

Service
Service
Service

Second Generation



Service Manual

TABLE OF CONTENTS

	Page
Technical Specifications	1-2
Safety Instruction, Warning & Notes.....	1-3
PCBs Location, Version Variations.....	1-7
Mechanical and Dismantling Instructions	2
Software Version & Upgrades, Region Code Change.....	3
Trouble Shooting Chart	4
Set Wiring Diagram	5
Electrical Diagrams and PCB layouts.....	6
Set Mechanical Exploded view & Parts List	7
Revision List	8

This service manual is for BDP5100 Second Generation model, which is different from the previous generation BDP5100 model.

For Second Generation model, the serial number begins with KX2A(B,C,...)xxxxxxxxxx.
(OPU Type: SONY 460)



© Copyright 2010 Philips Consumer Electronics B.V. Eindhoven, The Netherlands
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.



1. Technical Specifications, Directions for Use

Index of this chapter:

[1.1 Technical Specifications](#)

[1.2 Directions for Use](#)

Notes:

- Figures can deviate due to the different set executions.
- Specifications are indicative (subject to change).

1.1 Technical Specifications

For on-line product support please use the following website:

http://www.p4c.philips.com/cgi-bin/dcbint/cpproduct_selector.pl

Here is product information available, as well as getting started, user manuals, frequently asked questions and software & drivers.

1.2 Directions for Use

You can download this information from the following websites:

<http://www.philips.com/support>

<http://www.p4c.philips.com>

2. Safety Instructions, Warnings, Notes, and Abbreviation List

Index of this chapter:

[2.1 Safety Instructions](#)

[2.2 Warnings](#)

[2.3 Notes](#)

[2.4 Abbreviation List](#)

2.1 Safety Instructions

Safety regulations require the following **during** a repair:

- Connect the set to the Mains/AC Power via an isolation transformer (> 800 VA).
- Replace safety components, indicated by the symbol ▲, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that **after** a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the Mains/AC Power lead for external damage.
- Check the strain relief of the Mains/AC Power cord for proper function.
- Check the electrical DC resistance between the Mains/AC Power plug and the secondary side (only for sets that have a Mains/AC Power isolated power supply):
 1. Unplug the Mains/AC Power cord and connect a wire between the two pins of the Mains/AC Power plug.
 2. Set the Mains/AC Power switch to the "on" position (keep the Mains/AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the Mains/AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 MΩ and 12 MΩ.
 4. Switch "off" the set, and remove the wire between the two pins of the Mains/AC Power plug.
- Check the cabinet for defects, to prevent touching of any inner parts by the customer.

2.2 Warnings

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD ⚡). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.
- Be careful during measurements in the high voltage section.
- Never replace modules or other components while the unit is switched "on".
- When you align the set, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

2.3 Notes

2.3.1 General

- Measure the voltages and waveforms with regard to the chassis (= tuner) ground (⊥), or hot ground (↕), depending on the tested area of circuitry. The voltages and waveforms shown in the diagrams are indicative. Measure them in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L: 3 kHz, R: 1 kHz unless stated otherwise) and picture carrier at 475.25 MHz for PAL, or 61.25 MHz for NTSC (channel 3).

- Where necessary, measure the waveforms and voltages with (⊥) and without (↕) aerial signal. Measure the voltages in the power supply section both in normal operation (⊕) and in stand-by (⓪). These values are indicated by means of the appropriate symbols.

2.3.2 Schematic Notes

- All resistor values are in ohms, and the value multiplier is often used to indicate the decimal point location (e.g. 2K2 indicates 2.2 kΩ).
- Resistor values with no multiplier may be indicated with either an "E" or an "R" (e.g. 220E or 220R indicates 220 Ω).
- All capacitor values are given in micro-farads ($\mu = \times 10^{-6}$), nano-farads ($n = \times 10^{-9}$), or pico-farads ($p = \times 10^{-12}$).
- Capacitor values may also use the value multiplier as the decimal point indication (e.g. 2p2 indicates 2.2 pF).
- An "asterisk" (*) indicates component usage varies. Refer to the diversity tables for the correct values.
- The correct component values are listed in the Spare Parts List. Therefore, always check this list when there is any doubt.

2.3.3 BGA (Ball Grid Array) ICs

Introduction

For more information on how to handle BGA devices, visit this URL: www.atyourservice.ce.philips.com (needs subscription, not available for all regions). After login, select "Magazine", then go to "Repair downloads". Here you will find Information on how to deal with BGA-ICs.

BGA Temperature Profiles

For BGA-ICs, you **must** use the correct temperature-profile, which is coupled to the 12NC. For an overview of these profiles, visit the website www.atyourservice.ce.philips.com (needs subscription, but is not available for all regions)

You will find this and more technical information within the "Magazine", chapter "Repair downloads".

For additional questions please contact your local repair help desk.

2.3.4 Lead-free Soldering

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

- Use only lead-free soldering tin Philips SAC305 with order code 0622 149 00106. If lead-free solder paste is required, please contact the manufacturer of your soldering equipment. In general, use of solder paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free soldering tin. The solder tool must be able:
 - To reach a solder-tip temperature of at least 400°C.
 - To stabilize the adjusted temperature at the solder-tip.
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature of around 360°C - 380°C is reached and stabilized at the solder joint. Heating time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C, otherwise wear-out of tips will increase drastically and flux-fluid will be destroyed. To avoid wear-out of tips, switch "off" unused equipment or reduce heat.
- Mix of lead-free soldering tin/parts with leaded soldering tin/parts is possible but PHILIPS recommends strongly to **avoid** mixed regimes. If this cannot be avoided, carefully clear the solder-joint from old tin and re-solder with new tin.

Safety Instructions, Warnings, Notes, and Abbreviation List

2.3.5 Alternative BOM identification

It should be noted that on the European Service website, "Alternative BOM" is referred to as "Design variant".

The **third digit** in the serial number (example: KX2B0835000001) indicates the number of the alternative B.O.M. (Bill Of Materials) that has been used for producing the specific AV set. In general, it is possible that the same AV model on the market is produced with e.g. two different types of display, coming from two different suppliers. This will then result in sets which have the same CTN (Commercial Type Number; e.g. MCM394/12) but which have a different B.O.M. number.

Also, it is possible that same model on the market is produced with two production centers, however their partslist is the same. In such case, no alternative B.O.M. will be created.

By looking at the third digit of the serial number, one can identify which B.O.M. is used for the set he is working with. If the third digit of the serial number contains the number "1" (example: KX1B033500001), then the set has been manufactured according to B.O.M. number 1. If the third digit is a "2" (example: KX2B033500001), then the set has been produced according to B.O.M. no. 2. This is important for ordering the correct spare parts!
For the third digit, the numbers 1...9 and the characters A...Z can be used, so in total: 9 plus 26= 35 different B.O.M.s can be indicated by the third digit of the serial number.

Identification: The bottom line of a type plate gives a 14-digit serial number. Digits 1 and 2 refer to the production centre (e.g. LM is Arts), digit 3 refers to the B.O.M. code, digit 4 refers to the Service version change code, digits 5 and 6 refer to the production year, and digits 7 and 8 refer to production week (in example below it is 2008 week 50). The 6 last digits contain the serial number.



Figure 2-1 Serial number (example)

2.3.6 Module Level Repair (MLR) or Component Level Repair (CLR)

If a board is defective, consult your repair procedure to decide if the board has to be exchanged or if it should be repaired on component level.

If your repair procedure says the board should be exchanged completely, do not solder on the defective board. Otherwise, it cannot be returned to the O.E.M. supplier for back charging!

2.3.7 Practical Service Precautions

- **It makes sense to avoid exposure to electrical shock.** While some sources are expected to have a possible dangerous impact, others of quite high potential are of limited current and are sometimes held in less regard.
- **Always respect voltages.** While some may not be dangerous in themselves, they can cause unexpected reactions that are best avoided. Before reaching into a powered TV set, it is best to test the high voltage insulation. It is easy to do, and is a good service precaution.

2.4 Abbreviation List

0/6/12	SCART switch control signal on AV board. 0 = loop through (AUX to TV), 6 = play 16 : 9 format, 12 = play 4 : 3 format
2DNR	Spatial (2D) Noise Reduction
3DNR	Temporal (3D) Noise Reduction
AARA	Automatic Aspect Ratio Adaptation: algorithm that adapts aspect ratio to remove horizontal black bars; keeps the original aspect ratio
ACI	Automatic Channel Installation: algorithm that installs TV channels directly from a cable network by means of a predefined TXT page
ADC	Analogue to Digital Converter
AFC	Automatic Frequency Control: control signal used to tune to the correct frequency
AGC	Automatic Gain Control: algorithm that controls the video input of the feature box
AM	Amplitude Modulation
ANR	Automatic Noise Reduction: one of the algorithms of Auto TV
AP	Asia Pacific
AR	Aspect Ratio: 4 by 3 or 16 by 9
ASF	Auto Screen Fit: algorithm that adapts aspect ratio to remove horizontal black bars without discarding video information
ATSC	Advanced Television Systems Committee, the digital TV standard in the USA
ATV	See Auto TV
Auto TV	A hardware and software control system that measures picture content, and adapts image parameters in a dynamic way
AV	External Audio Video
AVC	Audio Video Controller
AVIP	Audio Video Input Processor
B/G	Monochrome TV system. Sound carrier distance is 5.5 MHz
BLR	Board-Level Repair
BTSC	Broadcast Television Standard Committee. Multiplex FM stereo sound system, originating from the USA and used e.g. in LATAM and AP-NTSC countries
B-TXT	Blue TeleteXT
C	Centre channel (audio)
CEC	Consumer Electronics Control bus: remote control bus on HDMI connections
CL	Constant Level: audio output to connect with an external amplifier
CLR	Component Level Repair
COLUMBUS	COLOR LUMinance Baseband Universal Sub-system
ComPair	Computer aided rePair
CP	Connected Planet / Copy Protection
CSM	Customer Service Mode
CTI	Color Transient Improvement: manipulates steepness of chroma transients
CVBS	Composite Video Blanking and Synchronization
DAC	Digital to Analogue Converter
DBE	Dynamic Bass Enhancement: extra low frequency amplification
DDC	See "E-DDC"

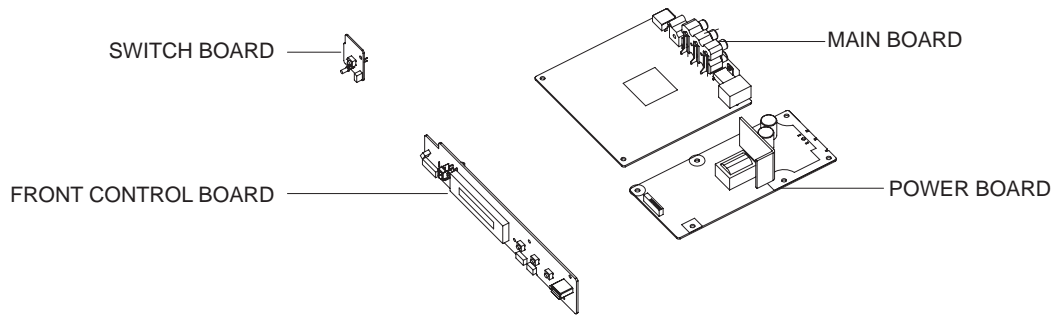
Safety Instructions, Warnings, Notes, and Abbreviation List

D/K	Monochrome TV system. Sound carrier distance is 6.5 MHz		lines. The fields are written in "pairs", causing line flicker.
DFI	Dynamic Frame Insertion	IR	Infra Red
DFU	Directions For Use: owner's manual	IRQ	Interrupt Request
DMR	Digital Media Reader: card reader	ITU-656	The ITU Radio communication Sector (ITU-R) is a standards body subcommittee of the International Telecommunication Union relating to radio communication. ITU-656 (a.k.a. SDI), is a digitized video format used for broadcast grade video.
DMSD	Digital Multi Standard Decoding		Uncompressed digital component or digital composite signals can be used.
DNM	Digital Natural Motion		The SDI signal is self-synchronizing, uses 8 bit or 10 bit data words, and has a maximum data rate of 270 Mbit/s, with a minimum bandwidth of 135 MHz.
DNR	Digital Noise Reduction: noise reduction feature of the set		
DRAM	Dynamic RAM		
DRM	Digital Rights Management		
DSP	Digital Signal Processing		
DST	Dealer Service Tool: special remote control designed for service technicians		
DTCP	Digital Transmission Content Protection; A protocol for protecting digital audio/video content that is traversing a high speed serial bus, such as IEEE-1394	ITV	Institutional TeleVision; TV sets for hotels, hospitals etc.
DVB-C	Digital Video Broadcast - Cable	JOP	Jaguar Output Processor
DVB-T	Digital Video Broadcast - Terrestrial	LS	Last Status; The settings last chosen by the customer and read and stored in RAM or in the NVM. They are called at start-up of the set to configure it according to the customer's preferences
DVD	Digital Versatile Disc		Latin America
DVI(-d)	Digital Visual Interface (d= digital only)	LATAM	Liquid Crystal Display
E-DDC	Enhanced Display Data Channel (VESA standard for communication channel and display). Using E-DDC, the video source can read the EDID information from the display.	LCD	Light Emitting Diode
EDID	Extended Display Identification Data (VESA standard)	LED	Monochrome TV system. Sound carrier distance is 6.5 MHz. L' is Band I, L is all bands except for Band I
EEPROM	Electrically Erasable and Programmable Read Only Memory	L/L'	Local REgression approximation noise reduction
EMI	Electro Magnetic Interference	LORE	LG.Philips LCD (supplier)
EPLD	Erasable Programmable Logic Device	LPL	Loudspeaker
EU	Europe	LS	Low Voltage Differential Signalling
EXT	EXTernal (source), entering the set by SCART or by cinches (jacks)	LVDS	Mega bits per second
FBL	Fast BLanking: DC signal accompanying RGB signals	Mbps	Monochrome TV system. Sound carrier distance is 4.5 MHz
FDS	Full Dual Screen (same as FDW)	M/N	Microprocessor without Interlocked Pipeline-Stages; A RISC-based microprocessor
FDW	Full Dual Window (same as FDS)	MIPS	Matrix Output Processor
FLASH	FLASH memory		Metal Oxide Silicon Field Effect Transistor, switching device
FM	Field Memory or Frequency Modulation	MOP	Motion Pictures Experts Group
FPGA	Field-Programmable Gate Array	MOSFET	Multi Platform InterFace
FTV	Flat TeleVision		MUTE Line
Gb/s	Giga bits per second	MPEG	Not Connected
G-TXT	Green TeleteXT	MPIF	Near Instantaneous Compounded Audio Multiplexing. This is a digital sound system, mainly used in Europe.
H	H_sync to the module	MUTE	Negative Temperature Coefficient, non-linear resistor
HD	High Definition	NC	National Television Standard Committee. Color system mainly used in North America and Japan. Color carrier NTSC M/N= 3.579545 MHz, NTSC 4.43= 4.433619 MHz (this is a VCR norm, it is not transmitted off-air)
HDD	Hard Disk Drive	NICAM	Non-Volatile Memory: IC containing TV related data such as alignments
HDCP	High-bandwidth Digital Content Protection: A "key" encoded into the HDMI/DVI signal that prevents video data piracy. If a source is HDCP coded and connected via HDMI/DVI without the proper HDCP decoding, the picture is put into a "snow vision" mode or changed to a low resolution. For normal content distribution the source and the display device must be enabled for HDCP "software key" decoding.	NTC	Open Circuit
HDMI	High Definition Multimedia Interface	NTSC	On Screen Display
HP	HeadPhone		On screen display Teletext and Control; also called Artistic (SAA5800)
I	Monochrome TV system. Sound carrier distance is 6.0 MHz		Project 50: communication protocol between TV and peripherals
I ² C	Inter IC bus		Phase Alternating Line. Color system mainly used in West Europe (color carrier= 4.433619 MHz) and South America (color carrier PAL M=
I ² D	Inter IC Data bus		
I ² S	Inter IC Sound bus		
IF	Intermediate Frequency		
Interlaced	Scan mode where two fields are used to form one frame. Each field contains half the number of the total amount of		

Safety Instructions, Warnings, Notes, and Abbreviation List

	3.575612 MHz and PAL N= 3.582056 MHz)	V	V-sync to the module
PCB	Printed Circuit Board (same as "PWB")	VCR	Video Cassette Recorder
PCM	Pulse Code Modulation	VESA	Video Electronics Standards Association
PDP	Plasma Display Panel	VGA	640x480 (4:3)
PFC	Power Factor Corrector (or Pre-conditioner)	VL	Variable Level out: processed audio output toward external amplifier
PIP	Picture In Picture	VSB	Vestigial Side Band; modulation method
PLL	Phase Locked Loop. Used for e.g. FST tuning systems. The customer can give directly the desired frequency	WYSIWYR	What You See Is What You Record: record selection that follows main picture and sound
POR	Power On Reset, signal to reset the uP		1280x768 (15:9)
Progressive Scan	Scan mode where all scan lines are displayed in one frame at the same time, creating a double vertical resolution.	WXGA	Quartz crystal
		XTAL	1024x768 (4:3)
PTC	Positive Temperature Coefficient, non-linear resistor	Y	Luminance signal
PWB	Printed Wiring Board (same as "PCB")	Y/C	Luminance (Y) and Chrominance (C) signal
PWM	Pulse Width Modulation	YPbPr	Component video. Luminance and scaled color difference signals (B-Y and R-Y)
QRC	Quasi Resonant Converter		Component video
QTNR	Quality Temporal Noise Reduction	YUV	
QVCP	Quality Video Composition Processor		
RAM	Random Access Memory		
RGB	Red, Green, and Blue. The primary color signals for TV. By mixing levels of R, G, and B, all colors (Y/C) are reproduced.		
RC	Remote Control		
RC5 / RC6	Signal protocol from the remote control receiver		
RESET	RESET signal		
ROM	Read Only Memory		
R-TXT	Red TeleteXT		
SAM	Service Alignment Mode		
S/C	Short Circuit		
SCART	Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs		
SCL	Serial Clock I ² C		
SCL-F	CLock Signal on Fast I ² C bus		
SD	Standard Definition		
SDA	Serial Data I ² C		
SDA-F	DAta Signal on Fast I ² C bus		
SDI	Serial Digital Interface, see "ITU-656"		
SDRAM	Synchronous DRAM		
SECAM	SEequence Couleur Avec Mémoire. Color system mainly used in France and East Europe. Color carriers= 4.406250 MHz and 4.250000 MHz		
SIF	Sound Intermediate Frequency		
SMPS	Switched Mode Power Supply		
SoC	System on Chip		
SOG	Sync On Green		
SOPS	Self Oscillating Power Supply		
S/PDIF	Sony Philips Digital InterFace		
SRAM	Static RAM		
SRP	Service Reference Protocol		
SSB	Small Signal Board		
STBY	STand-BY		
SVGA	800x600 (4:3)		
SVHS	Super Video Home System		
SW	Software		
SWAN	Spatial temporal Weighted Averaging Noise reduction		
SXGA	1280x1024		
TFT	Thin Film Transistor		
THD	Total Harmonic Distortion		
TMDS	Transmission Minimized Differential Signalling		
TXT	TeleteXT		
TXT-DW	Dual Window with TeleteXT		
UI	User Interface		
uP	Microprocessor		
UXGA	1600x1200 (4:3)		

PCBS LOCATION



VERSION VARIATIONS

Type / Versions		BDP3100								BDP3080	BDP5100				
		/05	/12	/51	/55	/93	/96	/98	X/78	/98	/05	/12	/51	/93	/98
Board in used	Service policy														
ASSY-POWER BOARD		M	M	M	C/M	C/M	C/M	C/M	C/M	C/M	M	M	M	C/M	C/M
ASSY-MAIN BOARD		M	M	M	C/M	C/M	C/M	C/M	C/M	C/M	M	M	M	C/M	C/M
ASSY-SWITCH BOARD		M	M	M	M	M	M	M	M	M	M	M	M	M	M
ASSY-FRONT CONTROL BOARD		M	M	M	C/M	C/M	C/M	C/M	C/M	C/M	M	M	M	C/M	C/M
* TIPS: C -- Component Lever Repair. M -- Module Lever Repair X -- Used															

Mechanical and Dismantling Instructions

Dismantling Instruction

Detailed information please refer to the model set.

The following guidelines show how to dismantle the player.

Step1: Remove 6 screws around the Top Cover, and then remove the Top Cover (Figure 1).

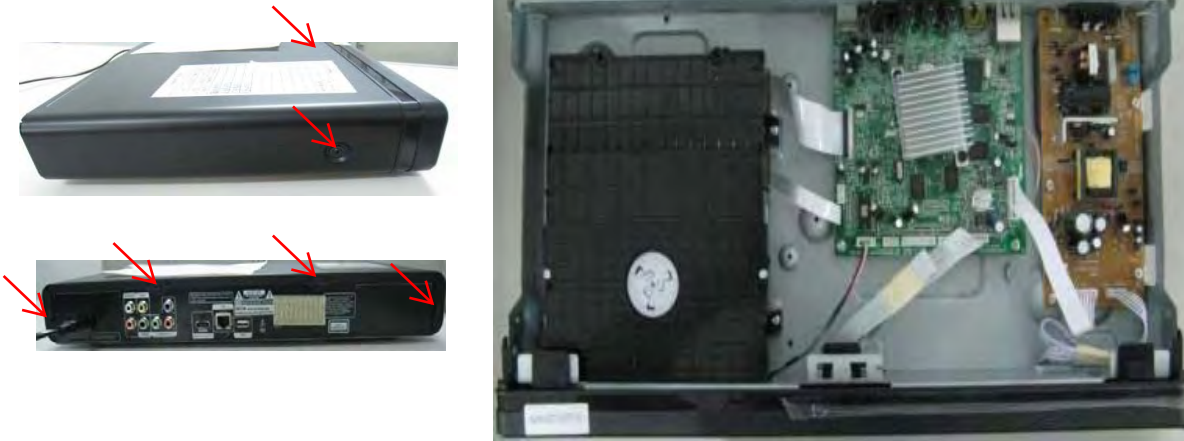


Figure 1

Step2: If it is necessary to dismantle Loader or Front Panel, the Front door should be removed first. (Figure 2)

Note: Make sure to operate gently otherwise the guider would be damaged.



Please kindly note that dismantle the front door assembly carefully to avoid damage tray and the front door.

Figure 2

Mechanical and Dismantling Instructions

Dismantling Instruction

Detailed information please refer to the model set.

Step3: If the tray can't open in normal way, you can make it through the instruction as below (Figure 3).

Note: Make sure to operate gently otherwise the guider would be damaged.



Figure 3

Step4: Dismantling Front Panel, disconnect the connectors (J3, CN502), need release 3 snaps of Front Panel and 2 snaps of bottom cabinet , then gently pull the Panel out from the set. (Figure 4 - Figure 6)

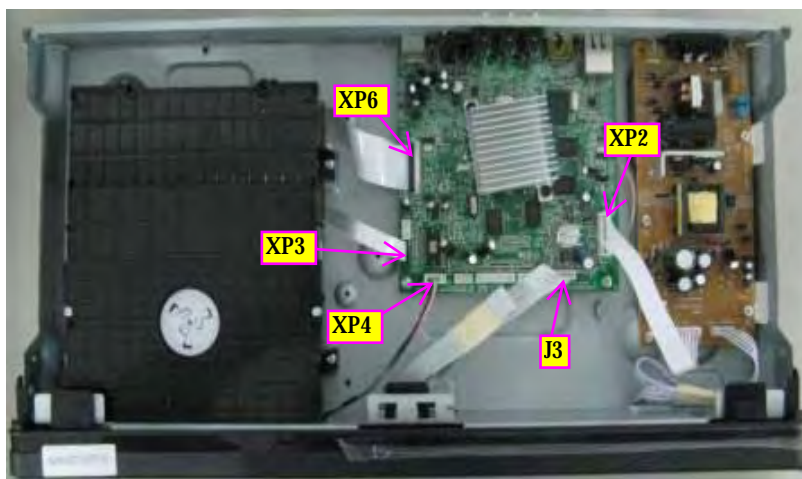


Figure 4

Mechanical and Dismantling Instructions

Dismantling Instruction

Detailed information please refer to the model set.

Step5: Dismantling Loader, disconnect the 3 connectors (XP6, XP3, XP4) aiming in the below figure, and remove 4 screws that connects the loader and the bottom cabinet. (Figure 4-5)

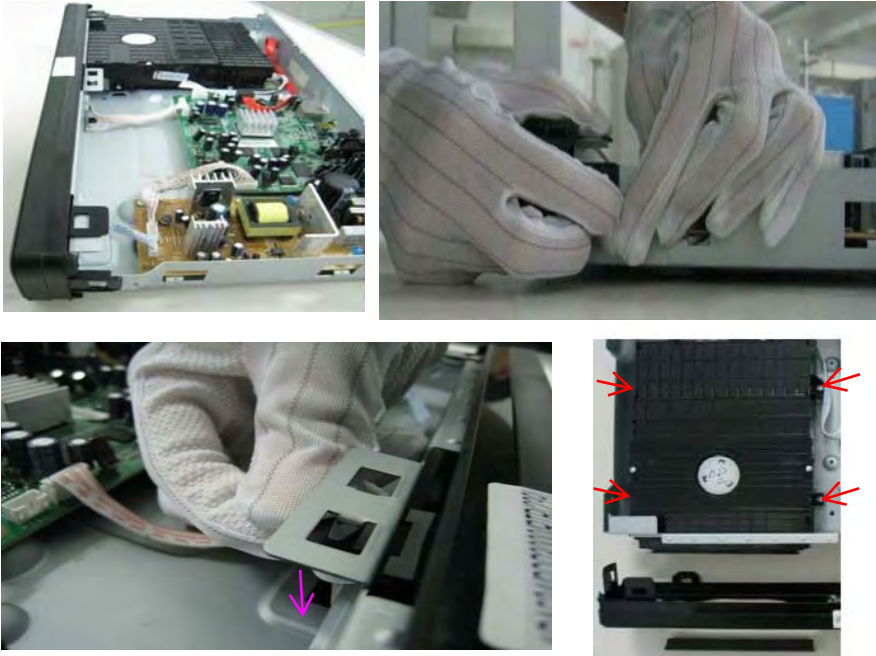


Figure 5

Step6: Dismantling Main Board, first disconnect the connector (XP2), and then remove 6 screws. (Figure 6)

Step7: Disconnect connector (CN504, CN502) and remove 6 screws on Power Board to dismantle the Power Board. (Figure 6)



Figure 6

Software check and upgrade

Preparation to upgrade software

- 1) Start the CD burning software & create a folder named "UPG_ALL",
- 2) Then copy the Bin file (BDP_3100_S_B.bin) OR (BDP_5100_S_B.bin) into it,
- 3) Burn the data onto the blank CD or USB.
- 4) If the model is BDP3100, must use (BDP_3100_S_X.bin) to upgrade
If the model is BDP5100, must use (BDP_5100_S_X.bin) to upgrade
X(A;B;C) If the model BD code is A,,X=A;BD code is B,X=B;BD code is C,X=C

A. Procedure for software upgrade

A) Upgrade software via Disc

- 1) Power on the set and insert the prepared Upgrade CDR.
- 2) The set will start reading disc & response with the following display TV screen:
Now searching for upgrade software!
Please wait...!

Still

- 3) Press <OK> button to confirm, then screen will display :

An upgrade software has been found!

Start upgrade with version:WKXXX.X?

Cancel

Start

- 4) Press Right cursor button to choose "Start", then press <OK>;

- 5) The software will upgrade and screen will display as below:

Upgrade is ongoing, Please wait...

Please do not unplug or switch off the device.

- 6) The screen will display as below when upgrading complete:

Upgrade has completed successfully!

Power off after 5s.

Power Off

- 5) Restart the set.

B) Upgrade software via network:

- 1) Setup the network connection (See "Getting started">"Set up network").
- 2) In the Home menu, select <Setting>-<Advanced Setup>-<Software Download>-<Network>.
- * You are prompted to start upgrading processes if upgrade media is detected.
- 3) Follow the instructions on the TV screen to confirm update operation.
- * Once software update is complete, this player automatically turns off to standby.
- 4) Disconnect the power cord for a few seconds and connect again to turn on the player.

C) Update software via USB Flash Drive:

- 1) Go to www.philips.com/support to check if the latest software version is available for this player.
- 2) Download the software onto a USB flash drive.
- 3) Insert the USB flash drive to the USB jack of the rear panel.
- 4) In the Home menu, select <Setup>-<Advanced Setup>-<Software Update>-<USB>.
- 5) Follow the instructions on the TV screen to confirm update operation.
- * Once software update is complete, this player automatically turns to standby.
- 6) Disconnect the power cord for a few seconds and connect again to turn on the player.

B. Read out the software versions to confirm upgrading

- 1) Power on the set and open the tray door.
- 2) Press <Home> button on the remote control.
- 3) Select <Setup>, then press <OK>.
- 4) Select <Advanced Setup>, press right cursor to choose <Version Info.>, then press <OK>, the software version and other information will display on the TV screen as below:
Model:BDP3XXX or BDP5XXX
Versions:

<http://www.philips.com/support>

MAC:XX-XX-XX-XX-XX-XX

Caution: The set must not be power off during upgrading, otherwise the Main board will be damaged entirely.

Remark: The region code can not be manual changed.

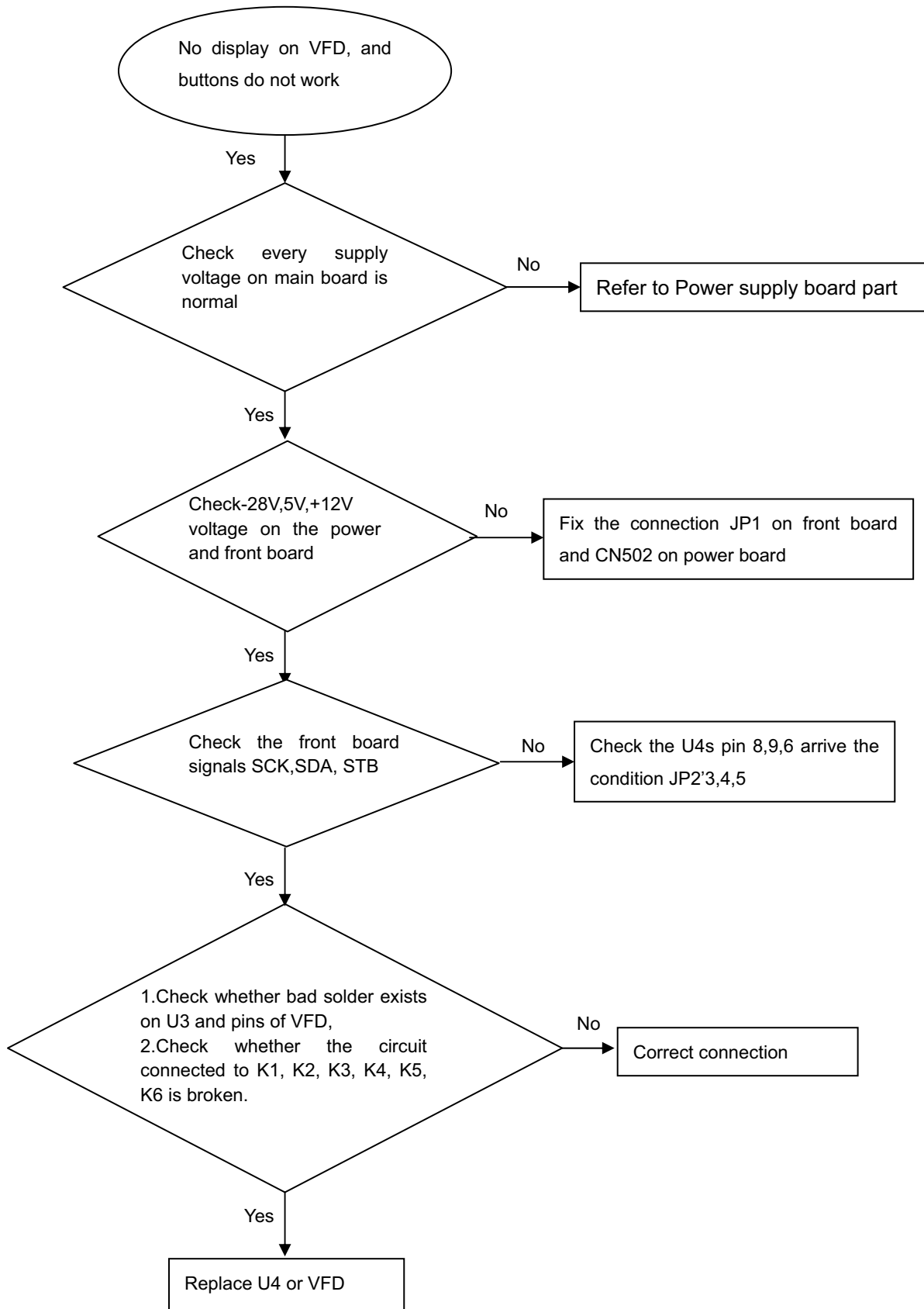
Loader repair Instruction for BDP3100/5100/ 3080/98

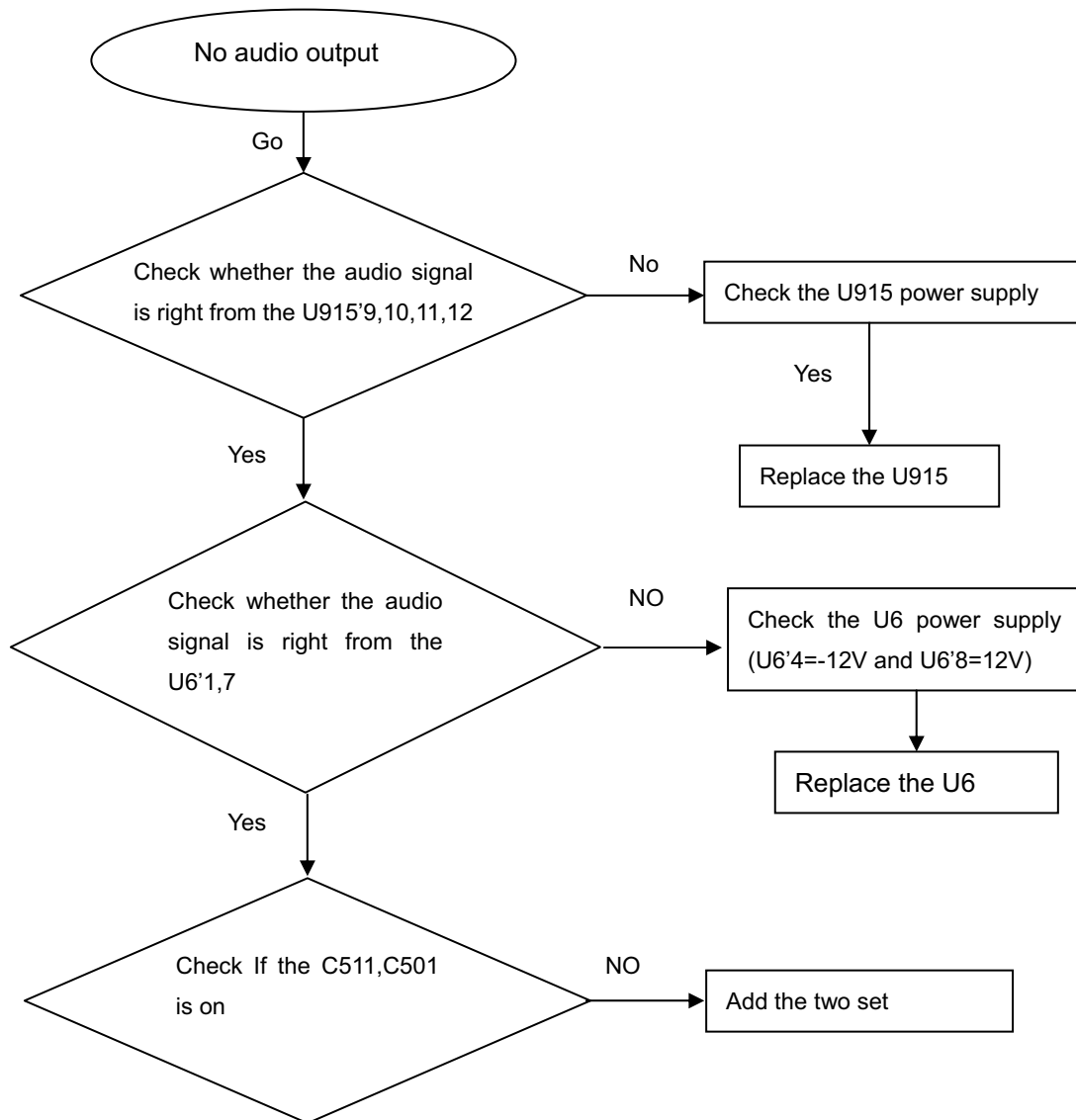
Preliminaries (at O.E.M. supplier site)

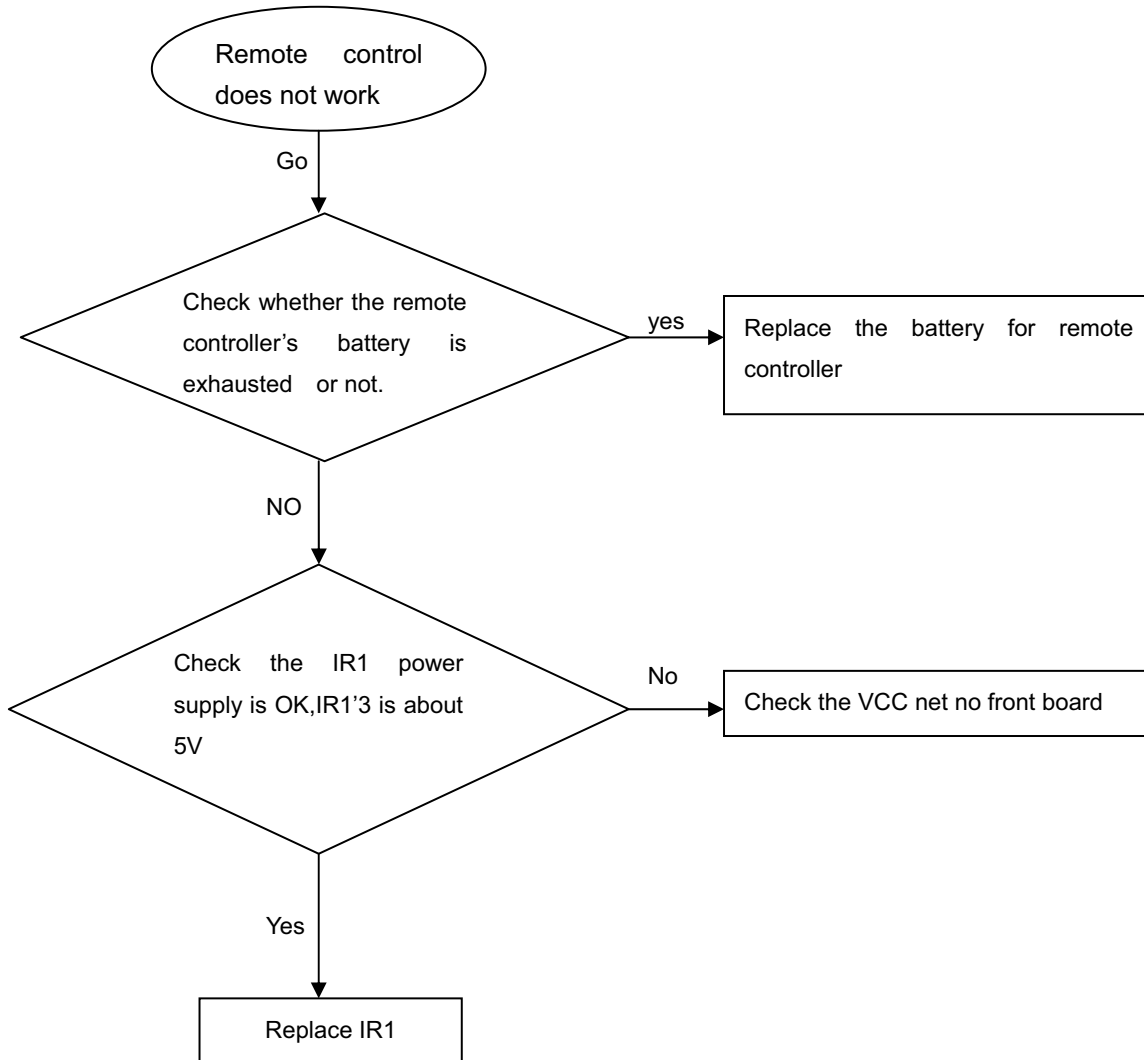
After scanning BARCODE on the new LOADER in supplier – TCL factory, print the one-dimensional code which generated by scanner and computer on label, then paste it into LOADER. If FA test passed , break off the protection point under the LOADER.

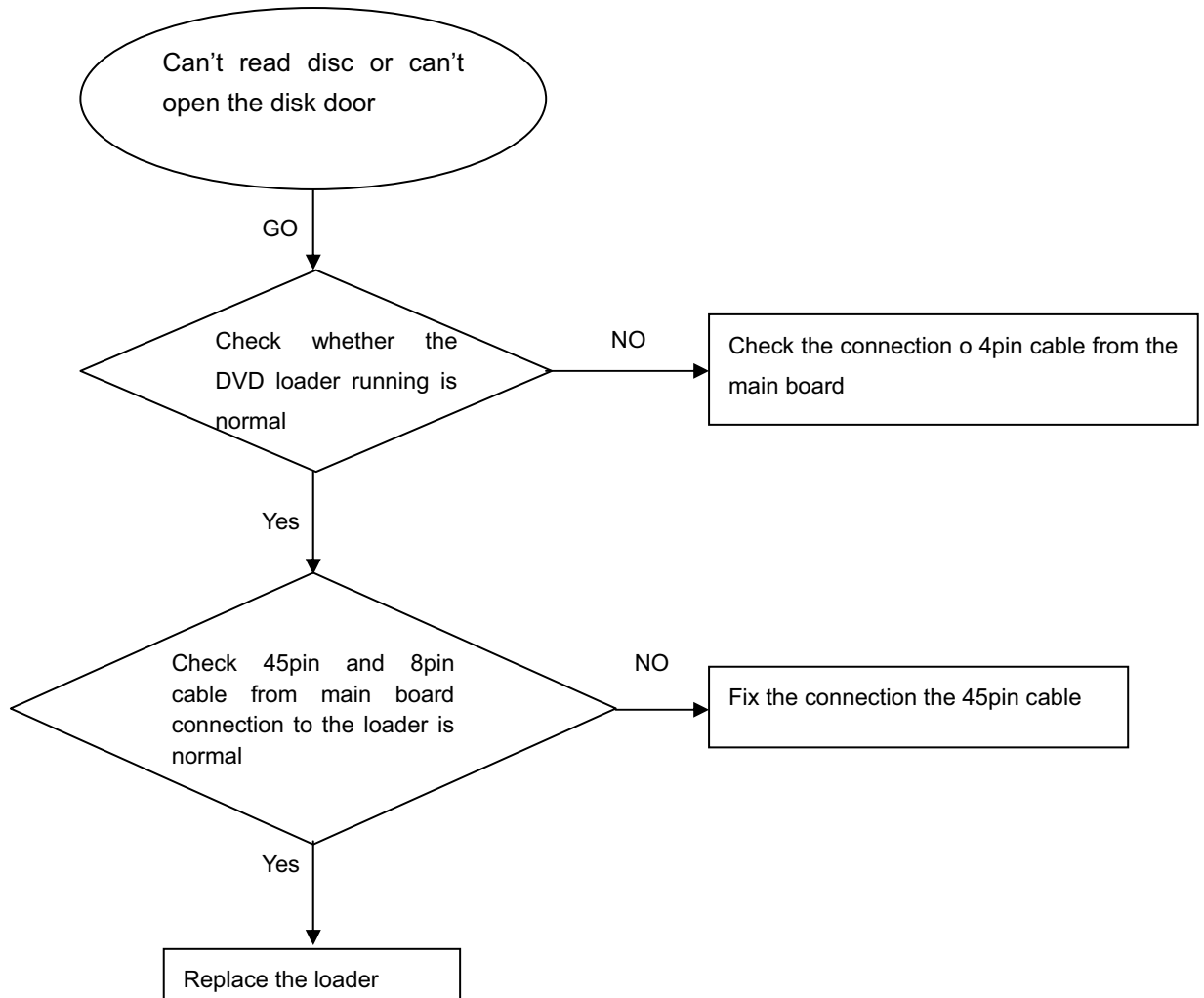
Repair Procedure in workshop

1. In region's workshop, to install loader in the machine then weld the open protection point. Keep the set to connect the TV and power on, press keys "5""1""7""7" on Remote Control when in the HOME menu, then the menu will be displayed.
2. Select "Enter Barcode Info" from the menu, input the BARCODE of the LOADER and wait until the OSD displays "PASS", press "STOP" key on Remote Control to go back to the menu.
3. Select "Laser check", confirm whether the cable is connected and welded protection point is ok.
4. Restart the set, test CD, DVD, BD discs. If ok, the LOADER replacing procedure is finish.

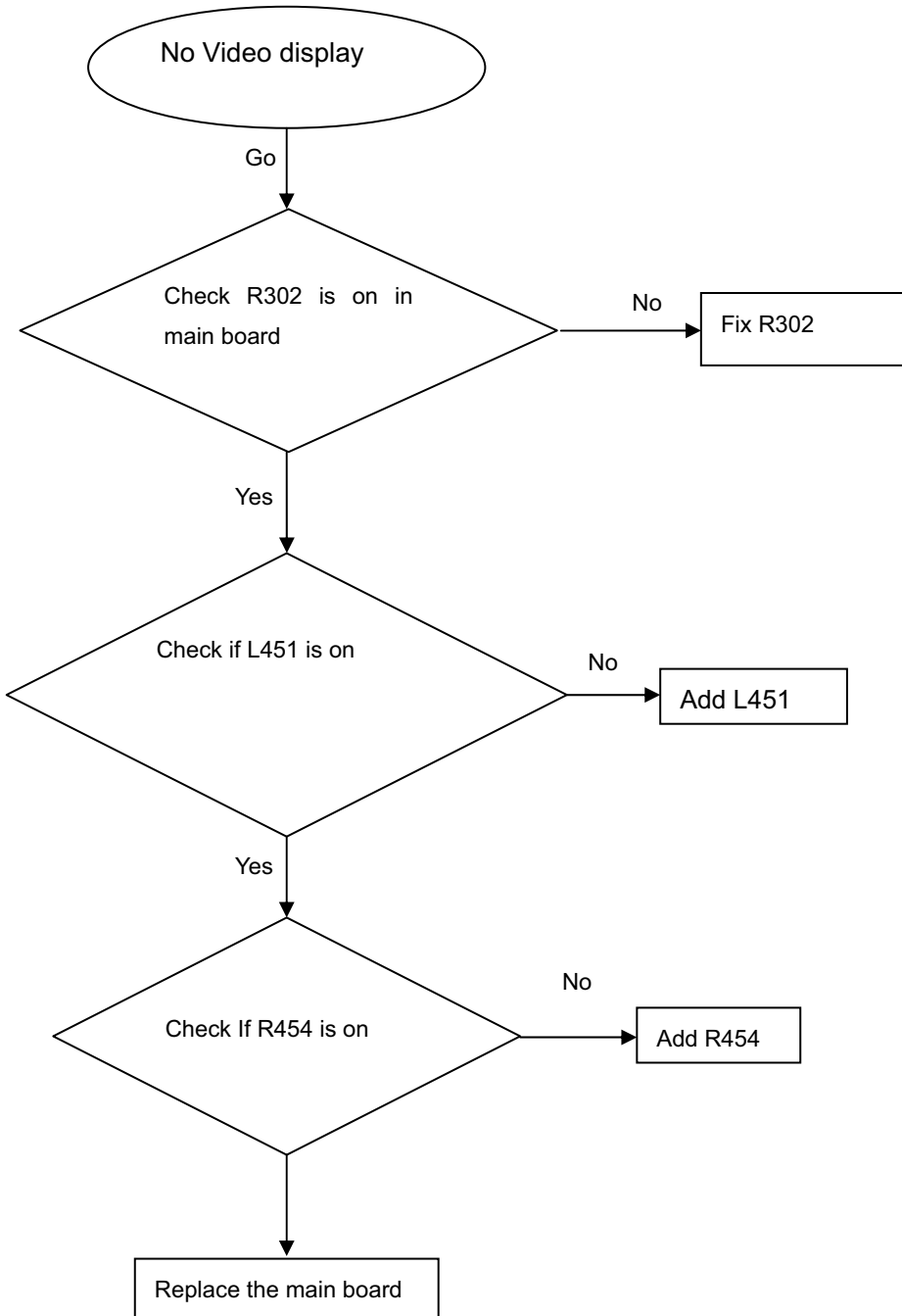
No display on VFD, and buttons do not work

No audio output

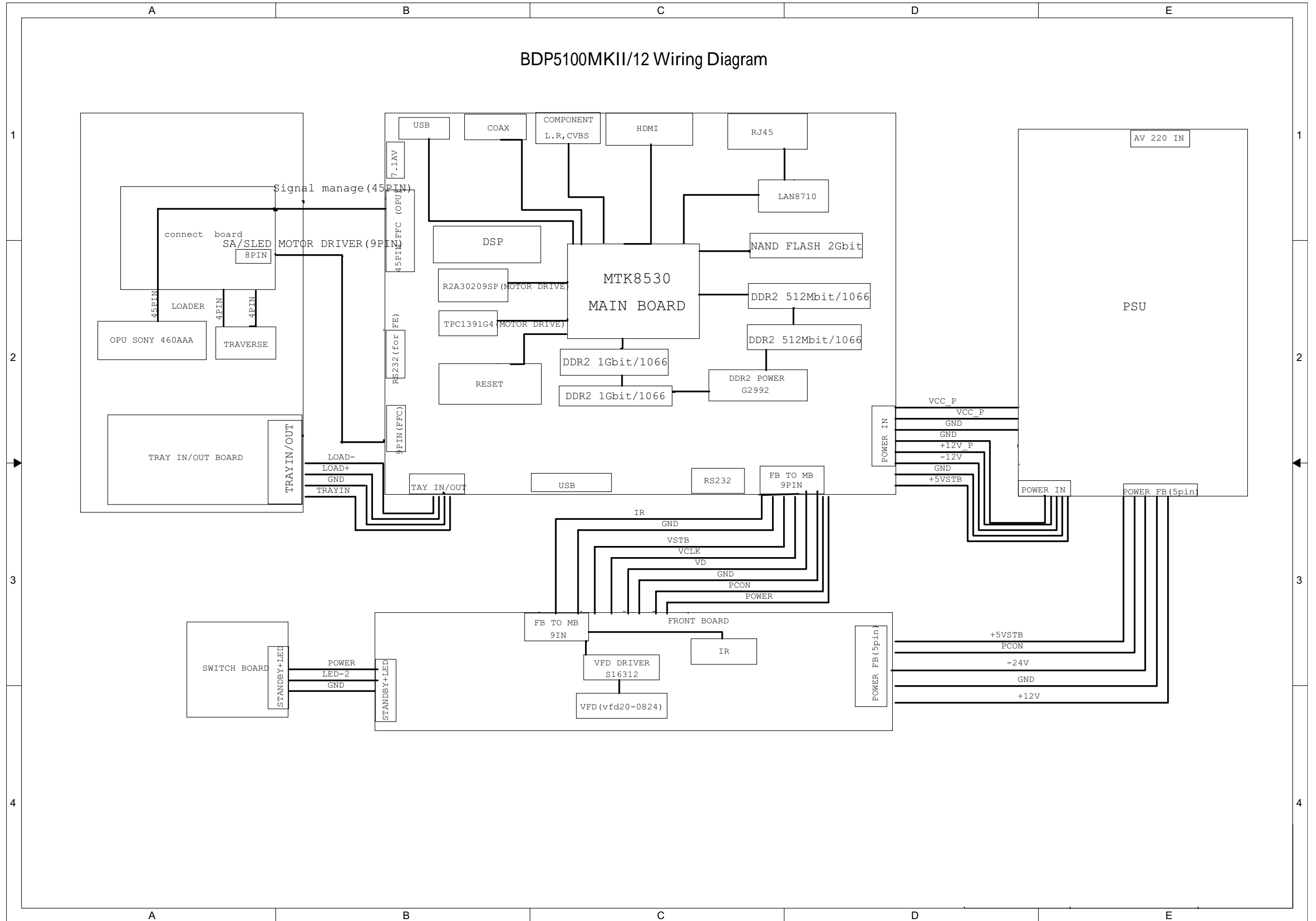
Remote control does not work

Can't read disc or can't open the disk door

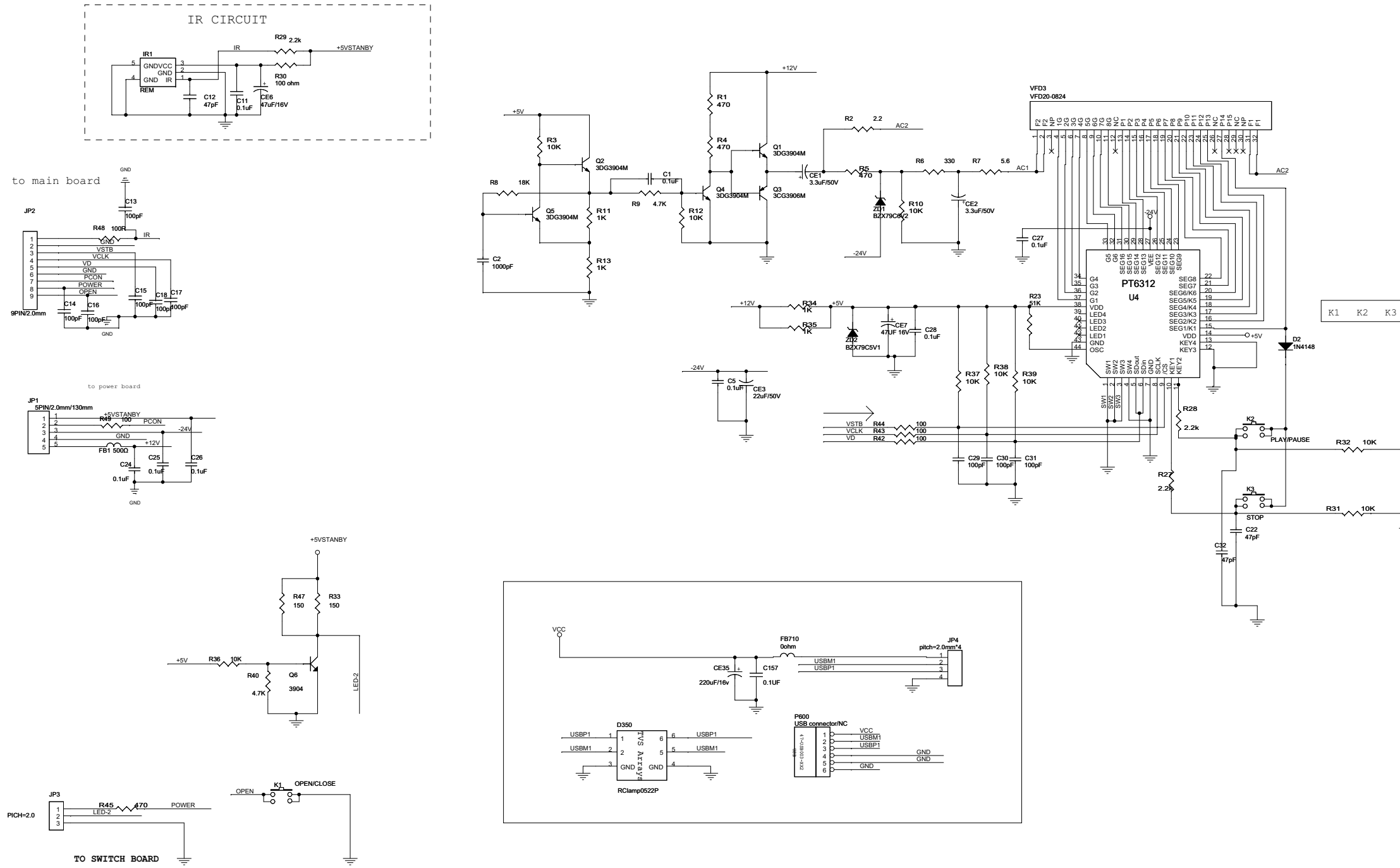
No video display



BDP5100MKII/12 Wiring Diagram



Front Board Circuit Diagram:

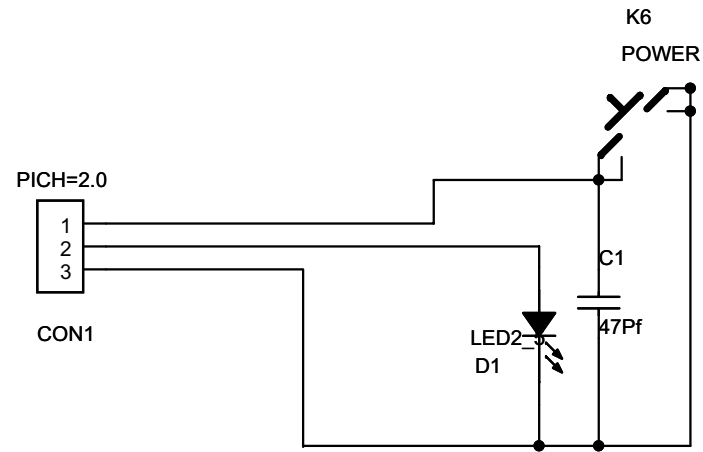


A B C D E

Switch Board Circuit Diagram:

1

1



2

2

SWITCH BOARD

3

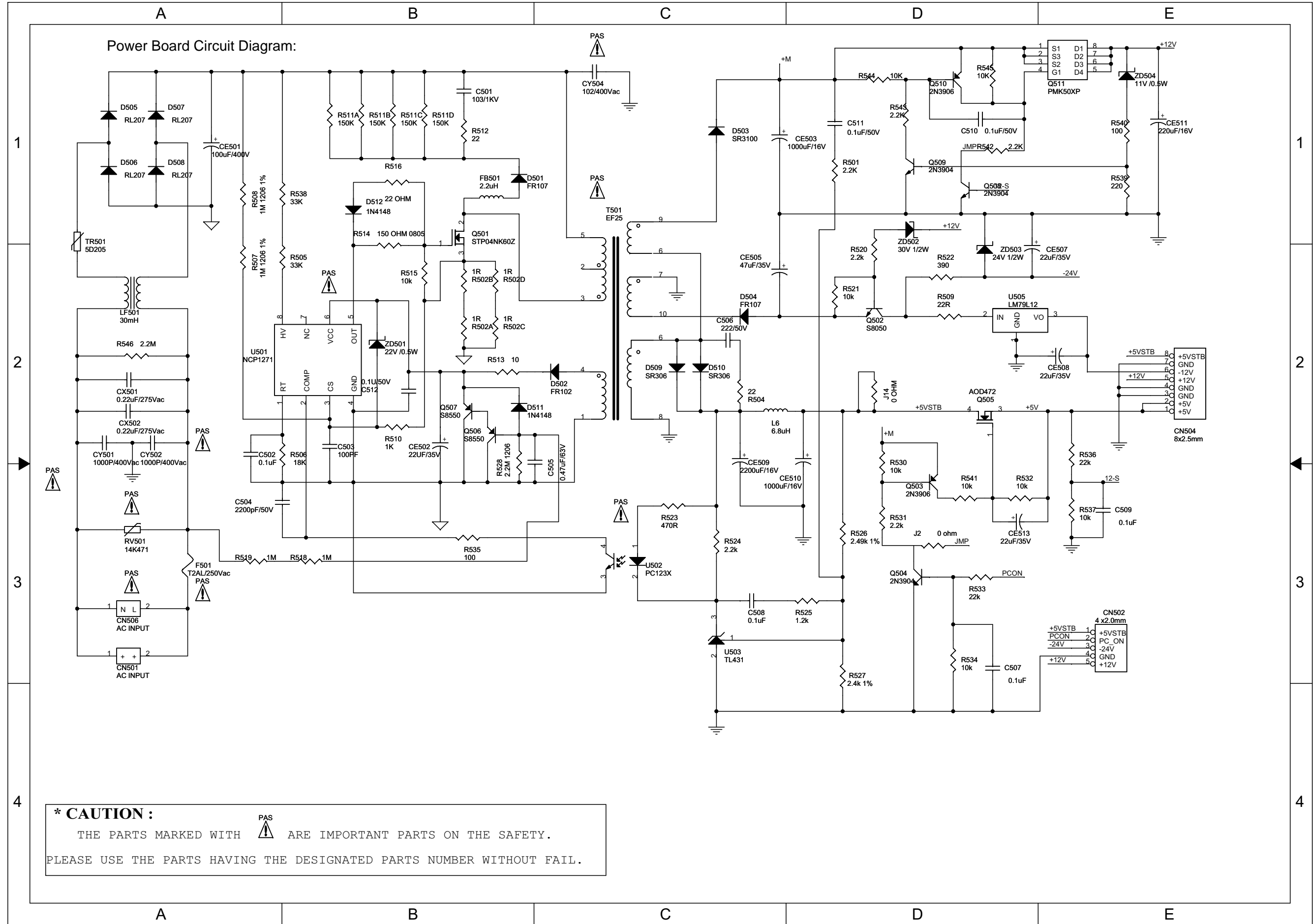
3

4


4

A B C D E

Power Board Circuit Diagram:

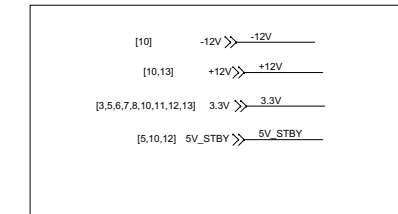
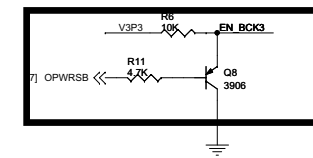
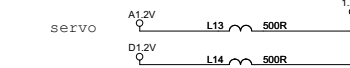
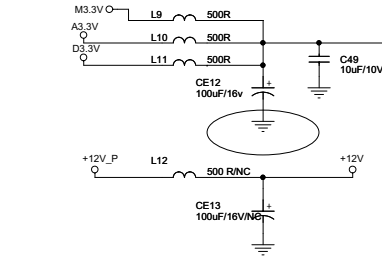
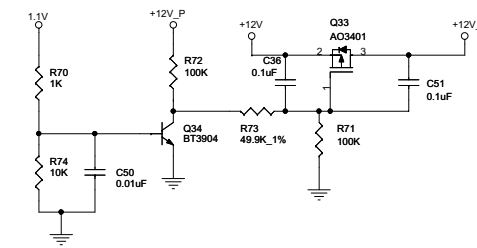
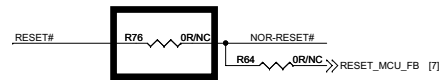
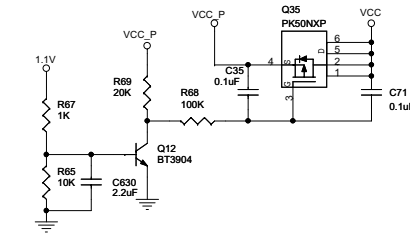
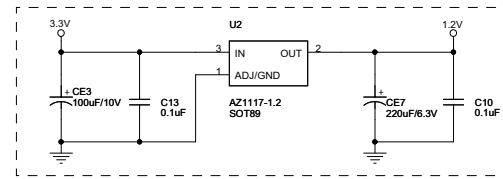
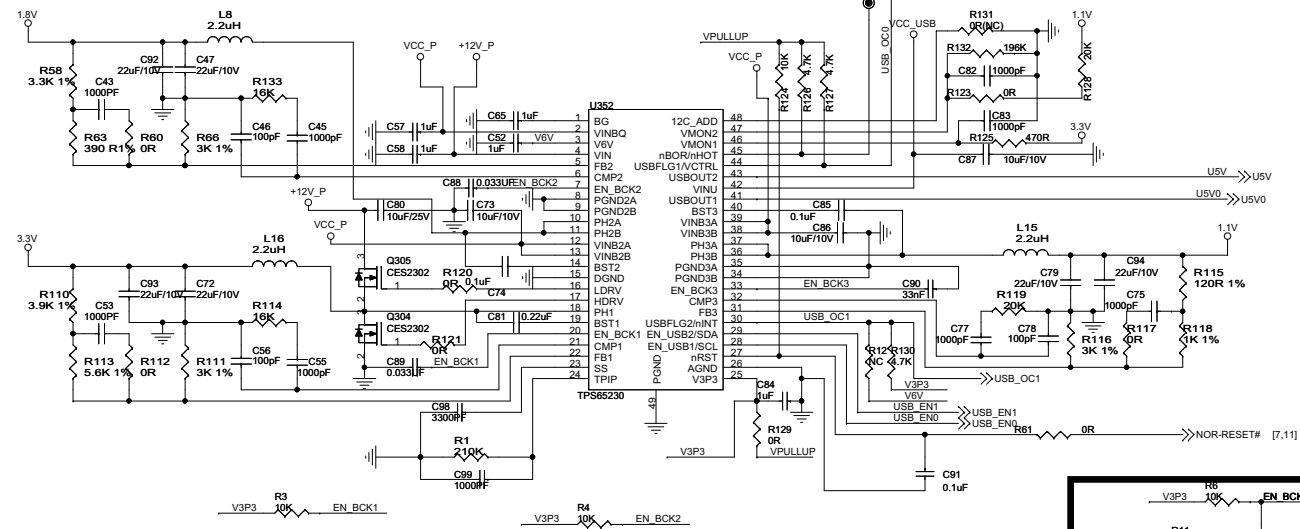
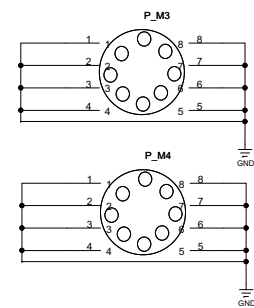
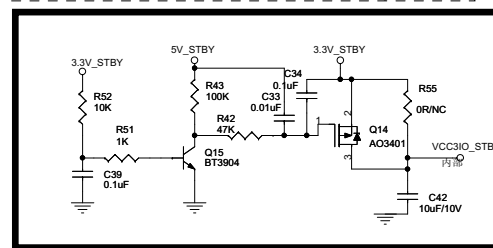
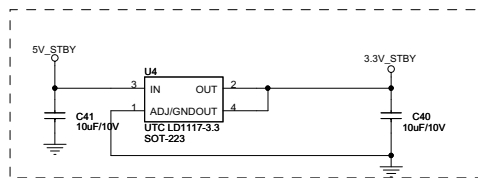
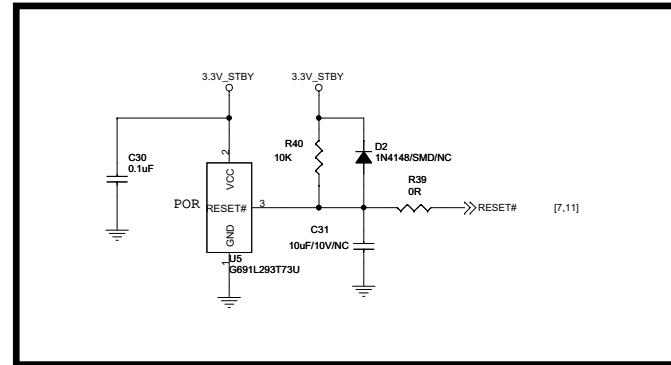
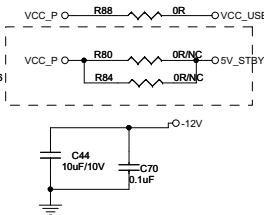
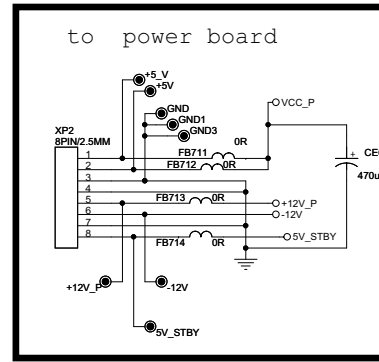


*** CAUTION :**

THE PARTS MARKED WITH  ARE IMPORTANT PARTS ON THE SAFETY.

PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

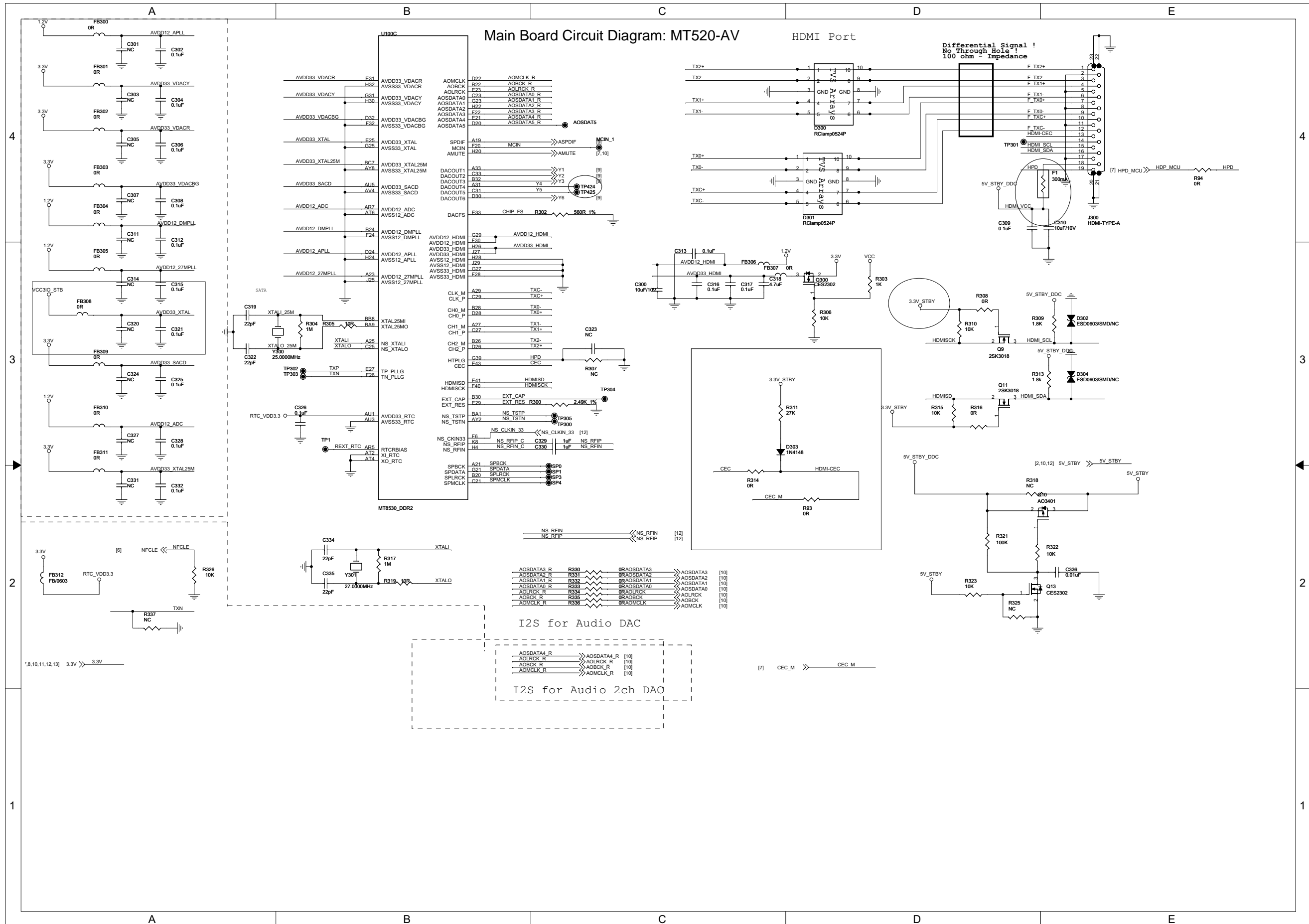
Main Board Circuit Diagram: POWER



Main Board Circuit Diagram: MT530-DDR Part2

J9	DVSS	B_DQ0	AR39	B_DQ0
J11	DVSS	B_DQ1	AW43	B_DQ1
T12	DVSS	B_DQ2	AW43	B_DQ2
V12	DVSS	B_DQ3	AW41	B_DQ3
J13	DVSS	B_DQ4	AT38	B_DQ4
U13	DVSS	B_DQ5	AR37	B_DQ5
W13	DVSS	B_DQ6	AF36	B_DQ6
AW13	DVSS	B_DQ7	AN43	B_DQ7
T14	DVSS	B_DQ8	AK36	B_DQ8
E14	DVSS	B_DQ9	AM40	B_DQ9
AT14	DVSS	B_DQ10	AL37	B_DQ10
H16	DVSS	B_DQ11	AM38	B_DQ11
AR17	DVSS	B_DQ12	AM42	B_DQ12
AU17	DVSS	B_DQ13	AL39	B_DQ13
AW17	DVSS	B_DQ14	AN41	B_DQ14
J18	DVSS	B_DQ15	Y38	B_DQ15
AA21	DVSS	B_DQ16	AA41	B_DQ16
AC21	DVSS	B_DQ17	W37	B_DQ17
AE21	DVSS	B_DQ18	AA43	B_DQ18
AG21	DVSS	B_DQ19	V40	B_DQ19
J21	DVSS	B_DQ20	W39	B_DQ20
AU21	DVSS	B_DQ21	Y42	B_DQ21
AW21	DVSS	B_DQ22	Y36	B_DQ22
Y22	DVSS	B_DQ23	T40	B_DQ23
AK22	DVSS	B_DQ24	R37	B_DQ24
AT22	DVSS	B_DQ25	R43	B_DQ25
J23	DVSS	B_DQ26	T38	B_DQ26
AC23	DVSS	B_DQ27	T36	B_DQ27
AE23	DVSS	B_DQ28	R41	B_DQ28
AG23	DVSS	B_DQ29	R39	B_DQ29
Y24	DVSS	B_DQ30	T42	B_DQ30
AB24	DVSS	B_DQ31	T42	B_DQ31
AD24	DVSS	B_DQM0	AP38	B_DQM0
AE24	DVSS	B_DQM1	AM36	B_DQM1
AG24	DVSS	B_DQM2	V38	B_DQM2
Y25	DVSS	B_DQM3	Y36	B_DQM3
AB25	DVSS	B_DQS0#	AT42	B_DQS0#
AD25	DVSS	B_DQS1#	AR41	B_DQS1#
AE25	DVSS	B_DQS2#	W43	B_DQS2#
AG25	DVSS	B_DQS3#	U41	B_DQS3#
Y26	DVSS	B_DQS0	AT40	B_DQS0
AB26	DVSS	B_DQS1	AR43	B_DQS1
AD26	DVSS	B_DQS2	W41	B_DQS2
AE26	DVSS	B_DQS3	U43	B_DQS3
AG26	DVSS	B_DQS0	AT40	B_DQS0
Y27	DVSS	B_DQS1	AR43	B_DQS1
AB27	DVSS	B_DQS2	W41	B_DQS2
AD27	DVSS	B_DQS3	U43	B_DQS3
AE27	DVSS	B_DQS0	AT40	B_DQS0
AG27	DVSS	B_DQS1	AR43	B_DQS1
Y28	DVSS	B_DQS2	W41	B_DQS2
AB28	DVSS	B_DQS3	U43	B_DQS3
AD28	DVSS	B_DQS0	AT40	B_DQS0
AE28	DVSS	B_DQS1	AR43	B_DQS1
AG28	DVSS	B_DQS2	W41	B_DQS2
Y29	DVSS	B_DQS3	U43	B_DQS3
AB29	DVSS	B_DQS0	AT40	B_DQS0
AD29	DVSS	B_DQS1	AR43	B_DQS1
AE29	DVSS	B_DQS2	W41	B_DQS2
AG29	DVSS	B_DQS3	U43	B_DQS3
Y30	DVSS	B_DQS0	AT40	B_DQS0
AB30	DVSS	B_DQS1	AR43	B_DQS1
AD30	DVSS	B_DQS2	W41	B_DQS2
AE30	DVSS	B_DQS3	U43	B_DQS3
AG30	DVSS	B_DQS0	AT40	B_DQS0
Y31	DVSS	B_DQS1	AR43	B_DQS1
AB31	DVSS	B_DQS2	W41	B_DQS2
AD31	DVSS	B_DQS3	U43	B_DQS3
AE31	DVSS	B_DQS0	AT40	B_DQS0
AG31	DVSS	B_DQS1	AR43	B_DQS1
Y32	DVSS	B_DQS2	W41	B_DQS2
AB32	DVSS	B_DQS3	U43	B_DQS3
AD32	DVSS	B_DQS0	AT40	B_DQS0
AE32	DVSS	B_DQS1	AR43	B_DQS1
AG32	DVSS	B_DQS2	W41	B_DQS2
Y33	DVSS	B_DQS3	U43	B_DQS3
AB33	DVSS	B_DQS0	AT40	B_DQS0
AD33	DVSS	B_DQS1	AR43	B_DQS1
AE33	DVSS	B_DQS2	W41	B_DQS2
AG33	DVSS	B_DQS3	U43	B_DQS3
Y34	DVSS	B_DQS0	AT40	B_DQS0
AB34	DVSS	B_DQS1	AR43	B_DQS1
AD34	DVSS	B_DQS2	W41	B_DQS2
AE34	DVSS	B_DQS3	U43	B_DQS3
AG34	DVSS	B_DQS0	AT40	B_DQS0
Y35	DVSS	B_DQS1	AR43	B_DQS1
AB35	DVSS	B_DQS2	W41	B_DQS2
AD35	DVSS	B_DQS3	U43	B_DQS3
AE35	DVSS	B_DQS0	AT40	B_DQS0
AG35	DVSS	B_DQS1	AR43	B_DQS1
Y36	DVSS	B_DQS2	W41	B_DQS2
AB36	DVSS	B_DQS3	U43	B_DQS3
AD36	DVSS	B_DQS0	AT40	B_DQS0
AE36	DVSS	B_DQS1	AR43	B_DQS1
AG36	DVSS	B_DQS2	W41	B_DQS2
Y37	DVSS	B_DQS3	U43	B_DQS3
AB37	DVSS	B_DQS0	AT40	B_DQS0
AD37	DVSS	B_DQS1	AR43	B_DQS1
AE37	DVSS	B_DQS2	W41	B_DQS2
AG37	DVSS	B_DQS3	U43	B_DQS3
Y38	DVSS	B_DQS0	AT40	B_DQS0
AB38	DVSS	B_DQS1	AR43	B_DQS1
AD38	DVSS	B_DQS2	W41	B_DQS2
AE38	DVSS	B_DQS3	U43	B_DQS3
AG38	DVSS	B_DQS0	AT40	B_DQS0
Y39	DVSS	B_DQS1	AR43	B_DQS1
AB39	DVSS	B_DQS2	W41	B_DQS2
AD39	DVSS	B_DQS3	U43	B_DQS3
AE39	DVSS	B_DQS0	AT40	B_DQS0
AG39	DVSS	B_DQS1	AR43	B_DQS1
Y40	DVSS	B_DQS2	W41	B_DQS2
AB40	DVSS	B_DQS3	U43	B_DQS3
AD40	DVSS	B_DQS0	AT40	B_DQS0
AE40	DVSS	B_DQS1	AR43	B_DQS1
AG40	DVSS	B_DQS2	W41	B_DQS2
Y41	DVSS	B_DQS3	U43	B_DQS3
AB41	DVSS	B_DQS0	AT40	B_DQS0
AD41	DVSS	B_DQS1	AR43	B_DQS1
AE41	DVSS	B_DQS2	W41	B_DQS2
AG41	DVSS	B_DQS3	U43	B_DQS3
Y42	DVSS	B_DQS0	AT40	B_DQS0
AB42	DVSS	B_DQS1	AR43	B_DQS1
AD42	DVSS	B_DQS2	W41	B_DQS2
AE42	DVSS	B_DQS3	U43	B_DQS3
AG42	DVSS	B_DQS0	AT40	B_DQS0
Y43	DVSS	B_DQS1	AR43	B_DQS1
AB43	DVSS	B_DQS2	W41	B_DQS2
AD43	DVSS	B_DQS3	U43	B_DQS3
AE43	DVSS	B_DQS0	AT40	B_DQS0
AG43	DVSS	B_DQS1	AR43	B_DQS1
Y44	DVSS	B_DQS2	W41	B_DQS2
AB44	DVSS	B_DQS3	U43	B_DQS3
AD44	DVSS	B_DQS0	AT40	B_DQS0
AE44	DVSS	B_DQS1	AR43	B_DQS1
AG44	DVSS	B_DQS2	W41	B_DQS2
Y45	DVSS	B_DQS3	U43	B_DQS3
AB45	DVSS	B_DQS0	AT40	B_DQS0
AD45	DVSS	B_DQS1	AR43	B_DQS1
AE45	DVSS	B_DQS2	W41	B_DQS2
AG45	DVSS	B_DQS3	U43	B_DQS3
Y46	DVSS	B_DQS0	AT40	B_DQS0
AB46	DVSS	B_DQS1	AR43	B_DQS1
AD46	DVSS	B_DQS2	W41	B_DQS2
AE46	DVSS	B_DQS3	U43	B_DQS3
AG46	DVSS	B_DQS0	AT40	B_DQS0
Y47	DVSS	B_DQS1	AR43	B_DQS1
AB47	DVSS	B_DQS2	W41	B_DQS2
AD47	DVSS	B_DQS3	U43	B_DQS3
AE47	DVSS	B_DQS0	AT40	B_DQS0
AG47	DVSS	B_DQS1	AR43	B_DQS1
Y48	DVSS	B_DQS2	W41	B_DQS2
AB48	DVSS	B_DQS3	U43	B_DQS3
AD48	DVSS	B_DQS0	AT40	B_DQS0
AE48	DVSS	B_DQS1	AR43	B_DQS1
AG48	DVSS	B_DQS2	W41	B_DQS2
Y49	DVSS	B_DQS3	U43	B_DQS3
AB49	DVSS	B_DQS0	AT40	B_DQS0
AD49	DVSS	B_DQS1	AR43	B_DQS1
AE49	DVSS	B_DQS2	W41	B_DQS2
AG49	DVSS	B_DQS3	U43	B_DQS3
Y50	DVSS	B_DQS0	AT40	B_DQS0
AB50	DVSS	B_DQS1	AR43	B_DQS1
AD50	DVSS	B_DQS2	W41	B_DQS2
AE50	DVSS	B_DQS3	U43	B_DQS3
AG50	DVSS	B_DQS0	AT40	B_DQS0
Y51	DVSS	B_DQS1	AR43	B_DQS1
AB51	DVSS	B_DQS2	W41	B_DQS2
AD51	DVSS	B_DQS3	U43	B_DQS3
AE51	DVSS	B_DQS0	AT40	B_DQS0
AG51	DVSS	B_DQS1	AR43	B_DQS1
Y52	DVSS	B_DQS2	W41	B_DQS2
AB52	DVSS	B_DQS3	U43	B_DQS3
AD52	DVSS	B_DQS0	AT40	B_DQS0
AE52	DVSS	B_DQS1	AR43	B_DQS1
AG52	DVSS	B_DQS2	W41	B_DQS2
Y53	DVSS	B_DQS3	U43	B_DQS3
AB53	DVSS	B_DQS0	AT40	B_DQS0
AD53	DVSS	B_DQS1	AR43	B_DQS1
AE53	DVSS	B_DQS2	W41	B_DQS2
AG53	DVSS	B_DQS3	U43	B_DQS3
Y54	DVSS	B_DQS0	AT40	B_DQS0
AB54	DVSS	B_DQS1	AR43	B_DQS1
AD54	DVSS	B_DQS2	W41	B_DQS2
AE54	DVSS	B_DQS3	U43	B_DQS3
AG54	DVSS	B_DQS0	AT40	B_DQS0
Y55	DVSS	B_DQS1	AR43	B_DQS1
AB55	DVSS	B_DQS2	W41	B_DQS2
AD55	DVSS	B_DQS3	U43	B_DQS3
AE55	DVSS	B_DQS0	AT40	B_DQS0
AG55	DVSS	B_DQS1	AR43	B_DQS1
Y56	DVSS	B_DQS2	W41	B_DQS2
AB56	DVSS	B_DQS3	U43	B_DQS3
AD56	DVSS	B_DQS0	AT40	B_DQS0
AE56	DVSS	B_DQS1	AR43	B_DQS1
AG56	DVSS	B_DQS2	W41	B_DQS2
Y57	DVSS	B_DQS3	U43	B_DQS3
AB57	DVSS	B_DQS0	AT40	B_DQS0
AD57	DVSS	B_DQS1	AR43	B_DQS1
AE57	DVSS	B_DQS2	W41	B_DQS2
AG57	DVSS	B_DQS3	U43	B_DQS3
Y58	DVSS	B_DQS0	AT40	B_DQS0
AB58	DVSS	B_DQS1	AR43	B_DQS1
AD58	DVSS	B_DQS2	W41	B_DQS2
AE58	DVSS	B_DQS3	U43	B_DQS3
AG58	DVSS	B_DQS0	AT40	B_DQS0
Y59	DVSS	B_DQS1	AR43	B_DQS1
AB59	DVSS	B_DQS2	W41	B_DQS2
AD59	DVSS	B_DQS3	U43	B_DQS3
AE59	DVSS	B_DQS0	AT40	B_DQS0
AG59	DVSS	B_DQS1	AR43	B_DQS1
Y60	DVSS	B_DQS2	W41	B_DQS2
AB60	DVSS	B_DQS3	U43	B_DQS3
AD60	DVSS	B_DQS0	AT40	B_DQS0
AE60	DVSS	B_DQS1	AR43	B_DQS1
AG60	DVSS	B_DQS2	W41	B_DQS2
Y61	DVSS	B_DQS3	U43	B_DQS3
AB61	DVSS	B_DQS0	AT40	B_DQS0
AD61	DVSS	B_DQS1	AR43	B_DQS1
AE61	DVSS	B_DQS2	W41	B_DQS2
AG61	DVSS	B_DQS3	U43	B_DQS3
Y62	DVSS	B_DQS0	AT40	B_DQS0
AB62	DVSS	B_DQS1	AR43	B_DQS1
AD62	DVSS	B_DQS2	W41	B_DQS2
AE62	DVSS	B_DQS3	U43	B_DQS3
AG62	DVSS	B_DQS0	AT40	B_DQS0
Y63	DVSS	B_DQS1	AR43	B_DQS1
AB63	DVSS	B_DQS2	W41	B_DQS2
AD63	DVSS	B_DQS3	U43	B_DQS3
AE63	DVSS	B_DQS0	AT40	B_DQS0
AG63	DVSS	B_DQS1	AR43	B_DQS1
Y64	DVSS	B_DQS2	W41	B_DQS2
AB64	DVSS	B_DQS3	U43	B_DQS3
AD64	DVSS	B_DQS0	AT40	B_DQS0
AE64	DVSS	B_DQS1	AR43	B_DQS1
AG64	DVSS	B_DQS2	W41	B_DQS2
Y65	DVSS	B_DQS3	U43	B_DQS3
AB65	DVSS	B_DQS0	AT40	B_DQS0
AD65	DVSS	B_DQS1	AR43	B_DQS1
AE65	DVSS	B_DQS2	W41	B_DQS2
AG65	DVSS	B_DQS3	U43	B_DQS3
Y66	DVSS	B_DQS0	AT40	B_DQS0
AB66	DVSS	B_DQS1	AR43	B_DQS1
AD66	DVSS	B_DQS2	W41	B_DQS2
AE66	DVSS	B_DQS3	U43	B_DQS3
AG66	DVSS	B_DQS0	AT40	B_DQS0
Y67	DVSS	B_DQS1	AR43	B_DQS1
AB67	DVSS	B_DQS2	W41	B_DQS2
AD67	DVSS	B_DQS3	U43	B_DQS3
AE67	DVSS	B_DQS0	AT40	B_DQS0
AG67	DVSS	B_DQS1	AR43	B_DQS1
Y68	DVSS	B_DQS2	W41	B_DQS2
AB68	DVSS	B_DQS3	U43	B_DQS3
AD68	DVSS	B_DQS0	AT40	B_DQS0
AE68	DVSS	B_DQS1	AR43	B_DQS1
AG68	DVSS	B_DQS2	W41	B_DQS2
Y69	DVSS	B_DQS3	U43	B_DQS3
AB69	DVSS	B_DQS0	AT40	B_DQS0
AD69	DVSS	B_DQS1	AR43	B_DQS1
AE69	DVSS	B_DQS2	W41	B_DQS2
AG69	DVSS	B_DQS3	U43	B_DQS3
Y70	DVSS	B_DQS0	AT40	B_DQS0
AB70	DVSS	B_DQS1	AR43	B_DQS1
AD70	DVSS	B_DQS2	W41	B_DQS2
AE70	DVSS	B_DQS3	U43	B_DQS3
AG70	DVSS	B_DQS0	AT40	B_DQS0
Y71	DVSS	B_DQS1	AR43	B_DQS1
AB71	DVSS	B_DQS2	W41	B_DQS2
AD71	DVSS	B_DQS3	U43	B_DQS3
AE71	DVSS	B_DQS0	AT40	B_DQS0
AG71	DVSS	B_DQS1	AR43	B_DQS1
Y72	DVSS	B_DQS2	W41	B_DQS2
AB72	DVSS	B_DQS3	U43	B_DQS3
AD72	DVSS	B_DQS0	AT40	B_DQS0
AE72	DVSS	B_DQS1	AR43	B_DQS1
AG72	DVSS	B_DQS2	W41	B_DQS2
Y73	DVSS	B_DQS3	U43	B_DQS3
AB73	DVSS	B_DQS0	AT40	B_DQS0
AD7				

Main Board Circuit Diagram: MT520-AV



AVDD33_VDACR E31 AVDD33_VDACR
 AVSS33_VDACR H32 AVSS33_VDACR
 AVDD33_VDACY G31 AVDD33_VDACY
 AVSS33_VDACY H30 AVSS33_VDACY
 AVDD33_VDACBG D32 AVDD33_VDACBG
 AVSS33_VDACBG F32 AVSS33_VDACBG
 AVDD33_XTAL E26 AVDD33_XTAL
 AVSS33_XTAL G25 AVSS33_XTAL
 AVDD33_XTAL25M BC7 AVDD33_XTAL25M
 AVSS33_XTAL25M AY8 AVSS33_XTAL25M
 AVDD33_SACD AU5 AVDD33_SACD
 AVSS33_SACD AV4 AVSS33_SACD
 AVDD12_ADC AR7 AVDD12_ADC
 AVSS12_ADC AT6 AVSS12_ADC
 AVDD12_DMPLL B24 AVDD12_DMPLL
 AVSS12_DMPLL F21 AVSS12_DMPLL
 AVDD12_APLL D24 AVDD12_APLL
 AVSS12_APLL H24 AVSS12_APLL
 AVDD12_27MPLL A23 AVDD12_27MPLL
 AVSS12_27MPLL J25 AVSS12_27MPLL

AOMCLK R D22 AOMCLK R
 AOBCK R B22 AOBCK R
 AOLRCK R E23 AOLRCK R
 AOSDATA0 R C23 AOSDATA0 R
 AOSDATA1 R H22 AOSDATA1 R
 AOSDATA2 R F22 AOSDATA2 R
 AOSDATA3 R E21 AOSDATA3 R
 AOSDATA4 R D20 AOSDATA4 R
 AOSDATA5 R D20 AOSDATA5 R

ASPDI F A19 ASPDI F
 MCIN MCIN F20 MCIN
 AMUTE AMUTE H20 AMUTE

Y1 Y1
 Y2 Y2
 Y3 Y3
 Y4 Y4
 Y5 Y5
 Y6 Y6

AVDD12_HDMI G29 AVDD12_HDMI
 AVSS12_HDMI F30 AVSS12_HDMI
 AVDD33_HDMI H26 AVDD33_HDMI
 AVSS12_HDMI J27 AVSS12_HDMI
 AVSS12_HDMI J28 AVSS12_HDMI
 AVSS33_HDMI E28 AVSS33_HDMI

TXC- A29 TXC-
 TXC+ C29 TXC+
 TX0- B28 TX0-
 TX0+ D28 TX0+
 TX1- A27 TX1-
 TX1+ C27 TX1+
 TX2- B26 TX2-
 TX2+ D26 TX2+
 HPD G39 HPD
 CEC E43 CEC

HDMI_SDA E41 HDMI_SDA
 HDMI_SCL E40 HDMI_SCL
 EXT_CAP B30 EXT_CAP
 EXT_RES R300 EXT_RES
 NS_TSTP BA1 NS_TSTP
 NS_TSTN AY2 NS_TSTN
 NS_CLKIN_33 E6 NS_CLKIN_33
 NS_RFIP_C K8 NS_RFIP_C
 NS_RFIP_C C329 NS_RFIP_C
 NS_RFIP_H4 NS_RFIP_H4

SPBCK A21 SPBCK
 SPDATA G21 SPDATA
 SPLRCK B20 SPLRCK
 SP3 SP3
 SP4 SP4

NS_RFIP [12] NS_RFIP
 NS_RFIP [12] NS_RFIP

AOSDATA3 R R330 AOSDATA3
 AOSDATA2 R R331 AOSDATA2
 AOSDATA1 R R332 AOSDATA1
 AOSDATA0 R R333 AOSDATA0
 AOLRCK R R334 AOLRCK
 AOBCK R R335 AOBCK
 AOMCLK R R336 AOMCLK

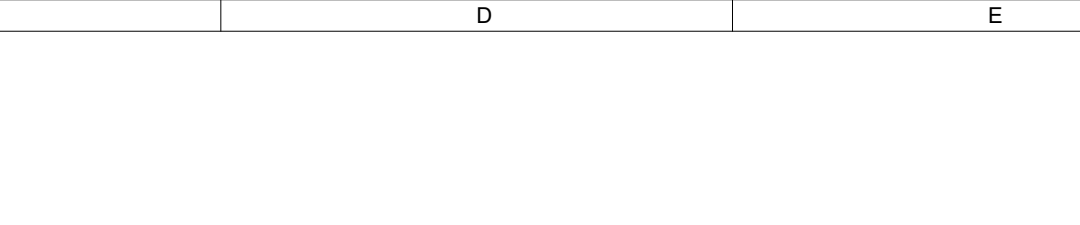
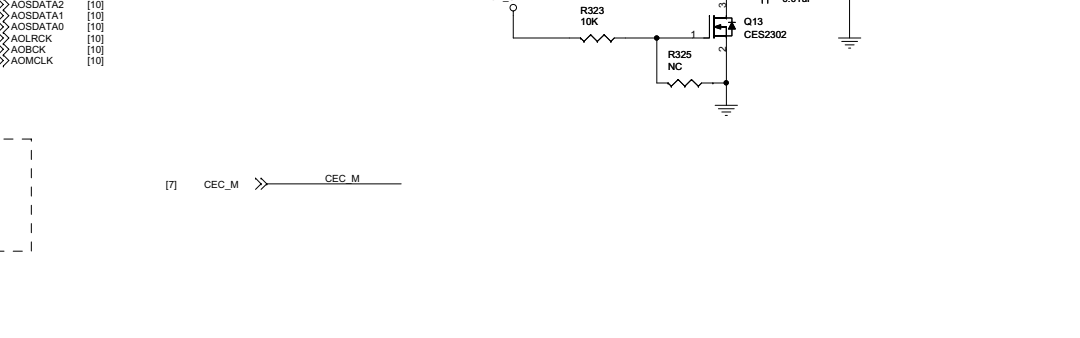
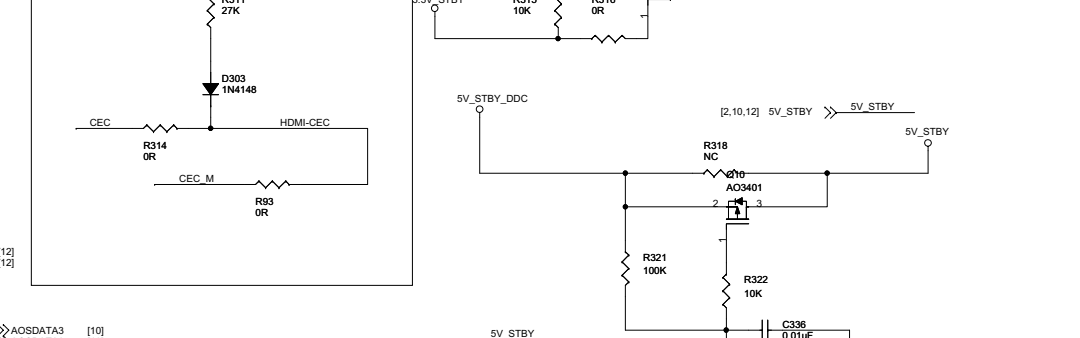
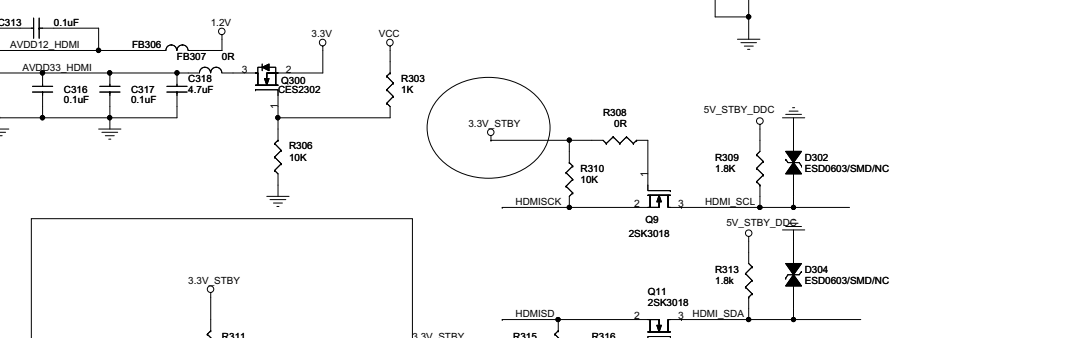
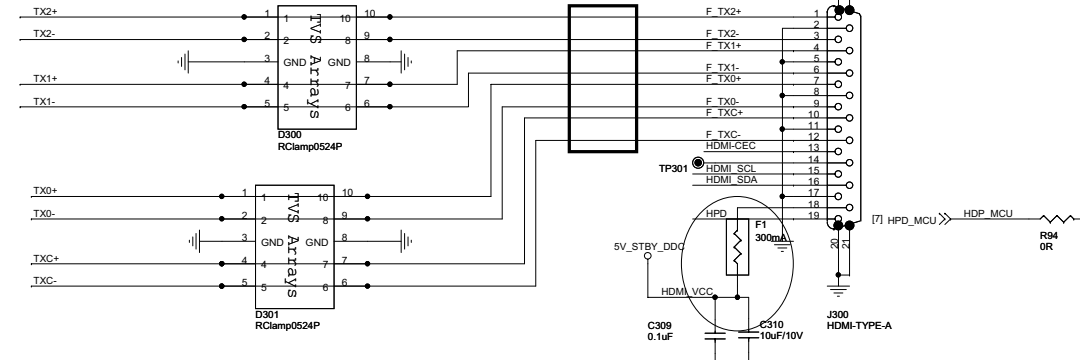
AOSDATA4 R AOSDATA4
 AOLRCK R AOLRCK
 AOBCK R AOBCK
 AOMCLK R AOMCLK

I2S for Audio DAC

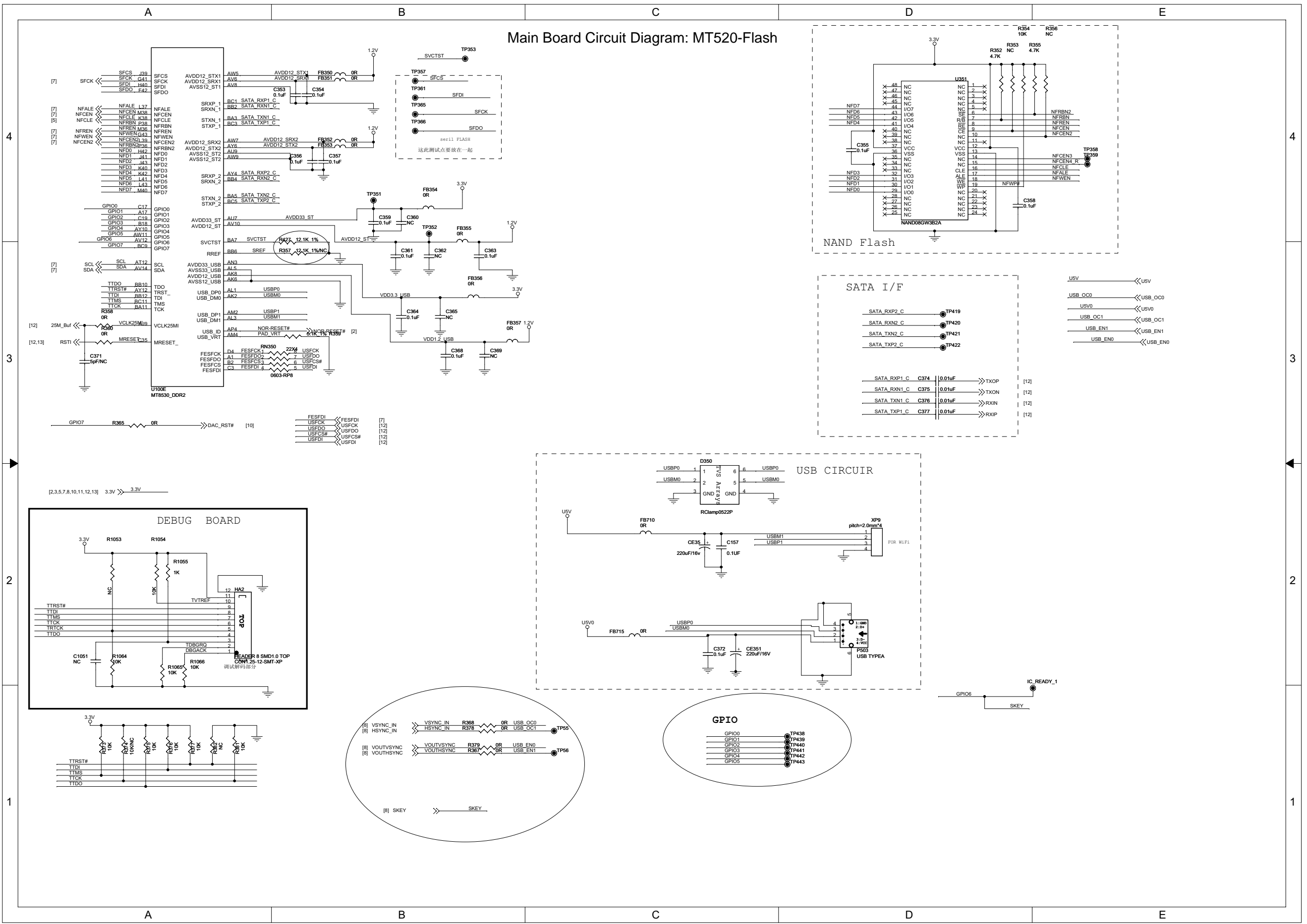
I2S for Audio 2ch DAC

HDMI Port

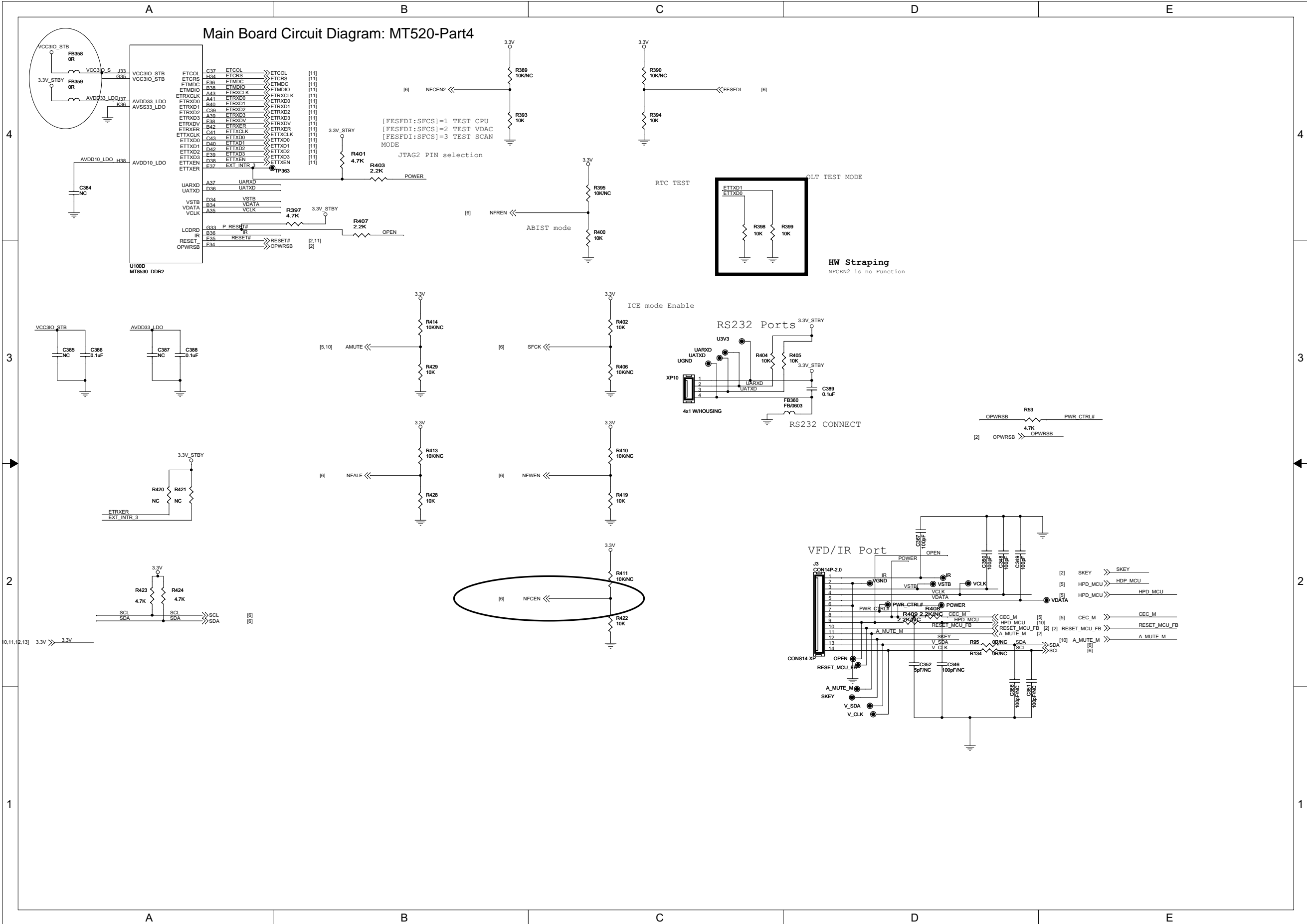
Differential Signal!
 No Through Hole!
 100 ohm Impedance



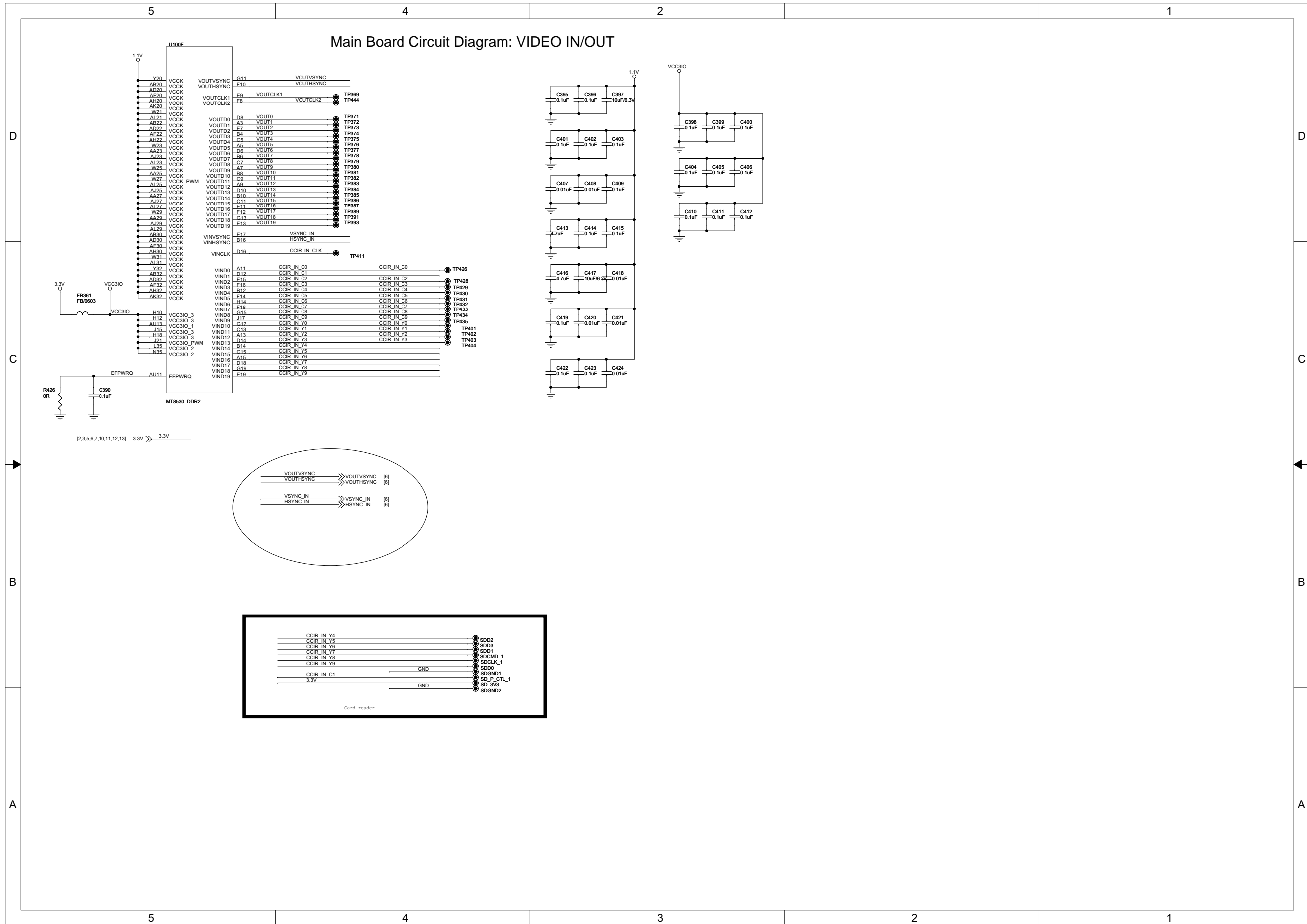
Main Board Circuit Diagram: MT520-Flash



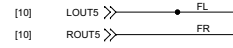
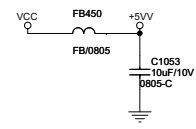
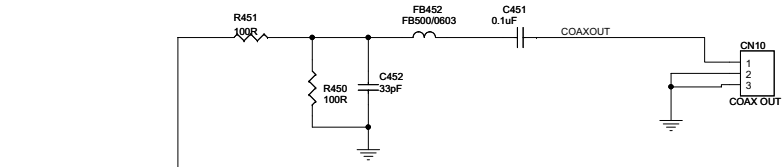
Main Board Circuit Diagram: MT520-Part4



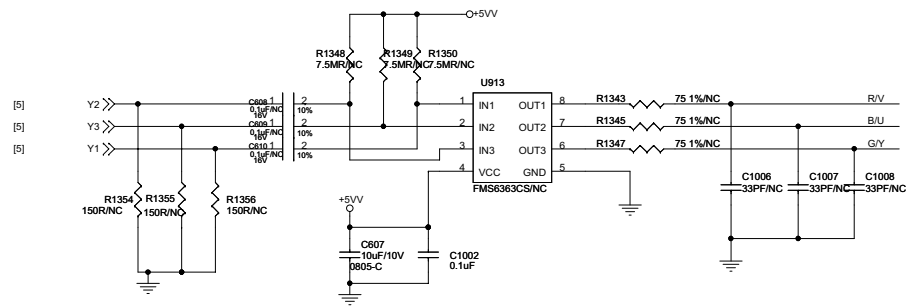
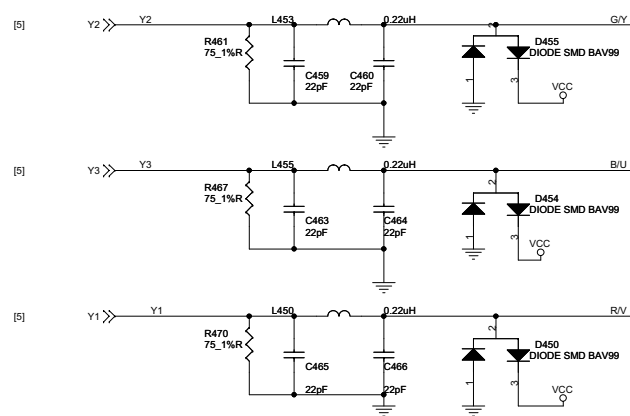
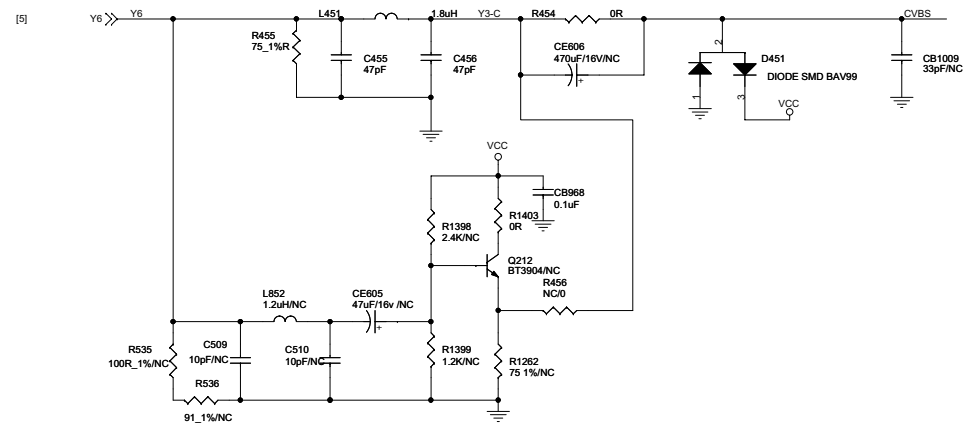
Main Board Circuit Diagram: VIDEO IN/OUT



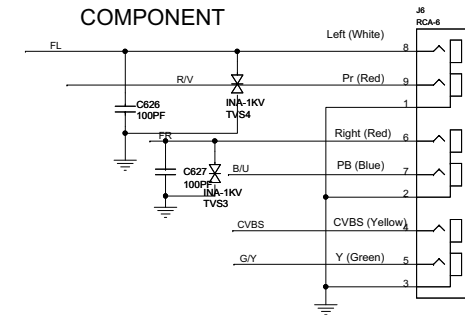
Main Board Circuit Diagram: VIDEO/OUTPUT & SPDIF OUT

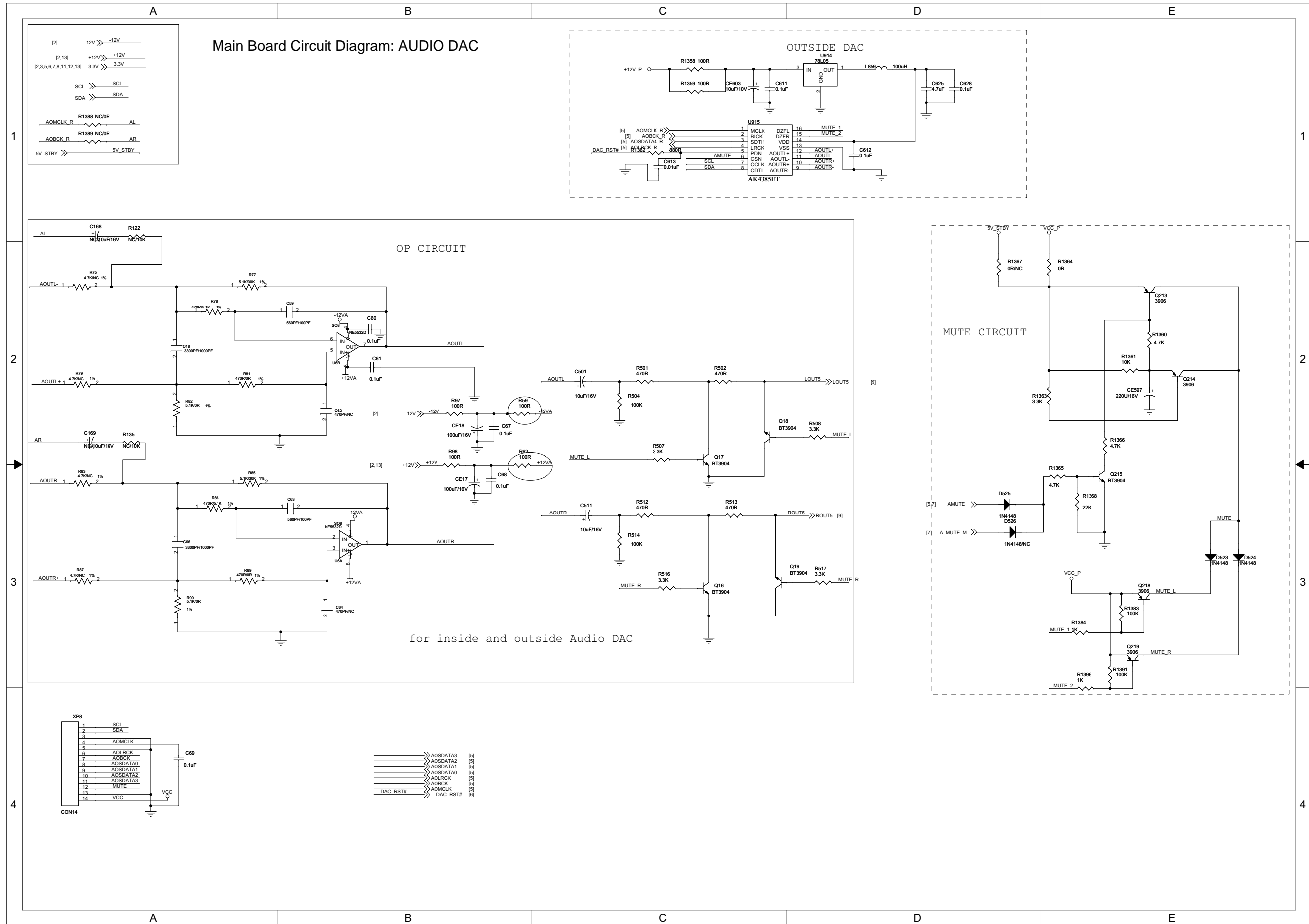


SPDIF OUTOUT

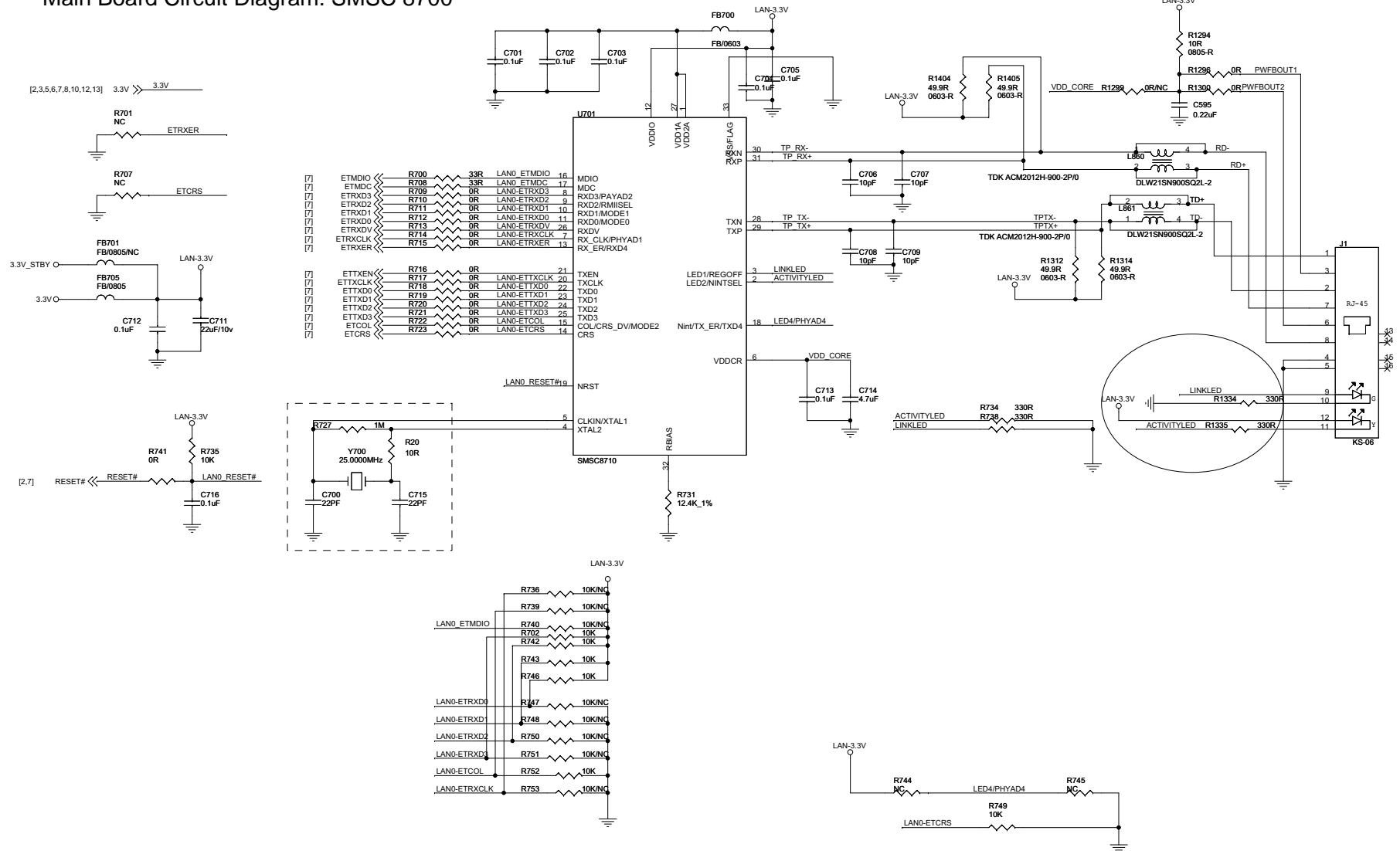


COMPONENT





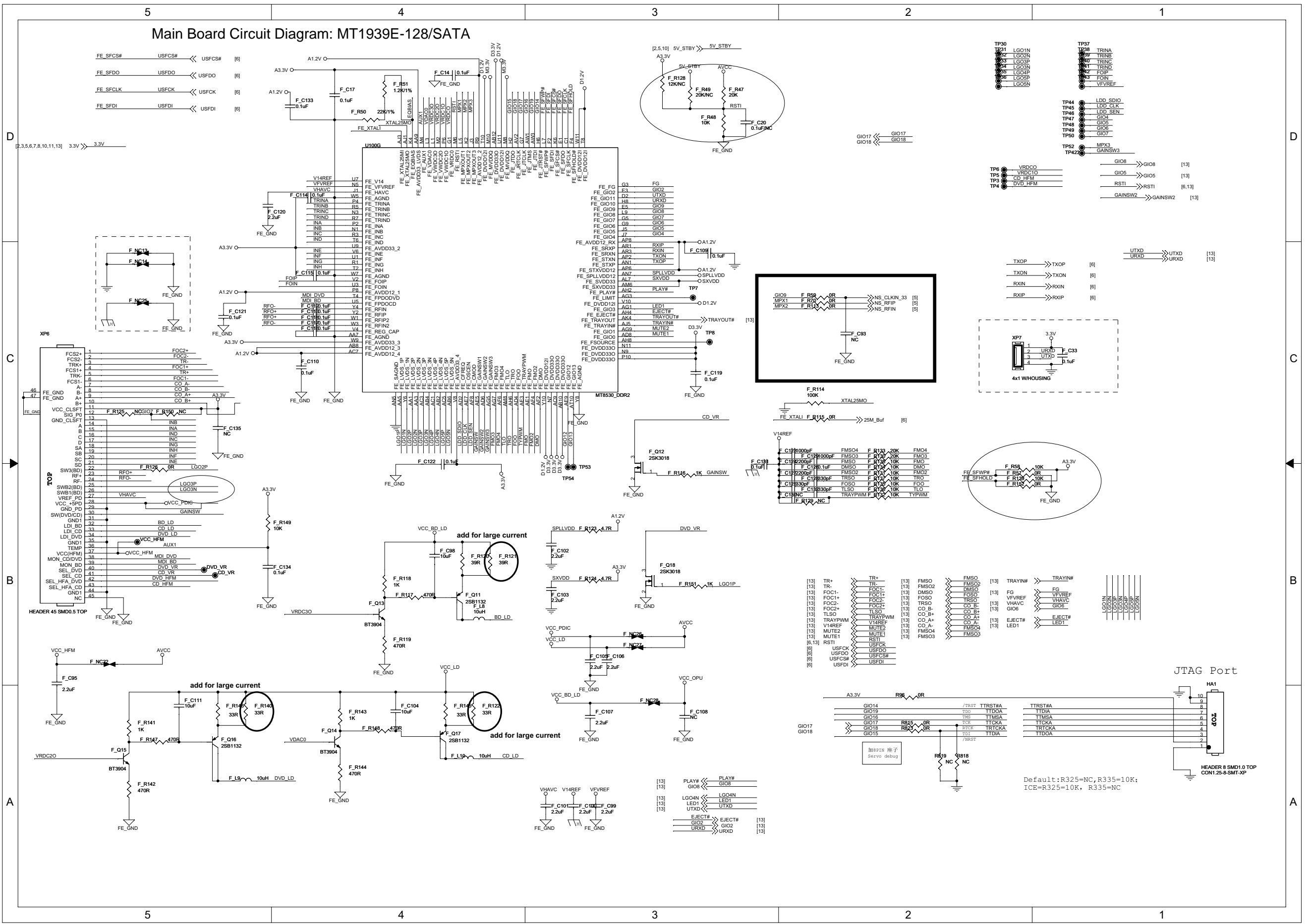
Main Board Circuit Diagram: SMSC 8700



D
C
B
A

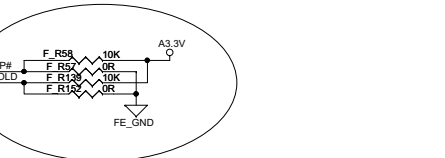
D
C
B
A

Main Board Circuit Diagram: MT1939E-128/SATA

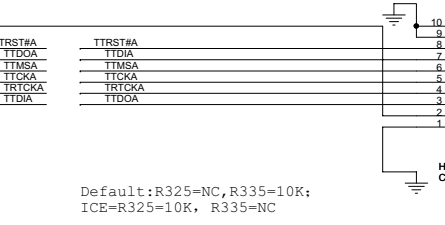


TP30	LGO1N	TP37	TRINA
TP31	LGO2N	TP38	TRINE
TP32	LGO3P	TP39	TRINC
TP33	LGO3N	TP40	TRIND
TP34	LGO4P	TP41	FOIP
TP35	LGO4N	TP42	FOIN
TP36	LGO5P	TP43	FOIN
TP37	LGO5N	TP44	VFVREF
TP38	LGO6P	TP45	LDD_SGIO
TP39	LGO6N	TP46	LDD_CLK
TP40	LGO7P	TP47	LDD_SEN
TP41	LGO7N	TP48	GIO4
TP42	LGO8P	TP49	GIO5
TP43	LGO8N	TP50	GIO6
TP44	LGO9P	TP51	GIO7
TP45	LGO9N	TP52	MPX3
TP46	LGO10P	TP42	GAINSW3
TP47	LGO10N		
TP48	LGO11P		
TP49	LGO11N		
TP50	LGO12P		
TP51	LGO12N		
TP52	LGO13P		
TP53	LGO13N		
TP54	LGO14P		
TP55	LGO14N		
TP56	LGO15P		
TP57	LGO15N		
TP58	LGO16P		
TP59	LGO16N		
TP60	LGO17P		
TP61	LGO17N		
TP62	LGO18P		
TP63	LGO18N		
TP64	LGO19P		
TP65	LGO19N		
TP66	LGO20P		
TP67	LGO20N		
TP68	LGO21P		
TP69	LGO21N		
TP70	LGO22P		
TP71	LGO22N		
TP72	LGO23P		
TP73	LGO23N		
TP74	LGO24P		
TP75	LGO24N		
TP76	LGO25P		
TP77	LGO25N		
TP78	LGO26P		
TP79	LGO26N		
TP80	LGO27P		
TP81	LGO27N		
TP82	LGO28P		
TP83	LGO28N		
TP84	LGO29P		
TP85	LGO29N		
TP86	LGO30P		
TP87	LGO30N		
TP88	LGO31P		
TP89	LGO31N		
TP90	LGO32P		
TP91	LGO32N		
TP92	LGO33P		
TP93	LGO33N		
TP94	LGO34P		
TP95	LGO34N		
TP96	LGO35P		
TP97	LGO35N		
TP98	LGO36P		
TP99	LGO36N		
TP100	LGO37P		
TP101	LGO37N		
TP102	LGO38P		
TP103	LGO38N		
TP104	LGO39P		
TP105	LGO39N		
TP106	LGO40P		
TP107	LGO40N		
TP108	LGO41P		
TP109	LGO41N		
TP110	LGO42P		
TP111	LGO42N		
TP112	LGO43P		
TP113	LGO43N		
TP114	LGO44P		
TP115	LGO44N		
TP116	LGO45P		
TP117	LGO45N		
TP118	LGO46P		
TP119	LGO46N		
TP120	LGO47P		
TP121	LGO47N		
TP122	LGO48P		
TP123	LGO48N		
TP124	LGO49P		
TP125	LGO49N		
TP126	LGO50P		
TP127	LGO50N		
TP128	LGO51P		
TP129	LGO51N		
TP130	LGO52P		
TP131	LGO52N		
TP132	LGO53P		
TP133	LGO53N		
TP134	LGO54P		
TP135	LGO54N		
TP136	LGO55P		
TP137	LGO55N		
TP138	LGO56P		
TP139	LGO56N		
TP140	LGO57P		
TP141	LGO57N		
TP142	LGO58P		
TP143	LGO58N		
TP144	LGO59P		
TP145	LGO59N		
TP146	LGO60P		
TP147	LGO60N		
TP148	LGO61P		
TP149	LGO61N		
TP150	LGO62P		
TP151	LGO62N		
TP152	LGO63P		
TP153	LGO63N		
TP154	LGO64P		
TP155	LGO64N		
TP156	LGO65P		
TP157	LGO65N		
TP158	LGO66P		
TP159	LGO66N		
TP160	LGO67P		
TP161	LGO67N		
TP162	LGO68P		
TP163	LGO68N		
TP164	LGO69P		
TP165	LGO69N		
TP166	LGO70P		
TP167	LGO70N		
TP168	LGO71P		
TP169	LGO71N		
TP170	LGO72P		
TP171	LGO72N		
TP172	LGO73P		
TP173	LGO73N		
TP174	LGO74P		
TP175	LGO74N		
TP176	LGO75P		
TP177	LGO75N		
TP178	LGO76P		
TP179	LGO76N		
TP180	LGO77P		
TP181	LGO77N		
TP182	LGO78P		
TP183	LGO78N		
TP184	LGO79P		
TP185	LGO79N		
TP186	LGO80P		
TP187	LGO80N		
TP188	LGO81P		
TP189	LGO81N		
TP190	LGO82P		
TP191	LGO82N		
TP192	LGO83P		
TP193	LGO83N		
TP194	LGO84P		
TP195	LGO84N		
TP196	LGO85P		
TP197	LGO85N		
TP198	LGO86P		
TP199	LGO86N		
TP200	LGO87P		
TP201	LGO87N		
TP202	LGO88P		
TP203	LGO88N		
TP204	LGO89P		
TP205	LGO89N		
TP206	LGO90P		
TP207	LGO90N		
TP208	LGO91P		
TP209	LGO91N		
TP210	LGO92P		
TP211	LGO92N		
TP212	LGO93P		
TP213	LGO93N		
TP214	LGO94P		
TP215	LGO94N		
TP216	LGO95P		
TP217	LGO95N		
TP218	LGO96P		
TP219	LGO96N		
TP220	LGO97P		
TP221	LGO97N		
TP222	LGO98P		
TP223	LGO98N		
TP224	LGO99P		
TP225	LGO99N		
TP226	LGO100P		
TP227	LGO100N		

TP6	VRDCCO		
TP5	VRDCCO		
TP3	CD_HFM		
TP4	DVD_HFM		
		GIO8	[13]
		GIO5	[13]
		RST1	[6,13]
		GAINSW2	[13]

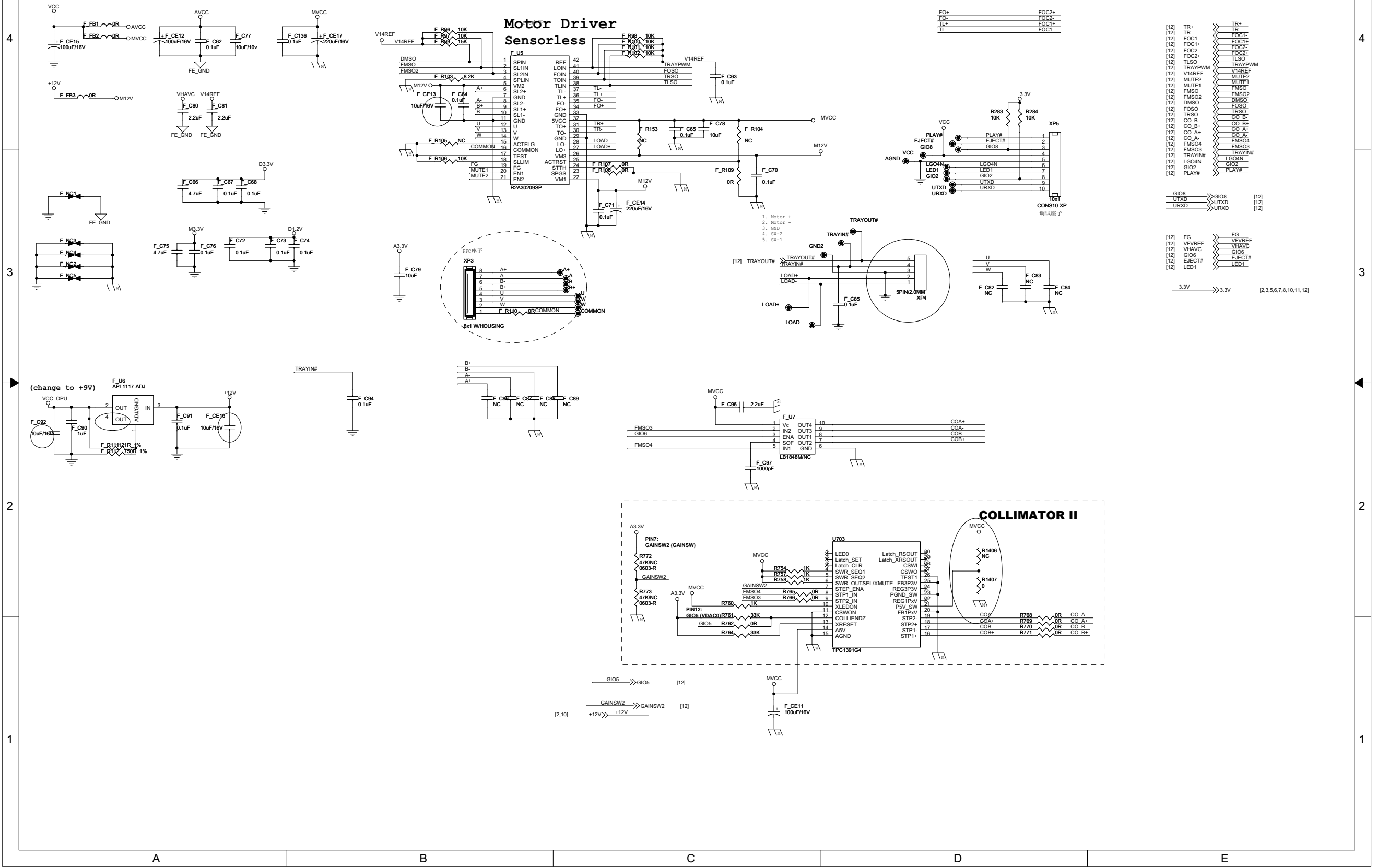


[13]	TR+	TR+	[13]	FMSO	FMSO	[13]	TRAYIN#	TRAYIN#
[13]	TR-	TR-	[13]	FMSO2	FMSO2	[13]	FG	FG
[13]	FOC1+	FOC1+	[13]	FMSO3	FMSO3	[13]	VFVREF	VFVREF
[13]	FOC1-	FOC1-	[13]	FMSO4	FMSO4	[13]	VHAVC	VHAVC
[13]	FOC2+	FOC2+	[13]	FMSO5	FMSO5	[13]	GIO6	GIO6
[13]	FOC2-	FOC2-	[13]	FMSO6	FMSO6	[13]	CO_A+	CO_A+
[13]	TL50	TL50	[13]	FMSO7	FMSO7	[13]	CO_A-	CO_A-
[13]	TRAYPWM	TRAYPWM	[13]	FMSO8	FMSO8	[13]	CO_B+	CO_B+
[13]	V14REF	V14REF	[13]	FMSO9	FMSO9	[13]	CO_B-	CO_B-
[13]	MUTE2	MUTE2	[13]	FMSO10	FMSO10	[13]	EJECT#	EJECT#
[13]	MUTE1	MUTE1	[13]	FMSO11	FMSO11	[13]	LED1	LED1
[6,13]	RST1	RST1	[13]	FMSO12	FMSO12	[13]		
[6]	USFCCK	USFCCK	[13]	FMSO13	FMSO13	[13]		
[6]	USFDO	USFDO	[13]	FMSO14	FMSO14	[13]		
[6]	USFCS#	USFCS#	[13]	FMSO15	FMSO15	[13]		
[6]	USFDI	USFDI	[13]	FMSO16	FMSO16	[13]		

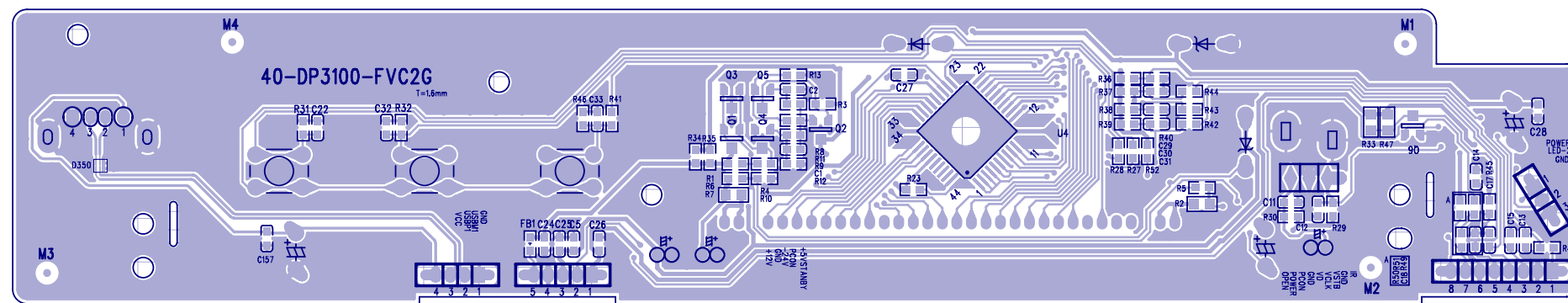
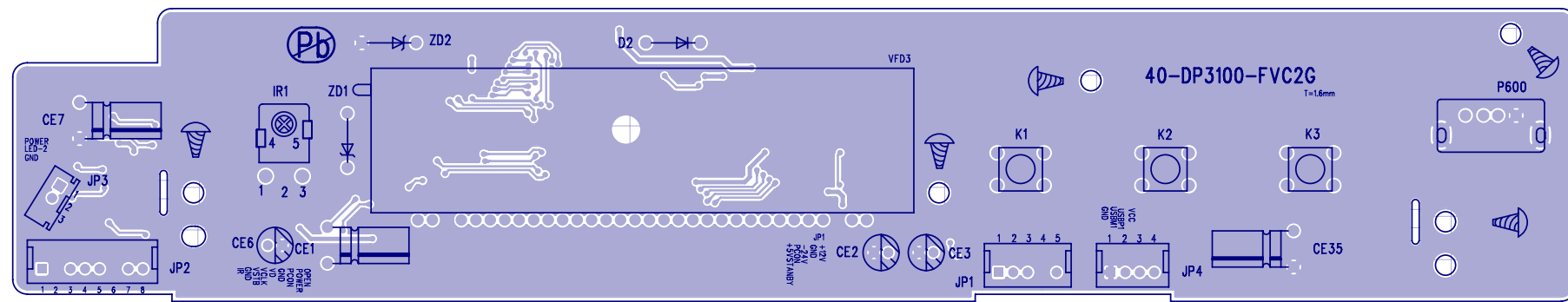


Default: R325=NC, R335=10K;
ICE: R325=10K, R335=NC

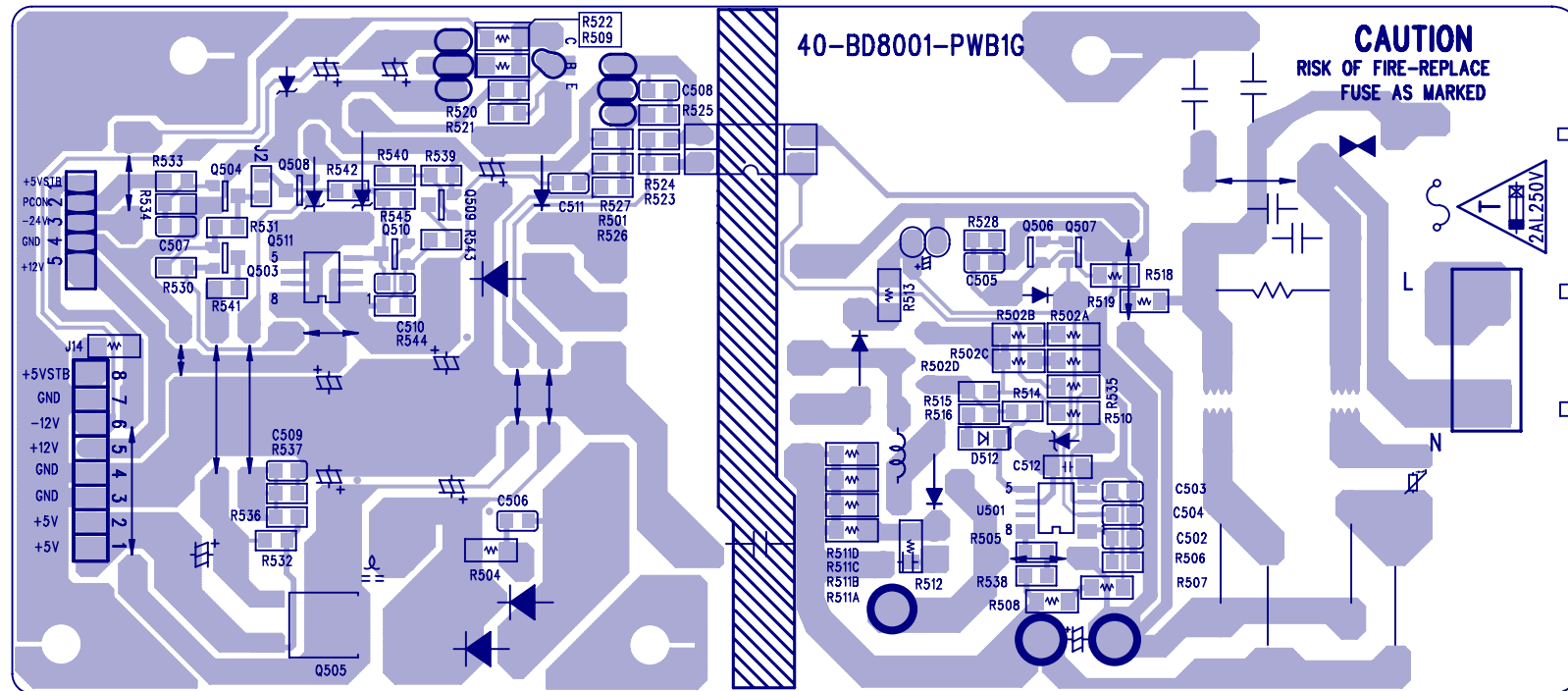
Main Board Circuit Diagram: POWER REGULATOR



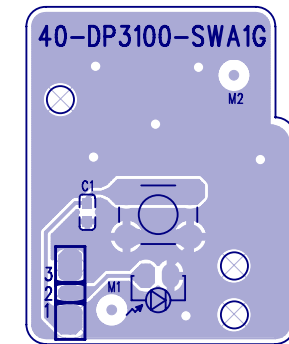
Front Board Print-layout (Top and Bottom side):



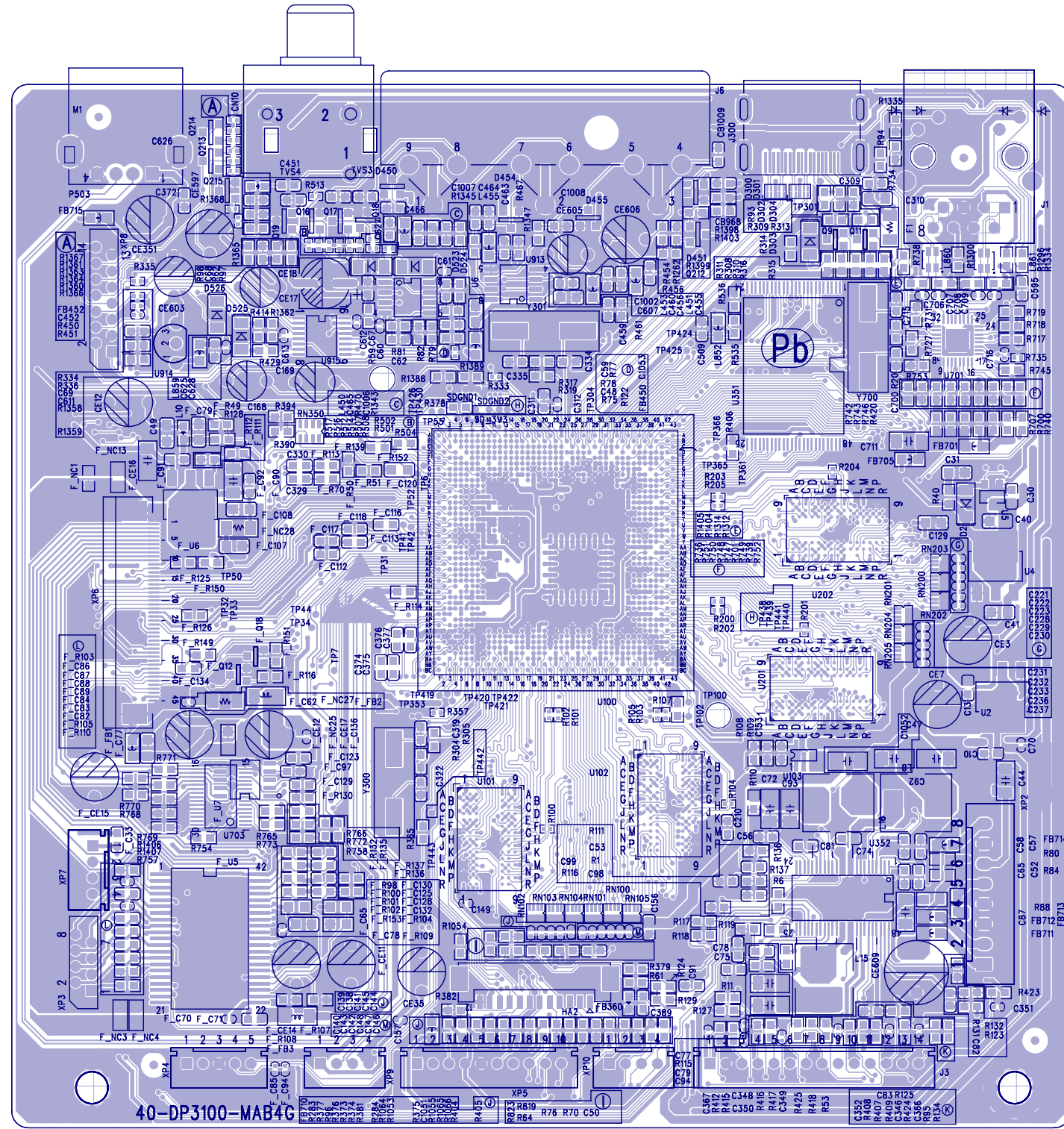
Power Board Print-layout (Bottom side):



Switch Board Print-layout (Bottom side):

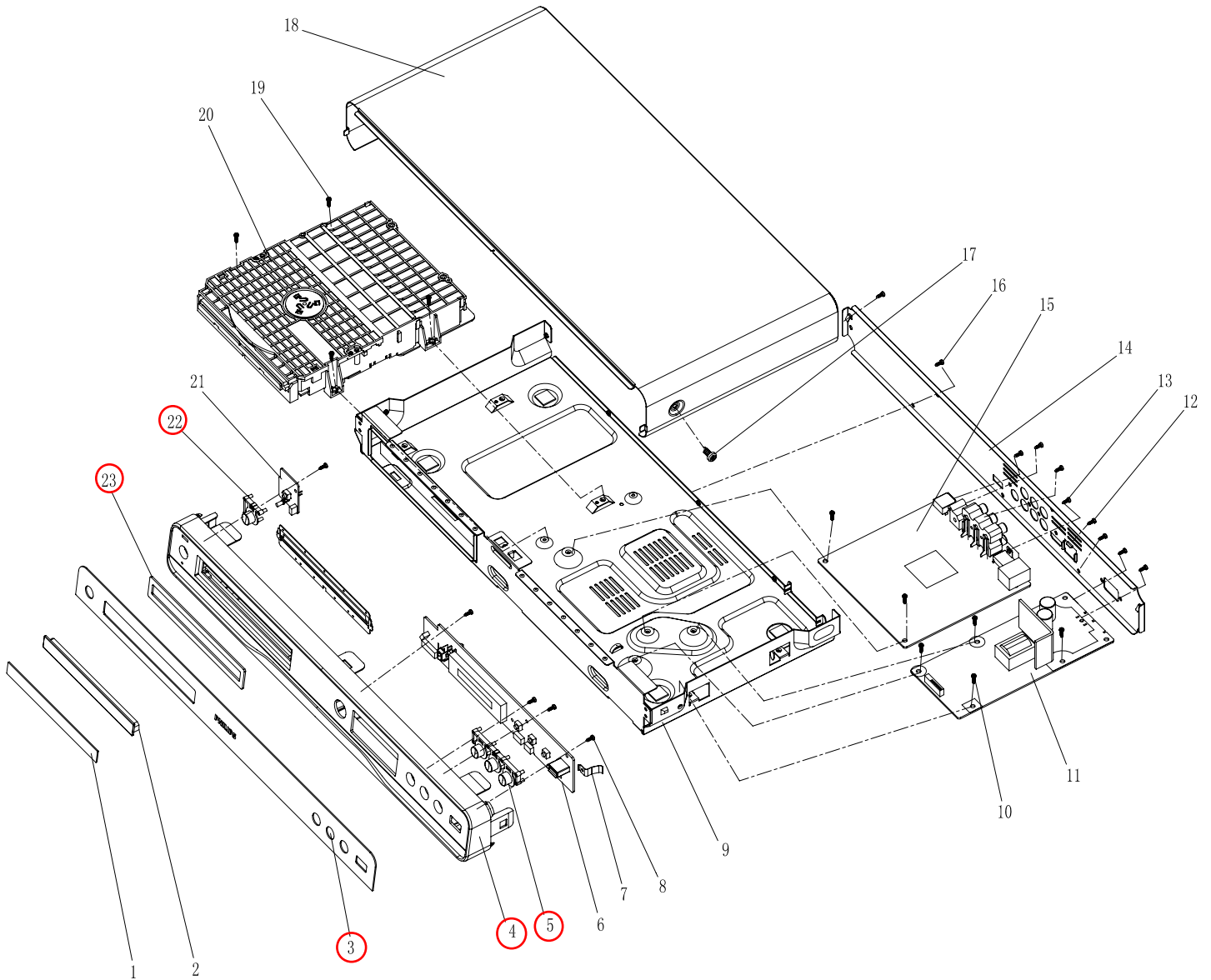


Main Board Print-layout (Top side):



Exploded view for BDP5100/12/93/98/05:

EXPLODED VIEW FOR BDP5100/12/93/98/05



It is a general mechanical exploded view for BDP5100/12, pls refer to the model set for detailed information. ASSY1 includes components: 3,4,5,22,23

EXPLODED VIEW FOR BDP5100/12/93/98/05
ASS'Y 1 includes components 3,4,5,22,23