

Service Manual

DV4000/F1N, /K1G
/N1B, /S1G, /U1B
DVD Player

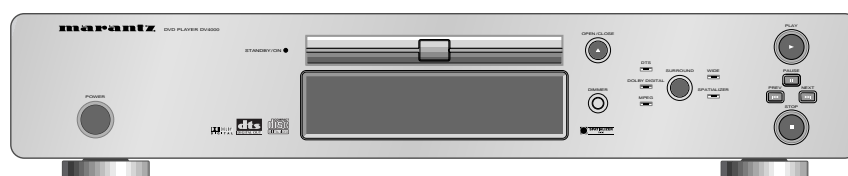


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Please use this service manual with referring to the user guide (D.F.U) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行って下さい。

marantz®

DV4000

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

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SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

Discs played

DVD video disc	12 cm single sided, single layer 12 cm single sided, double layer 12 cm double sided, single layer 12 cm double sided, double layer (one layer per side) 8 cm single sided, single layer 8 cm single sided, double layer 8 cm double sided, single layer 8 cm double sided, double layer (one layer per side)
Compact disc (CD-DA, Video CD)	12 cm, 8 cm

Video system.....PAL (625/50)/NTSC (525/60)

Audio system.....Linear PCM audio
MPEG 1/2 audio
Dolby Digital (AC-3)
DTS audio (Digital output only)

Video output

Line output level	1.0 Vp-p / 75 ohms, unbalanced RCA pin Jack x 1
S1-output level	Y output: 1.0 Vp-p/75 ohms unbalanced C output: 0.3 Vp-p/75 ohms (PAL) 0.286 Vp-p/75 ohms (NTSC) 4 pin mini DIN x 1
R/G/B output.....	R/G/B output: 0.7 Vp-p 21-pin SCART connector x 1 (/N1B)

Audio output

Line output

2.0 Vrms / 10 kohms RCA pin Jack x 1 system
--

Digital audio output

Optical output

Optical connector x 1

Coaxial output

RCA pin Jack x 1

DVD linear audio characteristics

Frequency response

4 Hz-22 kHz (Fs = 48 kHz) 4 Hz-44 kHz (Fs = 96 kHz)
--

S/N ratio

100 dB (Fs = 48 kHz/24 bit PCM)

Dynamic range

100 dB (Fs = 48 kHz/24 bit PCM)

Total harmonic distortion

0.0025% (Fs = 48 kHz/24 bit PCM)

CD audio characteristics:

Frequency response

4 Hz-20 kHz (EIAJ)

S/N ratio

100 dB (EIAJ)

Dynamic range

100 dB (EIAJ)

Total harmonic distortion

0.0025% (EIAJ)

Pickup..... Wavelength: 655 nm (DVD)
Wavelength: 790 nm (CD)

Power requirements..... 120V AC, 60 Hz (/U1B)
100-240V AC, 50/60 Hz (/N1B)
100V AC, 50/60 Hz (/F1N)
100-240V AC, 50/60 Hz (/K1G,/S1G)

Power consumption..... 20 W (standby mode = approx 1.2 W, power off = 0 W)

Operation temperature..... 5°C-35°C

Operation humidity range..... 5%-90% (no condensation)

Dimensions..... 440 (W) x 88 (H) x 332 (D) mm (excluding protrusions)

Weight..... 3.3 kg

Supplied accessories

AC power cable

x 1

Auido / Video cable

x 1 (/F1N, /K1G, /S1G, /U1B)

D-BUS remote cable

x 1

Remote control unit

x 1

Batteries

x 2

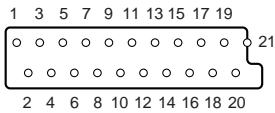
21-pin SCART cable.....

x 1 (/N1B)

- For improvement purposes, specifications and design are subject to change without notice

2. CONNECTION FACILITIES

2.1 Video performance (N1B only)



- Pin 15 Red out :0.7Vpp (0.1V into 75 Ohm (*)
- Pin 16 fast switching RGB/ CVBS : <0.4V into 75 Ohm = CVBS
- <1V/ <3V into 75 Ohm = RGB

2.1.1 SCART

- Pin 1 Audio R out :1.8V RMS
- Pin 2 not connected
- Pin 3 Audio L out :1.8V RMS
- Pin 4 GND
- Pin 5 GND
- Pin 6 not connected
- Pin 7 Blue out :0.7Vpp (0.1V into 75 Ohm (*)
- Pin 8 function switching :
2V TV
>4.5V / <7V asp. ratio 16:9 DVD
>9.5V / <12Vasp. ratio 4:3 DVD
- Pin 9 GND
- Pin 10 not connected
- Pin 11 Green out :0.7Vpp (0.1V into 75 Ohm (*)
- Pin 12 not connected
- Pin 13 GND
- Pin 14 GND

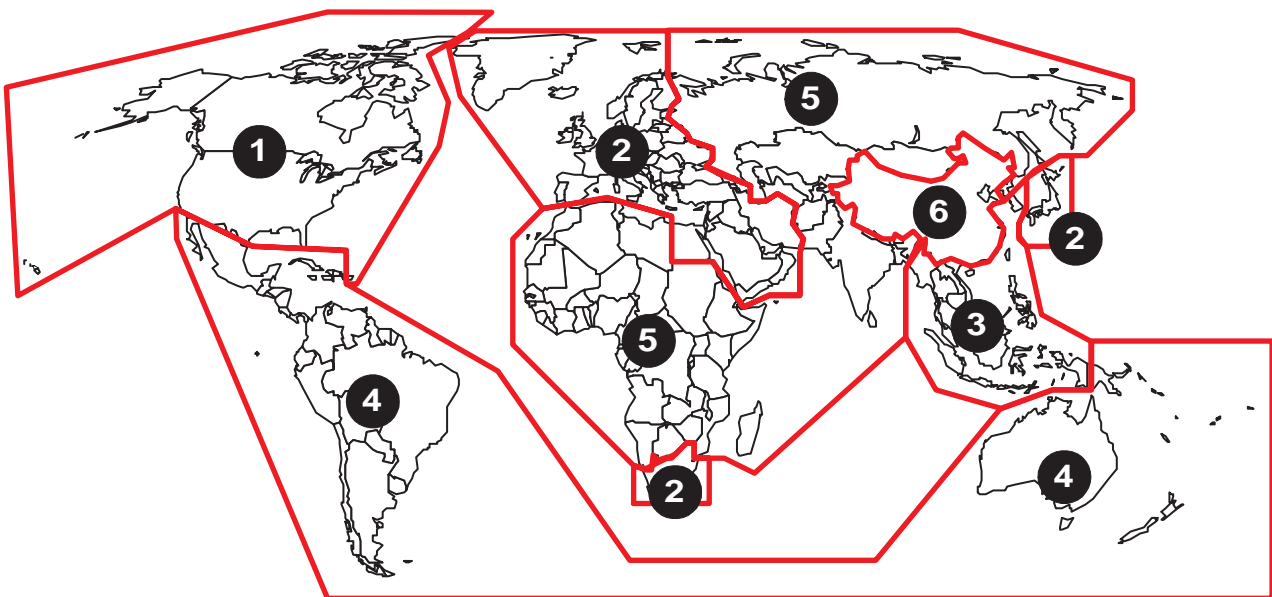
- Pin 17 GND
- Pin 18 GND
- Pin 19 CVBS/RGB sync out : 1Vpp (0.1V into 75 Ohm)
- Pin 20 not connected
- Pin 21 GND

(*) for 100% white

What are "regional codes"?

Motion picture studios want to control the home release of movies in different countries because theater releases aren't simultaneous (a movie may come out on DVD in the US when it's just hitting screens in Europe). Therefore they have required that the DVD standard include codes which can be used to lock out the playback of certain discs in certain geographical regions. Players sold in each region will have that region's code built into the player. The player will refuse to play these "region coded" discs which are not allowed in the region. However, regional codes are entirely optional. Discs without codes will play on any player in any country. Some studios have already announced that only their new releases will have regional codes. There are six regions:

1. United States and Canada
2. Europe and Japan
3. Far East (except Japan & China)
4. South America and Oceania
5. Africa and the Middle East
6. China (except Hong Kong)



Map of DVD Regions




3. INFORMATIONS

REGION CODE

VERSION	REGION CODE	COUNTRY
/FXX	2	JAPAN
/KXX	6	CHINA
/NXX	2	EUROPE
/SXX	3	SINGAPORE/HONGKONG
/UXX	1	USA/CANADA

THE DISCS THAT THE DV4000 CAN HANDLE

The following discs can be played back with a DV4000.

disc	mark	playback capability	size	side
DVD		Audio/Video	12 cm 8 cm	single/double
CD		Audio	12 cm 8 cm	single
VCD		Audio/Video	12 cm 8 cm	single

Note: The regional code of the discs must meet to the regional code of the DV4000.

DVD INFORMATION

Below is a glossary of the new terms related to DVD.

Title:

A disc may have more than one story/movie on it, so each story/movie is called a "title".

For example, if there are 2 movies on the disc, they are separated into Title 1 and Title 2.

Chapter:

A title may also be separated into chapters.

For example, a movie (title) may be separated into 3 scenes (chapters).

Title 1			Title 2		
Chapter 1	Chapter 2	Chapter 3	Chapter 1	Chapter 2	Chapter 3

Subtitles:

DVDs are recorded with up to 32 different subtitle languages.

If a disc has more than one subtitle language, you can select the subtitle language that you want to read.

Soundtrack language:

DVDs are recorded with up to 8 different soundtrack languages.

If a disc has more than one language, you can select the soundtrack language that you want to listen to.

Multi-angles:

On some DVDs, scenes have been filmed from different angles (up to a maximum of 9). On these discs, you can select the angle that you want to watch. Please refer to the DVD's manual to see which scenes have multi-angles.

Parental guide:

Some discs have restriction levels that allow you to cut scenes or prevent playback of discs that have contents that you do not want children to watch.

Safety Lock

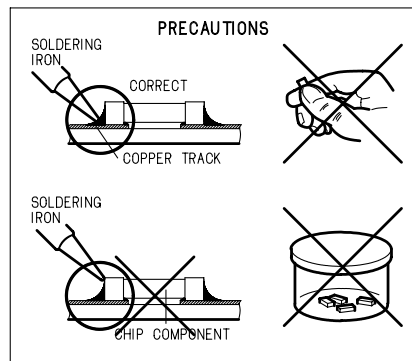
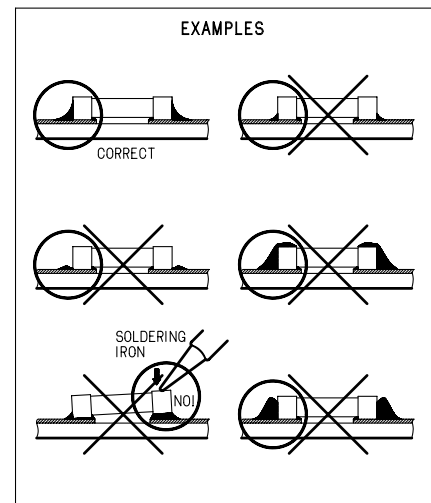
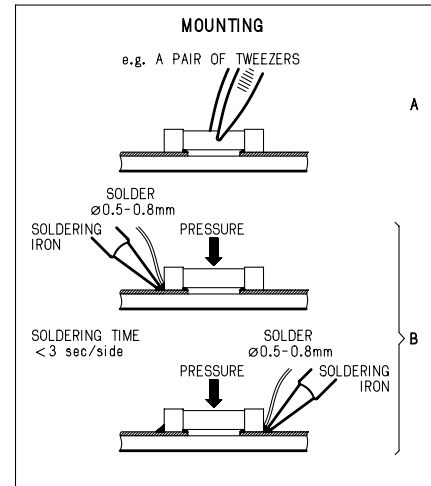
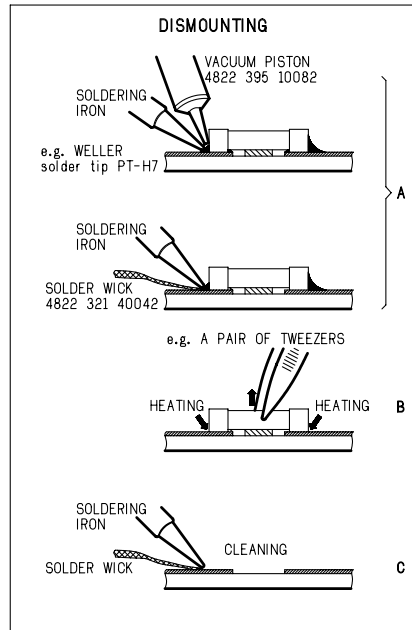
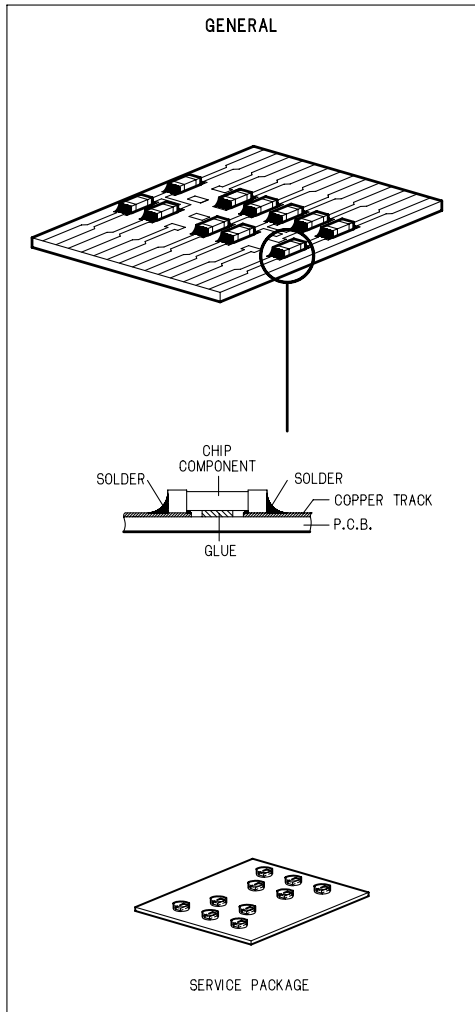
The safety lock prevents children from playing discs. When the Safety Lock is set, discs can not be played back.

Cancelling Safety Lock

Press the CLEAR button and hold for 10 seconds while the player is stopped.

4. SERVICING HINT

SERVICE HINTS



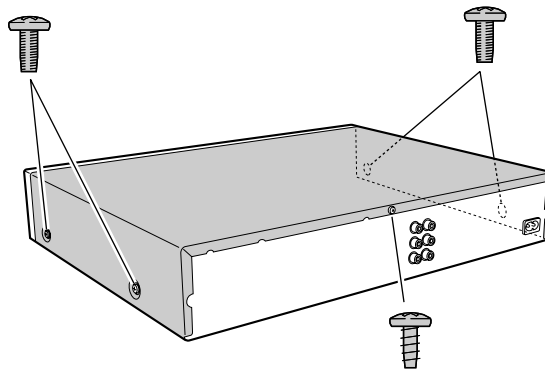
SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (SBC444)+	
Disc with DO errors, black spots and fingerprints (SBC444A)	4822 397 30245
Disc (65 min 1kHz) without no pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
DVD test disc	4822 397 10131

5. DISASSEMBLY

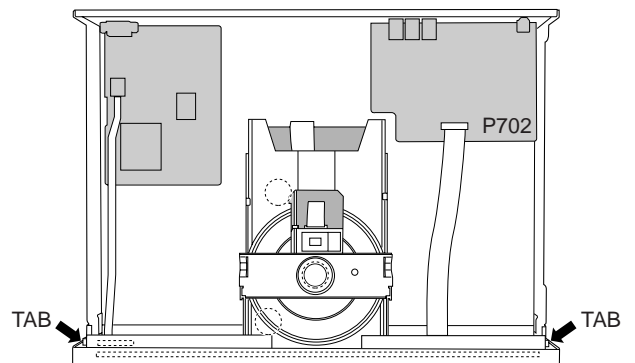
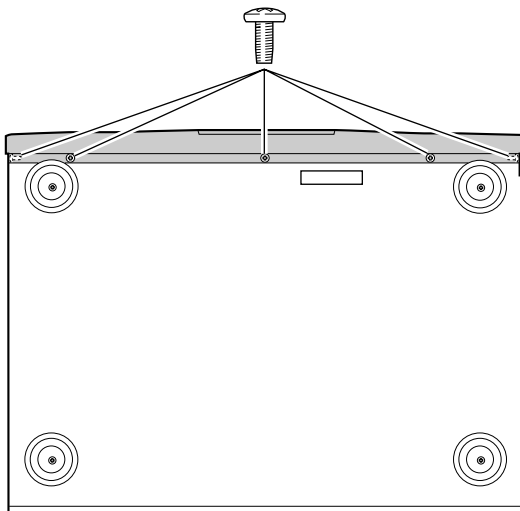
In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in the reverse order.

1. Removal of the UPPER COVER

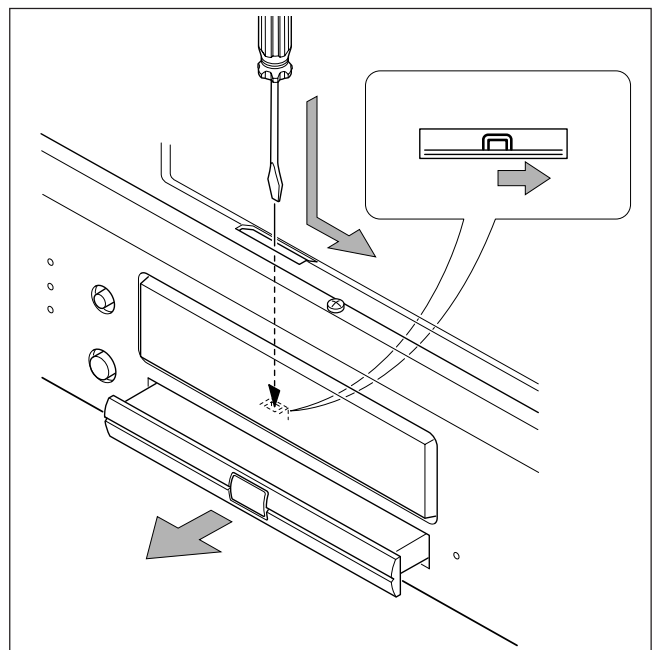


2. Removal of the FRONT PANEL

- 1) Press the "EJECT" button while the unit's power is turned on and open the DISC TRAY.
- 2) Remove the decoration plate on the DISC TRAY by pulling it upward.
- 3) Remove the three retaining screws on the bottom and two screws on each left and right side of the FRONT PANEL as shown.
- 4) Disconnect the flat cable from the P702 connector on the OUTPUT PCB .
- 5) Remove the FRONT PANEL by pulling it forward while releasing the TABs on both left and right ends of the FRONT PANEL.



REMARK : Before disassemble the front panel. Press open/close button to open the tray. If the tray doesn't work, put a small screwdriver into the hole as shown in picture and slide the knob. Then the tray comes out. After the first centimeter it is possible to pull the tray out by hand. Release the door cover of the tray.



6. PRINCIPAL PARTS LOCATION

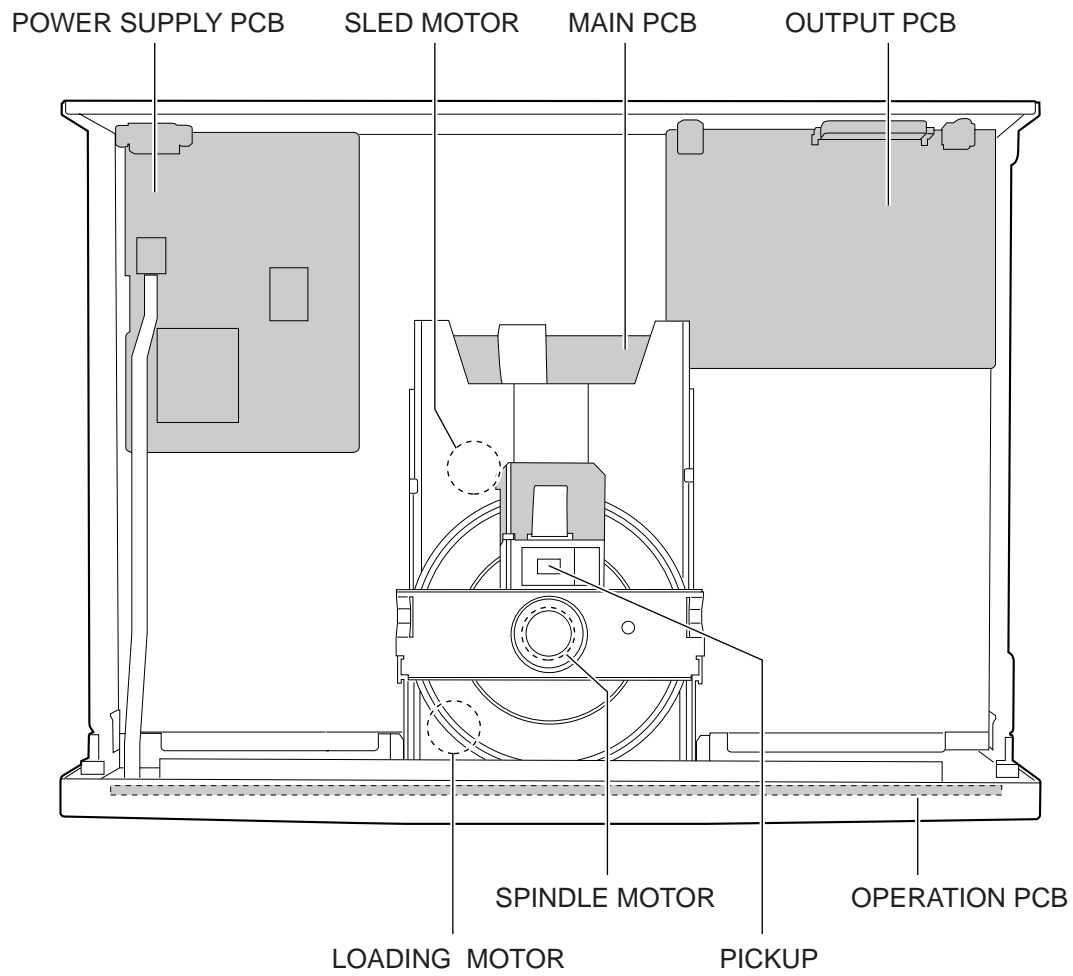


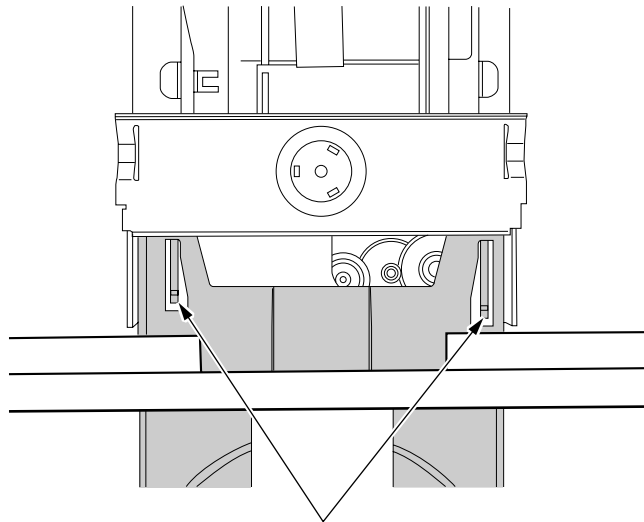
Fig. 6-1 Top view (DV4000)

7. REPLACEMENT OF PRINCIPAL COMPONENTS

7-1. Removal of the TRAVERSE MECHA.

7-1-1. Removal of the MECHANISM BLOCK

- 1) Turn the unit's power on and press the "EJECT" button to eject the DISC TRAY.
- 2) Disconnect the power cord and remove the DISC CLAMPER BLOCK.
- 3) Completely remove the DISC TRAY by pulling it outwards while pulling up both of the stopper tabs alternately.



STOPPER TUB

Fig. 7-1

- 4) Disconnect the two flat cables from the P803 connectors and one flat cable from the P808 connector on the MAIN PCB.
- 5) Disconnect the P807 connector on the MAIN PCB.
- 6) Remove the four a retaining screws and remove the MECHANISM BLOCK from the chassis.

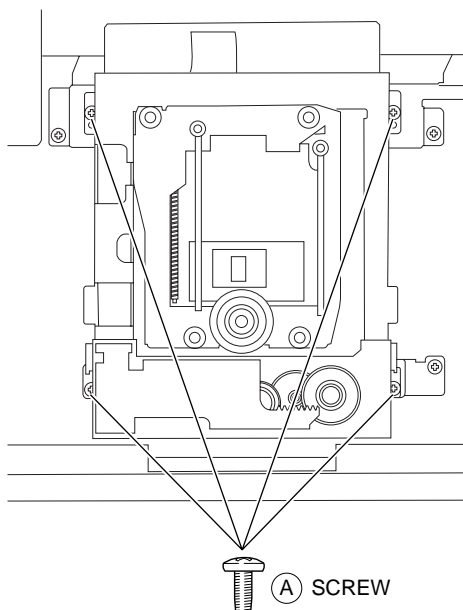


Fig. 7-2

7-1-2. Removal of the TRAVERSE MECHA.

- 1) Remove the four b screws on the MAIN PCB and then disconnect the P800 connector on the MAIN PCB.

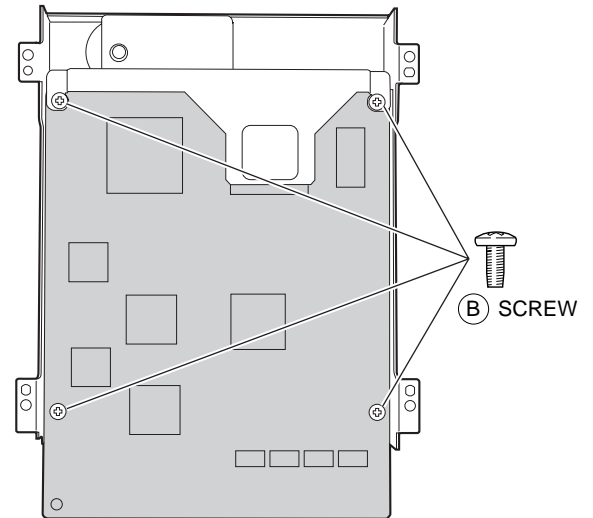


Fig. 7-3

- 2) Short the laser diode protection circuit on the PICK UP BLOCK's flexible cable with solder as shown.

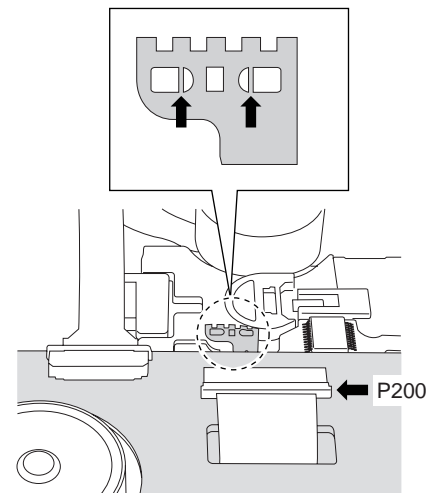


Fig. 7-4

Caution

To protect the laser diode from damage caused by high voltage static electricity, a laser diode protection circuit has to be shorted before disconnecting the flexible cable (P200 connector on the MECHANISM PCB). It is recommended that you put solder on the top of the soldering iron as shown in Fig. 3-5 then short the circuit at once. When you replace the TRAVERSE MECHA., be sure to connect the P200 connector before removing the solder at the shorted parts.

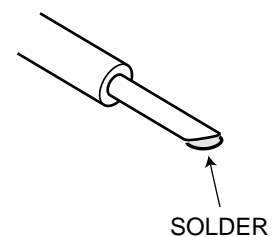


Fig. 7-5

- Carefully disconnect the two connectors (P500, P600) and the two flat cables (P200, P300) on the MECHANISM PCB.

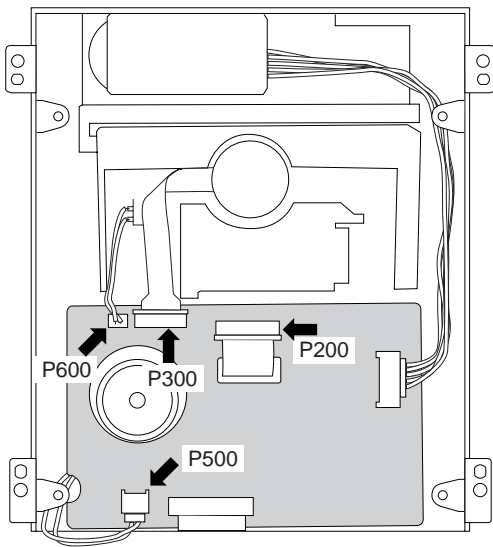


Fig. 7-6

7-3. Replacement of the PICK UP BLOCK

* Replacement of the PICK UP BLOCK itself is not recommended because its azimuth adjustment is very critical and requires a special jig. If PICK UP BLOCK replacement is necessary, replace with an entire TRAVERSE MECHANISM only.

- Using tweezers, release the four retaining HOOKs of the TRAVERSE MECHA. from the rubber insulators being careful not to damage the rubber insulators.

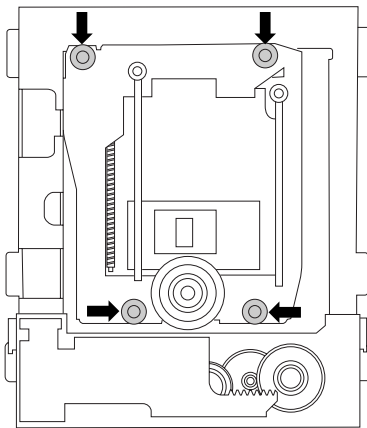


Fig. 7-7

- Remove the TRAVERSE MECHA. from the MECHANISM BLOCK.
- Reassemble in the reverse order for installation. Never remove the solder on the flexible cable before connecting the P200 connector on the MECHANISM PCB.

7-2. Replacement of the SPINDLE MOTOR

* Because the SPINDLE MOTOR position is very critical, jitter adjustment should be performed after replacement.

- Disconnect the P300 connector on the MECHANISM PCB.
- Insert a Philips type screw driver into the hole on the TURN TABLE of the SPINDLE MOTOR and remove the two screws.

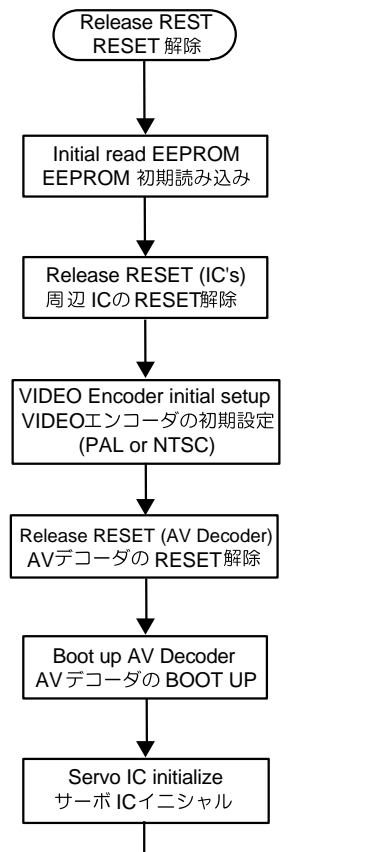
8. SERVICE MODE

8-1 OPERATION

8-1-1. Main Microprocessor (IC600 : MB90574)
Functions which operated by main microprocessor are follows.

- Control of following IC's.
AV decoder, DEM/ECC, VIDEO encoder, CD-DSP, AUDIO-DAC, PRE-AMP, READ-CHANNEL, SERVO
- Mechanism control
- DVD rate control
- OSD control
- DISC detect, Focus/Tracking alignment
- Data transmission between OPE microprocessor

Process from POWER ON (RESET RELEASE) till PLAY BACK are described in the chart below.



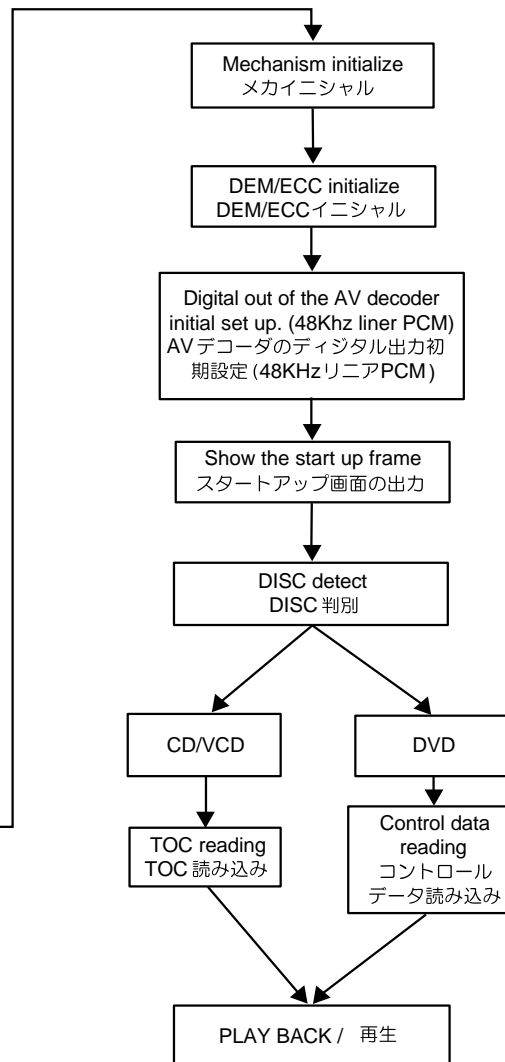
8-1. オペレーション

8-1-1. MAIN マイコン (IC600:MB90574)

MAIN マイコンの主な処理内容は次の通りです。

- 周辺 IC の制御
AV デコーダ, DEM/ECC, VIDEO エンコーダ, CD-DSP, AUDIO-DAC, PRE-AMP, READ-CHANNEL, SERVO
- メカコントロール
- DVD レート制御
- OSD 制御
- DISC 判別、フォーカス / トラッキング調整
- OPE マイコンとデータ転送

この MAIN マイコンの電源投入後 RESET が解除してから再生までの動作をフローチャートにて示します。



8-1-2. Output Control Microprocessor (IC700:M38022)

Main operation features of this microprocessor is as follows.

- Power supply control : Power efficiency switching.
 - 3.3V line ON/OFF
 - 5.0V line ON/OFF
 - 9.0V line ON/OFF
- Out put selection of the OUTPUT PCB.
 - VIDEO output stage control
 - 21PIN SCART output signal selection
 - 21PIN SCART control signal selection (TV/DVD, SQUEEZE, RGB)
 - S-Video out S1 control
 - AUDIO output control
 - Output MUTE control
 - Feedback to the MAIN microprocessor
- OPERATION PCB
 - Operation Button key scan
 - Remote control code reading
 - FLD indication
 - LED indication
- Communication between MAIN microprocessor
 - Command transmission (by user controlable)
 - Data receiving for FLD/LED indication

8-2. TEST MODE

<How to set up the TEST MODE >

1. Remove any Disc from the tray, and turn OFF the mains power.
2. Turn ON the mains power while depress the "■" (STOP) and "||" (PAUSE) buttons together. Do not release buttons till FLD shows follows.

8-1-2. OUTPUT CONTROL マイコン (IC700: M38022)

OUTPUT CONTROL マイコンの主な処理内容は次の通りです。

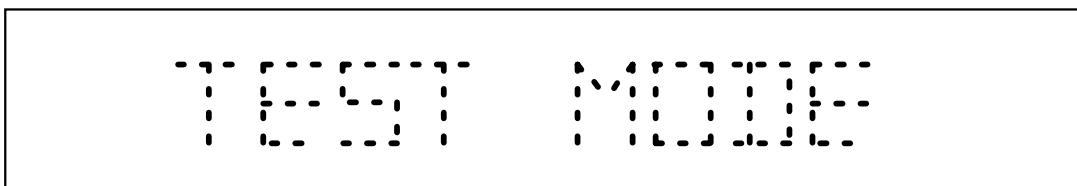
- 電源制御 : 電源効率切り替え
 - 3.3V 系の ON/OFF
 - 5.0V 系の ON/OFF
 - 9.0V 系の ON/OFF
- OUTPUT 基板の出力切り替え制御
 - VIDEO 出力段制御
 - 21PIN SCART 出力信号切り替え
 - 21PIN SCART 制御線出力切り替え (TV/DVD, SQUEEZE, RGB)
 - S 端子出力 S1 制御出力切り替え
 - AUDIO 出力制御
 - 出力 MUTE 制御
 - MAIN マイコンに情報供給
- OPERATION 基板
 - 本体タクトキーの読み込み
 - リモコンキーの読み込み
 - FLD 表示
 - LED 表示
- MAIN マイコンとの情報交換
 - タクトキー / リモコンキー入力の伝達
 - FLD/LED に表示させる為のデータの受信

8-2. テストモード

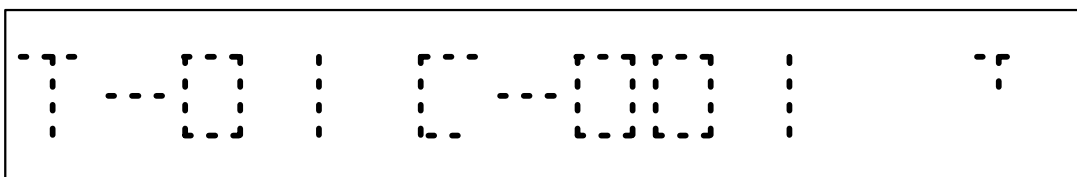
<テストモード設定方法>

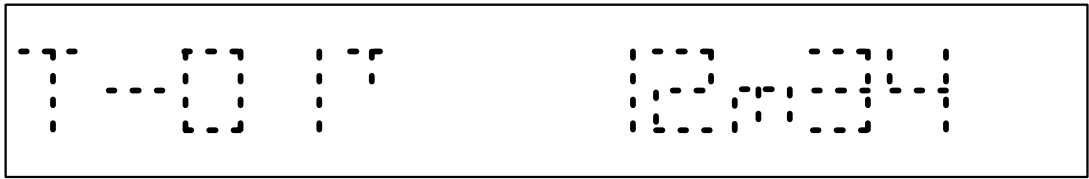
1. トレイにディスクがないことを確認し、電源を切りま
- す。
2. フロントパネルの"■"(STOP)と"||"(PAUSE)ボタンを同時に押しながら電源を入れます。この時ボタンは5秒以上押し続けて下さい。フロントパネルのFLD表示は次のようになります。

In case of no DISC / ディスク無しの場合



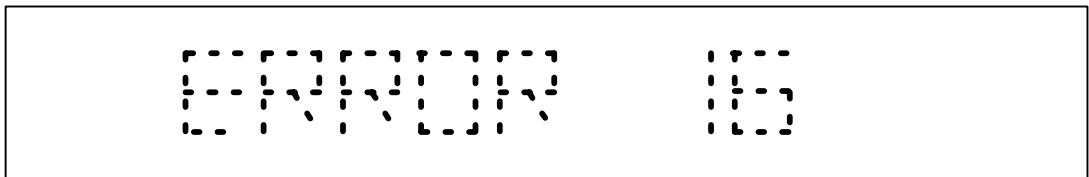
While DVD Video playback / DVD ディスク再生時





In case of some fault has happened. (caused with communications between CPU: IC600 and related IC's) Some Error code is shown on the FLD. Each Error codes are described on the table 8-1.

この時、シスコン内で動作不良が発生した場合 (CPU : IC600 が各接続先 ICとのアクセスに異常があった場合)、フロントパネルのFLD上にエラーコードを表示します。そのコード内容は、表 8-1 を参照下さい。



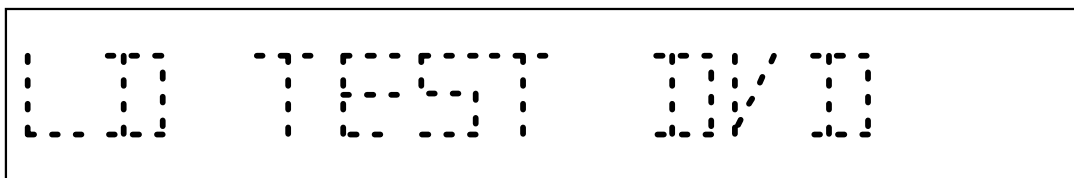
ERRR CODE	ERRR DESCRIPTION / 内容	DISC
16	No access with CD-DSP (IC490). CD-DSP(IC490)へのアクセスが出来ない	D/V/C
17	Sledge motor is not working. スレッドモータが駆動しない	D/V/C
18	Tracking ON error. トラッキングがオン出来ない	D/V/C
19	Focus ON error. フォーカスがオン出来ない	D/V/C
20	Sub code read error. (CD/VCD) CD, VCD のサブコードが読めない	V/C
32	No access with Servo-DSC (IC300). サーボ DSC(IC300)へのアクセスが出来ない	D/V/C
33	No access with DEM/ECC (IC500). DEM/ECC(IC500)のアクセスが出来ない	D/V/C
34	No access with A/V decoder (IC700). A/V デコーダ (IC700)とのアクセスが出来ない	D/V/C
35	No access with system ROM (IC602). システム ROM(IC602) とのアクセスが出来ない	D/V/C
36	No access with EEPROM(IC603). EEPROM(IC603)とのアクセスが出来ない	D/V/C
37	No access with A/V encoder (IC850). A/V エンコーダ (IC850)とのアクセスが出来ない	D/V/C
38	No access with Read channel (IC200). リードチャンネル(IC200)へのアクセスが出来ない	D/V/C

表 8-1. / Table 8-1.

D : DVD, V : Video CD, C : CD

3. Press the "■" (STOP) button while close the disc tray without any disc. Then all segments of the FLD right ON.

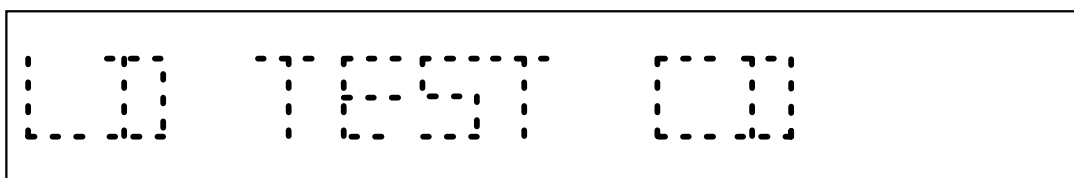
4. Press the "■" (STOP) button again. The FLD indication shows below. Then the laser diode for DVD will right ON.



3. ディスクが入れずにトレイを閉じた状態からフロントパネルの"■" (STOP) ボタンを押すとフロントパネルの FLD が全点灯状態となり、FLD 表示の確認が行えます。

4. 再度、"■" (STOP) ボタンを押すと下図の表示がされ、DVD のレーザーダイオードのみの点灯となり DVD のレーザーパワーの確認が行えます。

5. Press the "■" (STOP) button again. The FLD indication shows below. Then the laser diode for CD will right ON.



5. 更に、"■" (STOP) ボタンを押すと下図の表示がされ、CD のレーザーダイオードのみの点灯となり CD のレーザーパワーの確認が行えます。

6. Press the "■" (STOP) button again. Then the TEST MODE back to the first step.

7. Press the "▶▶" (Forward Search) button while close the disc tray without any disc. Then the sledge motor will move.

8. Turn OFF the mains power. Then service mode will be released.

6. フロントパネルの"■" (STOP) ボタンを押すことによりテストモードの初期状態に戻ります。

7. トレイにディスクが入っていない状態で、フロントパネルの"▶▶" (Forward Search) ボタンを押すことにより スレッドモータの動作確認が出来ます。

8. 電源を切りテストモードを解除します。

8-3. EEPROM initialize

The memory device (EEPROM) which used in this DVD player is programmed each functions by products regions at factory. When that EEPROM (MAIN P.C. Board IC602 : M24C16-MN6T) or MAIN P.C. Board has exchanged, EEPROM initialization is necessary. If that the initialization will not be done correctly, the product might not be work correctly.

The initialize procedure are as follows.

- Remove any Disc from the tray, and turn OFF the mains power.
Turn ON the mains power while depress the "■" (STOP) and "▶▶" (Forward skip) buttons together. Do not release buttons till FLD shows "A-01 D-XX". (XX = is depended on EEPROM status)
REMARK : In case of some failure with the product. The ERROR code will be shown on the FLD and above indication will not be shown. Then other confirmation or repair is necessary before this EEPROM initialization.
- The address shown as "A-01 D-XX" is can be changed by pressing "▶▶" and "◀◀" buttons on the front panel or remote controller. Which can be changed to "0" till "07". (Address "00" is not available.)
"▶▶" (Forward skip) button : Address UP
"◀◀" (Reverse skip) button : Address DOWN
- The DATA shown as "XX" is can be changed by pressing "||" and "■" buttons on the front panel or remote controller. Set up data are shown in following table.
"||" (PAUSE) button : Data UP
"■" (STOP) button : Data DOWN
- Press the "DIMMER" button, then address data will be memorize.
- Memorize data by each address (from "01" to "07"), as order 2., 3. And 4. processes.
- Turn OFF the mains switch. (This procedure is necessary for next procedure.)

8-3. EEPROMの初期設定

本機に搭載しているメモリーデバイス EEPROM には機能・仕分けの設定情報が出荷時に記憶されています。従って、この EEPROM (MAIN P.C. Board 内IC602 : M24C16-MN6T) または MAIN P.C. Board を交換した際は初期設定が必ず必要となります。設定していない場合正常な動作をしないことがありますのでご注意ください。次に設定手順を示します。

- トレイにディスクがないことを確認して電源を切ります。
フロントパネルの "■" (STOP) と "▶▶" (Forward skip) ボタンを同時に押しながら電源を入れます。このときボタンは5秒以上押し続けて下さい。
フロントパネルの FLD 表示が " A-01 D-yz " となります。
表示の " yz " は、EEPROM の状態により異なっています。
注 : この時、シスコン内で動作不良が発生した場合、8-1. テストモードの項で説明したエラーコードがフロントパネルの FLD 上に表示され上記初期設定表示はしません。問題を解決してから初期設定を行って下さい。
- フロントパネルまたはリモートコントロールの "▶▶" と "◀◀" ボタンにて " A " (Address) のナンバーを " 01 " (" 07 " 迄) に設定します。但し、Address の " 00 " 設定は出来ません。
"▶▶" (Forward skip) ボタン : Address 番号がひとつ上がります。
"◀◀" (Reverse skip) ボタン : Address 番号がひとつ下がります。
- フロントパネルまたはリモートコントロール "||" または "■" ボタンにて " D " (Data) 番号 " yz " を下表に従って設定します。
"||" (PAUSE) ボタン : Data 番号がひとつ上がります。
"■" (STOP) ボタン : Data 番号がひとつ下がります。
- 上記設定項目 2 と 4 項の各 Address 設定時フロントパネルの " DIMMER " ボタンを押して記憶させて下さい。
- Address 番号が " 07 " まで上記設定項目 2, 3, 4 を行って下さい。
- 電源を切ります。次の項目に進む前に必ず一旦電源を切ってください。

Address	Data				
	U1B	F1N	N1B	S1G	K1G
01	E1	E9	F7	E7	E7
02	30	30	70	30	30
03	00	08	00	00	06
04	53	50	00	00	00
05	55	4A	00	00	00
06	C5	C5	C5	C5	C5
07	A9	A9	A9	A9	A9

7. Turn ON the mains power while depress the " **DIMMER** " and " **⏪** " (Reverse skip) buttons together. Then the FLD shows " - - - - - ".
 8. Send the commands " **1999** " by the remote controller. (Press buttons " **1** ", " **9** ", " **9** " and " **9** ".) Then the FLD shows " **A-00 D-XX** ". (XX = is depended on EEPROM status)
 9. Send the commands " **D-XX** " (Data) as your product version shows in following table by the remote controller.
7. フロントパネルの " **DIMMER** " と " **⏪** " (Reverse skip) ボタンを同時に押しながら電源を入れて下さい。フロントパネルの FLD 表示が " - - - - - " となります。
 8. リモートコントロールにて 4 桁の番号 " **1999** " を入力します。フロントパネルの FLD 表示が " **A-00 D-yz** " となります。このとき " **yz** " の番号は EEPROM の状態によって異なります。
 9. リモートコントロールにて " **D** " (**Data**) 番号に次の表の 2 桁の数字を入力します。

	U1B	F1N	N1B	S1G	K1G
Data	01	02	02	04	20

10. Press the " **ENTER** " button, then address data will be memorize and the FLD shows a data number which you stored. (EX: " **D-02** ")
 11. Turn OFF the mains switch, then EEPROM initialization mode will be release.
10. リモートコントロールの " **ENTER** " ボタンを押すことによってデータが記憶されます。また、フロントパネルの FLD 表示が " **D-02** " 等の上表で入力した番号が表示されます。
 11. 電源を切りテストモードを解除します。

9. ELECTRICAL ADJUSTMENT

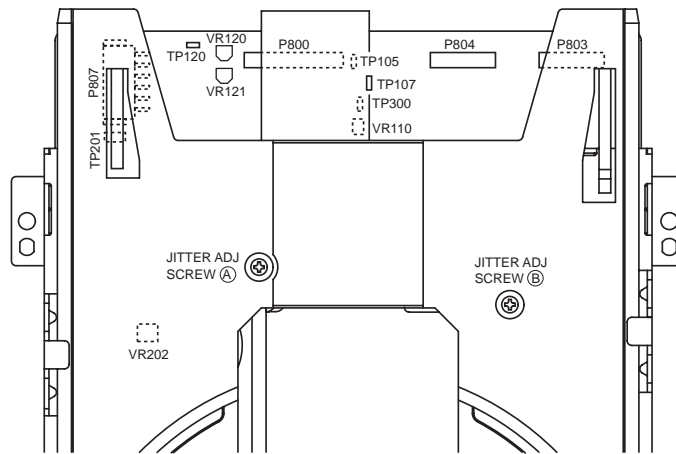


Fig. 9-1

9-1. DVD JITTER ADJUSTMENT

1. Stick the provided small round sticker (0.1 mm thickness) at the innermost position of a DVD disc as shown and make a swayed DVD disc.

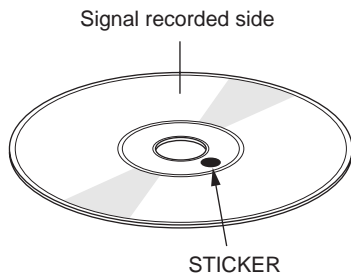


Fig. 9-2

2. Play back the swayed DVD disc and press the F.F button repeatedly until the pickup block reaches the outermost position of its movable range. Next, press the PAUSE button.
3. Set the oscilloscope to the DC input mode and connect it to the TP201 (HOT) and the TP102 (D.GND) on the MAIN PCB.
4. Adjust the a screw and b screw alternately so that the AC and DC level of the waveform is minimum. (DC level should be less than 1.8 V, AC component should be minimum.)

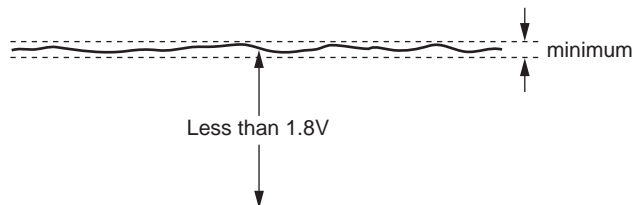


Fig. 9-3

NOTE: If the SPINDLE MOTOR is replaced, this jitter adjustment should be performed for proper performance.

9-2. SLICE LEVEL ADJUSTMENT

1. Play back an ordinary DVD disc (single side, one layer) and press the F.F button repeatedly until the pickup block reaches almost the center position of its movable range.

2. Set the oscilloscope to the DC input mode and connect it to the TP201 (HOT) and the TP102 (D.GND) on the MAIN PCB.
3. Adjust the VR202 so that the DC level is minimum. (The DC level should be less than 1.8 V)

9-3. CD TRACKING BALANCE

1. Set the VR110 at its center position prior to the adjustment.
2. Connect an oscilloscope to the TP150 (TE) on the MAIN PCB.
3. Play back an ordinary CD-disc and then set it to the PAUSE mode. If the play mode does not be engage, turn the VR110 at ± 15 degrees. If the play mode does still not be engage even when the VR110 is turned at ± 15 degrees, turn the VR110 at ± 30 degrees and try it again.
4. Observe the waveform and adjust it so that the level A of the waveform is the same as level B.

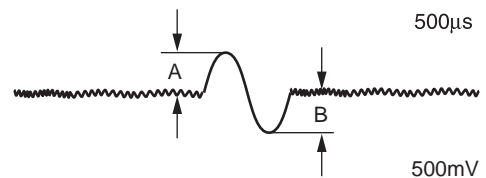


Fig. 9-4

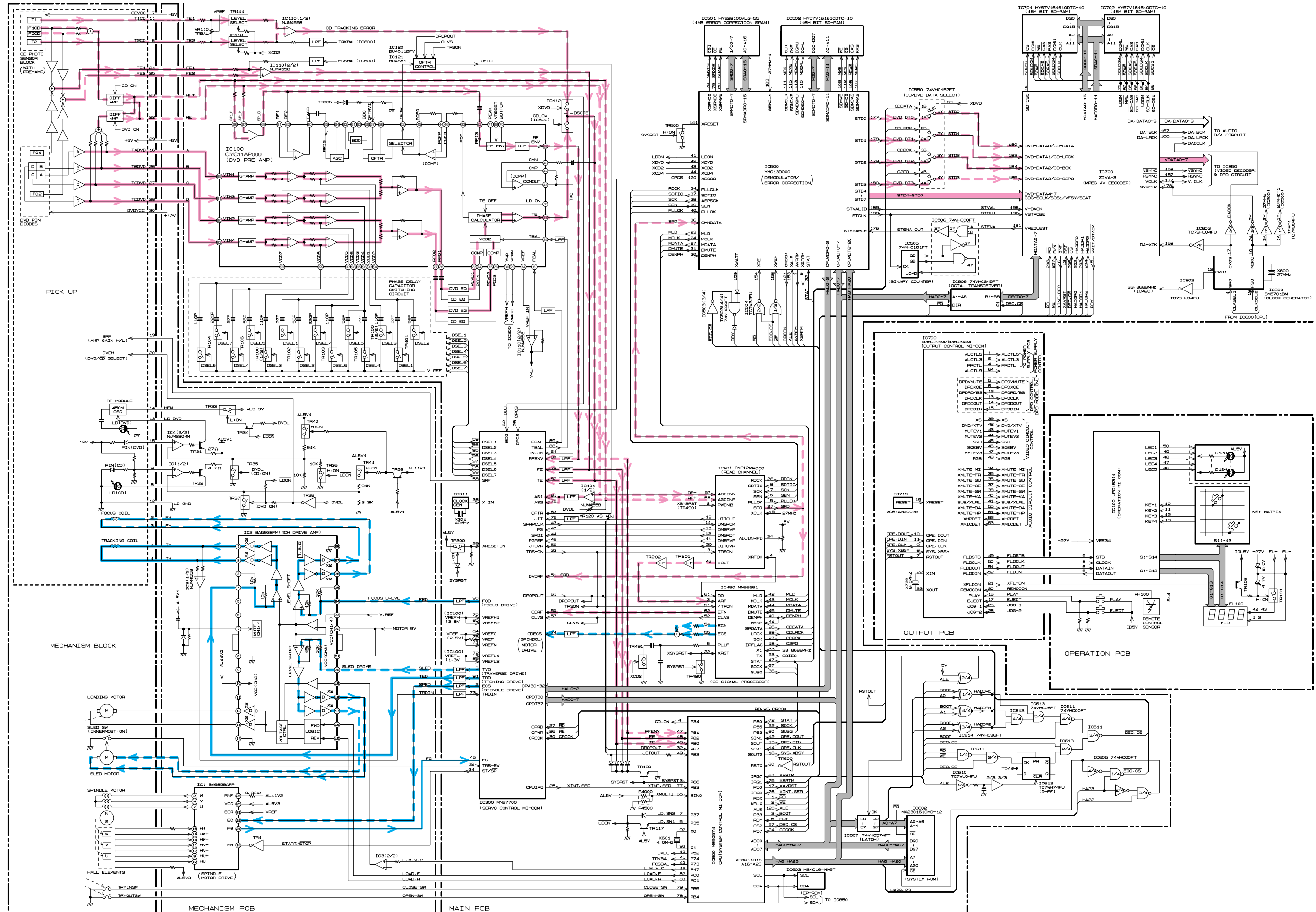
9-4. AS ADJUSTMENT

Adjustment point : VR120

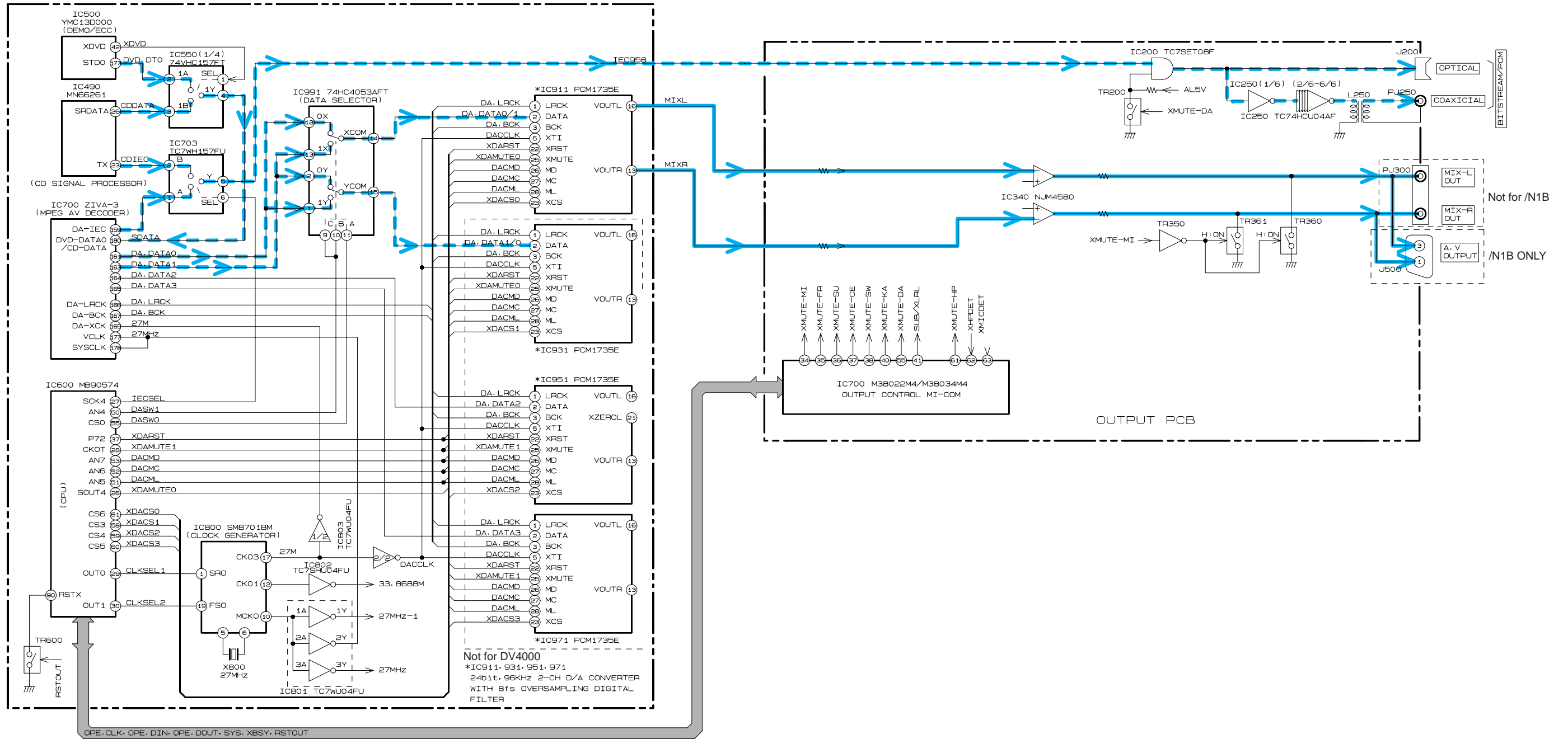
Test point : TP120

1. Turn ON the mains power while depress the "■" (STOP) and "II" (PAUSE) buttons together. (TEST MODE)
2. Connect the multi meter to test point TP120. Set the multi meter in DC voltage mode.
3. Press the "■" (STOP) button several times till the FLD shows "LD TEST CD". Measure the voltage at that status.
4. Press the "■" (STOP) button several times till the FLD shows "LD TEST DVD".
5. Adjust the voltage at that status 50mV lower than "LD TEST CD" status by the trim resistor VR120.

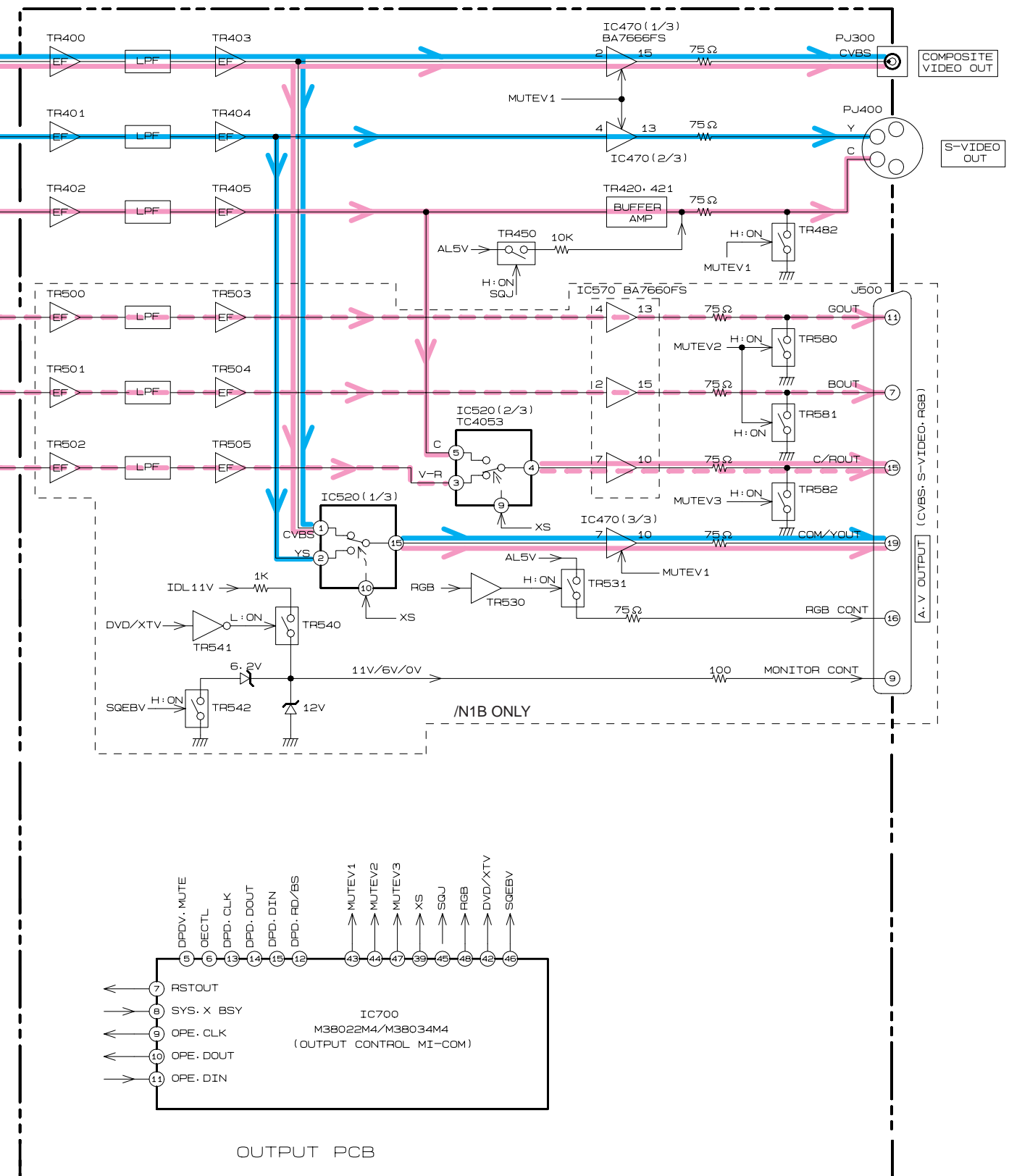
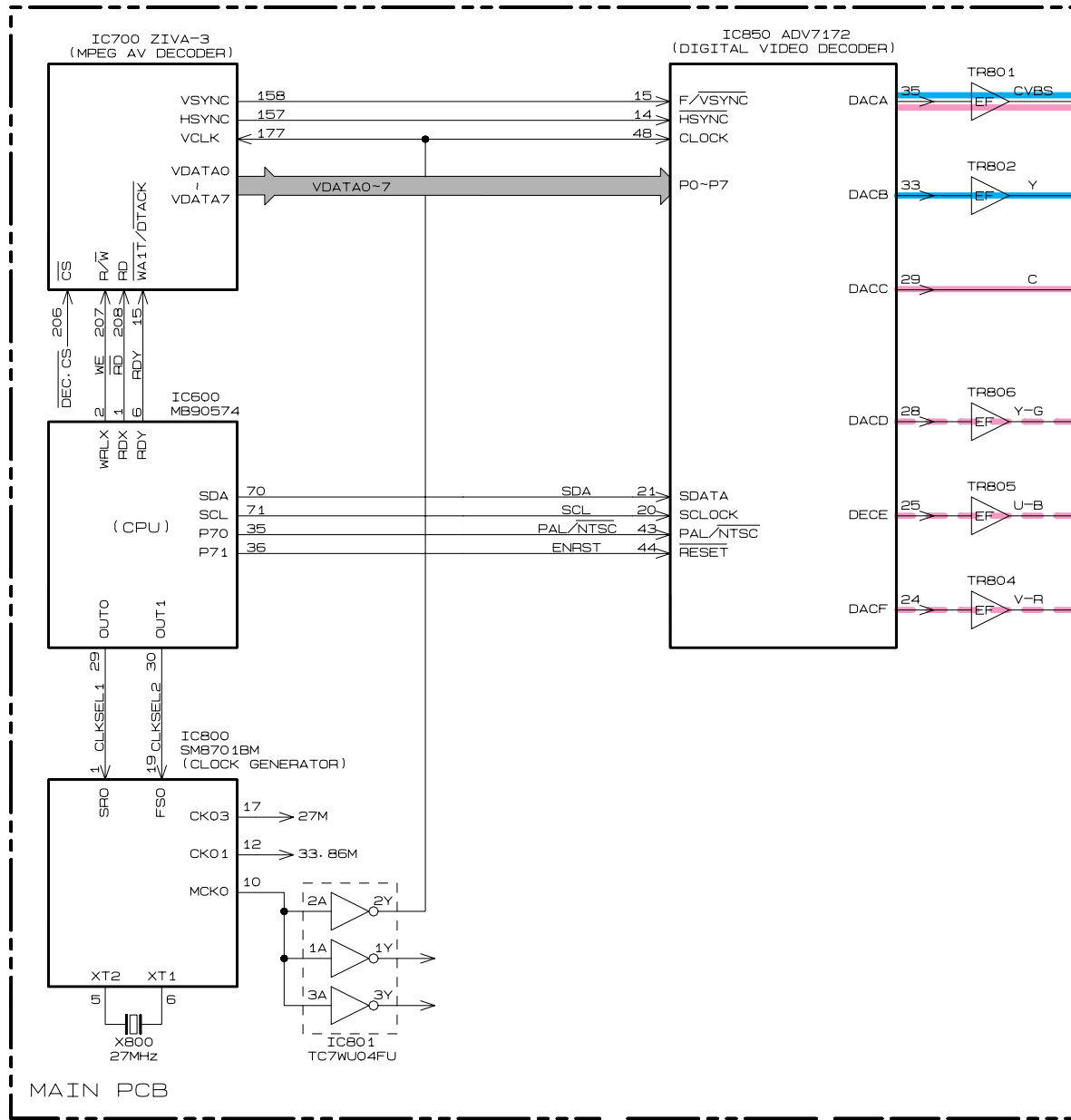
10. BLOCK DIAGRAM RF / SERVO / SYSCON



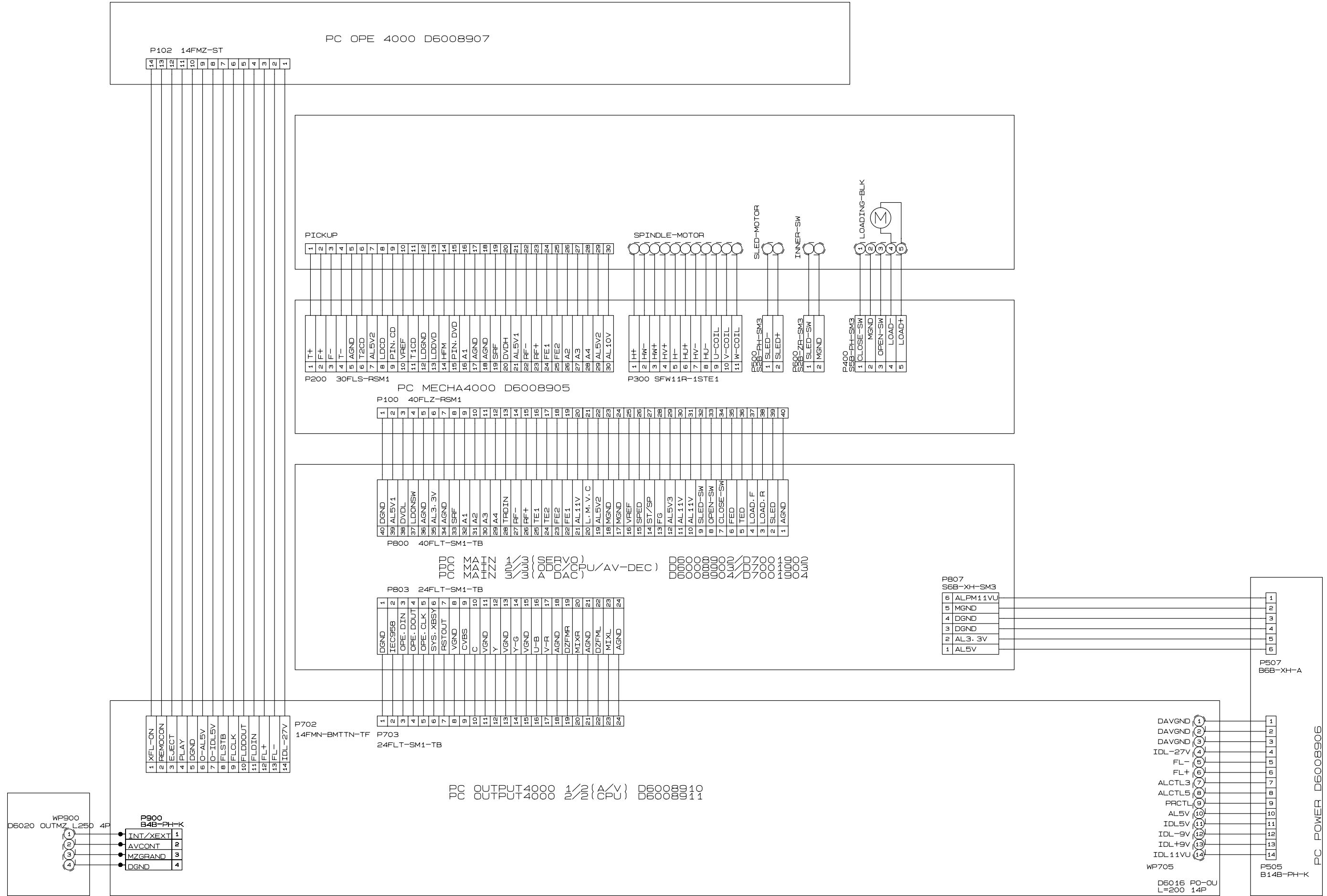
AUDIO



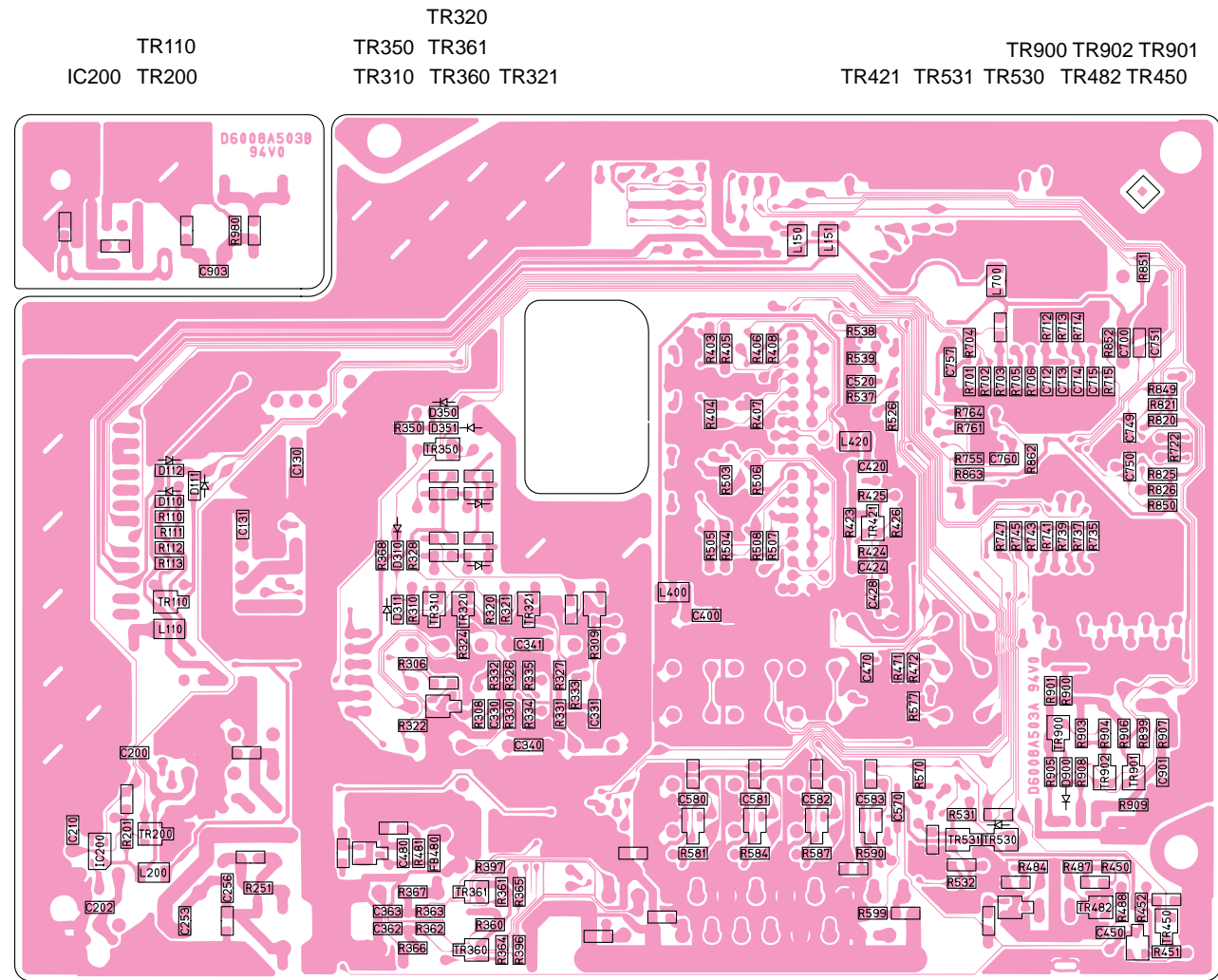
VIDEO



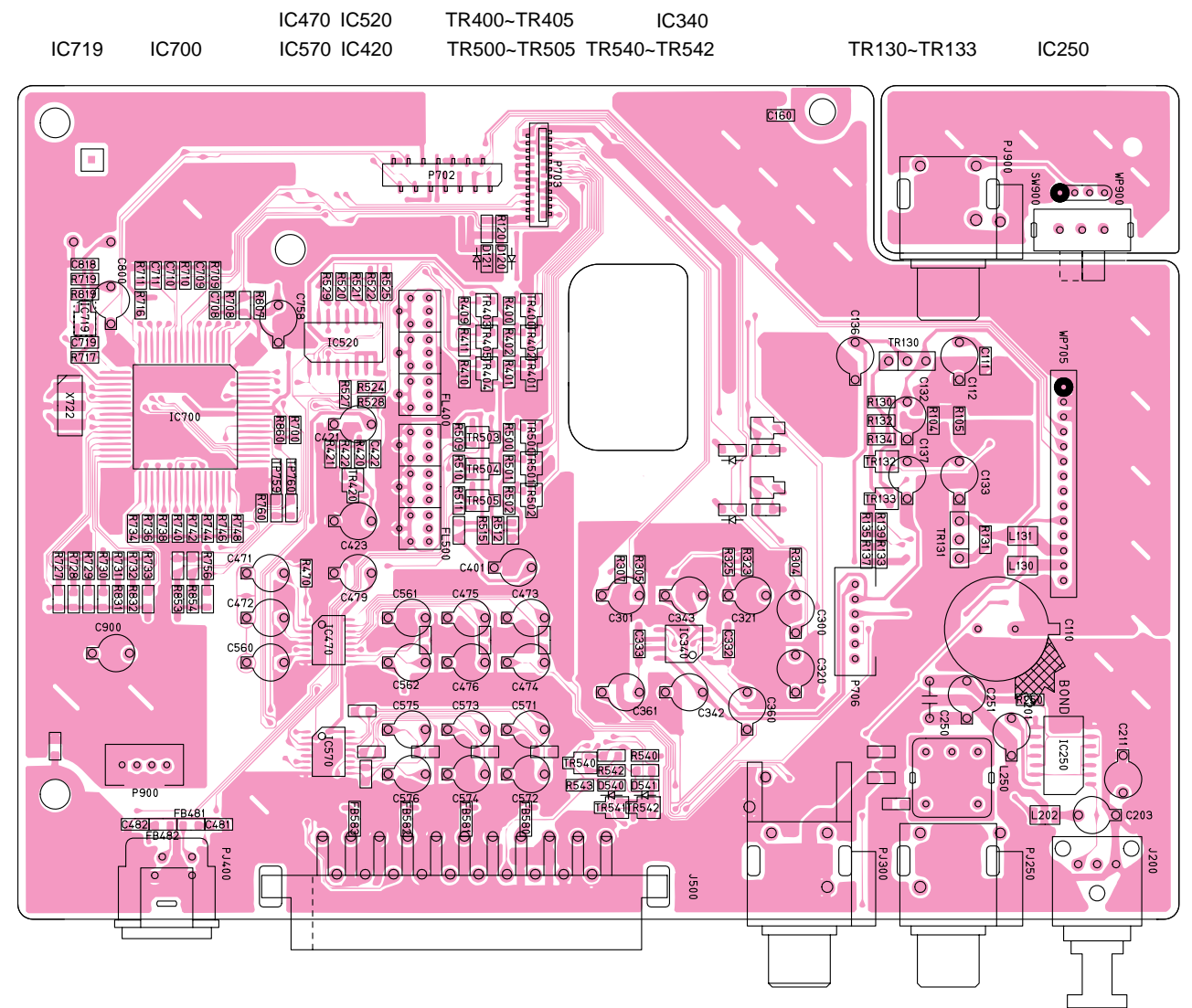
11. WIRING DIAGRAM



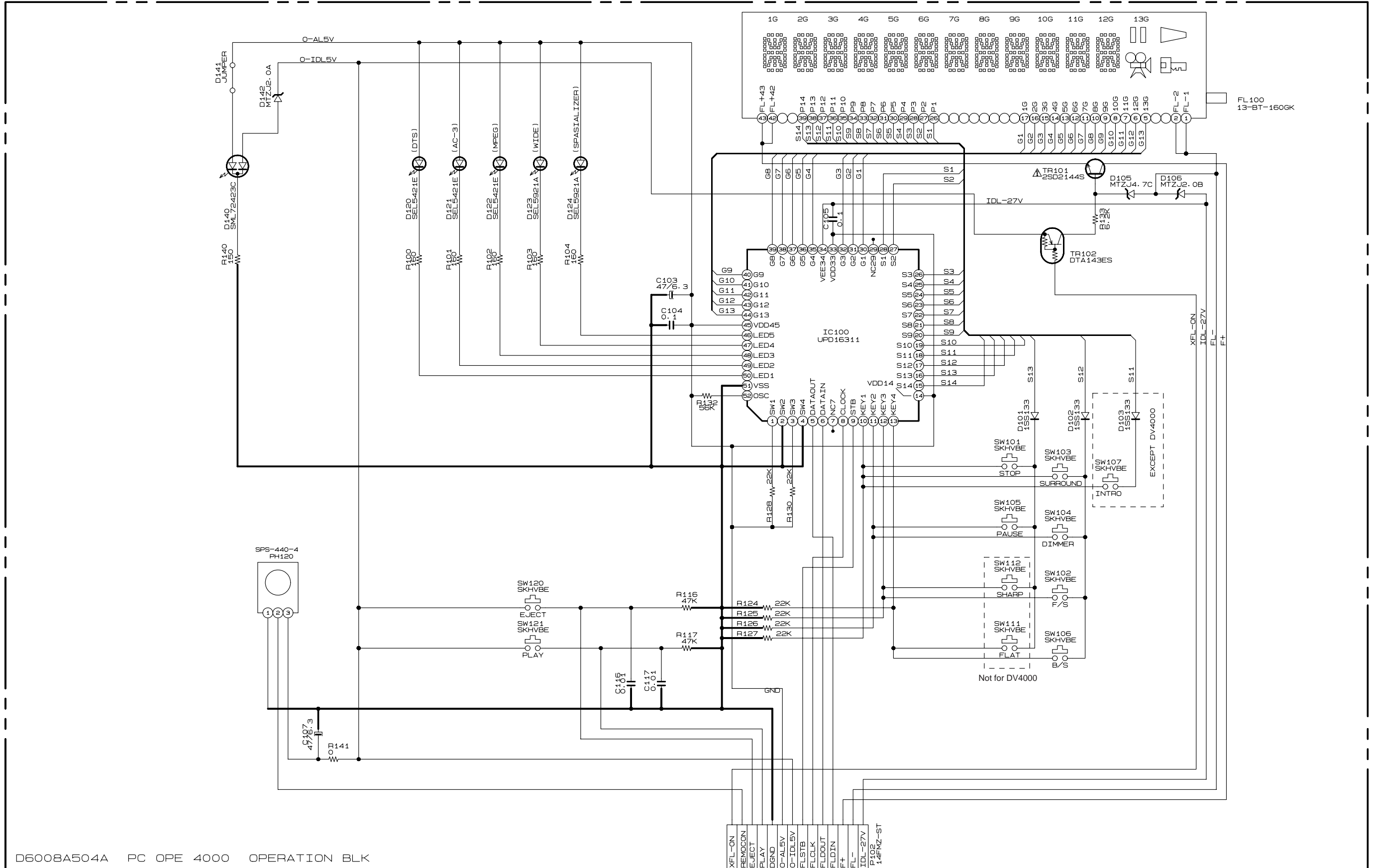
OUTPUT TOP VIEW



OUTPUT BOTTOM VIEW



OPERATION

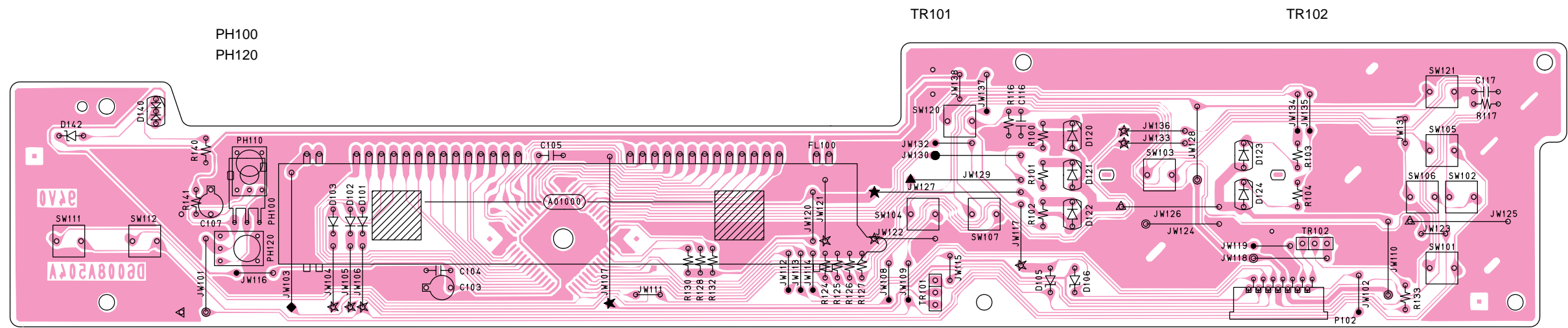


D6008A504A PC OPE 4000 OPERATION BLK

WARNING : TOXIC >ZINQ >FLUX >HTC >S >O4 >IM >N >IN >SD >I >N >D >I >O >C >A >T >E >C >R > >O >O >E >O >X >O >I >N >S >A >F >E >T >Y >C >H >I >L >I >N >G >E >R >E >S >O >O >R >R >I >T >I >O >N >I >C >A >L >R >E >S >I >T >O >F >F >I >R >E >S >Z >I >N >C >H >E >M >I >Z >I >O >S >R >E >D

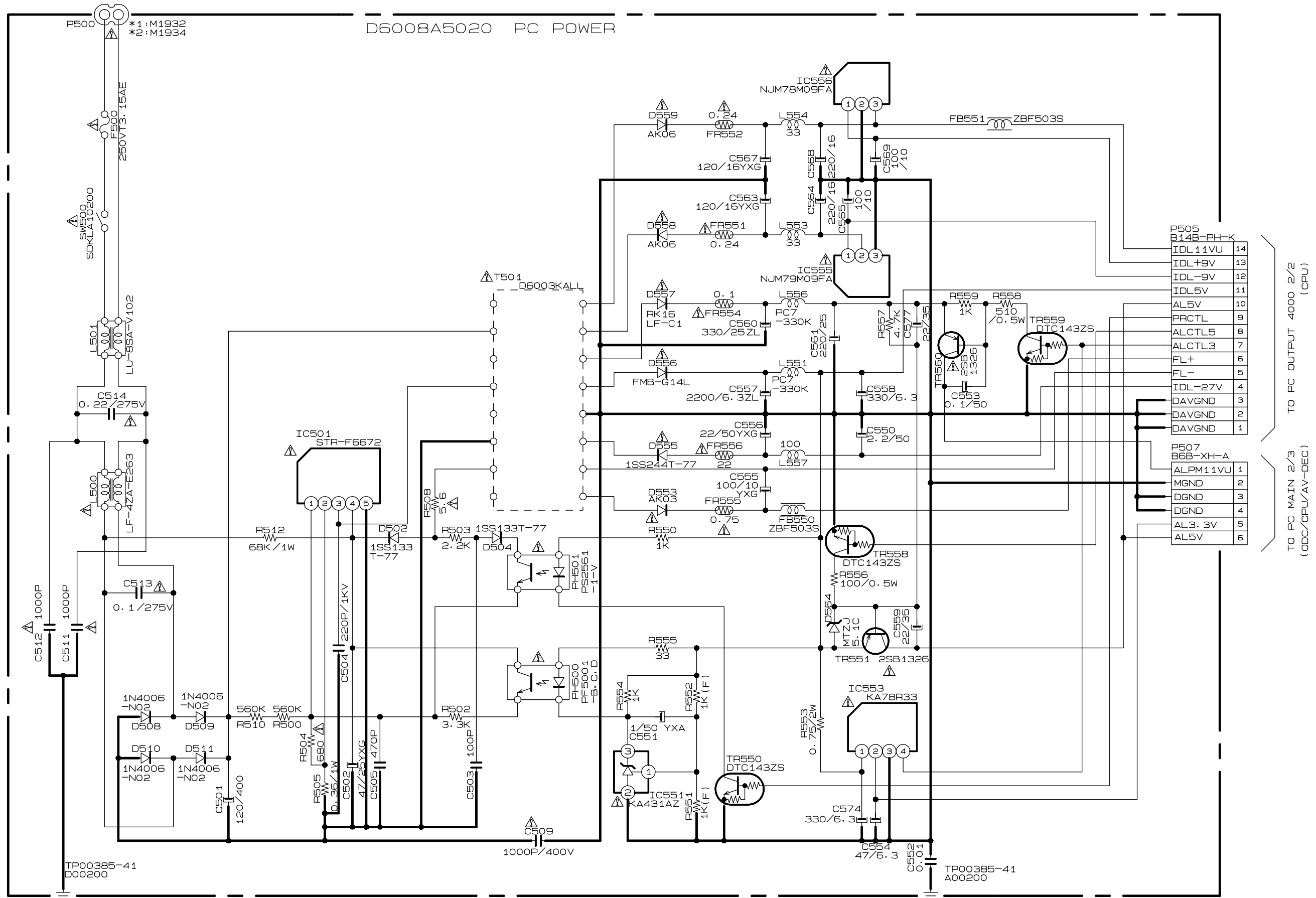
>CZ >FLZ >FLT >RIM >ORS >AS >O >ST >I >O >E >R >R >S >I >S >E >O >S >T >I >T >M >S >O >I >F >I >E >D >W >V

OPERATION



POWER

D6008A5020 PC POWER



P505 B14B-PH-K	
IDL11VU	14
IDL+9V	13
IDL-9V	12
IDL5V	11
AL5V	10
PRCTL	9
ALCTL5	8
ALCTL3	7
FL+	6
FL-	5
IDL-27V	4
DAVGND	3
DAVGND	2
DAVGND	1
P507 B6B-XH-A	
ALPM11VU	1
MGND	2
DGND	3
DGND	4
AL3.3V	5
AL5V	6

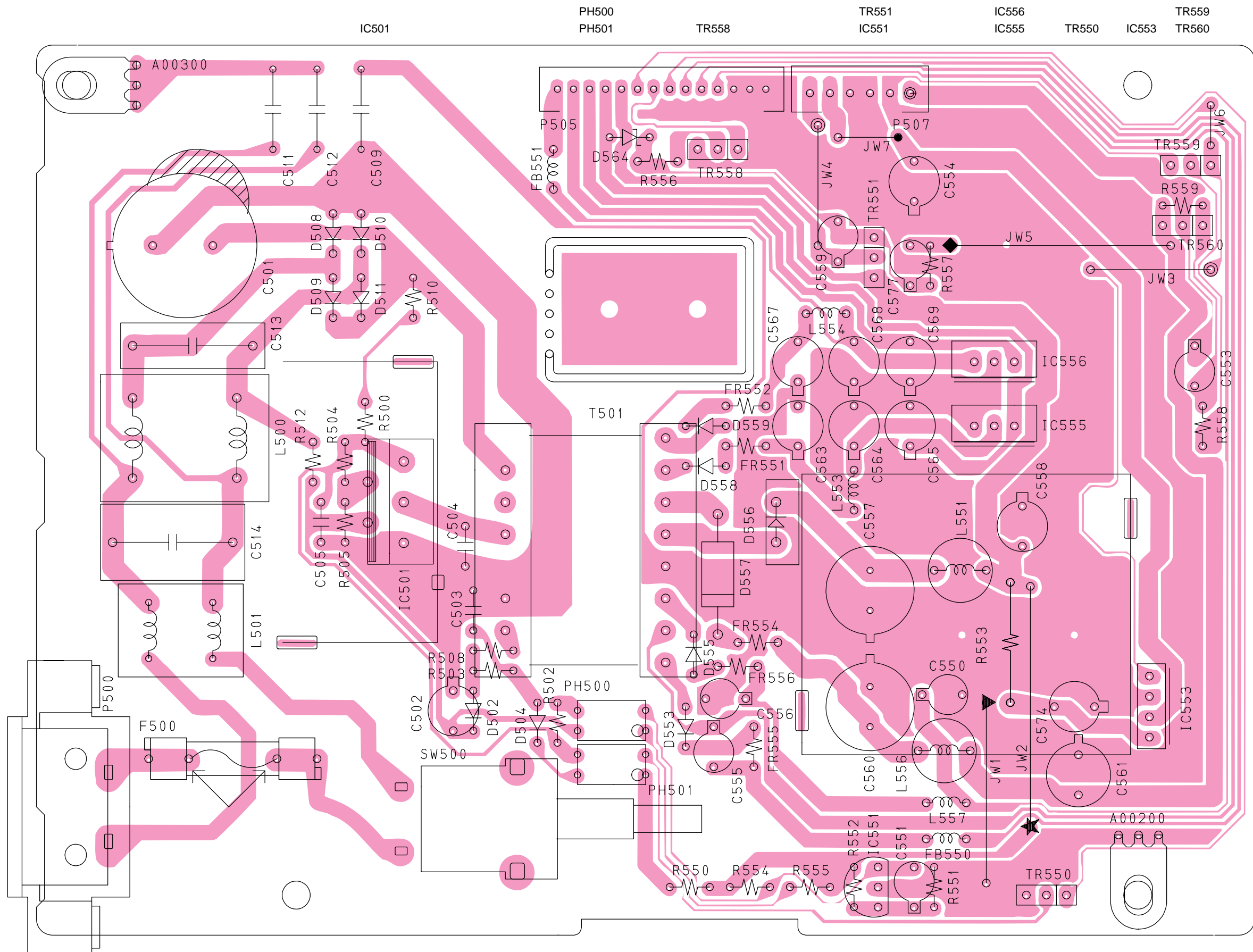
TO PC OUTPUT 4000 2/2 (CPU)

TO PC MAIN 2/3 (ODC/CPU/AV-DEC)

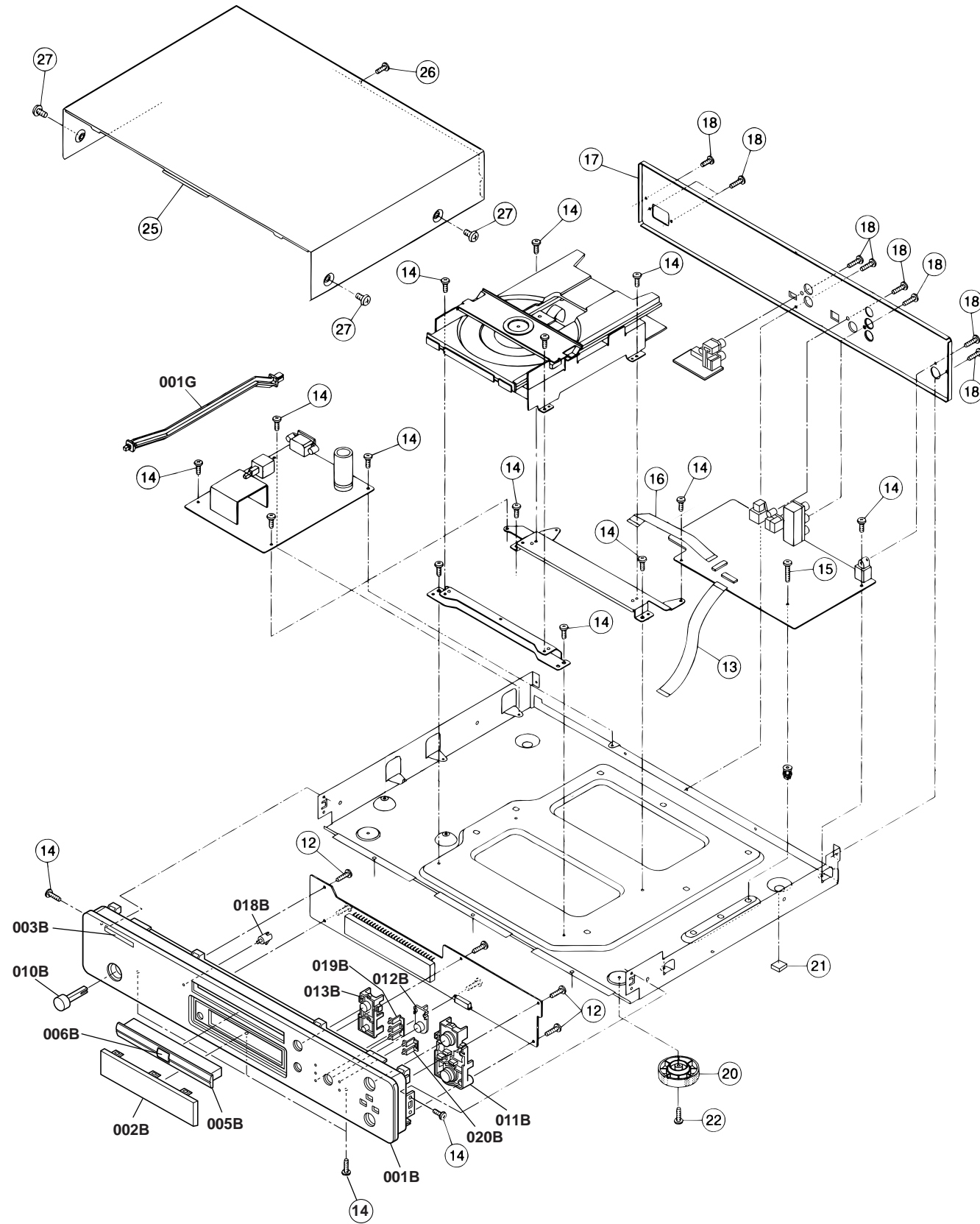
NOT ALL RES OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS (1/4W)
 ALL ALUMINUM ELECTROLYTIC CAPACITORS IN μ F/V

WARNING: THIS DOCUMENT IS UNCLASSIFIED AND IS NOT TO BE RELEASED TO THE PUBLIC WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE MANUFACTURER'S COMPANY.

POWER



13. EXPLODED VIEW AND PARTS LIST



(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
001B	/F1N,/S1 G,/K1G		PANEL FRONT (GLD)HB	294W248110	001T	/F1N		PACKING USER GUIDE (JPN)	294W851110
001B	/U1B		PANEL FRONT (BLK)V2	294W248020	001T	/K1G		USER GUIDE (ENG/CHINA)	294W851350
001B	/N1B	9965 000 04731	PANEL FRONT (BLK)HB	294W248010	001T	/N1B	9965 000 04748	USER GUIDE (5LANGUAGE)	294W851310
002B		9965 000 04735	WINDOW FLD	294W158010	001T	/S1G		USER GUIDE (ENG/CHINA)	294W851350
003B		4822 454 11825	BADGE MARANTZ	185J251010	001T	/U1B		USER GUIDE (ENG/Fran)	294W851250
005B	/F1N,/S1 G,/K1G		PANEL TRAY (GLD)	294W053110	001Z		9965 000 04746	REMOTE CONTROLLER RC4000DV	ZK294W0010
005B	/U1B	9965 000 04745	PANEL TRAY (BLK)	294W053010	002Z	/N1B	nsp	CORD 21P YAF11-0642 1.5M	nsp
006B	/F1N,/S1 G,/K1G		PLATE DVD (GLD)	294W251110		/F1N		MAINS CORD (JPN)	*YC000420R
006B	/U1B	9965 000 04736	PLATE DVD (BLK)	294W251010		/U1B		MAINS CORD (USA)	*YC000430R
010B	/F1N,/S1 G,/K1G		BUTTON POWER (GLD)	294W270110		/N1B	9965 000 04747	MAINS CORD (EUR/S-pore)	*YC000410R
010B	/U1B	9965 000 04743	BUTTON POWER (BLK)	294W270010		/S1G			
011B	/F1N,/S1 G,/K1G		BUTTON PLAY (GLD)	294W270120		/K1G		MAINS CORD (CHINA)	*YC000440R
011B	/U1B	9965 000 04732	BUTTON PLAY (BLK)	294W270020					
012B	/F1N,/S1 G,/K1G		BUTTON SURROUND (GLD)	294W270130					
012B	/U1B	9965 000 04733	BUTTON SURROUND (BLK)	294W270030					
013B	/F1N,/S1 G,/K1G		BUTTON EJECT (GLD)	294W270140					
013B	/U1B	9965 000 04734	BUTTON EJECT (BLK)	294W270040					
018B		9965 000 04737	LENS POWER	294W355010					
019B		9965 000 04738	LENS DTS	294W355020					
020B		9965 000 04739	LENS WIDE	294W355030					
001G		9965 000 04744	JOINT POWER	294W357010					
12		nsp	BT BID26X08STL CMT	nsp					
13		9965 000 04740	FFC BD P1.0 L230 14P	*YU000590R					
14		nsp	ST BID30X06STL CMT	nsp					
15		nsp	BT BID30X14STL NI3	nsp					
16		9965 000 04741	FFC BD P0.5 L160 24P	*YU000620R					
17	/F1N	nsp	PANEL REAR DV4000 (J) (CH)	nsp					
17	/U1B	nsp	PANEL REAR DV4000(A) (CH)	nsp					
17	/N1B	nsp	PANEL REAR DV4000 (E) (CH)	nsp					
17	/S1G	nsp	PANEL REAR DV4000(U5) (CH)	nsp					
17	/K1G	nsp	PANEL REAR DV4000(Y4) (CH)	nsp					
18		nsp	BT BID30X08STL BZN	nsp					
20		9965 000 04742	FOOT	294W057010					
21		nsp	CUSHION FOOT 12X12X2 (CH)	nsp					
22		nsp	ST BID30X10STL CMT	Nsp					
25	/F1N,/S1 G,/K1G		COVER UPPER (G) (CH)	nsp					
25	/U1B	nsp	COVER UPPER (B) (CH)	nsp					
25	/N1B								
26		nsp	BT BID30X08STL BZN	nsp					
27	/F1N,/S1 G,/K1G		ST BID40X06STL COP CLEAR	nsp					
27	/U1B	nsp							
27	/N1B		ST BID40X06STL BZN	Nsp					

14. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R*** : 1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
 R*** : 2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W

Examples

- ① Resistance value
- 0.1Ω 001 10Ω 100 1kΩ 102 100kΩ 104
- 0.5Ω 005 18Ω 180 2.7kΩ 272 680kΩ 684
- 1Ω 010 100Ω 101 10kΩ 103 1MΩ 105
- 6.8Ω 068 390Ω 391 22kΩ 223 4.7MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C*** : CERAMIC CAP.

3) DD1 x x x x 370, Ceramic capacitor
 Disc type
 Temp.coef. P350~N1000, 50V

Examples

- ② Tolerance (Capacity deviation)
 - ±0.25 pF 0
 - ±0.5 pF 1
 - ±5 % 5
- Tolerance of COMMON PARTS handled here are as follows :
- 0.5 pF - 5 pF ± 0.25 pF
 - 6 pF - 10 pF ± 0.5 pF
 - 12 pF - 560 pF ... ± 5 %
- ③ Capacity value
 - 0.5 pF 005 3 pF 030 100 pF 101
 - 1 pF 010 10 pF 100 220 pF 221
 - 1.5 pF 015 47 pF 470 560 pF 561

C*** : CERAMIC CAP.

4) DK16 x x x 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V

Examples

- ④ Capacity value
- 100 pF 101 1000 pF 102 10000 pF 103
- 470 pF 471 2200 pF 222

C*** : 5) ELECTROLY CAP. (), 6) FILM CAP ()

5) EA x x x x x 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%

Examples

- ⑤ Capacity value
- 0.1 μF 104 4.7 μF 475 100 μF 107
- 0.33 μF 334 10 μF 106 330 μF 337
- 1 μF 105 22 μF 226 1100 μF 118
- 2200 μF 228
- ⑥ Working voltage
- 6.3 V 006 25 V 025
- 10 V 010 35 V 035
- 16 V 016 50 V 050

6) DF15 x x x 350 → Plastic film capacitor
 DF15 x x x 310 → One-way type, Mylar ±5% 50V
 DF16 x x x 310 → Plastic film capacitor
 One-way type, Mylar ±10% 50V

Examples

- ⑦ Capacity value
- 0.001 μF (1000 pF) 102 0.1 μF 104
- 0.0018 μF 182 0.56 μF 564
- 0.01 μF 103 1 μF 105
- 0.015 μF 153

NOTE 1) The above CODES(R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.
 2) On the occasion, be confirmed the common parts on the parts list.
 3) Refer to "Common Parts List" for the other common parts(RI05, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows ;

1 . KOA Corporation

Part No.(MJI)	Type No.(KOA)	Description
NH05 x x x 140	RF25S x x x x Ω	J ±5% (1/4W)
NH05 x x x 120	RF50S x x x x Ω	J ±5% (1/2W)
NH85 x x x 110	RF73B2A x x x x Ω	J ±5% (1/10W)
NH95 x x x 140	RF73B2E x x x x Ω	J ±5% (1/4W)

* Resistance value Resistance value(0.1Ω - 10k Ω)

2. Matsushita Electronic Components Co., Ltd

Part No.(MJI)	Type No.(MEC)	Description
NF05 x x x 140	ERD-2FCJ x x x	(±5% 1/4W)
RF05 x x x 140	ERD-2FCG x x x	(±2% 1/4W)
NF02 x x x 140		
RF02 x x x 140		



* Resistance value

Examples


- * Resistance value
- 0.1Ω 001 10Ω 100 1kΩ 102 100kΩ 104
- 0.5Ω 005 18Ω 180 2.7kΩ 272 680kΩ 684
- 1Ω 010 100Ω 101 10kΩ 103 1MΩ 105
- 6.8 Ω 068 390 Ω 391 22kΩ 223 4.7MΩ 475

ABBREVIATION AND MARKS	
ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X' TAL : CRYSTAL

NOTE ON SAFETY:

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol  Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			OPERATION CIRCUIT BOARD		▲ TR560		9965 000 04707	2SB1326 Q/R	*HT200380R
			DIODES					RESISTORS	
D101		9965 000 04668	1SS133T-77 T26	*HD201380R	▲ FR551		9965 000 04680	0.24 Ω ±10% 1/4W FUSE	*NH000110R
D102		9965 000 04668	1SS133T-77 T26	*HD201380R	▲ FR552		9965 000 04680	0.24 Ω ±10% 1/4W FUSE	*NH000110R
D105		9965 000 01138	MTZJ4.7C T26	*HD301820R	▲ FR554		9965 000 04681	0.1 Ω ±10% 1/4W FUSE	NH05001140
D106		4822 130 82609	MTZJ2.0B T26	*HD301780R	▲ FR555		9965 000 04682	0.75 Ω ±10% 1/4W FUSE	*NH000130R
D120		9965 000 04669	LED SEL5421ETP15	*HI100850R	▲ FR556		9965 000 04683	22 Ω ±5% 1/4W FUSE	*NH000120R
D121		9965 000 04669	LED SEL5421ETP15	*HI100850R	▲ R504		4822 050 26801	680 Ω ±5% 1/4W	GG05681140
D122		9965 000 04669	LED SEL5421ETP15	*HI100850R	R505		9965 000 04701	0.36 Ω ±5% 1W	*GA000180R
D123		9965 000 04670	LED SEL2910ATP6 ORANGE	HI10031080	▲ R508		9965 000 04702	5.6 Ω ±5% 1/4W	GG05056140
D124		9965 000 04670	LED SEL2910ATP6 ORANGE	HI10031080	R512		9965 000 04703	68K Ω ±5% 1W	GA05683010
D140		9965 000 04671	LED SPR325MVWT31	*HI100840R	R553		9965 000 04704	0.75 Ω ±5% 2W	*GA000170R
D142		9965 000 04672	MTZJ2.0A T26	*HD301760R					
			INTEGRATED CIRCUITS		▲ F500		9965 000 04684	FUSE 219 T 250V 3.15A	*FS000720R
IC100		4822 209 90244	IC UPD16311GC-AB6	HC10283060	▲ L500		9965 000 04693	COIL LF-4ZA-E263 26.0mH	*LC200120R
			TRANSISTORS		L501		9965 000 04694	COIL LU-8SA-V102 1.0mH	*LC200130R
PH120		9965 000 04674	IR SPS-440-4-E	*HW100460R	L551		9965 000 04695	COIL FIX 2 PC7 330K	*LC107270R
TR101		4822 130 61892	2SD2144S U/W/W	*HT400420R	L553		9965 000 04696	COIL FIX 1 EL0606RA 330J	LC13333000
TR102		4822 130 60889	DTA143ES	*BA000800R	L554		9965 000 04696	COIL FIX 1 EL0606RA 330J	LC13333000
			MISCELLANEOUS		L556		9965 000 04695	COIL FIX 2 PC7 330K	*LC107270R
FL100		9965 000 04673	FLD 13-BT-160GK	*HQ300410R	L557		9965 000 04697	COIL FIX 1 EL0606RA 101J	LC11043000
P102		nsp	SOCKET 14-FMZ-ST 14P	nsp	▲ PH500		9965 000 04698	PHOTO COUP. PF5001-B	*HC200080R
SW101		4822 276 20508	SW TACT SKHVBE	SP0101128X	▲ PH501		9965 000 04699	PHOTO COUP. PS2561-1-V	*HC200070R
SW102		4822 276 20508	SW TACT SKHVBE	SP0101128X	▲ P500A	/F1N,K1 G,/N1B /S1G	9965 000 04700	MAINS INLET M1932 1P	*YT001950R
SW103		4822 276 20508	SW TACT SKHVBE	SP0101128X	▲ P500B	/U1B		MAINS INLET M1934 1P	*YT001960R
SW104		4822 276 20508	SW TACT SKHVBE	SP0101128X	▲ SW500		9965 000 04705	SW PUSH SDKLA10200 01-1	*SP000990R
SW105		4822 276 20508	SW TACT SKHVBE	SP0101128X	▲ T501		9965 000 04708	TRANS MAINS D6003KALL	*TS001150R
SW106		4822 276 20508	SW TACT SKHVBE	SP0101128X					
SW120		4822 276 20508	SW TACT SKHVBE	SP0101128X					
SW121		4822 276 20508	SW TACT SKHVBE	SP0101128X					
			POWER CIRCUIT BOARD		D110		9965 000 04620	1SS355TE-17	*HD201320R
			CAPACITORS		D111		9965 000 04620	1SS355TE-17	*HD201320R
▲ C509		nsp	CER. 1000pF 400V	nsp	D112		9965 000 04620	1SS355TE-17	*HD201320R
▲ C511		nsp	CER. 1000pF 400V	nsp	D120		9965 000 04620	1SS355TE-17	*HD201320R
▲ C512		nsp	CER. 1000pF 400V	nsp	D121		9965 000 04620	1SS355TE-17	*HD201320R
▲ C513		nsp	MYLAR 0.1μF 275V	nsp	D350		9965 000 04620	1SS355TE-17	*HD201320R
▲ C514		nsp	MYLAR 0.22μF 275V	nsp	D351		9965 000 04620	1SS355TE-17	*HD201320R
			DIODES		D540	/N1B	9965 000 04709	UDZ6.2BTE-17	*HD301790R
D502		9965 000 04668	1SS133T-77 T26	*HD201380R	D541	/N1B	9965 000 04710	UDZ12BTE-17	*HD301800R
D504		9965 000 04668	1SS133T-77 T26	*HD201380R	D900		9965 000 04620	1SS355TE-17	*HD201320R
▲ D508		9965 000 04675	1N4006N02 800/1A	*HD201300R					
D509		9965 000 04675	1N4006N02 800/1A	*HD201300R	IC200		9965 000 04711	IC TC7SET08FTE85L	*HC105290R
D510		9965 000 04675	1N4006N02 800/1A	*HD201300R	IC250		9965 000 04713	IC TC74HCU04AF	*HC105310R
D511		9965 000 04675	1N4006N02 800/1A	*HD201300R	IC340		9965 000 04714	IC NJM4580M	*HC105240R
▲ D553		9965 000 04676	AK03V0 T26	*HD201310R	IC470		9965 000 04715	IC BA7666FS-E2	*HC105460R
▲ D555		9965 000 04677	1SS244T-77T26 250/0.2A	*HD201370R	IC520	/N1B	4822 209 83368	IC TC4053BF	HC405300Z0
▲ D556		5322 130 10293	FMB-G14L 40/5.0A	*HD201340R	IC570	/N1B	9965 000 04716	IC BA7660FS-E2	*HC105250R
▲ D557		9965 000 04678	RK16LF-C1 S15 60/1.5A	*HD201350R	IC700		9965 000 04717	IC M38034M4-053FP	*HC105510R
▲ D558		9965 000 04679	AK06V0 T26 60/0.7A	*HD201360R	IC719		9965 000 04718	IC XC61AN4002MR	*HC105410R
▲ D559		9965 000 04679	AK06V0 T26 60/0.7A	*HD201360R					
D564		4822 130 11643	MTZJ5.1C T26	*HD301770R					
			INTEGRATED CIRCUITS		TR110		4822 130 10982	2SA1037AK R/S	*HT100470R
▲ IC501		9965 000 04685	IC STR-F6672	*HC105280R	TR130		9965 000 04707	2SB1326 Q/R	*HT200380R
▲ IC551		9965 000 04686	IC KA431AZTA	*HC105270R	TR131		9965 000 04725	2SD2097 Q/R/S	*HT400430R
▲ IC553		9965 000 04687	IC KA278R33	*HC105260R	TR132		9965 000 04726	DTC143ZKA	*BA000840R
▲ IC555		9965 000 04692	IC NJM79M09FA	HC3950909F	TR133		9965 000 04727	DTA143ZKA	*BA000830R
▲ IC556		4822 209 33232	IC NJM78M09FA	HC3850909F	TR200		9965 000 04727	DTA143ZKA	*BA000830R
			TRANSISTORS		TR350		9965 000 04727	DTA143ZKA	*BA000830R
TR550		9965 000 04706	DTC143ZS	*BA000810R	TR360		9965 000 04728	2SD2114K	HX421141V0
▲ TR551		9965 000 04707	2SB1326 Q/R	*HT200380R	TR361		9965 000 04728	2SD2114K	HX421141V0
TR558		9965 000 04706	DTC143ZS	*BA000810R	TR400		4822 130 10982	2SA1037AK R/S	*HT100470R
TR559		9965 000 04706	DTC143ZS	*BA000810R	TR401		4822 130 10982	2SA1037AK R/S	*HT100470R
					TR402		4822 130 10982	2SA1037AK R/S	*HT100470R
					TR403		9965 000 04729	2SC2412K R/S	*HT300710R

(VERS. :VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
TR404		9965 000 04729	2SC2412K R/S	*HT300710R
TR405		9965 000 04729	2SC2412K R/S	*HT300710R
TR420		9965 000 04729	2SC2412K R/S	*HT300710R
TR421		9965 000 04729	2SC2412K R/S	*HT300710R
TR450		9965 000 04726	DTC143ZKA	*BA000840R
TR482		9965 000 04729	2SC2412K R/S	*HT300710R
TR500	/N1B	4822 130 10982	2SA1037AK R/S	*HT100470R
TR501	/N1B	4822 130 10982	2SA1037AK R/S	*HT100470R
TR502	/N1B	4822 130 10982	2SA1037AK R/S	*HT100470R
TR503	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR504	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR505	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR530	/N1B	9965 000 04726	DTC143ZKA	*BA000840R
TR531	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR540	/N1B	4822 130 10982	2SA1037AK R/S	*HT100470R
TR541	/N1B	9965 000 04726	DTC143ZKA	*BA000840R
TR542	/N1B	9965 000 04726	DTC143ZKA	*BA000840R
TR580	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR581	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR582	/N1B	9965 000 04729	2SC2412K R/S	*HT300710R
TR900		4822 130 10982	2SA1037AK R/S	*HT100470R
TR901		9965 000 04729	2SC2412K R/S	*HT300710R
TR902		9965 000 04729	2SC2412K R/S	*HT300710R
MISCELLANEOUS				
J200		4822 267 31369	SOCKET OPTICAL GP1F32T	YJ15000090
J500	/N1B	9965 000 04719	SCART YKF41-5021 21P	*YT001970R
L250		9965 000 04720	TRANS PULSE TC-1027-04	*TP000030R
PJ250		9965 000 04721	RCA JACK HSP-241V1B (1P)	*YT002000R
PJ300	/F1N,K1 G,S1G /U1B		RCA JACK HSP-243V2-07 (3P)	*YT001980R
PJ400		9965 000 04722	S-VIDEO HDC-050A (4P)	*YT001990R
PJ900		9965 000 04723	RCA JACK HSP-242V3-23 (2P)	*YT002010R
SW900		9965 000 04724	SW SLIDE SK12P7.2G4 1-01-02	*SS000610R
X722		9965 000 04730	RESONATOR CCR8.0MC5T	*FQ000420R

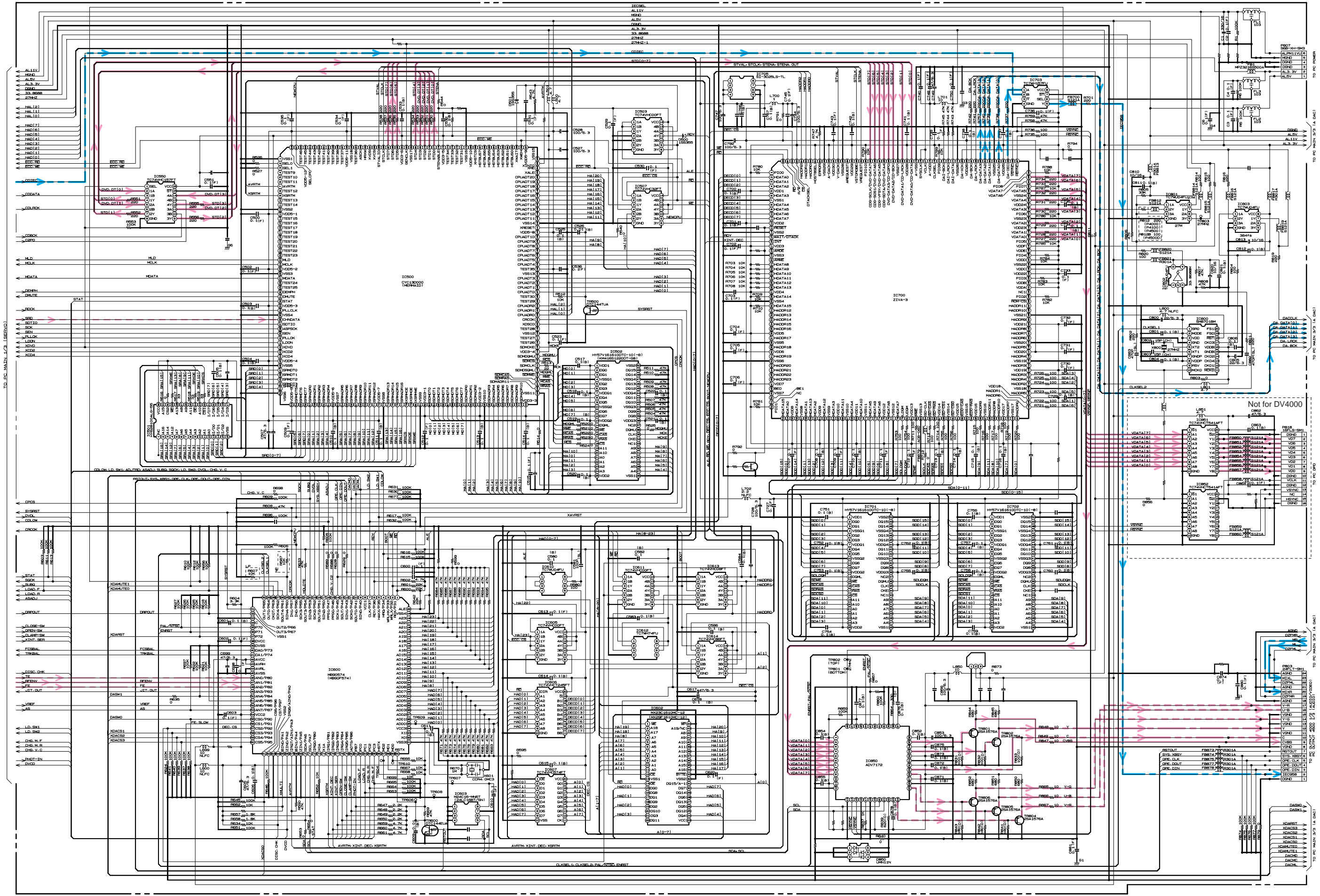
<<IMPORTANT NOTICE>>

This service manual explains the product DV4000 which mounted the **DVD module TKM1000MZ with the main board <C3M1>** only. Products which mounted <C3M1> are as follows. (see table) All other products have mounted <M3C1> main board. Spare parts for <M3C1> main board are not available. In case of defects are found with the <M3C1> main board, complete DVD module must be replaced by the TKM1000MZ with the main board <C3M1>.

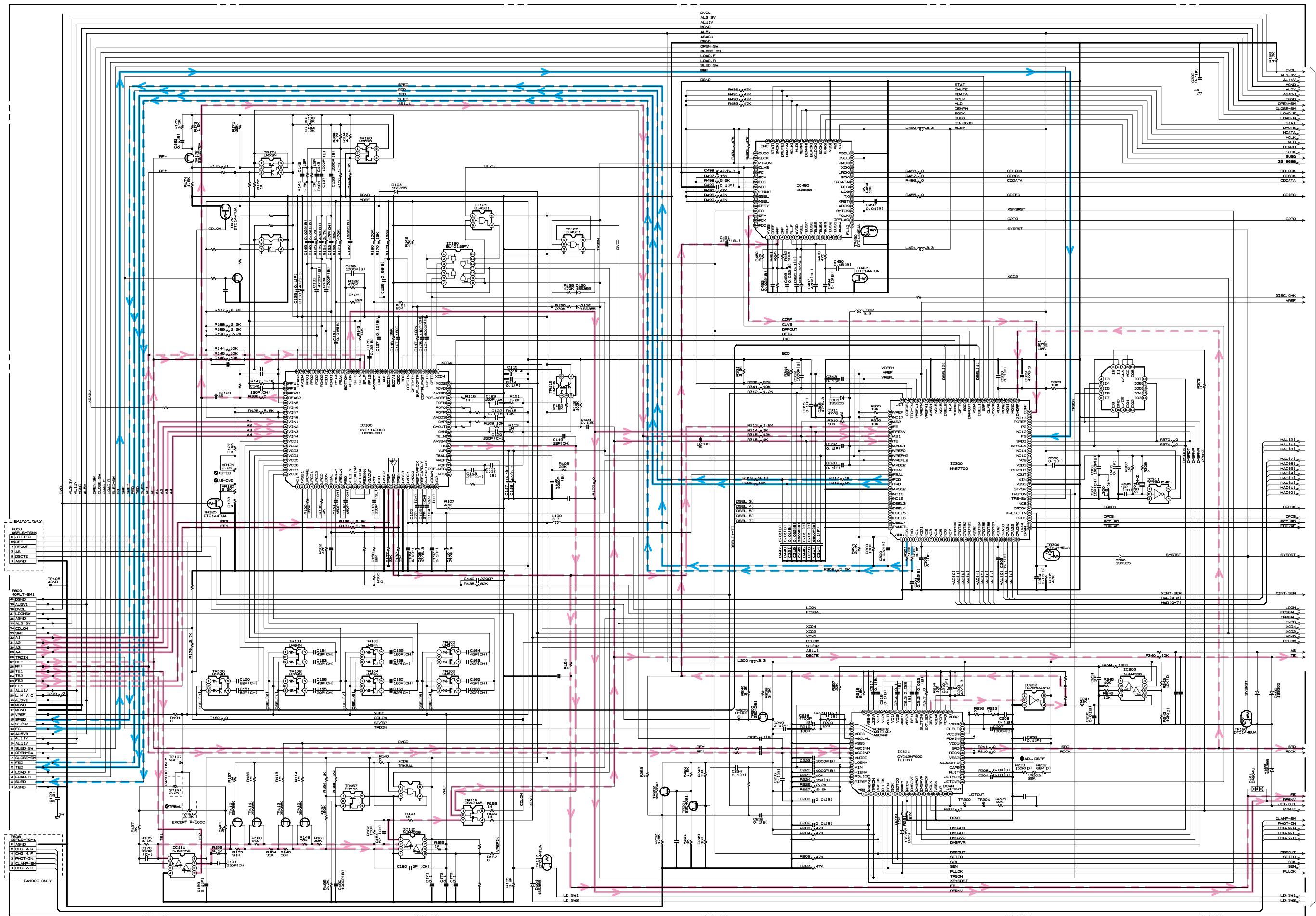
Versions	Serial numbers (C3M mounted)	
/F1N	MZ000002140001	— MZ000002141000
	MZ000004150001	— MZ000004151000
/N1B	MZ009950100001	— MZ009950101000
	MZ000003130001	— MZ000003130500
	MZ000003130501	— MZ000003131000
/U1B	MZ009950090001	— MZ009950091300
	MZ000002120001	— MZ000002120200

15. SCHEMATIC DIAGRAM AND PARTS LOCATION (TKM1000MZ)

MAIN-1/3



D600BA5010 PC MAIN(C3) ODC/CPU/AV-DEC BLK

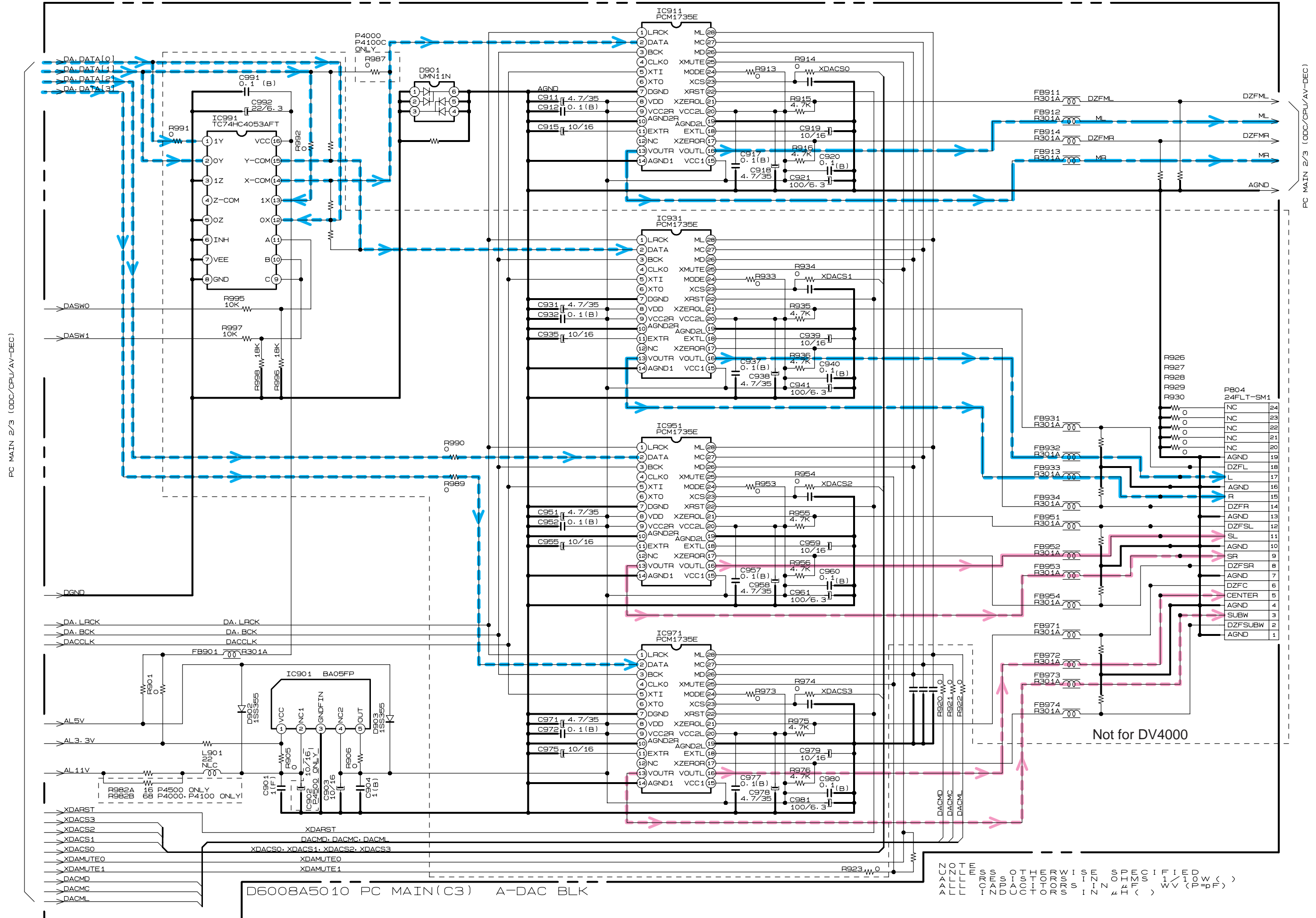


TO PC MECHA 4000

TO PC MAIN 2/3 (00C/CPU/AV-DEC)

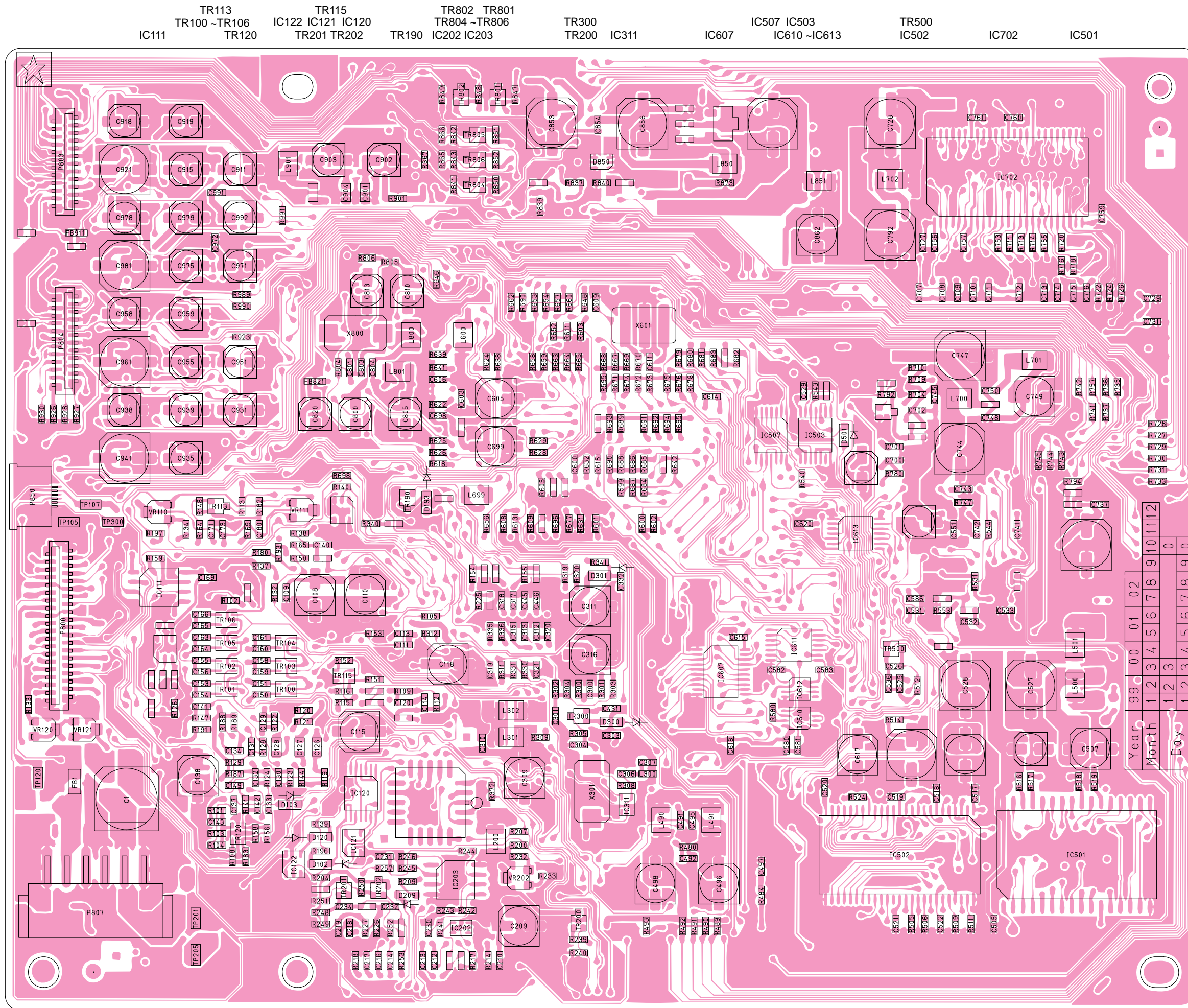
D600BA5010 PC MAIN(C3) SERVO BLK

1/2 3/4 5/6 7/8 9/10 11/12 13/14 15/16 17/18 19/20 21/22 23/24 25/26 27/28 29/30 31/32 33/34 35/36 37/38 39/40 41/42 43/44 45/46 47/48 49/50 51/52 53/54 55/56 57/58 59/60 61/62 63/64 65/66 67/68 69/70 71/72 73/74 75/76 77/78 79/80 81/82 83/84 85/86 87/88 89/90 91/92 93/94 95/96 97/98 99/100



NOT FOR DV4000
 UNLESS OTHERWISE SPECIFIED
 ALL DIMENSIONS ARE IN MILLIMETERS
 UNLESS OTHERWISE SPECIFIED
 ALL DIMENSIONS ARE IN MILLIMETERS

MAIN TOP VIEW



Year	99	00	01	02
Month	1	2	3	4
Day	1	2	3	4
	5	6	7	8
	9	10	11	12

MAIN BOTTOM VIEW

IC701
IC700
IC500
IC550
IC614
IC852
TR490
TR491
IC490

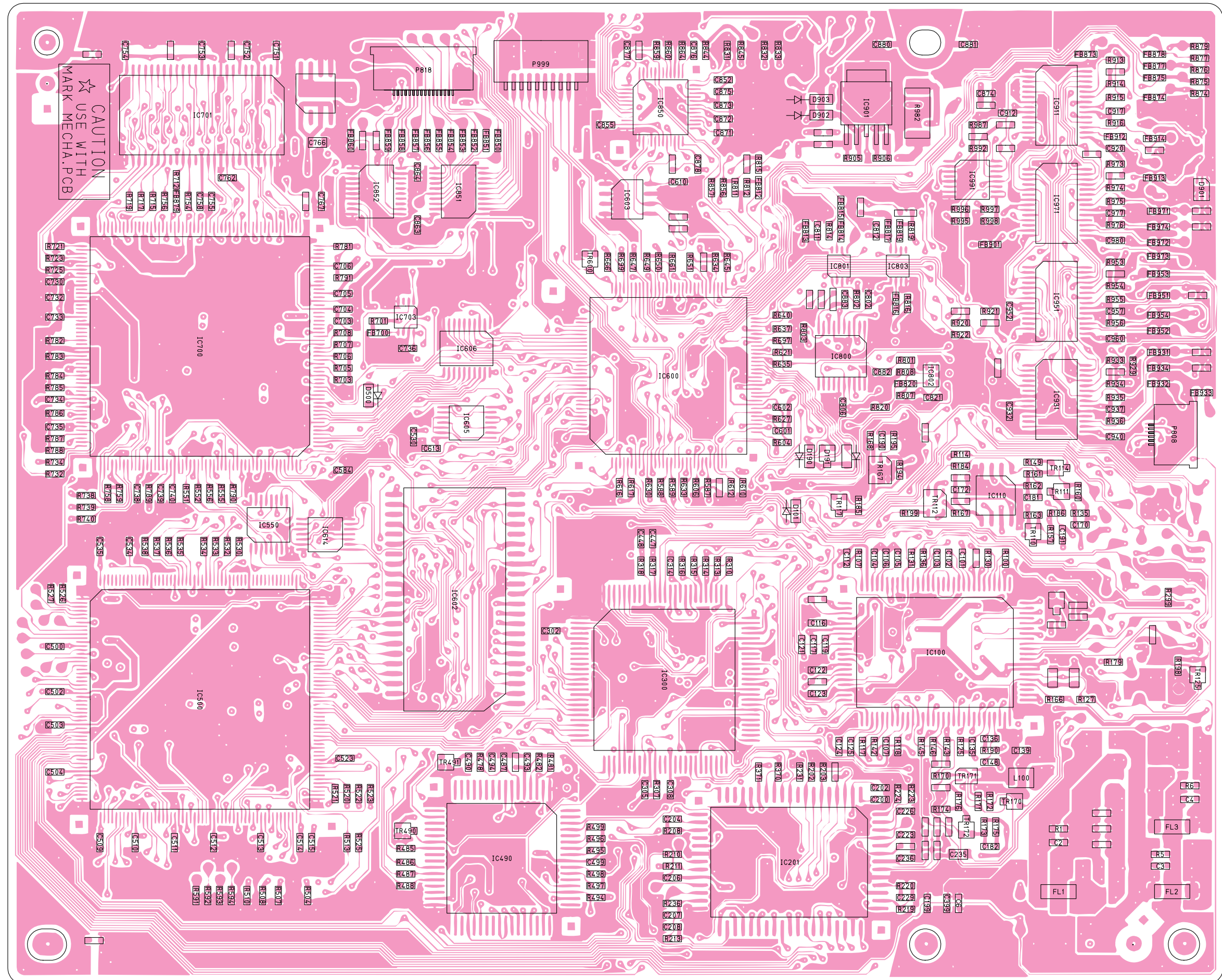
IC851 IC606
IC703 IC602 IC605
TR600 IC603 IC300

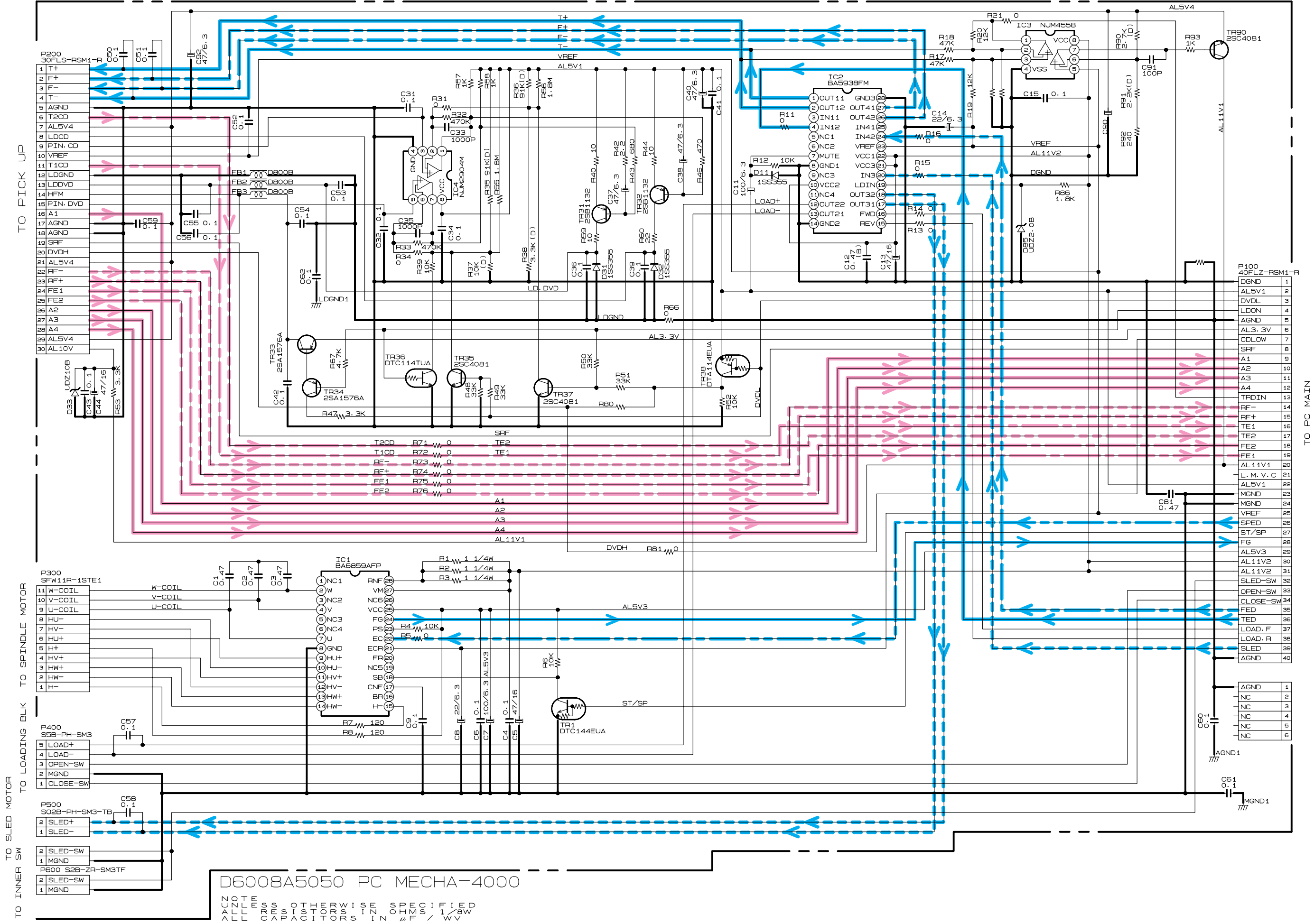
IC850
IC600
IC201
TR117
TR167

IC801 IC901
IC800 IC803
TR117
TR167

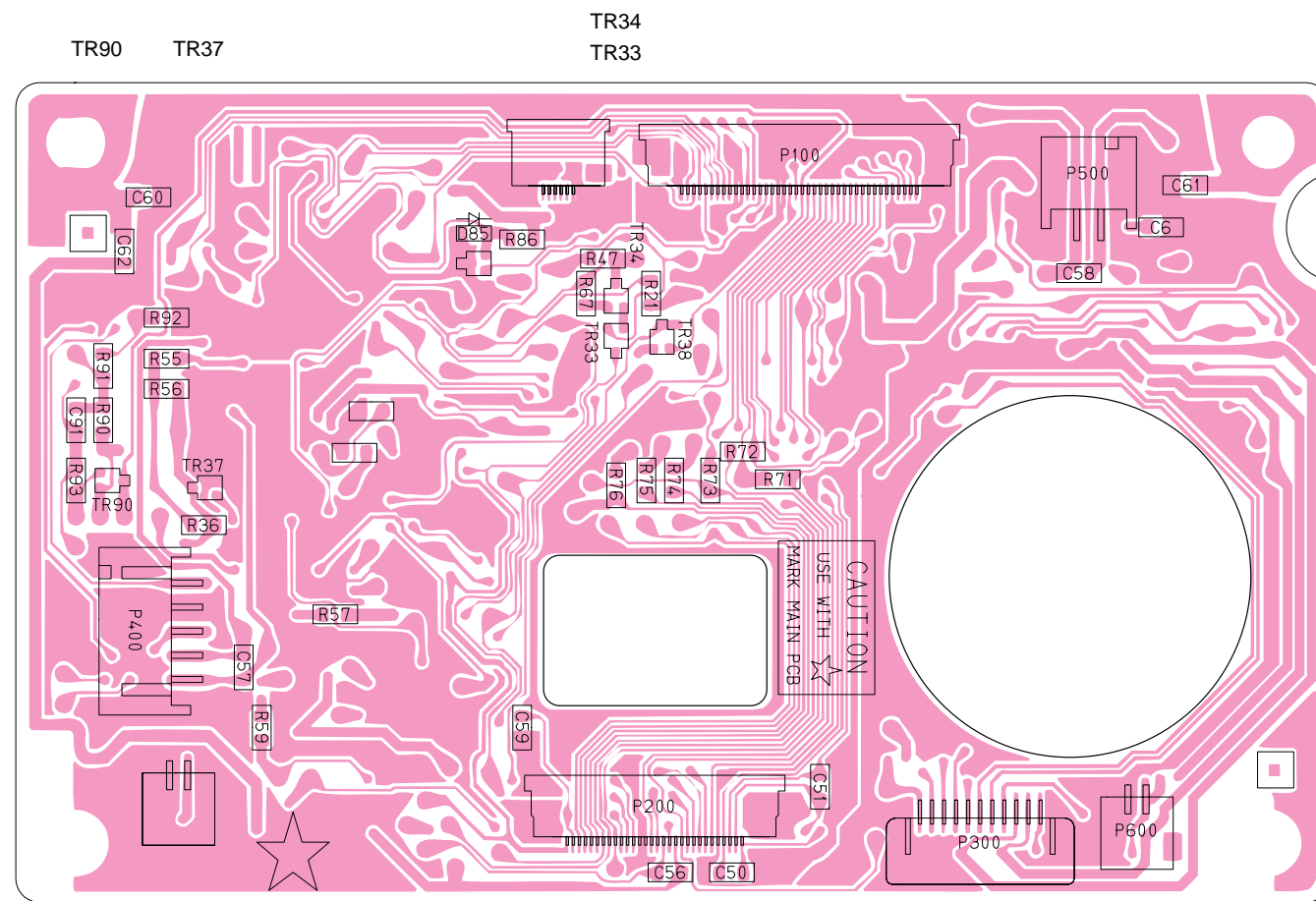
IC802 IC991
TR112 IC110
IC100 TR170 -TR712

IC911
IC971 TR114
IC951 TR111
IC931 TR110
TR125

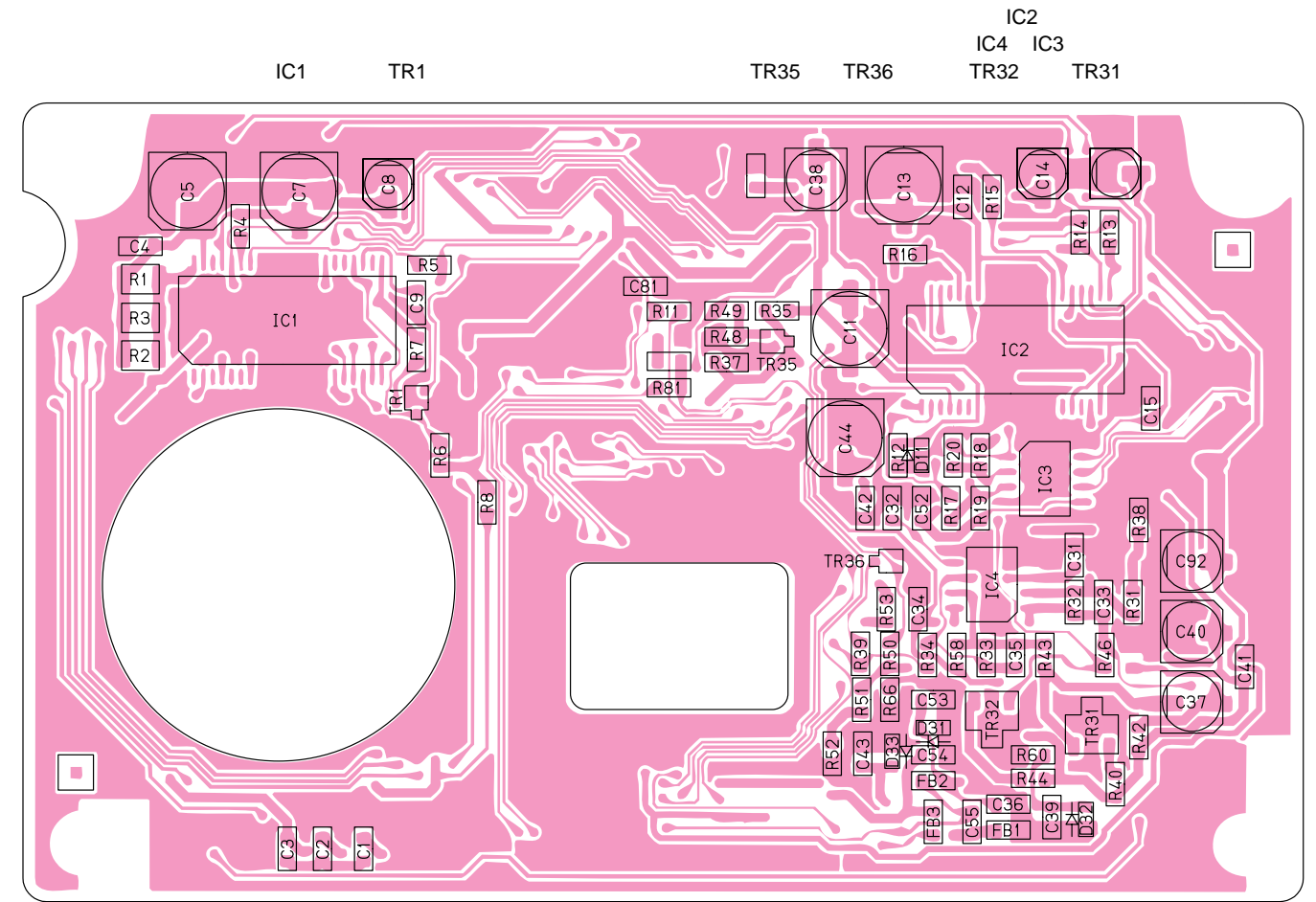




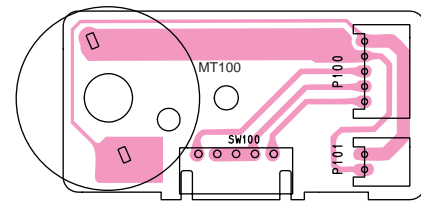
MECHA TOP VIEW



MECHA BOTTOM VIEW

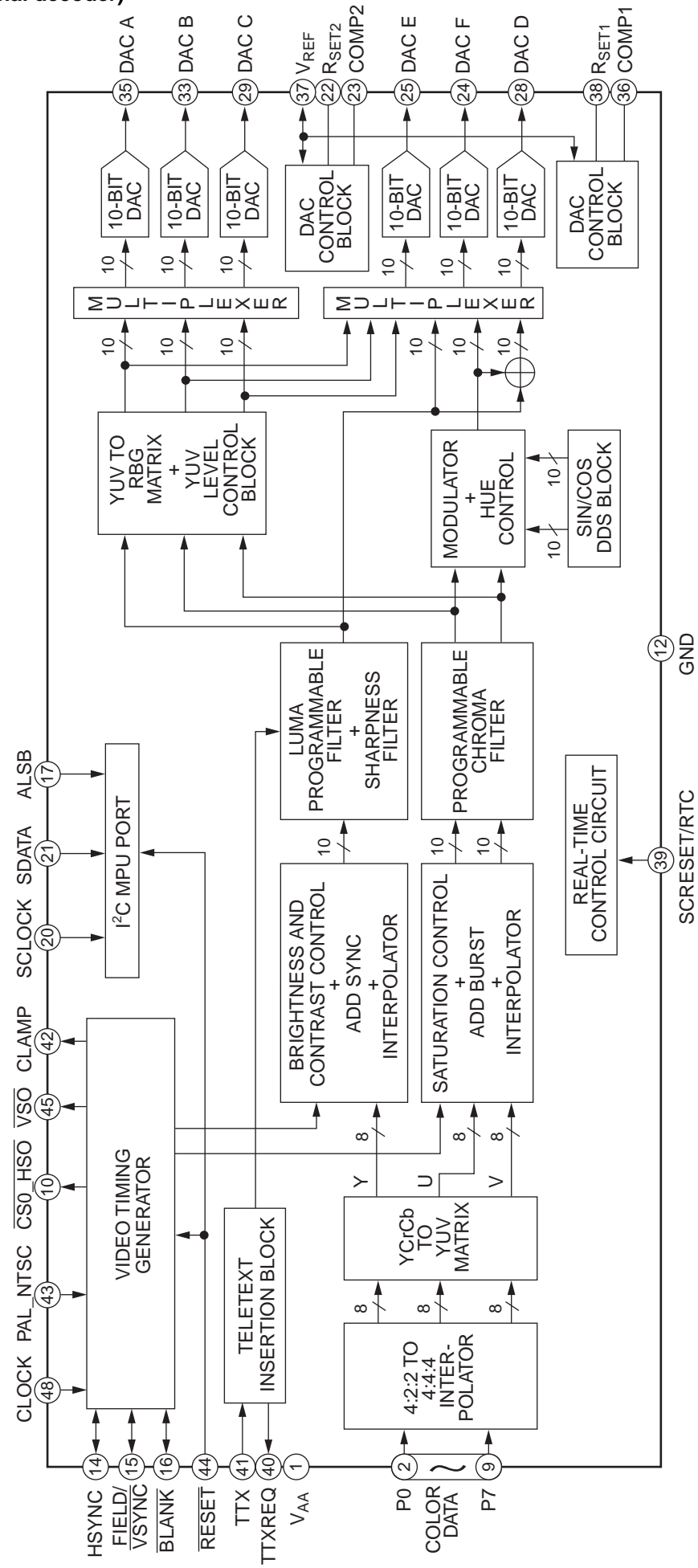


LOADING

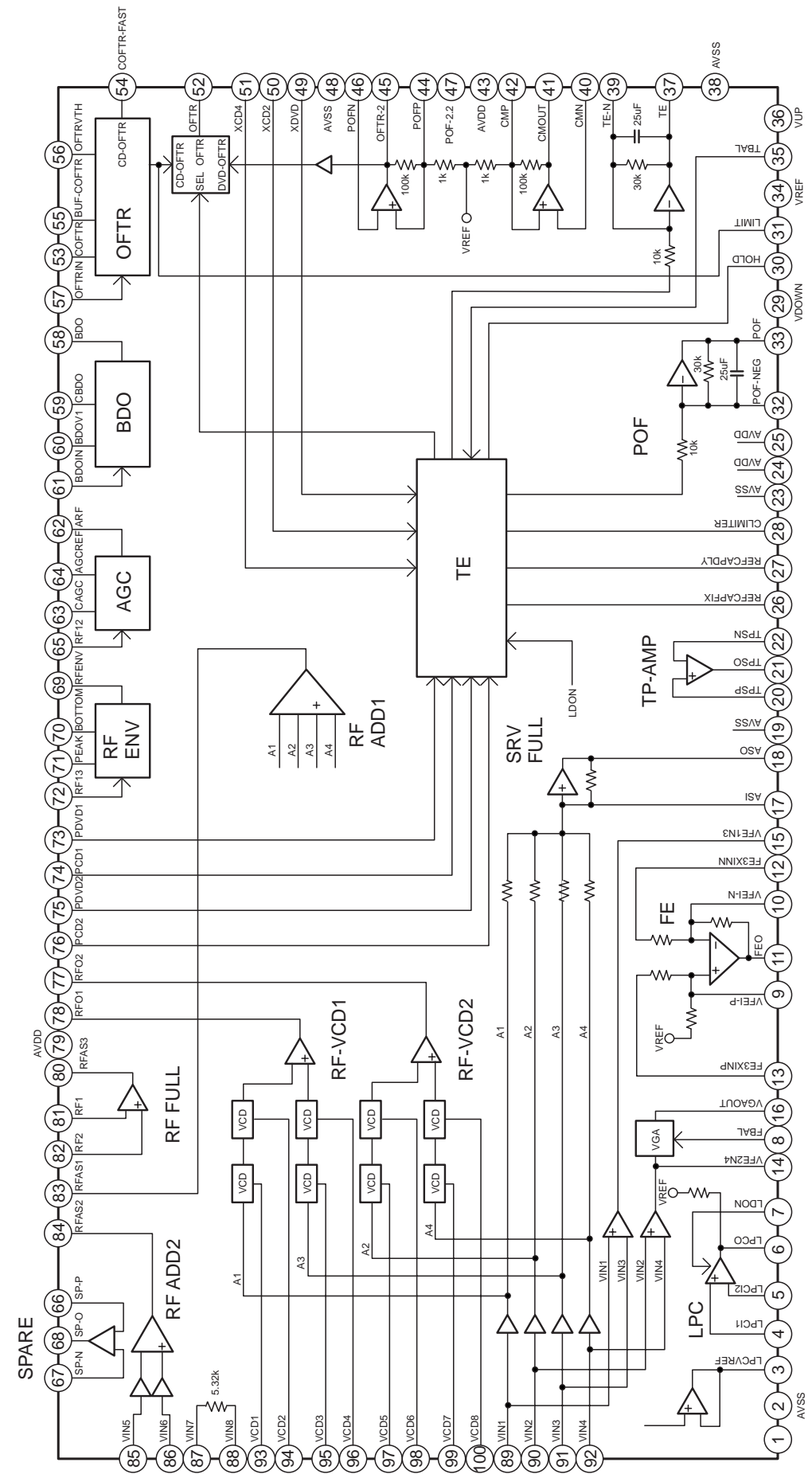


16. MICROPROCESSOR AND IC DATA

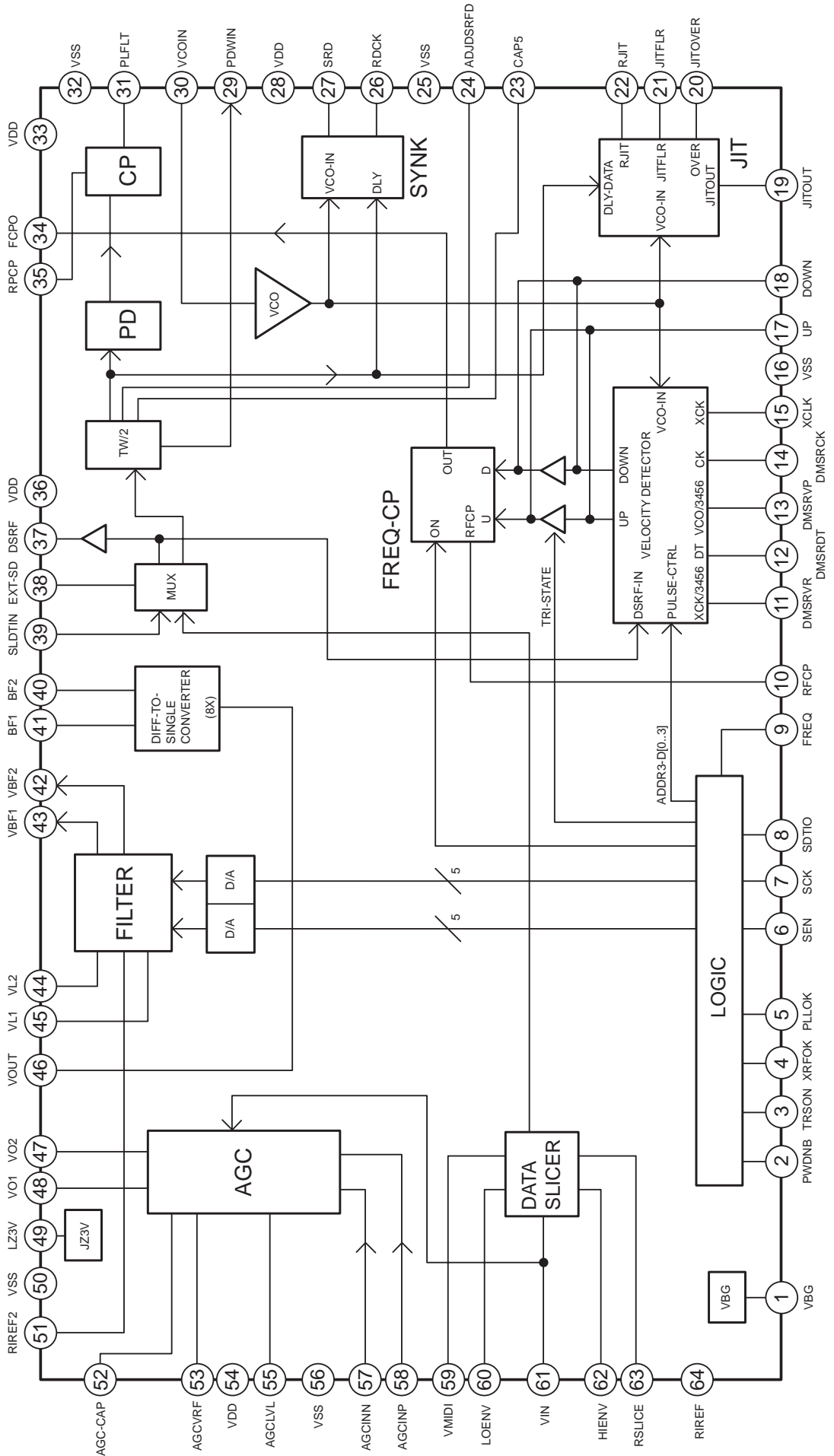
ADV7172 (Video signal decoder)



CYC11AP000 (DVD Pre AMP)



CYC12MP000(DVD Read Channel)

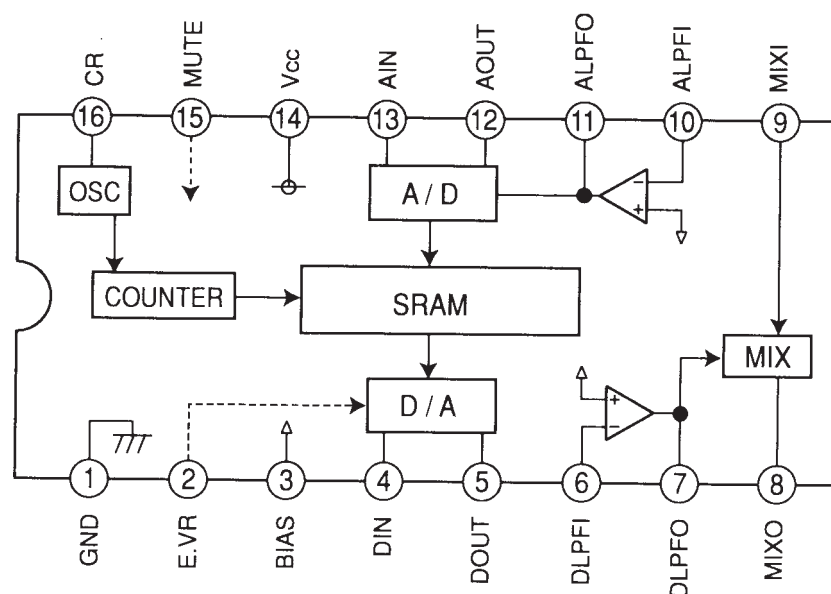


MB90574 (CPU/System control MI-COM)

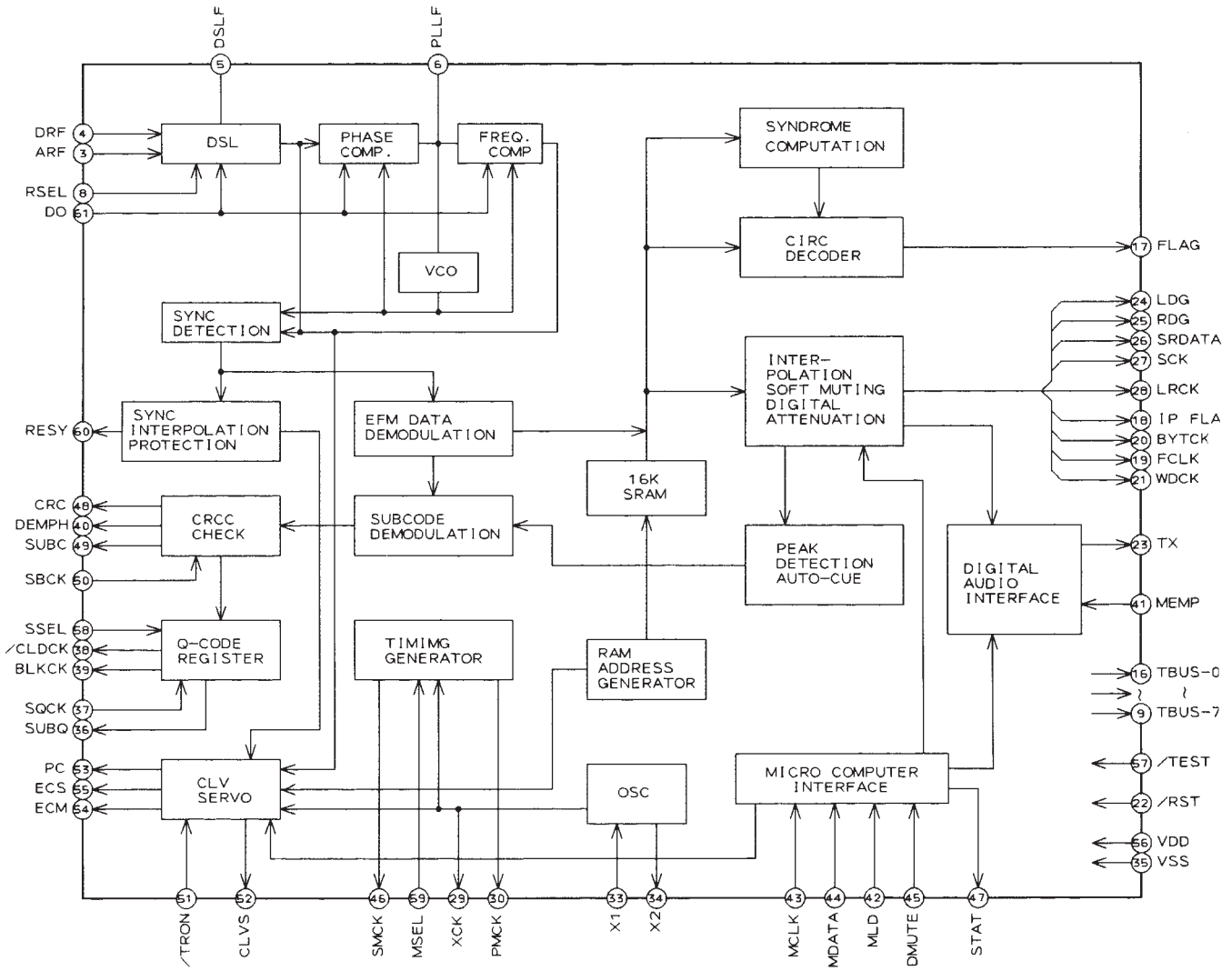
Pin No.	Port Name	I/O	FUNCTION
1	RDX	O	System bus read strobe signal output.
2	WEX	O	System bus lower 8 bit write strobe signal output.
3	BOOT	O	Ziva MI-COM transmission control output.
4	CDLOW	O	Disc judge output.
5	LD.SW1	O	Laser control output 1.
6	RDY	I	System bus ready input.
7	LD.SW2	O	Laser control output 2.
8,54,94	Vcc	–	+5 V power supply pin.
9-11,21,23, 56	N.C	–	No connection.
12	OPE.DOUT	I	Serial data input from the output control MI-COM.
13	OPE.DIN	O	Serial data output to the output control MI-COM.
14	OPE.CLK	I	Serial clock input from the output control MI-COM.
15	SLI.LV	O	PWM output for data slice level control of the read channel MI-COM.
16	L.M.V.C	O	PWM output for disc changer tray rotation control.
17	XAVRST	O	Reset control output for the Ziva-3 MI-COM.
18	SYS.XBSY	O	Serial data ready/busy output to the output control MI-COM.
19	DVD.L	O	DVD/CD laser select control output.
20	SUBQ	I	CD-DSP Q data input.
22	SQCK	O	Clock output for CD-DSP Q data.
24	CRCOK	I	Sector ID error O.K. input.
25	XCHANGER	I	Disc changer operation setting pin.
26	XDAMUTE0	O	Audio section mute control output. (L: mute on)
27	ICESEL	O	IEC958 digital out select output. (L: Ziva, H: CD)
28	XDAMUTE1	O	Audio section mute control output. (L: mute on)
29	CLKSEL1	O	Clock generator SRO control output. (L: normal, H: double)
30	CLKSEL2	O	Clock generator FSO control output. (L: 48 kHz, H: 44.1 kHz)
31	SYRST	O	System reset output.
32	DRPOUT	I	Drop out input.
33,63,91,119	Vss	–	Ground pin.
34	C	–	Capacitor connecting pin.
35	PAL/NTSC	O	Video decoder PAL/NTSC select output.
36	ENRST	O	Video encoder IC reset output.
37	XDARST	O	DAC reset output.
38	DVcc	–	+5 V power supply pin for digital circuit.
39	DVss	–	Ground pin for digital circuit.
40	FCSBAL	I	Focus balance adjustment input.
41	TRKBAL	I	Tracking balance adjustment input.
42	Avcc	–	+5 V power supply pin for analog circuit.
43	AVRH	I	Connect to +5 V.
44	AVRL	I	Connect to ground.
45	Avss	–	Ground pin for analog circuit.
46	TE	I	A/D input for disc judge signal 1 (Tracking error).
47	RFENV	I	A/D input for disc judge signal 2 (RF envelope).
48	FE	I	A/D input for disc judge signal 3 (Focus error).
49	JIT.OUT	I	A/D input for jitter out.
50	DASW1	O	Audio DAC L/R channel input data select control output.
51	DACML	O	Audio DAC serial latch output.
52	DACMC	O	Audio DAC serial clock output.
53	DACMD	O	Audio DAC serial data output.
55	DASW0	O	Audio DAC mix channel input data select control output.
57	DEC.CS	O	Ziva MI-COM chip select output.
58	XDACS1	O	Audio DAC (L/R) chip select output.
59	XDACS2	O	Audio DAC (SL/SR) chip select output.
60	XDACS3	O	Audio DAC (C/SUBW) chip select output.
61	XDACS0	O	Audio DAC (MIXL/MIXR) chip select output.
62	CHG.V.C	O	Disc changer motor control output.
64	DISC.CHK	I	Disc judge assist.
65	XMULTI	I	2 CH/XMULTICH setting control input.
66	DASW2	O	Four audio DAC test mode input data select.

Pin No.	Port Name	I/O	FUNCTION
67	AVRTM	I	ECC interruption request input (end of output stream of 2060 bytes data) .
68,69	DGND	-	Ground for digital section.
70	SDA(I2C)	I/O	Serial data in/out from/to EEP-ROM & video encoder.
71	SCL	O	Serial clock output to the EEP-ROM & video encoder.
72	STAT	I	CD-DSP status input.
73	X0A	I	Not used.
74	X1A	O	Not used.
75	XSRTM	I	ECC interruption request input (end of block signal).
76	XINT.DEC	I	Interruption request from the Ziva MI-COM.
77	XINT.SER	I	Interruption request from the servo MI-COM.
78	OPEN-SW	I	Disc tray open detect input pin.
79	CLOSE-SW	I	Disc tray close detect input pin.
80	CLAMP-SW	I	Disc changer tray position detect input pin.
81	PHOT-IN	I	Disc changer tray position detect photo sensor input pin.
82	LOAD.F	O	Loading motor direction control output.
83	LOAD.R		
84	CHG.M.R	O	Disc changer motor control output.
85	CHG.M.L		
86	HSTX	I	hardware standby pin. (Pulled up)
87-89	MD0-MD2	I	Bus mode setting pins.
90	RSTOUT	I	Reset signal input from the output control MI-COM.
92	X0	I	4 MHz crystal connecting pin.
93	X1	O	
95-102	HAD00-HAD07	I/O	System bus serial data/address I/O pins.
103-116	HA08-HA21	O	System bus address output pins.
117,118	HA22,HA23	O	System bus address output pins for chip select circuit.
120	ALE	O	System bus address latch enable output.

BU9253 (Digital delay)



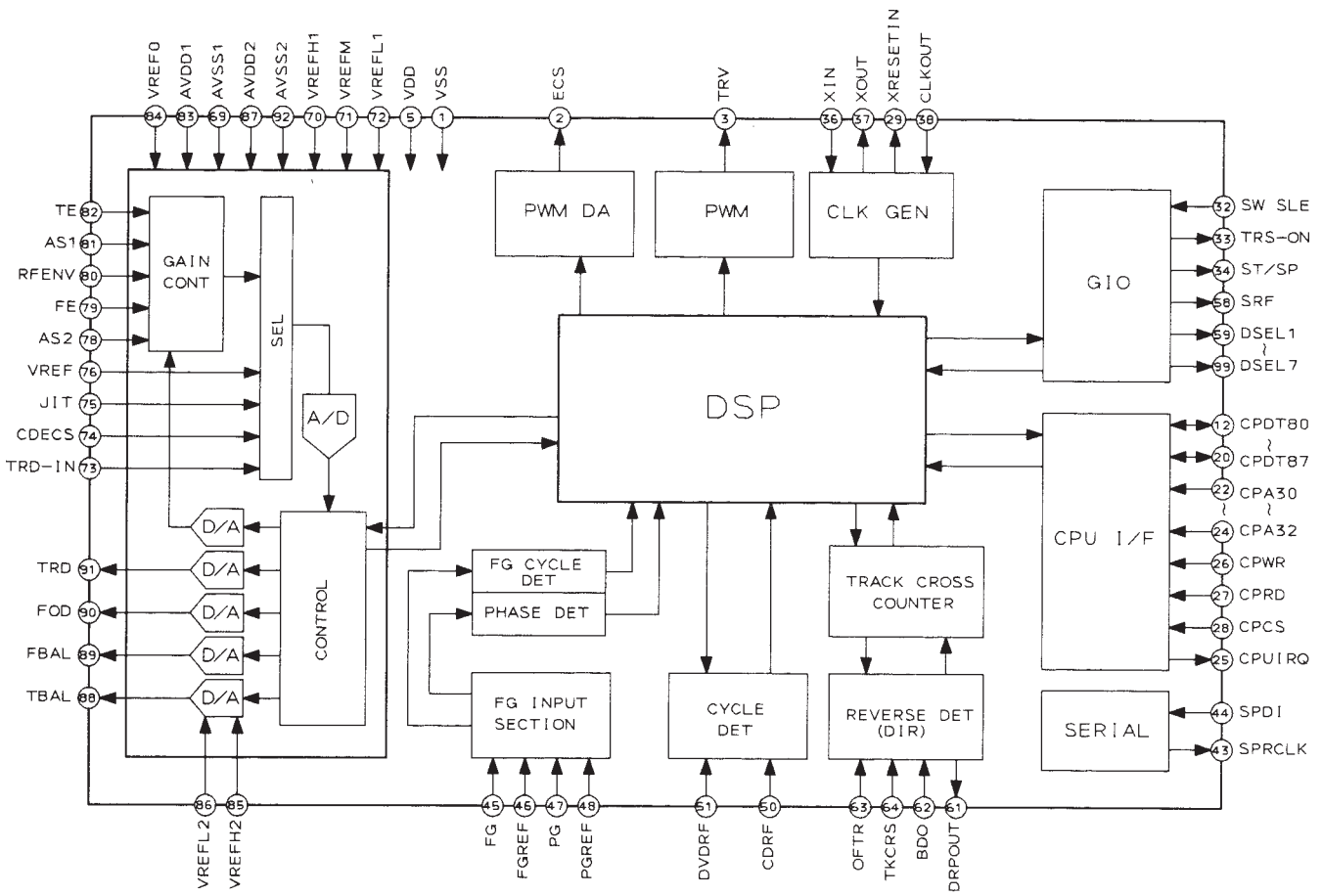
MN66261 (CD signal processing)



MN66261 (CD signal processing)

PIN No.	PORT NAME	I/O	FUNCTION
1	Avss	-	Ground pin for DSL, PLL circuit.
2	IREF	I	Reference current input pin.
3	ARF	I	RF signal input pin.
4	DRF	-	Bias pin for DSL.
5	DSLIF	O	Loop filter pin for DSL.
6	PLLIF	I/O	Loop filter pin for PLL.
7	Avdd	-	+5 V power supply pin for DSL, PLL.
8	RSEL	-	RF signal polarity setting pin. (Brightness level: H → RSEL: H)
9-16	TBUS0 - 7	O	Test pins. Normally, these pins are open circuit.
17	FLAG	O	Flag output pin.
18	IPFLAG	O	Interpolation flag pin. (H: interpolate)
19	FCLK	O	Frame clock output (from crystal OSC). (fCLK = 7.35 kHz, 14.7 kHz when dubble speed)
20	BYTCK	O	Byte clock out.
21	WDCK	O	Word clock out.
22	/RST	I	Reset input pin (L: reset).
23	TX	O	Digital audio interface output.
24	LDG	O	L-CH deglitch signal output.
25	RDG	O	R-CH deglitch signal output.
26	SRDATA	O	Serial data output.
27	SCK	O	Bit clock output for SRDATA.
28	LRCK	O	Left-right discrimination clock output.
29	XCK	O	Crystal OSC clock output (fXCK = 16.9344 MHz).
30	PMCK	O	1/192 counted down clock signal from the crystal OSC. (fPMCK = 88.2 kHz)
31	CSEL	I	Crystal OSC frequency select pin. (L: 16.9344 MHz, H: 33.8688 MHz)
32	PSEL	-	Test pin (normally, open circuit).
33	X1	I	Crystal connecting pin. (f = 16.9344 MHz or 33.8688 MHz)
34	X2	O	Crystal connecting pin. (f = 16.9344 MHz or 33.8688 MHz)
35	Vss	-	Ground pin.
36	SUBQ	O	Subcode Q output.
37	SQCK	I	External clock input for subcode Q register.
38	/CLDCK	O	Subcode frame clock signal output. (fCLDCK = 7.35 kHz in normal playback)
39	BLKCK	O	Subcode block clock signal. (fBLOCK = 75 Hz in normal playback)
40	DEMPH	O	De-emphasis control output. (H: de-emphasis on)
41	MEMP	I	Emphasis signal input for digital audio interface.
42	MLD	I	MI-COM command LOAD signal input. (L: LOAD)
43	MCLK	I	MI-COM command CLOCK signal input. (Data will be latched with rising edge of the pulse)
44	MDATA	I	MI-COM command DATA input.
45	DMUTE	I	Muting input.
46	SMCK	O	1/2 counted down crystal OSC signal output when MSEL = H. 1/4 counted down crystal OSC signal output when MSEL = L.
47	STAT	O	Status signal output (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK).
48	CRC	O	Subcode CRC check output. (H: OK, L: no good)
49	SUBC	O	Subcode serial output data.
50	SBCK	I	Clock input for subcode serial output.
51	/TRON	I	Tracking servo on signal. (L: tracking on)
52	CLVS	O	Spindle servo phase synchronization judge output. (H: CLV, L: rough servo)
53	PC	O	Spindle motor on signal (L = on).
54	ECM	O	Spindle motor drive signal output (forced mode, 3-state).
55	ECS	O	Spindle motor drive signal output (servo error signal, 3-state)
56	Vdd	-	+5 V power supply.
57	/TEST	I	Test pin (normally, H).
58	SSEL	I	Output mode select pin for SUBQ pin. (H: Q-code buffer is used)
59	MSEL	I	Output frequency select pin for SMCK pin. (H: SMCK = 8.4672 MHz, L: 4.2336 MHz)
60	RESY	O	Re-synchronization signal of the frame synchronization signal. (H: synchronized, L: not synchronized)
61	DO	I	Drop out signal (H: drop out)
62	EFM	O	EFM signal output.
63	PCK	O	PLL extraction clock output. (fPCK = 4.3218 MHz in normal playback)
64	PDO	O	Phase comparison signal between EFM and PCK signal.

MN67700 (Servo processing IC)



MN67700 (Servo processing IC)

PIN No.	PORT NAME	I/O	FUNCTION
1	Vss	–	Ground pin for digital circuit.
2	ECS	O	Spindle motor drive signal output.
3	TRV	O	Traverse (sled motor) drive signal output.
4,6-11	N.C	–	No connection.
5,21,39,55	Vdd	–	Power supply for digital circuit.
12-15,17-20	CPDT80-87	I/O	CPU I/F data I/O pins.
16,35,60	Vss	–	Ground for digital circuit.
22-24	CPA30-32	I	CPU I/F address input pins.
25	CPUIRQ	O	CPU interruption signal output.
26	CPWR	I	CPU I/F write strobe input pin.
27	CPRD	I	CPU I/F read strobe input pin.
28	CPCS	I	CPU I/F chip select input pin.
29	XRESETIN	I	Reset signal input. (L: reset)
30	CRCOK	I	ID check signal input pin from the DEM/ECC MI-COM.
31	GIO01	–	No connection.
32	SW SLE	I	Traverse innermost position detect signal input.
33	TRS-ON	O	Tracking servo on signal. (H: tracking servo on)
34	ST/SR	O	Spindle motor drive (start/stop) control output (H: start).
35	Vss	I	Ground for digital circuit.
36	XIN	I	Crystal connecting pin (40 MHz).
37	XOUT	O	Crystal connecting pin (40 MHz).
38	CLKOUT	O	Clock output (1/2 counted down of the crystal OSC).
40	SPEN	O	Serial enable output pin.
41	SPWCLK	O	Serial write signal synchronization clock.
42	SPDO	O	Serial data output pin.
43	SPRCLK	O	Serial clock output pin.
44	SPDI	I	Serial data input pin.
45	FG	I	FG signal input pin.
46	FGREF	I	FG reference signal input pin.
47	PG	I	PG signal input pin. (VCO/3456 XCK = 27 MHz)
48	PGREF	I	PG reference signal input pin. (XCK/3456 XCK = 27 MHz)
49,56,57,77	N.C	–	No connection.
50	CDRF	I	CD-RF signal input.
51	DVDRF	I	DVD-RF signal input.
52-54	MON0-2	O	Internal monitoring signal.
58	SRF	O	Head AMP gain select control .
59,66 95-99	DSEL1-7	O	VCD setting pins.
61	DRPOUT	O	Drop out signal output. (H: drop out)
62	BDO	I	Black drop out signal input. (H: black drop out)
63	OFTR	I	Off track signal input. (H: off track)
64	TKCRS	I	Track cross signal input pin.
65	RSV1	I	Test pin (normally open).
67	RSVO	I	Test pin (normally open).
68	TESTA	I	Test mode setting pin (normally open).
69	Avss1	I	Ground for analog circuit.
70	VREFH1	I	AD high level reference voltage input pin (3.75 V).
71	VREFM	I	AD middle reference voltage input pin (2.5 V).
72	VREFL1	I	AD low level reference voltage input pin (1.25 V).
73	TRD-IN	I	Tracking drive voltage input pin. (This pin is connected to 91 pin.)
74	CDECS	I	CD spindle motor drive signal input.
75	JIT	I	Jitter level signal input.
76	VREF	I	Reference voltage input.
78	AS2	I	PD all addition signal input.
79	FE	I	Focus error signal input.
80	RFENV	I	RF envelope signal input.
81	AS1	I	Addition signal of inner 4 divided PD.
82	TE	I	Tracking error signal input.
83	AVdd1	I	Power supply for analog circuit.
84	VREF0	I	Analog reference voltage input (2.5 V).
85	VREFH2	I	Analog high level reference voltage input pin (3.75 V).
86	VREFL2	I	Analog low level reference voltage input pin (1.25 V).
87	AVdd2	I	Power supply for analog circuit.
88	TBAL	O	Tracking balance adjust output.
89	FBAL	O	Focus balance adjust output.
90	FOD	O	Focus drive signal output.
91	TRD	O	Tracking drive signal output.
92	AVss2	I	Ground pin for analog circuit.
93	TESTD	I	Test mode setting pin (normally open).
94	MINTST	I	Test mode setting pin (normally open).
100	PWMCTL	I	PWM output control signal input (normal: L).

YMC13D000 (DVD Sync/ECC/Formatter)

Pin No.	Port Name	I/O	FUNCTION
1,12,26,35,46, 52,63,73,81, 95,105,118, 131,142,156, 170,182,195	VSS1-18	–	Ground pins.
2	SEL0	–	Test mode select pins.
3	SEL1		
4-6,8,10,10 11,14-22,28 29,116,117 119,125,126 132,171-174 194,197-206	TEST9-46	–	Test mode output pins. (Leave them open)
7	AVRTM	O	End of output stream of 2060 bytes data to CSS.
9	XSRTM	O	End of block signal.
13,25,33,45,53, 62,72,140,157, 169,196,208	VDD5-1to 5-12	–	+5 V power supply pin.
23	MLD	O	Microprocessor command load signal for CD-DA section. (L: load).
24	MCLK	O	Microprocessor command clock signal for CD-DA section. (data is atched on rising edge)
25	VDD5-2	–	+5 V power supply pin.
26	VSS3	–	Ground pin.
27	MDATA	O	Microprocessor command data for CD-DA section.
30	DEMPH	I	De-emphasis control input (H: on).
31	DMUTE	O	Muting output for CD-DA section.
32	STAT	I	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK) from CD-DA, STAT also goes to CPU.
34	PLLCLK	I	27 MHz clock input pin.
36	CHNDATA	I	Inverted bit data, which is changed on the falling edge of PLLCLK.
37	SDTIO	I/O	Serial bit data I/O.
38	ASPSCK	O	296ns clock (27 MHz/8) output.
39	SEN	O	High enable CPU to write data to 8 read-channel registers.
40	PLLOK	O	DVD frame sync (H: O.K)
41	LDON	O	Turn on the Laser diode.
42	XDVD	O	DVD mode control output.
43	XCD2	O	2X CD mode control output.
44	XCD4	O	4X CD mode control output.
47-51,54-56	SRMDT0-7	I/O	SRAM data bus.
57-61,64-71 74-77	SRMADR0-16	O	SRAM address bus.
78	XSRMCE	O	Chip enable signal to SRAM.
79	XSRMOE	O	Output enable signal to SRAM.
80	XSRMWE	O	Write enable signal to SRAM.
83-90	SDMDT0-7	I/O	SDRAM data bus.
91-93 96-103,106	SDMADR0-11	O	SDRAM address bus.
107	$\overline{\text{SDMRAS}}$	O	SDRAM row address strobe output.
108	$\overline{\text{SDMCAS}}$	O	SDRAM column address strobe output.
109	$\overline{\text{SDMWE}}$	O	SDRAM write enable output.
110	SDMDQML	O	SDRAM lower byte input/output mask.
111	SDMCLK	O	Clock signal output to SDRAM.
112	SDMCS	O	SDRAM chip select control.
113	SDMDQML	O	SDRAM upper byte input/output mask.
115	SDMCKE	O	SDRAM clock enable.
120	XDSCO	O	Chip select signal to the SERVO MI-COM.
121	CRCOK	O	Sector IDs are O.K.
122-124	CPUADR0-2	O	(Video/Audio) HAL [2:0], V/A decoder, CPU address bus.

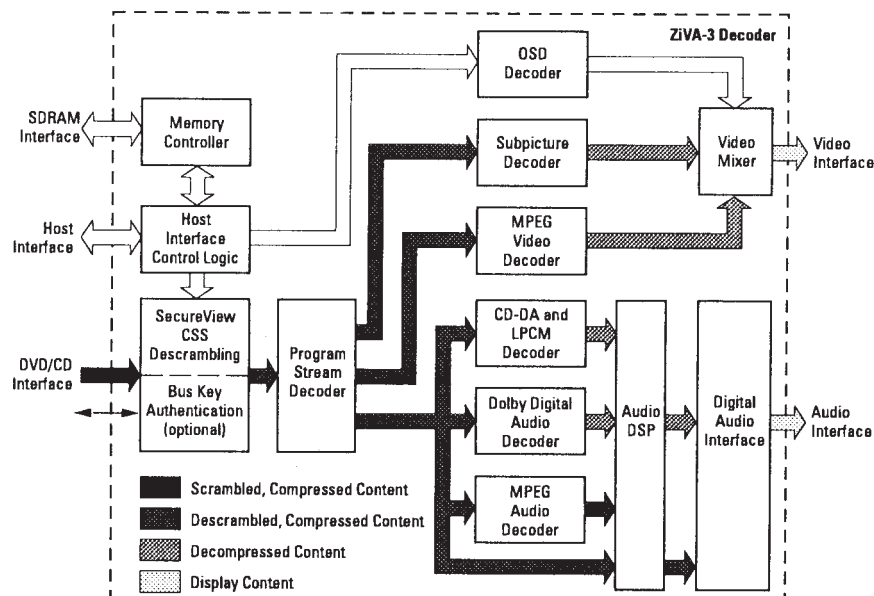
Pin No.	Port Name	I/O	FUNCTION
127-130 133-139 143-147	CPUADT0-15	I/O	CPU address/data bus.
141	XRESET	I	Global reset input.
148-152	CPUADT16-20	I	CPU address bus.
153	XALE	I	Address latch enable input.
154	XRE	I	Read strobe.
155	XINTO	O	ECC interrupt request.
158	XWEH	I	Write strobe signal.
159	XWAIT	O	CPU wait state control.
168	XHSTCS	O	Decipher chip select.
176	STENABLE	I	Stream data request.
177-181 185-187	STD0-7	O	Output stream data bus.
183	GENCLK	I	27 MHz clock input.
188	STCLK	O	Output stream data transfer clock, falling edge active, 6.75 MHz.
189	STVALID	O	Output stream data valid.
190	XVCS	O	Latched video decoder chip select.
191	XVDS	O	CPU read/write strobe.
192	HRXW	O	CPU write strobe, XWEH
193	ASCK	O	Latched audio decoder chip select.
207	SELCPU	I	1: data corresponds to CPUADT15-8. 0: data corresponds to CPUADT7-0.

ZIVA-3 (Advanced DVD decoder with integrated Audio DSP)

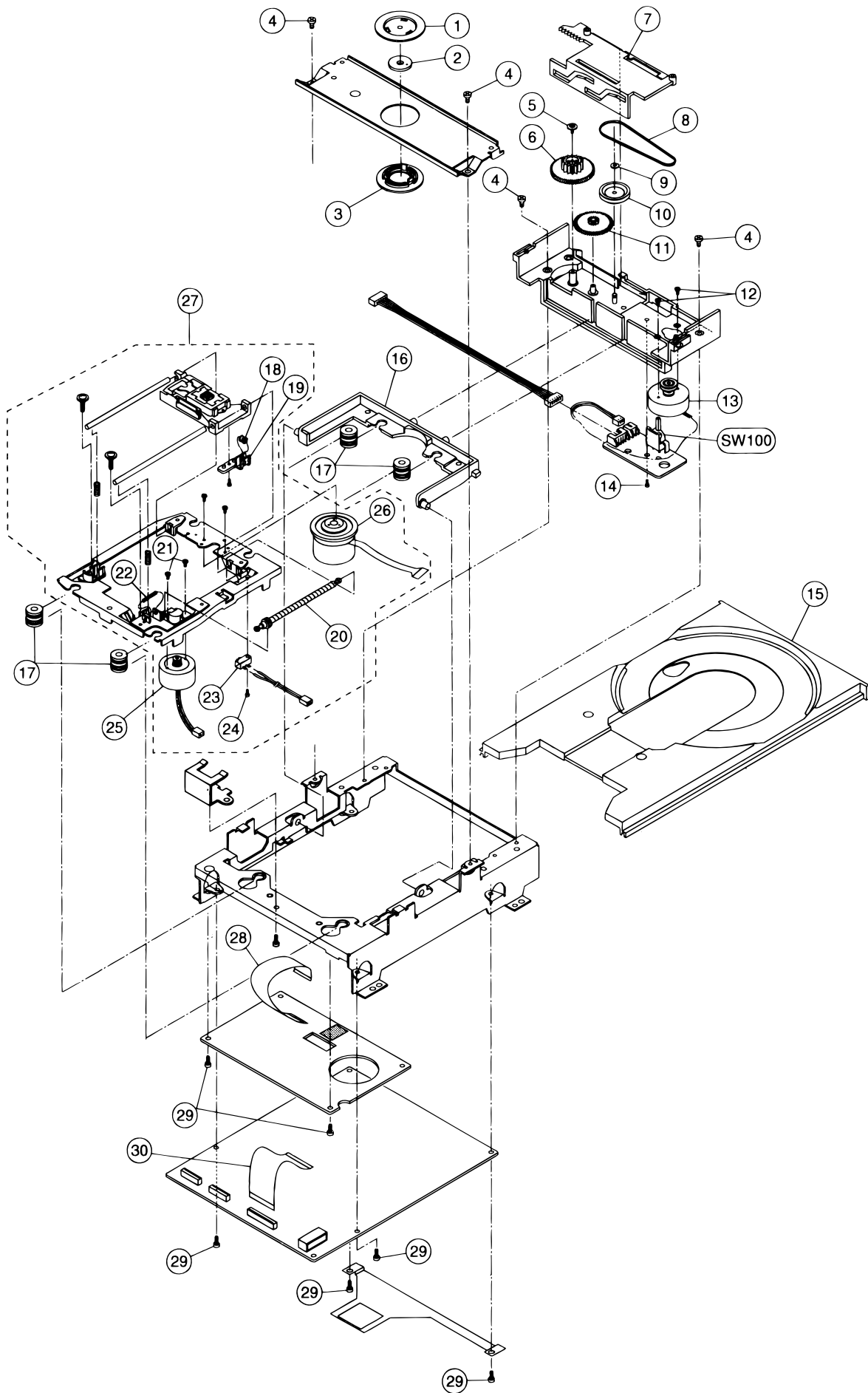
Pin No.	Port Name	I/O	FUNCTION
1,52,129 133,138,141 147,153,156 174,190	PIO0-10	I/O	Programmable I/O pins.
2-4,6,8-11	HDATA0-7	I/O	8 bit bi-directional host data bus.
5,12,17,27 36,40,47,55 61,65,69,75 81,87,91,95 101,107,113 117,123,134 149,160,181 193	VDD1-29	–	+3.3 V power supply pins.
7,14,19,29 38,42,49,57 63,67,71,77 83,89,93,97 103,109,115 119,125,136 146,151,162 170,183,195 199	VSS1-29	–	Ground pins.
13	RESET	I	Hardware reset pin.
15	WAIT/D \overline TACK	O	Transfer not complete / data acknowledge.
16	INT	O	Host interrupt.
21-26,28,30	HDATA8-15	I/O	Programmable I/O pins. Input mode after reset.
31-35,37,39 41,43-46	HADDR12-23	I/O	Programmable I/O pins. Output mode after reset.
51,130	NC	–	No connection.
53,54,56,58 59,60,62,64 66,68,70,72 73,74,76,78	MDATA0-15	I/O	Memory data.
79	LDQM	O	SDRAM LDQM.
80	UDQM	O	SDRAM UDQM.
82	\overline MWE	O	SDRAM write enable.
84	SD-CLK	O	SDRAM system clock.
85	SD-CAS	O	Active low SDRAM column address.
86	SD-RAS	O	Active low SDRAM row address.
88,90	SDCS0,1	O	Active low SDRAM bank select.
92	EDO-CAS	O	EDO column address (Not used).
94	EDO-RAS	O	EDO row address (Not used).
96,98-100 102,104-106 108,110-112	MADDR0-11	O	Memory address output.
114,115,116 120-122,124 126,127	HADDR3-11	O	Memory address output (not used).
128	ROM-CS	O	Not used.
131,132,135 137,139,140	VDDA-F	–	Connect to +3.3 V power supply line.
142,143,145 148,150,152 154,155	VDATA0-7	O	Video data bus.
157	HSYNC	I/O	Horizontal sync.
158	VS \overline YNC	I/O	Vertical sync.
159	DA-IEC	O	Bit stream data in IEC-1937 or PCM data out in IEC-958 format.
161,163-165	DA-DATA0-3	O	PCM data out, eight channels. Serial audio samples relative to DA-BCK clock.

Pin No.	Port Name	I/O	FUNCTION
166	DA-LRCK	O	PCM left/right clock. Identifies the channel for each audio sample.
167	DA-BCK	O	PCM bit clock output.
169	DA-XCK	I/O	Audio master frequency clock.
171	DAI-DATA	I	PCM input DATA (not used).
172	DAI-LRCK	I	PCM input LRCK (not used).
173	DAI-BCK	I	PCM input BCK (not used).
175	CLKSEL	I	Clock select pin. (H: internal, L: external)
176	A-VDD	-	+3.3 V power supply for analog section.
177	VCLK	O	Video clock. (27 MHz)
178	SYSCLK	I	System clock input. Decoder requires an external 27 MHz TTL oscillator.
179	A-VSS	-	Analog ground for PLL.
180	DVD-DATA0 /CD-DATA	I	Serial CD data.
182	DVD DATA1 /CD LRCK	I	DVD DATA1 input or CD-LRCK input.
184	DVD-DATA2 /CD BCK	I	DVD DATA2 input or CD bit clock input.
185	DVD-DATA3 /CD-C2PO	I	DVD DATA3 input. Asserted HIGH indicates a corrupted byte.
186-189	DVD-DATA4-7 CDG 4-7	I	DVD parallel compressed data from DVD DSP or CDG-SDATA/ VSFY/S0S1/SCLK signal input.
191	VREQUEST	O	Video request. Decoder asserts VREQUEST to indicate that the video input buffer has available space.
192	VSTROBE	I	Video strobe signal input.
194	AREQUEST	O	Audio request. Decoder asserts AREQUEST to indicate that the audio input buffer has available space.
196	V-DACK	I	Video data acknowledge (in synchronous mode). Asserted when DVD is valid.
198	A-DACK	I	Audio data acknowledge.
200	ERROR	I	Error in input data. If error signal is not available from the DSP, it must be grounded.
202-204	HADDR0-2	I	Host address bus. 3-bit address bus selects one of eight host interface registers.
205	DTACKSEL	I	Tie HIGH to select WAIT signal, LOW to select DTACK signal. (Motorola 68 K mode)
206	CS	I	Host chip select. Host asserts CS to select the decoder for a read or write operation.
207	R/W	I	Read/write strobe in M mode. Write strobe in I mode. Host asserts R/W LOW to select write and LOW to select read.
208	RD	I	Read strobe in I mode. Must be held HIGH in M mode.

ZIVA-3 (MPEG AV decoder)



17. EXPLODED VIEW AND PARTS LIST (TKM1000MZ)



(VERS. :VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
1		9965 000 04593	PLATE CLAMP	294W051010
2		9965 000 04594	MAGNET	294W012010
3		9965 000 04595	DISC CLAMP	294W005010
4		nsp	ST PAN26X06STL CMT	nsp
5		nsp	PT PAN20X05STL CMT C060	nsp
6		9965 000 04596	GEAR LOAD 2	294W058010
7		9965 000 04597	SLIDER UD	294W360010
8		9965 000 04598	BELT LOADING	294W264010
9		nsp	SLIT W.21X050X050PSL	nsp
10		9965 000 04599	PULLEY GEAR	294W262010
11		9965 000 04600	GEAR LOAD 1	294W058020
12		nsp	PAN17X2.5STL BZN PS3	nsp
13		9965 000 04601	LOADING MOTOR PART	*MM001050R
14		nsp	BT BID30X08STL CMT	nsp
15		9965 000 04602	DISC TRAY	294W163010
16		9965 000 04603	HOLDER TRAVERSE	294W104010
17		9965 000 04604	INSULATOR	294W130010
18		9965 000 04605	SP PUSH HOOK	294W115010
19		9965 000 04606	HOOK L.S	294W258010
20		9965 000 04607	SHAFT SCREW PART	294W117010
21		nsp	PAN17X3.5STL CMT PS3	nsp
22		9965 000 04608	SP PUSH L.S	*SP000980R
23		9965 000 04609	SW MICRO MPU10420MLB0	*SM000330R
24		nsp	ST BID20X08STL CMT	nsp
25		9965 000 04610	SLED MOTOR PART	*MM001040R
26		9965 000 04611	MOTOR CDS8A50T30-A/TT	*MM001060R
27		nsp	CH TRAVERSE BLK TKM-002	nsp
28		9965 000 04612	FFC BD P0.5 L50 30P	*YU000610R
29		nsp	ST BID30X06STL NI3	nsp
30		9965 000 04613	FFC BD P0.5 L70 40P	*YU000600R
SW100		9965 000 04614	SW LEVER MXS01070MLB0 1-01-02S	*SC000670R
001A		9965 000 04619	DVD MODULE BLKTKM100MZ (PCB C3M1)	ZK370K0100

18. ELECTRICAL PARTS LIST (TKM1000MZ)

ASSIGNMENT OF COMMON PARTS CODES. RESISTORS

R*** : 1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
 R*** : 2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W
 ↳ Resistance value

Examples

① Resistance value
 0.1Ω 001 10Ω 100 1kΩ 102 100kΩ 104
 0.5Ω 005 18Ω 180 2.7kΩ 272 680kΩ 684
 1Ω 010 100Ω 101 10kΩ 103 1MΩ 105
 6.8Ω 068 390Ω 391 22kΩ 223 4.7MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C*** : CERAMIC CAP.

3) DD1 x x x 370, Ceramic capacitor
 ↳ Disc type
 ↳ Temp. coeff. P350~N1000, 50V
 ↳ Capacity value
 ↳ Tolerance

Examples

② Tolerance (Capacity deviation)

±0.25 pF 0
 ±0.5 pF 1
 ±5 % 5

Tolerance of COMMON PARTS handled here are as follows :

0.5 pF - 5 pF ± 0.25 pF
 6 pF - 10 pF ± 0.5 pF
 12 pF - 560 pF ... ± 5 %

③ Capacity value

0.5 pF 005 3 pF 030 100 pF 101
 1 pF 010 10 pF 100 220 pF 221
 1.5 pF 015 47 pF 470 560 pF 561

C*** : CERAMIC CAP.

4) DK16 x x x 300, High dielectric constant ceramic capacitor
 ↳ Disc type
 ↳ Temp. chara. 2B4, 50V
 ↳ Capacity value

Examples

④ Capacity value

100 pF 101 1000 pF 102 10000 pF 103
 470 pF 471 2200 pF 222

C*** : 5) ELECTROLY CAP. (), 6) FILM CAP ()

5) EA x x x x x 10, Electrolytic capacitor
 ↳ One-way lead type, Tolerance ±20%
 ↳ Working voltage
 ↳ Capacity value

Examples

⑤ Capacity value

0.1 μF 104 4.7 μF 475 100 μF 107
 0.33 μF 334 10 μF 106 330 μF 337
 1 μF 105 22 μF 226 1100 μF 118
 2200 μF 228

⑥ Working voltage

6.3 V 006 25 V 025
 10 V 010 35 V 035
 16 V 016 50 V 050

6) DF15 x x x 350 → Plastic film capacitor
 DF15 x x x 310 → One-way type, Mylar ±5% 50V
 DF16 x x x 310 → Plastic film capacitor
 ↳ One-way type, Mylar ±10% 50V
 ↳ Capacity value

Examples

⑦ Capacity value

0.001 μF (1000 pF) 102 0.1 μF 104
 0.0018 μF 182 0.56 μF 564
 0.01 μF 103 1 μF 105
 0.015 μF 153

NOTE 1) The above CODES(R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts(RI05, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows :

1. KOA Corporation

Part No.(MJI)	Type No.(KOA)	Description
NH05 x x x 140	RF25S x x x x Ω	J ±5% (1/4W)
NH05 x x x 120	RF50S x x x x Ω	J ±5% (1/2W)
NH85 x x x 110	RF73B2A x x x x Ω	J ±5% (1/10W)
NH95 x x x 140	RF73B2E x x x x Ω	J ±5% (1/4W)

* Resistance value

Resistance value(0.1Ω - 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No.(MJI)	Type No.(MEC)	Description
NF05 x x x 140	ERD-2FCJ x x x	(±5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	ERD-2FCG x x x	(±2% 1/4W)
RF02 x x x 140		

* Resistance value



Examples

* Resistance value
 0.1Ω 001 10Ω 100 1kΩ 102 100kΩ 104
 0.5Ω 005 18Ω 180 2.7kΩ 272 680kΩ 684
 1Ω 010 100Ω 101 10kΩ 103 1MΩ 105
 6.8Ω 068 390Ω 391 22kΩ 223 4.7MΩ 475


ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X' TAL : CRYSTAL

NOTE ON SAFETY:

Symbol  Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol  Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

 がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

(VERS.:VERSION, U:U.S.A., F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJ)
			MAIN CIRCUIT BOARD						
			DIODES						
D101		9965 000 04620	1SS355TE-17	*HD201320R	TR106		9965 000 04651	UMG4N	BA21711000
D103		9965 000 04620	1SS355TE-17	*HD201320R	TR110		4822 130 63618	FET 2SK880	HY208802B0
D190		9965 000 04620	1SS355TE-17	*HD201320R	TR111		4822 130 63618	FET 2SK880	HY208802B0
D191		4822 130 80523	DA204U	HZ20008210	TR112		9965 000 04652	FET 2SK2145	*HF200260R
D193		9965 000 04620	1SS355TE-17	*HD201320R	TR117		4822 130 11352	DTC144TU	*BA000820R
D300		9965 000 04620	1SS355TE-17	*HD201320R	TR167		9965 000 04653	FMY4A	*BA000850R
D301		9965 000 04620	1SS355TE-17	*HD201320R	TR170		4822 130 11352	DTC144TU	*BA000820R
D500		9965 000 04620	1SS355TE-17	*HD201320R	TR171		9965 000 04654	UMX3N	*BA000860R
D501		9965 000 04620	1SS355TE-17	*HD201320R	TR172		4822 130 10698	2SA1576A Q/R/S	HX100012A0
D850		9965 000 04621	UMN11N	*HD201330R	TR190		4822 130 60856	DTC144EUA	BA20021210
D901		9965 000 04621	UMN11N	*HD201330R	TR200		4822 130 60669	2SC4081 R/S	HX340811B0
D902		9965 000 04620	1SS355TE-17	*HD201320R	TR201		4822 130 60669	2SC4081 R/S	HX340811B0
D903		9965 000 04620	1SS355TE-17	*HD201320R	TR202		4822 130 60669	2SC4081 R/S	HX340811B0
			INTEGRATED CIRCUITS		TR300		4822 130 61199	DTA144EU	BA10014210
IC100	nsp	IC CYC11AP000(HERCULES)	nsp	TR490		4822 130 60856	DTC144EUA	BA20021210	
IC110	4822 209 83357	IC.NJM4560M	HC10029090	TR491		4822 130 11352	DTC144TU	*BA000820R	
IC111	4822 209 71451	IC NJM4558M	HC10011090	TR500		4822 130 11352	DTC144TU	*BA000820R	
IC120	9965 000 04622	IC BU4011BFV-E2	*HC105480R	TR600		4822 130 60856	DTC144EUA	BA20021210	
IC121	9965 000 04624	IC BU4S81-TR	*HC105470R	TR801		4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC201	nsp	IC CYC12MP000 (LION)	nsp	TR802		4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC202	9965 000 04625	IC AN8623FBQ	*HC105420R	TR804		4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC203	4822 209 71451	IC NJM4558M	HC10011090	TR805		4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC250	9965 000 04626	IC EL5244C	*HC105500R	TR806		4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC300	9965 000 04627	IC MN67700VRZB	*HC105220R		VR110	9965 000 04655	TRIM T08 MVR32 222	*NY000290R	
IC311	9965 000 04628	IC TC7SHU04FUTE85L	*HC105430R		VR120	9965 000 04655	TRIM T08 MVR32 222	*NY000290R	
IC490	9965 000 04629	IC MN66261	*HC105210R		VR121	9965 000 04655	TRIM T08 MVR32 222	*NY000290R	
IC500	9965 000 04630	IC CYC13DD000(MERMAID)	*HC105340R		VR202	9965 000 04656	TRIM T08 MVR32 232	*NY000300R	
IC501	9965 000 04631	IC HY628100ALG-55	*HC105350R						
IC502	9965 000 01910	IC HY57V161610DTC-8	HC10092000		X301	9965 000 04643	X-TAL CX-16F 40.000MHz	*JX000640R	
IC503	9965 000 04632	IC TC74VHC00FT	HC005105K0		X601	9965 000 04659	RESONATOR CCR4.0MC3T	*FQ000410R	
IC550	9965 000 04633	IC TC74VHC15FTEL	HC005805K0		X800	9965 000 04660	X-TAL CX-11F 27MHz±15PPM	*JX000650R	
IC600	nsp	IC MB90F574APFV-G249-AKSYS1	nsp						
IC602	9965 000 04634	IC MX23C1610MC-12	*HC105490R						
IC603	4822 209 16907	IC M24C16-MN6T	*HC105440R		D11	9965 000 04620	1SS355TE-17	*HD201320R	
IC605	9965 000 04632	IC TC74VHC00FT	HC005105K0		D31	9965 000 04620	1SS355TE-17	*HD201320R	
IC606	9965 000 04635	IC TC74VHCT245AFTEL	*HC105230R		D32	9965 000 04620	1SS355TE-17	*HD201320R	
IC607	9965 000 04636	IC TC74VHC574FTEL	HC006205K0		D33	9965 000 04661	UDZ10BTE-17	*HD301810R	
IC610	4822 209 33521	IC TC7W04FUTE12L	HC10382050						
IC611	9965 000 04632	IC TC74VHC00FT	HC005105K0						
IC612	9965 000 04637	IC TC7WH74FUTE12L	*HC105450R		IC1	9965 000 04662	IC BA6859AFP-E2	*HC105320R	
IC613	9965 000 04639	IC TC74VHC08FTEL	HC005305K0		IC2	9965 000 04663	IC BA5938FM-E2	*HC105300R	
IC614	9965 000 04640	IC TC74VHC86FT	*HC105330R		IC3	4822 209 71451	IC NJM4558M	HC10011090	
IC700	9965 000 04644	IC ZIVA3	*HU100380R		IC4	4822 209 83361	IC NJM2904M	*HC105520R	
IC701	9965 000 01910	IC HY57V161610DTC-8	HC10092000						
IC702	9965 000 01910	IC HY57V161610DTC-8	HC10092000						
IC703	9965 000 04645	IC TC7WH157FUTE12L	*HC105370R		TR1	4822 130 60856	DTC144EUA	BA20021210	
IC800	9965 000 04646	IC SM8701BM-ET	*HC105390R		TR31	9965 000 04667	2SB1132 P/Q/R	*HT200370R	
IC801	4822 209 17194	IC TC7WU04FUTE12L	HC700405U0		TR32	9965 000 04667	2SB1132 P/Q/R	*HT200370R	
IC802	9965 000 04628	IC TC7SHU04FUTE85L	*HC105430R		TR33	4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC803	4822 209 17194	IC TC7WU04FUTE12L	HC700405U0		TR34	4822 130 10698	2SA1576A Q/R/S	HX100012A0	
IC850	9965 000 04647	IC ADV7172 KST	*HC105380R		TR35	4822 130 60669	2SC4081 R/S	HX340811B0	
IC901	9965 000 04648	IC BA05FP-E2	*HC105530R		TR36	4822 130 63496	DTC114TU	BA20019210	
IC911	9965 000 04649	IC PCM1735E/2K	*HC105400R		TR37	4822 130 60669	2SC4081 R/S	HX340811B0	
IC931	9965 000 04649	IC PCM1735E/2K	*HC105400R		TR38	4822 130 61903	DTA114EUA	BA10026210	
IC951	9965 000 04649	IC PCM1735E/2K	*HC105400R						
IC971	9965 000 04649	IC PCM1735E/2K	*HC105400R						
IC991	9965 000 04650	IC TC74HC4053AFTEL	*HC105360R						
			TRANSISTORS						
TR100		9965 000 04651	UMG4N	BA21711000	P100	9965 000 04664	SOCKET	*YJ002180R	
TR101		9965 000 04651	UMG4N	BA21711000	P200	9965 000 04665	40FLZ-RSM1-RTB40P T44E	*YJ002200R	
TR102		9965 000 04651	UMG4N	BA21711000	P300	9965 000 04666	SOCKET	*YJ002190R	
TR103		9965 000 04651	UMG4N	BA21711000					
TR104		9965 000 04651	UMG4N	BA21711000					
TR105		9965 000 04651	UMG4N	BA21711000					