

Service Manual

DV18 /F1N, /K1G, /S1G, /U1G, /U1B

DVD Player

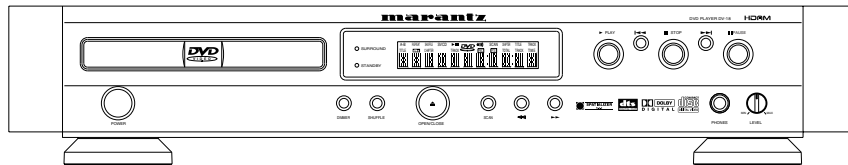


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Please use this service manual with referring to the user guide (D.F.U.) without fail.

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ください。

marantz®

DV-18

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
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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 2
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
Color different output level	Y output: 1.0 Vp-p / 75 ohms unbalanced Cb, Cr output: 0.7 Vp-p / 75 ohms RCA pin Jack x 3

Audio output

Line output	2.0 Vrms / 330 ohms RCA pin Jack x 2 system
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Digital audio output

Optical output	Optical connector x 1
Coaxial output	0.5 Vp-p / 75 ohm 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	More than 110 dB (Fs = 48 kHz / 24 bit PCM)
Dynamic range	More than 100 dB (Fs = 48 kHz / 24 bit PCM)
Total harmonic distortion	Less than 0.0025% (Fs = 48 kHz / 24 bit PCM)

CD audio characteristics:

Frequency response	4 Hz - 20 kHz (EIAJ)
S/N ratio	More than 110 dB (EIAJ)
Dynamic range	More than 100 dB (EIAJ)
Total harmonic distortion	Less than 0.0025% (EIAJ)

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

Power requirements 120V AC, 60 Hz (/U1)
100V AC, 50 / 60 Hz (/F1)
220V AC, 50 Hz (/K1)
220 - 230V AC, 50 / 60 Hz (/S1)

Power consumption 22 W (standby mode = approx 5 W, power off = 0 W)

Operation temperature 5 °C - 35 °C

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

Dimensions 458 (W) x 88 (H) x 313 (D) mm (excluding protrusions)

Weight 6.4 kg

Supplied accessories

Audio / Video cable	x 1
D-BUS remote cable	x 1
Remote control unit	x 1
Batteries	x 3

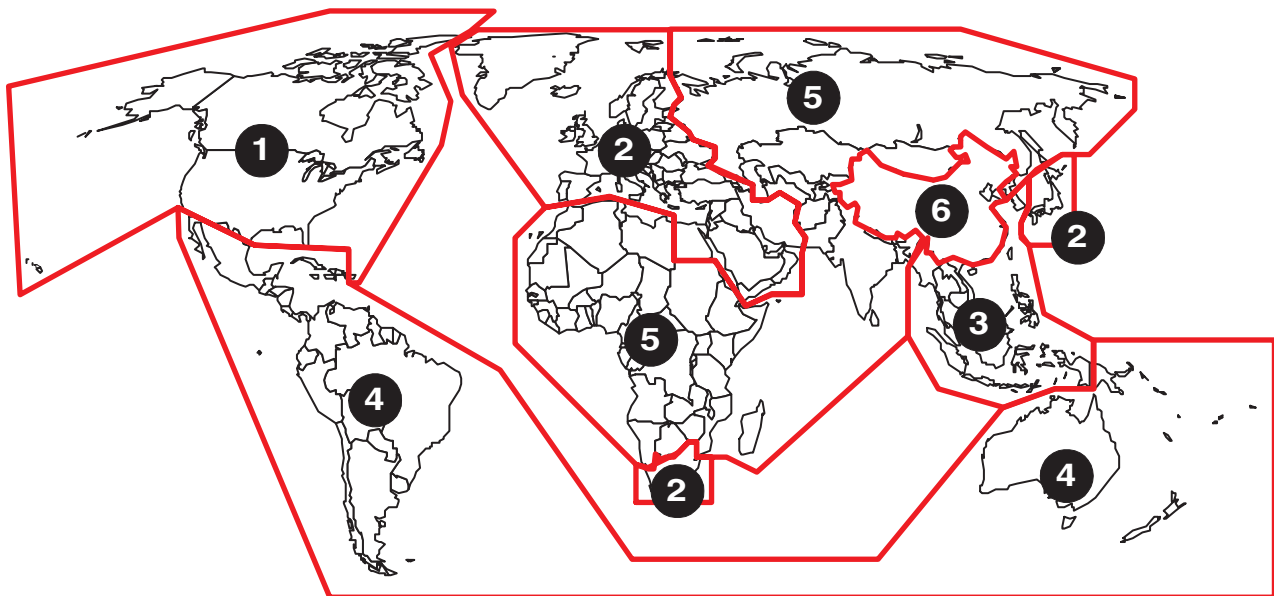
• For improvement purposes, specifications and design are subject to change without notice

2. REGIONAL CODES

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
/SXX	3	SINGAPORE/HONGKONG
/UXX	1	USA/CANADA

THE DISCS THAT THE DV-18 CAN HANDLE

The following discs can be played back with a DV-18.

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 DV-18.

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.

Cancelling password for parental press the DIMMER button and hold for 10 seconds while the player is stopped.

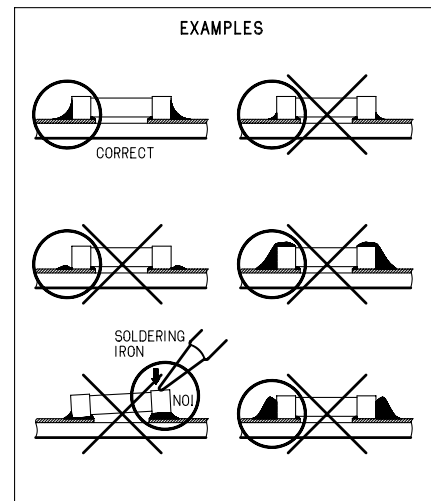
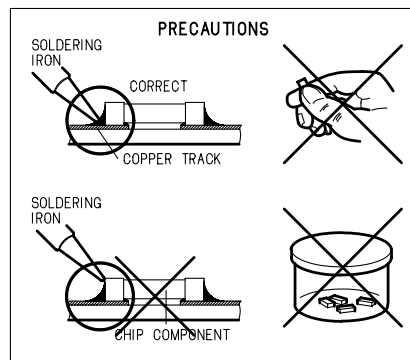
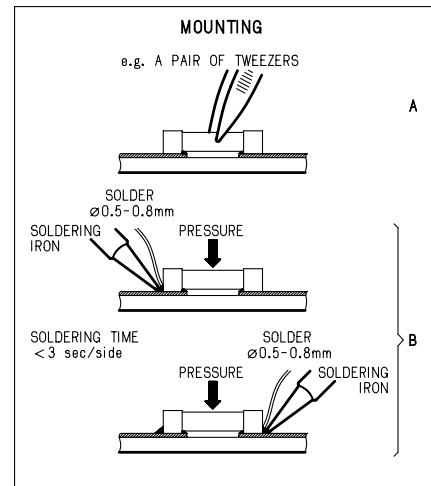
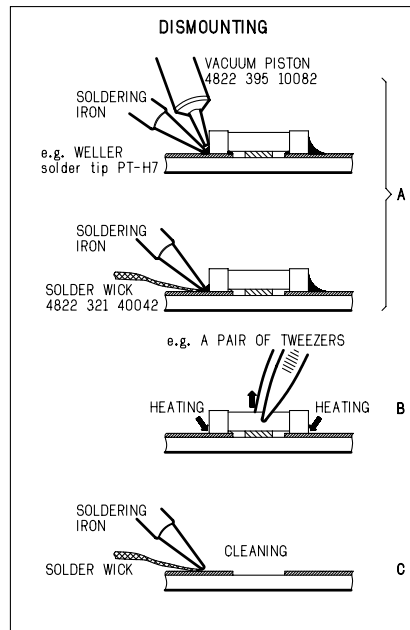
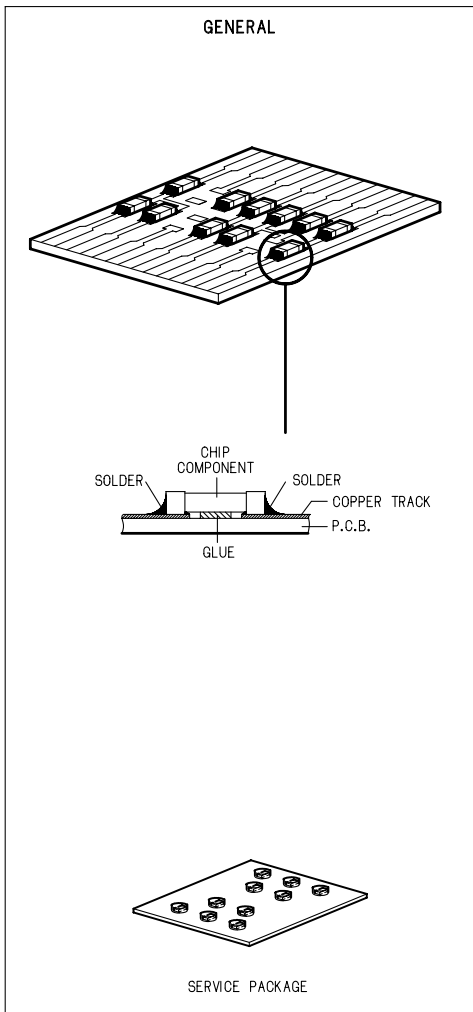
Error Code Table

Code	Error Description	Disc
16	Access to CD-DSP(IC490) is not available.	D/V/C
17	Sledge motor is not working.	D/V/C
18	No tracking ON.	D/V/C
19	No focus ON.	D/V/C
20	Sub code of CD,VCD is not readable.	V/C
32	No access to the servo DSC (IC300).	D/V/C
33	No access with the DEM/ECC (IC500).	D/V/C
34	No access with A/V decoder (IC700).	D/V/C
35	No access with the flash ROM (IC602).	D/V/C
36	No access with the EEPROM (IC603).	D/V/C
37	No access with the A/V Encoder (IC850).	D/V/C
38	No access with the Read channel (IC200).	D/V/C

D: DVD, V: VideoCD, C: CD

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 (PAL)	4822 397 10131
DVD test disc (NTSC) ALMEDIO	TDV-540

5. DISASSEMBLY

1. Remove 6 screws and remove the top cover. (see Fig.5-1)
2. Remove the cable holder. Remove the housing of the wire harness at the connector JP06 on the PCB PP01. (see Fig.5-2)
3. Remove FFC and wire harness from the DVD main PCB which mounted under the DVD mechanism. (see Fig.5-2)
4. Remove the retainer (035G) on the DVD mechanism. (see Fig.5-3)
5. Remove 4 screws and remove DVD mechanism module. (see Fig.5-4)

How to open the Disk tray

Put a small screwdriver into the slide knob and slide it. Then the tray comes out. After the first centimeter it is possible to pull the tray out by hand. (see Fig.5-5)

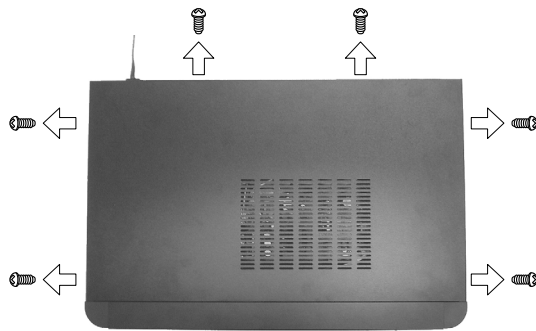


Fig. 5-1

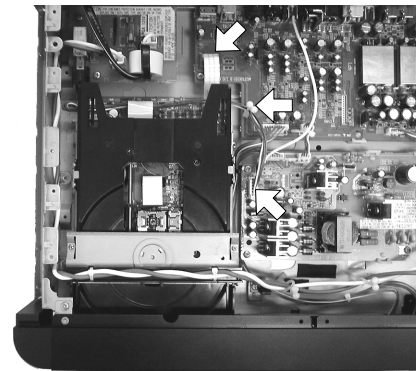


Fig. 5-2

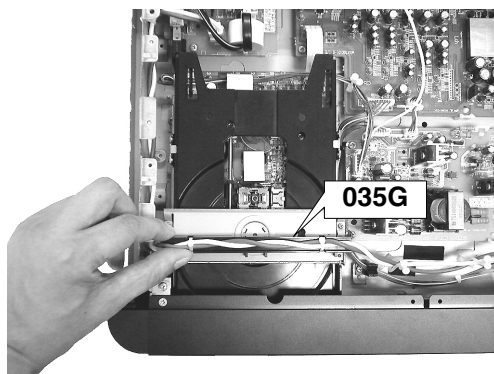


Fig. 5-3

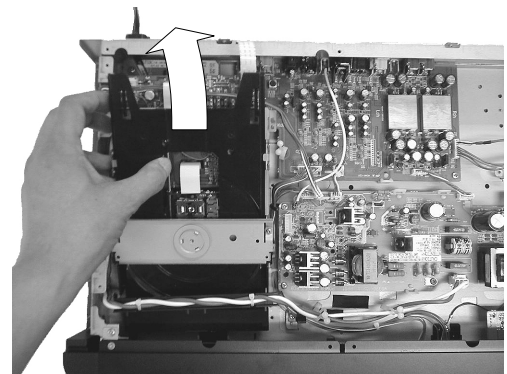


Fig. 5-4

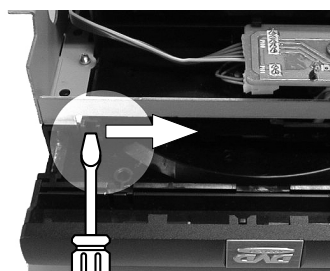


Fig. 5-5

5. DISASSEMBLY

1. ネジを 6本外し、トップカバーを 外します。(Fig.5-1)
2. ケーブルホルダーを 緩め、DVD メイン基板 <-> PP01 間のケーブルを コネクタ JP06 側で 外します。(Fig.5-2)
3. DVD メイン基板に接続されている FFC とケーブルを 外します。(Fig.5-2)
4. DVD メカの上部のケーブルホルダー (035G) を 外します。(Fig.5-3)
5. ネジを 4 本外し DVD モジュールを 取り外します。(Fig.5-4)

ディスクトレイの開け方

DVD モジュールを 裏返し、細いドライバーでスライドノブを 左側に 押します。トレイが 手前に出てきます。(Fig.5-5)

6. REPLACEMENT OF PRINCIPAL COMPONENTS

6-1. Removal of the TRAVERSE MECHA.

6-1-1. 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.

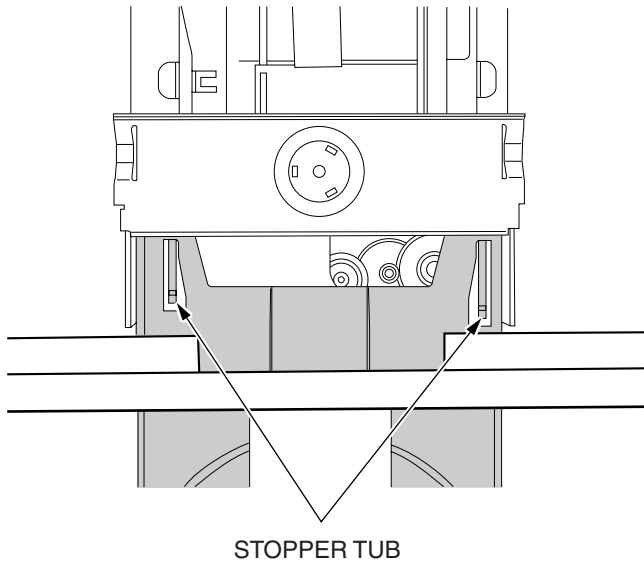


Fig. 6-1

- 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.

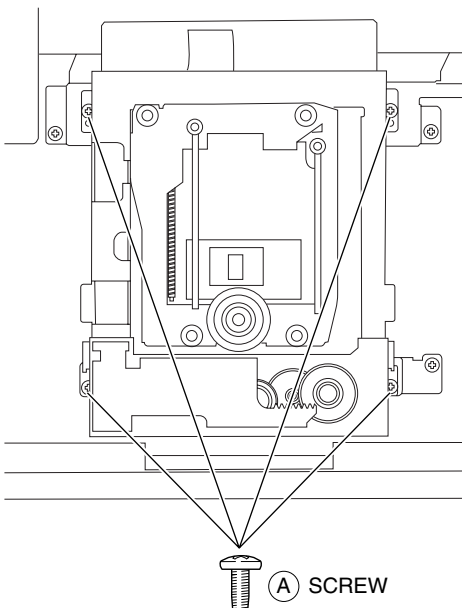


Fig. 6-2

6-1-2. 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.

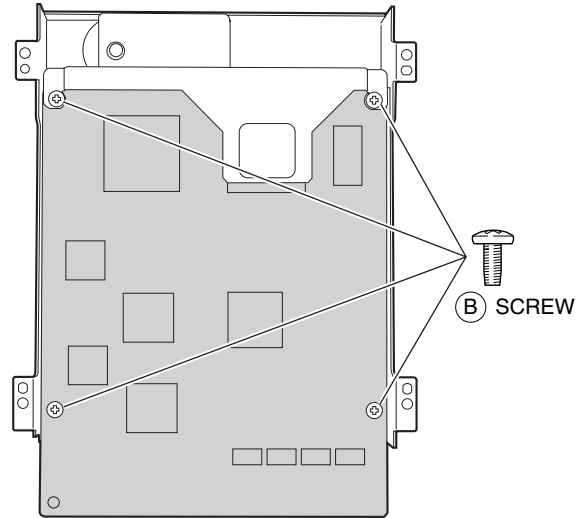


Fig. 6-3

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

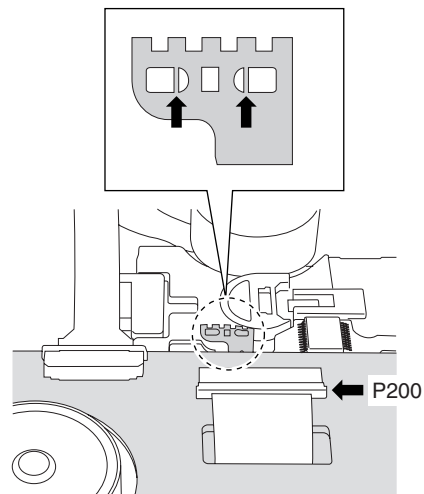


Fig. 6-4

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.

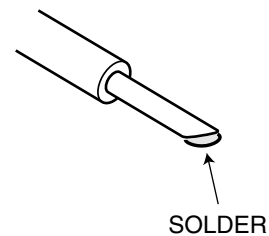


Fig. 6-5

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

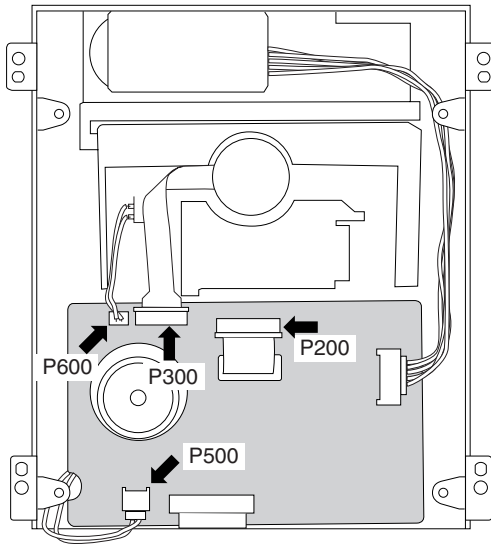


Fig. 6-6

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

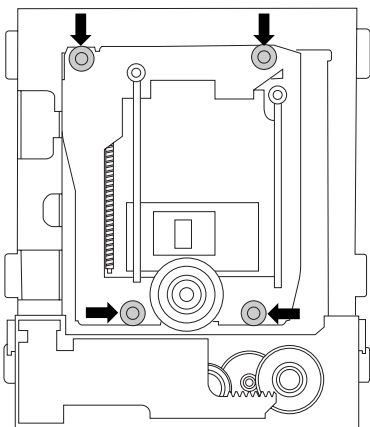


Fig. 6-7

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

6-2. Replacement of the SPINDLE MOTOR

- * Because the SPINDLE MOTOR position is very critical, jitter adjustment should be performed after replacement.
- 1) Disconnect the P300 connector on the MECHANISM PCB.
 - 2) Insert a Philips type screw driver into the hole on the TURN TABLE of the SPINDLE MOTOR and remove the two screws.

6-3. 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.

7. SERVICE MODE

FLD, LED TEST

1. Press the mains switch (**POWER BUTTON**) while depressing the **PAUSE** button and **STOP** button.
2. Status will be on the **TEST mode 1** and FL display shows <TEST 1>.
3. Press the **NEXT** button, then **Standby LED** will be light ON and FLD shows <LED 1>.
4. Press the **NEXT** button again, then **Surround LED** will be light ON and FLD shows <LED 2>.
5. Press the **NEXT** button again, then all segments of FLD will be light ON.
6. Press the **NEXT** button again, then each segments of FLD will be light ON by press by press. (17 forms)
7. Finally FLD shows <KEY 0 0 0 0>, it will be in "BUTTON (KEY) TEST MODE".
8. If press some button on the front panel, FLD shows a code of that pressed button.
9. If press the PAUSE button and STOP button simultaneously while FLD shows <KEY 0 0 0 0>. The status will be in "REMOTE CONTROL TEST MODE" and FLD shows <RC6 000000>.
10. If press some button on the remote controller, FLD shows a code of that pressed button.
11. Press the **NEXT** button again, then the version number of the main microprocessor (IC600 on the DVD main PCB) will be shown on the FLD.
12. Press the **NEXT** button again, then the version number of the slave microprocessor (**QF01** on the front PCB) will be shown on the FLD.
13. Press the **NEXT** button again, then the status will be #2. <TEST 1> mode. In case of finish the <TEST 1> mode, press the mains switch (**POWER BUTTON**).

How to EEPROM all clear

1. Press the mains switch (**POWER BUTTON**) while depressing the **PLAY** button and **STOP** button.
2. Status will be on the **TEST mode 2** and FL display shows <TEST 2>. After a couple of seconds FL display shows <TEST2 OK>.
3. Press the **PLAY** button, **PAUSE** button and **STOP** button simultaneously.
4. FL display shows <TEST OK>, then power off the mains switch (**POWER BUTTON**). **EEPROM** should cleared.

FLD, LEDの確認のしかた

1. **PAUSE** ボタンと **STOP** ボタンを同じに押しながら、電源スイッチを押して下さい。
2. **テストモード 1** に入り、ディスプレイには[TEST 1]と表示されます。
3. **NEXT** ボタンを押すと **Standby LED** が点灯し、FL ディスプレイには[LED 1]と表示されます。
4. 更に **NEXT** ボタンを押すと **Surround LED** が点灯し、FL ディスプレイには[LED 2]と表示されます。
5. 更に **NEXT** ボタンを押すと FL ディスプレイの全てのセグメントが点灯します。
6. 続けて **NEXT** ボタンを押していくと FL ディスプレイの各セグメントが点灯し、パターンが変わっていきます (全 17 種類)。
7. 最後に FL ディスプレイに[KEY 0 0 0 0]と表示され、ボタン (KEY) 操作確認モードになります。
8. 各ボタンを押すと、それらに対応したコードが FL ディスプレイに表示されます。
9. FL ディスプレイが[KEY 0 0 0 0]のときに PAUSE ボタンと STOP ボタンを同時に押すと、FL ディスプレイに[RC6 000000]と表示がされ、リモコンコードの確認画面になります。
10. Remote Control の各ボタンを押すと、それに対応したコードが FL ディスプレイ表示されます。
11. 更に **NEXT** ボタンを押すと、メインマイコン (IC600: DVD メイン基板内) のバージョンが表示されます。
12. 更に **NEXT** ボタンを押すと、フロント (スレーブ) マイコン (**QF01**) のバージョンが表示されます。
13. 更に **NEXT** ボタンを押すと、2. の状態に戻ります。テストモード 1 を終了するには電源ボタンを押して電源を OFF にして下さい。

EEPROMのクリアのしかた

1. **PLAY** ボタンと **STOP** ボタンを同じに押しながら、電源スイッチを押して下さい。
2. **テストモード 2** に入り、ディスプレイには[TEST 2]と表示され、数秒後[TEST OK]と表示されます。
3. **PLAY** ボタンと **PAUSE** ボタンと **STOP** ボタンを同時に押しします。
4. ディスプレイに[TEST2 OK]と表示されたら、電源スイッチを押して電源を OFF にしてください。EEPROM がクリアされます。

Type version confirmation

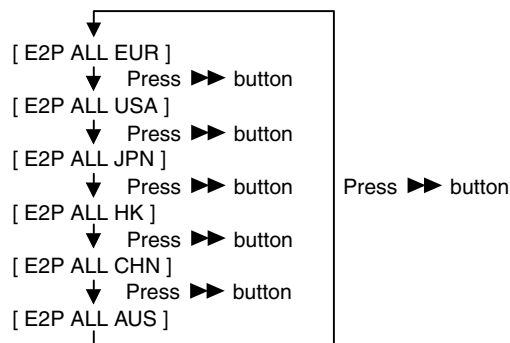
1. Power ON the DVD player. The FL display must be shown <NO DISC>.
2. Pressing the ►► button and ◀◀ button simultaneously.
3. FL display shows product versions as follows.

DISPLAY	VERSIONS
[USA]	/U1B, /U1G
[EUROPE]	/N1B, /N1G
[HK / S 'PORE]	/S1G
[CHINA]	/K1B, /K1G
[JAPAN]	/F1B, /F1N
[NO REGION]	Incorrect setup.

4. Release buttons. Then FL display shows <NO DISC> and status will be in usual mode.

Type Version setup

1. Press the mains switch (POWER BUTTON) while depressing the STOP button and SHUFFLE button.
2. The FL display shows <E2P ALL EUR> after a couple of seconds.
3. Type versions can be changed by pressing ►► button and ◀◀ button.



VERSIONS	DISPLAY
/F1B, /F1N	[E2P ALL JPN]
/U1B, /U1G	[E2P ALL USA]
/N1B, /N1G	[E2P ALL EUR]
/S1G	[E2P ALL HK]
/K1B, /K1G	[E2P ALL CHN]
/A1B (no release)	[E2P ALL AUS]

4. Memorize the version by pressing PLAY button.
5. The FL display shows <VERIFY OK> after a couple of seconds.
6. Power OFF the mains switch.

製品仕向の確認のしかた

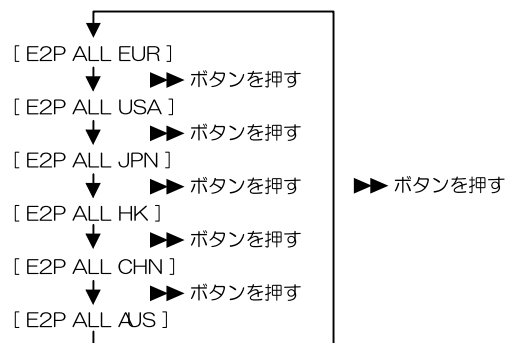
1. Discが入っていない状態で、ディスプレイに[NO DISC]と表示されている事を確認します。
2. ►► ボタンと ◀◀ ボタンを同時に押します。
(押し続ける)
3. ディスプレイに仕向が表示されます。

表示	仕向 (バージョン)
[USA]	/U1B, /U1G
[EUROPE]	/N1B, /N1G
[HK / S 'PORE]	/S1B
[CHINA]	/K1B, /K1G
[JAPAN]	/F1B, /F1N
[NO REGION]	仕向設定が正しくない

4. ボタンを離すと、元の状態に戻りディスプレイに[NO DISC]と表示されます。

製品仕向の設定のしかた

1. STOP ボタンと SHUFFLE ボタンを同じに押しながら、電源スイッチを押して下さい。
2. 4 ~ 5秒後に、ディスプレイに[E2P ALL EUR]と表示がでます。
3. ►► ボタンまたは ◀◀ ボタンを押して仕向を選択します。



仕向	表示
/F1B, /F1N	[E2P ALL JPN]
/U1B, /U1G	[E2P ALL USA]
/N1B, /N1G	[E2P ALL EUR]
/S1G	[E2P ALL HK]
/K1B, /K1G	[E2P ALL CHN]
/A1B (no release)	[E2P ALL AUS]

4. PLAY ボタンを押し、仕向を決定します。
5. 2 ~ 3秒後に、ディスプレイに[VERIFY OK]と表示され、仕向設定が完了します。
6. 電源スイッチを押して、電源をOFFにします。

8. ELECTRICAL ADJUSTMENT

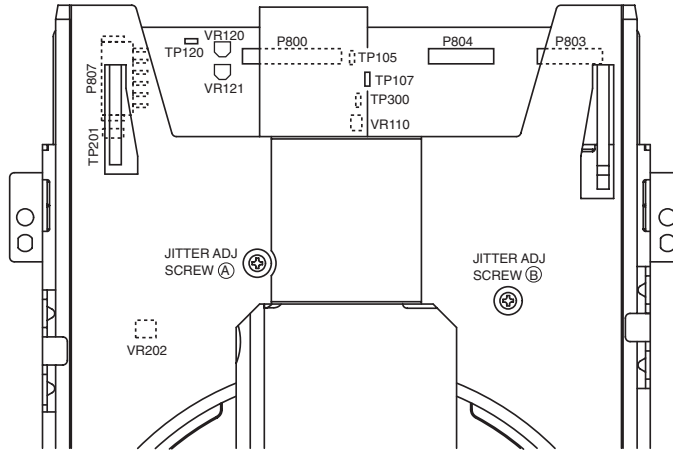


Fig. 8-1

8-1. 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.

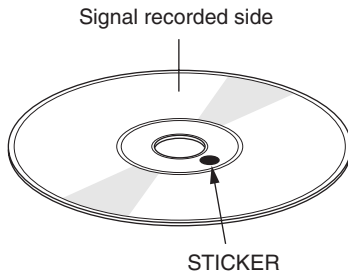


Fig. 8-2

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.)

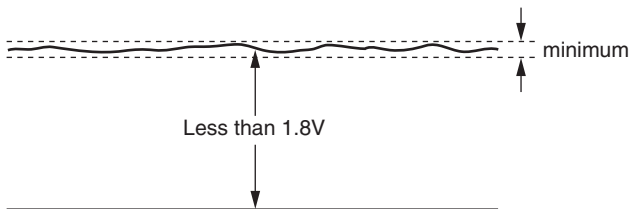


Fig. 8-3

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

8-2. 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)

8-3. 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.

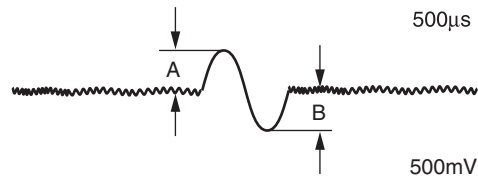


Fig. 8-4

8-4 AS Adjustment

CAUTION :

Do not see the laser pick-up! Cover the laser pick-up unit while AS adjustment.

Adjustment point : VR120, VR121

Test point : TP107(+), TP120 (+) TP105 (GND)

Equipment : Digital Multi Meter (DC voltage)

1. Press the mains switch (**POWER BUTTON**) while depressing the **PLAY** button and **STOP** button.
2. Status will be on the **TEST mode 2** and FL display shows **<TEST 2>**. After a couple of seconds FL display shows **<TEST2 OK>**.
3. Press the **▶▶** button. Then the FL display shows **<E3 02>** and the status will be in **AS adjustment mode**.
4. Measure the DC voltage at the test point **TP107**.
5. Press the **▶▶** button again. Then the DVD laser will light ON and the FL display shows **<E3 00>**.
6. Press the **▶▶** button again. Then the CD laser will light ON and the FL display shows **<E3 01>**.
7. Adjust the voltage at the test point **TP120** by **VR121**, that the value must be same as **TP107** (10mV) value measured on #4. process.
8. Press the **▶▶** button twice of time. Then the DVD laser will light ON and the FL display shows **<E3 00>**.
9. Measure the DC voltage at the status **DVD laser light ON**. Adjust the voltage at that status 35mV (± 10 mV) lower than "CD laser light ON " status by the trim resister VR120.
10. Press the **▶▶** button again. Confirm the DC voltage at the status **CD laser light ON**.
(DC voltage must be 35mV higher than the status **DVD laser light ON**.)
11. Power OFF the mains switch (**POWER BUTTON**).

8-4 AS 調整

注意 :

Laser光を直接見ると目を傷める恐れがあります。AS調整の際にはLaser が点灯しますので必ずLaser 光を遮蔽して下さい。

調整箇所 : VR120, VR121

テストポイント : TP107(+), TP120(+) TP105 (GND)

測定器 : デジタルマルチメーター

1. **PLAY**ボタンと**STOP**ボタンを押しながら、電源スイッチを 押して下さい。
2. **テストモード 2**に入り、ディスプレイには**[TEST 2]**と表示され、数秒後**[TEST2 OK]**と表示されます。
3. **▶▶** ボタンを押し、**A S (反射光)調整モード**に入ります。ディスプレイには **[E3 02]**と表示されます。
4. **TP107**のDC電圧を測定し記録します。
5. **▶▶** ボタンを押し、DVD用 Laser を点灯させます。ディスプレイには **[E3 00]**と表示されますが、何もせず次に進んで下さい。
6. **▶▶** ボタンを押し、CD用 Laser を点灯させます。ディスプレイには **[E3 01]**と表示されます。
7. **VR121**を回し**TP120**の電圧を4.にて測定した**TP107**のDC電圧と同じ値 (± 10 mV) に調整します。
8. **▶▶** ボタンを2回押し、**DVD用 Laser を点灯**させます。ディスプレイには **[E3 00]**と表示されます。
9. このときの電圧が CD Laser 点灯時のDC電圧より 35mV (± 10 mV)低くなるように、**VR120**の半固定抵抗を調整します。
10. **▶▶** ボタンを押し、**CD用 Laser を点灯**させます。ディスプレイには **[E3 01]**と表示されます。この時、DC電圧がDVD用 Laser点灯時より35mV高くなっていることを確認してください。
11. 電源スイッチを押して、電源を切ります。

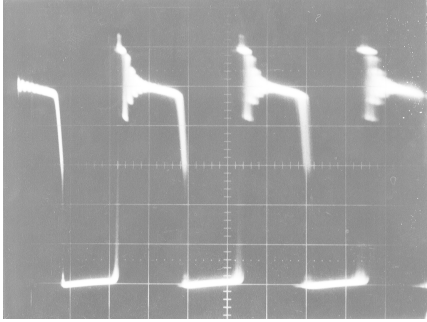
9. WAVEFORM

Power requirements (Refer the circuit diagram page 1-25 and 1-26)
100V AC

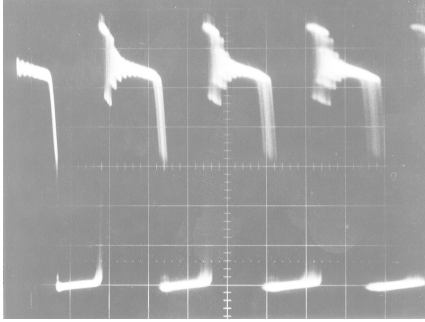
120V AC

220V AC

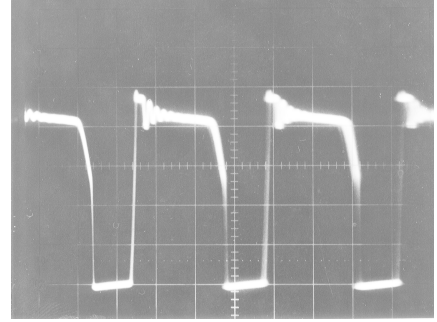
1 50V 5 μ sec



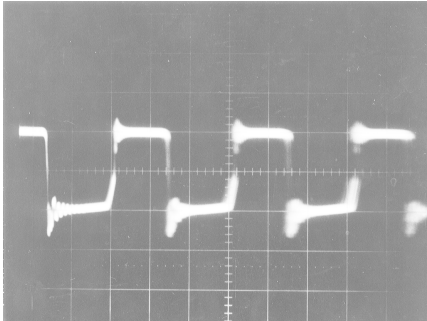
1 50V 5 μ sec



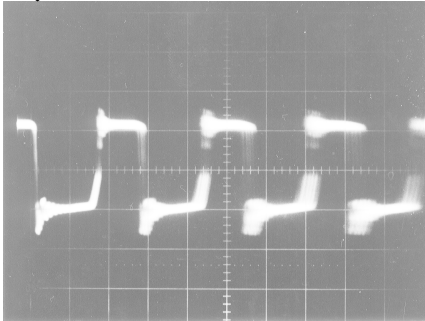
1 50V 5 μ sec



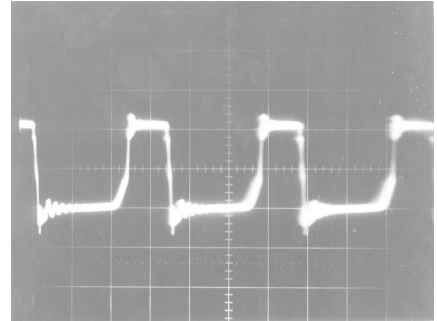
2 10V 5 μ sec



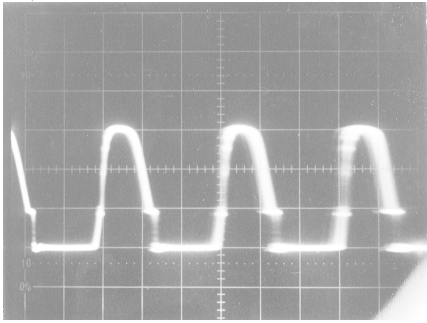
2 10V 5 μ sec



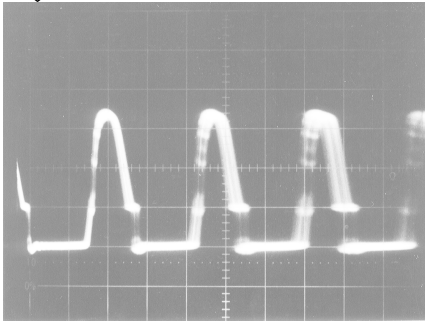
2 10V 5 μ sec



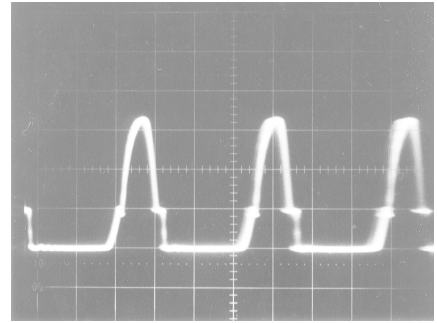
3 5V 5 μ sec



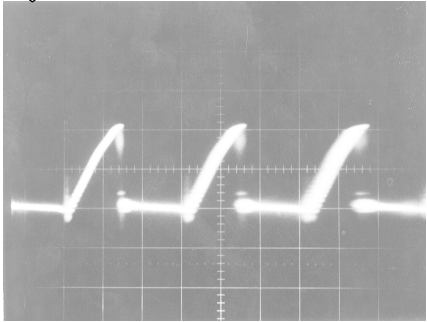
3 5V 5 μ sec



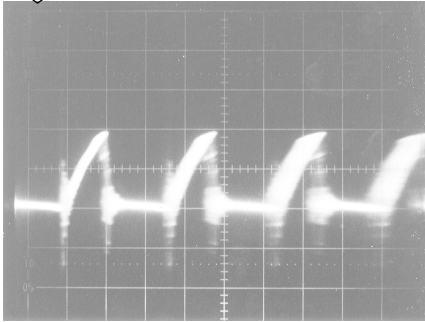
3 5V 5 μ sec



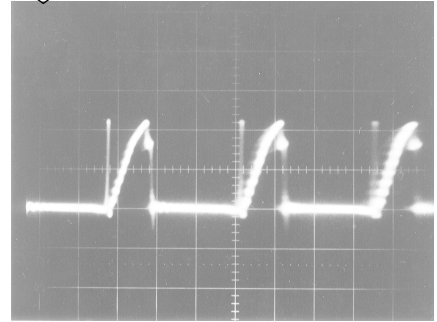
4 0.1V 5 μ sec



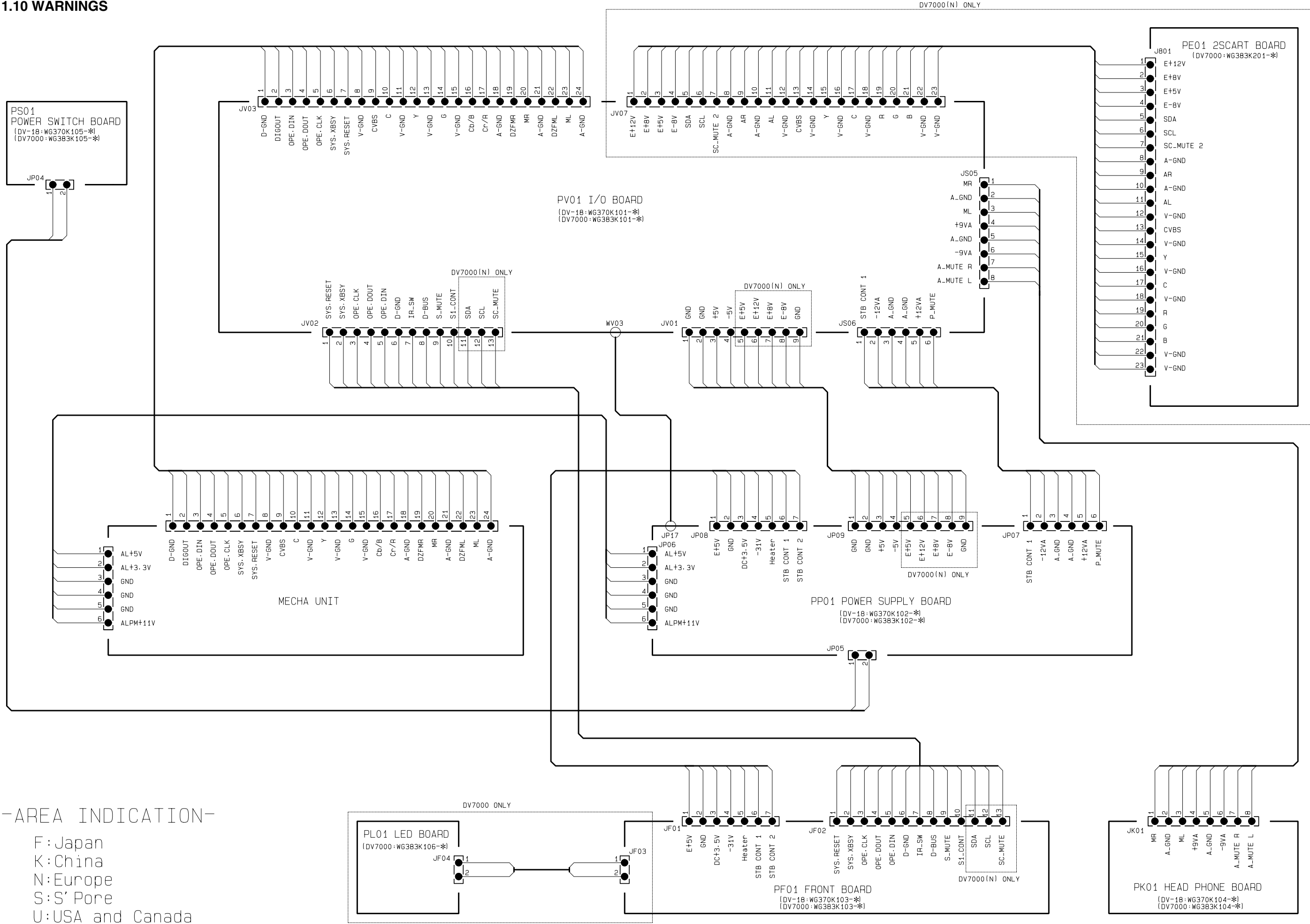
4 0.1V 5 μ sec



4 0.1V 5 μ sec



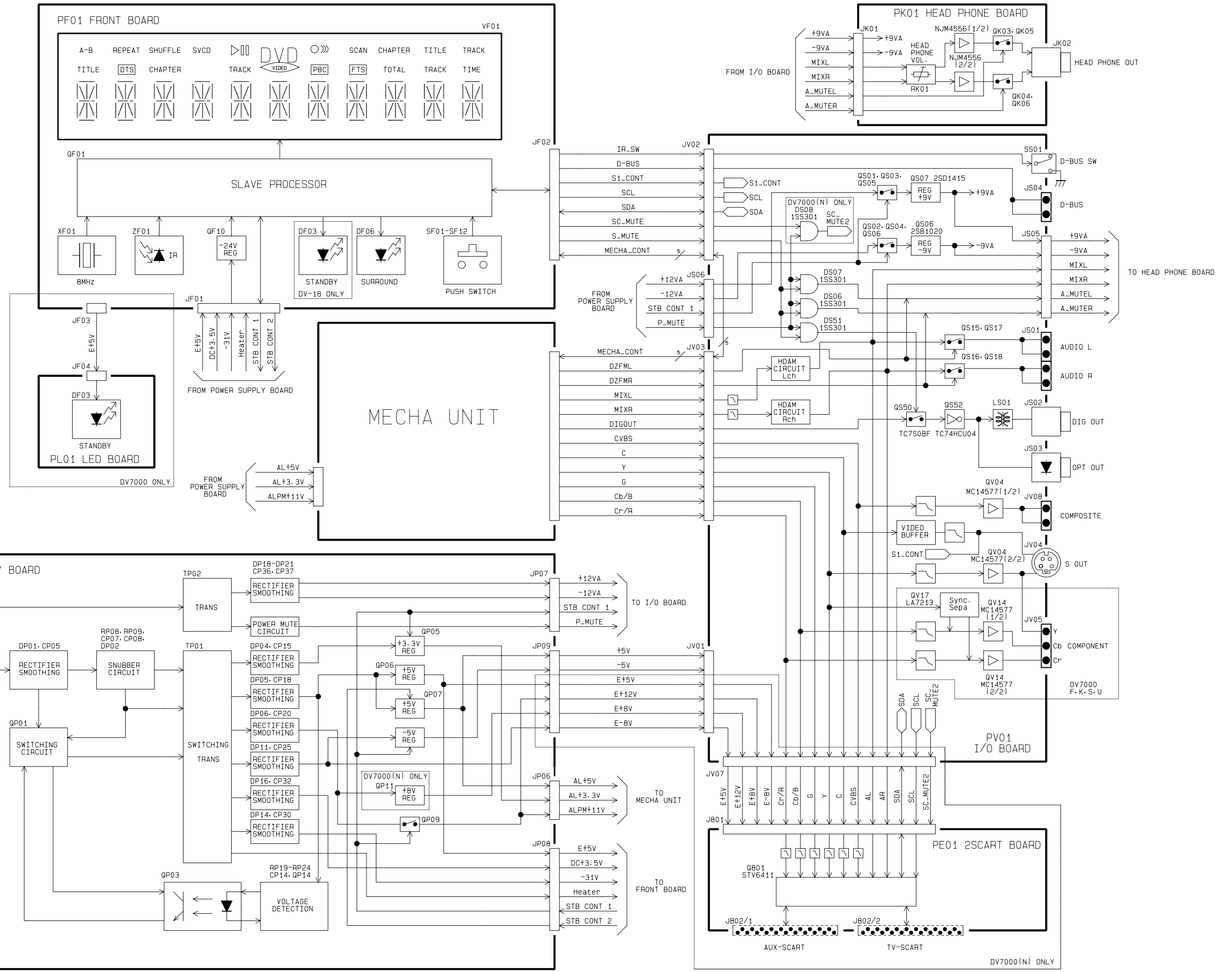
1.10 WARNINGS



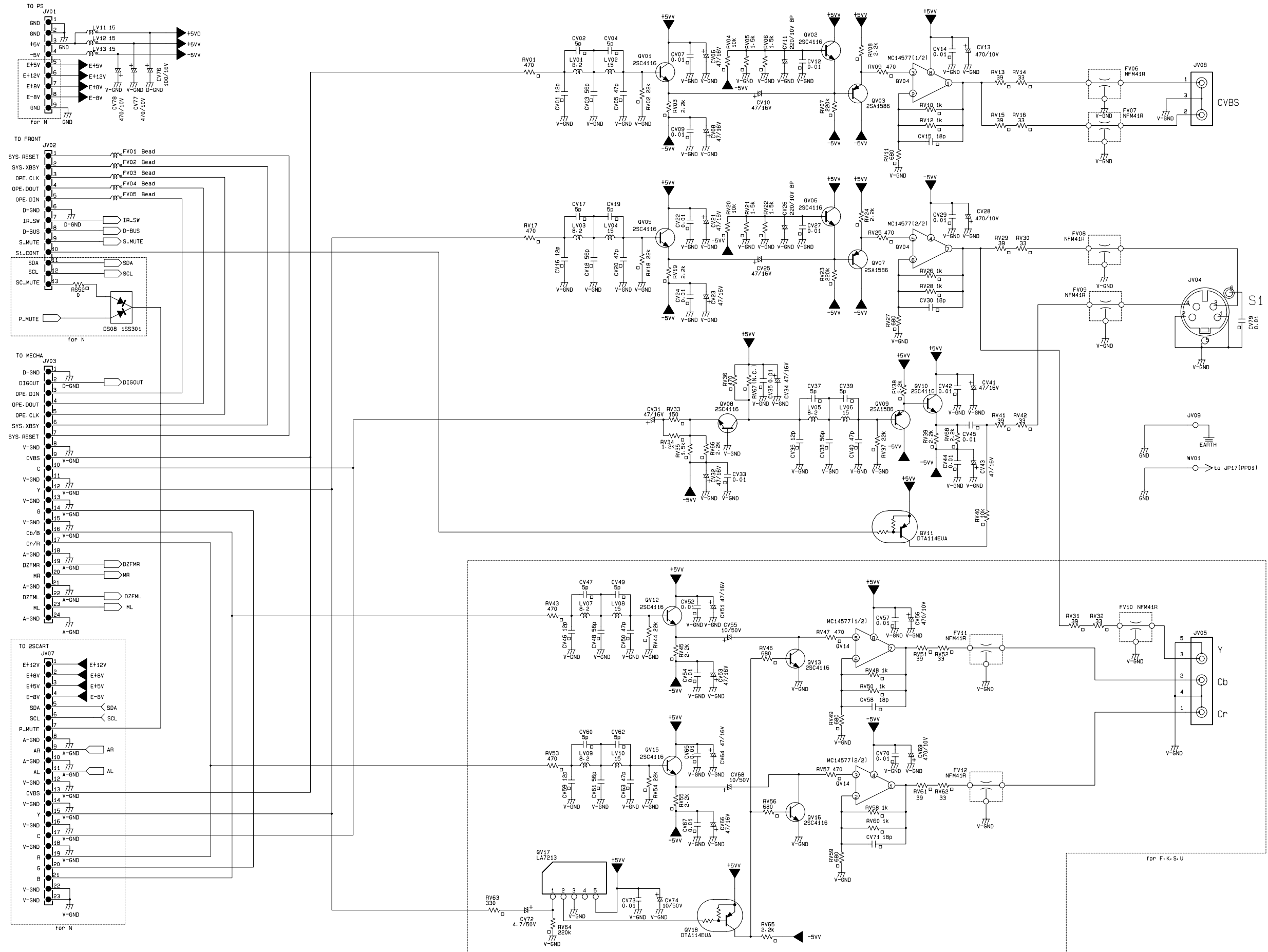
-AREA INDICATION-

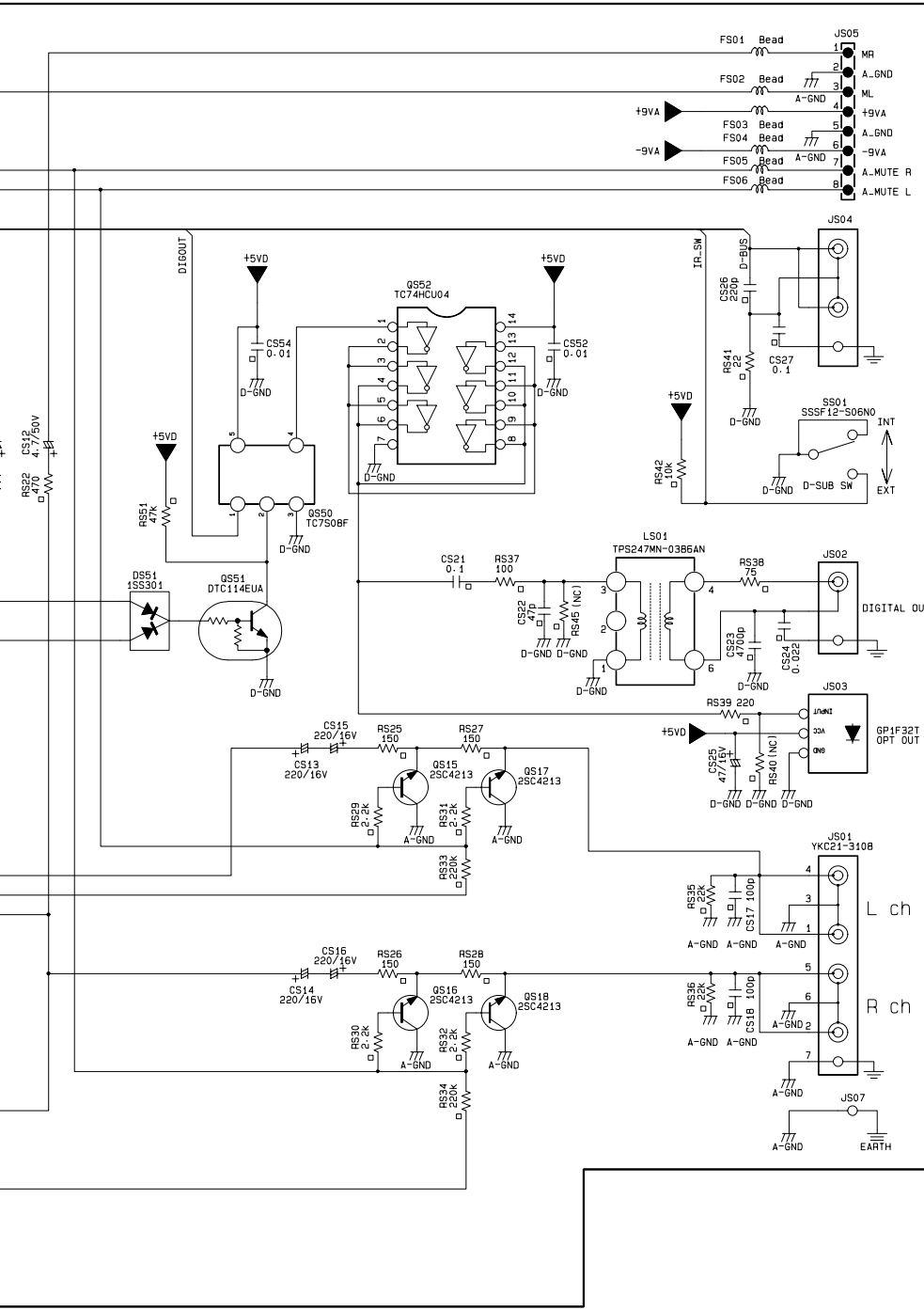
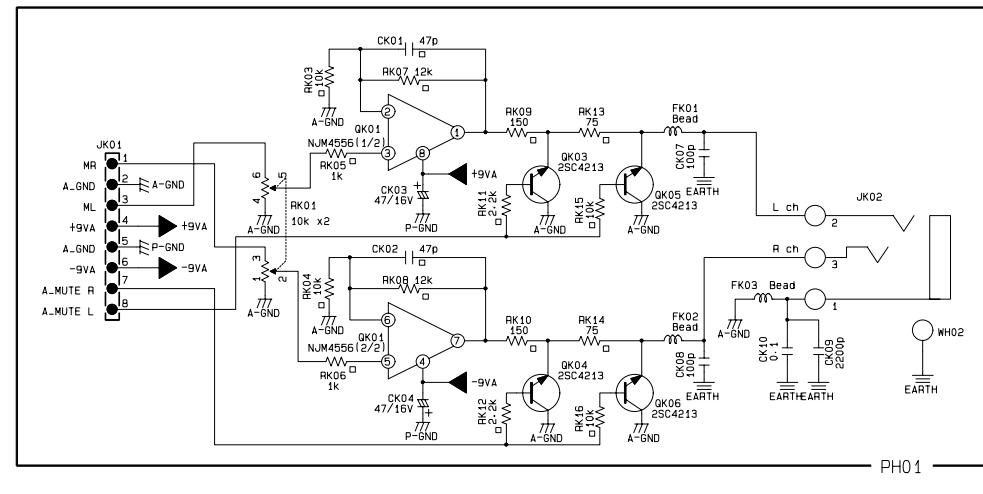
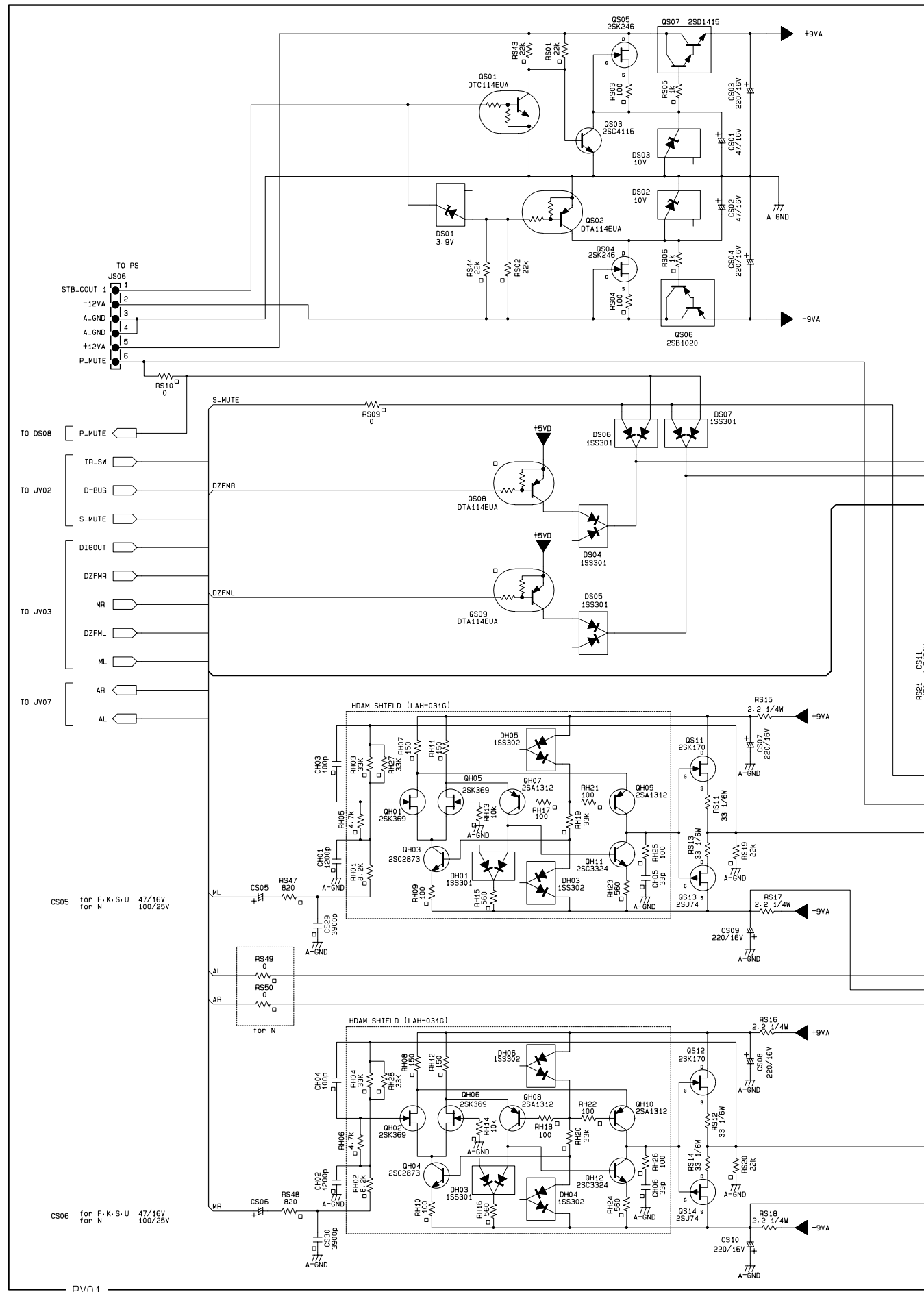
- F: Japan
- K: China
- N: Europe
- S: S' Pore
- U: USA and Canada

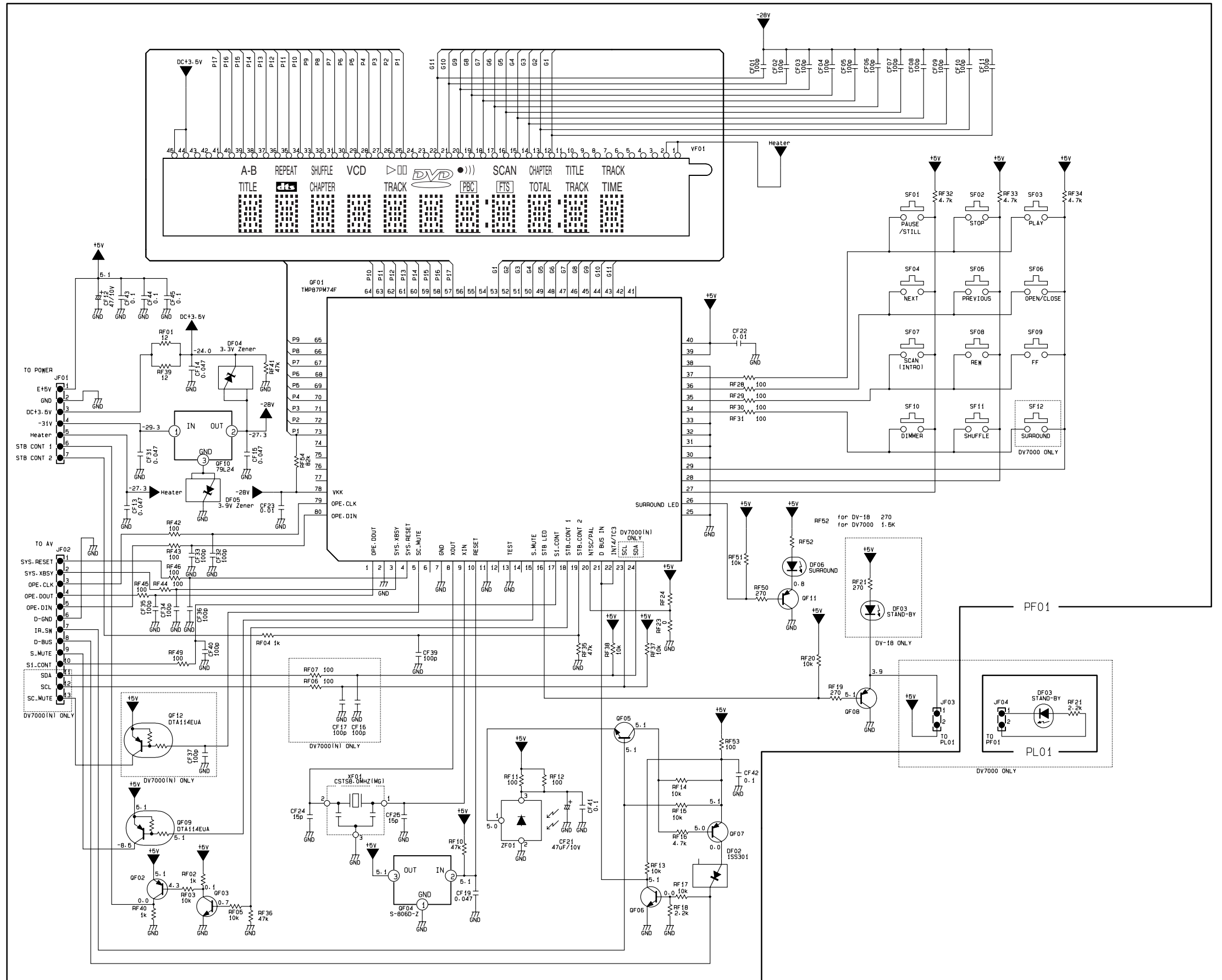
1.11 BLOCK DIAGRAM

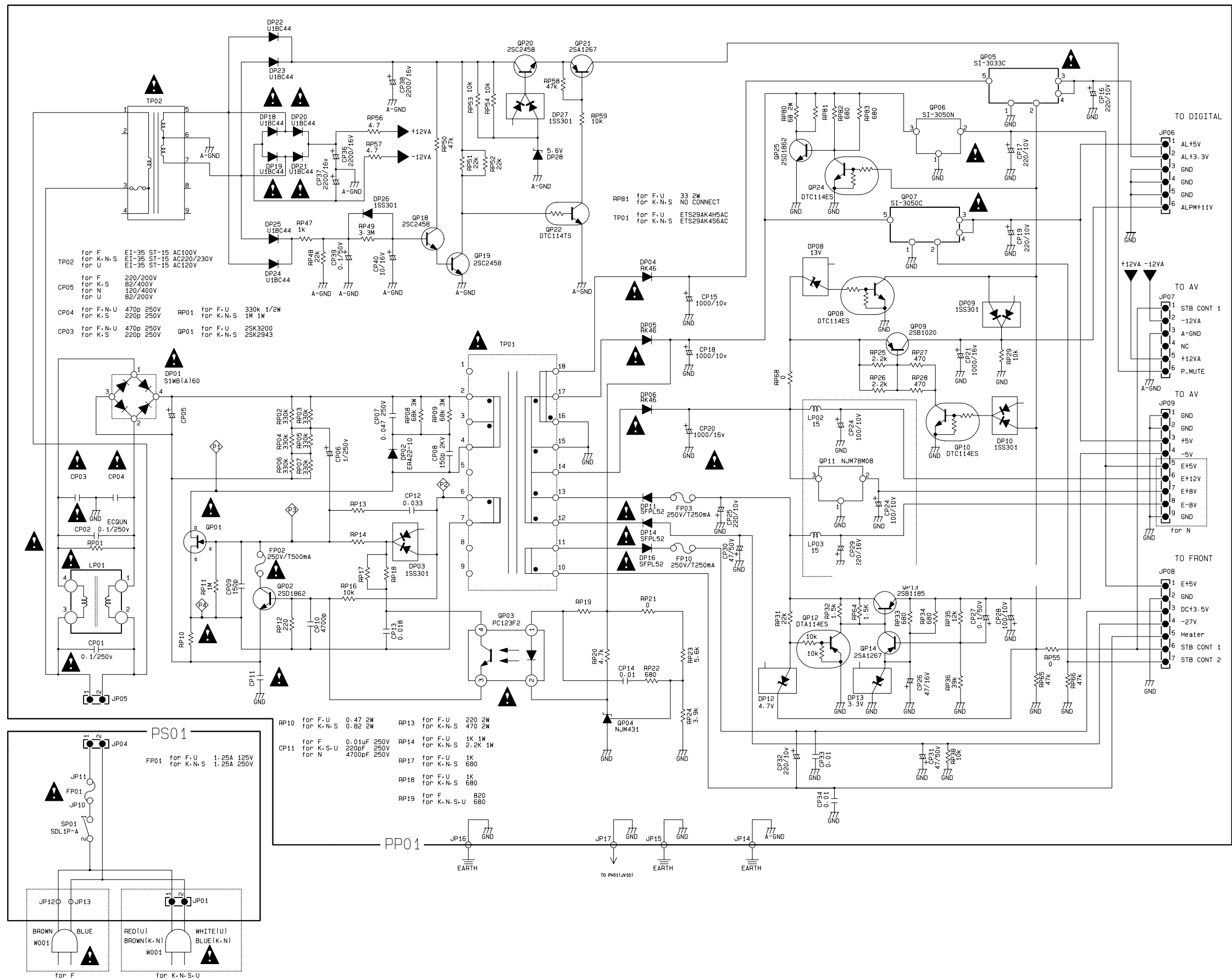


1.12 SCHEMATIC DIAGRAM AND PARTS LOCATION









TP02 for F EI-35 ST-15 AC100V
 for K.N.S EI-35 ST-15 AC220/230V
 for U EI-35 ST-15 AC120V

CP05 for F 220/200V
 for K.S 62/400V
 for N 120/400V
 for U 82/200V

CP04 for F.N.U 470p 250V
 for K.S 220p 250V

CP03 for F.N.U 470p 250V
 for K.S 220p 250V

RP01 for F.U 330k 1/2W
 for K.N.S 1M 1W

QP01 for F.U 25K3200
 for K.N.S 25K2943

RP10 for F.U 0.47 2W
 for K.N.S 0.82 2W

RP13 for F.U 220 2W
 for K.N.S 470 2W

RP14 for F.U 1K 1W
 for K.N.S 2.2K 1W

RP17 for F.U 1K 680
 for K.N.S 680

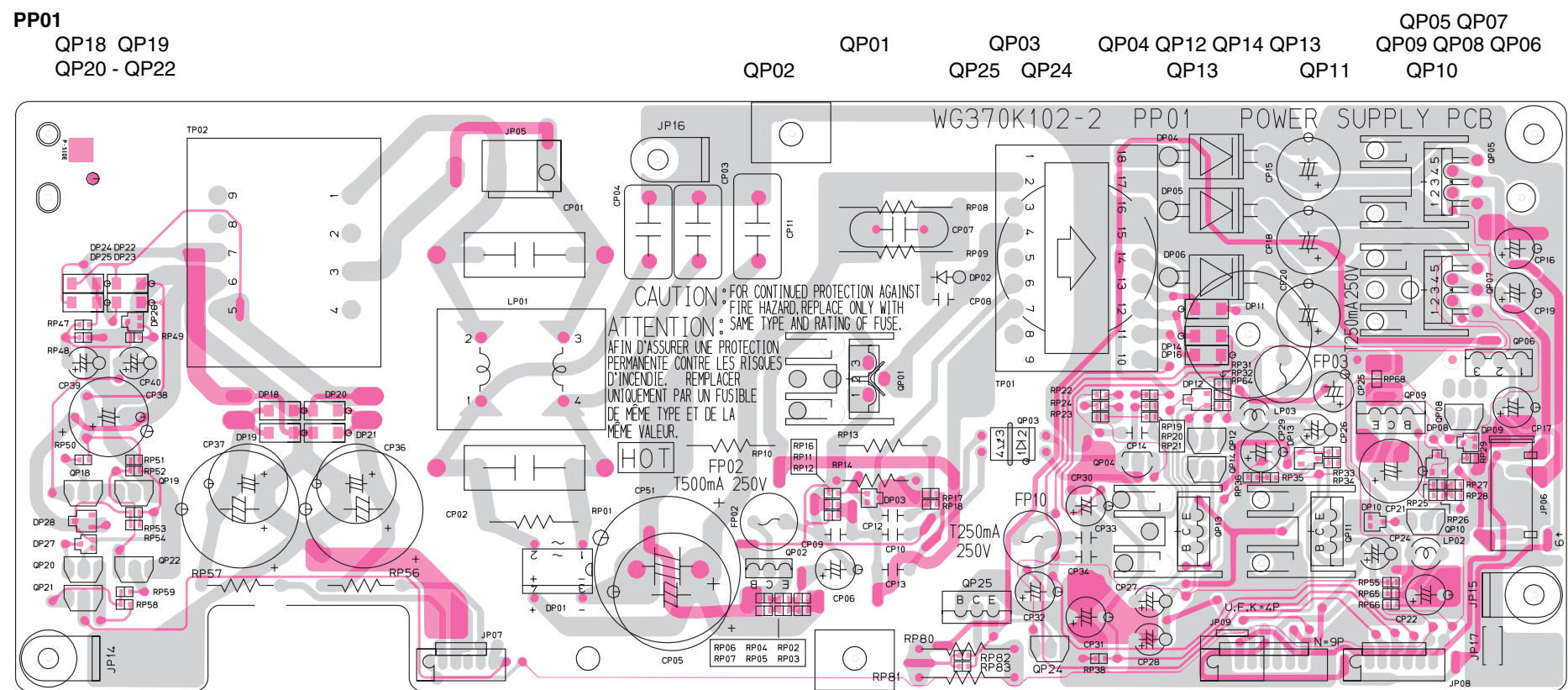
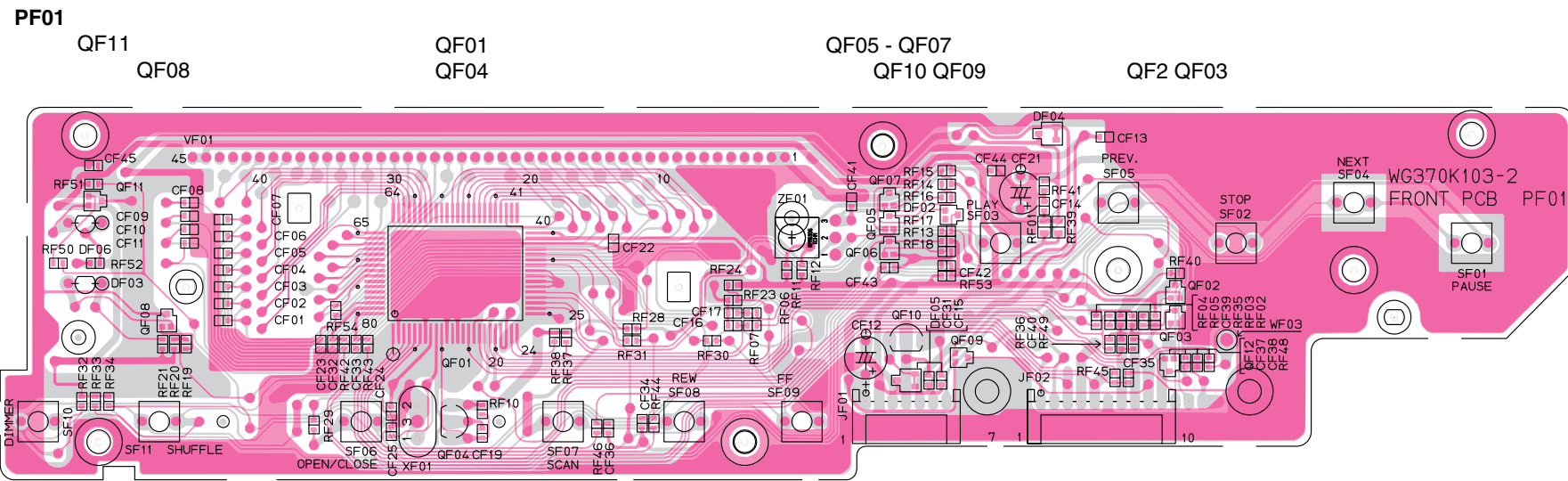
RP18 for F.U 1K 680
 for K.N.S 680

RP19 for F 820
 for K.N.S.U 680

CP11 for F 0.01uF 250V
 for K.S.U 220pF 250V
 for N 4700pF 250V

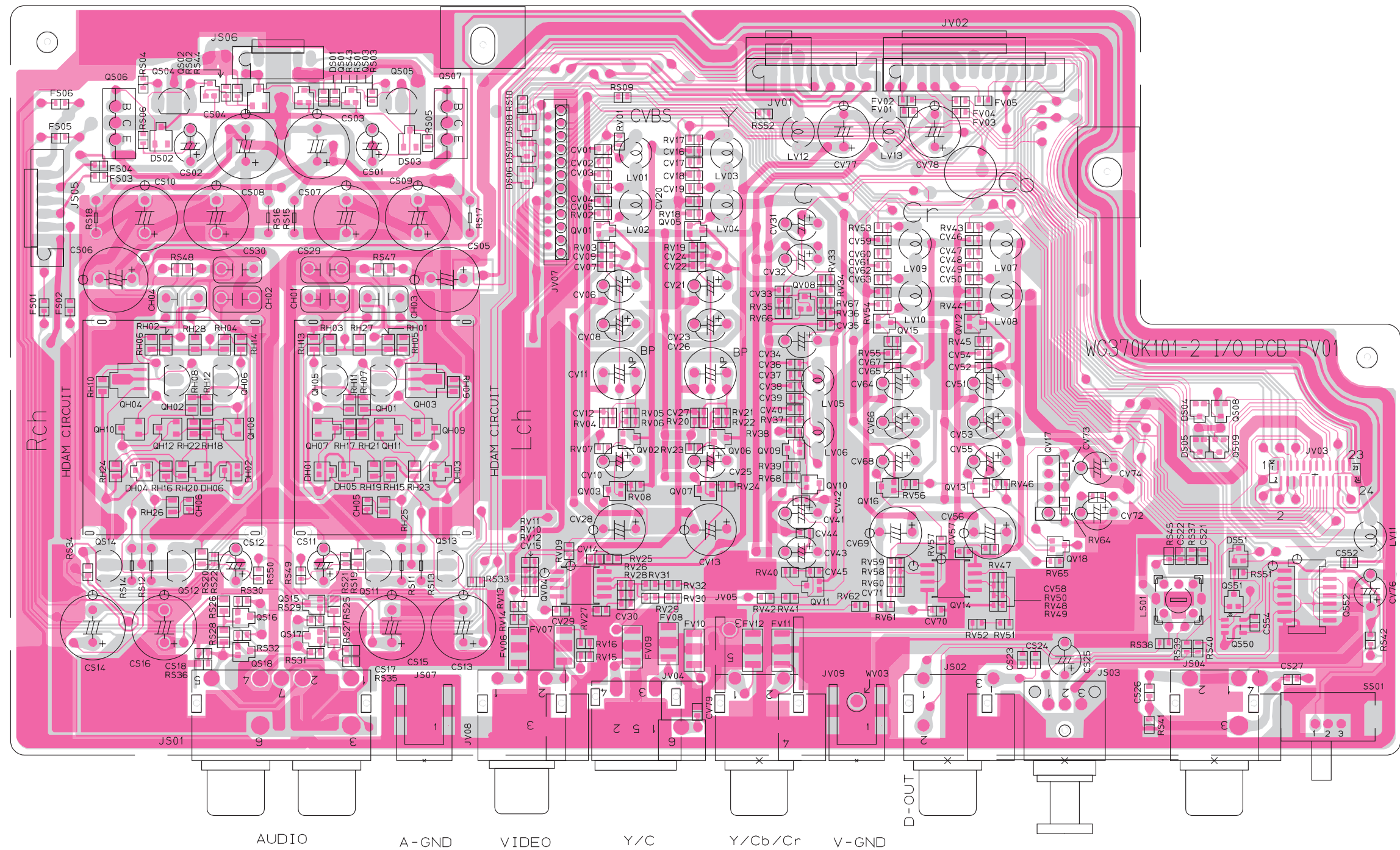
PS01
 FP01 for F.U 1.25A 125V
 for K.N.S 1.25A 250V

1.13 PARTS LOCATION

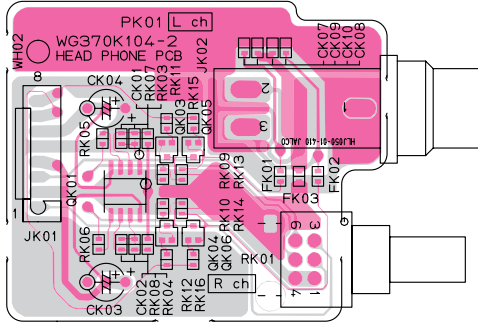


PV01

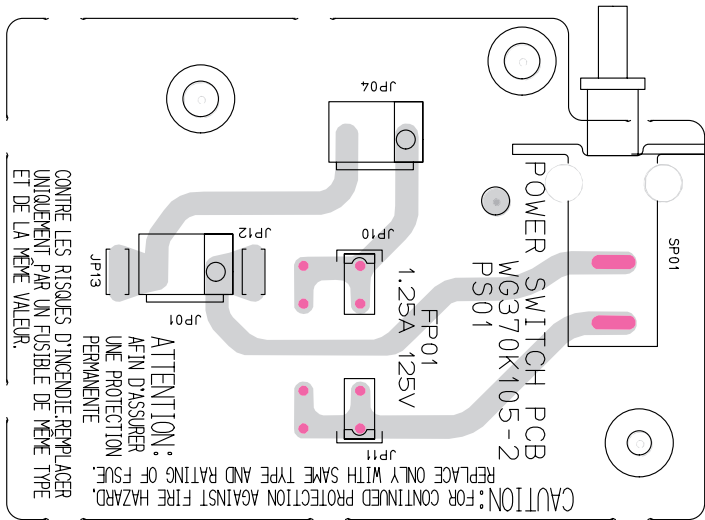
QS06	QS04	QS02	QS01	QS03	QS05	QS07	QV10	QV05	QV08	QV15	QV12	QS08	QS09					
QH02 - QH12			QH03 - QH11				QV03	QV02	QV07	QV06	QV09	QV10	QV16	QV17	QV18	QS51	QS50	QS52
(Even number)			(Odd number)				QV04				QV11	QV14	QV18					
QS14	QS12	QS15 - QS18	QS11	QS13														



PK01 QK03 QK05
 QK01 QK04 QK06



PS01

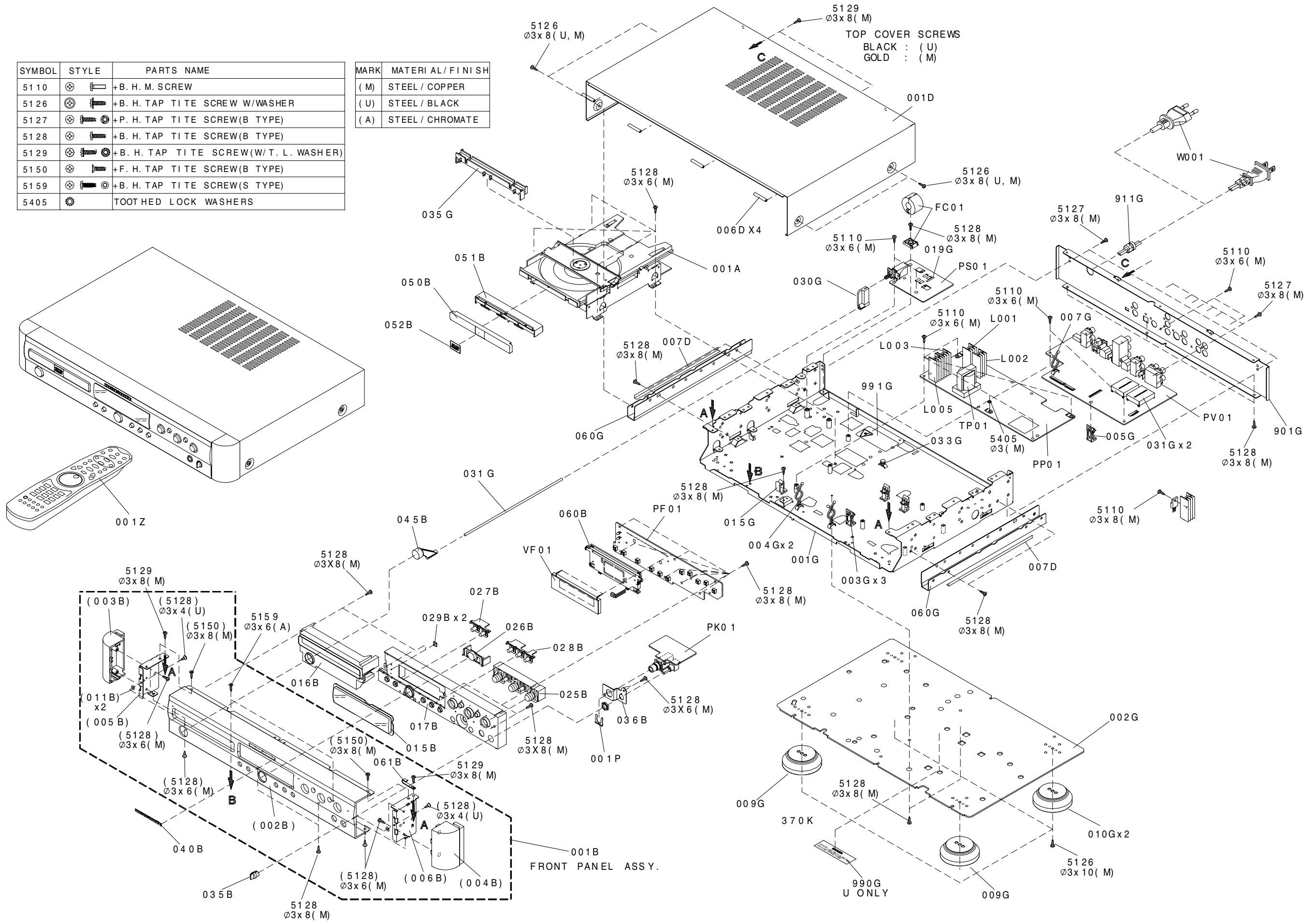


1.14 EXPLODED VIEW AND PARTS LIST

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	GOLD		FRONT PANEL ASSY GLD	370K248520				PACKING USER GUIDE DV-18F	370K851110
001B	BLACK		FRONT PANEL ASSY BLK	370K248510	001T	/F1			370K851350
002B	GOLD		FRONT PANEL AL GLD	370K248110	001T	/K1, /S1		ENG.CHINA DV-18K	
002B	BLACK		FRONT PANEL AL BLK	370K248010				USER GUIDE DV-18U	370K851250
003B	GOLD		ESCUTCHEON CORNER COLUMN PL LEFT GLD	342K063110	001T	/U1		UNIT KIT RC UNIT FOR DV-18	ZK370K0010
003B	BLACK		ESCUTCHEON CORNER COLUMN PL LEFT BLK	342K063010	001Z				
004B	GOLD		ESCUTCHEON CORNER COLUMN PL RIGHT GLD	342K063120					
004B	BLACK		ESCUTCHEON CORNER COLUMN PL RIGHT BLK	342K063020					
015B	GOLD		WINDOW PINK SMOKE GLD	318K158140					
015B	BLACK		WINDOW BLUE SMOKE BLK	318K158040					
016B	GOLD		BUSH TRAY OPENING GLD	370K259110					
016B	BLACK		BUSH TRAY OPENING BLK	370K259010					
017B	GOLD		RETAINER FRONT PCB HOLDER WITH H.P. GL	370K104110					
017B	BLACK		RETAINER FRONT PCB HOLDER WITH H.P. BL	370K104010					
025B	GOLD	9965 000 00563	BUTTON GLD	362K270150					
025B	BLACK	9965 000 00562	BUTTON BLK	362K270050					
026B	GOLD	4822 410 70033	BUTTON OPEN/CLOSE GLD	318K270130					
026B	BLACK	4822 410 70028	BUTTON OPEN/CLOSE BLK	318K270030					
027B	GOLD	9965 000 00567	BUTTON REPEAT GLD	376K270120					
027B	BLACK	9965 000 00566	BUTTON REPEAT BLK	376K270020					
028B	GOLD	9965 000 00565	BUTTON SCAN GLD	376K270110					
028B	BLACK	9965 000 00564	BUTTON SCAN BLK	376K270010					
029B		9965 000 00584	LENS STANDBY SURROUND	351H355010					
035B	GOLD	9965 000 00580	KNOB PHONE GLD	284T154240					
035B	BLACK	4822 411 20336	KNOB PHONE BLK	284T154310					
040B	GOLD	9965 000 01554	BADGE NEW MARANTZ BADGE GLD	313J251110					
040B	BLACK	9965 000 01553	BADGE NEW MARANTZ BADGE BLK	313J251010					
045B	GOLD		BUTTON POWER GLD	370K270110					
045B	BLACK		BUTTON POWER BLK	370K270010					
050B	GOLD		ESCUTCHEON TRAY LID AL GLD	370K063110					
050B	BLACK		ESCUTCHEON TRAY LID AL BLK	370K063010					
051B	GOLD		RETAINER TRAY LID BUSH GLD	370K104120					
051B	BLACK		RETAINER TRAY LID BUSH BLK	370K104020					
052B			BADGE DVD	370K251110					
009G			LEG FRONT D60 H18 GLD	370K057110					
010G			LEG REAR D60 H18 GLD	370K057120					
030G			LINK POWER SW.	370K121010					
031G			SHAFT POWER SW	376K120010					
911G	/F1	4822 532 52145	BUSH AC CORD KF-51	1455259210					
911G	/K1, /S1 /U1	4822 532 60948	BUSH AC CORD NIFCO 2271	450H259010					
001A			DVD MODULE UNIT DVD MECHA +DIGITAL BOARD	ZK370K0100					
▲ W001	/F1		MAINS CORD 15A 125V OFC	YC01800430					
▲ W001	/K1		MAINS CORD CCEE APP. AC250V 10A + VAR2P	YC01800880					
▲ W001	/S1		MAINS CORD FOR BS MAYOR	YC01800760					
▲ W001	/U1		MAINS CORD UL/CSA NON-INTEGRAL	YC02000880					
▲ W001	/U1		MAINS CORD UL/CSA NON-INTEGRAL	YC02000880					
WV01			JUMPER LEAD MECHA-AV	YU24060510	001S 002S			NOT STANDARD SPARE PARTS PACKING CASE CUSHION:BOTH SIDE	370K801010 318K809010

SYMBOL	STYLE	PARTS NAME
5110		+B. H. M. SCREW
5126		+B. H. TAP TITE SCREW W/WASHER
5127		+P. H. TAP TITE SCREW(B TYPE)
5128		+B. H. TAP TITE SCREW(B TYPE)
5129		+B. H. TAP TITE SCREW(W/T. L. WASHER)
5150		+F. H. TAP TITE SCREW(B TYPE)
5159		+B. H. TAP TITE SCREW(S TYPE)
5405		TOOTHED LOCK WASHERS

MARK	MATERIAL / FINISH
(M)	STEEL / COPPER
(U)	STEEL / BLACK
(A)	STEEL / CHROMATE



1.15 ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

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

① Resistance value

Examples ;

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

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

CAPACITORS

C***: CERAMIC CAP.

3) DD1 × × × × 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 × × × 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. (E), 6) FILM CAP. (F)

5) EA × × × × × 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

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

6) DF15 × × × 350 Plastic film capacitor
 DF15 × × × 310 One-way type, Mylar ±5% 50V
 DF16 × × × 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. (MJ) Type No. (KOA) Description
 NH05 × × × 140 → RF25S × × × × ΩJ (±5% 1/4W)
 NH05 × × × 120 → RF50S × × × × ΩJ (±5% 1/2W)
 NH85 × × × 110 → RF73B2A × × × × ΩJ (±5% 1/10W)
 NH95 × × × 140 → RF73B2E × × × × ΩJ (±5% 1/4W)

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

2. Matsushita Electronic Components Co., Ltd

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



* Resistance value * Resistance value

Examples ;


* Resistance value
 0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 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. : TRAMSISTOR		
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)
CF01		4822 126 11759	CER. CHIP 100pF ±5% CG 50V	DD95101300	DF02		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
CF11		4822 124 23056	ELECT. 47μF 10V	EJ47601010	DF03		4822 130 80326	L.E.D. LT3D8B RED 30	HI10062320
CF12		9965 000 01912	CER. CHIP 0.047μF	DK98473300	DF04			CHIP DIODE 02CZ3.3X	HZ30014050
CF13		9965 000 01912	CER. CHIP 0.047μF	DK98473300	DF05		4822 130 83229	CHIP DIODE 02CZ3.9X	HZ30024050
CF14		9965 000 01912	CER. CHIP 0.047μF	DK98473300	DF06		4822 130 80326	L.E.D. LT3D8B RED 30	HI10062320
CF15		9965 000 01912	CER. CHIP 0.047μF	DK98473300	QF01		4822 130 10698	Microprocessor	*HU7000DV1
CF19		9965 000 01912	CER. CHIP 0.047μF	DK98473300	QF02			CHIP TRS. 2SA1586 Y OR GR	HX100012A0
CF21		4822 124 23056	ELECT. 47μF 10V	EJ47601010	QF03			2SA1576A Q OR R	HX300012A0
CF22		4822 126 11703	CER. CHIP 0.01μF	DK98103300				CHIP TRS. 2SC4081 Q OR R	HX300012A0
CF23		4822 126 11703	CER. CHIP 0.01μF	DK98103300	QF04		4822 209 15921	IC S-806D-Z	HC10077530
CF24		4822 122 33752	CER. CHIP 15pF ±5% CG 50V	DD95150300	QF05			2SC4116 Y OR GR	HX300012A0
CF25		4822 122 33752	CER. CHIP 15pF ±5% CG 50V	DD95150300	QF06			CHIP TRS. 2SC4081 Q OR R	HX300012A0
CF31		9965 000 01912	CER. CHIP 0.047μF	DK98473300	QF07		4822 130 10698	CHIP TRS. 2SA1586 Y OR GR	HX100012A0
CF32		4822 126 11759	CER. CHIP 100pF	DD95101300	QF08		4822 130 10698	2SA1576A Q OR R	HX100012A0
CF36		4822 126 11759	CER. CHIP 100pF	DD95101300	QF09			CHIP TRS. 2SA1586 Y OR GR	HX100012A0
CF39		4822 126 11759	CER. CHIP 100pF	DD95101300	QF10		4822 130 10698	2SA1576A Q OR R	HX100012A0
CF40		4822 126 11687	CER. CHIP 0.1μF	DK98104200	QF11			DIG.TR.S. DTA114EU	BA10026210
CF41		4822 126 11687	CER. CHIP 0.1μF	DK98104200	QF11			IC NJM79L24A -24V 100MA	HC39124090
CF42		4822 126 11687	CER. CHIP 0.1μF	DK98104200	QF11			CHIP TRS. 2SA1586 Y OR GR	HX100012A0
CF45			GRM39F104Z16					2SA1576A Q OR R	
RF01		4822 111 91458	CHIP 12Ω ±5% 1/10W	NI05120110	JF01			PF01-MISCELLANEOUS	
RF02		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	JF02			JACK S7B-PH-K-S	YJ06006470
RF03		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610				JACK S10B-PH-K-S	YJ06006500
RF04		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	SF01		4822 276 14009	PUSH SWITCH	SP01013310
RF05		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	SF11			SKQNAE H/5MM 160GF	
RF10		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610	VF01			DISPLAY UNIT FL DISPLAY	HQ31110410
RF11		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610				11-BT-174 GNK	
RF12		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610	XF01			SERAMIC VIB. CSTS MG 8MHz	FQ08004060
RF13		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	ZF01		4822 130 11494	PHOTO UNIT RPM6936-V4	HW10004210
RF14		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610				IR SENSOR	
RF15		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610					
RF16		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610				PK01-HEAD PHONE	
RF17		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610				CIRCUIT BOARD	
RF18		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610				PK01-CAPACITORS	
RF19		4822 116 83213	CHIP 270Ω ±5% 1/16W	NN05271610	CK01		4822 122 33777	CER. CHIP 47pF ±5% CG 50V	DD95470300
RF20		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	CK02		4822 122 33777	CER. CHIP 47pF ±5% CG 50V	DD95470300
RF21		4822 116 83213	CHIP 270Ω ±5% 1/16W	NN05271610	CK03		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620
RF23		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610	CK04		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620
RF28					CK07		4822 126 11759	CER. CHIP 100pF ±5% CG 50V	DD95101300
RF31		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610	CK08		4822 126 11759	CER. CHIP 100pF ±5% CG 50V	DD95101300
RF32		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610	CK09		4822 126 12339	CER. CHIP 2200pF	DK96222300
RF33		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610	CK10		4822 126 11687	CER. CHIP 0.1μF	DK98104200
RF34		4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610				GRM39F104Z16	
RF35		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610	RK01		9965 000 00602	VARIABLE RK09L12B0 10kΩ B	RM01031170
RF36		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610				D-CUT REVERSE	
RF37		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610					
RF38		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	RK03		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RF39		4822 111 91458	CHIP 12Ω ±5% 1/10W	NI05120110	RK04		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RF40		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	RK05		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
RF41		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610	RK06		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
RF42					RK07		4822 116 83208	CHIP 12kΩ ±5% 1/16W	NN05123610
RF46		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610	RK08		4822 116 83208	CHIP 12kΩ ±5% 1/16W	NN05123610
RF50		4822 116 83213	CHIP 270Ω ±5% 1/16W	NN05271610	RK09		4822 051 30151	CHIP 150Ω ±5% 1/16W	NN05151610
RF51		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	RK10		4822 051 30151	CHIP 150Ω ±5% 1/16W	NN05151610
RF52		4822 116 83213	CHIP 270Ω ±5% 1/16W	NN05271610	RK11		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
RF53		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610	RK12		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
RF54		4822 117 12864	CHIP 82kΩ ±5% 1/6W	NN05823610	RK13		4822 051 30759	CHIP 75Ω ±5% 1/16W	NN05750610
					RK14		4822 051 30759	CHIP 75Ω ±5% 1/16W	NN05750610
					RK15		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
					RK16		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
QK01		4822 209 31378	PK01- SEMICONDUCTORS	HC10045090	▲ RP09		4822 116 82107	METAL 68kΩ ±5% 3W	NK05683030
QK03			IC NJM4556		▲ RP10	/F1, /U1	9965 000 00402	METAL 0.47Ω ±5% 2W	NL05472020
QK06		4822 130 63601	CHIP TRS. 2SC4213	HX342132A0	▲ RP10	/K1, /S1		METAL 0.82Ω ±5% 2W	NL05822020
FK01		4822 157 10416	PK01-MISCELLANEOUS	FN31010030	RP11		4822 051 30105	CHIP 1MΩ ±5% 1/16W	NN05105610
FK02		4822 157 10416	EMIFILTER BLM11B102S 1608	FN31010030	RP12		4822 051 30221	CHIP 220Ω ±5% 1/16W	NN05221610
FK03		4822 157 10416	EMIFILTER BLM11B102S 1608	FN31010030	RP13	/F1, /U1	4822 116 80979	METAL 220Ω ±5% 2W	NK05221020
JK01			JACK B8B-PH-K-S	YJ06006280	RP13	/K1, /S1		METAL 470Ω ±5% 2W	NK05471020
JK02	GOLD	4822 267 31692	H.P JACK HLJ0540-01-430 GR	YJ01003880	RP14	/F1, /U1	4822 116 60214	METAL 1kΩ ±5% 1W	NK05102010
JK02	BLACK	9965 000 01662	H.P JACK HLJ0540-01-433 GR	YJ01003870	RP14	/K1, /S1		METAL 2.2kΩ ±5% 1W	NK05222010
▲ CP01			PP01-POWER SUPPLY	DF17104630	RP16		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
▲ CP02			CIRCUIT BOARD	DF17104630	RP17	/F1, /U1	4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
▲ CP03	/F1, /U1		PP01-CAPACITORS	DK17471520	RP17	/K1, /S1	4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
▲ CP03	/K1, /S1		FILM. 0.1μF AC250V	DK17471520	RP18	/F1, /U1	4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
▲ CP04	/F1, /U1		ECQU2A104MLA	DK17471520	RP18	/K1, /S1	4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
▲ CP04	/K1, /S1		FILM. 0.1μF AC250V	DK17221520	RP19	/F1	4822 117 12968	CHIP 820Ω ±5% 1/16W	NN05821610
▲ CP05	/F1		ECQU2A104MLA	EA227200P0	RP19	/K1, /S1	4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
▲ CP05	/K1, /S1	4822 124 23114	CER. 470pF 250V	EA82640010	RP20	/U1	4822 051 30472	CHIP 4.7kΩ ±5% 1/16W	NN05472610
▲ CP05	/U1		DE0910 B 471K -KX	EA82620070	RP21		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
▲ CP06		4822 124 80493	CER. 220pF 250V	EA10525020	RP22		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
▲ CP07		4822 126 13091	DE0910 B 221K -KX	DF16473640	RP23		4822 116 83215	CHIP 5.6kΩ ±5% 1/16W	NN05562610
CP08			CER. 470pF 250V	DK16151910	RP24		4822 051 30392	CHIP 3.9kΩ ±5% 1/16W	NN05392610
▲ CP11	/F1		DE0910 B 471K -KX	DK17103860	RP25		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
▲ CP11	/K1, /S1		CER. 220pF 250V	DK17221520	RP26		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
CP15			DE0910 B 221K -KX	OA10801020	RP27		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
CP16		9965 000 01318	ELECT. 1000μF 10V M RA-2	OA10801020	RP28		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
CP17		9965 000 01318	ELECT. 220μF M 10V RA-2	OA22701020	RP29		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
CP18			ELECT. 220μF M 10V RA-2	OA22701020	RP31		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CP19		9965 000 01318	ELECT. 1000μF 10V M RA-2	OA10801620	RP32		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610
CP20		4822 124 22722	ELECT. 1000μF M 16V RA-2	OA10801620	RP33		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
CP21		4822 124 22722	ELECT. 1000μF M 16V RA-2	OA10801620	RP34		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
CP25		9965 000 01318	ELECT. 220μF M 10V RA-2	OA47605020	RP35		4822 116 83208	CHIP 12kΩ ±5% 1/16W	NN05123610
CP26		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47605020	RP36		4822 051 30393	CHIP 39kΩ ±5% 1/16W	NN05393610
CP27		4822 124 90351	ELECT. 0.1μF M 50V RA-2	OA10701020	RP38		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
CP28		4822 124 90353	ELECT. 100μF M 10V RA-2	OA47605020	RP47		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
CP30		4822 124 22276	ELECT. 47μF M 50V RA-2	OA22701020	RP48		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CP31		4822 124 22276	ELECT. 47μF M 50V RA-2	OA10801620	RP49		4822 051 30335	CHIP 3.3MΩ ±5% 1/16W	NN05335610
CP32		9965 000 01318	ELECT. 220μF M 10V RA-2	OA22801650	RP50		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610
CP33		4822 122 30043	CER. 0.01μF Z 50V	OA22801650	RP51		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CP34		4822 122 30043	CER. 0.01μF Z 50V	OA22801620	RP52		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CP36			ELECT. 2200μF 16V	OA10405020	RP53		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
CP37			ELECT. 2200μF 16V	OA10701020	RP54		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
CP38		4822 124 40723	ELECT. 2200μF 16V	OA10701020	RP55		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
CP39		4822 124 90351	ELECT. 0.1μF M 50V RA-2	OA47605020	RP56		4822 117 11462	METAL 4.7Ω ±5% 1W	NK05047010
CP40		4822 124 90352	ELECT. 10μF M 16V RA-2	OA22701020	RP57		4822 117 11462	METAL 4.7Ω ±5% 1W	NK05047010
▲ RP01	/F1, /U1	4822 116 82449	PP01-RESISTORS	RC10334120	RP58		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610
▲ RP01	/K1, /S1	9965 000 00502	330kΩ K 1/2W ERC12GK334C	RC05105010	RP59		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RP02			1MΩ ±5% 1W RCR60 L15	OA10601620	RP64		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610
RP07		4822 051 30334	CHIP 330kΩ ±5% 1/16W	NN05334610	RP65		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610
▲ RP08		4822 116 82107	METAL 68kΩ ±5% 3W	NK05683030	RP66		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610
					RP68		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
					RP80		4822 116 60304	METAL 68Ω ±5% 2W	NK05680020
					RP81	/F1, /U1		METAL 33Ω ±5% 2W	NK05330020
					RP82		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
					RP83		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610
					▲ DP01		4822 130 32748	PP01-SEMICONDUCTORS	HD20031290
					▲ DP02		4822 130 81244	DIODE S1WB A 60 30A 600V	HD20008130
					DP03		4822 130 83715	DIODE ERA22-10 STRAIGHT	HZ21005000
					DP04			CHIP DIODE 1SS301 DAN202U	HD20050080
					DP05			DIODE RK46 SBD 60V 3.5A	HD20050080
					DP06			DIODE RK46 SBD 60V 3.5A	HD20050080
					DP08			DIODE RK46 SBD 60V 3.5A	HD20050080
					DP09		4822 130 83715	CHIP DIODE ZENER 02CZ13Y	HZ31301050
					DP10		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
					DP11		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
								CHIP DIODE SFPL-52	HZ20002080
								200V 0.9A	
					DP12		4822 130 11514	CHIP DIODE DIODE 02CZ4.7Z	HZ30017050

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJJ)
DP13			CHIP DIODE ZENER 02CZ3.3X 3.3V	HZ30014050	FC01		4822 526 10696	FERRITE CORE TFC-23-11-14 WITH TFP2014-V	FC50150010
DP14			CHIP DIODE SFPL-52 200V 0.9A	HZ20002080	▲ FP01	/F1, /U1		FUSE 1.25A 125V UL CSA MINI FBT	FS10125350
DP16			CHIP DIODE SFPL-52 200V 0.9A	HZ20002080	▲ FP01	/K1, /S1	4822 070 31252	FUSE 1.25A 250V BSLISTED	FS10125850
DP18		9965 000 04986	CHIP DIODE U1BC44 1A 100V	HZ20032050	▲ JP01	/K1, /U1	4822 265 20359	PLUG CONNECTOR 2P	YP04000760
DP25					▲ JP04		4822 265 20359	PLUG CONNECTOR 2P	YP04000760
DP26		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	▲ JP10			JACK CLIP FOR 20MM FUSE	YJ08000580
DP27		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	▲ JP11			JACK CLIP FOR 20MM FUSE	YJ08000590
DP28		4822 130 81672	CHIP DIODE 02CZ5.6X	HZ30020050	▲ JP12	/F1, /S1		TERMINAL FOR AC CORD	YL01010250
					▲ JP13	/F1, /S1		TERMINAL FOR AC CORD	YL01010250
▲ QP01	/F1, /U1		F.E.T. 2SK3200 500V 10A	HF23200000	▲ SP01		4822 276 13364	PUSH SWITCH POWER SDDL1 TV-3	SP01011990
▲ QP01	/K1, /S1	9965 000 00395	F.E.T. 2SK2943 900V 3A	HF22943000				PV01-I/O CIRCUIT BOARD	
QP02		4822 130 61441	TRS. 2SD1862 TV-2 NPN Q R	HT418622A0				PV01-CAPACITORS	
▲ QP03			PHOTO CUPLER PC-123F2	HW10032320	CH01			FILM 1200pF J	OF15122540
QP04		4822 209 62759	IC NJM431 SHUNT REG.	HC33136090	CH02			FILM 1200pF J	OF15122540
▲ QP05			IC SI-3033C	HC36903080	CH03	9965 000 01344		FILM 100pF J	OF15101540
▲ QP06			+3.3V 1.5A WITH SW		CH04	9965 000 01344		FILM 100pF J	OF15101540
▲ QP07			IC SI-3050N +5.0V 1A	HC36905080	CH05	4822 126 11671		CER. CHIP 33pF ±5% CG 50V	DD95330300
▲ QP07			IC SI-3050C VOLTAGE REG.	HC10006080	CH06	4822 126 11671		CER. CHIP 33pF ±5% CG 50V	DD95330300
QP08		4822 130 60588	DIG.TRS.	BA20001000	CS01	4822 124 41539		ELECT. 47µF M 16V RA-2	OA47601620
			DTC114ES UN4211 10K 10K		CS02	4822 124 41539		ELECT. 47µF M 16V RA-2	OA47601620
QP09			TRS. 2SB1020	HT21020100	CS03	4822 124 22039		ELECT. 220µF 16V	OA22701650
QP10		4822 130 60588	DIG.TRS.	BA20001000	CS04	4822 124 22039		ELECT. 220µF 16V	OA22701650
			DTC114ES UN4211 10K 10K		CS05	4822 124 22241		ELECT. 47µF 16V CERAFINE	OA47601650
QP12		4822 130 61227	DIG.TRS.	BA10001000	CS06	4822 124 22241		ELECT. 47µF 16V CERAFINE	OA47601650
			DTA114ES UN4111 10K 10K		CS07				
QP13		4822 130 62548	TRS. 2SB1185 E F	HT211852B0	CS07				
QP14		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267 ETC.	HT10001000	}	4822 124 22039		ELECT. 220µF 16V	OA22701650
QP18					CS10			ARA CERAFINE	
}		4822 130 41947	TRS. 2SC2458 2SC1740S	HT30001000	CS11	4822 124 22274		ELECT. 4.7µF M 50V RA-2	OA47505020
QP20			2SC3199 ETC.		CS12	4822 124 22274		ELECT. 4.7µF M 50V RA-2	OA47505020
QP21		4822 130 42715	TRS. 2SA1048 2SA933S 2SA1267 ETC.	HT10001000	CS13				
QP22		4822 130 61189	DIG.TRS.	BA20004000	}	4822 124 22039		ELECT. 220µF 16V	OA22701650
			DTC114TS UN4215 10K		CS16			ARA CERAFINE	
QP24		4822 130 60588	DIG.TRS.	BA20001000	CS17	4822 126 11759		CER. CHIP 100pF ±5% CG 50V	DD95101300
			DTC114ES UN4211 10K 10K		CS18	4822 126 11759		CER. CHIP 100pF ±5% CG 50V	DD95101300
QP25		4822 130 61441	TRS. 2SD1862 TV-2 NPN Q R	HT418622A0	CS21	4822 126 11687		CER. CHIP 0.1µF GRM39F104Z16	DK98104200
					CS22	4822 122 33777		CER. CHIP 47pF ±5% CG 50V	DD95470300
					CS23	4822 126 11685		CER. CHIP 4700pF ±10% B 50V	DK96472300
					CS24	4822 126 11704		CER. CHIP 0.022µF	DK98223300
▲ FP02			PP01-MISCELLANEOUS FUSE T500mA 250V	FS20050200	CS25	4822 124 41539		ELECT. 47µF M 16V RA-2	OA47601620
			TR5 NO.19372 TP		CS26	4822 126 13883		CER. CHIP 220pF ±5% CG 50V	DD95221300
▲ FP03			FUSE T250mA 250V	FS20025200	CS27	4822 126 11687		CER. CHIP 0.1µF	DK98104200
			TR5 NO 19372 TP		CS29			FILM 3900pF J	OF15392540
▲ FP10			FUSE T250mA 250V	FS20025200	CS30			FILM 3900pF J	OF15392540
			TR5 NO 19372		CS52	4822 126 11703		CER. CHIP 0.01µ	DK98103300
▲ JP05		4822 265 20359	PLUG CONNECTOR 2P B3P-VH	YP04000760	CS54	4822 126 11703		CER. CHIP 0.01µ	DK98103300
JP06		4822 265 30473	PLUG B6B-XH-A	YP06003420	CV01	4822 126 11663		CER. CHIP 12pF	DD95120300
JP07		4822 267 40792	JACK B6B-PH-K-S	YJ06006260	CV02	4822 126 11661		CER. CHIP 5pF ±0.25pF CH	DD90050300
JP08		4822 265 40771	JACK B7B-PH-K-S	YJ06006270	CV03	4822 122 33782		CER. CHIP 56pF	DD95560300
JP09		4822 267 30894	JACK B4B-PH-K-S	YJ06006240	CV04	4822 126 11661		CER. CHIP 5pF	DD90050300
▲ LP01		4822 157 70398	CHOKE COIL 22mH 0.4A LF-4D-223	LC22260130	CV05	4822 122 33777		CER. CHIP 47pF	DD95470300
					CV06	4822 124 41539		ELECT. 47µF M 16V RA-2	OA47601620
▲ TP01	/F1, /U1		MAINS TRANSF. ETS29AK4H5AC SWITCHING	TS14003020	CV07	4822 126 11703		CER. CHIP 0.01µF	DK98103300
▲ TP01	/K1, /S1		MAINS TRANSF. ETS29AK4S6AC SWITCHING	TS14003030	CV08	4822 124 41539		ELECT. 47µF M 16V RA-2	OA47601620
▲ TP02	/F1		MAINS TRANSF. EI-35 ST-15 TYPE AC100V	TS13522030	CV09	4822 126 11703		CER. CHIP 0.01µF	DK98103300
▲ TP02	/K1, /S1		MAINS TRANSF. EI-35 ST-15 TYPE AC220 230V	TS13522040	CV10	4822 124 41539		ELECT. 47µF M 16V RA-2	OA47601620
▲ TP02	/U1		MAINS TRANSF. EI-35 ST-15 TYPE	TS13522020	CV11			ELECT. 220µF 10V	EQ22701030
					CV12	4822 126 11703		CER. CHIP 0.01µF	DK98103300
					CV13	4822 124 90371		ELECT. 470µF M 10V RA-2	OA47701020
					CV14	4822 126 11703		CER. CHIP 0.01µF	DK98103300
					CV15	4822 122 33757		CER. CHIP 18pF	DD95180300
					CV16	4822 126 11663		CER. CHIP 12pF	DD95120300
					CV17	4822 126 11661		CER. CHIP 5pF ±0.25pF CH	DD90050300
					CV18	4822 122 33782		CER. CHIP 56pF	DD95560300

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
CV19		4822 126 11661	CER. CHIP 5pF	DD90050300	RH07		4822 116 90503	CHIP 150Ω ±5% 1/10W	NI05151110
CV20		4822 122 33777	CER. CHIP 47pF	DD95470300	RH08		4822 116 90503	CHIP 150Ω ±5% 1/10W	NI05151110
CV21		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RH09		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV22		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RH10		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV23		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RH11		4822 116 90503	CHIP 150Ω ±5% 1/10W	NI05151110
CV24		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RH12		4822 116 90503	CHIP 150Ω ±5% 1/10W	NI05151110
CV25		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RH13		4822 111 90895	CHIP 10kΩ ±5% 1/10W	NI05103110
CV26			ELECT. 220μF 10V	EQ22701030	RH14		4822 111 90895	CHIP 10kΩ ±5% 1/10W	NI05103110
CV27		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RH15		4822 116 83352	CHIP 560Ω ±5% 1/10W	NI05561110
CV28		4822 124 90371	ELECT. 470μF M 10V RA-2	OA47701020	RH16		4822 116 83352	CHIP 560Ω ±5% 1/10W	NI05561110
CV29		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RH17		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
					RH18		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV30		4822 122 33757	CER. CHIP 18pF	DD95180300	RH19		4822 111 90913	CHIP 33kΩ ±5% 1/10W	NI05333110
CV31		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RH20		4822 111 90913	CHIP 33kΩ ±5% 1/10W	NI05333110
CV32		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RH21		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV33		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RH22		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV34		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RH23		4822 116 83352	CHIP 560Ω ±5% 1/10W	NI05561110
CV35		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RH24		4822 116 83352	CHIP 560Ω ±5% 1/10W	NI05561110
CV36		4822 126 11663	CER. CHIP 12pF	DD95120300	RH25		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV37		4822 126 11661	CER. CHIP 5pF ±0.25pF CH	DD90050300	RH26		4822 111 90893	CHIP 100Ω ±5% 1/10W	NI05101110
CV38		4822 122 33782	CER. CHIP 56pF	DD95560300	RH27			33kΩ ±1% 1/10W	NJ01333110
CV39		4822 126 11661	CER. CHIP 5pF	DD90050300	RH28			33kΩ ±1% 1/10W	NJ01333110
CV40		4822 122 33777	CER. CHIP 47pF	DD95470300					
CV41		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RS01		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CV42		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS02		4822 051 30223	CHIP 22kΩ ±5% 1/10W	NN05223610
CV43		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RS03		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
CV44		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS04		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
CV45		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS05		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
CV46		4822 126 11663	CER. CHIP 12pF	DD95120300	RS06		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610
CV47		4822 126 11661	CER. CHIP 5pF ±0.25pF CH	DD90050300	RS09		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
CV48		4822 122 33782	CER. CHIP 56pF	DD95560300	RS10		4822 116 82487	CHIP 0Ω ±5% 1/16W	NN05000610
CV49		4822 126 11661	CER. CHIP 5pF	DD90050300	RS11			33Ω ±5% 1/6W	GG05330160
CV50		4822 122 33777	CER. CHIP 47pF	DD95470300	RS12			33Ω ±5% 1/6W	GG05330160
CV51		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RS13			33Ω ±5% 1/6W	GG05330160
CV52		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS14			33Ω ±5% 1/6W	GG05330160
CV53		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	▲ RS15				
CV54		4822 126 11703	CER. CHIP 0.01μF	DK98103300	}		4822 116 60309	FUSIBLE 2.2Ω ±5% 1/4W	NH05022140
CV55		4822 124 22571	ELECT. 10μF M 50V RA-2	OA10605020	▲ RS18			RADUAL T	
CV56		4822 124 90371	ELECT. 470μF M 10V RA-2	OA47701020	RS19		4822 111 90907	CHIP 22kΩ ±5% 1/16W	NI05223110
CV57		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS20		4822 111 90907	CHIP 22kΩ ±5% 1/16W	NI05223110
CV58		4822 122 33757	CER. CHIP 18pF	DD95180300	RS21		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
CV59		4822 126 11663	CER. CHIP 12pF	DD95120300	RS22		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
					RS25				
CV60		4822 126 11661	CER. CHIP 5pF ±0.25pF CH	DD90050300	}		4822 116 90503	CHIP 150Ω ±5% 1/10W	NI05151110
CV61		4822 122 33782	CER. CHIP 56pF	DD95560300	RS28				
CV62		4822 126 11661	CER. CHIP 5pF	DD90050300	RS29				
CV63		4822 122 33777	CER. CHIP 47pF	DD95470300	}		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
CV64		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RS32				
CV65		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS33		4822 051 30224	CHIP 220kΩ ±5% 1/16W	NN05224610
CV66		4822 124 41539	ELECT. 47μF M 16V RA-2	OA47601620	RS34		4822 051 30224	CHIP 220kΩ ±5% 1/16W	NN05224610
CV67		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS35		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CV68		4822 124 22571	ELECT. 10μF M 50V RA-2	OA10605020	RS36		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CV69		4822 124 90371	ELECT. 470μF M 10V RA-2	OA47701020	RS37		4822 051 30101	CHIP 100Ω ±5% 1/16W	NN05101610
CV70		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS38		4822 051 30759	CHIP 75Ω ±5% 1/16W	NN05750610
CV71		4822 122 33757	CER. CHIP 18pF	DD95180300	RS39		4822 051 30221	CHIP 220Ω ±5% 1/16W	NN05221610
CV72		4822 124 22274	ELECT. 4.7μF M 50V RA-2	OA47505020	RS41		4822 117 12139	CHIP 22Ω ±5% 1/16W	NN05220610
CV73		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS42		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
CV74		4822 124 22571	ELECT. 10μF M 50V RA-2	OA10605020	RS43		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
CV76		4822 124 90354	ELECT. 100μF M 16V RA-2	OA10701620	RS44		4822 051 30223	CHIP 22kΩ ±5% 1/10W	NN05223610
CV77		4822 124 90371	ELECT. 470μF M 10V RA-2	OA47701020	RS47		4822 111 91372	CHIP 820Ω ±5% 1/10W	NI05821110
CV78		4822 124 90371	ELECT. 470μF M 10V RA-2	OA47701020	RS48		4822 111 91372	CHIP 820Ω ±5% 1/10W	NI05821110
CV79		4822 126 11703	CER. CHIP 0.01μF	DK98103300	RS51		4822 051 30473	CHIP 47kΩ ±5% 1/16W	NN05473610
			PV01-RESISTORS		RV01		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610
RH01			8.2kΩ ±1% 1/10W	NJ01822110	RV02		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610
RH02			8.2kΩ ±1% 1/10W	NJ01822110	RV03		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610
RH03			33kΩ ±1% 1/10W	NJ01333110	RV04		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610
RH04			33kΩ ±1% 1/10W	NJ01333110	RV05		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610
RH05			4.7kΩ ±1% 1/10W	NJ01472110	RV06		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610
RH06			4.7kΩ ±1% 1/10W	NJ01472110	RV07		4822 051 30224	CHIP 220kΩ ±5% 1/16W	NN05224610

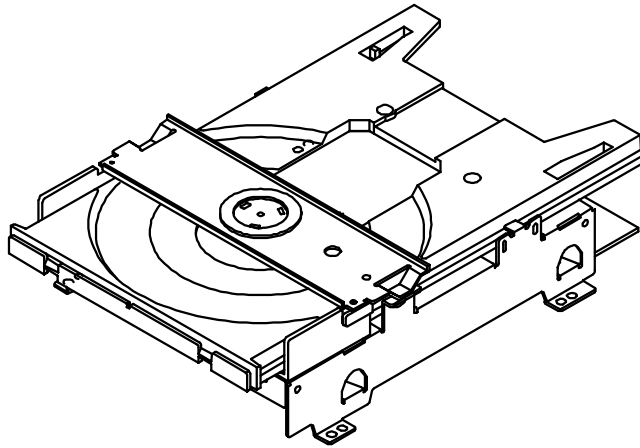
POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
RV08		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	DS01		4822 130 83229	CHIP DIODE 02CZ3.9X	HZ30024050
RV09		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610	DS02		9965 000 01734	CHIP DIODE ZENER	HZ30025050
RV10		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610				02CZ10Y 10V	
RV11		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610	DS03		9965 000 01734	CHIP DIODE ZENER	HZ30025050
RV12		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610				02CZ10Y 10V	
RV13		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	DS04				
RV14		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610	}		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
RV15		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	DS07				
RV16		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610	DS51		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000
RV17		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610					
RV18		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	QH01		4822 130 42839	F.E.T. 2SK369 BL	HF203691B0
RV19		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610				VDGS-40V PDO.4W	
RV20		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	QH02		4822 130 42839	F.E.T. 2SK369 BL	HF203691B0
RV21		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610				VDGS-40V PDO.4W	
RV22		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610	QH03		4822 130 61425	CHIP TRS. 2SC2873 Y	HX328731B0
RV23		4822 051 30224	CHIP 220kΩ ±5% 1/16W	NN05224610	QH04		4822 130 61425	CHIP TRS. 2SC2873 Y	HX328731B0
RV24		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QH05		4822 130 42839	F.E.T. 2SK369 BL	HF203691B0
RV25		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610				VDGS-40V PDO.4W	
RV26		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	QH06		4822 130 42839	F.E.T. 2SK369 BL	HF203691B0
RV27		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610				VDGS-40V PDO.4W	
RV28		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	QH07				
RV29		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	}		4822 130 63928	CHIP TRS. 2SA1312 (B)	HX113121B0
					QH10				
RV30		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610	QH11		4822 130 63929	CHIP TRS. 2SC3324 B	HX333241B0
RV31		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	QH12		4822 130 63929	CHIP TRS. 2SC3324 B	HX333241B0
RV32		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610					
RV33		4822 051 30151	CHIP 150Ω ±5% 1/16W	NN05151610	QS01			DIG.TRS. DTC114EU	BA20035210
RV34		4822 116 83207	CHIP 1.2kΩ ±5% 1/16W	NN05122610	QS02			DIG.TRS. DTA114EU	BA10026210
RV35		4822 051 30152	CHIP 1.5kΩ ±5% 1/16W	NN05152610	QS03			CHIP TRS. 2SC4081 Q OR R	HX300012A0
RV36		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610				2SC4116 Y OR GR	
RV37		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	QS04		4822 130 42836	F.E.T. 2SK246 GR	HF202461C0
RV38		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QS05		4822 130 42836	F.E.T. 2SK246 GR	HF202461C0
RV39		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QS06			TRS. 2SB1020	HT21020100
RV40		4822 051 30103	CHIP 10kΩ ±5% 1/16W	NN05103610	QS07			TRS. 2SD1415	HT41415100
RV41		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	QS08			DIG.TRS. DTA114EU	BA10026210
RV42		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610	QS09			DIG.TRS. DTA114EU	BA10026210
RV43		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610	QS11		5322 130 41844	F.E.T. 2SK170 V LANK	HF201701H0
RV44		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610	QS12		5322 130 41844	F.E.T. 2SK170 V LANK	HF201701H0
RV45		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QS13		4822 130 62649	F.E.T. 2SJ74 V LANK	HF100741H0
RV46		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610	QS14		4822 130 62649	F.E.T. 2SJ74 V LANK	HF100741H0
RV47		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610	QS15		4822 130 63601	CHIP TRS. 2SC4213	HX342132A0
RV48		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	QS16		4822 130 63601	CHIP TRS. 2SC4213	HX342132A0
RV49		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610	QS17		4822 130 63601	CHIP TRS. 2SC4213	HX342132A0
RV50		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	QS18		4822 130 63601	CHIP TRS. 2SC4213	HX342132A0
RV51		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	QS50		4822 209 63557	IC TC7S08F	HC700805S0
RV52		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610	QS51			DIG.TRS. DTC114EU	BA20035210
RV53		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610	QS52			IC CMOS 74HCU04 FLAT	HC700400Z0
RV54		4822 051 30223	CHIP 22kΩ ±5% 1/16W	NN05223610					
RV55		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QV01			CHIP TRS. 2SC4081 Q OR R	HX300012A0
RV56		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610				2SC4116 Y OR GR	
RV57		4822 051 30471	CHIP 470Ω ±5% 1/16W	NN05471610	QV02			CHIP TRS. 2SC4081 Q OR R	HX300012A0
RV58		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610				2SC4116 Y OR GR	
RV59		4822 051 30681	CHIP 680Ω ±5% 1/16W	NN05681610	QV03		4822 130 10698	CHIP TRS. 2SA1586 Y OR GR	HX100012A0
								2SA1576A Q OR R	
RV60		4822 051 30102	CHIP 1kΩ ±5% 1/16W	NN05102610	QV04		4822 209 14876	IC MC14577C SOP	HC10065170
RV61		4822 051 30399	CHIP 39Ω ±5% 1/16W	NN05390610	QV05			CHIP TRS. 2SC4081 Q OR R	HX300012A0
RV62		4822 051 30339	CHIP 33Ω ±5% 1/16W	NN05330610				2SC4116 Y OR GR	
RV63		4822 051 30331	CHIP 330Ω ±5% 1/16W	NN05331610	QV06			CHIP TRS. 2SC4081 Q OR R	HX300012A0
RV64		4822 051 30224	CHIP 220kΩ ±5% 1/16W	NN05224610				2SC4116 Y OR GR	
RV65		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QV07		4822 130 10698	CHIP TRS. 2SA1586 Y OR GR	HX100012A0
RV66		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610				2SA1576A Q OR R	
RV68		4822 051 30222	CHIP 2.2kΩ ±5% 1/16W	NN05222610	QV08			CHIP TRS. 2SC4081 Q OR R	HX300012A0
								2SC4116 Y OR GR	
			PV01-SEMICONDUCTORS		QV09		4822 130 10698	CHIP TRS. 2SA1586 Y OR GR	HX100012A0
DH01		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000				2SA1576A Q OR R	
DH02		4822 130 83715	CHIP DIODE 1SS301 DAN202U	HZ21005000	QV10			CHIP TRS. 2SC4081 Q OR R	HX300012A0
DH03								2SC4116 Y OR GR	
}		4822 130 81324	CHIP DIODE 1SS302	HZ20018050	QV11			DIG.TRS. DTA114EU	BA10026210
DH06					QV12			CHIP TRS. 2SC4081 Q OR R	HX300012A0
								2SC4116 Y OR GR	

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
QV13			CHIP TRS. 2SC4081 Q OR R	HX300012A0
QV14		4822 209 14876	2SC4116 Y OR GR	HC10065170
QV15			IC MC14577C SOP	HX300012A0
QV16			CHIP TRS. 2SC4081 Q OR R	HX300012A0
QV17		4822 209 60605	2SC4116 Y OR GR	HC10270030
QV18			IC LA7213	BA10026210
			DIG.TRS. DTA114EU	
			PV01-MISCELLANEOUS	
FS01		4822 157 10416	EMIFILTER BLM11B102S	FN31010030
FS06				
FV01			FERRIT BEADS	FC90020120
FV05			BK1608HM102-T	
FV06				
FV12			EMI FILTER NFM41R01C221	FM31221020
JS01		4822 290 81723	TERMINAL RCA 4P	YT02041070
JS02		4822 290 81638	WHITE/RED AU YKC21-3108	YT02010790
JS03		4822 267 31369	TERMINAL 14X14 RA 1L1P	YJ15000090
JS04		4822 267 41009	BLK AU FLM-GND	YT02020890
JS05			OPT. CONNECTOR GP1F32T	YJ06006280
JS06		4822 267 40792	OPTICAL OUTPUT	YJ06006260
JV01		4822 267 30894	TERMINAL 2P RCA PIN JACK	YJ06006240
JV02		4822 265 10221	JACK B8B-PH-K-S	YJ06006300
JV03			JACK B6B-PH-K-S	YJ07021200
JV04		4822 265 10678	JACK B4B-PH-K-S	YT02011010
JV05			JACK B10B-PH-K-S	YT02030580
JV08			JACK 24FLT-SM1-TB JST	YT02021590
LS01		4822 142 60422	TERMINAL YKF51-5506	TP41042030
LV01		9965 000 00458	TERMINAL 3P	LC18223900
LV02		4822 157 60445	RCA PIN JACK YKC21-4010	LC11533900
LV03		9965 000 00458	TERMINAL 2P	LC18223900
LV04		4822 157 60445	RCA JACK YKC21-3926	LC11533900
LV05		9965 000 00458	PULSE TRNSF.	LC18223900
LV06		4822 157 60445	TPS247MN-0386AN	LC11533900
LV07		9965 000 00458	CHOKO COIL 8.2µH EL0405	LC18223900
LV08		4822 157 60445	CHOKO COIL 15µH J%	LC11533900
LV09		9965 000 00458	CHOKO COIL 8.2µH EL0405	LC18223900
LV10		4822 157 60445	CHOKO COIL 15µH J%	LC11533900
LV13		9965 000 00458	CHOKO COIL 8.2µH EL0405	LC18223900
SS01			CHOKO COIL 15µH J%	LC11533900
			SLIDE SWITCH SSSF12- S06N0	SS01021010
			HORIZONTAL N-SHOT	

Service Manual

TKM1000MZ

DVD Module for MARANTZ



<<IMPORTANT NOTICE>>

This service manual explains the product DV7000 which mounted the **DVD module TKM1000MZ with the main board <C3M1>** only. Products which mounted <C3M1> has product serial number **MZ01XXXXXXXXXX**. All other products have mounted <M3C1> main board. (Product serial number **MZ00XXXXXXXXXX**.) 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>.

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2.2 MICROPROCESSOR AND IC DATA	2-15
2.3 EXPLODED VIEW AND PARTS LIST	2-28
2.4 ELECTRICAL PARTS LIST	2-30

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ください。

marantz®

TKM1000MZ

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.

ORDERING PARTS :

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.

USA

MARANTZ AMERICA, INC.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172
USA
PHONE : 630 - 307 - 3100
FAX : 630 - 307 - 2687

EUROPE / TRADING

MARANTZ EUROPE B.V.
P.O.BOX 80002, BUILDING SFF2
5600 JB EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2732241
FAX : +31 - 40 - 2735578

BRAZIL

PHILIP DA AMAZONIA IND. ELET. ITDA
CENTRO DE INFORMACOES AO
CEP 04698-970
SAO PAULO, SP, BRAZIL
PHONE : 0800 - 123123(Discagem Direta Gratuita)
FAX : +55 11 534. 8988

PROFESSIONAL AMERICAS SUPERSCOPE TECHNOLOGIES, INC.

MARANTZ PROFESSIONAL PRODUCTS
2640 WHITE OAK CIRCLE, SUITE A
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL AUSTRALIA TECHNICAL AUDIO GROUP PTY, LTD

558 DARLING STREET,
BALMAIN, NSW 2041,
AUSTRALIA
PHONE : 61 - 2 - 9810 - 5300
FAX : 61 - 2 - 9810 - 5355

CANADA

LENBROOK INDUSTRIES LIMITED
633 GRANITE COURT,
PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 905 - 831 - 6333
FAX : 905 - 831 - 6936

AUSTRALIA

JAMO AUSTRALIA PTY LTD
1 EXPO COURT, P.O. BOX 350
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - 3 - 9543 - 1522
FAX : +61 - 3 - 9543 - 3677

THAILAND

MRZ STANDARD CO.,LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 9181
FAX : +66 - 2 - 224 6795

SINGAPORE

WO KEE HONG (S) PTE LTD
WO KEE HONG CENTRE
NO.23, LORONG 8, TOA PAYOH
SINGAPORE 319257
PHONE : +65 2544555
FAX : +65 2502213

NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
PHONE : +64 - 9 - 8451958
FAX : +64 - 9 - 8463554

TAIWAN

PAI- YUING CO., LTD.
6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 - 2 - 25221304
FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
SUITE 8.1, LEVEL 8, MENARA GENESIS,
NO. 33, JALAN SULTAN ISMAIL,
50250 KUALA LUMPUR, MALAYSIA
PHONE : +60 3 - 2457677
FAX : +60 3 - 2458180

JAPAN *Technical*

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
FAX : +81 42 741 9190

日本マランツ株式会社

本社 〒228-8505
神奈川県相模原市相模大野7-35-1
営業本部 〒150-0022
東京都渋谷区恵比寿南1-11-9

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

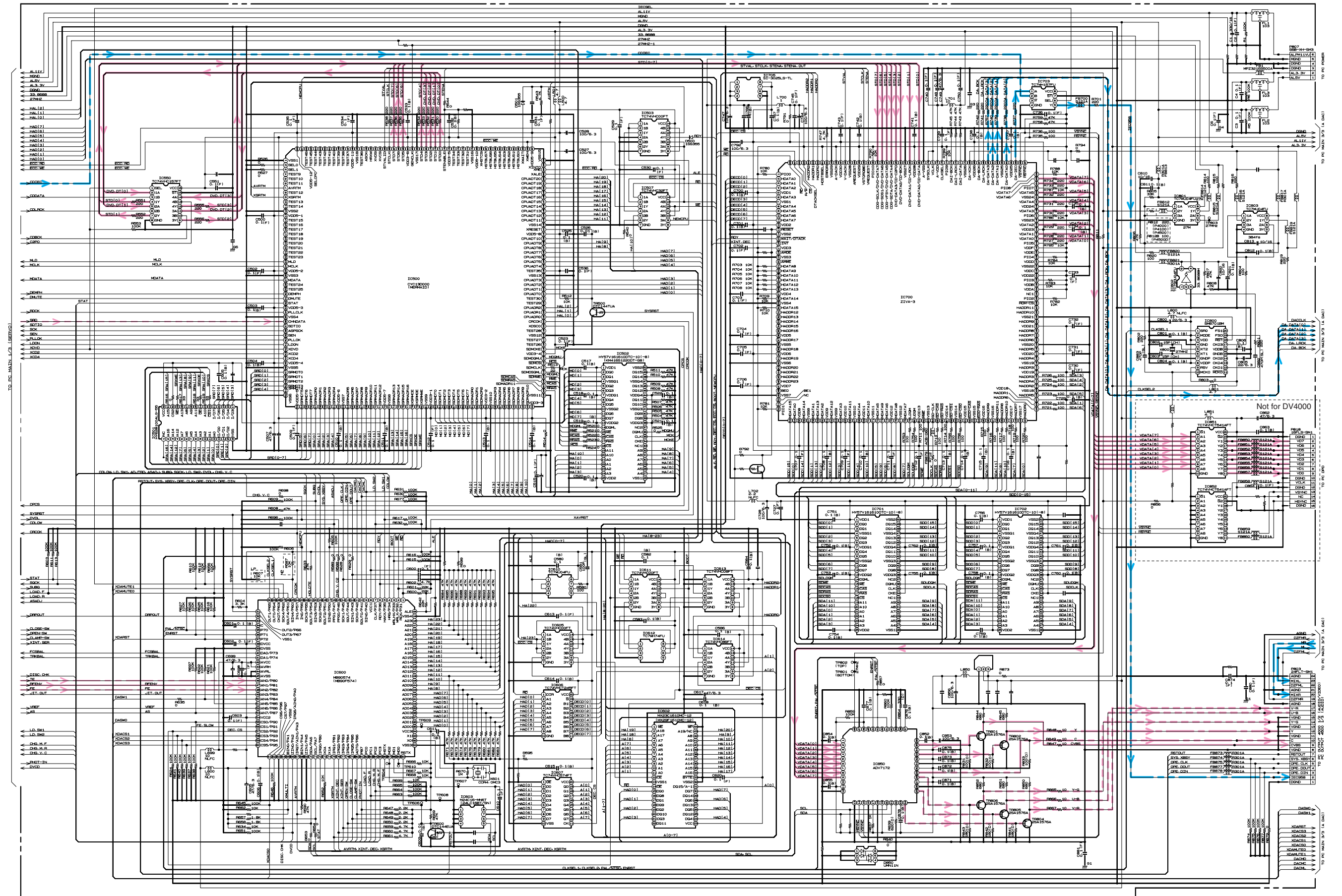
CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

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.

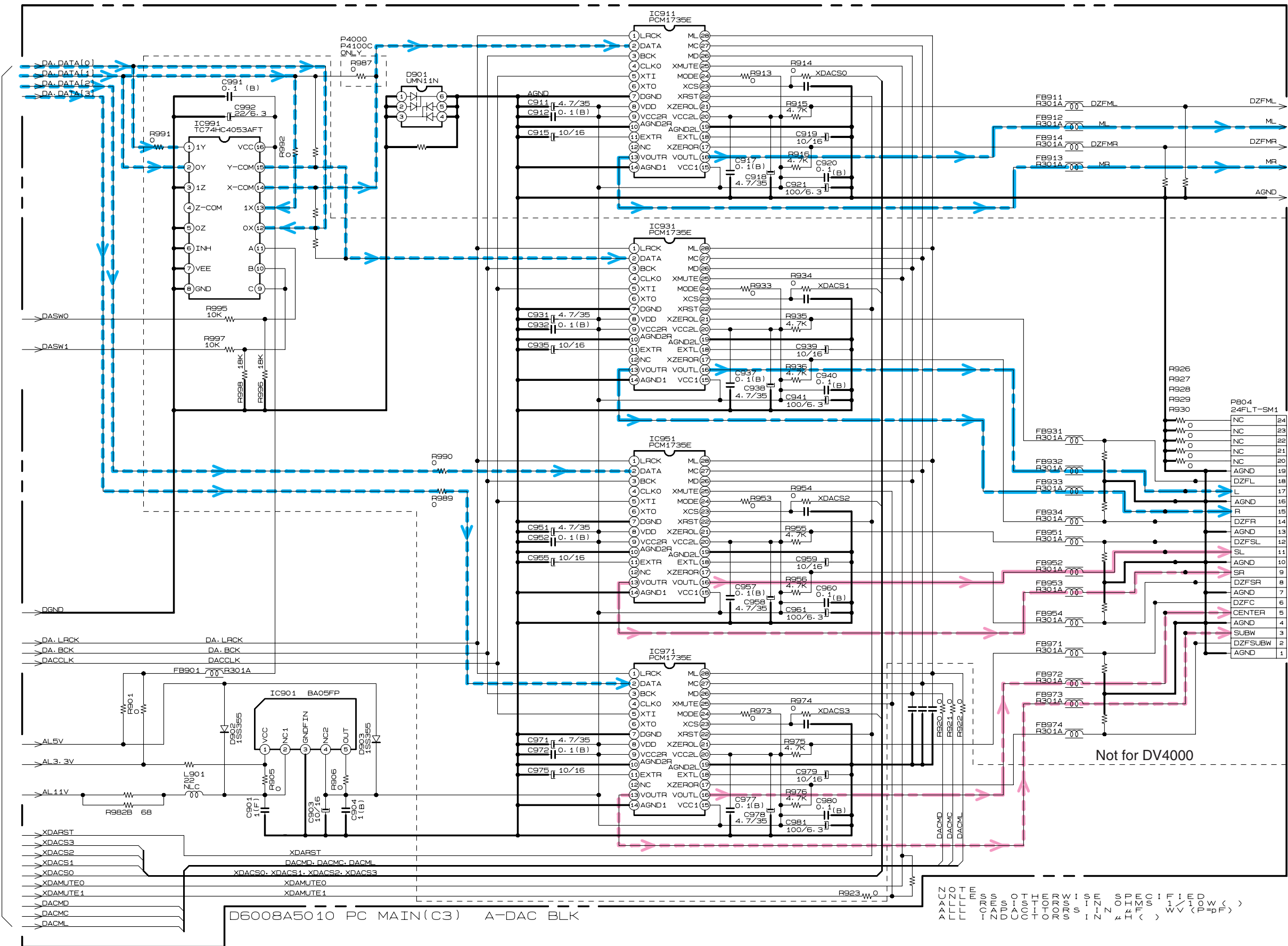
In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

2.1 SCHEMATIC DIAGRAM AND PARTS LOCATION



D5008A5010 PC MAIN(C3) ODC/CPU/AV-DEC BLK

>>> C2
 >>> C1
 >>> C0
 >>> B1
 >>> B0
 >>> A1
 >>> A0
 >>> 9
 >>> 8
 >>> 7
 >>> 6
 >>> 5
 >>> 4
 >>> 3
 >>> 2
 >>> 1
 >>> 0

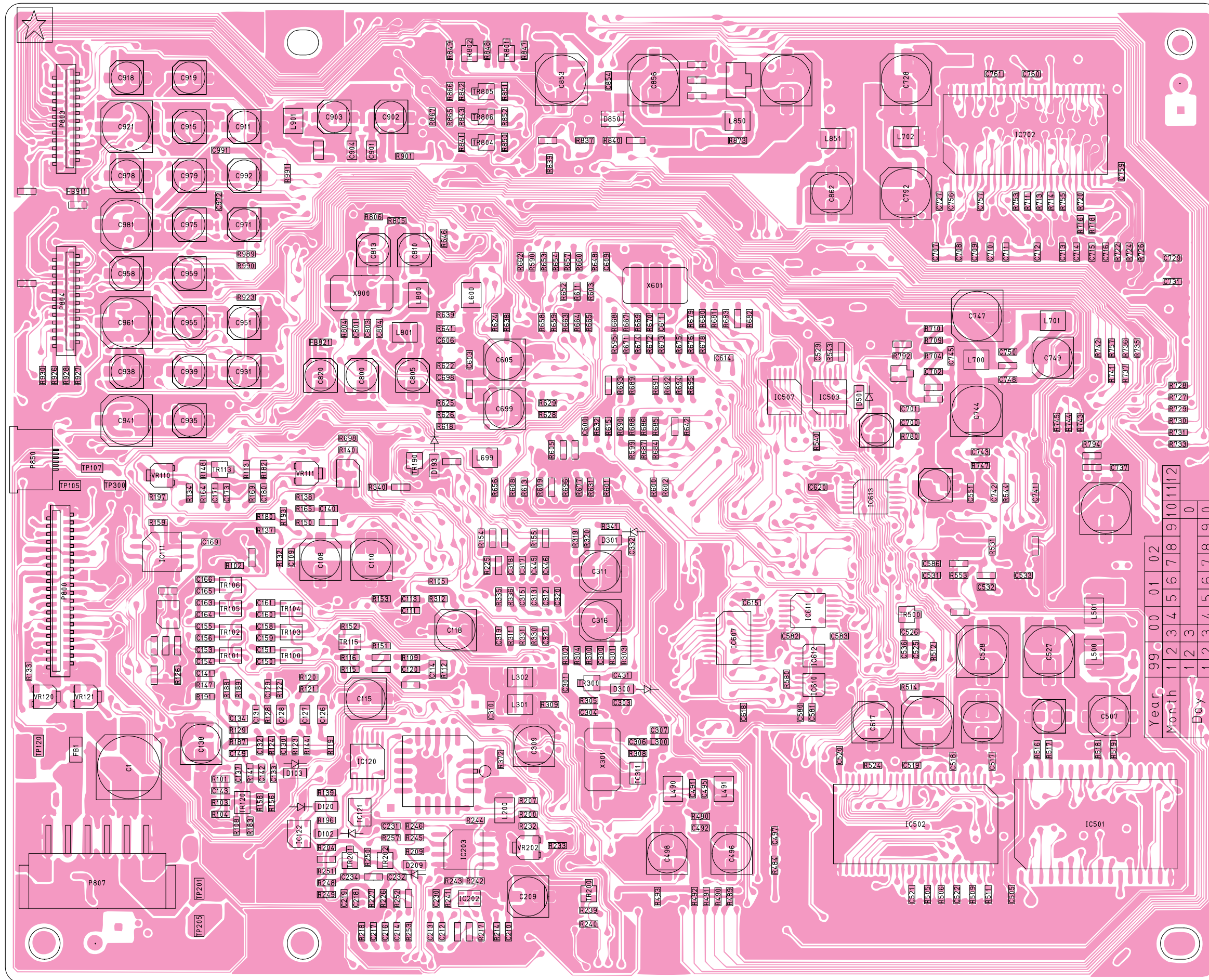


D6008A5010 PC MAIN(C3) A-DAC BLK

NOT FOR DV4000
ALL RIGHTS RESERVED. OTHERWISE SPECIFIED IN THE DRAWING.
1/10 (POWER)

MAIN TOP VIEW

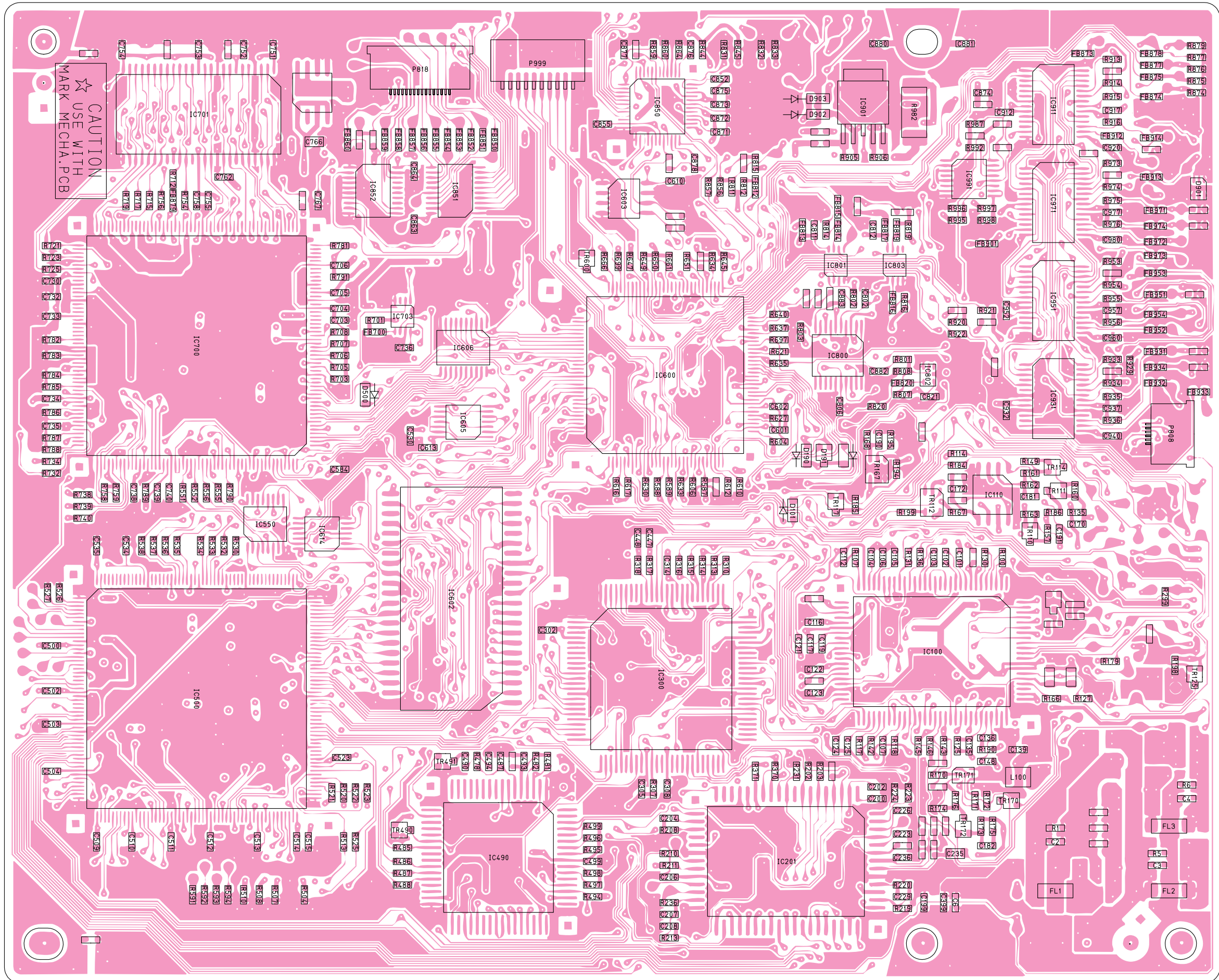
- TR113
- TR100 ~TR106
- IC111
- TR120
- TR115
- IC122 IC121 IC120
- TR201 TR202
- TR190
- TR802 TR801
- TR804 ~TR806
- IC202 IC203
- TR300
- TR200
- IC311
- IC607
- IC507 IC503
- IC610 ~IC613
- TR500
- IC502
- IC702
- IC501



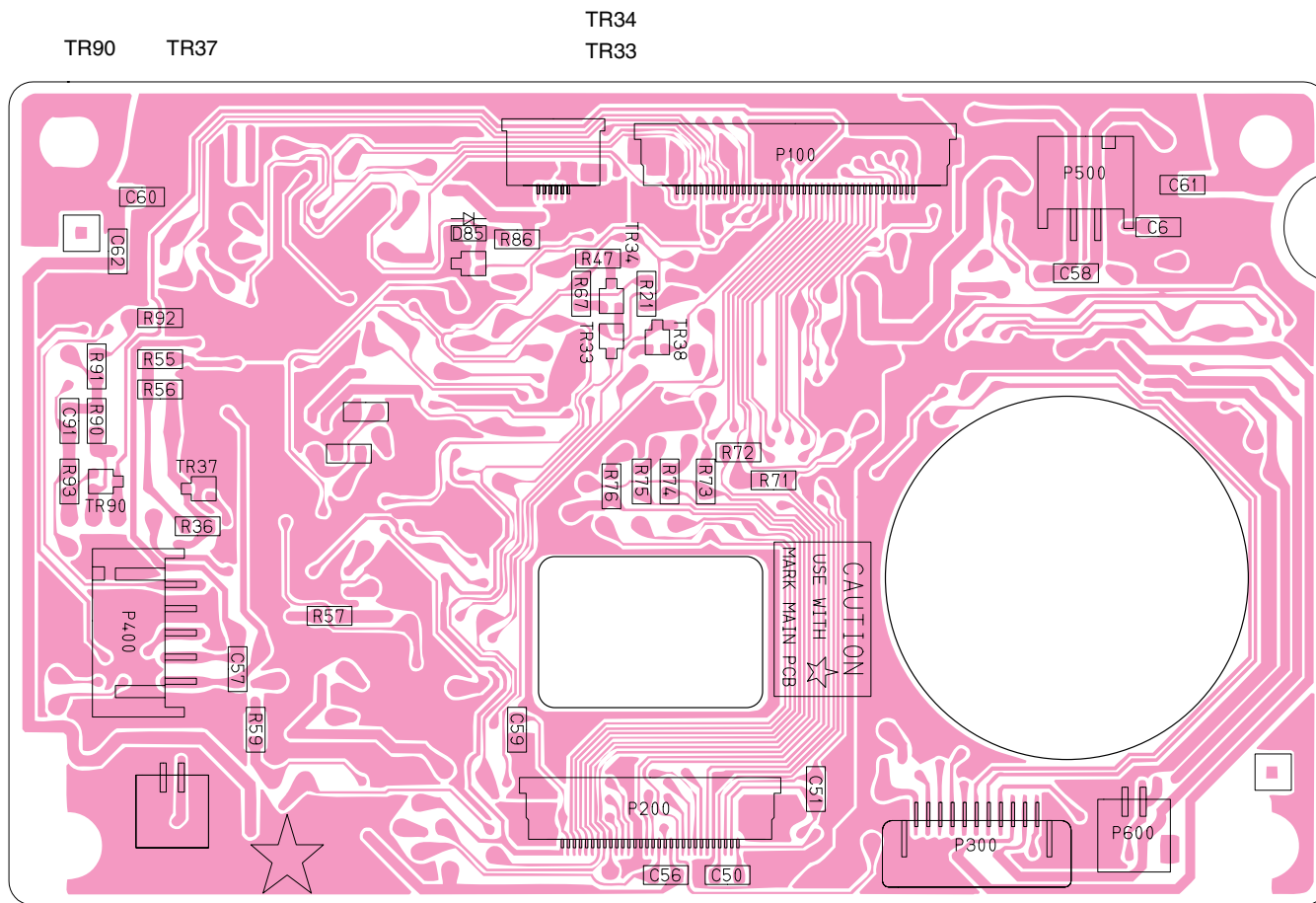
Year	99	00	01	02
Month	1	2	3	4
Day	1	2	3	4
	5	6	7	8
	9	10	11	12
	0			

MAIN BOTTOM VIEW

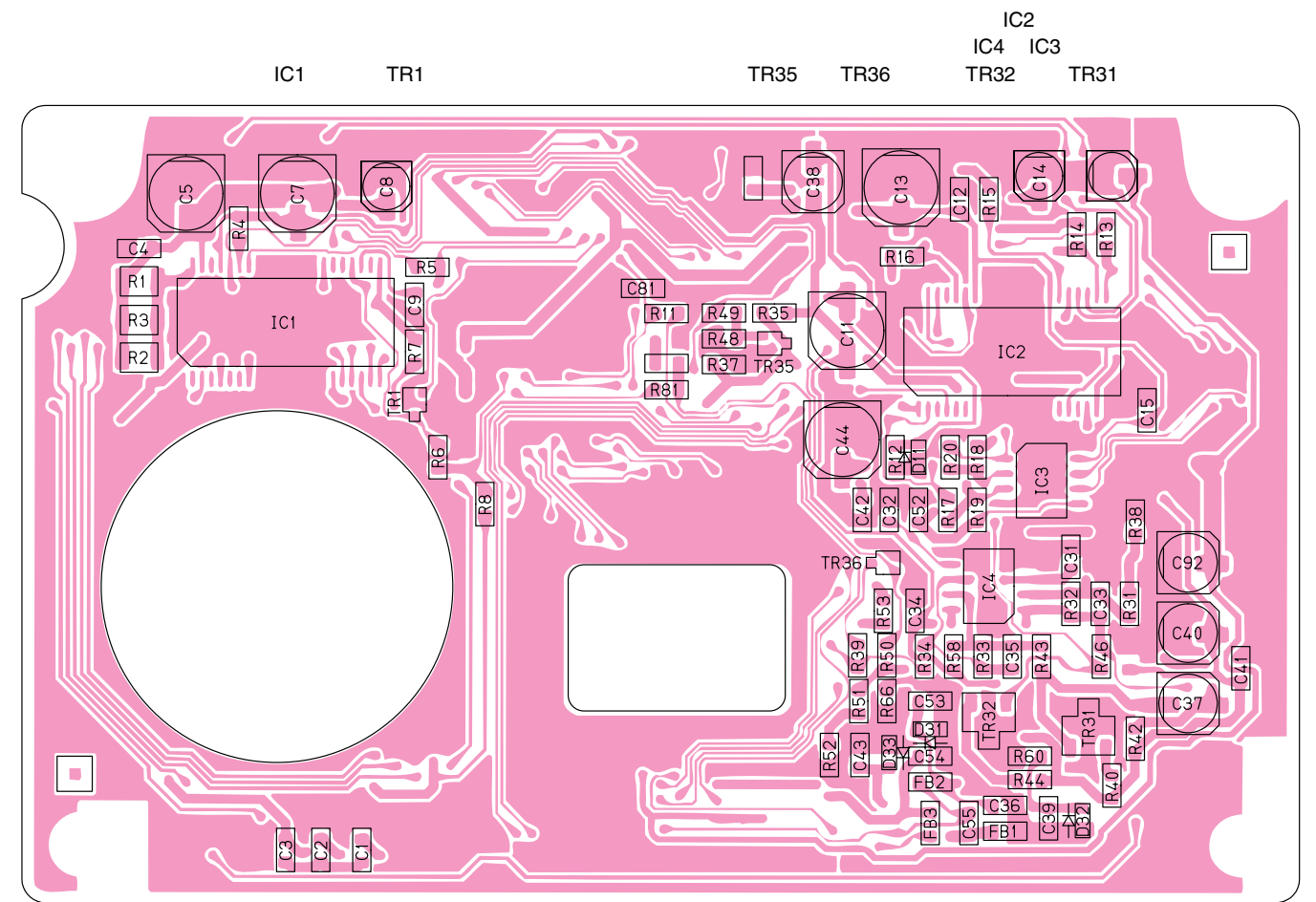
IC701 IC851 IC606 IC850 IC801 IC901 IC802 IC991 IC971 TR114
 IC700 IC703 IC602 IC605 IC600 IC800 IC803 TR112 IC110 IC951 TR111
 IC500 IC550 IC614 IC852 TR490 TR491 IC490 TR600 IC603 IC300 IC201 TR117 TR167 IC100 TR170 ~TR712 IC931 TR110 TR125



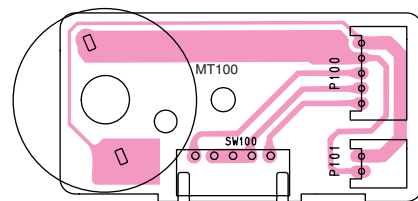
MECHA TOP VIEW



MECHA BOTTOM VIEW

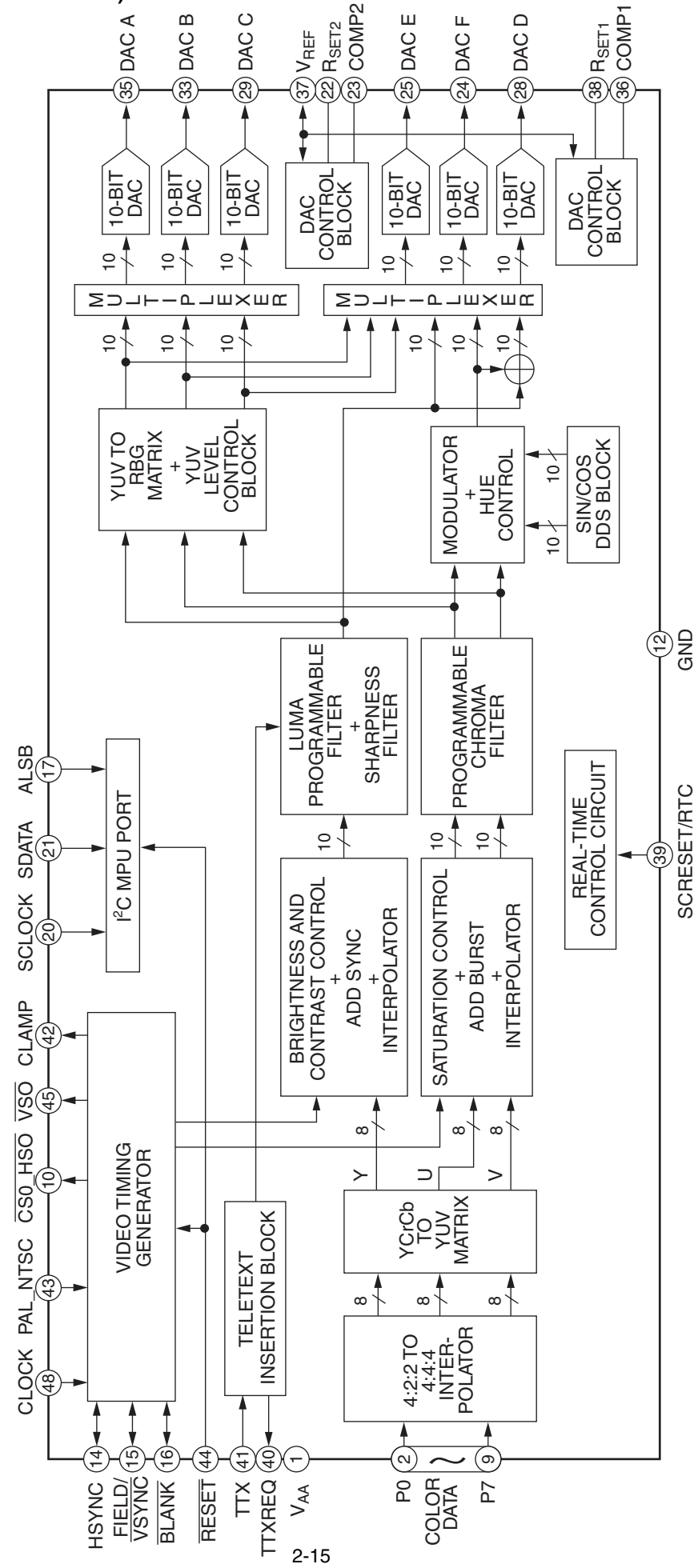


LOADING

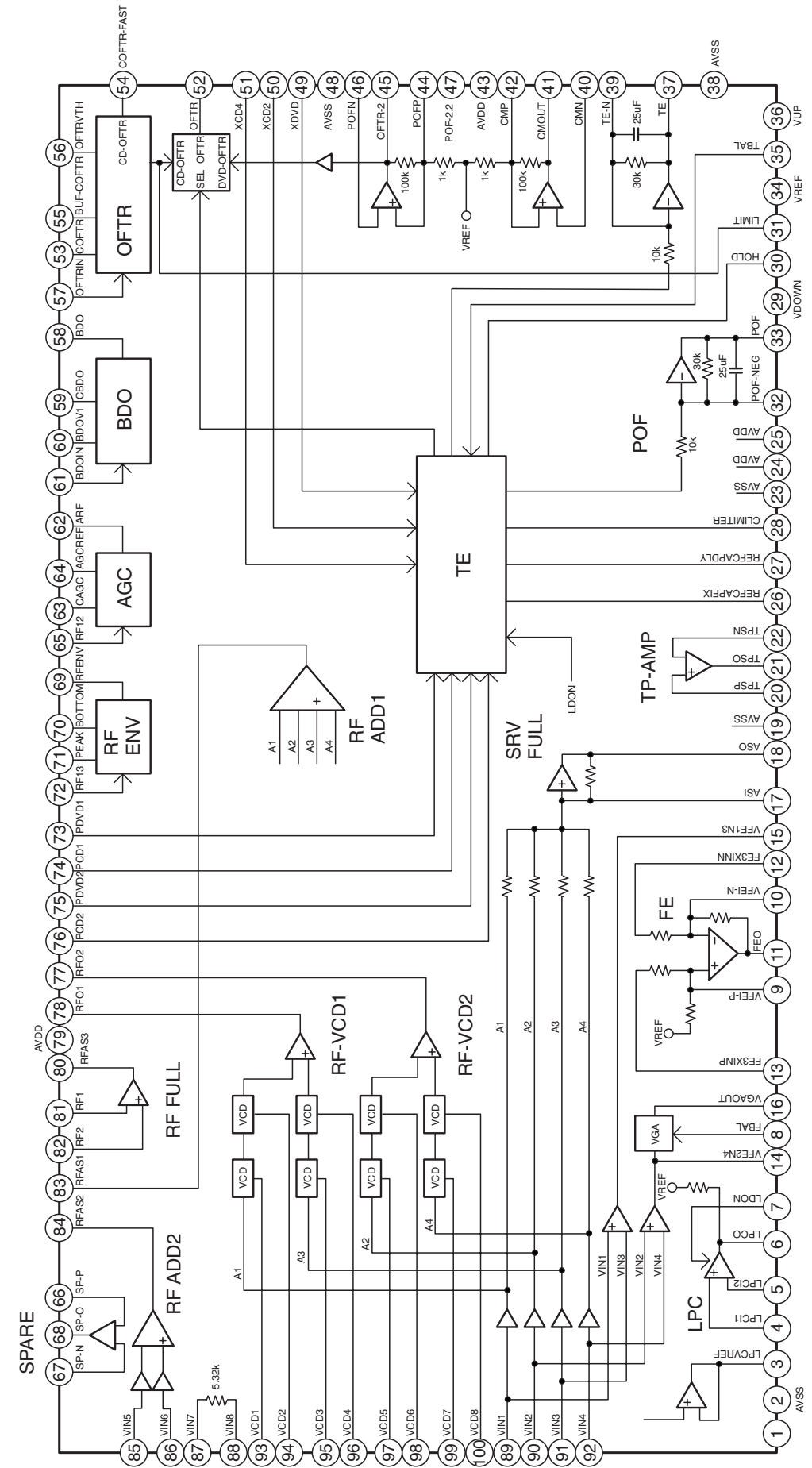


2.2 MICROPROCESSOR AND IC DATA

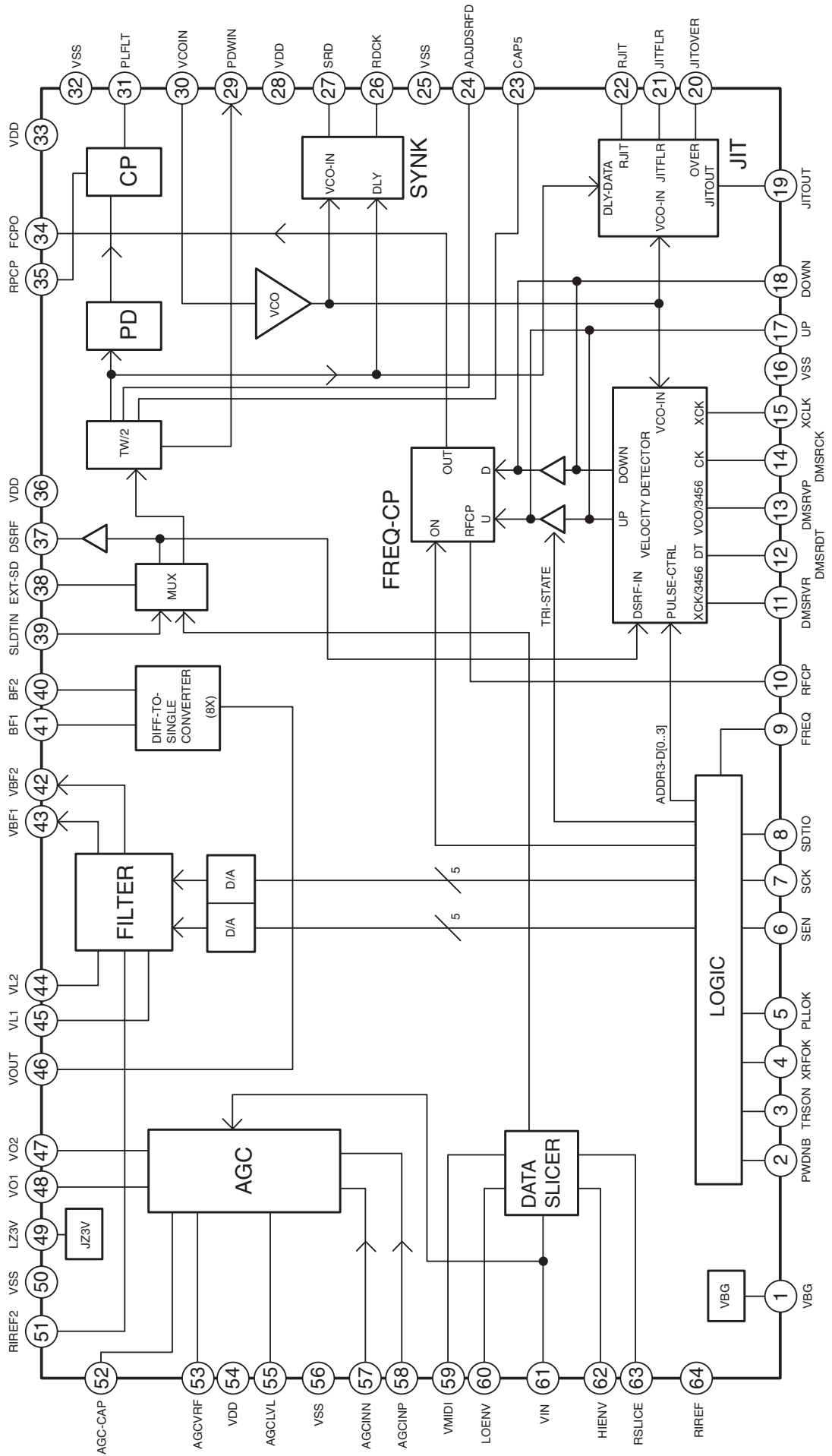
ADV7172 (Video signal decoder)



CYC11AP00 (DVD Pre AMP)



CYC12MP000(DVD Read Channel)

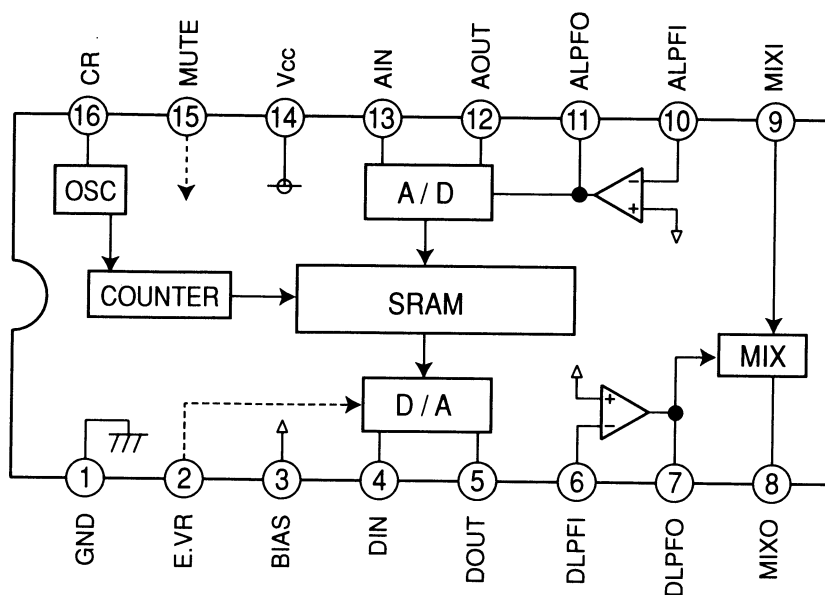


MB90574 (CPU/System control MI-COM)

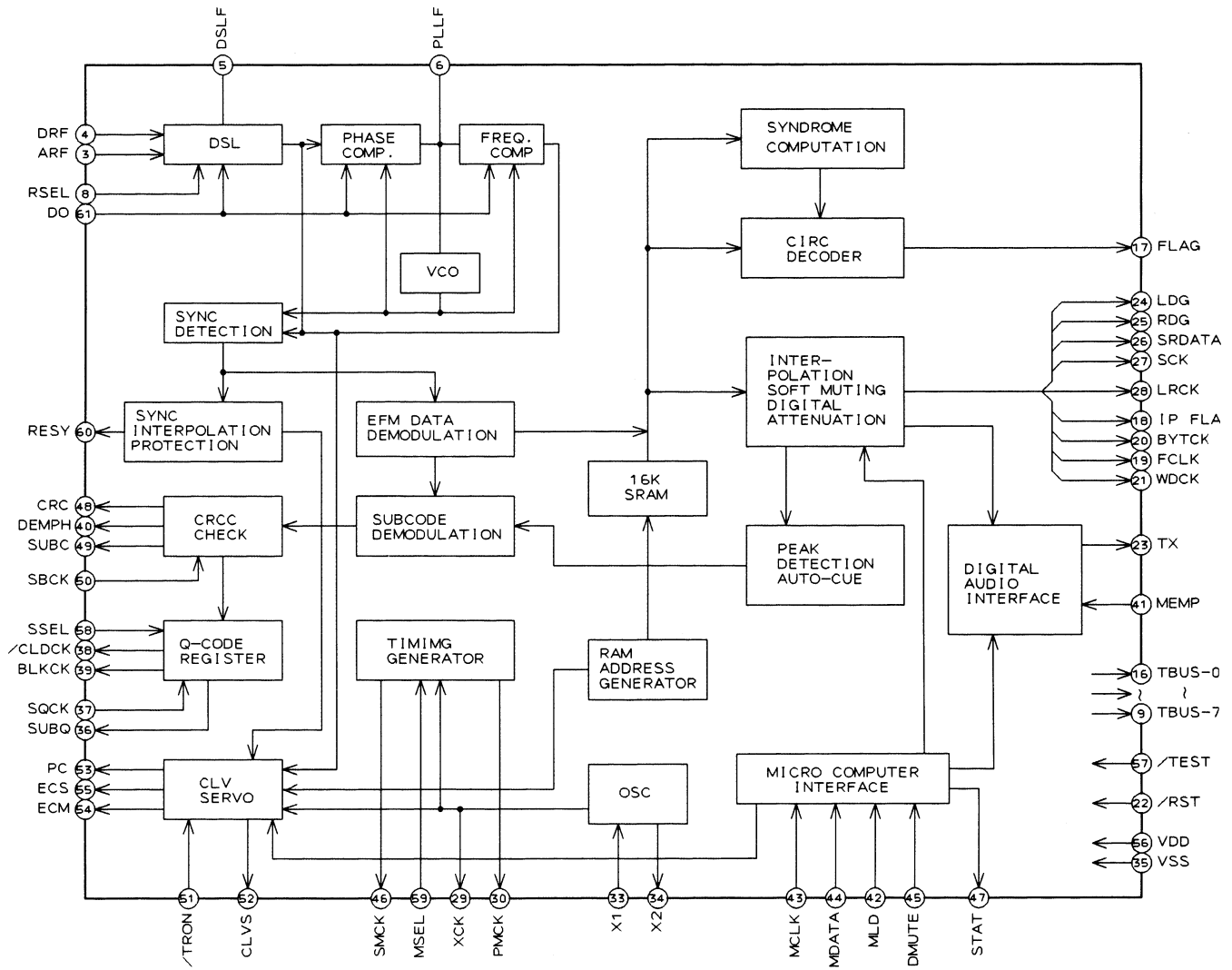
Pin No.	Port Name	I/O	FUNCTION
1	RDX	O	System bus read strobe signal output.
2	WEX	O	System bus lower 8 bit write strobe signal output.
3	BOOT	O	Ziva MI-COM transmission control output.
4	CDLOW	O	Disc judge output.
5	LD.SW1	O	Laser control output 1.
6	RDY	I	System bus ready input.
7	LD.SW2	O	Laser control 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	SYSRST	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 EEPROM & video encoder.
71	SCL	O	Serial clock output to the EEPROM & 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		
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)



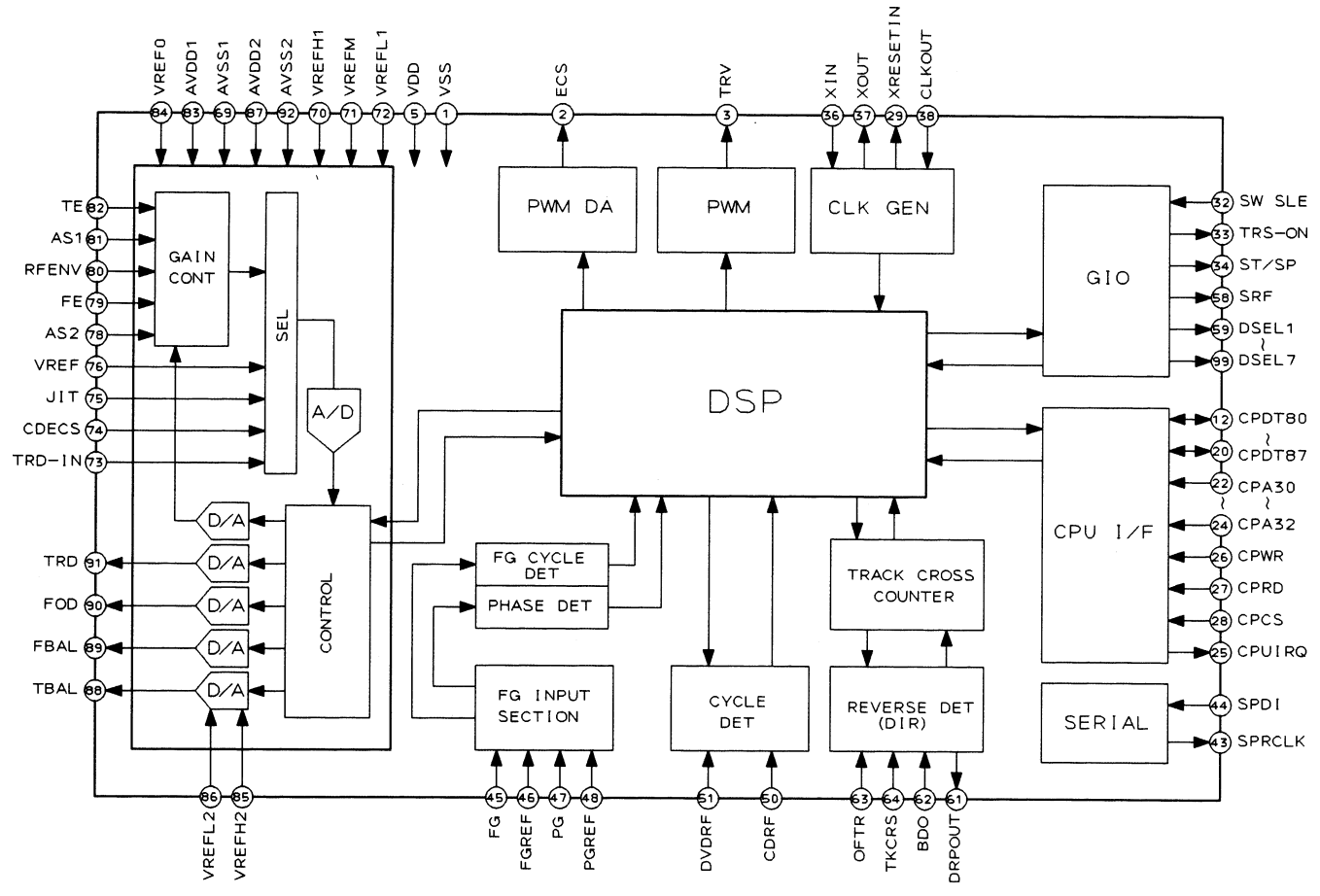
MN66261 (CD signal processing)



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.

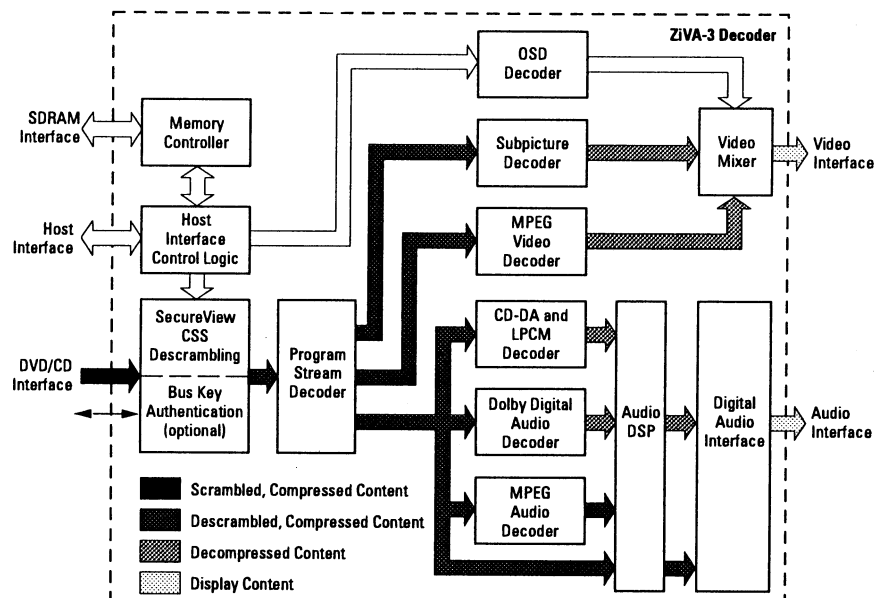
Pin No.	Port Name	I/O	FUNCTION
127-130 133-139 143-147	CPUADT0-15	I/O	CPU address/data bus.
141	XRESET	I	Global reset input.
148-152	CPUADT16-20	I	CPU address bus.
153	XALE	I	Address latch enable input.
154	XRE	I	Read strobe.
155	XINTO	O	ECC interrupt request.
158	XWEH	I	Write strobe signal.
159	XWAIT	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)

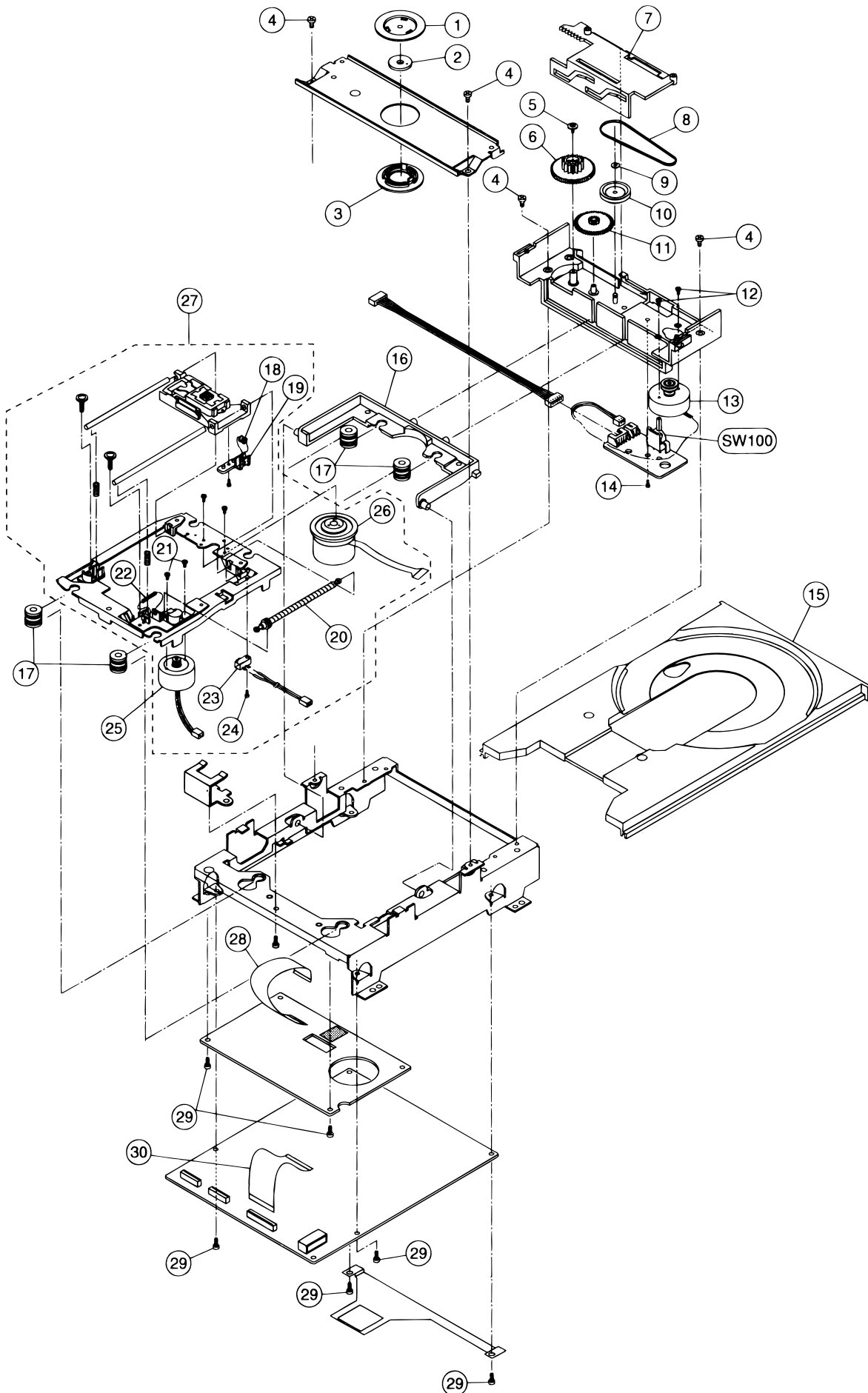
Pin No.	Port Name	I/O	FUNCTION
1,52,129 133,138,141 147,153,156 174,190	PIO0-10	I/O	Programmable I/O pins.
2-4,6,8-11	HDATA0-7	I/O	8 bit bi-directional host data bus.
5,12,17,27 36,40,47,55 61,65,69,75 81,87,91,95 101,107,113 117,123,134 149,160,181 193	VDD1-29	⊕	+3.3 V power supply pins.
7,14,19,29 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/DTACK	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	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	VSYNC	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)



2.3 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 BLK TKM100MZ (PCB C3M1)	ZK370K0100

2.4 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
 ① 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 x 370, Ceramic capacitor
 Disc type
 Temp. coeff. P350-N1000, 50V
 ③ Capacity value
 ② 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
 ④ 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%
 ⑥ Working voltage
 ⑤ 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
 ⑦ 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 - 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		
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。

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			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	DTA144EUA	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					
IC311	9965 000 04628		IC TC7SHU04FUTE85L	*HC105430R	VR110		9965 000 04655	TRIM T08 MVR32 222	*NY000290R
IC490	9965 000 04629		IC MN66261	*HC105210R	VR120		9965 000 04655	TRIM T08 MVR32 222	*NY000290R
IC500	9965 000 04630		IC CYC13DD000(MERMAID)	*HC105340R	VR121		9965 000 04655	TRIM T08 MVR32 222	*NY000290R
IC501	9965 000 04631		IC HY628100ALG-55	*HC105350R	VR202		9965 000 04656	TRIM T08 MVR32 232	*NY000300R
IC502	9965 000 01910		IC HY57V161610DTC-8	HC10092000					
IC503	9965 000 04632		IC TC74VHC00FT	HC005105K0	X301		9965 000 04643	X-TAL CX-16F 40.000MHz	*JX000640R
IC550	9965 000 04633		IC TC74VHC157FTEL	HC005805K0	X601		9965 000 04659	RESONATOR CCR4.0MC3T	*FQ000410R
IC600	nsp		IC MB90F574APFV-G249-AKSYS1	nsp	X800		9965 000 04660	X-TAL CX-11F 27MHz z15PPM	*JX000650R
IC602	9965 000 04634		IC MX23C1610MC-12	*HC105490R					
IC603	4822 209 16907		IC M24C16-MN6T	*HC105440R					
IC605	9965 000 04632		IC TC74VHC00FT	HC005105K0	D11		9965 000 04620	1SS355TE-17	*HD201320R
IC606	9965 000 04635		IC TC74VHCT245AFTEL	*HC105230R	D31		9965 000 04620	1SS355TE-17	*HD201320R
IC607	9965 000 04636		IC TC74VHC574FTEL	HC006205K0	D32		9965 000 04620	1SS355TE-17	*HD201320R
IC610	4822 209 33521		IC TC7W04FUTE12L	HC10382050	D33		9965 000 04661	UDZ10BTE-17	*HD301810R
IC611	9965 000 04632		IC TC74VHC00FT	HC005105K0					
IC612	9965 000 04637		IC TC7WH74FUTE12L	*HC105450R					
IC613	9965 000 04639		IC TC74VHC08FTEL	HC005305K0	IC1		9965 000 04662	IC BA6859AFP-E2	*HC105320R
IC614	9965 000 04640		IC TC74VHC86FT	*HC105330R	IC2		9965 000 04663	IC BA5938FM-E2	*HC105300R
IC700	9965 000 04644		IC ZIVA3	*HU100380R	IC3		4822 209 71451	IC NJM4558M	HC10011090
IC701	9965 000 01910		IC HY57V161610DTC-8	HC10092000	IC4		4822 209 83361	IC NJM2904M	*HC105520R
IC702	9965 000 01910		IC HY57V161610DTC-8	HC10092000					
IC703	9965 000 04645		IC TC7WH157FUTE12L	*HC105370R					
IC800	9965 000 04646		IC SM8701BM-ET	*HC105390R	TR1		4822 130 60856	DTC144EUA	BA20021210
IC801	4822 209 17194		IC TC7WU04FUTE12L	HC700405U0	TR31		9965 000 04667	2SB1132 P/Q/R	*HT200370R
IC802	9965 000 04628		IC TC7SHU04FUTE85L	*HC105430R	TR32		9965 000 04667	2SB1132 P/Q/R	*HT200370R
IC803	4822 209 17194		IC TC7WU04FUTE12L	HC700405U0	TR33		4822 130 10698	2SA1576A Q/R/S	HX100012A0
IC850	9965 000 04647		IC ADV7172 KST	*HC105380R	TR34		4822 130 10698	2SA1576A Q/R/S	HX100012A0
IC901	9965 000 04648		IC BA05FP-E2	*HC105530R	TR35		4822 130 60669	2SC4081 R/S	HX340811B0
IC911	9965 000 04649		IC PCM1735E/2K	*HC105400R	TR36		4822 130 63496	DTC114TU	BA20019210
IC931	9965 000 04649		IC PCM1735E/2K	*HC105400R	TR37		4822 130 60669	2SC4081 R/S	HX340811B0
IC951	9965 000 04649		IC PCM1735E/2K	*HC105400R	TR38		4822 130 61903	DTA114EUA	BA10026210
IC971	9965 000 04649		IC PCM1735E/2K	*HC105400R					
IC991	9965 000 04650		IC TC74HC4053AFTEL	*HC105360R					
			TRANSISTORS						
TR100		9965 000 04651	UMG4N	BA21711000					
TR101		9965 000 04651	UMG4N	BA21711000					
TR102		9965 000 04651	UMG4N	BA21711000					
TR103		9965 000 04651	UMG4N	BA21711000					
TR104		9965 000 04651	UMG4N	BA21711000					
TR105		9965 000 04651	UMG4N	BA21711000					
								MISCELLANEOUS	
					P100		9965 000 04664	SOCKET	*YJ002180R
					P200		9965 000 04665	40FLZ-RSM1-RTB40P T44E	*YJ002200R
					P300		9965 000 04666	SOCKET	*YJ002190R
								30FLS-RSM1-TB30P T32E	
								SOCKET	
								SFW11R-1STE1 11P T24E	