

SERVICE MANUAL

Blu-Ray Disc Player

BDX1250KE Ver. 1.00

Updating history

Currently there are no updates available.
Please check back at a later time for any future updates.

IMPORTANT NOTICE

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Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING: This product is manufactured using lead free solder.
DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT!

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product especially when soldering large components, through-hole pins, and on PCBs as the level of heat required to melt lead-free solder is high.

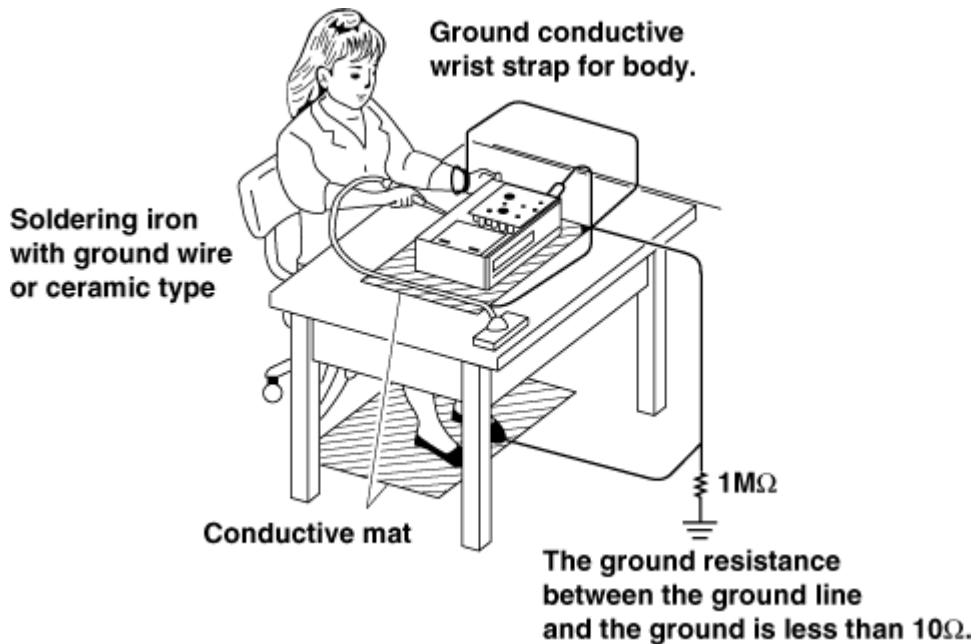
LASER BEAM PRECAUTION

CLASS 2 Visible and Invisible Laser Radiation from the Drive Mecha Unit when the Power Supply is turned ON.

Do not stare into the beam.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity. Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity. And also, the LSI and IC are same as above.



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SAFETY INSTRUCTION

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

Safety Precaution

WARNING: SERVICING SHOULD NOT BE ATTEMPTED BY ANYONE UNFAMILIAR WITH THE NECESSARY PRECAUTIONS ON THIS RECEIVER. THE FOLLOWING ARE THE NECESSARY PRECAUTIONS TO BE OBSERVED BEFORE SERVICING THIS CHASSIS.

- An isolation transformer should be connected in the power line between the product and the AC line before any service is performed on the product.
- Always disconnect the power plug before any disassembling of the product. It may result in electrical shock.
- When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network, etc.
- Always keep tools, components of the product, etc away from the children, These items may cause injury to children.
- Depending on the model, use an isolation transformer or wear suitable gloves when servicing with the power on, and disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.
- Always use the replacement parts specified for the particular model when making repairs. The parts used in products require special safety characteristics such as inflammability, voltage resistance, etc. therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the ⚠ mark is indicated in the circuit diagram or parts list.
- Parts mounting and routing dressing of wirings should be the same as that used originally. For safety purposes, insulating materials such as isolation tube or tape are sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wirings is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the manufactured wiring routes / dressings.
- Always ensure that all internal wirings are in accordance before re-assembling the external casing after a repairing completed. Do not allow internal wiring to be pinched by cabinets,

panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.

- NEVER remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous.

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SAFETY INSTRUCTION

Touch Current Check

(After completing the work, measure touch current to prevent an electric shock.)

- Plug the AC cord directly into the AC outlet. Do NOT use an isolation transformer for this check.
- Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure D.1.
- The potential at any point (TOUCH CURRENT) expressed as voltage U_1 and U_2 does not exceed the following value:

The part or contact of a TERMINAL is not HAZARDOUS LIVE if:

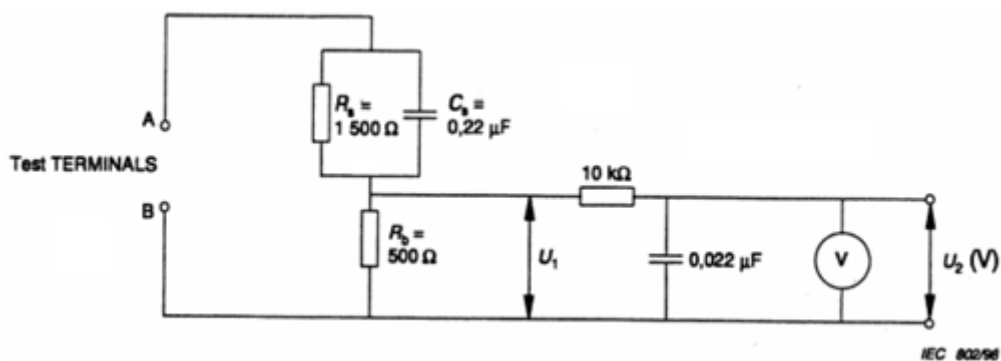
- The open-circuit voltage should not exceed 35 V (peak) a.c. or 60 V d.c. or, if a) is not met.
- The measurement of the TOUCH CURRENT shall be carried out in accordance with IEC 60990, with the measuring network described in **Annex D** of this standard. The TOUCH CURRENT expressed as voltages U_1 and U_2 , does not exceed the following values:
 - for a.c. : $U_1 = 35$ V (peak) and $U_2 = 0.35$ V (peak);
 - for d.c. : $U_1 = 1.0$ V

Note: The limit values of $U_2 = 0.35$ V (peak) for a.c. and $U_1 = 1.0$ V for d.c. correspond to the values 0.7 mA (peak) a.c. and 2.0 mA d.c.

The limit value $U_1 = 35$ V (peak) for a.c. corresponds to the value 70 mA (peak) a.c. for frequencies greater than 100 kHz.

Annex D (normative)

Measuring network for TOUCH CURRENTS



V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance : $\geq 1 \text{ M}\Omega$

Input capacitance : $\leq 200 \text{ pF}$

Frequency range : 15 Hz to 1 MHz and d.c. respectively

Note: Appropriate measures should be taken to obtain the correct value in case of non sinusoidal waveforms.

The measuring instrument is calibrated by comparing the frequency factor of U_2 with the solid line in figure F.2 of IEC 60990 at various frequencies. A calibration curve is constructed showing the deviation of U_2 from the ideal curve as a function of frequency.

TOUCH CURRENT = $U_2/500$ (peak value).

Fig. D.1

SAFETY INSTRUCTION

Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create electrical shock, fire, or other hazards.

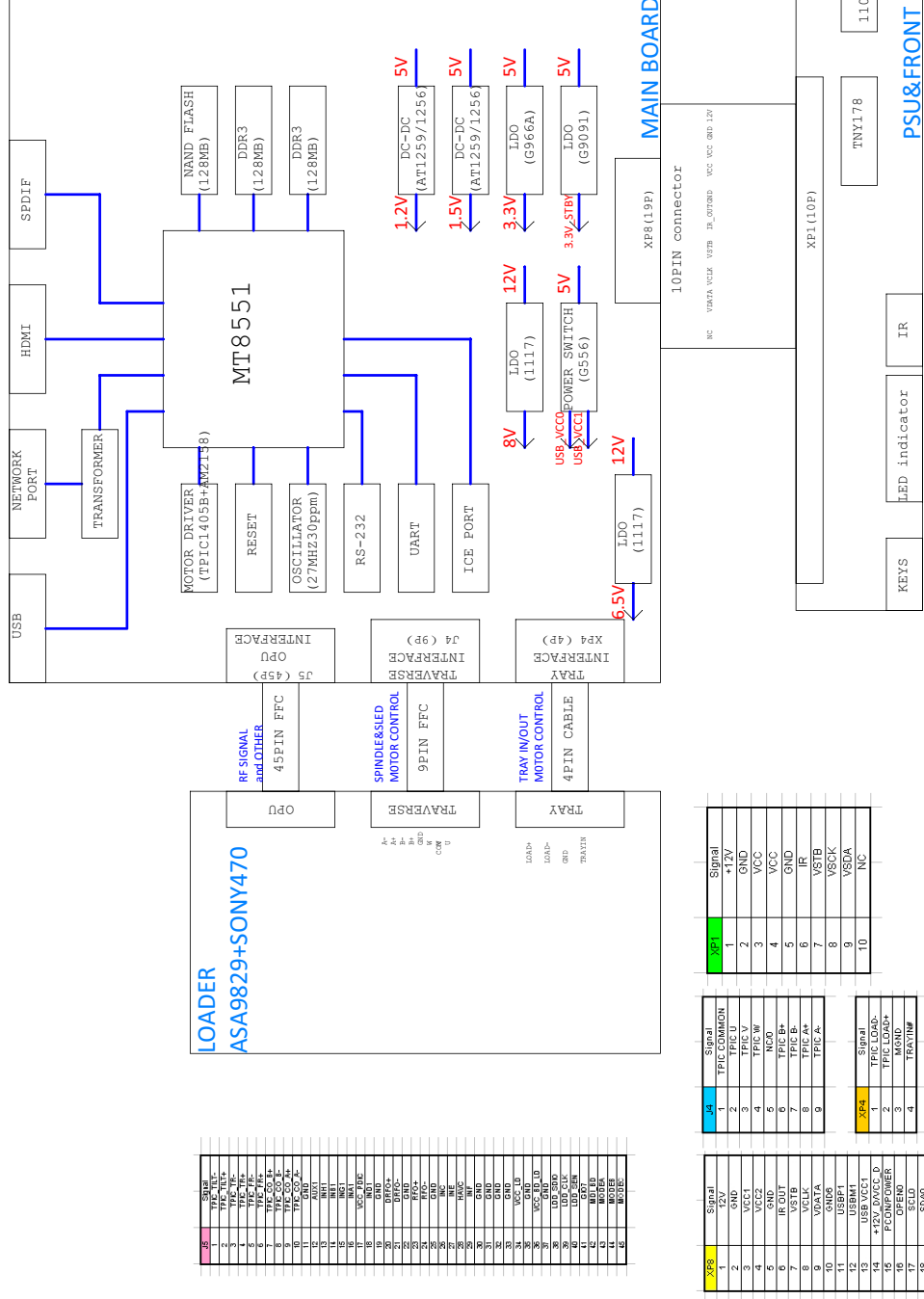
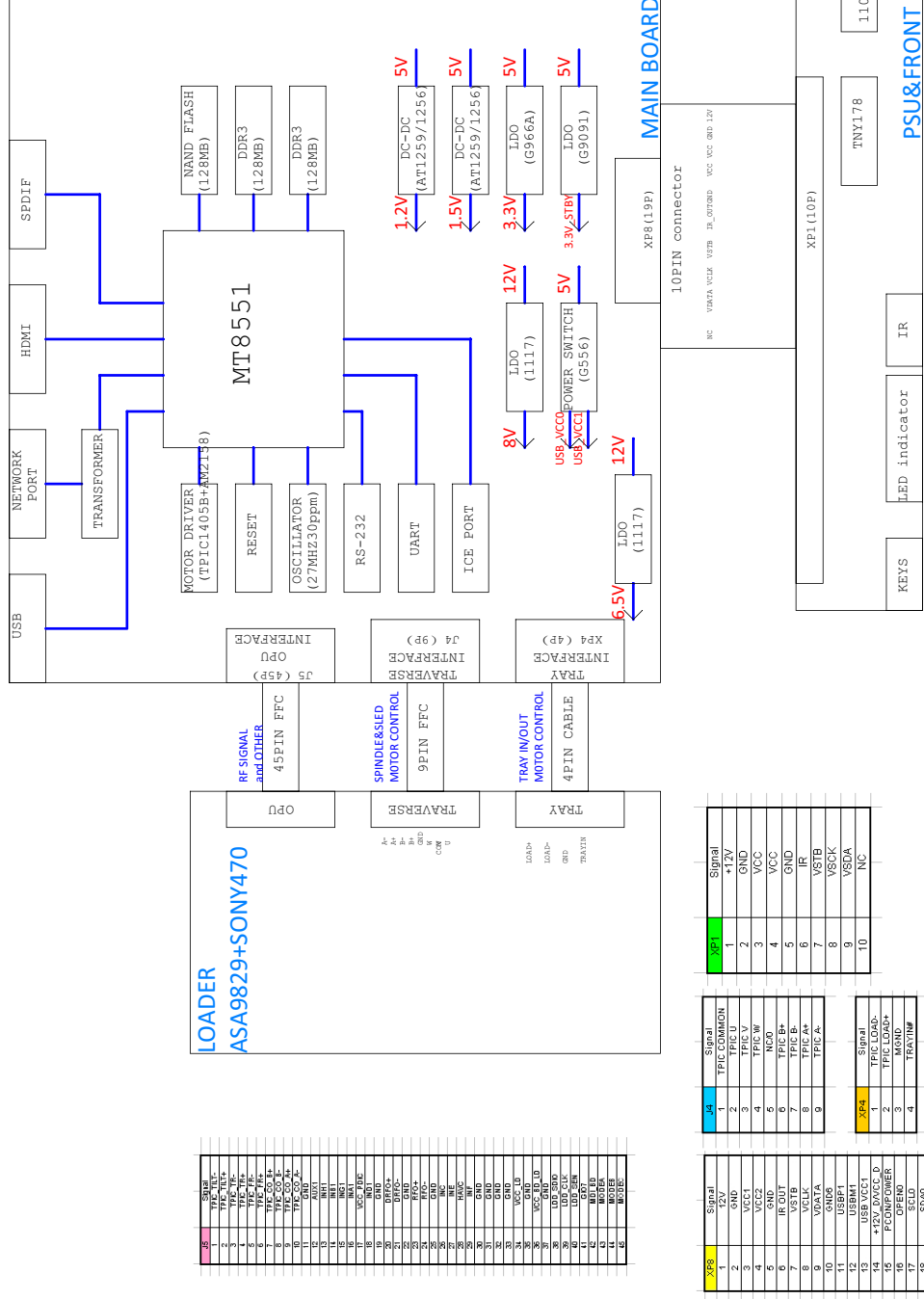
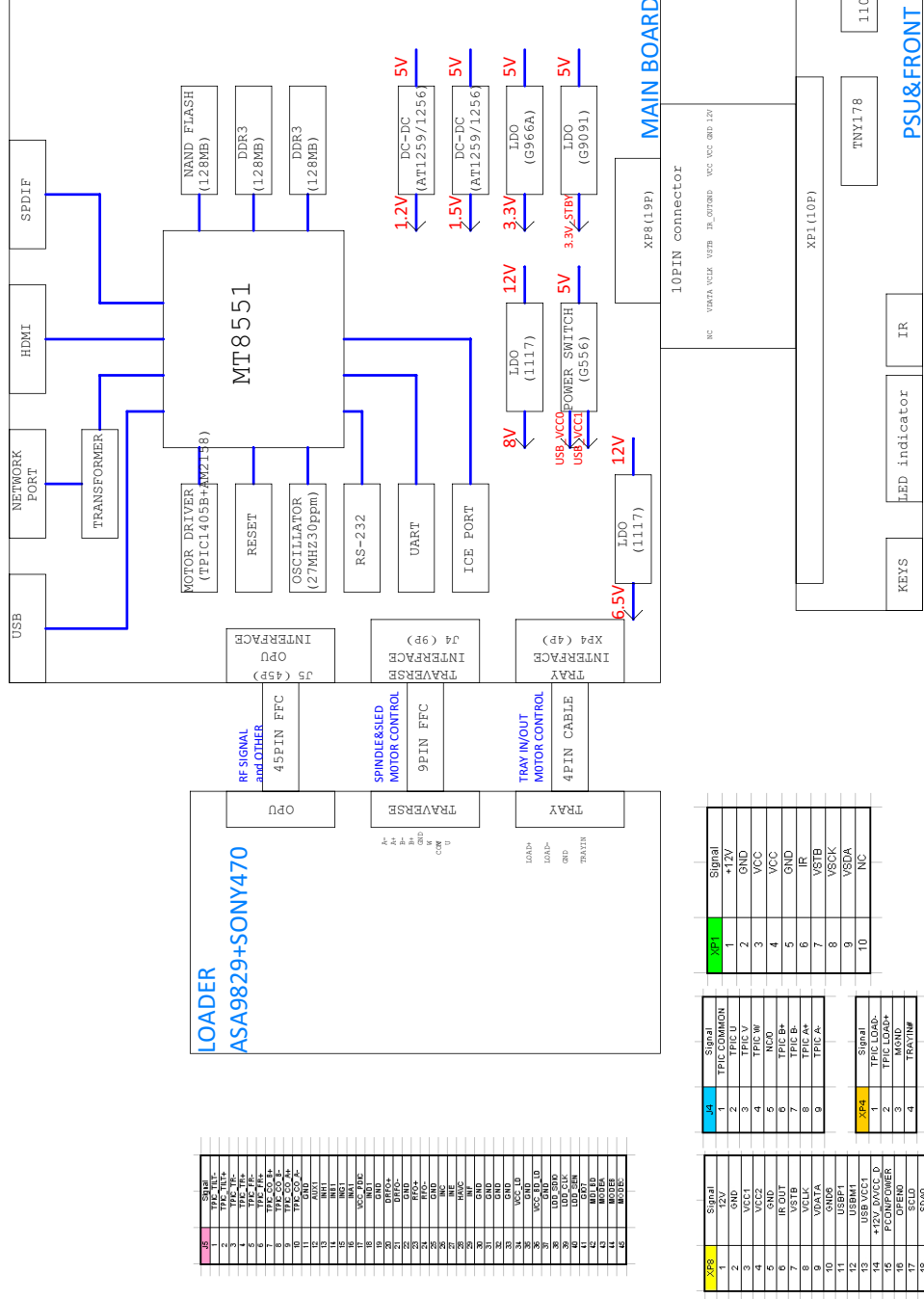
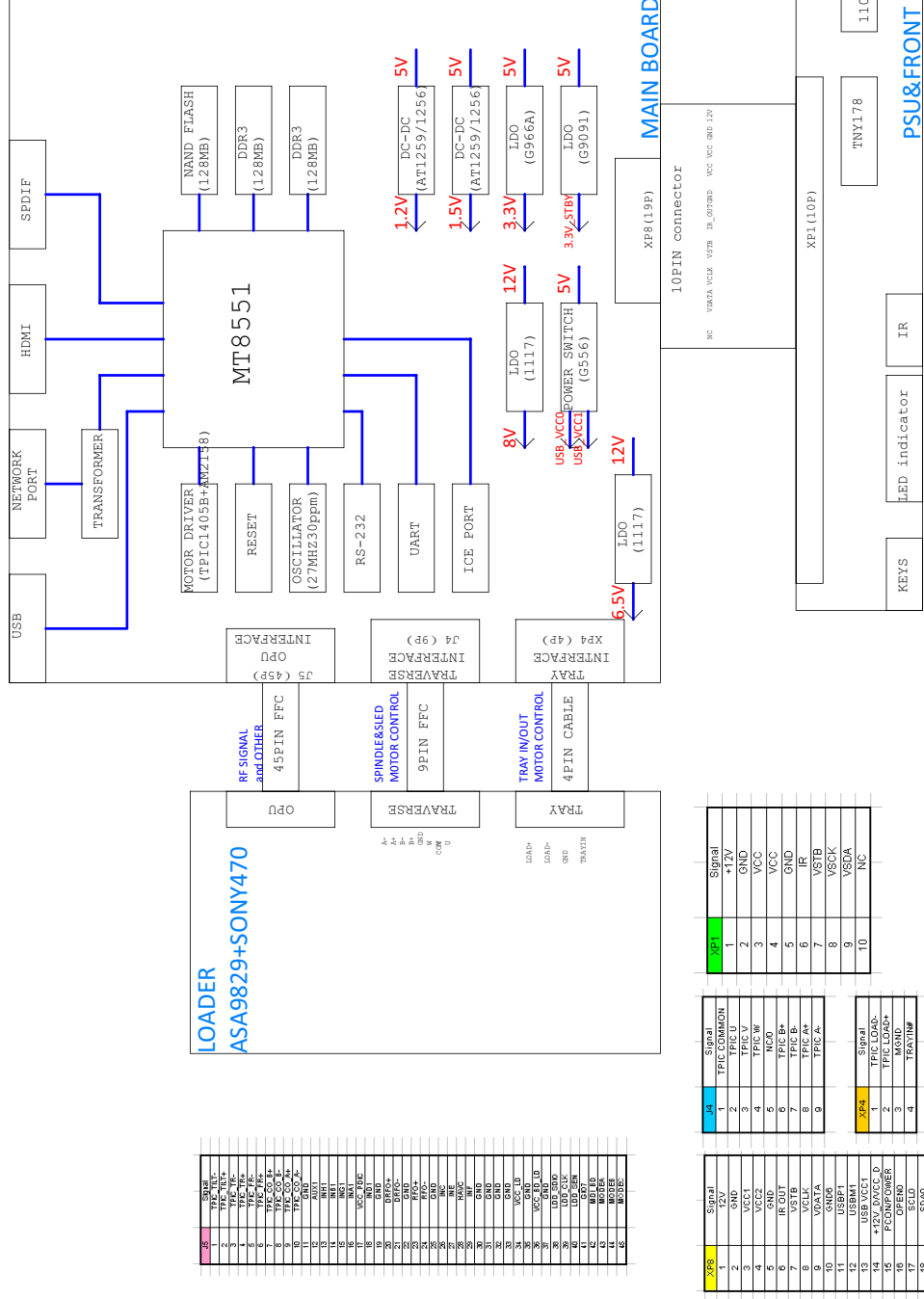


The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

BDX125KM KB KR KE Wiring Diagram and Block Diagram



TROUBLESHOOTING GUIDE

UNDER CONSTRUCTION

Note: Please check back in the future.

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FIRMWARE UPDATING

Firmware Updating

Upgrade the application software and servo software:

1. Create a folder named "UPG_ALL" in the root path of the USB device.
2. The file "BDX1250_APP.bin" is the software and the file "BDX1250_2250_servo.bin" is the servo. You can upgrade one of them or both of them.
If you want to upgrade the software, copy "BDX1250_APP.bin" into the folder UPG_ALL. If you want to upgrade the servo, copy "BDX1250_2250_servo.bin" into the folder UPG_ALL. If you want to upgrade both, copy both of them to the folder.
3. Put the plug in the USB device to the BD player, and in proper order to select Setup Menu → General Setting → System → Upgrade → USB Storage, then the system need some time to scan the upgrade files.
4. If the servo upgrade file is found successfully, a window pop up and show the text "Frontend upgrade file found. Upgrade?". Press OK button of the RC to upgrade the servo.
If the software upgrade file is found successfully, a window pop up and show the text "Here an upgrade file has been found! Start upgrade with version?". Press OK button of the RC to upgrade the servo.
If both of servo and software upgrade files are found, it will upgrade the servo first.
5. When the upgrade is over, the system will show the message of "Upgrade has completed successfully" and the system will reboot 5 seconds later.

PARTS LIST

Precaution

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "**SAFETY PRECAUTION**" AND "**PRODUCT SAFETY NOTICE**".

CAUTION: The international hazard symbols "" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

The mounting position of replacements is to be identical with originals.
Before replacing any of these components, read carefully the "**SAFETY PRECAUTION**" AND "**PRODUCT SAFETY NOTICE**".

Do not degrade the safety of the receiver through improper servicing.

Note:

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with * mark is no longer available after the end of the production.

Abbreviations

Capacitors CD : Ceramic Disk

Resistors CF : Carbon film
OMF : Oxide Metal Film
PF : Plastic Film
CC : Carbon Composition
VR : Variable Resistor
EL : Electrolytic
MF : Metal Film
FR : Fusible Resistor

All CD and PF capacitors are $\pm 5\%$, 50 V and all resistor, $\pm 5\%$, 1/6 W unless otherwise noted.

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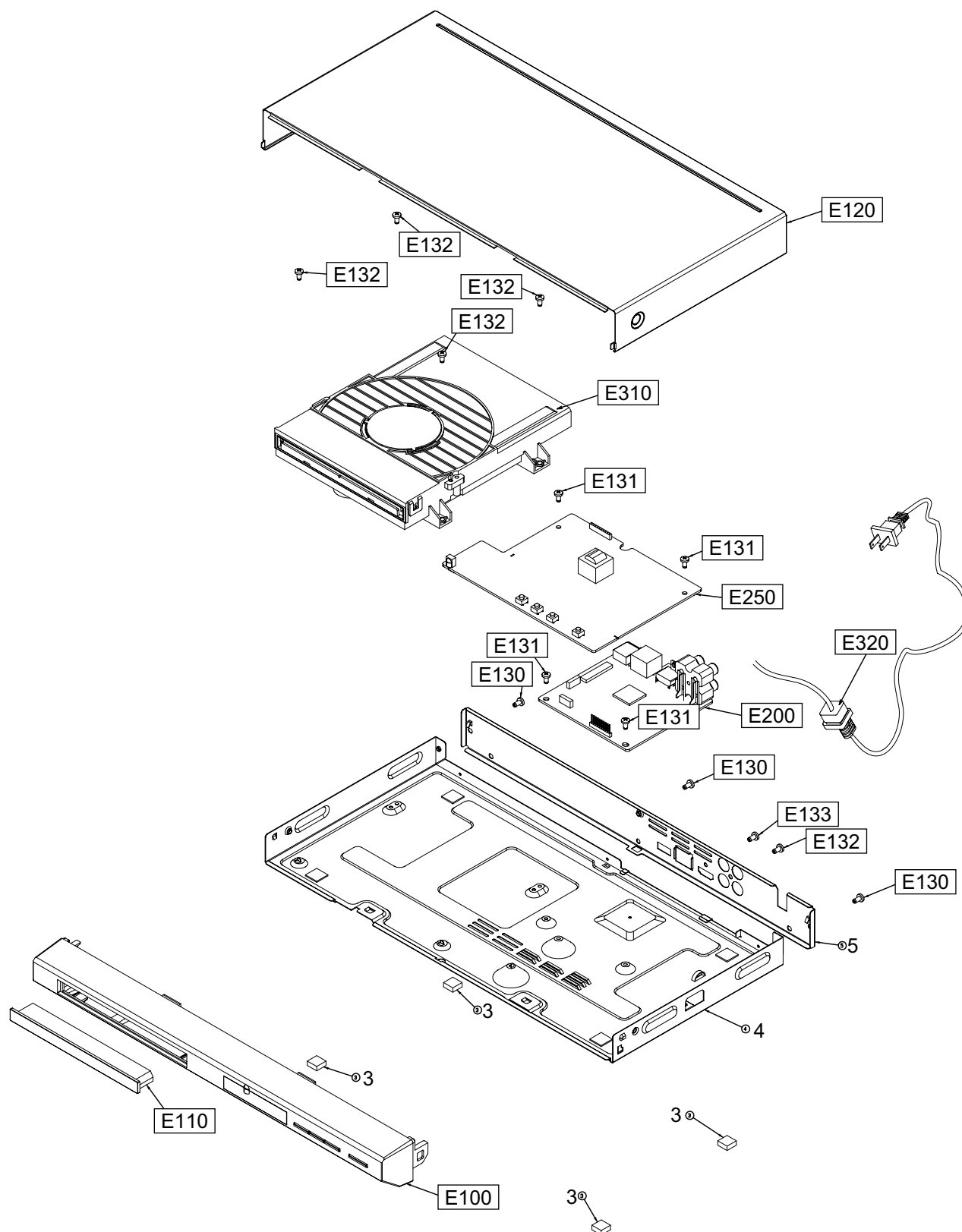
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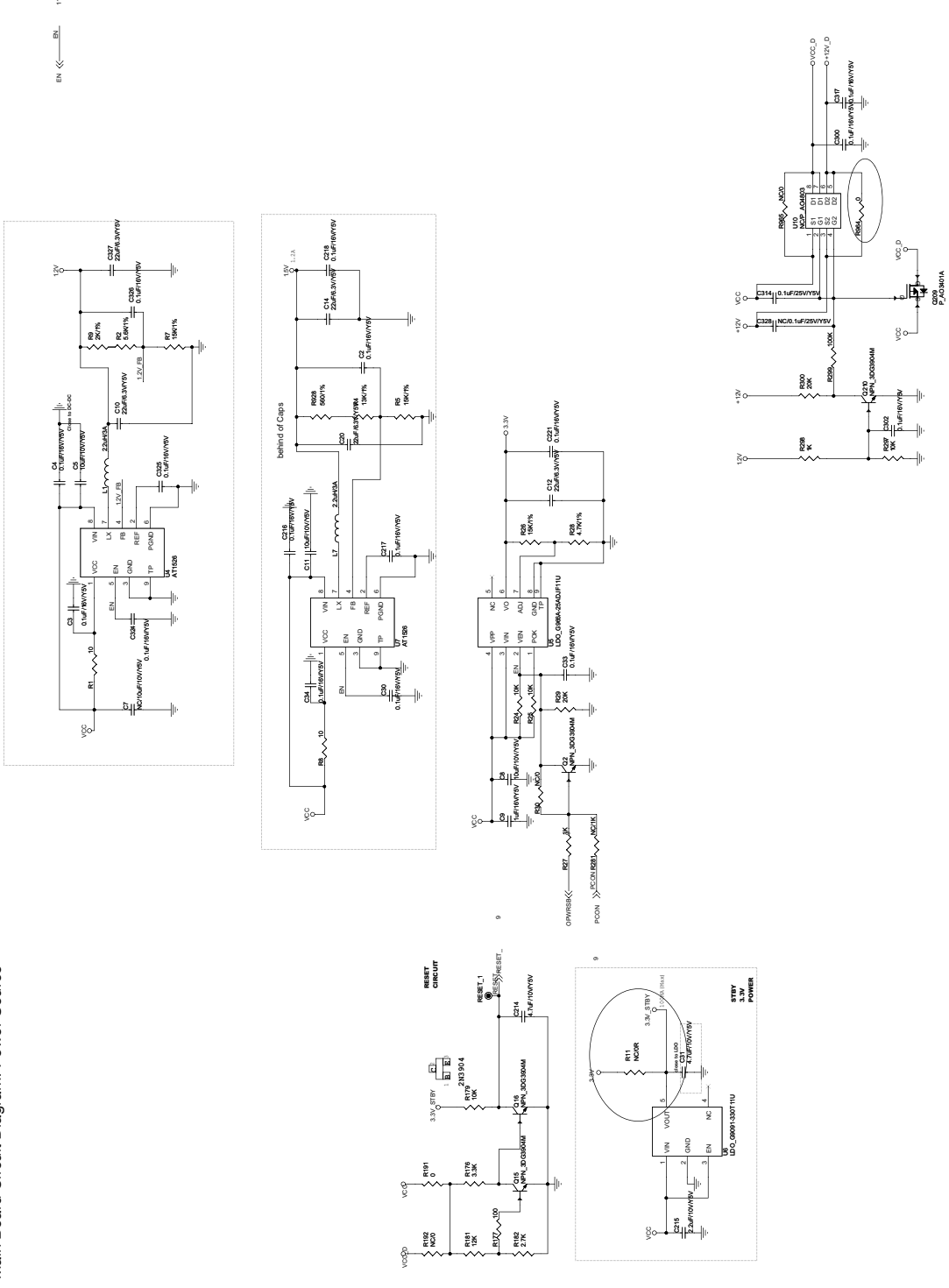
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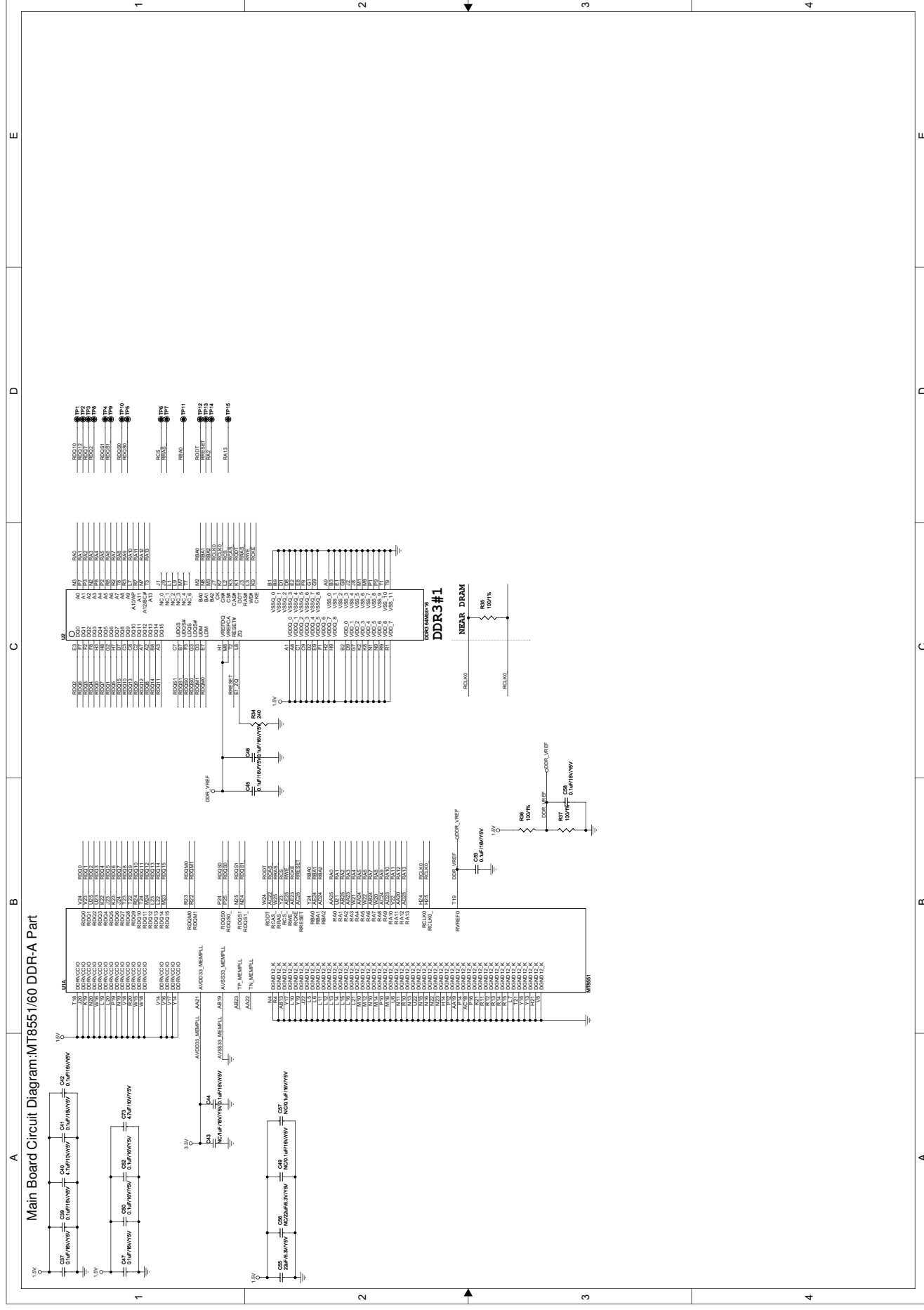
EXPLODED VIEW FOR BDX1250KB/KE/KR/KU/KM:



This is general mechanical exploded view. Please refer to the model set for the detailed information.

Main Board Circuit Diagram: Power Source



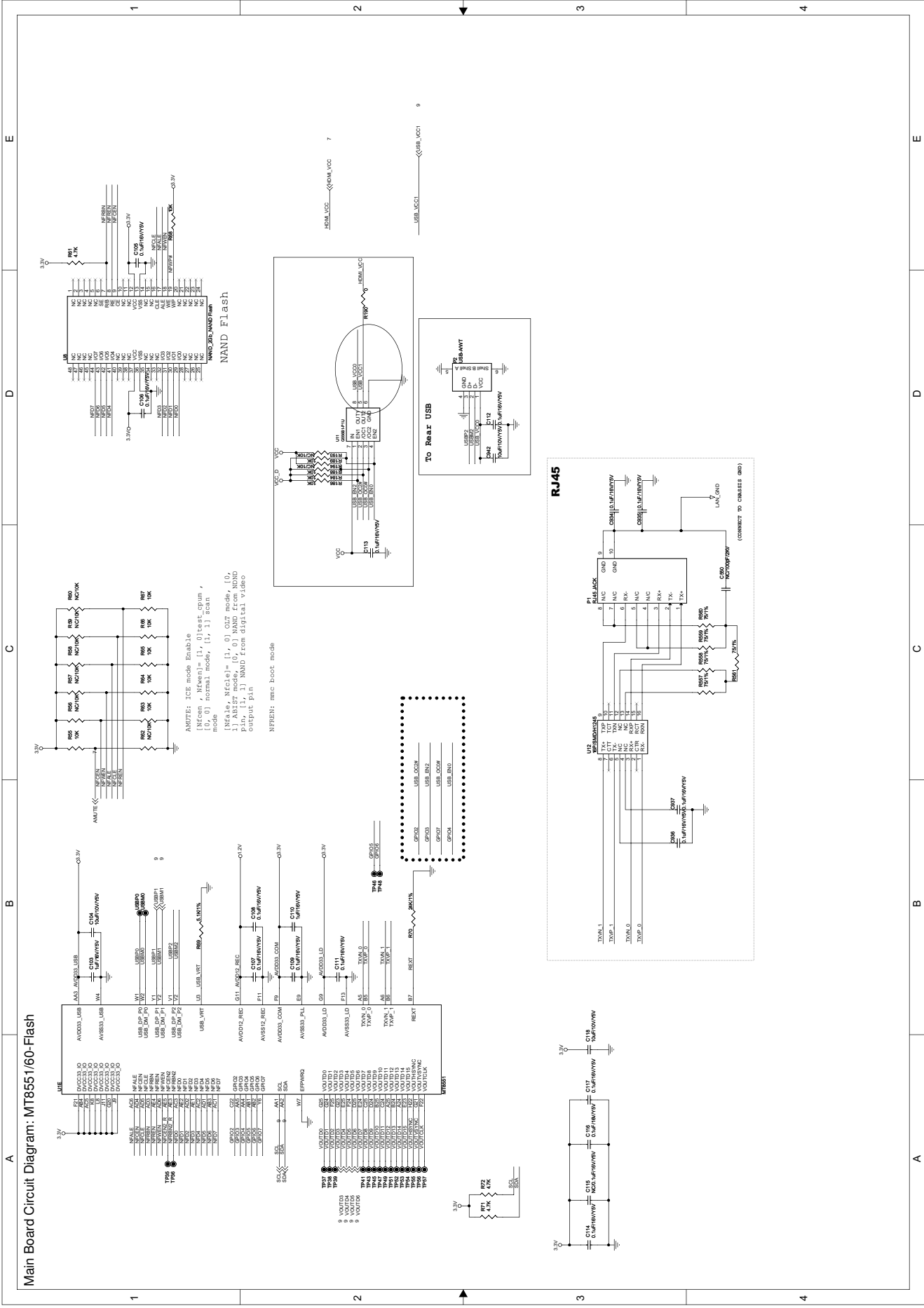


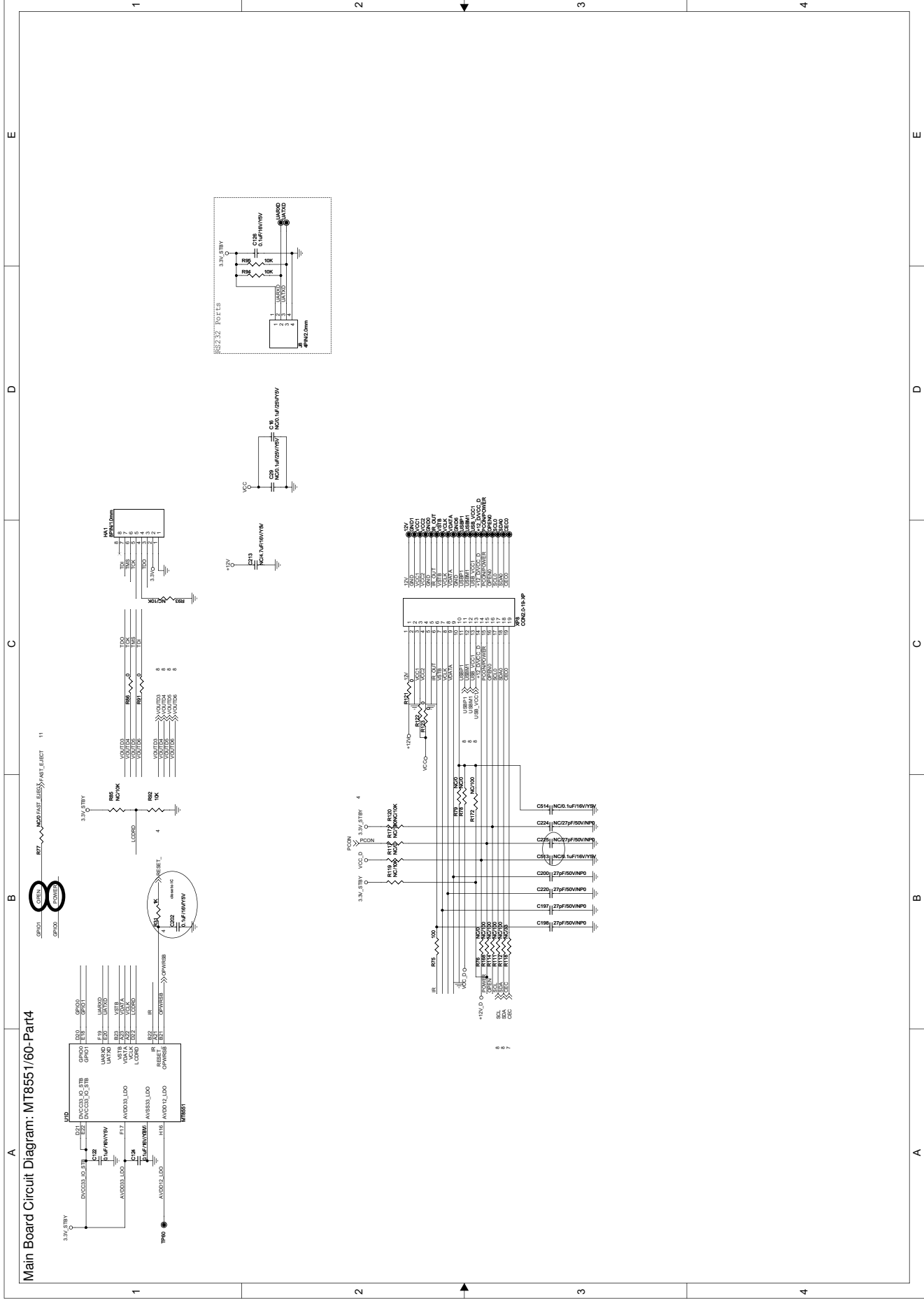
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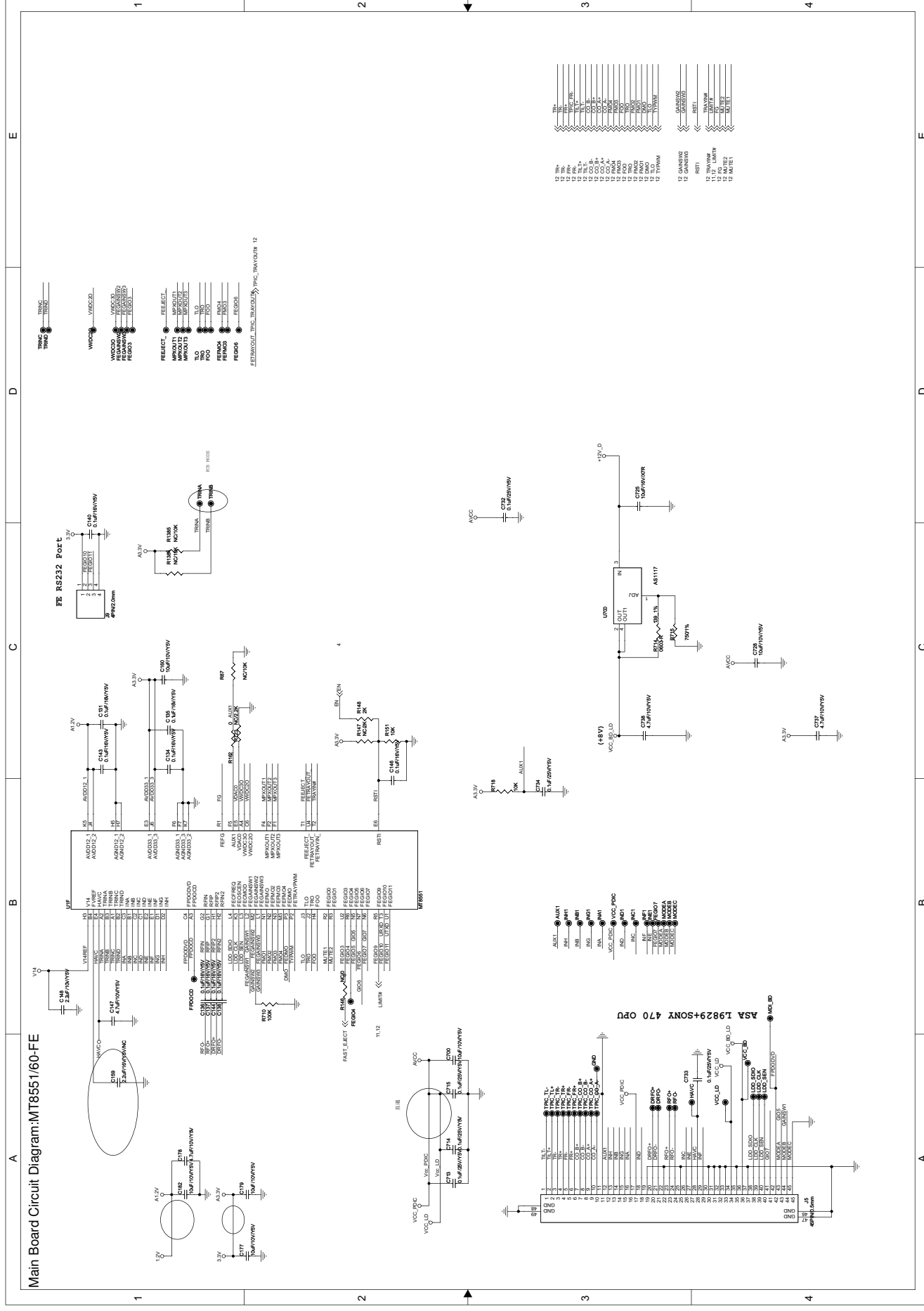
Main Board Circuit Diagram:MT8551/60-AV/PLL

Main Board Circuit Diagram: MT8551/60-Flash

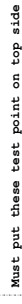




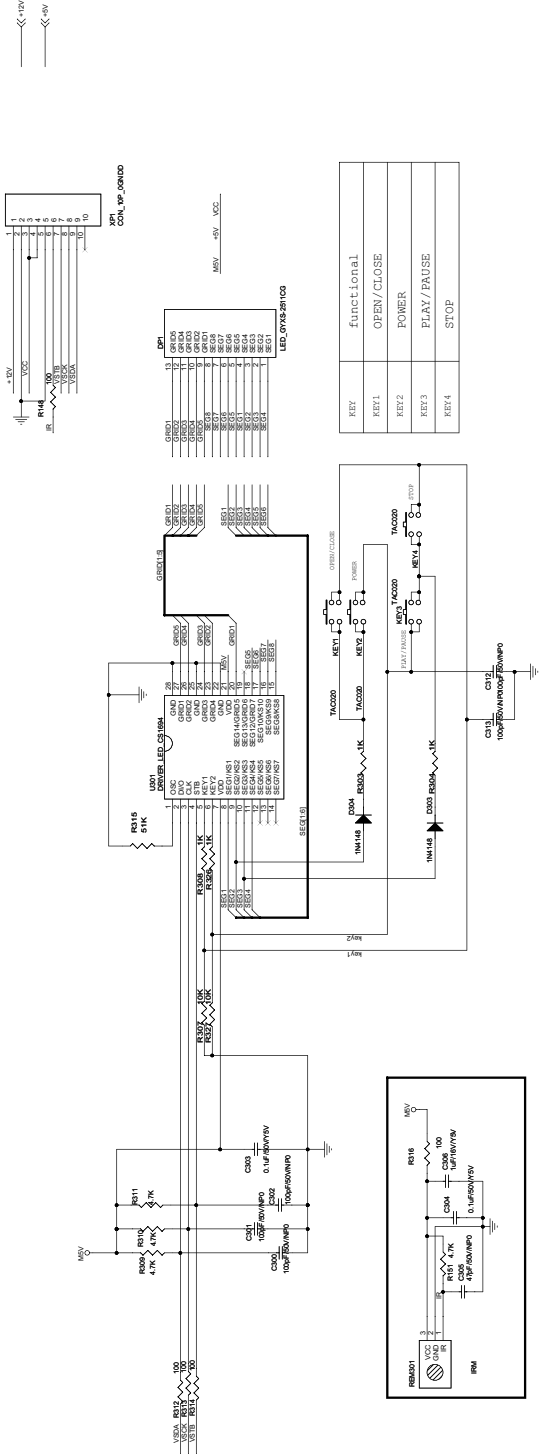
Main Board Circuit Diagram: MT8551/60-FE

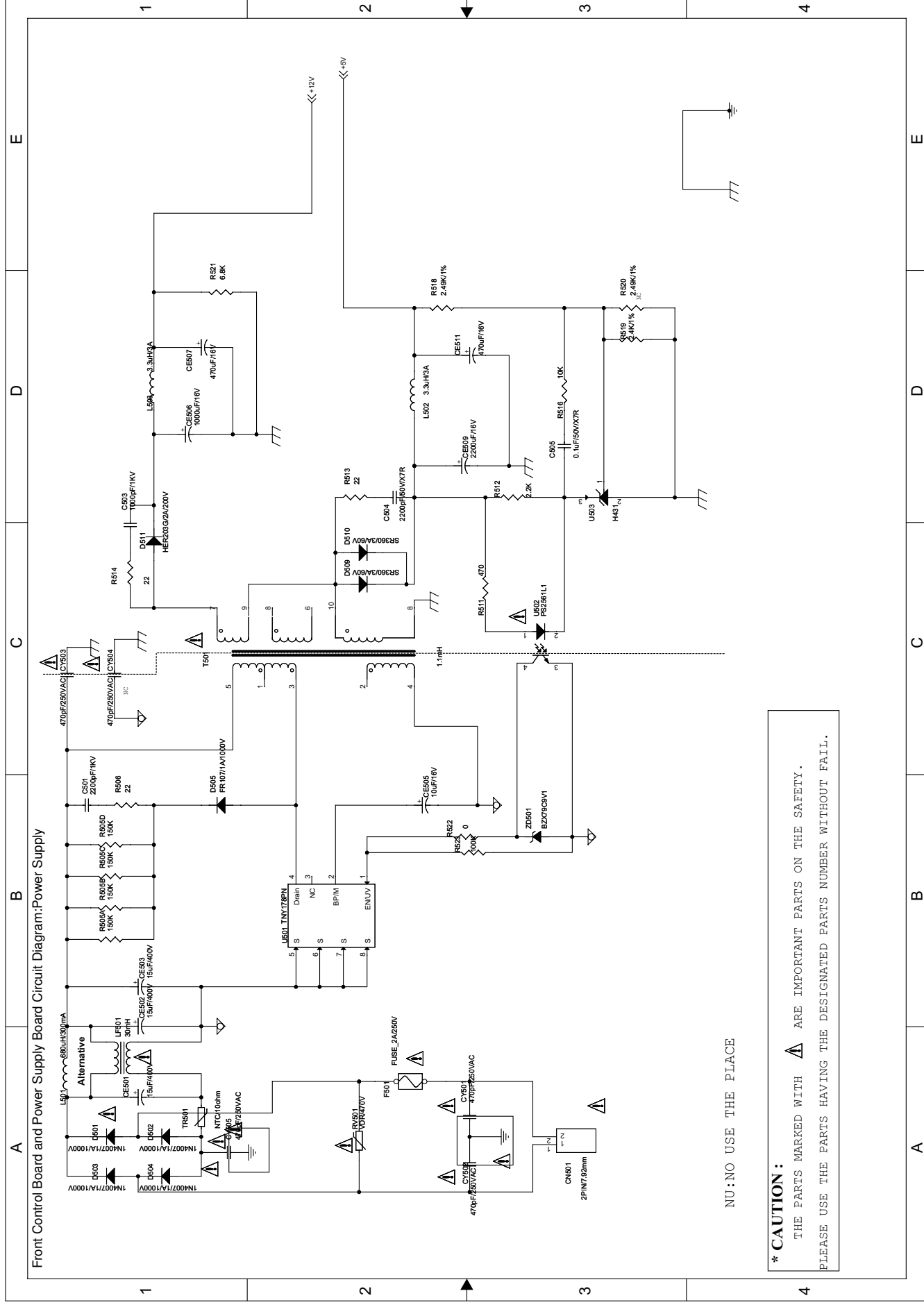


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Front Control Board and Power Supply Board Circuit Diagram:Cover Page





Main Board Print-layout (top side):

