



# SERVICE MANUAL

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**Model:**

**PDP5073TM**





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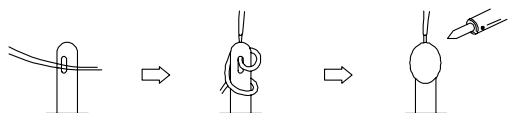
This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

# Safety Precaution

 <b>CAUTION</b> <b>RISK OF ELECTRIC SHOCK</b> <b>DO NOT OPEN</b>  <b>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.</b>	 <p>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.</p>  <p>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.</p>
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## PRECAUTIONS DURING SERVICING

- In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.  
Examples: RF converters, tuner units, antenna selection switches, RF cables, noise-blocking capacitors, noise-blocking filters, etc.
- Use specified internal Wiring. Note especially:
  - Wires covered with PVC tubing
  - Double insulated wires
  - High voltage leads
- Use specified insulating materials for hazardous live parts. Note especially:
  - Insulating Tape
  - PVC tubing
  - Spacers (insulating barriers)
  - Insulating sheets for transistors
  - Plastic screws for fixing micro switches
- When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



- Make sure that wires do not contact heat generating parts (heat sinks, oxide metal film resistors, fusible resistors, etc.)
- Check if replaced wires do not contact sharply edged or pointed parts.
- Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

## MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol



for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot.

### WARNING:

Before servicing this TV receiver, read the SAFETY INSTRUCTION and PRODUCT SAFETY NOTICE.

## SAFETY INSTRUCTION

The service should not be attempted by anyone unfamiliar with the necessary instructions on this apparatus. The following are the necessary instructions to be observed before servicing.

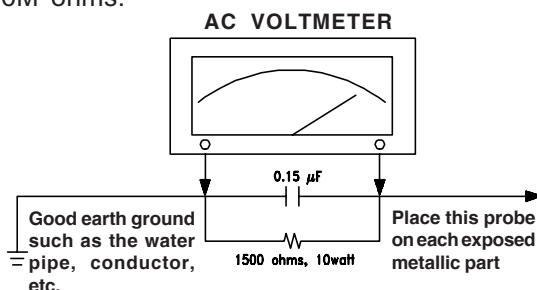
- An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.
- Comply with all caution and safety related provided on the back of the cabinet, inside the cabinet, on the chassis or picture tube.
- To avoid a shock hazard, always discharge the picture tube's anode to the chassis ground before removing the anode cap.
- Completely discharge the high potential voltage of the picture tube before handling. The picture tube is a vacuum and if broken, the glass will explode.

5. When replacing a MAIN PCB in the cabinet, always be certain that all protective are installed properly such as control knobs, adjustment covers or shields, barriers, isolation resistor networks etc.
6. When servicing is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area.
7. Keep wires away from high voltage or high temperature components.
8. 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 overlay, control shafts, etc., to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly to the AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5K ohms volt sensitivity or more in the following manner.  
Connect a 1.5K ohm 10 watt resistor paralleled by a 0.15 $\mu$ F AC type capacitor, between a good earth ground (water pipe, conductor etc.,) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of the 1.5K ohm resistor and 0.15  $\mu$ F capacitor. Reverse the AC plug at the AC outlet and repeat the AC voltage measurements for each exposed metallic part.

The measured voltage must not exceed 0.3V RMS.

This corresponds to 0.5mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch "ON". The resistance should be more than 6M ohms.



AC Leakage Current Check

## PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this apparatus have special safety-related characteristics.

These characteristics are often passed unnoticed by visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for a higher voltage, wattage, etc.

The replacement parts which have these special safety characteristics are identified by  $\triangle$  marks on the schematic diagram and on 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.

9. Must be sure that the ground wire of the AC inlet is connected with the ground of the apparatus properly.

**1. Standard Test Conditions**

All tests shall be performed under the following conditions, unless otherwise specified.

- 1.1 Ambient light : 150ux (When measuring  $I_B$ , the ambient luminance  $\cong 0.1\text{Cd/m}^2$ )
- 1.2 Viewing distance : 50cm in front of PDP
- 1.3 Warm up time : 30 minutes
- 1.4 PDP Panel facing : no restricted
- 1.5 Measuring Equipment : Minolta CA 100 photometer
- 1.6 Magnetic field : no restricted
- 1.7 Control settings : Brightness, Contrast, Tint, Color set at Center(50)
- 1.8 Power input : 120Vac, 60Hz
- 1.9 Ambient temperature :  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$  ( $68^{\circ}\text{F} \pm 9^{\circ}\text{F}$ )
- 1.10 Display mode : Resolution 1366 (H) x 768 (V) Pixels
- 1.11 Other conditions :
  - 1.11.1 With image sticking protection of PDP module, the luminance will descend by time on a same still screen and rapidly go down in 5 minutes. When measuring the color tracking and luminance of a same still screen, be sure to accomplish the measurement in one minute to ensure its accuracy.
  - 1.11.2 Due to the structure of PDP, the extra-high-bright same screen should not hold over 5 minutes for fear of branding on the panel.

**ELECTRICAL CHARACTERISTICS**

**2. Power Input**

- 2.1 Voltage : 120VAC
- 2.2 Input Current : 4.0A
- 2.3 Maximum Inrush Current : <30 A (FOR AC 120V ONLY)  
 Test condition : Measured when switched off for at least 20 mins
- 2.4 Frequency : 60Hz(±3Hz)
- 2.5 Power Consumption : 480W Typical  
 Test condition : full white display with maximum brightness and contrast
- 2.6 Power Factor : Meets IEC1000-3-2
- 2.7 Withstanding voltage : 1.5kVac or 2.2kVdc for 1 sec

**3. Display**

- 3.1 Screen Size : 50" Plasma display
- 3.2 Aspect Ratio : 16:9
- 3.3 Pixel Resolution : 1366 x 768
- 3.4 Peak Brightness : 1000 cd/m<sup>2</sup> (Panel module without filter)
- 3.5 Contrast Ratio (Dark room) : 10000:1 (Panel module without filter)
- 3.6 Viewing Angle : Over 160°
- 3.7 OSD language : English, Spanish, French

**4. Signal**

4.1 AV & Graphic input

- 4.1.1 Composite signal : AV
- 4.1.2 Y,C Signal : S-Video
- 4.1.3 Component signal : YPbPr HDTV compatible
- 4.1.4 Graphic Input : D-Sub 15 pin detachable cable
- 4.1.5 HDMI : HDMI
- 4.1.6 PnP compatibility : DDC 1.0
- 4.1.7 I/P frequency : f<sub>H</sub>: 31.5kHz to 60kHz/f<sub>V</sub>: 56.25Hz to 75Hz (640x480 recommended)

4.2 Audio input

Audio Input(L/Rx5) : 1 for DVI / D-Sub  
 2 for YPbPr  
 1 for S-Video  
 1 for AV

4.3 Audio output

Audio Output (L/Rx1) : Monitor out(L/R)  
 SPDIF : Coaxial x 1 (only for HDMI)

5. Environment

5.1 Operating environment

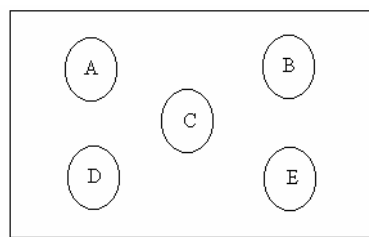
5.1.1 Temperature : 5° to 33°C  
 5.1.2 Relative humidity: 20% to 85%(non-condensing)

5.2 Storage and Transport

5.2.1 Temperature : -20°C to 60°C (-4° to 140°F)  
 5.2.2 Relative humidity: 5% to 95%

6. Panel Characteristics

- 6.1 Type : LG X3
- 6.2 Size : 50", 1190mm(W)x700mm(H)x58mm(D)±1mm
- 6.3 Aspect ratio : 16:9
- 6.4 Viewing angle : Over 160°
- 6.5 Resolution : 1366 x 768
- 6.6 Weight : Approx 21.4kg +/- 0.5kg (1EA)
- 6.7 Color : 1073.7 million colors by combination of 10 bits R,G,B digital
- 6.8 Contrast : Max 10000:1 (In dark room 1% White Window pattern at center)
- 6.9 Peak brightness : Typical 1000cd/m<sup>2</sup> (1% White Window pattern at center)
- 6.10 Color Coordinate Uniformity : Contrast; Brightness and Color control at normal setting  
 Test Pattern : Full white pattern



Average of point A,B,C,D and E +/- 0.01

6.11 Color temperature : Contrast and Brightness at Normal;  
 Colortemperature set at Middle  
 $x=0.285\pm0.02$   
 $y=0.293\pm0.02$

6.12 Cell Defect Specifications  
 Subject to Panel supplier specification as appends.

**7. Front Panel Control Button**

- 7.1 SEL. Up / Down Button : Select the up or down item in OSD menu.
- VOL. Left / Right Button : Press the key to increase the volume left or right. When selecting the adjusting item on OSD menu increase or decrease the data-bar.
- MENU Button : Press the key to display or exit the menu.
- SOURCE Button : Press the key to select the input signals source.
- 7.2 STANDBY Button : Switch on main power, or switch off to enter power Saving modes.
- 7.3 Main Power Switch : Turn on or off the unit.

**8. OSD Function**

Full on screen display

**9. Agency Approvals**

Safety	UL60950
Emissions	FCC class B

**10. Reliability**

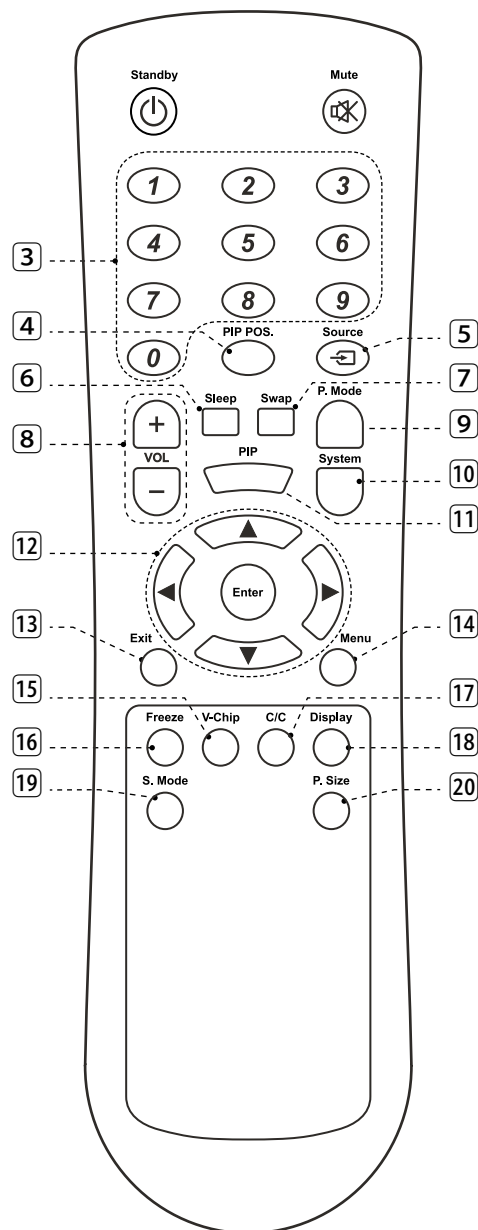
10.1 MTBF: 20,000 hours (Use moving picture signal at 25°C ambient)

**11. Accessories:** User Manual x 1, Remote Control x 1, Stand x 1, Power Cord x 1, Battery x2.



12. Remote Control

- 1 **Standby**(⏻): Press this button to turn off to standby and turn on from standby.
- 2 **Mute**(🔇): Press this button to quiet the sound system. Press again to reactivate the sound system.
- 3 **Number buttons**: Use these buttons to enter the password.
- 4 **PIP POS.** : Press the button to select different Image Position in PIP Mode.
- 5 **Source**: Press this button and use ▲ / ▼ button to select the signal sources. AV, S-Video, YPbPr 1, YPbPr 2, VGA or HDMI.
- 6 **Sleep**: Press this button to select the sleep time, such as “15 Min, 30 Min, 60 Min, 90 Min, 120 Min or off”.
- 7 **Swap**: Press this button to switch the Main window or Sub window pictures in PIP and Split Screen.
- 8 **VOL +/-** : Press these buttons to increase or decrease the volume.
- 9 **P. Mode** : Press the button to select different picture effect, such as “Normal, Vivid, Hi-Bright, User or Cinema”.
- 10 **System**: Press this button to select the color system, such as “AUTO or NTSC 3.58”.
- 11 **PIP**: Press this button to enter PIP function.
- 12 **Enter** : Press to enter or confirm.  
 ◀ / ▶ : They are used as ◀ / ▶ buttons in the OSD Menu screen.  
 ▲ / ▼ : They are used as ▲ / ▼ buttons in the OSD Menu screen.
- 13 **Exit**: Press this button to exit the OSD Menu.
- 14 **Menu**: Press this button to pop up the OSD Menu and press it again to exit the OSD Menu.
- 15 **V-Chip**: Press this button to enter the V-Chip Function. (Only for AV or S-Video)
- 16 **Freeze**: Press this button to hold on the screen. Press again to normal.
- 17 **C/C**: Press this button to enter the Closed Caption Function. (Only for AV or S-Video)
- 18 **Display**: Press the button to display the source information.
- 19 **S. Mode**: Press the button to select different sound effect, such as “Normal, News, Cinema, Concert or User”.
- 20 **P. Size**: Press this button, the picture will change according to Full, 4:3 or Panoramic. (inactive for VGA)



**13. Support the Signal Mode**

A. VGA Mode

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
640 x 480	31.50	60.00
	37.86	72.81
800 x 600	35.16	56.25
	37.90	60.32
	46.90	75.00
	48.08	72.19
1024 x 768	48.40	60.00

B.YPbPr Mode

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
480i	15.734	59.94
480p(720x480)	31.468	59.94
720p(1280x720)	45.00	60.00
1080i(1920x1080)	33.75	60.00

C.HDMI Mode

Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
480p	31.468	59.94
720p	45.00	60.00
1080i	33.75	60.00

- When the signal received by the Display exceeds the allowed range, a warning message shall appear on the screen.
- You can confirm the input signal format from the on-screen.

**PHYSICAL CHARACTERISTICS**

**14. Power Cord**

Length : 1.8m nominal

Type : optional

**15. Cabinet**

15.1 Color : “Black” colour as defined by colour plaque reference number

15.2 Weight

Net weight : 54.5 kg(with stand, speaker and handles)

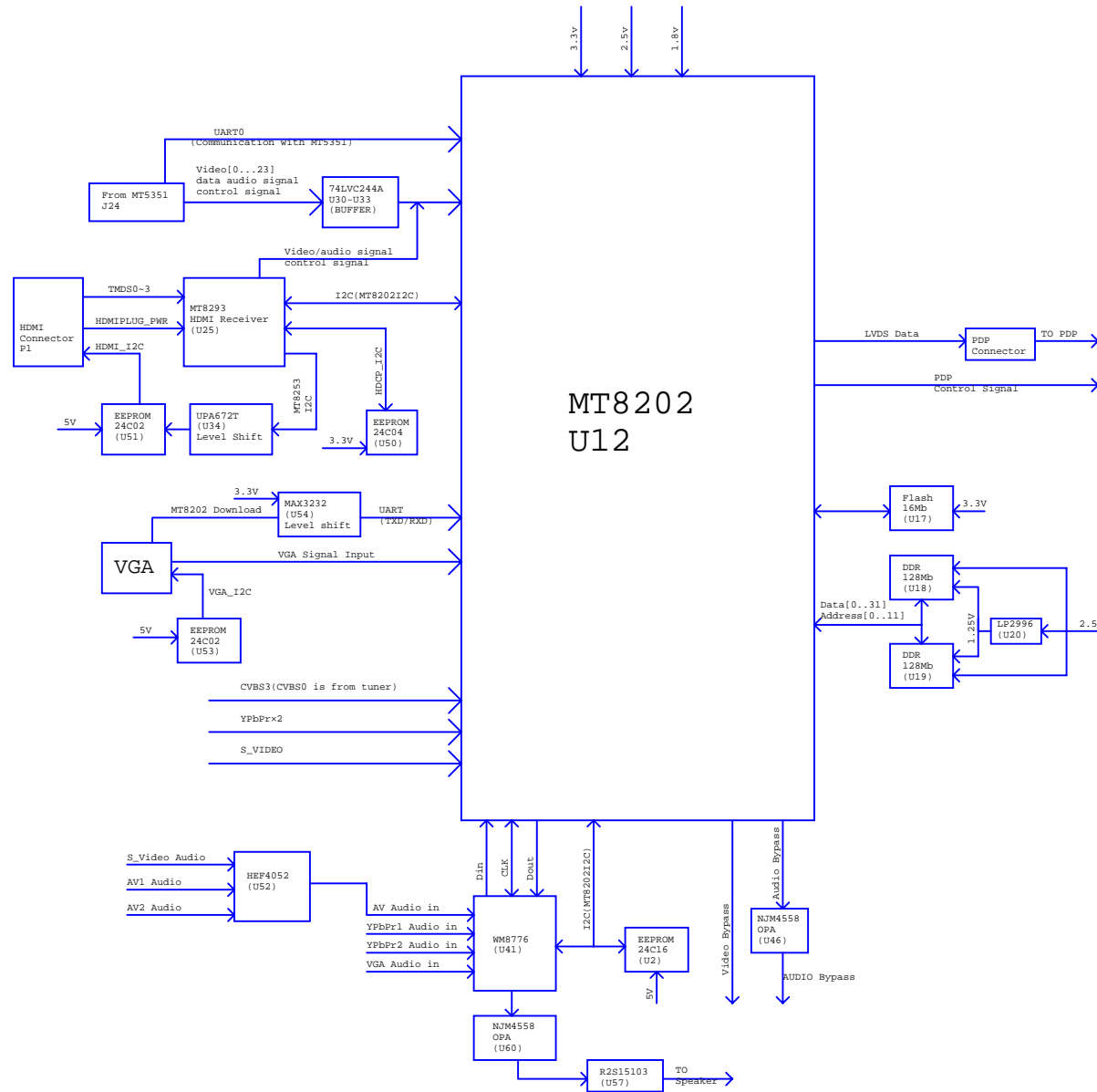
Gross weight : 61.0 kg

15.3 Dimensions(w/o stand)

Width : 1227.8 mm

Height : 871 mm

Depth : 286 mm



## **Circuit Diagram**

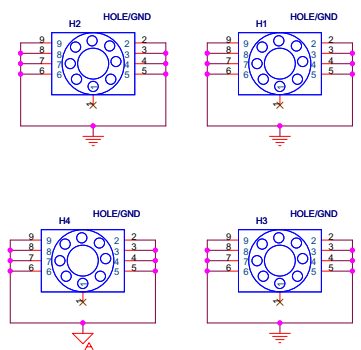
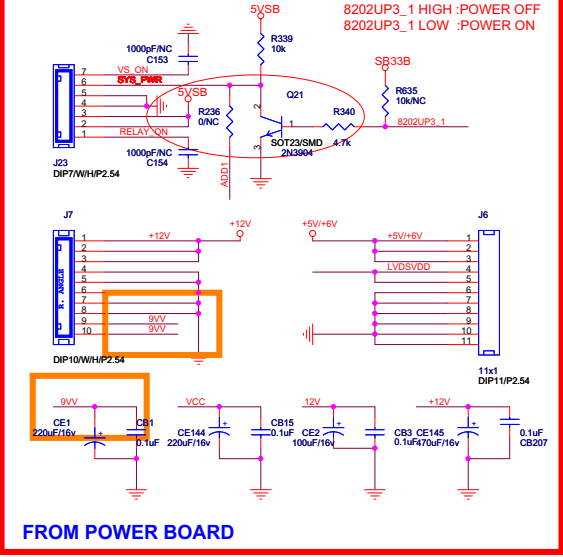
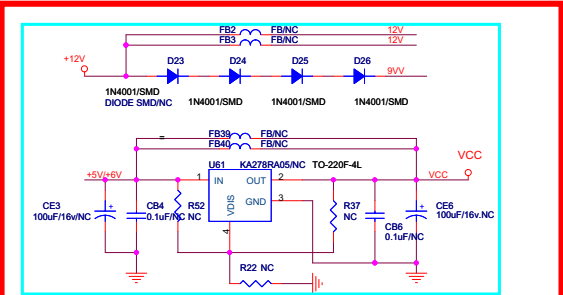
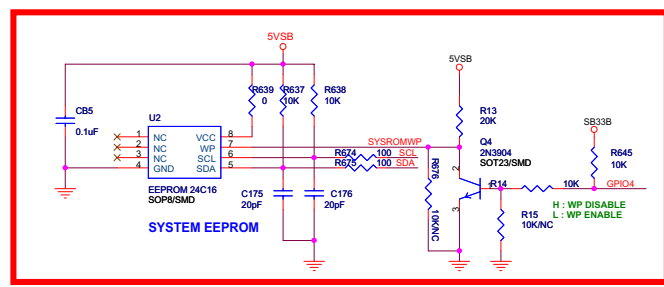
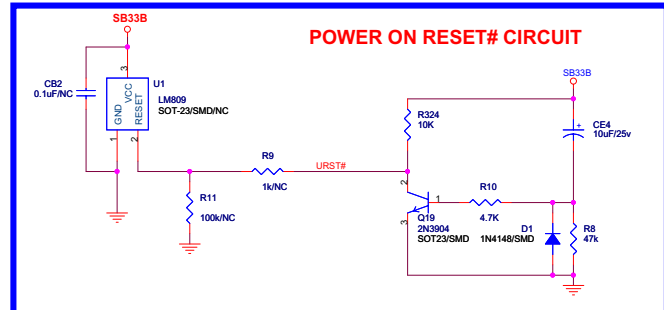
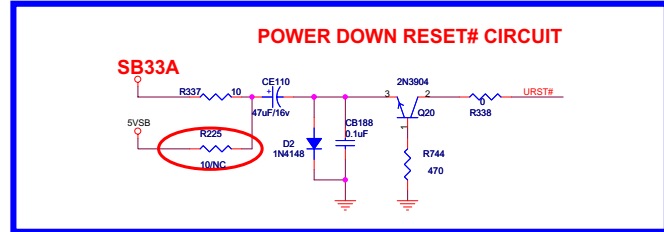
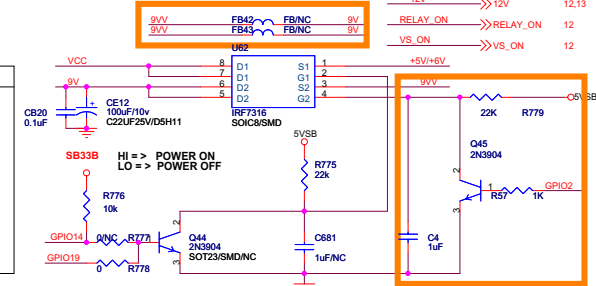
- **Main (Video) board**
- **Keypad board**
- **Remote control receiver board**
- **External L/R Speakers board**
- **Remote control board**

# MT8202E (PBGA388) LCDTV BOARD 4 LAYERS FOR AKAI

LVDSVDD	>>	LVDSGND	2,3,4
SCL	>>	SCL	9,14
SDA	>>	SDA	9,14
URST#	>>	URST#	3
8202UP3_1	>>	8202UP3_1	3
GPIO2	>>	GPIO2	3,12
GPIO4	>>	GPIO4	3
GPIO14	>>	GPIO14	3,13
GPIO19	>>	GPIO19	3,13
9V	>>	9V	7,9,14
12V	>>	12V	12,13
RELAY_ON	>>	RELAY_ON	12
VS_ON	>>	VS_ON	12

1. INDEX / POWER / RESET / EEPROM
2. LDO
3. MT8202E PBGA388
4. MT8202 DECOUPLING
5. DDR MEMORY & FLASH
6. MT5351 INTERFACE
7. HDMI MT8293
8. DAUGHTER BOARD IN
9. WM8776 & VIDEO BYPASS
10. AUDIO / VIDEO IN CIRCUIT
11. VGA & PC AUDIO IN
12. LVDS OUT
13. BACK LIGHT / KEYPAD
14. TUNER IN
15. AV IN
16. AUDIO IN
17. AUDIO Amplifier

Rev	History	P#	Date
AKAI_MT8202_27US_LVDS_V0.0	New		2005/11/22
AKAI_MT8202_27US_HDMI_LVDS_V0.0	ADD HDMI / VIDEO /AUDIO CONNECTOR INPUT IN		



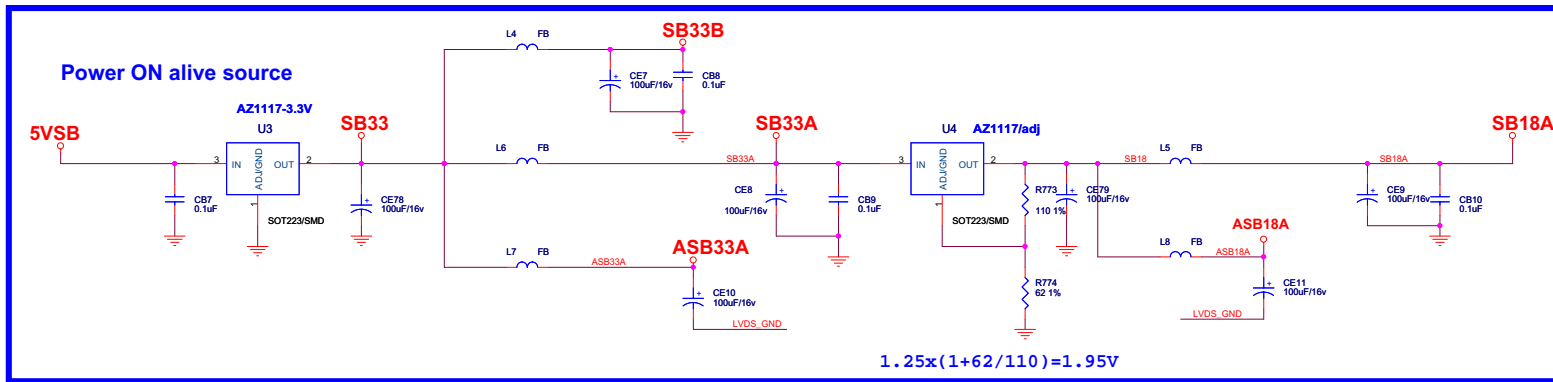
FROM POWER BOARD

**KAWA Confidential**

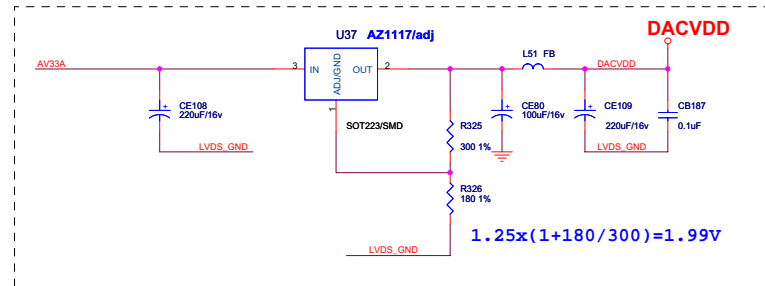
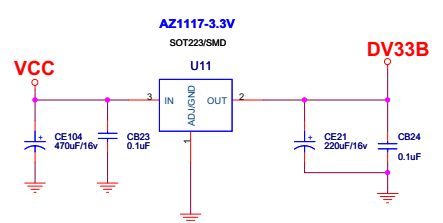
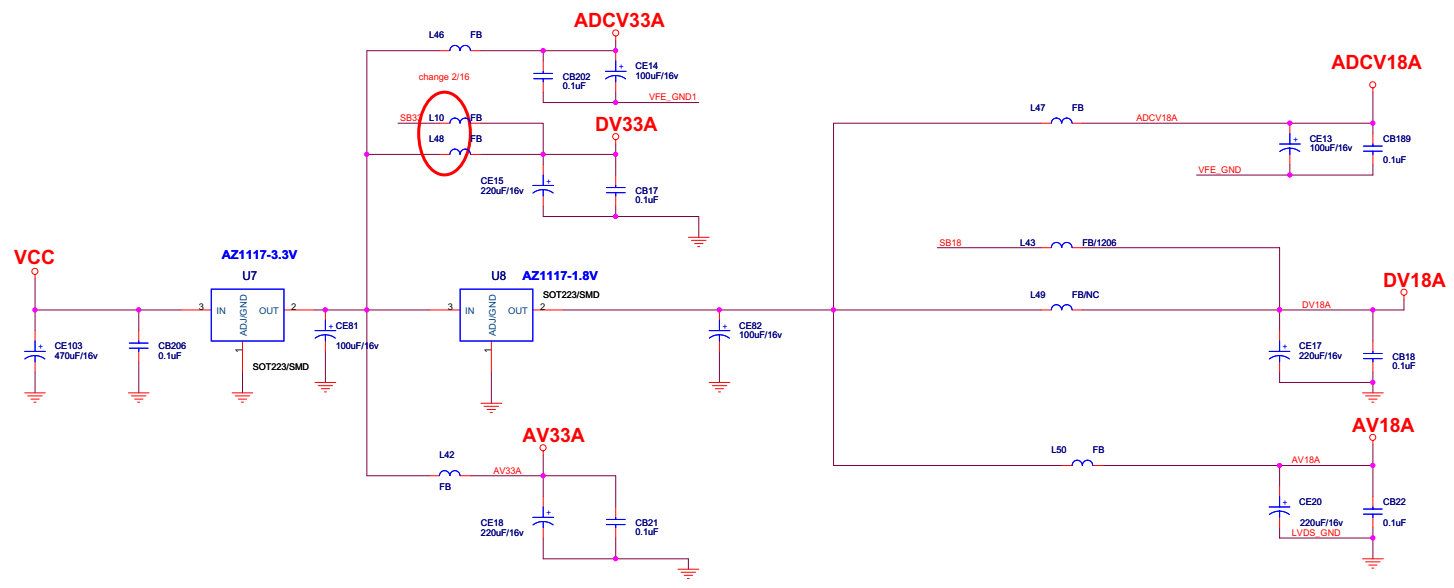
**ZhongShan KAWA Electronic Inc.**

**INDEX / POWER / RESET / EEPROM**

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Size		Document Number		Checked	<Checker>
Date	Monday, April 03, 2006			Sheet	1 of 17



- LVDS\_GND >>> LVDS\_GND 3.4.12
- VFE\_GND >>> VFE\_GND 3.4.8.11
- VFE\_GND1 >>> VFE\_GND1 3.4.8.11



KAWA Confidential

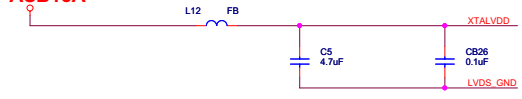
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Date: Thursday, March 30, 2006		Checked: <Checker>	Sheet 2 of 17



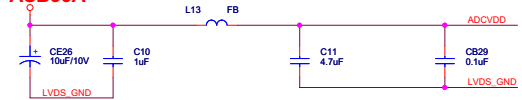


### STANDBY ANALOG POWER

#### ASB18A

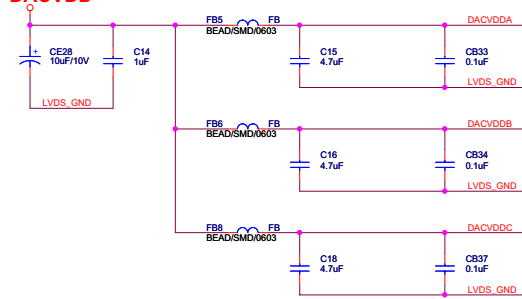


#### ASB33A



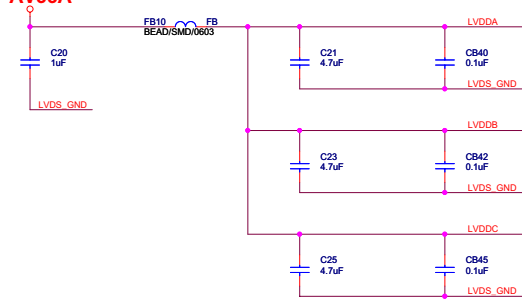
### NORMAL VIDEO DAC POWER

#### DACVDD



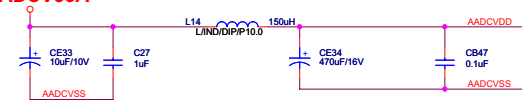
### NORMAL VIDEO DAC POWER

#### AV33A

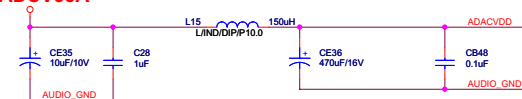


### NORMAL AUDIO ADC / DAC POWER

#### ADCV33A

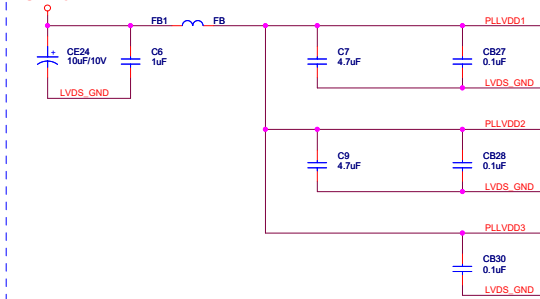


#### ADCV33A

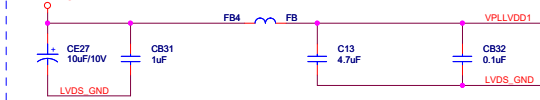


### NORMAL ANALOG POWER

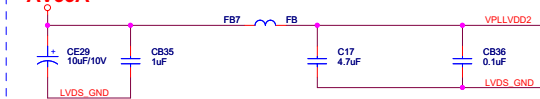
#### ASB18A



#### AV18A

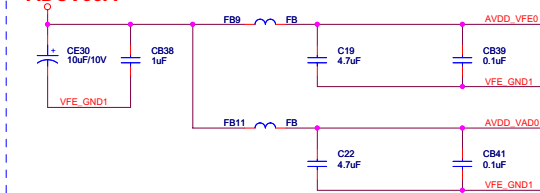


#### AV33A

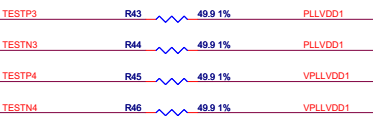
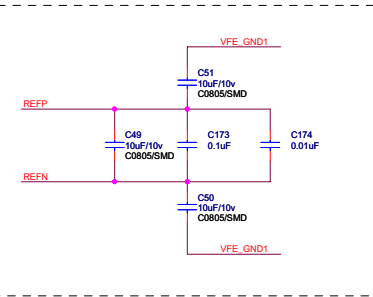
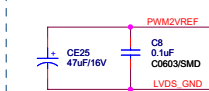
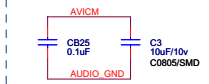
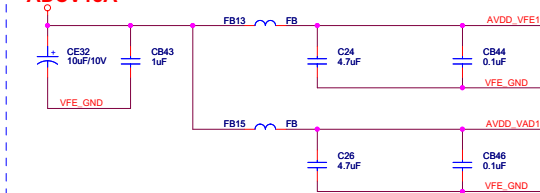


### NORMAL VIDEO ADC POWER

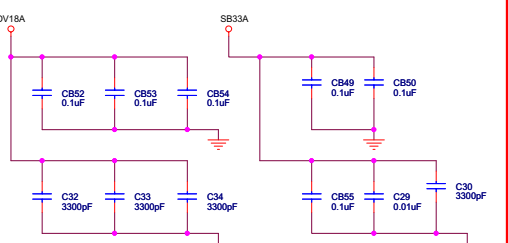
#### ADCV33A



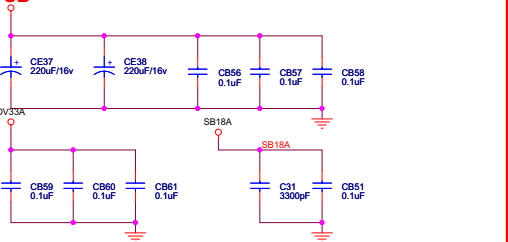
#### ADCV18A



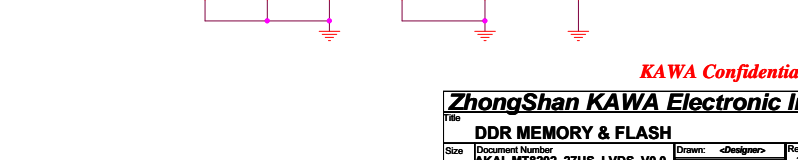
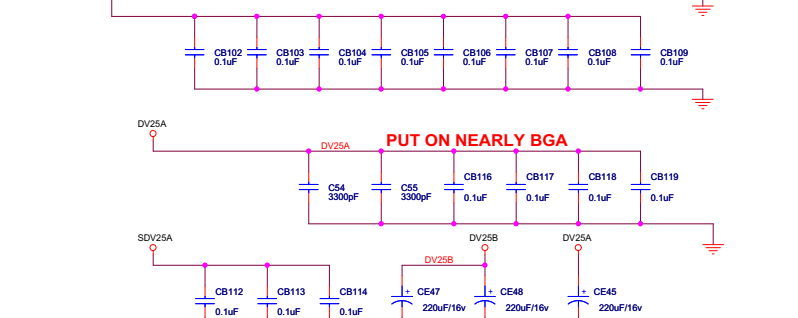
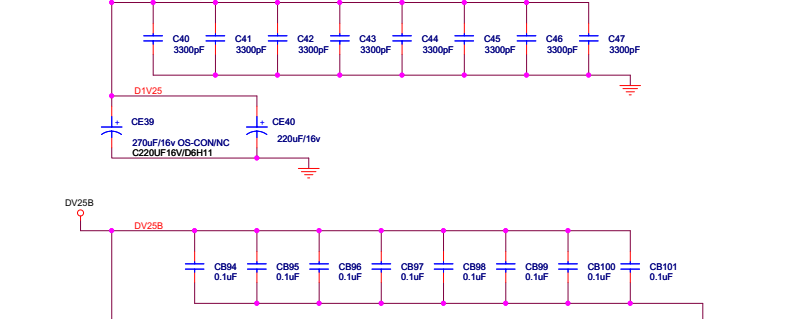
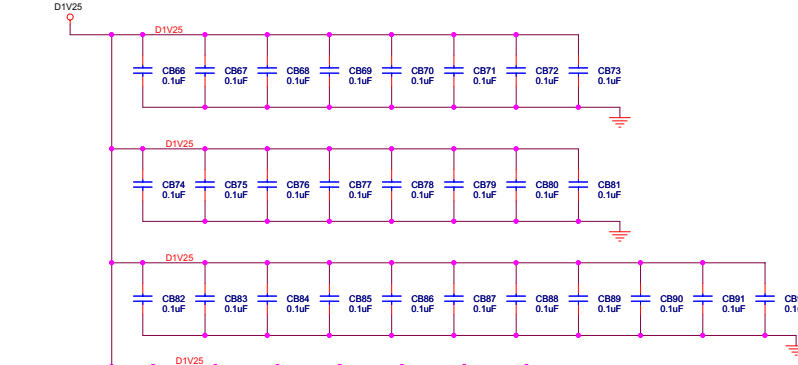
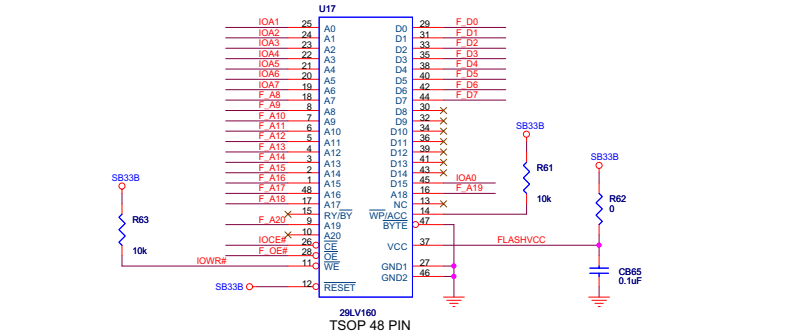
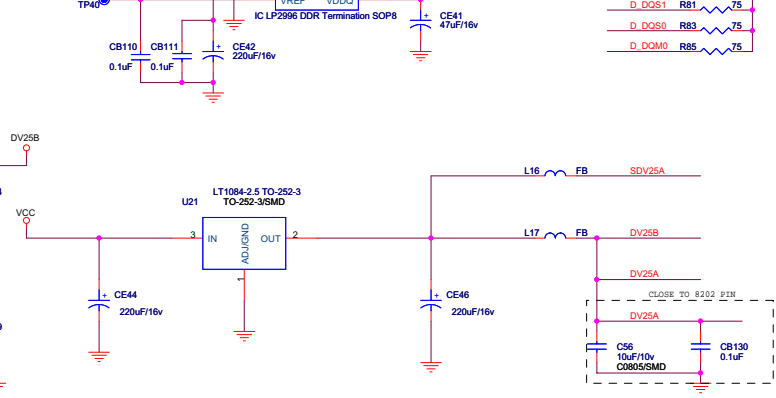
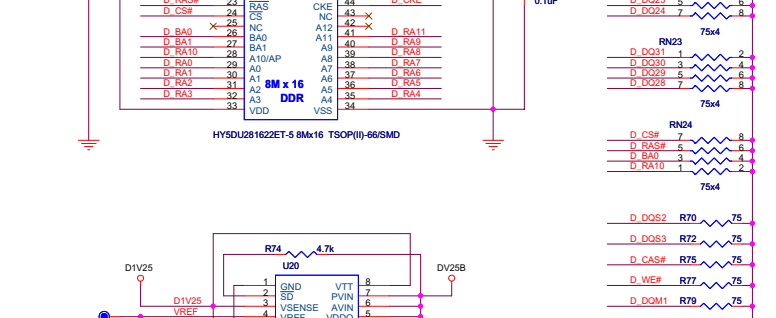
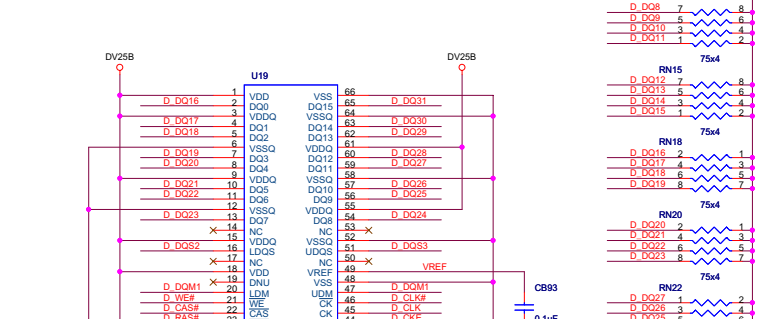
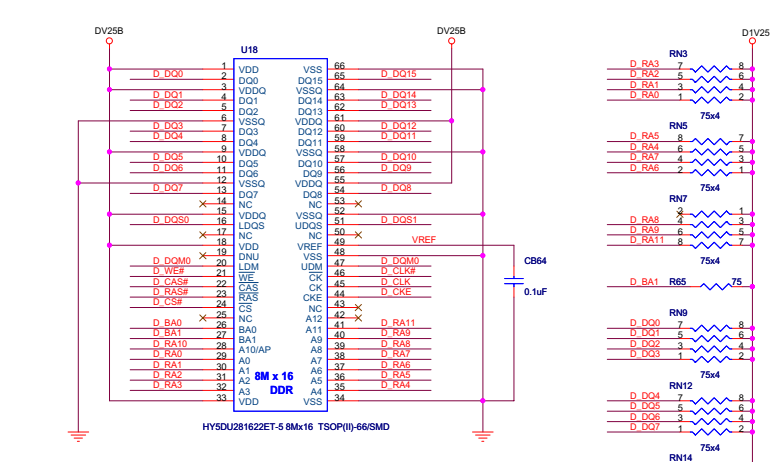
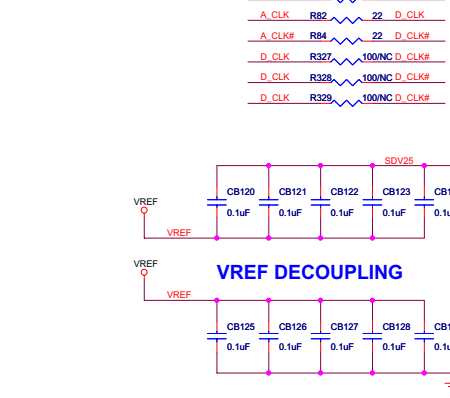
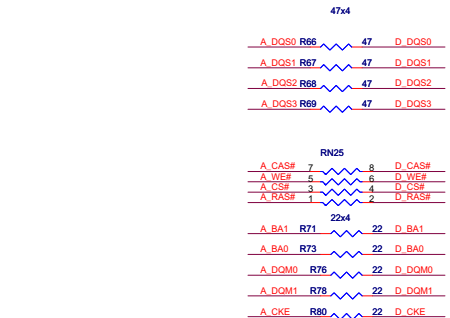
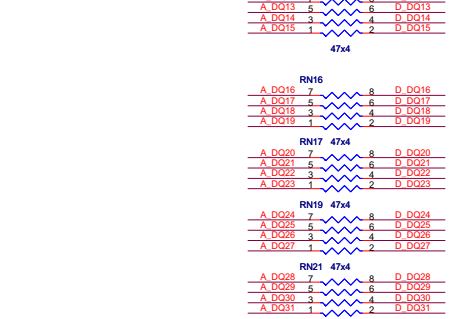
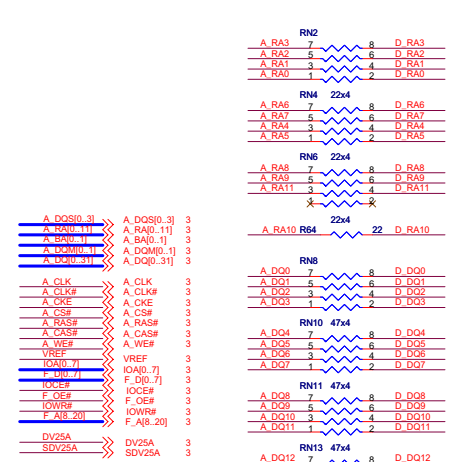
### MT8202 DIGITAL POWER & DECOUPLING

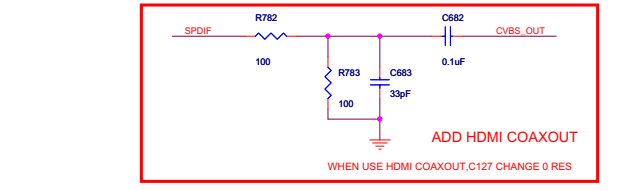
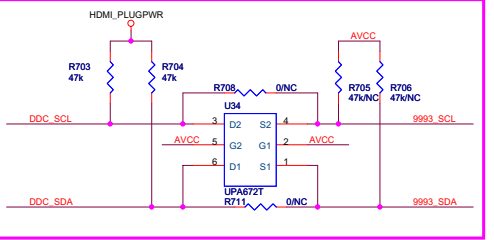
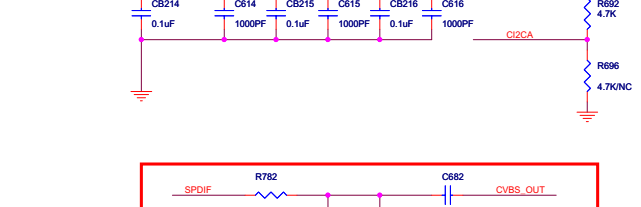
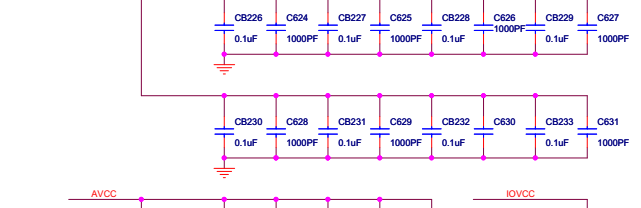
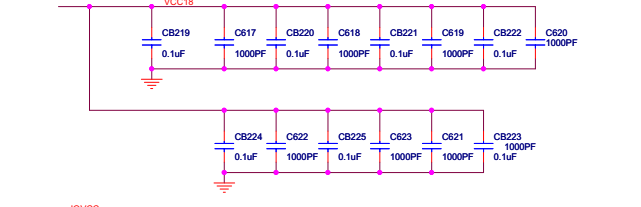
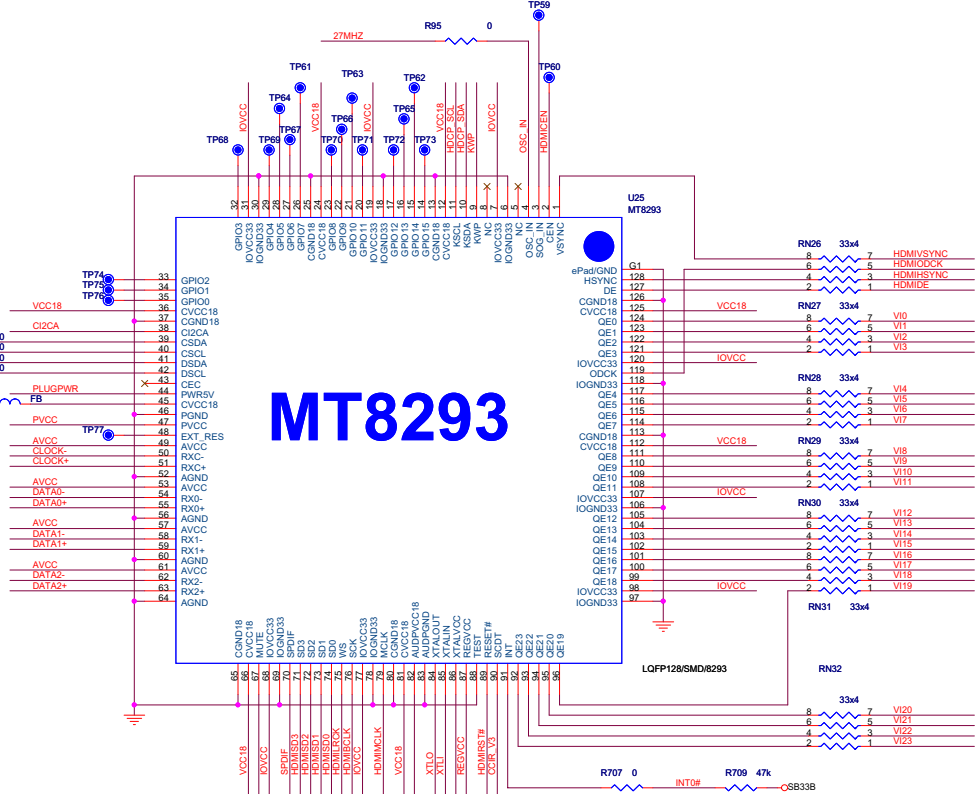
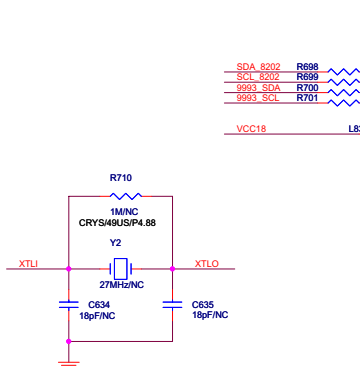
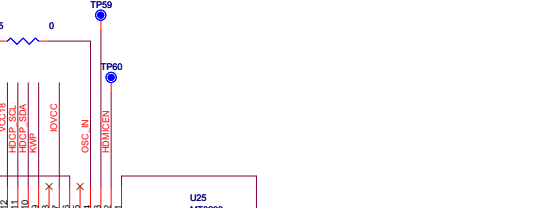
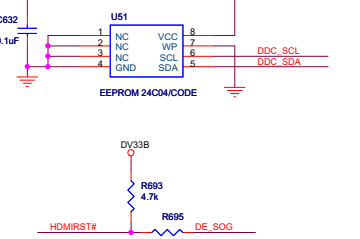
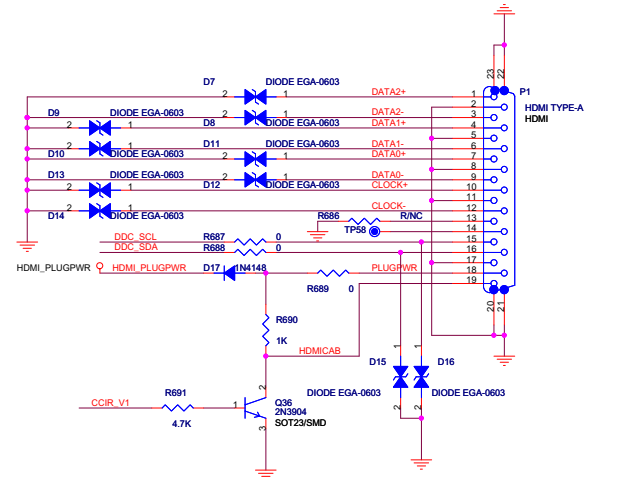
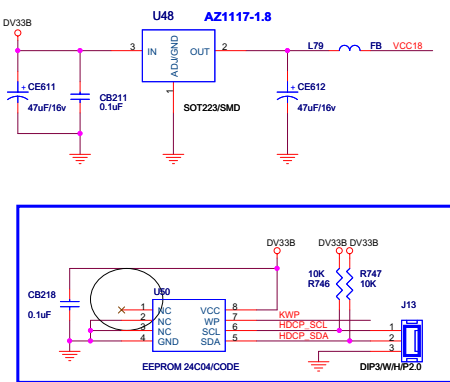
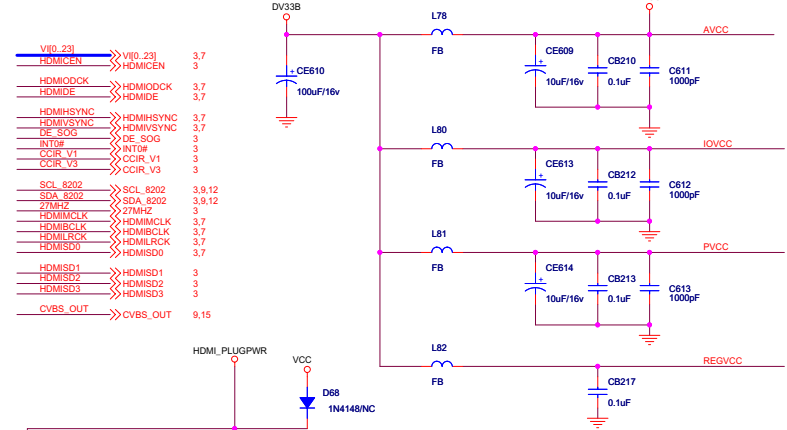


#### 5VSB



PUT ON NEARLY BGA

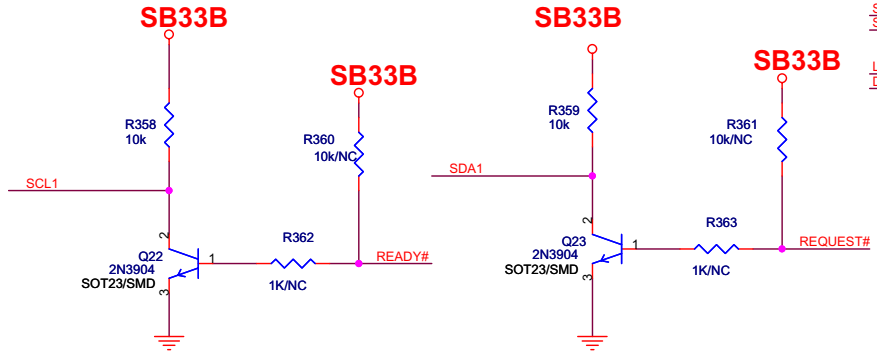




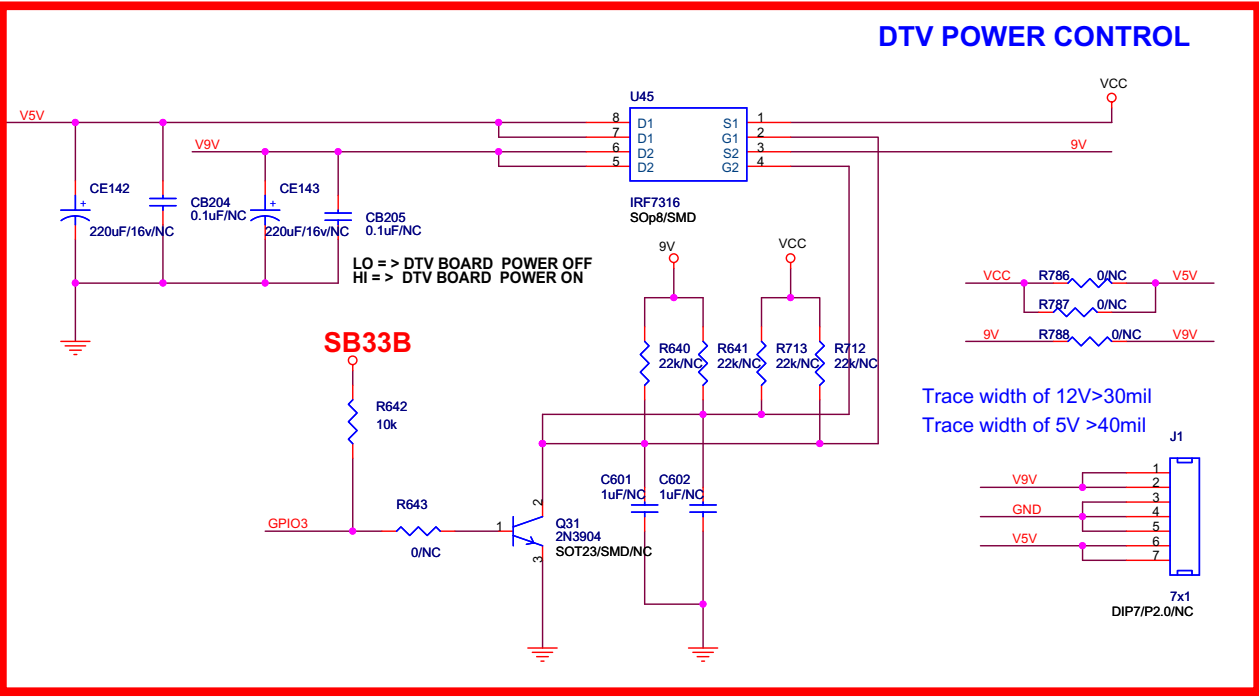
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HDMI INPUT MT8293			
File	Document Number	Drawn: <Designer>	Rev
C	AKAI_MT8202_27US_LVDS_V0.0	Checked: <Checker>	1
Date:	Thursday, March 30, 2006	Sheet	6 of 17

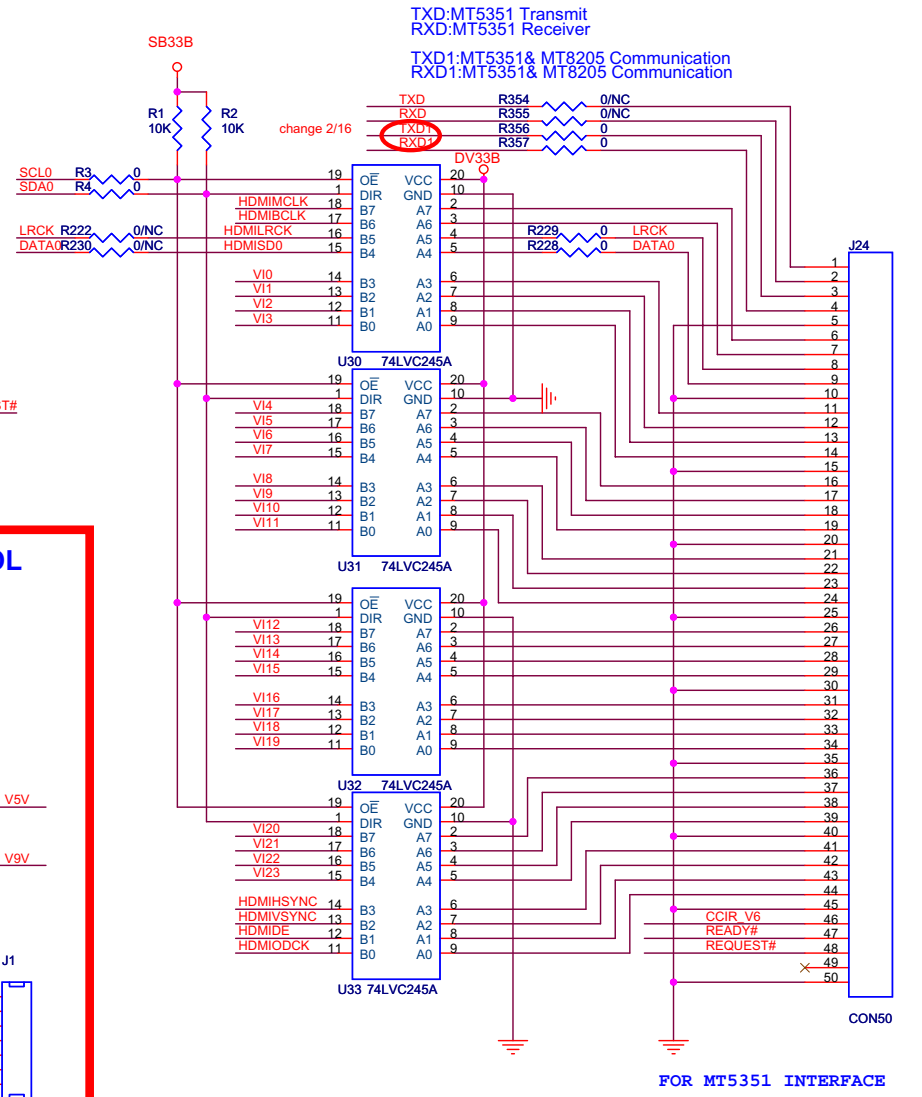
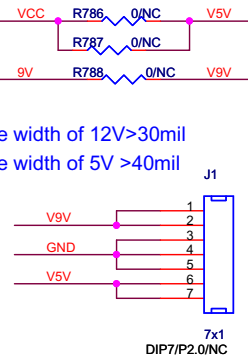
HDMIMCLK	>>	HDMIMCLK	3,6
HDMIBCLK	>>	HDMIBCLK	3,6
HDMILRCK	>>	HDMILRCK	3,6
HDMISD0	>>	HDMISD0	3,6
HDMIDE	>>	HDMIDE	3,6
HDMIODCK	>>	HDMIODCK	3,6
HDMIHSYNC	>>	HDMIHSYNC	3,6
HDMIVSYNC	>>	HDMIVSYNC	3,6
VI[0..23]	>>	VI[0..23]	3,6
TXD	>>	TXD	3,11
RXD	>>	RXD	3,11
TXD1	>>	TXD1	3
RXD1	>>	RXD1	3
SCL1	>>	SCL1	3
SDA1	>>	SDA1	3
GPIO3	>>	GPIO3	3
CCIR_V6	>>	CCIR_V6	3
SCL0	>>	SCL0	3
SDA0	>>	SDA0	3
9V	>>	9V	1,9,14



### DTV POWER CONTROL



Trace width of 12V > 30mil  
Trace width of 5V > 40mil



FOR MT5351 INTERFACE

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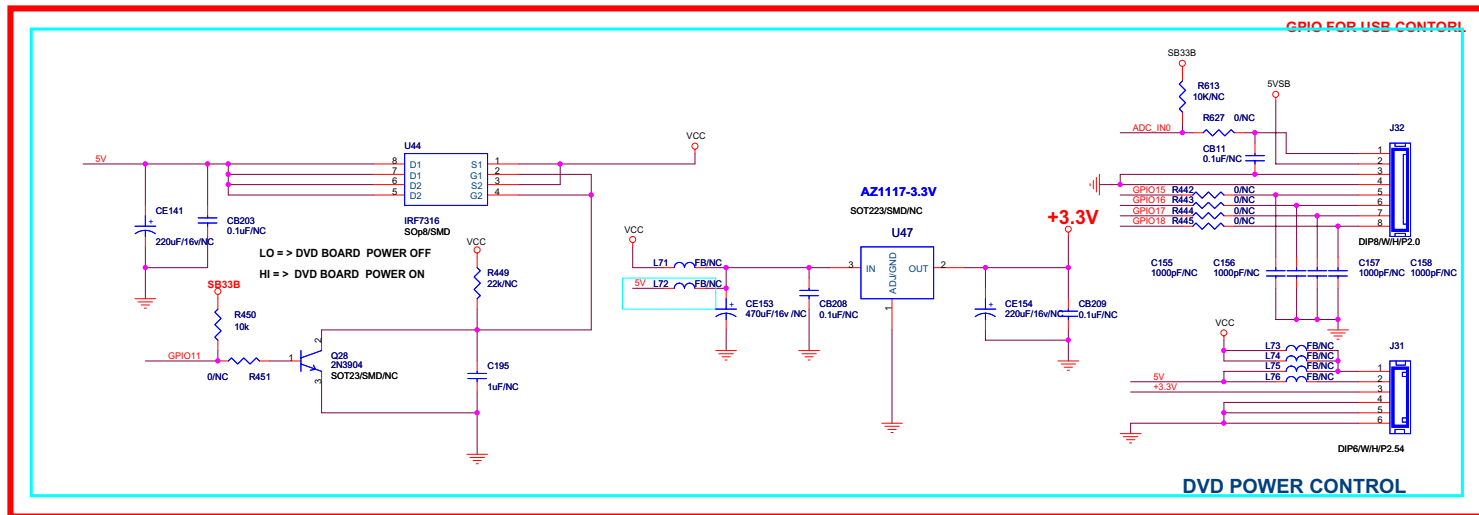
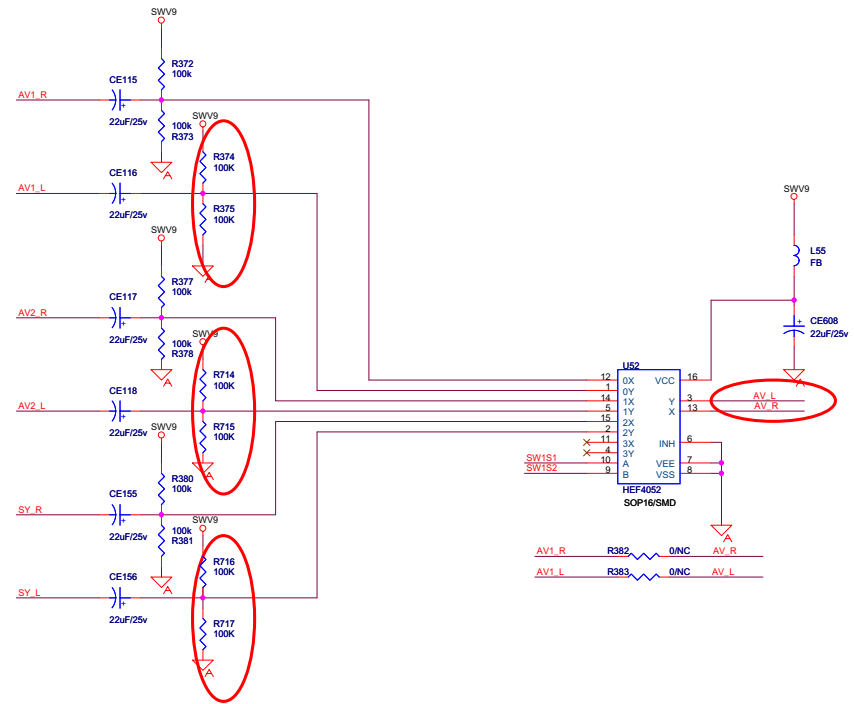
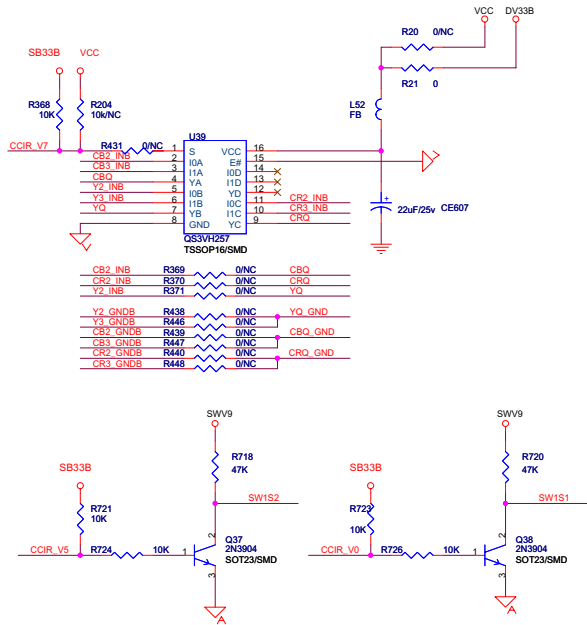
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Size	Document Number	Drawn: <Designer>	Rev
B	AKAL_MT8202_27US_LVDS_V0.0	Checked: <Checker>	1
Date:	Monday, April 03, 2006	Sheet	7 of 17

**INPUT**

ADC_IN0	ADC_IN0	3
CCIR_V0	CCIR_V0	3
CCIR_V5	CCIR_V5	3
CCIR_V7	CCIR_V7	3
GPIO11	GPIO11	3
GPIO15	GPIO15	3
GPIO16	GPIO16	3
GPIO17	GPIO17	3
GPIO18	GPIO18	3
VFE_GND	VFE_GND	2,3,4,11
AADC_VSS	AADC_VSS	3,4,10
AV1_R	AV1_R	15
AV2_R	AV1_L	15
AV2_L	AV2_R	15
SV_R	AV2_L	15
SV_L	SV_R	15
YZ_INB	YZ_INB	15
YZ_GNDB	YZ_INB	15
CB2_INB	YZ_GNDB	10,15
CB2_GNDB	CB2_INB	15
CR2_INB	CB2_GNDB	10,15
CR2_GNDB	CR2_INB	10,15
Y3_INB	Y3_INB	15
Y3_GNDB	Y3_INB	15
CB3_INB	Y3_GNDB	15
CB3_GNDB	CB3_INB	15
CR3_INB	CR3_INB	15
CR3_GNDB	CR3_INB	15
SV	SV	1,7,9,14

**OUTPUT**

AV_R	AV_R	9
AV_L	AV_L	9
YQ	YQ	10
CBQ	CBQ	10
CRQ	CRQ	10
YQ_GND	YQ_GND	10
CBQ_GND	CBQ_GND	10
CRQ_GND	CRQ_GND	10

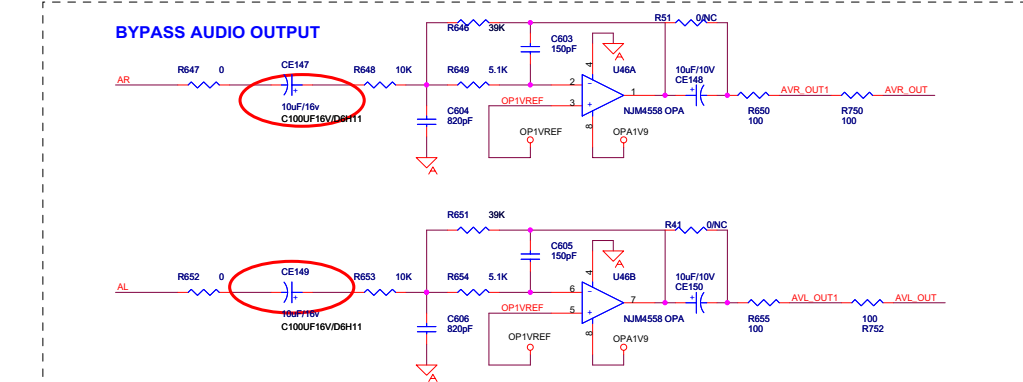
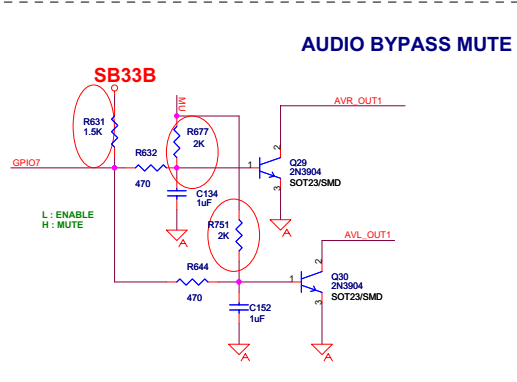
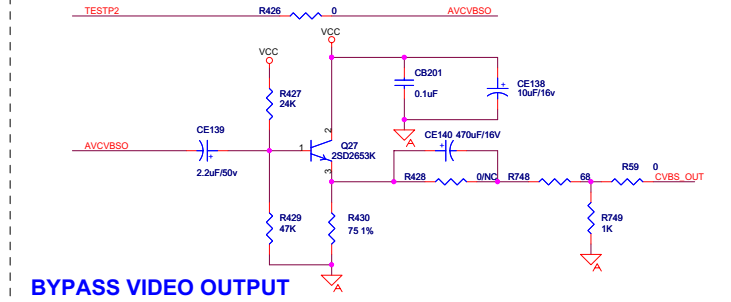
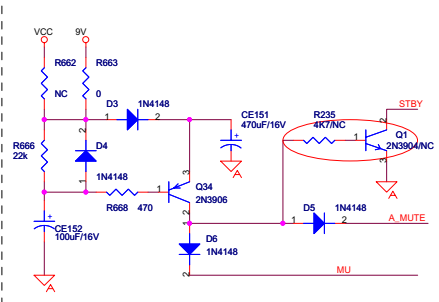
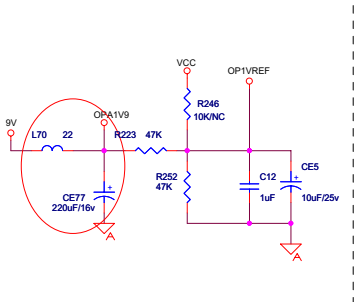
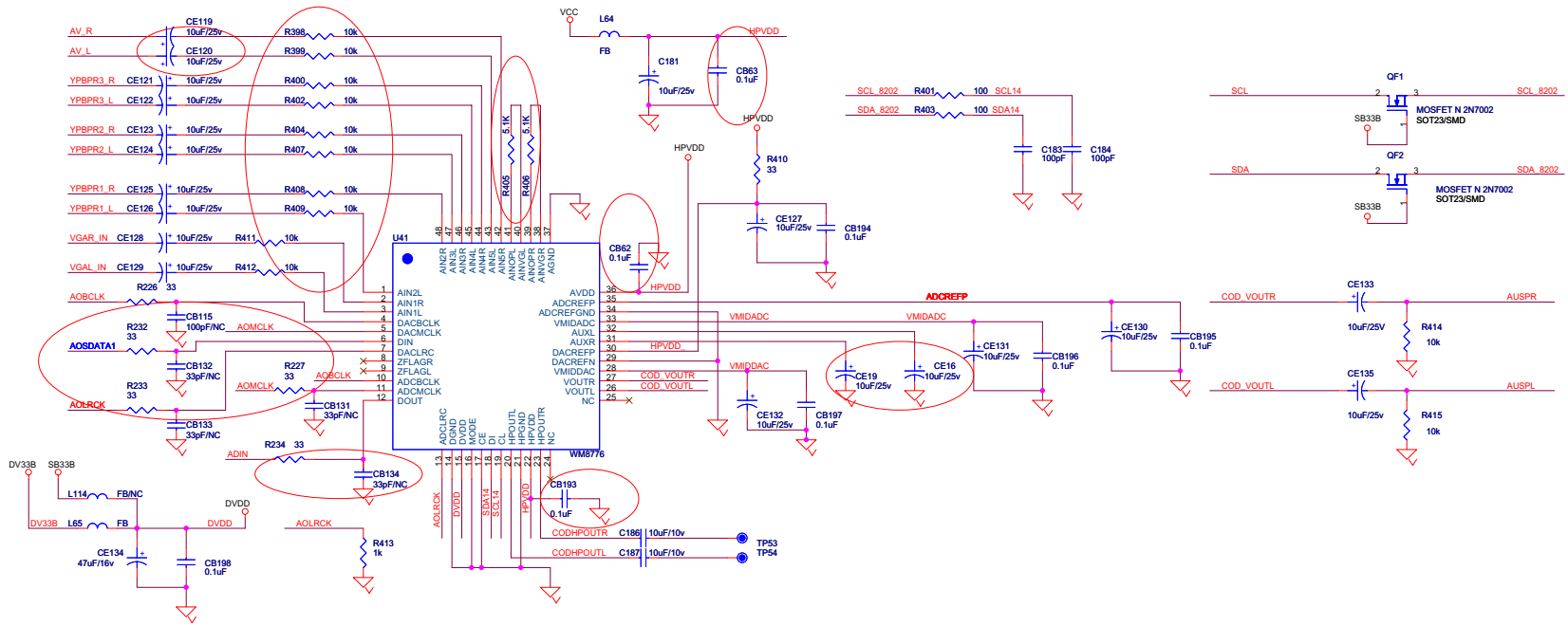


**INPUT**

GPIO7	GPIO7	3
SCL	SCL	1,14
SDA	SDA	1,14
SDA_8202	SDA_8202	3,6,12
SCL_8202	SCL_8202	3,6,12
AOSDATA1	AOSDATA1	3
AOMCLK	AOMCLK	3,16
AOBCLK	AOMCLK	3,16
AOLRCK	AOLRCK	3,16
ADIN	ADIN	3,16
AIZ	AIZ	3
AV_L	AV_R	8
YBPBR1_L	YBPBR1_L	15
YBPBR1_R	YBPBR1_R	15
YBPBR2_R	YBPBR2_R	15
YBPBR2_L	YBPBR2_L	15
YBPBR3_R	YBPBR3_R	15
YBPBR3_L	YBPBR3_L	15
VGAR_IN	VGAR_IN	11
VGAL_IN	VGAL_IN	11
TESTP2	TESTP2	3
AR	AR	3
MU	MU	16
A_MUTE	A_MUTE	17
9V	9V	1,7,14

**OUTPUT**

AUSPR	AUSPR	16
AUSPL	AUSPL	16
AVR_OUT	AVR_OUT	16
AVL_OUT	AVL_OUT	16
CVBS_OUT	CVBS_OUT	6,15



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**M8776 & VIDEO BYPASS**

File	Document Number	Drawn: <Designer>	Rev
Size	AKAI_MIT8202_2TUS_LVDS_V0.0	Checked: <Checker>	1
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CVBS0 >>> CVBS0 3  
 CVBS1 >>> CVBS1 3  
 CVBS2 >>> CVBS2 3

SY0 >>> SY0 3  
 SC0 >>> SC0 3

SY1 >>> SY1 3  
 SC1 >>> SC1 3

Y0+ >>> Y0+ 3  
 Y0- >>> Y0- 3  
 PB0+ >>> PB0+ 3  
 PB0- >>> PB0- 3  
 PR0+ >>> PR0+ 3  
 PR0- >>> PR0- 3  
 SOY0 >>> SOY0 3

Y1+ >>> Y1+ 3  
 Y1- >>> Y1- 3  
 PB1+ >>> PB1+ 3  
 PB1- >>> PB1- 3  
 PR1+ >>> PR1+ 3  
 PR1- >>> PR1- 3  
 SOY1 >>> SOY1 3

MPX1 >>> MPX1 3  
 MPX2 >>> MPX2 3

TO MT8202

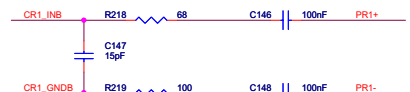
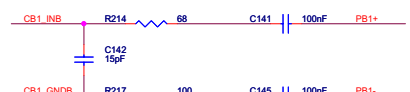
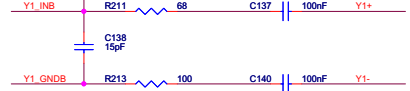
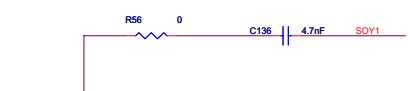
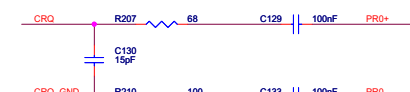
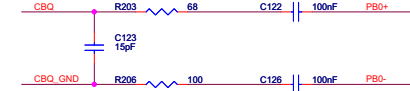
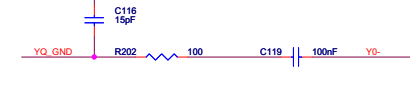
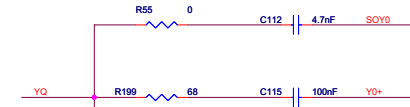
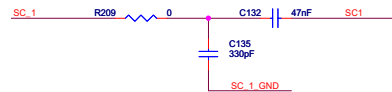
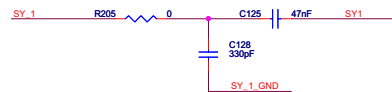
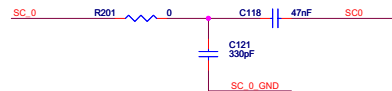
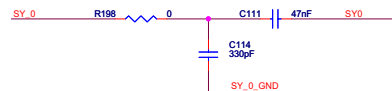
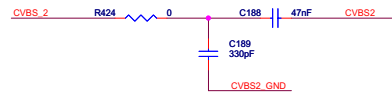
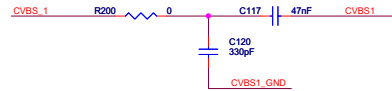
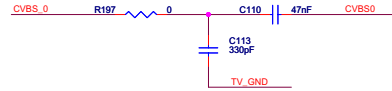
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 CVBS\_0 >>> CVBS\_0 14  
 SIF >>> SIF 14  
 AF >>> AF 14  
 CVBS\_1 >>> CVBS\_1 15  
 CVBS1\_GND >>> CVBS1\_GND 15  
 CVBS\_2 >>> CVBS\_2 15  
 CVBS2\_GND >>> CVBS2\_GND 15  
 SY\_1 >>> SY\_1 15  
 SY\_1\_GND >>> SY\_1\_GND 15  
 SC\_1 >>> SC\_1 15  
 SC\_1\_GND >>> SC\_1\_GND 15  
 SY\_0 >>> SY\_0 15  
 SY\_0\_GND >>> SY\_0\_GND 15  
 SC\_0 >>> SC\_0 15  
 SC\_0\_GND >>> SC\_0\_GND 15

SOY1 >>> SOY1 3  
 SOY0 >>> SOY0 3  
 Y1\_INB >>> Y1\_INB 15  
 Y1\_GNDB >>> Y1\_GNDB 8,15  
 CR1\_INB >>> CR1\_INB 15  
 CR1\_GNDB >>> CR1\_GNDB 8,15  
 CB1\_INB >>> CB1\_INB 15  
 CB1\_GNDB >>> CB1\_GNDB 8,15  
 CRO >>> CRO 8  
 Y0 >>> Y0 8  
 Y0\_GND >>> Y0\_GND 8  
 CBO\_GND >>> CBO\_GND 8  
 CRO\_GND >>> CRO\_GND 8

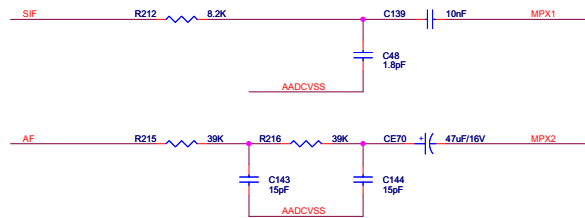
FROM AV BOARD

AADCSS >>> AADCSS 3,4

**THIS PAGE NEARLY IC**



**FROM Tuner**



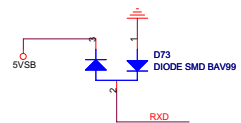
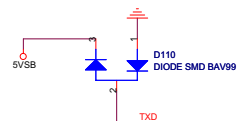
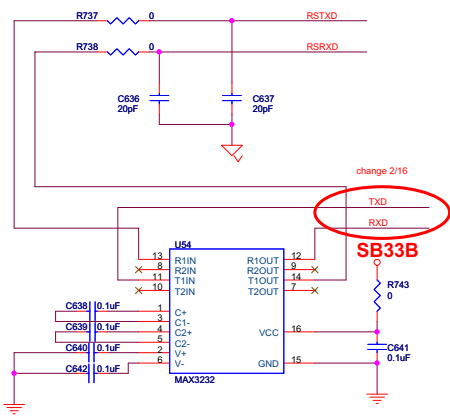
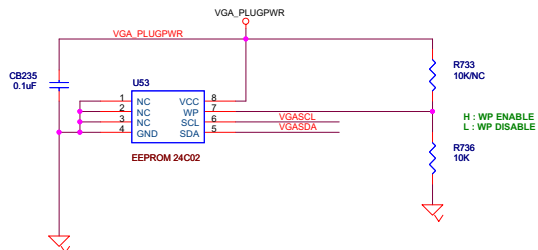
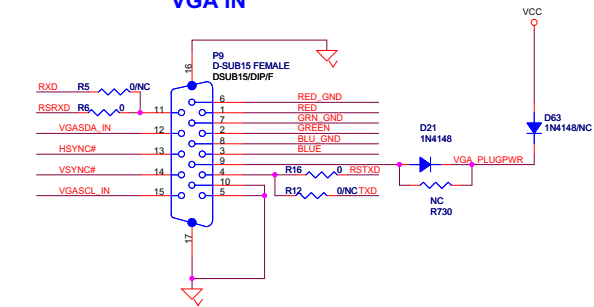
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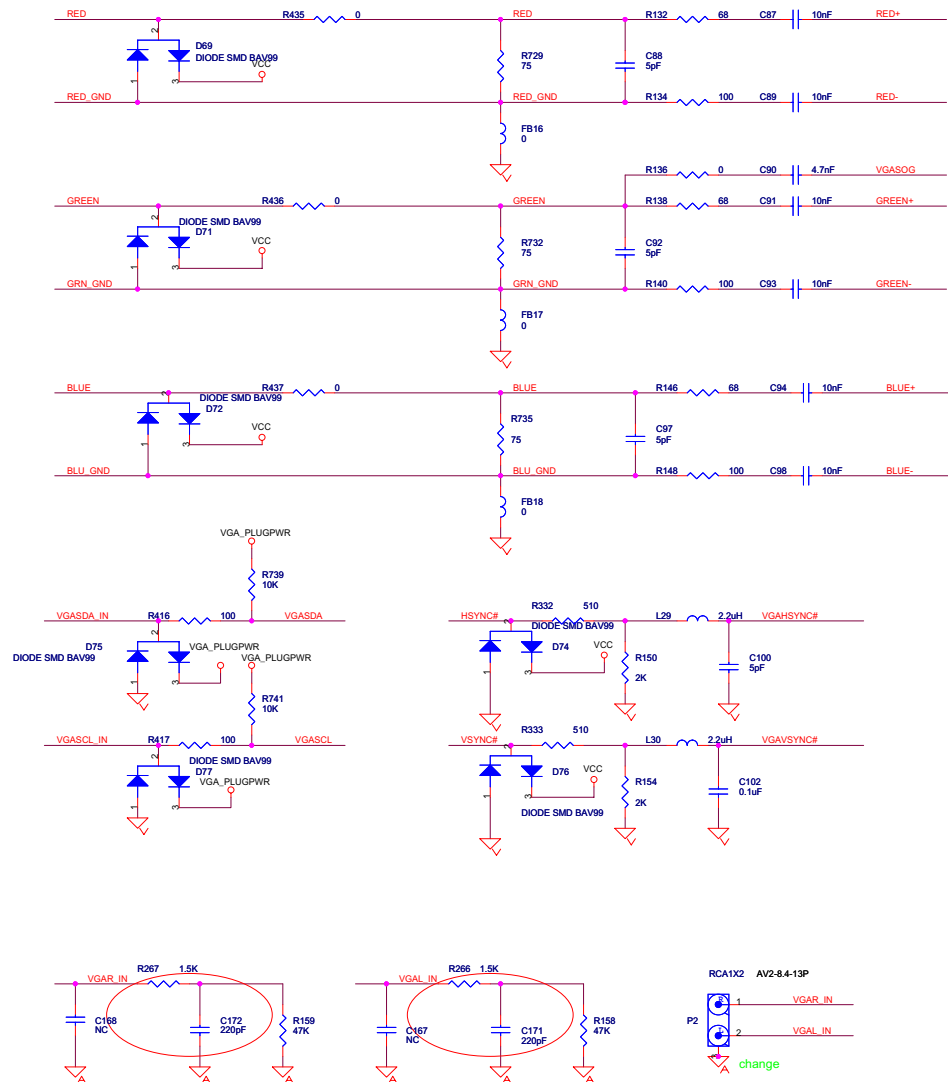
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AUDIO / VIDEO IN CIRCUIT			
Size	Document Number	Drawn: <Designer>	Rev
C	AKAI_MT8202_27US_LVDS_V0.0	Checked: <Checker>	1
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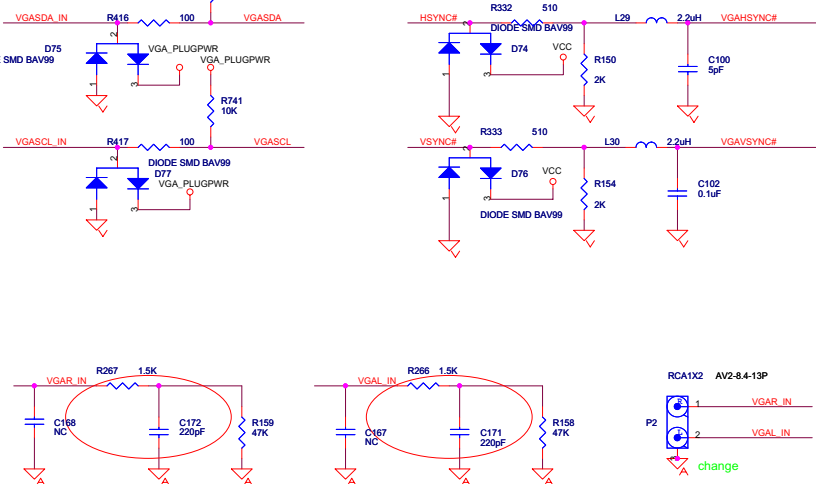
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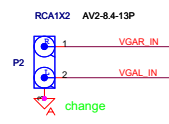
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### NEARLY 8202



### VGA/DVI AUDIO INPUT



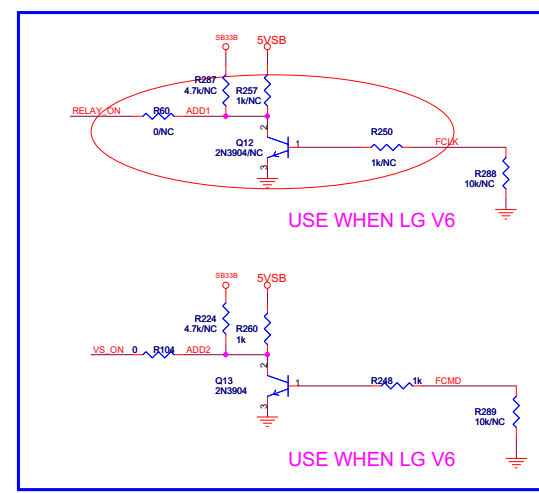
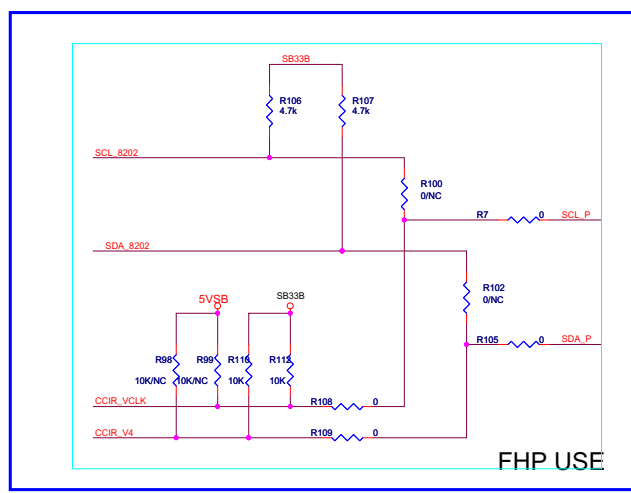
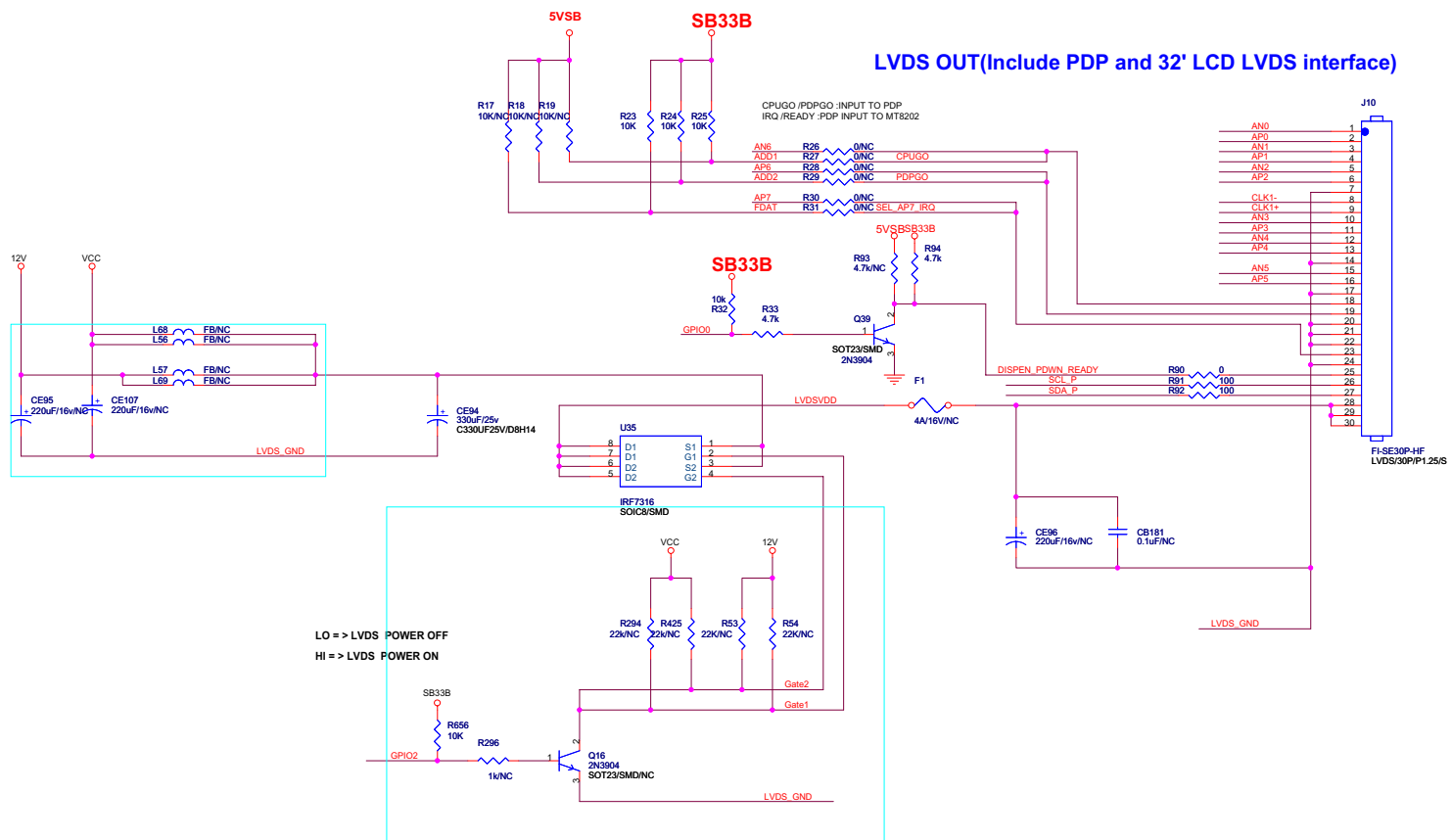
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Title <b>VGA IN &amp; PC AUDIO IN</b>			
Size C	Document Number AKAL_MT8202_27US_LVDS_V0.0	Drawn: <Designer>	Rev 1
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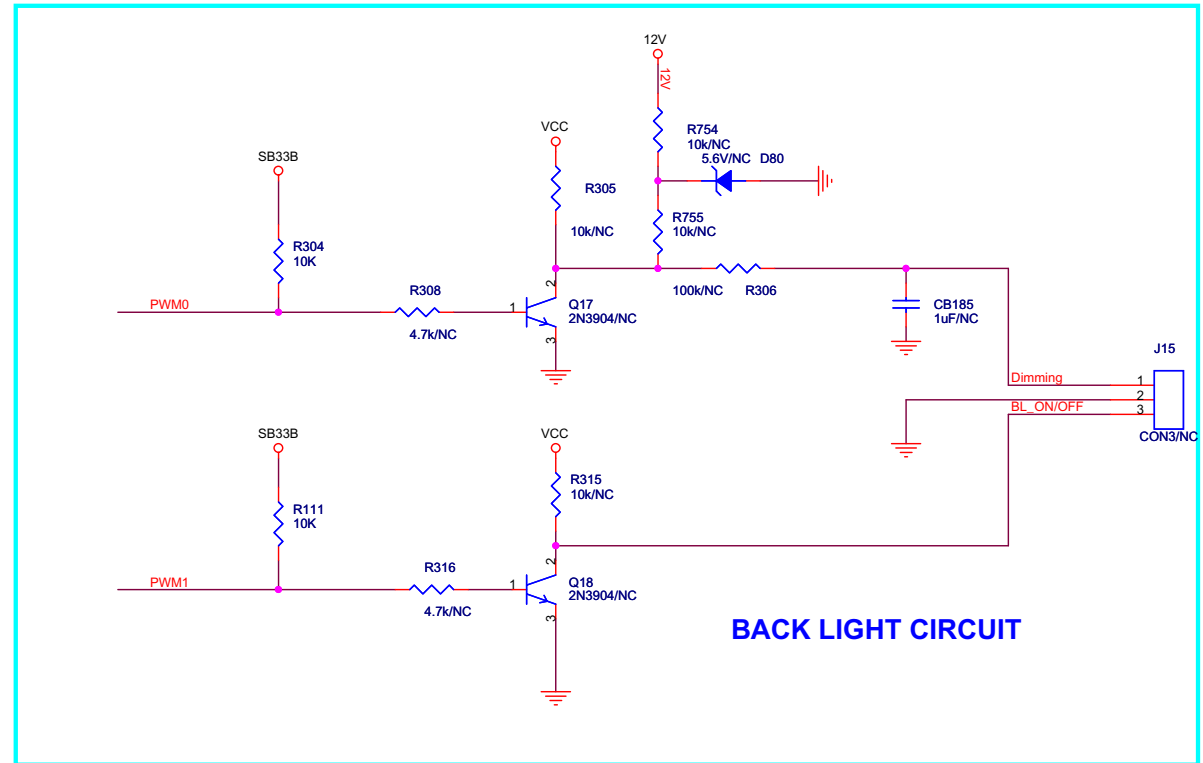
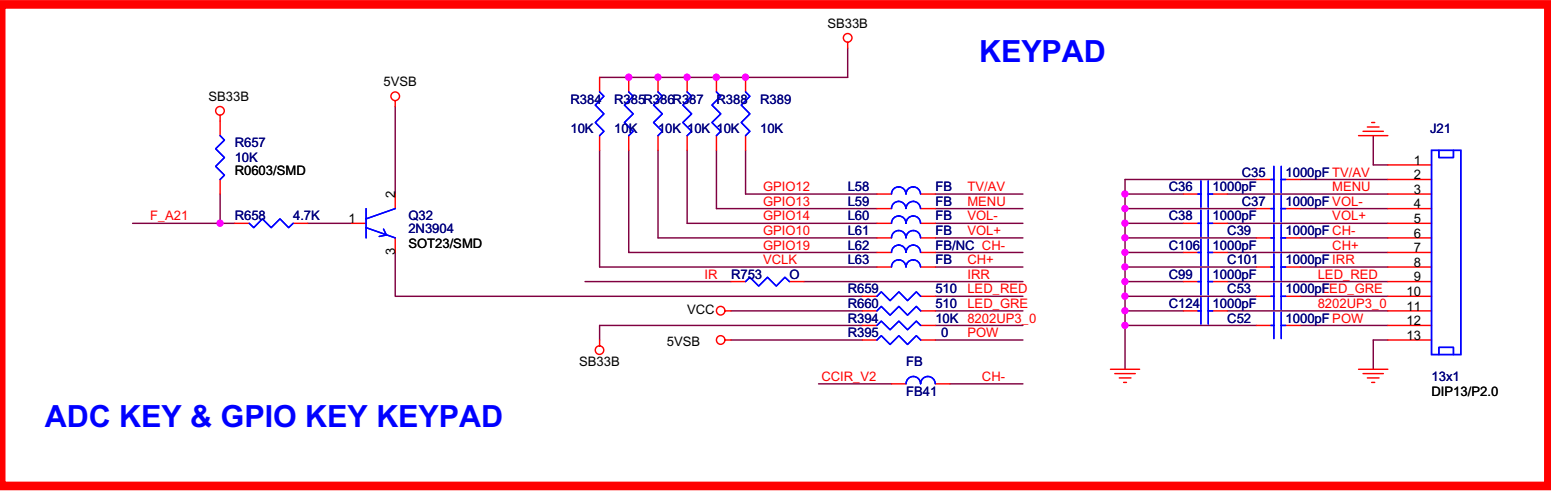
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- CLK1+ >>> CLK1+ 3
- CLK1- >>> CLK1- 3
- AP0\_7 >>> AP0\_7 3
- AND\_6 >>> AND\_6 3
- LVDS\_GND >>> LVDS\_GND 2,3,4
- LVDSVDD >>> LVDSVDD 2,3,4
- CCIR\_VCLK >>> CCIR\_VCLK 3
- CCIR\_V4 >>> CCIR\_V4 3
- FCLK >>> FCLK 3
- FCMD >>> FCMD 3
- FDAT >>> FDAT 3
- SCL\_8202 >>> SCL\_8202 3,6,9
- SDA\_8202 >>> SDA\_8202 3,6,9
- RELAY\_ON >>> RELAY\_ON 1
- VS\_ON >>> VS\_ON 1
- 12V >>> 12V 1,13



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LVDS OUT			
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IR	>>>IR	3,15
GPIO10	>>>GPIO10	3
GPIO12	>>>GPIO12	3
GPIO13	>>>GPIO13	3
GPIO14	>>>GPIO14	1,3
PWM0	>>>PWM0	3
PWM1	>>>PWM1	3
8202UP3_0	>>>8202UP3_0	3
GPIO14	>>>GPIO14	1,3
GPIO19	>>>GPIO19	1,3
VCLK	>>>VCLK	3
F_A21	>>>F_A21	3
CCIR_V2	>>>CCIR_V2	3
12V	>>>12V	1,12

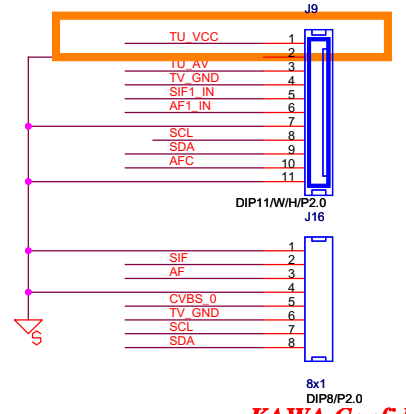
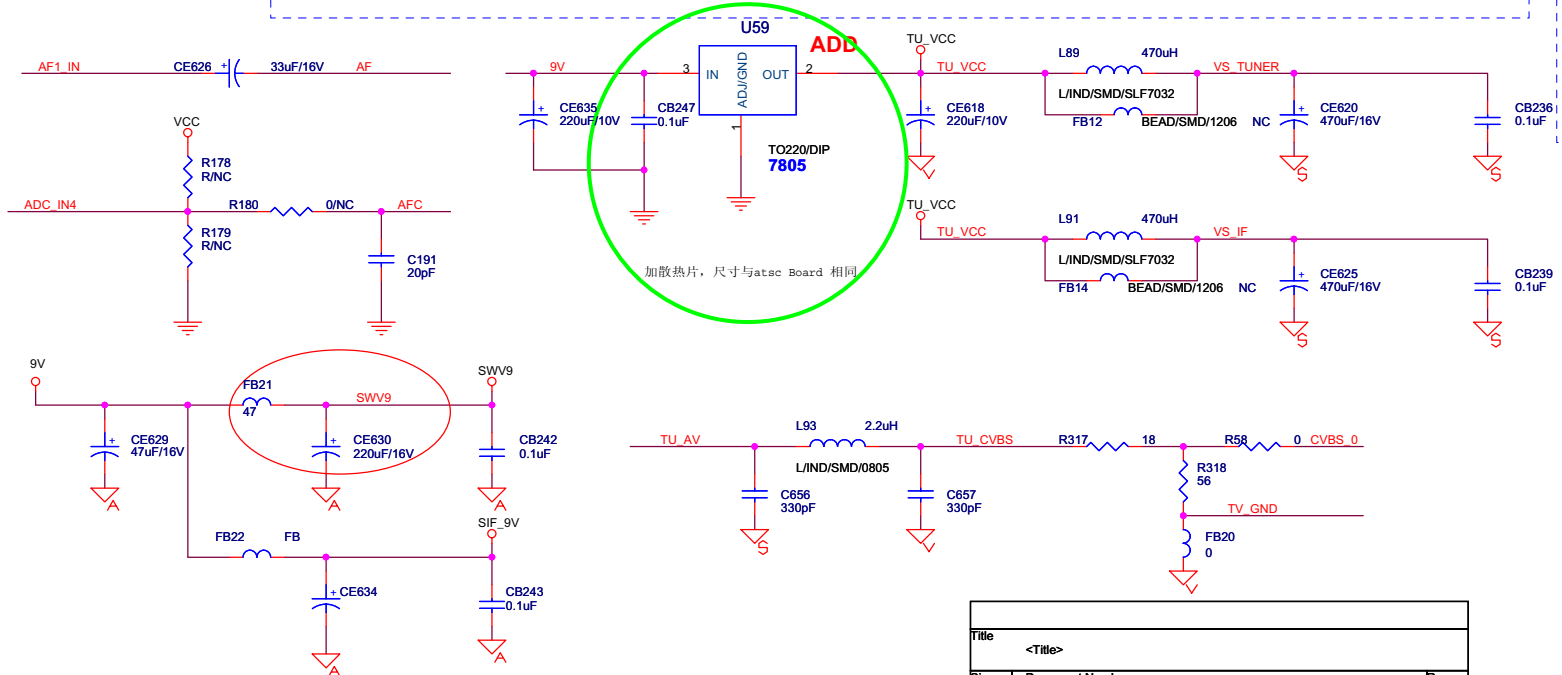
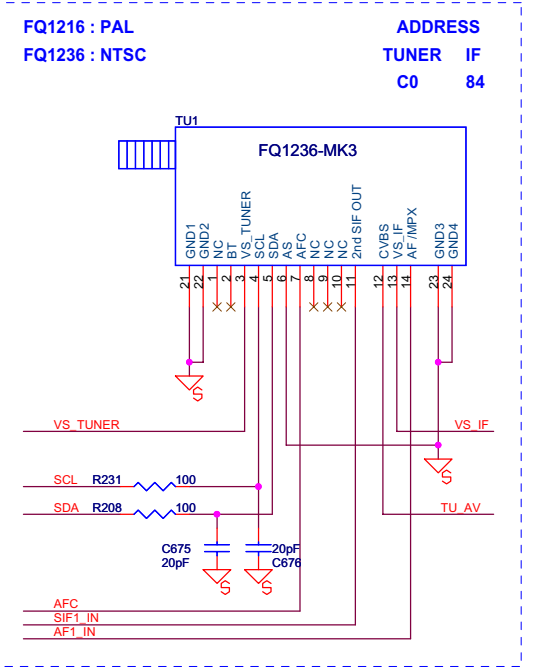
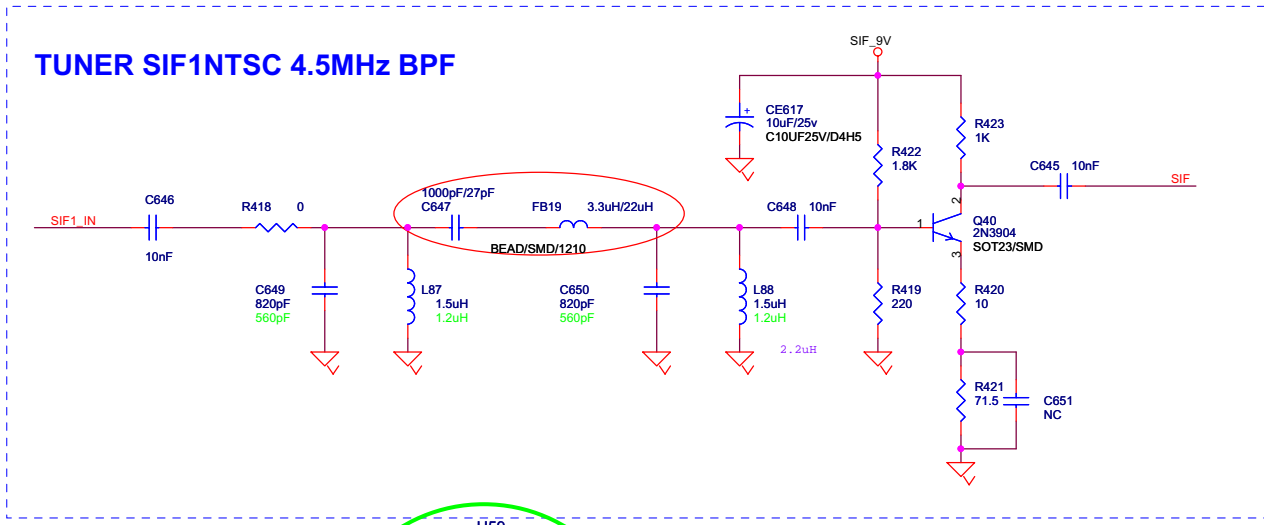


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Title			
<b>BACK LIGHT / KEYPAD</b>			
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SCL	SCL	1,9
SDA	SDA	1,9
CVBS_0	CVBS_0	10
TV_GND	TV_GND	10
AF	AF	10
SIF	SIF	10
ADC_IN4	ADC_IN4	3
9V	9V	1,7,9



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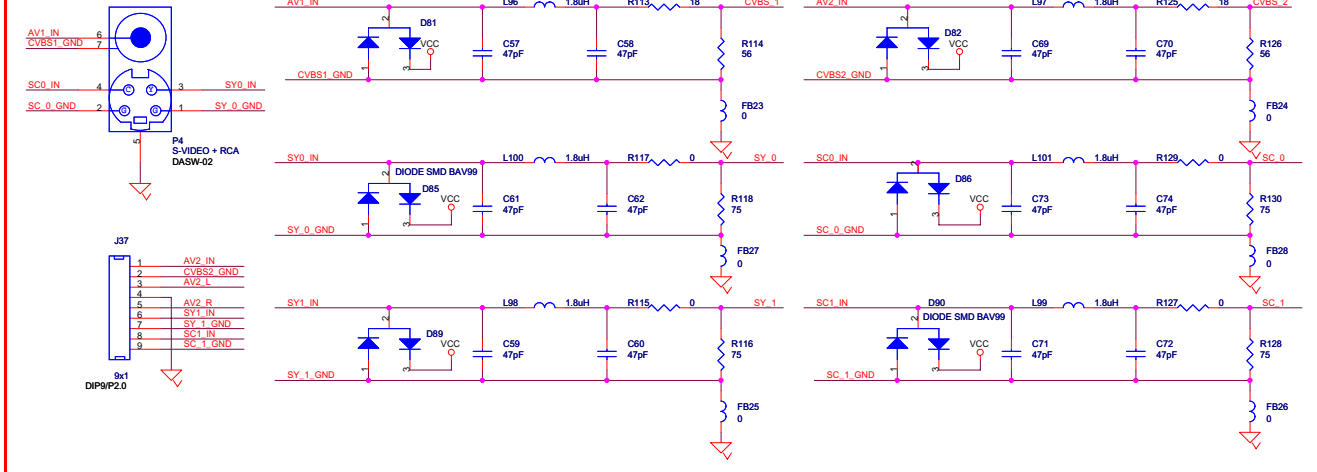
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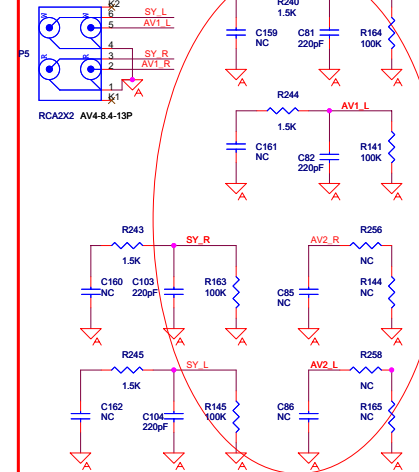
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### AV /YC VIDEO IN

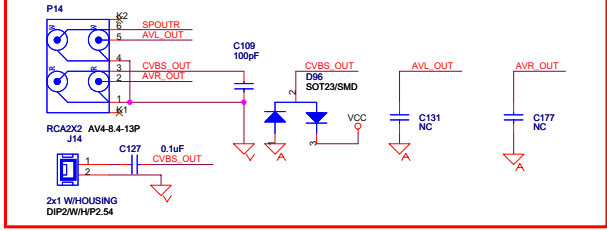


### AV /YC AUDIO IN

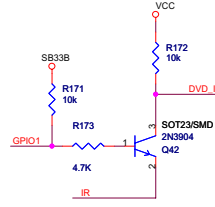
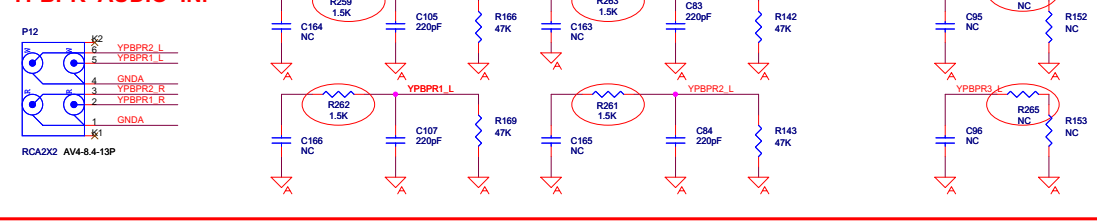


GPIO1 IR	GPIO1 IR	3
SY 1	SY 1	10
SY 1 GND	SY 1 GND	10
SC 1	SC 1	10
SC 1 GND	SC 1 GND	10
SY 0	SY 0	10
SY 0 GND	SY 0 GND	10
SC 0	SC 0	10
SC 0 GND	SC 0 GND	10
CVBS1	CVBS1	10
CVBS1 GND	CVBS1 GND	10
CVBS2	CVBS2	10
CVBS2 GND	CVBS2 GND	10
SPOUTR	SPOUTR	16
AVR_OUT	AVR_OUT	9
AVL_OUT	AVL_OUT	9
CVBS_OUT	CVBS_OUT	6,9
AV1_R	AV1_R	8
AV1_L	AV1_L	8
AV2_R	AV2_R	8
AV2_L	AV2_L	8
SY_R	SY_R	8
SY_L	SY_L	8
YPBPR1_L	YPBPR1_L	9
YPBPR1_R	YPBPR1_R	9
YPBPR2_L	YPBPR2_L	9
YPBPR2_R	YPBPR2_R	9
YPBPR3_L	YPBPR3_L	9
YPBPR3_R	YPBPR3_R	9
Y1_INB	Y1_INB	8,10
Y1_GNDB	Y1_GNDB	8,10
CR1_INB	CR1_INB	8,10
CR1_GNDB	CR1_GNDB	8,10
CR1_INL	CR1_INL	8,10
CR1_GNDBL	CR1_GNDBL	8,10
Y2_INB	Y2_INB	8,10
Y2_GNDB	Y2_GNDB	8,10
CR2_INB	CR2_INB	8,10
CR2_GNDB	CR2_GNDB	8,10
CR2_INL	CR2_INL	8,10
CR2_GNDBL	CR2_GNDBL	8,10
Y3_INB	Y3_INB	8,10
Y3_GNDB	Y3_GNDB	8,10
CR3_INB	CR3_INB	8,10
CR3_GNDB	CR3_GNDB	8,10
CR3_INL	CR3_INL	8,10
CR3_GNDBL	CR3_GNDBL	8,10
GNDV	GNDV	
GNDL	GNDL	

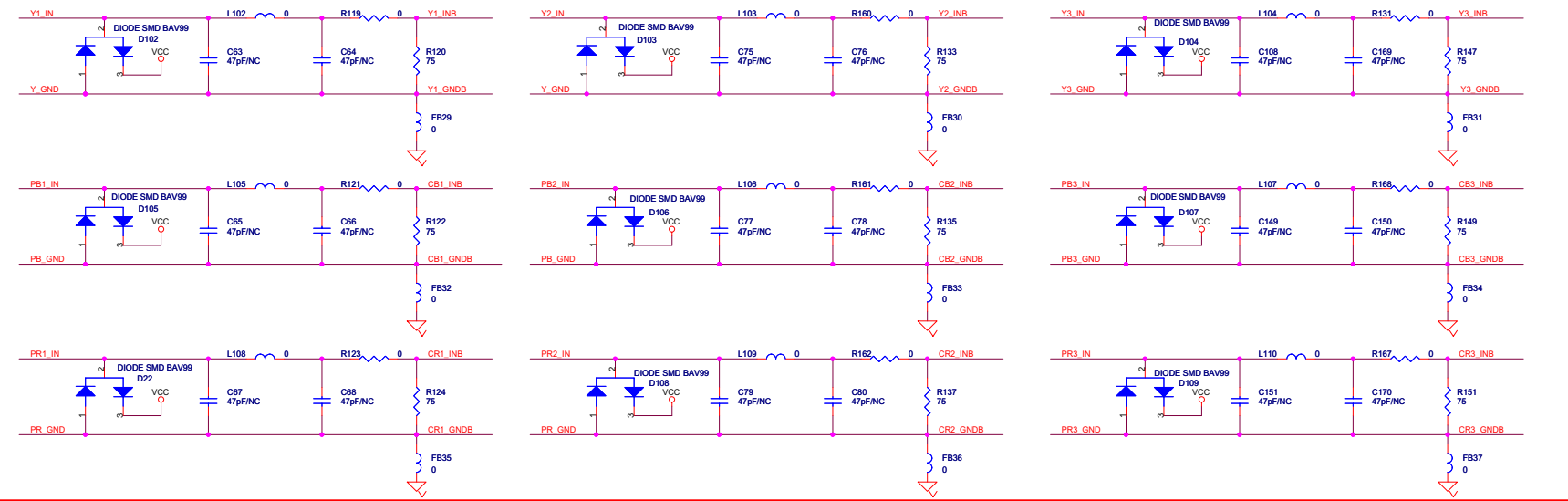
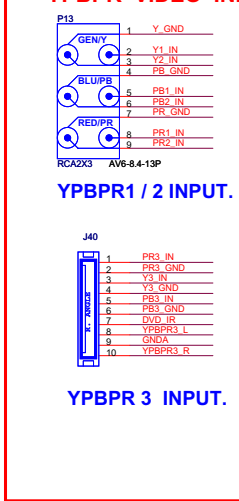
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### YPBPR AUDIO IN.



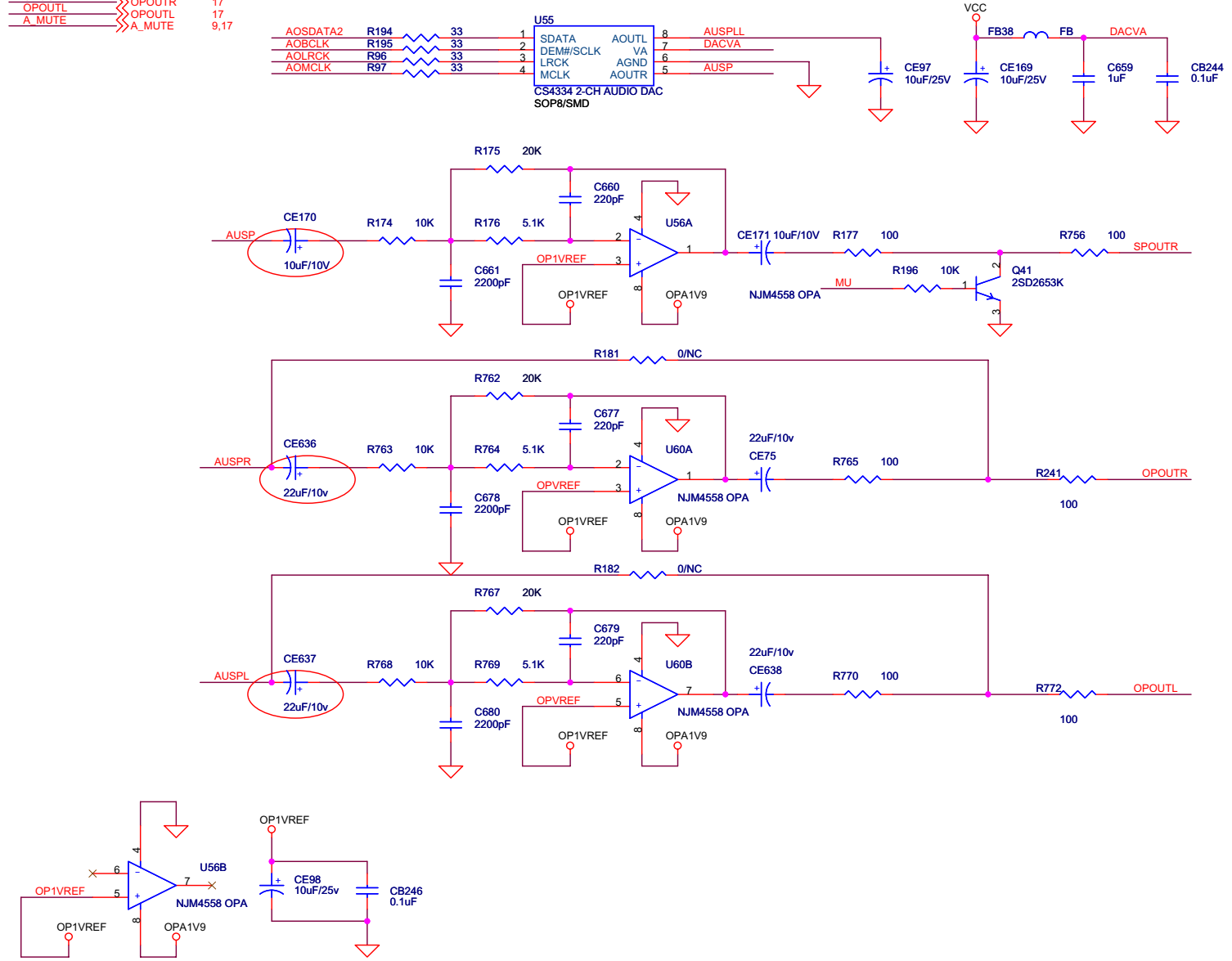
### YPBPR VIDEO IN.



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AV IN  
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AOSDATA2 >>> AOSDATA2 3  
 AOMCLK >>> AOMCLK 3,9  
 AOBCLK >>> AOBCLK 3,9  
 AOLRCK >>> AOLRCK 3,9  
 MU >>> MU 9  
 SPOUTR >>> SPOUTR 15  
 AUSPR >>> AUSPR 9  
 AUSPL >>> AUSPL 9  
 OPOUTL >>> OPOUTL 17  
 OPOUTR >>> OPOUTR 17  
 A\_MUTE >>> A\_MUTE 9,17



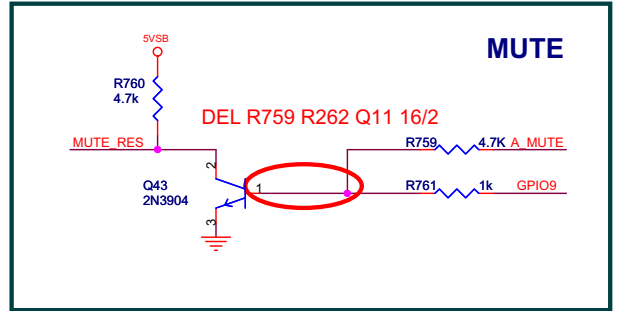
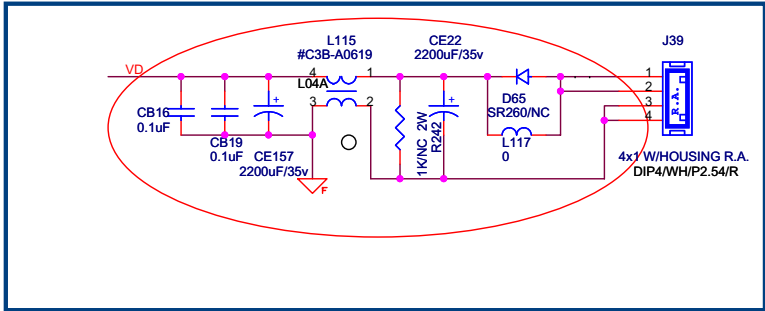
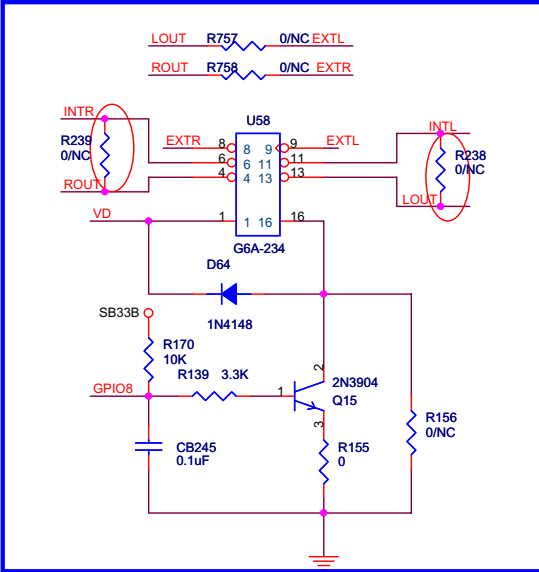
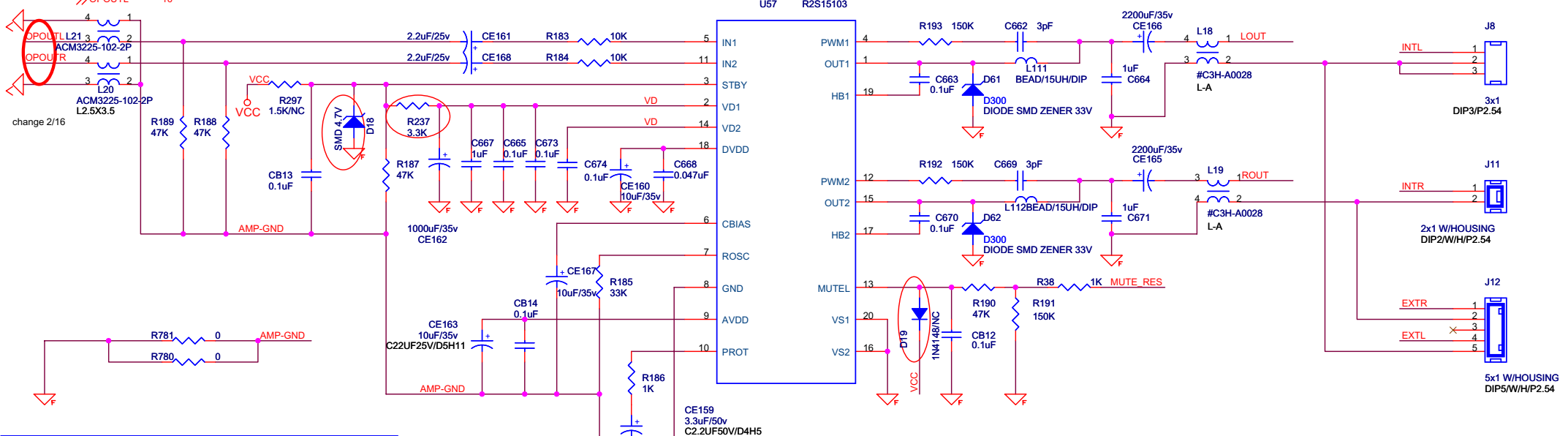
## GPIO DECRPTION

- UP3\_4 : SW SCL
- UP3\_5 : SW SDA
- ERO0/UP3\_0 :KEYPAD POWER
- ERO1/UP3\_1 : MAIN POWER SWITCH
- VCLK : KEPAD CH+
- GPIO19 : KEPAD CH-
- DE/GPIO : DVD IR
- CCIR\_CLK : PDP USE
- CCIR\_V4 : PDP USE
- GPIO0 : PDP USE
- GPIO1 : NO USE
- GPIO2 : LVDS POWER SW
- GPIO3 : DTV POWER CONTROL
- GPIO4 : EEPROM WRITE PROTECT
- GPIO5/TXD : 2nd UART FOR MT5351
- GPIO6/RXD : 2nd UART FOR MT5351
- GPIO7 : AUDIO BYPASS MUTE CONTROL
- GPIO8 : SPEAKER SWITCH
- GPIO9 : AUDIO MUTE
- GPIO10 : Indicates active video at HDMI port
- GPIO11 : DVD POWER CONTROL
- GPIO12 : AV SWITCH
- GPIO13 : HDMI Hot Plug Detect
- GPIO14 : NO USE
- GPIO[15..18] : FOR DVD CONTROL
- GPIO/PWM0 : DIMMING
- GPIO/PWM1 : BACKLIGHT ON/OFF
- OUT\_27Mhz/GPIO : HDMI CRYSTAL
- SDA1 : TO MT5351 I/F REQUEST
- SCL1 : TO MT5351 I/F READY
- F\_A21 : KEYPAD(LED RED)
- ADCIN0 : KEYPAD
- ADCIN3:PDP 5VD DETECT
- ADCIN4:FOR TUNER AFC
- CCIR\_V[0-3] : KEYPAD
- CCIR\_V5 : AUDIO SWITCH
- CCIR\_V6 : RESET DTV
- CCIR\_V7 : YBPBR VIDEO SWITCH

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<b>SUB WOOFER</b>			
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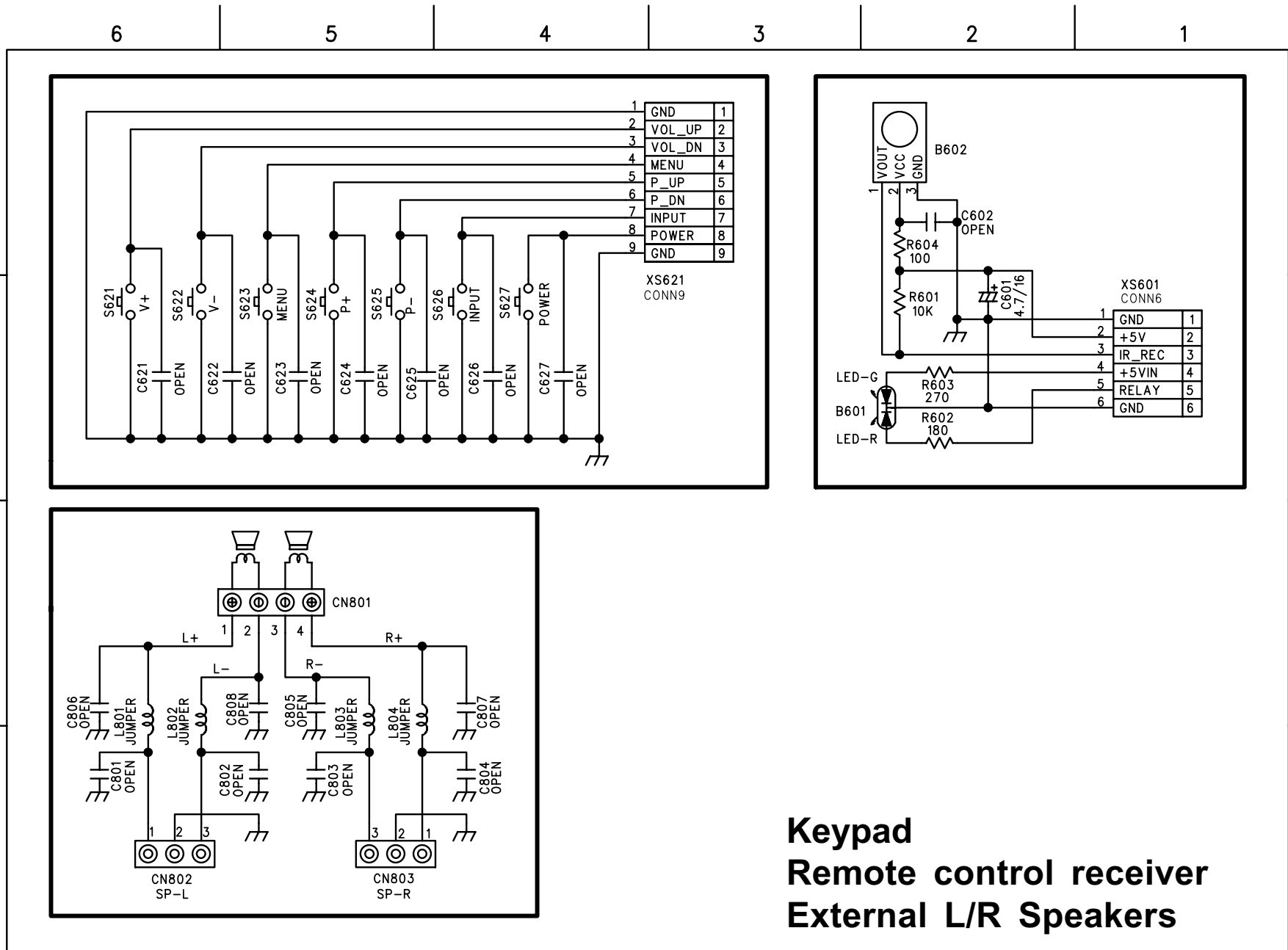
GPIO8	GPIO8	3
GPIO9	GPIO9	3
AUSPR	AUSPR	9,16
AUSPL	AUSPL	9,16
A_MUTE	A_MUTE	9
OPOUTR	OPOUTR	16
OPOUTL	OPOUTL	16

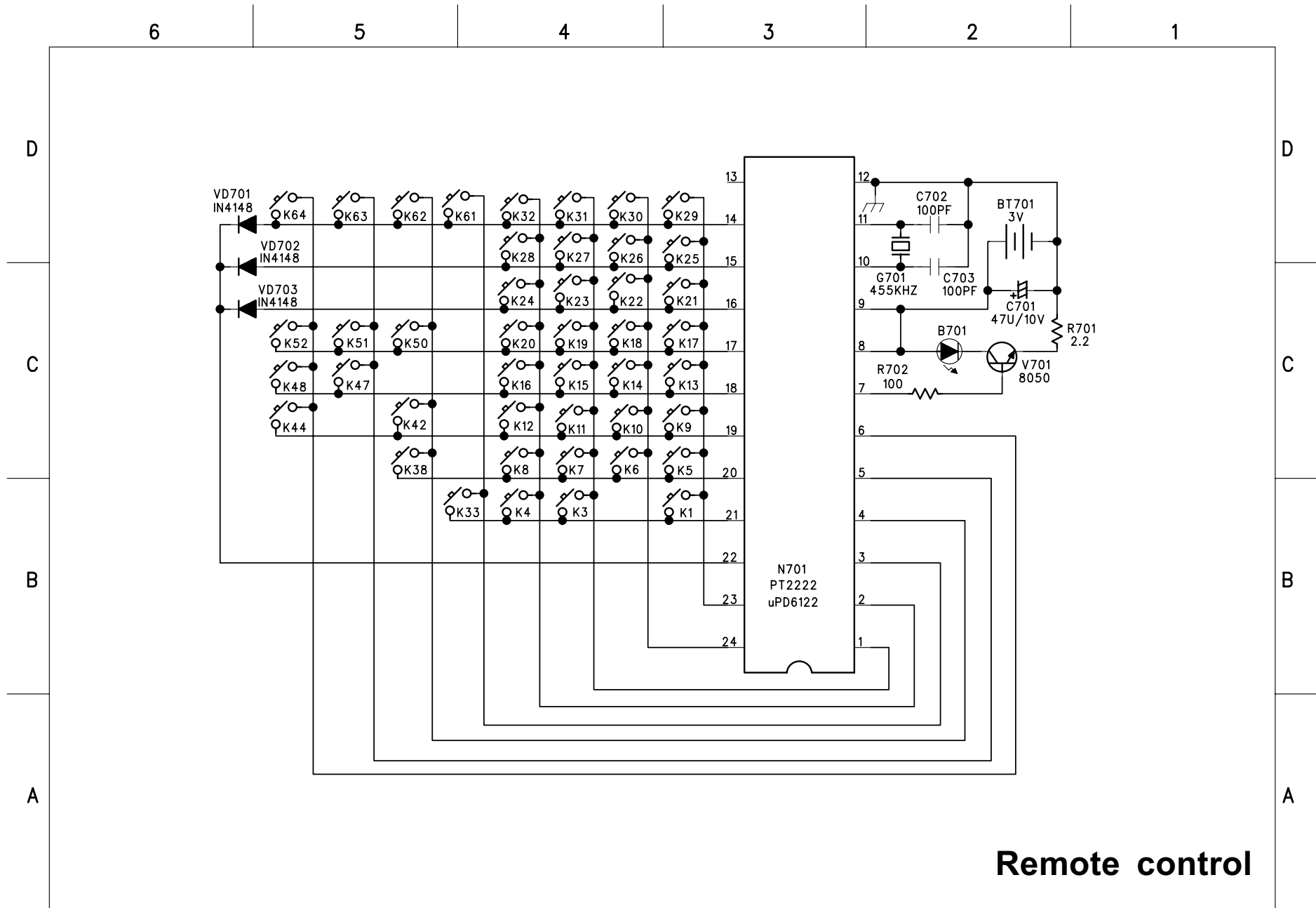


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AUDIO Amplifier			
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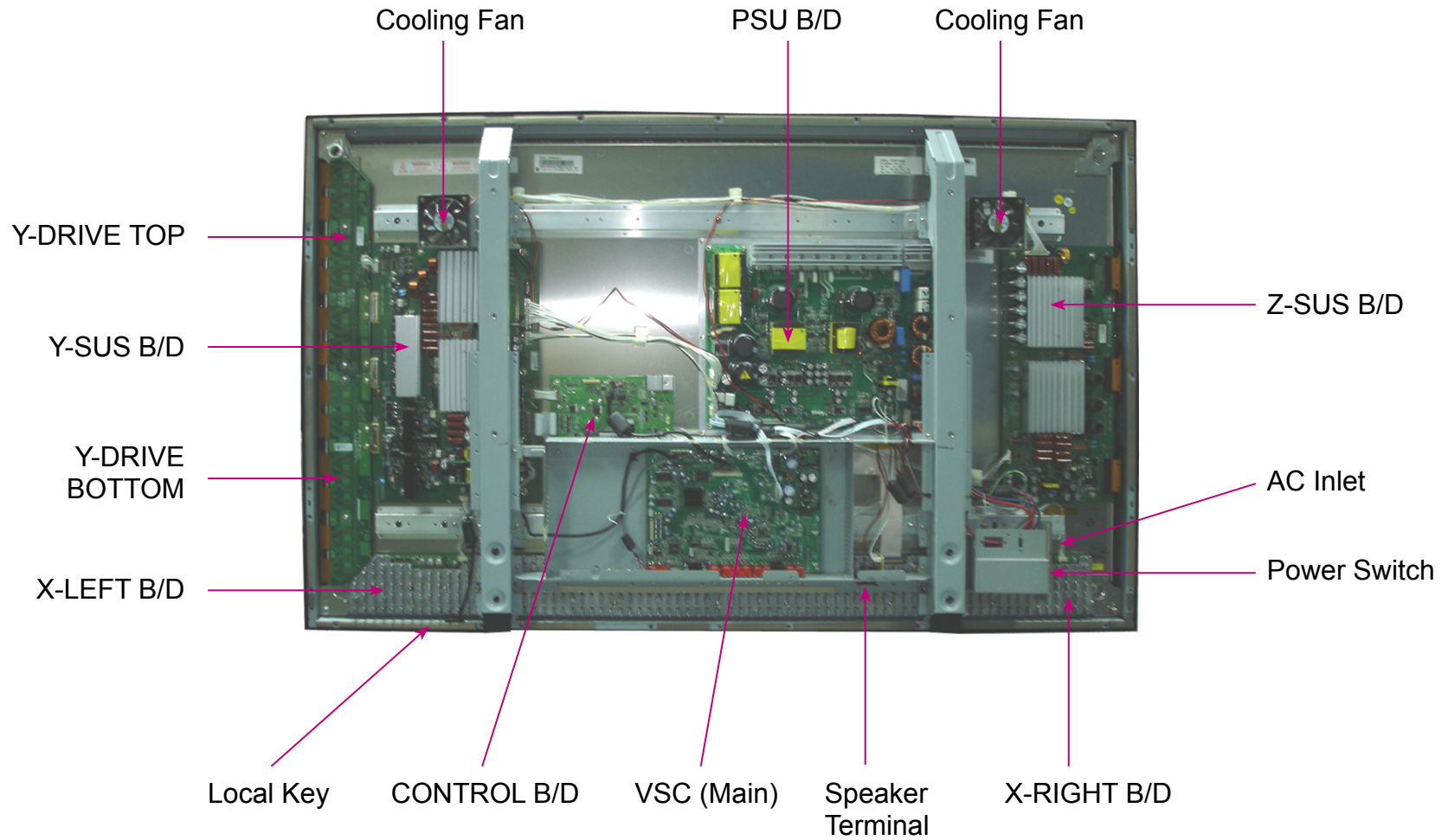
**Remote control**



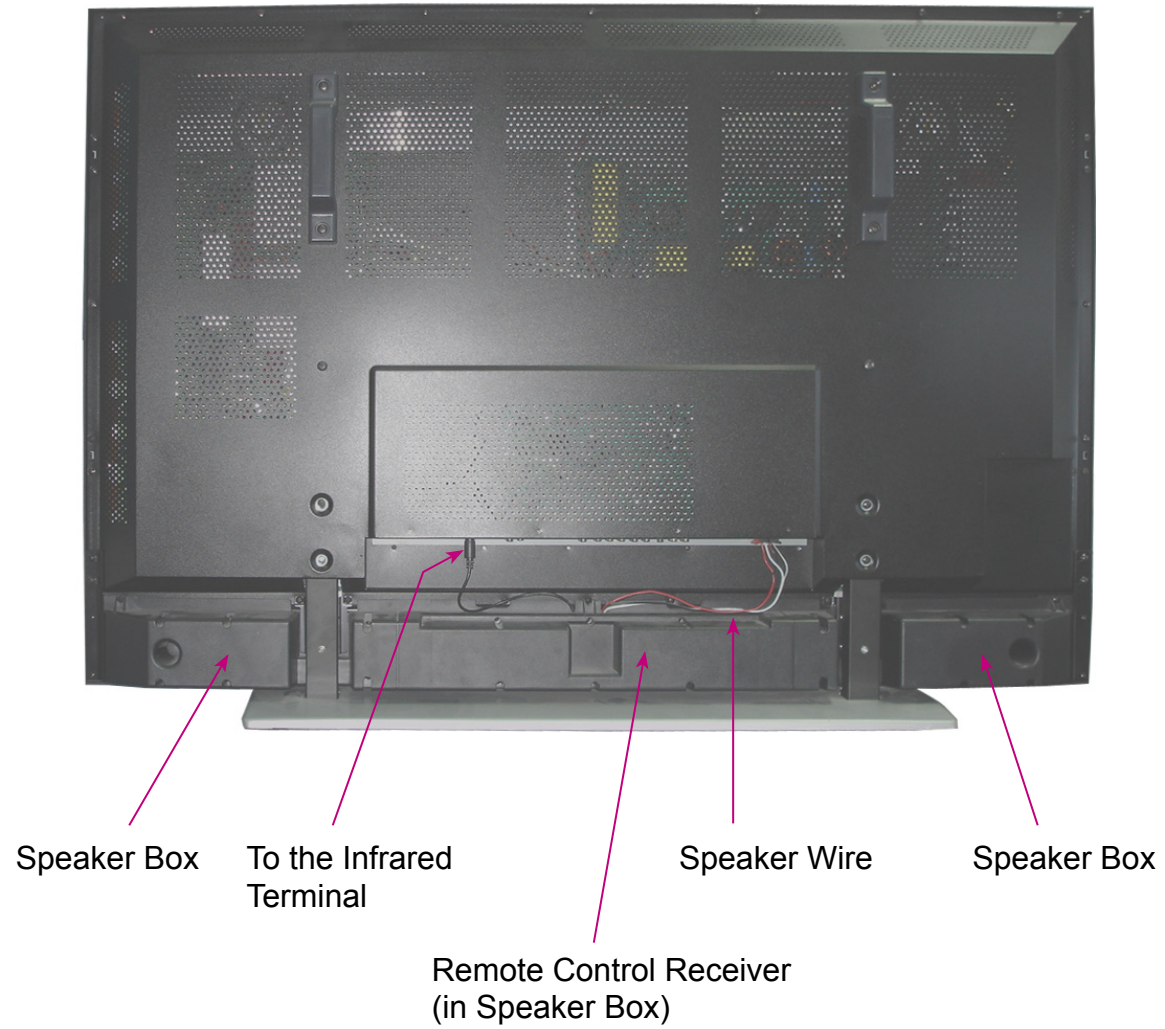
## Basic operation of Plasma Display

1. After turning on power switch, PSU board sends 5Vst-by Volt to Main IC MT8202 waiting for ON signals from Key Switch or Remote Receiver.
2. When the ON signal from Key Switch or Remote Receiver is detected, MT8202 will send RLY ON and VS ON signals to PSU B/D. Then PSU B/D sends 5Vsc, 9Vsc, 24V to PCBs working. This time CONTROL Board will send signals to Panel by Z/Y SUS Board, OSD on the panel and display available signal. If the audio signals input, them will be amplified by Audio AMP and transmitted to Speakers.
3. If some abnormal signals are detected (for example: over volts, over current, over temperature and under volts), the system will be shut down by Power off.

# Parts position



## Parts position



## **Basic Operations & Circuit Description**

### **MODULE**

There are 1 pcs panel and 8 pcs PCBs including 2 pcs Y/Z Sustainer board, 2 pcs Y Drive board, 2 pcs X (left and right) Extension board, 1 pcs Control (Signal Input) board and 1 pcs PSU board in the Module.

### **SET**

There are 4 pcs PCBs including 1 pcs Local key board, 1 pcs Remote Control Receiver board, 1 pcs L/R Speakers and 1 pcs VSC (Main) board, 2 pcs Cooling Fan in the SET.

## PCB function

1. PSU B/D:
  - (1). Input voltage: AC 120V, 60Hz.
  - (2). To provide power for PCBs.
2. VSC (Main) board: To converter S signals, AV signals, Y Pb/Cb Pr/Cr signals, HDMI signals and D-SUB signals to digital ones and to transmit to Control board.
3. Control board: Creates signal processing and order of many FET on/off of each DRIVE B/D with R, G, B each 10 bit input.
4. Y-Sustainer board: Generates SUSTAIN, RESET Waveform, VSC (SCAN) voltage and supplies it Y DRIVE B/D.
5. Y-Drive board:
  - (1). This is a path to supply SUSTAIN, RESET waveform which made from Y SUSTAIN B/D to Panel through SCAN DRIVER IC.
  - (2). Supply a waveform that select Horizontal electrode (Y SUSTAIN electrode) sequentially.
6. Z-Sustainer board: Make SUSTAIN PULSE and ERASE PULSE that generates SUSTAIN discharge in panel by receiving LOGIC signal from CONTROL B/D.
7. X (left and right) extension board: Receiving LOGIC signal from CONTROL B/D and make ADDRESS PULSE (generates Address discharge) by ON/OFF operation, and supplies this waveform to COF (data).

## PCB failure analysis

1. CONTROL:
  - a. Abnormal noise on screen.
  - b. No picture.
2. VSC (MAIN) :
  - a. Lacking color, Bad color scale.
  - b. No voice.
  - c. No picture.
  - d. Abnormal noise on screen.
3. PSU: No picture, no power output.
4. Z - Sustainer:
  - a. No picture.
  - b. Color not enough.
  - c. Flash on screen.
5. Y - Sustainer: Darker picture with signals.
6. Y/Z - Sustainer: The component working temperature is about 55°C.  
If the temperature rises abnormal, this may be a error point.

## Main IC Information

- M13S128168A (ESMT)  
2M x 16 Bit x 4 Banks Double Data Rate SDRAM
- MT8202  
MT8202G is a highly integrated Single-Chip for LCD TV supporting video input and output format up to HDTV. It includes 3D comb filter TV decoder to retrieve the best image from popular composite signals.
- MT8293  
HDMI PanelLink Cinema Receiver
- R2S15102NP  
Digital Power Amplifier R2S15102NP
- WM8776  
24-bit, 192kHz Stereo CODEC with 5 Channel Input Multiplexer

### 0. Warnings and Cautions

- ✓ WARNING indicates hazards that may lead to death or injury if ignored.
- ✓ CAUTION indicates hazards that may lead to injury or damage to property if ignored.



- 1) This product uses a high voltage (450 V max.). Do not touch the circuitry of this product with your hands when power is supplied to the product or immediately after turning off the power. Be sure to confirm that the voltage is dropped to a sufficiently low level.
- 2) Do not supply a voltage higher than that specified to this product. This may damage the product and may cause a fire.
- 3) Do not use this product in locations where the humidity is extremely high, where it may be splashed with water, or where flammable materials surround it. Do not install or use the product in a location that does not satisfy the specified environmental conditions. This may damage the product and may cause a fire.
- 4) If a foreign substance (such as water, metal, or liquid) gets inside the product, immediately turn off the power. Continuing to use the products it may cause fire or electric shock.
- 5) If the product emits smoke, an abnormal smell, or makes an abnormal sound, immediately turn off the power. If noting is displayed or if the display goes out during use, immediately turn off the power. Continuing to use the product as it is may cause fire or electric shock.
- 6) Do not disconnect or connect the connector while power to the product is on. It takes some time for the voltage to drop to a sufficiently low level after the power has been turned off. Confirm that the voltage has dropped to a safe level before disconnecting or connecting the connector. Otherwise, this may cause fire, electric shock, or malfunction.
- 7) Do not pull out or insert the power cable from/to an outlet with wet hands. It may cause electric shock.
- 8) Do not damage or modify the power cable. It may cause fire or electric shock.
- 9) If the power cable is damaged, or if the connector is loose, do not use the product; otherwise, this can lead to fire or electric shock.
- 10) If the power connector or the connector of the power cable becomes dirty or dusty, wipe it with a dry cloth. Otherwise, this can lead to fire.





### □ General

- 1) Do not place this product in a location that is subject to heavy vibration, or on an unstable surface such as an inclined surface. The product may fall off or fall over, causing injuries.
- 2) When moving the product, be sure to turn off the power and disconnect all the cables. While moving the product, watch your step. The product may be dropped or fall, leading to injuries of electric shock.
- 3) Do not place this product in a location that is subject to heavy vibration, or on an unstable surface such as an inclined surface. The product may fall off or fall over, causing injuries.
- 4) Before disconnecting cable from the product, be sure to turn off the power. Be sure to hold the connector when disconnecting cables. Pulling a cable with excessive force may cause the core of the cable to be exposed or break the cable, and this can lead to fire or electric shock.
- 5) This product should be moved by two or more persons. If one person attempts to carry this product alone, he/she may be injured.
- 6) This product contains glass. The glass may break, causing injuries, if shock, vibration, heat, or distortion is applied to the product.
- 7) The temperature of the glass surface of the display may rise to 80°C or more depending on the conditions of use. If you touch the glass inadvertently, you may be burned.
- 8) Do not poke or strike the glass surface of the display with a hard object. The glass may break or be scratched. If the glass breaks, you may be injured.
- 9) If you glass surface of the display breaks or is scratched, do not touch the broken pieces or the scratches with bare hands. You may be injured.
- 10) Do not place an object on the glass surface of the display. The glass may break or be scratched.

### □ Design

- 1) This product may be damaged if it is subject to excessive stresses (such as excessive voltage, current, or temperature). The absolute maximum ratings specify the limits of these stresses, and system design must ensure that none of the absolute maximum ratings are exceeded.
- 2) The recommended operating conditions are conditions in which the normal operation of this product is guaranteed. All the rated values of the electrical specifications are guaranteed within these conditions. Always use the product within the range of the recommended operating conditions. Otherwise, the reliability of the product may be degraded. Use of the product with a combination of parameters, conditions, or logic not specified in the specifications of this product is not guaranteed. If intending to use the product in such a way, be sure to consult LGE in advance.
- 3) This product emits near infrared rays (800 to 1000nm) that may cause the remote controllers of other electric products to malfunction. To avoid this, use an infrared absorption filter and thoroughly evaluate the system and environment.

## Product Specification of PDP Module

### □ Design (continued)

- 4) This product uses high-voltage switching and a high-speed clock. A system using this product should be designed so that it does not affect the other systems, and should be thoroughly evaluated.
- 5) **The materials which contain sulfur are forbidden to use, because they may damage PDP module.**
- 6) This product has a glass display surface. Design your system so that excessive shock and load are not applied to the glass. Exercise care that the vent at the corner of the glass panel is not damaged. If the glass panel or vent is damaged, the product is inoperable.
- 7) There are some exposed components on the rear panel of this product. Touching these components may cause an electric shock.
- 8) This product uses a high voltage. Design your system so that any residual voltage in this product is dissipated quickly when power is turned off, observing the specifications.
- 9) This product uses heat-emitting components. Take the heat emitted by these components into consideration when designing your system. If the product is used outside the specified temperature range, it may malfunction.
- 10) This product uses a high voltage and, because of its compact design, components are densely mounted on the circuit board. If dust collects on these components, it can cause short-circuiting between the pins of the components and moisture can cause the insulation between the components to break down, causing the product to malfunction.
- 11) Regulations and standards on safety and electromagnetic interference differ depending on the country. Design your system in compliance with the regulations and standards of the country for which your system is intended.
- 12) To obtain approval under certain safety standards (such as UL and EN), a filter that passes a shock test must be fitted over the glass surface of the finished product. In addition, it must be confirmed that the level of UV emissions is within the range specified by such standards.
- 13) If this product is used as a display board to display a static image, “image sticking” occurs. This means that the luminance of areas of the display that remain lit for a long time drops compared with the luminance of areas that are lit for a shorter time, causing uneven luminance across the display. The degree to which this occurs is in proportion to the luminance at which the display is used. To prevent this phenomenon, therefore, avoid static images as much as possible and design your system so that it is used at a low luminance, by reducing signal level difference between bright area and less bright area through signal processing.
- 14) Within the warranty period, general faults that occur due to defects in components such as ICs will be rectified by LGE without charge. However, IMAGE STICKING is not included in the warranty. Repairs due to the other faults may be charged for depending on responsibility for the faults.
- 15) In case of AC PDP driving mechanism, Because the brightness of output is not always proportional to input signals. Therefore the non-linearity of gray can occasionally be observed in certain gray levels as well as Contour and Error Diffusion Noise can be appeared when a dark picture is on the screen especially. These are phenomena that can be observed on the PDP driving mechanism. With simple adjustment to picture brightness control, these can be reduced considerably.
- 16) Because of the need to control the power consumption on the PDP driving mechanism, the APL(Average Picture Level) mode was equipped. Thus, as the picture on the screen changes, there can be slightly switched in brightness. This also is a phenomenon that can be observed on the PDP driving mechanism.
- 17) This product is designed to LGE’s “Standard” quality grade. If you wish to use the product for applications outside the scope of the “Standard” quality grade, be sure to consult LGE in advance to assess the technological feasibility before starting to design your system.

## Product Specification of PDP Module

### USE

- 1) Because this product uses a high voltage, connecting or disconnecting the connectors while power is supplied to the product may cause malfunctioning. Never connect or disconnect the connectors while the power is on. Immediately after power has been turned off, a residual voltage remains in the product. Be sure to confirm that the voltage has dropped to a sufficiently low level.
- 2) Watching the display for a long time can tire the eyes. Take a break at appropriate intervals.
- 3) PDP's brightness and contrast ratio is lower than that of the CRT. The picture is dimmer with surrounding light and better for viewing in dark condition.
- 4) Do not cover or wrap the product with a cloth or other covering while power is supplied to the product.
- 5) Before turning on power to the product, check the wiring of the product and confirm that the supply voltage is within the rated voltage range. If the wiring is wrong or if a voltage outside the rated range is applied, the product may malfunction or be damaged.
- 6) Do not store this product in a location where temperature and humidity are high. This may cause the product to malfunction. Because this product uses a discharge phenomenon, it may take time to light (operation may be delayed) when the product is used after it has been stored for a long time. In this case, it is recommended to light all cells for about 2hours (aging).
- 7) If the glass surface of the display becomes dirty, wipe it with a soft cloth moistened with a neutral detergent. Do not use acidic or alkaline liquids, or organic solvents.
- 8) Do not tilt or turn upside down while the module package is carried, the product may be damaged.
- 9) This product is made from various materials such as glass, metal, and plastic. When discarding it, be sure to contact a professional waste disposal operator.

### Repair and Maintenance

Because this product combines the display panel and driver circuits in a single module, it cannot be repaired or maintained at user's office or plant. Arrangements for maintenance and repair will be determined later

### Others

- 1) If your system requires the user to observe any particular precautions, in addition to the above warnings and cautions, include such caution and warning statements in the manual for your system.
- 2) If you have any questions concerning design, such as on housing, storage, or operating environment, consult LGE in advance.

# 1. GENERAL DESCRIPTION

## ❑ DESCRIPTION

The PDP50X3#### is a 50-inch 16:9 color plasma display module with resolution of 1366(H) × 768(V) pixels. This is the display device which offers vivid colors with adopting AC plasma technology by LG Electronics Inc.

## ❑ FEATURES

High peak brightness (1000cd/m<sup>2</sup> Typical) and high contrast ratio (10,000:1 Max) enables user to create high performance PDP SETs.

## ❑ APPLICATIONS

- ✓ Public information display
- ✓ Video conference systems
- ✓ Education and training systems



## Product Specification of PDP Module

### ❑ ELECTRICAL INTERFACE OF PLASMA DISPLAY

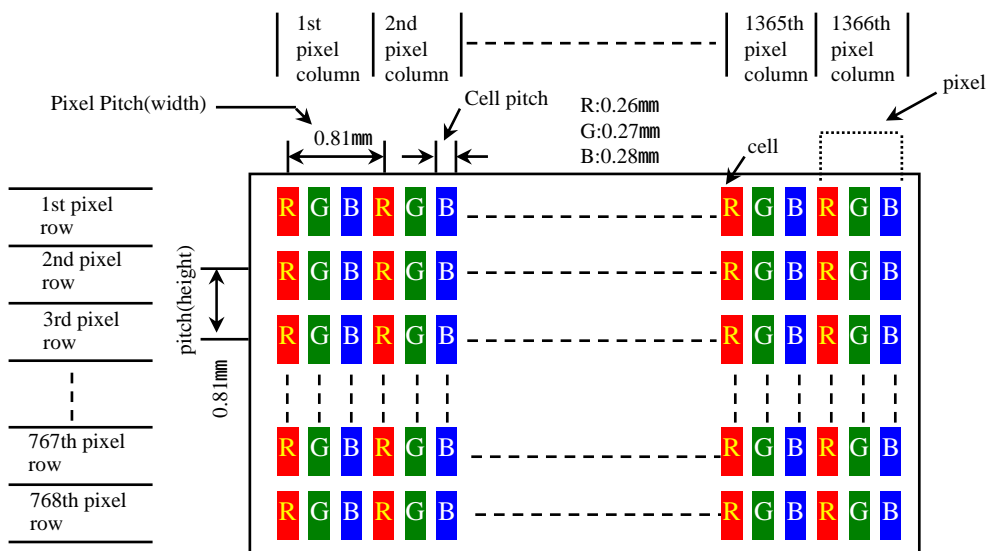
The PDP50X3#### requires 8bits or 10bits of digital video signals for each RGB color.  
In addition to the video signals, six different DC voltages are required to operate the display.

### ❑ GENERAL SPECIFICATIONS

- ✓ Model Name : PDP50X3#### (50X3 Model)
- ✓ Number of Pixels : 1366(H) × 768(V) (1pixel=3 RGB cells)
- ✓ Pixel Pitch : 810 $\mu$ m (H) × 810 $\mu$ m (V)
- ✓ Cell Pitch : 270 $\mu$ m (H) × 810 $\mu$ m (V) (Green Cell basis)
- ✓ Display Area : 1106.5(H) × 622.1(V) ± 0.5mm
- ✓ Outline Dimension : 1190(H) × 700(V) × 58(D) ± 1mm
- ✓ Pixel Type : RGB Closed(Well) type
- ✓ Number of Gradations : (R)1,024 × (G)1,024 × (B)1,024 colors
- ✓ Weight : 21.4±0.5 Kg (Net 1EA)  
130±5 Kg (5EA/1BOX)
- ✓ Aspect Ratio : 16:9
- ✓ Peak Brightness : Typical 1000cd/m<sup>2</sup> (1/100 White Window pattern at center)
- ✓ Contrast Ratio : Average 90:1 (In a bright room with 100Lux at center)  
Max 10,000:1 (In a dark room 1/100 White Window pattern at center)
- ✓ Power Consumption : Max. 400 W (Full-White)
- ✓ Expected Life-time : more than 60,000 Hours of continuous operation

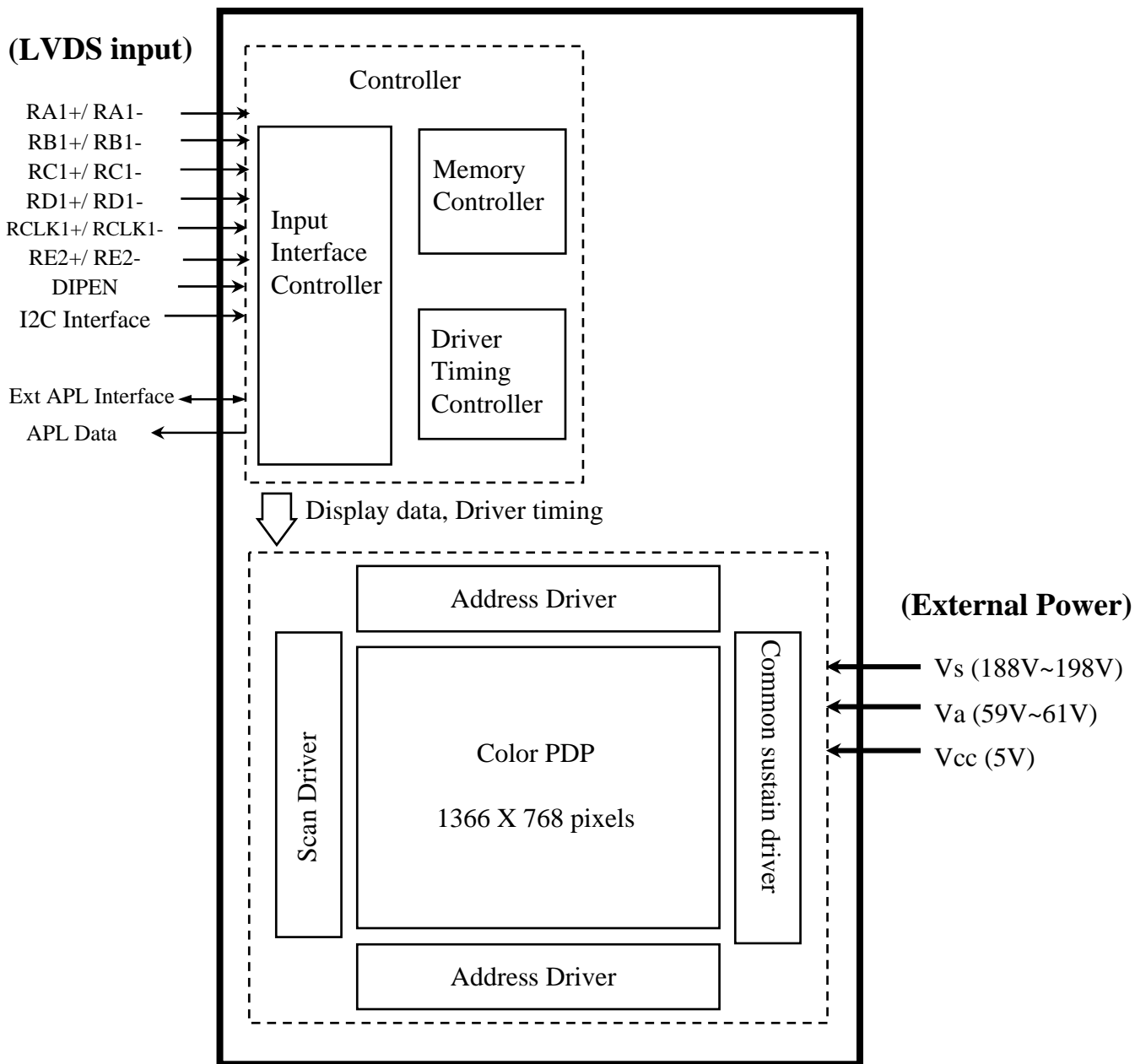
Life-time is defined as the time when the brightness level becomes half of its initial value.

#### ✓ Display Dot Diagram



## Product Specification of PDP Module

### □ BLOCK DIAGRAM



Applied Voltage level is specified at the time when Full-White pattern is displayed on the panel.

## Product Specification of PDP Module

### □ LVDS Signal and LVDS Receiver

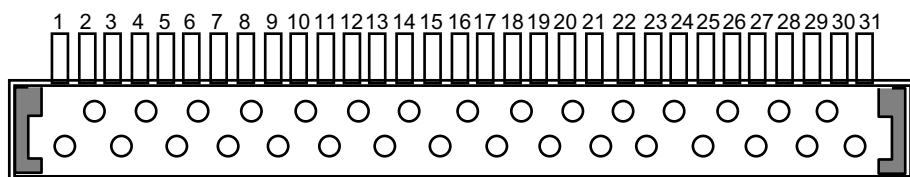
#### ➤ Definitions and Functions of LVDS Signal

Symbol	Definition and Function	Related Output Signal
RA +	Channel-A Pos. Receiver Input	R4, R5, R6, R7, R8, R9, G4
RA -	Channel-A Neg. Receiver Input	
RB +	Channel-B Pos. Receiver Input	G5, G6, G7, G8, G9, B4, B5
RB -	Channel-B Neg. Receiver Input	
RC +	Channel-C Pos. Receiver Input	B6, B7, B8, B9, $\overline{\text{Hsync}}$ , $\overline{\text{Vsync}}$ , $\overline{\text{BLANK}}$
RC -	Channel-C Neg. Receiver Input	
RD +	Channel-D Pos. Receiver Input	R2, R3, G2, G3, B2, B3
RD -	Channel-D Neg. Receiver Input	
RE +	Channel-E Pos. Receiver Input	R0, R1, G0, G1, B0, B1
RE -	Channel-E Neg. Receiver Input	
RCLK +	Clock Pos. Receiver Input	PIX_CLK
RCLK -	Clock Neg. Receiver Input	

#### ➤ Video Input Connector (P3)

Pin No.	Symbol	Pin No.	Symbol	Pin No.	Symbol
1	GND	11	RD1-	21	nc
2	RA1-	12	RD1+	22	nc
3	RA1+	13	GND	23	nc
4	RB1-	14	GND	24	RE1-
5	RB1+	15	Nc	25	RE1+
6	GND	16	Nc	26	GND
7	RC1-	17	Nc	27	DISPEN
8	RC1+	18	Nc	28	I <sup>2</sup> C SDATA
9	RCLK1-	19	GND	29	I <sup>2</sup> C SCLK
10	RCLK1+	20	Nc	30	Nc
				31	GND

} 3.3V level



LG Cable, GT121-31P-TD pin number ( Top view )

substitute : JAE, FI-TWEP31-VF

## Product Specification of PDP Module

### □ LVDS Signal and LVDS Receiver (continued)

#### ➤ Output Signals of LVDS Receiver

Symbol	Definition and Function
R9 ~ R0	10-bit Red Pixel video signal ( R9 : MSB, R0 : LSB )
G9 ~ G0	10-bit Green Pixel video signal ( G9 : MSB, G0 : LSB )
B9 ~ B0	10-bit Blue Pixel video signal ( B9 : MSB, B0 : LSB )
PIX_CLK	Clock Signal which synchronous to video signal
$\overline{\text{Vsync}}$	vertical synchronous signal
$\overline{\text{Hsync}}$	horizontal synchronous signal
$\overline{\text{BLANK}}$	'HIGH' level : data is valid 'LOW' level : data is invalid
DISPEN	'HIGH' level : Display Enable 'LOW' level : Non Display

Each of the RGB signals can be changed with the Gamma Mode.

#### ➤ Pin assignment of LVDS Receiver Output Signal

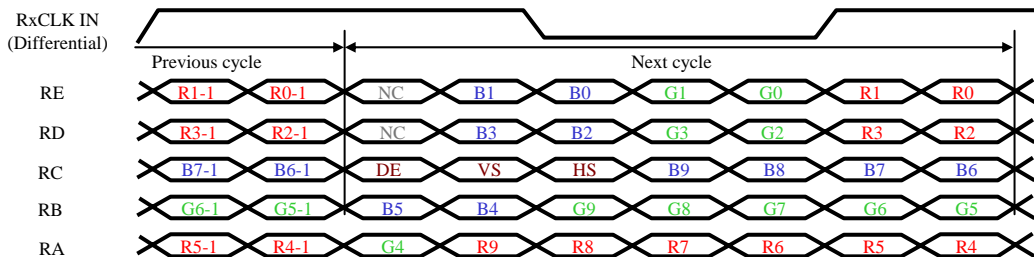
Pin No	Symbol	Pin No	Symbol	Pin No	Symbol	Pin No	Symbol
1	B9	38	G5	1	NC	38	NC
2	NC	39	G6	2	NC	39	NC
3	Hsync	41	G2	3	NC	41	G0
5	Vsync	42	G3	5	NC	42	G1
6	BLANK	43	G7	6	NC	43	NC
7	R2	45	G8	7	R0	45	NC
26	PIX_CLK	46	G9	26	NC	46	NC
27	R4	47	B4	27	NC	47	NC
29	R5	49	B2	29	NC	49	B0
30	R6	50	B3	30	NC	50	B1
32	R7	51	B5	32	NC	51	NC
33	R8	53	B6	33	NC	53	NC
34	R3	54	B7	34	R1	54	NC
35	R9	55	B8	35	NC	55	NC
37	G4			37	NC		NC

IC64 : First LVDS Receiver

IC78 : Second LVDS Receiver

LVDS Receiver : THC63LVDF84B(THine) or SN75LVDS82(TI)

#### ➤ Signal Input sequence of LVDS Receiver



DE : BLANK, VS : Vsync, HS : Hsync



## 5. IMAGE STICKING CHARACTERISTICS

### Image Sticking

The fluorescent substance used in the plasma module loses its brightness with the lapse of lighting time. This deterioration in brightness appears to be a difference in brightness in relation to the surroundings, and comes to be recognized as image sticking.

In other words, the image sticking is defined as follows: when the same pattern (of the fixed display) is displayed for a long time, a difference in brightness is caused around the lighting area and non-lighting area due to deterioration in the fluorescent substance.

When the present pattern is changed over to another one, the boundary comes to be seen between the lighting area and non-lighting area due to difference in brightness in the pattern shown shortly before changeover. If this conditions is accumulated, the boundary or image sticking comes to be seen with the naked eyes.

### Secular change in brightness

The life of brightness, defined as the reduction to half the initial level, is more than 25 thousand hours on average.

Conditions: All white (100% white) input at an ambient temperature of 25°C.

However, this lifetime is not a guarantee value for life and brightness. It should be recognized simply as the data for reference.

### Warranty

Image sticking and faults in brightness and picture elements are excluded from the warranty objects.

### Cause of deterioration in brightness

A major possible cause of deterioration in brightness is damage in the fluorescent substance due to impact caused by ions generated at the time of plasma discharges.

### Practical value for Image sticking

The relationship between integrated lighting time and brightness in this plasma module is described in the attached material. In particular, the deterioration in brightness tends to be accelerated up to 100 hours in the initial period. In the initial period, the fixed display of patterns particularly tends to cause image sticking. The practical value for image sticking is difficult in concrete numerals. As described below, you are advised to take proper measures to make the occurrence of image sticking as slow as possible.

### □ Proposed measures taken to relieve image sticking

So long as there is the reduction of brightness in the fluorescent substance, it is impossible to avoid the occurrence of image sticking. Therefore, to relieve image sticking, we offer you a method of entering an image input that may ensure reluctance to the generation of the difference in brightness reduction among the displayed dots.

The images from TV broadcasting involve a high rate of motion picture displays. Therefore, there is less chance of being a cause of difference in brightness reduction among the cells. Even when the fixed patterns are displayed, they generally last for a few minutes. Since the same pattern is less liable to be displayed, there is almost no influence toward image sticking.

If the fixed patterns tend to be displayed for a long time, however, there occurs a substantial imbalance between the lighting and non-lighting areas, thus causing a difference in brightness as a result. In this document, we offer you some proposals of installation, paying attentions to the two points: the reduction of difference in brightness achieved by integrated lighting time leveling and the method of edge smearing to make image sticking hard to be discerned.

The result from these proposals can, however, greatly depend on the contents of images and the operating environment. Therefore, we consider that it is essential to take the suitable measures in consideration of the customer's operating environment.

Example of Proposal 1: The display position is moved while the fixed display pattern is changed over, or it is scrolled during the display.

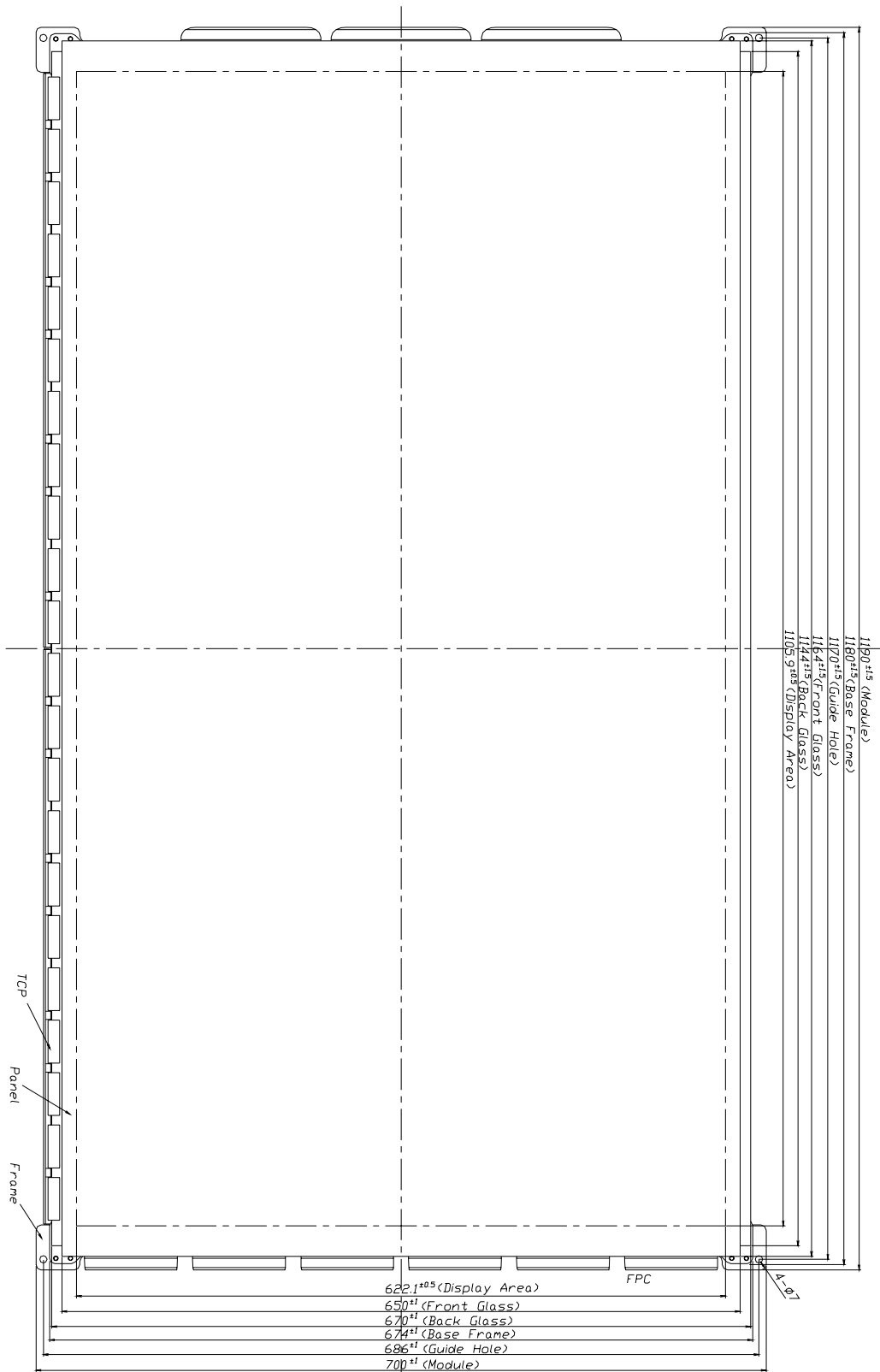
Example of Proposal 2: If possible, a pattern of complementary color is incorporated (for integrated time leveling).

Example of Proposal 3: The fixed pattern and the motion picture display are reciprocally exchanged, in order to minimize display period of the fixed pattern.

Example of Proposal 4: During operation, the brightness of screen is suppressed as low as possible. For the display patterns, characters are indicated not on the black ground (non-picture area) but on the colored ground (mixture of R, G, B recommended).

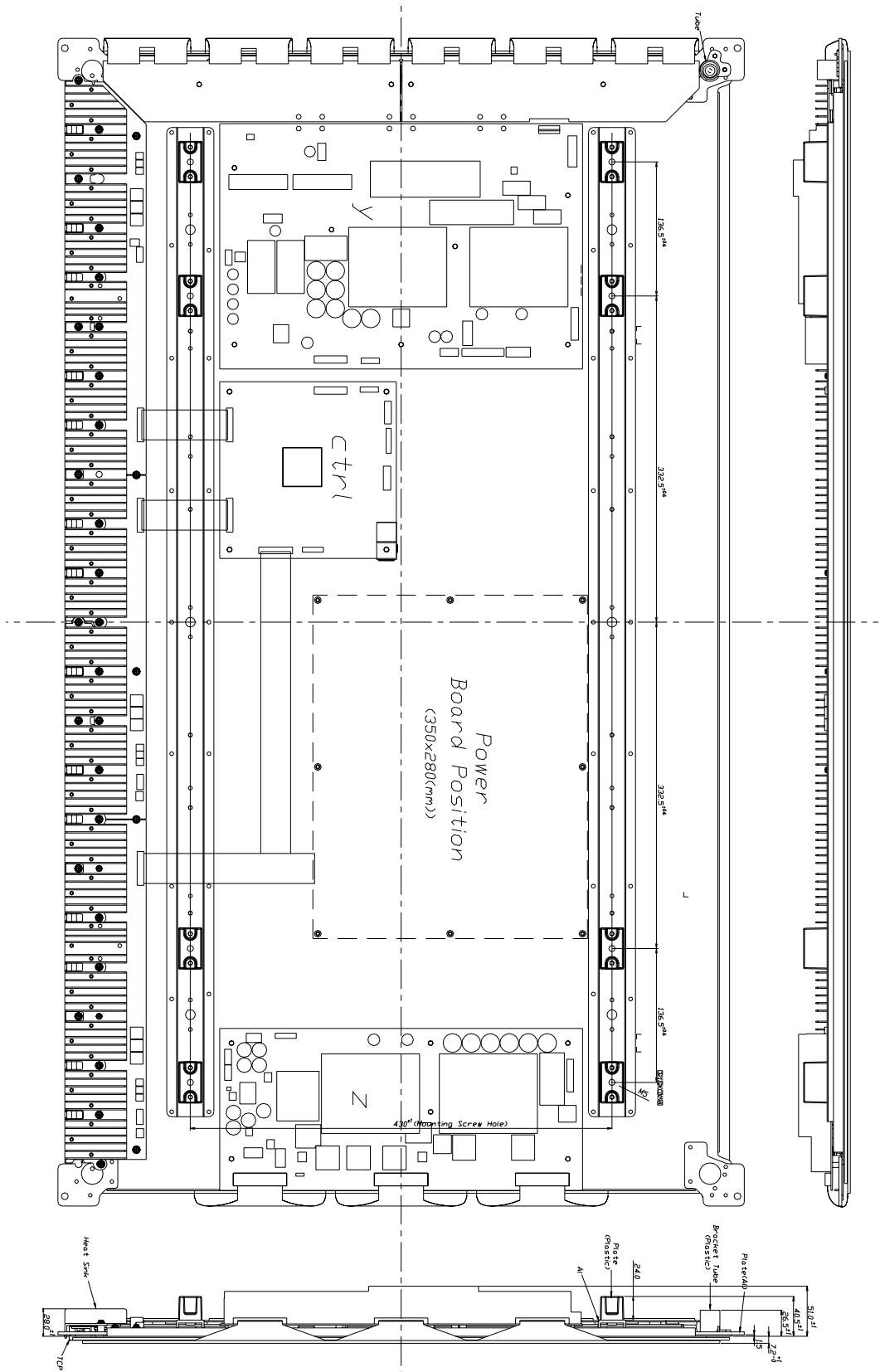
## 6. OUTLINE DRAWING

### □ Front View



# Product Specification of PDP Module

## □ Rear View



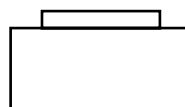
## 7. CONNECTORS and CONNECTIONS

### ❑ Power Input Connector

#### ➤ Connector P25 Pin Assignment ( Y SUS Board )

Pin No.	Symbol
1	GND
2	GND
3	+5V
4	+5V

GP390-4P-TS Pin numbers  
( Top View )

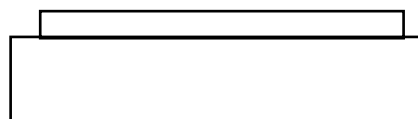


Connector : GP390-4P-TS  
Housing : GP390-4S-CS  
Maker : LG Cable

#### ➤ Connector P26 Pin Assignment ( Y SUS Board )

Pin No.	Symbol	Pin No.	Symbol
1	Vs	6	GND
2	Vs	7	GND
3	Vs	8	GND
4	NC	9	Va
5	GND	10	Va

GP390-10P-TS Pin numbers  
( Top View )



Connector : GP390-10P-TS  
Housing : GP390-10S-CS  
Maker : LG Cable

## Product Specification of 50X3 Unicorn PSU

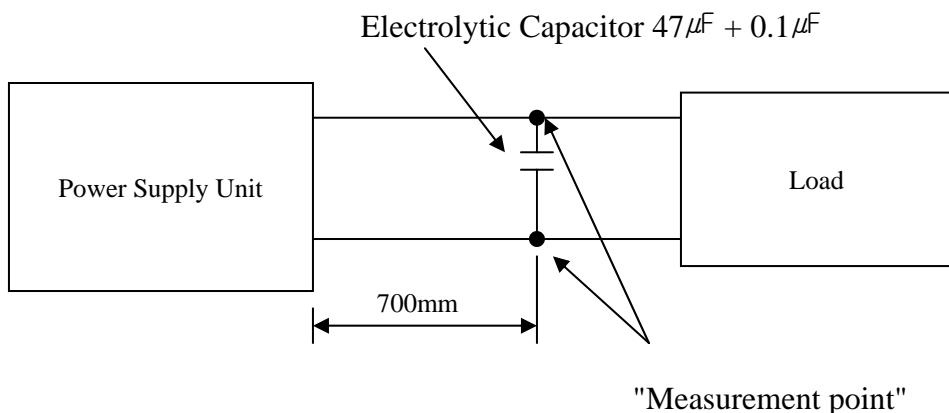
### 4. Output Specification

#### 4.1 Output Voltage & Load Condition

	Output Name	Output Typical (V)	Variable Voltage Range(V)	Voltage Tolerance (%)	Output Current(A)		*2Ripple & Noise (Vp-p)
					Min.	Max.	
Vsc Board (Signal Interface)	5V Stand_by	5.0	-	±5	0.03	1.0	100mVp-p
	5Vsc	5.0	-	±5	0.5	4.5	100mVp-p
	9Vsc	9	-	±5	0	2.0	100mVp-p
	12Vsc	12	-	±5	0	1.0	200mVp-p
	12Vfan	12	-	±5	0	0.6	200mVp-p
	Vaudio (selectable)	24 30	- -	±12 ±12	0 0	1.75 1.4	500mVp-p 500mVp-p
*1PDP Module	5Vctrl	5.0	-	±5	2.0	5.0	300mVp-p
	Va	60	55~61	±1	0.005	2.4	300mVp-p
	Vs	195	180~200	±1	0.1	2.2	500mVp-p

**\*1. PDP Module Maximum Power are below 500W at all pattern of full white gray scale.**

**\*2. Ripple & Noise measurement method**



## Product Specification of 50X3 Unicorn PSU

### 4.2 Output protection

Output Name	Output Typical(V)	*1Over Current Protection(A)	Over Voltage Protection(V)	Short circuit protection
5V stand_by	5.0	Short Protection		No hardware failure
5Vctrl	5.0	13.0 ~ 26.0	5.3~7.0	
5Vsc	5.0			
9Vsc	9	2.2 or more	11~15	
12Vsc	12	1.76 or more	13~17	
12Vfan	12			
Vaudio	24	3.0 or more	26 ~ 35	
	30	2.5 or more	38 ~ 50	
Va	60	2.80 ~ 4.60	64 ~ 77	
Vs	195	2.42 ~ 4.25	205 ~ 230	

\*1 The O.C.P point is measured by resistor load when other output load is a maximum.

( The Output voltage must keep normally at moment peak current of PDP.)

The O.C.P point is load current when the output voltage decrease to 0 ( shut down )

No hardware failure and No fire

### 5. Environment condition

#### 5.1 Ambient temperature and humidity

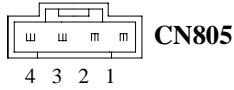
(Under Condition PDP Module + PSU)

Storage temperature	-20℃ ~ 60℃
Operation temperature	0℃ ~ 40℃
Storage humidity	10% ~ 85%
Operation humidity	20% ~ 80%

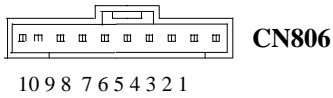
#### 5.2 MTBF(Mean Time Between Failures)

: 50,000hours or more

### 8. Input/Output pin assignment & specification



#1 ~#2 : GND  
#3 ~ #4 : 5Vctrl



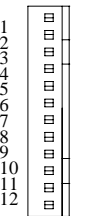
#1 : Vs  
#2 : Vs  
#3 : Vs  
#4 : NC  
#5 : GND  
#6 : GND  
#7 : GND  
#8 : GND  
#9 : Va  
#10 : Va

CN804



#1 : 9Vsc  
#2 : 9Vsc  
#3 : GND  
#4 : 5Vsc  
#5 : 5Vsc  
#6 : 5Vsc  
#7 : GND  
#8 : GND  
#9 : GND

CN803



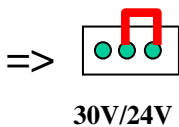
#1 ~ #3 : 5Vsc  
#4 ~ #6 : GND  
#7, #8 : 12Vsc  
#9, #10 : GND  
#11 : 12Vfan  
#12 : 12Vfan.GND

CN809



#1 : 9Vsc  
#2 : GND

Selection Wire



CN802



#1, #2 : 30V or 24V  
#3, #4 : GND

CN801



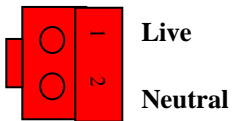
#1 : ACD  
#2 : RLY ON  
#3 : 5Vst\_by  
#4 : GND  
#5 : Vs ON  
#6 : 5VD  
#7 : NC

Location No.	Specification	Vendor
CN01	3-176976-2(Red)	AMP
CN801	171825-7	AMP
CN802	171825-4	AMP
CN803	1-171825-2	AMP
CN804	171825-9	AMP
CN805	GP390-04P-TS	LG Cable
CN806	GP390-10P-TS	LG Cable
CN809	171825-2	AMP

\* PSU operation method S/W

Normal : On/Off with Vsc B/D

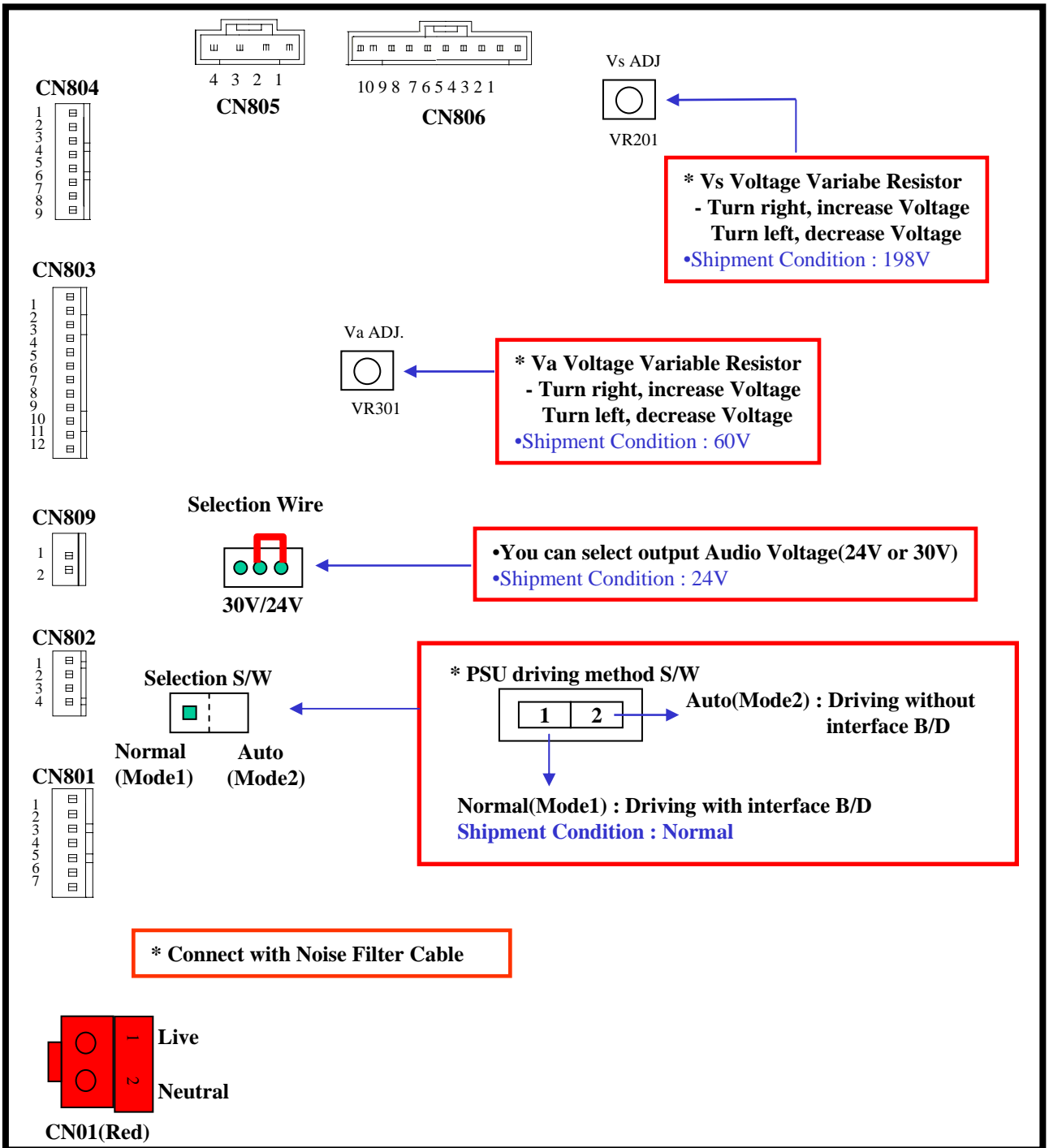
Auto : Automatic On/Off without Vsc B/D



CN01(Red)



## 9. Adjustment detail



※ The color of CN01 is red.

※ Caution : If Va, Vs Voltage is adjusted Max. PSU is able to shut down by OVP

# Spare Part List

PDP5073TM

Item	Part Number	Part Description	Usage / unit	Unit	Key/Spare
	PDP501DMIA1LS-A01	AKAI PDP50"(PDP5073TM) MT8202/LGX3 (1366X768) 120V/60HZ USA MONITOR BLACK			
1>	510-501D01-SMU01K	CARTON BOX AKAI ENG PDP5073TM (S-MT8202) LGX3 PANEL USA K	1.000000	Piece	K
2>	518-501D01-01K	BOTTOM BOX 1356(L)X346(W)	1.000000	Piece	K
3>	580-P501DHS-MU01L	IB E FOR AKAI PDP5073TM LGX3 S-MT8202 USA	1.000000	Piece	K
4>	E7501-056001	REMOTE CONTROL K001 "AKAI" 34KEYS MT8202 PDP MONITOR USA BLACK	1.000000	SET	K
5>	771E501D01-01	MAIN PCB ASSY S-MT8202 (LG50X3) (MONITOR) USA	1.000000	SET	K
6>	205-50SD01-01RV	SPEAKER FRONT CABINET 501D(W/WINDOW) RV SILVER	1.000000	Piece	S
7>	206-50SD01-01RV	SPEAKER BACK CABINET BLACK	1.000000	Piece	S
8>	244-34B811-01	GIFT BOX HANDLE 34B8	2.000000	Piece	S
9>	248-46D201-01	HANDLE FOR PLASMA BLACK	4.000000	Piece	S
10>	269-42SD01-01L	REMOTE RECEIVE LENS	1.000000	Piece	S
11>	277-46SD01-01S	FUNCTION KNOB 42SD S BLK	1.000000	Piece	S
12>	300-42SD05-01C	POLYFOAM SHEET 421D	2.000000	Piece	S
13>	310-041104-01V	POLYBAG 4"X11"X0.04 AV	1.000000	Piece	S
14>	310-111404-07V	POLYBAG 11"X14"X0.04 FV	1.000000	Piece	S
15>	310-635005-02T	POLYBAG 63"X50"X0.5 THKX0.04MM W/WARNING& RELYCLE MARK&HOLE	1.000000	Piece	S
16>	326-001010-20	CUSHION 10X10X2.0MM W/ADHESIVE	1.000000	Piece	S
17>	329-002510-50	SPONGE 25X10X5.0MM W/ADHESIVE	2.000000	Piece	S
18>	329-006010-50	SPONGE 60X10X5.0MM W/ADHESIVE	1.000000	Piece	S
19>	329-008410-50	SPONGE 84X10X5.0MM W/ADHESIVE	4.000000	Piece	S
20>	329-010010-50	SPONGE 100X10X5.0MM W/ADHESIVE	2.000000	Piece	S
21>	329-064510-50	SPONGE 645X10X5.0MM W/ADHESIVE	2.000000	Piece	S

# Spare Part List

PDP5073TM

22>	329-115010-50	SPONGE 1150X10X5.0MM W/ADHESIVE	2.000000	Piece	S
23>	329-P46T01-01	SPK ABSORB SPONGE 450X100X20MM	4.000000	Piece	S
24>	329-SP0101-01	ABSORB SPONGE 100X100X20MM	3.000000	Piece	S
25>	370-42D102-01	PAD CORD SPONG FOR SPK	1.000000	Piece	S
26>	384-42AG01-02AH	PVC SHEET FOR TERMINAL PDP5073TM(S-MT8202G) USA H	1.000000	Piece	S
27>	388-421D02-01H	INFRARED PLATE 421D H	1.000000	Piece	S
28>	388-421D03-01H	SPEAKER PLATE 421D H	1.000000	Piece	S
29>	388-42D103-01H	CAUTION PLATE ENG 42D1 H	1.000000	Piece	S
30>	388-42SB04-01H	POWER PLATE SANSUI 42SB H	1.000000	Piece	S
31>	388-42SD01-01	PC SHEET FOR KEY PCB	1.000000	Piece	S
32>	400-501D03-SMK01	FRONT CABINET (AL) LGX3 PANEL 501D (S-MT8202) W/O WINDOW AKAI BLACK	1.000000	Piece	S
33>	402-50AA03-01S	BACK COVER 501D BLACK	1.000000	Piece	S
34>	422-42SD05-01	SPEAKER BRACKET LEFT	1.000000	Piece	S
35>	422-42SD06-01	SPEAKER BRACKET RIGHT	1.000000	Piece	S
36>	422-42SD11-01	SPEAKER BRACKET	2.000000	Piece	S
37>	429-50AD0C-01S	POWER JACK BKT	1.000000	Piece	S
38>	436-50AA0B-01S	TERMINAL SHEET FOR MTK 8202 MINITOR (5073TM) W S-PCB HOLE	1.000000	Piece	S
39>	481-42AA03-01S	SHIELD BOX MTK8202 42AA	1.000000	Piece	S
40>	483-50AA01-01	SHIELD BOX COVER 50AA	1.000000	Piece	S
41>	486-50AD01-01	NAME PLATE AKAI SIL/BLACK 50AD	1.000000	Piece	S
42>	512-501D01-01	SHEET 1380X1315X3.0MM	.640000	Piece	S
43>	512-501D02-01	SHEET 1380X945X3.0MM	.040000	Piece	S
44>	521-030091-01	FELT PAPER 30X9X1.0MM W/ADHESIVE	1.000000	Piece	S
45>	522-421D01-01	MASKING PAPER	1.000000	Piece	S
46>	530-095045-10	FIBBER WASHER 9.5X4.5X1.0 W/ADHESIVE	8.000000	Piece	S

# Spare Part List

PDP5073TM

47>	530-150032-10	FIBER WASHER 15X3.2X1.0MM	1.000000	Piece	S
48>	553-002009-40A	SHIELD GASKET 20X9X4.0MM W/CONDUCTIVE ADHESIVE KI JD-60	2.000000	Piece	S
49>	553-002509-40A	EMI SHIELD GASKET 25X9X4.0MM W/CONDUCTIVE ADHESIVE	4.000000	Piece	S
50>	553-010509-10A	SHIELD GASKET 105X9X1.0MM W/CONDUCTIVE ADHESIVE	1.000000	Piece	S
51>	553-013509-10A	SHIELD GASKET 135X9X1.0MM	2.000000	Piece	S
52>	553-015009-40A	EMI SHIELD GASKET 150X9X4.0MM W/CONDUCTIVE ADHESIVE	8.000000	Piece	S
53>	553-017009-40A	EMI SHIELD GASKET 170X9X4.0MM W/CONDUCTIVE ADHESIVE	2.000000	Piece	S
54>	553-018509-40A	EMI SHIELD GASKET 185X9X4.0MM W/CONDUCTIVE ADHESIVE	4.000000	Piece	S
55>	553-020009-40A	SHIELD GASKET 200X9X4.0MM W/CONDUCTIVE ADHESIVE KI JD-60	2.000000	Piece	S
56>	553-039509-25A	SHIELD GASKET 395X9X2.5MM W/CONDUCTIVE ADHESIVE	1.000000	Piece	S
57>	553-056007-10A	SHIELD GASKET 560X7X1.0MM W/CONDUCTIVE ADHESIVE	1.000000	Piece	S
58>	553-067009-40A	EMI SHIELD GASKET 670X9X4.0MM W/CONDUCTIVE ADHESIVE	2.000000	Piece	S
59>	553-114009-40A	EMI SHIELD GASKET 1140X9X4.0MM W/CONDUCTIVE ADHESIVE	2.000000	Piece	S
60>	554-090030-01	SHIELD CLOTH 90X30MM W/CONDUCTIVE ADHESIVE	1.000000	Piece	S
61>	563-119-	SERIAL NO. LABEL	1.000000	Piece	S
62>	568-P46T02-02	WARNING LB ENG 42SF NIL	1.000000	Piece	S
63>	579-42D103-02	ON/OFF LB ENG 42D1 NIL	1.000000	Piece	S
64>	579-42D105-01	PROTECTIVE EARTH LABEL FOR ESA 42TD1	1.000000	Piece	S
65>	579-50AD02-01	SERIAL NO/BAR CODE LABEL 50HA (USA)	1.000000	Piece	S
66>	590-501D01-01	WARRANTY CARD AKAI ENG PDP5073TM USA	1.000000	Piece	S
67>	593-421D01-09APA	AKAI INSERTION CARD ENG FOR PDP4235M&PDP4225M &PDP5073TM (S-MT8202) USA P(QIAN SE)	1.000000	Piece	S
68>	734-BM1401-01	SECC STAND BASE 501D(COST DOWN) W/O PACKING SILVER	1.000000	SET	S
69>	900-500201-01A	DISPLAY FILTER 50" SSC FOR LG/SDI 1155X671X3.1 (S3-COATING TYPE)	1.000000	Piece	S
70>	E3301-028005	TERMINAL PUSH WP4-15B	1.000000	Piece	S

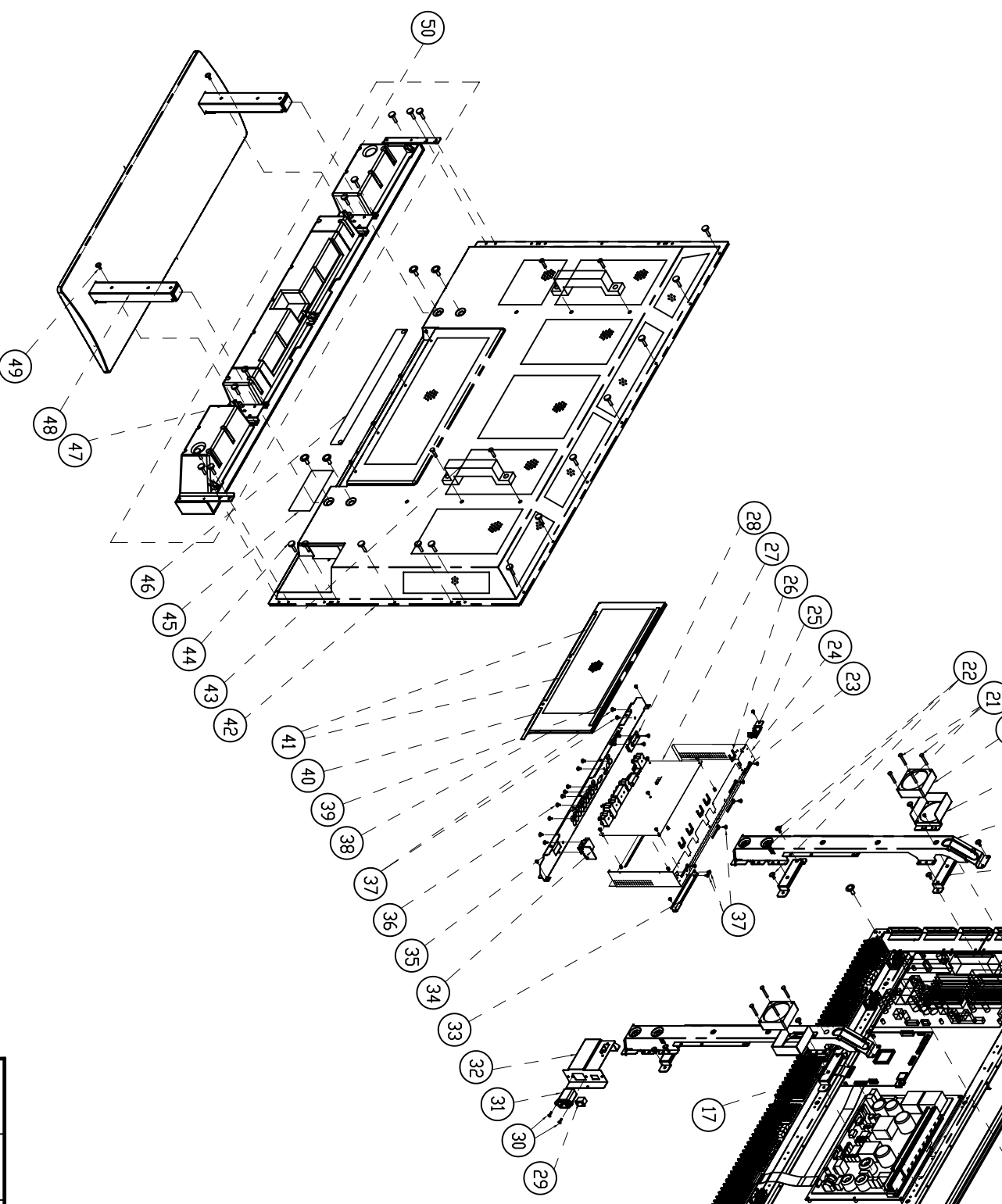
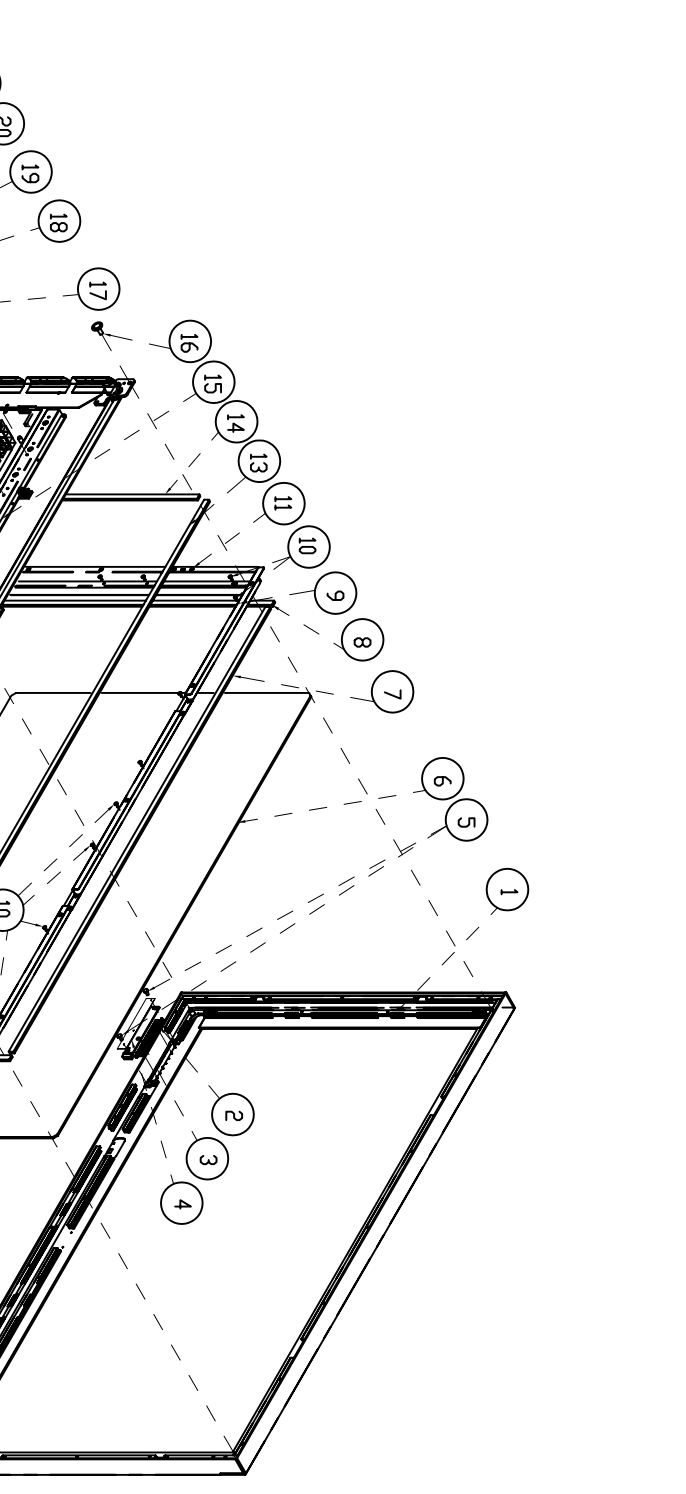
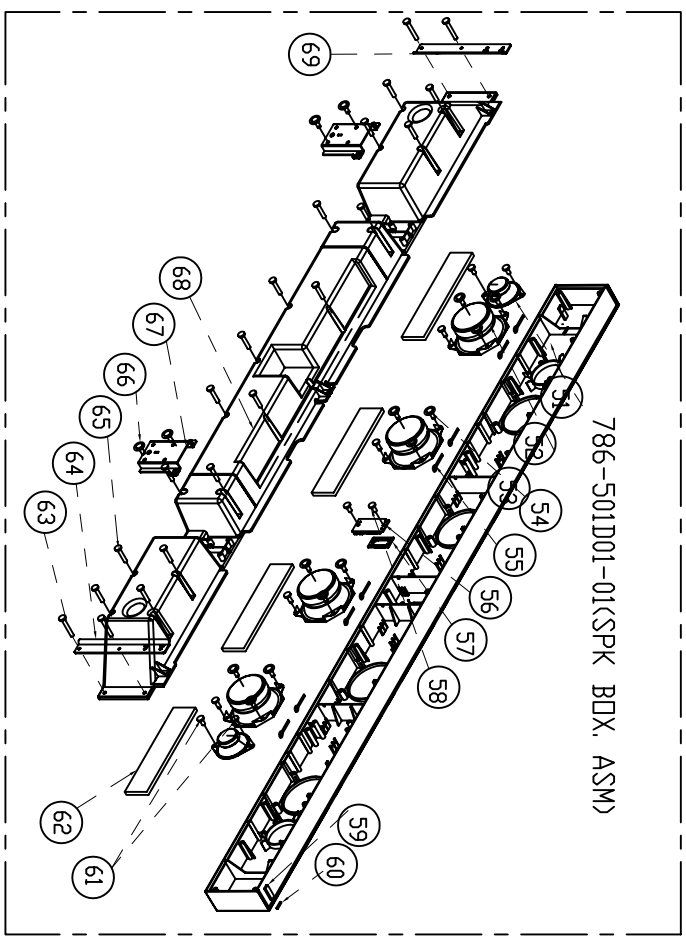
# Spare Part List

PDP5073TM

71>	E3404-157004	AC CORD UL 1.88M (YY-3/ST3 YUNBIAO)	1.000000	Piece	S
72>	E3421-924026	WIRE ASSY 2P L=300 R/B FOR SPK (L/R)	2.000000	Piece	S
73>	E3421-924028	WIRE ASSY 2P L=110 R/B FOR SPK	2.000000	Piece	S
74>	E3421-926105	WIRE ASSY 4P/5P 2.0MM L=300MM S-VIDEO (FOR FHP)	1.000000	Piece	S
75>	E3421-927001	WIRE ASSY AMP/AMP-2Y/530 (FROM SWITCH POW)	1.000000	Piece	S
76>	E3461-000099	CABLE SPK CONVERT 2P L=600 W/B SPK-L	1.000000	Piece	S
77>	E3461-000100	CABLE SPK CONVERT 2P L=600 R/B SPK -R	1.000000	Piece	S
78>	E3471-004003	WIRE ASSY KEY 13P/8P+6P P2.0 L=650/240 FOR 50LGX3 MT8202 W/EMI	1.000000	Piece	S
79>	E4101-027001	SWITCH POW MR-22-N2BB-F2 ROCKET	1.000000	Piece	S
80>	E4801-125001	SPEAKER 16 OHM 10W D3" YD78-2	4.000000	Piece	S
81>	E4802-015001	TWEETER 6 OHM 10W D2" YDG52-2	2.000000	Piece	S
82>	E6205-50LD01	DISPLAY PDP 50" LG-X3 (XGA) (127CM)	1.000000	Piece	S
83>	E7301-010002	BATTERY AAA R03P1.5V <2>	2.000000	Piece	S
84>	775-501D01-01	ELECT NON COMMON ASSY MT8202 LG50X3	1.000000	SET	S

NOTE : THIS RELEASED DRAWING WAS PRODUCED BY COMPUTER, DO NOT UPDATE MASTER MANUALLY

786-501D01-01(SPK BDX. ASM)



ITEM	PART NO.	DESCRIPTION	QTY	REMARK	ITEM	PART NO.	DESCRIPTION	QTY	REMARK
69	422-423005-01	SPRINGER BRACKET LEFT	1		50	786-501D01-01	SPK JACK PCB ASSY 4PIN	1	ASM
68	206-500501-01R	SPRINGER BRACKET BLACK	2		49	60D-407010-00	MACH SCREW V/SRING WASHER M4 BLACK	2	ASM
67	422-423011-01	TAPPING SCREW B-TYPE TRUSS AXI2 B ZNP	4		48	734-BM401-01	SECC STYMO BASE SUBCOSTR DOWEL V/O PACKING SILVER	1	
66	623-401812-00	TAPPING SCREW	16		47	649-501D01-01	SPK JACK PCB ASSY 4PIN	1	
65	614-300216-00	TAPPING SCREW	16		46	649-501D01-01	SPK JACK PCB ASSY 4PIN	1	
64	422-423006-01	SPRINGER BRACKET RIGHT	1		45	384-42A601-02AH1	SPVC SHEET FOR TERMINAL PDP50731M	1	
63	614-300220-00	TAPPING SCREW	4		44	387-501D01-SW10H	MODEL PLATE AKAI ENG. PDP50731M	1	
62	329-P46101-00	SPK ASSORBD SPRINGE 450X100X20MM	4		43	623-401812-00	TAPPING SCREW B-TYPE TRUSS AXI2 B ZNP HI	25	
61	614-300120-00	SELF TAPPING SCREW B T BINDING M8X2.0	4		42	248-46D201-01	HANDLE FIBR PLASMA BLACK	1	
60	379-42101-01	RUBBER BAG FIBR 4210 SPEAKER	2		41	402-50AA03-01S	BACK COVER SOLID BLACK	1	
59	329-002510-50	SPRINGER BRACKET W/ADHESIVE	2		40	553-013509-10A	SHIELD GASKET 105X92X1.0MM V/CONDUCTIVE ADHESIVE	1	
58	614-300107-00	SELF TAPPING SCREW BINDING HEAD 3MMX7.5	4		39	553-039509-25A	SHIELD GASKET 395X92X2.5MM V/CONDUCTIVE ADHESIVE	1	
57	623-423001-01L	REARITE RECEIVE LENS	1		38	483-50AA01-01	SHIELD BOX COVER	18	
56	771F501D01-01	CLAMP B-TYPE L-4MM	8		37	602-305004-10	MACH SCREW PAN-WASHER M3X4	1	
55	457-422101-01	TAPPING SCREW B-TYPE TRUSS AXI2	4		36	614-300210	S-TAP SCREW BID 3X10 A NIP HI	9	
54	623-401808-00	TAPPING SCREW B-TYPE TRUSS AXI2	16		35	436-50AA03-01S	ISOMAL SHEET FOR HIK BERR NUMBER CONTROL V S-PCB HOLE	1	
53	E4801-125001	SPRINGER B-TYPE TRUSS AXI2	4		34	771J421D01-01	SPK JACK PCB ASSY 4PIN	1	
52	E4802-015001	SPRINGER B-TYPE TRUSS AXI2	2		33	367-422101-01	EDGE SADDLE 14MM	5	
51	206-500501-01R	SPRINGER FRONT CABINET FOR OVERBOARD SILVER	1		32	429-50A10C-01S	POWVER BRKT	1	
					31	E4405-035001	AC LINE FILTER	1	
					30	601-305008-10	MACH SCREW V 3X8	1	
					29	E4101-027001	POWER SWITCH	2	
					28	771F501D01-01	CONNECTOR FOR ASSY FIBR S-TYMO CONVERT	1	
					27	771F501D01-01	MAIN PCB ASSY S-MTRDRE G50X20 CONDUCTOR USA	1	
					26	367-422101-01	EDGE SADDLE 14MM	5	
					25	429-50AA03-01S	BKT B FOR SHIELD BOX 50AA	1	
					24	481-42AA03-01S	SHIELD BOX MTK8202 42AA	1	
					23	457-422101-01	CLAMP ID=4.3MM L=46MM	5	
					22	60D-407010-10	MACH SCREW V/SP WASHER 4X10	8	
					21	602-305003-00	MACH SCREW PAN WASHER M3X2.5MM BLK PLATED	8	
					20	4E3901-002003	FAN 70X70X20MM L=600MM DC12V 1500RPM	2	
					19	429-50AA14-01S	FAN BRACKET	2	
					18	420-50AA02-01S	MAIN BRACKET FOR 50T LOG3	2	
					17	429-50AA01-01S	CONNECT BRACKET H=15MM	4	
					16	60D-50B012-40	V/SRING WASHER M3X0.8X2MM WHITE ZINCP	4	
					15	E4205-5011001	DISPLAY PIP 50T L=5X3 (CIG) (127C/D)	1	
					14	326-064510-50	SPRINGER CUSHION 645X105X5MM V/ADHESIVE	1	
					13	326-115010-50	SPRINGER CUSHION 115X105X5MM V/ADHESIVE	2	
					12	423-50AA05-01S	GLASS FILTER SUPPORT BOTTOM SOLID	2	
					11	423-50AA04-01S	GLASS FILTER SUPPORT L/R SOLID	2	
					10	629-501D01-01	TAP SCREW B-TYPE BINDING 3.0X6.0 W/ANCH SPECIAL	20	
					9	423-50AA01-01S	GLASS FILTER SUPPORT TOP	1	
					8	553-067209-40A	670X94X1MM V/CONDUCTIVE ADHESIVE	2	
					7	553-114009-40A	1140X94X1MM V/CONDUCTIVE ADHESIVE	2	
					6	900-50D201-01A	DISP/AN FILTER 50T SSC FOR LV/SII 15367VX31	1	
					5	604-305008-10	MACH SCREW BID 3X8	2	
					4	388-42S101-01	PC SHEET FOR KEY PCB	1	
					3	771K501D01-01	KEY PCB ASSY	1	
					2	269-422101-01L	PCB KEY 16MM FOR PDP42SD	1	
					1	400-50D003-SMK01	FRONT CABINET	1	

DRAWN		TOLERANCE UNLESS OTHERWISE SPECIFIED	KAWA	ELECTRONIC R & D CENTRE	TITLE	EXPLODE VIEW
CHECKED		0 - 30 ± 0.10			MODEL NO.	501D
APPRD.		30-100 ± 0.20			PART NO.	
3RD ANGLE PROJECTION		>100 ± 0.30			EXP-501D01-XX	
		ANGULAR ± 0.3°			DWG. NO.	
		UNIT : MM			SCALE	NIL
					QTY	
					SHEET	DF

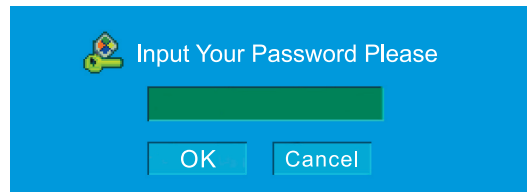
DWG/Rev.	ZONE	DESCRIPTION	DATE	REVISOR

# If you forget your V-Chip Password

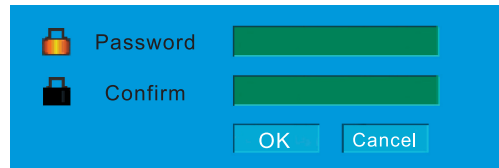
- Omnipotence V-Chip Password: 8202.

Using the “Change Password” item

- ❶ When enter the “V-Chip” menu, select “Change Password”.
- ❷ Press ▲ or ▼ button to highlight the “Change Password” item.
- ❸ Press **Enter** button to confirm and pop up a menu.



- ❹ Use 0~9 buttons input the omnipotence password(8202), then Press **Enter** button to enter and pop up a menu.



- ❺ Use 0~9 buttons input your new password.
- ❻ Press ▼ button to move to confirm blank.
- ❼ Use 0~9 buttons input your new password again.
- ❽ Press **Enter** button to confirm

-Suggest: Change to your familiar Password again.

# Software Upgrade

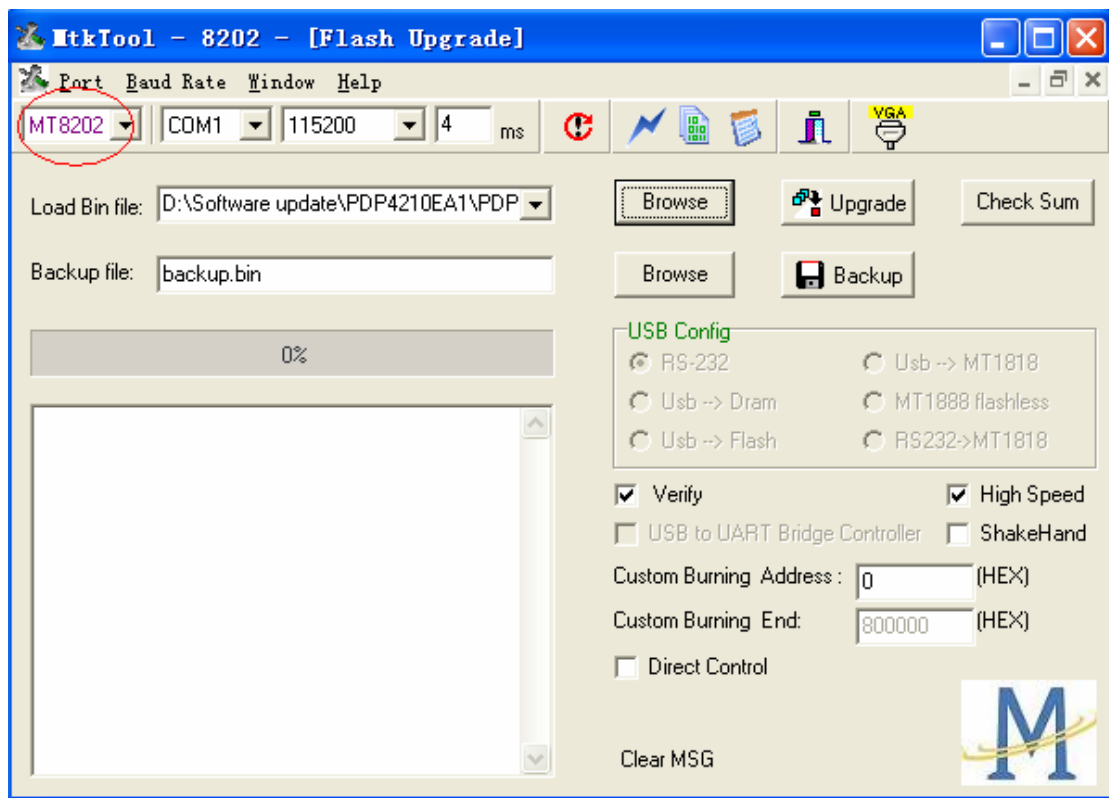
## Process of update MT8202

### Preparing :

1. Connect **RS232-VGA download line**, One connector is connected to **VGA connect port of Plasma TV** ,while another side is connected to PC COM port.
2. Store the MtkTool into the PC .

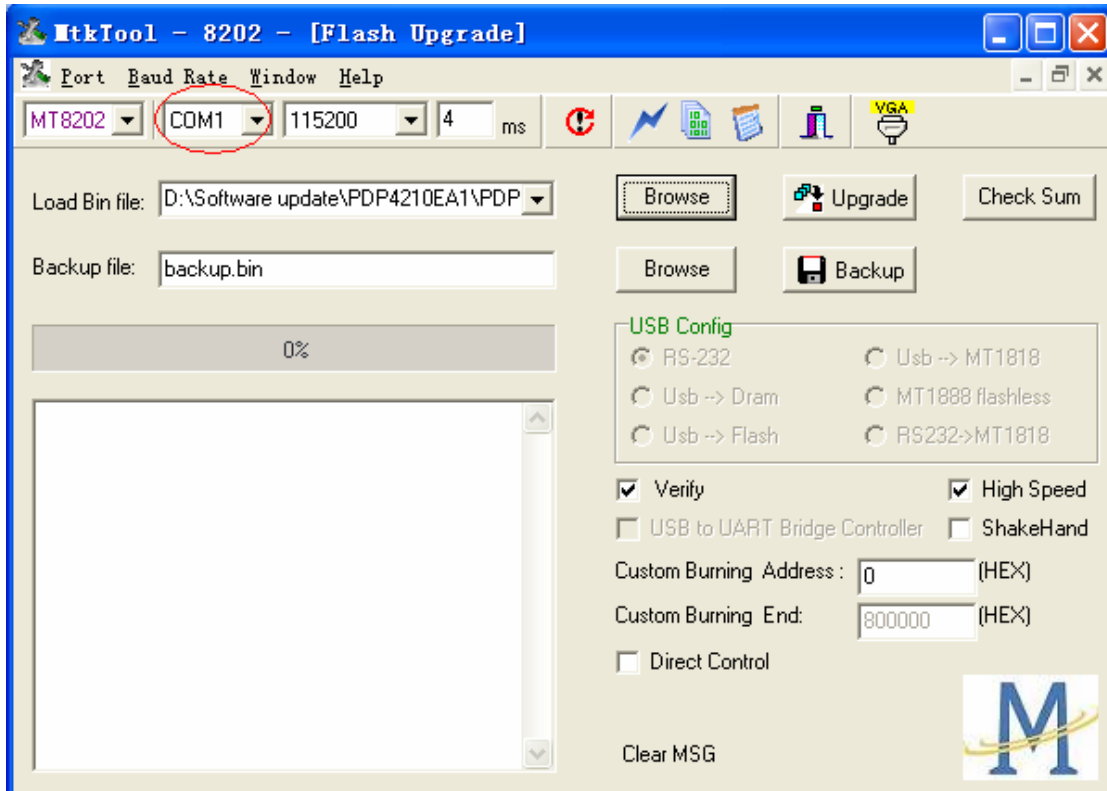
### Downloading :

3. Turn on AC power switch of the Plasma TV and then press the button “standby” of the remote control . The image could be found on the screen of the Plasma TV while the color of the power indicator is green . (the mode of the Plasma TV will be standby mode if after turn on the main power switch only .)
4. Execute MTKtool and select the chipset as MT8202. (the software of MTKtool will be sent to your side)

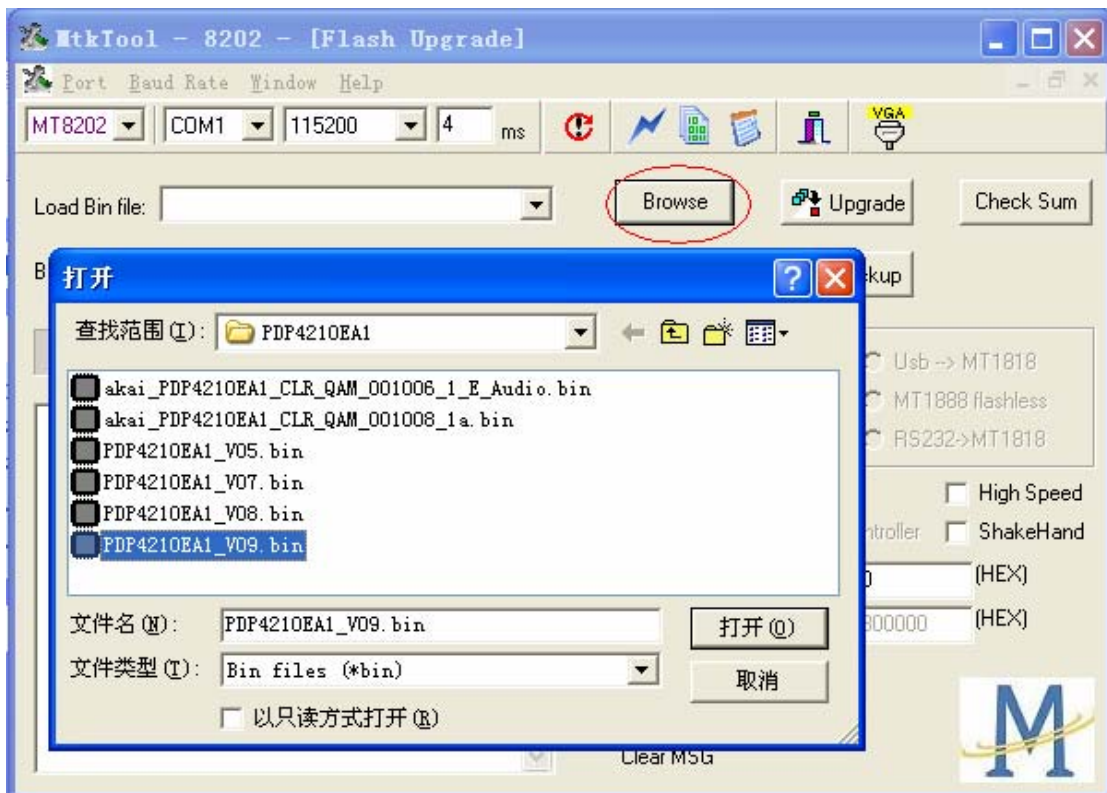


5. Select current COM port. (please try to check the COM port of your PC).

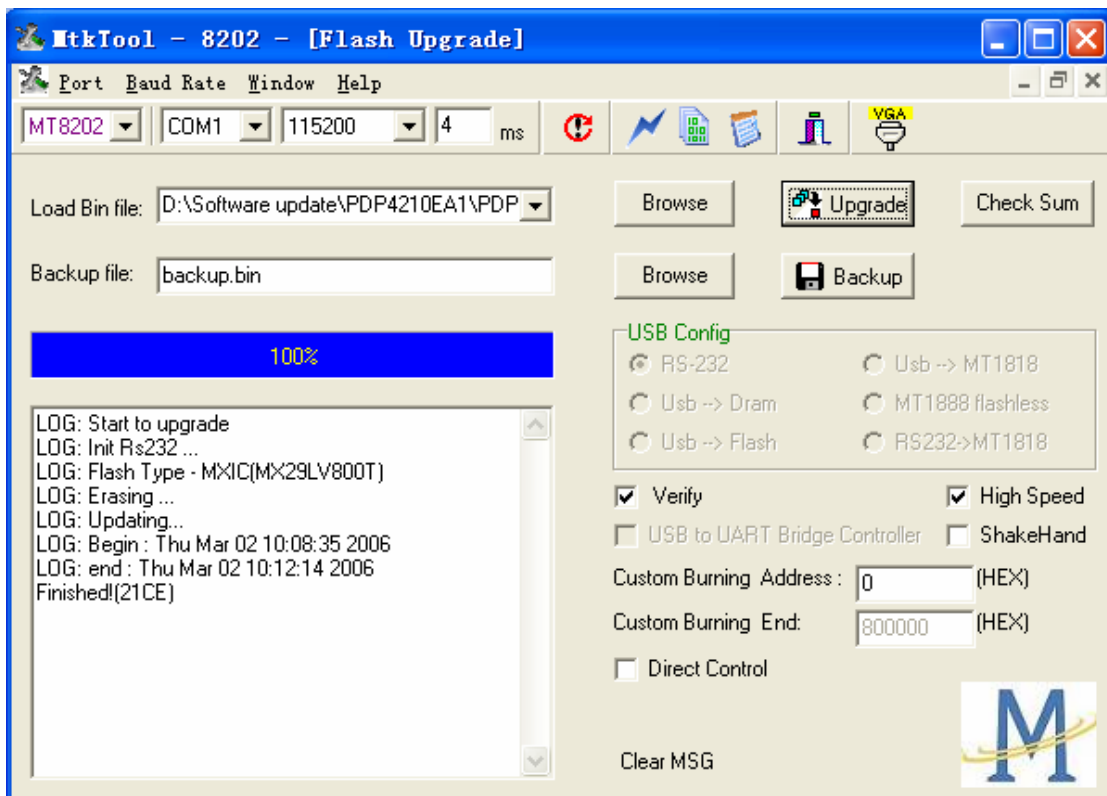
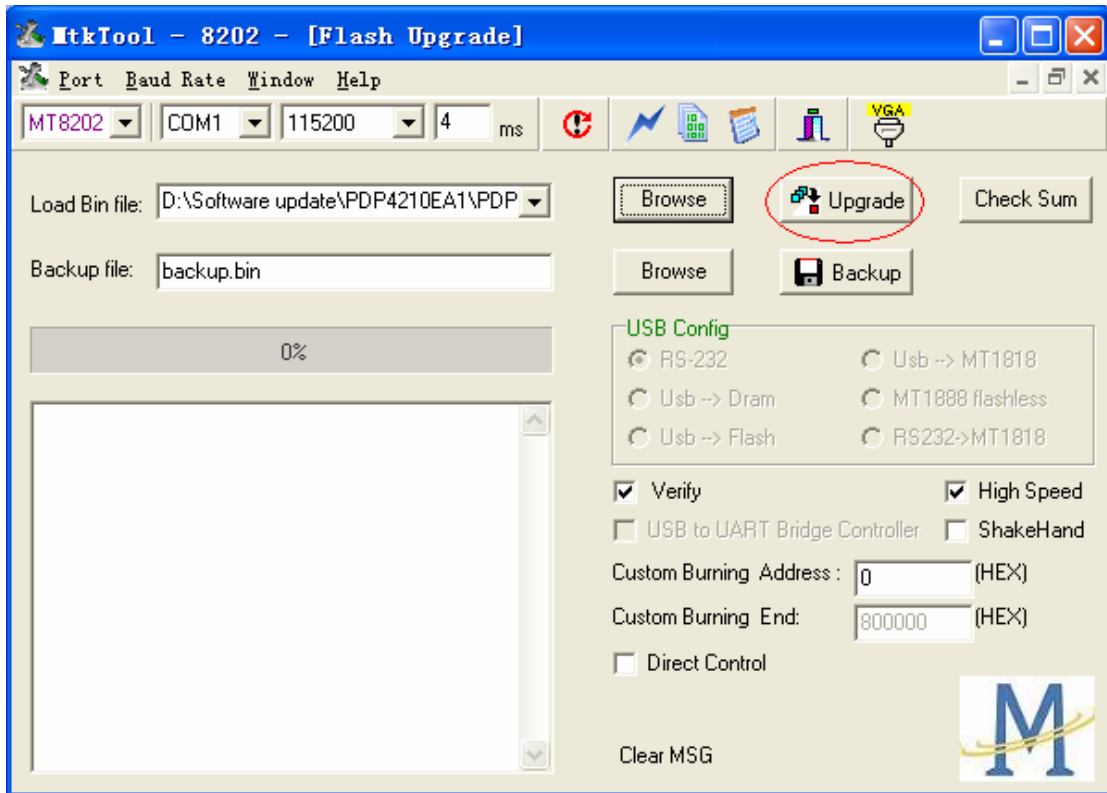




6. Choose the bit rate as 115200.
7. Select the update binary by pressing browse button. For example, the binary file name is PDP5073TM\_V09.bin. (this update firmware will be sent to your side)



8. Press Upgrade button and start update process.



9. The update process is successful as the progress bar is 100%. After the update process is ok,

turn off power and wait indicator light is off. Turn on power and TV can work.

## Checking

It is needed to check the version of the firmware for MT8202 which has been download into the Plasma TV .

Press Menu button of the remote control, following input “8202” of the remote control and OSD menu for Factory Setting is appeared on the screen .

Use the remote control and select the mode of Firmware Version and then enter the mode of Firmware Version . It is easy to be found the version of the current firmware for MT8202 is as the following : “Factory ID : PDP5073TM\_VXX ”

