

User's Manual

FlexScan® L685EX

Color LCD Monitor



SAFETY SYMBOLS

This manual uses the safety symbols below. They denote critical information. Please read them carefully.



WARNING

Failure to abide by the information in a WARNING may result in serious injury and can be life threatening.



CAUTION

Failure to abide by the information in a CAUTION may result in moderate injury and/or property or product damage.



Indicates a prohibited action.



Indicates to ground for safety.

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As an ENERGY STAR® Partner, Eizo Nanao Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

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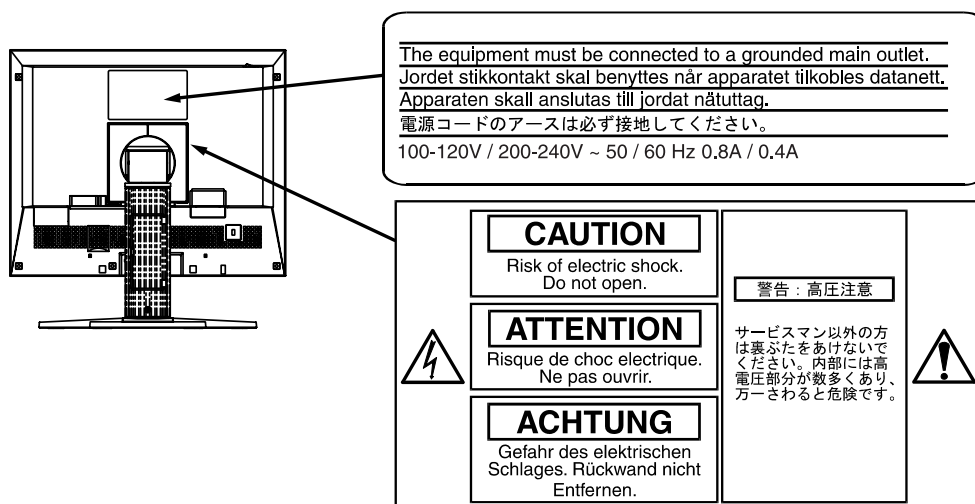
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PRECAUTIONS

IMPORTANT!

- This product has been adjusted specifically for use in the region to which it was originally shipped. If operated outside the region to which it was originally shipped, the product may not perform as stated in the specifications.
- To ensure personal safety and proper maintenance, please read this section and the caution statements on the unit (refer to the figure below).

[Location of the Caution Statements]



WARNING

If the unit begins to emit smoke, smells like something is burning, or makes strange noises, disconnect all power connections immediately and contact your dealer for advice.

Attempting to use a malfunctioning unit can be dangerous.

Do not dismantle the cabinet or modify the unit.

Dismantling the cabinet or modifying the unit may result in electric shock or burn.



Refer all servicing to qualified service personnel.

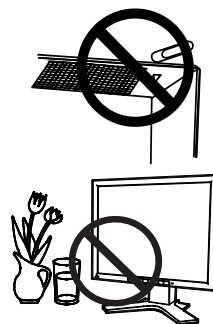
Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards.

WARNING

Keep small objects or liquids away from the unit.

Small objects accidentally falling through the ventilation slots into the cabinet or spillage into the cabinet may result in fire, electric shock, or equipment damage.

If an object or liquid falls/spills into the cabinet, unplug the unit immediately. Have the unit checked by a qualified service engineer before using it again.



Place the unit on a strong, stable surface.

A unit placed on an inadequate surface may fall, resulting in injury or equipment damage.

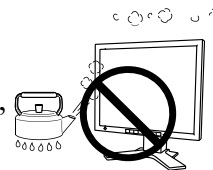
When the unit is dropped, please ask your dealer for advice. Do not continue using a damaged unit. Using a damaged unit may result in fire or electric shock.



Set the unit in an appropriate location.

Not doing so may cause damage and could result in fire or electric shock.

- * Do not place in outdoors.
- * Do not place in the transportation system (ship, aircraft, trains, automobiles, etc.)
- * Do not install in a dusty or humid environment.
- * Do not place in a location where the steam comes directly on the screen.
- * Do not place near heat generating devices or a humidifier.



To avoid danger of suffocation, keep the plastic packing bags away from babies and children.



Use the enclosed power cord and connect to the standard power outlet of your country. Be sure to remain within the rated voltage of the power cord.

Not doing so may cause in fire or electric shock.

To disconnect the power cord, grasp the plug firmly and pull.

Never tug on the cord, doing so may cause damage and could result in fire or electric shock.



WARNING

The equipment must be connected to a grounded main outlet.

Not doing so may cause in fire or electric shock.



Use the correct voltage.

- * Do not overload your power circuit, as this may result in fire or electric shock.
- * The unit is designed for use with a specific voltage only. Connection to another voltage than specified in this User's Manual may cause fire, electric shock, or other damage.
- * Do not overload your power circuit, as this may result in fire or electric shock.

Handle the power cord with care.

- * Do not place the cord underneath the unit or other heavy objects.
- * Do not pull on or tie the cord.

If the power cord becomes damaged, stop using it. Use of a damaged cord may result in fire or electric shock.



Never touch the plug and power cord if it begins to thunder.

Touching them may result in electric shock.

When attaching an arm stand, please refer to the user's manual of the arm stand and install the unit securely with the enclosed screws.

Not doing so may cause the unit to come unattached, which may result in injury or equipment damage. When the unit is dropped, please ask your dealer for advice. Do not continue using a damaged unit. Using a damaged unit may result in fire or electric shock. When reattaching the tilt stand, please use the same screws and tighten them securely.

Do not touch a damaged LCD panel directly with bare hands.

The liquid crystal which leaks from the panel is poisonous if it enters the eyes or mouth.

If any part of the skin or body comes in direct contact with the panel, please wash thoroughly. If some physical symptoms result, please consult your doctor.



Follow local regulation or laws for safe disposal.

The backlight of the LCD panel contains mercury.

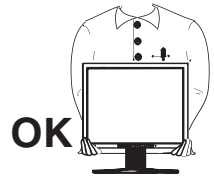
CAUTION

Handle with care when carrying the unit.

Disconnect the power cord and cables when moving the unit. Moving the unit with the cord attached is dangerous. It may result in injury or equipment damage.

When handling the unit, grip the bottom of the unit firmly with both hands ensuring the panel faces outward before lifting.

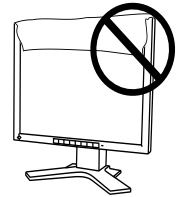
Dropping the unit may result in injury or equipment damage.



Do not block the ventilation slots on the cabinet.

- * Do not place books or any other papers on the ventilation slots.
- * Do not install the unit in a closed space.
- * Do not use the unit lying down or upside down.

Using the unit in these ways blocks the ventilation slots and prevents proper airflow, leading to fire or other damage.



Do not touch the plug with wet hands.

Touching them may result in electric shock.



Use an easily accessible power outlet.

This will ensure that you can disconnect the power quickly in case of a problem.

Periodically clean the area around the plug.

Buildup of dust, water, or oil on the plug may result in fire.

Unplug the unit before cleaning it.

Cleaning the unit while it is plugged into a power outlet may result in electric shock.

If you plan to leave the unit unused for an extended period, disconnect the power cord from the wall socket after turning off the power switch for the safety and the power conservation.

LCD Panel

The screen may have defective pixels. These pixels may appear as slightly light or dark area on the screen. This is due to the characteristics of the panel itself, and not the product.

The backlight of the LCD panel has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer.

Do not press on the panel or edge of the frame strongly, as this will result in damage to the screen. There will be prints left on the screen if the pressed image is dark or black. If pressure is repeatedly applied to the screen, it may deteriorate or damage your LCD panel. Leave the screen white to decrease the prints.

Do not scratch or press on the panel with any sharp objects, such as a pencil or pen as this may result in damage to the panel. Do not attempt to brush with tissues as this may scratch the LCD panel.

1. INTRODUCTION

Thank you very much for choosing an EIZO Color Monitor.

1-1. Features

- Dual inputs compliant
- DVI (p. 44) Digital input (TMDS (p. 45)) compliant
- Horizontal scanning frequency: 27 - 82 kHz (Digital input: 27 - 64 kHz)
Vertical scanning frequency: 50 - 85 Hz Vertical (1280 x 1024 ~ 75 Hz)
Vertical (Digital) of 60 Hz (VGA text: 70 Hz)
Resolution: 1280 x 1024
- Smoothing function incorporated for the adjustment of an enlarged image. (p.26)
- Fine contrast modes, to select the most suitable mode for screen display (p.19)
- The utility software “ScreenManager Pro for LCD” (for Windows) which can control the monitor from a PC with a mouse or keyboard, is included (refer to the EIZO LCD Utility Disk).
- Supports to sRGB (p.45) standard
- USB (Universal Serial Bus) hub supported. (p.32)
- The height adjustable stand incorporated
- Ultra slim bezel incorporated
- The Portrait/Landscape display capability

1-2. Package Contents

Please contact your local dealer for assistance if any of the listed items are missing or damaged.

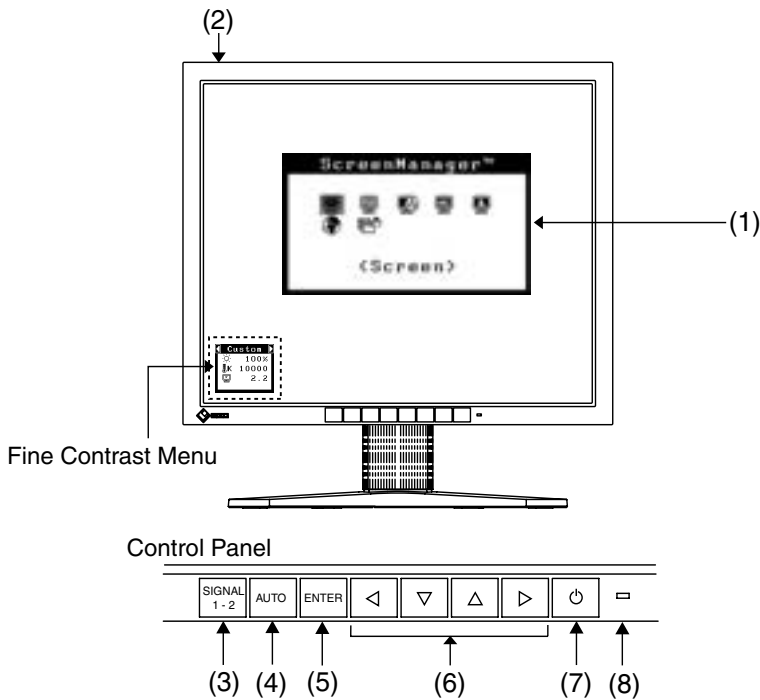
- LCD Monitor
- Power Cord
- Signal Cable (FD-C16)
- Signal Cable (FD-C04)
- EIZO USB Cable (MD-C93)
- EIZO LCD Utility Disk
- User's Manual
- ScreenManager Quick Reference
- LIMITED WARRANTY

NOTE

- Please retain the packing materials for future transference.

1-3. Controls & Connectors

Front



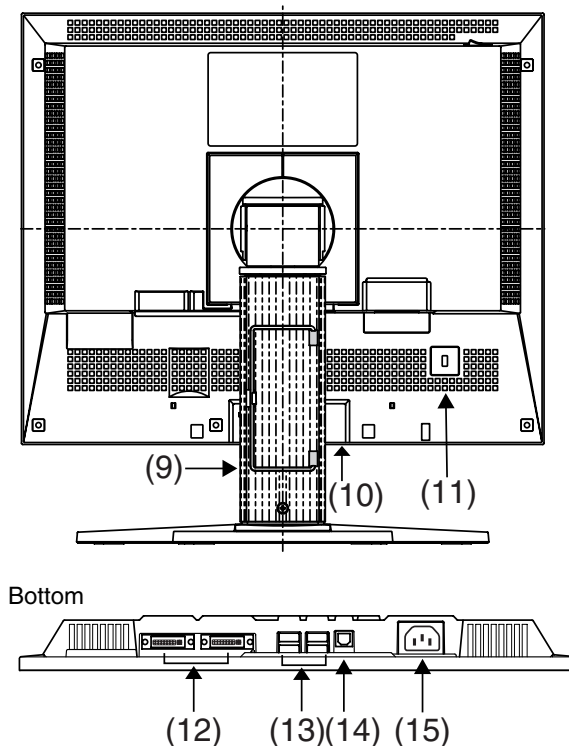
- (1) ScreenManager™ Main Menu
- (2) Main Power Switch
- (3) Input signal selection button
- (4) Auto Adjustment Button
- (5) Enter Button
- (6) Control Buttons¹
- (7) Power Button
- (8) Power Indicator²

Green	Operation
Yellow	Power saving
Flashing yellow (2 times for each)	Power save mode Digital only
Flashing yellow slowly	Power is off (Main power is on)
Off	Power off

¹ Directly pushing the left or right button allows you to select a fine contrast mode, see page 19. The ScreenManager Main Menu and the Fine Contrast Menu cannot be displayed at the same time.

² Regarding the power indicator for the “Off Timer”, see page 20.

Rear



- (9) Height Adjustable Stand (Detachable)³
- (10) Power Terminal Covers for the Optional peripheral
- (11) Security Lock Slot⁴
- (12) DVI-I Input Connector x 2 (SIGNAL 1, SIGNAL 2)
- (13) USB Port (4 Downstream)
- (14) USB Port (1 Upstream)
- (15) Power Connector

³ The LCD monitor has the capability of the Portrait/Landscape display. (The panel pivots in the clockwise direction 90°.) For the Portrait display, use the software for the portrait.

The LCD monitor can be used with an optional arm stand by removing the stand. (see page 34)

⁴ Allows for connection of a security cable. This lock supports Kensington's MicroSaver security system. For further information, please consult' Kensington Technology Group
2855 Campus Drive, San Mateo, CA 94403 USA
Tel.: 800-650-4242, x3348, Intl: 650-572-2700, x3348
Fax: 650-572-9675
<http://www.kensington.com>

2. CABLE CONNECTION

2-1. Before connecting

Before connecting your monitor to the PC, change the display screen settings (resolution p. 45) and frequency) in accordance with the charts below.

NOTE

- When your computer and display support VESA DDC, the suitable resolution and the refresh rate are set by just plugging your display into the computer without any manual settings.

Analog Input

Resolution	Frequency	Remarks
640 × 480	~ 85 Hz	VGA, VESA
720 × 400	70 Hz	VGA TEXT
800 × 600	~ 85 Hz	VESA
832 × 624	75 Hz	Apple Macintosh
1024 × 768	~ 85 Hz	VESA
1152 × 864	75 Hz	VESA
1152 × 870	75 Hz	Apple Macintosh
1152 × 900	~ 76 Hz	SUN WS
1280 × 960	60 Hz	VESA
1280 × 960	75 Hz	Apple Macintosh
1280 × 1024	67 Hz	SUN WS
1280 × 1024	~ 75 Hz	VESA

Digital Input

Only the following resolutions with frequency can be displayed on this model.

Resolution	Frequency	Remarks
640 × 480	60 Hz	VGA
720 × 400	70 Hz	VGA TEXT
800 × 600	60 Hz	VESA
1024 × 768	60 Hz	VESA
1280 × 1024	60 Hz	VESA

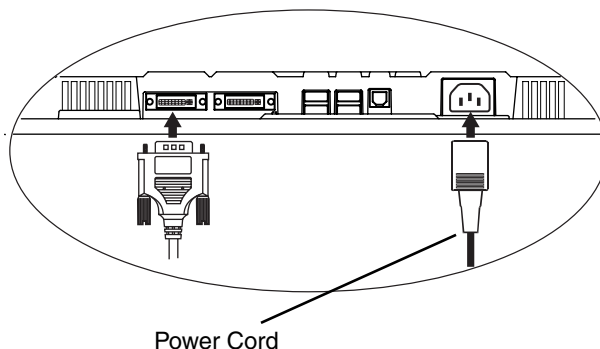
2-2. Connecting the signal cable

NOTE

- Be sure that the power switches of both the PC and the monitor are OFF.

1. Plug the signal cable into the connector at the rear of the monitor and the other end of the cable into the video connector on the PC.

After connecting, secure the connection with the screw-in fasteners.



Analog Input

Signal Cable	Connector	PC
Signal Cable (FD-C16 enclosed) 	Video Output Connector D-Sub mini 15 pin	Standard graphics card Macintosh G3 (Blue & White) / G4
Signal Cable (FD-C16 enclosed) + Macintosh Adapter (Optional) 	Video Output Connector D-Sub 15 pin	Macintosh Macintosh Adapter (Optional)

Digital Input

Signal Cable	Connector	PC
Signal Cable (FD-C04 enclosed) 	Video Output Connector DVI	Digital graphics board

NOTE

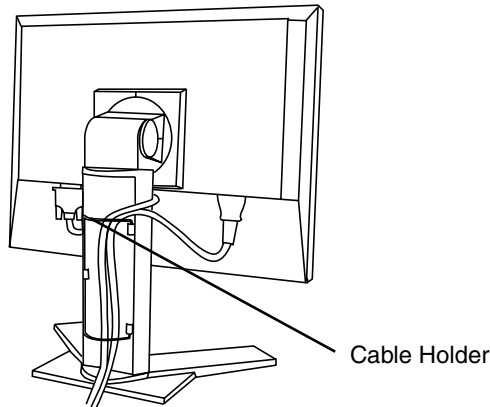
- The monitor is not compatible with a Power Macintosh G4/G4 Cube ADC (Apple Display Connector)

2. Plug the power cord into the power connector on the rear of the monitor.

3. Lead the power cord and signal cable into the cable holder at rear of the monitor.

NOTE

- The cables are recommended to lead with slight sag for the smooth motion of the stand and the Portrait/Landscape display.



4. Plug the other end of the power cord into a power outlet.



WARNING

Use the enclosed power cord and connect to the standard power outlet of your country.

Be sure to remain within the rated voltage of the power cord.
Not doing so may cause in fire or electric shock.

The equipment must be connected to a grounded main outlet.

Not doing so may cause in fire or electric shock. Not doing so may cause in fire or electric shock.



5. Turn on the monitor's power button and then switch on the PC's power.

The monitor's power indicator will light up (green).

If an image does not appear, refer to the "TROUBLE SHOOTING" (p.36) for advice.

Whenever finished, turn off the PC and the monitor.

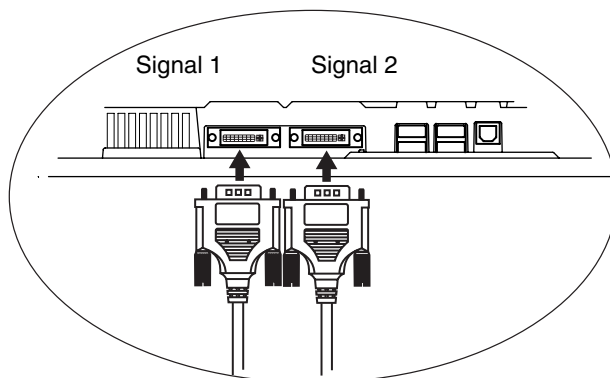
NOTE

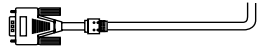


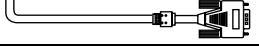
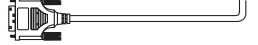

- When turning on the monitor, the kind of the input signal (Signal1 or 2/Analog or Digital) is displayed for a few seconds on the right top corner of the screen.
- Adjust brightness of the screen depending on the brightness of your environment.
- Be sure to take adequate rests. A 10-minute rest period each hour is suggested.

2-3. Connecting two PCs to the monitor

Two PCs can be connected to the monitor through the Signal 1 and the Signal 2 on the back of the monitor.

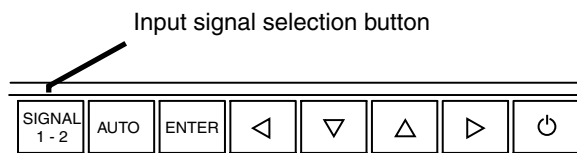
Connecting Examples



	PC 1			PC 2		
(Ex.1)	Analog	D-Sub mini 15 pin	Signal Cable (FD-C16 enclosed) 	Signal Cable (FD-C04 enclosed) 	DVI	Digital
(Ex.2)	Analog	D-Sub mini 15 pin	Signal Cable (FD-C16 enclosed) 	Signal Cable (FD-C16 optional) 	D-Sub mini 15 pin	Analog
(Ex.3)	Digital	DVI	Signal Cable (FD-C04 enclosed) 	Signal Cable (FD-C04 optional) 	DVI	Digital

Selecting the active input

The Input signal selection button on the front panel can be used to select either Signal 1 or Signal 2 as the active input at any time. Every time the button is pressed, the input changes. When switching the signal, the kind of the input signal (Signal1 or 2/Analog or Digital) is displayed for a few seconds on the right top corner of the screen.



The priority input signal

This function is used to select which PC will have priority to control the monitor when utilizing two PCs. The monitor constantly checks the input signals and switches automatically in accordance with the “Input Priority” setting (see table below). Once a priority is set, whenever a change of signal is detected at the selected input, the monitor will switch the input to that signal.

In the case of only one signal being present at either input, the monitor automatically detects and displays that signal.

Priority setting	Performance
Signal 1	<p>If signals from both inputs are present, the monitor gives preference to Signal 1 in the following cases.</p> <ul style="list-style-type: none"> • When the power of the monitor is turned ON • When the signal input to Signal 1 is changed even if active input was Signal 2.
Signal 2	<p>If signals from both inputs are present, the monitor gives preference to Signal 2 in the following cases.</p> <ul style="list-style-type: none"> • When the power of the monitor is turned ON • When the signal input to Signal 2 is changed even if active input was Signal 1.
Manual	<p>The monitor will not detect signals automatically in this mode. Select the active input by pressing the input signal selection button on the monitor's front panel.</p>

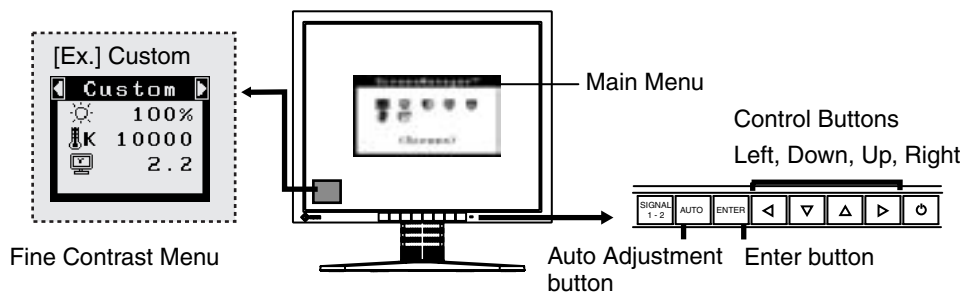
NOTE

- When the Signal 1 or Signal 2 is selected, the power saving mode of the monitor activates only if both PCs are in power saving mode.

3. ScreenManager

3-1. How to use the ScreenManager

ScreenManager allows you to adjust screen performance through the main menu and select a fine contrast mode easily.



NOTE

- Main Menu and Fine Contrast Menu cannot be activated at the same time.

1. Entering the ScreenManager

Push the Enter button once to display the main menu of the ScreenManager.

2. Making Adjustments and Settings

- (1) Select the desired sub menu icon using the Control buttons and push the Enter button. The sub menu appears.
- (2) Use the Control buttons to select the desired setting icon and push the Enter button. The setting menu appears.
- (3) Use the Control buttons to make all required adjustments and push the Enter button to save the settings.

3. Exiting the ScreenManager

- (1) To return to the main menu, select the <Return> icon or push the down button twice, followed by the Enter button.
- (2) To exit the ScreenManager, select the <Exit> icon or push the down button twice, followed by the Enter button.

NOTE

- Double clicking the Enter button at any time also exits the ScreenManager menu.

Fine Contrast Menu

Directly pressing the left or right button allows you to select the best suited mode for screen display from 6 fine contrast modes; Text, Picture, Movie, sRGB, Custom and External. To exit the menu, push the Enter button. (p. 19)

3-2. ScreenManager Adjustments and Settings.

The following table shows all the ScreenManager's adjustment and setting menus.

“*” indicates adjustments of analog input only and “**” indicates digital input only.

Main menu	Sub menu		Reference	
Screen	Clock	*	4-1. Screen Adjustment (p.22)	
	Phase	*		
	Position			
	Resolution			
	Range Adjustment	*		
	Smoothing			
	Signal Filter	*		
Color(Custom) ¹	Brightness		4-3. Color Adjustment (p.28)	
	Temperature			
	Gamma			
	Saturation			
	Hue			
	Gain			
	6 Colors			
	Reset			
PowerManager	DVI DMPM	**	4-4. Power-save Setup (p.30)	
	VESA DPMS	*		
	EIZO MPMS	*		
Others	Screen Size		4-2. Displaying a low resolutions (p.26)	
	Border Intensity			
	Input Priority		Select the priority input signal. (p.16)	
	Off Timer		Set the monitor's off timer to on or off. (p.20)	
	Beep		Set the monitor's beeper to on or off. (p.42)	
	Menu Settings	Menu Size		Change the size of the menu.
		Menu Position		Adjust the menu position
		Menu Off Timer		Set the menu displaying time. ²
		Translucent		Set the transparency of the background.
		Rotate		Change the orientation of the ScreenManager.
Reset		Return to the factory default settings. (p.42)		
Information	Information		Review the ScreenManager's settings, model name, serial number and usage time ³ .	
Language	English, German, French, Spanish, Italian, Swedish and Japanese		Select the ScreenManager's language.	

¹The adjustable functions depend on the selected fine contrast mode. The above table shows the sub menus when the 'custom' mode is selected (see page 28).

²The displaying time of the Fine Contrast Menu cannot be changed.

³Due to the inspection on the factory, the usage time may not be "0 hour" at shipping.

3-3. Fine Contrast

This function allows you to select the best suited mode for screen display.

To select the Mode

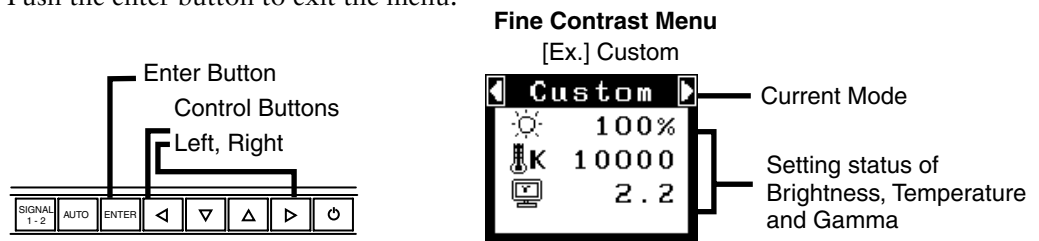
Directly pressing the left or right button allows you to select the best suited mode for screen display from 6 fine contrast modes; Text, Picture, Movie, sRGB, Custom and External. Color settings each mode can be adjusted by using the <Color> menu of the ScreenManager.

NOTE

- When the main menu of ScreenManager is displayed on the screen, the Fine Contrast Menu cannot be activated.

Exit

Push the enter button to exit the menu.



Fine Contrast Mode

Selectable fine contrast modes are as follows.

Text	Text on word processor or spreadsheet software
Picture	Photo or picture image
Movie	Animated images
sRGB	To display the screen images based on those original colors (ex. over the Internet)
Custom	To adjust the color settings according to your preference
External	Color reproduction by setting the values of color coordinate and gamma with using the "ScreenManager Pro for LCD (for Windows)" (Refer to the EIZO LCD Utility Disk.)

Color adjustment of the mode settings

<Brightness>, <Temperature> and <Gamma> settings can be adjusted on the Fine Contrast Menu. Select the desired function icon with the Up/Down control buttons and adjust with the Left/Right buttons. (Setting(s) of <Temperature> and/or <Gamma> is defined as standard default in some modes. (p. 28))

Detailed Adjustments

The detailed color settings of each mode can be adjusted by using the <Color> menu of the ScreenManager. (See page 28)

3-4. Useful Functions

Adjustment Lock

Use the “Adjustment Lock” function to prevent any accidental changes.

Locked function	<ul style="list-style-type: none"> • Auto adjustment button adjustments and settings in the ScreenManager. • Auto Adjustment Button
Unlocked function	<ul style="list-style-type: none"> • Selecting of the Fine Contrast mode by the control buttons. • Input signal selection button

- To lock

Switch off the monitor’s power by the power button on the front panel. Press on the Auto adjustment button while switching on the monitor’s power.

- To unlock

Switch off the monitor’s power by the power button on the front panel, then hold down the Auto adjustment button once again and turn the power back on.

Off Timer

The off timer function causes the monitor to automatically enter a power off state after a predetermined amount of time has lapsed. This function was created to reduce afterimage (p.44) characteristics that are particular to LCD monitors when the monitor screen is left on for a long period without use.

[Procedure]

- (1) Select <Off Timer> in the ScreenManager <Others> menu.
- (2) Select “Enable” and press the right and left buttons to adjust the “On Period” (1 to 23 hours).

[Off timer system]

PC	Monitor	LED
On Period (1H - 23H)	Operation	Green
Last 15 min. in "On period"	Advance Notice ¹	Green Flashing
"On period" expired	Power off	Flashing yellow slowly

¹Advance notice (LED flashing green) will be given 15 minutes before the monitor automatically enters the “Power Off” mode. To delay entering the “Power Off” mode, press the power button during the advance notice period. The monitor will continue to operate for an additional 90 minutes.

[Procedure]

Press the power button to return to a normal screen.

NOTE

- The off timer function works while the PowerManager is active, but there is no advance notice before the monitor’s power is switched off.

EIZO Logo appearing function

When switching on the power button on the front panel, the EIZO logo is displayed for a while. If you desire to display or undisplay this logo, use this function. (Default is logo appearing.)

- To undisplay
Switch off the monitor's power by the power switch on the front panel, then hold down the Enter button once again and turn the power back on.
- To display again
Switch off the monitor's power by the power switch, then hold down the Enter button once again and turn the power back on.

4. ADJUSTMENT

4-1. Screen Adjustment

NOTE

- Allow the LCD monitor to stabilize for at least 20 minutes before making image adjustments.

When connecting the DVI cable for digital input, see page 25.

Analog Input

Screen adjustments for the LCD monitor should be used in suppressing screen flickering and also for adjusting the screen to its proper position. There is only one correct position for each display mode. It is also recommended to use the ScreenManager function when first installing the display or whenever changing the system. For convenience, an easy set-up Program installed on the utility disk to assist in the set-up procedure is provided.

Adjustment Procedure

1. Push the Auto adjustment button on the front panel.

The message “Your setting will be lost, if you press again now.” appears and remains on the screen for 5 seconds. While the message is on the screen, push the Auto adjustment button again to automatically adjust the clock, phase, screen position and resolution. If you do not wish to do adjust the screen, do not push the Auto adjustment button again.

NOTE

- The Auto sizing function is intended for use on the Macintosh and on AT-compatible PC running Windows. It may not work properly in either of the following cases.

When running an AT-compatible PC on MS-DOS (Not windows). The background color for the “wall paper” or “desktop” pattern is set to black.

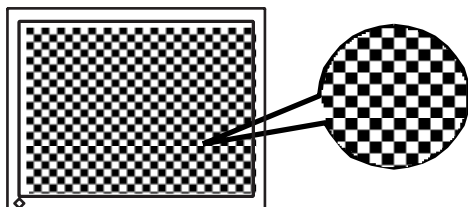
If the appropriate screen cannot be made by using the Auto adjustment button, adjust the screen through the following procedures. If the appropriate screen can be made, proceed to step 4.

2. Run the “Screen adjustment program”.

Having read the “Readme.txt” file, run the “Screen adjustment program” in the enclosed EIZO LCD Utility Disk. Step by step, adjustment is provided by the wizard guide. (If using the Windows, the program can be directly run from the menu screen of the CD-ROM.)


NOTE

- If the user's operating system has no utility disk (e.g. OS/2), we recommend setting the desktop pattern to that as shown in the diagram on the following.



3. Adjust by using <Screen> menu in the ScreenManager.

(1) Vertical bars appear on the screen

→  Use the <Clock> (p.44) adjustment.


Select the “Clock” and eliminate the vertical bars by using the right and left of the control buttons. Do not continuously press the control buttons, as the adjustment value will change quickly and make it difficult to locate the most suitable adjustment point.

If the horizontal flickering, blur or bars appear, proceed to “Phase” adjustment as follows.

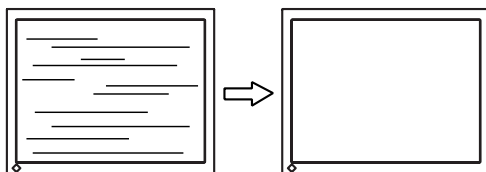
**NOTE**

- When adjusting the <Clock>, the horizontal screen size will also change.

(2) Horizontal flickering, blurring or bars appear on the screen.

→  Use the <Phase> (p.45) adjustment.

Select the <Phase> and eliminate the horizontal flickering, blurring or bars by using the right and left buttons.

**NOTE**

- Horizontal bars may not completely disappear from the screen depending on the PC.

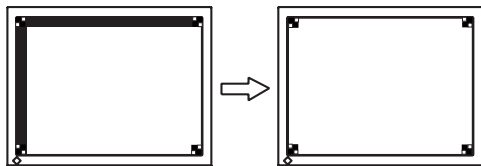
(3) The screen position is not incorrect.

→  Use the <Position> adjustment.

The correct displayed position of the monitor is decided because the number and the position of the pixels are fixed. The <Position> adjustment moves the image to the correct position.

Select <Position> and adjust the position of the upper left corner of the image by using the up, down, right and left buttons in order to align the screen.

If vertical bars of distortion appear after finishing the <Position> adjustment, return to <Clock> adjustment and repeat the previously explained adjustment procedure (“Clock” → “Phase” → “Position”)



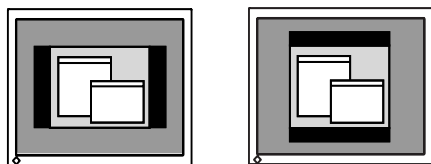
(4) Screen image is smaller or larger than the actual screen images.

→  Use the <Resolution> adjustment.

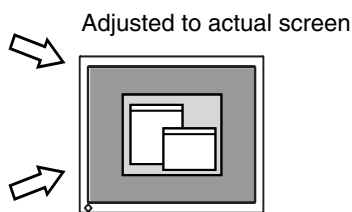
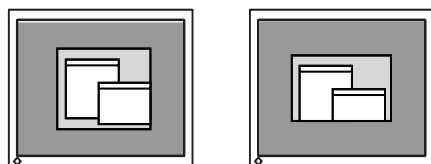
Adjustment is needed when the input signal resolution and the resolution now being displayed are different.

Select <Resolution> and confirm if the resolution now being displayed is the same as the input resolution. If it is not, adjust the vertical resolution using the up and down button and adjust the horizontal resolution using the right and left buttons.


Smaller than the actual screen images.



Larger than the actual screen images.



4. Adjust the output signal range (Dynamic Range) of the signal.

→  Use the <Range Adjustment> (p.45) of <Screen> menu.

This controls the level of output signal range to display the whole color gradation (256 colors).


[Procedure]

Push the Auto adjustment button on the front panel while displaying the <Range Adjustment> menu to automatically adjust the range. The screen blanks for a moment and adjusts the color range to display the whole color gradation of the current output signal.

Digital input

The monitor displays the digital input image correctly based on its pre-setting data. However, if the image position is not correct or larger than the actual image screen, please adjust the following adjustment items using the “Screen” menu of the ScreenManager.

1. The screen position is incorrect.

→  Use the <Position> adjustment.

See page 24.

2. Screen image is smaller or larger than the actual screen images.


→  Use the <Resolution> adjustment.

See page 24.

4-2. Displaying a low resolutions

The lower resolutions are enlarged to full screen automatically. Using the <Screen Size> function in the <Others> menu enables to change the screen size.

1. Enlarge the screen size when displaying a low resolution.

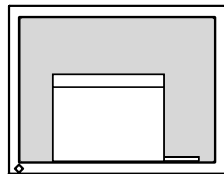
→  Select the <Screen Size>.

Select the <Screen Size> in the others menu and select the screen size by using the up and down buttons.

Menu	Function
Full	Displays the picture on the screen in full, irrespective of the picture's resolution. Since the vertical resolution and the horizontal resolution are enlarged at different rates, some images may appear distorted.
Enlarged	Displays the picture on the screen in full, irrespective of the picture's resolution. Since the vertical resolution and horizontal resolution are enlarged at same rates, some horizontal or vertical image may disappear.
Normal	Displays the picture at the actual Screen resolution.

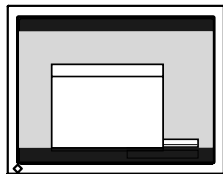
Example: Displaying 1024 x 768

Full (Default Setting)



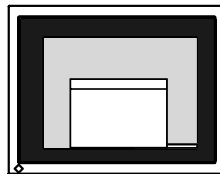
(1280×1024)

Enlarged



(1280×960)

Normal



(1024×768)

2. Smooth the blurred texts of the enlarged screen.


→  Switch the <Smoothing> setting.

Select the suitable level from 1 – 5 (Soft – Sharp).

Select <Smoothing> in the <Screen> menu and adjust by using the right and left buttons.

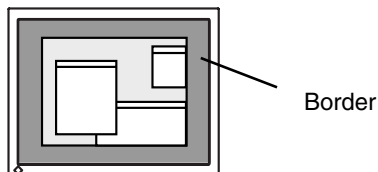
NOTE

- <Smoothing> is disabled when the screen is displayed in the following resolutions.
 - *1280 x 1024
 - *The image size is doubled both in horizontally and vertically to (i.e. 1280 x 960 enlarged from 640 x 480) provide clear focus which does not require this function.

- 3.** Set the brightness of the black area surrounding the displayed image.
→  Set the <Border Intensity>.

In the <Enlarge> mode or <Full Screen> mode, the outer area (border) is usually black.

Select <Border Intensity> in the <Others> menu and adjust by using the right and left buttons.



4-3. Color Adjustment

Color settings of each Fine Contrast mode can be adjusted and saved by using the <Color> menu of the ScreenManager.



In the analog input, perform the “Range Adjustment” (p.25) before making the color adjustments.

During color adjustments, the Fine Contrast mode cannot be changed. Select the mode in advance by using the Fine Contrast Mode.

Adjustment items

The adjustable items and displayed icons on the ScreenManager depend on the selected Fine Contrast mode

“√”: Settable/Adjustable “-”: Fixed at the factory









Icons	Functions	Fine Contrast Modes					
		Text	Picture	Movie	sRGB	Custom	External
	Brightness *	√	√	√	√	√	√
	Temperature *	√	√	√	-	√	-
	Gamma *	√	-	-	-	√	-
	Saturation	√	√	√	-	√	-
	Hue	√	√	√	-	√	-
	Gain	-	-	-	-	√	-
	6 colors	-	-	-	-	√	-
	Reset	√	√	√	-	√	-

*These settings can be also adjusted on the Fine Contrast menu. (p.19)

NOTE

- Allow the LCD monitor to stabilize for at least 20 minutes before making image adjustments. (Allow the monitor to warm up for at least 20 minutes before making adjustments.)
- Performing the <Reset> of the <Color> menu returns the color settings of the selected mode to the default settings.
- The values shown in percentages represent the current level within the specific adjustment. They are available only as a reference tool. (To create a uniform white or black screen, the percentages for each will probably not be the same.)

Adjustment Contents

Menu	Function Descriptions	Adjustable range
Brightness 	To set the brightness of the screen	0 ~ 100%
Temperature (p.45) 	To set the color temperature	4,000 ~ 10,000 K in 500 K increments (including 9,300 K). Default setting is off (normal white)
	NOTE <ul style="list-style-type: none"> • The values shown in the Kelvin are available only as a reference tool. • Setting the temperature under 4,000 K or over 10,000 K invalidates the color temperature setting. (The color temperature's setting turns "OFF".) 	
Gamma (p.44) 	To set the gamma value	1.4 ~ 3.0
	NOTE <ul style="list-style-type: none"> • If setting the gamma value, the using the monitor in the digital signal input is recommended. If using the monitor in the analog input signal, set the gamma value from 1.8 to 2.2. 	
Saturation 	To change the saturation	-16 ~ 16 Setting the minimum level (-16) turns the image to the monochrome.
	NOTE <ul style="list-style-type: none"> • The <Saturation> adjustment may cause undisplayable color tone. 	
Hue 	To change the flesh color, etc.	-20 ~ 20
	NOTE <ul style="list-style-type: none"> • The <Hue> adjustment may cause undisplayable color tone. 	
Gain 	To change each color (red, green and blue)	0 ~ 100% By adjusting the red, green and blue color tones for each mode, custom colors can be defined. The 100 % indicates unadjusted condition. Display a white or gray background image and adjust the <Gain>.
	NOTE <ul style="list-style-type: none"> • The values shown in the percentage are available only as a reference tool. • Setting the <Temperature> (p45) invalidates the <Gain> adjustment. <Gain> setting returns to the default: All the color indicates 100 %. 	
6 colors 	To adjust <Saturation> and <Hue> in each color (Red, Yellow, Green, Cyan, Blue and Magenta)	Hue: -20 ~ 20 Saturation: -16 ~ 16
Reset 	To return the color settings of the selected mode to the default settings	Select the "Reset".

4-4. Power-save Setup

The <PowerManager> menu in the ScreenManager enables to set the power-save setup.

NOTE

- Do your part to conserve energy, turn off the monitor when you are finished using it. Disconnecting the monitor from the power supply is recommended to save energy completely.
- Even if the monitor is in a power saving mode, USB compliant devices function when they are connected to the monitor's USB (both the upstream and the downstream ports). Therefore, power consumption of the monitor will change according to the connected devices even if the monitor is in a power saving mode.

Analog input

This monitor complies with the <VESA DPMS> (p.45) standard and adopts a power saving method, <EIZO MPMS> (p.44), which works with a blank screen (totally black screen) like "Blank Screen" ScreenSaver software.

To use the PC's power saving system (VESA DPMS).

[Procedure]

- (1) Set the PC's power saving settings.
- (2) Select "VESA DPMS" in the <PowerManager> menu.

[Power saving system]

PC		Monitor	LED
Operation		Operation	Green
Power saving	STAND-BY SUSPEND OFF	Power saving	Yellow

Operate the mouse or keyboard to return to a normal screen.

To set the power save with ScreenSaver (EIZO MPMS) software.

[Procedure]

- (1) Set the PC's appropriate ScreenSaver settings or blank the screen (totally black screen).
- (2) Select <EIZO DPMS> in the <PowerManager> menu.

[Power saving system]

PC	Monitor	LED
Operation	Operation	Green
Blank the screen (ScreenSaver or Macintosh Energy Saver)	Power saving	Yellow

Operate the mouse or keyboard to return to a normal screen.

NOTE

- EIZO MPMS should be used with Macintosh "EnergySaver".

Digital input

This monitor complies with the DVI DMPM (p.44).

[Procedure]

- (1) Set the PC's power saving settings.
- (2) Select "VESA DPMS" in the <PowerManager> menu.

[Power saving system]

PC	Monitor	LED
On	Operation	Green
Power saving	Power saving	Yellow
Off mode	Power saving ¹	Flashing yellow (2 times for each)

¹Power saving through the PC's off mode is only supported when "Manual" is selected on the ScreenManager's <Input Priority>.

[Procedure]

Operate the mouse or keyboard to return to a normal screen.

Power on the PC to return a normal screen from the Off mode of the PC.

5. MAKING USE OF USB (Universal Serial Bus)

This monitor provides a hub which supports the USB standard. When connecting to a USB compliant PC or another hub, the monitor functions as a hub to which the USB compliant peripherals can be easily connected.

Required system environment

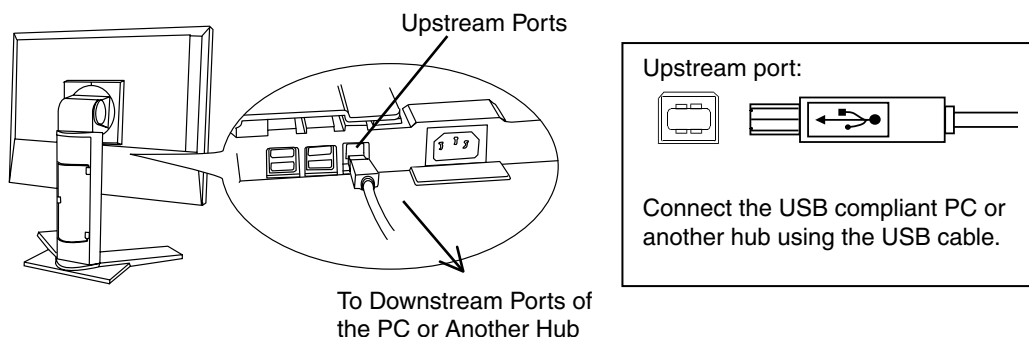
- PC equipped with USB ports or another USB hub connected to the USB compliant PC
- Windows 98/2000/XP // Mac OS 8.5.1 or later
- EIZO USB Cable (Optional)

NOTE

- The USB hub function may not work properly depending on the PC, OS or peripherals. Please consult the manufacturer of each device about the USB support.
- When the monitor is not on, the peripherals connected to the downstream ports will not operate.
- Even if the monitor is in a power saving mode, the devices connected to the monitor's USB ports (both the upstream and the downstream) will function.
- The followings are procedures for the Windows 98/Me/2000/XP and Mac OS.

Connecting to the USB HUB

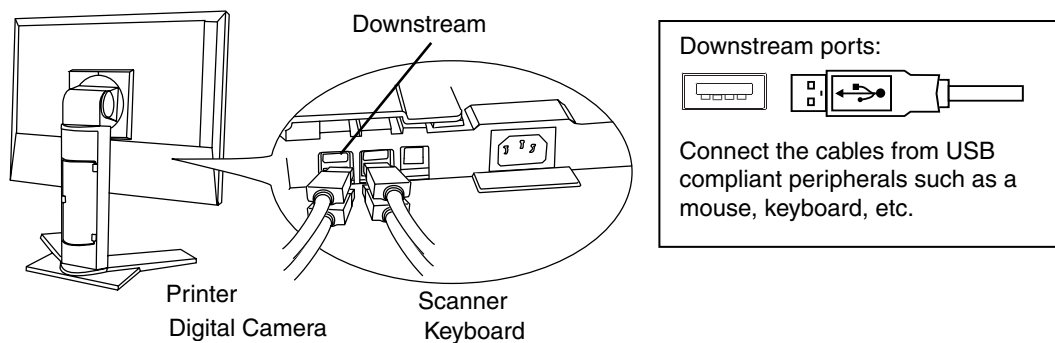
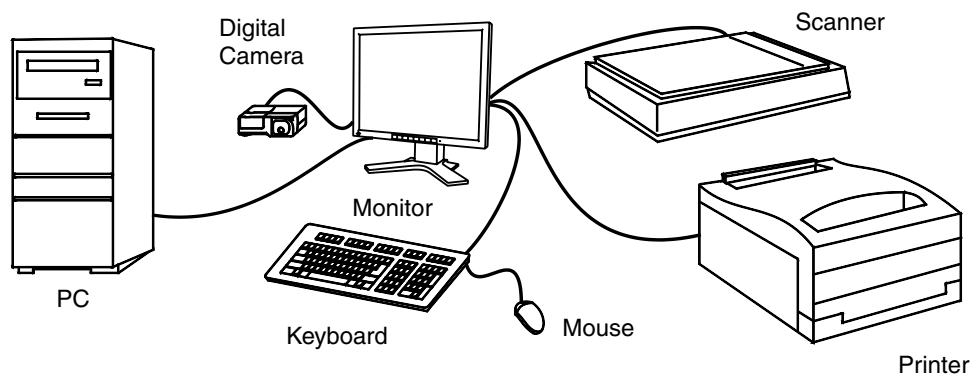
1. Connect the monitor to the PC with the signal cable (See page 13) first, then turn on the PC.
2. Connect the upstream port of the monitor to the downstream port of the USB compliant PC or another hub by using the USB cable.



After connecting the USB cable, the USB function can be set up automatically.

- 3.** After setting up, the monitor's USB hub is available for connecting USB compliant peripherals to the downstream ports of the monitor.

Connecting Examples



ScreenManager Pro for LCD (for Windows)

For further details about the “ScreenManager Pro for LCD (for Windows)”, refer to the EIZO LCD Utility Disk.

6. ATTACHING AN ARM STAND

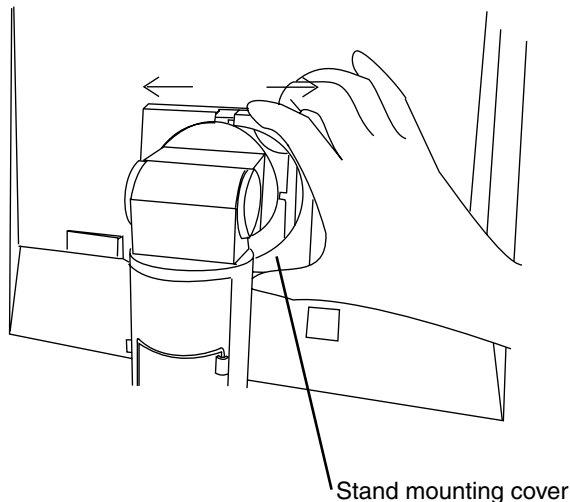
The LCD monitor can be used with an arm stand by removing the tilt stand and attaching the arm stand to the LCD monitor.

NOTE

- Use an arm stand that satisfies the followings.
 - When using the LCD monitor with an arm stand, the arm stand must be VESA approved:
Use an arm stand with a 100 mm x 100 mm hole spacing on the arm mounting pad.
Weight: Use an arm stand that is able to support an object weighting 13.5 kg (29.8 lbs.).
 - TÜV/GS approved arm stand
 - Use an arm stand with sufficient stability (mechanical firmness) to support the weight of the monitor.
 - Use an arm stand remaining that position where it is manually moved.
 - Use an arm stand with the ability to tilt the monitor forward and backward.
- Please connect cables after attaching an arm stand.

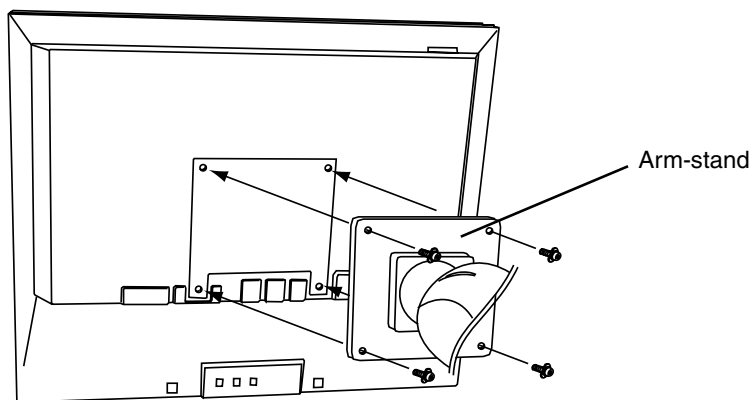
Setup Procedure

- 1.** Hold the center of the stand mounting cover and slide them rightward or leftward to remove the mounting cover.



- 2.** Lay the LCD monitor down. Do not scratch the panel.
- 3.** Remove the tilt stand by loosening the screws.
(4 pcs of M4 x 15 BZn/Fe)

4. Attach an arm stand to the LCD monitor securely.



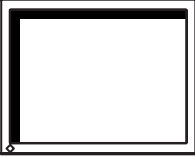
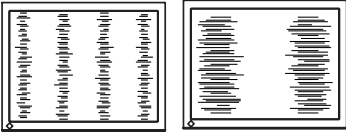
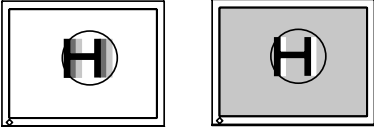


M4 Mounting Screws: M4 x 15 (mm) BZn/Fe

7. TROUBLESHOOTING

If a problem persists even after applying the suggested remedies, contact an EIZO dealer.

- No picture problems → See No.1 ~ No.2
- Imaging problems → See No.3 ~ No.14
- Other problems → See No.15 ~ No.19
- USB problems → See No.20 ~ No.21

Problems	Points to check with possible solutions
1. No picture <ul style="list-style-type: none"> • Indicator status: Off 	<input type="checkbox"/> Check that the power cord is correctly connected. If the problem persists, turn off the monitor power for a few minutes, then turn it back on and try again.
<ul style="list-style-type: none"> • Indicator status: Green • Indicator status: Yellow • Indicator status: Slowly flashing Yellow • Indicator status: Flashing Yellow (twice for each) 	<input type="checkbox"/> Check the “Brightness” setting. <input type="checkbox"/> Switch the signal input by pressing the input signal selection button on the front control panel. <input type="checkbox"/> Try pressing a key on the keyboard, or clicking the mouse. (p.30) <input type="checkbox"/> Try pressing the power button. <input type="checkbox"/> Try turning the PC on.
2. Error messages shown below will remain on the screen for 40 seconds. <div data-bbox="209 1136 550 1315" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Signal Check</p> <p style="text-align: center;">Signal 2</p> <p style="text-align: center;">fH: 0.0kHz fV: 0.0Hz</p> </div>	<p>These message appear when the signal is not inputted correctly, even if the monitor functions properly.</p> <input type="checkbox"/> When the image is displayed correctly after a short time, there is no problem with the monitor. (Some PCs do not output the signal soon after powering on.) <input type="checkbox"/> Check that the PC is turned ON. <input type="checkbox"/> Check that the signal cable is properly connected to the PC or graphics board. <input type="checkbox"/> Switch the signal input by pressing the input signal selection button on the front control panel.
<ul style="list-style-type: none"> • Whenever an error signal message appears, the signal frequency will be displayed in red. (Example) <div data-bbox="209 1547 550 1727" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Signal Error</p> <p style="text-align: center;">Signal 2</p> <p style="text-align: center;">fH: 110.0kHz fV: 75.0Hz</p> </div>	<input type="checkbox"/> Use the graphics board’s utility software to change the frequency setting. (Refer to the manual of the graphics board.)

Problems	Points to check with possible solutions
<p>3. Display position is incorrect.</p> 	<p><input type="checkbox"/> Adjust the image position using the <Position> (p.24) If the problem persists, use the graphics board's utility software to change the display position if available.</p>
<p>4. Screen image is smaller or larger than the actual screen images.</p>	<p><input type="checkbox"/> Adjust the resolution using the <Resolution>. (p.24)</p>
<p>5. Vertical bars of distortion appear.</p> 	<p><input type="checkbox"/> Decrease the vertical bars using the <Clock>. (p.23)</p>
<p>6. The characters and images have several vertical bars on their right side.</p> 	<p><input type="checkbox"/> If using the monitor in the analog input signal, try setting the gamma value from 1.8 to 2.2. (p.29)</p>
<p>7. Horizontal bars of distortion appear.</p> 	<p><input type="checkbox"/> Decrease the horizontal bars using the <Phase>. (p.23)</p>
<p>8. Letters and lines appear blurred.</p>	<p><input type="checkbox"/> Adjust the blurred lines using <Smoothing> (p.26)</p>
<p>9. Distortion appears like the figure below.</p> 	<p><input type="checkbox"/> This happens when both composite (X-OR) input signal and separate vertical synchronizing signal are input. Please select one of the two.</p>
<p>10. The screen is too bright or too dark.</p>	<p><input type="checkbox"/> Adjust the <Brightness> (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer.)</p>

Problems	Points to check with possible solutions
11. Afterimages appear.	<input type="checkbox"/> When the screen image is changed after displaying the same image for a long period, an afterimage may appear. The “Afterimage” can be removed gradually by changing the displayed image. Use the “Off Timer” function and avoid keeping the screen on all the time. (p.20)
12. The screen has defective pixels (e.g. slightly light or dark).	<input type="checkbox"/> This is due to the characteristics of the panel itself and not the LCD product.
13. Fingerprints remain on the screen.	<input type="checkbox"/> Leaving the screen white may solve the problem.
14. The noise appears on the screen.	<input type="checkbox"/> Change the mode in <Signal Filter> in the <Screen> menu.
15. The <Smoothing> cannot be selected.	<input type="checkbox"/> <Smoothing> is disabled when the screen is displayed in the 1280 x1024. <input type="checkbox"/> The image size is doubled both in horizontally and vertically to (i.e. 1280 x 960 enlarged from 640 x 480) provide clear focus which does not require this function.
16. The Main menu of ScreenManager does not operate.	<input type="checkbox"/> The adjustment lock is probably on. To unlock: switch the LCD monitor off. Then, while pressing the Auto adjustment button, switch the power on. (p.20) <input type="checkbox"/> Check that the Fine Contrast mode is not activated. (p. 17)
17. The Fine Contrast mode does not operate.	<input type="checkbox"/> Check that the Main menu of ScreenManager is not activated. (p.19)
18. The Auto adjustment button does not operate.	<input type="checkbox"/> The adjustment lock is probably on. To unlock: switch the LCD monitor off. Then, while pressing the Auto adjustment button, switch the power on. (p.20)
19. Frequency does not change after installing “Monitor information file” in the attached utility disk on Windows 95/98/2000/XP.	<input type="checkbox"/> Use the graphics board’s utility software to change the input signal frequency.

Problems	Points to check with possible solutions
20. USB function cannot be setup.	<ul style="list-style-type: none"><input type="checkbox"/> Check that the USB cable is correctly connected.<input type="checkbox"/> Check that the PC and OS are USB compliant. (For verification of USB support, consult the manufacturer of each system.)<input type="checkbox"/> Check the PC's BIOS setting for USB. (For details, refer to the manual of the PC.)
21. PC is hung up. / The peripherals connected to the downstream ports do not operate.	<ul style="list-style-type: none"><input type="checkbox"/> Check that the USB cable is correctly connected.<input type="checkbox"/> Check the downstream ports by connecting the peripherals to other downstream ports. If the problem is solved by doing this, contact an EIZO dealer. (For details, refer to the manual of the PC.)<input type="checkbox"/> Try executing the following method.<ul style="list-style-type: none">• Restarting the PC - Restarting the PC• Connecting the PC and peripherals directlyIf the problem is solved by doing this, contact an EIZO dealer.<input type="checkbox"/> The power button of the APPLE keyboard does not operate if it is connected to the EIZO USB Hub. Please connect the keyboard directly with the PC. Refer to the instruction of the PC for details.

8. CLEANING

Periodic cleaning is recommended to keep the monitor looking new and to prolong its operation lifetime.

NOTE

- Never use thinner, benzene, alcohol (ethanol, methanol, or isopropyl alcohol), abrasive cleaners, or other strong solvents, as these may cause damage to the cabinet or LCD panel.

Cabinet

To remove stains, wipe the cabinet with a soft, lightly moistened cloth using a mild detergent. Do not spray wax or cleaner directly into the cabinet. (For details, refer to the manual of the PC.)

LCD Panel

- The LCD surface can be cleaned with a soft cloth, such as cotton or lens paper.
- If necessary, stubborn stains can be removed by moistening part of a cloth with water to enhance its cleaning power.

9. SPECIFICATIONS

LCD Panel	46 cm (18.1 inch), TFT color LCD panel with Anti-Glare Hard Coating, Viewing Angle: Horizontal: 170°, Vertical: 170° Image Formation Time: approx. 78 ms
Dot Pitch	0.2805 mm
Horizontal Scan Frequency	27 ~ 82 kHz (Automatic) (Digital): 27 ~ 64 kHz
Vertical Scan Frequency	50 Hz ~ 85 Hz (Automatic) (1280 x 1024: 50 Hz ~ 75 Hz) (Digital): 60Hz, (VGA TEXT : 70Hz)
Resolution	1280 dots x 1024 lines
Dot Clock (Max.)	135 MHz (Digital: 108 MHz)
Display Colors	16 million colors (max)
Display Area	359 mm (H) x 287 mm (V) (14.1" (H) x 11.3" (V)) (Viewable image size: 459 mm (18.1"))
Power Supply	100-120/200-240 VAC±10%, 50/60 Hz, 0.8 /0.4 A
Power Consumption	Min.: 56 W Max.: 76W (With speaker and USB hub) Power Saving Mode: Less than 5 W (When the optional speaker and the USB hub are not connected.)
Input Connector	DVI-I x 2
Analog Input Signal (Sync)	a) Separate, TTL, Positive/Negative b) Composite, TTL, Positive/Negative c) Sync on Green, 0.3 Vp-p, Negative
Analog Input Signal (Video)	0.7Vp-p/75Ω Positive
Input Signal (Digital)	TMDS (Single Link)
Signal registration	28 (Factory preset: 25)
Plug & Play	VESA DDC 2B
Dimensions	399 mm (W) x 404~ 504 mm (H) x 203 mm (D) (15.7"(W) x 15.9" ~ 19.8" (H) x 8.0"(D))
Dimensions (without stand)	399mm (W) x 328mm (H) x 65mm (D) (15.7"(W) x 12.9"(H) x 2.6"(D))
Weight	8.0kg (17.6 lbs.)
Weight (without stand)	5.5kg (12.1 lbs.)
Temperature	Operating: 0°C ~ 35°C (32°F ~ 95°F) Storage: -20°C ~ 60°C (-4°F ~ 140°F) Humidity 30% to 80% R.H. Non-condensing
USB standard	Rev. 1.1 complied self-powered hub
Communication speed	12 Mbps (full), 1.5 Mbps (low)
Downstream power supply	500 mA for each (Max.)
USB ports	Upstream port x 1, Downstream port x 4
Certifications and Standards 100-120 VAC 200-240 VAC	NRTL/C-TÜV, FCC-B, TCO'99 ¹ , EPA ENERGY STAR Program, TÜV/Rheinland Ergonomics Approved CE, CB, TÜV Rheinland/GS, TCO'99 ¹ , EPA ENERGY STAR Program, TÜV/Rheinland Ergonomics Approved

¹ Applicable to gray (standard) color version only.

Default settings

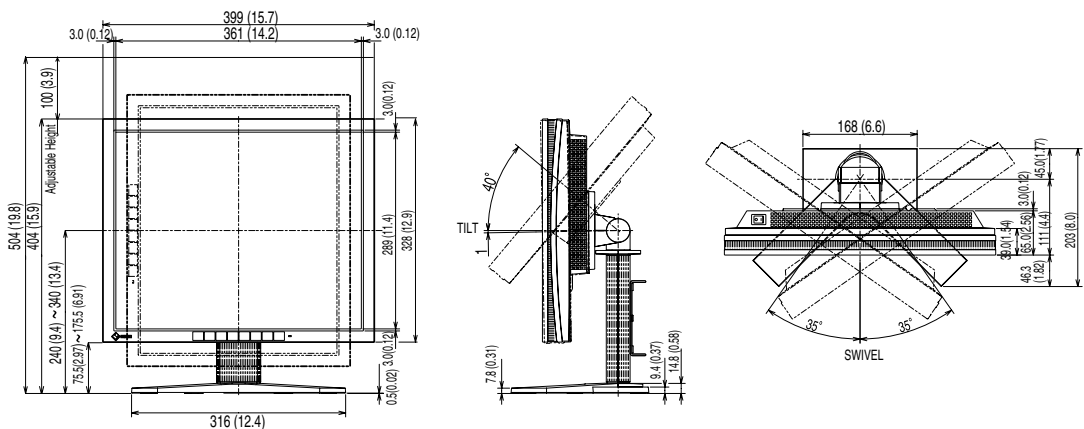
		Analog input	Digital input
Contrast		100%	100%
Brightness		100%	100%
Smoothing		3	
Fine Contrast Mode		Custom	
PowerManager		VESA DPMS	DVI DMPM
Screen Size		Full	
Input Priority		Signal 1	
Menu Off Timer		Disable	
Menu Settings	Menu Size	Normal	
	Menu Off Timer	45 seconds	
Beep		On	
Language		English	

Beeper settings

Short beep	ScreenManager item selected. ScreenManager parameter adjusted to minimum or maximum limit. Input signal selection button pressed.
Long beep	Auto Adjustment button pressed. ScreenManager data-save executed.
4 short beeps	Monitor not connected correctly. PC turned off. Monitor received unsupported signal frequency.
2 short beeps every 15 sec.	Monitor is in the advance notice mode of the Off Timer. The power will be off within fifteen minutes.

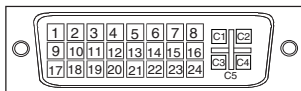
Dimensions

mm (inches)



Pin Assignment

DVI-I Connector

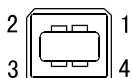


Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	TMDS Data2-	11	TMDS Data1/3 Shield	21	NC
2	TMDS Data2+	12	NC	22	TMDS Clock shield
3	TMDS Data2/4 Shield	13	NC	23	TMDS Clock+
4	NC*	14	+5V Power	24	TMDS Clock-
5	NC	15	Ground (return for +5V, Hsync and Vsync)	C1	Analog Red
6	DDC Clock (SCL)	16	Hot Plug Detect	C2	Analog Green
7	DDC Data (SDA)	17	TMDS Data0-	C3	Analog Blue
8	Analog Vertical Sync	18	TMDS Data0+	C4	Analog Horizontal Sync
9	TMDS Data1-	19	TMDS Data0/5 Shield	C5	Analog Ground (analog R, G, & B return)
10	TMDS Data1+	20	NC		

(*NC: No Connection)

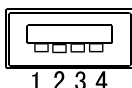
USB Ports

Upstream



Series B

Downstream



Series A

No.	Signal	Signal
1	VCC	Cable power
2	- Data	Serial data
3	+ Data	Serial data
4	Ground	Cable Ground

10. GLOSSARY

Afterimage

The Afterimage is particular to LCD monitors when the monitor screen is left on for a long period without use. The “Afterimage” can be removed gradually by changing the displayed image.

Clock

With the analog input signal display, the analog signal is converted to a digital signal by the LCD circuitry. To convert the signal correctly, the LCD monitor needs to produce the same number clock pulse as the dot clock of the graphics system. When the clock pulse is not correctly set, some vertical bars of distortion are displayed on the screen.

DVI

(Digital Visual Interface)

A digital flat panel interface. DVI can transmit digital data from the PC directly without loss with the signal transition method “TMDS”.

There are two kinds of DVI connectors. One is DVI-D connector for digital signal input only. The other is DVI-I connector for both digital and analog signal inputs.

DVI DMPM

(DVI Digital Monitor Power Management)

The Power management system for the digital interface. The “Monitor ON” status (operation mode) and the “Active Off” status (power-saving mode) are indispensable for the DVI-DMPM as the monitor’s power mode.

EIZO MPMS

(EIZO Monitor PowerManager Signaling)

EIZO MPMS, “EIZO Monitor PowerManager Signaling” also enables power saving on the monitor side. EIZO MPMS recognizes video signals from the PC when the PC is in a power saving mode and reduces energy consumption of the monitor.

Gain Adjustment

Adjusts each color parameter for red, green and blue. The color of the LCD monitor is displayed through the color filter of the LCD panel. Red, green and blue are the three primary colors. The colors on the monitor are displayed by combining these three colors. The color tone can change by adjusting the illumination amount passed through each color’s filter.

Gamma

Generally, the relationship that the light intensity values of a monitor change nonlinearly to the input signal level is called “Gamma Characteristic”. On the monitor, low gamma values display the whitish images and high gamma values display the high contrast images.

Phase

The phase adjustment decides the sampling timing point for converting the analog input signal to a digital signal. Adjusting the phase after the clock adjustment will produce a clear screen.

Range Adjustment

The Range Adjustment controls the level of output signal range to display the whole color gradation.

Resolution

The LCD panel consists of a fixed number of pixel elements which are illuminated to form the screen image. The EIZO L685EX display panel consists of 1280 horizontal pixels and 1024 vertical pixels. At a resolution of 1280 x 1024, all pixels are displayed as a full screen.

sRGB (Standard RGB)

“International Standard for Red, Green and Blue color space”

A color space was defined with the aim of the color matching between applications and hardware devices, such as monitors, scanners, printers and digital cameras. As a standard default space, sRGB allows Internet users to closely match colors.

Temperature

Color temperature is a method to measure the white color tone, generally indicated in degrees Kelvin. At high temperatures the white tone appears somewhat blue, while at lower temperatures it appears somewhat red. Computer monitors generally give best performance at high temperature settings.

5,000K: Often used in printing industry.

6,500K: Good for video-image display.

9,300K: Default setting for your EIZO monitor.

TMDS

(Transition Minimized Differential Signaling)

A signal transition method for the digital interface

VESA DPMS

(Video Electronics Standard Association – Display Power Management Signaling)

The acronym VESA stands for “Video Electronics Standards Association” and DPMS stands for “Display Power Management Signaling.” DPMS is a communication standard that PCs and graphics boards use to implement power savings on the monitor side.

APPENDIX/ANHANG/ANNEXE

Preset Timing Chart for Analog input Timing-Übersichten für Analog Eingang Synchronisation des Signaux pour Analog numerique

Based on the signal diagram shown below 25 factory presets have been registered in the monitor's microprocessor.

Der integrierte Mikroprozessor des Monitors unterstützt 25 werkseitige Standardeinstellungen (siehe hierzu die nachfolgenden Diagramme).

25 signaux ont été enregistrés en usine dans le microprocesseur du moniteur, conformément au diagramme de synchronisation ci-dessous.

A	Front Porch	Vordere Schwarzschiiter	Front avant
B	Sync Period	Synchronimpuls	Délai de synchronisation
C	Back Porch	Hintere Schwarzschiiter	Front arrière
D	Blanking Period	Austastzeit	Délai de clignotement
E	Display period	Display-Zeit	Délai d'affichage
F	Total cycle	Kompletter Zyklus	Cycle total
H	Sync signal level	Sync-Signalpegel	Niveau du signal de synchronisation
V	Video signal level	Video-Signalpegel	Niveau du signal vidéo

Mode	Dot Clock MHz	Sync Polarity		Frequencies		A: Front Porch		B: Sync Period	
		H	V	H kHz	V Hz	H µs/Dot	V ms/Line	H µs/ Dot	V ms/ Line
VGA 640 × 480	25.175	Nega.	Nega.	31.469	59.940	0.318/ 8	0.064/ 2	3.813/ 96	0.054/ 2
VGA 720 × 400	28.322	Nega.	Posi.	31.468	70.087	0.636/ 18	0.381/ 12	3.813/ 108	0.064/ 2
Macintosh 640 × 480	30.24	Posi.	Posi.	35.00	66.67	2.116/ 64	0.086/ 3	2.116/ 64	0.086/ 3
Macintosh 832 × 624	57.28	Posi.	Posi.	49.73	74.55	0.559/ 32	0.020/ 1	1.117/ 64	0.060/ 3
Macintosh 1152 × 870	100.0	Posi.	Posi.	68.68	75.06	0.320/ 32	0.044/ 3	1.280/ 128	0.044/ 3
Macintosh 1280 × 960	126.2	Posi.	Posi.	74.76	74.76	0.190/ 24	0.013/ 1	1.204 152	0.040/ 3
VESA 640 × 480	31.5	Nega.	Nega.	37.86	72.81	0.508/ 16	0.026/ 1	1.270/ 40	0.079/ 3
VESA 640 × 480	31.5	Nega.	Nega.	37.50	75.00	0.508/ 16	0.027/ 1	2.032/ 67	0.080/ 3
VESA 640 × 480	36.0	Nega.	Nega.	43.27	85.01	1.556/ 56	0.023/ 1	1.556/ 56	0.069/ 3
VESA 800 × 600	36.0	Posi.	Posi.	35.16	56.25	0.667/ 24	0.028/ 1	2.000/ 72	0.057/ 2
VESA 800 × 600	40.0	Posi.	Posi.	37.88	60.32	1.000/ 40	0.026/ 1	3.200/ 128	0.106/ 4
VESA 800 × 600	50.0	Posi.	Posi.	48.08	72.19	1.120/ 56	0.770/ 37	2.400/ 120	0.125/ 6
VESA 800 × 600	49.5	Posi.	Posi.	46.88	75.00	0.323/ 16	0.021/ 1	1.616/ 80	0.064/ 3
VESA 800 × 600	56.25	Posi.	Posi.	53.674	85.061	0.569/ 32	0.019/ 1	1.138/ 64	0.056/ 3
VESA 1024 × 768	65.0	Nega.	Nega.	48.36	60.00	0.369/ 24	0.062/ 3	2.092/ 136	0.124/ 6
VESA 1024 × 768	75.0	Nega.	Nega.	56.48	70.07	0.320/ 24	0.053/ 3	1.813/ 136	0.106/ 6
VESA 1024 × 768	78.75	Posi.	Posi.	60.02	75.03	0.203/ 16	0.017/ 1	1.219/ 96	0.050/ 3
VESA 1024 × 768	94.5	Posi.	Posi.	68.68	85.0	0.508/ 48	0.015/ 1	1.016/ 96	0.044/ 3
VESA 1152 × 864	75.0	Posi.	Posi.	67.50	75.00	0.593/ 64	0.015/ 1	1.185/ 128	0.044/ 3
VESA 1280 × 960	60.0	Posi.	Posi.	60.00	60.00	0.889/ 96	0.017/ 1	1.037/ 112	0.050/ 3
VESA 1280 × 1024	108.0	Nega.	Nega.	63.98	60.02	0.444/ 48	0.016/ 1	1.037/ 112	0.047/ 3
VESA 1280 × 1024	135.0	Posi.	Posi.	79.98	75.03	0.119/ 16	0.013/ 1	1.067/ 144	0.038/ 3

C: Back Porch		D: Blanking Period		E: Display Period		F: Total Cycle	
H μ s/ Dot	V ms/ Line	H μ s/ Dot	V ms/ Line	H μ s/ Dot	V ms/ Line	H μ s/ Dot	V ms/ Line
1.589/ 40	0.794/ 25	5.720/ 144	0.922/ 29	25.442/ 640	15.253/ 480	31.778/ 800	16.683/ 525
1.907/ 54	1.111/ 35	6.356/ 180	1.556/ 49	25.422/ 720	12.711/ 400	31.778/ 900	14.267/ 449
3.175/ 96	1.114/ 39	7.407/ 224	1.286/ 45	21.164/ 640	13.714/ 480	28.571/ 864	15.000/ 525
3.911/ 224	0.784/ 39	5.587/ 320	0.865/ 43	14.525/ 832	12.550/ 624	20.112/ 1152	13.415/ 667
1.440/ 144	0.568/ 39	3.040/ 304	0.655/ 45	11.520/ 1152	12.667/ 870	14.560/ 1456	13.322/ 915
1.838/ 232	0.482/ 36	3.233/ 408	0.535/ 40	10.143/ 1280	12.841/ 960	13.376/ 1280	13.376/ 1688
3.810/ 120	0.528/ 20	5.587/ 176	0.634/ 24	20.317/ 640	12.678/ 480	26.413/ 832	13.735/ 520
3.810/ 120	0.427/ 16	6.349/ 200	0.533/ 20	20.317/ 640	12.800/ 481	26.667/ 840	13.333/ 500
2.222/ 80	0.578/ 25	5.333/ 192	0.670/ 29	17.778/ 640	11.093/ 480	23.111/ 832	11.764/ 509
3.556/ 128	0.626/ 22	6.222/ 224	0.711/ 25	22.222/ 800	17.067/ 600	28.444/ 1024	17.778/ 625
2.200/ 88	0.607/ 23	6.400/ 256	0.739/ 28	20.000/ 800	15.840/ 600	26.400/ 1056	16.579/ 628
1.280/ 64	0.478/ 23	4.800/ 240	1.373/ 66	16.000/ 800	12.480/ 600	20.800/ 1040	13.853/ 666
3.232/ 160	0.448/ 21	5.172/ 256	0.533/ 25	16.162/ 800	12.800/ 600	21.333/ 1056	13.333/ 625
2.702/ 152	0.503/ 27	4.409/ 248	0.578/ 31	14.222/ 800	11.179/ 600	18.631/ 1048	11.756/ 631
2.462/ 160	0.600/ 29	4.923/ 320	0.786/ 38	15.754/ 1024	15.880/ 768	20.677/ 1344	16.666/ 806
19.20/ 144	0.513/ 29	4.053/ 304	0.673/ 38	13.653/ 1024	13.599/ 768	17.707/ 1328	14.272/ 806
2.235/ 176	0.466/ 28	3.657/ 288	0.533/ 32	13.003/ 1024	12.795/ 768	16.660/ 1312	13.328/ 800
2.201/ 208	0.524/ 36	3.725/ 352	0.582/ 40	10.836/ 1024	11.183/ 768	14.561/ 1376	11.765/ 808
2.370/ 256	0.474/ 32	4.148/ 448	0.533/ 36	10.667/ 1152	12.800/ 864	14.815/ 1600	13.333/ 900
2.889/ 312	0.600/ 36	4.815/ 520	0.667/ 40	11.852/ 1280	16.000/ 960	16.667/ 1800	16.667/ 1000
2.296/ 248	0.594/ 38	3.778/ 408	0.656/ 42	11.852/ 1280	16.005/ 1024	15.630/ 1688	16.661/ 1066
1.837/ 248	0.475/ 38	3.022/ 408	0.525/ 42	9.481/ 1280	12.804/ 1024	12.504/ 1688	13.329/ 1066

Mode	Dot Clock MHz	Sync Polarity		Frequencies		A: Front Porch		B: Sync Period	
		H	V	H kHz	V Hz	H μ s/Dot	V ms/Line	H μ s/ Dot	V ms/ Line
Workstation 1152 \times 900	94.2	Composite, Nega.		61.974	66.141	0.425/ 40	0.032/ 2	1.359/ 128	0.065/ 4
Workstation 1152 \times 900	107.50	Composite, Nega.		71.858	76.202	0.223/ 24	0.028/ 2	1.265/ 136	0.111/ 8
Workstation 1280 \times 1024	117.0	Composite, Nega.		71.691	67.189	0.205/ 24	0.028/ 2	0.957/ 112	0.112/ 8

C: Back Porch		D: Blanking Period		E: Display Period		F: Total Cycle	
H μ s/ Dot	V ms/ Line	H μ s/ Dot	V ms/ Line	H μ s/ Dot	V ms/ Line	H μ s/ Dot	V ms/ Line
2.123/ 200	0.500/ 31	3.907/ 368	0.597/ 37	12.229/ 1152	14.522/ 900	16.136/ 1520	15.119/ 937
1.712/ 184	0.459/ 33	3.200/ 344	0.598/ 43	10.716/ 1152	12.525/ 900	13.916/ 1496	13.123/ 943
1.846/ 216	0.460/ 33	3.009/ 352	0.600/ 43	10.940/ 1280	14.283/ 1024	13.949/ 1632	14.883/ 1067

[Applicable to gray (standard color version only).]



Congratulations!

You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem, as far as computers and other electronics equipment are concerned, is that environmentally harmful substances are used both in the products and during their manufacture. Since it is not so far possible to satisfactorily recycle the majority of electronics equipment, most of these potentially damaging substances sooner or later enter nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Since all methods of electricity generation have a negative effect on the environment (e.g. acidic and climate-influencing emissions, radioactive waste), it is vital to save energy. Electronics equipment in offices is often left running continuously and thereby consumes a lot of energy.

What does labelling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

Approval requirements cover a wide range of issues: environment, ergonomics, usability, emission of electric and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, among other things. The product must be prepared for recycling and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, physical and visual ergonomics and good usability.

You will find a brief summary of the environmental requirements met by this product on the right. The complete environmental criteria document may be ordered from:

TCO Development

SE-114 94 Stockholm, Sweden

Fax: +46 8 782 92 07

Email (Internet): development@tco.se

Current information regarding TCO'99 approved and labelled products may also be obtained via the Internet, using the address: <http://www.tco-info.com/>

Environmental Requirements

Flame retardants

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chloride, and those flame retardants are chemically related to another group of environmental toxins, PCBs. Both the flame retardants containing bromine or chloride and the PCBs are suspected of giving rise to severe health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes. Flame retardants have been found in human blood and researchers fear that disturbances in foetus development may occur.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses.

The relevant TCO'99 requirement states that batteries, the colour-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

Mercury**

Mercury is sometimes found in batteries, relays and switches. It damages the nervous system and is toxic in high doses.

The relevant TCO'99 requirement states that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit.

CFCs (freons)

The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light with e.g. increased risks of skin cancer (malignant melanoma) as a consequence.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. Lead damages the nervous system and in higher doses, causes lead poisoning.

The relevant TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

* Bio-accumulative is defined as substances which accumulate within living organisms.

** Lead, Cadmium and Mercury are heavy metals which are Bio-accumulative.

For U.S.A, Canada, etc. (rated 100-120 Vac) Only

FCC Declaration of Conformity

We, the Responsible Party EIZO NANAOTECHNOLOGIES INC.
5710 Warland Drive, Cypress, CA 90630
Phone: (562) 431-5011

declare that the product Trade name: EIZO
Model: FlexScan L685

is in conformity with Part 15 of the FCC Rules. Operation of this product 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.

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.

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

Note

Use the attached specified cable below or EIZO signal cable with this monitor so as to keep interference within the limits of a Class B digital device.

- AC Cord
- Shielded Signal Cable (enclosed)

Canadian Notice

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Hinweis zur Ergonomie :

Dieser Monitor erfüllt die Anforderungen an die Ergonomie nach EK1-ITB 2000 mit dem Videosignal, 1280 Punkte × 1024 Zeilen, RGB analog, 0,7 Vp-p und mindestens 75,0 Hz Bildwiederholfrequenz, non interlaced. Weiterhin wird aus ergonomischen Gründen empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast.)

Recycle Auskunft

Die Rücknahme dieses Produktes nach Nutzungsende übernimmt EIZO in Deutschland zusammen mit dem Partner von Roll MBB Recycling GmbH. Dort werden die Geräte in ihre Bestandteile zerlegt, die dann der Wiederverwertung zugeführt werden. Um einen Abholtermin zu vereinbaren und die aktuellen Kosten zu erfahren, benutzen Sie bitte folgende Rufnummer: 02153-73 35 00. Weitere Informationen finden Sie auch unter der Internet-Adresse: www.eizo.de.