DATA SHEET

15" Compact Panel
AUT1500

Revision 0
10.02.2005

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Revision History

Date	Paragraph	Change Description

1. Description

AUT1500 open frame monitor is an analog RGB interface monitor for 15" XGA TFT LCD panel that is providing high quality screen image. This monitor supports from VGA to UXGA resolution at a maximum of 85Hz refresh rate with expanding to full screen image.

It gives a lot of convenience to the user in installing various application such as gaming, amusement, industry and so on and accessing the GUI(Graphic User Interface).

2. General Specification

ITEM	DESCRIPTION	REMARKS
Model Name	AUT1500	
Input Signal	Analog RGB DC 12V/3.0A	
Resolution	Horizontal : 31 to 69 KHz Vertical : 55 to 86 Hz Analog RGB : VGA/SVGA/XGA/SXGA/UXGA	Special timing available 1600x1200 @ 60Hz Max.
Receptacle	DC Jack, KEY Connector, RGB Connector	
User Controls	5 Buttons Controls	
Image Scaler	gm2121	Genesis Microchip
Power Consumption	35W Max	
Dimension	Monitor : TBD(mm) Inner box : TBD(mm) Out box : TBD(mm)	Refer to the clause 5.1
Plug & Play	DDC 2B	VESA
Power Management	Supports VESA DPMS	

3. Environmental and Reliability Specifications

3.1 Operating Conditions

  3.1.1 Temperature : 10°C~ 50°C
  3.1.2 Humidity   : 10% ~ 80%, non-condensing
  3.1.3 Altitude   : maximum 3,000m

3.2 Transportation Conditions

  3.2.1 Temperature   : -25°C~ 60°C
  3.2.2 Humidity   : 5% ~ 95%, non-condensing
  3.2.3 Altitude   : maximum 15,000m

3.3 Storage Conditions

  3.3.1 Temperature   : -20°C~ 45°C
  3.3.2 Humidity   : 5% ~ 95%, non-condensing
  3.3.3 Altitude   : maximum 3,000m

3.4 Reliability Specifications

  3.4.1 MTBF : more than 50,000 hours at 90% confidence level, excluding LCD panel.
  3.4.2 Reliability specification and items : refer to "Specification of reliability test for LCD monitor"

4. Electrical Specification

4.1 Panel Specification

Item	Description	Unit
Type No.	Samsung ,	
Size	15" Diagonal	Inch
Active Display Area	304.1 x 228.1	mm
Number of Pixels	1024 (H) x 768 (V)	
Pixel Arrangement	RGB Vertical Stripe	
Pixel Pitch	0.297 x 0.297	mm
Color Depth	16.2M True Color	
Surface Treatments	Hard Coating (3H), Haze 25%	
Viewing Angle	Horizontal : Θ L 70 Θ R 70 Vertical : Φ H 50 Φ L 60	degree
Contrast Ratio	Typ. 400 : 1	
Response Time (CR$\geq$ 10)	Rise time (tr) : 5ms(Typ.) Fall time (tf) : 20ms(Typ.)	
Average Brightness	Typ. 430 cd/m2	
Frame Rate	Typ. 60Hz, Max. 75Hz	
Panel Dimension	(WHD) 331.6 x 254.9 x 12.5	mm
CCFT	4 (2 Dual)	

4.2 Input Signal Characteristics

Input Signal	Description	Unit	Min	Typical	Max	Remarks
DC input	DC Voltage	Vdc	10	12	15	
	Power Consumption	Watts		30	35	for full Option
15Pin D-Sub	Video(SOG)	Vp-p		0.7	1.0	75Ω Terminated
	Sync Voltage	Vp-p		5.0		
	Horizontal Frequency	kHz	31	48	69	Depends on Mode
	Vertical Frequency	Hz	55	60	86	Depends on Mode

4.3 Power Management : VESA DPMS standard is applied for power management control.

Mode	HSync.	VSync.	LED1	LED2	Power Consumption (nominal)
On	Active	Active	Off	On	< 35 W
Stand-by	Inactive	Active	Blinking	Off	< 3 W
Suspend	Active	Inactive	Blinking	Off	
Off	Inactive	Inactive	Blinking	Off	

4.4 Connector Pin Assignment

4.4.1 CN6 : DC Input

Part No.	Pin No.	Description	Remarks
40006WR-02 (YEONHO)	1	GND	
	2	Vcc(12V/3A)	

4.4.2 CN1 : Analog RGB Input

Part No.	Pin No.	Description	Remarks
S13B-PH-SM3-TB (JST)	1	CABLE DETECT	
	2	DDC SDA	
	3	DDC SCL	
	4	RED GND	
	5	RED INPUT	
	6	GREEN GND	
	7	GREEN INPUT	
	8	BLUE GND	
	9	BLUE INPUT	
	10	NC	
	11	VERTICAL SYNC	
	12	SYNC GND	
	13	HORIZONTAL SYNC	

4.4.3 CN2 : Key Connector

Part No.	Pin No.	Description	Remarks
53261-1490 (MOLEX)	1	LED2	
	2	LED1	
	3	GND	
	4	POWER	
	5	GND	
	6	MENU	
	7	RIGHT (Brightness +)	
	8	NC	Option in 8 keys
	9	NC	Option in 8 keys
	10	LEFT (Brightness -)	
	11	EXIT	
	12	AUTO	
	13	GND	
	14	+3.3V (100mA)	

5. Mechanical Specification

5.1 Front

5. Mechanical Specification

140,5

113

167,5
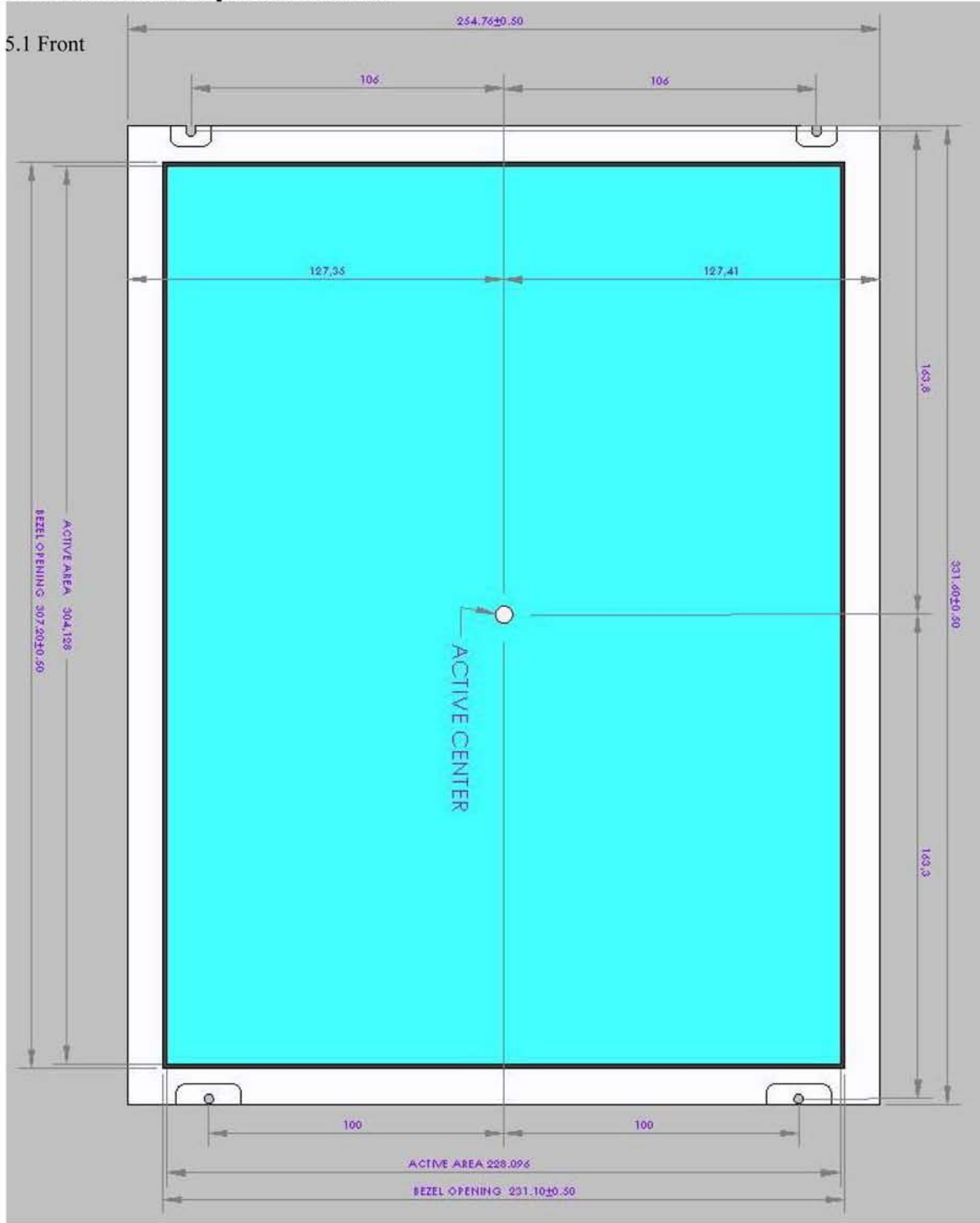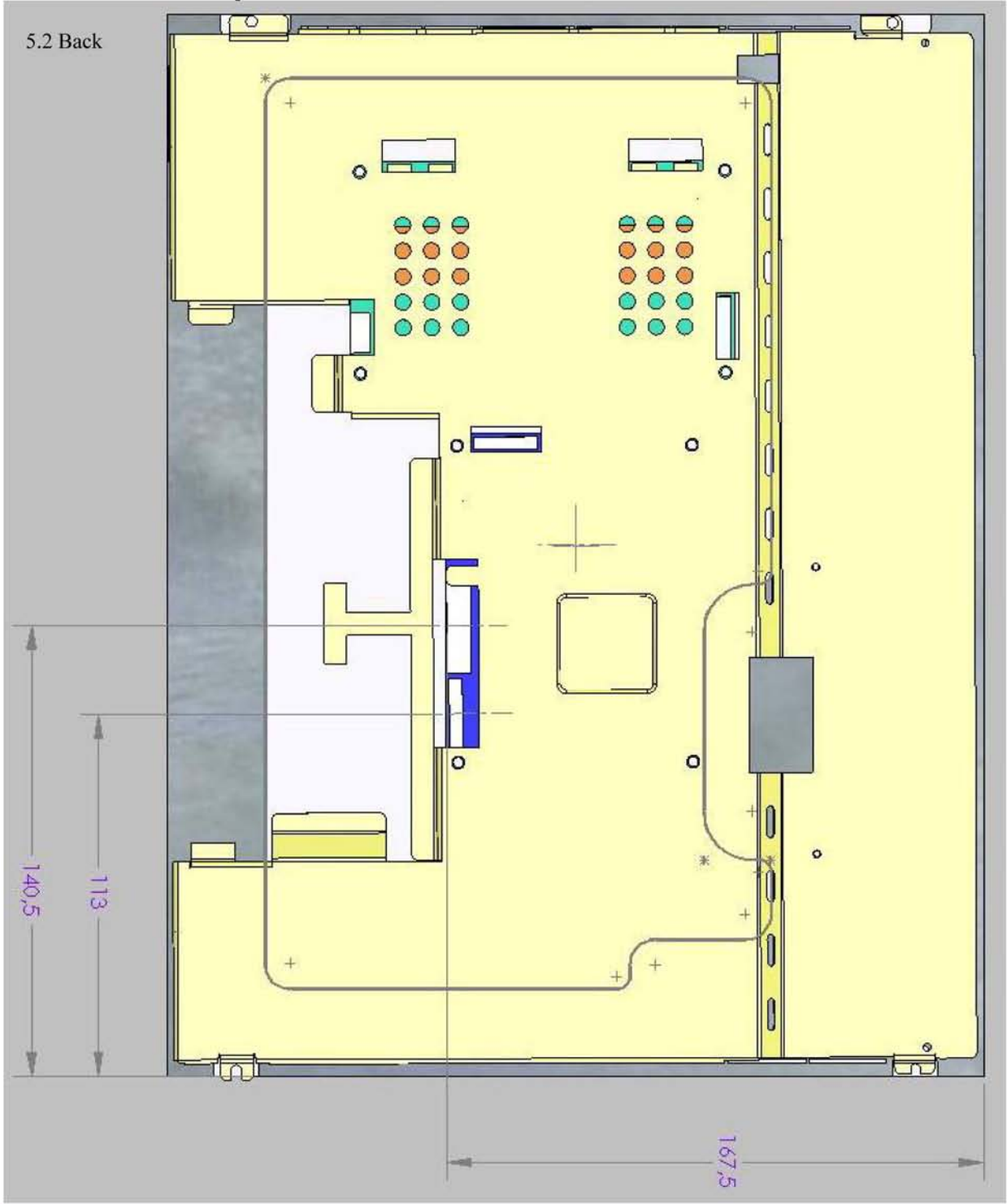
5. Mechanical Specification

5.3 Side

6. Operation Guide

6.1 Installation

This monitor is designed for RGB monitor using 15" TFT LCD panel.
This section provides some guidelines for assembly and preparation of a finished display solution.
Before proceeding, it is important to familiarize yourself with the parts making up a system and the various connectors, mounting holes and general layout of the monitor.
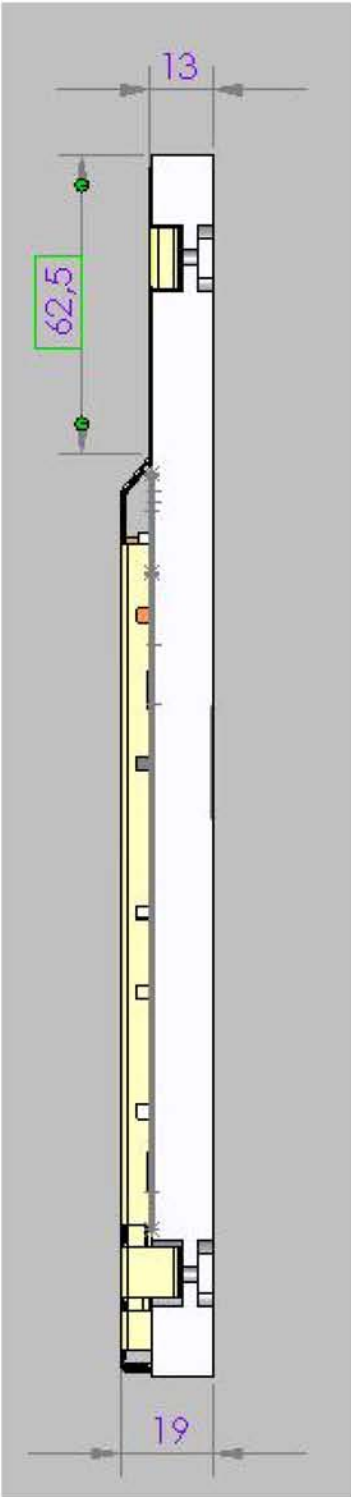Please follow the below procedure.

1) Appearance Inspection
    Please check the monitor whether it is damaged in appearance or not during transportation.
    And assemble this monitor to your system or applications.
2) Signal Inputs Connection
    Analog input is available. Please refer to the clause 4.4 Connector
    Pin Assignment and connect the signal what you want to apply to the monitor.
    Especially, the Analog RGB cable may affect the visual characteristics and regulatory emission
    test. So, a suitably shielded cable should be used.
3) Power Input Connection
    Refer to the 4.4 Connector Pin Assignment and connect the power input cable to the monitor.
    Every connection is done but you should consider electrical insulation, grounding, EMI shielding and
     heat & ventilation.
4) Apply Power
    Apply power and turn on the monitor and refer to the following clause.

6.2 OSD Adjustment

AUT1500 gives various and very easy graphic user interface. User can easily access to the function that user wants. Be sure that your system power and LED is turned on before operating key board.
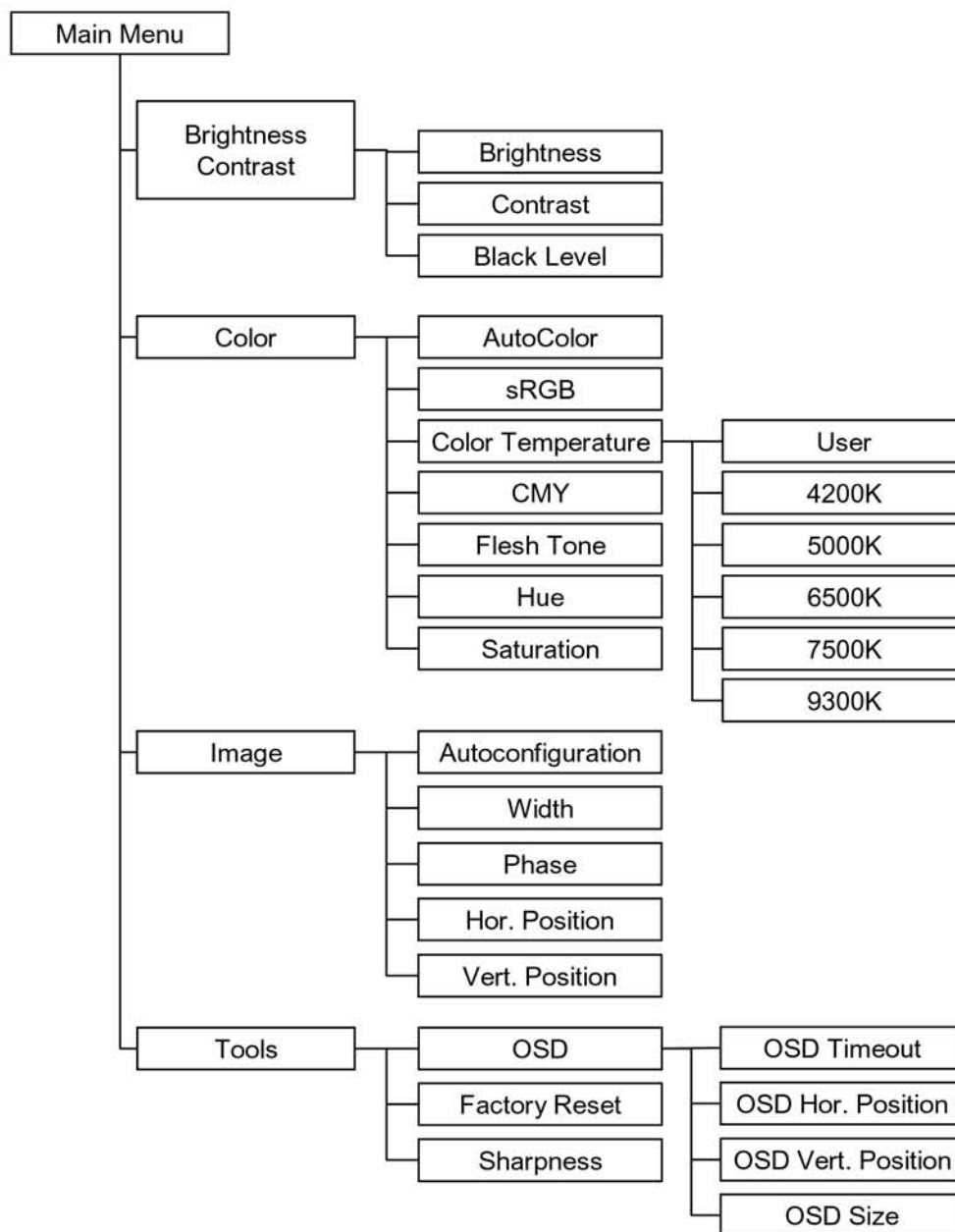
6.2.1 Key Name and Function

Key Name	Description
Power	Turns ON/OFF the system
Menu	Call OSD menu and moves through the function list
Auto	Activates "Auto-adjustment" function
Exit	-When the OSD menu is off, press more than 3 seconds : Performs "Auto-adjustment" function -When the OSD menu is on : Exits current menu or goes back to previous menu
Left	-Activates the current main menu -Decreases the adjustment of the selected function -Without OSD: Decrease brightness of backlight lamps
Right	-Activates the current main menu -Increases the adjustment of the selected function -Without OSD: Increase brightness of backlight lamps

Accessing the menu system

1. With the OSD off, push the Menu button to activate the main OSD menu.

2. Use the Menu button to move from one function to another. As you move from one icon to another, the function name changes to reflect the function or group of functions represented by that icon. Please refer to the following clause on the next page to view a complete list of all of the functions available for the driver board.

3. Press the Left or Right button once to activate the highlighted function, use the Menu buttons to select the function.

4. After selecting a function, use the Left or Right buttons to make optimum adjustments. The setting bar moves and the numeric value indicator changes to reflect your adjustments. NOTE: The numeric value indicator is provided as a point of reference only and has nothing to do with a real measurement.

5. Press the **Exit** button once to return to the main menu to select another function or press twice to exit from the OSD.

6.2.2 OSD Structure

```
Main Menu
  ├── Brightness          ── Brightness
  │   Contrast            ── Contrast
  │                       ── Black Level
  │
  ├── Color               ── AutoColor
  │                       ── sRGB
  │                       ── Color Temperature ── User
  │                       ── CMY                ── 4200K
  │                       ── Flesh Tone         ── 5000K
  │                       ── Hue                ── 6500K
  │                       ── Saturation         ── 7500K
  │                                             ── 9300K
  │
  ├── Image               ── Autoconfiguration
  │                       ── Width
  │                       ── Phase
  │                       ── Hor. Position
  │                       ── Vert. Position
  │
  └── Tools               ── OSD            ── OSD Timeout
                          ── Factory Reset  ── OSD Hor. Position
                          ── Sharpness      ── OSD Vert. Position
                                            ── OSD Size
```

6.2.3 Window Structure

Input Timing

Main Menu Name

800x600 60.3Hz
Color

Main Tab

Exit Menu

Sub Menu Items

4200k 5000k 6500k 7500k 9300k

Sub Menu Name

User

7. Appendix

7.1 Standard Timing Chart

Mode	Active Resolution	Total Pixels	Horizontal Frequency (KHz)	H-Pol.	Vertical Freq (Hz)	V-Pol.	Pixel Clock
VGA	640x350 @ 85Hz	832x445	37,861	P	85,080	N	31,500
	640x400 @ 85Hz	832x445	37,861	N	85,080	P	31,500
	720x400 @ 85Hz	936x446	37,927	N	85,039	P	35,500
	640x480 @ 60Hz	800x525	31,469	N	59,940	N	25,175
	640x480 @ 72Hz	832x520	37,861	N	72,809	N	31,500
	640x480 @ 75Hz	840x500	37,500	N	75,000	N	31,500
	640x480 @ 85Hz	832x509	43,269	N	85,008	N	36,000
SVGA	800x600 @ 56Hz	1024x625	35,156	N/P	56,250	N/P	36,000
	800x600 @ 60Hz	1056x628	37,879	P	60,317	P	40,000
	800x600 @ 72Hz	1040x666	48,077	P	72,188	P	50,000
	800x600 @ 75Hz	1056x625	46,875	P	75,000	P	49,500
	800x600 @ 85Hz	1048x631	53,674	P	85,061	P	56,250
XGA	1024x768 @ 60Hz	1344x806	48,363	N	60,004	N	65,000
	1024x768 @ 70Hz	1328x806	56,476	N	70,069	N	75,000
	1024x768 @ 75Hz	1312x800	60,023	P	75,029	P	78,750
	1024x768 @ 85Hz	1376x808	68,677	P	84,997	P	94,500
	1152x864 @ 75Hz	1600x900	67,500	P	75,000	P	108,000
SXGA	1280x1024 @ 60Hz	1688x1066	63,981	P	60,020	P	108,000
	1280x1024 @ 75Hz	1688x1066	79,976	P	75,025	P	135,000
EGA	640x350 @ 70Hz	800x449	31,469	P	70,086	N	25,175
CGA	640x400 @ 70Hz	800x449	31,469	N	70,086	P	25,175
DOS	720x350 @ 70Hz	900x449	31,469	P	70,087	N	28,322
DOS	720x400 @ 70Hz	900x449	31,469	N	70,087	P	28,322
XGA	1024x768 @ 72Hz	1304x798	57,515	P	72,100	P	75,000

XGA	1024x768 @ 87Hz(i)	1264x817	35,522	P	43,479	P	44,900
	640x480 @ 67Hz	864x525	35,000	N	66,667	N	30,240
SVGA	832x624 @ 75Hz	1152x667	49,725	N	74,551	N	57,283
XGA	1024x768 @ 60Hz	1312x813	48,780	N	60,001	N	64,000
	1024x768 @ 75Hz	1328x804	60,241	N	74,927	N	80,000
SXGA	1152x870 @ 75Hz	1456x915	68,681	N	75,060	N	100,000
SXGA	1280x1024 @ 60Hz	1708x1056	63,337	N	59,978	N	125,000
	1280x1024 @ 72Hz	1728x1085	78,125	N	72,005	N	135,001
	1152x900 @ 66Hz	1528x937	61,846	N/P	66,004	N/P	94,500
SXGA	1280x1024 @ 76Hz	1664x1066	81,129	N	76,106	N	135,000
SXGA	1280x1024 @ 67Hz	1696x1056	70,755	N	67,003	N	120,000
	1280x960 @ 60Hz	1800x1000	60,000	P	60,000	P	108,000
	1280x1024 @ 85Hz	1728x1072	91,146	P	85,024	P	157,500
	1280x960 @ 85Hz	1728x1011	85,934	P	85,002	P	148,500
VGA	640x400 @ 56Hz						
	1152x864 @ 70Hz	1600x900		P	70,000	P	
UXGA	1600x1200 @ 60Hz						
	1280x768 @ 60Hz						
	1280x720 @ 60Hz						