

acer



Acer AT2010 Service Guide

Service Guide Version and Revision

No.	Version	Release Date	Revision
1	A00	Mar-24-2006	Original release

Copyright

Copyright 2003 Acer Technology Corp.

All rights reserved.

This manual may not, in whole or in part, be copied, photocopied, reproduced, translated, or converted to any electronic machine readable form without prior written permission of Acer Technology Corp.

ACER AT2010 Service Manual.

Printed in Fujian.

Disclaimer

The information in this guide is subject to change without notice. Acer Incorporated makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties of merchantability or fitness for any particular purpose. Any Acer Incorporated software described in this manual is sold or licensed "as is". Should the programs prove defective following their purchase, the buyer (and not Acer Incorporated, its distributor, or its dealer) assumes the entire cost of all necessary servicing, repair, and any incidental or consequential damages resulting from any defect in the software.

Acer is a registered trademark of Acer Corporation.

Intel is a registered trademark of Intel Corporation.

Pentium and Pentium II/III are trademarks of Intel Corporation.

Other brand and product names are trademarks and/or registered trademarks of their respective holders.

Trademarks

All other trademarks are property of their respective owners.

Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Remind you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Warning: (For FCC Certified Models)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibility of the user to correct such interference.

As ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Warning:

To prevent fire or shock hazard, do not expose the monitor to rain or moisture. Dangerous high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

Precautions

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.

Special Notes On LCD TV Monitors

The following symptoms are normal with LCD TV monitor and do not indicate a problem.

Notes

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD TV screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD TV screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

Table Of Contents

Chapter 1	Monitor Features	.....	7
	General Specifications	.....	7
	LCD TV Description	.....	8
	Precautions And Notices	.....	9
	D-SUB PIN Distribution	.....	10
	Factory Preset Display Modes	.....	11
	LCD TV Panel Specification	.....	12
	Panel Features	.....	12
	General Specifications	.....	12
	Mechanical Specifications	.....	12
	Optical Specifications	.....	13
Chapter 2	Connecting Peripherals	.....	14
	Front Panel Controls	.....	14
Chapter 3	Remote Control & OSD Operating Instructions	.....	15
	Using The Remote Control	.....	15
	Using The OSD Menus	.....	17
	LOGO	.....	24
Chapter 4	Machine Disassembly	.....	25
Chapter 5	Trouble Shooting	.....	33
Chapter 6	White-Balance, Luminance Adjustment	.....	37
Chapter 7	FRU (Field Replaceable Unit) List	.....	40
	Exploded Diagram	.....	41
	EDID Data	.....	42
Chapter 8	PCB Layout	.....	43
Chapter 9	Schematic Diagram	.....	47

General Specifications

Model	AT2010
Panel spec	
Resolution (pixels)	1366 x 768
Brightness (tpe.)	500 cd / m2
Contrast Ratio (tpe.)	800:1
Display colour	16.2 M
Viewing angle (tpe.)	H: 176° ; V:176°
Response (tpe.)	16 ms (gray to gray)
Power supply	
Input	100 V ~ 240 V - AC, (50 / 60 Hz)
Max. power consumption	< 90 W
Power saving	5 W
Mechanical	
Dimensions (W x H x D mm)	
Weight (Kg)	9
Weight (lbs)	19.3
Wall Mounting	Yes
Analog TV system	
TV Colour system	PAL, SECAM, NTSC
Sound system	B / G / D / K / I / L (multi-European)
Stereo system	NICAM / A2
TV Tuner System	PLL, 45.25 Mhz - 862.25 Mhz
Subtitles	Teletext 1.5
Analog TV-tuner quantity	1
Terminal	
Analog Tuner In	Yes
SCART1	CVBS (In / Out), RGB (In), Audio R / L
SCART2 (*)	CVBS (In / Out), S-Video (In), Audio R / L
Component (**)	YPbPr, YCbCr, CVBS, AudioR/L
AV	CVBS , Audio R / L
S-Video	S-Video, audio R / L share with AV
HDMI in (**)	Yes
PC D-sub in	Yes
PC audio-in	Yes
Audio system	
Speaker	3 W + 3 W

LCD TV Description

The LCD TV will contain a main board (include audio), an I/O board, a switching power board, a function keyboard (include an IR Board) and an Ear phone board. The main board and power board will house the flat panel to control logic I2C bus, DDC, brightness control logic for LCD panel, DC-DC conversion to supply the appropriate power to the whole board and transmitting TTL level signals into LCD Module to drive the LCD display circuit.

The inverter board will drive the five CCFLs (Cold Cathode Fluorescent Lamp).

The switching power board will provides the power ON/OFF to control the TV and control LED indicator for DPMS.

The function keyboard and Remote Control will provide the OSD control signal to the Main Board.

Precautions And Notices

1-1 Assembly Precaution

- (1) Please do not press or scratch LCD panel surface with anything hard. And do not soil LCD panel surface by touching with bare hands (Polarize film, surface of LCD panel is easy to be flawed)
In the LCD panel, the gap between two glass plates is kept perfectly even to maintain display characteristic and reliability. If this panel is subject to hard pressing, the following occurs :
 - (a) Uniform color
 - (b) Orientation of liquid crystal becomes disorder
- (2) Please wipe out LCD panel surface with absorbent cotton or soft cloth in case of it being soiled.
- (3) Please wipe out drops of adhesive like saliva and water in LCD panel surface immediately.
They might damage to cause panel surface variation and color change.
- (4) Do not apply any strong mechanical shock to the LCD panel.

1-2 Operating Precaution

- (1) Please be sure to unplug the power cord before remove the back-cover. (be sure the power is turn-off)
- (2) Please do not change variable resistance settings in MAIN-BOARD; they are adjusted to the most suitable value. If they are changed, it might happen LUMINANCE does not satisfy the white balance spec.
- (3) Please consider that LCD backlight takes longer time to become stable of radiation characteristic in low temperature than in room temperature.
- (4) Please pay attention to displaying the same pattern for very long-time. Image might stick on LCD.

1-3 Storage Precaution

- (1) When you store LCD for a long time, it is recommended to keep the temperature between -20°C - 60°C without the exposure of sunlight and to keep the humidity less than 85% RH.
- (2) Please do not leave the LCD in the environment of high humidity and high temperature such as 60°C, 95%RH.
- (3) Please do not operate the LCD in the environment of abnormal temperature, below 0°C.

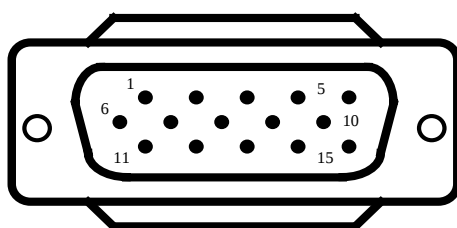
1- 4 High Voltage Warning

The high voltage was only generated by Power support part, if carelessly contacted the transformer on this module, can cause a serious shock.

D-SUB PIN Distribution

This procedure gives you instructions for installing and using the LCD TV display.

- (1) Position the display on the desired operation and plug the power cord into a convenient AC outlet.
Three-wire power cord must be shielded and is provided as a safety precaution as it connects the chassis and cabinet to the electrical conduct ground. If the AC outlet in your location does not have provisions for the grounded type plug, the installer should attach the proper adapter to ensure a safe ground potential.
- (2) Connect the 15-pin color display shielded signal cable to your signal system device and lock both screws on the connector to ensure firm grounding. The connector information is as follow:



15 - Pin Color Display Signal Cable

Pin NO.	Description	Pin NO.	Description
1	Red Video	9	No Pin!
2	Green Video	10	Sync Ground
3	Blue Video	11	Not Used
4	Not Used	12	Serial Data for DDC
5	Ground	13	H-Sync.
6	Red Ground	14	V-Sync.
7	Green Ground	15	Serial Clock for DDC
8	Blue Ground		

Factory Preset Display Modes:

Analog RGB Signal Timing

Dots × Lines	Vertical	Horizontal	Sync Polarity		Presence		Screen Mode
	Frequency	Frequency	Horizontal	Vertical	Horizontal	Vertical	FULL
	(Hz)	(KHz)					(16:9)
720 × 400	70.1	31.5	NEG	POS	YES	YES	YES
640 × 480	59.9	31.5	NEG	NEG	YES	YES	YES
	72.8	37.9	NEG	NEG	YES	YES	YES
	75.0	37.5	NEG	NEG	YES	YES	YES
800 × 600	60.3	37.9	POS	POS	YES	YES	YES
	72.2	48.1	POS	POS	YES	YES	YES
	75.0	46.9	POS	POS	YES	YES	YES
1024 × 768	60	48.3	NEG	NEG	YES	YES	YES
1280 × 768	60	47.7	POS	POS	YES	YES	YES

LCD TV Panel Specification

Panel Features

- High brightness (500 nits)
- High contrast ratio (1000:1)
- Fast response time (8ms)
- High color saturation NTSC 75%
- WXGA (1366 x 768 pixels) resolution
- DE (Data Enable) only mode
- LVDS (Low Voltage Differential Signaling) interface
- Optimized response time for 50/60 Hz frame rate
- Ultra wide viewing angle: 176(H)/176(V) (CR>20) Super MVA technology
- 180 degree rotation display option

General Specifications

Item	Specification
Active Area	444.633(H) x 249.984 (V) (20.1" diagonal)
Bezel Opening Area	450.7 (H) x 256 (V)
Driver Element	a-si TFT active matrix
Pixel Number	1366 x R.G.B. x 768
Pixel Pitch (Sub Pixel)	108.5 (H) x 325.5 (V)
Pixel Arrangement	RGB vertical stripe
Display Colors	16.2M
Display Operation Mode	Transmissive mode / Normally black
Surface Treatment	Hardness : 3H, Anti-Glare

Mechanical Specification

Item		Min.	Typ.	Max.	Unit
Module Size	Horizontal(H)	472.6	473.3	474	mm
	Vertical(V)	276	276.7	277.4	mm
	Depth(D)	36.45	37.45	38.45	mm
	Depth(D)	42.75	43.75	44.75	mm
Weight		2000	2200	2400	g

Optical Specifications

Test Conditions

Item	Symbol	Value	Unit
Ambient Temperature	Ta	25±2	°C
Ambient Humidity	Ha	50±10	%RH
Supply Voltage	V _{CC}	5.0	V
Input Signal	According to typical value in "3. ELECTRICAL CHARACTERISTICS"		
Lamp Current	I _L	5.5 ± 0.5	mA
Oscillating Frequency (Inverter)	F _W	52 ± 3	KHz
Frame Rate	Fr	60	Hz

Optical Specifications

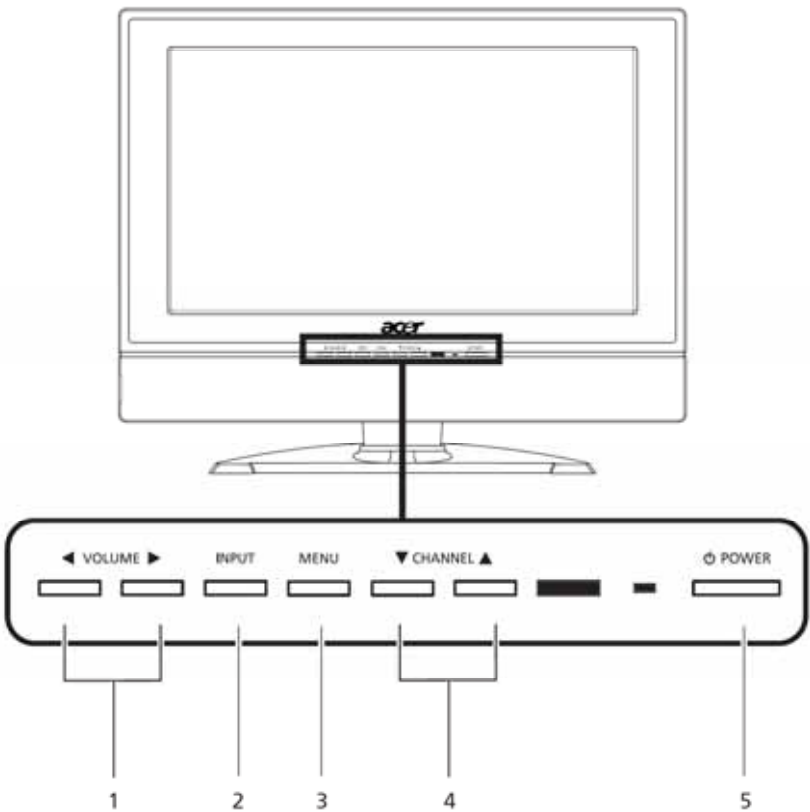
Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Contrast Ratio		CR	$\theta_x=0^\circ, \theta_y=0^\circ$ Viewing Normal Angle	800	1000	-	-
Response Time		Gray to gray average		-	8	12	ms
Center Luminance of White		L _C		400	500	-	cd/m ²
Average Luminance of White		L _{AVE}		400	500	-	cd/m ²
White Variation		δW		-	-	1.3	-
Cross Talk		CT		-	-	4.0	%
Color Chromaticity	Red	R _x		0.620	0.650	0.680	-
		R _y		0.300	0.330	0.360	-
	Green	G _x		0.244	0.274	0.304	-
		G _y		0.562	0.592	0.622	-
	Blue	B _x		0.113	0.143	0.173	-
		B _y		0.032	0.062	0.092	-
	White	W _x		0.242	0.272	0.302	-
		W _y		0.248	0.278	0.308	-
	Color Gamut			CG	72	75	
Viewing Angle	Horizontal	θ _{x+}	CR≥20	80	88	-	Deg.
		θ _{x-}		80	88	-	
	Vertical	θ _{y+}		80	88	-	
		θ _{y-}		80	88	-	

Front panel controls

Your LCD TV overview

AT2010

Front panel view	
1	Volume up/down
2	Input key
3	Menu key
4	Channel up/down
5	Headphone jack

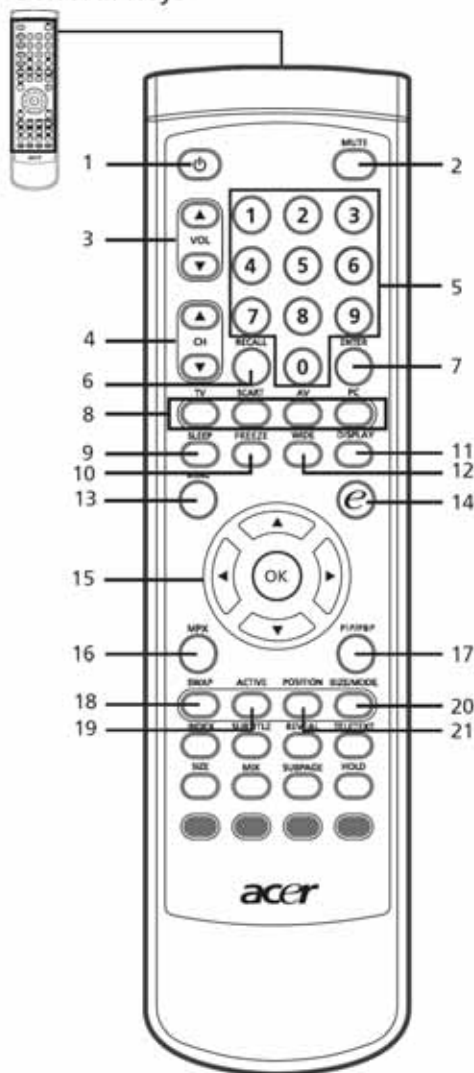


1		Volume up	When the OSD is on, functions the same as the Right arrow
		Volume down	When the OSD is on, functions the same as the Left arrow
2		Input key	When the OSD is on, press this button to confirm selection
3		Menu key	Turns the OSD menu ON and OFF
4		Channel up	When the OSD is on, functions the same as the Up arrow
		Channel down	When the OSD is on, functions the same as the Down arrow

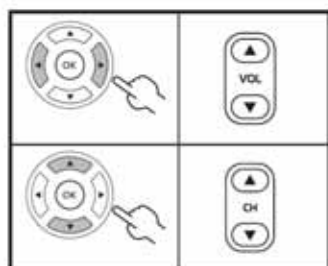
Using the Remote Control

Remote control

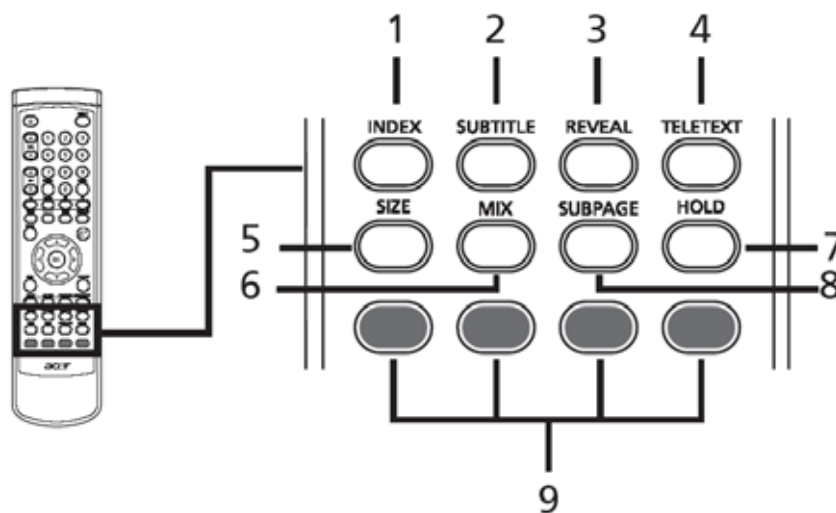
General keys



- 1 POWER**
Press to turn your TV on/off.
- 2 MUTE**
Press to toggle audio on and off.
- 3 VOL (up / down)**
Press to increase or decrease the volume.
- 4 CH (up / down)**
Press to sequentially select the TV channel.
- 5 Number keys.**
- 6 RECALL**
Press to return to the previous channel.
- 7 ENTER**
Press to confirm channel number selection.
- 8 Input buttons (TV / SCART / AV / PC)**
Press to select correct input mode.
- 9 SLEEP**
Press to set a time period after which the TV will switch itself to standby (15, 30, 45, 60, 90 or 120 minutes).
- 10 FREEZE**
Press to freeze the displayed picture.
- 11 DISPLAY**
Press to display input/channel information (dependent on input/source type).
- 12 WIDE**
Press to toggle scaling mode between 4:3, 16:9, Panorama and Letterbox 1, 2, 3 modes.
- 13 MENU**
Press to open or close the Menu.
- 14 e (Empowering Technology)**
Press to activate Acer Empowering Technology. See page 18.
- 15 Directional keys/OK**
- 16 MPX**
Press to select the sound input, displayed in the top right-hand corner (mono, stereo, bilingual).
- 17 PIP/PBP**
Switch between PIP / PBP modes. See page 20.
- 18 SWAP**
For PIP/PBP mode: Toggle between the primary and subscreens.
- 19 ACTIVE**
Toggle between primary and subscreens.
- 20 SIZE/MODE**
When in PIP mode: Change subscreen size. See page 25.
- 21 POSITION**
When in PIP mode: Change subscreen position.



Teletext



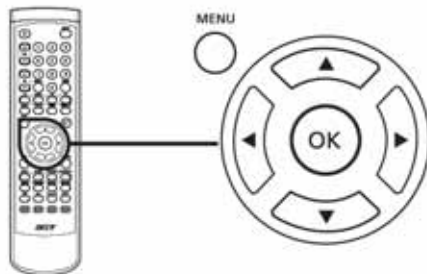
- 1 INDEX**
Press to go to the index page
- 2 SUBTITLE**
Press to view subtitles on the screen.
- 3 REVEAL**
Press to reveal hidden teletext information
- 4 TELETEXT**
Press to switch from TV/AV to Teletext mode.
- 5 SIZE**
Press once to zoom teletext page to 2X.
Press again to resume.
- 6 MIX**
Press to overlay teletext page on the TV image.
- 7 HOLD**
Press to pause the current teletext page in multi-page viewing mode.
- 8 SUBPAGE**
Press to access the teletext's subpages directly.
- 9 Colour buttons (R/G/Y/B)**
Operates corresponding button on the teletext page.

Using The OSD Menus

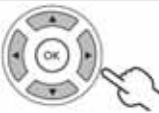
Many of the advanced settings and adjustments are available through using the OSD (onscreen display) menus, as shown in the example screenshot below.

Basic operations required to navigate these menus (Picture, Audio, Channel management, Options, Settings, Empowering) are described in this section. The first time you access the OSD, you will be asked to choose your language settings.

Navigating the OSD with the remote control



You can also interact with these menus using the front panel controls. Please see "Front panel view" on page 8 for details.

There are six main OSD menus. These are: Picture, Audio, Channel management, Options, Settings and Empowering. Use the following method to navigate these menus.		
1		Press the MENU button on the remote control or the MENU button on the control panel.
2		Select your desired menu by using the up and down directional keys to switch between the six menus.
3		Use the directional keys to interact with the menu. The up / down directions will scroll through the menu options, while left/right will adjust the different settings (for example, in the Picture menu, settings such as brightness, contrast, etc.). Press OK to confirm. Press MENU to exit.

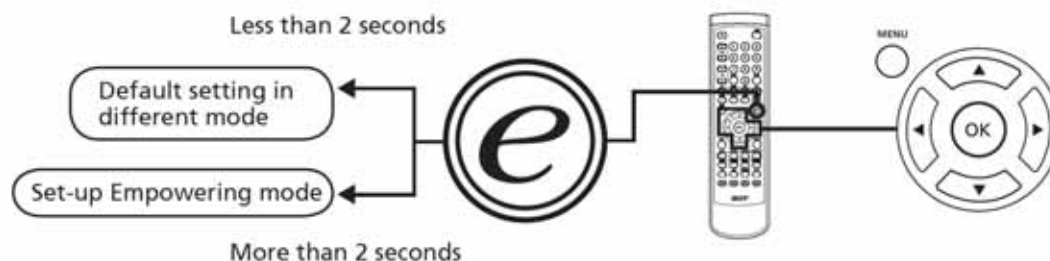
Adjusting the OSD settings

The OSD can be used for adjusting the settings of your LCD TV.

Press the **MENU** key to open the OSD. You can use the OSD to adjust the picture quality, audio settings, channel settings, general settings and the Empowering Technology settings. For advanced settings, please refer to following page:

Adjusting the picture quality	
	1 Press the MENU key to bring up the OSD. 2 Using the directional keys, select Picture from the OSD. Then navigate to the picture element you wish to adjust. 3 Use the left or right keys to adjust the sliding scales. 4 The Picture menu can be used to adjust the current Scenario mode, brightness, contrast, colour, sharpness and other image-related qualities.
Adjusting the audio settings	
	1 Press the MENU key to bring up the OSD. 2 Using the directional keys, select Audio from the onscreen display. Then navigate to the feature you wish to adjust. 3 Use the left or right keys to adjust the sliding scale. Press OK to save. 4 The Audio menu can also be used to adjust the treble, balance, sound effects and other important sound-related settings
Adjusting the channel management	
	1 Press the MENU key to bring up the OSD. 2 Using the directional keys, select Channel management from the OSD. 3 Use the directional keys to navigate the menus. 4 The Channel management menu can be used to adjust, and set the channel namings.
Adjusting other options	
	1 Press the MENU key to bring up the OSD. 2 Using the directional keys, select Options from the OSD. 3 Use the directional keys to navigate the menus. 4 The Options menu can be used to select the picture aspect-ratio mode.
Adjusting the settings	
	1 Press the MENU key to bring up the OSD. 2 Using the directional keys, select Settings from the OSD. Then navigate to the feature you wish to adjust. 3 The Settings menu can be used to adjust the menu language, set the sleep timer and other important settings.

Empowering Technology



The Empowering Key opens up the Acer Empowering Technology functions. In TV mode, the choice is between Scenario mode and Favourite channel; see page 20 for details. The default setting for both modes is Scenario mode.

Set-up Empowering mode

To change your Empowering Key's default setting:

1		Press and hold the Empowering Key for more than two seconds to open the menu.
2	More than 2 seconds TV mode Empowering Key settings menu	
		Use the directional keys to navigate the menu and select the Empowering Technology icon.
3		Press MENU to exit. Now, when you press the Empowering Key, your chosen selection will be accessed.

Default setting in different Empowering mode

Scenario mode in TV (default setting)

Scenario mode has five preset viewing modes designed to give you the best picture quality when watching a particular kind of programme. There are five pre-defined audio and video settings for optimal enjoyment of the following scenarios: Standard TV, Movie, Sport, Concert, Game, User.

 Pressing the Empowering Key for less than two second will toggle between the different modes.	
Mode	Information
Standard	Standard mode allows you to watch your favourite channels with sharp, brilliant imagery via adaptive brightness and contrast adjustments, and listen to clear-sounding audio.
Movie	For comfortably enjoying movies at home, Movie mode displays dim scenes in clear detail; compensates for colour; and smoothly presents motion images. This is accomplished through optimal Gamma correction plus saturation, brightness and contrast adjustments. Movie mode makes the most of high-definition movie soundtracks.
Game	Game mode carefully details the exquisite graphics of modern video games, providing lifelike entertainment while protecting your eyesight by adjusting brightness and contrast. What's more, Game mode provides a heightened audio experience.
Sports	Sports mode is suited for outdoor sports programmes, with accurate background depth and clear gradation between the bright, outdoor playing field and darker auditoriums. Sports mode also brilliantly enhances colours and presents swiftly moving pictures without residual images. All of this is achieved via specific Gamma corrections and saturation adjustments. Precise audio can be heard.
Concert	Concert mode places you in a virtual concert hall, opera house or other dim environment by means of adaptive brightness and contrast adjustments. Concert mode accentuates symphonic harmonies and the tenor audio range.

Favourite channel mode in TV

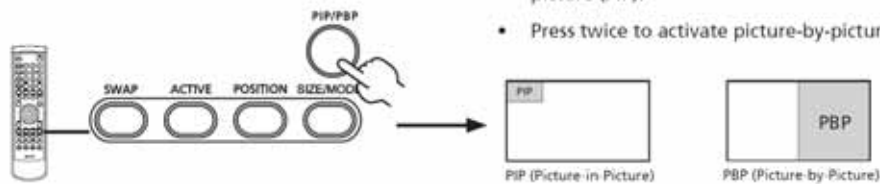
Favourite channel allows you to store five of your favourite TV channels and flick between them at the touch of a single button.

To set Favourite channel as the default, follow the steps described on page 19.

Storing favourite channels		
1		Select your desired channel, then press the MENU key on the remote control.
2		Use the directional keys to navigate the menu and select the Empowering Technology icon.
3		Navigate to a channel slot, use CH up/down button or number key to change channel. There are a total of five slots in which you can store TV programmes.
Viewing your favourite channels		
		On the remote control, if you press the Empowering Key for less than two second, the TV will toggle between the five stored TV channels sequentially according to your list of favourites.

Advanced features

PIP/PBP



- Press the PIP/PBP/POP button once to display activate picture-in-picture (PIP).
- Press twice to activate picture-by-picture (PBP).



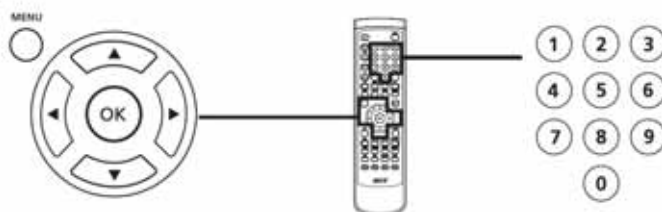
1. For a list of the available sources for this feature, please refer to the appendix at the end of this manual.

PIP		1a. Press the ACTIVE key to toggle between PIP screens.
		1b. Press the TV , AV , SCART or PC keys, number keys or CH up or down to change the content of the active screen.
		2. Press the SWAP key to change the content between the primary and the subscreen.
		3. Press the POSITION key to select the location of the subscreens, from upper left -> upper right -> lower right -> lower left, as shown in the image.
		4. Press the SIZE/MODE key to select the size of the subscreen, from 25% -> 37.5% -> 50%, as shown in the image.

PBP		1a. Press the ACTIVE key to toggle between PBP screens.
		1b. Press the TV , AV , SCART or PC keys, number keys or CH up or down to change the content of the active screen.
		2. Press the SWAP key to change the content between the primary and the PBP screen.

Re-scan for channels

The first time you completed the setup wizard, all available channels were listed. If you need to re-scan for new channels, please follow the steps below:



Scanning for channels		
1		Press the MENU key on the remote control to bring up the OSD.
2		Use the directional keys to navigate and select Channel Management.
3		Highlight Auto Scan. Then, select Start and press OK to begin.
4		Select OK and press MENU to exit.

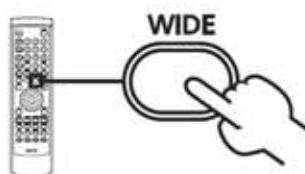
Widescreen display mode

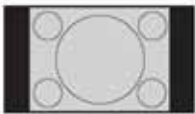
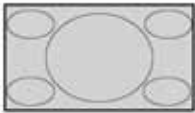
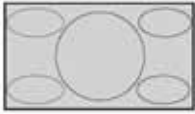
Your Acer LCD TV has a special widescreen mode that allows you to toggle between 4:3, 16:9, Panorama, and Letterbox 1, 2 and 3 type views.

Press the **WIDE** key on the remote control to toggle the display between the four wide modes.

Wide mode

The Acer LCD contains four widescreen modes, including 4:3, 16:9, Panorama, and Letterbox 1, 2 and 3.



4:3		For 4:3 standard pictures. A side bar appears on each side.
16:9		
16:9		In this mode, the whole picture is stretched toward each side of the screen.
Panorama		
Panorama		In this mode, the picture is progressively stretched toward each side of the screen.
Letterbox 1, 2, and 3		
Letterbox 1, 2, and 3		In this mode, the picture is enlarged linearly to fit the screen. The top and bottom portions of the picture may be cut off.

Logo

When the monitor is power on, the LOGO will be showed in the center, and disappear slowly.



How To Optimize The DOS-Mode

Plug And Play

Plug & Play DDC2B Feature

This monitor is equipped with VESA DDC2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities.

The DDC2B is a bi-directional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

This monitor will appear to be non-functional if there is no video input signal. In order for this monitor to operate properly, there must be a video input signal.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signals this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard, or clicking the mouse.

Using The Right Power Cord

The accessory power cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL listed and CSA labeled. The voltage rating for the power cord shall be 125 volts AC.

Supplied with units intended for connection to power outlet of personal computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V, CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.

Please note that power supply cord needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

This chapter contains step-by-step procedures on how to disassemble the monitor for maintenance.

Disassembly Procedure

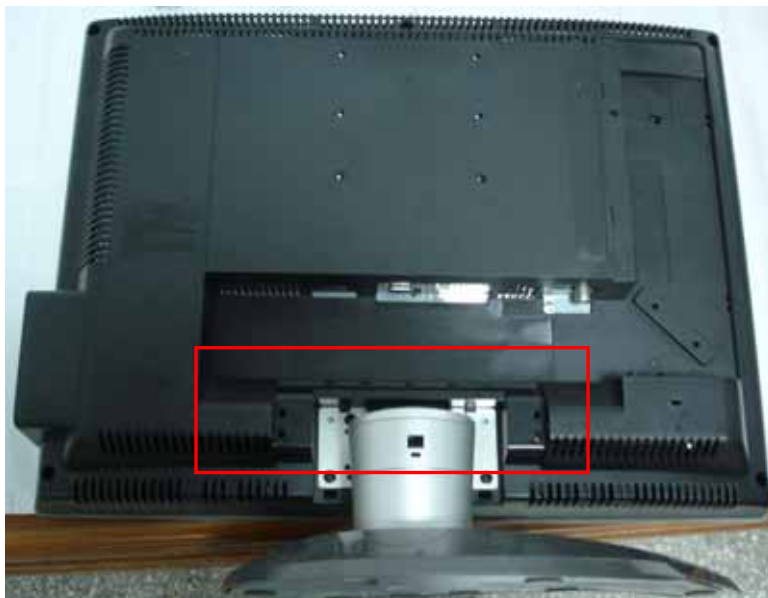
Disassemble The Base

1. Put the monitor on a clean soft cloth with panel facing to the table. (Fig 1)



(Fig 1)

2. Take off the cover hinge. (Fig 2-3)



(Fig 2)



(Fig 3)

2. Remove four screws to remove stand base. (Fig 4-5)



(Fig 4)



(Fig 5)

Disassemble the back cover

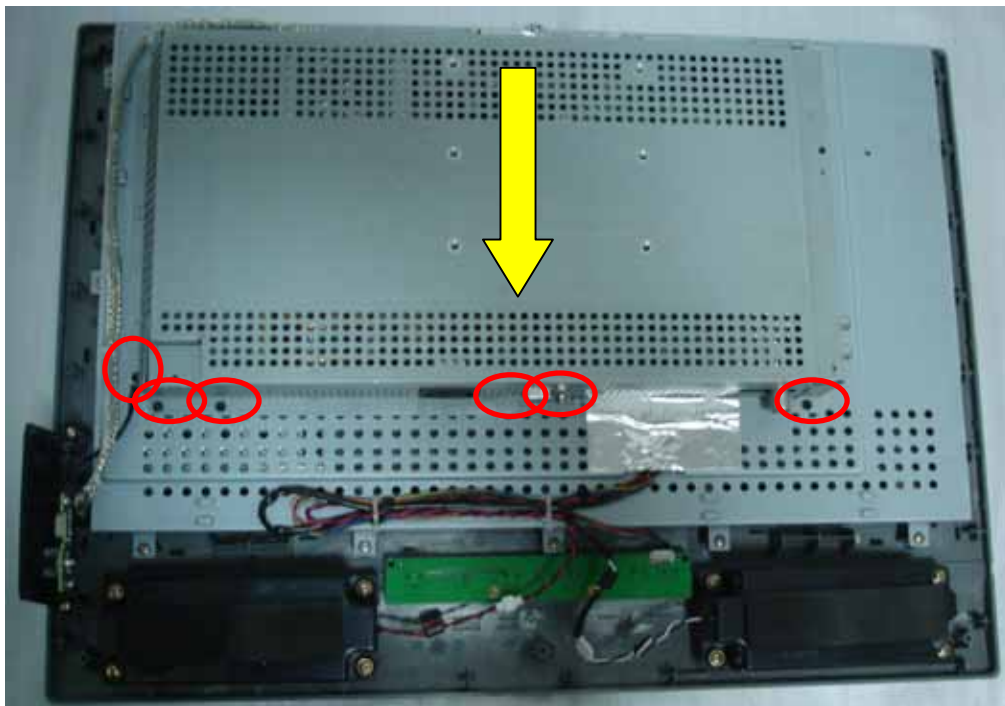
1. Remove seven screws to remove back cover. (Fig 6)



(Fig 6)

Disassemble the shield

1. Remove six screws to remove the shield. The screws are marked in red. (Fig 7)
2. Remove the shield as marked with yellow direction.



(Fig 7)

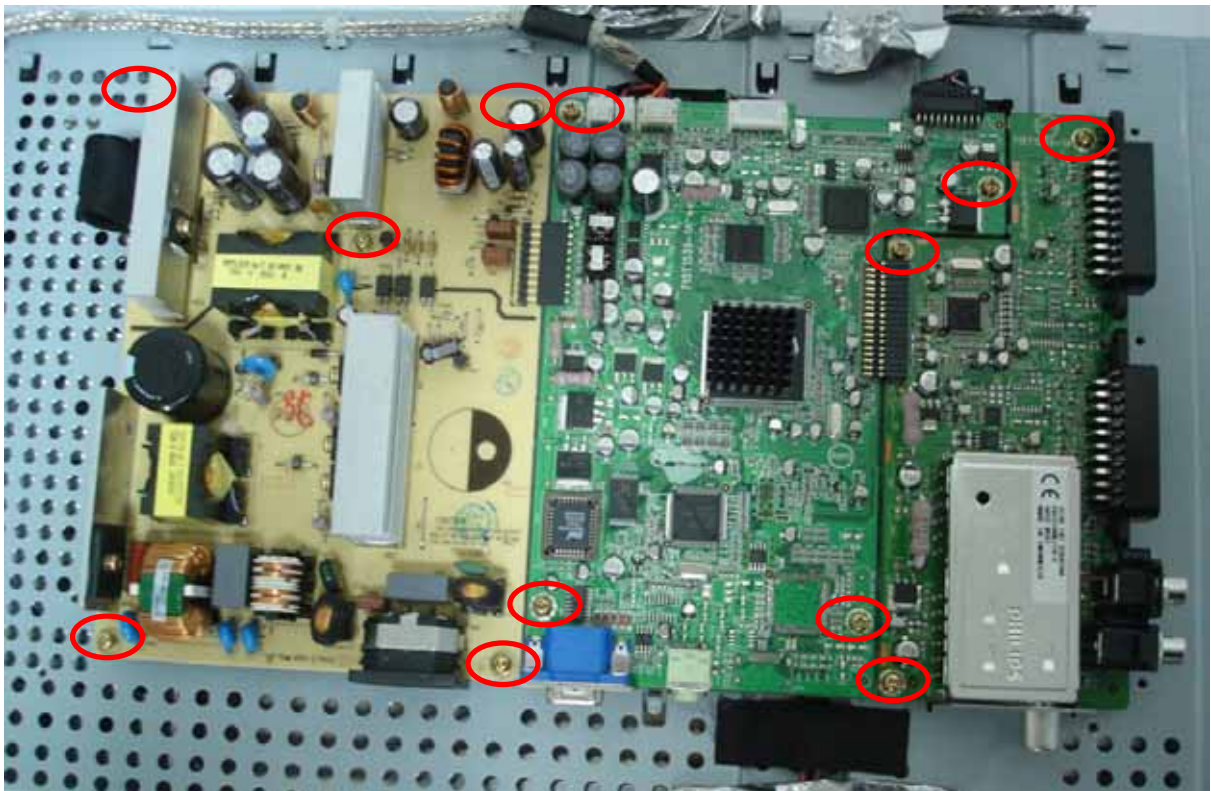
2. Remove the shield, then the main board and power board show as below. (Fig 8)



(Fig 8)

Remove the main board, I/O board and Power Board

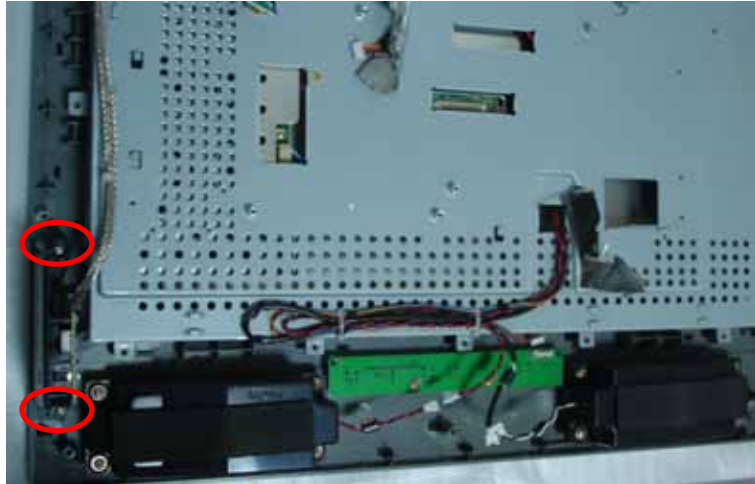
1. Remove the twelve screws marked in red to remove power, I/O board and main board. (Fig 9)
2. Remove all the connecting wires for these boards.



(Fig 9)

Disassemble the Headphone board

1. Remove two screws to headphone board. The screws are marked in red. (Fig 10-11)



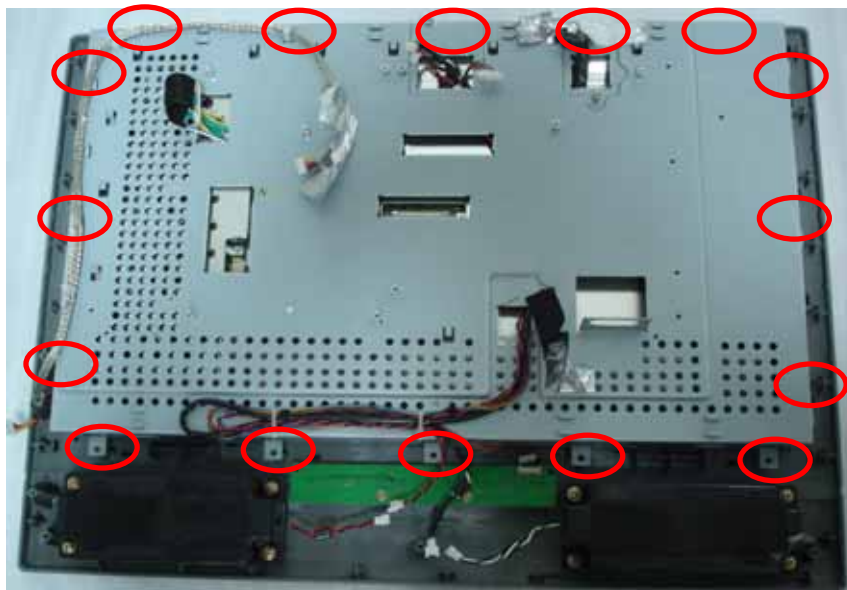
(Fig 10)



(Fig 11)

Disassemble the front panel

1. Remove sixteen screws in red to remove the front panel, (Fig 12-14)



(Fig 12)



Fig (13)



Fig (14)

Disassemble the speaker

1. Remove eight screws to remove speakers. (Fig 15)



(Fig 15)

Disassemble the Key board

1. Remove two screws in the keyboard, the screws is marked in red. (Fig 16)



(Fig 16)

Disassemble the Main frame

1. Remove four screws (right and left) to remove metal frame. (Fig 17-18)



Fig (17)

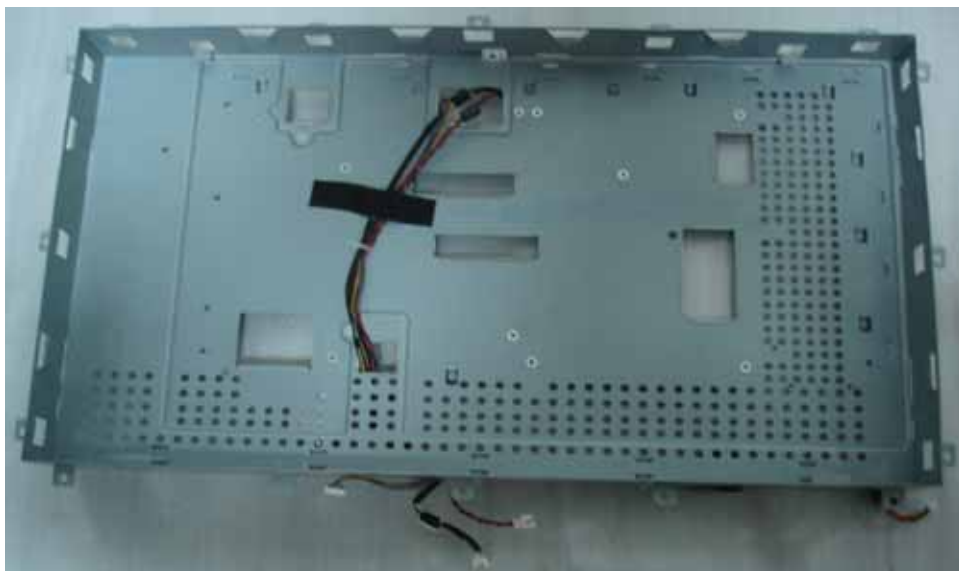


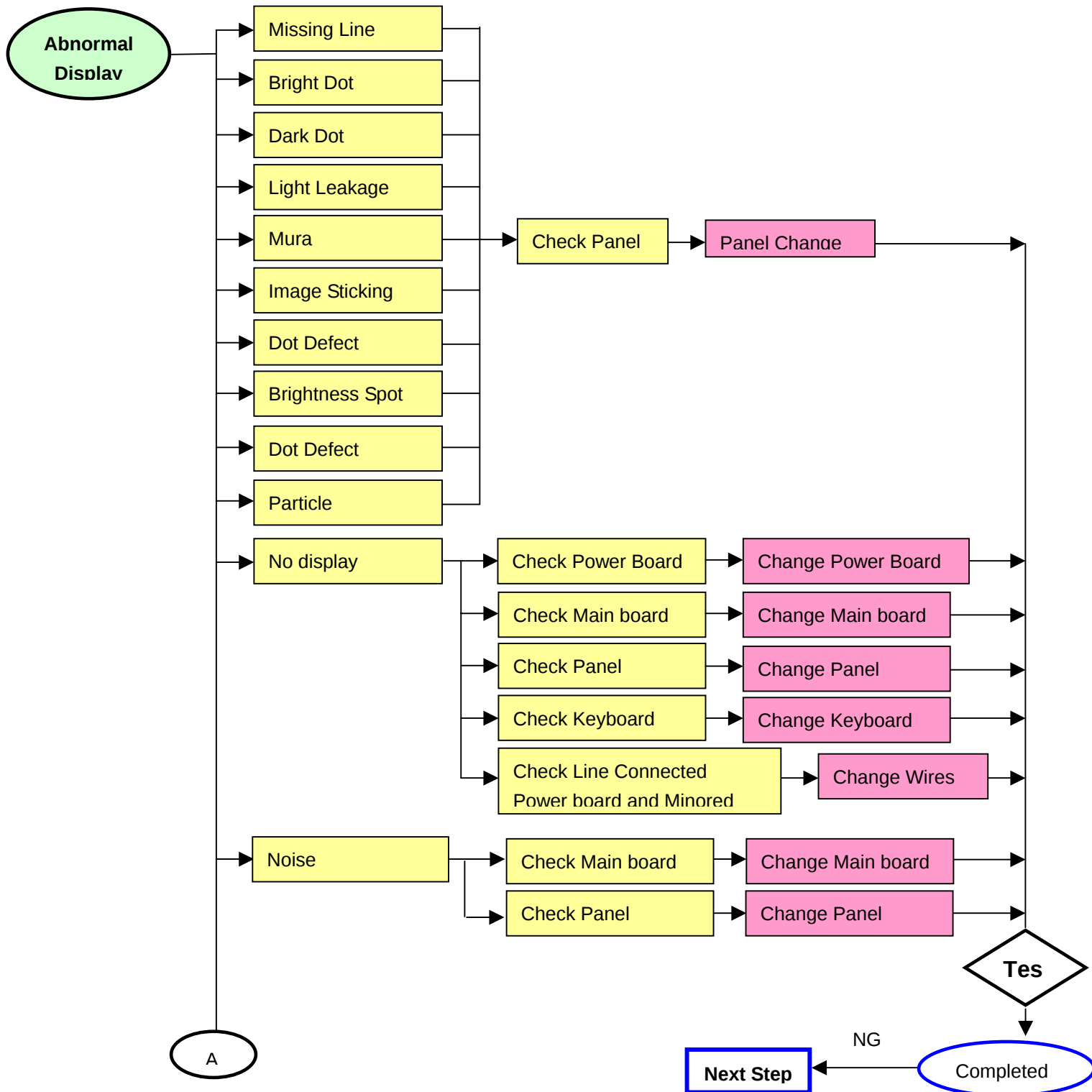
Fig (18)

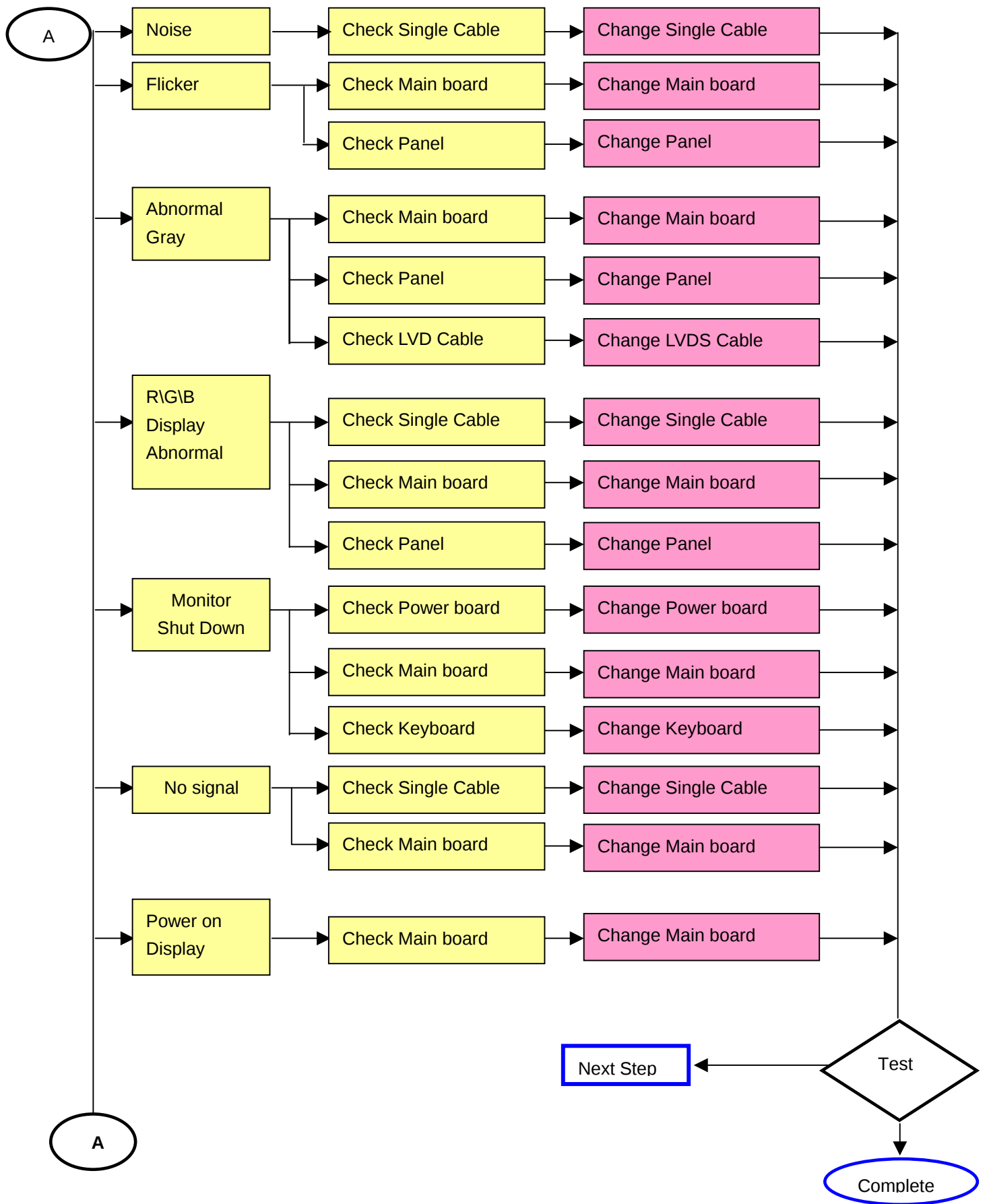
2.The panel is disassembled absolutely. Fig (19)

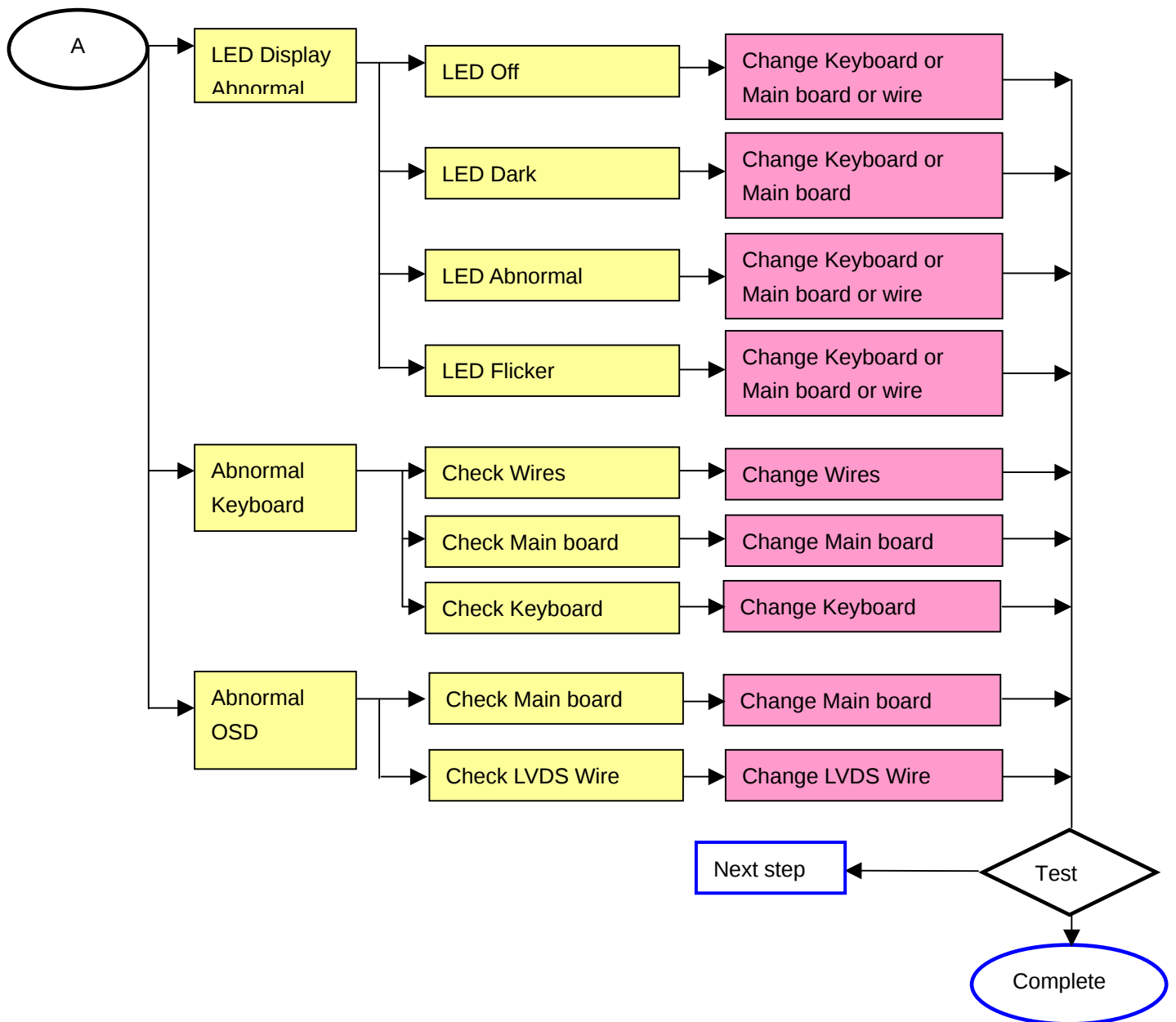


Fig (19)

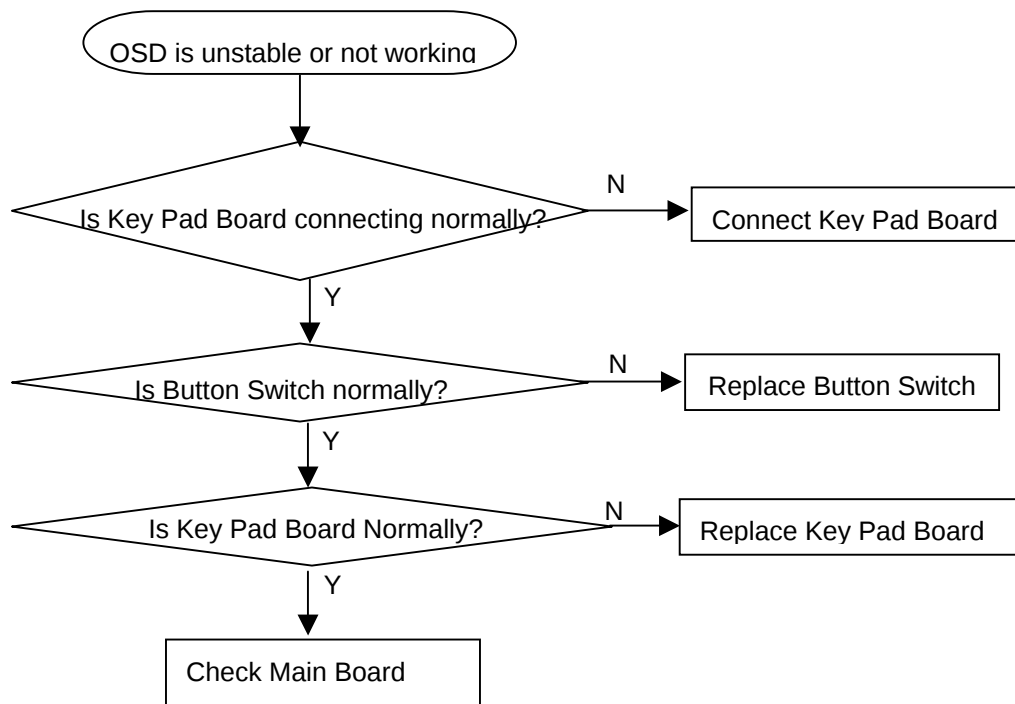
Defect Mode	Failure Analysis	Repair	Testing
-------------	------------------	--------	---------







Key Board



Approximately 30 minutes should be allowed for warm up before proceeding white balance adjustment.

Before started adjust white balance ,please setting the Chroma-7120 **MEM. Channel 1 to 14000** color, **MEM. channel 2 to 12000** color, **MEM. channel 3 to 9300** color, **MEM. channel 4 to 8000** color, and **MEM. channel 5 to 6500** color, (our 14000 parameter is $x = 266 \pm 15$, $y = 270 \pm 15$, $Y = 300 \pm 7$ cd/m² ; 12000 parameter is $x = 272 \pm 15$, $y = 278 \pm 15$, $Y = 300 \pm 7$ cd/m² ;9300 parameter is $x = 283 \pm 15$, $y = 297 \pm 15$, $Y = 300 \pm 7$ cd/m²;8000 parameter is $x = 295 \pm 15$, $y = 305 \pm 15$, $Y = 300 \pm 7$ cd/m²;6500 parameter is $x = 313 \pm 15$, $y = 329 \pm 15$, $Y = 300 \pm 7$ cd/m²),

Color Temp.	14000	12000	9300	8000	6500
X	266	272	283	295	313
Y	270	278	297	305	329
Y	300	300	300	300	300

How to setting MEM. channel you can reference to Chroma-7120 user guide or simple use “**SC**” key and “**NEXT**” key to modify x, y , Y value and use “**ID**” key to modify the TEXT description

Following is the procedure to do white-balance adjust

I. Press Number key 1 → 9 → 9 → 9 will into the factory mode, and press Menu key the OSD will show menu and a word “F” at LEFT top of Menu.

1. In the factory mode select “COLOR TEMP” may be select the difference color temp.
2. Select SCALER Adjustment:
RG, GG, BG → R, G, B Gain adjust.
RB, GB, BB → R, G, B Bias adjust.

<Notes: the R, G, B gain use 9 bits, and R, G, B bias use 10 bits to save the value in EEPROM, so if the R, G, B gain and bias is 255 to 256, the “P0 256”will change to “P10”>

Notes: adjust AV mode the same as PC mode, except the luminance (Pc mode is 350cd/m2, Av is 420cd/m2).

II. Bias (Low luminance) adjustment:

1. Set the raster pattern (Black pattern with 1024 × 768) Input.
2. Set the contrast on OSD window to the value=80, Brightness set to “80”
3. Adjust the brightness on OSD until chroma 7120 measurement reach the lowest value.

III, Gain adjustment:

A. Adjust 14000 color-temperature:

1. Set the Contrast of OSD function to 80 and Adjust Brightness to chroma-7120 $Y > 350 \text{ cd/m}^2$
2. Switch the chroma-7120 to RGB-mode (with press "MODE" button)
3. Switch the MEM.channel to Channel 03 (with up or down arrow on chroma-7120)
4. The LCD-indicator on chroma-7120 will show $x = 266 \pm 15$, $y = 270 \pm 15$, $Y = 300 \pm 7 \text{ cd/m}^2$
5. Adjust the Color (user) Mode: RED on OSD window, until chroma 7120 indicator reached the value $R=100$
6. Adjust the Color (user) Mode: GREEN on OSD window, until chroma-7120 indicator reached the value $G=100$
7. Adjust the Color (user) Mode: BLUE on OSD window, until chroma-7120 indicator reached the value $B=100$
8. Repeat above procedure (Item 5,6,7) until chroma-7120 RGB value meet the tolerance $=100 \pm 2$
9. Switch the chroma-7120 to x, y, Y mode With press "MODE" button to check the color temp is in SPEC. or not.
10. Press MENU to exit the SCALER page and press Save to save the current color temp.

B. Adjust 12000 color-temperature:

1. Set the Contrast of OSD function to 80 and Adjust Brightness to chroma-7120 $Y > 350 \text{ cd/m}^2$
2. Switch the chroma-7120 to RGB-mode (with press "MODE" button)
3. Switch the MEM.channel to Channel 02 (with up or down arrow on chroma-7120)
4. The LCD-indicator on chroma-7120 will show $x = 272 \pm 15$, $y = 278 \pm 15$, $Y = 300 \pm 7 \text{ cd/m}^2$
5. Adjust the Color(user)Mode: RED on OSD window, until chroma 7120 indicator reached the value $R=100$
6. Adjust the Color (user) Mode: GREEN on OSD window, until chroma-7120 indicator reached the value $G=100$
7. Adjust the Color(user)Mode: BLUE on OSD window, until chroma-7120 indicator reached the value $B=100$
8. Repeat above procedure (item 5,6,7) until chroma-7120 RGB value meet the tolerance $=100 \pm 2$
9. Switch the chroma-7120 to x, y, Y mode with press "MODE" button
10. Press MENU to exit the SCALER page and press Save to save the current color temp.

C. Adjust 9300 color-temperature:

1. Set the Contrast of OSD function to 80 and Adjust Brightness to chroma-7120 $Y > 370 \text{ cd/m}^2$
2. Switch the chroma-7120 to RGB-mode (with press "MODE" button)
3. Switch the MEM.channel to Channel 03 (with up or down arrow on chroma-7120)
4. The LCD-indicator on chroma-7120 will show $x = 283 \pm 15$, $y = 297 \pm 15$, $Y = 300 \pm 7 \text{ cd/m}^2$
5. Adjust the Color (user) Mode: RED on OSD window, until chroma 7120 indicator reached the value $R=100$
6. Adjust the Color (user) Mode: GREEN on OSD window, until chroma-7120 indicator reached the value $G=100$
7. Adjust the Color (user) Mode: BLUE on OSD window, until chroma-7120 indicator reached the value $B=100$
8. Repeat above procedure (item 5,6,7) until chroma-7120 RGB value meet the tolerance $=100 \pm 2$
9. Switch the chroma-7120 to XyY mode With press "MODE" button
10. Press MENU to exit the SCALER page and press Save to save the current color temp.

D. Adjust 8000 color-temperature:

1. Set the Contrast of OSD function to 80 and Adjust Brightness to chroma-7120 $Y > 370 \text{ cd/m}^2$
2. Switch the chroma-7120 to RGB-mode (with press "MODE" button)
3. Switch the MEM.channel to Channel 03 (with up or down arrow on chroma-7120)
4. The LCD-indicator on chroma-7120 will show $x = 295 \pm 15$, $y = 305 \pm 15$, $Y = 300 \pm 7 \text{ cd/m}^2$

5. Adjust the Color (user) Mode: RED on OSD window, until chroma 7120 indicator reached the value R=100
6. Adjust the Color (user) Mode: GREEN on OSD window, until chroma-7120 indicator reached the value G=100
7. Adjust the Color (user) Mode: BLUE on OSD window, until chroma-7120 indicator reached the value B=100
8. Repeat above procedure (item 5,6,7) until chroma-7120 RGB value meet the tolerance $=100 \pm 2$
9. Switch the chroma-7120 to X, y, Y mode with press "MODE" button
10. Press MENU to exit the SCALER page and press Save to save the current color temp.

E. Adjust 6500 color-temperature:

1. Set the Contrast of OSD function to 80 and Adjust Brightness to chroma-7120 $Y > 370 \text{ cd/m}^2$
2. Switch the chroma-7120 to RGB-mode (with press "MODE" button)
3. Switch the MEM.channel to Channel 03 (with up or down arrow on chroma-7120)
4. The LCD-indicator on chroma-7120 will show $x = 313 \pm 15$, $y = 329 \pm 15$, $Y = 300 \pm 7 \text{ cd/m}^2$
5. Adjust the Color (user) Mode: RED on OSD window, until chroma 7120 indicator reached the value R=100
6. Adjust the Color (user) Mode: GREEN on OSD window, until chroma-7120 indicator reached the value G=100
7. Adjust the Color (user) Mode: BLUE on OSD window, until chroma-7120 indicator reached the value B=100
8. Repeat above procedure (item 5,6,7) until chroma-7120 RGB value meet the tolerance $=100 \pm 2$
9. Switch the chroma-7120 to X, y, Y mode with press "MODE" button
10. Press MENU to exit the SCALER page and press Save to save the current color temp.

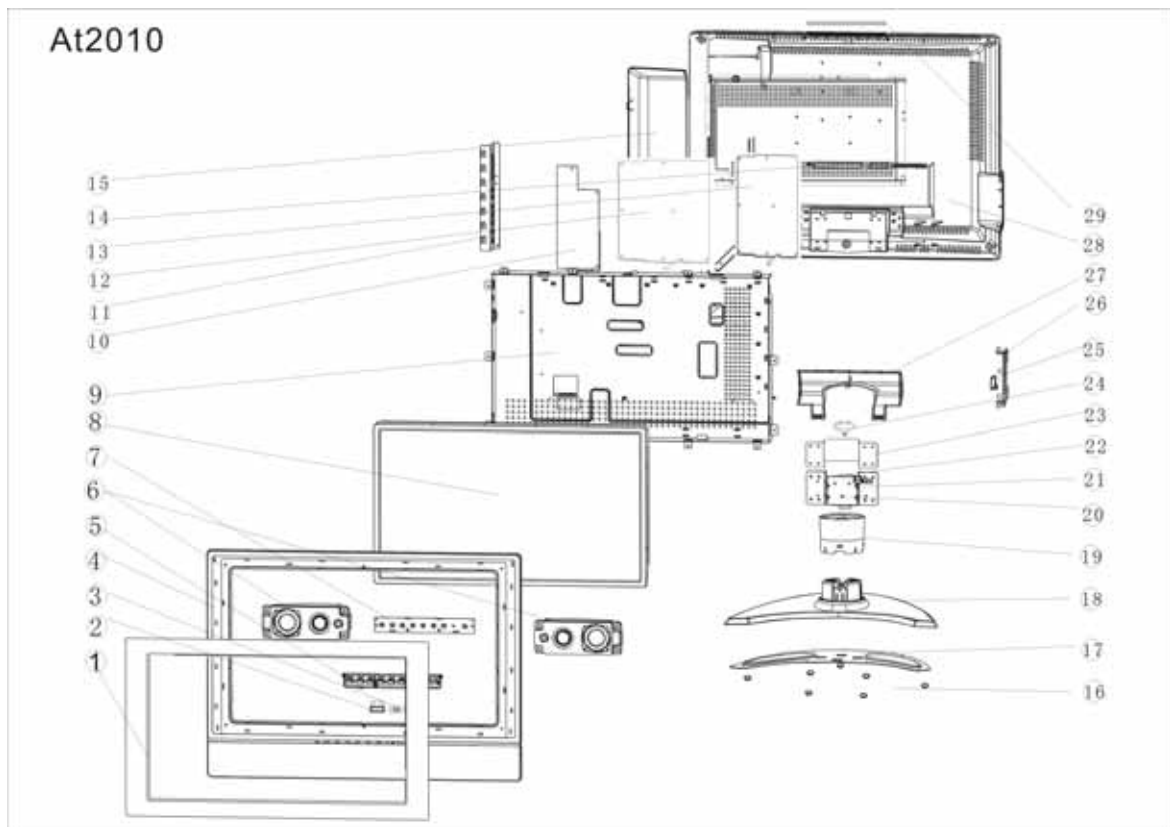
Turn the POWER-button off to on to quit from factory mode (in USER-mode, the OSD window location was placed at middle of screen)

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of AT2010. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE: Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel (<http://aicsl.acer.com.tw/spl/>). For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded Diagram (Model: AT2010)

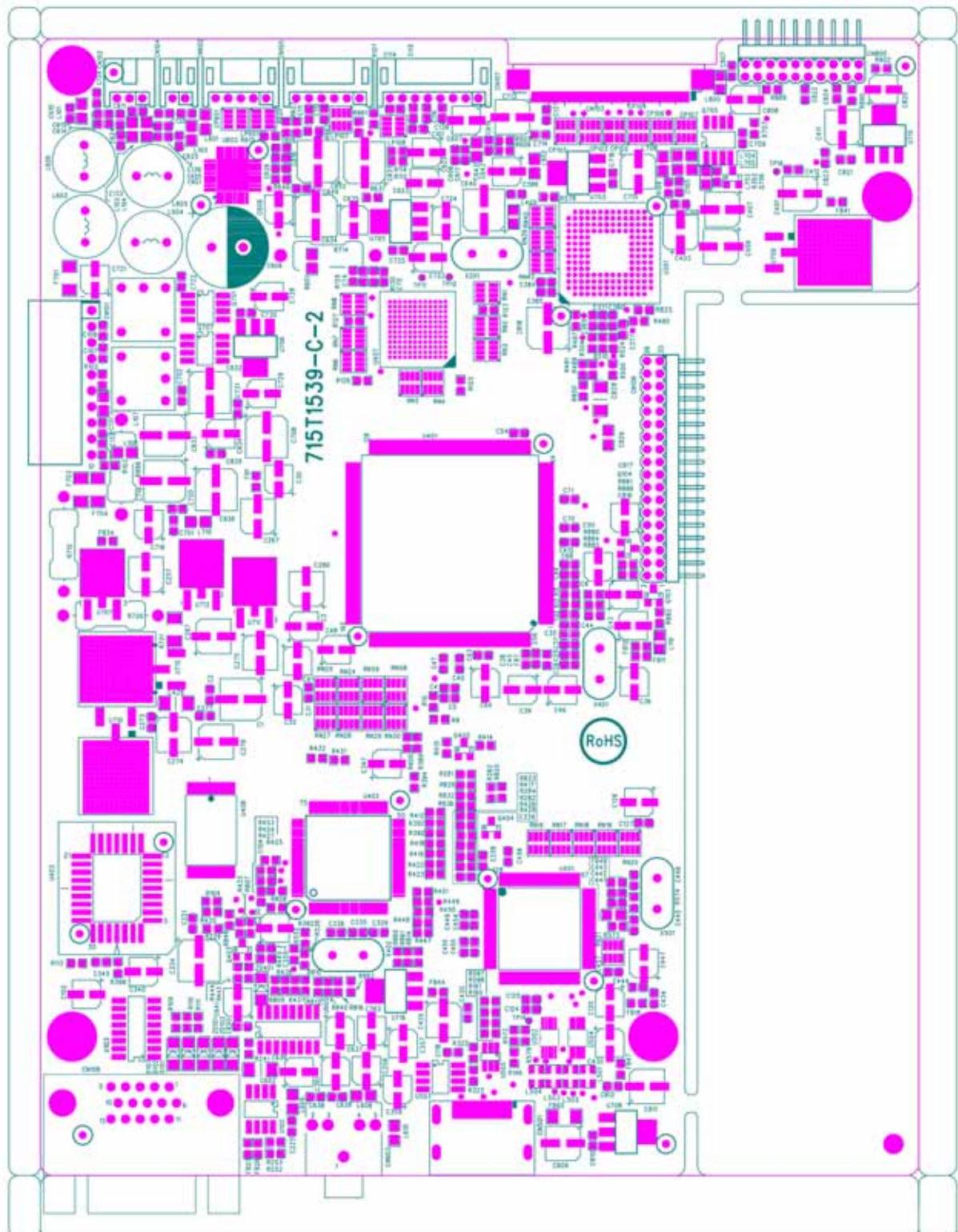


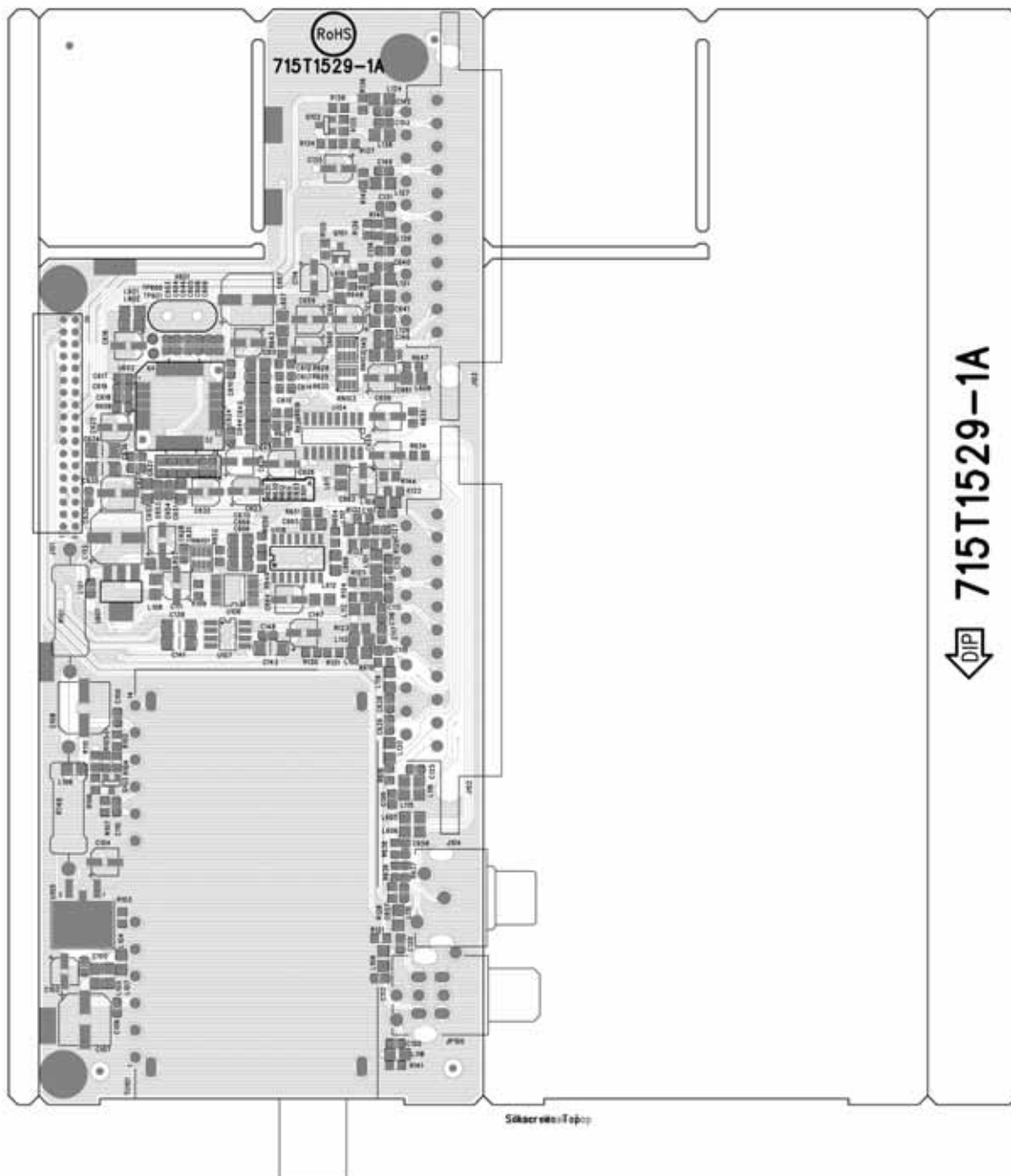
Index	Part Name	Part No.	Qty	Index	Part Name	Part No.	Qty
1	BEZEL PLATE	Q34T 5	1	16	RUBBER FOOT	012T 394 3	7
2	REMOTE LENS	Q33T 12	1	17	BASE BKT	Q15T 12 1	1
3	POWER LENS	Q33T 11 1	1	18	BASE	Q34T 17	1
4	BEZEL	Q34T 16	1	19	STAND	M1L1140-6128	1
5	KEY PAD	Q33T 10	1	20	HINGE	037T 525 2	1
6	SPEAKER	078T 443	2	21	STAND MID	Q33T4836	1
7	KEY BOARD FOR ROHS	KEPFA60KB6P	1	22	STAND TOP	Q33T4837	1
8	PANEL	750TVMA1WB1	1	23	HINGE BKT	015T6257 1	1
9	MAIN FRAME	015T6254 1	1	24	CLIP CABLE	Q33T4832	1
10	TUNER BOARD SMT	SMTHJPFA60A8P	1	25	CARD READER	033T4907	1
11	SHIELD-BKT	015T6269 2	1	26	AUDIO BOARD	N/A	1
12	MAIN BOARD	CBPFAF5BMTATP	1	27	COVER HINGE	034T1656	1
13	POWER BOARD	ADPC24100B1P	1	28	REAR COVER	034T1652	1
14	SHIELD MAIN	085T6134 1	1	29	PC PLATE ON TOP	033T6301	1
15	COVER CABLE	034T1655	1				

EDID Data

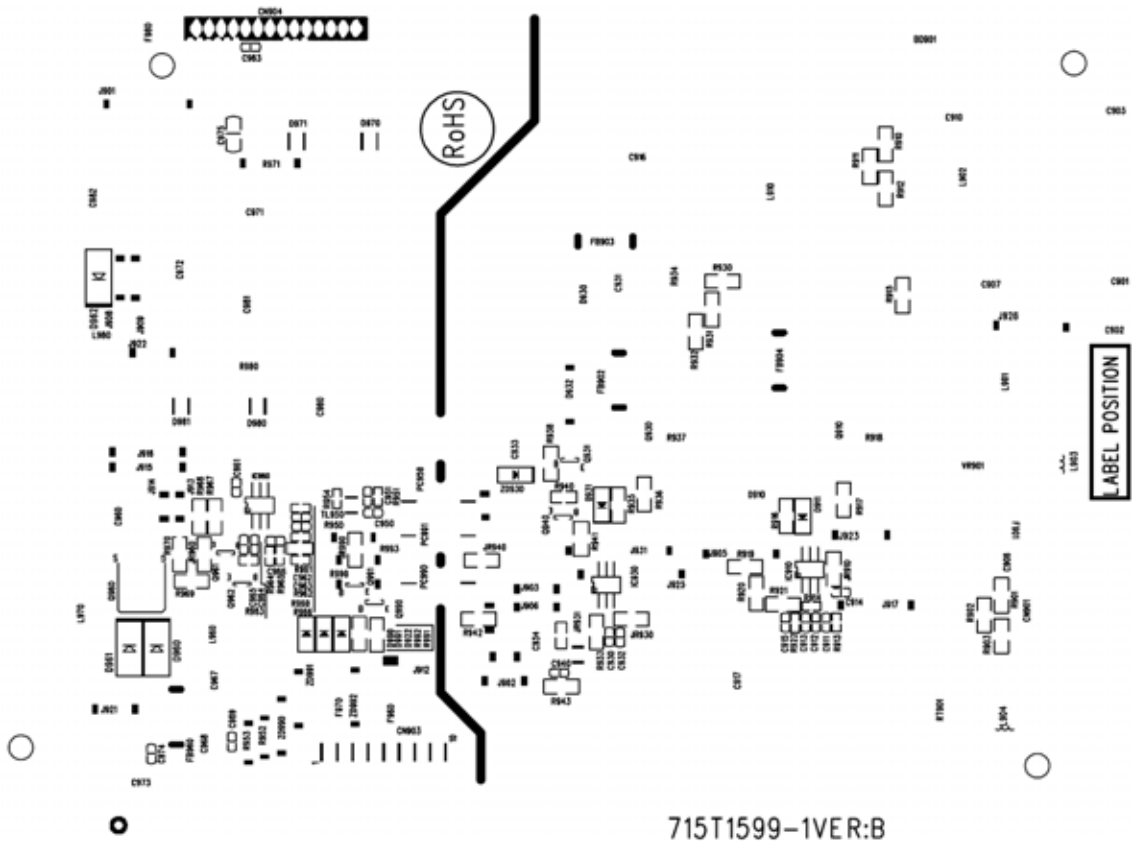
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0 :	00	FF	FF	FF	FF	FF	FF	00	04	72	10	20	0B	95	0D	00
16 :	14	0F	01	03	68	28	1E	78	2A	8E	60	A5	55	44	99	24
32 :	12	49	4B	AD	C8	00	01	01	01	01	01	01	01	01	01	01
48 :	01	01	01	01	01	01	0E	1F	00	80	51	00	1E	30	40	80
64 :	37	00	BC	F9	10	00	00	1C	00	00	00	FF	00	31	31	31
80 :	31	31	31	31	31	31	0A	20	20	20	00	00	00	FD	00	38
96 :	4B	1F	32	08	00	0A	20	20	20	20	20	20	00	00	00	FC
112:	00	41	54	32	30	31	30	0A	20	20	20	20	20	20	00	21

Main Board Layout

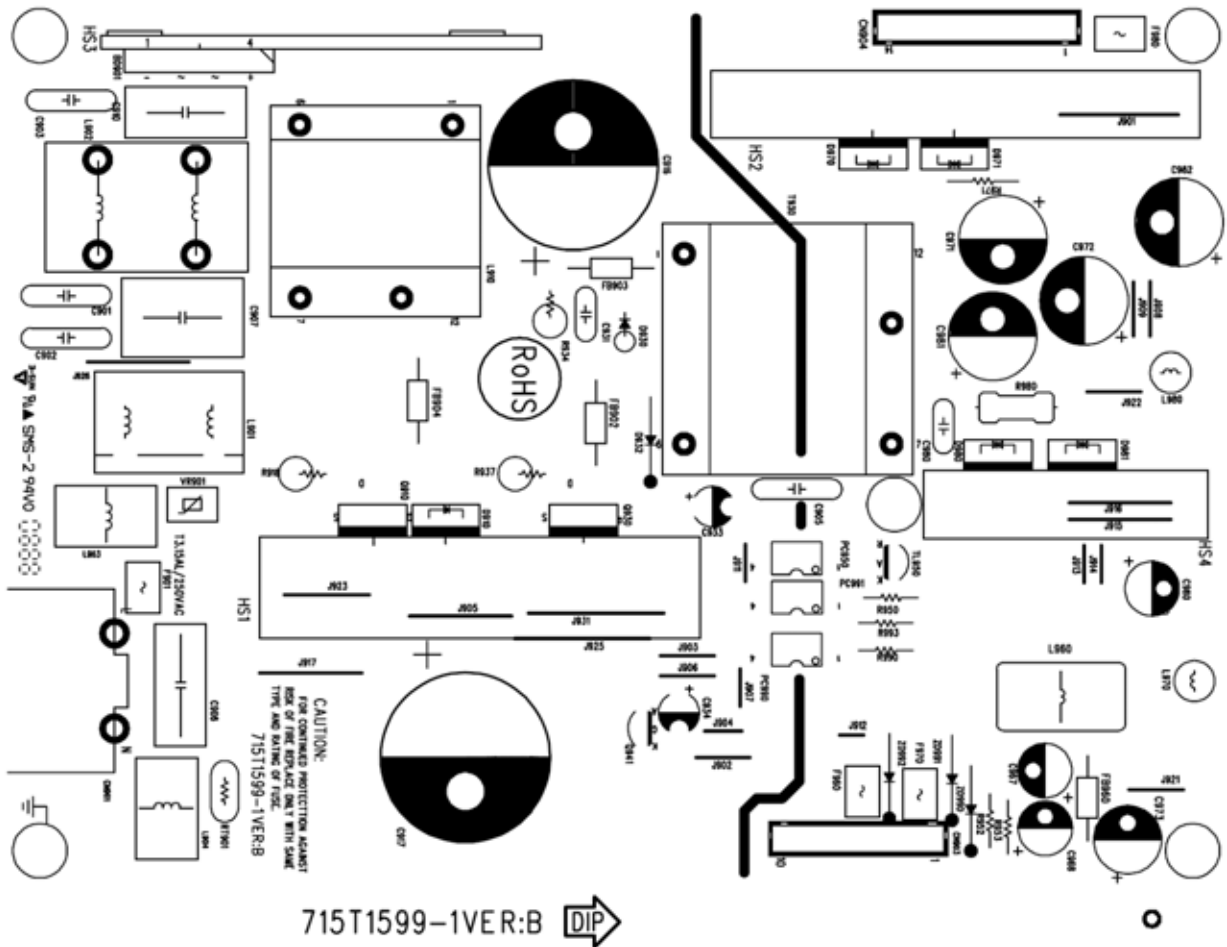




Power Board

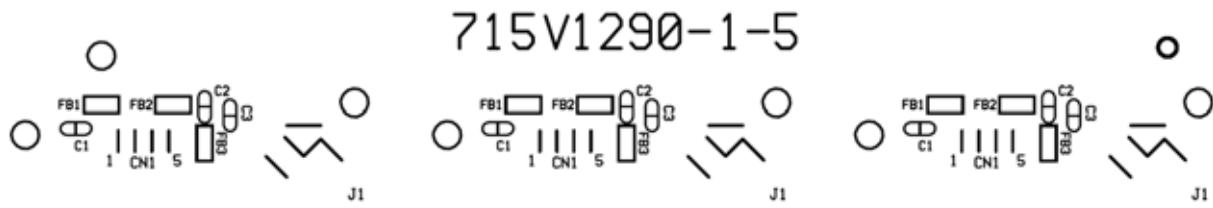
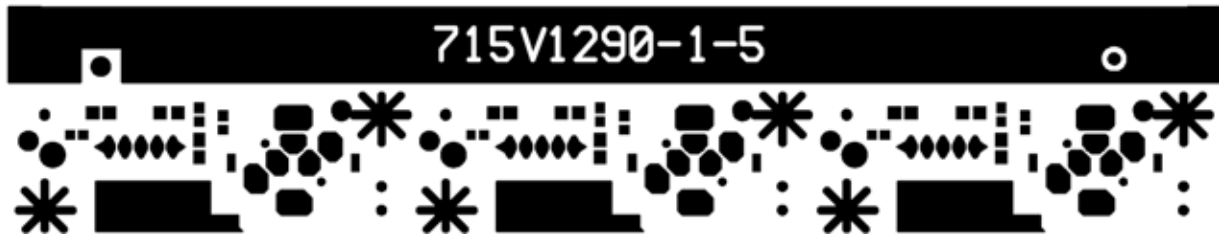


715T1599-1VER:B

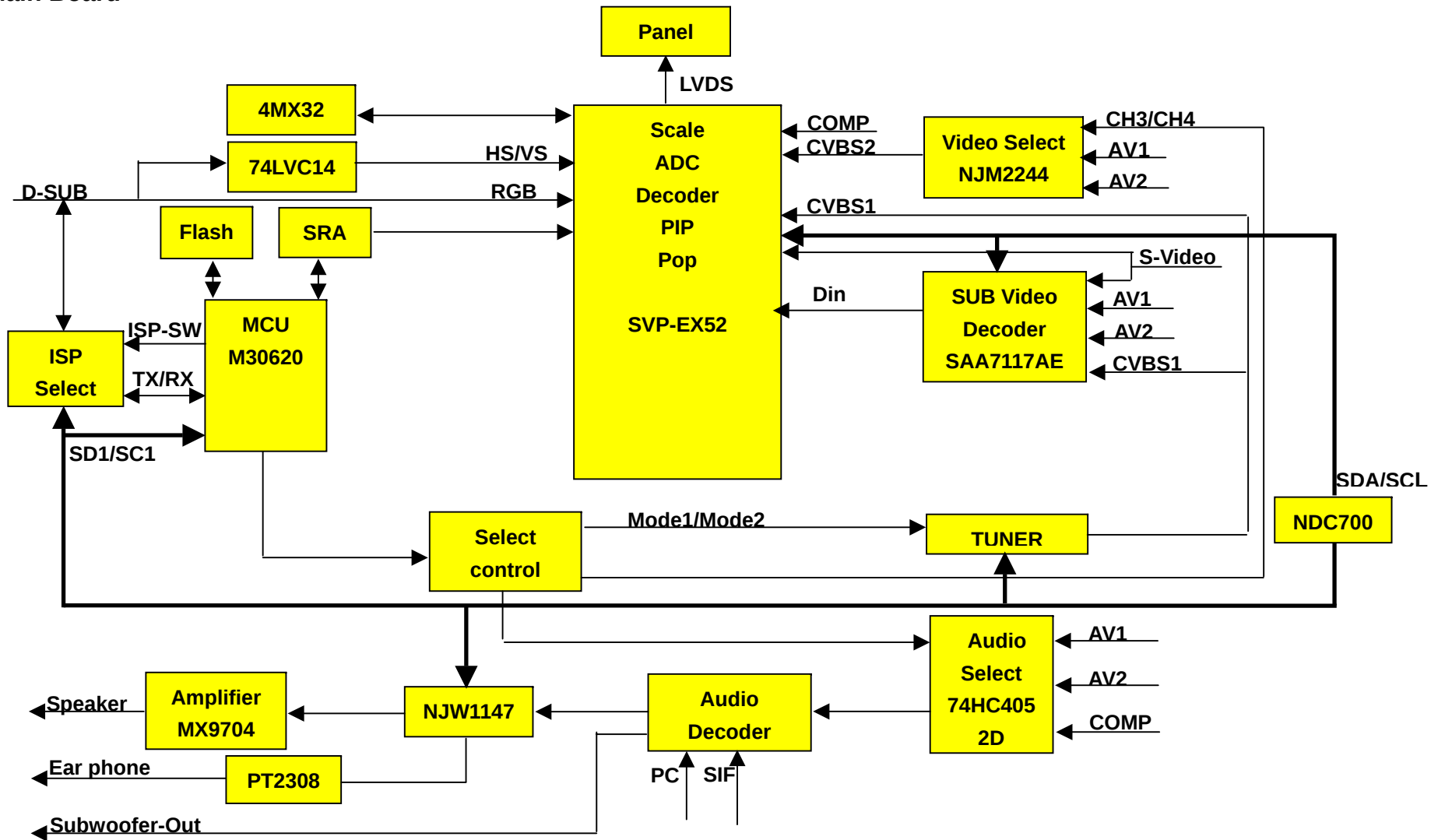


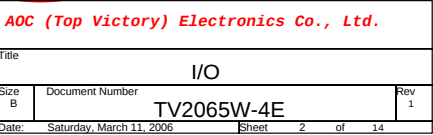
715T1599-1VER:B DIP

Headphone Board

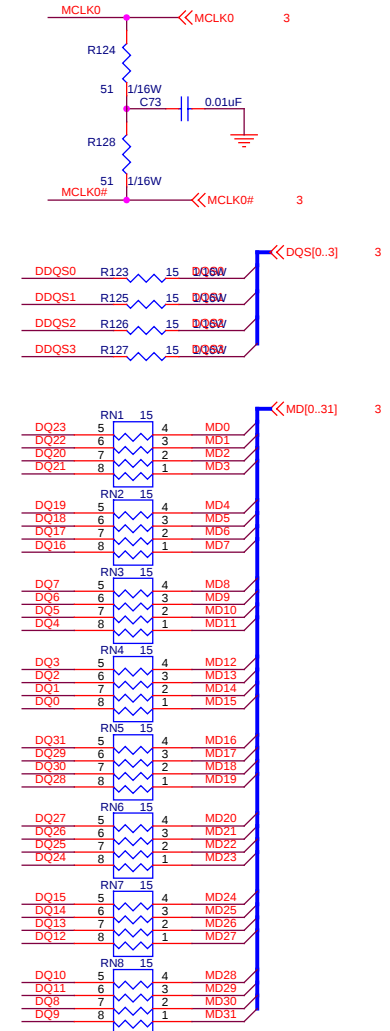
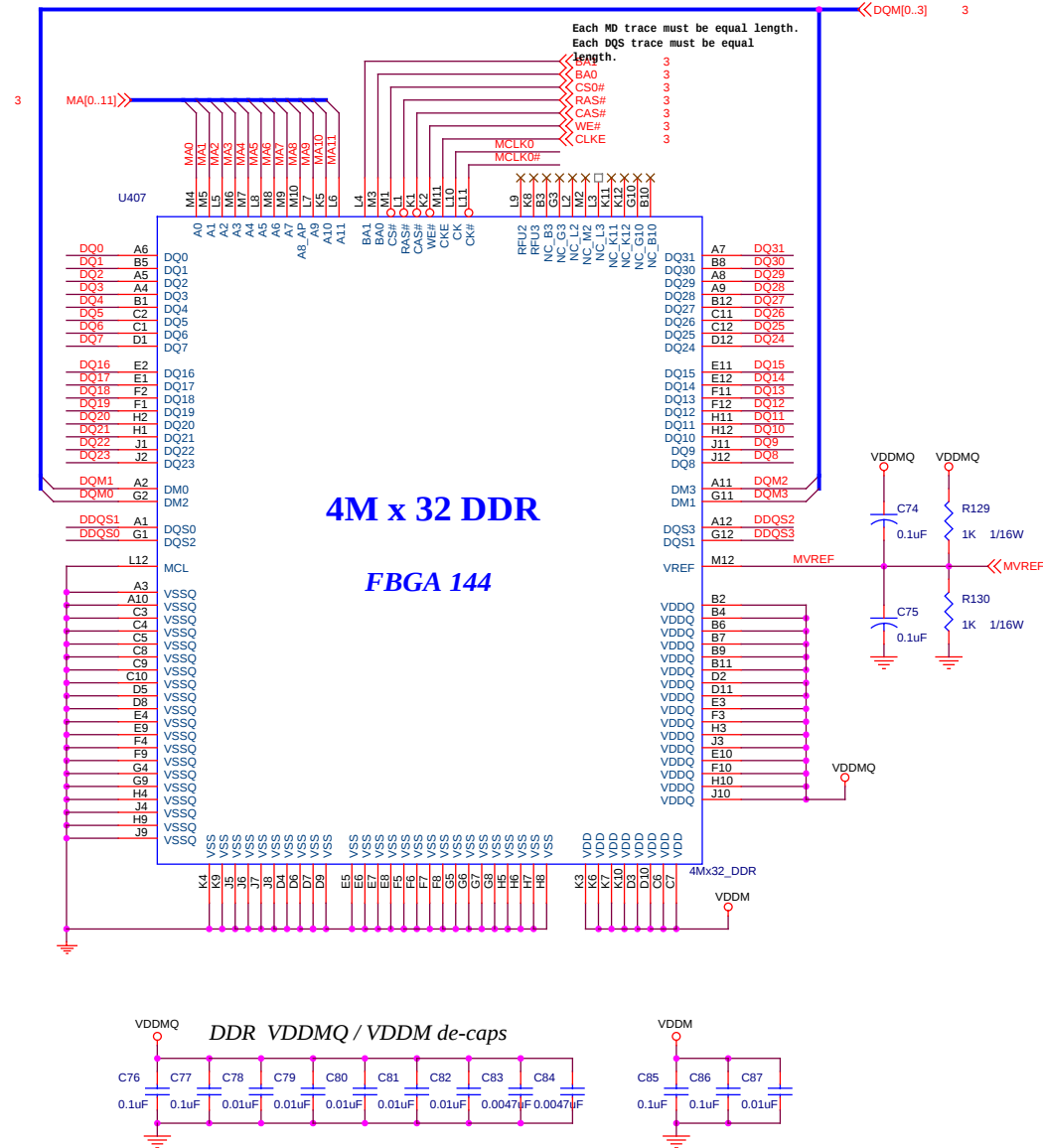
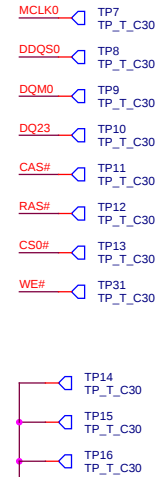


Main Board



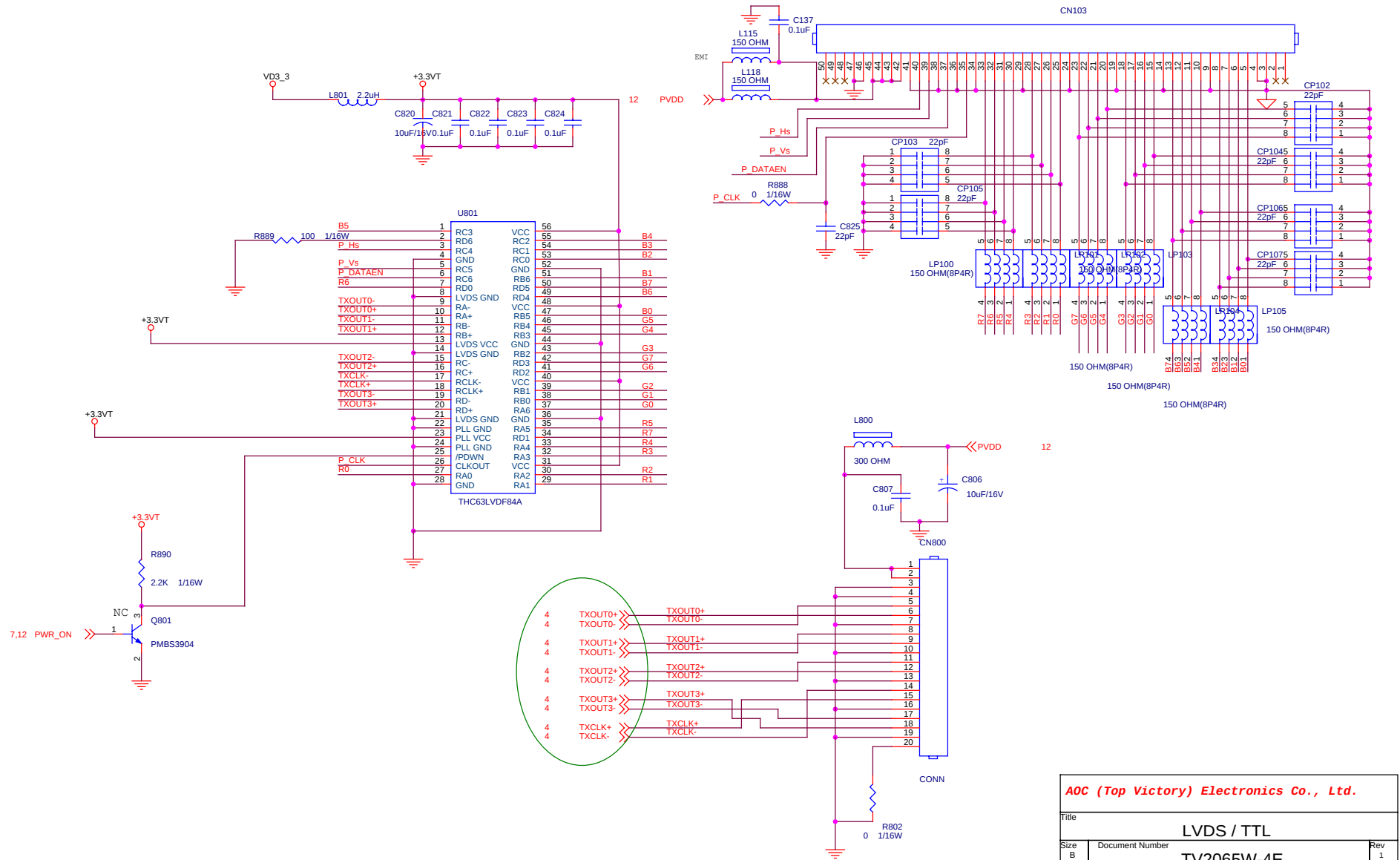


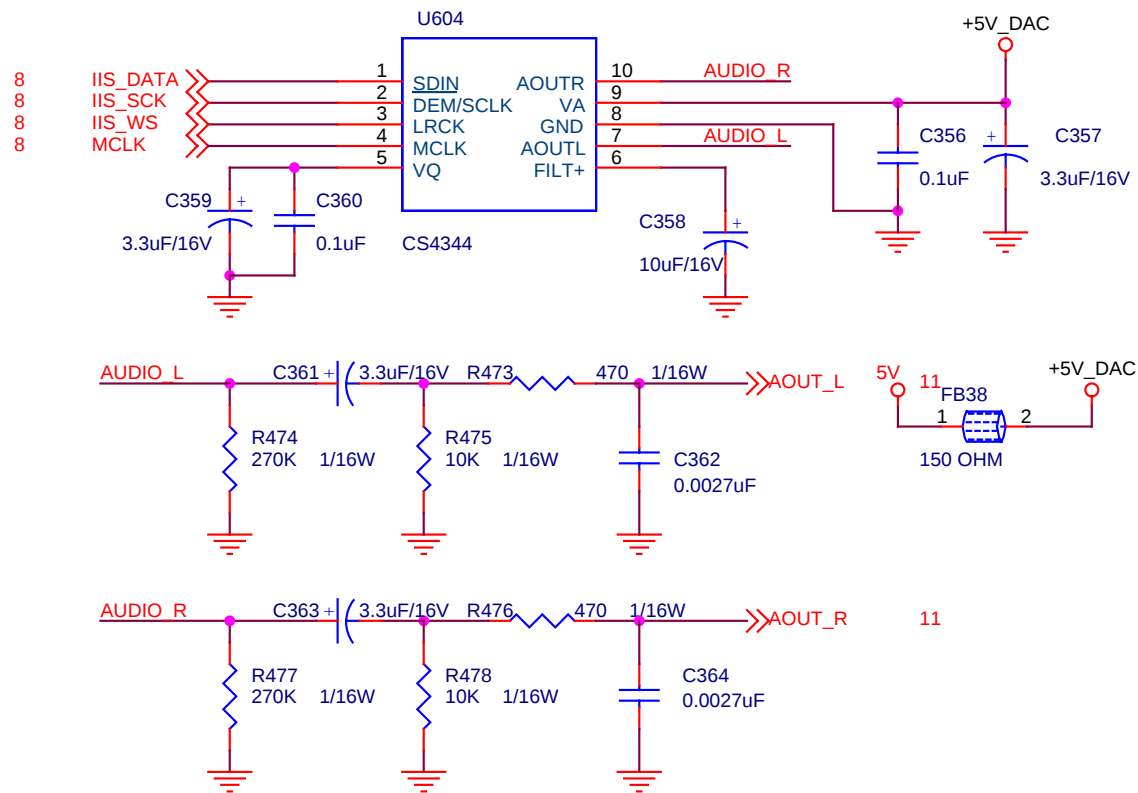
Test pads for DDR



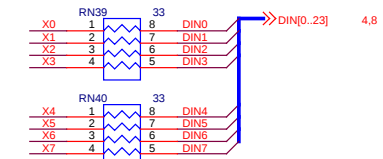
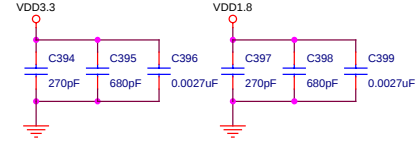
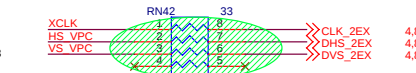
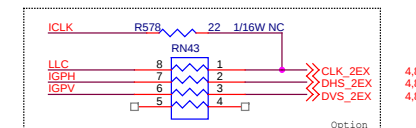
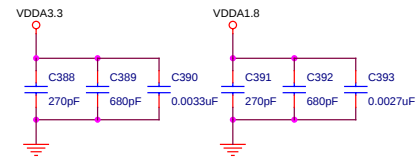
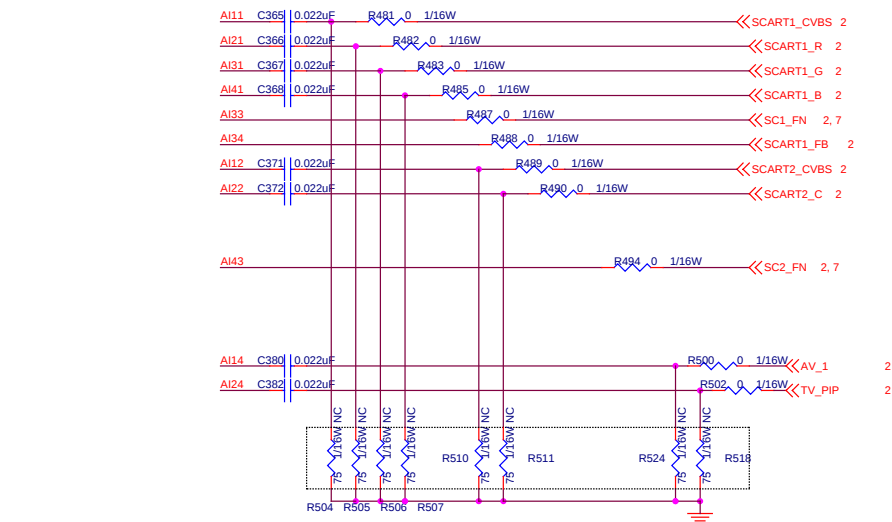
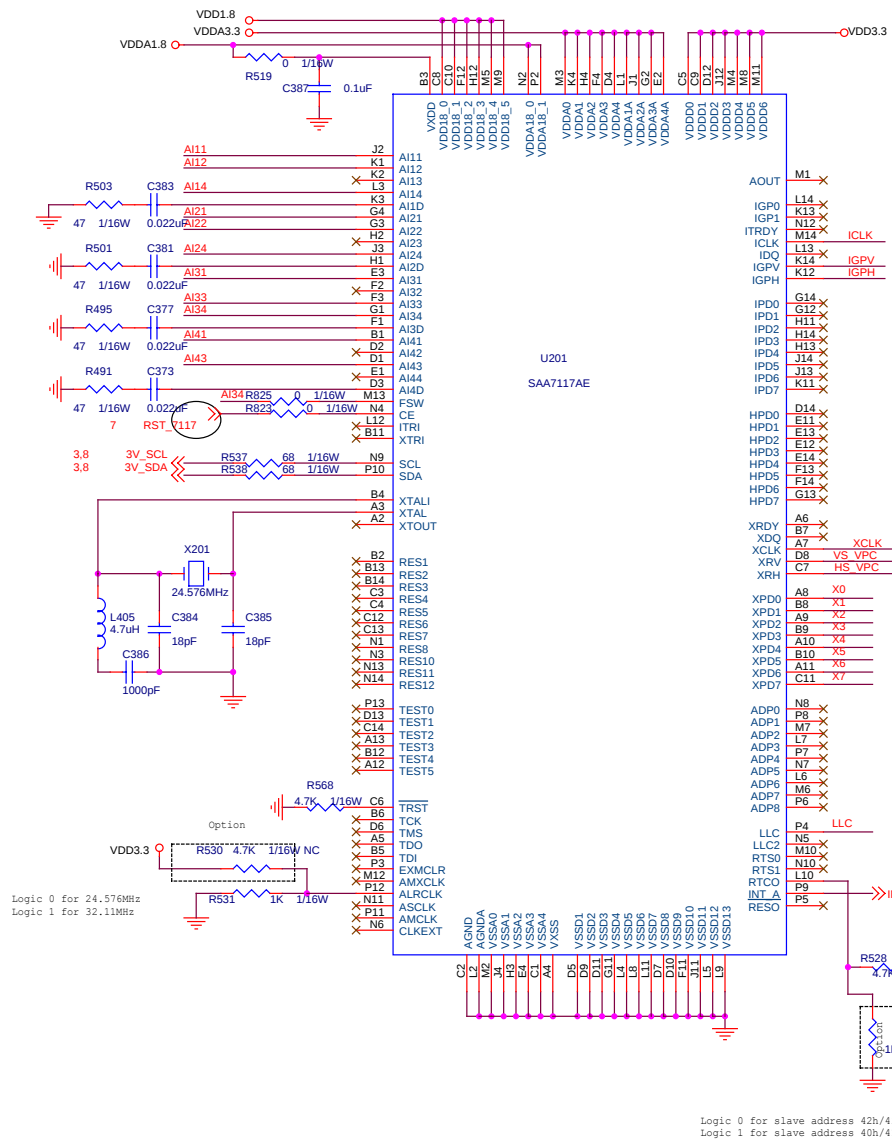
MEMORY DECOUPLING SCHEME

AOC (Top Victory) Electronics Co., Ltd.		
Title		
SVP-EX_4MX32_DDR		
Size	Document Number	Rev
B	TV2065W-4E	1
Date:	Saturday, March 11, 2006	Sheet 5 of 14

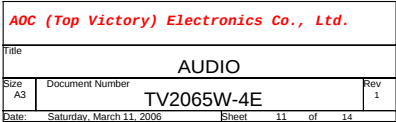


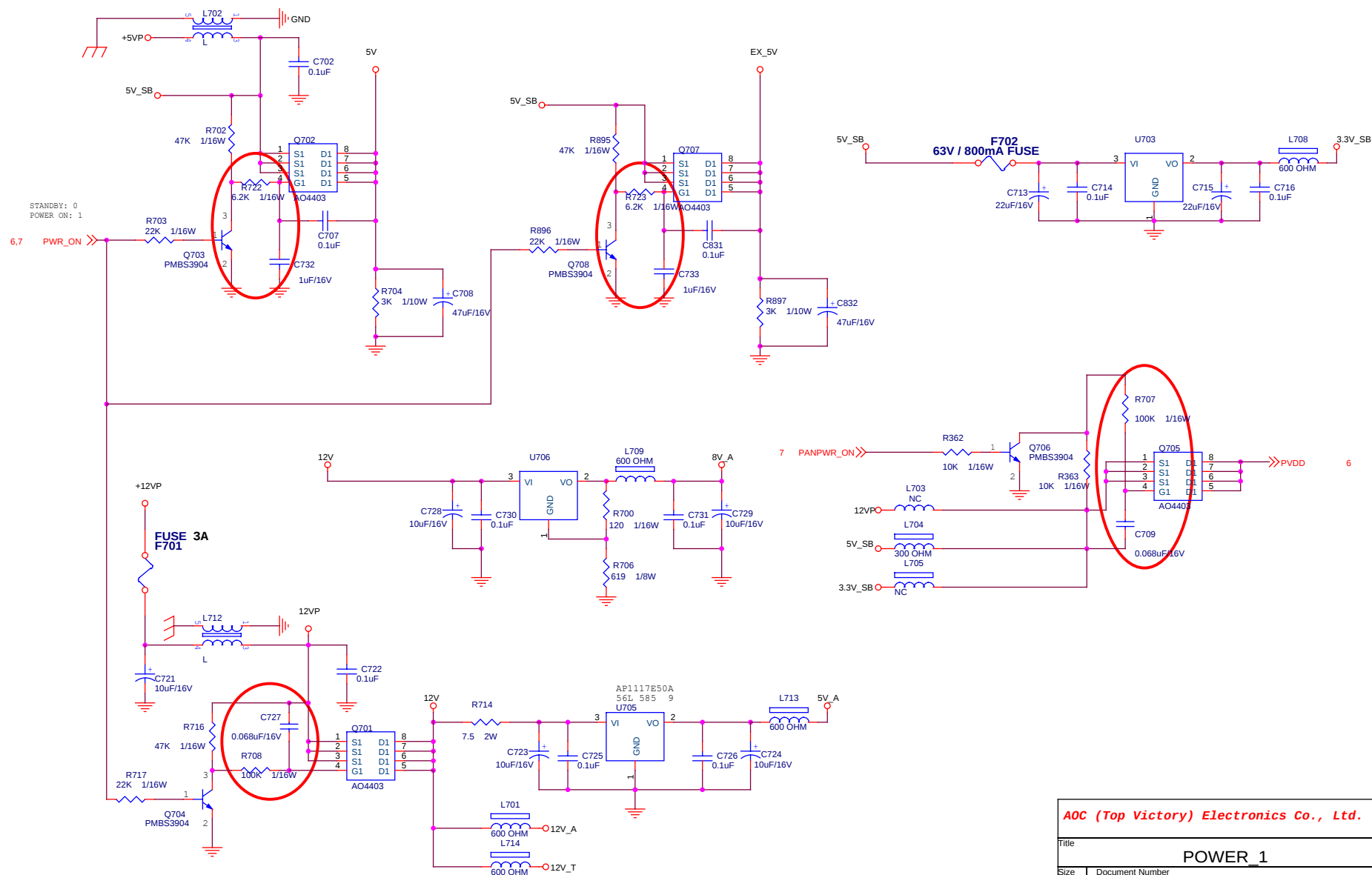


AOC (Top Victory) Electronics Co., Ltd.			
Title			
DAC			
Size A	Document Number		Rev 1
		TV2065W-4E	
Date:	Saturday, March 11, 2006	Sheet	9 of 14

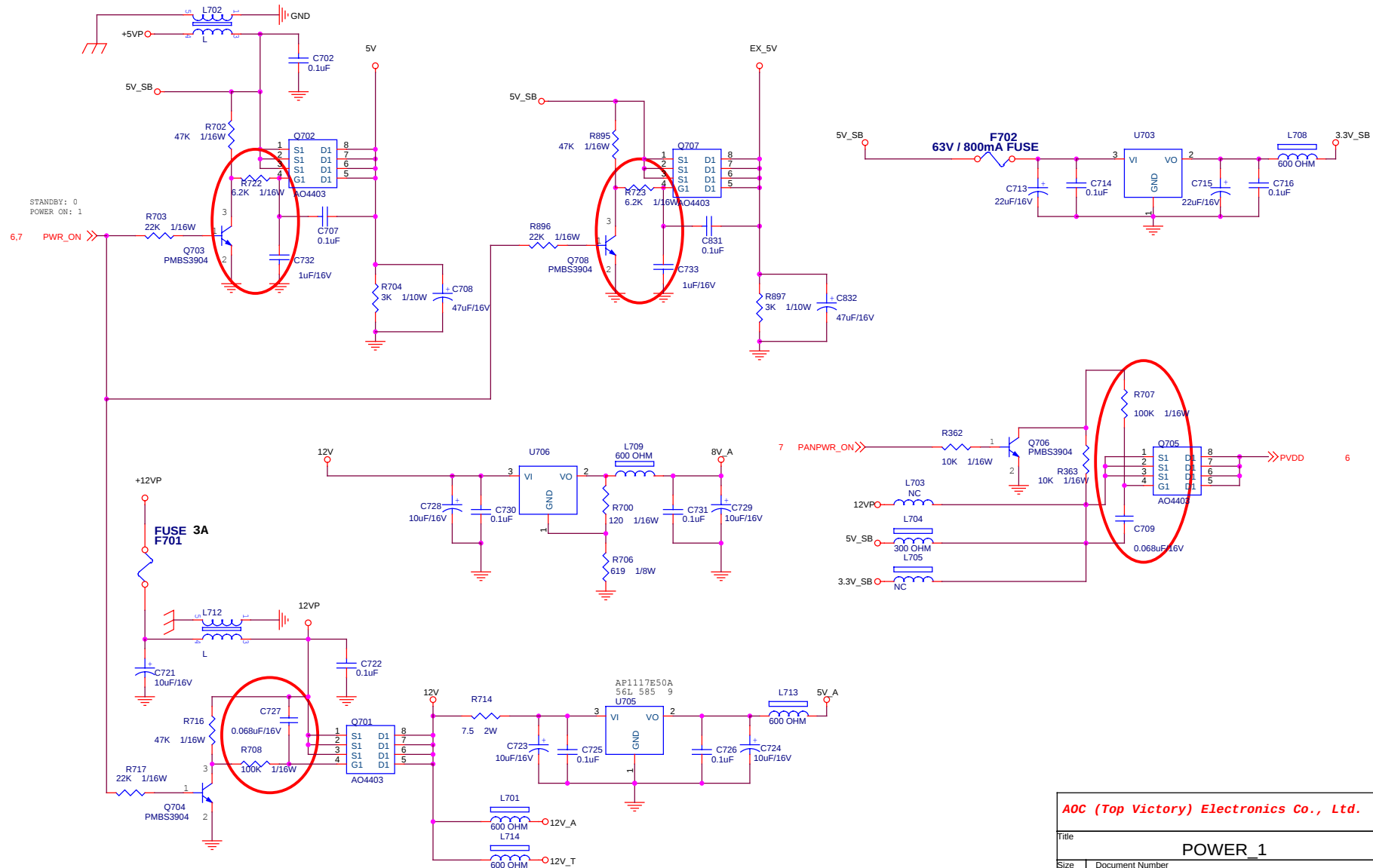


AOC (Top Victory) Electronics Co., Ltd.			
Title			
SAA7117A			
Size	Document Number	Rev	
B	TV2065W-4E	1	
Date:	Saturday, March 11, 2006	Sheet	10 of 14

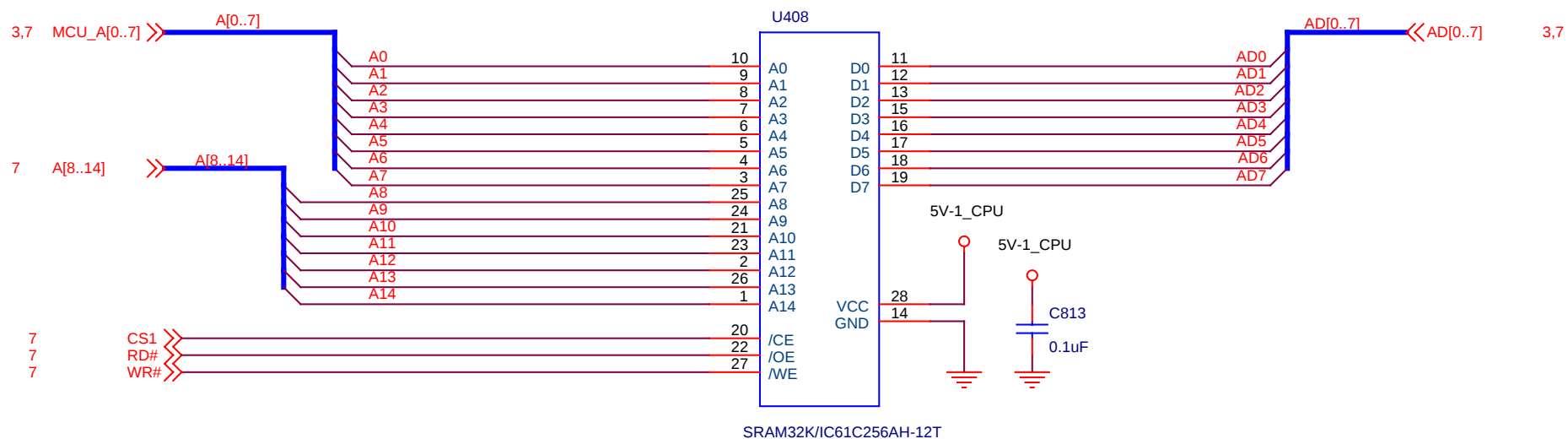




AOC (Top Victory) Electronics Co., Ltd.			
Title			
POWER_1			
Size	Document Number	Rev	
B	TV2065W-4E	1	
Date:	Saturday, March 11, 2006	Sheet	12 of 14

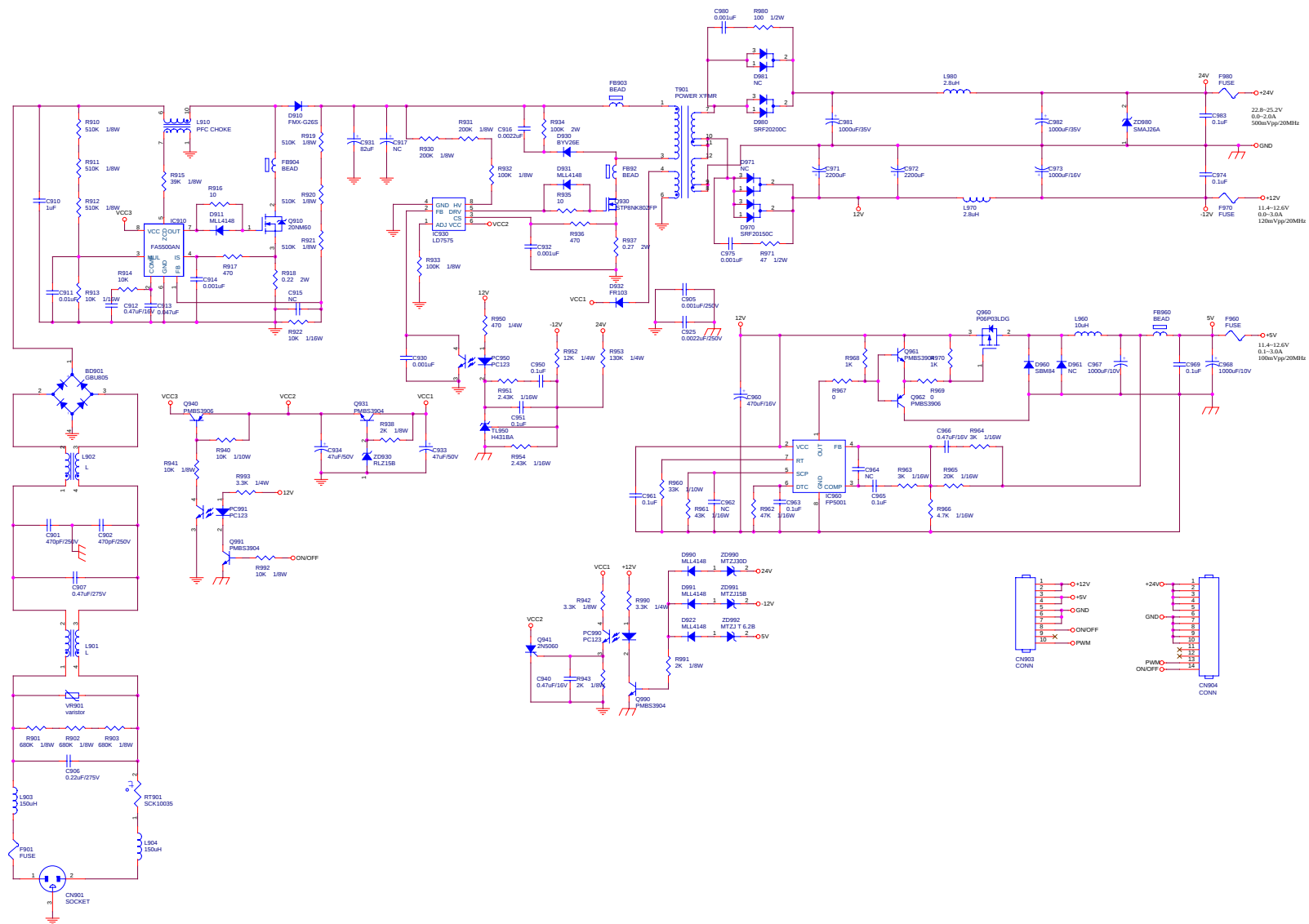


AOC (Top Victory) Electronics Co., Ltd.			
Title			
POWER_1			
Size	Document Number	TV2065W-4E	
B		Rev 1	
Date:	Saturday, March 11, 2006	Sheet	12 of 14



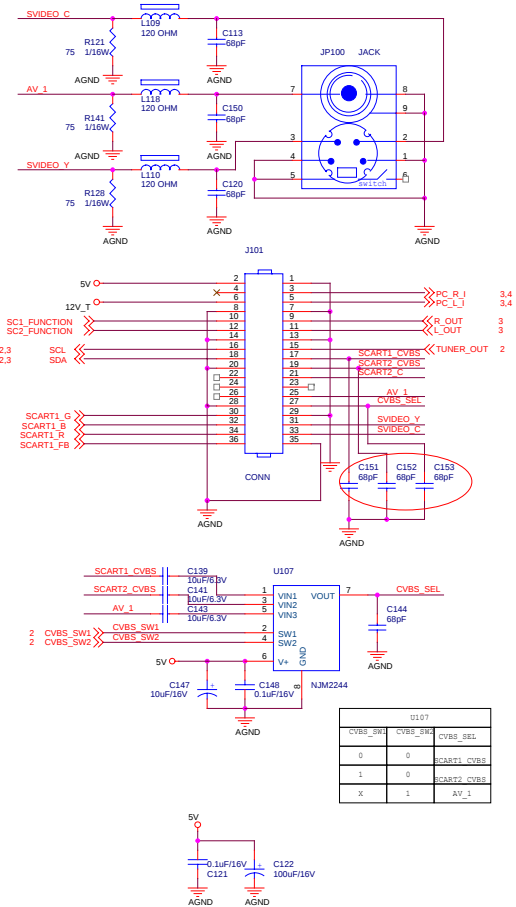
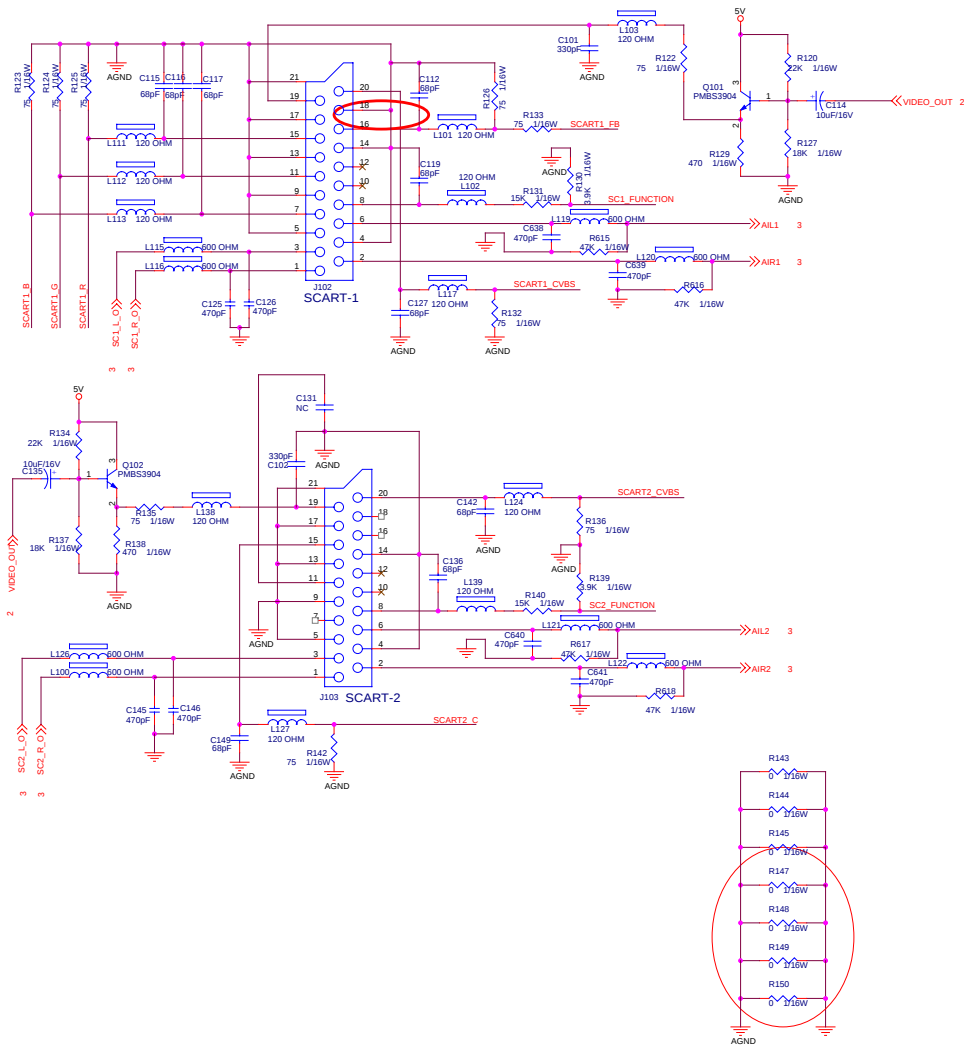
AOC (Top Victory) Electronics Co., Ltd.		
Title		
EXT SRAM 32K FOR MCU		
Size A	Document Number TV2065W-4E	Rev 1
Date:	Saturday, March 11, 2006	Sheet 14 of 14

Power board



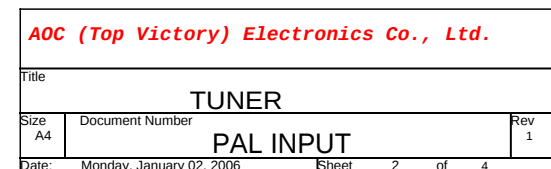
TTE 20"W			
REV	Document Number	715L1599-1	REV
DATE	Monday, February 27, 2006	Sheet	1 of 1

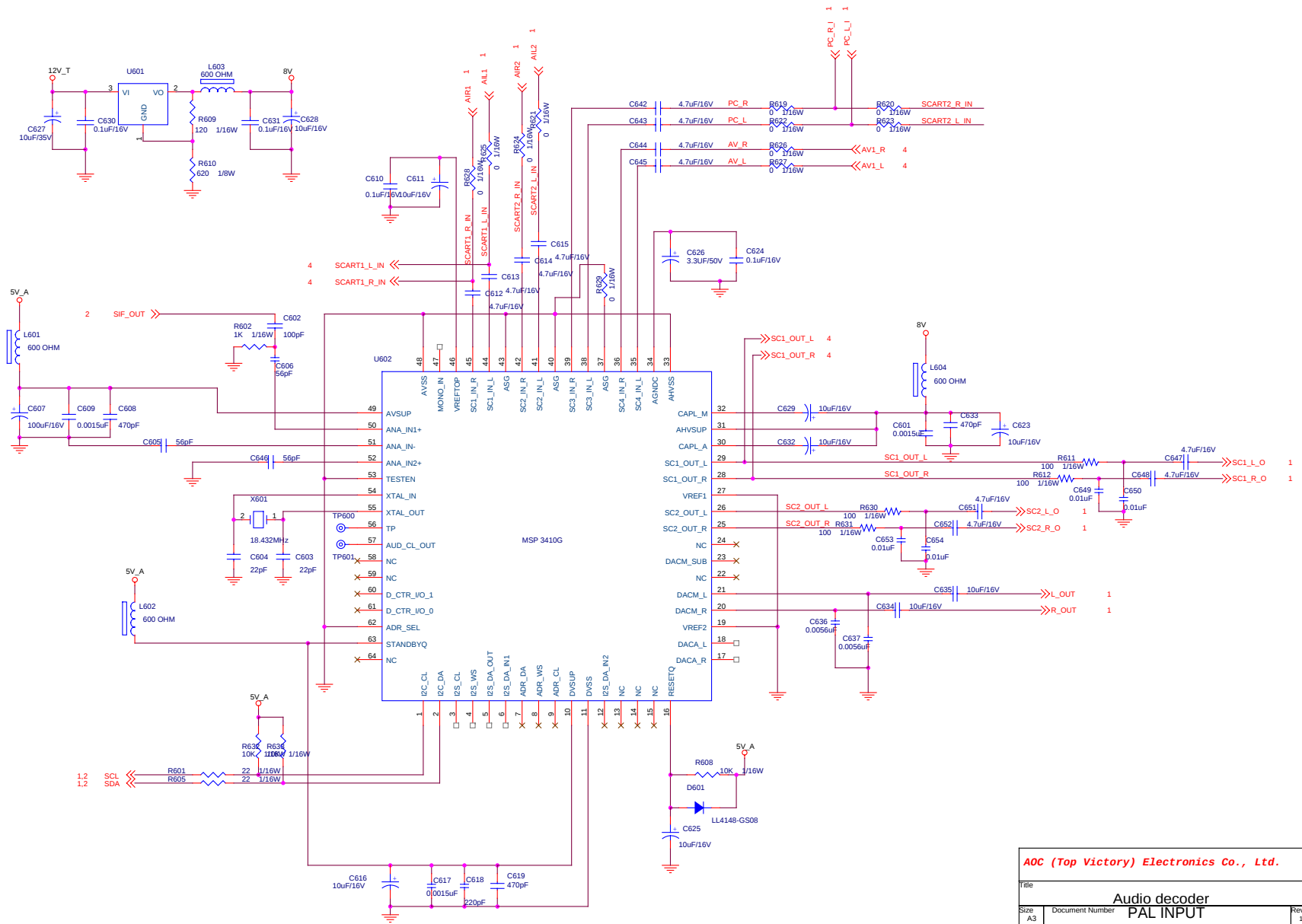
I/O_PAL PCB



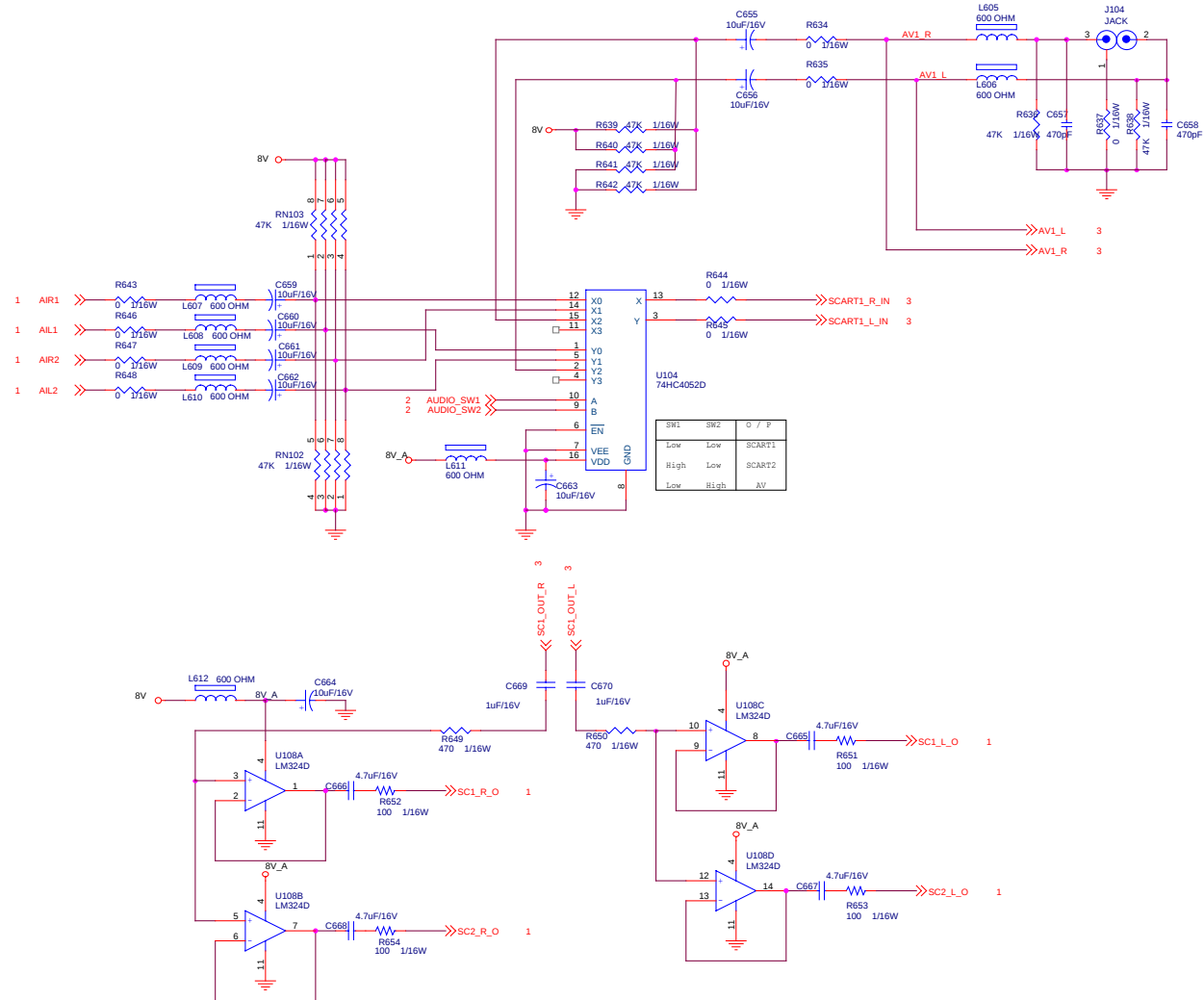
AOC (Top Victory) Electronics Co., Ltd.

I/O			
Size	Document Number	Rev 1	
PAL INPUT			
Date:	Monday, January 02, 2006	Sheet	1 of 4



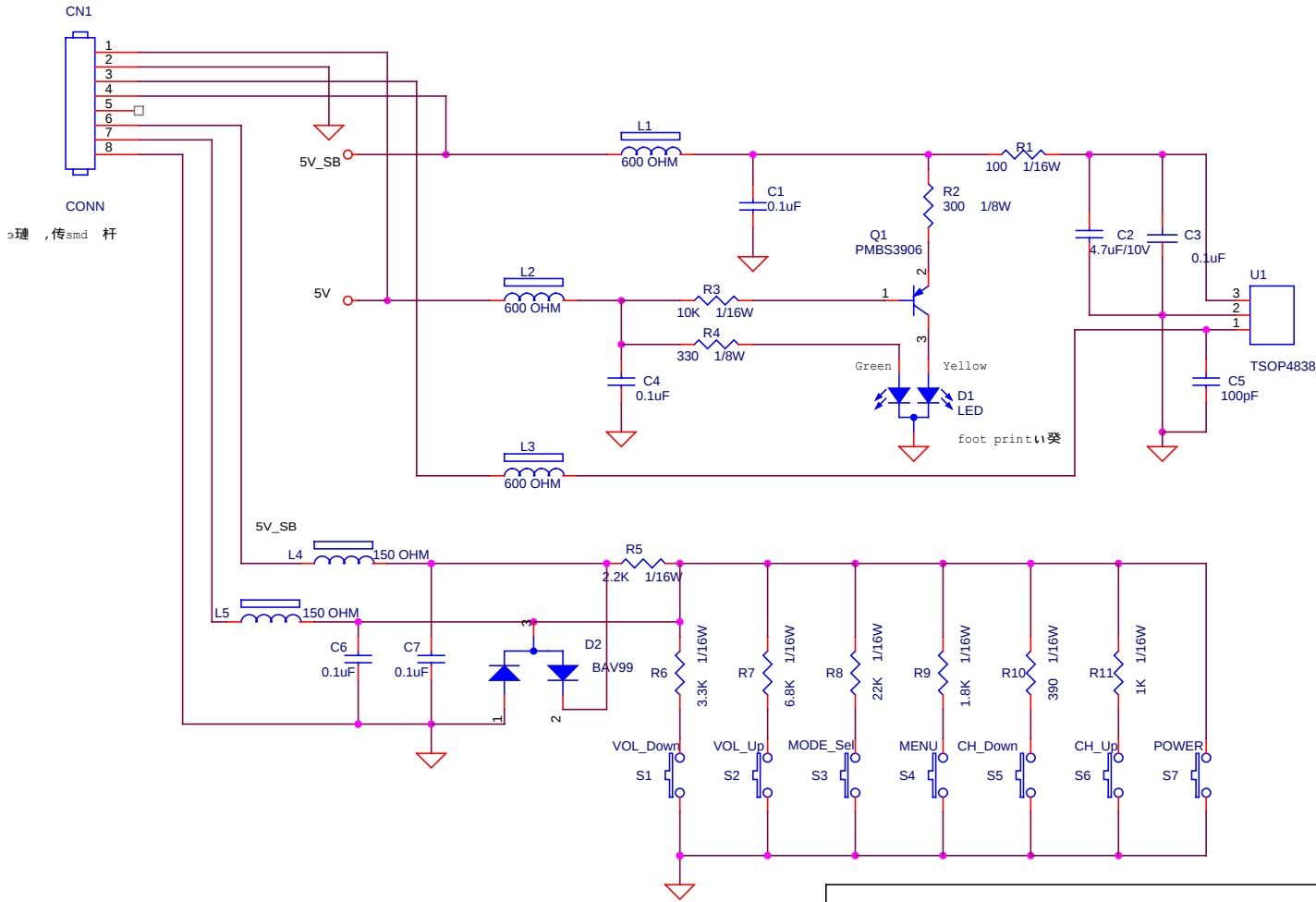


AOC (Top Victory) Electronics Co., Ltd.			
Title			
Audio decoder			
Size	Document Number	PAL INPUT	
A3		Rev 1.0	
Date:	Monday, January 02, 2006	Sheet	3 of 4



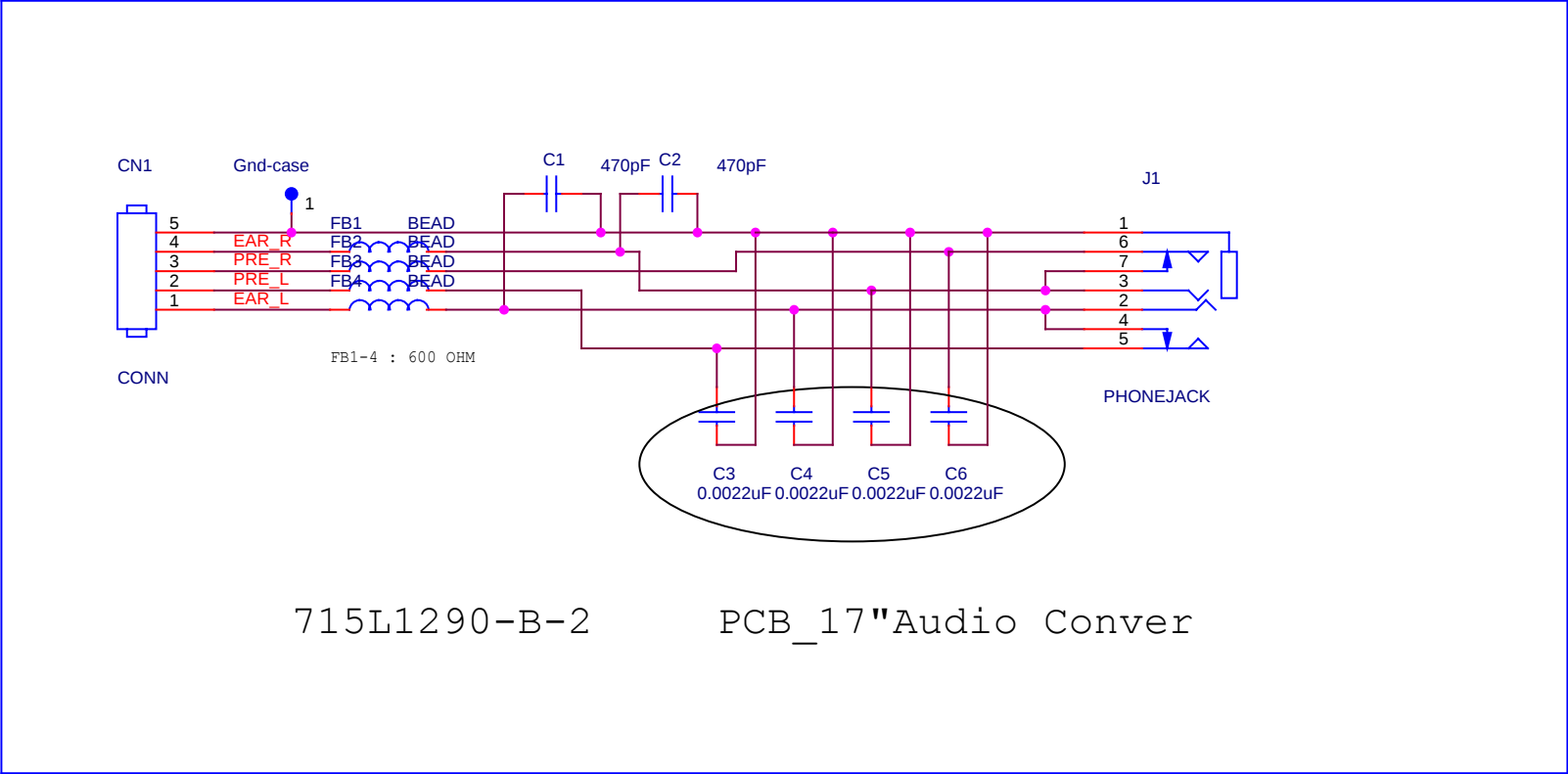
AOC (Top Victory) Electronics Co., Ltd.			
Title			
FOR MSP3415			
Size	Document Number	Rev	
A3	PAL INPUT	1	
Date	Monday, January 02, 2006	Sheet	4 of 4

key Board



Title		
TV2066W-4E		
Size	Document Number	Rev
A	Keypad_IR PCB	1
Date:	Monday, February 13, 2006	Sheet 1 of 1

Audio Board



AOC (Top Victory) Electronics Co., Ltd.		
Title Audio Conver		
Size A	Document Number 715L1290-B-2	Rev 1
Date: Wednesday, May 11, 2005 Sheet 1 of 1		