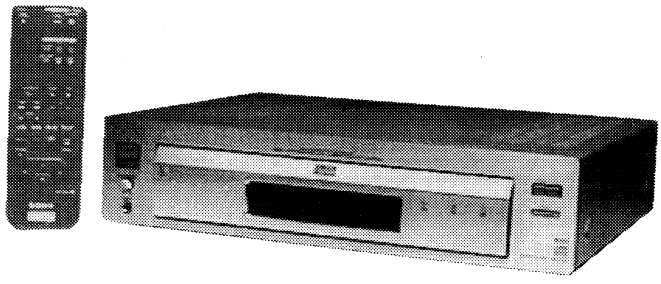
DVP-S7000

RMT-D100A/D100E

SERVICE MANUAL

US Model
Canadian Model
E Model



SPECIFICATIONS

CD/DVD player

Laser	Semiconductor laser
Signal format system	NTSC

Audio characteristics

Frequency response	DVD (PCM): 2 Hz to 22 kHz (±0.5 dB) CD: 2 Hz to 20 kHz (±0.5 dB)
Signal-to-noise ratio	More than 107 dB
Harmonic distortion	Less than 0.0028%
Dynamic range	More than 97 dB
Wow and flutter	Less than detected value (±0.001% W PEAK)

Outputs and inputs

	Jack type	Maximum output level	Load impedance
LINE OUT (AUDIO 1, 2)	Phono jacks	2 Vrms (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	–18 dBm	Wave length: 660 nm
DIGITAL OUT (COAXIAL)	Phono jacks	0.5 Vp-p	75 ohms terminated
LINE OUT (VIDEO)	Phono jack	1.0 Vp-p	75 ohms, sync negative
S VIDEO OUT	4-pin mini DIN	Y: 1.0 Vp-p C: 0.286 Vp-p	75 ohms, sync negative
COMPONENT VIDEO OUT (Y, B-Y, R-Y)	Phono jacks	Y: 1.0 Vp-p	75 ohms, sync negative
		B-Y, R-Y: 0.7 Vp-p	75 ohms
PHONES	Phone jack	12 mW	Over 8 ohms
S-LINK	Mini jack		

General

Power requirements	120 V AC, 60 Hz: US/Canadian model 220 – 240 V AC, 50 Hz: E model
Power consumption	28 W
Dimensions (approx.)	430 × 111 × 395 mm (17 × 4 3/8 × 15 5/8 in.) (w/h/d) incl. projecting parts
Mass (approx.)	7.0 kg (15 lb 7 oz)
Operating temperature	5 °C to 35 °C (41 °F to 95 °F)
Operating humidity	5% to 90%

Supplied accessories

- Audio connecting cord (1)
- Video connecting cord (1)
- S video cable (1)
- S-link cable (1)
- Remote commander (remote) RMT-D100A (1)
- Sony SUM-3 (NS) batteries (2)

Design and specifications are subject to change without notice.

Note: Video-CD recorded in PAL mode by overseas type model can be played.

DVD VIDEO COMPACT disc DIGITAL VIDEO **CD/DVD PLAYER**

MICROFILM

SONY

SAFETY CHECK-OUT

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

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

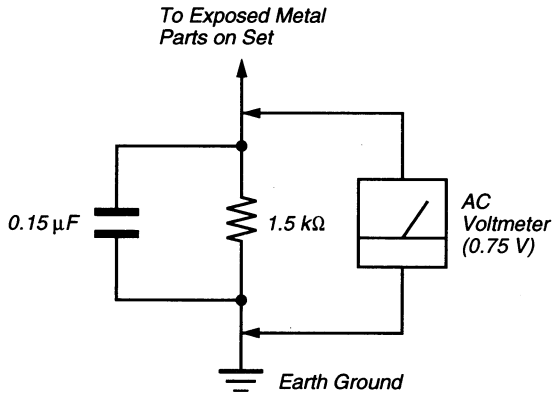


Fig. A Using AC voltmeter to check AC leakage

LEAKAGE TEST

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

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

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance procedures other than those specified herein may result in hazardous radiation exposure.

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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

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TABLE OF CONTENTS

Section	Title	Page
Service Note		5
1.	GENERAL	
	Getting Started	1-1
	Basic Operations	1-2
	Playing Discs in Various Modes	1-8
	Setting and Adjustments	1-10
	Additional Information	1-12
2.	DISASSEMBLY	
2-1.	Case Removal	2-1
2-2.	Front Panel Removal	2-1
2-3.	DC Motor (Door Open/Close) Removal	2-1
2-4.	AU-194 Board Removal	2-1
2-5.	MB-75 Board Removal	2-2
2-6.	MD Block Ass'y Removal	2-2
2-7.	Try Removal	2-2
2-8.	Optical Pick-up Removal	2-2
2-9.	TT-701 Board Removal	2-2
2-10.	Internal Views	2-3
2-11.	Circuit Boards Location	2-4
3.	BLOCK DIAGRAMS	
3-1.	Overall Block Diagram 1 (RF, Servo, Audio Power)	3-1
3-2.	Overall Block Diagram 2 (Signal Process)	3-6
3-3.	RF/Servo Block Diagram	3-11
3-4.	Data Process Block Diagram	3-14
3-5.	Video Block Diagram	3-16
3-6.	System Control Block Diagram	3-21
3-7.	Audio Block Diagram	3-24
3-8.	Mode Control Block Diagram	3-27
3-9.	Power Supply Block Diagram	3-30
4.	PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	
4-1.	Frame Schematic Diagram	4-1
4-2.	Printed Wiring Boards and Schematic Diagrams	4-5
	TT-701, LM-51 Printed Wiring Boards	4-5
	TT-701, LM-51 Schematic Diagram	4-7
	MB-75 Printed Wiring Board	4-11
	MB-75 (Interface) Schematic Diagram	4-15
	MB-75 (CPU) Schematic Diagram	4-18
	MB-75 (Drive Control) Schematic Diagram	4-21
	MB-75 (DVD Data Process) Schematic Diagram	4-24
	MB-75 (CD ROM Decode) Schematic Diagram	4-27
	MB-75 (MPEG Video Decode) Schematic Diagram	4-30
	MB-75 (Video EQ, Letter Box, Sub Picture) Schematic Diagram	4-33
	MB-75 (Audio Decode) Schematic Diagram	4-36
	MB-75 (Video) Schematic Diagram	4-39
	MB-75 (Digital Servo) Schematic Diagram	4-43
	MB-75 (RF Block) Schematic Diagram	4-47
	MB-75 (Drive) Schematic Diagram	4-51
	CN-99, DR-84, FL-73, FL-80, FP-411, HP-92 Printed Wiring Boards	4-55
	CN-99, DR-84, FL-73, FL-80, FP-411, HP-92 Schematic Diagram	4-57
	AU-194, PS-393 Schematic Diagram	4-59
	AU-194, PS-393 Printed Wiring Boards	4-63
5.	IC PIN FUNCTION DESCRIPTION	
5-1.	Interface Control Pin Function (MB-75 Board IC021)	5-1
5-2.	Drive Control Pin Function (MB-75 Board IC136)	5-2
5-3.	Extended Output Port 0 (MB-75 Board IC147)	5-3
5-4.	Extended Output Port 1 (MB-75 Board IC148)	5-3
5-5.	Extended Output Port 2 (MB-75 Board IC149)	5-3
5-6.	Extended Output Port 3 (MB-75 Board IC150)	5-3
5-7.	Extended Input Port 0 (MB-75 Board IC151)	5-4
5-8.	Extended Input Port 1 (MB-75 Board IC152)	5-4
5-9	D/A Converter (MB-75 Board IC722)	5-4
5-10	System Control Pin Function (MB-75 Board IC090)	5-5
6.	TEST MODE	
6-1.	Starting up Test Mode	6-1
6-2.	Syscon Diagnosis	6-1
6-3.	Drive Auto Adjustment	6-10
6-4.	Drive Manual Operation	6-13
6-4-1.	Drive Manual Operation wnu creen	6-13
6-4-2.	Disc Type	6-13
6-4-3.	Manual Control 1	6-13
6-4-4.	Manual Control 2	6-14
6-4-5.	Manual Control 3	6-14
6-4-6.	Manual Adjust 1	6-15
6-4-7.	Manual Adjust 2	6-15
6-4-8.	Auto Adjust	6-15
6-4-9.	Check	6-16
6-5.	Emergency History	6-18
6-6.	Other Checks	6-18
7.	ELECTRICAL ADJUSTMENT	
7-1.	Power Supply Check	7-1
1.	PS-393 Board	7-1
2.	MB-75 Board	7-1
7-2.	Adjustment of System Control	7-2
1.	27 MHz Free Run	7-2
2.	22 MHz Adjustment	7-2
3.	33 MHz Check	7-2
4.	33 MHz Lock Check	7-2
5.	24 MHz Adjustment	7-3
6.	36 MHz Check	7-3
7.	36 MHz Lock Check	7-3
8.	16 MHz Check	7-3
7-3.	Adjustment of Video System	
1.	Video Level Adjustment	7-4
2.	S-Terminal Output Check	7-4
3.	Checking Composite Video Output B-Y	7-4
4.	Checking Composite Video Output R-Y	7-5
5.	Checking Composite Video Output Y	7-5
6.	Checking S Video Output S-C	7-5
7.	Checking S Video Output DC Level	7-5
7-4.	Adjustment Related Parts Arrangement	7-6
8.	REPAIR PARTS LIST	
8-1.	Exploded Views	8-1
8-1-1.	Case Assembly	8-1
8-1-2.	Front Panel Assembly	8-2
8-1-3.	Chassis Assembly	8-3
8-1-4.	DVD Mechanism Chassis Assembly (1)	8-4
8-1-5.	DVD Mechanism Chassis Assembly (2)	8-5
8-2.	Electrical Parts List	8-6

SERVICE NOTE

1. DISK REMOVAL PROCEDURE (at POWER OFF)

1-1. How to Open the Door

1) With the top case removed, rotate the gear (D) ① in direction Ⓐ to open the door. (See Fig. 1)

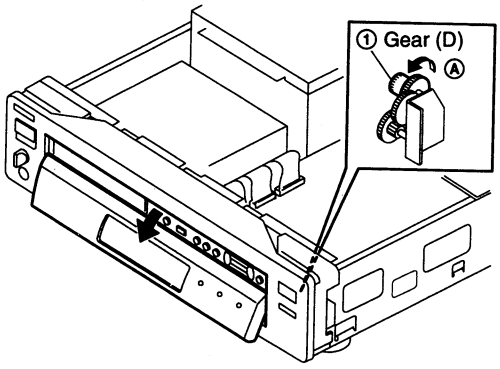


Fig. 1

1-2. How to Draw out Tray

1) Insert a cross-tip screwdriver into a hole at the bottom, and rotate the cam gear ② in direction Ⓑ. (See Fig. 2)
   Note: To prevent a damage of cam gear, rotate it in direction Ⓑ by 1/4 turn.
2) Draw out the tray ③ in direction Ⓒ by hand, and remove a disk. (See Fig.2)

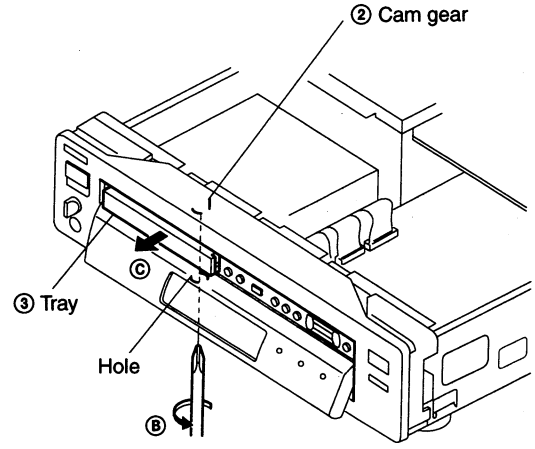


Fig. 2

2. HOW TO SERVICE THE MD BLOCK ASS'Y

1) Remove the top case from the main unit. (Refer to 2-1)
2) Remove the front panel. (Refer to 2-2)
   Note: Do not disconnect wiring.
3) Remove the MD block ass'y. (Refer to 2-6)
4) Remove the MD upper cover, and mount as shown in Fig. 3.

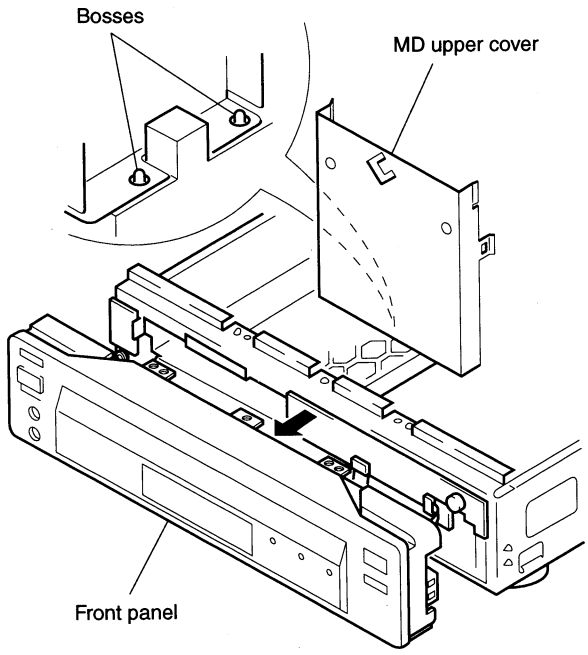


Fig. 3

5) Install the MD block ass'y as shown in Fig. 4.
   Note: Place a cushion at the position Ⓐ.
6) Connect three flexible flat cables.

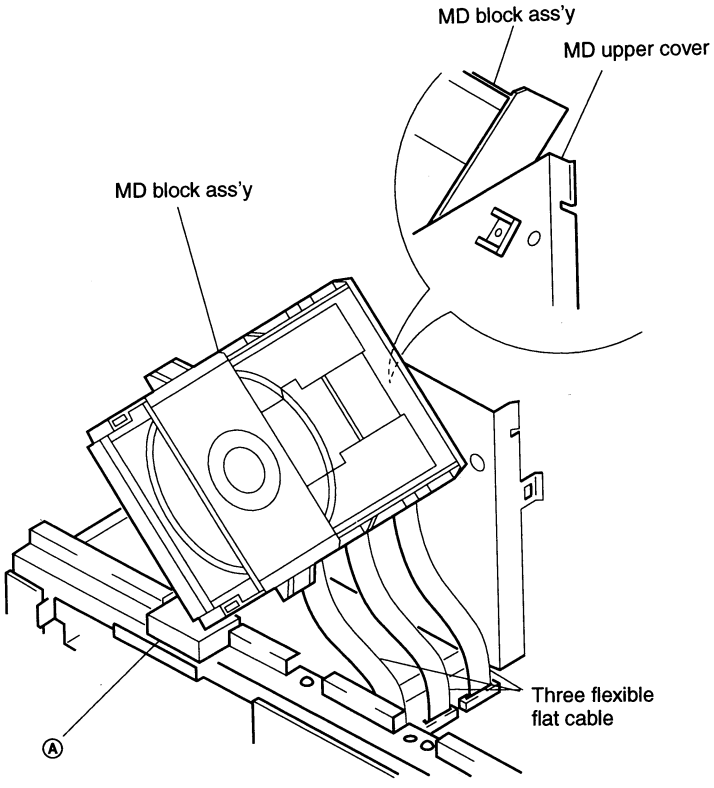


Fig. 4

3. HOW TO SERVICE AU-194 AND MB-75 BOARDS

1) Remove the top case from the set. (Refer to 2-1)
2) Remove the AU-194 board. (see 2-4)
   Note: Do not disconnect wiring.
3) Remove the MB-75 board. (See 2-5)
   Note: Do not disconnect wiring.
4) Erect MB-75 board on three circuit board holders. (see. Fig. 5)
5) Erect AU-194 board on two claws. (See Fig. 5)

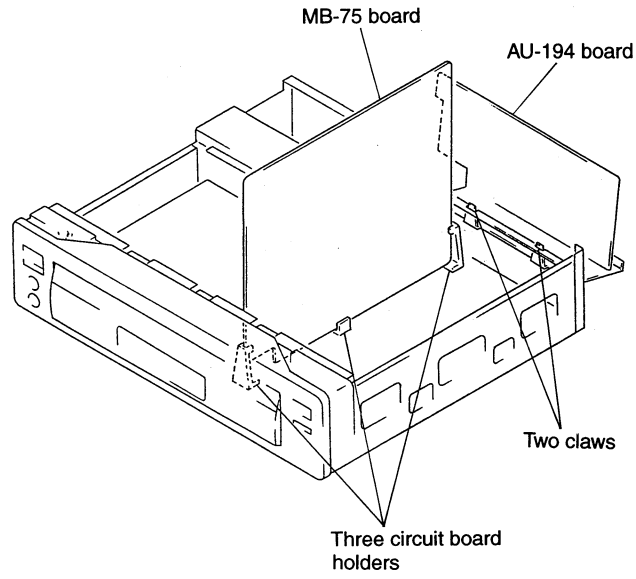


Fig. 5

4. REPLACING OPTICAL PICK-UP

4-1. Handling

1) A red laser diode for DVD requires more attention to static electricity than general infrared laser diodes for CD.
Because its durability to static electricity is far weaker than that of infrared laser diodes, always use an earth band when handling the optical pick-up block as service parts.

2) As for the flexible board KHS-180A (RP) packed as service parts, the short lands have been soldered to protect from static electricity. Accordingly, remove solders when replacing optical pick-up. (See Fig. 6)

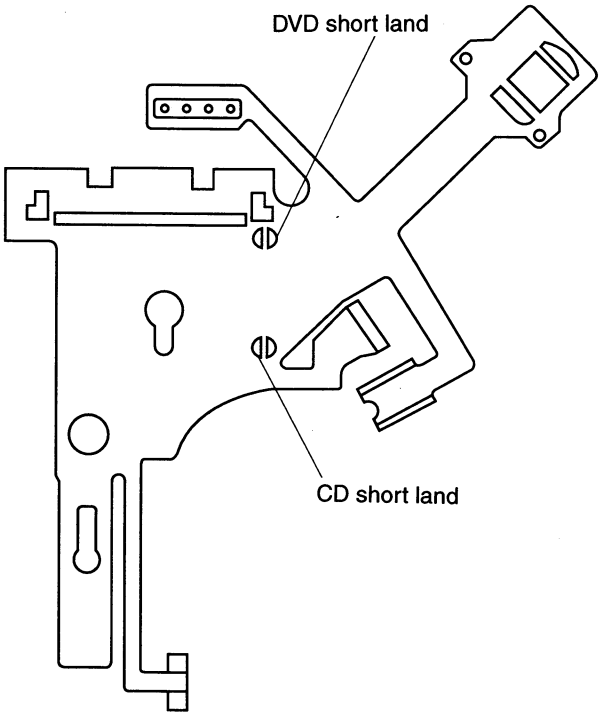
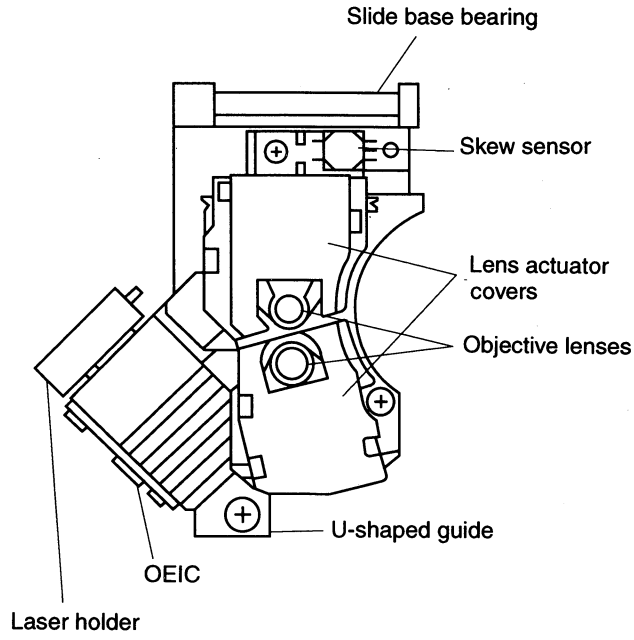


Fig. 6 Flexible board

3) In handling the KHS-180A (RP), do not touch inhibited parts shown in Fig. 7, but grip the slide base bearing and U-shaped guide.



Touch inhibited parts
- Objective lens
- Skew sensor
- Laser holder
- Laser coupler
- Flexible board
- OEIC
- Lens actuator covers

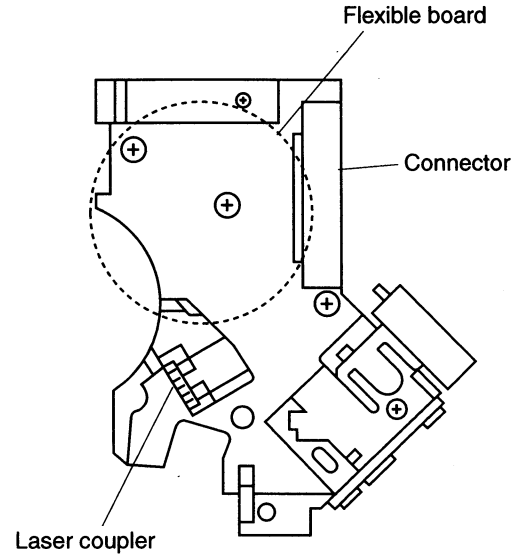


Fig. 7 KHS-180A (RP)

5. NOTE ON MOUNTEING SLED MOTOR

1) Push the sled motor assy ① toward direction Ⓐ. (See Fig.8)
2) Tighten two screws ② (M1.7 × 2.5).

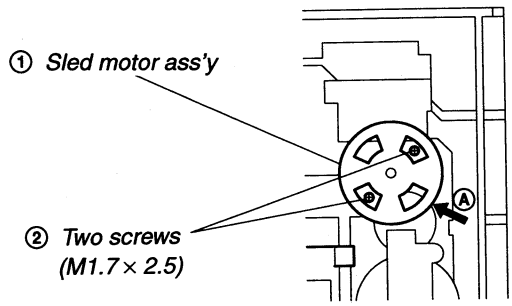


Fig. 8

3) Raising the MD block assy ③ 90 ° with the side down. confirm that the optical pick-up ④ falls by self weight. (See Fig. 9)
4) Further, with the front side of MD block assy ③ up, confirm that the optical pick-up falls by self weight.

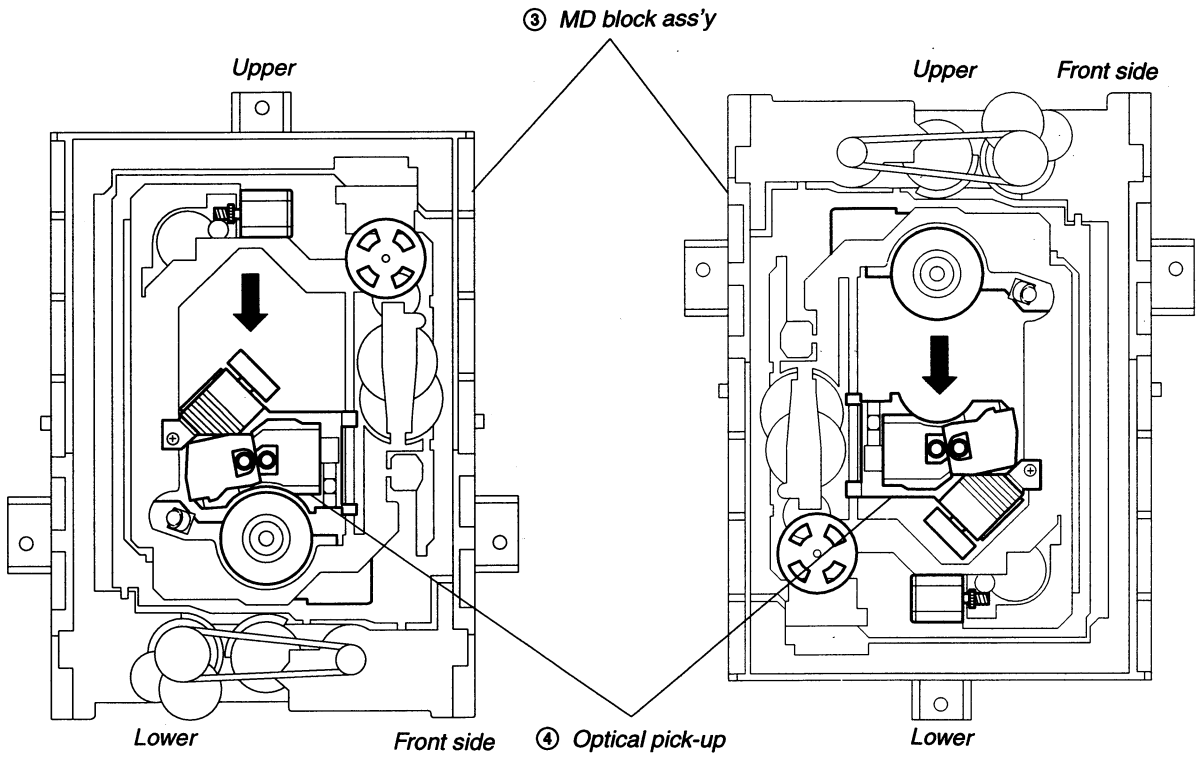


Fig. 9

SECTION 1
GENERAL

This section is extracted from instruction manual.

About This Manual

The instructions in this manual are for model DVP-S7000.

Conventions

- Instructions in this manual describe the controls on the player.
  You can also use the controls on the remote if they have the same or similar names as those on the player.
- The icons on the right are used in this manual:

Icon	Meaning
	Indicates that you can use only the remote to do the task.
	Indicates tips and hints for making the task easier.
DVD	Indicates the functions for DVD VIDEOs.
VIDEO CD	Indicates the functions for VIDEO CDs.
CD	Indicates the functions for CDs.

This Player Can Play the Following Discs

	DVD VIDEOs		VIDEO CDs		Audio CDs	
Disc logo	DVD VIDEO		COMPACT disc DIGITAL VIDEO		COMPACT disc DIGITAL AUDIO	
Contents	Audio + Video		Audio + Video		Audio	
Disc size	12 cm	8 cm	12 cm	8 cm	12 cm	8 cm (CD single)
Play time	About 4 h (for single-sided DVD)/ about 8 h (for double-sided DVD)	About 80 min. (for single-sided DVD)/ about 160 min. (for double-sided DVD)	74 min.	20 min.	74 min.	20 min.
Reference pages for basic operations	Pages 10 to 17		Pages 18 to 25		Pages 26 to 31	

"DVD-VIDEO" logo is a trademark.

This player conforms to the NTSC color system. You cannot play discs recorded in other color systems such as PAL and SECAM.

Region code of DVDs you can play

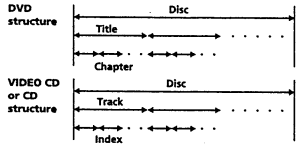
Region code indications such as (ALL) are labeled on some DVDs to indicate which type of player can play the discs.
Unless "1" is included in the indications or (1) is labeled on the DVDs, you cannot play the discs on this player. If you try to play these DVDs, the message "PLAYING THIS DISC PROHIBITED BY AREA LIMITS" will appear on the TV screen.
Depending on the DVD, no region code indication may be labeled even though playing the DVD is prohibited by the area limits.

Note on playback operations of DVDs and VIDEO CDs

Some playback operations of DVDs and VIDEO CDs may be intentionally fixed by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs or VIDEO CDs.

Terms for discs

- **Title**
  The longest sections of a picture or a music piece on a DVD; a movie, etc. for a picture piece on a video software or an album, etc. for a music piece on an audio software. Each title is assigned a title number enabling you to locate the title you want.
- **Chapter**
  Sections of a picture or a music piece that are smaller than titles. A title is composed of several chapters. Each chapter is assigned a chapter number enabling you to locate the chapter you want. Depending on the disc, no chapter may be recorded.
- **Track**
  Sections of a picture or a music piece on a VIDEO CD or a CD. Each track is assigned a track number enabling you to locate the track you want.



- **Index**
  A number that divides a track into some sections to easily locate the point you want on a VIDEO CD or a CD. Depending on the disc, no index may be recorded.
- **Scene**
  On a VIDEO CD with PBC functions, the menu screens, moving pictures and still pictures are divided into sections called "scenes." Each scene is assigned a scene number enabling you to locate the scene you want.

Note on PBC (Playback Control) (VIDEO CDs)

This player conforms to Ver. 1.1 and Ver. 2.0 of VIDEO CD standards. You can enjoy two kinds of playback according to the disc type.

Disc type	You can
VIDEO CDs without PBC functions (Ver. 1.1 discs)	Enjoy video playback (moving pictures) as well as music.
VIDEO CDs with PBC functions (Ver. 2.0 discs)	Play interactive software using menu screens displayed on the TV screen (PBC Playback), in addition to the video playback functions of Ver 1.1 discs. Moreover, you can play high-resolution still pictures, if they are included on the disc.

Discs that the player cannot play

The player cannot play discs other than the ones listed in the table on page 4 such as CD-ROMs including PHOTO CDs, data sections in CD-EXTRAs and DVD-ROMs.

Copy protection

- This product features the copy protection function developed by Macrovision. Copy protection signals are recorded on some discs. When you record and play the pictures of these discs on a video deck, the picture noise will appear.
- This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited pay-per-view uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

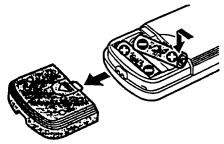
Unpacking

Check that you have the following items:

- Audio connecting cord (1)
- Video connecting cord (1)
- S video cable (1)
- S-link cable (1)
- Remote commander (remote) RMT-D100A (1)
- Sony SUM-3 (NS) batteries (2)

Inserting batteries into the remote

You can control the player using the supplied remote. Insert two R6 (size AA) batteries by matching the + and – on the batteries. When using the remote, point it at the remote sensor ■ on the player.



You can control Sony TVs with the ■ mark using the supplied remote
See page 42.

When to replace batteries

With normal use, the batteries should last for about six months. When the remote no longer operates the player, replace all the batteries with new ones.

Notes

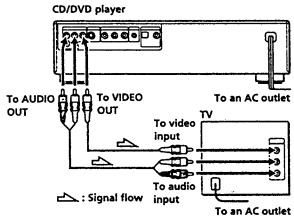
- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct sunlight or lighting apparatuses. Doing so may cause a malfunction.
- If you will not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Hooking Up the System

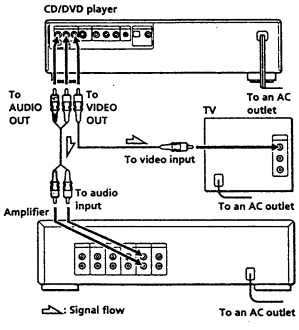
Overview

This section describes how to hook up the CD/DVD player to a TV (with audio/video input jacks) and/or an amplifier. You cannot connect this player to a TV without a video input connector. **Be sure to turn off the power of each component before making the connections.**

■To listen to the sound through TV speakers



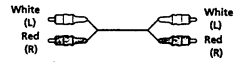
■To listen to the sound through speakers connected to an amplifier



What cords will I need?

Video connecting cord (supplied) (1)

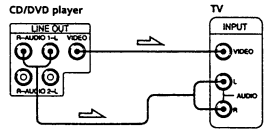
Audio connecting cord (supplied) (1)



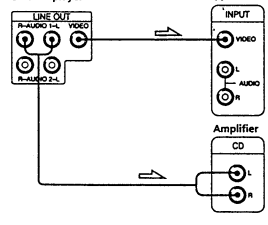
Hookups

When connecting the cord, be sure to match the color-coded cord to the appropriate jacks on the components: Yellow (video) to Yellow, Red (right) to Red and White (left) to White. Be sure to make connections firmly to avoid hum and noise.

■To listen to the sound through TV speakers



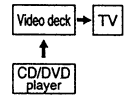
■To listen to the sound through speakers connected to an amplifier



Make the same connections when your amplifier conforms to "Pro Logic."

Notes

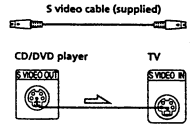
- Do not connect this player to a video deck. If you view the pictures on your TV after making connections shown on the right, a picture noise may appear.



- Depending on the TV or amplifier, the sound distortion may occur because the audio output level is high. In this case, set "AUDIO ATT" in "CUSTOM SETUP" to "ON" in the menu. For details, see page 46.

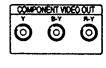
If your TV or VCR has an S video input connector

Connect the component via the S VIDEO OUT connector using the S video cable (supplied) instead of the video connecting cord. You will get a better picture.



If you connect the player to a monitor or projector with component video input connectors that conform to output signals from the COMPONENT VIDEO OUT (Y, B-Y, R-Y) connectors on the player

Connect the component via the COMPONENT VIDEO OUT connectors using three video connecting cords (not supplied) of the same kind. You will get a better picture.



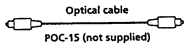
Notes

- Refer to the instructions supplied with the component to be connected.
- You cannot connect the player to the Y/PB/PR input connectors on a Hi-Vision TV.

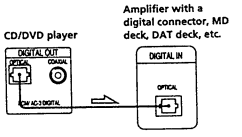
(Continued)

If you have a digital component such as an amplifier with a digital connector, DAT or MD
Connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial cable (not supplied).
When you play a DVD, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "PCM" in the menu. (page 47)
When you play a VIDEO CD, set "VIDEO CD DIGITAL OUT" in "INITIAL SETUP" to "ON" in the menu. (page 47)

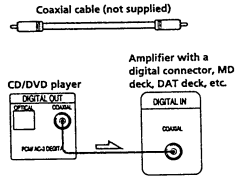
When using an optical cable



Take off the cap and plug in the optical cable.



When using a coaxial cable

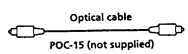


Notes
- Refer to the instructions supplied with the component to be connected.
- You cannot make digital audio recordings of discs recorded in Dolby Digital (AC-3) format directly using an amplifier with a digital connector, MD deck or DAT deck.

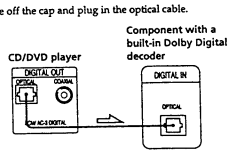
When you make the connections above, do not set "DVD DIGITAL OUT" in "INITIAL SETUP" to "AC-3 Digital." If you do, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.

If you have a digital component with a built-in Dolby Digital decoder
Connect the component via the DIGITAL OUT OPTICAL or COAXIAL connector using an optical or coaxial cable (not supplied). When the component with a built-in Dolby Digital decoder is connected, the player plays DVDs with sound recorded in Dolby Digital (AC-3) format while producing the effect of being in a movie theater or a concert hall.
In the menu, set **"DVD DIGITAL OUT" in "INITIAL SETUP" to "AC-3 Digital." (page 47)**

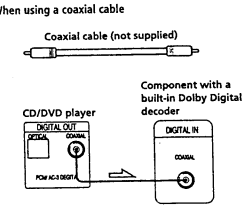
When using an optical cable



Take off the cap and plug in the optical cable.



When using a coaxial cable



Note
Refer to the instructions supplied with the component to be connected.

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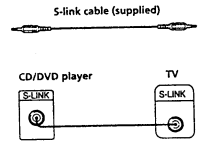
If your TV has an S-link connector
You can control the CD/DVD player from the TV. Connect the TV via the S-LINK connector using the S-link cable (supplied). Refer to the instructions supplied with the TV to be connected.



Necessary Setup Before Using the Player

Some setups are necessary for the player depending on the TV or other components to be connected.
For details on using the menu, see page 43.
For details on each menu item, see pages 44 to 47.

■**To connect the player to a wide-screen TV**
In the menu, set "TV TYPE" in "INITIAL SETUP" to "16:9."

■**To connect the player to a normal TV**
In the menu, set "TV TYPE" in "INITIAL SETUP" to "4:3."

■**To listen to the stereo sound through speakers connected to a normal amplifier or through TV speakers**
In the menu, set "DOWNMIX" in "INITIAL SETUP" to "NORMAL."

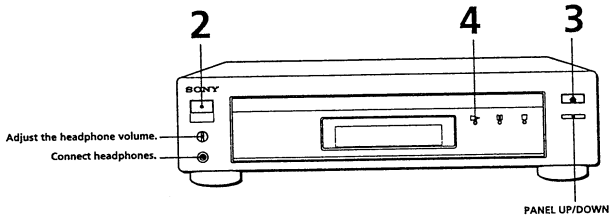
■**To listen to the sound through speakers connected to an amplifier that conforms to Dolby Pro Logic surround**
In the menu, set "DOWNMIX" in "INITIAL SETUP" to "SURROUND."

■**To listen to the sound through speakers connected to an amplifier with a digital connector or to output the sound to a digital component such as a DAT or MD deck**
When you play a DVD, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "PCM" in the menu.
When you play a VIDEO CD, set "VIDEO CD DIGITAL OUT" in "INITIAL SETUP" to "ON" in the menu.

■**To connect the player to a digital component with a built-in Dolby Digital decoder**
In the menu, set "DVD DIGITAL OUT" in "INITIAL SETUP" to "AC-3 Digital."

"INITIAL SETUP" also includes other items such as "VIDEO ASPECT RATIO" and "OSD LANGUAGE."
For details, see page 46.

Playing a DVD



- **The operating procedure of VIDEO CDs or CDs is different from that of DVDs.**
For details on playing a VIDEO CD, see pages 18 to 25.
For details on playing a CD, see pages 26 to 31.

You can turn on the player using the remote
Press POWER when the indicator above the POWER button on the front panel is lit in red.

After following Step 4
A DVD menu or title menu may appear on the TV screen (see page 13 or 14).

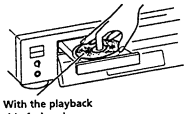
Refer to the instructions supplied with your disc.

1 **Make settings on your TV.**
Turn on the TV and select the video input so that you can view the pictures from this player.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this player.

2 Press POWER to turn on the player.
The indicator (red) above the POWER button changes to green and the front panel display lights up.

3 Press ⏏, and place the disc on the disc tray.



4 Press ▷.
The disc tray and front panel close, and the player starts playback (Continuous Play). Adjust the volume on the TV or the amplifier.

To open or close the front panel
Press PANEL UP/DOWN on the player.

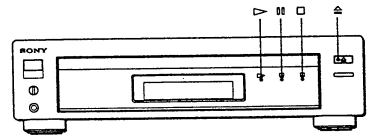
When "RESUME" appears on the front panel display
You can resume playback from the point where you stopped the DVD. For details on playing from the beginning of the disc, see page 36.

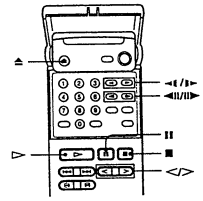
Note
You may not be able to do Resume Play depending on the DVD.

If you want to change the playback speed during Slow-motion play
Two speeds are available: SLOW 1 (about 1/15th the normal speed) and SLOW 2 (about 1/30th). Each time you press ◁II or II▷, the indication changes as follows:
SLOW 1 ⟷ SLOW 2

Note
Depending on the DVD, you may not do some of the operations described on the right.

To stop playback
Press □.



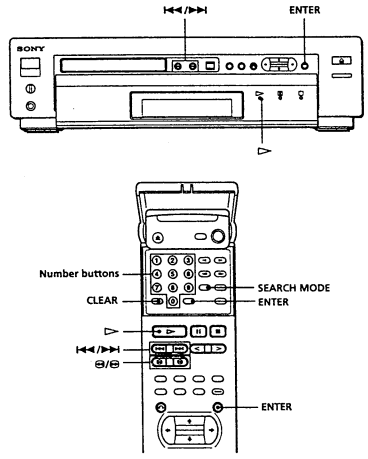


During playback

To	Press
Pause	II
Resume play after pause	II or ▷
Play frame by frame	◁II or II▷
Play in slow motion	◁I or I▷
Play at twice the normal speed	< or >
Stop play and remove the disc	⏏

To return to Continuous Play mode
Press ▷.

Locating a title, chapter or point you want



To	Press
Go to the next chapter in Continuous Play mode	►►I
Go back to the preceding chapter in Continuous Play mode	I◄◄
Select the chapter	Number buttons to select the chapter number, then ENTER or ▷. (A chapter in the title 1 is selected before you start playing.)
Select the title	1 SEARCH MODE repeatedly until "TITLE SEARCH" appears on the TV screen. 2 Number buttons to select the title number, then ENTER or ▷.
Locate a point using the time code	1 SEARCH MODE repeatedly until "TIME SEARCH" appears on the TV screen. 2 Number buttons to enter a time code, then ENTER or ▷.
Locate a point while monitoring the picture (Search)	⊖/⊕. You will not hear the sound during this operation. When you find the point you want, press ▷ to return to the normal speed.

Notes
- Depending on the DVD, you may not select the title.
- Depending on the DVD, a "title menu" may be simply called a "menu" or "title " in the instructions supplied with the disc. "Press ENTER." in Step 3 may also be expressed as "Press SELECT."

What are title and chapter?
See page 5.

If you want to change the search speed
Two speeds are available: FF1 or FR1 (about 10 times the normal speed) and FF2 or FR2 (about 30 times). Each time you press ⊖ or ⊕, the indication changes as follows:
FF1 (FR1) ⇄ FF2 (FR2)

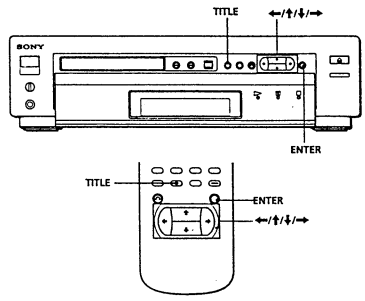
If you have made a mistake
Press CLEAR, then the correct number button.

Each time you press SEARCH MODE
"CHAPTER SEARCH," "TITLE SEARCH" and "TIME SEARCH" appear on the TV screen.

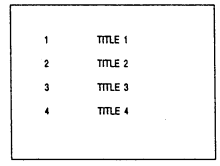
Note
Depending on the DVD, you may not do some of the operations described on the right.

Using the Title Menu

A DVD is divided into long sections of a picture or a music piece called "titles." When you play the DVD which contains several titles, you can select the title you want using the title menu.



1 Press TITLE.
The title menu appears on the TV screen. The contents of the menu varies from disc to disc.



2 Press ←/↑/↓/→ to select the title you want to play.
Depending on the disc, you can use the number buttons to select the title.

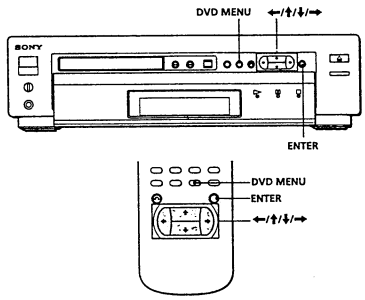
3 Press ENTER.
The player starts playing the selected title.

If you want to select the language for the DVD menu
Change the setting using "INITIAL SETUP" in the normal menu (see page 47).

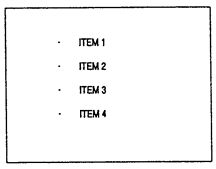
Note
Depending on the DVD, a "DVD menu" may be simply called a "menu" in the instructions supplied with the disc. "Press ENTER." in Step 4 may also be expressed as "Press SELECT."

Using the DVD menu

Some DVDs allows you to select the disc contents using the menu. When you play these DVDs, you can select the language for the sub-titles, the language for the sound, etc., using the DVD menu.



1 Press DVD MENU.
The DVD menu appears on the TV screen. The contents of the menu vary from disc to disc.



2 Press ←/↑/↓/→ to select the item you want to change.
Depending on the disc, you can use the number buttons to select the item.

3 To change other items, repeat Step 2.

4 Press ENTER.

What is play mode?
See page 44.

What is angle?
See page 39.

What are title and chapter?
See page 5.

What is language for the sound?
See page 37.

What is language for the sub-titles?
See page 38.

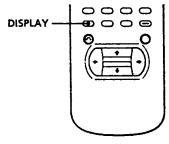
Note
Depending on the DVD, some information may not appear on the TV screen.

* Each time you press TIME, the information changes as shown below.

Playing time of the current chapter
↓
Remaining time of the current chapter
↓
Playing time of the current title
↓
Remaining time of the current title

Using the On-Screen Display

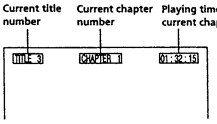
You can check the operating status of the player and the information about the disc using the on-screen display on the TV screen.



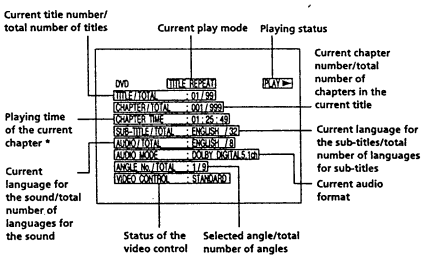
Press DISPLAY.
Each time you press the button, the on-screen display changes as follows:

On-screen display 1 ⇄
↓
On-screen display 2
↓
On-screen display 3
↓
On-screen display off

■ **Display information of the on-screen display 1 mode**
While playing a disc, the current title number, current chapter number and playing time are always displayed.

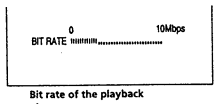


■ **Display information of the on-screen display 2 mode**



What is bit rate?
Bit rate refers to the amount of video data per second in a disc. The higher the bit rate is, the larger the amount of data. However, this does not always mean that you can get higher quality pictures.

■ **Display information of the on-screen display 3 mode**
While playing a disc, the approximate bit rate of the playback picture is always displayed.



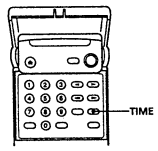
Bit rate of the playback picture

■ **Display information of the on-screen display off mode**
No information is displayed. (Messages, etc., will be displayed.)

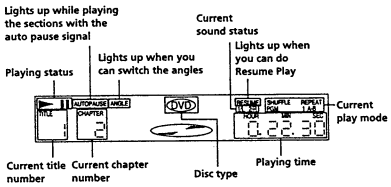
Note
Depending on the DVD, the chapter number or time may not appear.

Using the Front Panel Display

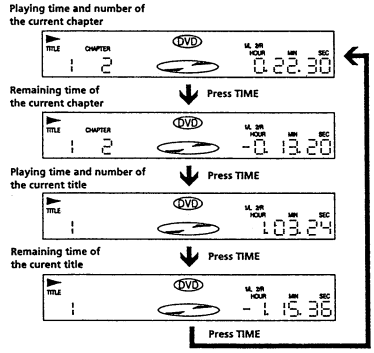
You can check the information about the disc, such as the total number of the titles, remaining numbers of the titles and chapters, or remaining time, using the front panel display.



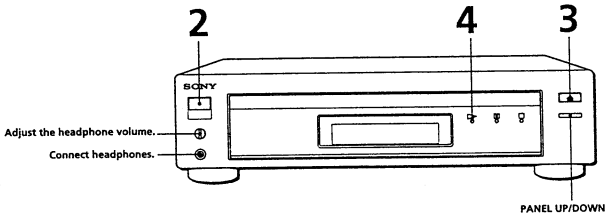
■ **Display information while playing the disc**



■ **Checking the remaining time**
Each time you press TIME while playing the disc, the display changes as shown in the chart below. The time information in the on-screen display 1 or 2 mode also changes each time you press TIME.



Playing a VIDEO CD



- **The operating procedure of DVDs or CDs is different from that of VIDEO CDs.**
  For details on playing a DVD, see pages 10 to 17.
  For details on playing a CD, see pages 26 to 31.

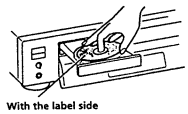
You can turn on the player using the remote
Press POWER when the indicator above the POWER button on the front panel is lit in red.

1 **Make settings on your TV.**
Turn on the TV and select the video input so that you can view the pictures from this player.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this player.

2 Press POWER to turn on the player.
The indicator (red) above the POWER button changes to green and the front panel display lights up.

3 Press ⏏, and place the disc on the disc tray.



With the label side facing up

After following Step 4
The menu screen may appear on the TV screen depending on the VIDEO CD. You can play the disc interactively, following the instructions on the menu screen. (PBC Playback, see page 21.)

Refer to the instructions supplied with your disc.

4 Press ▷.
The disc tray and front panel close and the player plays all the tracks once (Continuous Play). Adjust the volume on the TV or the amplifier.

To open or close the front panel

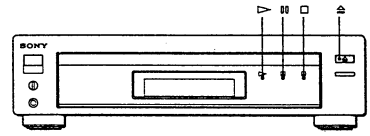
Press PANEL UP/DOWN on the player.

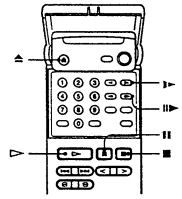
When "RESUME" appears on the front panel display
You can resume playback from the point where you stopped the VIDEO CD. For details on playing from the beginning of the disc, see page 36.

If you want to change the playback speed during Slow-motion play
Two speeds are available: SLOW 1 and SLOW 2. Each time you press I►, the indication changes as follows:
SLOW 1 ⟷ SLOW 2

To stop playback

Press □.





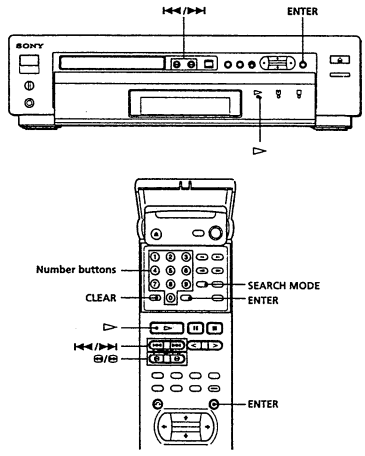
During playback

To	Press
Pause	II
Resume play after pause	II or ▷
Play frame by frame	II►
Play in slow motion	I►
Stop play and remove the disc	⏏

To return to Continuous Play mode

Press ▷.

Locating a track or point you want



To	Press
Go to the next track in Continuous Play mode	⏭
Go back to the preceding track in Continuous Play mode	⏮
Select the track	Number buttons to select the track number, then ENTER or ▷.
Select the index in Continuous Play mode	1 SEARCH MODE repeatedly until "VIDEO INDEX SEARCH" appears on the TV screen. 2 Number buttons to select the index number, then ENTER or ▷.
Select the scene before you start playing a VIDEO CD with PBC functions and during PBC playback (Scene Search)	1 SEARCH MODE repeatedly until "SCENE SEARCH" appears on the TV screen. 2 Number buttons to select the scene number, then ENTER or ▷. (To check the current scene number, press DISPLAY. The scene number appears at the left top of the TV screen.)
Locate a point while monitoring the picture (Search)	⊖/⊕. You will not hear the sound during this operation. When you find the point you want, press ▷ to return to the normal speed.

What is a track?
See page 5.

What is an index?
See page 5.

What is a scene?
See page 5.

If you want to change the search speed
Two speeds are available: FF1 or FR1 and FF2 or FR2. Each time you press ⊖ or ⊕, the indication changes as follows:
FF1 (FR1) ⟷ FF2 (FR2)

If you have made a mistake
Press CLEAR, then the correct number button.

Each time you press SEARCH MODE
"TRACK SEARCH," "SCENE SEARCH" and "VIDEO INDEX SEARCH" appear on the TV screen.

Note
Some discs do not allow you to start playing from a particular scene. In this case, if you do Scene Search before you start playing, the player starts playing from scene 1. If you do Scene Search while playing a disc, the player starts playing from the current scene.

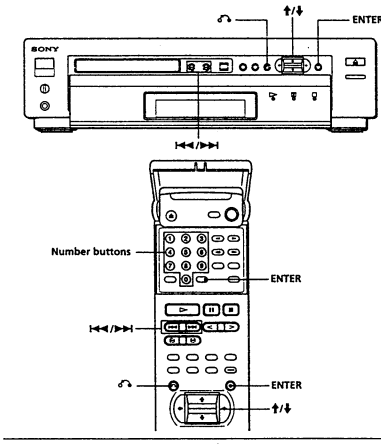
When playing VIDEO CDs with PBC functions
PBC playback starts automatically.

To cancel PBC playback of a VIDEO CD with PBC functions and play the disc in Continuous Play mode
There are two ways.
•Before you start playing, select the track you want using ⏮ or ⏭, then press ENTER or ▷.
•Before you start playing, select the track number using the number buttons on the remote, then press ENTER or ▷.
"PLAY WITHOUT PBC" appears on the TV screen and the player starts Continuous Play. You cannot play still pictures such as a menu screen.

When "THIS KEY NOT USABLE NOW. ON MENU DISPLAY, USE NUMBER KEYS TO SELECT." appears on the TV screen
You have pressed an invalid button. You can use the number keys only when the menu screen appears on the TV screen.

Playing VIDEO CDs with PBC Functions (PBC Playback)

When playing VIDEO CDs with PBC functions (Ver. 2.0 discs), you can enjoy simple interactive operations, operations with search functions, etc.
PBC Playback allows you to play VIDEO CDs interactively, following the menu screen on the TV screen.
On this player, you can use the number buttons, ENTER, ⏮, ⏭, ↑/↓ and ↶ during PBC Playback.

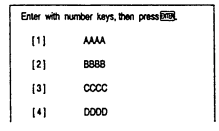


1 Start playing a VIDEO CD with PBC functions, following Steps 1 to 4 in "Playing a VIDEO CD" on page 18.

2 Select the item number you want.

On the player
Press ↑/↓ to select the item number.

On the remote
Press the number button of the item you want.



(Continued)

Note
Depending on the VIDEO CD, "Press ENTER." in Step 3 may be expressed as "Press SELECT." in the instructions supplied with the disc.

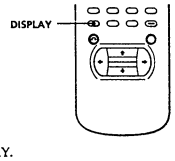
3 Press ENTER.

4 Follow the instructions on the menu screen for interactive operations.
Refer to the instructions supplied with the disc, as the operating procedure may differ according to the VIDEO CD.

When	Do the following
Selecting the item	On the player, press ↑/↓ to select the item number, then press ENTER.
	On the remote, press the number button of the item you want, then press ENTER.
Going back to the menu screen	Press ↶, ⏮, or ⏭.

Using the On-Screen Display

You can check the operating status of the player and the information about the disc using the on-screen display on the TV screen.



Press DISPLAY.
Each time you press the button, the on-screen display changes as follows:

On-screen display 1
↓
On-screen display 2
↓
On-screen display off
↑ (back to On-screen display 1)

What is a track?
See page 5.

What is a scene?
See page 5.

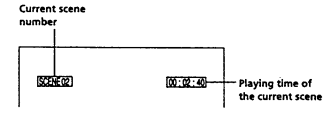
• Each time you press TIME, the information changes as shown below.

Playing time of the current track
↓
Remaining time of the current track
↓
Playing time of the disc
↓
Remaining time of the disc
↑ (back to Playing time of the current track)

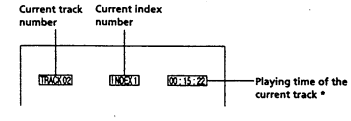
While you are doing Shuffle Play or Program Play, the playing time of the disc and the remainig time of the disc are not displayed.

■ **Display information of the on-screen display 1 mode**

• During PBC playback

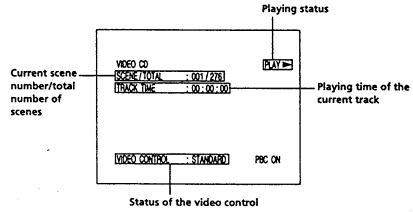


• In Continuous Play mode



■ **Display information of the on-screen display 2 mode**

• During PBC playback



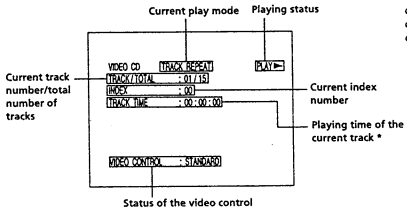
What is play mode?
See page 44.

- Each time you press TIME, the information changes as shown below.

Playing time of the current track
↓
Remaining time of the current track
↓
Playing time of the disk
↓
Remaining time of the disk

While you are doing Shuffle Play or Program Play, the playing time of the disc and the remainig time of the disc are not displayed.

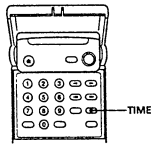
- In Continuous Play mode



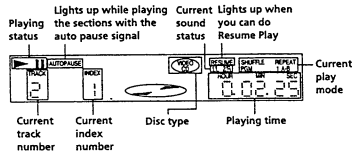
■ Display information of the on-screen display off mode
No information is displayed. (Messages, etc., will be displayed.)

Using the Front Panel Display

You can check information about the disc, such as the total number of the tracks, remaining number of tracks or remaining time, using the front panel display.

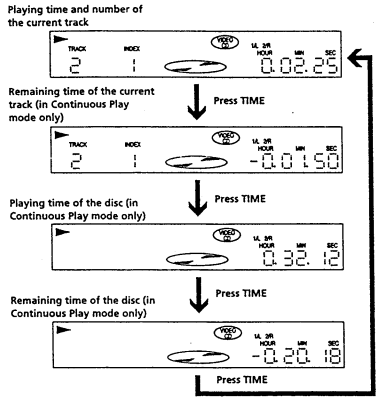


■ Display information while playing a disc

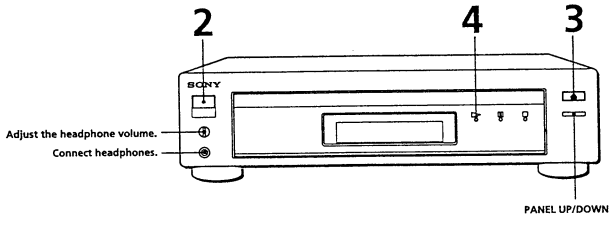


Note
While you are doing Shuffle Play or Program Play, the playing time of the disc and the remainig time of the disc are not displayed.

■ Checking the remaining time
Each time you press TIME while playing a disc, the display changes as shown in the chart below. The time information in the on-screen display 1 or 2 mode also changes each time you press TIME.



Playing a CD



- The operating procedure of DVDs or VIDEO CDs is different from that of CDs.
For details on playing a DVD, see pages 10 to 17.
For details on playing a VIDEO CD, see pages 18 to 25.

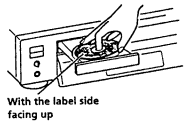
You can turn on the player using the remote
Press POWER when the indicator above the POWER button on the front panel is lit in red.

1 **Make settings on your TV.**
Turn on the TV and select the video input so that you can view the pictures from this player.

When using an amplifier
Turn on the amplifier and select the appropriate position so that you can listen to the sound from this player.

2 Press POWER to turn on the player.
The indicator (red) above the POWER button changes to green and the front panel display lights up.

3 Press ⏏, and place the disc on the disc tray.



4 Press ▷.
The disc tray and front panel close and the player plays all the tracks once (Continuous Play). Adjust the volume on the amplifier.

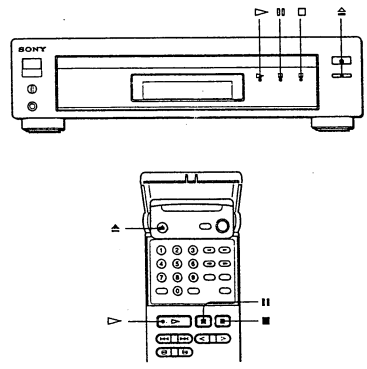
To open or close the front panel

Press PANEL UP/DOWN on the player.

When "RESUME" appears in the front panel display
You can resume playback from the point where you stopped the CD. For details on playing from the beginning of the disc, see page 36.

To stop playback

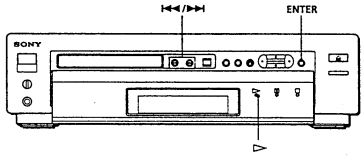
Press □.

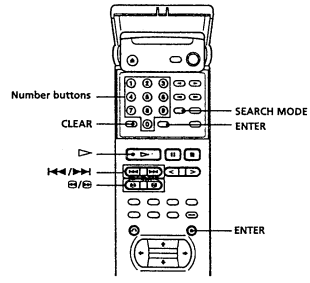


During playback

To	Press
Pause	II
Resume play after pause	II or ▷
Stop play and remove the disc	⏏

Locating a track or point you want





To	Press
Go to the next track in Continuous Play mode	⏭
Go back to the preceding track in Continuous Play mode	⏮
Select the track	Number buttons to select the track number, then ENTER or ▷.
Select the index in Continuous Play mode	1 SEARCH MODE repeatedly until "INDEX SEARCH" appears on the TV screen. 2 Number buttons to select the index number, then ENTER or ▷.
Locate a point while monitoring the sound (Search)	⊖/⊕. When you find the point you want, press ▷ to return to the normal speed.

* Each time you press TIME, the information changes as shown below.

Playing time of the current track
↓
Remaining time of the current track
↓
Playing time of the disc
↓
Remaining time of the disc

While you are doing Shuffle Play or Program Play, the playing time of the disc and the remainig time of the disc are not displayed.

What is a track?
See page 5.

What is an index?
See page 5.

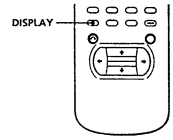
If you want to change the search speed
Each time you press ⊖ or ⊕, the indication changes as follows:
FF1 (FR1) ⟷ FF2 (FR2)

If you have made a mistake
Press CLEAR, then the correct number button.

Each time you press SEARCH MODE
"TRACK SEARCH" and "INDEX SEARCH" appear on the TV screen.

Using the On-Screen Display

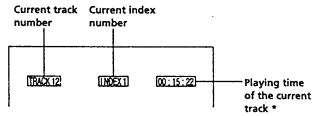
You can check the operating status of the player and the information about the disc using the on-screen display on the TV screen.



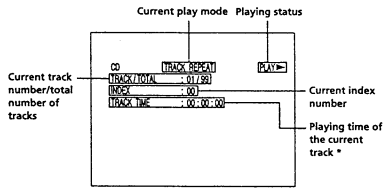
Press DISPLAY.
Each time you press the button, the on-screen display changes as follows:

On-screen display 1
↓
On-screen display 2
↓
On-screen display off

■ **Display information of the on-screen display 1 mode**
While playing a disc, the current track number, playing time and index number are always displayed.



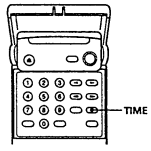
■ **Display information of the on-screen display 2 mode**



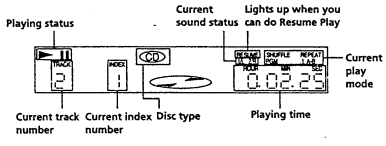
■ **Display information of the on-screen display off mode**
No information is displayed. (Messages, etc., will be displayed.)

Using the Front Panel Display

You can check information about the disc, such as the total number of the tracks, remaining number of tracks or remaining time, using the front panel display.

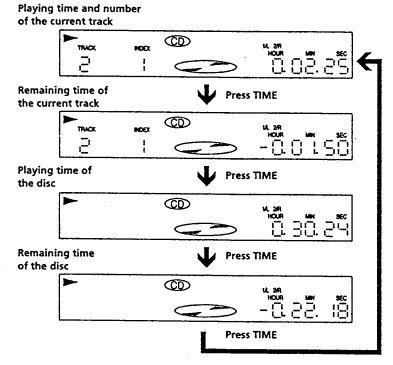


■ **Display information while playing a disc**
The operating status is displayed for a few seconds only when you change the operating status.



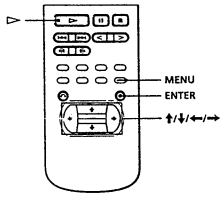
Note
While you are doing Shuffle Play or Program Play, the playing time of the disc and the remainig time of the disc are not displayed.

■ **Checking the remaining time**
Each time you press TIME while playing a disc, the display changes as shown in the chart below. The time information in the on-screen display 1 or 2 mode also changes each time you press TIME.



Playing Repeatedly (Repeat Play)

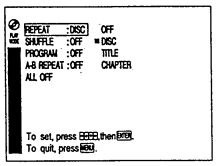
You can play the all the titles/all the tracks on a disc, a single title/chapter/track or a specific portion repeatedly. To set the Repeat Play, use the menu. For details on using the menu, see page 43.



Repeating all the titles or all the tracks on a disc DVD VIDEO CD CD

In Shuffle or Program Play mode, the player repeats the titles or tracks in the shuffled or programmed order.
You cannot do Repeat Play during PBC playback of VIDEO CDs (page 21). You may not be able to do Repeat Play depending on the DVD.

While playing a disc, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "DISC."



"REPEAT" appears on the front panel display. The player repeats the titles/chapters/tracks as follows:

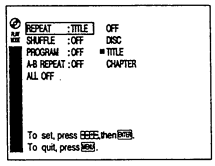
When the disc is played in	The player repeats
Continuous Play (page 10, 18 or 26)	All the tracks (For the DVD, all the chapters in the current title)
Shuffle Play (page 34)	All the titles or tracks in random order
Program Play (page 34)	The same program

To cancel repeating all the titles or all the tracks on a disc
Press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "OFF" (page 44).

Repeating the current title or chapter DVD

You can repeat only the current title or chapter in Continuous Play mode. You may not be able to do Repeat Play depending on the DVD.

■ Repeating the current title
While the title you want is being played, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "TITLE."
"REPEAT 1" appears on the front panel display and the player repeats the current title.



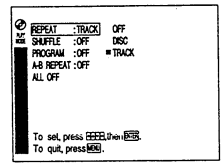
■ Repeating the current chapter
While the chapter you want is being played, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "CHAPTER."
"REPEAT 1" appears on the front panel display and the player repeats the current chapter.

To cancel repeating the current title or chapter
Press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "OFF" (page 44).

Repeating the current track VIDEO CD CD

You can repeat only the current track in Continuous Play mode.

While the track you want is being played, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "TRACK."



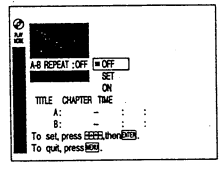
"REPEAT 1" appears on the front panel display and the player repeats the current title.

To cancel repeating the current track
Press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "OFF" (page 44).

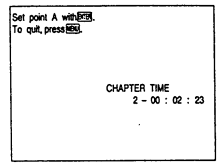
Repeating a specific portion (A↔B Repeat) DVD VIDEO CD CD

You can play a specific portion of a title/chapter/track repeatedly. This is useful when you want to memorize lyrics.
During PBC Playback of VIDEO CDs (page 21), this function is available only while playing moving pictures.
You may not be able to do Repeat Play depending on the DVD.

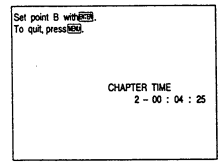
1 While playing a disc, press MENU to display the menu on the TV screen. Then set "REPEAT" in "PLAY MODE" to "A-B REPEAT."
"A-B REPEAT" is highlighted.



2 Select "SET" using ↑/↓ and press →.
The on-screen display for setting the point A appears indicating the current chapter or track number and playing time.



3 When you find the starting point (point A) of the portion to be played repeatedly, press ENTER.
The chapter or track number and playing time for the point A appear, and the display for setting the point B appears.
"REPEAT A –" also appears on the front panel display.



4 When you reach the ending point (point B), press ENTER.
"REPEAT A–B" appears on the front panel display. The player starts repeating this specific portion.

To cancel A↔B Repeat
Press MENU to display the menu on the TV screen. Then set "A-B REPEAT" in "PLAY MODE" to "OFF" (page 44).

To cancel setting halfway
Press MENU.

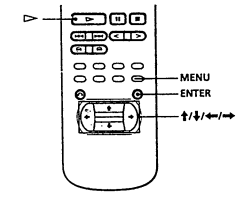
The setting for A↔B Repeat remains after it is canceled
When you select "ON" using ↑/↓ in Step 2 and press ENTER, you can play the same portion again.

Notes
- When you remove the disc, the setting for A↔B Repeat is canceled.
- When you turn the power off, the setting for A↔B Repeat is canceled.
- When you set the A↔B Repeat, the settings for Shuffle Play and Program Play are canceled.

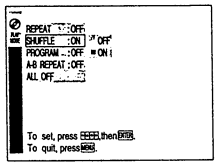
Playing in Random Order (Shuffle Play)

DVD VIDEO CD CD

You can have the player "shuffle" titles, chapters or tracks and play them in a random order. To set the Shuffle Play, use the menu. For details on using the menu, see page 43.



1 Press MENU to display the menu on the TV screen. Then set "SHUFFLE" in "PLAY MODE" to "ON."



2 Press ▷.
(During playback, the player starts Shuffle Play when you follow the step 1.)

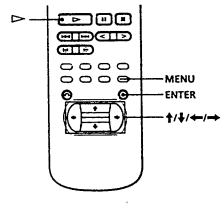
To cancel Shuffle Play
Press MENU to display the menu on the TV screen. Then set "SHUFFLE" in "PLAY MODE" to "OFF."

Notes
- When you disconnect the AC power cord from the AC outlet, Shuffle Play is canceled.
- You may not be able to do Shuffle Play depending on the DVD.

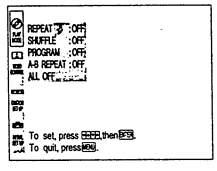
Creating Your Own Program (Program Play)

DVD VIDEO CD CD

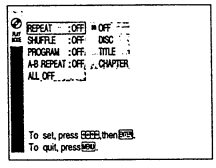
You can arrange the order of the titles, chapters or tracks on the disc and create your own program. The program can contain up to 99 titles, chapters and tracks.



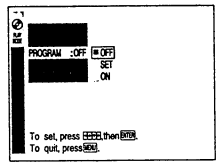
1 Press MENU to display the menu on the TV screen.



2 Select "PLAY MODE" using ↑/↓, then press →.
"PLAY MODE" is highlighted.

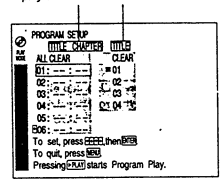


3 Select "PROGRAM" using ↑/↓, then press →.
"PROGRAM" is highlighted.

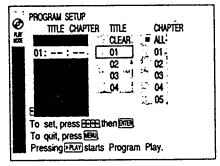


4 Select "SET" using ↑/↓, then press →.
The programming display appears.

"TRACK" is displayed when you play a VIDEO CD or a CD.

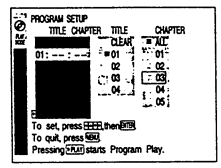


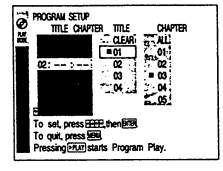
5 Press →.
"01" is highlighted.



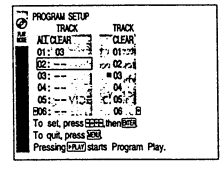
6 Select the title, chapter or track you want to program using ↑/↓, then press ENTER.
(You can also use the number buttons and ENTER button to select.)

■ When playing a DVD
When both titles and chapters are recorded on the disc, select the title, then the chapter.

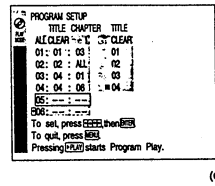




■ When playing a VIDEO CD or CD
Select the track you want to program.



7 To program other titles, chapters or tracks, repeat Step 6.
The programmed titles, chapters or tracks are displayed from 02 in order.



(Continued)

8 Press ▷ to start Program Play.

To cancel Program Play
Press MENU to display the menu on the TV screen. Then set "PROGRAM" in "PLAY MODE" to "OFF."

To cancel programming
Press MENU.

To change programming
1 In Step 5, select the program number of the title, chapter or track you want to change using ↑/↓.
2 Follow Step 6 for new programming.

To cancel the programmed order
To cancel all the titles, chapters or tracks in the programmed order, select "ALL CLEAR" in Step 5.
To cancel a title, chapter or track programmed, select the title, chapter or track you want to clear in Step 5, then select "CLEAR" in Step 6.

The program remains even after the Program Play ends
When you press ▷, you can play the same program again.

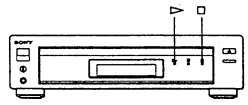
You can do Repeat Play or Shuffle Play of the programmed titles, chapters or tracks
After programming, set "REPEAT" to "DISC" or "SHUFFLE" to "ON" in the menu.

Notes
- The number of titles, chapters or tracks displayed are that of the titles, chapters or tracks recorded on a disc.
- The program is canceled when:
  – you open or close the disc tray
  – you turn the power off
- You may not be able to do Program Play depending on the DVD.

Resuming Playback from the Point Where You Stopped a Disc (Resume Play)

DVD VIDEO CD CD

The player stores the point where you stopped a disc if "RESUME" appears on the front panel display. In this case, you can resume playback from that point.
As long as you do not remove the disc, Resume Play is available even if you turn the power off.



1 While playing a disc, press □ to stop playback.
"RESUME" appears in the front panel display and "DISC RESTARTS FROM POINT YOU STOPPED." appears on the TV screen.
If "RESUME" does not appear, Resume Play is not available.

2 Press ▷.
The player starts playback from the point you stopped the disc in Step 1.

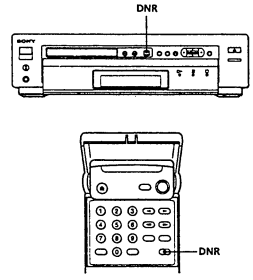
To play from the beginning of the disc
When "RESUME" appears on the front panel display before you start playing, press □ to turn off "RESUME," then press ▷.

Notes
- You cannot do Resume Play depending on the DVD.
- Resume Play is not available in Shuffle or Program Play mode.
- Depending on where you stopped the disc, the player may resume playback from a different point.
- The point where you stopped playing is cleared when:
  – you open or close the disc tray
  – you disconnect the AC power cord
  – you change the play mode
  – you start playback after selecting a title, chapter or track
  – you change the setting of "VIDEO ASPECT RATIO," "DVD MENU LANGUAGE" or "PARENTAL CONTROL" in "INITIAL SETUP" in the menu

Reducing the Picture Noise (DNR: Digital Video Noise Reduction)

DVD VIDEO CD CD

You can make the picture clearer by reducing the picture noise.



Press DNR.
Each time you press the button, the value for DNR changes as follows:
OFF → 1 → 2 → 3

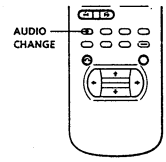
As the value increases, the picture noise will be reduced. However, afterimages may increase.

Notes
- Depending on the disc, the effect may be difficult to tell.
- The setting for DNR returns to OFF when:
  – you turn the power off
  – you open or close the disc tray

Changing the Sound

DVD VIDEO CD CD

With DVDs on which multilingual sound is recorded, you can select the language you want while playing the DVD.
With multiplex VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. In this case, the sound loses the stereo effect.



Press AUDIO CHANGE while playing a disc.
Each time you press the button, the indication and the language/sound from the speakers change as follows:

■ **When playing a DVD**

AUDIO 1 → AUDIO 2 → .....

AUDIO 1: ENGLISH

■ **When playing a VIDEO CD or a CD**

Press	Indication	You will hear
Once	1/L	The sound of the left channel
Twice	2/R	The sound of the right channel
Three times	1/L 2/R	The standard stereo sound

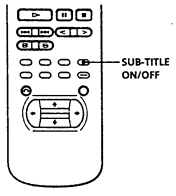
You can also use the menu to switch the sound for the VIDEO CD or the CD
Press MENU to display the menu. Then select "L/R/STEREO" in "CUSTOM SETUP" to change the sound (page 46). However, this setting does not affect the output from the DIGITAL OUT connectors when you play a CD.

Notes
- Depending on the DVD, you may not be able to change the languages even if multilingual sound is recorded on the DVD.
- When you turn off the player, the standard stereo playback will be resumed.

Turning the Sub-titles On and Off

DVD

With DVDs on which sub-titles are recorded, you can turn the sub-titles on and off whenever you want while playing the DVD.



Press SUB-TITLE ON/OFF while playing a DVD.
Sub-titles appear on the TV screen.

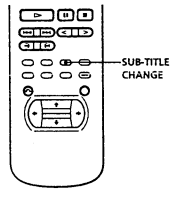
To turn off the sub-titles
Press SUB-TITLE ON/OFF again.

Notes
- When playing the DVD on which no sub-titles are recorded, no sub-titles appear even if you press SUB-TITLE ON/OFF.
- Depending on the DVD, you may not be able to turn the sub-titles on even if they are recorded on the DVD.
- Depending on the DVD, you may not be able to turn the sub-titles off.

Changing the Sub-titles

DVD

With DVDs on which multilingual sub-titles are recorded, you can change the sub-titles whenever you want while playing the DVD.
When sub-titles are turned off, press SUB-TITLE ON/OFF to turn on the sub-titles.



While playing a DVD, press SUB-TITLE CHANGE repeatedly until the sub-titles you want appear on the TV screen.

SUB-TITLE 1 → SUB-TITLE 2 → ... → AUDIO FOLLOW *

SUB-TITLE 1: ENGLISH

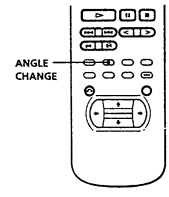
* When you select "AUDIO FOLLOW," the language for the sub-titles change according to the language for the sound.

Notes
- The type and number of languages for sub-titles vary from disc to disc.
- Depending on the DVD, you may not be able to change the sub-titles even if multilingual subtitles are recorded on the DVD.
- Depending on the DVD, you may not use the audio follow function even if "AUDIO FOLLOW" is displayed.

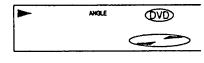
Changing the Angles

DVD

With DVDs on which various angles (multi-angles) for a scene are recorded, you can change the angles whenever you want while playing,the DVD.



When "ANGLE" appears on the front panel display while playing a DVD, press ANGLE CHANGE repeatedly until you get the angle you want.



ANGLE 1 → ANGLE 2 → ...

ANGLE 1

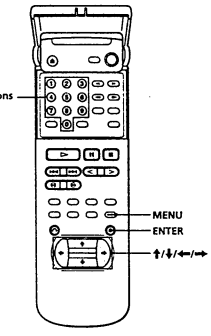
You can specify the angle beforehand
Specify the angle when "ANGLE" is not displayed on the front panel display. When a scene on which multi-angles are recorded comes, the angle is automatically selected.

Notes
- The number of angles varies from disc to disc or from scene to scene. The number of angles that can be changed on a scene is that of angles recorded for that scene.
- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

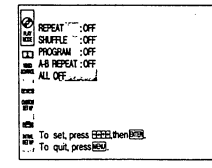
Limiting Playback by Children (Parental Control)

DVD

Playing some DVDs can be limited depending on the age of users. The "Parental Control" function allows you to set a playback limitation level.

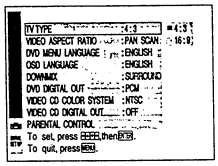


1 Press MENU to display the menu on the TV screen before playing.



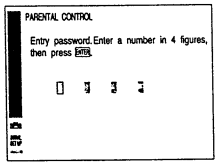
(Continued)

2 Select "INITIAL SETUP" using ↑/↓, then press →.
"INITIAL SETUP" is highlighted.

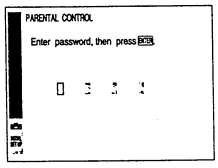


3 Select "PARENTAL CONTROL" using ↑/↓, then press ENTER.

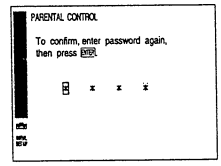
■When you have not entered a password yet
The display for entering a password appears.



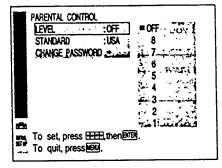
■When you have already entered a password
The display for confirming the password appears. Skip Step 4.



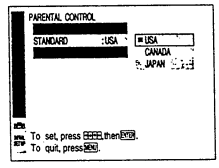
4 Enter a password in 4 figures using the number buttons, then press ENTER.
The figures change to asterisks (*), and the display for confirming the password appears.



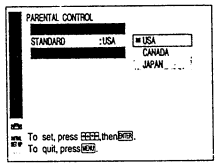
5 To confirm your password, enter it using the number buttons, then press ENTER.
The display for setting the playback limitation level and changing the password appears.



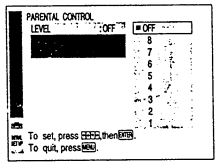
6 Select "STANDARD" using ↑/↓, then press →.



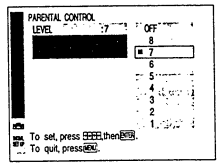
7 Select a country as the standard for playback limitation level using ↑/↓, then press →.
A check mark (■) appears on the left of the selected country.



8 Select "LEVEL" using ↑/↓, then press →.



9 Select the level you want using ↑/↓, then press ENTER.
A check mark (■) appears on the left of the selected level.



The lower the level is, the more strict the limitation.

To return to the normal screen
Press MENU.

To turn off the Parental Control function and play the DVD after entering your password
Set "LEVEL" to "OFF" in Step 9, then press ▷.

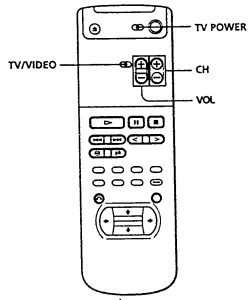
To change the password
1 In Step 5, select "CHANGE PASSWORD" using ↑/↓, then press → or ENTER.
The display for changing the password appears.
2 Follow Steps 4 and 5 to enter a new password.

If you have forgot your password
Enter "199703" in Step 4 to clear the current password. To enter a new password, follow the procedure from Step 1 again.

Notes
- When you play DVDs without the Parental Control function, playback cannot be limited on this player.
- When you do not set a password, you cannot change the settings for playback limitation.
- Depending on the DVD, you may be asked to change the parental control level while playing the disc. In this case, enter the password, then change the level.
When you stop playing the DVD, the level returns to the original level.
- When you disconnect the AC power cord, all the settings for the Parental Control function return to default settings.

Controlling the TV with the Supplied Remote

You can control Sony TVs with the ■ mark using the supplied remote.

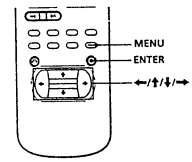


By pressing	You can
TV POWER	Turn on or off the TV
TV/VIDEO	Select the input source for the TV
VOL	Adjust the volume of the TV
CH	Change the channel of the TV

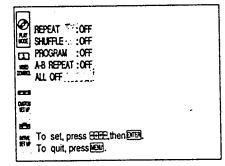
Using the Menu

Using the menu allows initial setup, selecting the play mode, adjusting the picture and sound quality, setting the various outputs, etc. You can also set a language for the sub-titles and menu display, playback limitation children, etc.
For details on each menu item, see pages 44 to 47.

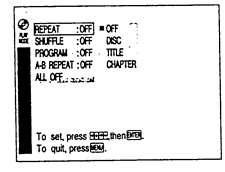
In the menu, select the item or setting from left to right. Use → to go to the right item or setting. Use ← to go back to the left item or setting.



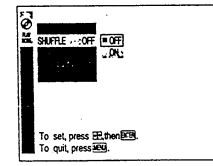
1 Press MENU to display the menu on the TV screen.



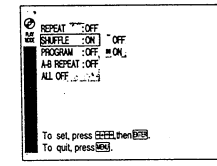
2 Select the main item you want using ↑/↓, and then press → or ENTER.
The selected main item is highlighted.



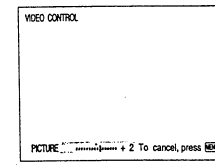
3 Select the item you want using ↑/↓, then press → or ENTER.



4 Select the setting you want using ↑/↓, then press ENTER.
A check mark (■) appears on the left of the selected setting.



When → appears on the right of "ADJUST"
1 Select "ADJUST," then press → or ENTER.
The display for adjustment appears.
2 Adjust the value using ←/→, then press ENTER.



When → appears on the right of the setting
More settings to be selected are on the right. Press → to select.

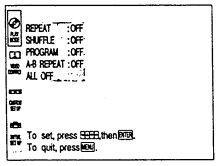
To cancel using the menu
Press MENU.

Note
Some menu items require operations other than selecting the setting. For details on these items, see the relevant pages.

Settings for Playback (PLAY MODE)

"PLAY MODE" allows you to set various playback modes as described on pages 32 to 36.
Default settings are underlined.

Note
Depending on the disc, you may not be able to set playback modes.



■REPEAT (page 32)
Selects the setting of Repeat Play.
- OFF: does not play repeatedly.
- DISC: repeats all the titles/all the chapters/all the tracks on a disc.
- TITLE (DVD only): repeats the current title.
- CHAPTER (DVD only): repeats the current chapter.
- TRACK (VIDEO CD/CD only): repeats the current track.

■SHUFFLE (page 34)
Selects the setting of Shuffle Play.
- OFF: does not play a disc in random order.
- ON: has the player "shuffle" titles or tracks and play in a random order.

■PROGRAM (page 34)
Selects the setting of Program Play.
- OFF: The order of the titles, chapters or tracks on the disc cannot be arranged.
- SET: arranges the order of the titles, chapters or tracks on the disc.
- ON: plays the titles, chapters or tracks in the programmed order.

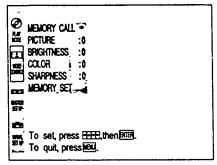
■A-B REPEAT (page 33)
Selects the setting of A↔B Repeat.
- OFF: does not play a specific portion of a title/chapter/track repeatedly.
- ON: plays a specific portion of a title/chapter/track repeatedly.

■ALL OFF
Turns off all the settings in "PLAY MODE." Select this item in Continuous Play mode.

You can do Repeat Play or Shuffle Play in the programmed order
When "PROGRAM" is set to "ON," set "REPEAT" to "DISC" or "SHUFFLE" to "ON."

Adjustments for Playback Picture (VIDEO CONTROL)

"VIDEO CONTROL" allows you to adjust the video output of the DVD or VIDEO CD from the player, not from the TV, to obtain the picture quality you want.
When you select "ADJUST" in a menu item, adjust the value using ←/→, then press ENTER.
Default adjustments are underlined.



■MEMORY CALL
At factory setting, typical adjustments are saved in memory. To adjust the picture using these adjustments, select this menu item to call any one of the sets.
When you change the settings of the menu items in "VIDEO CONTROL," you can save up to 3 sets of your own adjustments in memory ("MEMORY SET").
- CALL→:
  -1: to view the picture with the best possible sharpness and contrast in a well-lit room
  -2: to view the quiet picture in a dark room
  -3: to make adjustments to obtain the picture you want.
  (All the setting values are 0.)
  -STANDARD: All the setting values are 0.

■PICTURE
Adjusts the picture contrast. The higher the value is, the stronger the contrast.
- ADJUST→ –5 ~ 0 ~ 5: adjusts the value for the picture contrast.
- 0 RESET: resets the value to "0."

■BRIGHTNESS
Adjusts the picture brightness. The higher the value is, the brighter the picture.
- ADJUST→ –5 ~ 0 ~ 5: adjusts the value for the picture brightness.
- 0 RESET: resets the value to "0."

■COLOR
Adjusts the picture color intensity. The higher the value is, the stronger the intensity.
- ADJUST→ –5 ~ 0 ~ 5: adjusts the value for the picture color intensity.
- 0 RESET: resets the value to "0."

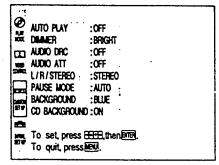
■SHARPNESS
Adjusts the picture sharpness. The higher the value is, the sharper the picture.
- ADJUST→ –5 ~ 0 ~ 5: adjusts the value for the picture sharpness.
- 0 RESET: resets the value to "0."

■MEMORY SET
Saves up to 3 sets of your own adjustments of "VIDEO CONTROL" in memory.
- RESET: resets all the sets of the adjustments saved in memory to the factory setting.
- 1: saves the current set of your own adjustments in memory "1."
- 2: saves the current set of your own adjustments in memory "2."
- 3: saves the current set of your own adjustments in memory "3."

Note
Depending on the DVD or VIDEO CD, the effects of the adjustments may be difficult to see.

Settings for Display and Sound (CUSTOM SETUP)

"CUSTOM SETUP" allows you to set the display and sound according to the playback conditions.
Default settings are underlined.



■AUTO PLAY
Selects the setting of Auto Play when you connect the AC power cord to the AC outlet.
- OFF: does not start playing a disc automatically.
- TIMER: starts playing a disc automatically when you connect the AC power cord to the AC outlet. By connecting a timer (not supplied), you can start playing at any time you want.
- DEMO1: starts playing the demonstration 1 automatically.
- DEMO2: starts playing the demonstration 2 automatically.

■DIMMER
Adjusts the lighting of the front panel display.
- BRIGHT: makes the front panel display bright.
- DARK: makes the front panel display dark.
- OFF: turns off the lighting of the front panel display.

■AUDIO DRC (Dynamic Range Control)
Controls the audio dynamic range when you play a DVD. This functions only when "DVD DIGITAL OUT" in "INITIAL SETUP" is set to "PCM." (page 47)
- OFF: Normally select this position.
- ON: makes the sound clear with the volume turned down at night, etc.

Note
Depending on the DVD, there may be no effect on the sound.

■AUDIO ATT (attenuation)
Selects the setting of the output from the LINE OUT (AUDIO 1, 2) connectors according to audio equipment to be connected.
- OFF: turns off the audio attenuation.
- ON: adjusts the audio output level so that no sound distortion occurs.

Note
The setting does not affect the output from the DIGITAL OUT connectors.

■L/R/STEREO
Selects the setting of the sound of the VIDEO CD from the LINE OUT (AUDIO 1, 2) and DIGITAL OUT connectors or the sound of the CD from the LINE OUT (AUDIO 1, 2) connectors.
- STEREO: outputs the standard stereo sound.
- L: outputs the sound from the left channel.
- R: outputs the sound from the right channel.

Note
The setting does not affect the sound from the DIGITAL OUT connectors when you play a CD.

■PAUSE MODE
Selects the picture in pause mode.
- AUTO: A picture including subjects that move dynamically is output with no blur. Normally select this position.
- FRAME: A picture including subjects do not move dynamically is output with high resolution.

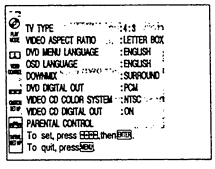
Note
The setting does not affect the picture when the auto pause functions while playing the DVD or VIDEO CD.

■BACKGROUND
Selects the background color of the TV screen in stop mode.
- BLUE: The background color is blue.
- BLACK: The background color is black.

■CD BACKGROUND
Turns on and off the background picture on the TV screen when you play a CD.
- ON: turns on the background graphic picture.
- OFF: turns off the background graphic picture.

Basic Settings (INITIAL SETUP)

"INITIAL SETUP" allows necessary setup when you install the player and connect external components to the player. The setups for advanced playback of DVDs or VIDEO CDs are also available in this main menu.
Default settings are underlined.



■TV TYPE
Selects the aspect ratio of the TV to be connected.
- 4:3: when you connect a normal TV to the player
- 16:9: when you connect a wide-screen TV to the player

■VIDEO ASPECT RATIO
Selects the aspect ratio of the screen when you play a wide picture recorded on a DVD on the normal TV.
- LETTER BOX: displays the wide picture with bands displayed on the upper and lower portions of the screen.
- PAN SCAN : displays the wide picture on the whole screen with a portion automatically cut off.

Wide picture

LETTER BOX

PAN SCAN

Note
Depending on the DVD, the aspect ratio of the playback picture may be fixed.

■DVD MENU LANGUAGE
Switches the languages for the DVD menu.
- ENGLISH
- JAPANESE
- CHINESE
- SPANISH
- FRENCH
- ITALIAN
- GERMAN
- PORTUGUESE
- DUTCH
- OTHERS→
  When you select "OTHERS," select and enter the language code from the list using the number buttons (page 55).

Note
When you select the language that is not recorded on the DVD, any one of the recorded languages is automatically selected.

■OSD (On-Screen Display) LANGUAGE
Switch the language for the on-screen display.
- ENGLISH
- FRENCH

■DOWNMIX
Switches the mixing down methods when you play a disc on which the sound in Dolby Digital (AC-3) format is recorded.
- SURROUND: when the player is connected to an audio component that conforms to Dolby surround, Dolby Pro Logic surround, etc.
- NORMAL : when the player is connected to a normal audio component

The setting affects the analog output from the LINE OUT (AUDIO 1, 2) connectors and digital output from the DIGITAL OUT OPTICAL and COAXIAL connectors when "DVD DIGITAL OUT" is set to "PCM."

■DVD DIGITAL OUT
Switches the outputting methods of audio signals from the DIGITAL OUT OPTICAL and COAXIAL connectors on the rear panel of the player.
- PCM: when the player is connected to an audio component without a built-in Dolby Digital (AC-3) decoder
- AC-3 Digital: when the player is connected to audio component with a built-in Dolby Digital (AC-3) decoder

Note
Select the setting correctly. Otherwise, no sound will come out from the speakers or strange sound will come out from the speakers, affecting your ears or causing the speakers to be damaged.

■VIDEO CD COLOR SYSTEM
"NTSC" is selected when you play a VIDEO CD.

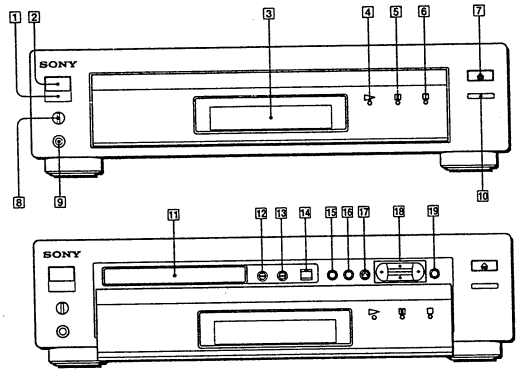
■VIDEO CD DIGITAL OUT
Turns on and off the digital audio output when you play a VIDEO CD.
- ON: outputs the digital audio signals.
- OFF: does not output the digital audio signals.

■PARENTAL CONTROL
Sets a password and playback limitation level when you play DVDs with playback limitation by children.
For details, see page 39.

Index to Parts and Controls

Refer to the pages indicated in parentheses for details.

Front Panel



1 ■ (remote sensor) (6)
Accepts the remote control signals.

2 POWER switch and indicator (10, 18, 26)
Turns on and off the power of the player.

3 Front Panel Display (16, 24, 30)
Indicates the playing time, etc.

4 ▷PLAY button (10, 18, 26)
Plays a disc.

5 ❚❚PAUSE button (11, 19, 27)
Pauses playing a disc.

6 □STOP button (11, 19, 27, 36)
Stops playing a disc.

7 ≙OPEN/CLOSE button (11, 19, 27)
Opens or closes the disc tray.

8 PHONE LEVEL control (10, 18, 26)
Adjusts the headphone volume.

9 PHONES connector (10, 18, 26)
Connect the headphones to this connector.

10 PANEL UP/DOWN button (10, 18, 26)
Moves the front panel up and down.

11 Disc tray (10, 18, 26)
Place a disc on the tray.

12 ⏮ PREV button (12, 20, 28)
Press to go back to the preceding chapter or track.

13 ⏭ NEXT button (12, 20, 28)
Press to go to the next chapter or track.

14 DNR button (37)
Reduces the picture noise.

15 TITLE button (13)
Displays the title menu on the TV screen.

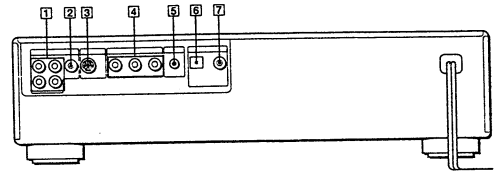
16 DVD MENU button (14)
Displays the DVD menu on the TV screen.

17 ↶ RETURN button (21)
Press to return to the preceding selection screen, etc.

18 ←/↑/↓/→ buttons
Selects the items or settings.

19 ENTER button
Executes the items or settings.

Rear Panel



1 LINE OUT (AUDIO 1, 2) connector (7)
Connects to the audio input connector on the TV or amplifier.

2 LINE OUT (VIDEO) connector (7)
Connects to the video input connector on the TV or monitor.

3 S VIDEO OUT connector (7)
Connects to the S video input connector on the TV or VCR.

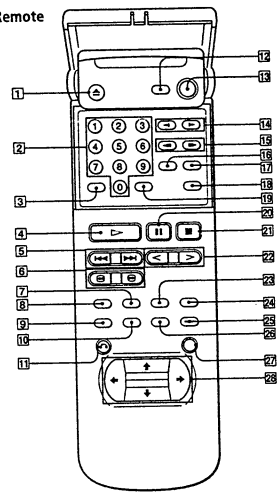
4 COMPONENT VIDEO OUT connectors (7)
Connects to the monitor or projector with component video input connectors (Y, B-Y, R-Y) that conform to output signals from the player.

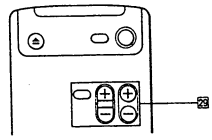
5 S-LINK connector (9)
Connects to the S-link connector on an external component.

6 DIGITAL OUT (OPTICAL) connector (8)
Connects to an audio component using the optical cable.

7 DIGITAL OUT (COAXIAL) connector (8)
Connects to an audio component using the coaxial cable.

Remote





1 ≙OPEN/CLOSE button (11, 19, 27)
Opens or closes the disc tray.

2 Number buttons (12, 20, 28)
Selects the items or settings.

3 CLEAR button (12, 20, 28)
Cancels the number selected with the number buttons.

4 ▷PLAY button (10, 18, 26)
Plays a disc.

5 ⏮/⏭PREV/NEXT buttons (12, 20, 28)
Press to go to the next chapter or track or to go back to the preceding chapter or track.

6 ⊟/⊟SCAN buttons (12, 20, 28)
Locates a point while monitoring the picture or sound.

7 ANGLE CHANGE button (39)
Changes the angles when playing a DVD.

8 AUDIO CHANGE button (37)
Changes the sound while playing a DVD or VIDEO CD.

9 DISPLAY button (15, 22, 29)
Displays the current playing status on the TV screen.

10 TITLE button (13)
Displays the title menu on the TV screen.

11 ↶RETURN button (21)
Press to return to the preceding selection screen while playing a VIDEO CD with PBC functions.

12 TV POWER button (42)
Turns the TV power on and off.

13 POWER button (10, 18, 26)
Turns on and off the power of the player.

14 ⇥/⇤ SLOW buttons (11, 19)
Plays a disc in slow motion.

15 ◁II/II▷STEP buttons (11, 19)
Plays a disc frame by frame.

16 SEARCH MODE button (12, 20, 28)
Press to select the unit for search (track, index, etc.)

17 TIME button (16, 24, 30)
Displays the playing time of the disc, etc. on the front panel display.

18 DNR button (37)
Reduces the picture noise.

19 ENTER button (13)
Executes the items or settings.

20 ❚❚PAUSE button (11, 19, 27)
Pauses playing a disc.

21 ■STOP button (11, 19, 27)
Stops playing a disc.

22 </> buttons (11)
Plays a disc at about twice the normal speed.

23 SUB-TITLE CHANGE button (38)
Changes the sub-titles when playing a DVD.

24 SUB-TITLE ON/OFF button (38)
Turns the sub-titles on and off when playing a DVD.

25 MENU button (43)
Displays the menu on the TV screen to set or adjust the menu items.

26 DVD MENU button (14)
Displays the DVD menu on the TV screen.

27 ENTER button (13)
Executes the items or settings.

28 ←/↑/↓/→ buttons (13)
Selects the items or settings.

29 TV operation buttons (42)
Controls Sony TVs.

Language Code List for the DVD Menu

For details, see page 47.

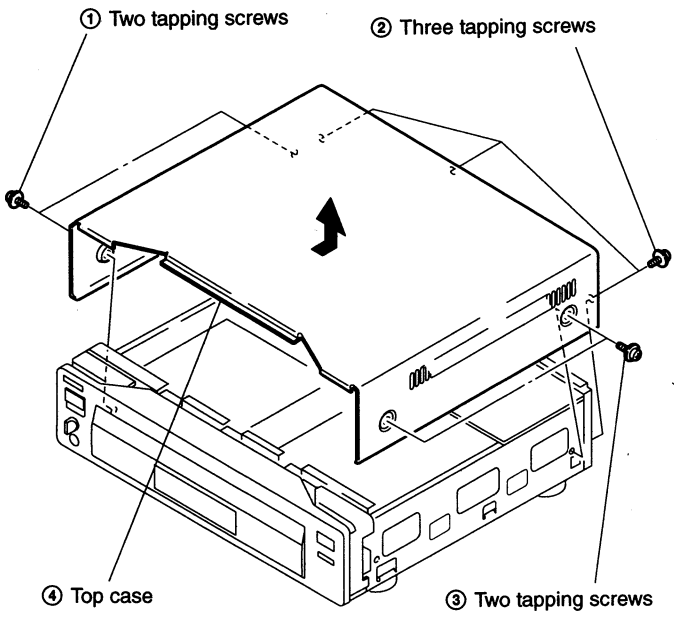
The language spellings conform to the ISO 639: 1988 (E/F) standard. (December 1996)

Code	Language	Code	Language	Code	Language	Code	Language
1027	Afar	1186	Scots Gaelic	1350	Malayalam	1513	Siswati
1028	Abkhazian	1194	Galician	1352	Mongolian	1514	Sesotho
1032	Afrikaans	1196	Guarani	1353	Moldavian	1515	Sundanese
1039	Amharic	1203	Gujarati	1356	Marathi	1516	Swedish
1044	Arabic	1209	Hausa	1357	Malay	1517	Swahili
1045	Assamese	1217	Hindi	1358	Maltese	1521	Tamil
1051	Aymara	1226	Croatian	1363	Burmese	1525	Telugu
1052	Azerbaijani	1229	Hungarian	1365	Nauru	1527	Tajik
1053	Bashkir	1233	Armenian	1369	Nepali	1528	Thai
1057	Byelorussian	1235	Interlingua	1376	Dutch	1529	Tigrinya
1059	Bulgarian	1239	Interlingue	1379	Norwegian	1531	Turkmen
1060	Bihari	1245	Inupiak	1393	Occitan	1532	Tagalog
1061	Bislama	1248	Indonesian	1403	(Afan) Oromo	1534	Setswana
1066	Bengali; Bangla	1253	Icelandic	1408	Oriya	1535	Tonga
1067	Tibetan	1254	Italian	1417	Punjabi	1538	Turkish
1070	Breton	1257	Hebrew	1428	Polish	1539	Tsonga
1079	Catalan	1261	Japanese	1435	Pashto; Pushto	1540	Tatar
1093	Corsican	1269	Yiddish	1436	Portuguese	1543	Twi
1097	Czech	1283	Javanese	1463	Quechua	1557	Ukrainian
1103	Welsh	1287	Georgian	1481	Rhaeto-Romance	1564	Urdu
1105	Danish	1297	Kazakh	1482	Kirundi	1572	Uzbek
1109	German	1298	Greenlandic	1483	Romanian	1581	Vietnamese
1130	Bhutani	1299	Cambodian	1489	Russian	1587	Volapük
1142	Greek	1300	Kannada	1491	Kinyarwanda	1613	Wolof
1144	English	1301	Korean	1495	Sanskrit	1632	Xhosa
1145	Esperanto	1305	Kashmiri	1498	Sindhi	1665	Yoruba
1149	Spanish	1307	Kurdish	1501	Sangho	1684	Chinese
1150	Estonian	1311	Kirghiz	1502	Serbo-Croatian	1697	Zulu
1151	Basque	1313	Latin	1503	Singhalese	1703	Not specified
1157	Persian	1326	Lingala	1505	Slovak		
1165	Finnish	1327	Laothian	1506	Slovenian		
1166	Fiji	1332	Lithuanian	1507	Samoan		
1171	Faroese	1334	Latvian; Lettish	1508	Shona		
1174	French	1345	Malagasy	1509	Somali		
1181	Frisian	1347	Maori	1511	Albanian		
1183	Irish	1349	Macedonian	1512	Serbian		

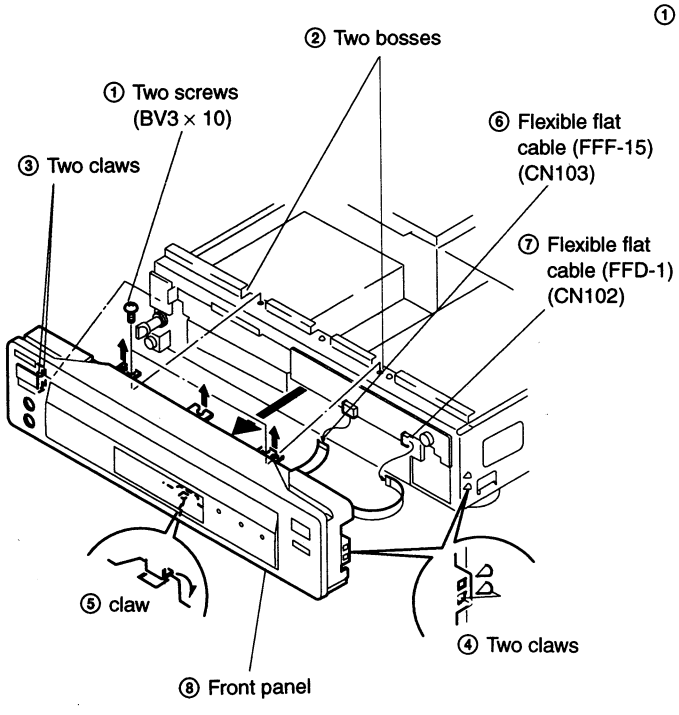
SECTION 2
DISASSEMBLY

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

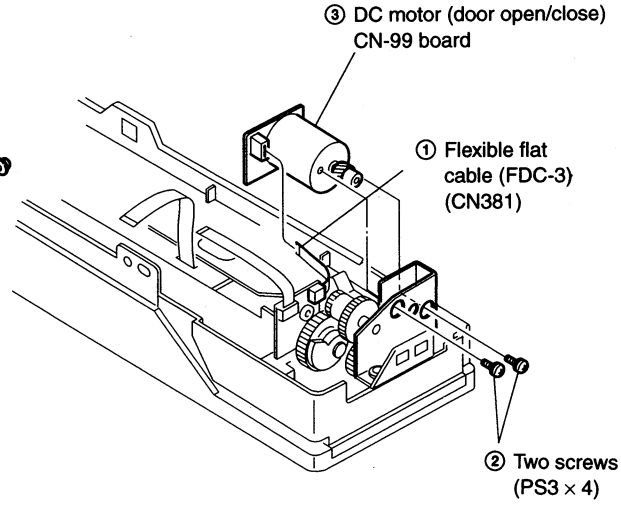
2-1. TOP CASE REMOVAL



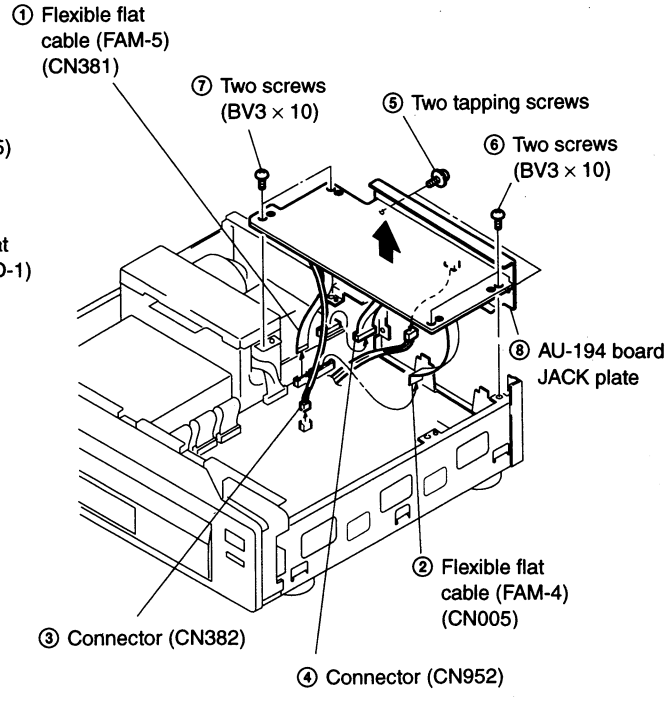
2-2. FRONT PANEL REMOVAL



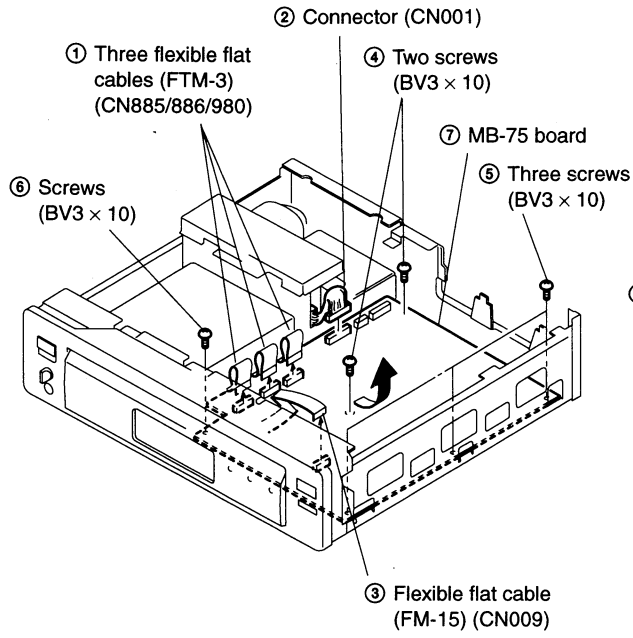
2-3. DC MOTOR (DOOR OPEN/CLOSE) REMOVAL



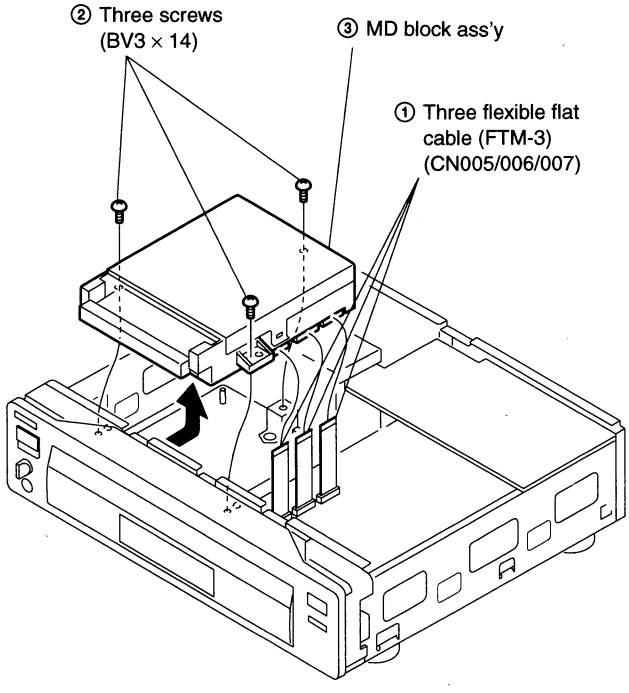
2-4. AU-194 BOARD REMOVAL



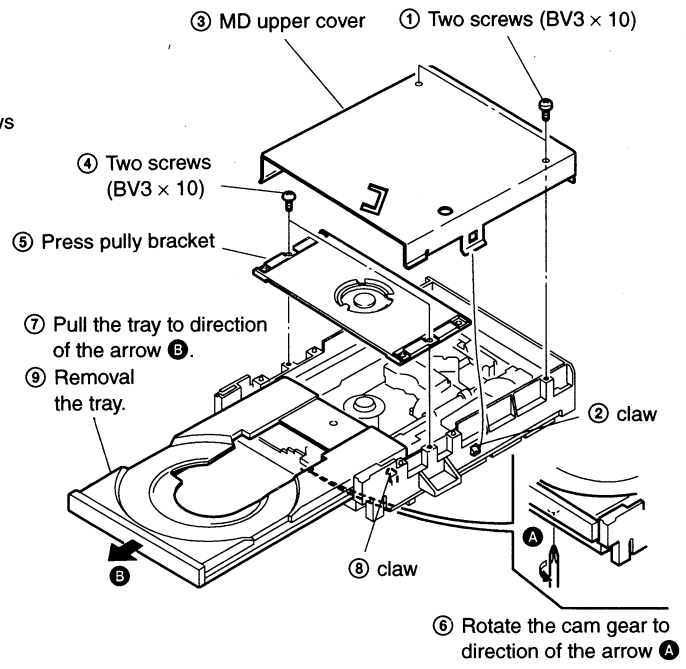
2-5. MB-75 BOARD REMOVAL



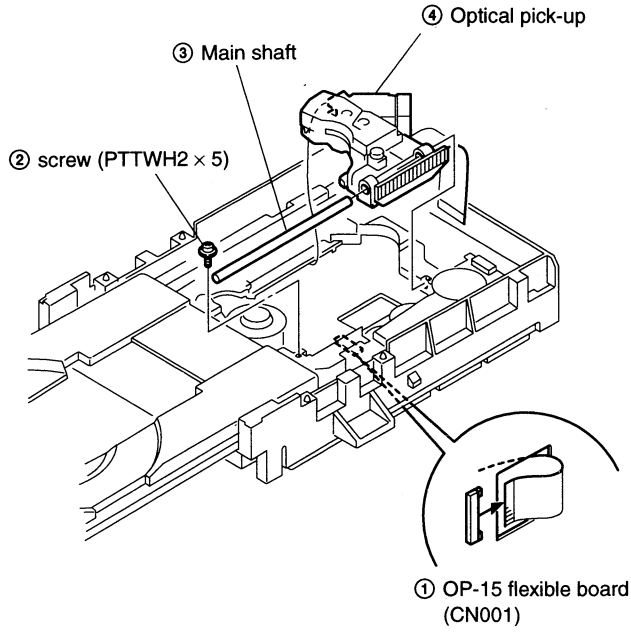
2-6. MD BLOCK ASS'Y REMOVAL



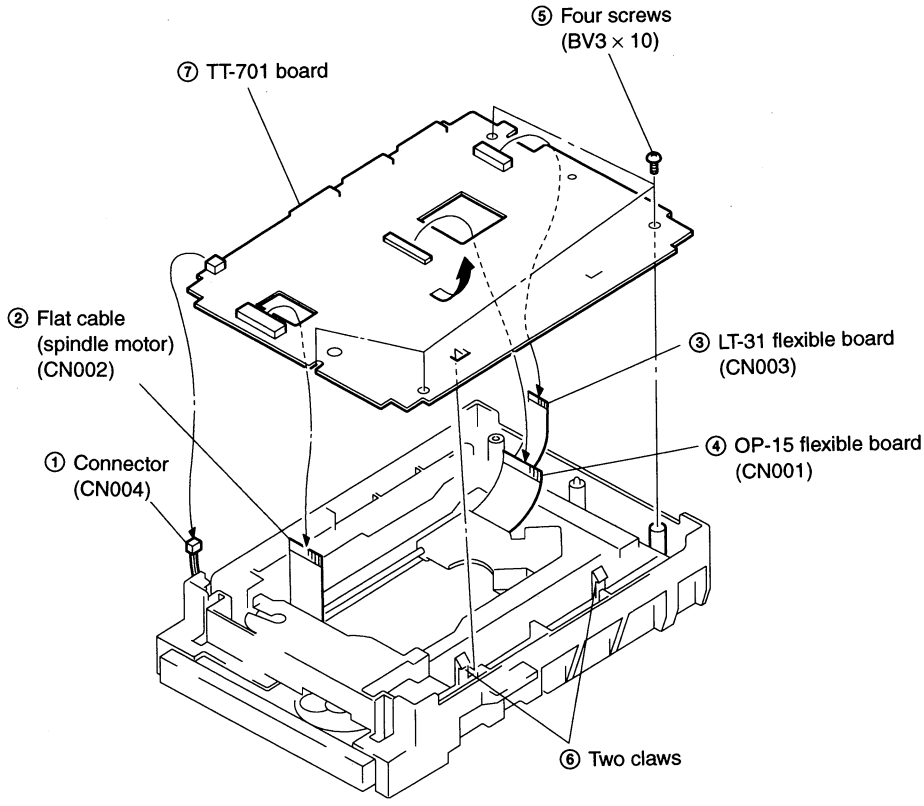
2-7. TRY REMOVAL



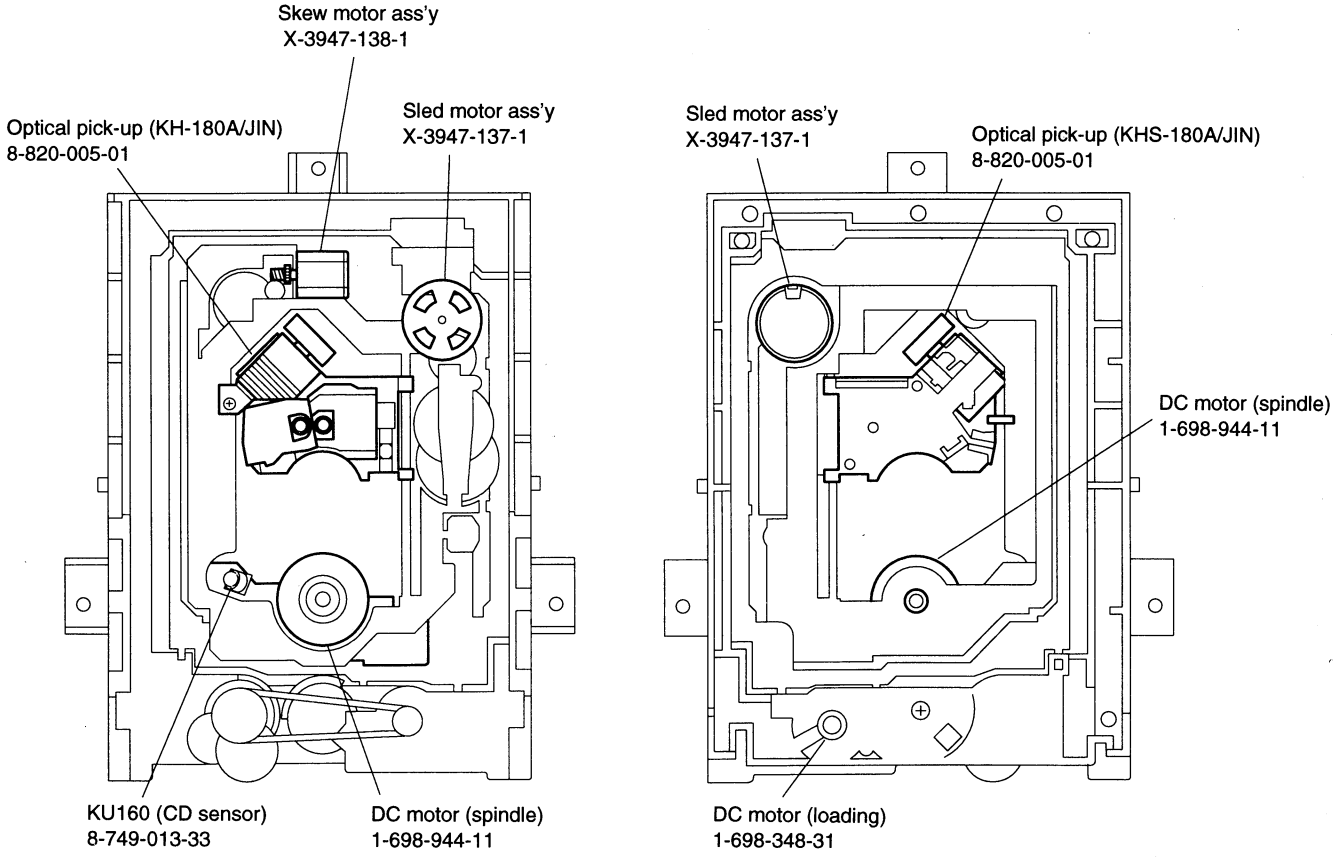
2-8. OPTICAL PICK-UP REMOVAL



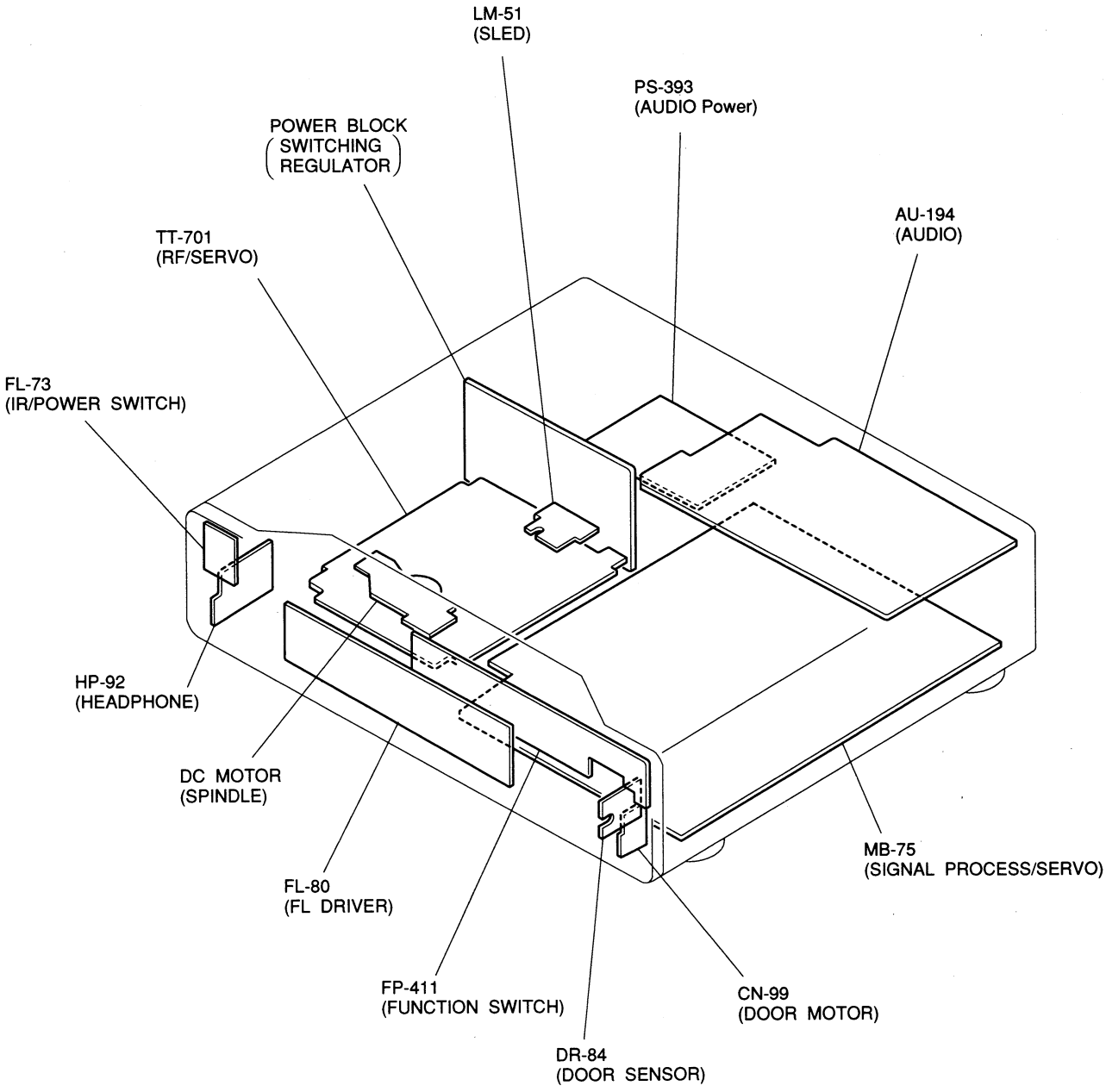
2-9. TT-701 BOARD REMOVAL



2-10. INTERNAL VIEWS

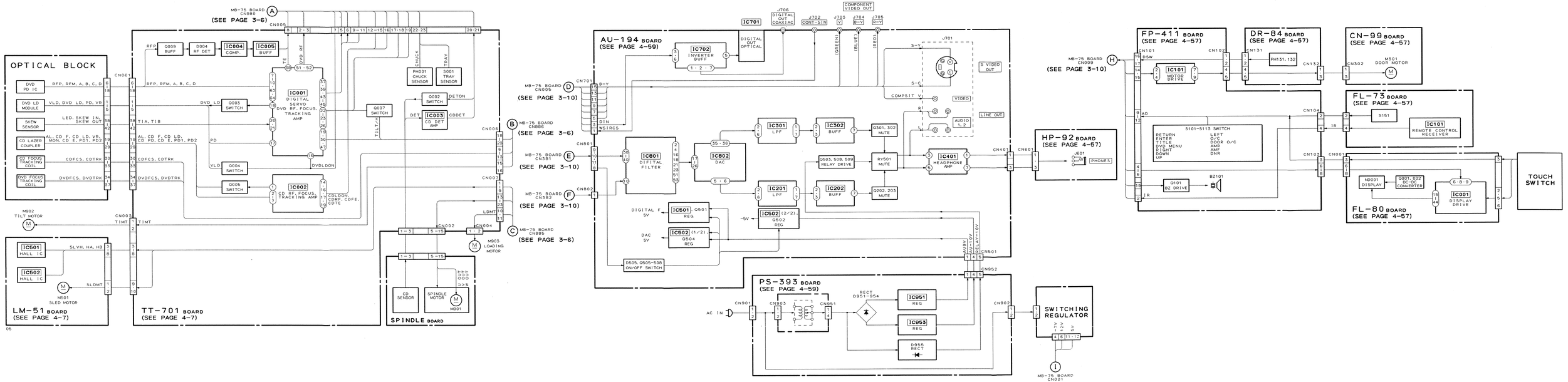


2-11. CIRCUIT BOARD LOCATION

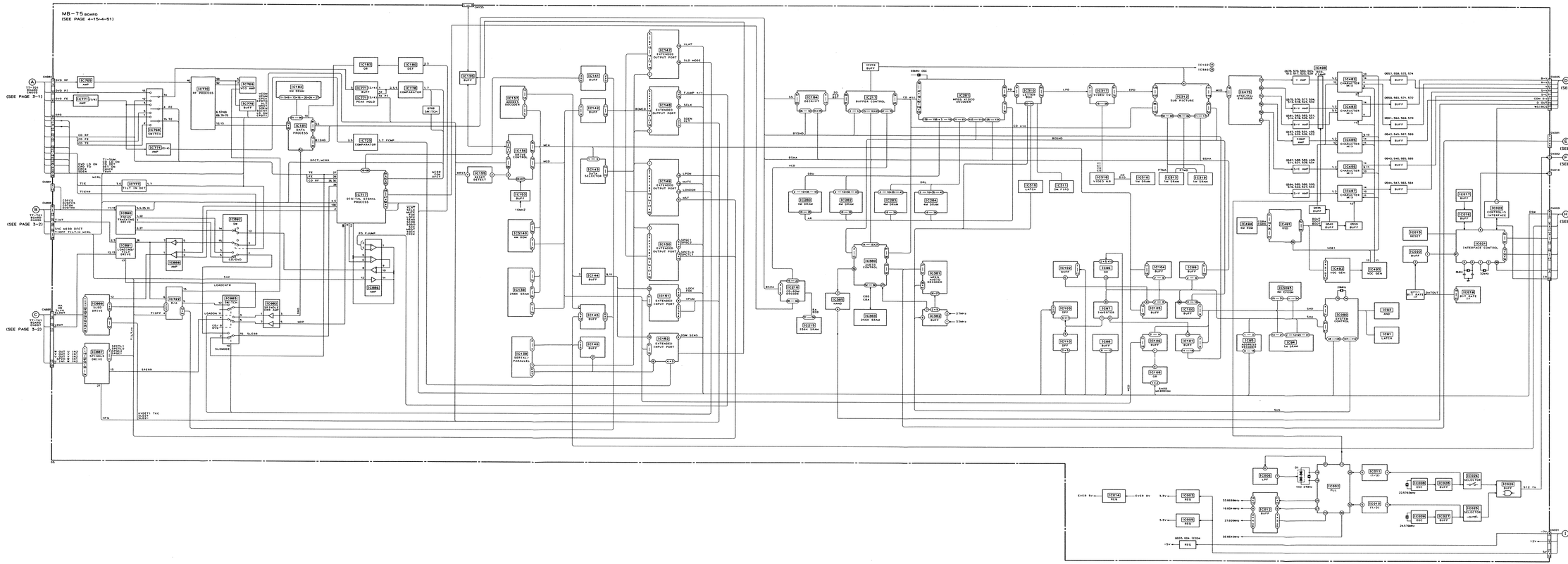


SECTION 3
BLOCK DIAGRAMS

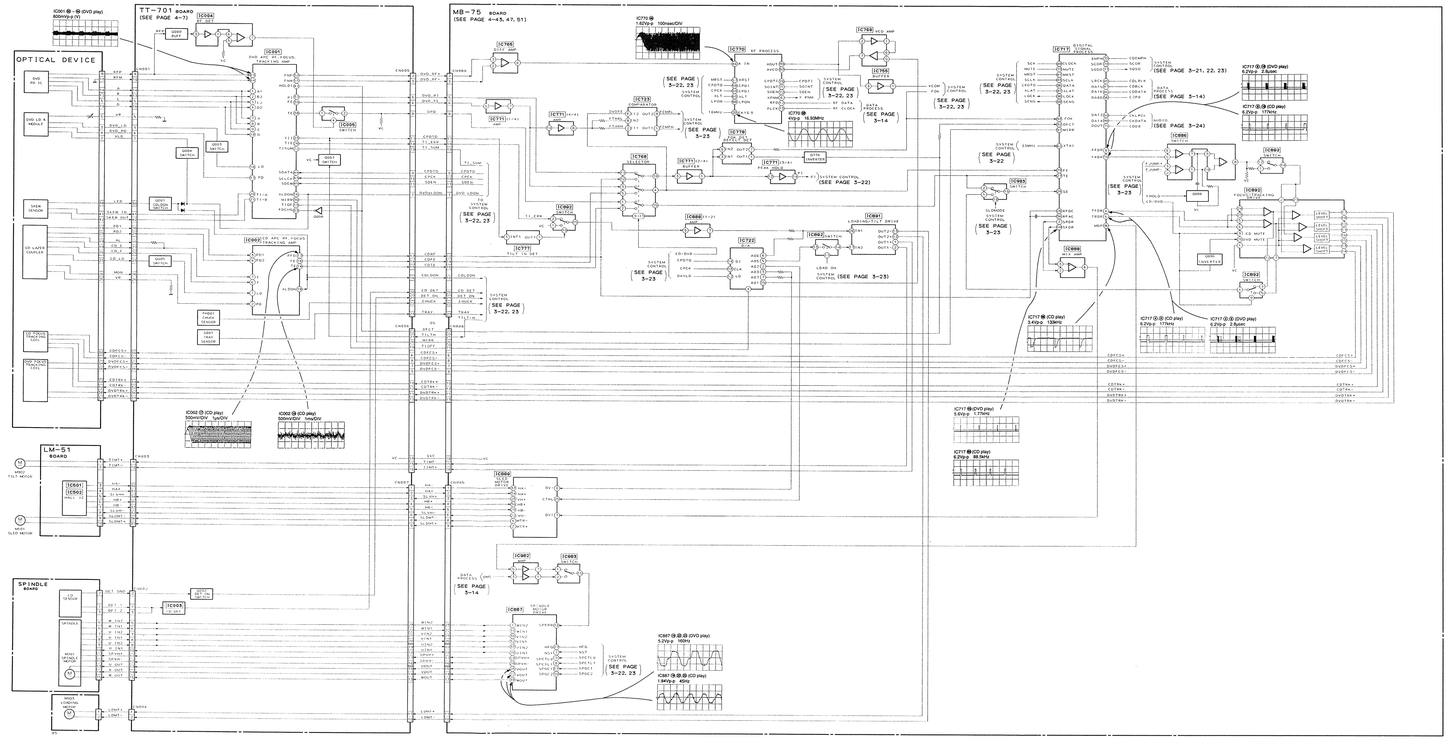
3-1. OVERALL BLOCK DIAGRAM 1 (RF, SERVO, AUDIO POWER BLOCK)



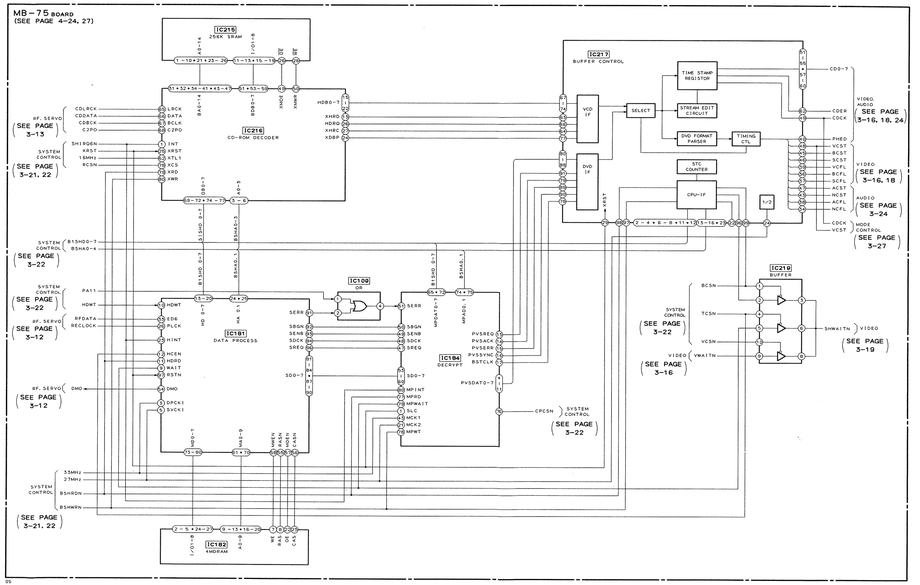
3-2. OVERALL BLOCK DIAGRAM 2 (SIGNAL PROCESS)



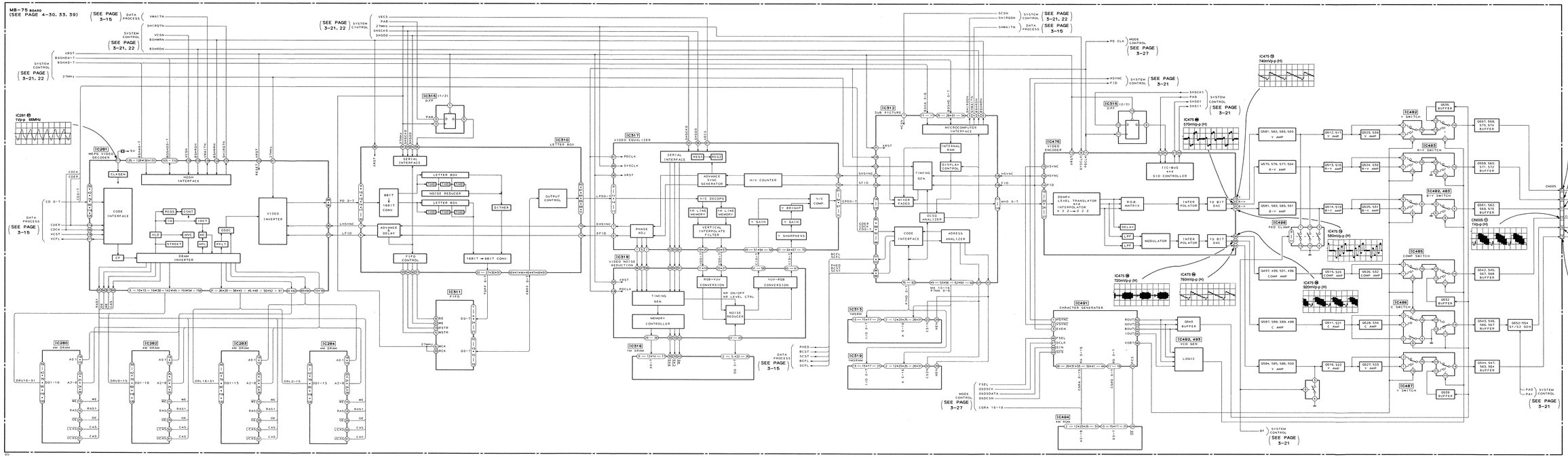
3-3. RF/SERVO BLOCK DIAGRAM



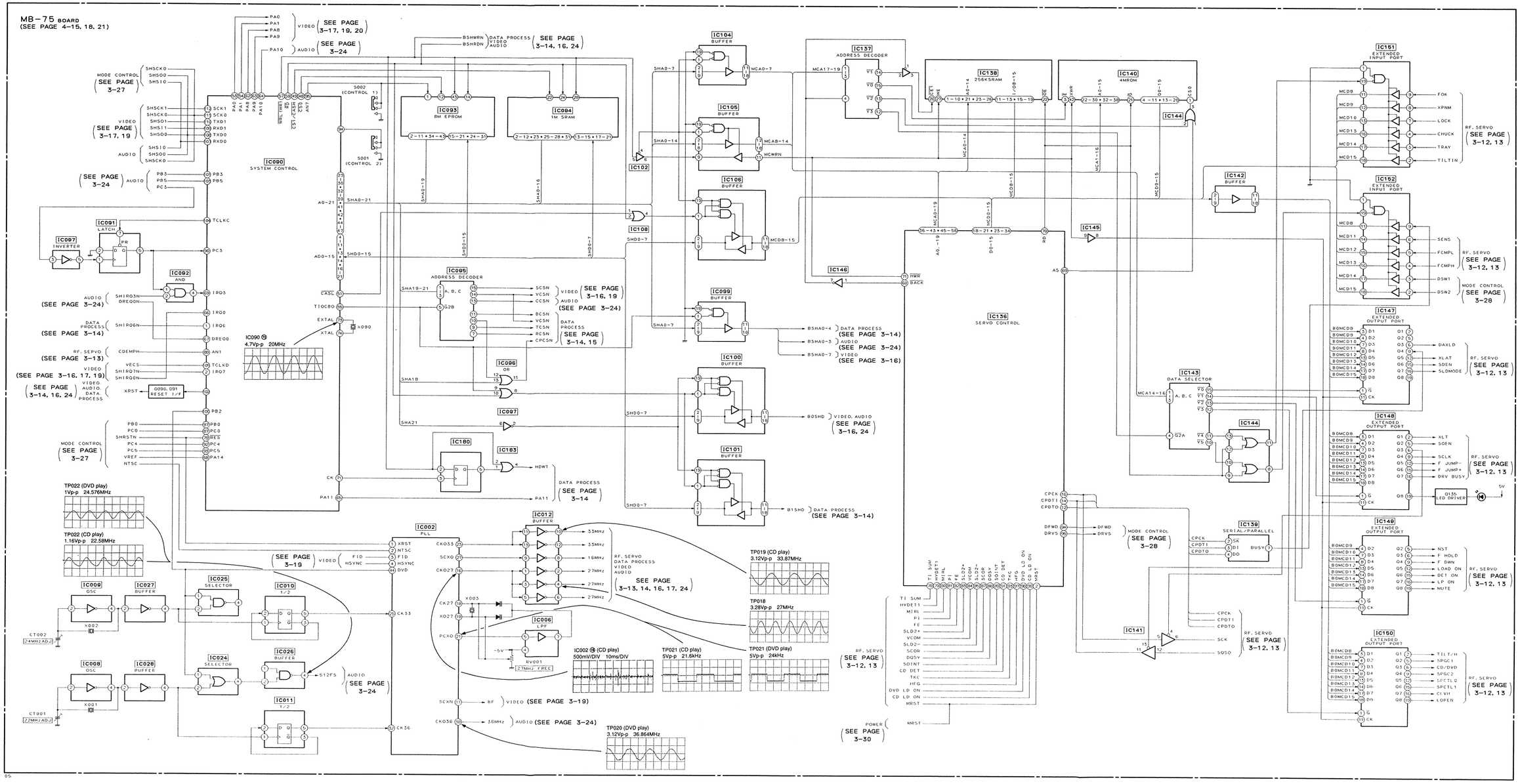
3-4. DATA PROCESS BLOCK DIAGRAM



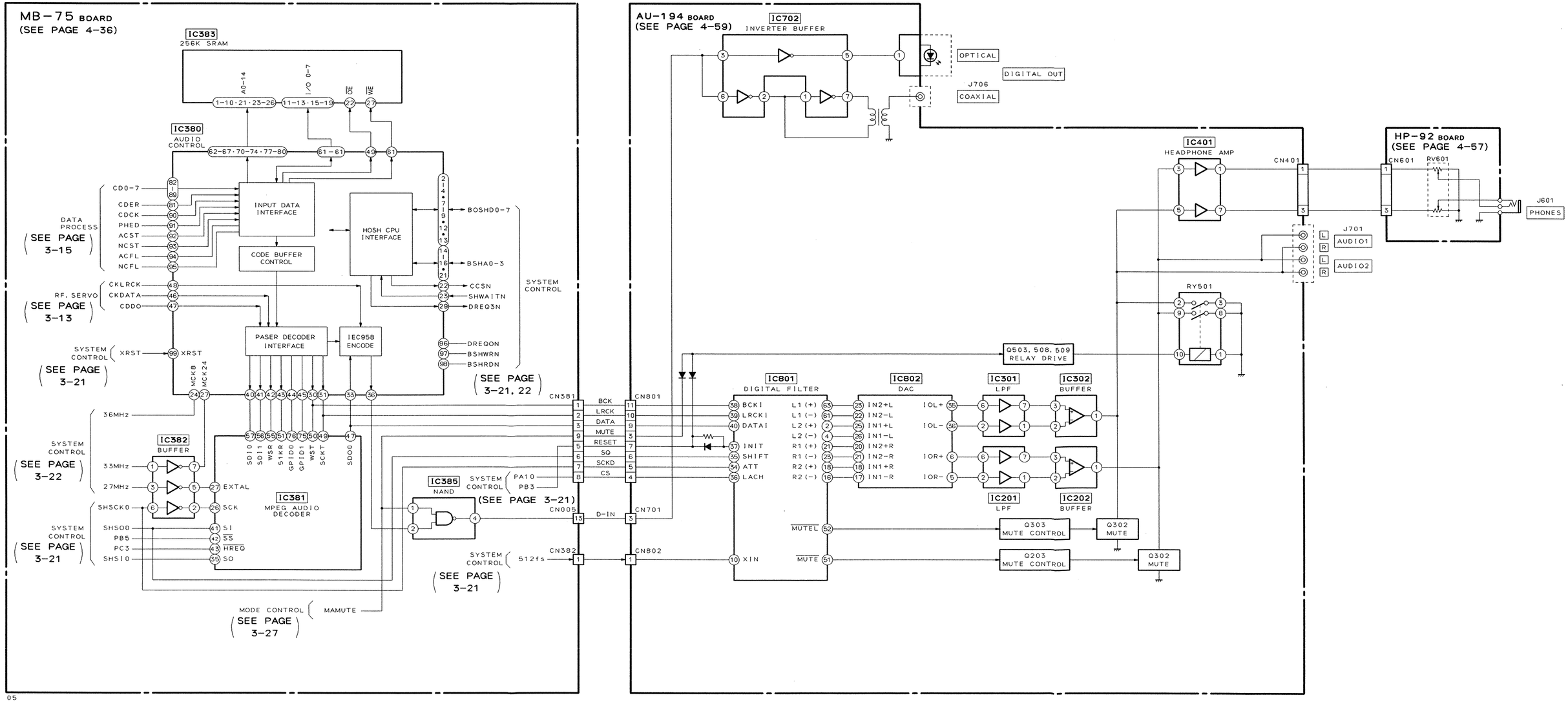
3-5. VIDEO BLOCK DIAGRAM



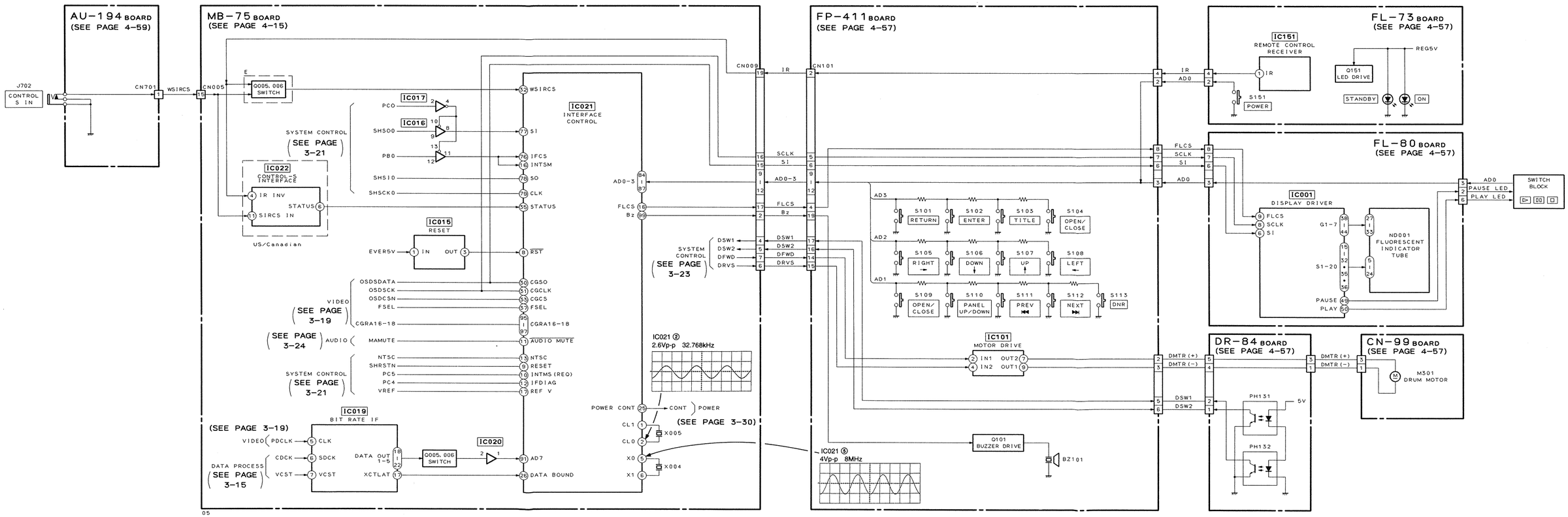
3-6. SYSTEM CONTROL BLOCK DIAGRAM



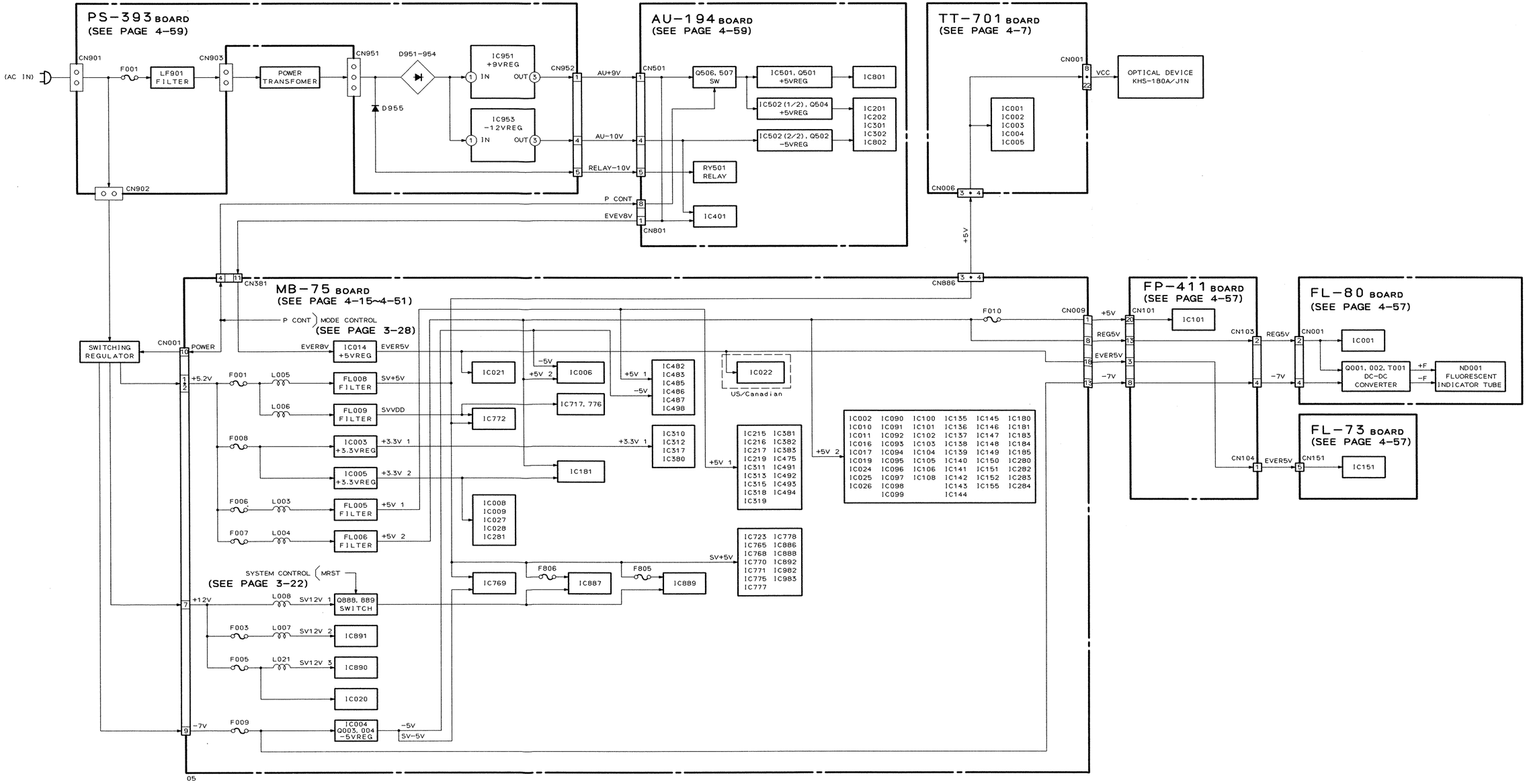
3-7. AUDIO BLOCK DIAGRAM



3-8. MODE CONTROL BLOCK DIAGRAM



3-9. POWER SUPPLY BLOCK DIAGRAM



SECTIONN 4
PRINTED WIRNIG BOARDS
AND
SCHEMATIC DIAGRAMS

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

For printed wiring boards:

- ○——— : indicates a lead wire mounted on the component side.
- ●——— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ■ : Parts mounted on the conductor side.
- ▒▒▒ : Pattern from the side which enables seeing.
- ▒▒▒ : Pattern on the rear side.*
- Circled numbers refer to waveforms.

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

For schematic Diagram:

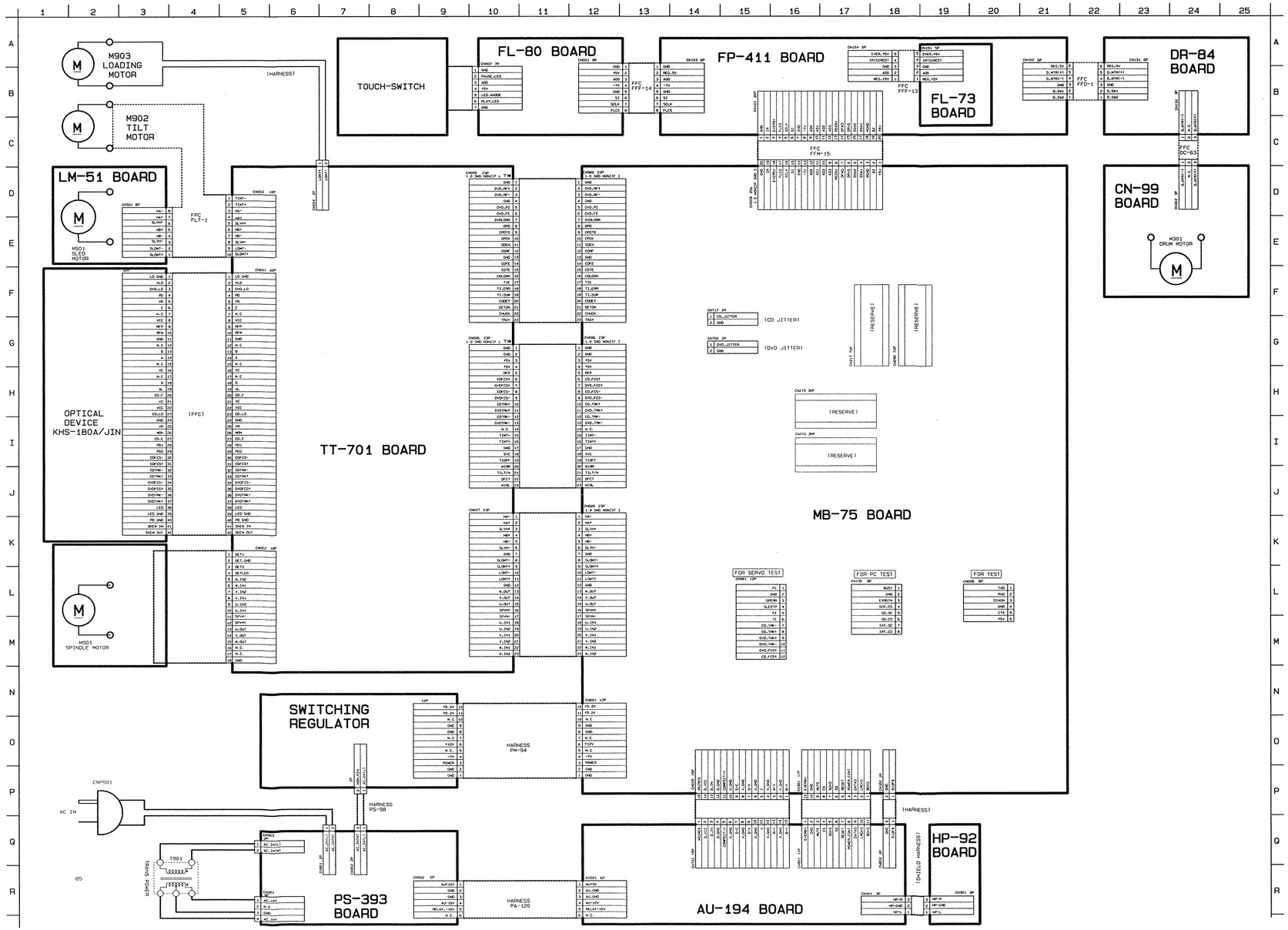
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4 W (Chip resistors : 1/10 W) unless otherwise specified.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- 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 measurement point.*
- Readings are taken with color bar signals on DVD reference disc and when playing CD reference disc.*
- Readings are taken with a digital multimeter (DC 10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

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

- * : indicated by the color red.

4-1. FRAME SCHEMATIC DIAGRAM

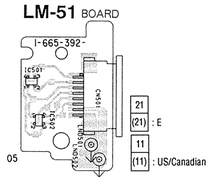


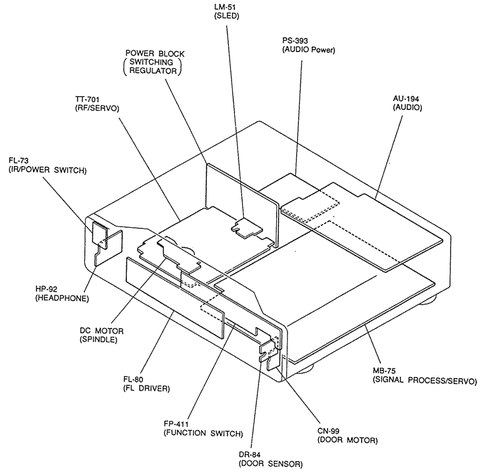
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

TT-701 (RF, SERVO), LM-51 (SLED) PRINTED WIRING BOARDS

– Ref. No.: TT-701 Board; 5,000 series, LM-51 Board; 1,000 series –

LM-51 BOARD



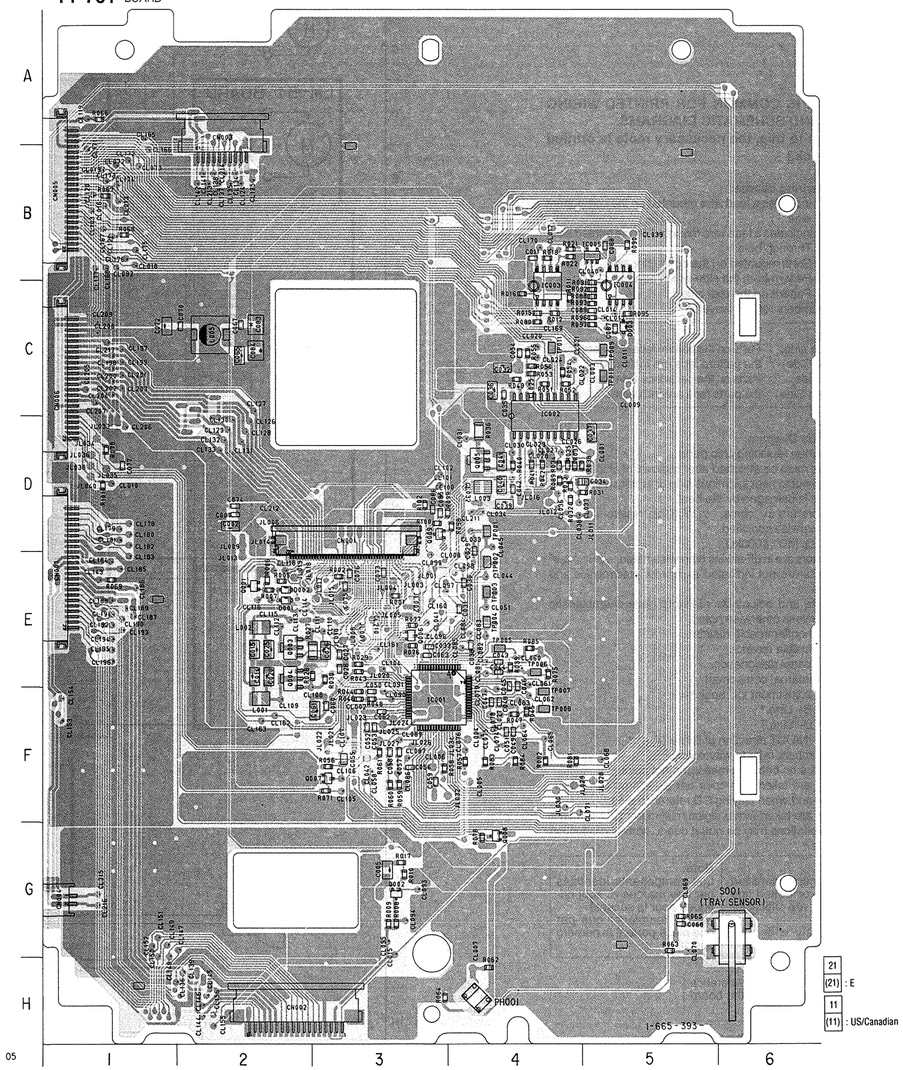


TT-701 BOARD

CN001	D-2
CN002	H-2
CN003	A-2
CN004	G-1
CN005	B-1
CN006	C-1
CN007	D-1
D001	E-2
D002	E-2
D003	C-5
IC001	F-3
IC002	C-4
IC003	C-4
IC004	C-5
IC005	B-5
Q001	E-2
Q002	G-3
Q003	E-2
Q004	F-2
Q005	D-4
Q007	F-3
Q008	G-4
Q009	D-3

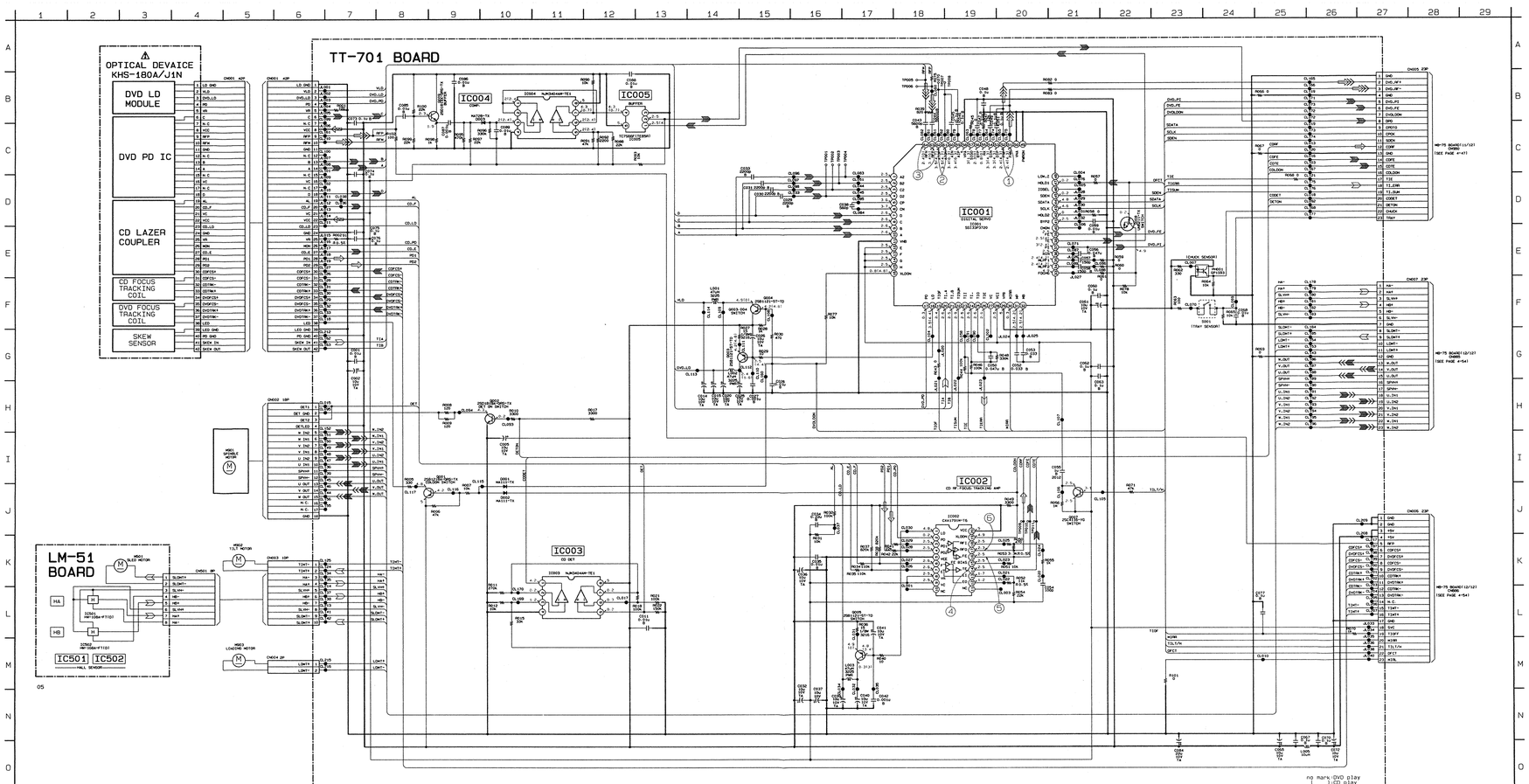
There are few cases that the part isn't mounted in this model is printed on this diagram.

TT-701 BOARD



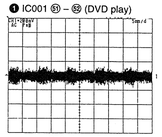
TT-701 (RF, SERVO), LM-51 (SLED) SCHEMATIC DIAGRAM

– Ref. No.: TT-701 Board; 5,000 series, LM-51 Board; 1,000 series –



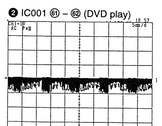
• **Waveforms**

❶ IC001 (53) – (52) (DVD play)



270mVp-p (V)

❷ IC001 (6) – (2) (DVD play)

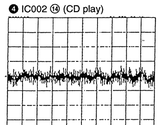


1.2Vp-p (V)

❸ IC001 (63) – (64) (DVD play)

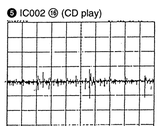
800mVp-p (V)

❹ IC002 (4) (CD play)



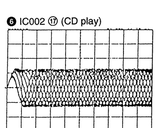
500mV/DIV 1ms/DIV

❺ IC002 (4) (CD play)



500mV/DIV 10ms/DIV

❻ IC002 (7) (CD play)



500mV/DIV 1µs/DIV

• Signal path

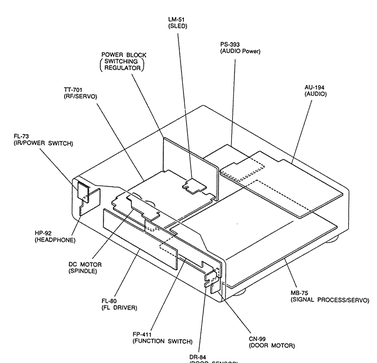
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

SPINDLE SERVO (SPEED AND PHASE)	⇨
TRACKING SERVO DVD/CD CDV	⇨
SLIDE SERVO DVD/CD	⇨
FOCUS SERVO	⇨
SKEW SERVO DVD/CD	⇨

MB-75 (SIGNAL PROCESS) PRINTED WIRING BOARD

– Ref. No.: MB-75 Board; 3,000 series –

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



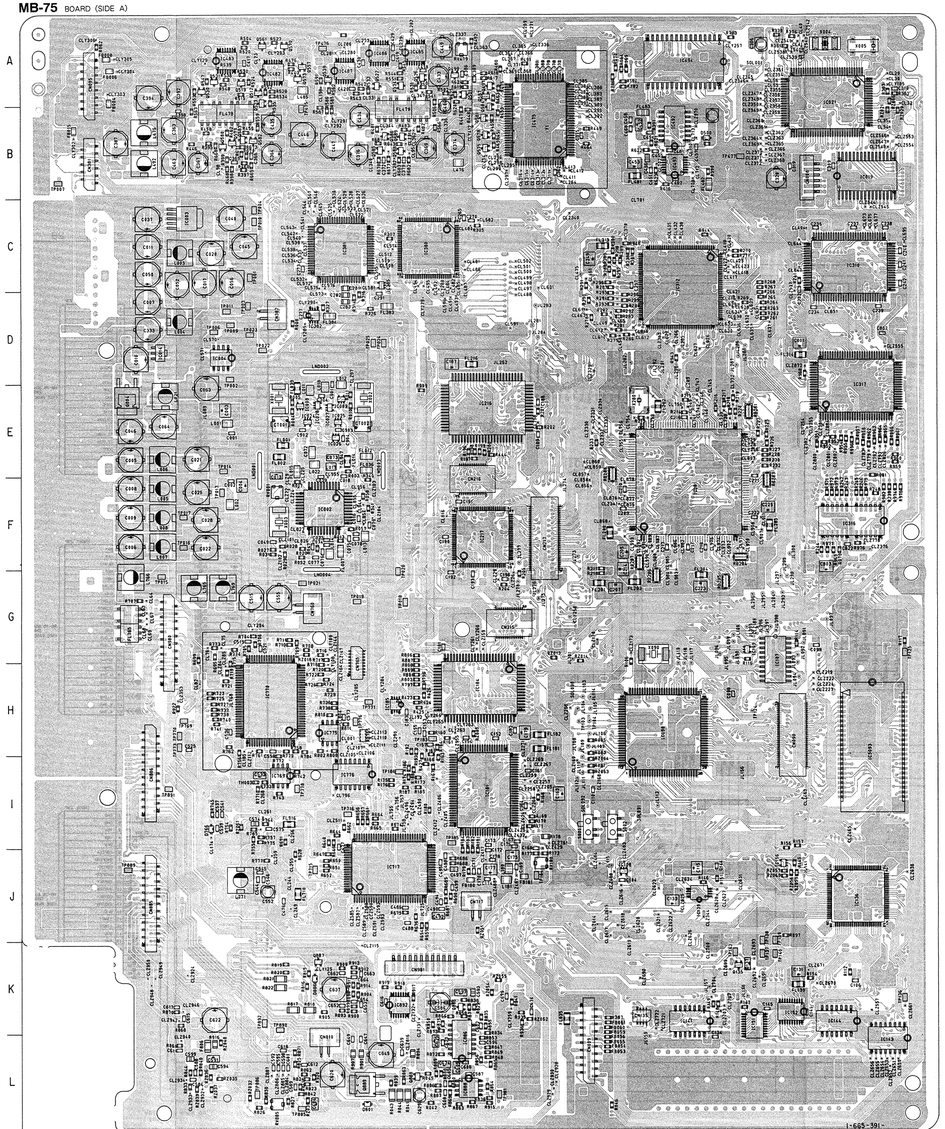
MB-75 BOARD (SIDE A)

CN005	A-1	IC382	D-4
CN008	B-9	IC385	C-4
CN009	L-7	IC475	B-5
CN135	K-7	IC482	A-3
CN381	B-1	IC483	A-3
CN382	D-3	IC485	A-5
CN717	J-5	IC486	A-4
CN760	G-4	IC487	A-4
CN885	J-2	IC492	B-7
CN886	I-2	IC493	B-7
CN980	G-2	IC494	A-8
CN981	K-5	IC717	J-4
		IC769	I-3
D500	B-8	IC770	H-3
D601	L-4	IC775	H-4
D766	I-2	IC776	I-4
D886	K-4	IC888	K-5
		IC888	L-5
IC002	F-4	IC892	K-5
IC003	C-2		
IC004	D-3	Q004	E-2
IC008	E-4	Q497	A-6
IC009	E-4	Q499	A-5
IC014	D-2	Q501	A-5
IC019	B-10	Q512	A-3
IC021	A-9	Q519	A-3
IC024	E-4	Q522	A-4
IC025	E-4	Q523	A-3
IC026	E-4	Q526	A-5
IC027	E-4	Q530	A-3
IC028	E-4	Q531	A-3
IC090	H-7	Q534	A-5
IC108	J-7	Q539	A-4
IC109	G-8	Q557	A-4
IC136	J-9	Q561	A-3
IC139	J-8	Q570	A-3
IC141	K-8	Q573	A-4
IC143	K-10	Q575	B-5
IC144	K-9	Q576	B-5
IC151	K-8	Q579	B-3
IC152	K-9	Q580	B-3
IC156	J-9	Q581	A-5
IC181	I-5	Q582	B-3
IC184	H-5	Q583	B-3
IC185	H-4	Q584	A-5
IC216	E-5	Q585	B-4
IC217	F-5	Q586	B-4
IC281	F-8	Q587	A-5
IC310	C-9	Q588	B-5
IC312	C-8	Q589	B-5
IC316	F-9	Q886	K-5
IC317	D-9	Q887	K-4
IC380	C-5	Q888	L-5
IC381	C-4	Q889	L-4

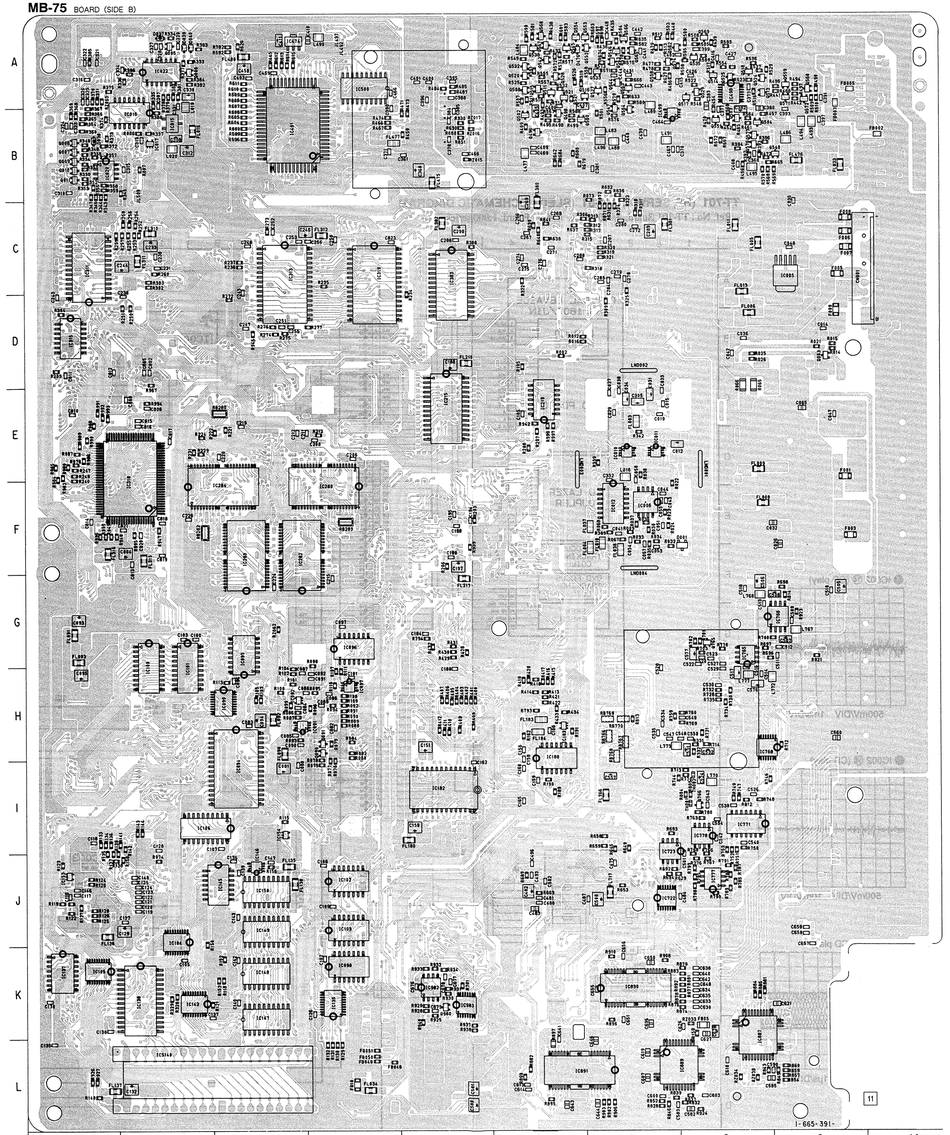
MB-75 BOARD (SIDE B)

CN001	C-9	IC887	K-8
		IC889	L-7
D001	F-8	IC890	K-7
D037	A-2	IC891	L-6
D038	B-1	IC983	K-5
D039	A-2		
D040	A-2	Q003	D-9
D476	A-6	Q005	A-2
		Q006	A-2
IC005	C-9	Q007	B-1
IC006	F-7	Q008	B-1
IC010	E-7	Q009	B-1
IC011	E-7	Q010	B-1
IC012	F-7	Q011	B-1
IC015	B-2	Q090	H-4
IC016	B-2	Q091	H-4
IC017	B-2	Q496	B-6
IC020	B-1	Q498	A-6
IC022	A-2	Q500	B-6
IC091	H-3	Q502	A-6
IC092	H-3	Q503	B-8
IC094	H-3	Q504	B-8
IC095	G-3	Q508	A-6
IC096	G-4	Q511	A-6
IC097	H-4	Q513	A-8
IC098	K-4	Q514	A-8
IC099	H-3	Q515	A-6
IC100	G-2	Q516	A-7
IC101	G-2	Q517	A-8
IC102	J-4	Q518	A-8
IC103	J-4	Q520	A-6
IC104	J-2	Q521	A-6
IC105	K-1	Q524	A-8
IC106	I-2	Q525	A-8
IC135	K-4	Q527	A-7
IC137	K-1	Q528	A-6
IC138	K-2	Q529	A-8
IC142	K-2	Q532	A-8
IC145	J-3	Q533	A-7
IC146	J-3	Q535	A-8
IC147	K-3	Q538	A-6
IC148	K-3	Q540	B-9
IC149	J-3	Q542	A-6
IC150	J-3	Q543	A-7
IC153	J-1	Q544	A-7
IC154	I-3	Q545	A-6
IC180	I-6	Q546	A-7
IC182	I-5	Q547	A-7
IC183	H-6	Q551	B-8
IC215	E-5	Q552	A-7
IC219	E-6	Q558	A-7
IC280	F-4	Q559	A-9
IC282	F-3	Q560	A-9
IC283	F-3	Q562	A-7
IC284	F-3	Q563	A-7
IC311	C-1	Q564	A-7
IC313	C-3	Q565	A-7
IC315	D-1	Q566	A-7
IC318	E-2	Q567	A-6
IC319	C-4	Q568	A-6
IC383	C-5	Q569	A-8
IC474	A-3	Q571	A-9
IC491	B-3	Q572	A-9
IC498	A-8	Q574	A-7
IC722	J-7	Q576	B-8
IC723	J-7	Q577	B-8
IC765	G-8	Q765	G-8
IC768	H-8	Q766	I-5
IC771	I-8	Q980	K-5
IC777	J-8		
IC778	I-6		

MB-75 BOARD (SIDE A)

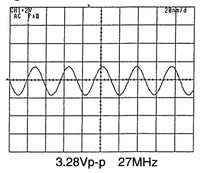


MB-75 BOARD (SIDE B)



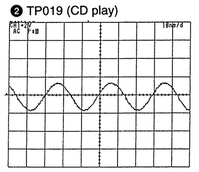
• **Waveforms**

❶ TP018



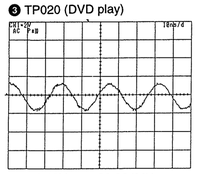
3.28Vp-p 27MHz

❷ TP019 (CD play)



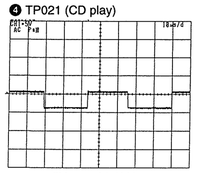
3.12Vp-p 33.87MHz

❸ TP020 (DVD play)



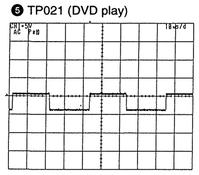
3.12Vp-p 36.864MHz

❹ TP021 (CD play)



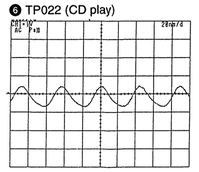
5Vp-p 21.6kHz

❺ TP021 (DVD play)



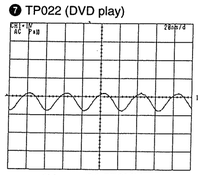
5Vp-p 24kHz

❻ TP022 (CD play)



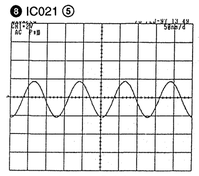
1.16Vp-p 22.58MHz

❼ TP022 (DVD play)



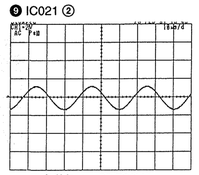
1Vp-p 24.576MHz

❽ IC021 ⑤



4Vp-p 8MHz

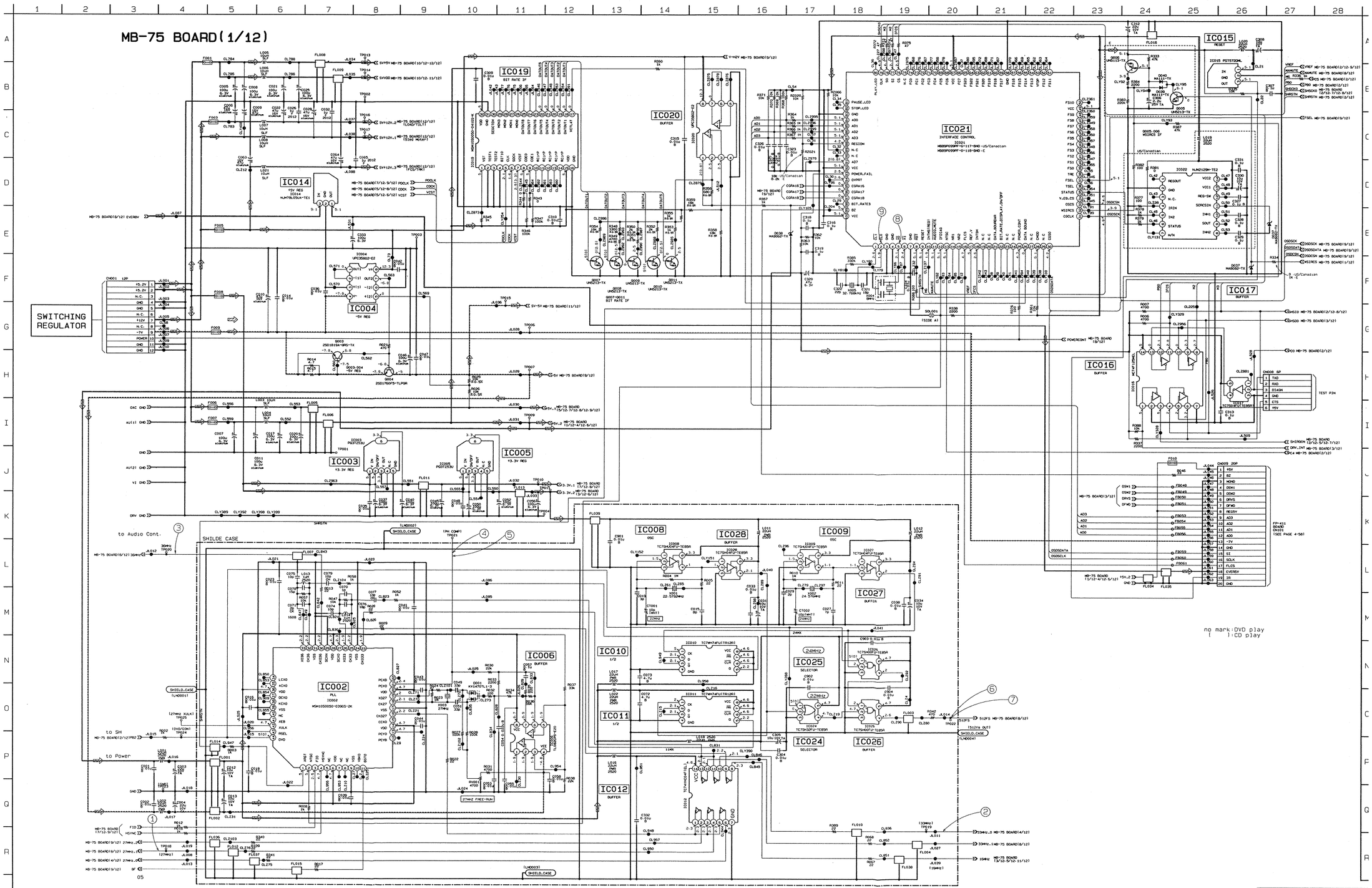
❾ IC021 ②



2.6Vp-p 32.768kHz

MB-75 (INTER FACE) SCHEMATIC DIAGRAM

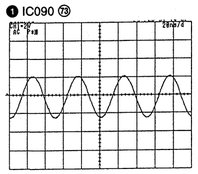
– Ref. No.: MB-75 Board; 3,000 series –



INTER FACE MB-75 (1/12)

• **Waveform**

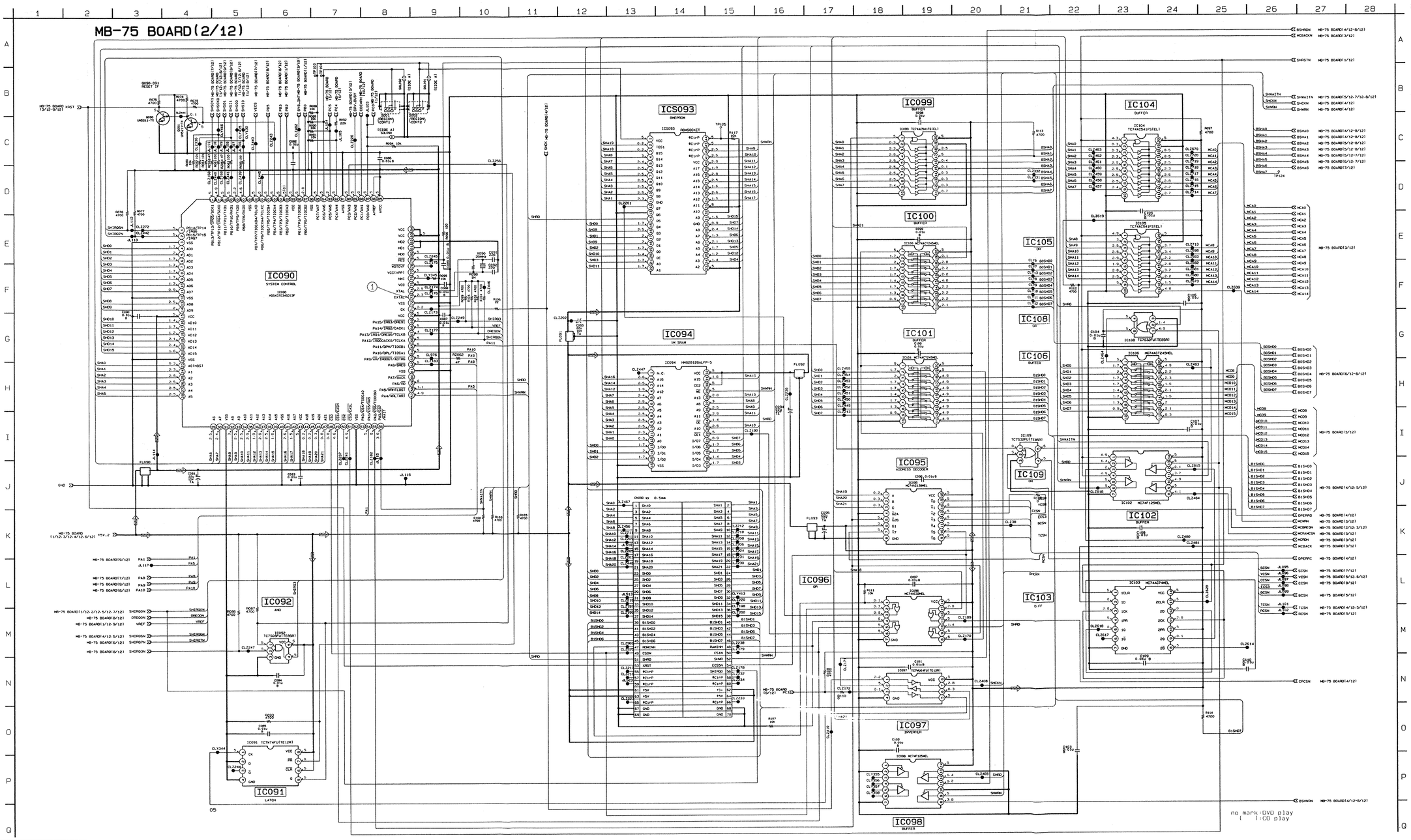
❶ IC090 (73)



4.7Vp-p 20MHz

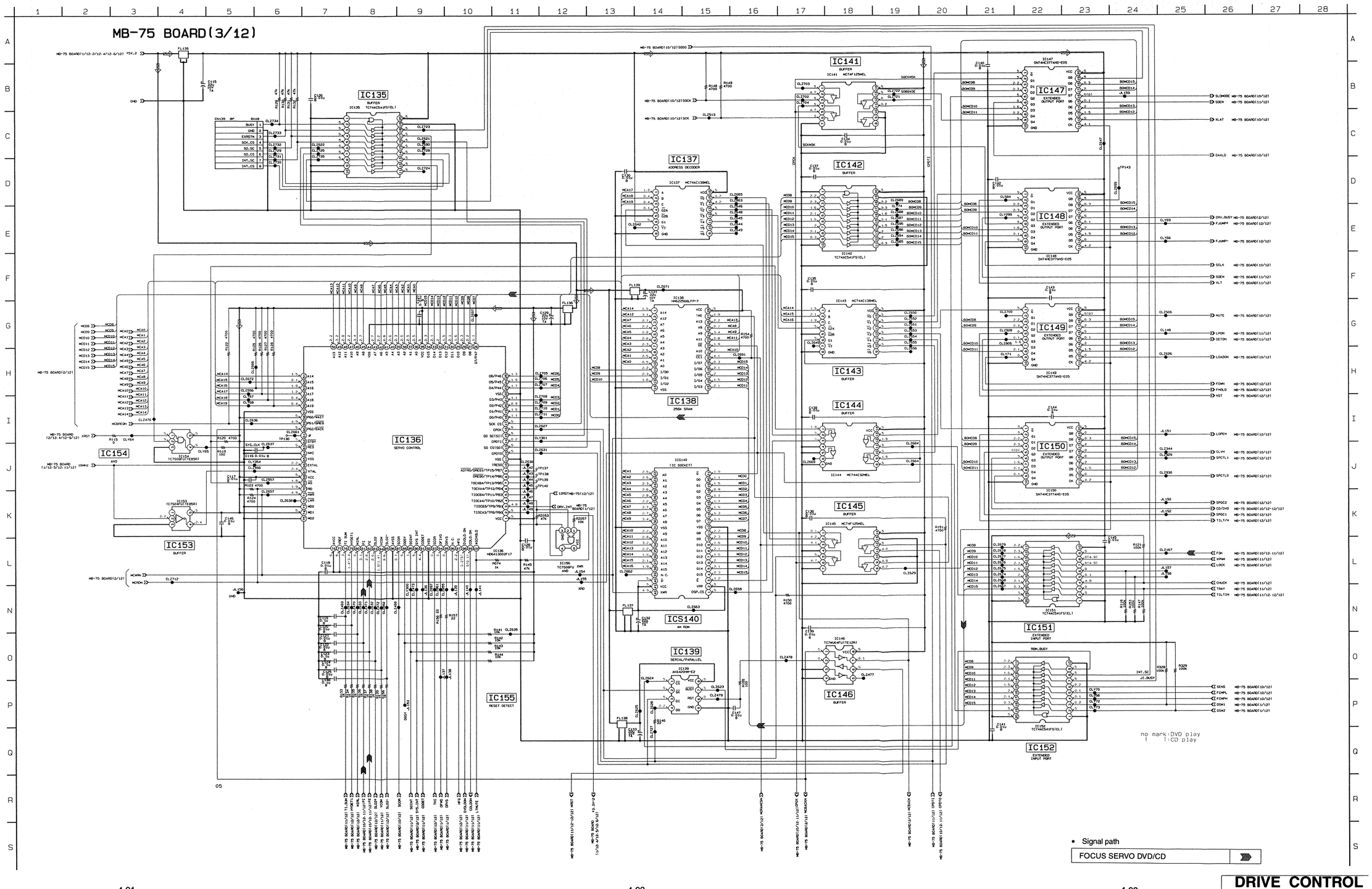
MB-75 (CPU) SCHEMATIC DIAGRAM • **See page 4-11 to 4-14 for printed wiring board.**

– Ref. No.: MB-75 Board; 3,000 series –



MB-75 (DRIVE CONTROL) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

– Ref. No.: MB-75 Board; 3,000 series –

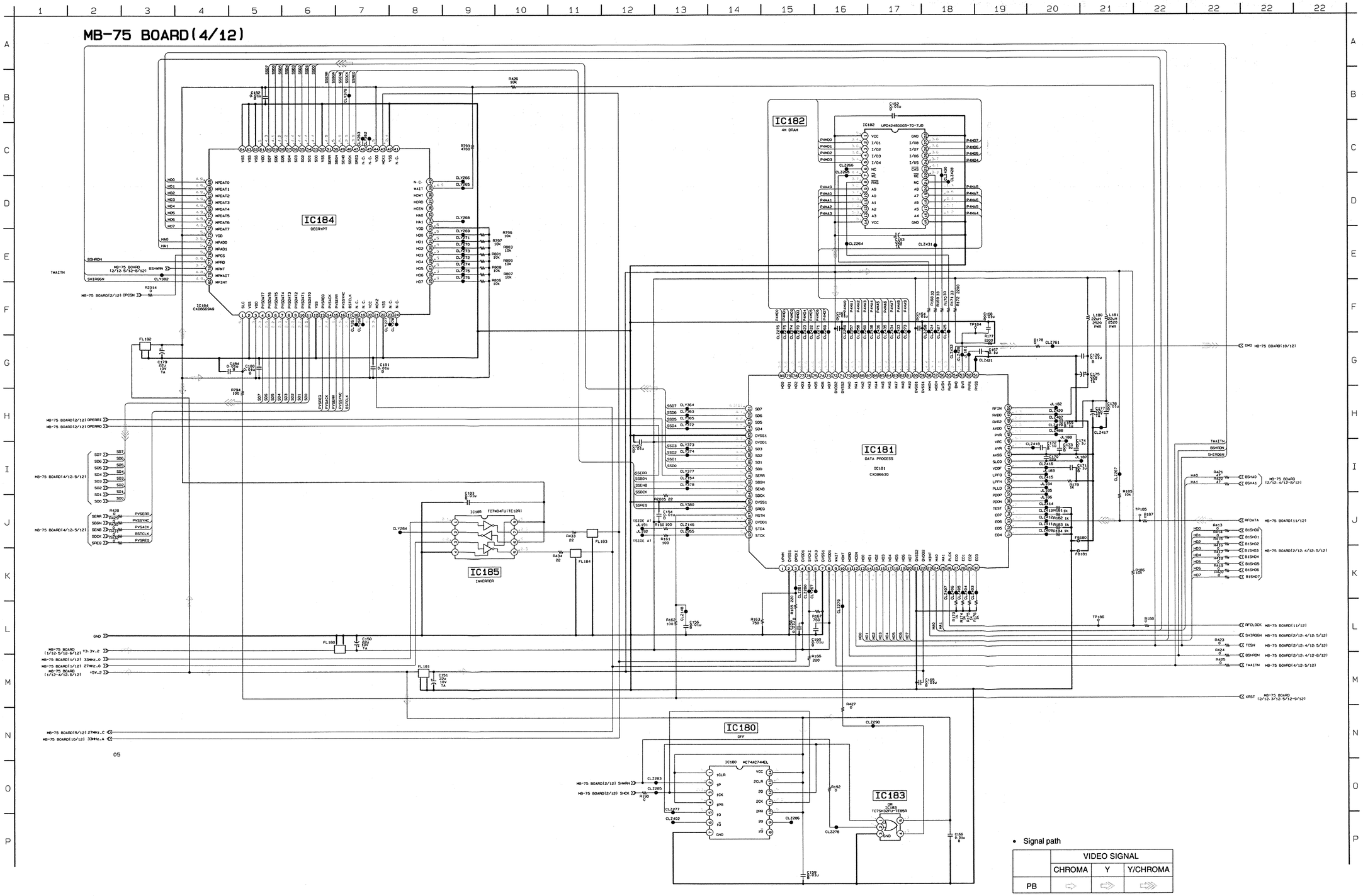


DRIVE CONTROL
MB-75 (3/12)

MB-75 (DVD DATA PROCESS) SCHEMATIC DIAGRAM

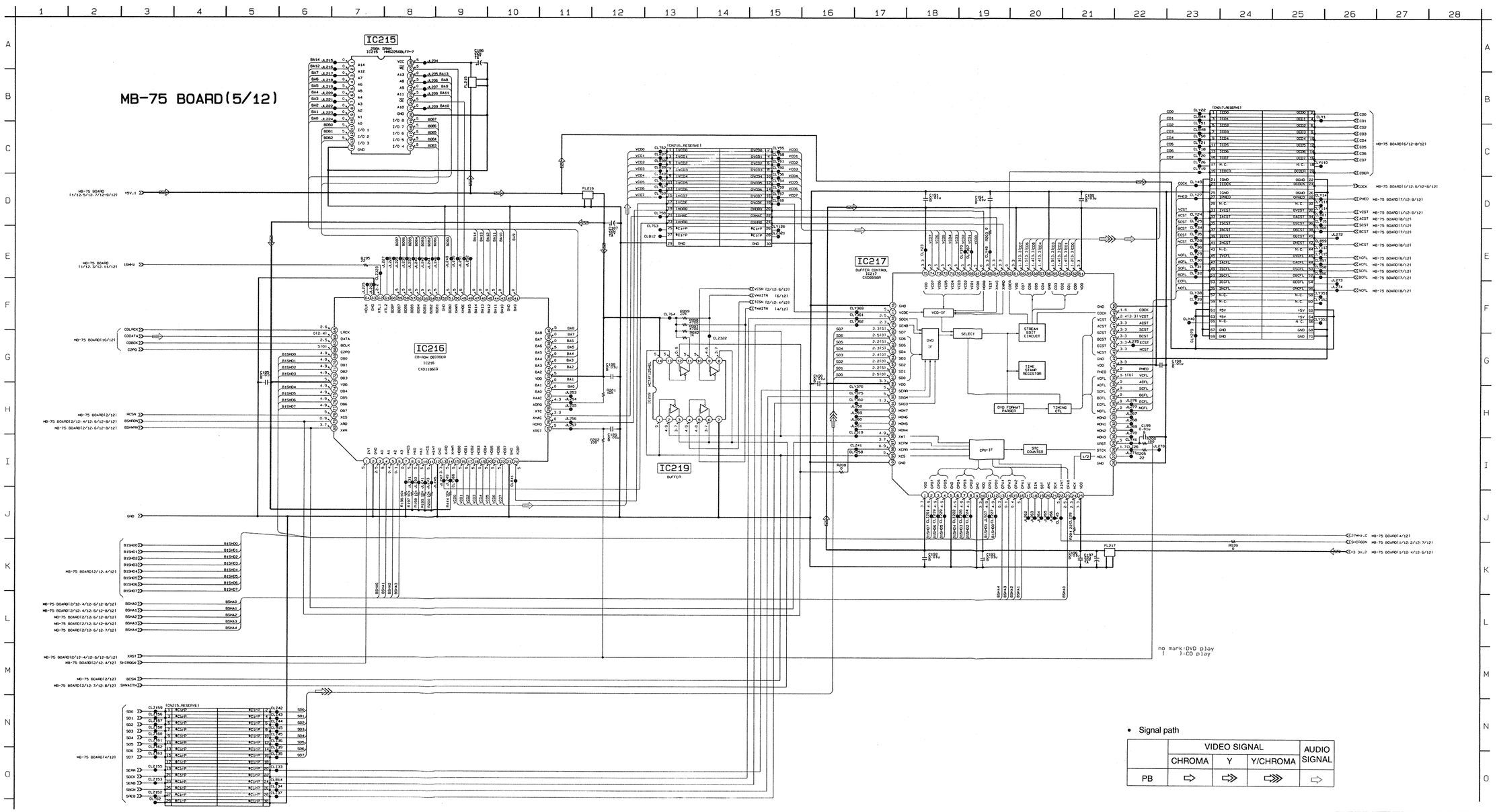
– Ref. No.: MB-75 Board; 3,000 series –

• See page 4-11 to 4-14 for printed wiring board.



MB-75 (CD ROM DECORD) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

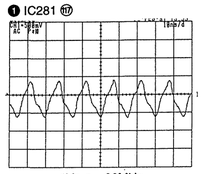
– Ref. No.: MB-75 Board; 3,000 series –



CD ROM DECORD
MB-75 (5/12)

• **Waveform**

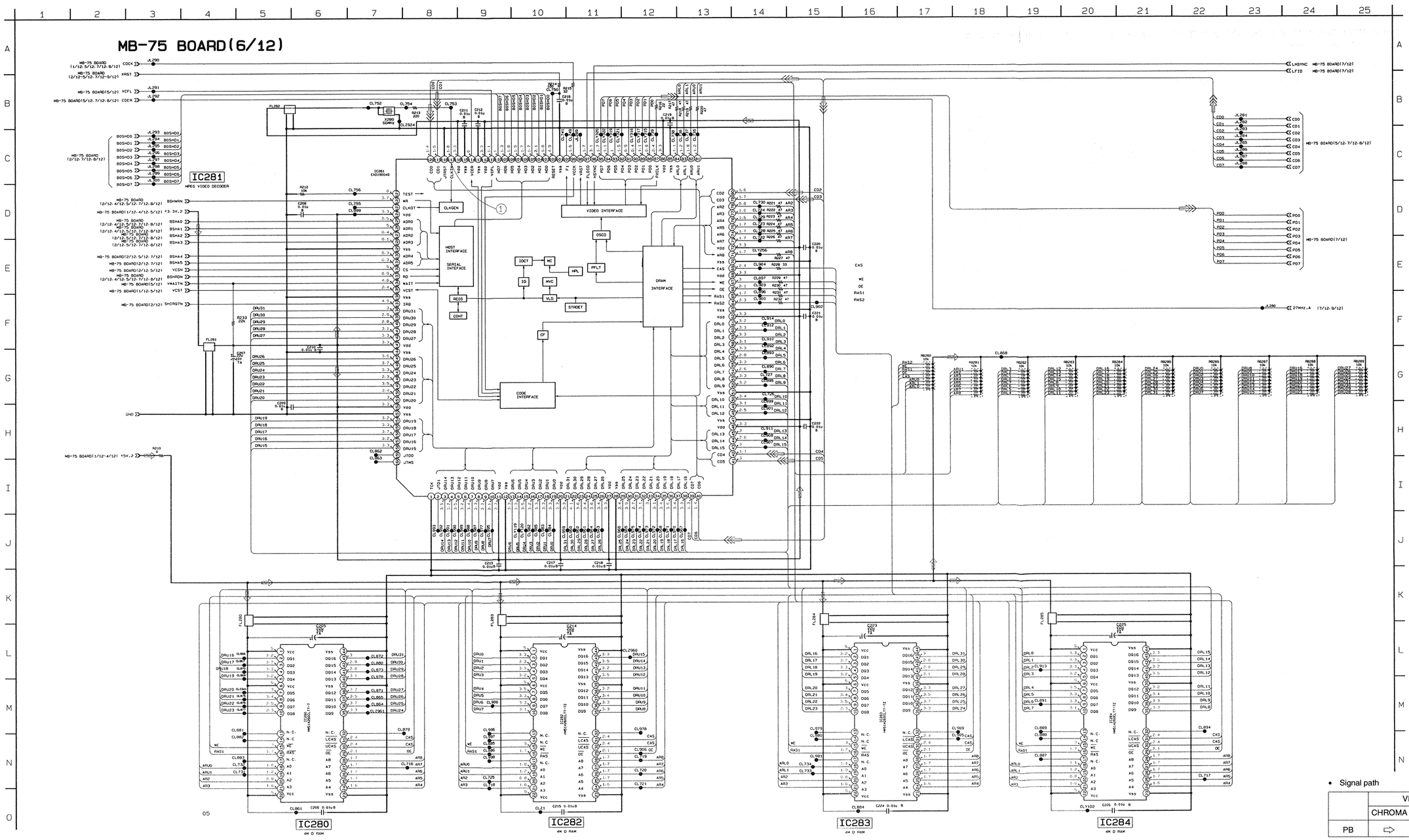
❶ IC281 ⑰



1Vp-p 66MHz

MB-75 (MPEG VIDEO DECORD) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

– Ref. No.: MB-75 Board; 3,000 series –

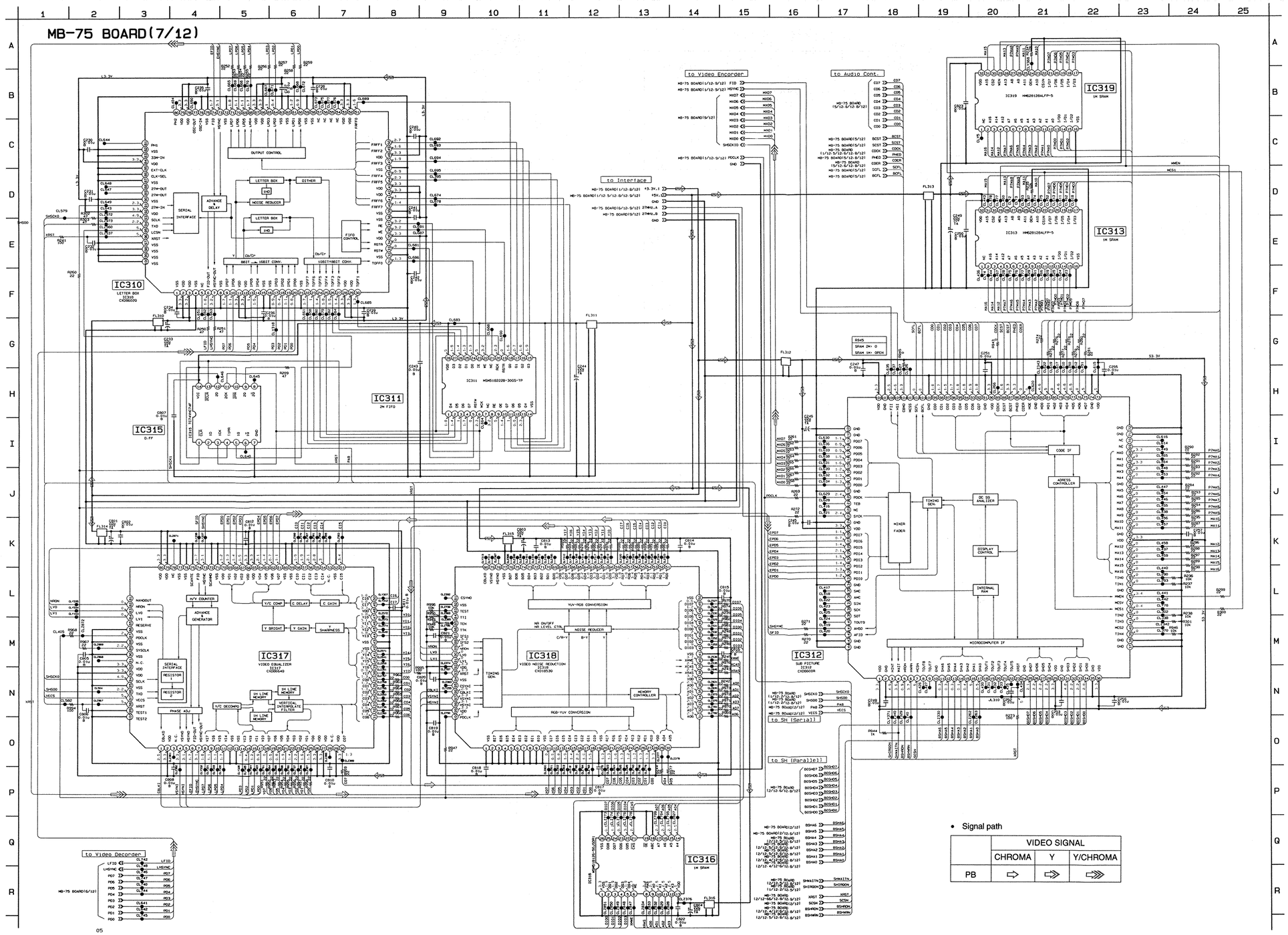


• Signal path

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨	⇨

MB-75 (VIDEO EQ, LETTER BOX, SUB PICTURE) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

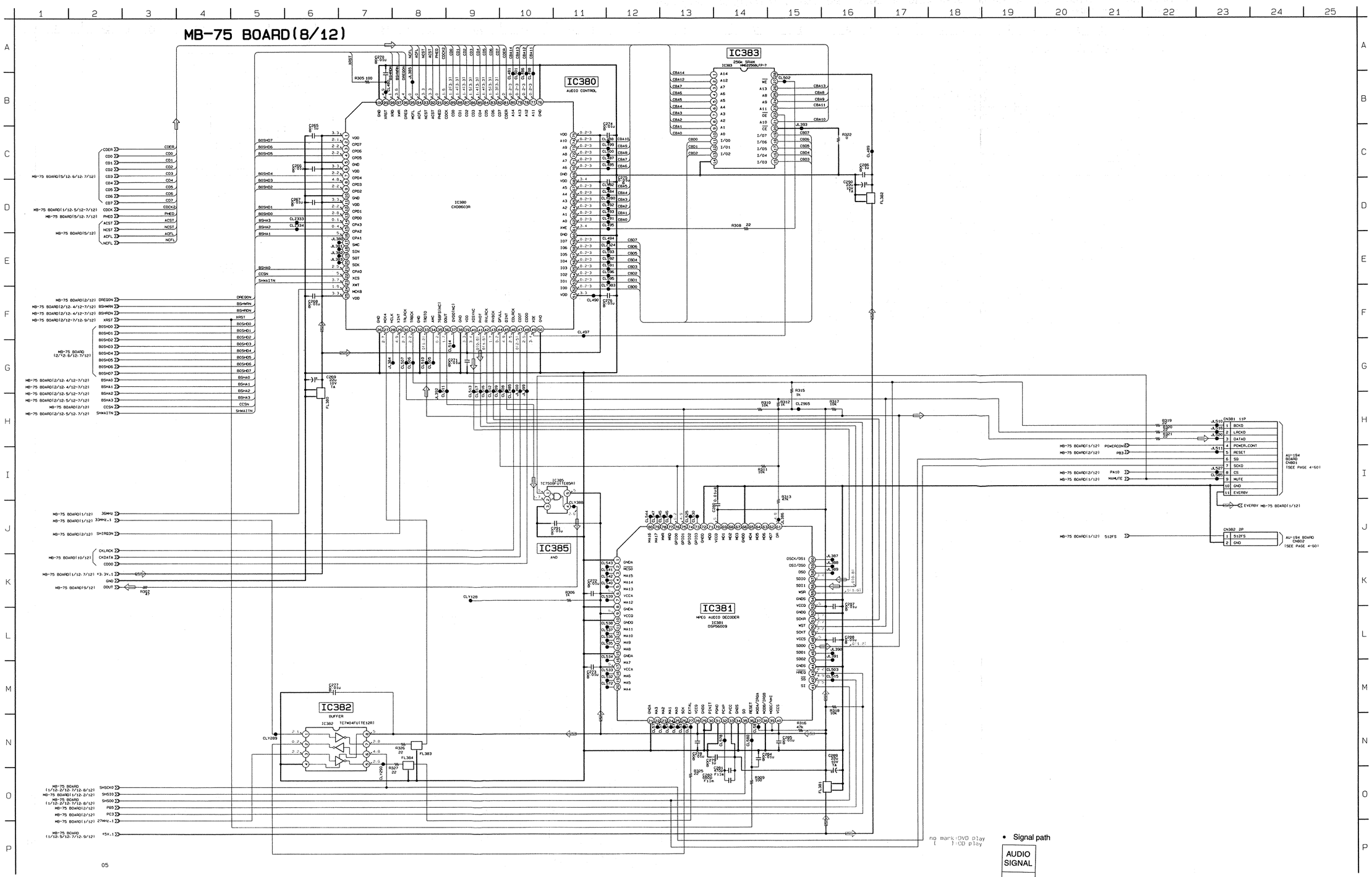
– Ref. No.: MB-75 Board; 3,000 series –



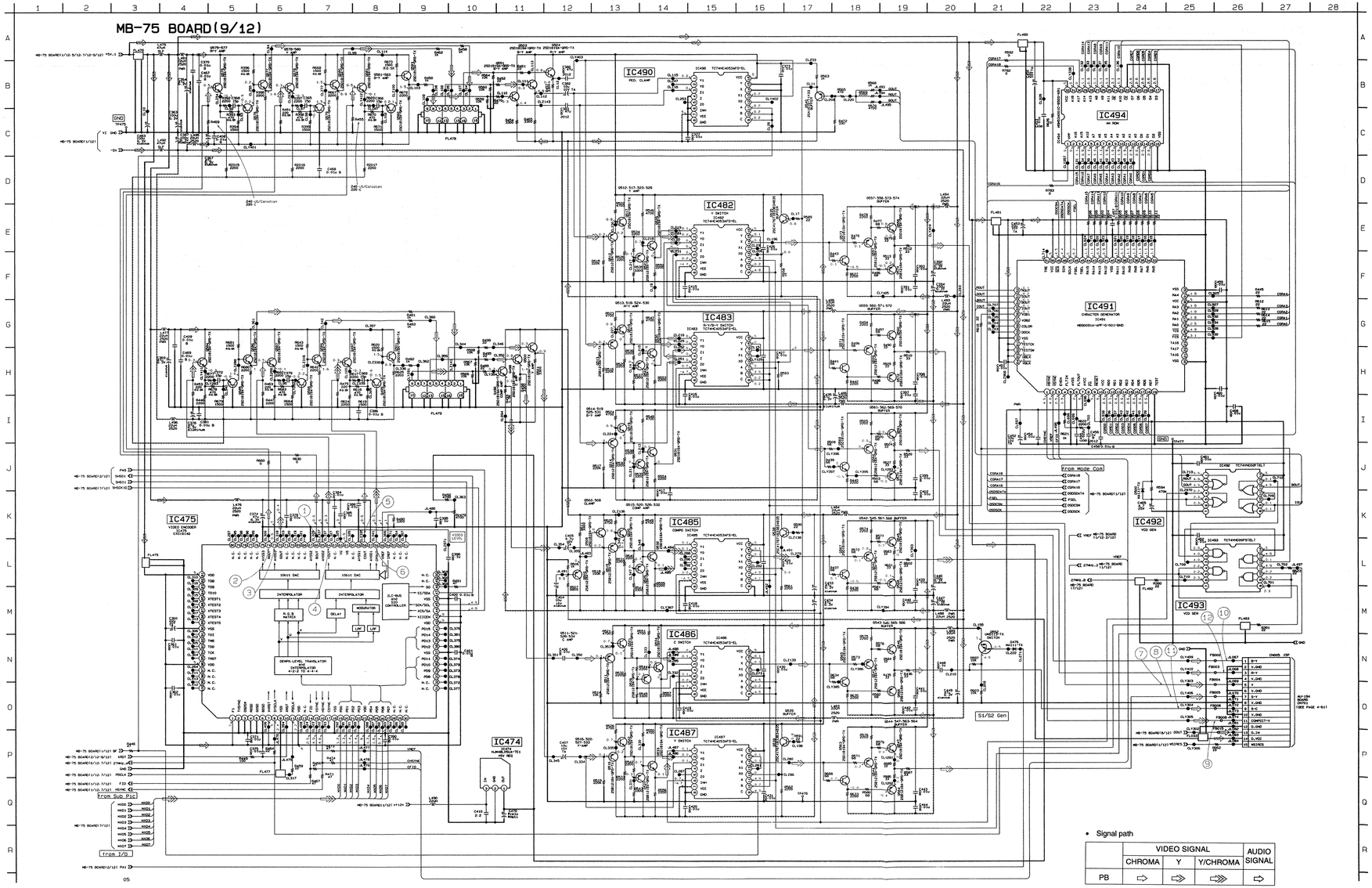
- Signal path

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
PB	⇨	⇨	⇨

MB-75 (AUDIO DECODE) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
– Ref. No.: MB-75 Board; 3,000 series –



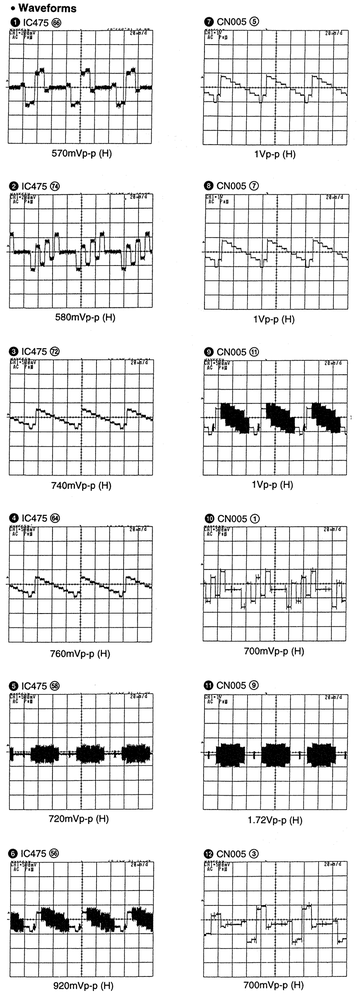
MB-75 (VIDEO) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.
– Ref. No.: MB-75 Board; 3,000 series –



• Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

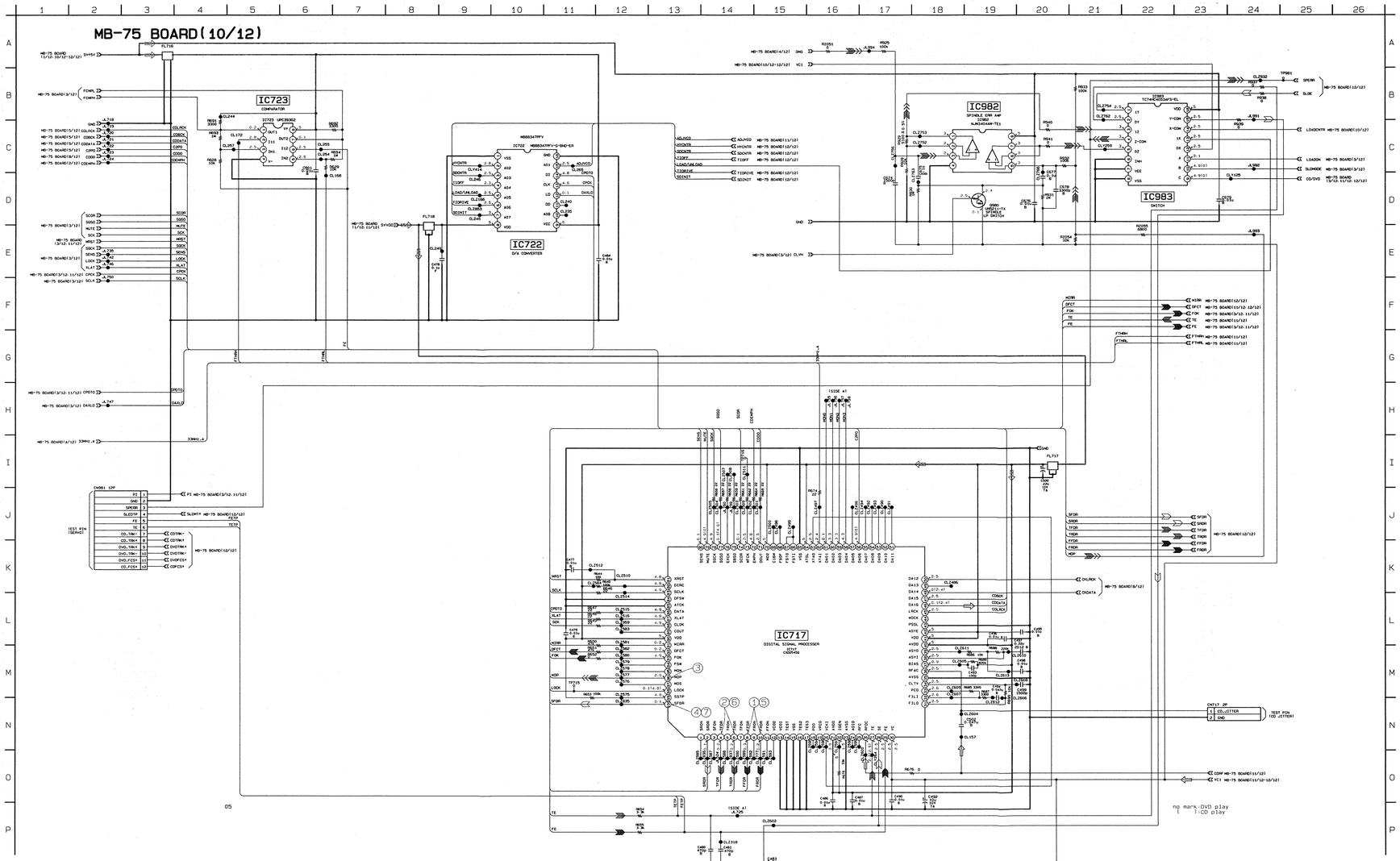
• Waveforms


❶ IC475 ㊱
570mVp-p (H)
❷ IC475 ㊻
580mVp-p (H)
❸ IC475 ㉒
740mVp-p (H)
❹ IC475 ㊹
760mVp-p (H)
❺ IC475 ㊿
720mVp-p (H)
❻ IC475 ㊿
920mVp-p (H)
❼ CN005 ⑤
1Vp-p (H)
❽ CN005 ⑦
1Vp-p (H)
❾ CN005 ⑪
1Vp-p (H)
❿ CN005 ①
700mVp-p (H)
⓫ CN005 ⑨
1.72Vp-p (H)
⓬ CN005 ③
700mVp-p (H)

VIDEO
MB-75 (9/12)

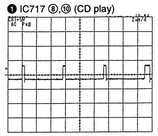
MB-75 (DEGITAL SERVO) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

– Ref. No.: MB-75 Board; 3,000 series –



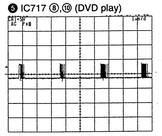
• **Waveforms**

❶ IC717 ⑧,⑱ (CD play)



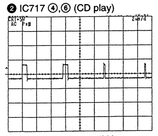
6.2Vp-p 177kHz

❺ IC717 ⑧,⑱ (DVD play)



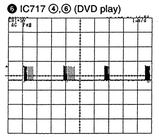
6.2Vp-p 2.8µsec

❷ IC717 ④,⑥ (CD play)



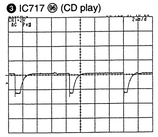
6.2Vp-p 177kHz

❻ IC717 ④,⑥ (DVD play)



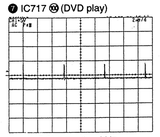
6.2Vp-p 2.8µsec

❸ IC717 ⑯ (CD play)



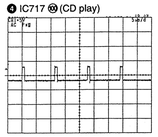
3.4Vp-p 133kHz

❼ IC717 ⑯ (DVD play)



5.6Vp-p 1.77kHz

❹ IC717 ⑯ (CD play)



6.2Vp-p 88.5kHz

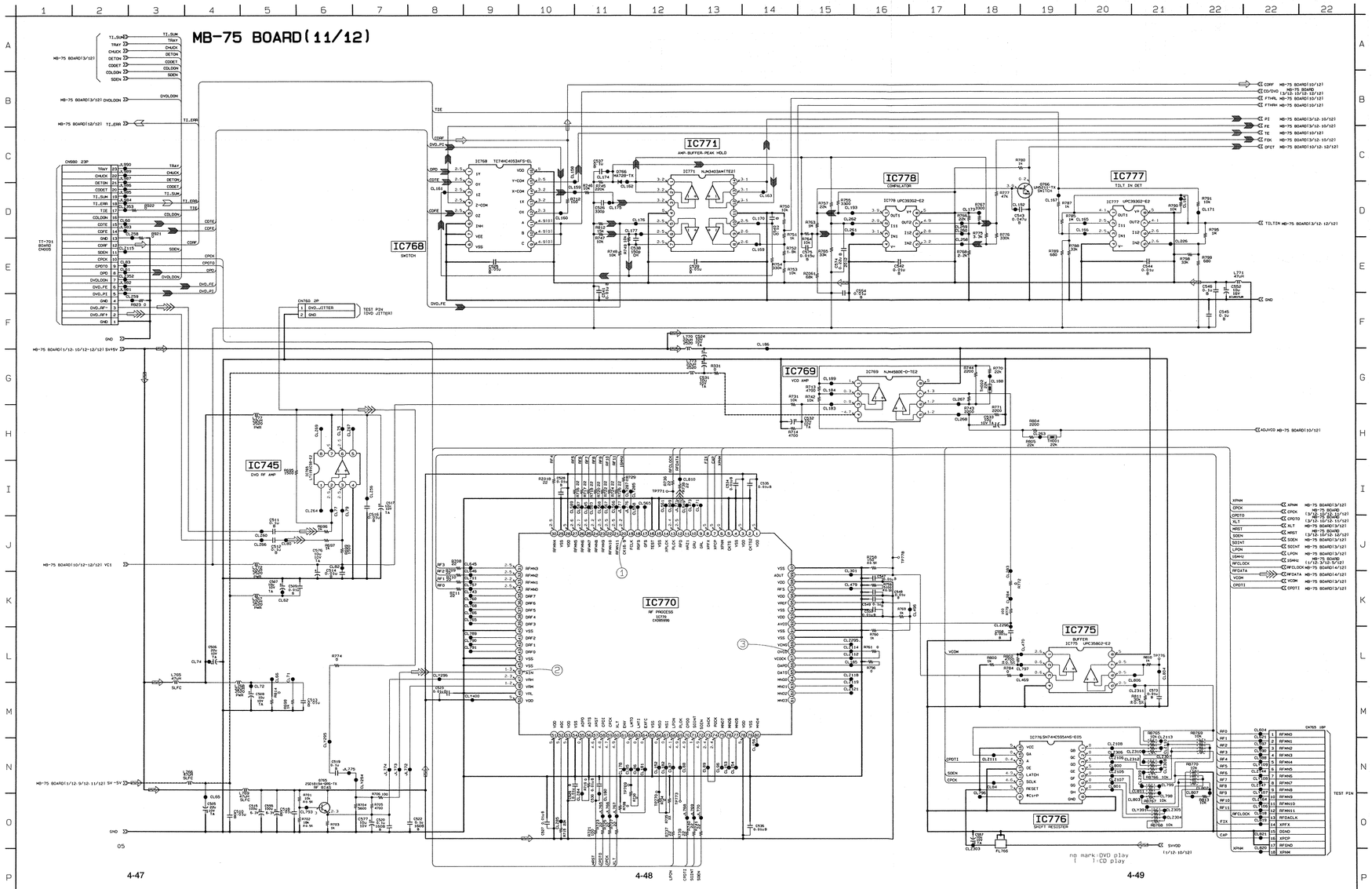
• Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

SPINDLE SERVO (SPEED AND PHASE)	⋙
TRACKING SERVO DVD/CD CDV	⋙
SLIDE SERVO DVD/CD	⋗
FOCUS SERVO	⋙
SKEW SERVO DVD/CD	⋗

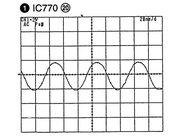
MB-75 (RF BLOCK) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

– Ref. No.: MB-75 Board; 3,000 series –



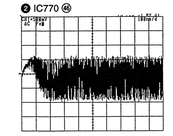
• **Waveforms**

❶ IC770 (22)



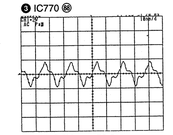
4Vp-p 16.93MHz

❷ IC770 (14)



1.62Vp-p 100nsec/DIV

❸ IC770 (18)



3.5Vp-p 53.2MHz

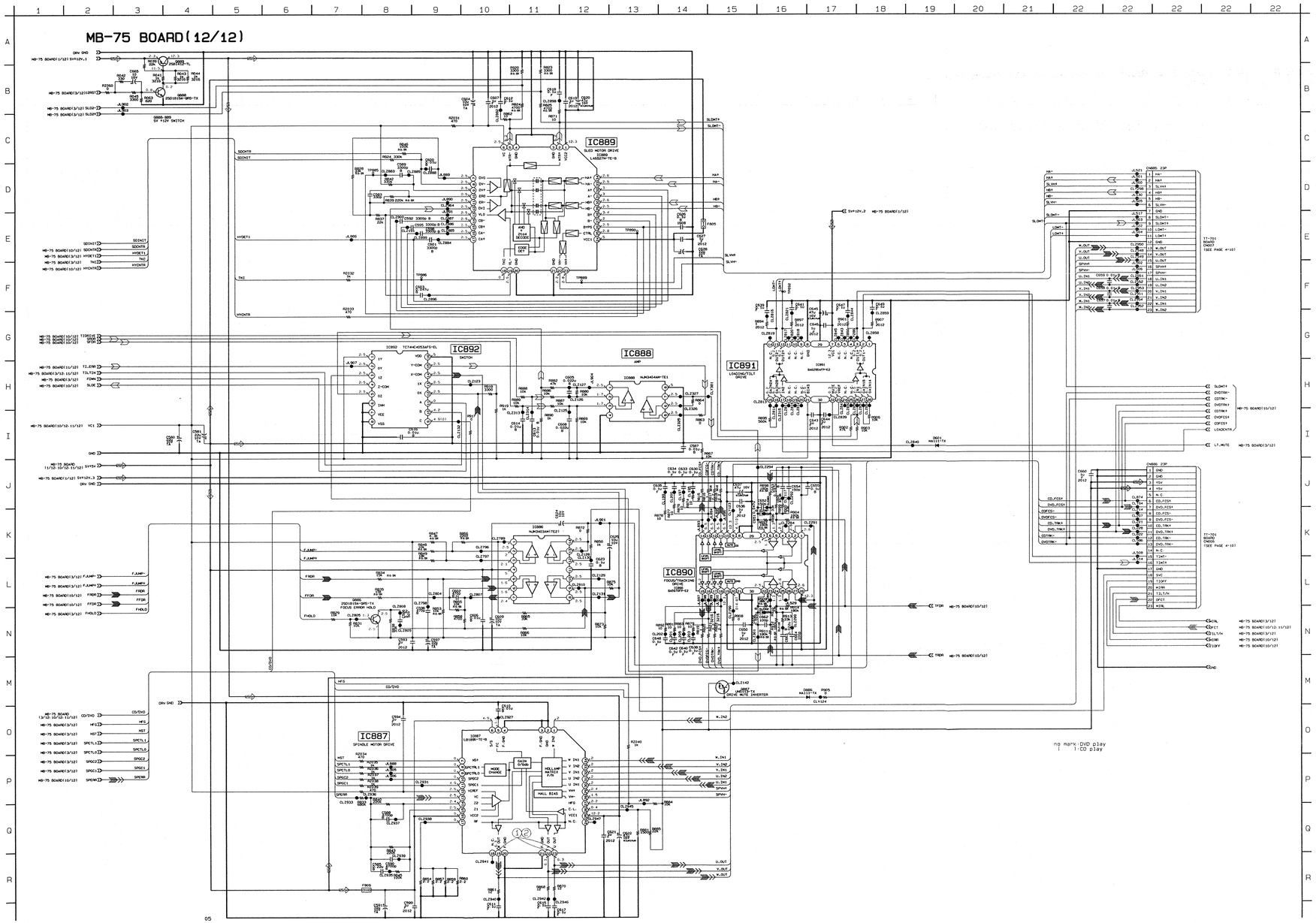
• Signal path

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

SPINDLE SERVO (SPEED AND PHASE)	⋙
TRACKING SERVO DVD/CD CDV	➡
SLIDE SERVO DVD/CD	Σ
FOCUS SERVO	➡
SKEW SERVO DVD/CD	Σ

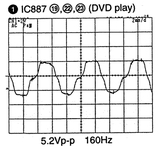
MB-75 (DRIVE) SCHEMATIC DIAGRAM • See page 4-11 to 4-14 for printed wiring board.

– Ref. No.: MB-75 Board; 3,000 series –



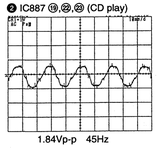
• **Waveforms**

❶ IC887 ⑭,⑮,⑯ (DVD play)



5.2Vp-p 160Hz

❷ IC887 ⑭,⑮,⑯ (CD play)



1.84Vp-p 45Hz

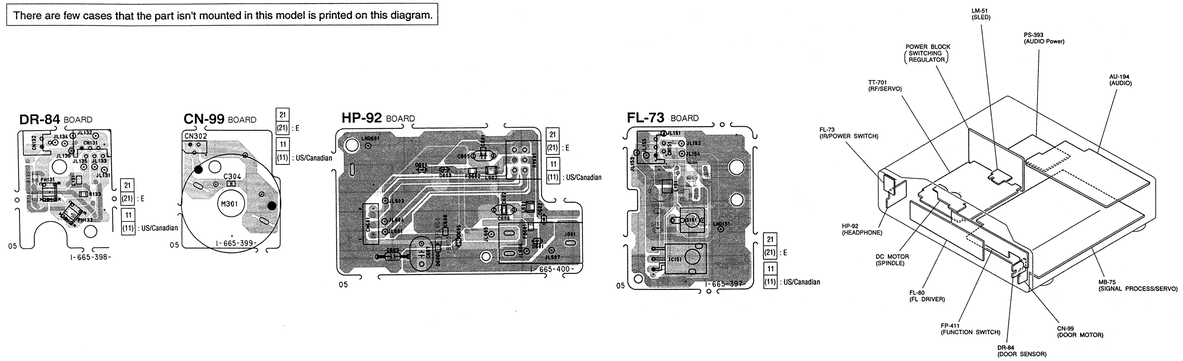
• Signal path

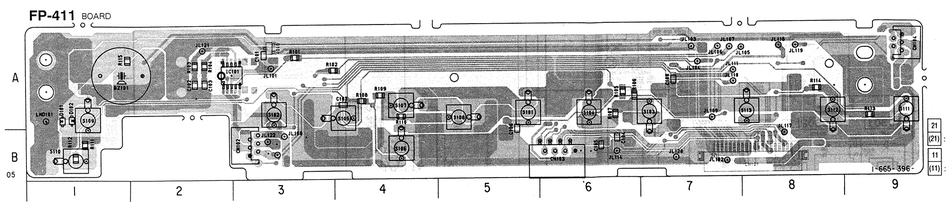
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

SPINDLE SERVO (SPEED AND PHASE)	
TRACKING SERVO DVD/CD CDV	
SLIDE SERVO DVD/CD	
FOCUS SERVO	
SKEW SERVO DVD/CD	

CN-99 (DOOR MOTOR), DR-84 (DOOR SENSOR), FL-73 (IR/POWER SWITCH), FL-80 (FL DRIVER), FP-411 (FUNCTION SWITCH), HP-92 (HEADPHONE)
PRINTED WIRING BOARDS and SCHEMATIC DIAGRAM
– Ref. No.: CN-99 Board, DR-84 Board, FL-73 Board, FL-80 Board, FP-411 Board, HP-92 Board; 1,000 series –

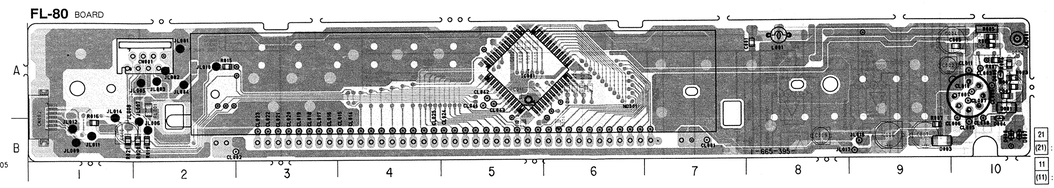
There are few cases that the part isn't mounted in this model is printed on this diagram.





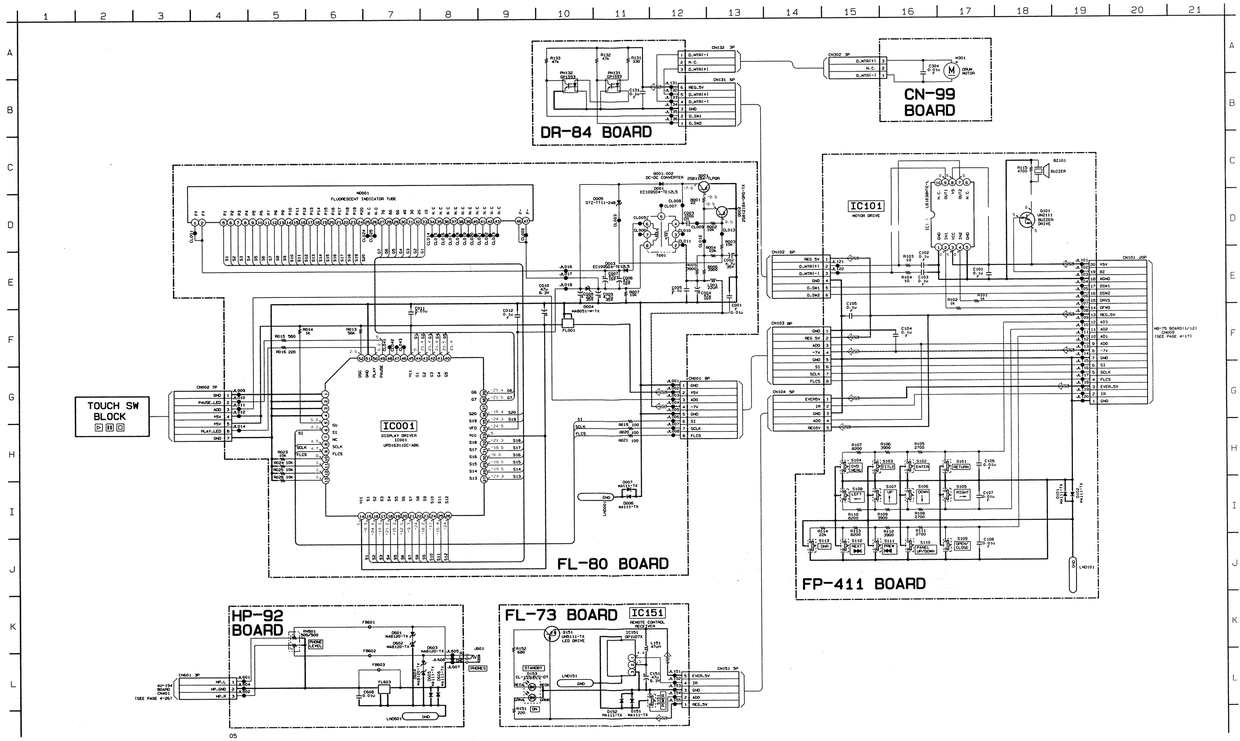
FP-411 BOARD

CN101	B-7
CN102	B-3
CN103	B-6
CN104	A-9
D101	A-1
D102	A-1
IC101	A-2
Q101	A-3



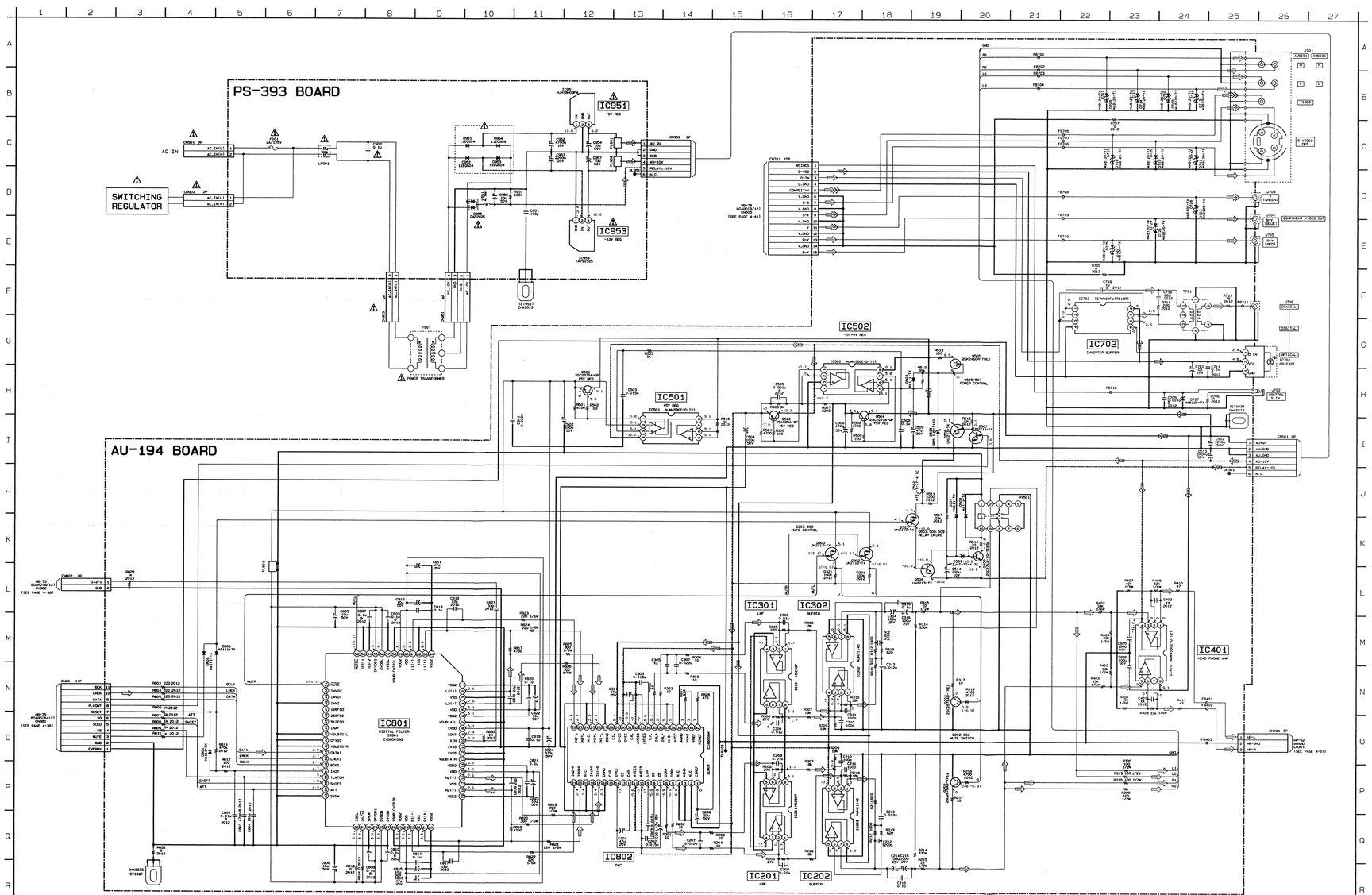
FL-80 BOARD

CN001	A-2
CN002	A-1
D001	A-10
D003	A-9
D004	A-10
D005	A-10
D006	B-10
D007	B-10
IC001	A-5
Q001	A-10
Q002	A-10



AU-194 (AUDIO, I/O), PS-393 (AUDIO POWER) SCHEMATIC DIAGRAM

– Ref. No.: AU-194 Board; 2,000 series, PS-393 Board; 4,000 series –



Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Signal path

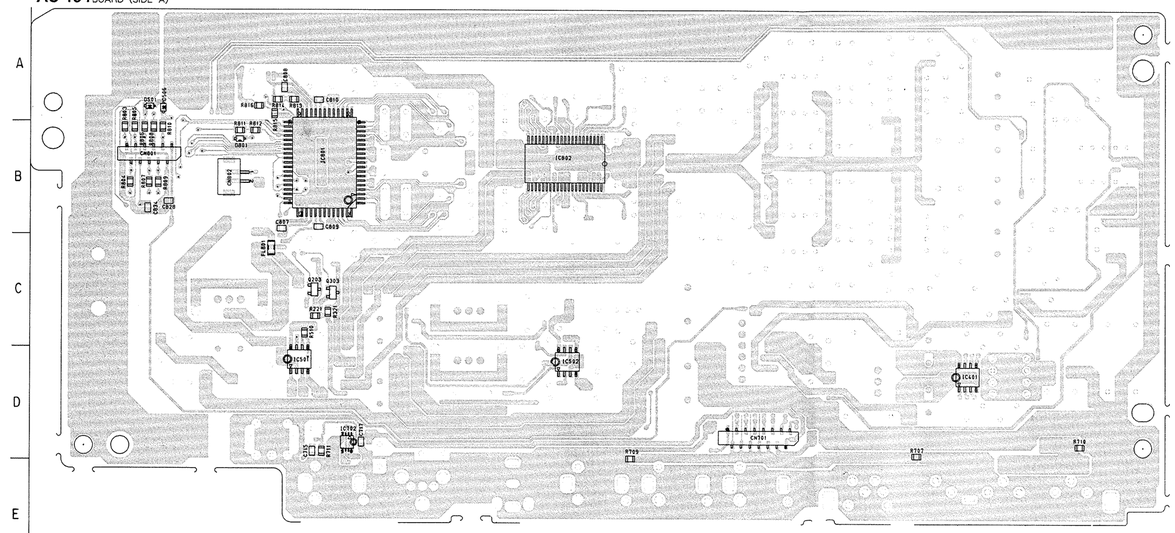
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

AU-194 (AUDIO, I/O), PS-393 (AUDIO POWER) PRINTED WIRING BOARDS

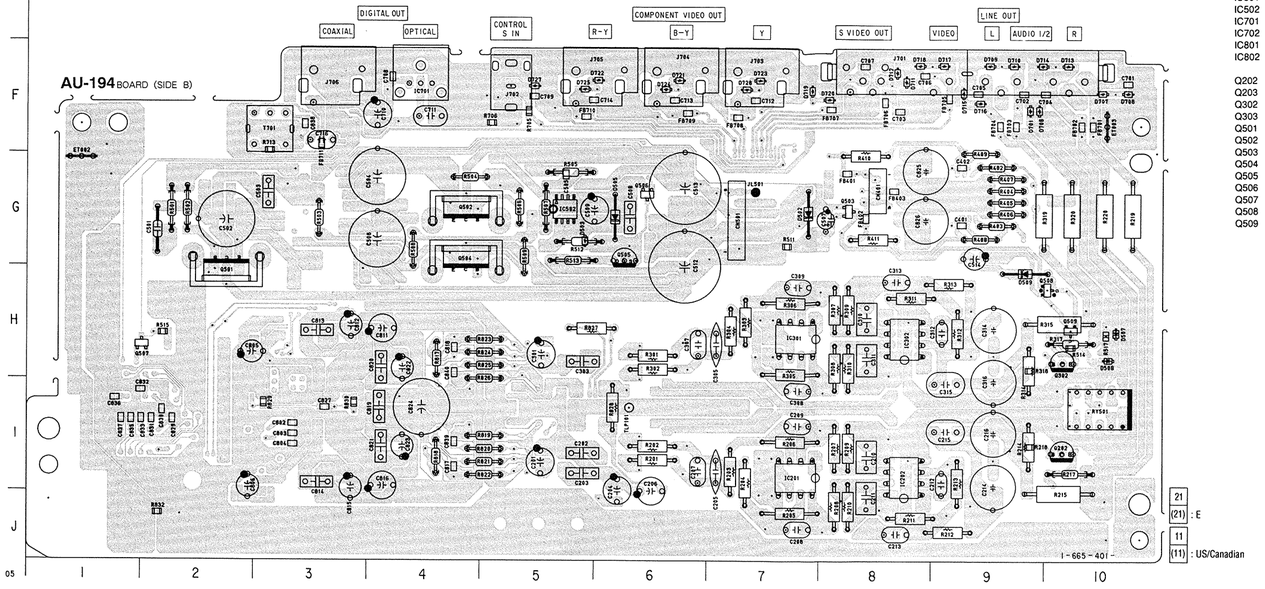
– Ref. No.: AU-194 Board; 2,000 series, PS-393 Board; 4,000 series –

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

AU-194 BOARD (SIDE A)



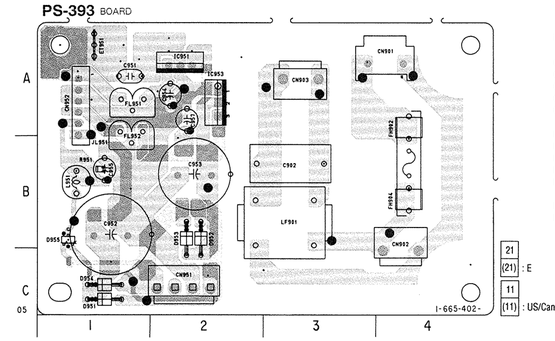
AU-194 BOARD (SIDE B)



AU-194 BOARD

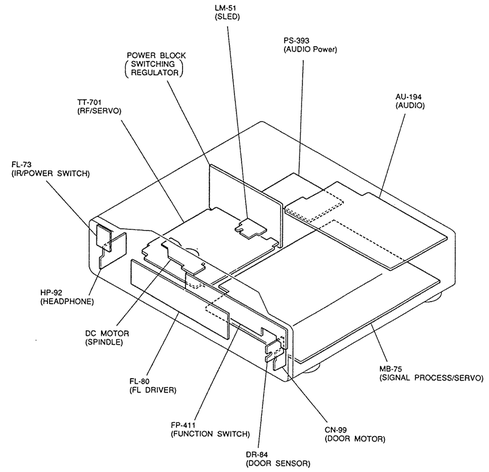
CN401	G-8
CN501	G-7
CN701	D-7
CN801	B-1
CN802	B-2
D501	A-2
D502	G-7
D503	G-5
D505	G-6
D506	A-2
D507	H-10
D508	H-10
D509	G-9
D707	F-10
D708	F-10
D709	F-9
D710	F-9
D711	F-8
D712	F-8
D713	F-10
D714	F-10
D715	F-9
D716	F-9
D717	F-9
D718	F-8
D719	F-7
D720	F-8
D721	F-6
D722	F-6
D723	F-7
D724	F-6
D725	F-5
D727	F-5
D728	F-7
D801	B-2
IC201	I-7
IC202	I-8
IC301	H-7
IC302	H-8
IC401	D-9
IC501	D-3
IC502	D-5
IC701	F-4
IC702	D-3
IC801	B-3
IC802	B-5
Q202	I-10
Q203	C-3
Q302	H-10
Q303	C-3
Q501	G-2
Q502	G-4
Q503	G-8
Q504	G-4
Q505	G-6
Q506	G-6
Q507	H-1
Q508	H-10
Q509	H-10

PS-393 BOARD



PS-393 BOARD

CN901	A-4
CN902	B-4
CN903	A-3
CN951	C-2
CN952	A-1
D951	C-1
D952	B-2
D953	B-2
D954	C-1
D955	B-1
IC951	A-2
IC953	A-2



5-1. INTERFACE CONTROL PIN FUNCTION (IC021 on MB-75 Board (1/12))

Pin No.	Pin Name	I/O	Function
1,2	CL1, 0	I	Input of sub clock (32kHz)
3,4	GND	–	Ground
5,6	X0–1	I	Input of main clock (8MHz)
7	GND	–	Ground
8	$\overline{\text{RST}}$	I	Input of RESET signal
9	RESET	O	SRESET (SYSCON)
10	INTMS	O	XINTM S (SYSCON)
11	$\overline{\text{AUDIO MUTE}}$	O	SAUDIO MUTE (L)
12	IFDIAG	I	DIAG (H)
13	NITSC	O	NTSC (H) /PAL (L)
14,15	N.C.	–	Not used
16	FLCS	O	XFLCS (FL)
17	REF V	I	XREF-V (VSYNC)
18	INTSM	I	XINTSM (SYSCON)
19-24	N.C.	–	Not used
25	POWER CONT	O	POWER-CONT (H)
26	DATA BOUND	O	DATA-BOUND
27	N.C.	–	Not used
28	CMOD	I	CMOD
29	N.C.	–	Not used
30	CGSO	O	CGSO (FL & OSDC)
31	CGCLK	O	CGCLK (FL & OSDC)
32	WSIRCS	I	WSIRCS
33	CGCS	O	CGCS (OSDC)
34	N.C.	–	Not used
35	STATUS	O	STATUS (H)
36	N.C.	–	TSEL (OSDC) Not used
37	STATUS	O	FSEL (OSDC)
38	N.C.	–	TRE (OSDC) Not used
39-48	N.C.	–	Not used
49	VCC	–	Power supply
50-57	N.C.	–	Not used
58	GND	–	Ground
59-66	N.C.	–	Not used
67	VCC	–	Power supply
68-75	N.C.		Not used
76	CS	I	CS (SYSCON)
77	SI	I	SI (SYSCON)
78	SO	O	SO (SYSCON)
79	CLK	I	CLK (SYSCON)
80-82	N.C.	–	Not used
83	GND	–	Ground
84-87	AD0–3	I	Analog input
88	REGION	I	Input of region identify signal
89	N.C.	I	Input of destination identify signal
90	N.C.	–	Not used
91	AD7	I	Input of BIT-RATE
92	VCC	–	Power supply
93	POWER-FAIL	I	Input of POWER-FAIL
94-98	N.C.	–	Not used
99	BZ	O	Buzzer output
100	VCC	–	Power supply

5-2. DRIVE CONTROL PIN FUNCTION (IC136 on MB-75 Board (3/12))

Pin No.	Pin Name	I/O	Function
1	VCC	–	Power supply
2	PB0/TP8/TIOCA3	O	Peripheral circuits reset signal (L: Reset)
3	DRV INT	O	
4	DRV P CONT	–	12V system power control signal
5–10	N.C.	–	Not used
11	VSS	–	Ground
12	CPDTO	O	Serial data output to each IC
13	SDCS (SO)	O	Serial data output to jig
14	CPDTI	I	Serial data input from each IC
15	SDSC (SI)	I	Serial data input from jig
16	CPCK	O	Serial clock to each IC
17	SCKCS	O	Serial clock to jig
18–21	D0–3	I/O	Data bus 0–3
22	VSS	–	Ground
23–25	D4–6	I/O	Data bus 4–6
26–34	D7–15	I/O	Data bus 7–15
35	VCC	–	Power supply
36–43	A0–7	O	Address bus 0–7
44	VSS	–	Ground
45–50	A8–13	O	Address bus 8–13
51–56	A14–19	O	Address bus 14–19
57	$\overline{\text{VSS}}$	–	Ground
58	$\overline{\text{WAIT}}$	I	WAIT signal (fixed to "H")
59	$\overline{\text{BREQ}}$	I	Input of bus request
60	BACK	O	Output of bus ACK
61	$\overline{\phi}$	O	Output of system clock (for check)
62	$\overline{\text{STBY}}$	I	Fixed to "H"
63	RES	I	Input of Reset by SH (L: Reset)
64	NMI	I	Fixed to "L"
65	VSS	–	Ground
66	EXTAL	I	Input of 16.9MHz
67	XTAL	I	Input of 16.9MHz
68	$\overline{\text{VCC}}$	–	Power supply

Pin No.	Pin Name	I/O	Function
69	$\overline{\text{AS}}$	O	Address strobe
70	$\overline{\text{RD}}$	O	Read
71	$\overline{\text{HWR}}$	O	H_Write
72	LWR	O	L_Write
73–75	MD0–2	I	Operation mode setting (Mode 2)
76	A VCC	–	Power supply
77	VREF	–	Reference voltage
78	TISUM	I	Input of redial skew sensor sum signal
79	HYDET1	I	Input of sled FG2
80	MIRL	I	VCO
81	PI	I	Input of pull–in signal
82	FE	I	Input of focus error signal
83	SLD2+	I	Input of sled offset
84	VCOM	I	Input of VCO adjustment
85	SLD2–	I	Input of sled offset
86	A VSS	–	Ground
87	SCOR	I	CXD2545 address storing request signal
88	DQSY	I	Pull up to "H"
89	SOINT	I	Jitter storing request signal
90	SYS_INT	I	Interrupt request signal from Syscon
91	CDDET	I	CD detection sensor input
92	VSS	I	Ground
93	TKC	I	Input of sled FG count
94	DFWD	O	Front door control (FWD)
95	DRVS	O	Front door control (RVS)
96	N.C.	–	Not used
97	HFG	I	Input of spindle FG
98	DVDLDON	O	LD ON/OFF control for DVD
99	CDLCON	O	LD ON/OFF control for CD
100	LT MUTE	O	

5-3. EXTENDED OUTPUT PORT0 (IC147 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	SQCK MSK	O	SubQ Read Clock Mask
5	ROM CS	O	Chip Select for EEPROM
6	DA XLD	O	Load Signal for D/A
9	SUBQ XOE	O	SubQ Output Enable
12	XLAT	O	Latch Signal for CXD2545
15	SDEN	O	Serial Output Enable For SSI3720
16	SLD MODE	O	Sled Control change
19	INT CS	O	Serial data forward request

5-4. EXTENDED OUTPUT PORT1 (IC148 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	XLT	O	Latch Signal for RF Pro
5	SOEN	O	Serial Output Enable for RF Pro
6	SCK MSK	O	Serial command transfer clock master
9	SCLK	O	SENS reading clock
12	FJUMP-	O	Focus Jump Pulse
15	FJUMP+	O	Focus Jump Pulse
16	DRV BUSY	O	Communication inhibit request from system controller
19	LOCK MON	O	Spindle LOCK Monitor Out

5-5. EXTENDED OUTPUT PORT2 (IC149 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	FG ON	O	Spindle FG Servo (Not used)
5	NST	O	Spindle forced stop (L: Stop) Active only at out of control
6	FHOLD	O	Focus Hold
9	FDWN	O	Focus Gain Down (L: Normal)
12	LOAD ON	O	Loading/Unloading Moter ON/OFF
15	DET ON	O	CD Det Sensor LED ON/OFF
16	LP ON	O	VCO Control
19	MUTE	O	Date output (CXD2545) control

5-6. EXTENDED OUTPUT PORT3 (IC150 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	TILT/H	O	Tilt Filter change
5	SPGC1	O	Selection of low band boost (H: 12 cm, L: 8 cm)
6	CD/DVD	O	DVD/CD (H: DVD, L: CD)
9	SPGC2	O	Spindle Gain change (L: 0dB, H: 6dB)
12	SPCTL0	O	Spindle Control [SPCTL0: SPCTL1]
15	SPCTL1	O	[0: 0] = control, [0: 1] = not control, [1: 0] = acceleration, [1: 1] = deceleration
16	CLVH	O	Spindle CLVH Control
19	LOPEN	O	Loading Driver Power Enable (H: Brake off)

5-7. EXTENDED INPUT PORT0 (IC151 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	TILT IN	I	Tilt state (Not used)
3	TRAY OUT	I	Tray'out end (H: End)
4	CHUCK	I	Chucking down end (H: End)
5	N. C.	I	Not used
6	N. C.	I	Not used
7	LOCK	I	Good Frame Sync det (H: OK, L: NG)
8	XPNM	I	RF Pro PLL Mode (L: Normal)
9	FOK	I	Focus OK (H: NG, L: OK)

5-8. EXTENDED INPUT PORT1 (IC152 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
2	PSW2	I	Front Door SW input (Close = [1: 0], Open = [0: 1]
3	PSW1	I	Front Door SW input (Close = [1: 0], Open = [0: 1]
4	FCMPH	I	FEZC High Det
5	FCMPL	I	FEZC Low Det
6	SENS	I	Input of CXD2545 internal information
7	JIG BUSY	I	Serial Busy Signal from JIg
8	INT-SC	I	Serial data forward request (JigH8)
9	ROM-BUSY	I	EEPROM Ready/Busy signal

5-9. D/A CONVERTER (IC722 on MB-75 Board)

Pin No.	Pin Name	I/O	Function
1	VSS	–	Ground
2	HYCNTR	O	Adjustment of hall element output
3	SDCNTR	O	Target sled speed
4	TI OFFSET	O	
5	LOAD/UNLOAD	O	Loading/Unloading Control
6	TI DRIVE	O	For tilt forced movement
7	SDINIT	O	
8	VDD	–	Power supply
9	VCC	–	Power supply
10	A08	O	
11	DO	O	Serial Data Output
12	LD	I	Serial Data Load
13	CLK	I	Serial Clock Input
14	DI	I	Serial Data Input
15	AVCO	O	For VCO adjustment
16	GND	–	Ground

5-10. SYSTEM CONTROL PIN FUNCTION (IC090 on MB-75 Board (2/12))

Pin No.	Pin Name	I/O	Function
1	IRQ6	I	Input of interrupt from CXD1186, CXD8663Q, CXD8669Q
2	IRQ7	I	Input of interrupt from CXD1900
3	VSS	–	Digital ground
4–11	AD0–7	I/O	Data bus AD0-AD7
12	VSS	–	Digital ground
13,14	AD8–9	I/O	Data bus AD8, AD9
15	VCC	–	Digital power supply
16–21	AD10–15	I/O	Data bus AD10-AD15
22	VSS	–	Digital ground
23–30	A0–7	O	Address bus A0-A7
31	VSS	–	Digital ground
32–39	A8–15	O	Address bus A8-A15
40	VSS	–	Digital ground
41,42	A16–17	O	Address bus A16, A17
43	VCC	–	Digital power supply
44–47	A18–21	O	Address bus A18-A21
48	CS0	O	Chip select signal for external ROM
49	CS1	O	Chip select signal for external RAM
50	CS2	–	Not used
51	CS3	O	Chip select signal for RAM common to drive controller
52	VSS	–	Digital ground
53	PA0	O	Not used
54	PA1	O	Output of squeeze mode
55	CS6	O	Output of chip select signal to external device
56	WAIT	I	Input of wait signal
57	WR	O	Output of write signal
58	PA5	O	Output of IF controller serial data control
59	RD	O	Output of read signal
60	PA7	O	Not used
61	VSS	–	Digital ground
62	PA8	O	Output of serial select signal to L chip
63	PA9	O	Output of serial select signal to CXD1914
64	PA10	O	Output of serial select signal to audio DAC
65	PA11	O	Output of error free signal

Pin No.	Pin Name	I/O	Function
66	IRQ0	I	Input of interrupt signal from SP, BFD, drive controller
67	DREQ0	I	Input of DMA request from CK
68	IRQ2	I	Input of VSYNC (FID) interrupt signal
69	IRQ3	I	Input of interrupt signal from CK, DSP5600
70	VCC	–	Digital power supply
71	CK	O	Output of internal clock
72	VSS	–	Digital ground
73	EXTAL	–	20MHz crystal connection pin
74	XTAL	–	20MHz crystal connection pin
75	VCC	–	Digital power supply
76	NMI	–	Not used
77	VCC	–	Digital power supply
78	WDTOVF	–	Not used
79	RES	I	Input of reset signal
80	MD0	I	Input of mode select 0 (fixed to "1")
81	MD1	I	Input of mode select 1 (fixed to "0")
82	MD2	I	Input of mode select 2 (fixed to "0")
83,84	VCC	–	Digital power supply
85	AVCC	–	Analog power supply
86	AVREF	–	Reference power supply
87	PC0	I	Input of DIAG mode select signal
88	PC1	I	Input of EMPH signal from CXD2545
89	PC2	I	Input of request from drive controller
90	PC3	I	Input of request from DSP56000
91	AVSS	–	Analog ground
92	PC4	I	Input of FID signal from CXD1914
93	PC5	I	Input of request from I/F controller
94	PC6	I	Input of control 1
95	PC7	I	Input of control 2
96	VSS	–	Digital ground
97	PB0	O	Output of request to I/F controller
98	PB1	O	Output of request to drive controller
99	VCC	–	Digital power supply
100	PB2	O	Output of clock system switching (DVD/CD)

Pin No.	Pin Name	I/O	Function
101	PB3	O	Output of reset signal to audio DAC
102	PB4	O	Output of reset signal to peripheral device
103	PB5	O	Output of serial select signal to DSP56000
104	PB6	O	Output of HREQ signal latch reset to DSP56000
105	PB7	O	Output of serial select signal to video equalizer
106	VSS	–	Digital ground
107	RxD0	I	Input of serial data from other than CXD1914
108	TxDO1	O	Output of serial data to other than CXD1914
109	RxD1	I	Input of serial data from CXD1914
110	TxD1	O	Output of serial data to CXD1914
111	SCK0	O	Output of serial clock to other than CXD1914
112	SCK1	O	Output of serial clock to CXD1914

SECTION 6
TEST MODE

6-1. Starting up Test Mode

With the DVP-S7000 in standby status, press [TIME], [CLEAR], and [POWER] keys on the standard commander in this order. And, the Test mode starts up and the initial menu shown in Figure 1 appears on the video display.

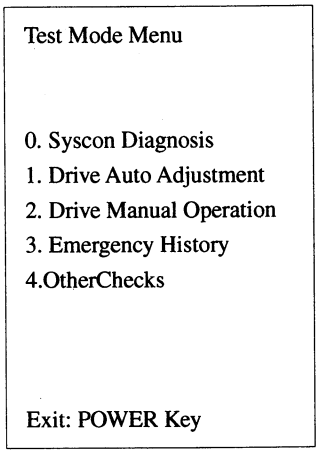


Figure 1 Initial menu

In the Test mode, necessary operations are all done with the keys on standard commander or operation panel.
The test mode can be finished and the set returns to the power off status when the [POWER] key is pressed whichever mode, except during checking of Syscon Diagnosis, you are working in now.

6-2. Syscon Diagnosis

In the Syscon Diagnosis, intermittent blocks such as 0-ff, 500-5ff, a00-aff, f00-fff, 1400-14ff, etc. (address) are checked. All of the operation are done with standard commander keys, and a menu cannot be selected but all items are checked. After result display, you can only select either "continue to next item" or "cancel", and continue and retry in case of written data error are not available.

If [0] key on standard commander is pressed during initial menu display, the Diagnosis screen as shown in Figure 2 is displayed, and a checking starts from the top of diagnosis check items list sequentially. After a checking started, standard commander keys are accepted while a message or title is blinking, so that you can go to the next job.

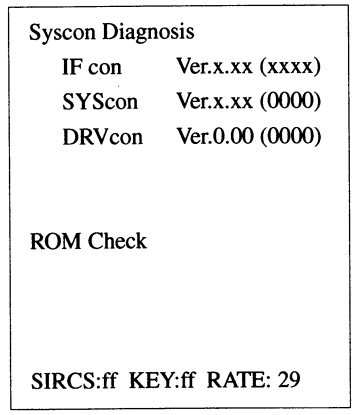
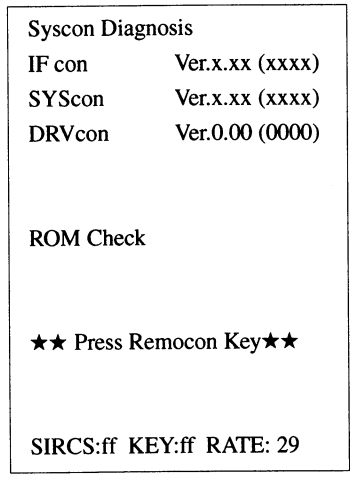


Figure 2

In this mode, ROM revision number (Ver. No.) of each control IC (MPU) and its checksum are displayed. However, Syscon checksum and Drvcon value are obtained in the process of diagnosis check, and therefore they are initially 0.
On the fifth line, an item is displayed, and IF control information is displayed at the bottom though it is not related to a checking of each item.
If Syscon Diagnosis is selected, a checking starts immediately, and the result of initial ROM check and Syscon ROM checksum are displayed as shown in Figure 3.



← Data in ( ) indicates Syscon checksum

Figure 3

Confirm the result, and to cancel checking, press [RETURN], [MENU], or [POWER]. Or, to continue next checking, press other than these keys.
The ROM revision and checksum of Drvcon are displayed when executing "DrvCon Data Exchange" and "DrvCon EPROM" respectively.
Also, in case of an error, the error code and information are displayed as shown in Figure 4.

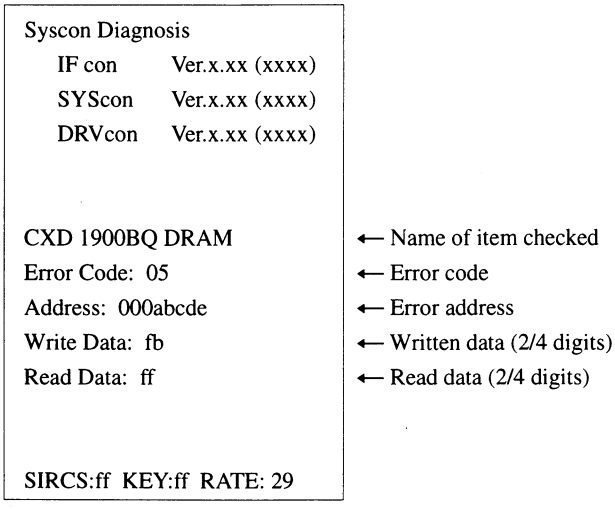


Figure 4

Except error code "05" (write/read data mismatch error), the address and data fields show "0". When a checking is over or cancelled, "Diag OK" or "Diag Error End" message blinks. If a key is pressed here, the test mode initial menu is resumed. The "Diag Error End" is displayed only when the Syscon detects an error, and visual inspection result is out of the display.

6-2-1. General description of checking method

This section describes briefly a checking method for each item in the order of menus.
Numbers in ( ) for respective items are diagnosis item numbers.

(2) Memory

(2-2) Syscon ROM (IC093) check

Calculation of checksum

Calculation range: 0x00000000 - 0x000fffff (at commercial products, 8Mbit ROM)
All 8bit data from address 0 to ROM size are added (checksum), and output as 4-digit hexadecimal number.
In this check, the IC090 (Syscon) itself does not detect an error. The result is displayed on the screen. Compare it with original ROM checksum.

(2-3) Syscon RAM (IC094) check

IC093 (Syscon ROM) → IC094 (Syscon RAM) collating check

Checking range: 0x01000000 - 0x0101ffff

IC093 (Syscon ROM) data (program codes) are transferred in DMA mode in the unit of 64 bytes to the IC094 (Syscon RAM), then they are read every 1 byte and compared with data in IC093. As the Syscon RAM check is made by saving the data into internal RAM (DMA transfer), the data are written and read every 64 bytes, and interruption during that time is completely masked.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed. Select the subsequent processing by pressing a key. As this check is made through DMA transfer, if Repeat is selected, the data are transferred in DMA mode again to the block where this error occurred and a checking is continued from the error address.

(3) Clock

(3-2) Audio clock system output switching (CD side)

I/O output

The audio clock system is switched to the CD side. In this check, the Syscon itself does not detect an error. Observe output signals with an instrument.

(3-3) Audio clock system output switching (DVD side)

I/O output

The audio clock system is switched to the DVD side. In this check, the Syscon itself does not detect an error. Observe output signals with an instrument.

(4) Drvcon

(4-2) Drvcon (IC136) reset check

Hard Reset → DRV BUSY response input

The Hard Reset signal is output, and after cancelling the reset, whether DRV BUSY signal changes from "low" to "high" is checked. The detection timing of DRV BUSY "low" is about 250 msec after the reset is cancelled. Also, whether the signal becomes "high" later is checked.

After confirming "high" or "low" of DRV BUSY signal 250 msec after reset was cancelled, if the signal does not go "high" though about 300 msec elapsed, the reset error 02 is output.

(4-3) Drvcon common RAM (IC138) check

IC093 (Syscon ROM) → IC138 (common RAM) collating check

Checking range: 0x03000001 - 0x03000fff

After confirming that the RAM areas common to Drvcon are not occupied by Drvcon (namely, the contents of common RAM addresses are true), the IC093 (Syscon RAM) codes are copied to the IC138 (common RAM) areas from address 1, then the data are read for checking. If all are same, the IC093 code bits are inverted and checked again. If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.
After checking, reset the Drvcon because irregular values are written to the IC138.

If common RAM areas are occupied by Drvcon and they are not opened even after about 2 seconds, the write error 03 is output.

(4-4) Drvcon data exchange check

IC090 (Syscon) → IC136 (Drvcon), IC136 (Drvcon) → IC090 (Syscon) command path check

The path check command is sent from IC090 (Syscon) to IC136 (Drvcon), and as a result, whether the data same as sent data is returned to the IC138 (common RAM) is checked. In the Syscon Diagnosis, only the ROM revision is displayed. If no response is returned from Drvcon or the data are not same, the error code 73 is output.

(4-5) Drvcon interrupt line check

IC136 (Drvcon) → IC090 (Syscon), IC090 (Syscon) → IC136 (Drvcon) interrupt line check

If CXD8663Q check command is sent from IC090 to IC136, the IC136 returns IC181 (CXD8663Q) register read/write command. Receiving this command, the IC090 outputs a response signal implying that the interrupt signal was received, then the IC136 confirms this signal input and writes the Command Done to the IC138 (common RAM).
When the Command Done is not returned even after 1 second, the error code 70 (DRV INT is not detected) is output if the interrupt signal has not been received, or the error code 71 (Drvcon does not recognize SYS INT) is output if the interrupt signal has been received.
Also, upon detection of an error in IC181 (CXD8663Q) by this command, the error code 30 is output.

If DRV INT signal is kept "low", the Syscon repeats an interrupt processing continuously, thus making error display impossible. For this reason, only for this command, the Drvcon returns the DRV INT signal to "high" even if SYS INT is not detected. (The Syscon makes judgment whether Command Done is returned or not.)
Here, if the Syscon makes no response, the DRV INT signal itself will be faulty.

(4-6) Drvcon SRAM check

IC090 (Syscon) → IC136 (Drvcon) check request command

The SRAM check command is sent from IC090 to IC136, and its response result is displayed.
In case of an error, the error information of Drvcon is read, then the error code 05, error address, written data, and read data are displayed.

(4-7) EEPROM check

IC090 (Syscon) → IC136 (Drvcon) check request command

The EEPROM check command is sent from IC090 to IC136, and its response result is displayed.
The error code 74 when IC139 (EEPROM) write signal is not ready, or error code 05 when written data and read data are not same, error address, written data, and read data are displayed.

(4-8) RF Processor check

IC090 (Syscon) → IC136 (Drvcon) check request command

The RF processor check command is sent from IC090 to IC136, and its response result is displayed.
In case of an error in IC770 (RF processor), the error code 76 is output.

(4-9) CXD2545 RAM check

The CXD2545 check command is sent from IC090 to IC136, and its response result is displayed.
In case of an error in IC717 (CXD2545), the error code 75 is output.

(4-10) Drvcon ROM check

IC090 → IC136 check request command

The EPROM check command is sent from IC090 to IC136.
The Drvcon calculates checksum of IC140 (EPROM), and returns its result and the checksum value is displayed, if there is no error.
Compare the result displayed on the screen with the checksum of original EPROM.

(4-11) VCO offset automatic adjustment

IC090 → IC136 check request command

The VCO offset automatic adjust command is sent from IC090 to IC136.
If automatic adjustment failed, the error code 77 is output.

(5) Data supply system

(5-2) IC217 (CXD8598R) reset check

Write to register → Hard reset → Read from register

Registers to be checked: TSC2 (0x06200011)
TSC1 (0x06200012)
TSC0 (0x06200013)

Data other than 0 are written to readable and writable registers in IC217 (CXD8598R), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-3) IC217 (CXD8598R) register check

Register write → Register read collating check

Registers to be checked: TSC2 (0x06200011)
TSC1 (0x06200012)
TSC0 (0x06200013)

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-4) IC181 (CXD8663Q) reset check

Write to register → Hard reset → Read from register

Register to be checked: INTRMASK (0x22)

Data other than 0 are written to readable and writable register in IC181 (CXD8663Q), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-5) IC181 (CXD863Q) register check

Register write → Register read collating check

Register mask data to be checked

0x20	0xbf
0x22	0xff
0x25	0xff
0x26	0xff
0x27	0xff

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. However, some bits that cannot be written are masked.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-6) IC181 (CXD8663Q) DRAM check

ROM → IC181 (CXD8663Q) → DRAM → IC181 (CXD8663Q) read collating check

Checking range: 0x00000000 - 0x0007ffff

ROM pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (ROM) address are returned. A reading check is made after data are written to all areas.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-7) IC181 (CXD8663Q) interrupt line check

IC093 (Syscon ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R)

DVD bit stream data stored in IC093 are transferred to the IC182 (external DRAM of IC181), and the SD bus sector header detect interruption is checked, which occurs by flowing data to the IC217 (CXD8598R).
If the header of SD bus sector in IC181 (CXD8663Q) is not detected, the error code 31 is output.

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

(5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check

IC093 (Syscon ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R)

DVD bit stream data stored in IC093 are transferred to the IC182 (external DRAM of IC181), and IC217 (CXD8598R) transfer end interruption is checked, which occurs by flowing data to the IC217 (CXD8598R). If the transfer end interruption is not detected, the error code 21 is output.
As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.

(5-9) IC184 (CXD8669AQ) reset check

Write to register → Hard reset → Read from register

Register to be checked: SYSINI (0xe1)

Data other than 0 are written to readable and writable register in IC184 (CXD8669AQ), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-10) IC184 (CXD8669AQ) register check

Register write → Register read collating check

Register mask data to be checked

0xe0	0x80
0xe1	0xff
0xe4	0xc0
0xe5	0xc0
0xe6	0xf8

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. However, some bits that cannot be written are masked.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-11) IC216 (CXD1186) reset check

Write to register → Hard reset → Read from register

Registers to be checked: DADRC_L (0x06380007)
DADRC_H (0x06380008)
HXFRC_L (0x06380009)
HXFRC_H (0x0638000A)
HADRC_L (0x0638000B)
HADRC_H (0x0638000C)

Data other than 0 are written to readable and writable register in IC216 (CXD1186), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(5-12) IC216 (CXD1186) register check

Register write → Register read collating check

Registers to be checked: DADRC_L (0x06380007)
DADRC_H (0x06380008)
HXFRC_L (0x06380009)
HXFRC_H (0x0638000A)
HADRC_L (0x0638000B)
HADRC_H (0x0638000C)

Incrementing 1 each starting from 0, data are written to readable and writable registers, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(5-13) IC216 (CXD1186) SRAM check

IC093 (Syscon ROM) → IC216 (CXD1186) → IC215 (SRAM) → IC216 read collating check

Checking range: 0x00000000 - 0x00007fff

IC093 ROM pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (ROM) address are returned. A reading check is made after data are written to all areas.
After SRAM write addresses are set, error code 03 when writing is not ready, or after read addresses are set, error code 04 when reading is not ready is output, then a check is finished.
Also, if compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed.

(5-14) IC216 (CXD1186) to IC217 (CXD8598R) connection check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R)

VCD bit stream data stored in IC093 are transferred to the IC215 (external SRAM of IC216), and IC217 (CXD8598R) transfer end interruption is checked, which occurs by flowing data to the IC217 (CXD8598R).
If the transfer end interruption is not detected, the error code 21 is output.
Further, SCR is read to check its value. If the value is not the one in sector transferred, the error code 22 is output.

(6) Video Decoder

(6-2) IC281 (CXD1900BQ) reset check

Write to register → Hard reset → Read from register

Register to be checked: PLYMOD (0x06080002)

Data other than 0 are written to readable and writable register in IC281 (CXD1900BQ), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(6-3) IC281 (CXD1900BQ) register check

Register write → Register read collating check

Register to be checked: PLYMOD (0x06080002)

Incrementing 1 each starting from 0, data are written to readable and writable register, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 256 times. However, some bits that cannot be written are masked.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed.

(6-4) IC281 (CXD1900BQ) DRAM check

IC093 (ROM) → IC281 → IC280, IC282 → NIC284 (DRAM) → IC281 read collating check

Checking range: 0x00000000 - 0x0003ffff (data bus width = 64bits)

IC093 ROM pattern is copied to all areas to be checked. Because of large DRAM capacity, each time 256 bytes are copied, 255 bytes of original (IC093) address are returned. A reading check is made after data are written to all areas.
The error code 03 when writing is not ready, or error code 04 when reading is not ready is output, then a check is finished.
Also, if compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed. However, the data are displayed every 8 bits, though the bus width of IC281 (CXD1900BQ) is 64 bits. Namely, actual address is the displayed value shifted by 3 bits to the right where lower 3 bits indicate the byte position.
For example, in the case of display shown below:

IC281 (CXD1900BQ) DRAM
Error Code: 05
Address: 000abcde
Write Data: fb
Read Data: ff

If displayed value 0 0 0 A B C D E is expressed with binary number, 0000 0000 0000 1010 1011 1100 1101 1110.
If it is shifted by 3 bits to the right, 0000 0000 0000 0001 0101 0111 1001 1011 110. That is, assuming that the top of address 0 0 0 1 5 7 9 B in hexadecimal notation is 0th byte, the 6th byte is erroneous such as FB → FF (as for the bit position in the same manner, the 53rd bit is 0 → 1, assuming that MSB is 0th and LSB is 63rd).

(6-5) CXD1914 VSync check

IC475 (CXD1914Q) VSync interrupt cycle measurement

The VSync interruption is enabled for about 160msec, and the number of VSync interruption from NTSC encoder is counted. The operation is normal if the count is more than 9 times and less than 11 times. If out of this range, the error code 41 is output.
The SCI1 interruption is also enabled, as the NTSC encoder processing is required due to VSync interruption.

(6-6) IC281 (CXD1900BQ) VSync interrupt line check

IC281 (CXD1900BQ) VSync interrupt detection check

The VSync interruption of IC281 (CXD1900BQ) is enabled and whether interruption is made is checked. If no interruption is made though 2 seconds elapsed, the error code 41 is output.

(6-7) IC217 (CXD8598R) to IC281 (CXD1900BQ) connection check

IC093 → IC216 → IC215 → IC216 → IC217 → IC281 → IC280,
IC282 ~ NIC284

VCD bit stream data stored in IC093 are transferred via IC216 (CXD1186) to the IC215 (SRAM), and the sequence header interruption and transfer end interruption from IC281 are checked, which occur by flowing data to the IC281 (CXD1900BQ) via IC216 (CXD1186) and IC217 (CXD8598R).
The error code 21 when transfer end interruption for transferred sectors is not detected, or error code 42 when sequence header interruption is not detected is output.

(7) Subpictures

(7-2) IC312 (CXD8600R) reset check

Write to register → Hard reset → Read from register

Register to be checked: WRITE_READ_TOP (0x06000050)

Data other than 0 are written to readable and writable register in IC312 (CXD8600R), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.

(7-3) IC312 (CXD8600R) register check

Register write → Register read collating check

Registers to be checked: VB_LUMINANCE (0x06000050)
VB_LUMINANCE+1
VB_LUMINANCE+2
VB_LUMINANCE+3
VB_LUMINANCE+4
VB_LUMINANCE+5
VB_LUMINANCE+6
VB_LUMINANCE+7
VB_LUMINANCE+8
VB_LUMINANCE+9
VB_LUMINANCE+A
VB_LUMINANCE+B
VB_LUMINANCE+C
VB_LUMINANCE+D
VB_LUMINANCE+E
VB_LUMINANCE+F

The values written to the registers in IC312 (CXD8600R) are read from the same address WRITE_READ_TOP in any registers. Therefore, the Diagnosis function cannot read data after data were written to all registers. A checking is made by reading every register.
If compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed.

(7-4) IC312 (CXD8600R) SRAM check

IC093 (ROM) → IC312 (CXD8600R) → IC313, IC319 (SRAM) → IC312 read collating check

Checking range: 0x00000001 - 0x0003ff000

The IC312 (CXD8600R) cannot designate read/write address of SRAM. Internal pointer manages the addresses automatically. Accordingly, the reading order is same as the writing order.
IC093 pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (IC093) address are returned.
A reading check is made after data are written to all areas. As the Syscon Diagnosis is a simplified check, actual check range is 1/5 of the above mentioned checking range.
Unlike other RAM checks, the addresses are not skipped. The address 0 in each area has specific meaning, and therefore arbitrary data cannot be written.
After the fixed data is written to address 0, a check starts from address 1, and the last 255 bytes are not checked because of a complicated program.
If compared data are not same, a check is suspended, and error code 05, its address, written data, and read data are displayed.
However, IC312 (CXD8600R) cannot designate an address, and the repeat check is ignored.
Also, in case of an error in VB, 0x10000000 is added to the address for explicit discrimination.

(7-5) IC217 (CXD8598R) to IC312 (CXD8600R) connection check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC312 (CXD8600R)

The bit stream data including subpictures stored in IC093 (ROM) are transferred to the IC182 (external DRAM of IC181). Then, SP Arrive signal from IC312 is checked, which is generated by flowing the data to the IC312 (CXD8600R) via IC217 (CXD8598R).
The error code 61 is output when data arrival cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).

As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.
When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

(7-6) IC312 (CXD8600R) interrupt line check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC312 (CXD8600R)

The bit stream data including subpictures stored in IC093 (ROM) are transferred to the IC182 (external DRAM of IC181). Then, the PTS interrupt is checked, which occurs by flowing the data to the IC312 (CXD8600R) via IC217 (CXD8598R).
The error code 62 is output when an interruption cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).
As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.
When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

(8) Video Related

(8-2) Video encoder check (color bar output)

The color bar is turned on for the NTSC encoder color bar enable command IC475 (NTSC encoder).
In this check, the Syscon itself does not detect an error.
Confirm the video display screen.

(8-3) Video output check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC281 (CXD1900BQ) → Video signal output

The bit stream data of still picture stored in IC093 (ROM) are transferred to the IC215 (SRAM of IC216), then the picture is displayed on the video screen by flowing data to the IC281 (CXD1900BQ) via IC217 (CXD8598R). If an error is present in any path, that code is output and a checking is finished.
If no error is found, the controller waits for key entry.
Check the video display screen.

(8-4) IC310 (CXD8602Q) check (letter box output)

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC281 (CXD1900BQ) → IC310 (CXD8602Q) → Video signal output

The bit stream data of still picture stored in IC093 (ROM) are transferred to the IC215 (SRAM of IC216), then the picture is displayed on the video screen by flowing data to the IC281 (CXD1900BQ) via IC217 (CXD8598R). In such a case, the letter box on command is output on the IC310 (CXD8602Q).
If no error is found, the controller waits for key entry.
Check the video display screen.

(8-5) Video equalizer check (brightness control)

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC281 (CXD1900BQ) → IC317 (CXD8664Q) → Video signal output

The bit stream data of still picture stored in IC093 (ROM) are transferred to the IC215 (SRAM of IC216), then the picture is displayed on the video screen by flowing data to the IC281 (CXD1900BQ) via IC217 (CXD8598R).
If no error is found, the brightness change command is sent to the IC317 (CXD8664Q). The controller waits for key entry after changing the brightness twice.
Confirm that the brightness of video display screen changes.

(8-6) Subpicture output check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC312 (CXD8600R) → Video signal output

The bit stream data including subpicture stored in IC093 (ROM) are transferred to the IC312 (CXD8600R) via IC181 (CXD8663Q) and IC217 (CXD8598R), and the picture is displayed on the video screen unless an error is found.
Check the video display screen.

(8-7) S-terminal output check (0V)

I/O output

Make S-terminal output potential 0V.
In this check, the Syscon itself does not detect an error.
Observe the potential at the S-terminal with an instrument.

(8-8) S-terminal output check (5V)

I/O output

Make S-terminal output potential 5V.
In this check, the Syscon itself does not detect an error.
Observe the potential at the S-terminal with an instrument.

(8-9) S-terminal output check (2.5V)

(9) Audio Related

(9-2) IC380 (CXD8603R) reset check

Write to register → Hard reset → Read from register

Register to be checked: RAADRS (0x06100004)

Data other than 0 are written to readable and writable register in IC380 (CXD8603R), and they are read after hard reset, then the error code 02 is output if they are not cleared to 0.
Though this register has 16-bit length, MSB is always 0.

(9-3) IC380 (CXD8603R) register check

Register write → Register read collating check

Register to be checked: RAADRS (0x06100004)

Incrementing 1 each starting from 0, data are written to readable and writable register, then they are read for checking. Incrementing initial value by 1 each, a check is repeated 32768 times.
If compared data are not same, a checking is suspended, and error code 05, its address, written data, and read data are displayed. Because of 16-bit length, 4-digit data is displayed (however, MSB is always 0).

(9-4) IC380 (CXD8603R) SRAM check

IC093 (ROM) → IC380 (CXD8603R) → IC383 (SRAM) → IC380 read collating check

Checking range: 0x00000000 - 0x00007fff

IC093 (ROM) pattern is copied to all areas to be checked. Each time 256 bytes are copied, 255 bytes of original (IC093) address are returned. A reading check is made after data are written to all areas.
The data write/read to IC383 (SRAM) are executed every 256 bytes using the direct access function of the IC380 (CXD8603R). If compared data are not same, a checking is
suspended, and error code 05, its address, written data, and read data are displayed.

(9-5) IC217 (CXD8598R) to IC380 (CXD8603R) connection check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC380 (CXD8603R) SRAM read collating check

The bit stream data of MPEG-AUDIO stored in IC093 (ROM) are transferred by only one sector to the IC215 (external SRAM of IC216), then they are flown to the IC380 (CXD8603R) via IC217 (CXD8598R).
If no error is found, the data are transferred to the SRAM in IC380 (CXD8603R) and compared with original ROM data.
The first 512 bytes in code buffer are read from IC380 (CXD8603R) SRAM into internal RAM of CPU, and whether 256 byte pattern after 12th bytes in effective area of MPEG-AUDIO bit stream data stored in ROM is contained is searched. If not found, the pattern to be searched is shifted one byte each, and a searching is repeated maximum 256 times. The check passed if 256 bytes are same successively.
If same pattern is not found, the error code 10 is output.

(9-6) Audio decoder boot check

AC-3 codes are downloaded to the audio decoder.

The error code 50 if download is not terminated successfully, or error code 51 if AC-3 codes downloading failed is output.
When an error occurred here, the subsequent audio related diagnosis may be rejected, resulting in unconditional output of error code 50.

(9-7) IC380 (CXD8603R) interrupt line check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC380 (CXD8603R)

The bit stream data including Navi Pack stored in IC093 (ROM) are transferred to the DRAM of IC181 (CXD8663Q). Then, the Navi Ready interruption is checked, which occurs by flowing the data to the IC380 (CXD8603R) via IC217 (CXD8598R).
The error code 55 is output when an interruption cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).
As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.
When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.

(9-8) DREQ/NCST check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC380 (CXD8603R) read data pattern check

The bit stream data including Navi Pack stored in IC093 (ROM) are transferred to the DRAM of IC181 (CXD8663Q). Then, the data are flown to the IC380 (CXD8603R) via IC217 (CXD8598R).
The error code 55 is output when Navi Ready interruption cannot be confirmed though 2 seconds elapsed after data transfer request was sent to the IC181 (CXD8663Q).
As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.
When an error occurred, confirm (5-8) IC181 (CXD8663Q) to IC217 (CXD8598R) connection check.
If no error is found, the Navi Pack transferred to the SRAM in IC380 (CXD8603R) is read for checking.
The error code 10 is output if the data are not same as original bit stream data.

(9-9) MPEG audio digital output check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC380 (CXD8603R) → Digital Audio I/F audio signal output

The bit stream data of MPEG-Audio stored in IC093 (ROM) are transferred to the IC216 (CXD1186). Then, the data are flown to the Digital Audio Interface via IC217 (CXD8598R) and CK to regenerate audio signals.
For the data, audio frequencies are different between left and right channels. Using left and right channels mixing function, the same stream is checked three times in the order of left channel, right channel, and both channels on.
In this diagnosis, the kind of expected errors is many because of complicated paths, but the diagnosis is finished upon detection of an error.
Confirm the content of error from the error code list.
If no error is detected, a sound is generated three times, then a message is output and the controller waits for key entry.

(9-10) MPEG audio analog output check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → CK → Analog Audio I/F audio signal output

The bit stream data of MPEG-Audio stored in IC093 (ROM) are transferred to the IC216 (CXD1186). Then, the data are flown to the Analog Audio Interface via IC217 (CXD8598R) and CK to regenerate audio signals.
For the data, audio frequencies are different between left and right channels. Using left and right channels mixing function, the same stream is checked three times in the order of left channel, right channel, and both channels on.
In this diagnosis, the kind of expected errors is many because of complicated paths, but the diagnosis is finished upon detection of an error.
Confirm the content of error from the error code list.
If no error is detected, a sound is generated three times, then a message is output and the controller waits for key entry.

(9-11) Audio attenuator check

IC093 (ROM) → IC216 (CXD1186) → IC217 (CXD8598R) → IC380 (CXD8603R) → Analog Audio I/F audio signal output

The bit stream data of MPEG-Audio stored in IC093 (ROM) are transferred to the IC216 (CXD1186). Then, the data are flown to the Analog Audio Interface via IC217 (CXD8598R) and IC380 (CXD8603R) to regenerate audio signals.
In such a case, DAC attenuation value is set to 1/4 of normal value to lower the volume.
For the data, audio frequencies are different between left and right channels. Using left and right channels mixing function, the same stream is checked three times in the order of left channel, right channel, and both channels on.
In this diagnosis, the kind of expected errors is many because of complicated paths, but the diagnosis is finished upon detection of an error.
Confirm the content of error from the error code list.

If no error is detected, a sound is generated three times, then a message is output and the controller waits for key entry.
Check if the volume level becomes lower (about half) than that in (9-10).

(9-12) AC-3 audio output check

IC093 (ROM) → IC181 (CXD8663Q) → IC217 (CXD8598R) → IC380 (CXD8603R) → Audio signal output

The bit stream data including AC-3 audio stored in IC093 (ROM) are transferred to the DRAM of IC181 (CXD8663Q). Then, the data are flown to the IC380 (CXD8603R) via IC217 (CXD8598R) to regenerate audio signals.
As SERR signal from IC181 (CXD8663Q) to IC217 (CXD8598R) is not initialized, this signal line is shut off and fixed to "high" before checking.
This diagnosis turns on all channels to turn on both analog and digital outputs.
If no error is detected, a sound is generated, then a message is output and the controller waits for key entry.

O Diagnosis Error code list

01: A mode not supported was selected
02: Reset error
03: Data write error
04: Data read error
05: Written and read data are not same

10: Data transfer error between chips
12: Stop by time out

21: IC217 (CXD8598R) transfer end interrupt is not detected
22: IC217 (CXD8598R) SCR not same

30: Drvcon detects an error in IC181 (CXD8663Q)
31: IC181 (CXD8663Q) SD bus sector header is not detected

41: Vsync interrupt is not detected
42: Sequence header is not detected

50: Audio related chips initialize error
51: Audio stream change error
52: Audio decoder is not in play mode
53: Audio decoder is not in stop mode
54: IC380 (CXD8603R) chip PTS is not detected
55: IC380 (CXD8603R) chip NAVI is not detected
56: No data arrives at IC380 (CXD8603R) chip code buffer
57: No data in IC380 (CXD8603R) chip code buffer is consumed

61: No sub-picture data arrives
62: Sub-picture PTS is not detected

70: DRV INT is not detected
71: Drvcon does not recognize SYS INT
72: Drvcon does not make a response
73: Drvcon communication data error
74: Drvcon EEPROM busy time out
75: Drvcon CXD2545 NG
76: Drvcon RF processor NG
77: Drvcon VCO preset NG

90: Error judged by inspector
91: Check of this item is cancelled by key entry
92: Check of all items is cancelled by key entry

99: Other errors

6-3. Drive Auto Adjustment

The drive can be automatically adjusted, except disc change and tangential skew adjustment. For a disc, use the disc for adjustment. In case of abnormality, press the [stop] key to stop adjustment.
If the drive does not stop, prevent secondary failure by taking proper action such as disconnection of the power cable. This adjustment should be made after repair is finished and no trouble is present in the drive.
A trouble, if present, causes NG and the adjustment to be aborted. As the secondary failure could occur, perform automatic adjustment after the drive is completely repaired.

With the initial menu displayed, press [1] on standard commander, and the screen as shown in Figure 5 will appear.

```
Drive Auto Adjustment
SA.00000   SI.00  EMG.OO


Select No.                          ← Blinking
   0: All              3: CD
   2: DVD SL           4: DVD-DL


STOP: Press STOP Key
```

Figure 5

If "All" is selected, the screen shown in Figure 6 is displayed.

```
Drive Auto Adjustment
SA.00000   SI.00  EMG.OO


0: Adjustment ALL
   0: All              2: CD
   2: DVD SL           3: DVD-DL


START: Press ENTER Key              ← Blinking
STOP: Press STOP Key
```

Figure 6

The tray opens after the ENTER key is pressed and the initialization is finished. Then, place the DVD_SL disc for adjustment. Press the ENTER key to start adjustment. During adjustment, the tangential skew adjustment screen is displayed. Make this adjustment only when the pickup was replaced.
As for adjustment, rotate the T-SKEW adjusting screw on the pickup so that the displayed jitter becomes minimum (CCW makes jitter smaller). Avoid extreme rotation or interference of screwdriver with the disc. After adjustment, a message to apply a screw locking agent will be displayed if jitter value is within the specification. Then, apply a drip of locking agent to the recess of screw. Hence, change discs following the given messages on OSD, and the adjustment is finished if there is no problem.
Note that if "All" is selected, the data of previous adjustment are erased and initial values are set.

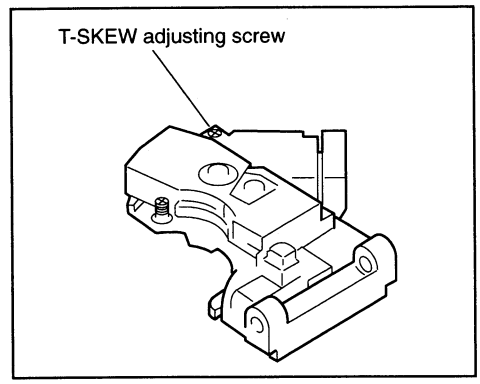
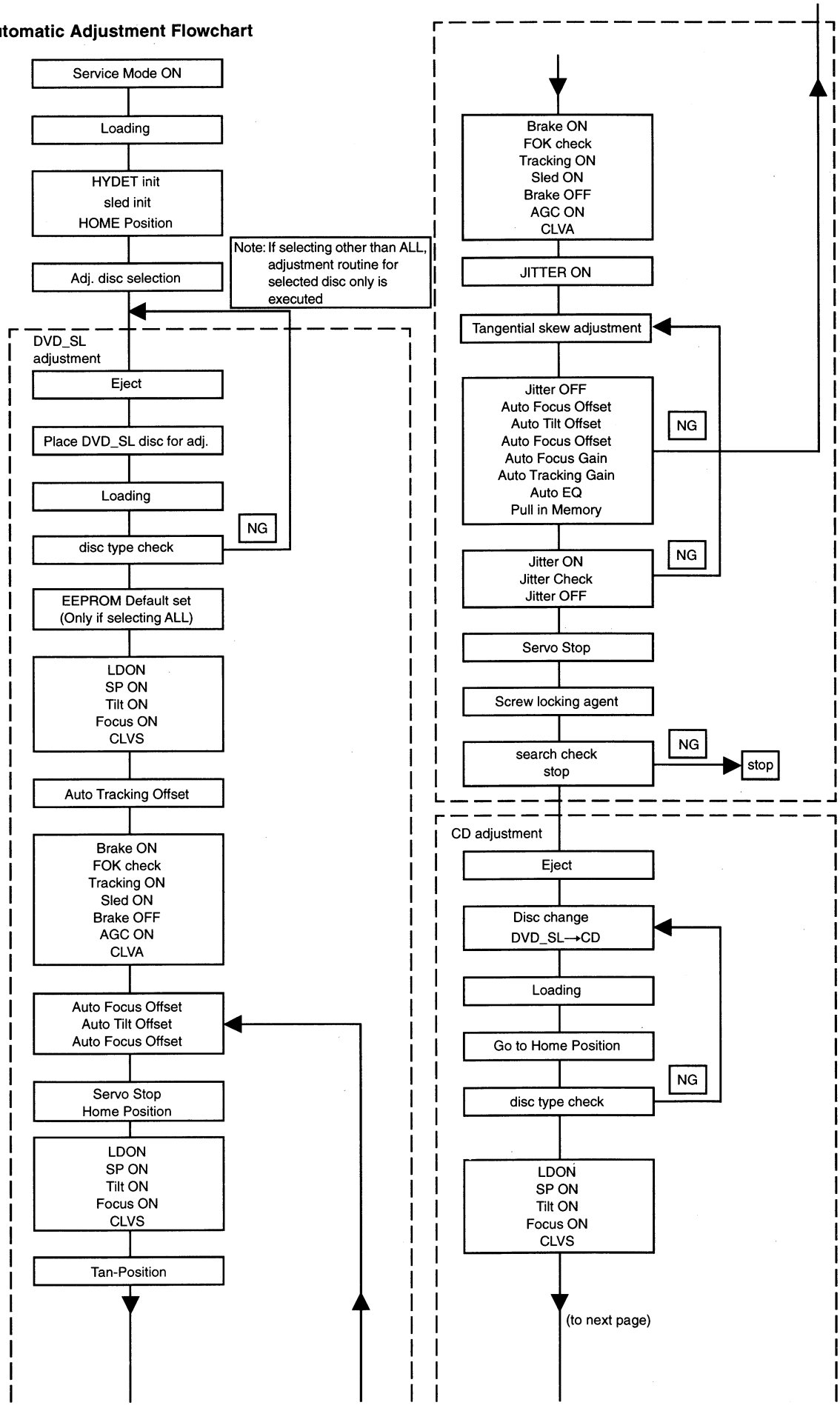
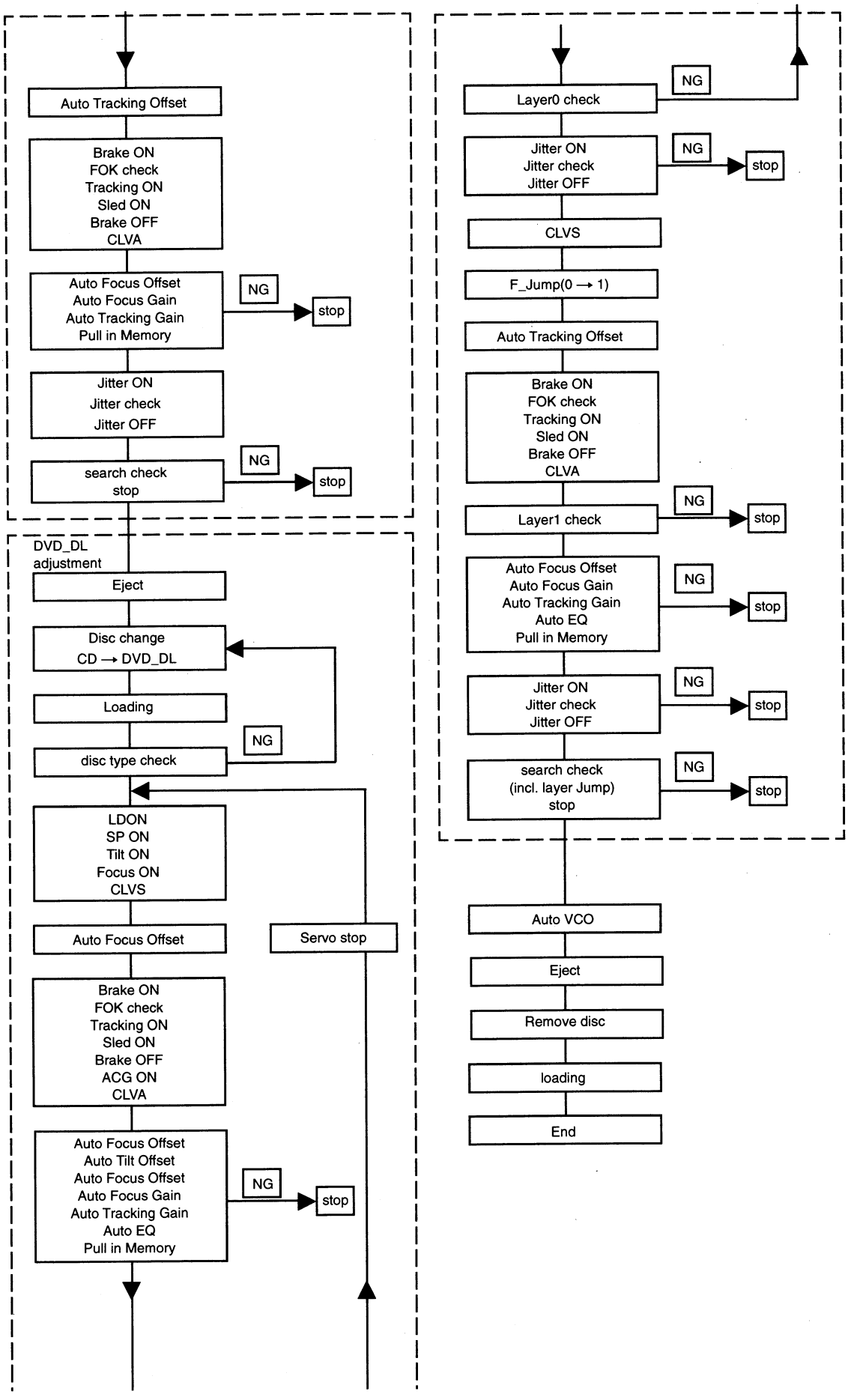


Figure 7

Drive Automatic Adjustment Flowchart




Auto Tracking Offset
Brake ON
FOK check
Tracking ON
Sled ON
Brake OFF
CLVA
Auto Focus Offset
Auto Focus Gain
Auto Tracking Gain
Pull in Memory
NG
stop
Jitter ON
Jitter check
Jitter OFF
search check
stop
NG
stop
DVD_DL
adjustment
Eject
Disc change
CD → DVD_DL
Loading
disc type check
NG
LDON
SP ON
Tilt ON
Focus ON
CLVS
Auto Focus Offset
Servo stop
Brake ON
FOK check
Tracking ON
Sled ON
Brake OFF
ACG ON
CLVA
Auto Focus Offset
Auto Tilt Offset
Auto Focus Offset
Auto Focus Gain
Auto Tracking Gain
Auto EQ
Pull in Memory
NG
stop
Layer0 check
NG
Jitter ON
Jitter check
Jitter OFF
NG
stop
CLVS
F_Jump(0 → 1)
Auto Tracking Offset
Brake ON
FOK check
Tracking ON
Sled ON
Brake OFF
CLVA
Layer1 check
NG
stop
Auto Focus Offset
Auto Focus Gain
Auto Tracking Gain
Auto EQ
Pull in Memory
NG
stop
Jitter ON
Jitter check
Jitter OFF
NG
stop
search check
(incl. layer Jump)
stop
NG
stop
Auto VCO
Eject
Remove disc
loading
End

6-4. Drive Manual Operation

In performing manual operation, observe the following points:
Select correct disc type on the Disc Type screen.
First, select "7. Check" and execute "4. Hydet init" and "5. Sled init". (See Figure 9)
With the initial menu displayed, if [2] on standard commander is pressed, the screen shown in Figure 11 is displayed.
In case of abnormality, press [stop] immediately to stop operation and turn off the power.
Do not execute Auto Adjust while executing FG Pause.
Also, as these commands are not protected, take care not to press wrong key.

6-4-1. Drive Manual Operation Menu Screen

```
Drive Manual Operation

SA.000000        SI.00          EMG.00


0. Disc Type
1. Manual Control 1
2. Manual Control 2
3. Manual Control 3
4. Manual Adjust 1
5. Manual Adjust 2
6. Auto Adjust
7. Check
```

Figure 8

This screen provides a menu for manual operation, and you can go directly to each screen from here. To return to this screen from each screen, press the RETURN key.
For switching between respective screens, use the CLEAR key.

```
check

SA.000000        SI.00          EMG.00


0. SRAM Check
1. EEPRM Check
2. CDDET Check
3. EPROM Default
4. Hydet Init
5. Sled Init
6. EEPROM Data
```

Figure 9

6-4-2. Disc Type

```
Disk type

SA.000000        SI.00          EMG.00


0. DVD SL   12cm
1. CD       12cm
2. DVD DL   12cm
3. DVD SL   8cm
4. CD       8cm
5. DVD DL   8cm
6. Disc type check


DVD SL           12cm
```

Figure 10

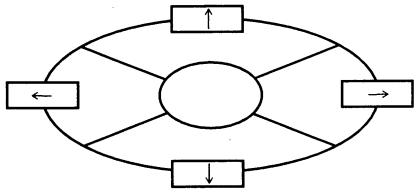
On this screen, select the type of disc used.
"6. Disc type check" judges the disc loaded. Confirm that judgment result meets the loaded disc type.
Judgment may fail if adjustment is not made yet immediately after EEPROM Default Set. The CD which is not cut up to the CD/VDV detection sensor position is judged as DVD. The optical system will be damaged if other disc is loaded after selecting DVD DL.

6-4-3. Manual Control 1

```
Manual Control 1

SA.000000        SI.00          EMG.00


0. LD       off          7. CLVS
1. SP       off          8. CLVA
2. Tilt     off          9. FG
3. Focus    off          →. Sled FWD
4. Brake    off          ←. Sled RVS
5. Track    off          ↑ . Tilt Up
6. Sled     off          ↓ . Tilt Down


DVD SL           12cm
```

Figure 11

On this screen, turn on/off servo operation items necessary for playing.
Normally, turn on the items from 1 sequentially, and normal trace is executed at CLVA. For the Brake, turn it off after turning on the Sled. During normal operation, AGC is turned on.



0. LD : Turn on/off the laser diode.
1. SP : Turn on/off the spindle.
   At SP ON, the spindle runs in constant velocity mode.
2. TILT : Turn on/off the tilt servo.
3. Focus : Focus searching is executed and focus is turned on.
   Operation is terminated if focus is not turned on after focus search is retried about 3 times.
4. Brake : Turn on/off the tracking brake.
   If turning on the tracking, turn on the brake.
   Also, turn off the brake during tracing.
5. Track : Turn on/off the tracking servo.
6. Sled : Turn on/off the sled servo.
7. CLVS : Spindle rough servo.
8. CLVA : Spindle normal servo.
9. FG : Spindle in constant velocity mode
→. : Move the sled system outside.
   Perform this with the tracking turned off.
←. : Move the sled system inside.
   Perform this with the tracking turned off.
↑. : Move the tilt system up.
↓. : Move the tilt system down.

6-4-4. Manual Control 2

Manual Control 2		
SA.000000	SI.00	EMG.00
0. AGC	off	5. FJ0 → 1
1. Pause	off	6. FJ1 → 0
2. FCS. Srch	off	7. LJ0 → 1
3. Defect	off	8. LJ1 → 0
4. Tilt_H	off	
DVDDL	12cm	

Figure 12

This screen will be used mainly for layer jump control.
Confirm the sector information (SI) so as not to mistake layer jump direction of DVD_DL.
The layer is 0 when SI is even number, or layer is 1 when odd number.
Wrong jump direction causes OPT failure.

0. AGC : Turn on/off focus error auto gain control on pull-in level.
1. Pause : Pause is made by executing track jump once per revolution.
2. FCS.Srch : The focus drive system is checked by applying same voltage to the focus drive as that in focus search.
3. Defect : Turn on/off defect.
4. Tilt H : Increase tilt gain.
5. FJ0 → 1 : After layer jump L0 → L1, tracking loop is not turned on.
6. FJ1 → 0 : After layer jump L1 → L0, tracking loop is not turned on.
7. LJ0 → 1 : After layer jump L0 → L1, tracking loop is turned on.
8. LJ1 → 0 : After layer jump L1 → L0, tracking loop is turned on.

6-4-5. Manual Control 3

Manual Control 3		
SA.000000	SI.00	EMG.00
0. FWD	ITJ	5. Eject
1. RVS	ITJ	6. Load
2. FWD	500TJ	7. Door Open
3. RDS	500TJ	8. Door Close
4. Home		
DVD SL	12cm	

Figure 13

On this screen, track jump, etc. are executed.

0. FWD 1TJ : Jump one track forward.
1. RVS 1TJ : Jump one track reversely.
2. FWD 500TJ : Jump 500 tracks forward (fine search).
3. RVS 500TJ : Jump 500 tracks reversely (fine search).
4. HOME : Move to home position.
5. Eject : Eject disc (not including door open). Execute this with the door left open.
6. Load : Load disc (not including door close)
7. Door Open : Open the front panel door.
8. Door Close : Close the front panel door. Execute this in the loading completed status.

6-4-6. Manual Adjust 1

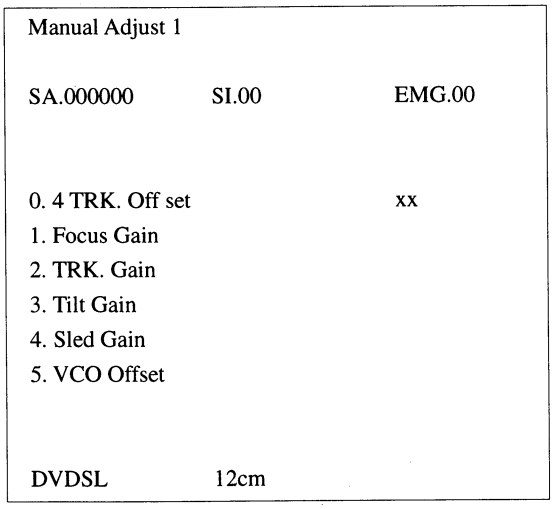


Figure 14

On this screen, manual adjustment can be made where jitter measurement is not executed.

0. TRK Offset: Adjust tracking offset.
1. Focus Gain : Adjust focus gain.
2. TRK Gain : Adjust tracking gain.
3. Tilt Gain : The tilt gain is fixed, and no adjustment is made.
4. Sled Gain : Do not adjust this.
5. VCO Offset: Set VCO control voltage.

6-4-7. Manual Adjust 2

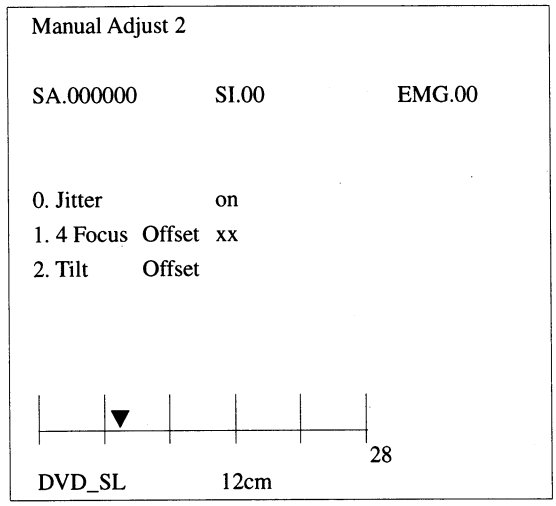


Figure 15

On this screen, manual adjustment can be made where jitter measurement is executed.

0. Jitter : Turn on/off jitter measurement. Jitter will not be measured unless the drive runs at CLVS or CLVA.
1. Focus Offset : Adjust focus offset.
2. Tilt offset : Adjust tilt offset.

6-4-8. Auto Adjust

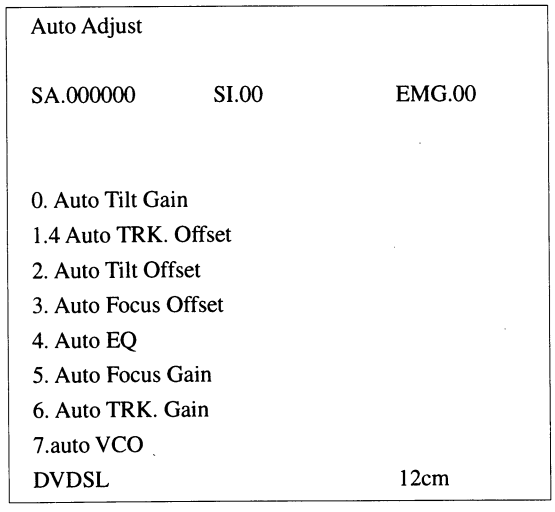


Figure 16

On this screen, each item can be automatically adjusted individually.
Note, however, that there are some restrictions.

0. Auto Tilt Gain : Adjust tilt gain. Adjusted result is not reflected on the ROM. Executed this at least with LD and Tilt turned on. (Not used at present)

1. Auto TRK Offset : Adjust tracking offset automatically. Adjusted result is reflected on the ROM. Turn off tracking with the Focus turned on. Do not execute this at outside track because pickup moves outside. It is recommended to turn on CLVS.

2. Auto Tilt Offset : Adjust tilt offset automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on. If NG, retry this after focus offset and tangential skew are adjusted.

3. Auto Focus Offset : Adjust focus offset automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on. If NG, retry this after tilt offset and tangential skew are adjusted.

4. Auto EQ : Adjust RF equalizer properly. Adjusted result is not reflected on the ROM. Execute this with CLVA turned on.

5. Auto Focus Gain : Adjust focus gain automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on if possible. If NG, the system will be defective, and repair it.

6. Auto TRK gain : Adjust tracking gain automatically. Adjusted result is reflected on the ROM. Execute this with CLVA turned on if possible. If NG, the system will be defective, and repair it.

7. Auto VCO : Adjust VCO voltage. Adjusted result is reflected on the ROM. Execute this with all items turned OFF.

6-4-9. Check

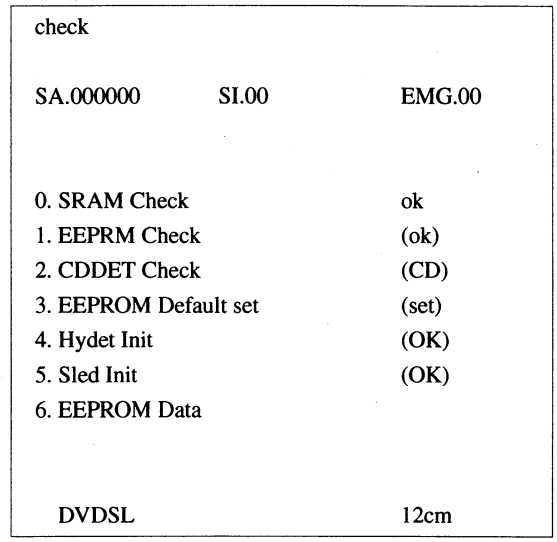


Figure 17

On this screen, various checking can be made. Note, however, that some items such as EEPROM Default set are not recoverable.

0. SRAM check : Check communication between H8 and SRAM (CXK58257).

1. EEPROM check : Check communication between H8 and EEPROM (AK6420).

2. CDDET check : Check CD detection sensor. Result is shown on the right side.

3. EEPROM Default set : Use this to set EEPROM set values to default values. Before executing this, it is recommended to record current values.

4. Hydet init : Initialize for direct searching.

5. Sled init : Cancel the sled stop position offset.

6. EEPROM data : Display EEPROM set values list. Display is made with HEX numbers "00"~"FF".

If the check on this screen is NG EMG turns to the number that is not "00.."

EEPROM data screen display (at default setting)

EEPROM data

Set No.	00	CD	DVD SL	DVD L0	DVD L1
Focus Offset		80	80	80	80
Focus Gain		30	18	30	30
TRK Offset		80	80	80	80
TRK Gain		30	30	30	30
Tilt Offset		80	80	80	80
Pullin Level		9e	9f	ab	ab
Sled Gain		10	18	18	18
EQ Init			3a	35	30
VCO Offset			76	76	76

Figure 18

This screen displays various set values including adjusted results stored in the EEPROM.

Set No. : Nothing is displayed (00 is displayed)
Focus Offset : 00~FF 80 center (DVD_SL)
Focus Gain : 00~7F 20 center (DVD_SL)
TRK. Offset : 00~FF 80 center (DVD_SL)
TRK. Gain : 00~7F 30 center (DVD_SL)
Tilt Offset : 00~FF 80 center (DVD_SL)
Pullin Level : 80~B0 approx. (DVD_SL)
EQ Init : Fixed value
VCO Offset : 70~80 approx. (DVD_SL)

6-5. Emergency History

With the initial menu displayed, press [3] key on the standard commander, and the information on emergency history of Drvcon will be displayed. This information is given over two pages, which can be changed over with [1] and [2] keys. To return to the initial menu, press [0] key.

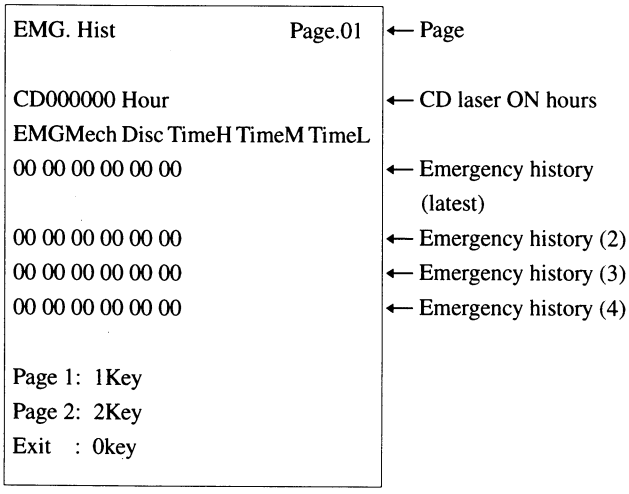


Figure 19

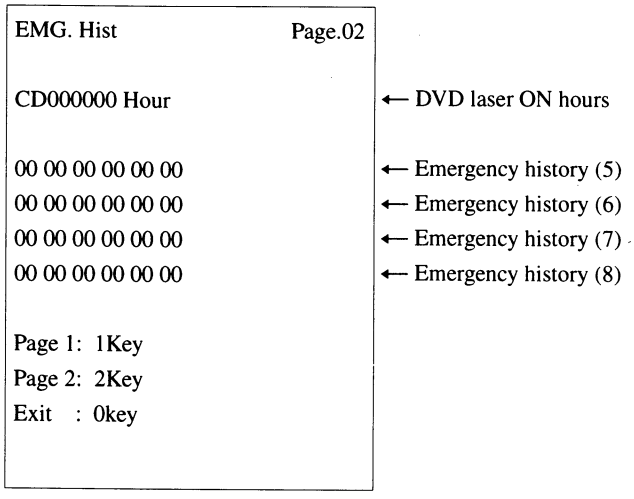


Figure 20

The following hidden commands are available. Data clear can be confirmed from the fact that the screen display changes.

◎ Clearing laser ON hours
Press [DISPLAY] and [CLEAR] keys on the standard commander in this order.

◎ Clearing emergency history
Press [TITLE] and [CLEAR] keys on the standard commander in this order.
After repair is finished, always clear emergency history data.

◎ Clearing Syscon preset
Press [DVD MENU] and [CLEAR] keys on the standard commander in this order.

For EMG code, Mech mode, and Disc information of history display, see "Drvcon emergency code list", "Drvcon Mech mode list", and "Drvcon disc status list".

6-6. Other Checks

With the initial menu displayed, press [4] key on the standard commander, and the information such as destination and ROM revision will be displayed. At this time, LED and display tube lighting check is also executed.

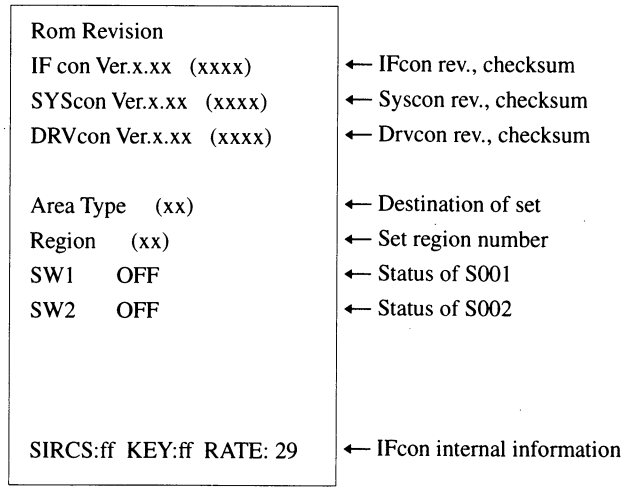


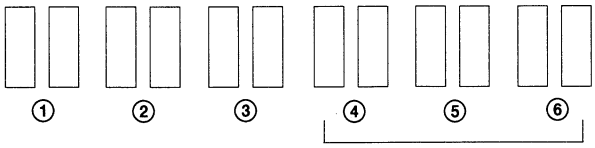
Figure 21

After mode is selected, checksum calculation and information reading are executed, thus requiring time before display.
Also, during this display, LEDs and display tube are all turned on.

The status of keys on standard commander and operation panel is displayed in real time. However, if [POWER] key is pressed, the power is turned off after display. Also, this mode is terminated if pressing [RETURN] key.
The door is opened/closed by pressing [PANEL] key on operation panel.
When [RETURN] key is pressed, LED and display tube are turned off and the initial screen is resumed.

Note: A number of two decimal places of Rom Revision is a design management code and therefore ignore it.

How to see Emergency History



DVD : Selector address
CD : minute & second frame

① EMG CODE
② MECH MODE
③ DISC
④ TIME (MSB)
⑤ TIME
⑥ TIME (LSB)

① EMG CODE (Drvcon emergency code list)

Initial
00: No Emergency
01: RAM check NG (IC138)
02: ROM check NG (ICS140)
03: EEPROM RW NG (IC139)
04: EEPROM BUSY Time Out (IC139)
05: CXD2545 (IC717) check NG
06: CXD8599 (IC710) check NG
07: CXD8663 (IC181) check NG
08: HYDET NG
09: SDCNTL NG
0A: VCO NG
0B: Focus Gain Adj NG
0C: Trk Gain Adj NG
0D: Jitter NG

Door & Tray system
10: Door Time Out
11: Tray Time Out

Spindle system
20: Spindle Lock Time Out
21: Spindle Out of Control

Sled system
30: Home Position Time Out
31: Sled FG NG
32: Sled Drv NG

Tilt system start up/down
50: Focus Search Time Out

Trace system
60: CL VLOCK NG
61: PLL NG
62: Address Continuity NG
63: PLL Lock Time Out
64: CLV Lock Time Out
65: Layer slip NG

Seek system
70: Address Read NG
71: Seek NG
72: Focus Jump NG
73: TOC Read Time Out
74: FOK NG
75: Req Address NG
76: Req Time NG
77: Req Track No NG

Communication system
80: Communication NG

② MECH MODE (Drvcon Mech mode list)
00: Power ON Ready (immediately after power on)
10: Eject
20: Stop
30: Trace (data supply mode)
40: Pause
50: Scan
60: Mecha Initialize
70: Load
80: Unload
90: Spin Up (disc startup operation)
A0: Spin Down (disc stop operation)
B0: Seek (search mode)
C0: Error Recovery
D0: Service

③ DISC (Drvcon status list)

bit	Value:0	Value:1
0: DVD/CD	DVD	CD
1: 12cm/8cm	12cm	8cm
2: Layer	Single	Dual
3: Reflectivity	High	Low
4: Judge/No judge	Judge	No judge
5: Disc/No disc	Disc	No disc
6: CDROM	Not	True
7: Track Density (DVD)	0.74 mm	0.80 mm

Note: If judge/no judge is not "judge", correct data have not been written.

SECTION 7
ELECTRICAL ADJUSTMENT

In making adjustment, refer to 7-6. Adjustment Related Parts Arrangement.

This section describes procedures and instructions necessary for adjusting electrical circuits in this set.

Instruments required:

1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) Frequency counter (over 8 digits)
4) Digital voltmeter
5) Standard commander
6) DVD reference disc
   HLX-502 (J-6090-068-A) (dual layer)
   HLX-503 (J-6090-069-A) (single layer)

7-1. Power Supply Check

1. PS-393 Board

Mode	E-E
Instrument	Digital voltmeter
AU+9V check	
Test point	CN952 ① pin
Specification	9 ±0.5V
AU-10V check	
Test point	CN952 ④ pin
Specification	–12.5V

Checking method:

1) Confirm that each voltage satisfies the specification.

2. MB-75 Board

Mode	E-E
Instrument	Digital voltmeter
–7V check	
Test point	CN001 ④ pin
Specification	–7 ±0.5V
+12V check	
Test point	CN001 ⑥ pin
Specification	+12 ±0.5V
+5.2V check	
Test point	CN001 ⑪, ⑫ pins
Specification	+5.2 ±0.2V

Checking method:

1) Confirm that each voltage satisfies the specification.

7-2. Adjustment of System Control

1. 27MHz Free Run (MB-75 board)

<Purpose>

27MHz is the reference clock for the MPEG system, and if it is not adjusted correctly, checking of 22 MHz and 33 MHz lock in the following steps will result in NG.

Mode	E-E
Test point	TP018 (27MHz FREE RUN)
Instrument	Oscilloscope, Frequency counter
Adjusting element	RV001
Specification	27000000 ±100Hz

Adjusting method:

1) Connect TP025 (XULK) to the GND.
2) Confirm that the waveform at TP018 is normal.
3) Adjust RV001 to attain 27000000 ± 100 Hz.
4) After adjustment, disconnect TP025 from GND.

Figure 7-1

2. 22MHz Adjustment (MB-75 board)

<Purpose>

22MHz is the reference clock to generate 33 MHz clock, and if it is not adjusted correctly, checking of 33 MHz will result in NG.

Mode	E-E
Test point	TP022 (512fs)
Instrument	Oscilloscope, Frequency counter
Adjusting element	CT001
Specification	22579200 ±100Hz

Adjusting method:

1) In the "0" Syscon Diagnosis of the test mode initial menu, select the CD mode.
2) Confirm that the waveform at TP022 is normal.
3) Adjust CT001 to attain 22579200 ±100Hz.

Figure 7-2

3. 33 MHz Check (MB-75 board)

<Purpose>

33 MHz is the reference clock for audio system to play CD (including video CD), and if it is not adjusted correctly, no sound will be generated or sounds will be distorted.

Mode	E-E
Test point	TP019 (33 MHz)
Instrument	Oscilloscope, Frequency counter
Specification	33868800 ±150Hz

Checking method:

1) In the "0" Syscon Diagnosis of the test mode initial menu, select the CD mode.
2) Confirm that the waveform at TP019 is normal.
3) Confirm that the frequency is 33868800 ±150Hz.

Figure 7-3

4. 33 MHz Lock Check (MB-75 board)

<Purpose>

This checks whether 33 MHz is synchronized with reference clock 27MHz for MPEG system. If it is not locked, the sounds and pictures are not synchronous during MPEG playing or playing is suspended.

Mode	E-E
Test point	TP021 (PH-COMP)
Instrument	Oscilloscope, Frequency counter
Specification	21.6 ±0.01kHz

Checking method:

1) In the "0" Syscon Diagnosis of the test mode initial menu, select the CD mode.
2) Confirm that a rectangular wave at TP021 is locked.
3) Confirm that the frequency is 21.6 ±0.01kHz.

Figure 7-4

5. 24 MHz Adjustment (MB-75 board)

<Purpose>

24 MHz is the reference clock to generate 36 MHz clock, and if it is not adjusted correctly, checking of 36 MHz will result in NG.

Mode	E-E
Test point	TP022 (512fs)
Instrument	Oscilloscope, Frequency counter
Adjusting element	CT002
Specification	24576000 ±100Hz

Adjusting method:

1) In the "0" Syscon Diagnosis of the test mode initial menu, select the DVD mode.
2) Confirm that the waveform at TP022 is normal.
3) Adjust CT002 to attain 24576000 ±100Hz.

Figure 7-5

6. 36 MHz Check (MB-75 board)

<Purpose>

36 MHz is the reference clock for audio system to play DVD, and if it is not adjusted correctly, no sound will be generated or sounds will be distorted.

Mode	E-E
Test point	TP020 (36 MHz)
Instrument	Oscilloscope, Frequency counter
Specification	36864000 ±150 Hz

Checking method:

1) In the "0" Syscon Diagnosis of the test mode initial menu, select the DVD mode.
2) Confirm that the waveform at TP020 is normal.
3) Confirm that the frequency is 36864000 ±150 Hz.

Figure 7-6

7. 36 MHz Lock Check (MB-75 board)

<Purpose>

This checks whether 36 MHz is synchronized with reference clock 27 MHz for MPEG system. If it is not locked, the sounds and pictures are not synchronous during MPEG playing or playing is suspended.

Mode	E-E
Test point	TP021 (PH-COMP)
Instrument	Oscilloscope, Frequency counter
Specification	24.0 ±0.01 kHz

Checking method:

1) In the "0" Syscon Diagnosis of the test mode initial menu, select the DVD mode.
2) Confirm that a rectangular wave at TP021 is locked.
3) Confirm that the frequency is 24.0 ±0.01 kHz.

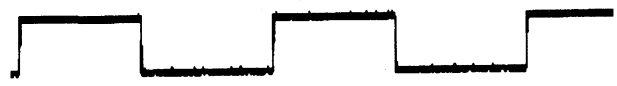


Figure 7-7

8. 16 MHz Check (MB-75 board)

<Purpose>

16 MHz is the reference clock for audio system to play CD (including video CD), and if it is not adjusted correctly, no sound will be generated or sounds will be distorted.

Mode	E-E
Test point	IC770 20 pin
Instrument	Oscilloscope, Frequency counter
Specification	16934400 ±75 Hz.

Checking method:

1) Confirm that the waveform at IC770 ⑳ pin is normal.
2) Confirm that the frequency is 16934400 ±75 Hz.

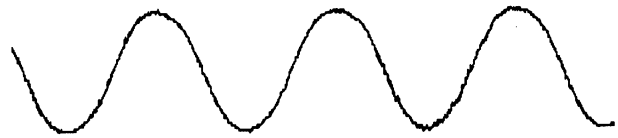


Figure 7-8

7-3. Adjustment of Video System

1. Video Level Adjustment (MB-75 board)

<Purpose>

This adjustment is made to satisfy the NTSC Standard, and if not adjusted correctly, the brightness will be too large or small.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑪ pin (terminating 75)
Instrument	Oscilloscope
Adjusting element	RV479
Specification	1 ±0.02 Vp-p

Adjusting method:

1) In the test mode initial menu "0" Syscon Diagnosis, set so that CXD1914 color bars are generated.
2) Adjust the RV479 to attain 1 ±0.02 Vp-p.

Figure 7-9

2. S-terminal Output Check (MB-75 board)

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with an S-terminal cable.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑦ pin (terminating 75)
Instrument	Oscilloscope
Specification	1 ±0.05 Vp-p

Checking method:

1) In the test mode initial menu "0" Syscon Diagnosis, set so that CXD1914 color bars are generated.
2) Confirm that the S-Y level is 1 ± 0.05 Vp-p.

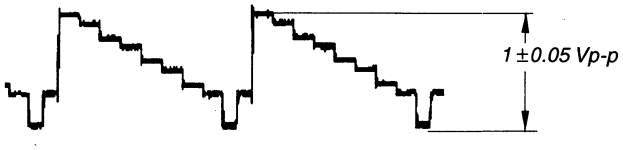


Figure 7-10

3. Checking Composite Video Output B-Y(MB-75 board)

<Purpose>

This checks composite video output B-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ① pin (terminating 75)
Instrument	Oscilloscope
Specification	700 ±30 mVp-p

Checking method:

1) Confirm that the B-Y level is 700 ±30 mVp-p.

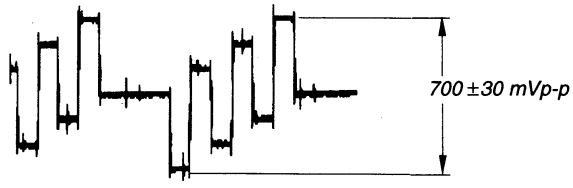


Figure 7-11

4. Checking Composite Video Output R-Y(MB-75 board)

<Purpose>

This checks composite video output R-Y. If it is incorrect, correct colors will not be displayed when connected to, for instance, projector.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ③ pin (terminating 75)
Instrument	Oscilloscope
Specification	700 ±30 mVp-p

Checking method:

1) Confirm that the R-Y level is 700 ± 30 mVp-p.

Figure 7-12

5. Checking Composite Video Output Y (MB-75 board)

<Purpose>

This checks composite video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑤ pin (terminating 75)
Instrument	Oscilloscope
Specification	1 ±0.05 Vp-p

Checking method:

1) Confirm that the Y level is 1 ±0.05 Vp-p.

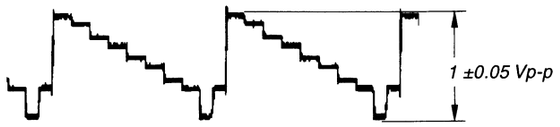


Figure 7-13

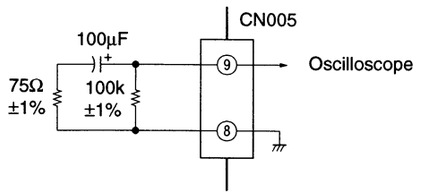
6. Checking S Video Output S-C (MB-75 board)

<Purpose>

This checks whether the S-C satisfies the NTSC Standard. If it is not correct, the colors will be too dark or light.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑨ pin
Instrument	Oscilloscope
Specification	286 ±20 mVp-p

Connection:



Checking method:

1) Confirm that the S-C burst is 286 ±20 mVp-p.

Figure 7-14

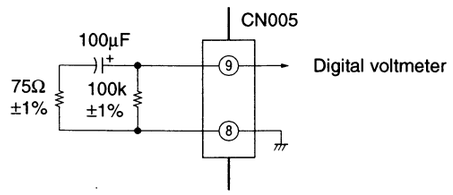
7. Checking S Video Output DC Level (MB-75 board)

<Purpose>

This checks signals for S1 and S2 compatible TV. If they are not correct, the TV will not switch automatically to letter box, etc.

Mode	CXD1914 (ENC) check in test mode menu "0" Syscon Diagnosis
Signal	Color bars
Test point	CN005 ⑨ pin
Instrument	Digital voltmeter
Specification	S-terminal 0V: 0V S-terminal 5V: $5.0^{+0}_{-1.5}$ V

Connection:

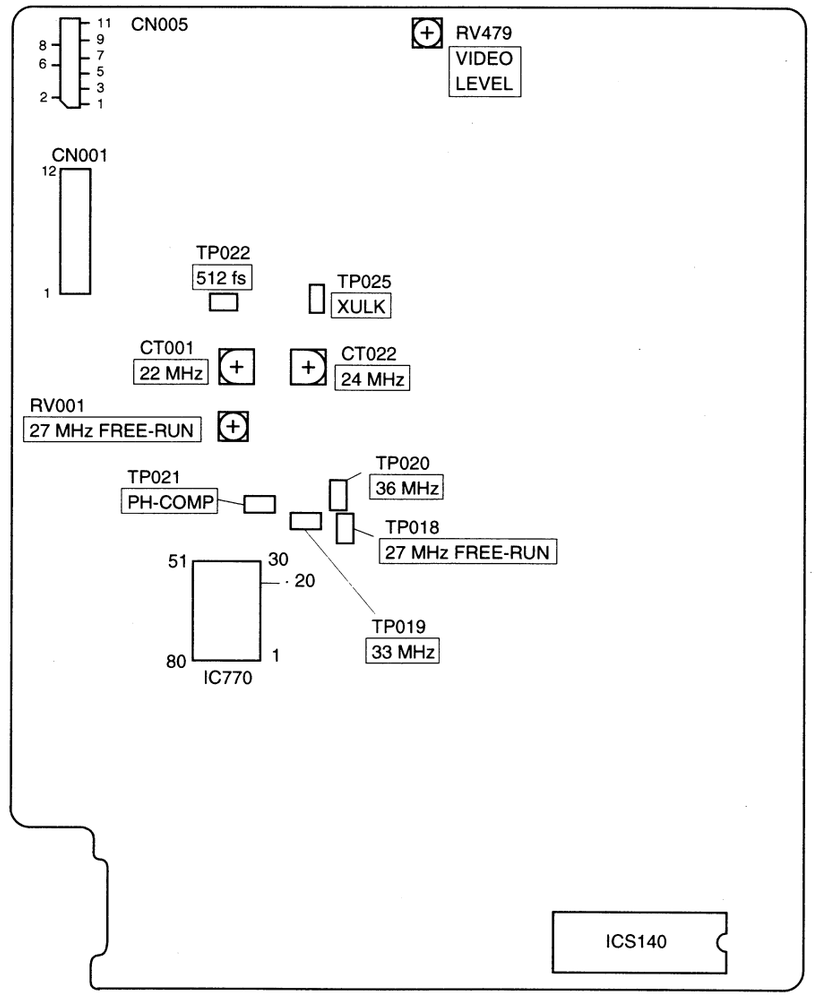


Checking method:

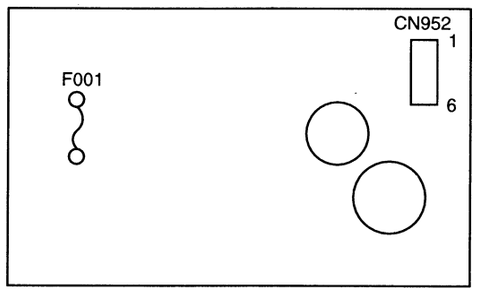
1) In the test mode initial menu "0" Syscon Diagnosis, select S-terminal 0V.
   Confirm that the voltage at CN005 ⑨ pin is 0V.
2) Press any key to select S-terminal 5V.
   Confirm that the voltage at CN005 ⑨ pin is 5.0 $^{+0}_{-1.5}$V.

7-4. Adjustment Related Parts Arrangement

MB-75 BOARD (Side A)



PS-393 BOARD (Side A)



SECTION 8
REPAIR PARTS LIST

8-1. EXPLODED VIEWS

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

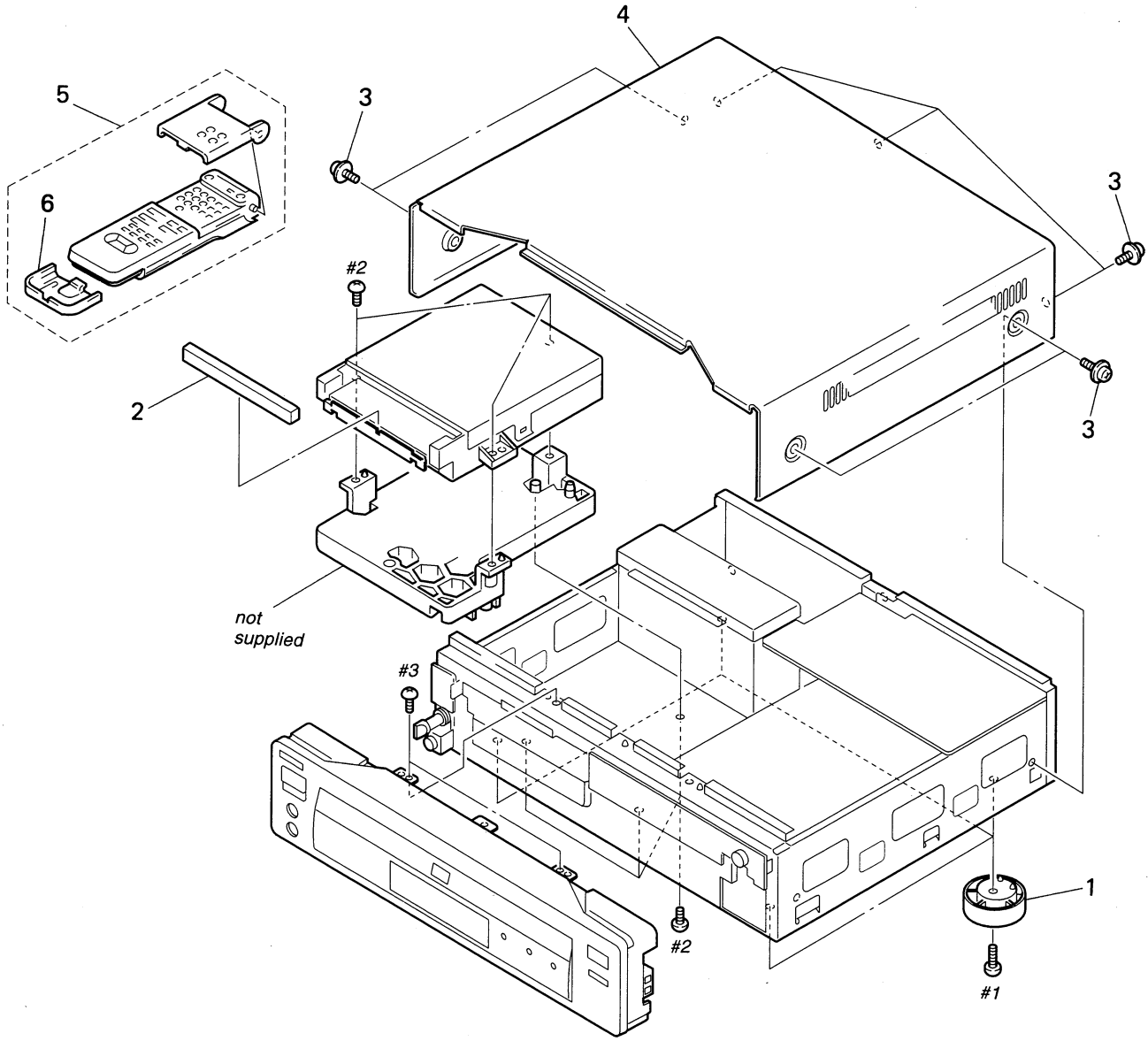
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color

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

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

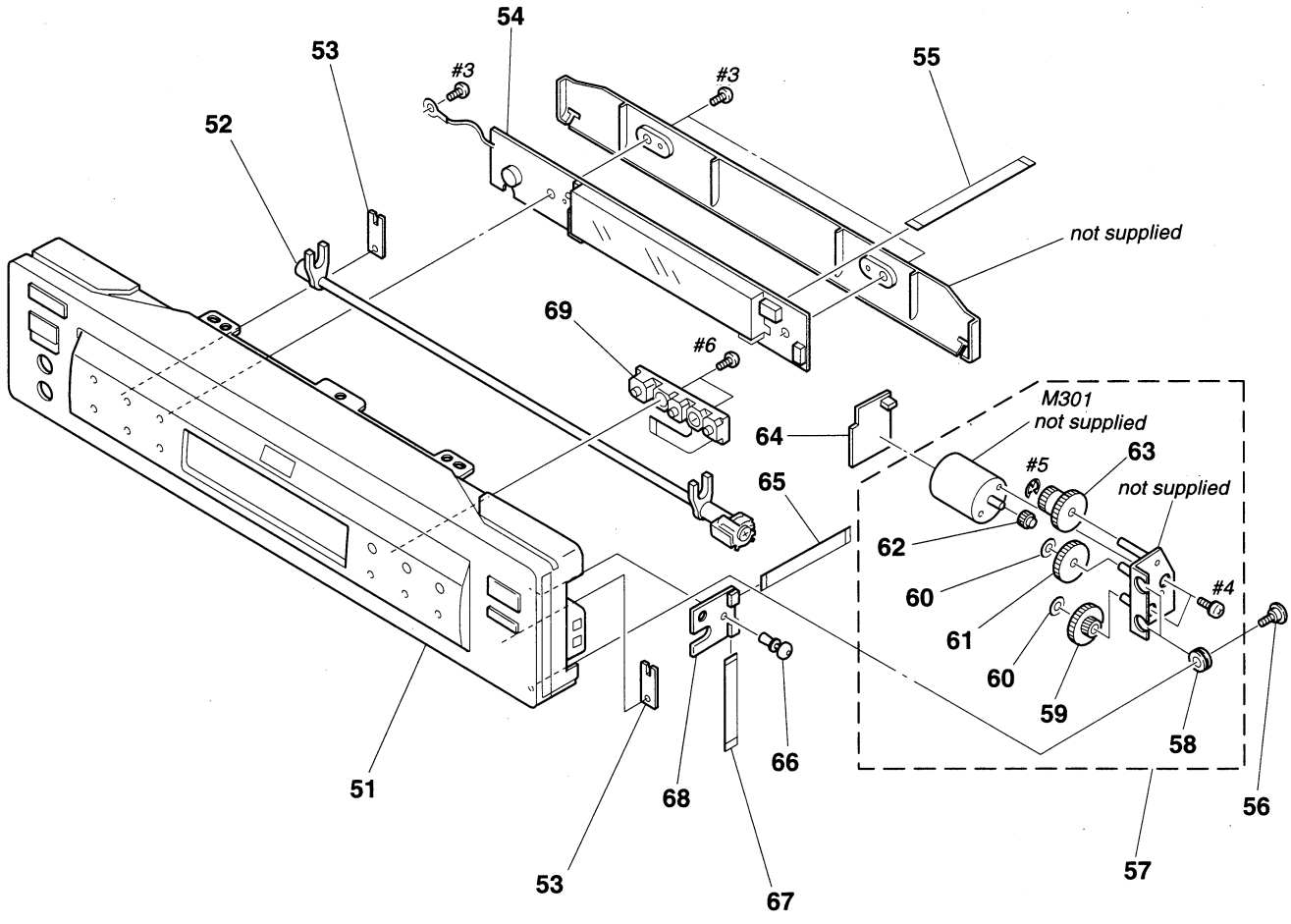
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le neméro spécifié.

8-1-1. CASE ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3602-115-1	FOOT ASSY (E)	
1	X-3947-227-1	FOOT ASSY (US, Canadian)	
2	3-974-960-01	COVER, TRAY (E)	
2	3-974-960-11	COVER, TRAY (US, Canadian)	
3	3-710-901-41	SCREW, TAPPING	
* 4	3-974-981-01	CASE, TOP (E)	
* 4	3-974-981-11	CASE, TOP (US, Canadian)	
5	1-475-086-21	COMMANDER, STANDARD (RMT-D100A) (US, Canadian)	
5	1-475-086-31	COMMANDER, STANDARD(RMT-D100E) (E)	
6	9-939-686-01	LID, BATTERY CASE (for RMT-100A/D100E)	

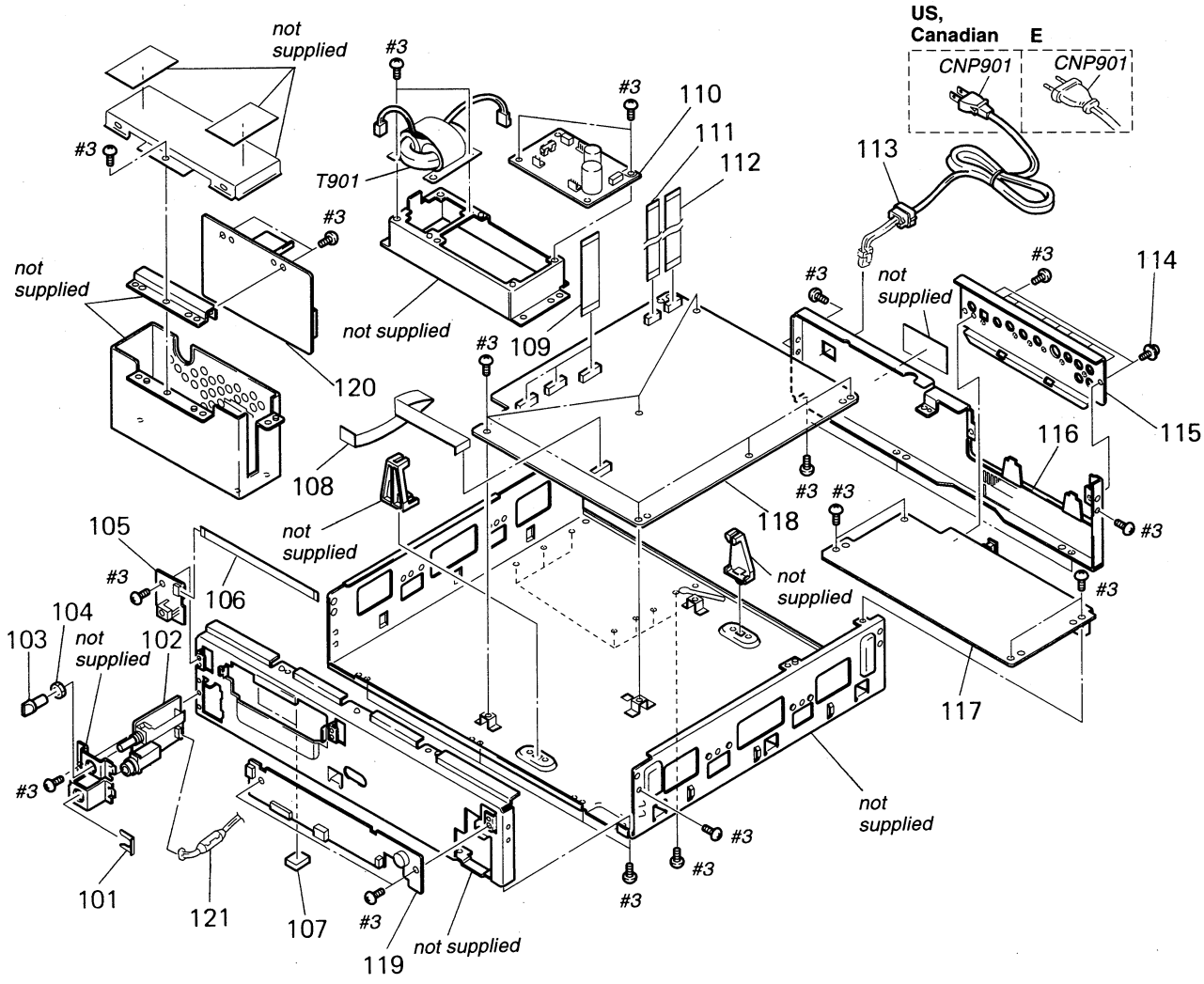
8-1-2. FRONT PANEL ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	A-6062-004-A	SUB BLOCK ASSY, FRONT PANEL (E)	
51	A-6062-018-A	SUB BLOCK ASSY (B),FRONT PANEL	(US, Canadian)
52	A-6062-009-A	SHAFT ASSY, LINK	
* 53	3-974-956-01	RETAINER, LINK SHAFT	
* 54	A-6065-005-A	FL-80 BOARD, COMPLETE (E)	
* 54	A-6065-020-A	FL-80 BOARD, COMPLETE (US, Canadian)	
55	1-782-406-11	CABLE, FLEXIBLE FLAT (FFF-15) 8P	
56	3-975-023-01	SCREW, CUSHION STOPPER	
57	A-6062-008-A	DRIVING BLOCK ASSY, DOOR	
58	3-570-118-00	CUSHION, MOTOR	
59	3-975-014-01	GEAR (B)	

Ref. No.	Part No.	Description	Remark
60	3-377-720-01	WASHER, POLYETHYLENE	
61	3-975-015-01	GEAR (C)	
62	4-968-863-01	GEAR (A)	
63	3-975-016-01	GEAR (D)	
* 64	A-6065-007-A	CN-99 BOARD, COMPLETE (E)	
* 64	A-6065-022-A	CN-99 BOARD, COMPLETE (US, Canadian)	
65	1-782-197-11	CABLE, FLEXIBLE FLAT (FFD-1)	
* 66	3-954-681-01	RIVET, NYLON	
67	1-782-198-11	CABLE, FLEXIBLE FLAT (FDC-3)	
* 68	A-6065-006-A	DR-84 BOARD, COMPLETE (E)	
* 68	A-6065-021-A	DR-84 BOARD, COMPLETE (US, Canadian)	
69	1-475-109-11	BLOCK, TOUCH SWITCH	

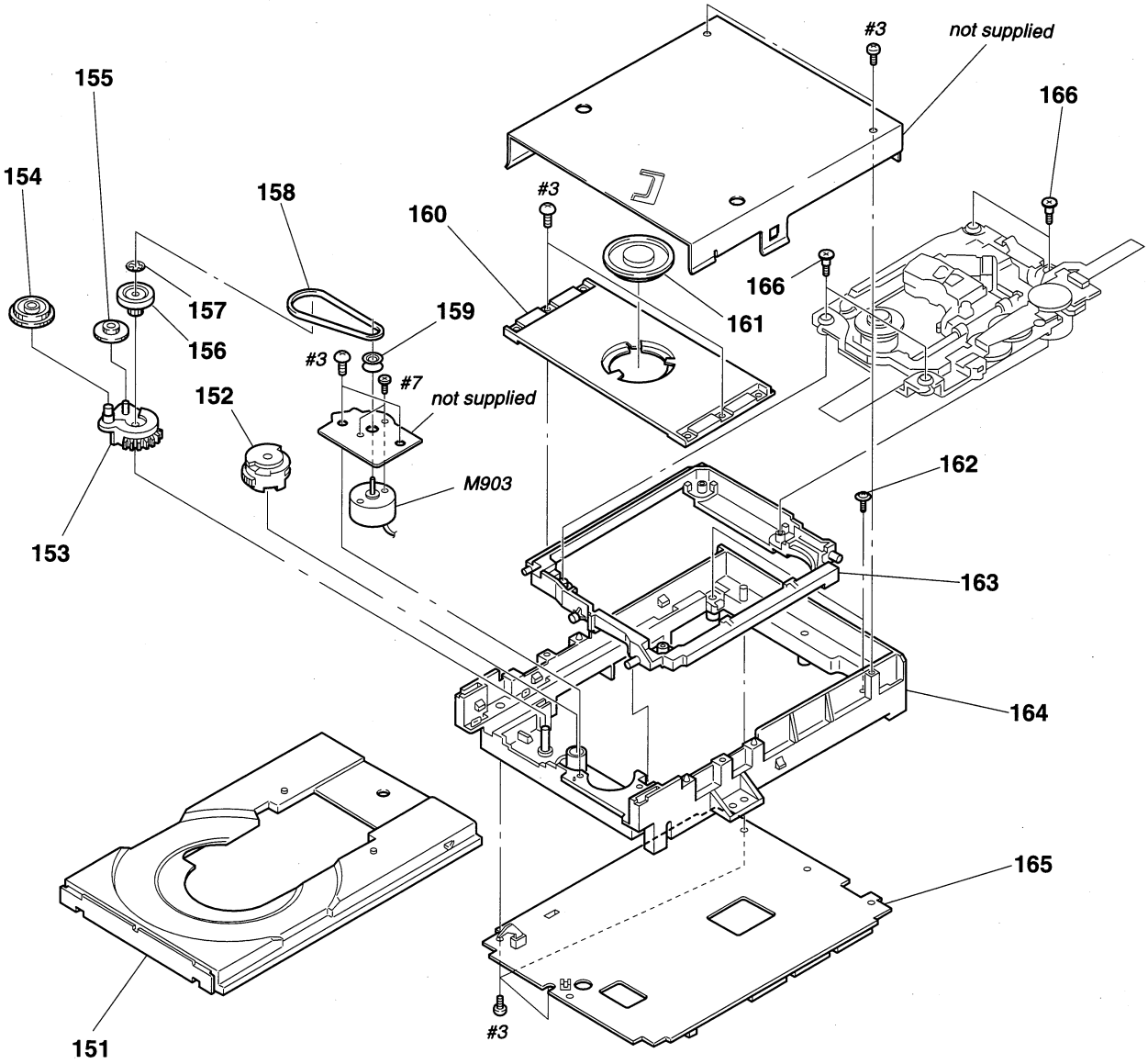
8-1-3. CHASSIS ASSEMBLY



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

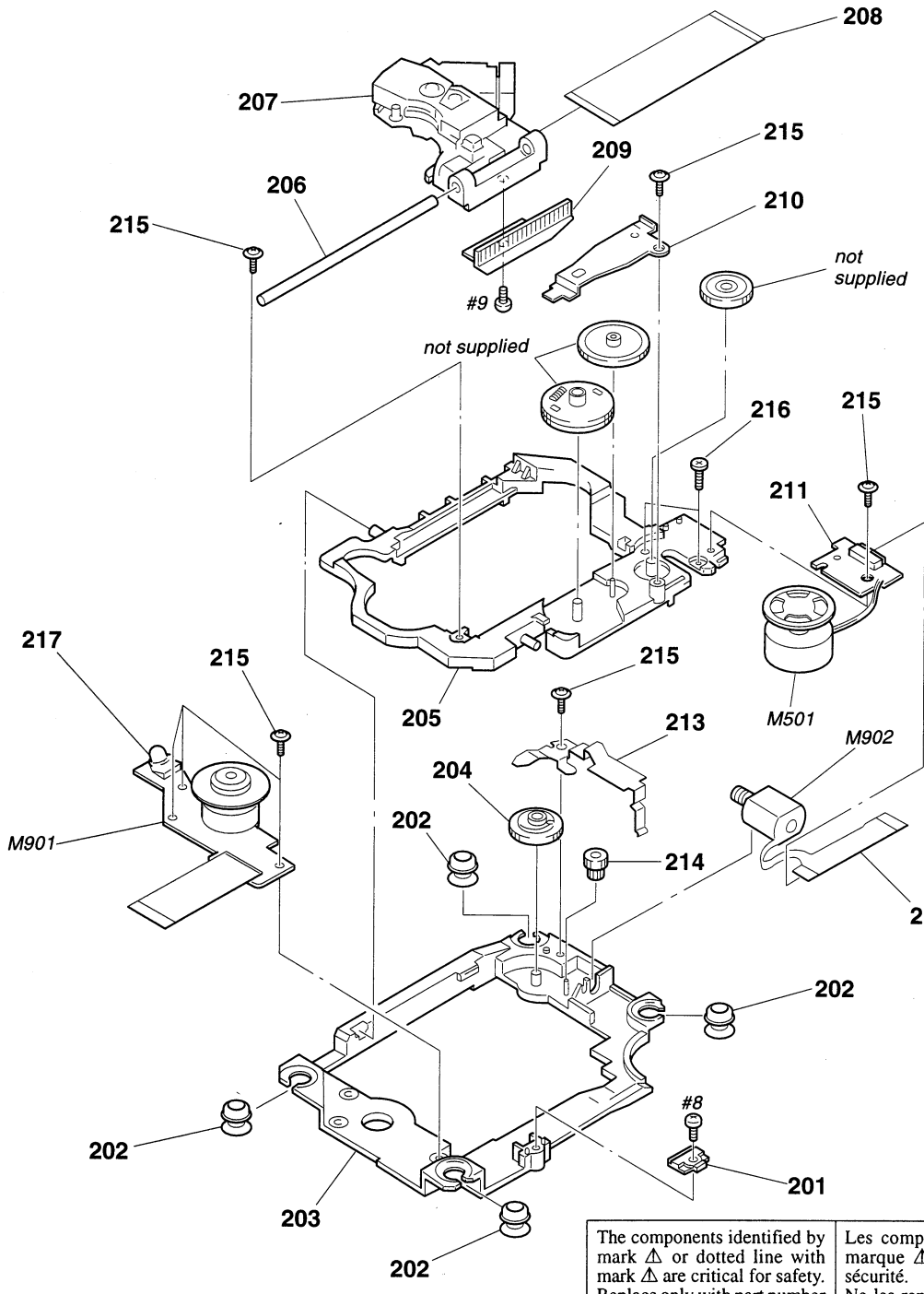
Ref. No.	Part No.	Description	Remark
* 101	3-684-436-01	PLATE, MOUNT	
* 102	A-6065-004-A	HP-92 BOARD, COMPLETE (E)	
102	A-6065-029-A	HP-92 BOARD, COMPLETE (US, Canadian)	
103	3-974-959-01	KNOB, VOLUME (E)	
103	3-974-959-11	KNOB, VOLUME (US, Canadian)	
104	3-950-989-01	NUT (M7), HEXAGON	
* 105	A-6065-002-A	FL-73 BOARD, COMPLETE (E)	
105	A-6065-027-A	FL-73 BOARD, COMPLETE (US, Canadian)	
106	1-782-195-11	CABLE, FLEXIBLE FLAT (FFF-13)	
107	3-831-441-99	CUSHION (A)	
108	1-782-194-11	CABLE, FLEXIBLE FLAT (FFM-15)	
109	1-782-191-11	CABLE, FLEXIBLE FLAT (FTM-3)	
* 110	A-6065-000-A	PS-393 BOARD, COMPLETE (E)	
* 110	A-6065-025-A	PS-393 BOARD, COMPLETE (US, Canadian)	
111	1-782-193-11	CABLE, FLEXIBLE FLAT (FAM-5)	
112	1-782-192-11	CABLE, FLEXIBLE FLAT (FAM-4)	
* 113	3-703-244-00	BUSHING (2104), CORD	
114	3-710-901-41	SCREW, TAPPING	
115	3-974-970-01	PLATE, JACK (E)	
115	3-974-970-11	PLATE, JACK (US, Canadian)	
* 116	3-974-969-01	PANEL, REAR (E)	
* 116	3-974-969-11	PANEL, REAR (US, Canadian)	
* 117	A-6065-009-A	AU-194 BOARD, COMPLETE (E)	
117	A-6065-024-A	AU-194 BOARD, COMPLETE (US, Canadian)	
* 118	A-6065-032-A	MB-75 BOARD, COMPLETE (E)	
* 118	A-6065-011-A	MB-75 BOARD, COMPLETE (US, Canadian)	
* 119	A-6065-001-A	FP-411 BOARD, COMPLETE (E)	
119	A-6065-026-A	FP-411 BOARD, COMPLETE (US, Canadian)	
⚠120	1-468-199-11	POWER BLOCK (SWITCHING REGULATOR) (US, Canadian)	
⚠120	1-468-200-11	POWER BLOCK (SWITCHING REGULATOR) (E)	
* 121	1-543-830-11	CLAMP, SLEEVE FERRITE	
⚠CNP901	1-558-568-21	CORD, POWER (E)	
⚠CNP901	1-559-583-21	CORD, POWER (US, Canadian)	
⚠T901	1-431-174-11	TRANSFORMER, POWER (US, Canadian)	
⚠T901	1-431-175-11	TRANSFORMER, POWER (E)	

8-1-4. DVD MECHANISM CHASSIS ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
151	3-967-257-01	TRAY (B)	
152	3-975-073-01	GEAR, CAM	
153	3-975-087-01	GEAR, DRIVE	
154	3-975-086-01	GEAR, TRAY DRIVING	
155	3-975-072-01	GEAR, LOADING (MIDWAY)	
156	3-975-071-01	PULLEY, LOADING	
157	3-669-596-00	WASHER (2.3), STOPPER	
158	3-975-070-01	BELT	
159	3-975-085-01	PULLEY, MOTOR	
160	3-975-089-01	BRACKET, PRESS PULLEY	
* 161	3-975-074-01	PULLEY, PRESS	
162	3-975-077-01	SCREW, BU STOPPER	
* 163	3-975-088-01	HOLDER, BASE UNIT	
* 164	X-3947-008-1	BASE ASSY, LO	
* 165	A-6065-030-A	TT-701 BOARD, COMPLETE	
166	4-981-923-01	SCREW (M), STEP	
M903	1-698-348-31	MOTOR, DC (LOADING)	

8-1-5. DVD MECHANISM CHASSIS ASSEMBLY (2)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description	Remark
* 201	3-975-066-01	STOPPER, SKEW SHAFT	
* 202	3-975-061-01	INSULATOR	
* 203	3-975-056-01	BASE, SPINDLE	
204	3-975-058-01	CAM, SKEW	
* 205	3-975-063-01	BASE, SLIDE	
* 206	3-975-065-01	SHAFT, MAIN	
⚠207	8-820-005-01	OPTICAL PICK-UP KHS-180A/J1N	
208	1-665-390-11	OP-15 FLEXIBLE BOARD	
209	3-975-067-01	GEAR, RACK	
* 210	3-975-064-01	RETAINER, SLED GEAR	

Ref. No.	Part No.	Description	Remark
* 211	A-6065-031-A	LM-51 BOARD, COMPLETE	
212	1-665-327-11	LT-31 FLEXIBLE BOARD	
* 213	3-975-059-01	RETAINER, SKEW GEAR	
214	3-975-057-01	GEAR, SKEW	
215	4-974-711-01	SCREW (2X5)(P TYIGHT),(+)PTTWH	
216	4-974-725-01	SCREW (M1.7X2.5), P	
217	8-749-013-33	IC KU160 (CD SENSOR)	
M501	X-3947-137-1	MOTOR ASSY, SLED	
M901	1-698-944-11	MOTOR, DC (SPINDLE)	
M902	X-3947-138-1	MOTOR ASSY, SKEW	

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: 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.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

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

Ref. No.	Part No.	Description			Remark
	A-6065-024-A	AU-194 BOARD, COMPLETE (US/Canadian)			
*	A-6065-009-A	AU-194 BOARD, COMPLETE (E)			
		**********			
			(Ref.No. 2,000 Series)		
	2-259-121-01	SCREW, TR			
	4-902-345-01	HEAT SINK			
		< CAPACITOR >			
C201	1-124-910-11	ELECT	47uF	20%	50V
C202	1-136-802-11	FILM	0.015uF	5%	100V
C203	1-136-802-11	FILM	0.015uF	5%	100V
C204	1-124-910-11	ELECT	47uF	20%	50V
C206	1-126-049-11	ELECT	22uF	20%	50V
C207	1-130-487-00	MYLAR	0.022uF	5%	50V
C208	1-130-483-00	MYLAR	0.01uF	5%	50V
C209	1-130-483-00	MYLAR	0.01uF	5%	50V
C210	1-136-808-11	FILM	100PF	5%	100V
C211	1-136-808-11	FILM	100PF	5%	100V
C212	1-130-472-00	MYLAR	0.0012uF	5%	50V
C213	1-130-484-00	MYLAR	0.012uF	5%	50V
C214	1-115-197-11	ELECT	100uF	20%	25V
C215	1-130-495-00	MYLAR	0.1uF	5%	50V
C216	1-115-197-11	ELECT	100uF	20%	25V
C301	1-124-910-11	ELECT	47uF	20%	50V
C303	1-136-802-11	FILM	0.015uF	5%	100V
C307	1-130-487-00	MYLAR	0.022uF	5%	50V
C308	1-130-483-00	MYLAR	0.01uF	5%	50V
C309	1-130-483-00	MYLAR	0.01uF	5%	50V
C310	1-136-808-11	FILM	100PF	5%	100V
C311	1-136-808-11	FILM	100PF	5%	100V
C312	1-130-472-00	MYLAR	0.0012uF	5%	50V
C313	1-130-484-00	MYLAR	0.012uF	5%	50V
C314	1-115-197-11	ELECT	100uF	20%	25V
C315	1-130-495-00	MYLAR	0.1uF	5%	50V
C316	1-115-197-11	ELECT	100uF	20%	25V
C501	1-161-494-00	CERAMIC	0.022uF		25V
C502	1-128-201-11	ELECT	100uF	20%	50V
C503	1-136-802-11	FILM	0.015uF	5%	100V
C504	1-128-201-11	ELECT	100uF	20%	50V
C505	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C506	1-128-201-11	ELECT	100uF	20%	50V
C508	1-136-850-11	FILM	0.1uF	5%	63V
C509	1-124-910-11	ELECT	47uF	20%	50V
C512	1-126-170-11	ELECT	1000uF	20%	50V
C513	1-126-170-11	ELECT	1000uF	20%	50V
C514	1-126-923-11	ELECT	220uF	20%	10V
C709	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C710	1-126-023-11	ELECT	100uF	20%	25V
C711	1-136-165-00	FILM	0.1uF	5%	50V
C715	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C716	1-104-645-11	CERAMIC	1uF	20%	50V
C802	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C803	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C804	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C805	1-124-721-11	ELECT	10uF	20%	50V
C806	1-124-721-11	ELECT	10uF	20%	50V
C807	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C808	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C809	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C810	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C811	1-124-910-11	ELECT	47uF	20%	50V
C812	1-124-721-11	ELECT	10uF	20%	50V
C813	1-136-850-11	FILM	0.1uF	5%	63V
C814	1-136-850-11	FILM	0.1uF	5%	63V
C815	1-124-721-11	ELECT	10uF	20%	50V
C816	1-124-910-11	ELECT	47uF	20%	50V
C817	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C818	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C819	1-136-850-11	FILM	0.1uF	5%	63V
C820	1-136-850-11	FILM	0.1uF	5%	63V
C821	1-136-850-11	FILM	0.1uF	5%	63V
C822	1-124-721-11	ELECT	10uF	20%	50V
C823	1-124-721-11	ELECT	10uF	20%	50V
C824	1-124-920-11	ELECT	330uF	20%	50V
C825	1-126-052-11	ELECT	100uF	20%	50V
C826	1-126-052-11	ELECT	100uF	20%	50V
C827	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C839	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C840	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CN401	1-564-506-11	PLUG, CONNECTOR 3P			
* CN501	1-564-509-11	PLUG, CONNECTOR 6P			
CN701	1-774-767-11	CONNECTOR, FFC/FPC 15P			
CN801	1-774-766-11	CONNECTOR, FFC/FPC 11P			

Ref. No.	Part No.	Description	Remark
* CN802	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P	
		< DIODE >	
D501	8-719-404-49	DIODE MA111	
D502	8-719-921-40	DIODE HTZJ-4.7C	
D503	8-719-404-49	DIODE MA111	
D505	8-719-115-38	DIODE RD5.1JS-T1B2	
D506	8-719-404-49	DIODE MA111	
D507	8-719-404-49	DIODE MA111	
D508	8-719-404-49	DIODE MA111	
D509	8-719-921-40	DIODE HTZJ-4.7C	
D707	8-719-056-89	DIODE MA8120-TX	
D708	8-719-056-89	DIODE MA8120-TX	
D709	8-719-056-89	DIODE MA8120-TX	
D710	8-719-056-89	DIODE MA8120-TX	
D711	8-719-056-89	DIODE MA8120-TX	
D712	8-719-056-89	DIODE MA8120-TX	
D713	8-719-056-89	DIODE MA8120-TX	
D714	8-719-056-89	DIODE MA8120-TX	
D715	8-719-056-89	DIODE MA8120-TX	
D716	8-719-056-89	DIODE MA8120-TX	
D717	8-719-056-89	DIODE MA8120-TX	
D718	8-719-056-89	DIODE MA8120-TX	
D719	8-719-056-89	DIODE MA8120-TX	
D720	8-719-056-89	DIODE MA8120-TX	
D721	8-719-056-89	DIODE MA8120-TX	
D722	8-719-056-89	DIODE MA8120-TX	
D723	8-719-056-89	DIODE MA8120-TX	
D724	8-719-056-89	DIODE MA8120-TX	
D725	8-719-056-89	DIODE MA8120-TX	
D727	8-719-056-89	DIODE MA8120-TX	
D728	8-719-056-89	DIODE MA8120-TX	
D801	8-719-404-49	DIODE MA111	
		< EARTH TERMINAL >	
* ET002	1-537-738-21	TERMINAL, EARTH	
* ET003	1-537-738-21	TERMINAL, EARTH	
		< FERRITE BEAD >	
FB401	1-414-135-11	INDUCTOR CHIP 0UH	
FB402	1-414-135-11	INDUCTOR CHIP 0UH	
FB403	1-414-135-11	INDUCTOR CHIP 0UH	
FB701	1-414-553-11	INDUCTOR 0UH	
FB702	1-414-553-11	INDUCTOR 0UH	
FB703	1-414-553-11	INDUCTOR 0UH	
FB704	1-414-553-11	INDUCTOR 0UH	
FB705	1-414-553-11	INDUCTOR 0UH	
FB706	1-414-553-11	INDUCTOR 0UH	
FB707	1-414-553-11	INDUCTOR 0UH	
FB708	1-414-553-11	INDUCTOR 0UH	
FB709	1-414-553-11	INDUCTOR 0UH	
FB710	1-414-553-11	INDUCTOR 0UH	
FB711	1-414-553-11	INDUCTOR 0UH	
FB712	1-414-553-11	INDUCTOR 0UH	
		< FILTER >	
FL801	1-233-893-21	FILTER, CHIP EMI	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC201	8-759-602-83	IC M5238P	
IC202	8-759-712-02	IC NJM2114D	
IC301	8-759-602-83	IC M5238P	
IC302	8-759-712-02	IC NJM2114D	
IC401	8-759-711-85	IC NJM4580E-D	
IC501	8-759-711-85	IC NJM4580E-D	
IC502	8-759-711-85	IC NJM4580E-D	
IC701	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
IC702	8-759-096-87	IC TC7WU04FU(T(E)R)	
IC801	8-759-370-62	IC CXD8505BQ	
IC802	8-759-361-58	IC CXA8055M-E1	
		< JACK >	
J701	1-694-262-21	TERMINAL BOARD (LINE OUT/S VIDEO OUT)	
J702	1-764-188-21	JACK(SMALL TYPE)(DIA. 3.5)(CONTROL S IN)	
J703	1-779-317-21	JACK, PIN 1P (COMPONENT VIDEO OUT Y)	
J704	1-779-318-21	JACK, PIN 1P (COMPONENT VIDEO OUT B-Y)	
J705	1-779-316-21	JACK, PIN 1P (COMPONENT VIDEO OUT R-Y)	
J706	1-779-382-21	JACK, PIN 1P (DIGITAL OUT COAXIAL)	
		< TRANSISTOR >	
Q202	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q203	8-729-424-18	TRANSISTOR UN2113	
Q302	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q303	8-729-424-18	TRANSISTOR UN2113	
Q501	8-729-141-58	TRANSISTOR 2SC2275A-QP	
Q502	8-729-141-10	TRANSISTOR 2SA985A	
Q503	8-729-424-18	TRANSISTOR UN2113	
Q504	8-729-141-58	TRANSISTOR 2SC2275A-QP	
Q505	8-729-224-62	TRANSISTOR 2SK246-GR	
Q506	8-729-421-19	TRANSISTOR UN2213	
Q507	8-729-421-19	TRANSISTOR UN2213	
Q508	8-729-421-19	TRANSISTOR UN2213	
Q509	8-729-230-49	TRANSISTOR 2SC2712-G	
		< RESISTOR >	
R201	1-249-504-11	CARBON 10 5% 1/4W	
R202	1-249-504-11	CARBON 10 5% 1/4W	
R203	1-249-504-11	CARBON 10 5% 1/4W	
R204	1-249-504-11	CARBON 10 5% 1/4W	
R205	1-249-538-11	CARBON 270 5% 1/4W	
R206	1-249-538-11	CARBON 270 5% 1/4W	
R207	1-249-461-11	CARBON 18K 5% 1/4W	
R208	1-249-461-11	CARBON 18K 5% 1/4W	
R209	1-249-461-11	CARBON 18K 5% 1/4W	
R210	1-249-461-11	CARBON 18K 5% 1/4W	
R211	1-249-551-11	CARBON 910 5% 1/4W	
R212	1-247-716-11	CARBON 1.8K 5% 1/4W	
R213	1-249-547-11	CARBON 620 5% 1/4W	
R214	1-247-891-00	CARBON 330K 5% 1/4W	
R215	1-249-633-11	CARBON 22 5% 1/2W	
R217	1-249-393-11	CARBON 10 5% 1/4W	
R218	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R219	1-247-739-11	CARBON 100 5% 1/2W	
R220	1-247-739-11	CARBON 100 5% 1/2W	
R221	1-216-097-91	METAL GLAZE 100K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R301	1-249-504-11	CARBON	10	5%	1/4W
R302	1-249-504-11	CARBON	10	5%	1/4W
R303	1-249-504-11	CARBON	10	5%	1/4W
R304	1-249-504-11	CARBON	10	5%	1/4W
R305	1-249-538-11	CARBON	270	5%	1/4W
R306	1-249-538-11	CARBON	270	5%	1/4W
R307	1-249-461-11	CARBON	18K	5%	1/4W
R308	1-249-461-11	CARBON	18K	5%	1/4W
R309	1-249-461-11	CARBON	18K	5%	1/4W
R310	1-249-461-11	CARBON	18K	5%	1/4W
R311	1-249-551-11	CARBON	910	5%	1/4W
R312	1-247-716-11	CARBON	1.8K	5%	1/4W
R313	1-249-547-11	CARBON	620	5%	1/4W
R314	1-247-891-00	CARBON	330K	5%	1/4W
R315	1-249-633-11	CARBON	22	5%	1/2W
R317	1-249-393-11	CARBON	10	5%	1/4W
R318	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R319	1-247-739-11	CARBON	100	5%	1/2W
R320	1-247-739-11	CARBON	100	5%	1/2W
R321	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R402	1-259-464-11	CARBON	33K	5%	1/6W
R403	1-259-464-11	CARBON	33K	5%	1/6W
R404	1-259-464-11	CARBON	33K	5%	1/6W
R405	1-259-464-11	CARBON	33K	5%	1/6W
R406	1-259-452-11	CARBON	10K	5%	1/6W
R407	1-259-452-11	CARBON	10K	5%	1/6W
R408	1-259-464-11	CARBON	33K	5%	1/6W
R409	1-259-464-11	CARBON	33K	5%	1/6W
R410	1-249-520-11	CARBON	47	5%	1/4W
R411	1-249-520-11	CARBON	47	5%	1/4W
R501	1-249-425-11	CARBON	4.7K	5%	1/4W
R502	1-247-807-31	CARBON	100	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-425-11	CARBON	4.7K	5%	1/4W
R505	1-247-842-11	CARBON	3K	5%	1/4W
R506	1-247-807-31	CARBON	100	5%	1/4W
R507	1-249-421-11	CARBON	2.2K	5%	1/4W
R508	1-249-425-11	CARBON	4.7K	5%	1/4W
R509	1-247-807-31	CARBON	100	5%	1/4W
R510	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R511	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R512	1-249-436-11	CARBON	39K	5%	1/4W
R513	1-247-807-31	CARBON	100	5%	1/4W
R514	1-216-009-00	METAL CHIP	22	5%	1/10W
R515	1-216-081-00	METAL CHIP	22K	5%	1/10W
R517	1-216-081-00	METAL CHIP	22K	5%	1/10W
R706	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R707	1-216-295-91	CONDUCTOR, CHIP	(	2012)	
R709	1-216-295-91	CONDUCTOR, CHIP	(	2012)	
R711	1-216-033-00	METAL CHIP	220	5%	1/10W
R713	1-216-022-00	METAL CHIP	75	5%	1/10W
R803	1-216-033-00	METAL CHIP	220	5%	1/10W
R804	1-216-033-00	METAL CHIP	220	5%	1/10W
R805	1-216-033-00	METAL CHIP	220	5%	1/10W
R806	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R807	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R808	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R809	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R810	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R811	1-216-113-00	METAL CHIP	470K	5%	1/10W
R812	1-216-025-91	METAL GLAZE	100	5%	1/10W
R814	1-216-295-91	CONDUCTOR, CHIP (2012)			
R816	1-216-295-91	CONDUCTOR, CHIP (2012)			
R817	1-249-425-11	CARBON	4.7K	5%	1/4W
R818	1-249-425-11	CARBON	4.7K	5%	1/4W
R819	1-259-415-11	CARBON	300	5%	1/6W
R820	1-259-415-11	CARBON	300	5%	1/6W
R821	1-259-412-11	CARBON	220	5%	1/6W
R822	1-259-412-11	CARBON	220	5%	1/6W
R823	1-259-412-11	CARBON	220	5%	1/6W
R824	1-259-412-11	CARBON	220	5%	1/6W
R825	1-259-415-11	CARBON	300	5%	1/6W
R826	1-259-415-11	CARBON	300	5%	1/6W
R827	1-249-551-11	CARBON	910	5%	1/4W
R828	1-247-708-11	CARBON	470	5%	1/4W
R829	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R830	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R832	1-216-295-91	CONDUCTOR, CHIP (2012)			
		< RELAY >			
RY501	1-755-061-11	RELAY			
		< TRANSFORMER >			
T701	1-459-795-11	COIL (WITH CORE)			
*	A-6065-022-A	CN-99 BOARD, COMPLETE (US/Canadian)			
*	A-6065-007-A	CN-99 BOARD, COMPLETE (E)			
		**********			
		(Ref.No. 1,000 Series)			
		< CAPACITOR >			
C304	1-163-031-11	CERAMIC CHIP 0.01uF			50V
		< CONNECTOR >			
CN302	1-770-634-11	CONNECTOR, FFC/FPC 3P			
*	A-6065-021-A	DR-84 BOARD, COMPLETE (US/Canadian)			
*	A-6065-006-A	DR-84 BOARD, COMPLETE (E)			
		**********			
		(Ref.No. 1,000 Series)			
		< CAPACITOR >			
C131	1-165-319-11	CERAMIC CHIP 0.1uF			50V
		< CONNECTOR >			
CN131	1-779-526-11	CONNECTOR, FFC/FPC 6P			
CN132	1-779-347-11	CONNECTOR, FFC/FPC 3P			
		< PHOTO INTERRUPTER >			
PH131	8-749-011-97	PHOTO INTERUPTER GP1S93			
PH132	8-749-011-97	PHOTO INTERUPTER GP1S93			
		< RESISTOR >			
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R132	1-216-089-91	METAL GLAZE	47K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R133	1-216-089-91	METAL GLAZE	47K	5%	1/10W
	A-6065-027-A	FL-73 BOARD, COMPLETE (US/Canadian)			
*	A-6065-002-A	FL-73 BOARD, COMPLETE (E)			
		**********			
		(Ref.No. 1,000 Series)			
		< CAPACITOR >			
C151	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
		< CONNECTOR >			
CN151	1-779-000-11	CONNECTOR, FFC/FPC 5P			
		< DIODE >			
D151	8-719-404-49	DIODE MA111			
D152	8-719-404-49	DIODE MA111			
D153	8-719-027-84	DIODE CL-155UR/G-DT(ON/STANDBY)			
		< IC >			
IC151	8-749-011-22	IC GP1U27X			
		< COIL >			
L151	1-412-031-11	INDUCTOR CHIP	47uH		
		< TRANSISTOR >			
Q151	8-729-424-08	TRANSISTOR UN2111			
		< RESISTOR >			
R151	1-216-033-00	METAL CHIP	220	5%	1/10W
R152	1-216-045-00	METAL CHIP	680	5%	1/10W
		< SWITCH >			
S151	1-571-760-11	SWITCH, KEY BOARD (POWER)			
*	A-6065-020-A	FL-80 BOARD, COMPLETE (US/Canadian)			
*	A-6065-005-A	FL-80 BOARD, COMPLETE (E)			
		**********			
		(Ref.No. 1,000 Series)			
	3-831-441-XX	SPACER			
	3-884-241-01	SHEET (C), ADHESIVE			
		< CAPACITOR >			
C001	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C002	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C003	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C004	1-126-204-11	ELECT CHIP	47uF	20%	16V
C005	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C006	1-126-204-11	ELECT CHIP	47uF	20%	16V
C007	1-126-204-11	ELECT CHIP	47uF	20%	16V
C008	1-126-400-11	ELECT	22uF	20%	35V
C009	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C010	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C011	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C012	1-165-319-11	CERAMIC CHIP	0.1uF		50V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN001	1-770-889-11	SOCKET, CONNECTOR 8P			
CN002	1-779-345-11	CONNECTOR, FFC/FPC 7P			
		< DIODE >			
D001	8-719-210-39	DIODE EC10QS-04			
D003	8-719-210-39	DIODE EC10QS-04			
D004	8-719-420-90	DIODE MA8051-M			
D005	8-719-977-69	DIODE DTZ24B			
D006	8-719-404-49	DIODE MA111			
D007	8-719-404-49	DIODE MA111			
		< FILTER >			
FL001	1-233-893-21	FILTER, CHIP EMI			
		< IC >			
IC001	8-759-438-82	IC uPD16311GC-AB6			
		< COIL >			
L001	1-414-185-41	INDUCTOR	22uH		
		< FLUORESCENT INDICATOR >			
ND001	1-517-639-11	TUBE, FLUORESCENT INDICATOR			
		< TRANSISTOR >			
Q001	8-729-105-29	TRANSISTOR 2SA1385			
Q002	8-729-010-05	TRANSISTOR MSB709-RT1			
		< RESISTOR >			
R001	1-216-009-00	METAL CHIP	22	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	1-216-081-00	METAL CHIP	22K	5%	1/10W
R005	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R006	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R007	1-216-073-00	METAL CHIP	10K	5%	1/10W
R013	1-216-091-00	METAL CHIP	56K	5%	1/10W
R014	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R015	1-216-043-91	METAL GLAZE	560	5%	1/10W
R016	1-216-033-00	METAL CHIP	220	5%	1/10W
R019	1-216-025-91	METAL GLAZE	100	5%	1/10W
R020	1-216-025-91	METAL GLAZE	100	5%	1/10W
R021	1-216-025-91	METAL GLAZE	100	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
		< TRANSFORMER >			
T001	1-448-740-31	TRANSFORMER, DC-DC CONVERTER			

Ref. No.	Part No.	Description			Remark
	A-6065-026-A	FP-411 BOARD, COMPLETE (US/Canadian)			
*	A-6065-001-A	FP-411 BOARD, COMPLETE (E)			
		**********			
		(Ref.No. 1,000 Series)			
		< BUZZER >			
BZ101	1-529-080-11	BUZZER, PIEZOELECTRIC			
		< CAPACITOR >			
C101	1-165-319-11	CERAMIC CHIP 0.1uF			50V
C102	1-165-319-11	CERAMIC CHIP 0.1uF			50V
C103	1-165-319-11	CERAMIC CHIP 0.1uF			50V
C104	1-165-319-11	CERAMIC CHIP 0.1uF			50V
C105	1-165-319-11	CERAMIC CHIP 0.1uF			50V
C106	1-163-031-11	CERAMIC CHIP 0.01uF			50V
C107	1-163-031-11	CERAMIC CHIP 0.01uF			50V
C108	1-163-031-11	CERAMIC CHIP 0.01uF			50V
		< CONNECTOR >			
CN101	1-770-703-11	CONNECTOR, FFC/FPC 20P			
CN102	1-779-526-11	CONNECTOR, FFC/FPC 6P			
* CN103	1-691-067-41	HOUSING, CONNECTOR 8P			
CN104	1-779-000-11	CONNECTOR, FFC/FPC 5P			
		< DIODE >			
D101	8-719-404-49	DIODE MA111			
D102	8-719-404-49	DIODE MA111			
		< IC >			
IC101	8-759-823-87	IC LB1638M			
		< TRANSISTOR >			
Q101	8-729-424-08	TRANSISTOR UN2111			
		< RESISTOR >			
R101	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R102	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R103	1-216-001-00	METAL CHIP	10	5%	1/10W
R104	1-216-001-00	METAL CHIP	10	5%	1/10W
R105	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R106	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R107	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R108	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R109	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R110	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R111	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R112	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R114	1-216-081-00	METAL CHIP	22K	5%	1/10W
R115	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
		< SWITCH >			
S101	1-571-760-11	SWITCH, KEY BOARD (RETURN)			
S102	1-571-760-11	SWITCH, KEY BOARD (ENTER)			
S103	1-571-760-11	SWITCH, KEY BOARD (TITLE)			
S104	1-571-760-11	SWITCH, KEY BOARD (DVD MENU)			
S105	1-571-760-11	SWITCH, KEY BOARD (RIGHT)			
S106	1-571-760-11	SWITCH, KEY BOARD (DOWN)			
S107	1-571-760-11	SWITCH, KEY BOARD (UP)			
S108	1-571-760-11	SWITCH, KEY BOARD (LEFT)			
S109	1-571-760-11	SWITCH, KEY BOARD (OPEN/CLOSE)			
S110	1-571-760-11	SWITCH, KEY BOARD (PANEL UP/DOWN)			
S111	1-571-760-11	SWITCH, KEY BOARD (PREV)			
S112	1-571-760-11	SWITCH, KEY BOARD (NEXT)			
S113	1-571-760-11	SWITCH, KEY BOARD (DNR)			
	A-6065-029-A	HP-92 BOARD, COMPLETE (US/Canadian)			
*	A-6065-004-A	HP-92 BOARD, COMPLETE (E)			
		**********			
		(Ref.No. 1,000 Series)			
		< CAPACITOR >			
C608	1-164-232-11	CERAMIC CHIP 0.01uF			50V
		< CONNECTOR >			
CN601	1-564-506-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D601	8-719-056-89	DIODE MA8120-TX			
D602	8-719-056-89	DIODE MA8120-TX			
D603	8-719-056-89	DIODE MA8120-TX			
D604	8-719-056-89	DIODE MA8120-TX			
D605	8-719-404-49	DIODE MA111			
D606	8-719-404-49	DIODE MA111			
		< FERRITE BEAD >			
FB601	1-414-135-11	INDUCTOR CHIP 0UH			
FB602	1-414-135-11	INDUCTOR CHIP 0UH			
FB603	1-414-135-11	INDUCTOR CHIP 0UH			
		< FILTER >			
FL603	1-233-893-21	FILTER, CHIP EMI			
		< JACK >			
J601	1-568-151-21	JACK, LARGE TYPE (PHONES)			
		< VARIABLE RESISTOR >			
RV601	1-223-191-11	RES, VAR, CARBON 500/500 (PHONE LEVEL)			
*	A-6065-031-A	LM-51 BOARD, COMPLETE			
		**********			
		(Ref.No. 1,000 Series)			
		< CONNECTOR >			
CN501	1-691-799-11	SOCKET, CONNECTOR 8P			
		< IC >			
IC501	8-719-052-42	IC ELEMENT, HOLE HW-108A-FT(D)			
IC502	8-719-052-42	IC ELEMENT, HOLE HW-108A-FT(D)			

Ref. No.	Part No.	Description			Remark
*	A-6065-011-A	MB-75 BOARD, COMPLETE (US/Canadian)			
*	A-6065-032-A	MB-75 BOARD, COMPLETE (E)			
		**********			
					(Ref.No. 3,000 Series)
		< CAPACITOR >			
C001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C003	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C004	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C005	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C006	1-126-204-11	ELECT CHIP	47uF	20%	16V
C007	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C008	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C009	1-126-204-11	ELECT CHIP	47uF	20%	16V
C010	1-126-204-11	ELECT CHIP	47uF	20%	16V
C011	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C012	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C013	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C014	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C015	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C016	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C017	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C018	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C019	1-162-908-11	CERAMIC CHIP	3PF	0.25PF	50V
C020	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C021	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C022	1-126-204-11	ELECT CHIP	47uF	20%	16V
C023	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C025	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C026	1-164-346-11	CERAMIC CHIP	1uF		16V
C027	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V
C028	1-126-204-11	ELECT CHIP	47uF	20%	16V
C029	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V
C031	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C032	1-164-346-11	CERAMIC CHIP	1uF		16V
C033	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C034	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C035	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C036	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C037	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C038	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C039	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C040	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C041	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C042	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C043	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C044	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C045	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C046	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C047	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C048	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C049	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C050	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C051	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C052	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C053	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C054	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C055	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C056	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C057	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C058	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C063	1-126-204-11	ELECT CHIP	47uF	20%	16V
C064	1-126-204-11	ELECT CHIP	47uF	20%	16V
C065	1-164-346-11	CERAMIC CHIP	1uF		16V
C070	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C071	1-162-907-11	CERAMIC CHIP	2PF	0.25PF	50V
C072	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C073	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C074	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C075	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C076	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C077	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C078	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C079	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C080	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C081	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C082	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C083	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C084	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C085	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C086	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C087	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C088	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C089	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C091	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C092	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C093	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C094	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C095	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C096	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C097	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C098	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C099	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C100	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C101	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C107	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C115	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C117	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C119	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C120	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C122	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C123	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C124	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C125	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description		Remark
C126	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C127	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C128	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C129	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C130	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C131	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C132	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C133	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C134	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C135	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C136	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C137	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C138	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C139	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C140	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C141	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C142	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C143	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C144	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C145	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C146	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C147	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C148	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C150	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C151	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C152	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C154	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C156	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C158	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C159	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C160	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C161	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C162	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C163	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C164	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C165	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C166	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C167	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C168	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C169	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C170	1-162-919-11	CERAMIC CHIP 22PF	5%	50V
C171	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C172	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C173	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C174	1-107-826-11	CERAMIC CHIP 0.1uF	10%	16V
C175	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C176	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C177	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C178	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C179	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C180	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C181	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C182	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C183	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C184	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C185	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C186	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C187	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C188	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C189	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C190	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C191	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C192	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C193	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C194	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C195	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C196	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C197	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C198	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C199	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C205	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C206	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C207	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C208	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C209	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C210	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C211	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C212	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C213	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C214	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C215	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C216	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C217	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C218	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C219	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C220	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C221	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C222	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C223	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C224	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C225	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C226	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C230	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C231	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C232	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C233	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C234	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C235	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C236	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C237	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C238	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C239	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C240	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C241	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C242	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C243	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C244	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C245	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C246	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C247	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C248	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C249	1-104-852-11	TANTAL. CHIP 22uF	20%	10V
C250	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C251	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C252	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C253	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V
C255	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C256	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C257	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C266	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C267	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C268	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C269	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C270	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C271	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C272	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C273	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C274	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C275	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C276	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C277	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C278	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C279	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C280	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C281	1-104-535-11	FILM CHIP	470PF	5%	50V
C282	1-104-537-11	FILM CHIP	680PF	5%	50V
C284	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C285	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C286	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C287	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C288	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C289	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C290	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C291	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C306	1-128-007-11	ELECT CHIP	2.2uF	20%	35V(E)
C307	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C308	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C309	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C310	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C312	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C313	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C315	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C316	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C318	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C319	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C320	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C321	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C322	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C327	1-107-826-11	CERAMIC CHIP (US/Canadian)	0.1uF	10%	16V
C328	1-107-826-11	CERAMIC CHIP (US/Canadian)	0.1uF	10%	16V
C329	1-107-826-11	CERAMIC CHIP (US/Canadian)	0.1uF	10%	16V
C330	1-104-851-11	TANTAL. CHIP (US/Canadian)	10uF	20%	10V
C331	1-107-826-11	CERAMIC CHIP (US/Canadian)	0.1uF	10%	16V

Ref. No.	Part No.	Description			Remark
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C333	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C334	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C360	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C361	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C362	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C363	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C364	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C365	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C366	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C367	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C368	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C369	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C370	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C371	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C372	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C373	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C374	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C375	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C376	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C377	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C378	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C379	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C380	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C381	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C382	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C383	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C384	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C385	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C386	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C387	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C388	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C389	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C390	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C391	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C392	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C393	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C394	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C395	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C396	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C397	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C398	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C399	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C400	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C401	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C402	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C403	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C404	1-128-004-11	ELECT CHIP	10uF	20%	16V
C405	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C406	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C407	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C408	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C409	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C410	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C411	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C416	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C417	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C418	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C419	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C420	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C426	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C427	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C429	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C430	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C431	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C433	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C434	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C435	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C439	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C440	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C441	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C442	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C443	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C444	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C446	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C447	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C448	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C449	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C450	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C451	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C452	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C453	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C454	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C455	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C456	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C457	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C458	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C459	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C460	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C461	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C462	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C463	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C465	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C466	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C467	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C468	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C469	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C475	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C476	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C477	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C480	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C481	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C483	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C484	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C486	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C487	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C490	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C492	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C493	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C494	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C495	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C496	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C497	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C498	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C499	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C500	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C501	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C502	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C505	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C506	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C510	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C511	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C515	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C516	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C517	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C518	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C519	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C520	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C522	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C523	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C524	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C525	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C526	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C527	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C528	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C529	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C531	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C532	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C533	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C534	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C535	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C536	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C537	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C538	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C539	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C541	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C542	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C543	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C544	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C545	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C546	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C547	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C548	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C549	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C550	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C552	1-128-004-11	ELECT CHIP	10uF	20%	16V
C554	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C555	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C558	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C573	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C574	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C575	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C576	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C577	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C580	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C581	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C583	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C585	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C586	1-128-596-11	ELECT CHIP	3.3uF	20%	50V

Ref. No.	Part No.	Description			Remark
C587	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C588	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C589	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C590	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C591	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C592	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C593	1-164-346-11	CERAMIC CHIP	1uF		16V
C594	1-164-346-11	CERAMIC CHIP	1uF		16V
C595	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C596	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C597	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C598	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C599	1-164-346-11	CERAMIC CHIP	1uF		16V
C600	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C601	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C602	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C603	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C604	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C605	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C606	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C607	1-164-346-11	CERAMIC CHIP	1uF		16V
C608	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C609	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C610	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C611	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C612	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C613	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C614	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C615	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C616	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C617	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C618	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C619	1-164-346-11	CERAMIC CHIP	1uF		16V
C620	1-126-204-11	ELECT CHIP	47uF	20%	16V
C621	1-164-346-11	CERAMIC CHIP	1uF		16V
C622	1-126-204-11	ELECT CHIP	47uF	20%	16V
C623	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C624	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C625	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C626	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C627	1-164-346-11	CERAMIC CHIP	1uF		16V
C628	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C629	1-128-004-11	ELECT CHIP	10uF	20%	16V
C630	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C633	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C634	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C635	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C636	1-164-346-11	CERAMIC CHIP	1uF		16V
C637	1-126-204-11	ELECT CHIP	47uF	20%	16V
C638	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C639	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C640	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C641	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C642	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C643	1-164-346-11	CERAMIC CHIP	1uF		16V
C644	1-164-346-11	CERAMIC CHIP	1uF		16V
C645	1-126-204-11	ELECT CHIP	47uF	20%	16V
C646	1-164-346-11	CERAMIC CHIP	1uF		16V
C647	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C648	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C649	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C650	1-164-346-11	CERAMIC CHIP	1uF		16V
C651	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C652	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C653	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C654	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C655	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C656	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C657	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C658	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C659	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C660	1-164-346-11	CERAMIC CHIP	1uF		16V
C662	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C663	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C664	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C674	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C675	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C676	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C677	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C678	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C679	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C801	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C802	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C803	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C804	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C805	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C806	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C807	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C808	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C810	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C812	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C813	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C814	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C815	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C816	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C817	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C818	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C819	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C820	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C821	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C822	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C823	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C901	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C902	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C903	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C904	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
* CN001	1-564-515-11	PLUG, CONNECTOR 12P			
CN005	1-774-767-11	CONNECTOR, FFC/FPC 15P			
CN008	1-573-806-21	PIN, CONNECTOR (1.5MM) (SMD)6P			
CN009	1-779-344-11	CONNECTOR, FFC/FPC 20P			
* CN135	1-573-304-11	CONNECTOR, BOARD TO BOARD 8P			
CN381	1-774-766-11	CONNECTOR, FFC/FPC 11P			

Ref. No.	Part No.	Description	Remark
* CN382	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P	
* CN717	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P	
* CN760	1-770-469-21	PIN, CONNECTOR (PC BOARD) 2P	
CN885	1-779-343-11	CONNECTOR, FFC/FPC 23P	
CN886	1-779-343-11	CONNECTOR, FFC/FPC 23P	
CN980	1-779-343-11	CONNECTOR, FFC/FPC 23P	
* CN981	1-766-383-11	PIN, CONNECTOR (1.5MM)(SMD)12P	
		< TRIMMER >	
CT001	1-141-422-11	CAP, ADJ 10PF	
CT002	1-141-422-11	CAP, ADJ 10PF	
		< DIODE >	
D001	8-719-055-86	DIODE KV1470TL1-3	
D037	8-719-420-14	DIODE MA8082-M	
D038	8-719-422-58	DIODE MA8062-TX	
D039	8-719-404-49	DIODE MA111 (E)	
D040	8-719-404-49	DIODE MA111 (E)	
D476	8-719-404-49	DIODE MA111	
D500	8-719-404-49	DIODE MA111	
D601	8-719-404-49	DIODE MA111	
D766	8-719-421-27	DIODE MA728	
D886	8-719-404-49	DIODE MA111	
		< IC LINK >	
F001	1-533-710-11	IC LINK (SMD)	
F003	1-533-771-21	IC LINK (SMD)	
F005	1-533-771-21	IC LINK (SMD)	
F006	1-533-710-11	IC LINK (SMD)	
F007	1-533-710-11	IC LINK (SMD)	
F008	1-533-710-11	IC LINK (SMD)	
F009	1-533-710-11	IC LINK (SMD)	
F010	1-533-771-21	IC LINK (SMD)	
F805	1-533-855-21	IC LINK (SMD)	
F806	1-533-855-21	IC LINK (SMD)	
		< FERRITE BEAD >	
FB002	1-414-553-11	INDUCTOR 0UH	
FB003	1-414-553-11	INDUCTOR 0UH	
FB004	1-414-553-11	INDUCTOR 0UH	
FB005	1-414-553-11	INDUCTOR 0UH	
FB006	1-414-553-11	INDUCTOR 0UH	
FB008	1-414-553-11	INDUCTOR 0UH	
FB015	1-414-553-11	INDUCTOR 0UH	
FB048	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB049	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB050	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB051	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB053	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB054	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB055	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB056	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB059	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB060	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB061	1-500-283-11	INDUCTOR, FERRITE BEAD	
FB180	1-412-390-21	INDUCTOR CHIP 0uH	
FB181	1-412-390-21	INDUCTOR CHIP 0uH	

Ref. No.	Part No.	Description	Remark
		< FILTER >	
FL001	1-233-893-21	FILTER, CHIP EMI	
FL002	1-233-893-21	FILTER, CHIP EMI	
FL003	1-239-400-11	FILTER, CHIP EMI	
FL004	1-239-400-11	FILTER, CHIP EMI	
FL005	1-233-893-21	FILTER, CHIP EMI	
FL006	1-233-893-21	FILTER, CHIP EMI	
FL007	1-239-400-11	FILTER, CHIP EMI	
FL008	1-233-893-21	FILTER, CHIP EMI	
FL009	1-233-893-21	FILTER, CHIP EMI	
FL010	1-239-400-11	FILTER, CHIP EMI	
FL011	1-233-893-21	FILTER, CHIP EMI	
FL012	1-239-400-11	FILTER, CHIP EMI	
FL013	1-233-893-21	FILTER, CHIP EMI	
FL014	1-233-893-21	FILTER, CHIP EMI	
FL015	1-239-400-11	FILTER, CHIP EMI	
FL016	1-233-893-21	FILTER, CHIP EMI	
FL033	1-233-893-21	FILTER, CHIP EMI	
FL034	1-233-893-21	FILTER, CHIP EMI	
FL035	1-233-893-21	FILTER, CHIP EMI	
FL036	1-239-400-11	FILTER, CHIP EMI	
FL037	1-239-400-11	FILTER, CHIP EMI	
FL038	1-239-400-11	FILTER, CHIP EMI	
FL039	1-233-893-21	FILTER, CHIP EMI	
FL090	1-233-893-21	FILTER, CHIP EMI	
FL091	1-233-893-21	FILTER, CHIP EMI	
FL092	1-233-893-21	FILTER, CHIP EMI	
FL093	1-233-893-21	FILTER, CHIP EMI	
FL135	1-233-893-21	FILTER, CHIP EMI	
FL136	1-233-893-21	FILTER, CHIP EMI	
FL137	1-233-893-21	FILTER, CHIP EMI	
FL138	1-233-893-21	FILTER, CHIP EMI	
FL139	1-233-893-21	FILTER, CHIP EMI	
FL180	1-233-893-21	FILTER, CHIP EMI	
FL181	1-233-893-21	FILTER, CHIP EMI	
FL182	1-233-893-21	FILTER, CHIP EMI	
FL183	1-239-400-11	FILTER, CHIP EMI	
FL184	1-239-400-11	FILTER, CHIP EMI	
FL215	1-233-893-21	FILTER, CHIP EMI	
FL216	1-233-893-21	FILTER, CHIP EMI	
FL217	1-233-893-21	FILTER, CHIP EMI	
FL280	1-233-893-21	FILTER, CHIP EMI	
FL281	1-233-893-21	FILTER, CHIP EMI	
FL282	1-233-893-21	FILTER, CHIP EMI	
FL283	1-233-893-21	FILTER, CHIP EMI	
FL284	1-233-893-21	FILTER, CHIP EMI	
FL285	1-233-893-21	FILTER, CHIP EMI	
FL310	1-233-893-21	FILTER, CHIP EMI	
FL311	1-233-893-21	FILTER, CHIP EMI	
FL312	1-233-893-21	FILTER, CHIP EMI	
FL313	1-233-893-21	FILTER, CHIP EMI	
FL314	1-233-893-21	FILTER, CHIP EMI	
FL315	1-233-893-21	FILTER, CHIP EMI	
FL316	1-233-893-21	FILTER, CHIP EMI	
FL380	1-233-893-21	FILTER, CHIP EMI	
FL381	1-233-893-21	FILTER, CHIP EMI	
FL382	1-233-893-21	FILTER, CHIP EMI	

Ref. No.	Part No.	Description	Remark
FL383	1-239-400-11	FILTER, CHIP EMI	
FL384	1-239-400-11	FILTER, CHIP EMI	
FL475	1-233-893-21	FILTER, CHIP EMI	
FL476	1-233-893-21	FILTER, CHIP EMI	
FL477	1-239-400-11	FILTER, CHIP EMI	
FL478	1-233-894-21	FILTER, LOW PASS (14MHz)	
FL479	1-233-894-21	FILTER, LOW PASS (14MHz)	
FL480	1-233-893-21	FILTER, CHIP EMI	
FL481	1-233-893-21	FILTER, CHIP EMI	
FL482	1-239-400-11	FILTER, CHIP EMI	
FL483	1-239-400-11	FILTER, CHIP EMI	
FL716	1-233-893-21	FILTER, CHIP EMI	
FL717	1-233-893-21	FILTER, CHIP EMI	
FL718	1-233-893-21	FILTER, CHIP EMI	
		< IC >	
IC002	8-759-449-38	IC MSM10S0050-039GS-2K	
IC003	8-759-431-14	IC PQ3TZ53U	
IC004	8-759-510-71	IC BA10358F-E2	
IC005	8-759-431-14	IC PQ3TZ53U	
IC006	8-759-981-48	IC RC082M2G2	
IC008	8-759-271-88	IC TC7SHU04FU-TE85R	
IC009	8-759-271-88	IC TC7SHU04FU-TE85R	
IC010	8-759-447-77	IC TC7WH74FU(TR12R)	
IC011	8-759-447-77	IC TC7WH74FU(TR12R)	
IC012	8-759-081-44	IC TC74VHC04F(EL)	
IC014	8-759-711-58	IC NJM78L05UA	
IC015	8-759-434-20	IC PST572DML	
IC016	8-759-423-49	IC MC74F125MEL	
IC017	8-759-058-58	IC TC7S04FU(TE85R)	
IC019	8-759-449-37	IC MSM10S0050-041GS-K	
IC020	8-759-510-71	IC BA10358F-E2	
IC021	8-759-473-19	IC MB89099PF-G-117-BND (US/Canadian)	
IC021	8-759-473-20	IC MB89099PF-G-118-BND (E)	
IC022	8-759-356-27	IC NJM2129M-TE2 (US/Canadian)	
IC024	8-759-196-97	IC TC7SH32FU-TE85R	
IC025	8-759-196-93	IC TC7SH00FU-TE85R	
IC026	8-759-196-93	IC TC7SH00FU-TE85R	
IC027	8-759-271-86	IC TC7SH04FU-TE85R	
IC028	8-759-271-86	IC TC7SH04FU-TE85R	
IC090	8-759-449-31	IC HD6437034SD13F	
IC091	8-759-083-94	IC TC7W74FU(T(E)R)	
IC092	8-759-058-62	IC TC7S08FU(TE85R)	
IC094	8-759-449-34	IC HM628128ALFP-5	
IC095	8-759-344-37	IC MC74AC138MEL	
IC096	8-759-423-32	IC MC74AC32MEL	
IC097	8-759-096-87	IC TC7WU04FU(T(E)R)	
IC098	8-759-423-49	IC MC74F125MEL	
IC099	8-759-351-13	IC TC74AC541FS(EL)	
IC100	8-759-423-38	IC MC74ACT245MEL	
IC101	8-759-423-38	IC MC74ACT245MEL	
IC102	8-759-423-49	IC MC74F125MEL	
IC103	8-759-423-33	IC MC74AC74MEL	
IC104	8-759-351-13	IC TC74AC541FS(EL)	
IC105	8-759-351-13	IC TC74AC541FS(EL)	
IC106	8-759-423-38	IC MC74ACT245MEL	
IC108	8-759-058-64	IC TC7S32FU(TE85R)	
IC109	8-759-058-64	IC TC7S32FU(TE85R)	
IC135	8-759-351-13	IC TC74AC541FS(EL)	
IC136	8-759-427-97	IC HD6413002F17	
IC137	8-759-344-37	IC MC74AC138MEL	
IC138	8-759-449-35	IC HM62256BLFP-7	
IC139	8-759-357-58	IC AK6420HM-E2	
IC141	8-759-423-49	IC MC74F125MEL	
IC142	8-759-351-13	IC TC74AC541FS(EL)	
IC143	8-759-344-37	IC MC74AC138MEL	
IC144	8-759-423-32	IC MC74AC32MEL	
IC145	8-759-423-49	IC MC74F125MEL	
IC146	8-759-096-87	IC TC7WU04FU(T(E)R)	
IC147	8-759-270-56	IC SN74HC377ANS-E20	
IC148	8-759-270-56	IC SN74HC377ANS-E20	
IC149	8-759-270-56	IC SN74HC377ANS-E20	
IC150	8-759-270-56	IC SN74HC377ANS-E20	
IC151	8-759-351-13	IC TC74AC541FS(EL)	
IC152	8-759-351-13	IC TC74AC541FS(EL)	
IC153	8-759-058-58	IC TC7S04FU(TE85R)	
IC154	8-759-058-62	IC TC7S08FU(TE85R)	
IC156	8-759-058-62	IC TC7S08FU(TE85R)	
IC180	8-759-423-33	IC MC74AC74MEL	
IC181	8-759-460-93	IC CXD8663Q	
IC182	8-759-463-74	IC HM514800CLTT-7Z	
IC183	8-759-196-97	IC TC7SH32FU-TE85R	
IC184	8-759-460-94	IC CXD8669AQ	
IC185	8-759-082-57	IC TC7W04FU(T(E)R)	
IC215	8-759-449-35	IC HM62256BLFP-7	
IC216	8-752-363-62	IC CXD1186CQ	
IC217	8-759-449-40	IC CXD8598R	
IC219	8-759-423-49	IC MC74F125MEL	
IC280	8-759-463-75	IC HM514260CTT-7Z	
IC281	8-752-386-59	IC CXD1900BQ	
IC282	8-759-463-75	IC HM514260CTT-7Z	
IC283	8-759-463-75	IC HM514260CTT-7Z	
IC284	8-759-463-75	IC HM514260CTT-7Z	
IC310	8-759-449-39	IC CXD8602Q	
IC311	8-759-350-08	IC MSM518222B-30GS-TP	
IC312	8-759-449-45	IC CXD8600R	
IC313	8-759-449-34	IC HM628128ALFP-5	
IC315	8-759-186-39	IC TC74VHC74F(EL)	
IC316	8-759-442-77	IC MSM518126-50JSDR1	
IC317	8-759-453-79	IC CXD8664Q	
IC318	8-752-381-72	IC CXD1853Q	
IC319	8-759-449-34	IC HM628128ALFP-5	
IC380	8-759-471-51	IC CXD8603AR	
IC381	8-759-449-42	IC DSP56009	
IC382	8-759-082-57	IC TC7W04FU(T(E)R)	
IC383	8-759-449-35	IC HM62256BLFP-7	
IC385	8-759-058-62	IC TC7S08FU(TE85R)	
IC474	8-759-711-58	IC NJM78L05UA	
IC475	8-752-379-07	IC CXD1914Q	
IC482	8-759-066-59	IC TC74HC4053AFS-EL	
IC483	8-759-066-59	IC TC74HC4053AFS-EL	
IC485	8-759-066-59	IC TC74HC4053AFS-EL	
IC486	8-759-066-59	IC TC74HC4053AFS-EL	
IC487	8-759-066-59	IC TC74HC4053AFS-EL	
IC491	8-759-449-30	IC MB90091APF-G-001-BND	

Ref. No.	Part No.	Description	Remark
IC492	8-759-186-26	IC TC74VHC02F(EL)	
IC493	8-759-079-46	IC TC74VHC00FS(EL)	
IC494	8-759-475-73	IC MSM534001C085GS-KR1	
IC498	8-759-066-59	IC TC74HC4053AFS-EL	
IC717	8-752-369-78	IC CXD2545Q	
IC722	8-759-067-52	IC MB88347PFV-G-BND-ER	
IC723	8-759-100-93	IC uPC393G2	
IC765	8-759-458-41	IC LT1191CS8-E2	
IC768	8-759-066-59	IC TC74HC4053AFS-EL	
IC769	8-759-711-85	IC NJM4580E-D	
IC770	8-759-449-41	IC CXD8599Q	
IC771	8-759-701-36	IC NJM3403AM(TE2)	
IC775	8-759-510-71	IC BA10358F-E2	
IC777	8-759-100-93	IC uPC393G2	
IC778	8-759-100-93	IC uPC393G2	
IC886	8-759-701-36	IC NJM3403AM(TE2)	
IC887	8-759-333-63	IC LB1896-TE-B	
IC888	8-759-701-39	IC NJM3404AM	
IC889	8-759-384-55	IC LA6527N-TE-B	
IC890	8-759-449-55	IC BA5970FP-E2	
IC891	8-759-452-00	IC BA6295AFP-E2	
IC892	8-759-066-59	IC TC74HC4053AFS-EL	
IC982	8-759-701-39	IC NJM3404AM	
IC983	8-759-066-59	IC TC74HC4053AFS-EL	
		< IC SOCKET >	
* ICS093	1-251-496-21	SOCKET, IC	
* ICS140	1-526-835-11	SOCKET, IC (40P)	
		< COIL >	
L001	1-414-755-11	INDUCTOR 22uH	
L002	1-414-755-11	INDUCTOR 22uH	
L003	1-409-529-41	COIL, CHOKE 10uH	
L004	1-409-529-41	COIL, CHOKE 10uH	
L005	1-409-529-41	COIL, CHOKE 10uH	
L006	1-409-529-41	COIL, CHOKE 10uH	
L007	1-409-529-41	COIL, CHOKE 10uH	
L008	1-409-529-41	COIL, CHOKE 10uH	
L011	1-414-755-11	INDUCTOR 22uH	
L012	1-414-755-11	INDUCTOR 22uH	
L013	1-412-939-11	INDUCTOR 1uH	
L014	1-412-939-11	INDUCTOR 1uH	
L016	1-414-755-11	INDUCTOR 22uH	
L017	1-414-755-11	INDUCTOR 22uH	
L018	1-414-755-11	INDUCTOR 22uH	
L019	1-414-755-11	INDUCTOR 22uH (US/Canadian)	
L020	1-414-755-11	INDUCTOR 22uH	
L021	1-409-529-41	COIL, CHOKE 10uH	
L022	1-414-755-11	INDUCTOR 22uH	
L180	1-414-755-11	INDUCTOR 22uH	
L181	1-414-755-11	INDUCTOR 22uH	
L475	1-409-556-11	COIL, CHOKE 47uH	
L476	1-414-755-11	INDUCTOR 22uH	
L477	1-414-755-11	INDUCTOR 22uH	
L483	1-414-755-11	INDUCTOR 22uH	
L484	1-414-755-11	INDUCTOR 22uH	
L485	1-414-755-11	INDUCTOR 22uH	
L486	1-414-755-11	INDUCTOR 22uH	
L488	1-414-755-11	INDUCTOR 22uH	

Ref. No.	Part No.	Description	Remark
L489	1-414-755-11	INDUCTOR 22uH	
L490	1-414-755-11	INDUCTOR 22uH	
L491	1-414-755-11	INDUCTOR 22uH	
L492	1-409-556-11	COIL, CHOKE 47uH	
L493	1-414-755-11	INDUCTOR 22uH	
L494	1-414-755-11	INDUCTOR 22uH	
L495	1-414-755-11	INDUCTOR 22uH	
L496	1-414-755-11	INDUCTOR 22uH	
L765	1-409-556-11	COIL, CHOKE 47uH	
L766	1-409-556-11	COIL, CHOKE 47uH	
L769	1-409-556-11	COIL, CHOKE 47uH	
L770	1-414-755-11	INDUCTOR 22uH	
L771	1-409-556-11	COIL, CHOKE 47uH	
L772	1-414-755-11	INDUCTOR 22uH	
L773	1-414-755-11	INDUCTOR 22uH	
L777	1-414-755-11	INDUCTOR 22uH	
		< TRANSISTOR >	
Q003	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q004	8-729-922-65	TRANSISTOR 2SD1760F5-PQR	
Q005	8-729-402-42	TRANSISTOR UN5213 (E)	
Q006	8-729-403-35	TRANSISTOR UN5113 (E)	
Q007	8-729-402-42	TRANSISTOR UN5213	
Q008	8-729-402-42	TRANSISTOR UN5213	
Q009	8-729-402-42	TRANSISTOR UN5213	
Q010	8-729-402-42	TRANSISTOR UN5213	
Q011	8-729-402-42	TRANSISTOR UN5213	
Q090	8-729-015-76	TRANSISTOR UN5211-TX	
Q091	8-729-015-76	TRANSISTOR UN5211-TX	
Q496	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q497	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q498	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q499	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q500	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q501	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q502	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q503	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q504	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q508	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q511	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q512	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q513	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q514	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q515	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q516	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q517	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q518	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q519	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q520	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q521	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q522	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q523	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q524	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q525	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q526	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q527	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q528	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q529	8-729-230-63	TRANSISTOR 2SC4116-YG	

Ref. No.	Part No.	Description	Remark
Q530	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q531	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q532	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q533	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q534	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q535	8-729-143-13	TRANSISTOR 2SC4176-B34	
Q538	8-729-143-13	TRANSISTOR 2SC4176-B34	
Q539	8-729-143-13	TRANSISTOR 2SC4176-B34	
Q540	8-729-143-07	TRANSISTOR 2SA1610-Y33	
Q542	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q543	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q544	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q545	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q546	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q547	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q551	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q552	8-729-403-35	TRANSISTOR UN5113	
Q557	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q558	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q559	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q560	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q561	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q562	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q563	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q564	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q565	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q566	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q567	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q568	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q569	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q570	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q571	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q572	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q573	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q574	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q575	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q576	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q577	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q578	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q579	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q580	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q581	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q582	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q583	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q584	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q585	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q586	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q587	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q588	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q589	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q765	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q766	8-729-015-76	TRANSISTOR UN5211-TX	
Q886	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q887	8-729-403-35	TRANSISTOR UN5113	
Q888	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q889	8-729-922-77	TRANSISTOR 2SB1412-TL	
Q980	8-729-015-76	TRANSISTOR UN5211-TX	

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R002	1-216-821-11	METAL CHIP	1K	5%	1/16W
R003	1-216-821-11	METAL CHIP	1K	5%	1/16W
R004	1-216-857-11	METAL CHIP	1M	5%	1/16W
R005	1-216-801-11	METAL CHIP	22	5%	1/16W
R006	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R007	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R008	1-216-821-11	METAL CHIP	1K	5%	1/16W
R009	1-216-801-11	METAL CHIP	22	5%	1/16W
R010	1-216-857-11	METAL CHIP	1M	5%	1/16W
R011	1-216-801-11	METAL CHIP	22	5%	1/16W
R012	1-216-821-11	METAL CHIP	1K	5%	1/16W
R013	1-216-801-11	METAL CHIP	22	5%	1/16W
R014	1-216-793-11	METAL GLAZE	4.7	5%	1/16W
R015	1-216-793-11	METAL GLAZE	4.7	5%	1/16W
R016	1-216-821-11	METAL CHIP	1K	5%	1/16W
R017	1-216-801-11	METAL CHIP	22	5%	1/16W
R020	1-216-801-11	METAL CHIP	22	5%	1/16W
R021	1-216-817-11	METAL CHIP	470	5%	1/16W
R022	1-216-801-11	METAL CHIP	22	5%	1/16W
R023	1-216-857-11	METAL CHIP	1M	5%	1/16W
R024	1-216-805-11	METAL CHIP	47	5%	1/16W
R025	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R026	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R027	1-216-845-11	METAL CHIP	100K	5%	1/16W
R028	1-216-845-11	METAL CHIP	100K	5%	1/16W
R030	1-216-837-11	METAL CHIP	22K	5%	1/16W
RQ31	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R032	1-216-809-11	METAL CHIP	100	5%	1/16W
R033	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R034	1-216-841-11	METAL CHIP	47K	5%	1/16W
R035	1-216-813-11	METAL CHIP	220	5%	1/16W
R036	1-216-842-11	METAL CHIP	56K	5%	1/16W
R037	1-216-839-11	METAL CHIP	33K	5%	1/16W
R038	1-216-837-11	METAL CHIP	22K	5%	1/16W
R039	1-216-837-11	METAL CHIP	22K	5%	1/16W
R041	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R042	1-216-815-11	METAL CHIP	330	5%	1/16W
R043	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R044	1-216-198-91	METAL GLAZE	1K	5%	1/8W
R045	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R046	1-216-803-11	METAL CHIP	33	5%	1/16W
R047	1-216-833-11	METAL CHIP	10K	5%	1/16W
R052	1-216-821-11	METAL CHIP	1K	5%	1/16W
R057	1-216-833-11	METAL CHIP	10K	5%	1/16W
R058	1-216-821-11	METAL CHIP	1K	5%	1/16W
R062	1-216-797-11	METAL CHIP	10	5%	1/16W
R063	1-216-820-11	METAL CHIP	820	5%	1/16W
R067	1-216-801-11	METAL CHIP	22	5%	1/16W
R068	1-216-801-11	METAL CHIP	22	5%	1/16W
R074	1-216-821-11	METAL CHIP	1K	5%	1/16W
R075	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R076	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R077	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R078	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R079	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R080	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R081	1-216-809-11	METAL CHIP	100	5%	1/16W
R082	1-216-833-11	METAL CHIP	10K	5%	1/16W
R083	1-216-809-11	METAL CHIP	100	5%	1/16W
R084	1-216-833-11	METAL CHIP	10K	5%	1/16W
R085	1-216-809-11	METAL CHIP	100	5%	1/16W
R086	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R087	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R088	1-216-833-11	METAL CHIP	10K	5%	1/16W
R089	1-216-833-11	METAL CHIP	10K	5%	1/16W
R090	1-216-833-11	METAL CHIP	10K	5%	1/16W
R091	1-216-833-11	METAL CHIP	10K	5%	1/16W
R092	1-216-837-11	METAL CHIP	22K	5%	1/16W
R093	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R094	1-216-833-11	METAL CHIP	10K	5%	1/16W
R095	1-216-833-11	METAL CHIP	10K	5%	1/16W
R096	1-216-809-11	METAL CHIP	100	5%	1/16W
R097	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R098	1-216-857-11	METAL CHIP	1M	5%	1/16W
R099	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R100	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R101	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R102	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R103	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R104	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R105	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R106	1-216-801-11	METAL CHIP	22	5%	1/16W
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W
R108	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R110	1-216-864-11	METAL CHIP	0	5%	1/16W
R111	1-216-833-11	METAL CHIP	10K	5%	1/16W
R112	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R113	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R114	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R115	1-216-864-11	METAL CHIP	0	5%	1/16W
R116	1-216-864-11	METAL CHIP	0	5%	1/16W
R117	1-216-833-11	METAL CHIP	10K	5%	1/16W
R118	1-216-845-11	METAL CHIP	100K	5%	1/16W
R119	1-216-809-11	METAL CHIP	100	5%	1/16W
R120	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R121	1-216-845-11	METAL CHIP	100K	5%	1/16W
R122	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R123	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R124	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R125	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R126	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R127	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R128	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R129	1-216-841-11	METAL CHIP	47K	5%	1/16W
R130	1-216-841-11	METAL CHIP	47K	5%	1/16W
R131	1-216-841-11	METAL CHIP	47K	5%	1/16W
R132	1-216-841-11	METAL CHIP	47K	5%	1/16W
R133	1-216-821-11	METAL CHIP	1K	5%	1/16W
R134	1-216-821-11	METAL CHIP	1K	5%	1/16W
R135	1-216-821-11	METAL CHIP	1K	5%	1/16W
R136	1-216-821-11	METAL CHIP	1K	5%	1/16W
R137	1-216-821-11	METAL CHIP	1K	5%	1/16W
R138	1-216-821-11	METAL CHIP	1K	5%	1/16W
R139	1-216-821-11	METAL CHIP	1K	5%	1/16W
R141	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R142	1-216-833-11	METAL CHIP	10K	5%	1/16W
R143	1-216-833-11	METAL CHIP	10K	5%	1/16W
R144	1-216-833-11	METAL CHIP	10K	5%	1/16W
R145	1-216-841-11	METAL CHIP	47K	5%	1/16W
R146	1-216-801-11	METAL CHIP	22	5%	1/16W
R147	1-216-845-11	METAL CHIP	100K	5%	1/16W
R148	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R149	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R150	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R151	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R153	1-216-845-11	METAL CHIP	100K	5%	1/16W
R154	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R155	1-216-809-11	METAL CHIP	100	5%	1/16W
R156	1-216-801-11	METAL CHIP	22	5%	1/16W
R157	1-216-801-11	METAL CHIP	22	5%	1/16W
R158	1-216-821-11	METAL CHIP	1K	5%	1/16W
R160	1-216-809-11	METAL CHIP	100	5%	1/16W
R161	1-216-809-11	METAL CHIP	100	5%	1/16W
R162	1-216-809-11	METAL CHIP	100	5%	1/16W
R163	1-218-484-11	METAL GLAZE	750	5%	1/16W
R165	1-216-813-11	METAL CHIP	220	5%	1/16W
R166	1-216-813-11	METAL CHIP	220	5%	1/16W
R167	1-218-484-11	METAL GLAZE	750	5%	1/16W
R168	1-216-803-11	METAL CHIP	33	5%	1/16W
R169	1-216-803-11	METAL CHIP	33	5%	1/16W
R170	1-216-803-11	METAL CHIP	33	5%	1/16W
R171	1-216-803-11	METAL CHIP	33	5%	1/16W
R172	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R173	1-216-821-11	METAL CHIP	1K	5%	1/16W
R174	1-216-821-11	METAL CHIP	1K	5%	1/16W
R175	1-216-821-11	METAL CHIP	1K	5%	1/16W
R176	1-216-821-11	METAL CHIP	1K	5%	1/16W
R177	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R178	1-216-295-91	CONDUCTOR, CHIP (2012)			
R179	1-216-821-11	METAL CHIP	1K	5%	1/16W
R181	1-216-821-11	METAL CHIP	1K	5%	1/16W
R182	1-216-821-11	METAL CHIP	1K	5%	1/16W
R183	1-216-821-11	METAL CHIP	1K	5%	1/16W
R184	1-216-821-11	METAL CHIP	1K	5%	1/16W
R185	1-216-833-11	METAL CHIP	10K	5%	1/16W
R186	1-216-833-11	METAL CHIP	10K	5%	1/16W
R187	1-216-864-11	METAL CHIP	0	5%	1/16W
R188	1-216-864-11	METAL CHIP	0	5%	1/16W
R190	1-216-864-11	METAL CHIP	0	5%	1/16W
R192	1-216-864-11	METAL CHIP	0	5%	1/16W
R195	1-216-801-11	METAL CHIP	22	5%	1/16W
R196	1-216-833-11	METAL CHIP	10K	5%	1/16W
R197	1-216-833-11	METAL CHIP	10K	5%	1/16W
R198	1-216-833-11	METAL CHIP	10K	5%	1/16W
R199	1-216-833-11	METAL CHIP	10K	5%	1/16W
R200	1-216-833-11	METAL CHIP	10K	5%	1/16W
R201	1-216-833-11	METAL CHIP	10K	5%	1/16W
R202	1-216-809-11	METAL CHIP	100	5%	1/16W
R203	1-216-864-11	METAL CHIP	0	5%	1/16W
R204	1-216-801-11	METAL CHIP	22	5%	1/16W
R205	1-216-801-11	METAL CHIP	22	5%	1/16W
R206	1-216-809-11	METAL CHIP	100	5%	1/16W
R208	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R209	1-216-805-11	METAL CHIP	47	5%	1/16W
R210	1-216-864-11	METAL CHIP	0	5%	1/16W
R212	1-216-833-11	METAL CHIP	10K	5%	1/16W
R213	1-216-813-11	METAL CHIP	220	5%	1/16W
R214	1-216-809-11	METAL CHIP	100	5%	1/16W
R215	1-216-801-11	METAL CHIP	22	5%	1/16W
R216	1-216-801-11	METAL CHIP	22	5%	1/16W
R217	1-216-805-11	METAL CHIP	47	5%	1/16W
R218	1-216-805-11	METAL CHIP	47	5%	1/16W
R219	1-216-805-11	METAL CHIP	47	5%	1/16W
R220	1-216-805-11	METAL CHIP	47	5%	1/16W
R221	1-216-805-11	METAL CHIP	47	5%	1/16W
R222	1-216-805-11	METAL CHIP	47	5%	1/16W
R223	1-216-805-11	METAL CHIP	47	5%	1/16W
R224	1-216-805-11	METAL CHIP	47	5%	1/16W
R225	1-216-805-11	METAL CHIP	47	5%	1/16W
R226	1-216-805-11	METAL CHIP	47	5%	1/16W
R227	1-216-805-11	METAL CHIP	47	5%	1/16W
R228	1-216-803-11	METAL CHIP	33	5%	1/16W
R229	1-216-805-11	METAL CHIP	47	5%	1/16W
R230	1-216-805-11	METAL CHIP	47	5%	1/16W
R231	1-216-805-11	METAL CHIP	47	5%	1/16W
R232	1-216-805-11	METAL CHIP	47	5%	1/16W
R233	1-216-837-11	METAL CHIP	22K	5%	1/16W
R234	1-216-833-11	METAL CHIP	10K	5%	1/16W
R235	1-216-833-11	METAL CHIP	10K	5%	1/16W
R236	1-216-833-11	METAL CHIP	10K	5%	1/16W
R237	1-216-833-11	METAL CHIP	10K	5%	1/16W
R238	1-216-833-11	METAL CHIP	10K	5%	1/16W
R239	1-216-801-11	METAL CHIP	22	5%	1/16W
R240	1-216-801-11	METAL CHIP	22	5%	1/16W
R241	1-216-809-11	METAL CHIP	100	5%	1/16W
R242	1-216-801-11	METAL CHIP	22	5%	1/16W
R243	1-216-801-11	METAL CHIP	22	5%	1/16W
R244	1-216-801-11	METAL CHIP	22	5%	1/16W
R245	1-216-801-11	METAL CHIP	22	5%	1/16W
R246	1-216-801-11	METAL CHIP	22	5%	1/16W
R247	1-216-801-11	METAL CHIP	22	5%	1/16W
R248	1-216-801-11	METAL CHIP	22	5%	1/16W
R249	1-216-801-11	METAL CHIP	22	5%	1/16W
R250	1-216-805-11	METAL CHIP	47	5%	1/16W
R251	1-216-805-11	METAL CHIP	47	5%	1/16W
R252	1-216-801-11	METAL CHIP	22	5%	1/16W
R253	1-216-801-11	METAL CHIP	22	5%	1/16W
R254	1-216-801-11	METAL CHIP	22	5%	1/16W
R255	1-216-801-11	METAL CHIP	22	5%	1/16W
R256	1-216-801-11	METAL CHIP	22	5%	1/16W
R257	1-216-801-11	METAL CHIP	22	5%	1/16W
R258	1-216-801-11	METAL CHIP	22	5%	1/16W
R259	1-216-801-11	METAL CHIP	22	5%	1/16W
R260	1-216-801-11	METAL CHIP	22	5%	1/16W
R261	1-216-801-11	METAL CHIP	22	5%	1/16W
R262	1-216-801-11	METAL CHIP	22	5%	1/16W
R263	1-216-801-11	METAL CHIP	22	5%	1/16W
R264	1-216-801-11	METAL CHIP	22	5%	1/16W
R265	1-216-801-11	METAL CHIP	22	5%	1/16W
R266	1-216-801-11	METAL CHIP	22	5%	1/16W
R267	1-216-801-11	METAL CHIP	22	5%	1/16W

Ref. No.	Part No.	Description			Remark
R268	1-216-801-11	METAL CHIP	22	5%	1/16W
R269	1-216-801-11	METAL CHIP	22	5%	1/16W
R270	1-216-801-11	METAL CHIP	22	5%	1/16W
R271	1-216-801-11	METAL CHIP	22	5%	1/16W
R272	1-216-801-11	METAL CHIP	22	5%	1/16W
R273	1-216-809-11	METAL CHIP	100	5%	1/16W
R274	1-216-801-11	METAL CHIP	22	5%	1/16W
R275	1-216-801-11	METAL CHIP	22	5%	1/16W
R276	1-216-801-11	METAL CHIP	22	5%	1/16W
R277	1-216-801-11	METAL CHIP	22	5%	1/16W
R278	1-216-801-11	METAL CHIP	22	5%	1/16W
R279	1-216-801-11	METAL CHIP	22	5%	1/16W
R280	1-216-801-11	METAL CHIP	22	5%	1/16W
R281	1-216-801-11	METAL CHIP	22	5%	1/16W
R282	1-216-801-11	METAL CHIP	22	5%	1/16W
R283	1-216-801-11	METAL CHIP	22	5%	1/16W
R284	1-216-801-11	METAL CHIP	22	5%	1/16W
R285	1-216-801-11	METAL CHIP	22	5%	1/16W
R286	1-216-801-11	METAL CHIP	22	5%	1/16W
R287	1-216-801-11	METAL CHIP	22	5%	1/16W
R288	1-216-801-11	METAL CHIP	22	5%	1/16W
R289	1-216-801-11	METAL CHIP	22	5%	1/16W
R290	1-216-801-11	METAL CHIP	22	5%	1/16W
R291	1-216-801-11	METAL CHIP	22	5%	1/16W
R292	1-216-801-11	METAL CHIP	22	5%	1/16W
R293	1-216-801-11	METAL CHIP	22	5%	1/16W
R294	1-216-801-11	METAL CHIP	22	5%	1/16W
R295	1-216-801-11	METAL CHIP	22	5%	1/16W
R296	1-216-801-11	METAL CHIP	22	5%	1/16W
R297	1-216-801-11	METAL CHIP	22	5%	1/16W
R298	1-216-801-11	METAL CHIP	22	5%	1/16W
R299	1-216-801-11	METAL CHIP	22	5%	1/16W
R300	1-216-801-11	METAL CHIP	22	5%	1/16W
R301	1-216-833-11	METAL CHIP	10K	5%	1/16W
R302	1-216-805-11	METAL CHIP	47	5%	1/16W
R303	1-216-805-11	METAL CHIP	47	5%	1/16W
R305	1-216-809-11	METAL CHIP	100	5%	1/16W
R306	1-216-821-11	METAL CHIP	1K	5%	1/16W
R307	1-216-805-11	METAL CHIP	47	5%	1/16W
R308	1-216-801-11	METAL CHIP	22	5%	1/16W
R309	1-216-809-11	METAL CHIP	100	5%	1/16W
R310	1-216-833-11	METAL CHIP	10K	5%	1/16W
R311	1-216-833-11	METAL CHIP	10K	5%	1/16W
R312	1-216-821-11	METAL CHIP	1K	5%	1/16W
R313	1-216-841-11	METAL CHIP	47K	5%	1/16W
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W
R316	1-216-841-11	METAL CHIP	47K	5%	1/16W
R317	1-216-833-11	METAL CHIP	10K	5%	1/16W
R318	1-216-833-11	METAL CHIP	10K	5%	1/16W
R319	1-216-801-11	METAL CHIP	22	5%	1/16W
R320	1-216-801-11	METAL CHIP	22	5%	1/16W
R321	1-216-801-11	METAL CHIP	22	5%	1/16W
R322	1-216-864-11	METAL CHIP	0	5%	1/16W
R325	1-216-801-11	METAL CHIP	22	5%	1/16W
R326	1-216-801-11	METAL CHIP	22	5%	1/16W
R327	1-216-801-11	METAL CHIP	22	5%	1/16W
R328	1-216-845-11	METAL CHIP	100K	5%	1/16W
R329	1-216-845-11	METAL CHIP	100K	5%	1/16W
R331	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R333	1-216-841-11	METAL CHIP	47K	5%	1/16W (E)
R334	1-216-864-11	METAL CHIP	0	5%	1/16W (US/Canadian)
R334	1-216-821-11	METAL CHIP	1K	5%	1/16W (E)
R335	1-216-833-11	METAL CHIP	10K	5%	1/16W
R336	1-216-821-11	METAL CHIP	1K	5%	1/16W
R337	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R338	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R339	1-216-801-11	METAL CHIP	22	5%	1/16W
R340	1-216-801-11	METAL CHIP	22	5%	1/16W
R341	1-216-801-11	METAL CHIP	22	5%	1/16W
R342	1-216-817-11	METAL CHIP	470	5%	1/16W
R343	1-216-864-11	METAL CHIP	0	5%	1/16W
R344	1-216-864-11	METAL CHIP	0	5%	1/16W
R345	1-216-821-11	METAL CHIP	1K	5%	1/16W
R346	1-216-845-11	METAL CHIP	100K	5%	1/16W
R347	1-216-845-11	METAL CHIP	100K	5%	1/16W
R348	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W
R349	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R350	1-218-854-11	METAL GLAZE	2K	0.50%	1/16W
R351	1-218-854-11	METAL GLAZE	2K	0.50%	1/16W
R352	1-218-854-11	METAL GLAZE	2K	0.50%	1/16W
R353	1-218-847-11	METAL GLAZE	1K	0.50%	1/16W
R354	1-218-876-11	METAL GLAZE	16K	0.50%	1/16W
R355	1-218-847-11	METAL GLAZE	1K	0.50%	1/16W
R356	1-218-843-11	METAL GLAZE	680	0.50%	1/16W
R357	1-216-821-11	METAL CHIP	1K	5%	1/16W
R358	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
R359	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
R360	1-216-821-11	METAL CHIP	1K	5%	1/16W
R361	1-216-833-11	METAL CHIP	10K	5%	1/16W
R362	1-216-833-11	METAL CHIP	10K	5%	1/16W
R363	1-216-833-11	METAL CHIP	10K	5%	1/16W
R364	1-216-821-11	METAL CHIP	1K	5%	1/16W
R365	1-216-821-11	METAL CHIP	1K	5%	1/16W
R366	1-216-821-11	METAL CHIP	1K	5%	1/16W
R367	1-216-821-11	METAL CHIP	1K	5%	1/16W
R368	1-216-845-11	METAL CHIP	100K	5%	1/16W
R369	1-216-833-11	METAL CHIP	10K	5%	1/16W
R370	1-216-833-11	METAL CHIP	10K	5%	1/16W
R371	1-216-833-11	METAL CHIP	10K	5%	1/16W
R372	1-216-805-11	METAL CHIP	47	5%	1/16W
R373	1-216-805-11	METAL CHIP	47	5%	1/16W
R374	1-216-805-11	METAL CHIP	47	5%	1/16W
R375	1-216-805-11	METAL CHIP	47	5%	1/16W
R376	1-216-809-11	METAL CHIP	100	5%	1/16W
R377	1-216-809-11	METAL CHIP	100	5%	1/16W (US/Canadian)
R378	1-216-821-11	METAL CHIP	1K	5%	1/16W (US/Canadian)
R379	1-216-821-11	METAL CHIP	1K	5%	1/16W (US/Canadian)
R381	1-216-864-11	METAL CHIP	0	5%	1/16W (US/Canadian)
R382	1-216-809-11	METAL CHIP	100	5%	1/16W
R383	1-216-849-11	METAL CHIP	220K	5%	1/16W (E)
R384	1-216-825-11	METAL CHIP	2.2K	5%	1/16W (E)
R385	1-216-851-11	METAL CHIP	330K	5%	1/16W
R386	1-216-809-11	METAL CHIP	100	5%	1/16W
R387	1-216-841-11	METAL CHIP	47K	5%	1/16W
R388	1-216-833-11	METAL CHIP	10K	5%	1/16W
R389	1-216-801-11	METAL CHIP	22	5%	1/16W
R392	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R393	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R394	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R395	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R396	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R397	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R398	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R399	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R413	1-216-864-11	METAL CHIP	0	5%	1/16W
R414	1-216-864-11	METAL CHIP	0	5%	1/16W
R415	1-216-864-11	METAL CHIP	0	5%	1/16W
R416	1-216-864-11	METAL CHIP	0	5%	1/16W
R417	1-216-864-11	METAL CHIP	0	5%	1/16W
R418	1-216-864-11	METAL CHIP	0	5%	1/16W
R419	1-216-864-11	METAL CHIP	0	5%	1/16W
R420	1-216-864-11	METAL CHIP	0	5%	1/16W
R421	1-216-805-11	METAL CHIP	47	5%	1/16W
R422	1-216-805-11	METAL CHIP	47	5%	1/16W
R423	1-216-864-11	METAL CHIP	0	5%	1/16W
R424	1-216-864-11	METAL CHIP	0	5%	1/16W
R425	1-216-864-11	METAL CHIP	0	5%	1/16W
R426	1-216-833-11	METAL CHIP	10K	5%	1/16W
R427	1-216-864-11	METAL CHIP	0	5%	1/16W
R428	1-216-864-11	METAL CHIP	0	5%	1/16W
R429	1-216-864-11	METAL CHIP	0	5%	1/16W
R430	1-216-864-11	METAL CHIP	0	5%	1/16W
R431	1-216-864-11	METAL CHIP	0	5%	1/16W
R432	1-216-864-11	METAL CHIP	0	5%	1/16W
R433	1-216-801-11	METAL CHIP	22	5%	1/16W
R434	1-216-801-11	METAL CHIP	22	5%	1/16W
R435	1-216-803-11	METAL CHIP	33	5%	1/16W
R436	1-216-803-11	METAL CHIP	33	5%	1/16W
R437	1-216-807-11	METAL CHIP	68	5%	1/16W
R438	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R439	1-216-807-11	METAL CHIP	68	5%	1/16W
R440	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R441	1-216-807-11	METAL CHIP	68	5%	1/16W
R442	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R443	1-216-807-11	METAL CHIP	68	5%	1/16W
R444	1-216-833-11	METAL CHIP	10K	5%	1/16W
R445	1-216-801-11	METAL CHIP	22	5%	1/16W
R446	1-216-805-11	METAL CHIP	47	5%	1/16W
R447	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R448	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R449	1-216-809-11	METAL CHIP	100	5%	1/16W
R450	1-216-821-11	METAL CHIP	1K	5%	1/16W
R451	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R452	1-216-801-11	METAL CHIP	22	5%	1/16W
R453	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R454	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R455	1-218-832-11	METAL GLAZE	240	0.50%	1/16W (US/Canadian)

Ref. No.	Part No.	Description			Remark
R455	1-218-831-11	METAL GLAZE	220	0.50%	1/16W (E)
R457	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R458	1-216-821-11	METAL CHIP	1K	5%	1/16W
R459	1-216-797-11	METAL CHIP	10	5%	1/16W
R461	1-216-801-11	METAL CHIP	22	5%	1/16W
R462	1-216-821-11	METAL CHIP	1K	5%	1/16W
R463	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R464	1-216-801-11	METAL CHIP	22	5%	1/16W
R465	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R466	1-216-805-11	METAL CHIP	47	5%	1/16W
R467	1-216-805-11	METAL CHIP	47	5%	1/16W
R469	1-218-832-11	METAL GLAZE (US/Canadian)	240	0.50%	1/16W
R469	1-218-831-11	METAL GLAZE	220	0.50%	1/16W (E)
R470	1-216-801-11	METAL CHIP	22	5%	1/16W
R471	1-216-805-11	METAL CHIP	47	5%	1/16W
R472	1-216-815-11	METAL CHIP	330	5%	1/16W
R473	1-216-805-11	METAL CHIP	47	5%	1/16W
R474	1-216-805-11	METAL CHIP	47	5%	1/16W
R475	1-218-831-11	METAL GLAZE	220	0.50%	1/16W
R476	1-216-807-11	METAL CHIP	68	5%	1/16W
R477	1-216-807-11	METAL CHIP	68	5%	1/16W
R478	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R479	1-216-803-11	METAL CHIP	33	5%	1/16W
R480	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R481	1-216-821-11	METAL CHIP	1K	5%	1/16W
R482	1-216-821-11	METAL CHIP	1K	5%	1/16W
R483	1-216-821-11	METAL CHIP	1K	5%	1/16W
R486	1-216-807-11	METAL CHIP	68	5%	1/16W
R488	1-216-807-11	METAL CHIP	68	5%	1/16W
R489	1-216-801-11	METAL CHIP	22	5%	1/16W
R490	1-216-803-11	METAL CHIP	33	5%	1/16W
R491	1-216-805-11	METAL CHIP	47	5%	1/16W
R492	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R493	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R494	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R495	1-216-801-11	METAL CHIP	22	5%	1/16W
R496	1-216-807-11	METAL CHIP	68	5%	1/16W
R497	1-216-807-11	METAL CHIP	68	5%	1/16W
R498	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R499	1-216-801-11	METAL CHIP	22	5%	1/16W
R500	1-216-807-11	METAL CHIP	68	5%	1/16W
R501	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R503	1-216-807-11	METAL CHIP	68	5%	1/16W
R504	1-216-803-11	METAL CHIP	33	5%	1/16W
R505	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R506	1-216-821-11	METAL CHIP	1K	5%	1/16W
R507	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R508	1-216-807-11	METAL CHIP	68	5%	1/16W
R509	1-216-803-11	METAL CHIP	33	5%	1/16W
R510	1-216-803-11	METAL CHIP	33	5%	1/16W
R511	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R512	1-216-803-11	METAL CHIP	33	5%	1/16W
R513	1-216-803-11	METAL CHIP	33	5%	1/16W
R514	1-216-833-11	METAL CHIP	10K	5%	1/16W
R515	1-216-849-11	METAL CHIP	220K	5%	1/16W
R516	1-216-849-11	METAL CHIP	220K	5%	1/16W
R517	1-216-849-11	METAL CHIP	220K	5%	1/16W
R518	1-216-845-11	METAL CHIP	100K	5%	1/16W
R519	1-216-849-11	METAL CHIP	220K	5%	1/16W
R520	1-216-803-11	METAL CHIP	33	5%	1/16W
R521	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R522	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R523	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R524	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R525	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R526	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R527	1-216-803-11	METAL CHIP	33	5%	1/16W
R528	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R529	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R530	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R531	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R532	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R533	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R534	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R535	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R536	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R537	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R538	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R539	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R540	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R541	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R542	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R543	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R544	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R545	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R546	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R547	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R548	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R549	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R550	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R551	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R552	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R553	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R554	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R555	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R556	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R557	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R558	1-216-821-11	METAL CHIP	1K	5%	1/16W
R559	1-216-833-11	METAL CHIP	10K	5%	1/16W
R560	1-216-833-11	METAL CHIP	10K	5%	1/16W
R561	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R562	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R563	1-216-821-11	METAL CHIP	1K	5%	1/16W
R564	1-216-833-11	METAL CHIP	10K	5%	1/16W
R565	1-216-817-11	METAL CHIP	470	5%	1/16W
R566	1-216-833-11	METAL CHIP	10K	5%	1/16W
R567	1-216-833-11	METAL CHIP	10K	5%	1/16W
R568	1-216-821-11	METAL CHIP	1K	5%	1/16W
R569	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R570	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R571	1-216-807-11	METAL CHIP	68	5%	1/16W
R572	1-216-807-11	METAL CHIP	68	5%	1/16W
R573	1-216-807-11	METAL CHIP	68	5%	1/16W
R574	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R575	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R576	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R577	1-216-807-11	METAL CHIP	68	5%	1/16W
R578	1-216-807-11	METAL CHIP	68	5%	1/16W
R579	1-216-807-11	METAL CHIP	68	5%	1/16W
R580	1-216-807-11	METAL CHIP	68	5%	1/16W
R581	1-216-807-11	METAL CHIP	68	5%	1/16W
R582	1-216-807-11	METAL CHIP	68	5%	1/16W
R583	1-216-803-11	METAL CHIP	33	5%	1/16W
R584	1-216-803-11	METAL CHIP	33	5%	1/16W
R585	1-216-803-11	METAL CHIP	33	5%	1/16W
R586	1-216-803-11	METAL CHIP	33	5%	1/16W
R587	1-216-803-11	METAL CHIP	33	5%	1/16W
R588	1-216-833-11	METAL CHIP	10K	5%	1/16W
R589	1-216-801-11	METAL CHIP	22	5%	1/16W (E)
R590	1-216-801-11	METAL CHIP	22	5%	1/16W (E)
R591	1-216-801-11	METAL CHIP	22	5%	1/16W (E)
R592	1-216-864-11	METAL CHIP	0	5%	1/16W
R593	1-216-864-11	METAL CHIP	0	5%	1/16W
R594	1-216-853-11	METAL CHIP	470K	5%	1/16W
R596	1-216-801-11	METAL CHIP	22	5%	1/16W
R597	1-216-833-11	METAL CHIP	10K	5%	1/16W
R599	1-216-801-11	METAL CHIP	22	5%	1/16W
R600	1-216-801-11	METAL CHIP	22	5%	1/16W
R601	1-216-803-11	METAL CHIP	33	5%	1/16W
R602	1-216-803-11	METAL CHIP	33	5%	1/16W
R603	1-216-833-11	METAL CHIP	10K	5%	1/16W
R604	1-216-801-11	METAL CHIP	22	5%	1/16W
R605	1-216-801-11	METAL CHIP	22	5%	1/16W
R606	1-216-801-11	METAL CHIP	22	5%	1/16W
R607	1-216-801-11	METAL CHIP	22	5%	1/16W
R608	1-216-801-11	METAL CHIP	22	5%	1/16W
R609	1-216-801-11	METAL CHIP	22	5%	1/16W
R610	1-216-801-11	METAL CHIP	22	5%	1/16W
R611	1-216-801-11	METAL CHIP	22	5%	1/16W
R612	1-216-801-11	METAL CHIP	22	5%	1/16W
R613	1-216-801-11	METAL CHIP	22	5%	1/16W
R614	1-216-801-11	METAL CHIP	22	5%	1/16W
R615	1-216-801-11	METAL CHIP	22	5%	1/16W
R616	1-216-801-11	METAL CHIP	22	5%	1/16W
R617	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R618	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R619	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R620	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R621	1-216-821-11	METAL CHIP	1K	5%	1/16W
R622	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R623	1-216-801-11	METAL CHIP	22	5%	1/16W
R624	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R625	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R626	1-216-864-11	METAL CHIP	0	5%	1/16W
R627	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R628	1-216-833-11	METAL CHIP	10K	5%	1/16W
R629	1-216-833-11	METAL CHIP	10K	5%	1/16W
R630	1-216-864-11	METAL CHIP	0	5%	1/16W
R633	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R634	1-216-807-11	METAL CHIP	68	5%	1/16W
R635	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R642	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R643	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R644	1-216-809-11	METAL CHIP	100	5%	1/16W
R645	1-216-845-11	METAL CHIP	100K	5%	1/16W
R646	1-216-801-11	METAL CHIP	22	5%	1/16W
R647	1-216-801-11	METAL CHIP	22	5%	1/16W
R648	1-216-801-11	METAL CHIP	22	5%	1/16W
R649	1-216-801-11	METAL CHIP	22	5%	1/16W
R650	1-216-841-11	METAL CHIP	47K	5%	1/16W
R651	1-216-841-11	METAL CHIP	47K	5%	1/16W
R652	1-216-864-11	METAL CHIP	0	5%	1/16W
R653	1-216-845-11	METAL CHIP	100K	5%	1/16W
R654	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R655	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R660	1-216-864-11	METAL CHIP	0	5%	1/16W
R661	1-216-801-11	METAL CHIP	22	5%	1/16W
R662	1-216-801-11	METAL CHIP	22	5%	1/16W
R664	1-216-801-11	METAL CHIP	22	5%	1/16W
R665	1-216-801-11	METAL CHIP	22	5%	1/16W
R666	1-216-807-11	METAL CHIP	68	5%	1/16W
R667	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R668	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R669	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R670	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R671	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R672	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R673	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R674	1-216-801-11	METAL CHIP	22	5%	1/16W
R675	1-216-839-11	METAL CHIP	33K	5%	1/16W
R676	1-216-864-11	METAL CHIP	0	5%	1/16W
R677	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R678	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R679	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R680	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R681	1-218-851-11	METAL GLAZE	1.5K	0.50%	1/16W
R682	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R683	1-218-839-11	METAL GLAZE	470	0.50%	1/16W
R684	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R685	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R686	1-216-833-11	METAL CHIP	10K	5%	1/16W
R687	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R688	1-216-849-11	METAL CHIP	220K	5%	1/16W
R689	1-216-856-11	METAL CHIP	820K	5%	1/16W
R690	1-216-833-11	METAL CHIP	10K	5%	1/16W
R691	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R692	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R693	1-216-857-11	METAL CHIP	1M	5%	1/16W
R694	1-216-857-11	METAL CHIP	1M	5%	1/16W
R695	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R696	1-216-821-11	METAL CHIP	1K	5%	1/16W
R697	1-216-821-11	METAL CHIP	1K	5%	1/16W
R699	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R701	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R702	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
R703	1-216-821-11	METAL CHIP	1K	5%	1/16W
R704	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R705	1-216-829-11	METAL CHIP	4.7K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R706	1-216-809-11	METAL CHIP	100	5%	1/16W
R708	1-216-801-11	METAL CHIP	22	5%	1/16W
R709	1-216-801-11	METAL CHIP	22	5%	1/16W
R710	1-216-801-11	METAL CHIP	22	5%	1/16W
R711	1-216-801-11	METAL CHIP	22	5%	1/16W
R712	1-216-809-11	METAL CHIP	100	5%	1/16W
R713	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R714	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R715	1-216-837-11	METAL CHIP	22K	5%	1/16W
R716	1-216-801-11	METAL CHIP	22	5%	1/16W
R717	1-216-801-11	METAL CHIP	22	5%	1/16W
R718	1-216-801-11	METAL CHIP	22	5%	1/16W
R719	1-216-864-11	METAL CHIP	0	5%	1/16W
R720	1-216-801-11	METAL CHIP	22	5%	1/16W
R721	1-216-809-11	METAL CHIP	100	5%	1/16W
R722	1-216-801-11	METAL CHIP	22	5%	1/16W
R723	1-216-801-11	METAL CHIP	22	5%	1/16W
R724	1-216-801-11	METAL CHIP	22	5%	1/16W
R725	1-216-801-11	METAL CHIP	22	5%	1/16W
R726	1-216-801-11	METAL CHIP	22	5%	1/16W
R727	1-216-801-11	METAL CHIP	22	5%	1/16W
R728	1-216-864-11	METAL CHIP	0	5%	1/16W
R729	1-216-864-11	METAL CHIP	0	5%	1/16W
R730	1-216-864-11	METAL CHIP	0	5%	1/16W
R731	1-216-833-11	METAL CHIP	10K	5%	1/16W
R734	1-216-864-11	METAL CHIP	0	5%	1/16W
R736	1-216-801-11	METAL CHIP	22	5%	1/16W
R737	1-216-801-11	METAL CHIP	22	5%	1/16W
R738	1-216-801-11	METAL CHIP	22	5%	1/16W
R739	1-216-801-11	METAL CHIP	22	5%	1/16W
R740	1-216-801-11	METAL CHIP	22	5%	1/16W
R741	1-216-801-11	METAL CHIP	22	5%	1/16W
R742	1-216-833-11	METAL CHIP	10K	5%	1/16W
R743	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R744	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R745	1-216-849-11	METAL CHIP	220K	5%	1/16W
R746	1-216-801-11	METAL CHIP	22	5%	1/16W
R747	1-216-801-11	METAL CHIP	22	5%	1/16W
R748	1-216-801-11	METAL CHIP	22	5%	1/16W
R749	1-216-801-11	METAL CHIP	22	5%	1/16W
R750	1-216-801-11	METAL CHIP	22	5%	1/16W
R751	1-216-821-11	METAL CHIP	1K	5%	1/16W
R752	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R753	1-216-833-11	METAL CHIP	10K	5%	1/16W
R754	1-216-851-11	METAL CHIP	330K	5%	1/16W
R755	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R756	1-216-864-11	METAL CHIP	0	5%	1/16W
R757	1-216-837-11	METAL CHIP	22K	5%	1/16W
R758	1-218-827-11	METAL GLAZE	150	0.50%	1/16W
R759	1-218-864-11	METAL GLAZE	5.1K	0.50%	1/16W
R760	1-216-821-11	METAL CHIP	1K	5%	1/16W
R761	1-216-864-11	METAL CHIP	0	5%	1/16W
R763	1-216-857-11	METAL CHIP	1M	5%	1/16W
R764	1-216-833-11	METAL CHIP	10K	5%	1/16W
R765	1-216-839-11	METAL CHIP	33K	5%	1/16W
R766	1-216-837-11	METAL CHIP	22K	5%	1/16W
R767	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R768	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R769	1-216-821-11	METAL CHIP	1K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R770	1-216-837-11	METAL CHIP	22K	5%	1/16W
R771	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R772	1-216-864-11	METAL CHIP	0	5%	1/16W
R774	1-216-864-11	METAL CHIP	0	5%	1/16W
R775	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R776	1-216-851-11	METAL CHIP	330K	5%	1/16W
R777	1-216-841-11	METAL CHIP	47K	5%	1/16W
R779	1-216-809-11	METAL CHIP	100	5%	1/16W
R780	1-216-821-11	METAL CHIP	1K	5%	1/16W
R781	1-216-837-11	METAL CHIP	22K	5%	1/16W
R782	1-216-864-11	METAL CHIP	0	5%	1/16W
R783	1-216-864-11	METAL CHIP	0	5%	1/16W
R784	1-216-864-11	METAL CHIP	0	5%	1/16W
R785	1-216-857-11	METAL CHIP	1M	5%	1/16W
R787	1-216-821-11	METAL CHIP	1K	5%	1/16W
R788	1-216-839-11	METAL CHIP	33K	5%	1/16W
R789	1-216-819-11	METAL CHIP	680	5%	1/16W
R790	1-216-833-11	METAL CHIP	10K	5%	1/16W
R791	1-216-833-11	METAL CHIP	10K	5%	1/16W
R793	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R794	1-216-809-11	METAL CHIP	100	5%	1/16W
R795	1-216-857-11	METAL CHIP	1M	5%	1/16W
R796	1-216-833-11	METAL CHIP	10K	5%	1/16W
R797	1-216-833-11	METAL CHIP	10K	5%	1/16W
R798	1-216-839-11	METAL CHIP	33K	5%	1/16W
R799	1-216-819-11	METAL CHIP	680	5%	1/16W
R800	1-216-821-11	METAL CHIP	1K	5%	1/16W
R801	1-216-833-11	METAL CHIP	10K	5%	1/16W
R802	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R803	1-216-833-11	METAL CHIP	10K	5%	1/16W
R804	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R805	1-216-837-11	METAL CHIP	22K	5%	1/16W
R806	1-216-833-11	METAL CHIP	10K	5%	1/16W
R807	1-216-833-11	METAL CHIP	10K	5%	1/16W
R808	1-216-833-11	METAL CHIP	10K	5%	1/16W
R809	1-216-833-11	METAL CHIP	10K	5%	1/16W
R812	1-216-835-11	METAL CHIP	15K	5%	1/16W
R815	1-218-446-11	METAL CHIP	1	5%	1/16W
R816	1-218-446-11	METAL CHIP	1	5%	1/16W
R817	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R818	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R819	1-218-446-11	METAL CHIP	1	5%	1/16W
R820	1-218-446-11	METAL CHIP	1	5%	1/16W
R821	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R822	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R823	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W
R824	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R825	1-218-863-11	METAL GLAZE	4.7K	0.50%	1/16W
R828	1-218-883-11	METAL GLAZE	33K	0.50%	1/16W
R829	1-216-833-11	METAL CHIP	10K	5%	1/16W
R831	1-216-833-11	METAL CHIP	10K	5%	1/16W
R833	1-216-855-11	METAL CHIP	680K	5%	1/16W
R834	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
R835	1-218-875-11	METAL GLAZE	15K	0.50%	1/16W
R837	1-216-837-11	METAL CHIP	22K	5%	1/16W
R838	1-216-839-11	METAL CHIP	33K	5%	1/16W
R839	1-218-903-11	METAL GLAZE	220K	0.50%	1/16W
R840	1-216-849-11	METAL CHIP	220K	5%	1/16W
R842	1-216-851-11	METAL CHIP	330K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R843	1-216-849-11	METAL CHIP	220K	5%	1/16W
R845	1-216-845-11	METAL CHIP	100K	5%	1/16W
R846	1-218-895-11	METAL GLAZE	100K	0.50%	1/16W
R847	1-218-862-11	METAL GLAZE	4.3K	0.50%	1/16W
R848	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R849	1-218-877-11	METAL GLAZE	18K	0.50%	1/16W
R850	1-216-821-11	METAL CHIP	1K	5%	1/16W
R853	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R854	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R855	1-218-871-11	METAL GLAZE	10K	0.50%	1/16W
R856	1-218-855-11	METAL GLAZE	2.2K	0.50%	1/16W
R857	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R858	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R859	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R860	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R861	1-216-798-11	METAL GLAZE	12	5%	1/16W
R862	1-216-797-11	METAL CHIP	10	5%	1/16W
R863	1-216-864-11	METAL CHIP	0	5%	1/16W
R864	1-216-864-11	METAL CHIP	0	5%	1/16W
R865	1-216-840-11	METAL CHIP	39K	5%	1/16W
R866	1-216-833-11	METAL CHIP	10K	5%	1/16W
R867	1-216-833-11	METAL CHIP	10K	5%	1/16W
R868	1-216-798-11	METAL GLAZE	12	5%	1/16W
R869	1-216-833-11	METAL CHIP	10K	5%	1/16W
R870	1-216-798-11	METAL GLAZE	12	5%	1/16W
R871	1-216-797-11	METAL CHIP	10	5%	1/16W
R872	1-216-864-11	METAL CHIP	0	5%	1/16W
R873	1-216-833-11	METAL CHIP	10K	5%	1/16W
R874	1-216-797-11	METAL CHIP	10	5%	1/16W
R875	1-216-833-11	METAL CHIP	10K	5%	1/16W
R876	1-216-797-11	METAL CHIP	10	5%	1/16W
R877	1-216-797-11	METAL CHIP	10	5%	1/16W
R878	1-216-797-11	METAL CHIP	10	5%	1/16W
R879	1-216-797-11	METAL CHIP	10	5%	1/16W
R880	1-216-833-11	METAL CHIP	10K	5%	1/16W
R881	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R882	1-216-841-11	METAL CHIP	47K	5%	1/16W
R883	1-216-797-11	METAL CHIP	10	5%	1/16W
R884	1-216-833-11	METAL CHIP	10K	5%	1/16W
R885	1-216-837-11	METAL CHIP	22K	5%	1/16W
R886	1-216-833-11	METAL CHIP	10K	5%	1/16W
R887	1-216-833-11	METAL CHIP	10K	5%	1/16W
R888	1-216-833-11	METAL CHIP	10K	5%	1/16W
R889	1-216-833-11	METAL CHIP	10K	5%	1/16W
R890	1-216-821-11	METAL CHIP	1K	5%	1/16W
R891	1-216-797-11	METAL CHIP	10	5%	1/16W
R892	1-216-797-11	METAL CHIP	10	5%	1/16W
R893	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R894	1-217-671-11	METAL CHIP	1	5%	1/10W
R895	1-216-854-11	METAL CHIP	560K	5%	1/16W
R896	1-216-839-11	METAL CHIP	33K	5%	1/16W
R897	1-217-671-11	METAL CHIP	1	5%	1/10W
R898	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R899	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R900	1-216-839-11	METAL CHIP	33K	5%	1/16W
R901	1-217-671-11	METAL CHIP	1	5%	1/10W
R902	1-216-841-11	METAL CHIP	47K	5%	1/16W
R903	1-216-833-11	METAL CHIP	10K	5%	1/16W
R904	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R905	1-216-864-11	METAL CHIP	0	5%	1/16W
R906	1-216-833-11	METAL CHIP	10K	5%	1/16W
R907	1-217-671-11	METAL CHIP	1	5%	1/10W
R908	1-216-864-11	METAL CHIP	0	5%	1/16W
R909	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R910	1-216-839-11	METAL CHIP	33K	5%	1/16W
R911	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R912	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R913	1-216-839-11	METAL CHIP	33K	5%	1/16W
R914	1-218-901-11	METAL GLAZE	180K	0.50%	1/16W
R917	1-216-864-11	METAL CHIP	0	5%	1/16W
R918	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R919	1-216-821-11	METAL CHIP	1K	5%	1/16W
R920	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W
R921	1-216-864-11	METAL CHIP	0	5%	1/16W
R922	1-216-864-11	METAL CHIP	0	5%	1/16W
R923	1-216-864-11	METAL CHIP	0	5%	1/16W
R924	1-218-907-11	METAL GLAZE	330K	0.50%	1/16W
R925	1-216-845-11	METAL CHIP	100K	5%	1/16W
R926	1-216-864-11	METAL CHIP	0	5%	1/16W
R927	1-216-864-11	METAL CHIP	0	5%	1/16W
R928	1-216-833-11	METAL CHIP	10K	5%	1/16W
R929	1-218-864-11	METAL GLAZE	5.1K	0.50%	1/16W
R930	1-216-857-11	METAL CHIP	1M	5%	1/16W
R931	1-216-857-11	METAL CHIP	1M	5%	1/16W
R932	1-216-845-11	METAL CHIP	100K	5%	1/16W
R933	1-216-845-11	METAL CHIP	100K	5%	1/16W
R937	1-216-864-11	METAL CHIP	0	5%	1/16W
R938	1-216-864-11	METAL CHIP	0	5%	1/16W
R939	1-216-864-11	METAL CHIP	0	5%	1/16W
R940	1-216-864-11	METAL CHIP	0	5%	1/16W
R941	1-216-864-11	METAL CHIP	0	5%	1/16W
R942	1-216-821-11	METAL CHIP	1K	5%	1/16W
R943	1-216-864-11	METAL CHIP	0	5%	1/16W
R944	1-216-821-11	METAL CHIP	1K	5%	1/16W
R945	1-216-864-11	METAL CHIP	0	5%	1/16W
R946	1-216-833-11	METAL CHIP	10K	5%	1/16W
R947	1-216-801-11	METAL CHIP	22	5%	1/16W
R948	1-216-833-11	METAL CHIP	10K	5%	1/16W
R949	1-216-833-11	METAL CHIP	10K	5%	1/16W
R950	1-216-833-11	METAL CHIP	10K	5%	1/16W
R951	1-216-801-11	METAL CHIP	22	5%	1/16W
R952	1-216-801-11	METAL CHIP	22	5%	1/16W
R953	1-216-801-11	METAL CHIP	22	5%	1/16W
R954	1-216-801-11	METAL CHIP	22	5%	1/16W
R955	1-216-801-11	METAL CHIP	22	5%	1/16W
R956	1-216-801-11	METAL CHIP	22	5%	1/16W
R957	1-216-801-11	METAL CHIP	22	5%	1/16W
R958	1-216-801-11	METAL CHIP	22	5%	1/16W
R959	1-216-801-11	METAL CHIP	22	5%	1/16W
R960	1-216-801-11	METAL CHIP	22	5%	1/16W
R961	1-216-801-11	METAL CHIP	22	5%	1/16W
R962	1-216-801-11	METAL CHIP	22	5%	1/16W
R963	1-216-801-11	METAL CHIP	22	5%	1/16W
R964	1-216-801-11	METAL CHIP	22	5%	1/16W
R965	1-216-801-11	METAL CHIP	22	5%	1/16W
R966	1-216-801-11	METAL CHIP	22	5%	1/16W

Ref. No.	Part No.	Description			Remark
R967	1-216-801-11	METAL CHIP	22	5%	1/16W
R968	1-216-801-11	METAL CHIP	22	5%	1/16W
R969	1-216-801-11	METAL CHIP	22	5%	1/16W
R970	1-216-801-11	METAL CHIP	22	5%	1/16W
R971	1-216-801-11	METAL CHIP	22	5%	1/16W
R972	1-216-801-11	METAL CHIP	22	5%	1/16W
R973	1-216-801-11	METAL CHIP	22	5%	1/16W
R974	1-216-801-11	METAL CHIP	22	5%	1/16W
R975	1-216-801-11	METAL CHIP	22	5%	1/16W
R976	1-216-801-11	METAL CHIP	22	5%	1/16W
R977	1-216-801-11	METAL CHIP	22	5%	1/16W
R978	1-216-801-11	METAL CHIP	22	5%	1/16W
R979	1-216-801-11	METAL CHIP	22	5%	1/16W
R980	1-216-801-11	METAL CHIP	22	5%	1/16W
R981	1-216-801-11	METAL CHIP	22	5%	1/16W
R982	1-216-801-11	METAL CHIP	22	5%	1/16W
R983	1-216-801-11	METAL CHIP	22	5%	1/16W
R984	1-216-801-11	METAL CHIP	22	5%	1/16W
R985	1-216-801-11	METAL CHIP	22	5%	1/16W
R986	1-216-801-11	METAL CHIP	22	5%	1/16W
R987	1-216-801-11	METAL CHIP	22	5%	1/16W
R988	1-216-801-11	METAL CHIP	22	5%	1/16W
R989	1-216-801-11	METAL CHIP	22	5%	1/16W
R990	1-216-801-11	METAL CHIP	22	5%	1/16W
R991	1-216-801-11	METAL CHIP	22	5%	1/16W
R992	1-216-801-11	METAL CHIP	22	5%	1/16W
R993	1-216-801-11	METAL CHIP	22	5%	1/16W
R994	1-216-809-11	METAL CHIP	100	5%	1/16W
R995	1-216-809-11	METAL CHIP	100	5%	1/16W
R996	1-216-833-11	METAL CHIP	10K	5%	1/16W
R997	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R998	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R999	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
* RB280	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB281	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB282	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB283	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB284	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB285	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB286	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB287	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB288	1-233-270-11	NETWORK, RES (8 GANG) 10K			
* RB289	1-233-270-11	NETWORK, RES (8 GANG) 10K			
		< VARIABLE RESISTOR >			
RV001	1-238-663-11	RES, ADJ, CARBON 4.7K			
RV479	1-238-663-11	RES, ADJ, CARBON 4.7K			
		< RESISTER >			
RZ005	1-216-801-11	METAL CHIP	22	5% 1/16W	

Ref. No.	Part No.	Description			Remark
RZ014	1-216-864-11	METAL CHIP	0	5% 1/16W	
RZ015	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
RZ016	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
RZ017	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
RZ018	1-216-801-11	METAL CHIP	22	5% 1/16W	
RZ020	1-216-833-11	METAL CHIP	10K	5% 1/16W	
RZ021	1-216-836-11	METAL CHIP	18K	5% 1/16W	(US/Canadian)
RZ021	1-216-832-11	METAL CHIP	8.2K	5% 1/16W (E)	
RZ031	1-216-817-11	METAL CHIP	470	5% 1/16W	
RZ032	1-216-821-11	METAL CHIP	1K	5% 1/16W	
RZ033	1-216-817-11	METAL CHIP	470	5% 1/16W	
RZ034	1-216-817-11	METAL CHIP	470	5% 1/16W	
RZ035	1-216-821-11	METAL CHIP	1K	5% 1/16W	
RZ036	1-216-821-11	METAL CHIP	1K	5% 1/16W	
RZ037	1-216-821-11	METAL CHIP	1K	5% 1/16W	
RZ038	1-216-821-11	METAL CHIP	1K	5% 1/16W	
RZ039	1-216-817-11	METAL CHIP	470	5% 1/16W	
RZ040	1-216-821-11	METAL CHIP	1K	5% 1/16W	
RZ051	1-216-864-11	METAL CHIP	0	5% 1/16W	
RZ053	1-216-841-11	METAL CHIP	47K	5% 1/16W	
RZ054	1-216-833-11	METAL CHIP	10K	5% 1/16W	
RZ055	1-216-831-11	METAL CHIP	6.8K	5% 1/16W	
RZ057	1-216-833-11	METAL CHIP	10K	5% 1/16W	
RZ060	1-216-864-11	METAL CHIP	0	5% 1/16W	
RZ061	1-216-843-11	METAL CHIP	68K	5% 1/16W	
RZ062	1-216-805-11	METAL CHIP	47	5% 1/16W	
RZ063	1-216-805-11	METAL CHIP	47	5% 1/16W	
RZ064	1-216-805-11	METAL CHIP	47	5% 1/16W	
RZ065	1-216-833-11	METAL CHIP	10K	5% 1/16W	
		< SWITCH >			
S001	1-571-275-11	SWITCH, SLIDE (CONTROL 1)			
S002	1-571-275-11	SWITCH, SLIDE (CONTROL 2)			
		< THERMISTOR >			
TH001	1-810-814-21	THERMISTOR, NTC (1608)			
TH002	1-810-814-21	THERMISTOR, NTC (1608)			
		< VIBRATOR >			
X001	1-767-402-21	VIBRATOR, CRYSTAL (22.5792MHz)			
X002	1-767-399-11	VIBRATOR, CRYSTAL (24.576MHz)			
X003	1-767-401-11	VIBRATOR, CRYSTAL (27MHz)			
X004	1-578-689-21	VIBRATOR (8MHz)			
X005	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)			
X090	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)			
X280	1-767-474-21	OSCILLATOR, CRYSTAL (66MHz)			

Ref. No.	Part No.	Description			Remark
*	A-6065-025-A	PS-393 BOARD, COMPLETE (US/Canadian)			
*	A-6065-000-A	PS-393 BOARD, COMPLETE (E)			
		**********			
					(Ref.No. 4,000 Series)
	1-533-223-11	HOLDER, FUSE			
		< CAPACITOR >			
⚠C902	1-104-705-11	FILM	0.1uF	20%	250V
C951	1-130-467-00	MYLAR	470PF	5%	50V
C952	1-124-523-11	ELECT	4700uF	20%	16V
C953	1-124-563-11	ELECT	2200uF	20%	25V
C954	1-124-721-11	ELECT	10uF	20%	50V
C955	1-124-721-11	ELECT	10uF	20%	50V
C957	1-124-721-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
⚠CN901	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
⚠CN902	1-564-321-21	PIN, CONNECTOR 2P			
⚠CN903	1-564-321-00	PIN, CONNECTOR 2P			
* CN951	1-564-241-11	PIN, CONNECTOR (B4P-VH) 4P			
* CN952	1-564-509-11	PLUG, CONNECTOR 6P			
		< DIODE >			
⚠D951	8-719-210-21	DIODE 11EQS04			
⚠D952	8-719-210-21	DIODE 11EQS04			
⚠D953	8-719-210-21	DIODE 11EQS04			
⚠D954	8-719-210-21	DIODE 11EQS04			
⚠D955	8-719-914-44	DIODE DAP202K			
		< EARTH TERMINAL >			
* ET951	1-537-738-21	TERMINAL, EARTH			
		< FILTER >			
FL951	1-235-096-00	FILTER, LINE			
FL952	1-235-096-00	FILTER, LINE			
⚠LF901	1-424-656-11	FILTER, LINE			
		< IC >			
⚠IC951	8-759-701-59	IC NJM78M09FA			
⚠IC953	8-759-245-86	IC TA7912S			
		< COIL >			
L951	1-407-500-00	INDUCTOR	4.7mH		
		< RESISTOR >			
R951	1-216-097-91	METAL GLAZE	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
*	A-6065-030-A	TT-701 BOARD, COMPLETE			
		**********			
					(Ref.No. 5,000 Series)
		< CAPACITOR >			
C001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C002	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C005	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C011	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C014	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C015	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C020	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C025	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C026	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C027	1-162-964-11	CERAMIC CHIP	Q.001uF	10%	50V
C028	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C029	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C030	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C031	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C032	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C033	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C034	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C035	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C036	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C037	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C038	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C039	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C040	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C041	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C042	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C043	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C044	1-164-172-11	CERAMIC CHIP	0.0056uF	10%	25V
C045	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C046	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C047	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C048	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C049	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C050	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C051	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C052	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C053	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C054	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C055	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C056	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C057	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C058	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C059	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C060	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C061	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C062	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C063	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C065	1-104-851-11	TANTAL. CHIP	10uF	20%	10V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

Ref. No.	Part No.	Description			Remark
C067	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C068	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C070	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C072	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C073	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C074	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C075	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C076	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C077	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C084	1-104-852-11	TANTAL. CHIP	22uF	20%	10V
C085	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C086	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C087	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C088	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C089	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN001	1-779-342-21	CONNECTOR, FFC/FPC 42P			
* CN002	1-695-154-11	SOCKET, CONNECTOR 18P			
* CN003	1-764-895-21	SOCKET, CONNECTOR 10P			
CN004	1-580-055-21	PIN, CONNECTOR 2P			
CN005	1-779-341-11	CONNECTOR, FFC/FPC 23P			
CN006	1-779-341-11	CONNECTOR, FFC/FPC 23P			
CN007	1-779-341-11	CONNECTOR, FFC/FPC 23P			
		< DIODE >			
D001	8-719-404-49	DIODE MA111			
D002	8-719-404-49	DIODE MA111			
D003	8-719-421-27	DIODE MA728			
		< IC >			
IC001	8-759-449-56	IC SSI33P3720			
IC002	8-752-069-93	IC CXA1791M-T6			
IC003	8-759-701-39	IC NJM3404AM			
IC004	8-759-701-39	IC NJM3404AM			
IC005	8-759-062-66	IC TC7S66F(TE85R)			
		< COIL >			
L001	1-412-031-11	INDUCTOR CHIP	47uH		
L002	1-412-031-11	INDUCTOR CHIP	47uH		
L003	1-412-031-11	INDUCTOR CHIP	47uH		
L005	1-409-529-41	COIL, CHOKE	10uH		
		< PHOTO INTERRUPTER >			
PH001	8-749-011-97	PHOTO INTERUPTER GP1S93			
		< TRANSISTOR >			
Q001	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q002	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q003	8-729-805-25	TRANSISTOR	2SB1121		
Q004	8-729-805-25	TRANSISTOR	2SB1121		
Q005	8-729-805-25	TRANSISTOR	2SB1121		
Q007	8-729-230-63	TRANSISTOR	2SC4116-YG		
Q008	8-729-015-76	TRANSISTOR	UN5211-TX		
Q009	8-729-230-63	TRANSISTOR	2SC4116-YG		

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R001	1-216-809-11	METAL CHIP	100	5%	1/16W
R002	1-211-992-11	METAL GLAZE	91	0.50%	1/16W
R005	1-216-815-11	METAL CHIP	330	5%	1/16W
R006	1-216-841-11	METAL CHIP	47K	5%	1/16W
R007	1-216-833-11	METAL CHIP	10K	5%	1/16W
R008	1-216-810-11	METAL CHIP	120	5%	1/16W
R009	1-216-810-11	METAL CHIP	120	5%	1/16W
R010	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R011	1-216-850-11	METAL CHIP	270K	5%	1/16W
R012	1-216-833-11	METAL CHIP	10K	5%	1/16W
R015	1-216-839-11	METAL CHIP	33K	5%	1/16W
R017	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R018	1-216-845-11	METAL CHIP	100K	5%	1/16W
R021	1-216-845-11	METAL CHIP	100K	5%	1/16W
R022	1-216-847-11	METAL CHIP	150K	5%	1/16W
R027	1-216-154-00	METAL GLAZE	15	5%	1/8W
R028	1-216-821-11	METAL CHIP	1K	5%	1/16W
R029	1-216-797-11	METAL CHIP	10	5%	1/16W
R030	1-216-817-11	METAL CHIP	470	5%	1/16W
R031	1-216-833-11	METAL CHIP	10K	5%	1/16W
R032	1-216-845-11	METAL CHIP	100K	5%	1/16W
R034	1-218-896-11	METAL GLAZE	110K	0.50%	1/16W
R035	1-218-896-11	METAL GLAZE	110K	0.50%	1/16W
R036	1-216-154-00	METAL GLAZE	15	5%	1/8W
R037	1-216-856-11	METAL CHIP	820K	5%	1/16W
R038	1-216-856-11	METAL CHIP	820K	5%	1/16W
R039	1-216-820-11	METAL CHIP	820	5%	1/16W
R040	1-216-797-11	METAL CHIP	10	5%	1/16W
R041	1-216-837-11	METAL CHIP	22K	5%	1/16W
R042	1-216-837-11	METAL CHIP	22K	5%	1/16W
R043	1-216-864-11	METAL CHIP	0	5%	1/16W
R044	1-216-845-11	METAL CHIP	100K	5%	1/16W
R045	1-216-864-11	METAL CHIP	0	5%	1/16W
R046	1-216-845-11	METAL CHIP	100K	5%	1/16W
R047	1-216-834-11	METAL CHIP	12K	5%	1/16W
R048	1-216-851-11	METAL CHIP	330K	5%	1/16W
R049	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R050	1-216-817-11	METAL CHIP	470	5%	1/16W
R051	1-216-833-11	METAL CHIP	10K	5%	1/16W
R052	1-218-872-11	METAL GLAZE	11K	0.50%	1/16W
R053	1-218-859-11	METAL GLAZE	3.3K	0.50%	1/16W
R054	1-216-837-11	METAL CHIP	22K	5%	1/16W
R055	1-216-821-11	METAL CHIP	1K	5%	1/16W
R056	1-216-857-11	METAL CHIP	1M	5%	1/16W
R057	1-216-864-11	METAL CHIP	0	5%	1/16W
R058	1-216-864-11	METAL CHIP	0	5%	1/16W
R059	1-216-864-11	METAL CHIP	0	5%	1/16W
R060	1-216-864-11	METAL CHIP	0	5%	1/16W
R061	1-216-864-11	METAL CHIP	0	5%	1/16W
R062	1-216-815-11	METAL CHIP	330	5%	1/16W
R063	1-216-809-11	METAL CHIP	100	5%	1/16W
R064	1-216-833-11	METAL CHIP	10K	5%	1/16W
R065	1-216-833-11	METAL CHIP	10K	5%	1/16W
R066	1-216-864-11	METAL CHIP	0	5%	1/16W
R067	1-216-864-11	METAL CHIP	0	5%	1/16W
R068	1-216-864-11	METAL CHIP	0	5%	1/16W
R069	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remark
R070	1-216-821-11	METAL CHIP	1K	5%	1/16W
R071	1-216-841-11	METAL CHIP	47K	5%	1/16W
R075	1-216-814-11	METAL CHIP	270	5%	1/16W
R077	1-216-833-11	METAL CHIP	10K	5%	1/16W
R078	1-216-833-11	METAL CHIP	10K	5%	1/16W
R082	1-216-864-11	METAL CHIP	0	5%	1/16W
R083	1-216-864-11	METAL CHIP	0	5%	1/16W
R088	1-216-837-11	METAL CHIP	22K	5%	1/16W
R090	1-216-833-11	METAL CHIP	10K	5%	1/16W
R091	1-216-841-11	METAL CHIP	47K	5%	1/16W
R092	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R093	1-216-833-11	METAL CHIP	10K	5%	1/16W
R095	1-216-853-11	METAL CHIP	470K	5%	1/16W
R096	1-216-851-11	METAL CHIP	330K	5%	1/16W
R097	1-216-837-11	METAL CHIP	22K	5%	1/16W
R098	1-216-821-11	METAL CHIP	1K	5%	1/16W
R099	1-216-837-11	METAL CHIP	22K	5%	1/16W
R100	1-216-837-11	METAL CHIP	22K	5%	1/16W
R101	1-216-864-11	METAL CHIP	0	5%	1/16W
R102	1-216-809-11	METAL CHIP	100	5%	1/16W
		< SWITCH >			
S001	1-771-046-11	SWITCH, PUSH LEVER (TRAY)			

MISCELLANEOUS
****

55	1-782-406-11	CABLE, FLEXIBLE FLAT (FFF-15) 8P
65	1-782-197-11	CABLE, FLEXIBLE FLAT (FFD-1)
67	1-782-198-11	CABLE, FLEXIBLE FLAT (FDC-3)
69	1-475-109-11	BLOCK, TOUCH SWITCH
106	1-782-195-11	CABLE, FLEXIBLE FLAT (FFF-13)
108	1-782-194-11	CABLE, FLEXIBLE FLAT (FFM-15)
109	1-782-191-11	CABLE, FLEXIBLE FLAT (FTM-3)
111	1-782-193-11	CABLE, FLEXIBLE FLAT (FAM-5)
112	1-782-192-11	CABLE, FLEXIBLE FLAT (FAM-4)
⚠120	1-468-199-11	POWER BLOCK (SWITCHING REGULATOR) (US, Canadian)
⚠120	1-468-200-11	POWER BLOCK (SWITCHING REGULATOR)(E)
* 121	1-543-830-11	CLAMP, SLEEVE FERRITE
⚠207	8-820-005-01	OPTICAL PICK-UP KHS-180A/J1N
208	1-665-390-11	OP-15 FLEXIBLE BOARD
212	1-665-327-11	LT-31 FLEXIBLE BOARD
217	8-749-013-33	IC KU160 (CD SENSOR)
⚠CNP901	1-558-568-21	CORD, POWER (E)
⚠CNP901	1-559-583-21	CORD, POWER (US, Canadian)
⚠F001	1-532-203-00	FUSE, TIME-LAG (E)
⚠F001	1-532-743-11	FUSE, GLASS TUBE (US, Canadian)
M501	X-3947-137-1	MOTOR ASSY, SLED
M901	1-698-944-11	MOTOR, DC (SPINDLE)
M902	X-3947-138-1	MOTOR ASSY, SKEW
M903	1-698-348-31	MOTOR, DC (LOADING)

Ref. No.	Part No.	Description	Remark
⚠T901	1-431-174-11	TRANSFORMER, POWER (US, Canadian)	
⚠T901	1-431-175-11	TRANSFORMER, POWER (E)	

ACCESSORIES & PACKING MATERIALS
****

	1-475-086-21	COMMANDER, STANDARD (RMT-D100A) (US, Canadian)
	1-475-086-31	COMMANDER, STANDARD(RMT-D100E) (E)
	1-775-454-21	CORD, CONNECTION (AUDIO 1.5 m) (US, Canadian)
	1-776-078-31	CORD, CONNECTION (S-VIDEO CABLE 1.5m)
	1-782-149-11	CORD, CONNECTION (VIDEO CABLE 1.5m)
	1-782-150-11	CORD, CONNECTION (AUDIO (STEREO) CABLE 1.5m)
	3-694-922-01	SHEET, PROTECTION
	3-859-359-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, Canadian)
	3-859-359-21	MANUAL, INSTRUCTION (ENGLISH, CHINESE) (E)
*	3-975-586-01	INDIVIDUAL CARTON (US,Canadian)
*	3-975-586-11	INDIVIDUAL CARTON (E)
*	3-975-591-01	CUSHION
	9-939-686-01	LID, BATTERY CASE (for RMT-100A/D100E)

****
HARDWARE LIST
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#1	7-685-663-79	SCREW +BVTP 4X16 TYPE2 IT-3
#2	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3
#4	7-682-645-01	SCREW +PS 3X4
#5	7-624-106-04	STOP RING 3.0, TYPE -E
#6	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT
#7	7-627-852-08	SCREW,PRECISION +P 1.7X2.5
#8	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT
#9	7-627-852-17	+P 1.7X4

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

9-921-627-11

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