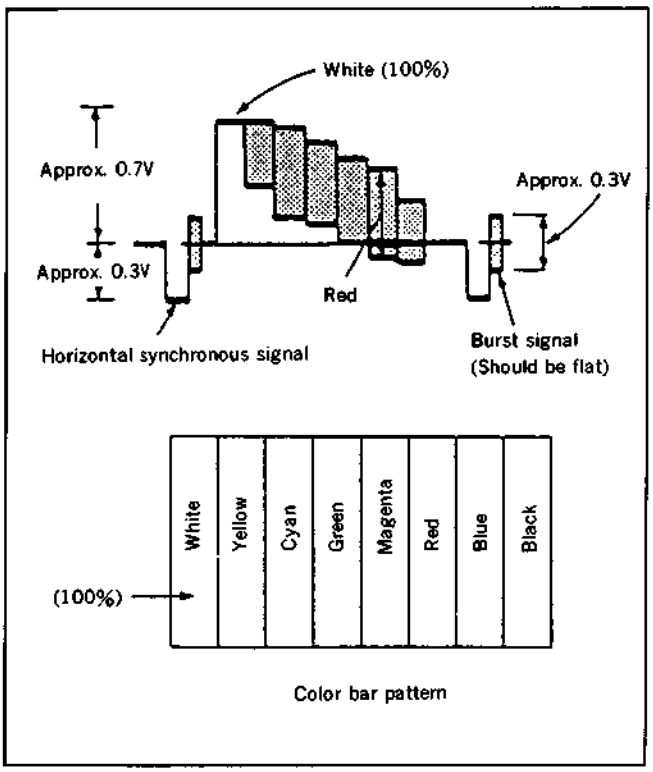


Fig. 11-4. Color Bar Signal of Alignment Tape

11-1-5. Input/Output Levels and Impedance

Video input	LINE IN VIDEO (phono jack) (1) Input signal : 1Vp-p, 75ohms, unbalanced, sync negative
Video output	LINE OUT 1/2 VIDEO (phono jack) (1) Output signal : 1Vp-p, 75ohms, unbalanced, sync negative EURO-AV (21-pin) (1) Output signal : pin 19 1Vp-p, 75ohms unbalanced, sync negative
S VIDEO input	LINE IN S VIDEO (4-pin, mini-DIN) (1) Luminance signal : 1Vp-p, 75ohms, unbalanced, sync negative Chrominance signal : 0.3Vp-p, 75ohm, unbalanced
S VIDEO output	LINE OUT1 S VIDEO (4-pin, miniDIN) (1) Luminance signal : 1Vp-p, 75ohms, unbalanced, sync negative Chrominance signal : 0.3Vp-p, 75ohms, unbalanced EURO-AV (S) 21-pin (pins 15 and 19)
Audio input	LINE IN AUDIO (phono jack) (2) Input level : −7.5dBs Input impedance : more than 47kilohms
Audio output	LINE OUT1 AUDIO (phono jack) (2) LINE OUT2 AUDIO (phono jack) (1) Standard impedance : −7.5dBs at load impedance 47kilohms Output impedance : less than 10kilohms EURO-AV (21-pin) (1) Standard impedance : −6dBs at load impedance 1kilohm Output impedance : less than 10kilohms
CONTROL S IN	Mini jack
CONTROL L	Stereo mini-mini jack

11-2. POWER SUPPLY CHECK

11-2-1. Output Voltage Check (POWER SUPPLY BOARD)

Mode	E-E
Measurement instrument	Digital voltmeter
UN 12V check	
Measurement point	CN201 pin ⑥
Specified value	12.0±0.1Vdc
UN 10.5V check	
Measurement point	CN201 pin ⑧
Specified value	10.5±0.1Vdc
UN 5.7V check	
Measurement point	CN201 pin ⑤
Specified value	6.0±0.1Vdc
SW 5V check	
Measurement point	CN201 pin ④
Specified value	5.0±0.05Vdc
UN −5V check	
Measurement point	CN201 pin ①
Specified value	−5.0±0.1Vdc

[Check Method]

1) Each of these supply voltages must meet its specified value.

11-3. SYSTEM CONTROL SYSTEM CHECK

11-3-1. Timer Clock Check (LC-46 Board)

Mode	E-E
Signal	Arbitrary
Measurement point	IC101 pin ④ (X1)
Measuring instrument	Frequency counter
Specified value	10000±100kHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check to 10000±100kHz.

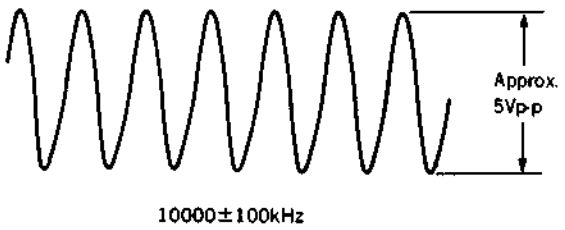


Fig. 11-5.

11-4. SERVO SYSTEM ADJUSTMENTS

[Adjustment sequence]

1. PWM Frequency Adjustment
2. Switching Position Adjustment

11-4-1. PWM Frequency Adjustment (SS-155 Board)

Mode	Record
Signal	Arbitrary
Measurement point	IC005 pin ⑦
Measuring instrument	Frequency counter
Adjustment element	RV102
Specified value	475±25kHz

[Adjustment Method]

1) Set Recording Time to SP mode.
2) Use RV102 to adjust to 475±25kHz.
3) Set Recording Time to LP mode.
4) Check for at 475±25kHz.
5) It the specification is not met, repeat Steps 1) to 4).

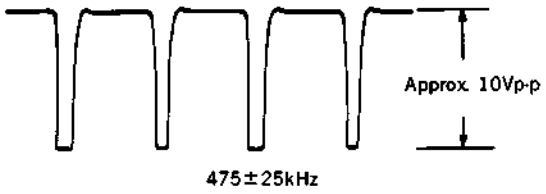


Fig. 11-6.

11-4-2. Switching Position Adjustment (LC-46 Board)

[Adjustment object]

Sets the switching timing of the video head. If deviated, this causes switching noise or jitter on the played back screen.

Mode	Playback
Signal	Alignment tape : For operation check (WR5-1CP)
Measurement point	CH-1 : RP-183 board CN001 pin ② (RF SWP) CH-2 : RP-183 board CN001 pin ③ (PB Y)
Measuring instrument	Oscilloscope
Adjustment page	0
Adjustment address	03 (Switching Position Data (LOW)) 04 (Switching Position Data (HIGH))
Adjustment element	RV101 RV102
Specified value	t=0±10μsec

[Adjustment Method]

1) Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
2) Use EDIT+/— button to select adjustment page 7.
3) Use FF/REW button to select adjustment address 80.
4) Use PB/STOP button to set to adjustment data 05.
5) Press PAUSE button on the remote control to store the adjustment data.
6) Use EDIT+/— button to select adjustment page 0.
7) Use FF/REW button to select adjustment address 04.
8) Use RV101 to adjust to t=0±255μsec.
9) Use FF/REW button to select adjustment address 03.
10) Use RV102 to adjust to t=0±10μsec.
11) Use EDIT+/−button to select adjustment page 7.
12) Use FF/REW button to select adjustment address 80.
13) Use PB/STOP button to set to adjustment data 00.
14) Press PAUSE button on the remote control to store the adjustment data.

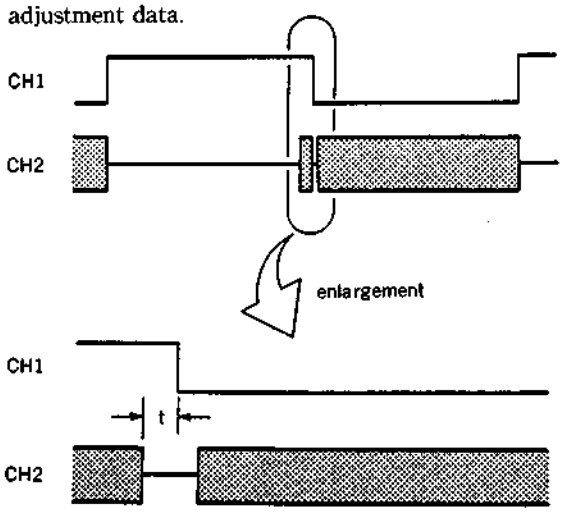


Fig. 11-7.

11-5. VIDEO SYSTEM ADJUSTMENTS

Color video signal supplied from a pattern generator is used as a video input signal for Video System Alignment in the Recording mode. This signal should be checked to ensure that it meets the specifications provided in Fig. 11-2 and "INPUT SIGNAL CHECK".

The adjustments in Video System Alignment should be performed in the following sequence.

[Adjustment sequence]

1. Playback Frequency Characteristic Adjustment
2. EE Level Adjustment
3. IR Adjustment
4. Y/Chroma Separation Adjustment
5. Emphasis Y Level Adjustment
6. AC Clip Check
7. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment
9. Chroma Emphasis Adjustment
10. Chroma Level Adjustment
11. Video Input Y/Chroma Separation Adjustment
12. E mode Playback Level Adjustment
13. L mode Playback Level Adjustment
14. Recording Y Level Adjustment
15. Recording Chroma Level Adjustment
16. Y/Chroma Mix Level Adjustment
17. Playback CCD Input Level Adjustment
18. Quasi, DL Burst Adjustment

11-5-1. Playback Frequency Characteristic Adjustment (RP-183 Board)

[Adjustment Object]

Sets the RF output of head to optimum frequency. If deviated, this causes roughness or black & white dot noise.

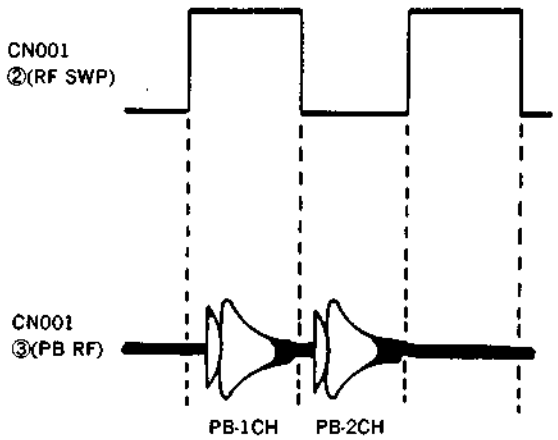
(1) 1ch,2ch

Note: The designation [ ] stands for adjustment on CH-2.

Mode	Playback
Signal	Alignment tape: for frequency characteristic adjustment (WR5-7CE)
Measurement point	CN001 pin ③ (PB Y) External trigger: CN001 pin ② (RF SWP) Trigger slope: −[+]
Measuring instrument	Oscilloscope
Adjustment element	RV001 [RV002]
Specified value	4.5MHz level: 8.5MHz level=3: 2.2±0.2

[Adjustment Method]

1) Use RV001 [RV002] to adjust so that the ratio of 4.5MHz level to 8.5MHz of PB RF output waveform is 3: 2.2±0.2.



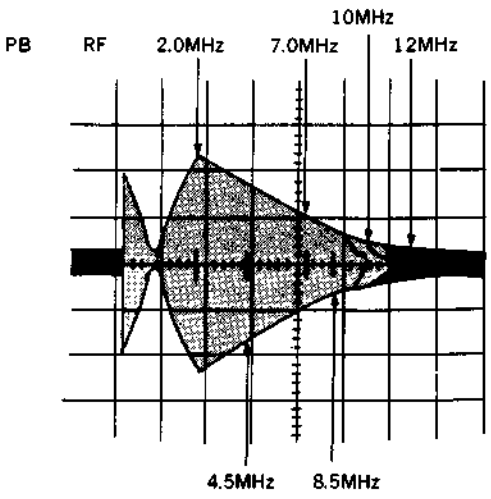


Fig. 11-8.

(2) 1'ch

Mode	Playback
Signal	Alignment tape: for frequency characteristic adjustment (WR5-7CE)
Measurement point	CN001 pin ⑧ (1'CH RF) External trigger : CN001 pin ② (RF SWP)
Measuring instrument	Oscilloscope
Adjustment page	D
Adjustment address	02 (Test Mode (COSMO))
Adjustment element	RV003
Specified value	4.5MHz level : 8.5MHz level=3 : 2.6±0.2

[Adjustment Method]

1) Place the adjustment remote control in the HOLD ON position.
2) Use EDIT+/− button to select adjustment page 0.
3) Use FF/REW button to select adjustment address 02.
4) Use PB/STOP button to select adjustment data 02.
5) Press PAUSE button on the remote control to store the adjustment data.
6) Use RV003 to adjust so that the ratio of 4.5MHz level to 8.5MHz of PB RF output waveform is 3 : 2.6±0.2.
7) Use EDIT+/− button to select adjustment page 0.
8) Use FF/REW button to select adjustment address 02.
9) Use PB/STOP button to select adjustment address 00.
10) Press PAUSE button on the remote control to store the adjustment data.
11) Place the adjustment remote control in the HOLD OFF position.

11-5-2. EE Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the video output level during stop. If deviated, this causes too bright or too dark image, or it disallows correct reproduction of color signal.

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ⑳ (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV621
Specified value	1.00±0.05Vp-p

[Adjustment Method]

1) Use RV621 to adjust to 1.00±0.05Vp-p.

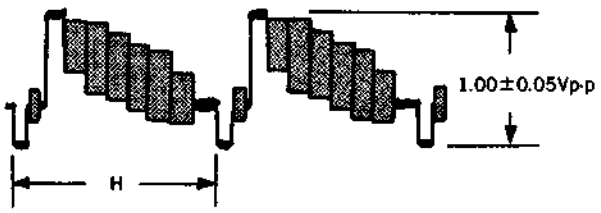


Fig. 11-9.

11-5-3. IR Adjustment (VI-129 Board)

[Adjustment Object]

Sets the characteristic of filter and DEMOD circuit. If deviated, this disallows correct reproduction of EE and played back picture color signal.

Mode	Record
Signal	Color bar (VIDEO)
Measurement point	IC601 pin ⑦ (Y COMB OUT)
Measuring instrument	Oscilloscope
Adjustment element	RV618
Specified value	Red residual chroma component should be minimized (to 50mVp-p or less).

[Connection]

1) Connect between pin ⑮ (SWP) and pin ⑭ (V REF) of IC601.

[Adjustment Method]

1) Use RV618 to adjust so that the red residual chroma component is minimized (to a level of 50mVp-p or less).

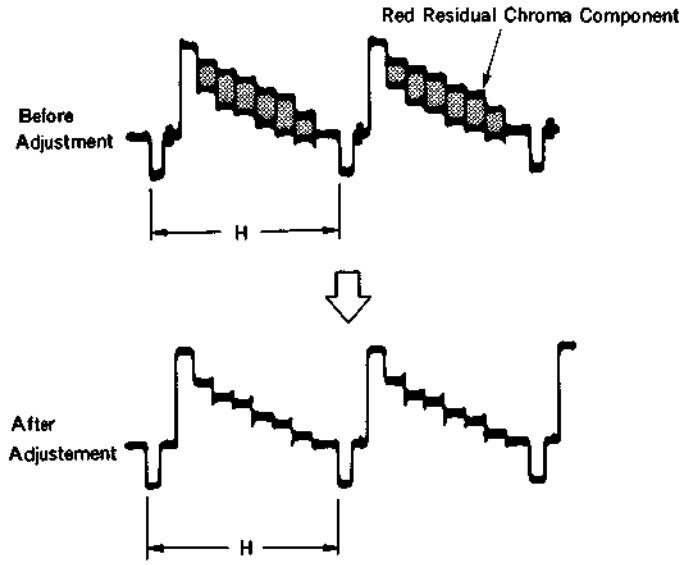


Fig. 11-10.

11-5-4. Y/Chroma Separation Adjustment (VI-129 Board)

[Adjustment Object]

If deviated, this causes marked occurrence of beats in played back picture.

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	IC601 pin ⑪ (C+CD)
Measuring instrument	Oscilloscope
Adjustment element	RV617 (PHASE) RV620 (GAIN)
Specified value	Red residual chroma component should be minimized (to 20mVp-p or less).

[Adjustment Method]

1) Adjust RV620 and RV617 alternately to minimize the red residual chroma component (to a level of 20mVp-p or less).

Note : The adjustment should be performed in the sequence of RV620 to RV617 to RV620 to RV617 two or more times for each trimming.

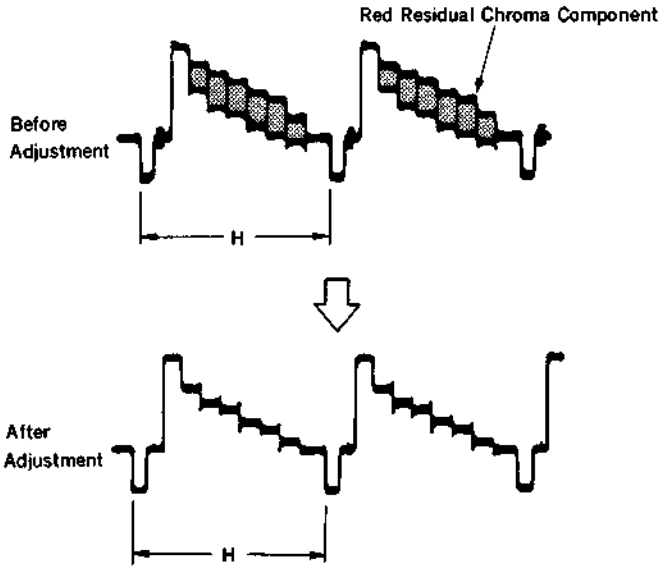


Fig. 11-11.

11-5-5. Emphasis Y Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the Y level of emphasis circuit. If deviated, this causes too bright or too dark image during play back after recording.

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	IC601 pin ③ (EMPH Y)
Measuring instrument	Oscilloscope
Adjustment element	RV613
Specified value	0.50±0.02Vp-p

[Adjustment Method]

1) Use RV613 and adjust to 0.50±0.02Vp-p.

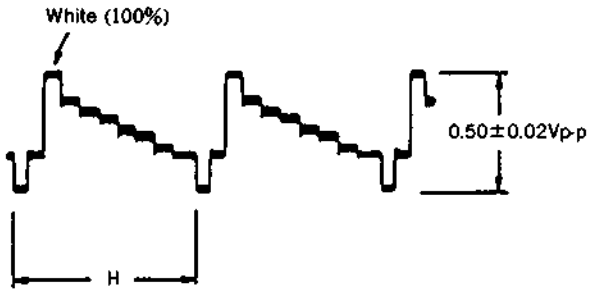


Fig. 11-12.

11-5-6. AC Clip Check (VI-129 Board)

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	IC601 pin ㊼ (DEV)
Measuring instrument	Oscilloscope
Specified value	White Clip : $\frac{B}{A}\times 100=245\pm 10\%$ Dark Clip : $\frac{C}{A}\times 100=95\pm 10\%$

Note : To measure with the oscilloscope, effect the band limit of 20MHz.

[Check Method]

1) Insert MP type cassette tape. (MP, L mode)
2) Check that the output waveform at IC601 pin ㊼ is $\frac{B}{A}\times 100=245\pm 10\%$. Also check that the output waveform at IC601 pin ㊼ is $\frac{C}{A}\times 100=95\pm 10\%$.

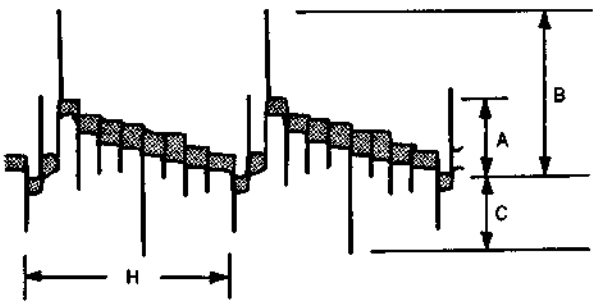


Fig. 11-13.

11-5-7. L Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1 : After this adjustment, be sure to perform "11-5-8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment".

Note 2 : The S Video Line output terminal should be terminated at 75Ω.

(1) L Mode Y FM Carrier Frequency Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM carrier frequency of REC Y for L-mode. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	E-E
Signal	No signal
Measurement point	CN502 pin ⑦ (REC Y RF)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV625
Specified value	4.37±0.05MHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Insert MP type cassette tape.
2) Use RV625 to adjust to 4.37±0.05MHz.

Fig. 11-14.

(2) L Mode Y FM Deviation Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM deviation of REC Y for L-mode. If deviated, this causes too bright/dark image, or marked occurrence of black stretch over modulation noise.

Mode	Record and playback
Signal	Color bar (S VIDEO)
Measurement point	Line Video out terminal
Measuring instrument	Oscilloscope
Adjustment element	RV623
Specified value	Playback level should be at 1.00±0.05Vp-p.

[Adjustment Method]

1) Insert MP type cassette tape.
2) Record color bar signal.
3) Play back the recorded signal.
4) Check the playback output level.
   Specification: 1.00±0.05Vp-p
5) If the specification is not met, rotate RV623 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV623
Over specified value	Counterclockwise (↺)
Below specified value	Clockwise (↻)

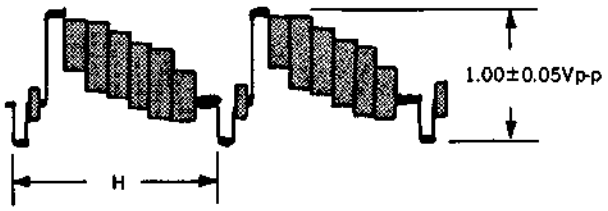


Fig. 11-15.

11-5-8. E Mode Y FM Carrier Frequency, Y FM Deviation Adjustment

Note 1 : When performing this adjustment, it is a prerequisite that "11-5-7. L Mode FM Carrier Frequency, Y FM Deviation Adjustment" has been completed.

Note 2 : The S Video Line output terminal should be terminated at 75Ω.

(1) E Mode Y FM Carrier Frequency Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM carrier frequency of REC Y for E-mode. If deviated, this caused blurred played picture or deteriorated resolution.

Mode	E-E
Signal	No signal
Measurement point	CN502 pin ⑦ (REC Y RF)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV622
Specified value	5.96±0.05MHz

Note : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Adjustment Method]

1) Insert ME type cassette tape.
2) Use RV622 to adjust to 5.96±0.05MHz.

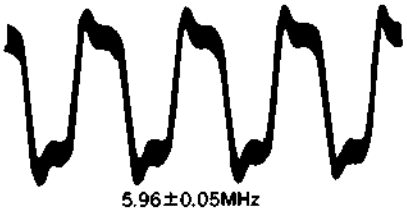


Fig. 11-16.

(2) E Mode Y FM Deviation Adjustment (VI-129 Board)

[Adjustment Object]

Sets the FM deviation of REC Y for E-mode. If deviated, this causes too bright/dark image, or marked occurrence of black stretch over modulation noise.

Mode	Record and playback
Signal	Color bar (S VIDEO)
Measurement point	Line Video out terminal
Measuring instrument	Oscilloscope
Adjustment element	RV624
Specified value	Playback level should be at 1.00±0.05Vp-p.

[Adjustment Method]

1) Insert ME type cassette tape.
2) Record color bar signal.
3) Play back the recorded signal.
4) Check the playback output level.
   Specification: 1.00±0.05Vp-p
5) If the specification is not met, rotate RV624 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV624
Over specified value	Counterclockwise (↺)
Below specified value	Clockwise (↻)

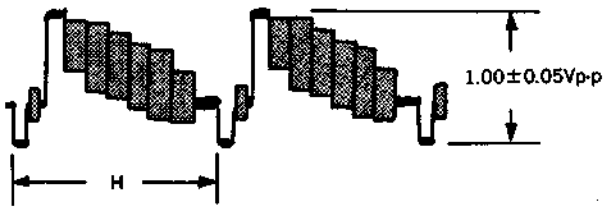


Fig. 11-17.

11-5-9. Chroma Emphasis Adjustment (VI-129 Board)

[Adjustment Object]

Sets the emphasis frequency. If deviated, this causes unnatural color.

Mode	Record
Signal	Color bar (S VIDEO)
Measurement point	IC802 pin ㉔ (B.EMPH 0)
Measuring instrument	Oscilloscope
Adjustment element	FL802
Specified value	Red residual chroma component should be minimized. (to 350mVp-p or less)

Note : Connect with 3.3kΩ (1-249-423-11) resistor between IC802 pin ㉔ and GND.

[Adjustment Method]

1) Adjust FL802 to allow the latter half of the red component in the chroma signal to have a minimum amplitude.

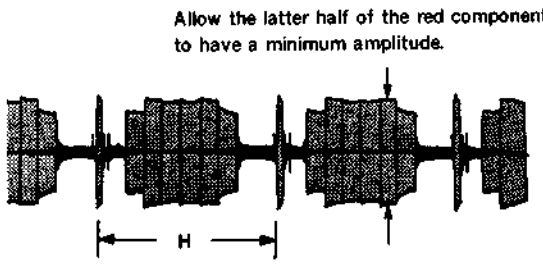


Fig. 11-18.

11-5-10. Chroma Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the color density. If deviated, this causes too deep or too light color.

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ⑯ (LINE OUT C)
Measuring instrument	Oscilloscope
Adjustment element	RV821
Specified value	300±15mVp-p

[Adjustment Method]

1) Use RV821 to adjust to 300±15mVp-p.

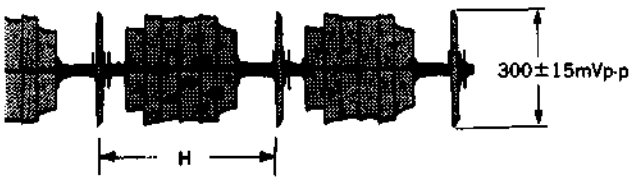


Fig. 11-19.

11-5-11. Video Input Y/C Separation Adjustment

(1) Y Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the level of Video luminance signal as pin input. If deviated, this causes excessive darkness of brightness.

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	CN511 pin ⑱ (LINE OUT Y)
Measuring instrument	Oscilloscope
Adjustment element	RV615
Specified value	1.00±0.05Vp-p

[Adjustment Method]

1) Use RV615 to adjust to 1.00±0.05Vp-p.

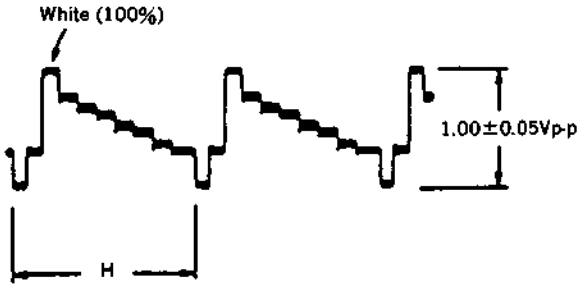


Fig. 11-20.

(2) Chroma Level Check (VI-129 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	CN511 pin ⑯ (LINE OUT C)
Measuring instrument	Oscilloscope
Specified value	300±30mVp-p

[Check Method]

1) Check to 300±30mVp-p.

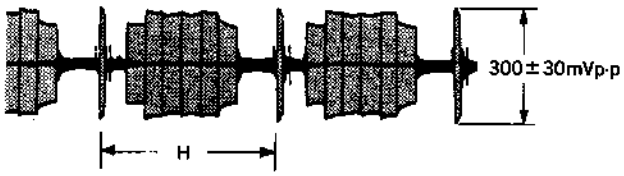


Fig. 11-21.

11-5-12. E Mode Playback Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the luminance level for Hi8 playback. If deviated, this causes too bright or too dark Hi8 picture.

Mode	Playback
Signal	Alignment tape : For operation check, color bar portion (WR5-8CSE)
Measurement point	CN511 pin ⑱ (LINE OUT Y)
Measuring instrument	Oscilloscope
Adjustment element	RV614
Specified value	1.00±0.05Vp-p

[Adjustment Method]

1) Insert ME tape.
2) Use RV614 to adjust to 1.00±0.05Vp-p.

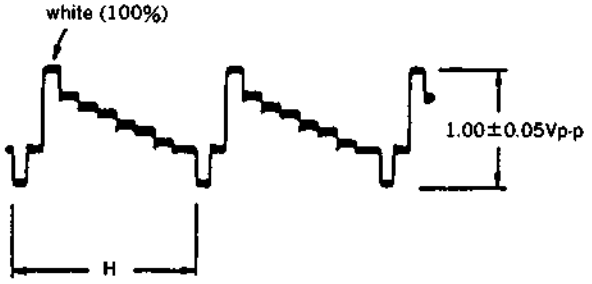


Fig. 11-22.

11-5-13. L Mode Playback Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the luminance level for normal playback. If deviated, this causes too bright or too dark normal picture.

Mode	Playback
Signal	Alignment tape : For operation check, color bar portion (WR5-5CSP)
Measurement point	CN511 pin ⑱ (LINE OUT Y)
Measuring instrument	Oscilloscope
Adjustment element	RV612
Specified value	1.00±0.05Vp-p

[Adjustment Method]

1) Insert MP tape.
2) Use RV612 to adjust to 1.00±0.05Vp-p.

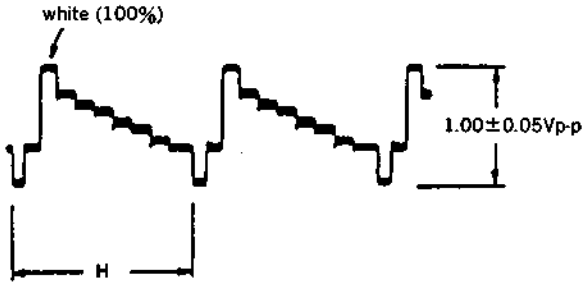


Fig. 11-23.

11-5-14. Recording Y RF Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the recording level of luminance signal. If deviated, this causes black stretch over modulation noise or color shade.

Mode	Record
Signal	No signal
Measurement point	CN502 pin ⑦ (REC Y RF)
Measuring instrument	Oscilloscope (20MHz bandwidth)
Adjustment element	RV601
Specified value	680±10mVp-p

Note : Set an oscilloscope to 20MHz bandwidth.

[Adjustment Method]

1) Insert ME tape.
2) Record.
3) Use RV601 to adjust to 680±10mVp-p.

Fig. 11-24.

11-5-15. Recording Chroma Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the recording level of color signal. If deviated, this causes too deep or too light color.

Mode	E-E
Signal	Color bar
Measurement point	① IC801 pin ⑤ ② IC801 pin ① ③ IC801 pin ③
Measuring instrument	Oscilloscope
Adjustment element	① RV802 ② RV803 ③ RV804
Specified value	① 200±10mVp-p ② 350±10mVp-p ③ 350±10mVp-p

[Adjustment Method]

1) Remove AU-156 board (since AFM signal hinders adjustment).
2) Enter E-E mode.
3) Connect 2-ch input of oscilloscope to VIDEO OUT (for trigger).
4) Insert MP tape.
5) Connect 1-ch input of oscilloscope to pin 5 of IC801.
6) Adjust RV802 so that YELLOW is at 200±10mVp-p.
7) Change to ME tape.
8) Connect 1-ch input of oscilloscope to pin 1 of IC801.
9) Adjust RV803 so that YELLOW is at 350±10mVp-p.
10) Connect 1-ch input of oscilloscope to pin 3 of IC801.
11) Adjust RV804 so that YELLOW is at 350±10mVp-p.

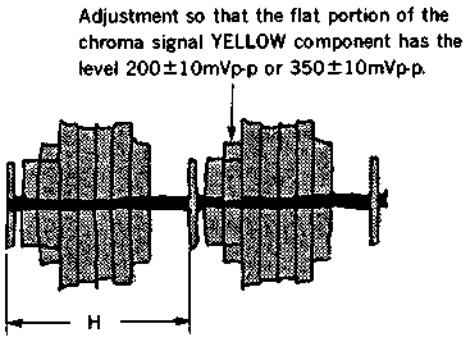


Fig. 11-25.

11-5-16. Y/Chroma Mix Level Adjustment

(1) Y Level Adjustment (VI-129 BOARD)

[Adjustment Object]

Determines the luminance level of VIDEO signal as pin input. If deviated, this causes excessive brightness or darkness.

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ⑳ (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV102
Specified value	1.00±0.02Vp-p

[Adjustment Method]

1) Use RV102 to adjust to 1.00±0.02Vp-p.

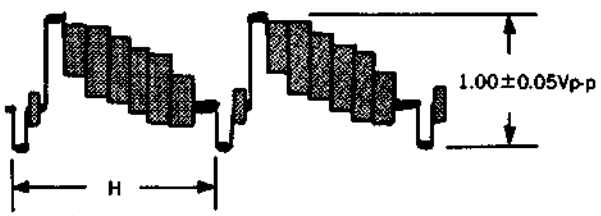


Fig. 11-26.

(2) Chroma Level Adjustment (VI-129 BOARD)

[Adjustment Object]

Sets the color signal level of VIDEO signal as pin input. If deviated, this causes too deep or too light color.

Mode	E-E
Signal	Color bar (S VIDEO)
Measurement point	CN511 pin ⑳ (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	300±15mVp-p

[Adjustment Method]

1) Adjust RV101 so that the burst level is at 300±15mVp-p.

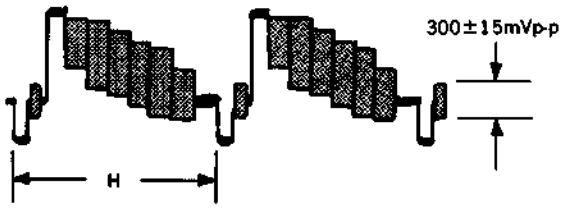


Fig. 11-27.

11-5-17. Playback CCD Input Level Adjustment (VI-129 Board)

[Adjustment Object]

Sets the de-emphasis input level. If deviated, this causes excessive brightness or darkness.

Mode	Playback + Pause (SP mode)
Signal	Alignment tape : For operation check, (WR5-8CSE) Color bar portion
Measurement point	IC601 pin ⑮ (DL IN2)
Measuring instrument	Oscilloscope
Adjustment element	RV611
Specified value	The level differene between playback and pause modes must be 0±0.05Vp-p.

[Adjustment Method]

1) Confirm that the video signal level is at 0.50±0.05Vp-p in playback mode.
2) Enter the playback pause mode.
3) Adjust RV611 so that the video signal level is equal to during playback.

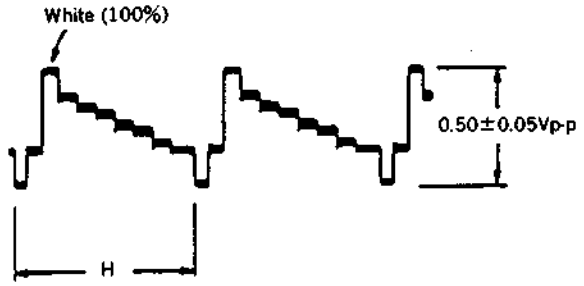


Fig. 11-28.

11-5-18. Quasi, DL Burst Adjustment (VI-129 Board) (Use a Vectorscope)

[Adjustment Object]

Set the level and phase of the JOG circuit so that there will be no variation of color in the JOG mode. If there is any variation of color, the hue will change, during JOGging

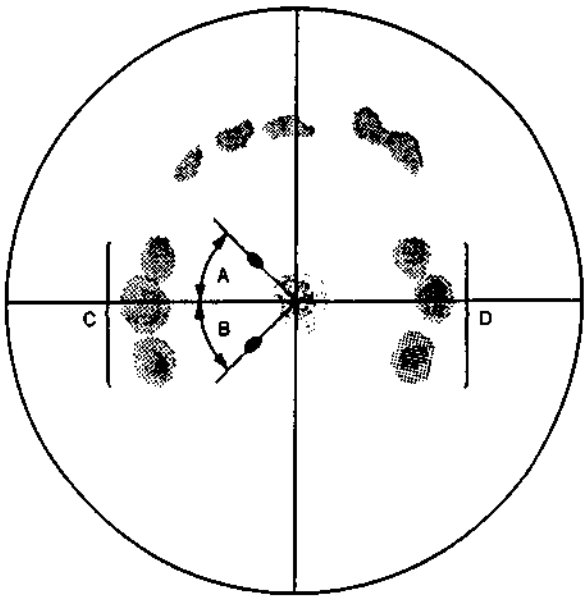
Mode	Playback + Pause
Signal	Alignment tape for operation check (WR5-5CSP), Color bar portion
Measurement point	VIDEO OUT terminal
Measuring instrument	Vectorscope
Adjustment element	RV303 (QUASI BURST) RV301 (DL BURST)
Specified value	See Fig.10-20.

[Connection]

1) Input 4.43MHz signal from IC802 Pin⑫ to 1CH of an oscilloscope.
2) Connect 1CH output of an oscilloscope to the EXT. subcarrier reference input of a vectorscope.
3) Put on the EXT. subcarrier switch of a vectorscope.

[Adjustment Method]

1) Adjust with RV303 so as to equalize A and B as shown in Fig. 11-29.
2) Adjust with RV301 so as to minimize the shaking of each three brighting point of C and D.



RV303 : A=B
RV301 : make C and a contrast

Fig. 11-29.

11-6. AUDIO SYSTEM ADJUSTMENTS

Color bar signal should be used as Video signal input for performing this adjustment.

[Connection of Equipment for Audio Measurement]

In addition to equipment for video measurement, the audio measurement equipment should be connected as illustrated below.

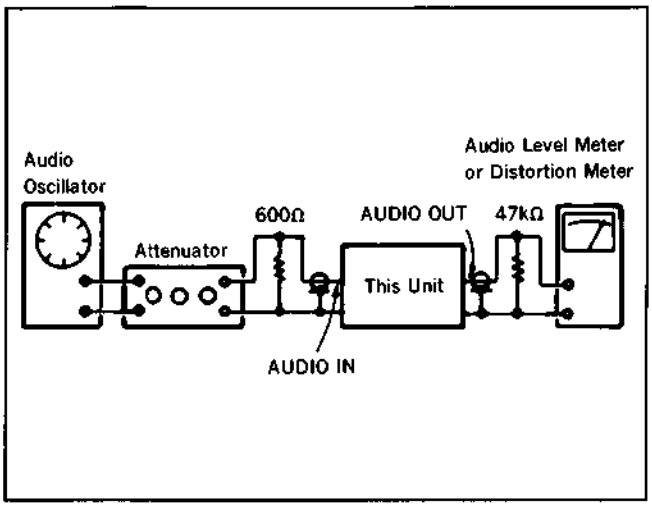


Fig. 11-30.

The adjustments should be performed in the following sequence.

[Adjustment sequence]

1. Carrier Frequency 1.5MHz Check
2. Carrier Frequency 1.7MHz Check
3. 1.5MHz Deviation Adjustment
4. 1.7MHz Deviation Adjustment
5. Playback Separation 2 Check
6. Playback Separation 1 Check
7. E-E Output Level Check
8. Overall Frequency Characteristic Check
9. Overall Distortion Factor Check
10. Overall Noise Check

11-6-1. Carrier Frequency 1.5MHz Check (AU-156 Board)

Mode	Record
Signal	No signal
Measurement point	IC901 pin ⑱ (VCO OUT)
Measuring instrument	Frequency counter
Specified value	1500±3kHz

Note 1 : A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check to adjust to 1500±3kHz.

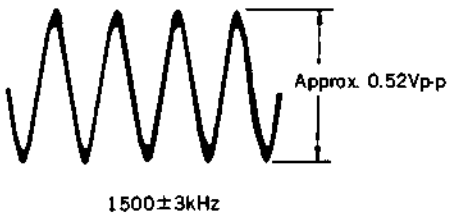


Fig. 11-31.

11-6-2. Carrier Frequency 1.7MHz Check (AU-156 Board)

Mode	Record
Signal	No signal
Measurement point	IC901 pin ⑮ (VCO OUT)
Measuring instrument	Frequency counter
Specified value	1700±3kHz

Note 1: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check to adjust to 1700±3kHz.

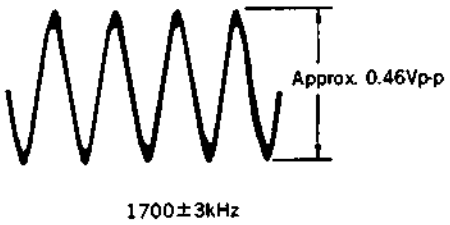


Fig. 11-32.

11-6-3. 1.5MHz Deviation Adjustment (AU-156 Board)

[Adjustment Object]

Adjusts the deviation. If deviated, this causes distortion of audio OUT waveform (with stereo signal).

Mode	Playback
Signal	Alignment tape: For operation check, bilingual portion (WR5-9CS)
Measurement point	Audio Line Output terminal, left
Measuring instrument	Audio level meter
Adjustment element	RV901
Specified value	−7.5±0.5dBs

[Adjustment Method]

1) Use RV901 to adjust to −7.5±0.5dBs.

11-6-4. 1.7MHz Deviation Adjustment (AU-156 Board)

[Adjustment Object]

Adjusts the deviation. If improper, this causes deteriorated separation with Alignment tape.

Mode	Playback
Signal	Alignment tape: For operation check, bilingual portion (WR5-9CS)
Measurement point	Audio Line Output terminal, right
Measuring instrument	Audio level meter
Adjustment element	RV902
Specified value	−7.5±0.5dBs

[Adjustment Method]

1) Use RV902 to adjust to −7.5±0.5dBs.

11-6-5. Playback Separation 2 Check (AU-156 Board)

Mode	Playback
Signal	Alignment tape: For operation check, stereo portion (WR5-9CS)
Measurement point	Audio Line Output terminal, right
Measuring instrument	Oscilloscope
Specified value	400Hz component minimum (no distortion should be present on 1kHz waveform.)

[Check Method]

1) Check that 400Hz component on the right level is at minimum.

11-6-6. Playback Separation 1 Check (AU-156 Board)

Mode	Playback
Signal	Alignment tape: For operation check, stereo portion (WR5-9CS)
Measurement point	Audio Line Output terminal, left
Measuring instrument	Oscilloscope
Specified value	1kHz component minimum (no distortion should be present on 400Hz waveform.)

[Check Method]

1) Check that 1kHz component on the left level is at minimum.

11-6-7. E-E Output Level Check

Mode	E-E
Signal	400Hz, −7.5dBs
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	−7.5±3dBs

[Check Method]

1) Check that the respective levels of Audio Line Output terminals, left and right are −7.5±3dBs.

11-6-8. Overall Frequency Characteristic Check

Mode	Self-record playback
Signal	Ⓐ 400Hz, −7.5dBs Ⓑ 20Hz, −7.5dBs Ⓒ 14kHz, −7.5dBs : Audio Line Input terminals, left and right
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	The playback output levels of 20Hz and 14kHz should be 0±3dBs with 400Hz playback output level at 0dBs.

[Check Method]

1) Record signals Ⓐ to Ⓒ in turn.
2) Play back the recorded portion.
3) Check that the respective playback output levels of 20Hz and 14kHz are 0±3dBs with 400Hz playback output level at 0dBs.

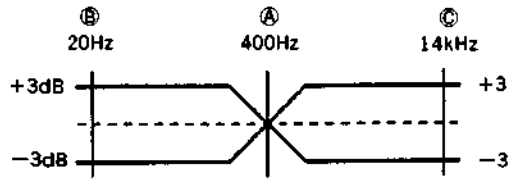


Fig. 11-33.

11-6-9. Overall Distortion Factor Check

Mode	Self-record playback
Signal	400Hz, −7.5dBs: Audio Line Input terminals, left and right
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Distortion meter
Specified value	1.5% or less Note)

[Check Method]

1) Record signal.
2) Play back the recorded portion.
3) Check that the distortion factor is 1.5% or less, left and right side.Note)

Note: These are values when a 200Hz - 6kHz BPF is used.

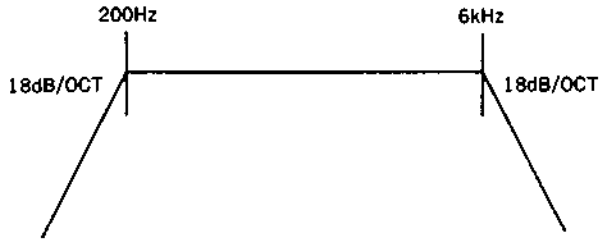


Fig. 11-34.

11-6-10. Overall Noise Level Check

Mode	Self-record playback
Signal	No signal (Insert a shorting plug into the Audio Line Input jacks, left and right.)
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	−63dBs or less Note)

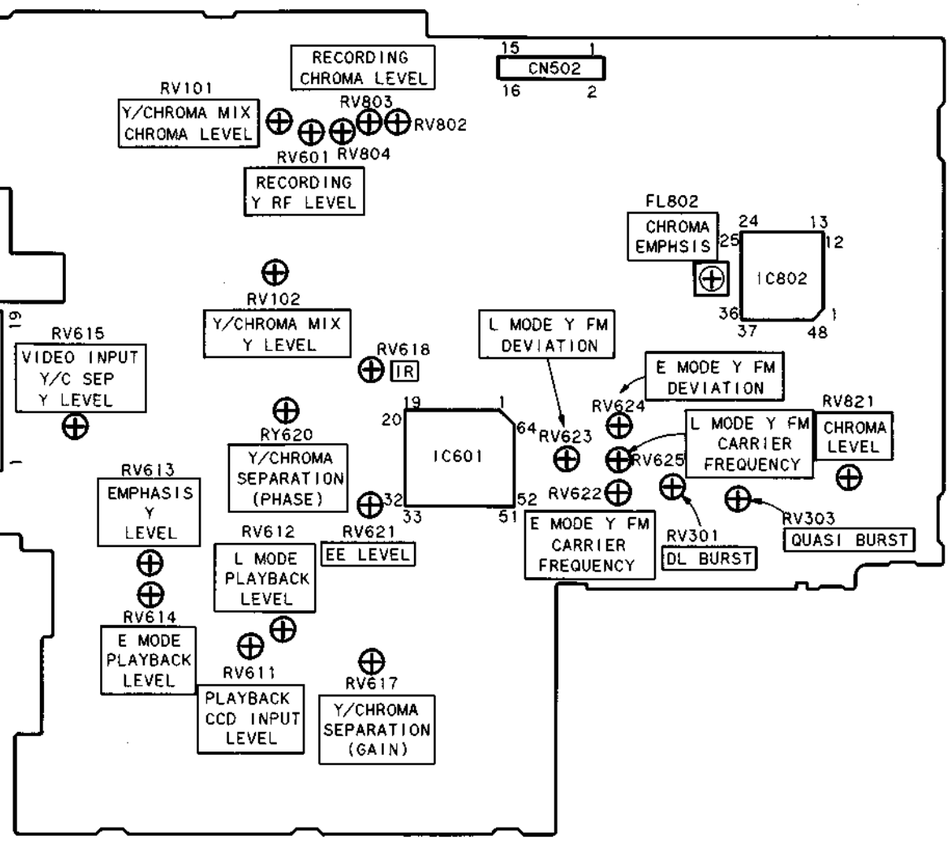
[Check Method]

1) Record.
2) Play back recorded portion.
3) Check that the noise level is −63dBs or less, left and right side.Note)

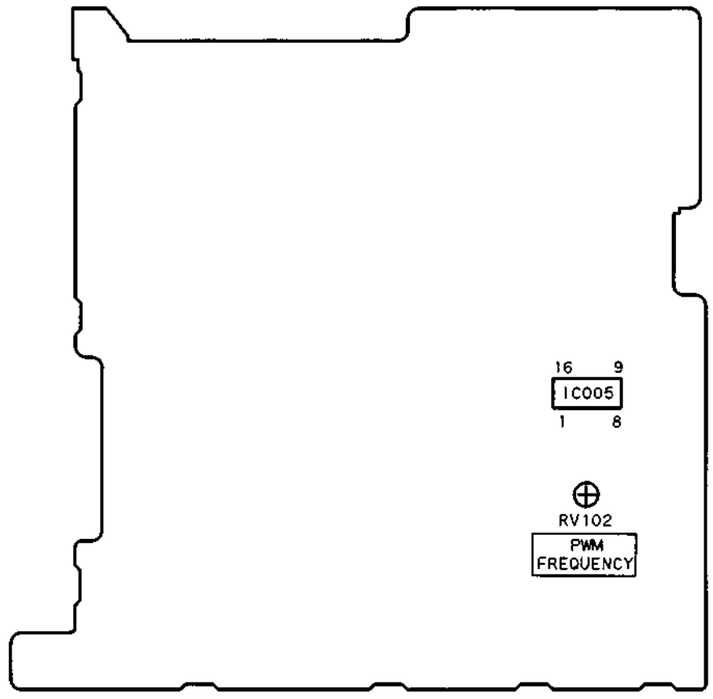
Note: These are values when an IHF-A weighing filter is used.

11-7. ADJUSTING PARTS LOCATION DIAGRAM

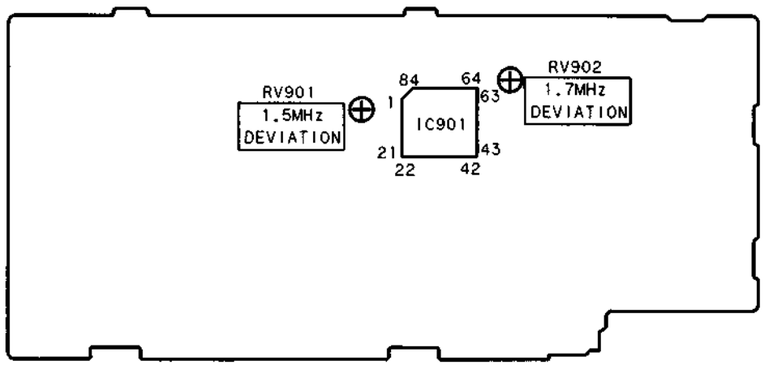
VI-129 BOARD (COMPONENT SIDE)



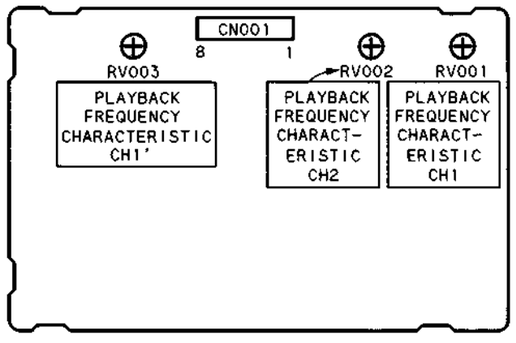
SS-155 BOARD (COMPONENT SIDE)



AU-156 BOARD (COMPONENT SIDE)



RP-183 BOARD (COMPONENT SIDE)



LC-46 BOARD (COMPONENT SIDE)