

AT2001
Service Guide

Service guide files and updates are available
on the AIPG/CSD web; for more information,
please refer to <http://csd.acer.com.tw>

Revision History

Please refer to the table below for the updates made on AT2001 service guide.

Date	Chapter	Updates

Copyright

Copyright © 2005 by Acer Incorporated. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of Acer Incorporated.

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.

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

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 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.

Chapter 1 System Specifications.....	1
Features	1
Block Diagram	3
LCD Panel Characteristics	6
Display Electrical and Function Specifications	10
Accessories	28
Mechanism Specification.....	29
Regulatory and Reliability Requirements.....	31
 Chapter 2 Machine Disassembly and Reassembly.....	35
General Information	36
Disassembly Procedure	37
Removing the Stand Assy	38
Removing the IO Box	39
Disassembly the Main Unit	40
 Chapter 3 Troubleshooting.....	44
 Chapter 4 FRU(Field Replaceable Unit) List.....	47
Exploded Diagram	48
FRU List	50

System Specifications

Features

The chapter describes the function and performance targets for the AT2001 LCD TV which can support PAL systems.

LCD Panel

- ☐ Max. resolution: 800X600
- ☐ Lamp Quantity: Direct 6 U-lamp
- ☐ Display area: 20 inches diagonal
- ☐ Display color: 16.7M(8 bits) colors
- ☐ Input Signal: TTL
- ☐ Contrast ratio: 500:1 (Typical)
- ☐ Brightness: 450 cd/m² (Typical)
- ☐ Response Time: 16ms
- ☐ Viewing angle: 80°(L)/80°(R), 60°(U)/60°(D)

I/O functions:

- ☐ RCA jack for Audio, Video
- ☐ 21 Pin Euro-SCART(R.G.B)
- ☐ 15 pin D-Sub for VGA
- ☐ S-Din for S-Video
- ☐ TV input: PH jack(for PAL system)
- ☐ Audio input: Stereo right and left on RCA jack
- ☐ Audio output: Earphone jack

Video Functions

- ☐ Support PAL/NTSC/SECAM video format
- ☐ Support 480i, 480p format
- ☐ Build in motion adaptive 2D Digital Comb filter
- ☐ Build in Teletext functions

Mechanical

- ☐ Tilt: 0,+15
- ☐ VESA mounting holes

SAP system

- ☐ NICAM, FM Stereo(A2)

Power Source:

- ☐ Input Voltage: 90~264V, 47~63 Hz

-
- ☐ Input current: 1.5A
 - ☐ Max.Power output: 63 Watts
 - ☐ Stand-by: 5 Watts Max.

Remote COntrollers

- ☐ Multi-function remote controller

Speaker

- ☐ Internal speaker. 3W*2 stereo, volume adjustable.

Others

- ☐ On screen display adjustment function
- ☐ ISP(In System Programming) function available for revising driver easily.

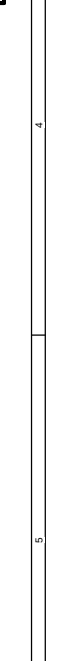
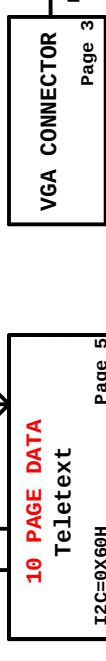
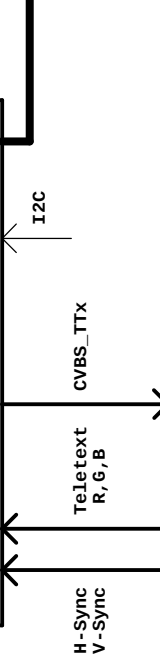
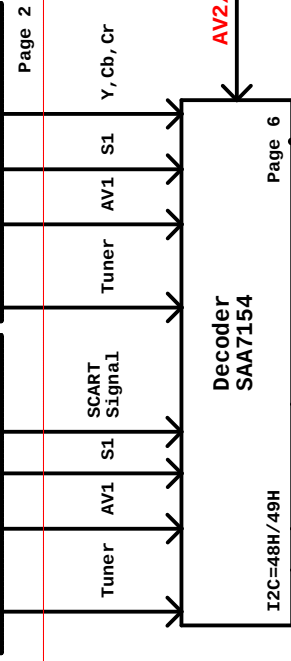
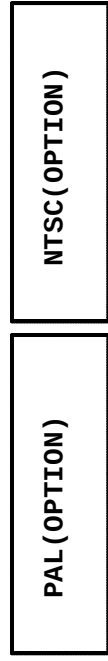
C1H-A For PAL Main Board BLOCK

POWER DC-DC

15V/15VDDM/12V/9VA_A/5V/5VA/5V_AUD/5V_7154
3VDDM/3.3V/3.3VA/2.5VDDM/1.8V/1.8VA

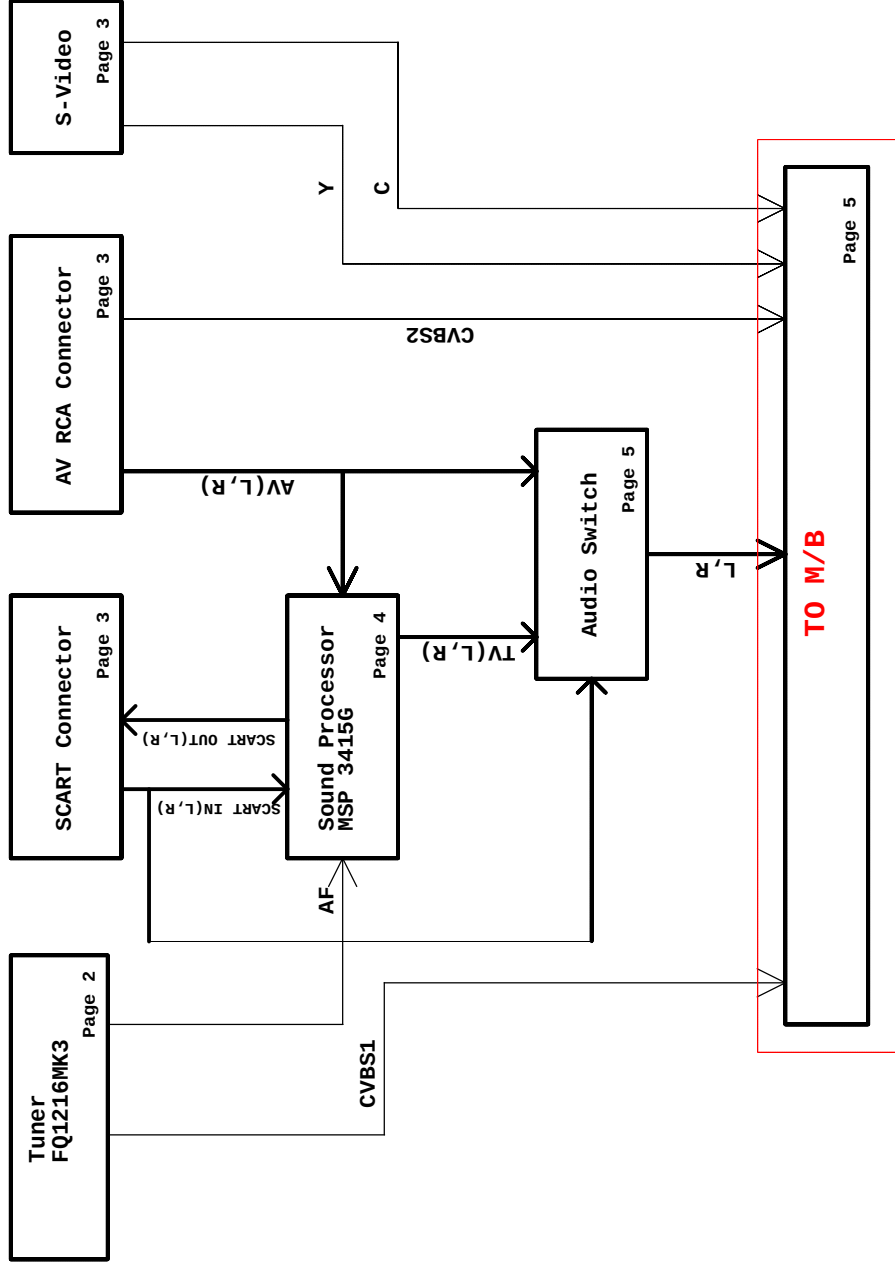
Page 9,10

I/O BOARD Connector



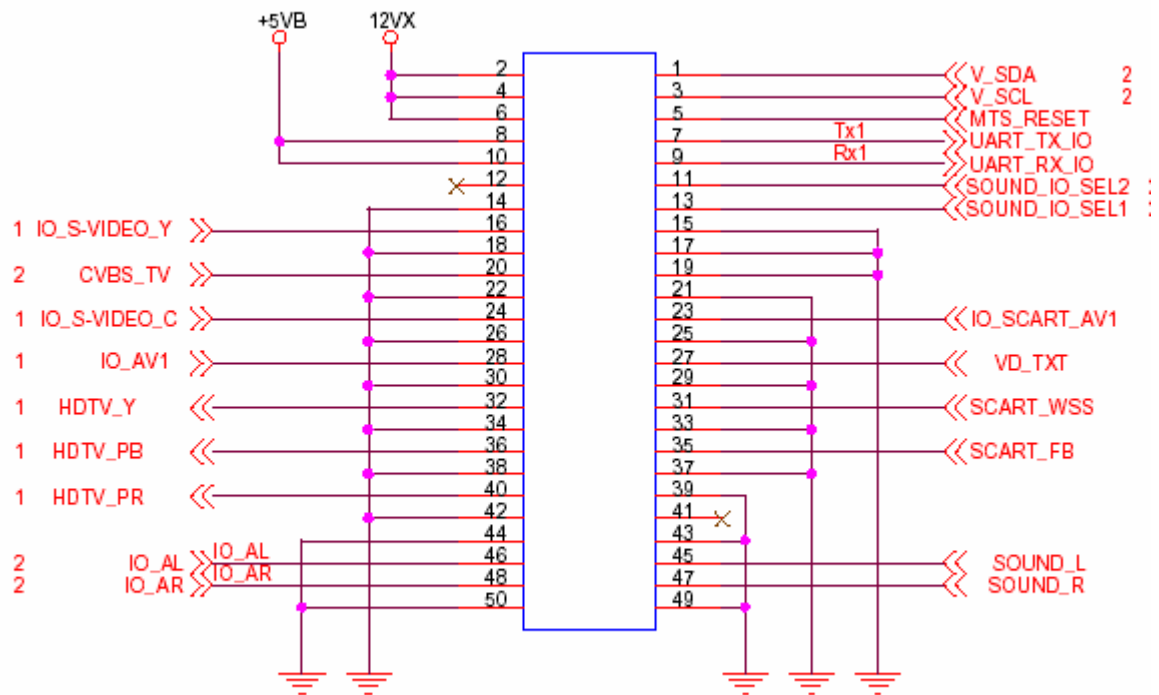
Size	Document Number	Rev
B	MB BLOCK	C
Date	Thursday, December 30, 2004	Sheet 1 of 10

C1H-A PAL I/O Board BLOCK Diagram



Size	Document Number	Rev
B	MIB BLOCK	C
Date	Thursday, December 30, 2004	Sheet 1 of 5

Pin Definition Between Main Board and I/O Board



LCD Panel Characteristics

General Description

This LCD TV adopts AU display modules which are color active matrix thin film transistor(TFT) liquid crystal display(LCD) that uses amorphous silicon TFT as a switching device. This model is composed of a TFT LCD panel, a driving circuit and a backlight system. This TFT LCD has a 20 inch diagonally measured active display area with SVGA resolution (600 vertical by 800 horizontal pixel array).

(Please refer to panel specification for detail and updated information)

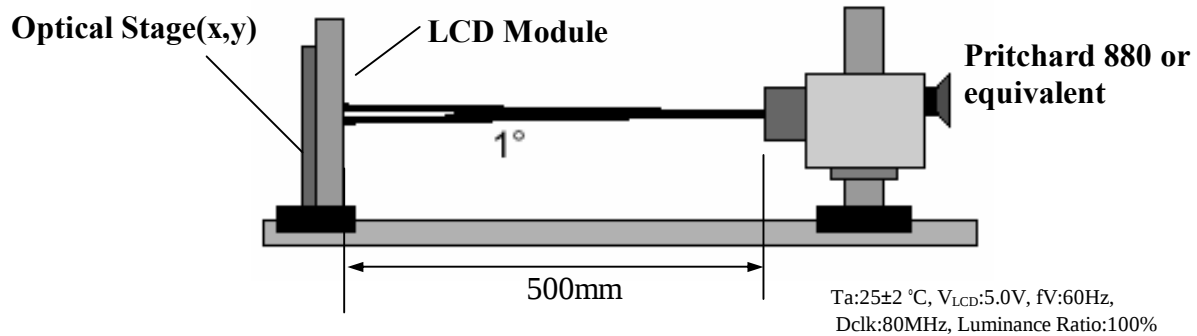
General Information

Item	Specification	Unit
Outline Dimension	448(W) x 347 (H)	mm
Display area	20.1 inches Diagonal	inch
Number of pixel	800(H)x600(V)	pixels
Pixel pitch	0.51(H) X 0.51 (V)	mm
Pixel arrangement	RGB Vertical stripe	
Display color	16.7 M colors (8 bits)	
Display mode	T N-Type Normally white +SWV Film	
Surface treatment	Anti-Glare type	
Weight	Max.3500	g
Lamp Quantity	Direct 6 U-lamp	
Input signal	TTL	
Panel Power consumption	5	W
Optimum viewing direction	6 o'clock	

Optical Characteristics

Optical characteristics are determined after the unit has been ‘ON’ and stable for around 2Hrs in a dark environment at 25 °C. The values specified are at an approximate distance 50cm from the LCD surface at a viewing angle of F and q equal to 0 °.

FIG. 1 Optical Characteristic Measurement Equipment and



Parameter		Symbol	Condi tion	Min.	Typ.	Max.	Unit	Remark
Viewing angle range	L/R	TOP	CR>10	55	60		Deg.	【Note 3,6,8】
	U D	BUTTON		55	60		Deg.	
		LEFT		65	80		Deg.	
		RIGHT	65	80		Deg		
Contrast ratio		C R n	θ =0 °	400	500	-		【Note3,4,6】
Response time		τ		-	16		ms	【Note 5】
Rise time	τ r				5		ms	
Fall time	τ d				11		ms	
Gray to gray					16		ms	
Chromaticity of White (CIE 1931)		Wx		0.243	0.273	0.303		
		Wy		0.262	0.292	0.322		
Chromaticity of Red (CIE 1931)		Rx		0.612	0.642	0.672		
		Ry		0.307	0.337	0.367		
Chromaticity of Green (CIE 1931)		Gx		0.254	0.284	0.314		
		Gy		0.585	0.615	0.645		
Chromaticity of Blue (CIE 1931)		Bx		0.111	0.141	0.171		
		By		0.038	0.068	0.098		
Luminance of white 【Note4】		Y _L		350	450		Cd/m ²	【Note4,7】
White Uniformity		δ _w		70			%	【Note 3,9】

The measurement shall be executed 30 minutes after lighting at rating.

Note 1: Ambient temperature = 25 . Note

2: To be measured in dark room after backlight warm up 30 minutes. Note

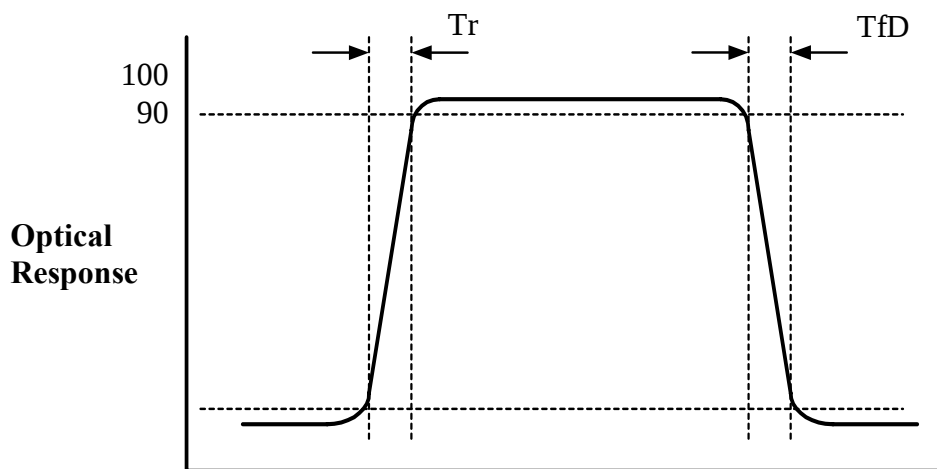
3: To be measured with a viewing cone of 1°by Topcon luminance meter ELDIM EZContrast 160D.

Note 4: To be measured with the detector PR880

Note 5: Definition of response time: The output signals of BM-7 are measured when the input signals are changed from “Black” to “White” (falling time) and from “White” to “Black” (rising time), respectively. The response time interval between the 10% and 90% of amplitudes. Refer to figure as

Response Time

The response time is defined as the following figure and shall be measured by switching the input signal for “black” and “white”.

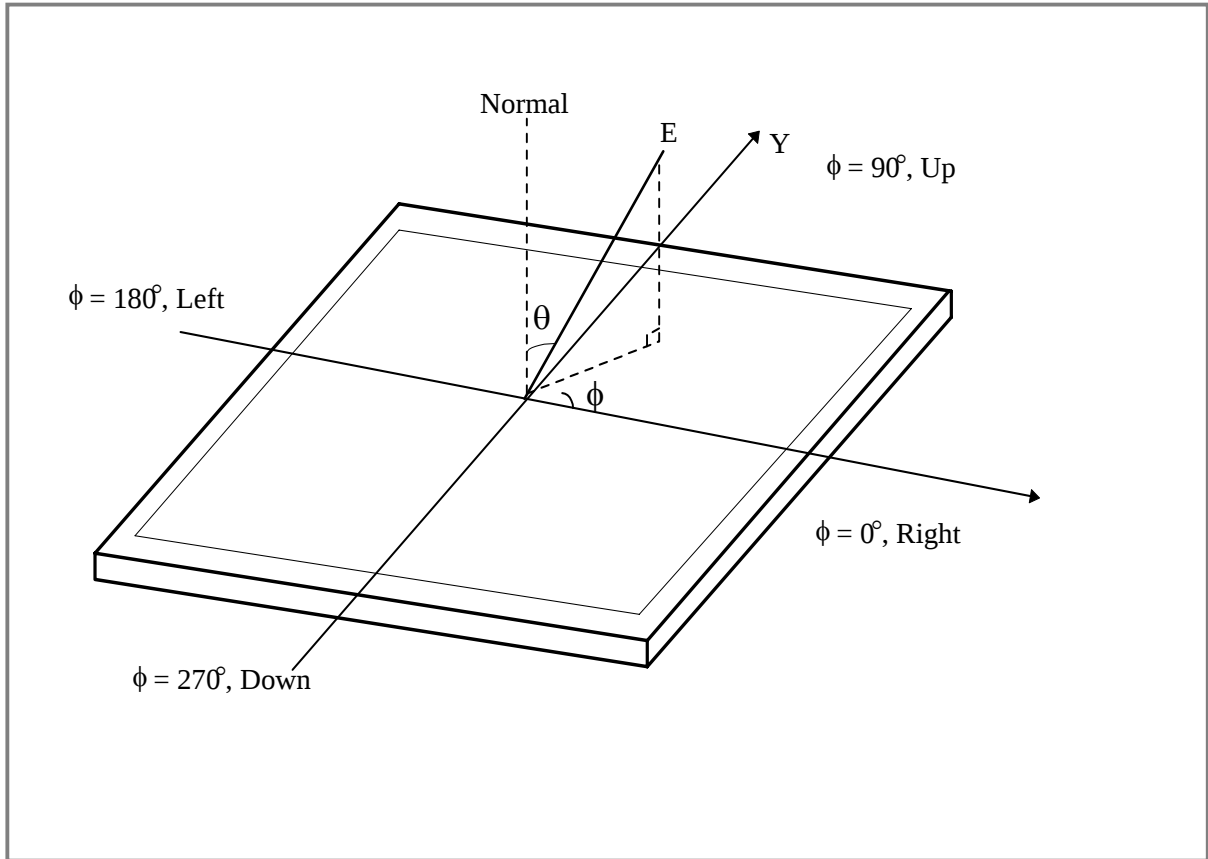


Note 6. Definition of contrast ratio: Contrast ratio is calculated with the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "white" state}}{\text{Brightness on the "black" state}}$$

Note 7: Driving conditions for CCFL: IL= 6.5 mA, 52KHz Frequency.

Note 8: Definition of viewing angle:

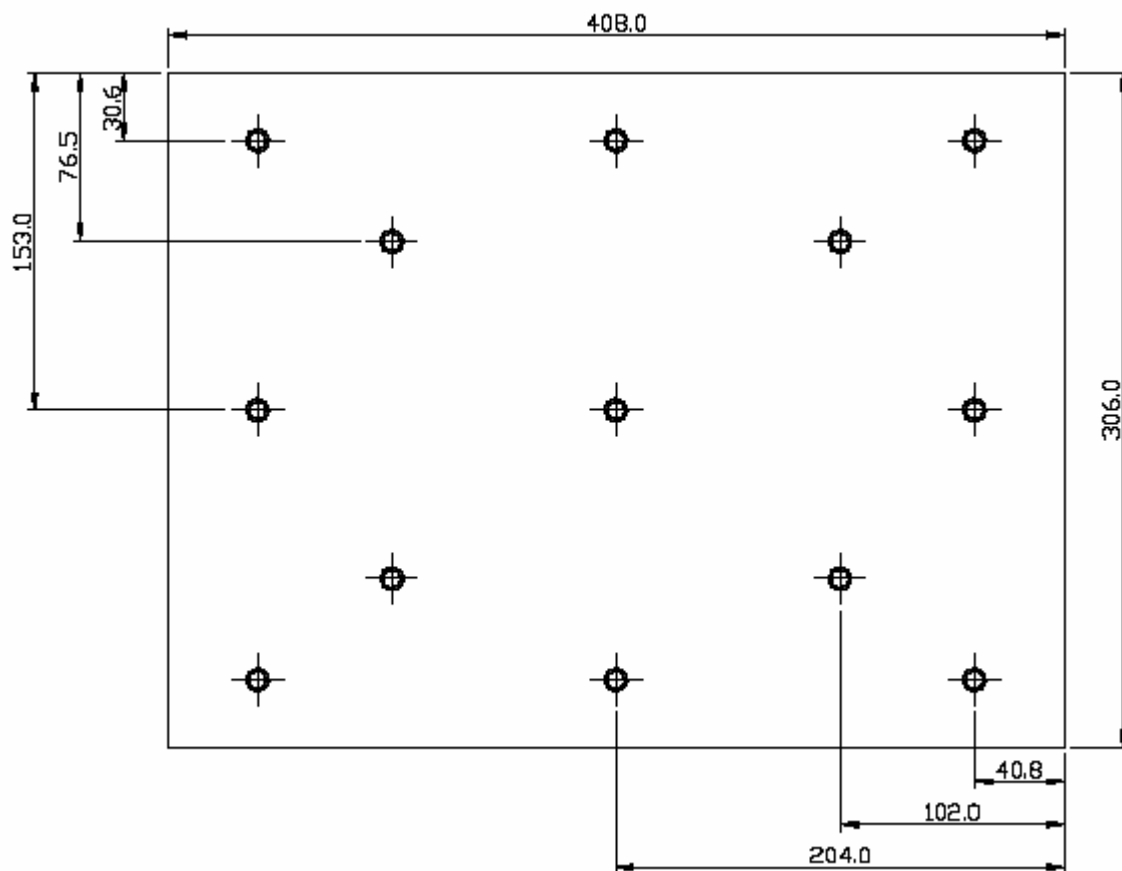


Note 9: Definition of white uniformity:

White uniformity is calculated with the following formula.

Luminance are measured at the following thirteen points (1~13).

$$\Delta W = \frac{\text{Minimum Brightness of 13 points}}{\text{Maximum Brightness of 13 points}}$$



Display Electrical and Functional Specifications

Input and Output Signals

This LCD TV shall have the ability to operate under following range with stable blue color of LED indicated. Any signal outside of the limits (any combination) shall not cause any damage to the unit or driving source. The range of operation is:

- PAL(4.43M) Receivable VHF/UHF/CATV, channels Auto-preset tuning,
PAL (4.43 M , 50 Hz) B、 G、 D、 K、 H、 I, PAL (4.43 M , 60 Hz)
SECAM D、 K
- TV system
PAL and SECAM system Receivable
Full frequency range From channel E2 (48.25 MHz) to channel E69 (855.25 MHz)

- VGA input

Horizontal input frequency range	30kHz	to	60kHz
Vertical input frequency range	56 Hz	to	75 Hz
Max. Resolution	800X600		

The LED shall indicate green color and OSD will show “ **Out of Range** “ message within 5 seconds after signal is out of range or down scaling support from selected input.

The LED shall indicate green color and OSD will show “ **No Signal** “ within 3 seconds while there is missing signal from selected input.

Video input

CVBS Input Signal

Type : Analog
 Polarity : Positive
 Level : 1Vp-p (with Sync.)
 Impedance : $75\Omega \pm 5\%$
 Interface : RCA jack, Yellow color

S Video Input Signal

Type : Analog
 Polarity : Positive
 Level : Y : 1Vp-p (with Sync.) C : 0.286Vp-p
 Impedance : $75\Omega \pm 5\%$
 Interface : DIN jack

SCART (R.G.B) Input Signal

Type : Analog
 Polarity : Positive
 Impedance : $75\Omega \pm 5\%$
 Interface : 21 Pin Euro-SCART

Audio input, output and Speaker

Audio input

Level : 500mVrms
 Type : Stereo R/L Channels
 Impedance : More than $22k\Omega$
 Jack : RCA jack ,
 Right channel : Red color.
 Left Channel : White color

PC Stereo Input

Level : 500mVrms
Type : Stereo R/L Channels
Impedance : More than 22k Ω
Jack : 3.5mm Stereo jack , Black color

Headphone output:

Level: 0.5W rms/per Channel(typ.) for 16 ohm earphone
Type: Stereo R/L Channels
Jack: 3.5mm Stereo

Built-in Speaker

Max. Audio output (at 10% THD max.) at 1.0Vp-p / 1kHz input : 2W + 2W
Sound Distortion at 250mW/1kHz : 1% THD max.
Speaker: Two of 3W
Speaker impedance: 4 ohms at 1kHz
Residual Hum at Min. Volume : 500uW Max.
Max. Hum at Max. Volume : 1000uW Max.

Audio Line out

Output level: 400Vrms.
Type: stereo R / L channels.
Jack: 3.5 m/m stereo jack.

RF Input

Indication of input level : 75Ω terminate value

No.	PARAMETER		MIN	TYP	MAX	UNIT	NOTE
1	Video Output Level		0.6	0.9	1.2	Vp-p	
2	Video S/N		40	45	---	dB	
3	Noise limiting		---	38	45	dbuV	
4	Video amplitude at discrete frequencies	2 MHz	---	0.0	-1.5	dB	
		3 MHz	---	-0.5	-2.5	dB	
		4.43 MHz	---	-1.0	-4.0	dB	
5	Sound carriers rejection		5.5/6M hz	42	---	dB	
			6.5 MHz	40	---	dB	
6	Audio S/N		50	63	---	dB	
7	Frequency Range for PAL		55.25		801.2 5	MHZ	
8	Audio sensitivity				40	dBuV	

VGA Input

Separate Sync:

Level: Low = 0 to 0.8V High = 2.0 to 5 V

Polarity: Positive or Negative

Impedance: 1 k ohm or higher

R.G.B. Input Signal: (comply with VESA)

Level: 0 to 700mv Positive

Rise/Fall time: $\leq 5\text{ns}$

Overshoot: $\leq 10\%$ of maximum transition.

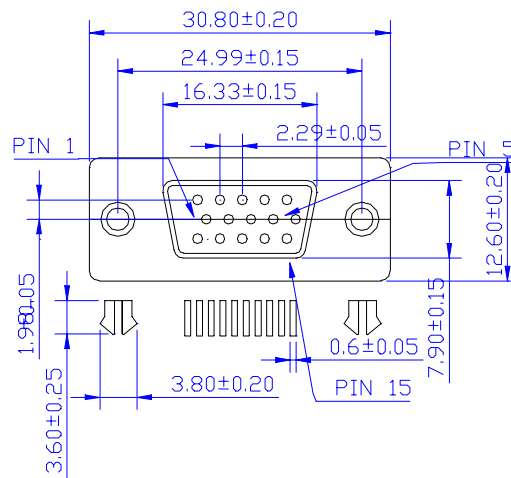
Impedance: $75\Omega \pm 5\%$

Current Sink and Source

When low level is asserted, the maximum current sink from any single monitor sync input node to the driver is 2.0mA. When high level is asserted, the maximum current source from the driver to any single monitor sync input node is 500uA.

D-Sub Pin Out (Pantone 661C, Blue color)

PIN	Signal	PIN	Signal
1	Red Video	9	+5V (PC97)
2	Green Video	10	VGA-CONN(Sync GND)
3	Blue Video	11	Ground
4	Ground	12	SDA (DDC Data)
5	Ground	13	Horizontal Sync
6	Red Ground	14	Vertical Sync
7	Green Ground	15	SCL (DDC Clock)
8	Blue Ground		



Terminals Configuration

RF	75Ω DIN45325 (IEC169-2) Type
AV 1, S1	RCA for CVBS, Audio R / L S Din for S-Video
SCART	SCART for R.G.B and Audio R / L
PC Analog Port	D-sub 15pin VGA
PC Stereo input	3.5mm Earphone Jack
Headphone	3.5mm Earphone Jack
Service Port	ISP through D-sub

TV System

This LCD TV could support PAL / SECAM (CCIR B/G, D/K, I and L/L ') system.
The system allocation as following:

TV System Configurations:

Destination	PAL / SECAM
Color System	CCIR B/G, D/K, I and L/L '
Sound System	Sound 1 and Sound 2
Stereo System	NICAM and FM Stereo (A2)
Channel System	Full frequency range from channel E2 (48.25 MHz) to channel E69 (855.25 MHz)

Subtitles Configuration

Function define		
Closed Caption	NO	
V-Chip	NO	
TeleText	YES	10 pages

Comb Filter

This LCD TV shall have Motion adaptive 2D digital Y/C separation improves the luma-chroma separation process such that the luma and chroma are perfectly separated for a stationary image.

Firmware Specifications

Preset Mode for VGA Input

8 factory pre-set modes for VGA input is saved during the manufacturing process.

Preset mode	Pixel Format	Hor. Freq. (kHz)	Hor. Polarity	Vert. Freq. (Hz)	Vertical Polarity	Standard
1	720*400	31.47	-	70	+	VGA
2	640*480	31.47	-	60	-	VGA
3	640*480	37.861	-	72	-	VESA
4	640*480	37.50	-	75	-	VESA
5	800*600	35.156	-	56	+	VESA
6	800*600	37.879	+	60	+	VESA
7	800*600	48.077	+	72	+	VESA
8	800*600	46.875	+	75	+	VESA

This LCD TV shall have 10 or more user modes for user to creat own timing.

This LCD TV would detect the used mode automatically.

Power Saving

While VGA is selected to be input, this LCD TV is equipped with a power-management according to VESA DPMS. There is a delay of 5 seconds before the transition from On-state to power saving state to avoid unintentionally entering of a power saving state during display resolution and timing mode changes. During the period of delay, the LED shall indicate green color and OSD will show “ POWER SAVE “. Transition from any power saving state to another can be instantaneous. The recovery from Off-state requires no manual power on.

Mode	Hsync	Vsync	Video	Power	Indication	Recovery time
Power-On	On	On	Active	<63W	Green	--
Stand-by	Off	On	Off	<5W	Amber	<3s
Suspend	On	Off	Off	<5W	Amber	<3s
Off-state	Off	Off	Off	<5W	Amber	<3s
Power off	×	×	×	<5W	Dark	Turn on <5s

Sync on means: normal operation

Sync off means: Hsync: $f < 1\text{kHz}$, duty cycle $> 25\%$, Vsync: $f < 10\text{Hz}$, duty cycle $> 25\%$

The power-consumption is valid over the specified voltage and frequency range.

Power consumption is measured from AC source.

There are no power saving modes for TV, AV1, S1, SCART inputs.

VESA DDC

The VGA input shall be capable of continuously transmitting its Extended Display Identification (EDID) information using Display Data Channel. It shall automatically switch to DDC2 mode if a DDC2 capable host is detected in accordance with the VESA DDC standard.

In addition, the display can respond to a request for EDID, to be transmitted using DDC2, level B commands. If a DDC2 capable host is detected by the display, the display shall switch to DDC2 communication.

The EDID shall contain the manufacture name code QCI, product code, date of manufacture, and serial number.

For complete EDID data structure, please refer to VESA Extended Display Identification Data Standard.

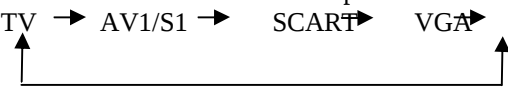
Hardware implementation may be either integrate into micro-controller or be a separate electrical component. EDID memory must be protected against writing or other corruption through customer-accessible electrical connection and required communication channels. Password protection, use of an unpublished enable register, or use of direct electrical connection is acceptable levels of protection provided that the power-on Default State is that disabling writing. The serial number fields in the EDID must contain a unique identifying numbers among units of the same model. EDID Table is defined as below:

For VGA input :

128 BYTES OF EDID CODE :

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	04	72
10	D0	07	00	00	00	00	10	0F	01	03
20	68	29	1F	78	E8	5E	23	A4	56	48
30	9D	24	11	46	4A	AF	C0	00	31	40
40	45	40	00	00	00	00	00	00	00	00
50	00	00	00	00	A0	0F	20	00	31	58
60	1C	20	28	80	94	04	9A	36	11	00
70	00	1A	00	00	00	FD	00	32	4B	1E
80	30	05	00	0A	20	20	20	20	20	20
90	00	00	00	FF	00	31	32	33	34	0A
100	20	20	20	20	20	20	20	20	00	00
110	00	FC	00	41	63	65	72	20	41	54
120	32	30	30	31	0A	20	00	AA		

Control Button

Key	Function
POWER	Software On/Off
MENU	Press this button to open the OSD or Enter function
CH ▲ or CH ▼	When OSD is on: Press ▲ key to move icon to up position Press ▼ key to move icon to down position When OSD is off: Press these buttons to select the TV channel in sequence.
VOL ► or VOL ◄	When OSD is on: Press ► key to increase volume value or move icon to right position Press ◄ key to decrease volume value or move icon to left position When OSD is off: Press these buttons to select the volume level.
INPUT	Press this button to select the input :  <pre> graph LR TV --> AV1/S1 AV1/S1 --> SCART SCART --> VGA VGA --> TV </pre>

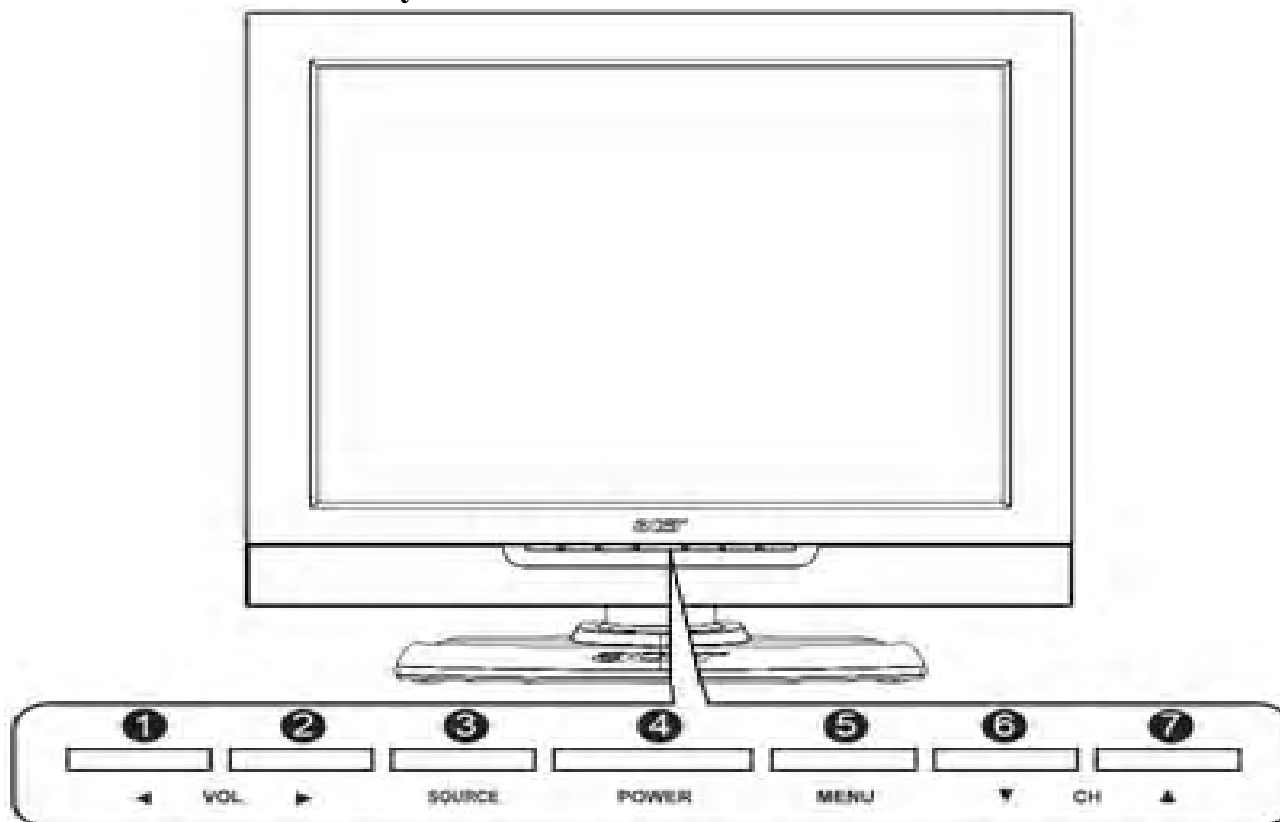
Remote Controller

Key Definition



	BUTTON	DESCRIPTION
1	POWER	Turns the selected component ON/OFF.
2	TV	Selects a programmed TV.
3	INPUT	Changes the input source.
4	MPX	Changes the SOUND output.
5	SLEEP	Turns on the sleep timer.
6	UP/DOWN	Navigates up and down in the on-screen display (OSD) menus.
7	LEFT/RIGHT	Navigates left and right in the on-screen display (OSD) menus.
8	MENU	Displays menus for TV and other options.
9	R	RED, activates Teletext command or the Sound menu when Teletext is not displayed.
10	G	GREEN, activates Teletext command or the Picture menu when Teletext is not displayed.
11	Y	YELLOW, Teletext command.
12	C	CYAN, Teletext command.
13	TEXT	Toggles ON/OFF Teletext mode.
14	HOLD	Temporarily holds the current Teletext page.
15	SIZE	Selects the size of the text in Teletext mode.
16	SUB PAGE	Turns ON/OFF the display of subpages for Teletext (where available).
17	INDEX	Brings up the initial Teletext page.
18	REVEAL	Displays hidden information.
19	MIX	Displays Teletext superimposed on top of the TV image.
20	Number pad	Selects a channel or enters a password.
21	LAST	Recalls the last viewed channel and input source.
22	INFO	Shows the current status of your LCD TV, such as the video input source, audio status, and channel number.
23	CH  / 	Changes the channel.
24	VOL  / 	Increases/decreases the volume.
25	MUTE	Mutes or restores the sound volume.

Button Key Definition

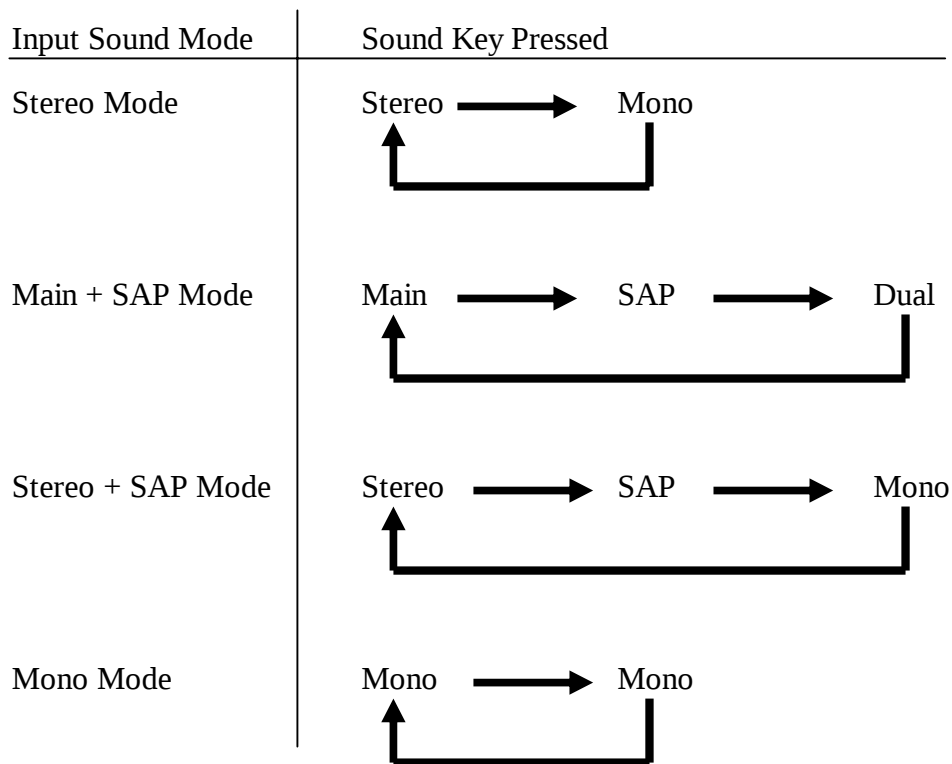


BUTTON	VIEWING FUNCTION (OSD OFF)	MENU FUNCTION (OSD ON)
1	Lowers the sound level.	Reduces a menu option value.
2	Increases the sound level.	Displays a submenu with selections for the current menu option.
		Increases a menu option value.
3	Selects the input source.	N/A
4	Turns the LCD TV ON/OFF.	N/A
5	Activates the OSD main menu.	Returns to the previous menu or to normal viewing.
6	Displays the previous stored channel.	Selects the previous menu option.
7	Displays the next stored channel.	Selects the next menu option.

Sound Systems

The System has a feature that allows reception of sound other than the main audio for the program. This feature is called Multi-channel Television Sound (MTS). The System with MTS can receive mono sound, stereo sound and Secondary Audio Programs (SAP). The SAP feature allows a TV station to broadcast other information, which could be audio (mono) in another language or something completely different like weather information.

The images display examples when receiving MTS and SAP are as follows:



- **Stereo broadcasts**

View programs like live sporting events, shows and concerts in dynamic stereo sound.

- **SAP broadcasts**

Receive TV broadcasts in either MAIN or SAP sound.

MAIN sound: The normal program soundtrack (either in mono or stereo).

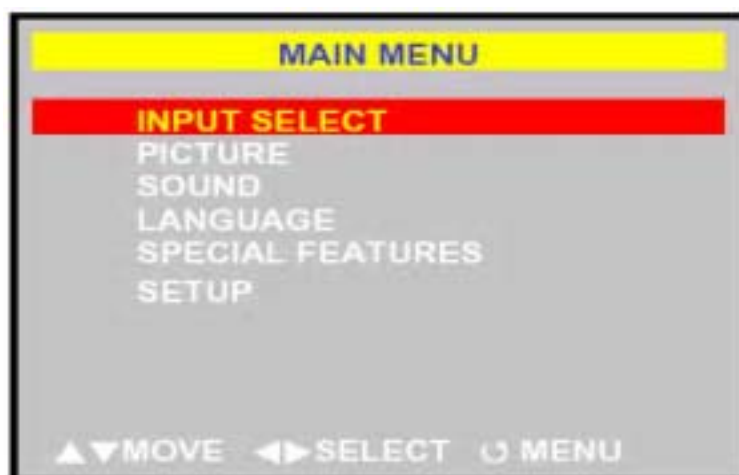
SAP sound: Listen to second language, supplementary commentary and other information. (SAP is mono sound.)

- **Once “MONO” mode is selected**, the sound remains mono even if the System receives a stereo broadcast. You must switch the mode back to “STEREO” if you want to hear stereo sound again.

- **Selecting MPX** while in the input mode does not change the type of sound. In this case, sound is determined by the video source.

OSD Menu Abstract Structure

OSD Menu for EURO



OSD Translations :

Priority	Country	Country Name (must include)	OSD Language			Manual Language		
1	UK	UK	Spain	Portuguese	UK Eng.	UK Eng.		
2	SPA	Spain				Spain		
3	POR	Portugal				Portuguese		
16	EMIRATES-DU	1)United Arab Emirates (UAE) 2)Kingdom of Saudi Arabia (SA)		UK Eng		UK Eng	Arabic	
4	CAN	Canada	US Eng	Canadian French		US Eng	Canadian French	
5	US	US	US Eng	Latin Spain		US Eng	Latin Spain	Chinese
6	GER	Germany	Ger.	UK Eng.		Ger.		
7	AUS	Austria						
8	FRAN	France	Fran.	UK Eng.		Fran.		
9	ITA	Italy	Ita	UK Eng.		Ita		
10	SWI	Switzerland	Ger.	Fran.	Ita	Ger.	Fran.	Ita
11	BLX	1)Belgium 2)Netherlands 3)Luxembourg	Fran.	Dutch	UK Eng.	Fran.	Dutch	
12	CZ	Czech Republic	Czeck	UK Eng.		Czeck		
13	SWE	Sweden	Swedish	UK Eng.		Swedish		
14	DEN	Denmark	Denish	UK Eng.		Denish		
15	GREC	Greece	Greek	UK Eng.		Greek		

Performance Specifications

The performance shall be check at 25°C environment.

White Balance and Uniformity :

Normal : x: 283 y: 293

Warm : x: 313 y: 329

Cold : x: 268 y: 268

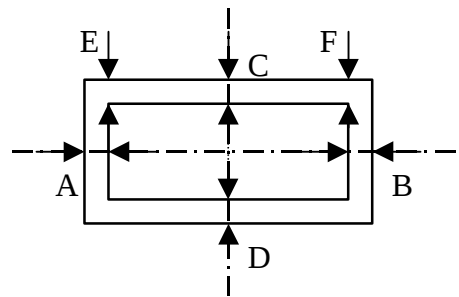
Display Area, Phase , Center and Tilt

Display Area: 20 inches diagonal

H-Phase: | A-B | Less than 1.5mm

V-Center: | C-D | Less than 1.5mm

Tilt: | E-F | Less than 1mm



Max. Brightness :

The brightness should exceed 300 Cd/m² while set both of contrast and brightness to max. and color temperature of Standard is selected. (Typical value would be 450 Cd/m²).

Power Supply Electrical Specifications

The power supply for this product is an internal converter, with a non-replaceable fuse internally.

This converter shall be well designed to meet CE mark requirement.

Input Voltage and Frequency Range

The operating range of line voltage shall be :

AC 90volts to 264volts, 47HZ to 63HZ

Power consumption shall be under 63 Watts

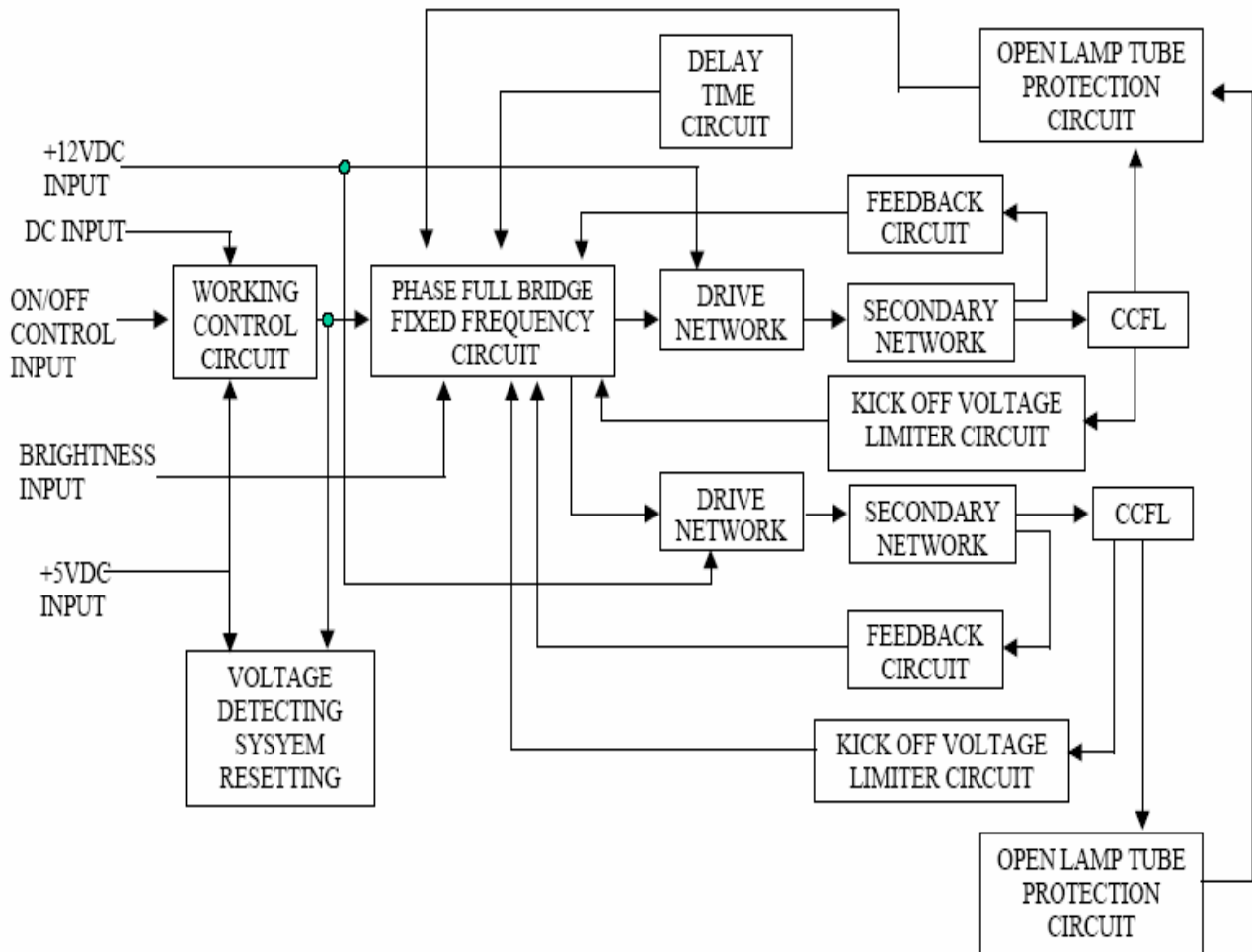
Variation of the line voltage throughout the applicable operating range shall not result in any visible image anomalies such as image movement, changes in light output, nor changes in image stability or quality.

Power on LED Location and Type

Power on indicator shall be easily visible from the front of the display.

Inverter

The inverter which is used to light up back-light of LCD panel shall be well designed to meet requirement of panel's specification.



Accessories

Following accessories would be contained to shipout with LCD TV.

Cables

Power Cord

Length: 1.8meters +15mm/-0mm

Cable Color: Black color

Quantity: One

AV (Video & Audio) Cable

Length: 1.8meters +15mm/-0mm

Cable Color: Black color

Quantity: One

SCART Cable

Length: 1.8meters +15mm/-0mm

Cable Color: Black color

Quantity: One

TV Antenna Cable

Length: 2.5meters +15mm/-0mm

Cable Color: Transparent color

Quantity: One

Remote Controller

Multi-function remote controller include battery

Quantity: One

I/O Board (Reserved)

Others

TV Users Guide

Quantity: One

Remote Control Users Guide

Quantity: One

Warranty Card

Quantity: One

Mechanism Specifications

Cosmetic and quality standards for injection molded plastic parts

This specification defines the criteria to be used for inspection resulting in the acceptance or rejection of parts due to visual, cosmetic and functional requirements for customer visible surfaces.

Surface quality

Surface color, gloss, texture, blemishes, and all other irregularities in the plastic shall comply with Quanta's approval sheet.

Fade and color change

All external surfaces shall be sufficiently rugged to withstand normal operator usage without extreme visible deterioration in color.

Appearance Gap Specifications

Refer to cosmetic specification.

Torque Specifications

Tilts Torque : Refer to engineering specification.

Physical Specifications

Overall Dimensions:

Height : 429 mm

Width : 750 mm

Depth : 215 mm

Base

Tilt: 0°, +15°

Mass

Mass of display with cable approx.: 8.0 Kg

VESA Mounting Holes

100 m/m * 100 m/m

Packing Specifications

Carton Label

Refer to packing instruction

Pallet Dimension

Refer to packing instruction

Shipping Container Stowing Method

Refer to packing instruction

Regulatory and Reliability Requirements

Regulatory Requirements

Product Safety Agency Approvals

Emissions/Susceptibility

Power Management (Reserved)

Environmental Requirements

This display shall meet the following environmental requirements under normal operating conditions.

Operating

25° ± 5° for Purity, White Point, Mis-convergence, Luminance measurements and White uniformity measurement

Operating temperature 5°C to 35°C

Operating humidity 10% to 90% (non-condensing)

Storage and Shipping

Storage temperature -20°C to 60°C

Shipping temperature -20°C to 60°C

Storage humidity 10% to 90% (<40°C)(non-condensing)

Shipping humidity 10% to 90% (<40°C) (non-condensing)

Altitude

Operating altitude 0 to 12,000 feet

Units tested at an altitude up to 12,000 feet must operate at normal conditions without exhibiting abnormal behavior such as arcing or shutdown.

Shipping altitude 0 to 40,000 feet

Storage altitude 0 to 40,000 feet

Transportation

Please refer to Packing instruction

Reliability Performance

Electrostatic Discharge Requirements

This display shall withstand 4kV for contact discharge and 8kV for air discharge of Electrostatic Discharge to meet the acceptance criteria as specified in EN55024.

Hinge Life

Mean time between failure (MTBF)

For the purposes of demonstrating the MTBF of this product, a failure is defined as the inability of the product to function in accordance with this specification. A failure event interrupts the expected operation of the product and requires service or repair to restore the product to full functionality.

The MTBF of this product shall be demonstrated to meet or exceed 50,000 hours @ 25 °C at a 90% lower confidence limit under all operating conditions as specified in previous section. (Lamp life is not included)

All components including power and inverter shall be derate to 80% for active devices, 80% for capacitors and 50% for resistive components, except for polarized capacitors which may be operated at 90% of voltage - which are all calculated under worst case conditions.

Mean Time Between Replace (MTTR)

This display shall be well designed to take less than 5 minutes for replacing control board or inverter board.

Note: If there is anything not clarified or specified on this specification, PVT sample shall be a standard reference.

檔名: 2-2-C2A_EU product spec_0601-2005
目錄: D:\00-ACER PROJECT-0529-2005\00-ACER-C2A--
AUO-20-inch\00--C2A-MDRR-MRR document
範本: C:\MSOffice\Template\商用文書\SPEC1.dot
標題: VT1N product spec
主旨:
作者: Golden
關鍵字:
註解:
建立日期: 2005/5/23 2:23:00 PM
修訂版編號: 50
前次更新日期: 2005/6/2 11:09:00 AM
前次存檔人員: 89080103
編輯總時間: 281 分鐘
最後列印在: 2005/6/14 10:49:00 AM
最後列印的字數
 頁數: 35
 字數: 4,230 (約)
 字元數: 24,116 (約)

Machine Disassembly and Replacement

To disassemble the AT2001, you need the following tools:

- ☐ Wrist grounding strap and conductive mat for preventing electrostatic discharge.
- ☐ Wire cutter.
- ☐ Phillips screwdriver (may require different size).

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

General Information

Before You Begin

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.

Disassembly Procedure

This section tells you how to disassemble the system when you need to perform system service. Please also refer to the disassembly video, if available.

CAUTION: Before you proceed, make sure you have turned off the system and all peripherals connected to it.

Removing the Stand Assy

1. Remove the four screws securing the stand assy and remove it.



2. Remove the screw securing the stand neck and stand base, and separate them.

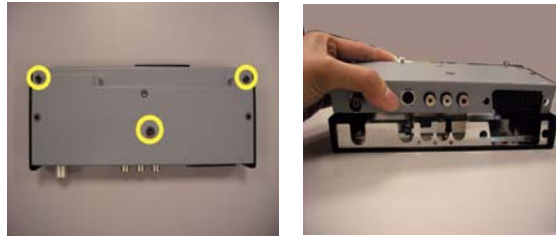


Removing the IO Box

1. Remove the two screws securing the IO box and remove it.



2. Remove the three screws securing the IO box shielding.



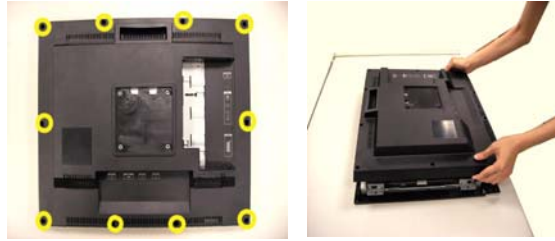
3. Remove the screw securing the IO board and remove it from the IO bracket.



Disassembly the Main Unit

Removing the Rear cover

1. Remove the ten screws securing the rear cover and remove it.

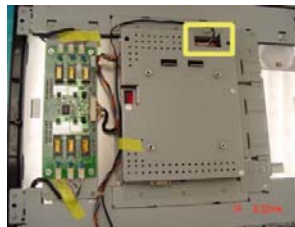


Disconnecting the Cables

1. Open the cable clamp on the bracket.



2. Disconnect the speaker cable from the Mainboard.



3. Disconnect the button board cable and IV board cable from the mainboard.(from left to right)



4. Disconnect the cables from the IV board.



Removing the Speaker

1. Remove the four screws securing the left and right speakers.
2. Remove the speakers from the front bezel.



Removing the button board

1. Remove the three screws securing the button board and remove the button board from the front bezel.

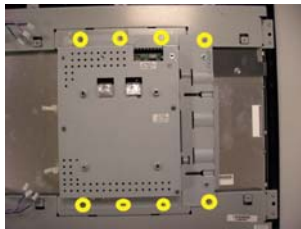


2. Disconnect the button cable from the button board.



Removing the Wall Mount Assembly

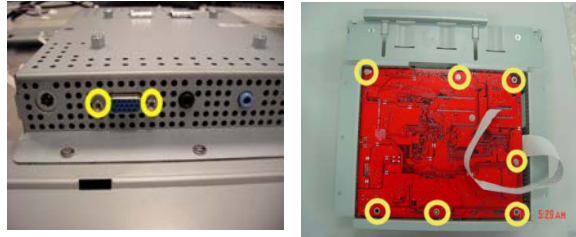
1. Remove the eight screws securing the wall mount bracket.



2. Lift the wall mount bracket and disconnect the FPC cable from the panel and remove the wall mount bracket.



3. Remove the two screws securing the mainboard as shown. Turn the bracket over. Remove another seven screws securing the mainboard and remove the mainboard.



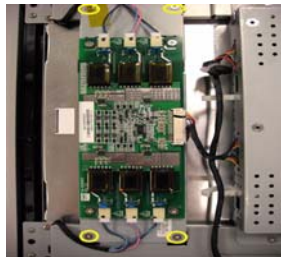
4. Disconnect the FPC cable from the mainboard.



NOTE: The mainboard color might be different.

Removing the IV Board

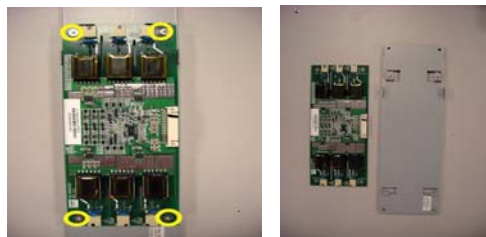
1. Remove the four screws securing the IV board bracket and remove it.



2. Disconnect the cable from the IV board.



3. Remove the four screws securing the IV board.



Removing the Panel

1. Remove the nine screws securing the top panel bracket and remove it.



2. Remove the nine screws securing the bottom panel bracket and remove it.



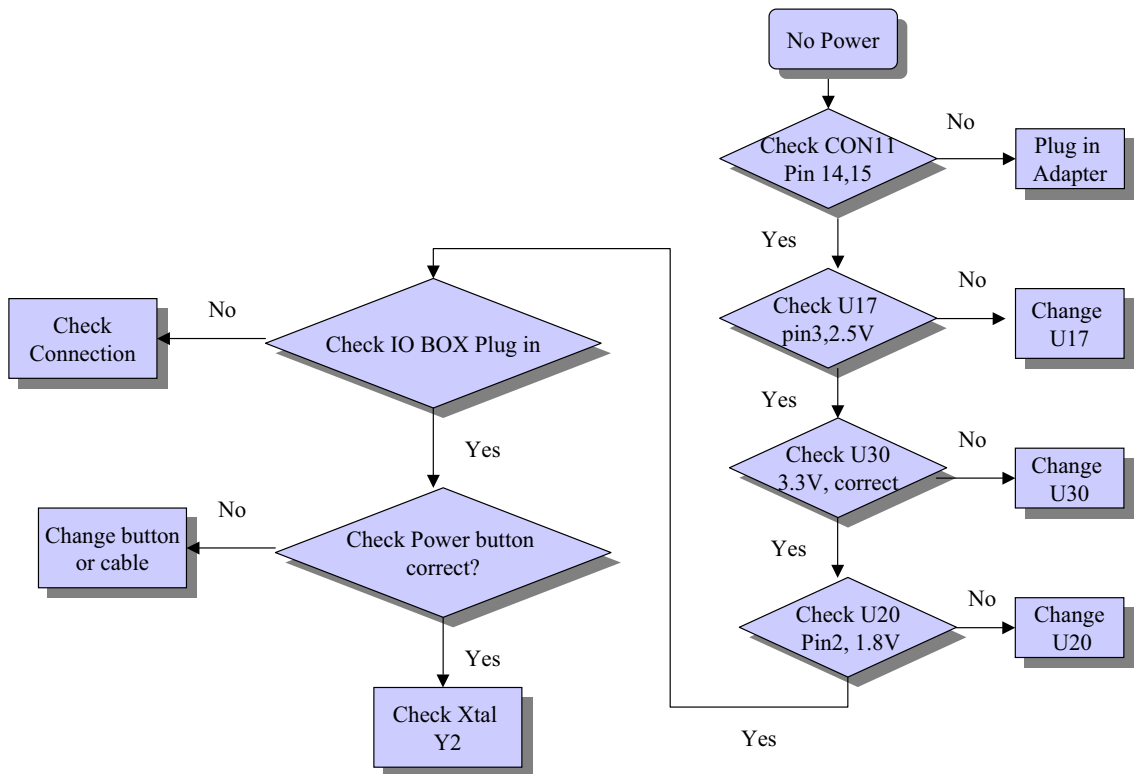
3. Remove the panel from the front cover.



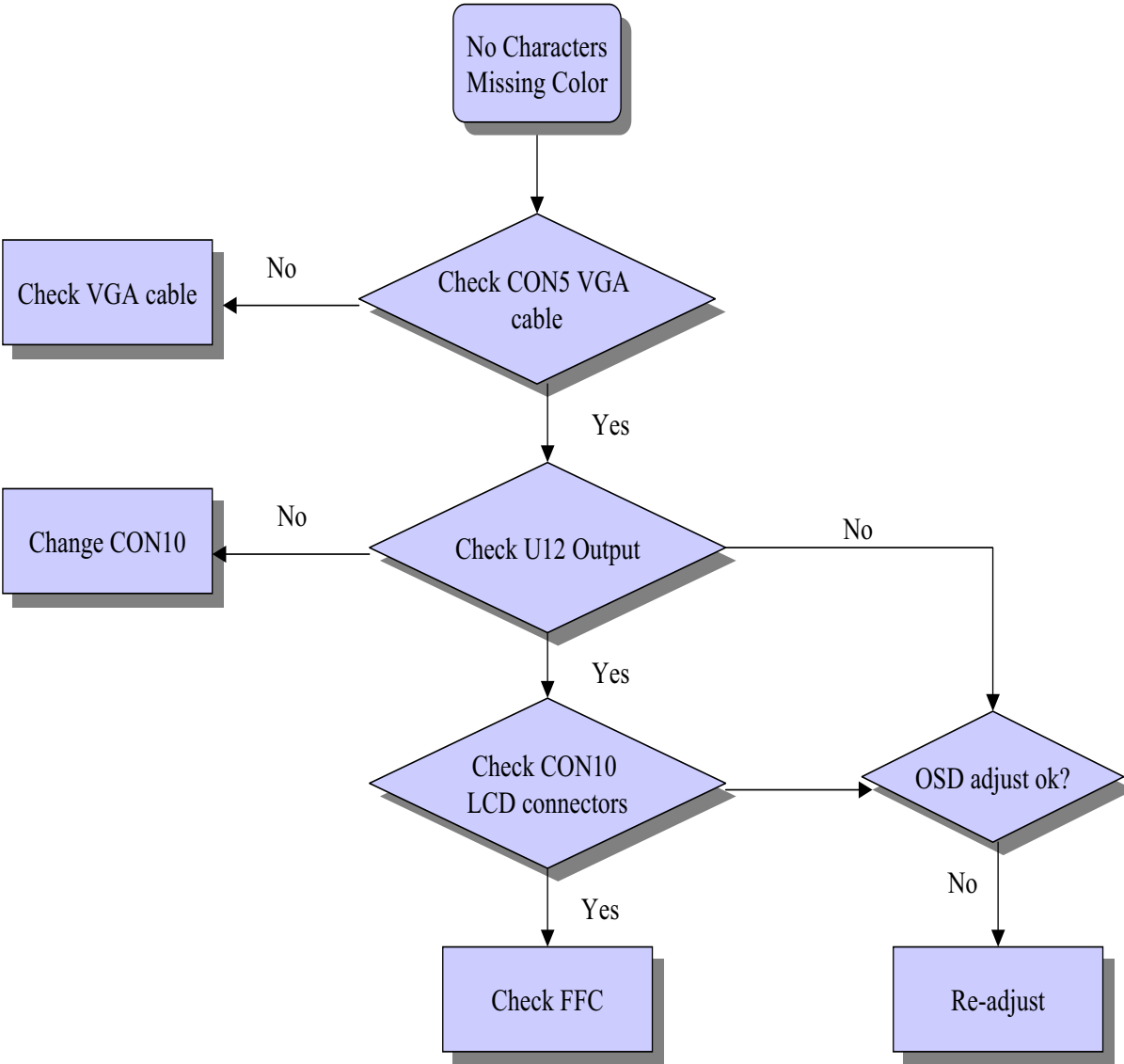
Troubleshooting

This chapter provides troubleshooting information for the AT2001.

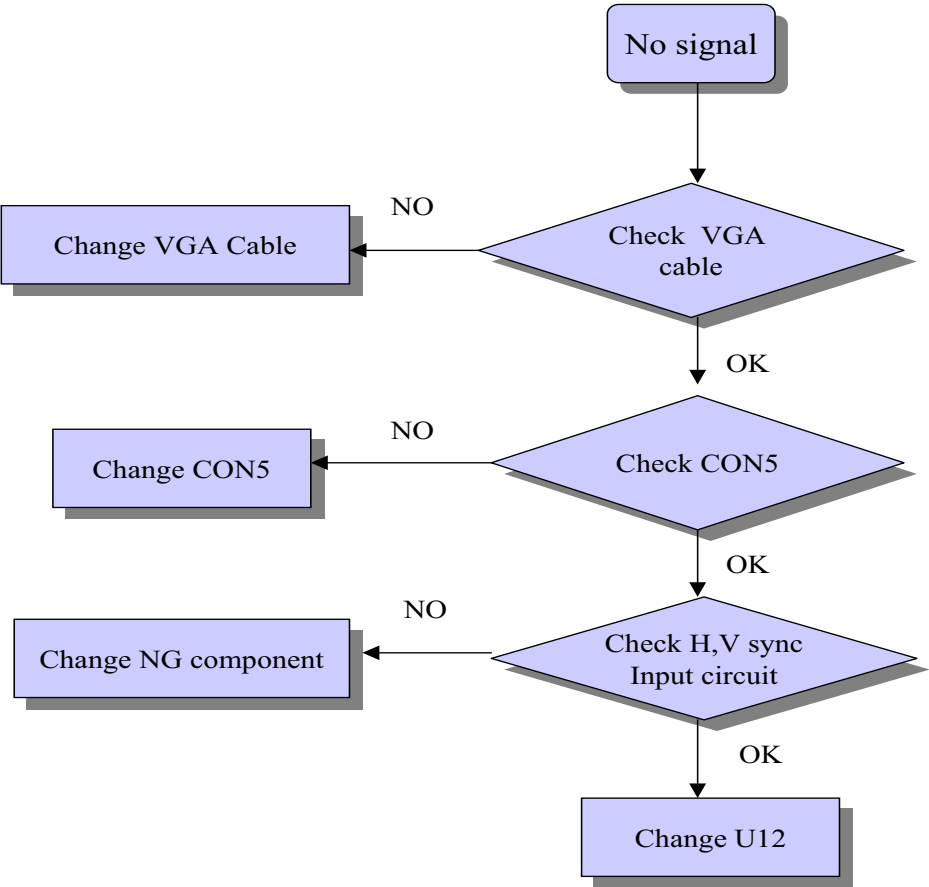
No Power



No Characters, Missing Color



NO Signal



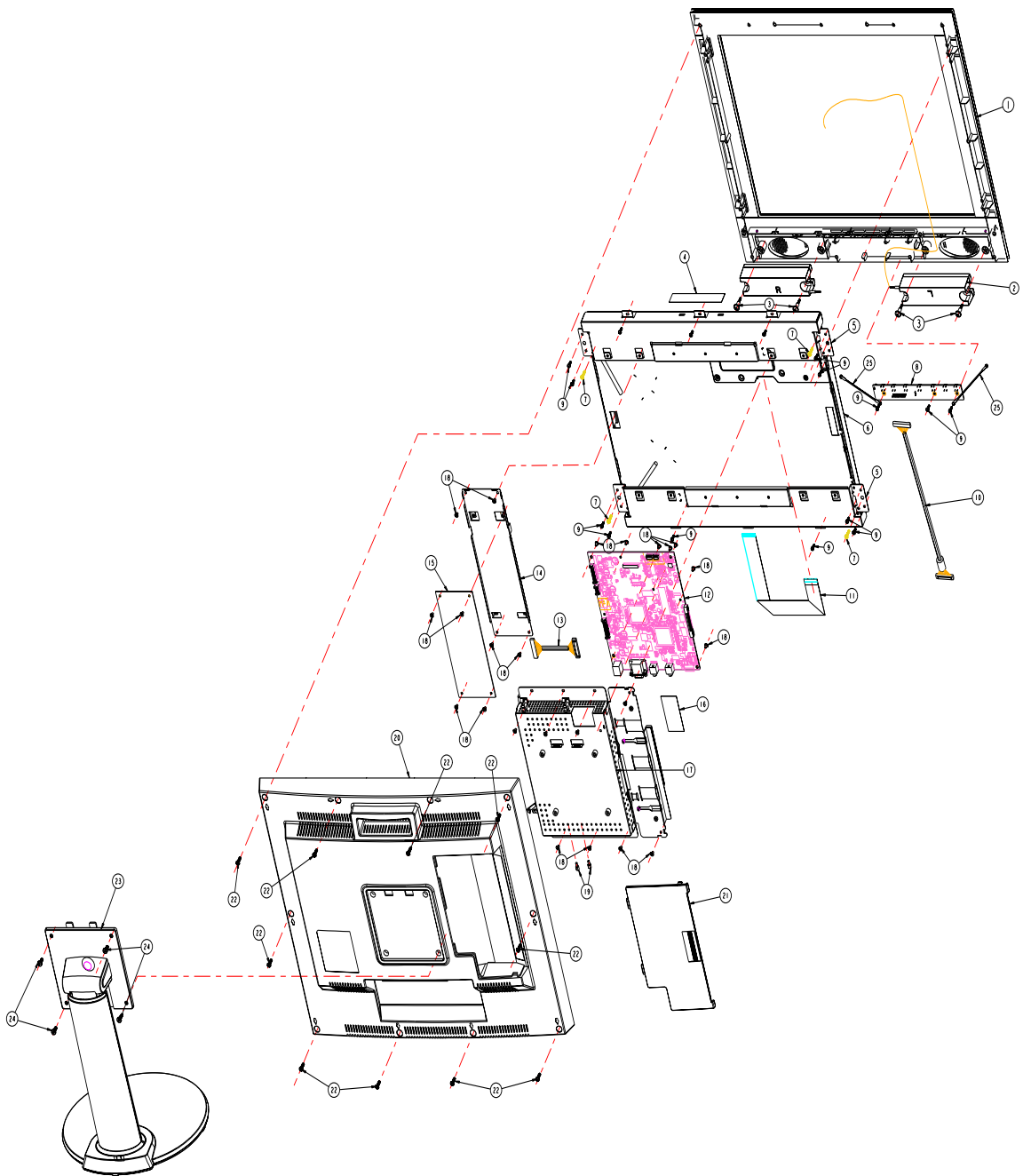
FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of LCD TV AT2001. Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

Please note that WHEN ORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted on 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



Number	Item
1	Front Cover Assy
2	Speaker Assy
3	Screw 3 X 20.4-B(NI)
4	AL-FOIL-LCD
5	Panel Bracket AU
6	LCD(TFT) 20.1" (SVGA)
7	Screw M3.0X12-B(MC)
8	VS3 Button Assy
9	Screw T3X8(NI)
10	Cable Assy (MB-Button)
11	Cable VS8 M/B(FFC, 50P, 300MM, REV3A)
12	VS3 M/B Assy EU
13	Cable Assy Inverter(15P, REVIA)GL
14	Inverter-Bracket
15	INV Module(LCE)
16	Gasket-LCD
17	Wall Mount Bracket Assy
18	Screw M3X4.0-I(NI)
19	IO Nut VTI
20	Back Cover
21	IO Cover
22	Screw T4X10-P(BNI)
23	Stand Assy
24	Screw M4X10-B(BK-NYLOK)
25	Cable Assy EMI-GND

FRU List

AT2001 FRU List

Picture	No.	Partname And Description	Part Number
Accessory			
		REMOTE CONTROLLER - EU	25.M04V7.001
Adapter			
		ADAPTER 15V 4.2A ADP-63BB B 100~240V	25.M04V7.001
Boards			
		TUNER MODULE - PAL	6M.M04V7.001
		MAIN BOARD - PAL	55.M04V7.001
		INVERTER BOARD	55.M04V7.002
		BUTTON BOARD	55.M04V7.003
Case/Cover/Bracket Assembly			
		STAND NECK ASSY	60.M04V7.001
		STAND BASE ASSY	60.M04V7.002

AT2001 FRU List

Picture	No.	Partname And Description	Part Number
		STAND BRACKET FIX	60.M04V7.003
		FRONT COVER	60.M04V7.004
		BACK COVER	60.M04V7.005
		I/O COVER	42.M04V7.001
		WALL MOUNT BRACKET ASSY	33.M04V7.001
		INVERTER SHIELDNG	33.M04V7.002
		LCD BRACKET AU	33.M04V7.003
Cables			
		POWER CODE EU 3P 1.8M	27.M04V7.001
		POWER CODE UK 3P 1.8M	27.M04V7.002
		INVERTER CABLE	50.M04V7.001

AT2001 FRU List

Picture	No.	Partname And Description	Part Number
		CABLE - MB TO LCD	50.M04V7.002
		CABLE - MB TO BUTTON BOARD	50.M04V7.003
		CABLE - IB TO GROUND	50.M04V7.004
		CABLE - VB1D PAL	50.M03V7.018
		CABLE - SCART TO SCART	50.M03V7.019
LCD			
		LCD(TFT) AU 20.1" A201SN02 V4(SVGA)	56.M04V7.001
Miscellaneous			
		AL FOIL - LCD	47.M04V7.001
		GASKET - LCD	47.M04V7.002
Speaker			
		SPEAKER ASSY C1H FG-QT132(4P,REV 1A)L-F	23.M04V7.001
Screws			
		SCREW M4*10-B(BK-NYLOK)	
		SCREW T4*10-P (BNI)	

AT2001 FRU List

Picture	No.	Partname And Description	Part Number
		SCREW M3.0*6.0-I-NI	
		SCREW M3*4-I (NI)	
		SCREW M3.0*12.0-B(MC)	
		SCREW 3 X 20.4-B (NI)	
		SCREW T3*8 P (NI)	
		IO NUT VT1(MBVT1002,REV3A)	