NEC

Medical Display

INSTALLATION & MAINTENANCE GUIDE

MultiSync MDC551C8

Please find your model name in the label on the backside of monitor.

Index

Symbol Information

	This symbol warns the 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.
	Protective earth terminal marked.
	Stand by.
	AC Input.
	Main Power On.
	Main Power Off.

UL MARK CERTIFICATION, ANSI/AAMI ES60601-1 (2005 and Amendment 1) cUL, CAN/CSA-C22.2 NO. 60601-1:2014

MEDICAL - GENERAL MEDICAL EQUIPMENT AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL HAZARDS ONLY IN ACCORDANCE WITH ANSI/AAMI ES60601-1 (2005 AND AMENDMENT 1) AND CAN/CSA-C22.2 NO. 60601-1:2014

Windows is a registered trademark of Microsoft Corporation.
NEC is a registered trademark of NEC Corporation.
DisplayPort and DisplayPort Compliance Logo are trademarks owned by Video Electronics Standards Association.
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HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

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GPL/LGPL Software Licenses
The product includes software licensed under GNU General Public License (GPL), GNU Lesser General Public License (LGPL), and others.
For more information on each software, see “readme.pdf” inside the “about GPL&LGPL” folder on the supplied CD-ROM.

Important Information

WARNING

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

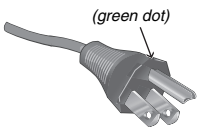
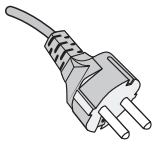
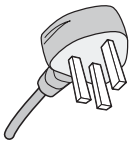
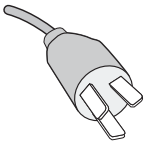
REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION

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.

Power Cord Important Information

CAUTION: Please use the power cord provided with this monitor in accordance with the table below. If a power cord is not supplied with this equipment, please contact your supplier. For all other cases, please use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country. When you use this Monitor in North America, you should use a North America Hospital Grade power cord.

Plug Type	North America	European Continental	U.K.	Chinese	Japanese
Plug Shape					
Country	U.S.A./Canada	EU (except U.K.)	U.K.	China	Japan
Voltage	120	230	230	220	100

NOTE: This product can only be serviced in the country where it was purchased.

Intended Use

The MDC551C8 Color display is intended to be used for displaying and viewing general purpose medical images.
It shall not be used for diagnostic purpose.
There are no restrictions for the patient type as it is for general purpose only.
To guarantee the display performance as specified, it must only be used in conjunction with NEC approved display controllers.
MDC551C8 cannot be used for a life-support system.
This device must not be used in digital mammography.
This device is designed for exclusive interconnection with IEC 60601-1 certified equipment.

Contraindications: None known.

Safety Precaution

The unit is designed for exclusive interconnection with IEC 60950-1 certified equipment outside of patient environment and IEC 60601-1 certified equipment inside the patient environment.

- Equipment connected to digital interfaces must comply with the respective IEC standards (e.g. IEC 60950-1 for data processing equipment and IEC 60601-1 for medical equipment).
- This device complies with IEC 60601-1-2. To minimize the interference from other equipment, a minimum 0.5 m distance shall be kept from other potential electromagnetic sources, such as a cell phone.
- To reduce the risk of electric shock, make sure the power cord is unplugged from the wall socket. To fully disengage the power to the unit, please disconnect the power cord from the ac outlet. Do not remove the front or back cover. No user serviceable parts inside. Refer servicing to qualified service personnel. The AC outlet shall be readily available and accessible.

This device uses temperature-controlled fans for internal cooling. The use of this device in surgery rooms is not recommended if cleaning of the air intakes from dust and lint at regular time intervals cannot be performed by the user (maximum interval: six months).

Operating Principle: The digital signal or video signal which are output from single device are zoom in or out action and digital image processing by Scaler IC. Then through the cable line transmission LVDS signals to one of the LCD module. The last by the clock controller, the clock signal is transmitted to the drive IC on the panel and turn on Backlight for LCD module light source by Scaler control.

Intended Operator: The commoner who received basic education which understood this operation.

Intended patient: The patient sees it only, it is not related directly to patient.

North America Customers

Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked “Hospital Only” or “Hospital Grade”. That signal input port need to be connected properly and that any unused signal input port shall not be accessible for the patient to contact in the patient area after the monitor is integrated into a medical system.
Federal law restricts this device to sale by or on the order of a licensed healthcare practitioner.

European Customers

Unpacking, installation and calibration of this monitor must only be done by authorized and trained personnel. Any installation done by a non-authorized person is done under his own risk and we accept no responsibility in any device malfunctioning.

Medical Imaging

MDC551C8 is designed for 3840 x 2160 medical imaging.

NOTE: To prevent any un-intentional de-adjustment of optimum settings and calibrated values, NEC Display Solutions highly recommends the activation of the SECURITY - CONTROL LOCK function within the monitor’s On-Screen-Display (OSD). This operation is described on page 31 of this document.

Registration Information

Declaration

Declaration of the Manufacturer

Means of Conformity

Device Classification:	Class I, non-measuring function
Applicable Rules:	Annex IX, Rules 1.4 (Section 1) and 1.1 (Section 3)
Product Name:	MDC551C8 (55" Color LCD Monitor)
Model Number:	MDC551C8
UMDNS Code:	16603

NEC Display Solutions Europe GmbH declares that the product listed is in conformity with the essential requirements and provisions of the Council Directive 93/42/EEC, including the amendments of Council Directive 2007/47/EC, as well as the Council Directive 2011/65/EU (ROHS), and conforms to the applicable clauses of the following standards:

CE
– EN 60601-1
– EN 60601-1-2
– EN 61000-3-2
– EN 61000-3-3
– EN 50581:2012

NEC Display Solutions Europe GmbH
Landshuter Allee 12-14. 80637 Muenchen, Germany

FCC Information

1. Use the attached specified cables with this 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.
   Use of other cables and adapters may cause interference with radio and television reception.

2. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
   - Reorient or relocate the receiving antenna.
   - Increase the separation between the equipment and receiver.
   - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
   - Consult your dealer or an experienced radio/TV technician for help.

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

Declaration of Conformity

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

U.S. Responsible Party:	**NEC Display Solutions of America, Inc.**
Address:	**500 Park Boulevard, Suite 1100 Itasca, Illinois 60143**
Tel. No.:	**(630) 467-3000**
Type of Product:	Display Monitor
Equipment Classification:	Class B Peripheral
Model:	MDC551C8

FC

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

Classification

According to the type of protection against electric shock: CLASS I
According to the degree of protection against electric shock: No applied part
According to the degree of protection against ingress of water as detailed in the current edition of IEC529: IP20
According to the method of sterilization or disinfection recommended by the manufacturer: Not Specified
According to the degree of safety of application in the presence of a FLAMMABLE AN AESTHETIC MIXTURE WITH AIR or a WITH OXYGEN OR NITROUS OXIDE: Not AP or APG category
According to the mode of operation: Continuous operation

Safety Precautions, Maintenance & Recommended Use

Safety Precautions and Maintenance

FOR OPTIMUM PERFORMANCE, PLEASE NOTE THE FOLLOWING WHEN SETTING UP AND USING THE MULTI-FUNCTION MONITOR:

WARNING: Do not modify this equipment without authorization of the manufacturer.

WARNING: To disconnect this product from the mains supply disconnect the mains plug from the socket outlet.

WARNING: To avoid risk of electric shock, this equipment must only be connected to a mains supply with protective earth.

WARNING: No modification of this equipment is allowed.

WARNING: For EMC details information, please contact your supplier.

- **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 bend, crimp or otherwise damage the power cord.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- The power supply cord you use must have been approved by and comply with the safety standards of your country. (Type H05VV-F 3G 1mm^2 should be used in Europe).
- In UK, use a BS-approved power cord with molded plug having a black (13A) fuse installed for use with this monitor.
- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet, which is easily accessible.
- 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 this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- Do not mount this product upside down for an extended period of time as it may cause permanent damage to the screen.
- Do not place any objects onto the monitor and do not use the monitor outdoors.
- If glass is broken, handle with care.
- Temperature controlled fans are implemented in this monitor. For reliable performance and long useful life of this product, it is mandatory to not cover any vents on the monitor.
- Please do not touch patient and this medical device at the same time.
- If monitor or glass is broken, do not come in contact with the liquid crystal and handle 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 the monitor.
- Do not move or mount this product by hanging a rope or wire to the backside handle.
  Do not mount or secure this product by using the backside handle. It may fall and cause personal injury.
- Handle with care when transporting. Save packaging for transporting.
- When using a LAN cable, do not connect to a peripheral device with wiring that might have excessive voltage.
- Do not use the monitor in high temperature, humid, dusty, or oily areas.
- Do not use the monitor under rapid temperature and humidity change conditions and avoid cold air from air-conditioning outlet directly, as it may shorten the lifetime of the monitor or cause condensation. If condensation of water has happened, let the monitor stand unplugged until the condensation has disappeared.
- This device uses temperature-controlled fans for internal cooling in high temperature environment. If the room temperature cannot be controlled to stay under a maximum level of 30°C/86°F, the following applies: Cleaning of the air intakes of the fans from dust and textile lint must be performed by the user in regular time intervals (max. six months).
- To ensure the monitor's reliability, please clean the holes at the back side of the cabinet at least once a year to remove dirt and dust.
- Vibration can damage the backlight. Do not install where the monitor will be exposed to continuous vibration.
- To prevent damage to the monitor caused by tipping over due to earthquakes or other shocks, make sure to install the monitor in a stable location and take measures to prevent falling.
- Do not touch the LCD panel surface while transporting, mounting and setting.
  Applying pressure on the LCD panel can cause permanent damage.
- The latency for images and video is 2.5 frames. This may be insufficient for applications that require real-time image reproduction, including surgery applications. Consult the clinical device provider to determine if this delay is acceptable for the application.

Connecting to a TV*

- Cable distribution system should be grounded (earthed) in accordance with ANSI/NFPA 70, the National Electrical Code (NEC), in particular Section 820.93, Grounding of Outer Conductive Shield of a Coaxial Cable.
- The screen of the coaxial cable is intended to be connected to earth in the building installation.

* The product you purchased may not have this feature.

Under the following conditions immediately disconnect your monitor from the wall outlet and refer servicing to qualified service personnel:

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet has been damaged.
- If you notice any structural damage such as cracks or unnatural wobbling.
- If the monitor does not operate normally by following operating instructions.

Recommended Use

- For optimum performance of the monitor, allow 20 minutes for warming 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, non-abrasive cloth. Avoid using any cleaning solution or glass cleaner!
- Avoid reproduction of still patterns on the monitor for long periods of time to avoid image persistence (after image effects).
- Get regular eye checkups.

Ergonomics

To realize the maximum 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.
- Suitable for entertainment purposes at controlled luminous environments, to avoid disturbing reflections from the screen.

Maintenance

- A “Reference Calibration” with the NEC GammaCompMD QA software is required at installation. See the GammaCompMD QA User Manual for more information on the process for performing a “Reference Calibration”.
- The latest GammaCompMD QA software is available on the NEC Display Solutions websites www.necdisplay.com for USA and www.nec-display-solutions.com for Europe.

Cleaning the LCD Panel

- When the liquid crystal panel is dusty, please gently wipe with a soft cloth.
- Please do not rub the LCD panel with hard material.
- Please do not apply pressure to the LCD surface.
- Please do not use OA cleaner as it will cause deterioration or discoloration on the LCD panel surface.
- Please use water, IPA or Hexane.
- At the timing of setting, please clean it by the method mentioned above as needed.

Cleaning the Cabinet

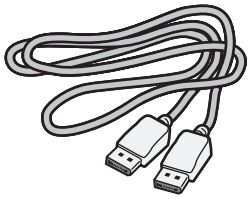
- Unplug the power supply
- Gently wipe the cabinet with a soft cloth
- To clean the cabinet, dampen the cloth with water or IPA 40 to 50%, wipe the cabinet and follow with a dry cloth.
- At the timing of setting, please clean it by the method mentioned above as needed.

NOTE: 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.

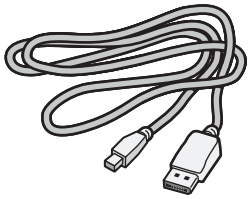
Contents

Your new MultiSync MDC monitor box* should contain the following:

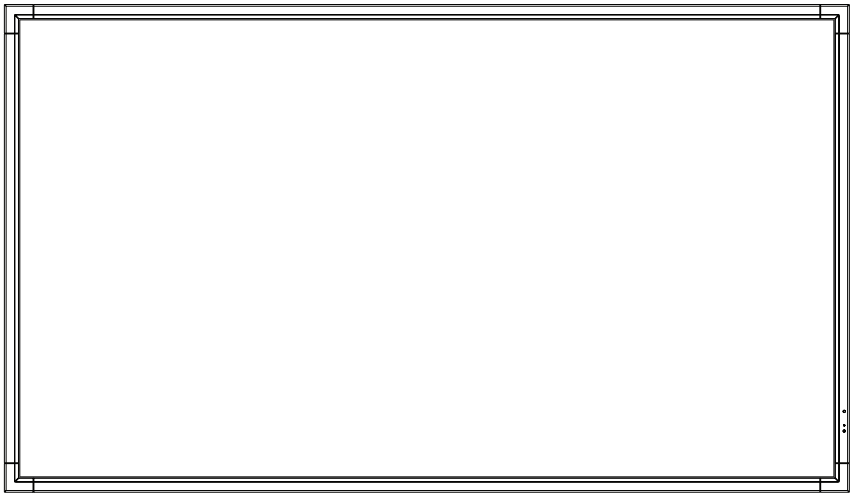
- LCD monitor
- Power cord*1
- Video Signal Cable (DisplayPort cable)
- Video Signal Cable (Mini DisplayPort to DisplayPort cable)
- Wireless Remote Control and AAA Batteries
- Quick Reference
- Clamp x 3
- Screw with washer (M4 x 10) x 3
- Thumbscrew for optional stand x 2
- CD-ROM



Video Signal Cable
(DisplayPort cable)

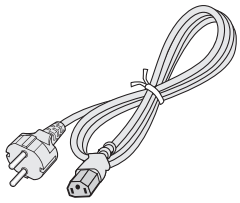


Video Signal Cable
(Mini-DisplayPort to
DisplayPort cable)



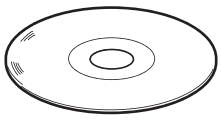
Screw with washer
(M4 x 10) x 3

Clamp x 3



Power Cord*1

Thumbscrew for
optional stand x 2



CD-ROM

Quick Reference

Quick Reference

Wireless Remote Control
and AAA Batteries

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

*1 Type and number of power cords included will depend on the country where the LCD monitor is to be shipped. When more than one power cord is included, please use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

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.

Mounting

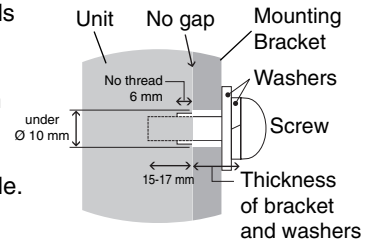
DO NOT mount the monitor yourself. Please ask your supplier. For proper installation it is strongly recommended to use a trained, qualified technician. Please inspect the location where the unit is to be mounted. Mounting on wall or ceiling is the customer's responsibility. Not all walls or ceilings are capable of supporting the weight of the unit. Product warranty does not cover damage caused by improper installation, re-modelling, 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 ensure 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

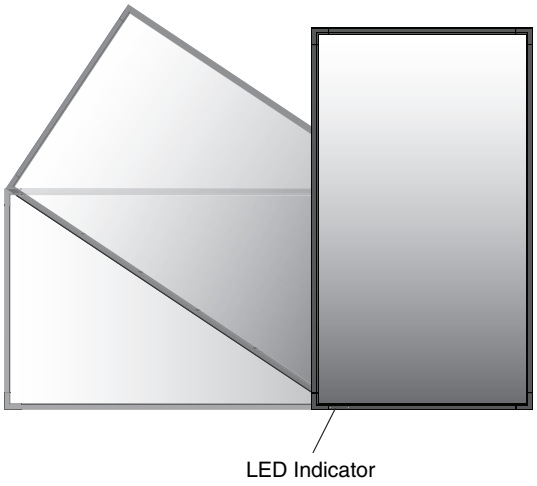
- When using mounting accessories other than those that are NEC approved, they must comply with the VESA-compatible (FDMIv1) mounting method.
- NEC recommends mounting interfaces that comply with UL1678 standard in North America.
- NEC strongly recommends using size M8 screws (15-17 mm + thickness of bracket and washers in length). If using screws longer than 15-17 mm, check the depth of the hole. (Recommended Fasten Force: 1125 - 1375N•cm). Bracket hole should be under Ø 10 mm.



- Prior to mounting, inspect the installation location to ensure that it is strong enough to support the weight of the unit so that the unit will be safe from harm.
- For detailed information, refer to the instructions included with the mounting equipment.
- Make sure that there is no gap between the monitor and the bracket.

Orientation

- When using the monitor in the portrait position, it should be rotated clockwise so that the left side is moved to the top, right side is moved to 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.



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 the monitor next to a location where the main power supply is fed into the building.
- DO NOT install the monitor in a location where people can easily grab and hang onto the unit or the mounting equipment.
- Allow for adequate ventilation or provide air conditioning around the monitor, so that heat can properly dissipate away from the monitor and from the mounting equipment.

Mounting on ceilings

- Ensure that the ceiling is sturdy enough to support the weight of the unit and the mounting equipment 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 ceiling or to hanging fixtures.

Maintenance

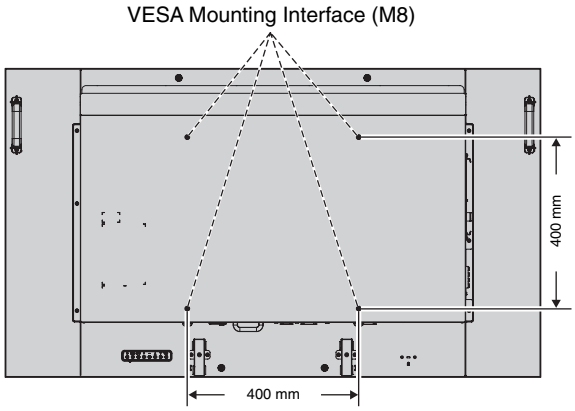
- Periodically check for loose screws, gaps, distortions, or other problems that may occur with the mounting equipment. If a problem is detected, please refer to qualified personnel for service.
- Regularly check the mounting location for signs of damage or weakness that may occur over time.

Attaching Mounting Accessories

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

1. Attach Mounting Accessories

Be careful to avoid tipping the monitor when attaching accessories.



Mounting accessories can be attached with the monitor in the face down position. To avoid damaging the front face, place the protective sheet on the table underneath the monitor. The protective sheet was wrapped around the monitor 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 Flat Display Mounting Interface Standard (FDMI).

NOTE: Prior to installation, be sure to place the monitor on a flat area with adequate space.

2. Using an Option Board

1. Turn off the main power switch.
2. Remove the attached slot cover by unscrewing the installed screws (**Figure 1**).
3. Insert the option board in to the monitor. Attach the slot cover by using the removed screws.

NOTE: Please contact your supplier for available option boards.
Do not apply excessive force to manipulate the option board before fixing it with screws.
Make sure that the board is inserted into the slot in the correct orientation.

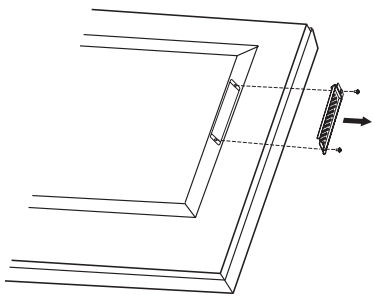


Figure 1

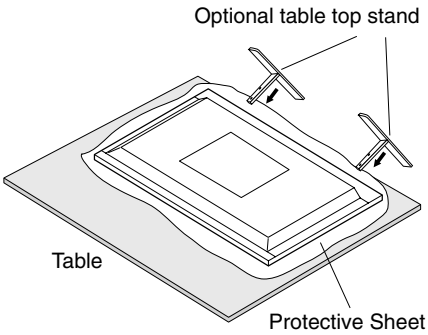
3. Installing and removing the optional table top stand

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

For installation follow the instructions included with the stand or mounting equipment. Only use the table top stand option ST-5220. Install the stand with the long end of the feet face forward.

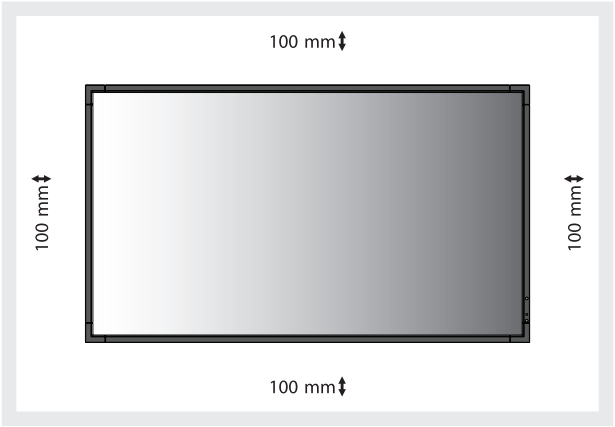
NOTE: Use ONLY the thumbscrews which are supplied with the monitor.

When installing the LCD monitor stand, handle the unit with care to avoid pinching your fingers.



4. Ventilation Requirements

When mounting in an enclosed space or recessed area, leave adequate room between the monitor and the enclosure to allow heat to disperse, as shown below.

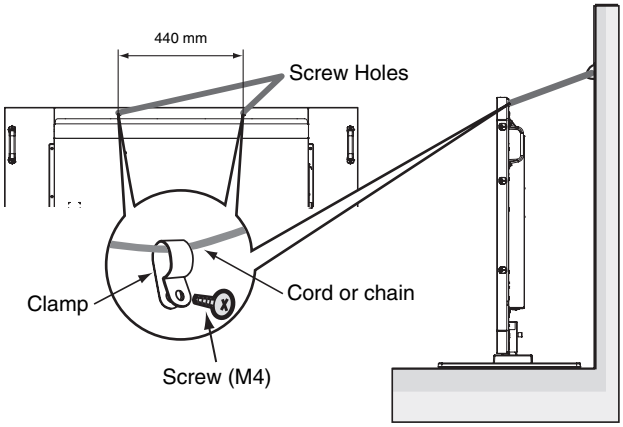


Allow adequate ventilation or provide air conditioning around the monitor, so that heat can properly dissipate away from the unit and the mounting equipment; especially when you use monitors in a multiple screen configuration.

NOTE: The sound quality of the internal speakers will be different depending on the acoustics of the room.

5. Prevent Tipping

When using the monitor with the optional table top stand, fasten it to a wall using a cord or chain that can support the weight of the monitor, in order to prevent the monitor from falling. Fasten the cord or chain to the monitor using the provided clamps and screws.

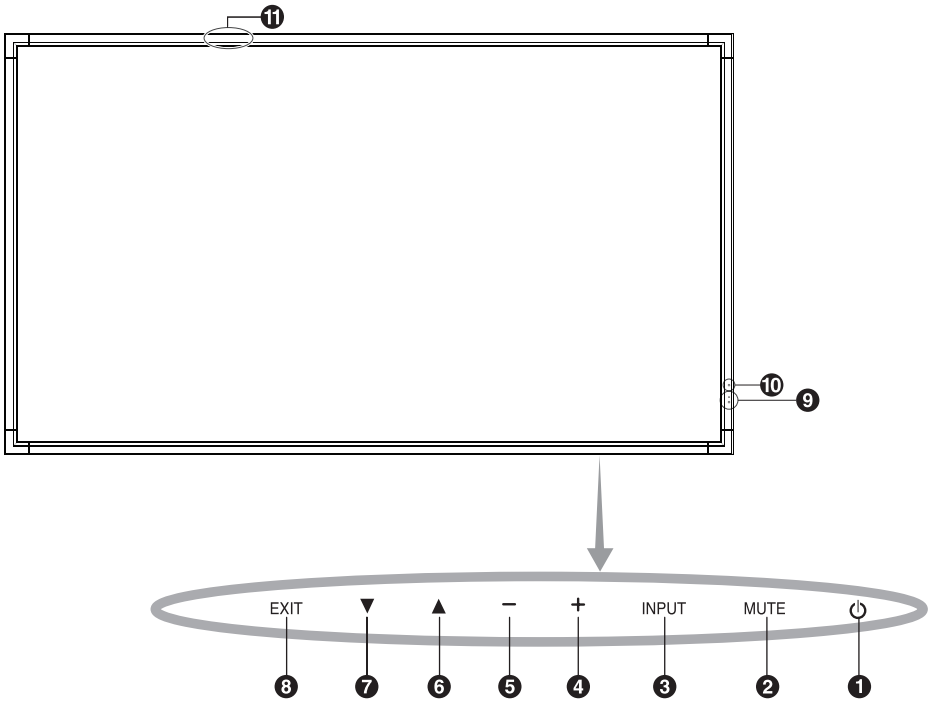


Before attaching the monitor to the wall, make sure that the wall can support the weight of the monitor.

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

Parts Name and Functions

Control Panel



❶ POWER button (⏻)

Switches the power on/off. See also page 19.

❷ MUTE button (MUTE)

Switches the audio mute ON/OFF.

❸ INPUT button (INPUT)

Acts as SET/POINT ZOOM button within the OSD menu. (Toggle switches between [DVI1], [DVI2], [DPORT], [HDMI1], [HDMI2], [HDMI3], [HDMI4], [OPTION]*). These are available inputs only, shown as their factory preset name.

❹ PLUS button (+)

Increases the audio output level when the OSD menu is turned off.
Acts as (+) button to increase the adjustment with the OSD menu.

❺ MINUS button (-)

Decreases the audio output level when the OSD menu is turned off.
Acts as (-) button to decrease the adjustment with the OSD menu.

❻ UP button (▲)

Activates the OSD menu when the OSD menu is turned off.
Acts as ▲ button to move the highlighted area up to select adjustment items within the OSD menu.

❼ DOWN button (▼)

Activates the OSD menu when the OSD menu is turned off.
Acts as ▼ button to move the highlighted area down to select adjustment items within the OSD menu.

❽ EXIT button (EXIT)

Activates the OSD menu when the OSD menu is turned off.
Acts as EXIT button within the OSD to move to previous menu.

❾ Remote control sensor and Power Indicator

Receives the signal from the remote control (when using the wireless remote control). See also page 14.
Glows green when the LCD monitor is in active mode*.
Unlit when the LCD is in POWER OFF mode.
Glows amber when the monitor is in Power Save Mode.
Green and Amber blink alternately while in Power Standby mode 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), LED will not glow when the LCD monitor is in active mode.

❿ Room light sensing sensor

Detects the level of ambient light, allowing the monitor to make automatic adjustments to the backlight setting.
DO NOT activate for use as a Clinical Review monitor.
See page 34.

⓫ Intelligent wireless data sensor

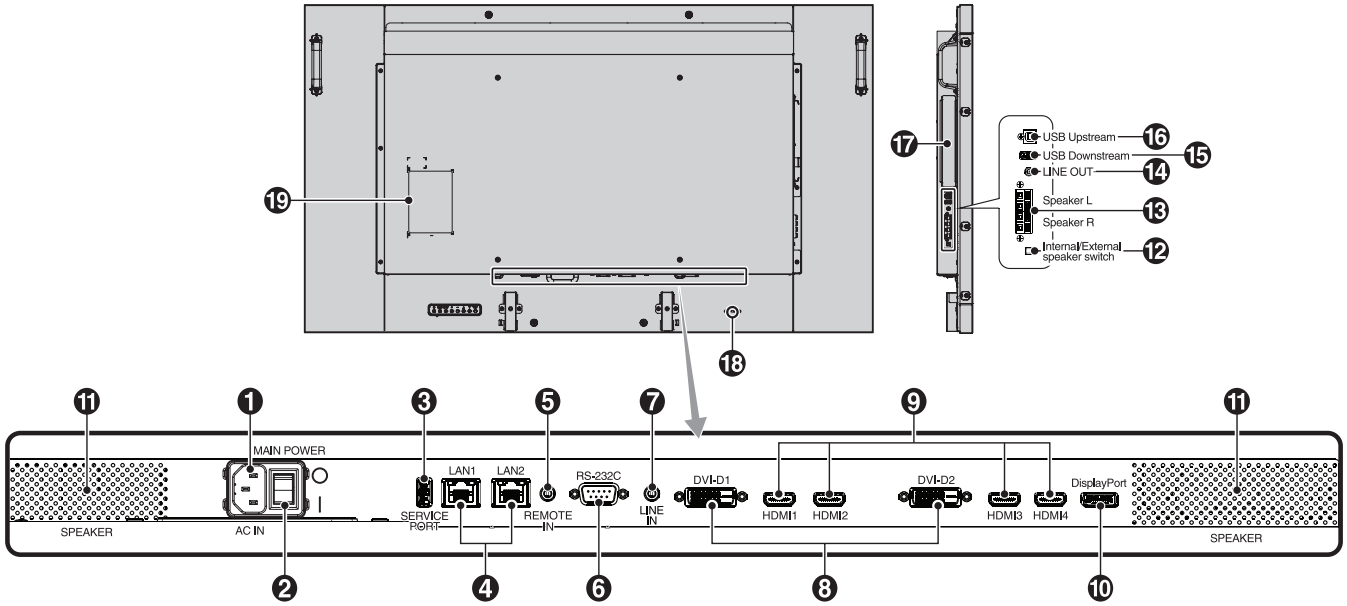
Sensor for wireless communication of the monitor for information and settings.

Control Key Lock Mode

This control completely locks out access to all Control Key functions. To activate the control key lock function, press both ▼ and ▲ and hold down simultaneously for more than 3 seconds. To resume user mode, press both ▼ and ▲ and hold simultaneously for more than 3 seconds.

*: This function depends on which option board you are using.

Terminal Panel



❶ AC IN connector

Connects with the supplied power cord.

❷ Main Power Switch

On/Off switch to turn main power ON/OFF.

❸ Service port

This USB slot is for future software upgrades.

❹ LAN port (RJ-45)

LAN connection. See page 37 and 40.
NOTE: Please give priority for use to LAN1.

❺ REMOTE IN

Use the optional wired remote control by connecting it to your monitor.
NOTE: Do not use this connector unless specified.

❻ RS-232C (D-Sub 9 pin)

Connect RS-232C input from external equipment such as a computer in order to control RS-232C functions.

❼ LINE IN

To input audio signal from external equipment such as a computer or player.

❽ DVI IN (DVI-D) (Dual Link)

To input digital RGB signals from a computer or HDTV device having a digital RGB output.
* This connector does not support analog input.

❾ HDMI IN

To input digital HDMI signals.

❿ DisplayPort IN

To input DisplayPort signals.

⓫ Internal speaker

⓬ Internal/External speaker switch

: Internal speaker : External speaker.
NOTE: Please power off the monitor when you use the Internal/External speaker switch.

⓭ EXTERNAL SPEAKER TERMINAL

To output the audio signal from LINE IN, DisplayPort and HDMI.
Red terminal is plus (+).
Black terminal is minus (-).
NOTE: This speaker terminal is for 15 W + 15 W (8 ohm) speaker.

⓮ LINE OUT

To output the audio signal from the LINE IN, DisplayPort and HDMI to an external device (stereo receiver, amplifier, etc.).
NOTE: This connector is not a Headphone terminal.

⓯ USB Downstream

To connect the monitor to USB devices.

⓰ USB Upstream

To connect the monitor to external equipment such as a computer.

⓱ Option board slot

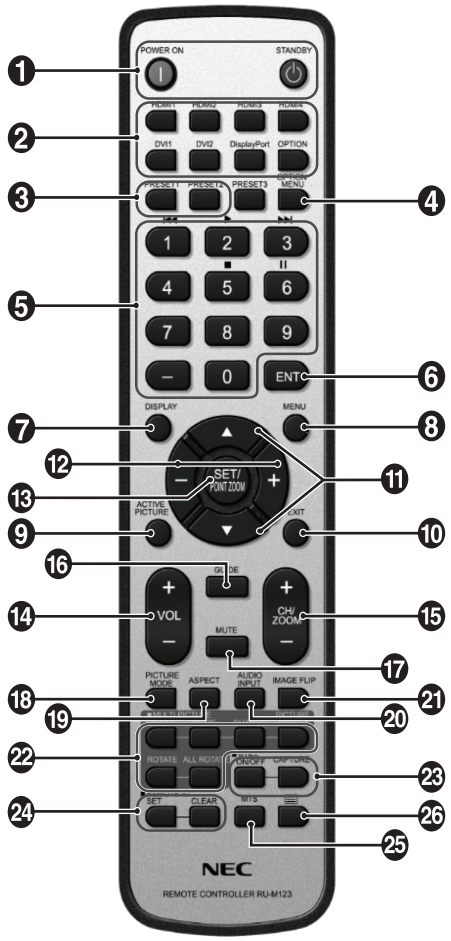
Slot 2 type accessory is available. Please contact your supplier for detailed information.
NOTE: Please contact your supplier for available option board.

⓲ Kensington Lock

For security and theft prevention.

⓳ Rating label

Wireless Remote Control



❶ POWER button

Switches the power on/standby.

❷ INPUT button

Selects input signal.
- HDMI1: HDMI1
- HDMI2: HDMI2
- HDMI3: HDMI3
- HDMI4: HDMI4
- DVI1: DVI1
- DVI2: DVI2
- DisplayPort: DPORT
- OPTION: OPTION*2

❸ MULTI INPUT button

Selects input signal. See page 32.
- PRESET1: PRESET1*3
- PRESET2: PRESET2*3.

❹ OPTION MENU button*1

❺ KEYPAD

Presses buttons to set and change passwords, change channel and set REMOTE ID.

❻ ENT button*1

❼ DISPLAY button

Turns on/off the information OSD. See page 21.

❽ MENU button

Turns on/off the menu mode.

❾ ACTIVE PICTURE button

Selects active picture.

❿ EXIT button

Returns to previous menu within OSD menu.

⓫ UP/DOWN button (▲/▼)

Acts as ▲ ▼ button to move the highlighted area up or down to select adjustment items within OSD menu.
Small screen which adjusted PIP mode moves up or down.

⓬ MINUS/PLUS (-/+) button

Increases or decreases the adjustment level within OSD menu settings.
Small screen which adjusted PIP mode moves left or right and increases or decreases the size.

⓭ SET/POINT ZOOM button

Makes selection. Activates POINT ZOOM function when OSD menu is not shown.

⓮ VOLUME UP/DOWN button (VOL +/-)

Increases or decreases audio output level.

⓯ CH/ZOOM UP/DOWN button (CH/ZOOM +/-)*1

Increases or decreases POINT ZOOM level.

⓰ GUIDE button*1

⓱ MUTE button

Turns on/off the mute function.

⓲ PICTURE MODE button

Selects picture mode, [HIGHBRIGHT], [STANDARD], [sRGB], [CINEMA], [CUSTOM1], [CUSTOM2], [SVE-(1-5) SETTINGS]. See page 24.

HIGHBRIGHT: for moving images such as DVD.
STANDARD: for images.
sRGB: for text based images.
CINEMA: for movies.
CUSTOM1 and CUSTOM2: activates auto dimming function. See page 34.
SVE-(1-5) SETTINGS: for images and movies.

⓳ ASPECT button

Selects picture aspect, [FULL], [WIDE], [DYNAMIC], [1:1], [ZOOM] and [NORMAL]. See page 20.

⓴ AUDIO INPUT button

Selects audio input source [LINE IN], [OPTION]*2, [HDMI1], [HDMI2], [HDMI3], [HDMI4], [DPORT].

㉑ IMAGE FLIP button

Toggle switches between [H FLIP], [V FLIP], [180° ROTATE] and [NONE]. See page 27.

㉒ MULTI PICTURE button

ON/OFF button: Toggle switches between ON and OFF. See page 20.
MODE button: Selects picture number and a mode from PIP, PBP 1, PBP 2, PBP 3.
CHANGE button: Selects a pair of pictures. You can swap images between the selected two pictures.
PICTURE ASPECT button: Selects active picture frame aspect.
ROTATE button: Selects a multi picture to rotate by 90°.
ALL ROTATE button: All multi pictures rotate by 90°.
When MULTI PICTURE is OFF, the displayed single picture rotates by 90°.
NOTE: Enable to change each multi picture size by pressing SET/POINT ZOOM button during multi picture mode.
You cannot select any input other than the setting of the HDMI/DVI SELECT.

㉓ STILL button*4

ON/OFF button: Activates/deactivates still picture mode.
STILL CAPTURE button: Captures still picture.
NOTE: This function is released when selecting MULTI PICTURE MODE, TEXT TICKER, SCREEN SAVER, POINT ZOOM, IMAGE FLIP except for NONE, SUPER in INPUT CHANGE, INPUT CONFIGURATION.
When STILL is active, ROTATE is not available.

㉔ REMOTE ID button

Activates the REMOTE ID function. See page 36.

㉕ MTS button*1

㉖ button*1

Activates closed captioning.
NOTE: VIDEO*2, S-VIDEO*2 inputs only.

*1: This button's action depends on which option board you use. Refer to the option board's user's manual for further information.

*2: This function depends on which option board you use.

*3: This function depends on the INPUT CONFIGURATION setting.

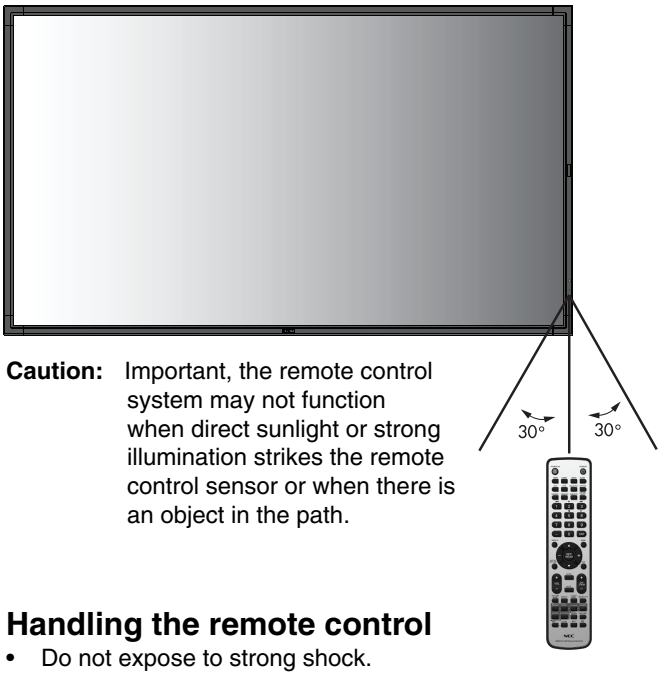
*4: When you use OPTION signal input, this function depends on which option board you use.

NOTE: The buttons with no explanation do not function.

Operating Range for the Remote Control

Point the top of the remote control toward the LCD monitor's remote sensor during button operation.

Use the remote control within a distance of about 7 m (23 ft.) from remote control sensor or at a horizontal and vertical angle of within 30° within a distance of about 3.5 m (10 ft.).



Caution: Important, the remote control system may not function when direct sunlight or strong illumination strikes the remote control sensor or when there is an object in the path.

Handling the remote control

- Do not expose to strong shock.
- Do not allow water or other liquid to splash the remote control. If the remote control gets wet, wipe it dry immediately.
- Avoid exposure to heat and steam.
- Except to install the batteries, do not open the remote control.

Setup

1. Determine the installation location

CAUTION: Installing your monitor must be done by a qualified technician. Contact your supplier 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 monitor falls.

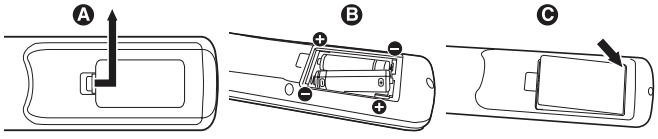
CAUTION: Do not mount or operate the monitor upside down.

CAUTION: This monitor has internal temperature sensors and cooling fans, including a fan for the option board.
If the monitor becomes too hot, the cooling fans will turn on automatically.
The option board's fan is active although the temperature is lower than normal operating temperature for cooling the option board. If the monitor becomes overheated while the cooling fan is running, a "Caution" warning will appear.
If the "Caution" warning appears, stop using the unit and allow to cool. Using the cooling fans will reduce the likelihood of early unit failure and may help reduce image degradation and "Image Persistance".
If the monitor 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 31). 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 31).

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

2. Install the remote control batteries

The remote control is powered by two 1.5V AAA 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 "AAA" 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 your 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 (See pages 17 and 18)

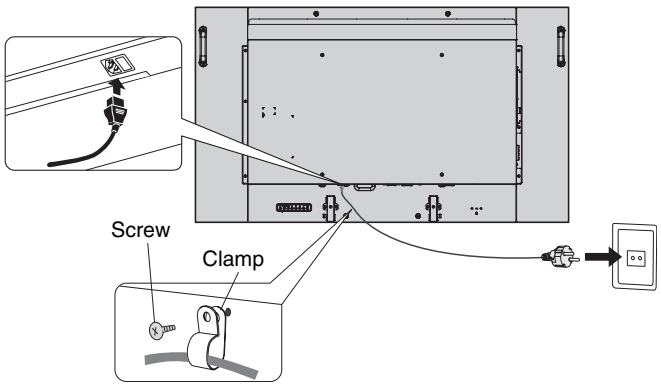
- To protect the external equipment; turn off the main power before making connections.
- Refer to your equipment's user's manual for further information.

NOTE: Do not connect/disconnect cables when turning on the monitor or other external equipment, as this may result in a loss of the monitor image.

4. Connect the supplied power cord

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

NOTE: Please refer to the "Safety Precautions and Maintenance" section of this manual for proper selection of an AC power cord.



5. Switch on the power of all the attached external equipment

When connected with a computer, switch on the power of the computer first.

6. Operate the attached external equipment

Showing the signal on the screen from the desired input source.

7. Adjust the sound

Make volume adjustments when required.

8. Adjust the screen (See pages 26 and 27)

Make adjustments to the image position, if necessary.

9. Adjust the image (See page 26)

Make adjustments such as backlight or contrast when required.

CAUTION: This unit is factory calibrated to DICOM part 14. Any manual change of Luminance or any other image characteristics will deteriorate the accuracy of Grayscale image reproduction. Use the NEC GammaCompMD QA calibration software and an external USB color sensor to maintain best image reproduction quality. See also page 6.

10. Recommended Adjustments

To reduce the risk of the “Image Persistence”, please adjust the following items based on the application being used: SCREEN SAVER, SIDE BORDER COLOR (See page 31), DATE & TIME (See page 28), SCHEDULE SETTINGS (See page 27).
It is recommended that the FAN CONTROL setting (See page 31) be checked also.

Connections

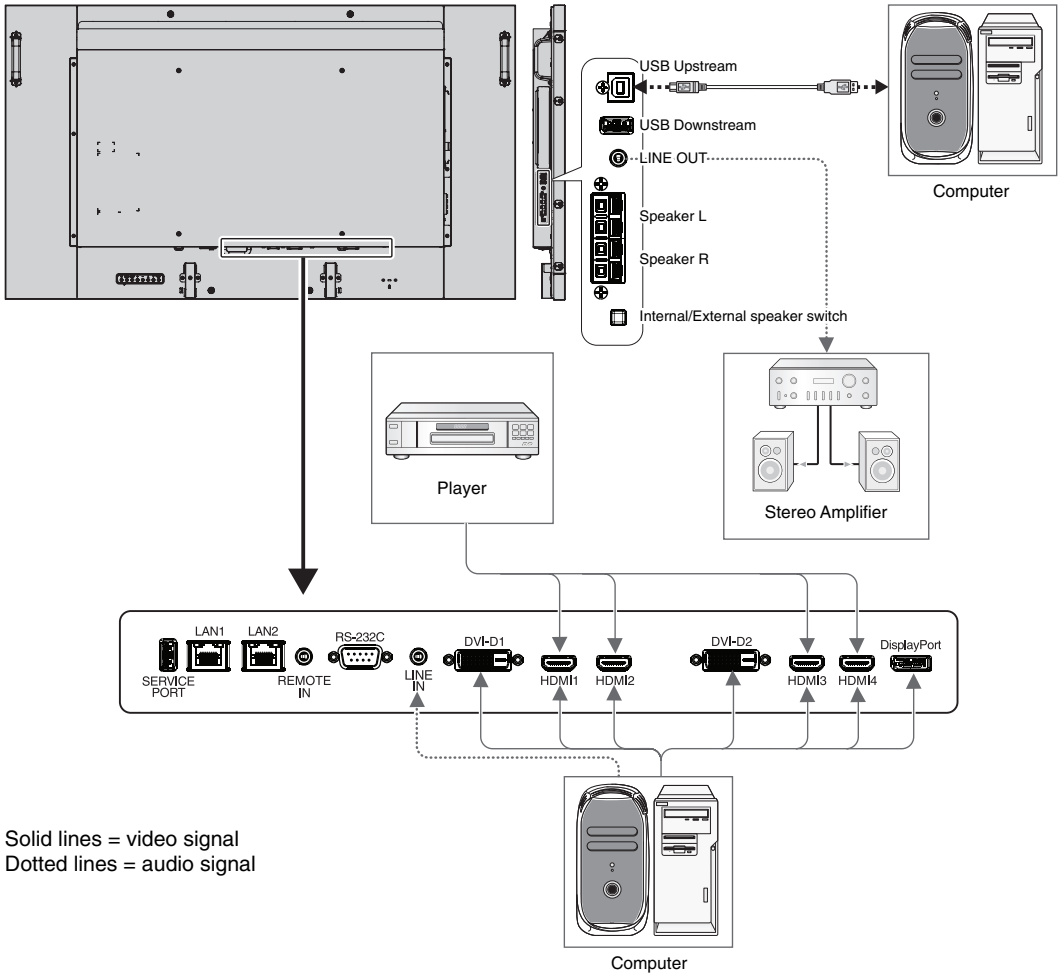
NOTE: Do not connect/disconnect cables when turning on the monitor or other external equipment, as this may result in a loss of the monitor image.

NOTE: Use an audio cable without a built-in resistor. Using an audio cable with a built-in resistor turns down the sound.

Before making connections:

* First turn off the power of all the attached equipment and make connections.
* Refer to the user's manual included with each separate piece of equipment.

Wiring Diagram



Solid lines = video signal
Dotted lines = audio signal

Connected equipment	Connecting terminal	Setting in TERMINAL SETTINGS	HDMI/DVI SELECT*2	Input signal name	Connecting audio terminal	Input button in remote control
AV	DisplayPort	-	-	DPORT	DPORT	DisplayPort
	DVI1 (DVI-D1)	DVI-HD	DVI*3, HDMI/DVI	DVI1	LINE IN	DVI1
	DVI2 (DVI-D2)	DVI-HD	DVI*3, HDMI/DVI	DVI2	LINE IN	DVI2
	HDMI1	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI1	HDMI1	HDMI1
	HDMI2	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI2	HDMI2	HDMI2
	HDMI3	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI3	HDMI3	HDMI3
	HDMI4	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI4	HDMI4	HDMI4
	Option	-	-	OPTION	OPTION	OPTION
PC	DisplayPort	-	-	DPORT	DPORT	DisplayPort
	DVI1 (DVI-D1)	DVI-HD/DVI-PC*1	DVI*3, HDMI/DVI	DVI1	LINE IN	DVI1
	DVI2 (DVI-D2)	DVI-HD/DVI-PC*1	DVI*3, HDMI/DVI	DVI2	LINE IN	DVI2
	HDMI1	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI1	HDMI1	HDMI1
	HDMI2	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI2	HDMI2	HDMI2
	HDMI3	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI3	HDMI3	HDMI3
	HDMI4	RAW/EXPAND*1	HDMI, HDMI/DVI	HDMI4	HDMI4	HDMI4
	Option	-	-	OPTION	OPTION	OPTION

*1: Depends on signal type.
*2: INPUT CONFIGURATION (See page 21).
*3: A HDMI signal is not reproduced by factory default settings. To display HDMI signal, set to HDMI at HDMI/DVI SELECT.

Connecting a Personal Computer

Connecting your computer to your monitor will enable you to reproduce your computer's video signal output.
Some display controllers may not be able to support the required resolution for proper image reproduction. To guarantee the visual performance as specified, the monitor must only be used in conjunction with NEC approved display controllers.
Your monitor shows proper image by adjusting the factory preset timing signal automatically.

<Typical factory preset signal timing>

Resolution	Scanning frequency		DVI	HDMI	DisplayPort		Remarks
	Horizontal	Vertical			1.2	1.1a	
640 x 480	31.5 kHz	60 Hz	Yes	Yes	Yes	Yes	
800 x 600	37.9 kHz	60 Hz	Yes	Yes	Yes	Yes	
1024 x 768	48.4 kHz	60 Hz	Yes	Yes	Yes	Yes	
1280 x 720	45.0 kHz	60 Hz	Yes	Yes	Yes	Yes	
1280 x 768	47.8 kHz	60 Hz	Yes	Yes	Yes	Yes	
1280 x 800	49.7 kHz	60 Hz	Yes	Yes	Yes	Yes	
1280 x 960	60.0 kHz	60 Hz	Yes	No	No	No	
1280 x 1024	64 kHz	60 Hz	Yes	Yes	Yes	Yes	
1360 x 768	47.7 kHz	60 Hz	Yes	Yes	Yes	Yes	
1366 x 768	47.7 kHz	60 Hz	No	Yes	Yes	Yes	
1400 x 1050	65.3 kHz	60 Hz	Yes	Yes	Yes	Yes	
1440 x 900	55.9 kHz	60 Hz	Yes	Yes	Yes	Yes	
1600 x 1200	75.0 kHz	60 Hz	Yes	Yes	Yes	Yes	
1680 x 1050	65.3 kHz	60 Hz	Yes	Yes	Yes	Yes	
1920 x 1080	67.5 kHz	60 Hz	Yes	Yes	Yes	Yes	
1920 x 1200	74.6 kHz	60 Hz	No	Yes	Yes	Yes	
1920 x 2160	133.3 kHz	60 Hz	Yes*	Yes	Yes	Yes	
3840 x 2160	65.7 kHz	30 Hz	Yes*	No	No	Yes	Recommended resolution - DVI
3840 x 2160	67.5 kHz	30 Hz	No	Yes	No	No	Recommended resolution - HDMI
3840 x 2160	133.3 kHz	60 Hz	No	No	Yes	No	Recommended resolution - DisplayPort
4096 x 2160	54.0 kHz	24 Hz	No	Yes	No	No	Compressed image

*: Dual Link cable.

- If you use with a Macintosh device, set "Mirroring" to Off on your device.

  Refer to your Macintosh's owner's manual for more information about your computer's video output requirements and any special identification or configuration your monitor's image and monitor may require.
- Input TMDS signals conforming to DVI standards.
- To maintain the image reproduction quality, use a cable that conforms to DVI standards.

Connecting a Player or Computer with HDMI

- Please use an HDMI cable with HDMI logo.
- It may take a moment for the signal to appear.
- Some display controllers or drivers may not display an image correctly.
- When you use a computer with HDMI, please set OVER SCAN to AUTO or OFF (see page 33).

Connecting a Computer with DisplayPort

- Please use a high quality DisplayPort cable with DisplayPort compliance logo.
- It may take a moment for the signal to appear.
- When connecting a DisplayPort cable to a component with a signal conversion adapter, an image may not appear.
- High Quality DisplayPort cables feature a locking function. When removing this cable, hold down the top button to release the lock.

Connecting a Computer with DVI

- Please use a high quality Dual Link cable.
- For MULTI PICTURE MODE operation, use two dual link DVI cables of the same brand, model and length.

Connecting a USB device with USB port

Upstream Port: Connect to a USB compatible computer with a USB cable.

Downstream Port: Connect USB compatible flash memory, mouse or keyboard to a downstream port.

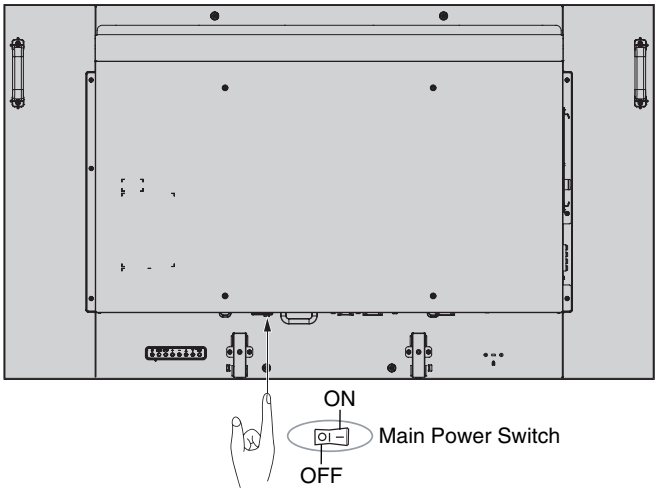
- Please make sure about the connector shape and orientation when connecting the USB cable.
- Depending on the use of computer BIOS, OS or device, the USB function may not be working. In this case, please check user's manual of your computer or device, or contact your supplier for detailed information.
- Before turning off the main power switch of the monitor or shutting down Windows®, please turn off the SB function and remove the USB cable from the monitor. You may lose data when the computer crushed.
- It may take a few seconds until the monitor recognizes the USB input. Do not disconnect the USB cable or disconnect and reconnect the USB cable before the monitor recognizes the input.

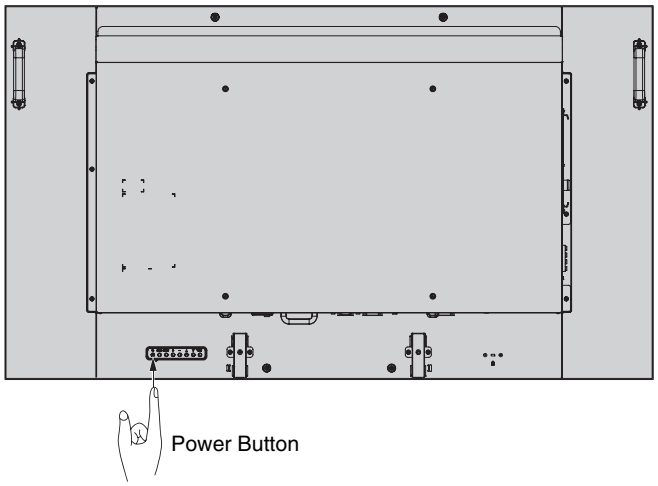
Basic Operation

Power ON and OFF Modes

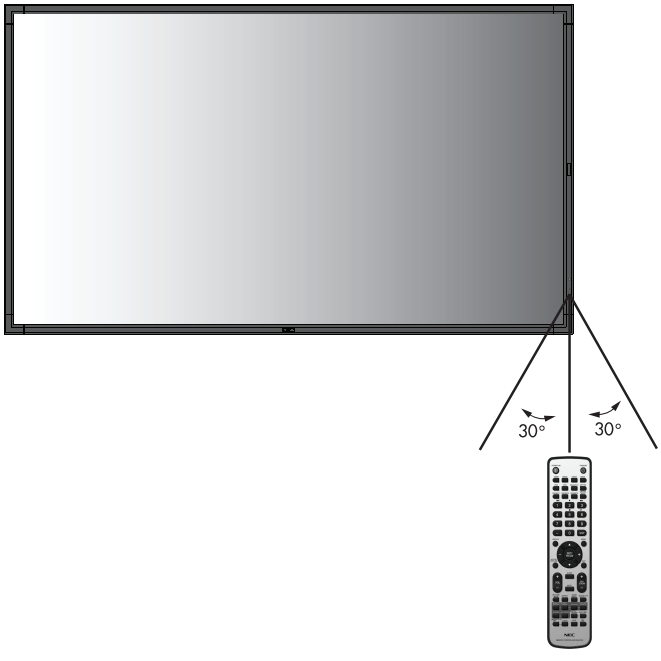
The monitor power indicator will turn green while powered on and will turn unlit or amber while powered off.

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.





Using the remote control



Power Indicator

Mode	Status Indicator Light
Power ON	Green*1
Power OFF and Power Save AUTO STANDBY Power consumption under 0.5 W*2	Unlit
Power Save AUTO POWER SAVE Power consumption under 0.5 W*2	Amber
Power Standby when SCHEDULE SETTINGS enabled	Green and Amber blink alternately
Diagnosis (Detecting failure)	Red Blinking (See **Troubleshooting** page 52)

*1 If OFF is selected in POWER INDICATOR (page 30), the LED will not light when the LCD monitor is in active mode.
*2 Without any option, with factory settings.

Initial settings

Setting LAN POWER (see page 31) and POWER SAVE (see page 30) windows appear when the monitor is powered on for the first time.
These settings are only necessary upon initial setup. However, this message window appears again when powered on after a FACTORY RESET has been applied.

Using Power Management

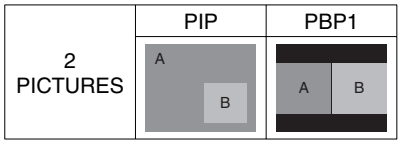
This monitor follows the VESA approved DPM Display Power Management function.
The power management function is an energy saving function that automatically reduces the power consumption of the monitor when the computer's keyboard or mouse has not been used for a period as pre-set in the operating system of the computer.
The power management feature has been set to the AUTO STANDBY mode. This allows your monitor to enter a Power Saving Mode when no video signal is applied. It will increase the life and decrease the power consumption of the monitor.

NOTE: Depending on the computer and display controller used, this function may not operate.

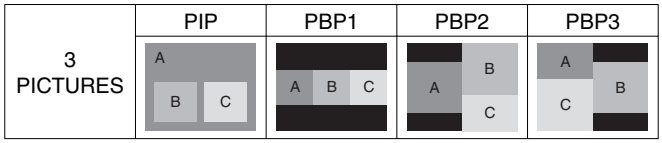
NOTE: The monitor automatically goes into OFF at a pre-set time period after the video signal was lost.

MULTI PICTURE MODE

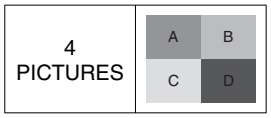
Select MULTI PICTURE MODE. You can select up to 4 pictures. When MULTI PICTURE is ON and the PICTURE NUMBER is 2 PICTURES, the images are arranged like below.



When MULTI PICTURE is ON and the PICTURE NUMBER is 3 PICTURES, the images are arranged like below.



When MULTI PICTURE is ON and the PICTURE NUMBER is 4 PICTURES, the images are arranged like below.



A: PICTURE 1
B: PICTURE 2
C: PICTURE 3
D: PICTURE 4

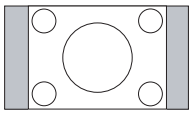
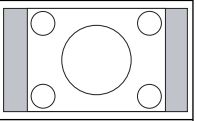
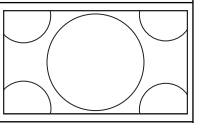
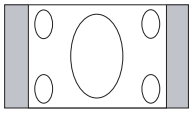
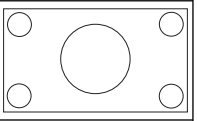
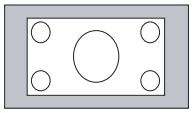
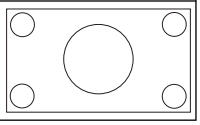
MULTI PICTURE MODE (See page 28).

Aspect

For DVI1, DVI2, DPORT, OPTION*4, PRESET1*5, PRESET2*5
FULL → 1:1 → ZOOM → NORMAL

For HDMI1, HDMI2, HDMI3, HDMI4, PRESET1*5, PRESET2*5
FULL → WIDE → DYNAMIC → 1:1 → ZOOM → NORMAL

*4: This function depends on which option board you use.
*5: This function depends on INPUT CONFIGURATION setting.

Aspect ratio of image	Unchanged view*3	Recommended selection for picture aspect*3
4:3		NORMAL 
		DYNAMIC 
Squeeze		FULL 
Letterbox		WIDE 

*3 Grey areas indicate unused portions of the screen.

NORMAL: Reproduces the aspect ratio as it is sent from the source.

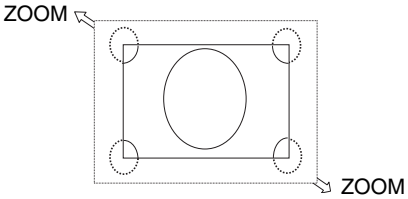
FULL: Fills the entire screen.

WIDE: Expands a 16:9 letter box signal to fill the entire screen.

DYNAMIC: Expands a 4:3 pictures to fill the entire screen with non-linearity. Some of the outside image area will be cut off due to expansion.

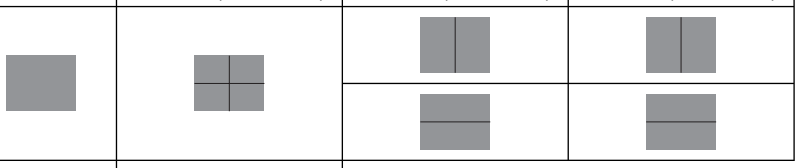
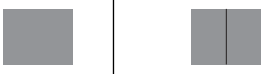
1:1: Shows the image in a 1 by 1 pixel format.

ZOOM
The image can be expanded beyond the active screen area. The image which is outside of the active screen area is not shown.



INPUT CONFIGURATION

3840 x 2160 60 Hz images may be created by using multiple input signals.
Select the input sources. Depending on the setting of HDMI/DVI SELECT in the OSD, the selection in INPUT CONFIGURATION is changed. See page 32.

HDMI/DVI SELECT	INPUT CONFIGURATION			
HDMI	OFF	HDMIx4 (PRESET1)	HDMIx2 (PRESET1)	HDMIx2 (PRESET2)
				
HDMI/DVI	OFF	HDMIx2 (PRESET1)		
				
DVI	OFF	DVIx2 (PRESET1)		
				

INPUT CONFIGURATION (See page 32).

Information OSD

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

❶ Input Name
❷ Audio input mode
❸ Picture aspect
❹ Input Signal Information
❺ Multi picture information
❻ Communication Info

Picture Mode

Depending on the setting of SPECTRAVIEW ENGINE in the OSD tag ADVANCED OPTION2 (see page 34), the selection choices for the Picture Mode are different.

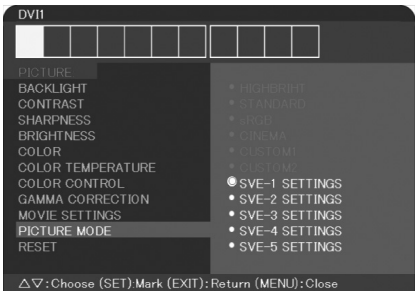
SPECTRAVIEW ENGINE is set to ON:

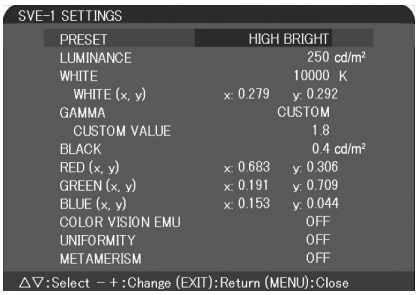
Selects five picture modes either via the OSD menu item PICTURE MODE, or using the PICTURE MODE button on the wireless remote control.

Select the Picture Mode with the wireless remote control
By pressing the Picture Mode button, the picture mode changes.

SVE-1 → SVE-2 → SVE-3 → SVE-4 → SVE-5

Select or change the Picture Mode in the OSD menu item PICTURE MODE.
Selects a setting from SVE-1 to SVE-5. By pressing the SET button again you can set below menus.



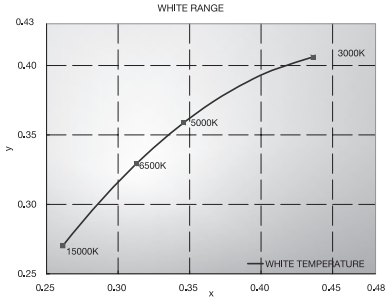


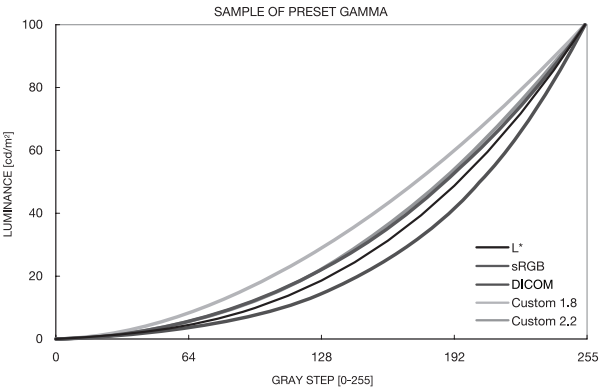
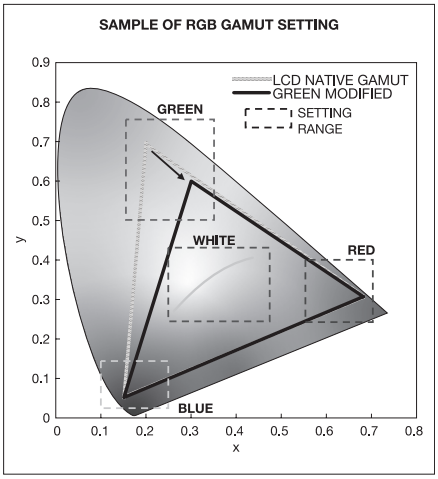
Choose the Picture Mode that is most suitable for the type of content that is shown.

- Several modes are selectable (sRGB, Adobe®RGB SIM., eciRGB_v2 SIM., DCI SIM., REC-Bt709, HIGH BRIGHT, FULL, DICOM, PROGRAMMABLE).
- Each PICTURE MODE includes LUMINANCE, WHITE, GAMMA, BLACK, RED, GREEN, BLUE, COLOR VISION EMU, UNIFORMITY and METAMERISM settings.

PRESET types

PRESET	PURPOSE
sRGB	The standard color space used for the Internet, Windows operating systems and digital cameras. Recommended setting for general color management.
Adobe®RGB SIM.	Provides a standard color space used in high-end graphics applications such as professional digital still cameras and imaging.
eciRGB_v2 SIM.	Provides a color space profile recommended by ECI (The European Color Initiative).
DCI SIM.	Color setting for digital cinema.
REC-Bt709	Color setting for High-definition television.
HIGH BRIGHT	Highest brightness setting.
FULL	Native LCD panel color gamut. Suitable for use with color managed applications.
DICOM	Medical settings for X-ray image viewing. The setting which conforms to the Grayscale Standard Display Function (GSDF) as defined in the DICOM standard.
PROGRAMMABLE	For the Hardware Calibration settings by NEC Display Solutions GammaCompMD QA software. NOTE: After a hardware calibration the below listed OSD settings are disabled to prevent (un)intended manipulation. Such manipulations would deteriorate the image quality for Medical grayscale image viewing.

MODE	PURPOSE
LUMINANCE	Adjusts the overall image and screen background brightness. Press LEFT or RIGHT to adjust.
WHITE	Adjusts the white color by temperature or xy setting. A lower color temperature will result in a reddish screen and a higher color temperature in a bluish screen. A larger x value will result in a reddish screen, a larger y value changes the screen to greenish, and smaller x,y values will change the screen to bluish white. 

GAMMA	Allows you to manually select the brightness level of grayscale. There are five selections: sRGB, L STAR, DICOM and CST. We recommend to show grayscale image data on screen. sRGB: GAMMA setting for sRGB. L STAR: GAMMA setting for the CIELAB color space Lab. DICOM: DICOM GSDF (Grayscale Standard Display Function) is typically used for medical imaging. CST: CUSTOM VALUE can be adjusted when CST is selected as the GAMMA SELECTION setting. CUSTOM VALUE: The gamma value is selected from the range from 0.5 to 4.0 in 0.1 steps. 
BLACK	Adjusts the black luminance.
RED GREEN BLUE	Adjusts the color gamut. 
COLOR VISION EMU	Previews various typical human vision deficiencies and is useful for evaluating how people who have such deficiencies will perceive colors. This preview is available in four modes: Types P (Protanopia), D (Deuteranopia) and T (Tritanopia) emulate color vision dichromacy, and Grayscale can be used for evaluating contrast legibility. NOTE: Depending on the vision of the user, including those with color vision deficiency, there will be a variation in how the screen's color is seen and experienced. A simulation is used to illustrate the view of those with a color vision deficiency. It is not their actual view. The simulation is a reproduction of those with a strong color vision mode of type P, type D or type T. People with a slight color vision deficiency will experience little to no difference compared to those with normal color vision.
UNIFORMITY	This function electronically compensates the slight variations in the white uniformity level as well as deviations in color that may occur throughout the screen area. These variations are characteristic of LCD panel technology. This function improves the color reproduction and evens out the non-uniformity in luminance of the monitor. NOTE: A higher number produces a better effect, but may also reduce the contrast ratio.
METAMERISM	Compensates the visual color difference with other monitors. If you prefer to get the color reproduction to be closer to the Picture Mode setting, set this function to OFF.

NOTE:
- When the selected PICTURE MODE is different from your computer's ICC color profile, you may experience inaccurate color reproduction.
- Medical imaging software typically does not use any ICC color profile.

SPECTRAVIEW ENGINE is set to OFF:

Selects five picture modes either via the OSD menu item PICTURE MODE, or using the PICTURE MODE button on the wireless remote control.

For DVI1, DVI2, DPORT, OPTION*, PRESET1*[1], PRESET2*[1]
STANDARD → sRGB → CUSTOM1 → CUSTOM2 → HIGHBRIGHT

For HDMI1, HDMI2, HDMI3, HDMI4, PRESET1*[1], PRESET2*[1]
STANDARD → CINEMA → CUSTOM1 → CUSTOM2 → HIGHBRIGHT

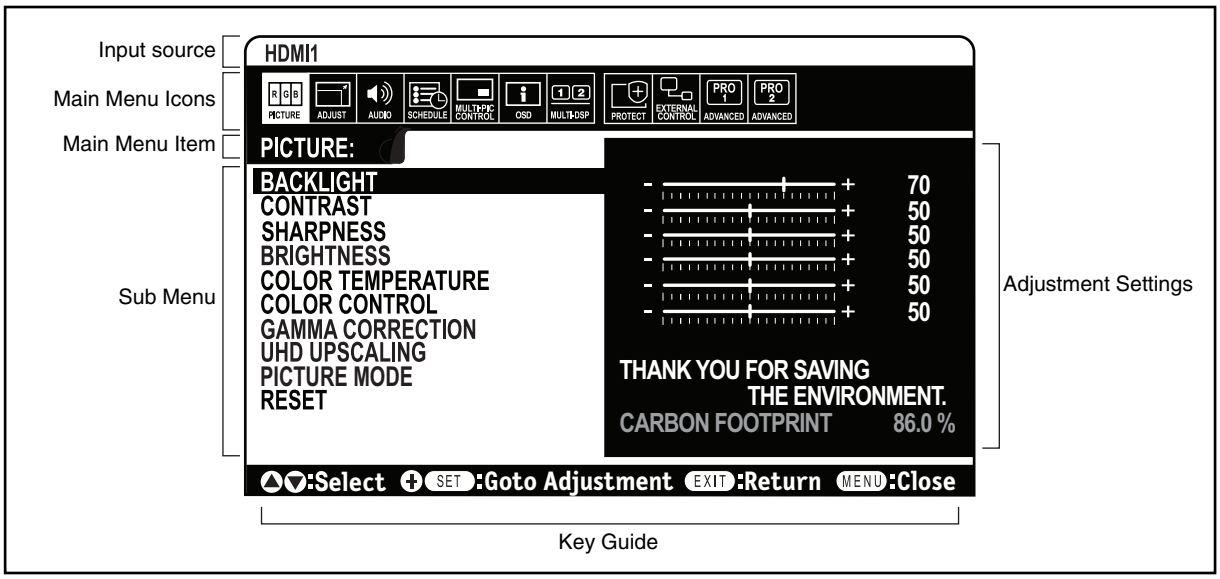
PRESET types

PRESET	PURPOSE
HIGH BRIGHT	Highest brightness setting.
STANDARD	Standard setting.
sRGB	The standard color space used for the Internet, Windows operating systems and digital cameras. Recommended setting for general color management.
CINEMA	A setting that boosts dark tones; best suited for movies.
CUSTOM	Activates the auto dimming function.

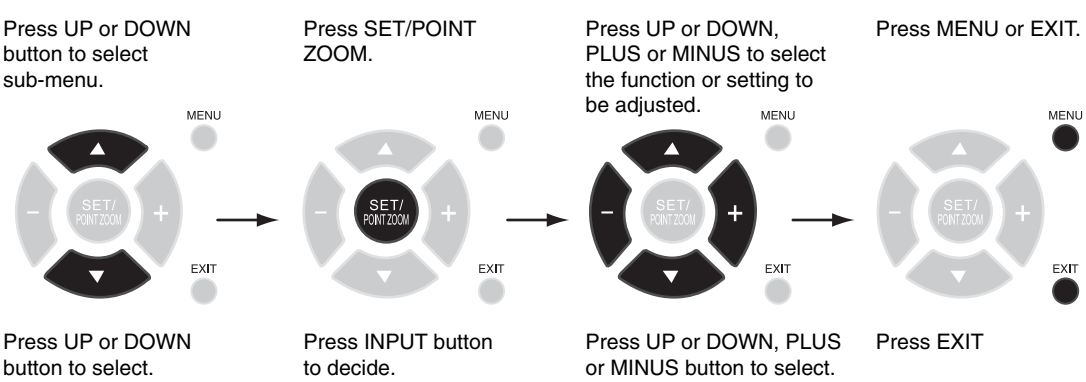
*: This function depends on which option board you use.
*1: This function depends on INPUT CONFIGURATION setting.

OSD (On-Screen-Display) Controls

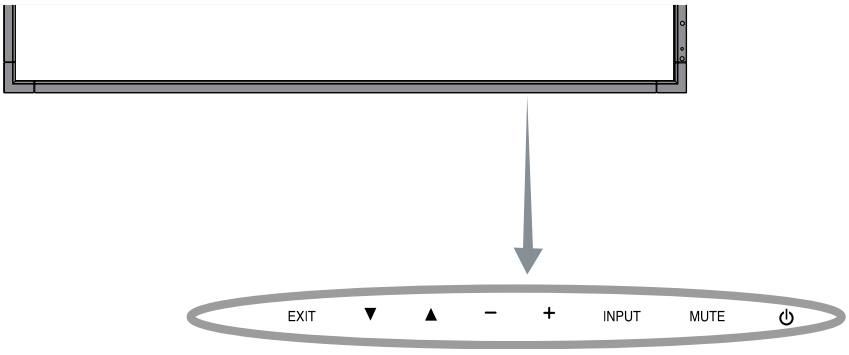
NOTE: Some functions may not be available depending on the model or optional equipment.



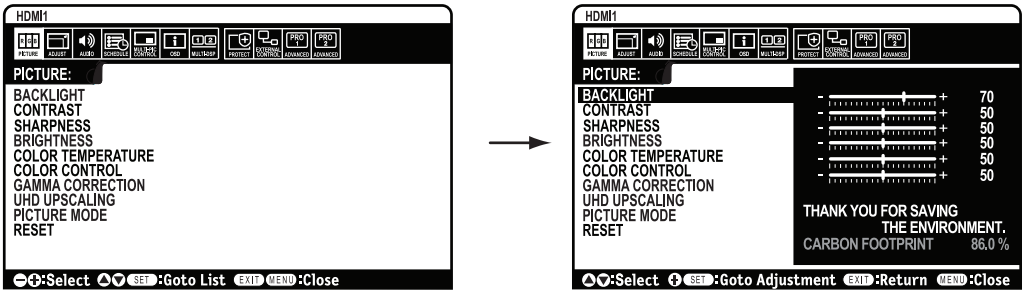
Remote Control



Control Panel



OSD screen



Setting	
PICTURE	
BACKLIGHT*1	Adjust the overall image and background brightness. Press + or - to adjust. NOTE: When MODE1 or MODE2 is selected in ROOM LIGHT SENSING, this function cannot be changed.
CONTRAST*1	Adjust the image brightness in relationship to the input signal. Press + or - to adjust. NOTE: When sRGB is selected in picture mode, this function cannot be changed.
SHARPNESS*1	Adjust the crispness of the image. Press + or - to adjust.
BRIGHTNESS*1	Adjust the image brightness in relationship to the background. Press + or - to adjust. NOTE: When sRGB is selected in picture mode, this function cannot be changed.
COLOR TEMPERATURE*1	Adjust the color temperature of the entire screen. A low color temperature will result in a reddish screen. A high color temperature will result in a bluish screen. If TEMPERATURE needs further adjustment, the individual R/G/B/ levels of the white point can be adjusted. To adjust the R/G/B levels, set CUSTOM as COLOR TEMP selection. NOTE: When sRGB is selected as picture mode, a color temperature of 6500k is predefined so it cannot be changed. When PROGRAMMABLE1, PROGRAMMABLE2 or PROGRAMMABLE3 is selected in GAMMA CORRECTION, this function cannot be changed.
COLOR CONTROL*1	Adjust the hue of the Red, Yellow, Green, Cyan, Blue and Magenta. NOTE: When sRGB is selected in picture mode, this function cannot be changed.
GAMMA CORRECTION*1	Select a monitor gamma correction for best picture quality. Selection depends on the desired usage. NOTE: When sRGB is selected in picture mode, this function cannot be changed.
NATIVE	Gamma correction is handled by the LCD panel.
2.2	Typical monitor gamma for use with a computer.
2.4	Good for video (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	Medical settings for X-ray imaging view. Setting that conforms to the DICOM standard for the Grayscale Standard Display Function.
PROGRAMMABLE1, 2, 3	A programmable gamma curve can be loaded using optional NEC software. The Gamma correction (Display Function) can be changed by using the NEC Display Solutions QA Software. Used for DICOM calibration according to DICOM Part 14. This setting can be selected only by using the NEC Display Solutions software when the PICTURE MODE is set to PROGRAMMABLE. *Gamma - The way luminance is distributed across the intensity spectrum by a monitor, Gamma is defined by the relationship between the signal input voltage and the resulting intensity of the monitor's light output. A perfect linear device would have a Gamma of 1.0. A Gamma correction to DICOM Part 14 is used to alter the luminance output of a monitor to gray steps which appear linear to the human visual system.
UHD UPSCALING*1	Achieve a high-definition effect.
PICTURE MODE	Select picture mode: SpectraView Engine = OFF: [HIGHBRIGHT], [STANDARD], [sRGB], [CINEMA], [CUSTOM1], [CUSTOM2]. SpectraView Engine = ON: [SVE-1 SETTINGS], [SVE-2 SETTINGS], [SVE-3 SETTINGS], [SVE-4 SETTINGS] or [SVE-5 SETTINGS]. See page 22.
RESET	Reset the following settings within the PICTURE menu back to factory setting: BACKLIGHT, CONTRAST, SHARPNESS, BRIGHTNESS, COLOR TEMPERATURE, COLOR CONTROL, GAMMA CORRECTION, UHD UPSCALING.
ADJUST	
ASPECT	Select the aspect ratio of the screen image. NOTE: DYNAMIC or ZOOM in ASPECT setting will be changed to FULL image while POINT ZOOM, IMAGE FLIP and MOTION in SCREEN SAVER are activating. When these functions stop activating, ASPECT will be returned to previous ASPECT setting. When ASPECT is changed during POINT ZOOM, IMAGE FLIP, SCREEN SAVER, DYNAMIC and ZOOM will be FULL image. When the INPUT CONFIGURATION is set as active, ZOOM is not available. ZOOM is also not available with a 3840 x 2160 60 Hz signal.
NORMAL	Show the aspect ratio as it is sent from the source.
FULL	Fill the entire screen.
WIDE	Expand a 16:9 letter box signal to fill the entire screen.
DYNAMIC	Expand 4:3 pictures to fill the entire screen with a non-linear image. Part of the outside image area will be cut off due to the expansion.
1:1	Show the image in a 1 by 1 Pixel format. If the input resolution is higher than a 3840 x 2160 resolution, the image will be scaled down to fit the screen. If ROTATE is selected within the MULTI PICTURE CONTROL tag, characters and lines may be shown with blurs, depending on the signal resolution.

*1: If SPECTRAVIEW ENGINE is ON, this function is grayed out.

ZOOM	The image can be expanded/reduced. NOTE: The expanded image, which is outside of the active screen area, is not shown. The reduced image may have some image degradation.
ZOOM	Maintain the aspect ratio while zooming.
HZOOM	Horizontal zoom value.
VZOOM	Vertical zoom value.
H POS	Horizontal position.
V POS	Vertical position.
IMAGE FLIP	NOTE: When the ASPECT is set to DYNAMIC, the image will be changed to FULL image before IMAGE FLIP starts. Then IMAGE FLIP will start to work. This function is not available when MOTION in SCREEN SAVER or ROTATE is set to ON. When selecting IMAGE FLIP (except for NONE), the following functions are disabled: MULTI PICTURE MODE, TEXT TICKER, STILL, POINT ZOOM and ROTATE. When the input signal is interlaced, the image may be disturbed.
IMAGE FLIP	Show the inverse image right-left, up-down or rotation. Press the + or - button to select.
NONE	Normal mode. 
H FLIP	The image will be inverted to right-left. 
V FLIP	The image will be inverted to up-down. 
180° ROTATE	The image will be rotated by 180 degrees. 
OSD FLIP	Determine the OSD display direction. If ON is selected, depending on the image status, the OSD will be inverted.
RESET	Reset all ADJUST settings back to factory settings.
AUDIO	
VOLUME	Increase or decrease the output volume level.
BALANCE	Select STEREO or MONO for the audio output. If you select STEREO, adjust the L/R volume balance. Press the + button to move the stereo sound image to right. Press the - button to move the stereo sound image to left.
TREBLE	To accentuate or reduce the high frequency range of audio signals. Press the + button to increase TREBLE. Press the - button to decrease TREBLE.
BASS	To accentuate or reduce the low frequency range of audio signals. Press the + button to increase BASS. Press the - button to decrease BASS.
SURROUND	Artificial surround sound. NOTE: LINE OUT is disabled when this function is set to ON.
MULTI PICTURE AUDIO	Select source of MULTI PICTURE AUDIO. NOTE: This function depends on MULTI PICTURE setting.
LINE OUT	Selecting VARIABLE enables control of the line out level with the VOLUME button.
AUDIO INPUT	Select the audio input source: LINE IN, DPORT, HDMI1, HDMI2, HDMI3, HDMI4, OPTION*1.
AUDIO DELAY	Activate a delay time to output the audio signal. The DELAY TIME can be set between 0 and 100 milliseconds. Set to ON to activate this function.
RESET	Reset all AUDIO options back to factory settings, except VOLUME.
SCHEDULE	
OFF TIMER	Set the monitor to power off after a pre-set time period. A time period between 1 to 24 hours may be set.
SCHEDULE SETTINGS	Create a working schedule for the monitor. NOTE: If your schedule exceeds a date, please set ON time and OFF time individually.
SCHEDULE LIST	List of working schedules.

*1: This function depends on which option board you use.

DATE & TIME		Set the date, time, and daylight saving region. Date & time must be set in order for the SCHEDULE function to operate. See page 35.
	YEAR	Set the year for the real-time clock.
	MONTH	Set the month for the real-time clock.
	DAY	Set the day for the real-time clock.
	TIME	Set the time for the real-time clock.
DAYLIGHT SAVING		Set daylight savings on or off.
RESET		Reset the following settings within the SCHEDULE menu back to factory setting: OFF TIMER, SCHEDULE SETTINGS.
MULTI PICTURE CONTROL*1		
KEEP MULTI PICTURE MODE		Allow the monitor to remain in MULTI PICTURE and TEXT TICKER mode after powering off. When Power is returned, MULTI PICTURE and TEXT TICKER appear without having to enter the OSD.
MULTI PICTURE MODE*3		Select the picture number and display form. NOTE: This function is released when selecting SUPER in INPUT CHANGE, SCREEN SAVER, INPUT CONFIGURATION, IMAGE FLIP, except for NONE. When this function is ON, STILL, POINT ZOOM are not available.
	MULTI PICTURE	When OFF is selected, one picture is displayed. When ON is selected, several pictures are displayed.
	PICTURE NUMBER	Select [2 PICTURES], [3 PICTURES], [4 PICTURES]. After having selected the PICTURE NUMBER, select display form PIP, PBP1, PBP2, or PBP3. Depending on the setting at PICTURE NUMBER, the display form selection will be changed. See page 20.
ACTIVE PICTURE*2		When MULTI PICTURE is OFF, [PICTURE 1] is the Active Picture. When MULTI PICTURE is ON, sets Active Picture. NOTE: This function depends on MULTI PICTURE setting.
	ACTIVE	
	ACTIVE FRAME	ON: The active picture is shown within a red frame.
INPUT SELECT*3		Select the Multi Picture input. Press the + button or - button to select the input. NOTE: This function is not available when MULTI PICTURE is OFF. Press SET button after selecting Active Picture input.
PICTURE SIZE*2		Set the Active Picture size. Press the SET/POINT ZOOM button to adjust the picture size. Press + or CH+ to expand. Press - or CH- to reduce. NOTE: This function is not available when MULTI PICTURE is set to 4 PICTURES PBP. Depending on the setting at MULTI PICTURE MODE, some images cannot change their size.
PICTURE POSITION*2		Set the Active Picture location. Pressing the + button moves the Active Picture to the right, and pressing the - button moves it to the left. Pressing the ▲ button moves the Active Picture up, and pressing the ▼ button moves it down. NOTE: This function is not available when MULTI PICTURE is set to 4 PICTURES PBP.
PICTURE ASPECT*2		Select the Active Picture frame aspect, [FULL], [NORMAL] and [EXPAND]. To change aspect ratio of the screen image, see page 20. NOTE: This function depends on the settings within MULTI PICTURE.
ROTATE*3		When ON is selected, all pictures rotate. When OFF is selected, set each picture individually with the ROTATE settings. NOTE: When the functions TEXT TICKER, IMAGE FLIP (except for NONE) or STILL is ON resp. SCREEN SAVER is active, this function is not available. If ASPECT “1:1” is selected, characters and lines may be displayed blurred, depending on the signal resolution. When ROTATE is ON, POINT ZOOM and IMAGE FLIP (except for NONE) are not available. The ROTATE settings of each picture are released when MULTI PICTURE is set to OFF. When the input signal is supplied in Interlace mode, the image may be disturbed. If the input signal is 3840 x 2160 at 60 Hz and either [3 PICTURES] or [4 PICTURES] is selected at PICTURE NUMBER within MULTI PICTURE MODE, ROTATE is not available. If ROTATE is selected within MULTI PICTURE CONTROL, and the input signal is supplied with a high refresh rate, the image may not be displayed smoothly. Please set the input signal to a lower refresh rate in order to reduce this effect.
	ROTATE ALL	
	PICTURE1	
	PICTURE2	
	PICTURE3	
	PICTURE4	

*1: This function is released when selecting SUPER in INPUT CHANGE, SCREEN SAVER, INPUT CONFIGURATION, IMAGE FLIP except for NONE.
*2: When TEXT TICKER is active, this function is not available.
*3: When you select OPTION for multi picture input, this function depends on which option board you use.

TEXT TICKER*1	
MODE	Enable Text Ticker and allows you to set Horizontal or Vertical direction.
POSITION	Select the location of the Text Ticker on the screen.
SIZE	Determine the size of the Text Ticker in relationship to the overall screen size.
DETECT	Enable auto-detection of the Text Ticker.
PICTURE1	Select input signals.
PICTURE2	Select input signals. NOTE: When this function is active, POINT ZOOM, STILL and ROTATE are not available.
RESET	Reset MULTI PICTURE CONTROL options back to factory settings, except for INPUT SELECT and PICTURE ASPECT.
OSD	
LANGUAGE	Select the language used by the OSD.
ENGLISH	
DEUTSCH	
FRANÇAIS	
ITALIANO	
ESPAÑOL	
SVENSKA	
РУССКИЙ	
中文	
日本語	
MENU DISPLAY TIME	Turn off the OSD after a period of inactivity. The preset choices are 10-240 seconds.
OSD POSITION	Determine the location where the OSD appears on the screen.
UP	
DOWN	
RIGHT	
LEFT	
INFORMATION OSD	Select whether the Information OSD is displayed or not. The Information OSD will appear when the input signal or input source changes. The Information OSD will also give a warning when no signal is detected or the signal is out of range. An interval between 3 and 10 seconds is selectable for the Information OSD to appear.
COMMUNICATION INFO	The MONITOR ID and IP ADDRESS will appear when the remote control Display button is pressed.
MONITOR INFORMATION	Show the model name, serial number and firmware version of your monitor. CARBON SAVINGS: Display the estimated carbon saving information in kg-CO2. The carbon footprint factor in the carbon saving calculation is based on the OECD (2008 Edition). CARBON USAGE: Display the estimated carbon usage information in kg-CO2. This is the arithmetic estimation, not actual measurement value. This estimation is based without any options.
OSD TRANSPARENCY	Select the transparency of the OSD.
OSD ROTATION	Determine the OSD orientation between landscape and portrait.
LANDSCAPE	Show the OSD in landscape orientation.
PORTRAIT	Show the OSD in portrait orientation.
INPUT NAME	You can create a name for the INPUT currently being used. Max: 8 characters, including Space, A-Z, 0-9, and some symbols.
MEMO	Define a title and a message via HTTP server. See page 48.
RESET	Reset the following settings within the OSD menu back to factory setting: MENU DISPLAY TIME, OSD POSITION, INFORMATION OSD, OSD TRANSPARENCY.

*1: When you select OPTION for multi picture input, this function depends on which option board you use.

MULTI DISPLAY	
ID CONTROL	Set the monitor ID number from 1-100 and group ID from A-J. DETECTED MONITORS shows the number of all monitors which are included in the daisy chain of connected LAN cables. NOTE: The Group ID is made of multiple selections.
AUTO ID	When YES is selected, monitor ID numbers are set automatically in all monitors which follow are included in the daisy chain. NOTE: All monitors which are included in the daisy chain should be ON. When executing this function while in standby mode or power save mode, LAN POWER should be ON.
AUTO ID RESET	Reset the monitor ID number of all monitors which are included in the daisy chain. NOTE: An AUTO ID RESET should be done when the number of monitors which are included in the daisy chain, was changed.
IR LOCK SETTINGS	Prevent the monitor from being controlled by the wireless remote control. When ACTIVATE is selected, all the settings are activated. NOTE: IR LOCK SETTINGS is a function intended only for the wireless remote control buttons. This function does not lock out access to all buttons at the back of the monitor. To return to normal operation, press the DISPLAY button on the remote control for 5 seconds.
MODE SELECT	Select the mode UNLOCK, ALL LOCK or CUSTOM LOCK.
UNLOCK	All buttons on the remote control are available for normal operation.
ALL LOCK	Lock all remote control buttons.
CUSTOM LOCK	Select which buttons to be locked from POWER, VOLUME, and INPUT button. Except for CUSTOM LOCK settings, other buttons on the remote control are locked. POWER: When LOCK is selected, the POWER button is locked. VOLUME: When UNLOCK is selected, set the minimum and maximum volume between VOL.0 to VOL.100. VOLUME (+) button and VOLUME (-) button are only available from the minimum volume to the maximum volume you set. When LOCK is selected, VOLUME (+) button and VOLUME (-) button are locked. INPUT: When UNLOCK is selected, choose up to three buttons from DVI1, DVI2, DPORT, HDMI1, HDMI2, HDMI3, HDMI4, OPTION*1, PRESET1*2, PRESET2*2, which you prefer to be unlocked. The unselected buttons are locked. When LOCK is selected, all INPUT buttons are locked.
POWER ON DELAY	Adjust the delay time between being in “standby” mode and entering “power on” mode.
DELAY TIME	POWER ON DELAY can be set between 0 and 50 seconds.
LINK TO ID	When ON selected, delay time is linked with the Monitor ID. The larger the ID number, the longer the delay time.
POWER INDICATOR	Turns the LED located at the front of the monitor ON or OFF. If OFF is selected, the LED will not light when the LCD monitor is in active mode.
SETTING COPY	In a daisy chain scenario, select the OSD menu categories that you want to copy over to the other monitors. NOTE: When you use this function, monitors should be daisy chained by LAN cables. This function will be reset to default when power is off. This function has a limit in the number of connected monitors, depending on type and quality of the LAN cable you use.
COPY START	Select YES and press the SET button to start copying.
ALL INPUT	All input terminals settings are copied when you select this item. Default is off.
RESET	Reset MULTI DISPLAY options back to factory settings, except for POWER ON DELAY.
DISPLAY PROTECTION	
POWER SAVE	Use this function to set how long the monitor waits to go into power save mode after the signal is lost. NOTE: When connecting to DVI, the display controller might not stop sending a digital data even though the image might have disappeared. If this occurs the monitor will not switch into power management mode. POWER SAVE is disabled when AUTO OFF or CUSTOM is selected in HUMAN SENSING*3.
AUTO POWER SAVE	The monitor automatically goes into OFF mode at the pre-set time period after the signal was switched off. The monitor will return to normal mode when signal is restarted.
AUTO STANDBY	The monitor automatically goes into OFF at the pre-set time period after the signal was switched off. Press the power button to activate the monitor to normal mode.
DISABLE	The monitor will not go into OFF mode after the signal was switched off.

*1: This function depends on which option board you use.
*2: This function depends on INPUT CONFIGURATION setting.
*3: The function is available only when connecting the optional control unit.

HEAT STATUS	Show the actual status of fans, backlight and temperature sensors.
FAN CONTROL	Cooling fans will reduce the internal temperature of the monitor to protect from overheating. If AUTO is selected, you can adjust the start temperature of the cooling fans and the fan speed.
SCREEN SAVER	Use the SCREEN SAVER function to reduce the risk of Image Persistence. NOTE: This function is released when INPUT CONFIGURATION is set as active. When the screen saver is activated, the image will be changed to FULL image. After the screen saver stops the activity, the image will be reproduced again with the current ASPECT setting. The screen saver cannot be selected for 3840 x 2160 at 60 Hz signal input. When the SCREEN SAVER is set to active, MULTI PICTURE, ROTATE, STILL, IMAGE FLIP (except for NONE) or TEXT TICKER, POINT ZOOM are not available.
GAMMA*	The monitor gamma is changed and fixed when ON is selected.
BACKLIGHT*	The brightness of the backlight is decreased when ON is selected. NOTE: Do not select this function when ROOM LIGHT SENSING is set to MODE1 or MODE2.
MOTION*1	The screen image is slightly expanded and moves in 4 directions (UP, DOWN, RIGHT, LEFT) at user determined intervals. You can set interval time and zoom ratio.
SIDE BORDER COLOR	Adjust the color of the side borders when a 4:3 image is reproduced. Press the + button on the remote control. The side borders will become brighter. By pressing the - button, the side borders will become darker.
CHANGE PASSWORD	Allow the security password to be changed. The factory preset password is 0000.
SECURITY	Lock the security password. START-UP LOCK: The security password is required when the monitor power is on. CONTROL LOCK: The security password is required when a remote control button or a control button on the monitor is pressed. BOTH LOCK: The security password is required when either the monitor is powered on or a remote control button or a control button on the monitor is pressed.
RESET	Reset the following settings within the DISPLAY PROTECTION menu back to factory setting: POWER SAVE, FAN CONTROL, SCREEN SAVER, SIDE BORDER COLOR.
EXTERNAL CONTROL	
NETWORK INFORMATION	Shows the current network settings.
IP ADDRESS SETTINGS	NOTE: When changing any LAN Settings, you need to wait several seconds until modified LAN settings are applied.
IP SETTING	Enabling this option automatically assigns an IP address to the monitor from your DHCP server. Disabling this option allows you to enter a fixed IP address and subnet mask data obtained from your network administrator. NOTE: Consult your network administrator for the IP address when AUTO is selected for [IP SETTING].
IP ADDRESS	Set your IP address for the monitor connected to the network when MANUAL is selected for [IP SETTING].
SUBNET MASK	Set your subnet mask data for the monitor connected to the network when MANUAL is selected for [IP SETTING].
DEFAULT GATEWAY	Set your default gateway for the monitor connected to the network when MANUAL is selected for [IP SETTING]. NOTE: Enter [0.0.0.0] to delete the setting.
DNS	Set the IP addresses of DNS servers. AUTO: The DNS server which is connected with the monitor will automatically assign his IP address. MANUAL: Manually enter the IP address of the DNS server which is connected with the monitor.
DNS PRIMARY	Enter the primary DNS server settings of the network connected with the monitor. NOTE: Enter [0.0.0.0] to delete the setting.
DNS SECONDARY	Enter the secondary DNS server settings of the network connected with the monitor. NOTE: Enter [0.0.0.0] to delete the setting.
LAN POWER	Select the LAN operation mode. When ON is selected, power will be supplied to the LAN module during power save mode or standby mode. NOTE: This function must be ON to enable AUTO ID in the MULTI DISPLAY tag.
DDC/CI	ENABLE/DISABLE: Turns ON or OFF the two-way communication and control of the monitor.
PING	Confirm successful connection with the network by communicating with a pre-set IP address.
IP ADDRESS RESET	Reset IP ADDRESS SETTINGS back to factory settings.
RESET	Reset the following setting within the EXTERNAL CONTROL menu back to factory settings: DDC/CI.

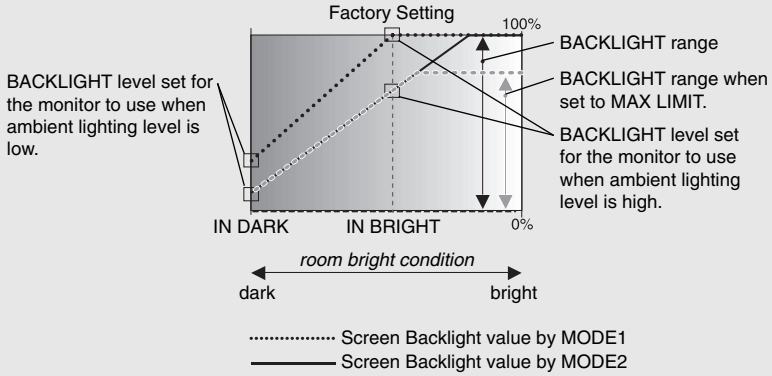
*: If SPECTRAVIEW ENGINE is ON, this function is grayed out.
*1: When you select OPTION for signal input, this function depends on which option board you use.

ADVANCED OPTION1	
INPUT DETECT	Select the input detection method which the monitor should use when more than one signal source is connected. NOTE: When SUPER is selected within INPUT CHANGE, this function cannot be changed.
NONE	The Monitor will not search for signals at the other video input ports.
FIRST DETECT*1	When the current video input signal is not present, then the monitor searches for a video signal from another video input port. If a video signal is present in the other input, then the monitor switches from the current video source to this active video source automatically. The monitor will not look for any other video signals while the current video source is present.
LAST DETECT*1	When the monitor is reproducing a signal from the current video source and a new second video source is supplied to the monitor, the monitor will automatically switch to the new video source. When the current video input signal is not present anymore, the monitor searches for a video signal from any other video input. If a video signal is present in the other input, then the monitor switches from the current video source to this active video source automatically.
CUSTOM DETECT*1	Set the priority of input signals. When CUSTOM DETECT is selected, the monitor searches on pre-set inputs only. NOTE: Priority of an option input signal is only available in PRIORITY3, except for a slot 2 type PC option.
LONG CABLE COMP	Compensate image degradation caused by long cables. A lower number produces less compensation. If an image shows visible noise, select MODE2 or MODE3. If you are using a long cable equipped with an equalizer, select MODE0 or MODE1. NOTE: LONG CABLE COMP does not compensate video signals supplied via a DisplayPort cable.
INPUT CHANGE*1	Set input change speed. The selection SUPER enables high-speed switching between pre-set two signals. NOTE: When QUICK is selected, the picture may be distorted for a short time when signal input source is changed. When INPUT CONFIGURATION is ACTIVE, SUPER is not available. When SUPER is active, MULTI PICTURE MODE, TEXT TICKER, STILL, POINT ZOOM are not available. This function should be chosen after all adjustment options have been finished for the setup of inputs.
TERMINAL SETTINGS	
HDMI/DVI SELECT	Select input terminal sources [HDMI], [DVI] or [HDMI/DVI]. NOTE: Only signals from selected inputs will be shown. A HDMI signal is not displayed by factory setting. To show a HDMI signal on the screen, set to HDMI.
INPUT CONFIGURATION	Select the input sources. See page 21. When this function is ON, MULTI PICTURE MODE, TEXT TICKER, SCREEN SAVER, STILL, POINT ZOOM, SUPER in INPUT CHANGE, ZOOM in ASPECT are not available.
HDMI	Select the input source, ON or OFF. [HDMI x 4 (PRESET1)], [HDMI x 2 (PRESET1)], [HDMI x 2 (PRESET2)]. HDMI x 4 (PRESET1): When [HDMI x 2 (PRESET1)] or [HDMI x 2 (PRESET2)] is set, [HDMI x 4 (PRESET1)] is disabled. HDMI x 2 (PRESET1): When TOP & BOTTOM is set, [HDMI x 2 (PRESET2)] is disabled. HDMI x 2 (PRESET2): When TOP & BOTTOM is set, [HDMI x 2 (PRESET1)] is disabled.
DVI	Select LEFT & RIGHT or TOP & BOTTOM for the multi input sources [DVI x 2 (PRESET1)].
HDMI/DVI	Select LEFT & RIGHT for the multi input sources [HDMI x 2 (PRESET1)].
DVI MODE	Select the kind of DVI-D equipment which is connected to the DVI input. Select DVI-HD when a DVD player or computer equipment is connected which requires HDCP authentication. Select DVI-PC when a computer equipment is connected which does not require HDCP authentication.
DisplayPort	Select the DisplayPort mode [1.1a] or [1.2]. If the input resolution is higher than 3840 x 2160, the image will be scaled down to fit the screen.
BIT RATE	If DisplayPort 1.1a is selected, you can set [RBR] or [HBR]. If DisplayPort 1.2 is selected, you can set [RBR], [HBR] or [HBR2]. NOTE: This function depends on DisplayPort settings.
HDMI SIGNAL	RAW: For computer settings. Show all input signals of 0-255 gray levels. EXPAND: For audio-visual equipment settings. Expands the input signals from 16-235 gray levels to 0-255 gray levels.

*1: When you select OPTION for signal input, this function depends on which option board you use.

DEINTERLACE	Select the IP (Interlaced to Progressive) conversion function. NOTE: For DVI input DVI-HD needs to be enabled in the DVI mode menu.
ON	Convert interlaced signals to progressive signals. This is the default setting.
OFF	Disable IP conversion. This setting is best suited for motion pictures, but increases the risk of image retention.
MOVIE SETTINGS	Select suitable settings for Movie.
TELECINE HDMI1, HDMI2, HDMI3, HDMI4, PRESET1*2, PRESET2*2 inputs only.	Automatically senses the sources frame rate for optimal picture quality.
ADAPTIVE CONTRAST*1 HDMI1, HDMI2, HDMI3, HDMI4, PRESET1*2, PRESET2*2 inputs only.	Set the level of adjustment for dynamic contrast.
OVER SCAN HDMI1, HDMI2, HDMI3, HDMI4, PRESET1*2, PRESET2*2 inputs only.	Some video formats may require different scanning modes for best image reproduction.
ON	The image size is larger than what can be reproduced. The image edge will appear cropped. Approximately 95% of the image content will be shown on the screen.
OFF	The image size stays within the screen area. The whole image is reproduced on the screen. NOTE: When you use a computer with HDMI signal output, please set to OFF.
AUTO*4	Set the scanning mode automatically.
OPTION SETTINGS	
OPTION POWER	Allow the monitor to supply power to an Option board slot during power save mode or standby mode. NOTE: This function should be set to ON when using the power save management for a slot 2 type option.
AUDIO*3	Select the sound input signal according to the slot 2 type option specifications. To activate DIGITAL, select OPTION for input signal and OPTION for AUDIO INPUT. NOTE: DIGITAL is activated only when OPTION is selected for input signal and OPTION for AUDIO INPUT.
INTERNAL PC*3	The function is available for a slot 2 type PC.
OFF WARNING	If OPTION POWER is OFF, a warning message appears when the monitor power is turned off. NOTE: This warning message does not appear when the monitor power is turned off by OFF TIMER settings or SCHEDULE settings.
AUTO OFF	Monitor power is automatically OFF when the internal PC is OFF or the monitor is in power save mode. NOTE: If you select OFF, the monitor power is not automatically ON when the internal PC is ON.
START UP PC	When ON is selected, the internal PC will start.
FORCE QUIT	When ON is selected, a forced shutdown of the internal PC will be carried out. Please use this function only when the operating system cannot be shut down manually.
SLOT2 CH SETTING*3	Select signal type according to the slot 2 type option specifications.
AUTO	Set the signal type automatically.
1CH	Fill the screen entirely with the signal which is selected in SLOT2 CH SELECT.
2CH	The DisplayPort signal is displayed on the left half of the screen, the TMDS signal is displayed on the right half. If the internal PC does not support either one of the signal types, the existing signal will automatically be displayed on the full screen.
SLOT2 CH SELECT*3	This function is available only when SLOT2 CH SETTING is 1CH.
DPORT	Show the DisplayPort signal from a slot 2 type PC option on the full screen.
TMDS	Show the TMDS signal from a slot 2 type PC option on the full screen.
120Hz (not adjustable)	
TOUCH PANEL (not adjustable)	
RESET	Reset the following settings within the ADVANCED OPTION1 menu back to factory setting: INPUT DETECT (priority of input signals only), INPUT CHANGE (except for INPUT1 and INPUT2), TERMINAL SETTINGS, DEINTERLACE, MOVIE SETTINGS, OVER SCAN, AUDIO in OPTION SETTINGS.

*1: If SPECTRAVIEW ENGINE is ON, this function is grayed out.
*2: This function depends on INPUT CONFIGURATION setting.
*3: This function depends on which option board you use. When changing the setting, turn the monitor off and on again.
*4: When you select OPTION for signal input, this function depends on which option board you use.

ADVANCED OPTION2		
AUTO DIMMING*		Adjust the backlight of the LCD automatically depending on the amount of ambient light. NOTE: Do not activate this function when SPECTRAVIEW ENGINE is set to ON.
	AUTO BRIGHTNESS DVI1, DVI2, DPORT, OPTION*1, PRESET*2, PRESET2*2 inputs only.	Adjust the brightness level according to the input signal. NOTE: Do not select this function when ROOM LIGHT SENSING is MODE1 or MODE2. NOTE: Do not activate this function when SPECTRAVIEW ENGINE is set to ON.
	BACKLIGHT DIMMING (not adjustable)	
	ROOM LIGHT SENSING*	The backlight of the LCD screen can be set to increase or decrease depending on the amount of ambient light within the room. If the room is bright, the monitor becomes correspondingly bright. If the room is dim, then the monitor will dim accordingly. The purpose of this function is to make the viewing experience more comfortable to the eye in a variety of lighting conditions. NOTE: When ROOM LIGHT SENSING is set to MODE1 or MODE2, BACKLIGHT, AUTO BRIGHTNESS and BACKLIGHT in SCREEN SAVER function are disabled. Do not cover the room light sensing sensor when you use MODE1 or MODE2. AMBIENT parameter setting ROOM LIGHT SENSING in OSD, select MODE1 or MODE2 and set MAX LIMIT, IN BRIGHT and IN DARK in each mode. MAX LIMIT: This is the max level of backlight which you set. IN BRIGHT: This is the backlight level that the monitor will go up to when the ambient light level is highest. IN DARK: This is the level of backlight that the monitor will go down to when the ambient light level is low. When the ROOM LIGHT SENSING is enabled the Backlight level of the screen changes automatically according to the lighting conditions of the room (see figure below).  MAX LIMIT: BACKLIGHT level is limited to your set level. IN DARK: BACKLIGHT level set for the monitor to use when ambient lighting level is low. IN BRIGHT: BACKLIGHT level set for the monitor to use when ambient lighting level is high. NOTE: Do not activate this function when SPECTRAVIEW ENGINE is set to ON.
	HUMAN SENSING*3	HUMAN SENSING has three settings. NOTE: POWER SAVE is disabled when AUTO OFF or CUSTOM is selected in HUMAN SENSING. NOTE: Do not activate this function when SPECTRAVIEW ENGINE is set to ON.
	DISABLE	No human sensing.
	AUTO OFF	At the pre-set time, when no person is detected, BACKLIGHT* and VOLUME automatically go into OFF. When a person comes near the monitor again, the monitor will automatically return to normal mode.
	CUSTOM	BACKLIGHT* and VOLUME automatically shift to the set value when detecting no person. When a person comes near the monitor again, the monitor automatically returns to normal mode and reproduce the input signal selected in INPUT SELECT.
INTELLI. WIRELESS DATA		Select ON to activate INTELLIGENT WIRELESS DATA function (see page 50). A password is required when using the function.
SPECTRAVIEW ENGINE		Select ON to activate SPECTRAVIEW ENGINE (see page 22).
RESET		Reset ADVANCED OPTION 2 settings back to factory setting, except for INTELLI. WIRELESS DATA.
FACTORY RESET		All items are returned to factory shipment state. NOTE: You can reset all items in all daisy chained displays. Please be careful to avoid resetting all items inadvertently.

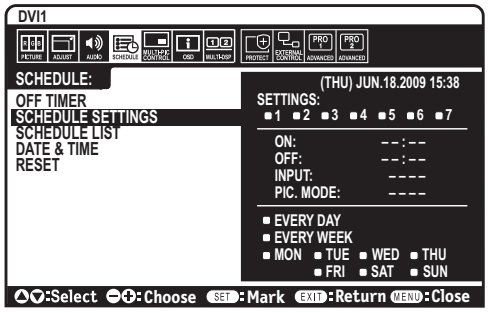
*: If SPECTRAVIEW ENGINE is ON, this function is grayed out.
*1: This function depends on which option board you use.
*2: This function depends on INPUT CONFIGURATION setting.
*3: The function is available only when connecting the optional control unit.

NOTE 1: CREATING A SCHEDULE

The schedule function allows the monitor 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 SETTINGS using the up and down buttons. Press the SET/POINT ZOOM or the + button to enter the Settings menu. Highlight the desired schedule number and press SET/POINT ZOOM. The box next to the number will turn yellow. The schedule can now be programmed.
2. Use the down button to highlight the hours setting in the ON time slot. 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.
3. Use the up and down arrows to highlight INPUT. Use the + and - buttons to choose the input source. Use the up and down arrows to highlight PIC. MODE. Use the + and - buttons to choose the picture mode.
4. Use the down button to select a day on which the schedule will be enabled. Push the SET/POINT ZOOM button to enable. If the schedule is to be ran every day, choose EVERY DAY and press the SET/POINT ZOOM 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/POINT ZOOM to select. Then highlight the EVERY WEEK option and press SET/POINT ZOOM.
5. After a schedule is programmed, the remaining schedules can then be set. Press MENU 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.
If selected input or picture mode is not available now, the disabled input or picture mode is shown in red.

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, the image persistence of LCD monitors 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.
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 SCREEN SAVER, DATE &TIME and SCHEDULE SETTINGS functions to further reduce the risk of Image persistence.

Recommendations for long life use as a medical image viewing monitor

Image Sticking of LCD Panel

When an LCD panel is operated continuously for long hours, a trace of electric charge remains near the electrode inside LCD, and residual or “ghost” image of previous image may be observed. (Image Persistence)
Image Persistence is not permanent, but when fixed image is displayed for long period, ionic impurities inside LCD are accumulated along the displayed image, and may be permanent. (Image Sticking)

To prevent Image Sticking, and for longer life usage of the monitor, the following is recommended.

1. Fixed image should not be reproduced for long period. Change still images after short intervals.
2. When not in use, please turn off the monitor via remote control, or use the Power Management function of the PC, or use the built-in Schedule Functions.
3. Lower environmental temperatures prolong the lifespan of the monitor.
   When a protective surface (glass, acrylic) is installed over the monitor’s screen surface, the monitor’s screen surface is located in an enclosure, or the monitors are stacked, utilize the temperature sensors inside the monitor.
   To reduce the internal temperature, use the Cooling Fans, Screen Saver, the Power Management function of the PC and Low Brightness.
4. Please use “Screen Saver Mode” of monitor.

Remote Control Functions

REMOTE CONTROL ID FUNCTION

REMOTE CONTROL ID

The remote control can be used to control up to 100 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 100 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 (see Figure 1). Using the remote in REMOTE CONTROL ID mode will only operate one specific monitor within the group (see Figure 2).

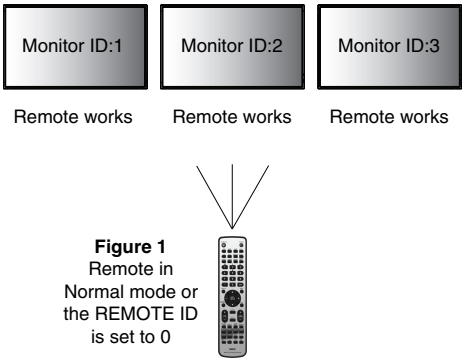


Figure 1
Remote in Normal mode or the REMOTE ID is set to 0

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 (1-100) 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 SET/RESET REMOTE CONTROL 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 CLEAR 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).

Point the remote control towards the remote sensor of the desired monitor and press the REMOTE ID SET button. The MONITOR ID number is shown on the screen when your remote control is in ID mode.

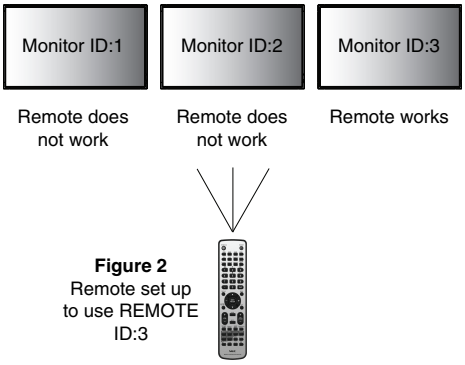


Figure 2
Remote set up to use REMOTE ID:3

Use the remote control to operate a monitor that has a specific MONITOR ID number assigned to it.

1. Set the MONITOR ID number for the monitor (See page 30). The MONITOR ID number can range from 1-100. This MONITOR ID number allows the remote control to operate this specific monitor without affecting other monitors.
2. On the remote control, press and hold down the REMOTE ID SET button while using the keypad to input the REMOTE CONTROL ID number (1-100). The REMOTE ID NUMBER should match the MONITOR ID number of the monitor to be controlled. Choose “0” to simultaneously control all monitors in range.
3. Point the remote control towards the remote sensor of the desired monitor and press the REMOTE ID SET button. The MONITOR ID number is shown in red on the monitor. If the REMOTE CONTROLID is “0”, then all monitors in range will show their respective MONITOR ID number in red.

   If the MONITOR ID number is shown in white on the monitor, the MONITOR ID number and the REMOTE CONTROL ID are not the same.

   NOTE: The GROUP ID cannot be specified via the remote control.

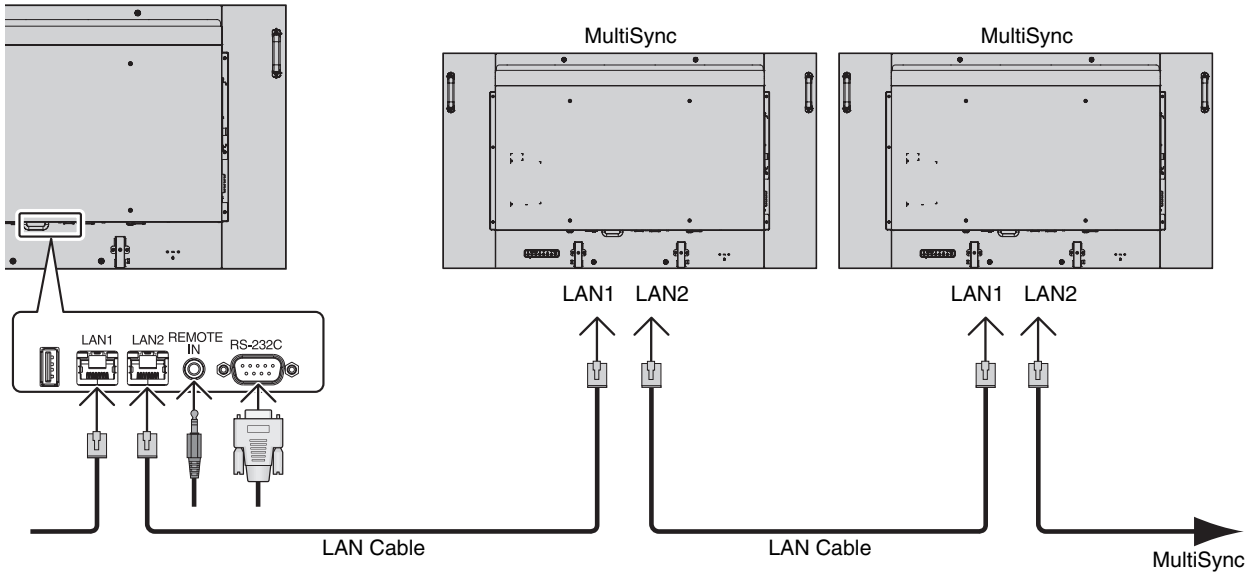
Multiple Monitors Connection

You can control multiple monitors by using RS-232C, REMOTE IN or LAN daisy-chain connection.

NOTE: Multiple monitors that are daisy-chained have a limit to the connectable monitors.
Please execute AUTO ID (see page 30) before manually specifying the ID number or control by the specified ID number.

Main Monitor		Sub Monitors	
Connector		Connector	
IN	OUT	IN	OUT
RS-232C	LAN2	LAN1	LAN2
REMOTE IN			
LAN1			

Connection



Controlling the LCD monitor via RS-232C Remote Control

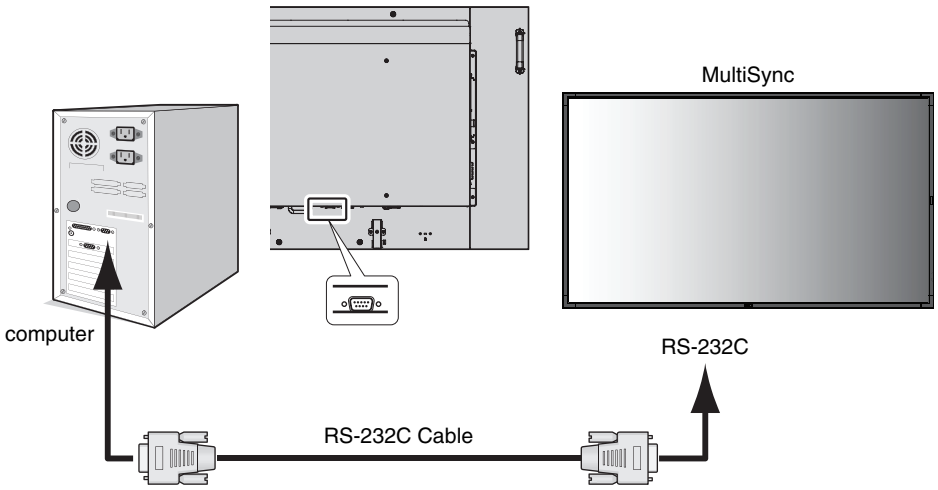
This LCD monitor can be controlled by connecting a personal computer with a RS-232C (reverse type) terminal.

Functions that can be controlled by a personal computer are:

- Power ON or OFF.
- Switching between input signals.
- Sound Mute ON or OFF.

Connection

LCD Monitor + computer



NOTE: If your computer is equipped only with a 25-pin serial port connector, a 25-pin serial port adapter is required. Contact your dealer for details.
For the pin assignment, please see “2) RS-232C input/output” below.

To control a monitor, please use the control command. Instructions for the control command can be found on the CD included with the display. The file is called “External_control.pdf”.

1) Interface

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

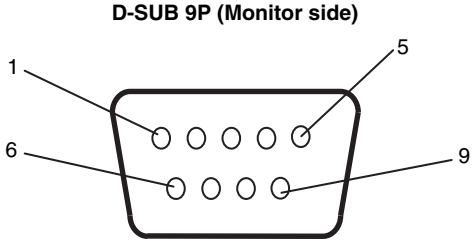
This LCD monitor uses RXD, TXD and GND lines for RS-232C control.
The reverse type cable (null modem cable) (not include) should be used for RS-232C control.

2) PIN ASSIGNMENT

RS-232C input/output

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

D-SUB 9P (Monitor side)



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

3) Control command diagram

For other commands, please see “External_Control.pdf” file on the CD-ROM supplied with this monitor.

Function (Monitor ID = 1)	Code Data
Power ON	01 30 41 30 41 30 43 02 43 32 30 33 44 36 30 30 30 31 03 73 0d
Power OFF	01 30 41 30 41 30 43 02 43 32 30 33 44 36 30 30 30 34 03 76 0d
Input Source Select DisplayPort	01 30 41 30 45 30 41 02 30 30 36 30 30 30 30 46 03 04 0d or 01 30 41 30 45 30 41 02 31 31 30 36 30 30 30 46 03 04 0d
Input Source Select DVI1	01 30 41 30 45 30 41 02 30 30 36 30 30 30 30 33 03 71 0d or 01 30 41 30 45 30 41 02 31 31 30 36 30 30 30 33 03 71 0d
Input Source Select DVI2	01 30 41 30 45 30 41 02 30 30 36 30 30 30 30 34 03 76 0d or 01 30 41 30 45 30 41 02 31 31 30 36 30 30 30 34 03 76 0d
Input Source Select HDMI1	01 30 41 30 45 30 41 02 30 30 36 30 30 30 31 31 03 72 0d or 01 30 41 30 45 30 41 02 31 31 30 36 30 30 31 31 03 72 0d
Input Source Select HDMI2	01 30 41 30 45 30 41 02 30 30 36 30 30 30 31 32 03 71 0d or 01 30 41 30 45 30 41 02 31 31 30 36 30 30 31 32 03 71 0d
Input Source Select HDMI3	01 30 41 30 45 30 41 02 31 31 30 36 30 30 38 32 03 78 0d
Input Source Select HDMI4	01 30 41 30 45 30 41 02 31 31 30 36 30 30 38 33 03 79 0d
Input Source Select OPTION	01 30 41 30 45 30 41 02 30 30 36 30 30 30 30 44 03 06 0d or 01 30 41 30 45 30 41 02 31 31 30 36 30 30 30 44 03 06 0d
Sound Mute ON	01 30 41 30 45 30 41 02 30 30 38 44 30 30 30 31 03 09 0d
Sound Mute OFF	01 30 41 30 45 30 41 02 30 30 38 44 30 30 30 32 03 0a 0d

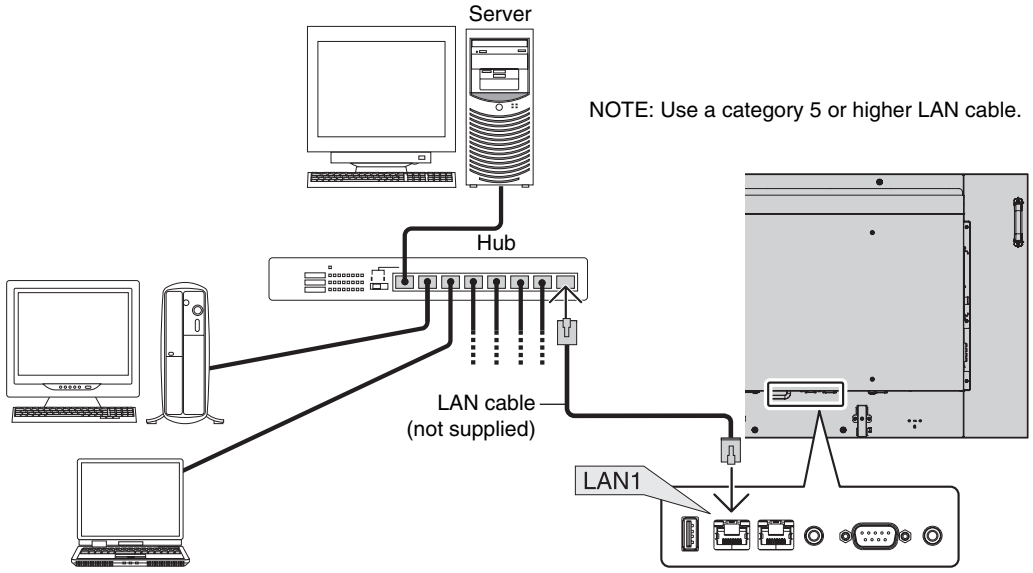
Controlling the LCD monitor via LAN Control

Connecting to a Network

Using a LAN cable allows you to specify the Network Settings and the Alert Mail Settings by using the HTTP server function.

To use a LAN connection, you are required to assign an IP address.

Example of a LAN connection:



Network Setting by Using an HTTP Browser

Overview

Connecting the monitor to a network allows for monitor control from a computer via the network.

To perform the monitor control from a web browser, you must have an exclusive application installed on your computer.

The IP address and subnet mask of the monitor can be set on the Network Setting screen of the web browser by using the HTTP server. Please be sure to use “Microsoft Internet Explorer 7.0” or a higher version for the web browser.
This device uses “JavaScript” and “Cookies” and the browser should be set to accept these functions. The setting method will vary depending on the version of the browser. Please refer to the help files and the other information provided in your software.

Access is gained to the HTTP server function by starting the Web browser on the computer via the network connected to the monitor and entering the following URL.

Network Setting

http://<the Monitor’s IP address>/index.html

HINT: The default IP address is assigned automatically to the monitor.
The exclusive application can be downloaded from our website.

NOTE: If the MONITOR NETWORK SETTINGS screen does not appear in the web browser, press the Ctrl+F5 keys to refresh your web browser (or clear the cache).

The response time of the monitor to commands, or clicks on buttons in the browser may be slowed down, or the speed of operation may even not be acceptable, depending on the settings of your network. Should this happen, consult your network administrator.

The monitor may not respond if the buttons shown on the browser are repeatedly pressed in rapid intervals. Should this happen, wait a moment and repeat. If you still can’t get a response, turn the monitor off and then back on.

To control a monitor please use the control command. See “Control command diagram” (page 39).

Preparation Before Use

Connect the monitor to the network, using a commercially available LAN cable before engaging in browser operations.

Operation with a browser that uses a proxy server may not be possible depending on the type of proxy server and the setting method. Although the type of proxy server will be a factor, it is possible that items that have actually been set will not be shown, depending on the effectiveness of the cache, and the contents set from the browser may not be reflected in operation. It is recommended that a proxy server is not used unless it is inevitable.

Handling of the Address for Operation via a Browser

A host name can be used in the following cases:
The host name - corresponding to the IP address of the monitor - must be registered in the domain name server (DNS) by the network administrator. You can then access the network settings of the monitor via this registered host name by using a compatible browser.
If the host name - corresponding to the IP address of the monitor - has been configured in the “HOSTS” file of the computer being used, you can then access the network settings of the monitor via this host name by using a compatible browser.

Example 1: When the host name of the monitor has been set to “pd.nec.co.jp”, access is gained to the network setting by specifying *http://pd.nec.co.jp/index.html* for the address or the entry column of the URL.

Example 2: When the IP address of the monitor is “192.168.73.1”, access is gained to the mail alert settings by specifying *http://192.168.73.1/index.html* for the address or the entry column of the URL.

Operation

Access the following address to show HOME. Click each link on the left column below HOME.

http://<the Monitor’s IP address>/index.html

REMOTE CONTROL

Enable an operation to control the monitor equivalent to the keys of the remote control.

OSD menu

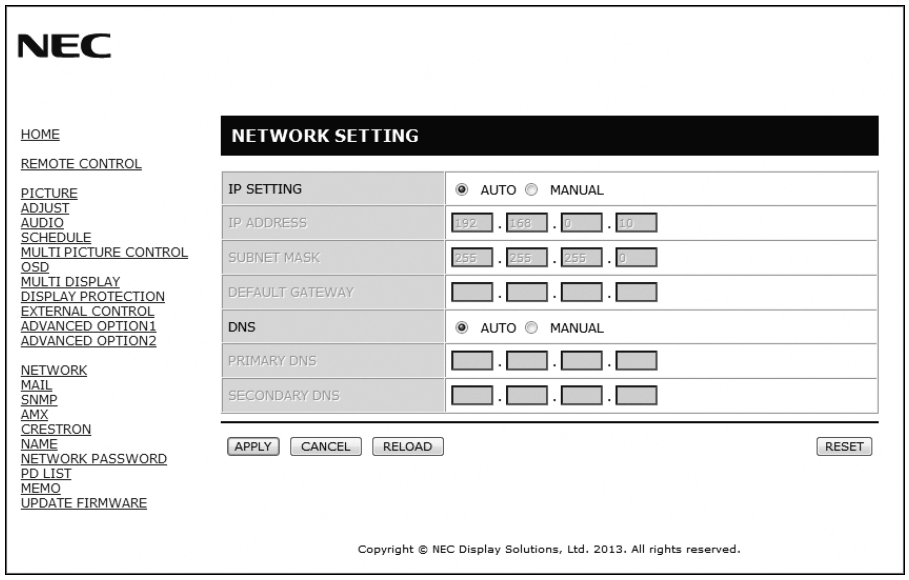
Enable the operation to set the following OSD menu.

PICTURE, ADJUST, AUDIO, SCHEDULE, MULTI PICTURE CONTROL, OSD, MULTI DISPLAY, DISPLAY PROTECTION, EXTERNAL CONTROL, ADVANCED OPTION1, ADVANCED OPTION2.

NOTE: Function of buttons which are shown on setting pages.
[APPLY]: Reflect your settings.
[CANCEL]: Return to the previous settings. **NOTE:** CANCEL is disabled after clicking APPLY.
[RELOAD]: Reload the settings.
[RESET]: Resets to the initial setting.

Network Setting

Click on “NETWORK” on the left column below HOME.

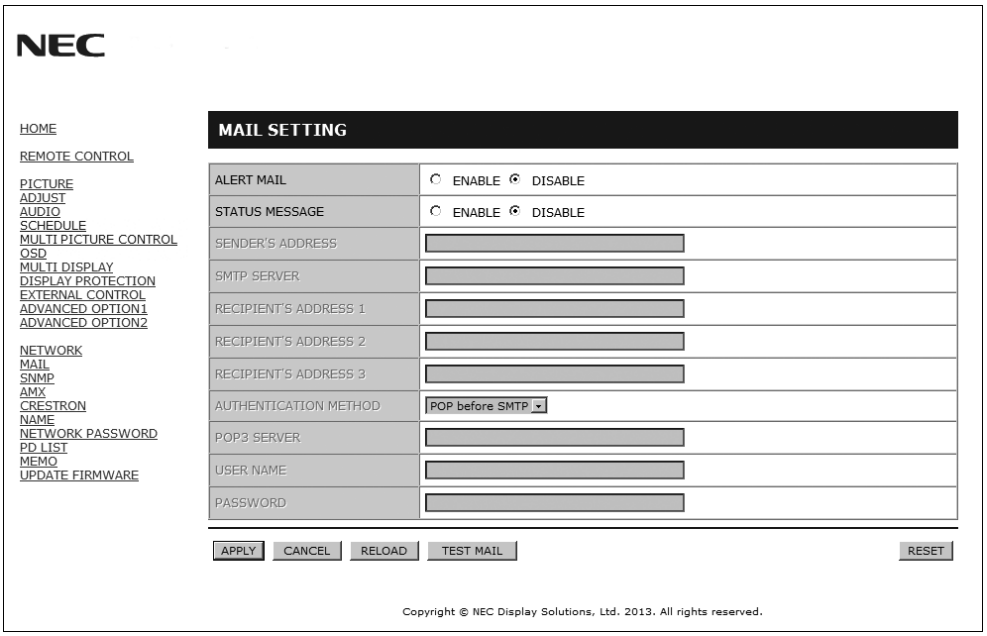


IP SETTING	Set for IP ADDRESS setting. AUTO: Automatically assign an IP address. MANUAL: Set your IP address for the monitor connected to the network. NOTE: Consult your network administrator for the IP address when [AUTO] is selected for [IP SETTING].
IP ADDRESS	Set your IP address for the monitor connected to the network when [MANUAL] is selected for [IP SETTING].
SUBNET MASK	Set your subnet mask data for the monitor connected to the network when [MANUAL] is selected for [IP SETTING].
DEFAULT GATEWAY	Set your default gateway for the monitor connected to the network when [MANUAL] is selected for [IP SETTING]. NOTE: Set as [0.0.0.0] to delete the setting.
DNS	Set for IP ADDRESS setting of DNS server. AUTO: The DNS server which is connected with the monitor will automatically assign his IP address. MANUAL: Manually enter the IP address of the DNS server which is connected with the monitor.
PRIMARY DNS	Enter the primary DNS server settings of the network connected with the monitor. NOTE: Enter [0.0.0.0] to delete the setting.
SECONDARY DNS	Enter the secondary DNS server settings of the network connected with the monitor. NOTE: Enter [0.0.0.0] to delete the setting.

NOTE: The following settings will be set back to the factory settings when IP ADDRESS RESET is selected by an EXTERNAL CONTROL of the OSD:
[IP SETTING]: AUTO, [IP ADDRESS]: 192.168.0.10, [SUBNET MASK]: 255.255.255.0, [DNS]: AUTO [DEFAULT GATEWAY], [PRIMARY DNS] and [SECONDARY DNS] are blank.

Mail Setting

Click on “MAIL” on the left column below HOME.



This option notifies your computer about an error message via e-mail when using wired LAN. An error message will be sent when an error occurs in the monitor.

ALERT MAIL	Selecting [ENABLE] will turn on the Alert Mail feature. Selecting [DISABLE] will turn off the Alert Mail feature.
STATUS MESSAGE	Selecting [ENABLE] will turn on the STATUS MESSAGE feature. Selecting [DISABLE] will turn off the STATUS MESSAGE feature.
SENDER’S ADDRESS	Type in the sender’s address. Up to 60 alphanumeric and symbols characters can be used.
SMTP SERVER	Type in the SMTP server name to be connected with the monitor. Up to 60 alphanumeric characters can be used.
RECIPIENT’S ADDRESS 1 TO 3	Type in your recipient’s address. Up to 60 alphanumeric and symbols characters can be used.
AUTHENTICATION METHOD	This selects the authentication method of the email transmission.
POP3 SERVER	This specifies the address of the POP3 server that is used in the authentication of the email.
USER NAME	This sets the user name for logging into the authentication server when authentication is required for the email transmission. Up to 60 alphanumeric characters can be used.
PASSWORD	This sets the password for logging into the authentication server when authentication is required for the email transmission. Up to 60 alphanumeric characters can be used.
TEST MAIL	Click on this button to send a test email to check if your settings are correct.

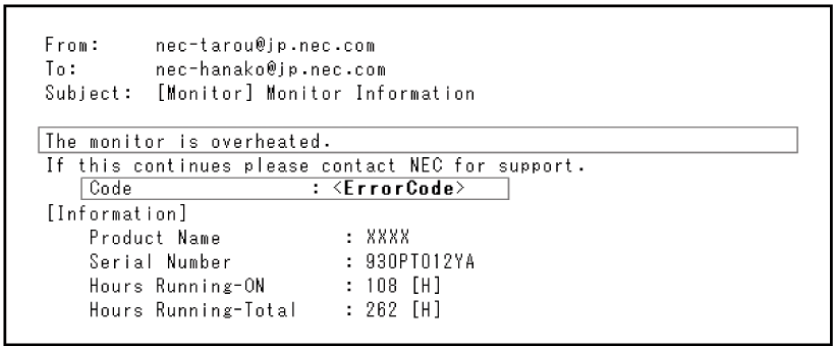
NOTE:
- If you execute a test, you may not receive an Alert email.
  Should this happen, check whether the network settings are correct.
- If you entered an incorrect address in a test, you may not receive an Alert email.
  Should this happen, check whether the Recipient’s Address is correct.

HINT: For the control command diagram, please see the file “External_Control.pdf” on the CD-ROM supplied with this monitor.

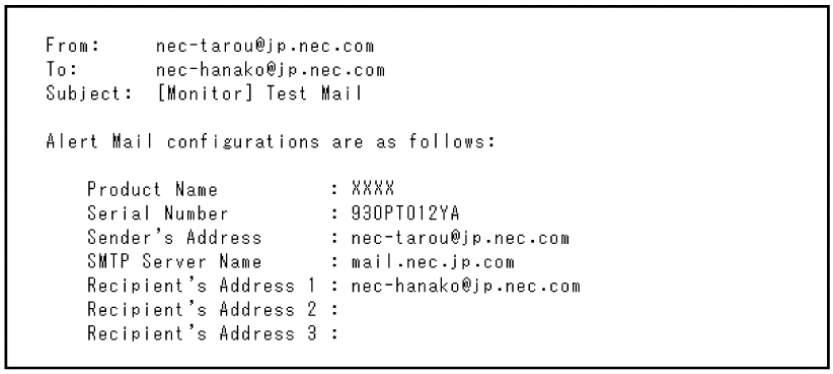
Alert error message list

Error number * ErrorCode	Alert mail Message	Explanation	Measure
70h ~ 7Fh	The monitor's power supply is not functioning normally.	Standby power abnormal	Please contact your supplier.
80h ~ Fh	The cooling fan has stopped.	Cooling fan abnormal	Please contact your supplier.
90h ~ 9Fh	The monitor's back light unit is not functioning normally.	Backlight abnormal	Please contact your supplier.
A0h ~ AFh	The monitor is overheated.	Temperature abnormal	Please contact your supplier.
A2h		A Sensor reached at the temperature limit which was specified in the OSD. Condition: DISPLAY PROTECTION-FAN CONTROL-COOLING FAN = AUTO	Reconfirm the settings in the OSD (DISPLAY PROTECTION-FAN CONTROL) or please contact your supplier.
B0h ~ BFh	The monitor does not receive an input signal.	No signal	Please check "No picture" in "Troubleshooting".
D0h	The remaining capacity of the error log decreased.	The Proof of Play log memory size is 1 more hour.	Please get a log by using PD external command. See page 49.
E0h ~ EFh	A system error occurred in the monitor.	System error.	Please contact your supplier.

Example: This picture shows the content of an Alert email which informs about a temperature anomaly inside the monitor.

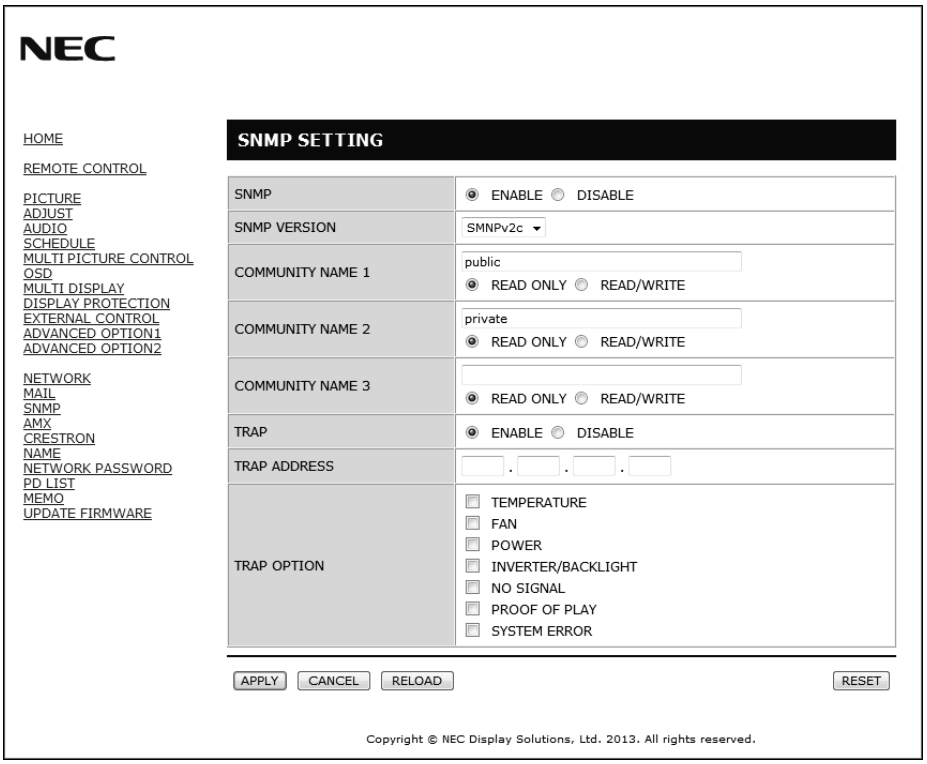


Example: This picture shows the content of a test email by using a browser.



SNMP Settings

Click on “SNMP” on the left column below HOME.



The SNMP protocol is used to get status information and to control a monitor directly via the network.

Version:
SNMP v1 Authenticated plaintext by community name, does not return a confirmation message of the trap.
SNMP v2c Authenticated plaintext by community name, returns a confirmation message of the trap.

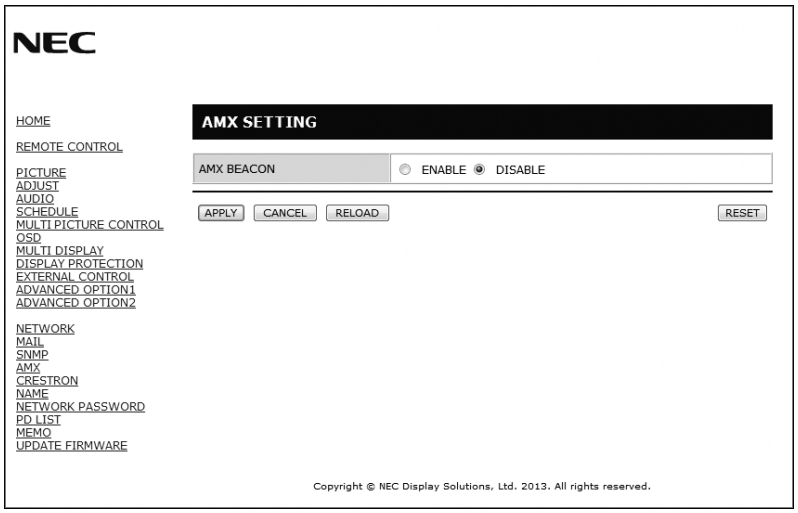
Community name:
The default setting of community name is “public”. It is read only. You can set community names for up to 3 settings.

Trap:
Sending error message to a specified address when an error occurs in the monitor.

Check Box	Explanation	Error code
Temperature	Temperature abnormal	0xA0, 0xA1, 0xA2
Fan	Cooling fan abnormal	0x80, 0x81
Power	Power abnormal	0x70, 0x71, 0x72, 0x78
Inverter/Backlight	Inverter or backlight abnormal	0x90, 0x91
No Signal	No signal	0xB0
PROOF OF PLAY	Lower the log storage	0xD0
System Error	System error	0xE0

AMX Settings

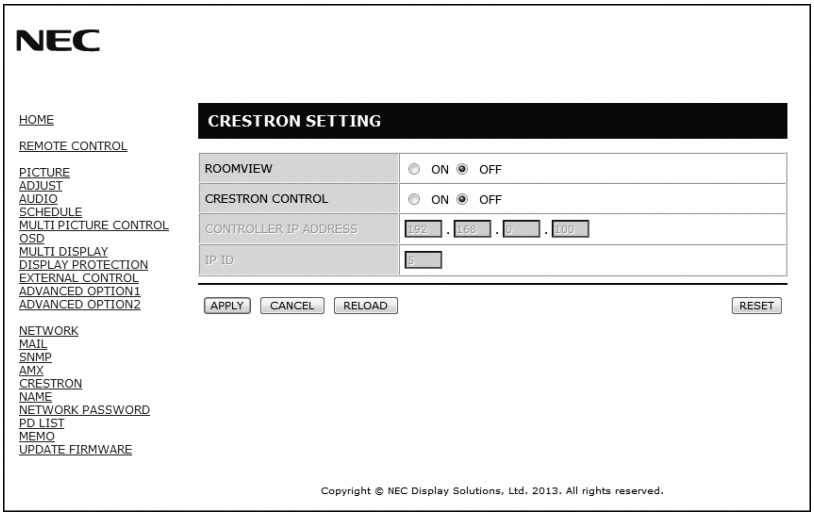
Click on “AMX” on the left column below HOME.



AMX BEACON	To turn on or off for the detection from AMX Device Discovery when connecting to a network supported by an AMX’s NetLinx control system. *HINT:* *When using a device that supports AMX Device Discovery, all AMX NetLinx control systems will recognize the device and download the appropriate Device Discovery Module from an AMX server.* *Selecting [ENABLE] AMX Device Discovery will detect the device.* *Selecting [DISABLE] AMX Device Discovery will not detect the device.*

CRESTRON Settings

Click on “CRESTRON” on the left column below HOME.



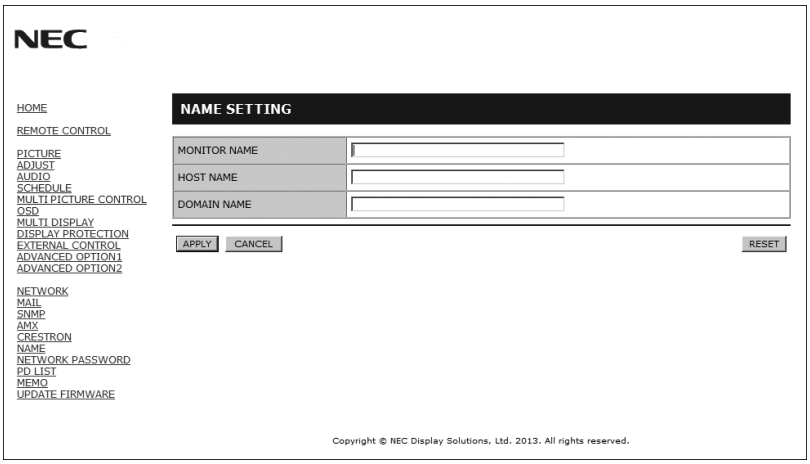
CRESTRON ROOMVIEW compatibility
The monitor supports CRESTRON ROOMVIEW, allowing multiple devices connected in the network to be managed and controlled from a computer or a controller.
For more information, visit http://www.crestron.com

ROOMVIEW	ROOMVIEW for managing from the computer. ON: Enables ROOMVIEW. OFF: Disables ROOMVIEW.
CRESTRON CONTROL	CRESTRON CONTROL for managing from the controller. ON: Enables CRESTRON CONTROL. OFF: Disables CRESTRON CONTROL.
CONTROLLER IP ADDRESS	Set the IP address of the CRESTRON SERVER.
IP ID	Set the IP ID of CRESTRON SERVER.

HINT: The CRESTRON settings are required only for use with CRESTRON ROOMVIEW.
For more information, visit http://www.crestron.com

NAME Settings

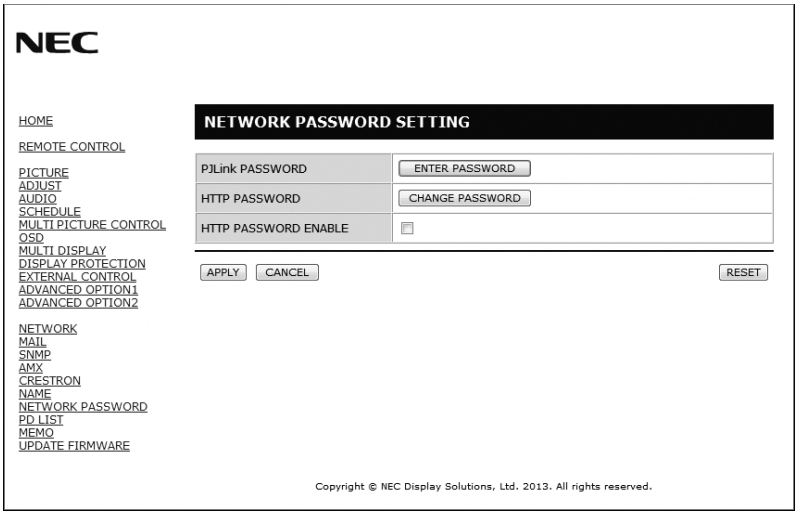
Click on “NAME” on the left column below HOME.



MONITOR NAME	Define a monitor name. The name must be max. 16 characters long. The default is the model name.
HOST NAME	Type in the hostname of the monitor which is connected to the network. Up to 15 alphanumeric characters can be used.
DOMAIN NAME	Type in the domain name of the network which is connected with the monitor. Up to 60 alphanumeric characters can be used.

NETWORK PASSWORD Settings

Click on “NETWORK PASSWORD” on the left column below HOME.



PJLink PASSWORD	Set a password for PJLink*. The password must be max. 32 characters long. Do not forget your password. If you forget your password, consult your supplier.
HTTP PASSWORD	Set a password for the HTTP server. The password must be max. 10 characters long.
HTTP PASSWORD ENABLE	A HTTP PASSWORD is required when logging into the HTTP server. Set the monitor name as the USER NAME when entering the password.

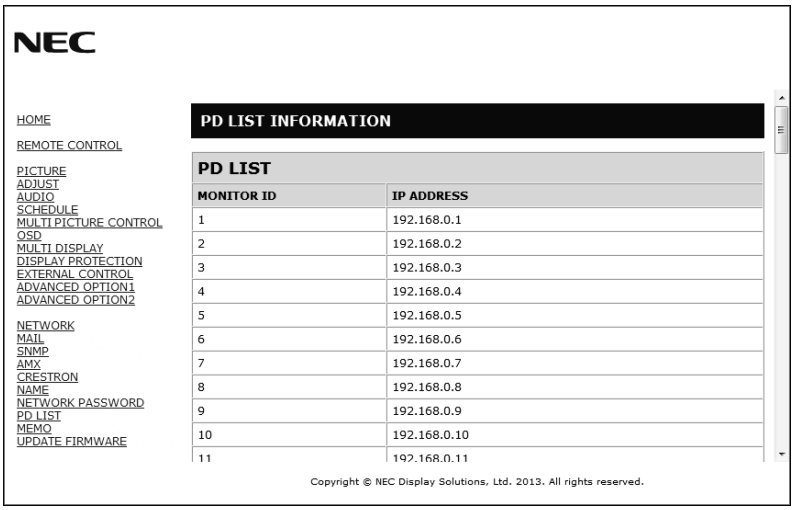
*What is PJLink?

PJLink is a standardization of protocol used for controlling devices of different manufacturers. This standard protocol was established by Japan Business Machine and Information System Industries Association (JBMIA) in 2005.

The device supports all commands of PJLink Class 1.

PD LIST Information

Click on “PD LIST” on the left column below HOME.

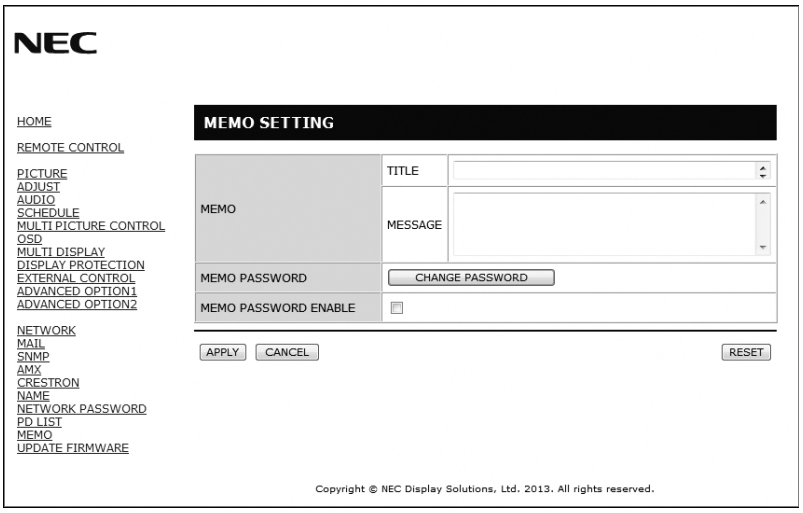


Show a list of monitor IDs and IP addresses of multiple monitors which are daisy-chained.

NOTE: Only the master monitor can show the list.

MEMO Settings

Click on “MEMO” on the left column below HOME.



Set a title and message.

TITLE	The title must be max. 24 characters long.
MESSAGE	A message must be max. 240 characters long.
MEMO PASSWORD	The default is “0000”.
MEMO PASSWORD ENABLE	A MEMO PASSWORD is required when selecting MEMO PASSWORD ENABLE.

POINT ZOOM

Using the SET/POINT ZOOM button on the remote control allows to enlarge a part of the image.
Press the CH+/- button to zoom up or down. The image can be expanded up to 10 times.

1 Press the [SET/POINT ZOOM] button on the remote control. The icon looks like a magnifier.
2 Move the magnifier icon with the [▲] [▼] [+] [-] buttons.
3 Press [CH+] to zoom in. Press [CH-] to zoom out.
4 Press [SET/POINT ZOOM] to let the icon disappear.
5 Press [EXIT] to return to the normal image size.
6 Press [MENU] to open the OSD menu.

NOTE:
- POINT ZOOM is not available with the 3840 x 2160 at 60 Hz resolution.
- Using this function, the image may look distorted.
- This function does not work when set to IMAGE FLIP (except for NONE), MULTI PICTURE MODE, SCREEN SAVER, SUPER in INPUT CHANGE, INPUT CONFIGURATION, ROTATE, TEXT TICKER.
- When DYNAMIC or ZOOM is selected in ASPECT, the image will change to FULL. Then start with POINT ZOOM. After exiting POINT ZOOM, ASPECT will return to the previous ASPECT settings. When ASPECT is changed during the POINT ZOOM operation, DYNAMIC and ZOOM will be set to FULL image.
- The magnifier icon does not move to a no image area.
- POINT ZOOM will become inactive after changing the input signal or when the monitor is powered off.
- POINT ZOOM will become inactive when changing the ASPECT setting during POINT ZOOM operation.
- When the POINT ZOOM is active, the STILL function is not available.

PROOF OF PLAY

This function allows to send messages for the current status of the monitor by self-diagnosis.

Check item		Message
①	INPUT	DVI1, DVI2, DPORT, HDMI1, HDMI2, HDMI3, HDMI4, OPTION*, PRESET1*1, PRESET2*1
②	Resolution	ex. (H)1920, (V)1080 , (H)1360, (V)768 or No signal or Invalid signal
③	AUDIO INPUT	LINE IN, DPORT, HDMI1, HDMI2, HDMI3, HDMI4, OPTION*
④	Audio signal	Audio in or No Audio in or N/A (LINE IN, OPTION*)
⑤	Picture Image	Normal Picture or No Picture
⑥	LINE OUT	Normal Audio or No Audio
⑦	TIME	(year)/(month)/(day)/(hour)/(minutes)/(second)

*: This function depends on which option board you use.
*1: This function depends on INPUT CONFIGURATION setting.

Example:

① HDMI
② 1920 x 1080
③ HDMI
④ Audio in
⑤ Normal Picture
⑥ Normal Audio
⑦ 2014/1/1/0h/0m/0s

NOTE: For the PROOF OF PLAY function, please see the “External_Control.pdf” on the CD-ROM supplied with this monitor.

INTELLIGENT WIRELESS DATA

This feature allows to get the monitor status via wireless communication, even while the monitor is off or is not yet installed. Even some OSD items may be set by using this feature.

NOTE: For the position: See page 11.
Please contact your supplier for detailed information.

Function name
Setting Copy
Setting read and write function
Display information
Security Setting

Features

Reduced Footprint: Provides the ideal solution for environments with superior image quality.

SPECTRAVIEW ENGINE: This system is designed for improvement the visual quality of the monitor.
Each monitor is calibrated at the factory. By making automatic adjustments during operation of the monitor hardware in real time, optimal settings are configured without any user interaction.

sRGB Color Control: A color management standard which allows for color matching on computer monitors and other peripherals. The sRGB standard, which is based on a calibrated color space, allows for optimal color representation and backward compatibility with other common color standards.

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

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.

IPM (Intelligent Power Manager) System: Provides innovative power-saving methods that allow the monitor to shift to a lower power consumption level when on but not in use, saving two-thirds of your monitor energy costs, reducing emissions and lowering the air conditioning costs of the workplace.

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

VESA Standard (FDMIv1) Mounting Interface: Allows you to mount the monitor to any VESA standard (FDMIv1) third party mounting arm or bracket. NEC recommends using mounting equipment which complies with TÜV-GS (Germany) and/or UL1678 standard (North America).

DVI-D: The digital-only subset of the DVI standard ratified by the Digital Display Working Group (DDWG) for digital connections between computers and displays. As a digital-only connector, analog support is not provided with 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. The DVI interface of this monitor supports HDCP and supports DVI Dual Link.

ZOOM: Expands/reduces the image size in horizontal and vertical direction.

Self-diagnosis: If an internal error should occur, a failure state will be indicated.

USB hub allows the connection of digital cameras, scanners, keyboards and more.

HDCP (High-bandwidth Digital Content Protection): HDCP is a system for preventing illegal copying of video data sent over a digital signal. If you are unable to view material via the digital input, this does not necessarily mean that the monitor is not functioning properly. With the implementation of HDCP, there may be cases in which certain content is protected by HDCP and might not be displayed due to the decision/intention of the HDCP community (Digital Content Protection, LLC).

Option board slot: You can use an option board. Please contact your supplier for detailed information.

DICOM calibration: A true DICOM gamma correction curve created by individual calibration of the monitor. Even though this monitor is DICOM factory calibrated, it is recommended to perform a regular re-calibration to keep the best possible visual performance during its lifetime.

Troubleshooting

No picture

- The signal cable should be completely connected to the display controller/computer.
- The display controller should be completely seated in its slot.
- Check the main Power Switch, it should be in the ON position.
- Power Switches of monitor and computer should be in the ON position.
- Make sure that a supported resolution has been selected on the display controller or system being used. If in doubt, please refer to the user's manual of the display controller or system to change the resolution.
- Check the monitor and your display controller with respect to compatibility and recommended signal timings.
- Check the signal cable connector for bent or pushed-in pins.
- The monitor automatically goes into OFF mode at a pre-set time period after the signal was lost. Press the power button.
- Check the DVI MODE settings when a DVD player or computer equipment is connected to the DVI input.
- Check the HDMI/DVI SELECT setting.
- Check the DVI cable you use. If the desired input resolution is either 1920 x 2160 or 3840 x 2160, a DVI Dual Link cable is mandatory.
- Check the OPTION POWER settings when you use option board accessories.

Snowy Picture, Black Screen in DVI input

- Check the DVI MODE setting when a DVD player or computer equipment is connected to the DVI input.

Power Button does not respond

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

Image persistence

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

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

The image is blinking

- If you use a signal repeater or distributor or a long cable, this may cause image roughness or blink for a moment. In this case please use the LONG CABLE COMP function. If the state of the screen is not improved, please connect the cable to the monitor directly without using a repeater or a distributor, or replace the cable with a higher quality cable.

NOTE: The LONG CABLE COMP function is not available for DisplayPort signal input.

- Some HDMI cables may not show a correct image. If the input resolution is 1920 x 2160, 3840 x 2160 or 4096 x 2160, please use a HDMI cable which is approved to support 4K resolution.

The image is unstable, unfocused or swimming is apparent

- The signal cable should be completely attached to the computer.
- Check the monitor and your display card with respect to compatibility and recommended signal timings.
- If text looks garbled, change the video mode to non-interlaced and use a 60 Hz refresh rate.
- The image may be distorted when turning the power on or changing the settings.

LED on monitor is not lit (no green or amber color can be seen)

- The Power Switch should be in the ON position and the power cord should be connected.
- Check the main Power Switch, it should be in the ON position.
- Make certain the computer is not in a power-saving mode (touch the keyboard or move the mouse).
- Check in the OSD that the power indicator option is set to ON.

RED LED on monitor is blinking

- A certain failure might have occurred, please contact your supplier.
- If the monitor is powered off by the internal temperature being higher than the normal operating temperature, the LED will blink RED for six times. Power on the monitor again after confirming the internal temperature has been reduced to normal operation temperature.

The image is not properly reproduced

- Make sure that a supported resolution has been selected on the display controller or system being used. If in doubt, please refer to the user's manual of the display controller or system to change the resolution.

No Sound

- Check to see if the audio cable is properly connected.
- Check to see if MUTE is activated. Use the remote control to enable or disable the Mute function.
- Check to see if VOLUME is set to a minimum.
- Check to see if the computer supports an audio signal through DisplayPort. If unsure, contact your supplier.
- When LINE OUT is not functioning, check to see if SURROUND is ON.
- Check the Internal/External speaker switch on the back side of the monitor.

The Remote Control is not functioning

- Check the batteries status of the Remote Control.
- Check if the batteries are inserted correctly.
- Check if the Remote Control is pointing at the remote control sensor of the monitor.
- Check the status of IR LOCK SETTINGS.
- The remote control system may not function when direct sunlight or strong illumination strikes the remote control sensor of the monitor, or when there is an object in the path.

The SCHEDULE/OFF TIMER function is not working properly

- The SCHEDULE 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 when the power supply is interrupted unexpectedly, then the OFF TIMER will be reset.

Snowy Picture, Poor Sound in TV

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

The USB Hub does not operate

- Check to make sure that the USB cable is properly connected. Refer to your USB device user's manual.
- Check if the USB upstream port on the monitor is connected to the USB downstream port on the computer. And make sure the computer is ON.

Interference in TV

- Check components for shielding, move away from monitor if necessary.

RS-232C or LAN control is not available

- Check RS-232C (reverse type) or the LAN cable. A category 5 or higher LAN cable is required for connection.

Either light vertical or horizontal stripes may appear, depending on the specific image pattern. This is not a product fault or degradation.

Specifications

Product Specifications				MultiSync MDC551C8
LCD Module				55"/138.78 cm diagonal Note: Active matrix; thin film transistor (TFT) liquid crystal display (LCD). Pixel Pitch: 0.105 mm Resolution: 3840 x 2160 Color: Over 1073 million colors (depending on display controller used) Brightness: 400 cd/m^2 white luminance; 250 cd/m^2 calibrated luminance. Contrast Ratio: 4000:1 Viewing Angle: 89° (typ) @ CR>10
Frequency				Horizontal: 31.5 kHz - 133.3 kHz (Digital Input) Vertical: 24.0 - 85.0 Hz
Pixel Clock				25 MHz - 300 MHz (HDMI), 25 MHz - 330 MHz (Dual Link), 25 MHz - 540 MHz (DisplayPort)
Viewable Size				1209.6 x 680.4 mm
Input Signal				
	DVI	DVI-D 24pin (Dual Link)	Digital RGB	DVI (HDCP) VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60, 1920 x 1080 (60 Hz), 1920 x 2160 (60 Hz), 3840 x 2160 (30 Hz),1080p, 1080i
	DisplayPort	DisplayPort Connector	Digital RGB	The DisplayPort input complies with Standard 1.2, applicable to HDCP V1.3 VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60, WUXGA60, 1920 x 1080 (60 Hz), 1920 x 2160 (60 Hz), 1080p, 1080i, 720p@50Hz/60Hz, 576p@50Hz, 480p@60Hz, 3840 x 2160 (60 Hz (DisplayPort1.2)/30 Hz/24 Hz)
	HDMI	HDMI Connector	Digital YUV Digital RGB	HDMI VGA60, SVGA60, XGA60, WXGA60, SXGA60, UXGA60, WUXGA60, 1920 x 1080 (60 Hz), 1920 x 2160 (60 Hz), 1080p, 1080i, 720p@50Hz/60Hz, 576p@50Hz, 480p@60Hz, 576i@50Hz, 480i@60Hz, 3840 x 2160 (30 Hz/24 Hz/25 Hz), 4096 x 2160 (24 Hz)*1, *3
AUDIO				
	LINE IN	Stereo Mini Jack	Analog Audio	Stereo L/R 0.5 Vrms
		HDMI Connector	Digital Audio	PCM 32, 44.1, 48 KHz (16/20/24bit)
		DisplayPort Connector	Digital Audio	PCM 32, 44.1, 48 KHz (16/20/24bit)
	LINE OUT	Stereo Mini Jack	Analog Audio	Stereo L/R 0.5 Vrms
Speaker Output				External Speaker Jack 15 W + 15 W (8 ohm) Internal Speaker 10 W + 10 W (Stereo)
Control				RS-232C In: 9 Pin D-sub LAN: RJ-45 10/100 BASE-T Remote IN: Stereo Mini Jack 3.5 mm Ø
USB Hub				I/F: USB Specification Revision 2.0 Port: Upstream 1 Downstream 1 Load Current: Maximum 0.5 A per port
Service port				USB service port for maintenance
Power Supply				3.6 - 1.4 A @ 100-240V AC, 50/60Hz
Operational Environment				Temperature*2: 0 - 35°C / 32 - 95°F Humidity: 20 - 80% (without condensation) Altitude: 0 - 9,843 Feet/0 - 3,000 m (Brightness may decrease with altitude) Atmospheric pressure: 710hPa - 1013hPa
Storage/Transportation Environment				Temperature: -20 - 60°C / -4 - 140°F Humidity: 10 - 90% (without condensation) / 90% - 3.5% x (Temp - 40°C) regarding over 40°C Altitude: 0 - 40,000 Feet/0 - 12,192 m Atmospheric pressure: 200hPa - 1013hPa
Dimension				1250.2 (W) x 721 (H) x 78.1 (D) mm / 49.2 (W) x 28.4 (H) x 3.1 (D) inches
Weight				28.7 kg (63.3 lbs)
VESA compatible mounting interface				400 mm x 400 mm (M8, 4 Holes)
Power Management				VESA DPM
Plug & Play				VESA DDC2Bi, DDC/CI, DisplayPort
Power supply for Slot 2 type OPTION				16V/3.6 A
Accessories				Quick Reference Guide, Power Cord, Video Signal cable, Remote Control, AAA Battery x 2, Clamp x 3, Screw x 3, Thumbscrew for optional stand x 2, CD-ROM

NOTE: Technical specifications are subject to change without notice.
The EUT (Equipment under test) reset during the dips testing, but this performance degradation does not affect basic safety or essential performance. According to the manufacturer specification, the performance is acceptable.

*1: Compressed image.

*2: When you use option board accessories, please contact your supplier for detailed information.

*3: Reproduced text may look blurred.

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 your old NEC product

The aim of recycling is to gain an environmental benefit by means of re-use, upgrading, reconditioning or reclamation of 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 on recycling facilities can be found on our following websites:

https://www.nec-display-solutions.com/p/greenvision/en/greenvision.xhtml (in Europe),

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

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

Energy Saving

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

Mode	Power consumption	LED color
Normal Operation*1, *2	Approx. 150 W	Green
Energy Saving Mode*1 (AUTO POWER SAVE)	Less than 0.5 W	Amber
Power Off	Less than 0.5 W	Unlit

*1: without any option, with factory settings.
*2: depends on destination.

For additional information visit:

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

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

http://www.nec-display.com/global/index.html (Global)

WEEE Mark (European Directive 2012/19/EU and amendments)

Disposing of your used product: In the European Union

EU-wide legislation as implemented in each Member State requires that used 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 dispose of such products, please follow the guidance of your local authority or ask the shop where you purchased the product, or if applicable, follow applicable legislation or agreement you may have. The mark on electrical and electronic products may only apply 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 and ask for the correct method of disposal.

For EU: The crossed-out wheeled bin implies that used batteries should not be put to the general household waste! There is a separate collection system for used batteries, to allow proper treatment and recycling in accordance with legislation.

According the EU directive 2006/66/EC, the battery can't be disposed improperly. The battery shall be separated to collect by local service.

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