

Service Manual

SA-15S2 /F N/K1G/N1G/N1S/U1G

SA-15S2

Super Audio CD Player

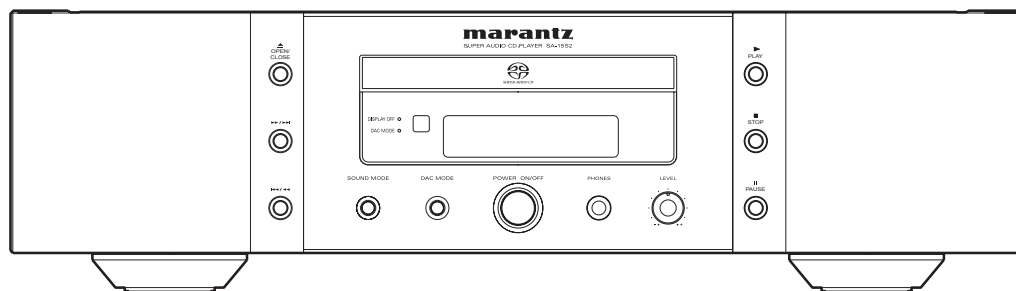


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Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

SA-15S2

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

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100 CORPORATE DRIVE
MAHWAH, NEW JERSEY 07430
USA

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D&M SALES AND MARKETING SHANGHAI LTD.
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CHINA. 200040
TEL : 021 - 6248 - 5151
FAX : 021 - 6248 - 4434

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ものを使用して下さい。

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. 60065.

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

1. TECHNICAL SPECIFICATIONS

	Super Audio CD	CD
Audio Characteristics		
Analog output		
Channels	2 channels	2 channels
Frequency range	2 Hz — 100 kHz	2 Hz — 20 kHz
Frequency characteristics	2 Hz — 50 kHz (-3 dB)	2 Hz — 20 kHz (-0.15 dB)
Dynamic range	112 dB	100 dB
S/N Ratio (A-weighted)	110 dB	110 dB
THD (1 kHz)	0.0010 %	0.0015 %
Wow & Flutter	Precision of quartz	Precision of quartz
Analog output level		
Unbalanced	2.4 V RMS stereo	2.4 V RMS stereo
Digital output level		
Cinch JACK	—	0.5 Vp-p (75 Ω)
Optical connector	—	-19 dBm
Digital input level		
Rectangular optical connector	—	-17.5 dBm — -23 dBm
Optical Readout System		
Laser	AlGaAs	AlGaAs
Wave length	650 nm	780 nm
Signal format		
Sampling frequency	1-bit DSD 2.8224 MHz	16-bit linear PCM 44.1 kHz

Power Supply

Input Voltage, Frequency [F].....AC 100 V 50/60 Hz
 [K].....AC 220 V 50 Hz
 [N].....AC 230 V 50/60 Hz
 [U].....AC 120 V 60 Hz
 Power Consumption..... 20 W

Cabinet, etc.

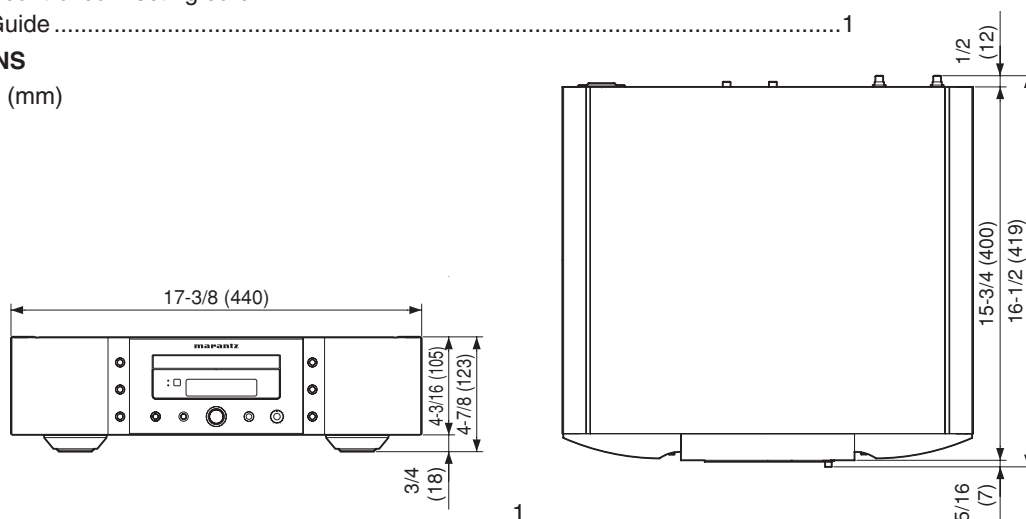
Dimensions (Width × Height × Depth) 17-3/8 × 4-7/8 × 16-1/2 in (440 × 123 × 419 mm)
 Net weight.....29.8 lb (13.5 kg)
 Operating temperatures..... +5 °C ~ +35 °C
 Operating humidity.....5 ~ 90 % (without dew)

Accessories

- Remote control unit (RC003SA)1
- Net weight..... 0.4 lb (160 g)
- AAA (R03) Batteries2
- AC Power cord.....1
- Audio cable1
- Remote control connecting cord1
- User's Guide1

DIMENSIONS

UNIT : in (mm)



APPLICABLE DISCS TO THE UNIT

1. Super Audio CD

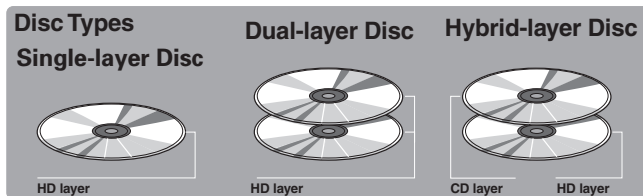


The Super Audio standard is based on Direct Stream Digital (DSD) technology. This new direct-stream digital format comprises a 1-bit system that has a digital sampling frequency that is 64 times higher than that of conventional audio CD. The results are spectacular: a frequency response of over 100kHz and a 120 dB dynamic range over the entire audible spectrum. Mixed with as many of the original frequencies as possible, the audio information audible for human ears sounds much more natural.

All audible frequencies are, after all, embedded in the frequency range as emitted by the sound source. A better reproduction does not exist! For the first time your ears will relive reality.

There are three types of Super Audio CDs.

- **Single-layer Disc**
- **Dual-layer Disc**
- **Hybrid-layer Disc**



And each type may contain two areas of recorded information.

- **High quality stereo area**
- **High quality multi-channel area****
- **Single Layer Disc**

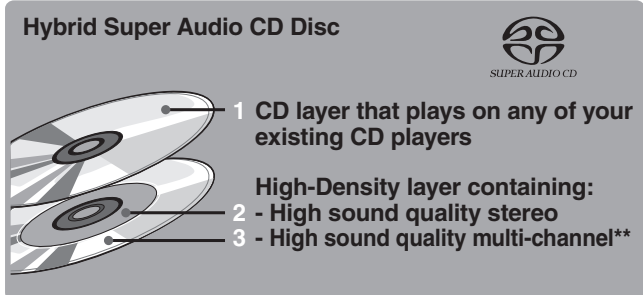
It can contain both high quality stereo area and high quality multi-channel area** information.

- **Dual Layer Disc**

It can contain both high quality stereo area and high quality multi-channel area** information. And a double amount of information can be stored on the disc thanks to the second layer.

- **Hybrid Layer Disc**

Not only does this disc contain both high sound quality stereo area and high sound quality multi-channel area** information, it also has a CD layer in the second layer, so it can be played on a CD player.



The number of tracks recorded may vary per layer.

****This unit is a stereo-only player, and so it cannot play high-quality multi-channel audio areas. (It does not recognize multi-channel areas.)**

2. Audio CD (CDDA)



Audio CDs contain music tracks only.

3. CD-R / CD-RW

This unit can play back the CD-RW (ReWritable) discs as well as ordinary Audio CD and CD-R (Recordable) discs.

- The CD-R and CD-RW discs should contain properly-recorded TOC* information so that they can be played back. In CD recorders, the task of writing TOC information is referred to as finalizing the disc. Discs that are not finalized cannot be properly recognized as an Audio CD and played back by regular CD players and Super Audio CD players. For details, please read the instruction manual provided with a CD recorder.

* TOC stands for Table Of Contents and contains information such as the total number of tracks and total playing time of the disc.

- As the playback of a CD-RW disc necessitates partial change of the player setup, it may take longer time for reading the TOC information than when an Audio CD or CD-R disc is played.

本機で再生できるディスクについて

1. スーパーオーディオ CD



スーパーオーディオ CD 規格はダイレクト・ストリーム・デジタル(Direct Stream Digital) (DSD)技術に基づいています。このダイレクト・ストリーム・デジタル・フォーマットは、従来のオーディオ CD よりも 64 倍のサンプリング周波数を有する 1 ビットシステムから構成されています。

それによって、100kHz 以上におよぶ周波数範囲及び可聴周波数帯全域でダイナミックレンジ 120dB の素晴らしいサウンドが生まれます。

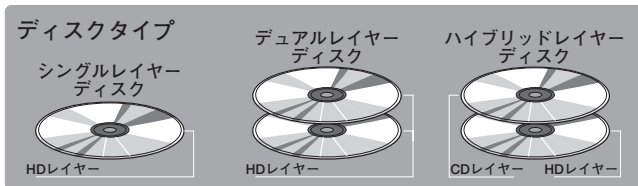
可能な限り多くの周波数分布をミックスすることにより、可聴域のオーディオ情報がよりいっそう自然に聞こえるようになります。

つまり、すべての可聴周波数は音源から発せられる周波数範囲内に組み込まれます。

これによって、リアリティーのある音場が再現されます。

スーパーオーディオ CD には、以下の 3 つのタイプがあります。

- シングルレイヤー・ディスク
- デュアルレイヤー・ディスク
- ハイブリッドレイヤー・ディスク



また、各々のタイプは、情報が記録される 2 つの領域、

- 高音質ステレオエリア
- 高音質マルチチャンネルエリア**

を持つことができます。

- シングルレイヤー・ディスク

高音質ステレオと高音質マルチチャンネル ** の両方の情報エリアを持つことができます。

- デュアルレイヤー・ディスク

高音質ステレオと高音質マルチチャンネル ** の両方の情報エリアを持つことができますが、第二レイヤーの存在によって 2 倍の情報量をディスクに記憶することができます。

- ハイブリッドレイヤー・ディスク

高音質ステレオと高音質マルチチャンネル ** の両方の情報エリアを持てるだけでなく、第二レイヤーには CD レイヤーも持てるため、CD プレーヤーでの再生が可能となります。



記録されるトラック数は、レイヤーによって違うことがあります。

** 本機はステレオ専用プレーヤーですので高音質マルチチャンネルエリアは再生できません。(マルチチャンネルエリアは認識しません)

2. オーディオ (音楽) CD (CDDA)



オーディオ CD はミュージックトラックのみで構成されています。

3. CD-R / CD-RW

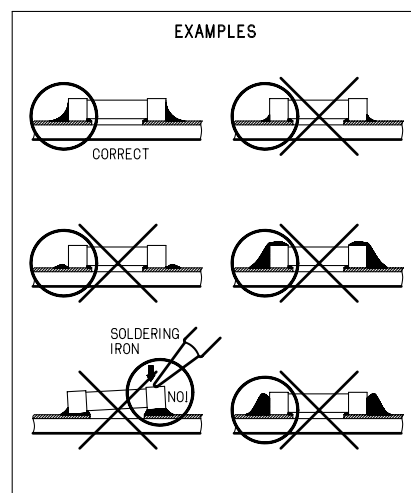
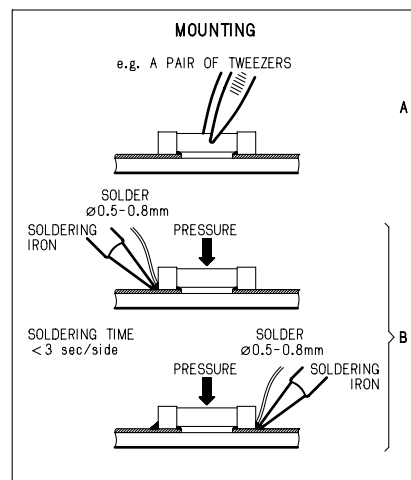
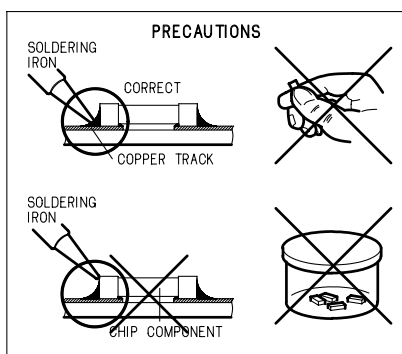
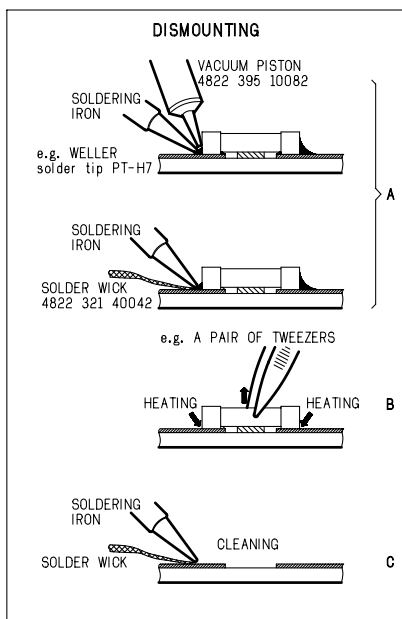
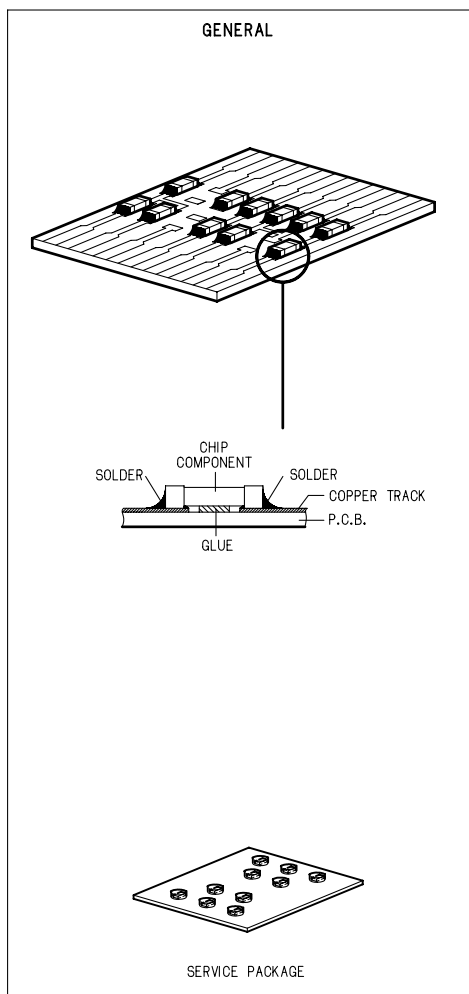
• CD-R や CD-RW の再生では必ず TOC* が正しく記録されていることが必要です。CD レコーダーでは TOC 情報を書き込むことをファイナライズ(Finalize)といい、この作業が正常に完了していないディスクは、普通の CD プレーヤーやスーパーオーディオ CD プレーヤーではオーディオ CD として正しく認識されず再生することができませんので十分ご注意ください。詳しくは CD レコーダーの取扱説明書をご覧ください。

* TOC (トック) とは Table Of Contents の略で、ディスクの総曲数や総再生時間などの目次情報のことです。

• CD-RW ディスクを再生する場合、プレーヤーの設定を一部変更するため、オーディオ CD や CD-R に比べ TOC の読み込みに若干時間がかかることがあります。

2. SERVICE HINTS AND TOOLS

SERVICE HINTS



SERVICE TOOLS

Audio signals disc	4822 397 30184 or TCD-784
Disc without errors +	
Disc with DO errors, black spots and fingerprints	4822 397 30245 (SBC444A) or TCD-726
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

070703MZ

3. WARNING AND LASER SAFETY INSTRUCTIONS

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD



(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le braceleterti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, das Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialeto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerats darf nicht verändert werden. Für Reparaturen sind Original-Ersatzteile zu verwenden.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio idetici a quelli specificati.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne."

LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.



USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURE OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

AVOID DIRECT EXPOSURE TO BEAM

WARNING

The use of optical instruments with this product will increase eye hazard. Repair handling should take place as much as possible with a disc loaded inside the player

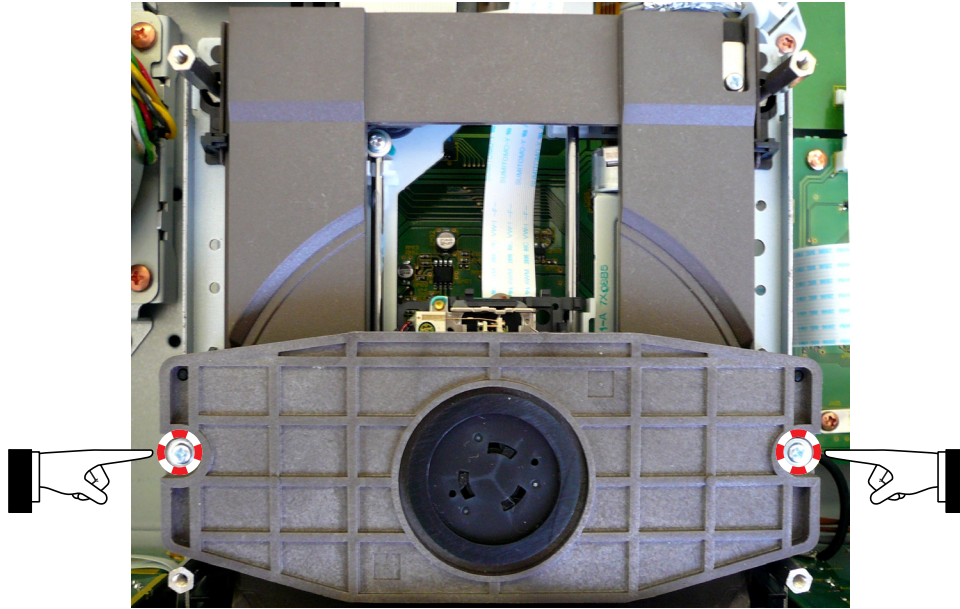
WARNING LOCATION: INSIDE ON LASER COVERSIELD

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL Å PNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÅR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

4. CAUTIONS

[A] TAKING THE DISC OUT OF EMERGENCY

1. Remove the top cover of the player.
2. Remove the cover of Loader.
3. Remove 2 screws shown in the picture follows.
4. Remove the disc clamber.
5. Now you can remove the disc.



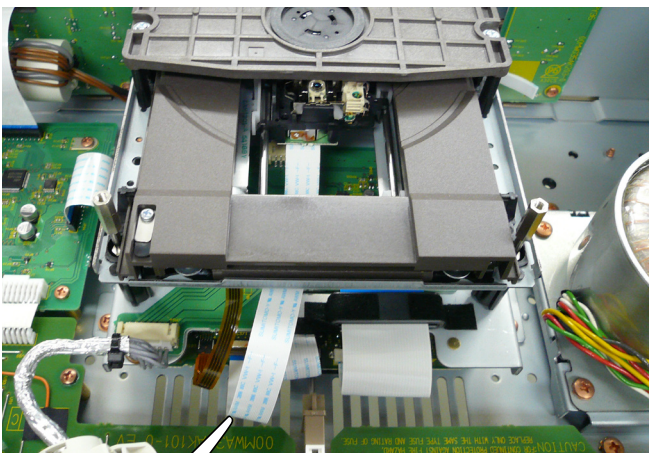
[B] CAUTIONS IN ASSEMBLING AND DISASSEMBLING (M002)

When removing the FFC (flexible flat cable), connecting the optical pick up and the Super Audio CD PWB, short the short three lands pointed by the arrow with solder. Otherwise the laser diode may be damaged by static electricity

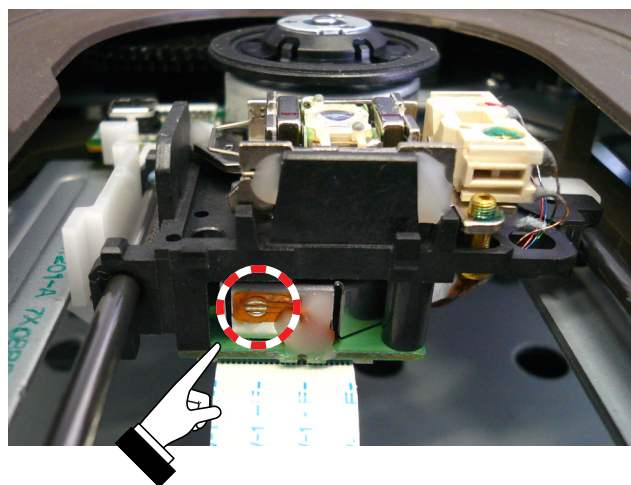
[B] 取り外し、組み立て時の注意 (M002)

ピックアップ（レーザーダイオード）の静電破壊による損傷を避けるため下記の作業を行ってください。

1. FFCケーブルを外す前に、ピックアップ基板の3つのショートランド（矢印）を半田でショートします。
2. FFCケーブルを接続後、ショートランドの半田を取り除きます。



FFC



Short the three short lands by soldering
3つのショートランド（矢印）を半田でショートします

[C] PRECAUTIONS TO OBSERVE IN INSTALLING THE LOADER UNIT

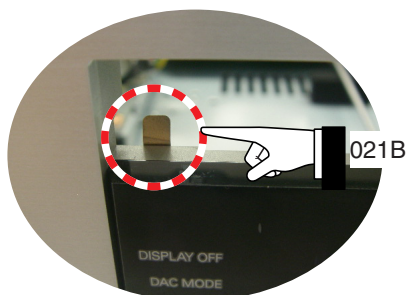
Due to the contactor (021B) being deformable, when installing the

The contactor (021B) is a thin copper plate.

[C] LOADER UNIT取り付け時の注意事項

修理時LOADER UNITを後から取り付ける際は、コンタクター(021B)が変形しやすいため、下記の手順でLOADER UNITを取り付けてください。

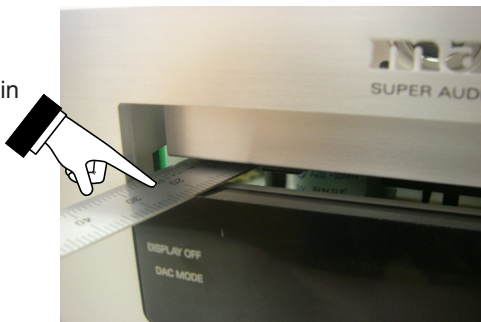
コンタクター(021B) : 薄い銅版です。



1. Hold down the 021B with a thin plate while installing the loader unit.

1. (021B)を薄い板等で押さえながら、LOADER UNITを取り付けてください。

薄い板等で押さえる
Hold it down with a thin plate.



2. Keep holding it down with a thin plate until the loader unit gets in

2. LOADER UNITが定位置に取り付くまで薄い板等で押さえます。



3. When the loader unit is installed, pull out the thin plate that has held

3. LOADER UNITを取り付け後、差し込んでいた薄い板を抜きます。



5. UPDATE FIRMWARE PROCEDURE

[A] Update Front CPU's software to internal Flash-ROM.

- This mode is to update the software for Front CPU's.
- The target device is internal flash ROM of Front CPU's (QF01) on MPU/DIR PWB (PU16).
- The updating of software takes about 1 minute.

Necessary Equipment

The following items are required for updating.

- Windows PC (OS: Windows2000 or WindowsXP) with Serial port.
- RS-232C Dsub-9 pin cable (female to female/straight type)
- Update software to CPU. (FlashSta.exe, SACD_yymmddvv.mot and SACD_yymmddvv.id in Front CPU (SA-15S2) folder)
- DATA UPDATE KIT (part no. 90M-SR4001JIG)

Use DATA UPDATE KIT to connect PC and JU01 (FFC connector) in rear panel of the unit, when updating Front CPU

Update Software for Front CPU

1. Put the "Front CPU (SA-15S2)" folder into anywhere on your PC's hard disc.

5. UPDATE FIRMWARE PROCEDURE

[A] Update Front CPU's software to internal Flash-ROM.

- このモードはフロントマイコンの更新用です。
- MPU/DIR PWB (PU16) のQF01のマイコン内部のフラッシュROMに書き込みます。
- 書き込みにかかる時間は約1分です。

必要機器

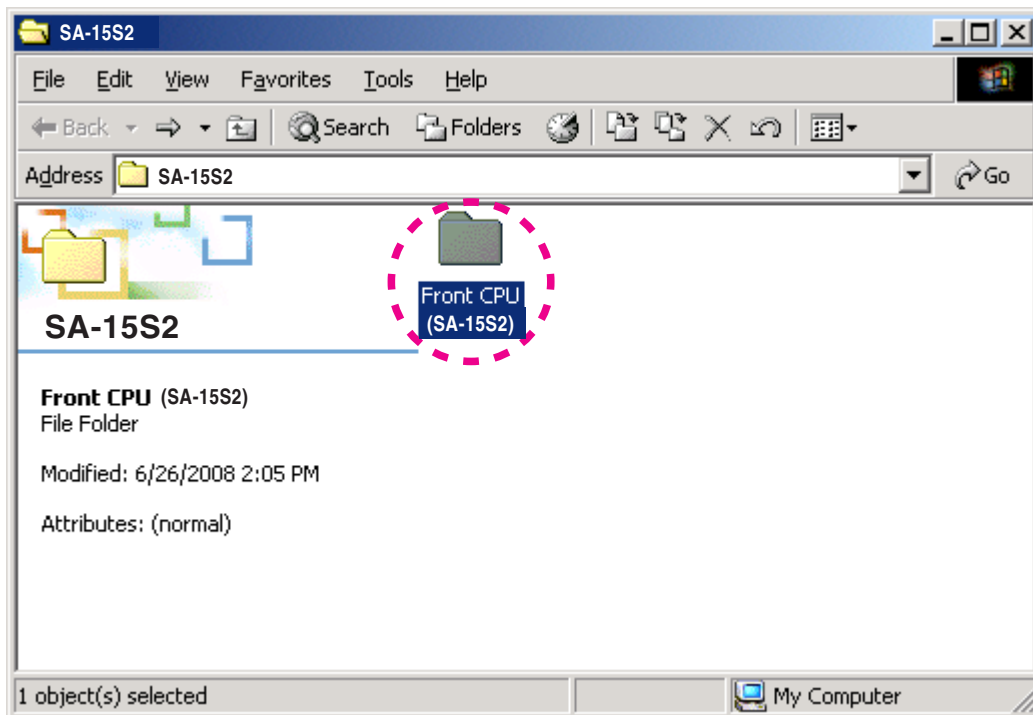
下記は更新に必要な機器です。

- Windows PC (OS : Windows2000 またはWindowsXP) で Serial ポートのあるもの
- RS-232C ストレートケーブル(9Pin メス-9Pin メス)
- マイコン用書き込みソフトウェア(Front CPU (SA-15S2) フォルダ内FlashSta.exeおよびSACD_yymmddvv.mot, SACD_yymmddvv.id)
- DATA UPDATE KIT (part no. 90M-SR4001JIG)

マイコンのファームウェアを更新する場合、DATA UPDATE KITを使用しPCと本機のリアパネル内にあるJU01とを接続します。

Update Software for Front CPU

1. 1. Front CPU (SA-15S2)フォルダをPCの任意のフォルダにコピーします。

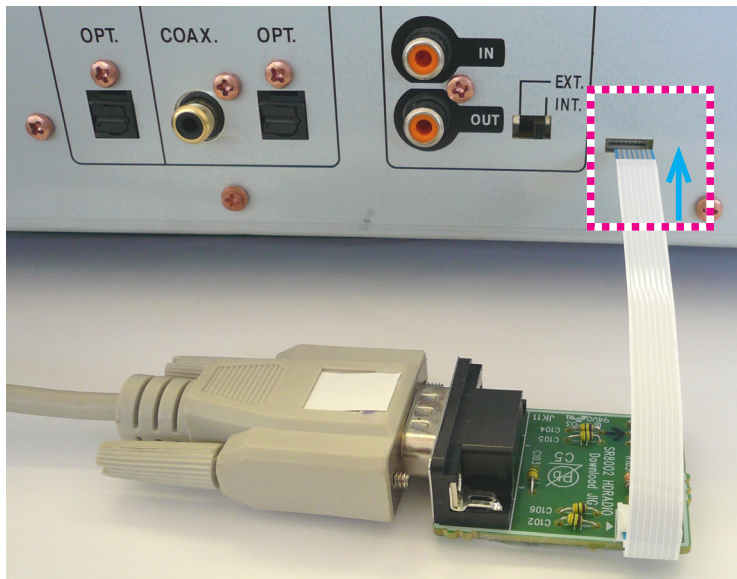


2. Connect PC and DATA UPDATE KIT with the RS-232C cable.

2. DATA UPDATE KITとPCとをRS-232Cケーブルで接続します。

3. Connect FPC (upside contact) to the rear panel of the unit from DATA UPDATE KIT

3. DATA UPDATE KITのFFCを接点を上にして、本機のリアパネルに接続します。

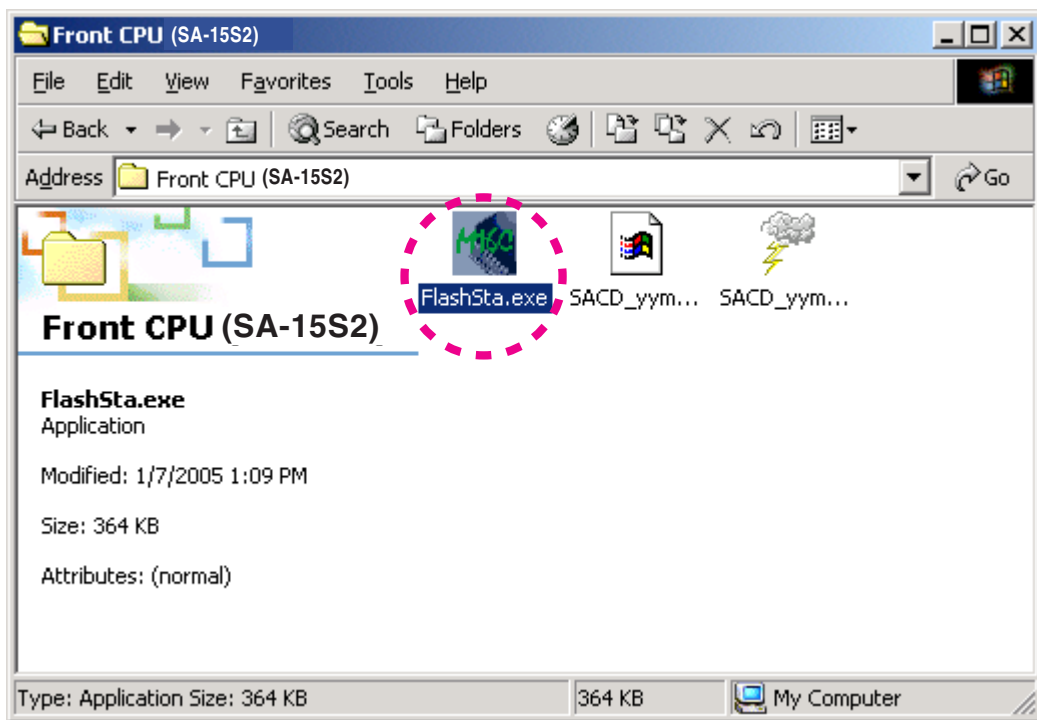


4. Connect the mains cord into the unit.

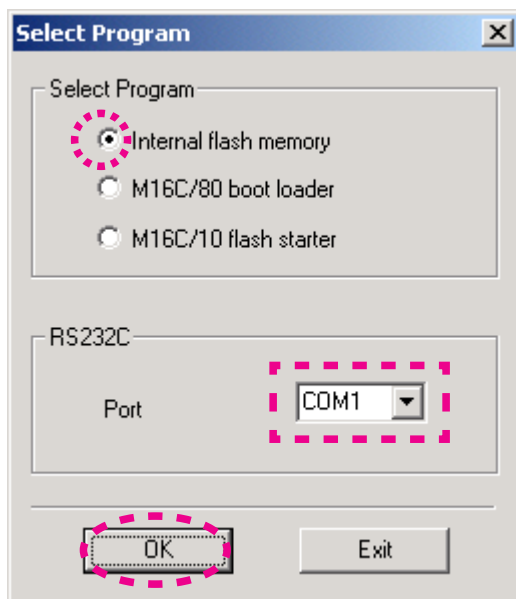
4. 本機に電源ケーブルを接続します。

5. Double click the FlashSta.exe. And launch the M16 Flash Start.

5. FlashSta.exeをダブルクリックし、Flash Startを起動します。

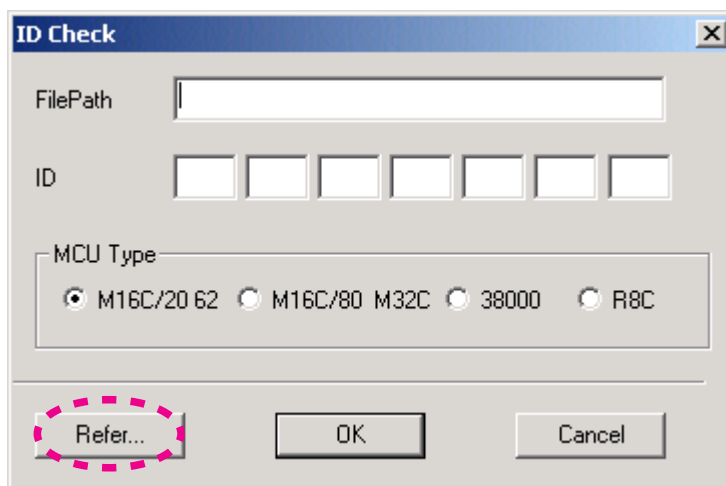


6. Check the **Internal flash memory** in the Select Program.
Choose the **COM Port** number.
And click the **OK**.
6. Select Programの**Internal flash memory**にチェックをして下さい。
使用する**COMポート番号**を選択します。
OKをクリックします。



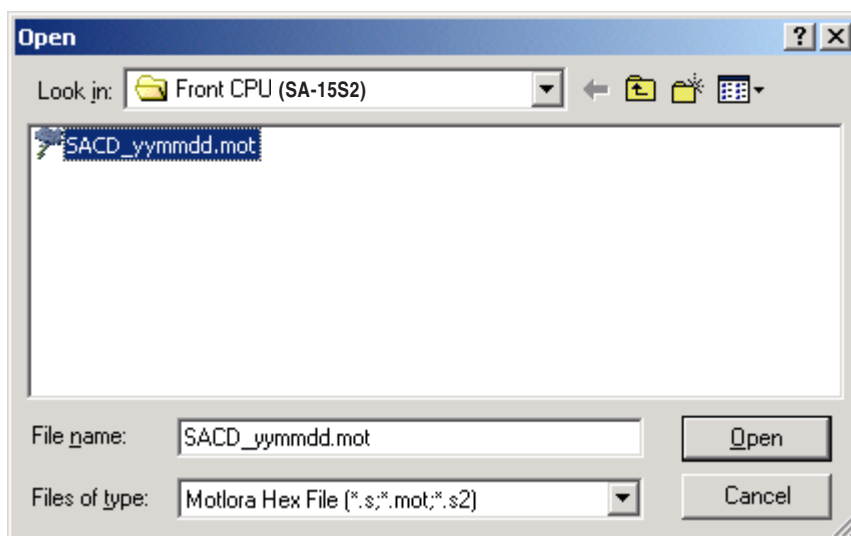
7. Click the **Refer...**

7. **Refer...**をクリックします。



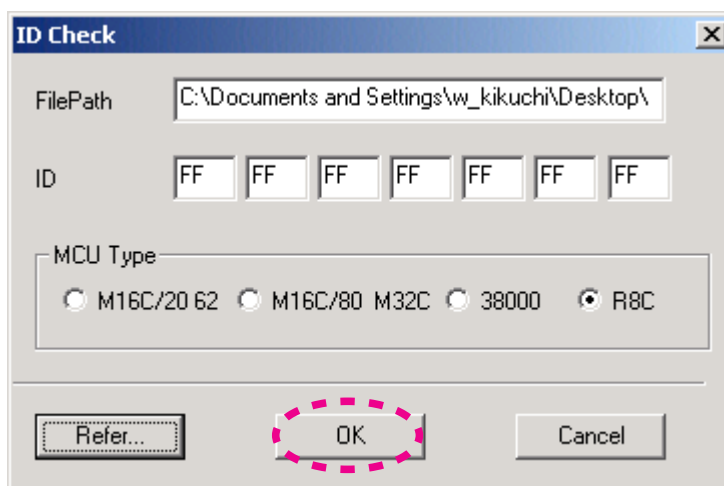
8. Choose the SACD_yymmdd.mot. And click the **Open**.
NOTE : The yy is two digits of year. The mm is month. The dd is date.

8. SACD_yymmdd.motを選択し、**Open**をクリックします。
注意 : yyは年の下二桁、mmは月、ddは日



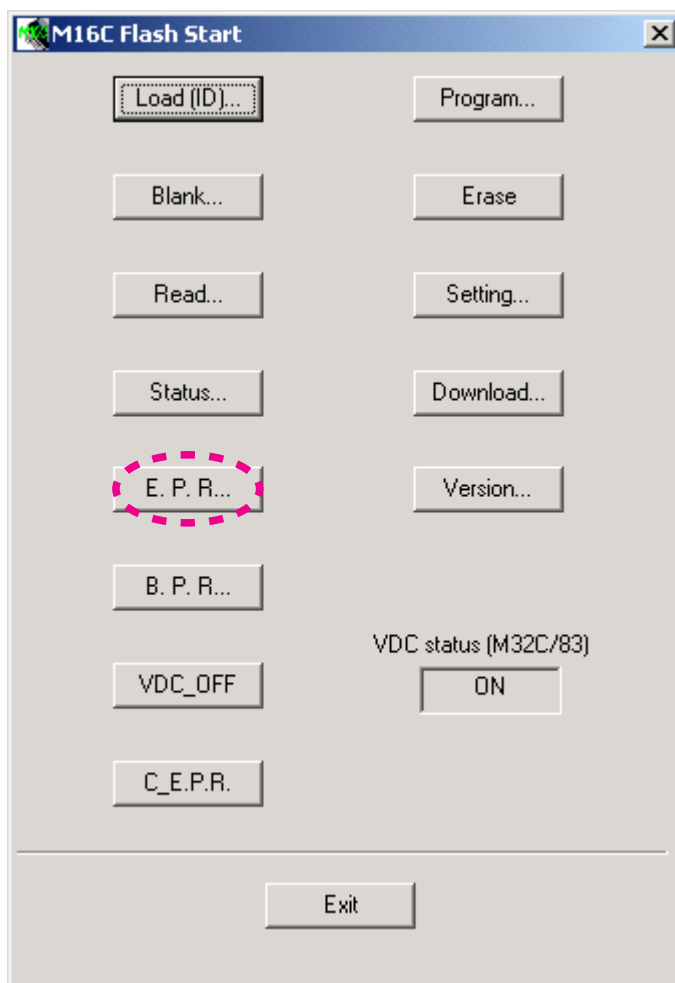
9. The FilePath and ID are inputted automatically, and the MCU Type is selected to R8C automatically. Click the **OK**.

9. FilePathとIDは自動的に記入され、MCU TypeはR8Cが選ばれます。
OKをクリックします。



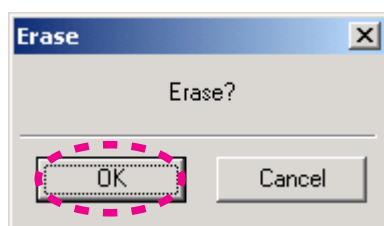
10. Click the **E.P.R...**

10. **E.P.R...**をクリックします。



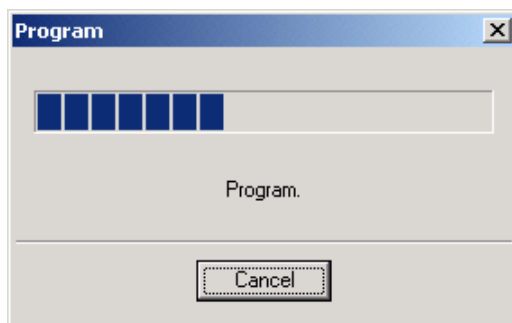
11. Click the **OK**.

11. **OK**をクリックします。



12. Software is written into the internal Flash-ROM of Front CPU.
The writing of software takes about 1 minute.

12. ソフトウェアがFront CPUの内部フラッシュROMに書き込まれます。
書き込みにかかる時間は約1分です。



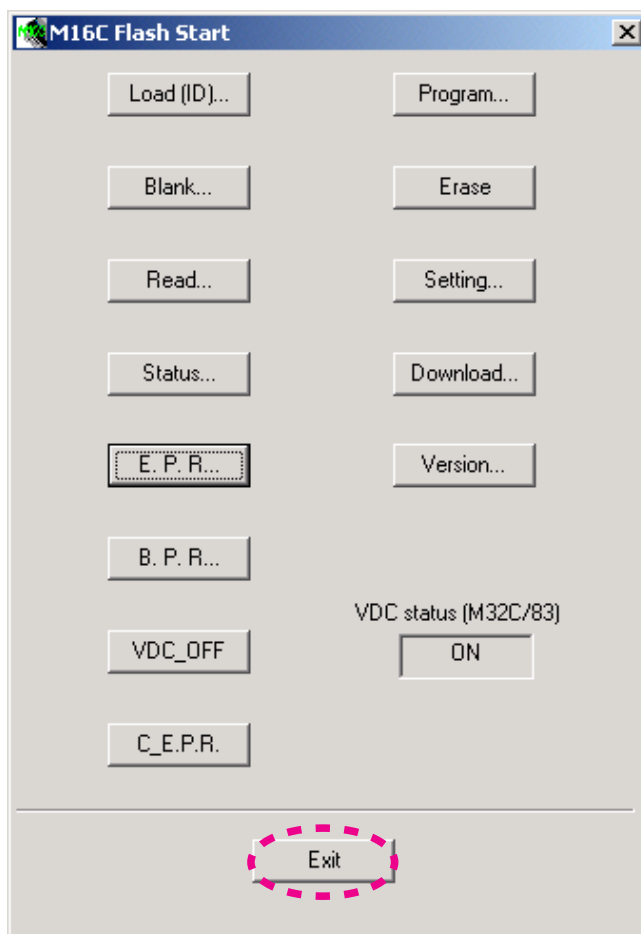
13. Click the **OK**.

13. **OK**をクリックします。



14. Click the **Exit**.

14. **Exit**をクリックします。



15. Disconnect the mains cord.

15. 本機から電源コードを外します。

16. Disconnect the FFC of DATA UPDATE KIT from the unit.

16. 本機からDATA UPDATE KITのFFCを抜きます。

[B] UPDATE FIRMWARE FOR Super Audio CD MODULE

NECESSARY EQUIPMENT

- Update Disc (90M-SA15S2CDR)

WRITING PROCEDURE

1. Connect the mains cord into the unit.
2. Turn on the unit.
3. Press the **OPEN/CLOSE** button to open the tray.
4. Insert the Update Disc.
5. Press the **OPEN/CLOSE** button to close the tray.
6. "Upgrade?" is displayed on the front display. Then Press **PLAY** button.
7. Remove the update disc from the tray, when the tray is opened automatically. At that time ""Upgrade" is blinking on the front display.
8. When update succeeded, the tray is closed automatically.
9. And "No Disc" is displayed on the front display.
10. Turn off the unit.
11. Disconnect the mains cord from the unit.

[B] UPDATE FIRMWARE FOR Super Audio CD MODULE

NECESSARY EQUIPMENT

- Update Disc (90M-SA15S2CDR)

WRITING PROCEDURE

1. 本機に電源コードを接続します。
2. 本機の電源を入れます。
3. **OPEN/CLOSE**ボタンを押してトレイを開きます。
4. Update Discをトレイに乗せます。
5. **OPEN/CLOSE**ボタンを押してトレイを閉じます。
6. フロントディスプレイに"Upgrade?"が表示されたら、**PLAY**ボタンを押します。
7. トレイが自動的に開いたらUpdate Discをトレイから取り出します。このときフロントディスプレイに"Upgrade"と表示され点滅します。
8. アップデートが完了すると自動的にトレイが閉じます。
9. フロントディスプレイに"No Disc"と表示されます。
10. 本機の電源を切ります。
11. 本機から電源コードを外します。

6. SERVICE MODE

1. Insert mains cable plug in the outlet.
2. Press the **POWER ON/OFF** button While pressing **▶▶/▶▶|** and **STOP** button.

Model name is displayed.



3. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

Version of FRONT microprocessor is displayed.



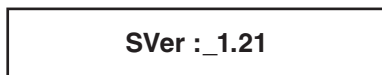
4. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

Number of SUPER AUDIO CD module ROM is displayed.



5. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

Version of SUPER AUDIO CD module ROM is displayed.



6. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

All area in the LCD light on.



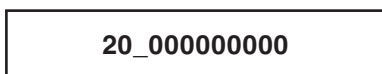
7. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

Turn off all LCD segments.



8. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

Serial number is displayed.



9. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

[A] DISPLAYにDISC 再生時間（総合計）が表示されます。

[A] SUPER AUDIO CD payback time is displayed.



Press **PLAY** button

Press **PAUSE** button

[B] SUPER AUDIO CDのバックアップされた時間が表示されます。

[B] SUPER AUDIO CD backup time is displayed.



10. Press **▶▶/▶▶|** button ↓ ↑ Press **|◀◀/◀◀** button

10. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。

6. SERVICE MODE

1. 電源コードを接続します。
2. **▶▶/▶▶|**ボタンと**STOP**ボタンを押しながら**POWER ON/OFF**ボタンを押します。（以下、表示例は英文項の図を参照）
DISPLAYに機種名が表示されます。

3. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。
DISPLAYにFRNOT Micro-Processor Versionが表示されます。

4. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。
DISPLAYにSUPER AUDIO CDモジュールのROM 番号が表示されます。

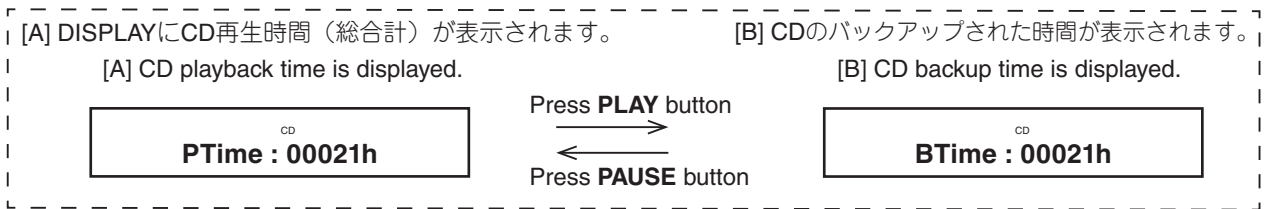
5. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。
DISPLAYにSUPER AUDIO CDモジュールのROM Versionが表示されます。

6. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。
LCDが全点灯します。

7. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。
LCDが全消灯します。

8. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。
DISPLAYにSERIAL NOが表示されます。

9. **▶▶/▶▶|**ボタンを押します。戻るには**|◀◀/◀◀**ボタンを押します。



Backup time (BTime) :

When replacing SUPER AUDIO CD module and reset playback times (total), the software is available that automatically backs up (saves) playback times (total). You can check the information before replacing SUPER AUDIO CD module.

バックアップ時間 (BTime) :

SUPER AUDIO CDモジュールを交換した際、再生時間（総合計）のクリア作業を行いますが、その時に交換する前のSUPER AUDIO CDモジュールの再生時間（総合計）がメモリにバックアップされます。その情報を確認することが出来ます。

Press the **POWER ON/OFF** button to quit Service Mode.

電源を切るとSERVICE モードが解除されます。

Factory Mode

To reset the back up memory of the unit into the default status, follow the procedure below.

1. Connect the mains cord into the unit and press **STOP** and **POWER ON/OFF** button simultaneously more than 3 seconds.
2. "**Reset**" is displayed, after "**Reset OK**" displayed on the display, and EEPROM is cleared to the default status, microprocessor is reset and unit returns to the normal status.

初期状態にするには（リセット）

1. 電源コードを接続します。**STOP**と**POWER ON/OFF**ボタンを同時に約3秒以上押します。
2. ディスプレイに"**Reset**"が表示され、その後"**Reset OK**"が表示され通常状態の表示に戻り、初期化が終了します。

7. HOW TO THE RESET OF PLAYBACK TIME

7. DISC再生時間のリセット（初期化）方法

When replacing CD MECHANISM [001M or M002] (TRAVERSE Block), please reset Playback time (total) in the following procedure.

新しいCD MECHANISM [001M or M002] (TRAVERSE部) に交換した場合、次の手順でDISC再生時間をリセット（初期化）してください。

1. Procedure 11, 12 of SERVICE MODE, Playback time (total) is displayed.

1. SERVICE MODE の手順11, 12でDISPLAYにDISC 再生時間（合計）が表示されます。

PTime : 10051h

The display is a time unit. (Example: "10050 hours, 0 minute, 1 second" is 10051h)

表示は時間単位です。（例：10050時間0分1秒は10051hとなります）

The maximum Playback time is 65536h.

最大表示は、65536hまでです。

2. Press ■ (STOP) Button 3 seconds and more. PTime Clear? is displayed.

2. ■ (STOP)ボタンを3秒以上押します。DISPLAYにPTime Clear?と表示されます。

PTime Clear?

3. Press ► (PLAY) Button. Done is displayed after PTime:00000h is displayed. Play back time (total) was reset.

3. ► (PLAY)ボタンを押します。DISPLAYにDoneと表示され、その後、PTime : 00000hとなります。DISC再生時間がリセット（初期化）されました。

Done : xxx



PTime : 00000h

When the ◀◀/◀ (PREVIOUS) button is pushed during a "PTime:00000h" display, it will return to the beginning (Model name is displayed) in service mode.

"PTime : 00000h"表示中に◀◀/◀ (PREVIOUS)ボタンを押すと、サービスモードの最初（機種名表示）に戻ります。

Press the **POWER ON/OFF** button to quit Service Mode.

電源を切るとSERVICE モードが解除されます。

8. ERROR MESSAGE

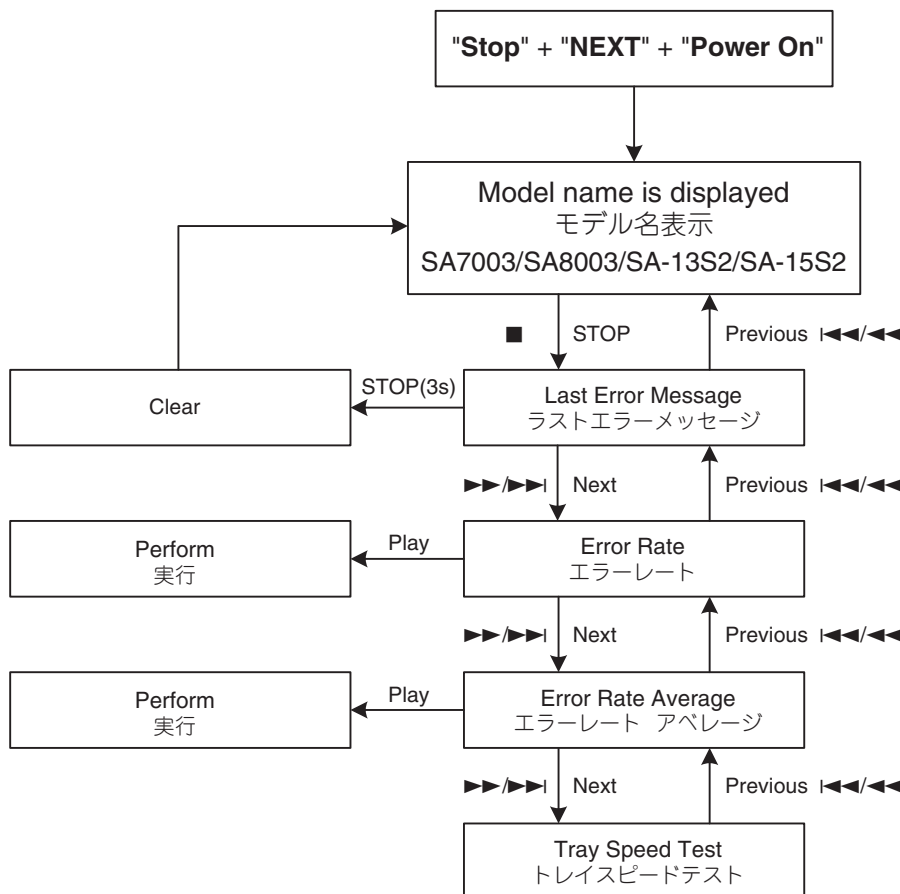
This test mode is common to all models.

[A] The mode to check the last error message etc.

8. エラーメッセージ

エラーメッセージ（各モデル共通）には、ラストエラーメッセージとその他のエラーメッセージがあります。

[A] ラストエラーメッセージなどを確認するモード



Here is the indication and specification of each function.

以下に、それぞれの表示及び仕様を示します。

1. Last Error Message

This function enables the users to check error messages at a later time when an error has occurred between the front microprocessor and each device. However, it does not display all errors. For more information about what messages can be displayed, refer to the [B] Other Error Message page. When no error has ever occurred, it displays the following.

1. ラストエラーメッセージ

フロントマイコンと各デバイス間の通信エラーなどが生じた際のエラー表示を、後からでも確認できる機能です。但し、全てのエラー表示を記録するわけではありません。表示が可能なエラー情報は[B] その他のエラーメッセージの項を参照ください。尚、エラー情報がない場合は、以下の表示を行います。



Hold the **STOP** button for 3 seconds while the last error message is being displayed, and the last error message will be cleared. After the last error message is cleared, the model identification returns to the display.

ラストエラーメッセージを表示中に、**STOP**ボタンを3秒間押し続けるとラストエラーメッセージ情報をクリアすることができます。このとき、ラストエラーメッセージ情報のクリアが完了するとモデル名表示に自動的に戻り。

2. Error Rate

This function determines the CD error rate. For SUPER AUDIO CDs, it only displays reference values.



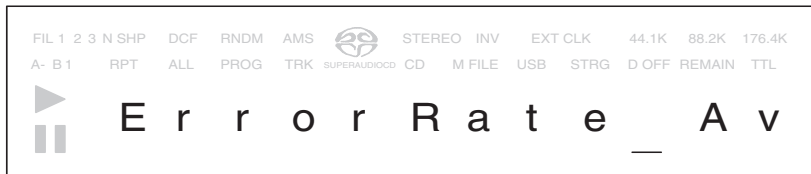
The buttons that function while this message is being displayed are OPEN/CLOSE and PLAY. (NEXT/PREVIOUS is functional too but switches to another service mode.) Press the OPEN/CLOSE, put in a disc to determine and press PLAY to start playback. When the playback has begun, the display message will be switched to the following:



A current error rate will be displayed for approximately 3 seconds. The above message "###E-#" will, for example, be "173E-4" in case of 1.73 / 10000 (173ppm). If the displayed value will not change, the processing may have failed. Please take out the disc and repeat the procedure again. Using the same disc will not always mean that the same value will be displayed.

3. Error Rate Average

This function determines the CD error rate and displays an average value of the first several rates. For SUPER AUDIO CDs, it only displays reference values.



The buttons that function while this message is being displayed are OPEN/CLOSE and PLAY. (NEXT/PREVIOUS is functional too but switches to another service mode.) Press the OPEN/CLOSE, put in a disc to determine and press PLAY to start playback. When the playback has begun, the display message will be switched to the following:

2. エラーレート

CDのエラーレートを測定します。SUPER AUDIO CDに関しては、参考値となります。

この表示中に有効な操作は、OPEN/CLOSEとPLAYになります。OPEN/CLOSEにて測定するディスクを挿入し、PLAYで再生を開始してください。再生を開始すると以下の表示に切り替わります。

およそ3秒単位で現在のエラーレートを表示します。尚、表示中の"###E-#"に関しては、実際に表示されている数字が例えば"173E-4"の場合、1.73 / 10000 (173ppm)となります。尚、表示の数値が変化しない場合、処理に失敗した可能性があります。その場合、一旦ディスクを排出してから再度実行してください。又、同じディスクを使用しても同じ値が出るとは限りません。

3. エラーレートアベレージ

CDのエラーレートを測定し最初の数回の平均値を表示します。SUPER AUDIO CDに関しては、参考値となります。

この表示中に有効な操作は、OPEN/CLOSEとPLAYになります。OPEN/CLOSEにて測定するディスクを挿入し、PLAYで再生を開始してください。再生を開始すると以下の表示に切り替わります。

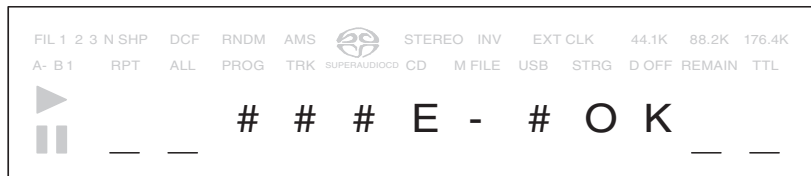


A current error rate will be displayed for approximately 3 seconds.

The above message "###E-#" will, for example, be "173E-4" in case of 1.73 / 10000 (173ppm).

If the displayed value will not change, the processing may have failed. Please take out the disc and repeat the procedure again. Using the same disc will not always mean that the same value will be displayed.

When an average has been calculated after a predetermined number of times of measurement, the displayed message will be switched to the following:



およそ3秒単位で現在のエラーレートを表示します。

尚、表示中の"###E-#"に関しては、実際に表示されている数字が例えば"173E-4"の場合、1.73 / 10000 (173ppm)となります。尚、表示の数値が変化しない場合、処理に失敗した可能性があります。その場合、一旦ディスクを排出してから再度実行してください。又、同じディスクを使用しても同じ値が出るとは限りません。

所定の回数を終了して平均値が算出されると以下の表示に変わります。

4. Tray Speed Test

This function allows the OPEN/CLOSE speed of the tray to be variable. It can be changed at a 1% step to the default values. Here are default values:

	1	2	3	4	5
Time	0-500ms	500ms-1s	1s-1.5s	1.5s-2s	2s~
TRY_OPN	85 %	65 %	55 %	55 %	55 %
TRY_CLS	65 %	70 %	75 %	85 %	100 %

Once into the test mode, it will display the following message:



Press the **STOP** button, and it will enable the number after Open to be variable (between 0 and 500ms).

4. トレイスピードテスト

トレイのオープン・クローズ時のスピードコントロールを変更することが可能です。デフォルトの値に対して1%ステップで変更することができます。デフォルトの値は以下の通りです。

当テストモードに入ると以下の表示を行います。

STOPボタンが押されると、Open側の1の部分（0~500msの区間）の変更が可能になります。



Press the **PLAY** button, and the number goes up at a 1% step; press the **PAUSE** button, and the number goes down at 1% step.

Press the **STOP** button at any value, and the setting for "Open1" will be determined (between 0 and 500ms).

Once the setting is determined, it will automatically determine the setting for "Open2".

Likewise, determine the setting for each of Open2 to Open5 and then for each of Close1 to Close5.

When the Close5 setting is completed, the display will show the following message:

PLAYボタンを押すと1%ステップで加算され、**PAUSE**ボタンを押すと1%ステップで減算されます。

任意の値で**STOP**ボタンを押すとOpen側の1の部分（0～500msの区間）の設定が確定されます。

確定すると自動的にOpen2の設定に移行します。

同じようにOpen2～5を設定し、更にClose1～5も設定します。

Close5の設定が完了すると、以下の表示に変更されます。



Then, press the **STOP** button, and the OPEN/CLOSE operation will be repeated three times at the set speed. Meanwhile, press the **PLAY** button while this message is on the display, and the OPEN/CLOSE test will be cancelled and the model indication will return to the display. However, the setting has been memorized so that the speed will remain unchanged.

Also, press the **PAUSE** button while this message is on the display, and the OPEN/CLOSE test will be cancelled, the model indication will return and the setting will be cancelled.

When the OPEN/CLOSE test is performed with the operation repeated three times, the display will show the following message:

このとき、**STOP**ボタンを押すと変更した値でOpen/Closeを3往復行います。

又、この表示の際に**PLAY**ボタンを押すと、Open/Closeのテストをキャンセルしてモデル表示に戻ります。

但し、変更した値はメモリするので次回起動時より設定したOpen/Closeのトレイスピードで動作します。

又、この表示の際に**PAUSE**ボタンを押すと、Open/Closeのテストをキャンセルしてモデル表示に復帰します。

但し、変更した値はキャンセルされます。

Open/Closeテストを行った場合、3往復後に以下の表示に変わります。



Press the **STOP** button then, and the model identification will return, and the OPEN/CLOSE will be performed at the set speed.

If another button is pressed, the setting will be cancelled and the model identification will return.

このとき、**STOP**ボタンを押すとモデル名表示に復帰し、次回起動時より設定したOpen/Closeのトレイスピードで動作します。

その他のボタンが押されると設定はキャンセルされモデル名表示に戻ります。

[B] Other Error Message page

The error message common to all models

1. The error message displayed as the Last Error Message

1. Communication error between SUPER AUDIO CD Module (pwb K001) and Front Microprocessor

When having had the communication error with the SUPER AUDIO CD Module (pwb K001) more than a regulated number of times, the unit will reset the SUPER AUDIO CD Module after displaying the following message. This will continue to be displayed until the unit has recovered from the communication error.

Ensure that the flexible cable between the JM06 of PF16 and the JF04 of PU16 is connected properly. Also check that the flexible cable between the SUPER AUDIO CD Module and JM03 of PF16 is connected properly.

When the unit is ready to play back CDs and SUPER AUDIO CDs, the SUPER AUDIO CD Module and the Microprocessor communicate regularly. Check the signal in reference to the communication between the SUPER AUDIO CD Module and the Microprocessor on Communication Waveforms page.

The M_SCLK is the clock that is transmitted from the SUPER AUDIO CD regularly. If this signal cannot be detected, the SUPER AUDIO CD Module may be broken. If so, replace the SUPER AUDIO CD Module.

When the SUPER AUDIO CD Module has been replaced, ensure that the Playtime will be cleared.

[B] その他のエラーメッセージ

全モデル共通のエラーメッセージ

1. ラストエラーメッセージにて表示されるエラーメッセージ

1. SUPER AUDIO CD Module (pwb K001)とフロントマイコンとの通信エラー

SUPER AUDIO CD Module (pwb K001)との通信エラーが規定回数を超えた場合、以下の表示を表示した後SUPER AUDIO CD Moduleのリセットを行います。この表示は、通信エラーが解除されるまで表示し続けます。

PF16のJM06とPU16のJF04を接続しているフレキケーブルが正しく接続されているか確認してください。同様にSUPER AUDIO CD ModuleとPF16のJM03を接続しているフレキケーブルが正しく接続されているか確認してください。

CD/SUPER AUDIO CDが再生可能な状態では、SUPER AUDIO CD Moduleとマイコンは常に定期的に通信を行っています。

通信波形の項にあるSUPER AUDIO CD Moduleとマイコンとの通信を参照し、その信号を確認してください。

M_SCLKは定期的にSUPER AUDIO CD Moduleから送信されるクロックになります。

この信号が確認できない場合、SUPER AUDIO CD Moduleが壊れている可能性があります。

SUPER AUDIO CD Moduleの交換をしてください。

尚、SUPER AUDIO CD Moduleの交換を行った場合、必ず再生時間のクリアを行ってください。



2. Communication Error between D/A Converter and Front Microprocessor

If no response is detected in the communication between the D/A Converter and the Microprocessor, the display will show the following message.

2. D/Aコンバータとフロントマイコンとの通信エラー

D/Aコンバータとマイコンの通信において指定時間内に応答がない場合、以下の表示を行います。



Check the flexible cable has been duly connected between J402 of PU16 and J502 of PP16.

Check that the voltage of L101 and L103 on the PP16 are +3.3V and also that voltage of TPF46 is +5V.

Make the CD/SUPER AUDIO CD or the DAIR replayable.

Ensure that IIC communications have been established between R556 and R557 when the unit is switched from

PU16のJ402とPP16のJ502を接続しているフレキケーブルが正しく接続されているか確認してください。

PP16のL101、L103に+3.3V、TPF46に+5Vの電圧がきているか確認してください。

CD/SUPER AUDIO CDはDAIRを再生可能な状態にしてください。

Stop状態からPlay状態に変更するときにR556とR557にIIC

STOP to PLAY.

If the error cannot be corrected through normal operations, Q551 may be broken. If such is the case, replace Q551.

2. Error messages that are not displayed in the Last Error Message

1. 1. Error messages that can be displayed on the LCD (Communication Error between the Front Microprocessor and EEPROM)

If no response is detected between the Front Microprocessor and EEPROM within a regulated timeframe, the display will show the following message.



Ensure that IIC communications have been established between TPF38 on PP16 and TPF93 on PU16 when the unit is powered on or put into powered off.

If no communication is detected, check the soldering of RF09, RF12, QF01 and QF02.

If the error cannot be corrected through normal operations, QF02 may be broke. If such is the case, replace QF02.

When no disc information is displayed 120 seconds after the disc is loaded, the display will show the following message. Reset the SUPER AUDIO CD Module.

If no information can be obtained after this operation has been repeated three times, the unit will open the tray by itself.

The unit cannot play back the disc if this message appears.



2. Error Messages that Cannot Be Displayed on the LCD

After the primary source is powered on, the microprocessor in the unit will obtain model information, thereby determine which of LCD and FL the display uses and whether the unit has a USB and DAIR, and configure the settings accordingly.

Until this setting is confirmed, the unit cannot show any messages on the display, but the DISPLAY OFF (LED) may flicker instead of showing an error message.

通信が行われているか確認してください。

通常動作が行われている状態で、当エラーが解消できない場合、Q551が壊れている可能性があります。

Q551を交換してください。

2. ラストエラーメッセージにて表示されないエラーメッセージ

1. LCD上に表示可能なエラーメッセージ (フロントマイコンとEEPROMとの通信エラー)

EEPROMとマイコンの通信において指定時間内に応答がない場合、以下の表示を行います。

電源投入時又は電源OFF移行時に、PP16上のTPF38とPU16上のTPF93にIIC通信が行われているか確認してください。

通信が行われていない場合、RF09、RF12、QF01、QF02の半田の状態を確認してください。

通常動作が行われている状態で、当エラーが解消できない場合、QF02が壊れている可能性があります。

QF02を交換してください。

ディスクをローディングして120秒間たってもディスク情報が取得できない場合以下の表示を行い、SUPER AUDIO CD Moduleのリセット行います。

この作業を3回繰り返してもディスク情報が取得できない場合、自動的にトレイをオープンします。

この表示が現れるディスクは、本機では再生できません。

2. LCD上にて表示できないエラーメッセージ

一次電源投入後、本セットのマイコンはモデル情報の取得を行います。これによって、使用する表示管がLCDなのかFLなのかを始め、USBの有無、DAIRの有無等の設定を行います。

この設定が不定の場合、表示が行えないためDISPLAY OFF (LED)を点滅することでエラー情報を示す場合があります。又、ディスプレイが表示されずにDISPLAY OFF (LED)が点滅しない場合、モデル情報の取得にて別のモデルと認識している場合があります。

If neither of the display nor the DISPLAY OFF (LED) responds, the unit may have recognized the unit as another model.

In either case, check if TPF85 and TPF86 on PU16 receive designated voltages.

QF06	PU16	SA-15S2
58pin	TPF85	0V~1.1V
60pin	TPF86	0V~1.1V

If the unit receives the regulated voltage and yet has the DISPLAY OFF (LED) flickering, QF01 on PU16 may be broken. If such is the case, replace QF01.

If the unit receives the regulated voltage without the DISPLAY OFF (LED) flickering, check that TPF147 and TPF194 on PU16 receive the regulated voltage.

Once the unit is powered ON, the LCD and Microprocessor begin to communicate. Check the signal in reference to Communications between the LCD and the Microprocessor on the Communication Waveform page.

All signals are output from the Microprocessor. If no signal is output, QF01 on PU16 may be broken. If such is the case, replace QF01.

If a signal is detected, VY01 on PY16 may be broken. If such is the case, replace VY01.

どちらの場合にせよ、PU16上のTPF85及びTPF86が指定の電圧かどうか確認してください。

電圧に問題がなくDISPLAY OFF (LED)が点滅している場合、PU16上のQF01が壊れている可能性があります。QF01を交換してください。

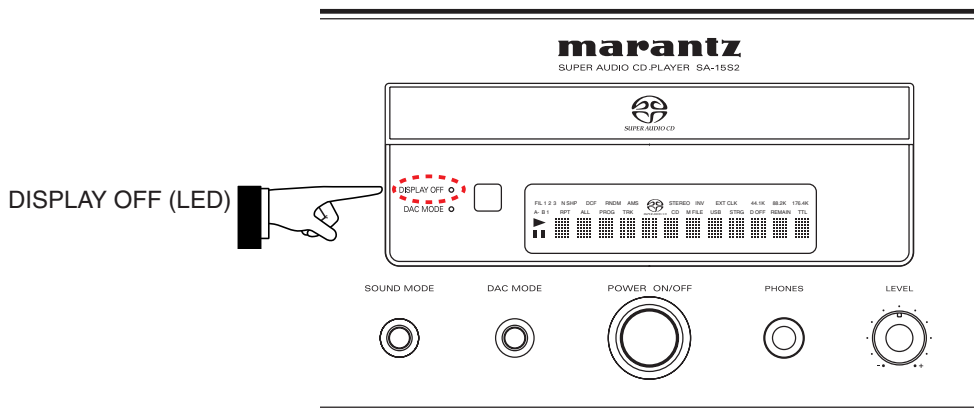
電圧に問題がなくDISPLAY OFF (LED)が点滅していない場合、PU16上のTPF147とTPF194に所定の電圧がきているか確認してください。

Power ONするとLCDとマイコンの通信が行われます。通信波形の項にあるLCDとマイコンとの通信を参照し、その信号を確認してください。

全ての信号はマイコンから出力されます。

信号が出力されていない場合、PU16上のQF01が壊れている可能性があります。QF01を交換してください。

信号が確認された場合、PY16上のVY01が壊れている可能性があります。VY01を交換してください。



9. TROUBLESHOOTING

[1] Discs cannot be played back

1. An Message is displayed

Refer to "8. ERROR MESSAGE".

2. No Error Message

1. Either CDs or SUPER AUDIO CDs cannot be played back

In this case, OPU may have been crippled due to deterioration of the CD laser. Replace the Traverse and ensure that the Playtime is cleared.

2. Neither Disc can be played back

In this case, either the pickup mechanism or the decoder PWB may be broken.

Normally, if the front Microprocessor is communicating, the OPU may have been crippled due to deterioration of the CD laser. Replace the Traverse.

If the unit still will not play back discs, the decoder PWB may be having trouble. If such is the case, replace the decoder PWB and ensure that the Playtime is cleared.

NOTE : OPU, Traverse, Pickup mechanism : SUPER AUDIO CD TRAVERSE MECHA (M002)
Decoder PWB : SUPER AUDIO CD Module (pwb K001)

[2] No Audio

1. Error Message Appears

Refer to "8. ERROR MESSAGE".

2. No Error Message

1. No Audio in CD and DAIR

Compare the communication between the module in use and Q401 on PU16 with the communication between Q551 on PP16 and Q401 on PU16.

Q401 is the selector to switch the signals.

If each module is communicating with Q401 without Q551 and Q401 communicating, Q401 may be broken, If such is the case, replace Q401.

2. No Audio in SUPER AUDIO CD

Compare the communication between the SUPER AUDIO CD Module and Q401 on PU16 with the communication between Q551 on PP16 and Q401 on PU16. Q401 is the selector to switch the signals.

If the SUPER AUDIO CD is communicating without Q551 and Q401 communicating, Q401 may be broken. If such is the case, replace Q401.

3. Always No Audio

If no problem is found with the communications between each Module and Q401 on PU16 and between Q551 and Q401, the problem lies with Q551 or the following analog circuit.

9. トラブルシューティング

[1] ディスクが再生できない

1. エラー表示あり

"8. エラーメッセージ"の項を参照ください。

2. エラー表示なし

1. CD又はSUPER AUDIO CDのどちらかのディスクが再生できない

この場合、CD用のレーザーの劣化等によるOPUの不具合の可能性がります。Traverseを交換してください。この時、必ず再生時間クリアを行ってください。

2. 両方のディスクが再生できない

この場合、ピックアップメカ、デコーダー基板のどちらかが壊れている可能性があります。

通常、フロントマイコンと正常に通信を行っている場合、レーザーの劣化等によるOPUの不具合の可能性の方が高いです。Traverseを交換してください。

それでも回らない場合は、デコーダー基板の不具合が考えられます。デコーダー基板を交換してください。

尚、Traverseを交換した場合は必ず再生時間クリアを行ってください。

注意 : OPU, Traverse, ピックアップメカ : SUPER AUDIO CD TRAVERSE MECHA (M002)
デコーダー基板 : SUPER AUDIO CD Module (pwb K001)

[2] 音が出ない

1. エラー表示あり

"8. エラーメッセージ"の項を参照ください。

2. エラー表示なし

1. CD, DAIR時に音が出ない

再生している ModuleとPU16上のQ401の通信と、PP16上のQ551とPU16上のQ401との通信を比べてみてください。Q401は各信号を切り替えるセレクターです。

各 ModuleとQ401の通信がきているのに、Q551とQ401の通信が行われていない場合、Q401が壊れている可能性があります。Q401を交換してください。

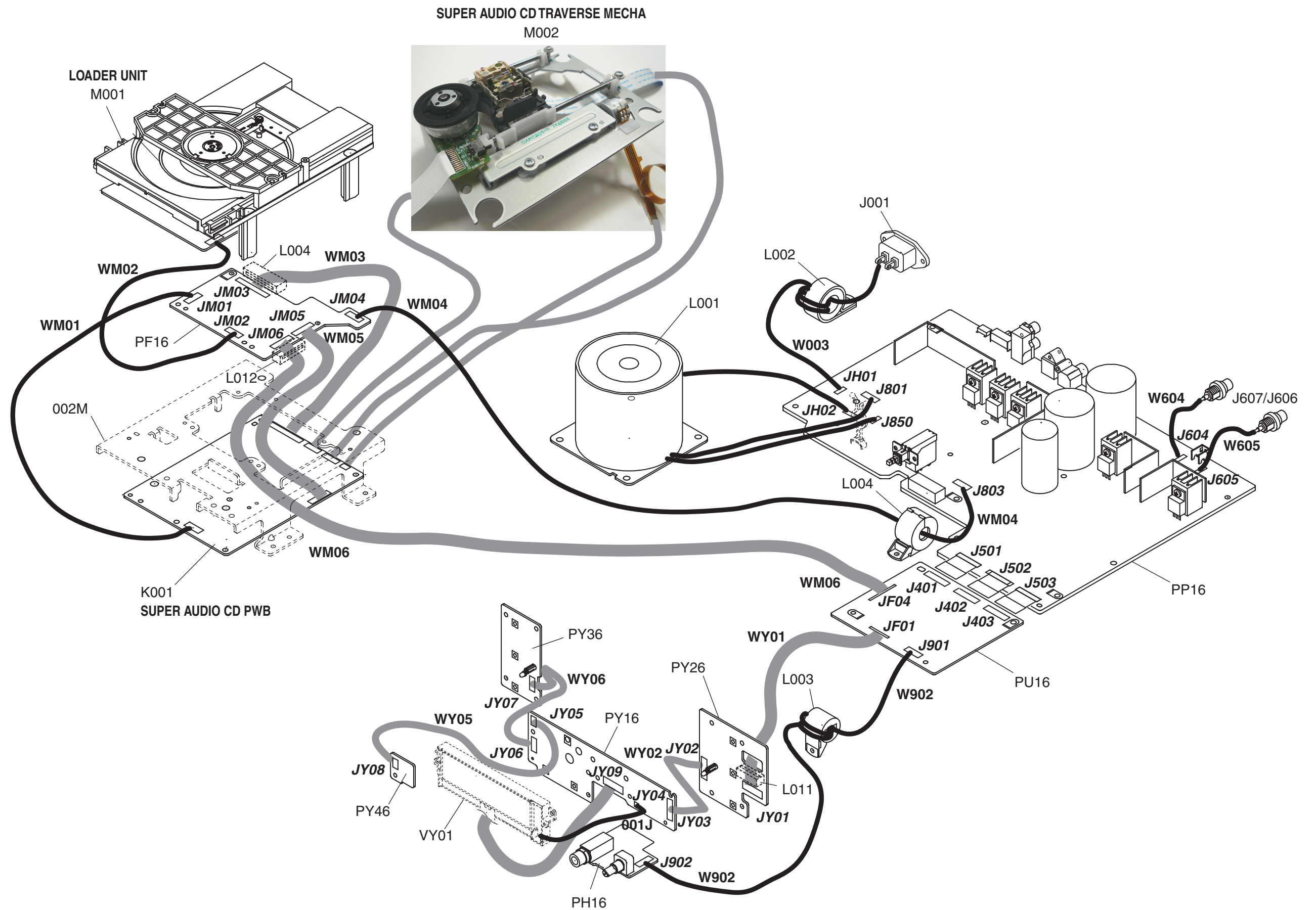
2. SUPER AUDIO CD時に音が出ない

SUPER AUDIO CD ModuleとPU16上のQ401の通信と、PP16上のQ551とPU16上のQ401との通信を比べてみてください。Q401は各信号を切り替えるセレクターです。SUPER AUDIO CD ModuleとQ401の通信がきているのに、Q551とQ401の通信が行われていない場合、Q401が壊れている可能性があります。Q401を交換してください。

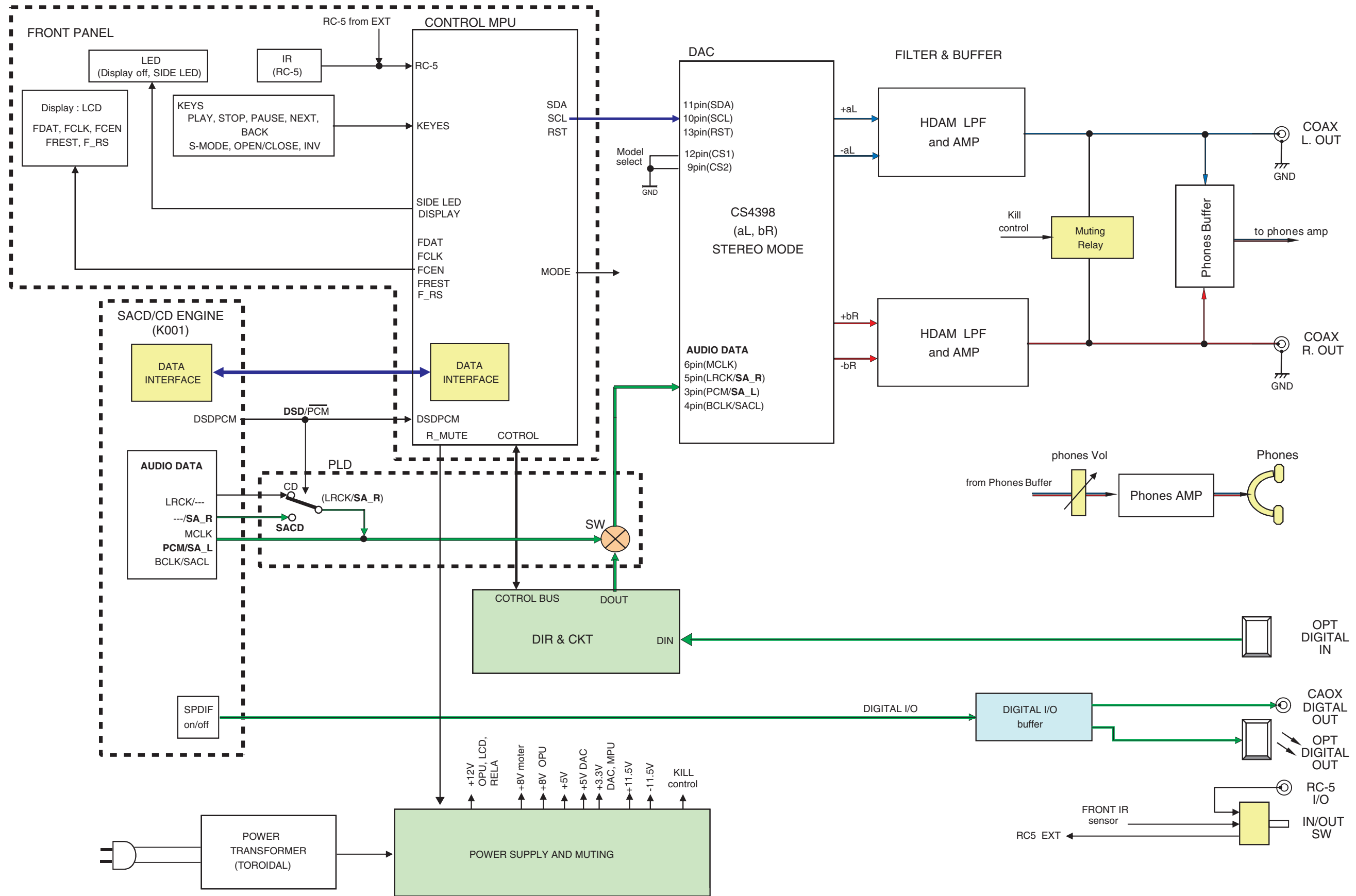
3. 常に音が出ない

各 ModuleとPU16上のQ401の通信と、PP16上のQ551とPU16上のQ401との通信が正常に行われている場合、Q551が故障しているか、その後のアナログ回路が故障しているかのどちらかになります。

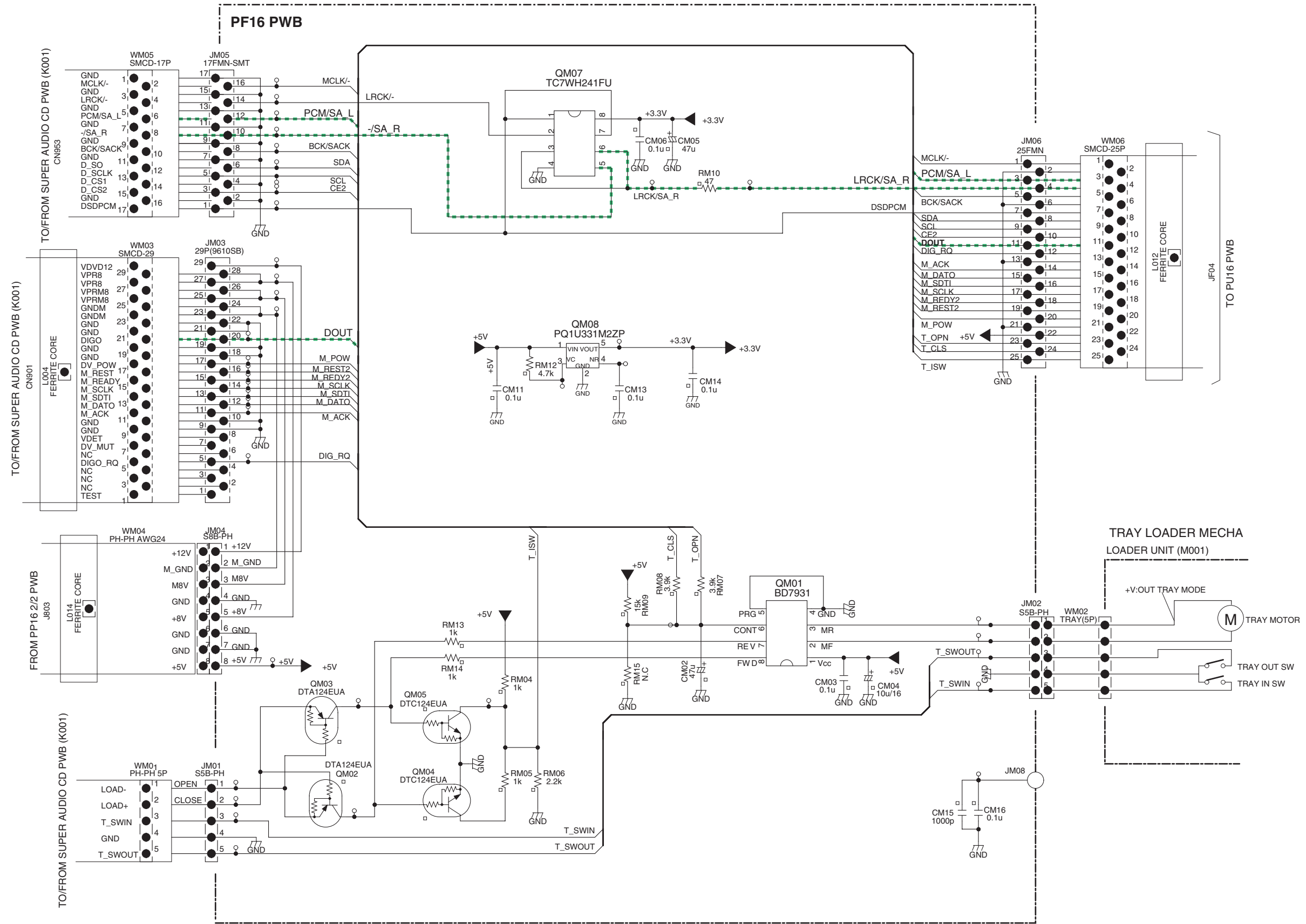
10. WIRING DIAGRAM

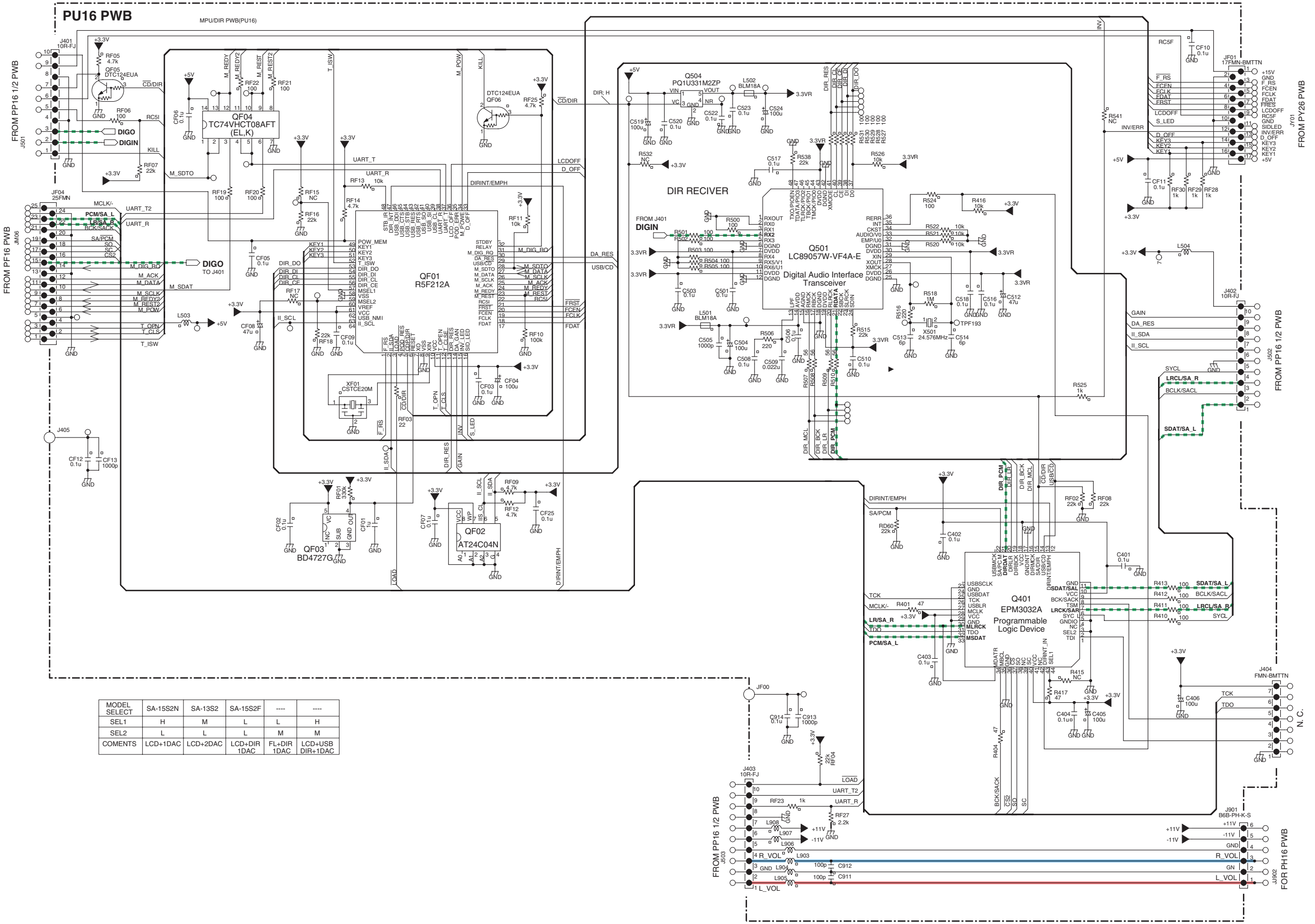


11. BLOCK DIAGRAM



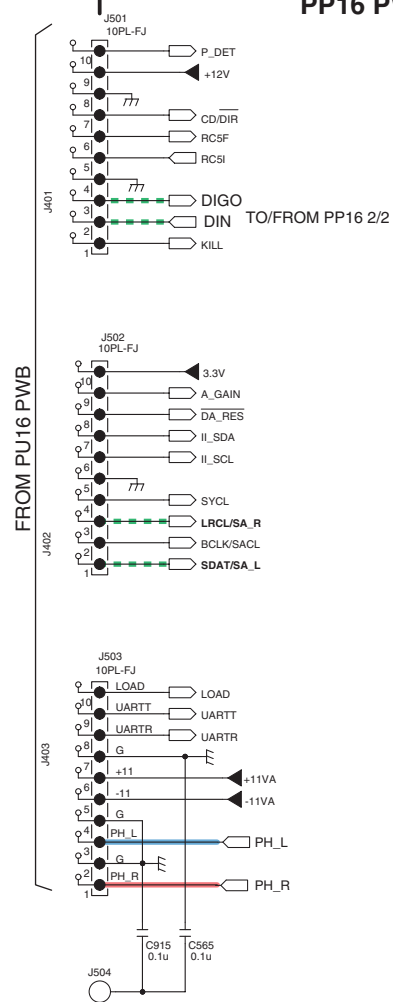
12. SCHEMATIC DIAGRAM



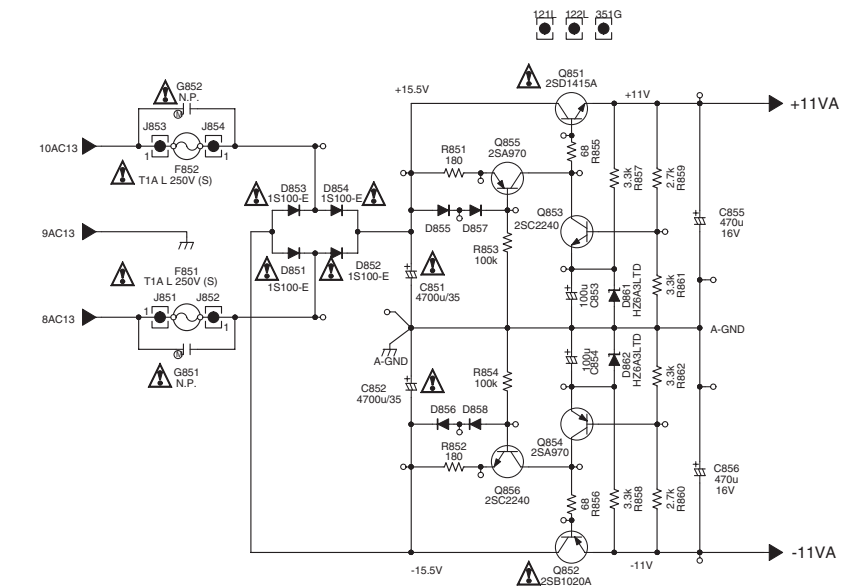
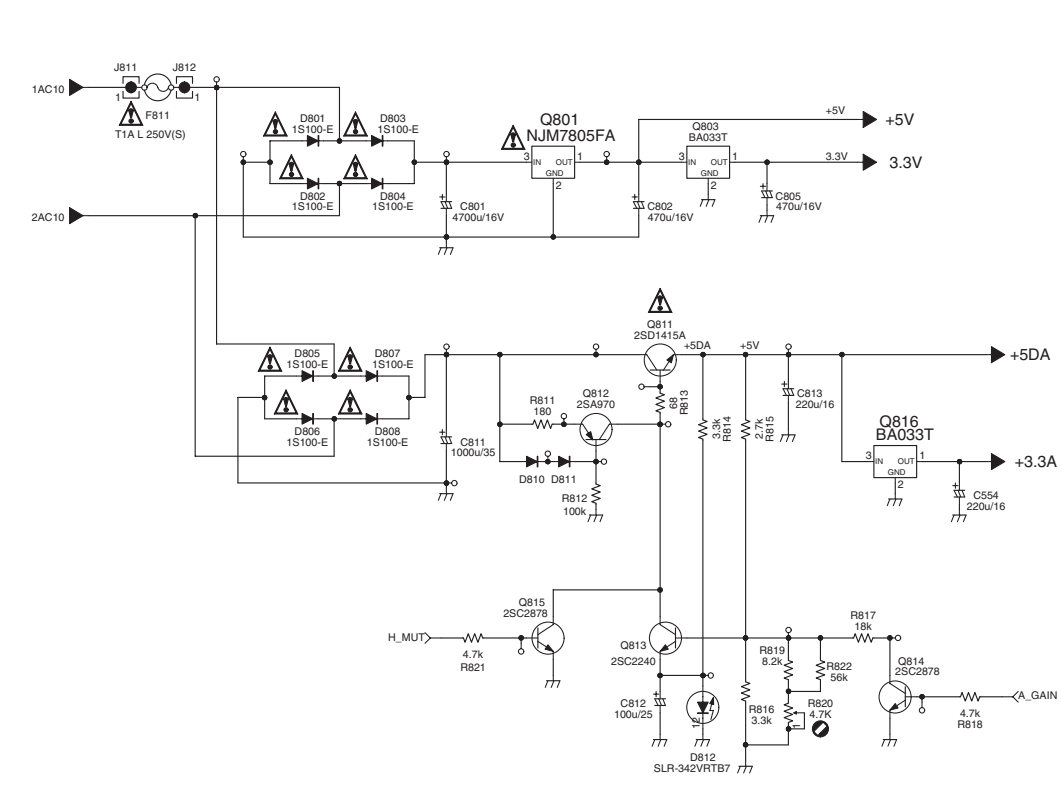
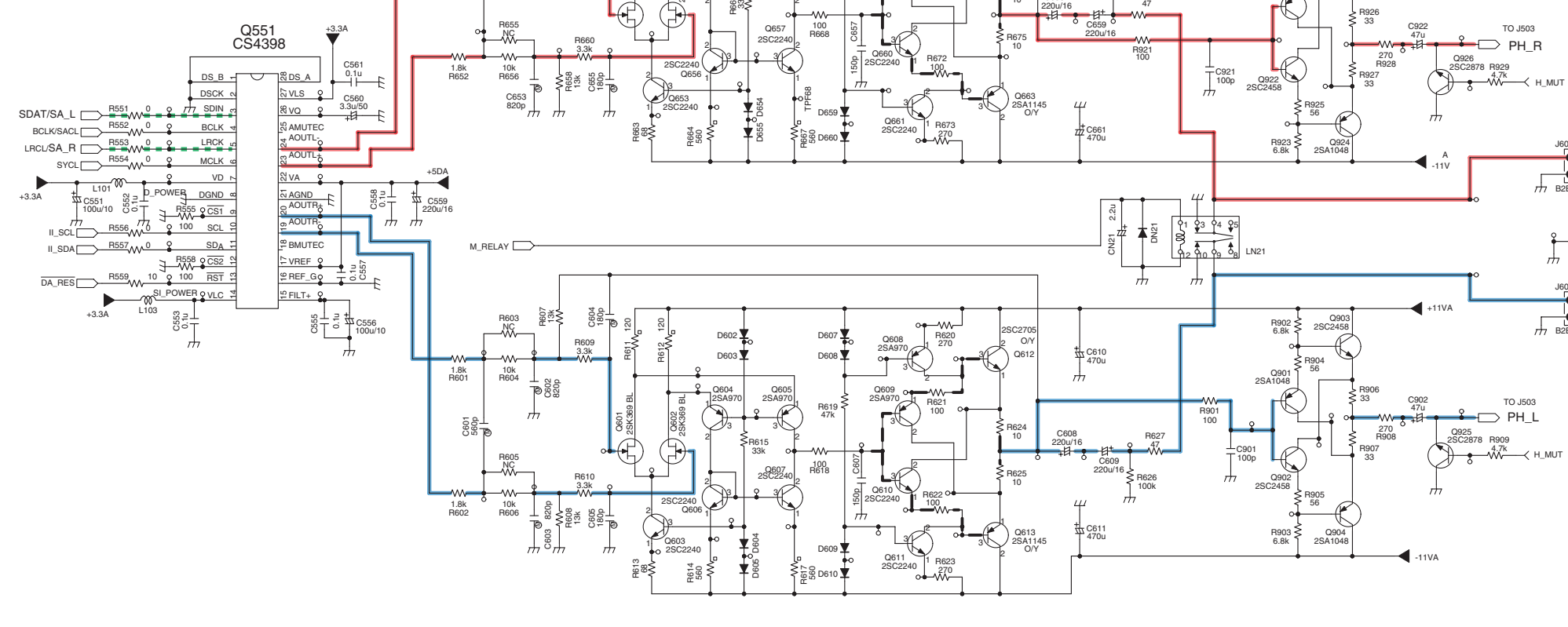


MODEL SELECT	SA-15S2N	SA-13S2	SA-15S2F	----	----
SEL1	H	M	L	L	H
SEL2	L	M	L	M	M
COMMENTS	LCD+1DAC	LCD+2DAC	LCD+DIR 1DAC	FL+DIR 1DAC	LCD+USB DIR+1DAC

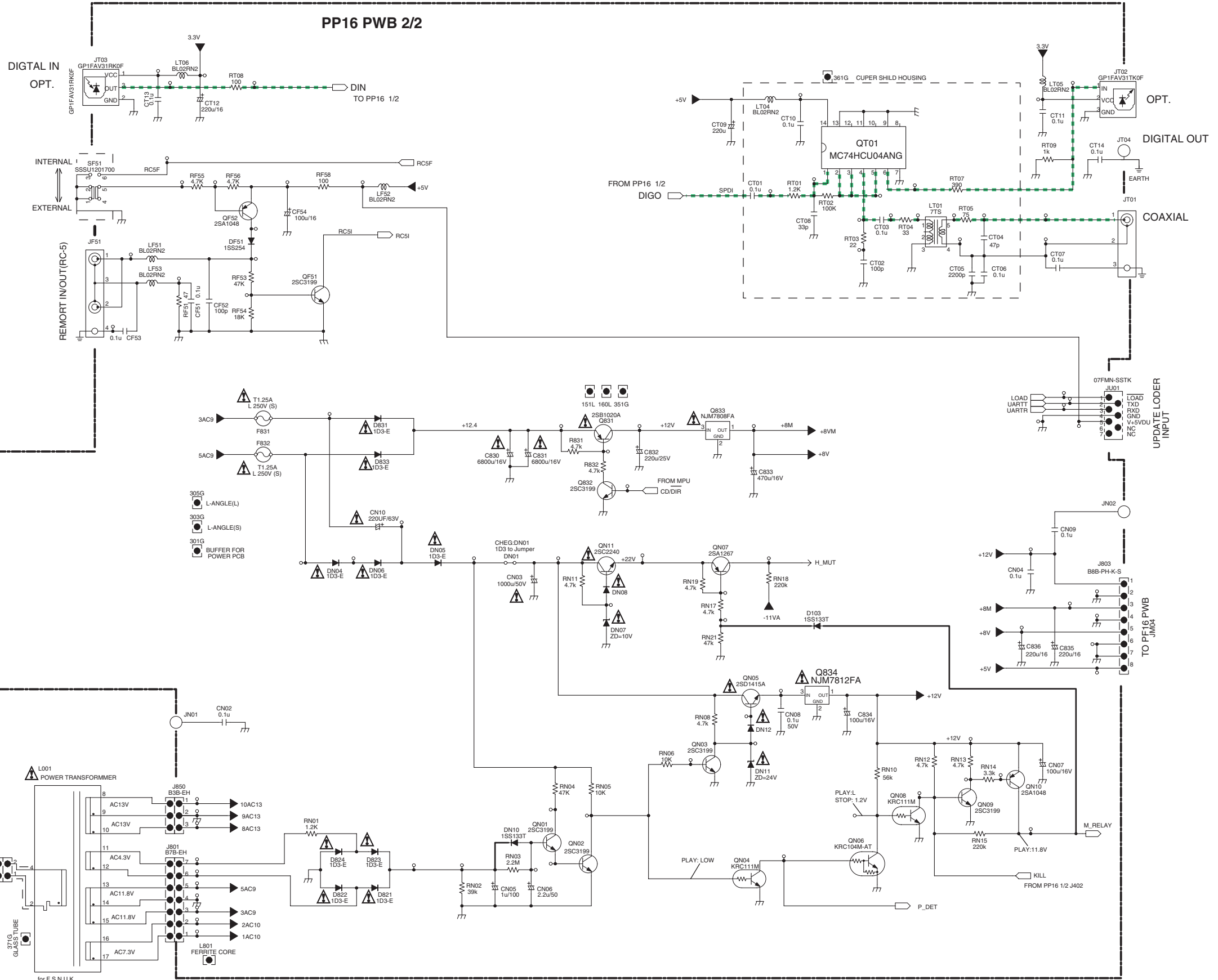
PP16 PWB 1/2

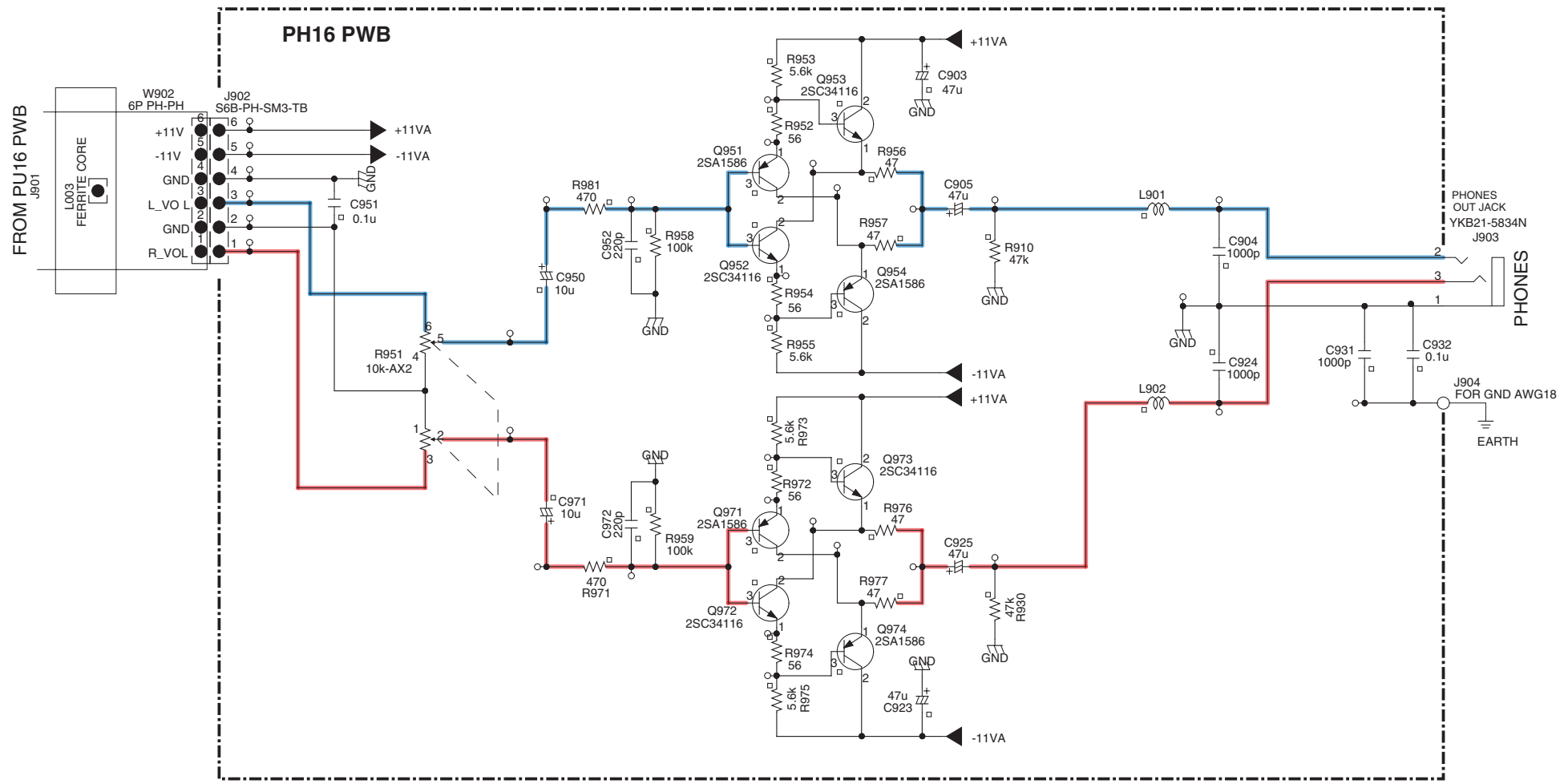


D/A CONVERTOR

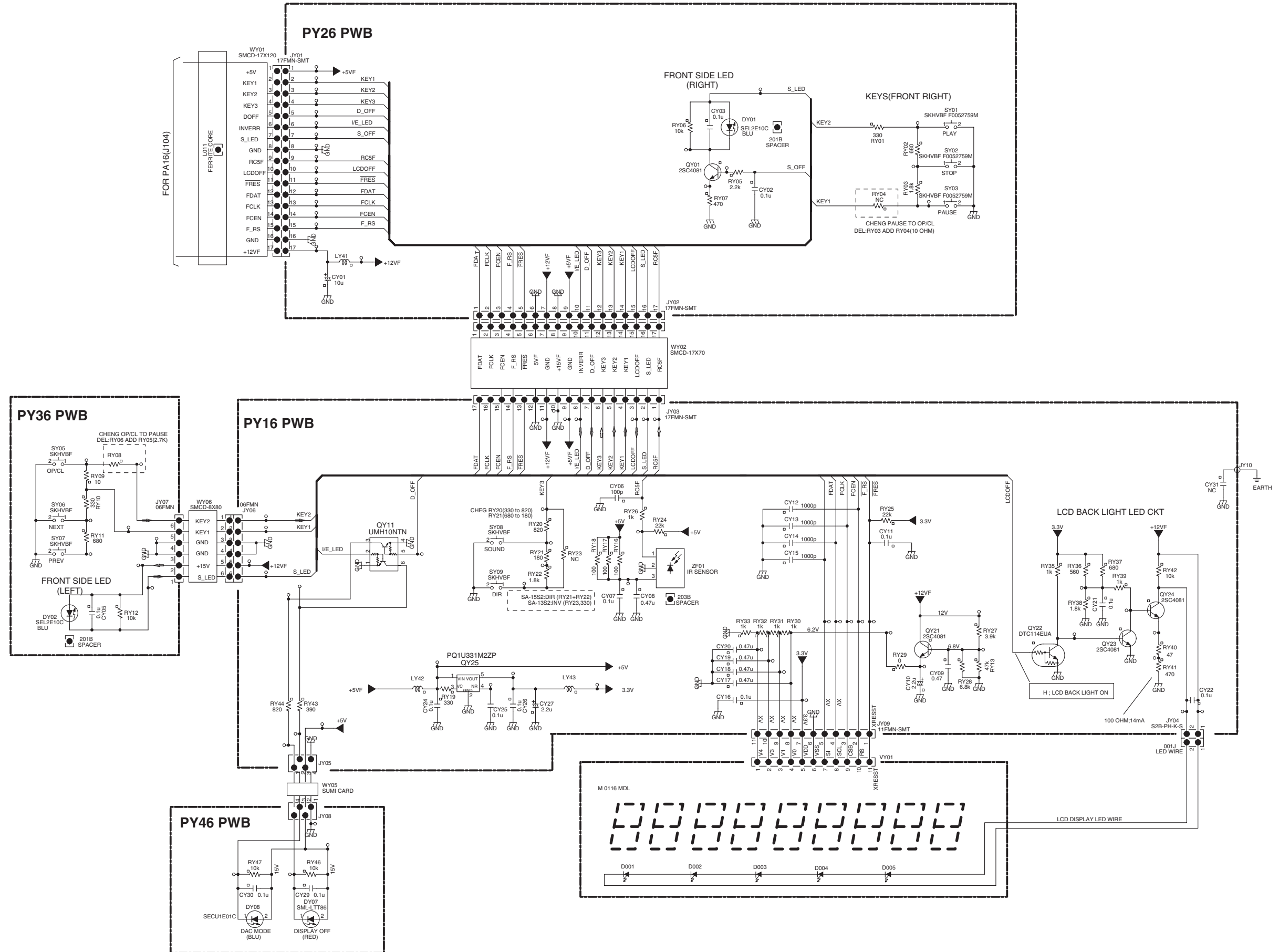


PP16 PWB 2/2



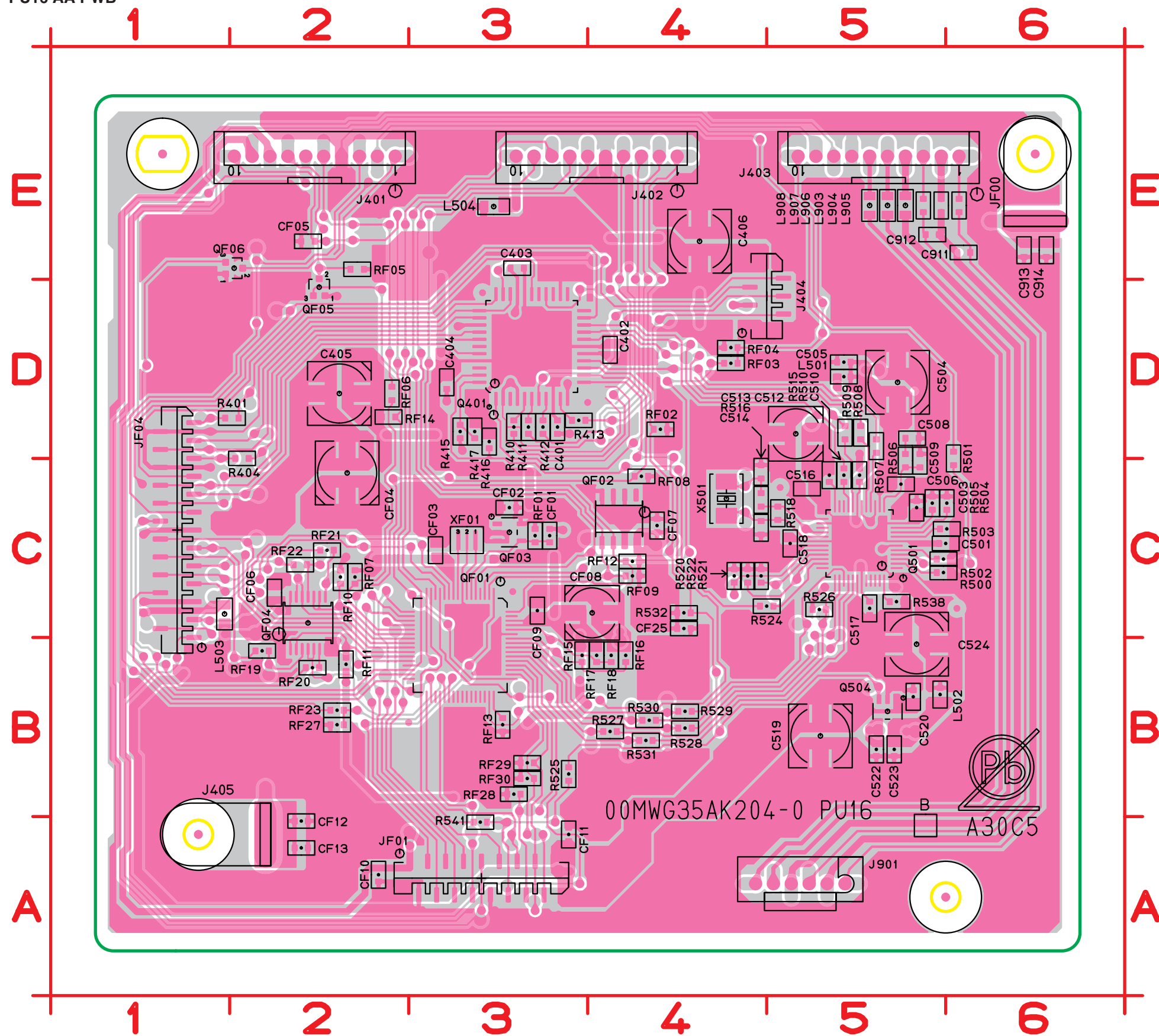


FRONT CKT(KEY,RC-5 & DISPLAY)



13. PARTS LOCATION

PU16 AA PWB

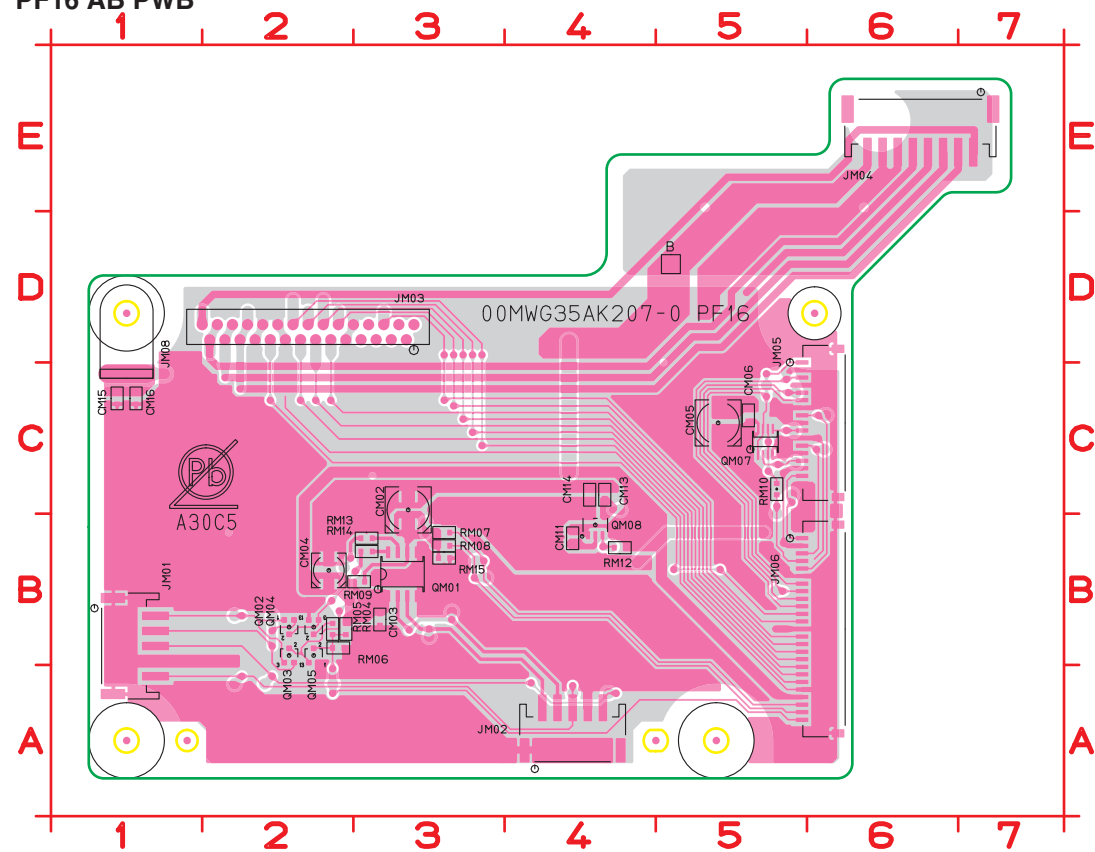


C401	D3	CF11	A3	R416	D3	RF10	C2
C402	D4	CF12	A2	R417	D3	RF11	B2
C403	E3	CF13	A2	R500	C5	RF12	C4
C404	D3	CF25	C4	R501	D6	RF13	B3
C405	D2	J401	E2	R502	C5	RF14	D2
C406	E4	J402	E4	R503	C6	RF15	B3
C501	C6	J403	E5	R504	C6	RF16	B4
C503	C5	J404	D5	R505	C5	RF17	B4
C504	D5	J405	A1	R506	C5	RF18	B4
C505	D5	J901	A5	R507	D5	RF19	B2
C506	C5	JF00	E6	R508	D5	RF20	B2
C508	D5	JF01	A3	R509	D5	RF21	C2
C509	C5	JF04	C1	R510	C5	RF22	C2
C510	C5	L501	D5	R515	C5	RF23	B2
C512	D5	L502	B5	R516	C4	RF27	B2
C513	C4	L503	C1	R518	C5	RF28	B3
C514	C4	L504	E3	R520	C4	RF29	B3
C516	C5	L903	E5	R521	C4	RF30	B3
C517	C5	L904	E5	R522	C4	XF01	C4
C518	C5	L905	E6	R524	C5		
C519	B5	L906	E5	R525	B3		
C520	B5	L907	E5	R526	C5		
C522	B5	L908	E5	R527	B4		
C523	B5	Q401	D3	R528	B4		
C524	B5	Q501	C5	R529	B4		
C911	E6	Q504	B5	R530	B4		
C912	E5	QF01	B3	R531	B4		
C913	E6	QF02	C4	R532	C4		
C914	E6	QF03	C3	R533	C4		
CF01	C3	QF04	C2	R534	C4		
CF02	C3	QF05	D2	R535	C4		
CF03	C3	QF06	E2	R536	C4		
CF04	C2	R401	D2	R537	C4		
CF05	E2	R404	D2	R538	C4		
CF06	C2	R410	D3	R539	C4		
CF07	C4	R411	D3	R540	C4		
CF08	C4	R412	D3	R541	C4		
CF09	C3	R413	D3				
CF10	A2	R415	D3				

鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

PF16 AB PWB



CM02 C3	CM14 C4	JM05 C6	QM05 B2	RM08 B3
CM03 B3	CM15 C1	JM06 B6	QM07 C5	RM09 B3
CM04 B2	CM16 C1	JM08 D1	QM08 B4	RM10 C5
CM05 C5	JM01 B1	QM01 B3	RM04 B2	RM12 B4
CM06 C5	JM02 A4	QM02 B2	RM05 B2	RM13 B3
CM11 B4	JM03 D3	QM03 B2	RM06 B2	RM14 B3
CM13 C4	JM04 E6	QM04 B2	RM07 B3	RM15 B3

鉛フリー半田

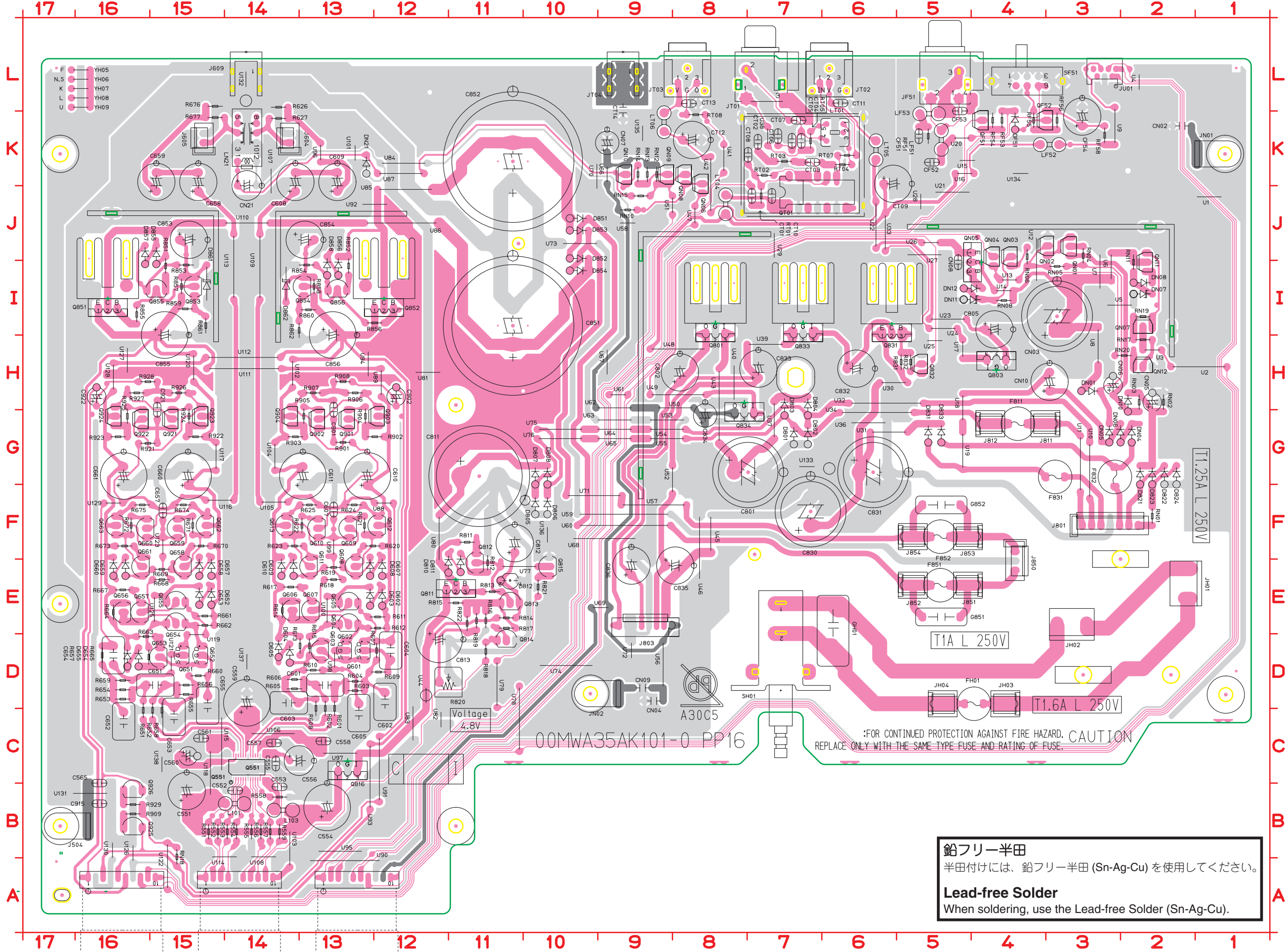
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

Lead-free Solder

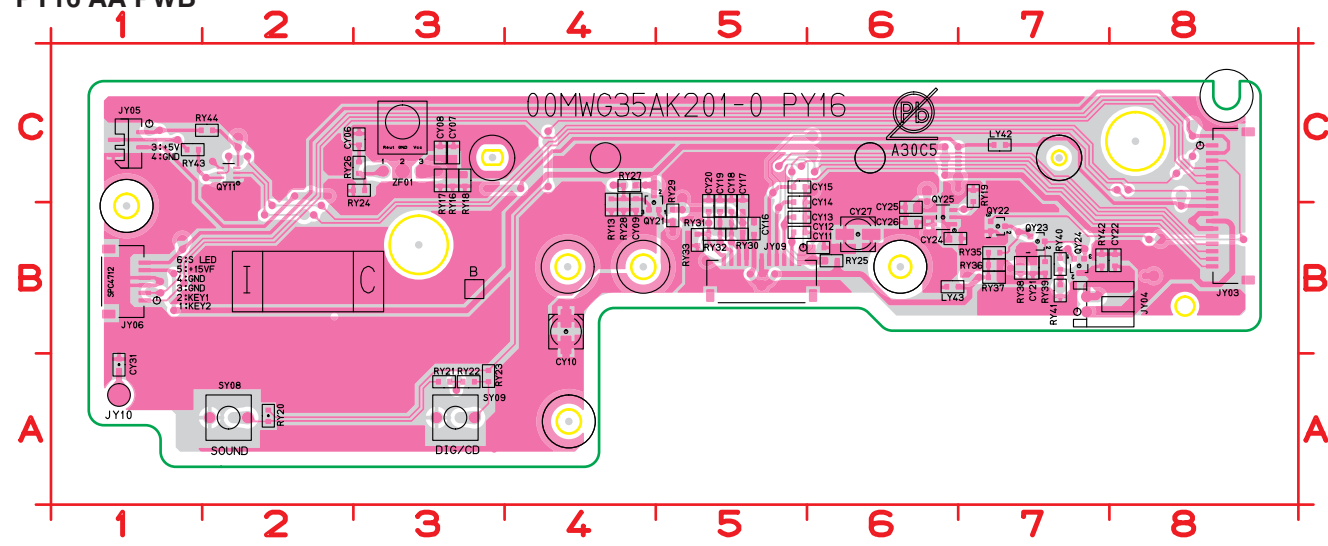
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

PP16 AB PWB

C551 B15	D608 E13	LF52 K4	R604 D13	R926 H15	U23 I5
C552 B14	D609 E14	LF53 K5	R605 D14	R927 H16	U24 I5
C553 B14	D610 E14	LN21 K14	R606 D14	R928 H16	U25 H5
C554 B13	D652 E15	LT01 K6	R607 D12	R929 B16	U26 J5
C555 C14	D653 E15	LT04 J8	R608 C13	RF51 K5	U27 J5
C556 C14	D654 D16	LT05 K6	R609 D13	RF53 L4	U28 J5
C557 C14	D655 D16	LT06 K9	R610 D13	RF54 K4	U29 J7
C558 C13	D657 E15	Q551 C14	R611 E13	RF55 K4	U3 H2
C559 C14	D658 E15	Q601 D13	R612 E13	RF56 L3	U30 H5
C560 C15	D659 E16	Q602 D13	R613 D13	RF58 K3	U31 G5
C561 C15	D660 E16	Q603 D13	R614 E14	RN01 F2	U32 H5
C565 C16	D801 G7	Q604 E13	R615 D13	RN02 G2	U33 J6
C601 D13	D802 G7	Q605 E13	R617 E14	RN03 H2	U34 G5
C602 C12	D803 G7	Q606 E14	R618 E13	RN04 I3	U36 G6
C603 D14	D804 G7	Q607 E13	R619 E13	RN05 I3	U37 G7
C604 D12	D805 F10	Q608 E13	R620 F12	RN06 J4	U38 K7
C605 C13	D806 F10	Q609 F13	R621 F13	RN08 I4	U39 H7
C607 F13	D807 G10	Q610 F13	R622 F13	RN10 J9	U4 L2
C608 J14	D808 G10	Q611 E13	R623 F14	RN11 I2	U40 H8
C609 J13	D810 E12	Q612 F12	R624 F13	RN12 K9	U41 K8
C610 F13	D811 E11	Q613 F14	R625 F13	RN13 K9	U42 J8
C611 F13	D812 E11	Q651 D15	R626 L14	RN14 K9	U43 G8
C651 D15	D821 G2	Q652 D15	R627 K14	RN15 J9	U44 D12
C652 C16	D822 G2	Q653 D15	R651 D16	RN17 H2	U45 F8
C653 C15	D823 G2	Q654 E15	R652 D15	RN18 B15	U46 E8
C654 D16	D824 G2	Q655 E15	R653 D16	RN19 I2	U47 J8
C655 C15	D831 G5	Q656 E16	R654 D16	RN20 H2	U48 H8
C657 F15	D833 G5	Q657 E16	R655 D15	RT01 J7	U49 H8
C658 J15	D851 J10	Q658 E15	R656 D15	RT02 K7	U5 I2
C659 J15	D852 J10	Q659 F15	R657 D16	RT03 K7	U50 H8
C660 F15	D853 J10	Q660 F16	R658 C15	RT04 K6	U51 J9
C661 F16	D854 I10	Q661 E16	R659 D16	RT05 K7	U52 F9
C801 G8	D855 I15	Q662 F15	R660 D15	RT07 K6	U53 G8
C802 H8	D856 I13	Q663 F16	R661 E15	RT08 K8	U54 G8
C805 I4	D857 I16	Q801 I8	R662 E15	SF51 L4	U55 G8
C811 G11	D858 I13	Q803 H4	R663 D16	SH01 D7	U56 D9
C812 F11	D861 I15	Q811 E11	R664 E16	U1 J1	U57 F8
C813 D12	D862 I14	Q812 E11	R665 D16	U10 F3	U58 J9
C830 F7	DF51 K4	Q813 E11	R667 E16	U100 E13	U59 F9
C831 G6	DN01 H3	Q814 D11	R668 E15	U101 K13	U6 I3
C832 H6	DN04 G2	Q815 E10	R669 E15	U102 H14	U60 F9
C833 H7	DN05 G3	Q816 C13	R670 F15	U103 A14	U61 H9
C834 G8	DN06 G3	Q831 I6	R671 F15	U104 G14	U62 H9
C835 E9	DN07 I2	Q832 H5	R672 F16	U105 F14	U63 G9
C836 E9	DN08 I2	Q833 I7	R673 F16	U106 C14	U64 G9
C851 H11	DN10 G2	Q834 G8	R674 F15	U107 J14	U65 G9
C852 K11	DN11 I5	Q851 I16	R675 F16	U108 B14	U66 K9
C853 J15	DN12 I5	Q852 I12	R676 L15	U109 I14	U67 H9
C854 J14	DN21 K13	Q853 I15	R677 K15	U11 F3	U68 F9
C855 I15	F811 G4	Q854 I13	R811 F11	U110 J14	U69 E9
C856 I13	F831 G3	Q855 I15	R812 F11	U111 H14	U7 I3
C901 G13	F832 F3	Q856 I13	R813 E11	U112 H14	U70 J10
C902 H12	F851 E5	Q901 G13	R814 E11	U113 I14	U71 F9
C915 B16	F852 F5	Q902 G13	R815 E12	U114 B14	U72 D9
C921 G15	FH01 D4	Q903 G12	R816 E11	U115 C15	U73 J9
C922 H16	G851 E5	Q904 G14	R817 E11	U116 F14	U74 D10
CF51 K5	G852 F5	Q921 G15	R818 D11	U117 G15	U75 G10
CF52 K5	GH01 D6	Q922 G16	R819 E11	U118 B15	U76 G10
CF53 L5	J501 A13	Q923 G15	R820 D12	U119 D15	U77 E10
CF54 K3	J502 A14	Q924 G16	R821 E10	U12 I4	U78 C11
CN02 K2	J503 A16	Q925 B16	R822 E11	U120 H15	U79 D11
CN03 I3	J504 B17	Q926 B16	R831 H5	U121 D15	U8 H3
CN04 D9	J604 K14	QF51 K4	R832 H5	U122 A15	U80 E12
CN05 G2	J605 K15	QF52 K3	R851 J15	U123 F15	U81 H12
CN06 H3	J609 L14	QN01 J3	R852 J13	U125 E15	U82 C12
CN07 K9	J801 F3	QN02 J3	R853 I15	U126 A16	U83 C12
CN08 J5	J803 E9	QN03 J4	R854 I13	U127 H16	U84 K12
CN09 D9	J811 G3	QN04 J4	R855 I16	U128 H16	U85 J12
CN10 H3	J812 G4	QN05 I5	R856 I13	U129 F16	U86 J12
CN21 K14	J850 F4	QN06 K8	R857 I15	U13 I4	U87 K12
CT01 J7	J851 E4	QN07 I2	R858 I13	U130 A16	U88 F12
CT02 K7	J852 E5	QN08 K8	R859 I15	U131 B16	U89 H12
CT03 K7	J853 F4	QN09 K9	R860 I14	U132 L14	U9 K3
CT04 K7	J854 F5	QN10 K9	R861 I15	U133 G7	U90 A12
CT05 K7	JF51 L5	QN11 I2	R862 H14	U134 K4	U91 B12
CT06 K7	JH01 E2	QN12 H2	R901 G13	U135 K9	U92 J12
CT07 K7	JH02 E3	QT01 K7	R902 G12	U136 F10	U93 B13
CT08 K7	JH03 D4	R551 B15	R903 G13	U137 D14	U94 H13
CT09 K6	JH04 D5	R552 B15	R904 G13	U138 C15	U95 B13
CT10 J7	JN01 K1	R553 B14	R905 H13	U14 I4	U96 K13
CT11 L6	JN02 D10	R554 B14	R906 H13	U15 K4	U97 C13
CT12 K8	JT01 L7	R555 B14	R907 H13	U16 K4	U98 D13
CT13 L8	JT02 L6	R556 B14	R908 H13	U17 H5	U99 F13
CT14 K9	JT03 L8	R557 B14	R909 B16	U18 G5	YH05 L16
D602 E12	JT04 L9	R558 B14	R921 G15	U19 G5	YH06 L16
D603 E13	JU01 L3	R559 B14	R922 G15	U2 H1	YH07 L16
D604 D14	L101 B14	R601 D13	R923 G16	U20 K5	YH08 L16
D605 D14	L103 B14	R602 D13	R924 G15	U21 J5	YH09 L16
D607 E12	LF51 K5	R603 D13	R925 H16	U22 J6	

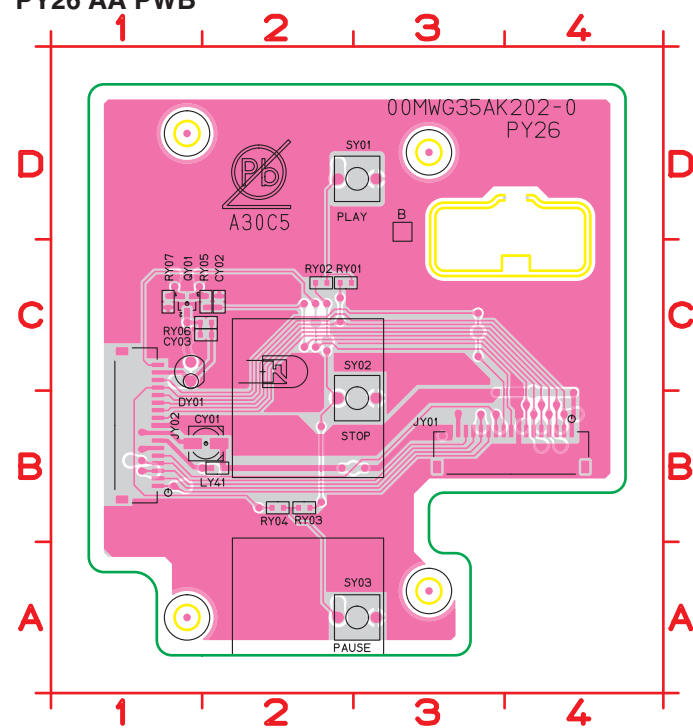


PY16 AA PWB



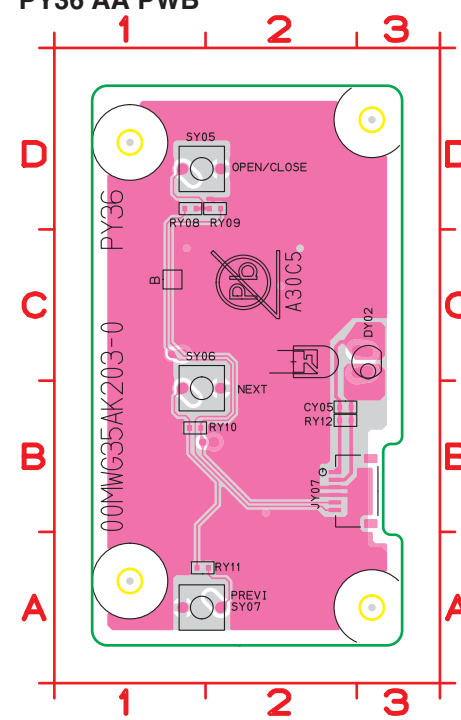
CY06	C3	JY06	B1	RY29	B5
CY07	C3	JY09	B5	RY30	B5
CY08	C3	JY10	A1	RY31	B5
CY09	B4	LY42	C7	RY32	B5
CY10	B4	LY43	B6	RY33	B5
CY11	B6	QY11	C2	RY35	B7
CY12	B5	QY21	B4	RY36	B7
CY13	B5	QY22	B7	RY37	B7
CY14	C5	QY23	B7	RY38	B7
CY15	C5	QY24	B7	RY39	B7
CY16	B5	QY25	B6	RY40	B7
CY17	B5	RY13	B4	RY41	B7
CY18	B5	RY16	C3	RY42	B7
CY19	B5	RY17	C3	RY43	C1
CY20	B5	RY18	C3	RY44	C2
CY21	B7	RY19	C7	SY08	A2
CY22	B8	RY20	A2	SY09	A3
CY24	B6	RY21	A3	ZF01	C3
CY25	B6	RY22	A3		
CY26	B6	RY23	A3		
CY27	B6	RY24	C3		
CY31	A1	RY25	B6		
JY03	B8	RY26	C3		
JY04	B7	RY27	C4		
JY05	C1	RY28	B4		

PY26 AA PWB



CY01	B2
CY02	C2
CY03	C2
DY01	C1
JY01	B4
JY02	B1
LY41	B2
QY01	C1
RY01	C2
RY02	C2
RY03	B2
RY04	B2
RY05	C2
RY06	C2
RY07	C1
SY01	D3
SY02	B3
SY03	A3

PY36 AA PWB

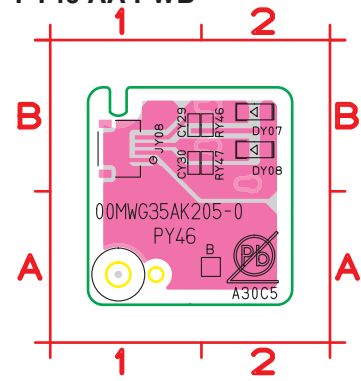


CY05	B2
DY02	C3
JY07	B3
RY08	D1
RY09	D2
RY10	B1
RY11	A1
RY12	B2
SY05	D1
SY06	B1
SY07	A1

鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

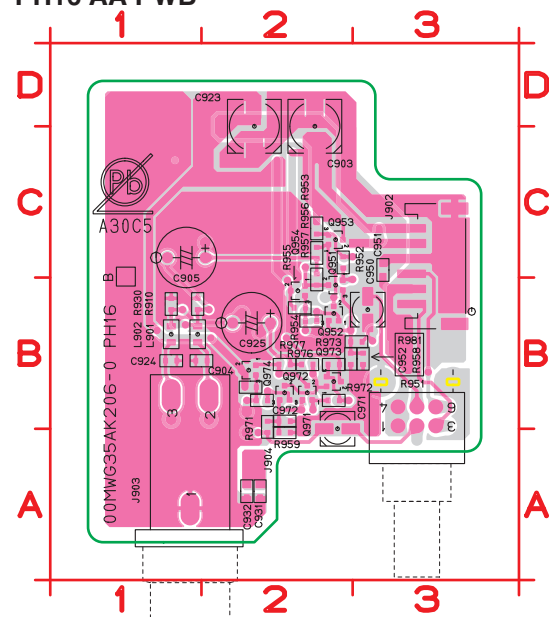
Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

PY46 AA PWB



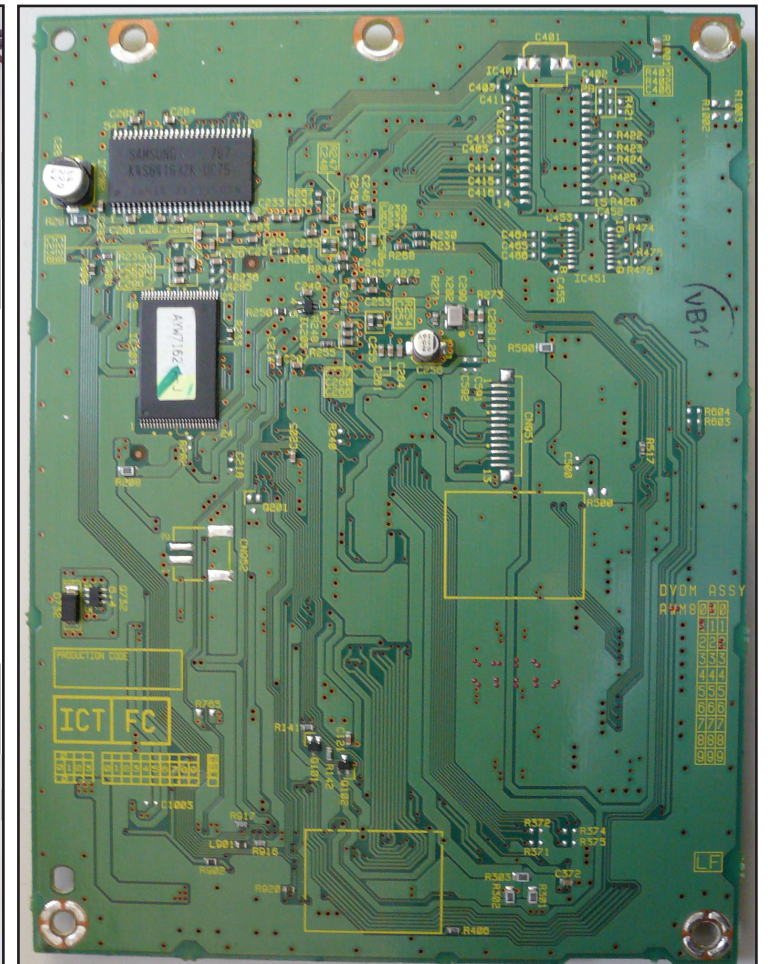
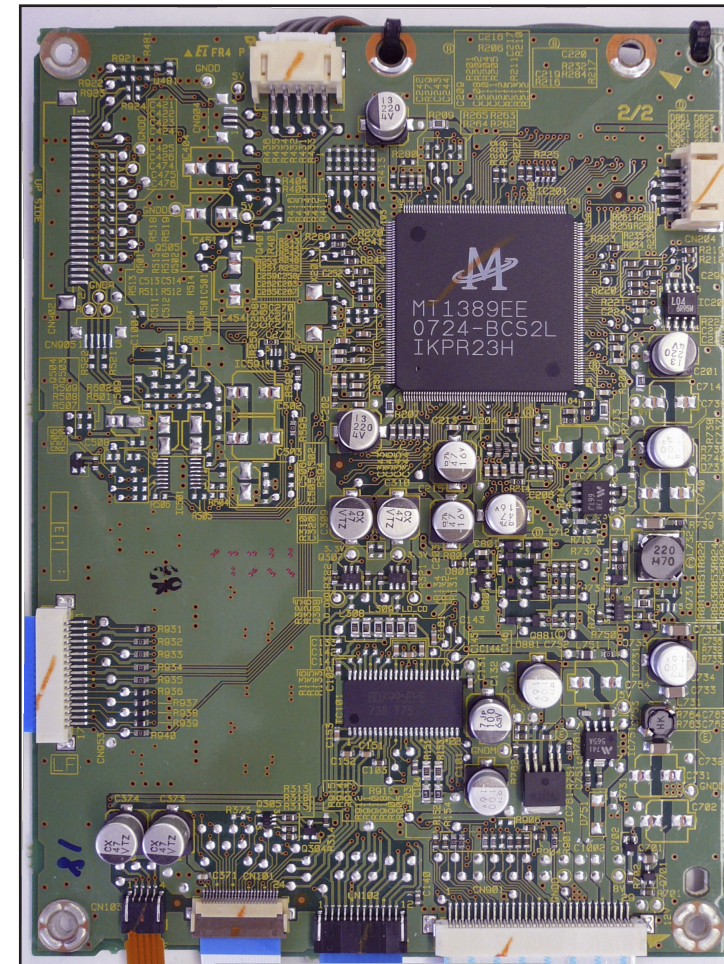
- CY29 B1
- CY30 B1
- DY07 B2
- DY08 B2
- JY08 B1
- RY46 B2
- RY47 B2

PH16 AA PWB



- C903 D2
- C904 B2
- C905 C2
- C923 D2
- C924 B1
- C925 B2
- C931 A2
- C932 A2
- C950 B3
- C951 C3
- C952 B2
- C971 B2
- C972 B2
- J902 C3
- J903 A1
- J904 A2
- L901 B1
- L902 B1
- Q951 B2
- Q952 B2
- Q953 C2
- Q954 B2
- Q971 B2
- Q972 B2
- Q973 B2
- Q974 B2
- R910 B1
- R930 B1
- R951 A3
- R952 C2
- R953 C2
- R954 B2
- R955 B2
- R956 C2
- R957 B2
- R958 B3
- R959 A2
- R971 B2
- R972 B2
- R973 B2
- R974 B2
- R975 B2
- R976 B2
- R977 B2
- R981 B3

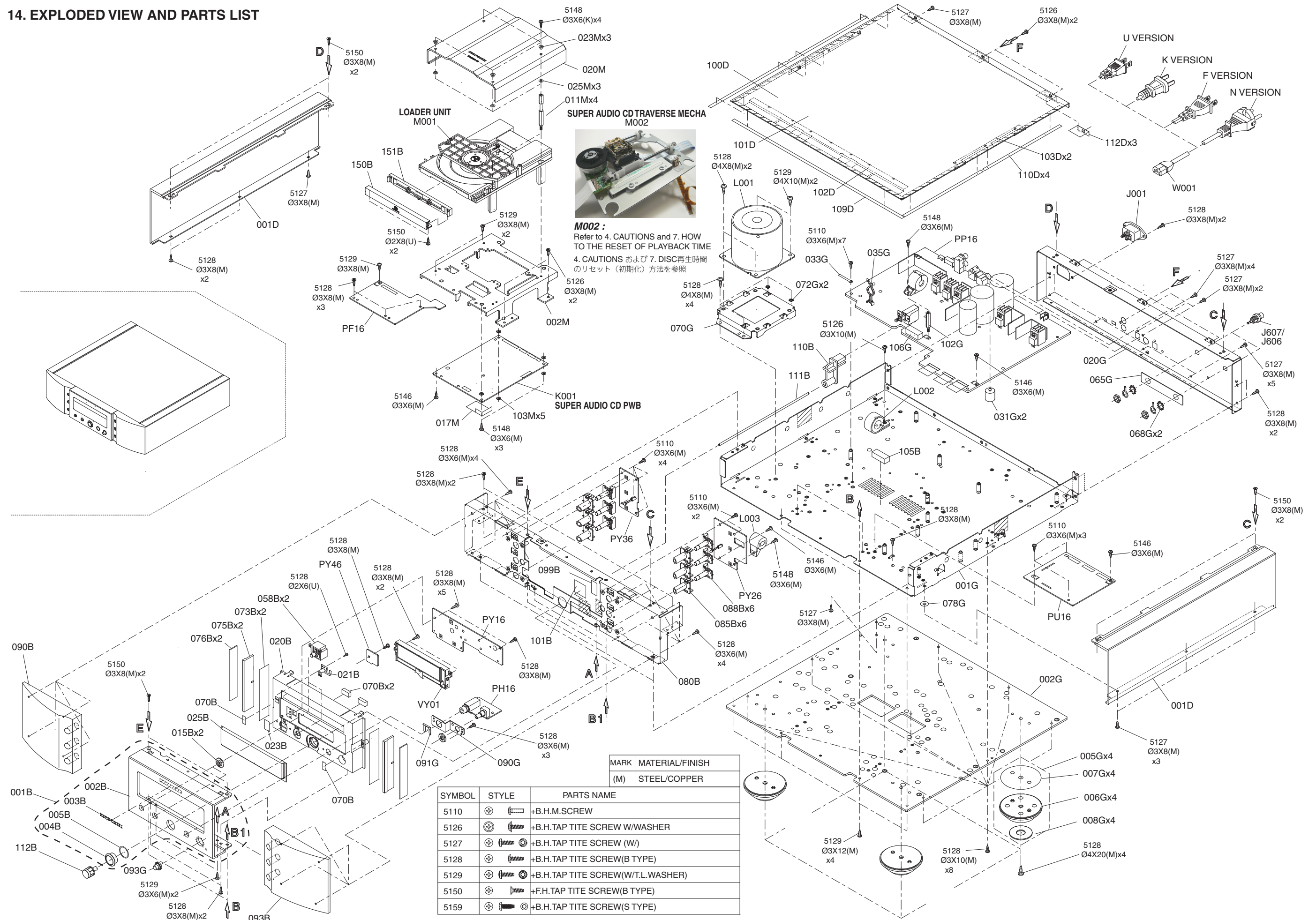
SUPER AUDIO CD PWB K001



鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

Lead-free Solder
When soldering, use the Lead-free Solder (Sn-Ag-Cu).

14. EXPLODED VIEW AND PARTS LIST



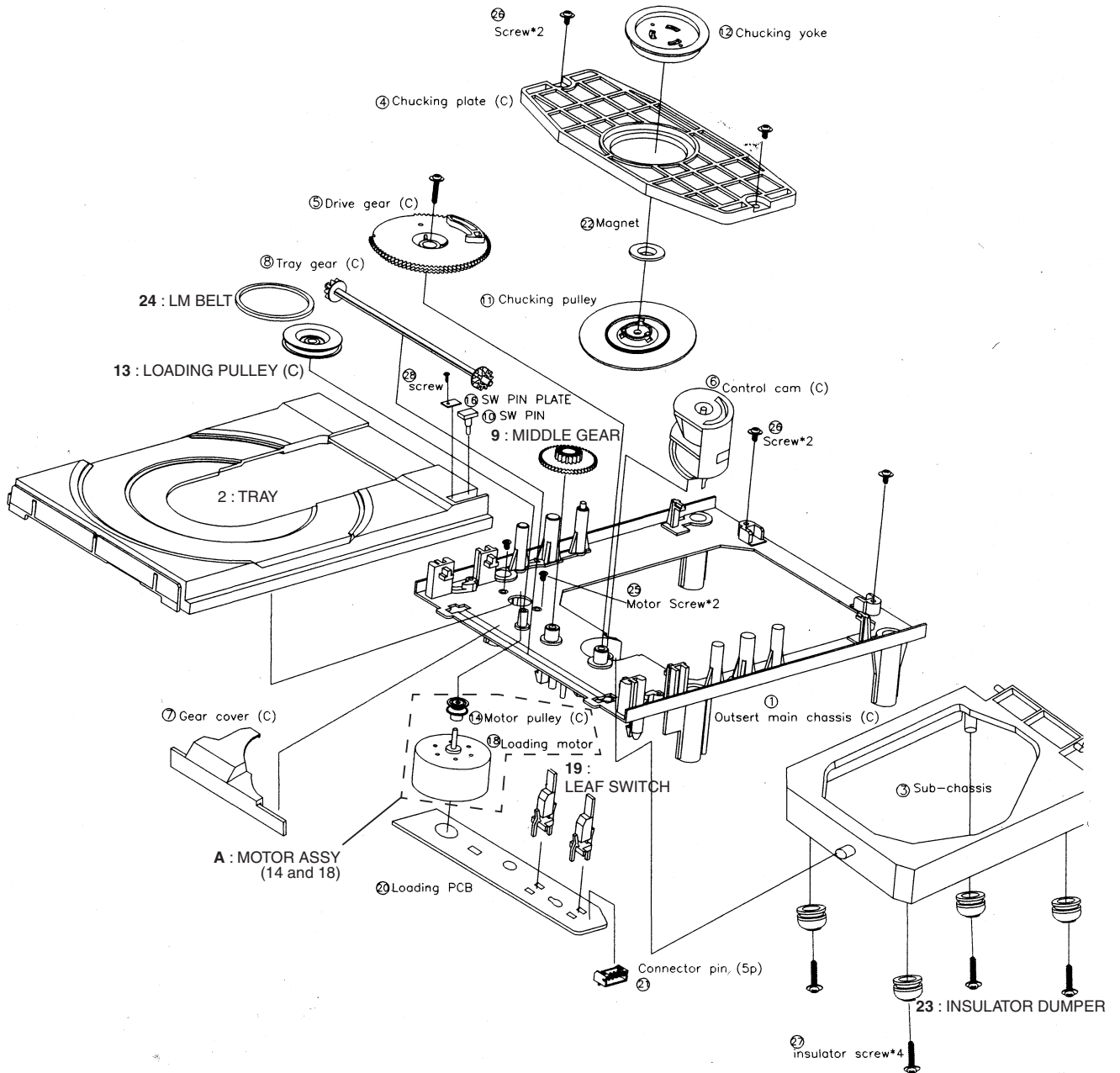
P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
	001B	F N	nsp	998402000170M	PANEL ASSY	FRONT PANEL ASSY GL
	001B	/K1G	nsp	998402000170M	PANEL ASSY	FRONT PANEL ASSY GL
	001B	/N1G	998402000170M	998402000170M	PANEL ASSY	FRONT PANEL ASSY GL
	001B	/N1S	998402000180M	998402000180M	PANEL ASSY	FRONT PANEL ASSY SL
	001B	/U1G	nsp	998402000170M	PANEL ASSY	FRONT PANEL ASSY GL
	015B	F N	nsp	00M18AK259110	BUSHING	BUSH SOUND BUTTON GL
	015B	/K1G	nsp	00M18AK259110	BUSHING	BUSH SOUND BUTTON GL
	015B	/N1G	00M18AK259110	00M18AK259110	BUSHING	BUSH SOUND BUTTON GL
	015B	/N1S	00M18AK259120	00M18AK259120	BUSHING	BUSH SOUND BUTTON SL
	015B	/U1G	nsp	00M18AK259110	BUSHING	BUSH SOUND BUTTON GL
	020B	F N	nsp	443510011012M	CHASSIS	CHASSIS GL SA-15S2
	020B	/K1G	nsp	443510011012M	CHASSIS	CHASSIS GL SA-15S2
	020B	/N1G	443510011012M	443510011012M	CHASSIS	CHASSIS GL SA-15S2
	020B	/N1S	443510011029M	443510011029M	CHASSIS	CHASSIS SL SA-15S2
	020B	/U1G	nsp	443510011012M	CHASSIS	CHASSIS GL SA-15S2
	025B		416510013009M	416510013009M	WINDOW	WINDOW SA-15S2
	058B	F N	nsp	00M32AK270110	BUTTON	BUTTON SOUND GL
	058B	/K1G	nsp	00M32AK270110	BUTTON	BUTTON SOUND GL
	058B	/N1G	00M32AK270110	00M32AK270110	BUTTON	BUTTON SOUND GL
	058B	/N1S	00M32AK270210	00M32AK270210	BUTTON	BUTTON SOUND SL
	058B	/U1G	nsp	00M32AK270110	BUTTON	BUTTON SOUND GL
	075B		00M18AK355010	00M18AK355010	LENS	LENS SIDE
	085B	F N	nsp	00M04AJ259210	BUSHING	BUSH FOR FUNCTION BUTTONS GL
	085B	/K1G	nsp	00M04AJ259210	BUSHING	BUSH FOR FUNCTION BUTTONS GL
	085B	/N1G	00M04AJ259210	00M04AJ259210	BUSHING	BUSH FOR FUNCTION BUTTONS GL
	085B	/N1S	00M04AJ259110	00M04AJ259110	BUSHING	BUSH FOR FUNCTION BUTTONS SL
	085B	/U1G	nsp	00M04AJ259210	BUSHING	BUSH FOR FUNCTION BUTTONS GL
	088B	F N	nsp	00M04AJ270130	BUTTON	FUNCTION BUTTONS GL
	088B	/K1G	nsp	00M04AJ270130	BUTTON	FUNCTION BUTTONS GL
	088B	/N1G	00M04AJ270130	00M04AJ270130	BUTTON	FUNCTION BUTTONS GL
	088B	/N1S	00M04AJ270230	00M04AJ270230	BUTTON	FUNCTION BUTTONS SL
	088B	/U1G	nsp	00M04AJ270130	BUTTON	FUNCTION BUTTONS GL
	090B	F N	nsp	00M18AK063110	ESCUTCHEON	ESCUTCHEON AL L SIDE GL
	090B	/K1G	nsp	00M18AK063110	ESCUTCHEON	ESCUTCHEON AL L SIDE GL
	090B	/N1G	00M18AK063110	00M18AK063110	ESCUTCHEON	ESCUTCHEON AL L SIDE GL
	090B	/N1S	00M18AK063210	00M18AK063210	ESCUTCHEON	ESCUTCHEON AL L SIDE SL
	090B	/U1G	nsp	00M18AK063110	ESCUTCHEON	ESCUTCHEON AL L SIDE GL
	093B	F N	nsp	00M18AK063150	ESCUTCHEON	ESCUTCHEON AL R SIDE GL
	093B	/K1G	nsp	00M18AK063150	ESCUTCHEON	ESCUTCHEON AL R SIDE GL
	093B	/N1G	00M18AK063150	00M18AK063150	ESCUTCHEON	ESCUTCHEON AL R SIDE GL
	093B	/N1S	00M18AK063250	00M18AK063250	ESCUTCHEON	ESCUTCHEON AL R SIDE SL
	093B	/U1G	nsp	00M18AK063150	ESCUTCHEON	ESCUTCHEON AL R SIDE GL
	110B		00M18AK121010	00M18AK121010	LINK	LINK POWER
	111B		00M18AK112010	00M18AK112010	SHAFT	SHAFT POWER
	112B	F N	nsp	00M18AK270110	BUTTON	BUTTON POWER GL
	112B	/K1G	nsp	00M18AK270110	BUTTON	BUTTON POWER GL
	112B	/N1G	00M18AK270110	00M18AK270110	BUTTON	BUTTON POWER GL
	112B	/N1S	00M18AK270210	00M18AK270210	BUTTON	BUTTON POWER SL
	112B	/U1G	nsp	00M18AK270110	BUTTON	BUTTON POWER GL
	150B	F N	nsp	418410005012M	ESCUTCHEON	ESCUTCHEON GL SA-15S2
	150B	/K1G	nsp	418410005012M	ESCUTCHEON	ESCUTCHEON GL SA-15S2
	150B	/N1G	418410005012M	418410005012M	ESCUTCHEON	ESCUTCHEON GL SA-15S2
	150B	/N1S	418410005029M	418410005029M	ESCUTCHEON	ESCUTCHEON SL SA-15S2
	150B	/U1G	nsp	418410005012M	ESCUTCHEON	ESCUTCHEON GL SA-15S2
	151B	F N	nsp	454510006010M	HOLDER	HOLDER GL SA-15S2
	151B	/K1G	nsp	454510006010M	HOLDER	HOLDER GL SA-15S2
	151B	/N1G	454510006010M	454510006010M	HOLDER	HOLDER GL SA-15S2
	151B	/N1S	454510006027M	454510006027M	HOLDER	HOLDER SL SA-15S2
	151B	/U1G	nsp	454510006010M	HOLDER	HOLDER GL SA-15S2
	001D	F N	nsp	00M18AK249110	SIDE PANEL	SIDE PANEL AL GL
	001D	/K1G	nsp	00M18AK249110	SIDE PANEL	SIDE PANEL AL GL
	001D	/N1G	00M18AK249110	00M18AK249110	SIDE PANEL	SIDE PANEL AL GL
	001D	/N1S	00M18AK249210	00M18AK249210	SIDE PANEL	SIDE PANEL AL SL
	001D	/U1G	nsp	00M18AK249110	SIDE PANEL	SIDE PANEL AL GL
	100D	F N	nsp	00M18AK257550	LID	TOP COVER ASM GL
	100D	/K1G	nsp	00M18AK257550	LID	TOP COVER ASM GL
	100D	/N1G	00M18AK257550	00M18AK257550	LID	TOP COVER ASM GL

NOTE : *nsp* PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
	100D	/N1S	00M18AK257560	00M18AK257560	LID	TOP COVER ASM SL
	100D	/U1G	nsp	00M18AK257550	LID	TOP COVER ASM GL
	005G	F N	nsp	00M04AJ057510	LEG	LEG ASSY GL
	005G	/K1G	nsp	00M04AJ057510	LEG	LEG ASSY GL
	005G	/N1G	00M04AJ057510	00M04AJ057510	LEG	LEG ASSY GL
	005G	/N1S	00M04AJ057520	00M04AJ057520	LEG	LEG ASSY SL
	005G	/U1G	nsp	00M04AJ057510	LEG	LEG ASSY GL
	093G	F N	nsp	00M10AJ154120	KNOB	KNOB HEAD PHONE AL CAP GL
	093G	/K1G	nsp	00M10AJ154120	KNOB	KNOB HEAD PHONE AL CAP GL
	093G	/N1G	00M10AJ154120	00M10AJ154120	KNOB	KNOB HEAD PHONE AL CAP GL
	093G	/N1S	00M10AJ154220	00M10AJ154220	KNOB	KNOB HEAD PHONE AL CAP SL
	093G	/U1G	nsp	00M10AJ154120	KNOB	KNOB HEAD PHONE AL CAP GL
	001M		nsp	nsp	MECHANISM	SACD MECHA UNIT
	020M		429410001003M	429410001003M	COVER	COVER MECHA SA-15S2
	▲J001		00MYJ04002640	00MYJ04002640	JACK	! R-301(21) AC INLET
	J606		00MYT02011280	00MYT02011280	TERMINAL	EW-2560T-LH-R
	J607		00MYT02011290	00MYT02011290	TERMINAL	EW-2560T-LH-W
	K001		00MZK35AK0020	00MZK35AK0020	UNIT KIT	DB-APB105/XJ MAIN PWB ASSY
	▲L001	F N	nsp	00MTS56903010	TRANSF.	!TROIDAL TRANS AC100V (F)
	▲L001	/K1G	nsp	00MTS56903030	TRANSF.	!TROIDAL TRANS AC230V (N)
	▲L001	/N1G	00MTS56903030	00MTS56903030	TRANSF.	!TROIDAL TRANS AC230V (N)
	▲L001	/N1S	00MTS56903030	00MTS56903030	TRANSF.	!TROIDAL TRANS AC230V (N)
	▲L001	/U1G	nsp	00MTS56903020	TRANSF.	!TROIDAL TRANS AC120V (U)
	L002		00MFC50280040	00MFC50280040	FERRITE CORE	TRCN-28-16-20
	L003		00MFC50230010	00MFC50230010	FERRITE CORE	TFCK-23-11-14
	L004		00MFC90400010	00MFC90400010	FERRITE CORE	FERRITE CORE SSC-40-12
	L011		00MFC90280010	00MFC90280010	FERRITE CORE	HF70SH28-2-10 FPC FERRITE CORE
	L012		00MFC90280010	00MFC90280010	FERRITE CORE	HF70SH28-2-10 FPC FERRITE CORE
	L014		00MFC50160060	00MFC50160060	FERRITE CORE	FERRITE CORE TFCK-16-8-13
	L801		00MFC50270040	00MFC50270040	FERRITE CORE	USB-4 SLEEVE FERRITE CLAMP
	M001		311010001007M	311010001007M	MECHANISM	LOADER UNIT
	M002		312010002010M	312010002010M	MECHANISM	DB-VTV736/XCN TRAVERSE
	PF16		nsp	nsp	PWB ASSY	DISTRIBUTE PWB ASSY
	PH16		nsp	nsp	PWB ASSY	HEADPHONE PWB ASSY
	PP16		nsp	nsp	PWB ASSY	POWER/AUDIO PWB ASSY
	PU16		nsp	nsp	PWB ASSY	MPU/DIR PWB ASSY
	PY16		nsp	nsp	PWB ASSY	DISPLAY/KEY PWB ASSY
	PY26		nsp	nsp	PWB ASSY	KEY1 PWB ASSY
	PY36		nsp	nsp	PWB ASSY	KEY2 PWB ASSY
	PY46		nsp	nsp	PWB ASSY	LED PWB ASSY
	WM00		nsp	606050046027M	FPC	SML2CD-24X150-BDX8(BL)-P0.5-S4-F-M-N(35)
	WM03		nsp	606050045017M	FPC	SMCD-29X60-BDX10+6(BL)-P1.0-S4-M
	WM05		nsp	00MYU17070520	FPC	SMCD-17X70-BDX8(BL)-P1.0-S4M
	WM06		nsp	00MYU25110520	FPC	SMCD-25X110-BDX8-P1.0-S4-M
	WY01		nsp	00MYU17120520	FPC	SMCD-17X120-BDX8(BL)-P1.0-S4
	WY02		nsp	00MYU17070520	FPC	SMCD-17X70-BDX8(BL)-P1.0-S4M
	WY05		nsp	00MYU04060520	FPC	2MCD-04X60-BDX6(BL)-P1.0-S4.0
	WY06		nsp	00MYU06080520	FPC	SMCD-6X80-BDX6(BL)-P1.0-S4-M
PACKING						
	005T	F N	nsp	541110192017M	USER GUIDE	USER GUIDE SA-15S2 (F)
	005T	/K1G	nsp	541110192055M	USER GUIDE	USER GUIDE SA-15S2 (K)
	005T	/N1G	541110192031M	541110192031M	USER GUIDE	USER GUIDE SA-15S2 (N)
	005T	/N1S	541110192031M	541110192031M	USER GUIDE	USER GUIDE SA-15S2 (N)
	005T	/U1G	nsp	541110192031M	USER GUIDE	USER GUIDE SA-15S2 (N)
	T100		307010015007M	307010015007M	UNIT KIT	REMOTE CONTROLLER RC003SA
	▲W001	F N	nsp	00D2062223001	MAINS CORD	# MAINS CORD SET(J) D7.4
	▲W001	/K1G	nsp	00D2062249001	MAINS CORD	# MAINS CORD (E1C)
	▲W001	/N1G	00MZC01803080	00MZC01803080	MAINS CORD	# 2P MAINS CORD 10A 250V CLASS2
	▲W001	/N1S	00MZC01803080	00MZC01803080	MAINS CORD	# 2P MAINS CORD 10A 250V CLASS2
	▲W001	/U1G	nsp	00MZC01803100	MAINS CORD	# MAINS CORD UL/CSA 10A 125V
NOT STANDARD SPARE PART						
	005S		nsp	00M18AK809010	CUSHION	CUSHION FOR SET
	010S		nsp	531210061009M	PACKING CASE	PACKING CASE SA-15S2
	015S	/N1G	nsp	531210062002M	MASS CARTON	MASTER CARTON SA-15S2
	015S	/N1S	nsp	531210062002M	MASS CARTON	MASTER CARTON SA-15S2
	J051		nsp	00MZD00900100	CONN. CORD	RCA RC-5 CORD 0.9M

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

LOADER UNIT



P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
LOADER	2		995419000010S	995419000010S	TRAY	TRAY SW00-1015-00
LOADER	9		995463000020S	995463000020S	GEAR	MIDDLE GEAR SW00-1009-00
LOADER	13		995462000030S	995462000030S	PULLEY	LOADING PULLEY(C) SW00-1012-00
LOADER	19		995669000040S	995669000040S	SW	LEAF SWITCH SW00-3002-00
LOADER	23		995474000050S	995474000050S	DUMPER	INSULATOR DUMPER SW00-4011-00
LOADER	24		995466000060S	995466000060S	BELT	LM BELT SW00-4005-00
LOADER	A		995684000070S	995684000070S	MOTOR	MOTOR ASSY (14 and 18) SW10-3001-00

NOTE : *nsp* PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

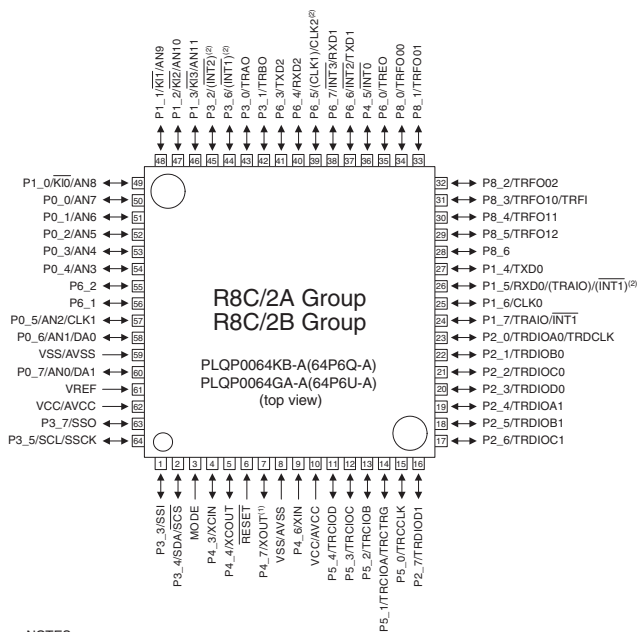
15. MICROPROCESSOR AND IC DATA

QF01 : R5F212AASNFP

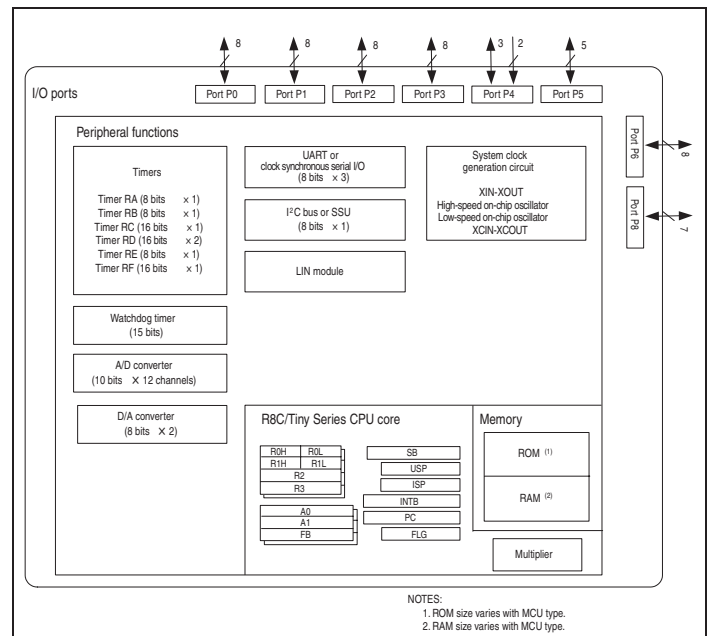
No.	Pin Port	Mode	I/O		STBY	Initial	Function
			SA7003	SA8003			
1	P3_3	LCD_RS	I	I	I	-	LCD SELECTION REGISTER
2	P3_4	SDA	I/O	I/O	I	H	IIC DATA
3	MODE	MODE	I	I	I	-	-
4	P4_3	IPOD_RESET	I	O	I	L	IPOD ATTESTATION IC RESET OUTPUT
5	P4_4	SACD_DIR	I	I	I	L	SIGNAL CHANGE OUTPUT POWER OF SACD AND DIR
6	RESET	RESET	I	I	I	-	-
7	XOUT	CLOCK	-	-	-	-	20MHZ
8	VSS	VSS	-	-	-	-	GND
9	XIN	CLOCK	-	-	-	-	20MHZ
10	VCC	VCC	-	-	-	-	3.3V
11	TRCIOD	TRY_OPN	O	O	I	L	TRAY OPEN OUTPUT PWM OUTPUT
12	TRCIOC	TRY_CLS	O	O	I	L	TRAY CLOSE OUTPUT PWM OUTPUT
13	P5_2	DIR_XMODE	I	I	I	L	DIR RESET OUTPUT
14	P5_1	DAC_GAIN	O	O	I	L	DAC GAIN CHANGE OUTPUT
15	P5_0	INVERT_LED	I	I	I	L	BALANCE OUTPUT POLARITY DISPLAY LED
16	P2_7	SIDE_LED_OFF	I	I	I	L	FRONT PANEL BLUE LED ON/OFF OUTPUT
17	P2_6	DIS_SO	O	O	I	H	FLD/LCD DATA OUT PUT
18	P2_5	DIS_SCL	O	O	I	H	FLD/LCD CLOCK OUT PUT
19	P2_4	DIS_CS	O	O	I	H	FLD/LCD CHIP SELECT OUT PUT
20	P2_3	DIS_RESET	O	O	I	L	FLD/LCD RESET OUT PUT
21	P2_2	IR_IN	I	I	I	-	REMOTE CONTROL INPUT
22	P2_1	MOD_XDVDRST	O	O	I	L	MECHANISM MODULE RESET OUTPUT
23	P2_0	MOD_XREADY	O	O	I	H	MECHANISM MODULE XRDY OUTPUT
24	INT1	MOD_ACK	I	I	I	-	MECHANISM MODULE ACK INPUT
25	CLK0	MOD_SCLK	I	I	I	-	MECHANISM MODULE COMMUNICATION CLOCK INPUT
26	RXD0	MOD_MDATA	I	I	I	-	MECHANISM MODULE COMMUNICATION DATA INPUT
27	TXD0	MOD_SDATA	O	O	I	L	MECHANISM MODULE COMMUNICATION DATA OUTPUT
28	P8_6	SACD_USB	O	O	I	L	THE SIGNAL CHANGE OF USB AND SACD
29	P8_5	DAC_RESET	O	O	I	L	DACRESET OUTPUT
30	P8_4	CUT_DIG	O	O	I	H	DIGITAL OUT ON/OFF CONTROL
31	P8_3	AUDIO_MUTE	O	O	I	H	DIGITAL OUT ON/OFF CONTROL
32	P8_2	STBY_CNT	O	O	O	H	STANDBY CONTROL SIGNAL
33	P8_1	DIS_OFF	O	O	I	L	DISPLAY OFF LED OUTPUT
34	P8_0	DVD_POWER	O	O	I	H	MECHANISM MODULE POWER SUPPLY CONTROL
35	P6_0	IPOD_ERR	I	I	I	-	EYE KURONASU COMMUNICATION ERROR DETECTION
36	P4_5	LCD_LED_OFF	I	I	I	L	LCD BACK LIGHT-OFF SIGNAL
37	TXD1	UART_TX	O	O	I	H	FOR EXTERNAL UART COMMUNICATION
38	RXD1	UART_RX	I	I	I	-	FOR EXTERNAL UART COMMUNICATION
39	CLK2	USB_SCK	I	O	I	H	USB IC COMMUNICATION CLOCK INPUT

QF01 : R5F212AASNFP

No.	Pin Port	Mode	I/O		STBY	Initial	Function
			SA7003	SA8003			
40	RXD2	USB_SI	I	I	I	-	USB IC COMMUNICATION DATA INPUT
41	TXD2	USB_SO	I	O	I	H	USB IC COMMUNICATION DATA OUTPUT
42	P3_1	USB_RTS	I	O	I	H	USB IC COMMUNICATION REQUEST OUTPUT
43	P3_0	USB_RESET	I	O	I	L	USB IC RESET OUTPUT
44	P3_6	USB_STBY_B	I	O	I	H	USB IC STANDBY CONTROL OUTPUT
45	INT2	USB_CTS	I	I	I	-	USB IC COMMUNICATION REQUEST INPUT
46	KI3	USB_DDI	I	I	I	-	USB IC ERROR DETECTION
47	KI2	DIR_INT	I	I	I	-	DIR IC INTERRUPT REQUEST INPUT
48	KI1	STB_IR	I	I	I	-	STANDBY RETURN INPUT
49	KI0	POWER_DET	I	I	I	-	POWER DOWN DETECTION
50	AN7	KEY_1	I	I	I	-	KEY INPUT AD INPUT
51	AN6	KEY_2	I	I	I	-	KEY INPUT AD INPUT
52	AN5	KEY_3	I	I	I	-	KEY INPUT AD INPUT
53	AN4	TRAY_IN_SW	I	I	I	-	TRAY OPEN CLOSING TRIGGER INPUT AD INPUT
54	P0_4	DIR_DO	I	I	I	L	DIR IC DATA OUTPUT
55	P6_2	DIR_DI	I	I	I	-	DIR IC DATA INPUT
56	P6_1	DIR_CL	I	I	I	L	DIR IC CLOCK OUTPUT
57	P0_5	DIR_CE	I	I	I	L	DIR IC CHIP ENABLE OUTPUT
58	AN1	MODEL_SEL_1	I	I	I	-	MODEL SELECTION AD INPUT
59	VSS	VSS	-	-	-	-	GND
60	AN0	MODEL_SEL_2	I	I	I	-	MODEL SELECTION AD INPUT
61	VREF	VREF	-	-	-	-	3.3V
62	VCC	VCC	-	-	-	-	3.3V
63	P3_7	USB_NMI	I	I	I	-	USB IC STANDBY DETECTION
64	P3_5	SCL	O	O	I	H	IIC CLOCK OUTPUT

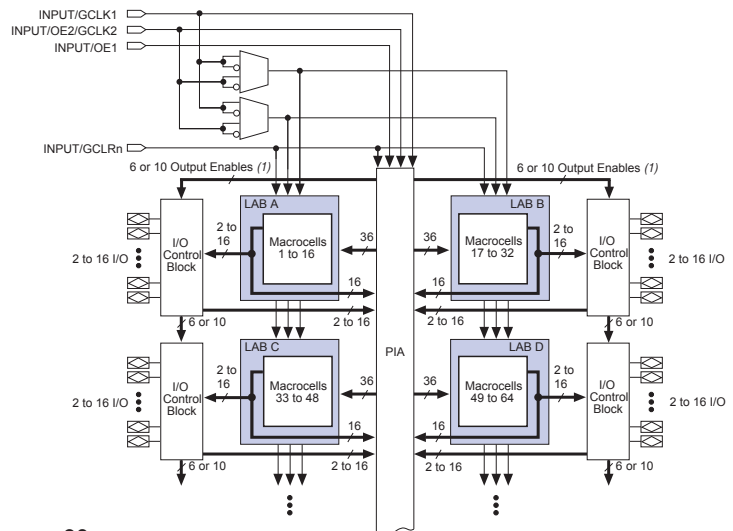


- NOTES:
1. P4_7/XOUT are an input-only port.
 2. Can be assigned to the pin in parentheses by a program.
 3. Confirm the pin 1 position on the package by referring to the package dimensions.

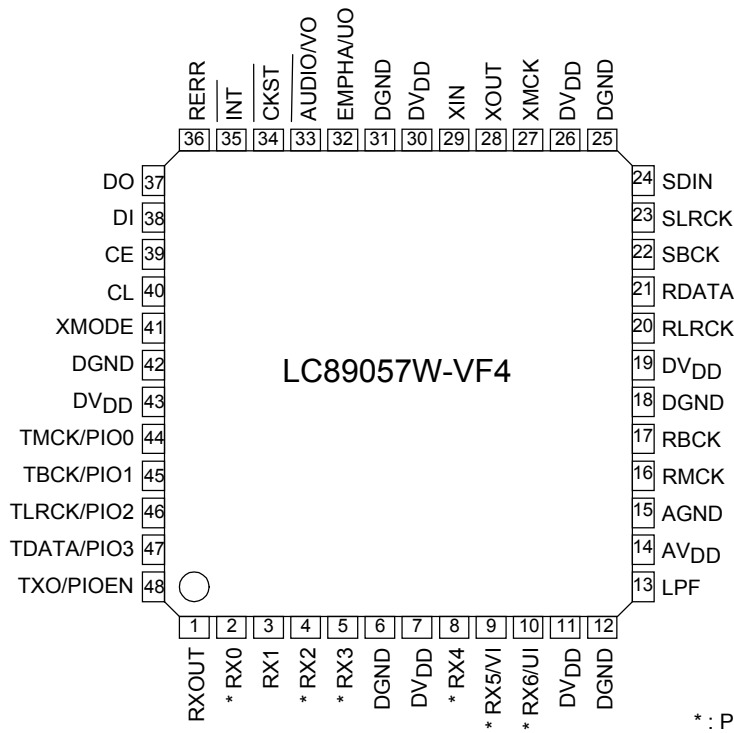


Q401 : EPM3032A (Programmable Logic Device)

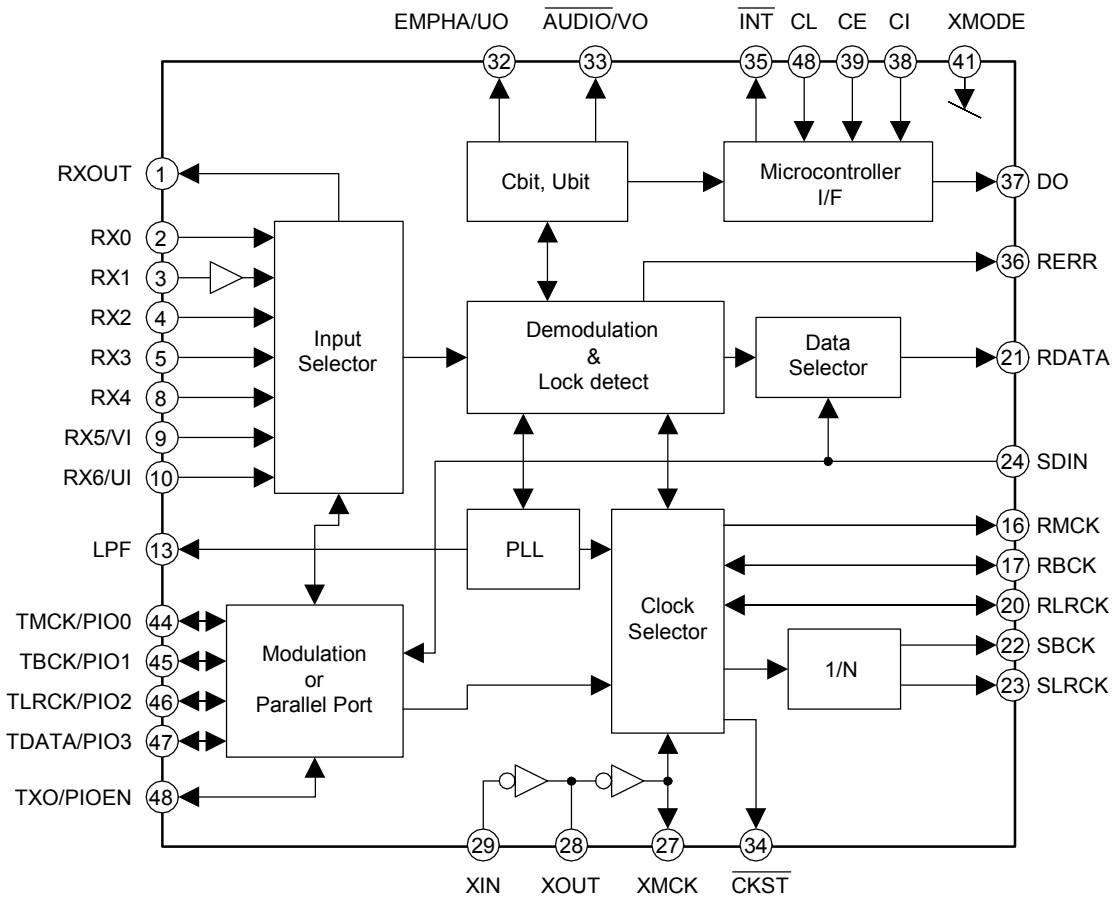
Pin Name	Name/Usage	Pin No.	Dir.	I/O Standard	Voltage	User Assignment
TDI	TDI	1	input	3.3-V LVTTTL		N For PLD writing
SEL2	RESERVED_INPUT	2				SEL
NC	RESERVED_INPUT	3				NC
GNDIO	GND	4	gnd			GND
SYCL	SMLCK	5	output	3.3-V LVTTTL		Y Master Clock output
LRCK/SAR	SWCLK	6	output	3.3-V LVTTTL		Y Word Clock output
TMS	TMS	7	input	3.3-V LVTTTL		N For PLD writing
BCK/SACK	SBCLK	8	output	3.3-V LVTTTL		Y Bit Clock output
VCC	VCCIO	9	power		3.3V	Power
SDAT/SAL	SDATA	10	output	3.3-V LVTTTL		Y Audio Data output
GND	GND	11	gnd			GND
DIRINT/EMPH	EMP_FLG	12	output	3.3-V LVTTTL		Y DAIR interrupt request output
USB/CD	CD_USB	13	input	3.3-V LVTTTL		Y SA-CD&CD/USB change signal input
SA/DIR	CD_DIR	14	input	3.3-V LVTTTL		Y SA-CD&CD/DAIR change signal input
DIRMCK	DAIR_MCLK	15	input	3.3-V LVTTTL		Y DAIR Master Clock input
GNDINT	GND	16	gnd			GND
VCC	VCCINT	17	power		3.3V	Power
DIRBCK	DAIR_BCLK	18	input	3.3-V LVTTTL		Y DAIR Bit Clock input
DIRLR	DAIR_WCLK	19	input	3.3-V LVTTTL		Y DAIR Word Clock input
DIRDAT	DAIR_DATA	20	input	3.3-V LVTTTL		Y DAIR Audio Data input
SA/PCM	CD_SACD	21	input	3.3-V LVTTTL		Y CD/SA-CD change signal input
USBMCK	USB_MCLK	22	input	3.3-V LVTTTL		Y USB Master Clock input
USBCLK	USB_BCLK	23	input	3.3-V LVTTTL		Y USB Bit Clock input
GND	GND	24	gnd			GND
USBDAT	USB_DATA	25	input	3.3-V LVTTTL		Y USB Audio Data input
TCK	TCK	26	input	3.3-V LVTTTL		N For PLD writing
USBLR	USB_WCLK	27	input	3.3-V LVTTTL		Y USB Word Clock input
MCLK	CD_MCLK	28	input	3.3-V LVTTTL		Y SA-CD Module Master Clock input
VCC	VCCIO	29	power		3.3V	Power
GND	GND	30	gnd			GND
MLRCK	CD_WCLK	31	input	3.3-V LVTTTL		Y SA-CD Module Word Clock input
TDO	TDO	32	output	3.3-V LVTTTL		N For PLD writing
MSDAT	CD_DATA	33	input	3.3-V LVTTTL		Y SA-CD Module Audio Data input
MDATR	MOD_DATAR	34	input	3.3-V LVTTTL		Y SA-CD Module DSD Rch Data input
MBCL	CD_BCLK	35	input	3.3-V LVTTTL		Y SA-CD Module Bit Clock input
GND	GND	36	gnd			GND
CS		37				D_CS2, SA-CD Module K001 PWB
SO		38				D_SO, SA-CD Module K001 PWB
NC		39				NC
SC		40				D_SCLK, SA-CD Module K001 PWB
VCC	VCCINT	41	power		3.3V	Power
NC	RESERVED_INPUT	42				NC
DIRINT_IN	DIR_INT_I	43	input	3.3-V LVTTTL		Y DAIR interrupt request output
SEL1	RESERVED_INPUT	44				SEL



Q501 : LC89057W-VF4



* : Pull-down resistor internal



Q501 : LC89057W-VF4

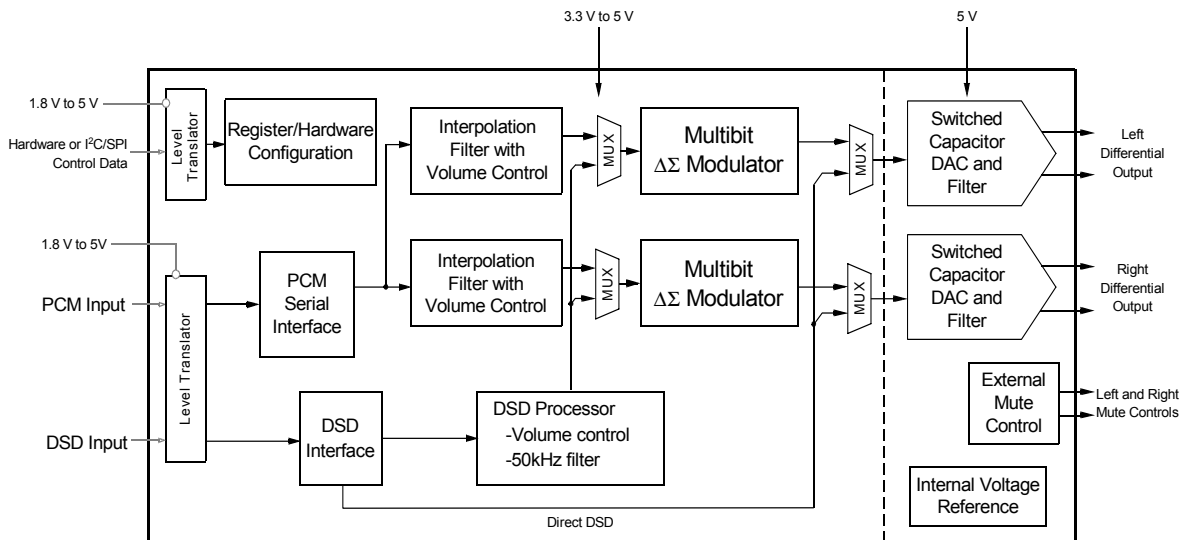
Pin No.	Name	I/O	Function
1	RXOUT	O	Output pin of Input bi-phase selection data
2	RX0	I ₅	Input pin of TTL-compatible digital data
3	RX1	I	Digital data input pin with built-in amplifier that supports coaxial
4	RX2	I ₅	Input pin of TTL-compatible digital data
5	RX3	I ₅	Input pin of TTL-compatible digital data
6	DGND		Digital GND
7	DV _{DD}		Digital power supply
8	RX4	I ₅	Input pin of TTL-compatible digital data
9	RX5/VI	I ₅	TTL-compatible digital data Validity flag input pin for modulation
10	RX6/UI	I ₅	TTL-compatible digital data User data input pin for modulation
11	DV _{DD}		Digital power supply for PLL
12	DGND		Digital GND for PLL
13	LPF	O	PLL loop filter connection pin
14	AV _{DD}		Analog power supply for PLL
15	AGND		Analog GND for PLL
16	RMCK	O	R system clock output pin (256fs, 512fs, XIN, VCO)
17	RBCK	O/I	R bit clock input/output pin (64fs)
18	DGND		Digital GND
19	DV _{DD}		Digital power supply
20	RLRCK	O/I	R LR clock input/output pin (fs)
21	RDATA	O	Output pin of serial audio data
22	SBCK	O	S bit clock output pin (32fs, 64fs, 128fs)
23	SLRCK	O	S LR clock output pin (fs/2, fs, 2fs)
24	SDIN	I ₅	Input pin of serial audio data
25	DGND		Digital GND
26	DV _{DD}		Digital power supply
27	XMCK	O	Oscillation amplifier output pin
28	XOUT	O	Quartz resonator connection output pin
29	XIN	I	Quartz resonator connection, input pin of external supply clock (24.576 MHz or 12.288 MHz)
30	DV _{DD}		Digital power supply
31	DGND		Digital GND
32	EMPHA/UO	I/O	Emphasis information U data output Chip address setting pin
33	AUDIO/VO	I/O	Non-PCM detection V flag output Chip address setting pin
34	CKST	I/O	Output of clock switch transitional period signal Demodulation master or slave function switch pin
35	INT	I/O	Interrupt output for Microcontroller (Possible to select an interrupt factor.) Modulation or general-purpose I/O switch pin
36	REERR	O	PLL clock error, data error flag output
37	DO	O	Microcontroller I/F, read data output pin (3-state)
38	DI	I ₅	Microcontroller I/F, write data input pin
39	CE	I ₅	Microcontroller I/F, chip enable input pin
40	CL	I ₅	Microcontroller I/F, clock input pin
41	XMODE	I ₅	System reset input pin
42	DGND		Digital GND
43	DV _{DD}		Digital power supply
44	TMCK/PIO0	I/O	256fs system clock input for modulation General-purpose I/O input/output pin
45	TMCK/PIO1	I/O	64fs bit clock input for modulation General-purpose I/O input/output pin
46	TLRCK/PIO2	I/O	fs clock input for modulation General-purpose I/O input/output pin
47	TLRCK/PIO3	I/O	serial audio data input for modulation General-purpose I/O input/output pin
48	TXO/PIOEN	O/I	Modulation data output General-purpose I/O enable input pin

- 1) Withstand voltage input/output: I or O = -0.3 to 3.6V, I₅ = -0.3 to 5.5V
- 2) Pins 32 and 33 are input pins for chip address setting, when pin 41 = "L".
- 3) Pin 34 is a demodulation function master or an input pin for slave setting, when pin 41 = "L".
- 4) Pin 35 is a modulation function or an input pin for general-purpose I/O function switch setting, when pin 41 = "L".
- 5) ON/OFF for all power supplies must be done at the same timing as a latch-up countermeasure.

120 dB, 192 kHz Multi-Bit DAC with Volume Control

Features

- ◆ Advanced Multi-bit Delta-Sigma Architecture
 - 120 dB Dynamic Range
 - -107 dB THD+N
 - Low Clock Jitter Sensitivity
 - Differential Analog Outputs
- ◆ PCM input
 - 102 dB of Stopband Attenuation
 - Supports Sample Rates up to 192 kHz
 - Accepts up to 24 bit Audio Data
 - Supports All Industry Standard Audio Interface Formats
 - Selectable Digital Filter Response
 - Volume Control with 1/2 dB Step Size and Soft Ramp
 - Flexible Channel Routing and Mixing
 - Selectable De-Emphasis
- ◆ Supports Stand-Alone or I²C/SPI™ Configuration
 - Embedded Level Translators
 - 1.8 V to 5 V Serial Audio Input
 - 1.8 V to 5 V Control Data Input
- ◆ Direct Stream Digital (DSD)
 - Dedicated DSD Input Pins
 - On-Chip 50 kHz Filter to Meet Scarlet Book SACD Recommendations
 - Matched PCM and DSD Analog Output Levels
 - Non-Decimating Volume Control with 1/2 dB Step Size and Soft Ramp
 - DSD Mute Detection
 - Supports Phase-Modulated Inputs
 - Optional Direct DSD Path to On-Chip Switched Capacitor Filter
- ◆ Control Output for External Muting
 - Independent Left and Right Mute Controls
 - Supports Auto Detection of Mute Output Polarity
- ◆ Typical Applications
 - DVD Players
 - SACD Players
 - A/V Receivers
 - Professional Audio Products



DSD_B	1	DSD_A	28
DSD_SCLK	2	VLS	27
SDIN	3	VQ	26
SCLK	4	AMUTEC	25
LRCK	5	AOUTA-	24
MCLK	6	AOUTA+	23
VD	7	VA	22
DGND	8	AGND	21
M3 (AD1/CDIN)	9	AOUTB+	20
M2 (SCL/CCLK)	10	AOUTB-	19
M1 (SDA/CDOUT)	11	BMUTEC	18
M0 (AD0/ $\overline{\text{CS}}$)	12	VREF	17
RST	13	REF_GND	16
VLC	14	FILT+	15

Pin Name	Pin #	Pin Description
DSD_A DSD_B	28 1	Direct Stream Digital Input (Input) - Input for Direct Stream Digital serial audio data.
DSD_SCLK	2	DSD Serial Clock (Input) - Serial clock for the Direct Stream Digital audio interface.
SDIN	3	Serial Audio Data Input (Input) - Input for two's complement serial audio data.
SCLK	4	Serial Clock (Input) - Serial clock for the serial audio interface.
LRCK	5	Left Right Clock (Input) - Determines which channel, Left or Right, is currently active on the serial audio data line.
MCLK	6	Master Clock (Input) - Clock source for the delta-sigma modulator and digital filters.
VD	7	Digital Power (Input) - Positive power for the digital section.
DGND	8	Digital Ground (Input) - Ground reference for the digital section.
RST	13	Reset (Input) - The device enters system reset when enabled.
VLC	14	Control Port Power (Input) - Positive power for Control Port I/O.
FILT+	15	Positive Voltage Reference (Output) - Positive reference voltage for the internal sampling circuits.
REF_GND	16	Reference Ground (Input) - Ground reference for the internal sampling circuits.
VREF	17	Voltage Reference (Input) - Positive voltage reference for the internal sampling circuits.
BMUTEC AMUTEC	18 25	Mute Control (Output) - The Mute Control pin is active during power-up initialization, muting, power-down or if the master clock to left/right clock frequency ratio is incorrect. During reset, these outputs are set to a high impedance.
AOUTB+ AOUTB-	20 19	Differential Right Channel Analog Output (Output) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
AGND	21	Analog Ground (Input) - Ground reference for the analog section.
VA	22	Analog Power (Input) - Positive power for the analog section.
AOUTA+ AOUTA-	23 24	Differential Left Channel Analog Output (Output) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
VQ	26	Quiescent Voltage (Output) - Filter connection for internal quiescent voltage.
VLS	27	Serial Audio Interface Power (Input) - Positive power for serial audio interface I/O.
Stand-Alone Mode Definitions		
M3	9	Mode Selection (Input) - Determines the operational mode of the device.
M2	10	
M1	11	
M0	12	
Control Port Mode Definitions		
AD1/CDIN	9	Address Bit 1 (I²C) / Control Data Input (SPI) (Input) - AD1 is a chip address pin in I ² C mode; CDIN is the input data line for the Control Port interface in SPI mode.
SCL/CCLK	10	Serial Control Port Clock (Input) - Serial clock for the serial Control Port.
SDA/CDOUT	11	Serial Control Data (I²C) / Control Data Output (SPI) (Input/Output) - SDA is a data I/O line in I ² C mode. CDOUT is the output data line for the Control Port interface in SPI mode.
AD0/ $\overline{\text{CS}}$	12	Address Bit 0 (I²C) / Control Port Chip Select (SPI) (Input) - AD0 is a chip address pin in I ² C mode; $\overline{\text{CS}}$ is the chip select signal for SPI format.

16. ELECTRICAL PARTS LIST

PARTS INFORMATION

RESISTORS

1) 00MGD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W

2) 00MGD05 × × × 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

CERAMIC CAP.

3) 00MDD1 × × × × 370,

Ceramic capacitor
Disc type
Temp.coeff.P350 ~ N1000, 50V

② Capacity value
③ Tolerance

Examples ;

② Tolerance (Capacity deviation)

±0.25pF.....0
±0.5pF.....1
±5%.....5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF ±0.25pF
6pF ~ 10pF ±0.5pF
12pF ~ 560pF ±5%

③ Capacity value

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

CERAMIC CAP.

4) 00MDK16 × × × 300,

High dielectric constant ceramic capacitor
Disc type
Temp.chara. 2B4, 50V

④ Capacity value

Examples ;

④ Capacity value

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

ELECTROLY CAP. (Z)

5) 00MEA × × × × × 10,

Electrolytic capacitor
One-way lead type, Tolerance ±20%

⑤ Working voltage
⑥ Capacity value

Examples ;

⑤ Capacity value

0.1μF.....104 4.7μF475 100μF ... 107
0.33μF.....334 10μF 106 330μF ... 337
1μF.....105 22μF226 1100μF ... 118
2200μF ... 228

⑥ Working voltage

6.3V.....006 25V025
10V.....010 35V035
16V.....016 50V050

FILM CAP. (Z)

6) 00MDF15 × × × 350

Plastic film capacitor
One-way type, Mylar ±5% 50V
00MDF15 × × × 310
Plastic film capacitor
One-way type, Mylar ±10% 50V

⑦ Capacity value

Examples ;

⑦ Capacity value

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

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
00MNH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
00MNH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
00MNH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
00MNH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value Resistance value (0.1 – 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
00MNF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
00MRF05 × × × 140		
00MNF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
00MRF02 × × × 140		

* Resistance value * 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 FUSE :

Regarding to all parts of parts code 00MFS20xxx2xx, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

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。

P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
					DISTRIBUTE PWB PF16 (00MWG35AK207-)	
PF16	CM02		00MEY47600620	00MEY47600620	ELECT CAP.	47UF/6.3V
PF16	CM03		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PF16	CM04		00MEY10601620	00MEY10601620	ELECT CAP.	10UF/ 16V
PF16	CM05		00MEY47600620	00MEY47600620	ELECT CAP.	47UF/6.3V
PF16	CM06		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PF16	CM11		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PF16	CM13		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PF16	CM14		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PF16	CM15		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PF16	CM16		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PF16	QM01		232710014509S	232710014509S	IC	BD7931F-E2
PF16	QM02		00MBA12303000	00MBA12303000	TRS.	DTA124EU RN2303 UMT
PF16	QM03		00MBA12303000	00MBA12303000	TRS.	DTA124EU RN2303 UMT
PF16	QM04		00MBA21303000	00MBA21303000	TRS.	DTC124EU RN1303 UMT
PF16	QM05		00MBA21303000	00MBA21303000	TRS.	DTC124EU RN1303 UMT
PF16	QM07		00MHC008305K0	00MHC008305K0	IC	TC7WH241FU
PF16	QM08		00MHC96303320	00MHC96303320	IC	PQ1U331M2ZPH 3.3V 300MA
PF16	RM04		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PF16	RM05		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PF16	RM06		nsp	00MNN05222610	CHIP RES.	2.2K OHM +- 5% 1/16W
PF16	RM07		nsp	00MNN05392610	CHIP RES.	3.9K OHM +- 5% 1/16W
PF16	RM08		nsp	00MNN05392610	CHIP RES.	3.9K OHM +- 5% 1/16W
PF16	RM09		nsp	00MNN05153610	CHIP RES.	15K OHM +- 5% 1/16W
PF16	RM10		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PF16	RM12		nsp	00MNN05472610	CHIP RES.	4.7K OHM +- 5% 1/16W
PF16	RM13		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PF16	RM14		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
					HEADPHONE PWB PH16 (00MWG35AK206-)	
PH16	C903		00MEY47601620	00MEY47601620	ELECT CAP.	47UF/ 16V
PH16	C904		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PH16	C905		nsp	00MOA476025R0	ELECT. CAP.	ROA-25V 470M -G3# - T2
PH16	C923		00MEY47601620	00MEY47601620	ELECT CAP.	47UF/ 16V
PH16	C924		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PH16	C925		nsp	00MOA476025R0	ELECT. CAP.	ROA-25V 470M -G3# - T2
PH16	C931		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PH16	C932		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PH16	C950		00MEY10601620	00MEY10601620	ELECT CAP.	10UF/ 16V
PH16	C951		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PH16	C952		nsp	00MDK96221300	CER. CAP.	220PF (GR39)
PH16	C971		00MEY10601620	00MEY10601620	ELECT CAP.	10UF/ 16V
PH16	C972		nsp	00MDK96221300	CER. CAP.	220PF (GR39)
PH16	J903		00MYJ01005190	00MYJ01005190	JACK	YKB21-5834N (GRY/GLD) HEADPHONE JACK
PH16	L901		00MFC90020100	00MFC90020100	FERRITE CORE	FB M J2125HM330-T
PH16	L902		00MFC90020100	00MFC90020100	FERRITE CORE	FB M J2125HM330-T
PH16	Q951		00MHX115862A0	00MHX115862A0	CHIP TRS.	2SA1586 (O Y)
PH16	Q952		00MHX341162B0	00MHX341162B0	CHIP TRS.	2SC4116
PH16	Q953		00MHX341162B0	00MHX341162B0	CHIP TRS.	2SC4116
PH16	Q954		00MHX115862A0	00MHX115862A0	CHIP TRS.	2SA1586 (O Y)
PH16	Q971		00MHX115862A0	00MHX115862A0	CHIP TRS.	2SA1586 (O Y)
PH16	Q972		00MHX341162B0	00MHX341162B0	CHIP TRS.	2SC4116
PH16	Q973		00MHX341162B0	00MHX341162B0	CHIP TRS.	2SC4116
PH16	Q974		00MHX115862A0	00MHX115862A0	CHIP TRS.	2SA1586 (O Y)
PH16	R910		nsp	00MNN05473610	CHIP RES.	47K OHM +- 5% 1/16W
PH16	R930		nsp	00MNN05473610	CHIP RES.	47K OHM +- 5% 1/16W
PH16	R951		00D2115646001	00D2115646001	VAR. RES.	V092Q20FA103 (METAL)
PH16	R952		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PH16	R953		nsp	00MNN05562610	CHIP RES.	5.6K OHM +- 5% 1/16W
PH16	R954		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PH16	R955		nsp	00MNN05562610	CHIP RES.	5.6K OHM +- 5% 1/16W
PH16	R956		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PH16	R957		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PH16	R958		nsp	00MNN05104610	CHIP RES.	100K OHM +- 5% 1/16W
PH16	R959		nsp	00MNN05104610	CHIP RES.	100K OHM +- 5% 1/16W
PH16	R971		nsp	00MNN05471610	CHIP RES.	470 OHM +- 5% 1/16W
PH16	R972		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PH16	R973		nsp	00MNN05562610	CHIP RES.	5.6K OHM +- 5% 1/16W

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PH16	R974		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PH16	R975		nsp	00MNN05562610	CHIP RES.	5.6K OHM +- 5% 1/16W
PH16	R976		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PH16	R977		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PH16	R981		nsp	00MNN05471610	CHIP RES.	470 OHM +- 5% 1/16W
					POWER/AUDIO PWB PP16 (00MWA35AK101-)	
PP16	C551		nsp	00MOA107010R0	ELECT. CAP.	ROA-10V 101M - G3#PE - T2 (100UF 10V)
PP16	C554		nsp	00MOA227016R0	ELECT. CAP.	ROA-16V 221M - H4#PE - T2 (220UF 16V)
PP16	C556		nsp	00MOA107010R0	ELECT. CAP.	ROA-10V 101M - G3#PE - T2 (100UF 10V)
PP16	C559		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	C560		nsp	00MOA33505020	ELECT. CAP.	3.3UF M 50V RA-2
PP16	C601		00MOF55561570	00MOF55561570	FILM CAP.	DTG 560PF 100V
PP16	C602		00MOF55821570	00MOF55821570	FILM CAP.	DTG 820PF 100VDC
PP16	C603		00MOF55821570	00MOF55821570	FILM CAP.	DTG 820PF 100VDC
PP16	C604		00MOF55181560	00MOF55181560	FILM CAP.	DAMG 180PF 630VDC
PP16	C605		00MOF55181560	00MOF55181560	FILM CAP.	DAMG 180PF 630VDC
PP16	C608		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	C609		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	C610		nsp	00MOA477016R0	ELECT. CAP.	ROA-16V 471M - I5#PE - S13 (470UF 16V)
PP16	C611		nsp	00MOA477016R0	ELECT. CAP.	ROA-16V 471M - I5#PE - S13 (470UF 16V)
PP16	C651		00MOF55561570	00MOF55561570	FILM CAP.	DTG 560PF 100V
PP16	C652		00MOF55821570	00MOF55821570	FILM CAP.	DTG 820PF 100VDC
PP16	C653		00MOF55821570	00MOF55821570	FILM CAP.	DTG 820PF 100VDC
PP16	C654		00MOF55181560	00MOF55181560	FILM CAP.	DAMG 180PF 630VDC
PP16	C655		00MOF55181560	00MOF55181560	FILM CAP.	DAMG 180PF 630VDC
PP16	C658		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	C659		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	C660		nsp	00MOA477016R0	ELECT. CAP.	ROA-16V 471M - I5#PE - S13 (470UF 16V)
PP16	C661		nsp	00MOA477016R0	ELECT. CAP.	ROA-16V 471M - I5#PE - S13 (470UF 16V)
PP16	C801		nsp	00MOA478016Z0	ELECT. CAP.	4700UF 16V RA2
PP16	C802		nsp	00MOA477016Z0	ELECT. CAP.	470UF 16V M RA-2
PP16	C805		nsp	00MOA477016Z0	ELECT. CAP.	470UF 16V M RA-2
PP16	C811		00MOB10803530	00MOB10803530	ELECT. CAP.	1000UF 35V SPECIAL (LF)
PP16	C812		nsp	00MOA107025R0	ELECT. CAP.	ROA-25V 101M - H4#PE - T2 (100UF 25V)
PP16	C813		nsp	00MOA477016Z0	ELECT. CAP.	ROS-16V 471M - I6#PE - S13 (470UF 16V)
PP16	▲C830		00MOA688016Z0	00MOA688016Z0	ELECT. CAP.	! 6800 UF 16V RA2 TYPE
PP16	▲C831		00MOA688016Z0	00MOA688016Z0	ELECT. CAP.	! 6800 UF 16V RA2 TYPE
PP16	C832		nsp	00MOA227025Z0	ELECT. CAP.	220 UF M 25V RA-2
PP16	C833		nsp	00MOA477016Z0	ELECT. CAP.	470UF 16V M RA-2
PP16	C834		nsp	00MOA107016Z0	ELECT. CAP.	100 UF M 16V RA-2
PP16	C835		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	C836		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	▲C851		00MOB47803580	00MOB47803580	ELECT. CAP.	! 4700U 35V(LAO)(LF)-BLOCK A0410-104
PP16	▲C852		00MOB47803580	00MOB47803580	ELECT. CAP.	! 4700U 35V(LAO)(LF)-BLOCK A0410-104
PP16	C853		nsp	00MOA107016R0	ELECT. CAP.	ROA-16V 101M - H3#PE - T2 (100UF 16V)
PP16	C854		nsp	00MOA107016R0	ELECT. CAP.	ROA-16V 101M - H3#PE - T2 (100UF 16V)
PP16	C855		nsp	00MOA477016Z0	ELECT. CAP.	ROS-16V 471M - I6#PE - S13 (470UF 16V)
PP16	C856		nsp	00MOA477016Z0	ELECT. CAP.	ROS-16V 471M - I6#PE - S13 (470UF 16V)
PP16	C902		nsp	00MOA476025Z0	ELECT. CAP.	47 UF M 25V RA-2
PP16	C922		nsp	00MOA476025Z0	ELECT. CAP.	47 UF M 25V RA-2
PP16	CF54		nsp	00MOA107016Z0	ELECT. CAP.	100 UF M 16V RA-2
PP16	▲CN03		00MOA10805020	00MOA10805020	ELECT. CAP.	! ELNA RA2 16X25
PP16	CN05		nsp	00MOA105100Z0	ELECT. CAP.	1UF100V RA-2TYPE
PP16	CN06		nsp	00MOA225050Z0	ELECT. CAP.	2.2 UF M 50V RA-2
PP16	CN07		nsp	00MOA107016Z0	ELECT. CAP.	100 UF M 16V RA-2
PP16	▲CN10		1340100865080	1340100865080	ELECT. CAP.	! RA2-63V221MH5#8-S1
PP16	CN21		nsp	00MOA225050Z0	ELECT. CAP.	2.2 UF M 50V RA-2
PP16	CT09		nsp	00MOA227016Z0	ELECT. CAP.	ROS-16V 221M - H5#PE - T2 (220UF 16V)
PP16	CT12		nsp	00MOA227016Z0	ELECT. CAP.	220 UF M 16V RA-2
PP16	D602		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D603		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D604		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D605		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D607		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D608		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D609		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D610		nsp	00MHD20002000	DIODE	1SS133 T-77

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P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PP16	D652		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D653		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D654		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D655		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D657		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D658		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D659		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D660		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	▲D801		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D802		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D803		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D804		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D805		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D806		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D807		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D808		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	D810		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D811		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D812		00MHI10115210	00MHI10115210	L.E.D.	SLR-342VRTB7 RED
PP16	▲D821		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲D822		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲D823		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲D824		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲D831		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲D833		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲D851		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D852		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D853		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	▲D854		00MHD20003710	00MHD20003710	DIODE	! SCHOTTKY 1S100 1A 100V
PP16	D855		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D856		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D857		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D858		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	D861		00MHD30021010	00MHD30021010	ZENER DIODE	HZ6A3LTD
PP16	D862		00MHD30021010	00MHD30021010	ZENER DIODE	HZ6A3LTD
PP16	DF51		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	DN03		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	▲DN04		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲DN05		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲DN06		00MHD20002710	00MHD20002710	DIODE	! 1D3 1A/200V
PP16	▲DN07		00MHD31001000	00MHD31001000	ZENER DIODE	! 04AZ10 TPA7/MTZJ10C
PP16	▲DN08		00MHD20002000	00MHD20002000	DIODE	! 1SS133 T-77
PP16	DN10		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	▲DN11		00MHD32401000	00MHD32401000	ZENER DIODE	! 24V ZENER EQUIVALENT
PP16	▲DN12		00MHD20002000	00MHD20002000	DIODE	! 1SS133 T-77
PP16	DN21		nsp	00MHD20002000	DIODE	1SS133 T-77
PP16	▲F811		0520100110080	0520100110080	FUSE	# 0218001.MXP T1A L 250V
PP16	▲F831		00MFS20125200	00MFS20125200	FUSE	# T1.25A 250V VDE SWMKO
PP16	▲F832		00MFS20125200	00MFS20125200	FUSE	# T1.25A 250V VDE SWMKO
PP16	▲F851		0520100110080	0520100110080	FUSE	# 0218001.MXP T1A L 250V
PP16	▲F852		0520100110080	0520100110080	FUSE	# 0218001.MXP T1A L 250V
PP16	▲FH01		0520100130040	0520100130040	FUSE	# 021801.6MXP T1.6A L 250V
PP16	▲GH01		133750061200S	133750061200S	FILM CAP.	#PHE840MA5100MA01R05
PP16	J501		00MYP10004500	00MYP10004500	PLUG	10PL-FJ(10P PLUG FJ-L TYPE)
PP16	J502		00MYP10004500	00MYP10004500	PLUG	10PL-FJ(10P PLUG FJ-L TYPE)
PP16	J503		00MYP10004500	00MYP10004500	PLUG	10PL-FJ(10P PLUG FJ-L TYPE)
PP16	JF51		00MYT02020890	00MYT02020890	TERMINAL	YKC21-3046V 2P RCA PIN JACK
PP16	JT01		00MYT02010790	00MYT02010790	TERMINAL	YKC21-3394V 14X14 RA 1L1P BLK AU FLM-GND
PP16	JT02		00D2690230000	00D2690230000	OPT. CONN.	GP1FAV31TK0F
PP16	JT03		00D2690231009	00D2690231009	OPT. CONN.	GP1FAV31RK0F
PP16	L101		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	L103		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	LF51		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	LF52		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	LF53		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	LN21		00MLY20120660	00MLY20120660	RELAY	NA-12W-K-2AG 12V RELAY
PP16	LT01		00MTP41042030	00MTP41042030	TRANSF.	PULSE TRNSF.(TPS247MN-0386AN)

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P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PP16	LT04		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	LT05		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	LT06		00MFC90050130	00MFC90050130	FERRITE CORE	BL02RN2-R62T2 FERRITE BEAD
PP16	Q551		00MHC10020880	00MHC10020880	IC	CS4398-CZZR/D
PP16	Q601		00MHF203691B0	00MHF203691B0	F.E.T.	2SK369 BL VGDS-40V PD0.4W
PP16	Q602		00MHF203691B0	00MHF203691B0	F.E.T.	2SK369 BL VGDS-40V PD0.4W
PP16	Q603		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q604		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q605		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q606		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q607		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q608		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q609		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q610		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q611		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q612		00MHT327052A0	00MHT327052A0	TRS.	2SC2705 O OR Y
PP16	Q613		00MHT111452A0	00MHT111452A0	TRS.	2SA1145 O OR Y
PP16	Q651		00MHF203691B0	00MHF203691B0	F.E.T.	2SK369 BL VGDS-40V PD0.4W
PP16	Q652		00MHF203691B0	00MHF203691B0	F.E.T.	2SK369 BL VGDS-40V PD0.4W
PP16	Q653		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q654		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q655		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q656		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q657		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q658		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q659		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q660		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q661		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q662		00MHT327052A0	00MHT327052A0	TRS.	2SC2705 O OR Y
PP16	Q663		00MHT111452A0	00MHT111452A0	TRS.	2SA1145 O OR Y
PP16	▲Q801		00MHC3890509F	00MHC3890509F	IC	! NJM7805FA +5V
PP16	Q803		00MHC36J3321F	00MHC36J3321F	IC	BA033T +3.3V 1A TYPE
PP16	▲Q811		00MHT41415100	00MHT41415100	TRS.	! TRANSISTOR 2SD1415
PP16	Q812		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q813		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q814		00MHT328782A0	00MHT328782A0	TRS.	2SC2878 A OR B RANK
PP16	Q816		00MHC36J3321F	00MHC36J3321F	IC	BA033T +3.3V 1A TYPE
PP16	▲Q831		00MHT21020100	00MHT21020100	TRS.	! 2SB1020
PP16	Q832		00MHT30001000	00MHT30001000	TRS.	C2458 C1740S C3199 ETC.
PP16	▲Q833		00MHC3890809F	00MHC3890809F	IC	! +8V 1A REGULATOR NJM7808FA
PP16	▲Q834		00MHC3891209F	00MHC3891209F	IC	! NJM7812FA +12V
PP16	▲Q851		00MHT41415100	00MHT41415100	TRS.	! TRANSISTOR 2SD1415
PP16	▲Q852		00MHT21020100	00MHT21020100	TRS.	! 2SB1020
PP16	Q853		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q854		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q855		00MHT109702A0	00MHT109702A0	TRS.	2SA970 (GR) OR (BL)
PP16	Q856		00MHT322402A0	00MHT322402A0	TRS.	2SC2240 GR OR BL
PP16	Q901		00MHT110482B0	00MHT110482B0	TRS.	2SA1048 Y OR GR
PP16	Q902		00MHT324582B0	00MHT324582B0	TRS.	2SC2458 Y OR GR
PP16	Q903		00MHT324582B0	00MHT324582B0	TRS.	2SC2458 Y OR GR
PP16	Q904		00MHT110482B0	00MHT110482B0	TRS.	2SA1048 Y OR GR
PP16	Q921		00MHT110482B0	00MHT110482B0	TRS.	2SA1048 Y OR GR
PP16	Q922		00MHT324582B0	00MHT324582B0	TRS.	2SC2458 Y OR GR
PP16	Q923		00MHT324582B0	00MHT324582B0	TRS.	2SC2458 Y OR GR
PP16	Q924		00MHT110482B0	00MHT110482B0	TRS.	2SA1048 Y OR GR
PP16	Q925		00MHT328782A0	00MHT328782A0	TRS.	2SC2878 A OR B RANK
PP16	Q926		00MHT328782A0	00MHT328782A0	TRS.	2SC2878 A OR B RANK
PP16	QF51		00MHT30001000	00MHT30001000	TRS.	C2458 C1740S C3199 ETC.
PP16	QF52		00MHT10001000	00MHT10001000	TRS.	A1048 A933S A1267 ETC.
PP16	QN01		00MHT30001000	00MHT30001000	TRS.	C2458 C1740S C3199 ETC.
PP16	QN02		00MHT30001000	00MHT30001000	TRS.	C2458 C1740S C3199 ETC.
PP16	QN03		00MHT30001000	00MHT30001000	TRS.	C2458 C1740S C3199 ETC.
PP16	QN04		00MBA20004000	00MBA20004000	TRS.	DTC114TS/UN4215 10K
PP16	▲QN05		00MHT41415100	00MHT41415100	TRS.	! TRANSISTOR 2SD1415
PP16	QN06		00MBA20002000	00MBA20002000	TRS.	DTC144ES/UN4213 47K 47K
PP16	QN07		00MHT10001000	00MHT10001000	TRS.	A1048 A933S A1267 ETC.
PP16	QN08		00MBA20004000	00MBA20004000	TRS.	DTC114TS/UN4215 10K

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P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PP16	QN09		00MHT30001000	00MHT30001000	TRS.	C2458 C1740S C3199 ETC.
PP16	QN10		00MHT10001000	00MHT10001000	TRS.	A1048 A933S A1267 ETC.
PP16	▲QN11		00MHT322402A0	00MHT322402A0	TRS.	! 2SC2240 GR OR BL
PP16	QT01		00MHC700400U0	00MHC700400U0	IC	MC74HCU04AN
PP16	R555		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R558		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R559		nsp	00MGD05100160	RES.	10 OHM +- 5% 1/6W
PP16	R601		nsp	00MGD05182160	RES.	1.8K OHM +- 5% 1/6W
PP16	R602		nsp	00MGD05182160	RES.	1.8K OHM +- 5% 1/6W
PP16	R609		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R610		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R611		nsp	00MGD05121160	RES.	120 OHM +- 5% 1/6W
PP16	R612		nsp	00MGD05121160	RES.	120 OHM +- 5% 1/6W
PP16	R613		nsp	00MGD05680160	RES.	68 OHM +- 5% 1/6W
PP16	R614		nsp	00MGD05561160	RES.	560 OHM +- 5% 1/6W
PP16	R615		nsp	00MGD05333160	RES.	33K OHM +- 5% 1/6W
PP16	R617		nsp	00MGD05561160	RES.	560 OHM +- 5% 1/6W
PP16	R618		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R619		nsp	00MGD05473160	RES.	47K OHM +- 5% 1/6W
PP16	R620		nsp	00MGD05271160	RES.	270 OHM +- 5% 1/6W
PP16	R621		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R622		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R623		nsp	00MGD05271160	RES.	270 OHM +- 5% 1/6W
PP16	R624		nsp	00MGD05100160	RES.	10 OHM +- 5% 1/6W
PP16	R625		nsp	00MGD05100160	RES.	10 OHM +- 5% 1/6W
PP16	R626		nsp	00MGD05104160	RES.	100K OHM +- 5% 1/6W
PP16	R627		nsp	00MGD05470160	RES.	47 OHM +- 5% 1/6W
PP16	R651		nsp	00MGD05182160	RES.	1.8K OHM +- 5% 1/6W
PP16	R652		nsp	00MGD05182160	RES.	1.8K OHM +- 5% 1/6W
PP16	R659		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R660		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R661		nsp	00MGD05121160	RES.	120 OHM +- 5% 1/6W
PP16	R662		nsp	00MGD05121160	RES.	120 OHM +- 5% 1/6W
PP16	R663		nsp	00MGD05680160	RES.	68 OHM +- 5% 1/6W
PP16	R664		nsp	00MGD05561160	RES.	560 OHM +- 5% 1/6W
PP16	R665		nsp	00MGD05333160	RES.	33K OHM +- 5% 1/6W
PP16	R667		nsp	00MGD05561160	RES.	560 OHM +- 5% 1/6W
PP16	R668		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R669		nsp	00MGD05473160	RES.	47K OHM +- 5% 1/6W
PP16	R670		nsp	00MGD05271160	RES.	270 OHM +- 5% 1/6W
PP16	R671		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R672		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R673		nsp	00MGD05271160	RES.	270 OHM +- 5% 1/6W
PP16	R674		nsp	00MGD05100160	RES.	10 OHM +- 5% 1/6W
PP16	R675		nsp	00MGD05100160	RES.	10 OHM +- 5% 1/6W
PP16	R676		nsp	00MGD05104160	RES.	100K OHM +- 5% 1/6W
PP16	R677		nsp	00MGD05470160	RES.	47 OHM +- 5% 1/6W
PP16	R811		nsp	00MGD05181160	RES.	180 OHM +- 5% 1/6W
PP16	R812		nsp	00MGD05104160	RES.	100K OHM +- 5% 1/6W
PP16	R813		nsp	00MGD05680160	RES.	68 OHM +- 5% 1/6W
PP16	R814		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R815		nsp	00MGD05272160	RES.	2.7K OHM +- 5% 1/6W
PP16	R816		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R817		nsp	00MGD05183160	RES.	18K OHM +- 5% 1/6W
PP16	R818		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	R819		nsp	00MGD05822160	RES.	8.2K OHM +- 5% 1/6W
PP16	R820		00MRA04720780	00MRA04720780	TRIM. RES.	4.7KOHM KVSF637TC472
PP16	R822		nsp	00MGD05563160	RES.	56K OHM +- 5% 1/6W
PP16	R831		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	R832		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	R851		nsp	00MGD05181160	RES.	180 OHM +- 5% 1/6W
PP16	R852		nsp	00MGD05181160	RES.	180 OHM +- 5% 1/6W
PP16	R853		nsp	00MGD05104160	RES.	100K OHM +- 5% 1/6W
PP16	R854		nsp	00MGD05104160	RES.	100K OHM +- 5% 1/6W
PP16	R855		nsp	00MGD05680160	RES.	68 OHM +- 5% 1/6W
PP16	R856		nsp	00MGD05680160	RES.	68 OHM +- 5% 1/6W
PP16	R857		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W

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P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PP16	R858		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R859		nsp	00MGD05272160	RES.	2.7K OHM +- 5% 1/6W
PP16	R860		nsp	00MGD05272160	RES.	2.7K OHM +- 5% 1/6W
PP16	R861		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R862		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	R901		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R902		nsp	00MGD05682160	RES.	6.8K OHM +- 5% 1/6W
PP16	R903		nsp	00MGD05682160	RES.	6.8K OHM +- 5% 1/6W
PP16	R904		nsp	00MGD05560160	RES.	56 OHM +- 5% 1/6W
PP16	R905		nsp	00MGD05560160	RES.	56 OHM +- 5% 1/6W
PP16	R906		nsp	00MGD05330160	RES.	33 OHM +- 5% 1/6W
PP16	R907		nsp	00MGD05330160	RES.	33 OHM +- 5% 1/6W
PP16	R908		nsp	00MGD05271160	RES.	270 OHM +- 5% 1/6W
PP16	R909		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	R921		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	R922		nsp	00MGD05682160	RES.	6.8K OHM +- 5% 1/6W
PP16	R923		nsp	00MGD05682160	RES.	6.8K OHM +- 5% 1/6W
PP16	R924		nsp	00MGD05560160	RES.	56 OHM +- 5% 1/6W
PP16	R925		nsp	00MGD05560160	RES.	56 OHM +- 5% 1/6W
PP16	R926		nsp	00MGD05330160	RES.	33 OHM +- 5% 1/6W
PP16	R927		nsp	00MGD05330160	RES.	33 OHM +- 5% 1/6W
PP16	R928		nsp	00MGD05271160	RES.	270 OHM +- 5% 1/6W
PP16	R929		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RF51		nsp	00MGD05470160	RES.	47 OHM +- 5% 1/6W
PP16	RF53		nsp	00MGD05473160	RES.	47K OHM +- 5% 1/6W
PP16	RF54		nsp	00MGD05183160	RES.	18K OHM +- 5% 1/6W
PP16	RF55		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RF56		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RF58		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	RN01		nsp	00MGD05122160	RES.	1.2K OHM +- 5% 1/6W
PP16	RN02		nsp	00MGD05393160	RES.	39K OHM +- 5% 1/6W
PP16	RN03		nsp	00MGD05225160	RES.	2.2M OHM +- 5% 1/6W
PP16	RN04		nsp	00MGD05473160	RES.	47K OHM +- 5% 1/6W
PP16	RN05		nsp	00MGD05103160	RES.	10K OHM +- 5% 1/6W
PP16	RN06		nsp	00MGD05103160	RES.	10K OHM +- 5% 1/6W
PP16	RN08		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RN10		nsp	00MGD05563160	RES.	56K OHM +- 5% 1/6W
PP16	RN11		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RN12		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RN13		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RN14		nsp	00MGD05332160	RES.	3.3K OHM +- 5% 1/6W
PP16	RN15		nsp	00MGD05224160	RES.	220K OHM +- 5% 1/6W
PP16	RN17		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RN18		nsp	00MGD05224160	RES.	220K OHM +- 5% 1/6W
PP16	RN19		nsp	00MGD05472160	RES.	4.7K OHM +- 5% 1/6W
PP16	RN21		nsp	00MGD05473160	RES.	47K OHM +- 5% 1/6W
PP16	RT01		nsp	00MGD05122160	RES.	1.2K OHM +- 5% 1/6W
PP16	RT02		nsp	00MGD05182160	RES.	1.8K OHM +- 5% 1/6W
PP16	RT03		nsp	00MGD05220160	RES.	22 OHM +- 5% 1/6W
PP16	RT04		nsp	00MGD05330160	RES.	33 OHM +- 5% 1/6W
PP16	RT05		nsp	00MGD05750160	RES.	75 OHM +- 5% 1/6W
PP16	RT07		nsp	00MGD05391160	RES.	390 OHM +- 5% 1/6W
PP16	RT08		nsp	00MGD05101160	RES.	100 OHM +- 5% 1/6W
PP16	RT09		nsp	00MGD05102160	RES.	1K OHM +- 5% 1/6W
PP16	SF51		00MSS02021620	00MSS02021620	SLIDE SW	SSSU121700
PP16	▲SH01		665010008002D	665010008002D	PUSH SW	I POWER SWITCH (TV-5)
					MPU/DIR PWB PU16 (00MWG35AK204-)	
PU16	C401		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C402		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C403		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C404		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C405		00MEY10700620	00MEY10700620	ELECT CAP.	100UF/6.3V
PU16	C406		00MEY10700620	00MEY10700620	ELECT CAP.	100UF/6.3V
PU16	C501		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C503		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C504		00MEY10700620	00MEY10700620	ELECT CAP.	100UF/6.3V
PU16	C505		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36

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P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PU16	C506		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C508		nsp	00MDK96104300	CER. CAP.	C1608X7R1H104K
PU16	C509		nsp	00MDK96223200	CER. CAP.	0.022 UF +- 10 % XTR 16V
PU16	C510		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C512		00MEY47600620	00MEY47600620	ELECT CAP.	47UF/6.3V
PU16	C513		nsp	00MDD91060300	CER. CAP.	6 PF +- 0.5 PF CH 50V GR39
PU16	C514		nsp	00MDD91060300	CER. CAP.	6 PF +- 0.5 PF CH 50V GR39
PU16	C516		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C517		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C518		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C519		00MEY10700620	00MEY10700620	ELECT CAP.	100UF/6.3V
PU16	C520		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C522		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C523		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	C524		00MEY10700620	00MEY10700620	ELECT CAP.	100UF/6.3V
PU16	C911		nsp	00MDD95101300	CER. CAP.	100 PF +- 5 % CG 50V GR39
PU16	C912		nsp	00MDD95101300	CER. CAP.	100 PF +- 5 % CG 50V GR39
PU16	C913		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PU16	C914		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF01		nsp	00MDK98105200	CER. CAP.	1UF 10V F
PU16	CF02		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF03		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF04		00MEY10700620	00MEY10700620	ELECT CAP.	100UF/6.3V
PU16	CF05		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF06		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF07		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF08		00MEY47600620	00MEY47600620	ELECT CAP.	47UF/6.3V
PU16	CF09		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF10		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF11		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF12		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	CF13		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PU16	CF25		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PU16	J401		00MYJ10005000	00MYJ10005000	JACK	10R-FJ(10P RECEPTACLE)
PU16	J402		00MYJ10005000	00MYJ10005000	JACK	10R-FJ(10P RECEPTACLE)
PU16	J403		00MYJ10005000	00MYJ10005000	JACK	10R-FJ(10P RECEPTACLE)
PU16	L501		00MFC90020220	00MFC90020220	FERRITE CORE	BLM18AG121SN1D
PU16	L502		00MFC90020220	00MFC90020220	FERRITE CORE	BLM18AG121SN1D
PU16	L503		00MFC90020100	00MFC90020100	FERRITE CORE	FB M J2125HM330-T
PU16	L504		00MFC90020100	00MFC90020100	FERRITE CORE	FB M J2125HM330-T
PU16	L903		00MFC90020110	00MFC90020110	FERRITE CORE	BLM18BD601SN1D
PU16	L904		00MFC90020110	00MFC90020110	FERRITE CORE	BLM18BD601SN1D
PU16	L905		00MFC90020110	00MFC90020110	FERRITE CORE	BLM18BD601SN1D
PU16	L906		00D2350147909	00D2350147909	EMI FILTER	E.FIL(BLM21PG221SN1)+2125
PU16	L907		00D2350147909	00D2350147909	EMI FILTER	E.FIL(BLM21PG221SN1)+2125
PU16	L908		00D2350147909	00D2350147909	EMI FILTER	E.FIL(BLM21PG221SN1)+2125
PU16	Q401		236710030602S	236710030602S	IC	EPM3032ATC44-10N
PU16	Q501		00D2623449004	00D2623449004	IC	LC89057W-VF4A
PU16	Q504		00MHC96303320	00MHC96303320	IC	PQ1U331M2ZPH 3.3V 300MA
PU16	QF01		243710020603M	243710020603M	U-PRO	R5F212AASNFP FOR SA-15
PU16	QF02		00D2623388903	00D2623388903	IC	AT24C04AN-10SU-1.8-SL383
PU16	QF03		00MHC10229210	00MHC10229210	IC	BD4727G 2.7V RESET IC
PU16	QF04		00MHC007505K0	00MHC007505K0	IC	TC74VHCT08AFT EL X4 2INPUT AND
PU16	QF05		00MBA21303000	00MBA21303000	TRS.	DTC124EU RN1303 UMT
PU16	QF06		00MBA21303000	00MBA21303000	TRS.	DTC124EU RN1303 UMT
PU16	R401		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PU16	R404		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PU16	R410		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R411		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R412		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R413		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R416		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	R417		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PU16	R500		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R501		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R502		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R503		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PU16	R504		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R505		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R506		nsp	00MNN05221610	CHIP RES.	220 OHM +- 5% 1/16W
PU16	R507		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PU16	R508		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PU16	R509		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PU16	R510		nsp	00MNN05560610	CHIP RES.	56 OHM +- 5% 1/16W
PU16	R515		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	R516		nsp	00MNN05221610	CHIP RES.	220 OHM +- 5% 1/16W
PU16	R518		nsp	00MNN05105610	CHIP RES.	1M OHM +- 5% 1/16W
PU16	R520		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	R521		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	R522		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	R524		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R525		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PU16	R526		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	R527		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R528		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R529		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R530		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R531		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	R538		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	R541		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	RD60		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF01		nsp	00MNN05334610	CHIP RES.	330K OHM +- 5% 1/16W
PU16	RF02		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF03		nsp	00MNN05220610	CHIP RES.	22 OHM +- 5% 1/16W
PU16	RF04		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF05		nsp	00MNN05472610	CHIP RES.	4.7K OHM +- 5% 1/16W
PU16	RF06		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	RF07		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF08		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF09		nsp	00MNN05472610	CHIP RES.	4.7K OHM +- 5% 1/16W
PU16	RF10		nsp	00MNN05104610	CHIP RES.	100K OHM +- 5% 1/16W
PU16	RF11		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	RF12		nsp	00MNN05472610	CHIP RES.	4.7K OHM +- 5% 1/16W
PU16	RF13		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PU16	RF14		nsp	00MNN05472610	CHIP RES.	4.7K OHM +- 5% 1/16W
PU16	RF16		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF18		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PU16	RF19		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	RF20		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	RF21		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	RF22		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PU16	RF23		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PU16	RF25		nsp	00MNN05472610	CHIP RES.	4.7K OHM +- 5% 1/16W
PU16	RF27		nsp	00MNN05222610	CHIP RES.	2.2K OHM +- 5% 1/16W
PU16	RF28		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PU16	RF29		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PU16	RF30		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PU16	X501		00D3991053901	00D3991053901	X'TAL	FCX-03(24.576MHZ)
PU16	XF01		00MFQ02005070	00MFQ02005070	CER. VIB.	CSTCE20M0V53-R0
					DISPLAY/KEY PWB PY16 (00MWG35AK201-)	
PY16	CY06		nsp	00MDD95101300	CER. CAP.	100 PF +- 5 % CG 50V GR39
PY16	CY07		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY08		nsp	00MDK98474200	CER. CAP.	GRM39F474Z16PT 0.47UF F 16V
PY16	CY09		nsp	00MDK98474200	CER. CAP.	GRM39F474Z16PT 0.47UF F 16V
PY16	CY10		00MEY22505020	00MEY22505020	ELECT CAP.	2.2UF/ 50V
PY16	CY11		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY12		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PY16	CY13		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PY16	CY14		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PY16	CY15		nsp	00MDK96102300	CER. CAP.	1000 PF +- 10 % B 50V GR36
PY16	CY16		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY17		nsp	00MDK98474200	CER. CAP.	GRM39F474Z16PT 0.47UF F 16V
PY16	CY18		nsp	00MDK98474200	CER. CAP.	GRM39F474Z16PT 0.47UF F 16V
PY16	CY19		nsp	00MDK98474200	CER. CAP.	GRM39F474Z16PT 0.47UF F 16V

NOTE : *nsp* PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PY16	CY20		nsp	00MDK98474200	CER. CAP.	GRM39F474Z16PT 0.47UF F 16V
PY16	CY21		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY22		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY24		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY25		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY26		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY16	CY27		00MEY22505020	00MEY22505020	ELECT CAP.	2.2UF/ 50V
PY16	LY42		00MFC90020110	00MFC90020110	FERRITE CORE	BLM18BD601SN1D
PY16	LY43		00MFC90020110	00MFC90020110	FERRITE CORE	BLM18BD601SN1D
PY16	QY11		00MBA20079210	00MBA20079210	TRS.	UMH10N
PY16	QY21		00MHX300012A0	00MHX300012A0	CHIP TRS.	2SC4081 (Q R) 2SC4116 (Y GR)
PY16	QY22		00MBA20035210	00MBA20035210	TRS.	DTC114EU
PY16	QY23		00MHX300012A0	00MHX300012A0	CHIP TRS.	2SC4081 (Q R) 2SC4116 (Y GR)
PY16	QY24		00MHX300012A0	00MHX300012A0	CHIP TRS.	2SC4081 (Q R) 2SC4116 (Y GR)
PY16	QY25		00MHC96303320	00MHC96303320	IC	PQ1U331M2ZPH 3.3V 300MA
PY16	RY13		nsp	00MNN05473610	CHIP RES.	47K OHM +- 5% 1/16W
PY16	RY16		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PY16	RY17		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PY16	RY18		nsp	00MNN05101610	CHIP RES.	100 OHM +- 5% 1/16W
PY16	RY19		nsp	00MNN05331610	CHIP RES.	330 OHM +- 5% 1/16W
PY16	RY20		nsp	00MNN05821610	CHIP RES.	820 OHM +- 5% 1/16W
PY16	RY21		nsp	00MNN05181610	CHIP RES.	180 OHM +- 5% 1/16W
PY16	RY22		nsp	00MNN05182610	CHIP RES.	1.8K OHM +- 5% 1/16W
PY16	RY24		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PY16	RY25		nsp	00MNN05223610	CHIP RES.	22K OHM +- 5% 1/16W
PY16	RY26		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY27		nsp	00MNN05392610	CHIP RES.	3.9K OHM +- 5% 1/16W
PY16	RY28		nsp	00MNN05682610	CHIP RES.	6.8K OHM +- 5% 1/16W
PY16	RY29		nsp	00MNN05000610	CHIP RES.	0 OHM +- 5% 1/16W
PY16	RY30		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY31		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY32		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY33		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY35		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY36		nsp	00MNN05561610	CHIP RES.	560 OHM +- 5% 1/16W
PY16	RY37		nsp	00MNN05681610	CHIP RES.	680 OHM +- 5% 1/16W
PY16	RY38		nsp	00MNN05182610	CHIP RES.	1.8K OHM +- 5% 1/16W
PY16	RY39		nsp	00MNN05102610	CHIP RES.	1K OHM +- 5% 1/16W
PY16	RY40		nsp	00MNN05470610	CHIP RES.	47 OHM +- 5% 1/16W
PY16	RY41		nsp	00MNN05471610	CHIP RES.	470 OHM +- 5% 1/16W
PY16	RY42		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PY16	RY43		nsp	00MNN05391610	CHIP RES.	390 OHM +- 5% 1/16W
PY16	RY44		nsp	00MNN05821610	CHIP RES.	820 OHM +- 5% 1/16W
PY16	SY08		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
PY16	SY09		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
PY16	VY01		173010002000M	173010002000M	DISPLAY	LCD UNIT DP-0009-001-NR-KK
PY16	ZF01		00MHW10004210	00MHW10004210	PHOTO UNIT	RPM6936-V4 (IR SENSOR)
					KEY1 PWB PY26 (00MWG35AK202-)	
PY26	CY01		00MEY10601620	00MEY10601620	ELECT CAP.	10UF/ 16V
PY26	CY02		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY26	CY03		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY26	DY01		263710015209S	263710015209S	L.E.D.	SELT2E10C-S BALK F/G RANK
PY26	LY41		00MFC90020110	00MFC90020110	FERRITE CORE	BLM18BD601SN1D
PY26	QY01		00MHX300012A0	00MHX300012A0	CHIP TRS.	2SC4081 (Q R) 2SC4116 (Y GR)
PY26	RY01		nsp	00MNN05331610	CHIP RES.	330 OHM +- 5% 1/16W
PY26	RY02		nsp	00MNN05681610	CHIP RES.	680 OHM +- 5% 1/16W
PY26	RY03		nsp	00MNN05182610	CHIP RES.	1.8K OHM +- 5% 1/16W
PY26	RY05		nsp	00MNN05222610	CHIP RES.	2.2K OHM +- 5% 1/16W
PY26	RY06		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PY26	RY07		nsp	00MNN05471610	CHIP RES.	470 OHM +- 5% 1/16W
PY26	SY01		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
PY26	SY02		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
PY26	SY03		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
					KEY2 PWB PY36 (00MWG35AK203-)	
PY36	CY05		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY36	DY02		263710015209S	263710015209S	L.E.D.	SELT2E10C-S BALK F/G RANK
PY36	RY09		nsp	00MNN05100610	CHIP RES.	10 OHM +- 5% 1/16W

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

P.W.B. NAME	POS. NO.	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MZ)	PART NAME	DESCRIPTION
PY36	RY10		nsp	00MNN05331610	CHIP RES.	330 OHM +- 5% 1/16W
PY36	RY11		nsp	00MNN05681610	CHIP RES.	680 OHM +- 5% 1/16W
PY36	RY12		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PY36	SY05		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
PY36	SY06		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
PY36	SY07		00MSP01012030	00MSP01012030	PUSH SW	SKHVBF 260GF RED
					LED PWB PY46 (00MWG35AK205-)	
PY46	CY29		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY46	CY30		nsp	00MDK98104200	CER. CAP.	GRM39F104Z16 0.1UF
PY46	DY07		00MHI10107210	00MHI10107210	L.E.D.	SML-010VTT86
PY46	DY08		00MHI10042080	00MHI10042080	L.E.D.	SECT1E01C-S
PY46	RY46		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W
PY46	RY47		nsp	00MNN05103610	CHIP RES.	10K OHM +- 5% 1/16W

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

17. ABOUT REPLACE THE MICROPROCESSOR WITH A NEW ONE

When replaced of the μ -PRO (Microprocessor) or the Flash ROM, confirm contents of the following.

PWB Name	Pos. No.	Description	After replaced	Remark
PU16	QF01	R5F212AASNFP (WITH PROGRAM)	B	

After replaced

- A** : Mask ROM (With software). No need write-in of software to the microprocessor.
- B** : Flash ROM (With software). Usually, no need write-in of software. But, when the software was updated, you should be write-in of the new software to the microprocessor or flash ROM. Please check the software version.
- C** : Empty Flash ROM (Without software). You should be write-in of the software to the microprocessor or flash ROM. Refer to "Update procedure" or "writing procedure", when you should be write-in the software.

マイコン等を交換した場合の対応について

μ -PRO(マイコン)およびFlash ROM等を交換した場合の対応方法を下記の記載します。

PWB Name	Pos. No.	Description	交換時の対応	備考
PU16	QF01	R5F212AASNFP (WITH PROGRAM)	B	

交換時の対応

- A** : Mask ROM (ソフトウェア書き込み済み) 交換時にソフトウェアの書き込みは必要ありません。
- B** : Flash ROM (ソフトウェア書き込み済み) バージョンアップにより交換時にソフトウェアの書き換えが必要な場合があります。バージョンの確認をしてください。
- C** : 空ROM (Flash ROM) 交換時必ずソフトウェアの書き込みが必要になります。Update、書き込み方法を参照してください。