BLU-RAY DISC PLAYER BDP7100/12

Service
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Service Manual

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Version 1.1

PHILIPS

1. Technical Specification

1.1 General

Mains voltage	:	220V ~ 230V
Mains frequency	:	50Hz
Power consumption	:	29 W
Standby Power consumption	:	< 1.1W

1.2 Dimensions and Weight

Height of feet	:	2mm
Apparatus tray closed	:	WxDxH: 430 x 319 x 79mm
Apparatus tray open	:	WxDxH: 430 x 445 x 79mm
Weight without packaging	:	4.3kg
Weight with packaging	:	7.4kg

1.3 Optical Drive reading speed

BD (Blu-ray Disc)	:	4.917 m/s
DVD	:	3.49 – 4.06 m/s
CD 12cm	:	4.8 – 5.6 m/s
CD 8cm	:	4.8 – 5.6 m/s

1.4 Region codes

BD (Blu-ray Disc)	:	B
DVD	:	2

1.5 Playable Disc types

BD-ROM	:	BD-ROM ver2.0, BD-RE2.0 and 3.0, BD-Rv1.0, v2.0
DVD	:	DVD Video, DVD-R/RW (4.7GB)
CD	:	Audio CD, CD-RW, CD-R

1.6 Audio Output:

2-Channel analog	:	Left / Right
5.1 Channel	:	Front L/R, Rear L/R, Center, Subwoofer
HDMI	:	PCM multi-channel audio, bitstream audio, PCM audio
Digital audio output	:	Optical/Coaxial (S/PDIF)

1.7 Video Output:

Component video:	Y	:	1Vpp 75Ω load
	Pb	:	0.7Vpp 75Ω load
	Pr	:	0.7Vpp 75Ω load
Composite video		:	1Vpp 75Ω load
S-Video:	Luminance	:	1Vpp 75Ω load
	Chrominance	:	0.3Vpp 75Ω load
HDMI		:	480p, 720p, 1080i, 1080p

1.8 Video Performance

1.8.1 Component Video:

Outpuy Impedance	:	75 Ω
SNR	:	> -60dB on all output
Bandwidth Y	:	5.7MHz ± 3dB (480i) 11.6MHz ± 3dB (480p) 26.1MHz ± 1dB (720p/1080i)
Bandwidth PbPr	:	2.9MHz ± 3dB (480i) 5.8MHz ± 3dB (480p) 13MHz ± 1dB (720p/1080i)
Supports:	:	BD: 1080i, 720p, 480p, 480i
DVD	:	480p, 480i

1.8.2 Composite Video (CVBS):

Output Impedance	:	75Ω
SNR Luminance	:	> -65dB
SNR Chrominance AM	:	> -59dB
SNR Chrominance PM	:	> -49dB
Bandwidth Luminance	:	4.2MHz ± 1dB
Supports:	:	BD: 480i / DVD: 480i

1.8.3 S-Video:

Output Impedance	:	75Ω
SNR Y	:	> -65dB
SNR C AM	:	> -59dB
SNR C PM	:	> -49dB
Bandwidth Y	:	4.2MHz ± 1dB
Supports:	:	BD: 480i / DVD: 480i

1.9 Audio Performance

Output voltage	:	2Vrms ± 5%
Channel unbalance (1kHz)	:	< 0.1dB
Crosstalk 1kHz	:	< -110dB
Crosstalk 20Hz-20kHz	:	< -95dB
Frequency response 20Hz-20kHz	:	± 0.1dB max.
Signal to noise ratio (unweighted)	:	> 115dB
Dynamic range 1kHz	:	> 95dB
Distortion and noise 1kHz	:	< -90dB
Distortion and noise 20Hz-20kHz	:	< -90dB
Intermodulation distortion	:	< -80dB
Mute	:	< -100dB
Outband attenuation (above 25kHz)	:	> 50dB

1.10 Laser Output Power & Wavelength

1.10.1 Blu-Ray Disc

Output power	:	0.35mW (single), 0.7mW (Dual)
Wavelength	:	405nm

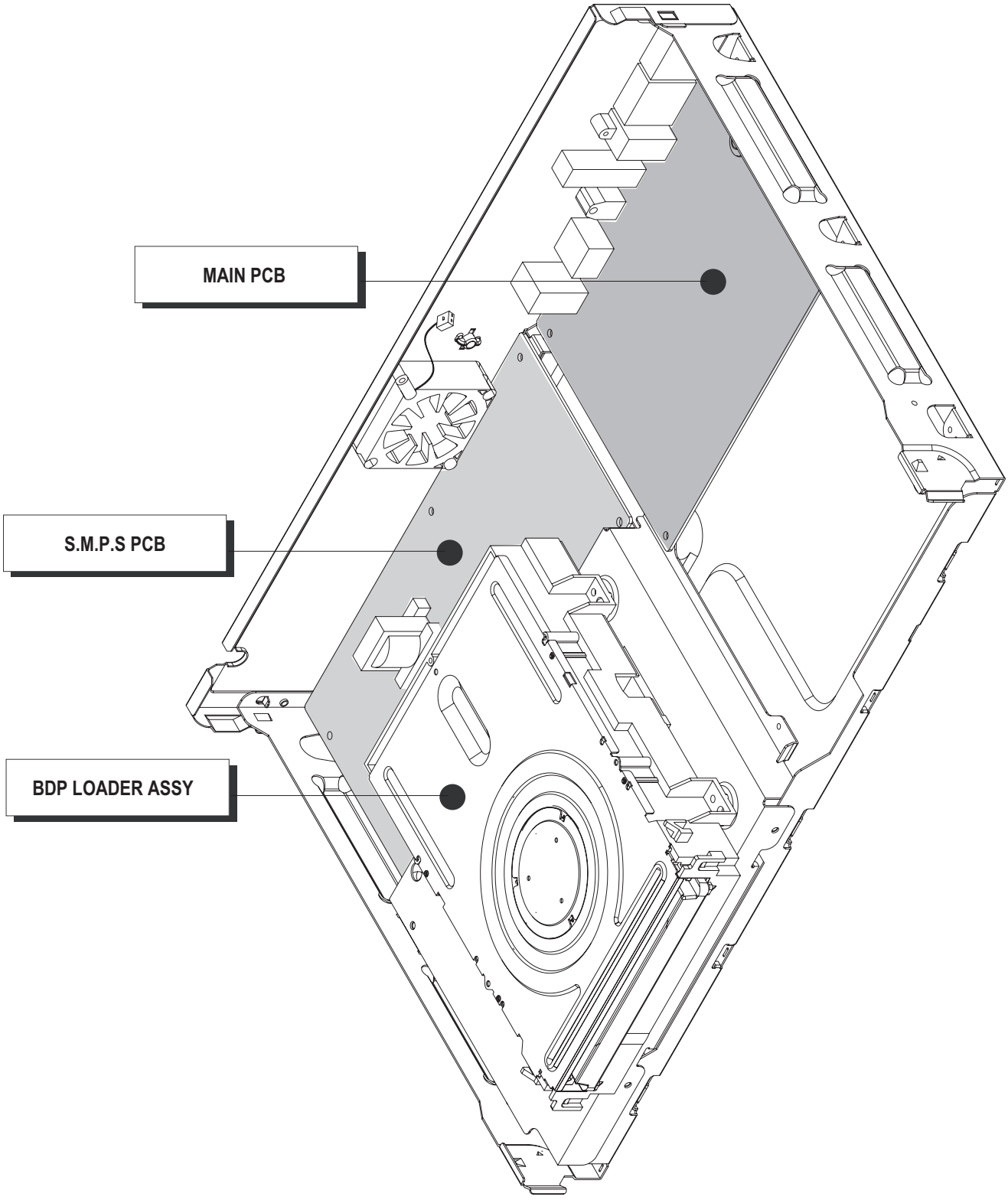
1.10.2 DVD

Output power	:	0.8mW
Wavelength	:	650nm

1.10.3 CD

Output power	:	0.3mW
Wavelength	:	780nm

1.11 PCB Location



2. Precautions

2-1 Safety Precautions

1) Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:

(1) Be sure that no built-in protective devices are defective or have been defeated during servicing.
(1) Protective shields are provided to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.
(2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fish papers, adjustment and compartment covers/ shields, and isolation resistor/capacitor networks. Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

(2) Be sure that there are no cabinet openings through which adults or children might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, excessively wide cabinet ventilation slots, and an improperly fitted and/or incorrectly secured cabinet back cover.

(3) Leakage Current Hot Check-With the instrument completely reassembled, plug the AC line cord directly into a 230V(220V ~ 240V) AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standardsp institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1270 (40.7). With the instrument's AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinets, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5mA. Reverse the instrument power cord plug in the outlet and repeat the test. See Fig. 1-1.

Any measurements not within the limits specified herein indicate a potential shock hazard that must be eliminated before returning the instrument to the customer.

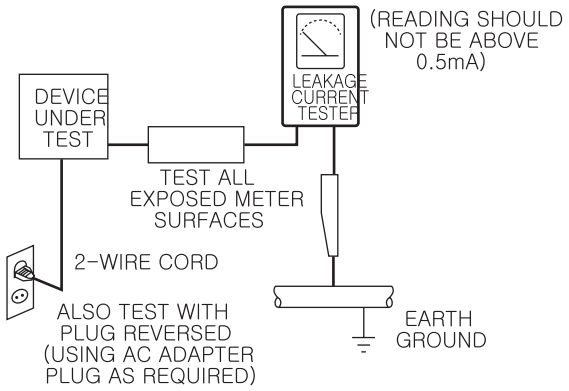


Fig. 1-1 AC Leakage Test

(4) Insulation Resistance Test Cold Check-(1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug.
(2) Turn on the power switch of the instrument.
(3) Measure the resistance with an ohmmeter between the jumpered AC plug and all exposed metallic cabinet parts on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. When an exposed metallic part has a return path to the chassis, the reading should be between 1 and 5.2 megohm. When there is no return path to the chassis, the reading must be infinite. If the reading is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be repaired and rechecked before it is returned to the customer. See Fig. 1-2.

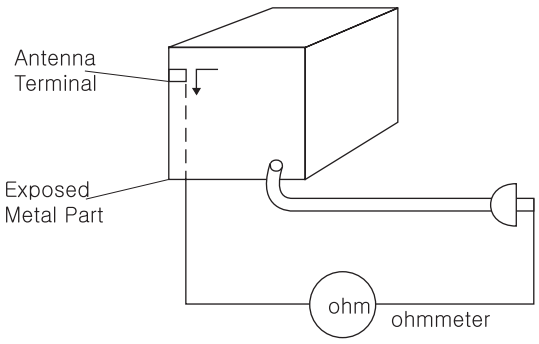


Fig. 1-2 Insulation Resistance Test

Precautions

2) Read and comply with all caution and safety related notes on or inside the cabinet, or on the chassis.

3) Design Alteration Warning-Do not alter or add to the mechanical or electrical design of this instrument.
Design alterations and additions, including but not limited to, circuit modifications and the addition of items such as auxiliary audio output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions will make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4) Observe original lead dress. Take extra care to assure correct lead dress in the following areas: (1) near sharp edges, (2) near thermally hot parts (be sure that leads and components do not touch thermally hot parts), (3) the AC supply, (4) high voltage, and (5) antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring, Do not change spacing between a component and the printed-circuit board. Check the AC power cord for damage.

5) Components, parts, and/or wiring that appear to have overheated or that are otherwise damaged should be replaced with components, parts and/ or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

6) Product Safety Notice-Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by shading, an (⚠)or a (⚠)on schematics and parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

2-2 Servicing Precautions

CAUTION : Before servicing units covered by this service manual and its supplements, read and follow the Safety Precautions section of this manual.Note : If unforseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions. Remember: Safety First.

2-2-1 General Servicing Precautions

(1) a. Always unplug the instrument's AC powercord from the AC power source before (1) re-moving or reinstalling any component, circuit board, module or any other instrument assembly, (2) disconnecting any instrument electrical plug or other electrical connection, (3) connecting a test substitute in parallel with an electrolytic ca pacitor in the instrument.
b. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.

c. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

d. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the test instrument positive lead. Alwaysremove the test instrument ground lead last.

Note : Refer to the Safety Precautions section ground lead last.

(2) The service precautions are indicated or printed on the cabinet, chassis or components. When servicing, follow the printed or indicated service precautions and service materials.

(3) The components used in the unit have a specified flame resistance and dielectric strength. When replacing components, use components which have the same ratings. Components identified by shading, by ( ) or by ( ) in the circuit diagram are important for safety or for the characteristics of the unit. Always replace them with the exact replacement components.

(4) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install such elements as they were.

(5) After servicing, always check that the removed screws, components, and wiring have been installed correctly and that the portion around the serviced part has not been damaged and so on. Further, check the insulation between the blades of the attachment plug and accessible conductive parts.

2-2-2 Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power ON. Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (see note) should be more than 1 Megohm.

Note : Accessible conductive parts include metal panels,input terminals, earphone jacks, etc.

2-3 ESD Precautions

Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be dam-agedeasily by static electricity.Such components commonly are called Electrostatically Sensitive Devices(ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. Thefollowing techniques should be used to help reducethe incidence of component damage caused by static electricity.

(1) Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

(2) After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

(3) Use only a grounded-tip soldering iron to solder or unsolder ESD devices.

(4) Use only an anti-static solder removal devices. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESD devices.

(5) Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.

(6) Do not remove a replacement ESD device from its protective package until immediately before your are ready to install it.(Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).

(7) Immediately before removing the protective materials from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

(8) Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

2-4 Handling the optical pick-up

The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

(1) Place a conductive sheet on the work bench (The black sheet used for wrapping repair parts.)

(2) Place the set on the conductive sheet so that the chassis is grounded to the sheet.

(3) Place your hands on the conductive sheet (This gives them the same ground as the sheet.)

(4) Remove the optical pick up block

(5) Perform work on top of the conductive sheet. Be careful not to let your clothes or any other static sources to touch the unit.

◆ Be sure to put on a wrist strap grounded to the sheet.

◆ Be sure to lay a conductive sheet made of copper etc. Which is grounded to the table.

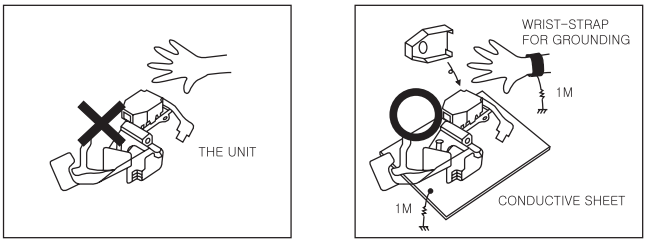


Fig.1-3

(6) Short the short terminal on the PCB, which is inside the Pick-Up ASS'Y, before replacing the Pick- Up. (The short terminal is shorted when the Pick- Up Ass'y is being lifted or moved.)

(7) After replacing the Pick-up, open the short terminal on the PCB.

2.5 Lead Free Requirement

Information about Lead-free produced sets

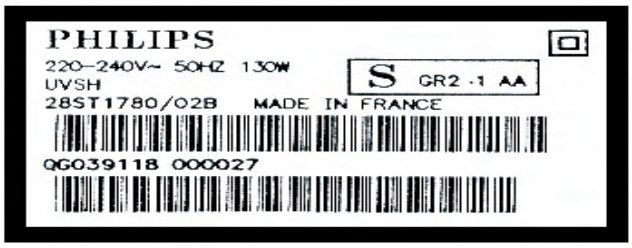
Philips CE is starting production of lead-free sets from 1.1.2005 onwards.

INDENTIFICATION:

Regardless of special logo (not always indicated)

One must treat all sets from **1 Jan 2005** onwards, according next rules.

Example S/N:



Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 1991 wk 18

So from 0501 onwards = from 1 Jan 2005 onwards

Important note: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-pate is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - o To reach at least a solder-temperature of 400°C,
  - o To stabilize the adjusted temperature at the solder-tip
  - o To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is poss ble but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website **www.atyourservice.ce.Philips.com** you find more information to:
  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

  You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

3. Disassembly and Reassembly

Cabinet and PCB

CAUTION : Connector Must be removed with care

3-1 Top Cabinet Removal

1) Remove 5 Screws ❶ ❷.
2) Lift up the Top Cabinet ❸ in direction of arrow.

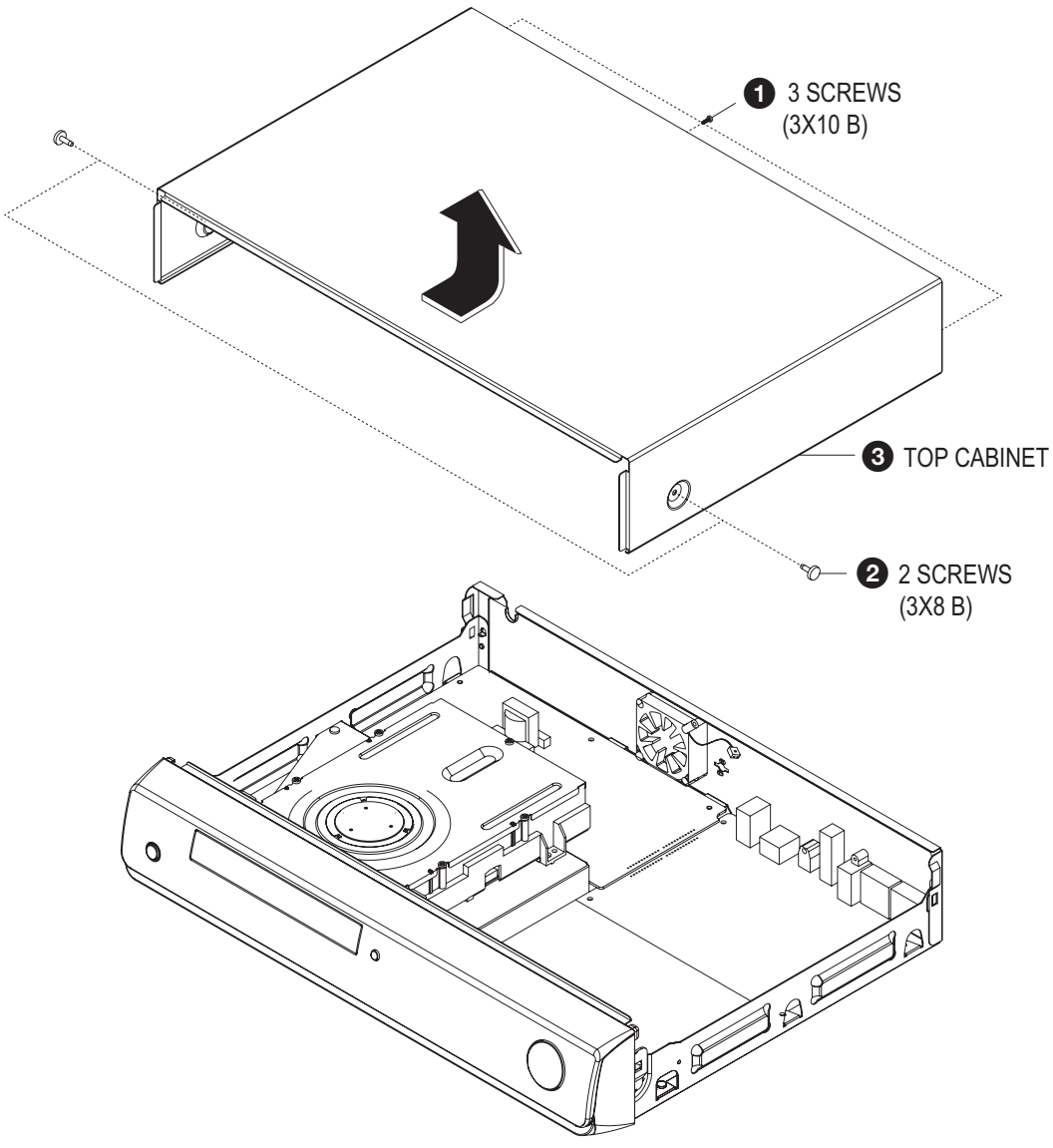


Fig. 3-1 Top Cabinet Removal

3-2 Ass'y Front-Cabinet Removal

1) Release 7 Hooks ❶, ❷, ❸, ❹ and Ass'y Front-Cabinet ❺.

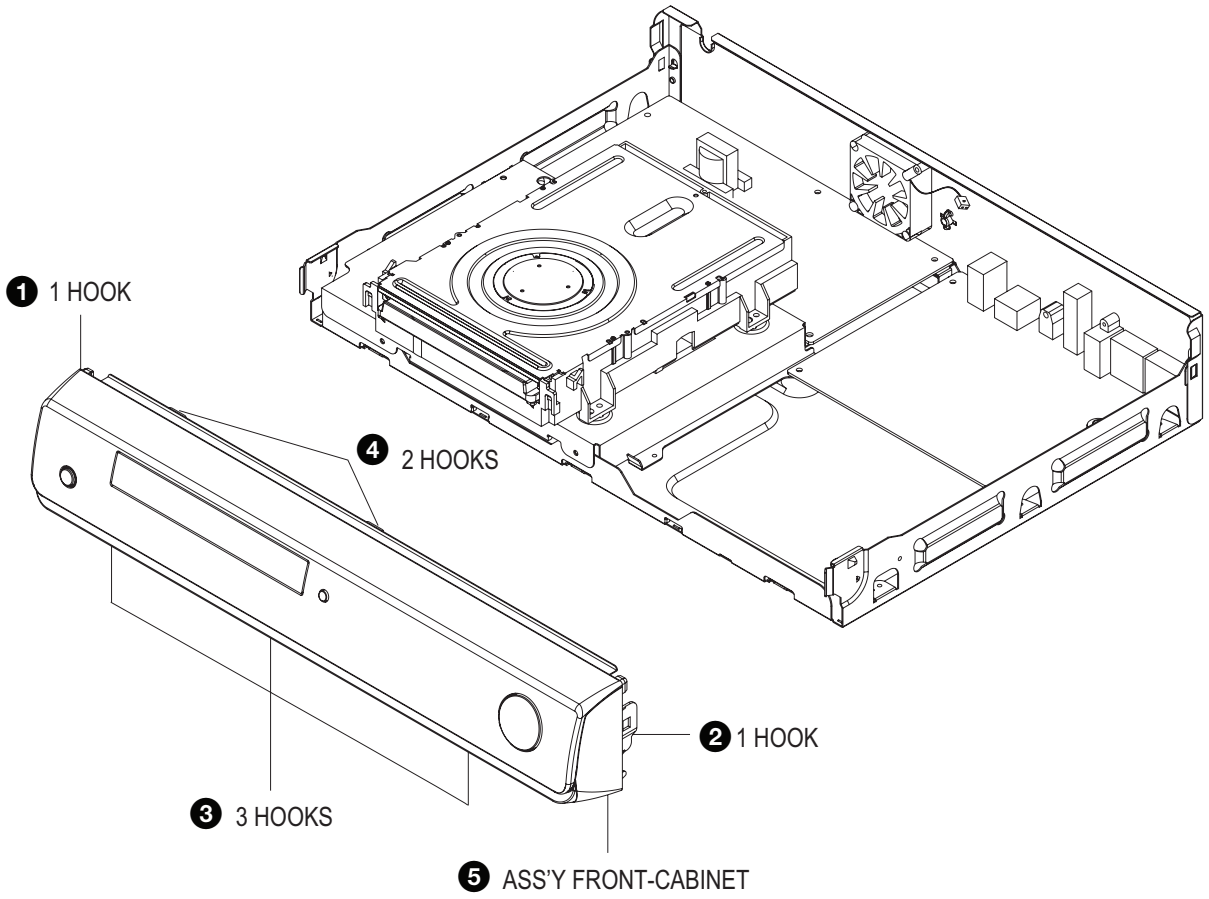


Fig. 3-2 Ass'y Front-Cabinet Removal

3-3 Ass'y Deck Removal

1) Remove 4 Screws ❶ from the Ass'y Deck ❷ and lift it up.

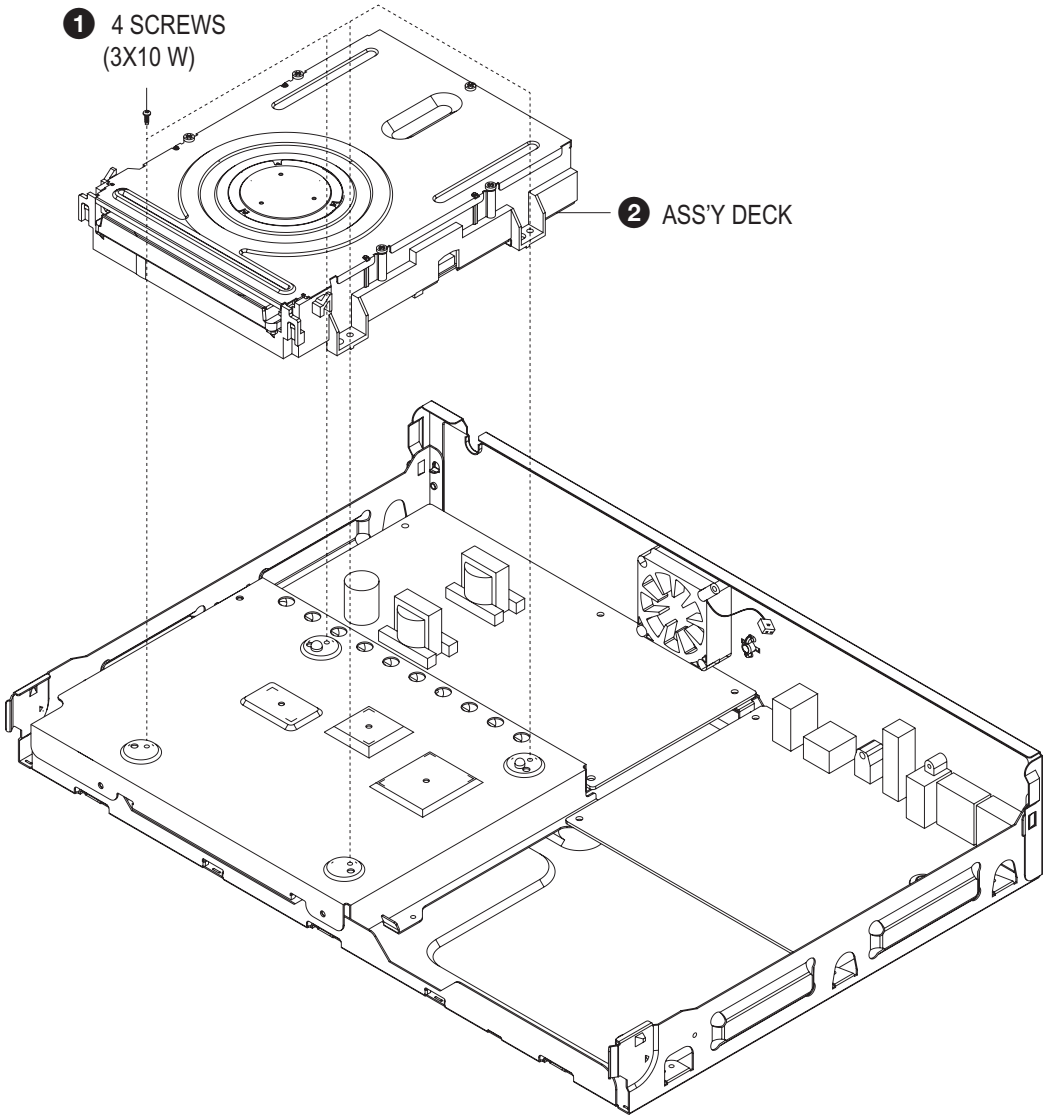


Fig. 3-3 Ass'y Deck Removal

3-4 S.M.P.S PCB Removal

1) Remove 3 Screws ❶, from the S.M.P.S PCB ❷ and lift it up.

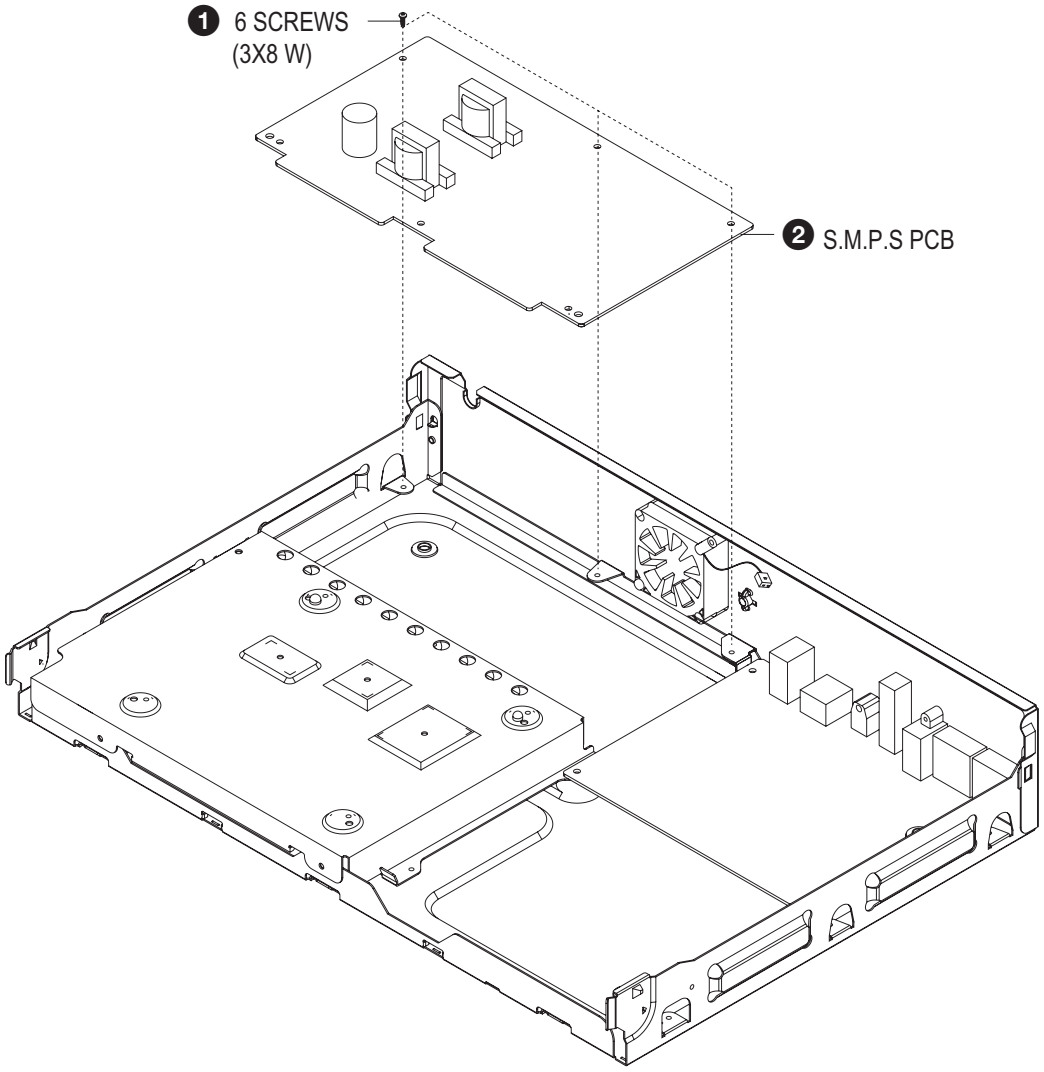


Fig. 3-4 S.M.P.S PCB Removal

3-5 Main PCB Removal

1) Remove 10 Screws ❶, ❷, ❸ from the Main PCB ❹ and lift it up.

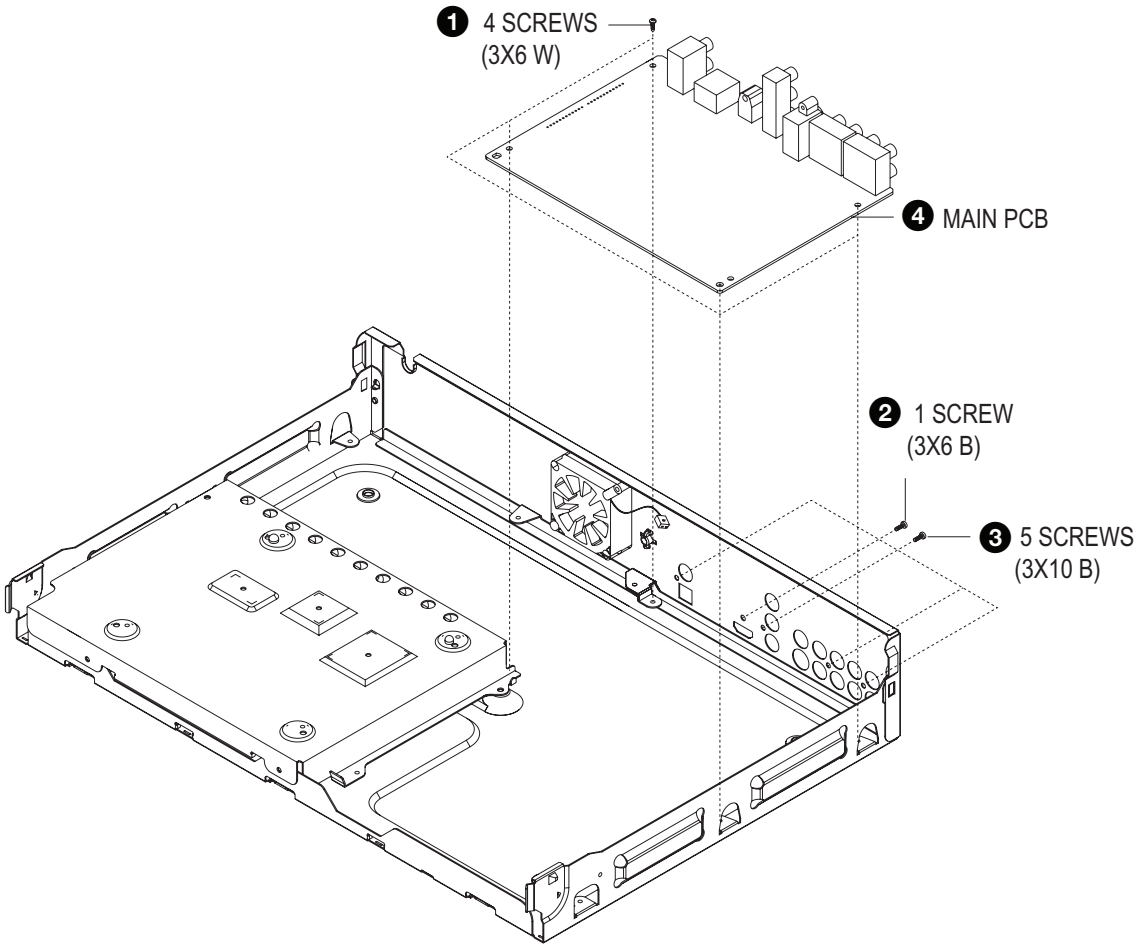


Fig. 3-5 Main PCB Removal

3-6 FAN Removal

1) Remove 2 Screws ❶ from the Fan ❷ and lift it up.

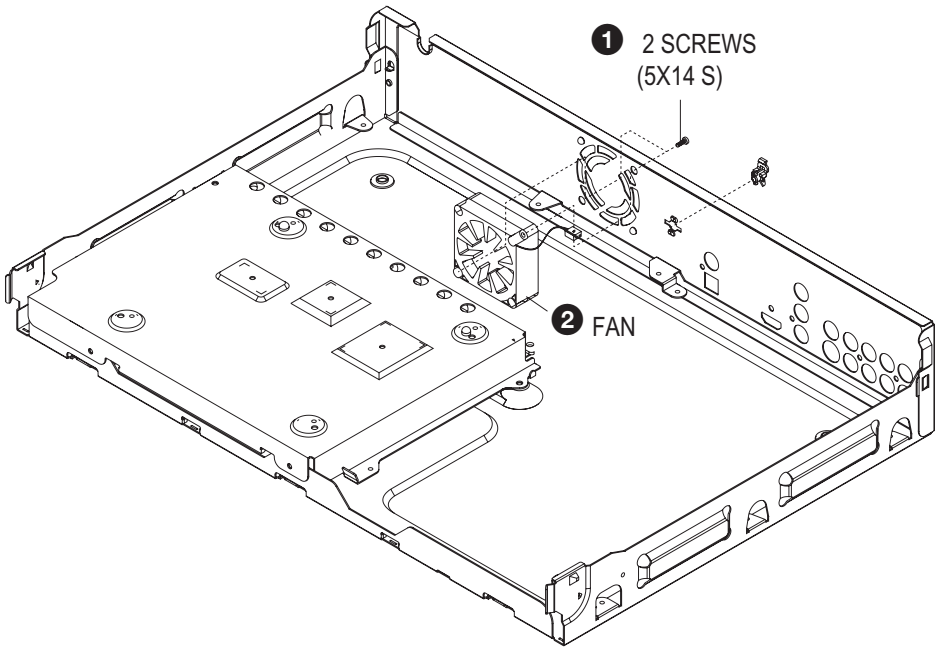
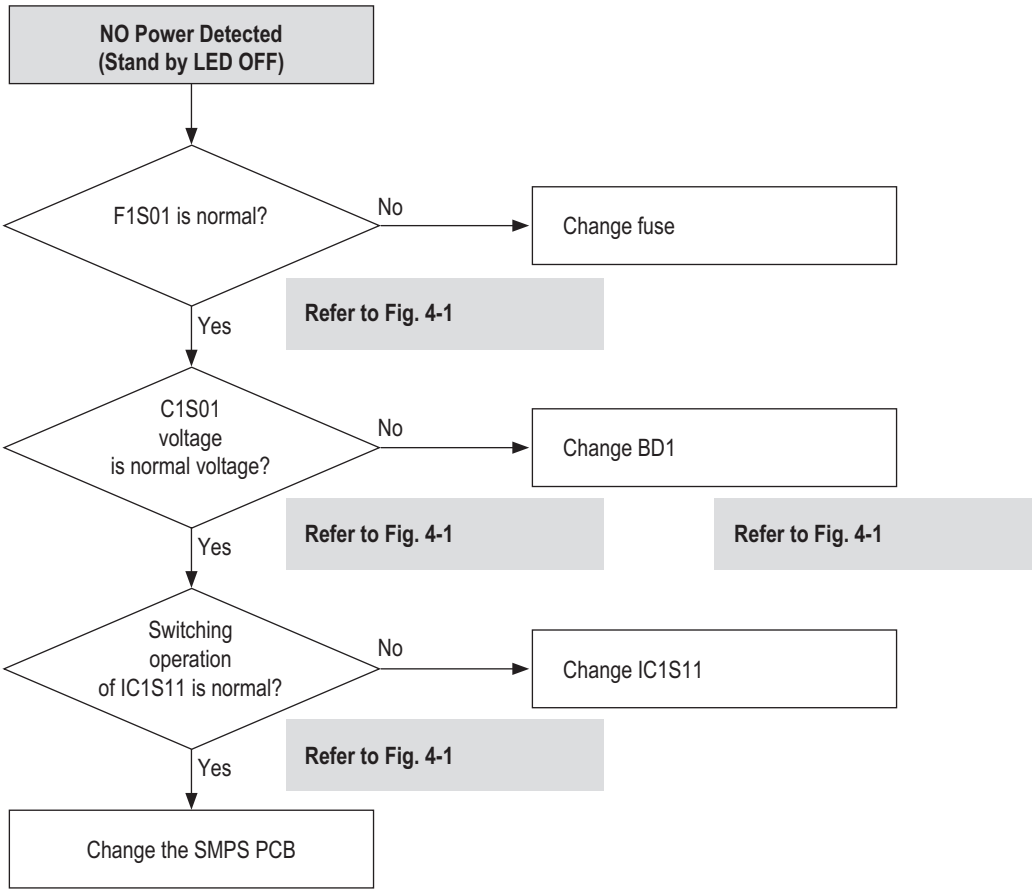
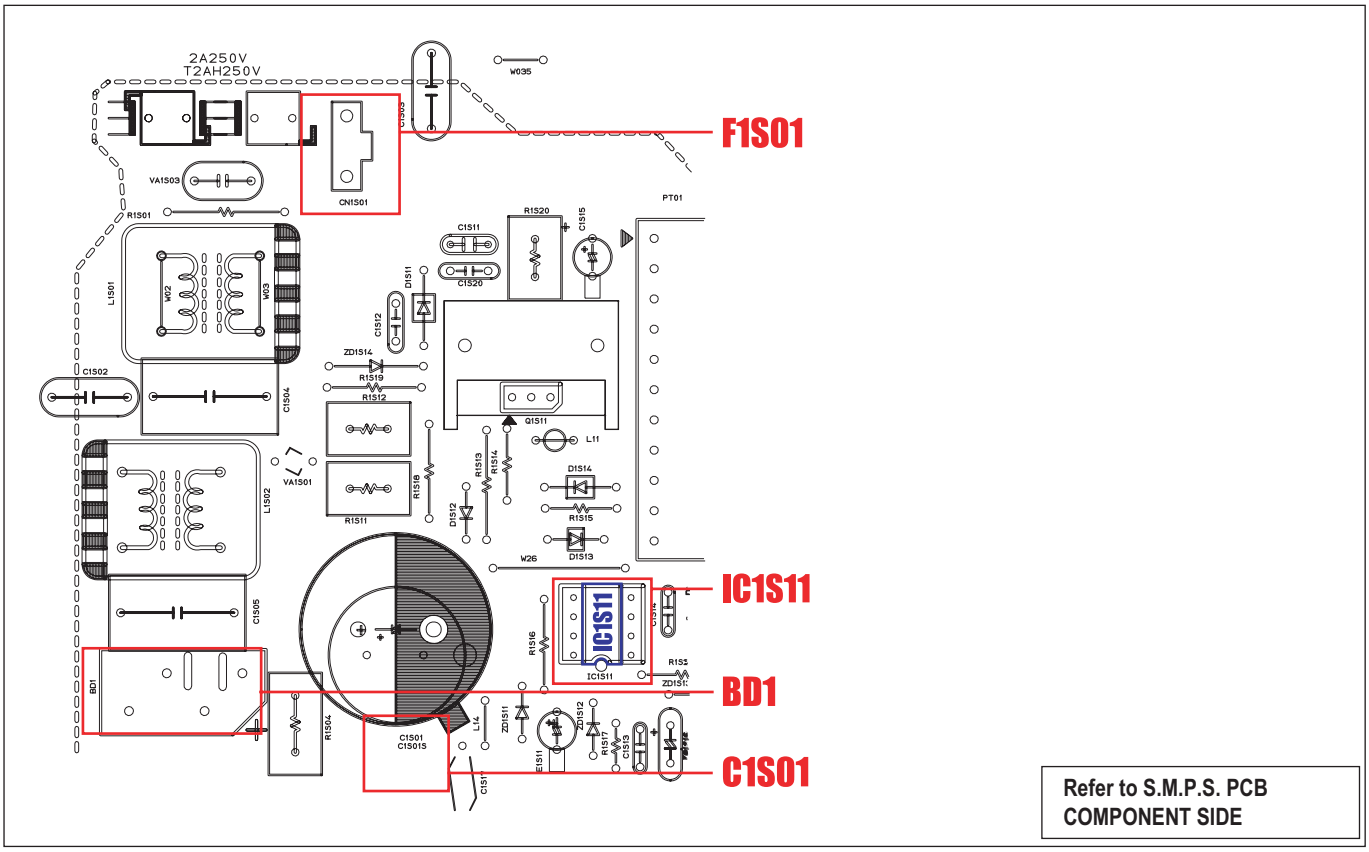


Fig. 3-6 FAN Removal

4 Trouble Shooting




F1S01
IC1S11
BD1
C1S01
Refer to S.M.P.S. PCB COMPONENT SIDE

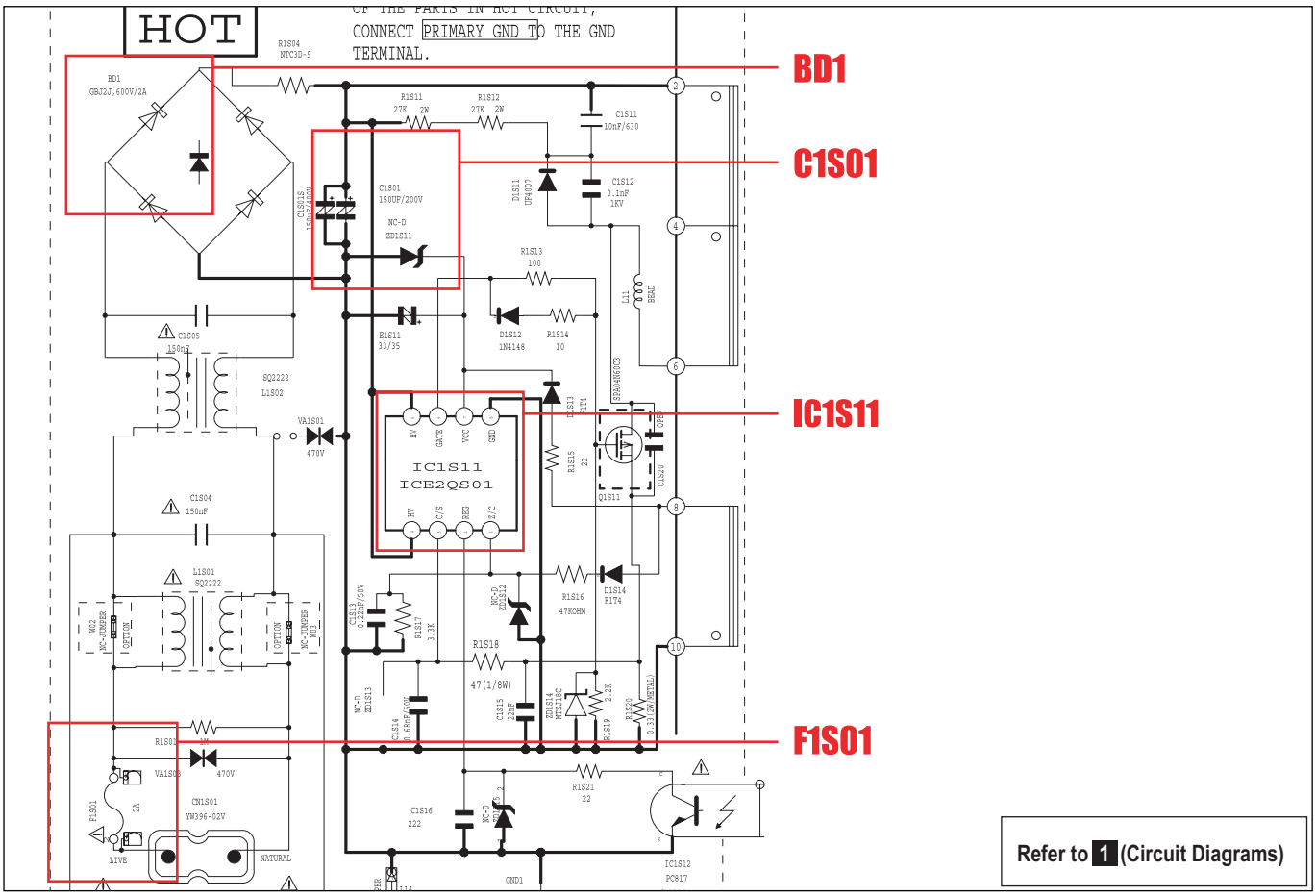
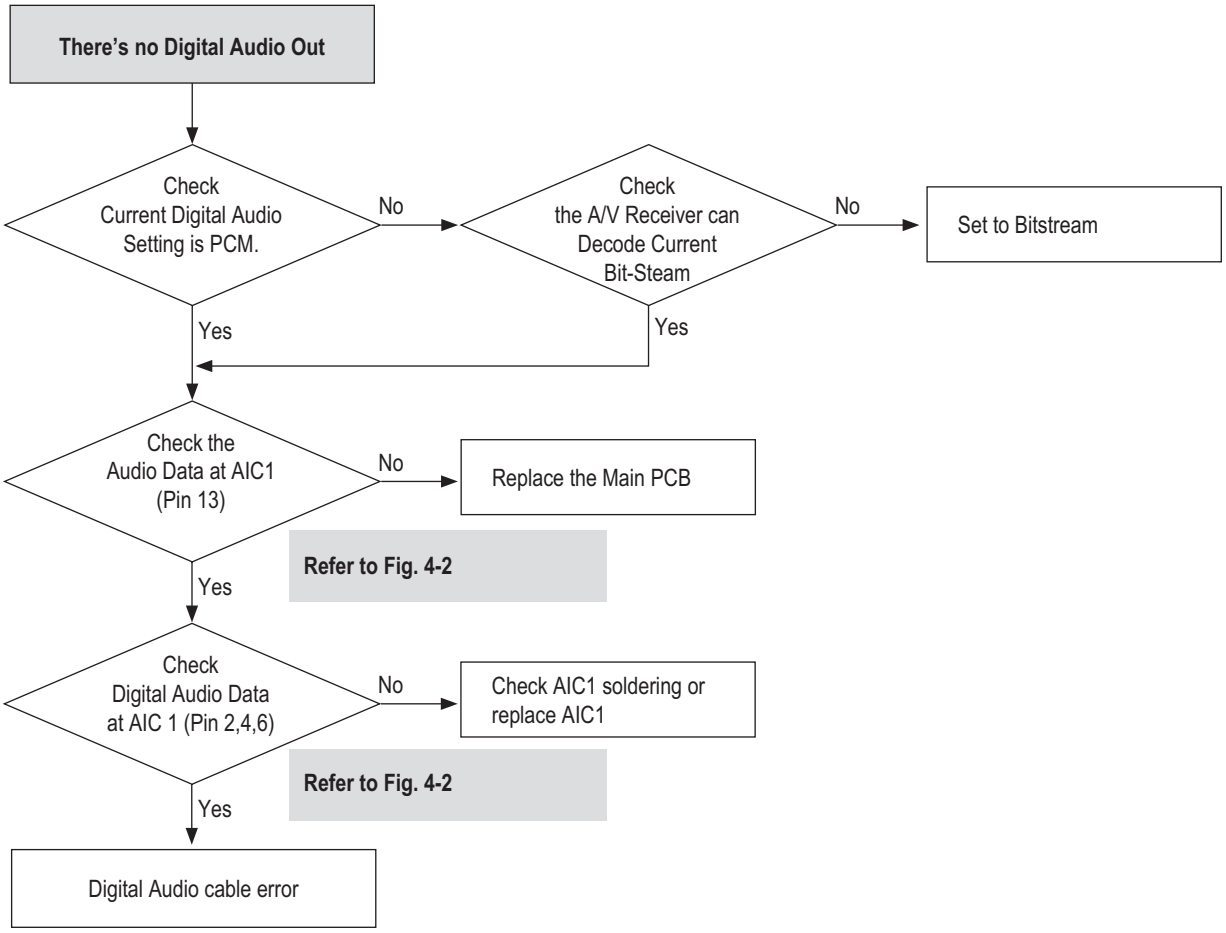
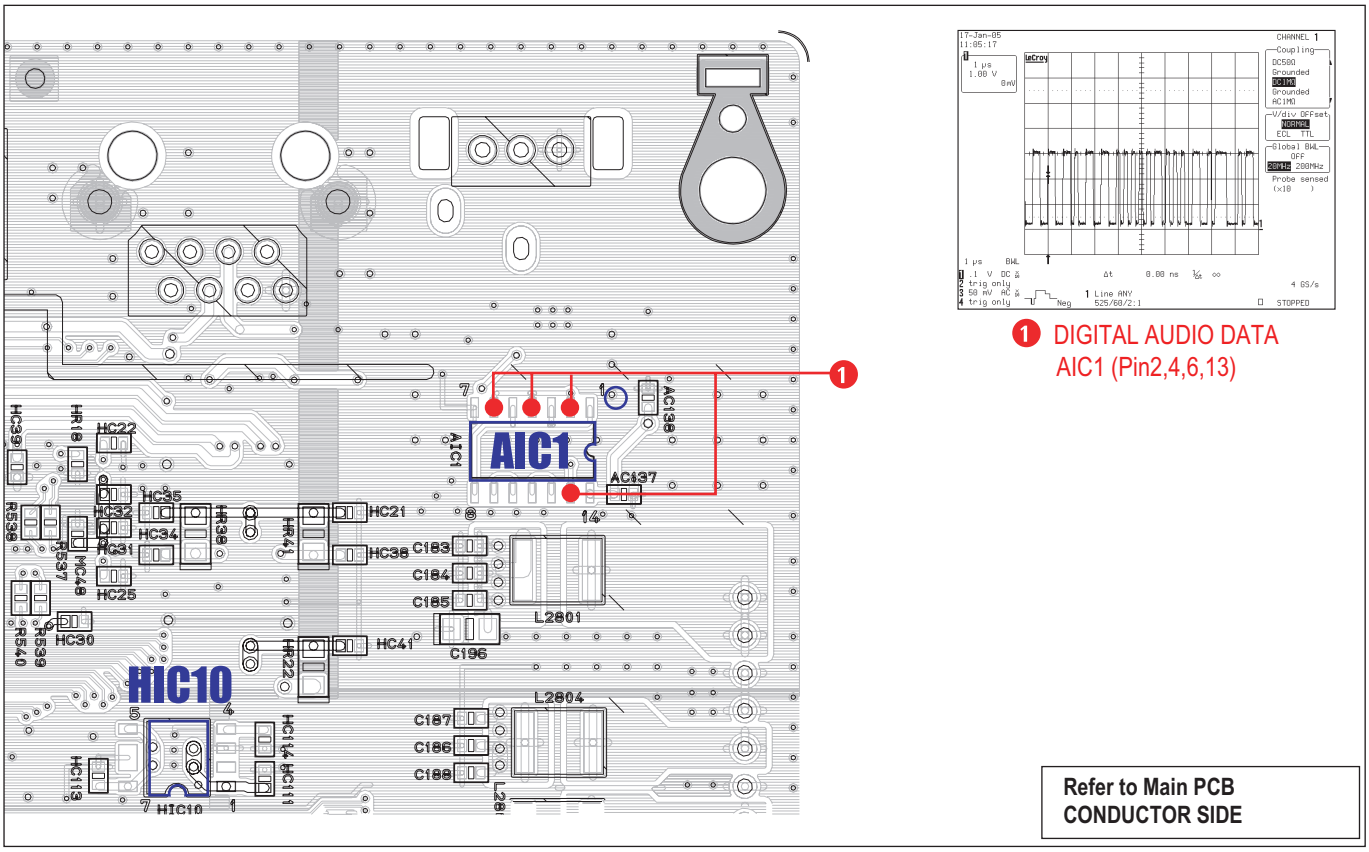

HOT
CONNECT PRIMARY GND TO THE GND TERMINAL.
BD1
C1S01
IC1S11
F1S01
IC1S11
ICE2QS01
Refer to 1 (Circuit Diagrams)

Fig. 4-1


There's no Digital Audio Out
Check Current Digital Audio Setting is PCM.
No
Check the A/V Receiver can Decode Current Bit-Steam
No
Set to Bitstream
Yes
Yes
Check the Audio Data at AIC1 (Pin 13)
No
Replace the Main PCB
Refer to Fig. 4-2
Yes
Check Digital Audio Data at AIC 1 (Pin 2,4,6)
No
Check AIC1 soldering or replace AIC1
Refer to Fig. 4-2
Yes
Digital Audio cable error



1 DIGITAL AUDIO DATA
AIC1 (Pin2,4,6,13)

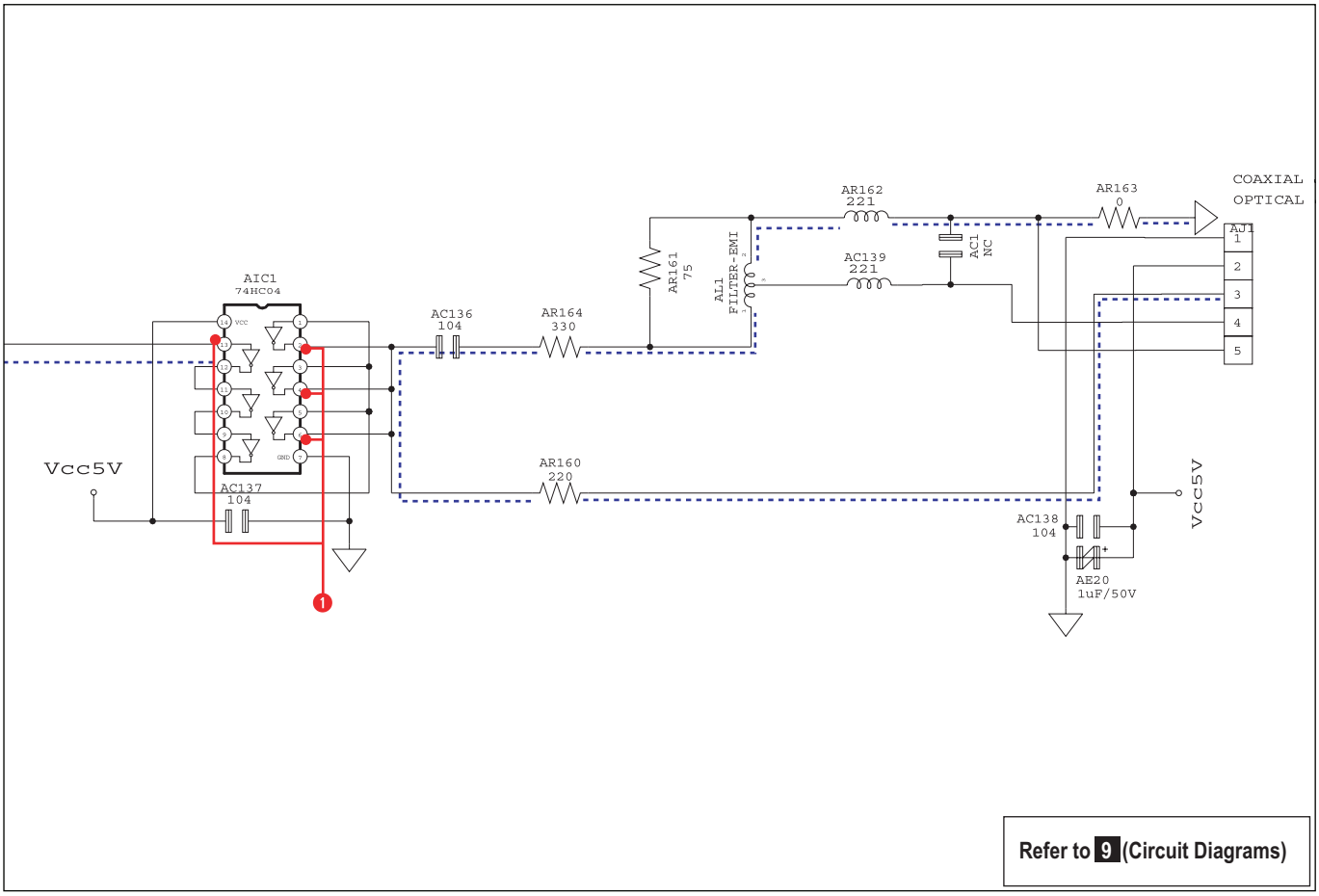
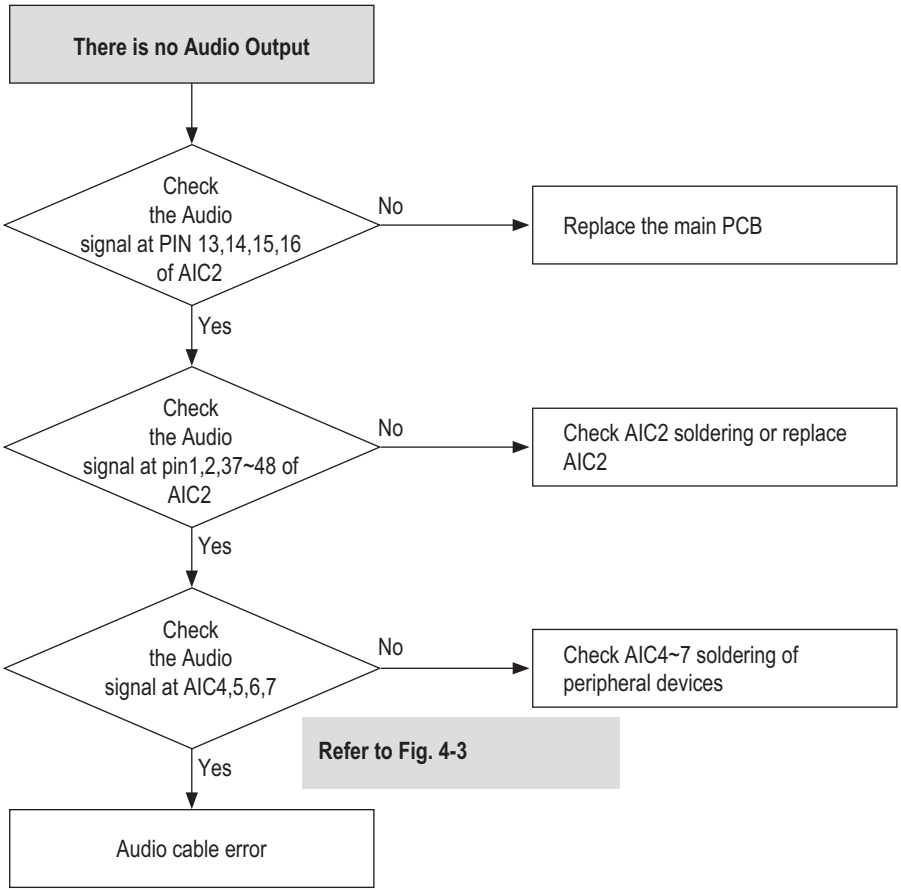
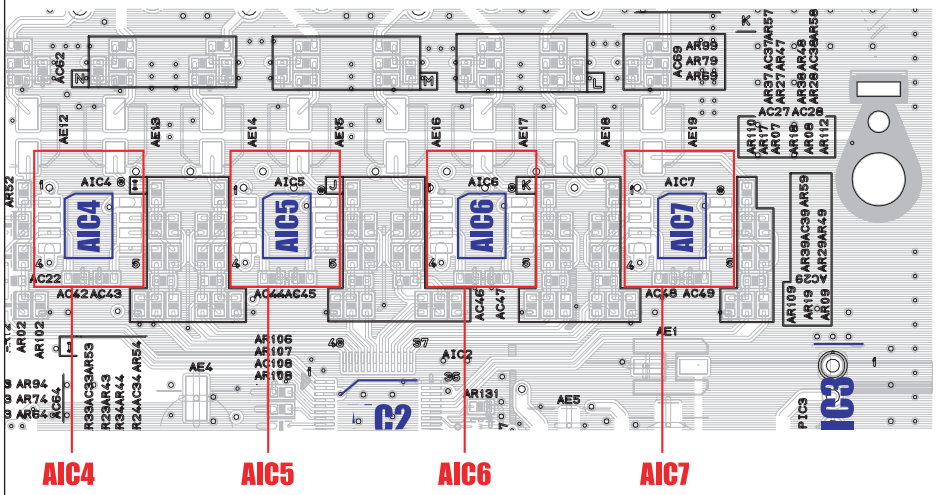
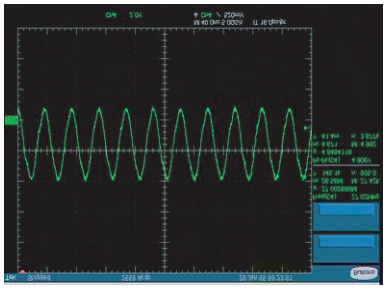


Fig. 4-2

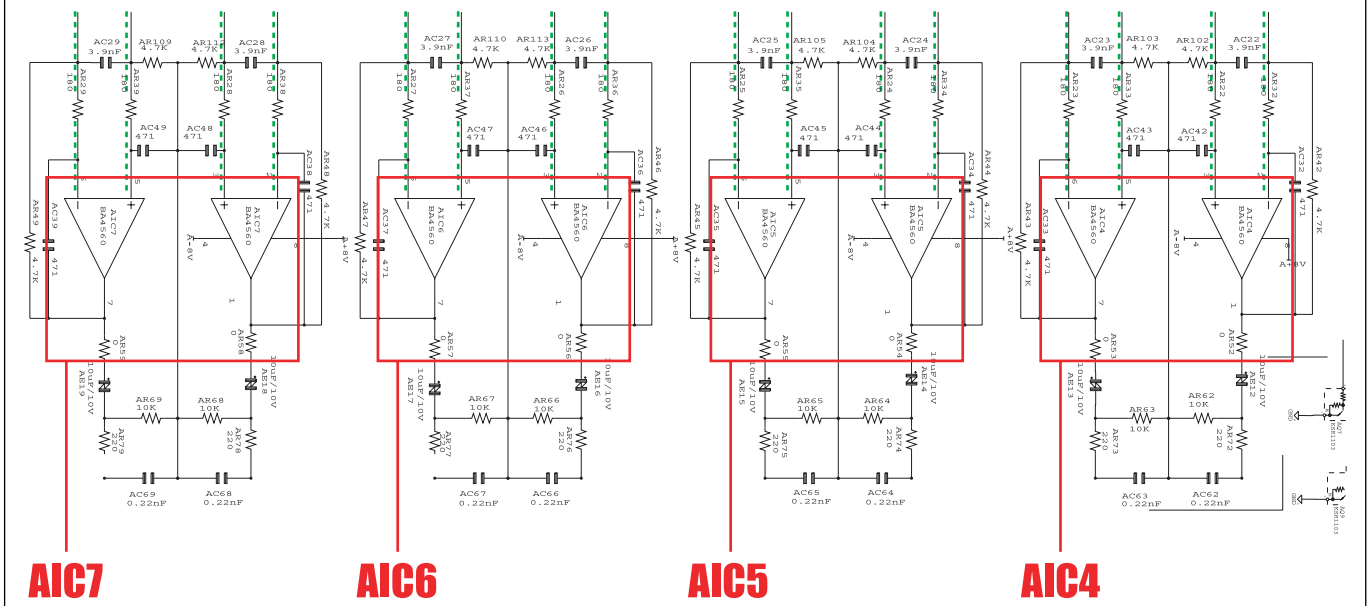

There is no Audio Output
Check the Audio signal at PIN 13,14,15,16 of AIC2
No
Replace the main PCB
Yes
Check the Audio signal at pin1,2,37~48 of AIC2
No
Check AIC2 soldering or replace AIC2
Yes
Check the Audio signal at AIC4,5,6,7
No
Check AIC4~7 soldering of peripheral devices
Refer to Fig. 4-3
Yes
Audio cable error





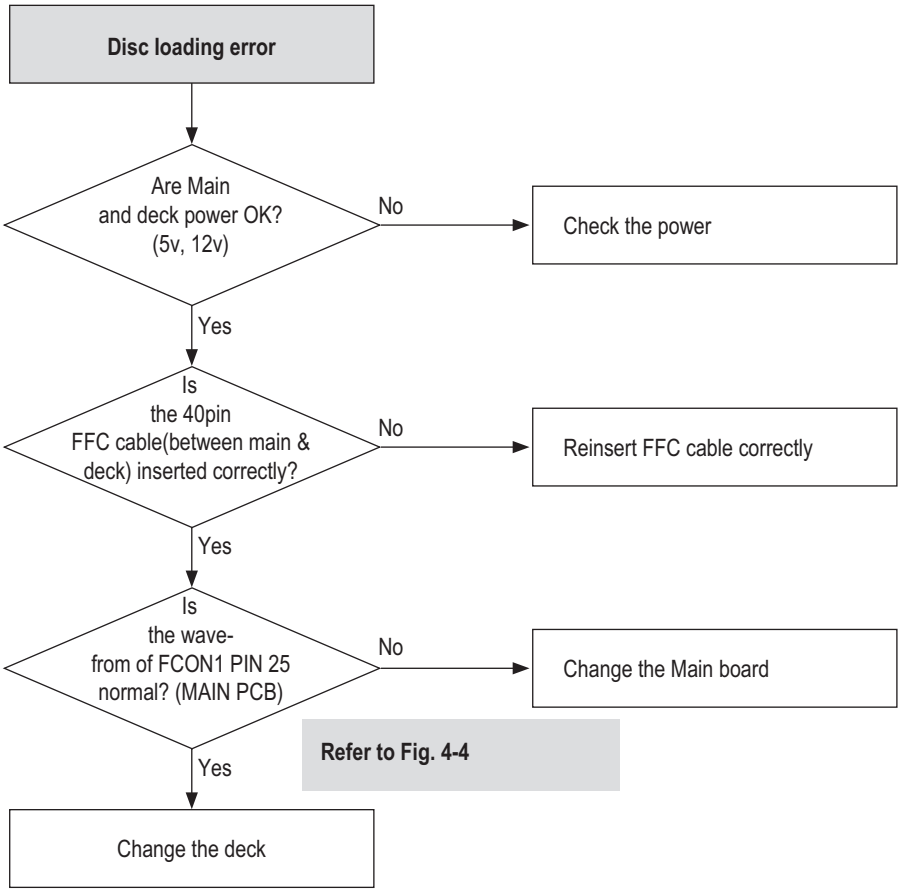
ANALOG AUDIO DATA(AIC4,5,6,7)

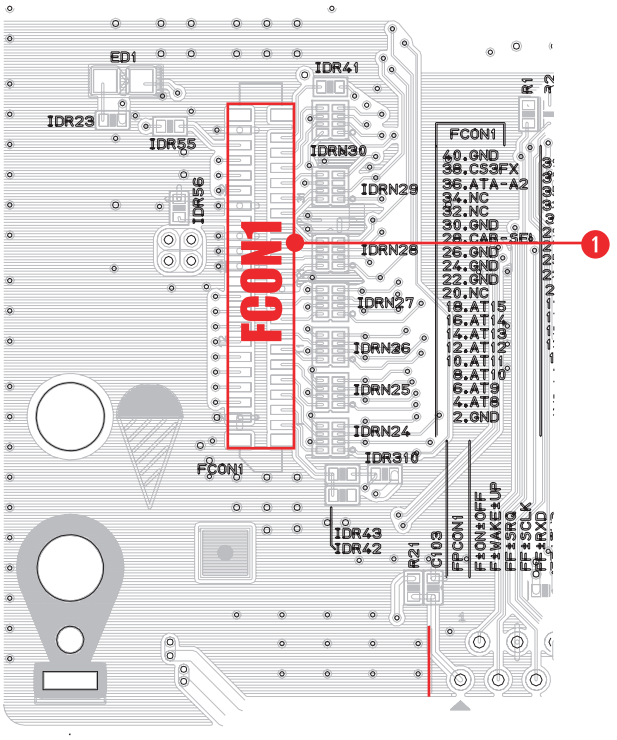
Refer to Main PCB
COMPONENT SIDE-2

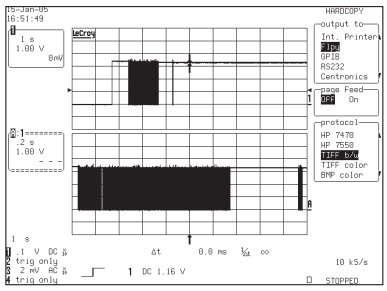


Refer to 9 (Circuit Diagrams)

Fig. 4-3

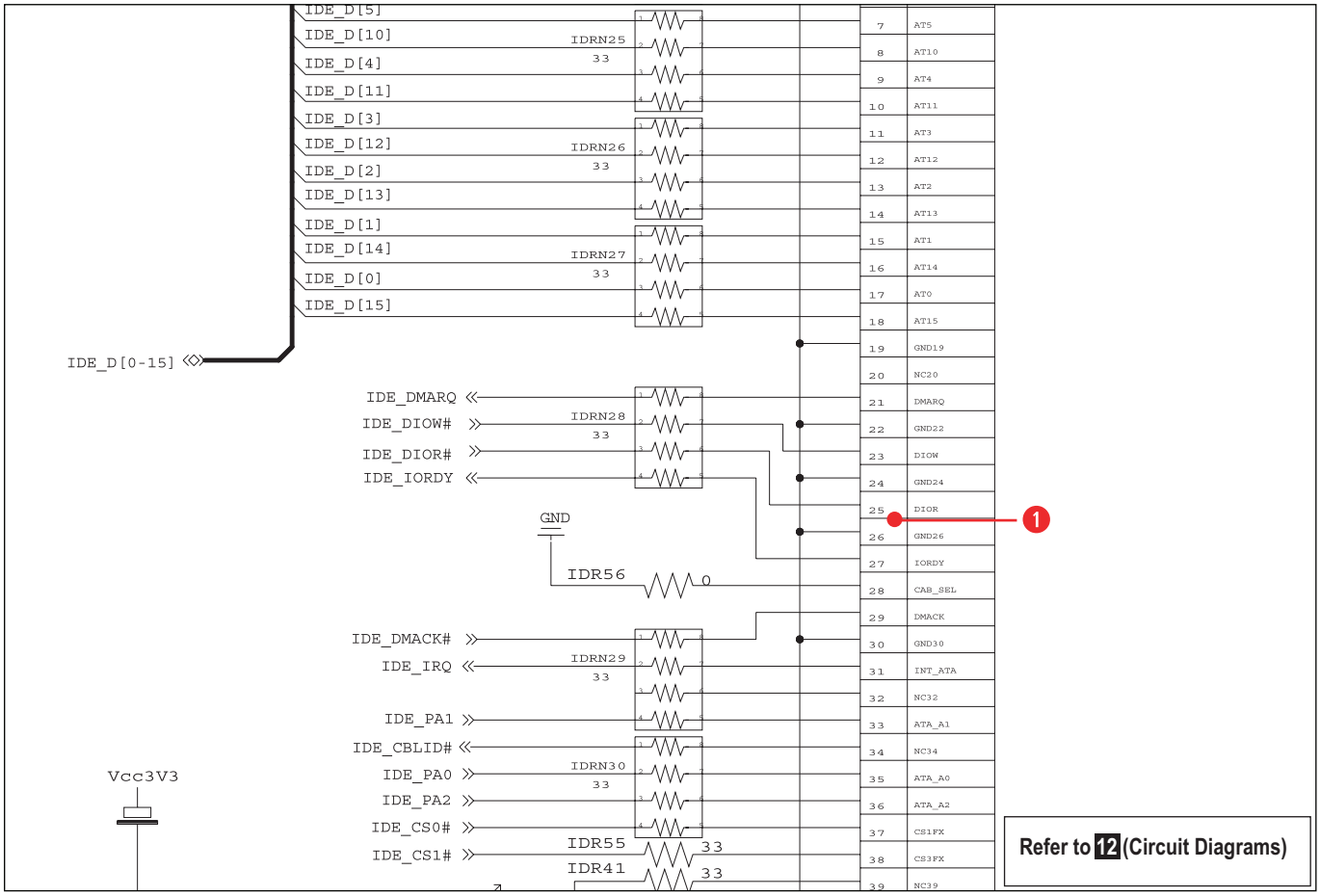

Disc loading error
Are Main and deck power OK? (5v, 12v)
No
Check the power
Yes
Is the 40pin FFC cable(between main & deck) inserted correctly?
No
Reinsert FFC cable correctly
Yes
Is the wave-from of FCON1 PIN 25 normal? (MAIN PCB)
No
Change the Main board
Refer to Fig. 4-4
Yes
Change the deck





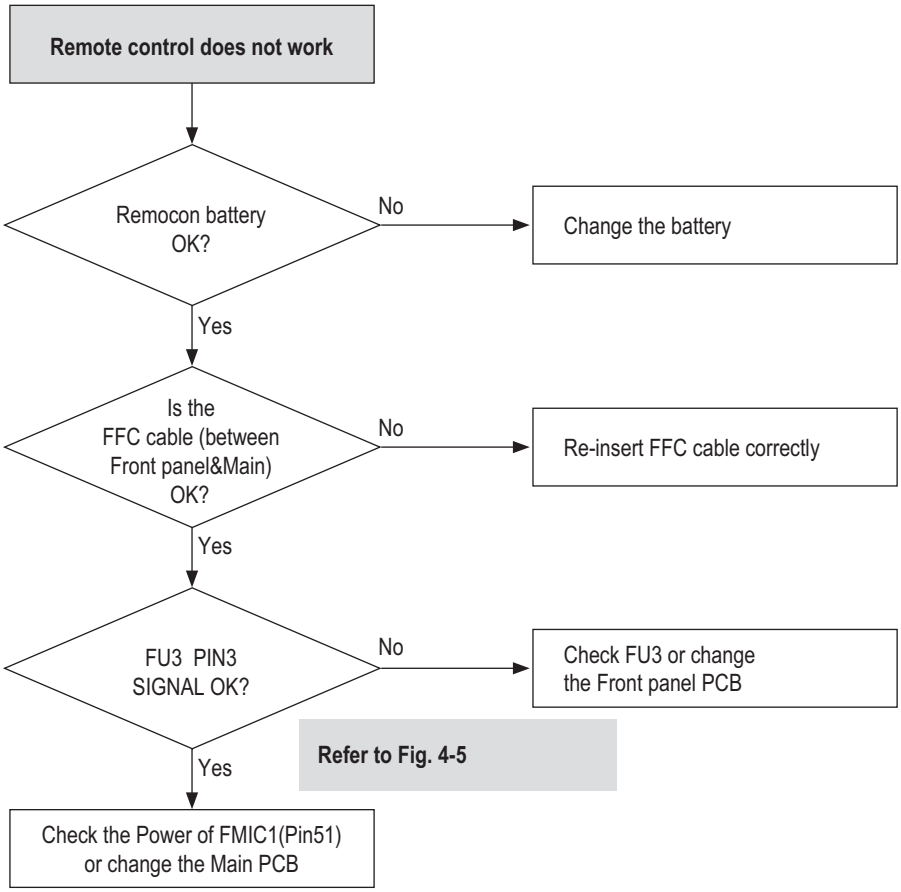
1 FCON1 PIN 25

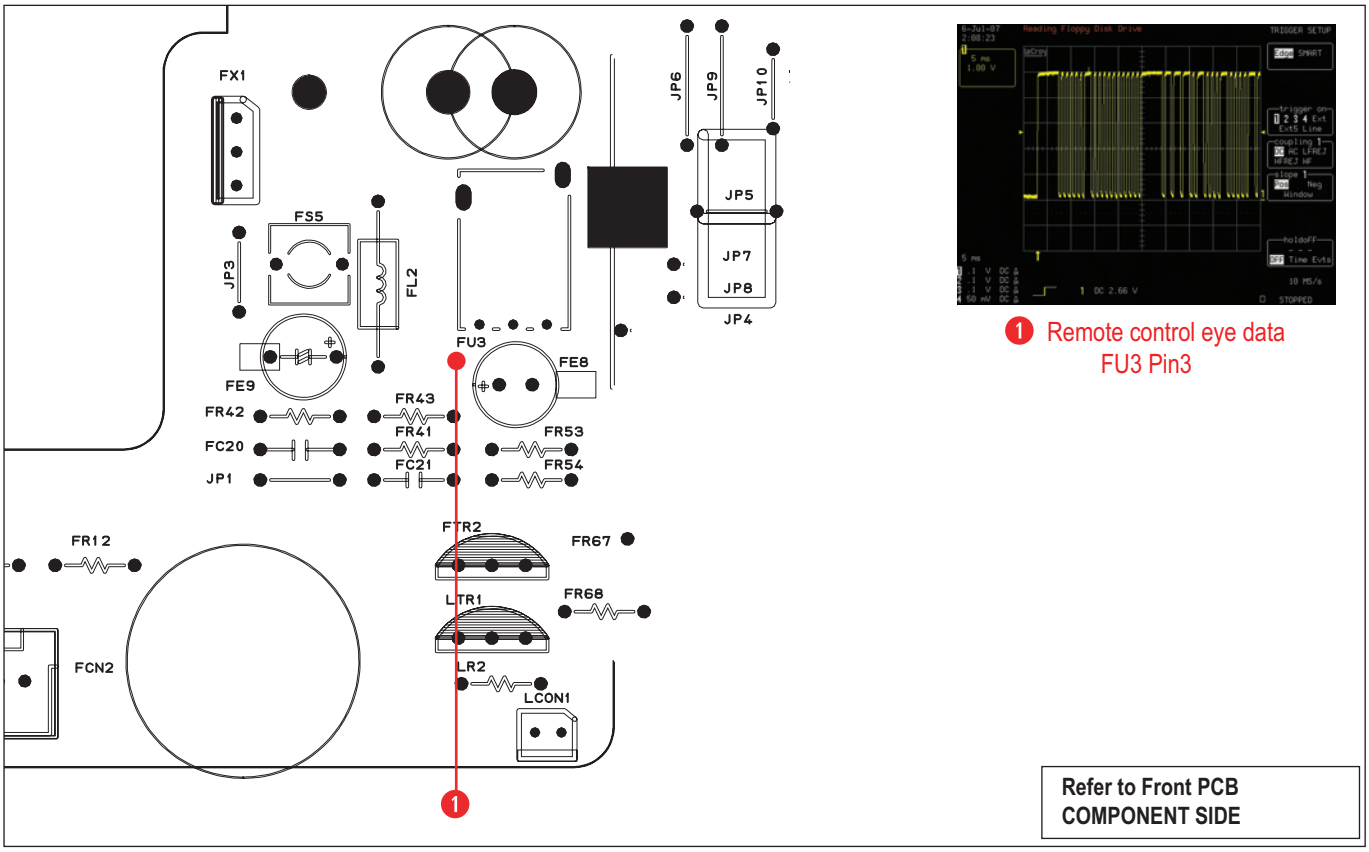
Refer to Main PCB
COMPONENT SIDE-2



Refer to 12 (Circuit Diagrams)

Fig. 4-4


Remote control does not work
Remocon battery OK?
No
Change the battery
Yes
Is the FFC cable (between Front panel&Main) OK?
No
Re-insert FFC cable correctly
Yes
FU3 PIN3 SIGNAL OK?
No
Check FU3 or change the Front panel PCB
Refer to Fig. 4-5
Yes
Check the Power of FMIC1(Pin51) or change the Main PCB



1 Remote control eye data
FU3 Pin3

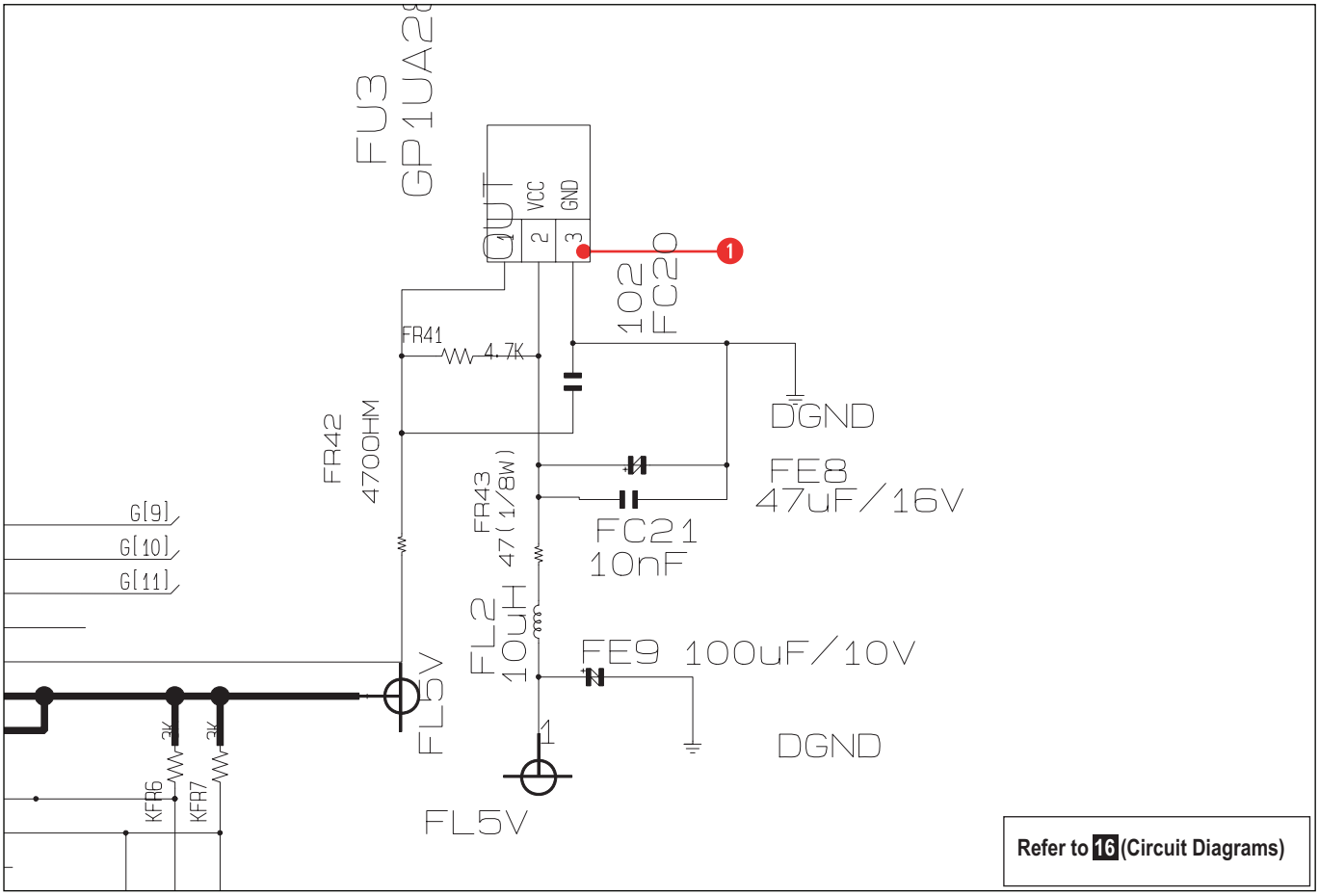
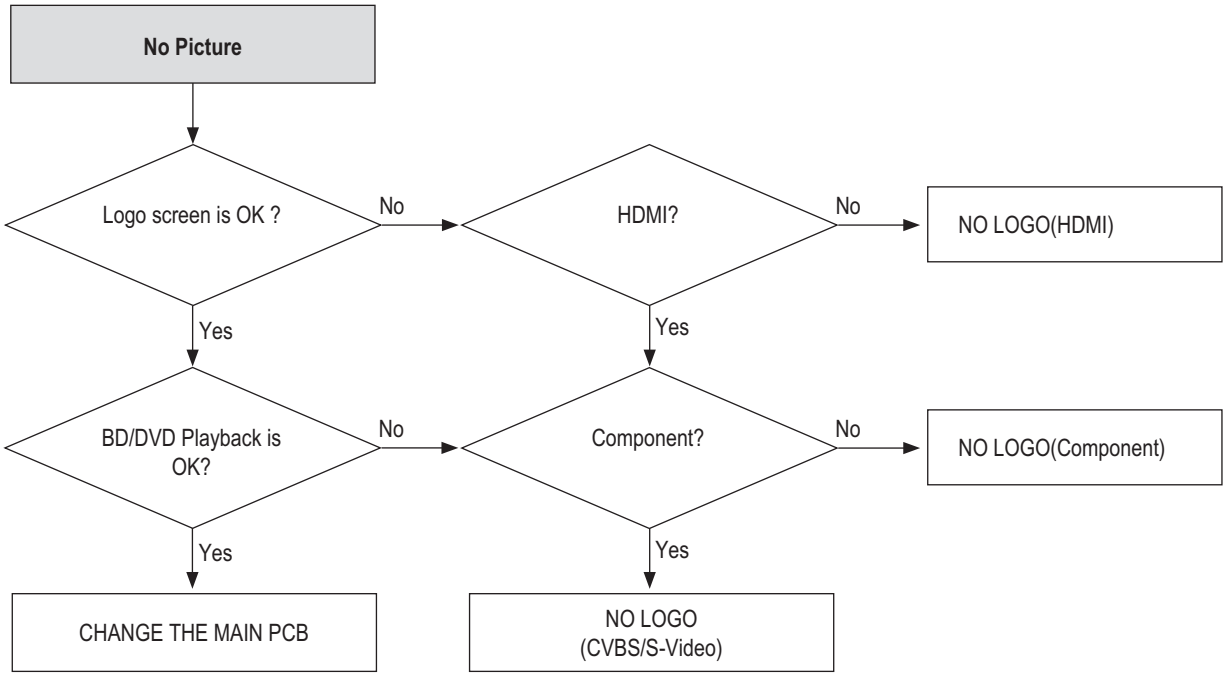
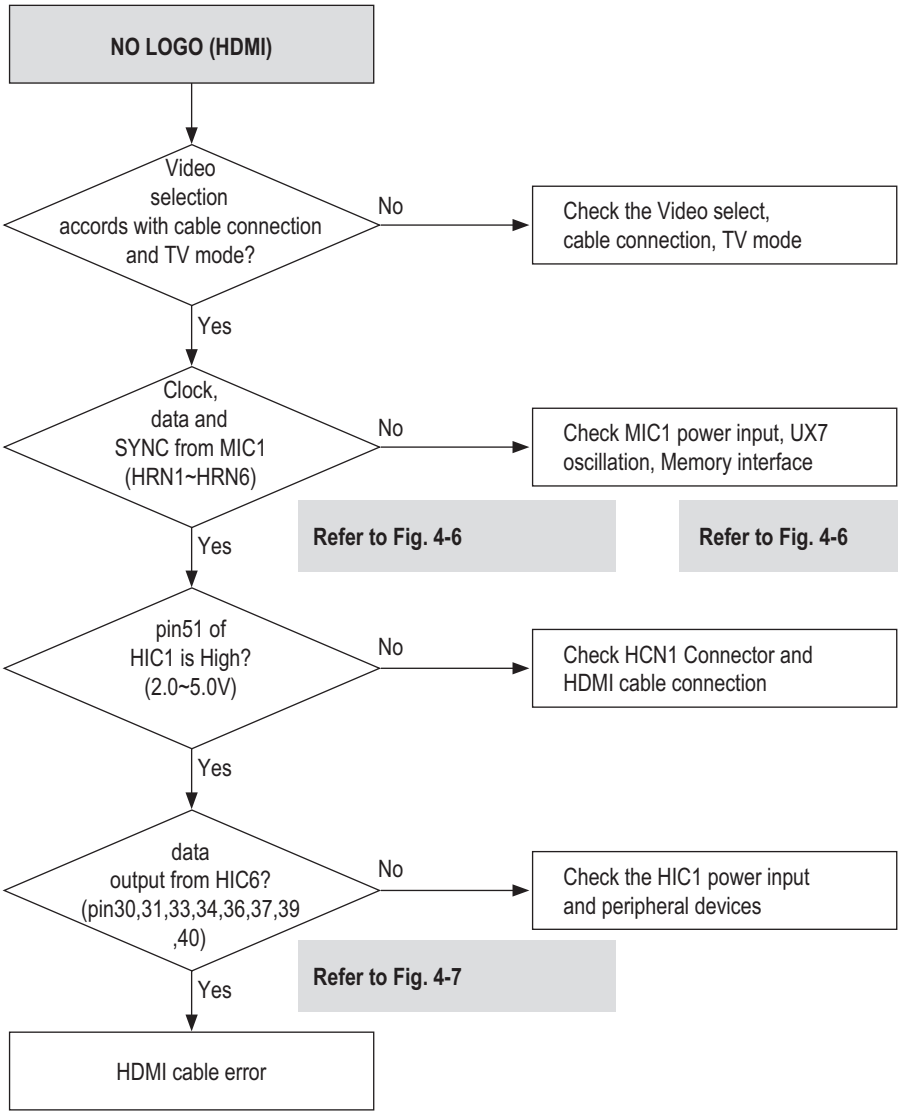
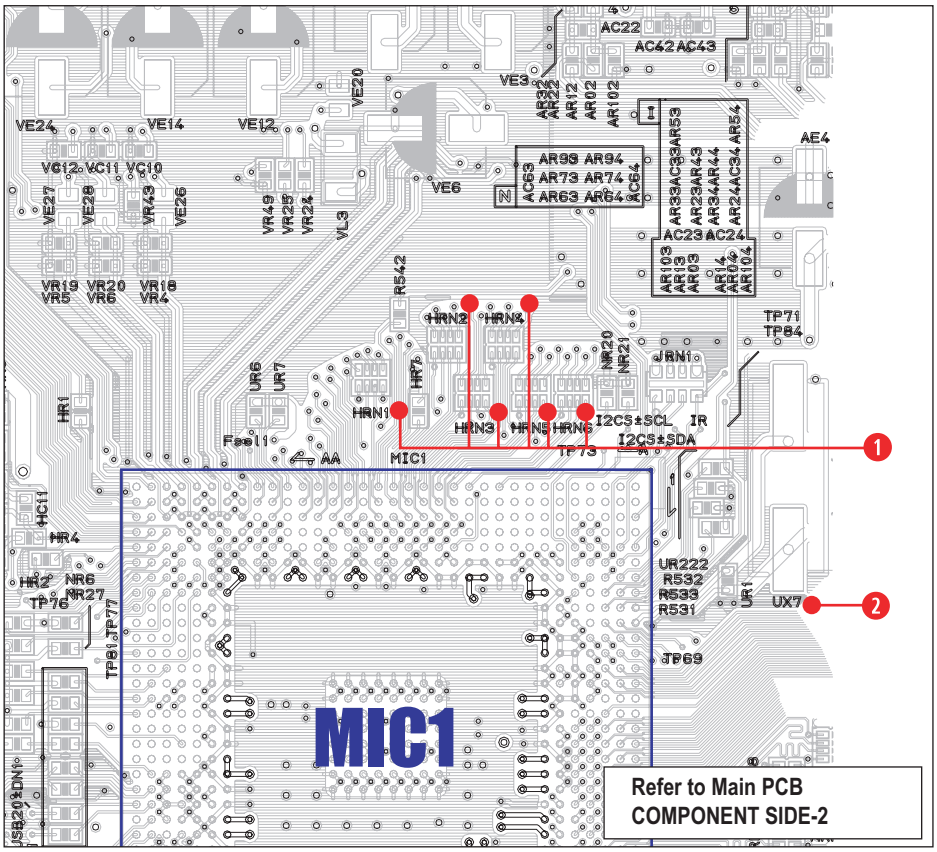
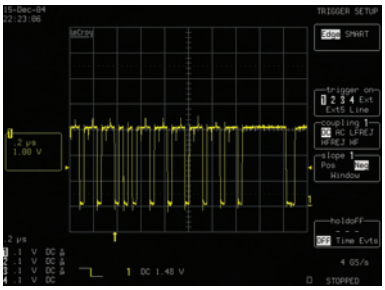


Fig. 4-5

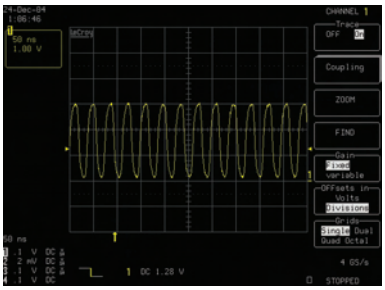

No Picture
Logo screen is OK ?
No
HDMI?
No
NO LOGO(HDMI)
Yes
Yes
BD/DVD Playback is OK?
No
Component?
No
NO LOGO(Component)
Yes
Yes
CHANGE THE MAIN PCB
NO LOGO (CVBS/S-Video)


NO LOGO (HDMI)
Video selection accords with cable connection and TV mode?
No
Check the Video select, cable connection, TV mode
Yes
Clock, data and SYNC from MIC1 (HRN1~HRN6)
No
Check MIC1 power input, UX7 oscillation, Memory interface
Refer to Fig. 4-6
Refer to Fig. 4-6
Yes
pin51 of HIC1 is High? (2.0~5.0V)
No
Check HCN1 Connector and HDMI cable connection
Yes
data output from HIC6? (pin30,31,33,34,36,37,39 ,40)
No
Check the HIC1 power input and peripheral devices
Refer to Fig. 4-7
Yes
HDMI cable error

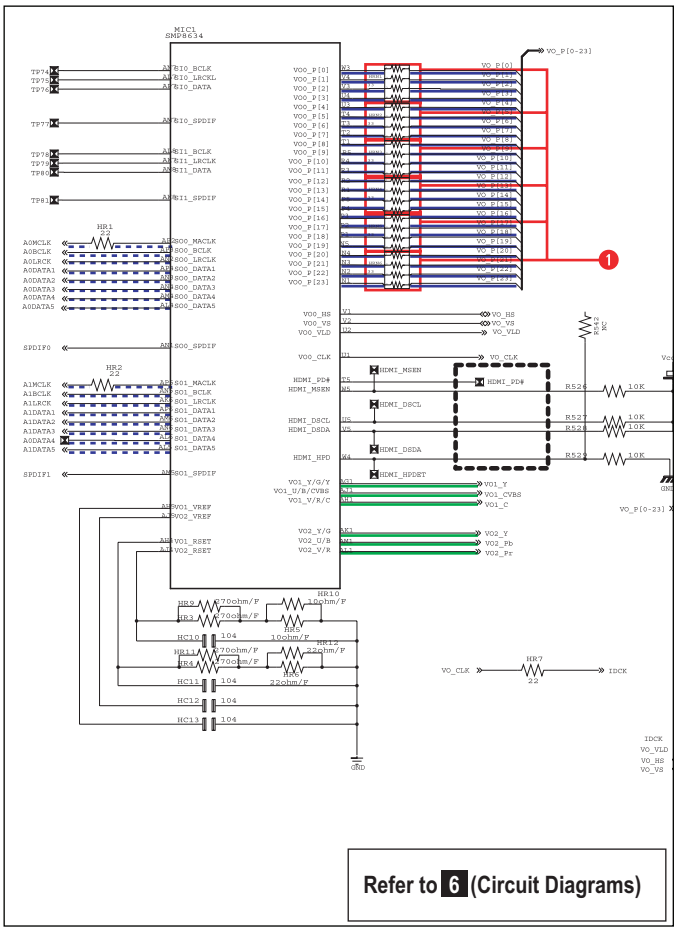




1 Digital Video signal
MIC1 (HRN1~HRN6)



2 UX7 CLOCK SIGNAL (27MHz)



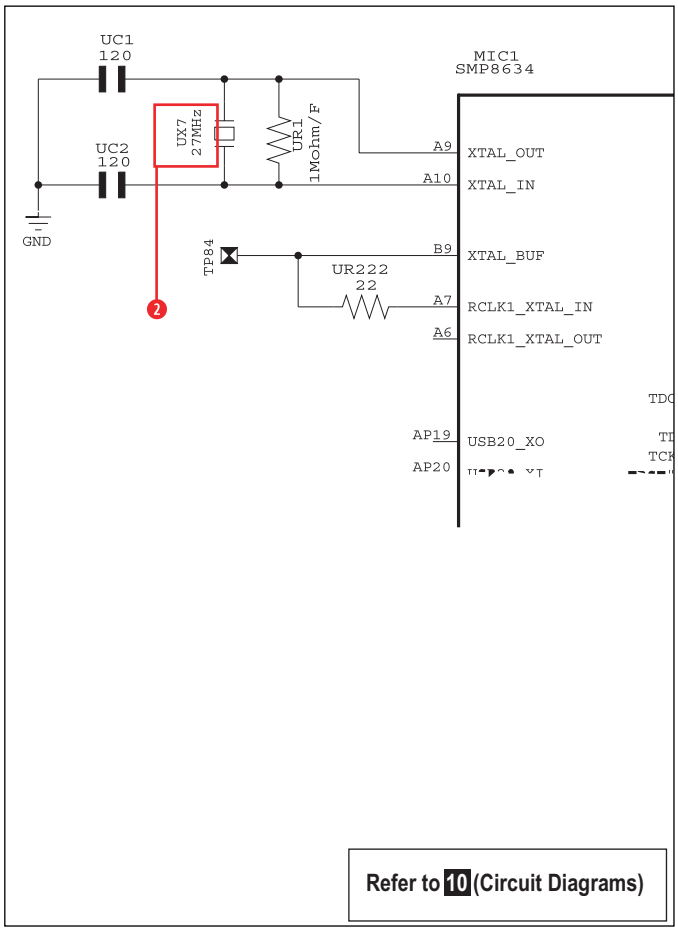
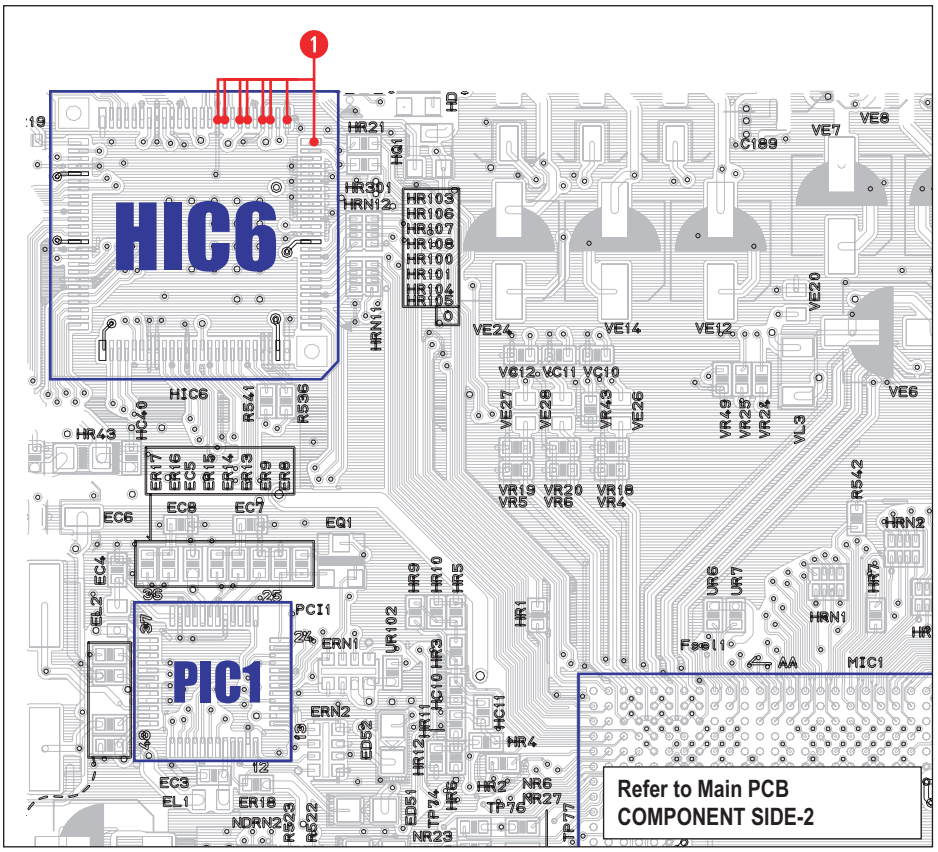
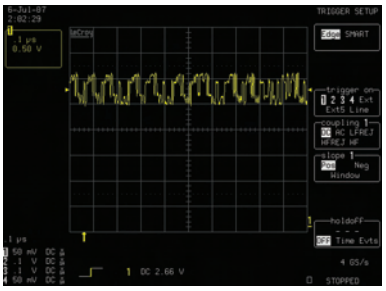


Fig. 4-6





1 HDMI OUTPUT DATA
HIC6 (pin30,31,33,34,36,37,39,40)

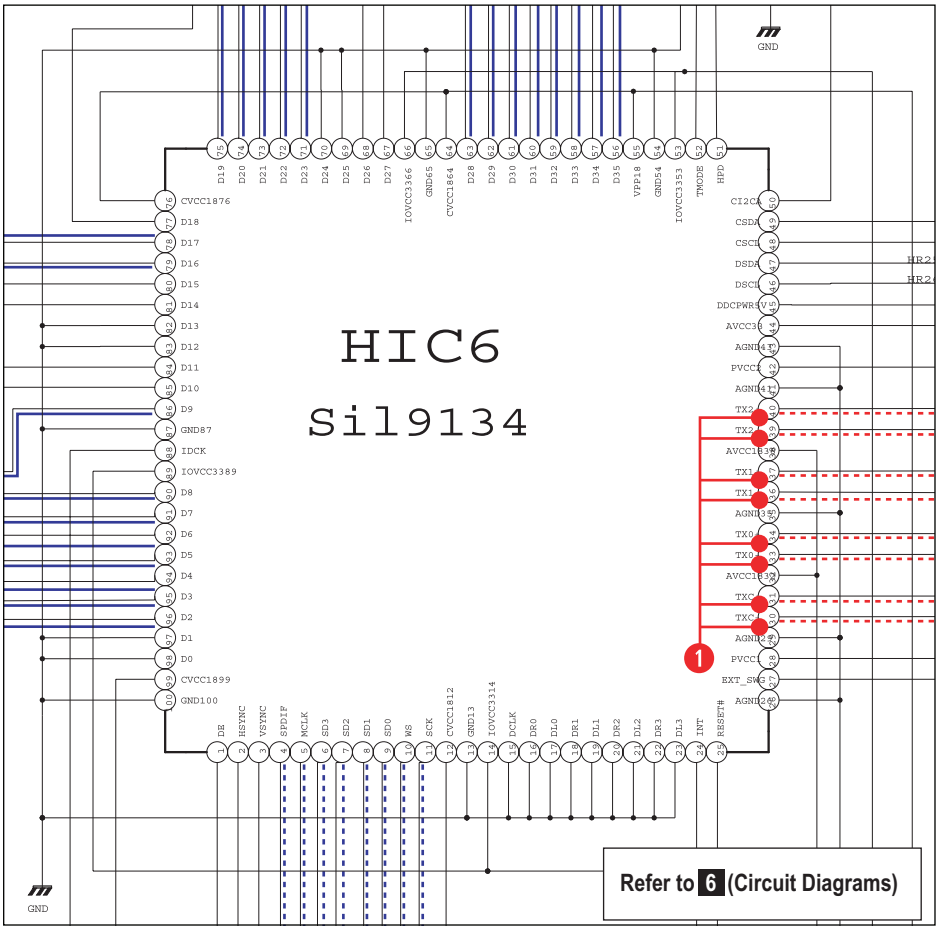
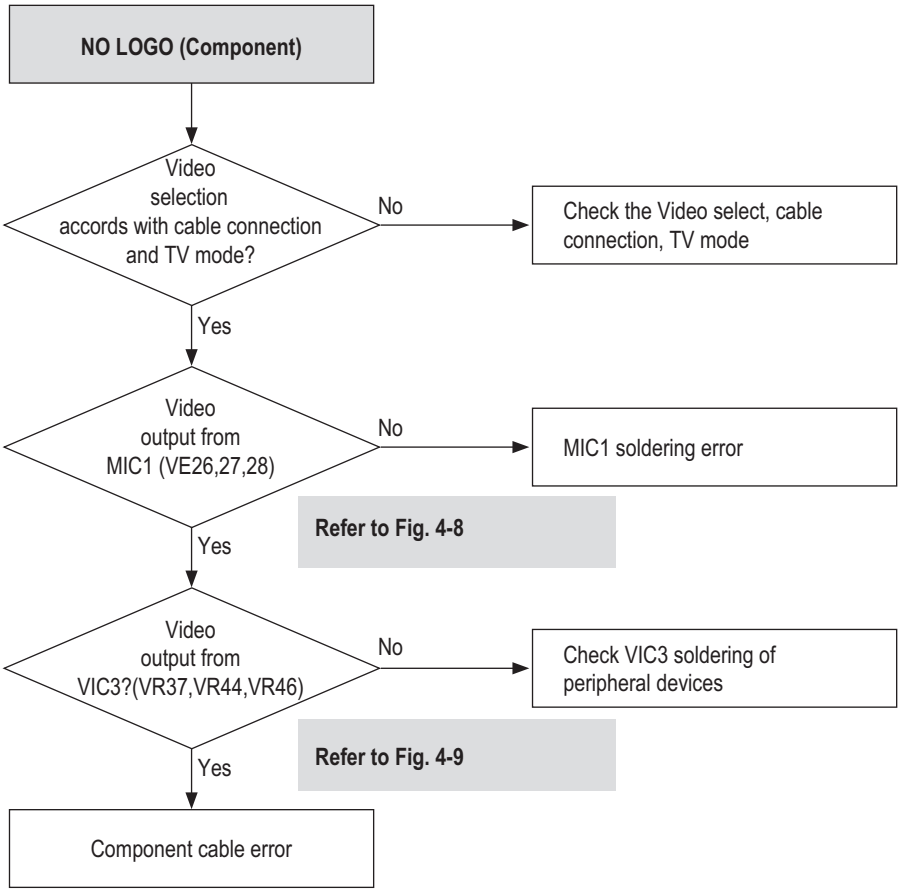
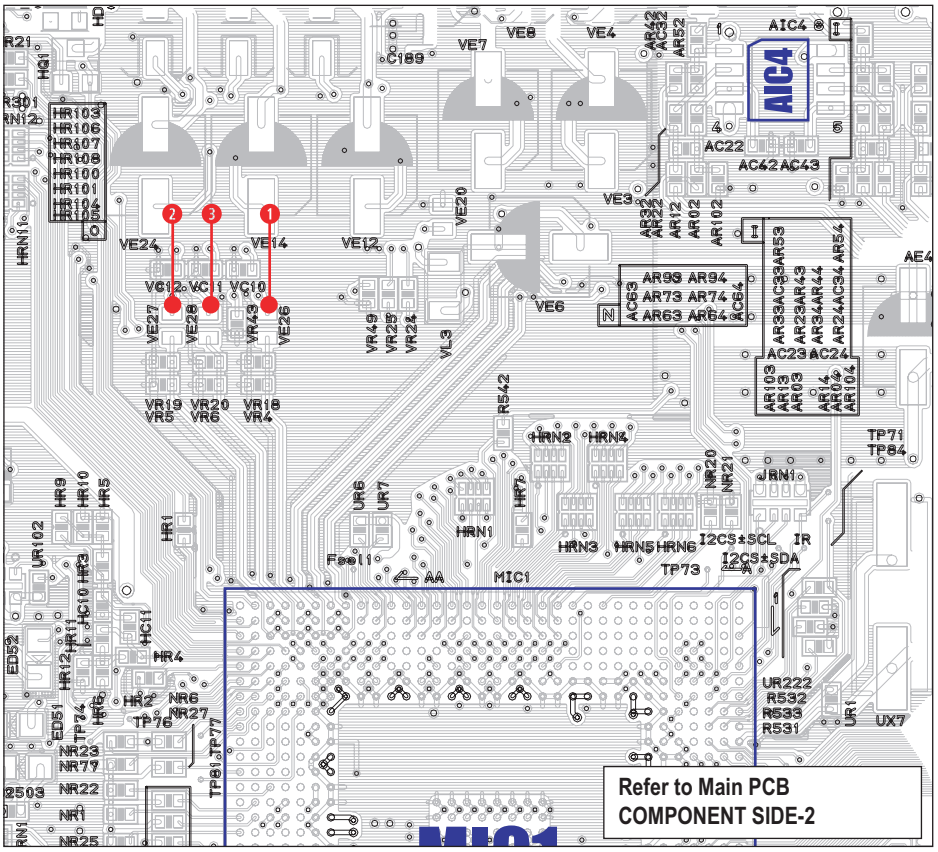
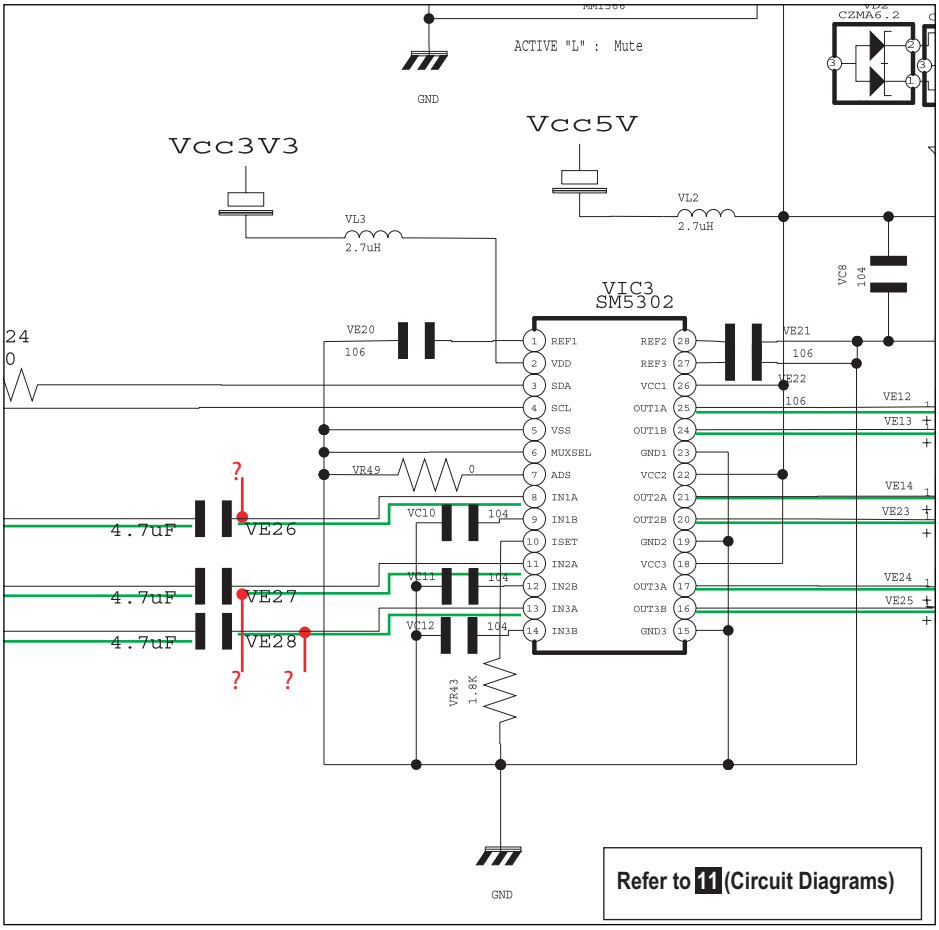
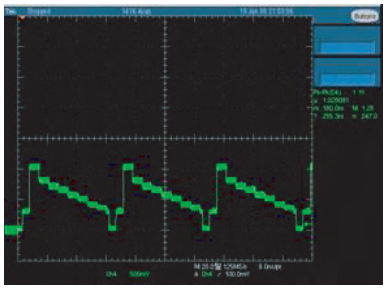


Fig. 4-7

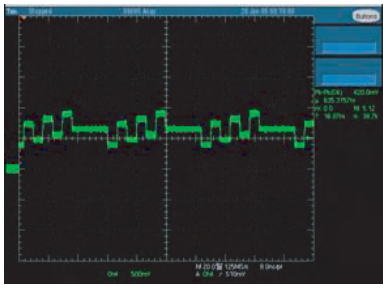

NO LOGO (Component)
Video selection accords with cable connection and TV mode?
No
Check the Video select, cable connection, TV mode
Yes
Video output from MIC1 (VE26,27,28)
No
MIC1 soldering error
Refer to Fig. 4-8
Yes
Video output from VIC3?(VR37,VR44,VR46)
No
Check VIC3 soldering of peripheral devices
Refer to Fig. 4-9
Yes
Component cable error



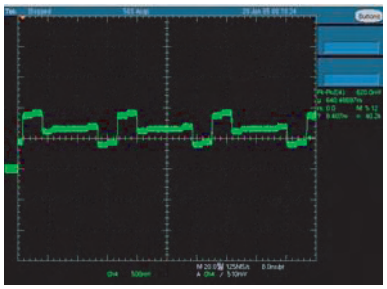




❶ Y(Color-bar)
Pin (MIC1-VE26)

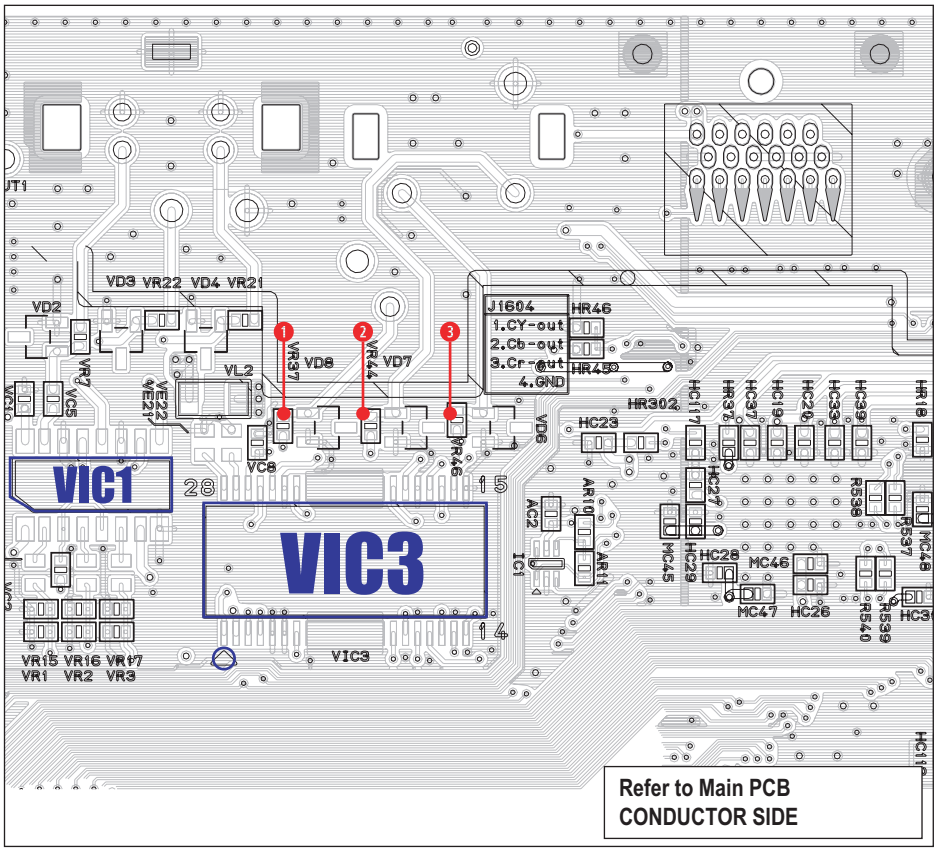


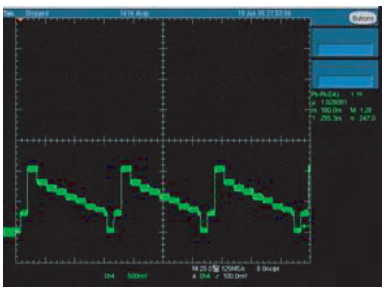
❷ Pb(Color-bar)
Pin (MIC1-VE27)



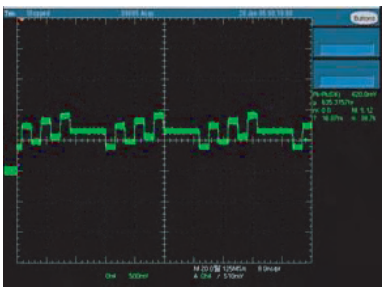
❸ Pr(Color-bar)
Pin (MIC1-VE28)

Fig. 4-8

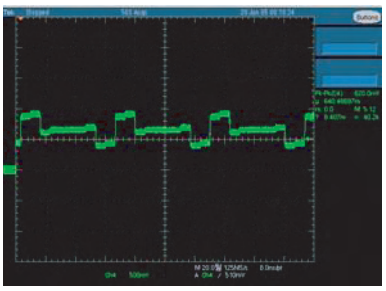




1 Y(Color-bar)
Pin-VR37



2 Pb(Color-bar)
Pin-VR44



3 Pr(Color-bar)
Pin-VR46

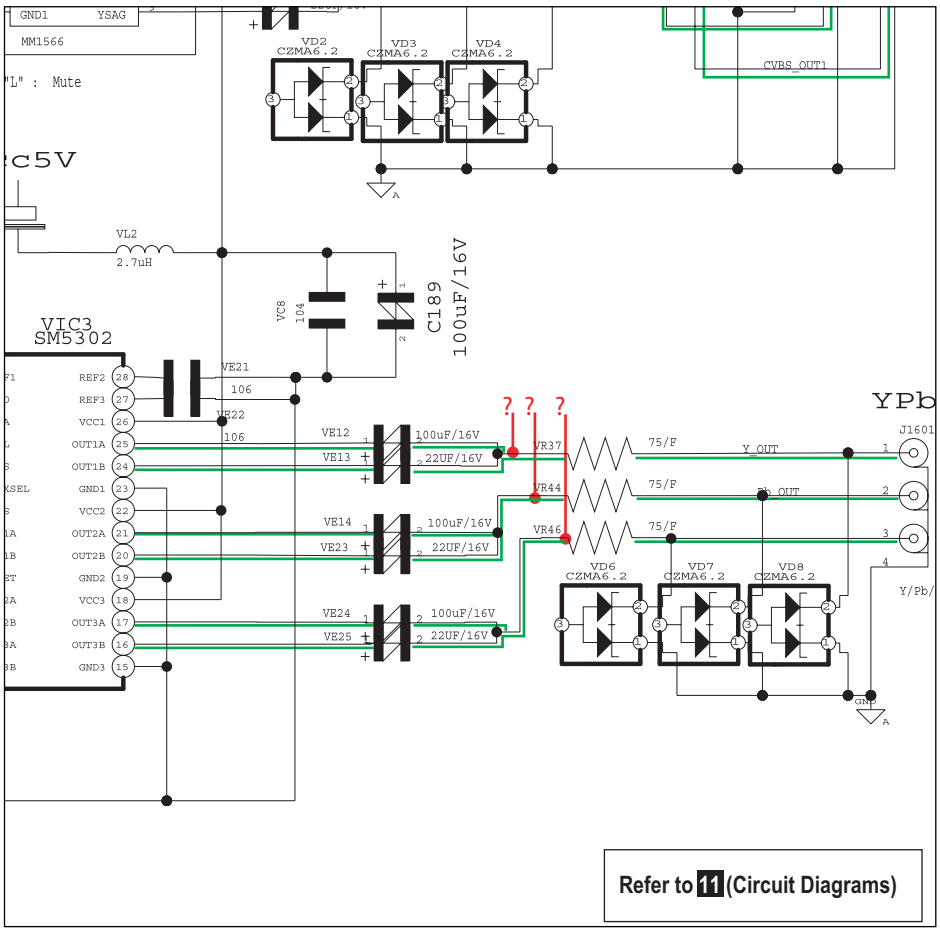
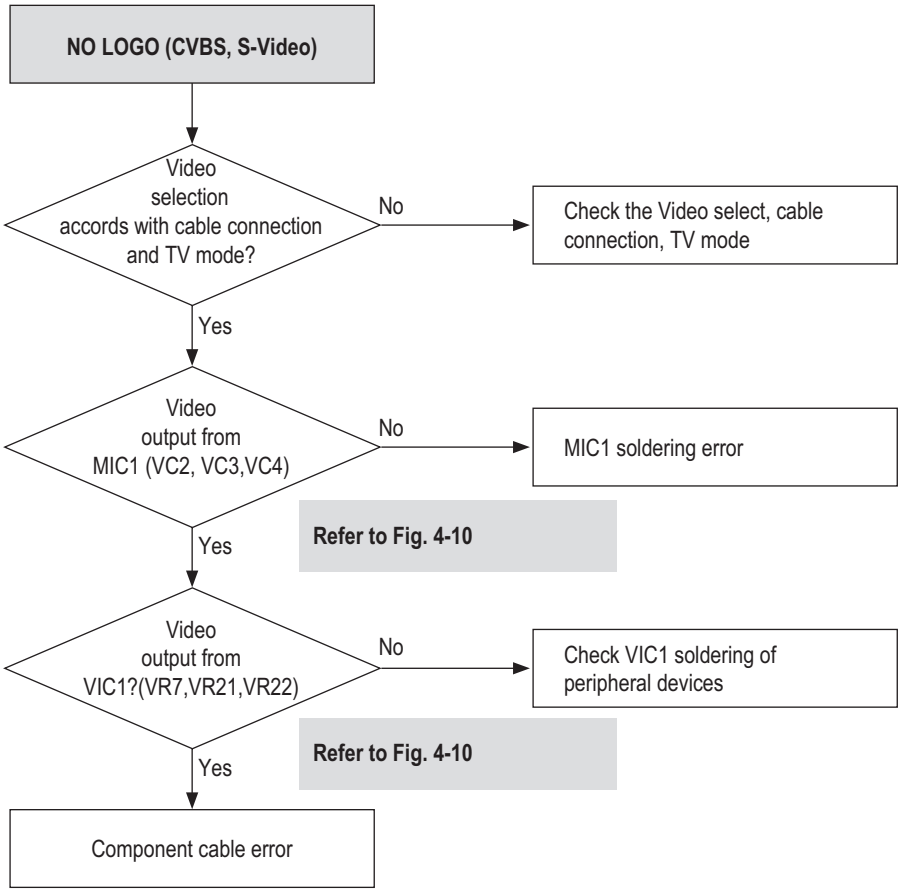
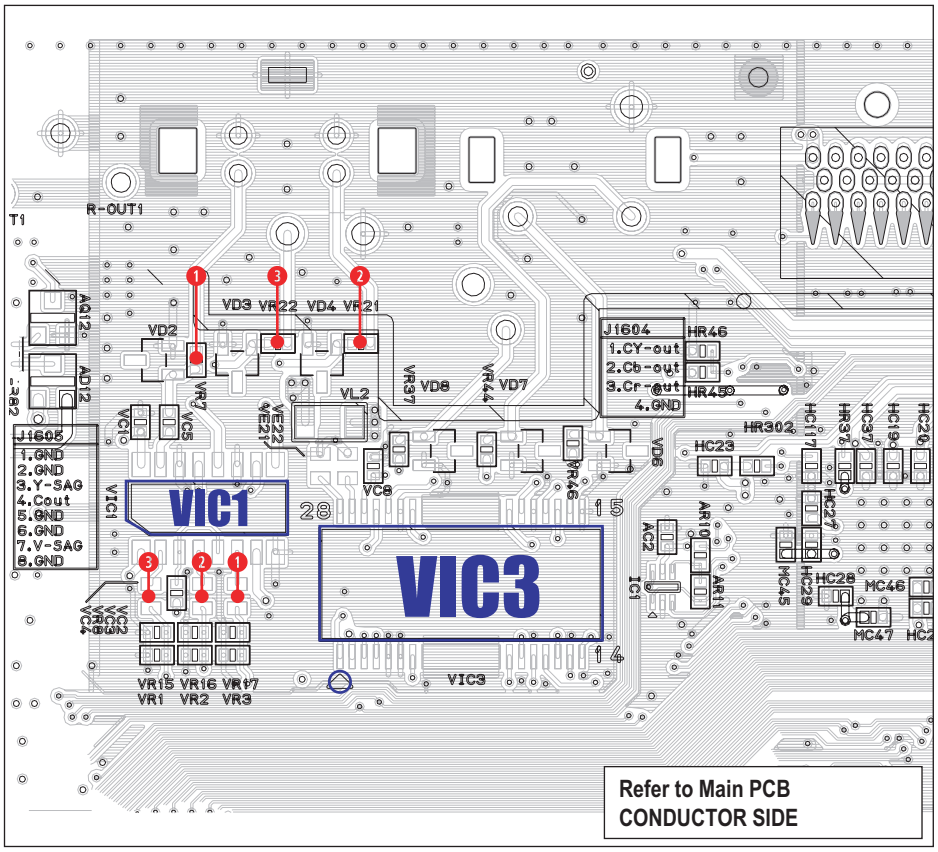


Fig. 4-9


NO LOGO (CVBS, S-Video)
Video selection accords with cable connection and TV mode?
No
Check the Video select, cable connection, TV mode
Yes
Video output from MIC1 (VC2, VC3,VC4)
No
MIC1 soldering error
Refer to Fig. 4-10
Yes
Video output from VIC1?(VR7,VR21,VR22)
No
Check VIC1 soldering of peripheral devices
Refer to Fig. 4-10
Yes
Component cable error



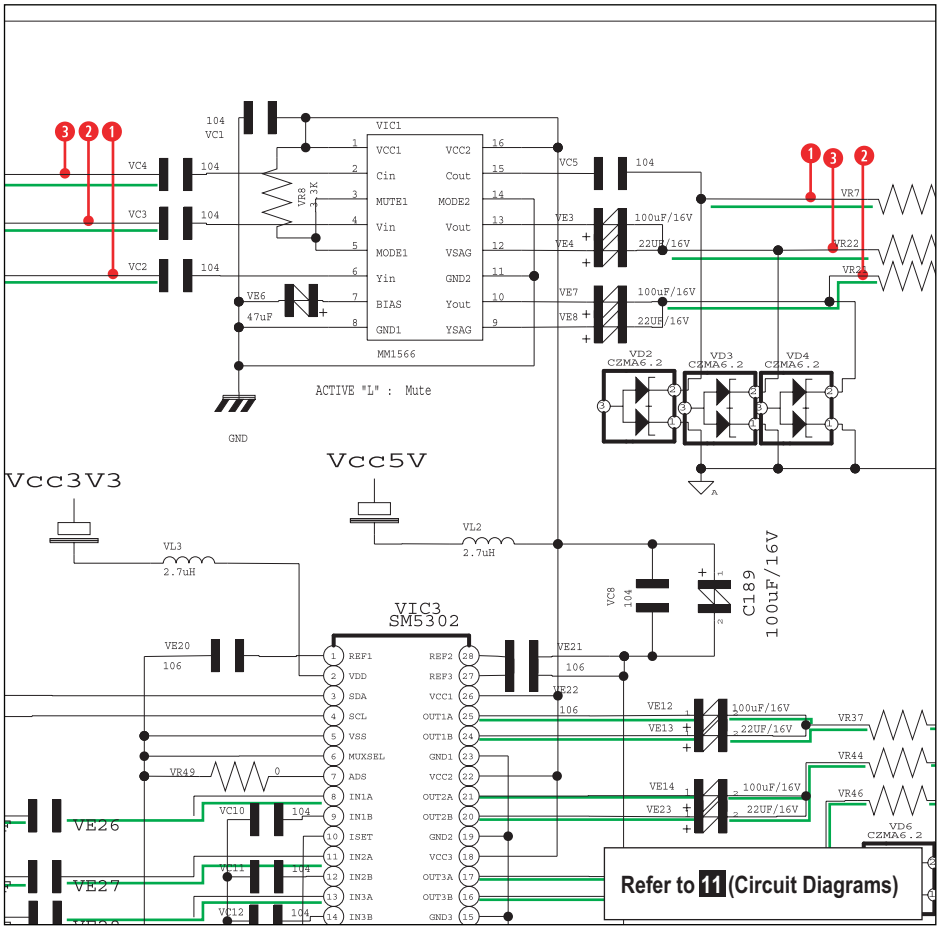
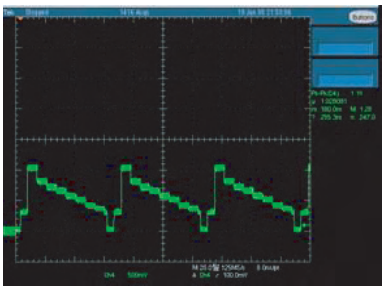
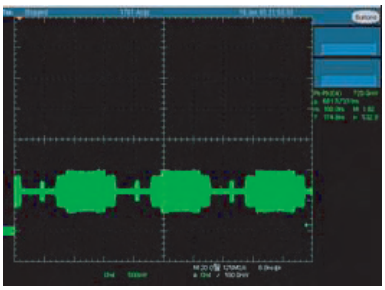


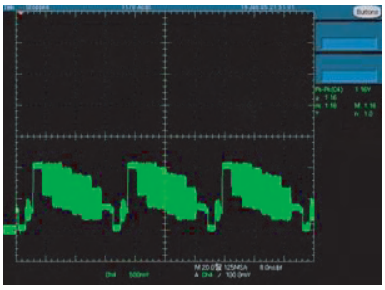
Fig. 4-10



1 Y(Color-bar)
Pin (MIC1-VC2,VIC1-VR7)



2 C(Color-bar)
Pin (MIC1-VC3,VIC1-VR21)



3 CVBS(Color-bar)
Pin (MIC1-VC4,VIC1-VR22)

5. Firmware Upgrading

Note: Upgrading the firmware will restore all the user settings to default.

5.1.1. Preparation to upgrade firmware

1. Download the software update from ww.philips.com
2. Unzip the zip-archive file
3. Start the CD Burning software and create a new CD project (data disc) with the following settings:
   - Character set: ISO9660, Joliet
   - Format: Mode 1
   - Recording mode: NO MULTISESSION, SINGLE SESSION (TRACK-AT-ONCE), FINALIZED CD (CD Close)
   - Recommended applications: Neo Burning, Easy CD Creator
4. Place the content of the zip-archive into the root directory of the new CD project.
5. Burn the data onto a blank CD-R or CD-RW

5.1.2. Procedures to apply the Firmware Upgrade

1. Power up the set, eject the tray , insert upgarde CD and close the tray.
2. The set will identify the CD. The set will display:

   "LOAD"

   And, on the TV screen, it will show:

   "Verifying Firmware Version"

3. After about 10 minutes, ejecting the disc, the set will display:

   "OPEN"

   And, on the TV screen, it will show:

   "Firmware Update
   Do you want to update Firmware?
   (Please remove a disc from the tray.)
   >Current Version: 070913.02_12
   >New Version: 070925.01_12 "

4. Remove the upgrade disc and select 'Yes' to continue.While updating the firmware, on the TV screen it will show:

   "Firmware Update
   Now, Processing..
   Please, do not turn off the power"

   And the set will display:

   "CD-UP"

Note: It may take about 5 to 10 minutes to complete the upgrading process. Do not press any buttons or interrupt the mains supply during the upgrading process, otherwise the set may become defective.

5. When the upgrade process is completed, the set will go to standby with the tray door remain open.

5.1.3. How to read out the firmware version to confirm set has been upgraded

1. Power up the set and open the disc tray.
2. With the disc tray remain open, press INFO key on RC for 10 seconds.
3. The firmware version dialog will appear as shwon below:

   "LDR:0709 / Front: 015
   S/W: 0700925.01_12
   Region: B/02 (BD/DVD)
   Macrovision: BSS02"

Note: The same procedure is applicable also for upgrading servo (loader) Firmware except the Screen Display may be different.

5.2. Procedure to reset the settings to initial mode

1. Power up the set without any disc inserted.
2. When the set displays: “HOME MENU”, press and hold the skip forward key on the Front Panel of the set as shown in figure 1.

Figure 1

3. The initial mode will be activated and the set will display:

   “NO DISC”

4. On the TV Screen, it will show the language selection menu as shown in figure 2 and select the Language by pressing the corresponding key as described in the menu.

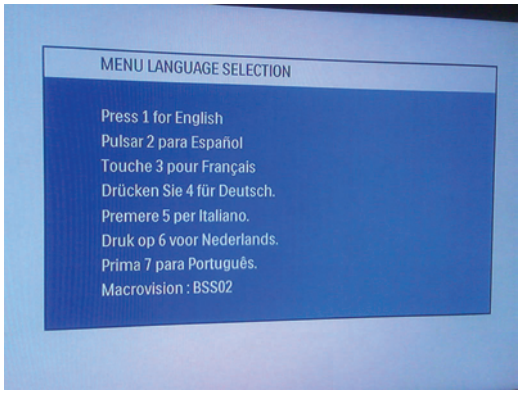
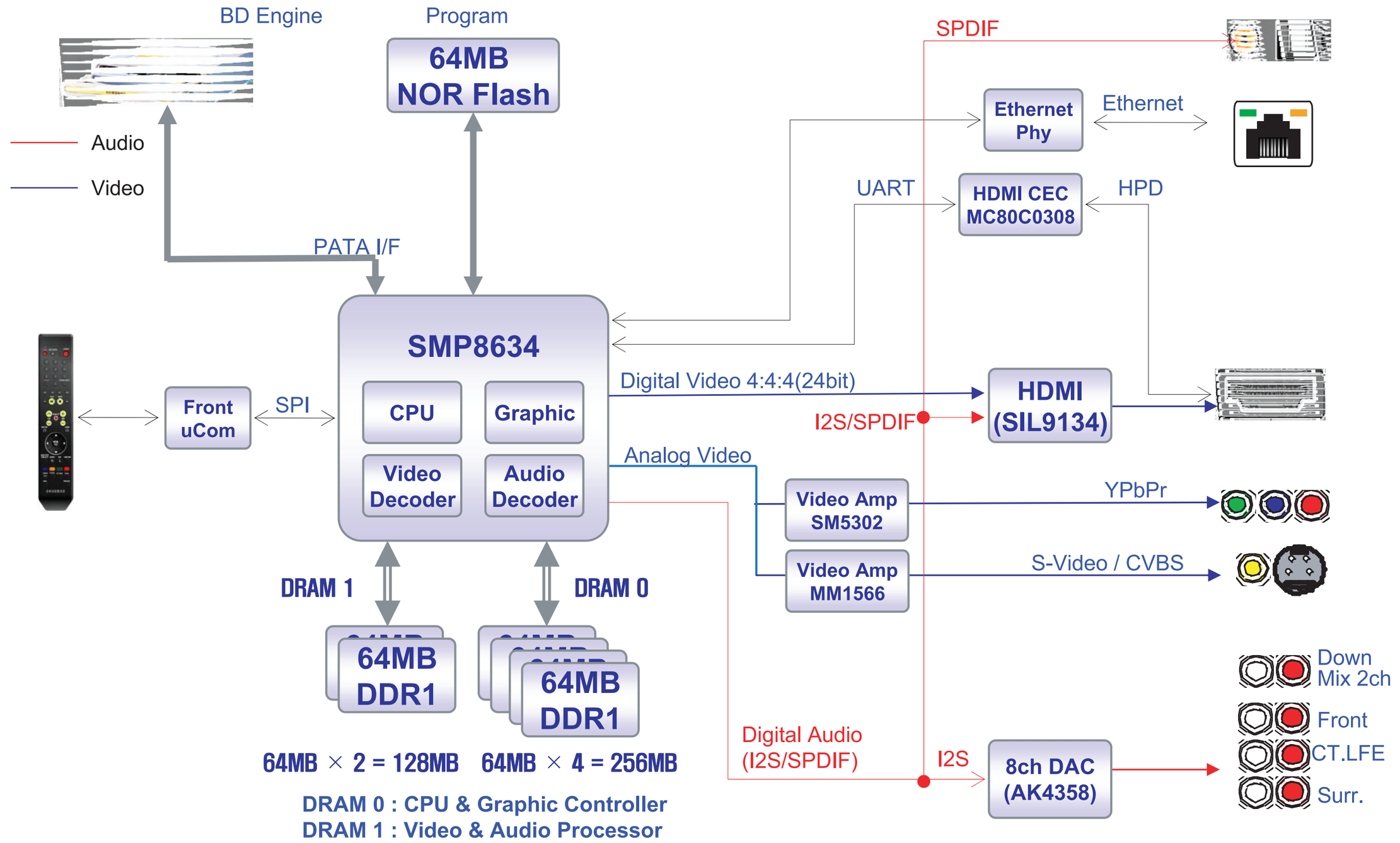


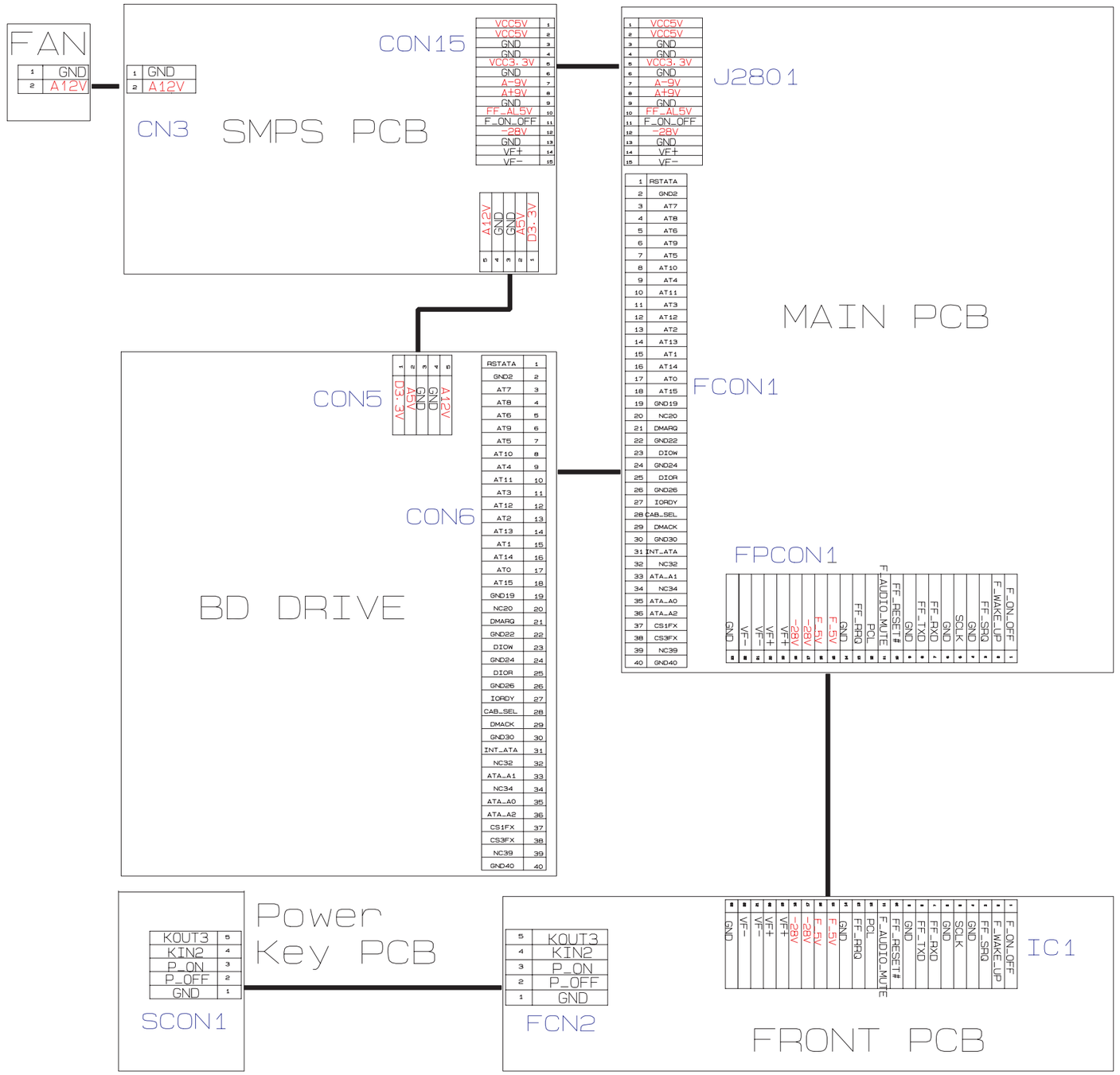
Figure 2

Note: Resetting the initial mode will restore all the user settings to Default.

6-1 All block Diagram



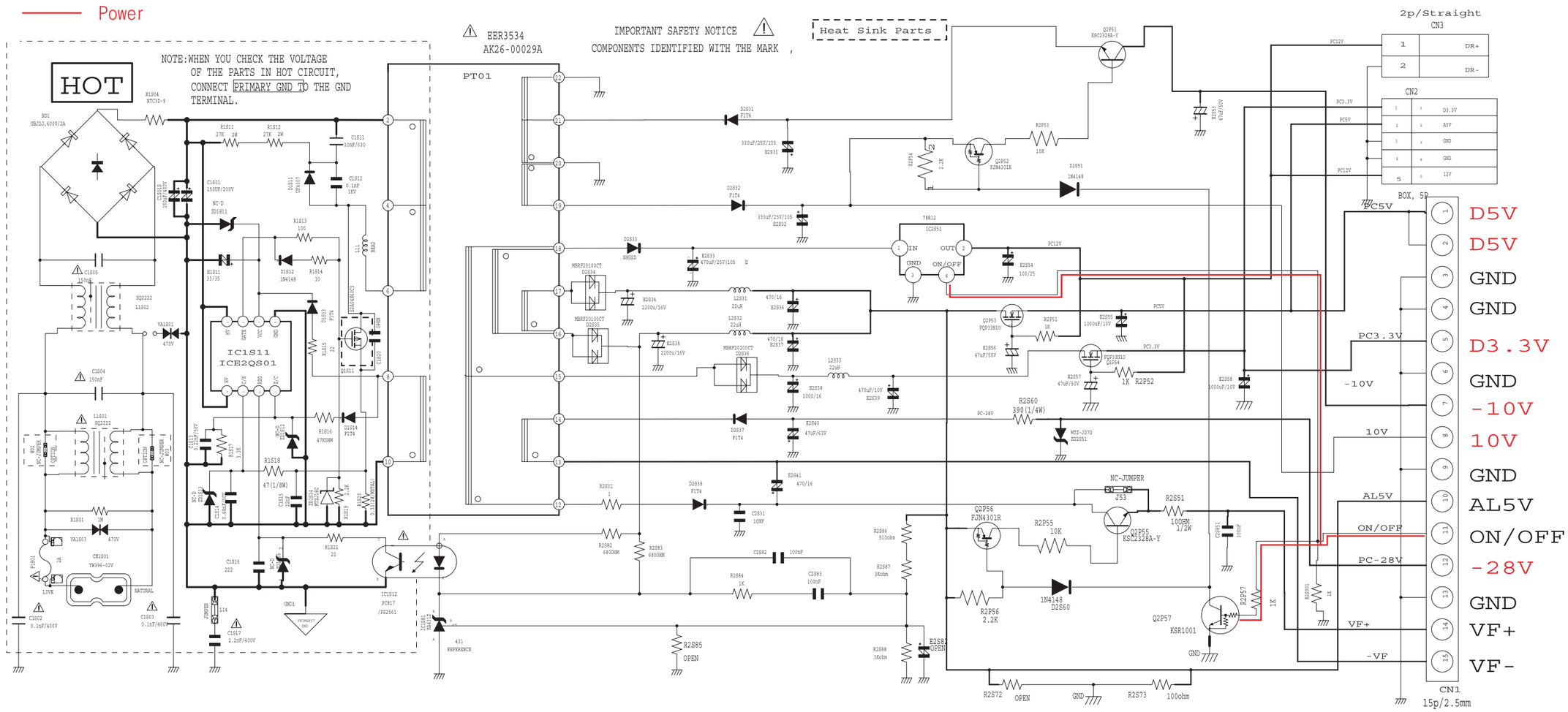
6-2 Wiring Diagram



7 Circuit Diagrams and PCB Layouts

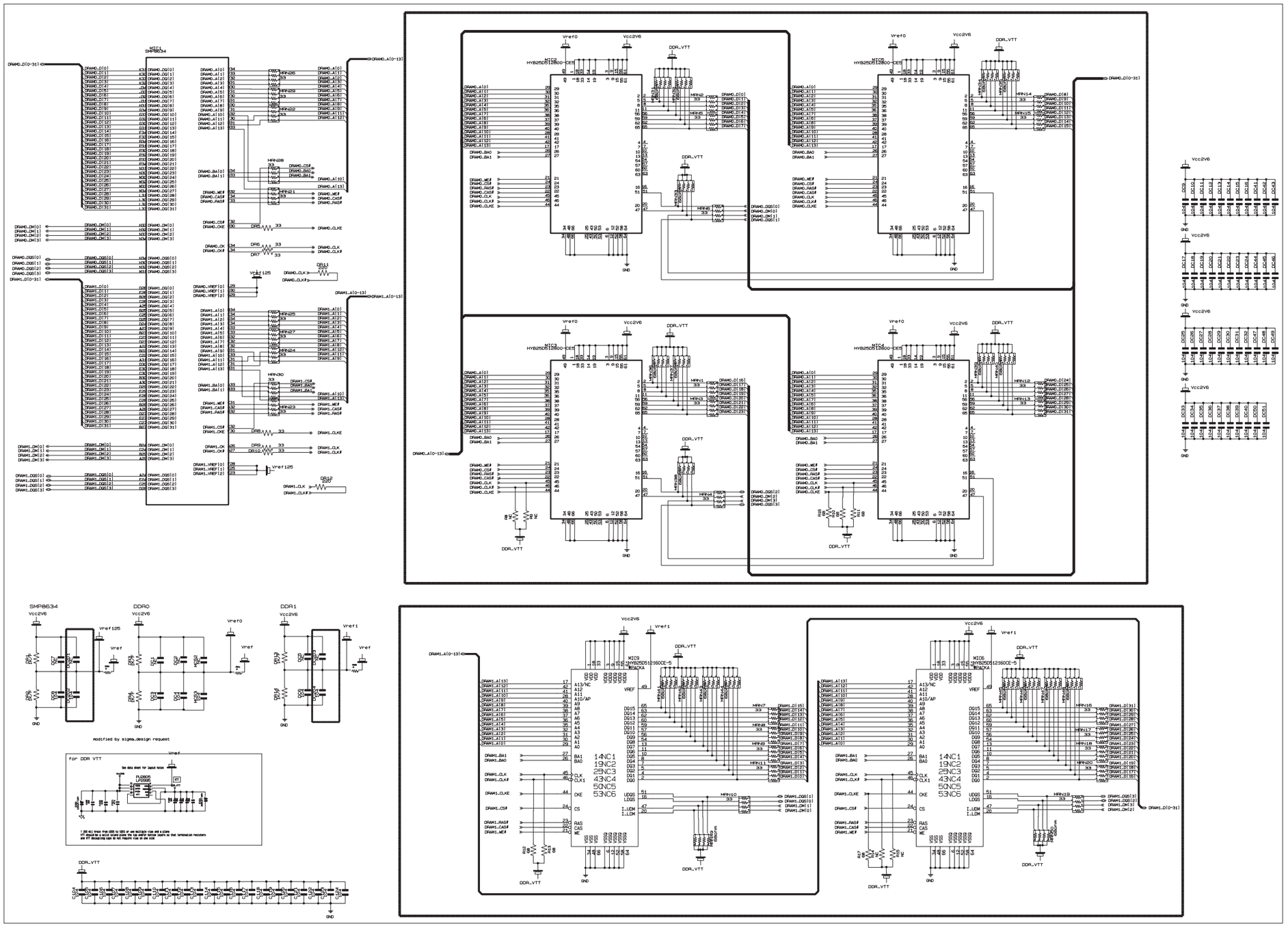
Circuit Diagrams

1 S.M.P.S (S.M.P.S PCB)

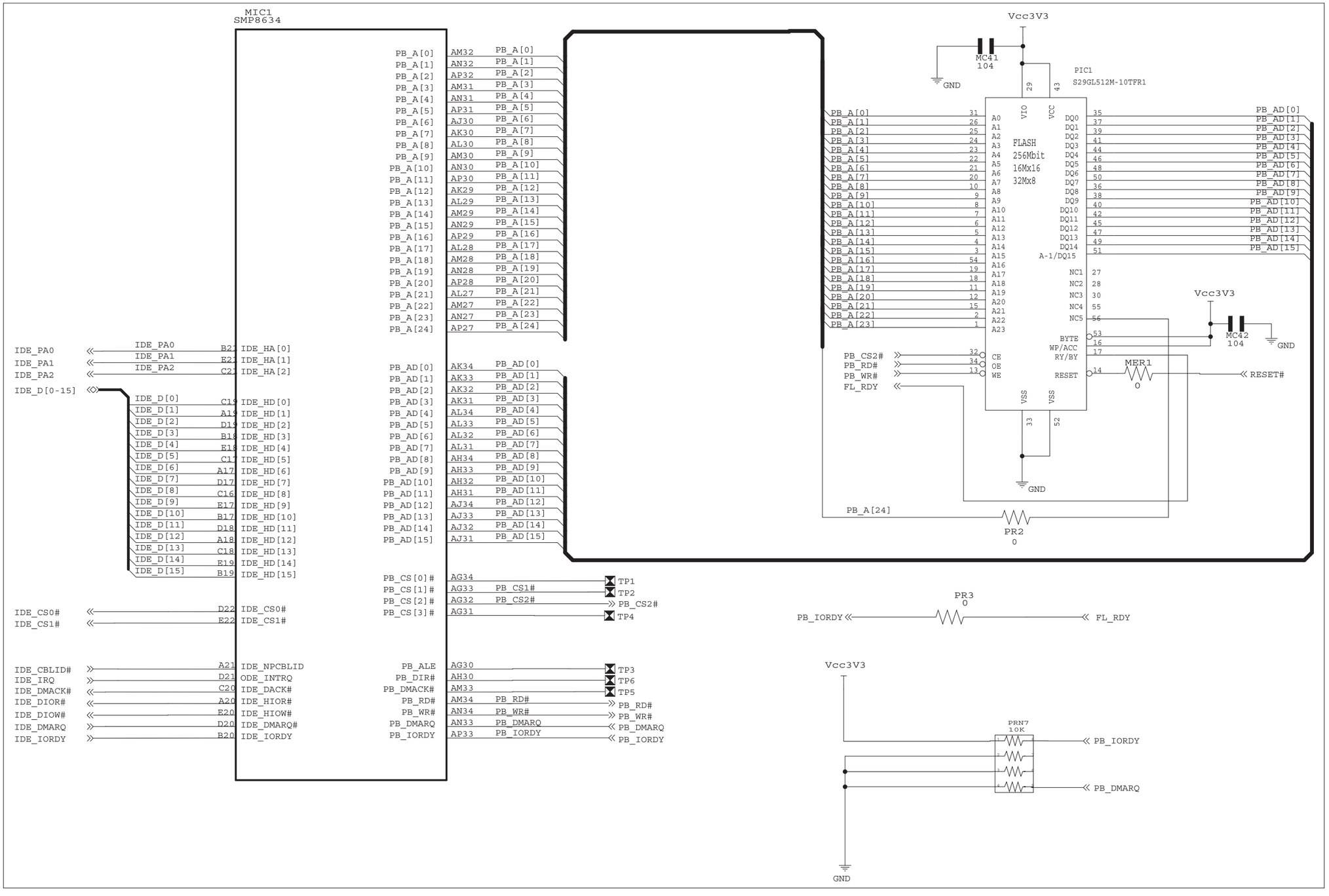

Power
HOT
NOTE:WHEN YOU CHECK THE VOLTAGE OF THE PARTS IN HOT CIRCUIT, CONNECT PRIMARY GND TO THE GND TERMINAL.
EER3534
AK26-00029A
IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED WITH THE MARK ,
Heat Sink Parts
PT01
IC1S11
ICE2QS01
IC1S12
PC817
/PS2561
431
REFERENCE
GND1
PRIMARY GND
LIVE
NATURAL
2p/Straight
CN3
DR+
DR-
CN2
D3.3V
A5V
GND
GND
12V
BOX, 5P
CN1
15p/2.5mm
D5V
D5V
GND
GND
D3.3V
GND
-10V
10V
GND
AL5V
ON/OFF
-28V
GND
VF+
VF-
PC5V
PC3.3V
PC12V
PC-28V
-10V
10V
AL5V
ON/OFF
-28V
VF+
-VF
NC-JUMPER
J53
OPEN
OPEN
OPEN

SMP8634 DDR SDRAM (Main PCB)

2

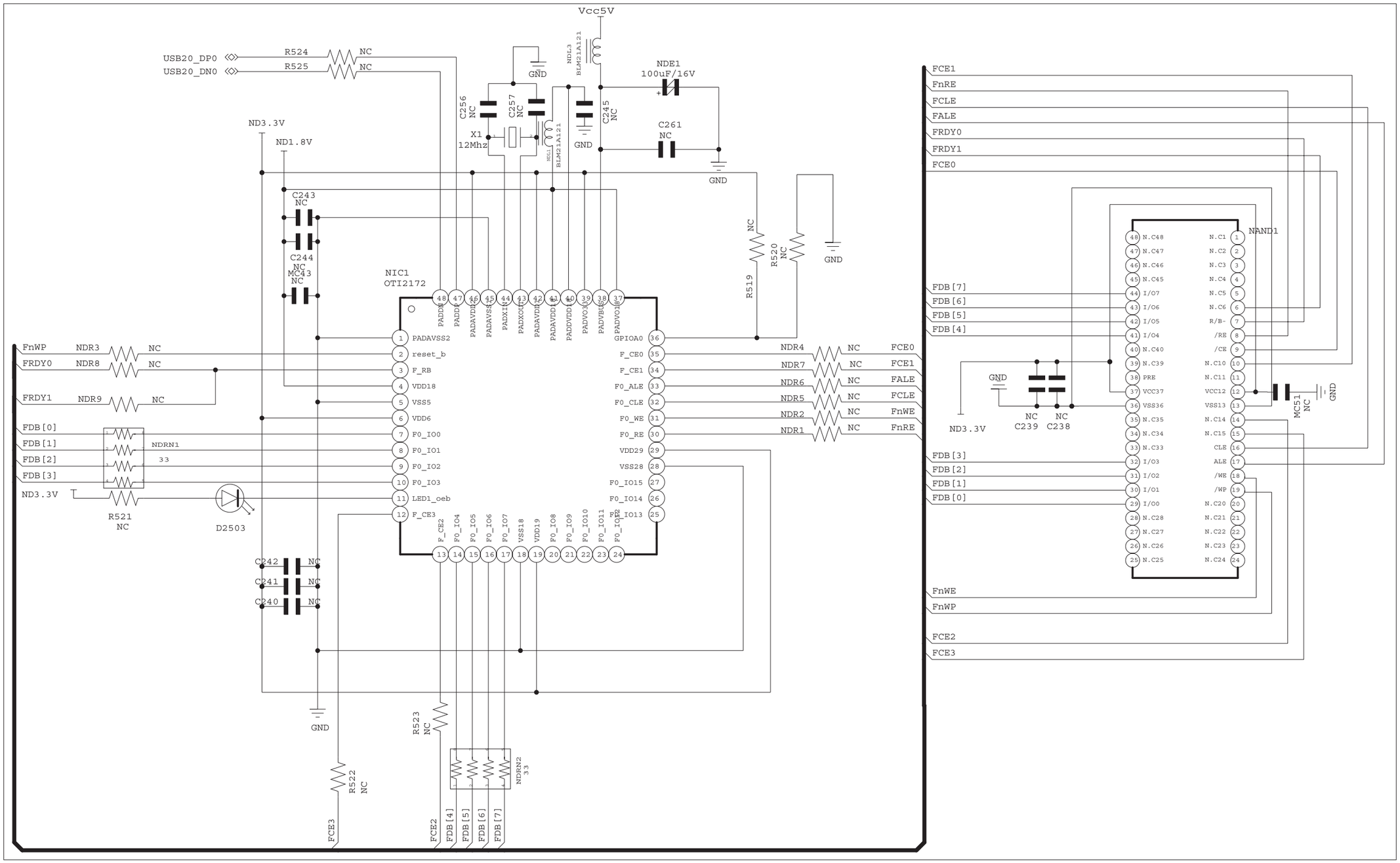


SMP8634 Flash Memory (Main PCB)



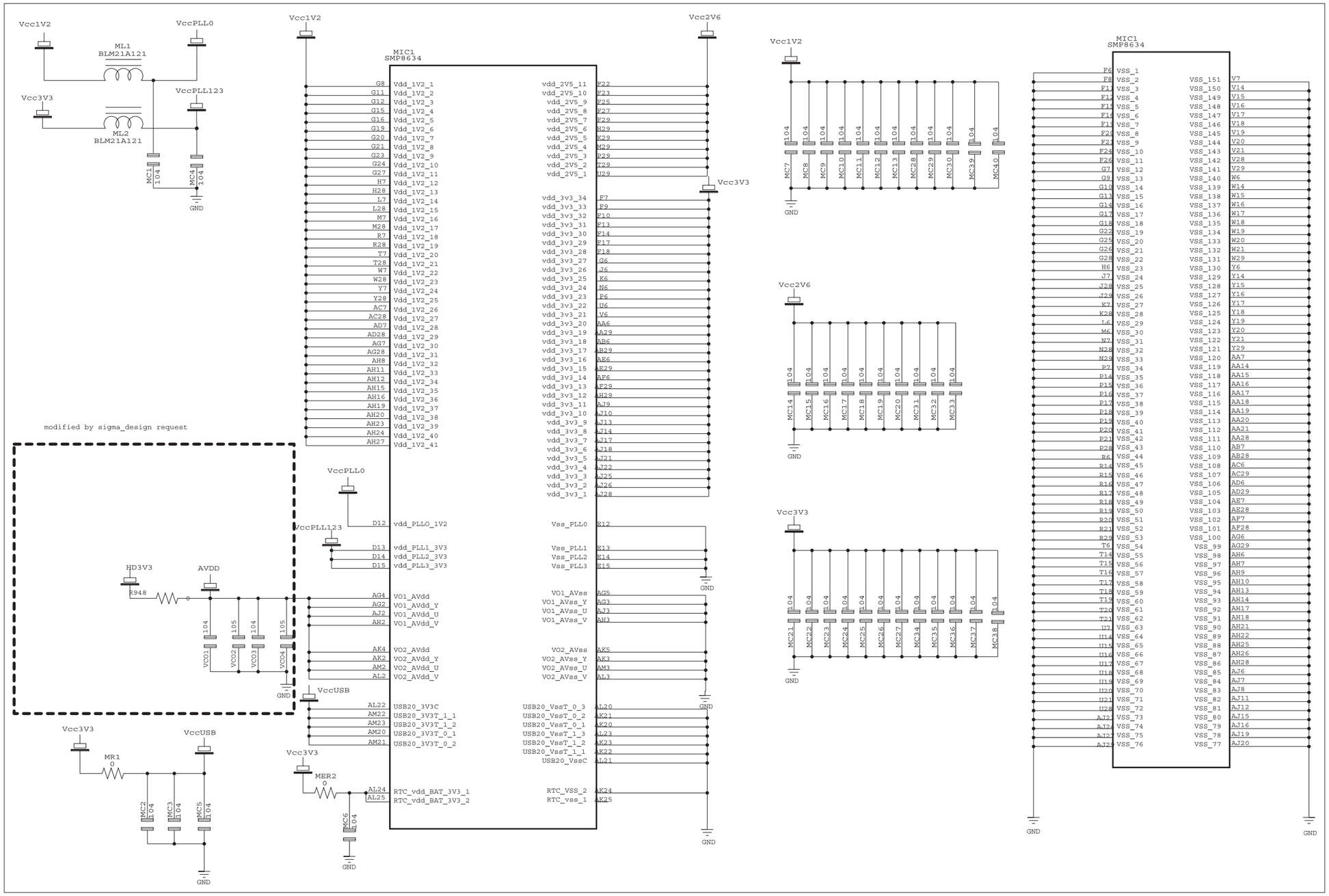
Nand Flash, Controller (Main PCB)

4



SMP8634 Power, Decoupling (Main PCB)

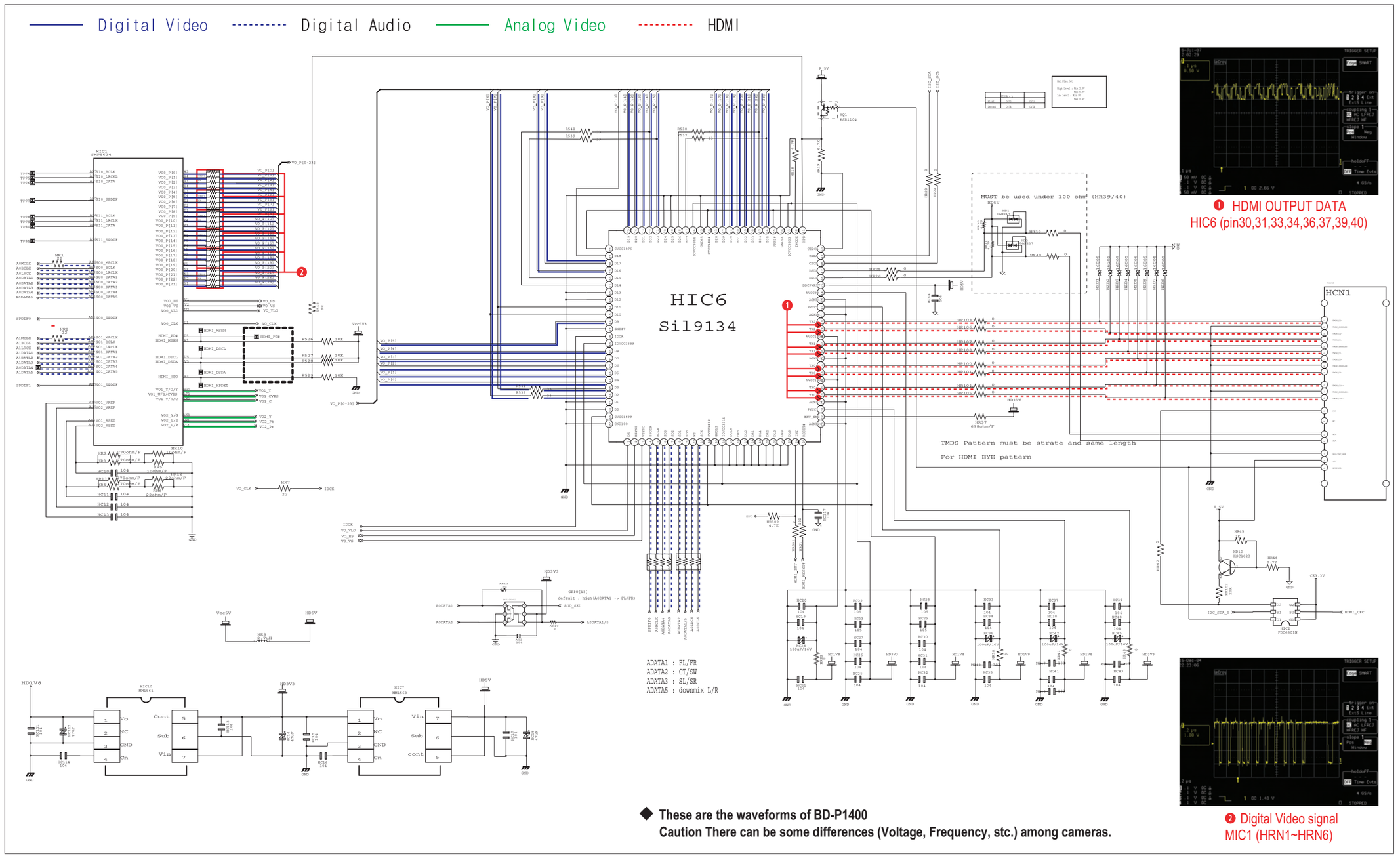
5



Sil9134 HDMI (Main PCB)

6

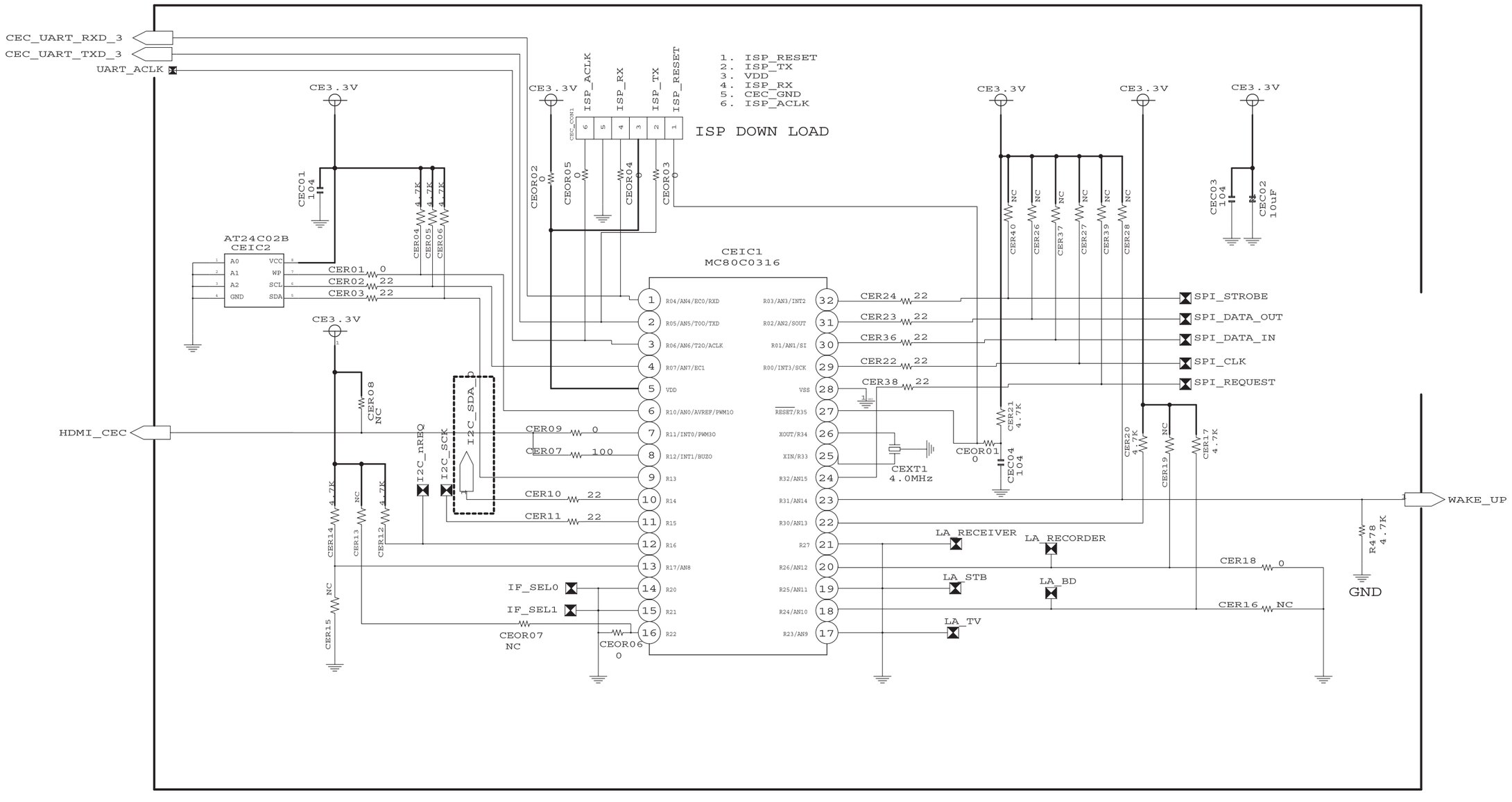
Schematic Diagrams



◆ **These are the waveforms of BD-P1400**
Caution There can be some differences (Voltage, Frequency, stc.) among cameras.

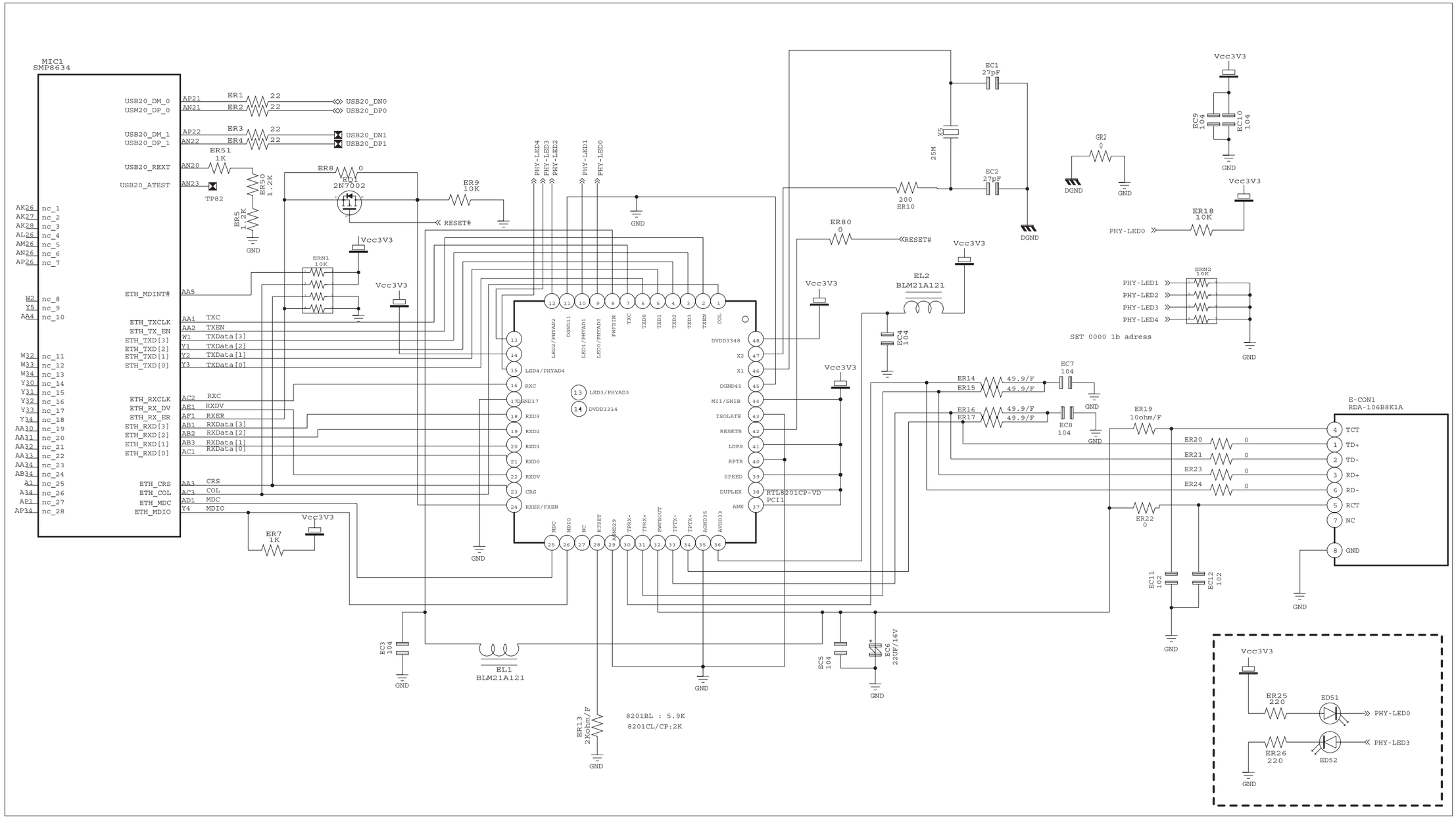
HDMI-CEC (Main PCB)

7



Ethernet contol (Main PCB)

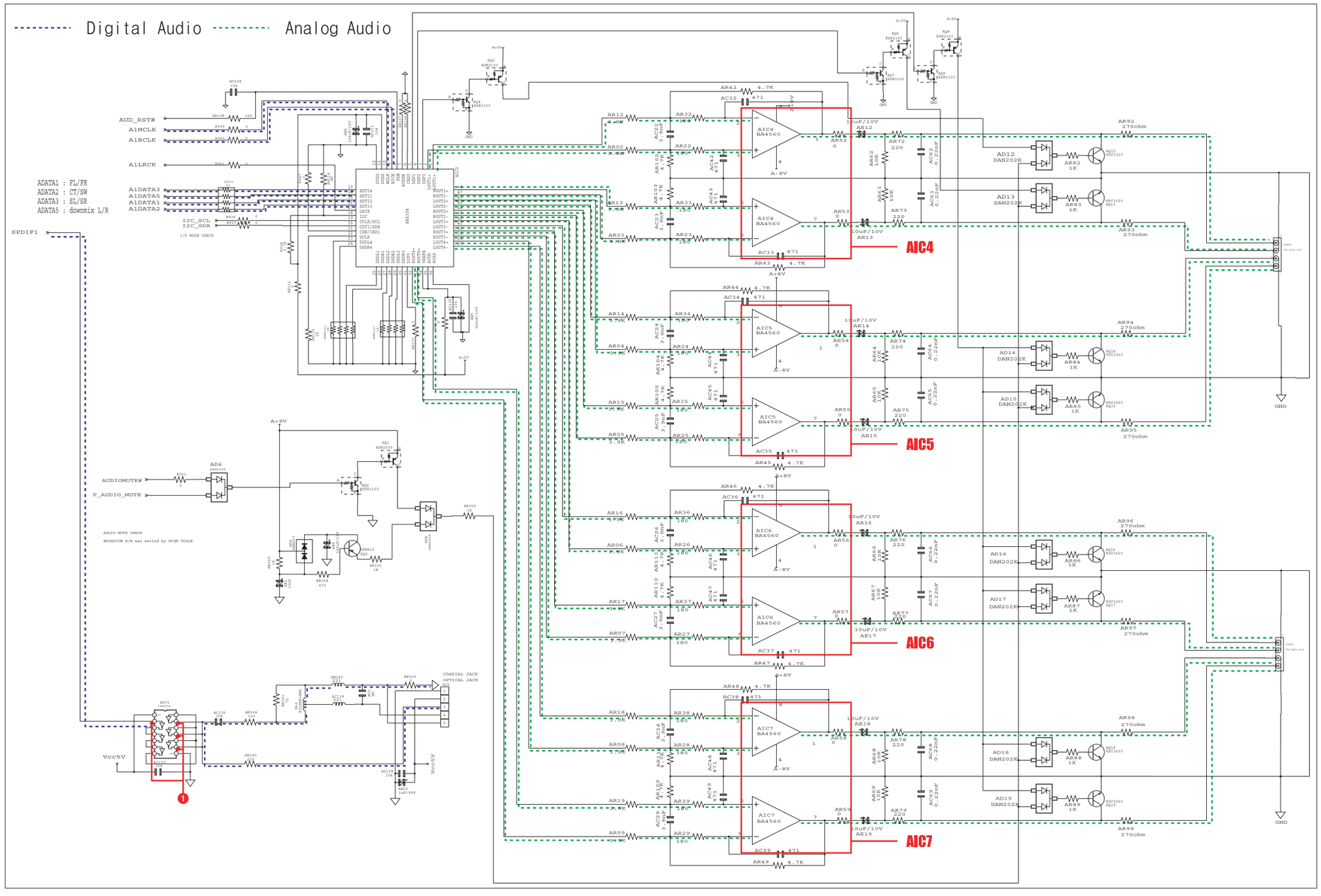
8

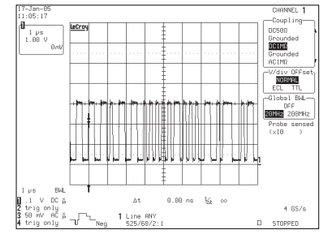


Audio (Main PCB)

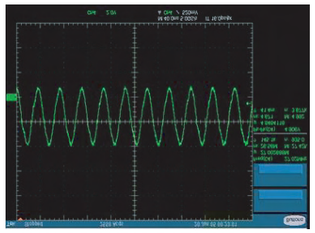
9

Schematic Diagrams





❶ DIGITAL AUDIO DATA
AIC1 (Pin2,4,6,13)

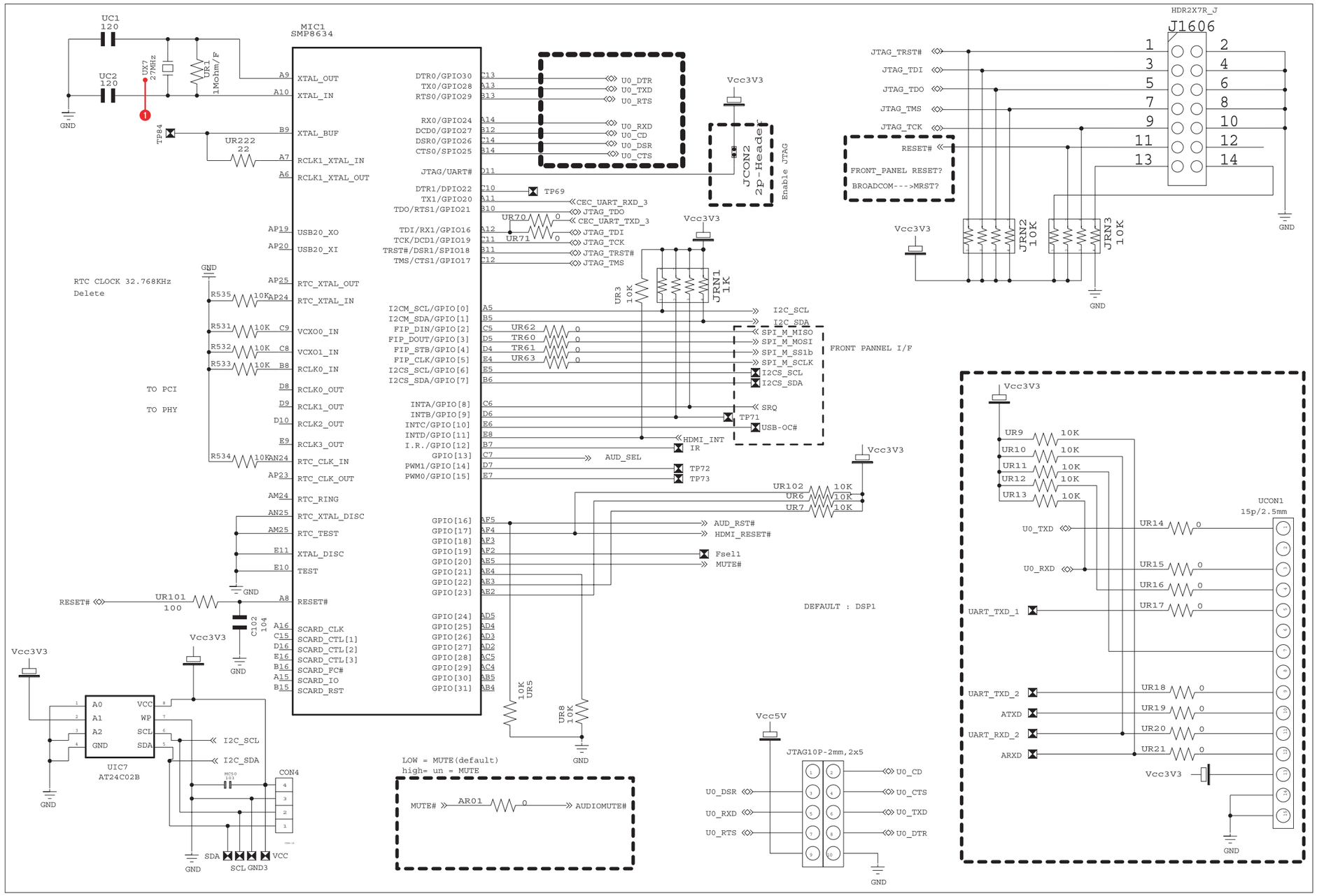


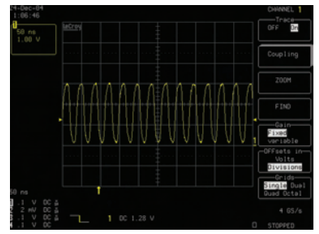
ANALOG AUDIO DATA(AIC4,5,6,7)

◆ **These are the waveforms of BD-P1400**
Caution There can be some differences (Voltage, Frequency, stc.) among cameras.

SMP8634 GPIO Control, JTAG, Debug (Main PCB)

10





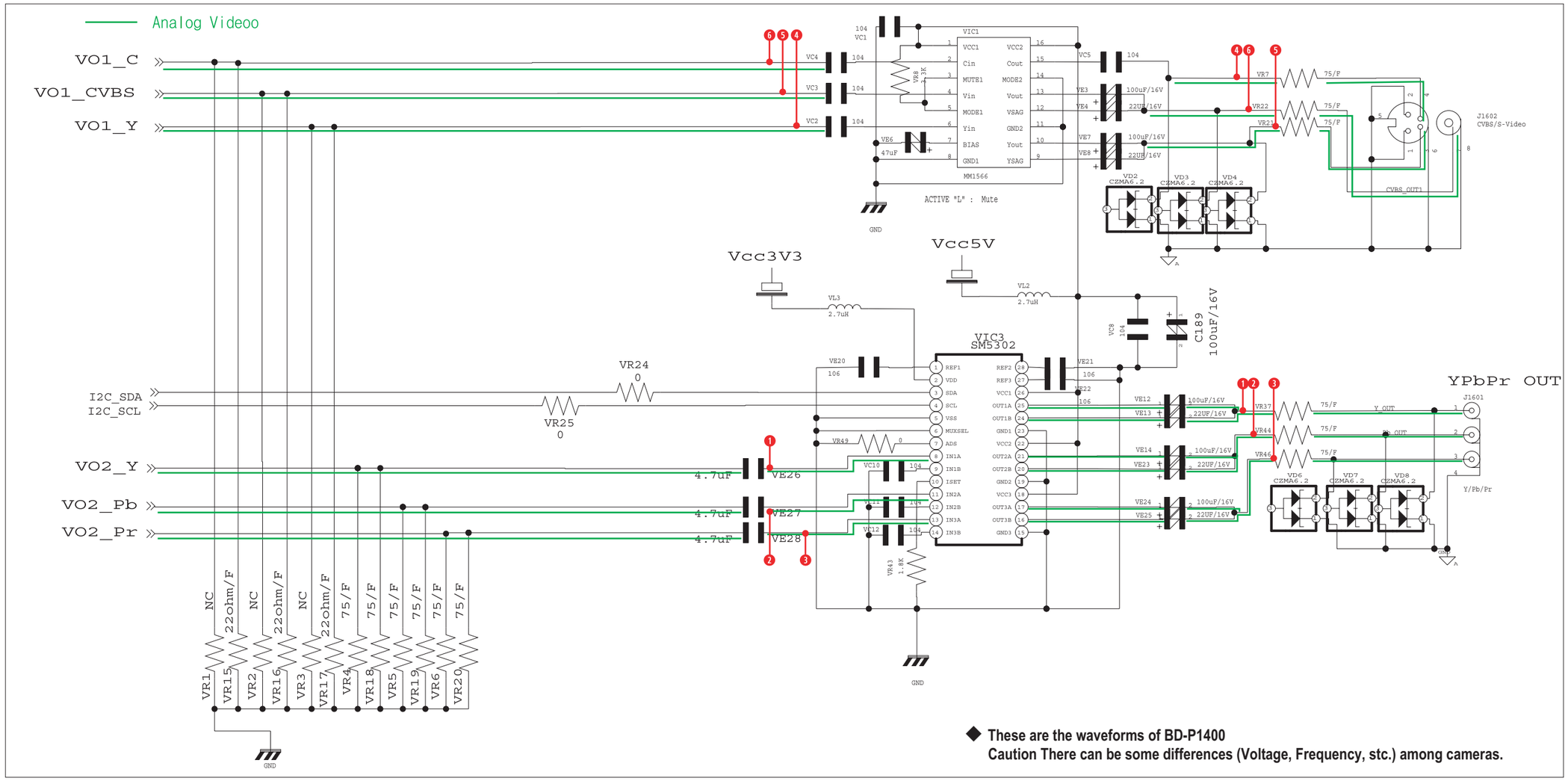
❷ UX7 CLOCK SIGNAL (27MHz)

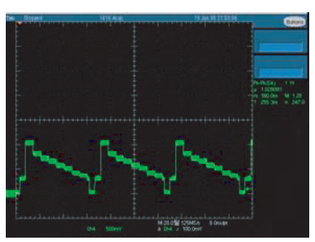
◆ **These are the waveforms of BD-P1400**
Caution There can be some differ ences (Voltage, Frequency, stc.) among cameras.

MM1757 Analog Video Out (Main PCB)

11

Schematic Diagrams

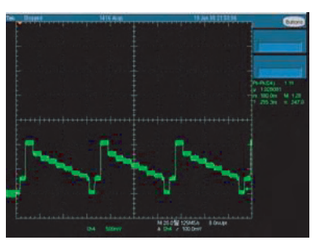




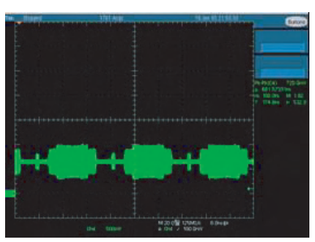
❶ Y(Color-bar)
Pin (MIC1-VE26,VR37)

❷ Pb(Color-bar)
Pin (MIC1-VE27,VR44)

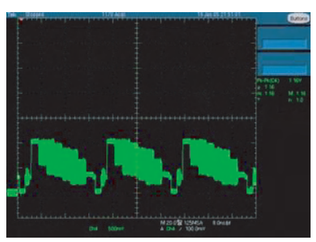
❸ Pr(Color-bar)
Pin (MIC1-VE28,VR46)



❹ Y(Color-bar)
Pin (MIC1-VC2,VIC1-VR7)



❺ C(Color-bar)
Pin (MIC1-VC3,VIC1-VR21)

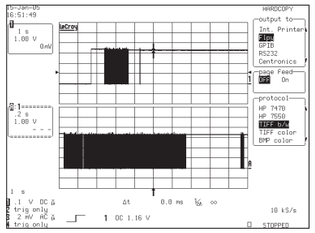


❻ CVBS(Color-bar)
Pin (MIC1-VC4,VIC1-VR22)

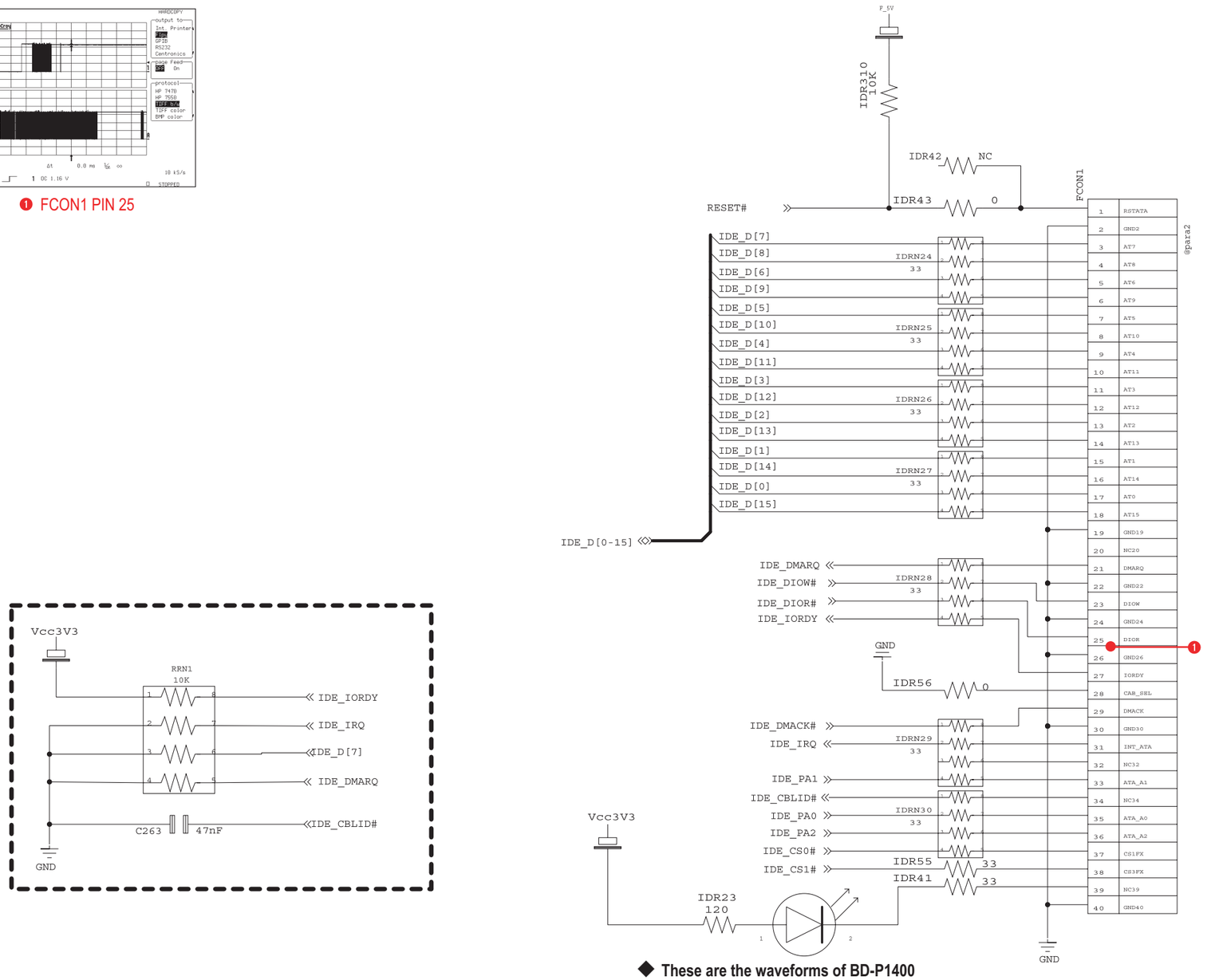
PATA Control (Main PCB)

12

Schematic Diagrams



❶ FCON1 PIN 25



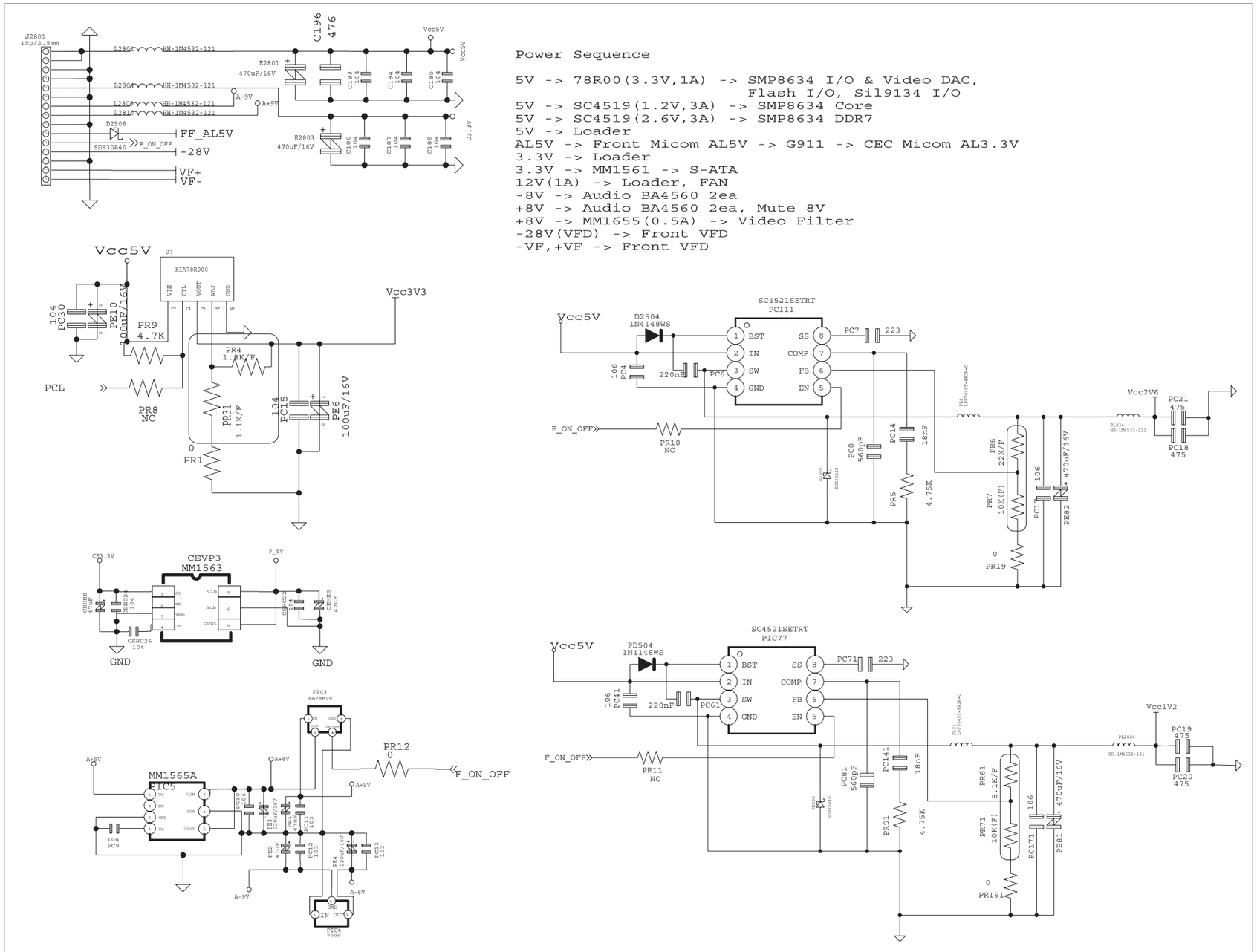
◆ **These are the waveforms of BD-P1400**
Caution There can be some differences (Voltage, Frequency, stc.) among cameras.

Power (Main PCB)

13

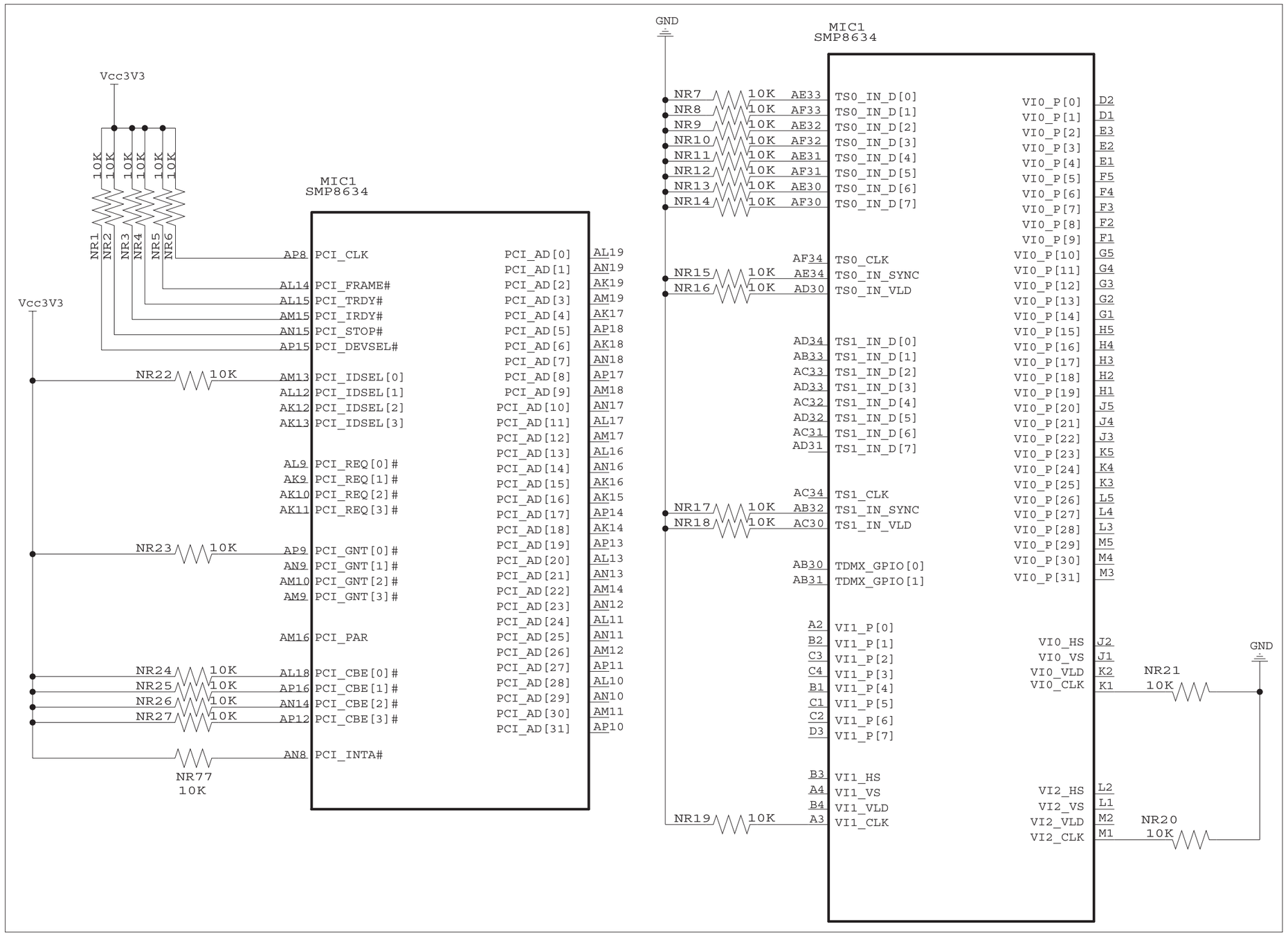

```
Power Sequence

5V -> 78R00(3.3V,1A) -> SMP8634 I/O & Video DAC,
                        Flash I/O, Sil9134 I/O
5V -> SC4519(1.2V,3A) -> SMP8634 Core
5V -> SC4519(2.6V,3A) -> SMP8634 DDR7
5V -> Loader
AL5V -> Front Micom AL5V -> G911 -> CEC Micom AL3.3V
3.3V -> Loader
3.3V -> MM1561 -> S-ATA
12V(1A) -> Loader, FAN
-8V -> Audio BA4560 2ea
+8V -> Audio BA4560 2ea, Mute 8V
+8V -> MM1655(0.5A) -> Video Filter
-28V(VFD) -> Front VFD
-VF,+VF -> Front VFD
```



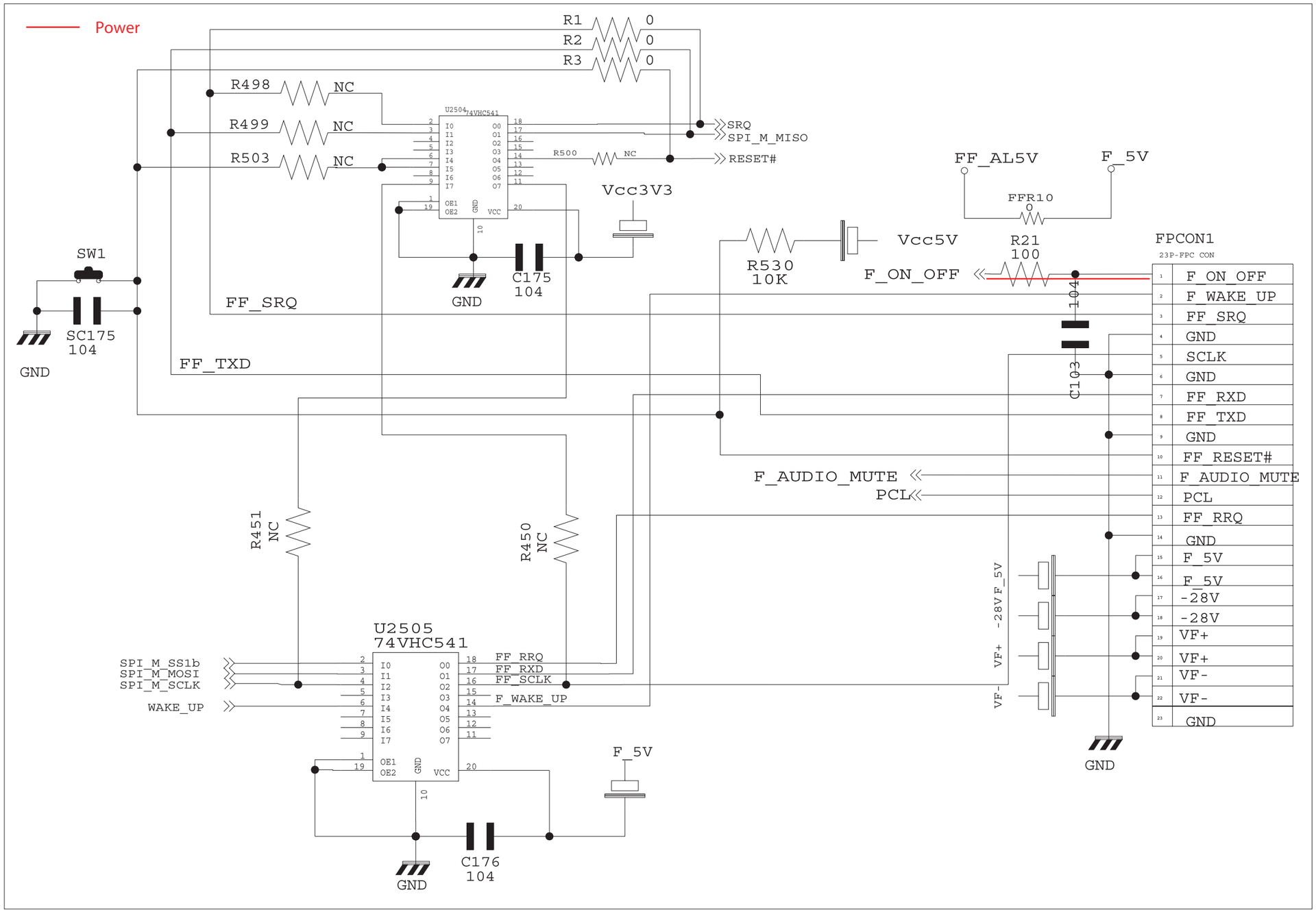
PCI, ETC (Main PCB)

14



Front Interface (Main PCB)

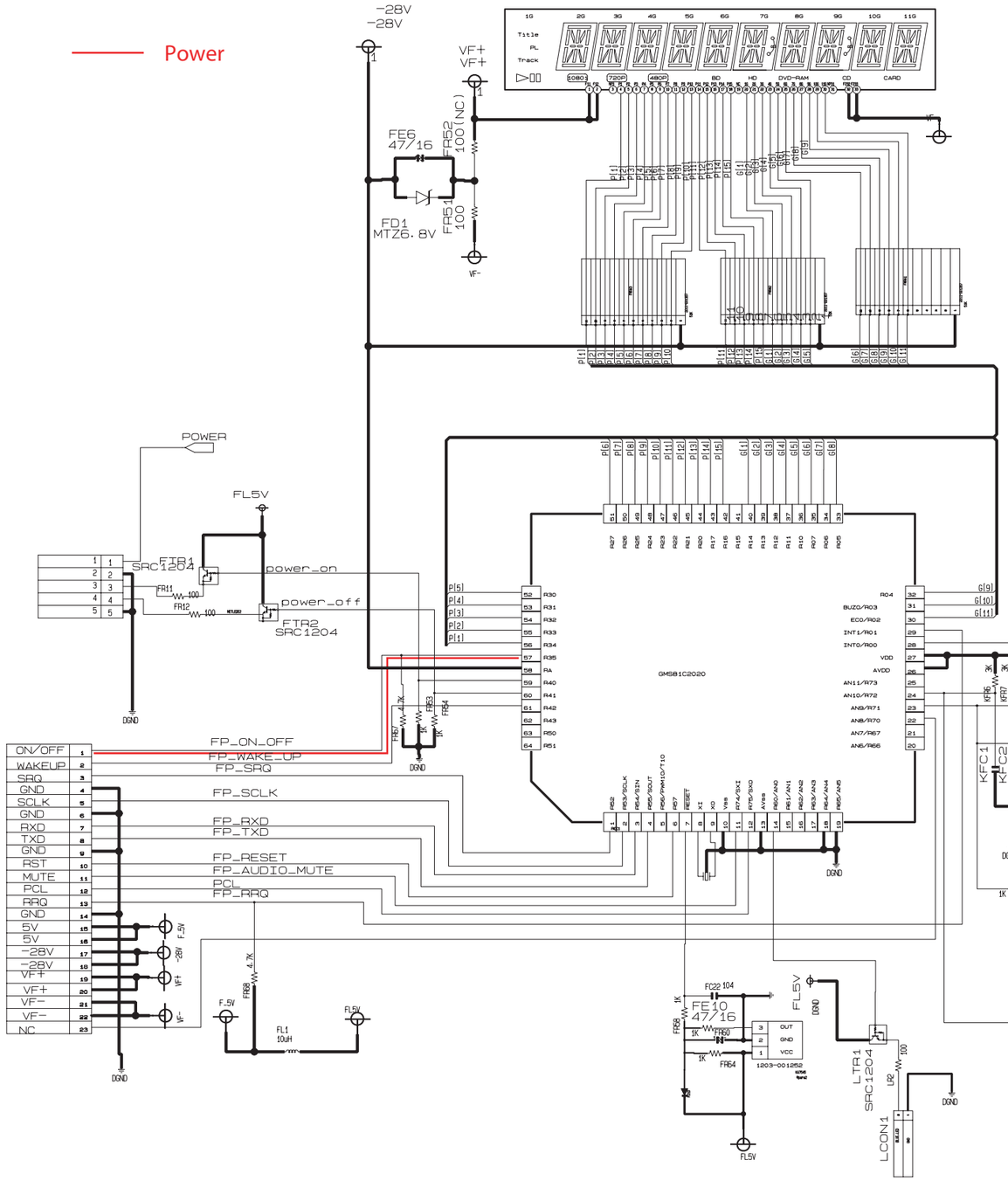
15

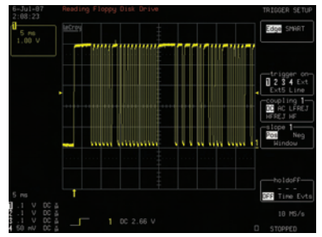


Front (Front PCB)

16

Power



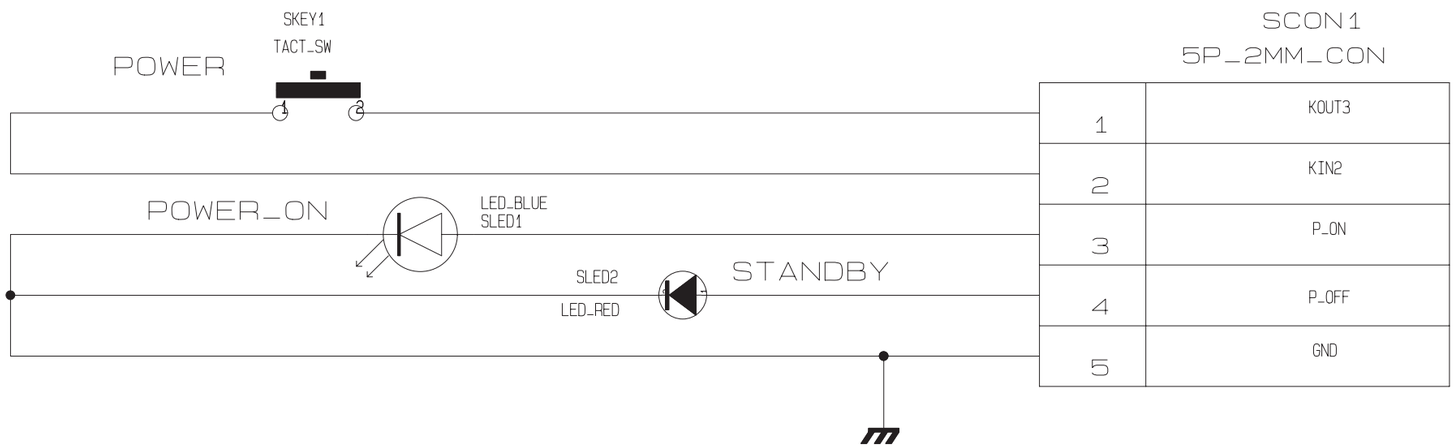


❶ Remote control eye data
FU3 Pin3

◆ **These are the waveforms of BD-P1400 Caution There can be some differences (Voltage, Frequency, stc.) among cameras.**

Power Key (Power Key PCB)

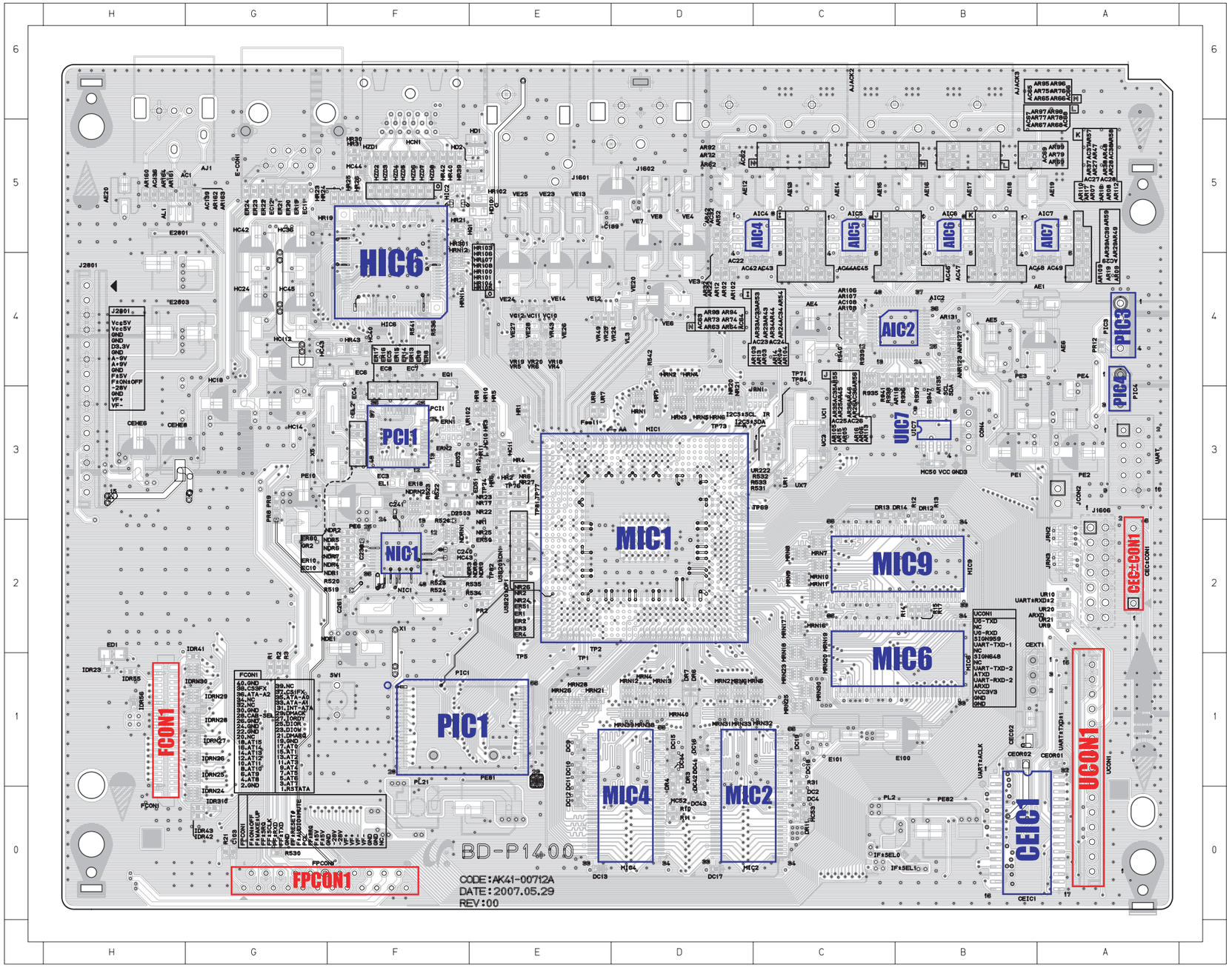
17



PCB Layout Diagrams

Layout: Main PCB

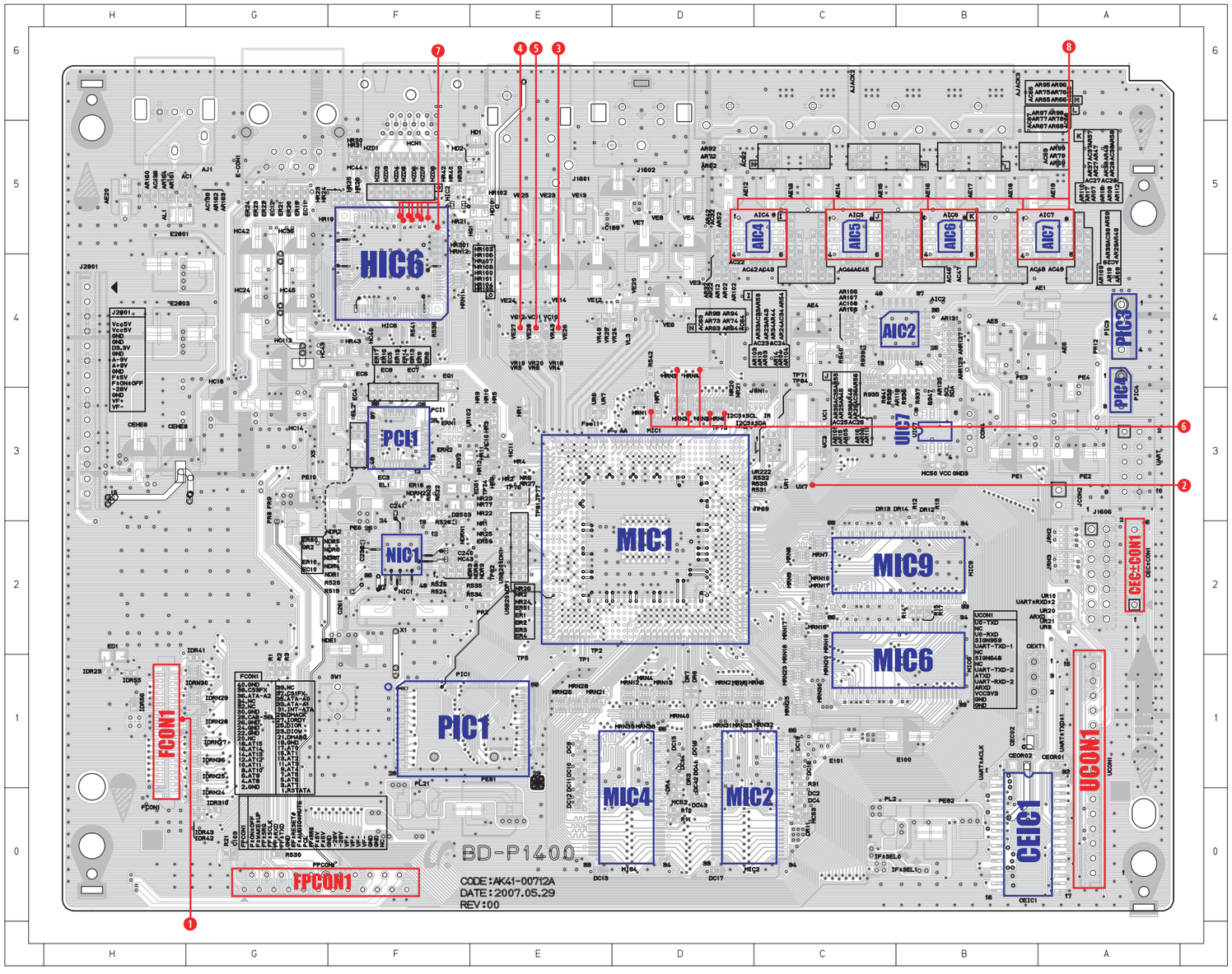
COMPONENT SIDE – 1

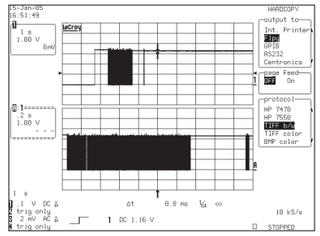


LOC.NO	X-Y
UCON1	A-0
CEIC1	A-0
CEC+CON1	A-2
PIC4	A-3
PIC3	A-4
PIC7	A-5
MIC6	B-1
MIC9	B-2
UIC7	B-3
AIC2	B-4
AIC6	B-5
MIC2	C-0
AIC5	C-5
AIC4	C-5
MIC4	D-0
MIC1	D-2
PIC1	E-1
FPCON1	F-0
NIC1	F-2
PCI1	F-3
HIC6	F-4
FCON1	H-0

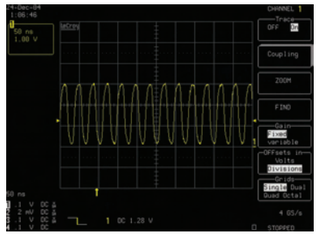
Layout: Main PCB

COMPONENT SIDE – 2

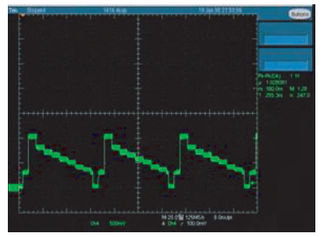




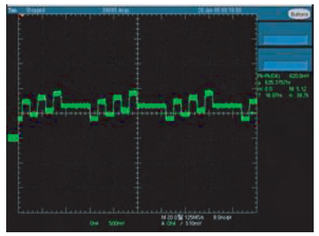
1 FCON1 PIN 25



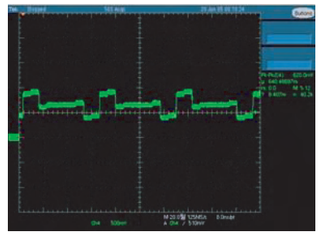
2 UX7 CLOCK SIGNAL (27MHz)



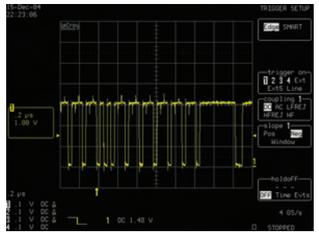
3 Y(Color-bar)
Pin (MIC1-VE28)



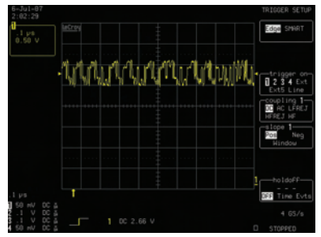
4 Pb(Color-bar)
Pin (MIC1-VE27)



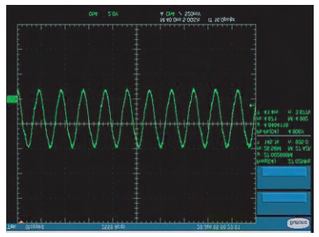
5 Pr(Color-bar)
Pin (MIC1-VE26)



6 Digital Video signal
MIC1 (HRN1~HRN6)



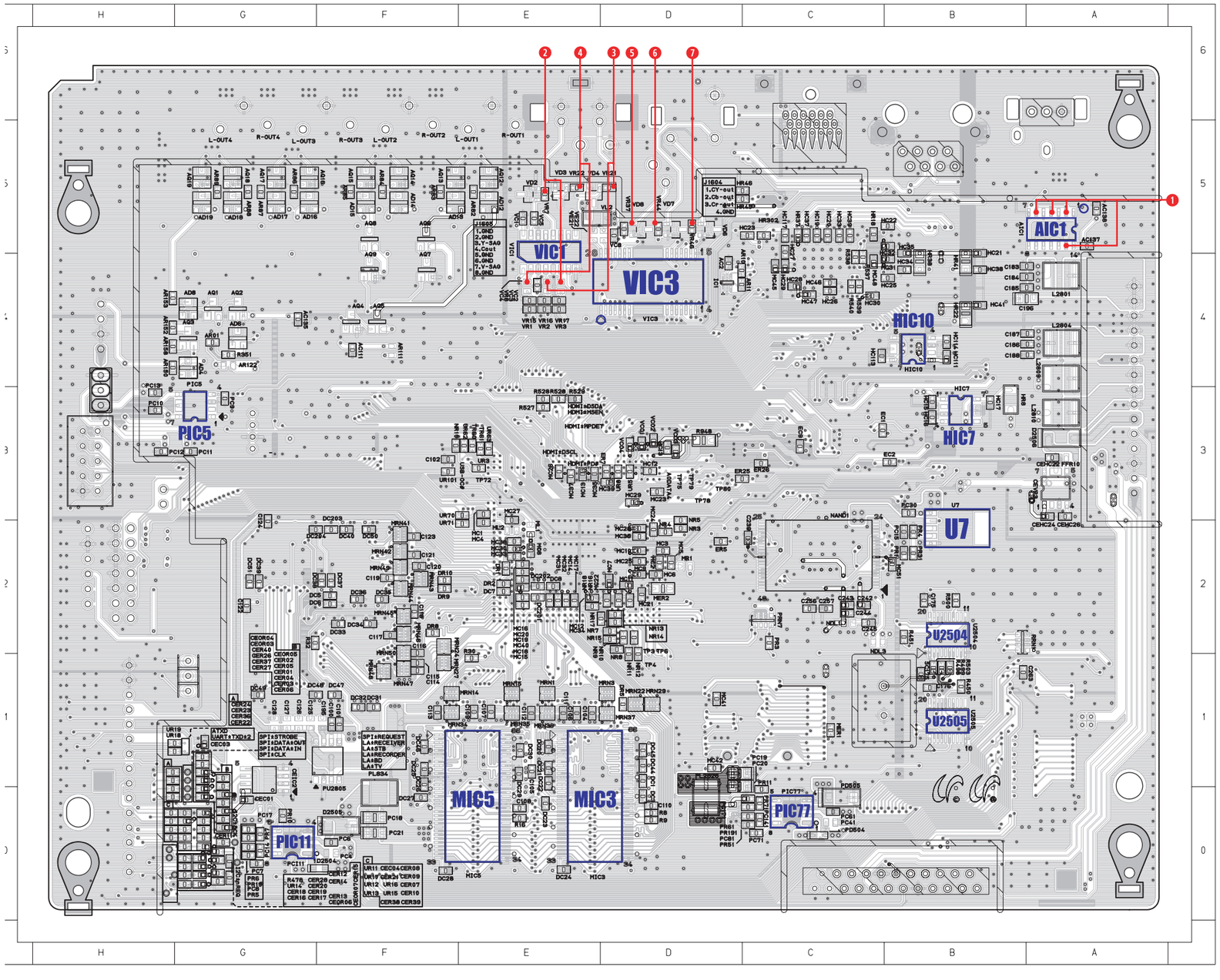
7 HDMI OUTPUT DATA
HIC6 (pin30,31,33,34,36,37,39,40)

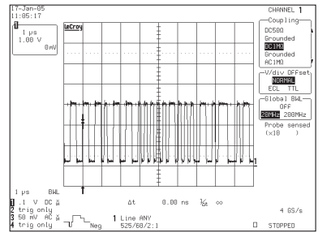


8 ANALOG AUDIO
DATA(AIC4,5,6,7)

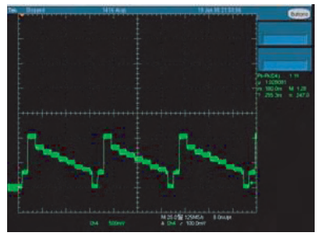
Layout: Main PCB

CONDUCTOR SIDE

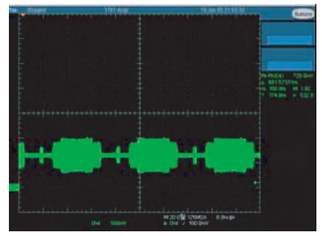




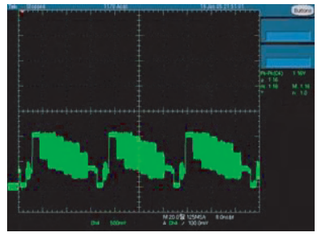
❶ DIGITAL AUDIO DATA
AIC1 (Pin2,4,6,13)



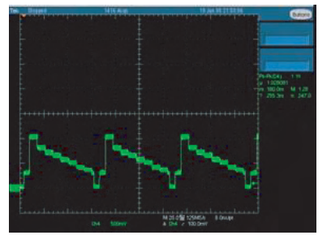
❷ Y(Color-bar)
Pin (MIC1-VC2,VIC1-VR7)



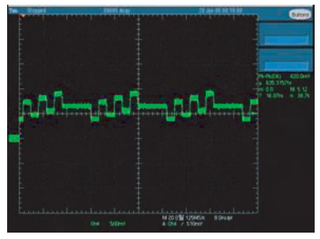
❸ C(Color-bar)
Pin (MIC1-VC3,VIC1-VR21)



❹ CVBS(Color-bar)
Pin (MIC1-VC4,VIC1-VR22)



❺ Y(Color-bar)
Pin-VR37



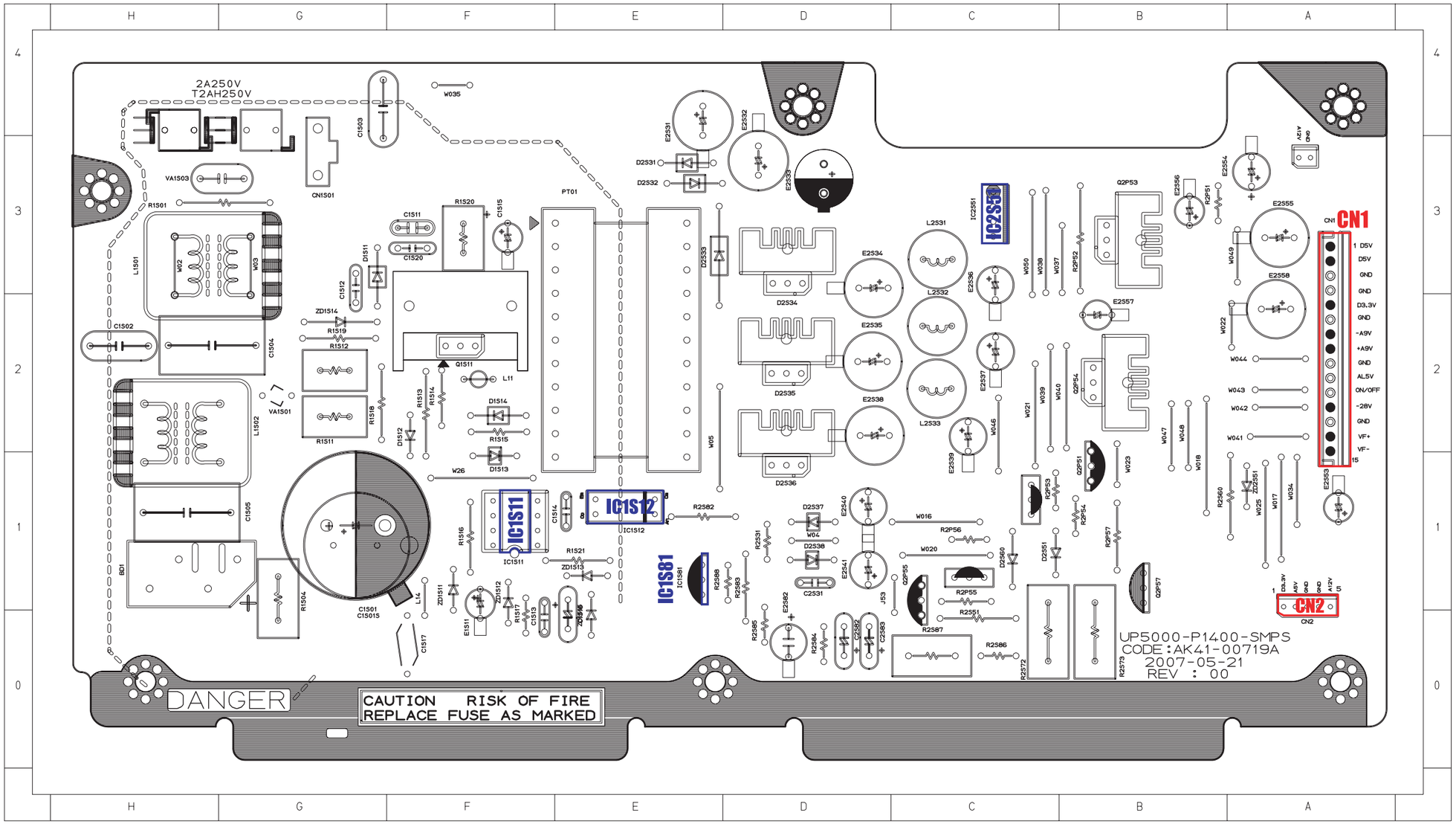
❻ Pb(Color-bar)
Pin-VR44

❼ Pr(Color-bar)
Pin-VR46

LOC.NO	X-Y
AIC1	A-5
U2505	B-1
U2504	B-2
U7	B-2
HIC7	B-3
HIC10	B-4
PIC77	C-1
MIC3	D-0
VIC3	D-4
MIC5	E-0
VIC1	E-4
PIC11	G-0
PIC5	G-3

Layout: S.M.P.S PCB

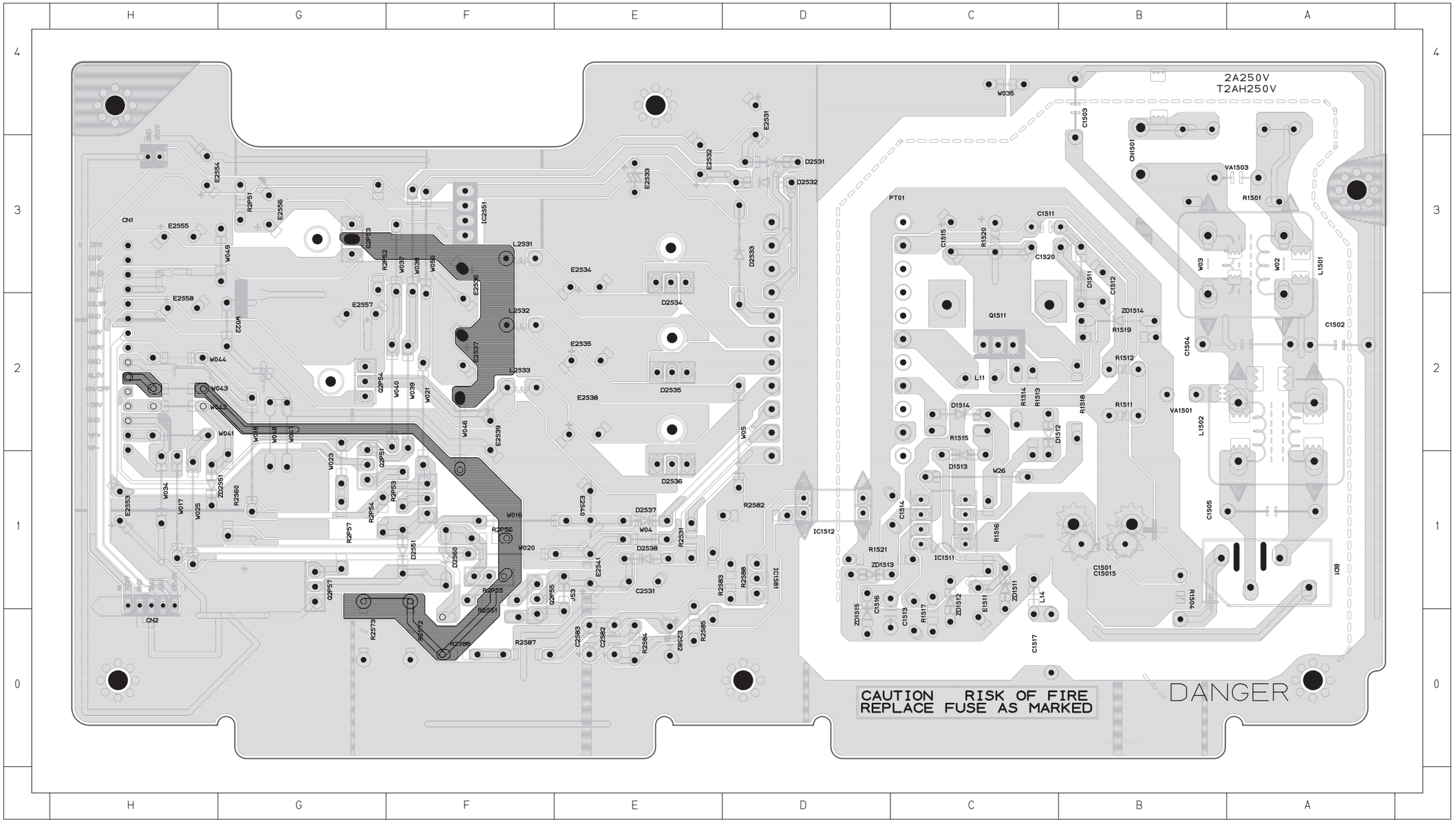
COMPONENT SIDE



LOC.NO	X-Y
CN2	A-0
CN1	A-1
IC2S51	C-3
IC1S81	E-1
IC1S12	E-1
IC1S11	F-1

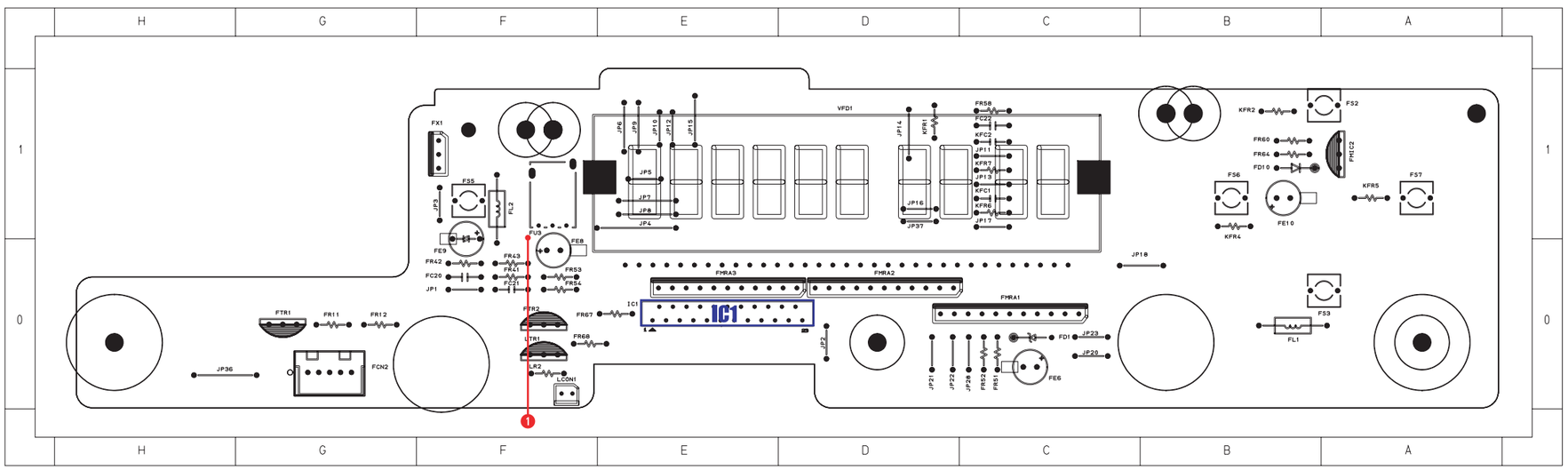
Layout: S.M.P.S PCB

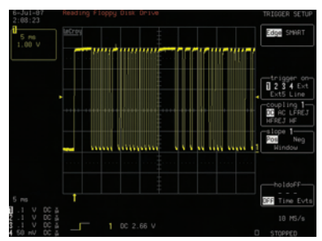
CONDUCTOR SIDE



Layout: Front PCB

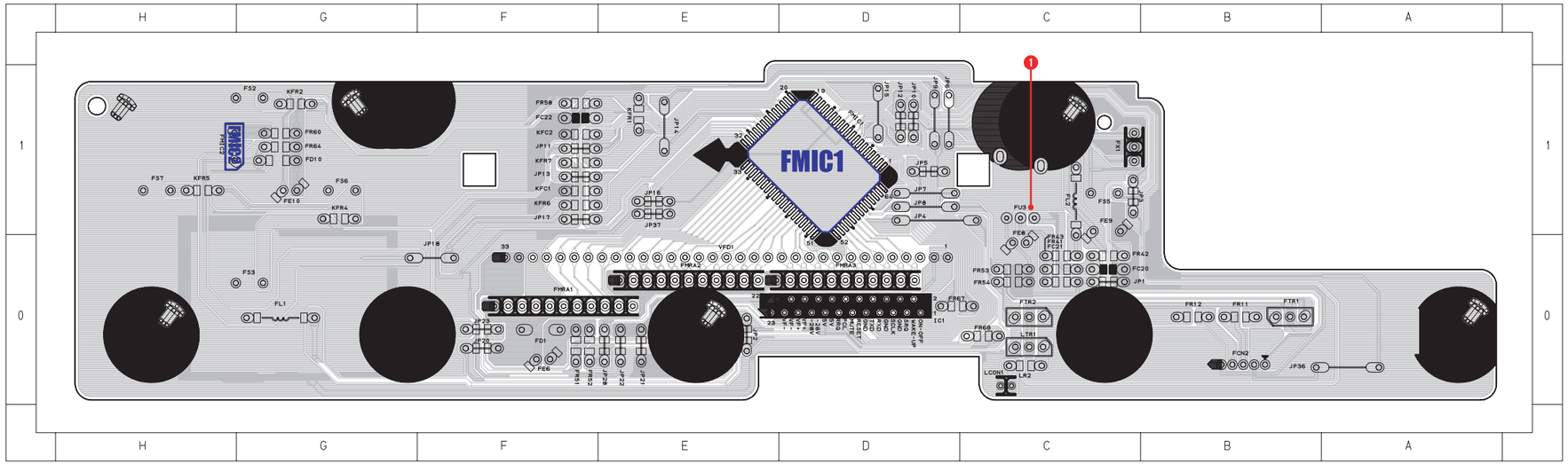
COMPONENT SIDE





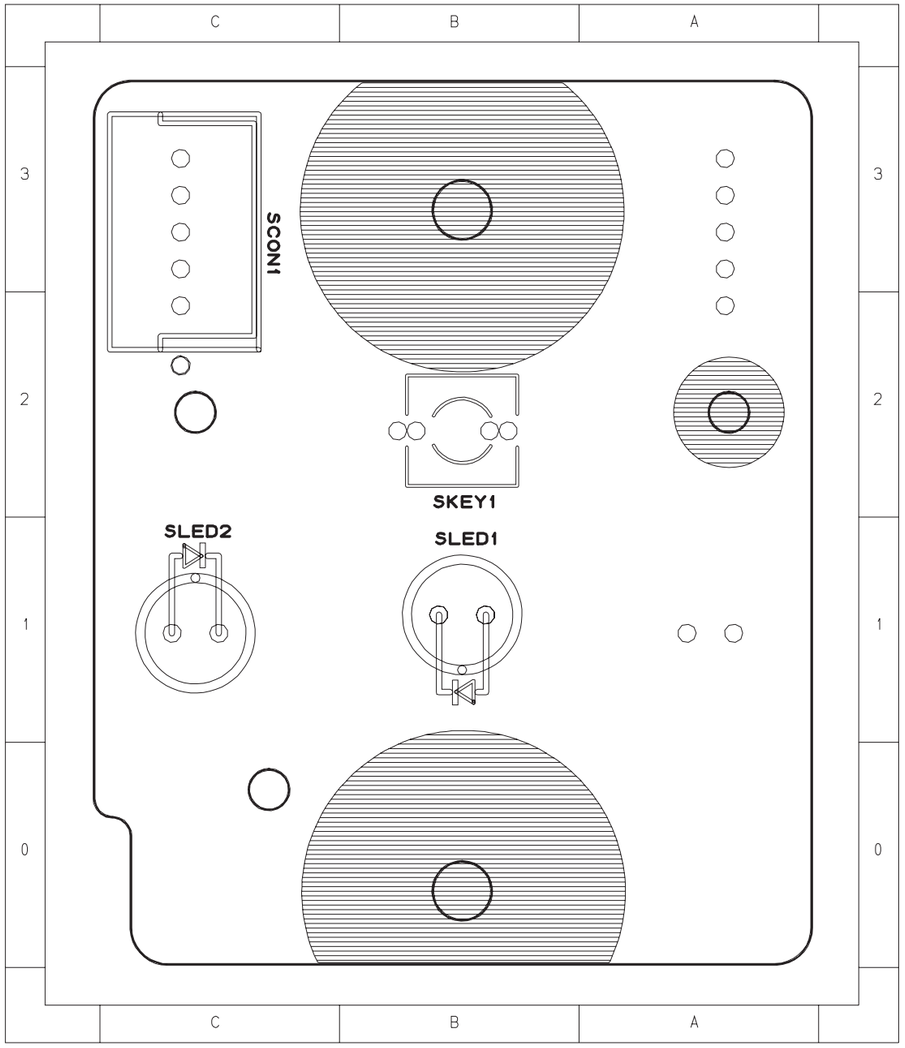
1 Remote control eye data FU3 Pin3

CONDUCTOR SIDE

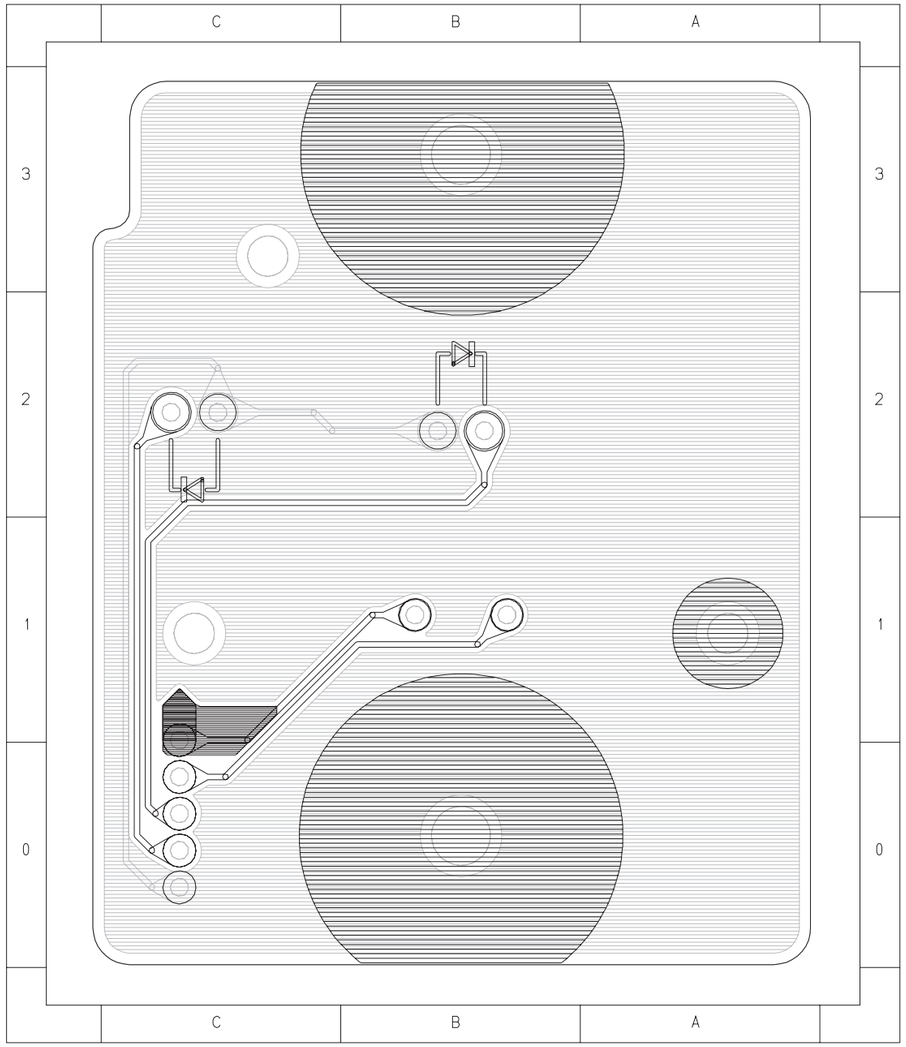


Layout: Power Key PCB

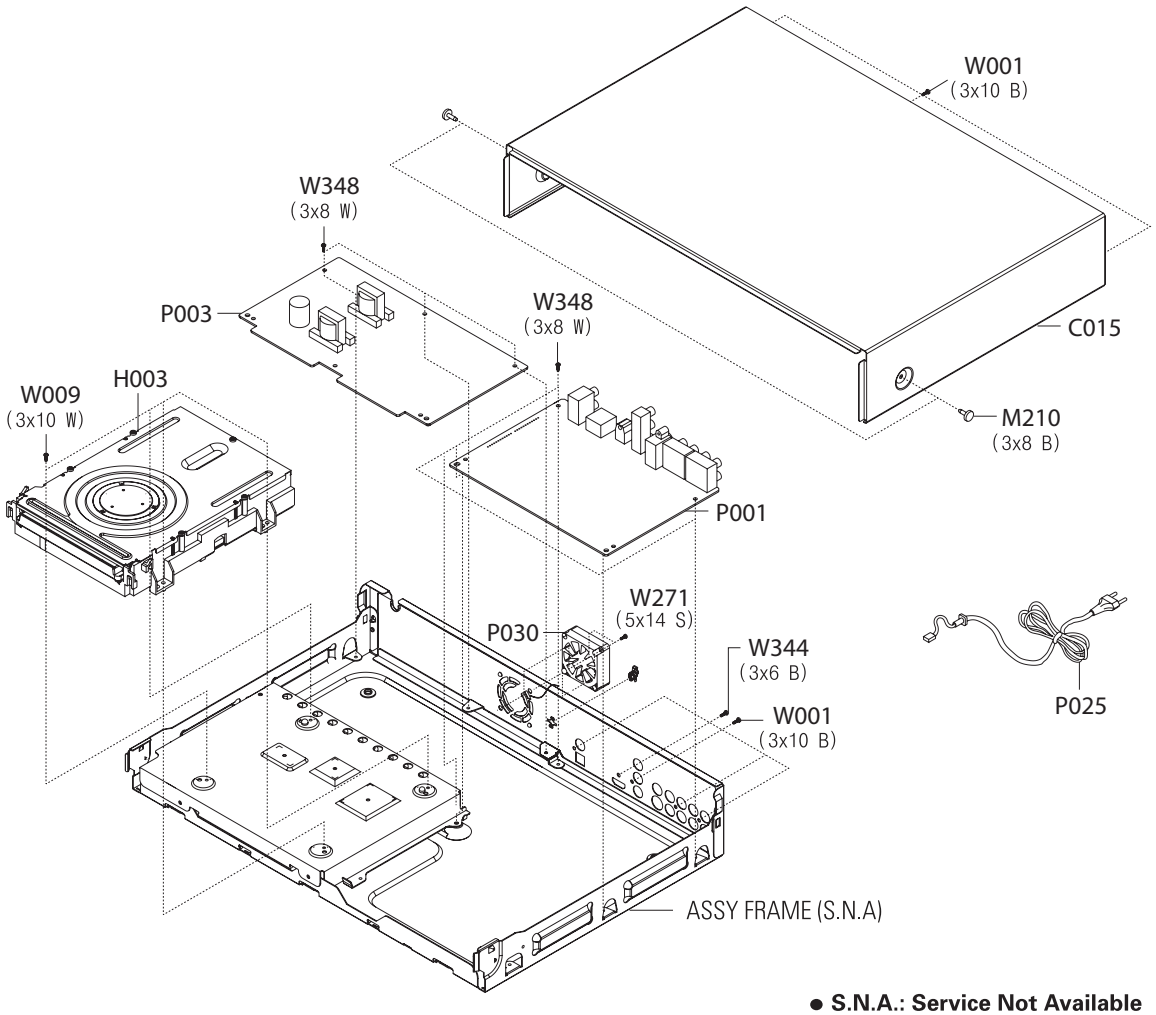
COMPONENT SIDE



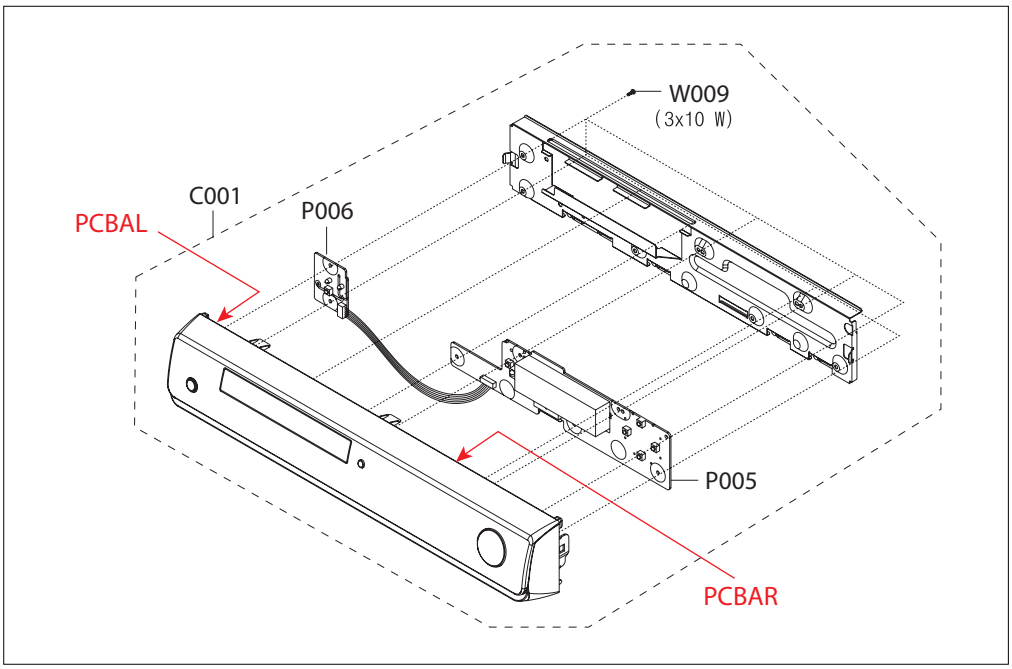
CONDUCTOR SIDE



8 Cabinet Assembly



● **S.N.A.: Service Not Available**



A001

BDP7100/12

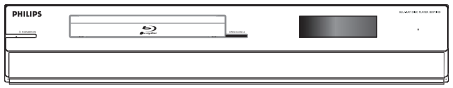
A001	996510008897		REMOTE CONTROL
AV1	996510008911		AV CABLE
C001	996510008903		FRONT CABINET ASSY
C015	996500042115		COVER, TOP
CN1	996510008900		WIRE TREE CONNECTOR 15 PIN
F1S01	996510008968	⚠	FUSE 2A 250V SLOW-BLOW
FFC1	996510008909		FLEX CABLE 23PIN (FRONT TO MAIN)
FFC2	996510008910		FLEX CABLE 40P (LOADER TO MAIN)
H003	996510008908		BDP LOADER ASSY
M210	996510008898		WASHER HEX SCREW
P001	996510008902		MAIN PCBA ASSY
P003	996510008967	⚠	SMPS PCBA ASSY
P025	996510008896	⚠	POWER CORD W/ CONNECTOR
P030	996500042116		FAN-DC;12V,20mA,2000rpm, 0.125m
W271	996520032549		SPECIAL SCREW M5 X 14

Blu-Ray Disc Player BDP7100

Quick Start Guide

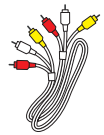
1 Connect
2 Set up
3 Enjoy

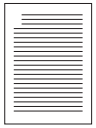
What's in the box?



Blu-Ray Disc Player

Remote Control and 2 batteries


Audio/Video cable


User Manual

PHILIPS

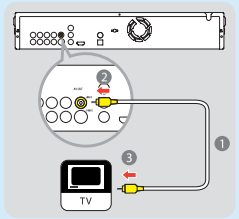
1 Connect

A Connect to the TV

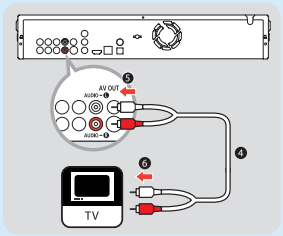
This product is designed for high-definition televisions (HDTV).

Option 1 - Using Composite video (standard quality)

1. Take the supplied audio/video cable.
2. Plug the yellow composite video cable into the **VIDEO** socket.
3. Plug the other end of the composite video cable into the TV.

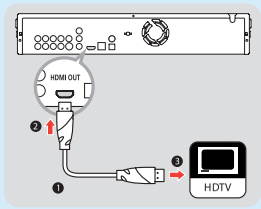


4. Plug the red and white ends of the audio cable into the **AUDIO-L** and **AUDIO-R** sockets.
5. Plug the other ends of the audio cable into the TV.



Note: This type of audio/video connection does not support Blu-ray disc playback.

Option 2 - Using HDMI (best quality)

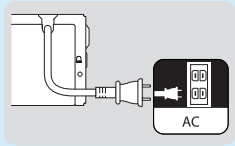


1. Take a HDMI cable (not supplied).
2. Plug one end of the HDMI cable into the **HDMI OUT** socket.
3. Plug the other end of the HDMI cable into the HD compliant TV.

Note: This type of connection requires no audio connection.

B Connect to the power outlet

- Plug the power cable into the power outlet.



Note: Refer to the user manual for other possible connections and important safety instructions.

9. Directions For Use

The following except of the Quick Use Guide serves as an introduction to the set.
The Complete Direction for the Use can be downloaded in different languages from the internet site of Philips Customer care Center:
www.p4c.philips.com

2 Set up

A Finding the viewing channel

1. Connect the BDP7100 to your TV.
2. Press ⏻ **STANDBY-ON** button to turn on the BDP7100.
3. Turn on your TV and set it to the correct viewing channel. You should see the { **MENU LANGUAGE SELECTION** } appearing on the TV.

Note: To search for the correct viewing channel, press the Channel Down button on the TVs remote control repeatedly (or AV, SELECT, ⇥ button) until you see the signal from the player appears on your TV.

B Select the on-screen display language

Important Note:
After you have connected the BDP7100 to your TV and turn on for the first time, follow the instructions on the TV to complete the initial setup for this player. You will not be able to open the disc tray unless the initial setup is completed

This menu will appear on TV when you turn on the player for the first time.

MENU LANGUAGE SELECTION

Press 1 for English
Pulsar 2 para Español
Touche 3 pour Français
Drücken Sie 4 für Deutsch
Premere 5 per Italiano
Druk op 6 voor Nederlands
Prima 7 para Português

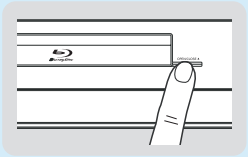
- Read the instructions on the TV and use the BDP7100 remote control to select your preferred language.
  Wait a few seconds for the player to finish initialising the system.

The BDP7100 is now ready for use.

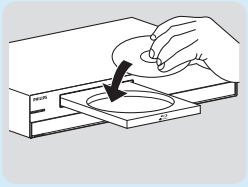
3 Enjoy

A Start disc playback

1. Press the **OPEN/CLOSE** ⏏ button.
   ➔ The disc tray opens.



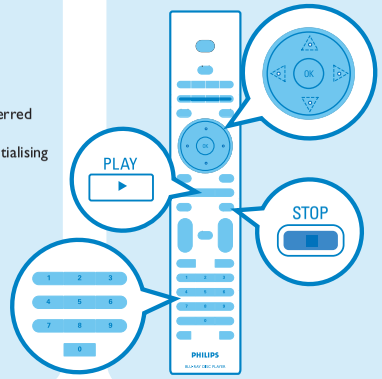
2. Place the disc in the disc tray with the label on the top.



3. Press the **OPEN/CLOSE** ⏏ button again.
   ➔ The disc tray closes.

Note: If a disc menu appears on the TV, use the cursor buttons to go to the Title list.

4. Press **PLAY** ▶ to start playback.
5. To stop playback, press **STOP** ■.



Troubleshooting

For more troubleshooting tips, see the user manual.

Cannot play a disc.
- Make sure that the Blu-ray Disc player supports the disc type.
- Make sure that the Blu-ray Disc player supports the region code of the DVD or BD.
- Clean the disc.

No video signal on the TV.
- Turn the TV on.
- Set the TV to the correct external input which this player is connected.

Bad video signal on the connected TV.
- Clean the disc.
- Make sure all cables are firmly inserted.

Incorrect aspect ratio on the connected TV.
- Change the aspect ratio of the TV. Refer to the user manual of your TV.
- Change the aspect ratio on the Blu-ray Disc player. Refer to the user manual.

No audio signal.
- Increase the volume level.
- Make sure that the audio settings of the TV are correct. Refer to the user manual of your TV.
- Try another track or the disc.

Need help?

User Manual

See the user manual that came with your Philips product or download from the website.

Online

Register your product and get support at www.philips.com/welcome

You can also visit the above website to download the User Manual in Danish/Norwegian, Finnish and Swedish.

Be responsible
Respect copyrights

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AK68-01472A
www.philips.com

10 Revision List

Version 1.0
*Initial Release

Version 1.1
*Changes in Service Parts