

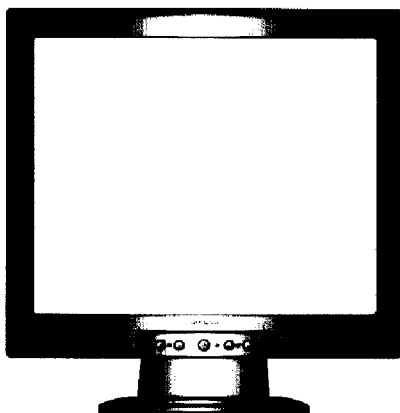
# HITACHI

## COLOUR/COLOR LCD MONITOR

# CML190SXW B

# User Manual

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**READ THE INSTRUCTIONS INSIDE CAREFULLY.  
KEEP THIS USER MANUAL FOR FUTURE REFERENCE.**

For future reference, record the serial number of your colour monitor.

**SERIAL No.** \_\_\_\_\_

The serial number is located on the rear of the monitor.

This monitor is ENERGY STAR<sup>®</sup> compliant when used with a computer equipped with VESA DPMS.

The ENERGY STAR<sup>®</sup> emblem does not represent EPA endorsement of any product or service.

As an ENERGY STAR<sup>®</sup> Partner, Hitachi, Ltd. has determined that this product meets the ENERGY STAR<sup>®</sup> guidelines for energy efficiency.



## **Limited Warranty for USA Customers Only**

Hitachi America, Ltd. warrants our Hitachi CRT color monitor to be free from defects in material and workmanship for 36 months from the date you purchased it if your purchase was made prior to 1/31/01 or 60 months if your purchase was made after 1/31/01 from your authorized Hitachi America, Ltd. dealer.

If you purchase a Hitachi Liquid Crystal Display (LCD) color monitor, Hitachi provides a warranty of 36 months for the panel and 12 months for the backlight if purchased before 1/31/01 or 36 months for both panel and backlight if purchased after 1/31/01. In the event of a defect during this 12 month, 36 month or 60 month period, Hitachi America, Ltd. will, at its option, repair or replace the monitor at no charge except as set forth below. If proof of purchase cannot be provided by owner, the warranty period will start to run from the date of manufacture.

Hitachi America, Ltd. may repair your monitor with new or reconditioned parts or replace it with a new or reconditioned monitor of the same or similar kind, and any replaced monitors or parts become Hitachi America, Ltd.'s property.

**Exclusions from this warranty:** It is normal for Cathode Ray Tube (CRT) monitors and LCD display backlights to decrease in brightness as they age. This is a natural process in CRTs & LCDs due to the degradation of the LCD backlight and the degradation of the CRT phosphors that create the image and is not covered by this warranty. This warranty excludes decreased image clarity or reduced brightness due to natural aging of the monitor/display. In addition, this warranty does not cover phosphor burn. Phosphor burn can occur when a monitor is left with one static image for extended periods of time during which the image may become burned into the phosphors.

This limited warranty does not cover damage occurring in shipping or in storage after you purchase the monitor or damage caused by abuse, accident, disaster, misuse, mishandling, mispackaging or shipping, improper installation, unauthorized repair or modification, or failure to follow the manufacturer's instruction with respect to the proper handling, operation, installation, service and maintenance of the monitor.

To obtain warranty service, call 1-800-536-6721 to obtain a return authorization and the location of your Hitachi service center or return the monitor to the dealer from whom you bought it (subject to that dealers' return policy). If you choose to ship the monitor rather than delivering it in person, you must assume the risk of damage or loss in transit. You must also use the original shipping container (or equivalent packaging), pay shipping charges, and enclose a copy of the proof of purchase date with the monitor.

For additional information, please write to:

Hitachi America, Ltd.  
200 Lowder Brook Drive, Suite 2200, Westwood, MA 02090

**NEVER** open the monitor cabinet. If the monitor is not operating properly, contact Hitachi America Ltd. service center (Call 1-800-536-6721).

Do not open the monitor housing under any circumstances. By opening the monitor housing you will expose yourself to high voltage and possible severe electrical shocks and void all warranties.

ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS MONITOR IS LIMITED TO THE 12, 36 or 60 MONTH DURATION OF THIS WRITTEN WARRANTY, AS APPLICABLE. ALL WARRANTIES SET FORTH IN THIS WARRANTY ARE LIMITED TO 12, 36 OR 60 MONTHS FROM THE DATE OF PURCHASE. NO WARRANTIES WHATSOEVER WILL COVER THIS MONITOR BEYOND THE STATED 12, 36 OR 60 MONTHS. HOWEVER, SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS MONITOR IS DEFECTIVE, YOUR ONLY REMEDY IS REPAIR OR REPLACEMENT, AS DESCRIBED ABOVE. UNDER NO CIRCUMSTANCES WILL HITACHI AMERICA, LTD. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING ANY LOST SAVINGS, LOST PROFITS, OR ANY OTHER DAMAGES CAUSED BY THE USE OF THIS MONITOR OR INABILITY TO USE IT, EVEN IF THE DEALER OR HITACHI AMERICA, LTD. HAS BEEN ADVISED OF SUCH LIABILITY OR OTHER CLAIMS.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS WHICH VARY STATE TO STATE.

**THIS WARRANTY APPLIES TO NEW, CURRENT, PRODUCTS ONLY AND DOES NOT APPLY TO PRODUCTS SOLD AFTER THEY ARE DISCONTINUED OR REFURBISHED.**

## ***For Canadian Customers only Warranty Policy***

Hitachi Industrial Products are guaranteed to be free from defects in workmanship and material. If any failure, resulting from either workmanship or material defects should occur under normal and proper usage within the period stated hereunder from the original provable date of purchase, such failure should be repaired at no cost to the buyer for labor and parts if the defective product is brought to an AUTHORIZED HITACHI SERVICE CENTRE in Canada.

### **WARRANTY PERIOD**

#### **COMPUTER MONITOR**

***3 year parts and 3 year labour***

### **WARRANTY DOES NOT COVER**

1. Products received for repair without sales or delivery receipt showing date of purchase by original customer.
2. Damages caused by incorrect use, carelessness, unauthorized alteration, improper storage or unauthorized service or repairs.
3. Damages caused by fire, flood, lightning, vandalism, collision, acts of God, or other events beyond the control of Hitachi.

4. External parts such as cabinet.
5. Products purchased outside Canada.
6. Products used outside Canada.
7. In transit damage claims, improper handling by carrier or post offices.
8. Products or parts there of which have serial numbers removed, altered or defaced.
9. Damage defect or failure caused by, or resulting from, the operation of the unit by incorrect voltages.
10. The use of components that do not meet Hitachi specifications.
11. Products sold in Canada by another organization which is not authorized by HITACHI CANADA LTD
12. Picture tube damages resulting from extended exposure of the video characters.

**IMPORTANT:** This warranty is in lieu of all other warranties, guarantees or agreements whether expressed or implied and no person, dealer, or Company is authorized to change, modify, or extend its terms in any manner whatsoever.

Hitachi Canada Inc. shall not be responsible for any damages or loss of any kind attributed to the product rendered defective during usage, or attributed to incompatibility problems of any linked equipment including software.

NEVER open the monitor cabinet. If the monitor is not operating properly, contact Hitachi Service Center. DO NOT open the monitor housing under any circumstances. By opening the monitor housing you will expose yourself to high voltage and possible severe electrical shocks, and void all warranties.

HITACHI CANADA LTD.

For service, please call your Dealer or your 1-800-HITACHI.

**TRONTO**

6740 Campobello Road, Mississauga, Ont. L5N 2L8

Tel.: (905) 821-4545

Fax No.: (905) 821-1101

# HITACHI

Colour/Color Monitor

## CML190SXW B USER MANUAL

Congratulations on your selection of the HITACHI Colour Monitor.

Read the instructions inside carefully, and keep this user manual for future reference.



### **NOTE:**

- \* The information in this manual is subject to change without notice. The manufacturer assumes no responsibility for any errors that may appear in this manual.
- \* The reproduction, transmission or use of this documents or contents is not permitted without express written authority.

### **TRADEMARK ACKNOWLEDGEMENT:**

VGA is a registered trademark of International Business Machines Corporation.  
VESA is a trademark of a nonprofit organization, Video Electronics Standard Association.  
ENERGY STAR<sup>®</sup> is a trademark of Environmental Protection Agency (EPA).

## **CONTENTS**

<b>Using this Display Safely</b> .....	<b>6</b>
 Warning .....	7
 Caution.....	10
FCC Statement Warning .....	12
For the Customers in CANADA.....	12
For the Customers in the UK.....	13
<b>Chapter 1 Installation</b> .....	<b>14</b>
Unpacking .....	14
Viewing Angle Adjustment .....	14
Cable Installation.....	15
Connecting the Display to your Computer .....	15
Connecting the AC Power.....	16
Setting Up the LCD Monitor .....	16
Power Management System .....	16

<b>Chapter 2 Display Controls</b> .....	<b>17</b>
User Controls .....	17
Adjusting the Monitor's Display .....	17
Function Descriptions.....	18
<b>Chapter 3 Technical Information</b> .....	<b>20</b>
Specifications .....	20
Standard Timing Table .....	23
Troubleshooting.....	24

# Using this Display Safely

## Common Safety Precautions

Please read carefully and make sure you fully understand the following safety precautions:

- Operations should be done according to instructions and procedures described in this manual.
- Make sure to heed all warnings displayed on the device and manual. Neglecting to do so may result in fire or damage the device.

## Symbols

Safety notifications are presented as shown below. These are indicated by "Warning" and "Caution" in combination with a caution symbol (graphic symbol). Additionally, details are depicted within the graphic symbols.



**Warning**

This symbol is used to indicate a hazard that may result in death or grave injury.



**Caution**

This symbol is used to indicate a hazard that may result in minor injury or significant damage to the product



### [ Notice example 1] Shock Caution

This (Δ) symbol indicates that caution should be taken and within the triangle (Δ) is a picture depicting "Shock caution".



### [Notice Example 2] Disassembly Prohibited

In the (⊘) barred circle is an action that must not be done and the picture in this (⊘) one depicts "Disassembly Prohibited".



### [Notice Example 3] Unplug power Cord from Socket

In the (●) symbol is an action that should be taken. This (●) one is a picture depicting "Unplug Power Cord from Socket" and other mandatory actions.

## Handling and Operation

Do not handle or operate in ways other than what is depicted in the manual. If there are any problems with the device, turn OFF the power, unplug the cord then notify the dealer where the product was purchased or call a service person.

## Taking ample care

The cautions noted on the device and manual have been carefully considered. Even so, unforeseen incidents may happen. When operating the device, in addition to following instructions, takes ample care during handling and operation.

## **Warning**

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### **Abnormal heat, smoke, sounds or smells.**

If anything abnormal should happen, turn OFF the power and unplug the power cord. Continued use in this condition may lead to electrical shock or fire. The area around the cord should be clear to allow the cord to be easily unplugged.



### **Repair, Modification, Disassembly**

DO NOT attempt to repair, modify or disassemble the product. This may result in fire or electrical shock.



### **Air vents**

- The air vents are to prevent the internal temperature from rising. Do not place items on or so that they block the air vents. Also do not place in racks where the air vents will be blocked. This will cause the internal temperature to rise and result in fire or malfunction.
- Do not place on racks that fix the display in leaning position. This will change the flow of air through the air vents and cause the internal temperature to rise resulting in fire or malfunction.



### **Placing Objects in Device**

DO NOT put paper clips, pins, metallic objects or combustible items in the ventilation holes. Using the device in this condition may result in electrical shock or fire.



### **Removing the Case Cover**

DO NOT remove the case cover. There are many high voltage parts inside and are very dangerous.



### **Placing Objects on the Device**

DO NOT put flower vases, planters, vessels containing water, pins and paper clips or other metal items on the device. If anything should fall in, using the product in this condition may result in electrical shock.





### **Handling of the power cord**

Use the power cord supplied with the product and be careful of the following during use. If handled improperly, the cord may be damaged resulting in electrical shock or fire.

Never place objects on it.

- DO NOT pull
- DO NOT apply pressure
- DO NOT fold
- DO NOT wrap

DO NOT use next to heating device



### **Plugging and Unplugging**

- When plugging or unplugging the power cord in the socket, make sure to hold the plug. Pulling on the power cord may cause a partial breakage resulting in fire.
- When taking a holiday or vacation and leaving the device unused for prolonged periods, unplug the power cord. Leaving it plugged in may result in fire.
- When unplugging or plugging in the power cord, insure that your hands are dry. Handling with wet hands may result in electrical shock.



### **Poor Electrical Contact in Electric Plug, etc.**

The following must be done to prevent bad contact in the electrical plug that may result in fire.

- Insure that electric plug is inserted in fully.
- Check to see if there is no dust accumulated on the plug before plugging in.
- DO NOT use a socket that is loose or wobbles.



### **Impact from Dropping**

To not drop, bang or subject to physical shock. Using after such incidents may result in electrical shock or fire.



### **Power Usage**

The usable voltage is 100-120V / 200-240VAC. DO NOT use any other voltage. This may result in electrical shock or fire.



### **Handling the AC adapter**

- DO NOT wet or handle with wet hands. This may result in electrical shock.
- DO NOT use with devices other than this display. This may result in shock, fire, or damage to the device.
- DO NOT use or place in areas where heat accumulates. This may result in fire.



### **Multi-Tap Usage**

DO NOT attach multiple extension plugs into one outlet. This may result in fire and overloading lines will activate the circuit breakers causing data loss or damage to the product.



### **Usage in Humid or Dusty Areas**

DO NOT use or store in areas that are humid, dusty or have abundant moisture such as a bathroom. This may cause fire or electrical shock.



### **Moving to Areas of Different Temperature**

Moving the device to areas that are very different in temperature may cause condensation on the outside and internally. Using the device in this condition may result in fire or electrical shock. Leave the device at the location for a few hours before using.



### **Aluminium Electrolysis Condenser**

The electrolyte condenser used in the AC adapter has a limited life. If used past the life span (approximately 5 years), replace the AC adapter. Leakage or drying up of the electrolyte liquid may result in fire, electrical shock. This may also cause the device itself to malfunction.



### **Damage to the Display Unit**

- Liquid may leak out of the display when damaged. DO NOT touch the liquid. If you should touch the liquid, wash your hands thoroughly with water. If the liquid should get into your mouth or eyes, gargle or rinse your eyes and promptly see a doctor for treatment.
- The display unit is made of glass. If the display unit should break, avoid handling the glass fragments. The fragments are dangerous and can cause injury.

## **CAUTION**

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### **Contact with Metal and Other Edges**

When moving the computer be careful when coming in contact with the plastic and metal edges. It is possible to be injured.



### **Use in Unstable Places**

DO NOT place on sloping or narrow areas that are unstable. The device may drop or fall and cause injury.



### **Display Cable**

- Arrange the cables so that they are out of the way. If a cable is tripped on, it may cause injury and damage to the connected devices.
- DO NOT place heavy objects on the cable. Additionally, do not place objects that generate heat near the cables. The cable casing may break and cause damage to the devices that are connected.



### **Stand**

- When adjusting the angle, hold the top left and right edges with both hands and move slowly. Using only one hand may cause it to fall.
- DO NOT place your hand near the stand when adjusting the LCD forward or back. Your fingers may get caught and cause injury.



### **Eyestrain**

When continuously looking at the display while working, keep the work area lighted at 300 – 1000 Luxes. Additionally, for every hour of work, rest 10 to 15 minutes. Continuously looking at the display for prolonged periods will cause accumulated eye fatigue.



### **Disposal of this Product**

When disposing of this product, confer with the dealer where this product was purchased or refer to laws of the local government or regulations regarding disposal.



### **Electronic Interference**

If used in the vicinity of other electronic devices, they may interfere with each other's performances. Especially for devices such as radios and televisions, noise may enter their sound reception. If this should happen, try the following:

- Place in a location as far away from radios and televisions as possible.
- Change the facing of the antenna on the radio or television.
- Use a different electrical socket.



### **Storing the Plastic Bag**

Keep the plastic bag used to wrap the display away from young children. The bag may cause suffocation.


## **FCC Statement Warning**

**WARNING:** 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:

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

**INSTRUCTIONS TO USERS:** This equipment complies with the requirements of FCC (Federal Communication Commission) equipments provided that following conditions are met.

- (1) Power cord: Unshielded power cord must be used.
- (2) Video inputs: The input signal amplitude must not exceed the specified level.

<b>Declaration of Conformity</b> According to 47CFR, Part 2 and 15 for <b>Class B Personal Computers and Peripherals; and / or CPU Boards and Power Supplies used with Class B Personal Computers:</b>	
<b>We:</b>	<u>Hitachi America, Ltd.</u>
<b>Located at:</b>	<u>2000 Sierra Point Parkway, Brisbane, CA 94005-1835 U.S.A.</u>
Declare under sole responsibility that the product identified herein, complies with 47CFR Part 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR § 2.909. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. The above named party is responsible for ensuring that the equipment complies with the standards of 47CFR § 15.101 to 15.109.	
<b>Trade name:</b>	<u>LCD Color Monitor</u>
<b>Model Number:</b>	<u>CML190SXW / CML190SXJ</u>
<b>Signature of Party Responsible:</b>	
<b>Printed name of Party Responsible:</b>	<u>Hideaki Kusaba</u>
<b>Executed on (Date), at (Place):</b>	<u>June 10, 2002 CA, U.S.A.</u>

**CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## **For the Customers in CANADA**

**NOTICE:** This Class B digital apparatus complies with Canadian ICES-003.

## ***For the Customers in the UK***

THIS PRODUCT IS SUPPLIED WITH A TWO-PIN MAINS PLUG FOR USE IN MAINLAND EUROPE. FOR THE UK PLEASE REFER TO THE NOTES ON THIS PAGE.

### **IMPORTANT FOR UNITED KINGDOM**

#### **WORDING FOR CLASS I EQUIPMENT INSTRUCTION BOOKS AND LABELS**

The mains lead on this equipment is supplied with a moulded plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA or BSI approved BS 1362 fuse must be used of the same rating. If the fuse cover is detachable never use the plug with the cover omitted. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug. Fuse covers are available from your dealer.

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power outlets in your home or the cable is too short to reach a power outlet, then obtain an appropriate safety approved extension lead or consult your dealer.

Should it be necessary to change the mains plugs, this must be carried out by a competent person, preferably a qualified electrician.

If there is no alternative to cutting off the mains plug, ensure that you dispose of it immediately, having first removed the fuse, to avoid a possible shock hazard by inadvertent connection to the mains supply.

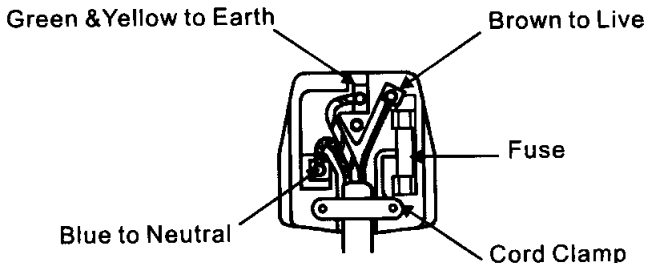
#### **WARNING: THIS EQUIPMENT MUST BE EARTHED**

#### **IMPORTANT**

**The wires in the mains lead are coloured in accordance with the following code:**

Green and Yellow = Earth, Blue = Neutral, Brown = Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:



The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol  $\oplus$  or coloured GREEN or GREEN and YELLOW.

The wire coloured BLUE must be connected to the terminal marked with the letter N or coloured BLUE or BLACK. The wire coloured BROWN must be connected to the terminal marked with the letter L or coloured BROWN or RED.

# Chapter 1 Installation

## Unpacking

Before unpacking the LCD Monitor, prepare a suitable workspace for your Monitor and computer. You need a stable and clean surface near a wall power outlet. Make sure that the LCD Monitor has enough space around it for sufficient airflow. Though the LCD Monitor uses very little power, some ventilation is needed to ensure that the Monitor does not become too hot.

After you unpack the LCD Monitor, make sure that the following items were included in the box:

- \* LCD Monitor
- \* 1.8M Monitor-to-PC DVI-D Cable
- \* User's Manual
- \* 1.8M Monitor-to-PC VGA Cable
- \* 1.8M Power Cord
- \* AC Adapter

If you find that any of these items is missing or appears damaged, contact your dealer immediately.

## Viewing Angle Adjustment

The LCD Monitor is designed to allow the users to have a comfortable viewing angle. The viewing angle can be adjusted as follows: Top ( $-0^{\circ}$ ~  $+25^{\circ}$ ) & Left / Right ( $-45^{\circ}$  to  $+45^{\circ}$ ).

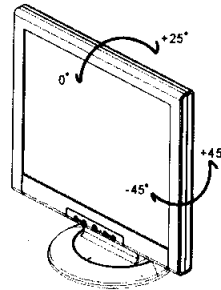


Figure 1-1

## **WARNING**

Do not force the LCD Monitor over the maximum viewing angle settings as stated above. In such an event, you will damage the Monitor and a Monitor stand.

# Cable Installation

Please follow these instructions to install the cables.

1. Remove the back panel ❶ from the rear of the monitor. (See Fig. 1.2,1-3)
2. Place the signal cable, the DC power cable into their correct respective grooves.

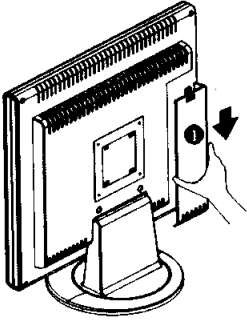


Figure 1-2

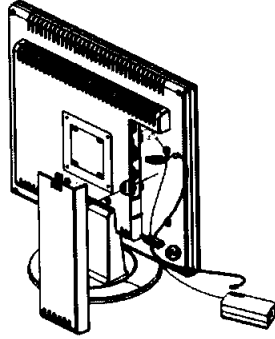


Figure 1-3

## Connecting the Display to your Computer

1. Power off your computer.
2. Connect one end of the signal cable to the LCD Monitor's VGA port or DVI port. (See Fig. 1-4)
3. Connect the other end of the signal cable to the VGA port or DVI port on your PC.
4. Make sure both connections are secure.

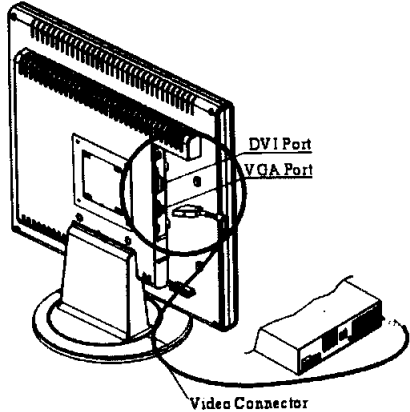


Figure 1-4

### **ATTENTION**

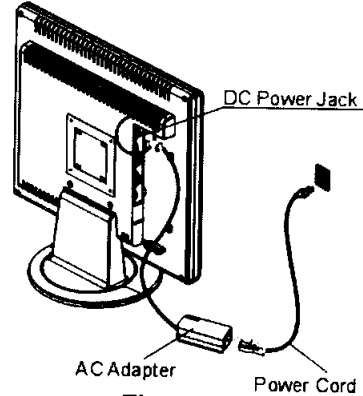
This device must be connected to an off-the-shelf video cable in order to comply with FCC regulations. A ferrite-loaded interface cable is included in the LCD Monitor package.

This device will not be in compliance with FCC regulations when a non-ferrite-core video cable is used.



## Connecting the AC Power

1. Connect the power cord to the AC adapter.  
(See Fig. 1-5)
2. Connect the AC adapter's DC output connector to the DC Power Jack of the monitor.
3. Connect the power cord to an AC power source.



**Figure 1-5**

### **WARNING**

Please install a "Surge Protector" device between the AC Adapter and the electrical wall outlet for added protection against power surges to prevent the effects of sudden voltage variations from reaching the LCD Monitor. Sudden power surges may damage your monitor.

For use only with power supply LINEARITY, LAD6019AB5 or Li-shin, LSE9901B1260.

## Setting Up the LCD Monitor

1. Make sure the AC Adapter is connected to the LCD Monitor.
2. Turn on the LCD Monitor's power switch, located on the bezel of the monitor.

## Power Management System

This LCD Monitor complies with the VESA DPMS (version 1.0) Power Management guidelines. The VESA DPMS provides four power saving modes through detecting a horizontal or vertical sync. signal.

When the LCD Monitor is in power saving mode, the monitor screen will be blank and the power LED indicator color shows.

# Chapter 2 Display Controls

## User Controls

A brief description and the location of all LCD Monitor function controls and indicators:

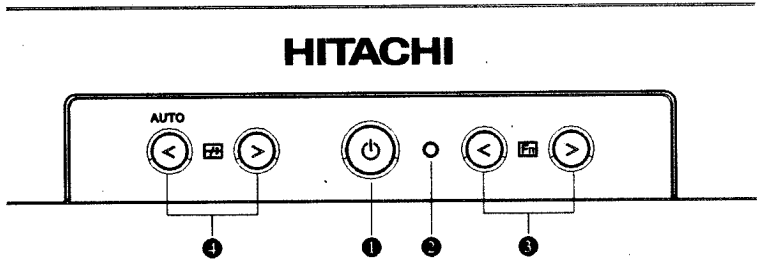


Figure 2-1

1	<b>DC Power Switch</b>	Press the power switch to switch the monitor ON/OFF.
2	<b>DC Power-On Indicator</b>	LED displays Green color --- Power is ON. LED displays Dark color --- Power is OFF. LED displays Yellow color --- Monitor is in "Power Saving Mode".
3	<b>Function Select Buttons</b>	Press either the left or right control button for the OSD (On Screen Display) menu selection.
4	<b>Adjustment Control Buttons</b>	Press the left button to decrease the value or the right button to increase the value of the chosen OSD setting. Press the left button for one second, then "Auto Adjustment" will be active.

## Adjusting the Monitor's Display

The monitor has four function control keys among the functions shown on the OSD menu, designed to create an easy user-viewing environment.

### OSD Function Menu

To access the OSD Main menu, simply press one of the Function Select Control buttons, and the menu dialog box will pop up on the screen as shown below:



















Continue pressing the Function Selection Control buttons to scroll through all menu items.



### ATTENTION

Firmware revisions may have been updated to a later version, the version number shown on all OSD menus in this manual however will remain as Ver. 1.00

## Function Descriptions

Icon	Function	Function Description
	<b>Brightness</b>	101 scales of brightness are available to choose from (0 to 100).
	<b>Contrast</b>	101 scales of contrast are available to choose from (0 to 100).
	<b>H. Position</b>	This function let's you adjust the display's horizontal position
	<b>V. Position</b>	This function let's you adjust the display's vertical position.
	<b>Sharpness</b>	This function let's you select the images sharpness. Five selections are available. A smoother setting is more suitable for pictures, while a sharper setting is more suitable for text.
	<b>OSD Transparency</b>	This function let's you set the transparency of the OSD menu. The transparency is adjustable from 0% to 10%. 11 scales are available.
	<b>Phase</b>	A total of 256 scales (0 to 255) are available to adjust the focus and clarity of the display.
	<b>Clock</b>	This function carries a frequency-tracking feature that offers users better stability and clarity. 101 scales (from -50 to +50) are available on the mode that is currently running. The adjustable range can be variable in different modes. This function records the deviated number of clock period between input timing and supported timing. The clock value may not be "0" after Auto Adjustment when the input timing is different from supported timing.
	<b>Color Temperature</b>	Push the  button to select a different color temperature. Please see the diagram below for function and description.
	<b>OSD H. Position</b>	This function moves the OSD menu window horizontally.
	<b>OSD V. Position</b>	This function moves the OSD menu window vertically.
	<b>Graph / Text</b>	Because the H and V-Frequencies of both 640 x 400 70Hz, and 720 x 400 70Hz, are the same, this function let's you manually select either 640 x 400 (graphics mode), or 720 x 400 (text mode).
	<b>Recall</b>	The recall function will return all adjusted parameters to factory preset values.
	<b>Language</b>	Five OSD language options are available: English, German, French, Spanish, and Italian. Press the left or right adjustment control button to select other language.
	<b>Auto and Input Select</b>	Press "  " button to activate the selected function, Auto Adjustment, Use Analog Input or Use Digital Input. The Auto Adjustment function let you adjust the display size, clock and phase to obtain the best viewing settings. This process will take 3 ~ 5 seconds to complete. <b>Attention</b> : After Auto Adjustment, the display might display wrong position or size, if it has received a pattern which has no screen border. You may select either Analog or Digital Input video when VGA input or/and DVI Input is/are available.
	<b>Exit</b>	Saves the values of this setting and exits the OSD menu function.

Icon	Function	Description
<b>9300</b>	CIE coordinate Color Temperature of 9300K	Sets the CIE coordinate color temperature to 9300K
<b>7500</b>	CIE coordinated Color Temperature of 7500°K	Sets the CIE coordinate color temperature to 7500°K
<b>6500</b>	CIE coordinated Color Temperature of 6500K	Sets the CIE coordinate color temperature to 6500K
<b>User</b>	Three colors (Red, Green, Blue) can be adjusted from the OSD menu	Sets the settings to a by user defined CIE Temperature.

# Chapter 3 Technical Information

## Specifications

### LCD Panel

Size	19" (48 cm)
Display Type	Active matrix color TFT LCD
Resolution	1280 x 1024
Display Dot	1280 x (RGB) x 1024
Display Area (mm)	376.32 x 301.056 (H x V)
Display Color	16.7M
Brightness	250 cd/m <sup>2</sup> (typical)
Contrast Ratio	500:1 (typical)
Response Time	Ta=25°C Tr=15ms Tf=10ms
Lamp Voltage	700 Vrms (typical)
Lamp Current	7.0 mA rms. (typical)
Viewing Angle	Vertical: -85° ~ +85° Horizontal: -85° ~ +85°

### Video

Input Signal	Analog RGB 0.7Vp-p	Digital TMDS
Input Impedance	75 Ohm ±2%	
Polarity	Positive	
Amplitude	0 - 0.7 ± 0.05 Vp	TMDS
Multi-mode Supported	Horizontal Frequency: 24 ~ 80 KHz Vertical Frequency: 56 ~ 75 Hz	31~80 KHz 60~75 Hz

### Control

Power ON / OFF switch with LED indicator.

### OSD

Brightness	Digital
Contrast	Digital
Horizontal Position	Digital
Vertical Position	Digital
Phase	Digital
Clock	Digital
Display Mode Setup	Uses EEPROM to save settings in memory

## **Power Management**

Mode	Power Consumption*	AC Input	LED Color
ON	54W maximum	240 VAC	Green
OFF	4W maximum	240 VAC	Yellow
DC Power	4W maximum	240 VAC	Dark
Disconnected	4W maximum	240 VAC	Yellow: Standby, Suspend, OFF Off: DC Power OFF

\* Meeting VESA DPMS requirements measured from AC Input end of AC adapter.

### **Sync Input**

Signal

Polarity

### **Plug & Play**

### **External Connection**

Power Input (DC input)

Video Cable

### **Analog**

Separate TTL compatible horizontal and vertical synchronization

Positive and negative

Supports VESA DDC1 and DDC2B functions

+12 VDC / 5A max. input through AC/DC adapter

1.8M with 15-pin D-sub connector

1.8M with DVI-D connector

### **Digital**

TMDS

—

## **Environment**

### **Operating**

Temperature

Relative Humidity

5°C to 40°C/41°F to 104°F

20 to 80%(non-condensing)

### **Storage or Shipping**

Temperature

Relative Humidity

-20°C to 60° C/-4°F to 140° F

5% to 85%(non-condensing)

### **Power Supply (AC Adapter)**

Input Voltage

Input Current

Single phase, 100 ~ 240VAC, 50 / 60 Hz

1.5 A maximum

### **Size and Weight**

Dimensions

Net Weight

Gross Weight

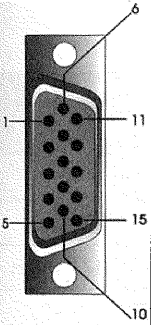
433 (W) x 447 (H) x 235 (D) mm

6.5g ± 0.3 kg

8.5kg ± 0.3 kg

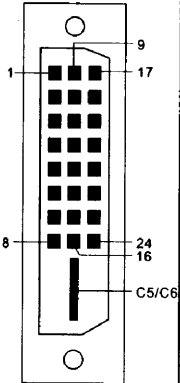
# Pin Assignment

## For Analog D-sub connector



Signal		Signal		Signal	
PIN	Description	PIN	Description	PIN	Description
1	Red	6	Red Rtn	11	NC
2	Green	7	Green Rtn	12	SDA
3	Blue	8	Blue Rtn	13	H. Sync. / C. Sync.
4	Digital GND	9	+5V	14	V. Sync.
5	Digital GND	10	Hot Plug Detect	15	SCL

## For Digital DVI-D connector



Signal		Signal		Signal	
PIN	Description	PIN	Description	PIN	Description
1	RX2-	10	RX1+	19	Shield for TMDS Channel 0
2	RX2+	11	Shield for TMDS Channel 1	20	NC
3	Shield for TMDS Channel 2	12	NC	21	NC
4	NC	13	NC	22	Shield for TMDS Channel clock
5	NC	14	+5V	23	RXC+
6	SCL	15	Hot Plug Detect	24	RXC-
7	SDA	16	HPD	C5	GND
8	NC	17	RX0-	C6	GND
9	RX1-	18	RX0+		

## Standard Timing Table

If the selected timing is NOT included in table below, this LCD monitor will use the most suitable available timing.

Resolution	H – Freq. (KHz)	V. Freq. (Hz)	Pixel Freq. (MHz)	H/V Sync. Polarity	Mode
640 x 350	31.469	70.087	25.175	+/-	VGA-350
640 x 400	24.83	56.42	21.05	-/-	NEC PC 9801
640 x 400	31.469	70.087	25.175	-/+, -/-	VGA-400-GRAPH. NEC PC9821
640 x 480	31.469	59.940	25.175	-/-	VGA 480
640 x 480	35.000	66.670	30.240	-/-	APPLE MAC – 480
640 x 480	37.861	72.809	31.500	-/-	VESA – 480 – 72Hz
640 x 480	37.500	75.000	31.500	-/-	VESA – 480 – 75Hz
720 x 400	31.469	70.087	28.322	-/+	VESA-400-TEXT
832 x 624	49.725	74.550	57.283	-/-	APPLE-MAC-800
800 x 600	35.156	56.250	36.000	+/+	SVGA
800 x 600	37.879	60.317	40.000	+/+	VESA-600-60 Hz
800 x 600	48.077	72.188	50.000	+/+	VESA-600-72 Hz
800 x 600	46.875	75.000	49.500	+/+	VESA-600-75 Hz
1024 x 768	48.363	60.004	65.000	-/-	XGA
1024 x 768	53.964	66.132	71.664	+/+	COMPAQ-XGA
1024 x 768	56.476	70.069	75.000	-/-	VESA-600-70 Hz
1024 x 768	60.023	75.029	78.750	+/+	VESA-768-75 Hz
1024 x 768	60.04	75.02	80.00	-/-	APPLE MAC-768
1280 x 1024	64.0	60	108	+/+	SXGA
1280 x 1024	80.0	75	135	+/+	SXGA

### NOTE:

1. When the input display mode is not 1280 x 1024, the image is smoothly expanded to 1280 x 1024 dots with the PW164 scaling engine. After expansion from 640x350, 640x400, 640x480, 720x400, 832x624, 800x600, and 1024x768 resolution, the text may look not so sharp, and the Graphics may look not so proportional.
2. 640x400 56Hz, 1024x768 66Hz and 1280x1024 75Hz modes cannot be supported when Digital (TMDS) input.



# Troubleshooting

This LCD Monitor has pre-adjusted using factory to standard VGA timings. Due to the output timing differences among various VGA cards in the market, users may initially experience an unstable or unclear display whenever a new display mode or new VGA card is selected.

## **ATTENTION**

This LCD Monitor Supports Multiple VGA Modes.

Refer to the Standard Timing Table for a listing of modes supported by this LCD Monitor.

### **PROBLEM      Picture is unclear and unstable or new colorized**

The picture is unclear and unstable, please perform the following steps:

1. Enter PC to "Shut Down Windows" status while you're in a MS-Windows environment.
2. Check the screen to see if any black vertical stripes appear. If there are, use the "Clock" function in OSD menu and adjust (by increment or decrement numbers) until those bars disappear.
3. Move to "phase" function in OSD menu again and adjust the monitor screen to its clearest display.
4. Click "No" on "Shut Down Windows" and return to the normal PC operating environment.

### **PROBLEM      There is no picture on LCD Monitor**

If there's no picture on the LCD Monitor, please perform the following steps:

1. Make sure the power indicator on the LCD Monitor is ON, all connections are secured, and the system is running on the correct timing. Refer to Chapter 3 for information on timing.
2. Turn off the LCD Monitor and then turn it back on again. Press the right Function Select Control button once and then press either the left or right Adjustment Control button several times. If there is still no picture, press the other Adjustment Control button several times.
3. If step 2 doesn't work, connect your PC system to another external CRT. If your PC system Functions properly with a CRT Monitor but it does not function with the LCD Monitor, the output timing of the VGA card may be out of the LCD's synchronous range. Please change to an alternative mode listed in the Standard Timing Table or replace the VGA card, and then repeat steps 1 and 2.

### **PROBLEM      There is no picture on LCD Monitor**

If you have chosen an output timing that is outside of the LCD Monitor's synchronous range (Horizontal: 24 ~ 80 KHz and Vertical: 56 ~ 75 Hz), the OSD will display an "Input Signal Out of Range" message. Choose a mode that is supported by the LCD Monitor.

If there is no signal input or you get a DPMS power saving signal from the PC, the monitor will display the message "No Input Signal", and then go into the POWER OFF mode.

If the signal cable is not connected to the monitor, the monitor will display the message "Check Video Cable", and then go into POWER OFF mode.

# HITACHI

## < U.S.A. >

Hitachi America, Ltd.

2000 Sierra Point Parkway,

Brisbane, CA 94005-1835 U.S.A

Pre-Sales Support : 1 - 800 - 441 - 4832

Technical Support : 1 - 800 - 536 - 6721

World Wide Web Home page : <http://www.hitachidisplays.com>

## < Canada >

1 - 800 - HITACHI or 905 - 821 - 4545

World Wide Web Home page : <http://www.hitachi.ca>

## < Europe >

Information Media Group

Hitachi Home Electronics (Europe) Ltd.

Dukes Meadow, Millboard Road

Bourne End, Buckinghamshire, SL8 5XF U.K.

Tel: +44-1628-643349

Fax: +44-1628-643403

	Tel	Fax
UK office	+44-1628-643349	+44-1628-643403
German office	+49(0)21152-915152	+49(0)21152-91594
France office	+33(0)13463-0545	+33(0)13465-0761
Belgium office	+32(0)236-39901	+32(0)236-39900
Holland	+44-1628-643349	+44-1628-643403
Switzerland office	+41(0)628-898-011	+41(0)628-964-771
Italy office	+39-02-487-86228	+39-02-487-86322
Spain office	+34(0)93-409-2549	+34(0)9349-01863
Greece office	+30(0)1-9242620	+30(0)1-9240789
Norway office	+47(0)2205-9060	+47(0)2205-9061
Sweden office	+46(0)8-5627-1100	+46(0)8-5627-1113
Finland office	+358-9455-0805	+358-9455-2152
Denmark office	+45-43-43-6050	+45-43-43-6051

## < Australia >

Hitachi Australia Ltd.

13-15 Lyonpark Road North Ryde NSW 2113 Australia

Tel: +61-2-9888-4100

Fax: +61-2-9888-4188