

X-Series

User manual

TFT LCD Display

20"/19"/17"/15"



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Precautions

Warning on installation

- Do not cover or block the ventilation holes in the case.
- Do not install the monitor near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Optional Video adaptor installation
 - Turn off the power switch and unplug the monitor before installation to avoid electric shock or damage.
 - Install the optional video adaptor on a stable surface. The monitor may cause injury or damage if it falls or is dropped.

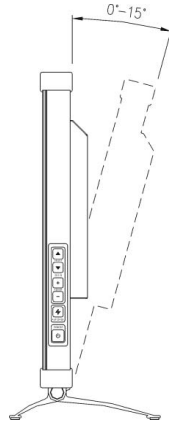
Warning on power connection

- Use an appropriate power cord for your local power supply.
- The outlet should be installed near the monitor and be easily accessible.
- Do not allow anything to rest on the power cord.
- Disconnect the power plug from the power outlet under following conditions:
 - If you will not use it for an indefinite period time.
 - When the power cord or plug is damaged or frayed.
 - If the product has been dropped or the cabinet has been damaged.
 - If the product exhibits a distinct change in performance, indicate a need for service.

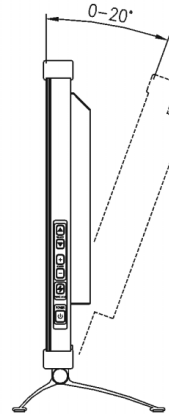
Warning on tilt

- Use the monitor's tilt capability to adjust its vertical orientation to an appropriate position. Grasp the top corners of the monitor with both hands and tilt to the desired angle.

X-20 / X-19 / X-17



X-15



Warning on Maintenance

- Clean the cabinet, glass, and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzene.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a pen or screwdriver. This type of contact may result in a scratched glass.
- Do not insert sharp objects or spill liquid into the monitor through ventilation holes. They may cause accident fire, electric shock or failure.
- Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage potentials or other risks.

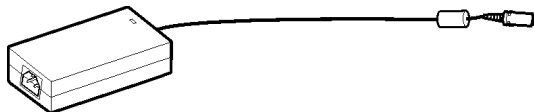
Warning on transportation

- When you transport this monitor for repair or shipment, use the original carton and packing materials.

Package Contents

Before using this monitor, check the following items are included in your carton box:

- Monitor (*1)
- Power adapter (X-19 / X-17 / X-15 *1)



- Power cord (*1)

➤ X-19 / X-17 / X-15



➤ X-20



- D-sub 15-pin signal cable (*1)



- Digital DVI signal cable (*1) *(Optional)*



- S- Video cable (*1,) *(Optional)*



- CVBS cable (*1) *(Optional)*



- CD-ROM (containing Windows information file and user's manual)



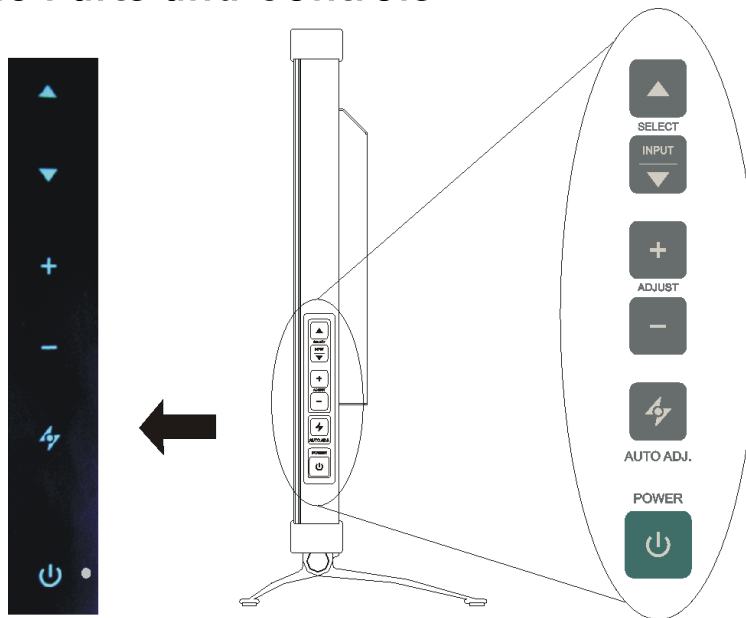
- Quick Guide



- Cleaning Cloth

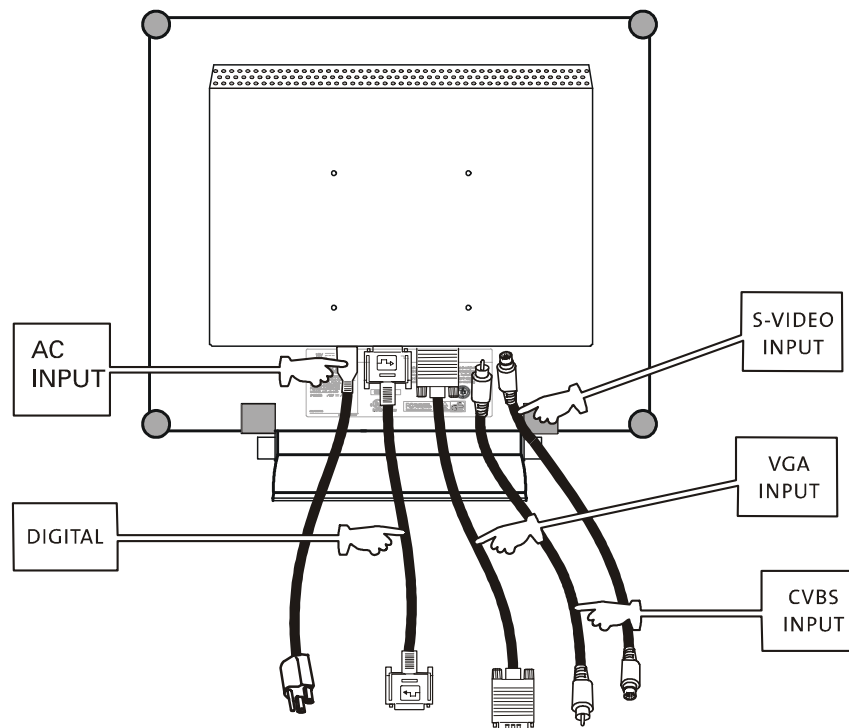


Identify the Parts and Controls



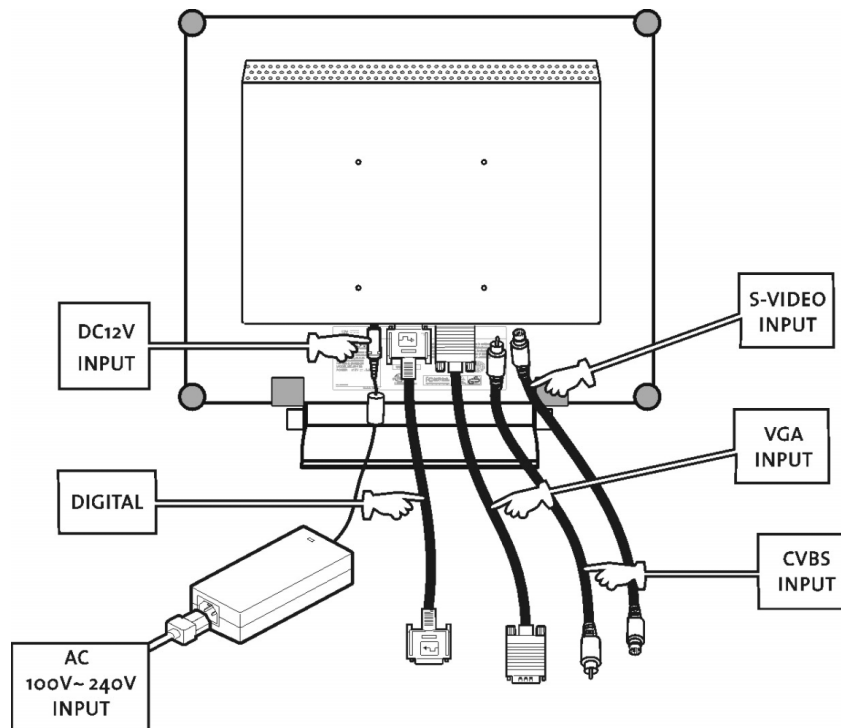
- ▲ **UP button**
Activates the On-Screen Display menu.
Move the selected item upward while the On-Screen Display sub-menu appears.
- ▼ **INPUT / DOWN button**
Move the selected item downward while the On-Screen Display sub-menu appears.
Input Select Hot key: Pressing ▲ and ▼ button for 5 seconds can switch between auto and manual input select. When you press this button, the message "Input Select: Auto" or "Input Select: Manual" will toggle on the top right hand corner of the display.
- + **Increase button**
Activates the On-Screen Display menu.
Move the selected item right while the On-Screen Display main menu appears.
Increase the adjustment value of selected item while the On-Screen Display sub-menu appears.
- **Decrease button**
Activates the On-Screen Display menu.
Move the selected item left while the On-Screen Display main menu appears.
Decrease the adjustment value of selected item while the On-Screen Display sub-menu appears
- ⚡ **AUTO button**
Adjust the picture position and performance automatically.
You are recommended to press the button the first time you use the monitor or every time you change the resolution and/or refresh rate of the input signal.
- ⏻ **Power switch**
Turns the monitor on or off.
- **LED indicator**
Indicates the monitor's operational mode; green for regular operation, and amber for power saving mode.

X-20



- **AC Power outlet**
Provides AC power to the monitor.
- **VGA-In**
D-sub 15-pin connector for VGA signal.
- **S-VIDEO-In (Optional)**
Connector for S-Video signal.
- **CVBS-In (Optional)**
Connector for CVBS signal.
- **Digital (Optional)**
DVI-D connector for digital signal input

X-19 / X-17 / X-15

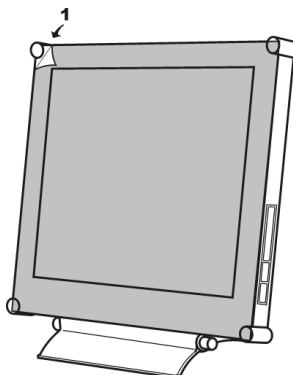


- **DC +12V Power inlet**
Provides +12V DC power to the monitor.
- **VGA-In**
D-sub 15-pin connector for VGA signal.
- **S-VIDEO-In (Optional)**
Connector for S-Video signal.
- **CVBS-In (Optional)**
Connector for CVBS signal.
- **Digital (Optional)**
DVI-D connector for digital signal input

Setup

Please follow the following instructions to setup monitor.

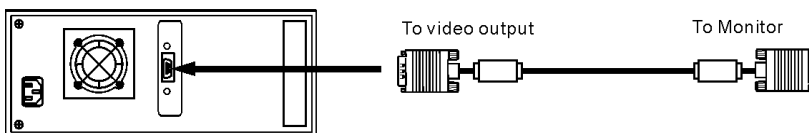
Step 1: Remove all packing materials and wrapping from the monitor and then tear down the plastic dust cover from the screen surface.



Step 2: With the computer or video equipment turned off, connect the enclosed VGA signal cable.

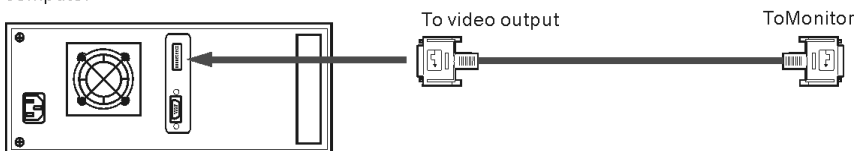
- Connecting to an IBM or IBM compatible computer

IBM PC/AT or compatible computer



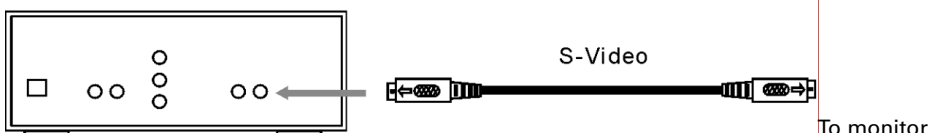
- Connecting to a video equipment with digital source (*Optional*)

IBM PC/AT or compatible computer



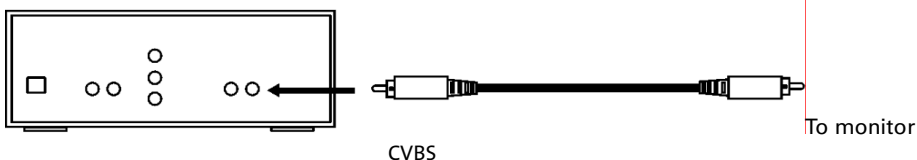
- Connecting to a video equipment with S-Video connector (*Optional*)

DVD or other video equipment

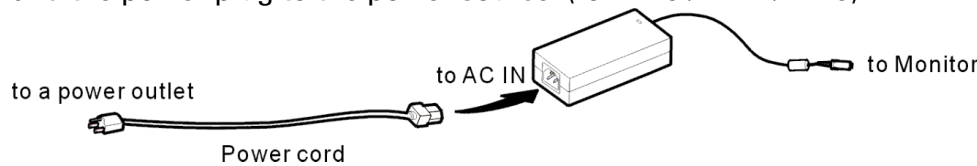



- Connecting to a video equipment with CVBS jack (*Optional*)

DVD or other video equipment



Step 3: With the monitor turned off, connect the monitor end power plug of adaptor to the power jack of the monitor. Then connect the power cord to the adaptor and the power plug to the power source. (for X-19 / X-17 / X-15)



Step 4: Turn on your computer or video equipment. Press  power switch to turn on monitor.

Step 5: For best performance.(If the monitor is connected to a video equipment such as DVD or VCR player, please skip this step.)

For X-20 LCD monitor, it will have the best performance at resolution 1600 x 1200. Ensure that your computer display is set at 1600 x 1200 pixels and 60Hz. Press the AUTO button. The monitor will optimize the display automatically.

For X-19 / X-17 LCD monitor, it will have the best performance at resolution 1280 x 1024. Ensure that your computer display is set at 1280 x 1024 pixels and 60Hz. Press the AUTO button. The monitor will optimize the display automatically.

For X-15 LCD monitor, it will have the best performance at resolution 1024 x 768. Ensure that your computer display is set at 1024 x 768 pixels and 60Hz. Press the AUTO button. The monitor will optimize the display automatically.

Install information (.inf) file for Microsoft Windows 2000/XP

The information file (also known as driver) for Microsoft Windows 2000/XP is available in the enclosed floppy disk or CD-ROM. You may install the enclosed driver for better communication between the monitor and Windows 2000/XP. The installation details can be found in the driver disk.




Customizing Your Monitor

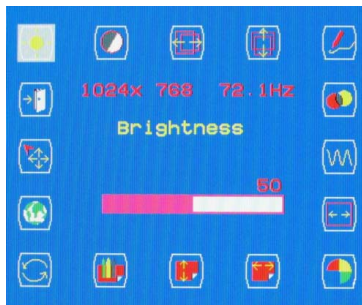
Adjusting Your LCD Panel

In the OSD menu, you will find all kinds of features to help you adjust your LCD panel to the optimal performance.

Important! Though manual adjustment of the LCD panel is available, we strongly recommend you to use the auto adjustment function of the panel. It will automatically tune your LCD panel to the optimal performance. Simply push the AUTO button to enable the auto adjustment function. Additionally, we recommend you to use the auto adjustment function every time after you have change the resolution or frequency of your display.

Selecting OSD Features









1. Push ,  or  button to call out the OSD menu. The sixteen OSD



icons are represented in the following menu.

2. In case of using video adapter and selecting video or S- video, the OSD menu is shown below.



3. Push  or  to move the highlight bar to the desired icon.
4. Then push  or  for adjustment or Sub-function selection.
5. In case of above Sub-function selection, push  or  to confirm the desired selection.
6. In case of no OSD menu, the icon  can do auto adjustment function.
7. In case of having OSD menu, the icon  can do exit function.

OSD Menu

VGA-Input

Brightness Adjustment



Contrast Adjustment



Horizontal Position Adjustment



Vertical Position Adjustment



Sharpness Adjustment



OSD Transparency Adjustment



Phase Adjustment



Clock Adjustment



Color Temperature Selection



P.S. The color temperature of RGB can be adjusted in case of entering " USER " sub menu.

Horizontal OSD Position Adjustment



Vertical OSD Position Adjustment



Graphic/Text Selection



P.S. Suggest the user select " Text " sub menu in case of the resolution being 640x350 or 640x400.

Recall Selection



P.S. Suggest the user to use " Recall "icon, if the user doesn't satisfy with the adjustment.

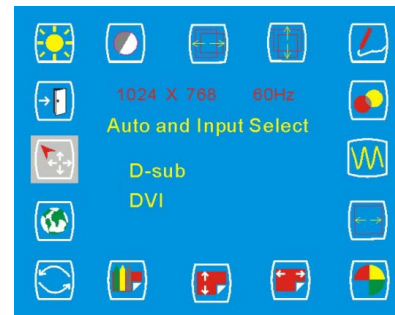
Language Selection



Input Select Selection

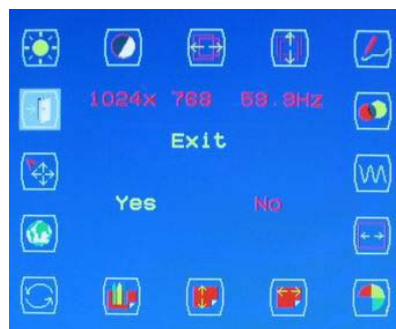


Within video / s-video



Without video / s-video

Exit Selection



DVI-Input (Optional)

Brightness Adjustment



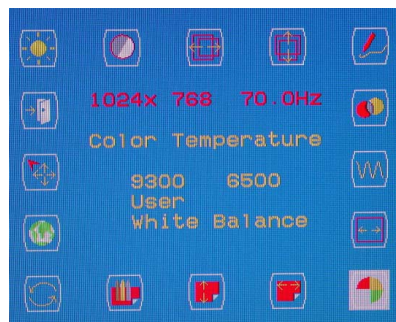
Contrast Adjustment



OSD Transparency Adjustment



Color Temperature Selection



P.S. The color temperature of RGB can be adjusted in case of entering " USER " sub menu.

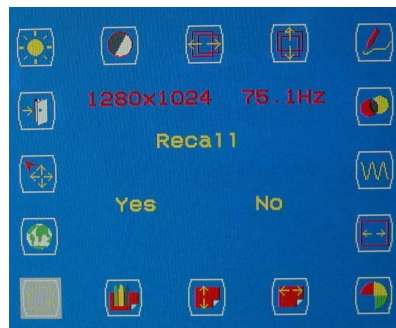
Horizontal OSD Position Adjustment



Vertical OSD Position Adjustment



Recall Selection



P.S. Suggest the user to use " Recall "icon, if the user doesn't satisfy with the adjustment.

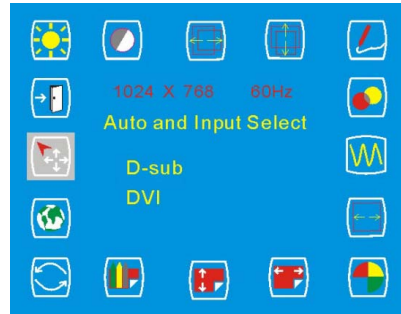
Language Selection



Input Select Selection

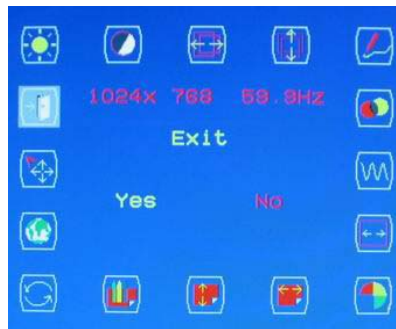


Within video / s-video



Without video / s-video

Exit Selection



CVBS Input / S-VIDEO Input *(Optional)*

Brightness Adjustment



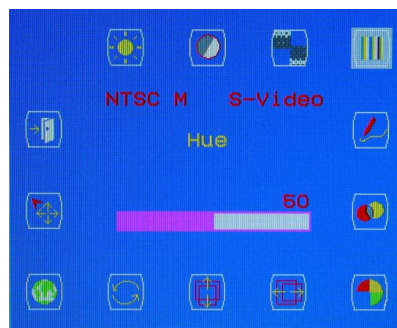
Contrast Adjustment



Color Adjustment



Hue Adjustment



Sharpness Adjustment



OSD Transparency Adjustment



Color Temperature Selection



P.S. The color temperature of RGB can be adjusted in case of entering " USER " sub menu.

Horizontal Position Adjustment



Vertical OSD Position Adjustment



Recall Selection



P.S. Suggest the user to use " Recall "icon, if the user doesn't satisfy with the adjustment.

Language Selection



Input Select Selection




Within video / s-video

Exit Selection





Warning Messages and Troubleshooting

Warning Messages

If the message appears on the screen	Check the items
CAN NOT DISPLAY THIS INPUT SIGNAL	<p>The input signal is not acceptable by the monitor.</p> <ul style="list-style-type: none">• Please check the video resolution and frequency range is within that specified for the monitor.• Please refer to the “Technical Specifications” section of this user manual for details.
NO SIGNAL INPUT	<p>No signal inputs are detected from any one of the input connectors.</p> <p>Check that the power switch of your computer or video source is in the “ON” position.</p> <ul style="list-style-type: none">• Check that the signal cable is connected properly.• Ensure that no pins are bent or pushed in the connectors of signal cable.
WAIT FOR AUTOMATIC ADJUSTMENT	<p>The monitor is detecting the input signal and then adjusting automatically the monitor parameters accordantly.</p> <ul style="list-style-type: none">• It takes around 5 seconds to finish the whole process.• You are recommended to run auto adjustment by pressing  (AUTO) button every time you changed the resolution or refresh rate.

Troubleshooting

Symptom	Check Items
<ul style="list-style-type: none"> No picture Power LED is off. 	<ul style="list-style-type: none"> Check that the power switch of monitor is turned on. Check that the power adapter is properly connected to the monitor. Check that the power cord is properly connected to the power adapter. Check that the power cord is properly connected to power outlet. Check there is electrical power coming from the power outlet. Use another device to check for power.
<ul style="list-style-type: none"> No display Power LED is Amber 	<ul style="list-style-type: none"> Check if your PC is in standby mode (move the mouse or push any key will wake up your PC). Check if your PC or video source is ON. Check if the signal cable is correctly connected.
<ul style="list-style-type: none"> The texts are not solid 	<ul style="list-style-type: none"> Change the resolution of the video signal to 1600 * 1200 (for X-20) or 1280*1024 (for X-19/X-17) or 1024*768 (for X-15). Press  (AUTO) button to run the automatic adjustment. Adjust Clock and Phase in the OSD menu to fine tune. (Please refer to the "Customizing Your Monitor" section of this user manual for details.)
<ul style="list-style-type: none"> Screen image is not centered properly. Some lines are missing 	<ul style="list-style-type: none"> Press  (AUTO) button to run the automatic adjustment. Adjust H. Position and V. Position to fine tune. (Please refer to the "Customizing Your Monitor" section of this user manual for details.)
<ul style="list-style-type: none"> There are red, green, blue or black tiny dots on the screen. 	<ul style="list-style-type: none"> The TFT LCD panel is made of millions of small transistors. And each defect transistor will cause a missing red, green, or blue dot. It's guarantees maximum 3 missing dots in every single monitor. It's around the industrial standard.

Technical Specifications

Specifications X-20

Electrical characteristics		
Screen size		20.1" (51 cm) diagonal
Pixel format		1600 x 1200 vertical stripe
Analogue	Horizontal frequency	30kHz – 94kHz
	Vertical frequency	50Hz – 75Hz
Digital	Horizontal frequency	30kHz – 80kHz
	Vertical frequency	50Hz – 75Hz
Maximum pixel clock(Analogue)		203MHz
Maximum pixel clock(Digital)		165MHz
Connections		Power: 3-Pin AC Plug
Power Consumption		< 60W (On) < 5W (sleep) < 5W (Off)
Physical characteristics		
Weight		Net: 8.2 kg (18.04 lb)
Tilt angle		0° - 15°

X-19

Electrical characteristics		
Screen size		19.0" (48.2 cm) diagonal
Pixel format		1280 x 1024 vertical stripe
Horizontal frequency		30kHz – 80kHz
Vertical frequency		50Hz – 75Hz
Maximum pixel clock		135MHz
Connections		Power: 3-Pin AC Plug
Power Consumption		< 50W (On) < 4W (sleep) < 2W (Off)
Physical characteristics		
Weight		Net: 7.4Kg (16.3 lb)
Tilt angle		0° - 15°

X-17

Electrical characteristics	
Screen size	17.0" (43.1 cm) diagonal
Pixel format	1280 x 1024 vertical stripe
Horizontal frequency	30kHz – 80kHz
Vertical frequency	50Hz – 75Hz
Maximum pixel clock	135MHz
Connections	Power: 3-Pin AC Plug
Power Consumption	< 48W (On), < 4W (sleep) < 2W (Off)
Physical characteristics	
Weight	Net: 6.4Kg (14.1 lb)
Tilt angle	0° - 15°

X-15

Electrical characteristics	
Screen size	15.0" (38.1 cm) diagonal
Pixel format	1024 x 768 vertical stripe
Horizontal frequency	30kHz – 60kHz
Vertical frequency	50Hz – 75Hz
Maximum pixel clock	80MHz
Connections	Power: 3-Pin AC Plug
Power Consumption	< 40W (On), < 4W (sleep) < 2W (Off)
Physical characteristics	
Weight	Net: 4.8 Kg (10.6 lb)
Tilt angle	0° - 20°

FCC compliance

This device complies with Part 15 of the FCC Rules. 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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

WARNING: Any unauthorized modification to this equipment could result in the revocation of the authorization to operate the equipment and void the product warranty.

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Information for users applicable in European Union countries



The symbol on the product or its packaging signifies that this product has to be disposed separately from ordinary household wastes at its end of life. Please kindly be aware that this is your responsibility to dispose electronic equipment at recycling centers so as to help conserve natural resources. Each country in the European Union should have its collection centers for electrical and electronic equipment recycling. For information about your recycling drop off area, please contact your local related electrical and electronic equipment waste management authority or the retailer where you bought the product.

Information for users applicable in United States of America



LAMP(S) inside this product contain mercury and must be recycled or disposed of according to local, state or federal laws. For more information, contact the electronic industries alliance at www.eiae.org for lamp specific disposal information check www.lamprecycle.org.