

MDP-K5

RMT-M11A

SERVICE MANUAL

US Model
Canadian Model



SPECIFICATIONS

Type
Signal readout
Signal format system
Playing time

CD/CDV/LD Player
Optical (Laser beam reflection)
EIA standard, NTSC color system
(minutes)

LD	CAV	30 cm (12 in) double-sided	60
		20 cm (8 in) double-sided	28
		20 cm (6 in) single-sided	14
	CLV	30 cm (12 in) double-sided	120
		20 cm (8 in) double-sided	40
		20 cm (8 in) single-sided	20
CD	12 cm (5 in) single-sided	74	
	8 cm (3 in) single-sided	20	
CDV	Audio portion	20	
	Video portion	5	
Video single disc	12 cm (5 in) single-sided	5	

Digital audio specifications

Frequency response 4 Hz to 20 kHz
(+0.5 dB/−1.0 dB)
Signal-to-noise ratio 100 dB (EIAJ)*
Total harmonic distortion 0.005% (EIAJ)
Wow and flutter Below measurement limit
(±0.001% W.PEAK) (EIAJ)
Digital key control ±2 notes (17 steps)

Video specifications

Horizontal video resolution 425 lines
Signal-to-noise ratio More than 48 dB

Input/output specifications

MIC 1/MIC 2 jack Standard jack
1 mV (Impedance below 1 kΩ)
MIC control jack Applicable to karaoke
microphone (F-KM1, etc)
Video output 1, 2 1.0 Vp-p, 75 ohms, unbalanced
Video output 1.0 Vp-p, 75 ohms.
Audio output 1, 2 Stereo L, R
Analog: 200 mVrms
(1 kHz, 40% modulation)
Audio output Monaural (only for RFU adaptor)
MIX output: 77.5 mVrms
(1 kHz, −20 dB)
RFU DC output Mini mini jack DC 5 V
AUX audio input 47 kΩ

— Continued on next page —

CD VIDEO CD/CDV/LD/PLAYER
SONY®

Headphone output 28 mW (32 ohms)
Impedance = more than 8 ohms

Power requirements

Power requirements 120 V AC, 60 Hz
Power consumption 49 W
Weight 9.3 kg (20 lb 8 oz)
Dimensions Approx. 430 × 140 × 420 mm
(w/h/d) (17 × 5¹/₂ × 16⁵/₈ in)
Operating temperature +5°C to +35°C
Ambient humidity 5% to 90%

Remote Commander RMT-M11A

Principle of operation Infrared pulse
Power requirements 3 V DC (2 size AA batteries)
Dimensions Approx. 62 × 44.5 × 185 mm
(w/h/d)
(2⁷/₁₆ × 1¹³/₁₆ × 7³/₈ in)
Approx. 160 g (6 oz)
(including batteries)

Supplied accessories

Remote Commander RMT-M11A (1)
Size AA (R6) batteries for remote commander (2)
Karaoke microphone F-KM1 (1)
RFU adaptor RFU-90UC
Video cable (phono plug 1 ↔ phono plug 1) (1)
Audio cable (phono plug 2 ↔ phono plug 2) (1)

Design and specifications are subject to change without notice.

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 of 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 COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

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

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

LEAKAGE TEST

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

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, 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)

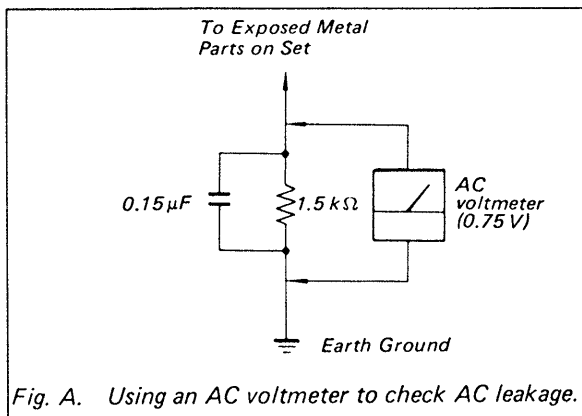


Fig. A. Using an AC voltmeter to check AC leakage.

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SECTION 1 GENERAL

This section is extracted from instruction manual.

Introduction

This introduction explains the organization of this manual and the principles of operation for the Multi-Disc Player (MDP).

About These Instructions

Consumer electronics manuals have been notorious for being hard to comprehend. Having recognized this fact, we have made an attempt with this manual to avoid the usual pitfalls by trying not to pretend that the equipment being described is as simple as a bread toaster. Most likely this is your first Multi-Disc Player and may be the only one you will own. With this in mind, we have striven to write the instructions in straight-forward English while trying to keep the procedures simple and systematic.

Because the Multi-Disc Player is capable of playing laser discs (LDs), compact discs (CDs), and compact disc videos (CDVs), the instructions are divided into the equivalent of three "manuals" - one for each type of disc - with a fourth section providing instructions common to all discs. The following summarizes what you'll find in this manual.

Karaoke Features

Karaoke microphone

The Karaoke microphone (supplied) enhances Karaoke entertainment with features like Repeat and Key control.

20 Direct select buttons

You can play any given selection quickly and easily by simply pressing the number of that selection.

Digital surround selector

The digitally enhanced surround effects can be used are available for all types of music, and three more are available especially for Karaoke use.

Digital key control

Use this feature to adjust the music to your singing tone. Controls are located on the player, the Remote Commander and the Karaoke microphone.

Selection Reservation

For non-stop Karaoke entertainment, use this feature to reserve the next selection while one is already being played.

Assistant vocal feature

This feature lets you listen to the singer's voice through the headphones while the audience hears only your voice from the speakers. Great for practice or to pick up a new song in a short time.

Vocal balance control

The vocal balance control is exclusively for multiplex recorded Karaoke discs. It lets you control the volume of the singer's voice and is useful when you lose the melody or want to practice.

Hi-Fi Karaoke mode

This feature is exclusively for MULTI AUDIO recorded Karaoke discs. In Hi-Fi Karaoke mode, the digitally recorded instrumental portion can be played in stereo while you adjust the mixing balance of the analog recorded vocals with the VOCAL BALANCE knob.

Auxiliary functions like surround sound are briefly described in "Front and Rear Panel Controls and Supplied Accessories" (pages 8, 9).

What to Do Next

Once you have read through this page, read "The Principles of Operation" (page 6), then go ahead and connect up the Multi-Disc Player to your television and/or stereo system using the connection diagrams on pages 12 and 13. After you have done this, you will be ready to play a disc. We suggest an LD or CD. Begin with the section, "How to Load and Play an LD (or a CD)".

AUX inputs

Other auxiliary equipment such as tape decks can also be used to playback Karaoke music. You can still use the Key Control and Karaoke Pon features as you would with discs.

Karaoke Pon

Karaoke Pon instantly removes the vocals from most stereo recorded disc/tape for instant Karaoke fun.

Orasuke vocal feature

This feature is inactive while you're singing from the microphone, but when you're not and you should, it helps you sing the original singer's voice. This feature is also good for singing by yourself. You sing the part of the male (or female) and the other half comes in for you. But this feature is not good for singing duets with your partner.

To Play a Laser Disc (LD)

This section covers all functions associated with playing LDs (page 20). Unique to LD play are STILL/STEP, MULTI SPEED play, and FRAME/TIME Search.

To Play a Compact Disc (CD)

This section explains the operation of CDs and compares most closely to CDV audio operations (page 29).

To Play a Compact Disc Video (CDV)

This section covers procedures for CDV operation and shares many functions with CD play (page 35). There are no functions unique to CDV play in this MDP.

To Play Any Disc (LD, CD, CDV)

Most of the procedures in this section fall into the advanced category (see page 37) and are collected here because they are common to LD, CD and CDV play.

The Principles of Operation

Beyond the play of discs, the functions of the Multi Disc Player range from simple to advanced. Some functions vary depending on what type of disc (laser disc, compact disc, or compact disc video) you are playing. Nevertheless, keep in mind that the majority of the buttons have been designed to achieve a comparable effect for each type of disc you are playing. Therefore, the following paragraphs can briefly summarize what the basic Multi Disc Player functions allow you to do. (Control names that differ from the function name appear in uppercase letters.)

Primary Functions are so-called because they entail the traditional functions of all disc players.

Karaoke Functions provide Karaoke entertainment using Karaoke laser discs and compact discs, or by converting regular stereo recorded discs into Karaoke discs. These functions can also be used with auxiliary equipment like tape decks.

Variable Speed group operations according to the fact that they let you vary play speed, therefore, easily locate ("search") scenes or tracks as you watch or listen.

Repeatable Functions are memory functions that let you play selections repeatedly, according to a play list, or randomly. Because the system finds and plays selections according to your request, some repeatable functions also serve as "search" functions.

Auxiliary Functions are additional functions that simply add to what you can do with the Multi Disc Player.


Primary Functions	Karaoke Functions	Variable Speed Functions	Repeatable Functions	Auxiliary Functions
Power Open/Close Play Pause Stop	Next Selection Reserve (RESERVE) Singing Tone (KEY CONTROL) Voice Control (MIC KEY CONTROL, DIGITAL ECHO) Karaoke with Regular Discs (KARAOKE PON) Practice Features: (ASSISTANT VOCAL, VOCAL BALANCE) Vocal Support Feature (OTASUKE VOCAL) Karaoke with Auxiliary Equipment (INPUT SELECTOR) Atmosphere Control Feature (SURROUND)	Variable Speed Scan (SHUTTLE RING) Still/Step Scan Variable Speed Play (MULTI SPEED)	Pre-Programmed Play (AUTO PGM. PGM) Intro Scan (INTRO) Random Play (SHUFFLE) Index play (CUSTOM INDEX) Chapter/Track Search (ACS/AMS) Frame/Time Search (FRAME/TIME) Auto Pause (A PAUSE/A SPACE) Repeat Play (1/ALL, REPEAT, REPEAT A--B)	Picture Enhance Sound Quality Functions: (AUDIO MONITOR, ANALOG, CX) On-Screen Display (DISPLAY) Audio/Video Time Counter (AV TIME)

Introduction to Your Player

The MDP-K5 Multi Disc Player integrates the functions of three machines in one: laser disc, compact disc, and compact disc video player. The entertainment potential afforded by the combined capabilities of this multi-faceted machine amount to some 35 to 40 functions. Below follows an illustration of the kinds of discs the Multi Disc Player plays.

The MDP-K5 Plays Three Classes of Optical/Digital Discs*

The MDP-K5 Multi Disc Player plays all three types of optical discs currently available for home entertainment. The following table illustrates their types and features.

Disc Class	Disc Logo	Disc Type	Size	Play Side	Play Time
Laser Discs For movies, operas, and concerts		LD Single	8 in. (20 cm)	Single Side	CAV 14 min CLV 20 min
		8-inch LD	8 in. (20 cm)	Double Side	CAV 28 min CLV 40 min
		12-inch LD	12 in. (30 cm)	Double Side	CAV 1 hr CLV 2 hr
Compact Discs For music		CD Single	3 in. (8 cm)	Single	20 min
		CD	5 in. (12 cm)	Single	74 min
Compact Disc Videos For music videos and educational material (Digital Audio)		CDV	5 in. (12 cm)	Single	Video+Audio 5 min Audio 20 min
		VSD	5 in. (12 cm)	Single	Video+Audio 5 min

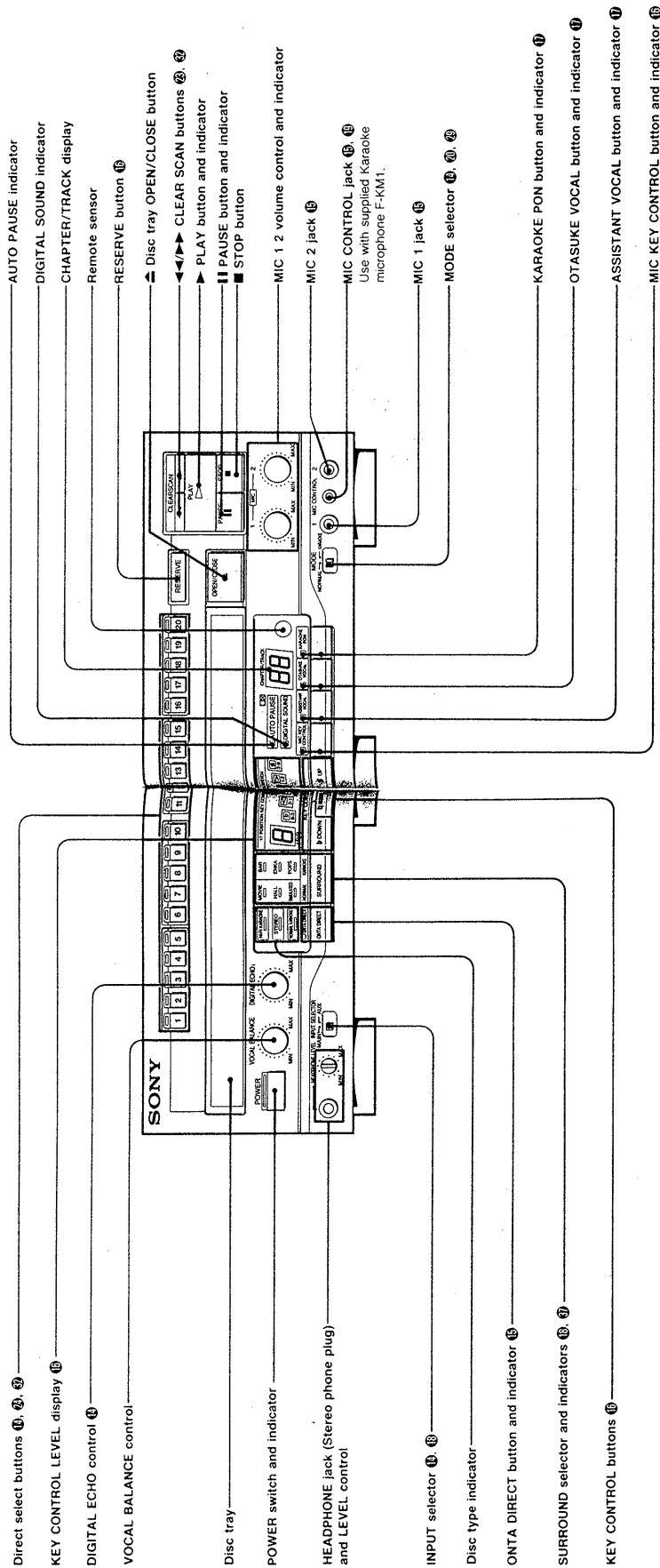
* These apply only to those discs recorded in the NTSC standard. The MDP-K5 cannot play CED, VHD discs, PAL video discs, CD-ROM, CD-Graphics discs, CDI discs or aluminum-lined disc.

Multi Audio Discs

On laser discs bearing this logo, the analog tracks are recorded in multiplex, and the digital tracks are recorded in stereo. This player automatically detects the type of disc loaded in the unit. If the disc is a MULTI AUDIO laser disc, the Hi-Fi KARAOKE indicator will turn on.

Front and Rear Panel Controls and Supplied Accessories

Front Panel



Accessories

Make sure the shipping box contains the following accessories:



Remote Commander



Two size AA (R6) batteries



Video connecting cord
(phone plug 1 ↔ phone plug 1 Yellow)



Audio connecting cord
(phone plug 2 ↔ phone plug 2 Red/White)

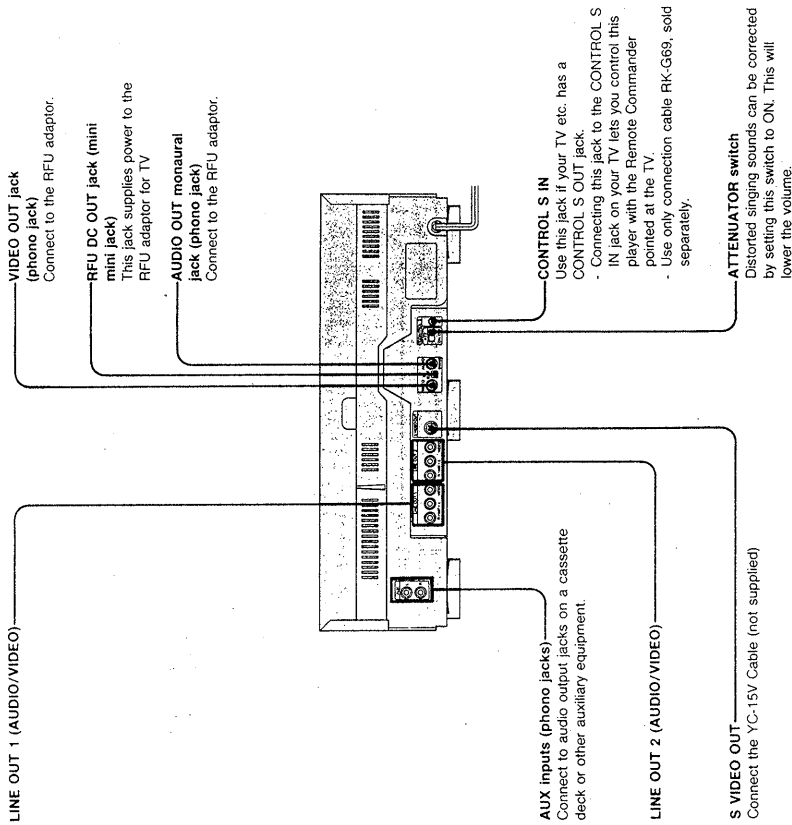


RFU adaptor RFU-90UC (1)



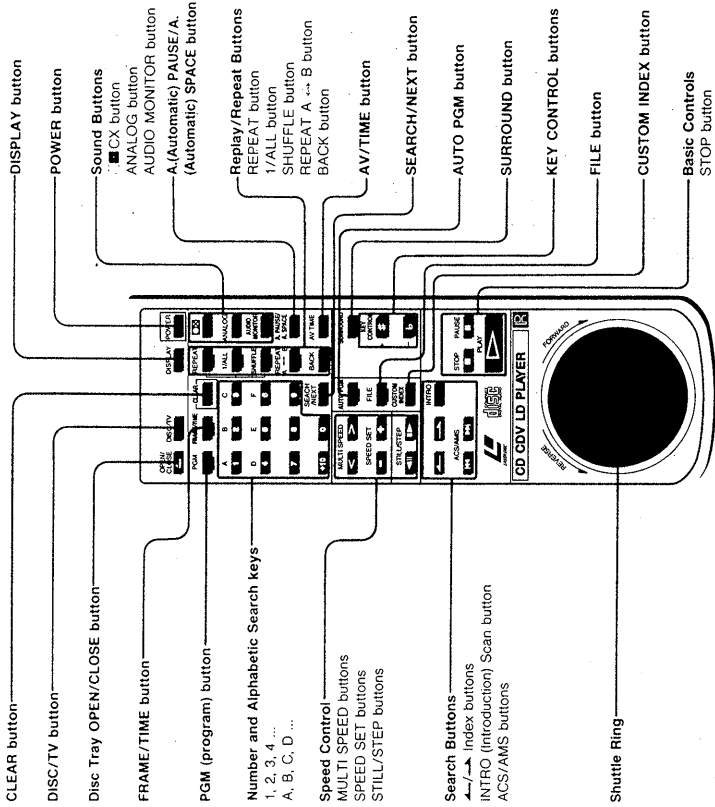
Karaoke microphone (1)

Rear Panel



Controls on the Remote Commander

You can use the Remote Commander (the Remote) to control the player or the identical buttons on the player itself.

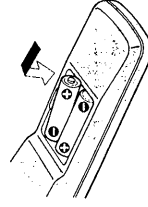


To Activate the Remote Commander

Open the back cover, and insert two size AA (R6) batteries according to the polarity indicated in the illustration. The batteries will last for about 6 months. If the range of the Remote Commander becomes noticeably short, replace all the batteries with new ones. If the Remote Commander is not to be used for a long time, remove the batteries to avoid damage from possible battery leakage.

Remote Commander Precautions

Do not let sunlight or powerful artificial light fall directly on the Remote Commander Sensor on the front panel of the player as it may interfere with Remote Commander operation or damage the sensor.



Insert two size AA (R6) batteries.

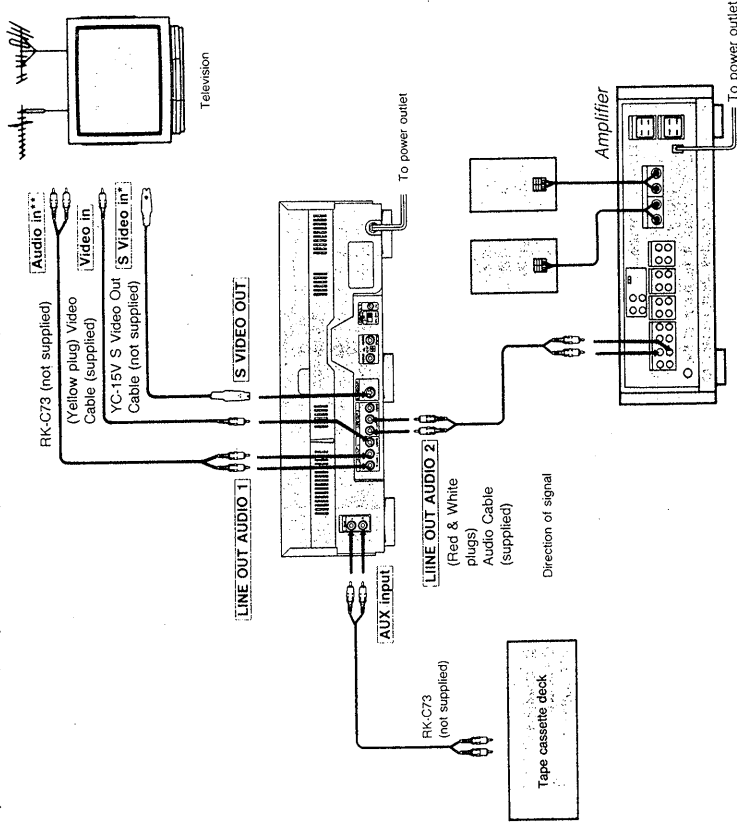
How to Connect the Television and Audio Equipment

To play LDs or CDs, hook up a television to the Multi Disc Player. Before connecting or disconnecting any of the below cables, turn off all equipment.

To achieve full stereo sound from your Multi Disc Player, hook up a stereo speaker system following the diagram below. Take out the supplied red and white audio connecting cable and use this to connect the Multi Disc Player to your amplifier or receiver.

Television and Audio Equipment Hook-Up

Take out the supplied yellow video connecting cable, and the red and white audio cable. Use these cables to connect the player to the television. Once you have hooked up the television, set the input selector on the TV to "Video".

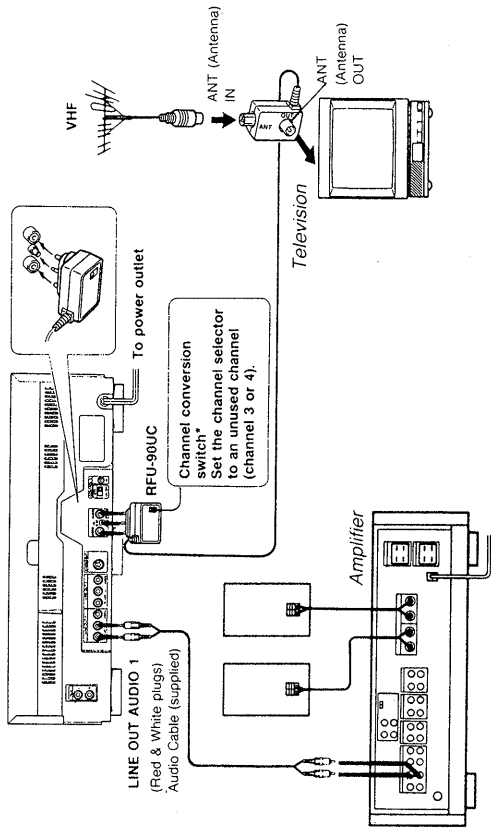


Connecting Notes:

- Connection methods may differ; when in doubt about a connection consult the TV or VCR manufacturer's manual.
- If noise emits from the video or audio input, try moving the equipment farther apart.
- Firmly insert plugs into the jacks. A loose connection may cause noise.
- To prevent interference with TV broadcast reception, turn off all equipment connected but not currently in use.
- If your TV has an S Video Input jack, obtain a YC-15V S Video Connecting Cable, and use this instead of the supplied video cable to connect your television to the S VIDEO OUT connector on the Multi Disc Player.
- If the TV only has a monaural phono jack for audio input, use a VMC-720M/730M Connecting Cable (not supplied).

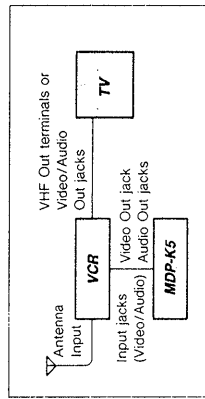
When Your TV Does Not Have Audio/Video Inputs

For connection, use the supplied RFU adaptor RFU-90UC.



* After connecting the cable, set the channel conversion switch at the rear to an unused channel, 3CH or 4CH. To receive the playback picture of the Laser disc, you must set the switch to unused position.

Television/VCR Hook-Up



Connect to the external video/audio inputs of a VCR.

To enjoy stereo sound

The audio signal of the disc is reproduced in monaural when connected to the TV via the RFU-90UC. To enjoy the disc in stereo, connect the player to an audio system.

Why is it necessary to select 3 or 4?

The Multi disc player sends its output to the TV as a VHF broadcast signal. Selecting an unused channel avoids interfering with regular broadcasts. When watching regular TV programs, turn the player off or press the TV/DISC button on the Remote Commander so that you can obtain a better picture. If TV picture quality is not satisfactory, refer to the manufacturer's manual and adjust the reception.

To Play a Karaoke

To Enjoy Karaoke

1 Turn on the TV and stereo system

TV Select the channel used for videocassette playback (channel 3 or 4) or the video input. (See p. 18.)
Stereo system. Turn on the amplifier or receiver and select CD or AUX for audio output.

2 Turn on the player



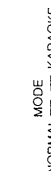
Lights up.

3 Set the INPUT SELECTOR to MAIN



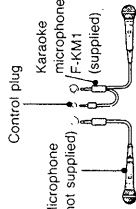
Select AUX when playing from a tape deck or other auxiliary device.

4 Set the MODE selector to KARAOKE



5 Connecting the wired microphone

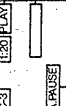
Connect the microphone to the MIC 1 or MIC 2 jacks. The Karaoke microphone allows you to repeat singing and change the key to a song. If two control microphones are used, insert the control plug of either MIC 1 or MIC 2 to the MIC CONTROL jack. (The above controls are only available on the microphone connected to the control jack.)



Display information

The following information is displayed by pressing the DISPLAY on the remote commander.

Current track number
 or time number
 Playing mode
 Sound effect (see table below)



Set mode

* Disc without time data to the second will be indicated as "0:22".

Sound effects

Display	Action
BAR	
KARAOKE	
SPKS	Press SURROUND button
SURROUND	
OFF	
TRC KEY 0	Press MIC KEY CONTROL button
KEY	Press MIC KEY CONTROL button
KARAOKE PON	Press KARAOKE POK button
OTASUKE	Press OTASUKE VOCAL button
VOCAL	Press ASSISTANT VOCAL button

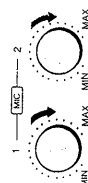
11 Adjust the microphone echo

Adjust the strength of the echo with the digital echo control. This cannot be used while using MIC KEY CONTROL.



10 Adjust the microphone volume

Adjust the volume for each respective microphone.

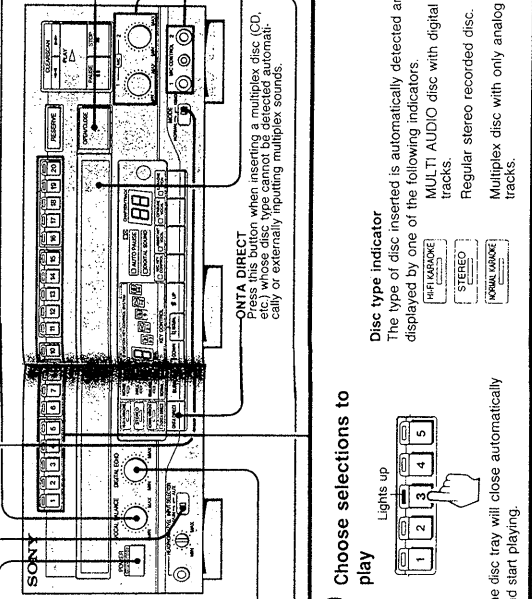


If howling occurs

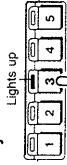
- Correct by doing the following:
 - Turn the volume down from the speakers
 - Lower the MIC or DIGITAL ECHO volumes
 - Lower the volume of the speakers

When listening through headphones

Once the headphones are connected, the volume must be adjusted with the LEVEL knob next to the PHONES jack.



9 Choose selections to play



Lights up
 The disc tray will close automatically and start playing.

Disc type indicator

The type of disc inserted is automatically detected and displayed by one of the following indicators.

- MULTI AUDIO disc with digital audio tracks
- Regular stereo recorded disc
- Multiplex disc with only analog audio tracks

Single steps in Karaoke mode

The player will automatically pause after playing the current selection. (If another selection has been reserved, that selection will be played (pausing) to play the next selection, press the PLAY or PAUSE button, or make a direct selection with the Direct select buttons.

6 Adjust the VOCAL BALANCE selector to MIN

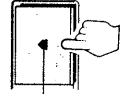
This control allows you to listen to the vocals of a selection. This feature is only available on discs having the MULTI AUDIO logo or that are recorded in Multiplex.

The volume of the vocal section can be raised by turning the knob toward MAX.

To use the VOCAL BALANCE for multiplex recorded CDs or AUX input sources
 Press the ONTA DIRECT button. A light above the button will glow to indicate that you can adjust the level of the vocals with the VOCAL BALANCE control. This feature cannot be used when using ASSISTANT VOCAL, OTASUKE VOCAL, and KARAOKE PON.



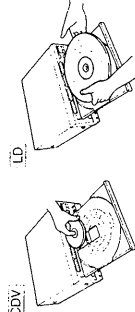
7 Open the disc tray



flashes

8 Place the disc on the tray

Carefully center a single disc on the tray. The disc will not play if it is not seated properly.



Always insert one disc at a time. Inserting more than may damage the player.

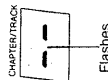
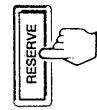
To cancel

Press the A PAUSE/SPACE button on the remote commander. The AUTO PAUSE indicator on the player will go out and selections will be played continuously without interruption.

Useful Features for Enjoying Karaoke - These features are available only in the KARAOKE mode.

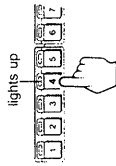
How to Reserve the Next Selection (Single Selection Reserve)

1 Press the RESERVE button.



Lets you reserve the next selection while one is currently in play.

2 Press the number of the selection you want to reserve.

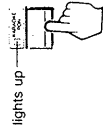


The display will change from "04" to the number of the selection reserved.

- When the selection playing finishes, the reserved selection will start playing from the beginning.
- If you reserved the wrong selection, press the RESERVE button and enter the correct number.

The words "RESERVE --" will appear on the TV screen.

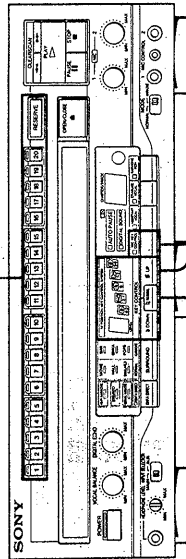
How to Enjoy Karaoke with Regular Discs (Karaoke Pon)



- Notes on the usage of KARAOKE PON**
- Always use this feature on stereo recorded discs. On monaural discs, the level of the vocal and instrumental portions will both be lowered.
 - The vocal portion of the disc may not erase completely for stereo discs with the following characteristics:
 - Tracks containing only a few instruments, duet selections, selections with strong echo and chorus emphasis, and selections where the singer's voice deviates from the center.
 - Playback using the KARAOKE PON button will be in monaural.

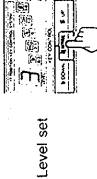
The vocal portions may not erase completely on certain discs.

Lets you enjoy Karaoke fun with regular non-Karaoke discs having vocals in them. (LD, CD)



How to Control the Singing Tone (Key Control)

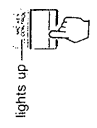
To change the playback tone to a lower tone, press the DOWN arrow playback tone to a higher tone, press the UP button.



- The key level will also appear on the TV screen, and disappear after three seconds.
- Find the key that suits your singing. The lower and higher tones can be applied through eight steps (total: 17 steps)
- To return to the original tone, press the NORMAL button.
- The tone will return to the original level after the current selection is played unless it is played repeatedly.

How to Change Your Own Voice (Microphone Key Control)

This feature lets you control the key of your own voice. (Digital feature only with this feature.) Press the MIC KEY CONTROL button.



- When this indicator is lit, the KEY CONTROL buttons and indicators will control the MIC key.
- Lower the tone of your voice with the DOWN button, raise it with the UP button.
- The level set will be displayed in the same way as the KEY CONTROL display.
- The tone will return to the original level after the current selection is played unless it is played repeatedly.

How to Listen to the Original Vocals While Performing (Assistant Vocal)

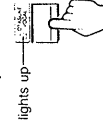
This feature lets you listen to the singer's voice through the headphones while the audience hears only your voice from the speakers.

- 1** Connect the headphones and adjust the PHONE volume
- 2** Press the ASSISTANT VOCAL button

The VOCAL BALANCE cannot be used at the same time to adjust the volume of the original vocals.

How to Sing Along With the Original Vocals (Maslike Vocal)

This feature is inactive while you're singing from the microphone, but when you're not and you should, it helps out by outputting the original singer's voice. This feature is also good for singing duets by yourself. You sing the part of the male, (or female), and the other half comes in for you.

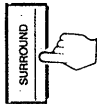


The VOCAL BALANCE cannot be used at the same time to adjust the volume of the original vocals.

Useful Features for Enjoying Karaoke (continued)

How to Use the Surround Effect
Choose from three acoustic effects for enhanced listening quality.

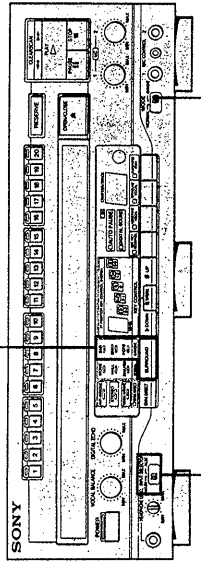
The surround mode changes with each press of the SURROUND button. Three modes are available especially for KARAOKE entertainment.



The indicator will glow for the mode selected.

Here is what each surround mode offers:

- KARAOKE BAR:** Creates the effect of singing in a bar. Gives your song a rich carrying tone.
- KARAOKE ENKA:** Suitable for singing traditional Japanese songs by placing a strong emphasis on the dynamic mid to low ranges.
- KARAOKE POPPS:** Great for singing pop music. Lets you sing casually with emphasis on the dynamic mid range.

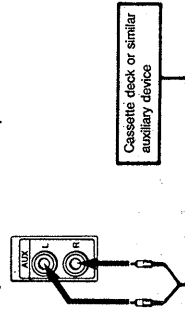


When playing Karaoke music, use the sound modes especially for the Karaoke mode.

How to Enjoy Karaoke With Auxiliary Equipment (AUX audio input)

Other auxiliary equipment such as tape decks can also be used to playback Karaoke music. You can still use the Key Control and Karaoke Pon features as you would with discs.

- 1 Connect the cassette deck to the AUX INPUT jacks on the rear panel.
- 2 Set the INPUT SELECTOR to AUX.



Cassette deck or similar auxiliary device

INPUT SELECTOR

MAIN → AUX



To resume playing discs, select MAIN.

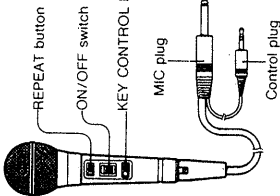
Using the Karaoke Microphone (F-KM1), the following convenient operations can be conducted.

Repeat

The person holding the microphone can go back to the beginning of a selection, or anywhere where else, by pressing this button. Hold the REPEAT button down and release at the desired point.

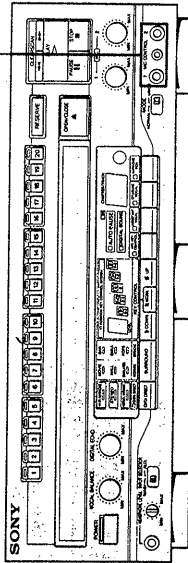
Key control

The singer can control his/her singing key from the microphone. (Same as KEY CONTROL operations on the player.)



To MIC 1 OR MIC 2 jacks

To MIC CONTROL jack



To Play a Laser Disc

After you have connected the Multi Disc Player to the TV and/or stereo system, you can begin playing a laser disc. Locate the POWER, OPEN/CLOSE, and PLAY buttons on either the Remote Commander or player.

How to Load and Play an LD (Laser Disc)

After you have connected the Multi Disc Player to the TV and/or stereo system, you can begin playing a laser disc. Locate the POWER, OPEN/CLOSE, and PLAY buttons on either the Remote Commander or player.

1 Set the MODE selector to NORMAL.

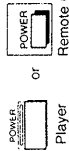


2 Turn on the TV and stereo system.

TV. Set the input selector on the TV to "Video".
 TV without audio/video inputs
 Select channel 3 or 4 (selected on page 13).
 Stereo system. Turn on the amplifier or receiver and select CD or AUX for audio output.

3 Turn on the multi disc player.

Press the POWER button on the player or Remote Commander.



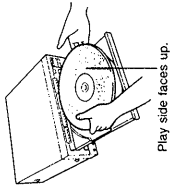
4 Open the disc tray.

Press the OPEN/CLOSE button.
 The indicator on the OPEN/CLOSE button of the player will flash and the disc tray will open.



5 Place the disc on the tray.

Carefully center a single disc on the tray. If you insert more than one disc, or if the disc is not sealed properly, it may not play or it may damage the unit and/or the disc.



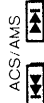
6 Start playback.

Press PLAY (▶).
 The indicator on the PLAY button of the player will flash.



To Advance or Go Back

Rotate the Shuttle Ring or press ACS/AMS (◀◀ or ▶▶). The same operation can be done at the player with the ◀◀▶▶ CLEAR SCAN buttons.



To Interrupt Play

Press PAUSE (⏸). The sound mutes and the picture freezes. To resume playback, press PAUSE (⏸) or PLAY (▶).



To Stop Playback

Press STOP (■).
 To play again from the beginning, press PLAY (▶).



To Stop Play and Remove the Disc

Press OPEN/CLOSE. The indicator on the OPEN/CLOSE button of the player will flash and moments later the disc tray will come out. Remove the disc and close the empty tray.



To Have the Player Pause Before Starting

Press the PAUSE (⏸) button on the player or the Remote Commander immediately after doing step 6 on page 20. The tray closes and the player waits at the start of the disc until you press PLAY (▶) or PAUSE (⏸).

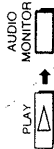


To Activate Play with an Optional Timer

Set the timer with the AC power cord connected to the player. When the timer supplies power at the preset time, the player starts playing the disc. If there is no disc in the player, the player goes off automatically.

To Play a Stereo LD or a Second Audio Program (SAP) LD

Press PLAY (▶), then press the AUDIO MONITOR button.



This function alternates the sound output on a disc that has been recorded on two sound tracks, such as bilingual discs.

To Watch Regular TV Programs on a TV without Audio/Video Inputs

Turn the player off or press the DISC/TV button on the Remote Commander. Then select the desired channel on the TV. If the TV picture or sound quality is not satisfactory, refer to the TV instruction manual and adjust the channels.

The procedure below indicates how the output and the display changes with each press.
 The active track will appear on the TV screen for three seconds and then disappear.

Procedure	TV Display	Stereo Disc	Output Sound
1 Press PLAY (▶).	1/L 2/R	Stereo (Both channels)	SAP Disc Sound track 1 (left channel) Sound track 2 (right channel)
2 Press AUDIO MONITOR.	1/L	Left channel	Sound track 1 (left channel)
3 Press AUDIO MONITOR again. Press AUDIO MONITOR again to return to stereo status.	2/R	Right channel	Sound track 2 (right channel)

To Switch from Digital to Analog Sound

Press the ANALOG button to switch the player to analog or digital sound. Digital affords a better quality sound reproduction. If the LD contains a digital sound signal, the player automatically sends that output to the amplifier or receiver. When you press the ANALOG button on the Remote Commander, you can switch to analog sound. With certain discs there may be a difference in volume.



Discs with a (CX) Label

Discs bearing the (CX) label are recorded with the Noise Reduction system, which gives lower noise levels and higher dynamic range. The player is designed to automatically recognize such discs. However, some discs do not include the coding necessary to automatically activate the player's noise reduction system. Press the button on the Remote Commander to manually activate the system.
 (Note, the display on the TV screen only appears for three seconds)
 "CX ON" will appear on the TV screen for three seconds and then disappear.



Understanding Displays and Messages When Playing LDs

You can determine player operating status or disc information by displaying the information on the TV screen, or pressing the DISPLAY button on the Remote Commander.

To View On-Screen Information

Press DISPLAY on the Remote Commander.
To turn off the display, press DISPLAY again.

Reading the On-Screen Messages

The illustration to the right is an example of what appears on screen while the player is operating. The below table is a key to the messages that appear on the right.

Message 1 (Examples)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing LD
STOP	Operation stopped
PAUSE	Operation momentarily stopped
-- / --	Variable speed (Shuttle Ring) scan
SEARCH	Searching
X 1/2	Scanning at 1/2-speed

Message 2 (Examples)

Screen Display	Currently Playing
SIDE A CAV	Standard-play disc side A**
SIDE B CAV	Standard-play disc side B
SIDE A CLV	Extended-play disc side A
SIDE B CLV	Extended-play disc side B
1/L	First soundtrack/left channel
2/R	Second soundtrack/right channel
DIGITAL	Digital sound
ANALOG	Analog sound

* Discs not indicating time data to the second indicate instead as two-digit numbers such as, "0:22".

** Some discs do not contain Side A or B identification coding. In that case, disc side indications may not be accurate.

How to Search Using Variable Speed Play (for CAV discs)

To find a scene, play the disc back or forward at varying speeds.* The sound is automatically muted during speed play. Use Multi Speed and Speed Set for CAV standard-play LDs. Use the Shuttle Ring, which lets you scan gradually, for all discs. Locate the MULTI SPEED, SPEED SET, DISPLAY buttons, and the Shuttle Ring on the Remote Commander.

To Change Speed and Direction (Multi Speed)

1 Press MULTI SPEED to select the direction.

To reverse



To advance



The direction can be changed at any speed by using the MULTI SPEED buttons.

2 Press SPEED SET to select the speed.

To reduce speed



To increase speed



(You can press SPEED SET first, or do either step without the other.)

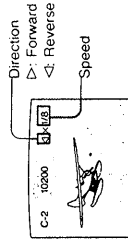
3 Press DISPLAY.

The play speed and direction appear on screen.



4 Press PLAY.

Normal playback resumes.



Discs with Automatic Picture Stop Code

When an automatic picture stop code (found on educational discs) is encountered during variable speed play, the unit automatically stops at that frame. To resume playback, press PLAY, MULTI SPEED, or turn the Shuttle Ring.

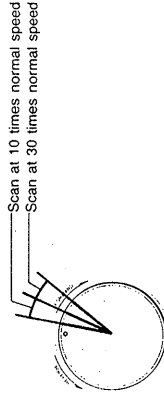
Extended-Play (CLV) or Non-CAV Discs

Variable Speed Play, Freeze Frame, and Step Play are not possible with CLV discs. When a MULTI SPEED button is pressed, the screen goes blank and the message "SIDE A (or B) CLV" appears.

To Change Speed and Direction Gradually (Variable Speed Scan)**

Rotate the Shuttle Ring in the forward or reverse direction. (To do this at the player, use the CLEAR SCAN buttons.)

The play speed changes according to the degree you rotate the Shuttle Ring. The illustration to the right indicates the approximate speeds.



To Resume Normal Play

Release the Shuttle Ring.

* A certain amount of visual noise and instability is inevitable with all variable speed operations.

** Scanning speed varies as the laser beam moves away from the center of a CLV disc.

How to Search by Chapter Numbers

LDs are divided into sections called "chapters". Chapters are usually listed on the jacket or label of the disc. By entering the desired chapter number, you can have the player find the chapter and play it. Use ACS/AMS - Automatic Chapter Sensing/Automatic Music Sensing - to advance or reverse a chapter at a time. Locate the number keys and the ACS/AMS buttons on the Remote Commander or front panel.

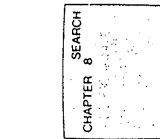
To Locate a Particular Chapter

Press one of the number keys on the Remote or front panel corresponding to the chapter you want to play. If you make a mistake, simply press the correct one.

For example, to locate chapter 8 press "8" on the Remote.

The player starts searching for Chapter 8.

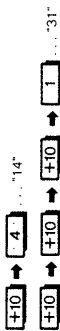
The player finds Chapter 8 and starts playing from the beginning of Chapter 8.



To Enter a Number Greater Than 10*

Press +10 and one of the number keys. Do this to make a numerical sum. For example, to enter 14, press +10 and 4; to enter 31, press +10, +10, +10 and 1. (On the player, you can use 20 direct select buttons.)

If you make a mistake while entering a number, press CLEAR then enter the correct number.



To Check the Current Chapter Number

Press DISPLAY on the Remote to display the current chapter number (upper left-hand corner) on the screen. You can also look at the CHAPTER/TRACK on the front panel display for the current chapter number.



To Advance or Go Back a Chapter at a Time (Skip Search)

Press ACS/AMS (←) once to return to the beginning of the current chapter.

Press ACS/AMS (→) to advance to the beginning of the next chapter.

Press ACS/AMS (↔) twice before the picture reappears to return to the beginning of the previous chapter.

Hold down the ACS/AMS button for continuous skip search.

To Resume Normal Play

Press PLAY (▶).



* Chapter Search does not function properly if the disc does not contain chapter numbers or the chapter number entered does not exist.

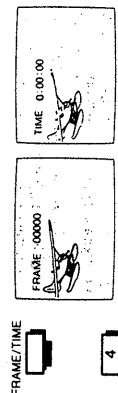
How to Search by Frame Number or Time—Frame/Time Search

Video scenes are counted as a series of still pictures or "frames". The player keeps track of the number of frames that have been played from the beginning of the disc to the current position. Similarly, the player also keeps track of the elapsed playing time from the beginning of the disc. To play from a particular frame or time use the Frame/Time Search function. Locate the FRAME/TIME, SEARCH/NEXT buttons, and number keys on the Remote Commander.

On CAV (standard-play) discs, enter a frame number. On CLV (extended-play) discs, enter the time.*

To Enter the Elapsed Frame or Time

Press the FRAME/TIME button. The screen displays the current frame (for CAVs) or current time (for CLVs) as "000000".



Enter the desired multi-digit number corresponding to the frame or time you want found.**

Enter five digits for CAVs.

Enter four digits for CLVs displaying the time to the second.

Enter two digits for CLVs displaying the time to the minute.

If you make a mistake, press FRAME/TIME again to return the display to zero, and then enter the correct numbers.

Sample Entry for CAV Discs

To locate frame number 12340, press the number keys in the order on the right:



Sample Entry for CLV Discs

To locate the 12-minute, 5-second point, press the number keys in the order on the right:



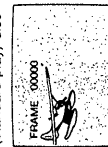
Press SEARCH/NEXT on the Remote.

Play starts from the time or frame specified in step 2.



To Check the Frame/Time Numbers
These numbers appear on screen when you press DISPLAY.

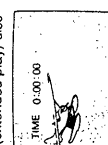
CAV (standard-play) disc



To Cancel Frame/Time Search

Before pressing the SEARCH/NEXT button, press CLEAR. If you have already pressed the SEARCH/NEXT button, press STOP (■).

CLV (extended-play) disc



In addition to play mode, you can conduct Frame/Time Search while in Freeze-Frame, Variable Speed Play, Repeat or Pause mode. When the specified frame or time appears after the search, play continues in the same mode.

* "CAV" or "CLV" should be noted somewhere on the disc jacket.

** If you enter a frame or time number not contained on the disc, play stops.

Notes


- If a frame/time number not contained on a disc is entered, the playback stops. If the REPEAT button is pressed and REPEAT is shown in the display window (see p. 27), playback will resume from the beginning of the disc.
- If the disc does not include seconds-unit time data, enter the time in minutes only.


How to Play Frame-by-Frame (for CAV discs)

Once you have found a particular scene, you can examine the progression of that scene by advancing or reversing the action one frame at a time (Step Play), or freezing the action into a still picture (Freeze Frame). • Locate the PAUSE, and STILL/STEP buttons on the Remote Commander.

To Play One Frame at a Time (Step Play)

- 1 Press **PAUSE (II)** once.
The frame freezes.
- 2 Press **STILL/STEP** repeatedly. Hold down the button for continuous frame-by-frame action. The sound is automatically muted during freeze frames or step frames. Each press shifts the image one frame backward or forward.

To reverse  **II**

To advance  **II**

In addition to pause mode, you can achieve Step Play while the player is in play mode by pressing one of the STILL/STEP buttons while the disc is playing.

To Freeze the Action (Freeze Frame)

Press **PAUSE** once.

To Resume Normal Play.

Press **PAUSE (II)** again, (or if in still mode press twice).
Press **PLAY (▶)**.

Extended-Play (CLV) Discs

Freeze Frame and Step Play are not possible with CLV discs. When the PAUSE button is pressed, the screen goes blank and the message "SIDE A (or B) CLV" appears. (The display on the TV will change to a solid blue background.)

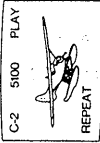
How to Replay the Same LD Selections

These instructions show you how to program the player to play the same scenes over and over until you signal the repetition to stop. You can replay a single side, a single chapter, or a section between one pair of points on the disc. (To program the player to replay between a series of paired points, refer to Custom Index on page 40.) Locate the REPEAT, 1/ALL, and the REPEAT A ↔ B buttons on the Remote Commander. To view your current settings on the TV screen, press the DISPLAY button.

To Repeat the Entire Side of the Disc

Press **REPEAT**.

At the end of one side of the disc.

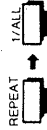


When the player reaches the end of one side, it returns to the beginning of the disc and starts playing that side again.

To Repeat the Current Chapter

Press **REPEAT** then, **1/ALL** on the Remote.

Pressing the DISPLAY button will cause "SINGLE" and "REPEAT" to appear on the TV screen.



Returns to the beginning of the disc.

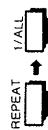
To Cancel REPEAT

Press **REPEAT**.



To Cancel REPEAT-1/ALL

Press **REPEAT** and **1/ALL**.



To Repeat One Section of the Disc

- 1 Go back to the start of the scene you want replayed. This marks where replay is to begin.
- 2 Press **REPEAT A ↔ B** at the beginning of where you want replay to begin. "A-B REPEAT" will appear on the screen with "B" flashing.
- 3 Let the player run to the end of the scene you want repeated.
- 4 Press **REPEAT A ↔ B** again. This marks where replay is to end.



"A-B REPEAT" will disappear from the screen. The player repeatedly plays the same scene between the two points selected.

To Cancel REPEAT A ↔ B

Press **CLEAR**.



• This function can only be performed on CAV discs.

How to Play Only Certain Chapters – Programmed Play

You can choose, in any order you like, the chapters the MDP plays. This playlist is stored in the player until you either remove the disc or turn off the power. After playing all the selections, the player stops and waits for your next command. Locate the number keys, PGM and PLAY buttons on the Remote Commander. Chapters that do not exist will not register.

- 1 Press **PGM** on the Remote. "PROGRAM - - - -" appears on screen.
- 2 Press **one of the number keys**. Press numbers for all the chapters you want played. For example, press 5, 4, 2, and 6 to play those chapters in that order.
The total playing time of the programmed chapters shows on screen for LDs containing TOC (Table of Contents) data*.
- 3 Press **PLAY** (▶).

To Start Over

Press **CLEAR**, and then **PGM**. Enter the new chapter numbers.

To Change an Entry

Press **SEARCH/NEXT** or **BACK** to advance or go back one entry. Enter the correct number while the current number is flashing.

To Enter a Number Greater Than 10

Press +10 and one of the number keys, following the same procedure as on page 28.

To Cancel Programmed Play

Press **CLEAR** or **1/ALL**.

The player resumes normal playback.

To Replay Programmed Chapters

Press **REPEAT**.

To cancel, press the **REPEAT** button again.

To Advance or Go Back a Chapter**

Press **ACS/AMS** (◀◀ or ▶▶), or use the Shuttle Ring (or the ◀◀/▶▶ buttons on the player).

To Check the Contents of the Program

Press **PGM**.

The flashing number indicates the chapter now playing. The display disappears after 3 seconds.

* If you enter 0 or chapter numbers greater than 21, or if total play time exceeds 100 minutes, the total play time is not displayed.

** The player does not go back to previous chapters if the Shuttle Ring is rotated to the left, although, it does advance to forward chapters if rotated to the right. To go back to preceding chapters hold down the **ACS/AMS** (◀◀) button.

To Play a Compact Disc

This section explains how to perform procedures associated with playing CDs.

How to Load and Play a CD (Compact Disc)

After you have connected the Multi Disc Player to the stereo system, you can begin playing a compact disc. Locate the **POWER**, **OPEN/CLOSE**, and **PLAY** buttons on either the Remote Commander or player.

- 1 Set the **MODE selector to NORMAL**.



- 2 Turn on the stereo system.

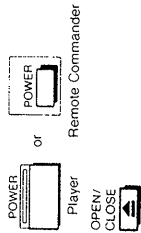
Turn on the amplifier or receiver and select CD, AUX, or other desired audio input.

- 3 Turn on the multi disc player.

Press the **POWER** button on the player or Remote Commander (the Remote).

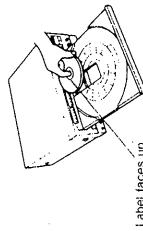
- 4 Open the disc tray.

Press the **OPEN/CLOSE** button on the player or on the Remote. The indicator on the **OPEN/CLOSE** button of the player will flash and the disc tray will open.



- 5 Place the disc on the tray.

Carefully center a single CD on the tray. If you insert more than one disc, or the disc is not seated properly, it may not play or it damage the unit and/or the disc.



- 6 Start playback.

Press **PLAY** (▶). The indicator on the **PLAY** button of the player will flash.



To Advance or Reverse

Rotate the Shuttle Ring or press **ACS/AMS** (◀◀ or ▶▶). The same operation can be done at the player with the ◀◀/▶▶ buttons.



To Interrupt Play

Press **PAUSE** (||).

To resume playback, press **PAUSE** (||) or **PLAY** (▶).



To Stop Playback

Press **STOP** (■).

To play again from the beginning, press **PLAY** (▶).



To Stop Play and Remove the Disc

Press **OPEN/CLOSE**. Remove the CD and close the empty tray.



To Have the Player Pause Before Starting
 Press the **PAUSE (II)** button on the player or the Remote instead of pressing **PLAY**.
 The tray closes and the player waits at the start of the disc until you press **PLAY (▶)**.

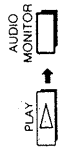


To Listen Directly From the Player
 Connect headphones and adjust the volume with the **LEVEL** control knob.

To Activate Playback with an Optional Timer

Set the timer with the **AC power cord** connected to the player. When the timer supplies power at the preset time, the player starts playing the disc. If there is no disc in the player, the player goes off automatically.

To Play a Stereo CD or a Second Audio Program (SAP) CD
 Press **PLAY (▶)**, then press the **AUDIO MONITOR** button.



The procedure below indicates how the output and the display changes with each press.
 Note, the display on the TV screen only appears for three seconds.

Procedure	TV Display	Output Sound	
		Stereo Disc	SAP Disc
1 Press PLAY (▶) .	1/L 2/R	Stereo (Both channels)	Sound track 1 (left channel) Sound track 2 (right channel)
2 Press AUDIO MONITOR .	1/L	Left channel	Soundtrack 1 (left channel)
3 Press AUDIO MONITOR again. Press AUDIO MONITOR again to return to stereo status.	2/R	Right channel	Sound track 2 (right channel)

Understanding Displays and Messages When Playing CDs

You can determine player operating status or disc information by displaying the information on the TV screen. Locate the **DISPLAY** button on the Remote Commander.



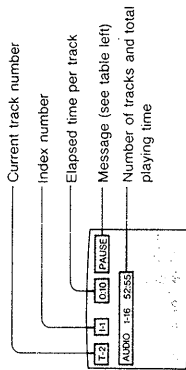
To View On-Screen Information
 Turn on the television, and press **DISPLAY** on the Remote Commander.
 To turn off the display, press **DISPLAY** again.

Reading the On-Screen Messages

The screen to the right is an example of what is displayed. The table below is a key to the messages that appear on the right.

Message (Examples)

Screen Display	Current Status of the Player
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playing CD
STOP	Operation stopped
PAUSE	Operation momentarily stopped
SEARCH	Searching

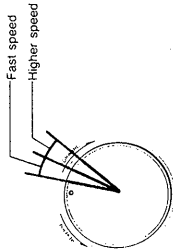


How to Locate a Certain Track

CDs are divided into sections called "tracks". To find a point within a track, use the Shuttle Ring. To find and play from the beginning of a certain track, use the number keys. In addition, use the ACS/AMS buttons to advance or reverse one track at a time. Locate the number keys, Shuttle Ring (Remote Commander only), and ACS/AMS buttons on the player or on the Remote Commander.

To Find a Certain Point on the Disc
 Rotate the Shuttle Ring in the forward or reverse direction.

The play speed switches between two levels according to the degree you rotate the Shuttle Ring. The illustration to the right indicates the speed levels. The CD can be heard fast forwarding or rewinding while using the Shuttle Ring. The same operation can be done at the player with the **◀/▶** buttons.



To Locate a Particular Track

Press one of the number buttons on the Remote or front panel to enter the track number you want played.

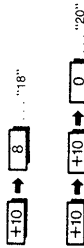
To Enter a Number Greater Than 10

Press **+10** and one of the numbers keys. Do this to make a numerical sum. For example, to enter 18, press **+10** and **8**; to enter 20, press **+10** and **0**.

If you make a mistake while entering a numbers, press **CLEAR** then enter the correct number.

To Check the Current Track Number

See the CHAPTER/TRACK display on the front panel.



To Advance or Go Back One Track at a Time

Press **ACS/AMS** (**◀**) once to return to the beginning of the current track. Press it again to return to the beginning of the previous track.

Press **ACS/AMS** (**▶**) to advance to the beginning of the next track.

Hold down the **ACS/AMS** button to advance or go back continuously.

To Play a Single Track Once

1 Press the **1/ALL** button on the Remote.
 Pressing the **DISPLAY** button will cause "SINGLE" to appear on the TV screen.

2 Enter the track number you want played. When the track has been played, the player stops. To cancel the setting, press **1/ALL** again.

If you press the wrong number key, simply press the correct one.



How to Replay the Same CD Selections

You can program the player to play the same selections over and over until you signal the repetition to stop. You can replay the entire disc, a single track, or a section between one pair of points on the disc. (To program the player to replay between a series of paired points, refer to Custom Index on page 40.) Locate the **REPEAT**, **1/ALL**, and the **REPEAT A ↔ B** buttons on the Remote Commander. To view your current settings on the TV screen, press the **DISPLAY** button.

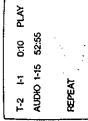
To Repeat the Entire Disc

Press **REPEAT** on the Remote Commander.

The player plays all tracks on the CD. When the player reaches the end of the disc, it plays again.

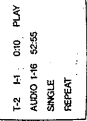


This display appears on the TV screen when **DISPLAY** is pressed.



To Repeat the Current Track

Press **1/ALL** on the Remote Commander; then, press **REPEAT**.



The current track repeats continuously.

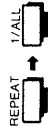
To Cancel REPEAT

Press **REPEAT**.



To Cancel 1/ALL-REPEAT

Press **REPEAT**, or press the **CLEAR** button.



To Repeat One Section of the Disc

1 Go back to the start of the section you want replayed.
 2 Press **REPEAT A ↔ B** to mark the beginning of the section.



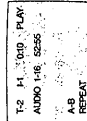
"A-B REPEAT" will appear on the screen with "B" flashing.

3 Let the player run to the end of the section you want repeated.

4 Press **REPEAT A ↔ B** again to mark the end of the section.



This display appears on the TV screen when **DISPLAY** is pressed.



To Cancel REPEAT A ↔ B

Press **CLEAR**.



"A-B REPEAT" will disappear from the screen. The player repeatedly plays the tracks between the two selected points.

How to Play Only Certain Tracks—Programmed Play

You can program, in any order you like, the tracks the MDP plays. This playlist is stored in the player until you either remove the disc or turn off the power. Program up to 20 tracks. After playing all the selections, the player stops and waits for your next command. Locate the number keys, PGM, and PLAY buttons on the Remote Commander.

- 1 Press **PGM** on the Remote. The dashes ... will blink on the TV screen.
- 2 Press **one of the number keys**. Press numbers for all the tracks you want played. For example, press 5, 4, 2 and 6 to play those tracks. The total playing time of the programmed tracks is displayed on the screen.*
- 3 Press **PLAY** (▶). Programming/play order Total playing time

To Start Over
Press **CLEAR** and **PGM**. Then, enter the correct track numbers.

To Change an Entry
Press **SEARCH/NEXT** or **BACK** to advance or go back one entry. Enter the new number.

To Enter a Number Greater Than 10
Press +10 and one of the number keys following the same procedure as on page 32.

To Cancel Programmed Play
Press **CLEAR** or **1/ALL**. The player resumes normal playback.

To Replay the Same Programmed Tracks
Press **REPEAT**. To cancel, press the **REPEAT** button again.

To Advance or Go Back**
Press **ACS/AMS** (◀ or ▶), or use the **Shuttle Ring**. The player moves to the preceding or following programmed tracks.

To Check the Contents of the Program
Press the **PROGRAM** button. The programmed selections will appear on the TV screen in programmed order for three seconds and then automatically disappear. During this display, the number of the selection in play will be blinking.

* If 0 or track numbers greater than 21 are entered, the total play time is not displayed.
** The player does not go back to previous tracks if the Shuttle Ring is rotated to the left, although, it does advance to forward tracks if rotated to the right. To go back to preceding tracks hold down the ACS/AMS (◀) button.

To Play a Compact Disc Video

This section explains basic procedures for playing Compact Disc Video (CDV) and Video Single Disc (VSD) play. See other sections for detailed information on applying special effects to CD and VSD play.

How to Load and Play a CDV (Compact Disc Video) or VSD (Video Single Disc)

CDVs are divided into two sections: video and audio. The video section of the disc consists of 5 minutes of video play with digital audio output. The audio section consists of 20 minutes of solely digital audio output (playable on any CD player). Thus, the CDV has the function of both an LD and CD combined in one disc. The audio and the video sections of the CDV are assigned track numbers. The track on the video section corresponds to the chapter on the LD and the same on the CD.

- 1 Turn on the TV, stereo system (if connected), and Multi Disc Player.
- 2 Place the disc on the tray.
- 3 Press **PLAY** (▶). Play begins from the video section.

To start play from the audio section, using the number keys, enter the track number that starts the audio section.

To Stop and Remove the Disc
Press **OPEN/CLOSE** (◀▶).

To Advance or Reverse
Press **ACS/AMS** (◀ or ▶).

To Interrupt Play
Press **PAUSE** (||).

To Find a Certain Audio Track
Press **5**.

To Play Certain Video Tracks
Press **PGM** → **2** → **▶** (PLAY).

To Repeat the Current Track
Press **REPEAT** (◀▶) or **1/ALL** (◀▶).

To Repeat All Selections
Press **REPEAT** (◀▶).

To Repeat a Section of the Disc
Press **REPEAT** (◀▶) → **A** → **B** (twice).

To Find a Certain Portion with Scanning
Shuttle Ring

Understanding Displays and Messages When Playing CDs or VSDs

You can determine player operating status or CDV information in one of two ways: by displaying the information on the TV screen. Locate the DISPLAY and AV TIME buttons on the Remote Commander.

To View On-Screen Information

Press DISPLAY.
To turn off the display, press DISPLAY again.

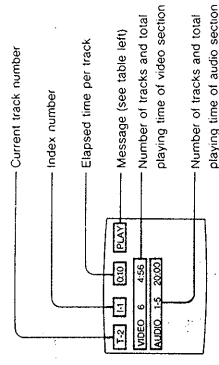
Reading the On-Screen Messages

The screen to the right is an example of what is displayed. The table below is a key to the messages that appear on the screen.

Message (Examples)

Display	Explanation
OPEN	Disc tray open
CLOSE	Disc tray closed
PLAY	Playback
STOP	Stop
PAUSE	Pause
⏮/⏭	Variable Speed (Shuttle Ring) Scanning
SEARCH	Search

DISPLAY



To Play Any Disc (Advanced Functions for LD, CD, or CDV Play)

This section explains advanced functions that apply to any one of the three types of discs.

How to Use the Surround Effect

Choose from three NORMAL acoustic effects or three KARAOKE acoustic effects for enhanced listening quality. Set the MODE selector NORMAL for normal use. For Karaoke use, refer to page 18.

Press the SURROUND button.

The surround mode changes with each press of the SURROUND button. The SURROUND indicator on the player will glow. The SURROUND mode will also appear on the TV screen for three seconds.

Here is what each surround mode offers:

- MOVIE** : Suitable for movie software.
Emphasizes the bass and extends the dynamic mid range.
- HALL** : Good for playing music programs.
Enhances the echo and dynamic mid range.
- SIMULATED** : Good for playing software recorded in monoaural. Enhances the dynamic range for monoaural programs like old movies and news programs.
- SURROUND OFF**: Cancels the surround effect.

How to Have the Disc Play Within a Period of Time

You can program the disc to play within a specified period of time. This is called "Auto Program Playback". Decide how long you want the disc to play and then enter that amount of time. The player divides the selections you designate onto what it calls "Program A" and "Program B", playing both A and B for the amount of time entered. The player pauses between the two programs. The following procedure explains how to conduct Auto Program Playback on a CD, but you can also use the function for LDs and CDVs with TOC. (Auto Program does not function on LDs or CDVs that do not contain TOC data.) Locate the AUTO PGM button and number keys on the Remote Commander.

- 1 Press **AUTO PGM**. "AUTO PROGRAM" will appear on the screen with "... flashing.
 - 2 Enter the desired play time. Using the number keys, enter the time. For example, to enter 30 minutes, press **+10** **+** **10** **+** **0**.
If you press the wrong number, simply press the correct one.
- The display will alternately show the number of all selections for programs A and B with a "P" (pause) in between and the total playing time of both programs.
- If you designate a play time shorter than the length of the disc, some selections on the disc may not fit into the time span given and therefore may not play. On the other hand, if you designate a play time longer than the length of the disc, the whole program of selections may run on Program A, with none running on Program B. This is because Program A always has priority over B.

Check the contents of your program by pressing the PROGRAM button.

The programmed selections will appear on the TV screen in programmed order for three seconds and then automatically disappear. During this display, the number of the selection in play will be blinking.

Example for a Forty-Minute Disc

Let's say your disc is 40 minutes long (see table below) and you designate playing time to run 15 minutes. Program A will run for 15 minutes (or less) and Program B will also run for 15 minutes (or less) for a total of about 30 minutes of play (see table below).

You enter	Program A plays	Program B plays	Total play time
15	15 min (or less)	15 min (or less)	30 min (or less)
30	30 min (or less)	10 min (about)	40 min
45	40 min (all selections)	0 min	40 min

- 3 Press **PLAY**. Program A selections start playing. The player pauses and waits for you to press **PLAY** again for Program B.
- 4 Press **PLAY** again to play Program B.

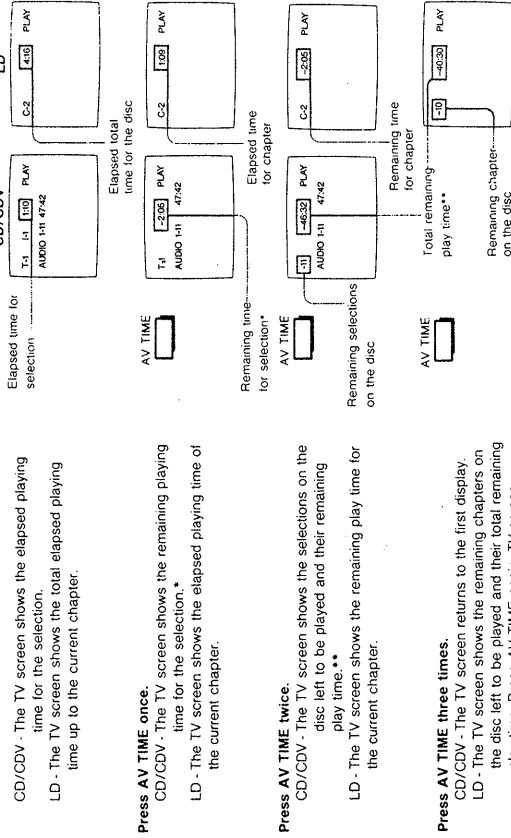
To Resume Normal Play from Auto Program

Press **CLEAR** or **1/ALL**.

- If your disc contains more than 20 tracks or chapters, the ones beyond 20 may not run.

How to Display the Elapsed Playing Time—Time Counter

You can display elapsed time information on the TV screen. How the information is displayed depends on the type of disc being played. LD must have a Table of Contents (TOC) to show this display. Otherwise, the words "NO TOC" will appear on the screen.



Press AV TIME once.

CD/CDV - The TV screen shows the remaining playing time for the selection.*

LD - The TV screen shows the elapsed playing time of the current chapter.

Press AV TIME twice.

CD/CDV - The TV screen shows the selections on the disc left to be played and their remaining play time.**

LD - The TV screen shows the remaining play time for the current chapter.

Press AV TIME three times.

CD/CDV - The TV screen returns to the first display.

LD - The TV screen shows the remaining chapters on the disc left to be played and their total remaining play time. Press AV TIME again, TV screen returns to the first display.

The Time Counter Display Depends on the Kind of Disc Pressing the DISPLAY button

CDs or CDVs

The time appears on the TV screen.

LDs with TOC

The TV screen shows the number of elapsed frames or elapsed time.

CDs and LDs with TOC

When you press the STOP (■) button, the TV screen shows total number of tracks/chapters and their play time.

CDVs

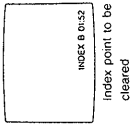
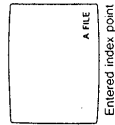
The TV screen shows the total number of tracks and total play time for the audio and video sections alternately.

* The display does not show remaining play time for selections numbered above 21.

** When playing CDVs, these figures refer only to the current section (audio or video) being played.

How to Play from Predetermined Points—Custom Index

The Custom Index function lets you set up to six points from which play can begin. In other words, when you press CUSTOM INDEX, the laser beam goes to a point you have marked on the disc, and plays from there. These play points are called "index points". You can also repeat play a section between index points using the 1/ALL and REPEAT buttons. Locate the FILE, SEARCH/NEXT, CLEAR, and CUSTOM INDEX buttons on the Remote Commander or player.



To Set Index Points

Press FILE while the disc is playing a selection.

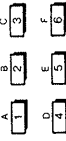
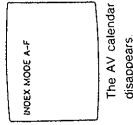
For every index point you want to set in place, press the FILE button. You can set up to six locations (A-F) anywhere on the disc.

To Clear a Mistake in Setting Index Points

- 1 Press SEARCH/NEXT until the index point comes into view on the TV screen.
- 2 Press CLEAR.
- 3 Press the FILE button to enter the correct location.

To Play from an Index Point

- 1 Press CUSTOM INDEX.



- 2 Press the number key corresponding to one of the index points (A-F). (The number keys now function as alphabetic keys.)

Each press begins play from one of the six index points you have set on the disc.

To Skip to Another Index Point

On the Remote Commander, press the letter corresponding to the index point you want the player to start play from.



To Resume Normal Play

Press the CUSTOM INDEX button or the CLEAR button.



Custom Index Points Remain in Player Memory

The index points remain in the memory of the player even when the player enters a different mode such as normal playback mode. However, when you remove the disc or turn off the player, the index points are erased.

(continued)

Custom Index (continued)

How the Custom Index Points are Stored

Entered index points are stored in the memory of the player, and not actually on the disc itself. Therefore, index points set using one player cannot be found on the same disc using another player.

How Custom Index Points are Ordered

The player arranges the index points on the disc not according to the order in which you input them, but according to their relative position from the start of the disc. If a new index point is set before an old one, the alphanumeric order gets rearranged. Also, in playing a CDV, although play starts from the video section of the disc, index points are arranged starting from the audio section.

To Play a Section Between Index Points One Time

- 1 Press CUSTOM INDEX.



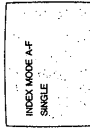
- 2 Press 1/ALL.



- 3 Press the number key corresponding to one of the index points (A-F). (The number keys now function as alphabetic keys.)



Each press begins play from one of six index points you have set on the disc. The section between this point and the next index point plays once.



This display will go out in about three seconds.

To Cancel 1/ALL

Press 1/ALL.



To Repeatedly Play a Section Between Two Index Points

- 1 Press the CUSTOM INDEX button.



- 2 Press 1/ALL.



- 3 Press REPEAT.



- 4 Follow the procedure "To Play from an Index Point" (on the preceding page).

The section between this point and the next index point plays over and over.

To Cancel REPEAT

Press 1/ALL and REPEAT.



To Clear an Index Point

- 1 Press SEARCH/NEXT until the index point you want to erase appears in the TV screen.
- 2 Press CLEAR.

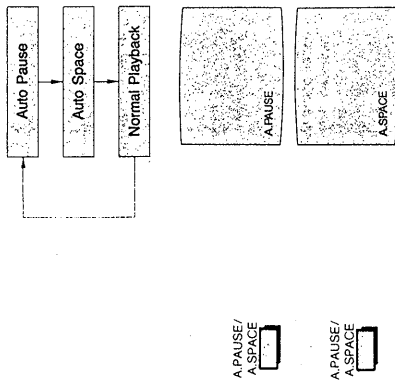
The index point disappears.



Index point to be cleared

How to Program the Player to Pause or Scan Automatically

There are many functions you can program the Multi Disc Player to do automatically. Three of them are Auto Pause, Auto Space, and Intro Scan. To make the player pause for three seconds between selections, use the Auto Space function. To make the player stop every time a selection ends, use Auto Pause. When you want to find a particular track, use the INTRO button to make the player play the first 8 seconds (approximately) of each chapter or track on the CD, LD, or CDV.



Each time you press the A.PAUSE/A.SPACE button, the modes change in the sequence shown on the right.

To Make the Player Stop Momentarily (Auto Pause)

Press A.PAUSE/A.SPACE once. To play the next selection, press PLAY.

To Insert a Three-Second Pause Between Selections (Auto Space)

Press A.PAUSE/A.SPACE twice.

To Resume Normal Playback

Press A.PAUSE/A.SPACE a third time.

To Scan the Beginning of Each Chapter/Track (Intro Scan)

Press INTRO. The player plays only the first 8 seconds (introduction) of each chapter or track on the disc. After the player introduces the last chapter, the player pauses. On CDVs, intro-scanning begins again from the video section of the disc.

To Resume Normal Play

Press the PLAY (▶) button. Play resumes from the selection just introduced.

To Stop Play

Press the STOP (■) button.

How to Play Selections in Random Order—Shuffle Play

Shuffle Play is another of the Multi Disc Player's programmable functions. As the name implies, this function allows you to play all the tracks or chapters on a disc in random order once or repeatedly. From this random order you may program the player to delete tracks or chapters you don't want played. (Note that Shuffle Play can only be conducted on LDs, CDs and CDVs containing TOC data.) Locate the number keys, SHUFFLE, and PLAY buttons on the Remote Commander.

To Ensure Correct Operation

Before you press the SHUFFLE button, make sure the disc tray has closed completely, and the "▶" (Play) indication on the PLAY button has stopped flashing.

To Shuffle Play all Tracks or Chapters on a Disc

- 1 Press SHUFFLE. "DELETE SHUFFLE" will appear on the screen with "▶" flashing.
- 2 Press PLAY (▶). All the selections on the disc play once in random order. After all the selections play, the player stops. CDV selections play randomly from the both audio and video parts of the disc.

To Advance to the Next Selection

Press ACS/AMS (▶▶) button to skip to the next track or chapter. (The ACS/AMS (▶▶) button does not function to return to a previous track or chapter in Shuffle Play mode.) Instead, use the Shuttle Ring.

To Resume Normal Play

Press CLEAR or 1/ALL. This clears Shuffle Play. Playback resumes from the next selection.

To Delete Certain Selections from Shuffle Play

- 1 Press SHUFFLE. "DELETE SHUFFLE" will appear on the screen with "▶" flashing.
- 2 Enter the chapter or track number of the selection you do not want the player to play.
- 3 Press PLAY (▶). The player automatically plays a random program of selections without the ones you deleted.

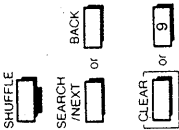
To Clear an Entry

- 1 Press CLEAR.
- 2 Press SHUFFLE.
- 3 Enter the correct numbers.

(continued)

Shuffle Play (continued)

To Change an Entered Number



- 1 Press SHUFFLE.
- 2 Press SEARCH/NEXT (to advance) or BACK (to go back) until the number you want to change flashes on the TV screen.
- 3 Press CLEAR, or using the number buttons, enter the correct number.

To Repeat Shuffle Play

Press the REPEAT button on the Remote Commander. The player reshuffles the selections and plays them back in a different random order.

To Clear Shuffle Play



When you turn off the player, or you remove the disc, all shuffle functions clear from the memory of the player.

Additional Information

This section contains information that will help you if you have problems with your player. It also contains maintenance information and a glossary.

Troubleshooting

Check the following before requesting service.

Symptom	Point to check
No power	<ul style="list-style-type: none"> Power cord properly plugged into AC outlet?
Play button () does not produce playback.	<ul style="list-style-type: none"> Disc inserted? Disc properly seated? Recorded side facing upward?
Play indicator () lights, but there is no picture or sound.	<ul style="list-style-type: none"> TV or monitor switched on? TV properly connected to player? The input selector on TV set to "Video"? TV without audio/video inputs Channel selector on the RFU adaptor and TV set to the same number? TV channel properly adjusted? TV/DISC selector on the remote commander set to DISC?
Poor picture or sound quality	<ul style="list-style-type: none"> TV properly connected? Any source of noise nearby? Disc dirty or scratched? Any condensation on player objective lens? TV without audio/video inputs Channel selector on the RFU adaptor and TV set to the same number?
No sound	<ul style="list-style-type: none"> TV properly connected to player? The input selector on the player set to "AUX"? Volume control on TV, monitor, or amplifier high enough? Playback at normal speed? (The player produces sound only during normal speed playback.)
Playing always stops at the end of each selection without playing the next selection.	<ul style="list-style-type: none"> AUTO PAUSE indicator on? Using KARAOKE mode?
No sound from microphone viewed on TV	<ul style="list-style-type: none"> MIC volume all the way on the left (MIN)? Using NORMAL mode? TV properly connected? DISC/TV selector set to "TV"?
Regular broadcasts cannot be viewed on TV	<ul style="list-style-type: none"> Batteries correctly inserted? Batteries weak? Any obstacles between the Remote Commander and the Sensor on the player? The Remote Commander is pointed at the Sensor on the player?
Cannot show STILL frames	<ul style="list-style-type: none"> Playing an extended-play disc CLV?
Picture distorted during scan.	<ul style="list-style-type: none"> Some distortion in the lower part of the picture in normal – even for CAV discs.

Optical Disc Maintenance

Holding CDs or CDVs

Hold CDs and CDVs by putting your index finger through the center hole and grasping the edges of the disc with the thumb and other fingers as pictured in the illustration.

Holding LDs

Hold LDs by grasping the outside edge in both hands as illustrated.

Light Exposure

Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave the disc in a car parked in direct sunlight where there can be a considerable rise in temperature.

Cracked or Damaged Discs

Do not play cracked or damaged discs, or try to play discs that have been repaired with adhesive glues.

Keeping the Disc Surface Clean

Clean the surface of the disc before playing using a soft, dry cleaning cloth. Wipe the disc from the center out. Do not use solvents such as benzene, paint thinner, commercially available cleaners, or anti-static spray intended for LP records.

To prevent marring, after playing, remove the disc and put it back into its jacket.

Putting your fingers on, or adhering anything to the surface of the disc such as sticky note pad paper or adhesive tape will deteriorate the quality of the playing surface, and thus the output quality.

Player Maintenance and Safety

On Electrical Safety

- Operate the player only on 120 V AC, 60 Hz.
- Should any foreign object or liquid fall into the cabinet of the player, unplug the player and have it checked by qualified personnel before operating it any further.
- Unplug the player from the wall outlet if you are not going to use it for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- One blade of the plug is wider than the other for the purpose of safety. If you are unable to insert the plug fully after aligning it with the right sockets, contact your dealer.

On Player Location

- Avoid placing the player where there is:
 - high humidity
 - direct sunlight
 - excessive dust
- Allow adequate air circulation to prevent internal heat build-up. Do not place the player on surfaces (shag rugs, blankets, etc.) or near materials (curtains, draperies, etc.) that may block the ventilation holes.

On Moisture Condensation

- Do not operate the player where the temperature has risen suddenly or in a location where the temperature is radically different from the previous location because moisture may condense in the operating section of the player. Wait about an hour before turning the power on in a different location or keep the rise in the room temperature gradual.
- If you operate the player with moisture condensation, the player and the disc may be damaged. Therefore, remove the disc immediately when there is a possibility of moisture condensation.
- To evaporate moisture rapidly, leave the player turned on without a disc inside.

On Operation

- Remove the disc from the tray after playing it if you are not going to use the player for any length of time. Do not transport the player with a disc in place.
- When the disc tray is in the open position, do not press down on it, or place heavy objects on it.

On Cleaning

Clean the cabinet, panel, and controls with a soft dry cloth or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzene, which may damage the finish.

On Repacking

Do not throw away the carton and the packing materials. The carton makes an ideal container to transport the player in.

Glossary

ACS/AMS Automatic Chapter Sensing/Automatic Music Sensing is a function in the player that allows the laser beam to sense the beginning of chapters or tracks on a disc.

CAV Discs Constant Angular Velocity (CAV) or standard-play discs rotate at a constant 1800 rpm. Each track traced by the laser for a single rotation of the disc produces a single frame. Up to 54,000 frames make up each side of the disc, for up to 30 minutes of play. Each frame has a number that is stored with other data on the disc. When searching for a particular location on CAV discs, you must enter that "frame number".

Chapters Some laser discs are divided into sections, called chapters. These are analogous to tracks on LPs and CDs. Such discs usually have a numbered list of chapters on the jacket or label. Each chapter has been numbered for easy location when you use Chapter Search, Repeat or Program functions.

CLV Discs Constant Linear Velocity (CLV) or extended-play discs double maximum playing time to 60 minutes by varying the rotational speed from a maximum of 1800 rpm to a minimum of 600 rpm as the laser beam moves away from the center of the disc. The disc surface therefore moves past the laser head at a constant rate, and each track is longer than its predecessor. For this reason, Variable Speed Play, Freeze Frame, and Step Play are not possible with CLV discs, so when searching for a scene you must enter the time on CLV discs instead of the frame number.

Digital Sound Recordings Sound translated into digital signals has a better signal-to-noise ratio. Therefore, digital sound recordings offer a higher quality reproduction than the alternative, analog recordings (found on LPs and older audio cassette tapes). However, some laser discs have been recorded in the higher-quality digital audio signal as well as the conventional analog type signal. This player reproduces both signals with priority given to the digital signal when it is encountered.

Indexing Marking specific places on the disc so you can find those places easily during subsequent listening and viewing.

SAP Second Audio Programs are double soundtrack recordings found on bilingual and karaoke (sing-along) recordings. Two completely different sound programs have been recorded on the disc. By pressing the AUDIO MONITOR button, you can switch from one sound track to the other.

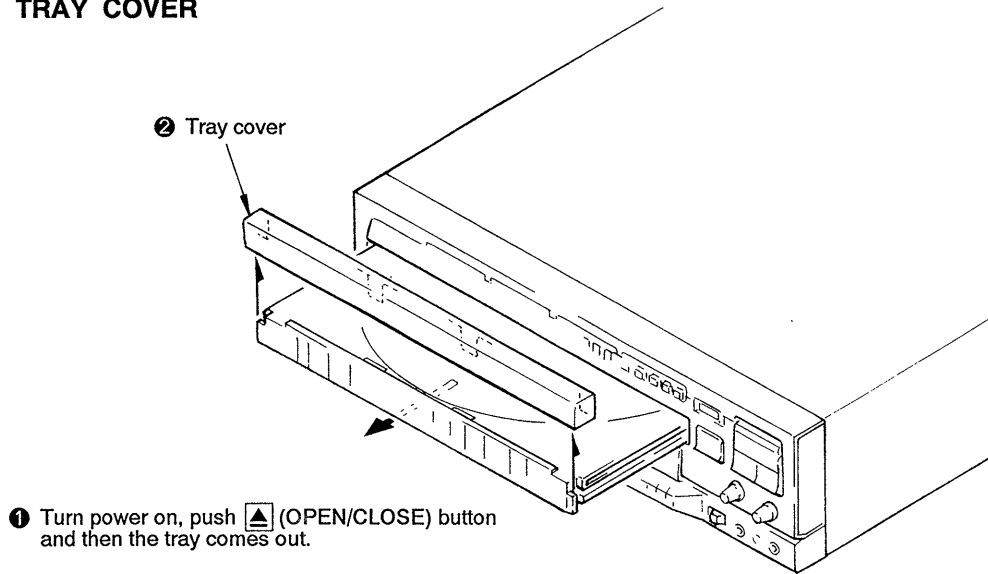
TOC Table of Contents signals are recorded on some LDs. When playing back LDs with TOC signals, additional functions can be enjoyed such as, Shuffle Play and Delete Shuffle Play.

MULTI AUDIO disc Different sounds are recorded on analog and digital tracks. You can select either sound by switching one to the other.

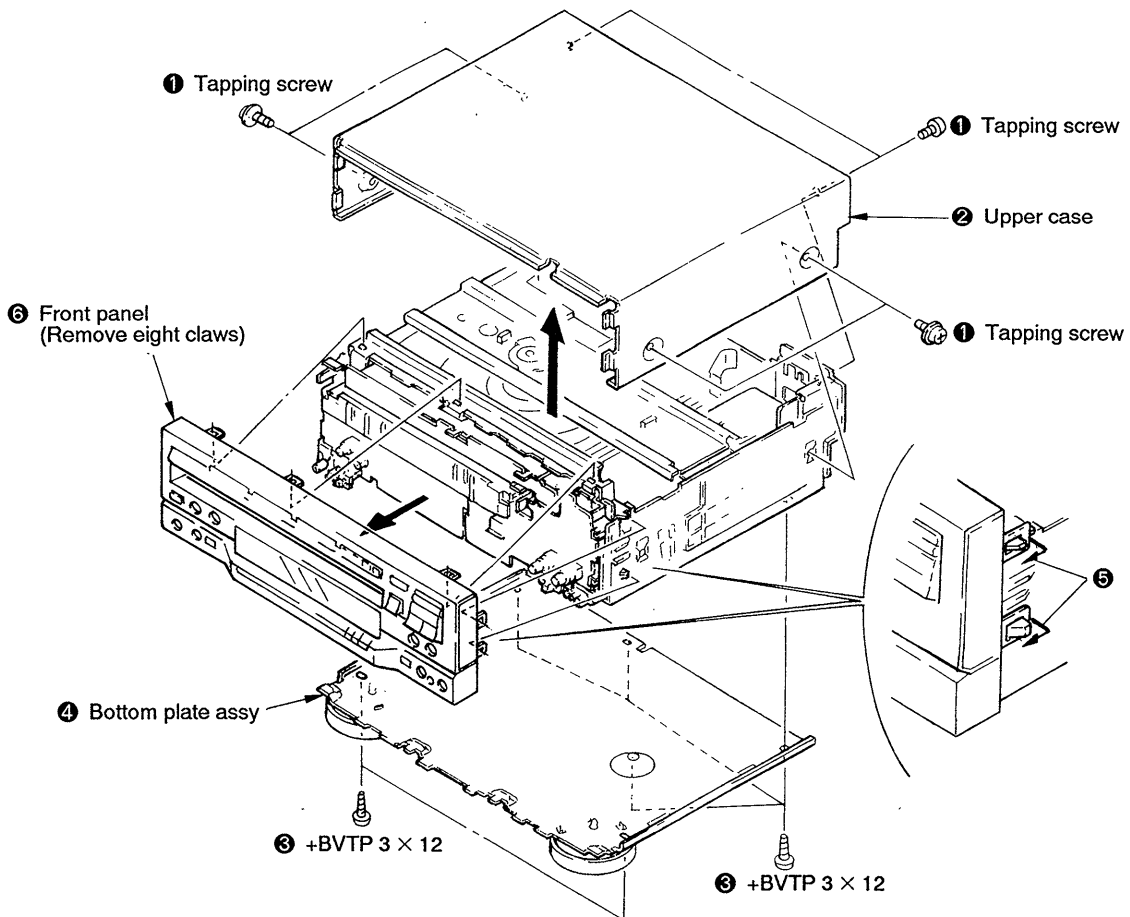
SECTION 2 DISASSEMBLY

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

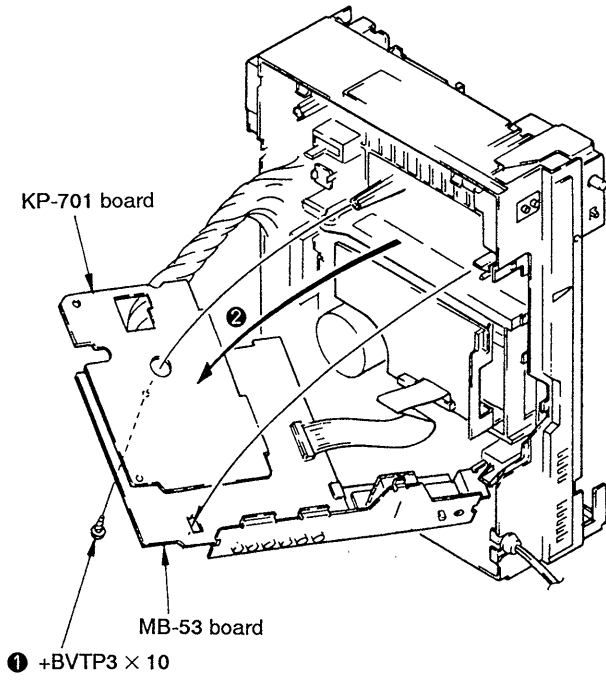
2-1. TRAY COVER



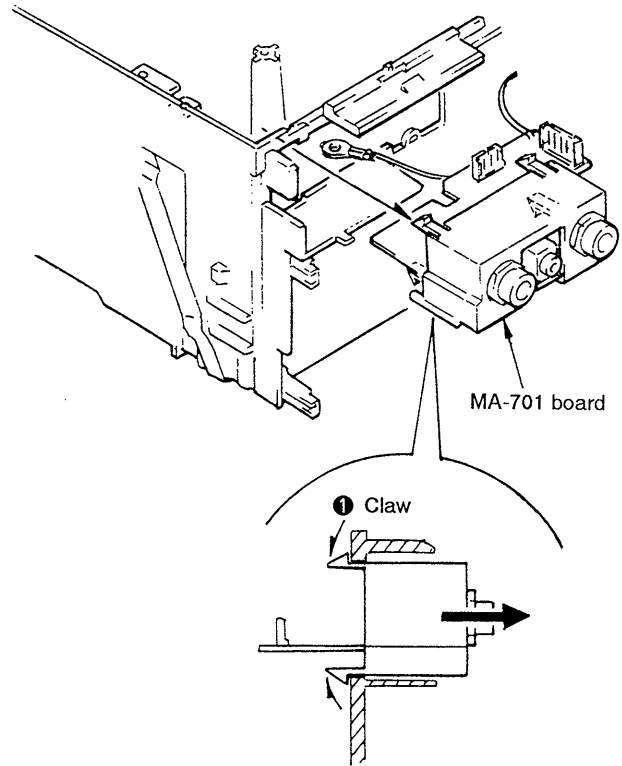
2-2. CASE, FRONT PANEL ASSY, BOTTOM PLATE ASSY



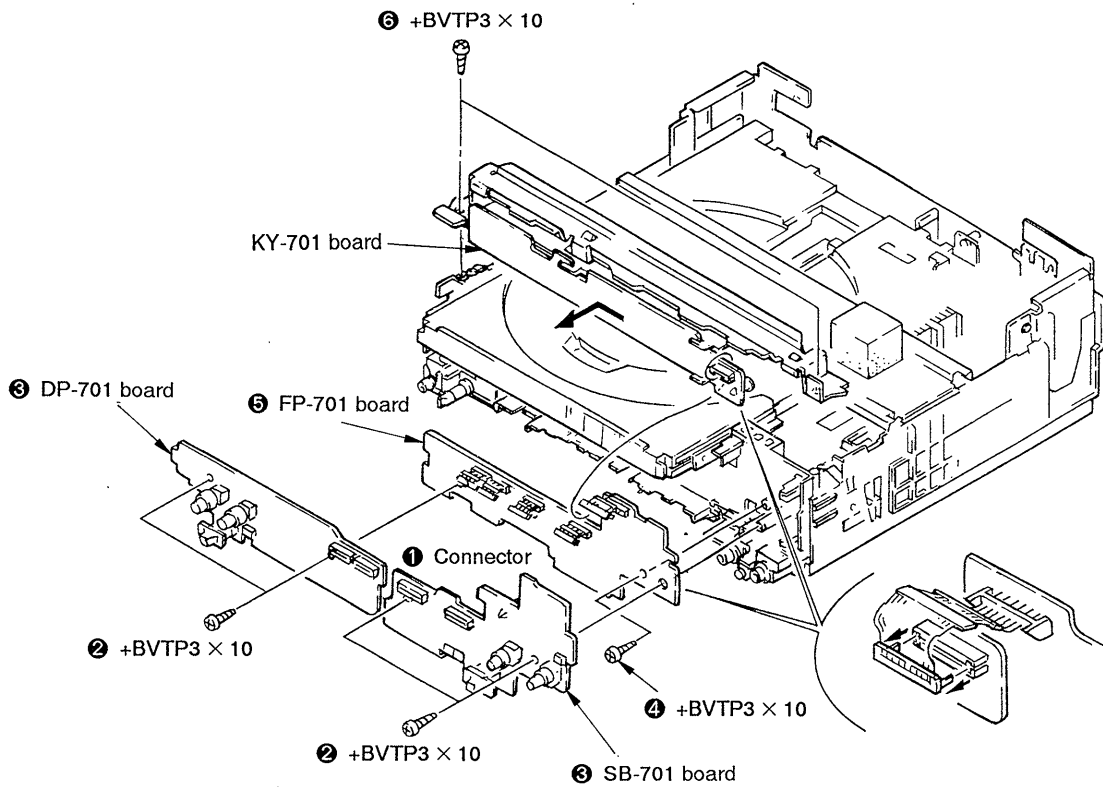
2-3. MB-53, KP-701 BOARDS



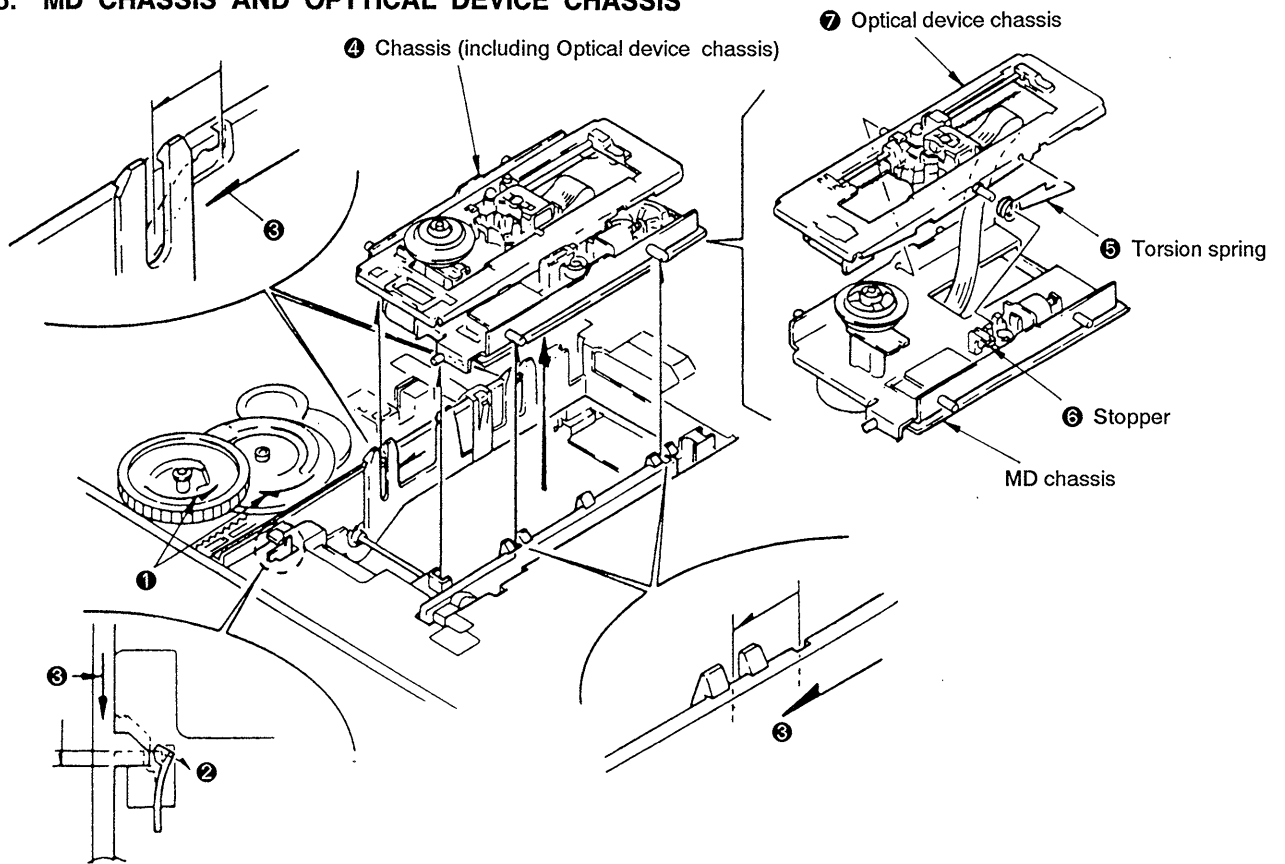
2-5. MA-701 BOARD



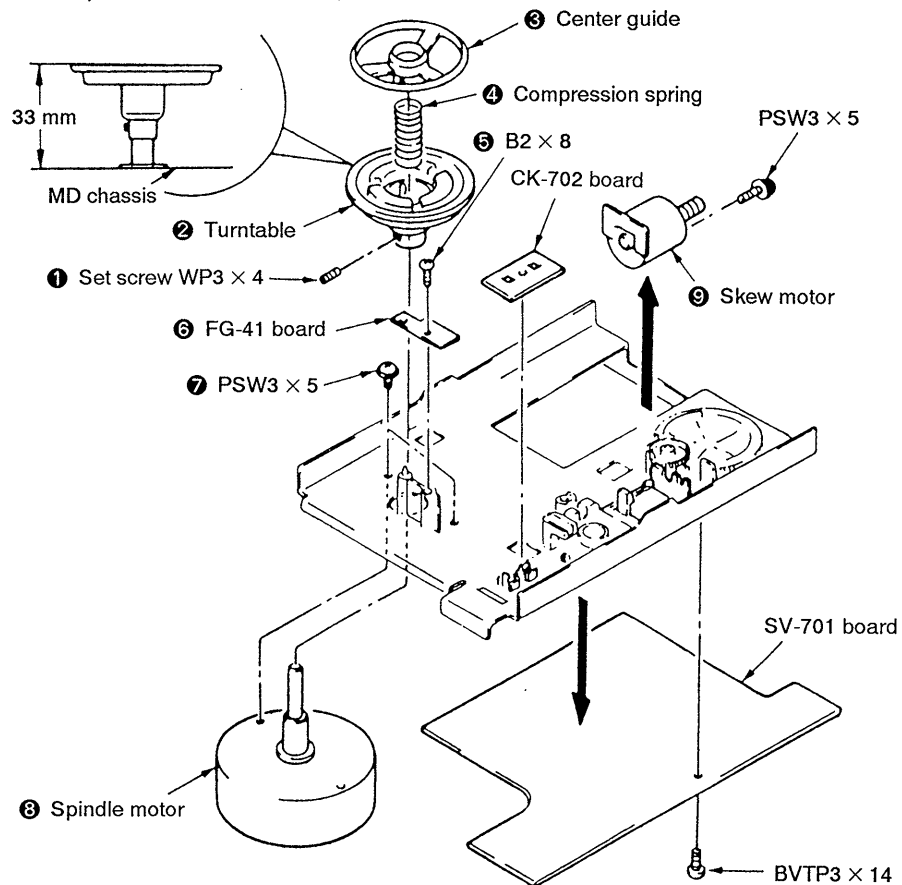
2-4. FP-701, SB-701, DP-701, KY-701 BOARDS



2-6. MD CHASSIS AND OPTICAL DEVICE CHASSIS

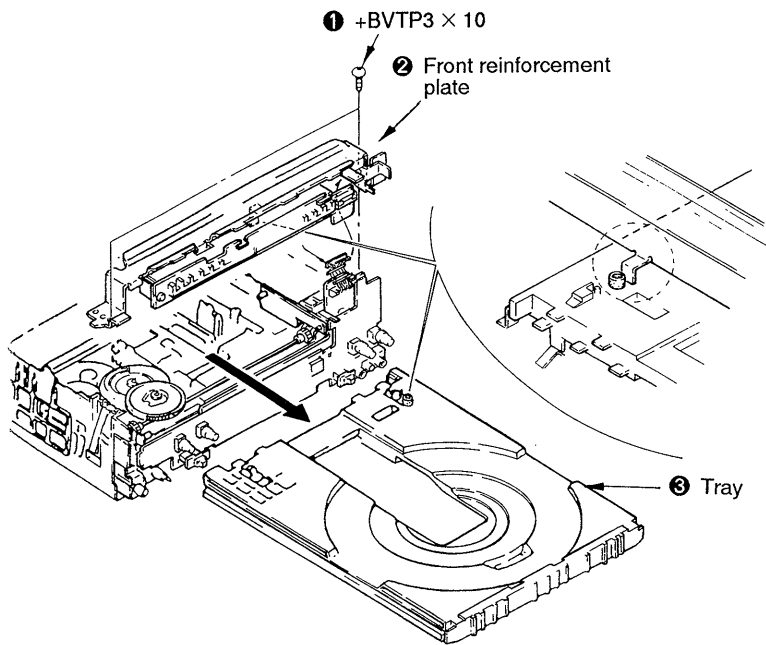


2-7. TURNTABLE, SPINDLE MOTOR, SKEW MOTOR, SV-701, FG-702 BOARDS



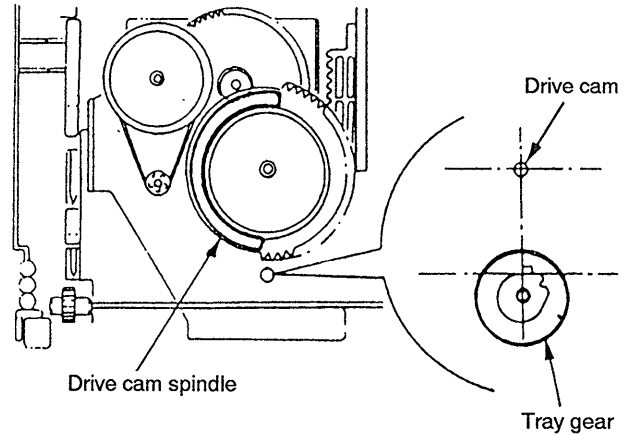
2-8. REMOVAL OF THE TRAY

Note: Make sure to remove the tray after having removed the front panel and the front reinforcement plate.



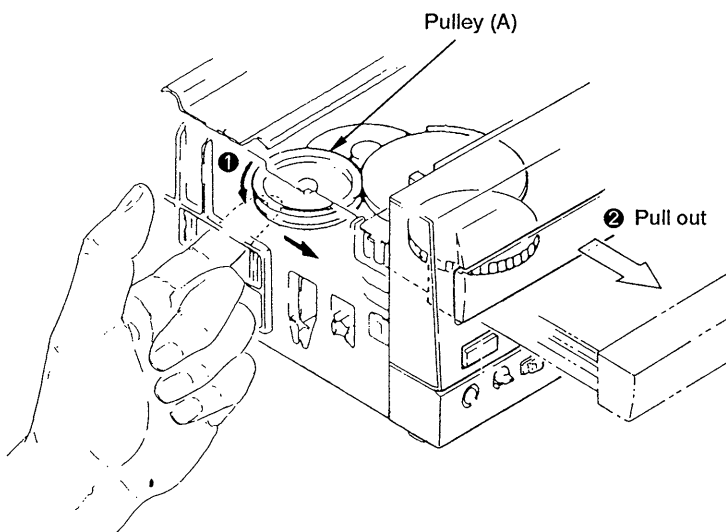
2-10. ALIGNMENT OF THE LOADING GEAR PHASE

- 1) Install the drive cam as shown in the illustration.
At this time, make sure that the last tooth of gear is aligned with the line from the center of the tray gear axle and the drive gear axle.
- 2) Install the tray gear as shown in the illustration.
At this time, make sure the flat surface of the cam is at a right angle with the drive cam.



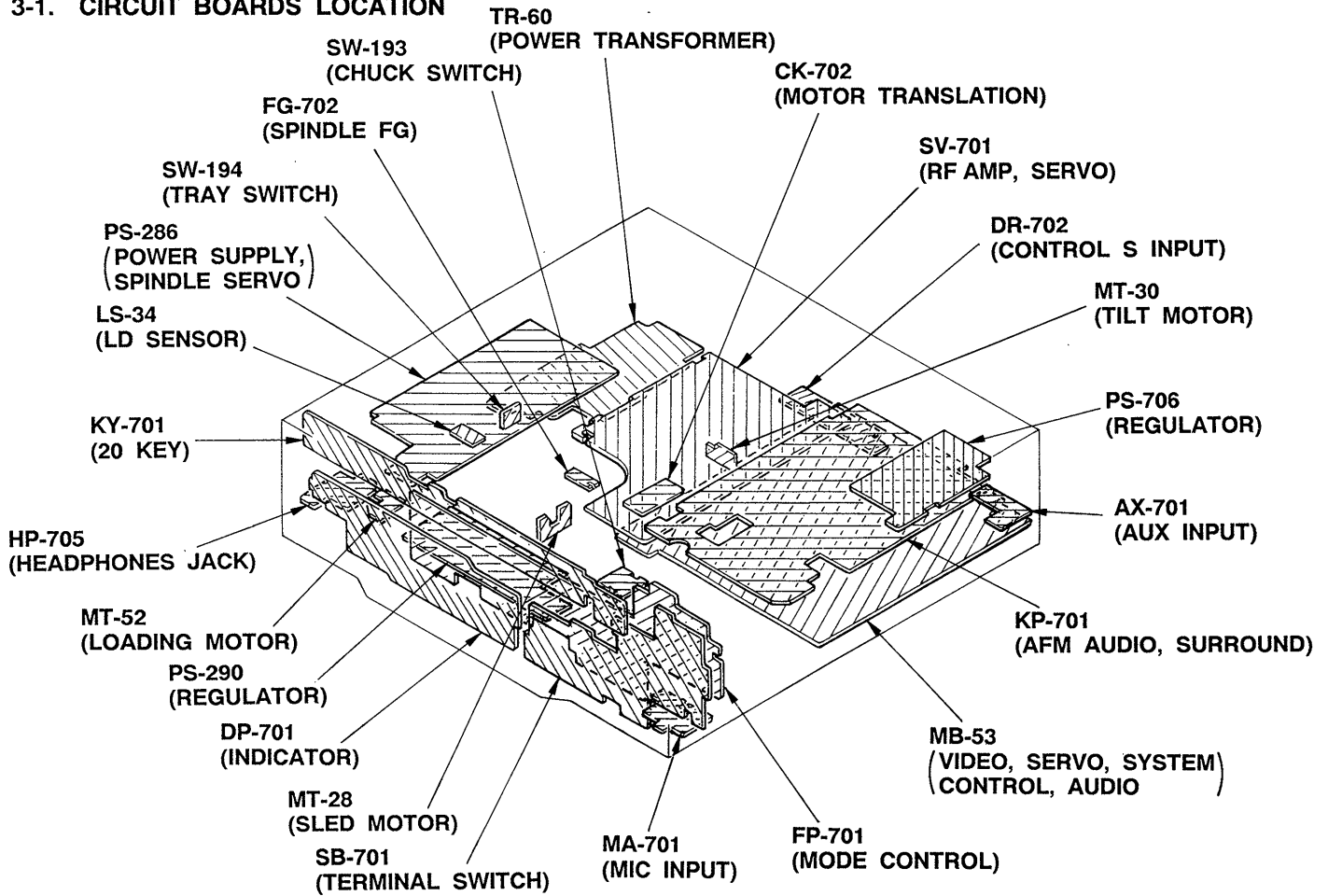
2-9. REMOVAL OF THE DISC WHEN A PROBLEM HAS OCCURRED WITH THE DISC LOADED

- 1) Turn the pulley (A) in counter-clockwise direction until the tray starts moving.
- 2) Pull out the tray.

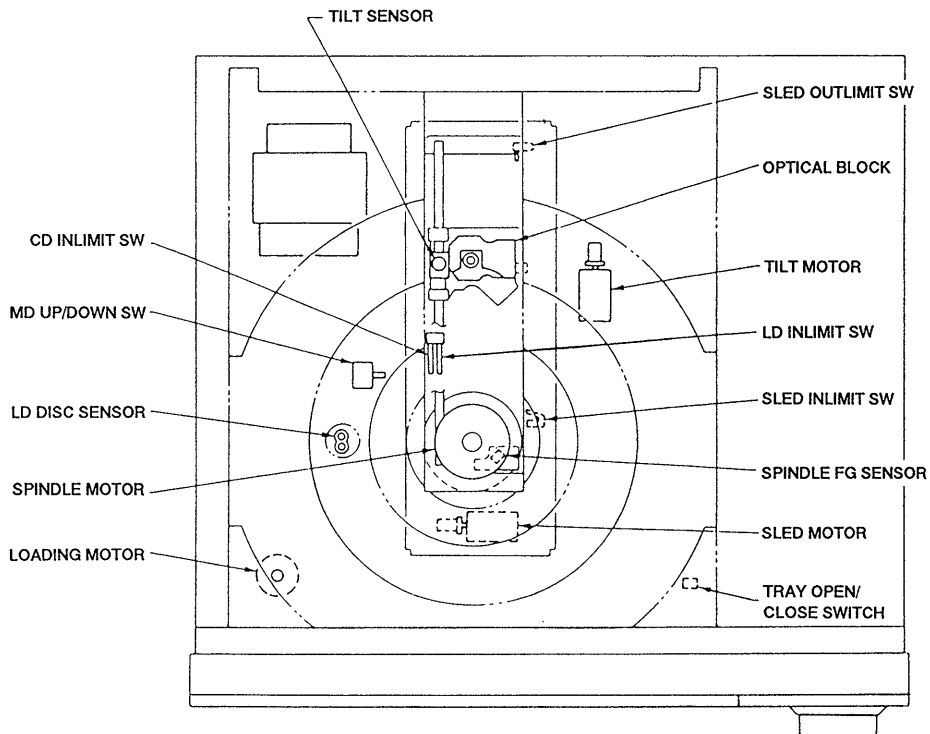


**SECTION 3
DIAGRAMS**

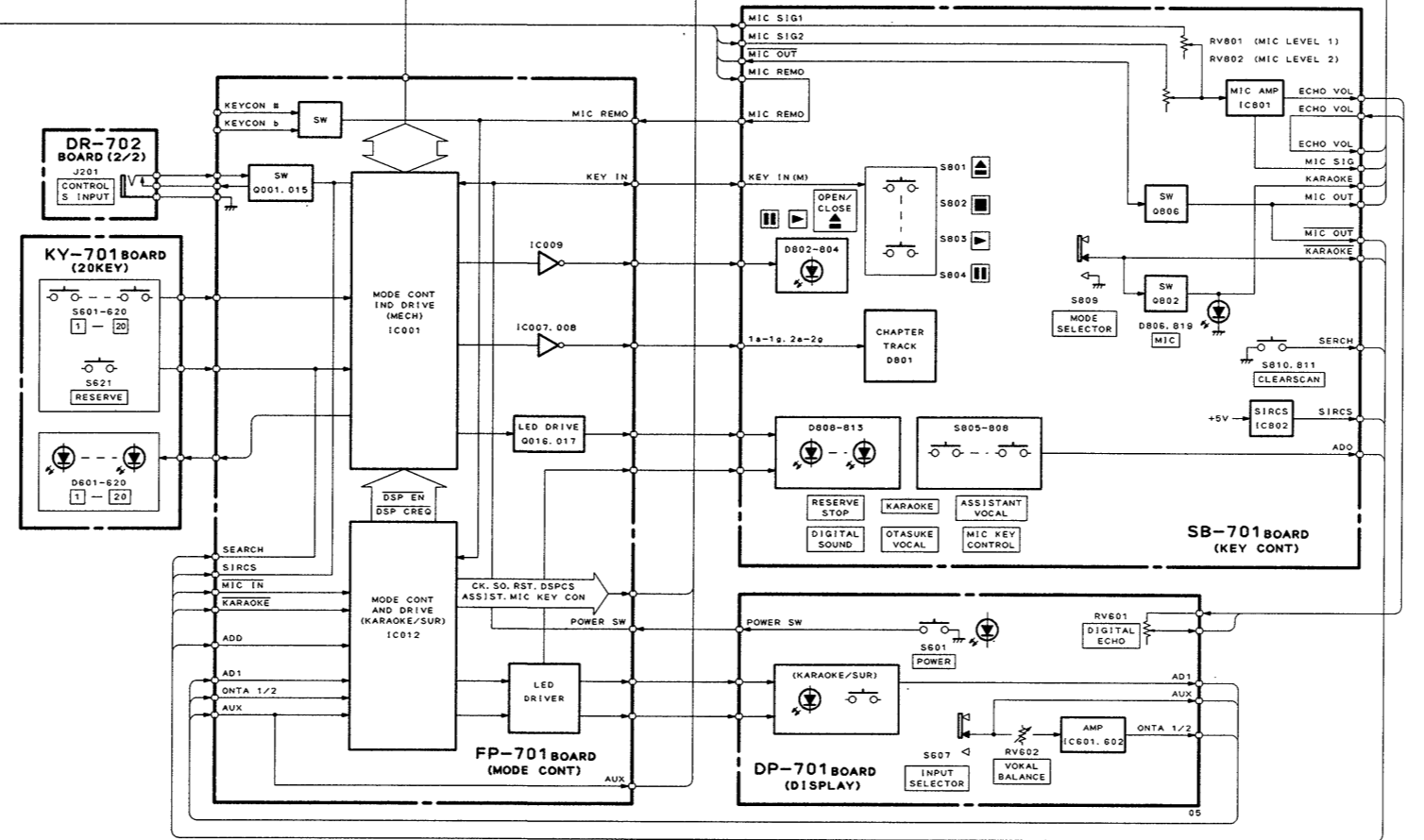
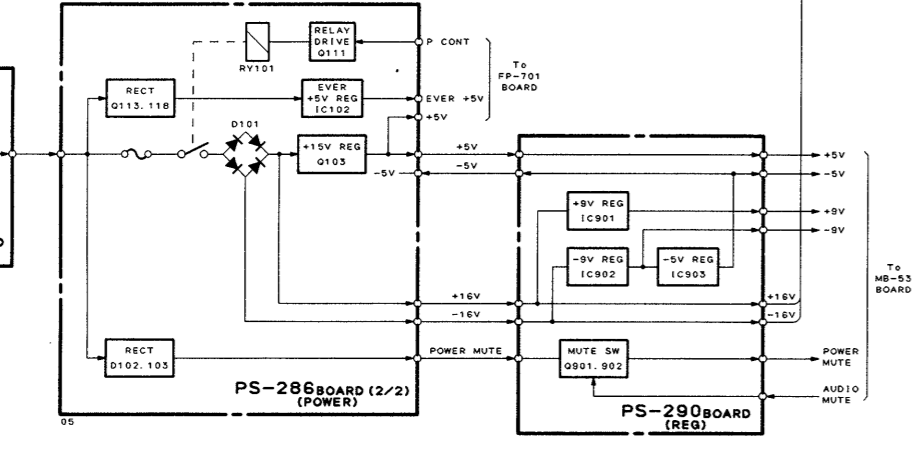
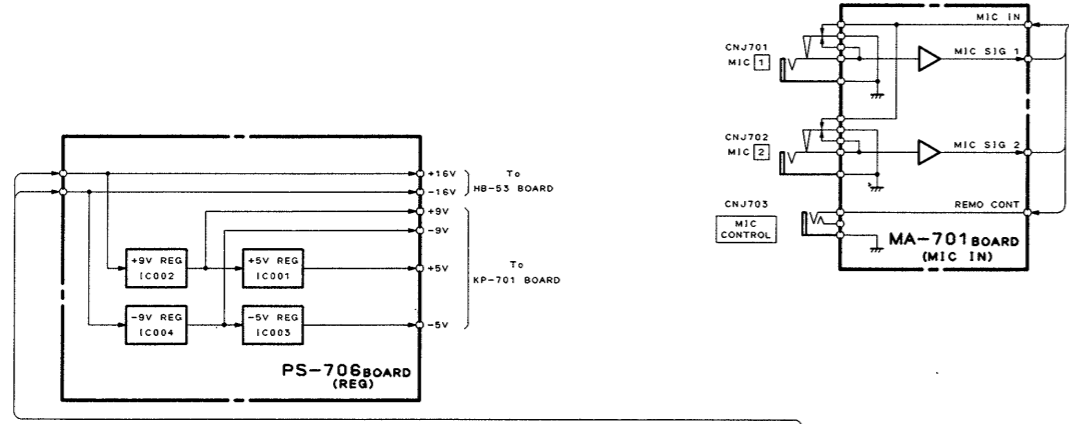
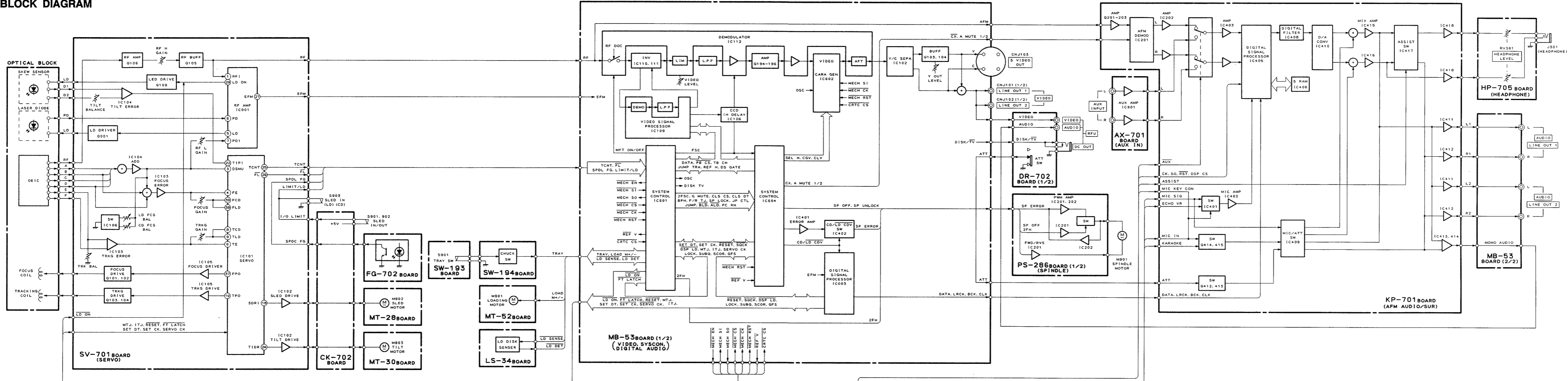
3-1. CIRCUIT BOARDS LOCATION



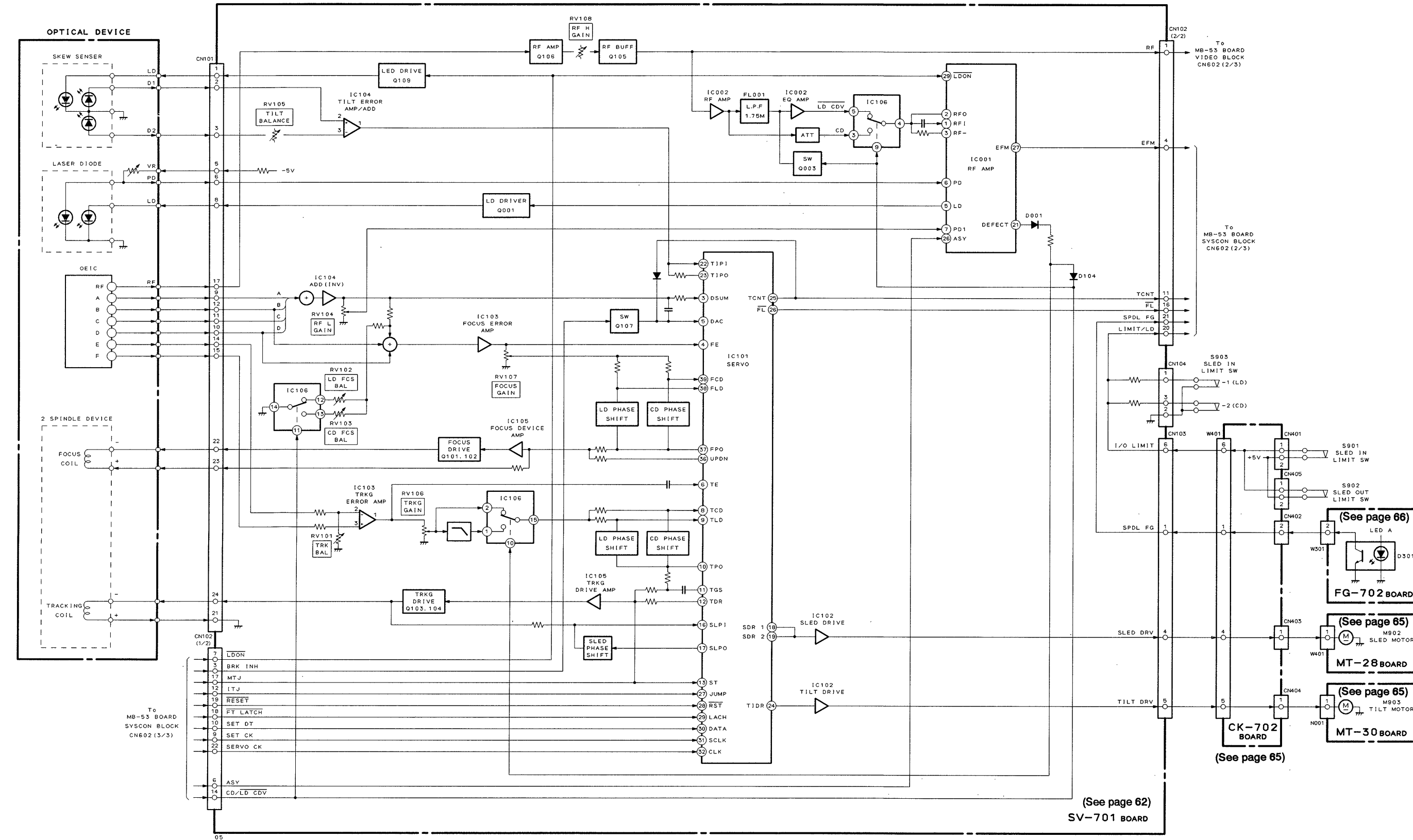
• MAIN PARTS LOCATION



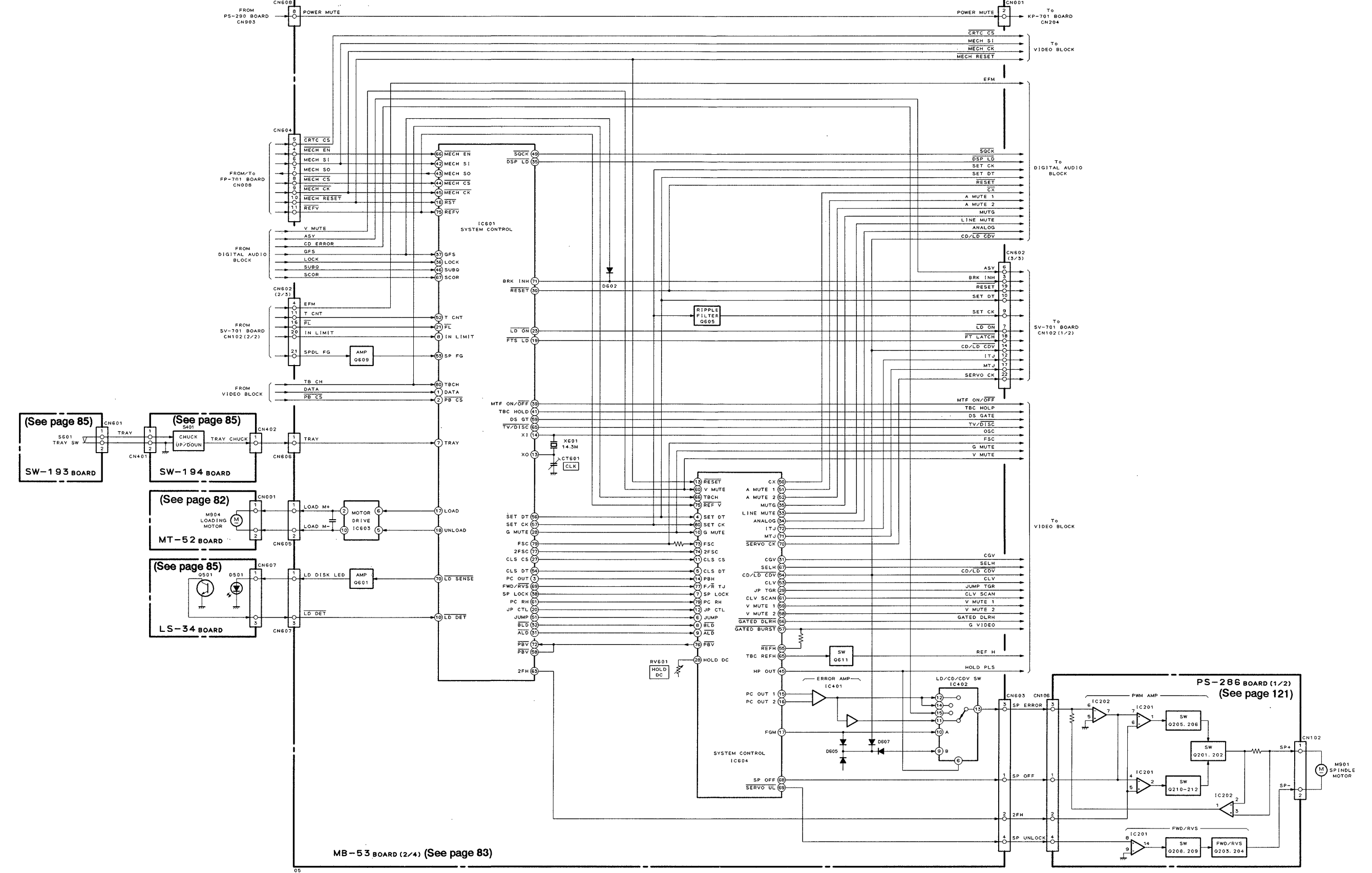
3-2. OVERALL BLOCK DIAGRAM



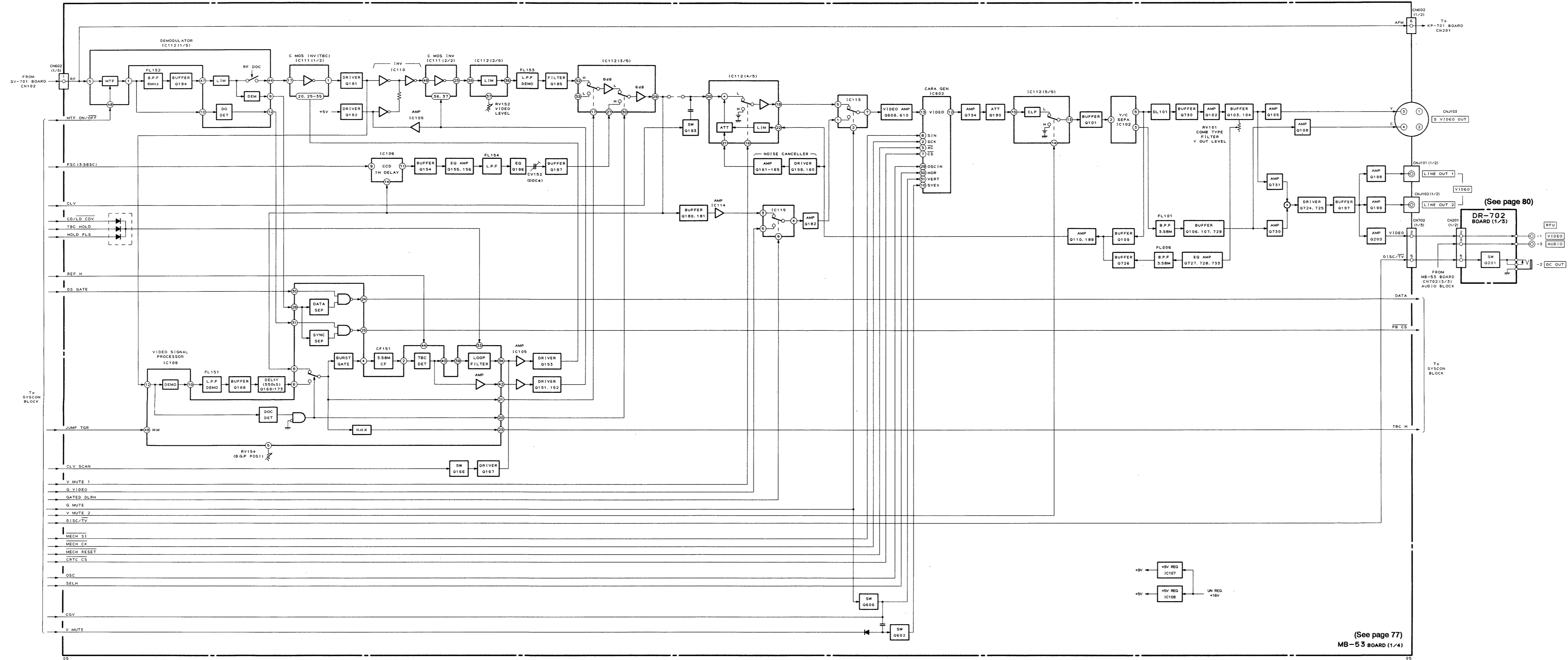
3-3. SERVO BLOCK DIAGRAM



3-4. SYSTEM CONTROL BLOCK DIAGRAM

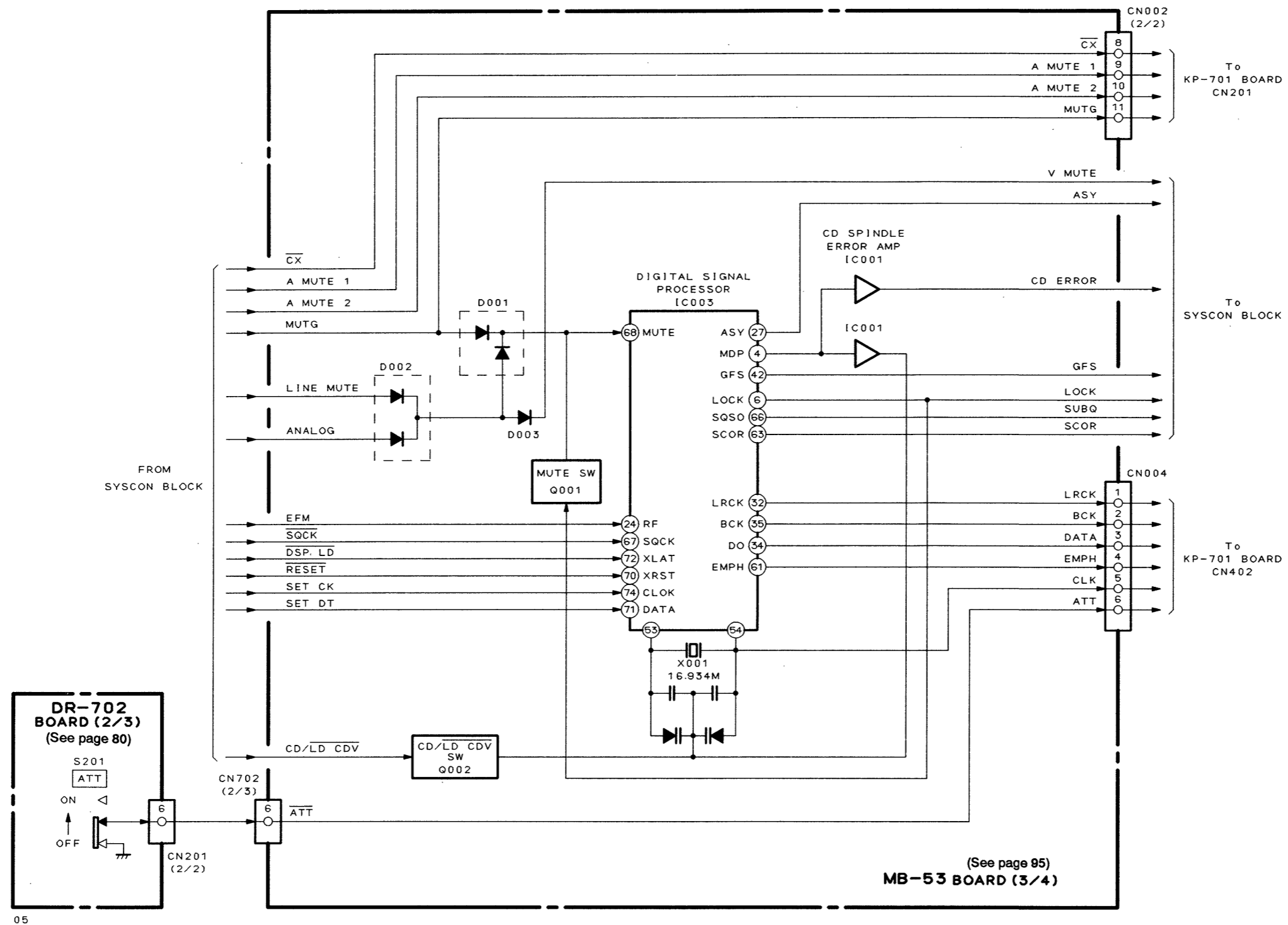


3-5. VIDEO BLOCK DIAGRAM



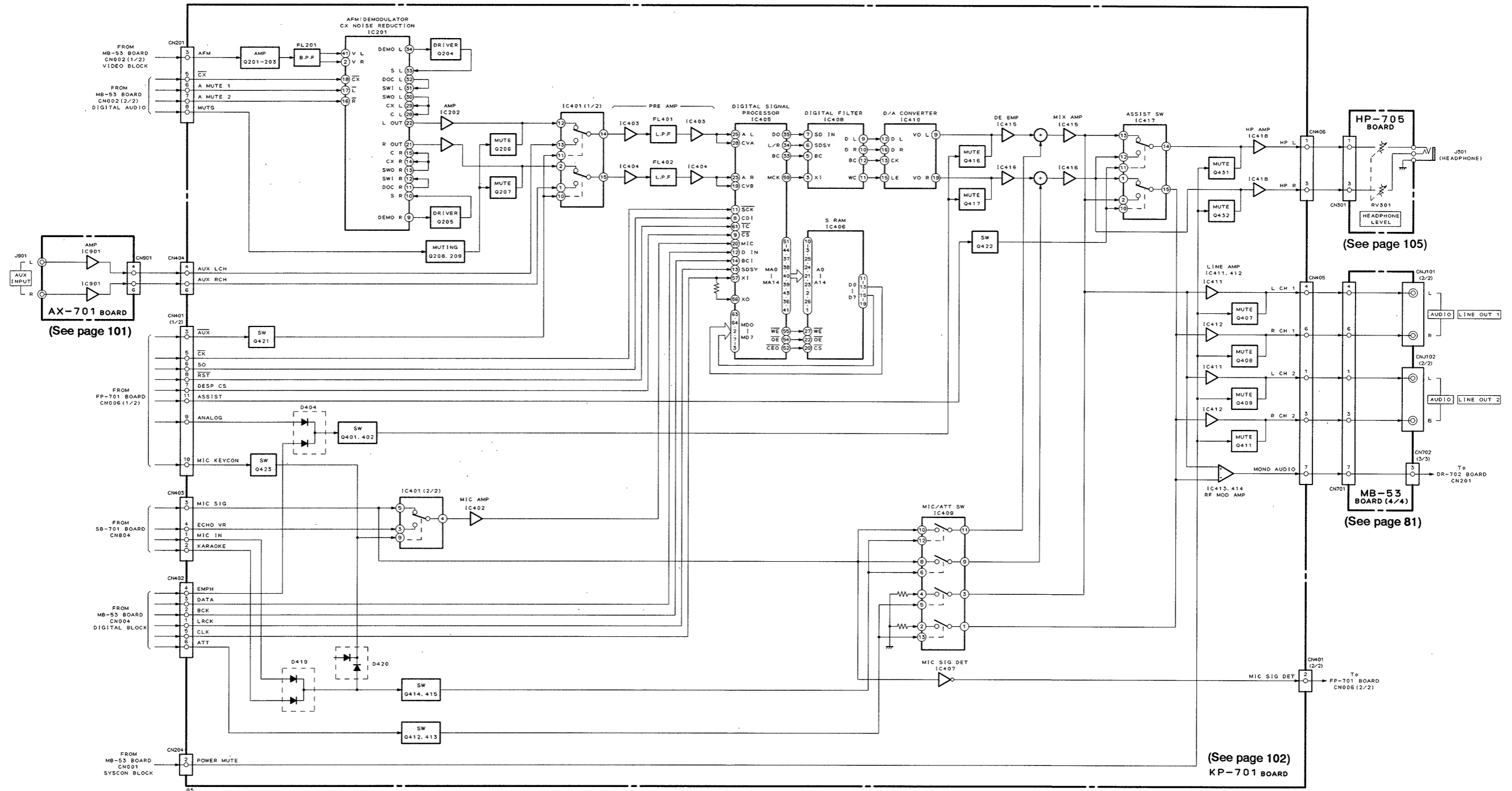
(See page 77)
MB-53 BOARD (1/4)

3-6. DIGITAL AUDIO BLOCK DIAGRAM

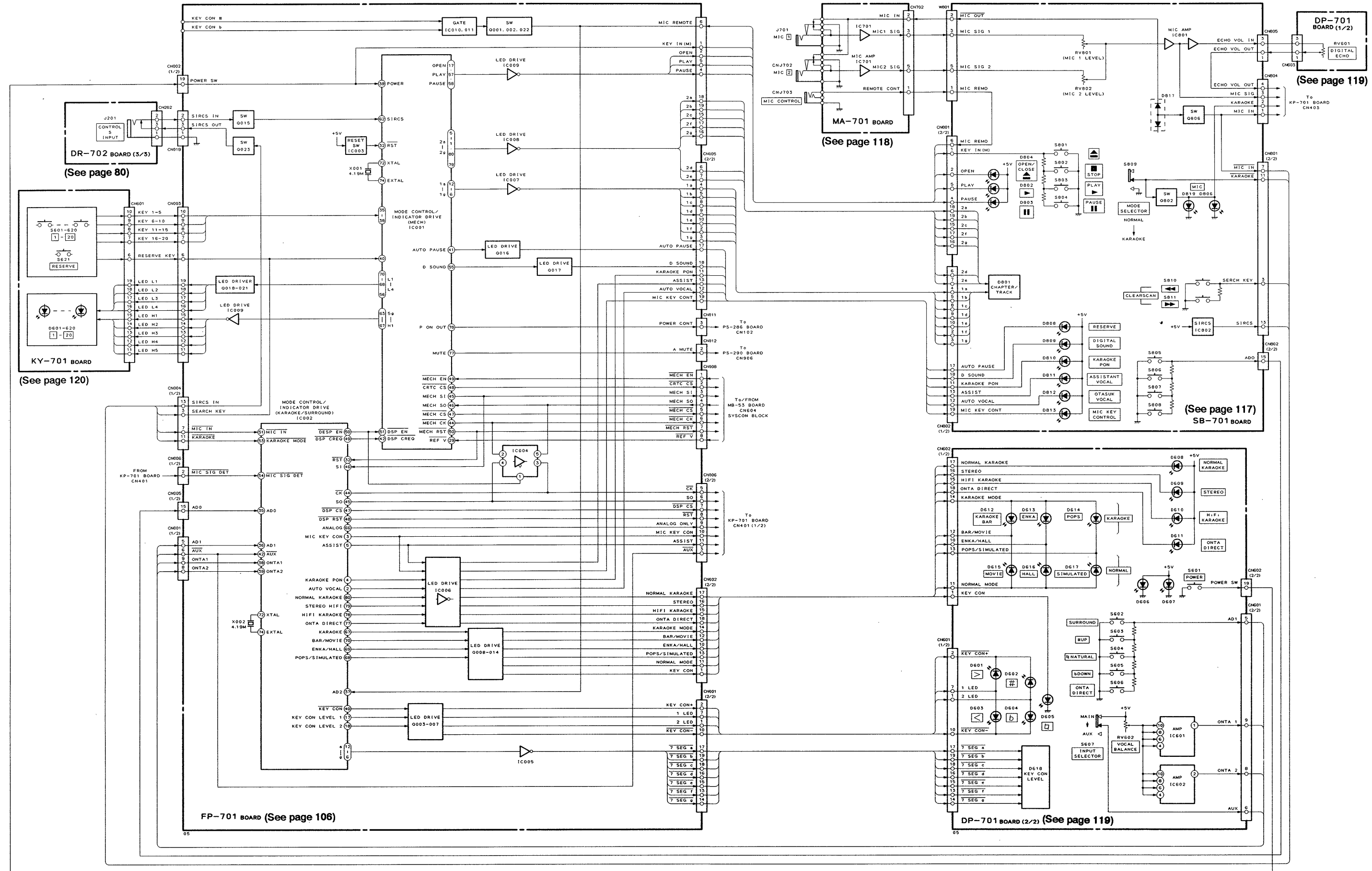


05

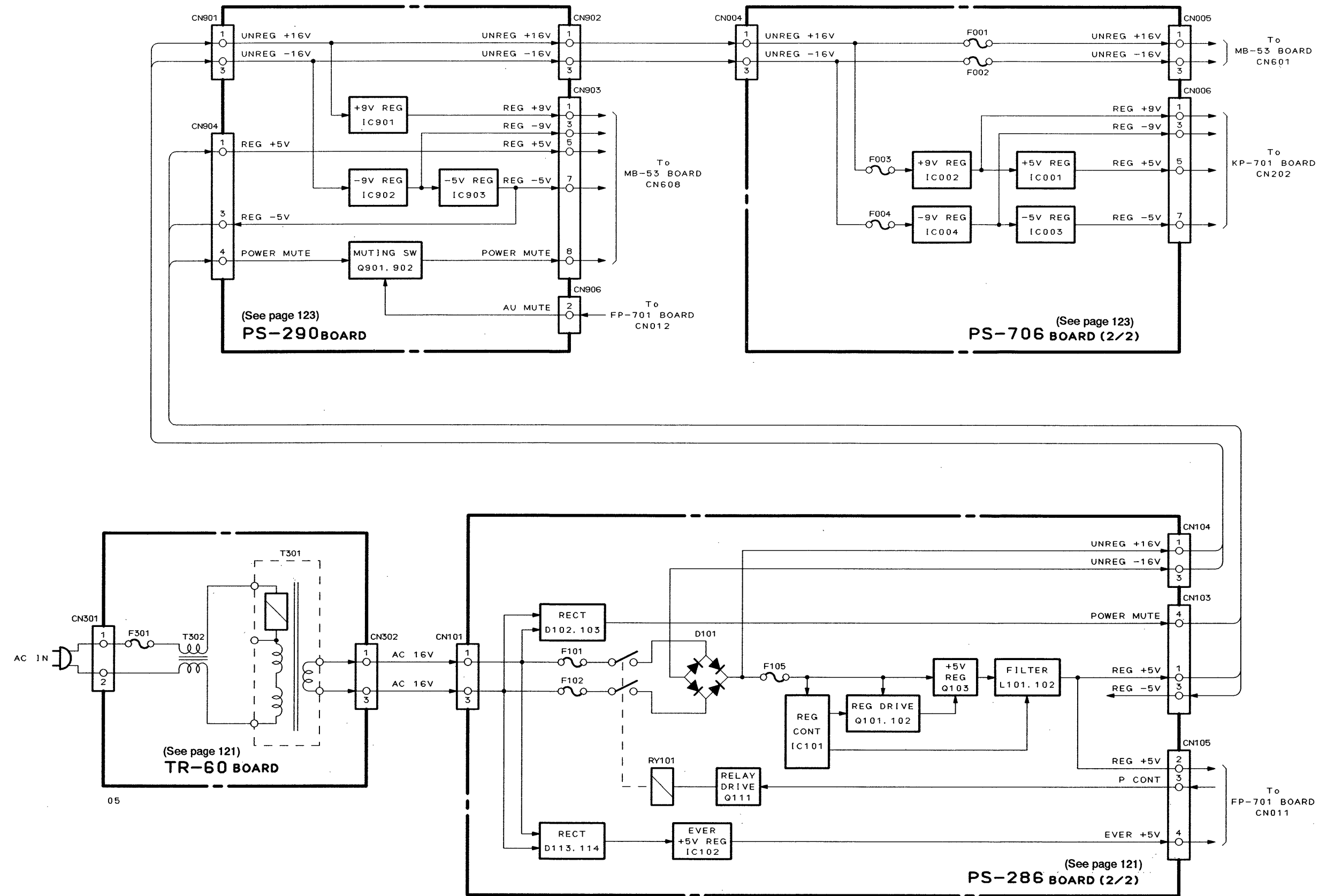
3-7. DIGITAL/AFM AUDIO BLOCK DIAGRAM



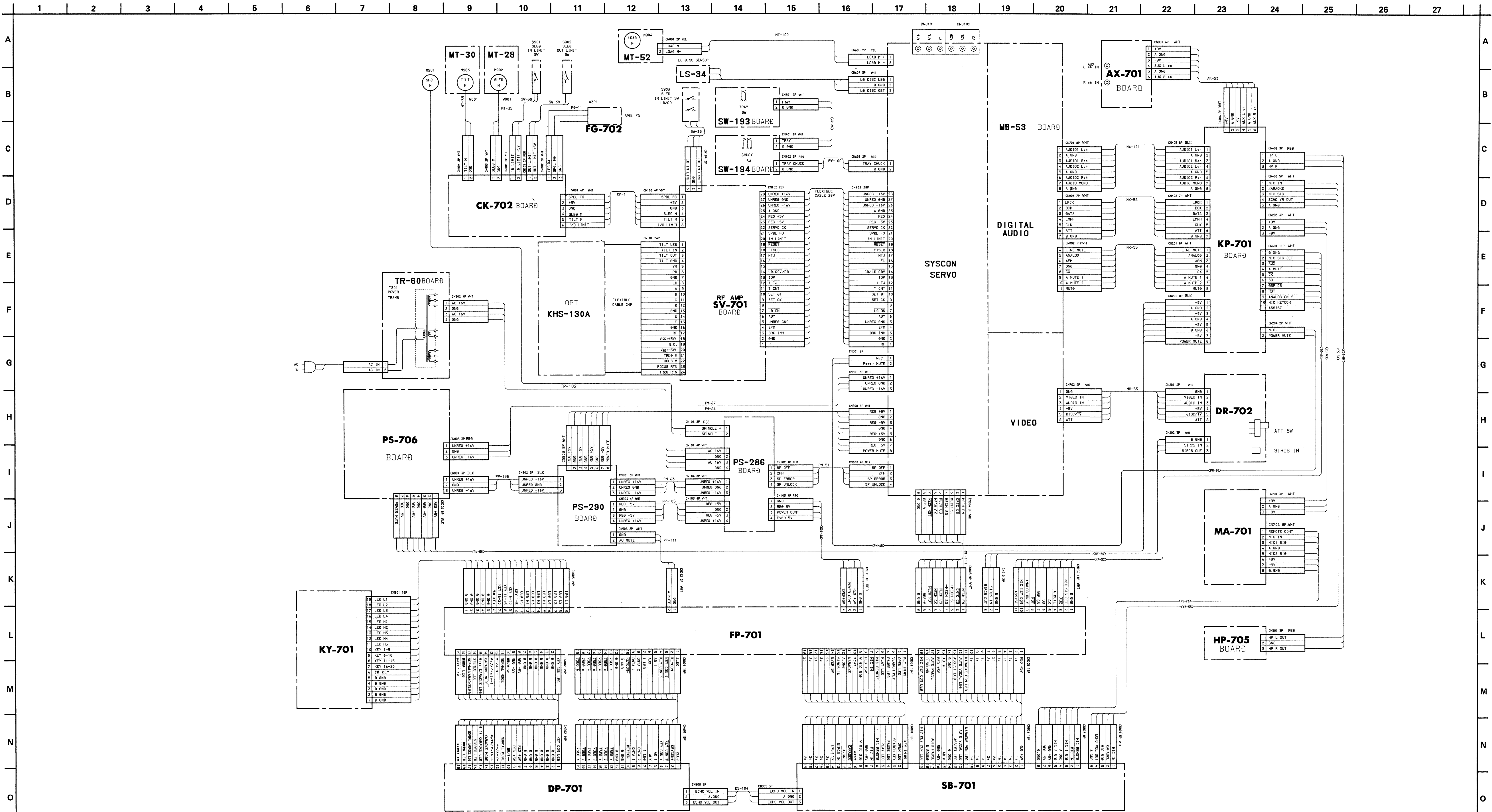
3-8. MODE CONTROL BLOCK DIAGRAM



3-9. POWER BLOCK DIAGRAM



SECTION 4
 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS
 4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

For printed wiring boards:

- — : indicates a lead wire mounted on the component side.
- — : indicates a lead wire mounted on the printed side.
- : Through hole.
- ⊙ : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

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

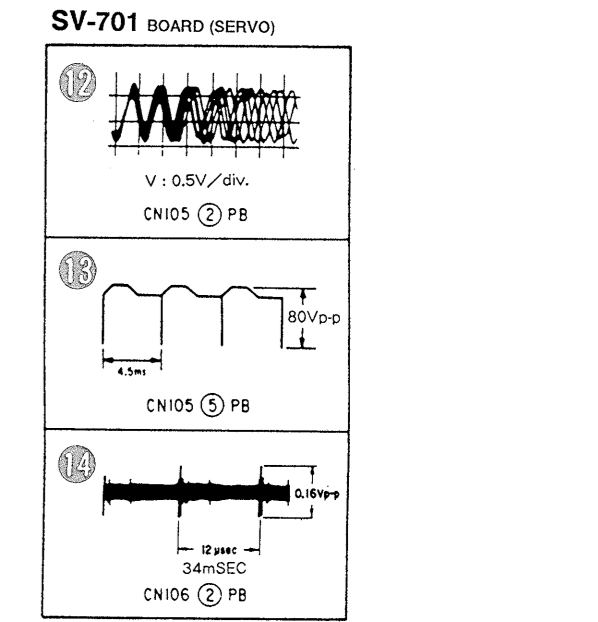
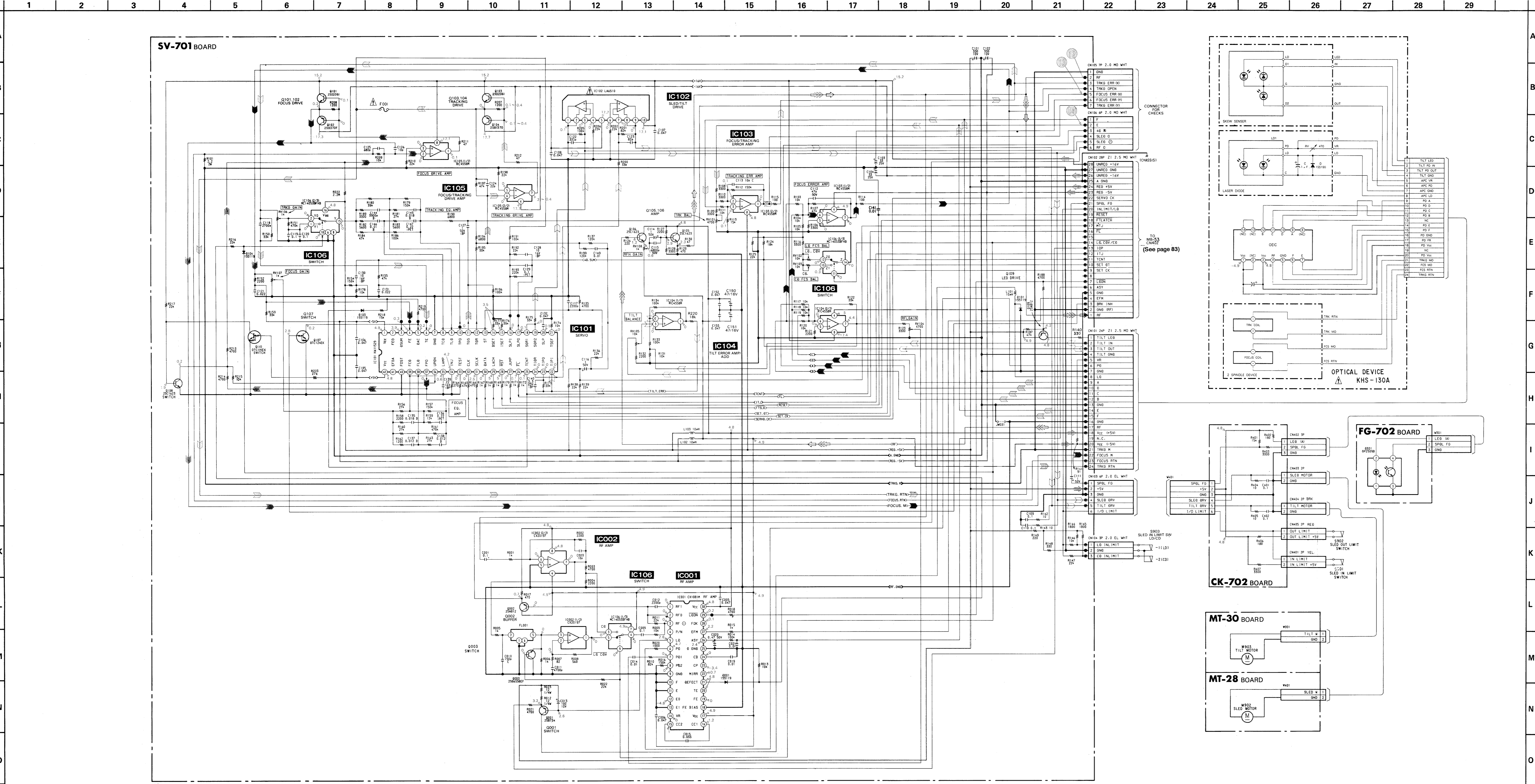
For schematic diagram:

- 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, 1/4W (Chip resistors: 1/10W) unless otherwise noted. kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: pF, SOV 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.*
- * Voltages are dc between measurement points and ground unless otherwise noted.
- * Readings are taken with a color-bar signal playback.*
- * Readings are taken with a digital multimeter (DC10MΩ).*
- * Voltage variations may be noted due to normal production tolerances.
- * IN/OUT direction of B line (+, -).*
- * Circled numbers refer to waveforms.*

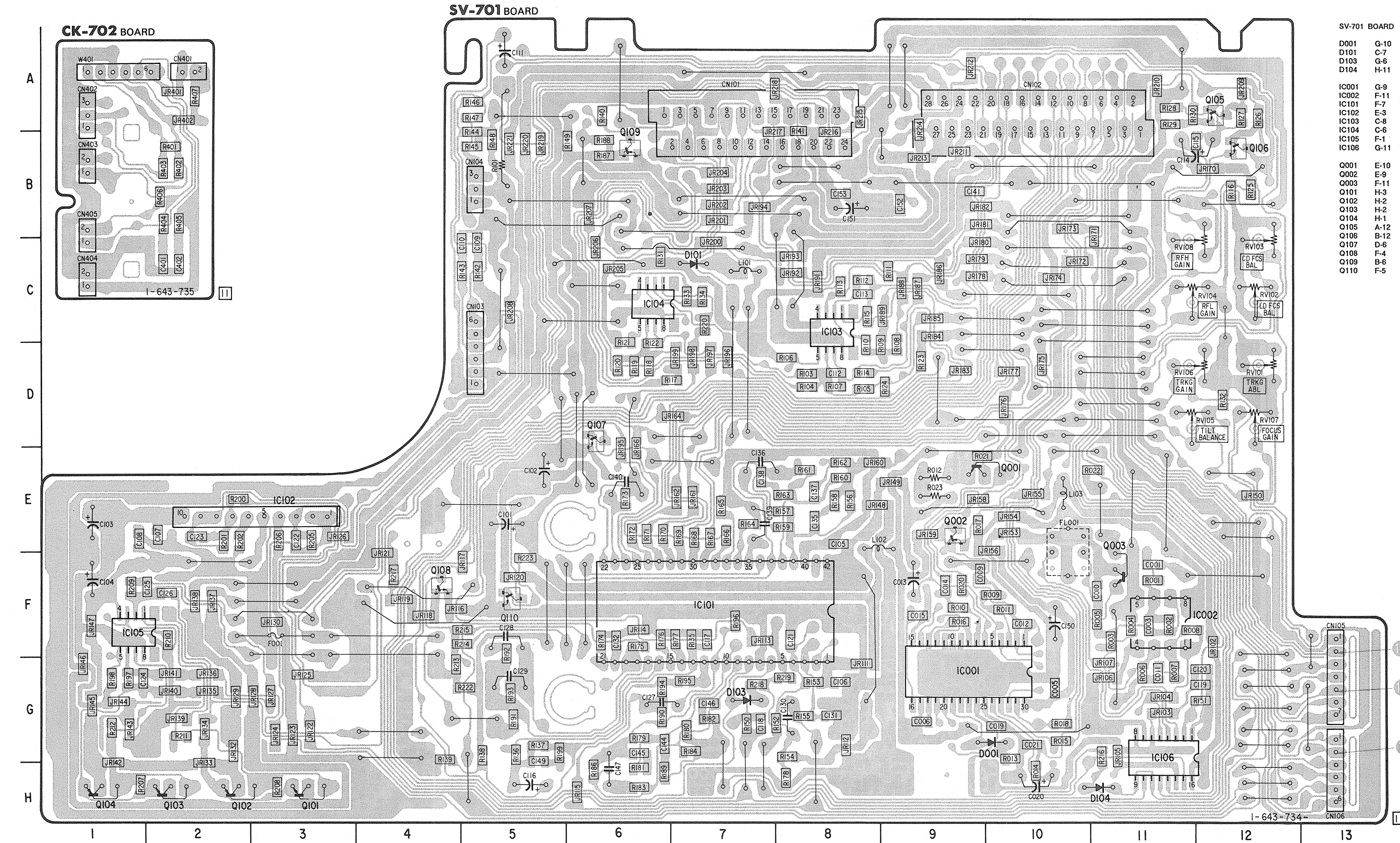
When indicating parts by reference number, please include the board name.

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

* : indicated by the color red.



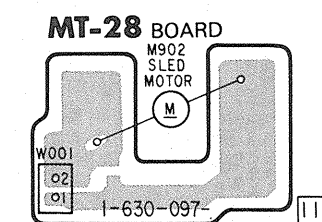
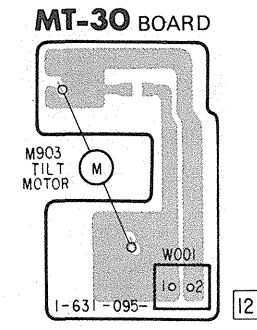
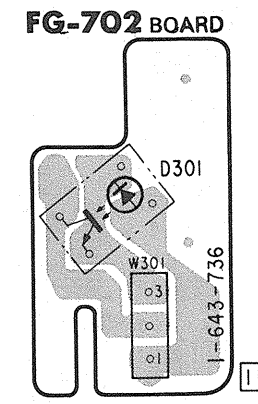
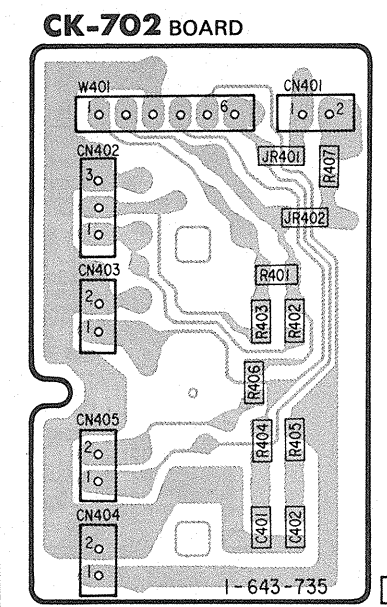
PB	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	SIGNAL
SPINDLE PHASE SERVO				▶▶▶▶
SPINDLE SERVO (SPEED AND PHASE)				▶▶▶▶▶▶
TRACKING SERVO LD/CD/CDV				▶▶▶▶▶▶
SLIDE SERVO LD/CD				▶▶▶▶▶▶
FOCUS SERVO LD/CD				▶▶▶▶▶▶
SKREW SERVO LD TILT				▶▶▶▶▶▶



- SV-701 BOARD
- D001 G-10
 - D101 C-7
 - D103 G-6
 - D104 H-11

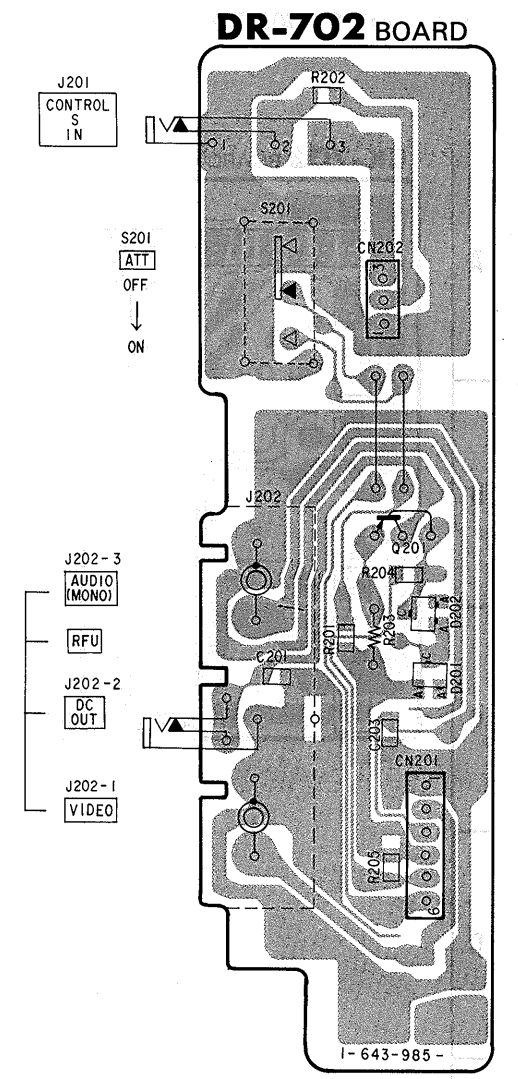
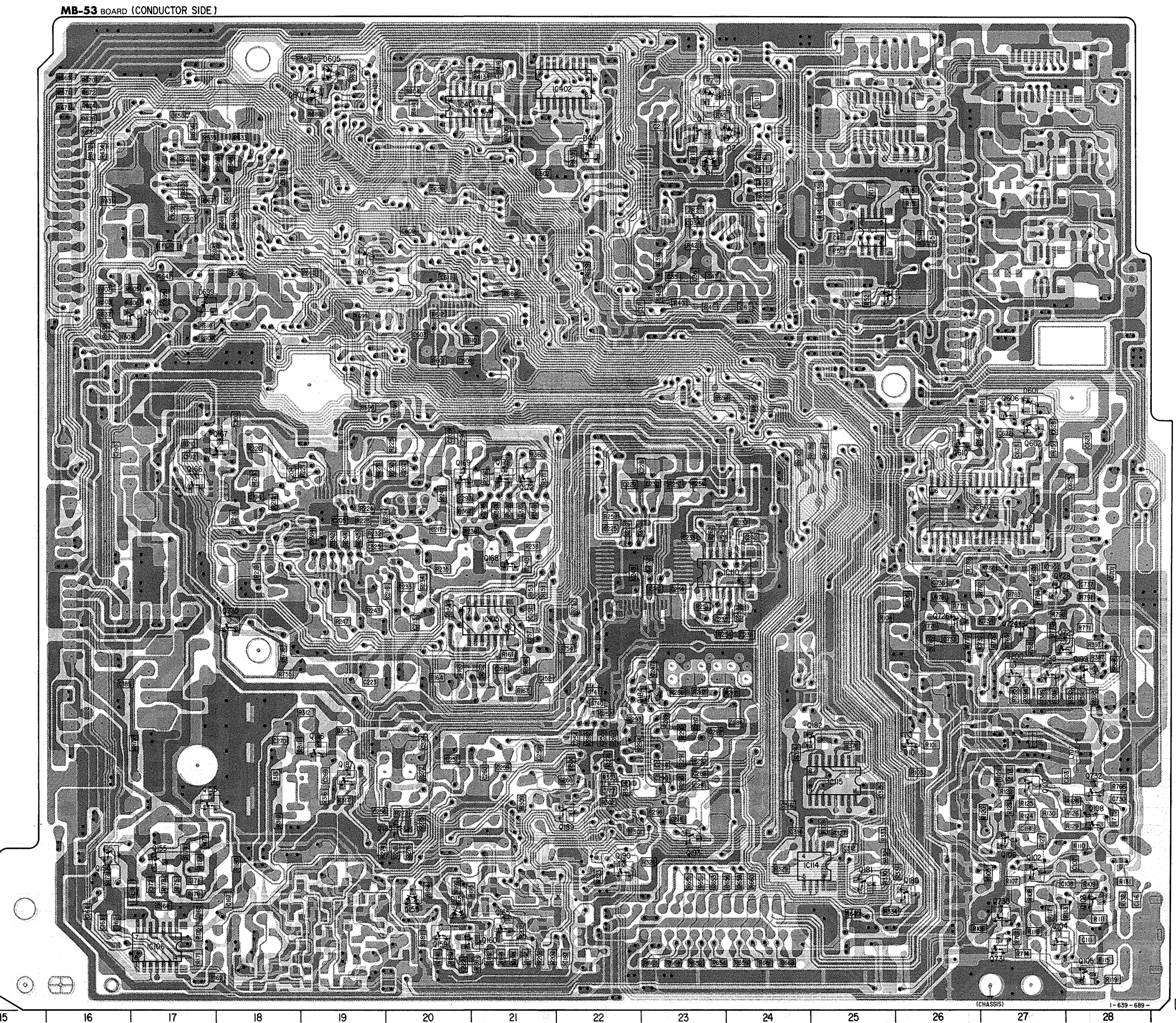
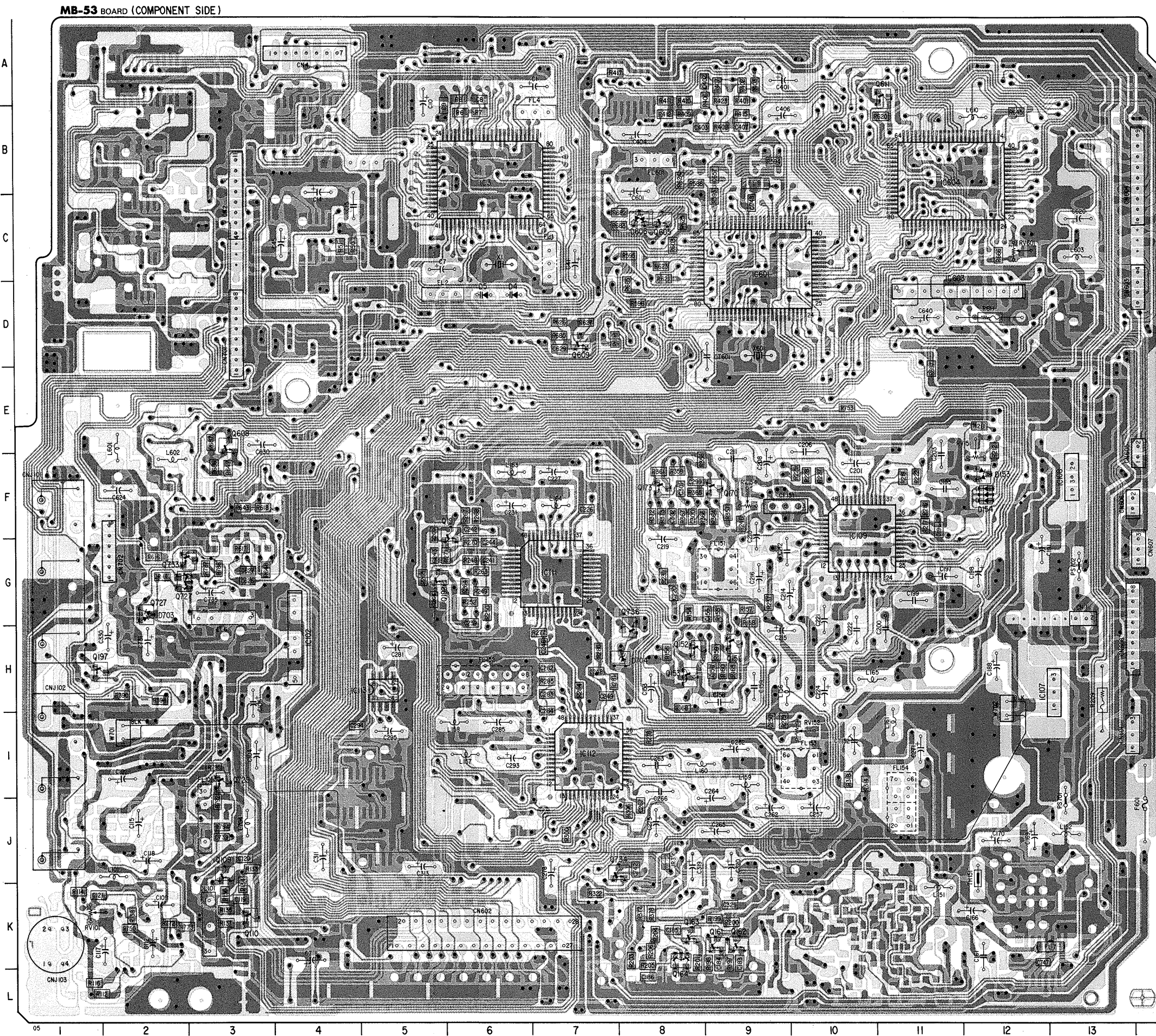
 - IC001 G-9
 - IC002 F-11
 - IC101 F-7
 - IC102 E-8
 - IC103 C-8
 - IC104 C-6
 - IC105 F-1
 - IC106 G-11

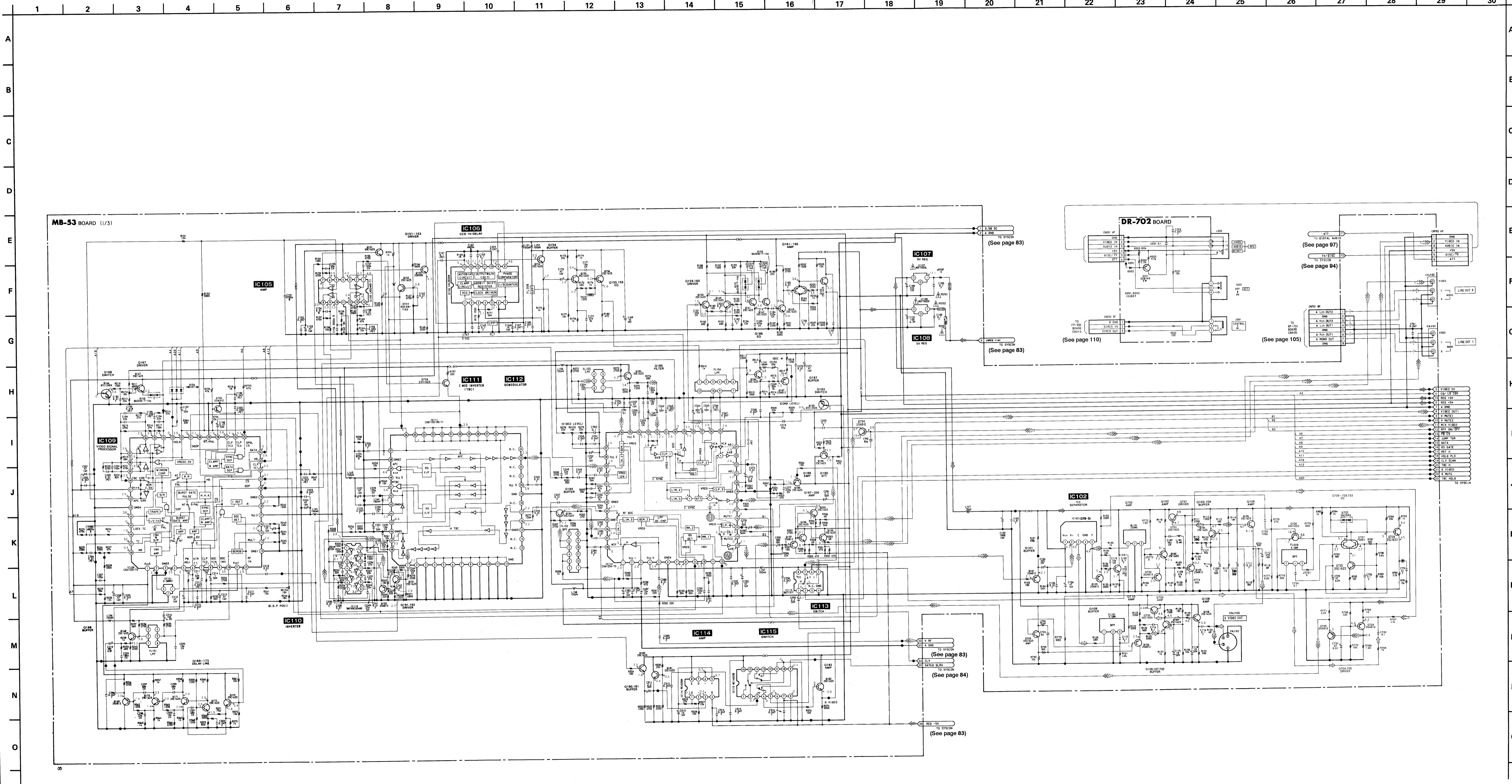
 - Q001 E-10
 - Q002 E-9
 - Q003 F-11
 - Q101 H-3
 - Q102 H-2
 - Q103 H-2
 - Q104 H-1
 - Q105 A-12
 - Q106 B-12
 - Q107 D-6
 - Q108 F-4
 - Q109 B-6
 - Q110 F-5



MB-53 BOARD

D001	B-23	Q608	E-3
D002	B-24	Q609	D-7
D003	A-23	Q610	E-26
D004	D-6	Q611	A-11
D005	D-6	Q724	H-27
D151	K-20	Q725	H-27
D153	F-12	Q726	G-26
D154	F-12	Q727	G-2
D155	K-20	Q728	G-27
D401	B-22	Q729	I-3
D601	E-27	Q750	K-27
D602	C-19	Q731	K-27
D605	A-19	Q732	I-28
D606	C-8	Q733	G-2
D652	A-19	Q734	J-6
D698	D-17	Q735	H-18
D703	G-2	Q736	H-8
D704	H-8		
IC001	C-25		
IC003	B-5		
IC102	H-4		
IC105	G-21		
IC106	K-17		
IC107	H-13		
IC108	F-13		
IC109	F-10		
IC110	G-24		
IC111	G-7		
IC112	I-7		
IC113	H-5		
IC114	J-25		
IC115	I-25		
IC401	A-20		
IC402	A-22		
IC601	C-9		
IC602	F-27		
IC603	D-11		
IC604	B-11		
Q001	B-23		
Q002	D-25		
Q101	I-26		
Q102	J-27		
Q103	K-28		
Q104	K-27		
Q105	L-28		
Q106	J-27		
Q107	I-27		
Q108	J-28		
Q109	J-3		
Q110	K-3		
Q151	H-9		
Q152	H-8		
Q153	H-8		
Q154	J-16		
Q155	J-17		
Q156	J-17		
Q159	K-20		
Q160	K-21		
Q161	K-9		
Q162	K-9		
Q163	K-8		
Q164	K-8		
Q165	K-21		
Q166	F-17		
Q167	E-18		
Q168	G-21		
Q169	F-20		
Q170	F-9		
Q171	F-21		
Q172	F-21		
Q173	F-8		
Q180	K-26		
Q181	K-25		
Q182	I-25		
Q184	F-23		
Q185	J-20		
Q186	I-19		
Q187	I-19		
Q189	J-22		
Q190	J-22		
Q191	F-6		
Q192	G-5		
Q193	J-23		
Q197	H-1		
Q198	H-27		
Q199	H-28		
Q200	H-27		
Q601	D-17		
Q602	E-27		
Q605	C-8		
Q606	E-27		





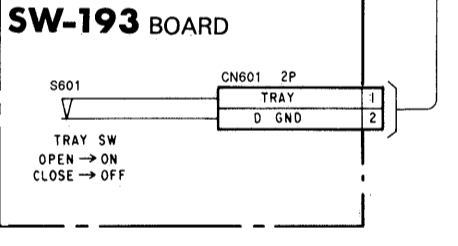
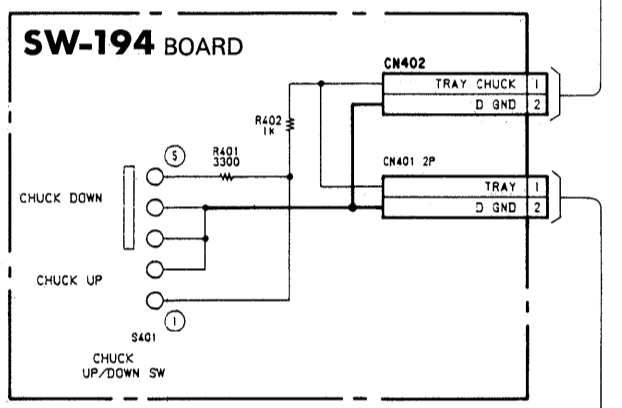
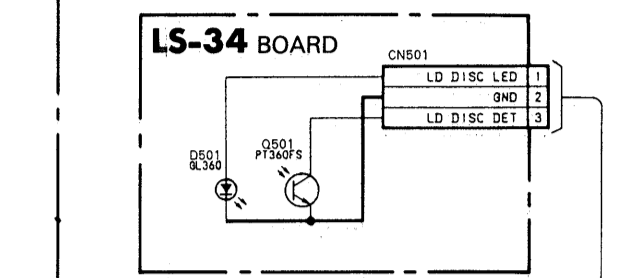
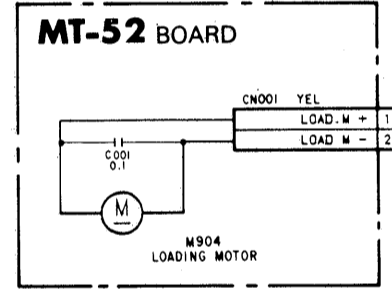
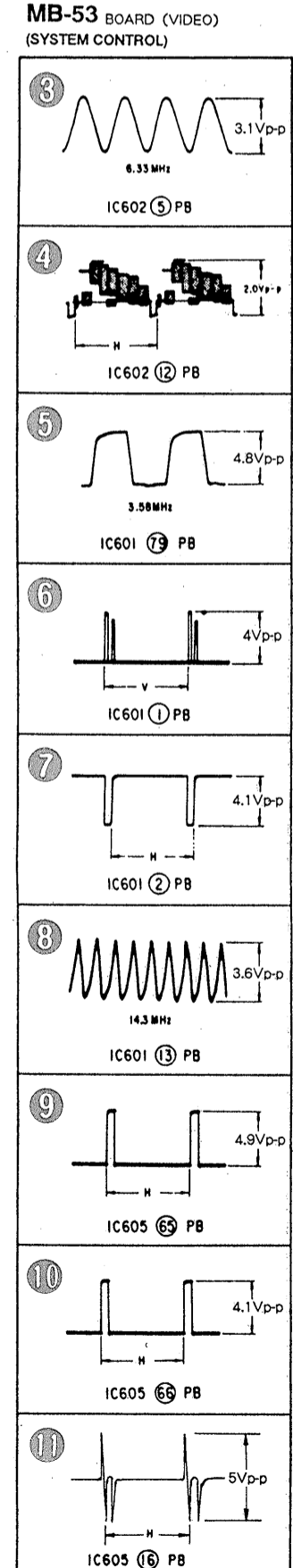
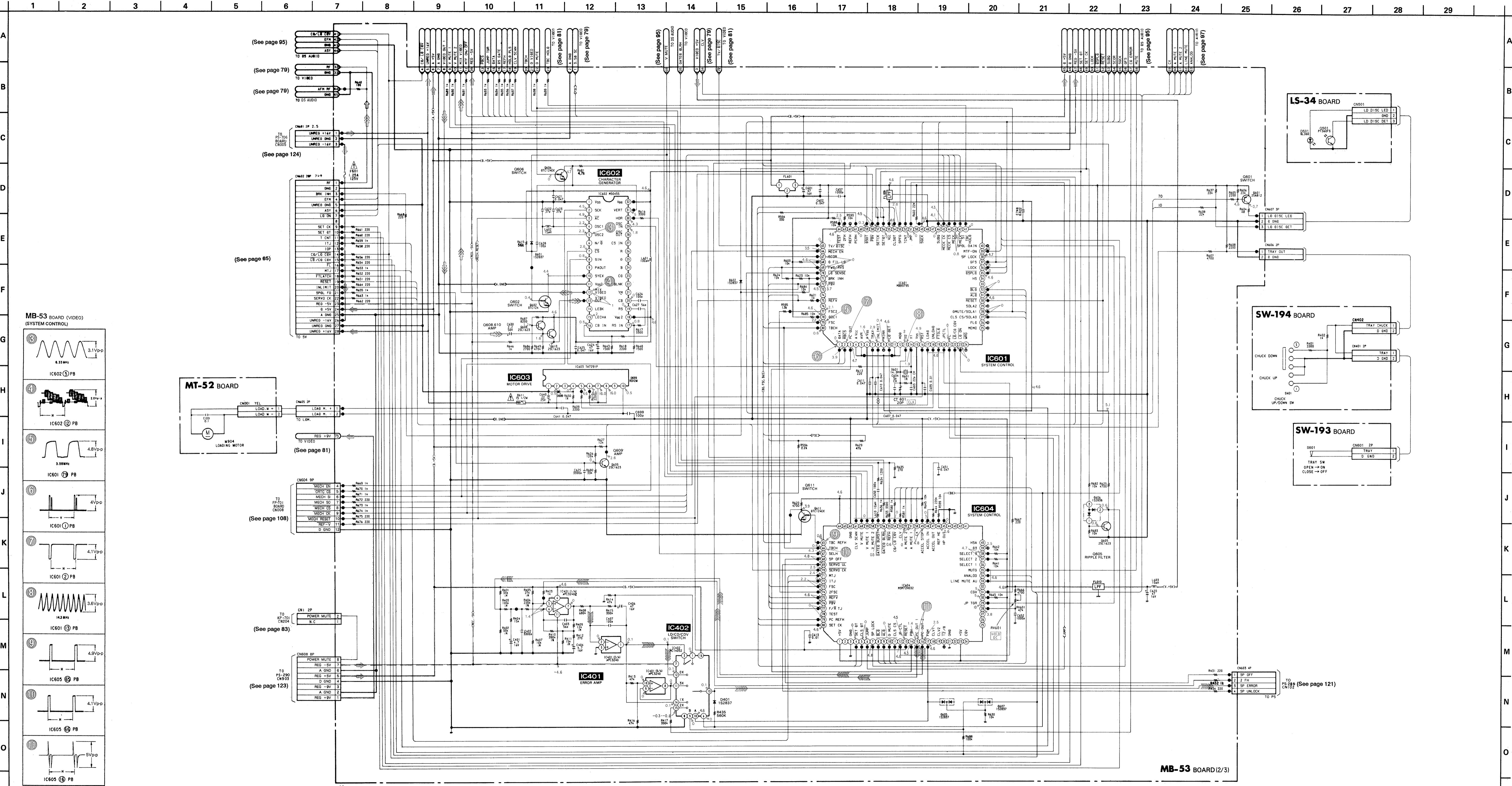
MB-53 BOARD (VIDEO)

IC103 (PB)

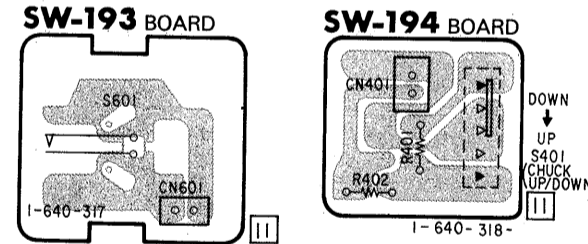
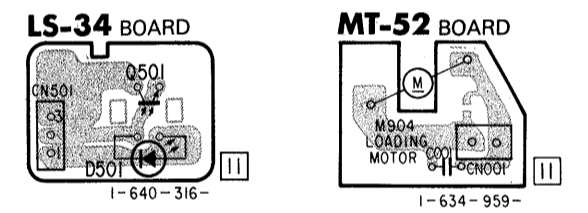
IC101 (PB)

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

SPINDLE PHASE SERVO	⇨
SPINDLE SERVO (SPEED AND PHASE)	⇨
TRACKING SERVO LD/CD/CDV	⇨
SLIDE SERVO LD/CD	⇨
FOCUS SERVO LD/CD	⇨
SKREW SERVO LD TILT	⇨



LS-34 (LD SENSOR), MT-52 (LOADING MOTOR), SW-193 (TRAY SWITCH), SW-194 (CHUCK SWITCH) PRINTED WIRING BOARDS
 - Ref. No.: LS-34, MT-52, SW-193, and SW-194 Boards; 3,000 series -



	VIDEO SIGNAL	CHROMA	Y	Y/CHROMA	AUDIO SIGNAL
PB	↔	↔	↔	↔	↔

SPINDLE PHASE SERVO	↔
SPINDLE SERVO (SPEED AND PHASE)	↔
TRACKING SERVO LD/CD/CDV	↔
SLIDE SERVO LD/CD	↔
FOCUS SERVO LD/CD	↔
SKEW SERVO LD TILT	↔

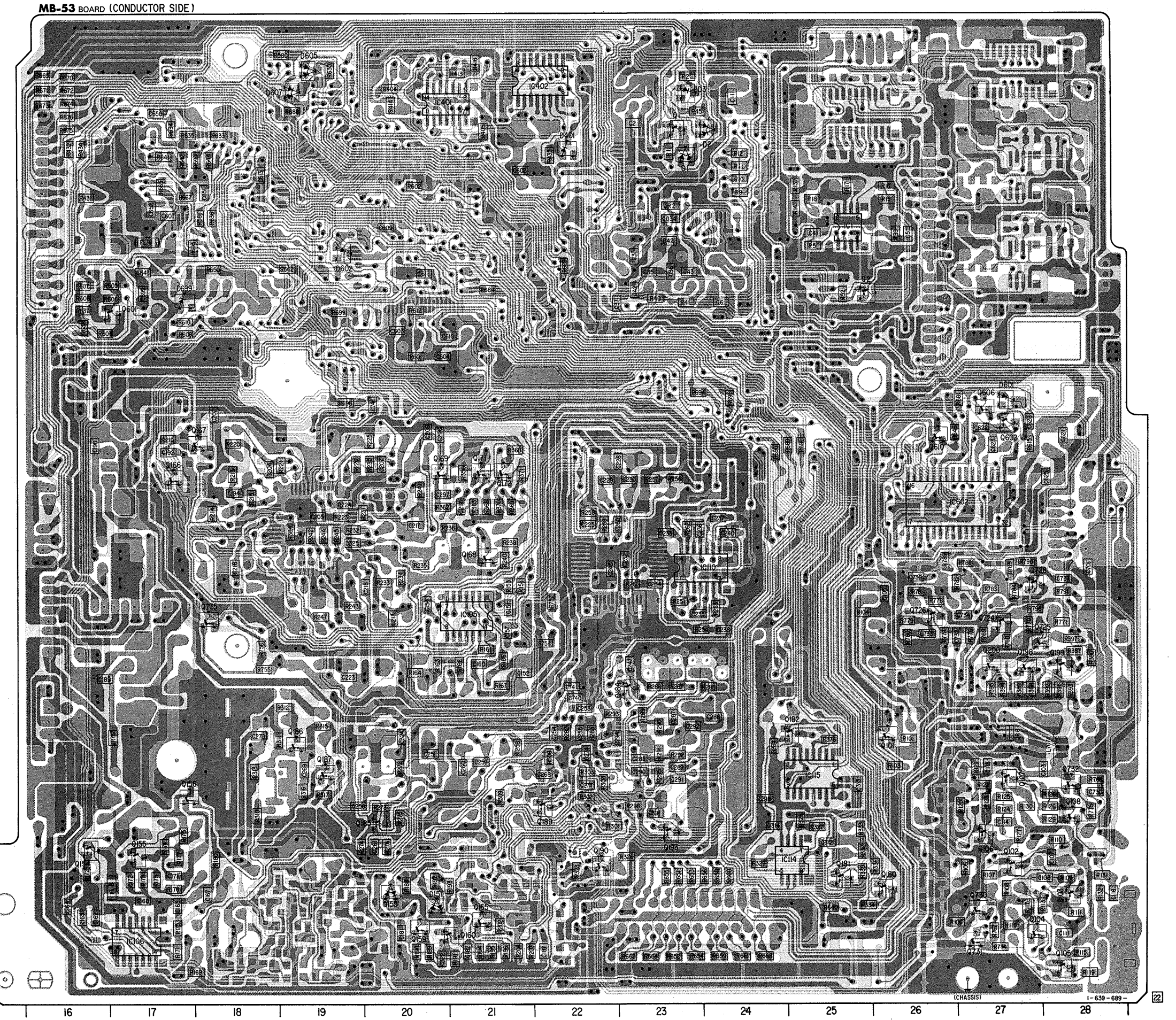
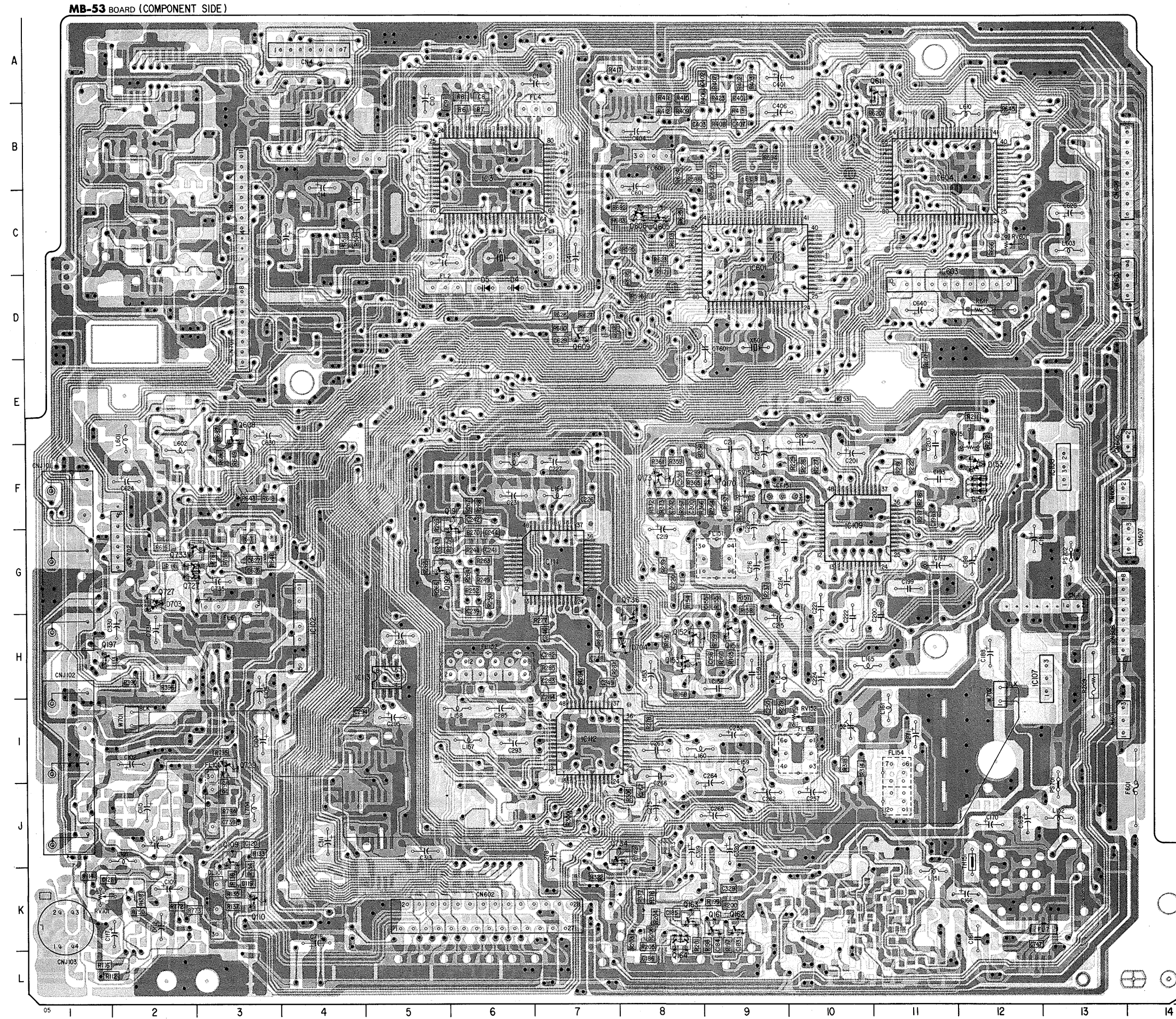
MB-53 BOARD (2/3)

MB-53 BOARD

D001	B-23	O608	E-3
D002	B-24	O609	D-7
D003	A-23	O610	E-26
D004	D-6	O611	A-11
D005	D-6	O724	H-27
D151	K-20	O725	H-27
D153	F-12	O726	G-26
D154	F-12	O727	G-2
D155	K-20	O728	G-27
D401	B-22	O729	I-3
D601	E-27	O730	K-27
D602	C-19	O731	K-27
D605	A-19	O732	I-28
D606	C-8	O733	G-2
D607	A-19	O734	J-8
D699	D-17	O735	H-18
D703	G-2	O736	H-8
D704	H-8		

IC001	C-25
IC003	B-5
IC102	H-4
IC105	G-21
IC106	K-17
IC107	H-19
IC108	F-13
IC109	F-10
IC110	G-24
IC111	G-7
IC112	I-7
IC113	H-5
IC114	J-25
IC115	I-25
IC401	A-20
IC402	A-22
IC801	C-9
IC802	F-27
IC803	D-11
IC804	B-11

Q001	B-23
Q002	D-25
Q101	I-26
Q102	J-27
Q103	K-28
Q104	K-27
Q105	L-28
Q106	J-27
Q107	I-27
Q108	J-28
Q109	J-3
Q110	K-3
Q151	H-8
Q152	H-8
Q153	H-8
Q154	J-16
Q155	J-17
Q156	J-17
Q159	K-20
Q160	K-21
Q161	K-8
Q162	K-8
Q163	K-8
Q164	K-8
Q165	K-21
Q166	F-17
Q167	E-18
Q168	G-21
Q169	F-20
Q170	F-8
Q171	F-21
Q172	F-21
Q173	F-8
Q180	K-26
Q181	K-25
Q182	I-25
Q184	F-23
Q185	J-20
Q186	I-19
Q187	I-19
Q189	J-22
Q190	J-22
Q191	F-6
Q192	G-5
Q193	J-23
Q197	H-1
Q198	H-27
Q199	H-29
Q200	H-27
O601	D-17
O602	E-27
O605	C-8
O606	E-27

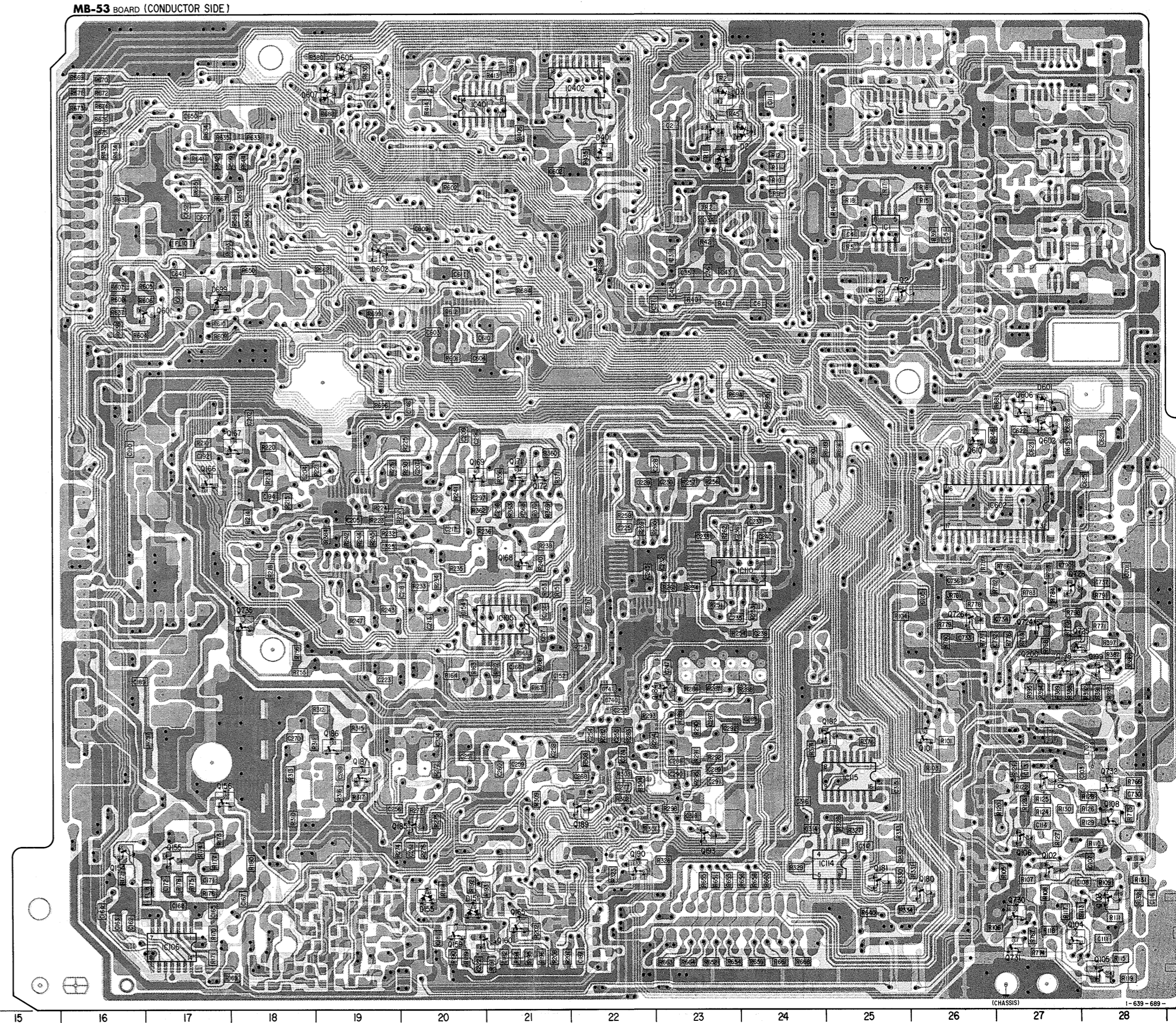
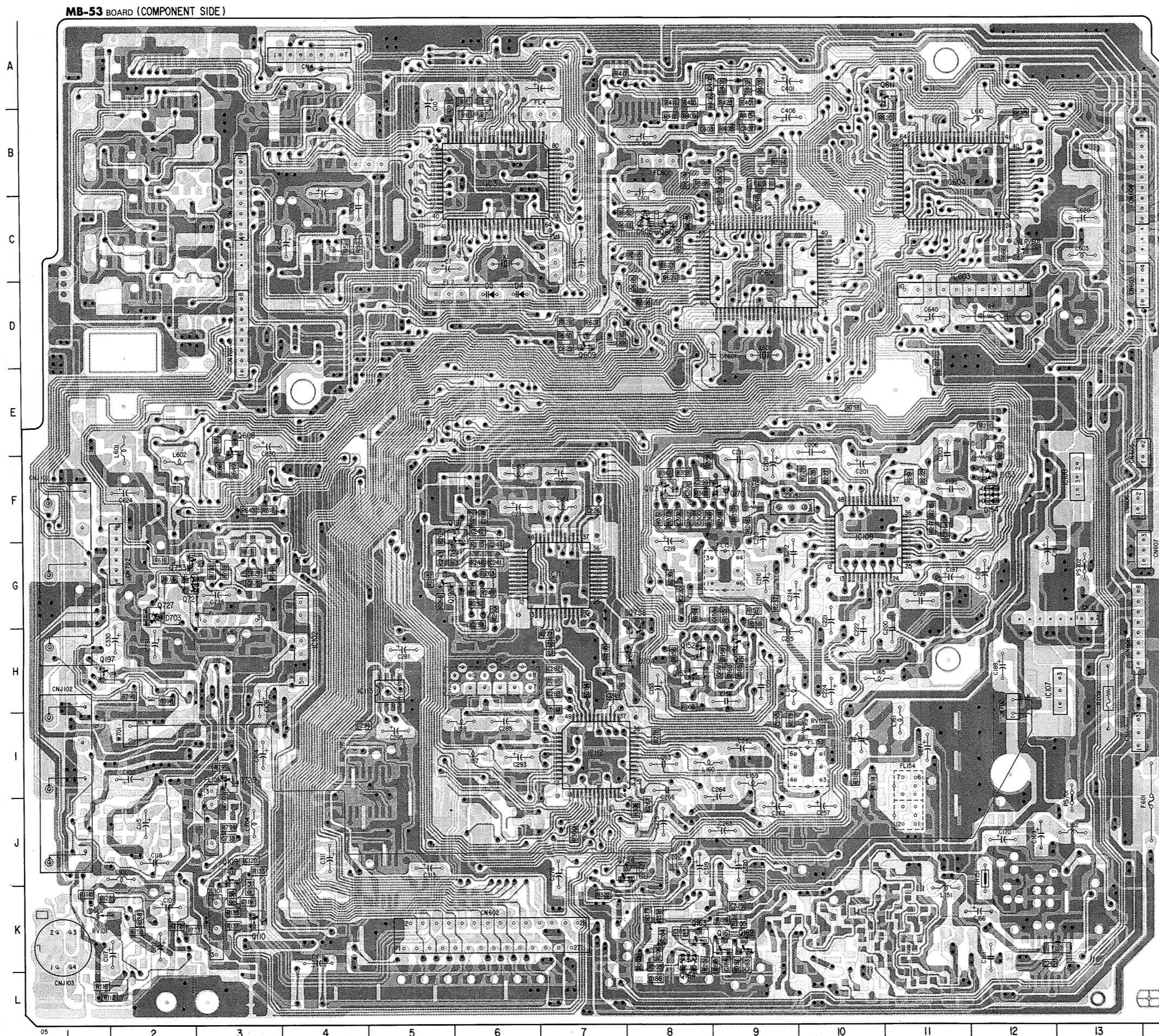


MB-53 BOARD

D001	B-23	O608	E-3
D002	B-24	O609	D-7
D003	A-23	O610	E-26
D004	D-6	O611	A-11
D005	D-6	O724	H-27
D151	K-20	O725	H-27
D153	F-12	O726	G-26
D154	F-12	O727	G-2
D155	K-20	O728	Q-27
D401	B-22	O729	I-3
D601	E-27	O730	K-27
D602	C-19	O731	K-27
D605	A-19	O732	I-26
D606	C-9	O733	G-2
D607	A-19	O734	J-8
D689	D-17	O735	H-18
D703	G-2	O736	H-8
D704	H-8		

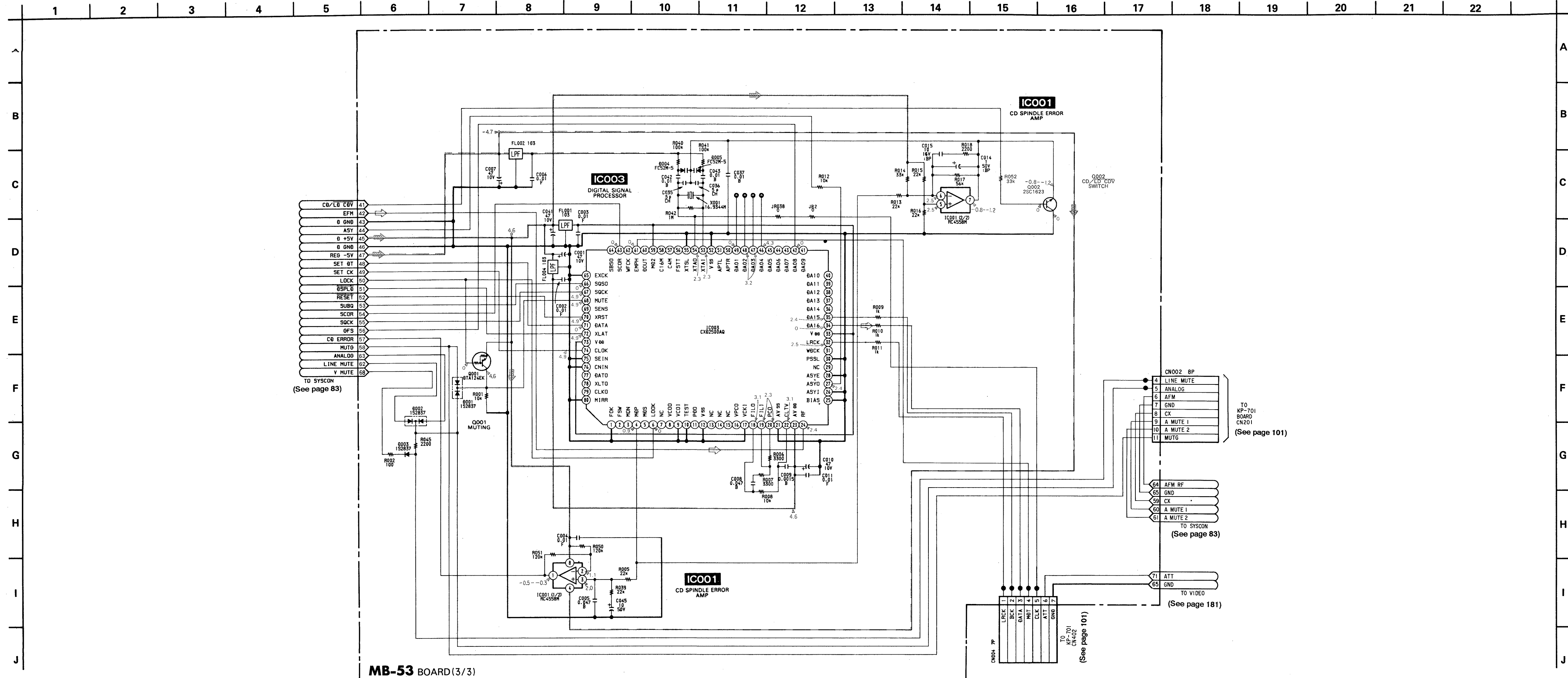
IC001	C-25
IC003	B-5
IC102	H-4
IC105	G-21
IC106	K-17
IC107	H-13
IC108	F-13
IC109	F-10
IC110	G-24
IC111	G-7
IC112	I-7
IC113	H-5
IC114	J-25
IC115	I-25
IC401	A-20
IC402	A-22
IC801	C-9
IC802	F-27
IC803	D-11
IC804	B-11

Q001	B-23
Q002	D-25
Q101	I-26
Q102	J-27
Q103	K-28
Q104	K-27
Q105	L-28
Q106	J-27
Q107	I-27
Q108	J-28
Q109	J-3
Q110	K-3
Q151	H-9
Q152	H-8
Q153	H-8
Q154	J-16
Q155	J-17
Q156	J-17
Q159	K-20
Q160	K-21
Q161	K-9
Q162	K-9
Q163	K-8
Q164	K-8
Q165	K-21
Q166	F-17
Q167	E-18
Q168	G-21
Q169	F-20
Q170	F-9
Q171	F-21
Q172	F-21
Q173	F-8
Q180	K-26
Q181	K-25
Q182	I-25
Q184	F-23
Q185	J-20
Q186	I-19
Q187	I-19
Q189	J-22
Q190	J-22
Q191	F-6
Q192	G-5
Q193	J-23
Q197	H-1
Q198	H-27
Q199	H-28
Q200	H-27
O601	D-17
O602	E-27
O605	C-8
O606	E-27

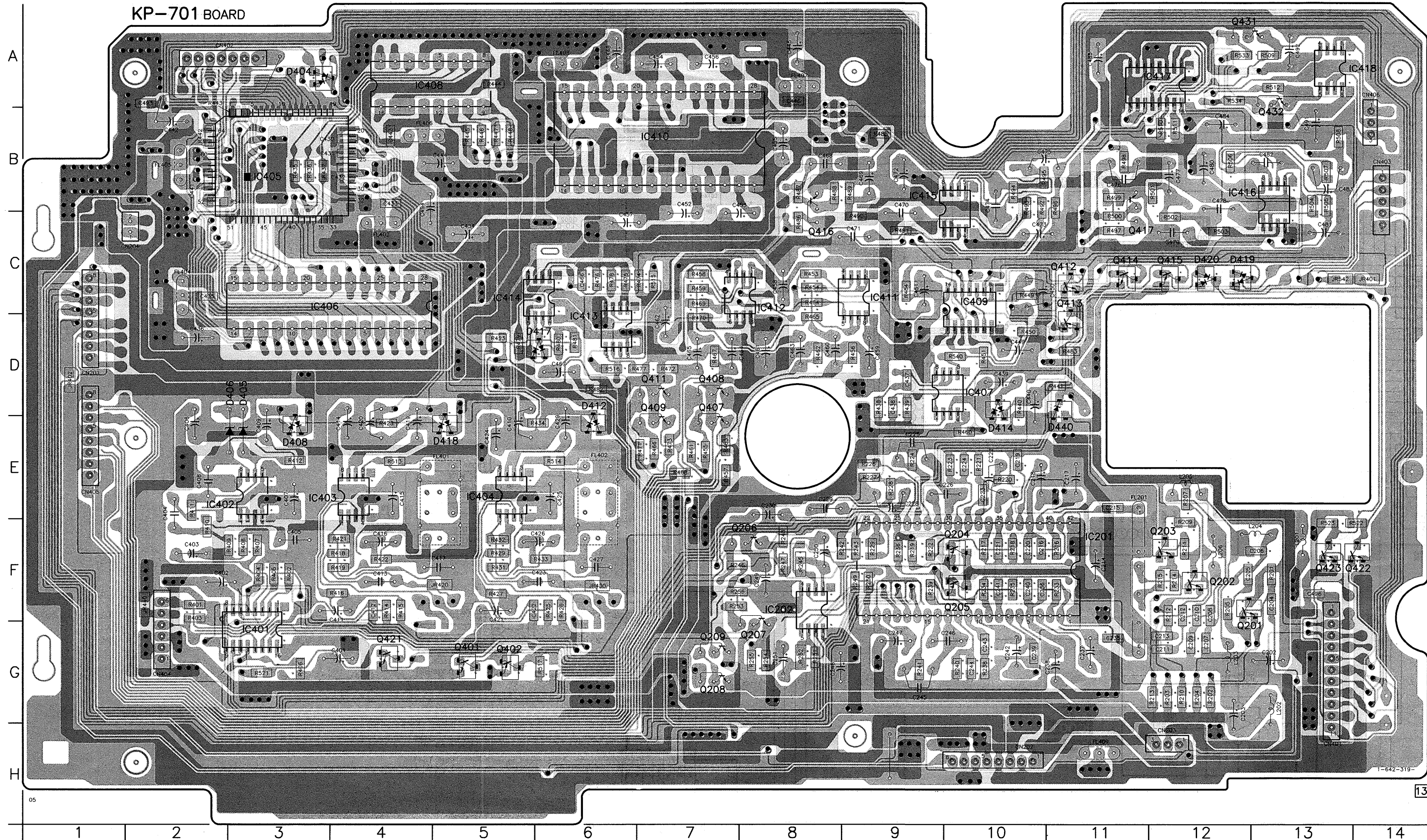


MB-53 (DIGITAL AUDIO) SCHEMATIC DIAGRAM

- Ref. No.: MB-53 Board; 2,000 series -



MB-53 BOARD (3/3)

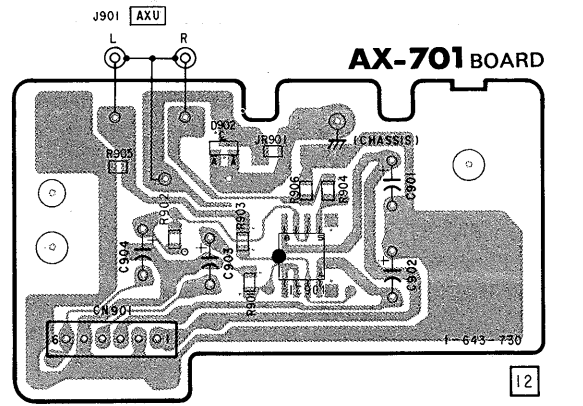


KP-701 BOARD

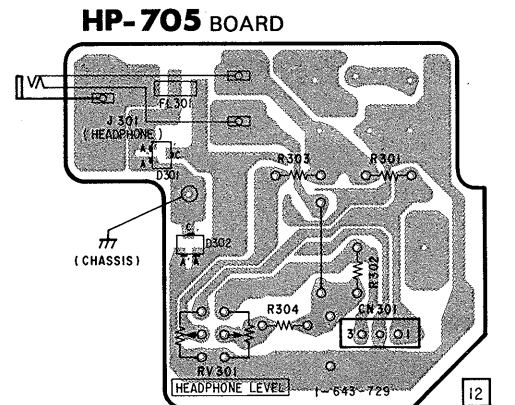
- D404 A-3
- D405 E-3
- D408 E-3
- D412 E-3
- D414 D-10
- D417 D-6
- D418 E-5
- D419 C-12
- D420 C-12
- D440 D-11

- IC201 F-10
- IC202 F-8
- IC401 G-3
- IC402 E-3
- IC403 E-4
- IC404 E-5
- IC405 B-3
- IC406 C-3
- IC407 D-10
- IC408 A-4
- IC409 C-10
- IC410 B-7
- IC411 C-9
- IC412 C-7
- IC413 D-6
- IC414 C-6
- IC415 C-10
- IC416 B-13
- IC417 A-12
- IC418 A-13

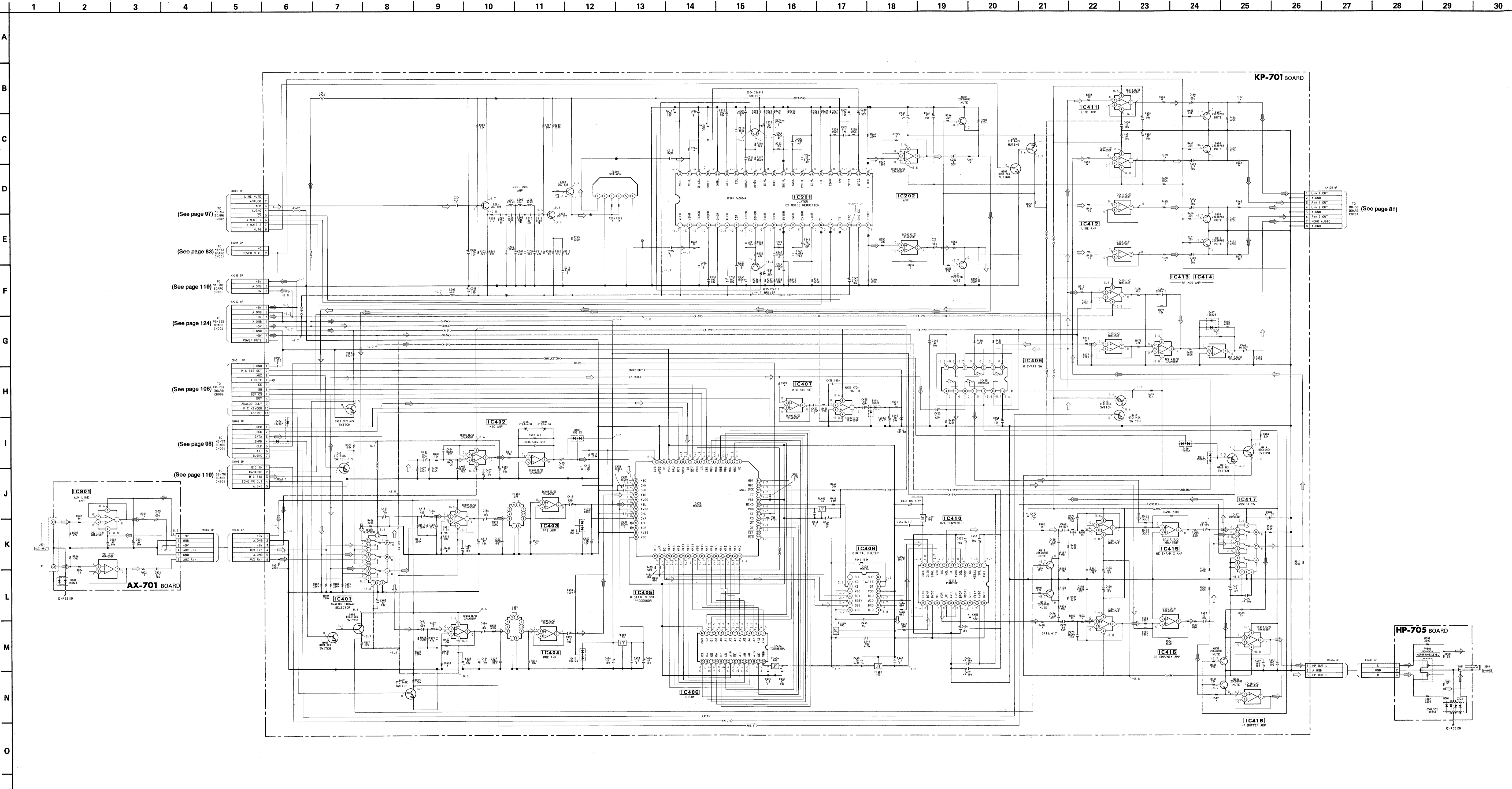
- Q201 F-12
- Q202 F-12
- Q203 F-12
- Q204 F-10
- Q205 F-10
- Q206 F-8
- Q207 G-8
- Q208 G-7
- Q209 G-7
- Q401 G-5
- Q402 G-5
- Q407 E-7
- Q408 D-7
- Q409 E-7
- Q411 D-7
- Q412 C-11
- Q413 D-11
- Q414 C-11
- Q415 C-12
- Q416 B-8
- Q417 B-11
- Q421 G-4
- Q422 F-14
- Q423 F-13
- Q431 A-12
- Q432 A-13



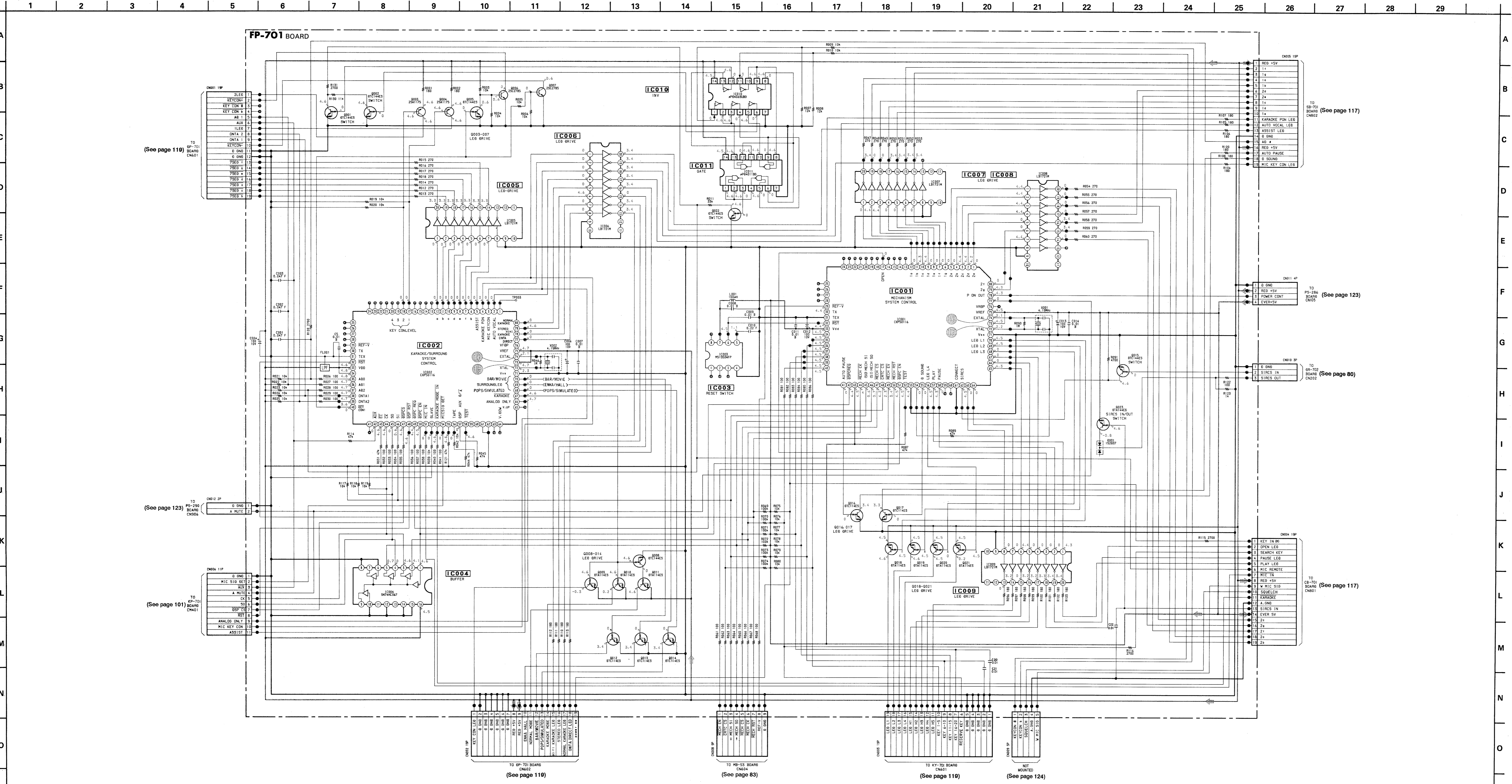
AX-701 BOARD



HP-705 BOARD



	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	◻	◻	◻	◻



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

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

(See page 119)

(See page 117)

(See page 123)

(See page 80)

(See page 123)

(See page 101)

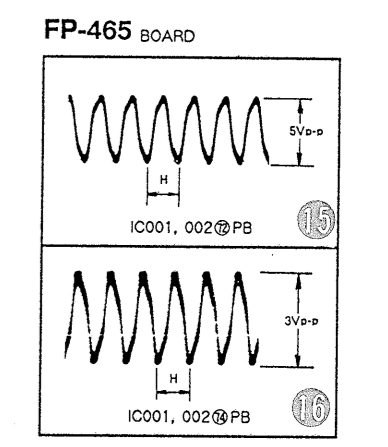
(See page 117)

(See page 119)

(See page 83)

(See page 119)

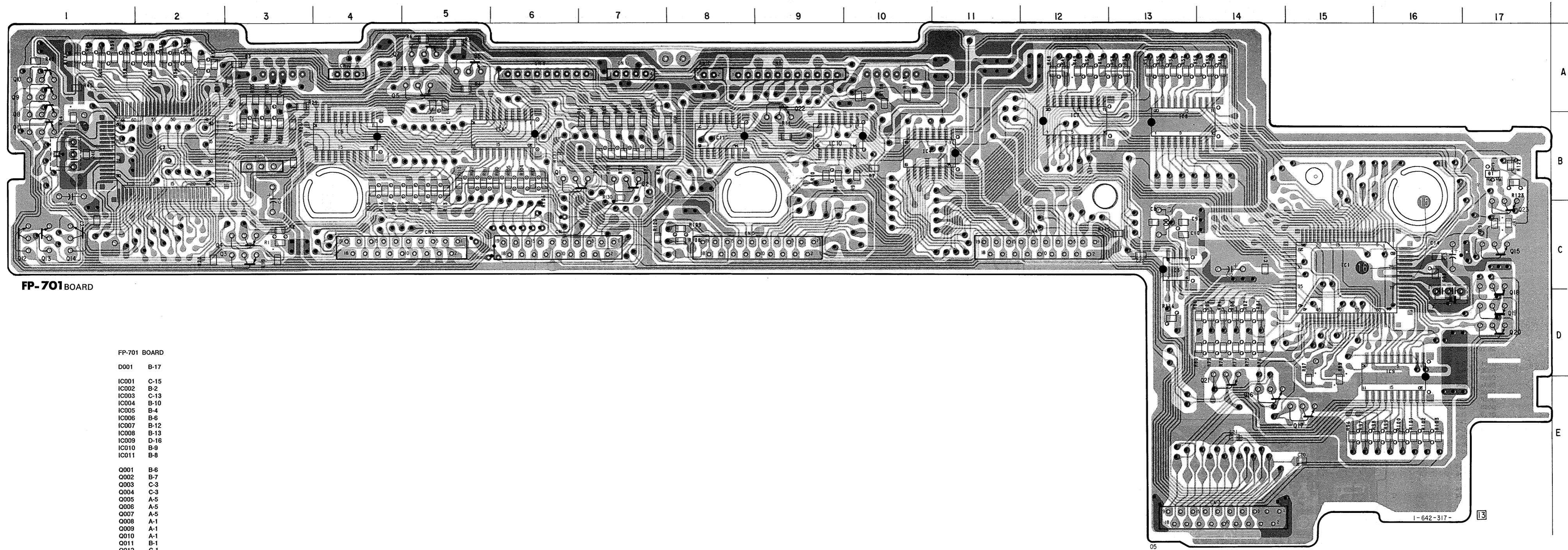
(See page 124)



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

FP-701 (MODE CONTROL) PRINTED WIRING BOARDS

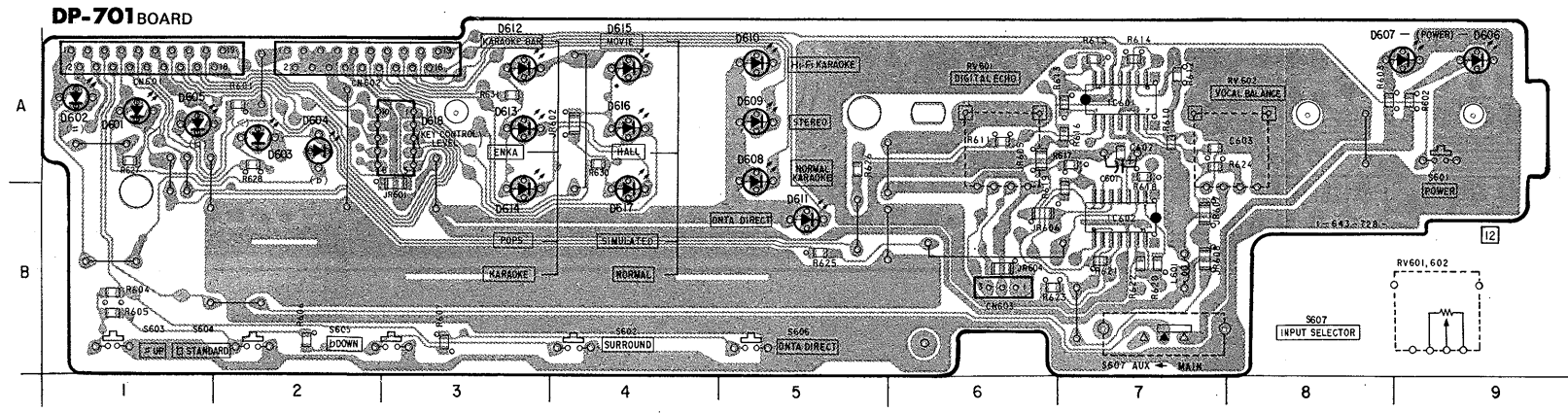
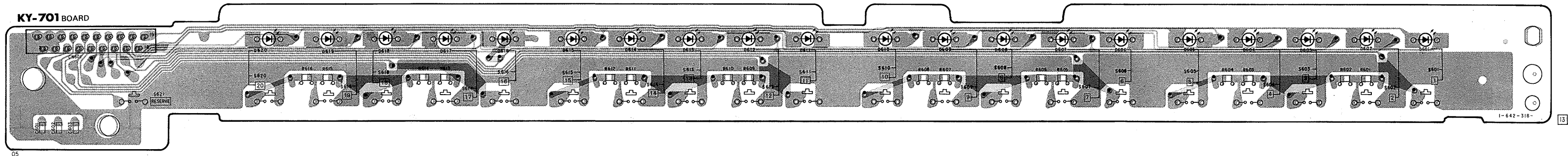
— Ref. No.: FP-701 Board; 4,000 series —



FP-701 BOARD

FP-701 BOARD

- D001 B-17
- IC001 C-15
- IC002 B-2
- IC003 C-13
- IC004 B-10
- IC005 B-4
- IC006 B-6
- IC007 B-12
- IC008 B-13
- IC009 D-16
- IC010 B-9
- IC011 B-8
- Q001 B-6
- Q002 B-7
- Q003 C-3
- Q004 C-3
- Q005 A-5
- Q006 A-5
- Q007 A-5
- Q008 A-1
- Q009 A-1
- Q010 A-1
- Q011 B-1
- Q012 C-1
- Q013 C-1
- Q014 C-1
- Q015 C-17
- Q016 E-14
- Q017 E-15
- Q018 D-17
- Q019 D-17
- Q020 D-17
- Q021 E-14
- Q022 A-9
- Q023 C-17

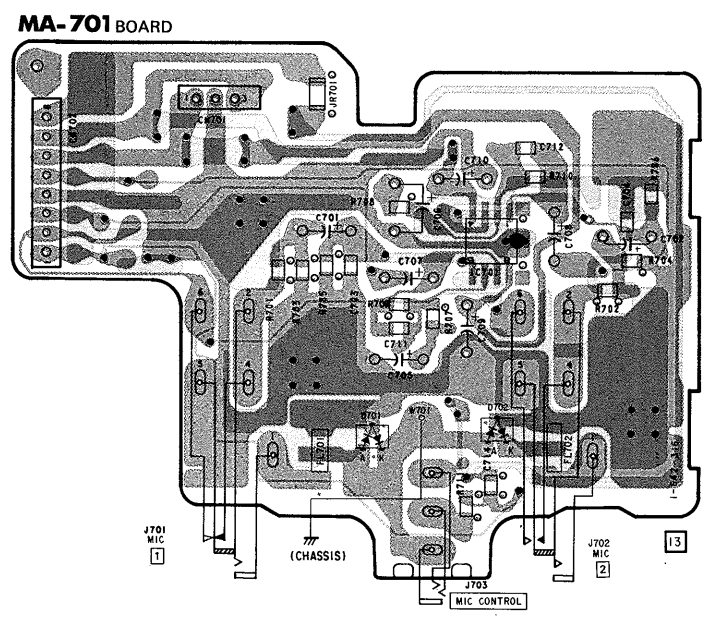
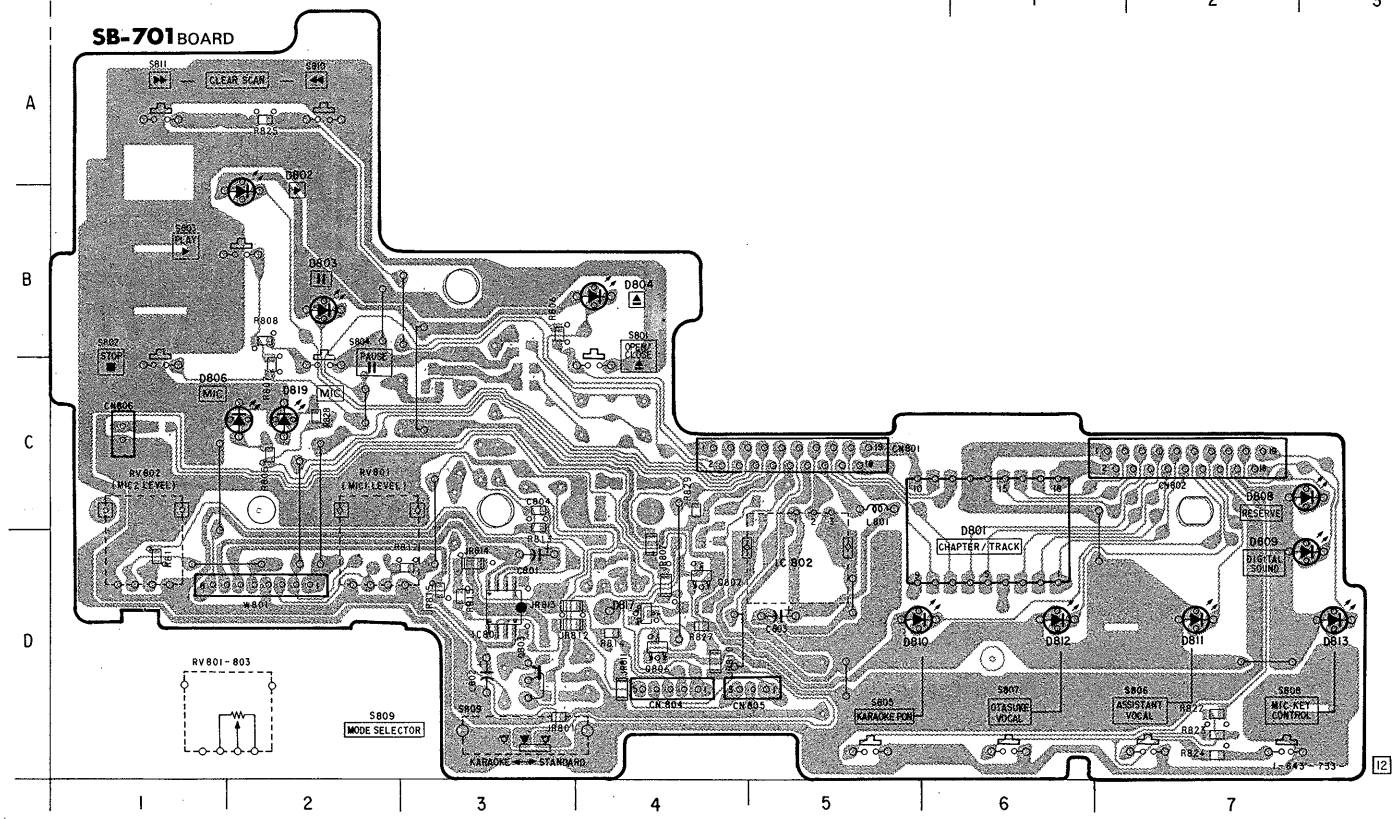


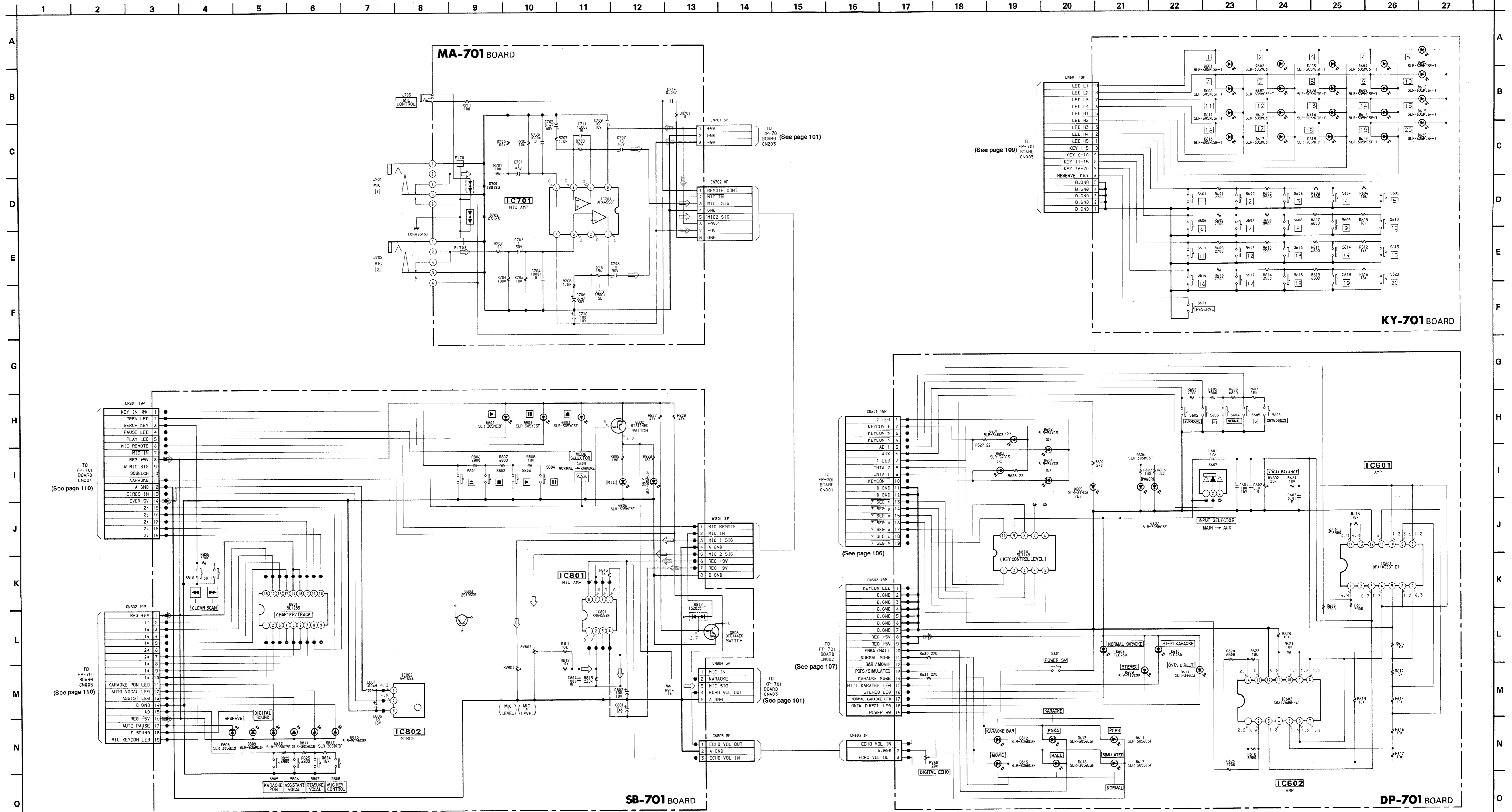
DP-701 BOARD

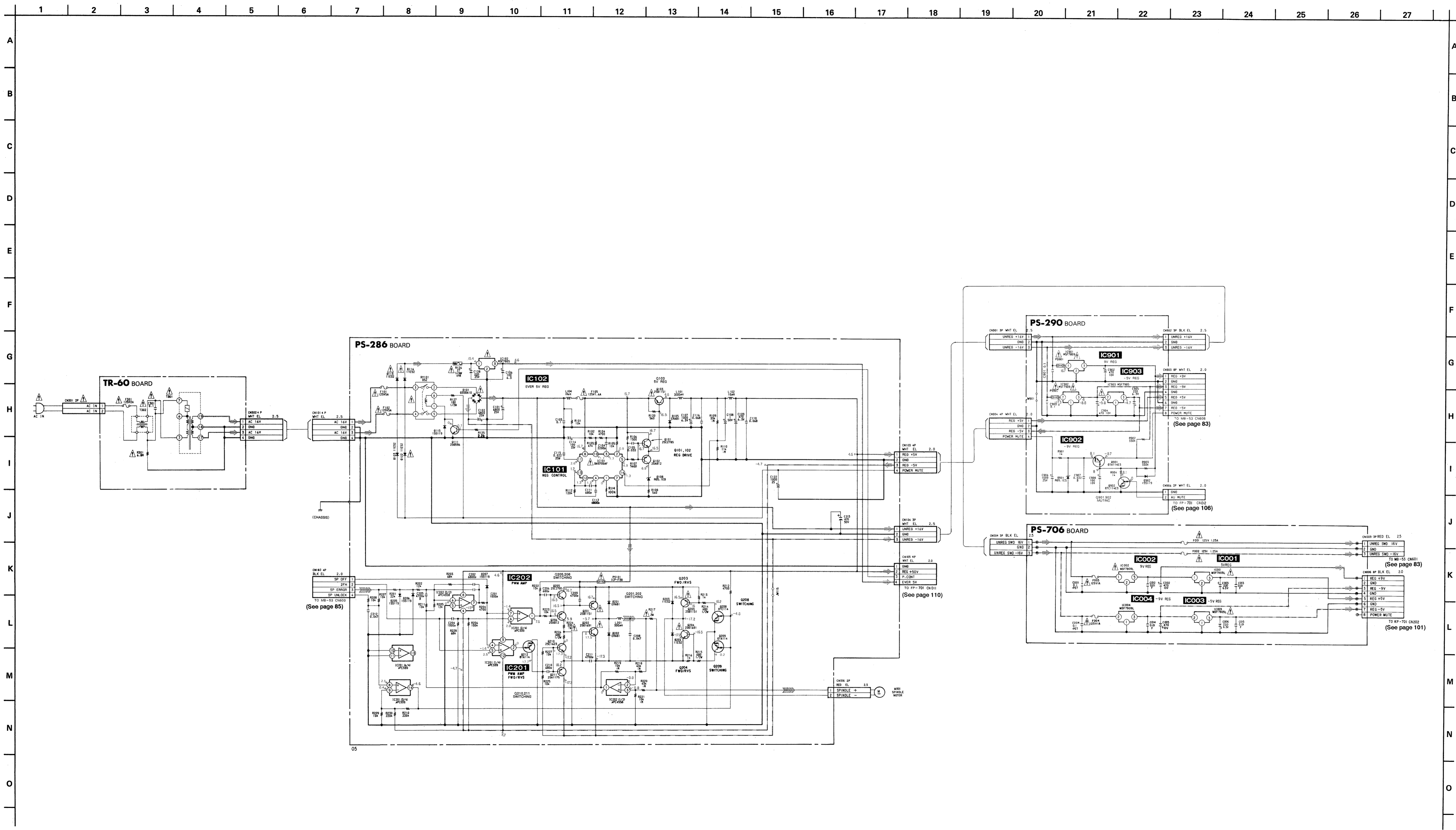
D601	A-1
D602	A-1
D603	A-2
D604	A-4
D605	A-1
D606	A-9
D607	A-9
D608	A-5
D609	A-5
D610	A-5
D611	B-5
D612	A-3
D613	A-3
D614	B-3
D615	A-4
D616	A-4
D617	B-4
D618	A-3
IC601	A-7
IC602	B-7

SB-701 BOARD

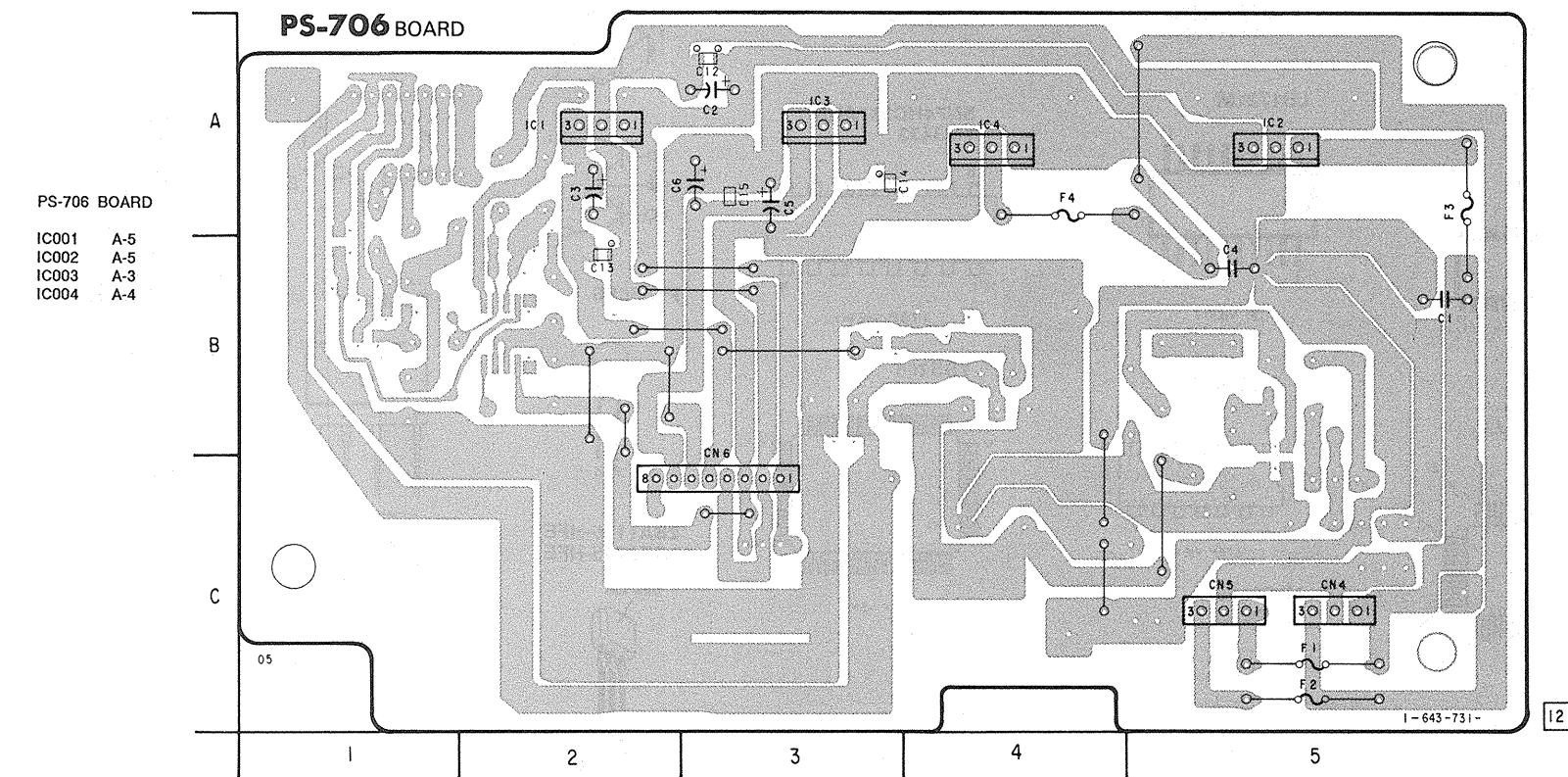
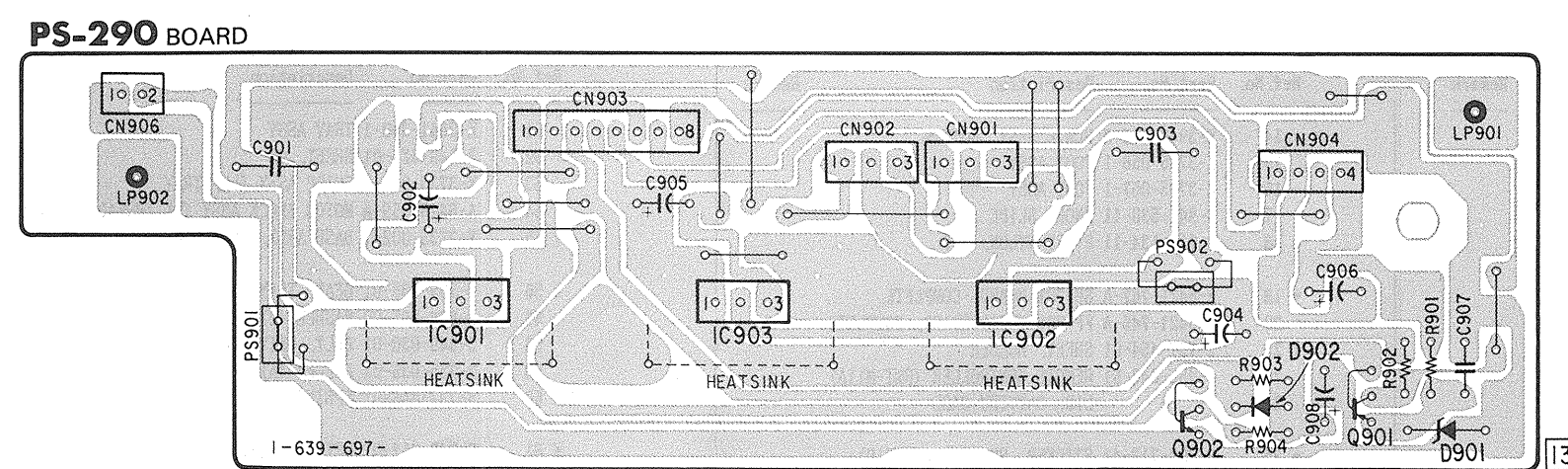
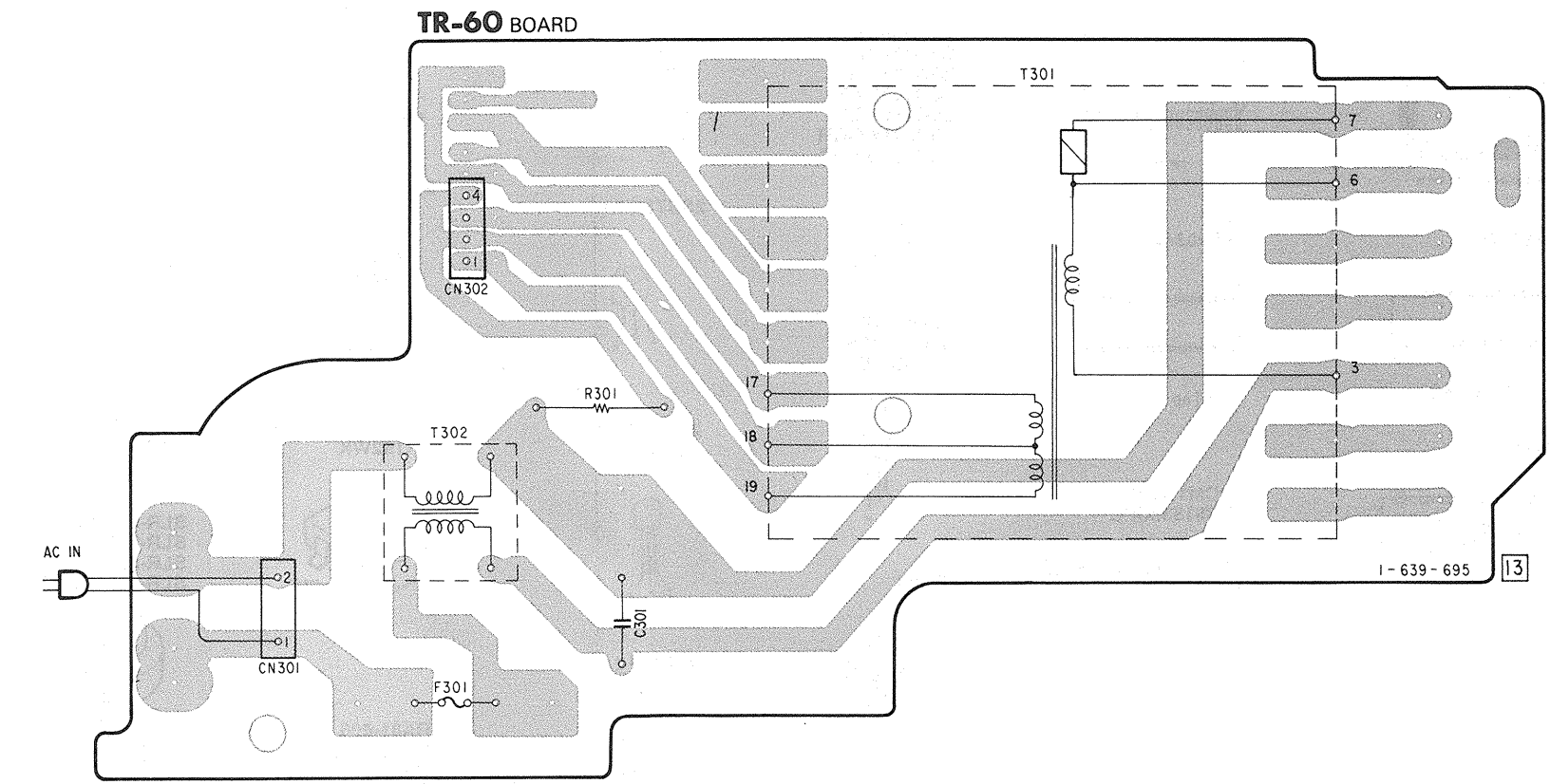
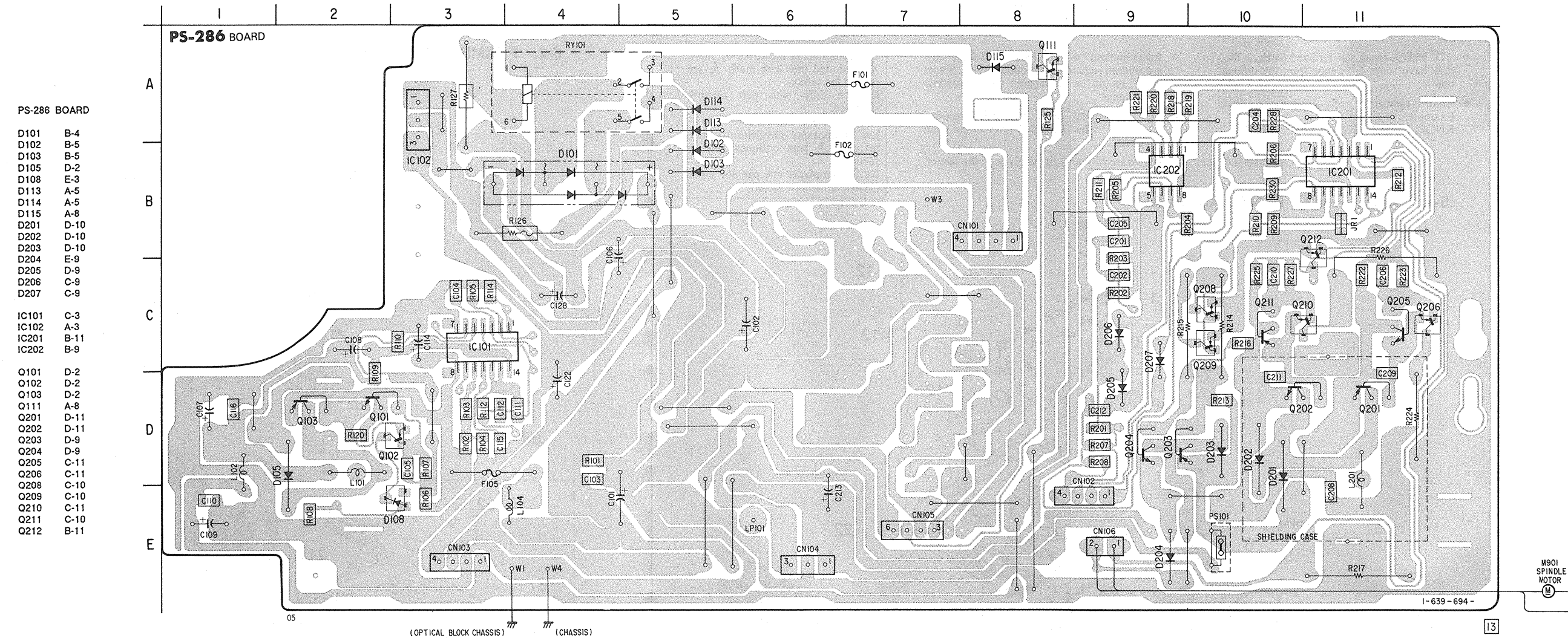
D801	D-6
D802	B-2
D803	B-2
D804	B-4
D806	C-2
D808	C-7
D809	D-7
D810	D-5
D811	D-7
D812	D-6
D813	D-7
D817	D-4
D819	C-2
IC801	D-3
IC802	D-5
Q802	D-4
Q806	D-4







PB	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
SPINDLE PHASE SERVO	→	→	→	→
SPINDLE SERVO (SPEED AND PHASE)	→	→	→	→
TRACKING SERVO LD/CD/CDV	→	→	→	→
SLIDE SERVO LD/CD	→	→	→	→
FOCUS SERVO LD/CD	→	→	→	→
SKEW SERVO LD TILT	→	→	→	→

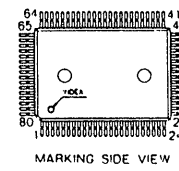


4-3. SEMICONDUCTORS

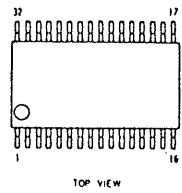
BA7131F
LM324NS
M51953AFP
RC4558M
μPC4558G2



CXD2500AQ
CXP50116-255Q
CXP50116-290
MB89795-132



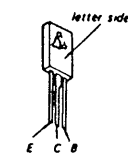
M50455-080FP



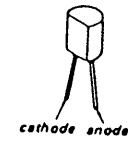
DTA114EK
DTA124EK
DTC114EK
DTC124EK
DTC144EK
DTC114YK
2SA1162-G
2SC1623-L6
2SC1623-L7
2SC2412K-QR
2SD596DV345



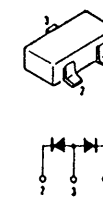
2SB1151-L
2SD1691-K



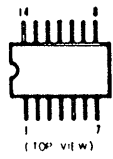
FC52M-5



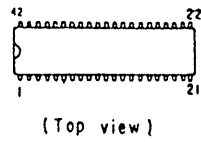
1S2836



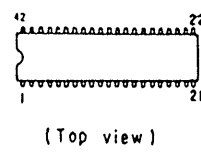
BA9700AF
CXL5005M
MC14069UPF
SN74HCU04ANS
μPC324G2
μPC339G2



HA11529



PA0034A



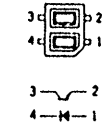
DTA114ES
DTC114ES
DTC144ES



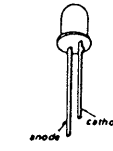
2SB734-34



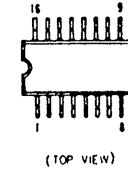
GP-2S09-B



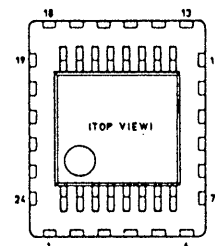
GL-360



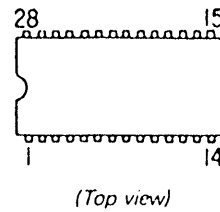
BU4053BF
MC14052BF
MSM72H048GS-V1K
HD14053BFP



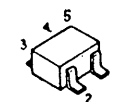
IMN10



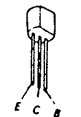
PCM1700P
TC51832SPL



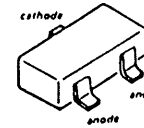
FMS1



2SC2878-B
2SD655-E



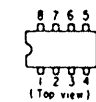
MA152WK



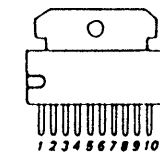
SLR-305DCA47
SLR-305MC3F
SLR-305VCA47
SLR-305YCA47



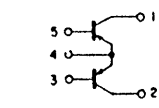
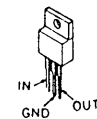
CX20197



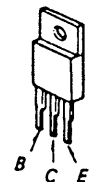
LA6510
TA7291P



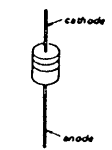
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RC7809FA
TA7805S



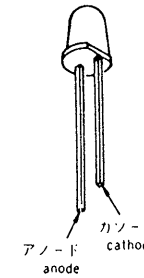
2SD2012



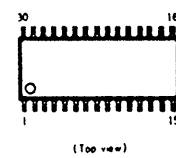
ERA81-006
RD3.9ES-B2
RD4.3ES-B2
RD9.1ES-B1
1SS119
11ES2



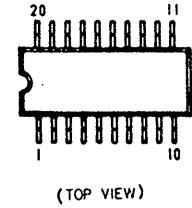
SLR-34DC3
SLR-34MC3
SLR-34VC3



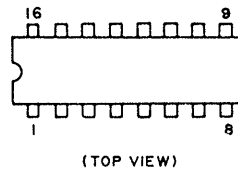
CXA1081M



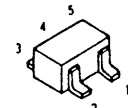
LB1721M



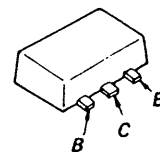
SN74HC367ANS
YM3433



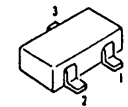
FMW1



2SD999CLCK

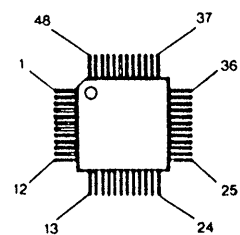


RD12M-B2
RD3.6M-B2
RD5.1M-B2
UZM5.1B

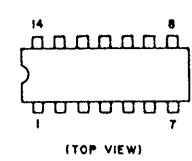


アノード カソード
anode cathode

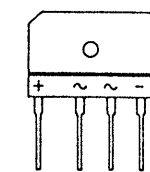
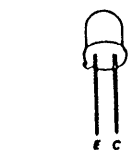
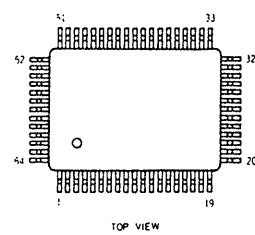
CXA1254Q
CXA1255Q
CXD1152-MS



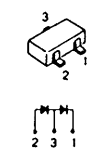
MC14066BF



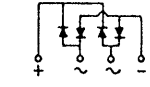
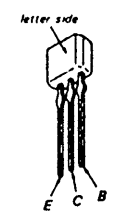
YSS205



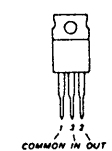
1SS226



2SA1175-HFE
2SC2785-HFE



M5F7909L
TA7905S



SECTION 6 EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) ... (RED)

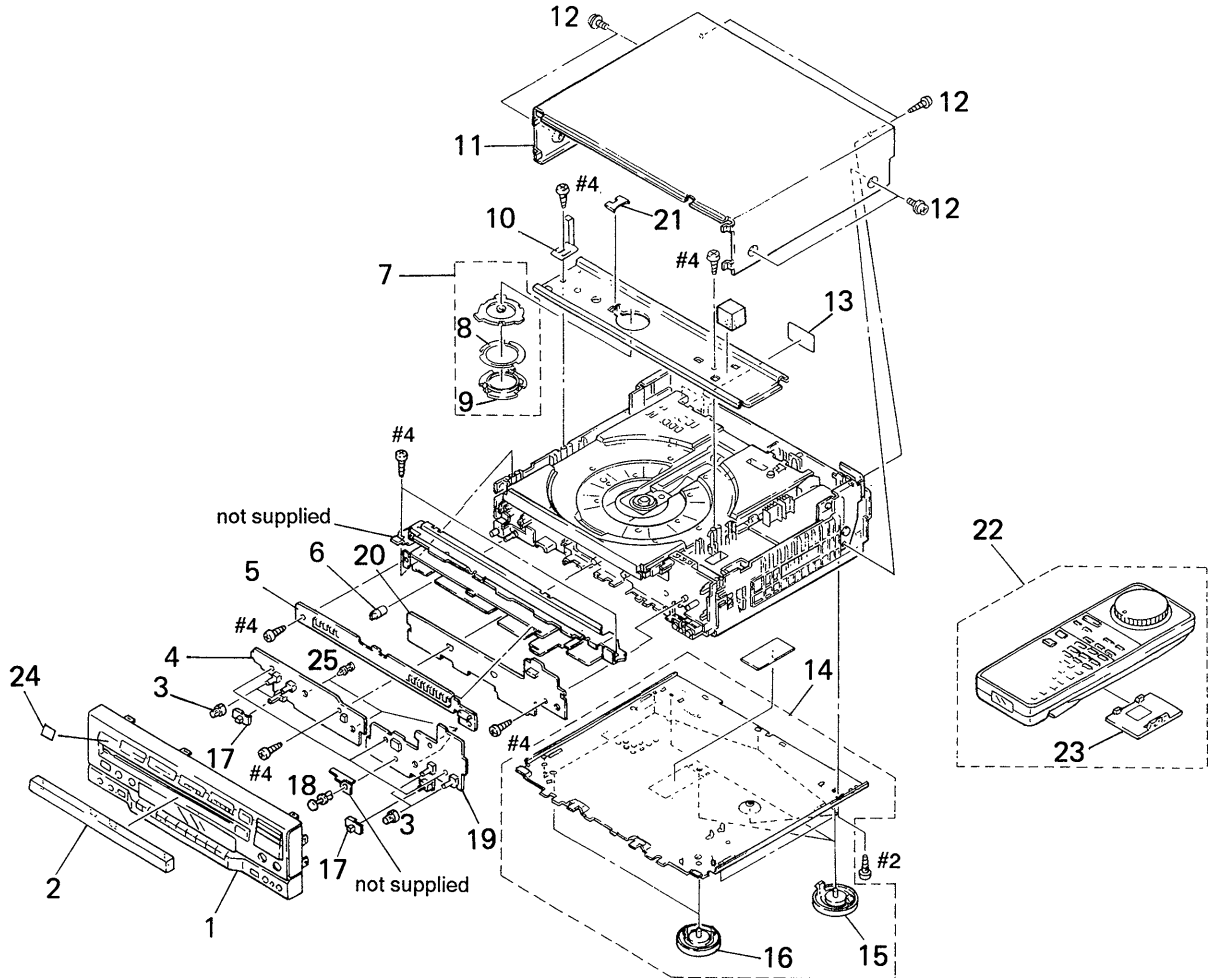
↑
Parts Color

↑
Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

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

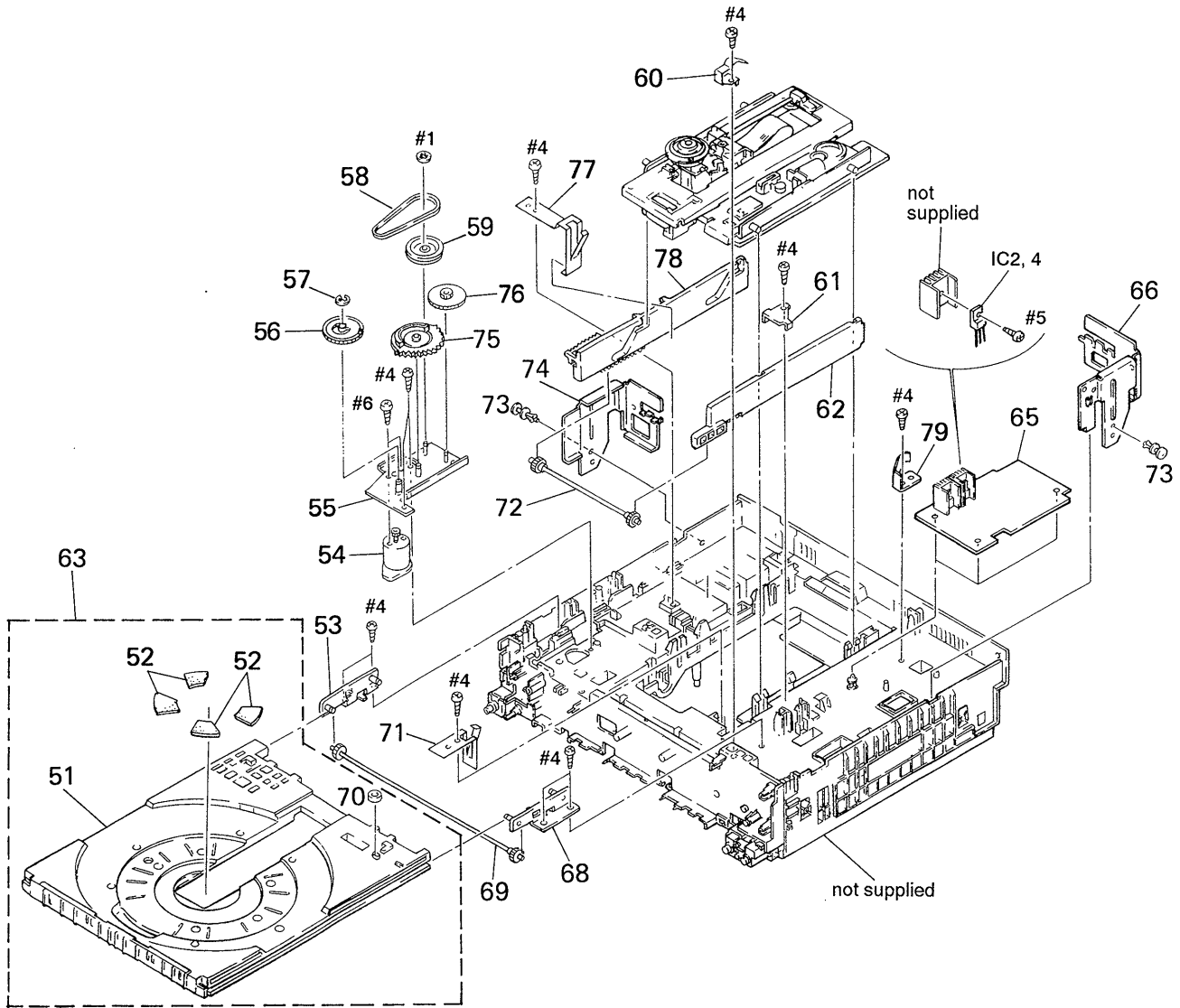
Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. CASE, FRONT PANEL ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3941-409-1	PANEL ASSY, FRONT		14	X-3940-505-2	PLATE ASSY, BOTTOM	
2	3-944-582-21	COVER, TRAY		15	X-3735-056-1	FOOT ASSY	
3	3-945-346-11	KNOB, BALANCE		16	X-3735-057-1	FOOT ASSY	
4	A-6421-757-A	DP-701 BOARD, COMPLETE		17	3-944-530-11	KNOB, SLIDE	
* 5	A-6421-746-A	KY-701 (U51) BOARD, COMPLETE		18	4-812-134-11	RIVET NYLON, 3.5	
6	3-945-284-11	KNOB, VOLUME		* 19	A-6421-762-A	SB-701 BOARD, COMPLETE	
7	X-3735-006-1	PLATE ASSY, PRESS		* 20	A-6421-745-A	FP-701 (U51) BOARD, COMPLETE	
8	3-735-011-01	SPRING		* 21	3-737-454-01	SHEET, HOLDER	
9	3-735-010-01	PLATE (1), PRESS		22	1-465-843-61	REMOTE CONTROLLER (RMT-M11A)	
10	3-740-735-01	SPRING, ELECTROSTATIC		23	- - -	LID, BATTERY CASE	
11	3-740-723-21	CASE, UPPER		* 24	3-703-713-41	STICKER, SONY SYMBOL (10)	
12	3-710-901-41	SCREW, TAPPING		* 25	3-669-610-00	SPACER	
* 13	3-946-344-01	LABEL, MODEL NUMBER (UC)					

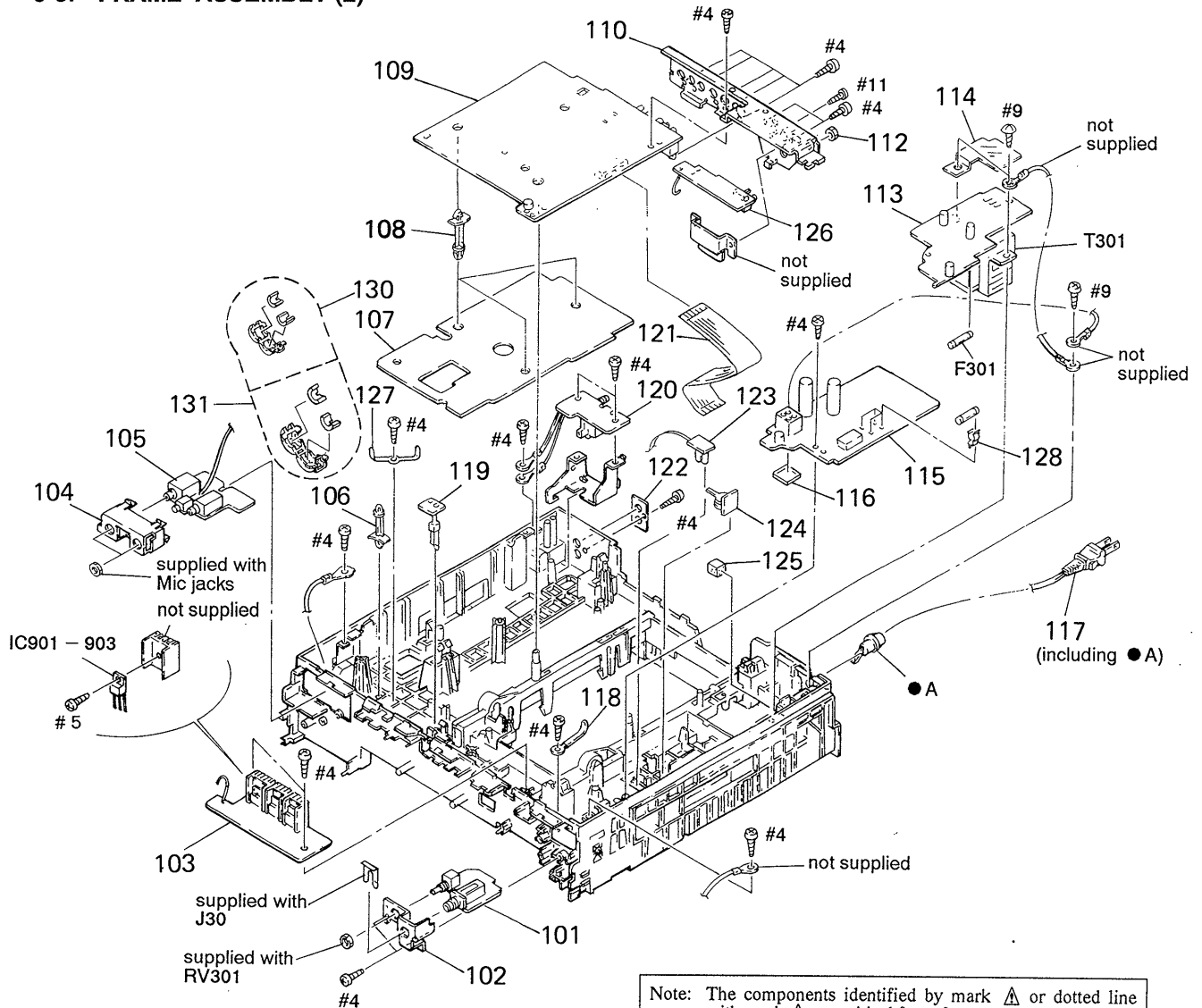
5-2. FRAME ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
51	X-3941-330-1	TRAY ASSY	
52	3-749-626-01	SHEET, CD	
53	X-3735-071-1	GUIDE ASSY (L), TRAY	
54	A-6415-359-A	MOTOR BLOCK ASSY (X), THREADING (M904)	
* 55	X-3735-002-1	BASE ASSY, THREADING	
56	3-735-035-01	GEAR, TRAY	
57	3-669-595-00	WASHER (2), STOPPER	
58	3-949-030-01	BELT, DRIVING	
59	3-735-036-01	PULLEY (A)	
60	3-737-448-01	SPRING, LEAF	
* 61	3-749-912-01	RETAINER (B), RACK	
62	3-735-052-01	RACK (RIGHT)	
63	X-3941-660-1	TRAY ASSY	
* 65	A-6421-760-A	PS-706 BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
66	3-740-710-01	REINFORCEMENT (RIGHT), REAR	
68	X-3735-070-1	GUIDE ASSY (R), TRAY	
69	X-3735-069-1	GEAR ASSY, PHASE	
* 70	4-914-248-01	STOPPER, RUBBER	
71	3-737-402-01	SPRING (2)	
72	X-3735-008-1	GEAR ASSY, MD PHASE	
73	4-812-134-11	RIVET NYLON, 3.5	
74	3-740-709-01	REINFORCEMENT (LEFT), REAR	
75	3-735-056-01	CAM, DRIVING	
76	3-735-037-01	GEAR, MIDWAY	
77	3-737-401-01	SPRING (1)	
78	3-735-053-01	RACK (LEFT)	
79	3-746-525-01	SPRING, TRAY	

5-3. FRAME ASSEMBLY (2)

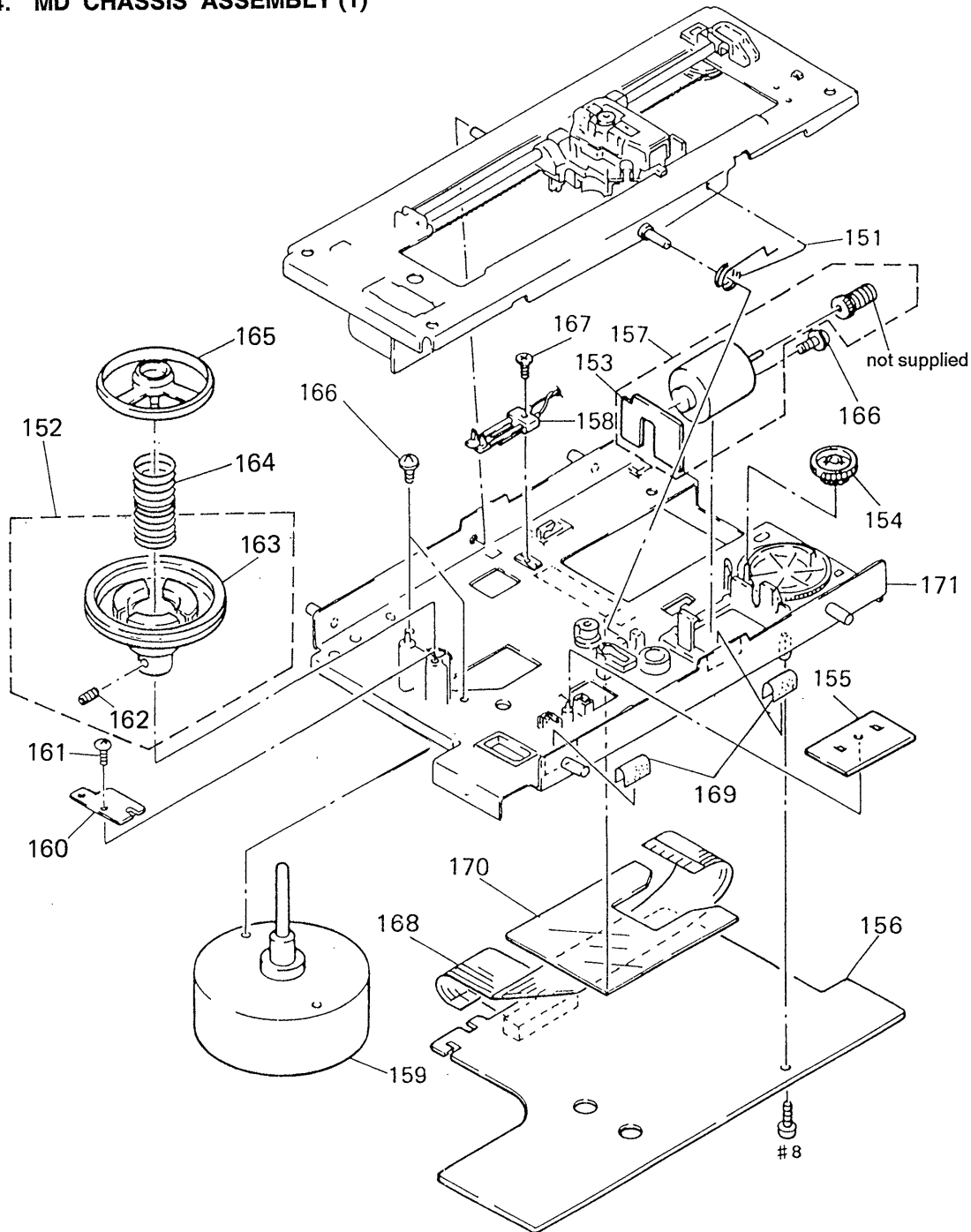


Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 101	A-6421-758-A	HP-705 BOARD, COMPLETE	
* 102	3-944-580-01	HOLDER, HP	
* 103	A-6421-749-A	PS-290 (U51) BOARD, COMPLETE	
* 104	3-944-581-01	HOLDER, MA	
* 105	A-6421-743-A	MA-701 (U51) BOARD, COMPLETE	
* 106	3-703-353-08	SUPPORTER, PC BOARD	
* 107	A-6421-744-A	KP-701 (U51) BOARD, COMPLETE	
* 108	3-703-353-12	SUPPORTER, PC BOARD	
* 109	A-6421-807-A	MB-53 (U51) BOARD, COMPLETE	
110	3-942-823-61	PLATE (B), JACK	
112	3-724-182-01	NUT (SMALL JACK), M6	
* 113	A-6421-748-A	TR-60 (U51) BOARD, COMPLETE	
114	3-746-543-01	COVER, TRANSFORMER	
* 115	A-6421-747-A	PS-286 (U51) BOARD, COMPLETE	
* 116	X-3940-915-1	SHIELD ASSY (2), PS LID	
117	1-551-478-00	CORD, POWER	
118	3-703-150-11	STOPPER, WIRING	

Ref. No.	Part No.	Description	Remark
* 119	A-6421-665-A	SW-193 BOARD, COMPLETE	
* 120	A-6420-759-A	AX-701 BOARD, COMPLETE	
121	1-575-813-11	CABLE, FLAT (FLEXIBLE) (28 CORE)	
122	3-944-532-13	PLATE, ORNAMENTAL, OUTER INPUT	
* 123	A-6421-664-A	LS-34 BOARD, COMPLETE	
* 124	A-6421-666-A	SW-194 BOARD, COMPLETE	
125	3-943-099-01	RUBBER, CORD CLAMP	
* 126	A-6420-799-A	DR-702 BOARD, COMPLETE	
* 127	2-367-032-01	CLAMP	
* 129	3-737-438-01	BRACKET, AC CORD	
130	1-543-619-41	CORE, RING (SMALL)	
131	1-543-870-11	CORE, RING (LARGE)	
Δ F101	1-532-747-11	FUSE, GLASS TUBE (5A 125V)	
Δ F102	1-532-747-11	FUSE, GLASS TUBE (5A 125V)	
Δ F301	1-532-743-11	FUSE, GLASS TUBE (2A 125V)	
Δ T301	1-450-721-11	TRANSFORMER, POWER	

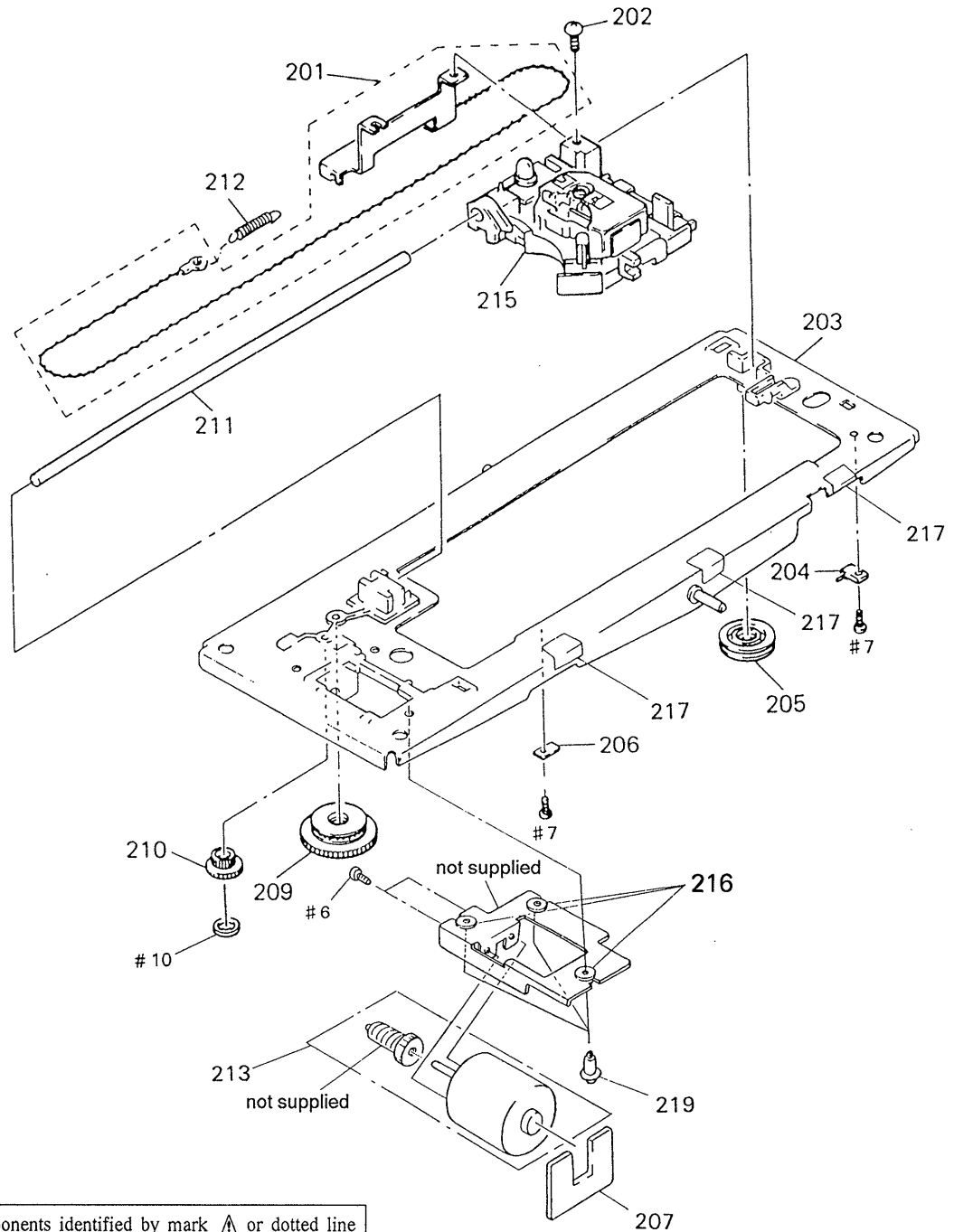
5-4. MD CHASSIS ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark
151	3-735-021-01	SPRING, TORSION	
152	X-3735-003-1	TURNTABLE ASSY	
* 153	1-631-095-11	MT-30 BOARD	
154	3-735-025-01	GEAR, SKEW	
* 155	A-6421-764-A	CK-702 BOARD, COMPLETE	
* 156	A-6421-763-A	SV-701 BOARD, COMPLETE	
157	A-6415-290-A	MOTOR BLOCK ASSY, SKEW (M903)	
158	1-554-468-00	SWITCH, LEAF	
159	1-541-776-21	MOTOR, LD SPINDLE	
* 160	A-6421-765-A	FG-702 BOARD, COMPLETE	
161	3-719-845-11	SCREW (B2X8), TAPPING	

Ref. No.	Part No.	Description	Remark
162	3-701-506-01	SET SCREW, DOUBLE POINT 3X4	
* 163	3-735-019-03	TURNTABLE (RUBBER)	
* 164	3-735-026-01	SPRING, COMPRESSION	
165	X-2625-077-1	GUIDE ASSY, CENTER	
167	3-899-248-01	SCREW (M3X6)	
168	1-574-648-11	CABLE, FLAT (FLEXIBLE) (24 CORE)	
* 169	3-737-413-01	SHEET, TEFLON	
* 170	3-735-099-01	SHEET, FLEXIBLE RETAINER	
* 171	3-735-068-15	CHASSIS, MD	

5-5. MD CHASSIS ASSEMBLY (2)



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

Ref. No.	Part No.	Description	Remark
201	X-3735-001-1	WIRE ASSY	
202	3-899-248-01	SCREW (M3X6)	
* 203	X-3940-657-1	CHASSIS ASSY	
204	1-570-771-21	SWITCH	
205	3-735-017-01	PULLEY, RETURN	
206	1-571-435-11	SWITCH	
* 207	1-630-097-11	MT-28 BOARD	
209	3-735-016-01	PULLEY, DRIVING	

Ref. No.	Part No.	Description	Remark
210	3-735-015-01	GEAR, CARRIAGE	
* 211	3-735-020-01	SHAFT, CARRIAGE	
212	3-672-430-00	SPRING, TENSION	
213	A-6415-434-A	MOTOR BLOCK ASSY, SLED (M902)	
▲215	8-848-138-11	DEVICE, OPTICAL KHS-130A	
216	3-570-118-00	CUSHION, MOTOR	
217	3-846-312-00	SPACER	
219	3-570-027-00	SCREW, MOTOR	

SECTION 6
ELECTRICAL PARTS LIST

AX-701 CK-702

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 .. μ A. uPA.. μ PA.
uPB.. μ PB. uPC.. μ PC. uPD.. μ PD.
- CAPACITORS
uF: μ F
- COILS
uH: μ H

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

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

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

Ref. No.	Part No.	Description	Remark
*	A-6420-759-A	AX-701 BOARD, COMPLETE *****	
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 < CAPACITOR >	
C901	1-124-589-11	ELECT 47uF 20% 16V	
C902	1-124-589-11	ELECT 47uF 20% 16V	
C903	1-124-927-11	ELECT 4.7uF 20% 100V	
C904	1-124-927-11	ELECT 4.7uF 20% 100V	
		< CONNECTOR >	
* CN901	1-568-783-11	PIN, CONNECTOR 6P < DIODE >	
D902	8-719-800-76	DIODE 1SS226 < IC >	
IC901	8-759-100-96	IC uPC4558G2 < JACK >	
J901	1-565-352-41	JACK, PIN 2P (AUX) < JUMPER RESISTOR >	
JR901	1-216-295-00	METAL CHIP 0 5% 1/10W < RESISTOR >	
R901	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R902	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R903	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R904	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R905	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R906	1-216-089-00	METAL CHIP 47K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
*	A-6421-764-A	CK-702 BOARD, COMPLETE *****	
		< CAPACITOR >	
C401	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C402	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
CN401	1-506-467-11	PIN, CONNECTOR 2P	
CN402	1-506-468-11	PIN, CONNECTOR 3P	
CN403	1-506-467-11	PIN, CONNECTOR 2P	
CN404	1-506-467-11	PIN, CONNECTOR 2P	
CN405	1-506-467-11	PIN, CONNECTOR 2P	
		< JUMPER RESISTOR >	
JR401	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< RESISTOR >	
R401	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R402	1-216-031-00	METAL CHIP 180 5% 1/10W	
R403	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R404	1-216-001-00	METAL CHIP 10 5% 1/10W	
R405	1-216-001-00	METAL CHIP 10 5% 1/10W	
R406	1-216-031-00	METAL CHIP 180 5% 1/10W	
R407	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
A-6421-757-A DP-701 BOARD, COMPLETE			

< CAPACITOR >			
C601	1-126-177-11	ELECT 100uF 20%	10V
C602	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C603	1-164-232-11	CERAMIC CHIP 0.01uF	50V
< CONNECTOR >			
CN601	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN602	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN603	1-506-482-11	PIN, CONNECTOR 3P	
< DIODE >			
D601	8-719-946-30	LED SLR34DC3	
D602	8-719-940-99	LED SLR34VC3	
D603	8-719-946-30	LED SLR34DC3	
D604	8-719-940-99	LED SLR34VC3	
D605	8-719-940-82	LED SLR34MC3	
D606	8-719-992-30	LED SLR305MC3F	
D607	8-719-992-30	LED SLR305MC3F	
D608	8-719-992-27	LED SLR-305DCA47	
D609	8-719-992-25	LED SLR-305VCA47	
D610	8-719-992-27	LED SLR-305DCA47	
D611	8-719-946-30	LED SLR34DC3	
D612	8-719-992-27	LED SLR-305DCA47	
D613	8-719-992-27	LED SLR-305DCA47	
D614	8-719-992-27	LED SLR-305DCA47	
D615	8-719-992-27	LED SLR-305DCA47	
D616	8-719-992-27	LED SLR-305DCA47	
D617	8-719-992-27	LED SLR-305DCA47	
D618	8-719-018-44	LED SL1149	
< IC >			
IC601	8-759-100-97	IC uPC339G2	
IC602	8-759-100-97	IC uPC339G2	
< JUMPER RESISTOR >			
JR601	1-216-296-00	METAL CHIP 0 5%	1/8W
JR602	1-216-296-00	METAL CHIP 0 5%	1/8W
JR604	1-216-296-00	METAL CHIP 0 5%	1/8W
JR605	1-216-296-00	METAL CHIP 0 5%	1/8W
JR606	1-216-296-00	METAL CHIP 0 5%	1/8W
JR607	1-216-296-00	METAL CHIP 0 5%	1/8W
JR608	1-216-296-00	METAL CHIP 0 5%	1/8W
< COIL >			
L601	1-408-417-00	INDUCTOR 47uH	

Ref. No.	Part No.	Description	Remark
< RESISTOR >			
R601	1-216-035-00	METAL CHIP 270 5%	1/10W
R602	1-216-031-00	METAL CHIP 180 5%	1/10W
R603	1-216-031-00	METAL CHIP 180 5%	1/10W
R604	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R605	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R606	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R607	1-216-079-00	METAL CHIP 18K 5%	1/10W
R610	1-216-073-00	METAL CHIP 10K 5%	1/10W
R611	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R612	1-216-073-00	METAL CHIP 10K 5%	1/10W
R613	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R614	1-216-073-00	METAL CHIP 10K 5%	1/10W
R615	1-216-079-00	METAL CHIP 18K 5%	1/10W
R616	1-216-073-00	METAL CHIP 10K 5%	1/10W
R617	1-216-073-00	METAL CHIP 10K 5%	1/10W
R618	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R619	1-216-073-00	METAL CHIP 10K 5%	1/10W
R620	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R621	1-216-073-00	METAL CHIP 10K 5%	1/10W
R622	1-216-079-00	METAL CHIP 18K 5%	1/10W
R623	1-216-073-00	METAL CHIP 10K 5%	1/10W
R624	1-216-073-00	METAL CHIP 10K 5%	1/10W
R625	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R626	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R627	1-216-009-00	METAL CHIP 22 5%	1/10W
R628	1-216-009-00	METAL CHIP 22 5%	1/10W
R630	1-216-035-00	METAL CHIP 270 5%	1/10W
R631	1-216-035-00	METAL CHIP 270 5%	1/10W
< VARIABLE RESISTOR >			
RV601	1-241-238-21	RES, VAR, CARBON 20K (DIGITAL ECHO)	
RV602	1-241-238-21	RES, VAR, CARBON 20K (VOCAL BALANCE)	
< SWITCH >			
S601	1-572-946-11	SWITCH, TACTIL (POWER)	
S602	1-572-946-11	SWITCH, TACTIL (SURROUND)	
S603	1-572-946-11	SWITCH, TACTIL (UP)	
S604	1-572-946-11	SWITCH, TACTIL (STANDARD)	
S605	1-572-946-11	SWITCH, TACTIL (DOWN)	
S606	1-572-946-11	SWITCH, TACTIL (ONTA DIRECT)	
S607	1-570-157-51	SWITCH, SLIDE (INPUT SELECTOR)	

Ref. No.	Part No.	Description	Remark
*	A-6420-799-A	DR-702 BOARD, COMPLETE *****	
		< CAPACITOR >	
C201	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C203	1-163-035-00	CERAMIC CHIP 0.047uF	50V
		< CONNECTOR >	
CN201	1-506-485-11	PIN, CONNECTOR 6P	
CN202	1-506-468-11	PIN, CONNECTOR 3P	
		< DIODE >	
D201	8-719-400-18	DIODE MA152WK	
D202	8-719-400-18	DIODE MA152WK	
		< JACK >	
J201	1-507-562-31	JACK (CONTROL S IN)	
J202	1-537-005-21	JACK BOARD (RF UNIT OUT)	
		< TRANSISTOR >	
Q201	8-729-374-02	TRANSISTOR 2SB740	
		< RESISTOR >	
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R202	1-216-025-00	METAL CHIP 100 5% 1/10W	
R203	1-249-389-11	CARBON 4.7 5% 1/4W	
R204	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R205	1-216-097-00	METAL CHIP 100K 5% 1/10W	
		< SWITCH >	
S201	1-553-725-21	SWITCH, SLIDE	

*	A-6421-765-A	FG-702 BOARD, COMPLETE *****	
		< DIODE >	
D301	8-719-939-11	DIODE GP-2S09-B	

Ref. No.	Part No.	Description	Remark
*	A-6421-745-A	FP-701 (U51) BOARD, COMPLETE *****	
		< CAPACITOR >	
C001	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C002	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C003	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C004	1-126-177-11	ELECT 100uF	20% 10V
C005	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C006	1-126-177-11	ELECT 100uF	20% 10V
C007	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C008	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C009	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C010	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C011	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C012	1-126-177-11	ELECT 100uF	20% 10V
C013	1-126-177-11	ELECT 100uF	20% 10V
C014	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C020	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C021	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C022	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
CN001	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN002	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN003	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN005	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
* CN006	1-568-788-21	PIN, CONNECTOR 11P	
* CN008	1-568-786-11	PIN, CONNECTOR 9P	
CN010	1-506-468-11	PIN, CONNECTOR 3P	
CN011	1-506-469-11	PIN, CONNECTOR 4P	
* CN012	1-568-779-11	PIN, CONNECTOR 2P	

		< DIODE >	
D001	8-719-400-18	DIODE MA152WK	
		< FILTER >	
F001	1-236-071-11	ENCAPSULATED COMPONENT	
		< IC >	

IC001	8-752-833-13	IC CXP50116-255Q	
IC002	8-752-837-58	IC CXP50116-290Q	
IC003	8-759-605-21	IC M51953AFP	
IC004	8-759-926-64	IC SN74HC367ANS	
IC005	8-759-062-08	IC LB1721M	
IC006	8-759-062-08	IC LB1721M	
IC007	8-759-062-08	IC LB1721M	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC008	8-759-062-08	IC LB1721M		R016	1-216-035-00	METAL CHIP 270 5% 1/10W	
IC009	8-759-062-08	IC LB1721M		R017	1-216-035-00	METAL CHIP 270 5% 1/10W	
IC010	8-759-009-10	IC MC14069UBF		R018	1-216-035-00	METAL CHIP 270 5% 1/10W	
IC011	8-759-008-79	IC MC14011BF		R019	1-216-073-00	METAL CHIP 10K 5% 1/10W	
< COIL >				R020	1-216-073-00	METAL CHIP 10K 5% 1/10W	
L001	1-408-421-00	INDUCTOR 100uH		R021	1-216-073-00	METAL CHIP 10K 5% 1/10W	
< TRANSISTOR >				R022	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q001	8-729-900-89	TRANSISTOR DTC144ES		R023	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q002	8-729-900-89	TRANSISTOR DTC144ES		R024	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q003	8-729-119-76	TRANSISTOR 2SA1175-HFE		R025	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q004	8-729-119-76	TRANSISTOR 2SA1175-HFE		R026	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q005	8-729-900-89	TRANSISTOR DTC144ES		R027	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q006	8-729-119-78	TRANSISTOR 2SC2785-HFE		R028	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q007	8-729-119-78	TRANSISTOR 2SC2785-HFE		R029	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q008	8-729-900-89	TRANSISTOR DTC144ES		R030	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q009	8-729-900-61	TRANSISTOR DTA114ES		R031	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q010	8-729-900-61	TRANSISTOR DTA114ES		R032	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q011	8-729-900-61	TRANSISTOR DTA114ES		R033	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q012	8-729-900-80	TRANSISTOR DTC114ES		R034	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q013	8-729-900-80	TRANSISTOR DTC114ES		R035	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q014	8-729-900-80	TRANSISTOR DTC114ES		R036	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q015	8-729-900-89	TRANSISTOR DTC144ES		R037	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q016	8-729-900-80	TRANSISTOR DTC114ES		R038	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q017	8-729-900-80	TRANSISTOR DTC114ES		R039	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q018	8-729-900-61	TRANSISTOR DTA114ES		R040	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q019	8-729-900-61	TRANSISTOR DTA114ES		R041	1-216-025-00	METAL CHIP 100 5% 1/10W	
Q020	8-729-900-61	TRANSISTOR DTA114ES		R042	1-216-073-00	METAL CHIP 10K 5% 1/10W	
Q021	8-729-900-61	TRANSISTOR DTA114ES		R044	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q022	8-729-900-89	TRANSISTOR DTC144ES		R045	1-216-089-00	METAL CHIP 47K 5% 1/10W	
Q023	8-729-900-65	TRANSISTOR DTA144ES		R046	1-216-121-00	METAL CHIP 1M 5% 1/10W	
< RESISTOR >				R047	1-216-035-00	METAL CHIP 270 5% 1/10W	
R001	1-216-031-00	METAL CHIP 180 5% 1/10W		R048	1-216-035-00	METAL CHIP 270 5% 1/10W	
R002	1-216-031-00	METAL CHIP 180 5% 1/10W		R049	1-216-035-00	METAL CHIP 270 5% 1/10W	
R003	1-216-073-00	METAL CHIP 10K 5% 1/10W		R050	1-216-035-00	METAL CHIP 270 5% 1/10W	
R004	1-216-073-00	METAL CHIP 10K 5% 1/10W		R051	1-216-035-00	METAL CHIP 270 5% 1/10W	
R005	1-216-073-00	METAL CHIP 10K 5% 1/10W		R052	1-216-035-00	METAL CHIP 270 5% 1/10W	
R006	1-216-073-00	METAL CHIP 10K 5% 1/10W		R053	1-216-035-00	METAL CHIP 270 5% 1/10W	
R007	1-216-075-00	METAL CHIP 12K 5% 1/10W		R054	1-216-035-00	METAL CHIP 270 5% 1/10W	
R008	1-216-075-00	METAL CHIP 12K 5% 1/10W		R055	1-216-035-00	METAL CHIP 270 5% 1/10W	
R009	1-216-073-00	METAL CHIP 10K 5% 1/10W		R056	1-216-035-00	METAL CHIP 270 5% 1/10W	
R010	1-216-073-00	METAL CHIP 10K 5% 1/10W		R057	1-216-035-00	METAL CHIP 270 5% 1/10W	
R011	1-216-085-00	METAL CHIP 33K 5% 1/10W		R058	1-216-035-00	METAL CHIP 270 5% 1/10W	
R012	1-216-035-00	METAL CHIP 270 5% 1/10W		R059	1-216-035-00	METAL CHIP 270 5% 1/10W	
R013	1-216-035-00	METAL CHIP 270 5% 1/10W		R060	1-216-035-00	METAL CHIP 270 5% 1/10W	
R014	1-216-035-00	METAL CHIP 270 5% 1/10W		R061	1-216-025-00	METAL CHIP 100 5% 1/10W	
R015	1-216-035-00	METAL CHIP 270 5% 1/10W		R062	1-216-025-00	METAL CHIP 100 5% 1/10W	
				R063	1-216-025-00	METAL CHIP 100 5% 1/10W	
				R064	1-216-025-00	METAL CHIP 100 5% 1/10W	
				R065	1-216-025-00	METAL CHIP 100 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R066	1-216-025-00	METAL CHIP	100 5% 1/10W
R067	1-216-025-00	METAL CHIP	100 5% 1/10W
R068	1-216-025-00	METAL CHIP	100 5% 1/10W
R069	1-216-097-00	METAL CHIP	100K 5% 1/10W
R070	1-216-097-00	METAL CHIP	100K 5% 1/10W
R071	1-216-097-00	METAL CHIP	100K 5% 1/10W
R072	1-216-097-00	METAL CHIP	100K 5% 1/10W
R073	1-216-097-00	METAL CHIP	100K 5% 1/10W
R074	1-216-097-00	METAL CHIP	100K 5% 1/10W
R075	1-216-073-00	METAL CHIP	10K 5% 1/10W
R076	1-216-073-00	METAL CHIP	10K 5% 1/10W
R077	1-216-073-00	METAL CHIP	10K 5% 1/10W
R078	1-216-073-00	METAL CHIP	10K 5% 1/10W
R079	1-216-073-00	METAL CHIP	10K 5% 1/10W
R080	1-216-073-00	METAL CHIP	10K 5% 1/10W
R081	1-216-025-00	METAL CHIP	100 5% 1/10W
R082	1-216-025-00	METAL CHIP	100 5% 1/10W
R083	1-216-025-00	METAL CHIP	100 5% 1/10W
R084	1-216-025-00	METAL CHIP	100 5% 1/10W
R085	1-216-025-00	METAL CHIP	100 5% 1/10W
R086	1-216-025-00	METAL CHIP	100 5% 1/10W
R087	1-216-089-00	METAL CHIP	47K 5% 1/10W
R089	1-216-089-00	METAL CHIP	47K 5% 1/10W
R090	1-216-121-00	METAL CHIP	1M 5% 1/10W
R091	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R096	1-216-031-00	METAL CHIP	180 5% 1/10W
R097	1-216-031-00	METAL CHIP	180 5% 1/10W
R098	1-216-031-00	METAL CHIP	180 5% 1/10W
R099	1-216-031-00	METAL CHIP	180 5% 1/10W
R100	1-216-031-00	METAL CHIP	180 5% 1/10W
R101	1-216-031-00	METAL CHIP	180 5% 1/10W
R102	1-216-031-00	METAL CHIP	180 5% 1/10W
R103	1-216-031-00	METAL CHIP	180 5% 1/10W
R104	1-216-031-00	METAL CHIP	180 5% 1/10W
R105	1-216-031-00	METAL CHIP	180 5% 1/10W
R106	1-216-031-00	METAL CHIP	180 5% 1/10W
R107	1-216-031-00	METAL CHIP	180 5% 1/10W
R108	1-216-031-00	METAL CHIP	180 5% 1/10W
R109	1-216-031-00	METAL CHIP	180 5% 1/10W
R110	1-216-031-00	METAL CHIP	180 5% 1/10W
R111	1-216-031-00	METAL CHIP	180 5% 1/10W
R112	1-216-031-00	METAL CHIP	180 5% 1/10W
R113	1-216-031-00	METAL CHIP	180 5% 1/10W
R114	1-216-089-00	METAL CHIP	47K 5% 1/10W
R115	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R116	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R117	1-216-073-00	METAL CHIP	10K 5% 1/10W
R118	1-216-073-00	METAL CHIP	10K 5% 1/10W
R119	1-216-073-00	METAL CHIP	10K 5% 1/10W

Ref. No.	Part No.	Description	Remark
R120	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R121	1-216-089-00	METAL CHIP	47K 5% 1/10W
R122	1-216-025-00	METAL CHIP	100 5% 1/10W
R123	1-216-049-00	METAL CHIP	1K 5% 1/10W
R130	1-216-074-00	METAL CHIP	11K 5% 1/10W
R131	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
< VIBRATOR >			
X001	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	
X002	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

*	A-6421-758-A	HP-705 BOARD, COMPLETE	*****
*	3-944-580-01	HOLDER, HP	
< CONNECTOR >			
CN301	1-506-468-11	PIN, CONNECTOR 3P	
< DIODE >			
D301	8-719-400-18	DIODE MA152WK	
D302	8-719-400-18	DIODE MA152WK	
< FILTER >			
FL301	1-236-744-21	FILTER, EMI	
< JACK >			
J301	1-507-796-71	JACK (PHONES)	
< RESISTOR >			
R301	1-249-421-11	CARBON	2.2K 5% 1/4W
R302	1-249-421-11	CARBON	2.2K 5% 1/4W
R303	1-249-399-11	CARBON	33 5% 1/4W
R304	1-249-399-11	CARBON	33 5% 1/4W
< VARIABLE RESISTOR >			
RV301	1-241-139-11	RES, VAR, CARBON 500/500 (LEVEL)	

KP-701

Ref. No.	Part No.	Description	Remark		
*	A-6421-744-A	KP-701 (U51) BOARD, COMPLETE *****			
	1-543-619-41	CORE, RING			
		< CAPACITOR >			
C202	1-124-443-00	ELECT	100uF	20%	10V
C203	1-124-443-00	ELECT	100uF	20%	10V
C204	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C205	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C206	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C207	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C208	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C209	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C210	1-163-091-00	CERAMIC CHIP	8PF		50V
C211	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C212	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C213	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C214	1-124-443-00	ELECT	100uF	20%	10V
C215	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C216	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C217	1-124-443-00	ELECT	100uF	20%	10V
C218	1-124-443-00	ELECT	100uF	20%	10V
C219	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C220	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C221	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C222	1-126-233-11	ELECT	22uF	20%	50V
C223	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C224	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C225	1-136-160-00	FILM	0.039uF	5%	50V
C226	1-124-288-00	ELECT	22uF	20%	6.3V
C228	1-124-443-00	ELECT	100uF	20%	10V
C229	1-136-165-00	FILM	0.1uF	5%	50V
C230	1-124-907-11	ELECT	10uF	20%	50V
C235	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C236	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C237	1-124-443-00	ELECT	100uF	20%	10V
C238	1-124-443-00	ELECT	100uF	20%	10V
C239	1-163-002-11	CERAMIC CHIP	270PF	10%	50V
C240	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C241	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C242	1-126-233-11	ELECT	22uF	20%	50V
C243	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C244	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C245	1-136-160-00	FILM	0.039uF	5%	50V
C246	1-124-288-00	ELECT	22uF	20%	6.3V
C247	1-124-902-00	ELECT	0.47uF	20%	50V
C248	1-124-126-00	ELECT	47uF	20%	10V
C249	1-124-126-00	ELECT	47uF	20%	10V

Ref. No.	Part No.	Description	Remark		
C250	1-124-903-11	ELECT	1uF	20%	50V
C251	1-124-903-11	ELECT	1uF	20%	50V
C401	1-124-126-00	ELECT	47uF	20%	10V
C402	1-124-126-00	ELECT	47uF	20%	10V
C403	1-124-927-11	ELECT	4.7uF	20%	100V
C404	1-130-481-00	MYLAR	0.0068uF	5%	50V
C405	1-130-474-00	MYLAR	0.0018uF	5%	50V
C406	1-124-126-00	ELECT	47uF	20%	10V
C407	1-124-126-00	ELECT	47uF	20%	10V
C408	1-130-468-00	MYLAR	560PF	5%	50V
C409	1-124-927-11	ELECT	4.7uF	20%	100V
C410	1-124-443-00	ELECT	100uF	20%	10V
C411	1-124-927-11	ELECT	4.7uF	20%	100V
C412	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C414	1-124-126-00	ELECT	47uF	20%	10V
C415	1-124-126-00	ELECT	47uF	20%	10V
C416	1-124-907-11	ELECT	10uF	20%	50V
C417	1-130-474-00	MYLAR	0.0018uF	5%	50V
C419	1-124-927-11	ELECT	4.7uF	20%	100V
C420	1-124-443-00	ELECT	100uF	20%	10V
C421	1-124-927-11	ELECT	4.7uF	20%	100V
C422	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C424	1-124-126-00	ELECT	47uF	20%	10V
C425	1-124-126-00	ELECT	47uF	20%	10V
C426	1-124-907-11	ELECT	100uF	20%	50V
C427	1-130-474-00	MYLAR	0.0018uF	5%	50V
C429	1-124-927-11	ELECT	4.7uF	20%	100V
C430	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C431	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C432	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C433	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C434	1-124-126-00	ELECT	47uF	20%	10V
C435	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C436	1-124-126-00	ELECT	47uF	20%	10V
C437	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C438	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C439	1-124-907-11	ELECT	10uF	20%	50V
C440	1-124-907-11	ELECT	10uF	20%	50V
C441	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C442	1-124-443-00	ELECT	100uF	20%	10V
C443	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C444	1-124-443-00	ELECT	100uF	20%	10V
C445	1-124-443-00	ELECT	100uF	20%	10V
C446	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C447	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C448	1-124-443-00	ELECT	100uF	20%	10V
C449	1-124-126-00	ELECT	47uF	20%	10V
C450	1-124-927-11	ELECT	4.7uF	20%	100V

Ref. No.	Part No.	Description	Remark
C451	1-124-126-00	ELECT	47uF 20% 10V
C452	1-124-903-11	ELECT	1uF 20% 50V
C453	1-124-903-11	ELECT	1uF 20% 50V
C454	1-124-903-11	ELECT	1uF 20% 50V
C455	1-124-903-11	ELECT	1uF 20% 50V
C456	1-124-126-00	ELECT	47uF 20% 10V
C457	1-124-126-00	ELECT	47uF 20% 10V
C458	1-124-126-00	ELECT	47uF 20% 10V
C459	1-124-126-00	ELECT	47uF 20% 10V
C460	1-124-927-11	ELECT	4.7uF 20% 100V
C461	1-124-126-00	ELECT	47uF 20% 10V
C462	1-124-126-00	ELECT	47uF 20% 10V
C463	1-124-927-11	ELECT	4.7uF 20% 100V
C464	1-124-927-11	ELECT	4.7uF 20% 100V
C465	1-124-927-11	ELECT	4.7uF 20% 100V
C466	1-164-182-11	CERAMIC CHIP	0.0033uF 10% 50V
C467	1-124-907-11	ELECT	10uF 20% 50V
C468	1-136-171-00	FILM	0.033uF 5% 50V
C469	1-124-907-11	ELECT	10uF 20% 50V
C470	1-130-481-00	MYLAR	0.0068uF 5% 50V
C471	1-130-475-00	MYLAR	0.0022uF 5% 50V
C472	1-124-126-00	ELECT	47uF 20% 10V
C473	1-124-126-00	ELECT	47uF 20% 10V
C475	1-124-907-11	ELECT	10uF 20% 50V
C476	1-136-171-00	FILM	0.033uF 5% 50V
C477	1-124-907-11	ELECT	10uF 20% 50V
C478	1-130-481-00	MYLAR	0.0068uF 5% 50V
C479	1-130-475-00	MYLAR	0.0022uF 5% 50V
C480	1-124-126-00	ELECT	47uF 20% 10V
C481	1-124-126-00	ELECT	47uF 20% 10V
C483	1-124-907-11	ELECT	10uF 20% 50V
C484	1-124-126-00	ELECT	47uF 20% 10V
C485	1-124-126-00	ELECT	47uF 20% 10V
C491	1-124-443-00	ELECT	100uF 20% 10V
C492	1-124-443-00	ELECT	100uF 20% 10V
C493	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
C494	1-124-126-00	ELECT	47uF 20% 10V
C496	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V
< CONNECTOR >			
CN201	1-506-473-11	PIN, CONNECTOR 8P	
CN202	1-506-487-11	PIN, CONNECTOR 8P	
CN203	1-506-468-11	PIN, CONNECTOR 3P	
* CN204	1-568-779-11	PIN, CONNECTOR 2P	
* CN401	1-568-788-21	PIN, CONNECTOR 11P	
CN402	1-506-472-11	PIN, CONNECTOR 7P	
CN403	1-506-470-11	PIN, CONNECTOR 5P	
* CN404	1-568-783-11	PIN, CONNECTOR 6P	
CN405	1-506-473-11	PIN, CONNECTOR 8P	

Ref. No.	Part No.	Description	Remark
CN406	1-506-468-11	PIN, CONNECTOR 3P	
< DIODE >			
D404	8-719-400-18	DIODE MA152WK	
D405	8-719-109-75	DIODE RD4.3ES-B2	
D406	8-719-109-75	DIODE RD4.3ES-B2	
D408	8-719-800-76	DIODE 1SS226	
D412	8-719-800-76	DIODE 1SS226	
D414	8-719-800-76	DIODE 1SS226	
D417	8-719-800-76	DIODE 1SS226	
D418	8-719-800-76	DIODE 1SS226	
D419	8-719-104-34	DIODE 1S2836	
D420	8-719-400-18	DIODE MA152WK	
D440	8-719-105-82	DIODE uZM5.1B	
< FILTER >			
FL201	1-236-840-11	FILTER, BAND PASS	
FL401	1-239-201-11	FILTER, LOW PASS (18KHz)	
FL402	1-239-201-11	FILTER, LOW PASS (18KHz)	
FL403	1-236-071-11	ENCAPSULATED COMPONENT (FILTER EMI)	
FL404	1-236-071-11	ENCAPSULATED COMPONENT (FILTER EMI)	
FL405	1-236-071-11	ENCAPSULATED COMPONENT (FILTER EMI)	
FL406	1-236-071-11	ENCAPSULATED COMPONENT (FILTER EMI)	
FL407	1-236-071-11	ENCAPSULATED COMPONENT (FILTER EMI)	
FL408	1-236-071-11	ENCAPSULATED COMPONENT (FILTER EMI)	
< IC >			
IC201	8-759-502-42	IC PA0034A	
IC202	8-759-100-96	IC uPC4558G2	
IC401	8-759-932-67	IC BU4053BF	
IC402	8-759-100-96	IC uPC4558G2	
IC403	8-759-100-96	IC uPC4558G2	
IC404	8-759-100-96	IC uPC4558G2	
IC405	8-759-504-52	IC YSS205	
IC406	8-759-243-37	IC TC51832SPL	
IC407	8-759-100-96	IC uPC4558G2	
IC408	8-759-504-53	IC YM3433	
IC409	8-759-008-67	IC MC14066BF	
IC410	8-759-999-35	IC PCM1700P	
IC411	8-759-100-96	IC uPC4558G2	
IC412	8-759-100-96	IC uPC4558G2	
IC413	8-759-100-96	IC uPC4558G2	
IC414	8-759-100-96	IC uPC4558G2	
IC415	8-759-100-96	IC uPC4558G2	
IC416	8-759-100-96	IC uPC4558G2	
IC417	8-759-932-67	IC BU4053BF	
IC418	8-759-100-96	IC uPC4558G2	

Ref. No.	Part No.	Description	Remark			
< JUMPER RESISTOR >						
JR245	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR252	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR401	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR402	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR420	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR430	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR440	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR542	1-216-295-00	METAL CHIP	0	5%	1/10W	

< COIL >

L201	1-408-417-00	INDUCTOR 47uH
L202	1-408-417-00	INDUCTOR 47uH
L203	1-408-421-00	INDUCTOR 100uH
L204	1-408-425-00	INDUCTOR 220uH
L205	1-408-417-00	INDUCTOR 47uH
L206	1-408-417-00	INDUCTOR 47uH

< TRANSISTOR >

Q201	8-729-100-66	TRANSISTOR	2SC1623-L6
Q202	8-729-100-66	TRANSISTOR	2SC1623-L6
Q203	8-729-100-66	TRANSISTOR	2SC1623-L6
Q204	8-729-216-22	TRANSISTOR	2SA1162-G
Q205	8-729-216-22	TRANSISTOR	2SA1162-G
Q206	8-729-201-05	TRANSISTOR	2SC2878-B
Q207	8-729-201-05	TRANSISTOR	2SC2878-B
Q208	8-729-900-80	TRANSISTOR	DTC114ES
Q209	8-729-900-61	TRANSISTOR	DTA114ES
Q401	8-729-900-53	TRANSISTOR	DTC114EK
Q402	8-729-901-04	TRANSISTOR	DTA114EK
Q407	8-729-201-05	TRANSISTOR	2SC2878-B
Q408	8-729-201-05	TRANSISTOR	2SC2878-B
Q409	8-729-201-05	TRANSISTOR	2SC2878-B
Q411	8-729-201-05	TRANSISTOR	2SC2878-B
Q412	8-729-900-53	TRANSISTOR	DTC114EK
Q413	8-729-901-04	TRANSISTOR	DTA114EK
Q414	8-729-901-01	TRANSISTOR	DTC114EK
Q415	8-729-901-04	TRANSISTOR	DTA114EK
Q416	8-729-201-05	TRANSISTOR	2SC2878-B
Q417	8-729-201-05	TRANSISTOR	2SC2878-B
Q421	8-729-900-53	TRANSISTOR	DTC114EK
Q422	8-729-900-53	TRANSISTOR	DTC114EK
Q423	8-729-900-53	TRANSISTOR	DTC114EK
Q431	8-729-201-05	TRANSISTOR	2SC2878-B
Q432	8-729-201-05	TRANSISTOR	2SC2878-B

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R201	1-216-081-00	METAL CHIP	22K	5%	1/10W
R202	1-216-081-00	METAL CHIP	22K	5%	1/10W
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W
R205	1-216-048-00	METAL CHIP	910	5%	1/10W
R207	1-216-093-00	METAL CHIP	68K	5%	1/10W
R208	1-216-076-00	METAL CHIP	13K	5%	1/10W
R209	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R210	1-216-041-00	METAL CHIP	470	5%	1/10W
R211	1-216-017-00	METAL CHIP	47	5%	1/10W
R212	1-216-023-00	METAL CHIP	82	5%	1/10W
R213	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R214	1-216-049-00	METAL CHIP	1K	5%	1/10W
R215	1-216-049-00	METAL CHIP	1K	5%	1/10W
R216	1-216-049-00	METAL CHIP	1K	5%	1/10W
R217	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R218	1-216-033-00	METAL CHIP	220	5%	1/10W
R219	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R220	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R221	1-216-073-00	METAL CHIP	10K	5%	1/10W
R222	1-216-078-00	METAL GLAZE	16K	5%	1/10W
R223	1-216-118-00	METAL GLAZE	750K	5%	1/10W
R224	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R226	1-216-046-00	METAL CHIP	750	5%	1/10W
R227	1-216-101-00	METAL CHIP	150K	5%	1/10W
R228	1-216-101-00	METAL CHIP	150K	5%	1/10W
R229	1-216-104-00	METAL CHIP	200K	5%	1/10W
R233	1-216-049-00	METAL CHIP	1K	5%	1/10W
R234	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R235	1-216-033-00	METAL CHIP	220	5%	1/10W
R236	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R237	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R238	1-216-073-00	METAL CHIP	10K	5%	1/10W
R239	1-216-078-00	METAL GLAZE	16K	5%	1/10W
R240	1-216-118-00	METAL GLAZE	750K	5%	1/10W
R241	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R242	1-216-105-00	METAL CHIP	220K	5%	1/10W
R243	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R246	1-216-081-00	METAL CHIP	22K	5%	1/10W
R247	1-216-049-00	METAL CHIP	1K	5%	1/10W
R248	1-216-105-00	METAL CHIP	220K	5%	1/10W
R249	1-216-105-00	METAL CHIP	220K	5%	1/10W
R250	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R253	1-216-081-00	METAL CHIP	22K	5%	1/10W
R254	1-216-049-00	METAL CHIP	1K	5%	1/10W
R255	1-216-105-00	METAL CHIP	220K	5%	1/10W
R256	1-216-095-00	METAL CHIP	82K	5%	1/10W
R401	1-216-105-00	METAL CHIP	220K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R402	1-216-105-00	METAL CHIP	220K	5%	1/10W
R403	1-216-105-00	METAL CHIP	220K	5%	1/10W
R404	1-216-105-00	METAL CHIP	220K	5%	1/10W
R405	1-216-105-00	METAL CHIP	220K	5%	1/10W
R406	1-216-105-00	METAL CHIP	220K	5%	1/10W
R407	1-216-105-00	METAL CHIP	220K	5%	1/10W
R408	1-216-105-00	METAL CHIP	220K	5%	1/10W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W
R410	1-216-073-00	METAL CHIP	10K	5%	1/10W
R411	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R412	1-216-089-00	METAL CHIP	47K	5%	1/10W
R413	1-216-097-00	METAL CHIP	100K	5%	1/10W
R414	1-216-105-00	METAL CHIP	220K	5%	1/10W
R415	1-216-105-00	METAL CHIP	220K	5%	1/10W
R416	1-216-049-00	METAL CHIP	1K	5%	1/10W
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W
R421	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R422	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R423	1-216-097-00	METAL CHIP	100K	5%	1/10W
R425	1-216-105-00	METAL CHIP	220K	5%	1/10W
R426	1-216-105-00	METAL CHIP	220K	5%	1/10W
R427	1-216-049-00	METAL CHIP	1K	5%	1/10W
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W
R432	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R433	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R434	1-216-097-00	METAL CHIP	100K	5%	1/10W
R435	1-216-045-00	METAL CHIP	680	5%	1/10W
R436	1-216-045-00	METAL CHIP	680	5%	1/10W
R437	1-216-045-00	METAL CHIP	680	5%	1/10W
R438	1-216-083-00	METAL CHIP	27K	5%	1/10W
R439	1-216-113-00	METAL CHIP	470K	5%	1/10W
R440	1-216-089-00	METAL CHIP	47K	5%	1/10W
R441	1-216-049-00	METAL CHIP	1K	5%	1/10W
R442	1-216-097-00	METAL CHIP	100K	5%	1/10W
R443	1-216-045-00	METAL CHIP	680	5%	1/10W
R444	1-216-097-00	METAL CHIP	100K	5%	1/10W
R445	1-216-045-00	METAL CHIP	680	5%	1/10W
R446	1-216-045-00	METAL CHIP	680	5%	1/10W
R447	1-216-045-00	METAL CHIP	680	5%	1/10W
R448	1-216-045-00	METAL CHIP	680	5%	1/10W
R449	1-216-105-00	METAL CHIP	220K	5%	1/10W
R450	1-216-045-00	METAL CHIP	680	5%	1/10W
R451	1-216-045-00	METAL CHIP	680	5%	1/10W
R453	1-216-049-00	METAL CHIP	1K	5%	1/10W
R454	1-216-049-00	METAL CHIP	1K	5%	1/10W
R455	1-216-081-00	METAL CHIP	22K	5%	1/10W
R456	1-216-105-00	METAL CHIP	220K	5%	1/10W
R457	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R458	1-216-049-00	METAL CHIP	1K	5%	1/10W
R459	1-216-049-00	METAL CHIP	1K	5%	1/10W
R460	1-216-101-00	METAL CHIP	150K	5%	1/10W
R461	1-216-081-00	METAL CHIP	22K	5%	1/10W
R462	1-216-105-00	METAL CHIP	220K	5%	1/10W
R463	1-216-049-00	METAL CHIP	1K	5%	1/10W
R464	1-216-049-00	METAL CHIP	1K	5%	1/10W
R465	1-216-049-00	METAL CHIP	1K	5%	1/10W
R466	1-216-081-00	METAL CHIP	22K	5%	1/10W
R467	1-216-105-00	METAL CHIP	220K	5%	1/10W
R468	1-216-049-00	METAL CHIP	1K	5%	1/10W
R469	1-216-049-00	METAL CHIP	1K	5%	1/10W
R470	1-216-049-00	METAL CHIP	1K	5%	1/10W
R471	1-216-081-00	METAL CHIP	22K	5%	1/10W
R472	1-216-105-00	METAL CHIP	220K	5%	1/10W
R473	1-216-049-00	METAL CHIP	1K	5%	1/10W
R474	1-216-105-00	METAL CHIP	220K	5%	1/10W
R475	1-216-089-00	METAL CHIP	47K	5%	1/10W
R476	1-216-077-00	METAL CHIP	15K	5%	1/10W
R477	1-216-105-00	METAL CHIP	220K	5%	1/10W
R478	1-216-089-00	METAL CHIP	47K	5%	1/10W
R479	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R480	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R481	1-216-073-00	METAL CHIP	10K	5%	1/10W
R482	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R483	1-216-095-00	METAL CHIP	82K	5%	1/10W
R484	1-216-095-00	METAL CHIP	82K	5%	1/10W
R485	1-216-049-00	METAL CHIP	1K	5%	1/10W
R486	1-216-081-00	METAL CHIP	22K	5%	1/10W
R487	1-216-039-00	METAL CHIP	390	5%	1/10W
R488	1-216-121-00	METAL CHIP	1M	5%	1/10W
R489	1-216-105-00	METAL CHIP	220K	5%	1/10W
R490	1-216-049-00	METAL CHIP	1K	5%	1/10W
R491	1-216-049-00	METAL CHIP	1K	5%	1/10W
R492	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R493	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R494	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R495	1-216-047-00	METAL CHIP	820	5%	1/10W
R496	1-216-105-00	METAL CHIP	220K	5%	1/10W
R497	1-216-081-00	METAL CHIP	22K	5%	1/10W
R498	1-216-049-00	METAL CHIP	1K	5%	1/10W
R499	1-216-121-00	METAL CHIP	1M	5%	1/10W
R500	1-216-039-00	METAL CHIP	390	5%	1/10W
R501	1-216-105-00	METAL CHIP	220K	5%	1/10W
R502	1-216-049-00	METAL CHIP	1K	5%	1/10W
R503	1-216-049-00	METAL CHIP	1K	5%	1/10W
R504	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R506	1-216-061-00	METAL CHIP	3.3K	5%	1/10W

Ref. No.	Part No.	Description	Remark
R507	1-216-047-00	METAL CHIP 820 5%	1/10W
R508	1-216-105-00	METAL CHIP 220K 5%	1/10W
R509	1-216-049-00	METAL CHIP 1K 5%	1/10W
R510	1-216-105-00	METAL CHIP 220K 5%	1/10W
R511	1-216-105-00	METAL CHIP 220K 5%	1/10W
R512	1-216-049-00	METAL CHIP 1K 5%	1/10W
R513	1-216-073-00	METAL CHIP 10K 5%	1/10W
R514	1-216-073-00	METAL CHIP 10K 5%	1/10W
R515	1-216-049-00	METAL CHIP 1K 5%	1/10W
R516	1-216-049-00	METAL CHIP 1K 5%	1/10W
R517	1-216-095-00	METAL CHIP 82K 5%	1/10W
R521	1-216-097-00	METAL CHIP 100K 5%	1/10W
R522	1-216-097-00	METAL CHIP 100K 5%	1/10W
R523	1-216-097-00	METAL CHIP 100K 5%	1/10W
R533	1-216-081-00	METAL CHIP 22K 5%	1/10W
R534	1-216-081-00	METAL CHIP 22K 5%	1/10W
R540	1-216-049-00	METAL CHIP 1K 5%	1/10W
R541	1-216-113-00	METAL CHIP 470K 5%	1/10W

* A-6421-746-A KY-701 (U51) BOARD, COMPLETE

< CAPACITOR >

C601	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C602	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C603	1-163-031-11	CERAMIC CHIP 0.01uF	50V

< CONNECTOR >

CN601	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
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< DIODE >

D601	8-719-992-30	LED SLR305MC3F	
D602	8-719-992-30	LED SLR305MC3F	
D603	8-719-992-30	LED SLR305MC3F	
D604	8-719-992-30	LED SLR305MC3F	
D605	8-719-992-30	LED SLR305MC3F	
D606	8-719-992-30	LED SLR305MC3F	
D607	8-719-992-30	LED SLR305MC3F	
D608	8-719-992-30	LED SLR305MC3F	
D609	8-719-992-30	LED SLR305MC3F	
D610	8-719-992-30	LED SLR305MC3F	
D611	8-719-992-30	LED SLR305MC3F	
D612	8-719-992-30	LED SLR305MC3F	
D613	8-719-992-30	LED SLR305MC3F	
D614	8-719-992-30	LED SLR305MC3F	
D615	8-719-992-30	LED SLR305MC3F	
D616	8-719-992-30	LED SLR305MC3F	

Ref. No.	Part No.	Description	Remark
D617	8-719-992-30	LED SLR305MC3F	
D618	8-719-992-30	LED SLR305MC3F	
D619	8-719-992-30	LED SLR305MC3F	
D620	8-719-992-30	LED SLR305MC3F	

< RESISTOR >

R601	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R602	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R603	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R604	1-216-079-00	METAL CHIP 18K 5%	1/10W
R605	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R606	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R607	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R608	1-216-079-00	METAL CHIP 18K 5%	1/10W
R609	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R610	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R611	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R612	1-216-079-00	METAL CHIP 18K 5%	1/10W
R613	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R614	1-216-063-00	METAL CHIP 3.9K 5%	1/10W
R615	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R616	1-216-079-00	METAL CHIP 18K 5%	1/10W

< SWITCH >

S601	1-572-946-11	SWITCH, TACTIL (1)	
S602	1-572-946-11	SWITCH, TACTIL (2)	
S603	1-572-946-11	SWITCH, TACTIL (3)	
S604	1-572-946-11	SWITCH, TACTIL (4)	
S605	1-572-946-11	SWITCH, TACTIL (5)	
S606	1-572-946-11	SWITCH, TACTIL (6)	
S607	1-572-946-11	SWITCH, TACTIL (7)	
S608	1-572-946-11	SWITCH, TACTIL (8)	
S609	1-572-946-11	SWITCH, TACTIL (9)	
S610	1-572-946-11	SWITCH, TACTIL (10)	
S611	1-572-946-11	SWITCH, TACTIL (11)	
S612	1-572-946-11	SWITCH, TACTIL (12)	
S613	1-572-946-11	SWITCH, TACTIL (13)	
S614	1-572-946-11	SWITCH, TACTIL (14)	
S615	1-572-946-11	SWITCH, TACTIL (15)	
S616	1-572-946-11	SWITCH, TACTIL (16)	
S617	1-572-946-11	SWITCH, TACTIL (17)	
S618	1-572-946-11	SWITCH, TACTIL (18)	
S619	1-572-946-11	SWITCH, TACTIL (19)	
S620	1-572-946-11	SWITCH, TACTIL (20)	
S621	1-572-946-11	SWITCH, TACTIL (RESERVE)	

Ref. No.	Part No.	Description	Remark
*	A-6421-664-A	LS-34 BOARD, COMPLETE *****	
	3-735-054-01	HOLDER, SENSOR < CONNECTOR >	
CN501	1-506-468-11	PIN, CONNECTOR 3P < DIODE >	
D501	8-719-941-81	DIODE GL360 < TRANSISTOR >	
Q501	8-729-904-10	TRANSISTOR PT-360FS *****	
*	A-6421-743-A	MA-701 (U51) BOARD, COMPLETE *****	
		< CAPACITOR >	
C701	1-126-301-11	ELECT 1uF 20% 50V	
C702	1-126-301-11	ELECT 1uF 20% 50V	
C703	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C704	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C705	1-124-465-00	ELECT 0.47uF 20% 50V	
C706	1-124-465-00	ELECT 0.47uF 20% 50V	
C707	1-126-795-11	ELECT 10uF 20% 50V	
C708	1-126-795-11	ELECT 10uF 20% 50V	
C709	1-126-177-11	ELECT 100uF 20% 10V	
C710	1-126-177-11	ELECT 100uF 20% 10V	
C711	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C712	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C714	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
		< CONNECTOR >	
CN701	1-506-468-11	PIN, CONNECTOR 3P	
CN702	1-506-473-11	PIN, CONNECTOR 8P < DIODE >	
D701	8-719-400-18	DIODE MA152WK	
D702	8-719-400-18	DIODE MA152WK < FILTER >	
FL701	1-236-744-21	FILTER, EMI	
FL702	1-236-744-21	FILTER, EMI < IC >	
IC701	8-759-100-96	IC uPC4558G2	

Ref. No.	Part No.	Description	Remark
		< JACK >	
J701	1-507-805-21	JACK, LARGE TYPE (MIC 1)	
J702	1-507-805-21	JACK, LARGE TYPE (MIC 2)	
J703	1-507-678-00	JACK (MIC CONTROL) < JUMPER RESISTOR >	
JR701	1-216-296-00	METAL CHIP 0 5% 1/8W < RESISTOR >	
R701	1-216-025-00	METAL CHIP 100 5% 1/10W	
R702	1-216-025-00	METAL CHIP 100 5% 1/10W	
R703	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R704	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R705	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R706	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R707	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R708	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R709	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R710	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R711	1-216-025-00	METAL CHIP 100 5% 1/10W *****	
*	A-6421-807-A	MB-53 (U51) BOARD, COMPLETE *****	
*	3-746-535-01	HEAT SINK	
	3-831-441-XX	CUSHION (5)	
	3-945-877-01	PLATE, GROUND, JACK	
	7-682-547-04	SCREW +BVTT 3X6 (S) < CAPACITOR >	
C001	1-124-126-00	ELECT 47uF 20% 10V	
C002	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C003	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C004	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C005	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C006	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C007	1-124-126-00	ELECT 47uF 20% 10V	
C008	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C009	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C010	1-124-126-00	ELECT 47uF 20% 10V	
C011	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C014	1-124-499-11	ELECT, NONPOLAR R 1uF 20% 50V	
C015	1-126-320-11	ELECT, NONPOLAR R 10uF 20% 16V	
C034	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C035	1-163-222-11	CERAMIC CHIP 5PF 0.25PF50V	
C036	1-163-222-11	CERAMIC CHIP 5PF 0.25PF50V	
C037	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C041	1-124-126-00	ELECT 47uF 20% 10V	

Ref. No.	Part No.	Description	Remark		
C042	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C043	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C045	1-124-907-11	ELECT	10uF	20%	50V
C102	1-124-473-11	ELECT	1000uF	20%	10V
C103	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C104	1-126-176-11	ELECT	220uF	20%	10V
C105	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C106	1-124-477-11	ELECT	47uF	20%	25V
C107	1-163-245-11	CERAMIC CHIP	56PF	5%	50V
C108	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C109	1-124-907-11	ELECT	10uF	20%	50V
C111	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C112	1-124-472-11	ELECT	470uF	20%	10V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-124-907-11	ELECT	10uF	20%	50V
C116	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C117	1-126-385-11	ELECT	390uF	20%	16V
C118	1-124-907-11	ELECT	10uF	20%	50V
C119	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C121	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C151	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C152	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C153	1-124-477-11	ELECT	47uF	20%	25V
C154	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C155	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C156	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C157	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C158	1-130-483-00	MYLAR	0.01uF	5%	50V
C159	1-130-489-00	MYLAR	0.033uF	5%	50V
C160	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C161	1-136-165-00	FILM	0.1uF	5%	50V
C162	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C163	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C164	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C165	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C166	1-126-157-11	ELECT	10uF	20%	16V
C167	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C168	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C169	1-126-157-11	ELECT	10uF	20%	16V
C170	1-124-589-11	ELECT	47uF	20%	16V
C171	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C172	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C181	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C183	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C184	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C185	1-163-031-11	CERAMIC CHIP	0.01uF		50V

Ref. No.	Part No.	Description	Remark		
C186	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C187	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C188	1-126-176-11	ELECT	220uF	20%	10V
C189	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C190	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C191	1-124-443-00	ELECT	100uF	20%	10V
C192	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C193	1-130-486-00	MYLAR	0.018uF	10%	50V
C194	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C195	1-130-489-00	MYLAR	0.033uF	5%	50V
C196	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C197	1-124-903-11	ELECT	1uF	20%	50V
C198	1-124-902-00	ELECT	0.47uF	20%	50V
C199	1-130-491-00	MYLAR	0.047uF	5%	50V
C200	1-130-489-00	MYLAR	0.033uF	5%	50V
C201	1-124-589-11	ELECT	47uF	20%	16V
C202	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C203	1-130-483-00	MYLAR	0.01uF	5%	50V
C204	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C205	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C206	1-130-483-00	MYLAR	0.01uF	5%	50V
C207	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C208	1-124-477-11	ELECT	47uF	20%	25V
C209	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C210	1-124-477-11	ELECT	47uF	20%	25V
C211	1-124-499-11	ELECT, NONPOLAR R	1uF	20%	50V
C212	1-130-491-00	MYLAR	0.047uF	5%	50V
C213	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C214	1-124-903-11	ELECT	1uF	20%	50V
C215	1-124-477-11	ELECT	47uF	20%	25V
C216	1-124-443-00	ELECT	100uF	20%	10V
C217	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C218	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C219	1-124-443-00	ELECT	100uF	20%	10V
C220	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C221	1-124-477-11	ELECT	47uF	20%	25V
C222	1-130-491-00	MYLAR	0.047uF	5%	50V
C223	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C224	1-124-477-11	ELECT	47uF	20%	25V
C225	1-163-139-00	CERAMIC CHIP	820PF	5%	50V
C226	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C227	1-124-477-11	ELECT	47uF	20%	25V
C228	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C229	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C230	1-163-253-11	CERAMIC CHIP	120PF	5%	50V
C231	1-124-903-11	ELECT	1uF	20%	50V
C232	1-163-227-11	CERAMIC CHIP	10PF	5%	50V
C233	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C234	1-163-235-11	CERAMIC CHIP	22PF	5%	50V

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C235	1-163-237-11	CERAMIC CHIP 27PF	5% 50V	C289	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C236	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C290	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C237	1-163-103-00	CERAMIC CHIP 27PF	5% 50V	C291	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C238	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C292	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C239	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C293	1-124-477-11	ELECT 47uF	20% 25V
C240	1-163-237-11	CERAMIC CHIP 27PF	5% 50V	C294	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C241	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C295	1-124-257-00	ELECT 2.2uF	20% 50V
C242	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C296	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C243	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C297	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C244	1-163-253-11	CERAMIC CHIP 120PF	5% 50V	C298	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C245	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C299	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C246	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C300	1-163-227-11	CERAMIC CHIP 10PF	5% 50V
C247	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C301	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C248	1-163-235-11	CERAMIC CHIP 22PF	5% 50V	C302	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C249	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C311	1-124-257-00	ELECT 2.2uF	20% 50V
C250	1-163-035-00	CERAMIC CHIP 0.047uF	50V	C312	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C251	1-163-035-00	CERAMIC CHIP 0.047uF	50V	C313	1-126-157-11	ELECT 10uF	20% 16V
C252	1-124-477-11	ELECT 47uF	20% 25V	C314	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C253	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C315	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C254	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C316	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C255	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C318	1-163-106-00	CERAMIC CHIP 36PF	5% 50V
C256	1-163-035-00	CERAMIC CHIP 0.047uF	50V	C319	1-124-589-11	ELECT 47uF	20% 16V
C257	1-124-477-11	ELECT 47uF	20% 25V	C320	1-124-589-11	ELECT 47uF	20% 16V
C258	1-163-235-11	CERAMIC CHIP 22PF	5% 50V	C322	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C259	1-163-235-11	CERAMIC CHIP 22PF	5% 50V	C324	1-163-227-11	CERAMIC CHIP 10PF	5% 50V
C260	1-163-099-00	CERAMIC CHIP 18PF	5% 50V	C325	1-163-227-11	CERAMIC CHIP 10PF	5% 50V
C261	1-163-257-11	CERAMIC CHIP 180PF	5% 50V	C329	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C262	1-126-160-11	ELECT 1uF	20% 50V	C330	1-126-176-11	ELECT 220uF	20% 10V
C263	1-130-487-00	MYLAR 0.022uF	5% 50V	C401	1-126-163-11	ELECT 4.7uF	20% 50V
C264	1-131-347-00	TANTALUM 1uF	10% 35V	C402	1-164-182-11	CERAMIC CHIP 0.0033uF	10% 50V
C265	1-126-160-11	ELECT 1uF	20% 50V	C403	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C266	1-130-483-00	MYLAR 0.01uF	5% 50V	C404	1-126-163-11	ELECT 4.7uF	20% 50V
C267	1-163-035-00	CERAMIC CHIP 0.047uF	50V	C406	1-124-589-11	ELECT 47uF	20% 16V
C268	1-163-035-00	CERAMIC CHIP 0.047uF	50V	C407	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C269	1-163-107-00	CERAMIC CHIP 39PF	5% 50V	C601	1-124-589-11	ELECT 47uF	20% 16V
C270	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C602	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C271	1-124-589-11	ELECT 47uF	20% 16V	C603	1-163-235-11	CERAMIC CHIP 22PF	5% 50V
C274	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C604	1-163-222-11	CERAMIC CHIP 5PF	0.25PF50V
C275	1-124-257-00	ELECT 2.2uF	20% 50V	C607	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C277	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	C609	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C278	1-124-257-00	ELECT 2.2uF	20% 50V	C610	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C281	1-124-257-00	ELECT 2.2uF	20% 50V	C611	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C282	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C613	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C283	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C620	1-124-589-11	ELECT 47uF	20% 16V
C284	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C621	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C285	1-124-477-11	ELECT 47uF	20% 25V	C622	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C286	1-163-035-00	CERAMIC CHIP 0.047uF	50V	C623	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C287	1-163-097-00	CERAMIC CHIP 15PF	5% 50V	C624	1-124-589-11	ELECT 47uF	20% 16V
C288	1-163-031-11	CERAMIC CHIP 0.01uF	50V	C625	1-163-035-00	CERAMIC CHIP 0.047uF	50V

Ref. No.	Part No.	Description	Remark
C626	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C627	1-163-111-00	CERAMIC CHIP 56PF 5%	50V
C628	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C629	1-164-182-11	CERAMIC CHIP 0.0033uF 10%	50V
C630	1-124-257-00	ELECT 2.2uF 20%	50V
C640	1-124-248-00	ELECT 22uF 20%	35V
C641	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C650	1-163-257-11	CERAMIC CHIP 180PF 5%	50V
C651	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V
C652	1-163-275-11	CERAMIC CHIP 0.001uF 5%	50V
C657	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C699	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C701	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C718	1-126-154-11	ELECT 47uF 20%	6.3V
C730	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C731	1-126-154-11	ELECT 47uF 20%	6.3V
C732	1-163-253-11	CERAMIC CHIP 120PF 5%	50V
C733	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C734	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C735	1-126-154-11	ELECT 47uF 20%	6.3V
C736	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C737	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C739	1-163-245-11	CERAMIC CHIP 56PF 5%	50V
C740	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C741	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C742	1-163-115-00	CERAMIC CHIP 82PF 5%	50V
C746	1-163-111-00	CERAMIC CHIP 56PF 5%	50V
C747	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C748	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
< FILTER >			
CF151	1-527-831-00	FILTER, CERAMIC	
< CONNECTOR >			
* CN601	1-564-028-00	PIN, CONNECTOR 3P	
CN602	1-563-493-11	CONNECTOR, F. P. C 28P	
CN603	1-506-483-21	PIN, CONNECTOR 4P	
CN604	1-506-488-11	PIN, CONNECTOR 9P	
CN605	1-506-481-11	PIN, CONNECTOR 2P	
CN606	1-506-481-11	PIN, CONNECTOR 2P	
CN607	1-506-482-11	PIN, CONNECTOR 3P	
CN608	1-506-487-11	PIN, CONNECTOR 8P	
* CN702	1-568-783-11	PIN, CONNECTOR 6P	
< JACK >			
CNJ101	1-565-351-41	JACK, PIN 3P	
CNJ102	1-565-351-41	JACK, PIN 3P	
CNJ103	1-566-847-31	CONNECTOR, (S) TERMINAL 4P	

Ref. No.	Part No.	Description	Remark
< TRIMMER >			
CT152	1-141-227-00	CAP, TRIMMER 20PF	
CT601	1-141-227-00	CAP, TRIMMER 20PF	
< DIODE >			
D001	8-719-400-18	DIODE MA152WK	
D002	8-719-400-18	DIODE MA152WK	
D003	8-719-400-18	DIODE MA152WK	
D004	8-719-907-19	DIODE FC52M-5	
D005	8-719-907-19	DIODE FC52M-5	
D151	8-719-800-76	DIODE 1SS226	
D153	8-719-800-76	DIODE 1SS226	
D154	8-719-951-22	IC 1MN10	
D155	8-719-800-76	DIODE 1SS226	
D401	8-719-400-18	DIODE MA152WK	
D601	8-719-400-18	DIODE MA152WK	
D602	8-719-400-18	DIODE MA152WK	
D605	8-719-400-18	DIODE MA152WK	
D606	8-719-104-34	DIODE 1S2836	
D607	8-719-400-18	DIODE MA152WK	
D699	8-719-106-71	DIODE RD12M-B2	
D703	8-719-800-76	DIODE 1SS226	
D704	8-719-105-52	DIODE RD3.6M-B2	
< DELAY LINE >			
DL101	1-415-694-11	DELAY LINE, LC	
< FUSE >			
△F601	1-532-777-21	FUSE, MICRO (SECONDARY)	
< FILTER >			
FLO01	1-424-031-11	FILTER, NOISE	
FLO02	1-424-031-11	FILTER, NOISE	
FLO04	1-424-031-11	FILTER, NOISE	
FLO06	1-235-896-11	FILTER, BAND PASS	
FLO07	1-236-744-21	FILTER, EMI	
FLO08	1-236-744-21	FILTER, EMI	
FLO09	1-236-744-21	FILTER, EMI	
FL101	1-235-896-11	FILTER, BAND PASS	
FL151	1-236-478-11	FILTER, LOW PASS	
FL152	1-236-843-11	FILTER, BAND PASS	
FL153	1-236-478-11	FILTER, LOW PASS	
FL154	1-235-901-11	FILTER, LOW PASS	
FL601	1-424-031-11	FILTER, NOISE	
< IC >			
IC001	8-759-981-92	IC RC4558M	

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Ref. No.	Part No.	Description	Remark
IC003	8-752-337-26	IC CXD2500AQ	
IC102	1-809-157-11	IC FILTER BLOCK, COM	
IC105	8-759-983-74	IC LM324NS	
IC106	8-752-322-35	IC CXL5005M	
△IC107	8-759-982-10	IC RC7809FA	
△IC108	8-759-231-53	IC TA7805S	
IC109	8-752-055-37	IC CXA1255Q	
IC110	8-759-927-29	IC SN74HC004ANS	
IC111	8-759-502-69	IC CXD1152-MS	
IC112	8-752-055-36	IC CXA1254Q	
IC113	8-759-941-68	IC BA7131F	
IC114	8-759-981-92	IC RC4558M	
IC115	8-759-300-71	IC HD14053BFP	
IC401	8-759-100-95	IC uPC324G2	
IC402	8-759-009-06	IC MC14052BF	
IC601	8-759-520-69	IC MB89795-132	
IC602	8-759-634-74	IC M50455-080FP	
IC603	8-759-231-92	IC TA7291P	
IC604	8-759-074-61	IC MSM72H048GS-V1K	
< JUMPER RESISTOR >			
JR002	1-216-017-00	METAL CHIP 47 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR014	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR773	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR781	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR797	1-216-295-00	METAL CHIP 0 5% 1/10W	
< COIL >			
L101	1-408-411-00	INDUCTOR 15uH	
L151	1-408-421-00	INDUCTOR 100uH	
L152	1-408-421-00	INDUCTOR 100uH	
L156	1-408-421-00	INDUCTOR 100uH	
L157	1-408-421-00	INDUCTOR 100uH	
L158	1-408-421-00	INDUCTOR 100uH	
L159	1-408-421-00	INDUCTOR 100uH	
L160	1-408-422-00	INDUCTOR 120uH	
L161	1-408-419-00	INDUCTOR 68uH	
L163	1-408-421-00	INDUCTOR 100uH	
L164	1-408-424-00	INDUCTOR 180uH	
L165	1-408-421-00	INDUCTOR 100uH	
L601	1-408-421-00	INDUCTOR 100uH	
L602	1-408-411-00	INDUCTOR 15uH	
L603	1-408-409-00	INDUCTOR 10uH	
L610	1-408-409-00	INDUCTOR 10uH	
L704	1-408-411-00	INDUCTOR 15uH	
L707	1-408-609-41	INDUCTOR 33uH	

Ref. No.	Part No.	Description	Remark
< IC LINK >			
△PS701	1-532-637-00	LINK, IC 1.0A	
△PS702	1-532-685-00	LINK, IC	
< TRANSISTOR >			
Q001	8-729-901-05	TRANSISTOR DTA124EK	
Q002	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q101	8-729-216-22	TRANSISTOR 2SA1162-G	
Q102	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q103	8-729-216-22	TRANSISTOR 2SA1162-G	
Q104	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q105	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q106	8-729-216-22	TRANSISTOR 2SA1162-G	
Q107	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q108	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q151	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q152	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q153	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q154	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q155	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q156	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q159	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q160	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q161	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q162	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q163	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q164	8-729-902-96	TRANSISTOR FMS1	
Q165	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q166	8-729-901-00	TRANSISTOR DTC124EK	
Q167	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q168	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q169	8-729-216-22	TRANSISTOR 2SA1162-G	
Q170	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q171	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q172	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q173	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q180	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q181	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q182	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q184	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q185	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q186	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q187	8-729-216-22	TRANSISTOR 2SA1162-G	
Q189	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q190	8-729-100-66	TRANSISTOR 2SC1623-L6	
Q191	8-729-100-66	TRANSISTOR 2SC1623-L6	

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Ref. No.	Part No.	Description	Remark
Q192	8-729-216-22	TRANSISTOR	2SA1162-G
Q193	8-729-901-00	TRANSISTOR	DTC124EK
Q197	8-729-216-22	TRANSISTOR	2SA1162-G
Q198	8-729-100-66	TRANSISTOR	2SC1623-L6
Q199	8-729-100-66	TRANSISTOR	2SC1623-L6
Q200	8-729-100-66	TRANSISTOR	2SC1623-L6
Q601	8-729-216-22	TRANSISTOR	2SA1162-G
Q602	8-729-901-00	TRANSISTOR	DTC124EK
Q605	8-729-100-66	TRANSISTOR	2SC1623-L6
Q606	8-729-901-00	TRANSISTOR	DTC124EK
Q608	8-729-100-66	TRANSISTOR	2SC1623-L6
Q609	8-729-100-66	TRANSISTOR	2SC1623-L6
Q610	8-729-100-66	TRANSISTOR	2SC1623-L6
Q611	8-729-901-00	TRANSISTOR	DTC124EK
Q724	8-729-216-22	TRANSISTOR	2SA1162-G
Q725	8-729-216-22	TRANSISTOR	2SA1162-G
Q726	8-729-100-66	TRANSISTOR	2SC1623-L6
Q727	8-729-903-10	TRANSISTOR	FMW1
Q728	8-729-100-66	TRANSISTOR	2SC1623-L6
Q729	8-729-100-66	TRANSISTOR	2SC1623-L6
Q730	8-729-216-22	TRANSISTOR	2SA1162-G
Q731	8-729-100-66	TRANSISTOR	2SC1623-L6
Q732	8-729-100-66	TRANSISTOR	2SC1623-L6
Q733	8-729-100-66	TRANSISTOR	2SC1623-L6
Q734	8-729-216-22	TRANSISTOR	2SA1162-G
Q735	8-729-216-22	TRANSISTOR	2SA1162-G
Q736	8-729-100-66	TRANSISTOR	2SC1623-L6
< RESISTOR >			
R001	1-216-073-00	METAL CHIP	10K 5% 1/10W
R002	1-216-025-00	METAL CHIP	100 5% 1/10W
R005	1-216-081-00	METAL CHIP	22K 5% 1/10W
R006	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R007	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R008	1-216-073-00	METAL CHIP	10K 5% 1/10W
R009	1-216-049-00	METAL CHIP	1K 5% 1/10W
R010	1-216-049-00	METAL CHIP	1K 5% 1/10W
R011	1-216-049-00	METAL CHIP	1K 5% 1/10W
R012	1-216-073-00	METAL CHIP	10K 5% 1/10W
R013	1-216-081-00	METAL CHIP	22K 5% 1/10W
R014	1-216-085-00	METAL CHIP	33K 5% 1/10W
R015	1-216-081-00	METAL CHIP	22K 5% 1/10W
R016	1-216-081-00	METAL CHIP	22K 5% 1/10W
R017	1-216-091-00	METAL CHIP	56K 5% 1/10W
R018	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R039	1-216-081-00	METAL CHIP	22K 5% 1/10W
R040	1-216-097-00	METAL CHIP	100K 5% 1/10W
R041	1-216-097-00	METAL CHIP	100K 5% 1/10W
R042	1-216-121-00	METAL CHIP	1M 5% 1/10W

Ref. No.	Part No.	Description	Remark
R045	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R050	1-216-099-00	METAL CHIP	120K 5% 1/10W
R051	1-216-099-00	METAL CHIP	120K 5% 1/10W
R052	1-216-085-00	METAL CHIP	33K 5% 1/10W
R101	1-216-077-00	METAL CHIP	15K 5% 1/10W
R103	1-216-031-00	METAL CHIP	180 5% 1/10W
R104	1-216-091-00	METAL CHIP	56K 5% 1/10W
R105	1-216-049-00	METAL CHIP	1K 5% 1/10W
R106	1-216-049-00	METAL CHIP	1K 5% 1/10W
R107	1-216-049-00	METAL CHIP	1K 5% 1/10W
R108	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R109	1-216-047-00	METAL CHIP	820 5% 1/10W
R110	1-216-049-00	METAL CHIP	1K 5% 1/10W
R111	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R112	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R113	1-216-039-00	METAL CHIP	390 5% 1/10W
R114	1-216-049-00	METAL CHIP	1K 5% 1/10W
R115	1-216-031-00	METAL CHIP	180 5% 1/10W
R116	1-216-079-00	METAL CHIP	18K 5% 1/10W
R117	1-216-074-00	METAL CHIP	11K 5% 1/10W
R118	1-216-039-00	METAL CHIP	390 5% 1/10W
R119	1-216-021-00	METAL CHIP	68 5% 1/10W
R120	1-216-045-00	METAL CHIP	680 5% 1/10W
R121	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R122	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R123	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R124	1-216-043-00	METAL CHIP	560 5% 1/10W
R125	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R126	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R127	1-216-049-00	METAL CHIP	1K 5% 1/10W
R128	1-216-079-00	METAL CHIP	18K 5% 1/10W
R129	1-216-031-00	METAL CHIP	180 5% 1/10W
R130	1-216-073-00	METAL CHIP	10K 5% 1/10W
R131	1-216-037-00	METAL CHIP	330 5% 1/10W
R132	1-216-021-00	METAL CHIP	68 5% 1/10W
R133	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R134	1-216-073-00	METAL CHIP	10K 5% 1/10W
R135	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R136	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R137	1-216-049-00	METAL CHIP	1K 5% 1/10W
R138	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R151	1-216-075-00	METAL CHIP	12K 5% 1/10W
R153	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R154	1-216-097-00	METAL CHIP	100K 5% 1/10W
R155	1-216-113-00	METAL CHIP	470K 5% 1/10W
R156	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R157	1-216-113-00	METAL CHIP	470K 5% 1/10W
R158	1-216-073-00	METAL CHIP	10K 5% 1/10W
R159	1-216-079-00	METAL CHIP	18K 5% 1/10W

Ref. No.	Part No.	Description	Remark
R160	1-216-079-00	METAL CHIP	18K 5% 1/10W
R161	1-216-113-00	METAL CHIP	470K 5% 1/10W
R162	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R163	1-216-089-00	METAL CHIP	47K 5% 1/10W
R164	1-216-077-00	METAL CHIP	15K 5% 1/10W
R165	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R166	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R167	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R168	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R169	1-216-121-00	METAL CHIP	1M 5% 1/10W
R170	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R171	1-216-091-00	METAL CHIP	56K 5% 1/10W
R172	1-216-049-00	METAL CHIP	1K 5% 1/10W
R173	1-216-081-00	METAL CHIP	22K 5% 1/10W
R174	1-216-049-00	METAL CHIP	1K 5% 1/10W
R175	1-216-040-00	METAL GLAZE	430 5% 1/10W
R176	1-216-049-00	METAL CHIP	1K 5% 1/10W
R177	1-216-073-00	METAL CHIP	10K 5% 1/10W
R178	1-216-049-00	METAL CHIP	1K 5% 1/10W
R180	1-216-041-00	METAL CHIP	470 5% 1/10W
R188	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R189	1-216-025-00	METAL CHIP	100 5% 1/10W
R190	1-216-045-00	METAL CHIP	680 5% 1/10W
R191	1-216-045-00	METAL CHIP	680 5% 1/10W
R192	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R193	1-216-085-00	METAL CHIP	33K 5% 1/10W
R194	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R195	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R196	1-216-077-00	METAL CHIP	15K 5% 1/10W
R197	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R198	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R199	1-216-081-00	METAL CHIP	22K 5% 1/10W
R200	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R201	1-216-039-00	METAL CHIP	390 5% 1/10W
R202	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R203	1-216-075-00	METAL CHIP	12K 5% 1/10W
R204	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R205	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R206	1-216-049-00	METAL CHIP	1K 5% 1/10W
R207	1-216-081-00	METAL CHIP	22K 5% 1/10W
R208	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
△R209	1-212-934-00	FUSIBLE	1 5% 1/2W F
R210	1-216-101-00	METAL CHIP	150K 5% 1/10W
R211	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R212	1-216-081-00	METAL CHIP	22K 5% 1/10W
R213	1-216-083-00	METAL CHIP	27K 5% 1/10W
R214	1-216-089-00	METAL CHIP	47K 5% 1/10W
R215	1-216-113-00	METAL CHIP	470K 5% 1/10W
R216	1-216-083-00	METAL CHIP	27K 5% 1/10W

Ref. No.	Part No.	Description	Remark
R217	1-216-097-00	METAL CHIP	100K 5% 1/10W
R218	1-216-121-00	METAL CHIP	1M 5% 1/10W
R219	1-216-093-00	METAL CHIP	68K 5% 1/10W
R220	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R221	1-216-113-00	METAL CHIP	470K 5% 1/10W
R222	1-216-095-00	METAL CHIP	82K 5% 1/10W
R223	1-216-113-00	METAL CHIP	470K 5% 1/10W
R224	1-216-049-00	METAL CHIP	1K 5% 1/10W
R225	1-216-109-00	METAL CHIP	330K 5% 1/10W
R226	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R227	1-216-089-00	METAL CHIP	47K 5% 1/10W
R228	1-216-109-00	METAL CHIP	330K 5% 1/10W
R229	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R230	1-216-075-00	METAL CHIP	12K 5% 1/10W
R231	1-216-121-00	METAL CHIP	1M 5% 1/10W
R232	1-216-121-00	METAL CHIP	1M 5% 1/10W
R233	1-216-043-00	METAL CHIP	560 5% 1/10W
R234	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R235	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R236	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R237	1-216-043-00	METAL CHIP	560 5% 1/10W
R238	1-216-049-00	METAL CHIP	1K 5% 1/10W
R239	1-216-045-00	METAL CHIP	680 5% 1/10W
R240	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R241	1-216-077-00	METAL CHIP	15K 5% 1/10W
R242	1-216-097-00	METAL CHIP	100K 5% 1/10W
R243	1-216-097-00	METAL CHIP	100K 5% 1/10W
R244	1-216-689-11	METAL CHIP	39K 0.5% 1/10W
R245	1-216-079-00	METAL CHIP	18K 5% 1/10W
R246	1-216-079-00	METAL CHIP	18K 5% 1/10W
R247	1-216-121-00	METAL CHIP	1M 5% 1/10W
R248	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R249	1-216-085-00	METAL CHIP	33K 5% 1/10W
R250	1-216-097-00	METAL CHIP	100K 5% 1/10W
R251	1-216-097-00	METAL CHIP	100K 5% 1/10W
R252	1-216-085-00	METAL CHIP	33K 5% 1/10W
R253	1-216-047-00	METAL CHIP	820 5% 1/10W
R254	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R256	1-216-049-00	METAL CHIP	1K 5% 1/10W
R257	1-216-063-00	METAL CHIP	3.9K 5% 1/10W
R258	1-216-073-00	METAL CHIP	10K 5% 1/10W
R259	1-216-073-00	METAL CHIP	10K 5% 1/10W
R260	1-216-073-00	METAL CHIP	10K 5% 1/10W
R261	1-216-073-00	METAL CHIP	10K 5% 1/10W
R262	1-216-097-00	METAL CHIP	100K 5% 1/10W
R263	1-216-085-00	METAL CHIP	33K 5% 1/10W
R264	1-216-085-00	METAL CHIP	33K 5% 1/10W
R265	1-216-079-00	METAL CHIP	18K 5% 1/10W

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

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

Ref. No.	Part No.	Description	Remark		
R266	1-216-081-00	METAL CHIP	22K	5%	1/10W
R267	1-216-037-00	METAL CHIP	330	5%	1/10W
R268	1-216-033-00	METAL CHIP	220	5%	1/10W
R269	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R270	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R271	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R272	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R273	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R274	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R275	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R276	1-216-045-00	METAL CHIP	680	5%	1/10W
R277	1-216-097-00	METAL CHIP	100K	5%	1/10W
R278	1-216-081-00	METAL CHIP	22K	5%	1/10W
R279	1-216-081-00	METAL CHIP	22K	5%	1/10W
R280	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R281	1-216-039-00	METAL CHIP	390	5%	1/10W
R282	1-216-091-00	METAL CHIP	56K	5%	1/10W
R283	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R284	1-216-043-00	METAL CHIP	560	5%	1/10W
R285	1-216-041-00	METAL CHIP	470	5%	1/10W
R286	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R287	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R288	1-216-049-00	METAL CHIP	1K	5%	1/10W
R289	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R290	1-216-041-00	METAL CHIP	470	5%	1/10W
R291	1-216-033-00	METAL CHIP	220	5%	1/10W
R292	1-216-033-00	METAL CHIP	220	5%	1/10W
R293	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R294	1-216-095-00	METAL CHIP	82K	5%	1/10W
R295	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R298	1-216-115-00	METAL CHIP	560K	5%	1/10W
R300	1-216-097-00	METAL CHIP	100K	5%	1/10W
R301	1-216-117-00	METAL CHIP	680K	5%	1/10W
R302	1-216-049-00	METAL CHIP	1K	5%	1/10W
R303	1-216-041-00	METAL CHIP	470	5%	1/10W
R304	1-216-041-00	METAL CHIP	470	5%	1/10W
R306	1-216-025-00	METAL CHIP	100	5%	1/10W
R308	1-216-081-00	METAL CHIP	22K	5%	1/10W
R309	1-216-081-00	METAL CHIP	22K	5%	1/10W
R310	1-216-049-00	METAL CHIP	1K	5%	1/10W
R311	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R312	1-216-049-00	METAL CHIP	1K	5%	1/10W
R313	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R314	1-216-049-00	METAL CHIP	1K	5%	1/10W
R315	1-216-049-00	METAL CHIP	1K	5%	1/10W
R316	1-216-049-00	METAL CHIP	1K	5%	1/10W
R317	1-216-049-00	METAL CHIP	1K	5%	1/10W
R318	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R322	1-216-041-00	METAL CHIP	470	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R323	1-216-041-00	METAL CHIP	470	5%	1/10W
R326	1-216-041-00	METAL CHIP	470	5%	1/10W
R327	1-216-073-00	METAL CHIP	10K	5%	1/10W
R328	1-216-073-00	METAL CHIP	10K	5%	1/10W
R329	1-216-083-00	METAL CHIP	27K	5%	1/10W
R330	1-216-081-00	METAL CHIP	22K	5%	1/10W
R331	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R332	1-216-113-00	METAL CHIP	470K	5%	1/10W
R333	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R334	1-216-031-00	METAL CHIP	180	5%	1/10W
R356	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R357	1-216-049-00	METAL CHIP	1K	5%	1/10W
R358	1-216-049-00	METAL CHIP	1K	5%	1/10W
R359	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R360	1-216-049-00	METAL CHIP	1K	5%	1/10W
R361	1-216-073-00	METAL CHIP	10K	5%	1/10W
R362	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R363	1-216-049-00	METAL CHIP	1K	5%	1/10W
R364	1-216-049-00	METAL CHIP	1K	5%	1/10W
R365	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R366	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R367	1-216-049-00	METAL CHIP	1K	5%	1/10W
R368	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R369	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R370	1-216-047-00	METAL CHIP	820	5%	1/10W
R371	1-216-046-00	METAL CHIP	750	5%	1/10W
R372	1-216-073-00	METAL CHIP	10K	5%	1/10W
R373	1-216-049-00	METAL CHIP	1K	5%	1/10W
R374	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R376	1-216-025-00	METAL CHIP	100	5%	1/10W
R384	1-216-085-00	METAL CHIP	33K	5%	1/10W
R386	1-216-081-00	METAL CHIP	22K	5%	1/10W
R387	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R388	1-216-041-00	METAL CHIP	470	5%	1/10W
R389	1-216-041-00	METAL CHIP	470	5%	1/10W
R390	1-216-021-00	METAL CHIP	68	5%	1/10W
R391	1-216-041-00	METAL CHIP	470	5%	1/10W
R392	1-216-041-00	METAL CHIP	470	5%	1/10W
R393	1-216-021-00	METAL CHIP	68	5%	1/10W
R394	1-216-043-00	METAL CHIP	560	5%	1/10W
R395	1-216-043-00	METAL CHIP	560	5%	1/10W
R396	1-216-021-00	METAL CHIP	68	5%	1/10W
R397	1-216-031-00	METAL CHIP	180	5%	1/10W
R401	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R402	1-216-687-11	METAL CHIP	33K	0.5%	1/10W
R403	1-216-699-11	METAL CHIP	100K	0.5%	1/10W
R404	1-216-077-00	METAL CHIP	15K	5%	1/10W
R405	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R406	1-218-165-11	METAL GLAZE	220K	1%	1/10W

Ref. No.	Part No.	Description	Remark
R407	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R408	1-216-117-00	METAL CHIP	680K 5% 1/10W
R409	1-216-677-11	METAL CHIP	12K 0.5% 1/10W
R410	1-216-530-00	METAL GLAZE	390K 1% 1/10W
R411	1-216-679-11	METAL CHIP	15K 0.5% 1/10W
R412	1-216-035-00	METAL CHIP	270 5% 1/10W
R413	1-216-089-00	METAL CHIP	47K 5% 1/10W
R414	1-216-089-00	METAL CHIP	47K 5% 1/10W
R415	1-216-111-00	METAL CHIP	390K 5% 1/10W
R416	1-216-089-00	METAL CHIP	47K 5% 1/10W
R417	1-216-111-00	METAL CHIP	390K 5% 1/10W
R423	1-216-049-00	METAL CHIP	1K 5% 1/10W
R431	1-216-033-00	METAL CHIP	220 5% 1/10W
R432	1-216-049-00	METAL CHIP	1K 5% 1/10W
R434	1-216-033-00	METAL CHIP	220 5% 1/10W
R435	1-216-115-00	METAL CHIP	560K 5% 1/10W
R580	1-216-049-00	METAL CHIP	1K 5% 1/10W
R581	1-216-049-00	METAL CHIP	1K 5% 1/10W
R588	1-216-073-00	METAL CHIP	10K 5% 1/10W
R593	1-216-073-00	METAL CHIP	10K 5% 1/10W
R594	1-216-037-00	METAL CHIP	330 5% 1/10W
R595	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R596	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R599	1-216-073-00	METAL CHIP	10K 5% 1/10W
R601	1-216-121-00	METAL CHIP	1M 5% 1/10W
R602	1-216-081-00	METAL CHIP	22K 5% 1/10W
R603	1-216-073-00	METAL CHIP	10K 5% 1/10W
R604	1-216-021-00	METAL CHIP	68 5% 1/10W
R605	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R606	1-216-081-00	METAL CHIP	22K 5% 1/10W
R607	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R608	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R609	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R610	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
△R611	1-212-950-00	FUSIBLE	4.7 5% 1/2W F
R612	1-216-033-00	METAL CHIP	220 5% 1/10W
R615	1-216-091-00	METAL CHIP	56K 5% 1/10W
R616	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R617	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R618	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R620	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R621	1-216-049-00	METAL CHIP	1K 5% 1/10W
R623	1-216-073-00	METAL CHIP	10K 5% 1/10W
R624	1-216-073-00	METAL CHIP	10K 5% 1/10W
R625	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R626	1-216-099-00	METAL CHIP	120K 5% 1/10W
R627	1-216-075-00	METAL CHIP	12K 5% 1/10W
R629	1-216-089-00	METAL CHIP	47K 5% 1/10W
R630	1-216-073-00	METAL CHIP	10K 5% 1/10W

Ref. No.	Part No.	Description	Remark
R633	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R634	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R635	1-216-035-00	METAL CHIP	270 5% 1/10W
R636	1-216-049-00	METAL CHIP	1K 5% 1/10W
R637	1-216-081-00	METAL CHIP	22K 5% 1/10W
R638	1-216-081-00	METAL CHIP	22K 5% 1/10W
R640	1-216-025-00	METAL CHIP	100 5% 1/10W
R641	1-216-073-00	METAL CHIP	10K 5% 1/10W
R642	1-216-073-00	METAL CHIP	10K 5% 1/10W
R643	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R644	1-216-105-00	METAL CHIP	220K 5% 1/10W
R645	1-216-073-00	METAL CHIP	10K 5% 1/10W
R646	1-216-049-00	METAL CHIP	1K 5% 1/10W
R648	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R649	1-216-113-00	METAL CHIP	470K 5% 1/10W
R650	1-216-049-00	METAL CHIP	1K 5% 1/10W
R651	1-216-033-00	METAL CHIP	220 5% 1/10W
R652	1-216-033-00	METAL CHIP	220 5% 1/10W
R653	1-216-049-00	METAL CHIP	1K 5% 1/10W
R654	1-216-033-00	METAL CHIP	220 5% 1/10W
R655	1-216-049-00	METAL CHIP	1K 5% 1/10W
R656	1-216-033-00	METAL CHIP	220 5% 1/10W
R658	1-216-033-00	METAL CHIP	220 5% 1/10W
R659	1-216-049-00	METAL CHIP	1K 5% 1/10W
R660	1-216-033-00	METAL CHIP	220 5% 1/10W
R661	1-216-033-00	METAL CHIP	220 5% 1/10W
R662	1-216-033-00	METAL CHIP	220 5% 1/10W
R663	1-216-049-00	METAL CHIP	1K 5% 1/10W
R664	1-216-033-00	METAL CHIP	220 5% 1/10W
R665	1-216-073-00	METAL CHIP	10K 5% 1/10W
R666	1-216-049-00	METAL CHIP	1K 5% 1/10W
R667	1-216-033-00	METAL CHIP	220 5% 1/10W
R668	1-216-033-00	METAL CHIP	220 5% 1/10W
R669	1-216-049-00	METAL CHIP	1K 5% 1/10W
R670	1-216-049-00	METAL CHIP	1K 5% 1/10W
R671	1-216-049-00	METAL CHIP	1K 5% 1/10W
R672	1-216-033-00	METAL CHIP	220 5% 1/10W
R673	1-216-049-00	METAL CHIP	1K 5% 1/10W
R674	1-216-049-00	METAL CHIP	1K 5% 1/10W
R675	1-216-033-00	METAL CHIP	220 5% 1/10W
R676	1-216-033-00	METAL CHIP	220 5% 1/10W
R680	1-216-085-00	METAL CHIP	33K 5% 1/10W
R681	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R682	1-216-073-00	METAL CHIP	10K 5% 1/10W
R683	1-216-073-00	METAL CHIP	10K 5% 1/10W
R684	1-216-073-00	METAL CHIP	10K 5% 1/10W
R685	1-216-073-00	METAL CHIP	10K 5% 1/10W
R686	1-216-059-00	METAL CHIP	2.7K 5% 1/10W

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

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

Ref. No.	Part No.	Description	Remark
R687	1-216-071-00	METAL CHIP	8.2K 5% 1/10W
R688	1-216-097-00	METAL CHIP	100K 5% 1/10W
R689	1-216-049-00	METAL CHIP	1K 5% 1/10W
R690	1-216-049-00	METAL CHIP	1K 5% 1/10W
R691	1-216-049-00	METAL CHIP	1K 5% 1/10W
R693	1-216-049-00	METAL CHIP	1K 5% 1/10W
R694	1-216-049-00	METAL CHIP	1K 5% 1/10W
R695	1-216-049-00	METAL CHIP	1K 5% 1/10W
R696	1-216-049-00	METAL CHIP	1K 5% 1/10W
R697	1-216-049-00	METAL CHIP	1K 5% 1/10W
R698	1-216-049-00	METAL CHIP	1K 5% 1/10W
R699	1-216-049-00	METAL CHIP	1K 5% 1/10W
R750	1-216-039-00	METAL CHIP	390 5% 1/10W
R753	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R754	1-216-049-00	METAL CHIP	1K 5% 1/10W
R755	1-216-089-00	METAL CHIP	47K 5% 1/10W
R756	1-216-077-00	METAL CHIP	15K 5% 1/10W
R757	1-216-009-00	METAL CHIP	22 5% 1/10W
R766	1-216-049-00	METAL CHIP	1K 5% 1/10W
R767	1-216-652-11	METAL CHIP	1.1K 0.5% 1/10W
R768	1-216-051-00	METAL CHIP	1.2K 5% 1/10W
R769	1-216-049-00	METAL CHIP	1K 5% 1/10W
R770	1-216-077-00	METAL CHIP	15K 5% 1/10W
R771	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R772	1-216-053-00	METAL CHIP	1.5K 5% 1/10W
R774	1-216-045-00	METAL CHIP	680 5% 1/10W
R775	1-216-045-00	METAL CHIP	680 5% 1/10W
R776	1-216-083-00	METAL CHIP	27K 5% 1/10W
R777	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R778	1-216-045-00	METAL CHIP	680 5% 1/10W
R779	1-216-039-00	METAL CHIP	390 5% 1/10W
R780	1-216-045-00	METAL CHIP	680 5% 1/10W
R782	1-216-045-00	METAL CHIP	680 5% 1/10W
R783	1-216-049-00	METAL CHIP	1K 5% 1/10W
R784	1-216-049-00	METAL CHIP	1K 5% 1/10W
R785	1-216-027-00	METAL CHIP	120 5% 1/10W
R786	1-216-081-00	METAL CHIP	22K 5% 1/10W
R787	1-216-045-00	METAL CHIP	680 5% 1/10W
R788	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R789	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R790	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R791	1-216-077-00	METAL CHIP	15K 5% 1/10W
R792	1-216-049-00	METAL CHIP	1K 5% 1/10W
R794	1-216-043-00	METAL CHIP	560 5% 1/10W
R795	1-216-049-00	METAL CHIP	1K 5% 1/10W
R798	1-216-075-00	METAL CHIP	12K 5% 1/10W

Ref. No.	Part No.	Description	Remark
< VARIABLE RESISTOR >			
RV101	1-230-866-11	RES, ADJ, METAL 470	
RV151	1-230-870-11	RES, ADJ, METAL 10K	
RV152	1-230-870-11	RES, ADJ, METAL 10K	
RV154	1-230-870-11	RES, ADJ, METAL 10K	
RV601	1-230-873-11	RES, ADJ, METAL 47K	
< THERMISTOR >			
TH151	1-800-199-00	THERMISTOR	
< VIBRATOR >			
X001	1-567-515-21	VIBRATOR, VARIABLE CRYSTAL (16.3944MHz)	
X601	1-567-900-11	OSCILLATOR, CRYSTAL (14.31818MHz)	

MT-52 BOARD			

< CAPACITOR >			
C001	1-161-063-00	CERAMIC CHIP 0.01uF 10% 50V	
< CONNECTOR >			
CN001	1-506-481-11	PIN, CONNECTOR 2P, MALE	

*	A-6421-747-A	PS-286 (U51) BOARD, COMPLETE	

△	1-533-189-11	HOLDER, FUSE	
< CAPACITOR >			
C101	1-126-946-11	ELECT 6800uF 20% 25V	
C102	1-126-946-11	ELECT 6800uF 20% 25V	
C103	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C104	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C105	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C106	1-126-101-11	ELECT 100uF 20% 16V	
C107	1-124-471-00	ELECT 1000uF 20% 6.3V	
C108	1-124-903-11	ELECT 1uF 20% 50V	
C109	1-124-472-11	ELECT 470uF 20% 10V	
C110	1-163-833-00	CERAMIC CHIP 0.068uF 25V	
C111	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C112	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C114	1-124-478-11	ELECT 100uF 20% 25V	
C115	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C116	1-163-833-00	CERAMIC CHIP 0.068uF 25V	
C122	1-124-557-11	ELECT 1000uF 20% 25V	
C128	1-124-120-11	ELECT 220uF 20% 25V	
C201	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	

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Ref. No.	Part No.	Description	Remark
C202	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V
C204	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C205	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
C206	1-163-007-11	CERAMIC CHIP 680PF 10%	50V
C208	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C209	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
C210	1-163-007-11	CERAMIC CHIP 680PF 10%	50V
C211	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
C212	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C213	1-124-913-11	ELECT 470uF 20%	50V
< CONNECTOR >			
* CN101	1-560-892-00	PIN, CONNECTOR 4P	
CN102	1-506-469-11	PIN, CONNECTOR 4P	
CN103	1-506-469-11	PIN, CONNECTOR 4P	
* CN104	1-560-891-00	PIN, CONNECTOR 3P	
CN105	1-506-469-11	PIN, CONNECTOR 4P	
* CN106	1-560-890-00	PIN, CONNECTOR 2P	
< DIODE >			
△D101	8-719-500-55	DIODE D3SBA10	
△D102	8-719-200-82	DIODE 11ES2	
△D103	8-719-200-82	DIODE 11ES2	
D105	8-719-980-78	DIODE ERA83-006	
D108	8-719-105-82	DIODE RD5. 1M-B2	
△D113	8-719-200-82	DIODE 11ES2	
△D114	8-719-200-82	DIODE 11ES2	
D115	8-719-911-19	DIODE 1SS119	
D201	8-719-980-78	DIODE ERA83-006	
D202	8-719-980-78	DIODE ERA83-006	
D203	8-719-200-82	DIODE 11ES2	
D204	8-719-200-82	DIODE 11ES2	
D205	8-719-911-19	DIODE 1SS119	
D206	8-719-911-19	DIODE 1SS119	
D207	8-719-911-19	DIODE 1SS119	
< FUSE >			
△F101	1-532-747-11	FUSE, GLASS TUBE 5A 125V	
△F102	1-532-747-11	FUSE, GLASS TUBE 5A 125V	
△F105	1-532-778-21	FUSE, MICRO 1.6A 125V	
< IC >			
△IC101	8-759-971-39	IC BA9700AF	
△IC102	8-759-231-53	IC TA7805S	
IC201	8-759-100-97	IC uPC339G2	
IC202	8-759-100-96	IC uPC4558G2	
< JUMPER RESISTOR >			
JR001	1-216-295-00	METAL CHIP 0 5%	1/10W

Ref. No.	Part No.	Description	Remark
< COIL >			
L101	1-424-219-11	COIL, CHOKE 300uH	
L102	1-410-339-11	COIL, CHOKE 10uH	
L104	1-410-339-11	COIL, CHOKE 10uH	
L201	1-424-219-11	COIL, CHOKE 300uH	
< IC LINK >			
△PS101	1-532-675-00	LINK, IC 1.5A	
< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-216-22	TRANSISTOR 2SA1162-G	
△Q103	8-729-117-11	TRANSISTOR 2SB1151-L	
Q111	8-729-141-75	TRANSISTOR 2SD596DV345	
△Q201	8-729-117-11	TRANSISTOR 2SB1151-L	
△Q202	8-729-143-30	TRANSISTOR 2SD1691K	
△Q203	8-729-117-11	TRANSISTOR 2SB1151-L	
△Q204	8-729-143-30	TRANSISTOR 2SD1691K	
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q208	8-729-900-53	TRANSISTOR DTC114EK	
Q209	8-729-901-04	TRANSISTOR DTA114EK	
Q210	8-729-100-67	TRANSISTOR 2SC1623-L6-L7	
Q211	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q212	8-729-901-04	TRANSISTOR DTA114EK	
< RESISTOR >			
R101	1-216-073-00	METAL CHIP 10K 5%	1/10W
R102	1-216-073-00	METAL CHIP 10K 5%	1/10W
R103	1-216-089-00	METAL CHIP 47K 5%	1/10W
R104	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R105	1-216-073-00	METAL CHIP 10K 5%	1/10W
R106	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R107	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R108	1-216-043-00	METAL CHIP 560 5%	1/10W
R109	1-216-687-11	METAL CHIP 33K 0.5%	1/10W
R110	1-216-676-11	METAL CHIP 11K 0.5%	1/10W
R112	1-216-099-00	METAL CHIP 120K 5%	1/10W
R114	1-216-097-00	METAL CHIP 100K 5%	1/10W
R120	1-216-043-00	METAL CHIP 560 5%	1/10W
R125	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
△R126	1-212-867-00	FUSIBLE 27 5%	1/4W F
R127	1-247-742-11	CARBON 180 5%	1/2W
R201	1-216-081-00	METAL CHIP 22K 5%	1/10W
R202	1-216-075-00	METAL CHIP 12K 5%	1/10W
R203	1-216-093-00	METAL CHIP 68K 5%	1/10W
R204	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R205	1-216-075-00	METAL CHIP 12K 5%	1/10W

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Ref. No.	Part No.	Description	Remark
R206	1-216-097-00	METAL CHIP	100K 5% 1/10W
R207	1-216-073-00	METAL CHIP	10K 5% 1/10W
R208	1-216-073-00	METAL CHIP	10K 5% 1/10W
R209	1-216-073-00	METAL CHIP	10K 5% 1/10W
R210	1-216-105-00	METAL CHIP	220K 5% 1/10W
R211	1-216-073-00	METAL CHIP	10K 5% 1/10W
R212	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R213	1-216-049-00	METAL CHIP	1K 5% 1/10W
R214	1-247-750-11	CARBON	680 5% 1/2W
R215	1-247-750-11	CARBON	680 5% 1/2W
R216	1-216-049-00	METAL CHIP	1K 5% 1/10W
△R217	1-216-369-00	METAL OXIDE	1 5% 2W F
R218	1-216-690-11	METAL CHIP	43K 0.5% 1/10W
R219	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R220	1-216-690-11	METAL CHIP	43K 0.5% 1/10W
R221	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R222	1-216-073-00	METAL CHIP	10K 5% 1/10W
R223	1-216-073-00	METAL CHIP	10K 5% 1/10W
△R224	1-215-866-11	METAL OXIDE	330 5% 1W F
R225	1-216-073-00	METAL CHIP	10K 5% 1/10W
R226	1-247-750-11	CARBON	680 5% 1/2W
R227	1-216-073-00	METAL CHIP	10K 5% 1/10W
R228	1-216-093-00	METAL CHIP	68K 5% 1/10W
R230	1-216-105-00	METAL CHIP	220K 5% 1/10W

< RELAY >

△RY101 1-515-833-11 RELAY

* A-6421-749-A PS-290 (U51) BOARD, COMPLETE

7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3

< CAPACITOR >

C901	1-130-495-00	MYLAR	0.1uF	5%	50V
C902	1-124-472-11	ELECT	470uF	20%	10V
C903	1-130-495-00	MYLAR	0.1uF	5%	50V
C904	1-124-472-11	ELECT	470uF	20%	10V
C905	1-126-176-11	ELECT	220uF	20%	10V
C906	1-124-557-11	ELECT	1000uF	20%	25V
C907	1-161-055-00	CERAMIC	0.022uF	10%	50V
C908	1-124-443-00	ELECT	100uF	20%	10V

< CONNECTOR >

* CN901 1-560-891-00 PIN, CONNECTOR 3P
 * CN902 1-560-891-00 PIN, CONNECTOR 3P
 CN903 1-506-473-11 PIN, CONNECTOR 8P
 CN904 1-506-469-11 PIN, CONNECTOR 4P
 CN906 1-506-467-11 PIN, CONNECTOR 2P

Ref. No.	Part No.	Description	Remark
< DIODE >			
D901	8-719-110-12	DIODE RD9.1ES-B1	
D902	8-719-911-19	DIODE 1SS119	

< IC >

△IC901 8-759-982-10 IC RC7809FA
 △IC902 8-759-604-49 IC M5F7909L
 △IC903 8-759-245-79 IC TA7905S

< IC LINK >

△PS901 1-532-637-00 LINK, IC 1.0A
 △PS902 1-532-685-00 LINK, IC

< TRANSISTOR >

Q901 8-729-900-61 TRANSISTOR DTA114ES
 Q902 8-729-900-80 TRANSISTOR DTC114ES

< RESISTOR >

R901	1-249-417-11	CARBON	1K	5%	1/4W
R902	1-247-891-00	CARBON	330K	5%	1/4W
R903	1-247-891-00	CARBON	330K	5%	1/4W
R904	1-249-417-11	CARBON	1K	5%	1/4W

* A-6421-760-A PS-706 BOARD, COMPLETE

7-685-646-79 SCREW +BVTP 3X8 TYPE2 IT-3

< CAPACITOR >

C001	1-136-165-00	MYLAR	0.1uF	10%	50V
C002	1-124-472-11	ELECT	470uF	20%	10V
C003	1-126-176-11	ELECT	220uF	20%	10V
C004	1-130-495-00	MYLAR	0.1uF	5%	50V
C004	1-136-165-00	MYLAR	0.1uF	10%	50V
C005	1-124-472-11	ELECT	470uF	20%	10V
C006	1-126-176-11	ELECT	220uF	20%	10V
C012	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C013	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C014	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C015	1-163-031-11	CERAMIC CHIP	0.01uF		50V

< CONNECTOR >

* CN004 1-560-891-00 PIN, CONNECTOR 3P
 * CN005 1-560-891-00 PIN, CONNECTOR 3P
 CN006 1-506-473-11 PIN, CONNECTOR 8P

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Ref. No.	Part No.	Description	Remark
		< FUSE >	
△F001	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A 125V)	
△F002	1-532-777-21	FUSE, MICRO (SECONDARY) (1.25A 125V)	
△F003	1-532-776-21	FUSE, MICRO (SECONDARY) (1A 125V)	
△F004	1-532-776-21	FUSE, MICRO (SECONDARY) (1A 125V)	
		< IC >	
△IC001	8-759-231-53	IC TA7805S	
△IC002	8-759-982-10	IC RC7809FA	
△IC003	8-759-245-79	IC TA7805S	
△IC004	8-759-604-49	IC M5F7909	

*	A-6421-762-A	SB-701 BOARD, COMPLETE	

		< CAPACITOR >	
C801	1-124-584-00	ELECT 100uF 20% 10V	
C802	1-124-584-00	ELECT 100uF 20% 10V	
C803	1-126-157-11	ELECT 10uF 20% 16V	
C804	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
		< CONNECTOR >	
CN801	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN802	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN804	1-506-484-11	PIN, CONNECTOR 5P	
CN805	1-506-482-11	PIN, CONNECTOR 3P	
		< DIODE >	
D801	8-719-018-45	LED SL1283	
D802	8-719-992-30	LED SLR305MC3F	
D803	8-719-992-29	LED SLR-305YCA47	
D804	8-719-992-29	LED SLR-305YCA47	
D806	8-719-992-30	LED SLR305MC3F	
D808	8-719-992-27	LED SLR-305DCA47	
D809	8-719-992-30	LED SLR305MC3F	
D810	8-719-992-27	LED SLR-305DCA47	
D811	8-719-992-27	LED SLR-305DCA47	
D812	8-719-992-27	LED SLR-305DCA47	
D813	8-719-992-27	LED SLR-305DCA47	
D817	8-719-104-34	DIODE 1S2836	
D819	8-719-992-30	LED SLR305MC3F	
		< IC >	
IC801	8-759-100-96	IC uPC4558G2	
IC802	8-749-921-76	IC GPIU56	
		< JUMPER RESISTOR >	
JR801	1-216-295-00	METAL CHIP 0 5% 1/10W	

Ref. No.	Part No.	Description	Remark
JR804	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR807	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR810	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR811	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR812	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR813	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR814	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR815	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L801	1-408-421-00	INDUCTOR 100uH	
		< TRANSISTOR >	
Q802	8-729-901-04	TRANSISTOR DTA114EK	
Q806	8-729-901-01	TRANSISTOR DTC144EK	
		< RESISTOR >	
R805	1-216-031-00	METAL CHIP 180 5% 1/10W	
R806	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R807	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R808	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R811	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R812	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R813	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R814	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R815	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R822	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R823	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R824	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R825	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R827	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R828	1-216-031-00	METAL CHIP 180 5% 1/10W	
R829	1-216-089-00	METAL CHIP 47K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV801	1-241-238-11	RES. VAR. CARBON 20K (MIC 1 LEVEL)	
RV802	1-241-238-11	RES. VAR. CARBON 20K (MIC 2 LEVEL)	
		< SWITCH >	
S801	1-572-946-11	SWITCH, TACTIL (OPEN/CLOSE)	
S802	1-572-946-11	SWITCH, TACTIL (STOP)	
S803	1-572-946-11	SWITCH, TACTIL (PLAY)	
S804	1-572-946-11	SWITCH, TACTIL (PAUSE)	
S805	1-572-946-11	SWITCH, TACTIL (KARAOKE PON)	
S806	1-572-946-11	SWITCH, TACTIL (ASSISTANT VOCAL)	
S807	1-572-946-11	SWITCH, TACTIL (OTASUKE VOCAL)	
S808	1-572-946-11	SWITCH, TACTIL (MIC KEY CONTROL)	
S809	1-570-157-11	SWITCH, SLIDE (MODE)	

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Ref. No.	Part No.	Description	Remark
S810	1-572-946-11	SWITCH, TACTIL (CLEAR SCAN: REVERSE)	
S811	1-572-946-11	SWITCH, TACTIL (CLEAR SCAN: FORWARD)	

*	A-6421-763-A	SV-701 BOARD, COMPLETE	

*	3-738-015-01	COVER, (DIA. 6) CARBON VR	
< CAPACITOR >			
C001	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C003	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C005	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C006	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C009	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C010	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C011	1-163-017-00	CERAMIC CHIP 0.0047uF	5% 50V
C012	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C013	1-124-584-00	ELECT 100uF	20% 10V
C014	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C015	1-163-989-11	CERAMIC CHIP 0.033uF	10% 25V
C019	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C020	1-124-465-00	ELECT 0.47uF	20% 50V
C021	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C101	1-124-604-00	ELECT 330uF	20% 10V
C102	1-124-604-00	ELECT 330uF	20% 10V
C103	1-124-242-00	ELECT 33uF	20% 25V
C104	1-124-242-00	ELECT 33uF	20% 25V
C105	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C106	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C107	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C108	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C109	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C110	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C111	1-126-160-11	ELECT 1uF	20% 50V
C112	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C113	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
C114	1-126-160-11	ELECT 1uF	20% 50V
C115	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V
C116	1-126-160-11	ELECT 1uF	20% 50V
C117	1-164-161-11	CERAMIC CHIP 0.0022uF	10% 100V
C118	1-163-014-00	CERAMIC CHIP 0.0027uF	10% 50V
C119	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C120	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C121	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C122	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C123	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C124	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C125	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C126	1-163-093-00	CERAMIC CHIP 10PF	5% 50V

Ref. No.	Part No.	Description	Remark
C127	1-124-499-11	ELECT, NONPOLAR R 1uF	20% 50V
C128	1-126-320-11	ELECT, NONPOLAR R 10uF	20% 16V
C129	1-136-165-00	FILM 0.1uF	5% 50V
C130	1-126-320-11	ELECT, NONPOLAR R 10uF	20% 16V
C131	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C132	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C135	1-163-024-00	CERAMIC CHIP 0.018uF	10% 50V
C136	1-136-169-00	FILM 0.22uF	5% 50V
C137	1-163-022-00	CERAMIC CHIP 0.012uF	10% 50V
C138	1-163-022-00	CERAMIC CHIP 0.012uF	10% 50V
C139	1-124-282-00	ELECT 22uF	20% 16V
C140	1-124-279-11	ELECT 3.3uF	20% 25V
C141	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C144	1-163-016-00	CERAMIC CHIP 0.0039uF	10% 50V
C145	1-163-024-00	CERAMIC CHIP 0.018uF	10% 50V
C146	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C147	1-136-169-00	FILM 0.22uF	5% 50V
C149	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C150	1-124-589-11	ELECT 47uF	20% 16V
C151	1-124-477-11	ELECT 47uF	20% 25V
C152	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C153	1-163-035-00	CERAMIC CHIP 0.047uF	50V
< CONNECTOR >			
CN101	1-566-939-11	CONNECTOR, F.P.C 24P	
CN102	1-563-493-11	CONNECTOR, F.P.C 28P	
CN103	1-506-485-11	PIN, CONNECTOR 6P	
CN104	1-506-482-11	PIN, CONNECTOR 3P	
* CN105	1-566-969-11	HOUSING, CONNECTOR (PC BOARD) 7P	
* CN106	1-566-968-11	HOUSING, CONNECTOR (PC BOARD) 6P	
< DIODE >			
D001	8-719-911-19	DIODE 1SS119	
D101	8-719-911-19	DIODE 1SS119	
D103	8-719-911-19	DIODE 1SS119	
D104	8-719-911-19	DIODE 1SS119	
< FUSE >			
△F001	1-532-775-11	FUSE, MICRO (SECONDARY)	
< FILTER >			
F001	1-235-922-11	FILTER, LOW PASS (1.7MHz)	
< IC >			
IC001	8-752-050-19	IC CXA1081M	
△IC002	8-759-603-24	IC CX20197	
IC101	8-759-321-40	IC HA11529	
IC102	8-759-822-38	IC LA6510	

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

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC103	8-759-981-92	IC RC4558M		JR149	1-216-296-00	METAL CHIP	0 5% 1/8W
IC104	8-759-981-92	IC RC4558M		JR150	1-216-296-00	METAL CHIP	0 5% 1/8W
IC105	8-759-981-92	IC RC4558M		JR153	1-216-296-00	METAL CHIP	0 5% 1/8W
IC106	8-759-300-71	IC HD14053BFP		JR154	1-216-296-00	METAL CHIP	0 5% 1/8W
< JUMPER RESISTOR >				JR155	1-216-296-00	METAL CHIP	0 5% 1/8W
JR102	1-216-295-00	METAL CHIP	0 5% 1/10W	JR156	1-216-296-00	METAL CHIP	0 5% 1/8W
JR103	1-216-296-00	METAL CHIP	0 5% 1/8W	JR158	1-216-295-00	METAL CHIP	0 5% 1/10W
JR104	1-216-296-00	METAL CHIP	0 5% 1/8W	JR159	1-216-296-00	METAL CHIP	0 5% 1/8W
JR105	1-216-295-00	METAL CHIP	0 5% 1/10W	JR160	1-216-296-00	METAL CHIP	0 5% 1/8W
JR106	1-216-296-00	METAL CHIP	0 5% 1/8W	JR161	1-216-296-00	METAL CHIP	0 5% 1/8W
JR107	1-216-295-00	METAL CHIP	0 5% 1/10W	JR162	1-216-296-00	METAL CHIP	0 5% 1/8W
JR111	1-216-296-00	METAL CHIP	0 5% 1/8W	JR164	1-216-296-00	METAL CHIP	0 5% 1/8W
JR112	1-216-296-00	METAL CHIP	0 5% 1/8W	JR166	1-216-295-00	METAL CHIP	0 5% 1/10W
JR113	1-216-296-00	METAL CHIP	0 5% 1/8W	JR170	1-216-296-00	METAL CHIP	0 5% 1/8W
JR114	1-216-295-00	METAL CHIP	0 5% 1/10W	JR171	1-216-295-00	METAL CHIP	0 5% 1/10W
JR115	1-216-296-00	METAL CHIP	0 5% 1/8W	JR172	1-216-296-00	METAL CHIP	0 5% 1/8W
JR116	1-216-295-00	METAL CHIP	0 5% 1/10W	JR173	1-216-296-00	METAL CHIP	0 5% 1/8W
JR117	1-216-295-00	METAL CHIP	0 5% 1/10W	JR174	1-216-296-00	METAL CHIP	0 5% 1/8W
JR118	1-216-296-00	METAL CHIP	0 5% 1/8W	JR175	1-216-295-00	METAL CHIP	0 5% 1/10W
JR119	1-216-296-00	METAL CHIP	0 5% 1/8W	JR176	1-216-296-00	METAL CHIP	0 5% 1/8W
JR120	1-216-296-00	METAL CHIP	0 5% 1/8W	JR177	1-216-296-00	METAL CHIP	0 5% 1/8W
JR121	1-216-296-00	METAL CHIP	0 5% 1/8W	JR178	1-216-296-00	METAL CHIP	0 5% 1/8W
JR122	1-216-296-00	METAL CHIP	0 5% 1/8W	JR179	1-216-296-00	METAL CHIP	0 5% 1/8W
JR123	1-216-296-00	METAL CHIP	0 5% 1/8W	JR180	1-216-296-00	METAL CHIP	0 5% 1/8W
JR124	1-216-296-00	METAL CHIP	0 5% 1/8W	JR181	1-216-296-00	METAL CHIP	0 5% 1/8W
JR125	1-216-296-00	METAL CHIP	0 5% 1/8W	JR182	1-216-296-00	METAL CHIP	0 5% 1/8W
JR126	1-216-296-00	METAL CHIP	0 5% 1/8W	JR183	1-216-295-00	METAL CHIP	0 5% 1/10W
JR127	1-216-295-00	METAL CHIP	0 5% 1/10W	JR184	1-216-296-00	METAL CHIP	0 5% 1/8W
JR128	1-216-296-00	METAL CHIP	0 5% 1/8W	JR185	1-216-296-00	METAL CHIP	0 5% 1/8W
JR129	1-216-296-00	METAL CHIP	0 5% 1/8W	JR186	1-216-296-00	METAL CHIP	0 5% 1/8W
JR130	1-216-296-00	METAL CHIP	0 5% 1/8W	JR187	1-216-296-00	METAL CHIP	0 5% 1/8W
JR132	1-216-296-00	METAL CHIP	0 5% 1/8W	JR188	1-216-296-00	METAL CHIP	0 5% 1/8W
JR133	1-216-296-00	METAL CHIP	0 5% 1/8W	JR189	1-216-295-00	METAL CHIP	0 5% 1/10W
JR134	1-216-296-00	METAL CHIP	0 5% 1/8W	JR191	1-216-296-00	METAL CHIP	0 5% 1/8W
JR135	1-216-296-00	METAL CHIP	0 5% 1/8W	JR192	1-216-296-00	METAL CHIP	0 5% 1/8W
JR136	1-216-296-00	METAL CHIP	0 5% 1/8W	JR193	1-216-296-00	METAL CHIP	0 5% 1/8W
JR137	1-216-296-00	METAL CHIP	0 5% 1/8W	JR194	1-216-296-00	METAL CHIP	0 5% 1/8W
JR138	1-216-296-00	METAL CHIP	0 5% 1/8W	JR195	1-216-295-00	METAL CHIP	0 5% 1/10W
JR139	1-216-296-00	METAL CHIP	0 5% 1/8W	JR196	1-216-296-00	METAL CHIP	0 5% 1/8W
JR140	1-216-296-00	METAL CHIP	0 5% 1/8W	JR197	1-216-296-00	METAL CHIP	0 5% 1/8W
JR141	1-216-296-00	METAL CHIP	0 5% 1/8W	JR198	1-216-296-00	METAL CHIP	0 5% 1/8W
JR142	1-216-296-00	METAL CHIP	0 5% 1/8W	JR199	1-216-296-00	METAL CHIP	0 5% 1/8W
JR143	1-216-296-00	METAL CHIP	0 5% 1/8W	JR200	1-216-296-00	METAL CHIP	0 5% 1/8W
JR144	1-216-296-00	METAL CHIP	0 5% 1/8W	JR201	1-216-296-00	METAL CHIP	0 5% 1/8W
JR145	1-216-296-00	METAL CHIP	0 5% 1/8W	JR202	1-216-296-00	METAL CHIP	0 5% 1/8W
JR146	1-216-296-00	METAL CHIP	0 5% 1/8W	JR203	1-216-296-00	METAL CHIP	0 5% 1/8W
JR147	1-216-296-00	METAL CHIP	0 5% 1/8W	JR204	1-216-296-00	METAL CHIP	0 5% 1/8W
JR148	1-216-296-00	METAL CHIP	0 5% 1/8W	JR205	1-216-295-00	METAL CHIP	0 5% 1/10W

Ref. No.	Part No.	Description	Remark		
JR206	1-216-295-00	METAL CHIP	0	5%	1/10W
JR207	1-216-296-00	METAL CHIP	0	5%	1/8W
JR208	1-216-296-00	METAL CHIP	0	5%	1/8W
JR209	1-216-295-00	METAL CHIP	0	5%	1/10W
JR210	1-216-295-00	METAL CHIP	0	5%	1/10W
JR211	1-216-296-00	METAL CHIP	0	5%	1/8W
JR212	1-216-296-00	METAL CHIP	0	5%	1/8W
JR213	1-216-296-00	METAL CHIP	0	5%	1/8W
JR214	1-216-296-00	METAL CHIP	0	5%	1/8W
JR215	1-216-295-00	METAL CHIP	0	5%	1/10W
JR216	1-216-295-00	METAL CHIP	0	5%	1/10W
JR217	1-216-295-00	METAL CHIP	0	5%	1/10W
JR218	1-216-296-00	METAL CHIP	0	5%	1/8W
JR219	1-216-295-00	METAL CHIP	0	5%	1/10W
JR220	1-216-296-00	METAL CHIP	0	5%	1/8W
JR221	1-216-296-00	METAL CHIP	0	5%	1/8W
< COIL >					
L101	1-410-509-11	INDUCTOR 10uH			
L102	1-410-509-11	INDUCTOR 10uH			
L103	1-410-509-11	INDUCTOR 10uH			
< TRANSISTOR >					
Q001	8-729-140-97	TRANSISTOR 2SB734-34			
Q002	8-729-216-22	TRANSISTOR 2SA1162-G			
Q003	8-729-303-37	TRANSISTOR 2SD655-E			
Q101	8-729-209-15	TRANSISTOR 2SD2012			
Q102	8-729-924-90	TRANSISTOR 2SB1370-EF			
Q103	8-729-209-15	TRANSISTOR 2SD2012			
Q104	8-729-924-90	TRANSISTOR 2SB1370-EF			
Q105	8-729-100-66	TRANSISTOR 2SC1623-L6			
Q106	8-729-100-66	TRANSISTOR 2SC1623-L6			
Q107	8-729-901-00	TRANSISTOR DTC124EK			
Q108	8-729-100-66	TRANSISTOR 2SC1623-L6			
Q109	8-729-216-22	TRANSISTOR 2SA1162-G			
Q110	8-729-900-53	TRANSISTOR DTC114EK			
< RESISTOR >					
R001	1-216-049-00	METAL CHIP	1K	5%	1/10W
R002	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R003	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R004	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R005	1-216-049-00	METAL CHIP	1K	5%	1/10W
R006	1-216-049-00	METAL CHIP	1K	5%	1/10W
R007	1-216-023-00	METAL CHIP	82	5%	1/10W
R008	1-216-043-00	METAL CHIP	560	5%	1/10W
R009	1-216-073-00	METAL CHIP	10K	5%	1/10W
R010	1-216-095-00	METAL CHIP	82K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R011	1-216-081-00	METAL CHIP	22K	5%	1/10W
R012	1-249-394-11	CARBON	12	5%	1/6W
R013	1-216-073-00	METAL CHIP	10K	5%	1/10W
R014	1-216-097-00	METAL CHIP	100K	5%	1/10W
R015	1-216-049-00	METAL CHIP	1K	5%	1/10W
R016	1-216-101-00	METAL CHIP	150K	5%	1/10W
R017	1-216-041-00	METAL CHIP	470	5%	1/10W
R018	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R020	1-216-049-00	METAL CHIP	1K	5%	1/10W
R021	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R022	1-216-081-00	METAL CHIP	22K	5%	1/10W
R023	1-249-394-11	CARBON	12	5%	1/6W
R101	1-216-373-11	METAL OXIDE	2.2	5%	2W F
R103	1-216-073-00	METAL CHIP	10K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-089-00	METAL CHIP	47K	5%	1/10W
R108	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R109	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R110	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-101-00	METAL CHIP	150K	5%	1/10W
R113	1-216-077-00	METAL CHIP	15K	5%	1/10W
R114	1-216-025-00	METAL CHIP	100	5%	1/10W
R115	1-216-025-00	METAL CHIP	100	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-073-00	METAL CHIP	10K	5%	1/10W
R118	1-216-073-00	METAL CHIP	10K	5%	1/10W
R119	1-216-073-00	METAL CHIP	10K	5%	1/10W
R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
R121	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R122	1-216-085-00	METAL CHIP	33K	5%	1/10W
R123	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R124	1-216-079-00	METAL CHIP	18K	5%	1/10W
R125	1-216-081-00	METAL CHIP	22K	5%	1/10W
R126	1-216-033-00	METAL CHIP	220	5%	1/10W
R127	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R128	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R129	1-216-041-00	METAL CHIP	470	5%	1/10W
R130	1-216-017-00	METAL CHIP	47	5%	1/10W
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R133	1-216-097-00	METAL CHIP	100K	5%	1/10W
R134	1-216-097-00	METAL CHIP	100K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-081-00	METAL CHIP	22K	5%	1/10W
R137	1-216-099-00	METAL CHIP	120K	5%	1/10W
R138	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R139	1-216-081-00	METAL CHIP	22K	5%	1/10W
R140	1-216-037-00	METAL CHIP	330	5%	1/10W
R141	1-216-024-00	METAL GLAZE	91	5%	1/10W
R142	1-216-001-00	METAL CHIP	10	5%	1/10W
R143	1-216-001-00	METAL CHIP	10	5%	1/10W
R144	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R145	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-037-00	METAL CHIP	330	5%	1/10W
R149	1-216-033-00	METAL CHIP	220	5%	1/10W
R150	1-216-085-00	METAL CHIP	33K	5%	1/10W
R151	1-216-113-00	METAL CHIP	470K	5%	1/10W
R152	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W
R154	1-216-101-00	METAL CHIP	150K	5%	1/10W
R155	1-216-089-00	METAL CHIP	47K	5%	1/10W
R156	1-216-083-00	METAL CHIP	27K	5%	1/10W
R157	1-216-101-00	METAL CHIP	150K	5%	1/10W
R158	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R159	1-216-075-00	METAL CHIP	12K	5%	1/10W
R160	1-216-083-00	METAL CHIP	27K	5%	1/10W
R161	1-216-113-00	METAL CHIP	470K	5%	1/10W
R162	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R163	1-216-083-00	METAL CHIP	27K	5%	1/10W
R164	1-216-035-00	METAL CHIP	270	5%	1/10W
R165	1-216-089-00	METAL CHIP	47K	5%	1/10W
R166	1-216-041-00	METAL CHIP	470	5%	1/10W
R167	1-216-049-00	METAL CHIP	1K	5%	1/10W
R168	1-216-049-00	METAL CHIP	1K	5%	1/10W
R169	1-216-049-00	METAL CHIP	1K	5%	1/10W
R170	1-216-049-00	METAL CHIP	1K	5%	1/10W
R171	1-216-049-00	METAL CHIP	1K	5%	1/10W
R172	1-216-049-00	METAL CHIP	1K	5%	1/10W
R173	1-216-085-00	METAL CHIP	33K	5%	1/10W
R174	1-216-073-00	METAL CHIP	10K	5%	1/10W
R175	1-216-085-00	METAL CHIP	33K	5%	1/10W
R176	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R177	1-216-085-00	METAL CHIP	33K	5%	1/10W
R178	1-216-073-00	METAL CHIP	10K	5%	1/10W
R179	1-216-101-00	METAL CHIP	150K	5%	1/10W
R180	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R181	1-216-083-00	METAL CHIP	27K	5%	1/10W
R182	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R183	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R184	1-216-089-00	METAL CHIP	47K	5%	1/10W
R186	1-216-097-00	METAL CHIP	100K	5%	1/10W
R187	1-216-089-00	METAL CHIP	47K	5%	1/10W
R188	1-216-065-00	METAL CHIP	4.7K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R189	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R190	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R191	1-216-097-00	METAL CHIP	100K	5%	1/10W
R192	1-216-081-00	METAL CHIP	22K	5%	1/10W
R193	1-216-105-00	METAL CHIP	220K	5%	1/10W
R194	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R195	1-216-085-00	METAL CHIP	33K	5%	1/10W
R196	1-216-097-00	METAL CHIP	100K	5%	1/10W
R197	1-216-089-00	METAL CHIP	47K	5%	1/10W
R198	1-216-081-00	METAL CHIP	22K	5%	1/10W
R199	1-216-099-00	METAL CHIP	120K	5%	1/10W
R200	1-216-085-00	METAL CHIP	33K	5%	1/10W
R201	1-216-095-00	METAL CHIP	82K	5%	1/10W
R202	1-216-081-00	METAL CHIP	22K	5%	1/10W
R205	1-216-097-00	METAL CHIP	100K	5%	1/10W
R206	1-216-081-00	METAL CHIP	22K	5%	1/10W
R207	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R208	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-081-00	METAL CHIP	22K	5%	1/10W
R211	1-216-017-00	METAL CHIP	47	5%	1/10W
R212	1-216-017-00	METAL CHIP	47	5%	1/10W
R213	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R214	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R215	1-216-073-00	METAL CHIP	10K	5%	1/10W
R216	1-216-081-00	METAL CHIP	22K	5%	1/10W
R217	1-216-081-00	METAL CHIP	22K	5%	1/10W
R218	1-216-077-00	METAL CHIP	15K	5%	1/10W
R219	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R220	1-216-079-00	METAL CHIP	18K	5%	1/10W
R222	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R223	1-216-083-00	METAL CHIP	27K	5%	1/10W

< VARIABLE RESISTOR >

RV101	1-228-993-00	RES, ADJ, METAL	4.7K		
RV102	1-228-994-00	RES, ADJ, METAL	10K		
RV103	1-228-994-00	RES, ADJ, METAL	10K		
RV104	1-228-993-00	RES, ADJ, METAL	4.7K		
RV105	1-228-994-00	RES, ADJ, METAL	10K		
RV106	1-228-990-00	RES, ADJ, METAL	1K		
RV107	1-228-990-00	RES, ADJ, METAL	1K		
RV108	1-228-990-00	RES, ADJ, METAL	1K		

Ref. No.	Part No.	Description	Remark
*	A-6421-665-A	SW-193 BOARD, COMPLETE *****	
		< CONNECTOR >	
CN601	1-506-467-11	PIN, CONNECTOR 2P	
		< SWITCH >	
S601	1-554-655-00	SWITCH, LEAF *****	
*	A-6421-666-A	SW-194 BOARD, COMPLETE *****	
		< CONNECTOR >	
CN401	1-506-481-11	PIN, CONNECTOR 2P	
CN402	1-506-481-11	PIN, CONNECTOR 2P	
		< RESISTOR >	
R401	1-249-423-11	CARBON 3.3K 5% 1/4W	
R402	1-249-417-11	CARBON 1K 5% 1/4W	
		< SWITCH >	
S401	1-571-300-21	SWITCH, ROTARY *****	
*	A-6421-748-A	TR-60 (U51) BOARD, COMPLETE *****	
⚠	1-533-189-11	HOLDER, FUSE	
⚠	1-535-443-00	PIN, TERMINAL (AC CORD)	
		< CAPACITOR >	
⚠C301	1-136-345-21	FILM 0.1uF 20% 125V	
		< CONNECTOR >	
⚠CN302	*1-564-029-00	PIN, CONNECTOR 4P	
		< FUSE >	
⚠F301	1-532-743-11	FUSE, GLASS FUBE 2A 125V	
		< RESISTOR >	
⚠R301	1-202-729-00	SOLID 6.8M 10% 1/2W	
		< TRANSFORMER >	
⚠T301	1-450-721-11	TRANSFORMER, POWER	
⚠T302	1-421-771-11	FILTER, LINE	

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
22	1-465-843-61	REMOTE CONTROLLER (RMT-M11A)	
117	1-551-478-00	CORD, POWER	
121	1-575-813-11	CABLE, FLAT (FLEXIBLE) (28 CORE)	
131	1-543-870-11	CORE, RING	
158	1-554-468-00	SWITCH, LEAF	
159	1-541-776-21	MOTOR, LD SPINDLE	
168	1-574-648-11	CABLE, FLAT (FLEXIBLE) (24 CORE)	
204	1-570-771-21	SWITCH	
206	1-571-435-11	SWITCH	
⚠215	8-848-138-11	DEVICE, OPTICAL KHS-130A	

		ACCESSORIES & PACKING MATERIALS *****	
		1-417-139-11 MATCHING TRANSFORMER, ANTENNA	
		1-542-141-11 MICROPHONE	
		1-551-086-31 CORD, CONNECTION	
		1-559-533-11 CORD, CONNECTION	
		1-575-509-11 CORD, CONNECTION	
		3-754-089-22 MANUAL, INSTRUCTION	
		3-755-443-01 INSTRUCTION	
		3-755-465-01 INSTRUCTION	
*		3-795-581-21 SAFEGUARD (SONY), IMPORTANT	
		3-945-480-21 MANUAL, INSTANT INFORMATION	
*		3-945-967-01 CUSHION (UPPER)	
*		3-945-968-01 CUSHION (LOWER)	
*		3-946-086-11 INDIVIDUAL CARTON	

		***** HARDWARE LIST *****	
#1	7-624-108-04	STOP RING 4.0, TYPE -E	
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#4	7-685-647-79	SCREW +BTP 3X10 TYPE2 N-S	
#5	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#6	7-682-645-01	SCREW +PS 3X4	
#7	7-621-255-55	SCREW +P 2X8	
#8	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
#9	7-685-661-79	SCREW +BVTP 4X12 TYPE2 SLIT	
#10	7-624-190-81	STOP RING 2, TYPE-CS	
#11	7-682-545-04	SCREW (3X4) (G), TAPPING, (+) P	
#12	7-682-547-04	SCREW +BVTT 3X6 (S)	

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.
---	--

SECTION 7

ELECTRICAL ADJUSTMENTS

During these adjustment, see the parts arrangement diagram for adjustments on page from 176.

7-1. LIST OF SERVICING JIGS

- Oscilloscope
- Color monitor TV
- Digital voltmeter
- Audio level meter
- Frequency counter
- Remote commander (RMT-M11)
- LD alignment disc HVL-8 (8-797-008-00)
NTSC Ref. Disc 8*
- CD alignment disc YEDS-18 (3-702-101-01)
- MD adjustment cable (J-6082-059-A)
- Audio oscillator

* : Ref. 7 is also available.

7-2. CAUTIONS ON ADJUSTMENT

- Disc load/unload operation must not be performed when servicing with the unit laying down sideways. (Never press the OPEN and CLOSE buttons.)
- When laying the unit down sideways, perform adjustment with the left side down and turn the power on.
- When adjusting the servo system, be sure to set up the unit horizontally.

7-3. MD ADJUSTMENT CABLE (J-6082-059-B)

MD adjustment cable is used to adjust the servo system with connecting to the SV-701 board. Remove it except when adjusting the servo system.

7-4. POWER SUPPLY CHECK

PS-290 Board

Mode	Stop
Measuring Equipment	Digital voltmeter
REG +9 V check	
Measurement Point	Pin ① of CN903 (Pin ②, GND)
Specified Value	9 ± 0.3 V
REG -9 V check	
Measurement Point	Pin ③ of CN903 (Pin ②, GND)
Specified Value	-9 ± 0.3 V
REG +5 V check	
Measurement Point	Pin ⑥ of CN903 (Pin ⑤, GND)
Specified Value	5 ± 0.3 V
REG -5 V check	
Measurement Point	Pin ⑦ of CN903 (Pin ⑤, GND)
Specified Value	-5 ± 0.3 V

PS-706 Board

Mode	Stop
Measuring Equipment	Digital voltmeter
UNREG +16 V check	
Measurement Point	Pin ① of CN005 (Pin ②, GND)
Specified Value	16 ± 0.1 V
UNREG -16 V check	
Measurement Point	Pin ③ of CN005 (Pin ②, GND)
Specified Value	-16 ± 0.1 V
REG +9 V check	
Measurement Point	Pin ① of CN006 (Pin ②, GND)
Specified Value	9 ± 0.3 V
REG -9 V check	
Measurement Point	Pin ③ of CN006 (Pin ⑥, GND)
Specified Value	-9 ± 0.3 V
REG +5 V check	
Measurement Point	Pin ⑤ of CN006 (Pin ⑥, GND)
Specified Value	5 ± 0.3 V
REG -5 V check	
Measurement Point	Pin ⑦ of CN006 (Pin ⑥, GND)
Specified Value	-5 ± 0.3 V

- Confirm that the power supply voltages satisfy the respective specified values.

7-5. SYSTEM CONTROL SYSTEM ADJUSTMENT

7-5-1. Microprocessor Clock Adjustment (MB-53 Board)

Mode	Stop
Measurement Point	Pin ①⑨ of IC601
Measuring Equipment	Frequency counter
Adjusting Element	CV601
Specified Value	$3,579,545 \pm 10$ Hz

Adjustment method :

- 1) Adjust CV601 to $3,579,545 \pm 10$ Hz.

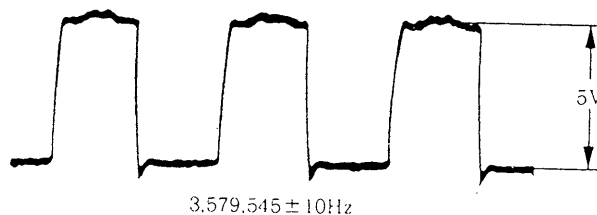


Fig. 7-1.

7-6. SERVO SYSTEM ADJUSTMENT

When adjusting the servo system, look out for the following items :

- Use the MD adjustment cable (J-6082-059-B).
- Adjust the CD servo system after the digital audio system adjustment is completed.
- When setting the tracking servo to the open state, set to the STOP state once and proceed to the next step.
- When the optical block is replaced, perform the adjustment in the following order.

Note : Start adjustment at maximum RF H level (RV108 fully counterclockwise direction).

1. LD Tracking Balance Adjustment
 - 1) Focus balance adjustment
 - 2) Tracking balance adjustment
2. LD Focus Gain Adjustment
3. LD Cross Talk Balance Adjustment
 - 1) TAN cam adjustment
 - 2) RAD-TILT adjustment
 - 3) Focus balance adjustment
4. LD Tracking Gain Adjustment
5. RD Adjustment
6. CD Focus Balance Adjustment
7. CD RF H Level Adjustment
8. CD RF L Level Adjustment

7-6-1. LD Servo System Adjustment

1. LD Tracking Balance Adjustment (SV-701 Board)

1) Focus balance adjustment

Note : Perform successively 1) and 2) adjustment in this order.

Mode	Still
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable [TRKG ERR (X)] (Pin ③ of CN105)
Measuring Equipment	Oscilloscope
Adjusting Element	RV102
Specified Value	Maximum amplitude

Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 2201 (GRAY).
- 3) Turn the thread servo off. (MD adjustment cable SLED SW OFF)
- 4) Turn the tracking servo off. (MD adjustment cable TRKG SW OFF)
- 5) Adjust RV102 so as to maximize the signal level.

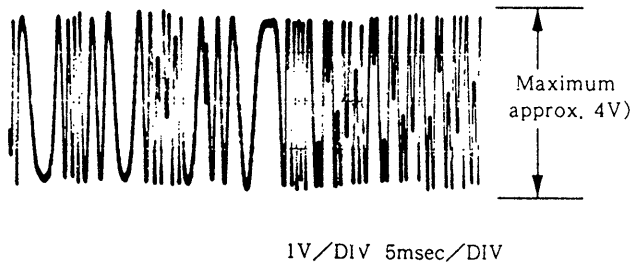


Fig. 7-2.

2) Tracking balance adjustment

Mode	Still
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable [TRKG ERR (X)] (Pin ③ of CN105)
Measuring Equipment	Oscilloscope
Adjusting Element	RV101
Specified Value	$A - B = 0 \pm 0.1V$

Adjustment method :

Note : Perform successively this adjustment after "1) Focus balance adjustment" is completed.

- 6) Adjust RV101 so that the center voltage of the tracking error signal becomes $0 \pm 0.1Vdc$.
- 7) Select STOP mode.
- 8) Turn the tracking servo on.
- 9) Turn the thread servo on.

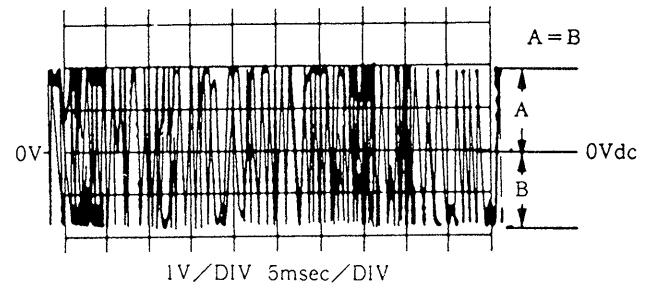
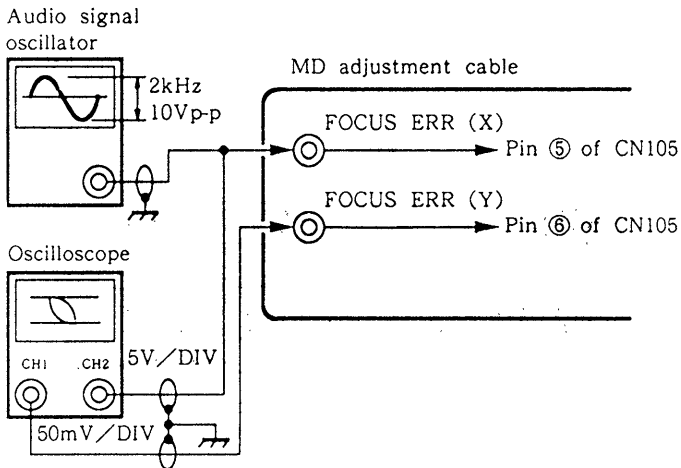


Fig. 7-3.

2. LD Focus Gain Adjustment (SV-701 Board)

Mode	Playback
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable CH1 : [FOCUS ERR (Y)] (Pin ⑥ of CN105) CH2 : [FOCUS ERR (X)] (Pin ⑤ of CN105)
Measuring Equipment	Oscilloscope (X-Y mode)
Adjusting Element	RV107
Specified Value	See figure below

Connections :



Adjustment method :

- 1) Search the frame 2201.
- 2) Adjust the waveform as shown in the figure below with RV107.



Fig. 7-4.

3. LD Cross Talk Balance Adjustment

1) TAN cam adjustment (MD)

The cam is always set to the initial position. When replacing the optical block and so on, set the cam to the mechanical center.

*Mechanical center :

Marked with the notch of the cam located at the opposite side of the optical block chassis shaft.

Adjustment method:

- 1) Turn the TAN cam on the bottom (See Fig. 7-5.) with a hexagonal wrench.

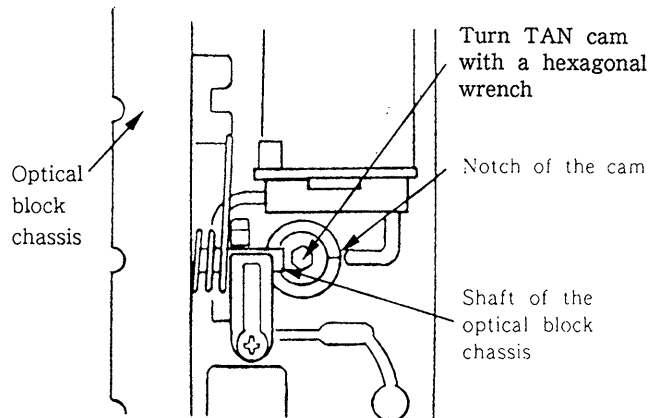


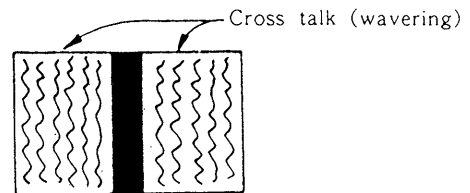
Fig. 7-5.

2) RAD TILT adjustment (SV-701 Board)

Mode	Still
Signal	Frame 770 (V BAR)
Measurement Point	Monitor TV
Measuring Equipment	Monitor TV
Adjusting Element	RV105
Specified Value	Cross talk (wavering) with minimum as well as the same level.

Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 770 and apply a vertical bar signal.
- 3) Adjust RV105 so that the right and left cross talks (wavering) become minimum as well as the same level.



Adjust so that cross talks appeared on the both sides on the monitor display become minimum as well as the same level.

Fig. 7-6.

3) Focus balance adjustment (SV-701 Board)

Mode	Still
Signal	Frame 770 (V BAR)
Measurement Point	Monitor TV
Measuring Equipment	Monitor TV
Adjusting Element	RV102
Specified Value	Cross talk (wavering) with minimum as well as the same level.

Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 770 and apply a vertical bar signal.
- 3) Adjust RV102 to minimize the right and left cross talks (wavering) level.

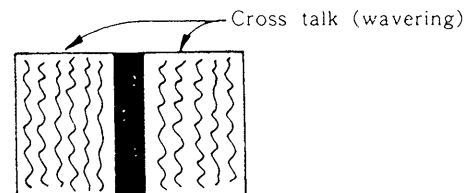
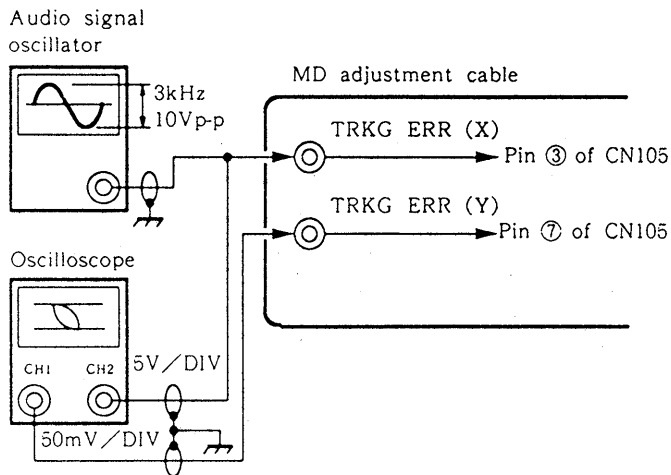


Fig. 7-7.

4. LD Tracing Gain Adjustment (SV-701 Board)

Mode	Still
Signal	Frame 2201 (GRAY)
Measurement Point	MD adjustment cable CH1 : [TRKG (Y)] (Pin ⑦ of CN105) CH2 : [TRKG (X)] (Pin ③ of CN105)
Measuring Equipment	Oscilloscope (X-Y mode)
Adjusting Element	RV106 (TR GAIN)
Specified Value	See figure below

Connections :



Adjustment method :

- 1) Search the frame 2201.
- 2) Adjust the waveform as shown in the figure below with RV107.

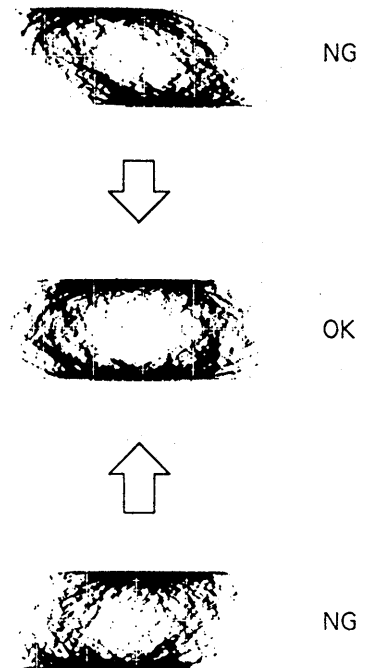


Fig. 7-8.

7-6-2. CD Servo System Adjustment

1. RD Adjustment

Mode	Pause
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable CH1 : [E terminal] CH2 : [F terminal]
Measuring Equipment	Oscilloscope
Adjusting Element	RD Cam (MD)
Specified Value	A : B ≤ 10 : 1

Note : 1) Turn off the monitor TV switch to prevent a noise.

Note : 2) Long continuation of the TRKG servo off state causes the spindle motor to stop.

Adjustment method :

- 1) Play back the track No. 1 and select PAUSE mode.
- 2) Turn the thread servo off. (MD adjustment cable SLED SW OFF)
- 3) Turn the tracking servo off. (MD adjustment cable TRKG SW OFF)
- 4) Turn RD cam on the MD and adjust so that it becomes as a straight line as possible.

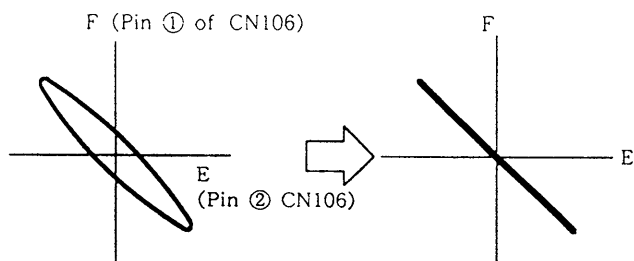


Fig. 7-9.

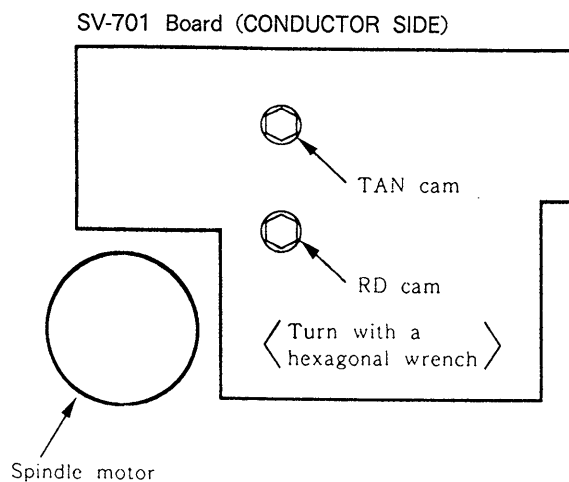


Fig. 7-10.

2. CD Focus Balance Adjustment (SV-701 Board)

Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable [RF (CD) OUT] (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV103
Specified Value	Maximum amplitude

Adjustment method :

- 1) Play back the track No. 1.
- 2) Adjust RV103 for maximum level.

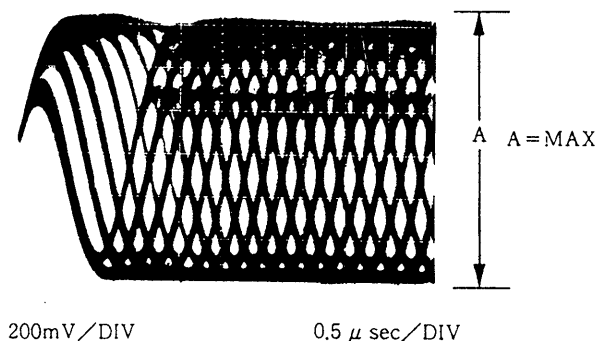


Fig. 7-11.

3. CD RF H Level Adjustment (SV-701 Board)

Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable [RF (CD) OUT] (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV108
Specified Value	$1.2 \pm 0.1V_{p-p}$

Adjustment method :

- 1) Play back the track No. 1.
- 2) Adjust RV108 for $1.2 \pm 0.1V_{p-p}$.

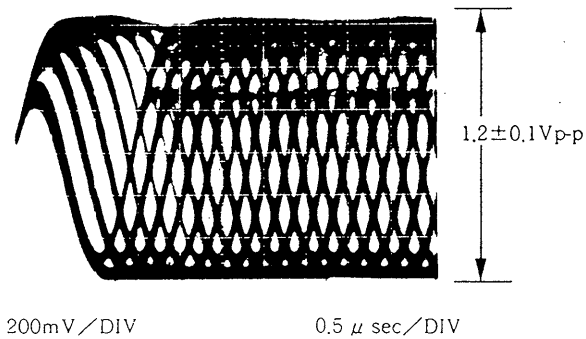


Fig. 7-12.

4. CD RF L Level Adjustment (SV-701 Board)

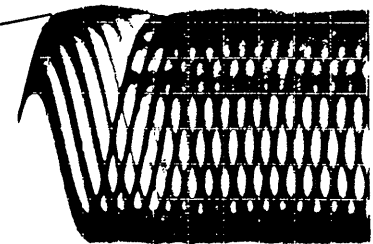
Mode	Playback
Signal	Track No. 1, YEDS-18
Measurement Point	MD adjustment cable [RF (CD) OUT] (Pin ⑥ of CN106)
Measuring Equipment	Oscilloscope
Adjusting Element	RV104
Specified Value	Clear-cut waveform

Adjustment method :

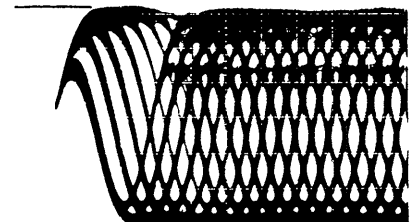
- 1) Play back the track No. 1.
- 2) Adjust RV104 so that the waveform of lozenge-shaped portions becomes clear-cut and the waveform slant disappear from the rising edge portion.

- Waveform slant at the rising edge.
- Waveform of lozenge-shaped portions are not clear.

(RV104 : Excessively rotated in clockwise direction (○) .



OK
200mV/DIV
0.5 μ sec/DIV



- Waveform slant at the rising edge.
- Waveform of lozenge-shaped portions are not clear.

(RV104 : Excessively rotated in counterclockwise direction (○) .

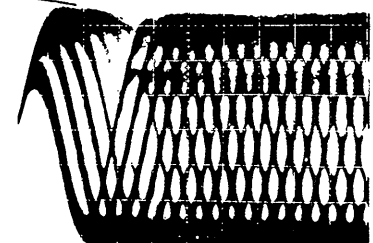


Fig. 7-13.

7-7. VIDEO SYSTEM ADJUSTMENT

7-7-1. Video Output Level Adjustment (MB-53 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	CNJ101 (VIDEO OUT terminal) (Terminated to 75 Ω)
Measuring Equipment	Oscilloscope
Adjusting Element	RV152
Specified Value	1.00 ± 0.03 V _{p-p}

Adjustment method :

- 1) Select STILL (▶◀) mode.
- 2) Search the frame 4100 and apply a color bar signal.
- 3) Adjust RV152 for 1.00 ± 0.03 V_{p-p}.



Fig. 7-14.

7-7-2. Comb Type Filter Y Output Level Adjustment (MB-53 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measurement Point	CNJ102 pin ③ (Y OUT) 75 Ω terminated
Measuring Equipment	Oscilloscope
Adjusting Element	RV101
Specified Value	1.00 ± 0.03 V _{p-p}

Adjustment method :

- 1) Select STILL (▶◀) mode.
- 2) Search the frame 4100.
- 3) Adjust RV101 for 1.00 ± 0.03 V_{p-p}.

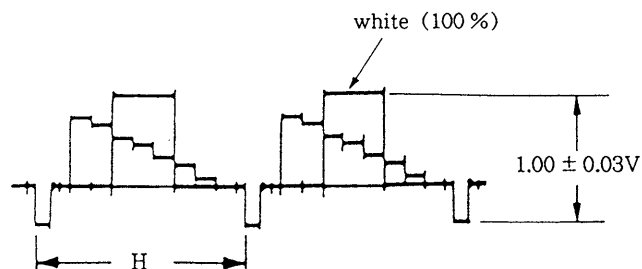


Fig. 7-15.

7-7-3. Burst Gate Position Adjustment (MB-53 Board)

Mode	Still
Signal	Frame 4100 (color bar)
Measurement Point	Pin ② of IC107
Adjusting Element	RV154
Specified Value	8.6 ± 0.3 μsec

Adjustment method :

- 1) Select STILL (▶◀) mode.
- 2) Search the frame 4100.
- 3) Adjust RV154 so that t_w becomes 8.6 ± 0.3 μsec.

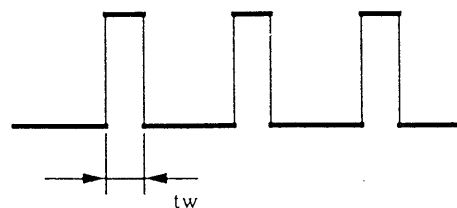


Fig. 7-16.

7-7-4. REF H Adjustment (1) (MB-53 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	Pin ②⑤-②⑥ of IC111.
Specified Value	4.2 ± 0.1 V

Note : Perform 7-7-5 REF H Adjustment (2) Adjustment continuously.

Adjustment method :

- 1) Adjust with RV601 so that the voltage values at Pin ②⑤-②⑥ become 4.2 ± 0.1 V.

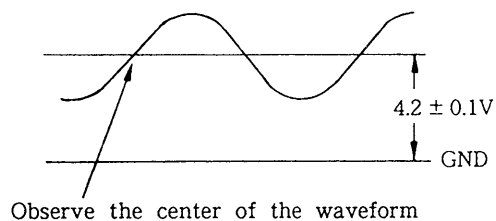


Fig. 7-17.

7-7-5. REF H Adjustment (2) (MB-53 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV601
Measurement Point	CH1 : PIN ⑳ of IC604 CH2 : PIN ㉔ of IC604
Specified Value	Adjust the timing of the falling edges of waveforms.

Adjustment method :

- 1) Adjust timing in the nearest portion between the falling edge of Pin ㉔ of IC604 and the falling edge of Pin ⑳ of IC604.

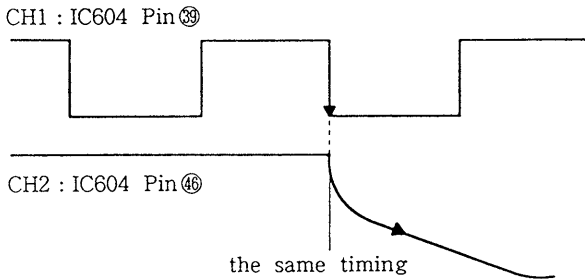


Fig. 7-18.

7-7-6. TBC Range Adjustment (MB-53 Board)

Mode	Still
Signal	Frame 4100 (Color bar)
Measuring Equipment	Oscilloscope
Adjusting Element	RV151
Measurement Point	CH1 : PIN ㉑ of IC109 External trigger : PIN ㉓ of IC109
Specified Value	$22 \pm 1 \mu \text{sec}$

Connection :

- Apply 5.0Vdc to Pin ④ of IC109.

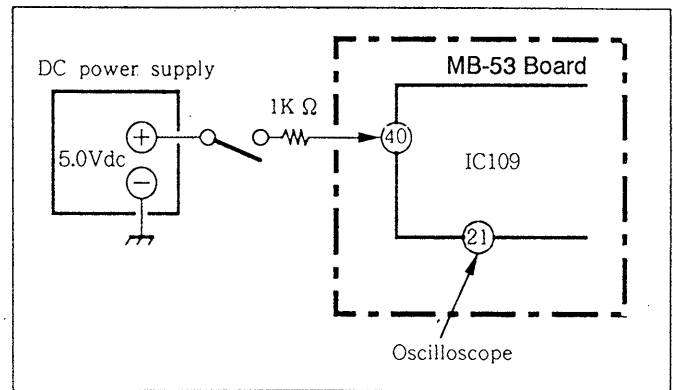


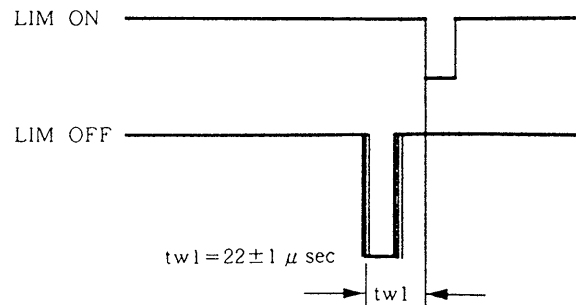
Fig. 7-19.

Adjustment method :

- 1) Select STILL (M) mode.
- 2) Search the frame 4100.
- 3) Connect the DC power supply (5.0Vdc) to Pin ④ of IC109.
- 4) Adjust so that rising time difference between when the power (5.0Vdc) is on (LIM ON) and when the power off (LIM OFF) is $22 \pm 1 \mu \text{sec}$.

Note : Since the waveform of LIM OFF is wavering, adjust at fits center position.

- Pin ㉑ of IC109 (CH1)



- Pin ㉓ of IC109 (Trigger pulse)



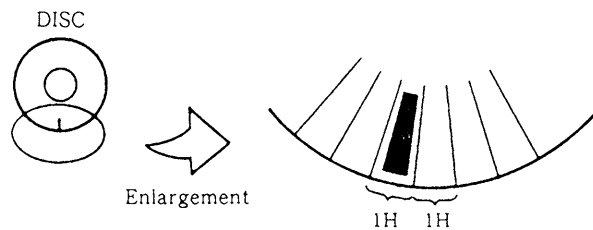
Fig. 7-20.

7-7-7. Color DOC Adjustment (MB-53 Board)

Mode	Still
Signal	Frame 23500 (Yellow Green)
Measurement Point	Monitor display
Adjusting Element	CV152
Specified Value	Drop out portion and its peripherals are the same color

Preparations:

Stick a black adhesive tape (approx. 10 mm length) on the outer track 1H period of the alignment disc (HVL-8 or REF. 7).



Adjustment method :

- 1) Select STILL (⏸) mode.
- 2) Search the frame 23500.
- 3) Adjust CV152 so that the drop out portion and its peripherals on the monitor picture are the same color.

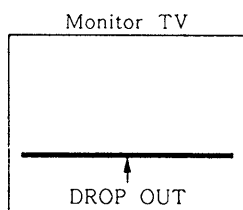
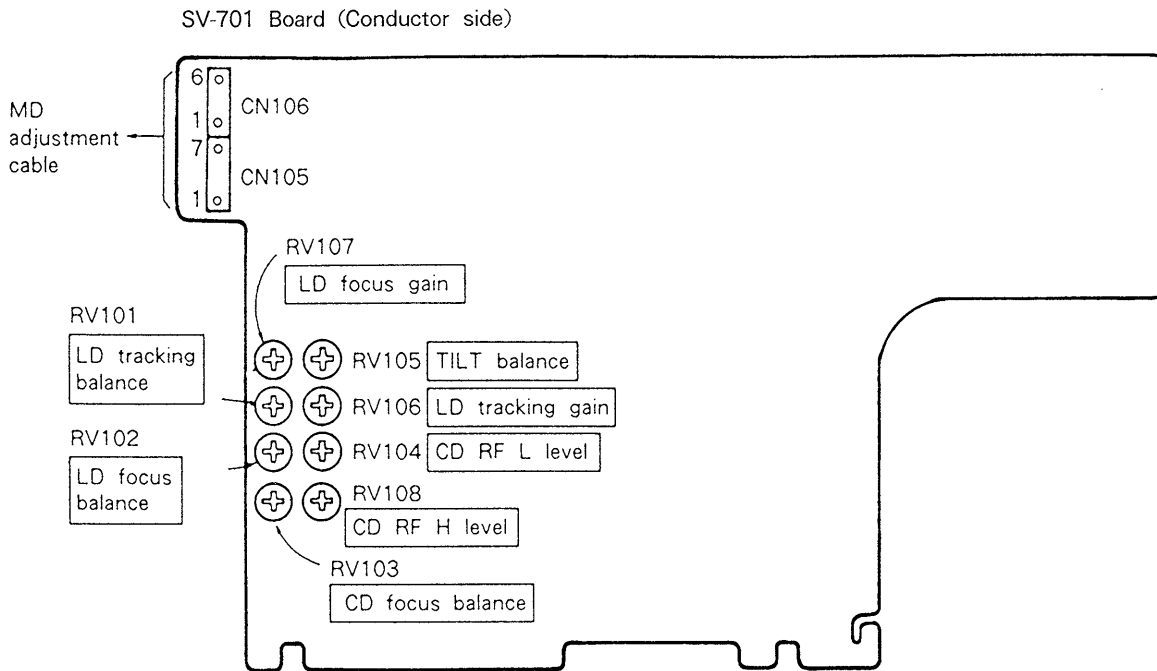
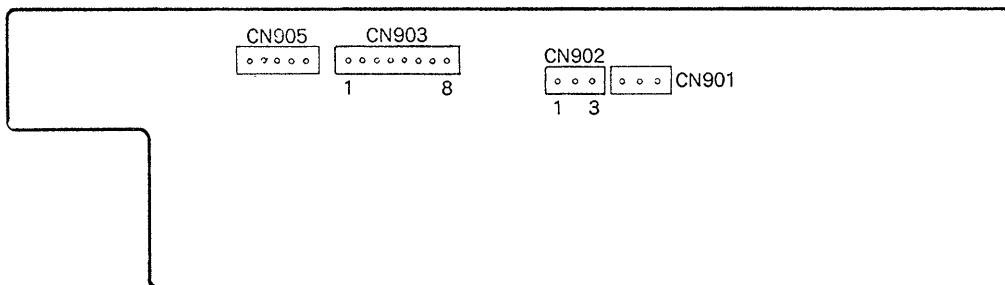


Fig. 7-21.

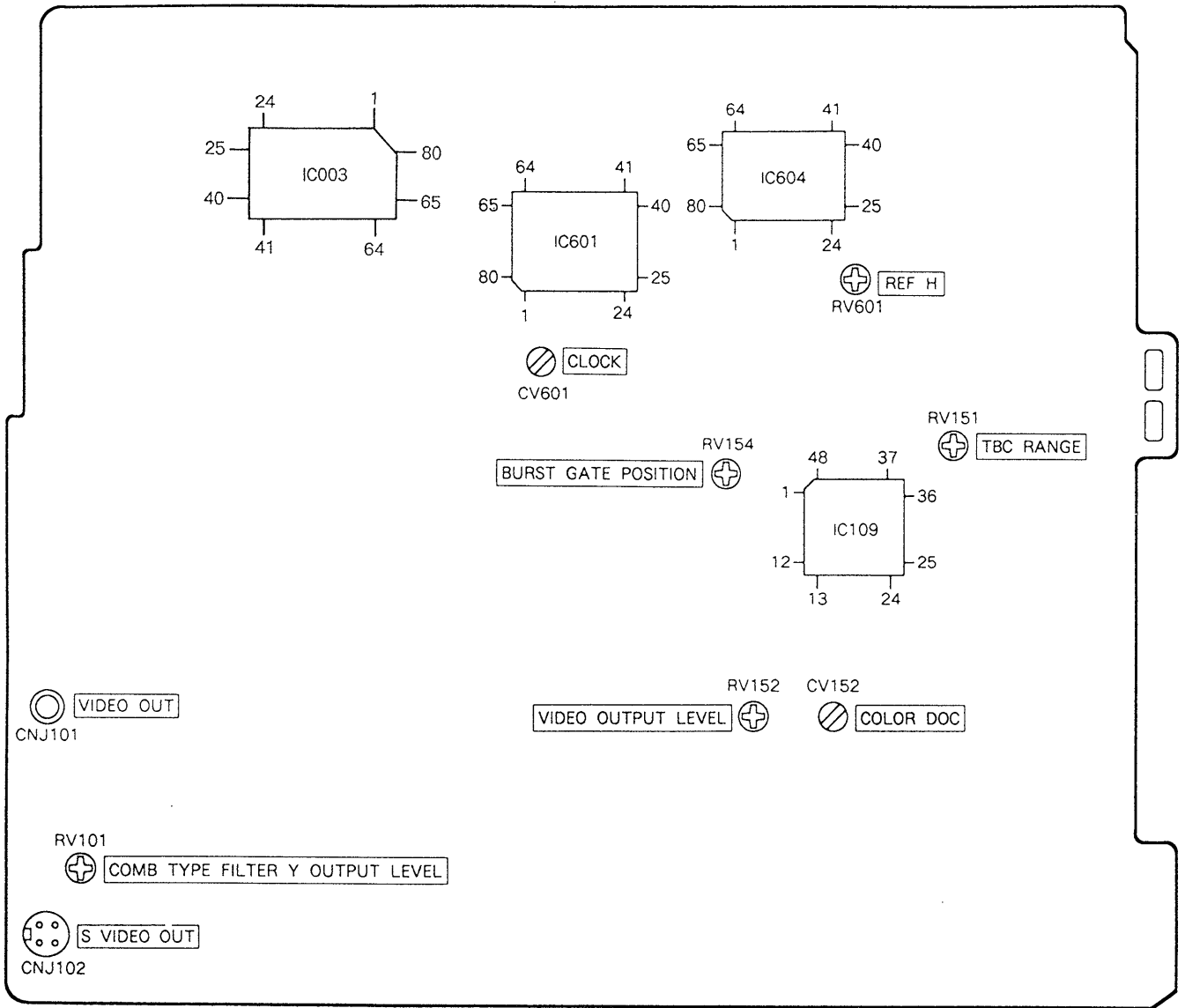
7-8. PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENTS



PS-290 board (Component Side)



MB-53 board (Component Side)



PS-706 Board (Component Side)

