Acer AL1514 (AL1511e)

Service Guide

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Please refer to http://csd.acer.com.tw/

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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	Reminds 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 BASICCONFIGURATION 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 not 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 an ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

WARNING:

To prevent fire or chock hazard, do not expose the monitor to rain or moisture. Dangerously 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 manufacture or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacture and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet area 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. 3.5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.
- For use only with the attached power adapter (output 12V DC) which have UL,CSA listed license

SPECIAL NOTES ON LCD MONITORS

The following symptoms are normal with LCD 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 in the screen depending on the desktop pattern you use.
- The LCD 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 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.

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Chapter 1

Monitor Feature

LCD Panel	Driving system	TFT Color LCD
	Size	15"
	Pixel pitch	0.297 mm
	Viewable angle	125(H) x 105 (V) degree
	Brightness	250 cd/m2(typ)
	Contrast Ratio	350:1 (typ)
	Response time	25ms (Tr+Tf)
Input	Video	R,G,B Analog
	Separate Sync	H/V TTL
	H-Frequency	31-61KHZ
	V-Frequency	50-75HZ
Display Color		16.2 million Colors
Maximum Dot Clock ®		135MHz
Max Resolution		1024x768@75HZ
Plug & Play		VESA DDC2B
EPA ENERGY STAY	ON Mode	<50W
	OFF Mode	<1W
Audio output		Rated Power 1.0W rms(Per channel)
Input Connector		D-Sub 15 pin
Input Video Signal		Analog : 0.7Vp-p,75OHM
Maximum Screen Size		Horizontal : 304mm
		Vertical : 228mm
Power Source		90~240 Vac, 50~60HZ
Environmental Considerations		Operating Temp : 0 to 40 degree ; Altitude:3000mm Storage Temp : -20 to 60 degree ; Altitude :12000mm Operating Humidity : 5% to 90%
Weight (N.W.)		2.6kg
Dimension		344(W) x 361(H) x 149.8(D) mm

External Controls :	Switch	* Power Switch * MENU/ENTER * >/ Volume * </ Volume * Auto Adjust KEY
	Function	* Contrast/brightness * Focus * Clock * H.Position * W.Position * Language * OSD Color temperature * OSD Position & Timeout * Auto Config * Input * Information * Reset * Exit
Regulatory Compliance		UL, CSA, FCC, TUV/GS, CE, TCO99, ISO13406-2

Timeings

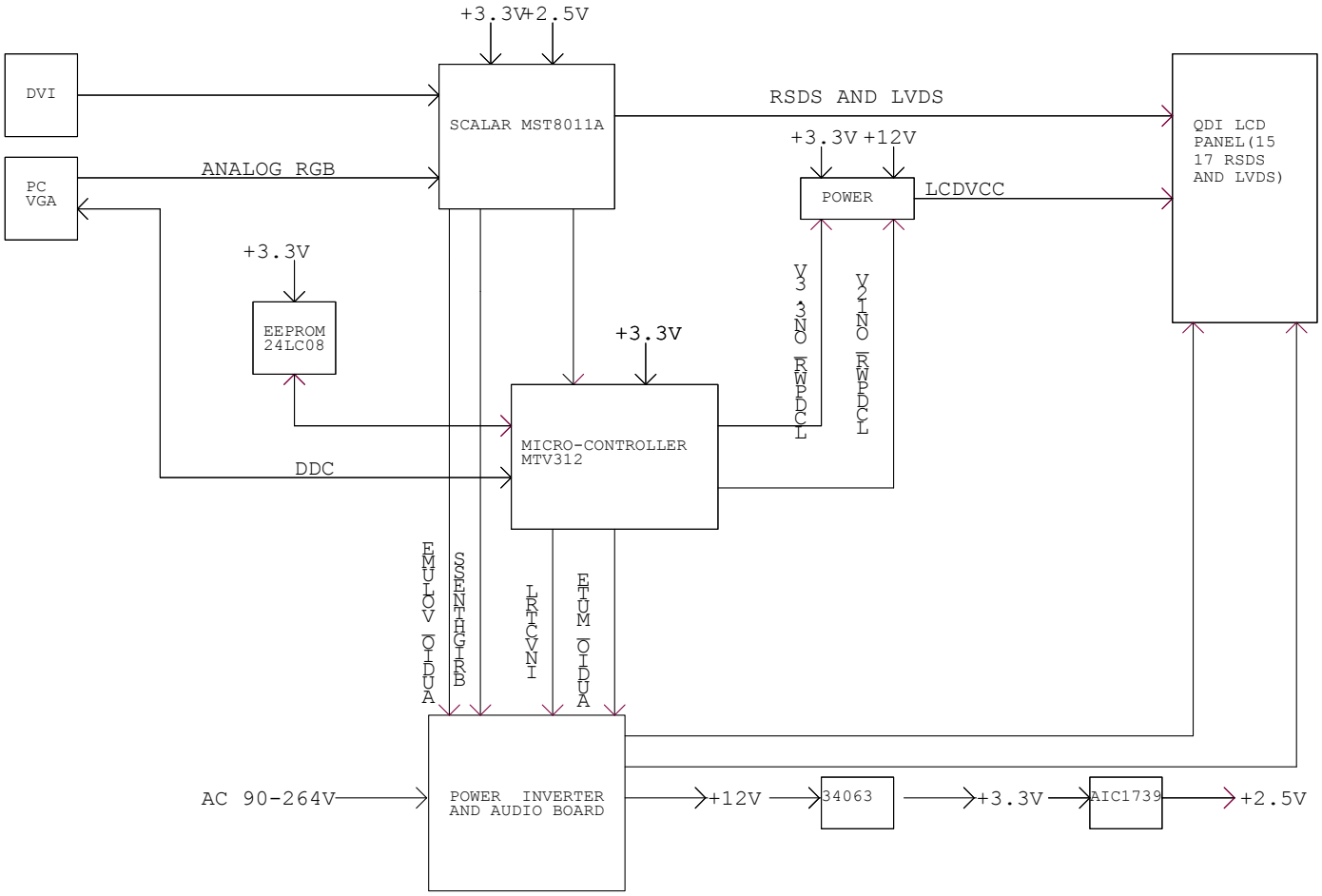
The product has 21 memory modes in total. 12 modes are preset and 9 modes are user definable.

Timing	1	2	3	4	5	6	7	8	9	10	11	12
Standard	DOS	VESA	VESA	VESA	VESA	VESA	VESA	VESA	VESA	VESA	VESA	VESA
Data Pixel	640	640	640	640	720	800	800	800	800	1024	1024	1024
Data Line	350	480	480	480	400	600	600	600	600	768	768	768
H-Freq kHz	31.469	31.469	37.861	37.500	31.467	35.156	37.879	48.077	46.875	48.363	56.476	60.023
V-Freq Hz	70.087	59.942	72.809	75.000	70.082	56.250	60.317	72.188	75.000	60.004	70.069	75.029
Pix Rate MHZ	25.175	25.175	31.500	31.500	28.320	36.000	40.000	50.000	49.500	65.000	75.000	78.750
Hor.A [us]	0.318	0.636*	0.508	0.508	0.616	0.667	1.000	1.120	0.323	0.369	0.320	0.203
Hor.B [us]	3.813	3.813	1.270	2.032	3.813	2.000	3.200	2.400	1.616	2.092	1.813	1.219
Hor.C [us]	1.907	1.907*	3.810	3.810	1.907	3.556	2.200	1.280	3.232	2.462	1.920	2.235
Hor.D [us]	25.422	25.422	20.317	20.317	25.442	22.222	20.000	16.000	16.162	15.754	13.653	13.003
Hor.E [us]	31.778	31.778	26.413	26.667	31.778	28.444	26.400	20.800	21.333	20.677	17.707	16.660
Vert.A [ms]	0.191	0.381	0.026	0.027	0.382	0.028	0.026	0.770	0.021	0.062	0.053	0.017
Vert.B [ms]	0.064	0.064	0.079	0.080	0.064	0.057	0.106	0.125	0.064	0.124	0.106	0.050
Vert.C [ms]	1.907	1.048#	0.528	0.427	1.111	0.626	0.026	0.478	0.448	0.600	0.513	0.466
Vert.D [ms]	11.122	15.253	12.678	12.800	12.711	17.067	15.840	12.480	12.800	15.880	13.599	12.795
Vert.E [ms]	14.268	16.683	13.735	13.333	14.268	17.778	16.579	13.853	13.333	16.666	14.272	13.328
Sync.Pol.	+/-	- / -	- / -	- / -	-/+	+ / +	+ / +	+ / +	+ / +	- /-	+ / +	+ / +

Note: *Indicates horizontal front / back porch includes borders

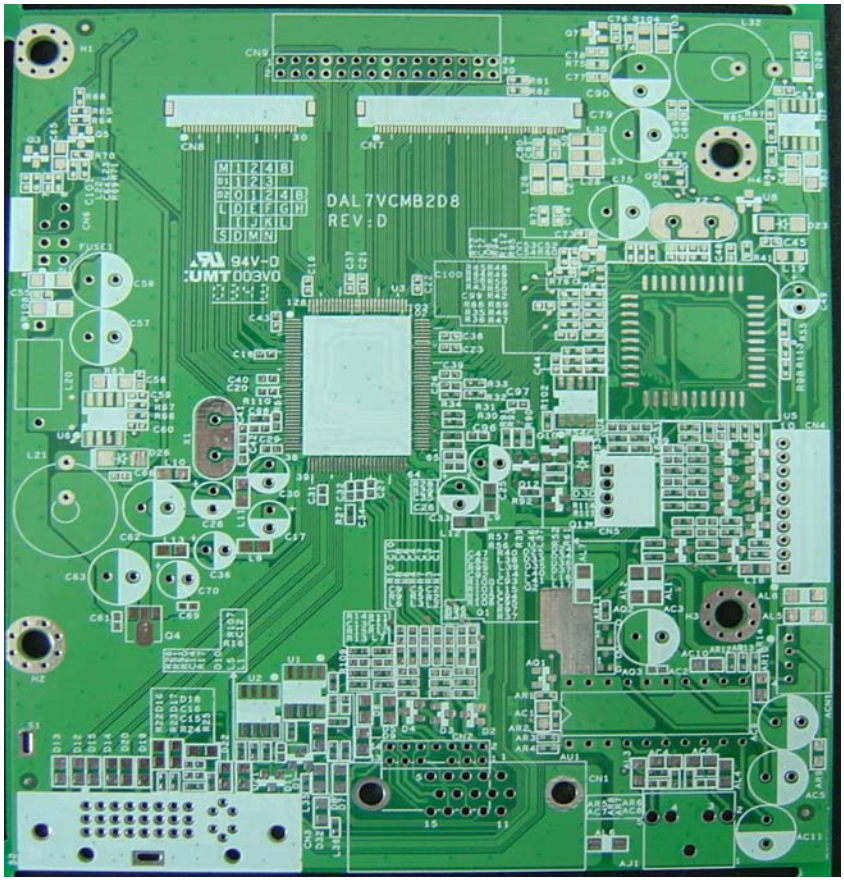
# Indicates vertical front / back porch includes borders

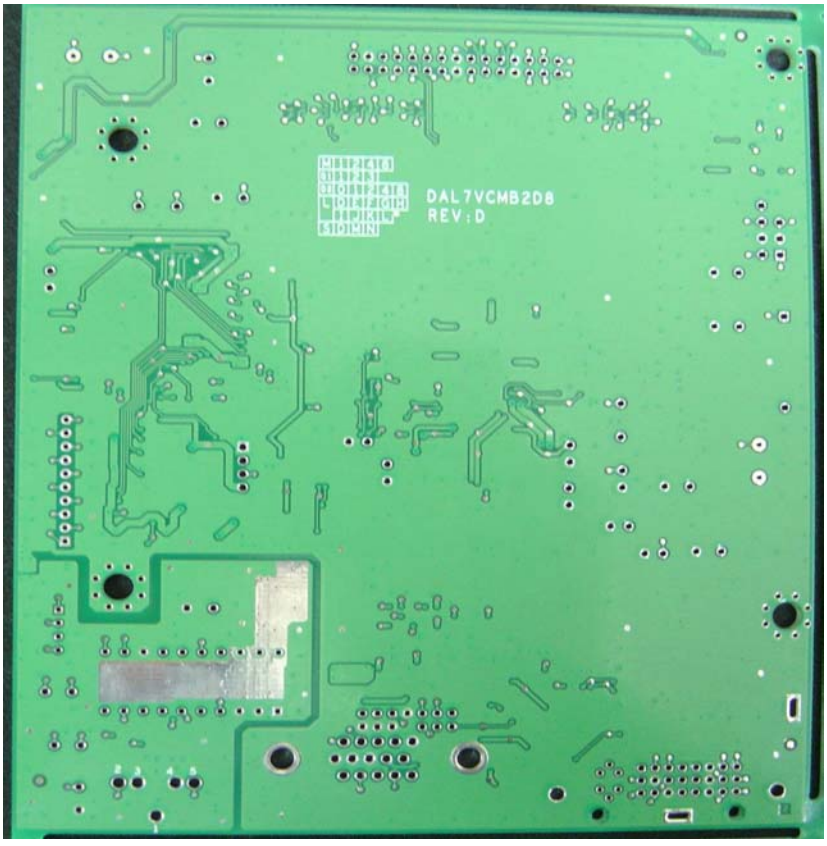
Monitor Block Diagram



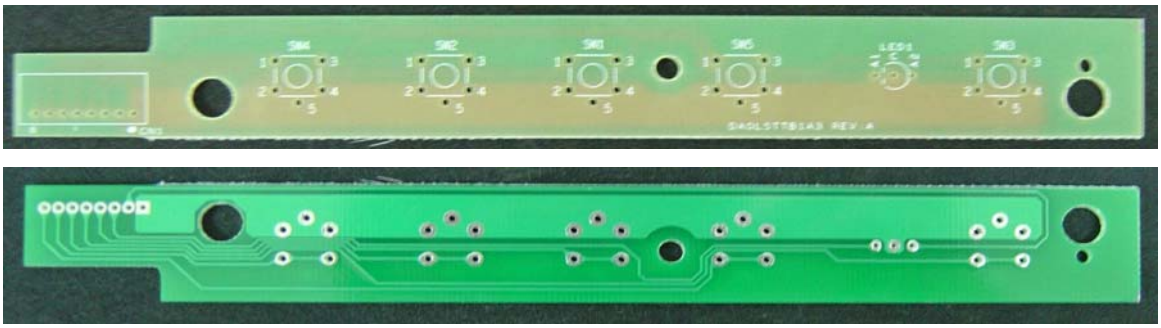
PCB CONDUCTOR VIEW

Main Board





Button Board



Chapter 2

OPERATING INSTRUCTIONS

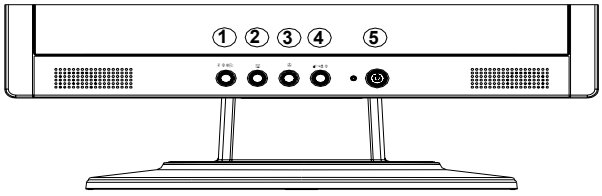
Front Panel Definition

This Section defines the front panel User Interface for Led Indictor and Key function.

Key Definition:

There are five keys defined in this system and described bellows.

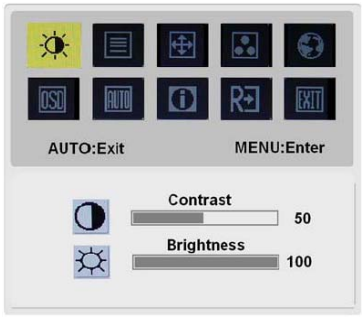
* Adjusting display settings



External Controls

1.	AUTO	AUTO	If OSD is active, press to exit a selection in OSD. If OSD is inactive, press and the monitor will automatically optimize the position, focus and clock of your display.
2	<	MINUS	If OSD is active, press to select or adjust OSD options. If OSD is inactive, press once, then press the buttons marked < or > to adjust the volume.
3	>	PLUS	If OSD is active, press to select or adjust OSD options. If OSD is inactive, press once, then press the buttons marked < or > to adjust the volume.
4	MENU	OSD Function	Press to view OSD. Press again to enter a selection in OSD.
5	⏻	POWER	Power on/off Green: power on Orange: in sleep mode

OSD Menu

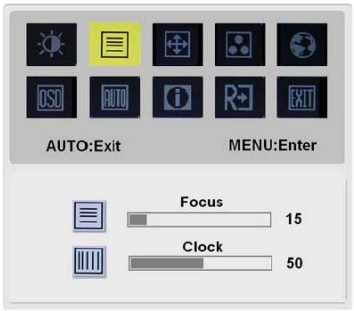


BRIGHTNESS:

This adjusts the brightness of the picture on the screen.

CONTRAST:

This adjusts dark and light shades of color relative to each other to achieve a comfortable contrast.

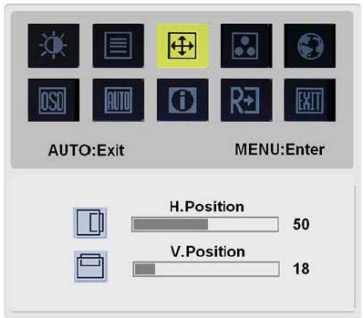


Focus:

This removes any horizontal distortion and makes the picture clear and sharp.

Clock:

If there are any vertical stripes seen on the background of the screen this renders them less noticeable by minimizing their size. It also changes the size of the horizontal screen.

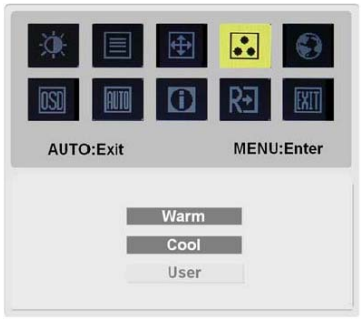


H-Position:

This adjusts the horizontal.

V-Position:

This adjusts the vertical.



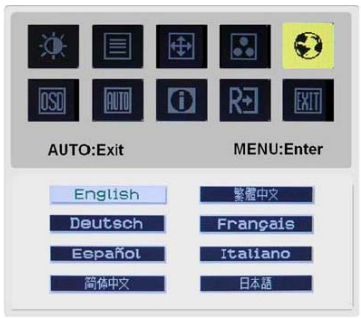
There are three ways of adjusting color:

Warm (Reddish white)

Cool (Bluish white)

User defined:

You can adjust the colors red, green and blue to the intensity you desire.



LANGUAGE:

Select the OSD menu language from English, German, and Spanish, Traditional-Chinese, French, Italian, Japanese, Simple Chinese or Rusain

OSD SETTING:

This changes the position of the OSD window on the screen and staying time

AUTO CONFIG

System runs auto-configuration.

INFORMATION:

This shows brief information on the screen.

RESET:

Recall to default settings

EXIT

Exit from OSD

LED Definition

The system equips one dual color (green/amber) led to indict system status and defined as bellows :

LED Color	System Status
Green	System in normal operation mode
Amber	System in power-saving mode
Dark	System in power-off mode

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 communication channel is defined in two levels, DDC2B. The DDC2Bis a bidirectional data channel based on the I^2C 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 signal 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 volt 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 card needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

Chapter 3

MACHINE ASSEMBLY

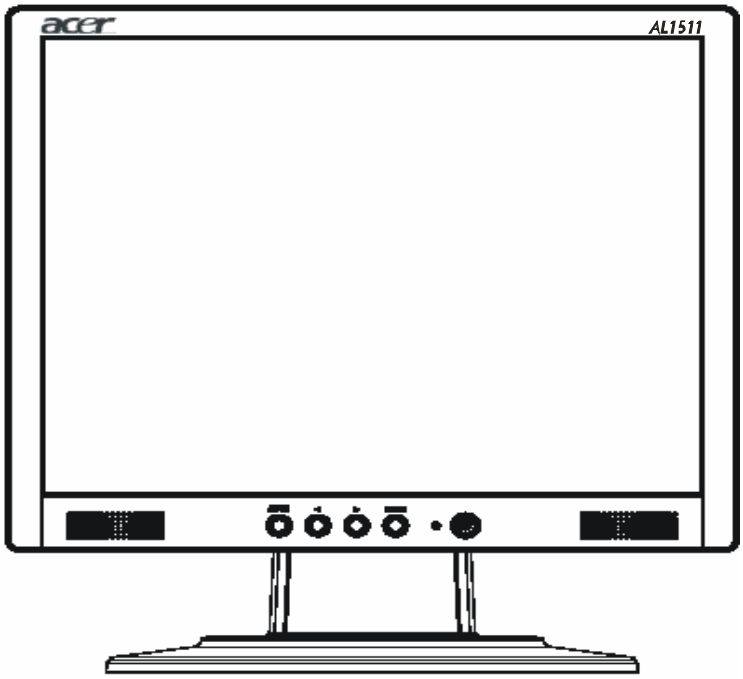
This chapter contains step-by-step procedures on how to assemble the monitor for maintenance and trouble shooting

NOTE : 1. The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding to avoid mismatch when putting back the components.

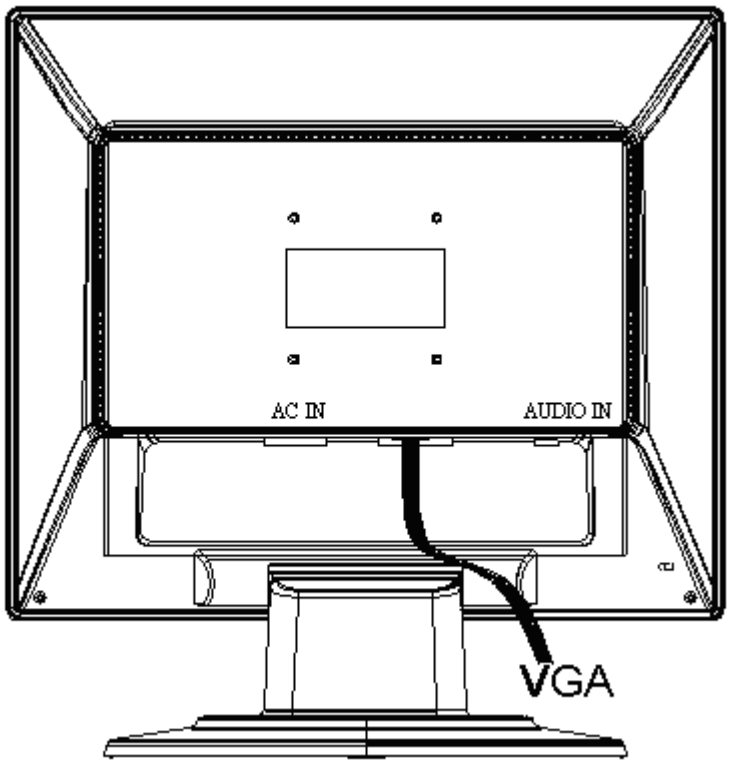
2. Note : The monitor surface is susceptible to scratching! Therefore, lay the monitor on a soft surface when mounting or removing the base.

3. Wear gloves.

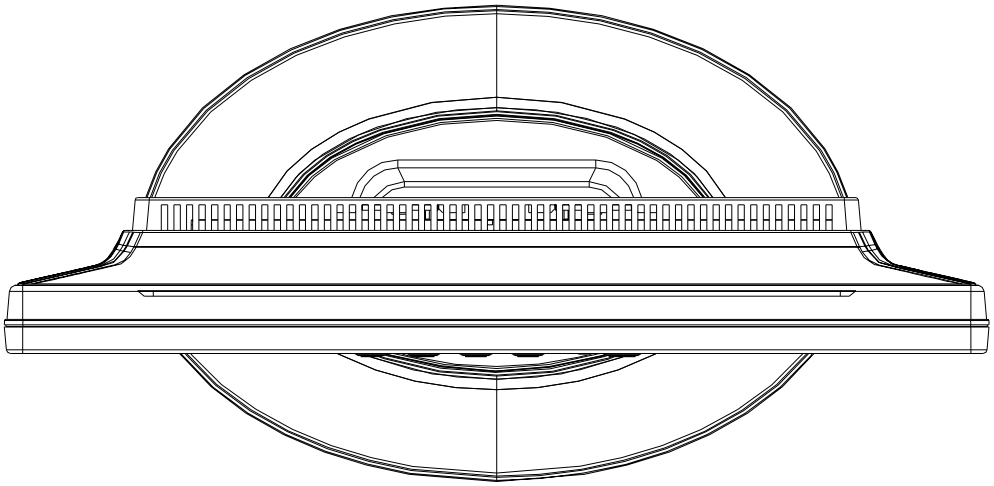
Front View : (unit : mm)



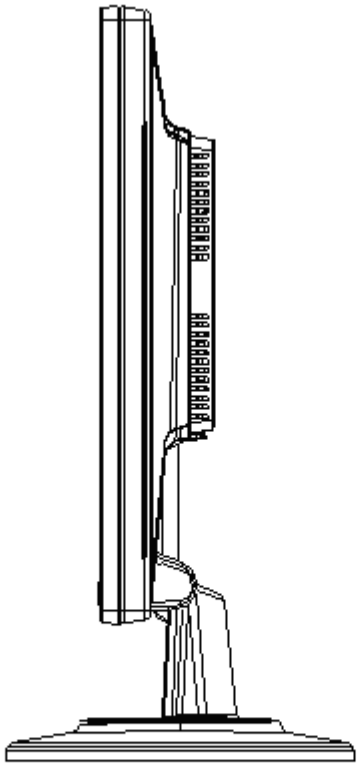
Real View :



Top View :



Side View : (unit : mm)



Picture	Description
	To assembly frame onto panel, let CCFT cable through frame, then fix frame & panel with screws
	To put & fix bezel on panel
	Insert LCD cable
	1.Assemble power BD on the frame with screws 2.Stick mylar on power BD shielding

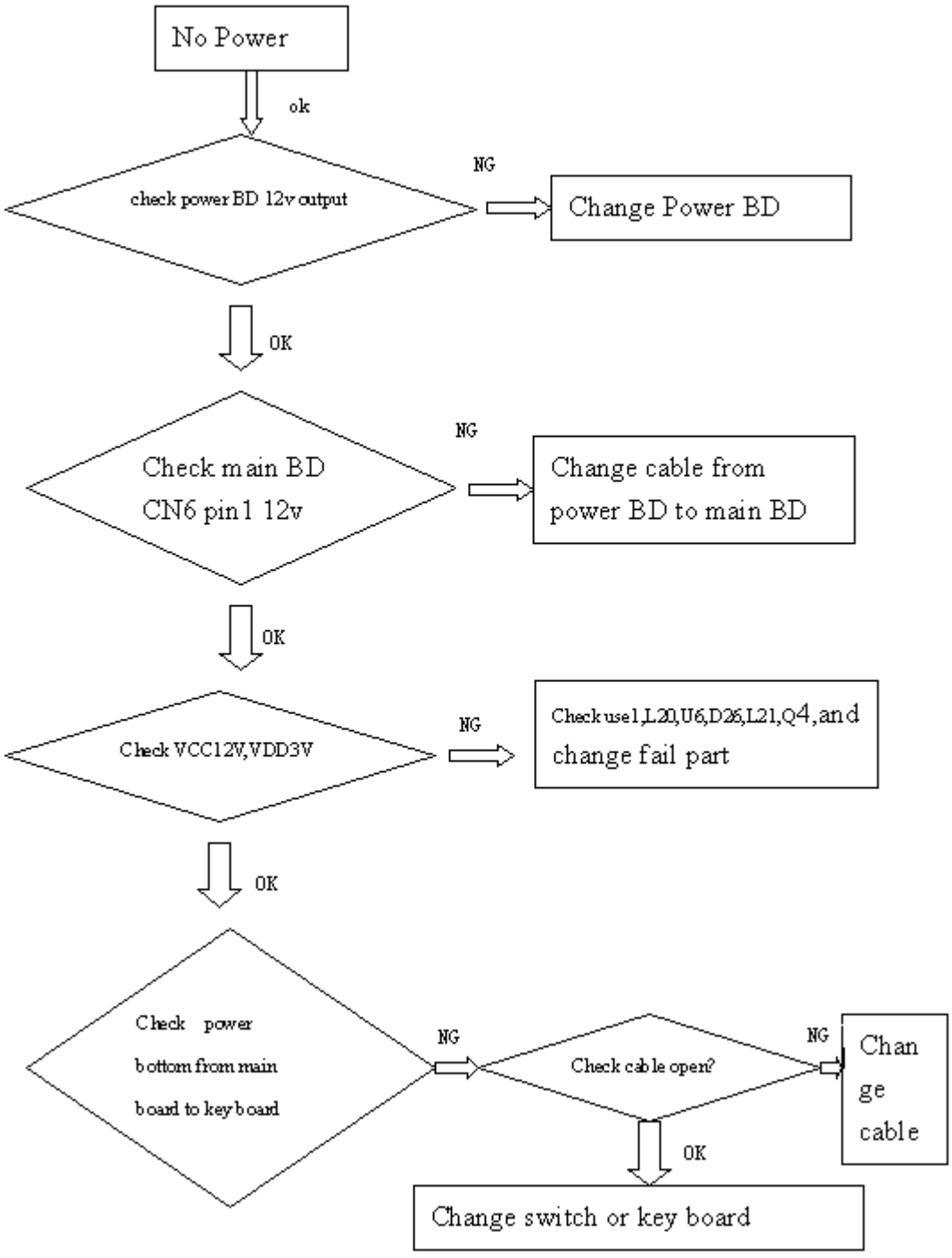
	1.Assemble main BD on the frame with screws 2.Insert LCD cable into main BD
	Insert LCD cable into main BD. Insert CCFL cable into power BD.
	Fix button BD & bezel with screw
	Fix VGA cable in main BD & the frame
	To put and fix the rear cover

	To fix the hinge stand assemble

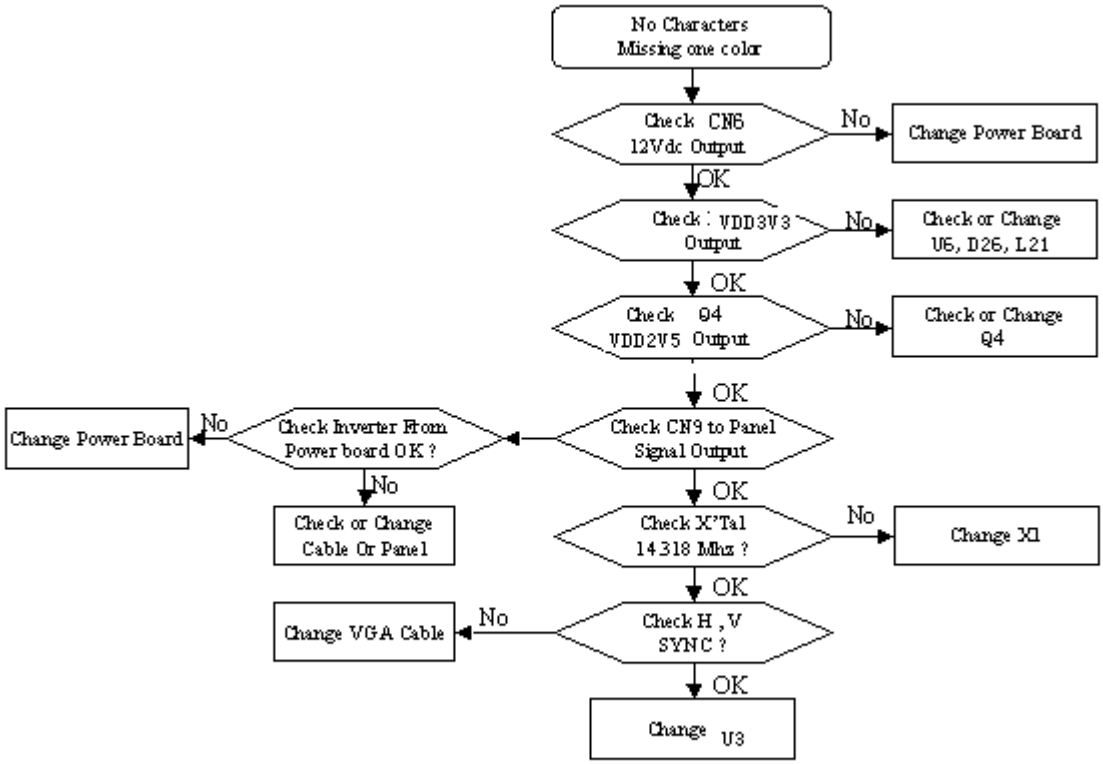
Chapter 4

TROUBLE SHOOTING

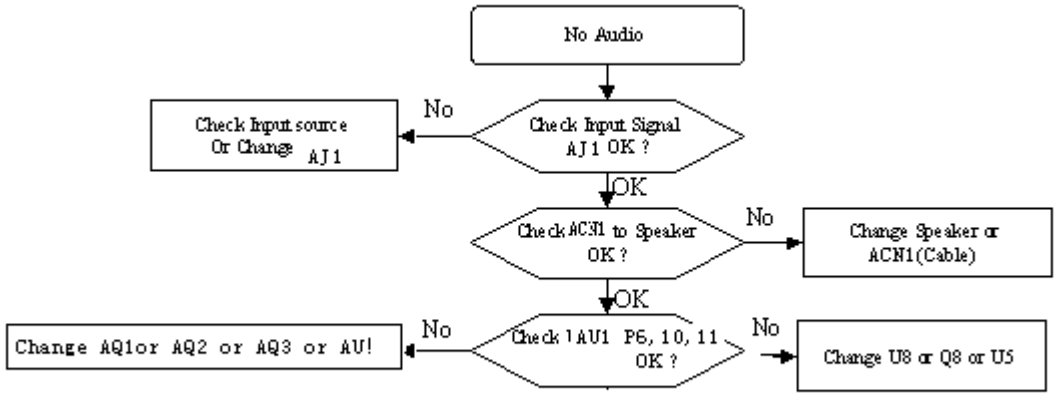
This chapter provides trouble shooting information forAL1511



2. No Characters , Missing one color



3. No Audio

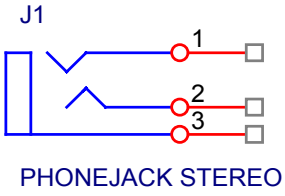


Chapter 5

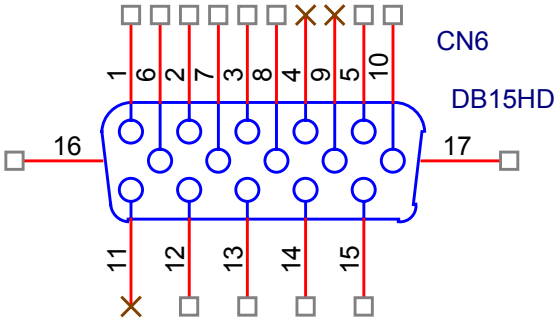
Connector Information

Phonejack stereo

PIN1. AC power cord : CEE22 typed connector
PIN2. Audio cable
PIN3. Audio : Line-in receptacle



Video signal connector 15P Mini D-Sub connector x 1



PIN	MNEMO	SIGNAL
1	RV	Red Video
2	GV	Green Video
3	BV	Blue Video
4	NC	None
5	GND	Ground(DDC return)
6	RG	Red GND
7	GG	Green GND
8	BG	Blue GND
9	+5V	+ 5V (for DDC)
10	SG	Sync GND
11	NC	None
12	SDA	DDC Data
13	HS	Horizontal Sync
14	VS	Vertical Sync
15	SCL	DDC Clock

Chapter 6

FRU (Field Replaceable Unit) list

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of AL1511. 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 CERVICE 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 local FRU list provided by your regional Acer office to order FRU parts 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 best to dispose it, or follow the rules set by your regional Acer office on how to return it.

Chapter 7

SCHEMATIC DIAGRAM

L5T MSTAR MB RSDS/LVDS

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SCHEMATIC	SHEET
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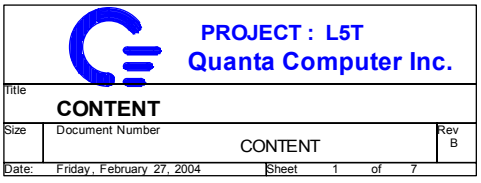
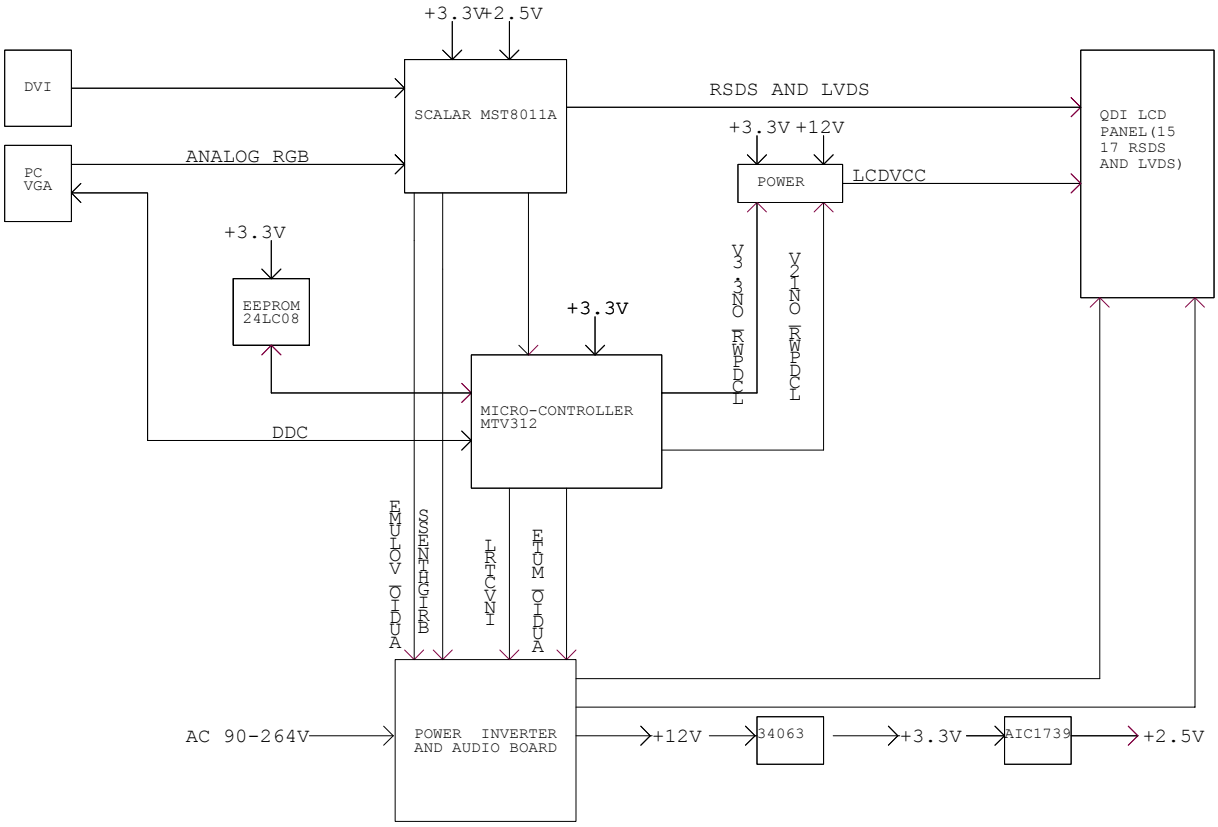
Panel interface	6
Audio	7





PROJECT : L5T
Quanta Computer Inc.

Title: BLOCK DIAGRAM

Size	Document Number	Rev
	BLOCK DIAGRAM	B

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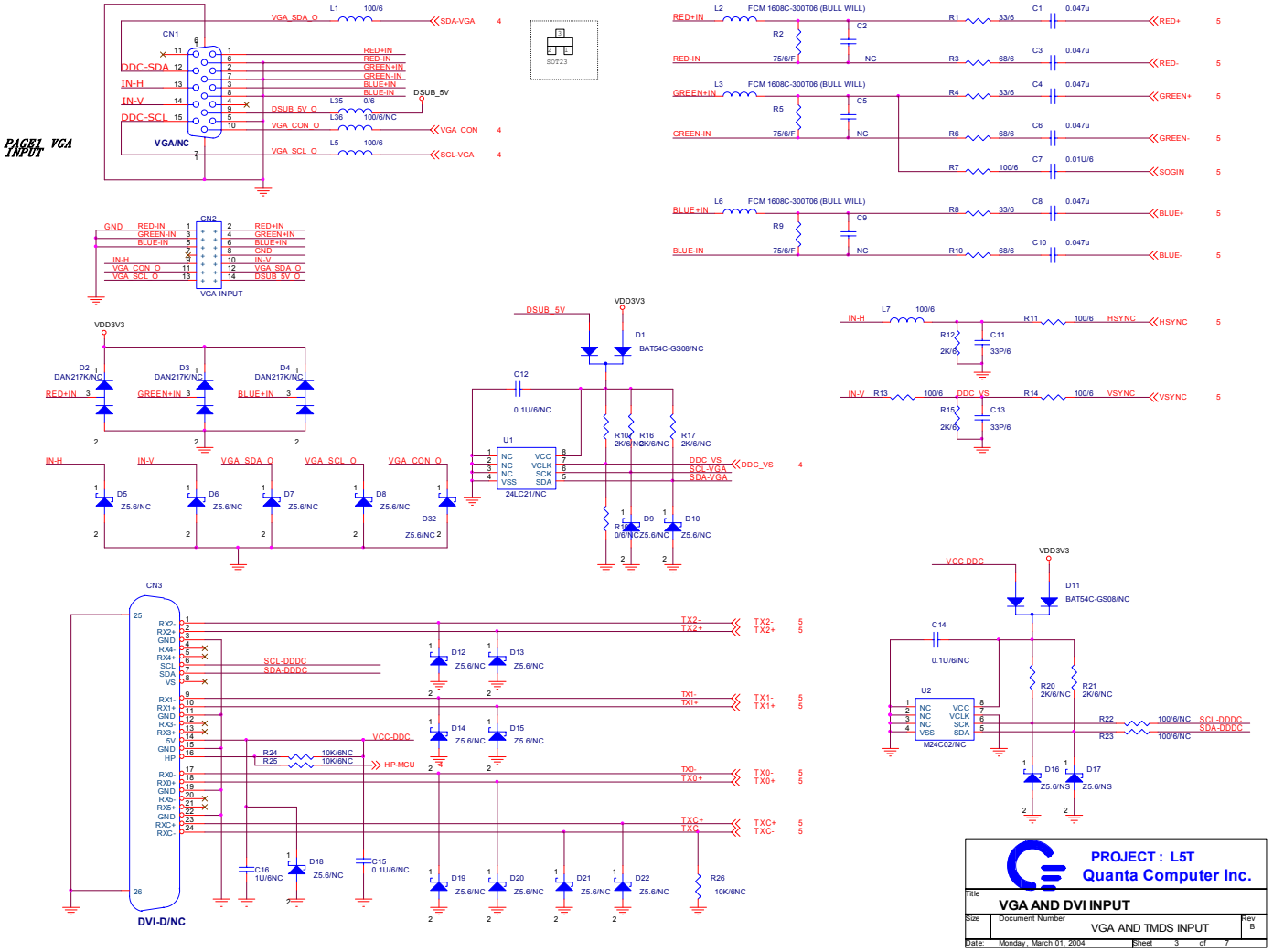
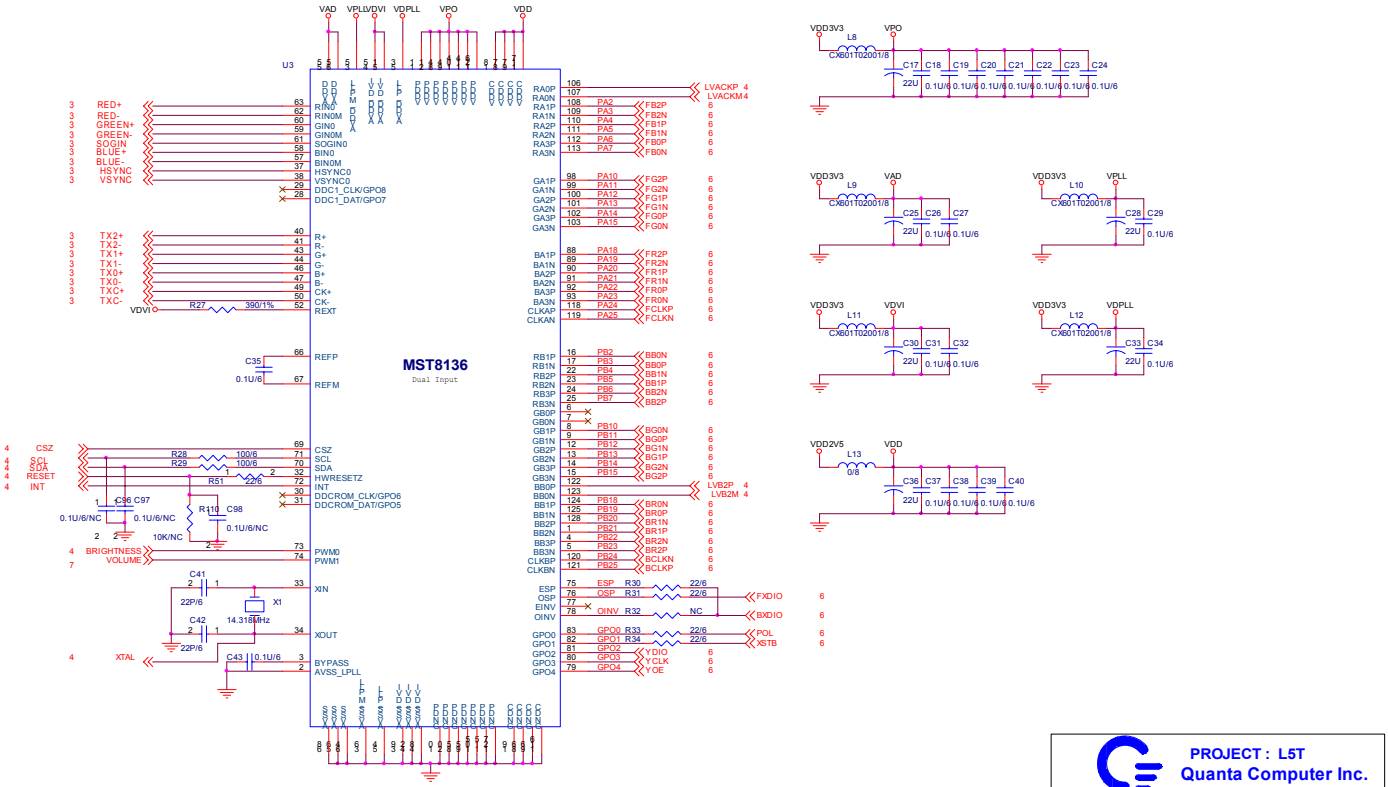

PAGE1 VGA INPUT
CN1
VGA/NC
VGA_SDA_O
SDA-VGA
RED+IN
GREEN+IN
BLUE+IN
DSUB_5V
DSUB_5V_O
VGA_CON_O
VGA_CON
VGA_SCL_O
SCL-VGA
DDC-SDA
IN-H
IN-V
DDC-SCL
L1 100/6
L35 0/6
L36 100/6/NC
L5 100/6
CN2
VGA INPUT
GND
RED-IN
GREEN-IN
BLUE-IN
IN-H
VGA_CON_O
VGA_SCL_O
VGA_SDA_O
DSUB_5V_O
IN-V
L2 FCM 1608C-300T06 (BULL WILL)
L3 FCM 1608C-300T06 (BULL WILL)
L6 FCM 1608C-300T06 (BULL WILL)
RED+
RED-
GREEN+
GREEN-
SOGIN
BLUE+
BLUE-
R1 33/6
R2 75/6/F
R3 68/6
R4 33/6
R5 75/6/F
R6 68/6
R7 100/6
R8 33/6
R9 75/6/F
R10 68/6
C1 0.047u
C2 NC
C3 0.047u
C4 0.047u
C5 NC
C6 0.047u
C7 0.01U/6
C8 0.047u
C9 NC
C10 0.047u
VDD3V3
D1 BAT54C-GS08/NC
D2 DAN217K/NC
D3 DAN217K/NC
D4 DAN217K/NC
D5 Z5.6/NC
D6 Z5.6/NC
D7 Z5.6/NC
D8 Z5.6/NC
D32 Z5.6/NC
C12 0.1U/6/NC
U1 24LC21/NC
R102 2K/6/NC
R16 2K/6/NC
R17 2K/6/NC
R18 0/6/NC
D9 Z5.6/NC
D10 Z5.6/NC
DDC_VS
SCL-VGA
SDA-VGA
L7 100/6
R11 100/6
R12 2K/6
R13 100/6
R14 100/6
R15 2K/6
C11 33P/6
C13 33P/6
HSYNC
VSYNC
CN3
DVI-D/NC
TX2-
TX2+
TX1-
TX1+
TX0-
TX0+
TXC+
TXC-
SCL-DDDC
SDA-DDDC
VCC-DDC
HP-MCU
R24 10K/6NC
R25 10K/6NC
D12 Z5.6/NC
D13 Z5.6/NC
D14 Z5.6/NC
D15 Z5.6/NC
D18 Z5.6/NC
D19 Z5.6/NC
D20 Z5.6/NC
D21 Z5.6/NC
D22 Z5.6/NC
C15 0.1U/6/NC
C16 1U/6/NC
R26 10K/6NC
D11 BAT54C-GS08/NC
C14 0.1U/6/NC
U2 M24C02/NC
R20 2K/6/NC
R21 2K/6/NC
R22 100/6/NC
R23 100/6/NC
D16 Z5.6/NS
D17 Z5.6/NS
PROJECT : L5T
Quanta Computer Inc.
VGA AND DVI INPUT
VGA AND TMDS INPUT
Monday, March 01, 2004
Sheet 3 of 7



PROJECT : L5T
Quanta Computer Inc.

Title: MST8116/8136A

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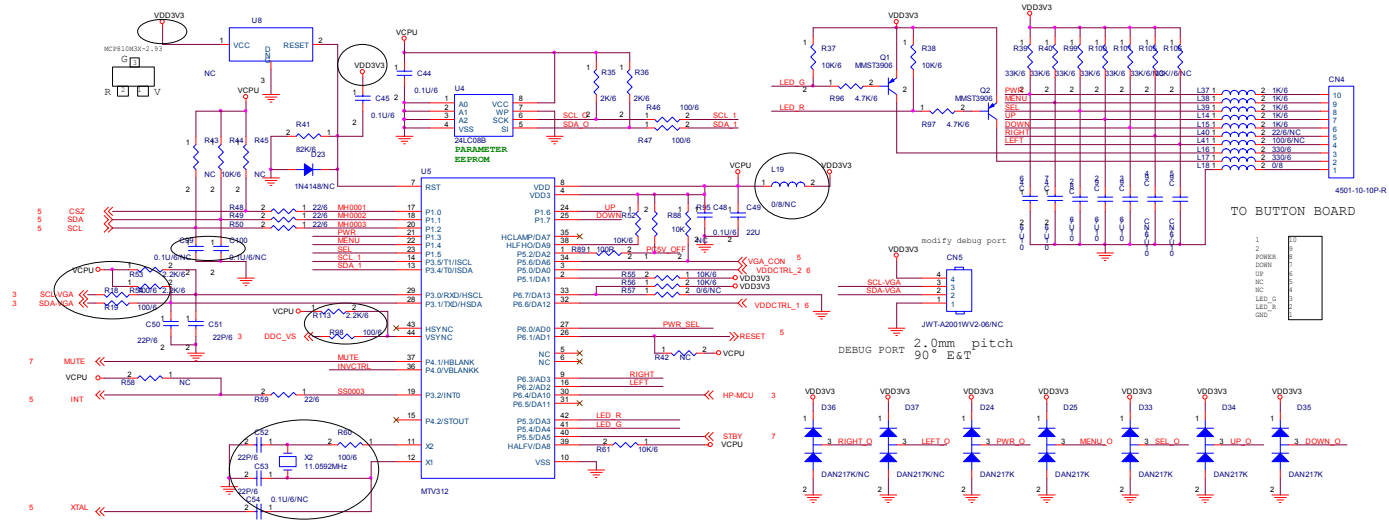

PROJECT : L5T
Quanta Computer Inc.

Title: MCU & BUTTON

Size: | Document Number: DISPLAY | Rev: B

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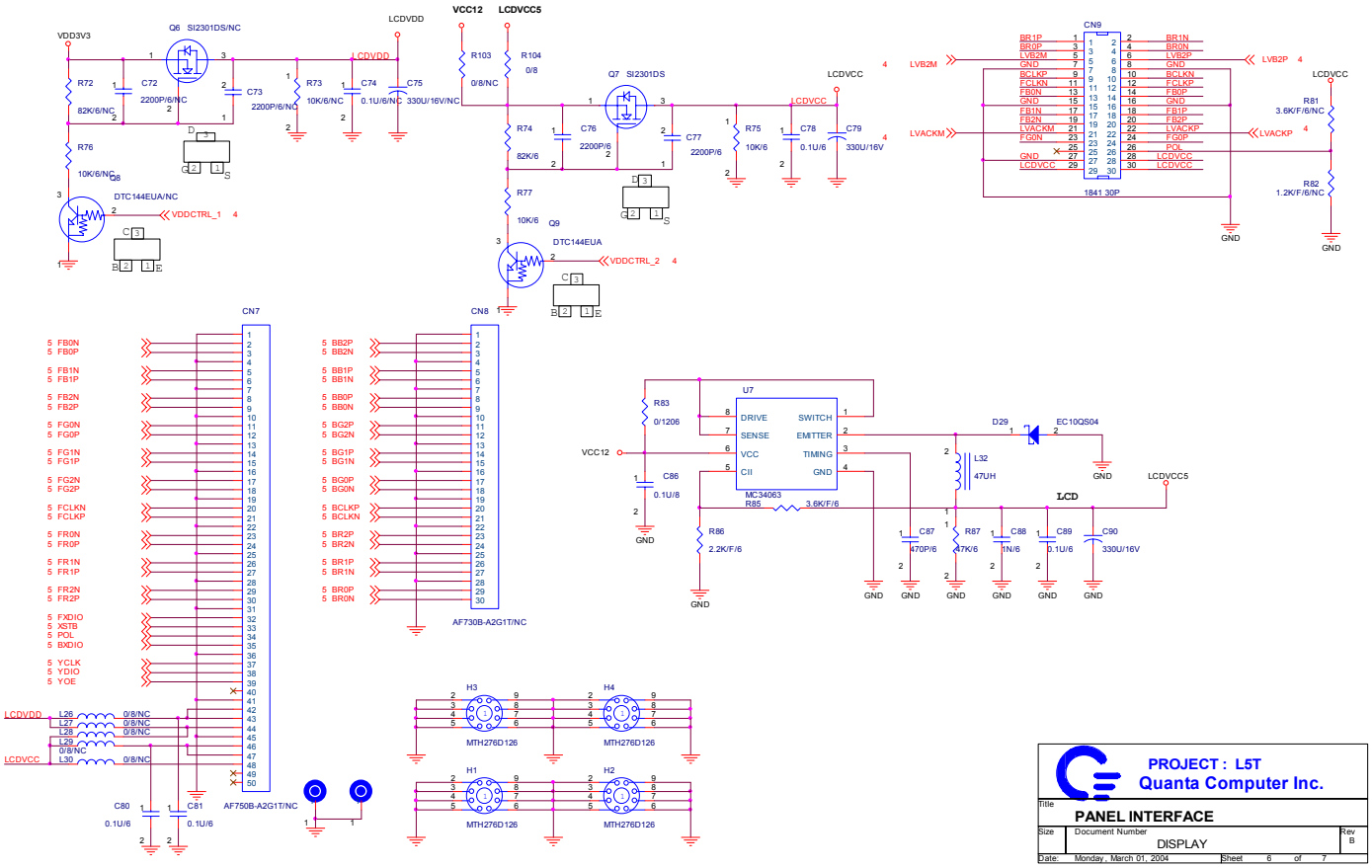

PROJECT : L5T
Quanta Computer Inc.

Title: PANEL INTERFACE

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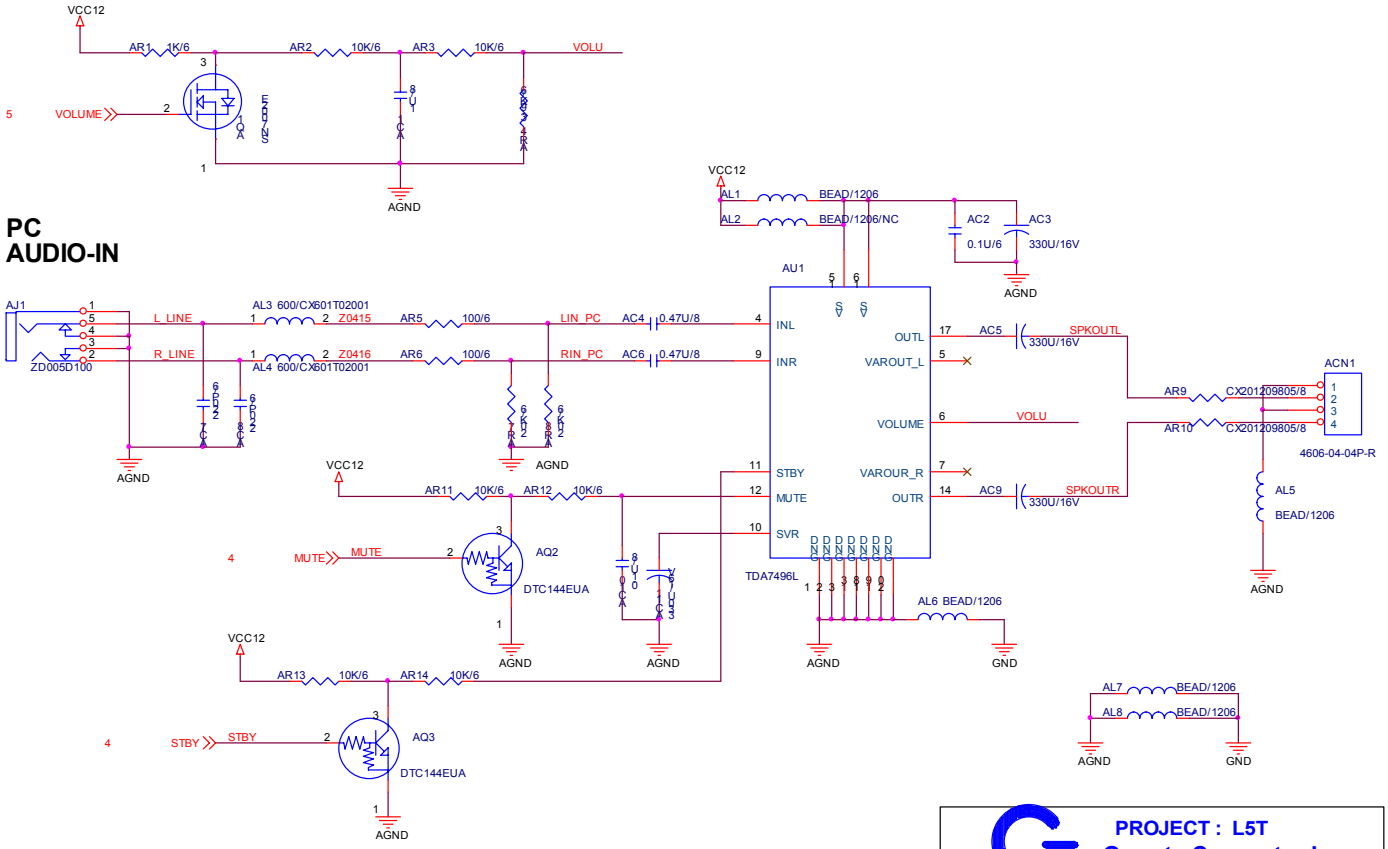

PROJECT : L5T Quanta Computer Inc.		
Title: Audio		
Size	Document Number: DISPLAY	Rev: B
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