SpectraView LCD2180 WideGamut LED

User's Manual

NEC

Index

⚡ | **WARNING** | ⚠

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS THE PRONGS CAN BE FULLY INSERTED.

REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

⚡ | **CAUTION** | ⚠

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, MAKE SURE POWER CORD IS UNPLUGGED FROM WALL SOCKET. TO FULLY DISENGAGE THE POWER TO THE UNIT, PLEASE DISCONNECT THE POWER CORD FROM THE AC OUTLET.DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

⚡ This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.

⚠ This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

Power Cord Important Information

Caution: Please use the power cord provided with this display in accordance with the table below. If a power cord is not supplied with this equipment, please contact your supplier. For all other cases, please use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

Plug Type	Plug Shape	Country	Voltage
North America		U.S.A./ Canada	120

Plug Type	Plug Shape	Country	Voltage
European Continental		EU (except U.K.)	230

Declaration

Declaration of the Manufacturer

We hereby certify that the colour monitor SpectraView LCD2180 WideGamut LED (L215GF) is in compliance with

Council Directive 73/23/EEC:
– EN 60950-1

Council Directive 89/336/EEC:
– EN 55022
– EN 61000-3-2
– EN 61000-3-3
– EN 55024

and marked with

(€

NEC Display Solutions, Ltd.
4-13-23, Shibaura,
Minato-Ku
Tokyo 108-0023, Japan

△ TÜV Rheinland Product Safety | **ISO 13406-2**

Windows is a registered trademark of Microsoft Corporation. NEC is a registered trademark of NEC Corporation.
All other brands and product names are trademarks or registered trademarks of their respective owners.
ErgoDesign is a registered trademark of NEC Display Solutions, Ltd. in Austria, Benelux, Denmark, France, Germany, Italy, Norway, Spain, Sweden, U.K.
NaViSet is a trademark of NEC Display Solutions Europe GmbH in the countries of EU and Switzerland.

Canadian Department of Communications Compliance Statement

DOC: This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

C-UL: Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to CAN/CSA C22.2 No. 60950-1.

FCC Information

1. Use the attached specified cables with the SpectraView LCD2180 WideGamut LED (L215GF) colour monitor so as not to interfere with radio and television reception.

    (1) Please use the supplied power cord or equivalent to ensure FCC compliance.

    (2) Please use the supplied shielded video signal cable, DVI-D to DVI-D cable.
    Use of other cables and adapters may cause interference with radio and television reception.

2. 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 your dealer or an experienced radio/TV technician for help.

    If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Declaration of Conformity

This device complies with Part 15 of 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.

U.S. Responsible Party:	**NEC Display Solutions of America, Inc.**
Address:	**500 Park Blvd, Suite 1100**
	Itasca, Illinois 60143
Tel. No.:	**(630) 467-3000**

Type of Product:	Display Monitor
Equipment Classification:	Class B Peripheral
Model:	SpectraView LCD2180 WideGamut LED (L215GF)

We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.

Contents

Your new NEC LCD monitor box* should contain the following:

• SpectraView LCD2180 WideGamut LED monitor with tilt stand

• Power Cord (North America and European Continental)

• Video Signal Cable (DVI-D to DVI-D cable)

• User's Manual

• CD-ROM

• Cable Cover

Power Cord

SpectraView
LCD2180 WideGamut LED
User's Manual
Uživatelská příručka
Bedienerhandbuch
Οδηγίες Χρήσης
Manual del usuario
Manuel Utilisateur
Manuale utente
Gebruikershandleiding
Podręcznik użytkownika
Руководство пользователя
Kullanıcı Klavuzu

NEC

Cable Cover

User's Manual   DVI-D to DVI-D cable   CD-ROM
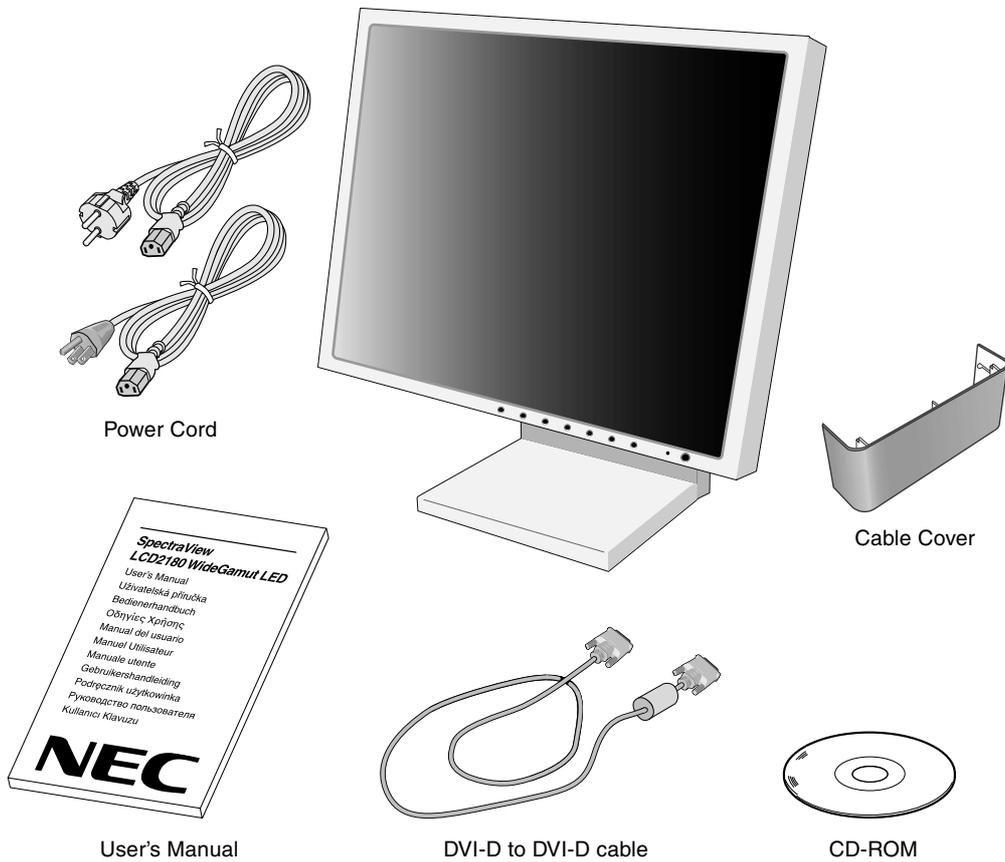
*   *Remember to save your original box and packing material to transport or ship the monitor.*

Quick Start

To attach the LCD monitor to your system, follow these instructions:

1. Turn off the power to your computer.
2. Connect the DVI signal cable to the connector of the display card in your system (**Figure A.1**). Tighten all screws.
3. Connect the DVI signal cable to the connector on the back of the monitor (**Figure C.1**).

NOTE: Incorrect cable connections may cause irregular operation, damage to the display and LCD module components and may shorten the lifespan of the module.

Collect cables and keep them in the stand with attached cable cover. The cable cover can be attached on the front or back side of Tilt Stand (**Figure C.1, C.2**).

Please check Tilt when you manage cables.

4. Connect one end of the power cord to the AC inlet on the back of the monitor and the other end to the power outlet (**Figure C.1**).

NOTE: Please refer to **Caution** section (Power Cord Important Information) of this manual for proper selection of AC power cord.

5. The Vacation Switch on the left side of the monitor must be turned on. Turn on the monitor with the front power button (**Figure D.1**) and the computer.

NOTE: The Vacation Switch is a true on/off switch. If this switch is on the OFF position, the monitor cannot be turned on using the front button. DO NOT switch on/off repeatedly.

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

Figure A.1

INPUT1   INPUT2

Figure C.1

Figure C.2

Vacation Switch

Power Button
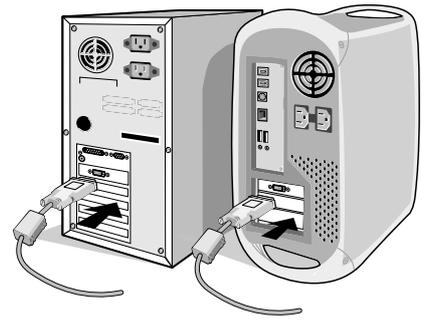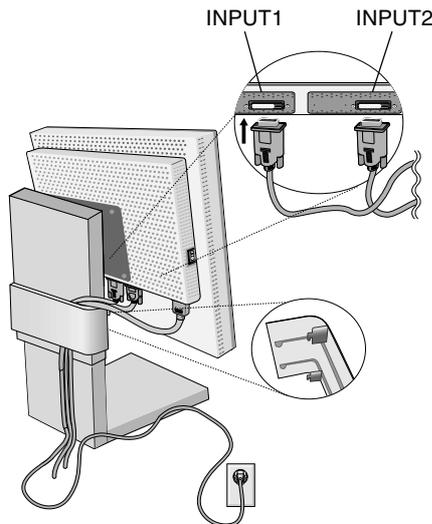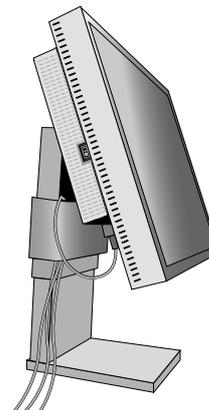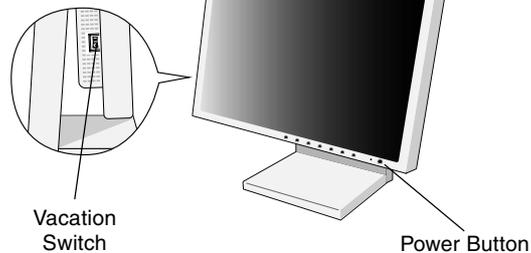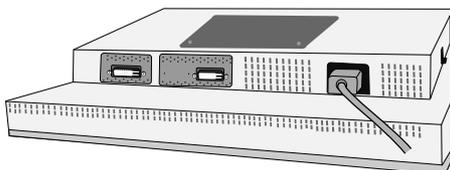
Figure D.1

Tilt

Grasp top and bottom sides of the monitor screen with your hands and adjust the tilt as desired (**Figure TS.1**).

Figure TS.1

NOTE: Handle with care when tilting the monitor screen.

Remove Monitor Stand for Mounting

To prepare the monitor for alternate mounting purposes:

1. Disconnect all cables.
2. Place monitor face down on a non-abrasive surface (**Figure S.1**).
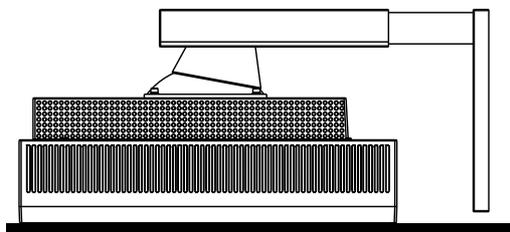
Figure S.1

3. Remove the four screws connecting the monitor to the stand using the Hexagon Socket Screw keys (**Figure S.2**). Lift the stand of the monitor. The monitor is now ready for mounting in an alternate manner.
4. Reverse this process to reattach stand: tighten the four screws.

NOTE: Use only VESA-compatible alternative mounting method (100 mm pitch).

NOTE: Handle with care when removing monitor stand.
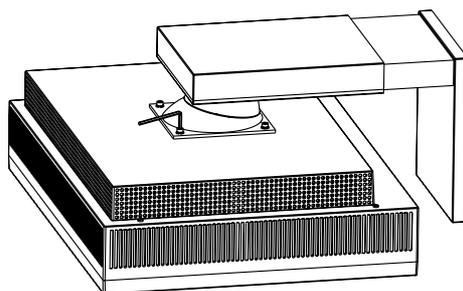
Figure S.2

NOTE: When using the original stand, be sure the two round indents are at the bottom of the screen (**Figure S.3**).

Caution: Use the original screws (4 pcs) when mounting to avoid damage to the monitor and stand. To fulfil the safety requirements the monitor must be mounted to an arm which guaranties the necessary stability under consideration of the weight of the monitor. The LCD monitor should only be used with an approved arm (e.g. GS mark).

Caution: This monitor does not support the portrait mode. The brightness become dark when using portrait mode to avoid damage when internal display temperature exceed the limited temperature.
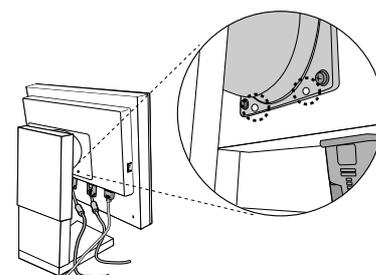
Figure S.3

Controls

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

To access OSM menu, press any of the control buttons (EXIT, ◄, ►, −, +).
To change signal input, press the SELECT button.

NOTE: OSM must be closed in order to change signal input.

	Menu
EXIT	Exits the OSM controls. Exits to the OSM main menu.
CONTROL ◄/►	Moves the highlighted area left/right to select control menus. Moves the highlighted area up/down to select one of the controls.
ADJUST - / +	Moves the bar left/right to increase or decrease the adjustment.
SELECT	Active Auto Adjust function. Enter the OSM controls. Enter the OSM sub menu.
RESET	Resets the highlighted control menu 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 by pressing the EXIT button.

NOTE: The OSD icon of "Brightness" and "Colour Control" may cause blinking if the colour feedback control system is under operation. It means that if the icon is blinking, then the colour of screen has not stabilized to target colour. When you change the "Brightness", "Colour Control" settings, the OSD causes blinking until colour is settled to target. And you see the same operation after every power on. Please wait until it stops the blinking.

☼ Brightness Controls

☼ BRIGHTNESS
Adjusts the overall image and background screen brightness.

▭▭ Image Controls

▭ LEFT / RIGHT
Controls Horizontal Image Position within the display area of the LCD.

▭ DOWN / UP
Controls Vertical Image Position within the display area of the LCD.

ⓇⒼⒷ Colour Control Systems

Colour Control Systems: Five colour temperature presets, in addition to sRGB, AdobeRGB and PROGRAMMABLE.

R,Y,G,C,B,M: Increases or decreases the Red, Yellow, Green, Cyan, Blue or Magenta colour Saturation and Hue depending upon which is selected. The colour change will appear on screen in the corresponding colours of the displayed image.

sRGB: sRGB mode provides a standard colour space that is compatible with conventional display monitors.

AdobeRGB: Provides a standard colour space used in high-end graphics applications including Digital Still Camera and imaging, provides the highest level of colour matching to other output devices.

PROGRAMMABLE: Selects the colour settings that have been configured by an optional colour calibration software system.

🗝 Tools 1

⌨ VIDEO DETECT: Selects the method of video detection when more than one computer is connected.
FIRST DETECT: The video input has to be switched to "FIRST DETECT" mode. When current video input signal is not present, then the monitor searches for a video signal from the other video input port. If the video signal is present in the other port, then the monitor switches the video source input port to the new found video source automatically. The monitor will not look for other video signals while the current video source is present.

LAST DETECT: The video input has to be switched to the "LAST DETECT" mode. When the monitor is displaying a signal from the current source and a new secondary source is supplied to the monitor, then the monitor will automatically switch to the new video source. When current video input signal is not present, then the monitor searches for a video signal from the other video input port. If the video signal is present in the other port, then the monitor switches the video source input port to the new found video source automatically.

NONE: The Monitor will not search the other video input port unless the monitor is turned on.

OFF TIMER: Monitor will automatically power-down when the end user has selected a pre-determined amount of time.

Tools 2

LANGUAGE: OSM control menus are available in seven languages.

OSM LEFT/RIGHT: You can choose where you would like the OSM control image to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu left or right.

OSM DOWN/UP: You can choose where you would like the OSM control image to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu down or up.

OSM TURN OFF: The OSM control menu will stay on as long as it is use. In the OSM Turn Off submenu, you can select how long the monitor waits after the last touch of a button to shut off the OSM control menu. The preset choices are 10-120 seconds by 5 seconds step.

OSM LOCK OUT: This control completely locks out access to all OSM control functions. When attempting to activate OSM controls while in the Lock Out mode, a screen will appear indicating the OSM controls are locked out. There are two types of OSM LOCK OUT:
OSM LOCK OUT with BRIGHTNESS control: To activate the OSM Lock Out function, press SELECT, then "+" key and hold down simultaneously. To deactivate the OSM Lock Out, press SELECT, then "+" key and hold down simultaneously. BRIGHTNESS can be adjusted while in the lock out mode.
OSM LOCK OUT with no control: To activate the OSM Lock Out function, press SELECT, then ">" key and hold down simultaneously. To deactivate the OSM Lock Out, press SELECT, then ">" key and hold down simultaneously. No controls can be adjusted while in the lock out mode.

RESOLUTION NOTIFIER: This optimal resolution is 1600 x 1200. If ON is selected, a message will appear on the screen after 30 seconds, notifying you if the resolution is not at 1600 x 1200.

HOT KEY: You can adjust the brightness directly. When this function is set to ON, you can adjust the brightness with ◄ or ►, while the OSM menu is off. The standard OSM can be accessed with the EXIT button.

FACTORY PRESET: Selecting Factory Preset allows you to reset all OSM control settings (BRIGHTNESS, IMAGE CONTROL, COLOUR CONTROL SYSTEM, OFF TIMER, OSM LEFT/RIGHT, OSM DOWN/UP, OSM TURN OFF, DISPLAY MODE) back to the factory settings. Individual settings can be reset by highlighting the control to be reset and pressing the RESET button.

Information

DISPLAY MODE: Provides information about the current resolution display and technical data including the preset timing being used and the horizontal and vertical frequencies. Increases or decreases the current resolution.

MONITOR INFO.: Indicates the model and serial numbers of your monitor.

OSM Warning

OSM Warning menus disappear with Exit button.

NO SIGNAL: This function gives a warning when there is no Horizontal or Vertical Sync. After power is turned on or when there is a change of input signal, the **No Signal** window will appear.

RESOLUTION NOTIFIER: This function gives a warning if the optimized resolution is not used. After power is turned on or when there is a change of input signal or the video signal doesn't have proper resolution, the **Resolution Notifier** window will open. This function can be disabled in the TOOL menu.

OUT OF RANGE: This function gives a recommendation of the optimized resolution and refresh rate. After the power is turned on or there is a change of input signal or the video signal doesn't have proper timing, the **Out Of Range** menu will appear.

For advanced user menu see "Appendix".

Recommended use

Safety Precautions and Maintenance

FOR OPTIMUM PERFORMANCE, PLEASE NOTE
THE FOLLOWING WHEN SETTING UP AND
USING THE LCD COLOUR 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.
- 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.
- Do not place any objects onto the monitor and do not use the monitor outdoors.

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.
- Do not bend power cord.
- Do not use monitor in hot, humid, dusty, or oily areas.
- If glass is broken, handle with care.
- Do not cover vent on monitor.
- If monitor or glass is broken, do not come in contact with the liquid crystal. Handle with care.

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 near 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.

- **Image Persistence:** Image persistence is when a residual or "ghost" image of a previous image remains visible on the screen. Unlike CRT monitors, LCD monitors' image persistence is not permanent, but constant images being displayed for a long period of time should be avoided.

  To alleviate image persistence, turn off the monitor for as long as the previous image was displayed. For example, if an image was on the monitor for one hour and a residual image remains, the monitor should be turned off for one hour to erase the image.

  NOTE: As with all personal display devices, NEC DISPLAY SOLUTIONS recommends using a moving screen saver at regular intervals whenever the screen is idle or turning off the monitor when not in use.

CORRECT PLACEMENT AND ADJUSTMENT OF THE MONITOR CAN REDUCE EYE, SHOULDER AND NECK FATIGUE. CHECK THE FOLLOWING WHEN YOU POSITION THE MONITOR:
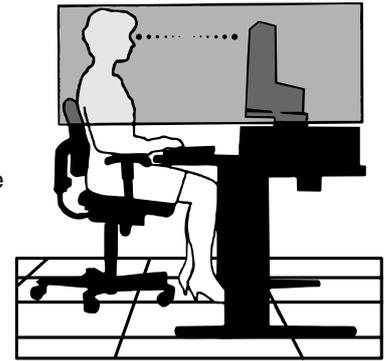
- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 40 cm and no further away than 70 cm from your eyes. The optimal distance is 50 cm.
- Rest your eyes periodically by focusing on an object at least 20 feet 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 the LCD monitor surface with a lint-free, non-abrasive cloth. Case of persistent dirt, wipe with cloth permeated by water, ethanol, isopropyl-alcohol completely. Avoid using any cleaning solution or glass cleaner (ex Acid, Alkali and Acetone).
- Adjust the monitor's brightness control 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.
- Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (after-image effects).
- Get regular eye checkups.

Ergonomics

To realize the maximum ergonomics benefits, we recommend the following:
- Adjust the Brightness until the background raster disappears.
- Use the preset Size and Position controls with standard signals.
- Use non-interlaced signals with a vertical refresh rate more than 60 Hz.
- Do not use primary colour blue on a dark background, as it is difficult to see and may produce eye fatigue due to insufficient contrast.

Cleaning the LCD Panel

Recommended cleaning of the LCD:
- To remove dust and dirt from the surface of the LCD panel, wipe gently with a soft cloth.
- Do not rub the LCD panel with rough material.
- Do not press on the surface of the LCD panel.

To avoid scratches

- Do not touch LCD panel with hard objects.
- Use only a soft cloth for cleaning the surface of the LCD panel.

To avoid stains

- Clean fingerprints, water drips, chemical spills and etc. from the LCD panel immediately or discoloration and spot will occur.
- If the LCD panel is rubbed with too much force, cracking may occur, which will lead to abnormalities in the display.

To avoid breakage or screen trouble

- Do not push hard on the LCD panel surface.
- Do not set heavy objects on the LCD panel surface.
- Do not leave the LCD panel under constant pressure.

Cleaning the Cabinet

- Unplug the power supply.
- Use a soft cloth.
- Dampen the cloth with a mild detergent mixed with water, wipe the cabinet and dry with a soft cloth.

NOTE: Many plastics are used on the cabinet surface. DO NOT clean with benzene, alkaline detergent, alcoholic system detergent, glass cleaner, wax, polish cleaner, soap powder or insecticide. Do not touch the cabinet with rubber or vinyl for a prolonged period. These types of fluids and fabrics can cause the paint to deteriorate, crack or peel.

Specifications

Monitor Specifications		SpectraView LCD2180 WideGamut LED Monitor	Notes
LCD Module	Diagonal:	54 cm/21.3 inches	Active matrix; thin film transistor (TFT) liquid
	Viewable Image Size:	54 cm/21.3 inches	crystal display (LCD); 0.270 mm dot pitch;
	Native Resolution (Pixel Count):	1600 x 1200	200 cd/m^2 white luminence; 430:1 contrast ratio, typical.
Input Signal	Video:	Digital Input	DVI
Display Colours		16,777,216	Depends on display card used.
Synchronization Range	Horizontal:	75 kHz	
	Vertical:	60 Hz	
Viewing Angle	Left/Right:	±88° (CR > 10)	
	Up/Down:	±88° (CR > 10)	
Image Formation Time		20 ms (Typ.)	
Resolutions Supported		1600 x 1200 at 60 Hz	
Active Display Area	Landscape: Horiz.:	432 mm/17.0 inches	
	Vert.:	324 mm/12.8 inches	
Power Supply		AC 100-240 V ~ 50/60 Hz	
Current Rating		1.1 - 0.5 A	
Dimensions	Landscape:	473 mm (W) x 461.7 mm (H) x 211.9 mm (D) 18.6 inches (W) x 18.2 inches (H) x 8.3 inches (D)	
Weight		18.3 kg (40.3 lbs)	
Environmental Considerations			
	Operating Temperature:	5°C to 35°C/41°F to 95°F	
	Humidity:	30% to 80%	
	Feet:	0 to 12,000 Feet/0 to 3,658 m	
	Storage Temperature:	-10°C to 60°C/14°F to 140°F	
	Humidity:	10% to 85%	
	Feet:	0 to 40,000 Feet/0 to 12,192 m	

*1 Interpolated Resolutions: When resolutions are shown that are lower than the pixel count of the LCD module, text may appear different. This is normal and necessary for all current flat panel technologies when displaying non-native resolutions full screen. In flat panel technologies, each dot on the screen is actually one pixel, so to expand resolutions to full screen, an interpolation of the resolution must be done.

NOTE: Technical specifications are subject to change without notice.

Features

DVI-D: The digital-only subset of DVI ratified by the Digital Display Working Group (DDWG) for digital connections between computers and displays. As a digital-only connector, analog support is not provided off a DVI-D connector. As a DVI-based digital only connection, only a simple adapter is necessary for compatibility between DVI-D and other DVI-based digital connectors such as DFP and P&D.

DFP (Digital Flat Panel): An all-digital interface for flat panel monitors which is signal compatible with DVI. As a DVI-based digital only connection, only a simple adapter is necessary for compatibility between DFP and other DVI-based digital connectors such as DVI and P&D.

P&D (Plug and Display): The VESA standard for digital flat panel monitor interfaces. It is more robust than DFP since it allows for other options off a signal connector (options like USB, analog video and IEEE-1394-995). The VESA committee has recognized that DFP is a subset of P&D. As a DVI-based connector (for the digital input pins), only a simple adapter is necessary for compatibility between P&D and other DVI-based digital connector such as DVI and DFP.

Reduced Footprint: Provides the ideal solution for environments requiring superior image quality but with size and weight limitations.

Colour Control Systems: Allows you to adjust the colours on your screen and customize the colour accuracy of your monitor to a variety of standards.

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: Enhanced human ergonomics to improve the working environment, protect the health of the user and save money. Examples include OSM controls for quick and easy image adjustments, tilt base for preferred angle of vision and small footprint.

Anti-Glare/Low Reflection Panel: Glare and reflection from the screen are greatly reduced while the BLACK level is retained resulting in improved clarity of displayed images.

Plug and Play: The Microsoft® solution with the Windows® 95/98/2000/Me/XP 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 two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

Wide Viewing Angle Technology: Allows the user to be able to see the monitor from any angle (176 degrees). Provides full 176° viewing angles either up, down, left or right.

NaViSet: Is a ground-breaking software family, developed by NEC Display Solutions Europe GmbH, providing intuitive access to all monitor setting controls and remote diagnosis via the Windows interface, based upon the VESA standard, DDC/CI. Using a standard DVI signal cable, NaViSet can either benefit single users or, with NaViSet Administrator, can reduce the Total Cost of Ownership through remote network-wide maintenance, diagnosis and asset-reporting.

Wide colour gamut greater than 100% NTSC and AdobeRGB due to LED light source.

Luminance is increased due to LED light source.

Variable white point system from the backlight itself results in a broader range between colour steps with no loss of luminance when the white point changes (no loss of luminance between 5000K and 9300K).

Built in colour feedback system for the LED enables quick start-up and stable colour. LED stabilizes at delta Eab<1, the target colour for the backlight itself. Colour feedback system also helps to maintain the colour over a long period of time.

White uniformity compensation results in an even screen image.

Colour tracking performs better; especially regarding the dark areas compared to CCFL backlight systems.

Advanced 6-color adjustment system (RGBCMY Hue and Saturation) for professional use.

LED backlight is "Mercury Free".

Highly reliable cooling system runs silent without the use of a cooling fan.

Colour calibrator support.

Troubleshooting

No picture
- The signal cable should be completely connected to the display card/computer.
- The display card should be completely seated in its slot.
- Make sure the Vacation Switch is in the ON position.
- Front Power Switch and computer power switch should be in the ON position.
- Check to make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.)
- Check the monitor and your display card with respect to compatibility and recommended settings.
- Check the signal cable connector for bent or pushed-in pins.
- Check the signal input, "INPUT 1" or "INPUT 2".

Power Button does not respond
- Unplug the power cord of the monitor from the AC outlet to turn off and reset the monitor.
- Check the Vacation Switch on the left side of the monitor.

Image Persistence
- Please be aware that LCD Technology may experience a phenomenon known as Image Persistence. Image Persistence occurs when a residual or "ghost" image of a previous image remains visible on the screen. Unlike CRT monitors, LCD monitors' image persistence is not permanent, but constant images being displayed for a long period of time should be avoided. To alleviate image persistence, turn off the monitor for as long as the previous image was displayed. For example, if an image was on the monitor for one hour and a residual image remains, the monitor should be turned off for one hour to erase the image.

NOTE: As with all personal display devices, NEC DISPLAY SOLUTIONS recommends displaying moving images and using a moving screen saver at regular intervals whenever the screen is idle or turning off the monitor when not in use.

Message "OUT OF RANGE" is displayed (screen is either blank or shows rough images only)
- Image is displayed only roughly (pixels are missing) and OSM warning "OUT OF RANGE" is displayed: Either signal clock or resolution is too high. Choose one of the supported modes.
- OSM warning "OUT OF RANGE" is displayed on a blank screen: Signal frequency is out of range. Choose one of the supported modes.

Image is unstable, unfocused or swimming is apparent
- Signal cable should be completely attached to the computer.
- Use the OSM Image Adjust controls to focus and adjust display by increasing or decreasing the fine total. When the display mode is changed, the OSM Image Adjust settings may need to be readjusted.
- Check the monitor and your display card with respect to compatibility and recommended signal timings.
- If your text is garbled, change the video mode to non-interlace and use 60Hz refresh rate.

LED on monitor is not lit (*no green or amber colour can be seen*)
- Power Switch should be in the ON position and power cord should be connected.

Display image is not sized properly
- Use the OSM Image Adjust controls to increase or decrease the Coarse total.
- Check to make sure that a supported mode has been selected on the display card or system being used. (Please consult display card or system manual to change graphics mode.)

No Video
- If no video is present on the screen, turn the Power button off and on again.
- Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).

Appendix

If you need detailed information about the controls, please use the advanced menu.

<How to use the advanced menu>
- Turn off your monitor.
- Turn on your monitor by pushing the "POWER" and "SELECT" button at the same time for at least one second simultaneously.
- You will see the Advanced menu.
  This menu is larger than the normal OSM.

<How to exit the advanced menu>
- Turn off and restart your monitor in the normal way.

To make an adjustment, ensure that the tag is highlighted, then press "SELECT".

To move to another tag, press "EXIT", then press " ◄ " or " ➤ " to highlight another tag.

Tag1	Brightness	Adjusts the overall image and screen background brightness. Press "+" or "-" to adjust.
Tag2	H. Position	Controls Horizontal Image Position within the display area of the LCD. Press "+" or "-" to adjust.
	V. Position	Controls Vertical Image Position within the display area of the LCD. Press "+" or "-" to adjust.
Tag3	Gamma Selection	Allows you to manually select the brightness level of greyscale. There are five selections: NO CORRECTION, 2.2, OPTION, PROGRAMMABLE and CUSTOM. NO CORRECTION: No Correction possible. 2.2: The value is fixed at 2.2. OPTION: This setting is recommended for Video source. Grey area looks much brighter than NO CORRECTION setting. PROGRAMMABLE: The brightness of greyscale can be changed to your preference by the application software. CUSTOM: The gamma value is selected from the rate of 0.5 to 4.0 by 0.1 steps. When the COLOUR PRESET is sRGB or AdobeRGB, the value is fixed at 2.2 and NOT ADJUSTABLE.
	Gamma Offset	GAMMA OFFSET digitally adjusts the black level when CUSTOM is selected in Gamma Selection.
Tag4	Colour Control	**Colour Control Systems:** Five colour temperature presets, in addition to sRGB, AdobeRGB and PROGRAMMABLE. **R,Y,G,C,B,M:** Increases or decreases the Red, Yellow, Green, Cyan, Blue or Magenta colour Saturation and Hue depending upon which is selected. The colour change will appear on screen in the corresponding colours of the displayed image. **sRGB:** sRGB mode provides a standard colour space that is compatible with conventional display monitors. **AdobeRGB:** Provides a standard colour space used in high-end graphics applications including Digital Still Camera and imaging, provides the highest level of colour matching to other output devices. **PROGRAMMABLE:** Selects the colour settings that have been configured by an optional colour calibration software system.

Tag5	Video Bit Depth	Selects the Input bit (10 bit or 8 bit). 10 bit input needs to connect the input2 with DVI Dual link.
	Video Detect	Selects the method of video detection when more than one computer is connected. Press "+" or "-" to select. **FIRST DETECT:** The video input has to be switched to "FIRST DETECT" mode. When current video input signal is not present, then the monitor searches for a video signal from the other video input port. If the video signal is present in the other port, then the monitor switches the video source input port to the new found video source automatically. The monitor will not look for other video signals while the current video source is present. **LAST DETECT:** The video input has to be switched to the "LAST DETECT" mode. When the monitor is displaying a signal from the current source and a new secondary source is supplied to the monitor, then the monitor will automatically switch to the new video source. When current video input signal is not present, then the monitor searches for a video signal from the other video input port. If the video signal is present in the other port, then the monitor switches the video source input port to the new found video source automatically. **NONE:** The Monitor will not search the other video input port unless the monitor is turned on.
	Off Timer	Monitor will automatically power-down when the end user has selected a pre-determined amount of time.
	Language	OSM control menus are available in seven languages. Press "+" or "-" to select.
	OSM Left/Right	You can choose where you would like the OSM control image to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu left or right.
	OSM Down/Up	You can choose where you would like the OSM control image to appear on your screen. Selecting OSM Location allows you to manually adjust the position of the OSM control menu down or up.
	OSM Turn off	The OSM control menu will stay on as long as it is in use. In the OSM Turn Off submenu, you can select how long the monitor waits after the last touch of a button to close the OSM control menu. The preset choices are 10-120 seconds by 5 seconds step. Press "+" or "-" to select.
	OSM Lock Out	This control completely locks out access to all OSM control functions. When attempting to activate OSM controls while in the Lock Out mode, a screen will appear indicating the OSM controls are locked out. There are two types of OSM LOCK OUT: OSM LOCK OUT with BRIGHTNESS control: To activate the OSM Lock Out function, press SELECT, then "+" key and hold down simultaneously. To deactivate the OSM Lock Out, press SELECT, then "+" key and hold down simultaneously. BRIGHTNESS can be adjusted while in the lock out mode. OSM LOCK OUT with no control: To activate the OSM Lock Out function, press SELECT, then ">" key and hold down simultaneously. To deactivate the OSM Lock Out, press SELECT, then ">" key and hold down simultaneously. No controls can be adjusted while in the lock out mode.
	Resolution Notifier	The optimal resolution is 1600 x 1200. If ON is selected, a message will appear on the screen after 30 seconds, notifying you that the resolution is not set to 1600 x 1200. Press "+" or "-" to select.
	LED Brightness	Controls the brightness of the LED on the display, "OFF", "MID" and "MAX".
	ColorComp	This function compensates for slight deviations in the white uniformity of the screen that may occur. This function improves the colour and smoothens the luminance uniformity of the display, however, this function does reduce the overall peak luminance of the screen. If greater luminance is desired over the uniform performance of the display, then this function should be turned off.
	Factory Preset	Selecting Factory Preset allows you to reset all OSM control settings (BRIGHTNESS, IMAGE CONTROLS, COLOUR CONTROL SYSTEM, OFF TIMER, OSM LEFT/RIGHT, OSM DOWN/UP, OSM TURN OFF, DISPLAY MODE) back to the factory settings. Highlighting the control to be reset and pressing the RESET button can reset individual settings. Press "SELECT" to reset.

| Tag6 | Display Mode | Provides information about the current display resolution and technical data, including the preset timing currently being used and the horizontal and vertical frequencies. Increases or decreases the current resolution. Press "SELECT" to move the adjustment mode, and press "+" or "-" to adjust. |
| | Monitor Info. | Indicates the model and serial numbers of your monitor. |

Manufacturer's Recycling and Energy Information

NEC DISPLAY SOLUTIONS is strongly committed to environmental protection and sees recycling as one of the company's top priorities in trying to minimize the burden placed on the environment. We are engaged in developing environmentally-friendly products, and always strive to help define and comply with the latest independent standards from agencies such as ISO (International Organisation for Standardization).

For more information, and for help in recycling your old NEC monitors, please visit our website at

http://www.nec-display-solutions.com (in Europe) or

http://www.necdisplay.com (in USA).

Country-specific recycling programmes can also be found at:

Sweden - http://www.el-retur.se

Germany - http://www.recyclingpartner.de/

Holland - http://www.mirec.nl/

Energy saving:

This monitor features an advanced energy saving capability. When a VESA Display Power Management Signaling (DPMS) Standard signal is sent to the monitor, the Energy Saving mode is activated. The monitor enters a single Energy Saving mode.

Mode	Power consumption	LED colour
Normal Operation	Approx. 100W	Green
Energy Saving Mode	Less than 7W	Amber
Off Mode	Less than 0.1W	Unlit

Disposing of your old NEC product
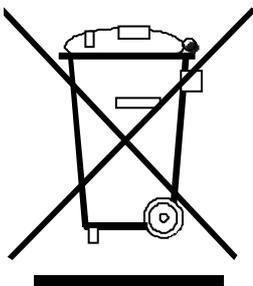
Within the European Union

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your NEC display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself and NEC.

The mark on electrical and electronic products only applies to the current European Union Member States.

Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.