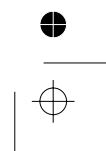
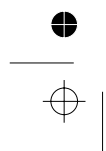
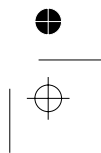
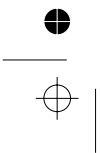
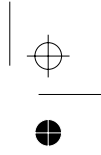
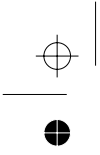


English

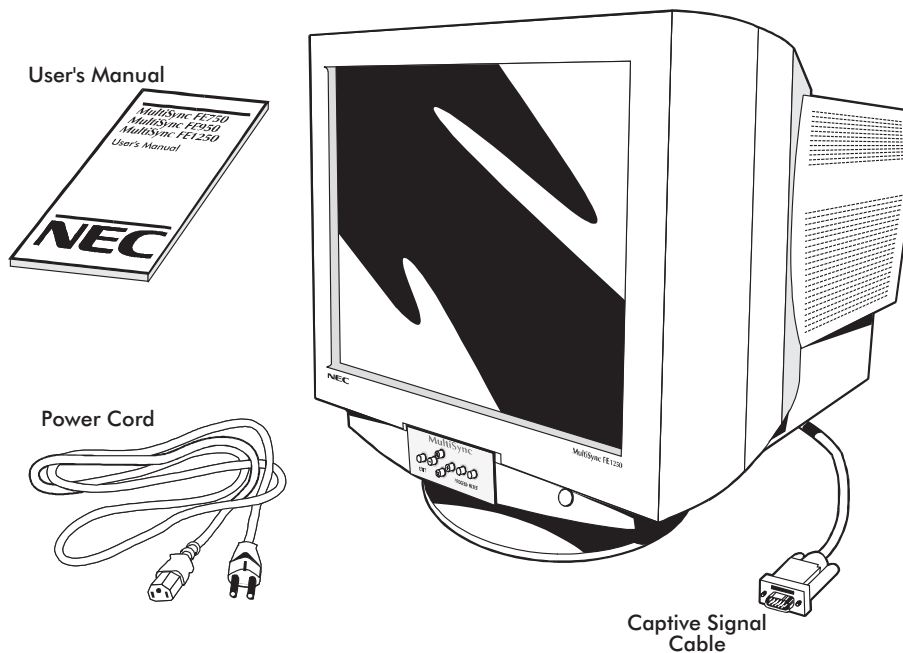




Contents

FE Series monitor box* should contain the following:

- MultiSync FE Series Monitor with tilt/swivel base
 - MultiSync FE750 (JC-17W40) or
 - MultiSync FE950 (JC-19W40) or
 - MultiSync FE1250 (JC-22W71)
- Power Cord
- Captive Signal Cable
- User's Manual



* Remember to save your original box and packing material to transport or ship the monitor.



Quick Start

To attach the MultiSync FE Series monitor to your system, follow these instructions:

1. Turn off the power to your computer and MultiSync monitor.
2. If necessary, install the display card. For more information, refer to the display card manual.
3. **For the PC:** Connect the 15-pin mini D-SUB of the captive signal cable to the connector of the display card in your system (Figure A.1). Tighten all screws.

For the Mac: Connect the Macintosh Cable Adapter (not included) to the monitor connector on the Macintosh (Figure B.1). Attach the 15-pin mini D-SUB end of the captive signal cable to the Macintosh cable adapter on the computer (Figure B.1). Tighten all screws.

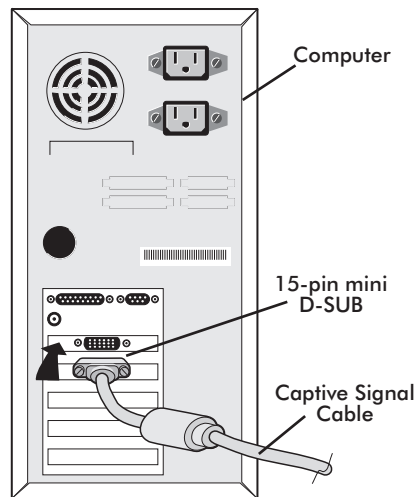


Figure A.1

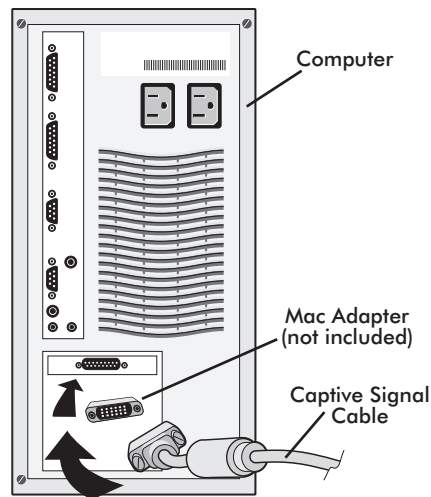
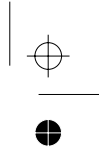
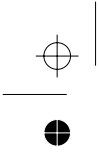


Figure B.1





4. Connect one end of the power cord to the monitor and the other end to the power outlet (Figure C.1).

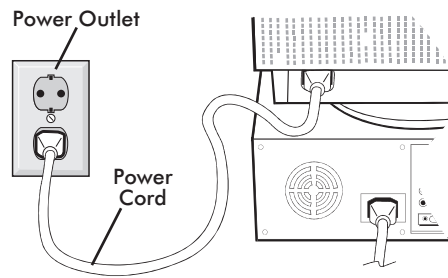


Figure C.1

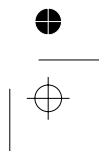
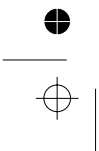
5. Turn on the monitor (Figure D.1) and the computer.



Figure D.1

6. This completes the installation.

NOTE: If you have any problems, please refer to the **Troubleshooting** section of this User's Manual.





Controls

OSM (On-Screen Manager) control buttons on the front of the monitor function as follows:



	Main Menu	Sub-Menu
EXIT	Exits the OSM menu.	Exits to the OSM main menu.
CONTROL ▲/▼	Moves the highlighted area up/down to select one of the controls.	Moves the highlighted area up/down to select one of the controls.
CONTROL -/+	Moves highlighted area left/right to select one of the controls.	Moves the bar in the - or + direction to decrease or increase the adjustment.
PROCEED	Has no function .	Only executes control or enters sub, sub-menu.
RESET	Resets all the controls within the highlighted menu to the factory setting.	Resets the highlighted control to the factory setting.

NOTE: When **RESET** is pressed in the main and sub-menu, a warning window will appear allowing you to cancel the reset function.

When OSM controls are activated, icons are displayed at the top of the menu. If an arrow (→) is displayed in a sub-menu, it indicates further choices are available. To enter a sub, sub-menu, press **PROCEED**.

Brightness/Contrast Controls

BRIGHTNESS: Adjusts the overall image and background screen brightness.

CONTRAST: Adjusts the image brightness in relation to the background.

DEGAUSS: Eliminates the build-up of stray magnetic fields which alter the correct scan of the electron beams and affect the purity of the screen colours, focus, and convergence. When activated, your screen image will jump and waver a bit as the screen is demagnetized.

Caution: Please allow a minimum of 20 minutes to elapse between uses of the Degauss function.

Size and Position Controls

AUTO ADJUST: Automatically adjusts the horizontal and vertical size and position settings for applicable signal timings.

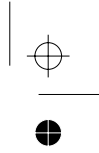
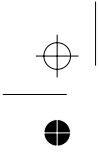
LEFT/RIGHT: Moves the image horizontally (left or right).

DOWN/UP: Moves the image vertically (up or down).

NARROW/WIDE: Decreases or increases the horizontal size of the image.

SHORT/TALL: Decreases or increases the vertical size of the image.





RGB Color Control

Color Presets 1 through 5, selects the desired color setting. The bar is replaced by the color setting choice from 1 to 5. Each color setting is adjusted at the factory to the stated Kelvin. If a setting is adjusted, the name of the setting will change from Kelvin to Custom.

RED, GREEN, BLUE: Decreases or increases red, green, or blue depending upon which is selected. The change in color will appear on screen and the direction (decrease or increase) will be shown by the bars.



Geometry Controls

The Geometry controls allow you to adjust the curvature or angle of the sides of your display.

IN/OUT (pincushion): Decreases or increases the curvature of the sides either inward or outward.

LEFT/RIGHT (pincushion balance): Decreases or increases the curvature of the sides either to the left or right.

TILT (parallelogram): Decreases or increases the tilt of the sides either to the left or right.

ALIGN (trapezoidal): Decreases or increases the bottom of the screen to be the same as the top.

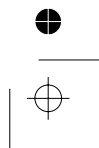
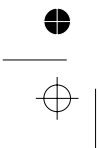
ROTATE (raster rotation): Rotates the entire display clockwise or counter clockwise.

Tools 1

MOIRÉ CANCELER: Moiré is a wavy pattern which can sometimes appear on the screen. The pattern is repetitive and superimposed as rippled images. When running certain applications, the wavy pattern is more evident than in others. To reduce moiré, adjust the ON/Level by using the -/+ CONTROL buttons.

BASIC CONVERGENCE: Aligns all three colors (R, G, B) to form a single color (white). The purpose of this control is to ensure that a white line drawn on the screen is as crisp and clear as possible.

- Use the Horizontal control to adjust the alignment of the white lines in the up/down direction.
- Use the Vertical control to adjust the alignment of the white lines in the left/right direction.





AREA CONVERGENCE: A small window will appear to indicate the area of adjustment — Top Horizontal, Top Vertical, Bottom Horizontal or Bottom Vertical.



CORNER CORRECTION: Allows you to adjust the geometry of the corners of your display — Top, Top Balance, Bottom or Bottom Balance.

LINEARITY: The Linearity selection allows you to adjust the spacing of the areas on the screen. The purpose of this control is to ensure that a 2 cm circle is a true 2 cm circle wherever it is drawn on the screen. The best way to determine the vertical linearity is as follows:

- Draw equally spaced horizontal lines using a drawing application that has a ruler.
- Use the Vertical Balance control to adjust the lines near the top and bottom of your screen.
- Use the Vertical control to adjust the spacing between the lines near the centre and top of your screen.

GLOBALSYNC CONTROL (MultiSync FE950 and MultiSync FE1250 only): Eliminates picture impurities that may result from the earth's magnetic field. While in the sub-menus (TOP LEFT, TOP RIGHT, BOTTOM LEFT or BOTTOM RIGHT), use the -/+ control buttons to fine tune the GlobalSync corrections.

Note: NEC recommends that you perform GlobalSync correction while running a typical application such as a spreadsheet or text document.

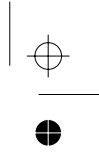
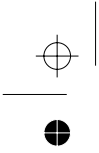
FACTORY PRESET: Selecting Factory Preset allows you to reset most OSM settings back to the factory settings. A warning statement will appear to confirm that you do want to reset ALL settings. Individual settings can be reset by highlighting the control to be reset and pressing the **RESET** button.

Tools 2

LANGUAGE: OSM menus are available in 7 languages.

OSM TURN OFF: The OSM menu will stay on as long as it is in use. In the OSM Turn Off sub-menu, you can select how long the monitor waits after the last touch of a button to shut off the OSM menu. The preset choices are 10, 20, 30, 60, 120 seconds.





OSM LOCK OUT: This control completely locks out access to all OSM functions except brightness and contrast controls. When attempting to activate OSM while in the lockout mode, a screen will appear indicating that OSM controls are locked out. To activate the OSM Lockout function, press **PROCEED**, then press “▲” and hold down simultaneously. To de-activate the OSM Lockout, press **PROCEED**, then press “▲” and hold down simultaneously.

IPM System Off Mode:

- ENABLE: The IPM works normally, all stages of the energy saving are used.
- DISABLE: The OFF MODE of the IPM is not used.

NOTE: For standard computers and display cards you should keep the factory setting **ENABLE**.

EDGELOCK CONTROL: Operating your monitor at a non-standard timing may cause images to appear darker than normal or have color distortion. Use of the EdgeLock control will adjust images to their normal state.

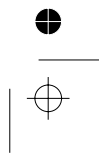
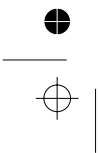
REFRESH NOTIFIER: A message will advise you if the refresh rate of the signal being applied to the monitor by the computer is too low. For further information, please refer to your display card or system manual. Factory setting is OFF.

i Information

Provides you with additional information which includes the following:

DISPLAY MODE: Indicates the current mode and frequency setting of the monitor.

MONITOR INFO: Indicates the model number and the serial number.





Recommended use

Safety Precautions and Maintenance



FOR OPTIMUM PERFORMANCE, PLEASE NOTE THE FOLLOWING WHEN SETTING UP AND USING THE MULTISYNC FE SERIES COLOR MONITOR:



- **DO NOT OPEN THE MONITOR.** There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Use the monitor in a clean, dry area.
- Do not spill any liquids into the cabinet or use your monitor near water.
- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- Keep the monitor away from high capacity transformers, electric motors and other devices such as external speakers or fans, which may create strong magnetic fields.
- If possible, position the monitor so that it is facing the east to minimize the effects of the earth's magnetic field.
- Changing the direction of the monitor while it is powered on may cause image discoloration. To correct this, turn the monitor off for 20 minutes before powering it back on.
- To separate the equipment from the power source you have to remove the plug from the inlet socket.
- When operating the MultiSync monitor with its AC 220-240V worldwide power supply, use a power supply cord that matches the power supply voltage of the AC power outlet being used. The power supply cord you use must have been approved by and comply with the safety standards of your country. (Type H05VV-F should be used except in UK)
- In UK, use a BS-approved power cord with molded plug having a black (5A) fuse installed for use with this monitor. If a power cord is not supplied with this monitor, please contact your supplier.

Immediately unplug your monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.





- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.



CAUTION

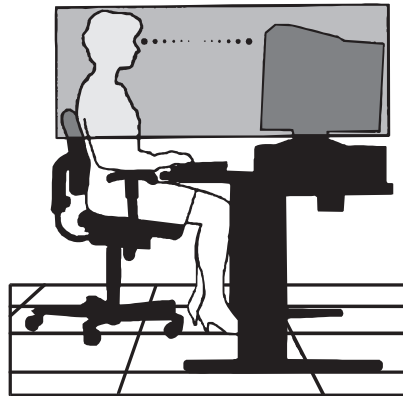
- Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
- Handle with care when transporting. Save packaging for transporting.

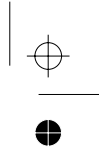
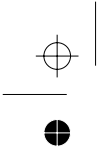


CORRECT PLACEMENT AND ADJUSTMENT OF THE MONITOR CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK THE FOLLOWING WHEN YOU POSITION THE MONITOR:



- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 40 cm and no further away than 70 cm from your eyes. The optimal distance is 60 cm.
- Rest your eyes periodically by focusing on an object at least 6 m away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.
- If reflected light makes it hard for you to see your screen, use an anti-glare filter.
- Clean your monitor regularly. Use a lint-free, non-abrasive cloth and a non-alcohol, neutral, non-abrasive cleaning solution or glass cleaner to minimize dust.





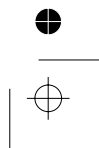
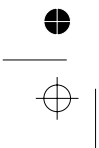
- Adjust the monitor's brightness and contrast controls to enhance readability.
- Use a document holder placed close to the screen.
- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.
- Get regular eye checkups.



Ergonomics

To realize the maximum ergonomics benefits, we recommend the following:

- Adjust the Brightness until the background raster disappears
- Do not position the Contrast controls to its maximum setting
- Use the preset Size and Position controls with standard signals
- Use the preset Color Setting and Sides Left/Right controls
- Use non-interlaced signals with a vertical refresh rate between 75-160 Hz
- Do not use primary color blue on a dark background, as it is difficult to see and may produce eye fatigue due to insufficient contrast



Specifications

Monitor Specifications	MultiSync FE750 Monitor	Notes
Picture Tube Viewable Image Size: Diagonal: Radius:	43 cm (17 inch) 41 cm (16 inch) 50000 mm	90° deflection, 0.25 mm grille pitch, medium short persistence phosphor, aperture grille CRT, multi-layered, anti-static screen coating, dark tint screen and OptiClear screen surface.
Input Signal	Video: ANALOG 0.7 Vp-p/75 Ω Sync: Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. (Positive/Negative) (TTL Level)	
Display Colors	Analog input: Unlimited number of Colors	Depends on the display card
Synchronization Range	Horizontal: 31 kHz to 92 kHz Vertical: 55 Hz to 160 Hz	Automatically Automatically
Resolutions Supported Resolution based on horizontal and vertical frequencies only	640 x 480 @ 60 to 160 Hz 800 x 600 @ 55 to 141 Hz 832 x 624 @ 55 to 136 Hz 1024 x 768 @ 55 to 112 Hz 1152 x 870 @ 55 to 99 Hz 1280 x 1024 @ 55 to 85 Hz 1600 x 1200 @ 55 to 73 Hz	Some systems may not support all modes listed NEC cites recommended resolution at 85 Hz for optimal display performance.
Active Display Area (Factory setting)	Horizontal: 315 mm Vertical: 236 mm	Dependent upon signal timing used, and does not include border area.
Active Display Area (Full scan)	325 mm 243 mm	Dependent upon signal timing used, and does not include border area.
Power Supply	AC 100-120 V / 220-240 V, 50/60 Hz	
Current Rating	1.1 A @ 100-120 V / 0.5 A @ 220-240 V	
Dimensions	403 (W) x 427 (H) x 424 (D) mm	
Weight	20.0 kg	
Environmental Considerations	Operating Temperature: +10° C to +35° C Humidity: 30% to 80% Altitude: 0 to 3000 m Storage Temperature: -20° C to +60° C Humidity: 10% to 90% Altitude: 0 to 13700 m	

NOTE: Technical specifications are subject to change without notice.





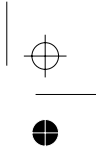
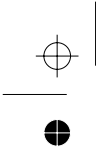
Monitor Specifications	MultiSync FE950 Monitor	Notes
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Picture Tube	Diagonal: 49.5 cm (19 inch) Viewable Image Size: 45.8 cm (18 inch) Radius: 57800 mm	90° deflection, 0.25-0.27 mm (variable) grille pitch, medium short persistence phosphor, aperture grille CRT, multi-layered, anti-static screen coating, semi-dark tint screen, and OptiClear screen surface.
Input Signal	Video: ANALOG 0.7 Vp-p/75 Ω Sync: Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. (Positive/Negative) (TTL Level)	
Display Colors	Analog input: Unlimited number of Colors	Depends on the display card
Synchronization Range	Horizontal: 31 kHz to 96 kHz Vertical: 55 Hz to 160 Hz	Automatically Automatically
Resolutions Supported Resolution based on horizontal and vertical frequencies only	640 x 480 @ 60 to 160 Hz 800 x 600 @ 55 to 152 Hz 832 x 624 @ 55 to 146 Hz 1024 x 768 @ 55 to 119 Hz 1152 x 870 @ 55 to 104 Hz 1280 x 1024 @ 55 to 89 Hz 1600 x 1200 @ 55 to 76 Hz 1792 x 1344 @ 55 to 68 Hz	Some systems may not support all modes listed NEC cites recommended resolution at 85 Hz for optimal display performance.
Active Display Area (Factory setting)	Horizontal: 356 mm Vertical: 267 mm	Dependent upon signal timing used, and does not include border area.
Active Display Area (Full scan)	366 mm 275 mm	Dependent upon signal timing used, and does not include border area.
Power Supply	AC 100-120 V / 220-240 V, 50/60 Hz	
Current Rating	1.2 A @ 100-120 V / 0.6 A @ 220-240 V	
Dimensions	442 (W) x 456 (H) x 447 (D) mm	
Weight	24.3 kg	
Environmental Considerations	Operating Temperature: +10° C to +35° C Humidity: 30% to 80% Altitude: 0 to 3000 m Storage Temperature: -20° C to +60° C Humidity: 10% to 90% Altitude: 0 to 13700 m	

NOTE: Technical specifications are subject to change without notice.

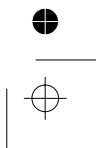
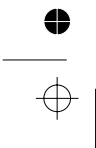




Monitor Specifications	MultiSync FE1250 Monitor	Notes
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Picture Tube	Diagonal: 55.3 cm (22 inch) Viewable Image Size: 50.8 cm (20 inch) Radius: 57800 mm	90° deflection, 0.25-0.27 mm (variable) grille pitch, medium short persistence phosphor, aperture grille CRT, multi-layered, anti-static screen coating, semi-dark tint screen, and OptiClear screen surface.
Input Signal	Video: ANALOG 0.7 Vp-p/75 Ω Sync: Separate sync. TTL Level Horizontal sync. Positive/Negative Vertical sync. Positive/Negative Composite sync. (Positive/Negative) (TTL Level)	
Display Colors	Analog input: Unlimited number of Colors	Depends on the display card
Synchronization Range	Horizontal: 31 kHz to 110 kHz Vertical: 55 Hz to 160 Hz	Automatically Automatically
Resolutions Supported Resolution based on horizontal and vertical frequencies only	640 x 480 @ 60 to 160 Hz 800 x 600 @ 55 to 160 Hz 832 x 624 @ 55 to 160 Hz 1024 x 768 @ 55 to 136 Hz 1152 x 870 @ 55 to 120 Hz 1280 x 1024 @ 55 to 102 Hz 1600 x 1200 @ 55 to 88 Hz 1792 x 1344 @ 55 to 78 Hz 1800 x 1440 @ 55 to 73 Hz 1856 x 1392 @ 55 to 75 Hz 1920 x 1440 @ 55 to 73 Hz	Some systems may not support all modes listed NEC cites recommended resolution at 85 Hz for optimal display performance.
Active Display Area (Factory setting)	Horizontal: 396 mm Vertical: 297 mm	Dependent upon signal timing used, and does not include border area.
Active Display Area (Full scan)	406 mm 305 mm	Dependent upon signal timing used, and does not include border area.
Power Supply	AC 100-120 V / 220-240 V, 50/60 Hz	
Current Rating	1.4 A @ 100-120 V / 0.7 A @ 220-240 V	
Dimensions	483 (W) x 501 (H) x 472 (D) mm	
Weight	32.0 kg	
Environmental Considerations	Operating Temperature: +10° C to +35° C Humidity: 30% to 80% Altitude: 0 to 3000 m Storage Temperature: -20° C to +60° C Humidity: 10% to 90% Altitude: 0 to 13700 m	

NOTE: Technical specifications are subject to change without notice.





Features



Flat Aperture Grille CRT: Delivers an unparalleled viewing experience with a virtually flat image, eliminating distortion and reducing glare so that what you see on-screen is what you get on your printed output. The striped phosphor alignment of the CRT delivers superior vertical definition with improved brightness for more uniform image contrast.

OptiClear Screen Surface: Reduces reflection and glare and increases contrast without sacrificing focus level, clarity or brightness.

Dual Dynamic Beam Focus: Provides precise, continuous focus adjustment of the electron beams and optimum image quality, even to the far edge of the screen.

Color Control System: Allows you to change between five color settings on your display to match your personal preference.

OSM (On-Screen Manager) Controls: Allow you to quickly and easily adjust all elements of your screen image via simple to use on-screen menus.

ErgoDesign Features: Enhance human ergonomics to improve the working environment, protect the health of the user and save money and is compliant with TCO'99 and MPRII for lower emissions.

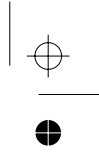
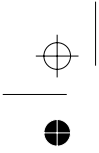
Plug and Play: The Microsoft® solution with the Windows® 95/98 operating system facilitates setup and installation by allowing the monitor to send its capabilities (such as screen size and resolutions supported) directly to your computer, automatically optimizing display performance.

IPM (Intelligent Power Manager) System: Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace and is compliant with NUTEK, VESA DPMS and EPA ENERGY STAR®.

Mode	LED Indicator	Power Saving
On	Green	None
Stand By	Green	Minimum (Quickest Recovery)
Suspend	Yellow	Moderate (< 15 Watts, Moderate Recovery)
Off (IPM Mode)	Orange	Maximum (< 5 Watts, Slow Recovery)
Off (Power Switch, Off)	No Light	No Power Used (Fully Off)

Reduced Magnetic Field Technology: Reduces magnetic and alternating electric field emissions and static electricity, addressing ergonomic concerns regarding potential risks from extended computer monitor use and is compliant with TCO'99 and MPRII.





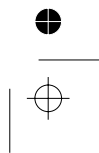
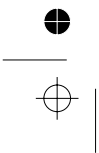
Multiple Frequency Technology: Automatically adjusts monitor to the display card's scanning frequency, thus displaying the resolution required.

FullScan Capability: Allows you to use the entire screen area in most resolutions, significantly expanding image size.

GlobalSync/Corner Purity Control (MultiSync FE950 and MultiSync FE1250 only): NEC's unique design eliminates picture impurities that may result from stray magnetic fields (including the earth's permanent magnets, etc.) and now allows you to easily adjust impurities in the four corners of your monitor.

Auto Adjust: Allows you to easily and quickly adjust the suitable horizontal and vertical size and position settings.

Convergence Control: Allows you to adjust the horizontal and vertical convergence of the top and bottom area to ensure that a white line drawn on the screen is as crisp and clear as possible.





Troubleshooting

No Picture



- The display card should be completely seated in its slot.
- Power Switch and computer power switch should be in the ON position.
- The signal cable should be completely connected to the display card/computer.
- Check the connector for bent or pushed-in pins.

Image is scrolling or unstable

- Signal cable should be completely attached to the computer.
- Check the pin assignment and signal timing of your monitor and display card with respect to the recommended timing and pin assignment.
- If the Macintosh adapter is used, check for proper connection or make sure the display card is Macintosh compatible and that the card is properly seated in the computer.

LED on monitor is not lit (no green, orange or yellow color can be seen)

- Power Switch should be in the ON position and the power cord should be connected.

Picture is fuzzy or color looks blotchy

- If the picture is fuzzy, adjust the Moire Canceler Control. If the color looks blotchy, adjust the Brightness, Contrast or GlobalSync Controls, or use the EdgeLock control to change modes.
- Access the Degauss Control through OSM. Activate the Degauss Control.

CAUTION: A minimum interval of 20 minutes should exist before the Degauss Function is used a second time.

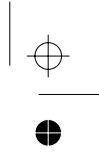
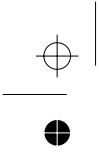
Picture bounces or a waving pattern is present in the picture

- Move electrical devices that may be causing electrical interference away from the monitor.

Edges of the display image are not square

- Use the OSM Geometry Controls to straighten the edges.
- If possible, position the front of the monitor facing east.





Display image is not centered, too small, or too large

- Use the OSM Size and Position controls to adjust the image.

Thin lines appear on your screen

- Thin lines are normal for an aperture grille CRT and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white).

