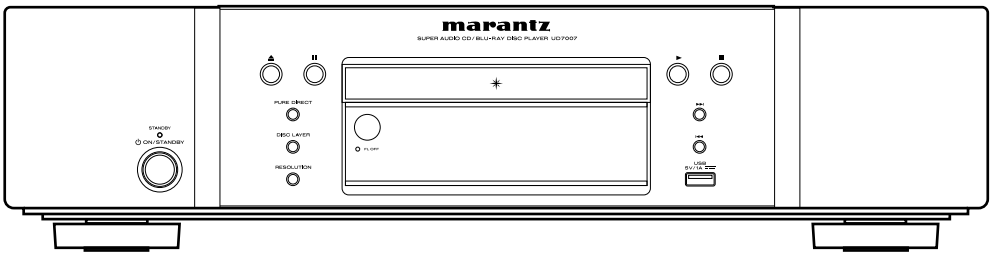
Service Manual

UD7007 /N1SG/N1B
U1B/K1B/S1B

SUPER AUDIO CD/ BLU-RAY DISC PLAYER



- For purposes of improvement, specifications and design are subject to change without notice.
- Please use this service manual with referring to the operating instructions without fail.
- Some illustrations using in this service manual are slightly different from the actual set.

marantz®

UD7007

Ver. 5
Please refer to the MODIFICATION NOTICE.

S0674-1V05DM/DG1304

CONTENTS

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
100 CORPORATE DRIVE
MAHWAH, NEW JERSEY 07430
USA

EUROPE / TRADING
D&M 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
D&M Canada Inc.
5-505 APPLE CREEK BLVD.
MARKHAM, ONTARIO L3R 5B1
CANADA
PHONE : 905 - 415 - 9292
FAX : 905 - 475 - 4159

JAPAN
D&M Holdings Inc.
D&M BUILDING, 2-1 NISSHIN-CHO,
KAWASAKI-KU, KAWASAKI-SHI,
KANAGAWA, 210-8569 JAPAN

株式会社 ディーアンドエムホールディングス

本 社 〒210-8569
神奈川県川崎市川崎区日進町2-1 D&Mビル

KOREA
D&M SALES AND MARKETING KOREA LTD.
2F,YEON BLDG.,
88-5, BANPO-DONG, SEOCHO-GU,
SEOUL KOREA
PHONE : +82 - 2 - 715 - 9041
FAX : +82 - 2 - 715 - 9040

CHINA
D&M SALES AND MARKETING SHANGHAI LTD.
ROOM.808 SHANGHAI AIRPORT CITY TERMINAL
NO.1600 NANJING (WEST) ROAD, SHANGHAI,
CHINA. 200040
TEL : 021 - 6248 - 5151
FAX : 021 - 6248 - 4434

NOTE ON SAFETY :

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

安全上の注意：

⚠ がついている部品は、安全上重要な部品です。必ず指定されている部品番号のものを使用してください。

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.
Ref. UL Standard No. 60065.

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

091105DM/DG

SAFETY PRECAUTIONS

The following items should be checked for continued protection of the customer and the service technician.

LEAKAGE CURRENT CHECK

Before returning the set to the customer, be sure to carry out either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the set is defective.
Be sure to test for leakage current with the AC plug in both polarities, in addition, when the set's power is in each state (on, off and standby mode), if applicable.

CAUTION Please heed the following cautions and instructions during servicing and inspection.

◎ Heed the cautions!

Cautions which are delicate in particular for servicing are labeled on the cabinets, the parts and the chassis, etc. Be sure to heed these cautions and the cautions described in the handling instructions.

◎ Cautions concerning electric shock!

(1) An AC voltage is impressed on this set, so if you touch internal metal parts when the set is energized, you may get an electric shock. Avoid getting an electric shock, by using an isolating transformer and wearing gloves when servicing while the set is energized, or by unplugging the power cord when replacing parts, for example.
(2) There are high voltage parts inside. Handle with extra care when the set is energized.

◎ Caution concerning disassembly and assembly!

Through great care is taken when parts were manufactured from sheet metal, there may be burrs on the edges of parts. The burrs could cause injury if fingers are moved across them in some rare cases. Wear gloves to protect your hands.

◎ Use only designated parts!

The set's parts have specific safety properties (fire resistance, voltage resistance, etc.). Be sure to use parts which have the same properties for replacement. The burrs have the same properties. In particular, for the important safety parts that are indicated by the ⚠ mark on schematic diagrams and parts lists, be sure to use the designated parts.

◎ Be sure to mount parts and arrange the wires as they were originally placed!

For safety seasons, some parts use tapes, tubes or other insulating materials, and some parts are mounted away from the surface of printed circuit boards.
Care is also taken with the positions of the wires by arranging them and using clamps to keep them away from heating and high voltage parts, so be sure to set everything back as it was originally placed.

◎ Make a safety check after servicing!

Check that all screws, parts and wires removed or disconnected when servicing have been put back in their original positions, check that no serviced parts have deteriorate the area around. Then make an insulation check on the external metal connectors and between the blades of the power plug, and otherwise check that safety is ensured.

(Insulation check procedure)
Unplug the power cord from the power outlet, disconnect the antenna, plugs, etc., and on the power. Using a 500V insulation resistance tester, check that the insulation resistance value between the inplug and the externally exposed metal parts (antenna terminal, headphones terminal, input terminal, etc.) is 1MΩ or greater. If it is less, the set must be inspected and repaired.

CAUTION Concerning important safety parts

Many of the electric and the structural parts used in the set have special safety properties. In most cases these properties are difficult to distinguish by sight, and the use of replacement parts with higher ratings (rated power and withstand voltage) does not necessarily guarantee that safety performance will be preserved. Parts with safety properties are indicated as shown below on the wiring diagrams and the parts list in this service manual. Be sure to replace them with the parts which have the designated part number.

(1) Schematic diagrams.....Indicated by the ⚠ mark.
(2) Parts lists.....Indicated by the ⚠ mark.
The use of parts other than the designated parts could cause electric shocks, fires or other dangerous situations.

NOTE FOR SCHEMATIC DIAGRAM

WARNING:

Parts marked with this symbol z have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

CAUTION:

Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 460 kohms, the unit is defective.

WARNING:

DO NOT return the unit to the customer until the problem is located and corrected.

NOTICE:

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM / M=1,000,000 OHM

ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION. CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

●Resistors

Value	Tolerance	Description
1Ω	5%	1
10Ω	5%	10
4.7KΩ	5%	4.7K
10KΩ	5%	10K
12.1KΩ	1%	12.1K/1%

●Electrolytic capacitor

Value	Voltage	Description
47μF	16V	47uF/16V

●Ceramic capacitor

Value	Voltage	Gread	Description
0.1μF	25V	Y5V	0.1uF/25V/Y5V
0.1μF	50V	X7R	0.1uF/50V/X7R

●NC (not implemented)

Description	Exsample
NC	NC
*/NC	100uF/10V/NC
NC/*	NC/0.1uF/25V/Y5V

NOTE FOR PARTS LIST

1. Parts indicated by "nsp" on this table cannot be supplied.
2. When ordering a part, make a clear distinction between "1" and "I" (i) to avoid mis-supplying.
3. A part ordered without specifying its part number can not be supplied.
4. Part indicated by "★" mark is not illustrated in the exploded view.
5. General-purpose Carbon Film Resistor in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)
6. General-purpose Carbon Chip Resistors are not included are not included in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING: Parts indicated by the ⚠ mark have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

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 apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semiconducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise a 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 a ce que les composants ainsi que les outils que l'on utilise soient également a ce potentiel.

(D) WARNUNG

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

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un 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.

(D)

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

(NL)

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

(I)

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

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

(F)

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

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.

CLASS 1
LASER PRODUCT

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 COVERSHIELD

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

100301DM

INSTRUCTIONS FOR HANDLING SEMI-CONDUCTORS AND OPTICAL UNIT

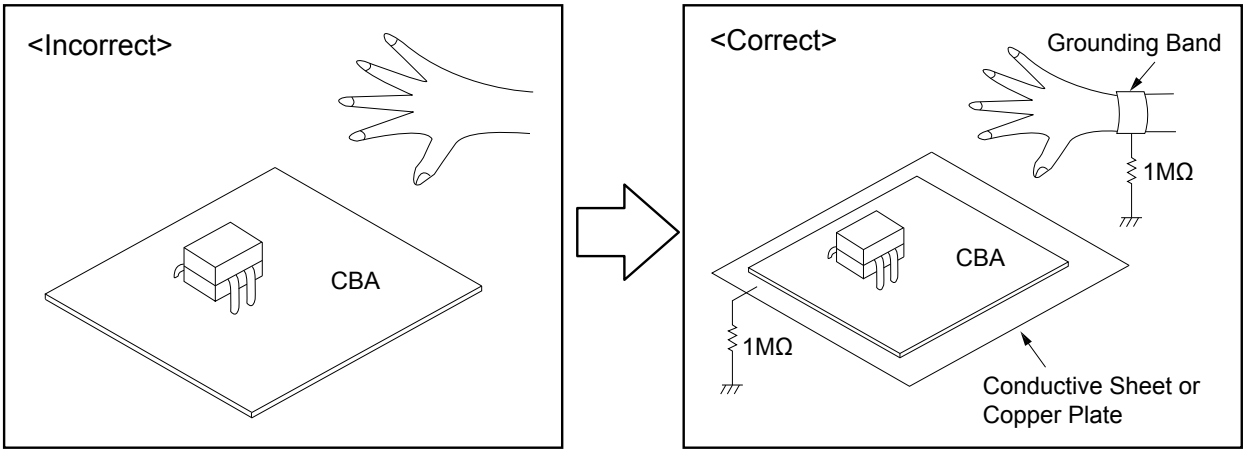
Electrostatic breakdown of the semi-conductors or optical pickup may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing



TECHNICAL SPECIFICATIONS

❑ Performance

Signal format : NTSC, PAL

Applicable discs /memory device :

(1) BD-Video disc :
12 cm, 1 side, 1 layer; 12 cm, 1 side, 2 layers

(2) DVD-Video / DVD-Audio disc :
12 cm, 1 side, 1 layer; 12 cm, 1 side, 2 layers /
12 cm, 2 sides, 2 layers (1 side, 1 layer)
8 cm, 1 side, 1 layer; 8 cm, 1 side, 2 layers /
8 cm, 2 sides, 2 layers (1 side, 1 layer)

(3) Super Audio CD :
12 cm, 1 layer / 12 cm, 2 layer / 12 cm, Hybrid

(4) Compact Disc (CD-DA) :
12 cm / 8 cm disc

(5) Memory device :
USB memory device (USB 2.0)

HDMI output :

Output terminal : 19-pin HDMI terminals, 2 set
(Deep Colour, Dolby Digital Plus, Dolby TrueHD, DTS-HD, 3D)

Analog audio output :

2 channels output terminal : Pin jack, 1 set
Output level : 2 Vrms (10 kΩ)
2 channels output terminal : Balanced terminal, 1 set
Output level : 4 Vrms (10 kΩ)

Audio output characteristics :

(1) Frequency response

① BD (Linear PCM) : 2Hz ~ 22kHz (48kHz sampling)
: 2Hz ~ 44kHz (96kHz sampling)
: 2Hz ~ 88kHz (192kHz sampling)

② DVD (Linear PCM) : 2Hz ~ 22kHz (48kHz sampling)
: 2Hz ~ 44kHz (96kHz sampling)
: 2Hz ~ 88kHz (192kHz sampling)

③ Super Audio CD : 2Hz ~ 40kHz

④ CD : 2Hz ~ 20kHz

(2) S/N ratio : 125dB (BD)

(3) Total harmonic distortion : 1kHz, 0.0008% (BD)

(4) Dynamic range : 110dB (BD)

Digital audio output :

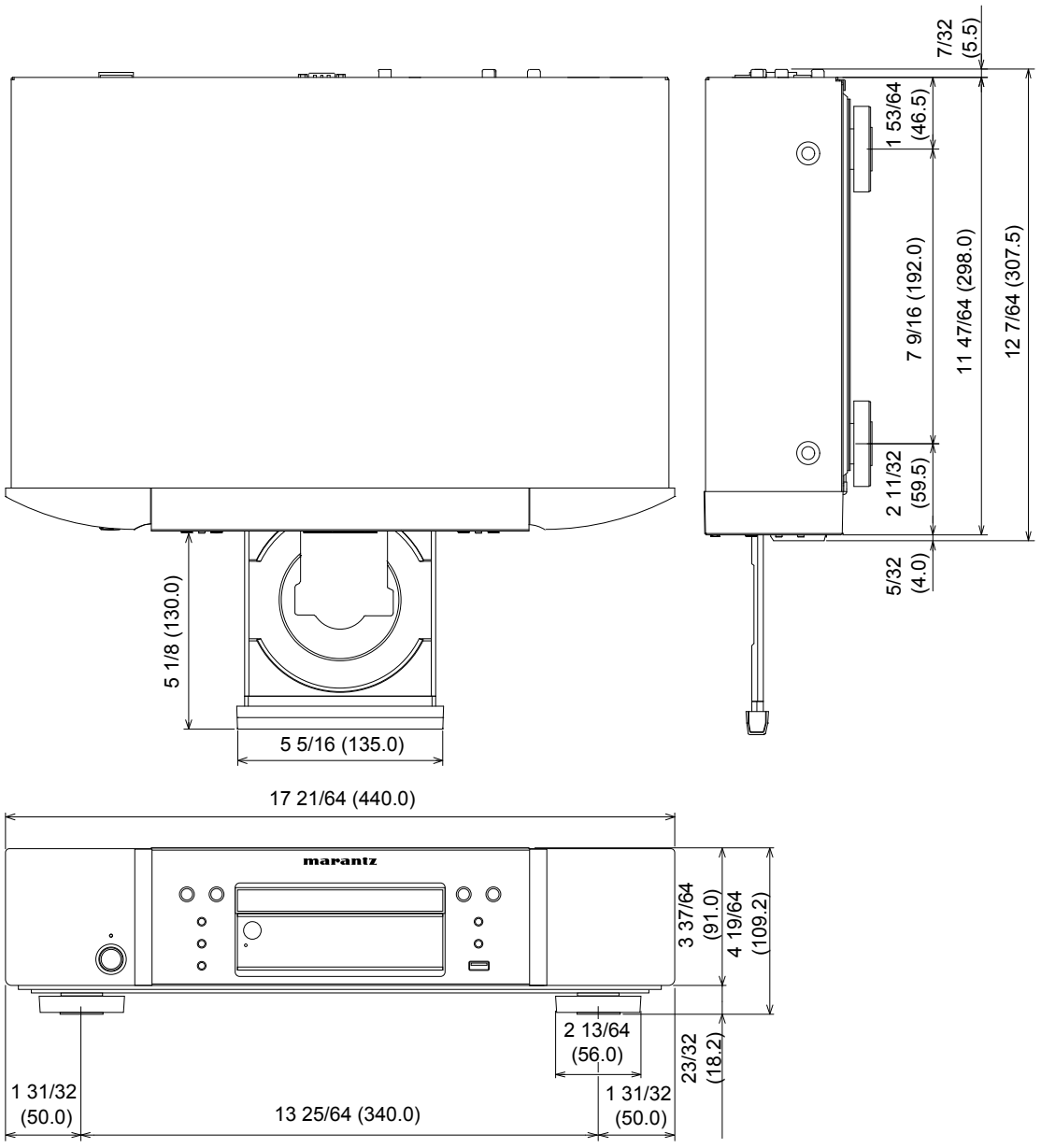
Coaxial digital output : Pin jack, 1 set

❑ General

Power supply : AC 120 V, 60 Hz

Power consumption : 25W
0.3 W (Energy Saving Standby)
0.5 W (Normal Standby)
14 W (Quick Start)

DIMENSION



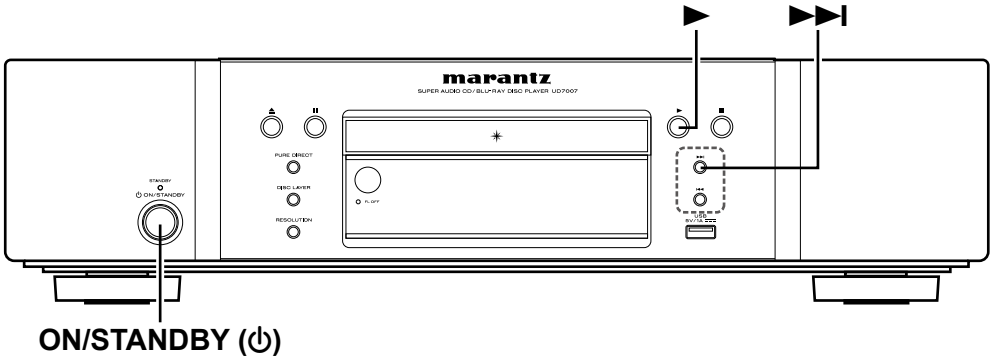
CAUTIONS IN SERVICING

Initializing BD player

BD player initialization should be performed when the µcom, peripheral parts of µcom, and MAIN PCB. were replaced.

1. Turn on this model's power. "NO DISC" is displayed on the FL tube.
2. Press the this model's "►" and "►►I" buttons simultaneously. "INITIALIZING" is displayed on the FL tube.
3. The display on the FL tube switches to "INITIALIZED", the "NO DISC" display reappears and initialization is completed.

NOTE : • If step 3 does not work, start over from step 1.
• All user settings will be lost and this factory setting will be recovered after the set is initialized. So make sure to note down your setting beforehand for restoring after the initialization.



Service tools

Measuring Disc: CD/TCD-784
DVD/VT502 or TDV-520A
BD/ABD-520 or BLX-108

✻ Refer to "MEASURING METHOD AND WAVEFORMS".

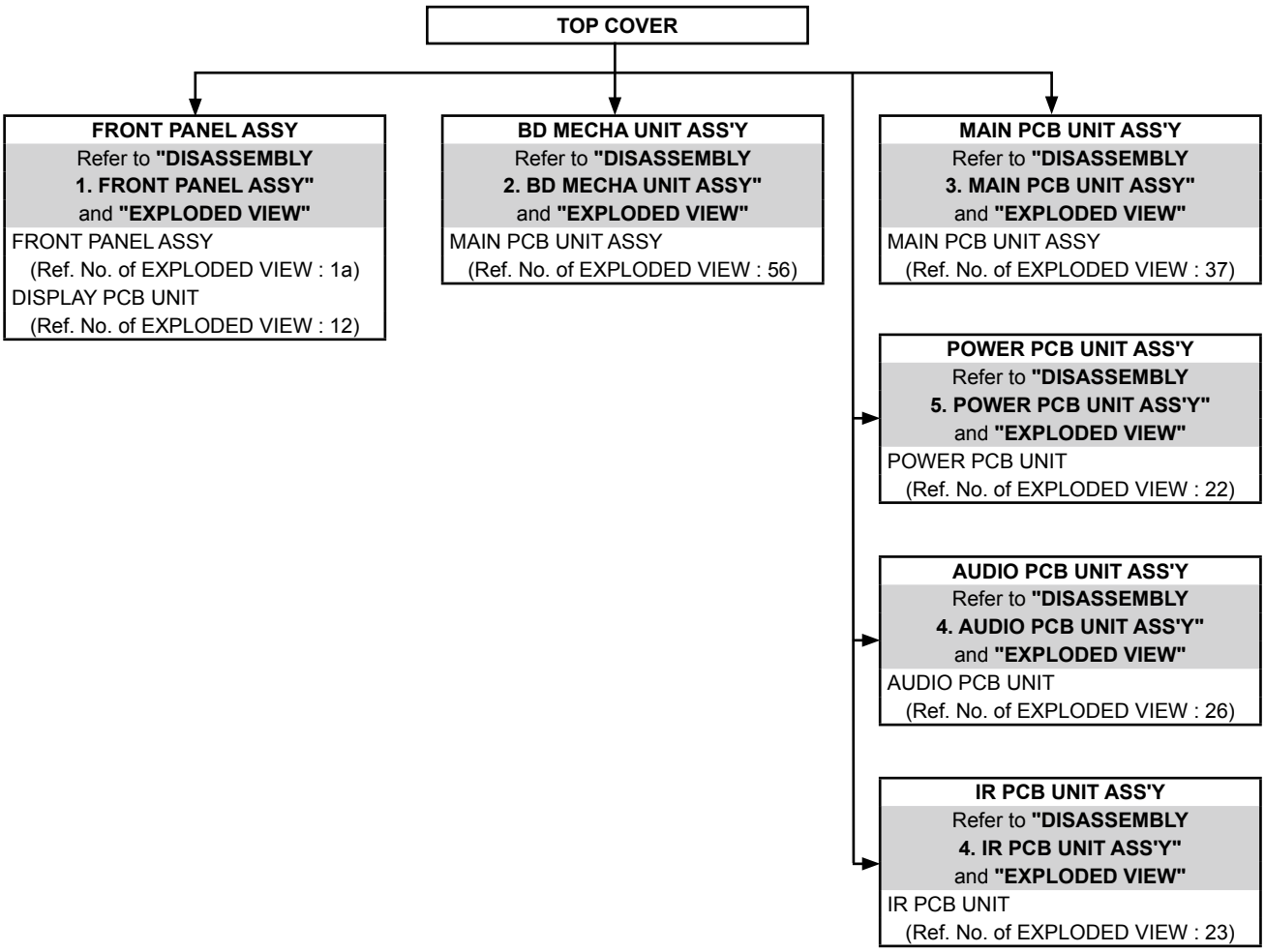
When you repair the BD MECHA UNIT, you can use the following JIG.
Please order to Marantz Official Service Distributor in your region if necessary.

Do not supply it : 232C (TTL) – USB conversion jig (Model: DUT-06635 by GeeeTech) : 1 Set
Part No. : 61205000300AS : 4P RE-PH CONN CORD (1000mm) : 1 Set

✻ Refer to "HOW TO REPLACE THE MAIN PCB & BD MECHA OR BD MECHA".

DISASSEMBLY

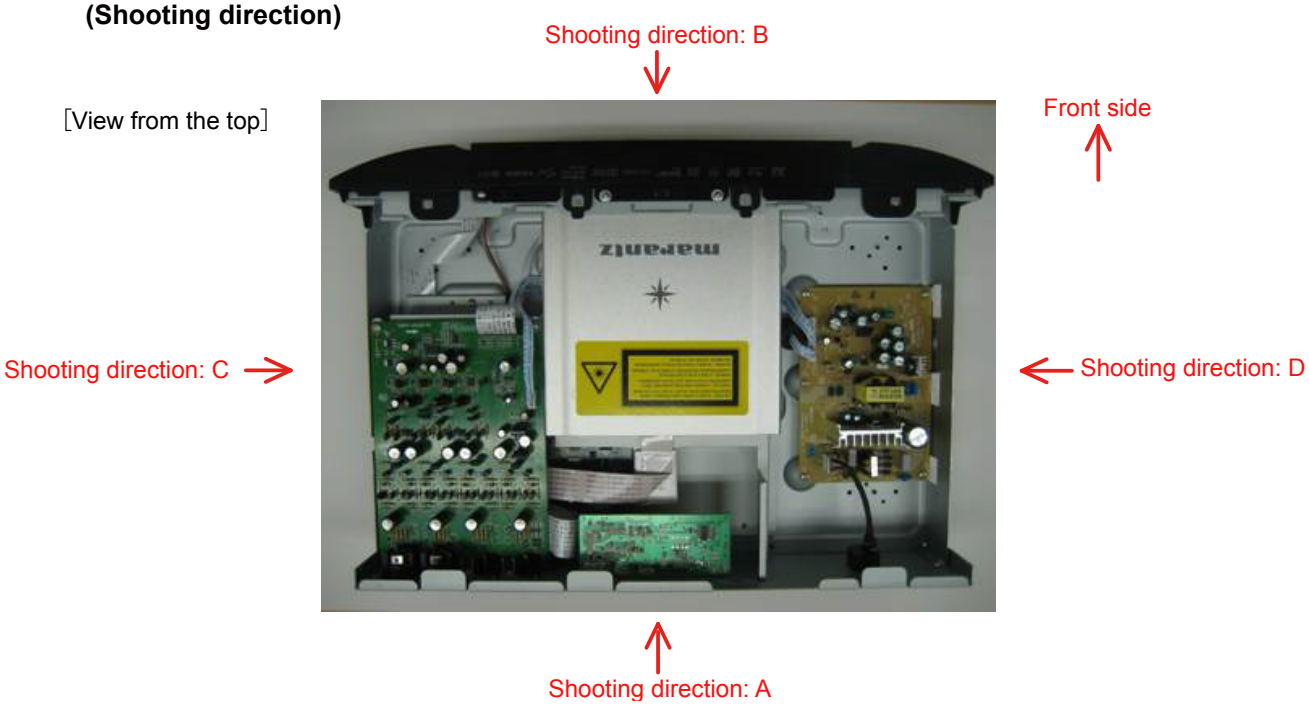
- Disassemble in order of the arrow in the following figure.
- In the case of the re-assembling, assemble it in order of the reverse of the following flow.
- In the case of the re-assembling, observe "attention of assembling".
- If wire bundles are untied or moved to perform adjustment or replace parts etc., be sure to rearrange them neatly as they were originally bundled or placed afterward.
  Otherwise, incorrect arrangement can be a cause of noise generation.



About the photos used for "descriptions of the DISASSEMBLY" section

- The shooting direction of each photograph used herein is indicated on the left side of the respective photograph as "Shooting direction: ***".
- Refer to the diagram below about the shooting direction of each photograph.
- Photographs with no shooting direction indicated were taken from the top of the set.

The viewpoint of each photograph (Shooting direction)



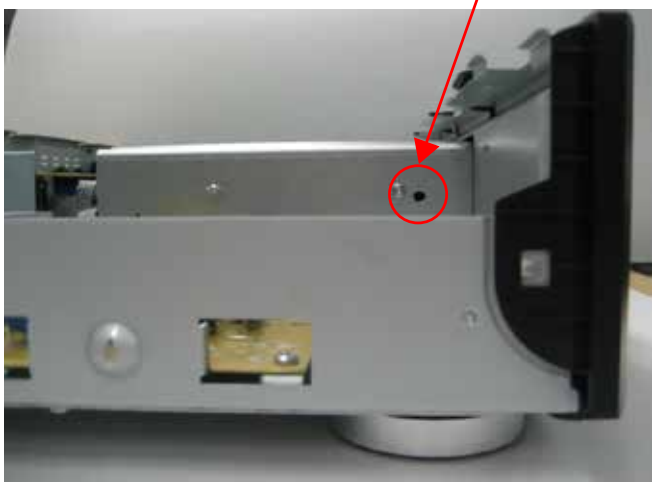
1. FRONT PANEL ASSY

Proceeding : TOP COVER → LOADER PANEL → AUDIO PCB Bracket → FRONT PANEL ASSY

(1) Detach the LOADER PANEL.

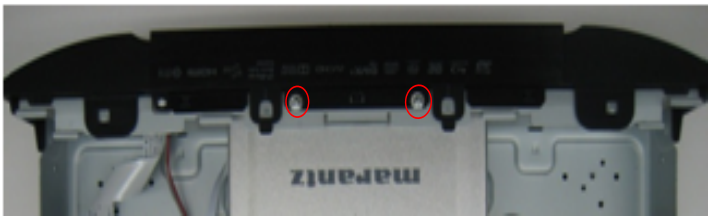
Shooting direction: B

Pressed in metal rod having a mechanism for emergency open, stretched out like a small hole on the left side of the clip to.



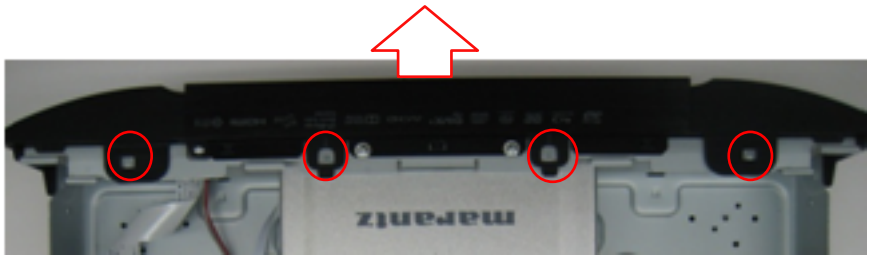
(2) Remove the screw on the top of Front Panel.
Screw x 2

Top side



(3) Lift up to unhook the claw and move in the direction of arrow to gradually pull out the assembly.
Top side ×4, Side ×2 (Left and right), Bottom ×3

Top side

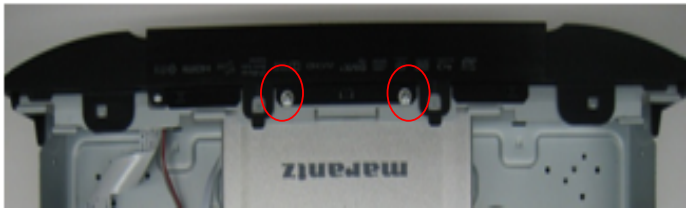


Shooting direction: D

Side

Bottom side

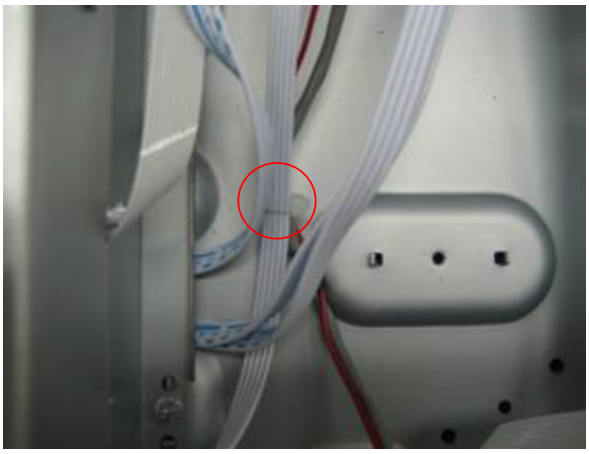
(4) Disconnect connector wire and FFC.
Remove the screw (x1)



(5) Remove the screw. (x8)
BALANCED OUT/AUDIO OUT are long screw.

(6) Remove the PCB Bracket. As shown in the figure raised to PCB Bracket, disconnect the FFC. Then, remove in one piece, the board and the bracket.

(7) Disconnect the connector wire and FFC.
Cut the wire clamp.
Remove 4p-PH【XP3】and 18P-FFC【XP4】

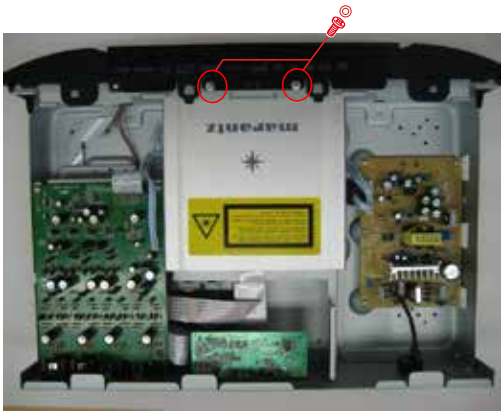


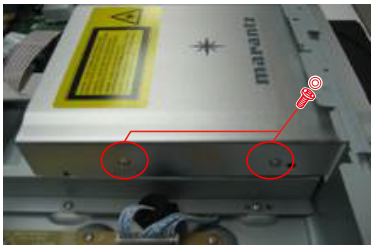
2. BD MECHA UNIT ASSY

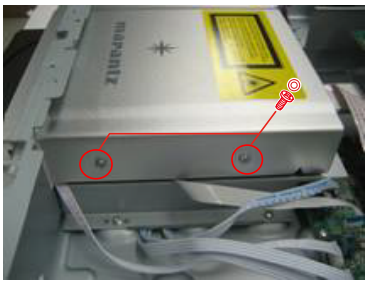
Proceeding : TOP COVER → MECHA COVER → AUDIO PCB Bracket → BD MECHA UNIT ASSY

※ Please ensure ESD protection prior to handling the BD MECHA.

(1) Remove the screws.
Screw of Mecha cover ×2, Right/Left (Each x2)

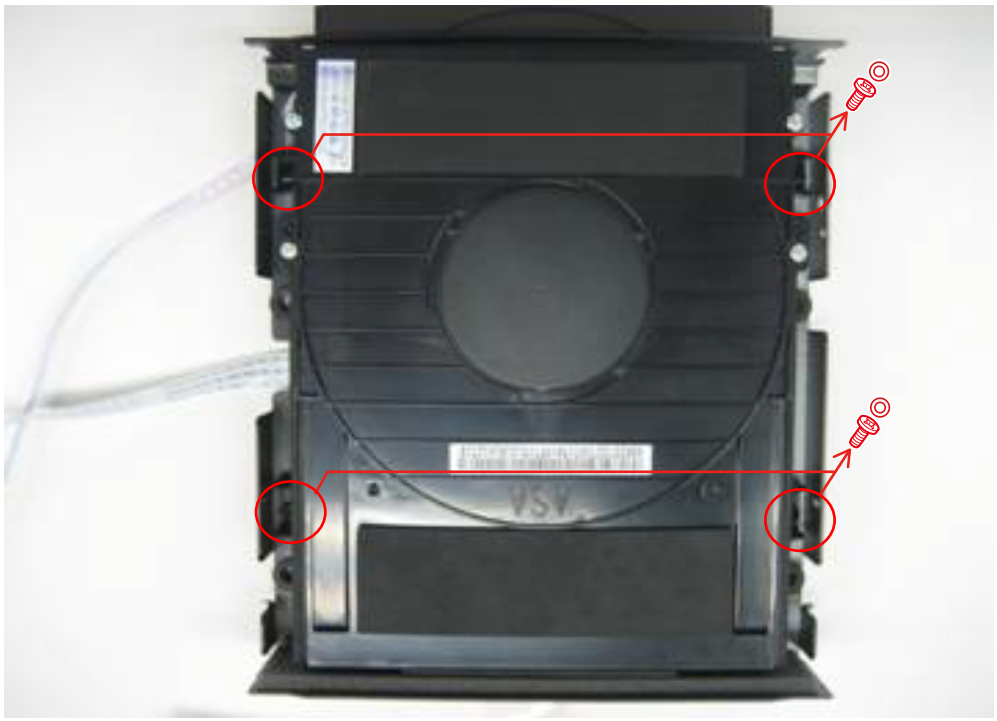






(2) Peeling off the sponge.
Right/Left, each side.

(3) Remove the screw. (x4)

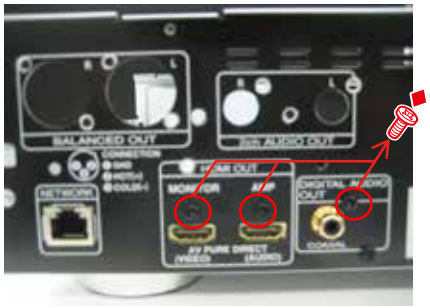


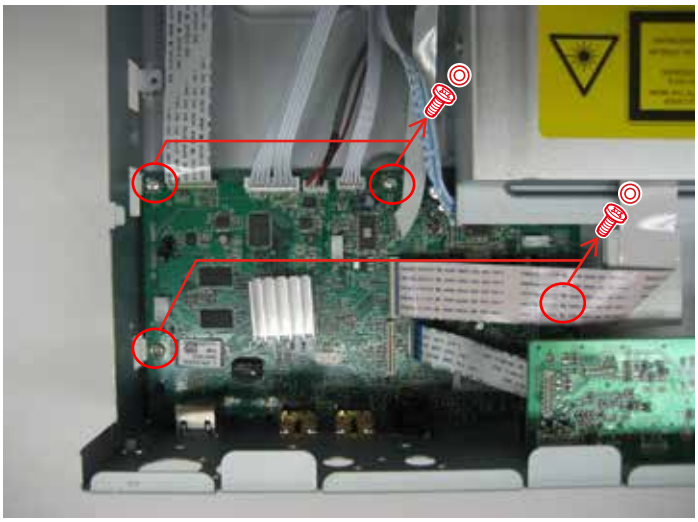
(4) Disconnect the connector wire and FFC cable.
45P-FFC【J2】, 9P-FFC【J4】
From the left side of the BD's Mecha.

3. MAIN PCB UNIT ASSY

Proceeding : TOP COVER → AUDIO PCB ASSY → MAIN PCB UNIT ASSY

(1) Remove the screws.
Remove the screws from REAR PANEL ×3
Remove the screws from TOP ×4





(2) Disconnect the connector wire and FFC.
Disconnect 13P-FFC【XP8】, 12P-PH【XP1】
Remove all connectors.

4. POWER PCB UNIT ASSY

Proceeding : TOP COVER → POWER PCB UNIT ASSY

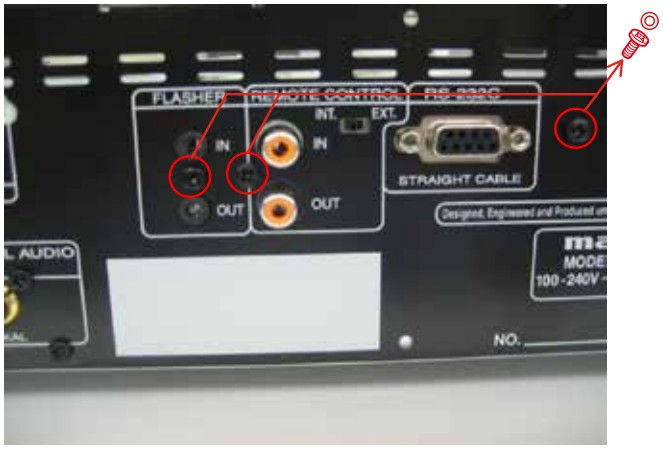
(1) Remove the screws.
Remove the screws from TOP ×5

(2) Disconnect the connector wire and FFC.
Disconnect 12P-PH【CN502/503】, 3P-VH【CN501】

5. IR PCB UNIT ASSY

Proceeding : TOP COVER → IR PCB UNIT ASSY

(1) Remove the screws.
Remove the screws from REAR PANEL ×3



(2) Disconnect the connector wire and FFC.
Disconnect 13P-FFC【XP8】

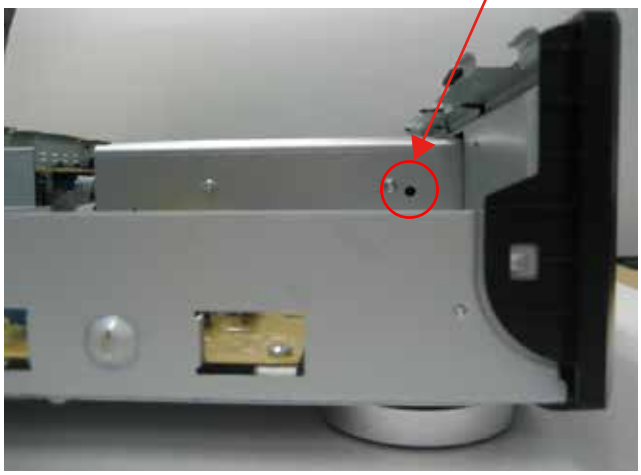
REMOVING DISCS

(1) Remove the Top Cover.

(2) Open the CD tray.

Shooting direction: D

Pressed in metal rod having a mechanism for emergency open, stretched out like a small hole on the left side of the clip to.



DIAGNOSTICS OF OPTICAL PICKUP

Make failure diagnostics of the Optical Pickup as follows.

①If the laser drive current (Iop) becomes more than BD : ± 6 [mA], DVD or CD : ±12 [mA] of the initial value, the Optical Pickup should be replaced.
The laser drive current initial value is checked by "Iop checked Method" of next page.

②Load five times of following disc again and playing it for one minute. It becomes the aim of the Optical Pickup exchange when it cannot play.

BD-RE	ABD-RE540W(made by ALMEDIO)

In case of replacing the Pickup, change the whole part of the MAIN PCB & BD MECHA or BD MECHA.
No mechanical adjustment is necessary after the replacement. (HOW TO REPLACE THE MAIN PCB & BD MECHA OR BD MECHA (page 23))

Laser drive current initial value:

CD :

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	1	:	m	m	m	m	:	n	n	n	n

DVD :

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	2	:	m	m	m	m	:	n	n	n	n

BD(SL) :

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	3	:	m	m	m	m	:	n	n	n	n

①Check the laser drive current value

Disc no read, unsteady playback, etc.

↓

Laser drive current (Iop) check.

↓ Current value of the BD Iop is ±6[mA], DVD or CD Iop is ±12[mA] or more the initial value.

The MAIN PCB & BD MECHA or the BD MECHA replacing.

②Check the playability disc

Disc no read, unsteady playback, etc.

↓

ABD-RE540W disc playability check (Load five times of following disc)

↓ Disc cannot play.

The MAIN PCB & BD MECHA or the BD MECHA replacing.

1. Iop checked Method

Select the laser ON/OFF(CD/DVD/BD)mode of the test mode, and check the Iop value of CD laser, DVD laser or BD laser. (Refer to "6. Test mode")

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2		L	a	s	e	r	0	n	0	f	f

Laser current check

Press the "**I◄◄**" or "**►►I**" button to display the laser current value, and then select [X].
Check the current value of Iop (nnnn)

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	X	:	m	m	m	m	:	n	n	n	n

(X=1 : CD laser mode, 2 : DVD laser mode, 3 : BD(SL) laser mode
(mmmm[mA] : Initial value, nnnn[mA] : Current value)

2. To clear the accumulated laser on time

Press the "►" button while the accumulated laser on time is displayed ("TC1, "TC2", "TC3") until "TC4 ∗ clear??" appears at the display. If the "►" button is pressed, the accumulated laser on time of CD, DVD and BD is cleared

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	4	*	-	-	c	l	e	a	r	?	?

When "TC1", "TC2" or "TC3" is selected with the "**I◄◄**" or "**►►I**" button, "mmmmmm" is displayed as "0" so you can check.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	Y	-	-	-	m	m	m	m	m	m	h

(Y=1 : CD, 2 : DVD , 3 : BD, mmmmmm : Time)

HOW TO REPLACE THE MAIN PCB & BD MECHA OR BD MECHA

NOTE: The optical pick-up laser diode (LD) is instantly degraded or damaged by static electricity or a power surge. When handling the BD MECHA UNIT, always be sure to earth yourself, and use an earth mat on the workbench and floor for grounding.

- **BD MECHA UNIT Replacement Conditions**

If the laser amperage (Iop) exceeds the stipulated range (see the laser on/off mode in test mode (page 34)), replace the BD MECHA or replace the MAIN PCB & BD MECHA. If other problems occur, replace the MAIN PCB & BD MECHA.

Stipulated range: For BD, within ±6 [mA] of the initial value; for DVD/CD, within ±12 [mA] of the initial value.

- **The following two parts are specified as service parts for the MECHA UNIT.**

1. MAIN PCB & BD MECHA : (Part No. : 9193041M)
2. BD MECHA : (Part No. : 9193041S)

1. How to Replace the MAIN PCB & BD MECHA

(1) Refer to the removal procedure, and remove and replace the MAIN PCB & BD MECHA. (see "DISASSEMBLY")
(2) Follow the firmware update procedure, and update the firmware to the latest version.
(see "VERSION UPGRADE PROCEDURE OF FIRMWARE")

2. How to Replace the BD MECHA

2.1. Devices Used

1. PC
2. USB - 232C (TTL) conversion jig (Model: DUT-06635 by GeeeTech) (Do not supply)
3. 4P RE-PH CONN CORD (1000mm) (Part No. : 61205000300AS)
4. Write software (5.12.71(8550+KES470)_1Dscan.zip)

2.2. Replacement Overview

(1) Before replacing the UNIT, write all of the UNIT data of the unit to be replaced onto the set.
(2) After performing (1), replace the UNIT.
(3) Configure the settings for the set in which the UNIT was replaced.

2.3. Before replacing

[Preparation]

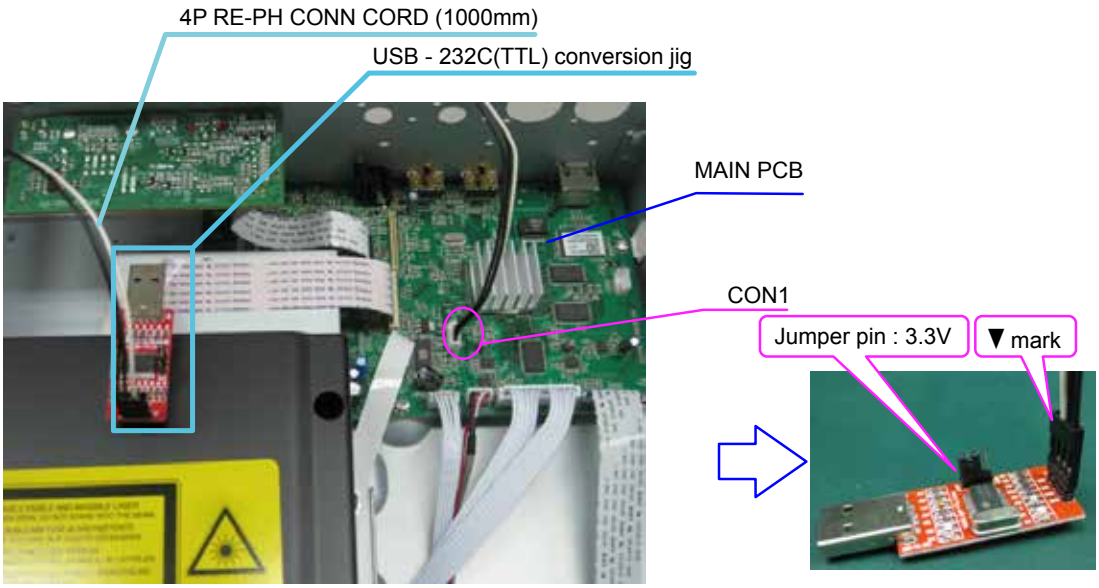
1. Set unit before replacing the UNIT
2. PC with write software (5.12.71(8550+KES470)_1Dscan.zip) installed
3. USB - 232C (TTL) conversion jig
4. UNIT for replacement

[Connection]

(1) Remove the Audio PCB bracket.

(2) Connect the 232C (TTL) side 4P PH connector of the USB - 232C (TTL) conversion jig to the MAIN PCB of the set.

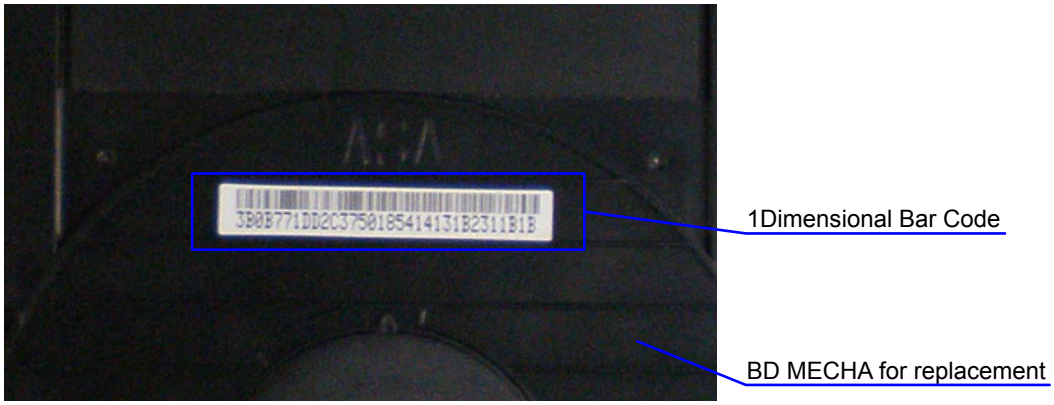
(3) Connect the USB side of the USB - 232C (TTL) conversion jig to the PC.



[Writing new optical pick-up data]

• Barcode position of optical pick-up unit

View from the top



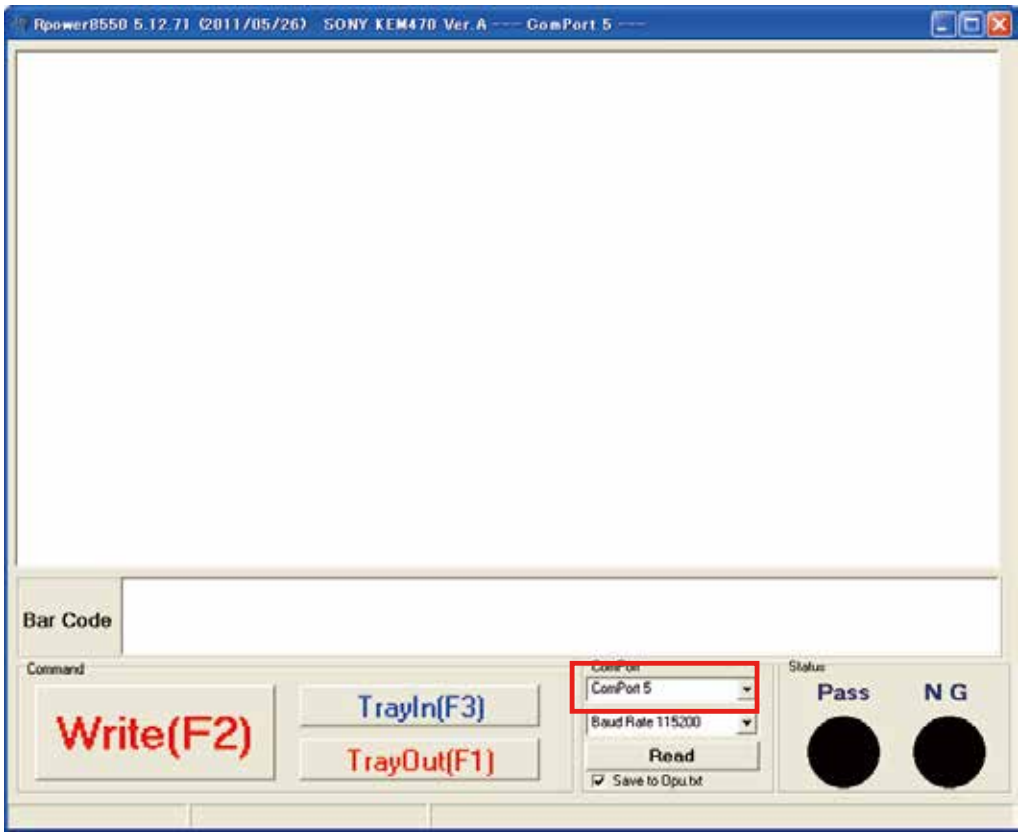
(1) Switch on the power on of the set before the BD MECHA is replaced.

(2) Decompress the 5.12.71(8550+KES470)_1Dscan.zip folder and start the "Rpower.exe".

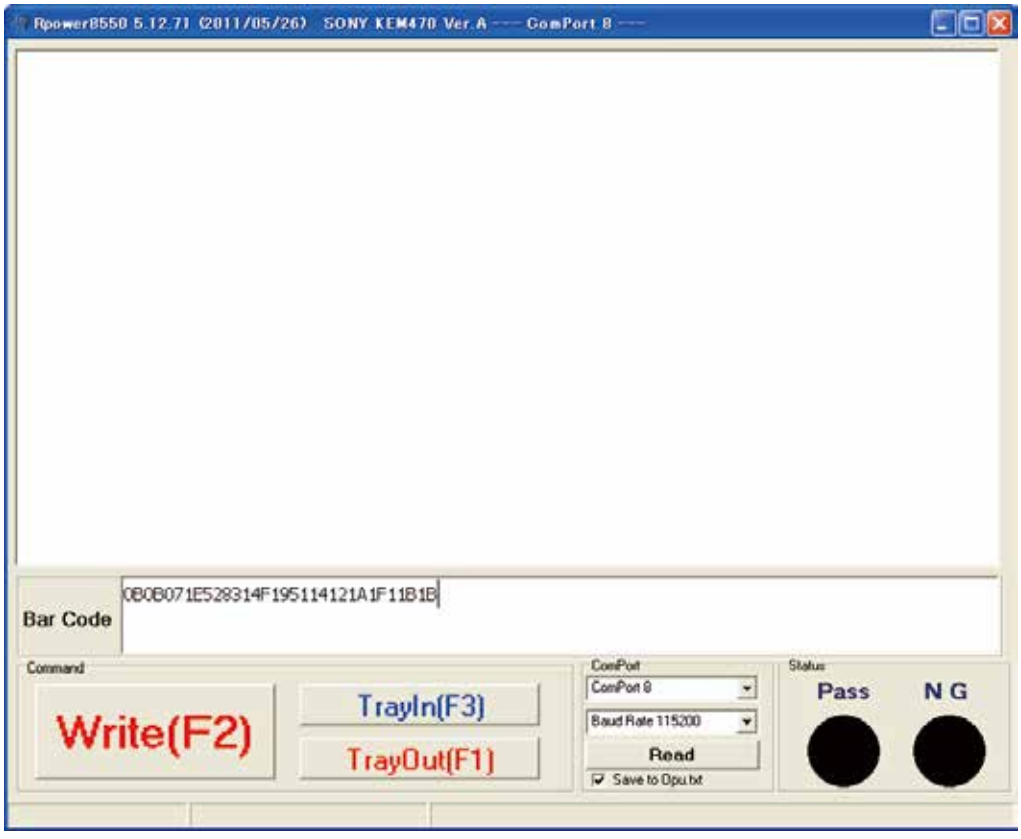
(3) A pop-up is displayed. Click "OK".

(4) Click "OK".

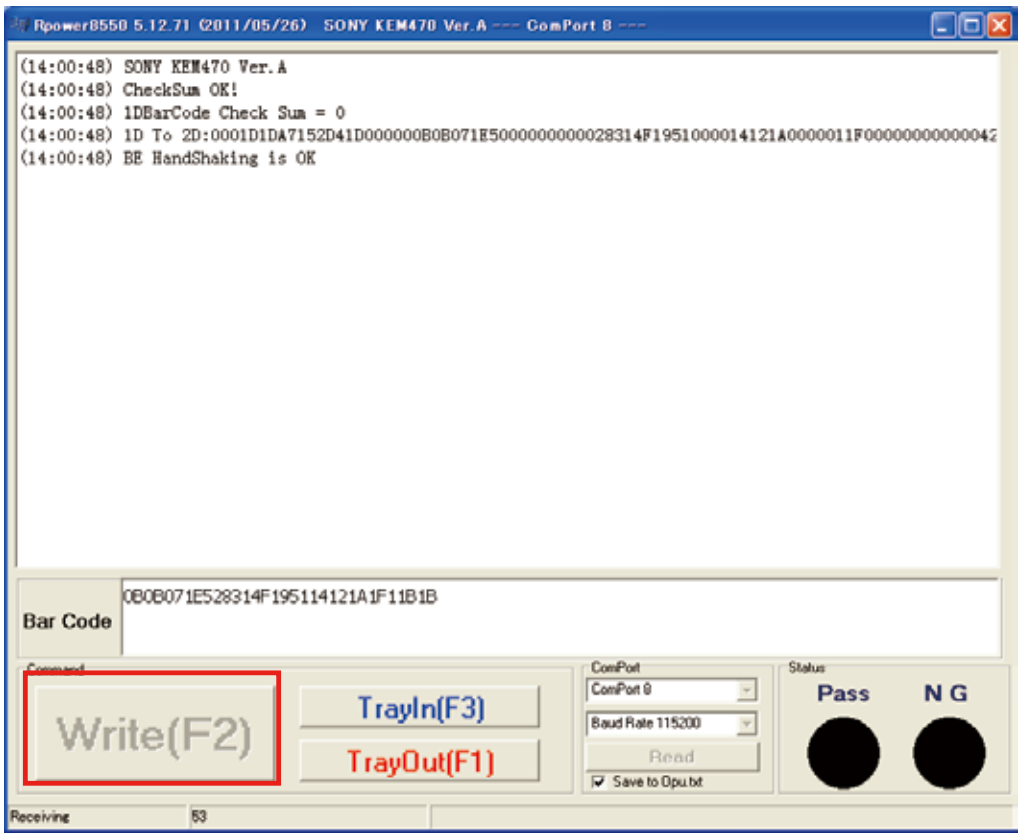
(5) On the screen below, select "ComPort XX".
Select the USB - 232C (TTL) conversion jig port.



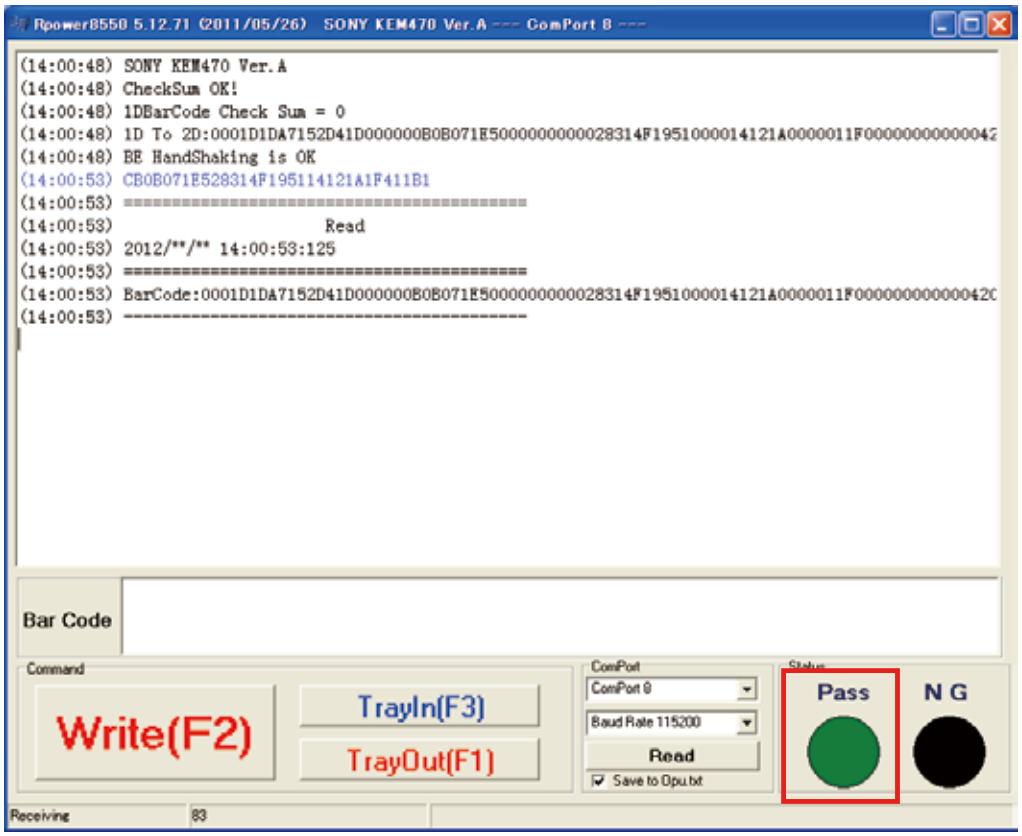
(6) Enter the Bar Code BOX 32-digit hexadecimal number listed at the bottom of one-dimensional bar code replacement for the BD MECHA.
One dimension of bar code data can stick to reading, Bar Code BOX in bar code leaders and can input.
NOTE: The bar code data of the optical pickup, please do not enter the wrong data. Please do not confused with other data of the optical pickup also.



(7) Click Write(F2).



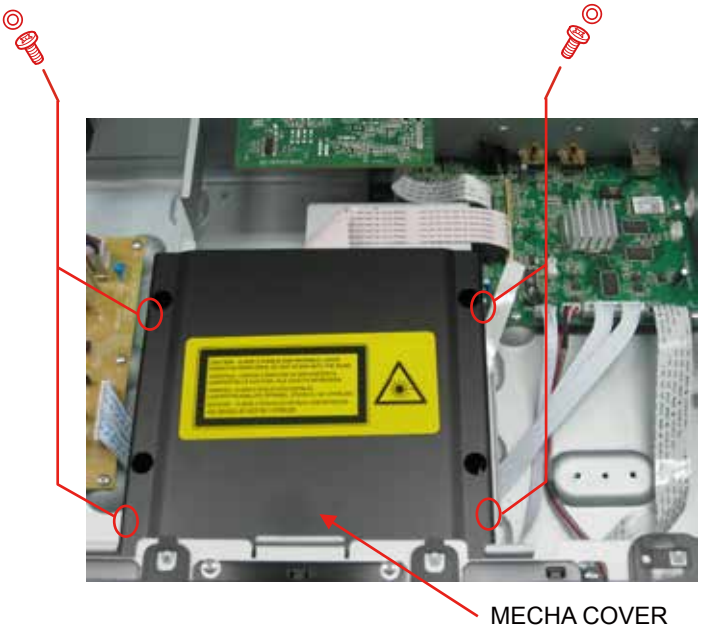
(8) When “Pass” changes to green, writing to the Flash ROM of the MAIN PCB is complete.



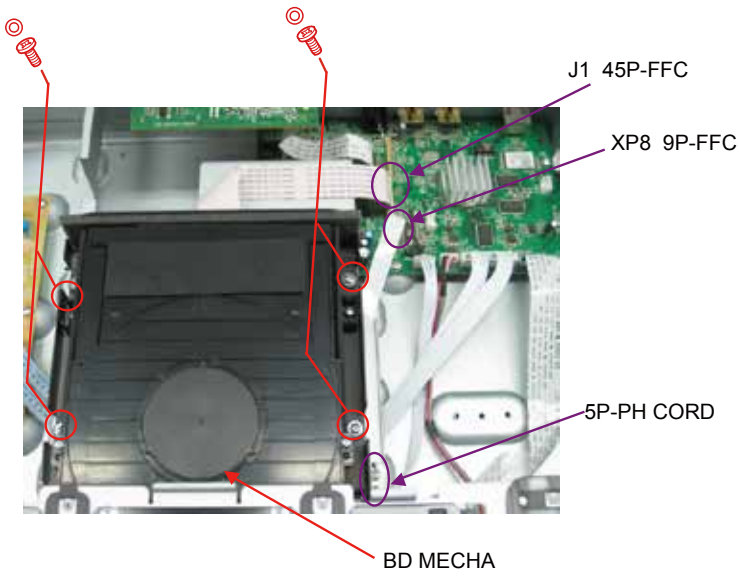
(9) Switch off the set unit power, and remove the 232C (TTL) side 4P PH connector of the USB - 232C (TTL) conversion jig from the MAIN PCB (CON1).

2.4. Replace the BD MECHA UNIT ASSY

(1) Remove the MECHA COVER.



(2) Move the optical pickup to the outer circumference, remove the FFC, and remove the screws.



(3) Attach the BD MECHA for replacement to the set unit. (When assembling the unit, perform the steps in reverse order.)

(4) Check that the 45P-FFC, 9P-FFC and 5P-PH connector cords have been connected.

2.5. Configure the settings of the set that contains the new BD MECHA

(1) Check the laser amperage (see laser on/off mode in the test mode (page 34)).
Check that the values are ±6 [mA] from the initial value for BD, and ±12 [mA] from the initial value for DVD/CD.

(2) Clear the total laser usage time (see the procedure for clearing the accumulated laser on time in test mode (page 35)).

(3) Check BD, DVD, and CD media playback.

(4) If there are no problems with playback, remove the disc, press the "ON/STANDBY" button to switch to standby status, and remove the AC plug from the AC socket.

(5) Attach the top cover, and this completes the replacement procedure.

HOW TO REPLACE THE MAIN PCB UNIT ASSY

・Service Part for the MAIN PCB UNIT ASSY
MAIN PCB: (Part No. :9196391D)

1.1. Devices Used

(1) PC
(2) USB - 232C (TTL) conversion jig (Model: DUT-06635 by GeeeTech) (Do not supply)
(3) 4P RE-PH CONN CORD (1000mm) (Part No. : 61205000300AS)
(4) Write software (5.12.71(8550+KES470)_1Dscan.zip)

1.2. Replacement Overview

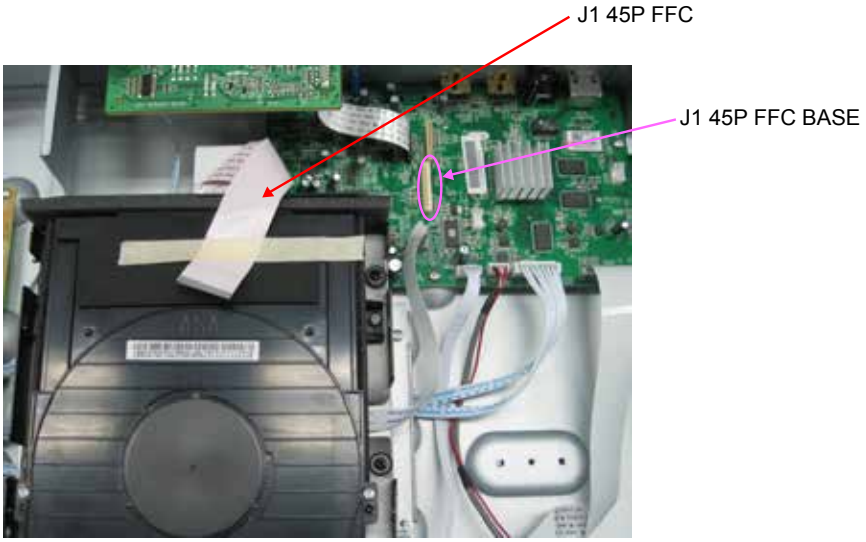
(1) Replace the MAIN PCB UNIT ASSY. (Disconnected J1 45P FFC)
(2) Writing Mecha's data to the replacement MAIN PCB UNIT.
(3) Turn off the unit, then connect 45P FFC of J1.
(4) To confirm the operation.

1.3. Before replacing

[Preparation]
(1) The unit of before replacement.
(2) Replacement MAIN PCB UNIT ASSY
(3) PC with write software (5.12.71(8550+KES470)_1Dscan.zip) installed
(4) USB - 232C (TTL) conversion jig

1.4. Replace the MAIN PCB UNIT ASSY

(1) Replacement MAIN PCB UNIT ASSY. (Refer to "DISASSEMBLY 3. MAIN PCB UNIT ASSY ")
(45P FFC J1 does not connect at this time.)
(2) Remove the MECHA COVER.
(3) Fixed to the MECHA UNIT to prevent short circuit. (J1 45P FFC)

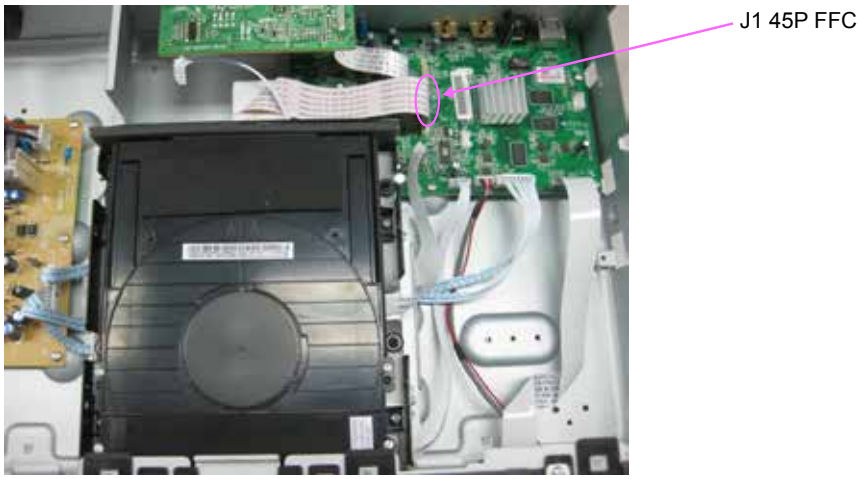


1.5. Connection and Writing optical pick-up data

(1) Refer to "HOW TO REPLACE THE MAIN PCB & BD MECHA OR BD MECHA,
[Connection] and [Writing new optical pick-up data]"(P.18) , then writing new optical pick-up data to MAIN PCB UNIT.

1.6. Operation check

(1) Connect the 45P FFC of J1.



(2) Attach the MECHA COVER.

(3) Attach the TOP COVER.

(4) Follow the firmware update procedure, and update the firmware to the latest version.
(see "VERSION UPGRADE PROCEDURE OF FIRMWARE")

(5) Check the laser amperage (see laser on/off mode in the test mode (page 34)).
Check that the values are ±6 [mA] from the initial value for BD, and ±12 [mA] from the initial value for DVD/CD.

(6) Check BD, DVD, and CD media playback and operation.

(7) If there are no problems with playback, remove the disc, press the ON/STANDBY button to switch to standby status,and remove the AC plug from the AC socket.

(8) Completes the replacement procedure.

Note: In the case of exchange, only MAIN PCB UNIT is cleared in the laser total use time.

SERVICE MODE

1. Initial setting mode

1.1. preparation

(1) Equipment used: None

(2) Unit setting: No spec other than the following procedure.

1.2. procedure

※ Initialize the BD player when µcom, peripheral parts of µcom, or MAIN PCB. unit has been replaced in servicing.

※ All user setting will be lost and its factory setting will be restored when this initialization is made. Be sure to memorize your setting for restoring again after the initialization.

(1) Turn on this model's power. "NO DISC" is displayed on the FL tube.

(2) Press the this model's "►" and "►►I" buttons simultaneously. "INITIALIZING" is displayed on the FL tube.

(3) The display on the FL tube switches to "INITIALIZED", the "NO DISC" display reappears and initialization is completed.

2. Firmware version check mode

2.1. preparation

(1) Equipment used: None

(2) Unit setting: No spec other than the following procedure.

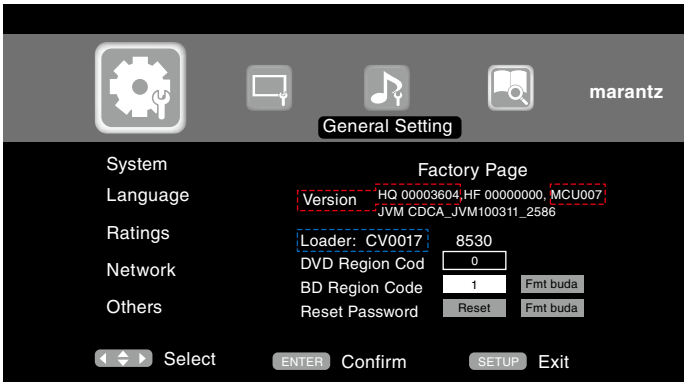
2.2. procedure

※ Front-end and Back-end and SYS com version check mode.

(1) Press the "SETUP" button on the remote controller to display the SETUP menu.

(2) Press remote controller "3265".

(3) The version is displayed on the TV screen as follows.



Version HQ 0000xxxx
Back-end version
MCUxxx
SYS com version

Loader : 4Fxxxx
Front-end version

3. Tray lock mode

3.1. preparation

(1) Equipment used: None

(2) Unit setting: No spec other than the following procedure.

3.2. procedure

[Setting]

(1) Pressing the "▶" and "I◀◀" buttons for simultaneously, plug the AC cord into a power outlet.

(2) "TRAY LOCK" is displayed on the FL tube and tray opening/closing is invalidated.

[Cancel]

(1) Unplug this model's AC cord from the power outlet.

(2) Pressing the "▶" and "I◀◀" buttons for simultaneously, plug the AC cord into a power outlet.

(3) "PLEASE WAIT" is displayed on the FL tube and tray opening/closing is enabled.
※The tray lock mode is also canceled when the product is initialized.

4. Remote lock mode

4.1. preparation

(1) Equipment used: None

(2) Unit setting: No spec other than the following procedure.

4.2. procedure

[Setting]

(1) Pressing the "PURE DIRECT" and "▶▶I" buttons for simultaneously.

(2) “Lock-On” is displayed on the FL tube, and operations with the remote control and the REMOTE CONTROL input terminal on the back of the UD5007 are disabled.

[Cancel]

(1) Pressing the "PURE DIRECT" and "▶▶I" buttons for simultaneously.

(2) "Lock-Off" is displayed on the FL tube and remote lock mode is made canceled.

5. All Lit / All Off mode for the FL tube

5.1. preparation

(1) Equipment used: None

(2) Unit setting: No spec other than the following procedure.

5.2. procedure

[Setting]

(1) Pressing the "PURE DIRECT" and "I◀◀" buttons for simultaneously, plug the AC cord into a power outlet.
If All Lit / All Off mode is set for the FL tube, the FL tube’s display area is fully lit.

(2) Press the "PURE DIRECT" button to ‘all off’ display.

[Cancel]

(1) Remove the power cable for 5 seconds or more to cancel All Lit / All Off mode for the FL tube.

6. Test mode

6.1. Entering the test mode

The test mode is entered by pressing the "⏏" and "⏮" buttons simultaneously, plug the AC cord into a power outlet. When the test mode is set, the "▶" and "⏸" indicators light.

FL tube display when test mode entered

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
		T	E	S	T		M	O	D	E		

When the test mode is set, the choice screen of the mode appears on the monitor.

6.2. Selecting the mode

・The following modes are available.

(1) Laser on/off (CD/DVD/BD) mode : T2
(2) Error rate (skew) measurement mode : T7
(3) Accumulated laser on time display mode : TC
(4) Test mode cancel : TI

① When the "⏭" button is pressed after entering the test mode, the display switches in the order: "T2, T7, TC, TI, T2 …"

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2		L	a	s	e	r	O	n	O	f	f

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	7		E	r	r	o	r		R	a	t	e

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C		L	a	s	e	r	O	n	T	i	m

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	I		T	e	s	t		E	x	i	t	

② When the "⏮" button is pressed, the display switches in the opposite order from ① above, starting from the current position (for example, if currently at "TC", it switches as follows: "T7, T2 ").

6.3. About each mode

・With the mode selected, press the "►" button to set that mode.

(1) Laser on/off (CD/DVD/BD) mode

Press the "I◄◄" or "►►I" button to select [X] and press the "►" button to set it.
Laser on/off control is executed and the laser current is displayed.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	2	X	:	m	m	m	m	:	n	n	n	n

(X=1 : CD laser mode, 2 : DVD laser mode, 3 : BD(SL) laser mode)
(mmmm[mA] : Stored data, nnnn[mA] : Current value)

※ When the current value is more that BD: ±6[mA], DVD or CD: ± 12[mA] of saved data, it becomes the pickup transducer's target.
In this case, replace the mechanism unit.

When the "■" button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

(2) Error rate measurement mode

Press the "I◄◄" or "►►I" button to select [YY] .
Refer to [Table 1 - Error rate details].

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	Y	Y	F	F	F	F	F	F	F	F	F	F

(YY : measurement mode, F : Address and error rate (When not set, "F" is displayed.)

Press the "►" button to begin error rate measurement. The address and error rate are displayed.
For a description of the displayed measurement results, see "Table 1: Error rate details".

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	Y	Y	m	m	m	m	m	m	l	l	l	l

(YY : selection mode [71 to 94], m : address [PBA][HEX], l : error rate [COUNT/SEC] [DEC])

(Note) CD (4x-speed) : Renewal of data is carried out for every 300 frame.
Error rate of 75 frames is displayed.
DVD (1.6x-speed) : Renewal of data is carried out for every 80ECC block.
Error rate of 8ECC block is displayed.
BD (1.6x-speed) : Renewal of data is carried out for every 136LDC clusters block.
Error rate of 8LDC clusters block is displayed.

The mode chosen when selection mode was changed into the trace execution and the "►" button was pressed is performed from the beginning.
When the "►" button is pressed without changing selection mode, the mode under selection is performed from the beginning.
(If the "►" button is pressed, the address corresponding to the chosen mode will be searched again.)

The pause mode is set after tracing is completed.

When the "■" button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

(3) Accumulated laser on time display mode

Press the "I◄◄" or "►►I" button to select [Y] and press the "►" button to set it.
The accumulated laser on time is displayed.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	Y				m	m	m	m	m	m	h

(Y=1 : CD, 2 : DVD , 3 : BD, mmmmmm : Time(Fractions of hours are counted up one hour on the display.)

When the "■" button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

---To clear the accumulated laser on time---

Press the "►" button while the accumulated laser on time is displayed ("TC1, "TC2", "TC3") until "TC4 ∗ clear??" appears at the display.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	4	∗			c	l	e	a	r	?	?

If the "►" button is pressed, the accumulated laser on time of CD, DVD and BD is cleared.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	C	1									0	h

When "TC1", "TC2" or "TC3" is selected with the "I◄◄" or "►►I" button, "mmmmmm" is displayed as "0" so you can check.

(4) Test mode cancel

A confirmation message is displayed. Press the "►" button to set, canceling the test mode.

FL Display (The display part of 13 digits)												
1	2	3	4	5	6	7	8	9	10	11	12	13
T	I	1		R	e	a	l	l	y	?		

When the "■" button is pressed, the layer above the current layer is displayed. See "6.4 Stopping the mode".

6.4. Stopping the mode

When the "■" button is pressed, the layer above the current layer is displayed. The relationship between the different modes and the display of the different layers is shown on the table below.

Mode	1 layer	2 layer	3 layer
Laser on/off (CD/DVD/BD) mode	T2 LaserOnOff	T2X mmmm nnnn	Non
Error rate measurement mode	T7 Error Rate	TYYFFFFFFFFFF	TYYmmmmmmllll
Accumulated laser on time display mode	TC LaserOnTim	TCY mmmmmmh	TC4* clear??
Test mode cancel	TI Test Exit	TI1 Really?	Non

6.5. About the OPEN/CLOSE (⏏) button

Even during the test mode, the tray is opened and closed when the "⏏" button is pressed.

6.6. Test mode detailed table

Table 1: Error rate details

YY	Measurement position	Error rate display details for each media type			Remarks
		BD	DVD	CD	
71	The inner circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T71 FFFFFFFFFF display.
72	The inner circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T72 FFFFFFFFFF display.
73	The inner circumference of 1-layer	LDC error detection signed number	PI error detection number	C1 error detection number	
74	The inner circumference of 1-layer	It is invalid.	It is invalid.	C2 uncorrectable error number	When this is selected for BD or DVD, T74 FFFFFFFFFF display.
75	The central circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T75 FFFFFFFFFF display.
76	The central circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T76 FFFFFFFFFF display.
77	The central circumference of 1-layer	LDC error detection signed number	PI error detection number	C1 error detection number	
78	The central circumference of 1-layer	It is invalid.	It is invalid.	C2 uncorrectable error number	When this is selected for BD or DVD, T78 FFFFFFFFFF display.
79	The outer circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T79 FFFFFFFFFF display.
80	The outer circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T80 FFFFFFFFFF display.
81	The outer circumference of 1-layer	LDC error detection signed number	PI error detection number	C1 error detection number	
82	The outer circumference of 1-layer	It is invalid.	It is invalid.	C2 uncorrectable error number	When this is selected for BD or DVD, T82 FFFFFFFFFF display.
83	The inner circumference of 2-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T83 FFFFFFFFFF display.

YY	Measurement position	Error rate display details for each media type			Remarks
		BD	DVD	CD	
84	The inner circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T84 FFFFFFFFF display.
85	The inner circumference of 2-layer	LDC error detection signed number	PI error detection number	It is invalid.	When this is selected for 1-layer DVD or CD, T85 FFFFFFFFF display.
86	The inner circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T86 FFFFFFFFF display.
87	The central circumference of 2-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T87 FFFFFFFFF display.
88	The central circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T88 FFFFFFFFF display.
89	The central circumference of 2-layer	LDC error detection signed number	PI error detection number	It is invalid.	When this is selected for DVD 1-layer or CD, T89 FFFFFFFFF display.
90	The central circumference of 2-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T90 FFFFFFFFF display.
91	The outer circumference of 1-layer	BIS error detection signed number	It is invalid.	It is invalid.	When this is selected for DVD or CD, T91 FFFFFFFFF display.
92	The outer circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T92 FFFFFFFFF display.
93	The outer circumference of 1-layer	LDC error detection signed number	PI error detection number	It is invalid.	When this is selected for DVD 1-layer or CD, T93 FFFFFFFFF display.
94	The outer circumference of 1-layer	It is invalid.	It is invalid.	It is invalid.	When this is selected for BD, DVD or CD, T94 FFFFFFFFF display.

* The inner circumference of the layer refers to the physical inner circumference for DVD parallel, the physical outer circumference for the opposite case.
* The inner circumference of the layer refers to the physical outer circumference for DVD parallel, the physical inner circumference for the opposite case.

PROCEDURE FIRMWARE FOR UPGRADING THE VERSION OF THE FIRMWARE

You can update by downloading the latest version from the Internet.

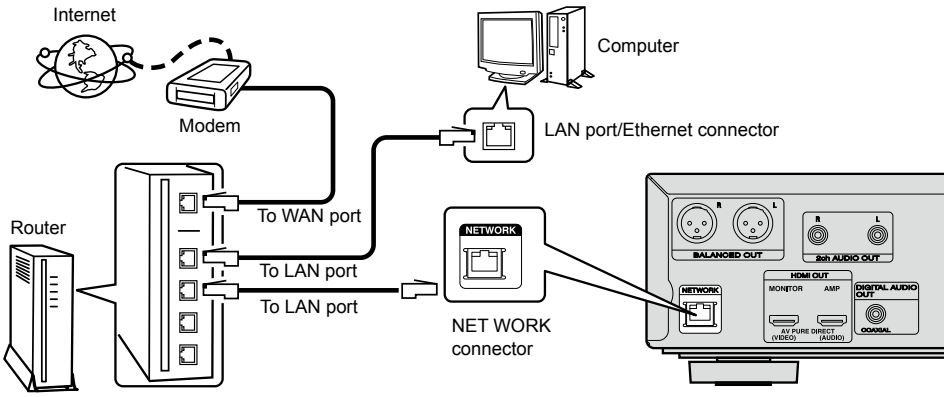
1. Update from the Internet

1.1. preparation

(1) System requirements

- Internet Connection by Broadband Circuit
- Modem
- Router
- Ethernet cable (CAT-5 or greater recommended)

(2) Setting



1.2. Checking and updating the firmware

Check if the latest firmware exists. You can also check approximately time required to complete an update.

(1) Press the "SETUP" button on the remote control to display the GUI menu.

(2) Use the cursor buttons to select "General Setting" → "System" → "Firmware Update" → "Update check".

(3) Press the "ENTER" button.

- If the firmware on the website is latest, proceed to (4) Press "Enter" Button.
- If the latest firmware has been already installed, press the "RETURN" button to return to SETUP menu.

(4) Press the "ENTER" button.

- When updating is completed, return to normal status about 20 seconds later.

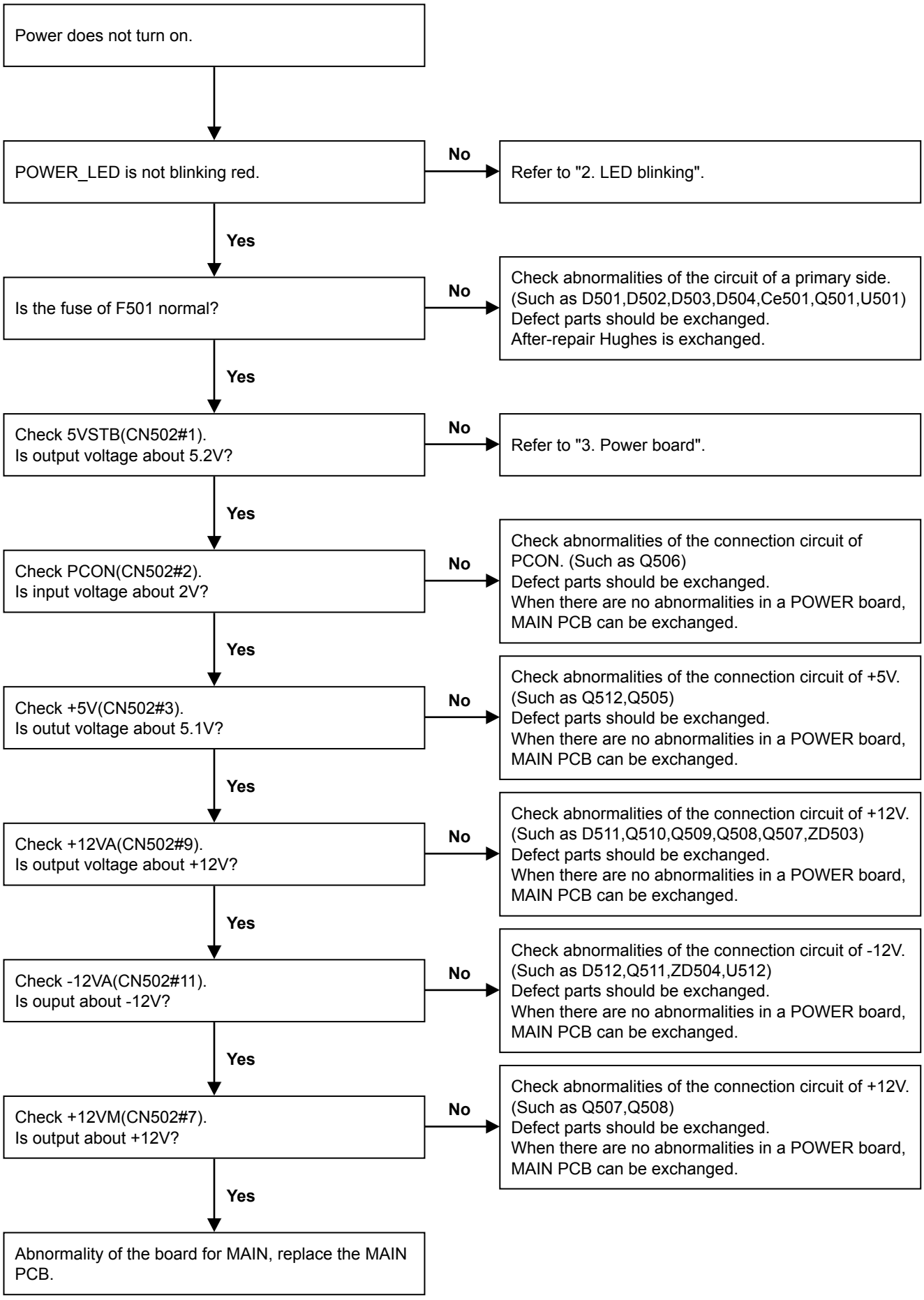
--- Cautions on Firmware Update ---

- In order to update the firmware, you must have the correct system requirements and settings for a broadband Internet connection.
- Do not turn off the power until updating is completed.
- Once updating starts, normal operations on this unit cannot be performed until updating is completed. Also, setting items of the GUI menu of this unit or setting items of the image adjustment may be initialized.
  Note down of the settings before updating, and set them again after updating.

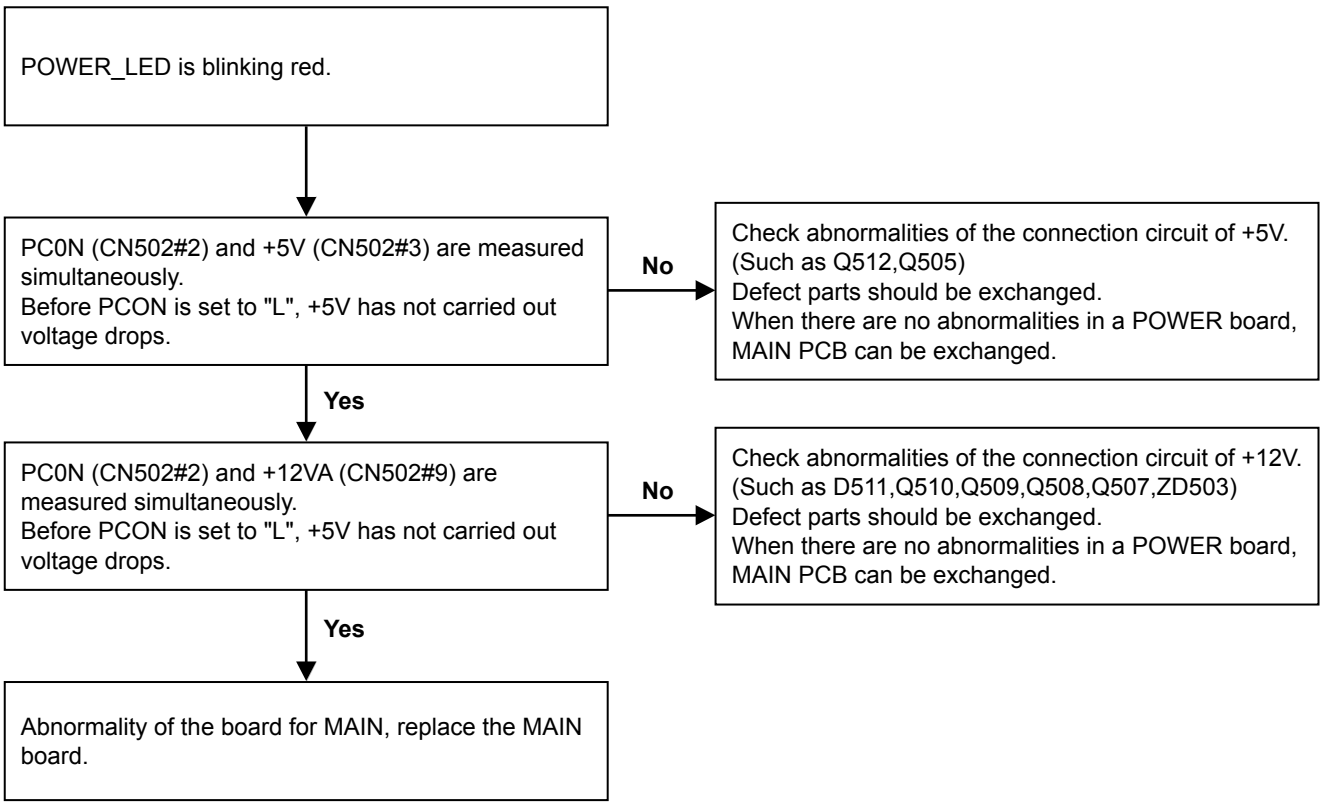
TROUBLE SHOOTING

1. Power (Power Board)

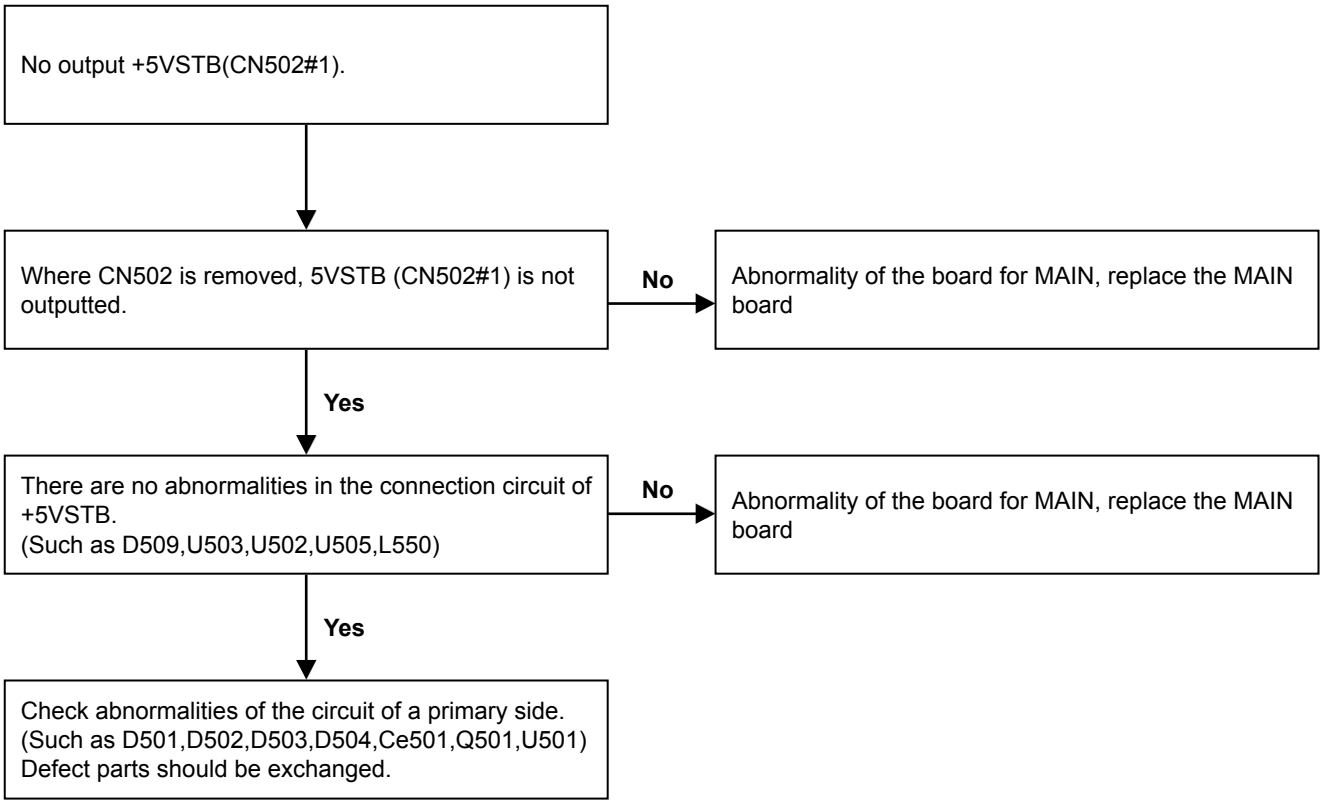
1. Power does not turn on.



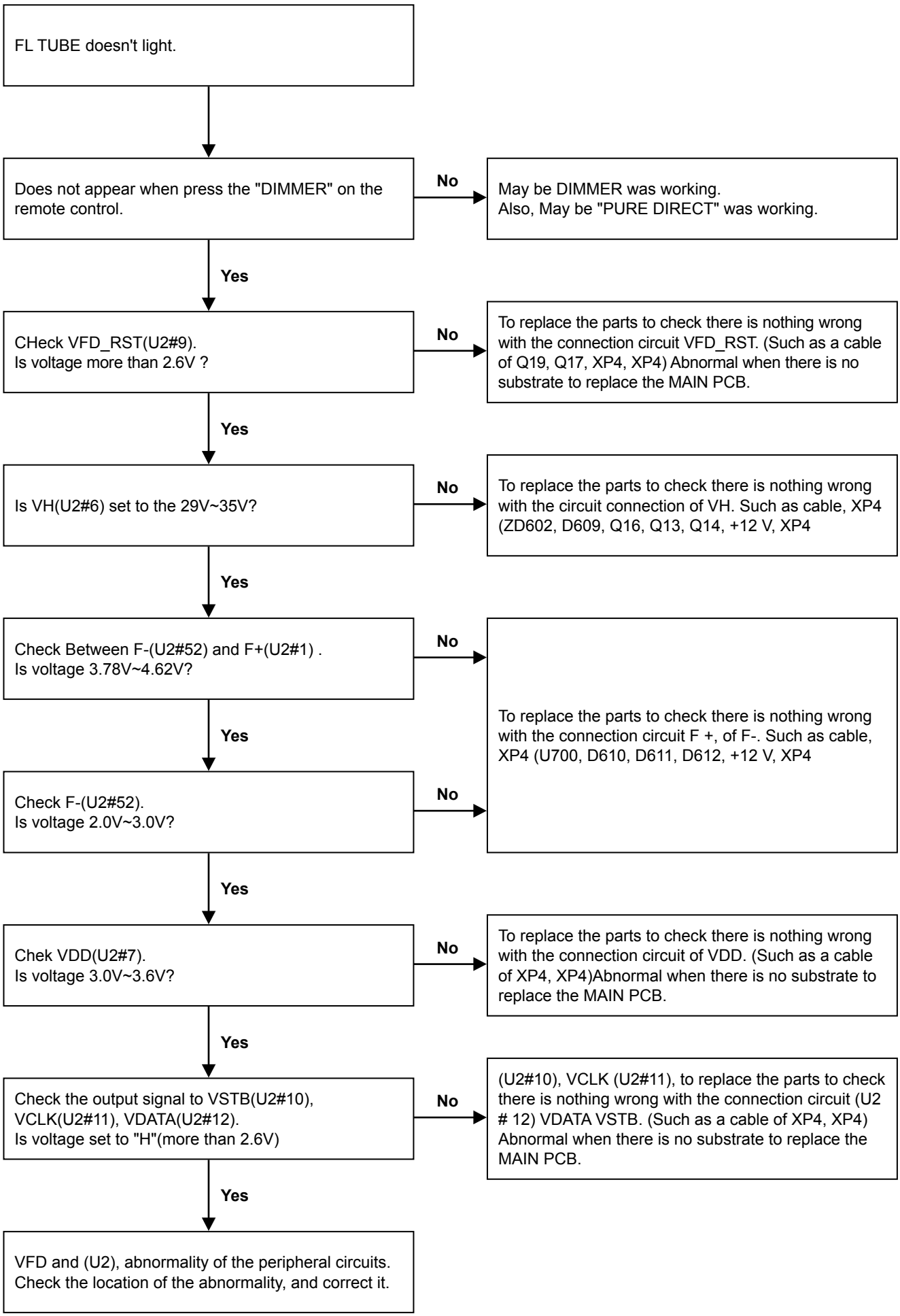
2. LED blinking



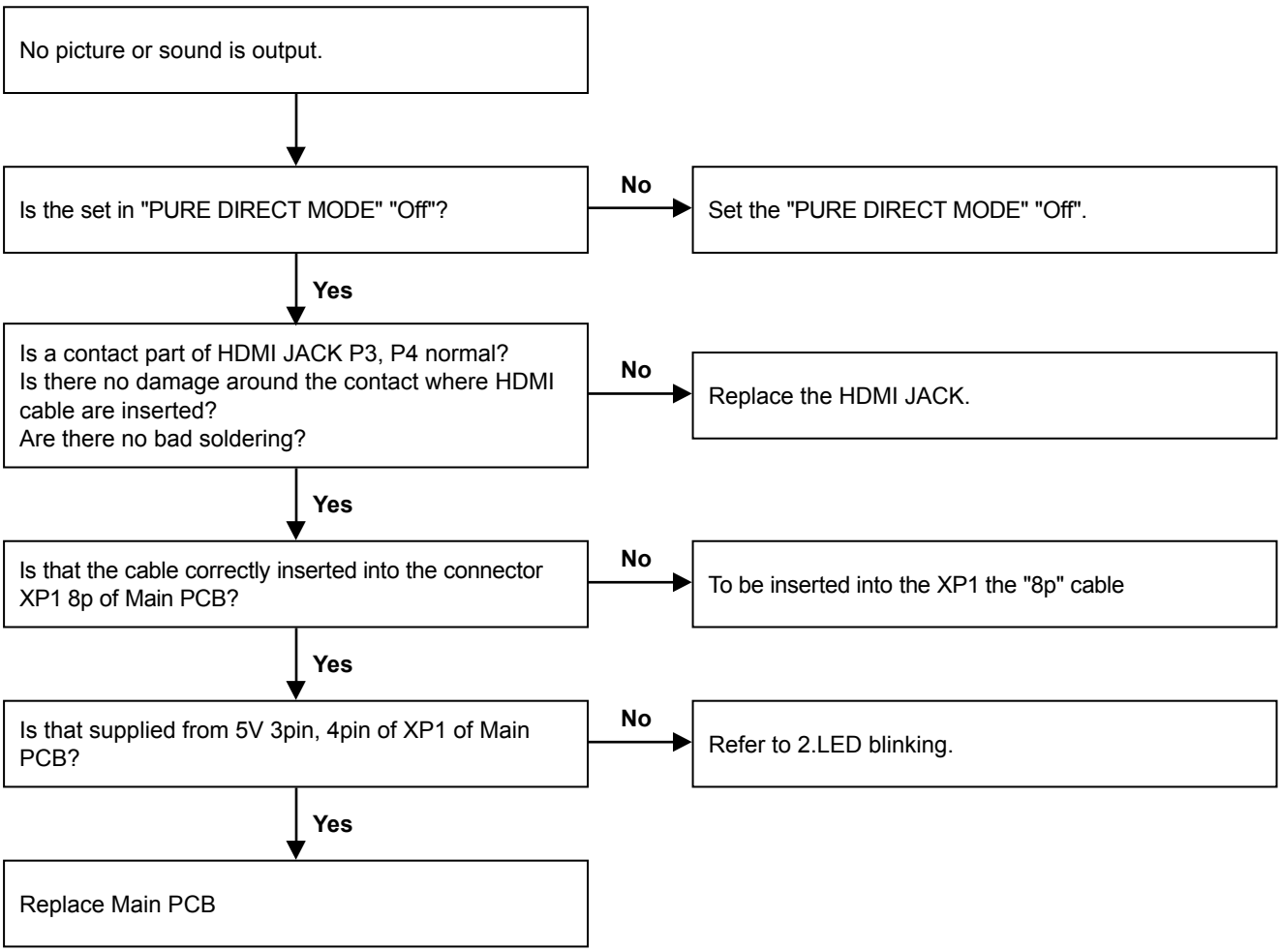
3. Power board



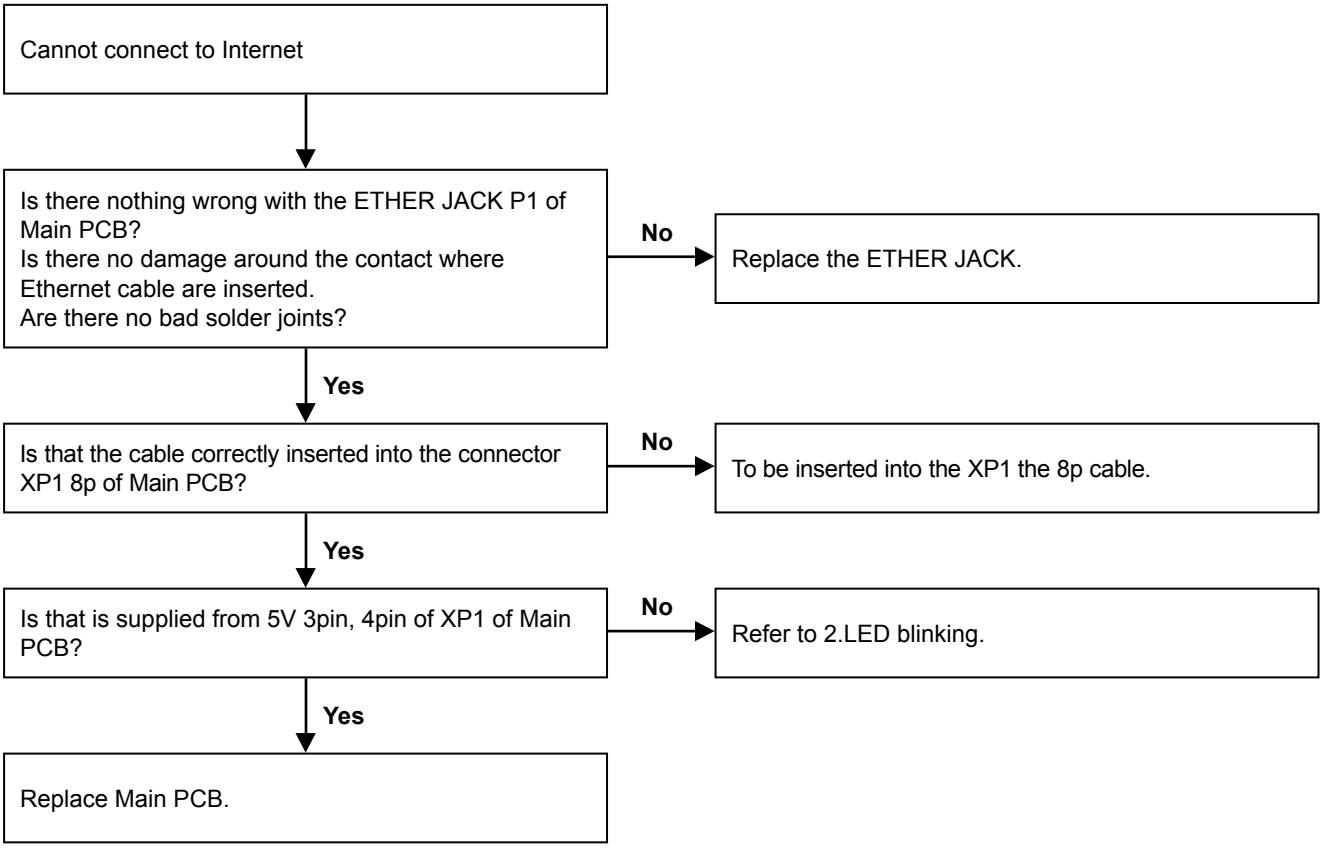
4. DISPLAY (Display Board)



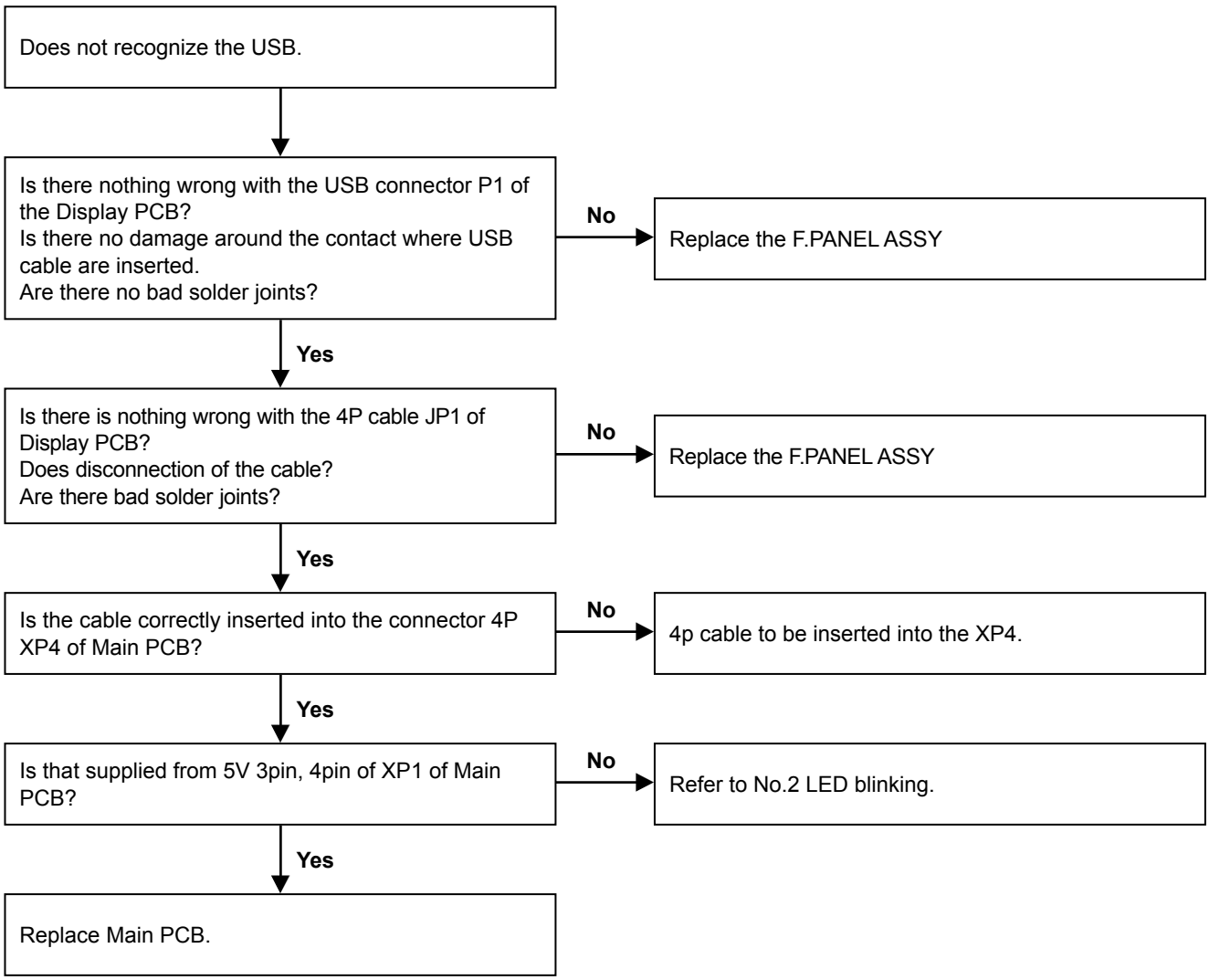
5. HDMI



6. Network



7. USB


Does not recognize the USB.
Is there nothing wrong with the USB connector P1 of the Display PCB?
Is there no damage around the contact where USB cable are inserted.
Are there no bad solder joints?
No
Replace the F.PANEL ASSY
Yes
Is there is nothing wrong with the 4P cable JP1 of Display PCB?
Does disconnection of the cable?
Are there bad solder joints?
No
Replace the F.PANEL ASSY
Yes
Is the cable correctly inserted into the connector 4P XP4 of Main PCB?
No
4p cable to be inserted into the XP4.
Yes
Is that supplied from 5V 3pin, 4pin of XP1 of Main PCB?
No
Refer to No.2 LED blinking.
Yes
Replace Main PCB.

8. No Audio output

There is no output from the (2P RCA) ANALOG output.

Terminal P1, P2, XLR (K1, K2) pin jack on the Main PCB There is nothing wrong with the Not bad, abnormal soldering or the like.

No → Replace the RCA PIN JACK or XLR JACK.

Yes

Is that each cable correctly inserted into the connector of the Main PCB
· XP3 (power 4P)
· XP1 (20P FFC, a signal system)

No → · Insert the 4p cable into the XP3.
· Insert 20P FFC into the XP1.

Yes

Is that each voltage supplied from the power supply board to XP3 (4p)?
· 1pin:+12V
· 3pin:-12V

No → ① Refer to flow-chart NO.1 (Power Board)
Power does not turn on.
Check the +12VA or
Check the -12VA
② Refer to flow-chart NO.2
Power LED is blinking red.

Yes

Are there output from the (three-terminal) regulator IC, below?
· U6 3pin : +9V
· U10 3pin : -9V
· U7 2pin : +5V
· U8 2pin : +3.3V

No → Check the soldering around regulator.
Is there short of terminal?

Yes

Are there correctly output from the U11, U12 (OPAMP) of 1/7pin (L/R) ?

No → Check the soldering U11, U12 and DAC(U1).
Is there no problem?

Yes

Is there output of audio from the U2 (Lch OP AMP), 1 and 7 pin?
Is there output of audio from the U5 (Rch OP AMP), 1 and 7 pin?

No → Check the soldering U2,U5 and DAC (U1).
Is there no problem?

Yes

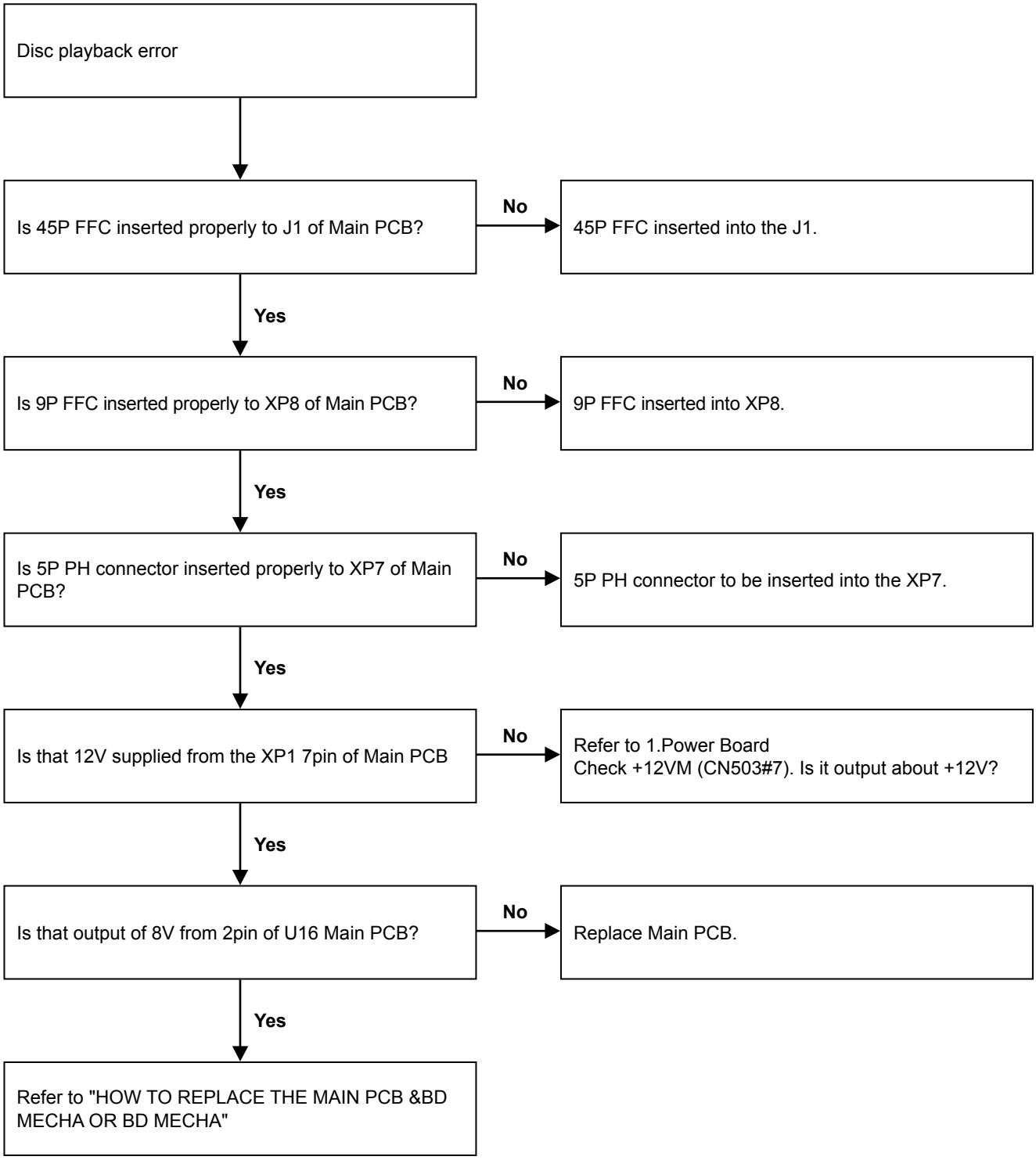
Is there output of digital CLK from the U1 (74LVC157)?

No → Check the soldering around U1 and XP1 (20P FFC BASE).

Yes

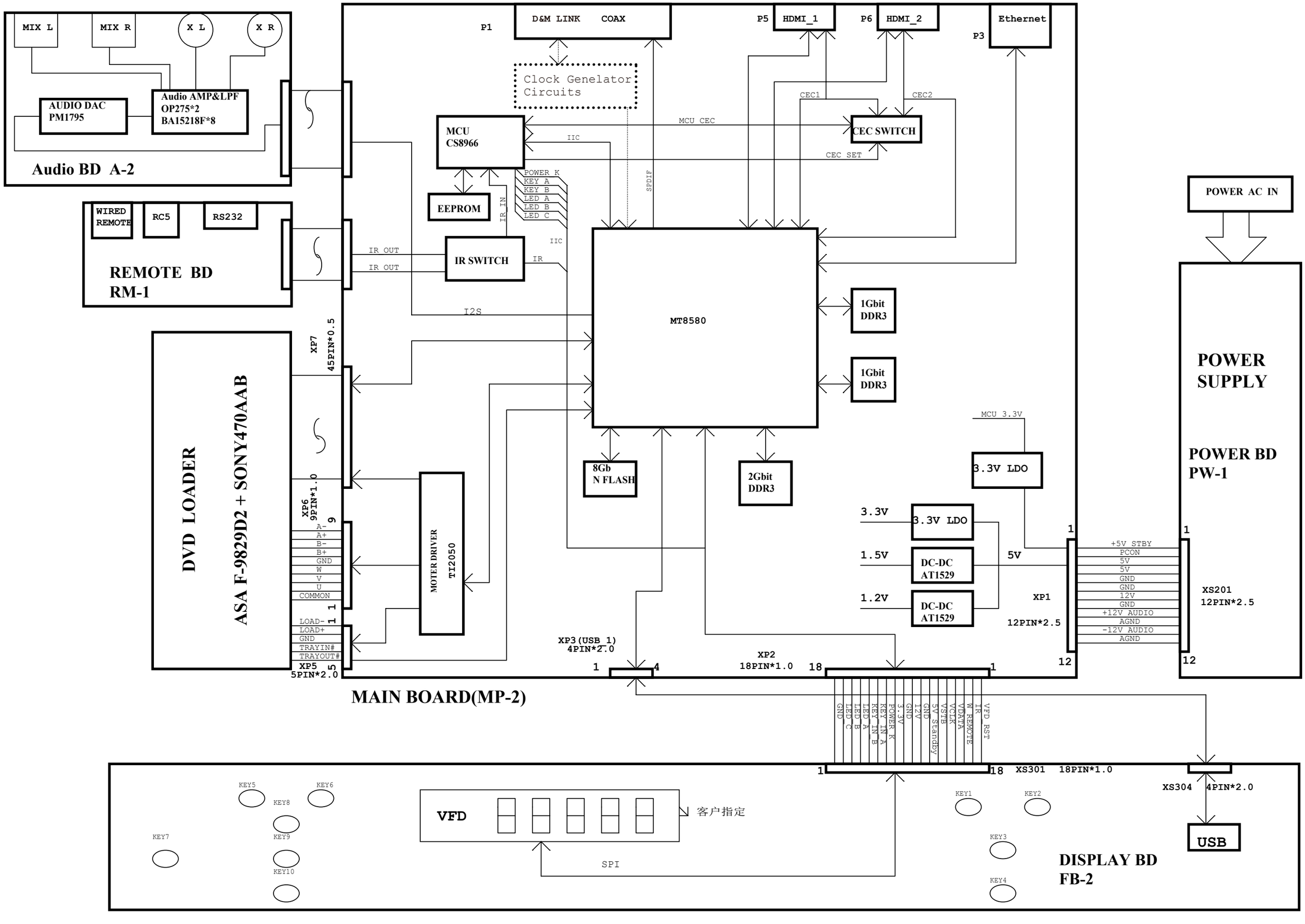
Replace the Main PCB & BD MECHA.

9. Disc playback error

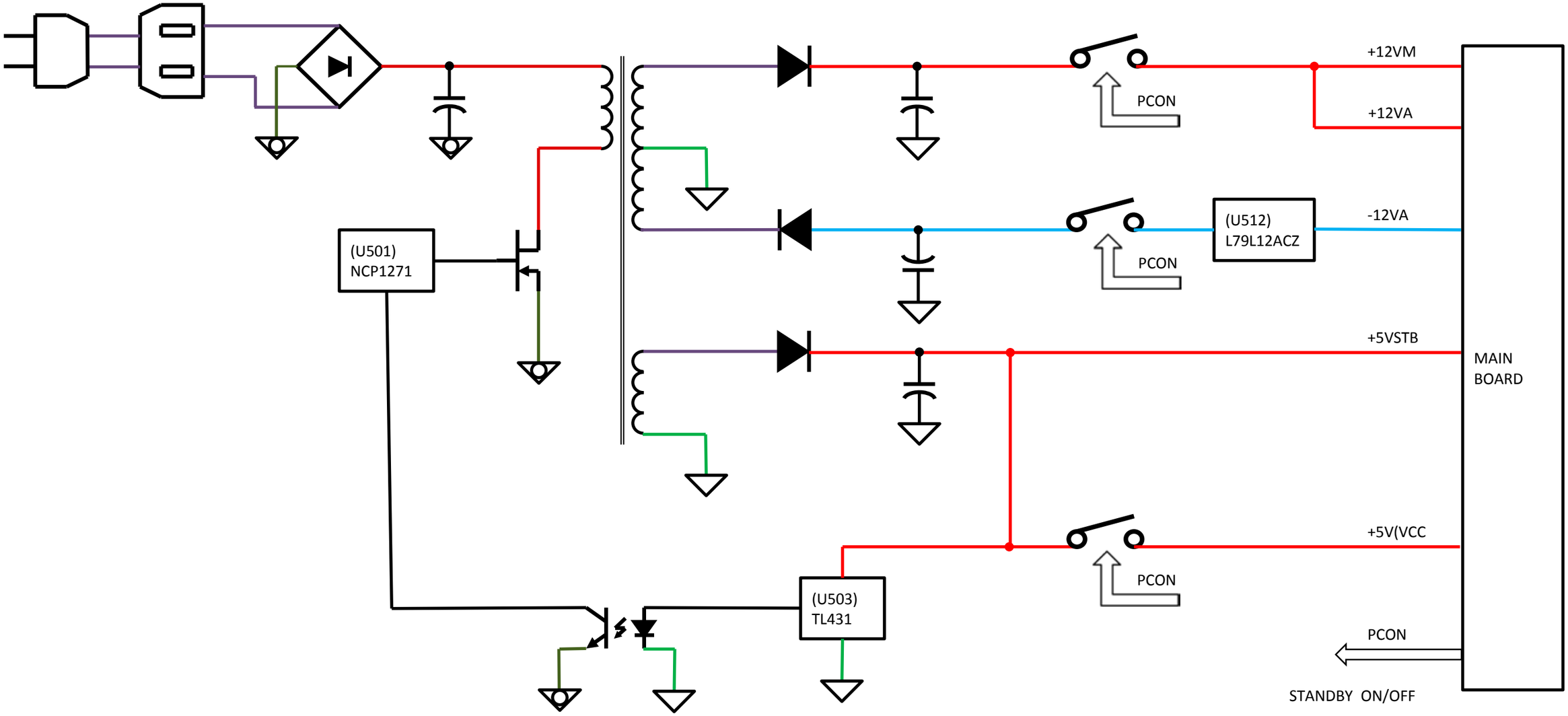


Personal notes:

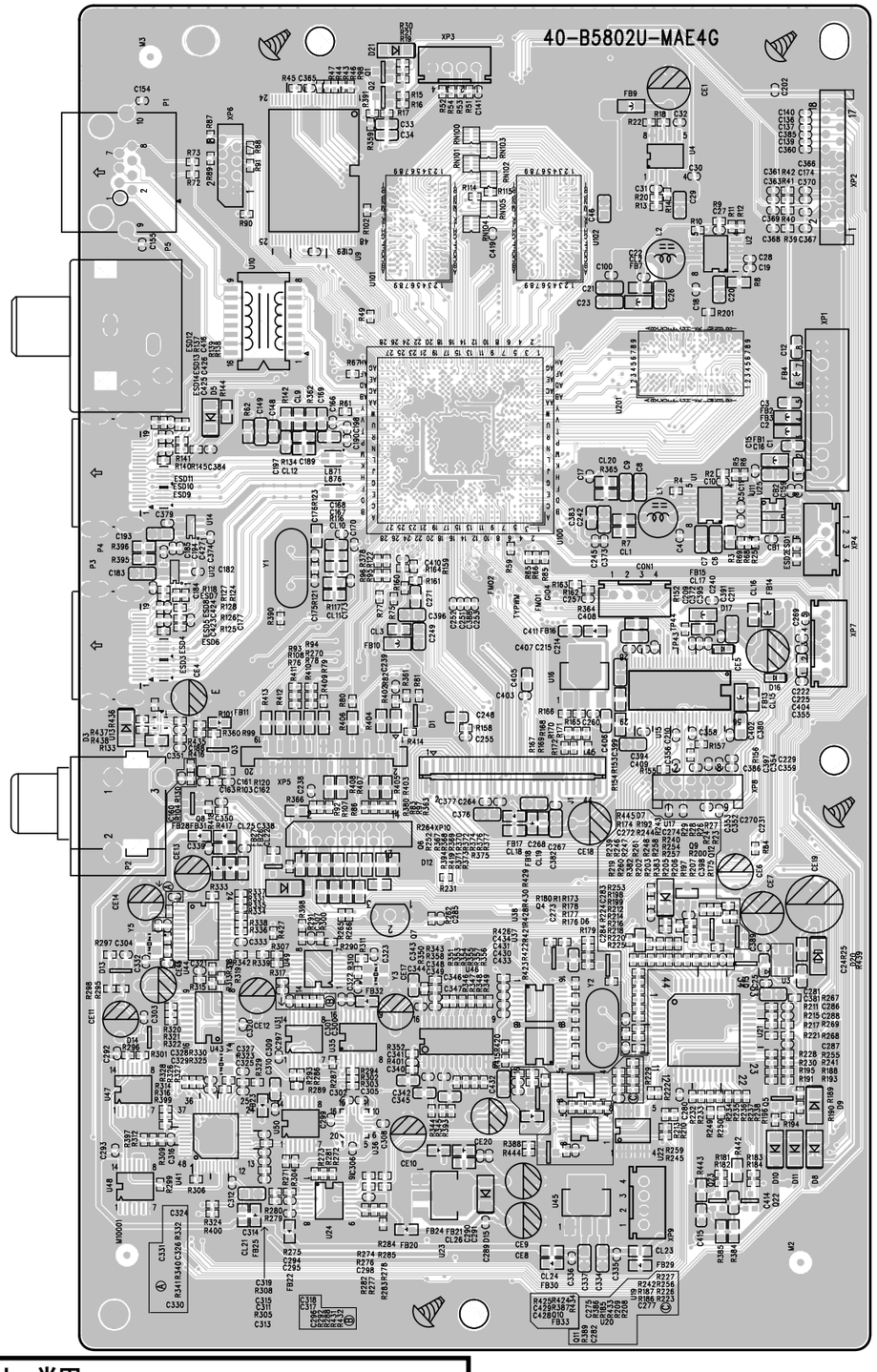
BLOCK DIAGRAM



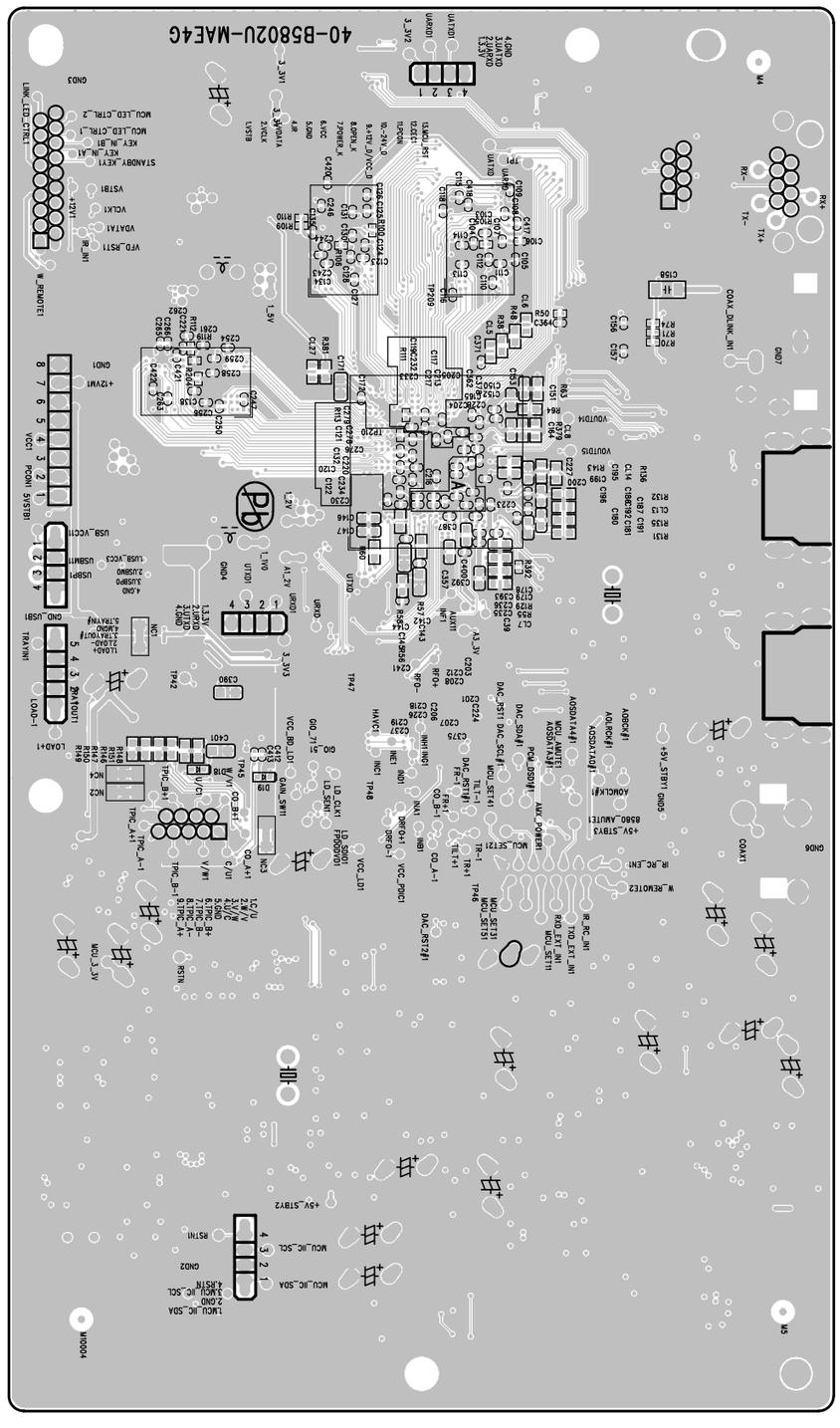
POWER BLOCK DIAGRAM



MAIN
(COMPONENT SIDE)



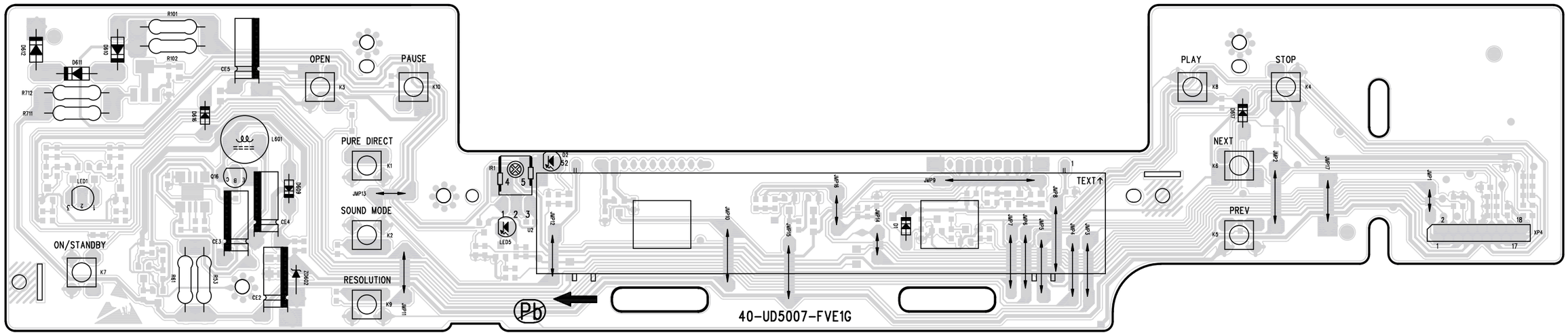
MAIN
(FOIL SIDE)



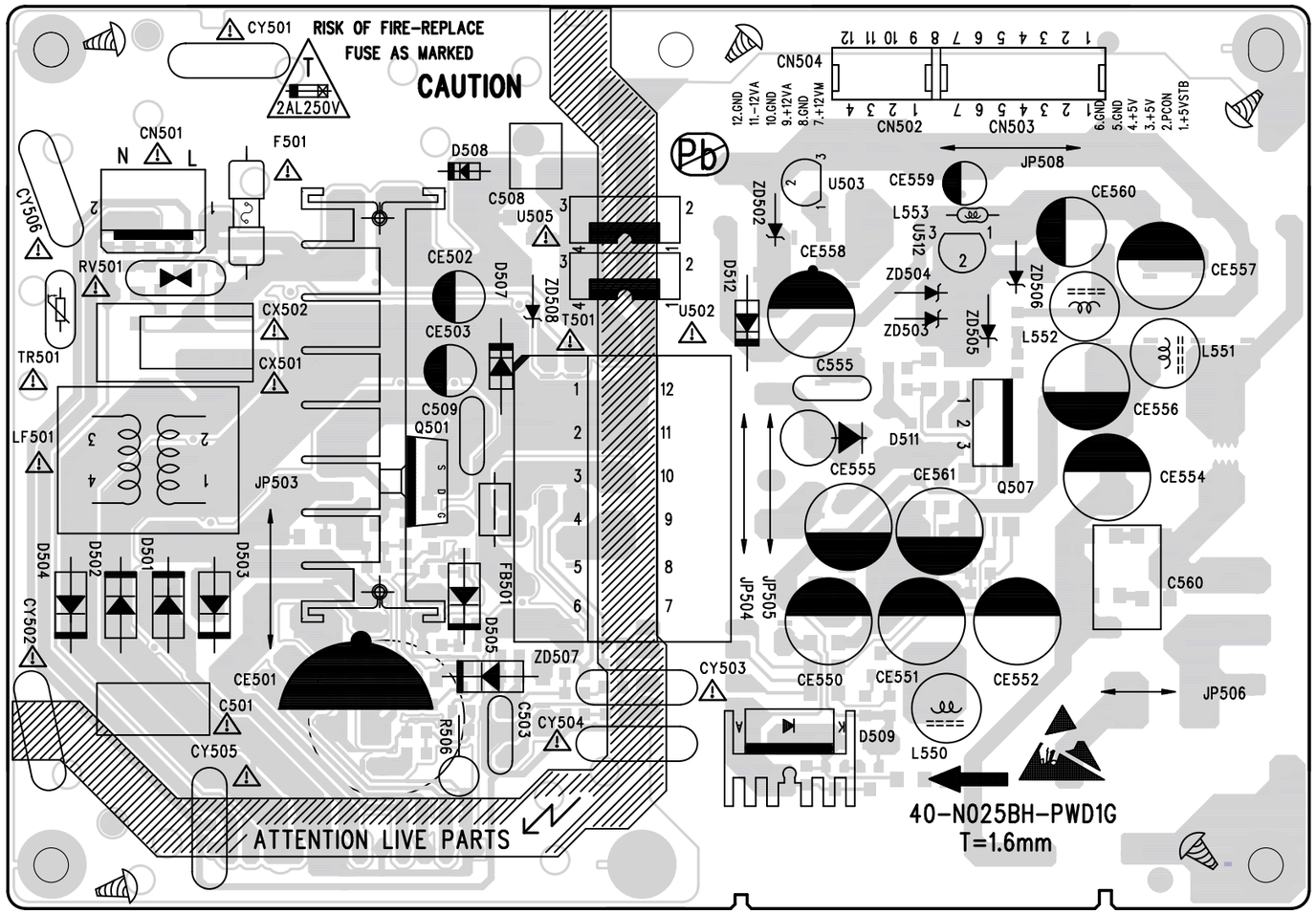
鉛フリー半田
半田付けには、鉛フリー半田 (Sn-Ag-Cu) を使用してください。

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

FRONT
(COMPONENT SIDE)



PWD1G
(COMPONENT SIDE)



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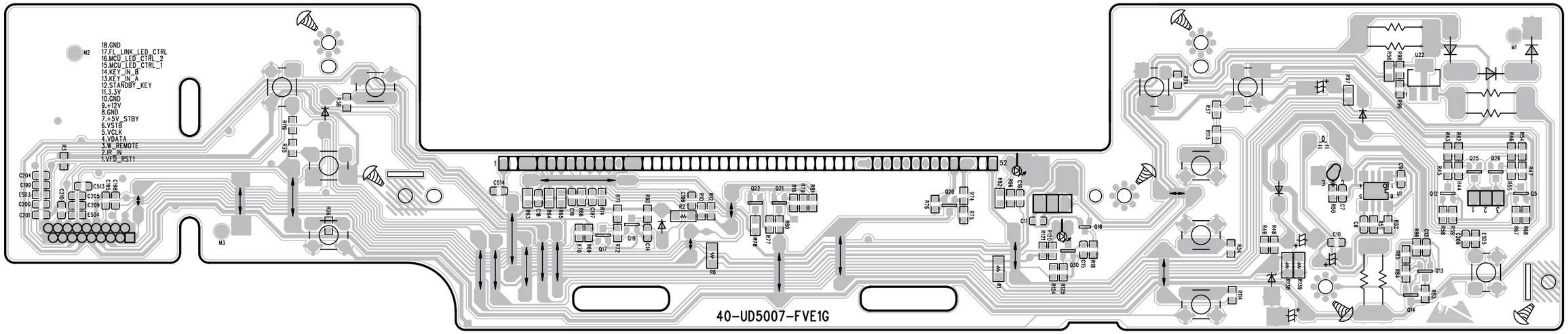
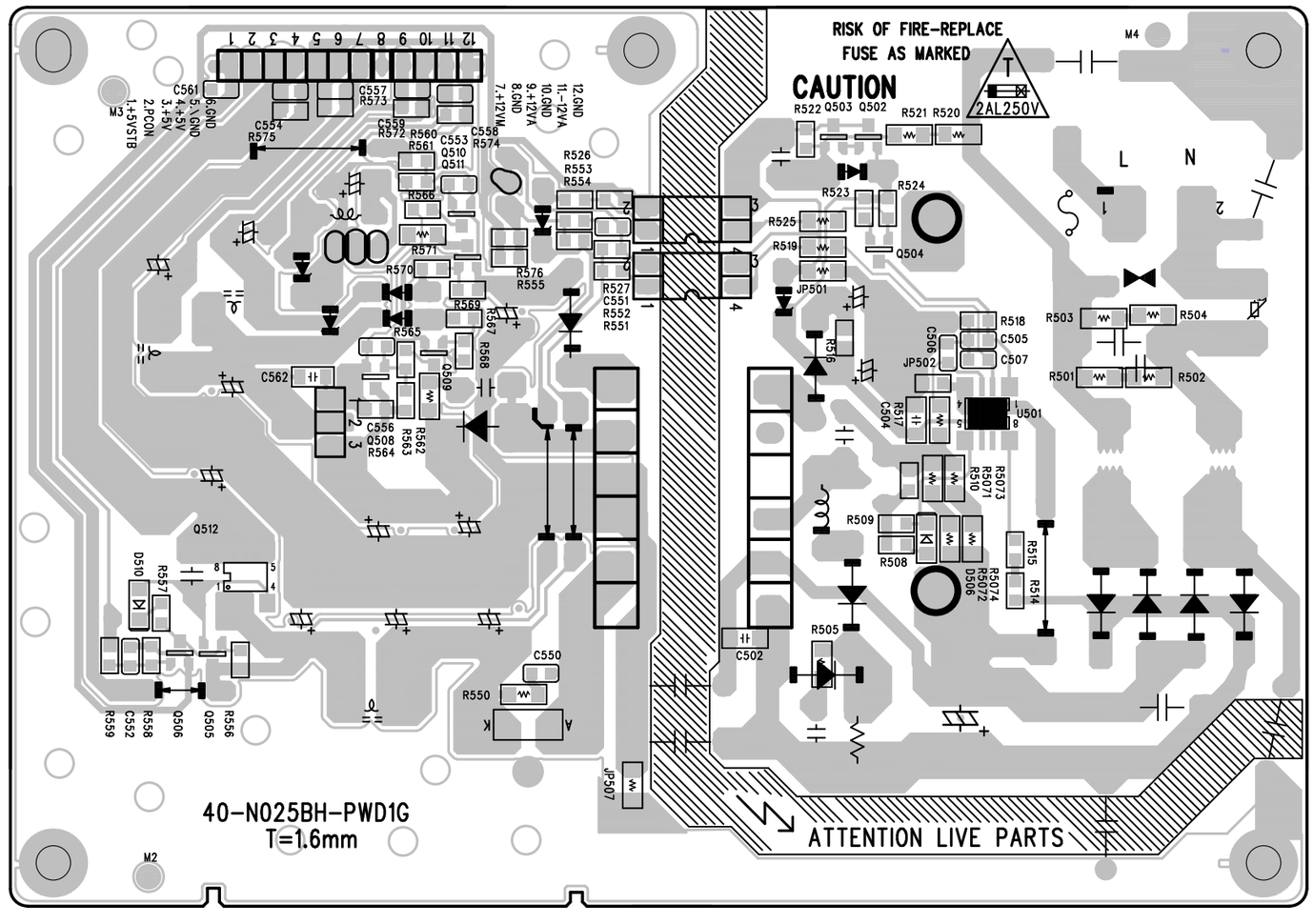
FRONT
(FOIL SIDE)



PWDG1
(FOIL SIDE)



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Lead-free Solder
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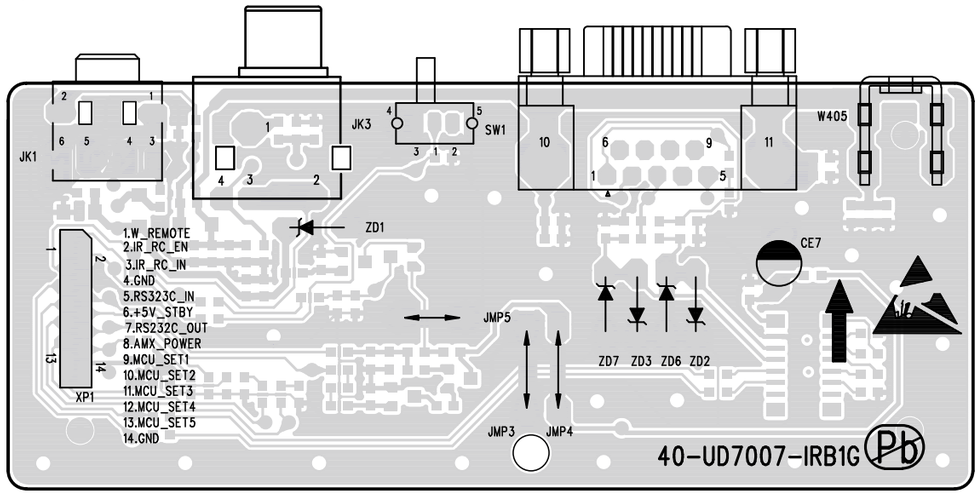
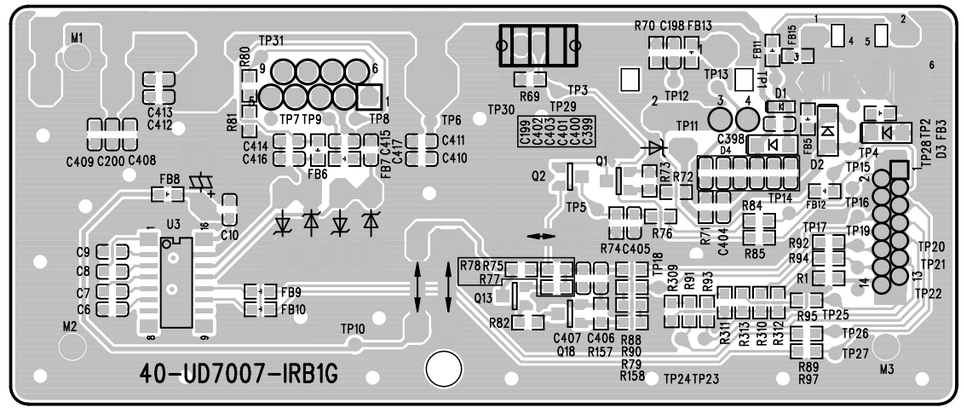
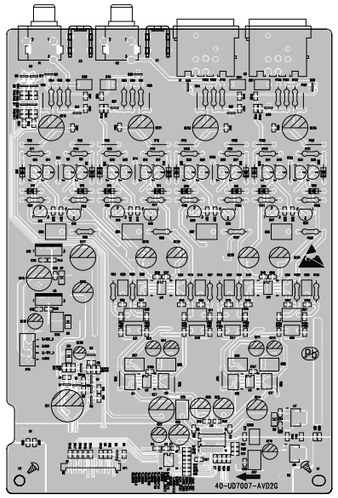
IRA1G
(COMPONENT SIDE)



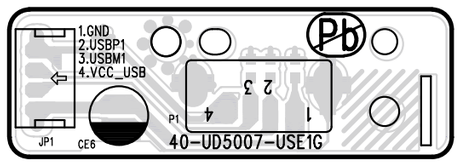
IRA1G
(FOIL SIDE)



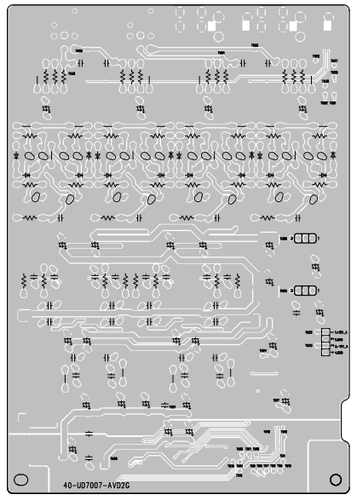
AVD2G
(COMPONENT SIDE)



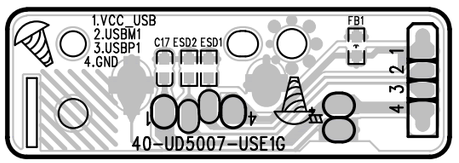
FRONT-USE1G
(COMPONENT SIDE)



AVD2G
(FOIL SIDE)



FRONT-USE1G
(FOIL SIDE)



鉛フリー半田
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Lead-free Solder
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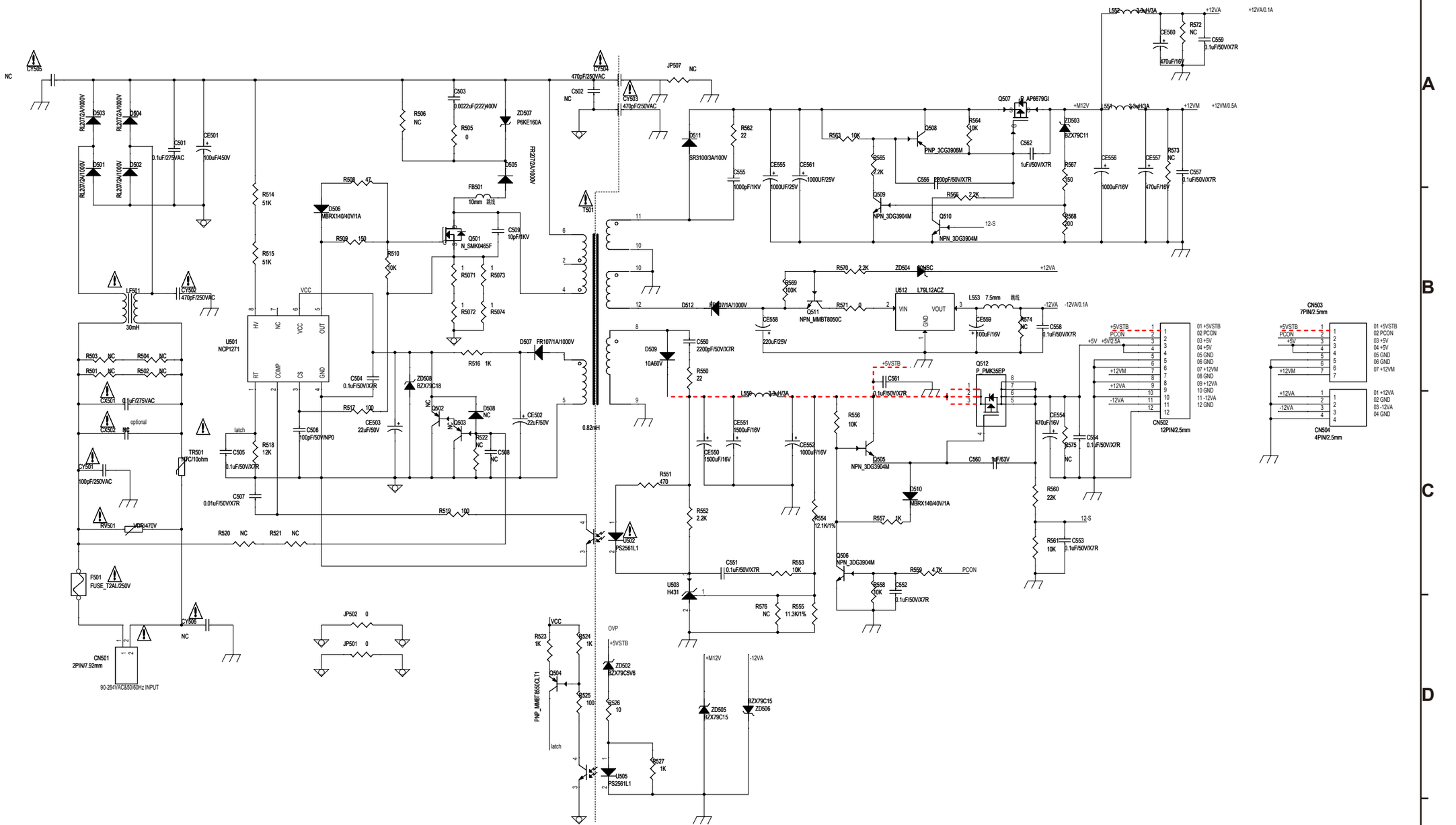
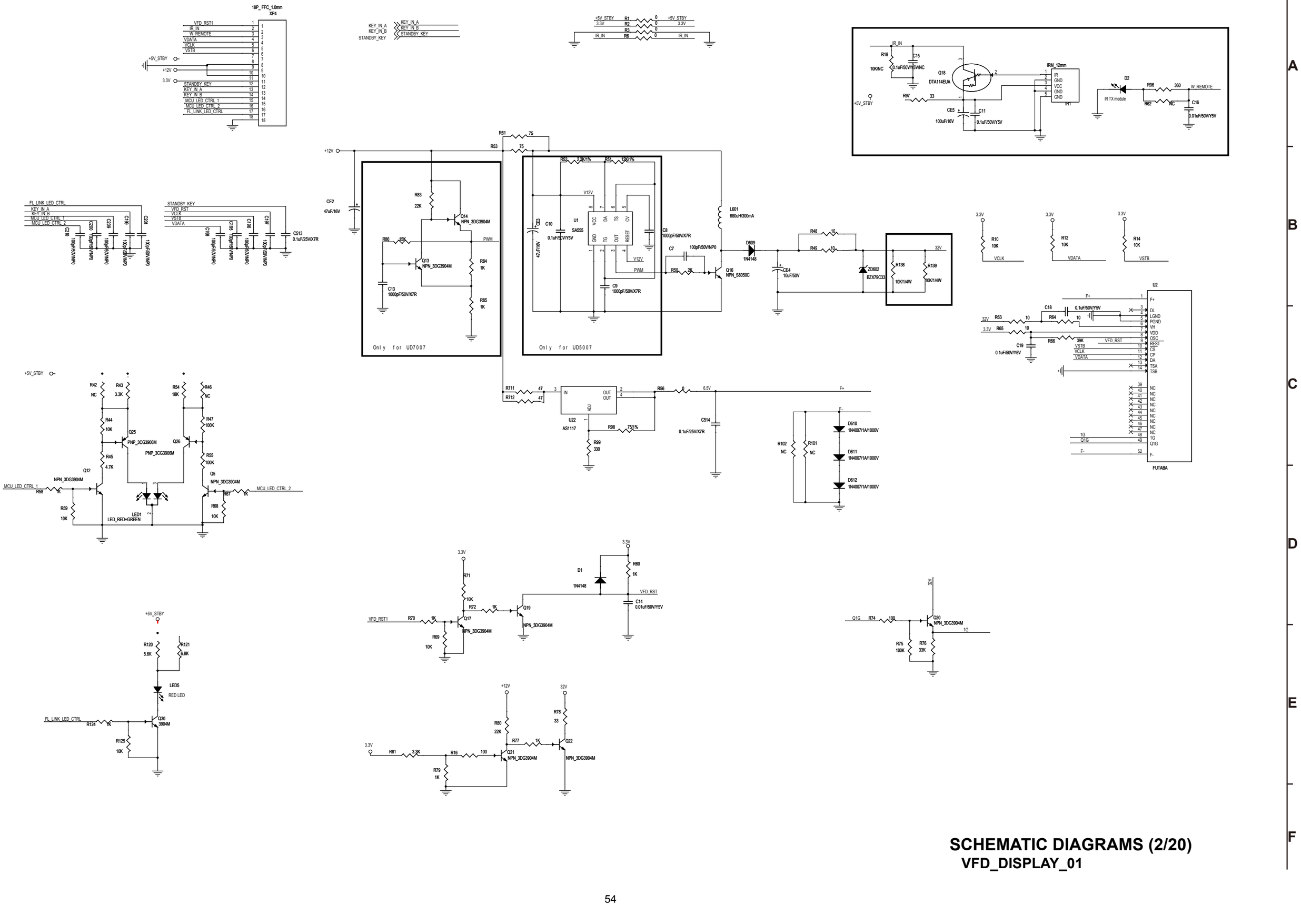


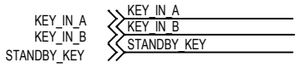
GND POWER + POWER - STBY POWER

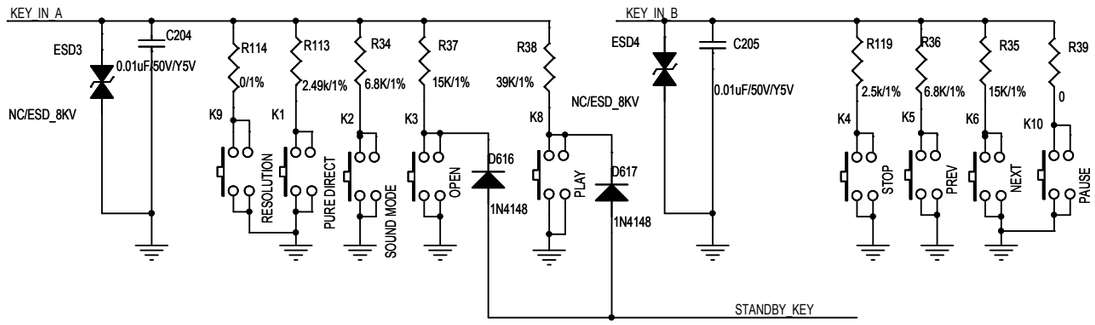
SCHEMATIC DIAGRAMS (1/20)
POWER

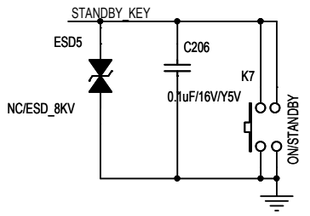


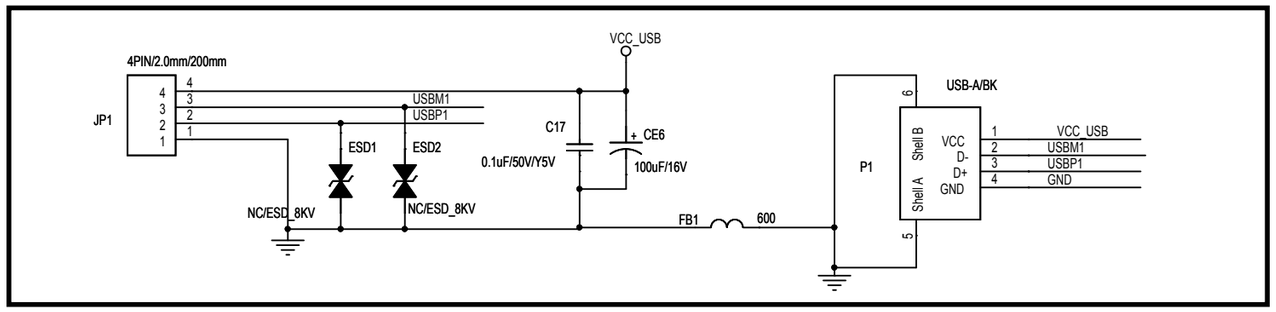
SCHEMATIC DIAGRAMS (2/20)

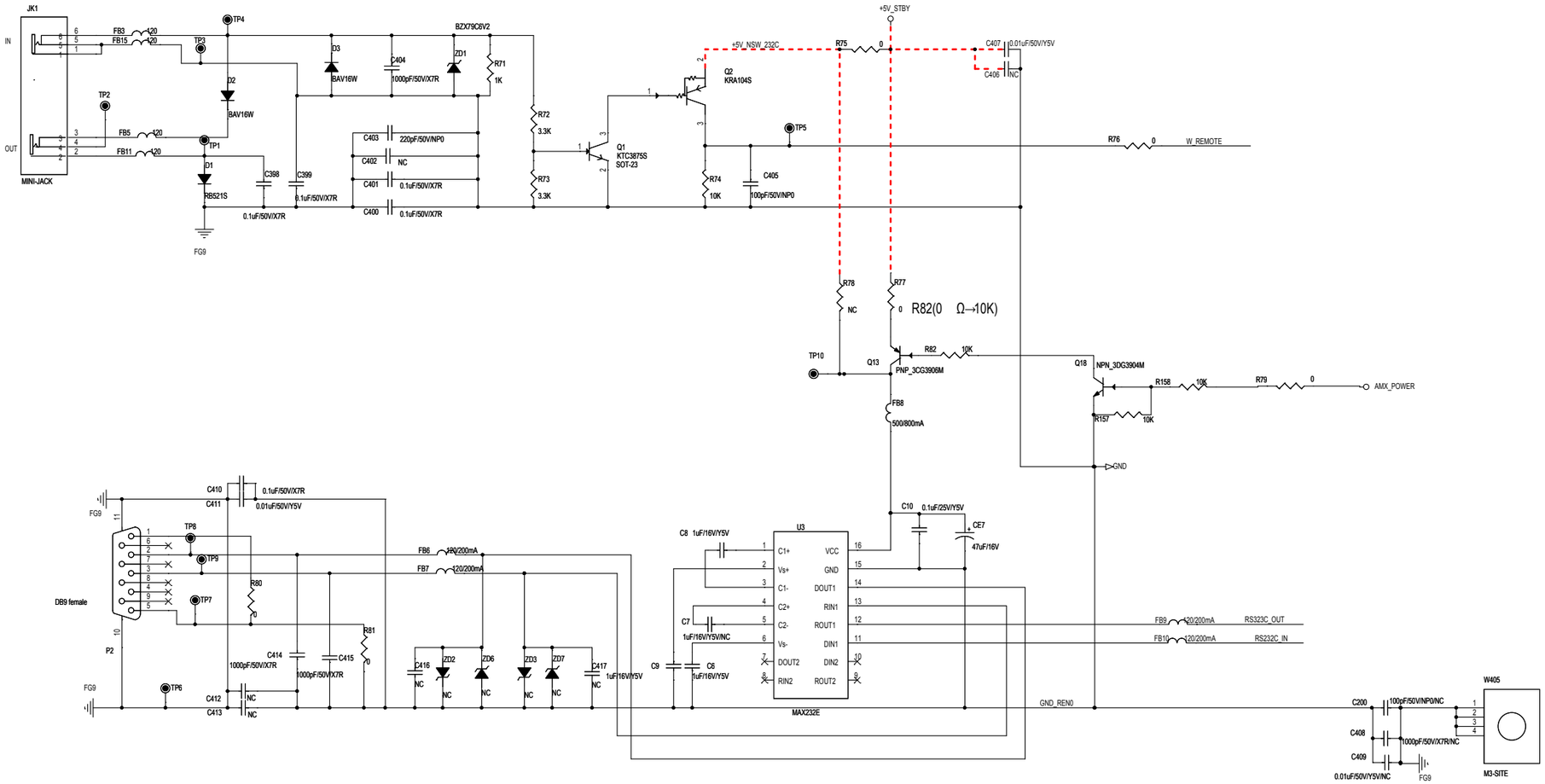
VFD_DISPLAY_01


KEY_IN_A
KEY_IN_B
STANDBY_KEY
KEY_IN_A
KEY_IN_B
STANDBY_KEY

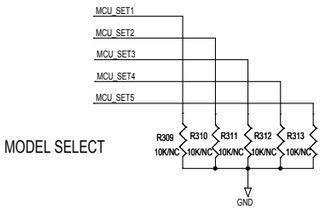

KEY_IN_A
ESD3
NC/ESD_8KV
C204
0.01uF/50V/Y5V
R114
0/1%
R113
2.49k/1%
R34
6.8K/1%
R37
15K/1%
R38
39K/1%
K9
K1
K2
K3
K8
RESOLUTION
PURE DIRECT
SOUND MODE
OPEN
PLAY
D616
1N4148
D617
1N4148
KEY_IN_B
ESD4
NC/ESD_8KV
C205
0.01uF/50V/Y5V
R119
2.5k/1%
R36
6.8K/1%
R35
15K/1%
R39
0
K4
K5
K6
K10
STOP
PREV
NEXT
PAUSE
STANDBY_KEY


STANDBY_KEY
ESD5
NC/ESD_8KV
C206
0.1uF/16V/Y5V
K7
ON/STANDBY


4PIN/2.0mm/200mm
JP1
4
3
2
1
USBM1
USBP1
ESD1
ESD2
NC/ESD_8KV
NC/ESD_8KV
VCC_USB
C17
0.1uF/50V/Y5V
CE6
100uF/16V
FB1
600
P1
USB-A/BK
6
5
Shell B
Shell A
VCC
D-
D+
GND
1
2
3
4
VCC_USB
USBM1
USBP1
GND



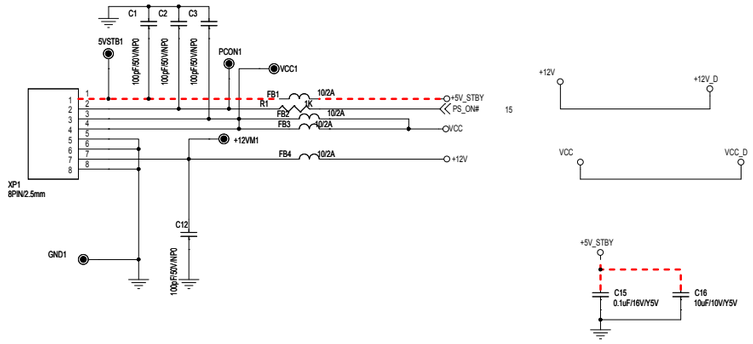
U7007	MCU_SET5	MCU_SET1	MCU_SET2	MCU_SET3	MCU_SET4
	R313	R309	R310	R311	R312
U7007 (for North America)	NC	10K	NC	NC	NC
U7007 (for Europe)	NC	10K	NC	NC	10K
U7007 (for Asia)	NC	10K	1.0 K	10K	10K
U7007 (for Japan)	NC	10K	NC	10K	10K



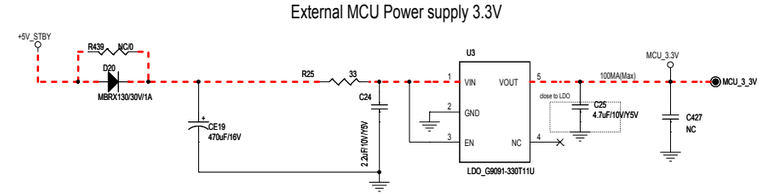
GND POWER + POWER - STBY POWER

SCHEMATIC DIAGRAMS (4/20)

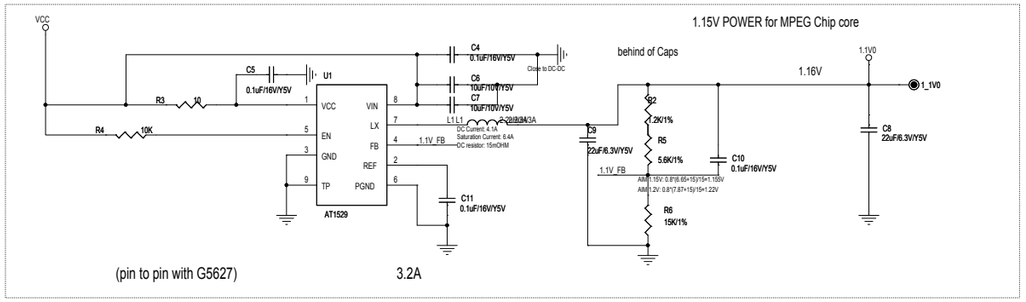
IR

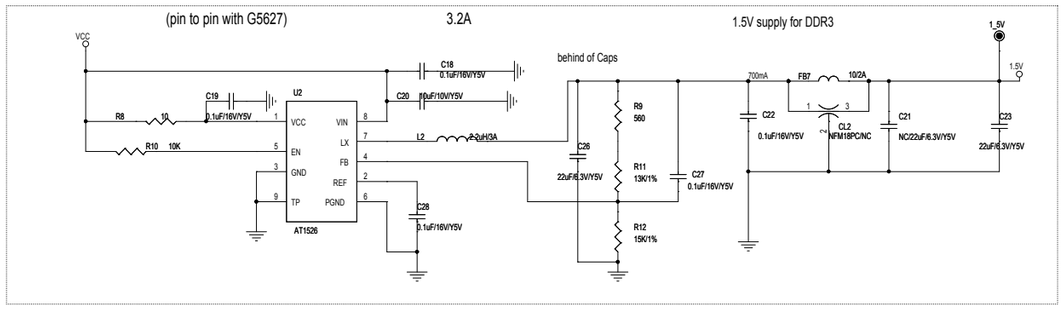


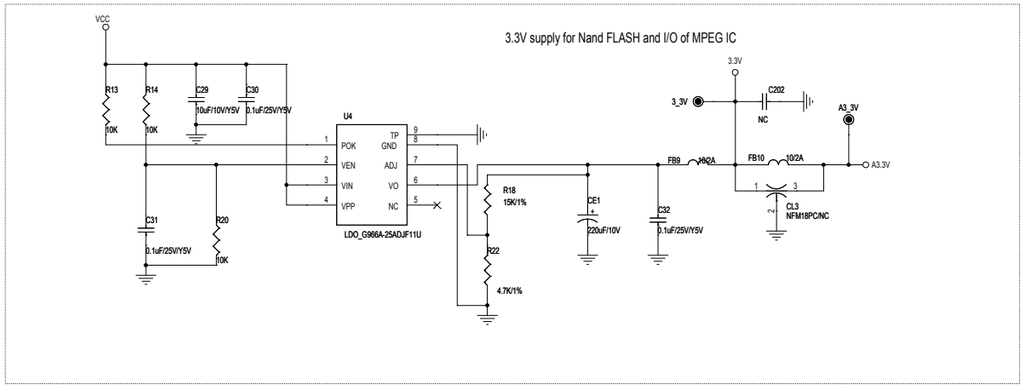
External MCU Power supply 3.3V

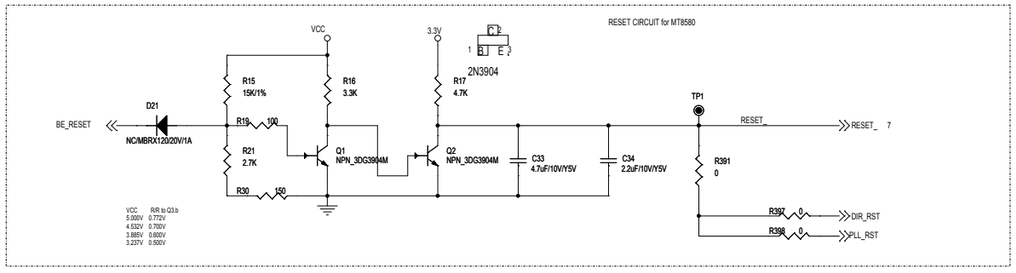


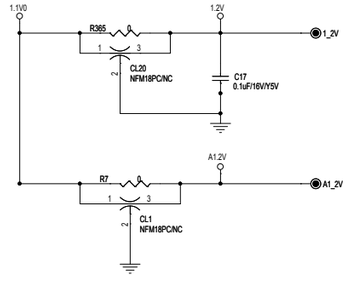
Prevent +5V_STBY from falling down





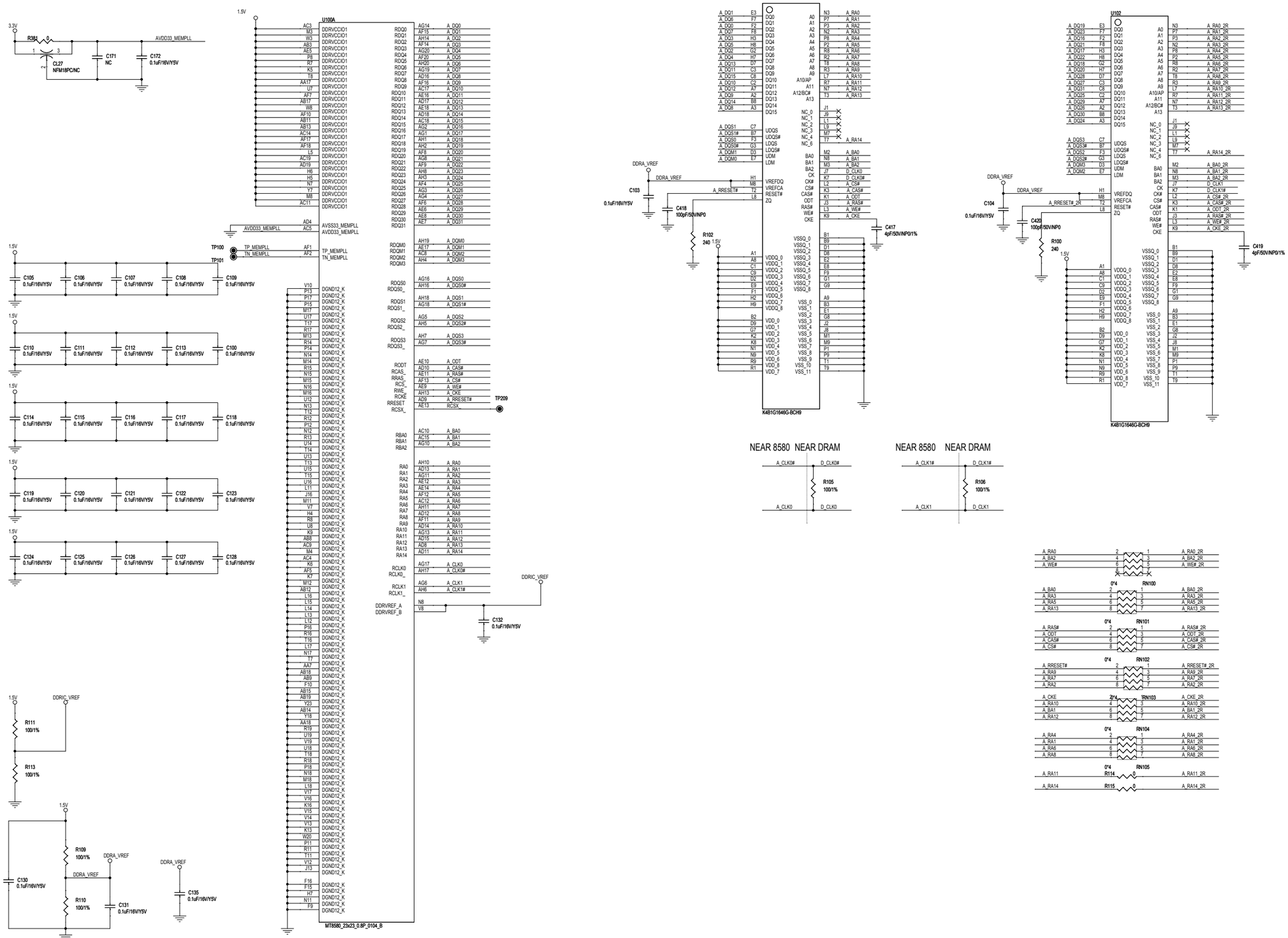






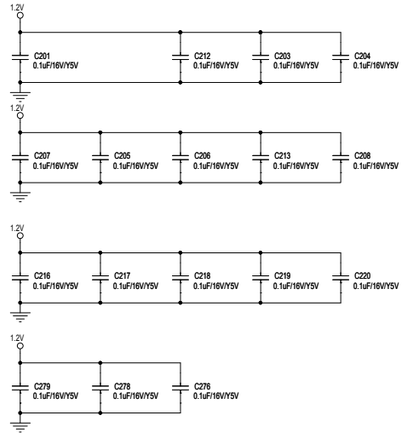
GND POWER + POWER - STBY POWER

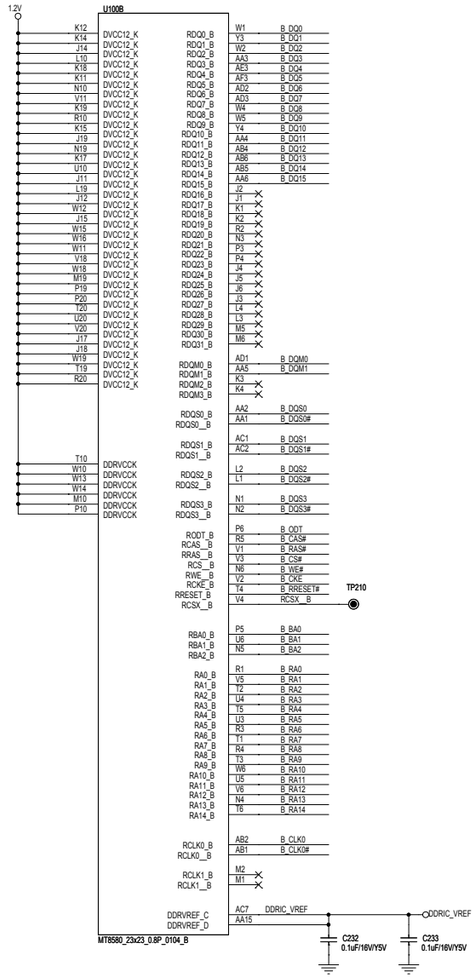
SCHEMATIC DIAGRAMS (5/20)
MAIN_01

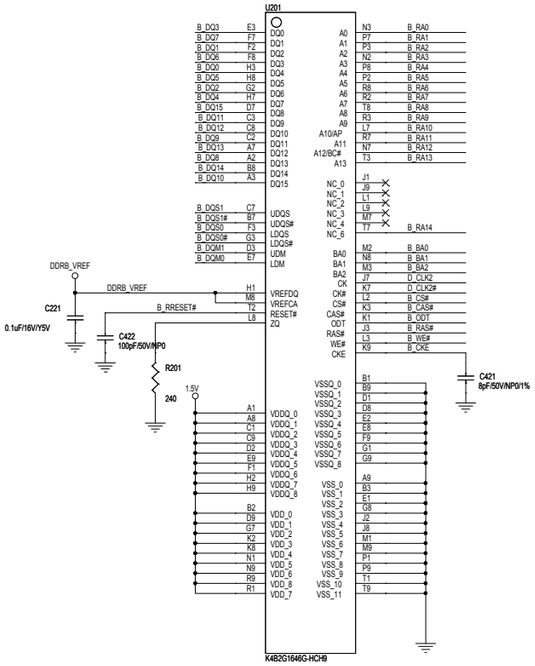


SCHEMATIC DIAGRAMS (6/20)

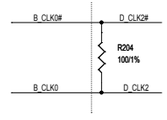
MAIN_02

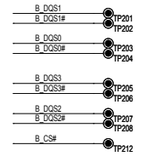


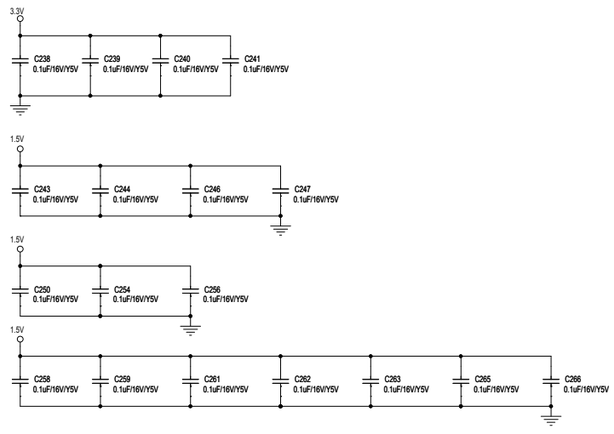


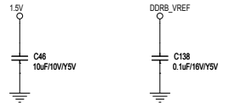


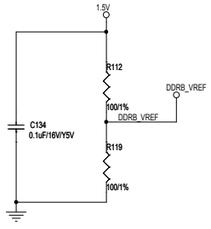
NEAR 85580 NEAR DRAM





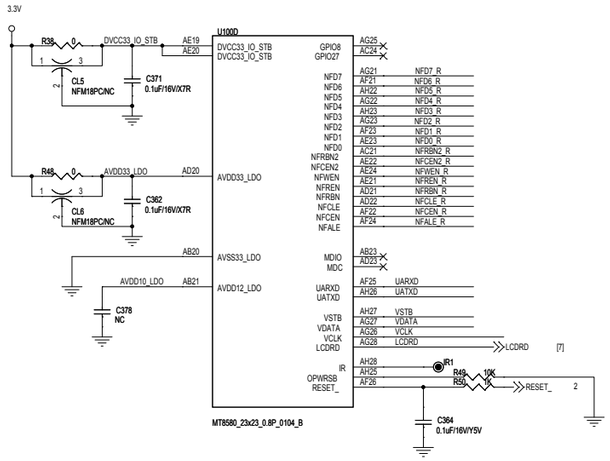


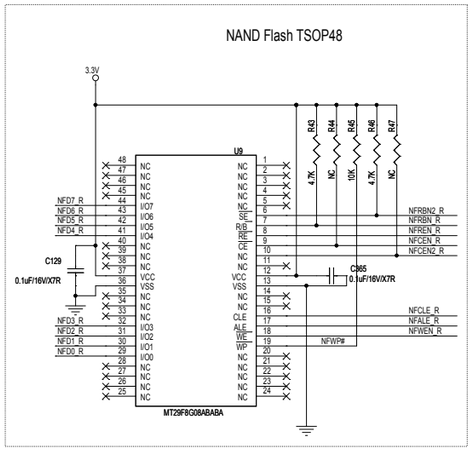


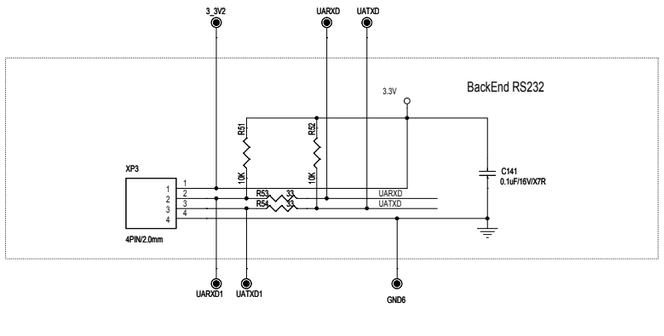


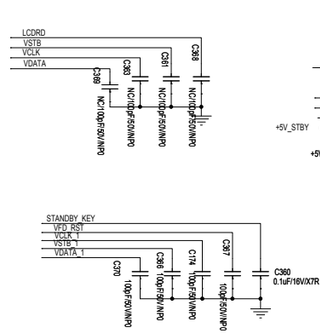
GND POWER + POWER - STBY POWER

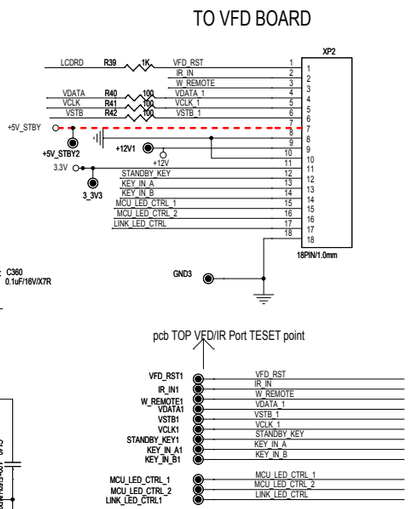
SCHEMATIC DIAGRAMS (7/20)
MAIN_03

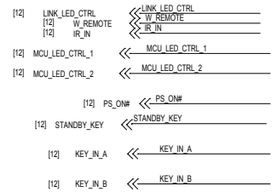






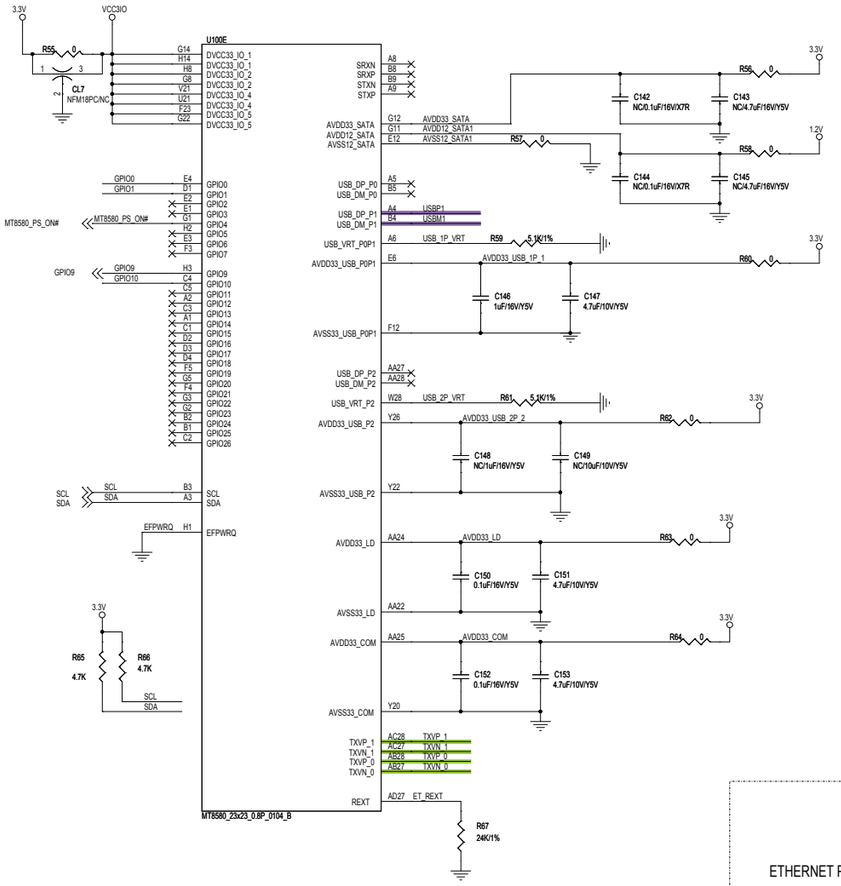






GND POWER + POWER - STBY POWER

SCHEMATIC DIAGRAMS (8/20)
MAIN_04



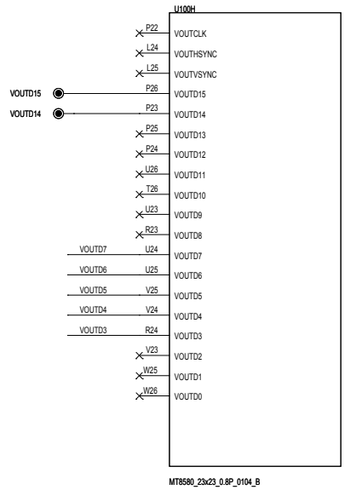
GND POWER + POWER - STBY POWER

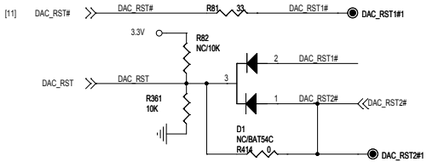
USB SIGNAL LINE

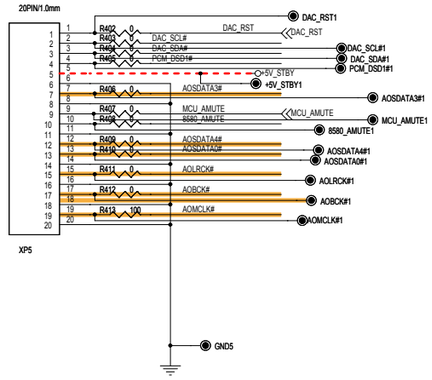
Ethernet SIGNAL LINE

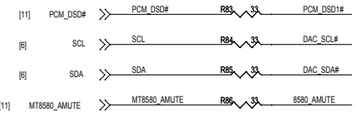
SCHEMATIC DIAGRAMS (9/20)

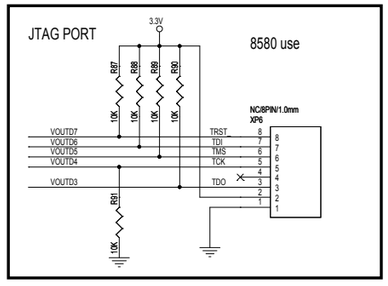
MAIN_05

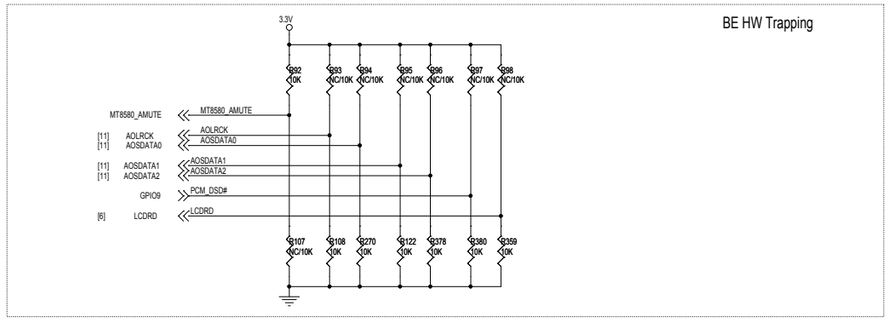


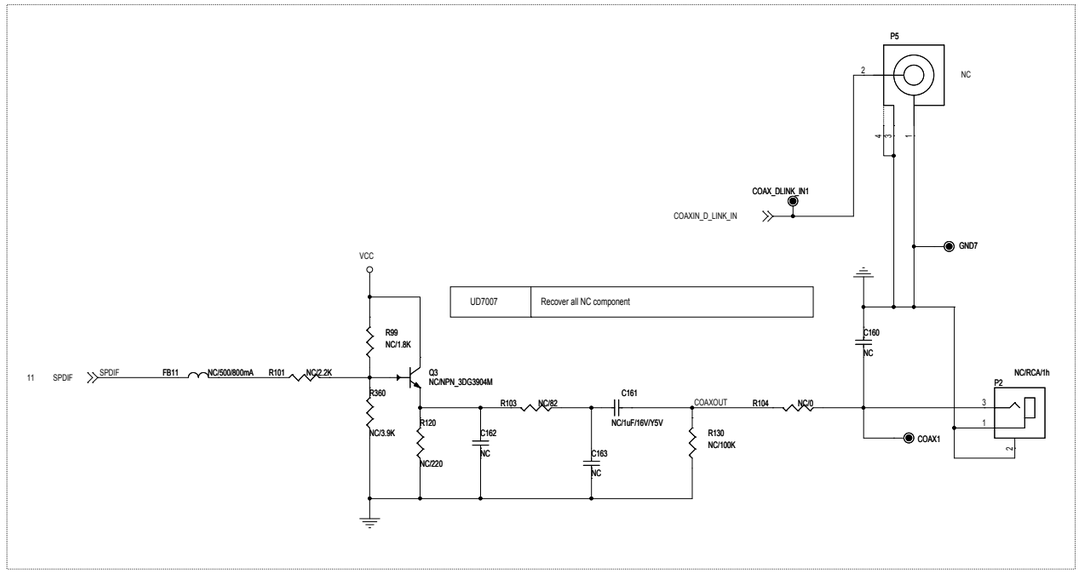








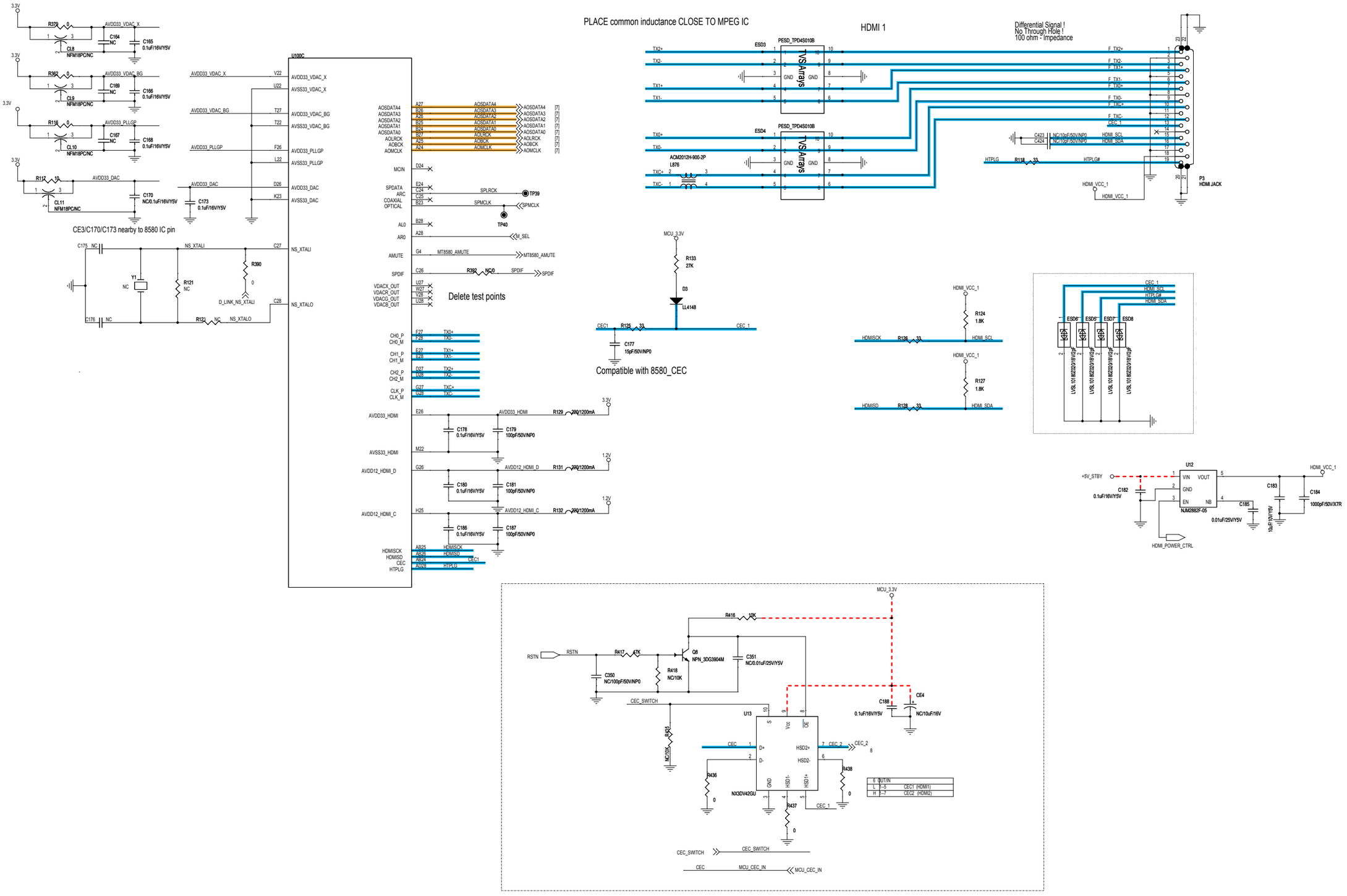




GND POWER + POWER - STBY POWER

Audio SIGNAL LINE

SCHEMATIC DIAGRAMS (10/20)
MAIN_06

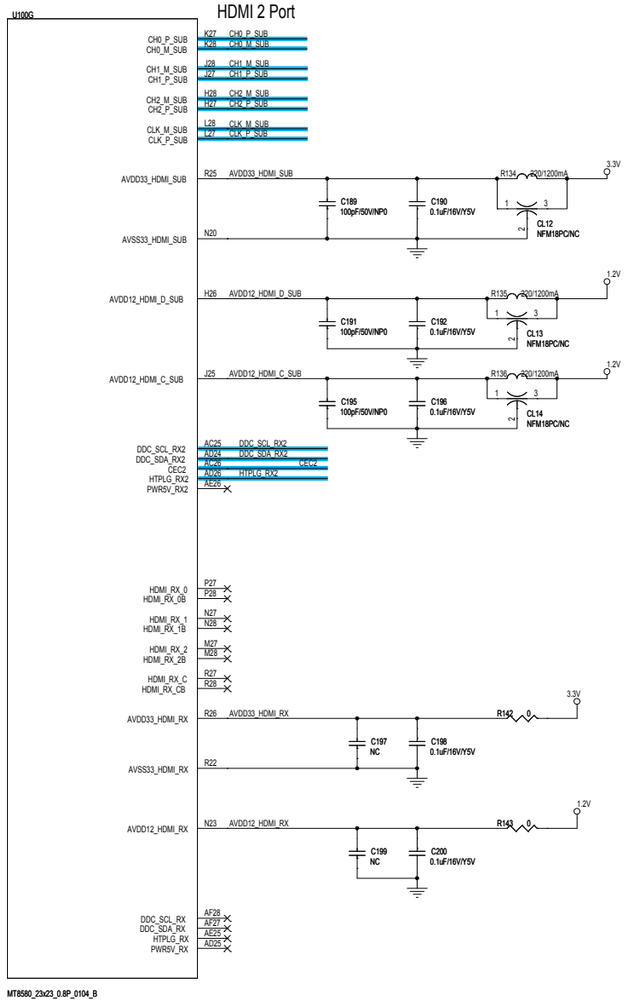


GND POWER + POWER - STBY POWER

HDMI SIGNAL LINE
Audio SIGNAL LINE

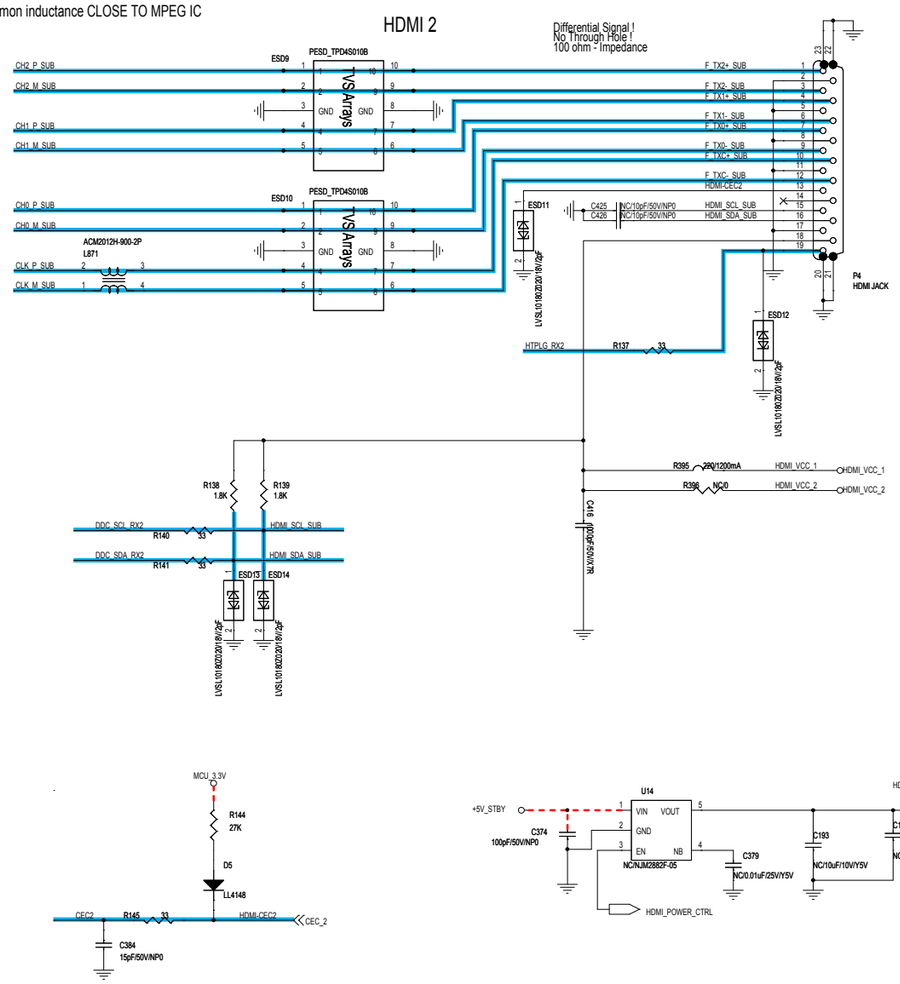
SCHEMATIC DIAGRAMS (11/20)
MAIN_07

HDMI 2 Port



PLACE common inductance CLOSE TO MPEG IC

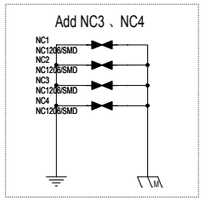
HDMI 2

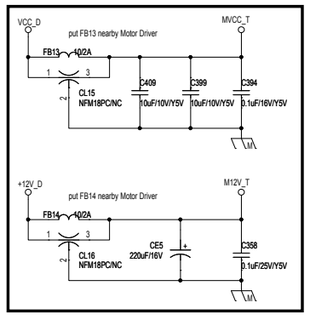


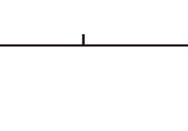
GND POWER + POWER - STBY POWER

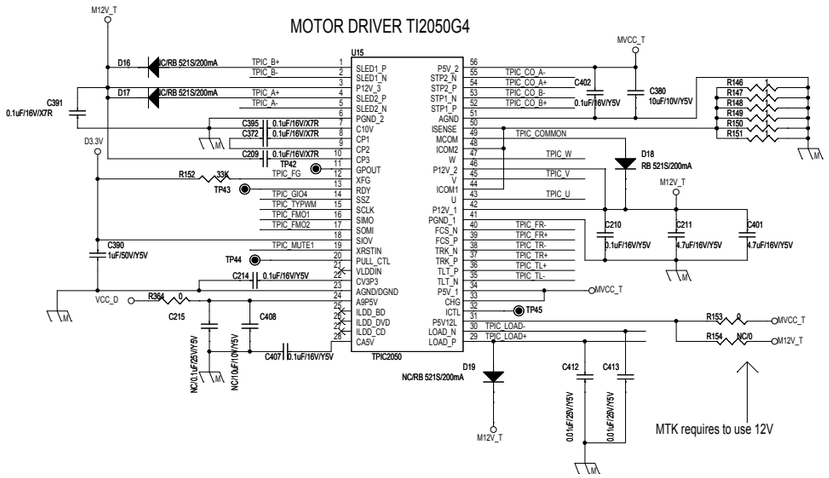
HDMI SIGNAL LINE

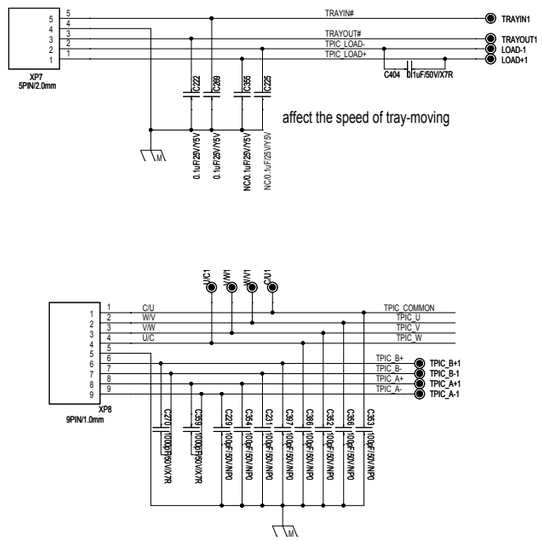
SCHEMATIC DIAGRAMS (12/20)
MAIN_08





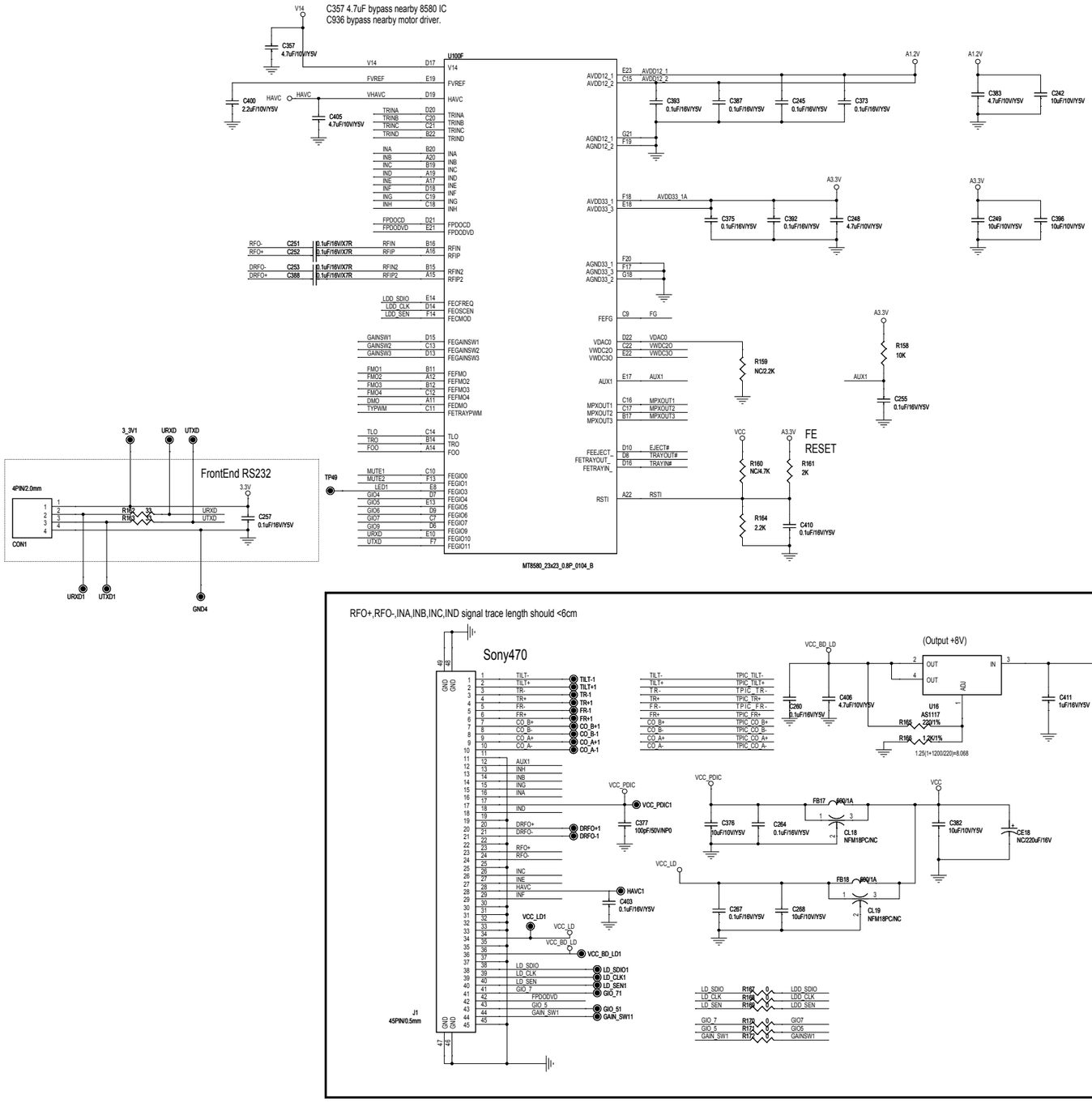






GND POWER + POWER - STBY POWER

SCHEMATIC DIAGRAMS (13/20)
MAIN_09



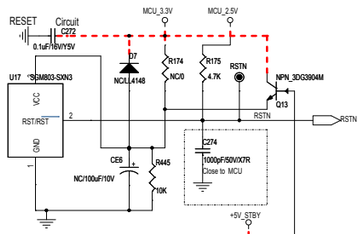
FE HW trapping list:

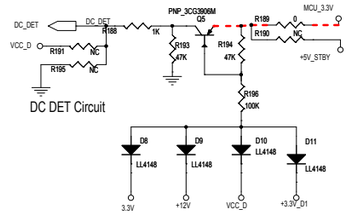
Signal name	Ball	HW trapping	Note
FEGIO7	C7	1: Test Mode 0: Normal Mode(default)	1). Not allowed to pull up in circuit layout; 2). IC internal pull down, No need connect external pull down resistor.
MPXOUT2	C17		
MPXOUT1	C16		
FEGIO6	D19		
FEGIO1	F13		
FEGIO0	C10		

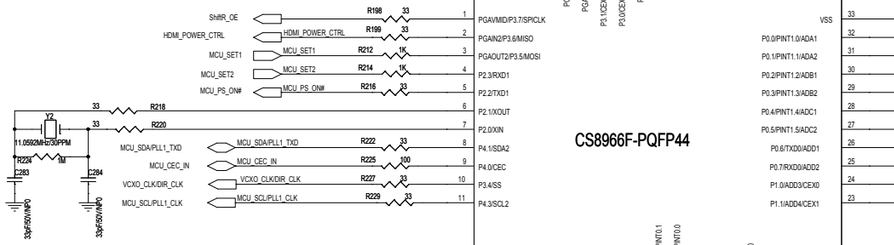
1. TRINA ~ TRIND,
2. MPXOUT1 ~ MPXOUT3
3. RFO+, RFO-
4. TLO, FOO, TRO, FMO1, FMO2, FMO3, FMO4, DMO
5. LED1, LED2
6. FG
7. FOC1+, FOC2+, TR+, CO_A+, CO_B+
(test point place on the TOP Layer)

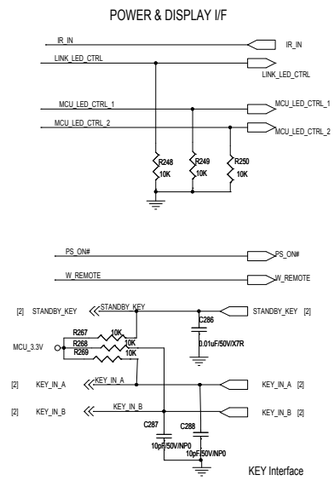
GND POWER + POWER - STBY POWER

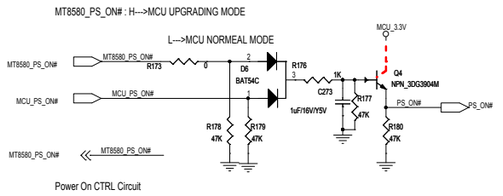
SCHEMATIC DIAGRAMS (14/20)
MAIN_10

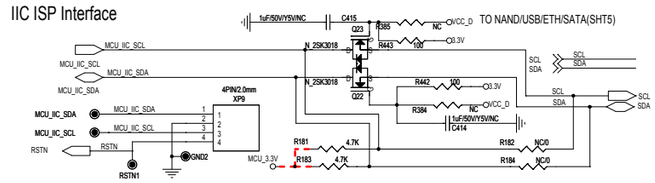


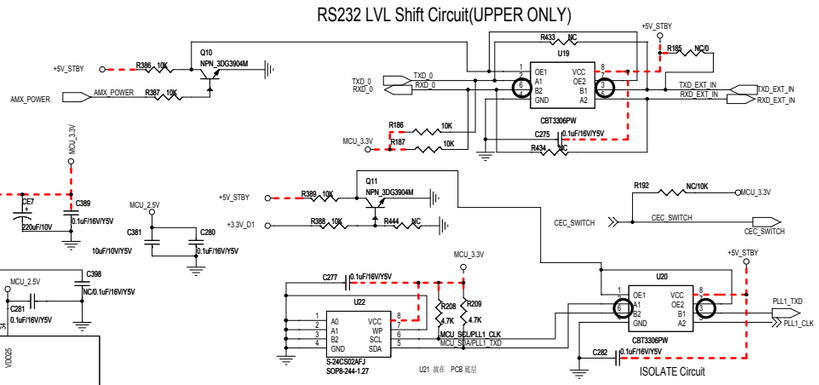


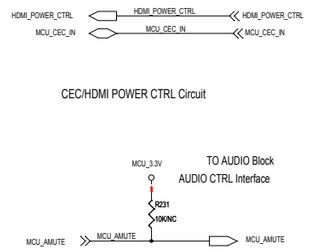


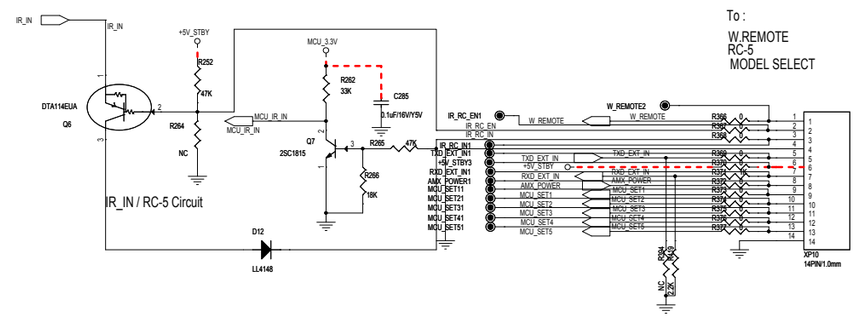


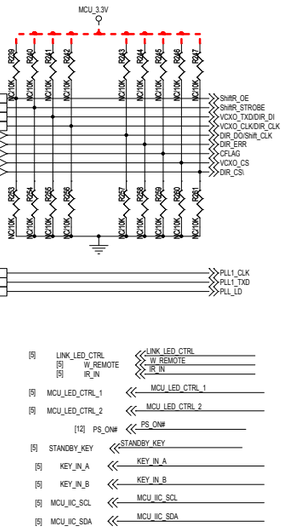










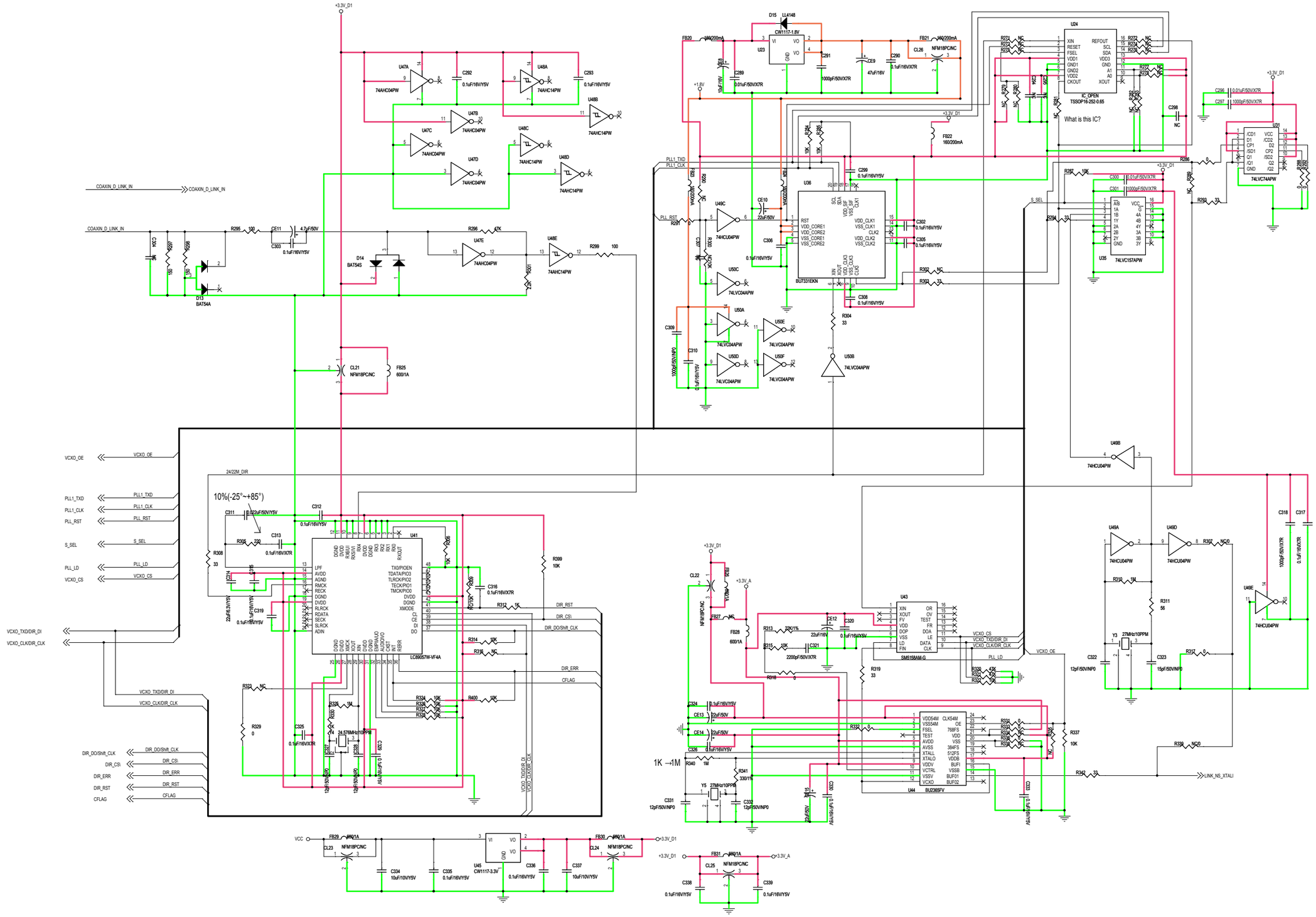


MCU CS8966F GPIO LIST

NAME	PIN	FEATURES AND NET	OFF
P3.7	1	ShiftR_OE	
P3.6	2	HDMI_POWER_CTRL	
P3.5	3	MCU_SET1	
P2.3	4	MCU_SET2	
P2.2	5	MCU_PS_ON#	
P4.1	8	MCU_SDA/PLL1_TXD	
P4.0/CEC	9	MCU_CEC_IN	
P3.4	10	VCXO_CLK/DIR_CLK	
P4.3	11	MCU_SCL/PLL1_CLK	
P4.2	16	MCU_SET3	
P1.7	17	MCU_AMUTE	
P1.6	18	MCU_LED_CTRL_1 GREEN	
P1.5	19	MCU_LED_CTRL_2 RED	
P1.4	20	MCU_SET5	
P1.3	21	MCU_IIC_SCL	
P1.2	22	MCU_IIC_SDA	
P1.1	23	DC_DET	
P1.0	24	VCXO_TXD/DIR_DI	
P0.7	25	MCU_RXD	
P0.6	26	MCU_TXD	
P0.5/ADC2	27	KEY_IN_B	
P0.4	28	MCU_IR_IN	
P0.3/ADB2	29	KEY_IN_A	
P0.2	30	MCU_SET4	
P0.1	31	CFLAG	
P0.0	32	STANDBY_KEY	
P2.4	37	ShiftR_STROBE	
P2.5	38	DIR_DO	
P2.6	39	AMX_POWER	
P2.7	40	CEC_SWITCH	
P3.0	41	DIR_ERR	
P3.1	42	FL/LINK_LED_CTRL	
P3.2	43	DIR_CS\	
P3.3	44	VCXO_CS	

GND POWER + POWER - STBY POWER

SCHEMATIC DIAGRAMS (15/20)
MAIN_11



GND — POWER + — POWER - — STBY POWER — 3.3V — 1.8V

SCHEMATIC DIAGRAMS (16/20)

MAIN_12

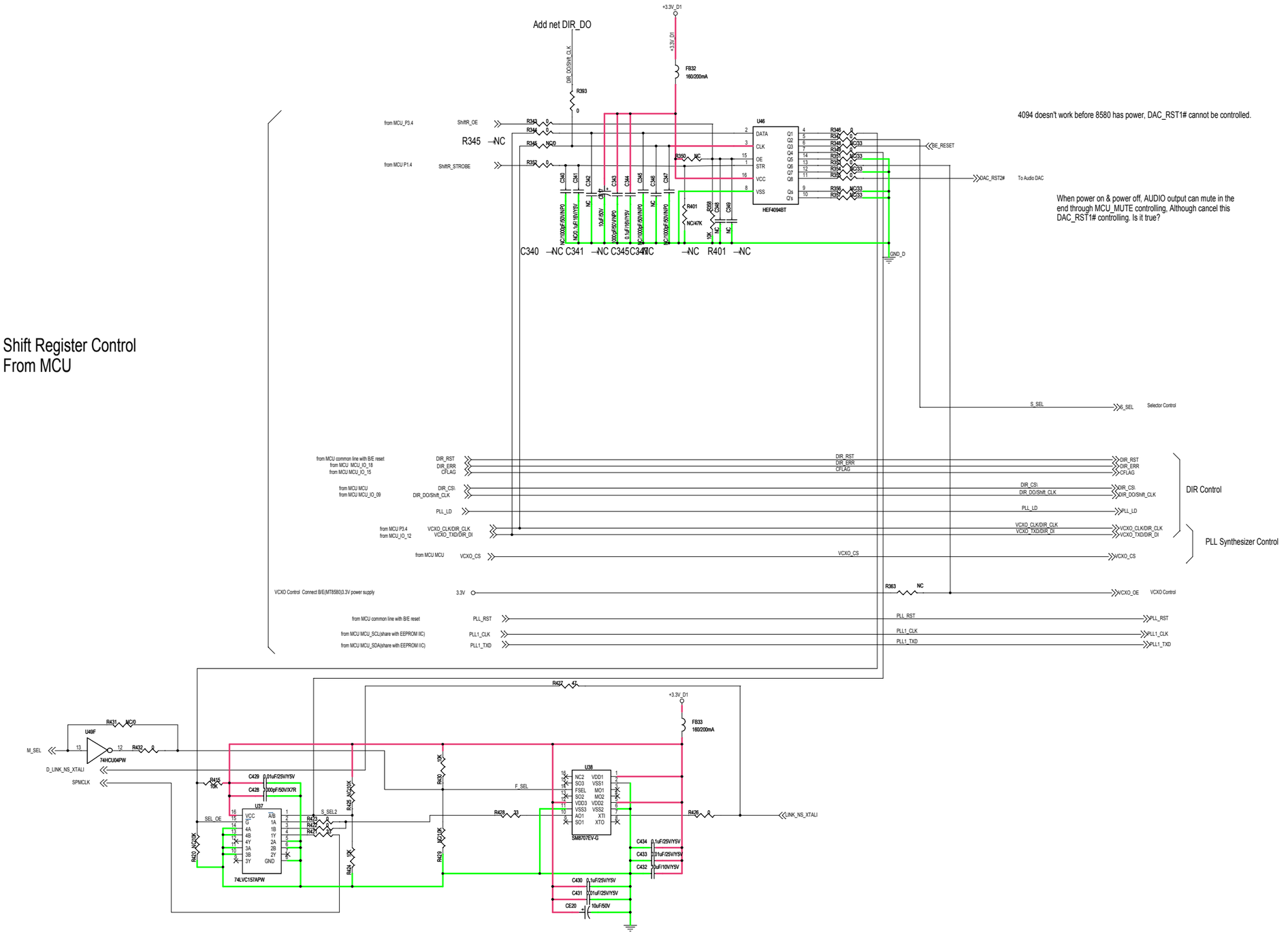
If use MCU_3.3V, it will increase the power dissipation at STANDBY mode.

Add net DIR_DO

4094 doesn't work before 8580 has power, DAC_RST1# cannot be controlled.

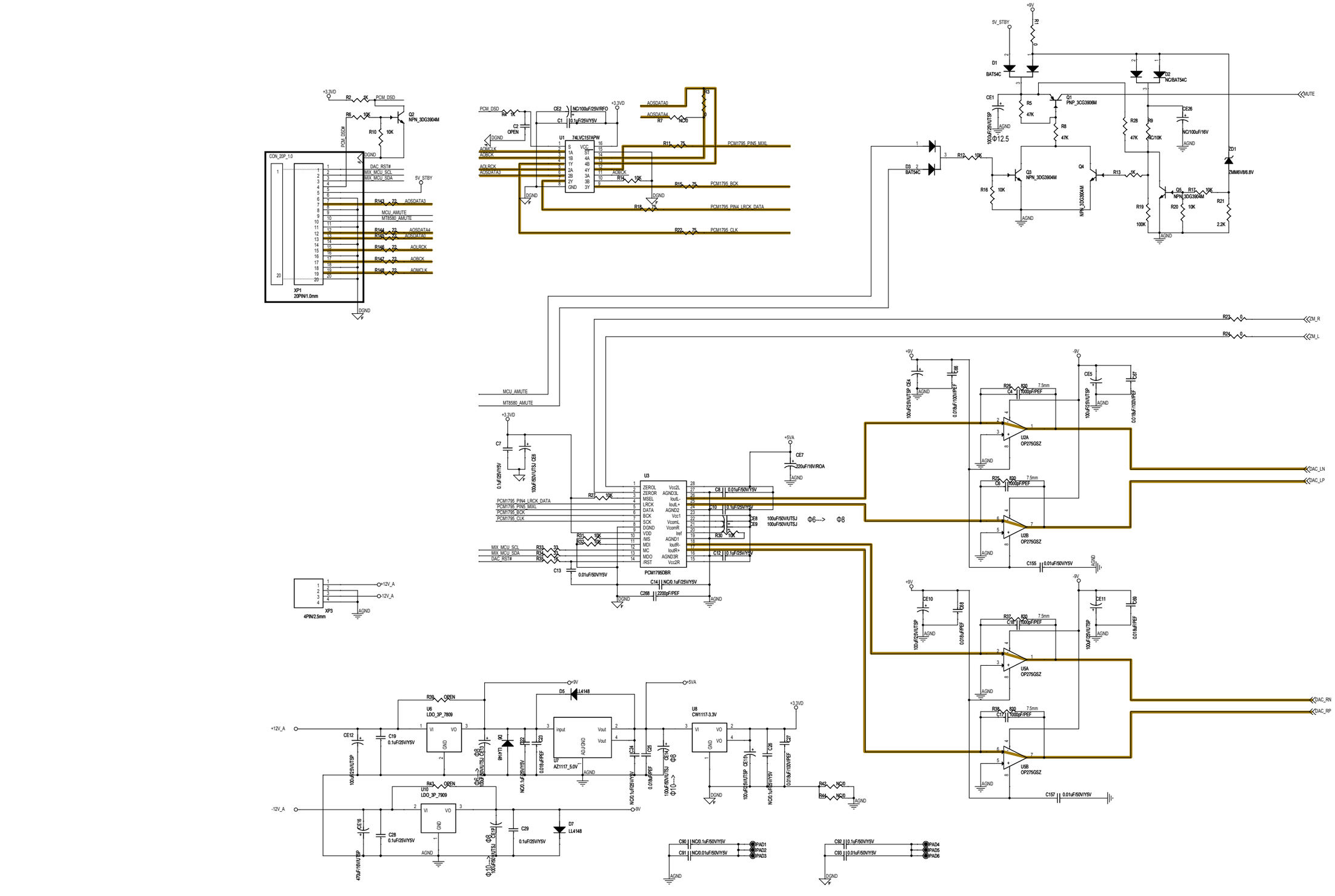
When power on & power off, AUDIO output can mute in the end through MCU_MUTE controlling, Although cancel this DAC_RST1# controlling. Is it true?

Shift Register Control
From MCU



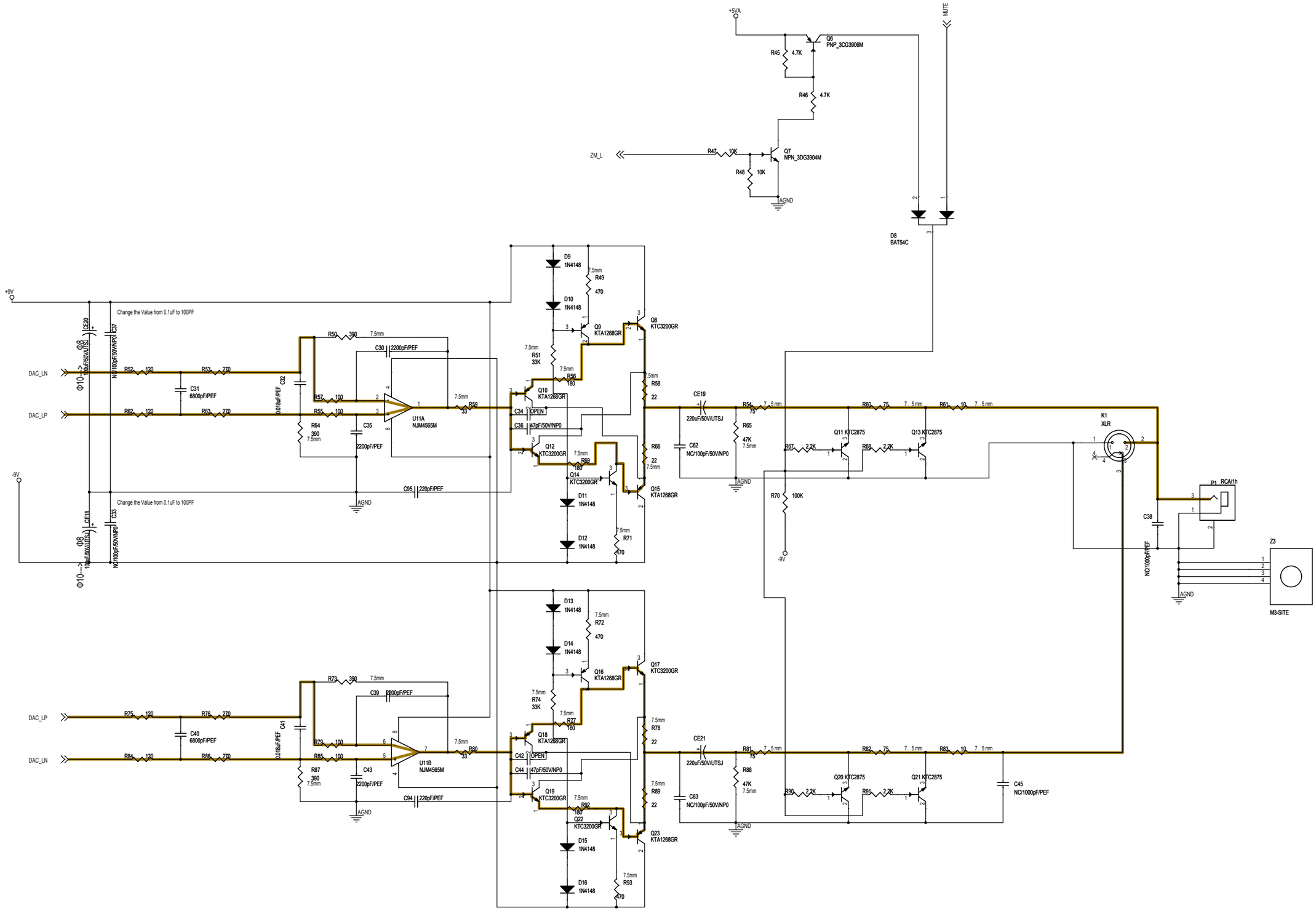
GND POWER + POWER - STBY POWER 3.3V

SCHEMATIC DIAGRAMS (17/20)
MAIN_13



SCHEMATIC DIAGRAMS (18/20)

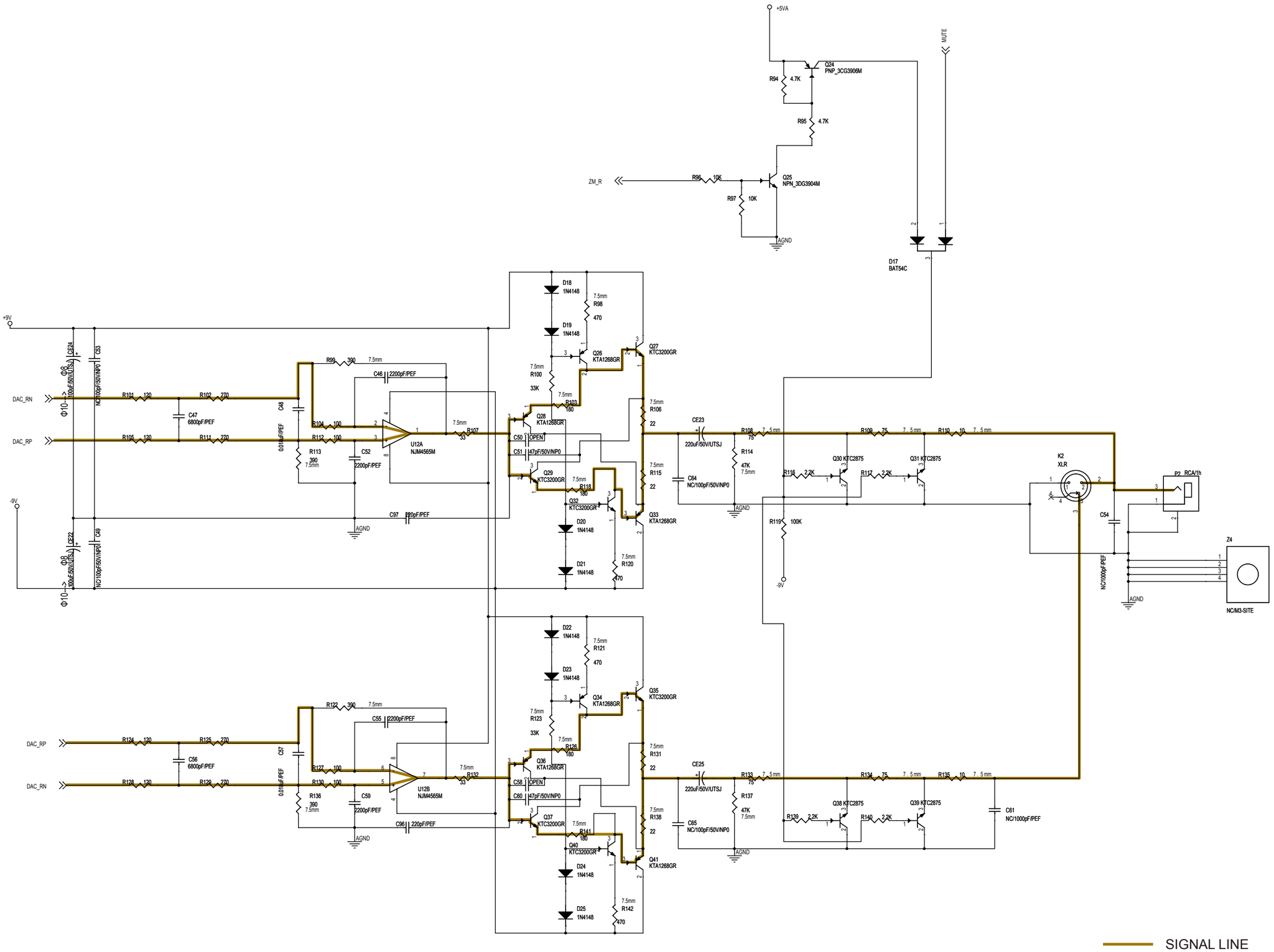
AUDIO_1



SIGNAL LINE

SCHEMATIC DIAGRAMS (19/20)

AUDIO_2

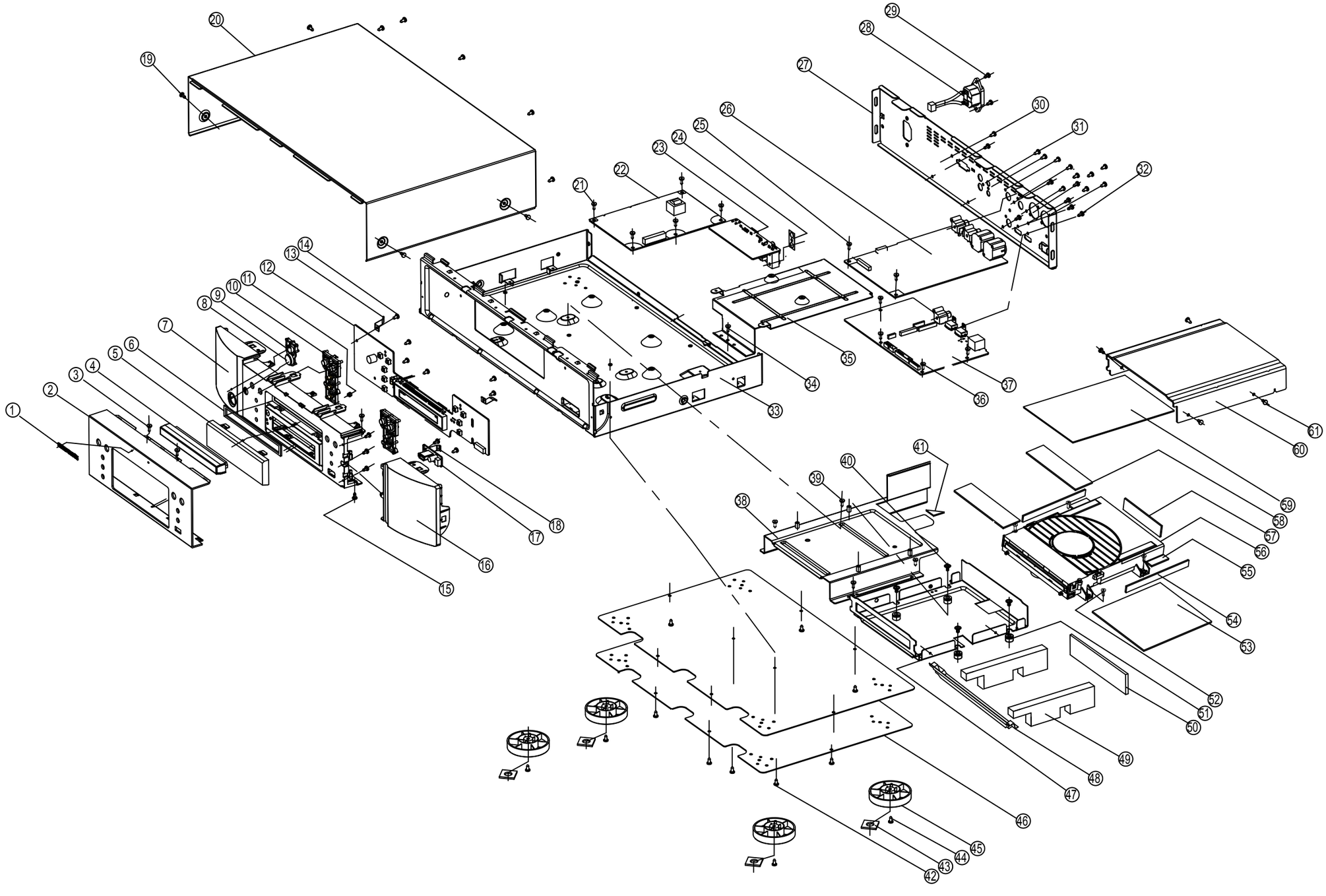


SIGNAL LINE

SCHEMATIC DIAGRAMS (20/20)

AUDIO_3

EXPLODED VIEW



WARNING:
Parts marked with this symbol ⚠ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

Personal notes:

Personal notes:

PARTS LIST OF EXPLODED VIEW ⚠2

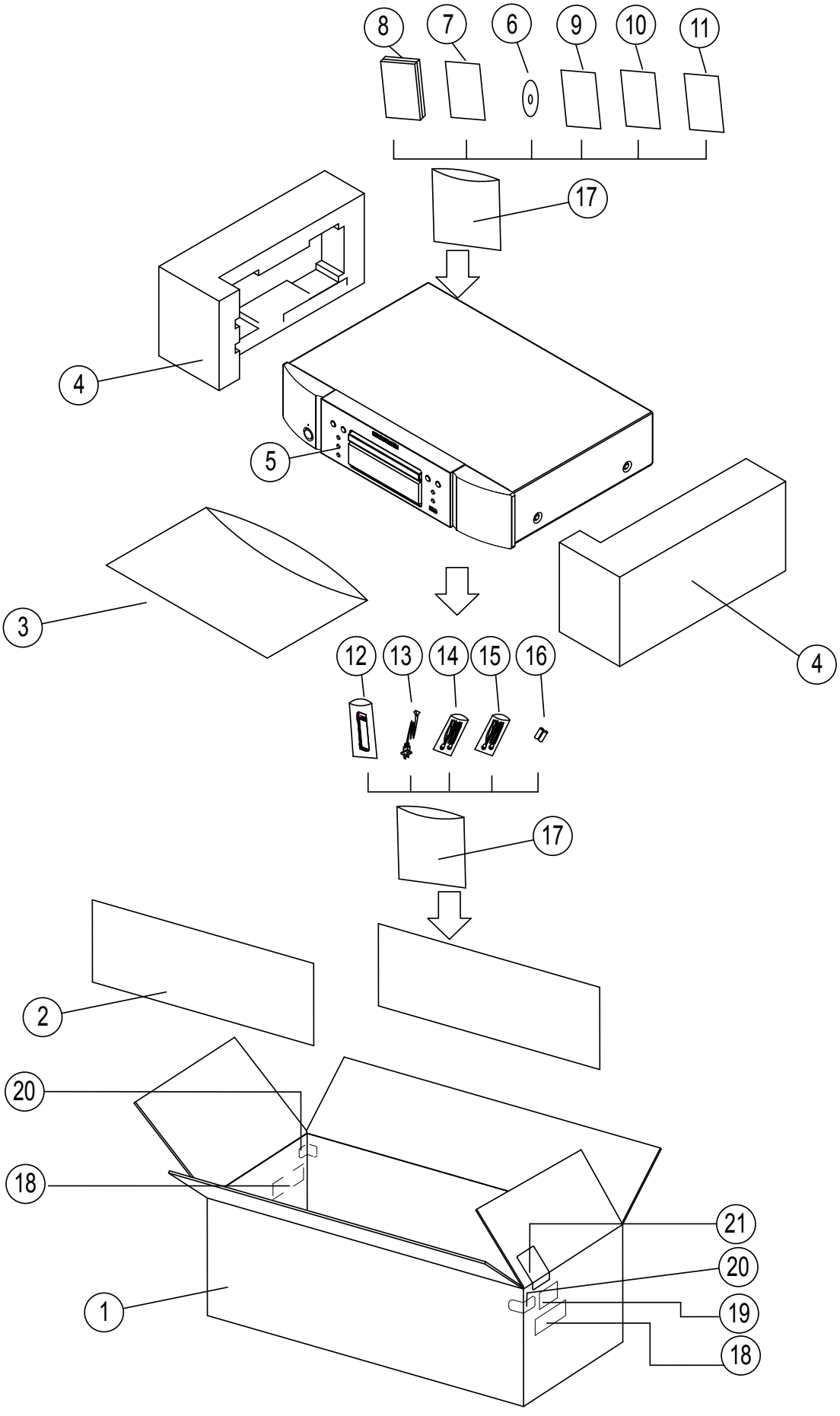
∗Parts indicated by "nsp" on this table cannot be supplied.
∗PCB ASS'Y indicated by "nsp" on this table cannot be supplied. When repairing the PCB ASS'Y, check the board parts list and order replacement parts.
∗Parts indicated by the " ★ " mark are not illustrated in the exploded view.
∗The parts listed below are only for maintenance, might differ from the parts used in the unit in appearances or dimensions.

NOTE: The symbols in the column "Remarks" indicate the following destinations.
U : U.S.A. & Canada model N : Europe model
S : Asia model K : China model F : Japan model
BK : Black model SG : Special Gold model

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New	
	1a	919402102270M	Front Panel ASSY 7007 BK	BK	08-UD70F1-000	1	*	
		919402102280M	Front Panel ASSY 7007 SG	SG	08-UD70F1-001	1	*	
	1	-	BADGE MARANTZ		67-UD50C1-0A0	1		
	2	-	FRONT AL PANEL UD7007		67-UD70F1-0A3	1		
	5	-	WINDOW		56-UD50L3-0HM	1		
	6	-	BUFFER		54-118500-000	1		
	7	-	FRONT MOLD PANEL		55-UD70F1-0HA	1		
	8	-	POWER KNOB		56-UD50K1-0HA	1		
	9	-	LENS POWER		56-UD50L1-OHA	1		
	10	-	CONTROL KEY		56-UD50K3-0HA	1		
	11	-	LENS FL OFF		56-UD50L2-OHA	1		
	15	-	SCREW		63-B26060-BF4	5		
	16	-	FRONT MOLD PANEL R		55-UD70F2-0HA	1		
	4	919418100370M	LOADER PANEL	BK	55-UD50D1-0HAB1	1	*	⚠3
	4	919418100380M	LOADER PANEL	SG	55-UD50D1-0HAB3	1	*	⚠3
	12	919639100840M	ASSY-FRONT CONTROL BOARD		08-UD7007-FB0	1	*	
	13	-	SPRING GROUND		67-UD50Q1-0B0	2		
	17	-	USB PCB		08-UD7007-USB	1		
	18	-	SPRING GROUND		67-UD50Q2-0B0	1		
	20	919403100850D	TOP COVER	BK	67-DB17T1-0E0B1	1	*	⚠5
	20	919403100860D	TOP COVER	SG	67-DB17T1-0E0B3	1	*	⚠6
⚠	22	-	POWER PCB		08-N025BH-PW2	1		
	23	-	IR PCB		08-UD7007-IR0	1		
	★	919643101770S	RS232C JACK (3313/7007)		47-VGA008-XX0	1		
	24	-	PC SHEET		58-119290-0HH	1		
	26	-	AV PCB		08-UD7007-AV0	1		
	★	919643101790M	AUDIO JACK (7007)		47-RCA306-XX3	1		
	★	919643101800M	BALANCED JACK (7007)		47-RCA306-XX3	1		
	27	-	REAR PANEL		67-DB17B1-3E0	1		
	28	-	POWER INLET		08-DT1713-AC	1		
	33	-	MAIN CHASSIS		67-DB17R1-1E0	1		
	35	-	BRACKET AV PCB		67-DB33Z4-1E0	1		
	★	919639100470M	Main PCB (7007) ALL		08-DT3313-GLBS1	1	*	
	★	919643101750S	HDMI JACK (3313/7007)		47-HDI014-XX0	1		
	37		Main PCB		08-B5802U-MA2	1		
	38	-	MECHA BRACKET		67-DB33Z1-1E0	1		
	41	-	DOUBLE SIDE TAPE		54-123780-000	1		
	43	-	RUBBER FOOT		54-117490-000	4		
	45	-	FOOT		56-UD50E1-0HA	4		
	46	-	BOTTOM PLATE		67-DB33F1-0E0	2		
	47	-	BOTTOM COVER MECHA		67-DB33Z2-0E0	1		
	48	-	COVER BOTTOM COVER MECHA		58-122220-0HH	1		
	49	-	SPONGE		54-121520-000	2		
	50	-	BUFFER		54-121540-000	1		
	51	-	DAMPER MECHA BOTTOM COVER		59-976590-001	4		

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	53	-	BUFFER		59-117440-000	1	
	54	-	BUFFER		59-117420-000	2	
	55	-	BUFFER		59-117470-000	2	
	★	919304100250M	Main PCB & BD MECHA(7007) ALL		08-DT3313-GLBS0	1	*
	★	919304100260S	BD MECHA(3313/7007)		08-LAD2S7-262338	1	*
	56		Mecha Assy ASA		08-LAD2S7-262338	1	
	57	-	BUFFER		59-117450-000	1	
	58	-	BUFFER		59-117430-000	2	
	59	-	SPONGE		54-121530-000	1	
	60	-	TOP COVER AL MECHA		67-DB33Z3-0E0	1	
	62	-	BUFFER		54-125700-000	1	
SCREWS							
	3	nsp	SCREW		63-B30060-3H4	4	
	14	nsp	SCREW		63-B26060-BF4	8	
	19	nsp	SCREW		63-B30060-3H3	5	
	21	nsp	SCREW		63-B30060-3H4	5	
	25	nsp	SCREW		63-B30060-3H4	2	
	29	nsp	SCREW		63-B30080-BF3	2	
	30	nsp	SCREW		64-B30060-3H3	6	
	31	nsp	SCREW		63-B30080-BF3	9	
	32	nsp	SCREW		64-B30060-303	2	
	34	nsp	SCREW		63-B30060-3H4	4	
	36	nsp	SCREW		63-B30060-3H4	4	
	39	nsp	SCREW		63-B30060-3H4	4	
	40	nsp	SCREW		64-W30060-304	4	
	42	nsp	SCREW		63-B30060-3H4	4	
	44	nsp	SCREW		63-B30080-BF3	4	
	52	nsp	SCREW		63-B30070-3H4	4	
	61	nsp	SCREW		63-B30060-3H4	31	

PACKING VIEW



PARTS LIST OF PACKING VIEW

∗Parts indicated by "nsp" on this table cannot be supplied.
∗Parts indicated by the " ★ " mark are not illustrated in the packing view.
∗The parts listed below are only for maintenance, might differ from the parts used in the unit in appearances or dimensions.

NOTE: The symbols in the column "Remarks" indicate the following destinations
U : U.S.A. & Canada model N : Europe model
S : Asia model K : China model F : Japan model
BK : Black model SG : Special Gold model

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	1	53121024400AM	CARTON CASE (7007/U)	U	76-117510-0ATD7	1	*
	1	53121024401AM	CARTON CASE (7007/N)	N	76-117510-0ATD8	1	*
	1	53121024402AM	CARTON CASE (7007/S)	S	76-117510-0ATD9	1	*
	1	53121024403AM	CARTON CASE (7007F)	F	76-117510-0ATE1	1	*
	2	919451101110S	SPACER (3313)		76-119300-1AP	2	
	3	nsp	BAG for SET		74-062050-50HB1	1	*
	4	919471100610M	CUSHION		74-118550-000	2	*
	6	35201014900AM	INST.MANUAL(CD-ROM. N)		99-7007BK-120B1	1	*
	6	35201015000AM	INST.MANUAL(CD-ROM. U)		99-7007BK-370B1	1	*
	6	35201015100AM	INST.MANUAL(CD-ROM. S)		99-7007BK-980B1	1	*
	6	35201015200AM	INST.MANUAL(CD-ROM. F)		99-7007BK-JP0B1	1	*
	7	54111093000AD	SAFETY INSTRAUCTIONS (N)	N	-	1	
	7	54111095000AD	SAFETY INSTRAUCTIONS (U)	U	-	1	
	7	54111095200AS	SAFETY INSTRAUCTIONS (S)	S	-	1	
	7	54111095200AS	SAFETY INSTRAUCTIONS (F)	F	-	1	
	8	54111086100AM	QUICK MANUAL(N)		72-7007BK-120B1	1	*
	8	54111086200AM	QUICK MANUAL(U)		72-7007BK-370B1	1	*
	8	54111086300AM	QUICK MANUAL(S)		72-7007BK-980B1	1	*
	8	54111086400AM	QUICK MANUAL(F)		72-7007BK-JP0B1	1	*
	9	nap	WARRANTY USA	U	-	1	
	10	nsp	WARRANTY CANADA	U	-	1	
	11	54311017600AM	RECYCLING SHEET MZ	U	-	1	
	12	30701009700AS	RC006UD / RC-UNIT		06-203800-150	1	
⚠	13	919611500530S	AC CORD (3313/7007) N1/S2	N, S	51-D70150-0CU09-M	1	*
⚠	13	919611500540S	AC CORD (3313/7007) U	U	51-BC0200-0LU01-M	1	*
⚠	13	919611500560S	AC CORD (3313/7007) JP	F	51-RC0200-0RU09-M	1	*
	14	919613100180S	HDMI CABLE(AU)		919613100180S	1	*
	15	919613100190M	RC5 CABLE		46-HDI015-19G07	1	
	16	nsp	BATTERY		-	1	
	17	nsp	BAG for ACCESSORY		-	2	*
	18	nsp	CONTROLL CARD		-	1	
	19	nsp	ONE-BLUE LABEL		-	1	
	20	544110091014M	COLOR LABEL□(SG)	SG	71-FORDEN-SGKB1	2	
	21	nsp	GUARANTEE CARD	JP	70-FORMAR-JAPB1	1	

SEMICONDUCTORS

Only major semiconductors are shown, general semiconductors etc. are omitted to list.
The semiconductor which described a detailed drawing in a schematic diagram are omitted to list.

1. IC's

PCM1795DBR (AUDIO PCB U3)

PIN CONFIGURATION

DB PACKAGE
SSOP-28
(TOP VIEW)

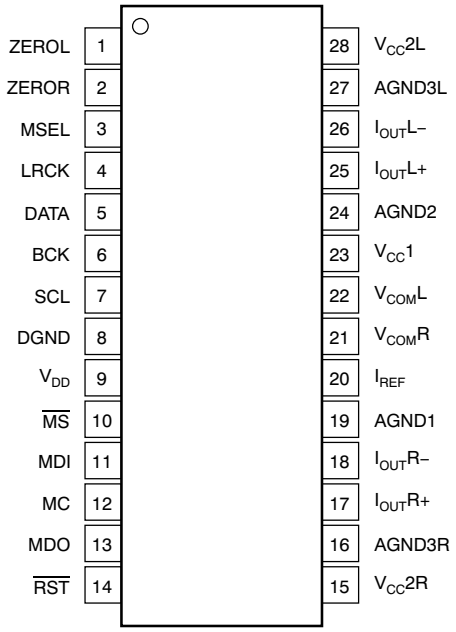


Table 1. TERMINAL FUNCTIONS

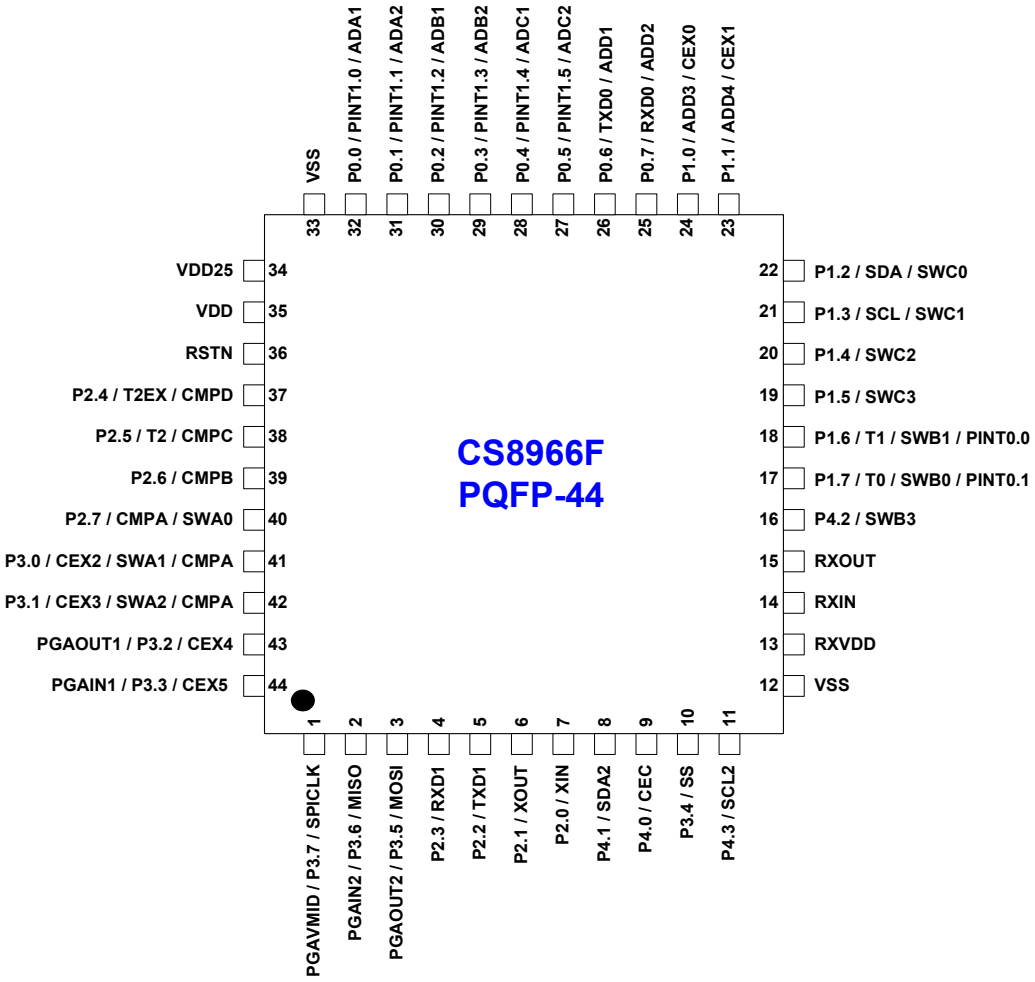
TERMINAL		I/O	DESCRIPTION
NAME	NO.		
AGND1	19	—	Analog ground (internal bias)
AGND2	24	—	Analog ground (internal bias)
AGND3L	27	—	Analog ground (left channel DACFF)
AGND3R	16	—	Analog ground (right channel DACFF)
BCK	6	I	Bit clock input(1)
DATA	5	I	Serial audio data input(2)
DGND	8	—	Digital ground
$I_{OUT}L+$	25	O	Left channel analog current output+
$I_{OUT}L-$	26	O	Left channel analog current output–
$I_{OUT}R+$	17	O	Right channel analog current output+
$I_{OUT}R-$	18	O	Right channel analog current output–
I_{REF}	20	—	Output current reference bias pin
LRCK	4	I	Left and right clock (f_S) input(2)
MC	12	I	Mode control clock input(2)
MDI	11	I	Mode control data input(2)
MDO	13	I/O	Mode control readback data output(3)
$\overline{MS}$	10	I/OI	Mode control chip-select input(4); active low
MSEL	3	I	$I^2C/\overline{SPI}$ select(2); active low SPI select
$\overline{RST}$	14	I	Reset(2); active low

(1) Schmitt-trigger input, 5-V tolerant.
(2) Schmitt-trigger input, 5-V tolerant.
(3) Schmitt-trigger input and output. 5-V tolerant input. In I^2C mode, this pin becomes an open-drain 3-state output; otherwise, this pin is a CMOS output.
(4) Schmitt-trigger input and output. 5-V tolerant input and CMOS output.

Table 1. TERMINAL FUNCTIONS (continued)

TERMINAL		I/O	DESCRIPTION
NAME	NO.		
SCK	7	I	System clock input(2)
$V_{CC}1$	23	—	Analog power supply, 5 V
$V_{CC}2L$	28	—	Analog power supply (left channel DACFF), 5 V
$V_{CC}2R$	15	—	Analog power supply (right channel DACFF), 5 V
$V_{COM}L$	22	—	Left channel internal bias decoupling pin
$V_{COM}R$	21	—	Right channel internal bias decoupling pin
V_{DD}	9	—	Digital power supply, 3.3 V
ZEROL	1	I/O	Zero flag for left channel(4)
ZEROR	2	I/O	Zero flag for right channel(4)

CS8966 (MAIN PCB U21)



PIN DESCRIPTION

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
P3.7	I/O, A	1	**Port 3.7 GPIO** 8051 P3.7 GPIO. **SPICLK** It behaves as the Master clock output (Master Mode), or Slave clock input (Slave Mode) of the on-chip SPI interface. **PGAVMID** PGA VMID output.
P3.6	I/O, A	2	**Port 3.6 GPIO** 8051 P3.6 GPIO. **MISO** It behaves Master data Input of the on-chip SPI interface (Master Mode), or Slave data Output of the SPI interface (Slave Mode). **PGAIN2** PGA IN2.
P3.5	I/O, A	3	**Port 3.5 GPIO** 8051 P3.5 GPIO. **MOSI** It behaves Master data Output of the on-chip SPI interface (Master Mode), or Slave data Input of the SPI interface (Slave Mode). **PGAOUT2** PGA OUT2.
P2.3	I/O	4	**Port 2.3 GPIO** 8051 P2.3 GPIO. **RXD1** This pin also can be configured as RXD of UART 1.
P2.2	I/O	5	**Port 2.2 GPIO** 8051 P2.2 GPIO. **TXD1** This pin also can be configured as TXD of UART 1.
P2.1	I/O, A	6	**Port 2.1 GPIO** 8051 P2.1 GPIO. To allow proper operation as GPIO P2.1 function, crystal oscillator must be disabled by setting XOSCCFG register to 0x00. **XOUT Crystal Oscillator Output** This pin also can be configured as XOUT for crystal oscillator. XOUT is in parallel connection with the GPIO pin. To enable this pin as XOUT, the IOCFGP2.1 must be cleared to 0x00.
P2.0	I/O, A	7	**Port 2.0 GPIO** 8051 P2.0 GPIO. To allow proper operation as GPIO P2.0 function, crystal oscillator must be disabled by setting XOSCCFG register to 0x00. **XIN Crystal Oscillator Input** This pin also can be configured as XIN for crystal oscillator. XIN is in parallel connection with the GPIO pin. To enable this pin as XIN, the IOCFGP2.0 must be cleared to 0x00.

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
P4.1	I/O, A	8	**Port 4.1 GPIO**
			8051 P4.1 GPIO.
			SDA2
			This pin also can be configured as the SDA signal of the 2nd I2C slave controller. In this operation mode, this pin should also be configured as bi-directional I/O with open-drain output.
P4.0	I/O	9	**8051 P4.0 GPIO**
			8051 P4.0 GPIO.
			CEC
			CEC Controller input/output pin.
			The falling edge can wake up this device from STOP mode.
P4.7	I/O	-	**Port 4.7 GPIO**
			8051 P4.7 GPIO.
P3.4	I/O	10	**Port 3.4 GPIO**
			8051 P3.4 GPIO.
			SS
			This pin also can be configured as selecting pin which can set the on-chip SPI interface work under Master mode or Slave mode. To set the SPI interface of this device work under Slave mode, the user can connect this pin to VSS, or to a CEB output from other SPI master. To set the SPI interface of this device work under Master mode, just tie this pin to VDD.
P4.3	I/O	11	**Port 4.3 GPIO**
			8051 P4.3 GPIO.
			SCL2
			This pin also can be configured as the SCL signal of the 2nd I2C slave controller. This pin should be configured as input only.
VSS	Power	12	**Ground Voltage. 0V**
RXVDD	Power	13	**VDD for RTC** Supply voltage range: 1.0~2.75V.
RXIN	I, A	14	**RXIN**
			Crystal IN for RTC oscillator.
RXOUT	O, A	15	**RXOUT**
			Crystal OUT for RTC oscillator.
P4.2	I/O, A	16	**Port 4.2 GPIO**
			8051 P4.2 GPIO.
			SWB3
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP4.2.
P4.4	I/O, A	-	**Port 4.4 GPIO**
			8051 P4.4 GPIO.
			SWB2
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP4.4.

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
P1.7	I/O, A	17	**Port 1.7 GPIO**
			8051 P1.7 GPIO.
			PINT0.1
			This pin also can be configured as the expanded INT0 interrupt.
			T0 Timer 0 Input
			This pin also can be configured as Timer 0 input.
			SWB0
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP1.7.
P1.6	I/O, A	18	**Port 1.6 GPIO**
			8051 P1.6 GPIO.
			PINT0.0
			This pin also can be configured as the expanded INT0 interrupt.
			T1 Timer 1 Input
			This pin also can be configured as Timer 1 input.
			SWB1
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP1.6.
P1.5	I/O, A	19	**Port 1.5 GPIO**
			8051 P1.5 GPIO.
			SWC3
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP1.5.
P1.4	I/O, A	20	**Port 1.4 GPIO**
			8051 P1.4 GPIO.
			SWC2
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP1.4.
P1.3	I/O, A	21	**Port 1.3 GPIO**
			8051 P1.3 GPIO.
			SCL
			This pin also can be configured as the SCL signal of the I2C master or I2C slave controller. In I2C master mode, this pin should be configured as open-drain output. In I2C slave, this pin should be configured as input only.
			SWC1
			This pin also serves as one of the connection for analog switch B. The control of the analog switch is done by setting of ANEN of IOCFGP1.3.
P1.2	I/O, A	22	**Port 1.2 GPIO**
			8051 P1.2 GPIO.
			SDA
			This pin also can be configured as the SDA signal of the I2C master or I2C slave controller. In this operation mode, this pin should also be configured as bi-directional I/O with open-drain output.
			SWC0
			This pin also serves as one of the connection for analog switch C. The control of the analog switch is done by setting of ANEN of IOCFGP1.2.

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
P4.5	I/O, A	-	**Port 4.5 GPIO**
			8051 P4.5 GPIO.
			SWC5
			This pin also serves as one of the connection for analog switch C. The control of the analog switch is done by setting of ANEN of IOCFGP4.5.
P1.1	I/O, A	23	**Port 1.1 GPIO**
			8051 P1.1 GPIO.
			CEX1 PCA CCAP Module 1
			This pin also can be configured as CEX pin for PCA CCP module 1. CEX is an I/O interface signal for compare/capture input and PWM output.
			ADD4
			This pin also can be configured as the input to the ADC channel D by setting ANEN of IOCFGP1.1 to 1. Only one of ADD1, ADD2, ADD3 and ADD4 can be enabled at any one time.
P1.0	I/O, A	24	**Port 1.0 GPIO**
			8051 P1.0 GPIO.
			CEX0 PCA CCAP Module 0
			This pin also can be configured as CEX pin for PCA CCP module 0. CEX is an I/O interface signal for compare/capture input and PWM output.
			ADD3
			This pin also can be configured as the input to the ADC channel D by setting ANEN of IOCFGP1.0 to 1. Only one of ADD1, ADD2, ADD3 and ADD4 can be enabled at any one time.
P0.7	I/O, A	25	**Port 0.7 GPIO**
			8051 P0.7 GPIO.
			RXD0
			This pin also can be configured as RXD of UART 0.
			ADD2
			This pin also can be configured as the input to the ADC channel D by setting ANEN of IOCFGP0.7 to 1. Only one of ADD1, ADD2, ADD3 and ADD4 can be enabled at any one time.
P0.6	I/O, A	26	**Port 0.6 GPIO**
			8051 P0.6 GPIO.
			TXD0
			This pin also can be configured as TXD of UART 0.
			ADD1
			This pin also can be configured as the input to the ADC channel D by setting ANEN of IOCFGP0.6 to 1. Only one of ADD1, ADD2, ADD3 and ADD4 can be enabled at any one time.
P0.5	I/O, A	27	**Port 0.5 GPIO**
			8051 P0.5 GPIO.
			PINT1.5
			This pin also can be configured as the expanded INT1 interrupt.
			ADC2
			This pin also can be configured as the input to the ADC channel C by setting ANEN of IOCFGP0.5 to 1. Only one of ADC1 and ADC2 can be enabled at any one time.

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
P0.4	I/O, A	28	**Port 0.4 GPIO**
			8051 P0.4 GPIO.
			PINT1.4
			This pin also can be configured as the expanded INT1 interrupt.
			ADC1
			This pin also can be configured as the input to the ADC channel C by setting ANEN of IOCFGP0.4 to 1. Only one of ADC1 and ADC2 can be enabled at any one time.
P0.3	I/O, A	29	**Port 0.3 GPIO**
			8051 P0.3 GPIO.
			PINT1.3
			This pin also can be configured as the expanded INT1 interrupt.
			ADB2
			This pin also can be configured as the input to the ADC channel B by setting ANEN of IOCFGP0.3 to 1. Only one of ADB1 and ADB2 can be enabled at any one time.
P0.2	I/O, A	30	**Port 0.2 GPIO**
			8051 P0.2 GPIO.
			PINT1.2
			This pin also can be configured as the expanded INT1 interrupt.
			ADB1
			This pin also can be configured as the input to the ADC channel B by setting ANEN of IOCFGP0.2 to 1. Only one of ADB1 and ADB2 can be enabled at any one time.
P0.1	I/O, A	31	**Port 0.1 GPIO**
			8051 P0.1 GPIO.
			PINT1.1
			This pin also can be configured as the expanded INT1 interrupt.
			ADA2
			This pin also can be configured as the input to the ADC channel A by setting ANEN of IOCFGP0.1 to 1. Only one of ADA1 and ADA2 can be enabled at any one time.
P0.0	I/O, A	32	**Port 0.0 GPIO**
			8051 P0.0 GPIO.
			PINT1.0
			This pin also can be configured as the expanded INT1 interrupt.
			ADA1
			This pin also can be configured as the input to the ADC channel A by setting ANEN of IOCFGP0.0 to 1. Only one of ADA1 and ADA2 can be enabled at any one time.
VSS	Power	33	VSS
VDD25	Power	34	**Internal Regulator Output. 2.25V ~ 2.75V**
			Typical decoupling capacitors of 0.1uF and 10uF should be connected between VDD25 and VSS.
VDD	Power	35	**Supply Voltage. 3.0V ~ 5.5V**
			A good decoupling capacitor between VDD and VSS pins is critical for good performance.

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
RSTN	I	36	**Reset Low Active.**
			Typically connect a resistor to VDD25 and a capacitor to VSS.
			Low asserted and threshold at 0.5*VDD25. When forced low, the chip enters into reset condition.
			This pin should not be connected to any level above VDD25.
P4.6	I/O	-	**Port 4.6 GPIO**
			8051 P4.6 GPIO.
			Analog Comparator D Input
			This pin also can be configured as the positive input of the analog comparator D.
P2.4	I/O, A	37	**Port 2.4 GPIO**
			8051 P2.4 GPIO.
			T2EX Timer 2 Trigger
			This pin also can be configured as T2EX signal for Timer 2. T2EX is the Timer 2 trigger input.
			Analog Comparator D Input
			This pin also can be configured as the positive input of the analog comparator D.
P2.5	I/O, A	38	**Port 2.5 GPIO**
			8051 P2.5 GPIO.
			T2 Timer 2 Input
			This pin also can be configured as Timer 2 input.
			Analog Comparator C Input
			This pin also can be configured as the positive input of the analog comparator C.
P2.6	I/O, A	39	**Port 2.6 GPIO**
			8051 P2.6 GPIO.
			Analog Comparator B Input
			This pin also can be configured as the positive input of the analog comparator B.
P2.7	I/O, A	40	**Port 2.7 GPIO**
			8051 P2.7 GPIO.
			Analog Comparator A Input
			This pin also can be configured as the positive input of the analog comparator A.
			SWA0
			This pin also serves as one of the connection for analog switch A. The control of the analog switch is done by setting of ANEN of IOCFGP2.7.
P3.0	I/O, A	41	**Port 3.0 GPIO**
			8051 P3.0 GPIO.
			CEX2 PCA CCAP Module 2
			This pin also can be configured as CEX pin for PCA CCP module 2. CEX is an I/O interface signal for compare/capture input and PWM output.
			SWA1
			This pin also serves as one of the connection for analog switch A. The control of the analog switch is done by setting of ANEN of IOCFGP3.0.
			Analog Comparator A Input
			This pin also can be configured as the positive input of the analog comparator A.

PIN NAME	TYPE	PIN No.	PIN FUNCTION DESCRIPTION
P3.1	I/O, A	42	**Port 3.1 GPIO**
			8051 P3.1 GPIO.
			CEX3 PCA CCAP Module 3
			This pin also can be configured as CEX pin for PCA CCP module 3. CEX is an I/O interface signal for compare/capture input and PWM output.
			SWA2
			This pin also serves as one of the connection for analog switch A. The control of the analog switch is done by setting of ANEN of IOCFGP3.1.
			Analog Comparator A Input
			This pin also can be configured as the positive input of the analog comparator A.
P3.2	I/O, A	43	**Port 3.2 GPIO**
			8051 P3.2 GPIO
			CEX4 PCA CCAP Module 4
			This pin also can be configured as CEX pin for PCA CCP module 4. CEX is an I/O interface signal for compare/capture input and PWM output.
			PGAOUT1
			PGAOUT1
P3.3	I/O, A	44	**Port 3.3 GPIO**
			8051 P3.3 GPIO
			CEX5 PCA CCAP Module 5
			This pin also can be configured as CEX pin for PCA CCP module 5. CEX is an I/O interface signal for compare/capture input and PWM output.
			PGAIN1
			PGAIN1

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Terminal Assignments

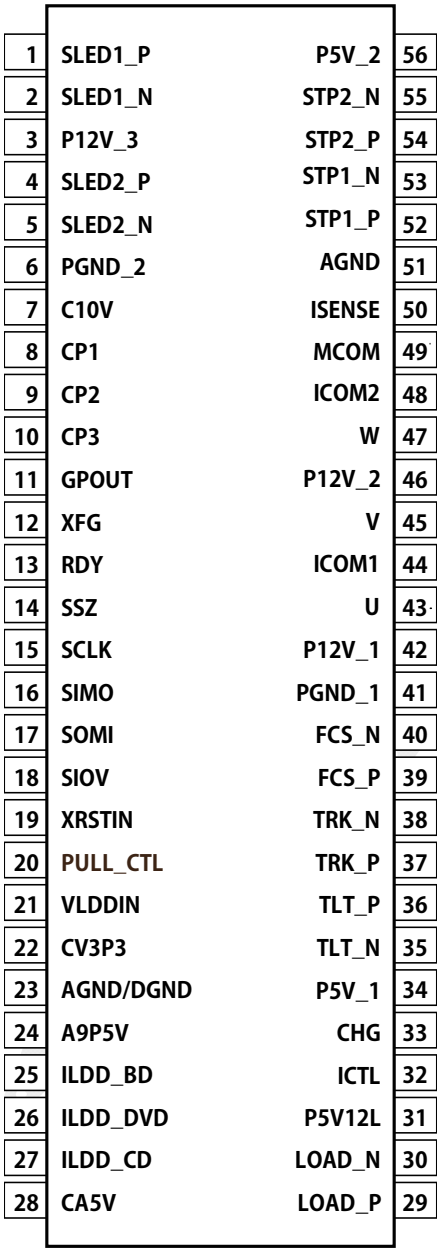

Figure 2 PINOUT

1.3. Signal description

List 1 Signal description

No	Name	I/O	description
1	SLED1_P	OUT	Sled1 positive output terminal
2	SLED1_N	OUT	Sled1 negative output terminal
3	P12V_3	PS	Power supply terminal for 12V drivers output
4	SLED2_P	OUT	Sled2 positive output terminal
5	SLED2_N	OUT	Sled2 negative output terminal
6	PGND_2	PS	GND terminal for 12V drivers
7	C10V	MISC	The capacitance connection terminal for internal regulator.
8	CP1	MISC	Capacitance connection for Charge Pump
9	CP2	MISC	Capacitance connection for Charge Pump
10	CP3	MISC	Capacitance connection for Charge Pump
11	GPOUT	OUT	General Purpose Output (Test monitor)
12	XFG	OUT	Motor speed signal output, internally pulled up to SIOV
13	RDY	OUT	Device ready signal Internally pulled up to SIOV
14	SSZ	IN	SIO Slave Select Low active input terminal
15	SCLK	IN	SIO Serial clock input terminal
16	SIMO	IN	SIO Slave Input Master Output terminal
17	SOMI	OUT	SIO Slave Output Master Input terminal
18	SIOV	PS	Power supply terminal for Serial Port 3.3V typical
19	XRSTIN	IN	RESET input terminal to disable the driver IC
20	PULL_CTL	IN	Object lends pull control input (Pull by Lo) Open or L at non using pull control function.
21	VLDDIN	IN	Laser diode control analog signal input 0 to 3V terminal Required to set register when use VLDDIN input. Open in case of non use analog input.
22	CV3P3	MISC	Capacitance terminal for internal 3.3V core (typ 0.1uF)
23	AGND/DGND	PS	Ground terminal for internal digital and analog
24	A9P5V	PS	Power supply terminal 9.5V Laser diode for BD
25	ILDD_BD	OUT	Laser diode for BD output terminal
26	ILDD_DVD	OUT	Laser diode for DVD output terminal
27	ILDD_CD	OUT	Laser diode for CD output terminal
28	CP5V	MISC	The capacitance connection terminal for control system power supply 0.1uF or lager decoupling capacitor should be connected.
29	LOAD_P	OUT	Load positive output terminal
30	LOAD_N	OUT	Load negative output terminal
31	P5V12L	PS	The power supply terminal (5V or 12V) for Load driver output stages.
32	ICTL	MISC	The capacitance connection terminal for pull control gate driver 0.1uF or lager decoupling capacitor should be connected. Open at non using pull control function.
33	CHG	PS	The capacitance connection terminal for lends pull control 200uF or larger capacitance is recommended Tie P5V at non using pull control function.
34	P5V_1	PS	Power supply terminal for Tilt/Fcs/Trk drivers
35	TLT_N	OUT	Tilt negative output terminal
36	TLT_P	OUT	Tilt positive output terminal
37	TRK_P	OUT	Tracking positive output terminal
38	TRK_N	OUT	Tracking negative output terminal
39	FCS_P	OUT	Focus positive output terminal
40	FCS_N	OUT	Focus negative output terminal
41	PGND_1	PS	GND terminal for Ti/F/T channel drivers
42	P12V_1	PS	Power supply terminal for 12V driver output stage
43	U	OUT	U phase output terminal for spindle motor
44	ICOM1	MISC	Current sense resister terminal for spindle driver
45	V	OUT	V phase output terminal for spindle motor
46	P12V_2	PS	Power supply terminal for 12V driver output stage
47	W	OUT	W phase output terminal for spindle motor
48	ICOM2	MISC	Current sense resister terminal for spindle driver

49	MCOM	IN	Motor center tap connection
50	ISENSE	IN	Current sense input terminal for spindle drivers
51	AGND	PS	Ground terminal for internal analog
52	STP1_P	OUT	STP1 positive output terminal for collimator
53	STP1_N	OUT	STP1 negative output terminal for collimator
54	STP2_P	OUT	STP2 positive output terminal for collimator
55	STP2_N	OUT	STP2 negative output terminal for collimator
56	P5V_2	PS	Power supply terminal for 5V driver output

IN*: input* **OUT***: output* **PS***: power* **MISC***: miscellaneous*

PARTS LIST OF PCB ⚠2

∗Parts indicated by "nsp" on this table cannot be supplied.
∗PCB ASS'Y indicated by "nsp" on this table cannot be supplied. When repairing the PCB ASS'Y, check the board parts list and order replacement parts.
∗The parts listed below are only for maintenance, might differ from the parts used in the unit in appearances or dimensions.

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
DISPLAY							
	IR1	919262100190D	IRM 12MM 2.7V-5.5V		02-IRR022-XX0	1	*
	D2	919263100760D	IR TX module 940nm Infrared LED HIR303CAKP		14-IRE03X-T1X-M	1	*
	U22	919231101400D	IC AS117L/TR		13-AS1117-L0B	1	*
	LED1	919263100770D	RED & GREEN LED		14-LED04A-XXB-M	1	*
	LED5	919263100790D	Red LED φ3mm		14-LED03R-XX0-M	1	*
	K1-6	919662100160D	SWITCH TACT TSAB-1		48-TAC020-XX0	6	*
	K9,10	919662100160D	SWITCH TACT TSAB-1		48-TAC020-XX0	2	*
	U2	919172100170D	Vacuum Fluorescent Display 014BT102G		14-VFD014-BT2-M	1	*
	Q25,26	90M-HX600040R	NPN TRANSISTOR 3CG3906M SOT-23		12-BT3906-0BX	2	
	Q5	00MHX80002000	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	1	
	Q12-14	00MHX80002000	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	3	
	Q17	00MHX80002000	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	1	
	Q19-22	00MHX80002000	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	4	
	Q30	00MHX80002000	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	1	
	Q16	919214500250D	NPN TRANSISTOR S8050C TO-92		11-0S8050-CBX	1	*
	D609	00MHD20011210	DIODE 1N4148 DO-35		10-1N4148-ABX	1	
	D1	00MHD20011210	DIODE 1N4148 DO-35		10-1N4148-ABX	1	
	D616,617	00MHD20011210	DIODE 1N4148 DO-35		10-1N4148-ABX	2	
	D610-612	2030500215045	1N4007/1A/1000V		10-1N4007-EBX-M	2	
	ZD602	919202500590D	DIODE ZENER BZX79-C33 33V±5%		10-79C33V-DBX	1	*
	Q18	00M-BA000900R	SMT PNP TRANSISTOR DTA114EUA SOT-323		12-DTA114-0BX	1	
POWER							
	D507	2030500240085	FAST RECOVERY DIODE 1A1000V FR107 DO-41		10-0FR107-FBX-M	1	
	D505	919201500200D	FAST RECOVERY RECTIFIER FR207 DO-15		10-0FR207-FBX-M	1	*
	D501-504	919203500350D	DIODE 2A1000V RL207 DO-15		10-0RL207-EBXGA-M	4	*
	ZD503	919202500600D	DIODE ZENER BZX79-C11 11V±5%		10-79C11V-DBX	1	*
	ZD505,506	919202500610D	DIODE ZENER BZX79-C15 15V±5%		10-79C15V-DBX	2	*
	ZD508	919202500620D	DIODE ZENER BZX79-C18 18V±5%		10-79C18V-DBX	1	*
	ZD502	919202500630D	DIODE ZENER BZX79-C5V6 5.6V±5%		10-79C5V6-DBX	1	*
	ZD504	919202500640D	DIODE ZENER 20HSC 20V ±2.5% DO-35		10-HS20VC-DBX	1	*
	ZD507	919202500650D	TVS P6KE160A 160V ±5% DO-15		10-P6KE16-0BX	1	*
	D509	919204500260D	DIODE MBRF1060		10-RF1060-S7X-M	1	*
	D511	919204500270D	DIODE SR3100		10-SR3100-S0X-M	1	*
	U503	919231101420D	IC H431BA		13-H431BA-00TFA-M	1	*
	U512	919231101430D	IC L79L12		13-L79L12-ACT-M	1	*
	U501	919231101440D	POWER CONTROL IC NCP1271B		13-NCP127-10B	1	*
	U502	919269100070D	IC PS2561		13-PS2561-WFP-M	1	*
	U505	919269100070D	IC PS2561		13-PS2561-WFP-M	1	*
	F501	919652500260D	FUSE 2A250V		50-02000D-BUS-M	1	*
	D512	919204500280D	FAST RECOVERY DIODE 2A200V HER203 DO-15		10-HER203-FBX-M	1	*
	D506	919204500290D	SMD. DIODE B5819W SOD-123		09-BRX140-STXGA	1	*
	D510	919204500290D	SMD. DIODE B5819W SOD-123		09-BRX140-STXGA	1	*
	Q507	919221500140D	P_AP6679GI		11-AP6679-0CX	1	*
	Q512	919222500230D	(-30V/-14.9A)PMK35EP		12-PMK35E-0BX	1	*

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	Q508	90M-HX600040R	NPN TRANSISTOR 3CG3906M SOT-23		12-BT3906-0BX	1	
	Q505,506	90M-HX600030R	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	2	
	Q509,510	90M-HX600030R	NPN TRANSISTOR 3DG3904M SOT-23		12-BT3904-0BX	2	
	Q501	919222500240D	MOSFET SMK0460F TO-220F		11-MK0465-0CX	1	*
	Q511	919214500260D	NPN TRANSISTOR MMBT8050C SOT-23		12-BT8050-CBX	1	*
	Q504	919212500210D	PNP TRANSISTOR MMBT8550C SOT-23		12-BT8550-CBX	1	*
	CE501	919134502300D	electrolytic capacitor 100uF/450V/10			1	*
	CE555	919134502310D	CAP_POL;1000UF,25V,ESR<0.05,10MM*20M		25-KDA102-M1X	1	*
	CE561	919134502310D	CAP_POL;1000UF,25V,ESR<0.05,10MM*20M		25-KDA102-M1X	1	*
	CE550,551	919134502320D	1500uF/16V		25-NCA152-M1X	2	*
IR							
	D2D3	919201500210D	SWITCH DIODE BAV16W SOD-123		09-BAV16W-ATX	2	*
	D4	919204500300D	Schottky Barrier Diode BAT43W		09-BAT43W-STX	1	*
	ZD1	919202500660D	DIODE ZENER BZX79-C6V2 6.2V±5%		10-79C6V2-DBX	1	*
	Q1	00D2730464901	NPN_transistor/KTC3875		12-TC3875-GBX	1	
	Q2	00D2690191903	PNP SMT Transistor KRA104S SOT23		12-KRA104-0BX	1	
	U3	919235100600D	RS232 DRIVER MAX232ECDR		13-MAX232-ECDR	1	*
AUDIO							
	U2	00D2631074908	Dual Operational Amplifier OP275GSZ		13-0P275G-SZ02	1	
	U5	00D2631074908	Dual Operational Amplifier OP275GSZ		13-0P275G-SZ02	1	
	D9-16	00MHD20011210	DIODE 1N4148 DO-35		10-1N4148-ABX	8	
	D18,19	00MHD20011210	DIODE 1N4148 DO-35		10-1N4148-ABX	2	
	D22-25	00MHD20011210	DIODE 1N4148 DO-35		10-1N4148-ABX	4	
	Q9,10	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	2	
	Q15,16	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	2	
	Q18	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	1	
	Q23	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	1	
	Q26	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	1	
	Q28	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	1	
	Q33,34	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	2	
	Q36	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	1	
	Q41	2110500020090	PNP_transistor/KTA1268GR		11-TA1268-GBX	1	
	Q8	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q12	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q14	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q17	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q19	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q22	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q27	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q29	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q32	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q35	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q37	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	Q40	2130500020050	NPN_transistor/KTC3200GR		11-TC3200-GBX	1	
	U1	00D2623277904	74LVC157APW		13-74LVC1-57A3	1	
	U3	236810081500S	Stereo Audio PCM1795DBR		13-PCM179-5DB3	1	
	U6	919231101450D	LDO_3P_7809		13-SN7809-PI03	1	*
	U10	919231101460D	LDO_3P_7909		13-SN7909-PI03	1	*
	U7	919231101470D	AZ1117_5.0V		13-AZ1117-50B	1	*
	U8	919231101480D	CW1117-3.3V		13-CW1117-33B	1	*
	U11,U12	235810050503S	Dual amplifier NJM4565M DMP8		13-NJM456-5M02	1	
	D5-7	00MHZ20007990	SMD. SWITCHING DIODE LL4148 LL-34		09-LL4148-ATX	3	

	Ref.No.	Part No.	Part Name	Remarks		Q'ty	New
	D1,2	00MHZ20005990	DIODE BAT54C SOT-23		09-BAT54C-STXGA	2	
	D3	00MHZ20005990	DIODE BAT54C SOT-23		09-BAT54C-STXGA	2	
	Q11	00D2730460905	NPN Transistor KTC2875 SOT-23		12-TC2875-BBX	1	
	Q13	00D2730460905	NPN Transistor KTC2875 SOT-23		12-TC2875-BBX	1	
	Q20,21	00D2730460905	NPN Transistor KTC2875 SOT-23		12-TC2875-BBX	2	
	Q30,31	00D2730460905	NPN Transistor KTC2875 SOT-23		12-TC2875-BBX	2	
	Q38,39	00D2730460905	NPN Transistor KTC2875 SOT-23		12-TC2875-BBX	2	
	ZD1	919202500670D	ZMM6V8 6.8v ±5% LL-34		09-ZMM6V8-DTX	1	*
USB							
	P1	919643102330D	USB socket model A black		47-USB003-XX2	1	*
MAIN							
	U21	919243101610S	13-CS8966-FPQ0(V45)		13-CS8966-FPQ0(V45)	1	* ⚠4

Personal notes: