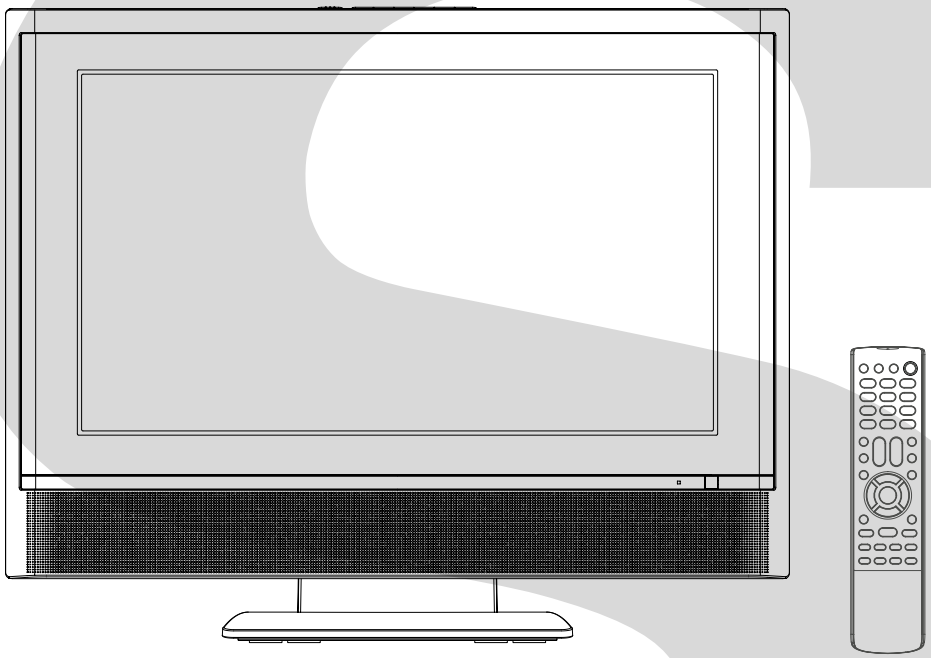
TOSHIBA

FILE NO. 050-200629GR

SERVICE MANUAL

LCD COLOR TELEVISION

20HL86
20HLK86



The above model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

DOCUMENT CREATED IN JAPAN, November, 2006

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(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

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

(*2) 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.

SERVICE INSTRUCTIONS

CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

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

1.An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. 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.
3. Always advise users to keep children away. There is danger of injury to children from tools, disassembled products, etc.
4. Always disconnect the power plug before starting work whenever power is not required. Failure to disconnect the power plug before starting work can result in electrical shock.
5. Depending on the model, use an insulation transformer or wear 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.

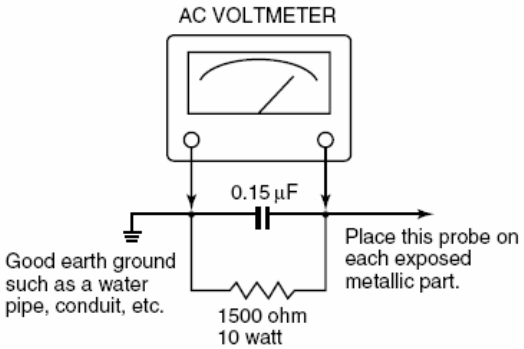
6. Always use the replacement parts specified for the particular model when making repairs. The parts used in products have the necessary safety characteristics such as inflammability, voltage resistance, etc.; therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the mark is included in a circuit diagram or parts list.
7. Parts mounting and routing of the wiring should be the same as that used originally. For safety purposes, insulating materials such as tubing or tape is sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wiring is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the original scheme.
8. After a repair has been completed, reassemble all disassembled parts, and route and reconnect the wiring, in accordance with the original scheme. 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.
9. Never remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous

SAFETY PRECAUTION

WARNING : Service 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.

10. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μF,AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 μF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.675 volts rms. This corresponds to 0.45 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



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 shock, fire, or other hazards.

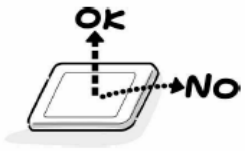
HANDLING THE LCD MODULE

HANDLING THE LCD MODULE

Safety Precautions
In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in or drink this fluid. Also, never touch this fluid.
Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

Precautions for Handling the LCD Module
The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.



2. Carefully align the holes at all four corners of the LCD module with the corresponding holes in the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.

CAUTION	The metal edges of the LCD module are sharp, so use caution to avoid injury.

3. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again.
If the panel surface is extremely solied, use a CRT cleaner as a cleaner. Wipe off the panel surface by drop the cleaner on the cloth. Do not drop the cleaner on the panel. Pay attention not to scratch the panel surface.

4. Leaving water or other fluids on the panel screen for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.

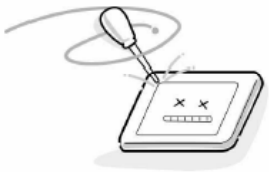
5. Glass is used in the panel, so do not drop or strike with hard objects. Such actions can damage the panel.

6. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.

7. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for an extended period of time.

8. Do not store the LCD module below the temperature conditions described in the specifications. Failure to do so could result in freezing of the liquid crystal due to cold air or loss of resilience or other damage.

9. Do not disassemble the LCD module. Such actions could result in improper operation.

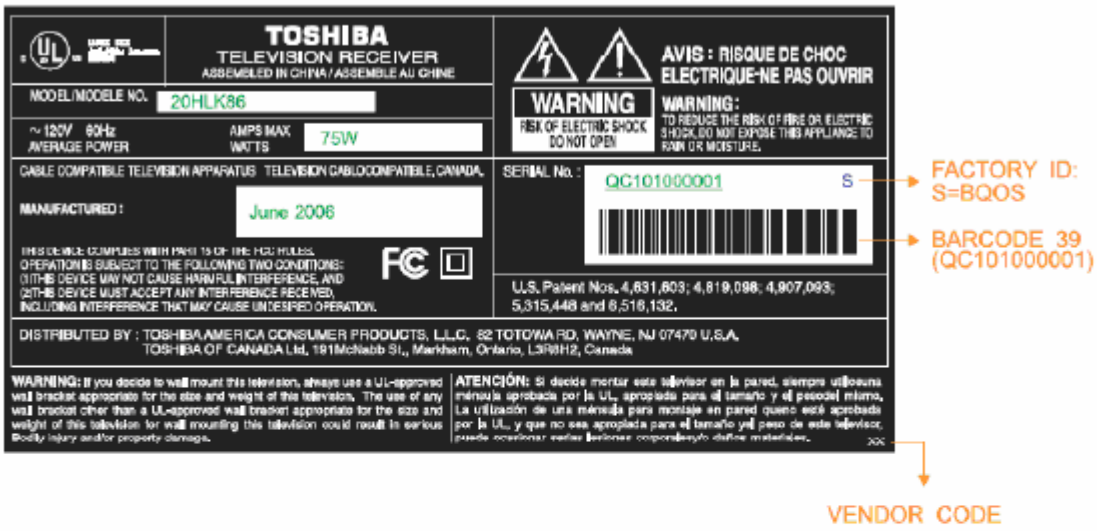


10. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.

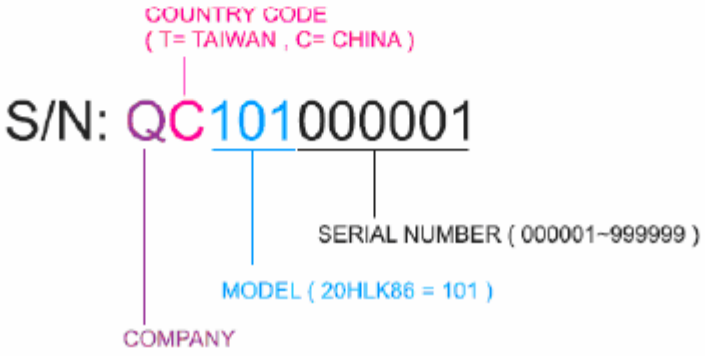
Appearance Description

- **20HLK86**

RATING LBL PRINTING:

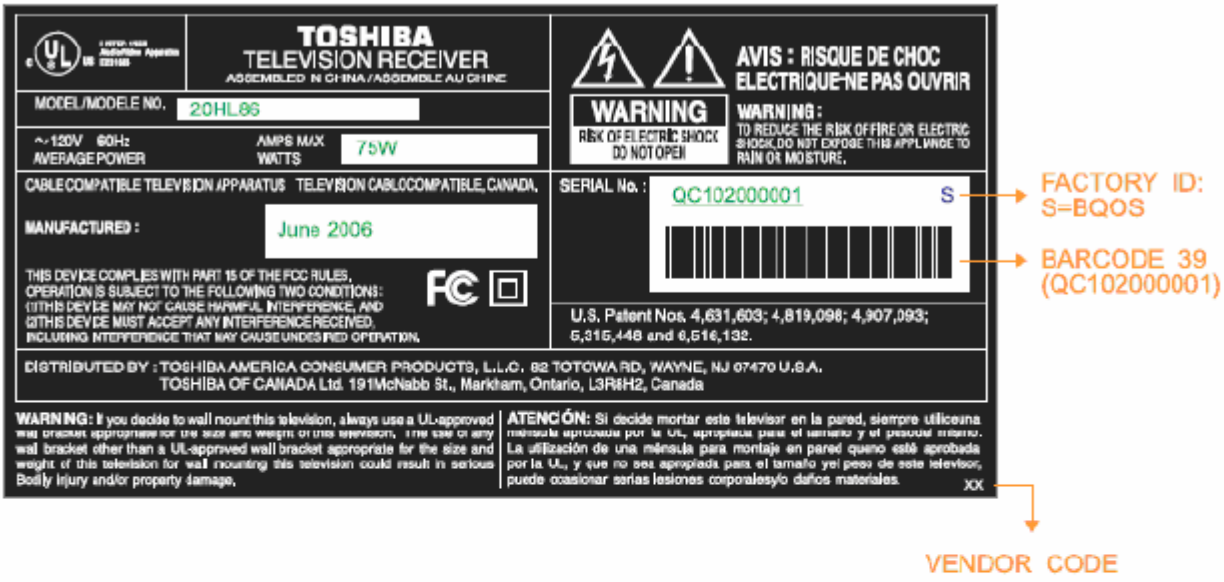


** Front: Arial, H=8 point

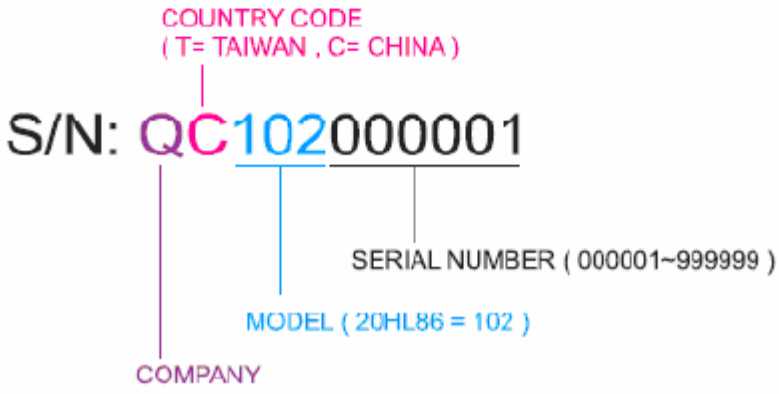


- **20HL86**

RATING LBL PRINTING:



** Front: Arial, H=8 point



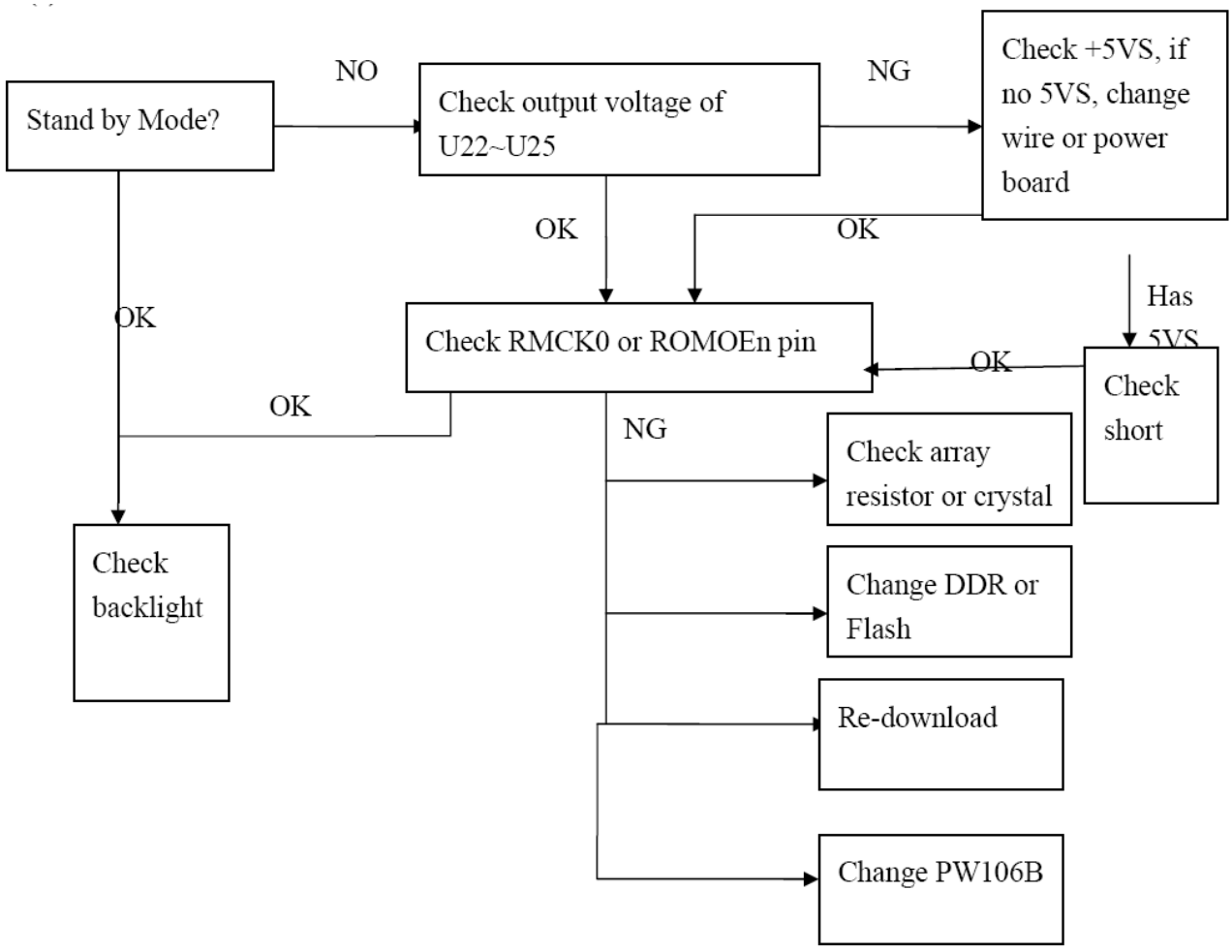
Trouble Shooting Guide

1. Introduction

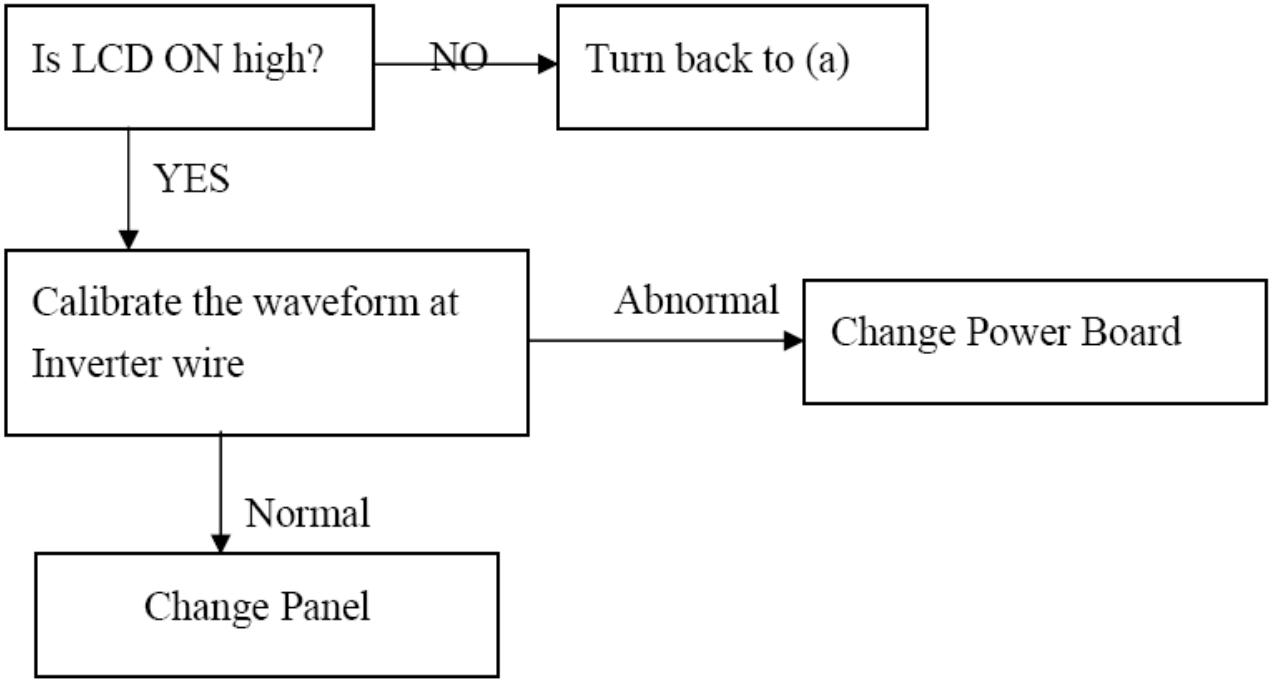
This document is prepared to be a guide to repair trouble sets, some problems happen more frequently are taken as example in it. Those are turn on fail, no signal, no sound, etc.

2. Problems

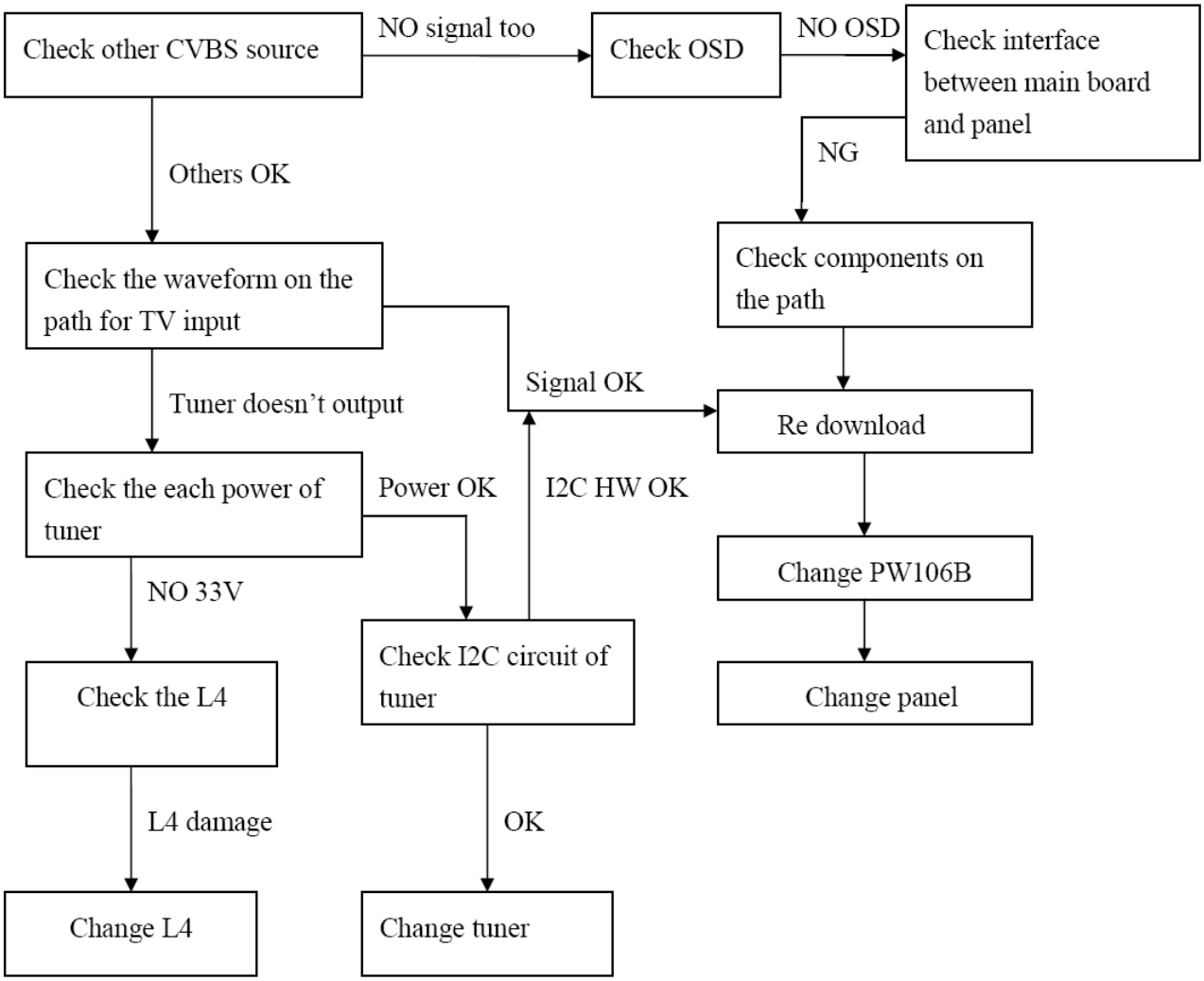
(a) Set fail to turn on



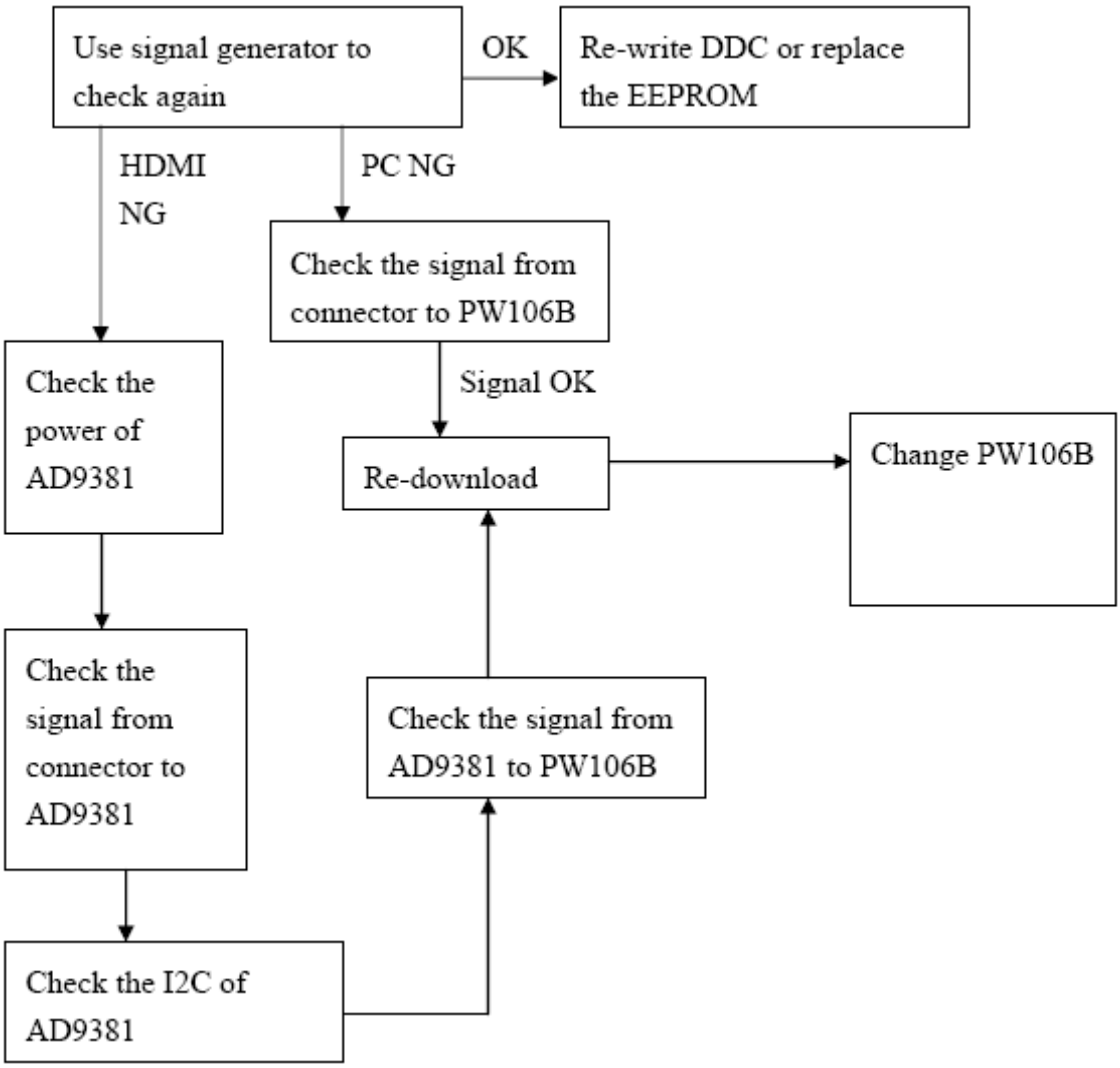
(b) NO backlight



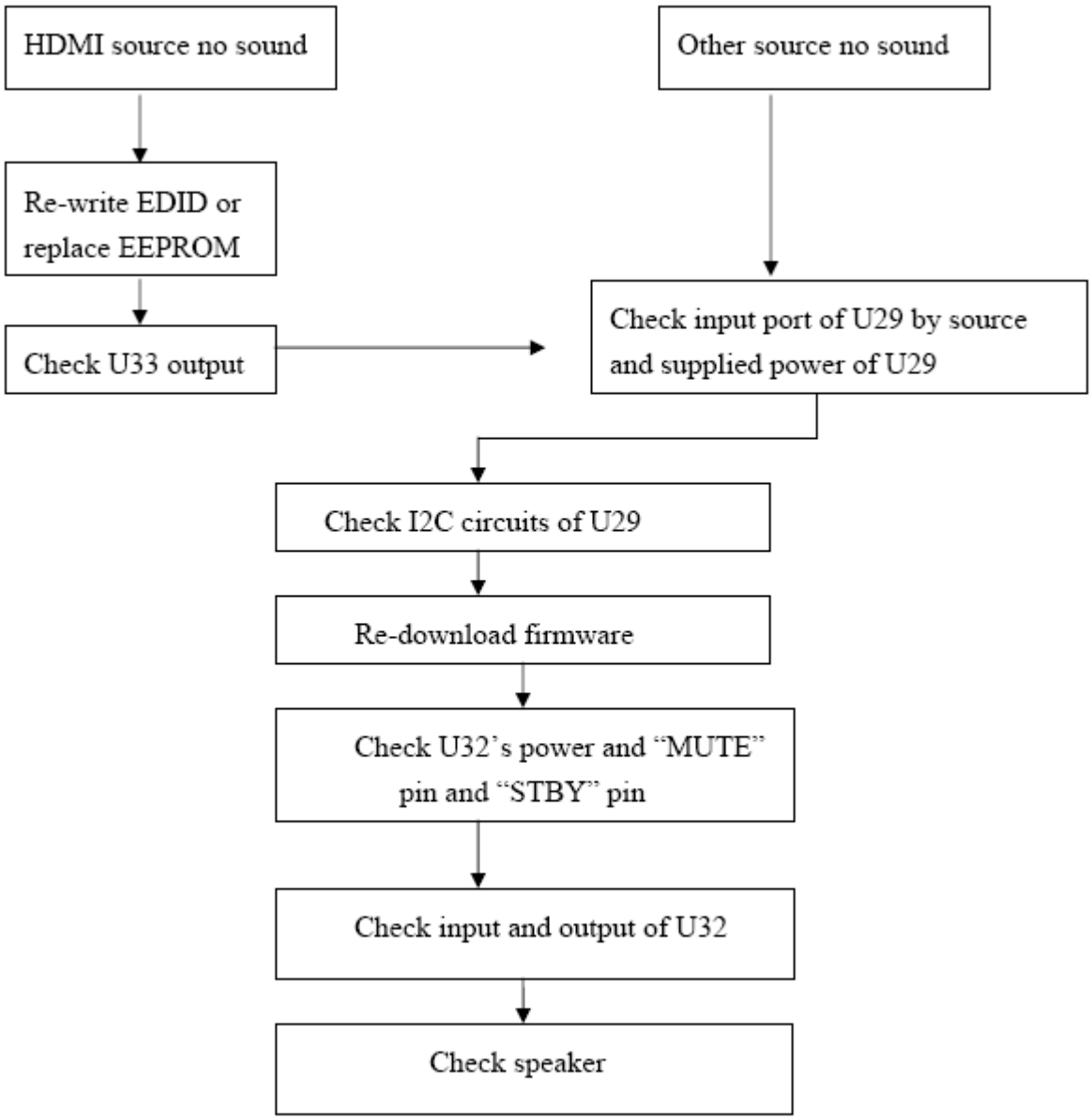
(C) TV no signal



(D) HDMI or PC no signal

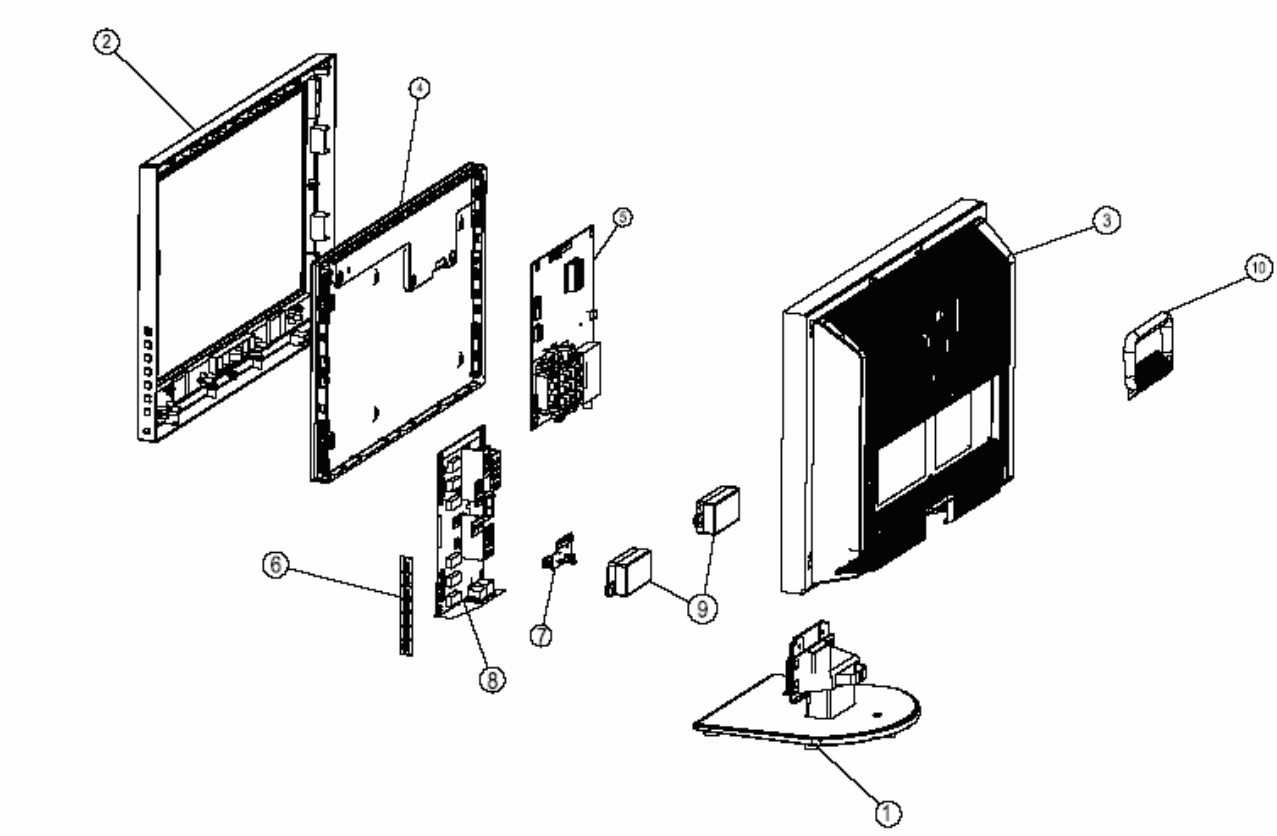


(E) No sound

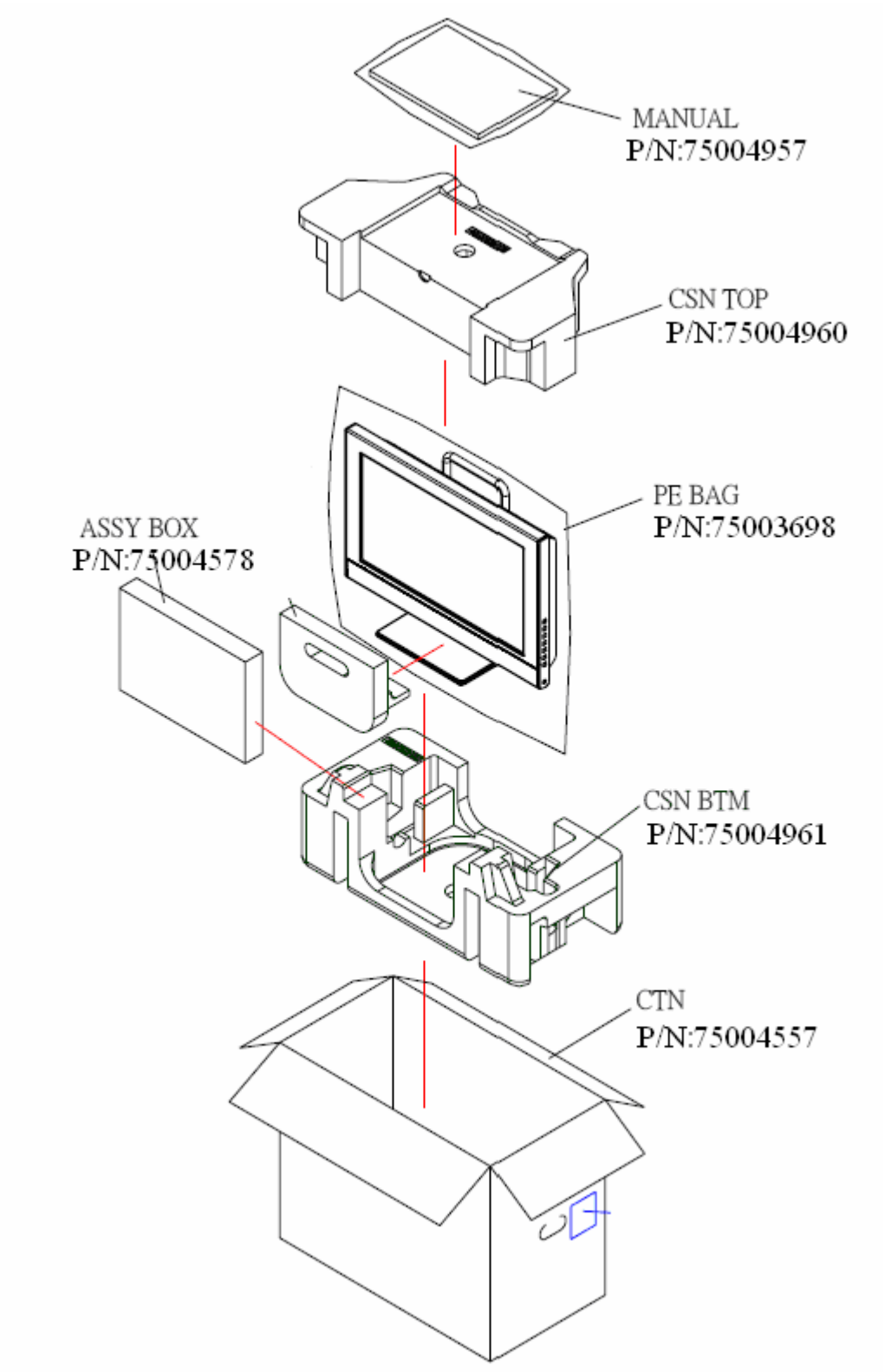

HDMI source no sound
Other source no sound
Re-write EDID or replace EEPROM
Check U33 output
Check input port of U29 by source and supplied power of U29
Check I2C circuits of U29
Re-download firmware
Check U32's power and "MUTE" pin and "STBY" pin
Check input and output of U32
Check speaker

PACKING EXPLODED VIEW

ITEM	Model	P/N	Description
1	20HLK86	75004560	ASSY BASE T20WH8
	20HL86	75003716	
2	20HLK86	75004561	ASSY BEZEL T20WH8 STD
	20HL86	75003719	
3	20HLK86/20HL86	75005407	ASSY REAR CVR T20WH8
4	20HLK86/20HL86	75003709	LCDM T200XW002-V0 AUO
5	20HLK86/20HL86	75003705	PCBA MAIN BD MI T20WH8
6	20HLK86/20HL86	75003706	PCBA KEYPAD BD T20WH8 MI
7	20HLK86	75004558	PCBA IR BD T20WH8-Standard MI
	20HL86	75003707	
8	20HLK86/20HL86	75003704	PCBA PWR BD 70W EADP-70AF
9	20HLK86/20HL86	75003696	SPK*2 160HM 330/520MM APS-0000
10	20HLK86	75003717	ASSY HANDLE T20WH8 STD
	20HL86	75003703	



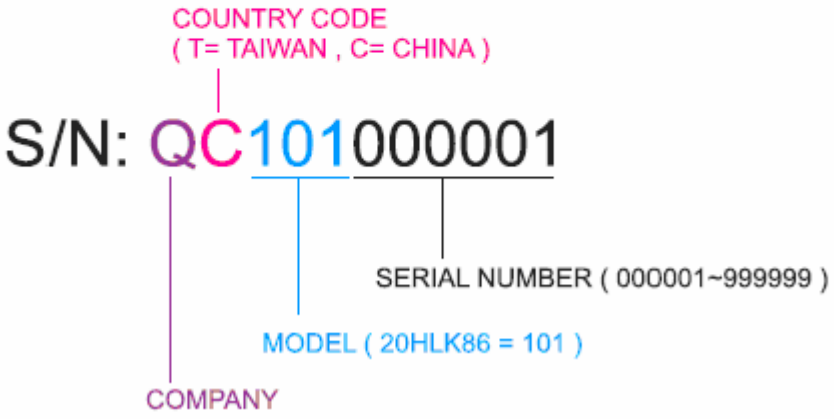
- **20HLK86**


MANUAL
P/N:75004957
CSN TOP
P/N:75004960
PE BAG
P/N:75003698
ASSY BOX
P/N:75004578
CSN BTM
P/N:75004961
CTN
P/N:75004557

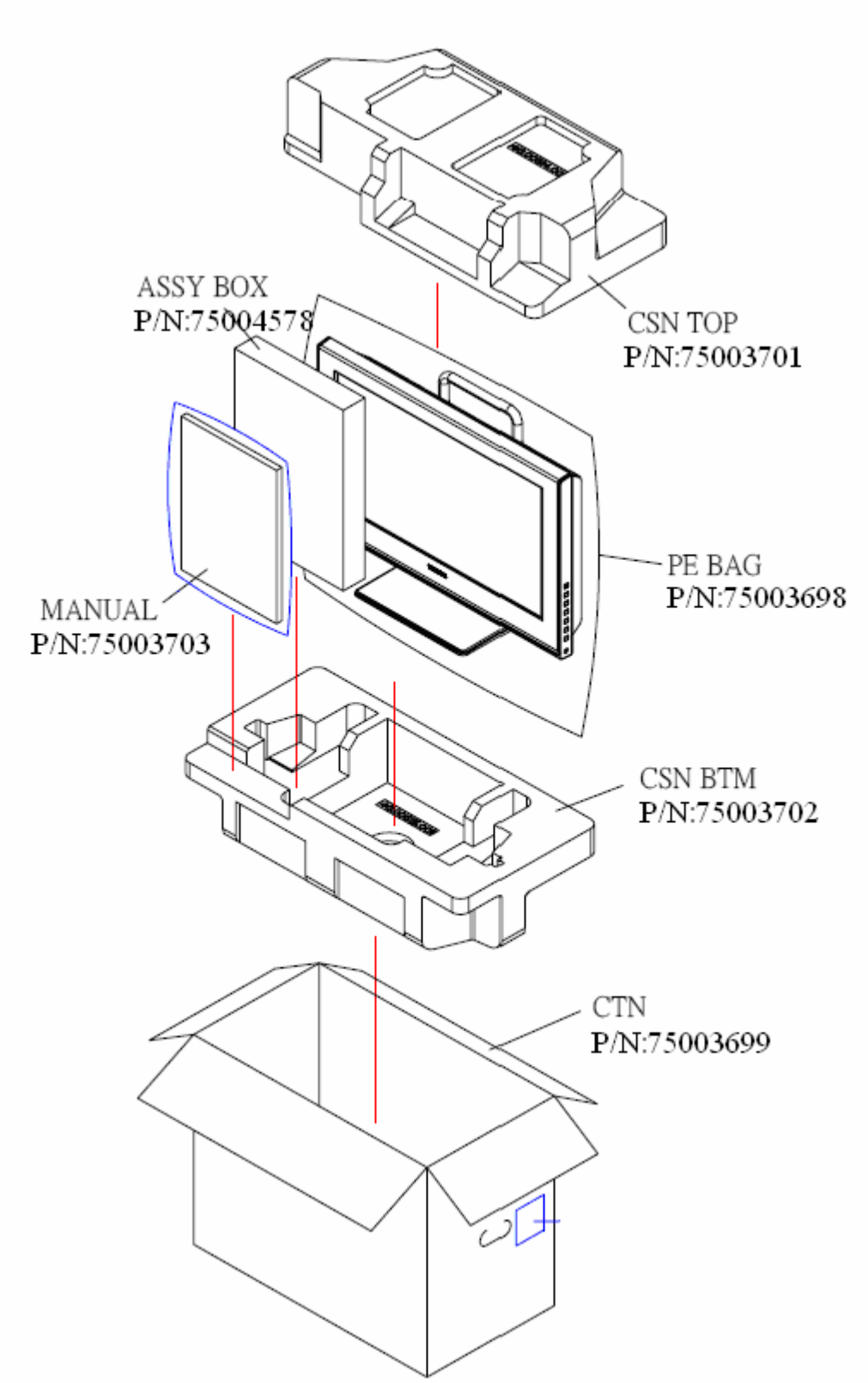
CARTON LBL PRINTING:

Arial Bold,
H=12 point

** Front: Arial , H=8 point

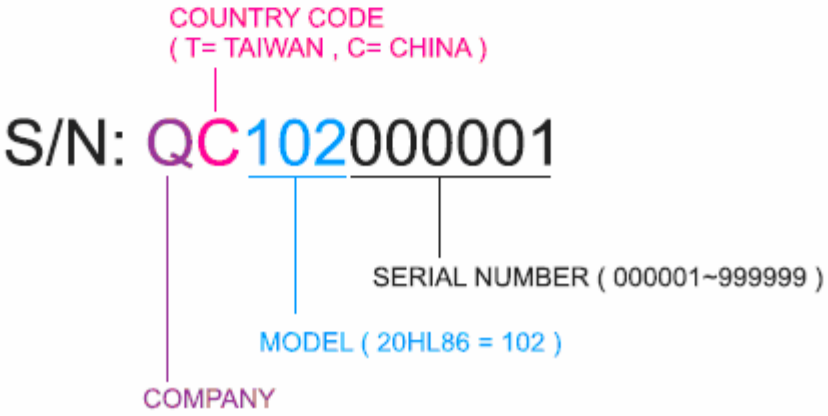


- **20HL86**

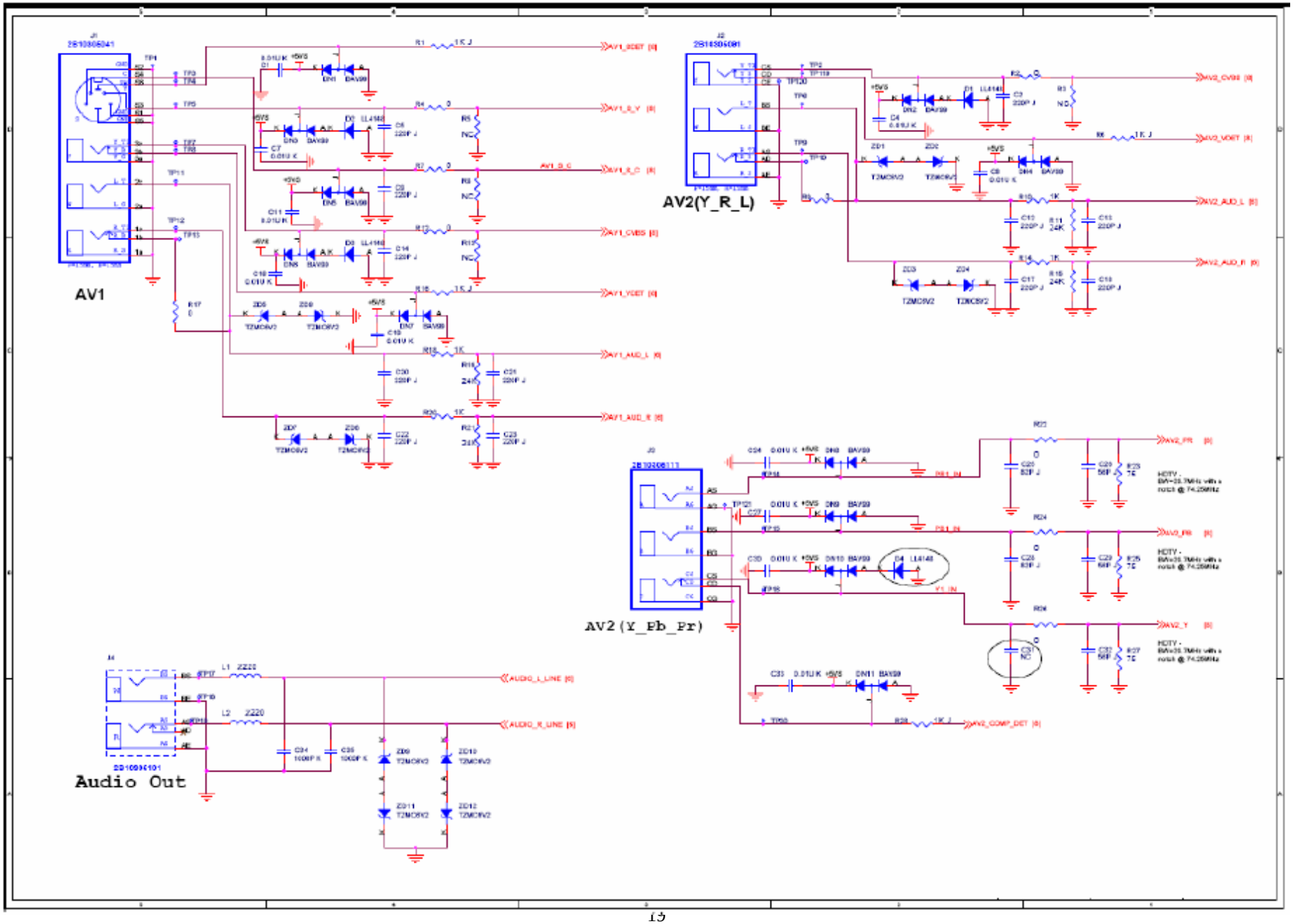

ASSY BOX
P/N:75004578
CSN TOP
P/N:75003701
PE BAG
P/N:75003698
MANUAL
P/N:75003703
CSN BTM
P/N:75003702
CTN
P/N:75003699

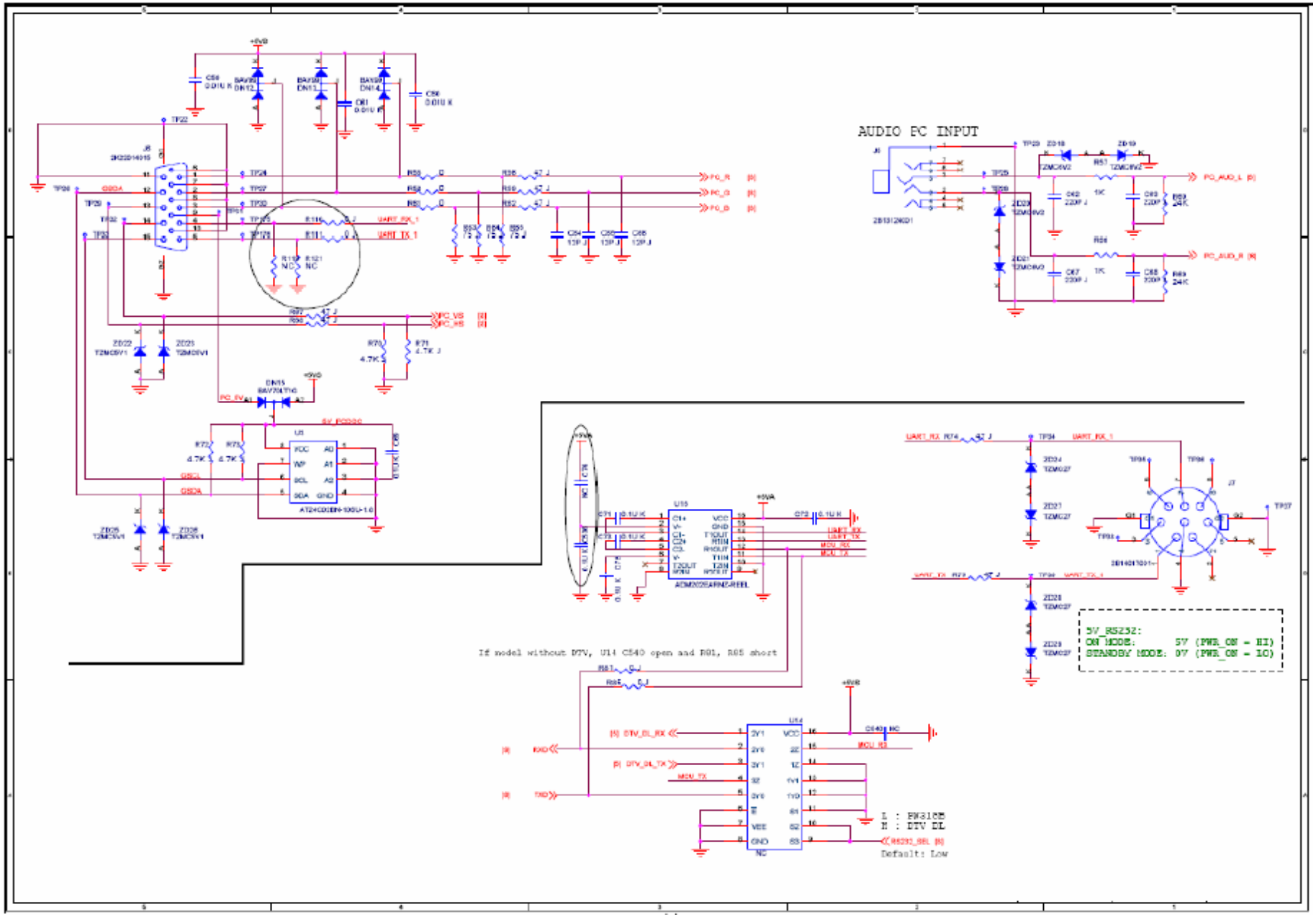
CARTON LBL PRINTING:

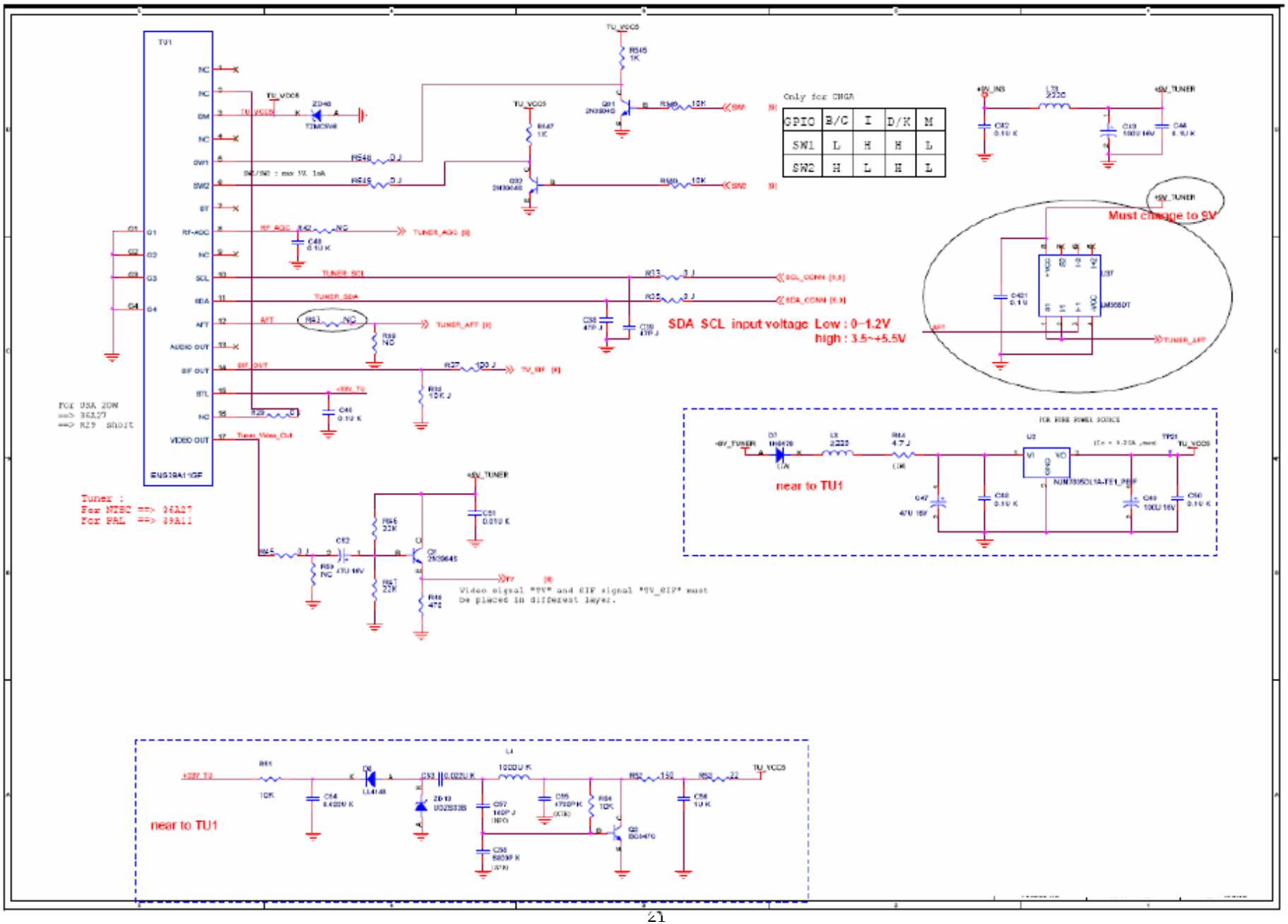
** Front: Arial , H=8 point

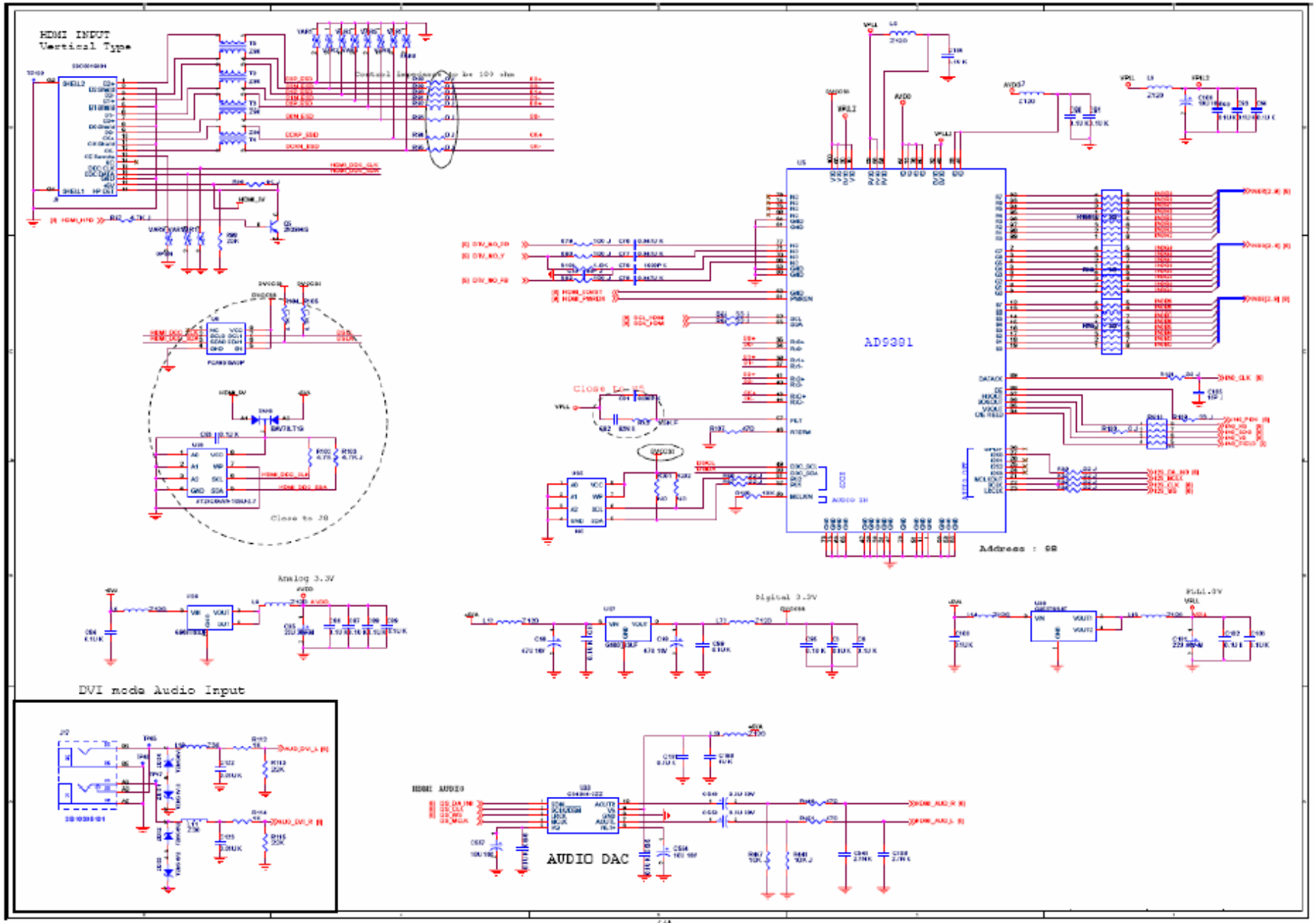


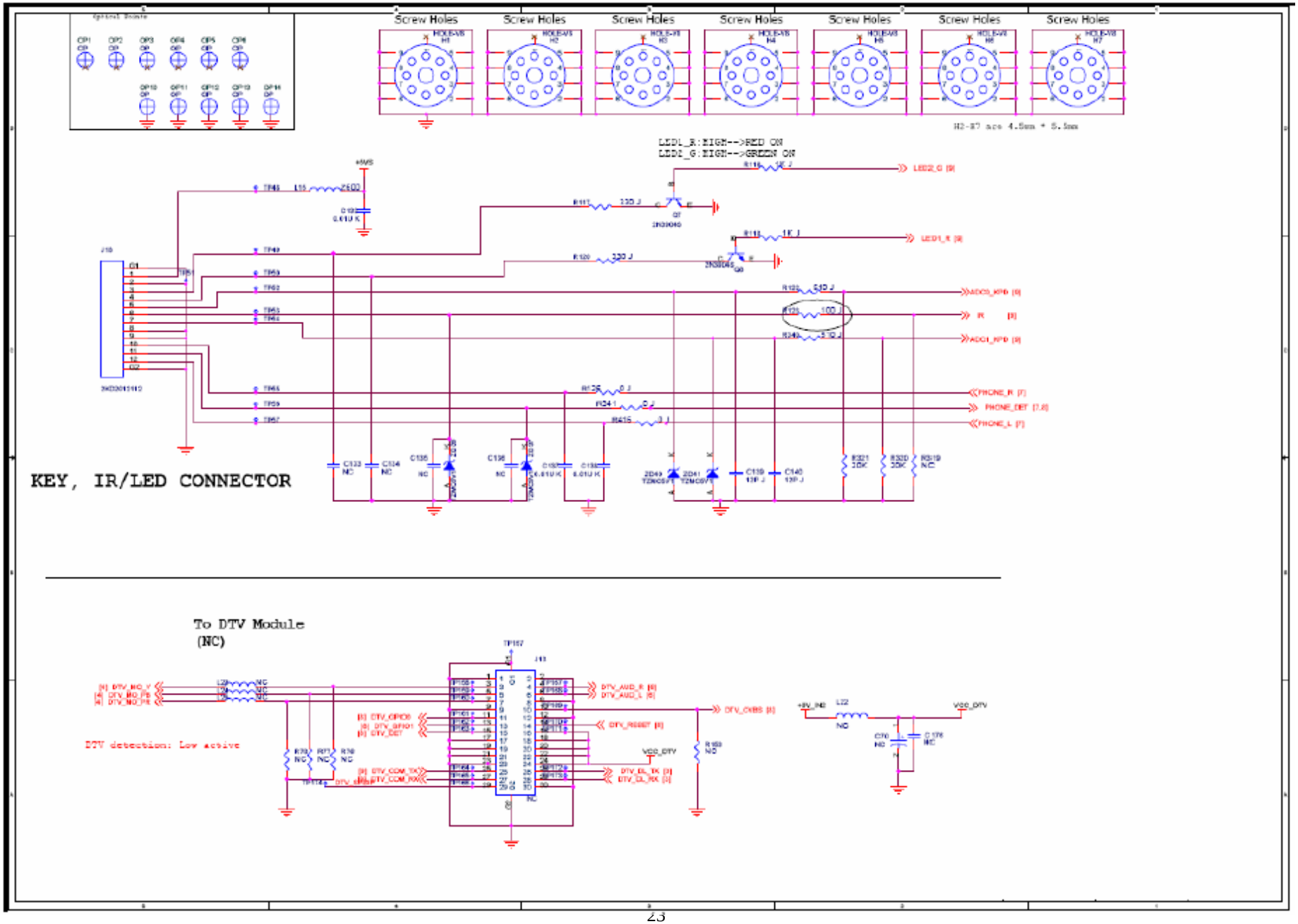
CIRCUIT BLOCK DIAGRAM

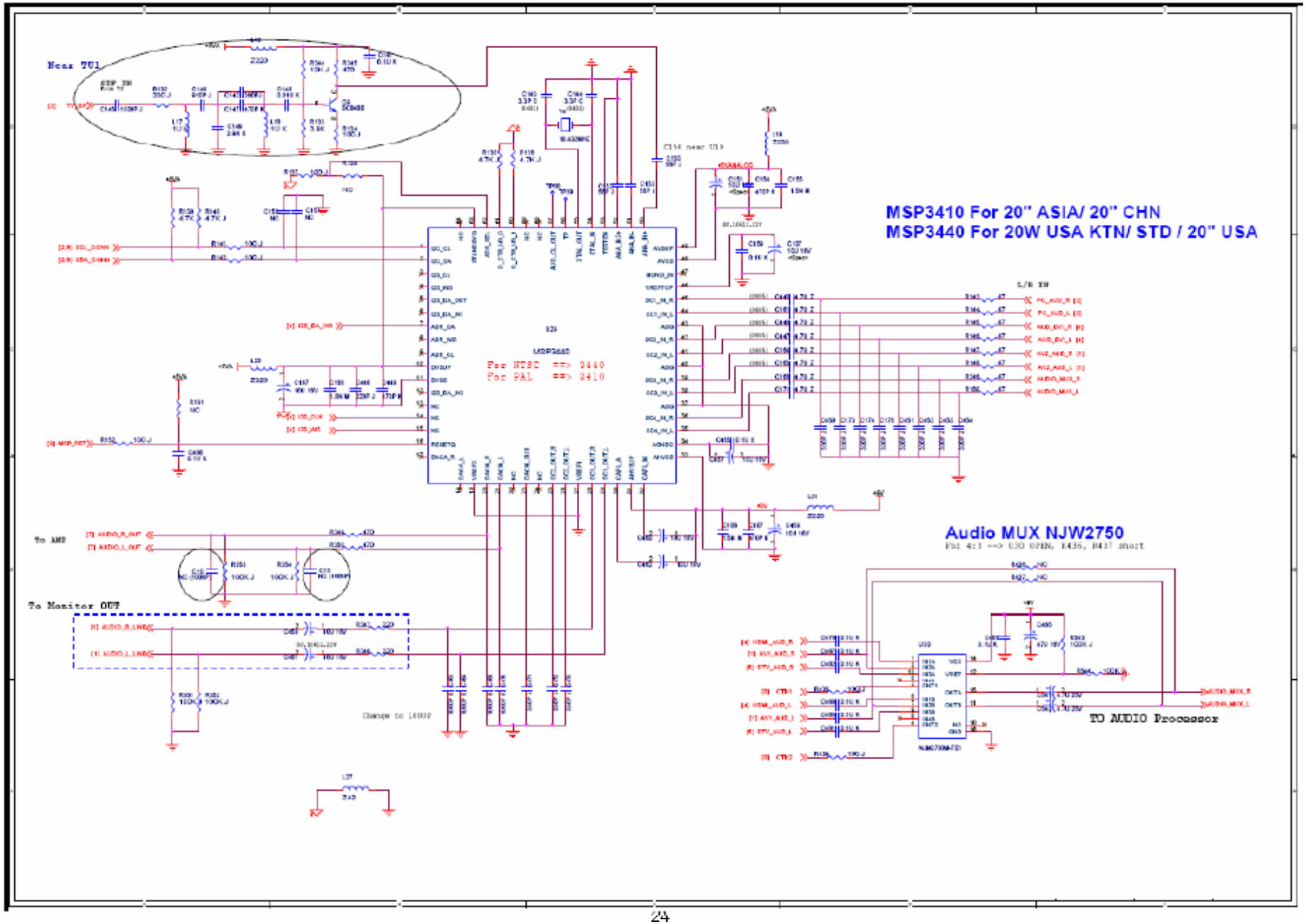

AV1
AV2(Y_R_L)
AV2(Y_Pb_Pr)
Audio Out

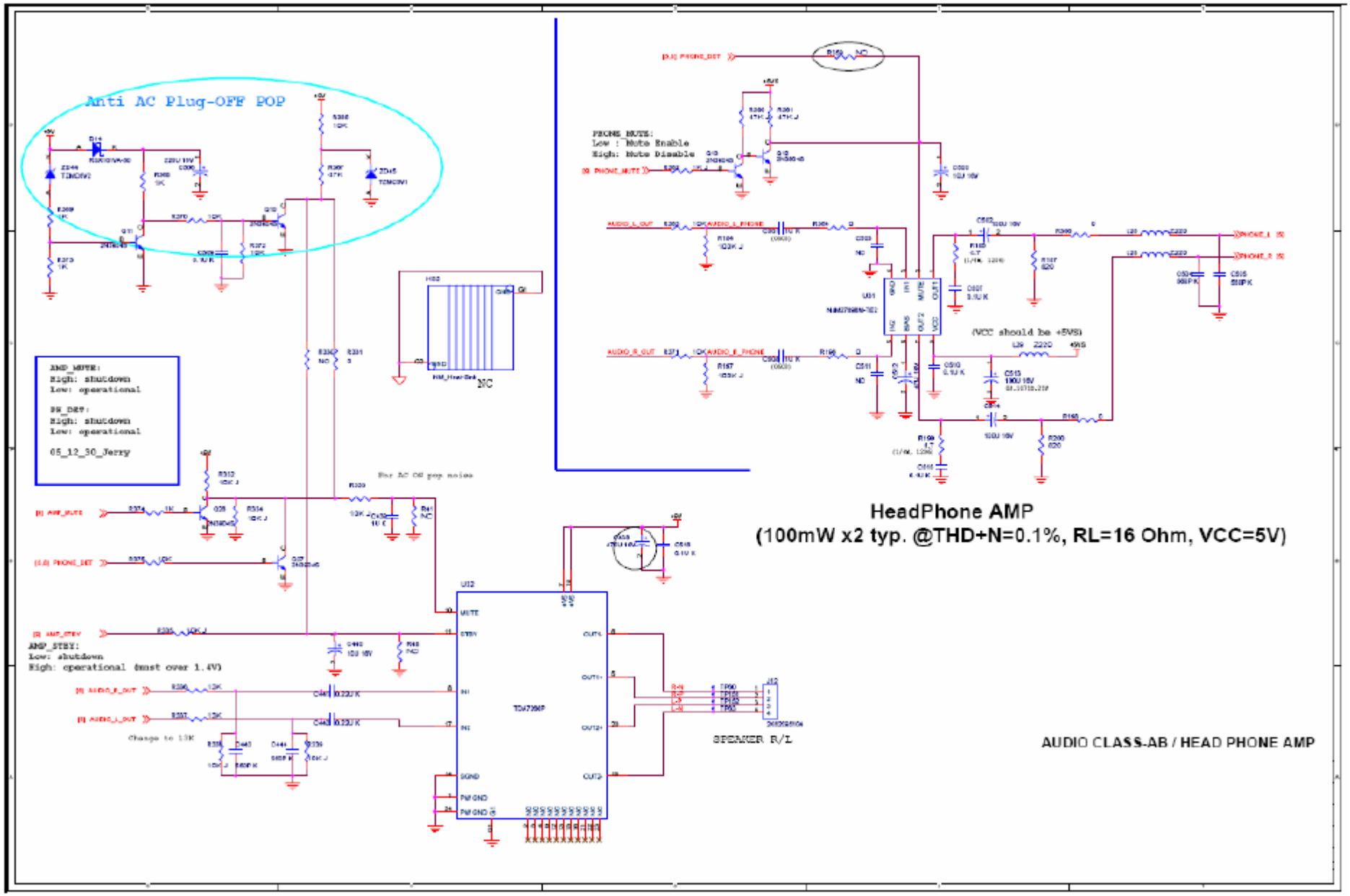

AUDIO PC INPUT
If model without DTV, U14 C540 open and R81, R85 short
5V_RS232:
ON MODE: 5V (PWR_ON = HI)
STANDBY MODE: 0V (PWR_ON = LO)
L : PW3188
H : DTV DL
Default: Low

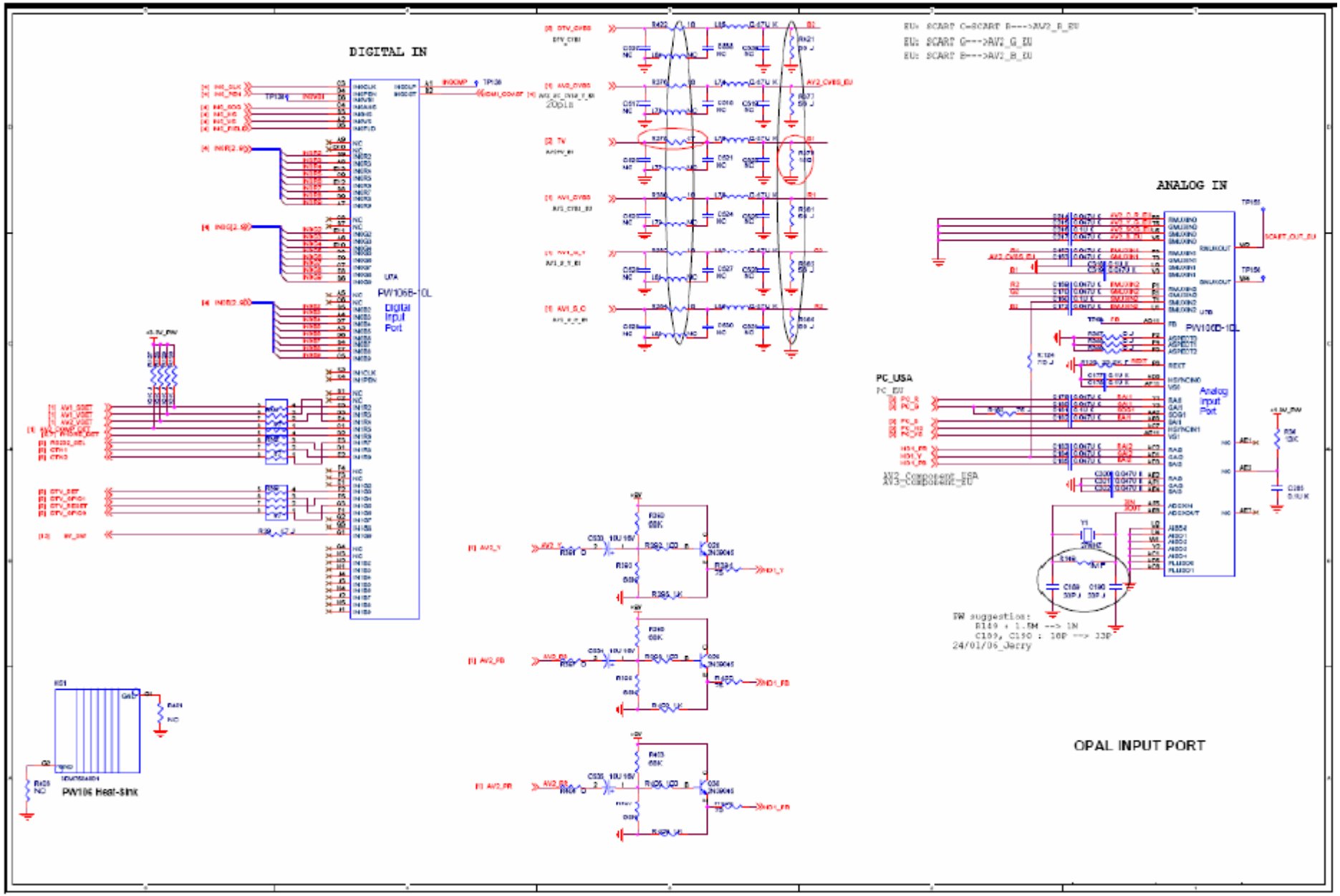

Only for CHGA
GPIO | B/C | I | D/K | M
SW1 | L | H | H | L
SW2 | H | L | H | L
SDA SCL input voltage Low : 0~1.2V
high : 3.5~+5.5V
Must change to 9V
near to TU1
near to TU1
Tuner :
For NTSC ==> 36A27
For PAL ==> 39A11
Video signal "9V" and OIP signal "9V_OIP" must
be placed in different layer.

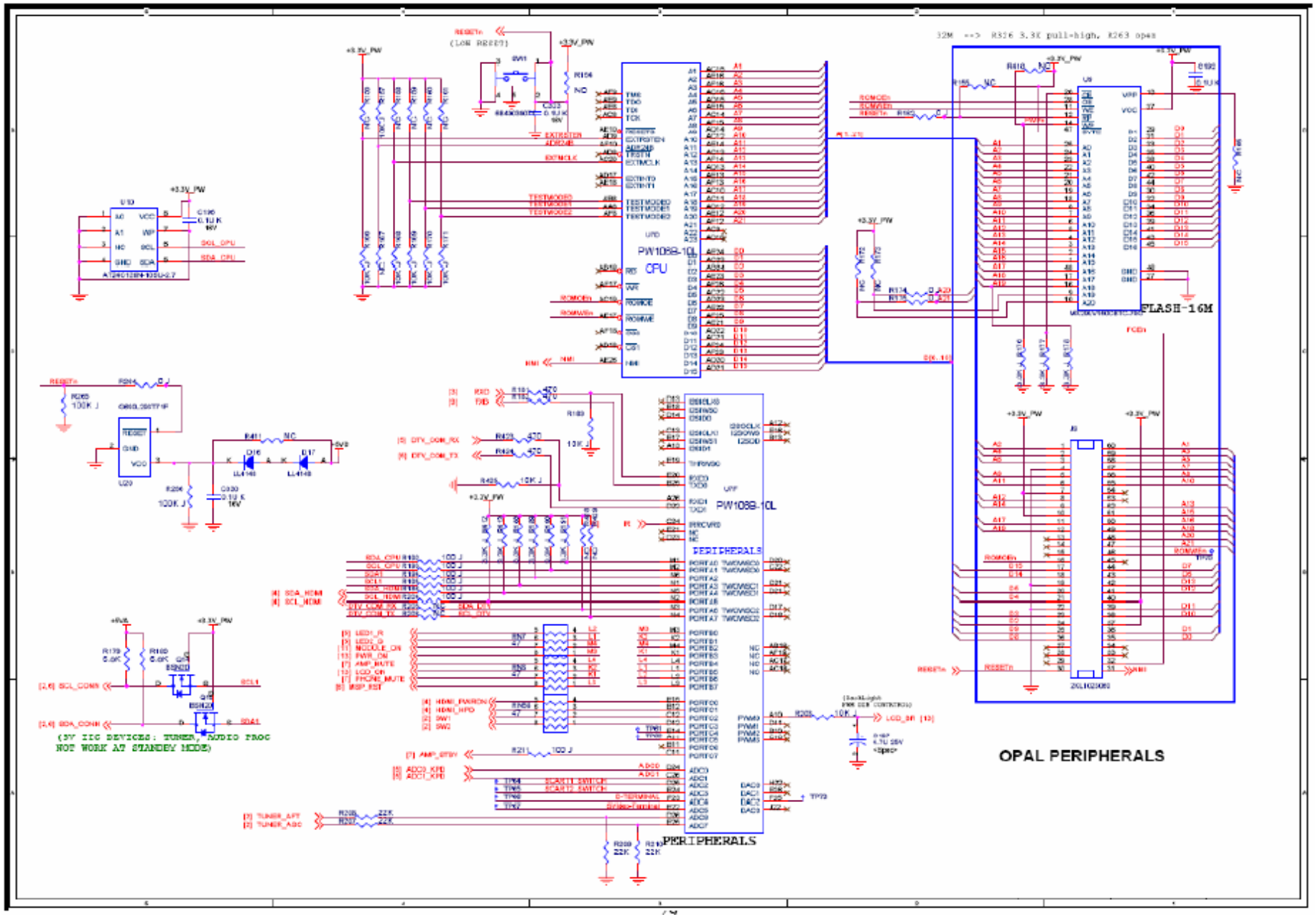

HDMI INPUT
Vertical Type
AD9301
Address : 98
Analog 3.3V
Digital 3.3V
PLL1.8V
DVI mode Audio Input
HDMI AUDIO
AUDIO DAC

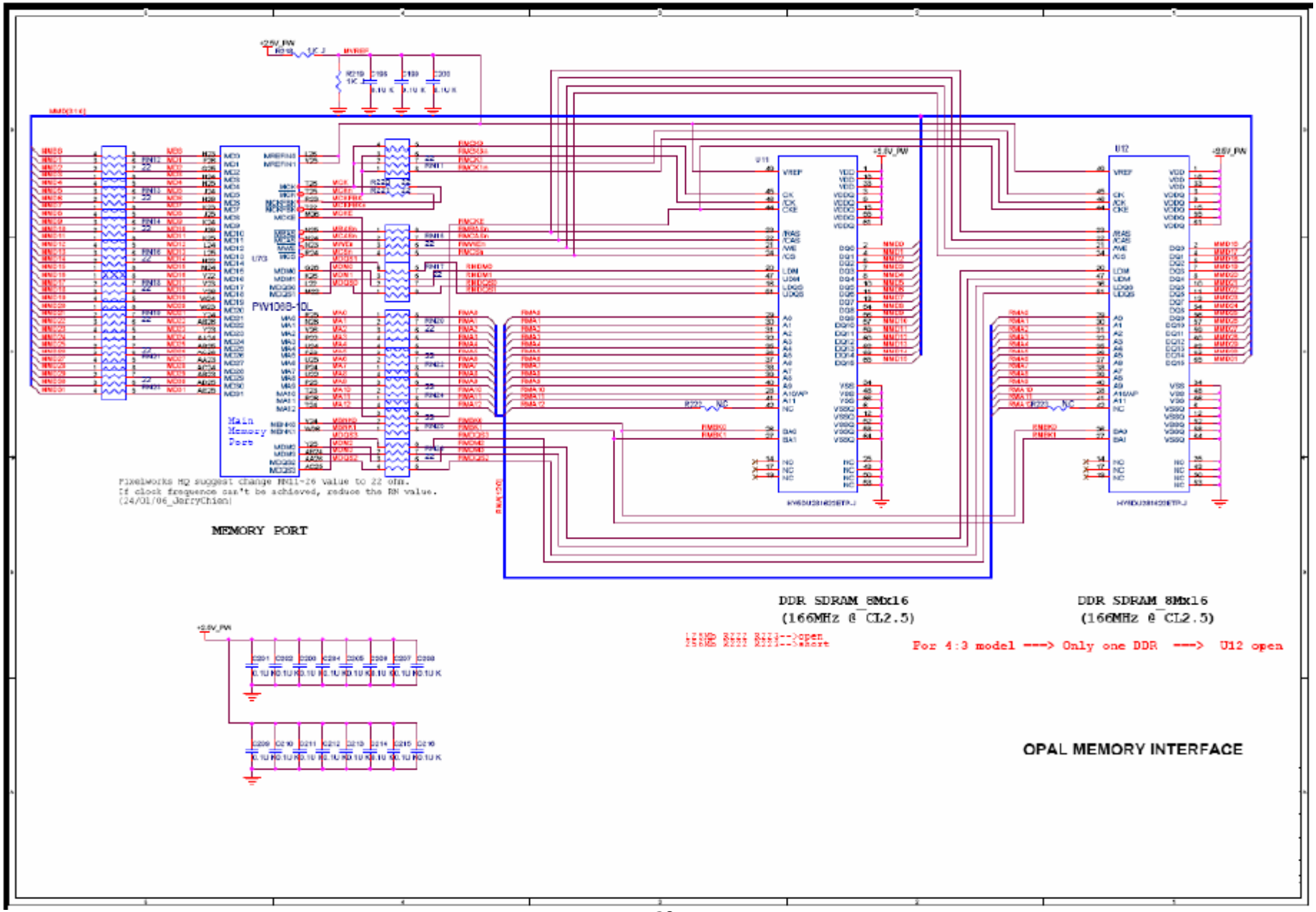

Screw Holes
Screw Holes
Screw Holes
Screw Holes
Screw Holes
Screw Holes
Screw Holes
LED1_R:HIGH-->RED ON
LED1_G:HIGH-->GREEN ON
KEY, IR/LED CONNECTOR
To DTV Module
(NC)
DTV detection: Low active

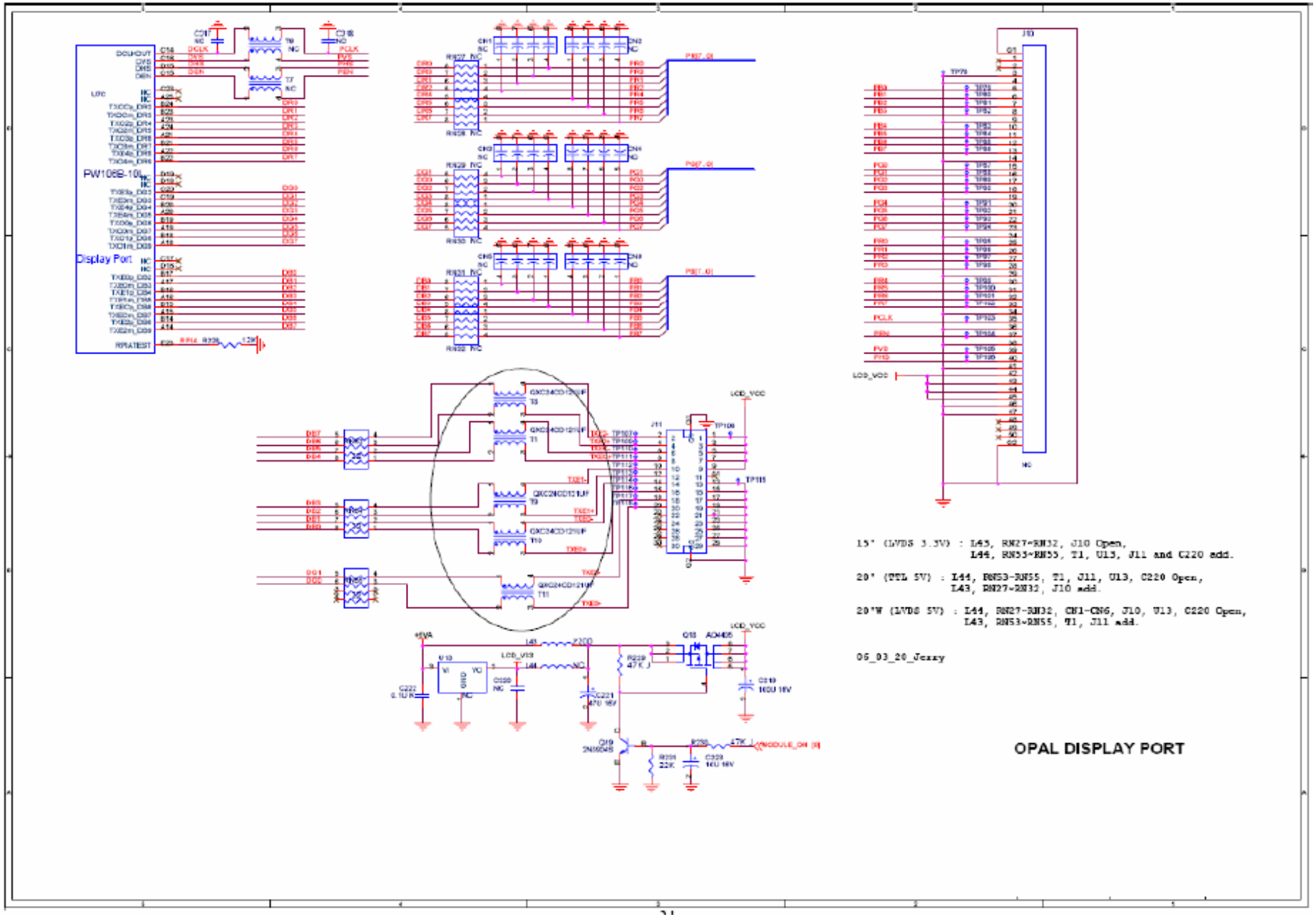

Near TU1
MSP3410 For 20" ASIA/ 20" CHN
MSP3440 For 20W USA KTN/ STD / 20" USA
U29
MSP3440
For NTSC ==> 3440
For PAL ==> 3410
Audio MUX NJW2750
For 4:3 ==> U30 OPEN, R436, R437 short
To AMP
To Monitor OUT
TO AUDIO Processor

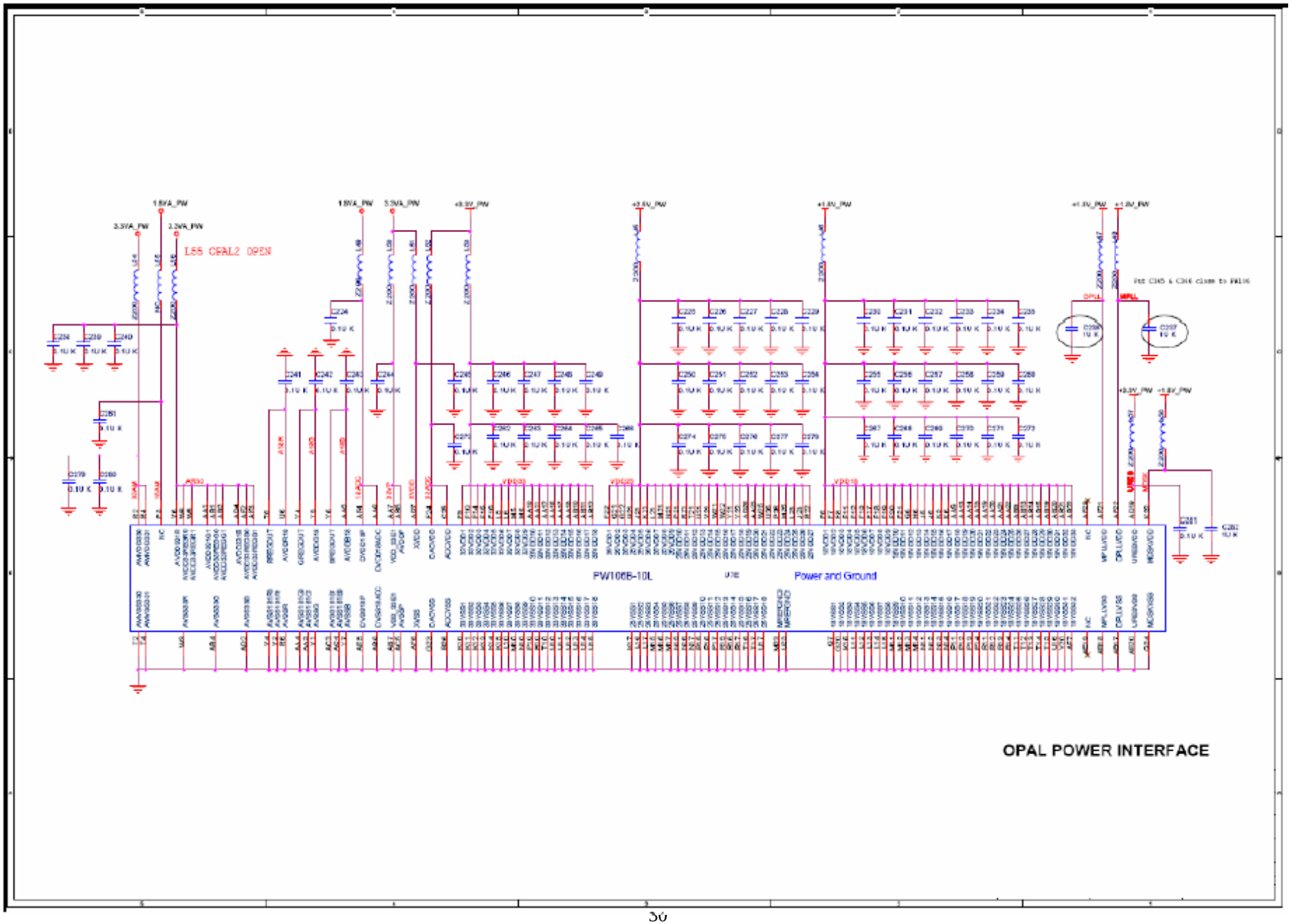

Anti AC Plug-OFF POP
AMP_MUTE:
High: shutdown
Low: operational
PH_DET:
High: shutdown
Low: operational
05_12_30_Jerry
AMP_STBY:
Low: shutdown
High: operational (must over 1.4V)
PHONE_MUTE:
Low : Mute Enable
High: Mute Disable
(VCC should be +5VS)
HeadPhone AMP
(100mW x2 typ. @THD+N=0.1%, RL=16 Ohm, VCC=5V)
SPEAKER R/L
AUDIO CLASS-AB / HEAD PHONE AMP

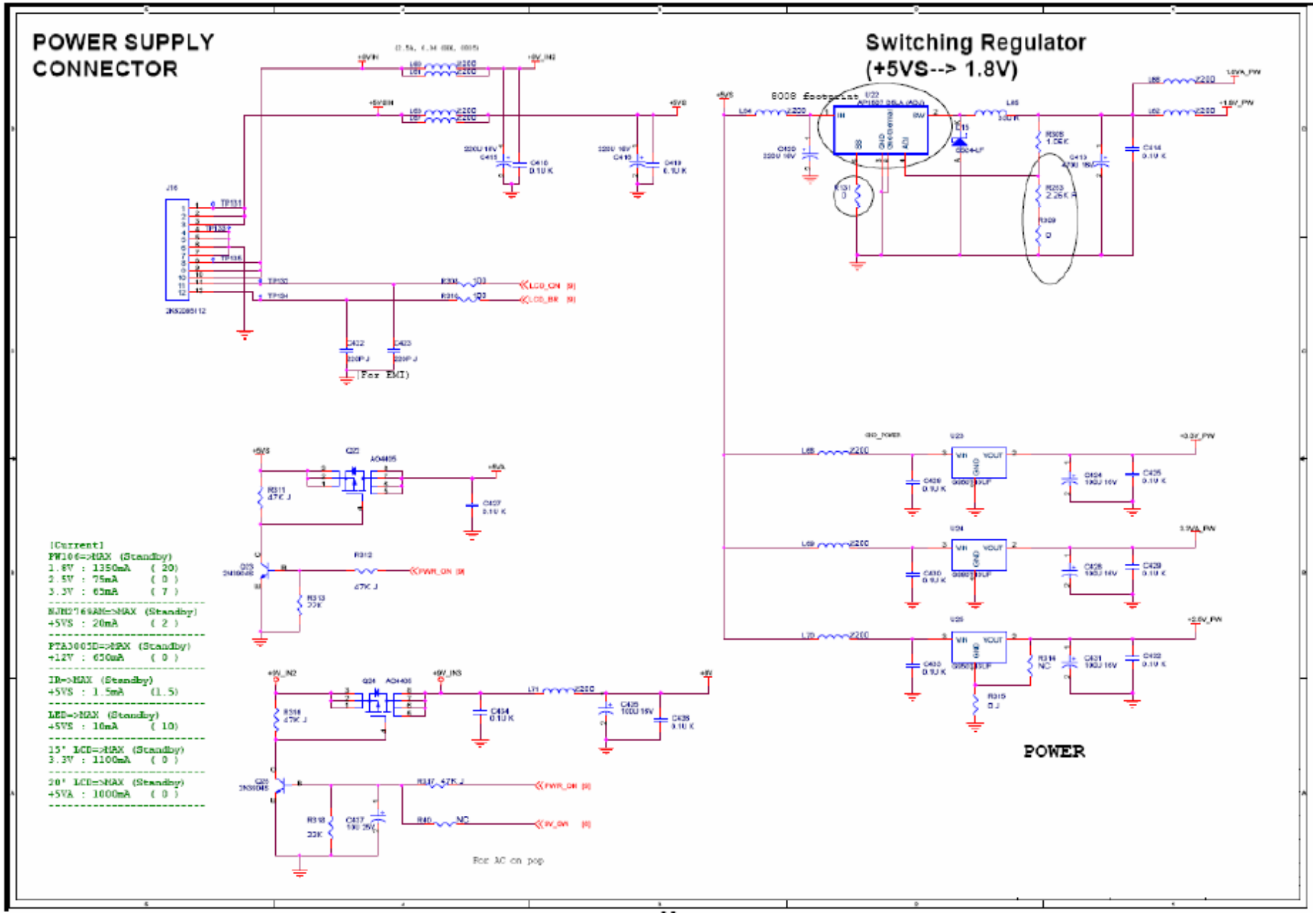

DIGITAL IN
PW106B-10L
Digital Input Port
ANALOG IN
PW106D-10L
Analog Input Port
PC_USA
OPAL INPUT PORT
PW106 Heat-Sink


PW1088-10L
CPU
PERIPHERALS
FLASH-16M
OPAL PERIPHERALS
(3V IIC DEVICES: TUNER, AUDIO PROC
NOT WORK AT STANDBY MODE)


PW1088-1DL
Main Memory Port
Pixelworks HQ suggest change RN11~26 value to 22 ohm.
If clock frequence can't be achieved, reduce the RN value.
(24/01/06_JerryChien)
MEMORY PORT
DDR SDRAM 8Mx16
(166MHz @ CL2.5)
DDR SDRAM 8Mx16
(166MHz @ CL2.5)
128MB R222 R223-->open
256MB R222 R223-->Short
For 4:3 model ---> Only one DDR ---> U12 open
OPAL MEMORY INTERFACE


PW106B-10L
Display Port
15' (LVDS 3.3V) : L43, RN27~RN32, J10 Open,
L44, RN53~RN55, T1, U13, J11 and C220 add.
20' (TTL 5V) : L44, RN53~RN55, T1, J11, U13, C220 Open,
L43, RN27~RN32, J10 add.
20'W (LVDS 5V) : L44, RN27~RN32, CN1~CN6, J10, U13, C220 Open,
L43, RN53~RN55, T1, J11 add.
05_03_20_Jenny
OPAL DISPLAY PORT


1.8VA_PW
3.3VA_PW
2.2VA_PW
1.8VA_PW
3.3VA_PW
+3.3V_PW
+2.5V_PW
+1.8V_PW
+1.8V_PW
+1.8V_PW
I55 OPAL2 OPEN
Put C265 & C266 close to FB106
FW106B-10L
Power and Ground
OPAL POWER INTERFACE


POWER SUPPLY CONNECTOR
Switching Regulator (+5VS--> 1.8V)
[Current]
PW106=>MAX (Standby)
1.8V : 1350mA (20)
2.5V : 75mA (0)
3.3V : 65mA (7)
MJM2769AM=>MAX (Standby)
+5VS : 20mA (2)
PTA3003D=>MAX (Standby)
+12V : 650mA (0)
IR=>MAX (Standby)
+5VS : 1.5mA (1.5)
LED=>MAX (Standby)
+5VS : 10mA (10)
15" LCD=>MAX (Standby)
3.3V : 1100mA (0)
20" LCD=>MAX (Standby)
+5VA : 1000mA (0)
(For EMI)
For AC on pop
POWER

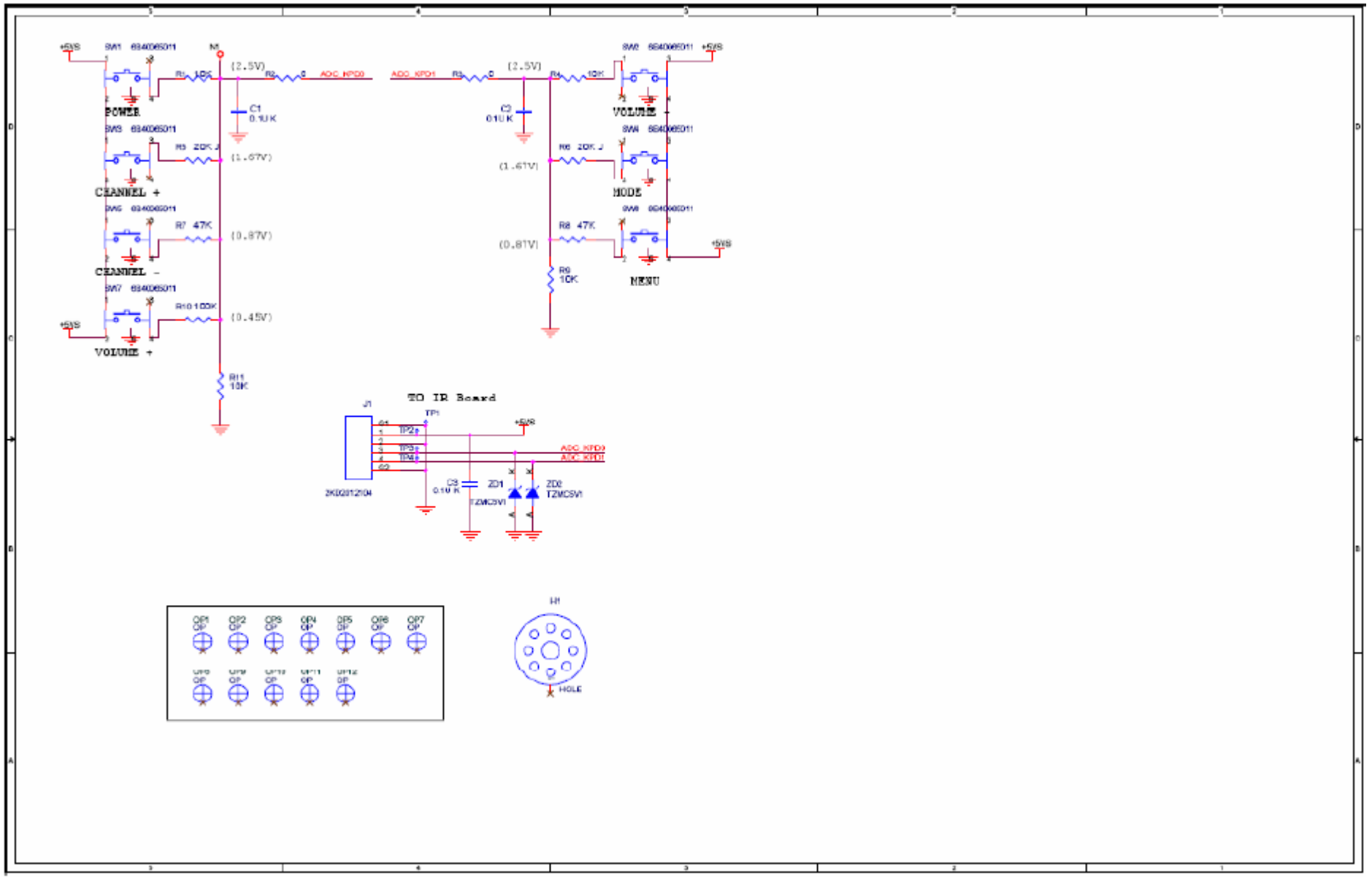
05_12_23 Start to prepare circuit
06_01_20 Remove FM function
06_03_20 Change R548 and R549 from 47K to 0 ohm; Add C40 (0.1U) [P2]
06_03_20 Change J6 to 2K.22014.015 [P3]
06_03_20 Change R363 and R371 from 1K to 10K ohm [P7]
06_03_20 Del R224, R225, R226 and R227, Open C217 and C218, add T6 and T7 [P11]
06_03_20 Add GPIO "9V_SW" and R39, R40 [P9][P13]
06_03_24 Change C463, C464, C469, C470 to 1000P [P6]
06_03_24 Change R366, R337 to 13K ohm; Add R331 to 0 ohm, change ZD44 to 6C.6R203.036 [P7]
06_03_24 Change U5 to AD9381-100 [P4]
06_04_13 Change R320 and R321 to 20K [P5]

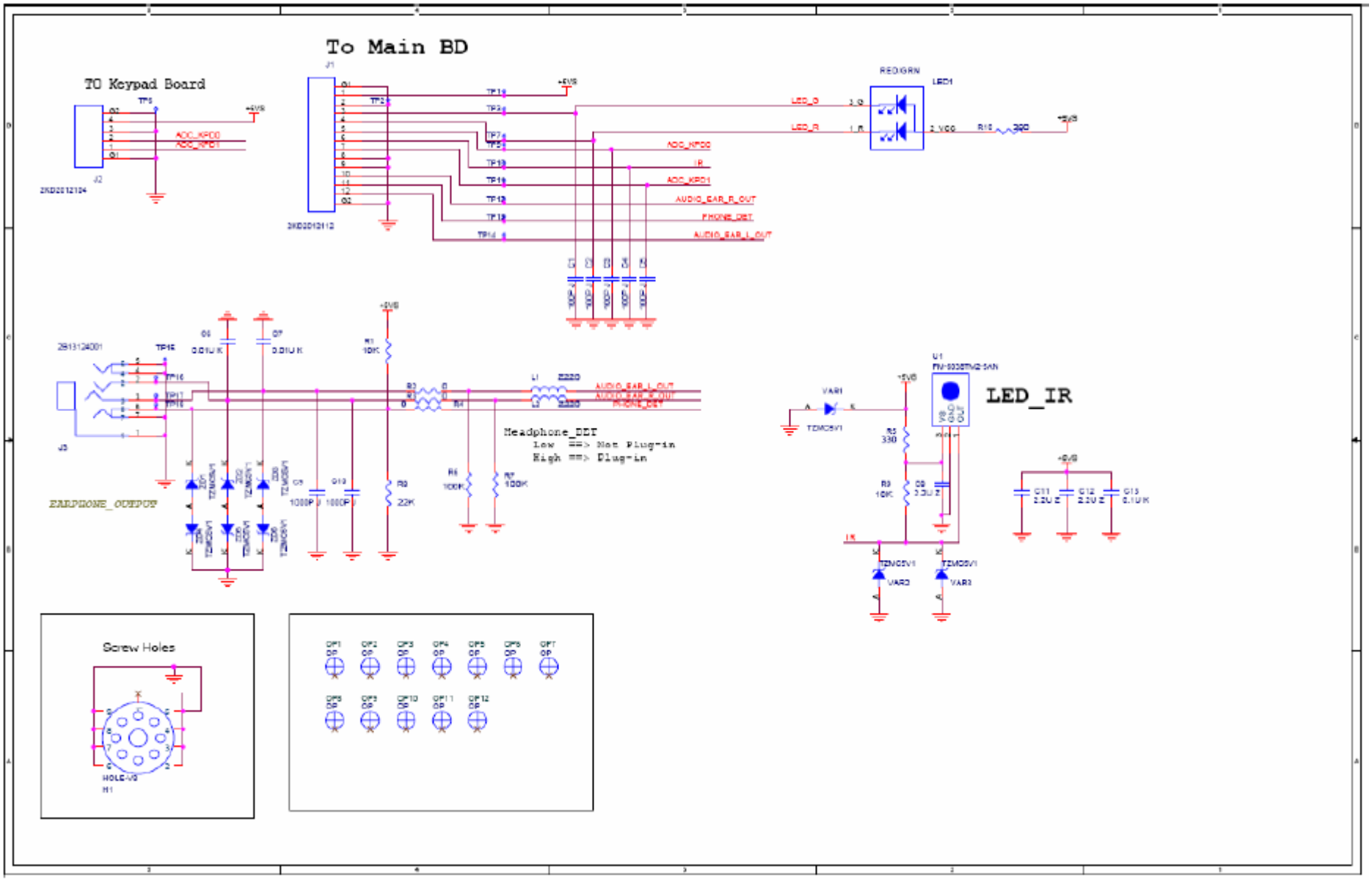
For S03

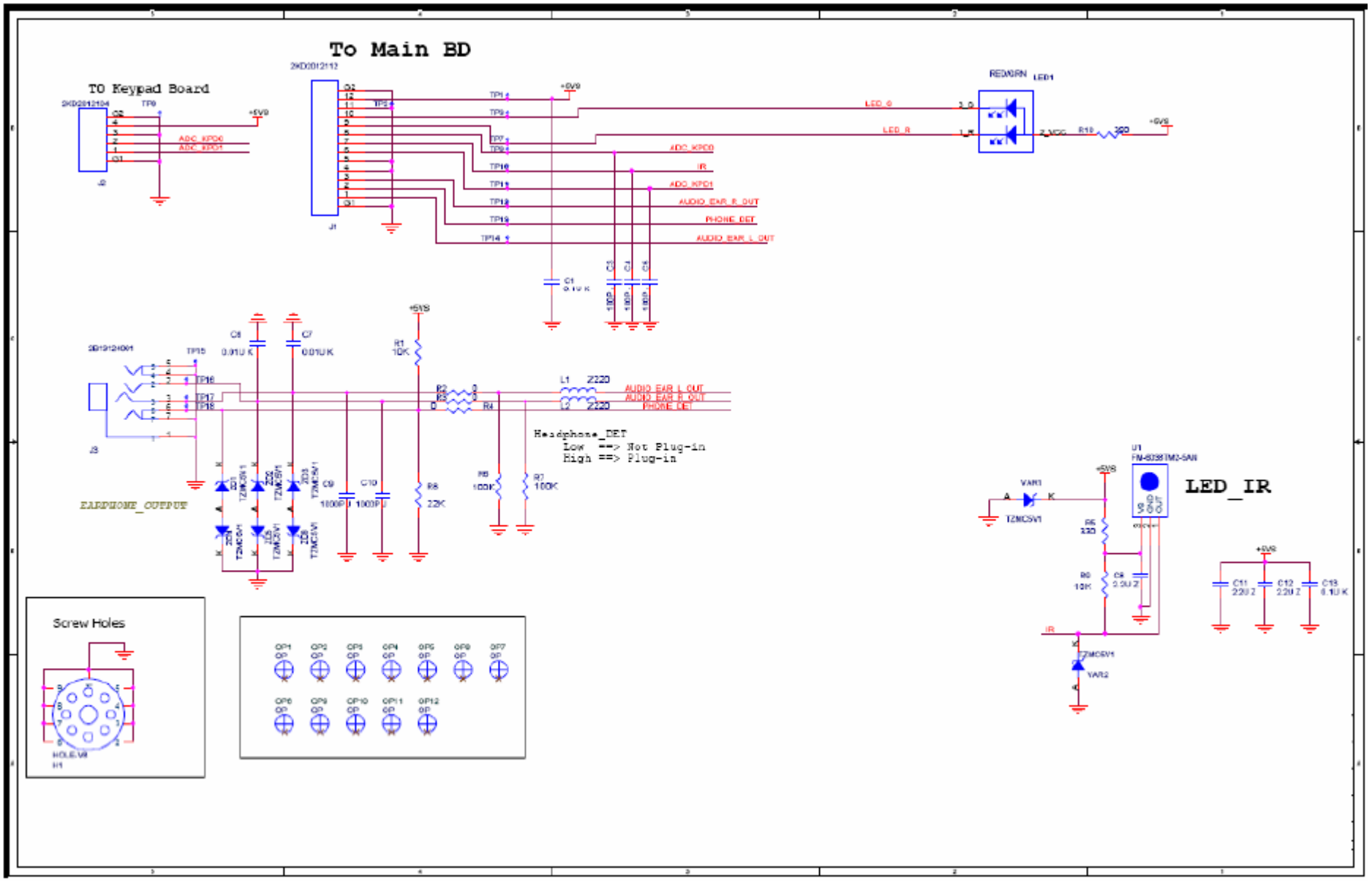
06_04_27 Move D4 location, C31 NC [P1]
06_04_27 Add R99 location (NC) [P2]
06_04_27 Add R110 and R111 (0 ohm), R119 and R121 (NC) [P3]
06_04_27 Change R88~R95 from 10 ohm to 0 ohm; Change HDMI trace layout [P4]
06_04_27 Change R123 from 0 ohm to 100 ohm [P5]
06_04_27 Add D_GND and L27 [P6]
06_04_27 R359 NC, C438 use dip type [P7]
06_04_27 Change R422, R376, R380, R382 and R384 from 36 ohm to 18 ohm; Change R378 from 34.8 ohm to 18 ohm [P8]
06_04_27 Change R421, R377, R379, R381, R383 and R385 from 39.2 ohm to 56 ohm [P8]
06_04_27 Add Heat-sink (only 16by9 model) [P8]
06_04_27 Change U22 from 7D.08008.040 to 7D.01507.04M [P13]
06_04_27 Delete C421 then Add R131 (0 ohm), (same location) [P13]
06_04_27 Change R253 from 180 ohm to 2.26K ohm; Change R309 from 619 ohm to 0 ohm [P13]
06_05_10 Change R378 from 18 ohm to 47 ohm, Change R379 from 56 ohm to 150 ohm. [P8]
06_05_10 Add U37 and C421; change U37 power voltage from TU_VCC5 to +9V_TUNER [P2]

For S04

06_05_25 Change U37 power voltage from TU_VCC5 to +9V_TUNER [P2]
06_05_25 Add C10 and C15 location [P2]

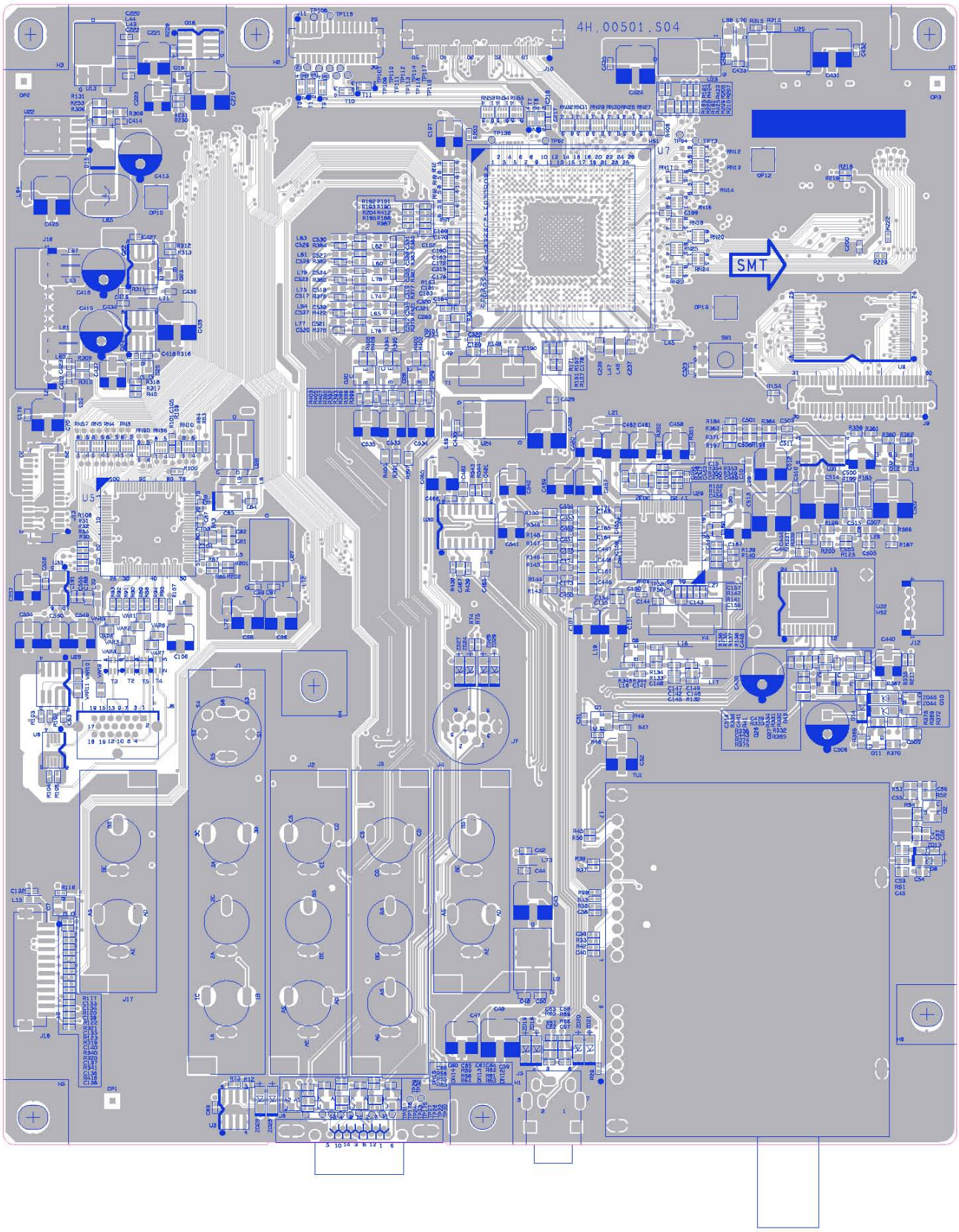

POWER
CHANNEL +
CHANNEL -
VOLUME +
VOLUME -
MODE
MENU
TO IR Board
(2.5V)
(1.67V)
(0.87V)
(0.45V)
(1.61V)
(0.81V)
ADC_KPD0
ADC_KPD1
+5VS
+5VR
R1 10K
R2 0
R3 0
R4 10K
R5 20K J
R6 20K J
R7 47K
R8 47K
R9 10K
R10 100K
R11 10K
C1 0.1U K
C2 0.1U K
C3 0.1U K
ZD1 TZMC5V1
ZD2 TZMC5V1
TP1
TP2
TP3
TP4
J1
ZKDQ01210H
H1
HOLE


To Main BD
TO Keypad Board
LED_IR
Headphone_DET
Low ==> Non Plugrin
High ==> Plugrin
EARPHONE_OUTPUT
Screw Holes


To Main BD
TO Keypad Board
ADC_KPD0
ADC_KPD1
IR
AUDIO_EAR_R_OUT
PHONE_DET
AUDIO_EAR_L_OUT
LED_G
LED_R
REDGRN LED1
+5V8
C1 0.1U K
C3 100P
C4 1000P
C5 1000P
C6 0.01U K
C7 0.01U K
R1 10K
R2 0
R3 0
R4 0
L1 Z220
L2 Z220
AUDIO_EAR_L_OUT
AUDIO_EAR_R_OUT
PHONE_DET
Headphone_DET
Low ==> Not Plug-in
High ==> Plug-in
EARPHONE_OUTPUT
C9 1000P
C10 1000P
R8 22K
R9 100K
R7 100K
LED_IR
U1
FM-8038M2-SAW
VAR1
TZMC5V1
R5 330
R6 10K
C8 2.2U Z
C11 2.2U Z
C12 2.2U Z
C13 0.1U K
VAR2
IR
Screw Holes
HOLE-M
H1

PCB Drawing

This chapter is to show you the PCB drawing of the mainboard.

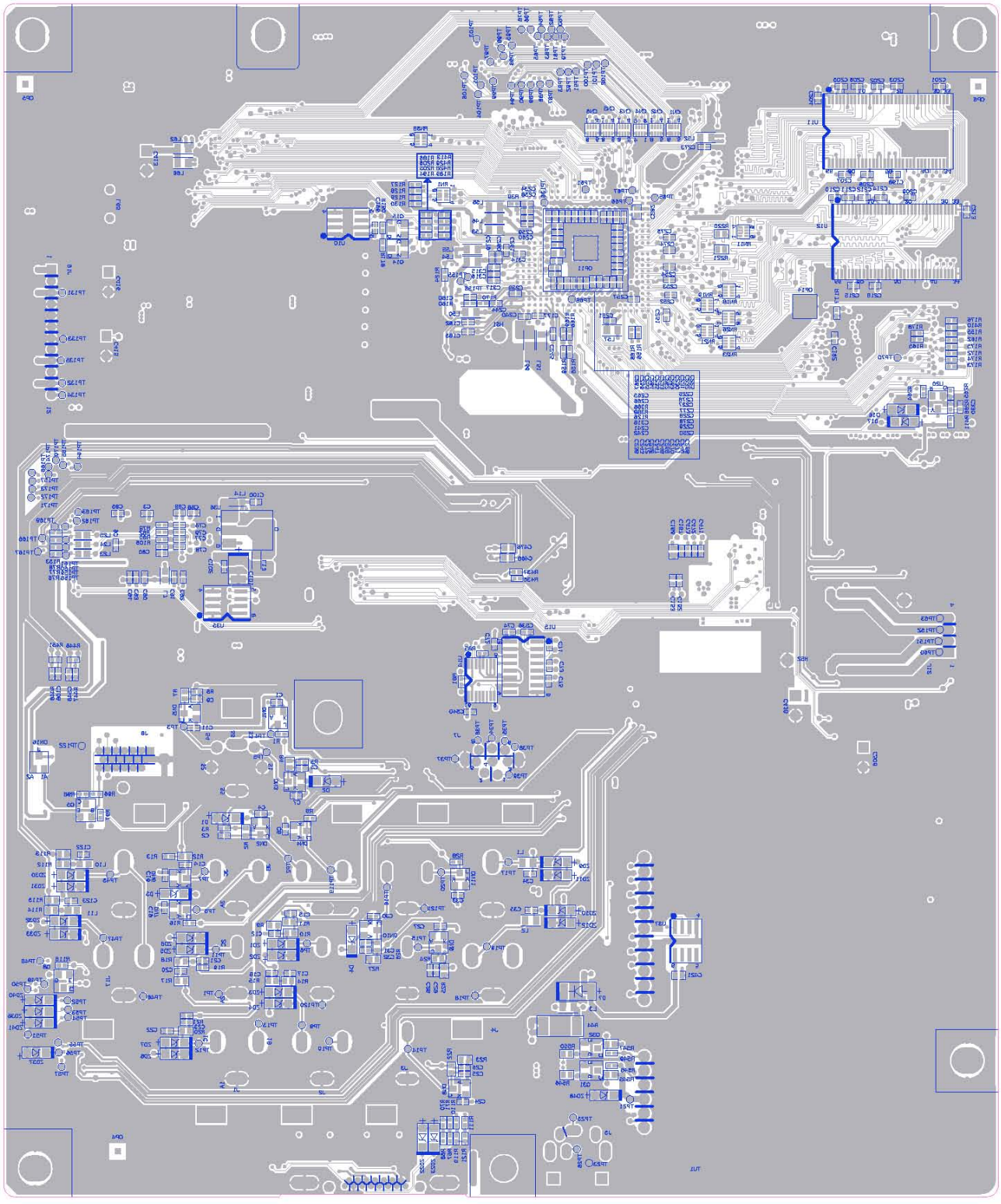


Impedance	
50Ω	X mil
80Ω	X mil
100Ω	X mil

BenQ	Layer: SILKSCREEN_TOP	Part No.: 4H.00501.S04
	Filename: Main BOARD	Date: 26/May/06 Rev.: XXX
	Model No.: T20WH8	Sheet 3 of 11
	Doc. No.:	

L1:COMP
L2:GND
L3:IN1
L4:BOTTOM

PCS:175 X 210 mm
PNL:350 X 220 mm (+/-0.127mm)
V-CUTX3



Impedance	
50 Ω	X mil
80 Ω	X mil
100 Ω	X mil

Layer:SILKSCREEN BOTTOM	Part No.:4H.00501.S04	
Filename: Main BOARD	Date:26/May/06	Rev.:XXX
Model No.: T20WH8	Sheet 4 of 11	
Doc. No.:		

L1:COMP
L2:GND
L3:IN1
L4:BOTTOM

PCS:175 X 210 mm
PNL:350 X 220 mm (+/-0.127mm)
V-CUTX3

Spare Parts List

Toshiba Model Name				20HLK86	20HL86
BenQ Model T20WH8 9J.00501				USK	USS
Type	Parts Description	Toshiba PN	BenQ PN		
PCB PWR	PCBA PWR BD 70W EADP-70AF	75003704	5D.00501.001	◎	◎
PCB MAIN	PCBA MAIN BD MI T20WH8	75003705	5E.00501.001	◎	◎
PCB Key	PCBA KEYPAD BD T20WH8 MI	75003706	5E.00502.001	◎	◎
PCB IR	PCBA IR BD T20WH8 MI	75003707	5E.00503.001		◎
PCB IR	PCBA IR BD T20WH8-KITCHEN MI	75004558	5E.00503.011	◎	
Panel	LCDM T200XW02-V0 AUO	75003709	5F.91005.001	◎	◎
ME WIR	WIRE 12/12P 1571#28 320MM	75003710	5K.00501.001		◎
ME WIR	WIRE 12/12P 1007#26 120MM	75003711	5K.00502.001	◎	◎
ME WIR	WIRE 30/30P 1571#28 125MM	75003712	5K.00503.001	◎	◎
ME WIR	WIRE 4/4P 1571#28 90MM+G	75003713	5K.00505.001	◎	◎
ME WIR	WIRE 12/12P 1571#28 320MM	75004559	5K.00507.001	◎	
ME SPK	SPK*2 16OHM 330/520MM APS-0000	75003696	2C.40050.061	◎	◎
ME SPK	SPK*2 16OHM 235/590MM PS-000	75005170	2C.40050.071		
ME RC	ASSY REAR CVR T20WH8	75005408	6K.00510.002	◎	◎
ME HIG	ASSY HINGE T20VV6	75003714	6E.00401.001	◎	◎
ME HAD	ASSY HANDLE T20WH8	75003717	6K.00503.001	◎	
ME HAD	ASSY HANDLE T20WH8 STD	75004579	6K.00503.011		◎
ME BEZ	ASSY BEZEL T20WH8 STD	75003719	6K.00509.001		◎
ME BEZ	ASSY BEZEL T20WH8 BENQ	75004561	6K.00512.001	◎	
ME BAS	ASSY BASE T20WH8	75003716	6K.00502.001		◎
ME BAS	ASSY BASE-KIH T20WH8	75004560	6K.00506.001	◎	
ACC RCU	REMOTE CTRL CT-885 GA	75003708	5F.26005.001		◎
ACC MNL	MANUAL US OWNERS T20WH8	75004957	4J.00501.001	◎	
ACC MNL	MANUAL USER 20HL86 T20WH8	75003703	4J.00501.011		◎
ACC CTN	CTN AB 640*497*336 T20WH8	75004557	4D.00501.001	◎	
ACC CTN	CTN AB 640*497*325 STD T20WH8	75003699	4D.00503.002		◎
ACC CSN	CSN TOP EPS KIH T20WH8	75004960	4G.00511.001	◎	

ACC CSN	CSN BTM EPS KIH T20WH8	75004961	4G.00512.002	◎	
ACC CSN	CSN TOP EPS STD T20WH8	75003701	4G.00514.001		◎
ACC CSN	CSN BTM EPS STD T20WH8	75003702	4G.00515.001		◎
ACC COD	CORD H03VVH2-F 2.5A250V1.8M EU	75005654	2G.00950.001		
ACC COD	CORD NISPT-2 SQUARE125V1.8M US	75003697	2G.01115.081	◎	◎
ACC BAG	BAG PE T20VV6	75003698	4B.00531.001	◎	◎

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN