

Service Manual

DV4300 /A1G/C1G/F1N/N1G/S1G
/A1B/N1B/U1B
/N1S

PMD910 /U1B

DVD Player

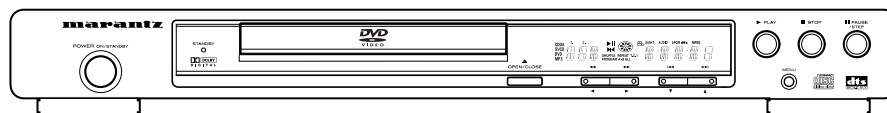


TABLE OF CONTENTS

SECTION	PAGE
1. TECHNICAL SPECIFICATIONS	1
2. CONNECTION FACILITIES	2
3. INFORMATIONS	3
4. SERVICE HINTS AND TOOLS.....	4
5. WARNING AND LASER SAFETY INSTRUCTIONS	5
6. TAKING THE DISC OUT OF EMERGENCY	7
7. SERVICE MODE	9
8. COMPONENT DESCRIPTIONS (RL-A700)	10
9. WIRING DIAGRAM	12
10. SCHEMATIC DIAGRAM	13
11. PARTS LOCATION	29
12. MICROPROCESSOR AND IC DATA	33
13. WAVE FORM CHART	46
14. EXPLODED VIEW AND PARTS LIST	50
15. ELECTRICAL PARTS LIST	52

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®

DV4300 / PMD910

MARANTZ DESIGN AND SERVICE

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

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

ORDERING PARTS :

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

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

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

USA

MARANTZ AMERICA, INC
1100 MAPLEWOOD DRIVE
ITASCA, IL. 60143
USA
PHONE : 630 - 741 - 0300
FAX : 630 - 741 - 0301

EUROPE / TRADING

MARANTZ EUROPE B.V.
P. O. BOX 8744, BUILDING SILVERPOINT
BEEMDSTRAAT 11, 5653 MA EINDHOVEN
THE NETHERLANDS
PHONE : +31 - 40 - 2507844
FAX : +31 - 40 - 2507860

CANADA

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

PROFESSIONAL AMERICAS

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

PROFESSIONAL AUSTRALIA

TECHNICAL AUDIO GROUP PTY, LTD
43-53 Bridge Rd.,
STANMORE NSW 2048
AUSTRALIA
PHONE : +61 - (0)2 - 9519 - 0900
FAX : +61 - (0)2 - 9519 - 0600

PROFESSIONAL HONG KONG

Jolly ProAudio Broadcast Engineering Ltd.
UNIT 2, 10F, WAH HUNG CENTRE,
41 HUNG TO ROAD, KWUN TONG, KLN.,
HONG KONG
PHONE : 852 - 21913660
FAX : 852 - 21913990

AUSTRALIA

QualiFi Pty Ltd,
24 LIONEL ROAD,
MT. WAVERLEY VIC 3149
AUSTRALIA
PHONE : +61 - (0)3 - 9543 - 1522
FAX : +61 - (0)3 - 9543 - 3677

THAILAND

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

SINGAPORE

WO KEE HONG DISTRIBUTION PTE LTD
130 JOO SENG ROAD
#03-02 OLIVINE BUILDING
SINGAPORE 368357
PHONE : +65 6858 5535 / +65 6381 8621
FAX : +65 6858 6078

NEW ZEALAND

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

TAIWAN

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

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
2ND FLOOR BANGUNAN INFINITE CENTRE
LOT 1, JALAN 13/6, 46200 PETALING JAYA
SELANGOR DARUL EHSAN, MALAYSIA
PHONE : +60 - 3 - 7954 8088
FAX : +60 - 3 - 7954 7088

JAPAN *Technical*

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

日本マランツ株式会社

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

KOREA

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

SHOCK, FIRE HAZARD SERVICE TEST :

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

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

Ref. UL Standard No. 1492.

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

1. TECHNICAL SPECIFICATIONS

General

System.....DVD-Video, DVD-R
 Super VCD, Video-CD
 CD and MP3 files

Power requirements

A Version AC 100V - 240 V, 50 / 60 Hz
 C Version AC 100V - 240 V, 50 / 60 Hz
 F Version..... AC 100V - 240 V, 50 / 60 Hz
 N Version AC 100V - 240 V, 50 / 60 Hz
 S Version AC 100V - 240 V, 50 / 60 Hz
 U Version AC 100V - 240 V, 50 / 60 Hz

Power consumption 14 W

Weight 3 kg (6.6 lbs)

Dimensions..... 440 (W) x 54 (H) x 280 (D) mm
 (17 5/16 (W) x 2 2/16 (H) x 11 (D) inch)

Operating temperature +5°C to +35°C

Operating humidity 5% to 85% (no condensation)

S-Video output

Y (luminance) - Output level 1 Vp-p (75 Ω)

C (color) - Output level.....286 mVp-p (75 Ω)

Jacks S-VIDEO jack

Video output

Output level 1 Vp-p (75Ω)

Jacks RCA jack

Component video output (Y, Cb/Pb, Cr/Pr)

Output level..... Y: 1.0 Vp-p (75 Ω)
 Cb/Pb, Cr/Pr: 0.7 Vp-p (75 Ω)

Jacks RCA jack

D1 / D2 video output [/A/C/F/S Version]

Output level..... Y: 1.0 Vp-p (75 Ω)
 Cb/Pb, Cr/Pr: 0.7 Vp-p (75 Ω)

Jacks D terminal

Audio output

Output level

During audio output200 mVrms (1 kHz, ±20 dB)

Number of channels 2

Jacks RCA jack

Audio characteristics

Frequency response 4 Hz to 44 kHz (DVD fs: 96 kHz)

S/N ratio..... 101 dB

Dynamic range 100 dB

Total harmonic distortion 0.003 %

Wow and flutter
 Limit of measurement (±0.001% W. PEAK) or lower

Digital output

Optical digital outputOptical digital jack

Coaxial digital output RCA jack

21-pin connector assignment [/N Version]

AV connector input/output21-pin connector

This connector provides the video and audio signals for connection to a compatible color TV or monitor.

Accessories

Audio/Video cable..... 1

System control cable 1

Remote control unit 1

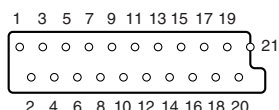
"AAA" size (R03) batteries 2

Operating Instructions 1

Warranty card 1

2. CONNECTION FACILITIES

2.1 Video performance (/N only)



2.1.1 SCART

Pin No. TV (OUT)

Pin 1	Audio R out : 2Vrms
Pin 2	Audio R in : 2Vrms
Pin 3	Audio L out : 2Vrms
Pin 4	GND
Pin 5	GND
Pin 6	Audio L in : 2Vrms
Pin 7	Blue out/C in Blue : 0.7Vpp ±0.1V into 75 Ohm *1 C : 300mVpp ±30 into 75 Ohm *2
Pin 8	function switching out <2V : TV >5/<8 : asp.ratio 16 : 9 DVD/AUX >9.5/<12 : asp.ratio 4 : 3 DVD/AUX
Pin 9	GND
Pin 10	not connected
Pin 11	Green out:0.7Vpp ±0.1V into 75 Ohm *1
Pin 12	not connected
Pin 13	GND
Pin 14	GND
Pin 15	Red/C out Red : 0.7Vpp ±0.1V into 75 Ohm *1 C : 300mVpp ±30 into 75 Ohm *2
Pin 16	fast switching out <0.4V into 75 Ohm=CVBS/S-Video 1</>3 into 75 Ohm=RGB
Pin 17	GND
Pin 18	GND
Pin 19	CVBS/Y out : 1Vpp ±0.1V *1
Pin 20	CVBS/Y in : 1Vpp ±0.1V *1
Pin 21	GND

Pin No. AUX (IN)

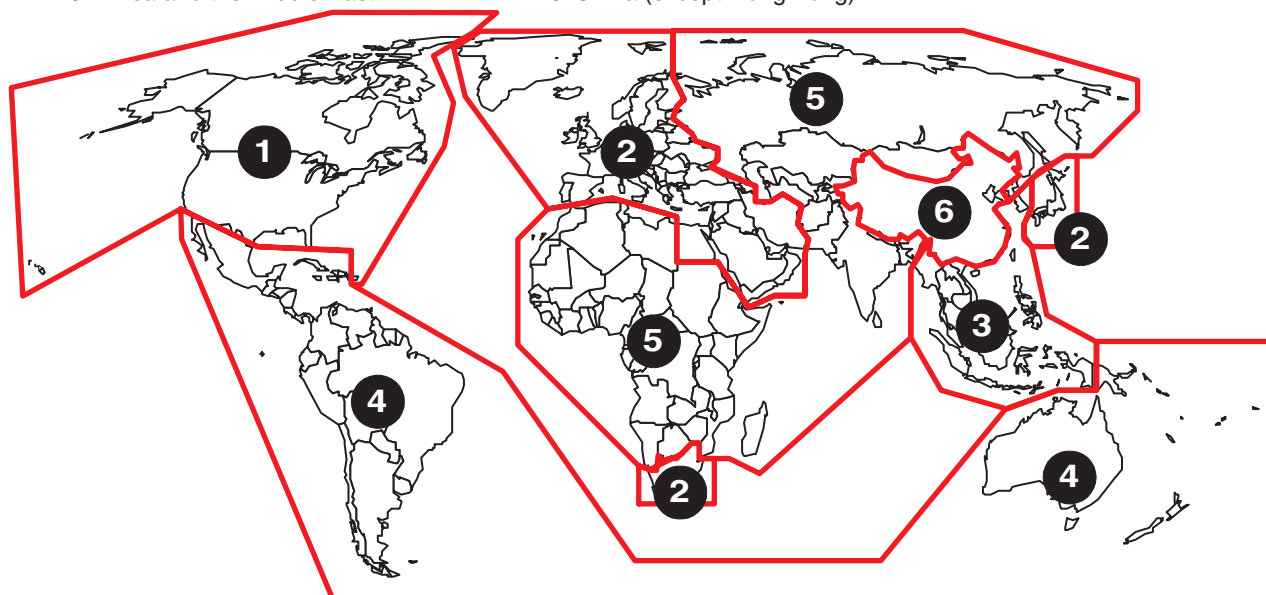
Pin 1	Audio R out : 2Vrms
Pin 2	Audio R in : 2Vrms
Pin 3	Audio L out : 2Vrms
Pin 4	GND
Pin 5	GND
Pin 6	Audio L in : 2Vrms
Pin 7	Blue in/C out Blue : 0.7Vpp ±0.1V into 75 Ohm *1 C : 300mVpp ±30 into 75 Ohm *2
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Pin 14	GND
Pin 15	Red/C in Red : 0.7Vpp ±0.1V into 75 Ohm *1 C : 300mVpp ±30 into 75 Ohm *2
Pin 16	fast switching in <0.4V into 75 Ohm=CVBS/S-Video 1</>3 into 75 Ohm=RGB
Pin 17	GND
Pin 18	GND
Pin 19	CVBS/Y out : 1Vpp ±0.1V *1
Pin 20	CVBS/Y in : 1Vpp ±0.1V *1
Pin 21	GND

*1 : 100% White *2 : Burst Level *3 : color bar(chroma level : 75%)

What are "regional codes"?

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

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



Map of DVD Regions

3. INFORMATIONS

REGION CODE

VERSION	REGION CODE	COUNTRY
/UXX	1	USA/CANADA
/FXX	2	JAPAN
/NXX	2	EUROPE
/CXX	3	KOREA
/SXX	3	SINGAPORE/HONGKONG
/AXX	4	AUSTRALIA

DVD INFORMATION

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

Title:

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

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

Chapter:

A title may also be separated into chapters.

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

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

Subtitles:

DVDs are recorded with up to 32 different subtitle languages. If a disc has more than one subtitle language, you can select the subtitle language that you want to read.

Soundtrack language:









DVDs are recorded with up to 8 different soundtrack languages. If a disc has more than one language, you can select the soundtrack language that you want to listen to.

Multi-angles:

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

THE DISCS THAT THE DV4300 CAN HANDLE

The following discs can be played back with a DV4300

Types of playable discs and their marks	Diameter/ Playable sides	Playback time
	DVD VIDEO	Digital audio Digital video (MPEG 2)
	12 cm (5 in.)/ single-sided	1 layer 2 layer 133 min. 242 min.
	12 cm (5 in.)/ double-sided	1 layer 2 layer 266 min. 484 min.
	DVD VIDEO	Digital audio Digital video (MPEG 2)
	S VIDEO CD	Digital audio (MPEG 1) Digital video (MPEG 2) 40 min.
	12 cm (5 in.)/ single-sided	
	S VIDEO CD single	Digital audio (MPEG 1) Digital video (MPEG 2) 10 min.
	8 cm (3 in.)/ single-sided	
	VIDEO CD	Digital audio Digital video (MPEG 1) Max. 74 minutes
	12 cm (5 in.)/ single-sided	
	VIDEO CD single	Digital audio Digital video (MPEG 1) Max. 20 minutes
	8 cm (3 in.)/ single-sided	
  	CD	Digital audio Max. 74 minutes
	12 cm (5 in.)/ single-sided	
	CD single	Digital audio Max. 20 minutes
	8 cm (3 in.)/ single-sided	

Note:The regional code of the discs must meet to the regional code of the DV4300

The disc format logos shown above are found on disc labels or on disc jackets.

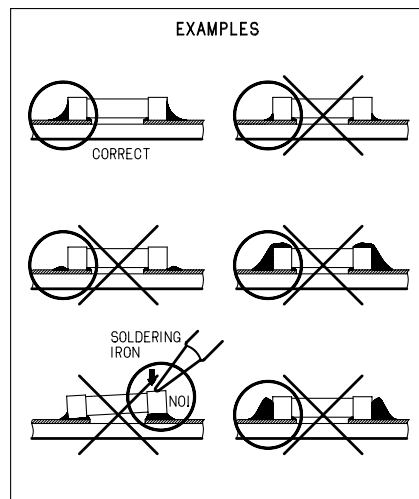
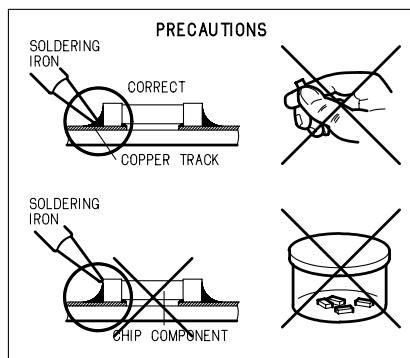
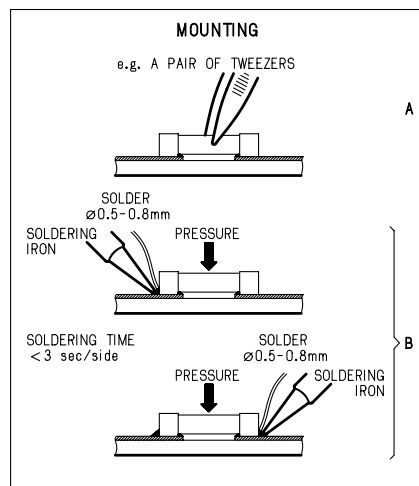
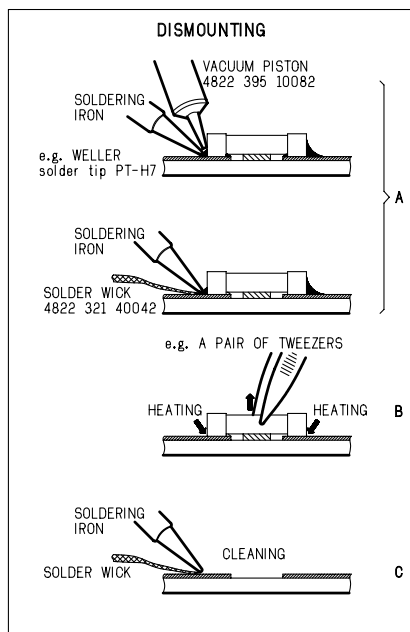
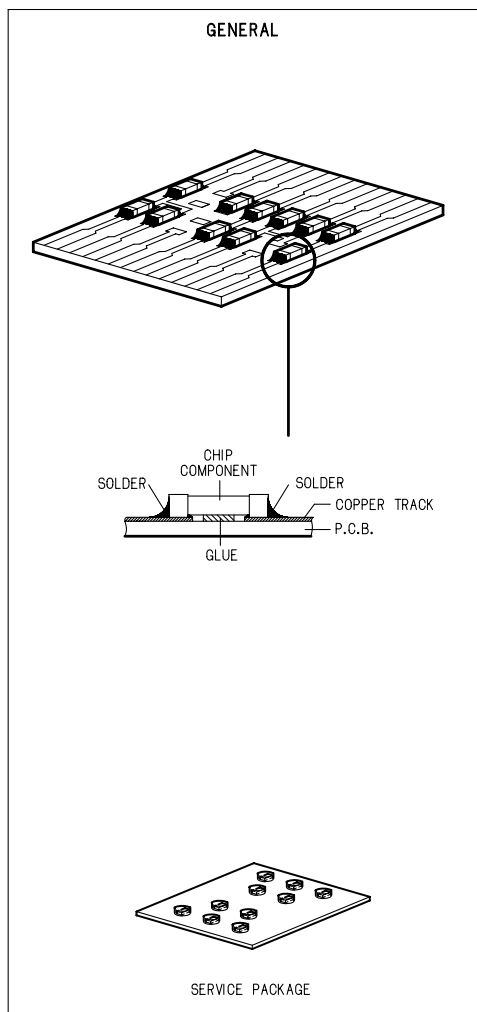
- To prevent malfunction, do not use an 8 cm (3 in.) adaptor (for CDs).
- Discs other than the ones indicated above cannot be played on this unit.
- DVDs that have incompatible region numbers, DVDROM, DVD-RAM, and CD-ROM cannot be played on this unit. The region number of the player can be found on the rear panel.

* Playing recordable CDs

- Note that this unit cannot record onto recordable discs.
 - This unit can play music-use CD-R and CD-RW discs.
- However, depending on the condition of the CD-Recorder and the disc, you may find that not all discs will play successfully. (For example, if the disc is scratched or dirty, or if the player's pickup lens is dirty.)

4. SERVICE HINTS AND TOOLS

2. SERVICE HINTS



3. SERVICE TOOLS

Audio signals disc	4822 397 30184
Disc without errors (SBC444)+	
Disc with DO errors, black spots and fingerprints (SBC444A)	4822 397 30245
Disc (65 min 1kHz) without no pause	4822 397 30155
Max. diameter disc (58.0 mm)	4822 397 60141
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204
DVD test disc (PAL)	4822 397 10131
DVD test disc (NTSC) ALMEDIO	TDV-540

5. 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 bracelet serti 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 longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto 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.

NL

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

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.

I

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



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 return to user/customer.

Ref.UL Standard NO.1492.

NOTE ON SAFETY:

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

"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.

LASER DEVICE UNIT

Type: SemiconductorlaserGaAlAs
Wave length: 650 nm (DVD)
780 nm (VCD/CD)
Output Power: 7 mW (DVD)
10 mW (VCD/CD)
Beam divergence: 60 degree



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 ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
WARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÅR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄT Eeseen
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

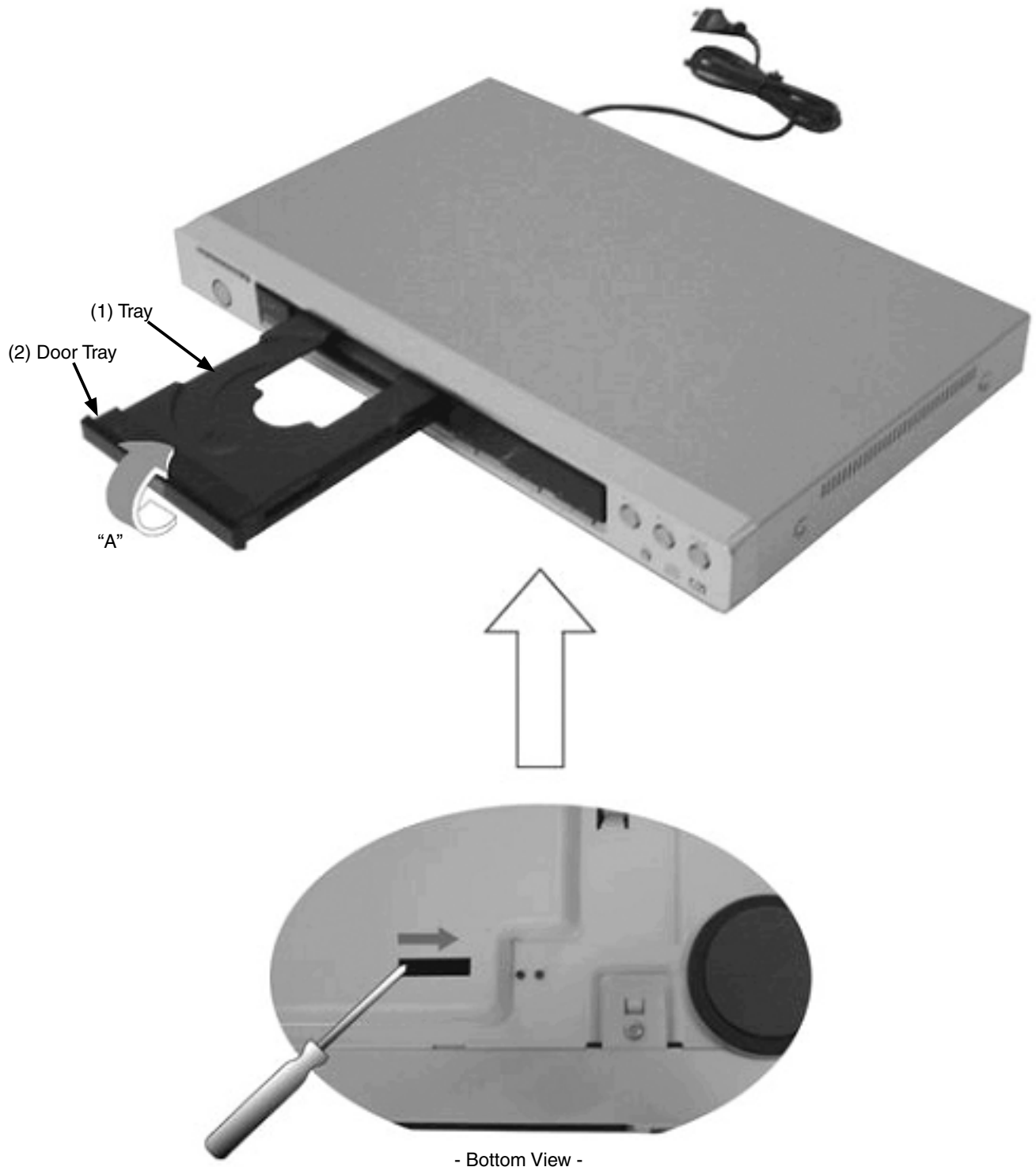
6. TAKING THE DISC OUT OF EMERGENCY

Door Tray Removal

- 1) Supply Power and open Tray (1).
- 2) Disassemble the Door Tray (2) in direction off arrow "A".
- 3) Close Tray (1) and power off.

Emergency Eject

If Tray doesn't open, insert a sharp point into emergency hole, and then push the tap in the hole in direction of arrow, After then open tray manually



Software update

[Caution] Be sure to connect a TV monitor for the update.

1. Press the **POWER** button to turn on the unit.
2. Open the disc tray and insert the update CD-ROM (Part no. *DV4300xxx).
3. Press the **PLAY** button.
4. The update file name is displayed on the TV screen.
Ex: U202-F1N-ROM
 - If "ROOT" is displayed, the disc is not correct. Insert the correct disc.
5. Software updating will be done automatically. When the updating is finished, "DONE" is displayed on the TV screen. Then the disc tray opens automatically.
Ex: DONE
U202-F1N-ROM
6. Remove the disc from the tray.
7. Press the **POWER** button to turn off the unit.
(It takes a little time to turn off the power.)
8. Press the **POWER** button again to turn on the unit. The disc tray closes automatically.
9. Press the **OPEN/CLOSE** button to open the disc tray.
10. Press the **SET UP** button on the remote controller RC4300DV.
(Confirm that the SET UP menu is displayed on the TV screen.)
11. Press the **SHUFFLE** button on the remote controller.
12. Press the **PAUSE/STEP** button on the remote controller.
13. Press the **NEXT** button on the remote controller.
14. Press the cursor buttons (▲▼) on the remote controller to select the **OTHER** icon on the TV screen. Then select the **DEFAULTS** and the **RESET** icons on the TV screen with the cursor buttons on the remote controller, and then press the **ENT** button on the remote controller.
15. Press the **POWER** button on the unit.

The software has been updated.

- To check the version number of the software, see the chapter 7 SERVICE MODE.

ソフトウェアのアップデート方法

【注意】必ず、本体とTVを接続して行ってください。

1. **POWER** ボタンを押し本体の電源を入れます。
2. ディスクトレイをオープンし、アップデート CD-ROM (部品番号 *DV4300xxx) を挿入します。
3. **PLAY** ボタンを押します。
4. TV 画面にアップデートのファイル名が表示されます。
表示例：U202-F1N-ROM
※ "ROOT" と表示された場合は、正しい DISC ではありません、正しい DISC に交換してください。
5. ソフトの書き換えは、自動的に行われます。書き換えが終了すると TV 画面に "DONE" の表示がでます。更にディスクトレイは自動的にオープンします。
表示例：DONE
U202-F1N-ROM
6. ディスクトレイから CD-ROM を取り出します。
7. **POWER** ボタンを押し本体の電源を切ります。
(POWER OFF まで少し時間がかかります。)
8. 再度 **POWER** ボタンを押し、本体の電源を入れます。
(この時ディスクトレイは自動的に閉じます。)
9. **OPEN/CLOSE** ボタンを押し、ディスクトレイをオープンします。
10. リモコン RC4300DV の **SET UP** ボタンを押します。
(SET UP メニューが TV に表示されたことを確認します)
11. リモコンの **SHUFFLE** ボタンを押します。
12. リモコンの **PAUSE/STEP** ボタンを押します。
13. リモコンの **NEXT** ボタンを押します。
14. カーソルボタン (▲▼) を押し、TV 画面上で **OTHER** を選択し、更にカーソルボタンで **設定項目** **リセット** を選択後、リモコンの **ENT** ボタンを押します。
15. 本体の **POWER** ボタンを押し電源を切ります。

以上で、ソフトウェアのアップデートは完了です。

※ ソフトウェアのバージョン確認は、7.SERVICE MODE の項を参照下さい。

7. SERVICE MODE

Connect the DVD player to [TV] and operate by using [Remote Controller RC4300DV]

1. Insert mains cable plug in the outlet and press **POWER** button.
2. Press **SETUP** button
3. Press **STOP** button.
4. Press **PAUSE/STEP** button.
5. Press **MENU/RETURN** button.

The connected TV indicates system information.

Turn off power to quit Service Mode

Example indicated

	0 0 0 0 0 0 0 2	D V 4 3 0 0
C U S T O M I D	N 1 U 2 0 2 - 0 0 0	. R O M
M A I N V E R	0 0 0 0 0 2 0 0	V F D 2
N A V V E R	0 2 0 0 0 8 3 5	
S U B V E R	0 0 0 0 0 0 C 3	A 7 0 0 A C 0 9
P W D	0 0 0 0 0 0 0 0	
C L O C K	0 0 0 0 0 4 7 B	
R U M T I M E	0 0 0 0 0 0 1 E	
N - S E T U P	0 0 0 0 0 0 0 4	
S - S E T U P	0 0 0 0 0 0 0 0	
R E S U L T	0 0 0 0 0 0 0 1	

8. COMPONENT DESCRIPTIONS

DVD ATAPI LOADER (RL-A700)

- D.C. Power Supply

A 4-pin shrouded, keyed male connector is used to provide the D.C. Power.

The pin assignment is described below.

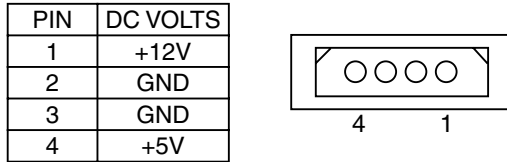
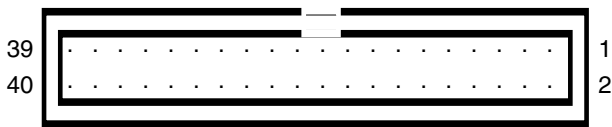


Figure-1 D.C. Power Connector

- Interface Connector

A 39-pin male, unshielded, shrouded, keyed connector are applied.

Please refer to Section 7-2-3 regarding its pin definition.



Interface Connector

- Electrical Characteristics

- Power

- 1-1. Voltage

+5V DC with $\pm 5\%$ tolerance, less than 100mVp-p

Ripple Voltage

+12V DC with $\pm 10\%$ tolerance, less than 150mVp-p

Ripple Voltage

- 1-2. Current

Continuous Reading

+5V DC 500mA (Average)

+12V DC 300mA (Average)

Seeking & Spin up

+5V DC 0.8 A (Maximum)

+12V DC 1.5 A (Maximum)

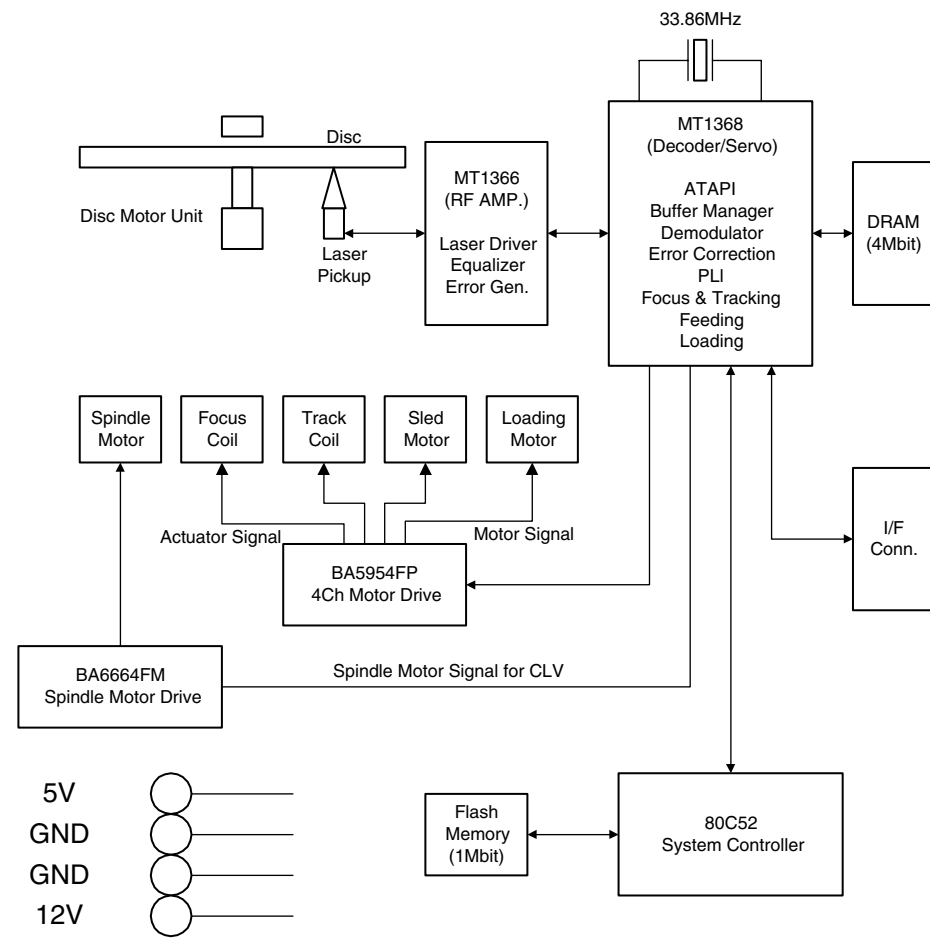
2. Signal Summary

The physical interface consists of single ended TTL compatible receivers.

3. Connector Pin Definition

Signal	Pin	I/O	Description
CS0	37	I	Chip select 0
CS1	38	I	Chip select 1
DA0	35	I	Device address bit 0
DA1	33	I	Device address bit 1
DA2	36	I	Device address bit 2
DASP	39	I/O	Device active or slave (device 1) present
DD0	17	I/O	Data bus bit 0
DD1	15	I/O	Data bus bit 1
DD2	13	I/O	Data bus bit 2
DD3	11	I/O	Data bus bit 3
DD4	9	I/O	Data bus bit 4
DD5	7	I/O	Data bus bit 5
DD6	5	I/O	Data bus bit 6
DD7	3	I/O	Data bus bit 7
DD8	4	I/O	Data bus bit 8
DD9	6	I/O	Data bus bit 9
DD10	8	I/O	Data bus bit 10
DD11	10	I/O	Data bus bit 11
DD12	12	I/O	Data bus bit 12
DD13	14	I/O	Data bus bit 13
DD14	16	I/O	Data bus bit 14
DD15	18	I/O	Data bus bit 15
DIOR	25	I	I/O read
DIOW_	23	I	I/O write
DMARK_	29	I	DMA acknowledge
DMARQ_	21	O	DMA request
INTRQ	31	O	Interrupt request
AOCS16	32	O	I/O device 16-bit
IORDY	27	O	I/O ready
PDIAG_	34	I/O	Passed diagnostics
RESET_	1	I	Reset
CSEL	28		Cable select
KEY PIN	20		Key pin
GND	2,19,22,24,26,30,40		

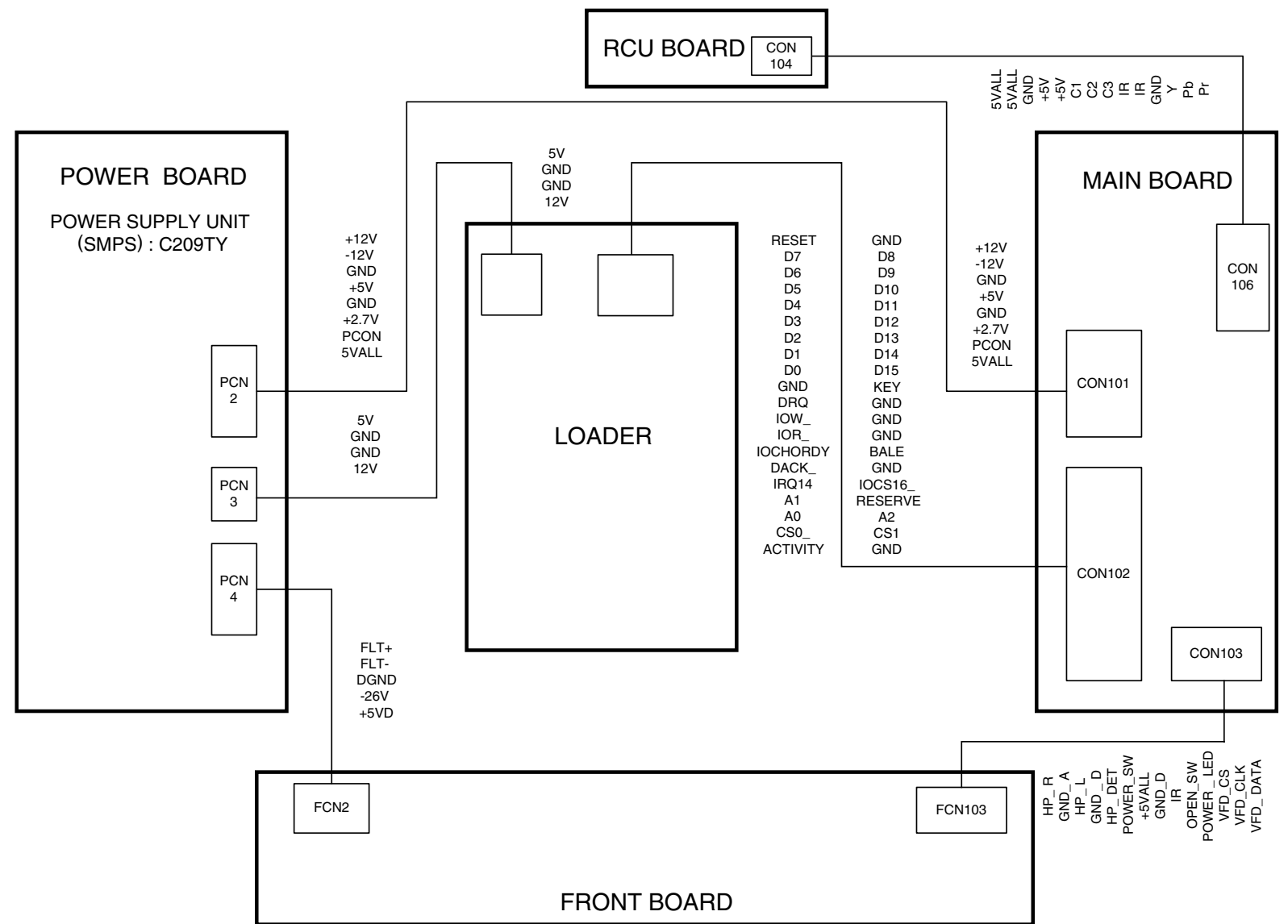
*Appendix 1. RL-A700 Block Diagram



*Appendix 2. Key-Components List

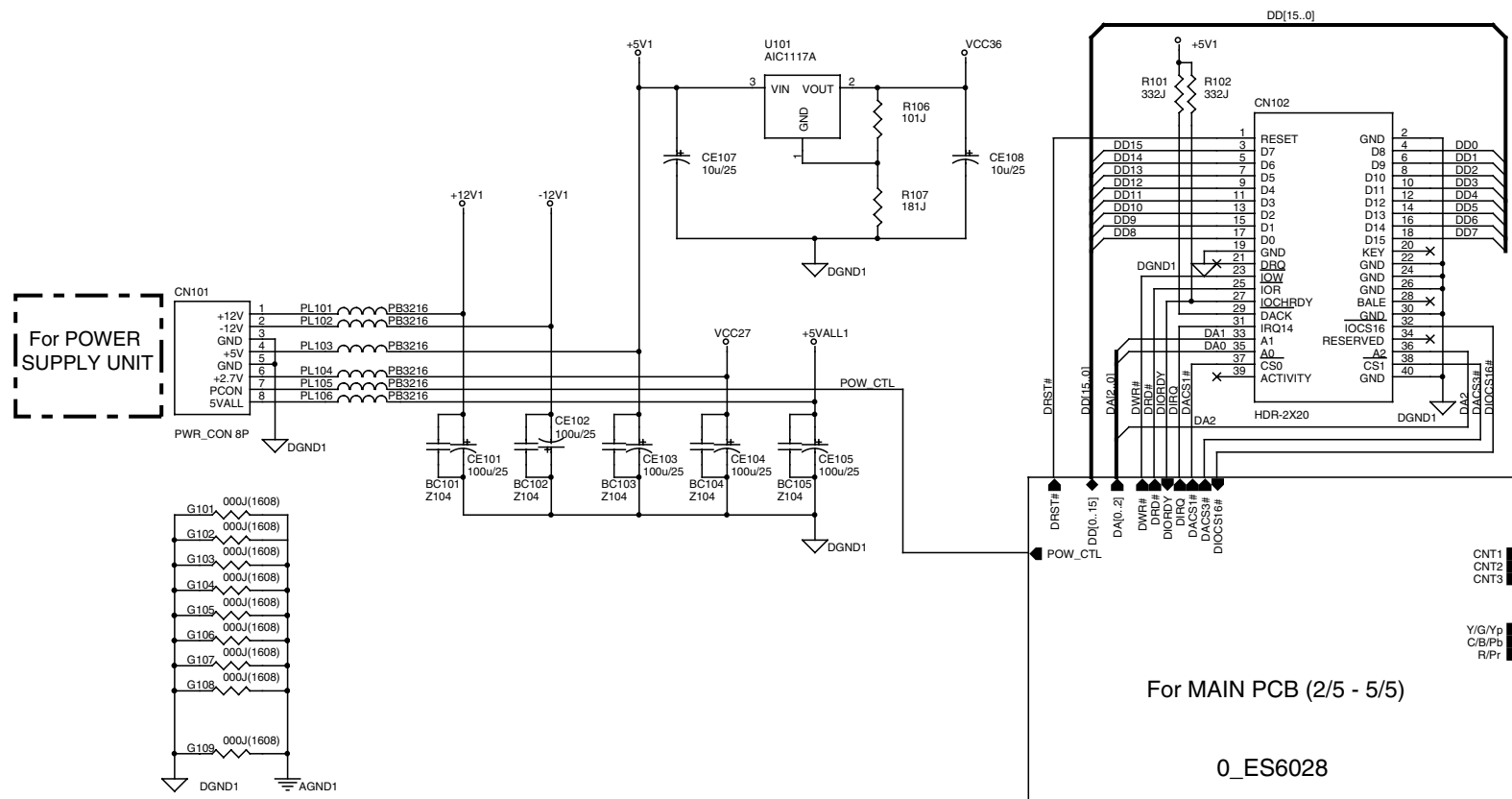
ITEM	Model Name	MAKER
Laser Pickup	SF-HD6AVS	Sanyo Electric
Spindle Motor	RSM-2811G	Samhongsa
Feedling Motor	RF-300CA-11440	Mabuchi
Loading Motor	RF-300CA-11440	Mabushi
Decoder IC	M5705	Ali
RF Amp IC	SP3721A	Ali
Actuator & Motor Drive IC	BA5954FP	Rohm
Spindle Motor Drive IC	BA6664FM	Rohm

9. WIRING DIAGRAM

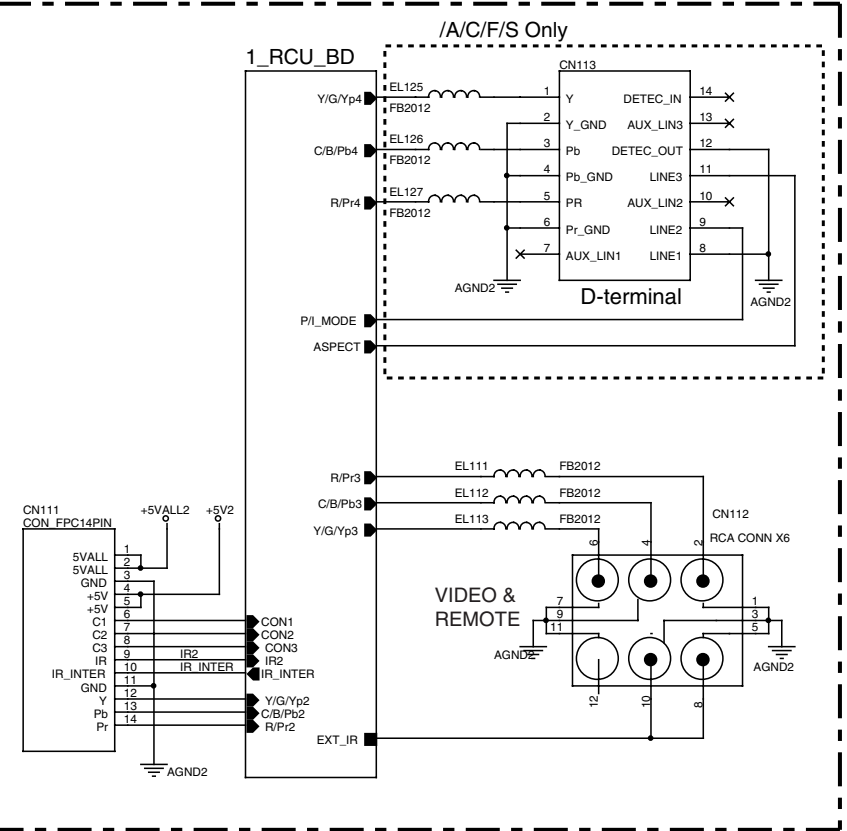


10. SCHEMATIC DIAGRAM

Main PCB (1/5) Top

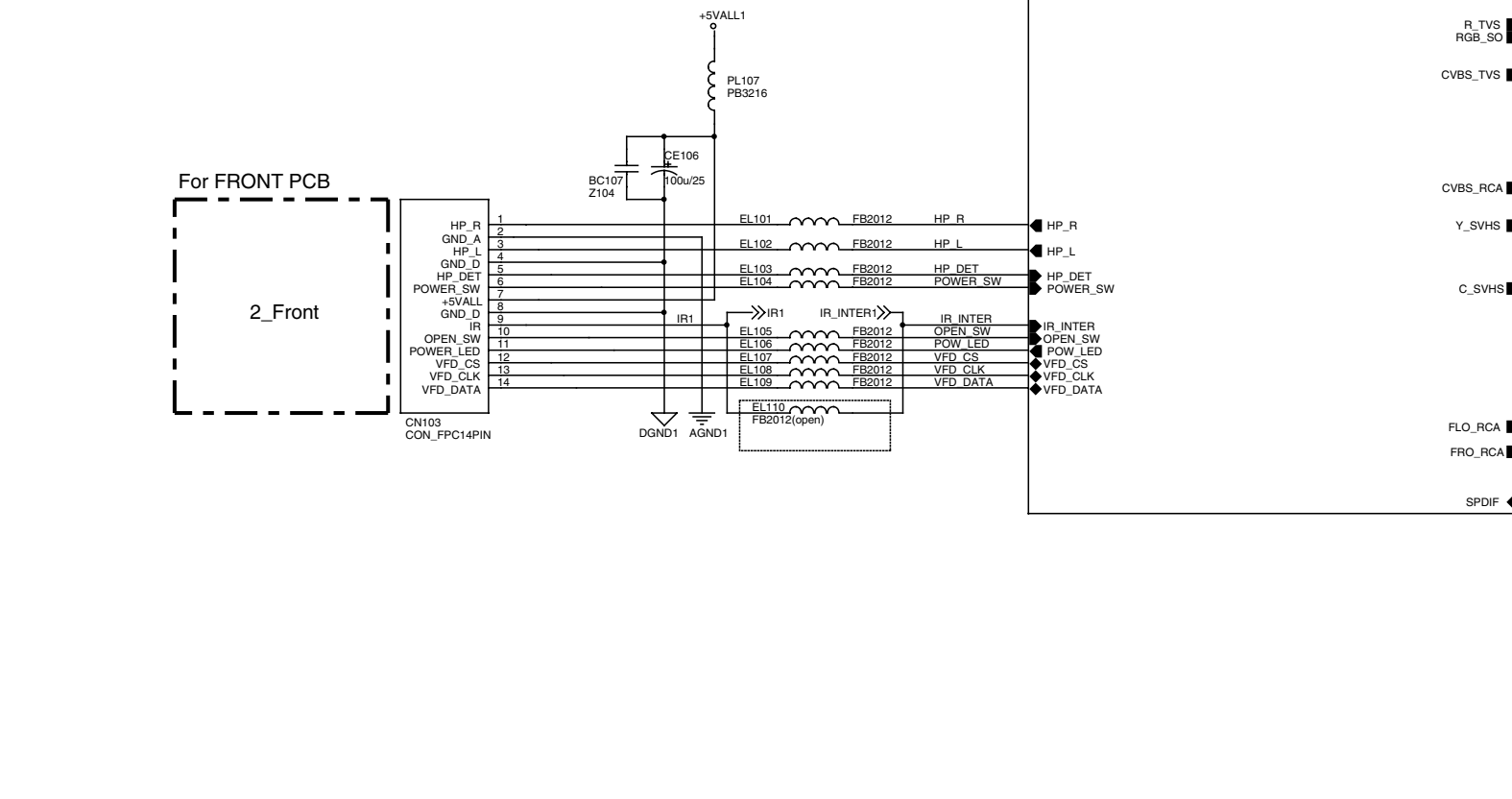


For RCU PCB (1/3 - 3/3)

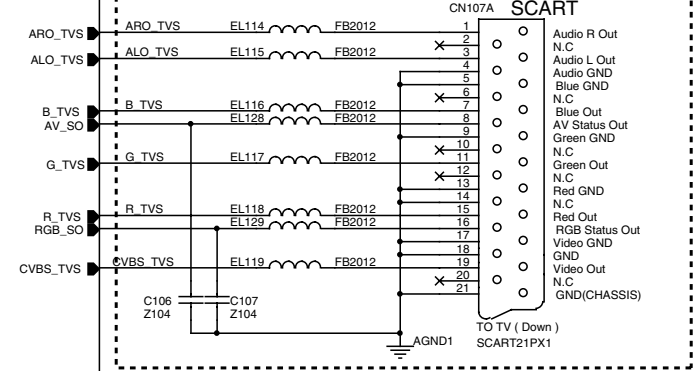


For MAIN PCB (2/5 - 5/5)

0_ES6028



/N Only



VIDEO

S-VIDEO

AUDIO L

AUDIO R

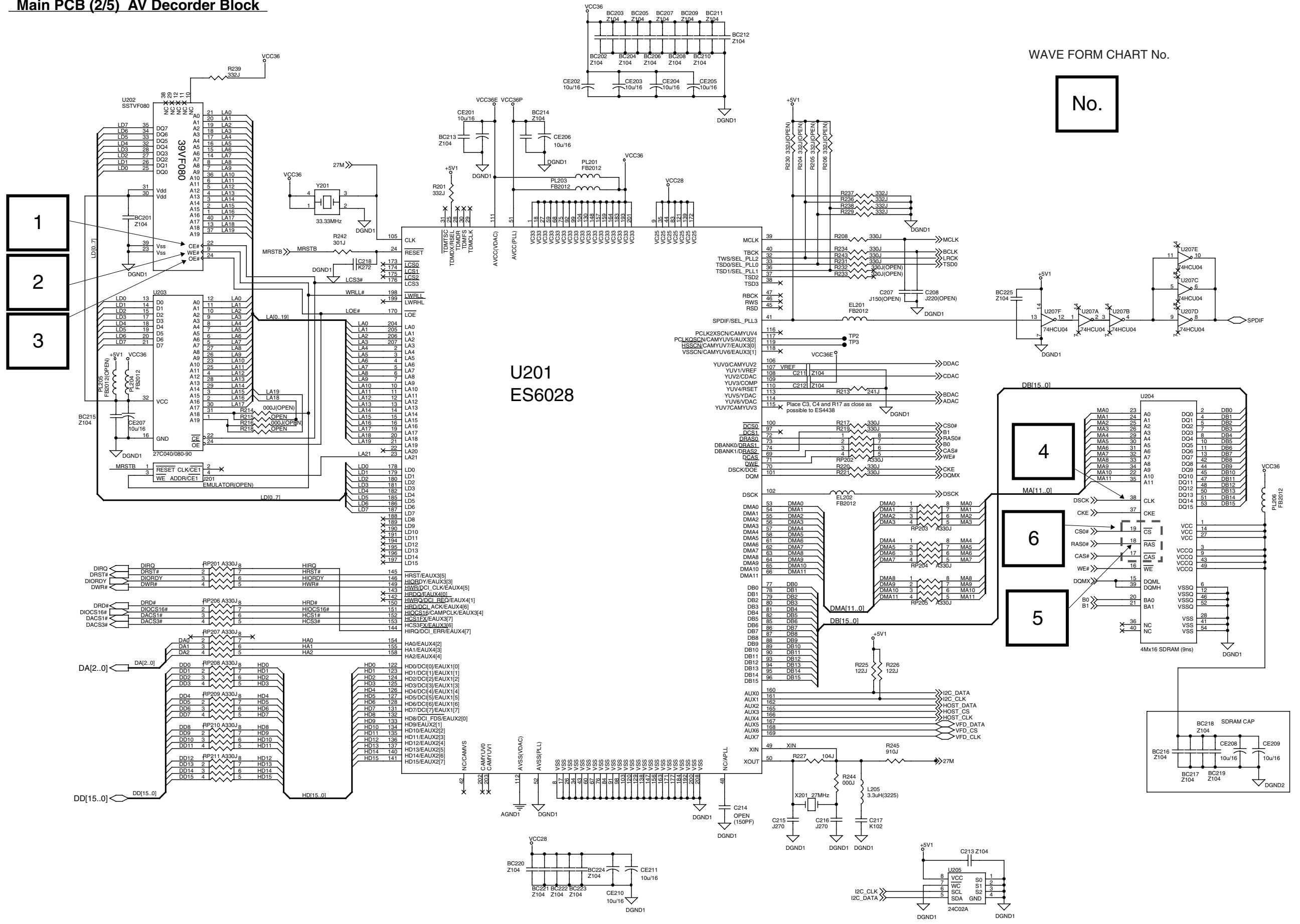
COAXIAL OUT

OPTICAL_OUT

Main PCB (2/5) AV Decoder Block

WAVE FORM CHART No.

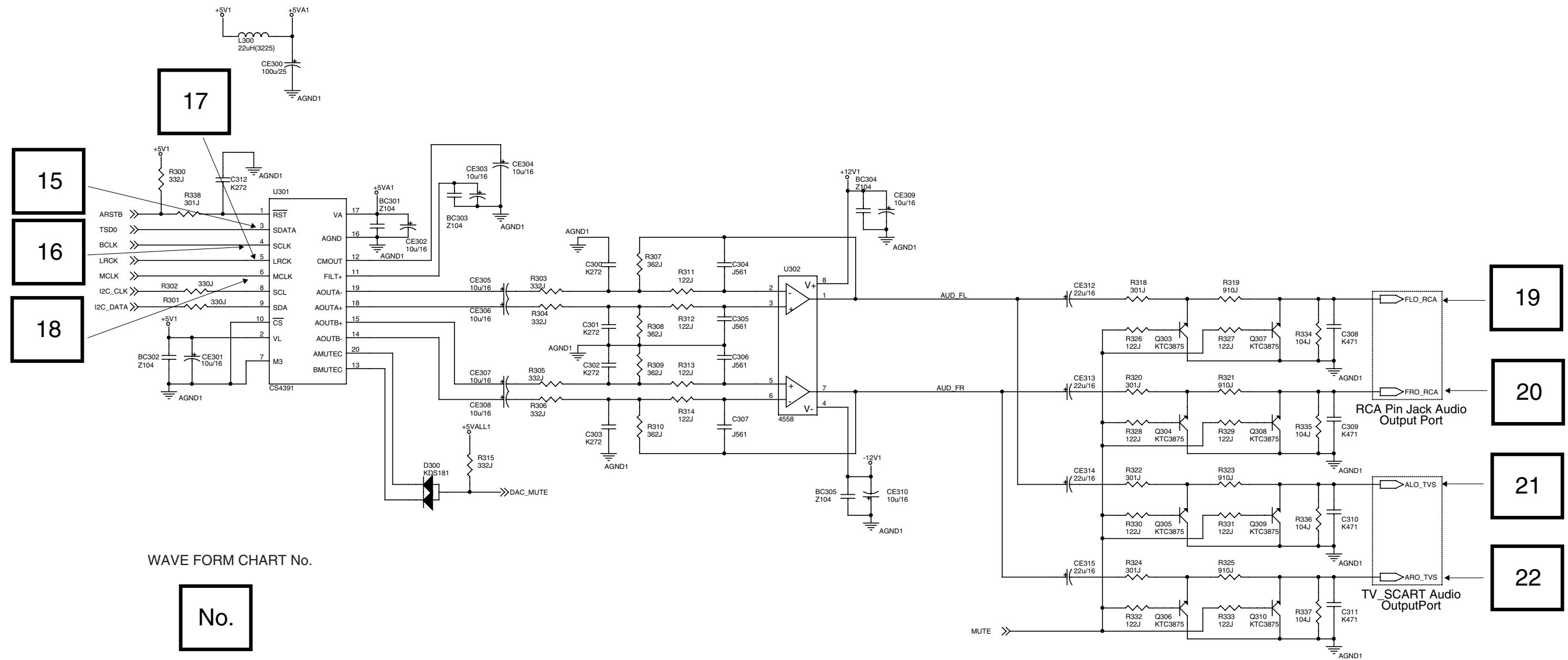
No.



1
2
3

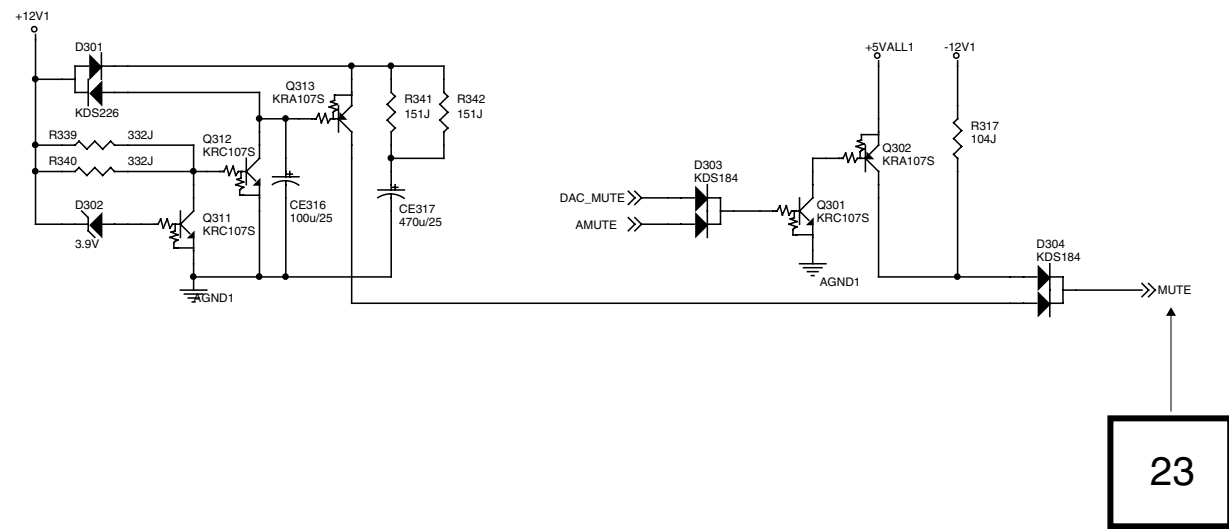
4
6
5

Main PCB (3/5) Audio Block

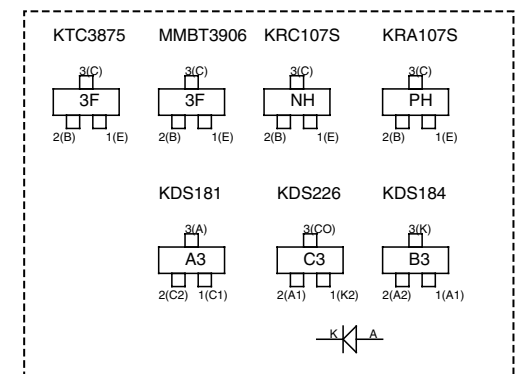


WAVE FORM CHART No.

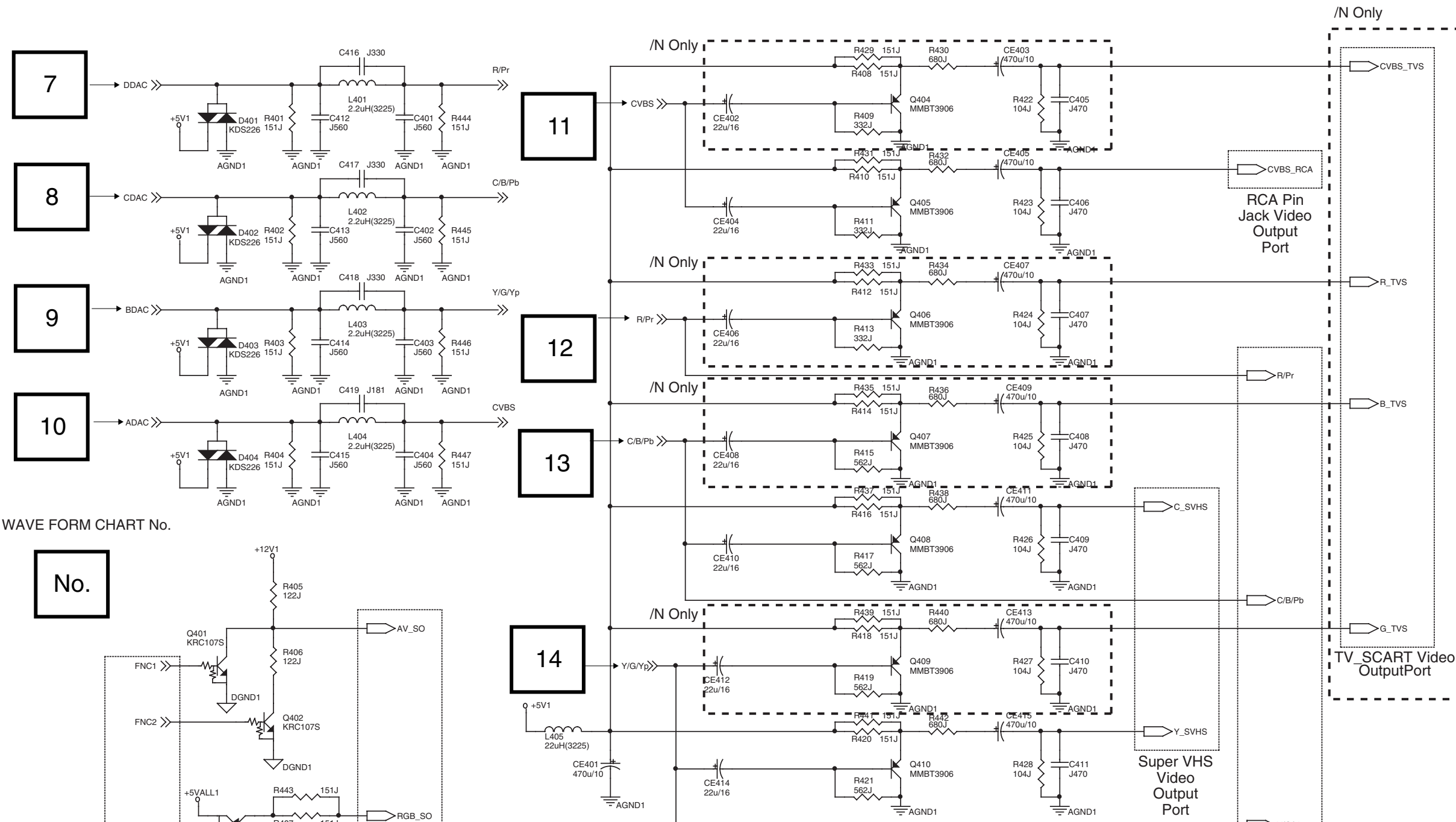
No.



23

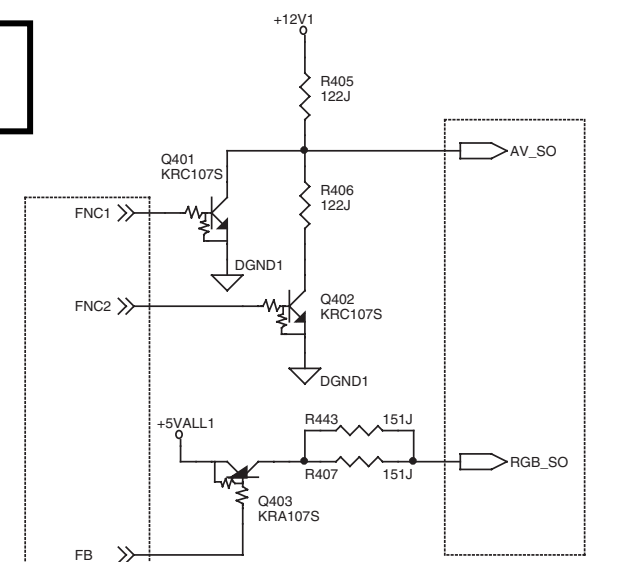


Main PCB (4/5) Video Block



WAVE FORM CHART No.

No.

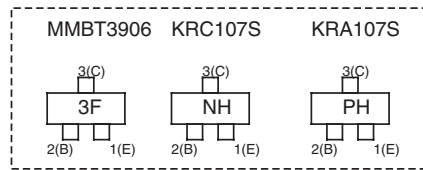


TV_SCART A/V & RGB Satatus Output from MPU

TV_SCART A/V & RGB Satatus Output Port

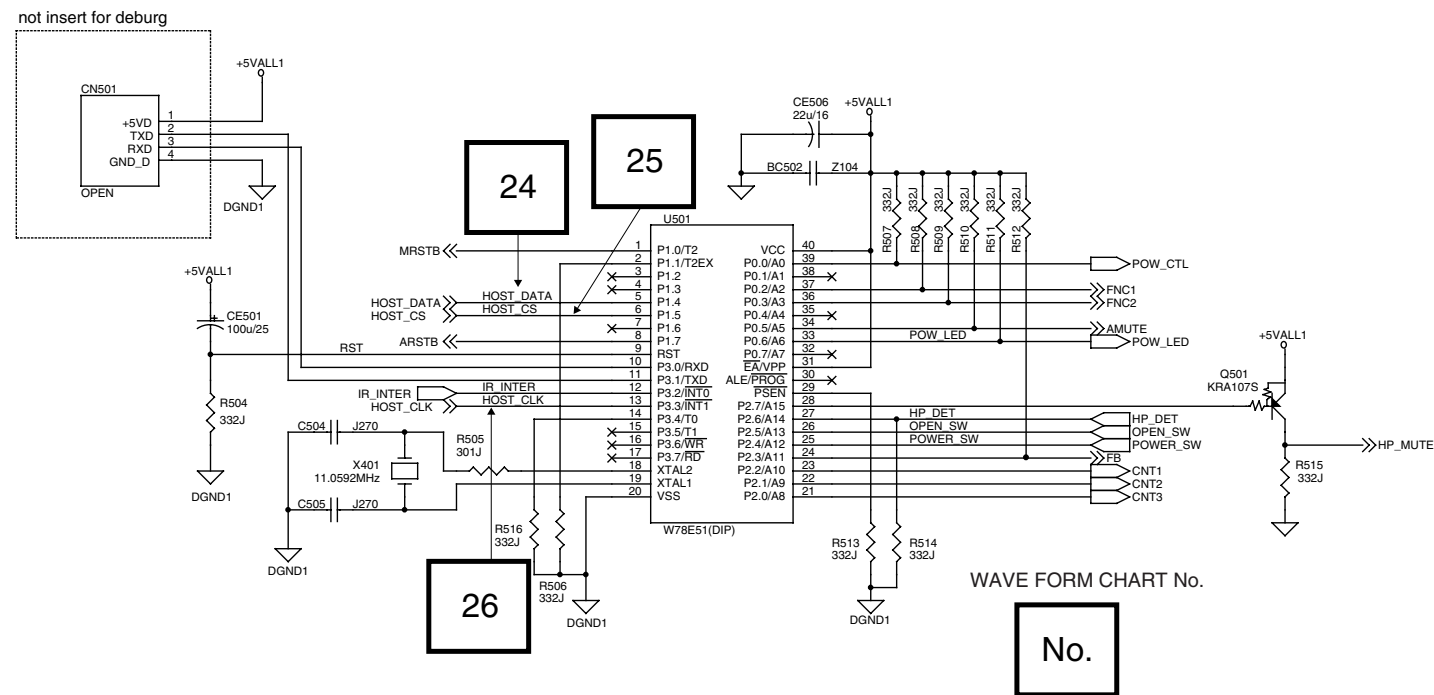
A/V STATUS TABLE

AV_SO	FNC=0, FNC1=0 ---> 12V, 4:3 ASPECT RATIO
FNC=0, FNC1=1 ---> 6V, 16:9 ASPECT RATIO	
FNC=1, FNC1=d ---> 0V, STANBY or TV MODE	
RGB_SO	FB=0 ---> HIGH, RGB MODE
FB=1 ---> LOW, CVBS MODE	

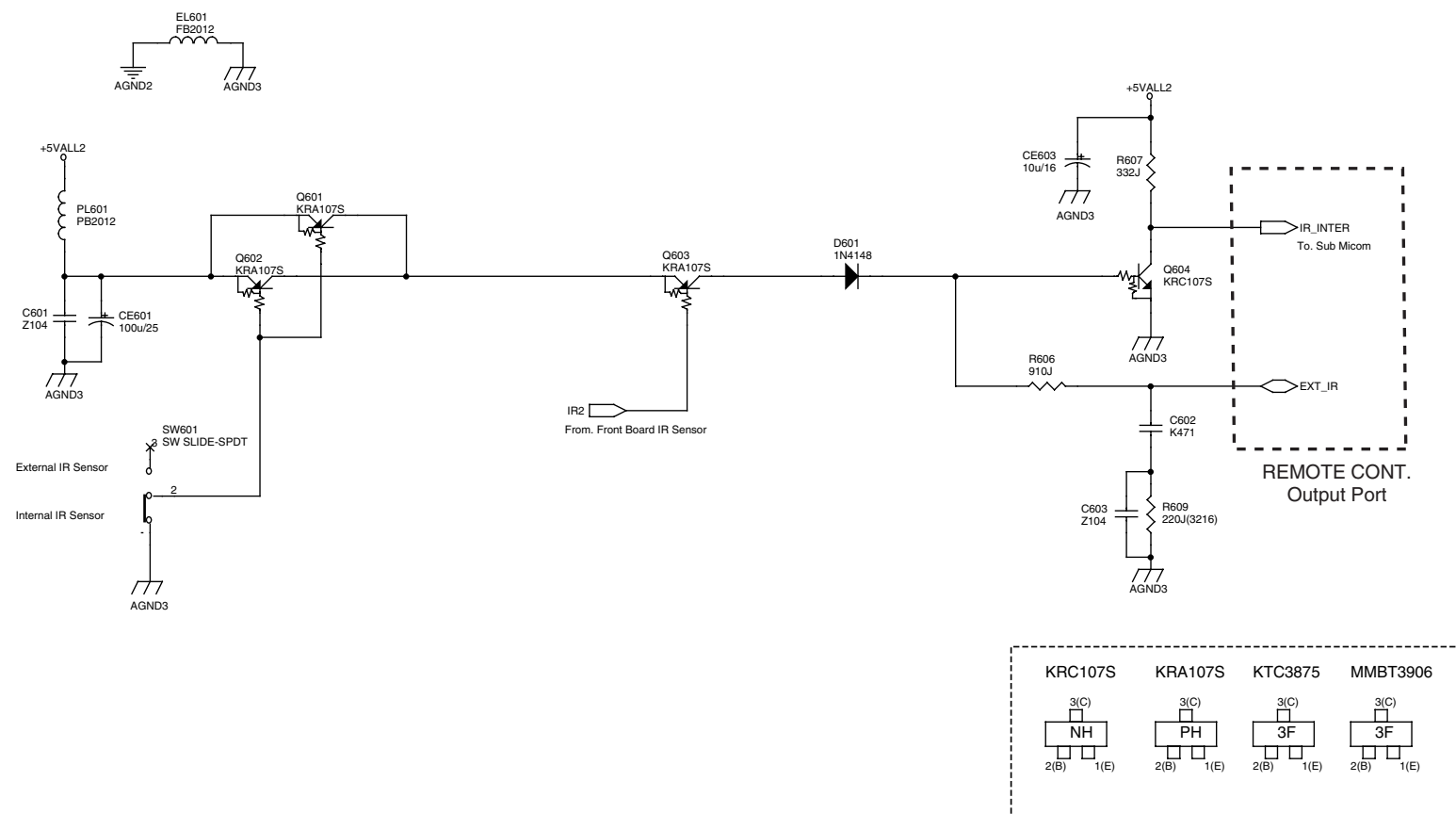


Output from MPU

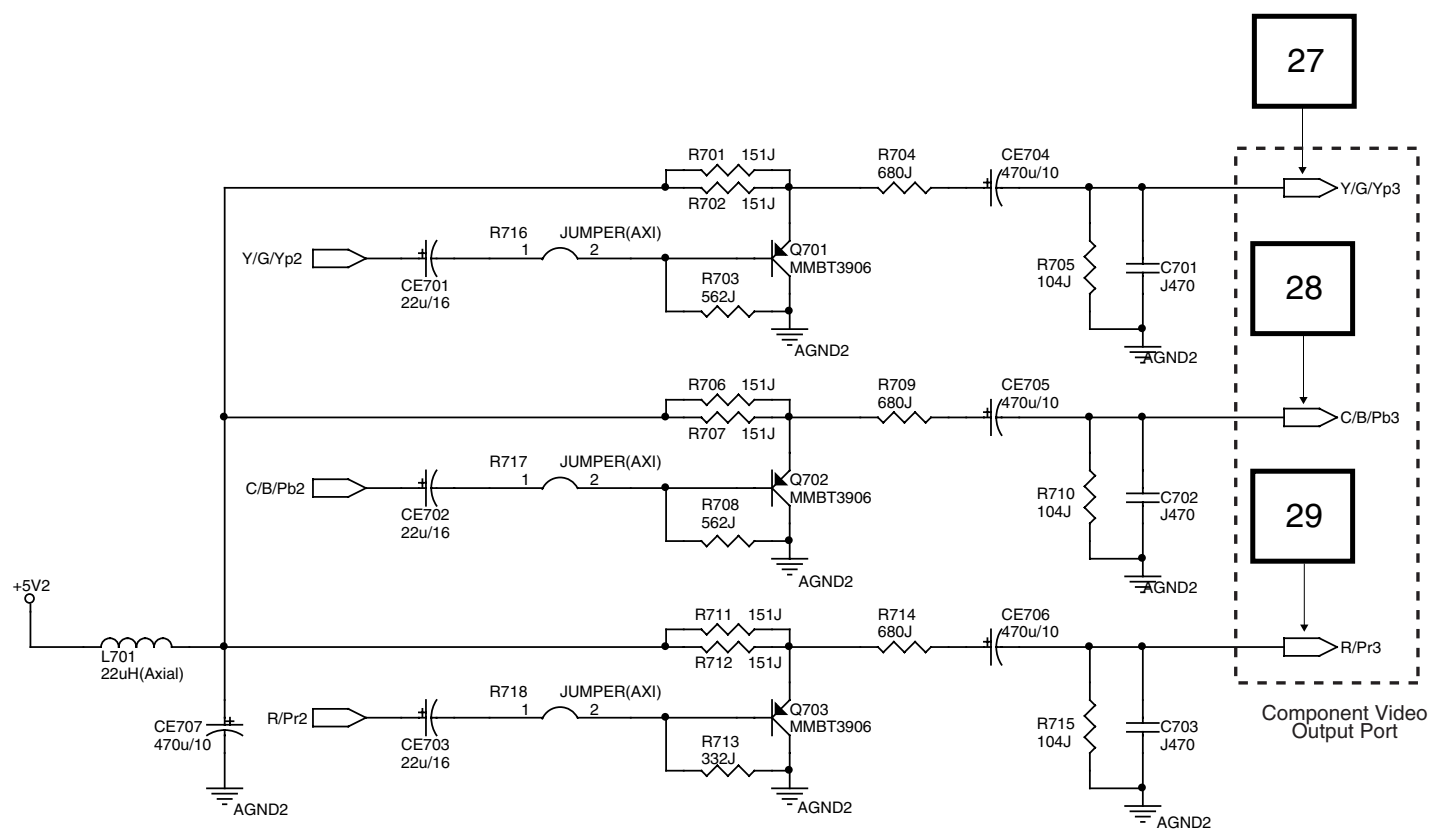
Main PCB (5/5) Sub microprocessor Block



RCU PCB (1/3) Remote control Block

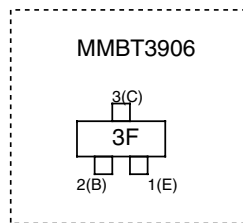


RCU PCB (2/3) Video Block

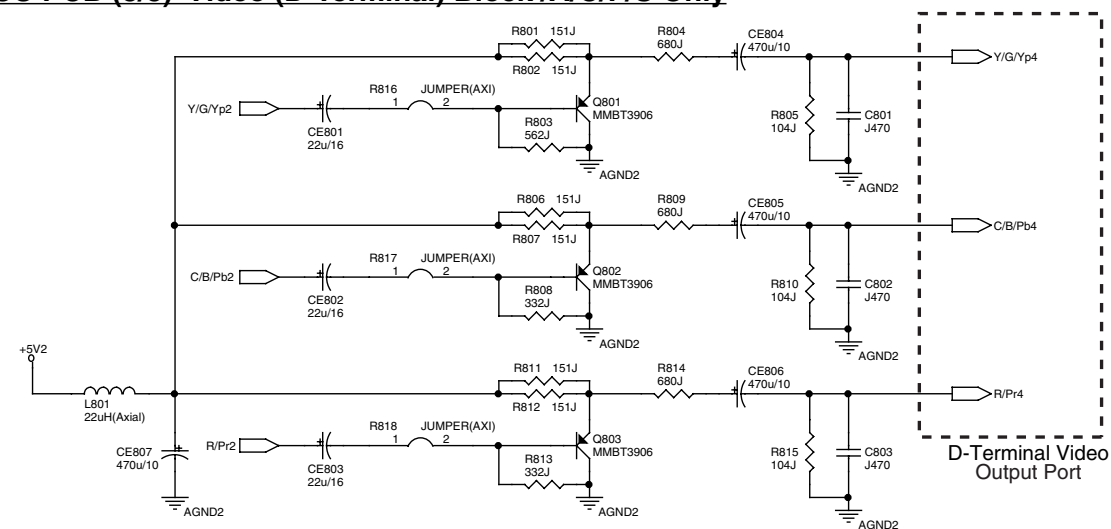


WAVE FORM CHART No.

No.



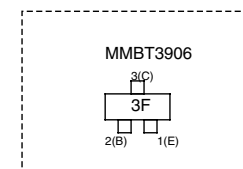
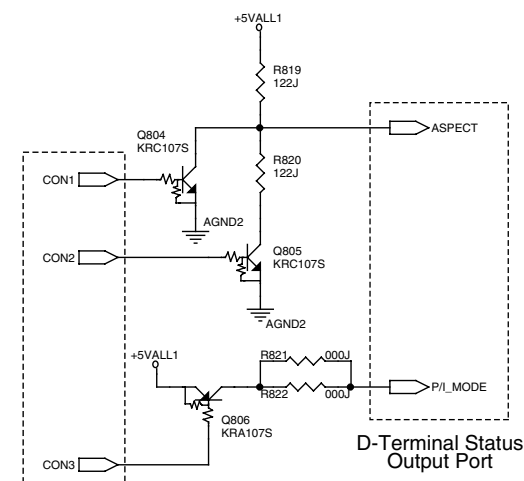
RCU PCB (3/3) Video (D-Terminal) Block /A/C/F/S Only



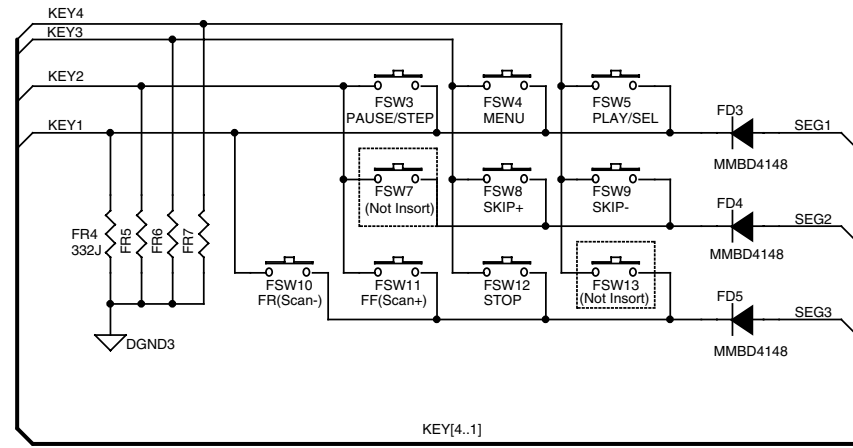
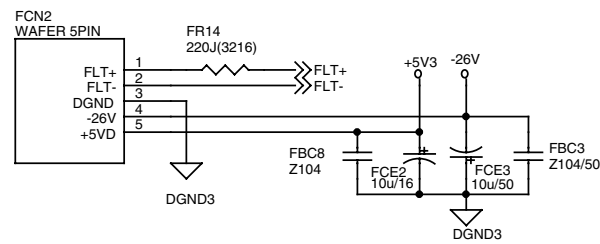
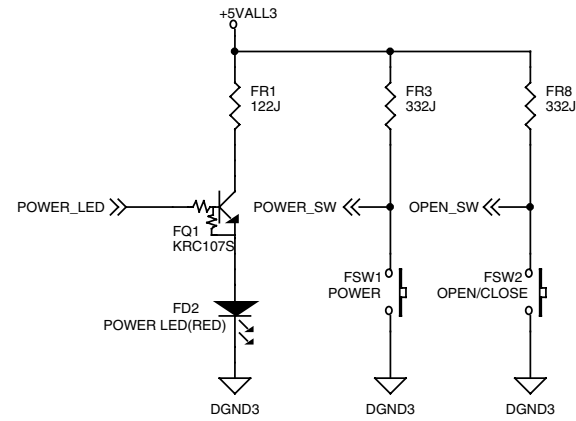
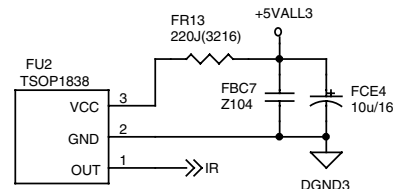
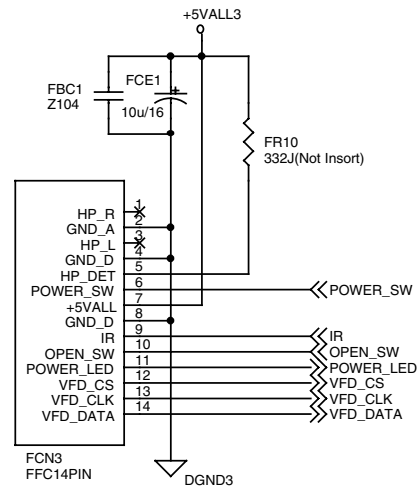
D-terminal Status Control Output from MPU

A/V STATUS TABLE

ASPECT	CON1=0, CON2=0	→ 5V, 16:9 ASPECT RATIO
ASPECT	CON1=0, CON2=1	→ 2.2V, 4:3 LETTER BOX ASPECT RATIO
ASPECT	CON1=1	→ 0V, 4:3 ASPECT RATIO
P/L MODE	CON3 = 0	→ HIGH, P/SCAN MODE
P/L MODE	CON3 = 1	→ LOW, INTERACE MODE



Front Block



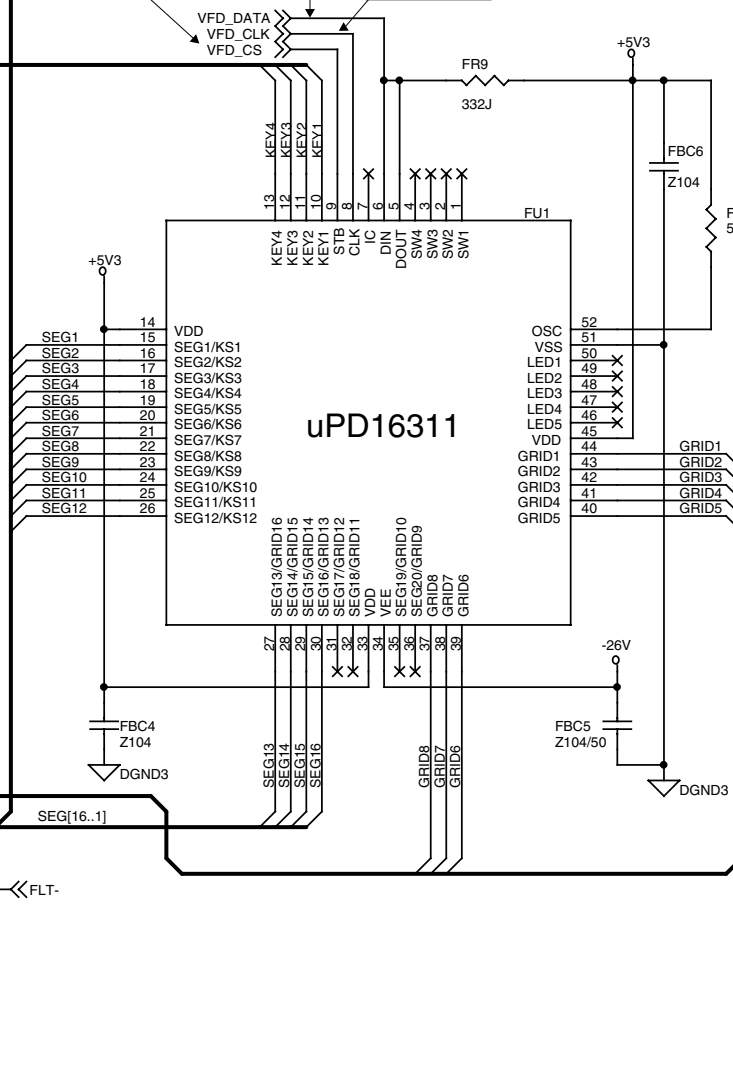
WAVE FORM CHART No.

No.

32

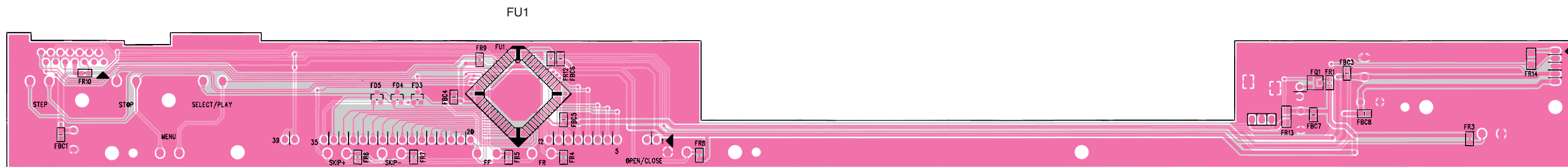
30

31

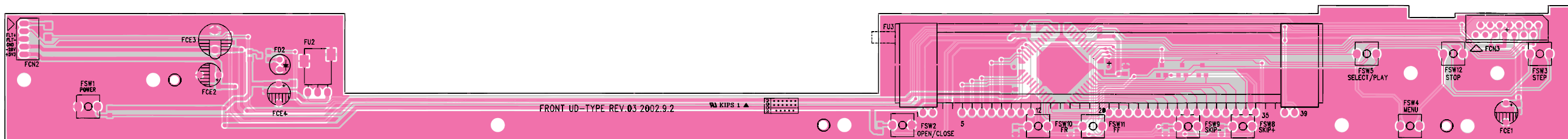


11. PARTS LOCATION

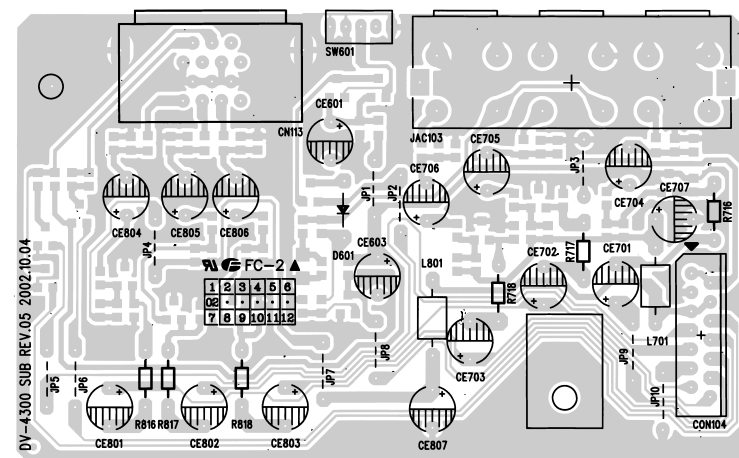
FRONT



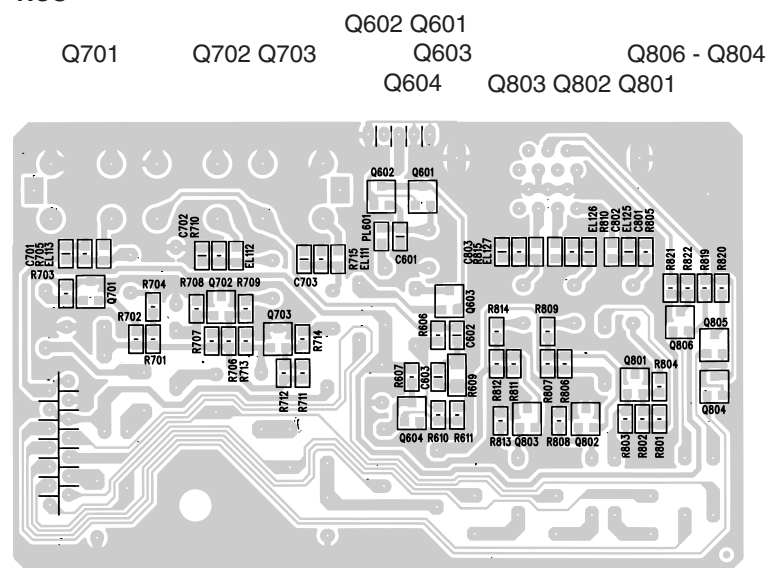
FRONT



RCU

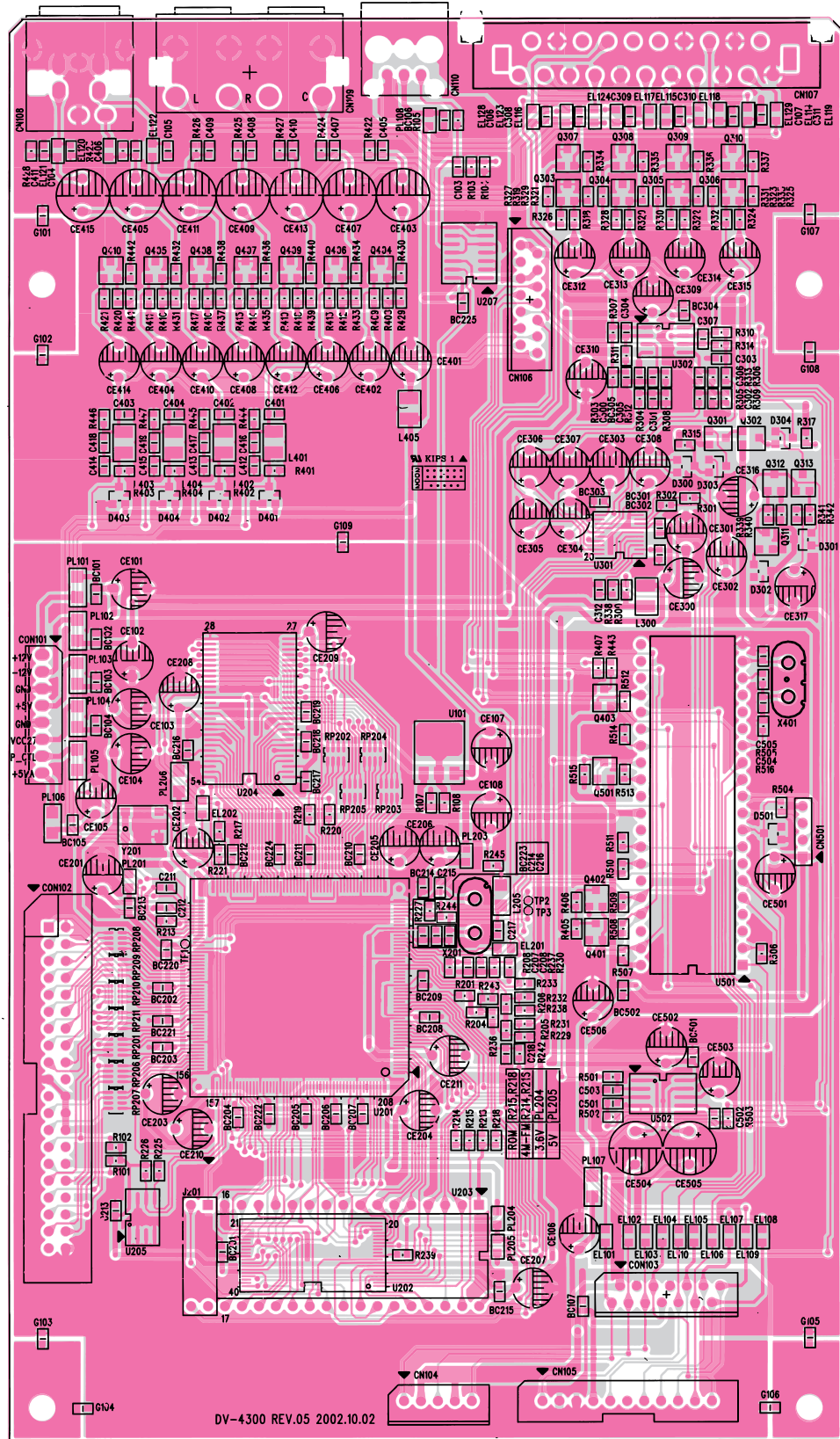


RCU



MAIN

Q410 Q434 - Q439



Q307 - Q310
Q303 - Q306

U207

U302

Q301 Q302

Q312 Q313

U301
Q311

Q403

U101
Q501

U501

Q402

Q401

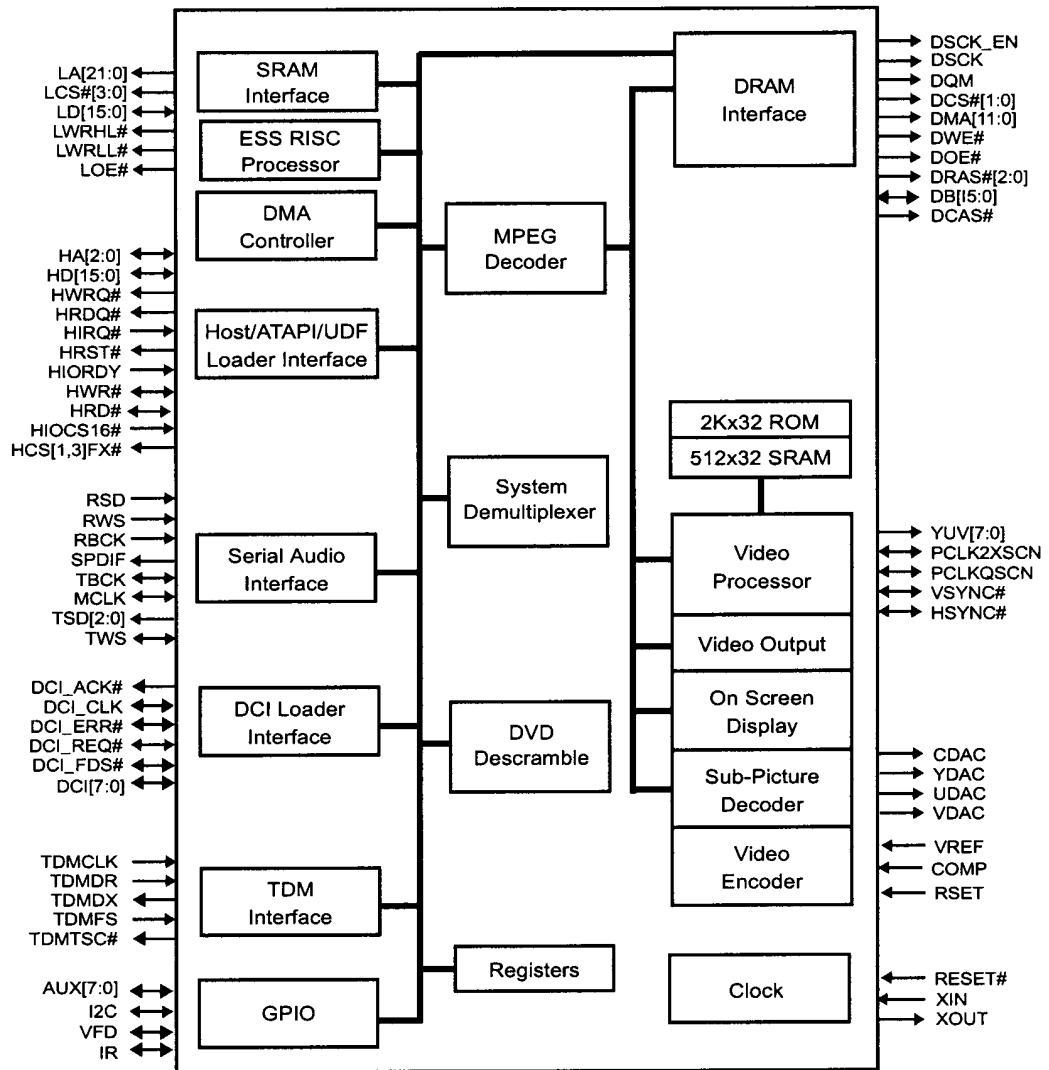
U502

Q203

DV-4300 REV.05 2002.10.02

12. MICROPROCESSOR AND IC DATA

U201:ES6028



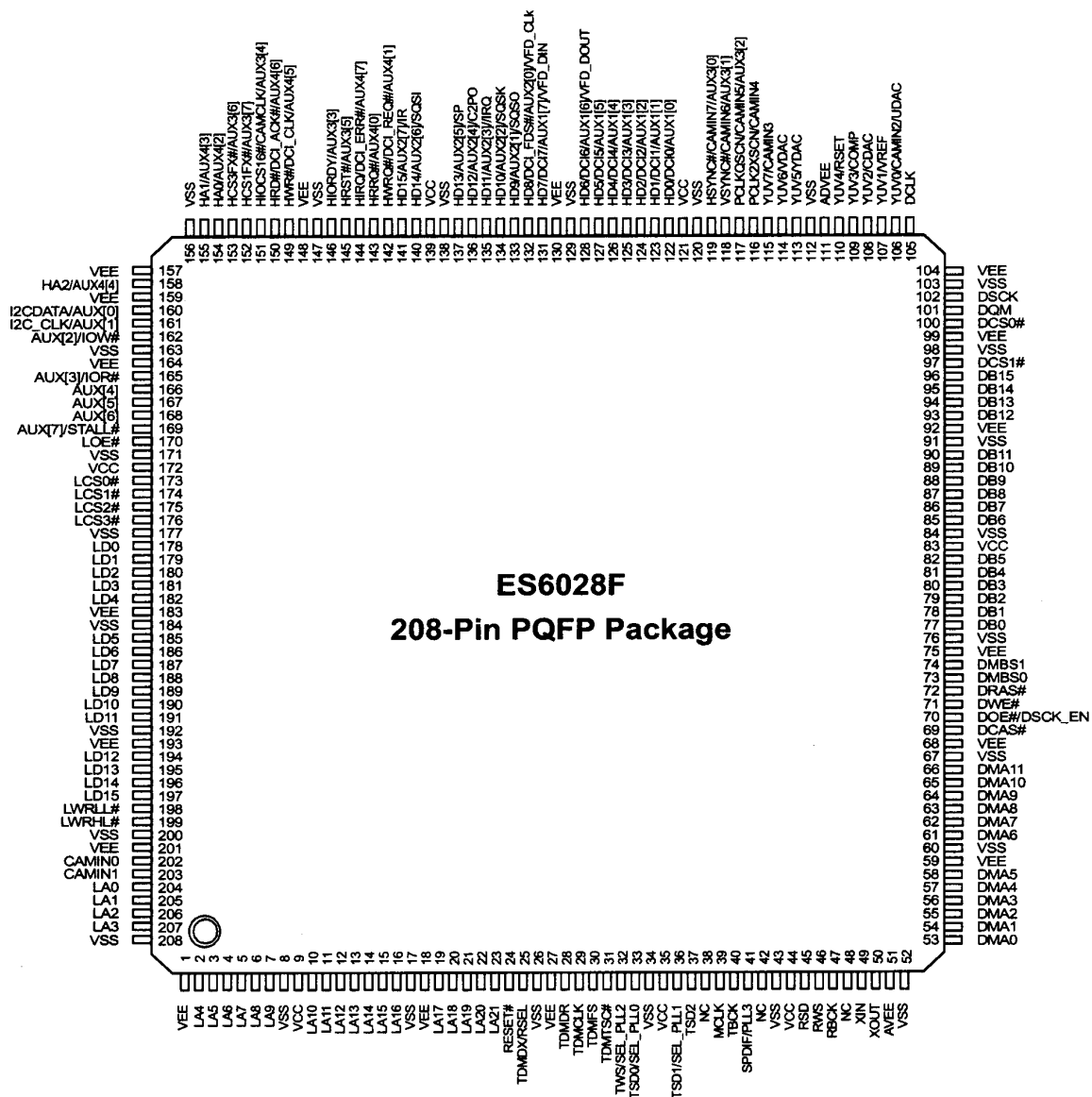


Table 1 ES6028 Pin Description

Name	Pin Numbers	I/O	Definition																																			
VEE	1, 18, 27, 59, 68, 75, 92, 99, 104, 130, 148, 157, 159, 164, 183, 193, 201	I	I/O power supply.																																			
LA[21:0]	2:7, 10:16, 19:23, 204:207	O	RISC port address bus.																																			
VSS	8, 17, 26, 34, 43, 52, 60, 67, 76, 84, 91, 98, 103, 112, 120, 129, 138, 147, 156, 163, 171, 177, 184, 192, 200, 208	I	Ground.																																			
VCC	9, 35, 44, 83, 121, 139, 172	I	Core power supply.																																			
RESET#	24	I	Reset input, active-low.																																			
TDMDX	25	O	TDM transmit data output.																																			
RSEL		I	LCS3 ROM Boot Data Width Select. Strapped to VCC or ground via 4.7-kΩ resistor; read only during reset. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>RSEL</th> <th>Selection</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>16-bit ROM</td> </tr> <tr> <td>1</td> <td>8-bit ROM</td> </tr> </tbody> </table>	RSEL	Selection	0	16-bit ROM	1	8-bit ROM																													
RSEL	Selection																																					
0	16-bit ROM																																					
1	8-bit ROM																																					
TMDR	28	I	TDM receive data input.																																			
TDMCLK	29	I	TDM clock input.																																			
TDMFS	30	I	TDM frame sync input.																																			
TDMTSC#	31	O	TDM output enable.																																			
TWS	32	O	Audio transmit frame sync output.																																			
SEL_PLL2		I	System and DSCK output clock frequency selection is made at the rising edge of RESET#. The matrix below lists the available clock frequencies and their respective PLL bit settings. Strapped to VCC or ground via 4.7-kΩ resistor; read only during reset. <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>SEL_PLL2</th> <th>SEL_PLL1</th> <th>SEL_PLL0</th> <th>Clock Type</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>DCLK x 4.25</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>Reserved</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>Bypass mode</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>DCLK x 3.75</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>DCLK x 4.5</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>Reserved</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>DCLK x 3.5</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>DCLK x 4</td> </tr> </tbody> </table>	SEL_PLL2	SEL_PLL1	SEL_PLL0	Clock Type	0	0	0	DCLK x 4.25	0	0	1	Reserved	0	1	0	Bypass mode	0	1	1	DCLK x 3.75	1	0	0	DCLK x 4.5	1	0	1	Reserved	1	1	0	DCLK x 3.5	1	1	1
SEL_PLL2	SEL_PLL1	SEL_PLL0	Clock Type																																			
0	0	0	DCLK x 4.25																																			
0	0	1	Reserved																																			
0	1	0	Bypass mode																																			
0	1	1	DCLK x 3.75																																			
1	0	0	DCLK x 4.5																																			
1	0	1	Reserved																																			
1	1	0	DCLK x 3.5																																			
1	1	1	DCLK x 4																																			

Table 1 ES6028 Pin Description (Continued)

Name	Pin Numbers	I/O	Definition				
TSD0	33	O	Audio transmit serial data port 0.				
SEL_PLL0		I	Refer to the description and matrix for SEL_PLL2 pin 32.				
TSD1	36	O	Audio transmit serial data port 1.				
SEL_PLL1		I	Refer to the description and matrix for SEL_PLL2 pin 32.				
TSD2	37	O	Audio transmit serial data port 2.				
NC	38, 42, 48	—	No connect pins. Leave open.				
MCLK	39	I/O	Audio master clock for audio DAC.				
TBCK	40	O	Audio transmit bit clock.				
SPDIF	41	O	S/PDIF output.				
SEL_PLL3		I	Clock source select. Strapped to VCC or ground via 4.7-kΩ resistor; read only during reset.				
		<table border="1"> <thead> <tr> <th>SEL_PLL3</th> <th>Clock Source</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Crystal oscillator</td> </tr> <tr> <td>1</td> <td>DCLK input</td> </tr> </tbody> </table>		SEL_PLL3	Clock Source	0	Crystal oscillator
SEL_PLL3	Clock Source						
0	Crystal oscillator						
1	DCLK input						
RSD	45	I	Audio receive serial data.				
RWS	46	I	Audio receive frame sync.				
RBCK	47	I	Audio receive bit clock.				
XIN	49	I	27-MHz crystal input.				
XOUT	50	O	27-MHz crystal output.				
AVEE	51	I	Analog power for PLL.				
DMA[11:0]	53:58, 61:66	O	DRAM address bus.				
DCAS#	69	O	DRAM column address strobe.				
DOE#	70	O	DRAM output enable.				
DSCK_EN		O	DRAM clock enable.				
DWE#	71	O	DRAM write enable.				
DRAS#	72	O	DRAM row address strobe.				
DMBS0	73	O	SDRAM bank select 0.				
DMBS1	74	O	SDRAM bank select 1.				
DB[15:0]	77:82, 85:90, 93:96	I/O	DRAM data bus.				
DCS[1:0]#	97,100	O	SDRAM chip select.				
DQM	101	O	Data input/output mask.				
DSCK	102	O	Output clock to SDRAM.				
DCLK	105	I	Clock input to PLL.				

Table 1 ES6028 Pin Description (Continued)

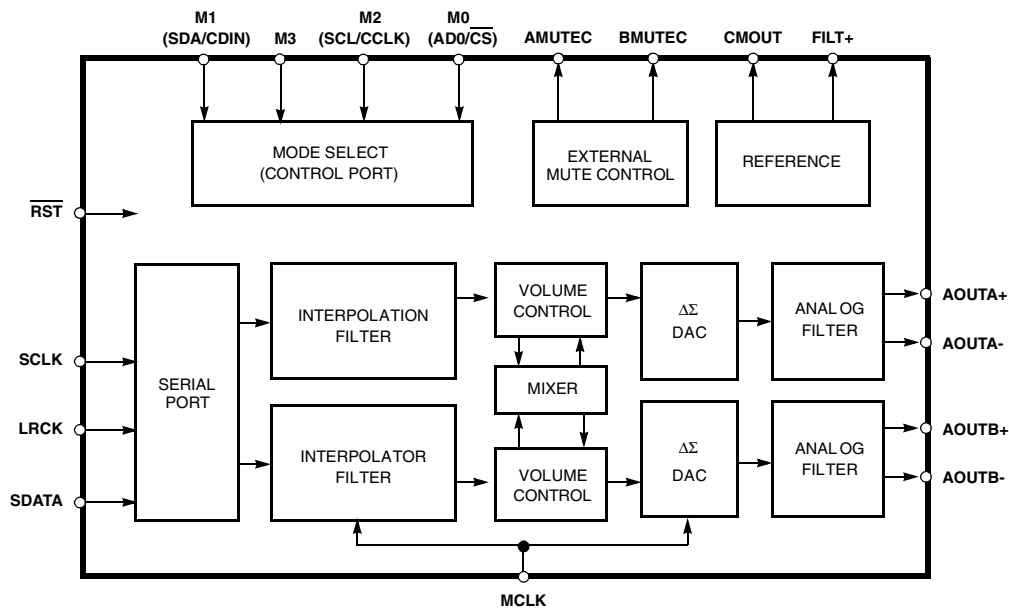
Name	Pin Numbers	I/O	Definition																																																																																	
YUV0	106	O	YUV0 pixel output data.																																																																																	
CAMIN2		I	Camera input 2.																																																																																	
UDAC		O	Video DAC output.																																																																																	
		<table border="1"> <thead> <tr> <th>Pin</th> <th>114</th> <th>113</th> <th>108</th> <th>106</th> </tr> <tr> <th>Value</th> <th>DAC V</th> <th>DAC Y</th> <th>DAC C</th> <th>DAC U</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>CVBS1</td> <td>Y</td> <td>C</td> <td>N/A</td> </tr> <tr> <td>1</td> <td>CVBS1</td> <td>Y</td> <td>C</td> <td>CVBS2</td> </tr> <tr> <td>2</td> <td>N/A</td> <td>Y</td> <td>C</td> <td>N/A</td> </tr> <tr> <td>3</td> <td>CVBS1</td> <td>N/A</td> <td>N/A</td> <td>CVBS2</td> </tr> <tr> <td>4</td> <td>CVBS1</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>5</td> <td>CVBS1</td> <td>Y</td> <td>Pb</td> <td>Pr</td> </tr> <tr> <td>6</td> <td>N/A</td> <td>Y</td> <td>Pb</td> <td>Pr</td> </tr> <tr> <td>7</td> <td>SYNC</td> <td>G</td> <td>B</td> <td>R</td> </tr> <tr> <td>8</td> <td>CHROMA</td> <td>Y</td> <td>Pb</td> <td>Pr</td> </tr> <tr> <td>9</td> <td>CVBS1</td> <td>G</td> <td>B</td> <td>R</td> </tr> <tr> <td>10</td> <td>CVBS1</td> <td>G</td> <td>R</td> <td>B</td> </tr> <tr> <td>11</td> <td>SYNC</td> <td>G</td> <td>R</td> <td>B</td> </tr> <tr> <td>12</td> <td>N/A</td> <td>Y</td> <td>Pr</td> <td>Pb</td> </tr> <tr> <td>13</td> <td>CVBS1</td> <td>Y</td> <td>Pr</td> <td>Pb</td> </tr> </tbody> </table>			Pin	114	113	108	106	Value	DAC V	DAC Y	DAC C	DAC U	0	CVBS1	Y	C	N/A	1	CVBS1	Y	C	CVBS2	2	N/A	Y	C	N/A	3	CVBS1	N/A	N/A	CVBS2	4	CVBS1	N/A	N/A	N/A	5	CVBS1	Y	Pb	Pr	6	N/A	Y	Pb	Pr	7	SYNC	G	B	R	8	CHROMA	Y	Pb	Pr	9	CVBS1	G	B	R	10	CVBS1	G	R	B	11	SYNC	G	R	B	12	N/A	Y	Pr	Pb	13	CVBS1	Y	Pr	Pb
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		4	CVBS1	N/A	N/A	N/A																																																																														
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			Y: Luma component for YUV and Y/C processing. C: Chrominance signal for Y/C processing. U: Chrominance component signal for YUV mode. V: Chrominance component signal for YUV mode.																																																																																	
YUV1	107	O	YUV1 pixel output data.																																																																																	
VREF		I	Internal voltage reference to video DAC. Bypass to ground with 0.1- μ F capacitor.																																																																																	
YUV2	108	O	YUV2 pixel output data.																																																																																	
CDAC		O	Video DAC output. Refer to description and matrix for UDAC pin 106.																																																																																	
YUV3	109	O	YUV3 pixel output data.																																																																																	
COMP		I	Compensation input. Bypass to ADVEE with 0.1- μ F capacitor.																																																																																	
YUV4	110	O	YUV4 pixel output data.																																																																																	
RSET		I	DAC current adjustment resistor input.																																																																																	
ADVEE	111	I	Analog power for video DAC.																																																																																	
YUV5	113	O	YUV5 pixel output data.																																																																																	
YDAC		O	Video DAC output. Refer to description and matrix for UDAC pin 106.																																																																																	

Table 1 ES6028 Pin Description (Continued)

Name	Pin Numbers	I/O	Definition
YUV6	114	O	YUV6 pixel output data.
VDAC		O	Video DAC output. Refer to description and matrix for UDAC pin 106.
YUV7	115	O	YUV7 pixel output data.
CAMIN3		I	Camera YUV 3.
PCLK2XSCN	116	I/O	27-MHz video output pixel clock.
CAMIN4		I	Camera YUV 4.
PCLKQSCN	117	O	13.5-MHz video output pixel clock.
CAMIN5		I	Camera YUV 5.
AUX3[2]		I/O	Aux3 data I/O.
VSYNC#	118	I/O	Vertical sync, active-low.
CAMIN6		I	Camera YUV 6.
AUX3[1]		I/O	Aux3 data I/O.
HSYNC#	119	I/O	Horizontal sync, active-low.
CAMIN7		I	Camera YUV 7.
AUX3[0]		I/O	Aux3 data I/O.
HD[5:0]	122:127	I/O	Host data bus lines 5:0.
DCI[5:0]		I/O	DVD channel data I/O.
AUX1[5:0]		I/O	Aux1 data I/O.
HD[6]	128	I/O	Host data bus line 6.
DCI[6]		I/O	DVD channel data I/O.
AUX1[6]		I/O	Aux1 data I/O.
VFD_DOUT		I	VFD data output.
HD[7]	131	I/O	Host data bus line 7.
DCI[7]		I/O	DVD channel data I/O.
AUX1[7]		I/O	Aux1 data I/O.
VFD_DIN		I	VFD data input.
HD[8]	132	I/O	Host data bus line 8.
DCI_FDS#		I/O	DVD input sector start.
AUX2[0]		I/O	Aux2 data I/O.
VFD_CLK		I	VFD clock input.
HD[9]	133	I/O	Host data bus line 9.
AUX2[1]		I/O	Aux2 data I/O.
SQSQ		I	Subcode-Q data.

Table 1 ES6028 Pin Description (Continued)

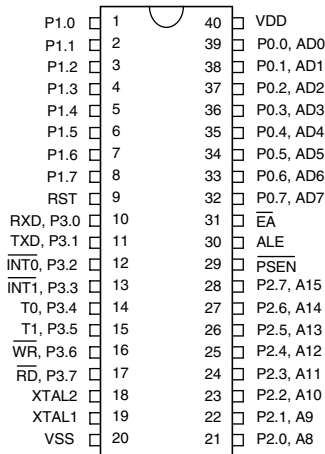
Name	Pin Numbers	I/O	Definition
HD[10]	134	I/O	Host data bus line 10.
AUX2[2]		I/O	Aux2 data I/O.
SQSK		I	Subcode-Q clock.
HD[11]	135	I/O	Host data bus line 11.
AUX2[3]		I/O	Aux2 data I/O.
IRQ		O	IRQ.
HD[12]	136	I/O	Host data bus line 12.
AUX2[4]		I/O	Aux2 data I/O.
C2PO		I	C2PO error correction flag from CD-ROM.
HD[13]	137	I/O	Host data bus line 13.
AUX2[5]		I/O	Aux2 data I/O.
SP		I	16550 UART serial port input.
HD[14]	140	I/O	Host data bus line 14.
AUX2[6]		I/O	Aux2 data I/O.
SQSI		I	Subcode-Q sync.
HD[15]	141	I/O	Host data bus line 15.
AUX2[7]		I/O	Aux2 data I/O.
IR		I	IR remote control input.
HWRQ#	142	O	Host write request.
DCI_REQ#		O	DVD control interface request.
AUX4[1]		I/O	Aux4 data I/O.
HRRQ#	143	O	Host read request.
AUX4[0]		I/O	Aux4 data I/O.
HIRQ	144	I/O	Host interrupt.
DCI_ERR#		I/O	DVD channel data error.
AUX4[7]		I/O	Aux4 data I/O.
HRST#	145	O	Host reset.
AUX3[5]		I/O	Aux3 data I/O.
HIORDY	146	I	Host I/O ready.
AUX3[3]		I/O	Aux3 data I/O.
HWR#	149	I/O	Host write.
DCI_CLK		I/O	DVD channel data clock.
AUX4[5]		I/O	Aux4 data I/O.



PIN DESCRIPTION - PCM DATA MODE

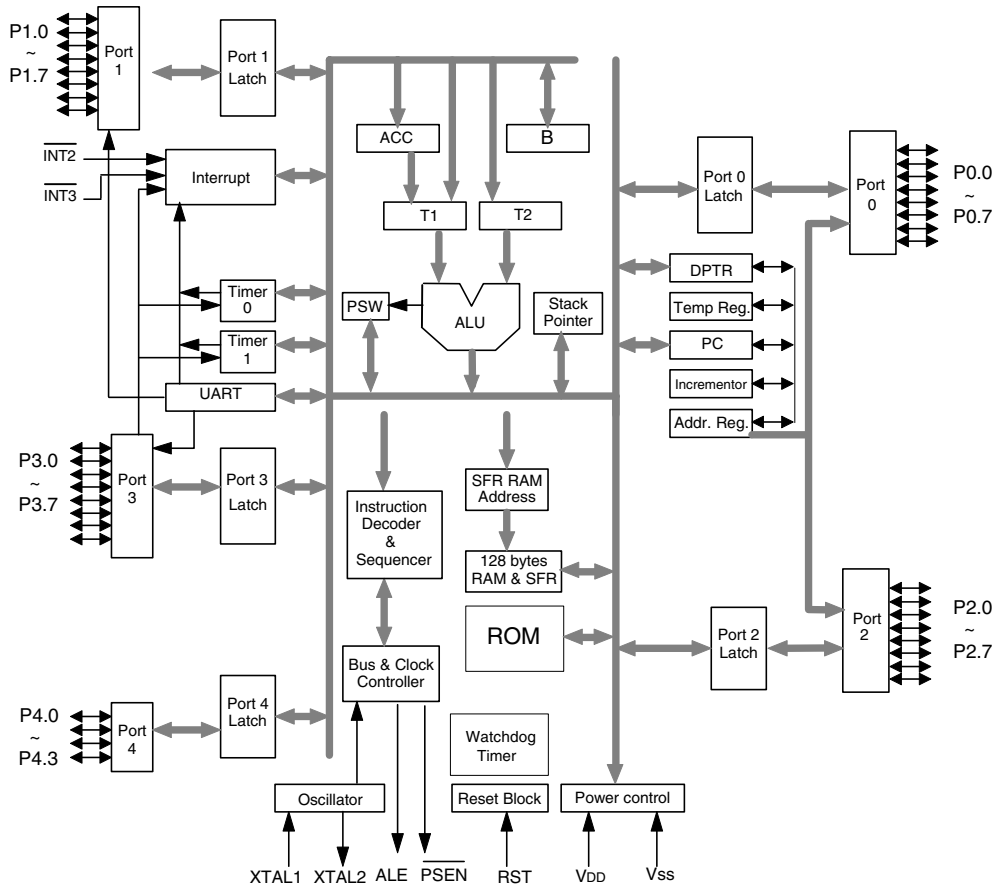
Reset	$\overline{\text{RST}}$	1	20	AMUTEC	Channel A Mute Control
Logic Voltage	VL	2	19	AOUTA-	Differential Output
Serial Data	SDATA	3	18	AOUTA+	Differential Output
Serial Clock	SCLK	4	17	VA	Analog Power
Left/Right Clock	LRCK	5	16	AGND	Analog Ground
Master Clock	MCLK	6	15	AOUTB+	Differential Output
See Description	M3	7	14	AOUTB-	Differential Output
See Description (SCL/CCLK)	M2	8	13	BMUTEC	Channel B Mute Control
See Description (SDA/CDIN)	M1	9	12	CMOUT	Common Mode Voltage
See Description (AD0/CS)	M0	10	11	FILT+	Positive Voltage Reference

Pin	Name	I/O	DESCRIPTIONS
1	$\overline{\text{RST}}$	I	RESET
2	VL	I	INTERFACE POWER
3	SDATA	I	SERIAL AUDIO DATA
4	SCLK	I	SERIAL CLOCK
5	LRCK	I	LEFT/RIGHT CLOCK
6	MCLK	I	MASTER CLOCK
7	M3	I	STAND-ALONE MODE:MODE SLECT, (CONTROL PORT MODE:MODE SLECT)
8	M2(SCL/CCLK)	I	STAND-ALONE MODE:MODE SLECT, (CONTROL PORT MODE:SERIAL CONTROL INTERFACE CLOCK)
9	M1(SDA/CDIN)	I/O	STAND-ALONE MODE:MODE SLECT, (CONTROL PORT MODE:SERIAL CONTROL DATA I/O)
10	M0(AD0/CS)	I	STAND-ALONE MODE:MODE SLECT, (CONTROL PORT MODE:ADDRESS BIT/CHIP SELECT)
11	FILT+	O	POSITIVE VOLTAGE REFERENCE
12	CMOUT	O	COMMON MODE VOLTAGE
13	BMUTEC	O	CHANNEL B MUTE CONTROL
14	AOUTB-	O	DIFFERENTIAL ANALOG OUTPUT
15	AOUTB+	O	DIFFERENTIAL ANALOG OUTPUT
16	AGND	I	ANALOG GROUND
17	VA	I	ANALOG POWER
18	AOUTA+	O	DIFFERENTIAL ANALOG OUTPUT
19	AOUTA-	O	DIFFERENTIAL ANALOG OUTPUT
20	AMUTEC	O	CHANNEL A MUTE CONTROL

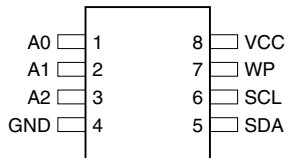


SYMBOL	DESCRIPTIONS
\overline{EA}	EXTERNAL ACCESS ENABLE: This pin forces the processor to execute out of external ROM. It should be kept high to access internal ROM. The ROM address and data will not be presented on the bus if \overline{EA} pin is high and the program counter is within on-chip ROM area.
\overline{PSEN}	PROGRAM STORE ENABLE: \overline{PSEN} enables the external ROM data onto the Port 0 address/ data bus during fetch and MOVC operations. When internal ROM access is performed, no \overline{PSEN} strobe signal outputs from this pin.
ALE	ADDRESS LATCH ENABLE: ALE is used to enable the address latch that separates the address from the data on Port 0.
RST	RESET: A high on this pin for two machine cycles while the oscillator is running resets the device.
XTAL1	CRYSTAL1: This is the crystal oscillator input. This pin may be driven by an external clock.
XTAL2	CRYSTAL2: This is the crystal oscillator output. It is the inversion of XTAL1.
VSS	GROUND: Ground potential
VDD	POWER SUPPLY: Supply voltage for operation.
P0.0–P0.7	PORT 0: Port 0 is a bi-directional I/O port which also provides a multiplexed low order address/data bus during accesses to external memory. The Port 0 is also an open-drain port and external pull-ups need to be connected while in programming.
P1.0–P1.7	PORT 1: Port 1 is a bi-directional I/O port with internal pull-ups. The bits have alternate functions which are described below: T2(P1.0): Timer/Counter 2 external count input T2EX(P1.1): Timer/Counter 2 Reload/Capture control
P2.0–P2.7	PORT 2: Port 2 is a bi-directional I/O port with internal pull-ups. This port also provides the upper address bits for accesses to external memory.
P3.0–P3.7	PORT 3: Port 3 is a bi-directional I/O port with internal pull-ups. All bits have alternate functions, which are described below: RXD(P3.0) : Serial Port receiver input TXD(P3.1) : Serial Port transmitter output $\overline{INT0}$ (P3.2) : External Interrupt 0 $\overline{INT1}$ (P3.3) : External Interrupt 1 T0(P3.4) : Timer 0 External Input T1(P3.5) : Timer 1 External Input \overline{WR} (P3.6) : External Data Memory Write Strobe \overline{RD} (P3.7) : External Data Memory Read Strobe
P4.0–P4.3	PORT 4: Another bit-addressable bidirectional I/O port P4. P4.3 and P4.2 are alternative function pins. It can be used as general I/O port or external interrupt input sources ($\overline{INT2}$ / $\overline{INT3}$).

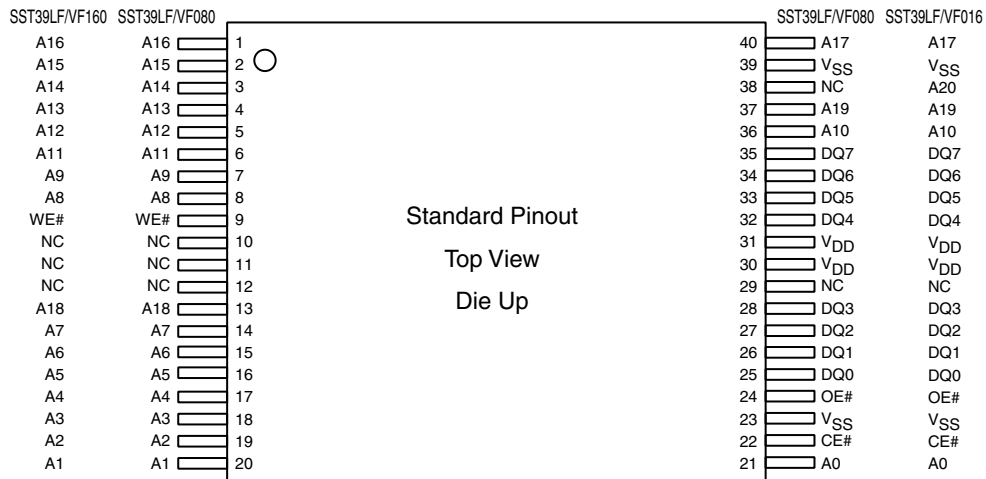
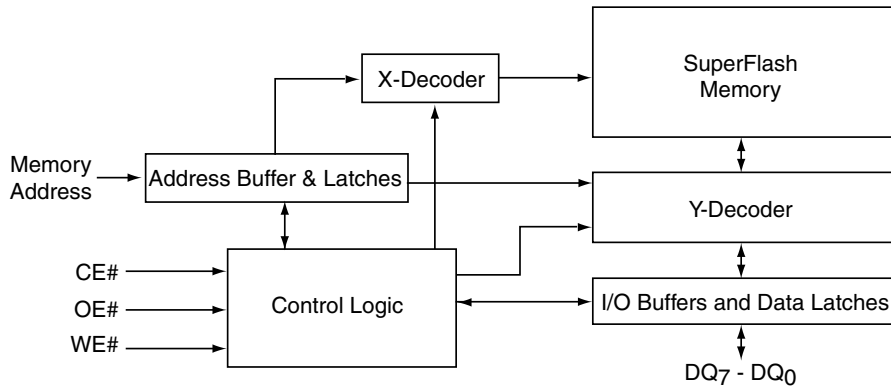
U501:W78LE51



U205:AT24C02



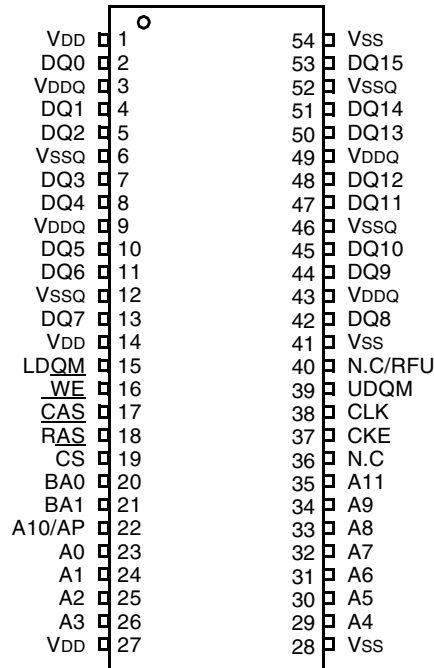
Pin Name	Function
A0 - A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock Input
WP	Write Protect
NC	No Connect



Symbol	Pin Name	Functions
A _{MS} -A ₀	Address Inputs	To provide memory addresses. During Sector-Erase A _{MS} -A ₁₂ address lines will select the sector. During Block-Erase A _{MS} -A ₁₆ address lines will select the block.
DQ ₇ -DQ ₀	Data Input/output	To output data during Read cycles and receive input data during Write cycles. Data is internally latched during a Write cycle. The outputs are in tri-state when OE# or CE# is high.
CE#	Chip Enable	To activate the device when CE# is low.
OE#	Output Enable	To gate the data output buffers.
WE#	Write Enable	To control the Write operations.
V _{DD}	Power Supply	To provide power supply voltage: 3.0-3.6V for SST39LF080/016 2.7-3.6V for SST39VF080/016
V _{SS}	Ground	
NC	No Connection	Unconnected pins.

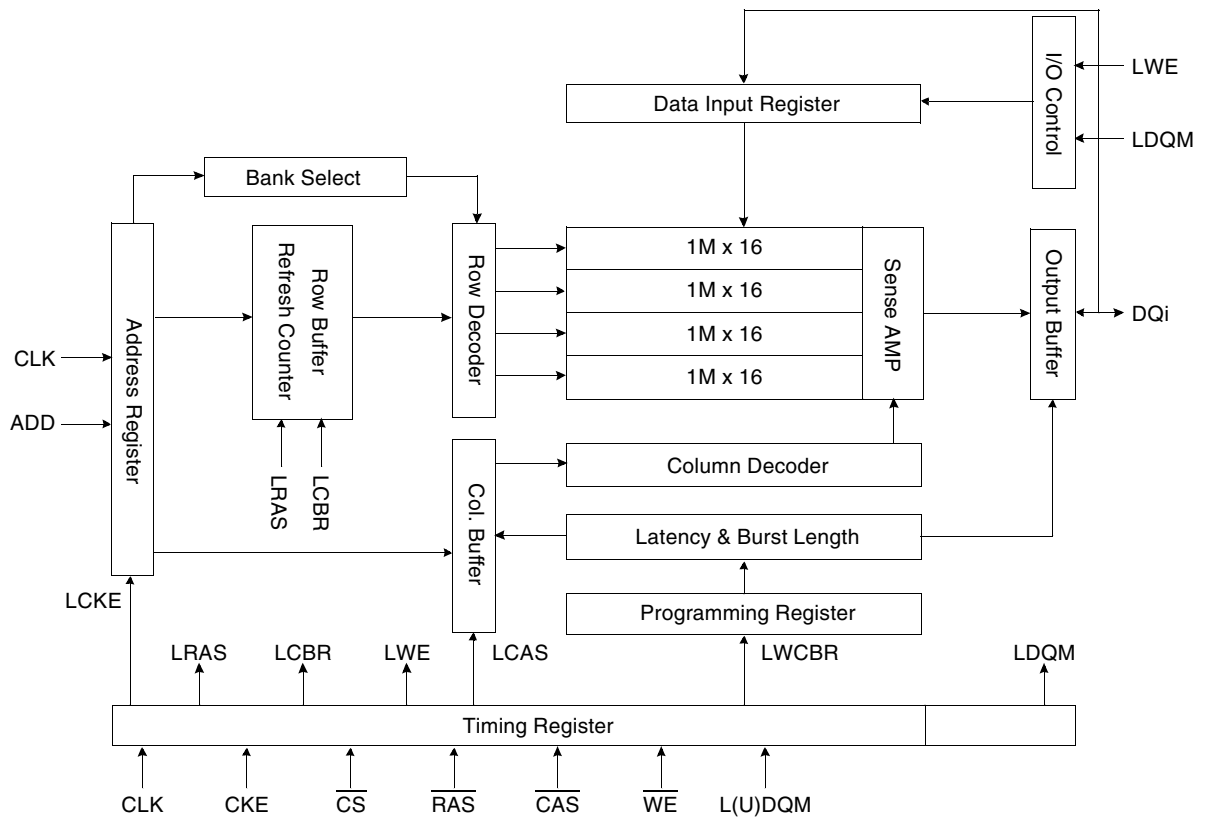
Note: A_{MS} = Most significant address
A_{MS} = A₁₉ for SST39LF/VF080 and A₂₀ for SST39LF/VF016.

U204:K4S641632D



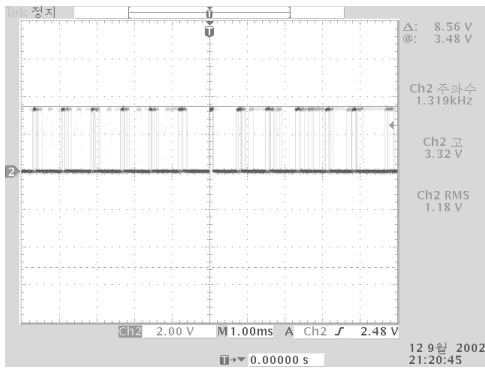
54Pin TSOP (II)
 (400mil x 875mil)
 (0.8 mm Pin pitch)

Pin	Name	Input Function
CLK	System clock	Active on the positive going edge to sample all inputs.
\overline{CS}	Chip select	Disables or enables device operation by masking or enabling all inputs except CLK, CKE and L(U)DQM
CKE	Clock enable	Masks system clock to freeze operation from the next clock cycle. CKE should be enabled at least one cycle prior to new command. Disable input buffers for power down in standby.
A0 ~ A11	Address	Row/column addresses are multiplexed on the same pins. Row address : RA0 ~ RA11, Column address : CA0 ~ CA7
BA0 ~ BA1	Bank select address	Selects bank to be activated during row address latch time. Selects bank for read/write during column address latch time.
\overline{RAS}	Row address strobe	Latches row addresses on the positive going edge of the CLK with \overline{RAS} low. Enables row access & precharge.
\overline{CAS}	Column address strobe	Latches column addresses on the positive going edge of the CLK with \overline{CAS} low. Enables column access.
\overline{WE}	Write enable	Enables write operation and row precharge. Latches data in starting from CAS, WE active.
L(U)DQM	Data input/output mask	Makes data output Hi-Z, tSHZ after the clock and masks the output. Blocks data input when L(U)DQM active.
DQ0 ~ 15	Data input/output	Data inputs/outputs are multiplexed on the same pins.
VDD/VSS	Power supply/ground	Power and ground for the input buffers and the core logic.
VDDQ/VSSQ	Data output power/ground	Isolated power supply and ground for the output buffers to provide improved noise immunity.
N.C./RFU	No connection /reserved for future use	This pin is recommended to be left No Connection on the device.

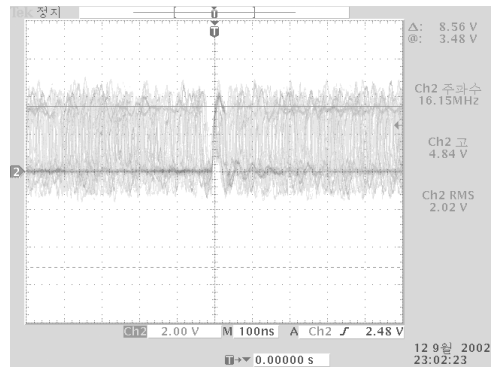


13. WAVE FORM CHART

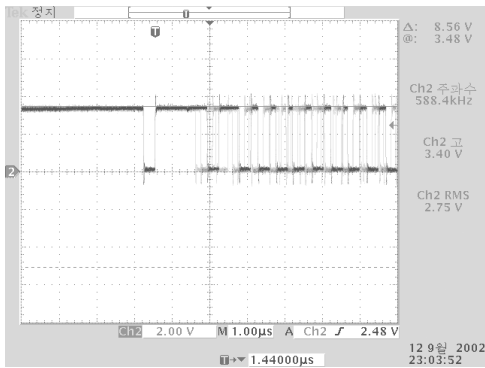
1. CE#



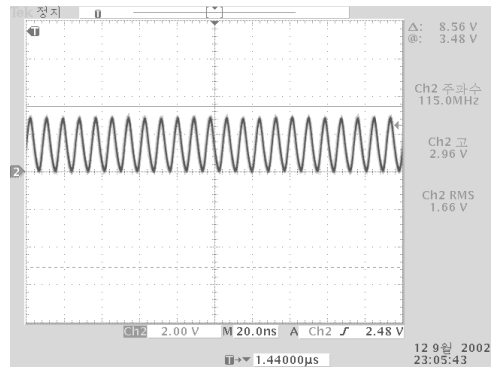
2. WE#



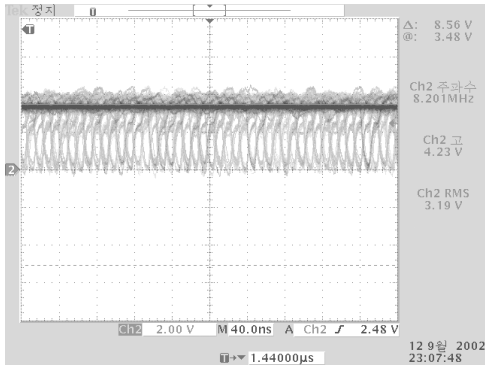
3. OE#



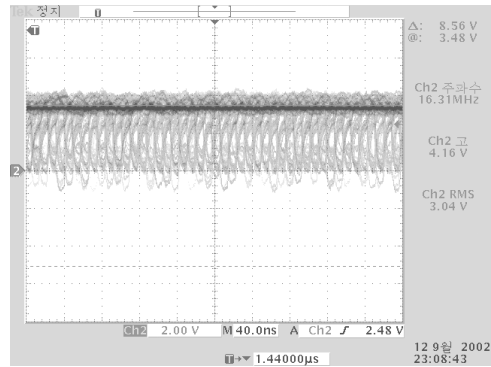
4. DSCK



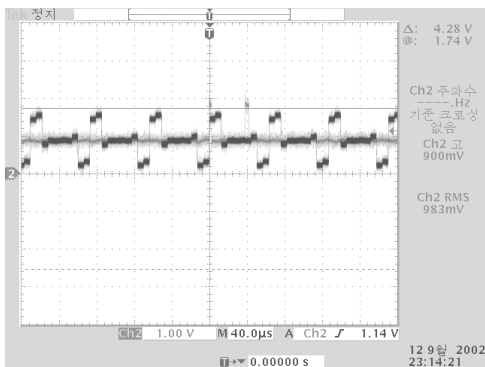
5. RAS0#



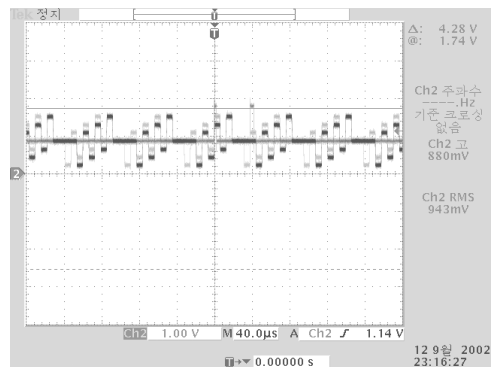
6. CS#



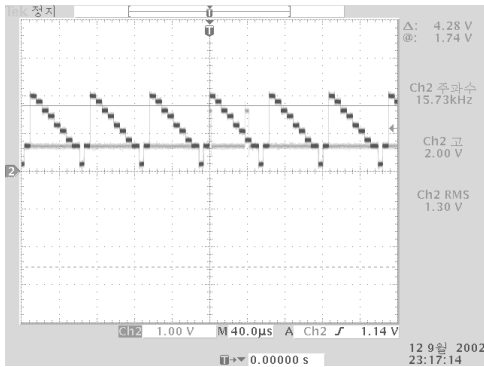
7. DDAC



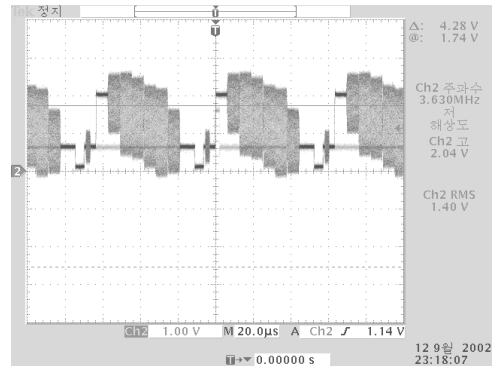
8. CDAC



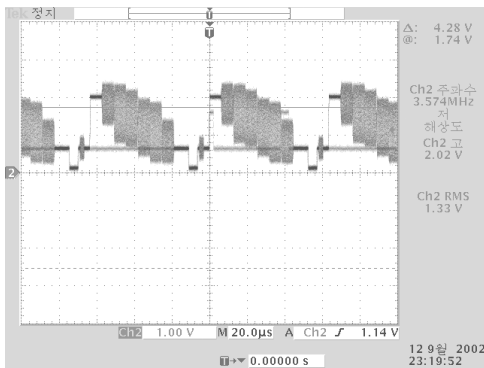
9. BDAC



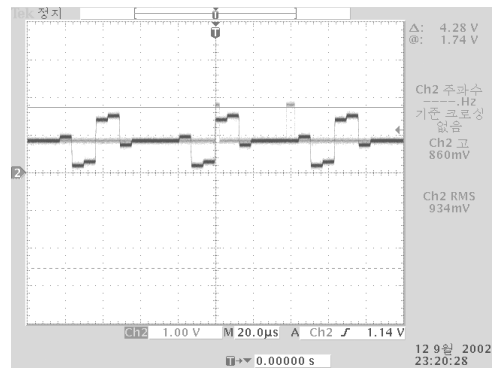
10. ADAC



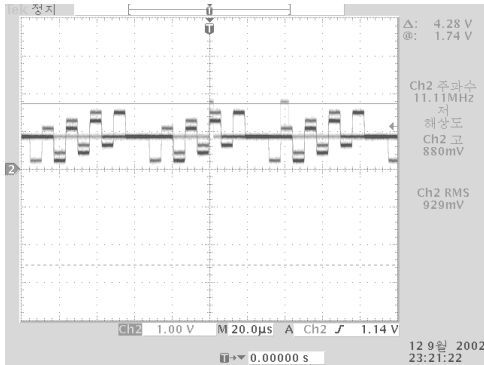
11. CVBS



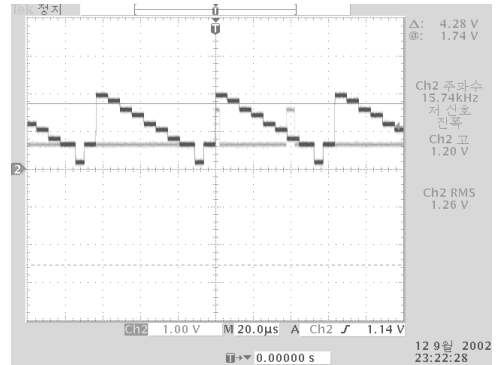
12. R/Pr



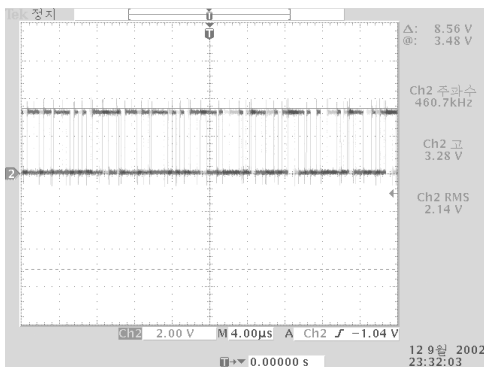
13. C/B/Pb



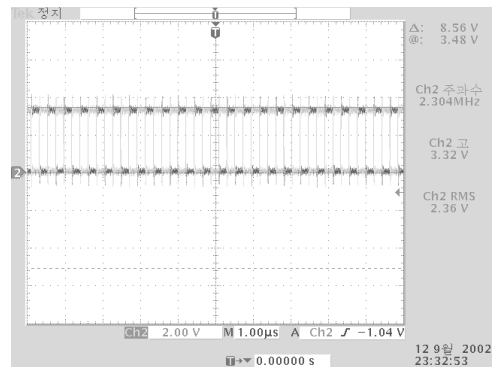
14. Y/G/Yp



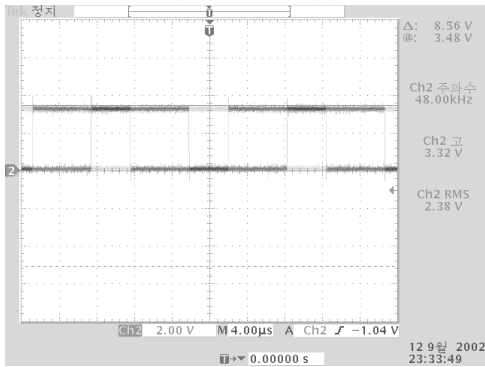
15. TSDO



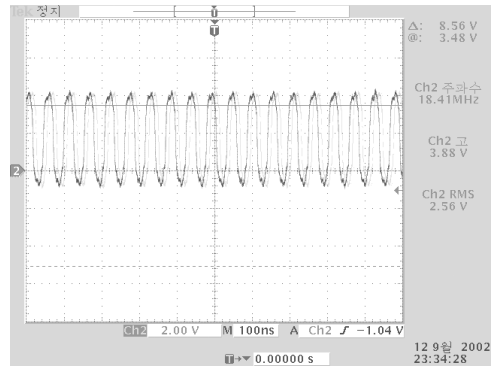
16. BCLK



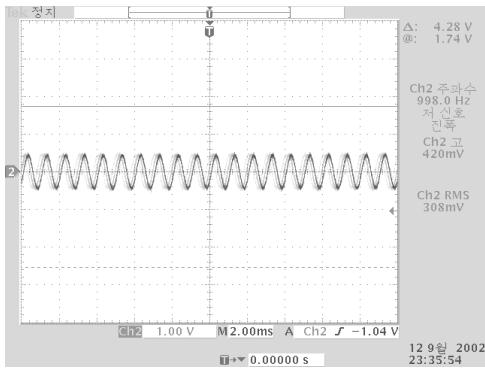
17. LRCK



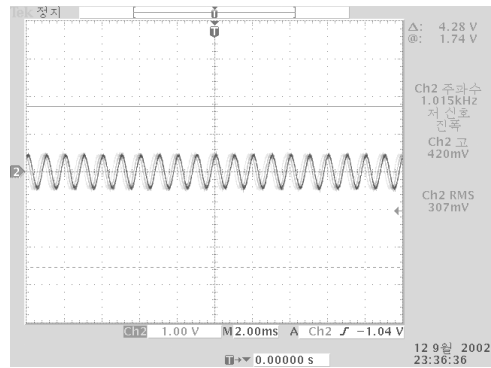
18. MCLK



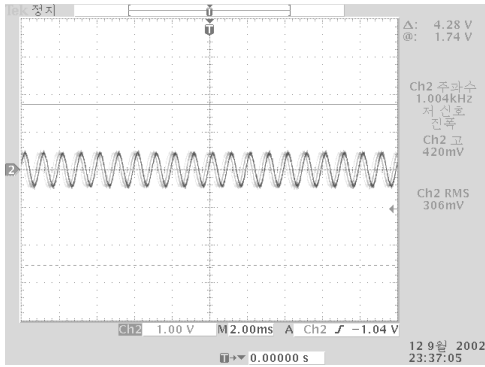
19. FLO_RCA



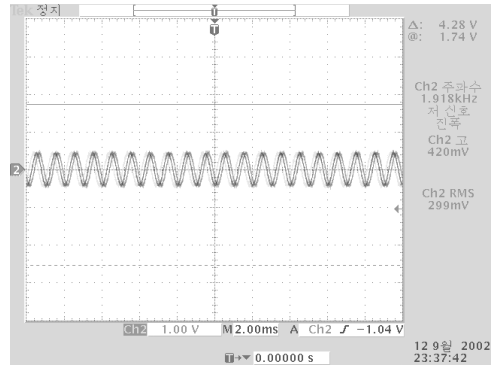
20. FRO_RCA



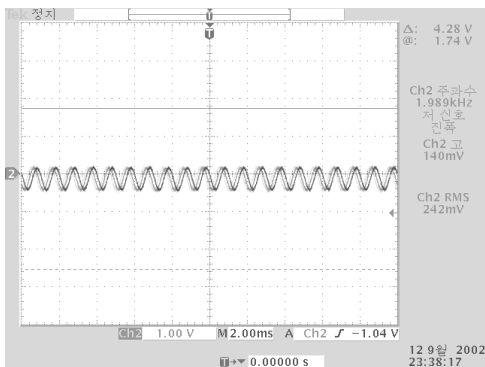
21. ALO_TVS



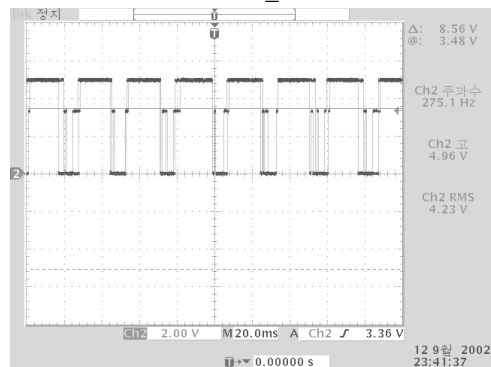
22. ARO_TVS



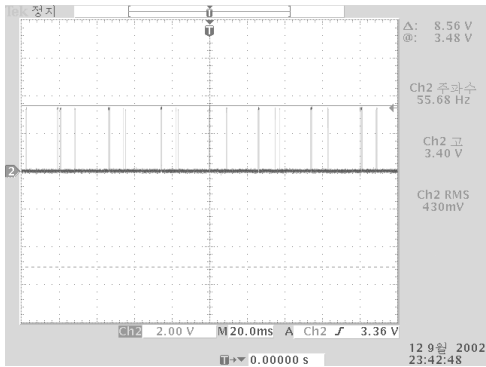
23. MUTE



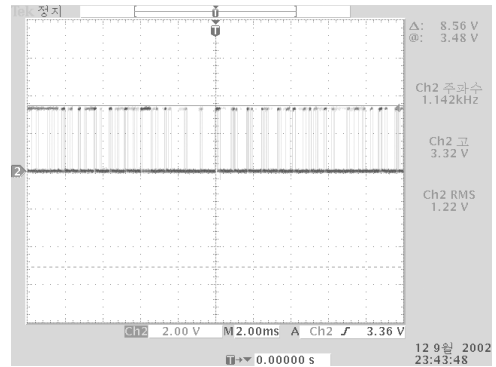
24. HOST_DATA



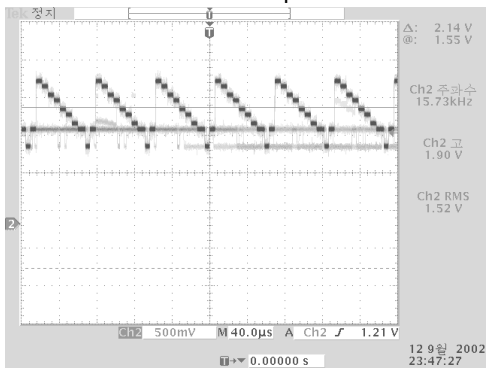
25. HOST_CS



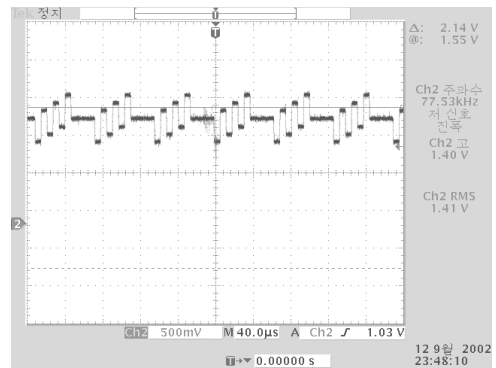
26. HOST_CLK



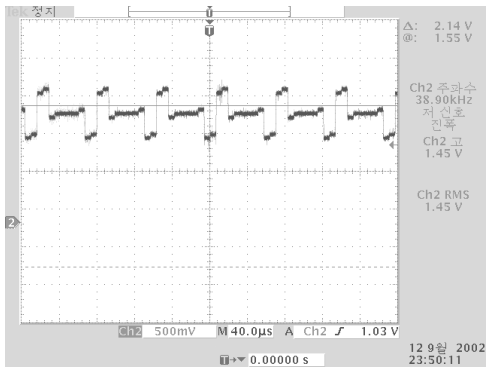
27. Y/G/Yp3



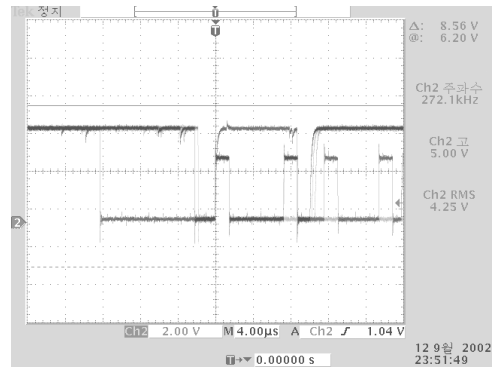
28. C/B/Pb3



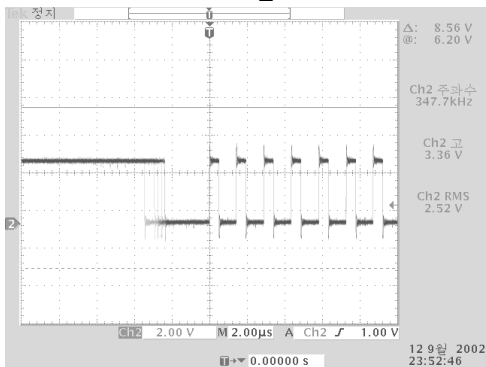
29. R/Pr3



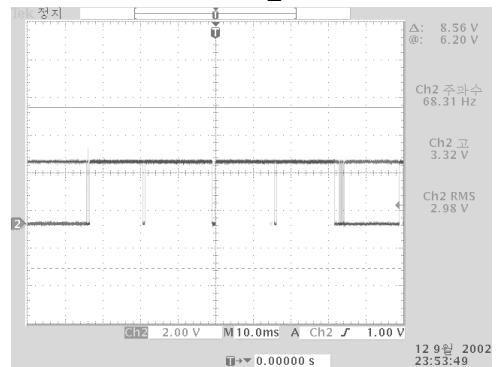
30. VFD_DATA



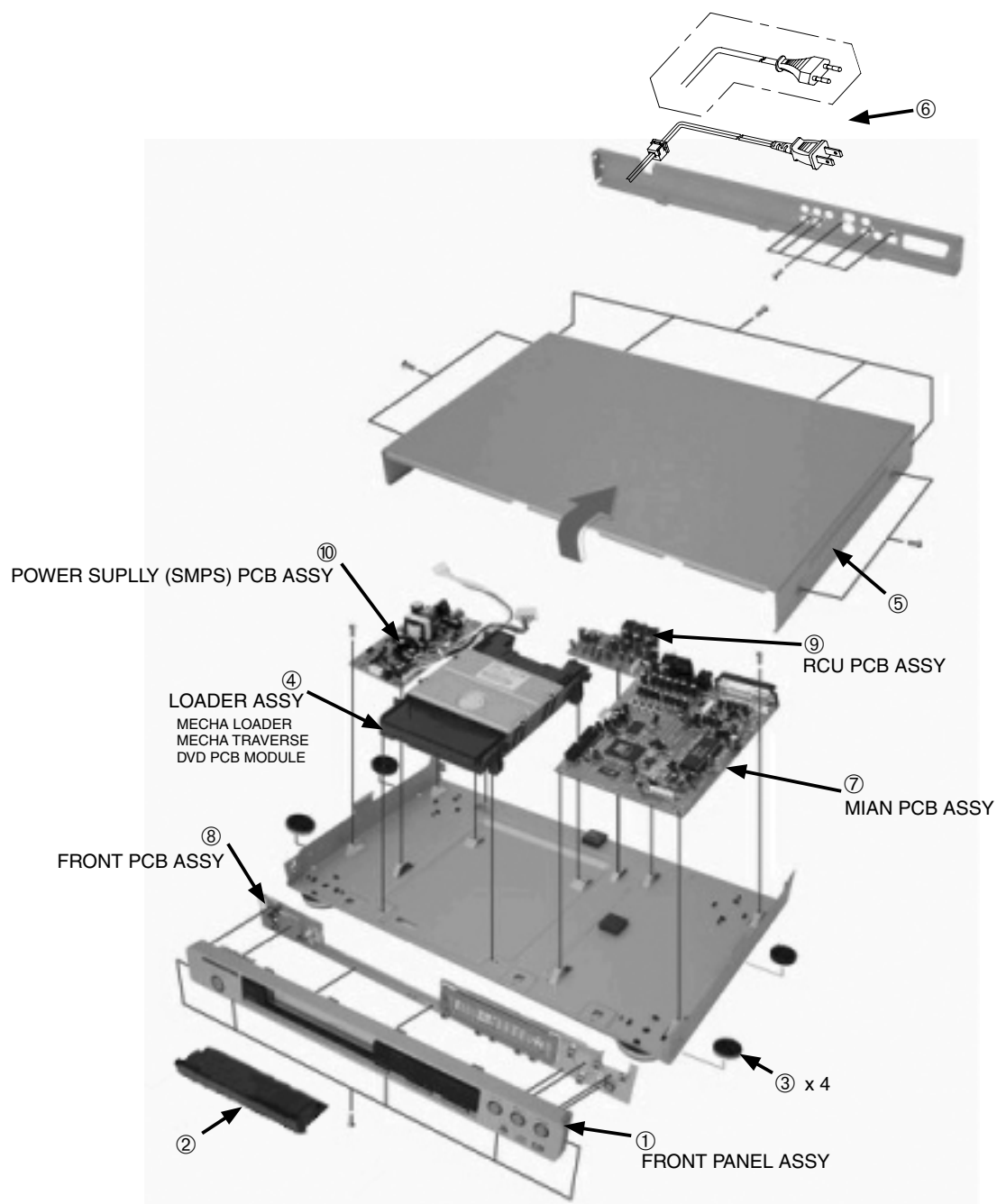
31. VFD_CLK



32. VFD_CS



14. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MJI)	DESCRIPTION (& Part Code)	
1	DV4300 GOLD	21AW248500	21AW248500	FRONT PANEL ASSY	FRONT PANEL ASSY (GOLD)
1	DV4300 BLACK	21AW248510	21AW248510	FRONT PANEL ASSY	FRONT PANEL ASSY (BLACK)
1	DV4300 SILVER	21AW248530	21AW248530	FRONT PANEL ASSY	FRONT PANEL ASSY (SILVER)
1	PMD910		21AW248520	FRONT PANEL ASSY	FRONT PANEL ASSY PMD910 BLACK
2	BLACK GOLD	21AW063010	21AW063010	DECK COVER	DECK COVER
2	SILVER	21AW063110	21AW063110	DECK COVER	DECK COVER (SILVER)
3	BLACK GOLD	21AW057010	21AW057010	LEG ASSY	LEG ASSY
3	SILVER	21AW057020	21AW057020	LEG ASSY	LEG ASSY (SILVER)
4		21AW304500	21AW304500	LOADER ASSY	RL-A700 LOADER ASSY
▲	6 /A		YC0183001R	POWER CORD	2*0.75MM2/250V,7.5A/1.83M/BK
▲	6 /C		YC0183002R	POWER CORD	2*0.75MM2/250V,3A/1.83M/1.83M/BK(KOR)
▲	6 /F		YC0183003R	POWER CORD	HVCTEFK2*0.75MM,125V/7A(JPA)
▲	6 /N/S	YC0183004R	YC0183004R	POWER CORD	2*0.75MM2/250V,2.5A/1.83/BK(EUROP)
▲	6 /U		YC0183005R	POWER CORD	NISP-2,2*18AWG,125V10A(USA)
7	/A		ZZ21AW100R	MAIN PCB ASSY	MAIN PCB ASSY FOR A
7	/C/S		ZZ21AW110R	MAIN PCB ASSY	MAIN PCB ASSY FOR C AND S
7	/F		ZZ21AW120R	MAIN PCB ASSY	MAIN PCB ASSY FOR F
7	/N	ZZ21AW130R	ZZ21AW130R	MAIN PCB ASSY	MAIN PCB ASSY FOR N
7	/U		ZZ21AW140R	MAIN PCB ASSY	MAIN PCB ASSY FOR U
8		ZZ21AW200R	ZZ21AW200R	FRONT PCB ASSY	FRONT PCB ASSY
9	/A/C/F/S		ZZ21AW300R	RCU PCB ASSY	RCU PCB ASSY FOR A C F AND S
9	/N/U	ZZ21AW310R	ZZ21AW310R	RCU PCB ASSY	RCU PCB ASSY FOR N AND U
10		ZZ21AW400R	ZZ21AW400R	SMPS PCB ASSY	C201TY01 SMPS ASSY
-	BLACK GOLD	344W251010	344W251010	BADGE	MARANTZ BADGE
-	SILVER	24AW251120	24AW251120	BADGE	MARANTZ BADGE SILVER
				WIRE	
-			YU1415053R	FFC CABLE	1.25X14X150XC(5/5/10)X(0.2X0.8)
-			YU4025028R	IDE CABLE	IDC40F FLAT CABLE
				PACKING	
-		ZK21AW0010	ZK21AW0010	REMOTE CONTROLER	HD7-715(RC4300DV)
-	DV4300 /A/C/S		21AW851350	USER GUIDE	USER GUIDE FOR A C AND S
-	DV4300 /C		21AW851360	USER GUIDE	USER GUIDE FOR C
-	DV4300 /F		21AW851110	USER GUIDE	USER GUIDE FOR F
-	DV4300 /N	21AW851310	21AW851310	USER GUIDE	USER GUIDE FOR N
-	DV4300 /U		21AW851250	USER GUIDE	USER GUIDE FOR U
-	PMD910		21AW851280	USER GUIDE	USER GUIDE FOR PMD910
				NOT STANDARD SPARE PARTS	
5	GOLD		21AW257010	TOP COVER	TOP COVER (GOLD)
5	BLACK		21AW257110	TOP COVER	TOP COVER (BLACK)
5	SILVER		21AW257210	TOP COVER	TOP COVER (SILVER)
-	DV4300		21AW801010	CARTON BOX	CARTON BOX DV4300
-	PMD910		21AW801020	CARTON BOX	CARTON BOX PMD910
-			21AW809010	CUSHION	CUSHION L/R

15. ELECTRICAL PARTS LIST

POS. NO	VERS. COLOR	PART NO. (FOR EUR)	PART NO. (MJ)	DESCRIPTION (& Part Code)	
MAIN PCB					
CN107	/N	YT0221009R	YT0221009R	SCART21P X1	SCART21PX1
CN108		BY0402003R	BY0402003R	JACK	C5016032YN S-VIDEO RCA X1
CN109		YT0203078R	YT0203078R	JACK	RCA CONN 3 AUDIO COAXIAL
CN110		YJ1500024R	YJ1500024R	OPTICAL JACK	TOTX178A OPTICAL JACK
U101		HC98J3699R	HC98J3699R	IC	IRU1117 REGULATOR
U201		HC1023499R	HC1023499R	IC	ES6028QT
U202		HC1023599R	HC1023599R	IC	SST39VF080-70-4C-EI
U204		HC1023699R	HC1023699R	IC	4MX16 SDRAM (9NS)
U205		HC1023799R	HC1023799R	IC	24C02A EEPROM
U301		HC1001888R	HC1001888R	IC	CS4391 AUDIO DAC
U501	/A		HU21AWX00R	MICROPROCESSOR	W78E52B-24(DIP) FOR A
U501	/C/S		HU21AWX10R	MICROPROCESSOR	W78E52B-24(DIP) FOR C AND S
U501	/F		HU21AWX20R	MICROPROCESSOR	W78E52B-24(DIP) FOR F
U501	/N	HU21AWX30R	HU21AWX30R	MICROPROCESSOR	W78E52B-24(DIP) FOR N
U501	/U		HU21AWX40R	MICROPROCESSOR	W78E52B-24(DIP) FOR U
X201		JX2700226R	JX2700226R	X-TAL & OSC	27MHZ, 30PPM, 18P, 50OHM
X401		JX1100226R	JX1100226R	X-TAL & OSC	11.0592MHZ, 30PPM, 20P, 60OHM
RCU PCB					
CN112		YT0205007R	YT0205007R	JACK	SY-J0607-5P(S) RCA
CN113	/A/C/F/S		YJ1100069R	JACK	D1/D2 JACK
SW601		SS0102114R	SS0102114R	SWITCH	SLIDE-SWITCH(CSS-1223)
FRONT PCB					
FD2		HI1000499R	HI1000499R	LED	SR3511-F4T 3PI 2.5MM (RED)
FSW1		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW2		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW3		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW4		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW5		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW8		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW9		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW10		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW11		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FSW12		SP0101393R	SP0101393R	TACT SWITCH	5MM HIGT, 160G, 2PIN
FU1		HC1224406R	HC1224406R	IC	UPD6311 VFD DRIVER
FU2		HW1003999R	HW1003999R	IR SENSOR	FRP-5052HS IR SENSOR
FU3		HQ3080199R	HQ3080199R	DISPLAY	DVD VFD(HNR-08SM07)
SMPS PCB					
▲	PF2	/A/N/S/U	FS1020091R	FS1020091R	FUSE 3620300001 50T 2.0A (AE)
▲	PF2	/C/F		FS1020092R	FUSE 3620300008 S51 2.0A (AJ)