

User's Manual



MultiSync® LCD4020/LCD4620

Chinese RoHS -information relevant for Chinese mark

部件名称		有毒有害物质或元素					
		铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 [Cr(VI)]	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
主机	印刷线路板	×	○	○	○	○	○
	液晶板	×	×	○	○	○	○
	机箱 支架	×	○	○	○	○	○
	电源	×	○	○	○	○	○
	其他(电缆等)	○	○	○	○	○	○
附属品(信号线等)		×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/ T11363- 2006标准规定的限量要求以下。

×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/ T11363- 2006标准规定的限量要求。

English →

Français →

Español →

English

Français

Español

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Important Information

WARNING



TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. 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.

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 L406T6, or L466T7 color 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,

Mini D-SUB 15-pin to Mini D-SUB 15-pin.

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 distance 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 the Manufacturer

We hereby certify that the color monitor L406T6 or L466T7 is in compliance with Council Directive 2006/95/EEC:
— EN 60950-1

Council Directive 2004/108/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

Safety Precautions and Maintenance

Safety Precautions and Maintenance

FOR OPTIMUM PERFORMANCE, PLEASE NOTE THE FOLLOWING WHEN SETTING UP AND USING THE 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.
- When operating the MultiSync monitor with its AC 125-240V 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 3G 1mm² should be used in Europe)
- In the UK, use a BS-approved power cord with molded plug having a black (13A) fuse installed for use with this monitor. If a power cord is not supplied with this monitor, please contact your supplier.
- Do not place any objects onto the monitor and do not use the monitor outdoors.
- The lamps in this product contain mercury. Please dispose according to state, local or federal law.
- Do not bend, crimp or otherwise damage the power cord.
- Do not use monitor in high temperature, humid, dusty, or oily areas.
- Do not cover vent on monitor.
- If monitor or glass is broken, do not come in contact with the liquid crystal.
- Handle broken glass with care.
- 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 that is easily accessible.

- Handle with care when transporting. Save packaging for transporting.
- Do not hold the display by the bezel when moving or shifting the display.
- Keep the vent holes on the back of the LCD clean of dirt and dust. It is recommended to wipe vent holes with a soft cloth a minimum of once per year.
- If using the cooling fan continuously, it is recommended to wipe vent holes a minimum of once a month.



CAUTION

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 on, 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.

Recommended Use

CAUTION

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

- For optimum performance, allow 20 minutes for warm-up.
- Rest your eyes periodically by focusing on an object at least 5 feet away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections.
- Clean the LCD monitor surface with a lint-free, nonabrasive cloth. Avoid using any cleaning solution or glass cleaner.
- Adjust the monitor's brightness and contrast controls to enhance readability.
- Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (afterimage effects).
- Get regular eye checkups.

Ergonomics

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

- Use the preset Size and Position controls with standard signals.
- Use the preset Color Setting.
- Use non-interlaced signals.
- 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.

For more detailed information on setting up a healthy work environment, refer to the following document:

*American National Standard for Human Factors
Engineering of Visual Display Terminal Workstations
ANSI-HFS Standard No. 100-1988*

Published by:

The Human Factors and Ergonomics Society
P.O. Box 1369, Santa Monica, California 90406.

Cleaning the LCD Panel

- When the liquid crystal panel becomes dusty or dirty, wipe gently with soft cloth.
- Do not rub the LCD panel with coarse material.
- Do not apply pressure to the LCD surface.
- Do not use OA cleaner. OA cleaner will cause deterioration or discolor the LCD surface.

Cleaning the Cabinet

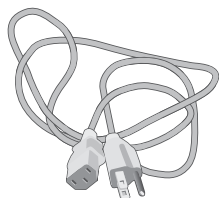
- Unplug the power supply
- Gently wipe the cabinet with a soft cloth
- To clean the cabinet, dampen the cloth with a neutral detergent and water, wipe the cabinet and follow with a dry cloth.

NOTE: The surface of the cabinet is composed of many types of plastic. DO NOT clean with benzene thinner, alkaline detergent, alcoholic system detergent, glass cleaner, wax, polish cleaner, soap powder, or insecticide. Rubber or vinyl should not be in contact with the cabinet for an extended period of time. These types of fluids and materials can cause the paint to deteriorate, crack or peel.

Package Contents



LCD Monitor



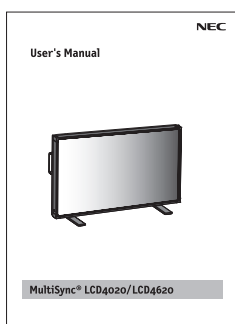
Power Cord



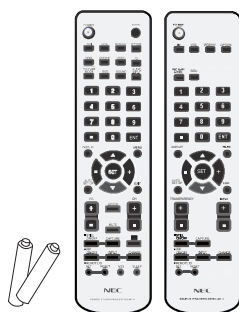
Video Signal Cable
(Mini D-SUB 15 pin to Mini D-SUB 15 pin)



Clamp x 3



User's Manual



**Wireless Remote Control
and AA Batteries**
(The product you purchased has
one of these remote controls)



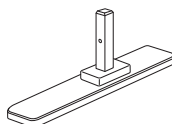
Screw (M4 x 10) x 9



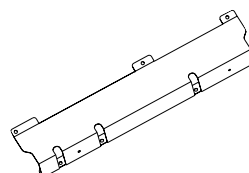
Thumbscrew for stand x 2



CD-ROM



Stand x 2



Cable cover

Installation

This device cannot be used or installed without the Tabletop Stand or other mounting accessory for support. For proper installation it is strongly recommended to use a trained, NEC authorized service person. Failure to follow NEC standard mounting procedures could result in damage to the equipment or injury to the user or installer. Product warranty does not cover damage caused by improper installation. Failure to follow these recommendations could result in voiding the warranty. For further mounting information see page 6. For stand installation see page 8~9.

Mounting

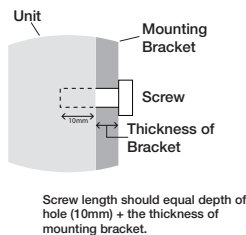
- DO NOT mount the monitor yourself. Please ask dealer. For proper installation it is strongly recommended to use a trained, qualified technician. Please inspect the location where the unit is to be mounted. Not all walls or ceilings are capable of supporting the weight of the unit. Product warranty does not cover damage caused by improper installation, remodeling, or natural disasters. Failure to comply with these recommendations could result in voiding the warranty.
- DO NOT block ventilated openings with mounting accessories or other accessories.

For NEC Qualified Personnel:

To insure safe installation, use two or more brackets to mount the unit. Mount the unit to at least two points on the installation location.

Please note the following when mounting on wall or ceiling.

- When using mounting accessories other than those that are NEC approved, they must comply with the VESA-compatible (FDMIv1) mounting method.
- NEC strongly recommends using size M6 screws (10mm + thickness of bracket in length). If using screws longer than 10mm, check the depth of the hole. (Recommended Fasten Force: 470 - 635N·cm) NEC recommends mounting interfaces that comply with UL1678 standard in North America.
- Prior to mounting, inspect the installation location to insure that it is strong enough to support the weight of the unit so that the unit will be safe from harm.
- Refer to the instructions included with the mounting equipment for detailed information.



Mounting location

The ceiling and wall must be strong enough to support the monitor and mounting accessories.

- DO NOT install in locations where a door or gate can hit the unit.
- DO NOT install in areas where the unit will be

subjected to strong vibrations and dust.

DO NOT install near where the main power supply enters the building.

- Do not install in where people can easily grab and hang onto the unit or the mounting apparatus.
- When mounting in a recessed area, as in a wall, leave at least 4 inches (10cm) of space between the monitor and the wall for proper ventilation.
- Allow adequate ventilation or provide air conditioning around the monitor, so that heat can properly dissipate away from the unit and mounting apparatus.

Mounting on Ceiling

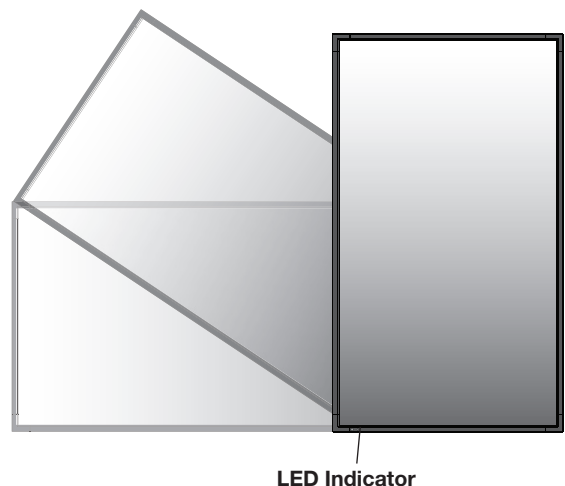
- Ensure that the ceiling is sturdy enough to support the weight of the unit and the mounting apparatus over time, against earthquakes, unexpected vibrations, and other external forces.
- Be sure the unit is mounted to a solid structure within the ceiling, such as a support beam. Secure the monitor using bolts, spring lock washers, washer and nut.
- DO NOT mount to areas that have no supporting internal structure. DO NOT use wood screws or anchor screws for mounting. DO NOT mount the unit to trim or to hanging fixtures.

Maintenance

- Periodically check for loose screws, gaps, distortions, or other problems that may occur with the mounting apparatus. If a problem is detected, please refer to qualified personnel for service.
- Regularly check the mounting location for signs of damage or weakness that may occur over time.

Orientation

When using the display in the portrait position, the monitor should be rotated clockwise so that the left side is moved to the top and the LED indicator light is on the bottom. This will allow for proper ventilation and will extend the lifetime of the monitor. Improper ventilation may shorten the lifetime of the monitor.



Attaching Mounting Accessories

The display is designed for use with the VESA mounting system.

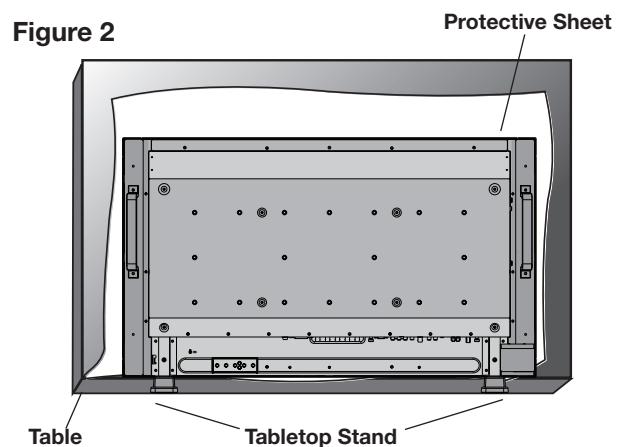
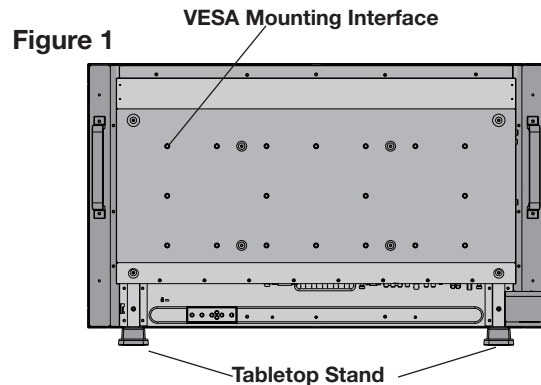
1) Attach Mounting Accessories

Mounting accessories can be attached while the monitor is on the Tabletop Stand in the upright position (Figure 1). Be careful to avoid tipping monitor when attaching accessories. After accessories are attached, stand can be removed.

Mounting accessories can be attached with the monitor in the face down position. To avoid damaging the screen face, place the protective sheet on the table underneath the LCD (Figure 2). The protective sheet was wrapped around the LCD in the original packaging. Make sure there is nothing on the table that can damage the monitor.

When using mounting accessories other than NEC compliant and approved, they must comply with the VESA-compatible mounting method. NEC strongly recommends using screws M6 size and 10mm in length. If using screws longer than 10mm, check the depth of the hole. (Recommended Fasten Force: 470-635N•cm)

NEC recommends using mounting interface that comply with UL1678 standard in North America.



Installation - *continued*

2) Installing and removing stand

CAUTION

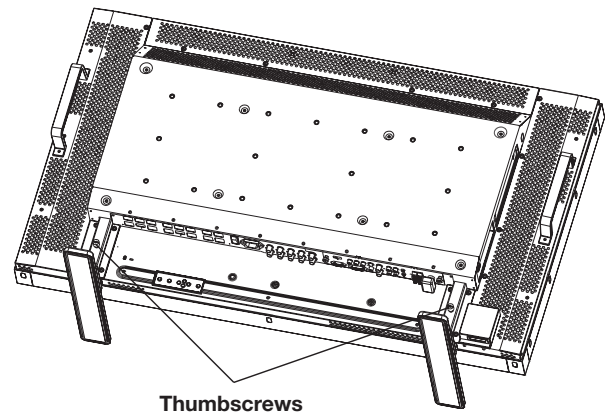
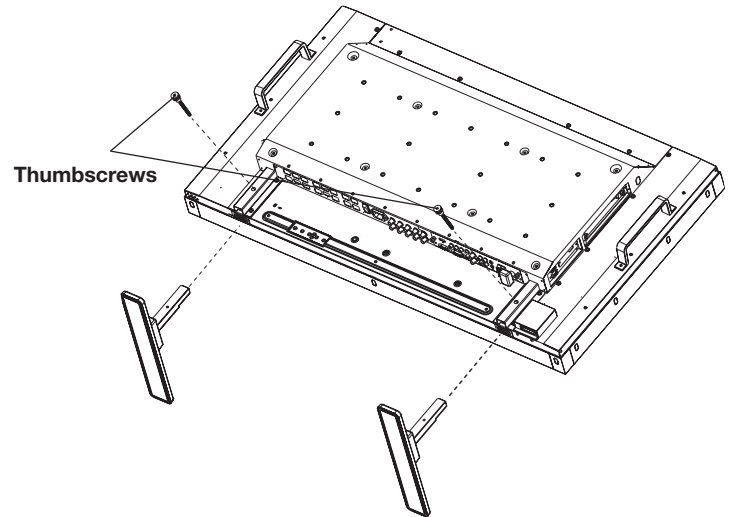
Installing and removing the stand must be done by two or more people.

How to install stand

1. Please turn monitor off.
2. Place stand onto monitor with the long ends of the feet in front of the monitor.
3. After inserting stand in guide block, fasten thumbscrews on both sides of the monitor.

How to remove the stand

1. Spread the protective sheet on a flat surface, such as a desk.
2. Place monitor on the protective sheet.
3. Remove thumbscrews with a screwdriver or with your fingers and place them in a safe place for reuse.



NOTE: Place stand onto monitor so that the long end of the feet are in the front.

3) Ventilation Requirements

When mounting in an enclosure or in a recessed area, leave space between surrounding the monitor and surrounding objects to allow heat to disperse, as shown in Figure 5.

4) Prevent Tipping

When using the display with the Tabletop Stand fasten the LCD to a wall using a cord or chain that can support the weight of the monitor (LCD4020 approx. 31.1kg; LCD4620 approx. 37.9kg) in order to prevent the monitor from falling. Fasten the cord or chain to the monitor using the provided clamp and screw (Figure 6).

Before attaching the LCD monitor to the wall, make sure that the wall can support the weight of the monitor.

Be sure to remove the cord or chain from the wall before moving the LCD.

Figure 5

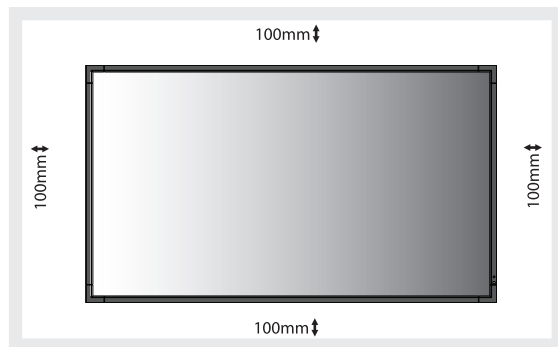
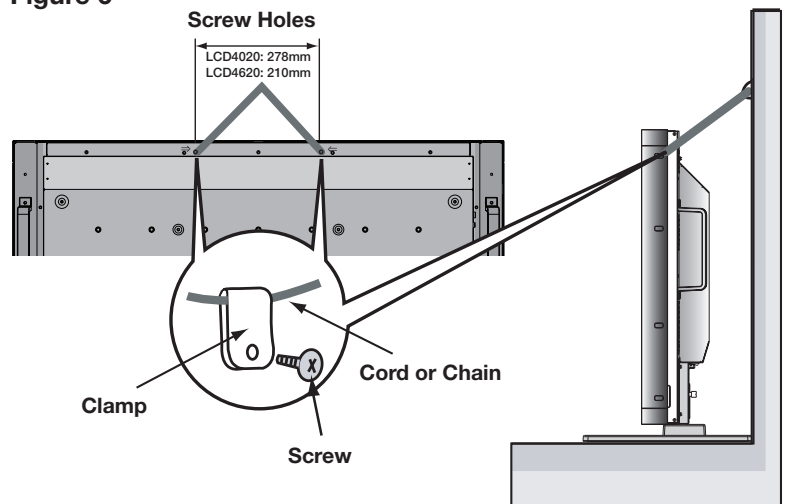
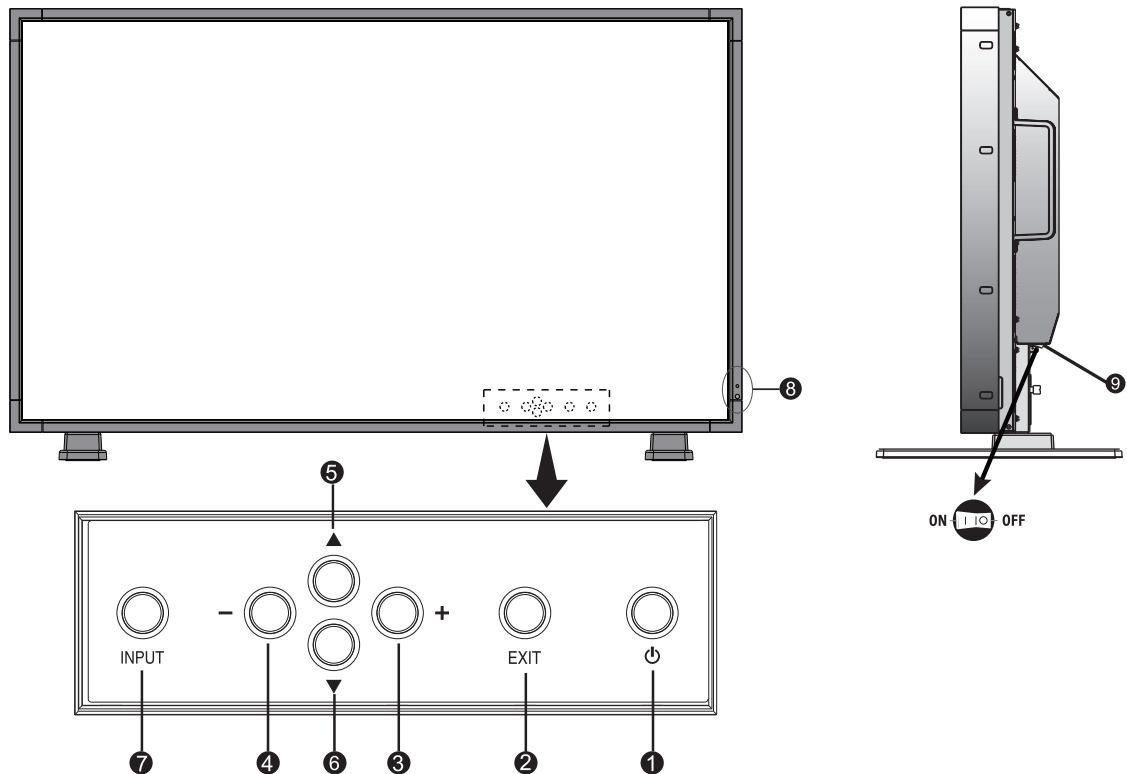








Figure 6



Part Names and Functions

Control Panel



- 1) **POWER**
Switches the power on/off. (See page 24)
- 2) **EXIT**
Activates the OSD menu when the OSD menu is off.
Exits from the current menu being displayed to the previous menu within the OSD.
- 3) **PLUS(+)**
Increases the setting adjustment within OSD menu.
Increases the audio output level when the OSD is off. 
- 4) **MINUS(-)**
Decreases the setting adjustment within OSD menu.
Decreases the audio output level when the OSD is off. 
- 5) **UP(▲)**
Activates the OSD menu when the OSD menu is off.
Moves the highlighted area up to select which setting to be adjust within OSD menu.
- 6) **DOWN(▼)**
Activates the OSD menu when the OSD menu is off.
Moves the highlighted area down to select which setting to be adjust within OSD menu.
- 7) **INPUT**
Selects which signal connected to the display is shown.
([DVI], [VGA], [RGB/HV], [HDMI] , [DVD/HD] , [VIDEO] , [TV] )
Acts as SET button within the OSD menu.
- 8) **Remote control sensor and Power indicator**
Receives the signal when using the wireless remote control. (See page 14)
Glows green when the LCD monitor is in active mode*. Glows red when the LCD is in POWER OFF (ECO standby) mode. Glows amber when the LCD is in POWER OFF (standby) mode. Blinks amber when the monitor is in Power Save Mode. Green and amber blink alternately while in Power Standby with the "SCHEDULE SETTINGS" function enabled. When a component failure is detected within the monitor, the indicator will blink red.
**If "OFF" is selected in POWER INDICATOR(See page 30), the LED will not light when the LCD monitor is active mode".
- 9) **Main Power Switch**
Seesaw Switch to turn the the main power on/off.


Control Key Lock Mode

This function completely locks out access to all Control Key functions.

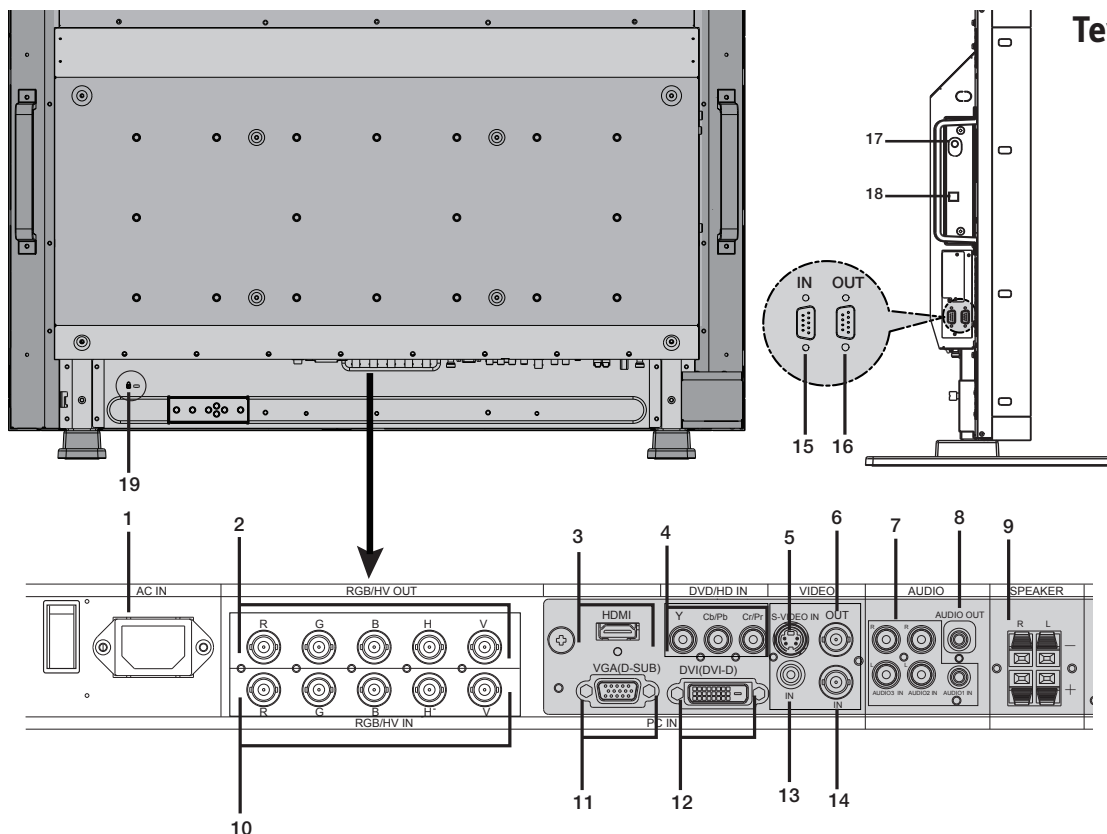
To enable the Control Key Lock Mode, press both "▲" and "▼" simultaneously and hold down for three (3) seconds.












To go back to user mode, press both "▲" and "▼" simultaneously and hold down for three (3) seconds.

 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.


 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Terminal Panel



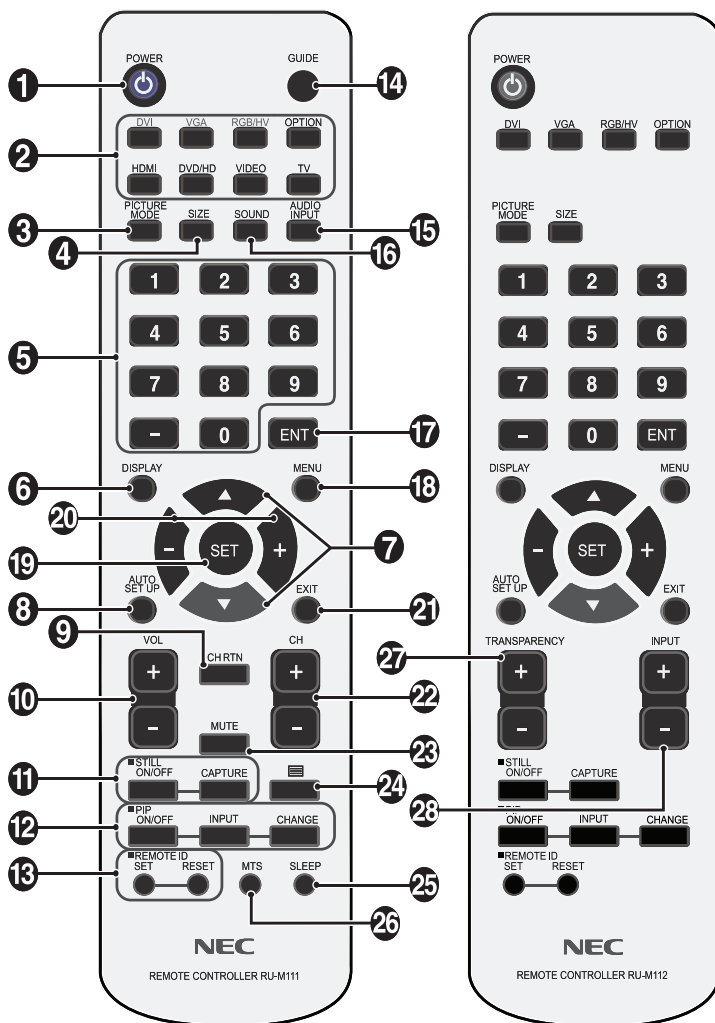
- 1) **AC IN**
Connects with the supplied power cord.
- 2) **RGB/HV OUT [R, G, B, H, V] (BNC)**
Outputs the signal from the RGB/HV IN connector to an input on a separate device.
- 3) **HDMI connector **
To input digital HDMI signals.
- 4) **DVD/HD IN **
Connecting equipment such as a DVD player, HDTV device, or Set-Top-Box.
- 5) **S-VIDEO IN **
Input S-video.
- 6) **VIDEO OUT **
Output the composite video signal from the VIDEO IN connection.
- 7) **AUDIO IN **
Input the audio signal from external equipment such as a computer, VCR or DVD player.
- 8) **AUDIO OUT **
Output the audio signal from the AUDIO IN 1, 2, 3, HDMI, and TV jack to an external device (stereo receiver, amplifier, etc.).
- 9) **SPEAKER TERMINALS **
Output the audio signal from AUDIO 1, 2, 3, HDMI, and TV to external speakers jack.
NOTE: Speaker Terminal is 15W + 15W (8 ohm).
- 10) **RGB/HV IN [R, G, B, H, V] (BNC)**
Input RGB/ HV signals or signals from other RGB equipment. A Sync-on-Green signal can be connected to the G connector.
- 11) **VGA (Mini D-SUB15)**
Analog computer input.
- 12) **DVI-D**
Input digital RGB signals from a computer or HDTV device having a digital RGB output.
- 13) **VIDEO IN (RCA) **
Composite video input.
- 14) **VIDEO IN (BNC) **
Composite video input.
- 15) **EXTERNAL CONTROL (D-Sub 9 pin)**
Connect RS-232C input to external equipment such as a PC in order to control RS-232C functions.
- 16) **EXTERNAL CONTROL (D-Sub 9 pin)**
Connect RS-232C output.
To connect to multiple MultiSync monitors via daisy RS-232C Chain.
- 17) **RF IN **
TV signal input.
- 18) **S/PDIF OUTPUT **
Optical digital audio out.
- 19) **Kensington Lock**
For security and theft prevention.






 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.







 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Part Names and Functions - continued


Remote Control Functions




- 1) **POWER**
Switches the power on/off.
- 2) **INPUT**
Selects which input signal ([DVI], [VGA], [RGB/HV], [HDMI] , [DVD/HD] , [VIDEO] , [TV] , [OPTION]) to be displayed.
- 3) **PICTURE MODE**
Selects picture mode, [HIGHBRIGHT], [STANDARD], [sRGB], [CINEMA]. See page 25.
HIGHBRIGHT: for moving images
STANDARD: for images
sRGB: for text based images
CINEMA: for movies 

- 4) **SIZE**
Selects aspect ratio of the displayed image. [FULL], [NORMAL], [WIDE] , and [ZOOM]. See page 25.
- 5) **KEYPAD**
Set and change passwords. Set REMOTE ID. Select TV channel. 
- 6) **DISPLAY**
Turn on/off the Information OSD. See page 25.
- 7) **▲ ▼**
Move highlighted area up or down.
Moves the PIP sub-picture. 
- 8) **AUTO SETUP**
Enters AUTO SETUP menu.
- 9) **CHANNEL RETURN** 
Return to previous channel.
- 10) **VOLUME** 
Increases or Decreases sound level.
- 11) **STILL**
ON/OFF: Activates/deactivates still picture mode.
CAPTURE: Captures still picture.
- 12) **PICTURE in PICTURE** 
ON/OFF: Turns PIP on or off.
INPUT: Changes the input signal of PIP.
CHANGE: Swaps inner picture with outer picture.

		Sub Picture						
		DVI	VGA	RGB/HV	HDMI	DVD/HD	VIDEO	TV
Main Picture	DVI	-	-	-	-	✓	✓	✓
	VGA	-	-	-	-	✓	✓	✓
	RGB/HV	-	-	-	-	✓	✓	✓
	HDMI	-	-	-	-	✓	✓	✓
	DVD/HD	✓	✓	✓	✓	-	✓	✓
	VIDEO	✓	✓	✓	✓	✓	-	✓
	TV	✓	✓	✓	✓	✓	✓	-

- 13) **REMOTE ID**
Activates REMOTE ID function. See page 15.
- 14) **GUIDE** 
Enter on screen program guide.

 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.

 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

15) AUDIO INPUT

Select the Audio source.

NOTE: It is possible to play audio from a source that is different from the video source. When setting parental controls for video, be aware that this content is not filtered.

16) SOUND

Artificial surround sound.

17) ENTER

Go to channel selected.

18) MENU

Turns ON/OFF menu mode.

19) SET

Makes selection.

20) -, +

Increases or decreases adjustment.

Moves the PIP sub-picture. 

21) EXIT

Goes to previous menu.

22) Channel

Go up or down channel selections.

23) MUTE

Mutes audio output.

24)

Activates closed captioning.

25) SLEEP

Sleep timer.

26) MTS

Multi-track sound.

27) TRANSPARENCY button*

Determines the level of OSD transparency.

28) INPUT button*

Cycles through available inputs.

*: The product you purchased may not have this feature.

Changing the channel

Both Analog and Digital channels are available using this tuner. In addition to the CH+ and CH- buttons channels can be changed in the following method.


Tuning Analog Channels

Input the desired channel number using the keypad, then press [SET] or [ENT] to immediately tune to the new channel. If the number is input and [SET] or [ENT] is not pushed, after a few seconds the channel will be changed. For example to tune to channel 5, press [5] then press [SET] or [ENT].

Tuning Digital Channels

To tune in to a digital sub-channel enter the number of the main channel, then a dash followed by the number of the sub-channel. For example to tune to digital channel 5-1, press [5] then [-] then [1]. Press [SET] or [ENT] to tune.

 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.

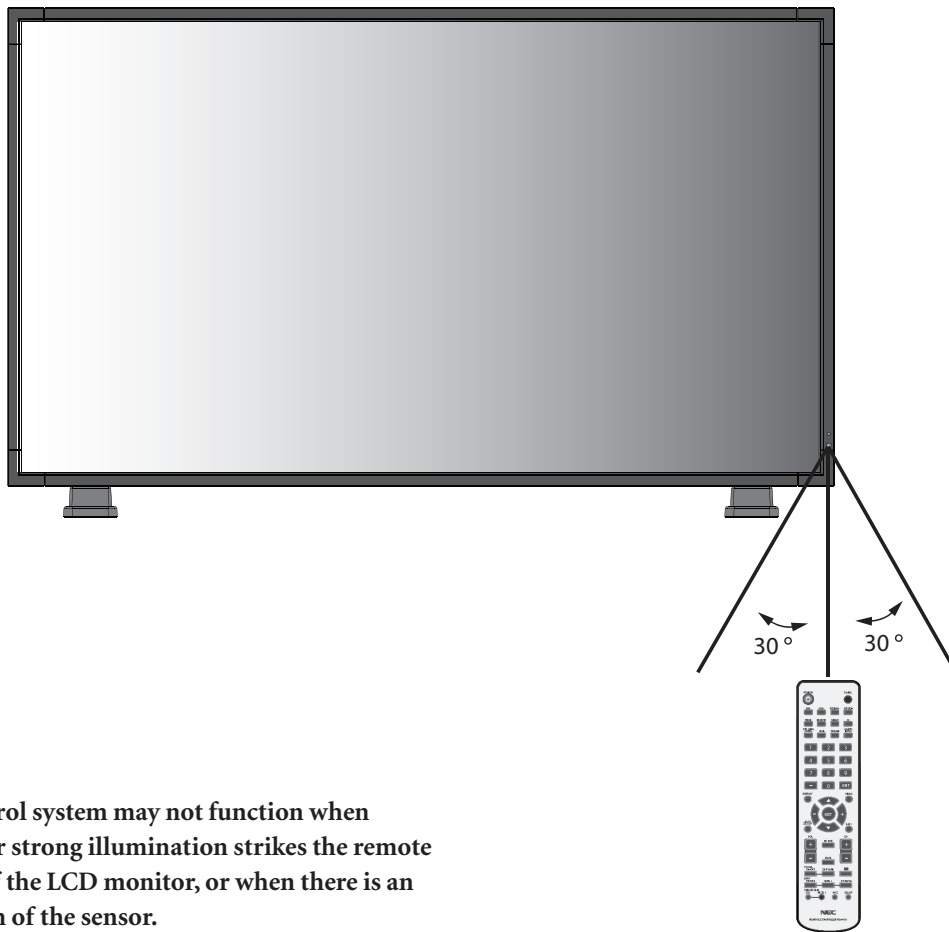
 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Part Names and Functions - *continued*

Remote Control Operating Range

Operating Range for the Remote Control

Point the top of the remote control toward the monitor's remote sensor while pressing buttons. The remote control can be used from the front of the monitor at a maximum distance of 7 m/23 ft. from the front of the LCD monitor's remote control sensor. The maximum horizontal and vertical angle for use of the remote is 30 degrees within a distance of 3.5 m/10 ft.



CAUTION

The remote control system may not function when direct sunlight or strong illumination strikes the remote control sensor of the LCD monitor, or when there is an object in the path of the sensor.

Handling the Remote Control

Do not open the remote control other than to install batteries.

Do not allow water or other liquid to splash onto the remote control. If the remote control gets wet, wipe it dry immediately.

Avoid exposure to heat and steam.

Remote Control ID Function

REMOTE CONTROL ID

The remote control included with the display can be used to control up to 26 individual MultiSync monitors using what is called the REMOTE CONTROL ID mode. The REMOTE CONTROL ID mode works in conjunction with the Monitor ID, allowing control of up to 26 individual MultiSync monitors. For example: if there are many monitors being used in the same area, a remote control in normal mode would send signals to every monitor at the same time Figure 1. Using the remote in REMOTE CONTROL ID mode will only operate one specific monitor within the group Figure 2.

TO SET REMOTE CONTROL ID:

While holding down the REMOTE ID SET button on the remote control, use the KEYPAD to input the Monitor ID (1-26) of the display to be controlled via remote. The remote can then be used to operate the monitor having that specific Monitor ID number.

When 0 is selected or when the remote control is in normal mode, all monitors will be operated.

TO USE REMOTE CONTROL ID MODE

ID Mode - To enter ID Mode press the REMOTE ID SET button and hold down for 2 seconds.

Normal Mode - To return to Normal Mode press the REMOTE ID RESET button and hold down for 2 seconds.

In order for this feature to work properly, the display must be assigned a Monitor ID number. The Monitor ID number can be assigned under the MULTI DISPLAY menu in the OSD (See page 30).

You monitor ID in the center of display when your remote control is ID mode.-

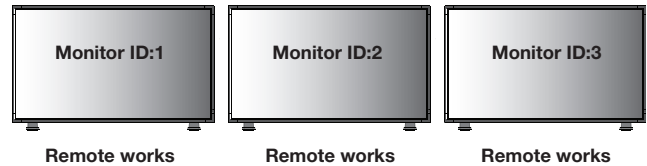


Figure 1
Remote in Normal
mode or the REMOTE
ID is set to 0

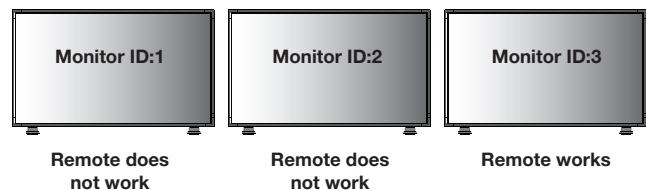


Figure 2
Remote set up to
use Remote ID:3



Setup

Please see installation on page 6 of this manual and follow all installation instructions.

1) Determine the installation location.

CAUTION: Installing your LCD display must be done by a qualified technician. Contact your dealer for more information.

CAUTION: MOVING OR INSTALLING THE LCD MONITOR MUST BE DONE BY TWO OR MORE PEOPLE. Failure to follow this caution may result in injury if the LCD monitor falls.

CAUTION: Do not mount or operate the display upside down, face up, or face down.

CAUTION: This LCD has a temperature sensor and cooling fan. If the LCD becomes too hot, the cooling fan will turn on automatically. If the LCD becomes overheated while the cooling fan is running, the "Caution" menu will appear. If the "Caution" menu appears, discontinue use and allow the unit to cool. Using the cooling fan will reduce the likelihood of early circuit failure and may help reduce image degradation and "image persistence".

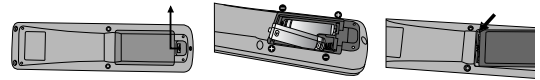
If the LCD is used in an enclosed area or if the LCD panel is covered with a protective screen, please check the inside temperature of the monitor by using the "HEAT STATUS" control in the OSD (see page 30). If the temperature is higher than the normal operating temperature, please turn the cooling fan to ON within the FAN CONTROL menu within the OSD (see page 30).

IMPORTANT

Lay the protective sheet, which was wrapped around the LCD monitor when it was packaged, beneath the LCD monitor so as not to scratch the panel.

2) Install the remote control batteries.

The remote control is powered by two 1.5V AA batteries. To install or replace batteries:



- A. Press and slide to open the cover.
- B. Align the batteries according to the (+) and (-) indications inside the case.
- C. Replace the cover.

CAUTION: Incorrect usage of batteries can result in leaks or bursting. NEC recommends the following battery use:

- Place "AA" size batteries matching the (+) and (-) signs on each battery to the (+) and (-) signs of the battery compartment.
- Do not mix battery brands.
- Do not combine new and old batteries. This can shorten battery life or cause liquid leakage of batteries.
- Remove dead batteries immediately to prevent battery acid from leaking into the battery compartment.
- Do not touch exposed battery acid, it may injure skin.

NOTE: If you do not intend to use the Remote Control for a long period of time, remove the batteries.

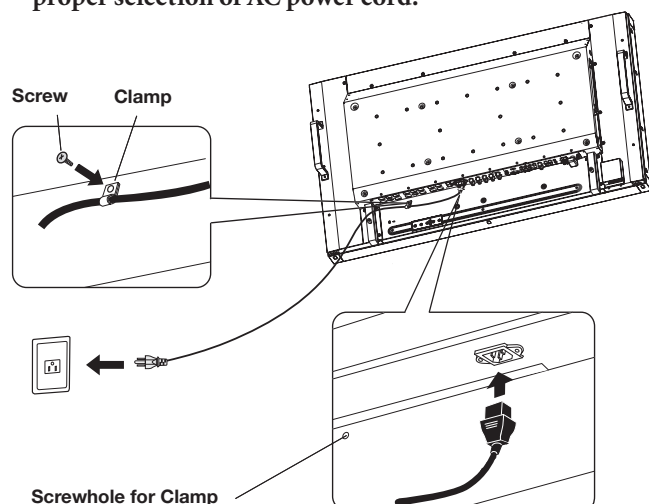
3) Connect external equipment.

- To protect the external equipment, turn off the main power before making connections.
- Refer to your equipment user manual for further information.

4) Connect the supplied power cord.

- The equipment should be installed close to an easily accessible power outlet.
- Please attach power cord to the LCD monitor by attaching the screw and clamp.
- Fully insert the prongs into the power outlet socket. A loose connection may cause image degradation.

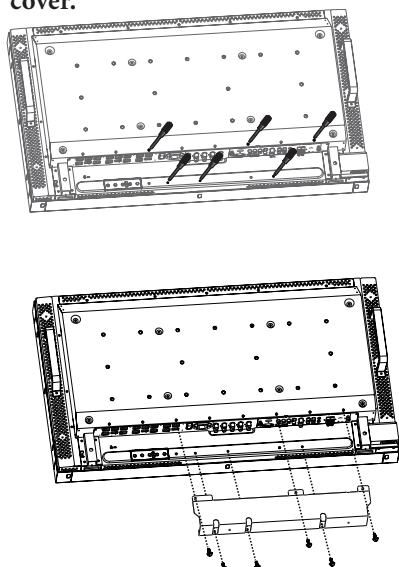
NOTE: If you use this monitor at AC 220 - 240V, please refer to "Safety Precautions and Maintenance & Recommended Use" sections of this manual for proper selection of AC power cord.



5) Attach the cable cover

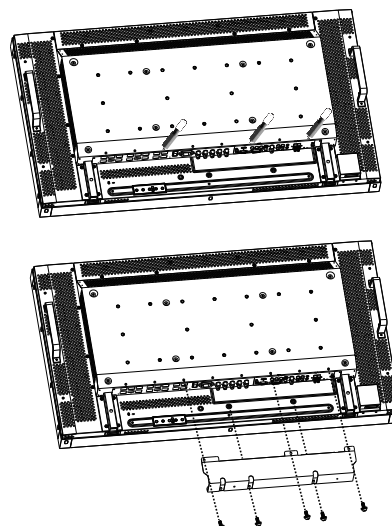
For LCD4020

- Remove the six screws.
- Use 6 of the M4 x 10 screws (included) to attach the cable cover.



For LCD4620

- Remove the 3 screws.
- Use 5 of the M4 x 10 screws (included) to attach the cable cover.



- 6) Switch on the power of all the attached external equipment.
When connected with a computer, switch on the power of the computer first.
- 7) Operate the attached external equipment.
Display the signal from the desired input source.
- 8) Adjust the sound .
Make volume adjustments as required.
- 9) Adjust the screen (See page 27).
Make adjustments of the screen display position when necessary.
- 10) Adjust the image (See page 27).
Make adjustments such as brightness or contrast when required.
- 11) Recommended Adjustments
To reduce the risk of the "image persistence", please adjust the following items based on the application being used:
"DATE & TIME" and "SCHEDULE SETTINGS"
(See pages 28 and 29)
"SCREEN SAVER", and "SIDE BORDER COLOR"
(See page 30)

It is recommended that the "FAN CONTROL" setting (see page 30) be turned to ON also.

Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.

Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Connections

Before connecting external equipment to LCD:

First turn off the power to all of the equipment associated with the LCD as well as that of the equipment to be connected.

For questions regarding external equipment please refer to the user's manual supplied with that equipment.

Connecting the LCD Monitor to a PC

Connecting your computer to your LCD monitor will enable you to display your computer's screen image.

Some video cards having a pixel clock over 162MHz may not display images correctly.

The LCD monitor will automatically adjust to a preset timing to display the proper image.

<Factory Preset Signal Timing>

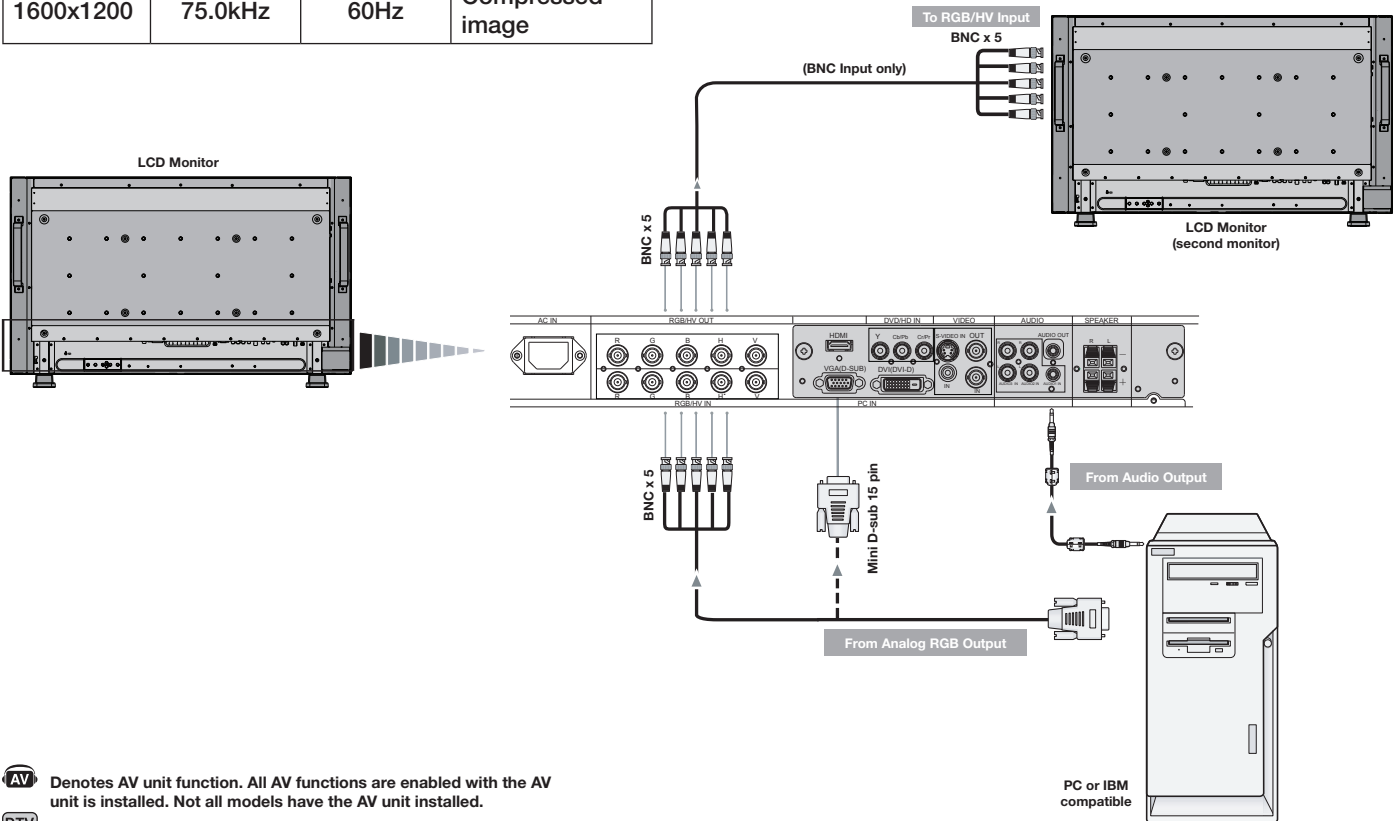
Resolution	Scanning frequency		Remarks
	Horizontal	Vertical	
640x480	31.5kHz	60Hz	
800x600	37.9kHz	60Hz	
1024x768	48.4kHz	60Hz	
1280x768	48.0kHz	60Hz	
1360x768	48.0kHz	60Hz	Recommended resolution
1280x1024	64.0kHz	60Hz	Compressed image
1600x1200	75.0kHz	60Hz	Compressed image


To connect to the VGA connector (mini D-sub 15 pin) on the LCD monitor, use the provided RGB signal cable (mini D-sub 15 pin to mini D-sub 15 pin).


To connect to the RGB/HV connector (BNC) on the LCD monitor, use a mini D-sub 15 pin to BNC x 5 signal cable (not included). Select RGB/HV from the INPUT button.

When connecting to a second LCD monitor, use the RGB/HV OUT connector (BNC)(BNC INPUT only).

The AUDIO IN1, 2, 3 can be used to choose the audio source. To select, use the AUDIO INPUT button. 



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 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Connecting to a Macintosh® Computer

Connecting your Macintosh computer to your LCD monitor will enable you to display your computer's screen image. Some video cards or drivers may not display images correctly.

To connect to the VGA connector (mini D-sub 15 pin) on the LCD monitor, use the RGB signal cable (mini D-sub 15 pin to mini D-sub 15 pin) included with the display.

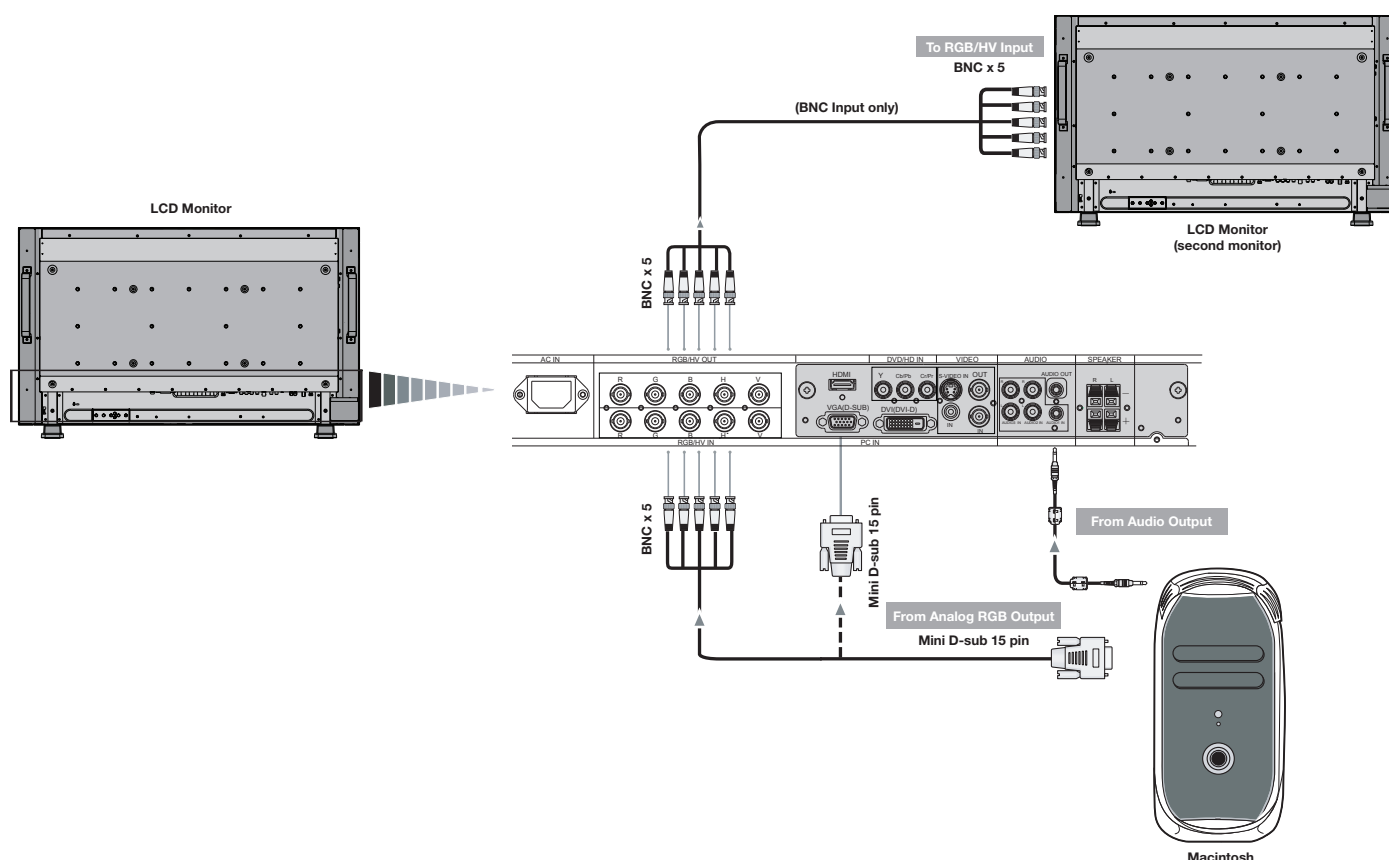
NOTE: For older Macintosh computers, use Macintosh cable adapter to connect to your Macintosh's video port. To obtain the Macintosh cable adapter call NEC Display Solutions of America, Inc. at (800) 632-4662

To connect to the RGB/ HVconnector (BNC) on the LCD monitor, use a mini D-sub 15 pin to BNC x 5 signal cable (not included)(BNC INPUT only).


If you will be connecting the LCD monitor to a Macintosh PowerBook, set "Mirroring" to off.

Refer to your Macintosh's owner's manual for more information about your computer's video output requirements and any special identification or configuring that may be required.

The AUDIO IN1, 2, 3 can be used to choose the audio source. To select, use the AUDIO INPUT button. 



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 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

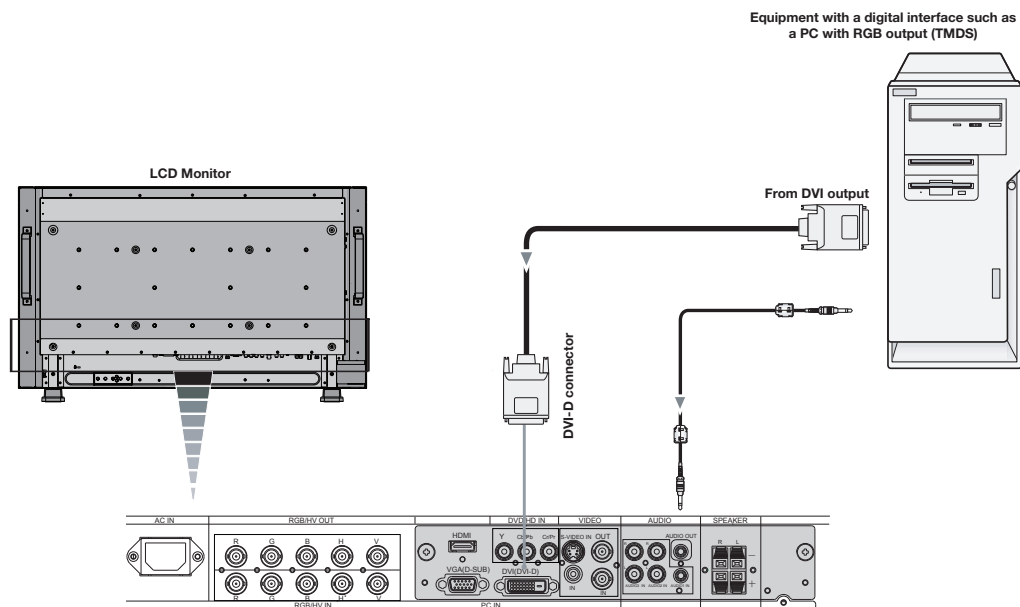
Connections - *continued*

Connecting to a Computer with Digital Output


Connections can be made with devices equipped with a digital interface that complies with the DVI (Digital Visual Interface) standard.

- DVI connector also accepts a DVI-D cable.
- Input TMDS signals conforming to DVI standards.
- To maintain display quality, use a cable recommended by DVI standards.

The AUDIO IN1, 2, 3 can be used to choose the audio source. To select, use the AUDIO INPUT button. 



 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.

 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

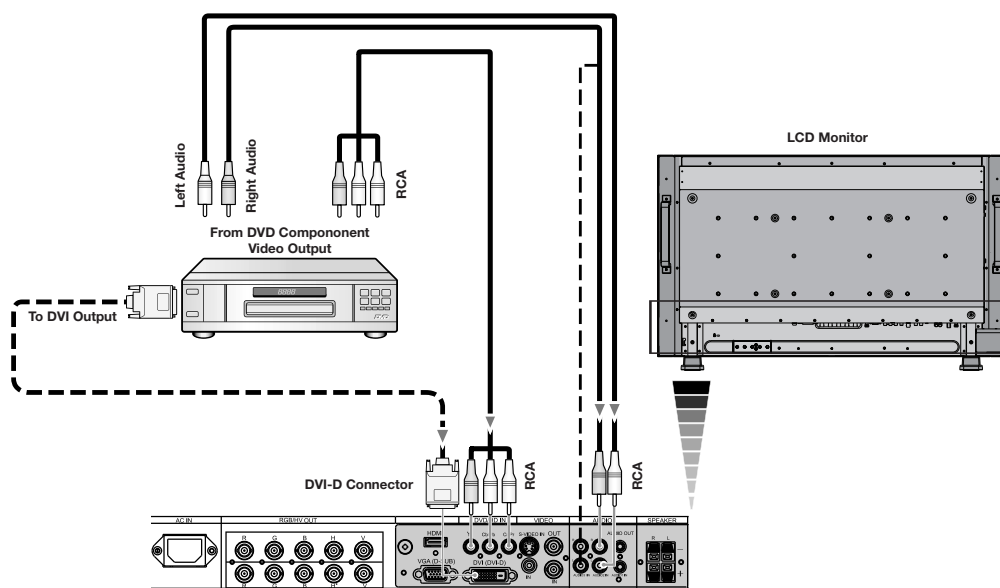
Connecting a DVD Player with component out

Connecting your DVD player to your LCD monitor will enable you to display DVD video.


Refer to your DVD player user's manual for more information.

Connect the LCD Monitor to a DVD Player

- To connect the DVD/HD IN connector (RCA) on the LCD monitor, use a separately available RCA connector cable.
- Some DVD players may have different connectors such as a DVI-D connector.
- Select [DVI-HD] mode from the "DVI MODE" menu when you connect a DVI-D connector. For DVI Mode selection, see "DVI MODE" on page 31.
- The AUDIO IN1, 2, and 3 (both RCA) can be used for audio input. For connection, select [IN1, IN2] or [IN3] from the AUDIO INPUT button.



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 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

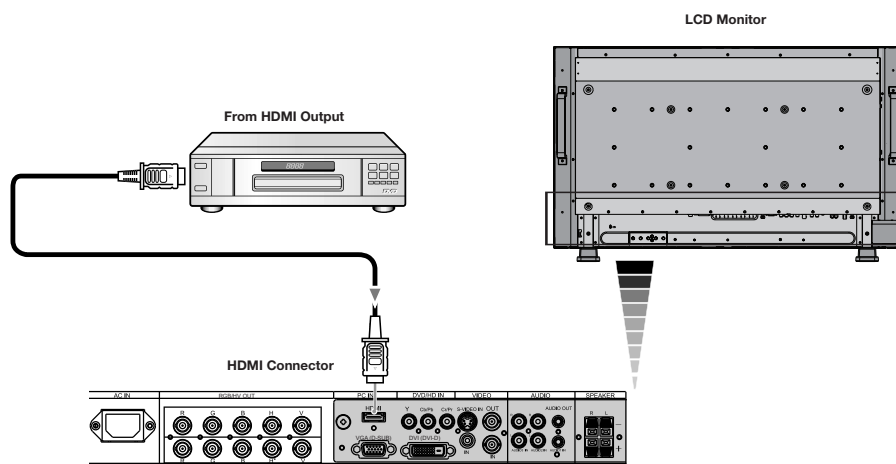
Connections - continued

Connecting a DVD Player with HDMI out

Connecting your DVD player to your LCD monitor will enable you to display DVD video. Refer to your DVD player user's manual for more information.

Connect the LCD Monitor to a DVD Player

- Please use an HDMI cable that has the HDMI logo.
- It may take a few seconds to show the signal.
- We do not support PC-DVI signals.

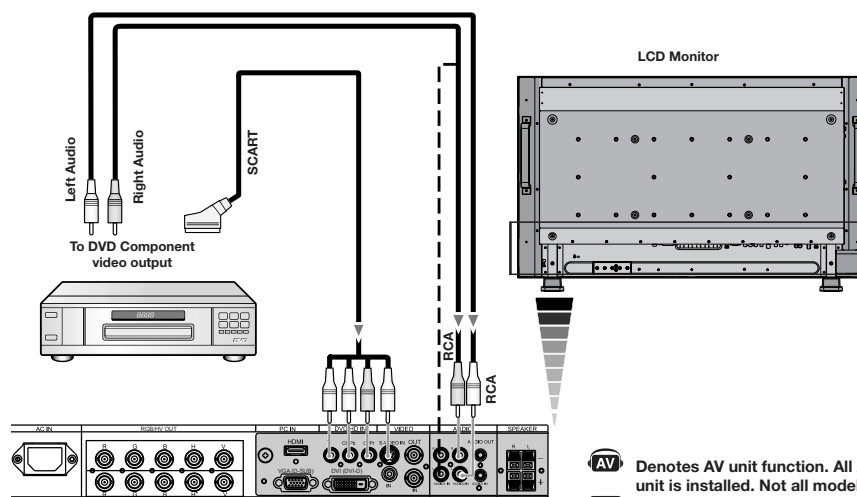



Connecting a DVD Player with SCART out


Connecting your DVD player to your LCD monitor will enable you to display SCART.

Connect the LCD Monitor to a DVD Player

- To connect the DVD/HD IN connector (RCA) on the LCD monitor and connect the video (sync) and the Video In connector (RCA), use a separately available RCA connector cable.
- Some DVD players may have different connectors such as DVI-D connector.
- Select [ON] mode from the “SCART MODE” menu when you use a SCART connector. Mode selection, see “SCART” on page 31.
- The AUDIO IN 2 and 3 (both RCA) can be used for audio input. For connection, select [IN2] or [IN3] from the AUDIO INPUT button.



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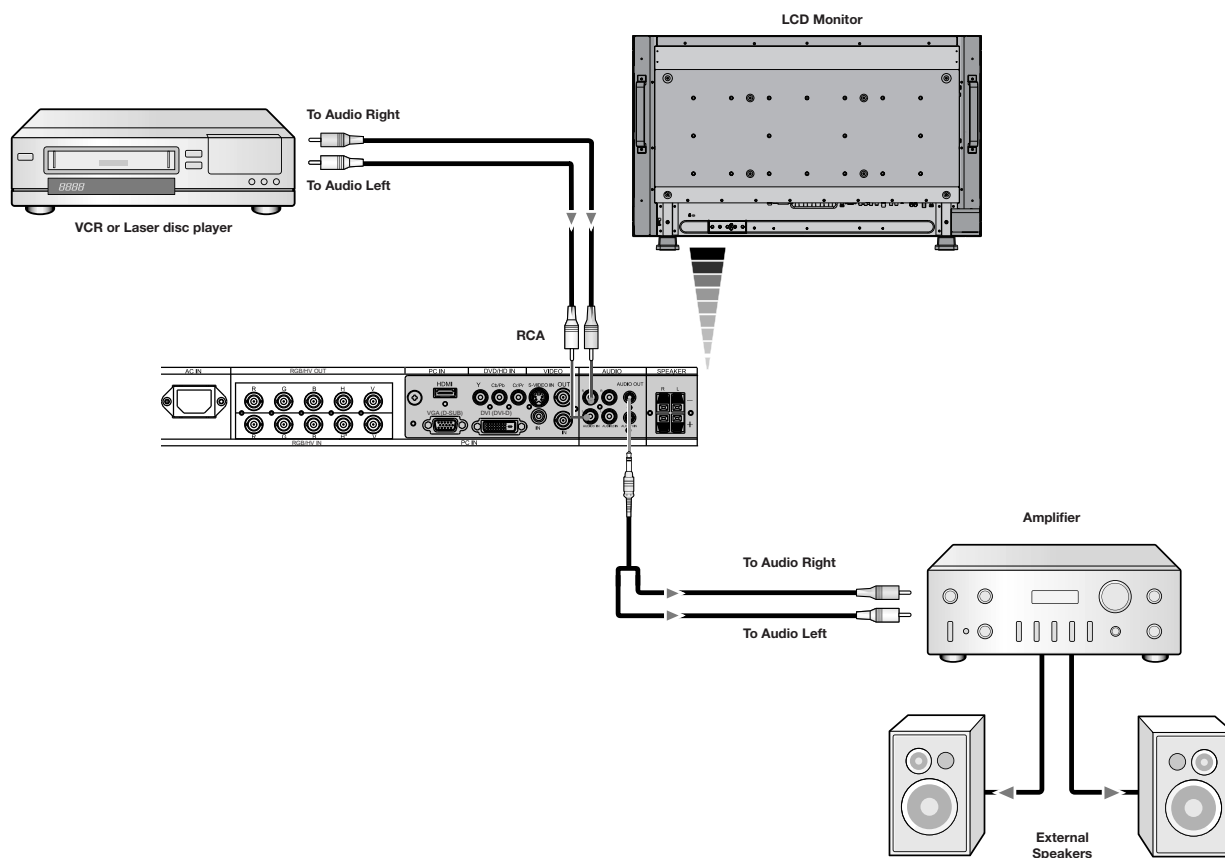
 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Connecting to a Stereo Amplifier


You can connect your stereo amplifier to your LCD monitor. Refer to your amplifier owner's manual for more information.

Connect the LCD Monitor to a Stereo Amplifier

- Turn on the LCD monitor and the amplifier only after all connections have been made.
- Use a stereo Mini RCA cable to connect the AUDIO OUT connector (a stereo Mini Jack) on the LCD monitor and the audio input on the amplifier.
- Do not reverse the audio left and right jacks.
- The AUDIO IN is used for audio input.
- The AUDIO OUT jack outputs sound from the selected Audio input.



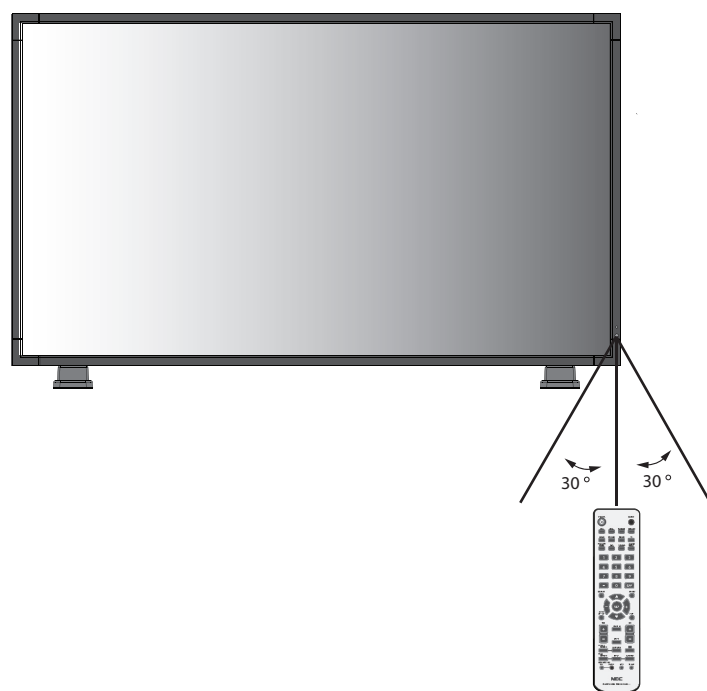
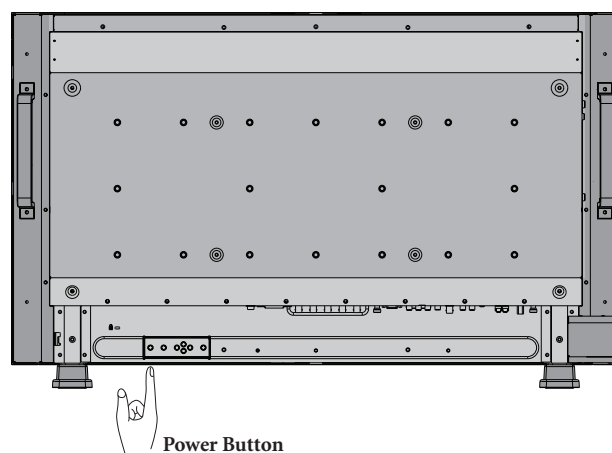
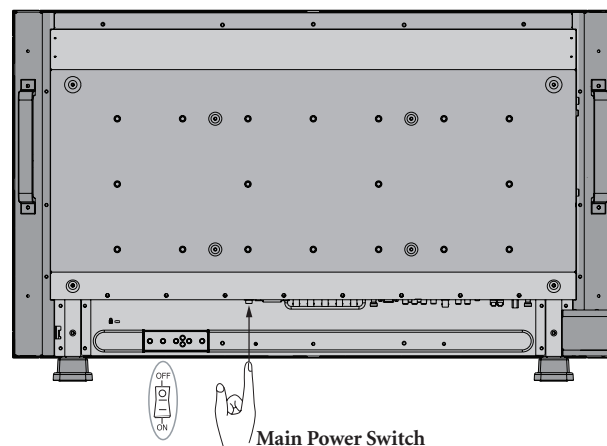
 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.

 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Basic Operation - Power ON and OFF Modes

The LCD monitor power indicator will turn green while powered on and will turn red or amber while powered off.

NOTE: The Main Power Switch must be in the ON position in order to power up the monitor using the remote control or the Power Button on the front of the LCD.



Power Indicator

Mode	Status Indicator Light
Power ON	Green *2
Power OFF (ECO STANDBY)* Power consumption under 1W	Red
Power OFF (STANDBY) Power consumption under 5W	Amber
Power Save	Amber Blinking
Power Standby when "SCHEDULE SETTINGS" enabled	Green and Amber blink alternately
Diagnosis (Detecting failure)	Red Blinking (See Trouble Shooting page 41)

*When in Eco Standby Mode RS-232C controls do not function.
*2 If "OFF" is selected in POWER INDICATOR (See page 30), the LED will not light when the LCD monitor is active mode.

Power Management

The LCD monitor follows the VESA approved DPM Power Management function.

The power management function is an energy saving function that automatically reduces the power consumption of the display when the keyboard or the mouse has not been used for a fixed period of time.

The power management feature on your new display has been set to the "ON" mode. This allows your display to enter a Power Saving Mode when no signal is detected. This could potentially increase the lifetime of the display while power consumption is decreased.

STANDBY mode is used when the display is connected to an RS-232C cable or when using the INPUT DETECT function.

ECO STANDBY uses less power, but the RS-232C and INPUT DETECT functions are not available.

Picture Size

The size of the picture can be changed depending on the aspect ratio (4:3, 16:9, etc.) of the input signal.

DVI, VGA, RGBH/V, OPTION FULL → ZOOM → NORMAL
 HDMI, DVD/HD, VIDEO, TV FULL → WIDE → ZOOM → NORMAL

Signal Type	NORMAL SIZE	RECOMMENDED SIZE
4:3		NORMAL
		ZOOM (DYNAMIC)
Squeeze		FULL
Letterbox		WIDE

Picture Mode

Choose the Picture Mode that is most suitable for the type of content that is shown.

Standard: for images
 sRGB: for text based applications.
 Highbriht: for moving images
 Cinema: for movies

DVI, VGA, RGB/HV, OPTION	STANDARD → sRGB → HIGHBRIGHT
HDMI, DVD/HD, VIDEO, TV	STANDARD → CINEMA → HIGHBRIGHT

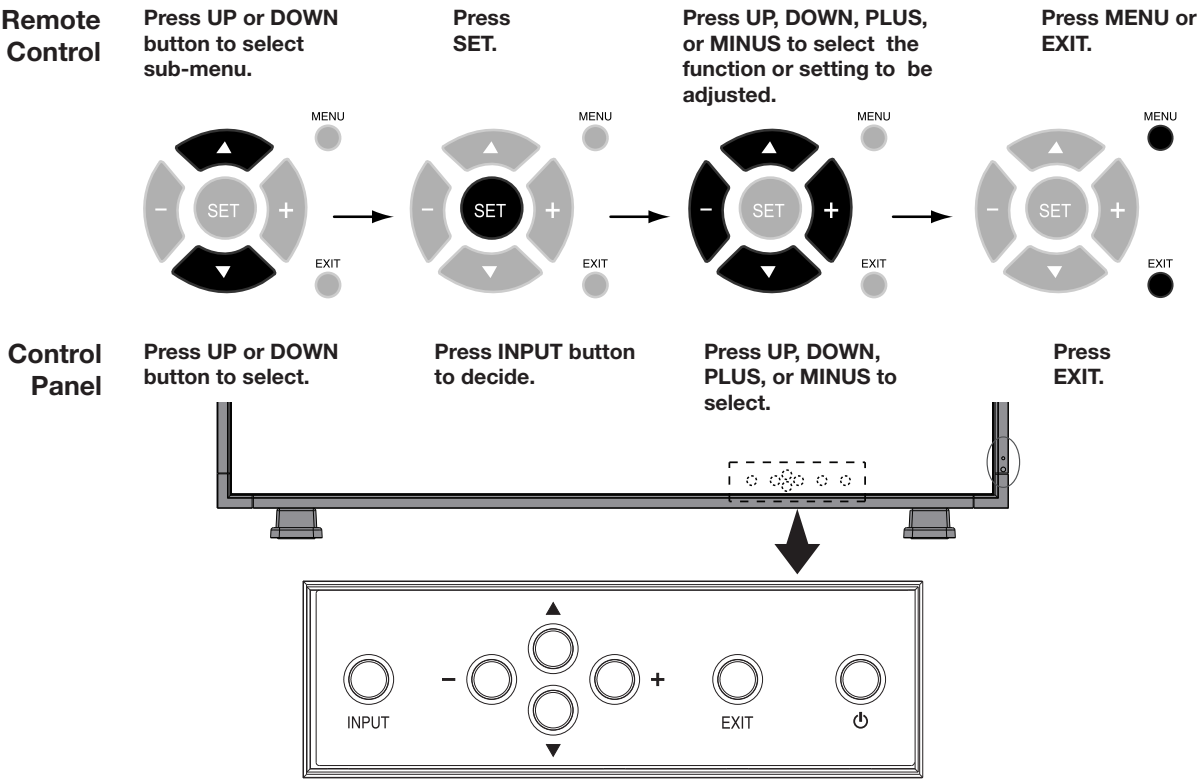
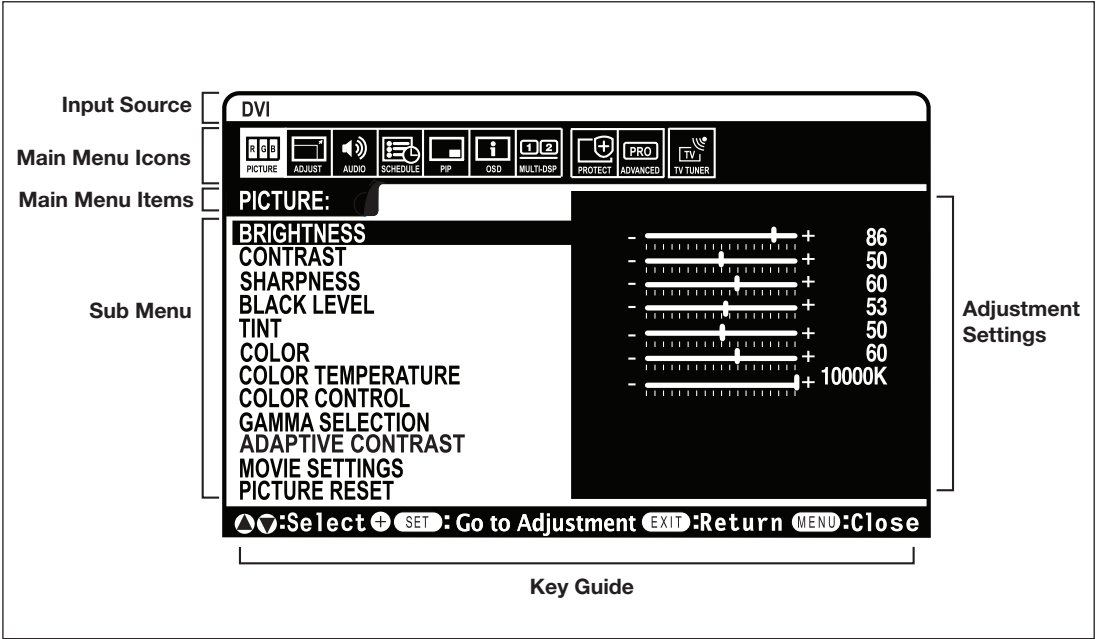
Information OSD

The Information OSD provides information such as: Monitor ID, Input Source, Picture Size, etc. Press the DISPLAY button on the remote to bring up the Information OSD.

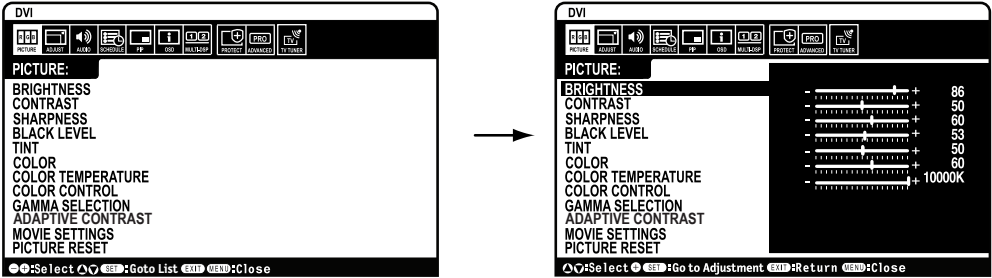
See page 35 for detailed explanation.







OSD (On-Screen Display) Controls




OSD
Screen





OSD Controls - *continued*

OSD	Setting	
PICTURE	BRIGHTNESS	Adjusts the overall image and background brightness. Press + or - to adjust.
	CONTRAST	Adjusts the image brightness in relationship to the background. Press + or - to adjust. Note: The sRGB picture mode is standard and cannot be changed.
	SHARPNESS	Adjusts the crispness of the image. Press + or - to adjust.
	BLACK LEVEL	Adjusts the image brightness in relationship to the background. Press + or - to adjust. Note: The sRGB picture mode is standard and cannot be changed.
	TINT  HDMI, DVD/HD, VIDEO, TV input only	Adjusts the tint of the screen. Press + or - to adjust.
	COLOR  HDMI, DVD/HD, VIDEO, TV input only	Adjusts the color depth of the screen. Press + or - to adjust.
	COLOR TEMPERATURE	Adjusts the color temperature of the entire screen. A low color temperature will make the screen reddish. A high color temperature will make the screen bluish. Note: The sRGB picture mode is set to a predefined 6500 K standard and cannot be changed.
	COLOR CONTROL DVI, VGA, RGB/HV, HDMI input only	Adjusts the levels of the Red, Yellow, Green, Cyan, Blue, Magenta and Saturation. Note: The sRGB picture mode is standard and cannot be changed.
	GAMMA SELECTION	Select a display gamma for best picture quality. Note: The sRGB picture mode is standard and cannot be changed.
	NATIVE	Gamma correction is handled by the LCD panel.
	2.2	Typical display gamma for use with a PC.
	2.4	Good for video (TV, DVD, etc.).
	S GAMMA	Special gamma for certain types of movies. Raises the dark parts and lowers the light parts of the image. (S-Curve)
	DICOM SIM.	DICOM GSDF curve simulated for LCD type.
	PROGRAMMABLE	A programmable gamma curve can be loaded using NEC software.
	ADAPTIVE CONTRAST  HDMI, DVD/HD, VIDEO, TV input only	Sets the level of adjustment for dynamic contrast.
	OFF	
	MID	
	HIGH	
	MOVIE SETTINGS 	
	NOISE REDUCTION VIDEO, TV input only	Adjusts the amount of noise reduction. Press + or - to adjust.
	FILM MODE HDMI, DVD/HD, VIDEO, TV input only	Selects Film mode.
	PICTURE RESET	Resets the following settings within the PICTURE menu back to factory setting: BRIGHTNESS, CONTRAST, SHARPNESS, BLACK LEVEL, TINT, COLOR TEMPERATURE, COLOR CONTROL, GAMMA SELECTION, ADAPTIVE CONTRAST, MOVIE SETTINGS.
ADJUST	AUTO SETUP VGA and RGB/HV input only	Automatically adjusts screen size, H position, V position, Clock, Clock Phase, White Level, and Black Level.
	AUTO ADJUST VGA and RGB/HV input only	H Position, V Position and Clock Phase are adjusted automatically upon power on.
	H POSITION	Controls the horizontal position of the image within the Display area of the LCD. Press + to move right. Press - to move left.
	V POSITION	Controls the vertical position of the image within the Display area of the LCD. Press + to move up. Press - to move down.
	CLOCK VGA and RGB/HV input only	Press + to expand the width of the image on the right of the screen. Press - to narrow the width of the image on the left.





OSD Controls - *continued*

	CLOCK PHASE <i>VGA, RGB/HV, DVD/HD input only</i>		Adjusts the visual “noise” on the image.	
	H RESOLUTION <i>DVI, VGA, RGB/HV input only</i>		Adjusts the horizontal size of the image.	
	V RESOLUTION <i>DVI, VGA, RGB/HV input only</i>		Adjusts the vertical size of the image.	
	ZOOM MODE <i>All input except for TV</i>		Select the aspect ratio of the screen image.	
		BASE ZOOM		Choose the zoom method.
			16:9 <i>HDMI, DVD/HD, VIDEO Input only</i>	Same aspect ratio as the LCD panel.
			14:9 <i>HDMI, DVD/HD, VIDEO Input only</i>	14:9
			DYNAMIC <i>HDMI, DVD/HD, VIDEO Input only</i>	Expands a 4:3 picture to fill the screen in a non-linear (non-proportionate) manner and some of the image will be lost due to expansion. DYNAMIC is the same as FULL size image when HDTV 1080i signal is input.
			OFF	Selecting “OFF” will display the image in a 1 by 1 pixel format. (If the input resolution is higher than a 1360 x 768 resolution, the image will be scaled down to fit the screen.
			CUSTOM	Displays an image as large as possible without changing the aspect ratio or cutting off part of the image.
		ZOOM <i>16:9, 14:9, CUSTOM only</i>		Maintains the aspect ratio while zooming.
		H ZOOM <i>16:9, 14:9, CUSTOM only</i>		Amount of horizontal zoom. Can be adjusted for each BASE ZOOM setting.
		V ZOOM <i>16:9, 14:9, CUSTOM only</i>		Amount of vertical zoom. Can be adjusted for each BASE ZOOM setting.
		H POS <i>16:9, 14:9, CUSTOM only</i>		Horizontal position. Can be adjusted for each BASE ZOOM setting.
		V POS <i>16:9, 14:9, CUSTOM only</i>		Vertical position. Can be adjusted for each BASE ZOOM setting.
	INPUT RESOLUTION <i>VGA and RGB/HV input only</i>		If there is a problem with signal detection, this function forces the monitor to display the signal at the desired resolution. If no problem is detected, the only available option will be “AUTO”.	
	ADJUST RESET		Resets the following settings within the ADJUST menu back to factory setting: AUTO ADJUST, H POSITION, V POSITION, CLOCK, CLOCK PHASE, H RESOLUTION, V RESOLUTION, ZOOM MODE, INPUT RESOLUTION.	
AUDIO 	BALANCE			
	TREBLE			
	BASS			
	PIP AUDIO			Selects source of PIP audio.
	AUDIO RESET			Resets “AUDIO” options back to factory settings.
SCHEDULE	OFF TIMER		Sets the monitor to power off after a length of time between 1 and 24 hours.	
	SCHEDULE SETTING		Creates a working schedule for the monitor to use. See page 34 for instructions.	
	SCHEDULE LIST		List of schedules.	
	DATE & TIME		Sets the date, time, and daylight saving region. Date & time must be set in order for the “SCHEDULE” function to operate.	



	YEAR	Resets the following settings within the SCHEDULE menu back to factory setting: OFF TIMER, SCHEDULE SETTINGS.
	MONTH	
	DAY	
	TIME	
	DAYLIGHT SAVING	
	SCHEDULE RESET	
PIP	KEEP PIP MODE 	Allows the monitor to remain in "PIP" mode after powering off. When Power is returned, PIP appears without having to enter the OSD.
	PIP MODE 	Picture-in-Picture
	OFF	
	PIP	
	POP	
	SIDE BY SIDE (ASPECT)	
	SIDE BY SIDE (FULL)	
	PIP SIZE	Selects the size of the sub-picture used in Picture-in-Picture (PIP) mode.
	SMALL	
	MIDDLE	
	LARGE	
	PIP POSITION	Determines where the PIP appears on the screen.
	PIP RESET	Resets the following settings within the PIP menu back to factory setting: KEEP PIP MODE, PIP MODE, PIP SIZE, PIP POSITION.
OSD	LANGUAGE	Select the language used by the OSD.
	ENGLISH	
	DEUTSCH	
	FRANÇAIS	
	ITALIANO	
	ESPAÑOL	
	SVENSKA	
	日本語	
	OSD TURN OFF	Turns off the OSD after a period of inactivity. The preset choices are 10-240 seconds.
	OSD POSITION	Determines the location where the OSD appears on the screen.
	UP	
	DOWN	
	LEFT	
	RIGHT	
	INFORMATION OSD	Selects whether the information OSD is displayed or not. The information OSD will be displayed when the input signal or source changes. The information OSD will also give a warning when there is no-signal or the signal is out-of range. An interval between 3 to 10 seconds for the Information OSD to appear is available.
	MONITOR INFORMATION	Monitor Information.

OSD Controls - *continued*


	OSD TRANSPARENCY		Set the transparency level of the OSD.
	OFF		
	TYPE1		
	TYPE2		
	OSD RESET		
MULTI DISPLAY	MONITOR ID		Sets the monitor ID number from 1-26.
	IR CONTROL		Selects the mode of the monitor for use with the infra-red remote control when using the RS-232C daisy chain.
		NORMAL	The monitor will be controlled normally by wireless remote controller.
		PRIMARY	Choose “PRIMARY” for the first monitor within an R-S232C daisy chain.
		SECONDARY	Choose “SECONDARY” for all subsequent monitors within an RS-232C daisy chain.
		LOCK	Prevents the monitor from being controlled by wireless remote controller. To return to normal operation, press the “DISPLAY” button on the remote controller for 5 seconds.
	TILE MATRIX		Allows one image to be expanded and displayed over multiple screens (up to 25) through a distribution amplifier.
		H MONITORS	Number of monitors arranged horizontally.
		V MONITORS	Number of monitors arranged vertically.
		POSITION	Select which section of the tiled image to be displayed on the monitor.
		TILE COMP	Turns the TILE COMP feature on.
		ENABLE	Enables Tile Matrix.
	POWER ON DELAY		Adjusts the delay time between being in “standby” mode and entering “power on” mode. “POWER ON DELAY” can be set between 0 and 50 seconds.
	POWER INDICATOR		Turns on or off the LED located on the front of the monitor. If "OFF" is selected, the LED will not light when the LCD monitor is active mode.
	MULTI DISPLAY RESET		Resets the following settings within the MULTI DISPLAY menu back to factory setting: MONITOR ID, IR CONTROL, TILE MATRIX, POWER ON DELAY.
DISPLAY PROTECTION	POWER SAVE <i>All inputs except for TV</i>		Sets how long the monitor waits to go into power save mode after a lost signal. NOTE: When connecting DVI, video card might not stop sending digital even if image has disappeared. In this case the monitor does not got to power management mode.
	STANDBY MODE		Lowers power consumption. Note: RS-232C Function is lost when in Eco Standby mode.
	HEAT STATUS		Displays status of the COOLING FAN, BRIGHTNESS and TEMPERATURE.
	FAN CONTROL		Cooling fan reduces the temperature of the display.
	SCREEN SAVER		Use the SCREEN SAVER function to reduce the risk of Image Persistence.
		GAMMA	The gamma curve becomes narrow, reducing contrast and cutting down the risk of image retention.
		BRIGHTNESS	The brightness is decreased when “ON” is selected.
		MOTION	The screen image is slightly expanded and moves in 4 directions (UP, DOWN, RIGHT, LEFT) at user determined intervals.
	SIDE BORDER COLOR		Adjusts the color of the side borders when a 4:3 image is displayed. Press + button, the bar will become lighter. Press - button, the bar will become darker.
	AUTO BRIGHTNESS <i>DVI, VGA, RGB/HV input only</i>		Adjusts the brightness level according to the input signal.
	CHANGE SECURITY PASSWORD		Allows the security password to be changed. Factory preset password is 0000.
	SECURITY LOCK		Locks the security password.
	DDC/ CI		ENABLE/ DISEABLE: turn on or off the two way communication and control of the monitor.
	DISPLAY PROTECTION RESET		Resets the following settings within the Picture menu back to factory setting: POWER SAVE, STANDBY MODE, FAN CONTROL, SCREEN SAVER, SIDE BORDER COLOR, AUTO BRIGHTNESS.

ADVANCED OPTION		
	INPUT DETECT <i>All inputs except for TV</i>	Selects the method of input detection the monitor uses when more than two input devices are connected.
	NONE	The Monitor will not search the other video input ports.
	FIRST DETECT	When the 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	When the monitor is displaying a signal from the current source and a new secondary source is supplied to the monitor, the monitor will automatically switch to the new video source. When current video input signal is not present, 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.
	VIDEO DETECT 	DVD/HD or VIDEO inputs will have priority over DVI, VGA, and RGB/HV. When DVD/HD or VIDEO input signal is present the monitor will change and keep to the DVD/HD or VIDEO input.
	LONG CABLE ON/OFF <i>VGA and RGB/HV input only</i>	Compensates for image degradation caused from using a long cable.
	LONG CABLE MANUAL <i>VGA and RGB/HV input only</i>	Manually compensates for image degradation caused from using a long cable.
	RED DELAY	Adjusts the phase of the red signal.
	GREEN DELAY	Adjusts the phase of the green signal.
	BLUE DELAY	Adjusts the phase of the blue signal.
	RED SHARPNESS	Adjusts the performance degradation of the RED signal.
	GREEN SHARPNESS	Adjusts the performance degradation of the GREEN signal.
	BLUE SHARPNESS	Adjusts the performance degradation of the BLUE signal.
	SOG PEAK.	Adjusts the shape of Sync on Green signal.
	VIDEO EQ. <i>RGB/HV input only</i>	Optimize the shape (Tailing) of RED, GREEN and BLUE signals.
	SYNC TERMINATE <i>RGB/HV input only</i>	Selects the terminate resistance for matching the cable impedance.
	DVI MODE	Choose the DVI mode based on the input device connected via DVI connector.
	DVI-PC	When a PC or similar equipment is connected.
	DVI-HD	When a DVD player is connected.
	SCAN CONVERSION <i>All inputs except for RGB, RGB/ HV</i>	Selects the IP (Interlace to Progressive) conversion function. Note: For DVI input "DVI-HD" needs to be enabled in the DVI mode menu.
	PROGRESSIVE	Converts interlaced signals to progressive. This is the default setting.
	INTERLACE	Disables IP conversion. This setting is best suited for motion pictures, but increases the risk of image retention.
	SCART MODE 	Input mode for devices using SCART connectors.
	S-VIDEO MODE 	Selects the S-Video input port function.
	PRIORITY	When an S-Video cable is connected to the S-Video input, it will have priority over the composite input port.
	SEPARATE	The S-Video port and Composite port can be selected as independent input ports.
	COLOR SYSTEM  <i>VIDEO input only</i>	The selected Color System depends on the video format of the input signal.
	AUTO	Automatically chooses Color System setting based on input signal.
	NTSC	
	PAL	
	SECAM	
	4.43NTSC	
	PAL-60	

OSD Controls - *continued*

	SCAN MODE  HDMI, DVD/HD, VIDEO, TV input only	Some video formats may require scan conversion in order to best display the image.
	OVER SCAN	Image size is larger than what can be displayed. The image edge will appear cropped. Approximately 95% of the image will be shown on the screen
	UNDER SCAN	Image size stays within the display area. The whole image is displayed on the screen.
	ADVANCED OPTION RESET	Resets the following settings within the ADVANCED OPTION menu back to factory setting: INPUT DETECT, LONG CABLE ON/OFF, LONG CABLE MANUAL, DVI MODE, SCAN CONVERSION, S-VIDEO MODE, SCAN MODE.
	FACTORY RESET	Resets OSD options back to factory settings EXCEPT FOR: CHANGE SECURITY PASSWORD and SECURITY PASSWORD.
TV TUNER  <i>Not all models have the Digital Tuner installed.</i>	TUNER	
	TUNING BAND	Choose AIR or Cable as TV source.
	CHECK DTV SIGNAL	Shows the status of the Digital TV signal.
	CHANNEL SEARCH	Searches for TV channels and stores them in memory.
	ADD ON CHANNEL SEARCH	Searches for TV channels and stores them in memory without erasing previously stored channels.
	FINE TUNING	Performs fine adjustments to analog channels.
	CHANNEL EDIT	Add or remove channels stored in memory.
	CHANNEL LABELS	Add a label to the channel.
	CONFIGURATION	
	MENU LANGUAGE	
	TIME ZONE	
	PASSWORD SET	Set the Parental Control Password. Factory default password is 0000.
	PARENTAL CONTROL	
	PARENTAL CONTROL MENU	Parents can choose to block types of programming based on rating and content.
	ADVANCED RATING	Downloadable rating, depending on broadcast. Press SET to change setting.
	CLOSED CAPTION OPTIONS	NOTE: Closed captioning settings can not be adjusted for the VIDEO/S-VIDEO inputs. AUTO is the only option available for these inputs.
	RESOLUTION	Set the displayed image to the desired resolution.
	AUDIO	
	AUDIO LANGUAGE	Choose the language of audio output.
	DIGITAL AUDIO OUTPUT	Select the digital audio output source. Choose Dolby D/PCM/OFF.

 Denotes AV unit function. All AV functions are enabled with the AV unit is installed. Not all models have the AV unit installed.

 Denotes Digital Tuner function. All DTV and AV functions are enabled when the DTV unit is installed. Not all models will have the digital tuner installed.

Digital Tuner Operation

Initial TV Setup

Before watching TV for the first time it is necessary to program the channels.

1. Attach the cable or antenna to the coaxial RF Connector on the back of the monitor.

NOTE: Cable distribution system should be grounded (earthed) in accordance with ANSI/NFPA 70, the National Electric Code (NEC), in particular section 820.93, Grounding of Outer Conductive Shield of a Coaxial Cable.

2. Enter the OSD and go to the TUNER.
3. In the TUNING BAND menu select which tuning method (Air, Cable, Cable HRC, Cable IRC) will be used.
4. Enter the CHANNEL SEARCH menu. Press SET to automatically scan and store channels to memory. The channel search will store both analog and digital channels.
NOTE: Analog channels are indicated with a -0 following the channel number. Digital channels are indicated with a - followed by a number. For example, channel 2-0 is analog and channel 2-1 is digital. Analog channels may also have separate digital subchannels associated with them. For example channel 3-0 would be analog followed by channel 3-1, 3-2, etc.

5. Once channels are in memory, use the CHANNEL EDIT menu to add or remove channels and the CHANNEL LABEL menu to create unique names for channels, if desired.

Parental Controls TV, VIDEO input only.

Parents can block certain types of programming based on the rating and the content.

To block programming :

1. Enter the PARENTAL CONTROL menu, found under the CONFIG submenu within the TUNER OSD.
2. Enter the password. Default password is 0000. This password can be changed in the PASSWORD SET menu.
3. Highlight the square next to the type of programming you wish to block and press SET on the remote.
NOTE: Blocking one type of programming will automatically block all higher rated programming also. However, it is possible to unlock this programming while keeping the desired programming blocked.

TV Parental Guide Ratings Chart	
OFF	No Limitation.
TV-Y	All children. The themes and elements in this program are specifically designed for a very young audience, including children from ages 2-6.
TV-Y7	Directed to older children. Themes and elements in this program may include mild physical or comic violence or may frighten children under the age of 7.
TV-G	General audience. It contains little or no violence, no strong language, and little or no suggestive dialogue or situations.
TV-PG	Parental guidance suggested. The program may contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
TV-14	Parents strongly cautioned. This program contains some material that many parents would find unsuitable for children under 14 years of age. This program may contain intense violence (V), intense sexual situations (S), strong coarse language (L), or intensely suggestive dialogue (D).
TV-MA	Mature audiences only. This program may contain mature themes, indecent language, graphic violence and explicit sexual content.
Video Parental Guide Ratings Chart	
OFF	No Limitation
G	General audiences. All ages are permitted to watch.
PG	Parental guidance suggested. Some material may not be suitable for children.
PG-13	Parents strongly cautioned. Some material may be inappropriate for children under 13.
R	Restricted. Under 17 requires an accompanying parent or adult guardian.
NC-17	No one under 17 permitted to watch.
X	Adults only.

NOTE: Not all models come with the Digital Tuner installed.

Notes

NOTE 1: CREATING A SCHEDULE

The schedule function allows the display to be set to power on and off at different times. Up to seven different schedules can be programmed.

To program the schedule:

1. Enter the SCHEDULE menu.
Highlight SCHEDULE SETTING using the up and down buttons. Press the SET or the + button to enter the Settings menu. Highlight the desired schedule number and press set. The box next to the number will turn yellow. The schedule can now be programmed.
2. Use the up and down arrows to highlight INPUT.
Use the + and - buttons to choose the input source.
3. After the INPUT source is selected, use the down button to highlight the hours setting in the ON timeslot. Use the + and - buttons to set the hour. Use the up and down buttons to highlight the minutes setting. Use the + and - buttons to set the minutes. Set the OFF time in the same manner.
4. Use the down button to select a day on which the schedule will be enabled. Push the set button to enable. If the schedule is to be ran every day, use the choose EVERY DAY and press the SET button The circle next to EVERY DAY will turn yellow. If a weekly schedule is desired, choose the days of the week using the up and down buttons and pressing SET to select. Then highlight the EVERY WEEK option and press SET.

5. After a schedule is programmed the remaining schedules can then be set. Press CLOSE to leave the OSD or press EXIT to go back to the previous menu.

NOTE: If schedules are overlapping then the schedule with the highest number will have priority over the schedule with the lowest number. For example Schedule #7 will have priority over Schedule #1.

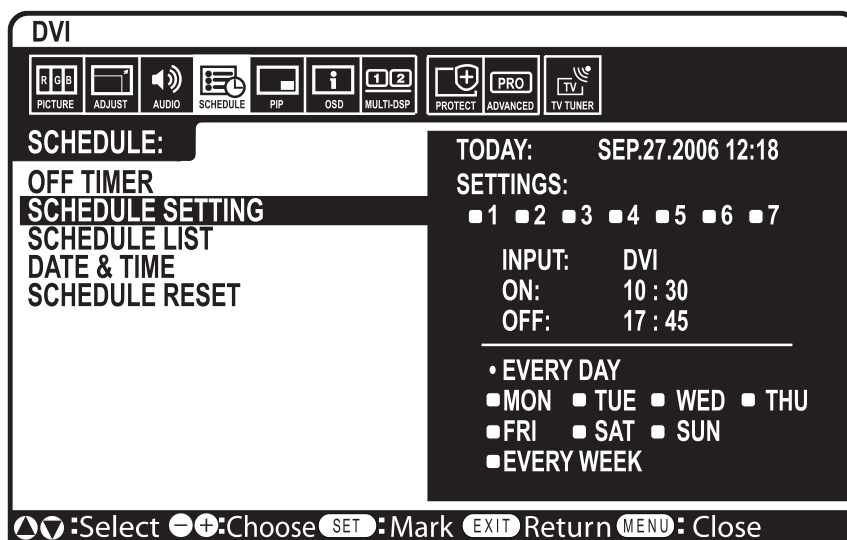
NOTE 2: IMAGE PERSISTENCE

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 usually permanent, but constant images being displayed for a long period of time should be avoided since there may be a “semi-permanent” effect.

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.

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.

Please set the “SCREEN SAVER”, “DATE & TIME” and “SCHEDULE SETTINGS” functions to further reduce the risk of Image persistence.



Using the LCD with RS-232C

This LCD monitor can be controlled via personal computer or wireless remote control using an RS-232C connection.

MONITOR ID and IR CONTROL

Using one PC or one infra-red wireless controller, up to 26 individual LCD4020/LCD4620 monitors can be controlled through a daisy chain via RS-232C connection.

1. Connect PC and LCD4020/LCD4620.

Connect a PC's RS-232C control output to the LCD4020/LCD4620's RS-232C input. You can then connect the RS-232C output from the LCD4020/LCD4620 to another LCD4020/LCD4620's RS-232C input. Up to 26 monitors can be connected using RS-232C.

2. Set Monitor ID and IR Control mode.

For proper operation, the Monitor ID should be set in the OSD menu of each monitor that is in the chain. The Monitor ID can be set under the "MULTI DISPLAY" menu in the OSD. The Monitor ID number can be set within a range from 1 to 26. No two monitors should share the same Monitor ID number. It is recommended to number each monitor in a daisy chain sequentially from 1. The first monitor in the daisy chain is designated as the primary monitor. Subsequent monitors with the chain are secondary monitors.

In the "MULTI DISPLAY" menu on the first monitor in the RS-232C daisy chain set the "IR CONTROL" to "PRIMARY".

Set the "IR CONTROL" to "SECONDARY" on all other monitors.

3. Press the "DISPLAY" button on the remote control while aiming at the "PRIMARY" monitor.

The Information OSD will be shown at top left side of the screen.

MONITOR ID: Displays the ID number of the current monitor within the daisy chain.

TARGET ID: Displays the ID number of the monitor that to be controlled via daisy chain from the current monitor.

Press the "+" or "-" buttons to change the "Target ID" to show the ID number of the monitor to be controlled. To control all of the daisy chained monitors simultaneously, select "ALL" as the "Target ID."

NOTE: If the monitor is in ECO Standby mode, RS-232C functionality is stopped.

4. Use the wireless remote controller to control the "SECONDARY" monitor while aiming at the "PRIMARY" monitor.

The "MENU OSD" will appear on the selected target monitor.

NOTE: If the "ID No." mode select OSD is showing, press the "DISPLAY" button on the remote control while pointing at the "PRIMARY" monitor to clear this OSD.

HINT: If you lost control due to the incorrect setting of "IR CONTROL", pressing the "DISPLAY" button on the remote control for 5 or more seconds will reset the "IR CONTROL" menu to "NORMAL" function.

ID number assigned to current monitor *1
ID number assigned monitor to be controlled via RS-232C *2

Monitor ID:1
Target ID:5

DVI
AUDIO: IN1
SIZE:FULL
1024 X 768
48KHz/60Hz

Input Source

Picture Size

Input Signal Information

*1: "IR control" should be set "Primary" or "Secondary".

*2: "IR control" should be set "Primary".

Using the LCD with RS-232C - *continued*

Functions that can be controlled via RS-232C are:

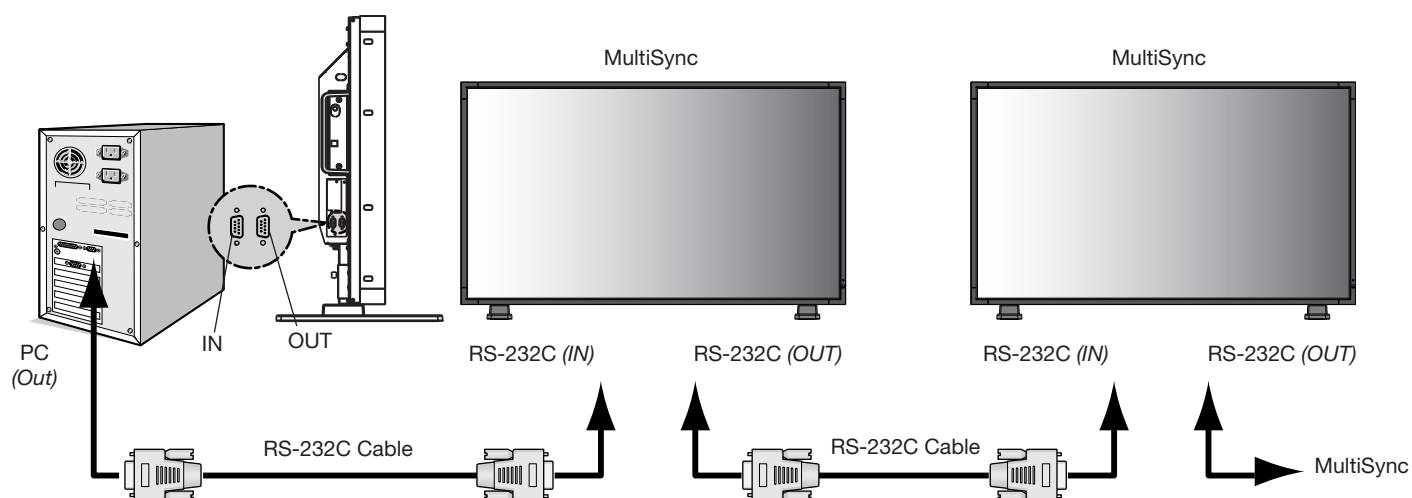
- Powering ON or OFF
- Switching input signals

NOTE: If your PC (IBM or IBM compatible) is equipped only with a 25-pin serial port connector, a 25-pin serial port adapter is required. Contact your dealer for details.

NOTE: In order to function, the RS-232C OUT terminal can only be connected to another monitor of the same model. Do not connect to other types of equipment.

This LCD monitor uses RXD, TXD and GND lines for RS-232C control.

The reverse type cable (null modem cable) should be used for RS-232C control.



The following control sequence is used for a single MultiSync display.


When using the following control commands, all of the daisy-chained monitors can be controlled at the same time from the primary monitor. However, reply and status commands will only pertain to the primary monitor, and not to the secondary monitors.

1) Interface

PROTOCOL	RS-232C
BAUD RATE	9600 [bps]
DATA LENGTH	8 [bits]
PARITY BIT	NONE
STOP BIT	1 [bit]
FLOW CONTROL	NONE

2) Control command diagram


The command is structured by the address code, function code, data code and end code. The length of the command is different for each function.

	Address Code	Function Code	Data Code	End Code
HEX	30h 30h	Function	Data	0Dh
ASCII	'0' '0'	Function	Data	

[Address code] 30h 30h (In ASCII code, '0' '0') fixed.

[Function code] A code of each fixed control move.

[Data code] A code of each fixed control data (number) and not always indicated.

[End code] 0Dh (In ASCII code, '') fixed.

To control multiple MultiSync monitors that are daisy-chained together please use the extended control command. Instructions for the extended control command can be found on the CD included with the display. The file is called "External_control.pdf".

Using the LCD with RS-232C - *continued*

3) Control sequence

- 1) The command from a computer to the LCD monitor will take 400ms.
- 2) The LCD monitor will send a return command 400ms* after it has received an encode. If the command is not received correctly, the LCD monitor will not send the return command.
- 3) The personal computer checks the command and confirms if the command which has been sent has been executed or not.
- 4) This LCD monitor sends various codes other than the return code. When sending a control sequence via RS-232C, other codes from personal computers will be ignored.

**The sending time of the return command may be delayed depending on the monitor's current activity (changing of the input signal, etc.).*






[Example] Turn the power ON. (' ' is for ASCII code)


Sending commands from the PC etc.	Status code from LCD monitor	Meaning
30 30 21 0D '0' '0' '!' '↵'		Command for POWER ON
	30 30 21 0D '0' '0' '!' '↵'	Command received (Command echo back)

4) Operation commands

Operation commands execute the basic operation setting of this LCD monitor.

It may not operate when changing the signal:

Operation	ASCII	HEX
POWER ON	!	21h
POWER OFF	"	22h
DVI	_r1	5Fh 72h 31h
VGA	_r2	5Fh 72h 32h
RGB/HV	_r3	5Fh 72h 33h
HDMI 	_h1	5Fh 68h 31h
VIDEO 	_v1	5Fh 76h 31h
DVD/HD 	_v2	5Fh 76h 32h
S-VIDEO 	_v3	5Fh 76h 33h
TV 	_t2	5Fh 74h 32h

- POWER OFF command should not be used less than 1 minute after the power is turned on.
- POWER ON command should not be used less than 1 minute after the power is turned off.
- S-VIDEO is enabled by having an S-VIDEO cable connected with the "S-VIDEO" signal present and selecting "PRIORITY MODE". 

5) Read command






Host computer sends the command without Data-code to monitor.

After receiving this command, the monitor returns the command with Data-code of current status to host computer.

<ex> When the Host computer checks the Power status of monitor, the status of monitor is powered-on.

Command from computer	Command from Monitor	Detail of command
30 30 76 50 0D '0"0"v"P'[enter]		Ask about the power status of monitor.
	30 30 76 50 31 0D '0"0"v"P"1'[enter]	Monitor is powered-on.

Structure of the Read-command

		ASCII		HEX	
		Function	Data (Receive)	Function	Data (Receive)
POWER	ON	vP	1	76 50	31
	OFF (stand by)	vP	0	76 50	30
Input	DVI (DVI-D)	vl	r1	76 49	72 31
	VGA (D-sub)	vl	r2	76 49	72 32
	RGB/HV (BNC)	vl	r3	76 49	72 33
	HDMI 	vl	h1	76 49	68 31
	VIDEO 	vl	v1	76 49	76 31
	DVD/HD 	vl	v2	76 49	76 32
	S-VIDEO 	vl	v3	76 49	76 33
	TV 	vl	t2	76 49	74 32
Picture Mode	HIGHBRIGHT	vM	p1	76 4D	70 31
	Standard	vM	p2	76 4D	70 32

NOTE: For complete information please see file "External_Control.pdf" on the CD-ROM.

RS-232C control will not function if the display is in "ECO STANDBY" mode. If monitors are daisy-chained, and one display is in "ECO STANDBY mode, then control of the entire daisy-chain will be lost. See page 30 for more information on STANDBY mode.

Features

40" or 46" diagonal screen size: Adds a new dimension to information display technology.

1366 x 768 resolution: Allows for crisp text and precise images.

XtraView® technology: Allows for wide-angle viewing.

DDC/CI capabilities: Allow control commands to be sent directly to the monitor through a standard PC or over an existing network by a system administrator.

CableComp™: Automatic long cable compensation prevents image quality degradation caused by long cable lengths.

User-friendly, efficient design: Features the currently proposed VESA-standard mounting and an overall lightweight construction for easy transport and installation.

Low power consumption and reduced heat emission: Lead to a lower total cost of ownership.

On Screen Display (OSD): Puts you in complete control of display settings.

NEC's quality and reliability: Provide peace of mind with a 3-year warranty (including backlight) and 24/7 customer service and technical support.

Reduced Footprint: Provides the ideal solution for environments requiring superior image quality but with size and weight reductions. The monitor's small footprint and low weight allow it to be moved or transported easily from one location to another.

AccuColor® Control System: Along with sRGB allows you to change between the color settings on your display to match your personal preference.

OmniColor™ Control System: Along with sRGB color-matching uses 6-axis color data to ensure true-to-life color reproduction for still images and real-time videos.

Plug and Play: The Microsoft® solution with the Windows® 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.

Intelligent Power Manager (IPM®) System: Provides innovative power-saving methods, saving two-thirds of your monitor energy costs.

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.

VESA® Standard Mounting Interface: Allows users to connect their LCD monitor to any VESA standard third party mounting arm or bracket. Allows for the monitor to be mounted on a wall or an arm using any third party compliant device. NEC recommends using mounting interface that comply with UL1678 standard in North America.

DVI-D: The digital-only subset of DVI created 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.

TILE MATRIX with TILE COMP: Allows multiple screens to display one image tiled over several stacked monitors while compensating within the displayed image for monitor bezel width.

ZOOM: Expands the image horizontally and vertically direction.

RS-232C daisy chain: You can control multiple monitors by PC or wireless remote control.

Self-diagnosis: If an internal error should occur, a failure state will be indicated by a blinking red light on the front of the monitor.

No picture

- The signal cable should be properly connected to the display card/computer.
- The display card should be properly seated in its slot.
- 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.

Power Button does not respond

- Unplug the power cord of the monitor from the AC outlet to turn off and reset the monitor.

Image persistence

- Please be aware that LCD Technology may experience a phenomena 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 of America, Inc. 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.

Image is unstable, unfocused or swimming is apparent

- Signal cable should be properly attached to the LCD monitor, computer, or other input device.
- Use the OSD screen controls to focus and adjust display by increasing or decreasing the clock phase total. When the display mode is changed, the OSD 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-interlaced and use 60Hz refresh rate.

Image of component signal is greenish

- Check to see if the DVD/HD input connector is selected.

LED on monitor is not lit

(no green or red color can be seen)

- Main Power Switch should be in the ON position and power cord should be connected.
- Make certain the computer is not in a power-saving mode (touch the keyboard or mouse).

Red LED on monitor is blinking

- A certain failure might have occurred, please contact your nearest authorized NEC DISPLAY SOLUTIONS service facility.

Display image is not sized properly

- Use the OSD screen controls to increase or decrease the clock 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.)

Selected resolution is not displayed properly

- Use OSD information to enter Information menu and confirm that the appropriate resolution has been selected. If not, select appropriate resolution.

“SCHEDULE SETTINGS” / “OFF TIMER” functions not working properly

- The “SCHEDULE SETTINGS” function will be disabled when the “OFF TIMER” is set.
- If the “OFF TIMER” function is enabled and the power to the LCD monitor is turned off or if the power supply is interrupted unexpectedly, then the OFF TIMER will be reset.

No Sound

- Check to see if speaker cable is properly connected.
- Check to see if mute is activated.
- Check to see if volume is set at minimum.

NOTE: It is possible to play audio from a source that is different from the video source. When setting parental controls for video, be aware that this content is not filtered.

RS-232C does not work

- Make sure the monitor is not in “Eco Standby” mode. (see page 30)

Remote Control does not work

- Make sure the batteries are inserted properly.
- Test the batteries for strength/life.
- Make sure to point the remote directly at the sensor on the monitor.
- Check if the remote is in Remote ID mode.
- The remote control may not function when in direct sunlight or when there is strong illumination on the remote sensor of the monitor.

Snowy Picture, Poor Sound in TV

- Check antenna/cable connection. Use new cable if necessary.

Interference in TV

- Check components for shielding. Move them away from the monitor if necessary.

References

NEC Monitor Customer Service & Support

Customer Service and Technical Support: (800) 632-4662
Fax: (800) 695-3044

Parts and Accessories/Macintosh Cable Adapter: (800) 632-4662

Warranty Information: www.necdisplay.com

Online Technical Support: www.necdisplay.com

Sales and Product Information

Sales Information Line: (888) 632-6487
Canadian Customers: (866) 771-0266, Ext#: 4037
Government Sales: (800) 284-6320
Government Sales email: gov@necdisplay.com

Electronic Channels

World Wide Web: www.necdisplay.com
Product Registration: www.necdisplay.com

European Operations: www.nec-display-solutions.com

Drivers and Downloads: www.necdisplay.com

Specifications LCD4020

LCD Module	(40" / 101.6 cm diagonal)			
	Pixel Pitch	0.648 mm		
	Resolution	1366 x 768 pixels		
	Color	Over 16 million colors (depending on video card used)		
	Brightness	700cd/m ² (Maximum), 500cd/m ² (Typ)		
	Contrast Ratio	2000:1 (typ)		
	Viewing Angle	Up 89 / Down 89 / Left 89 / Right 89 (typ) @ CR >10		
Frequency	Horizontal	ANALOG: 15.625/15.734kHz, 31.5kHz - 91.1kHz DIGITAL: 31.5kHz - 91.1kHz		
	Vertical	50Hz to 85Hz		
Pixel Clock		25.2MHz - 162.0MHz		
Viewable Size		885.168 x 497.664mm		
Input Signal	DVI	DVI-D 24 Pin	DIGITAL RGB	DVI (HDCP)
				VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60*, 1920X1080* (60Hz)
	VGA	Mini D-sub 15 Pin	Analog RGB	0.7V p-p/ 75 ohm
				VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60*, 1920X1080* (60Hz)
			Sync	Separate: TTL level (Pos./Neg.)
				Composite sync on Green Video: 0.3Vp-p Neg.
	RGB/HV	BNC (R,G,B,H,V)	Analog RGB	0.7V p-p/ 75 ohm
				VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60*, 1920X1080* (60Hz)
			Sync	Separate: TTL level (Pos./Neg.)
				Composite sync on Green Video: 0.3Vp-p Neg.
	HDMI	HDMI Type-A	Digital RGB	HDMI
				1080p*,1080i*,720p@ 50Hz/60Hz, 576p@ 50Hz, 480p@ 60Hz
	DVD/HD	RCA (Y, Cb/Pb, Cr/Pr)	Component	Y : 1.0Vp-p/75ohm, Cb/Cr (Pb/Pr) : 0.7Vp-p/75 ohm
				HDTV/DVD:1080p*,1080i*,720p@ 50Hz/60Hz, 576p@ 50Hz, 480p@ 60Hz, 576i@ 50Hz, 480i@ 60Hz
	VIDEO	BNC	Composite	1.0V p-p/ 75 ohm
				NTSC/PAL/SECAM/4.43NTSC/PAL60
	S-VIDEO	Mini DIN 4 pin	S-VIDEO	Y: 1.0Vp-p/75ohm C: 0.286Vp-p/75 ohm
				NTSC/PAL/SECAM/4.43NTSC/PAL60
	TV	75 ohm F-terminal	Analog Terrestrial broadcast	NTSC: VHF(2-13ch),UHF(14-69ch)
			Analog Cable	CATV 1-135ch
			Digital Terrestrial broadcast	ATSC (8VSB):-2-69ch
			Digital Cable	64/256 QAM : 1-135ch
Output Signal	RGB/HV	BNC (R,G,B,H,V)	Analog RGB	0.7V p-p with 75 ohm terminated Separate HV sync: TTL level (Pos./Neg.)
	VIDEO	BNC	COMPOSITE	1.0V p-p with 75 ohm terminated
Audio	AUDIO Input	RCA (L/R) x 2	Analog Audio	Stereo L/R 0.5Vrms
		STEREO Mini Jack		
	AUDIO Output	HDMI Type-A	DIGITAL Audio	PCM 32, 44.1, 48KHz (16bit)
		STEREO Mini Jack	Analog Audio	Stereo L/R 0.5Vrms
Speaker Output				External Speaker Jack 15W + 15W (8 ohm)
Control	RS-232C: IN			D-sub 9 Pin
	RS-232C: OUT			D-sub 9 Pin (daisy chain)
Power Supply		3.0-1.2A@100-240V AC, 50/60Hz		
Operational Environment	Temperature	5 to 40°C/4°F to 140°F(Default brightness) 5 ~ 20°C/4°F to 68°F(Maximum brightness)		
	Humidity	20% to 80%		
Storage Environment	Temperature	-20°C to 60°C/-4°F to 140°F		
	Humidity	10% to 90% (without condensation) / below 60% over 40°C		
Dimensions	Net	919.7 (W) x 567.7 (H) x 330 (D) mm (with Stand) 919.7 (W) x 532.2 (H) x 140 (D) mm (without Stand)		
	Gross	1147 (W) x 761 (H) x 312 (D) mm		
Weight	Net	31.1kg / 68.6 lbs.		
	Gross	38.9kg / 85.8 lbs.		
VESA compatible arm mounting interface		3 x 200mm x 200mm (8 Holes)		
		2 x 200mm x 200mm (6 Holes)		
Complied Regulatory and Guidelines		UL 60950-1/CSA C22.2 No.60950-1/ TUV-GS/EN60950-1 FCC-B/DOC-B/EN55022-A/EN55024/EN61000-3-2/EN61000-3-3/CE		
Power Management		VESA DPM		
Plug & Play		VESA DDC2B DDC/CI		
Accessories		User's manual, Power Cord, Video Signal Cable, Remote Control, AA Battery x 2, Clamp x 3, Screw x 11, CD-ROM, Stand x 2, Cable cover.		

*Compressed Image

**Audio Output for Digital Terrestrial broadcast

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

Specifications LCD4620

LCD Module	(46" / 116.8 cm diagonal)			
	Pixel Pitch	0.7455 mm		
	Resolution	1366 x 768 pixels		
	Color	Over 16 million colors (depending on video card used)		
	Brightness	650cd/m² (Maximum), 500cd/m²(Typ)		
	Contrast Ratio	2000:1 (typ)		
	Viewing Angle	Up 89 / Down 89 / Left 89 / Right 89 (typ) @ CR >10		
Frequency	Horizontal	ANALOG: 15.625/15.734kHz, 31.5kHz - 91.1kHz DIGITAL: 31.5kHz - 91.1kHz		
	Vertical	50Hz to 85Hz		
Pixel Clock		25.2MHz - 162.0MHz		
Viewable Size		1018.353 x 572.544mm		
Input Signal	DVI	DVI-D 24 Pin	DIGITAL RGB	DVI (HDCP)
				VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60*, 1920X1080* (60Hz)
	VGA	Mini D-sub 15 Pin	Analog RGB	0.7V p-p/ 75 ohm
				VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60*, 1920X1080* (60Hz)
			Sync	Separate: TTL level (Pos./Neg.)
				Composite sync on Green Video: 0.3Vp-p Neg.
	RGB/HV	BNC (R,G,B,H,V)	Analog RGB	0.7V p-p/ 75 ohm
				VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60*, 1920X1080* (60Hz)
			Sync	Separate: TTL level (Pos./Neg.)
				Composite sync on Green Video: 0.3Vp-p Neg.
	HDMI	HDMI Type-A	Digital RGB	HDMI
				1080p*,1080i*,720p@ 50Hz/60Hz, 576p@ 50Hz, 480p@ 60Hz
	DVD/HD	RCA (Y, Cb/Pb, Cr/Pr)	Component	Y : 1.0Vp-p/75ohm, Cb/Cr (Pb/Pr) : 0.7Vp-p/75 ohm
				HDTV/DVD:1080p*,1080i*,720p@ 50Hz/60Hz, 576p@ 50Hz, 480p@ 60Hz, 576i@ 50Hz, 480i@ 60Hz
	VIDEO	BNC	Composite	1.0V p-p/ 75 ohm
		RCA		NTSC/PAL/SECAM/4.43NTSC/PAL60
	S-VIDEO	Mini DIN 4 pin	S-VIDEO	Y: 1.0Vp-p/75ohm C: 0.286Vp-p/75 ohm
				NTSC/PAL/SECAM/4.43NTSC/PAL60
	TV	75 ohm F-terminal	Analog Terrestrial broadcast	NTSC: VHF(2-13ch),UHF(14-69ch)
			Analog Cable	CATV 1-135ch
Digital Terrestrial broadcast			ATSC (8VSB):2-69ch	
Digital Cable			64/256 QAM : 1-135ch	
Output Signal	RGB/HV	BNC (R,G,B,H,V)	Analog RGB	0.7V p-p with 75 ohm terminated Separate HV sync: TTL level (Pos./Neg.)
	VIDEO	BNC	COMPOSITE	1.0V p-p with 75 ohm terminated
Audio	AUDIO Input	RCA (L/R) x 2	Analog Audio	Stereo L/R 0.5Vrms
		STEREO Mini Jack		
	AUDIO Output	HDMI Type-A	DIGITAL Audio	PCM 32, 44.1, 48KHz (16bit)
		STEREO Mini Jack	Analog Audio	Stereo L/R 0.5Vrms
		Optical S/PDIF connector	Digital Audio	S/PDIF Optical Digital audio output (PCM/Dolby Digital)**
Speaker Output				External Speaker Jack 15W + 15W (8 ohm)
Control	RS-232C: IN			D-sub 9 Pin
	RS-232C: OUT			D-sub 9 Pin (daisy chain)
Power Supply		3.4-1.35A@100-240V AC, 50/60Hz		
Operational Environment	Temperature	5 to 40°C/4°F to 140°F(Default brightness) 5 ~ 20°C/4°F to 68°F(Maximum brightness)		
	Humidity	20% to 80%		
Storage Environment	Temperature	-20°C to 60°C/-4°F to 140°F		
	Humidity	10% to 90% (without condensation) / below 60% over 40°C		
Dimensions	Net	1055.4 (W) x 644.1 (H) x 351 (D) mm (with Stand) 1055.4 (W) x 608.6 (H) x 140 (D) mm (without Stand)		
	Gross	1278 (W) x 837 (H) x 312 (D) mm		
Weight	Net	37.9kg / 83.6 lbs.		
	Gross	47.1kg / 103.8 lbs.		
VESA compatible arm mounting interface		3 x 200mm x 200mm (8 Holes)		
		2 x 200mm x 200mm (6 Holes)		
Complied Regulatory and Guidelines		UL 60950-1/CSA C22.2 No.60950-1/ TUV-GS/EN60950-1 FCC-B/DOC-B/EN55022-A/EN55024/EN61000-3-2/EN61000-3-3/CE		
Power Management		VESA DPM		
Plug & Play		VESA DDC2B DDC/CI		
Accessories		User's manual, Power Cord, Video Signal Cable, Remote Control, AA Battery x 2, Clamp x 3, Screw x 11, CD-ROM, Stand x 2, Cable cover		

*Compressed Image

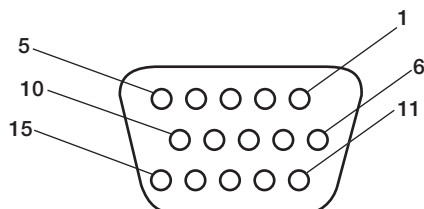
**Audio Output for Digital Terrestrial broadcast

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

Pin Assignment

1) Analog RGB Input (Mini D-SUB 15P) VGA

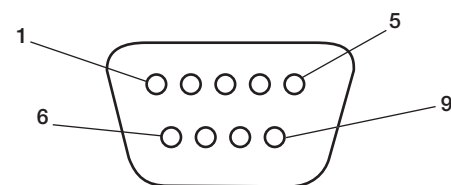
Pin No.	Name
1	Video Signal Red
2	Video Signal Green
3	Video Signal Blue
4	GND
5	DDC-GND
6	Red-GND
7	Green-GND
8	Blue-GND
9	+5V (DDC)
10	SYNC-GND
11	GND
12	DDC-SDA
13	H-SYNC
14	V-SYNC
15	DDC-SCL



Mini D-SUB 15P

3) RS-232C Input (D-SUB 9P)

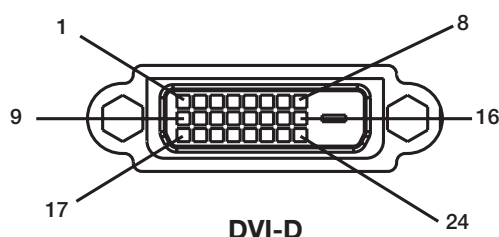
Pin No.	Name
1	Connected to 7 & 8
2	RXD
3	TXD
4	Connected to 6
5	GND
6	Connected to 4
7	Connected to 1 & 8
8	Connected to 1 & 7
9	NC



D-SUB 9P

2) Digital RGB Input (DVI-D) DVI

1	TX2-	9	TX1-	17	TX0-
2	TX2+	10	TX1+	18	TX0+
3	Shield (TX2/TX4)	11	Shield (TX1/TX3)	19	Shield (TXP/TX5)
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	DDC-Serial Clock	14	+5 power	22	Shield (TXC)
7	DDC-Serial Data	15	Ground (+5V)	23	TXC+
8	NC	16	Hot Plug Detect	24	TXC-



DVI-D

Limited Warranty

NEC Display Solutions of America, Inc. (hereinafter “NEC DISPLAY SOLUTIONS”) warrants this Product to be free from defects in material and workmanship and, subject to the conditions set forth below, agrees to repair or replace (at NEC DISPLAY SOLUTIONS’ sole option) any part of the enclosed unit which proves defective for a period of three (3) years from the date of first consumer purchase. Spare parts are warranted for ninety (90) days. Replacement parts or unit may be new or refurbished and will meet specifications of the original parts or unit.

This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This warranty is limited to the original purchaser of the Product and is not transferable. This warranty covers only NEC DISPLAY SOLUTIONS-supplied components. Service required as a result of third party components is not covered under this warranty. In order to be covered under this warranty, the Product must have been purchased in the U.S.A. or Canada by the original purchaser. This warranty only covers Product distribution in the U.S.A. or Canada by NEC DISPLAY SOLUTIONS. No warranty service is provided outside of the U.S.A. or Canada. Proof of Purchase will be required by NEC DISPLAY SOLUTIONS to substantiate date of purchase. Such proof of purchase must be an original bill of sale or receipt containing name and address of seller, purchaser, and the serial number of the product.

It shall be your obligation and expense to have the Product shipped, freight prepaid, or delivered to the authorized reseller from whom it was purchased or other facility authorized by NEC DISPLAY SOLUTIONS to render the services provided hereunder in either the original package or a similar package affording an equal degree of protection. All Products returned to NEC DISPLAY SOLUTIONS for service MUST have prior approval, which may be obtained by calling 1-800-632-4662. The Product shall not have been previously altered, repaired, or serviced by anyone other than a service facility authorized by NEC DISPLAY SOLUTIONS to render such service, the serial number of the product shall not have been altered or removed. In order to be covered by this warranty the Product shall not have been subjected to displaying of fixed images for long periods of time resulting in image persistence (afterimage effects), accident, misuse or abuse or operated contrary to the instructions contained in the User’s Manual. Any such conditions will void this warranty.

NEC DISPLAY SOLUTIONS SHALL NOT BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR OTHER TYPES OF DAMAGES RESULTING FROM THE USE OF ANY NEC DISPLAY SOLUTIONS PRODUCT OTHER THAN THE LIABILITY STATED ABOVE. THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE EXCLUSIONS OR LIMITATIONS MAY NOT APPLY TO YOU.

This Product is warranted in accordance with the terms of this limited warranty. Consumers are cautioned that Product performance is affected by system configuration, software, the application, customer data, and operator control of the system, among other factors. While NEC DISPLAY SOLUTIONS Products are considered to be compatible with many systems, specific functional implementation by the customers of the Product may vary. Therefore, suitability of a Product for a specific purpose or application must be determined by consumer and is not warranted by NEC DISPLAY SOLUTIONS.

For the name of your nearest authorized NEC Display Solutions of America, Inc. service facility, contact NEC Display Solutions of America, Inc. at 1-800-632-4662.

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 Organization for Standardization) and TCO (Swedish Trades Union).

Disposing of old NEC product

The aim of recycling is to gain environmental benefits by means of reusing, upgrading, reconditioning, or reclaiming old material. Dedicated recycling sites ensure that environmentally harmful components are properly handled and securely disposed. To ensure the best recycling of our products, NEC DISPLAY SOLUTIONS offers a variety of recycling procedures and gives advice on how to handle the product, in an environmentally sensitive way, once it has reached the end of its life.

All required information concerning the disposal of the product and country-specific information can be found on our following websites:

USA: <http://www.necdisplay.com>

Europe: <http://www.nec-display-solutions.com/greencompany/>

Japan: <http://www.nec-display.com>

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.

LCD4020

Mode	Power consumption	LED color
Normal Operation	300W	Green
Energy Saving Mode	Less than 5W	Amber
Off Mode(ECO standby)	Less than 1W	Red

LCD4620

Mode	Power consumption	LED color
Normal Operation	340W	Green
Energy Saving Mode	Less than 5W	Amber
Off Mode(ECO standby)	Less than 1W	Red

WEEE Mark (European Directive 2002/96/EC)

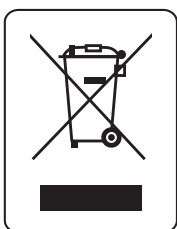
Within the European Union

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.

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.



NEC MultiSync LCD4020/LCD4620

PROPRIETARY NOTICE AND LIABILITY DISCLAIMER

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The NEC Display Solutions of America, Inc. product(s) discussed in this document are warranted in accordance with the terms of the Limited Warranty Statement accompanying each product. However, actual performance of each such product is dependent upon factors such as system configuration, customer data and operator control. Since implementation by customers of each product may vary, the suitability of specific product configurations and applications must be determined by the customer and is not warranted by NEC Display Solutions of America, Inc.

To allow for design and specification improvements, the information in this document is subject to change at any time without notice.

Reproduction of this document or portions thereof without prior approval of NEC Display Solutions of America, Inc. is prohibited.

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, IL 60143
Tel. No.:	(630)467-3000

Type of Product:	Computer Monitor
Equipment Classification:	Class B Peripheral
Model:	MultiSync LCD4020 (L406T6) MultiSync LCD4620 (L466T7)



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

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LCD4020-AV, LCD4020-AVT, LCD4620-AV, LCD4620-AVT only
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