# NEC

**Quick Reference Guide**

**Stručná referenční příručka**

**Kurzübersicht**

**Οδηγὀ Γρήγορης Αναφοράς**

**Guía de referencia rápida**

**Guide abrégé de référence**

**Guida di riferimento rapida**

**Beknopte referentiehandleiding**

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クイックリファレンス

快速参考指南

الدليل المرجعي السريع

# MD211G3

# 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:    MD211G3
21.3" Diagnostic Imaging Grayscale LCD Monitor

Model Number:    MD211G3

UMDNS Code:    16-603

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 the Council Directive 2007/47/EC, and conforms to the applicable clauses of the following standards:

– EN 60601-1
– EN 60601-1-2
– EN 61000-3-2
– EN 61000-3-3

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

## Canadian Department of Communications Compliance Statement

**DOC:** This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
**C-UL:** Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to CAN/CSA C22.2 No. 601-1:08.

## FCC Information

1. Use the attached specified cables with the MD211G3 grayscale 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 or DVI-D to DVI-D cable.
   Use of other cables and adapters may cause interference with radio and television reception.

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

   • Reorient or relocate the receiving antenna.
   • Increase the separation between the equipment and receiver.
   • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
   • Consult your dealer or an experienced radio/TV technician for help.

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

## Declaration of Conformity

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

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

Type of Product:    Display Monitor

Equipment Classification:    Class B Peripheral

Model:    MD211G3

*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: IPX0
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

# Manufacturer's Recycling and Energy Information

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

## 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:

**http://www.nec-display-solutions.com/greencompany/** (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 VESA Display Power Management Signalling (DPMS) Standard signal is sent to the monitor, the Energy Saving mode is activated. The monitor enters a single Energy Saving mode.

| Mode | Power consumption | LED colour |
|---|---|---|
| Normal Operation | Approx. 105 W | Green |
| Energy Saving Mode | Less than 2 W | Amber |
| Off Mode | Less than 1 W | Unlit |

## WEEE Mark (European Directive 2002/96/EC)

**Within the European Union**

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

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

**Outside the European Union**

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

## • Ukrainian RoHS Information relevant for Ukrainian market

| English | Declaration of Conformity<br>with the requirements of Technical Regulation on the Restriction Of the use of certain Hazardous Substances in Electrical and Electronic Equipment<br>(adopted by Order №1057 of Cabinet of Ministers of Ukraine)<br><br>The Product is in conformity with the requirements of Technical Regulation on the Restriction Of the use of certain Hazardous Substances in electrical and electronic equipment (TR on RoHS).<br><br>The content of hazardous substance with the exemption of the applications listed in the Annex №2 of TR on RoHS:<br><br>1. Lead (Pb) – not over 0,1wt % or 1000wt ppm;<br>2. Cadmium (Cd) – not over 0,01wt % or 100wt ppm;<br>3. Mercury (Hg) – not over 0,1wt % or 1000wt ppm;<br>4. Hexavalent chromium ($Cr^{6+}$) – not over 0,1wt % or 1000wt ppm;<br>5. Polybrominated biphenyls (PBBs) – not over 0,1wt % or 1000wt ppm;<br>6. Polybrominated diphenyl ethers (PBDEs) – not over 0,1wt % or 1000wt ppm.<br><br>NEC Display Solutions, Ltd. |
|---|---|
| Ukrainian | Декларація про Відповідність<br>Вимогам Технічного Регламенту Обмеження Використання деяких Небезпечних Речовин в електричному та електронному обладнанні<br>(затвердженого Постановою №1057 Кабінету Міністрів України)<br><br>Виріб відповідає вимогам Технічного Регламенту Обмеження Використання деяких Небезпечних Речовин в електричному та електронному обладнанні (ТР ОВНР).<br><br>Вміст небезпечних речовин у випадках, не обумовлених в Додатку №2 ТР ОВНР, :<br><br>1. свинець(Pb) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;<br>2. кадмій (Cd)– не перевищує 0,01 % ваги речовини або в концентрації до 100 частин на мільйон;<br>3. ртуть(Hg) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;<br>4. шестивалентний хром ($Cr^{6+}$) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;<br>5. полібромбіфеноли (PBB) – не перевищує 0,1% ваги речовини або в концентрації до 1000 частин на мільйон;<br>6. полібромдефенілові ефіри (PBDE) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон.<br><br>NEC Display Solutions, Ltd. |
| Russian | Декларация о Соответствии<br>Требованиям Технического Регламента об Ограничении Использования некоторых Вредных Веществ в электрическом и электронном оборудовании<br>(утverждённого Постановлением №1057 Кабинета Министров Украины)<br><br>Изделие соответствует требованиям Технического Регламента об Ограничении Использования некоторых Вредных Веществ в электрическом и электронном оборудовании (ТР ОИВВ).<br><br>Содержание вредных веществ в случаях, не предусмотренных Дополнением №2 ТР ОИВВ:<br><br>1. свинец (Pb) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей;<br>2. кадмий (Cd) – не превышает 0,01 % веса вещества или в концентрации до 100 миллионных частей;<br>3. ртуть (Hg) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей;<br>4. шестивалентный хром ($Cr^{6+}$)– не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей;<br>5. полибромбифенолы (PBB) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей;<br>6. полибромдифеноловые эфиры (PBDE) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей.<br><br>NEC Display Solutions, Ltd. |

# Index

## Symbol Information

| | |
|---|---|
| ⚡ | This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit. |
| 📖 | This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems. |
| ⏚ | Protective earth terminal marked. |
| I | Main switch ON. |
| ○ | Main switch OFF. |
| ∿ | AC Input. |

UL MARK CERTIFICATION, ANSI/AAMI ES60601-1:2005
cUL, CAN/CSA-C22.2 NO.60601-1:08

CLASSIFIED
C ℞UL US
46AW
E350980

MEDICAL - GENERAL MEDICAL EQUIPMENT
AS TO ELECTRICAL SHOCK, FIRE AND MECHANICAL
HAZARD ONLY IN ACCORDANCE WITH ANSI/AAMI
ES60601-1:2005 AND CAN/CSA-C22.2 NO.60601-1:08
ALSO LISTED ACCORDANCE WITH UL 60950-1 AND
CAN/CSA-C22.2 NO.60950-1-07
45VU
E332883

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ErgoDesign is a registered trademark of NEC Display Solutions, Ltd. in Austria, Benelux, Denmark, France,
Germany, Italy, Norway, Spain, Sweden, U.K.
All other brands and product names are trademarks or registered trademarks of their respective owners.
The DisplayPort Icon is a trademark of the Video Electronics Standards Association, registered in the U.S.
and other countries.

™
🄿

**English-1**

## 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.
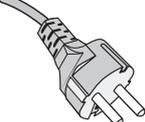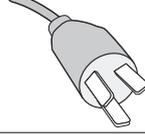
## CAUTION

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 | *(green dot and tag label)* | | | | |
| 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.

**English-2**

# Intended Use

The MD211G3 Grayscale display is intended to be used for displaying and viewing of digital images for diagnosis by trained physicians.
To guarantee the display performance as specified, it must only be used in conjunction with NEC approved display controllers.
MD211G3 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 IEC60601-1-1 certified equipment.

**Contraindications:** None known.

**Safety Precaution**

The unit is designed for exclusive interconnection with IEC60950 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 for data processing equipment and IEC 60601-1 for medical equipment).
- This device complies with EN60601-1-2. To minimize the interference from other equipment, a minimum 0.5 m distance shall be kept form 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 textile lint in regular time intervals cannot be performed by the user (maximum interval: six months).

This device is equipped with an integrated front sensor and ambient light sensor complying with the IEC 62563-1 standard requirements for measurement devices with a calibration traceable to a primary standards laboratory. Therefore, these sensors can be re-calibrated using external luminance and illuminance meters as a reference, which were calibrated following country specific legal obligations for metrological control. When re-calibrated in a regular manner, the integrated front sensor and ambient light sensor may then be used for remote quality assurance following the IEC 62563-1 standard. NEC Display Solutions recommends to check the integrated front sensor and ambient light sensor intervals of two (2) years.

**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 LCD 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**

MD211G3 is designed for 1536 x 2048 (portrait mode) or 2048 x 1536 (landscape mode) medical imaging.

# Recommended use

**Safety Precautions and Maintenance**

FOR OPTIMUM PERFORMANCE, PLEASE
NOTE THE FOLLOWING WHEN SETTING UP
AND USING THE LCD 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 supply mains with protective earth.

**WARNING:** No modification of this equipment is allowed.

**WARNING:** For EMC details information, please contact NEC local authority.

- **DO NOT OPEN THE MONITOR.** There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.
- Do not spill any liquids into the cabinet or use your monitor near water.
- Do not insert objects of any kind into the cabinet slots, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.
- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the monitor.
- The power supply cord you use must have been approved by and comply with the safety standards of your country. (Type H05VV-F 3G 1mm² should be used in Europe).
- In UK, use a BS-approved power cord with molded plug having a black (5A) fuse installed for use with this monitor.
- Do not place any objects onto the monitor and do not use the monitor outdoors.
- The lamps in this product contain mercury. Please dispose according to state, local or federal law.
- Do not bend power cord.
- Do not use monitor in high temperatured, humid, dusty, or oily areas.
- 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.
- Vibration can damage the backlight. Do not install where the monitor will be exposed to continual vibration.
- If monitor or glass is broken, do not come in contact with the liquid crystal and handle with care.
- To prevent damage to the LCD 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.
- Please do not touch patient and this medical device at the same time.

Immediately turn off the power, unplug your monitor from the wall outlet and move to a safe location then refer servicing to qualified service personnel under the following conditions. If the monitor is used in this condition, the monitor may cause fall, fire and electric shock:

- If the monitor stand has been cracked or peeled.
- If the monitor has been wobbled.
- If the monitor has an unusual odor.
- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the monitor.
- If the monitor has been exposed to rain or water.
- If the monitor has been dropped or the cabinet damaged.
- If the monitor does not operate normally by following operating instructions.

**CAUTION**

- Allow adequate ventilation around the monitor so that heat can properly dissipate. Do not block ventilated openings or place the monitor near a radiator or other heat sources. Do not put anything on top of monitor.
- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet which is easily accessible.
- Handle with care when transporting. Save packaging for transporting.
- Do not touch LCD panel surface while transporting, mounting and setting. Applying pressure on the LCD panel can cause permanent damage.
- Carry the monitor holding the built-in handle and bottom frames of the monitor.
- Do not carry holding only the stand.
- This monitor has a front sensor. Do not touch the front sensor while carrying the monitor. Do not apply any stress to the front sensor.
- 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 textile lint in regular time intervals cannot be performed by the user (interval: max. six months).

**English-4**

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

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

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

**Maintenance:**
a) Before first use of this monitor for diagnostic imaging, an initial calibration to DICOM Part 14 is highly recommended. To ensure constant visual quality over the life of this monitor, the recommended time interval to re-calibrate this model is 12 months.

b) This model is equipped with an integrated front sensor and ambient light sensor complying with the IEC 62563-1 standard requirements for measurement devices with a calibration traceable to a primary standards laboratory. Therefore, these sensors can be re-calibrated using external luminance and illuminance meters as a reference, which were calibrated following country specific legal obligations for metrological control. When re-calibrated in a regular manner, the integrated front sensor and ambient light sensor may then be used for remote quality assurance following the IEC 62563-1 standard. NEC Display Solutions recommends to re-calibrate the integrated front sensor and ambient light sensor latest after 2 years, whichever comes first.

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

- For optimum performance, allow 30 minutes for the monitor to warm up.
- Adjust the monitor height so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen.
- Position your monitor no closer than 40 cm (15.75 inches) and no further away than 70 cm (27.56 inches) from your eyes. The optimal distance is 50 cm (19.69 inches).
- Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often.
- Position the monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen.
- Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (after-image effects).
- Get regular eye checkups.
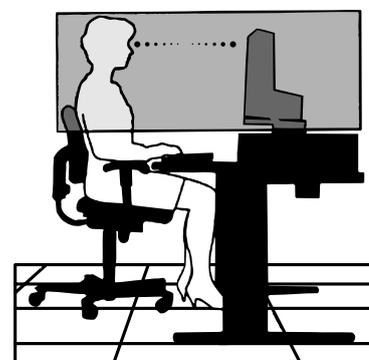
**NOTE:** This model is set up in the factory so that the NEC logo is briefly displayed after the monitor is powered on. This feature can be turned on or off in the Advanced OSD. In case you find such bright Brand Logo annoying in your reading room environment, you may easily switch this off. By keeping the "EXIT" button pressed while this logo is displayed, the BOOT LOGO menu will appear. It is possible to change the BOOT LOGO setting to OFF.

**Cleaning the LCD Panel**
- When the LCD is dusty, please gently wipe with a soft cloth.
- Please do not rub the LCD panel with hard or coarse 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 surface.

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

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

**English-5**

# Contents

Your new NEC monitor box* should contain the following:

- MD211G3 monitor with tilt/swivel/pivot/height adjust stand
- Power Cord
- Video Signal Cable (DVI-D to DVI-D cable)*1
- DisplayPort cable
- USB Cable
- Quick Reference Guide
- CD-ROM x 2

Power Cord*2

Quick Reference Guide

CD-ROM x 2

Quick Reference Guide     USB Cable     DVI-D to DVI-D cable*1     DisplayPort cable

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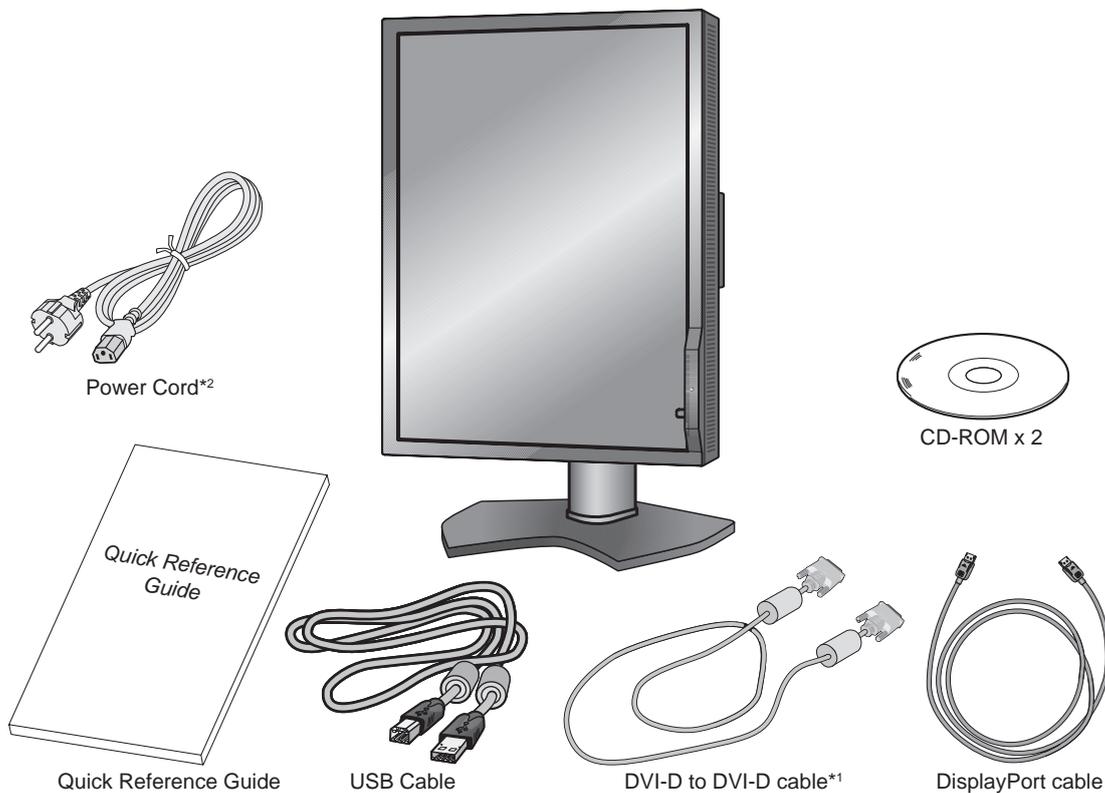
\*     *Remember to save your original box and packing material to transport or ship the monitor.*

\*1     Dual link DVI cable.

\*2     Type and number of power cords included will depend on the 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.

**English-6**

# Quick Start

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

**NOTE:** Make sure to read "Recommended Use" before installation.
In order to display the maximum resolution, a display controller that can output a resolution of 1536 x 2048 (in portrait mode) or 2048 x 1536 (in landscape mode) is needed.

1. Turn off your computer.
2. **For a PC with DVI digital output:** Connect the DVI signal cable to the connector of the display controller in your system (**Figure A.1**). Tighten all screws.

   **For a PC with DisplayPort output:** Connect the DisplayPort cable to the connector of the display controller in your system (**Figure A.2**).

DisplayPort cable
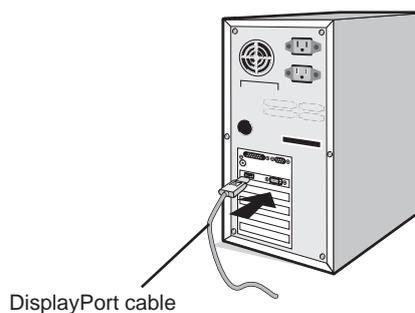
**Figure A.1**                                    **Figure A.2**

**NOTE:** 1. Please use a DisplayPort cable with a DisplayPort logo.
2. When removing the DisplayPort cable, hold down the top button to release the lock.

3. Height adjustment is locked by a lock button. Place hand on top of the monitor stand to push down the screen to the lowest position. Slide the lock button to unlock (**Figure B.1**).

**NOTE:** Handle with care when unlocking the stand.

Place hands on each side of the monitor to tilt the LCD panel to a 30-degree tilt angle and lift up to the highest position. Slide the cable cover up (**Figure B.2**).
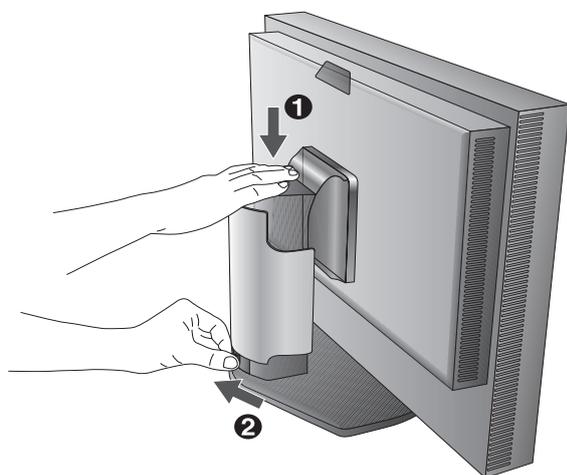
**NOTE:** The cable cover is not removable.

30° Tilt

❶

❷

Cable cover

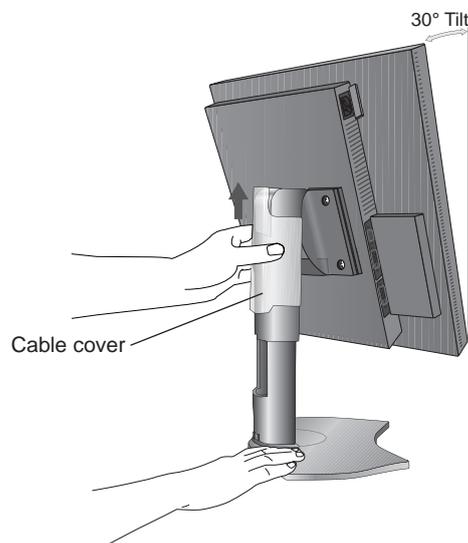**Figure B.1**                                    **Figure B.2**

English-7

4. Connect all cables to the appropriate connectors (**Figure C.1**). When using the USB cable, connect the B type connector to the USB upstream port on the right back side of the monitor and the A type connector to the downstream port on the computer (**Figure C.1a**). If using the cord from a USB device, plug into one of the downstream ports of the monitor.

**NOTE:** Incorrect cable connections may result in irregular operation, damage display quality/components of the LCD module and/or shorten the module's life.

**NOTE:** Up to 5 sub monitors can be daisy-chained.



30° Tilt

Highest Stand Position

Power cord

DVI-D Cable

DisplayPort Cable

USB Upstream Port

USB Downstream Port

Sensor Port*¹
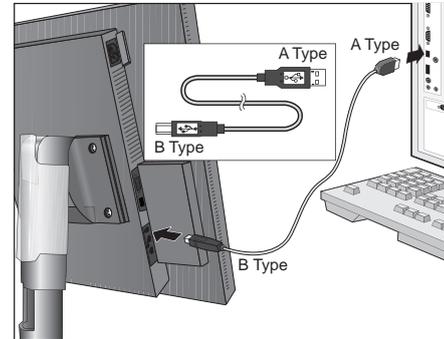
**Figure C.1**



A Type    A Type

B Type

B Type
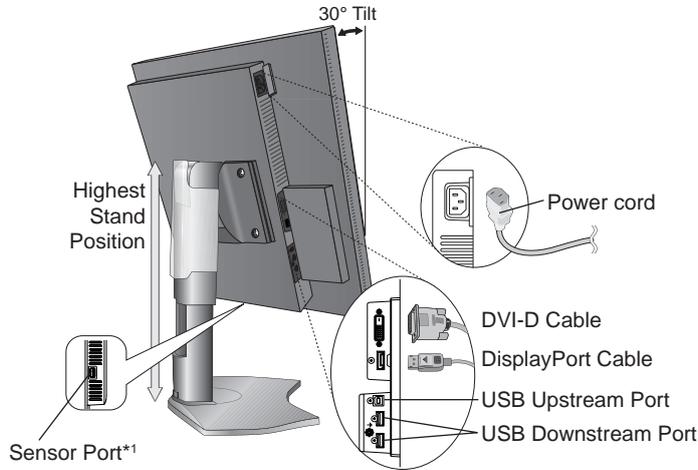
**Figure C.1a**

5. To keep the cables neatly organized, place them into the cable management system that is built into the stand.
   Place the cables in the hooks firmly and evenly (**Figure C.2** and **Figure C.3**).

6. Please check that you can still rotate, raise and lower the monitor screen when you have installed the cables.
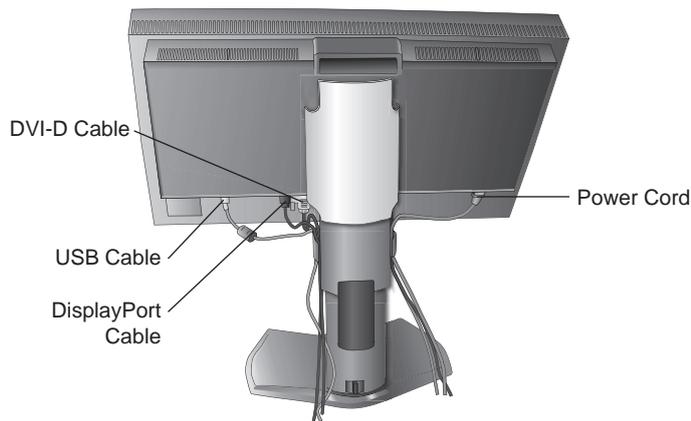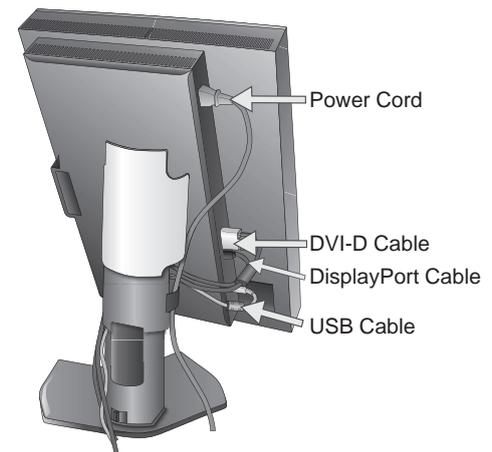


DVI-D Cable

Power Cord

USB Cable

DisplayPort Cable

**Figure C.2**



Power Cord

DVI-D Cable

DisplayPort Cable

USB Cable

**Figure C.3**

*1 Connect the optional USB optical sensor to this port for self calibration. (See page 25, CD-ROM Version)

**English-8**

7.  Slide down the cable cover (**Figure D.1**).

8.  Connect one end of the power cord to the AC inlet on the back of the monitor and the other end to the power outlet.

**NOTE:**   Please refer to the **Caution** section of this manual for proper selection of an AC power cord.
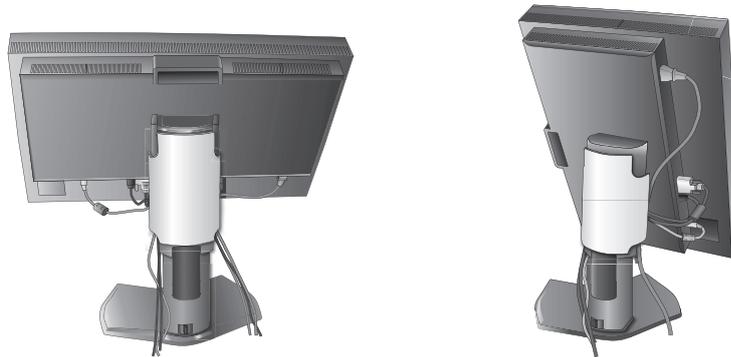


**Figure D.1**

9.  Turn on the monitor with power switch on the top (Portrait) or left side (Landscape) of the monitor (**Figure E.1**). Turn on the computer.

**NOTE:**   If you have any problems, please refer to the **Troubleshooting** section of this User's Manual (CD-ROM Version).
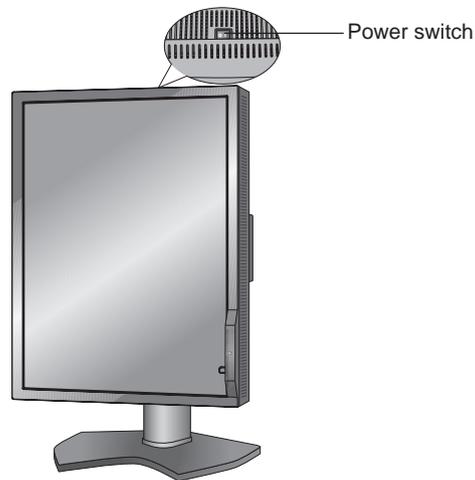


Power switch

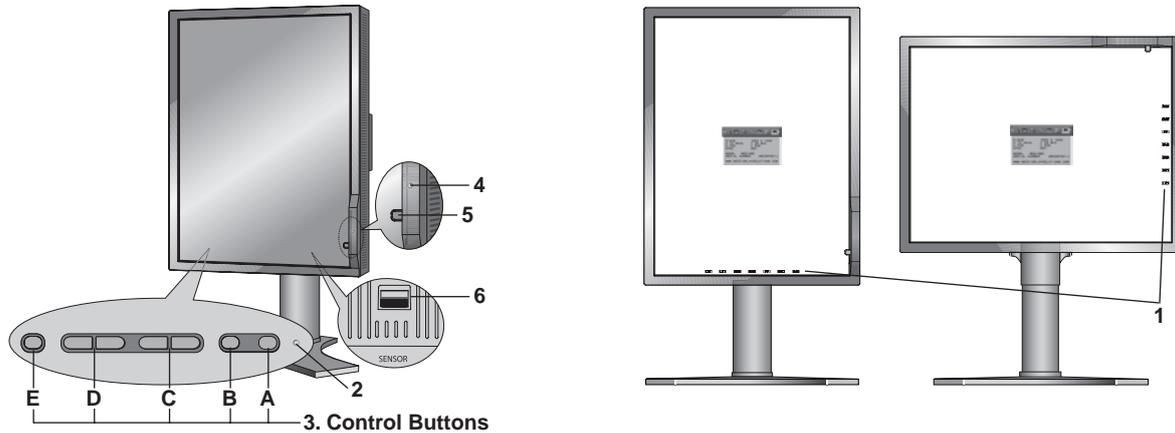**Figure E.1**

**English-9**

# Controls

## OSD (On-Screen Display) control buttons on the front of the monitor function as follows:

To access the OSD menu, press the EXIT button. To change the signal input, press the SELECT button.

All buttons are located at the back of the monitor.

The Key Guide appears pressing any button when not in the OSD control menu.

**NOTE:** The OSD must be closed in order to change the signal input.



E    D    C    B    A    2

**3. Control Buttons**

| | |
|---|---|
| 1 KEY GUIDE | The Key Guide appears on the screen when the OSD control menu is accessed.<br>The Key Guide will rotate when the OSD control menu is rotated.<br>Perform along the notification of each key.<br><br>NOTE: The KEY GUIDE appears as follows:<br><br>• KEY GUIDE when OSD menu is displayed.<br>　EXIT　　　LEFT　　　RIGHT　　　DOWN　　　U P　　　SELECT　　　RESET<br>• KEY GUIDE when HOT KEY is set to OFF.<br>　EXIT　　　MENU　　　MENU　　　MENU　　　MENU　　　INPUT　　　Q A<br>• KEY GUIDE when HOT KEY is set to ON.<br>　EXIT　　　MENU　　　MENU　　　PMODE　　　PMODE　　　INPUT　　　Q A<br><br>Each KEY GUIDE works as follows:<br><br>EXIT　- Exits any OSD sub menu.<br>　　　　　Exits the OSD Control menu.<br>MENU　- Shows OSD menu.<br>PMODE　- Shows PICTURE MODE.<br>SELECT　- Selects the item.<br>INPUT　- Changes the input source.<br>RESET　- Resets the OSD back to factory settings.<br>Q A　- Shows the quick screen QA test pattern. |
| 2 LED | Indicates that power is on. |
| 3 Control Buttons | A. RESET button<br>　NOTE: When not in the OSD control menu, press the RESET button for at least 3 seconds to display the quick screen QA test pattern (grayscale) drawing and check the display performance.<br>B. SELECT button<br>C. UP/DOWN button<br>D. LEFT/RIGHT button<br>E. EXIT button |
| 4 AMBIENT LIGHT Sensor | Detects the level of ambient light, allowing the monitor to make adjustments to various settings. **Do not cover this sensor** (**See page 17, CD-ROM Version**). |
| 5 FRONT SENSOR | Detects screen luminance changes over time.<br>Used for luminance stabilization, standalone (Self Calibration, Gamma Adjust, DICOM Measurement) and network (Gamma Adjutst, DICOM Measurement) controlled calibrations and conformance tests. |
| 6 SENSOR PORT | For optional external sensor used for self calibration and copy calibration. |

**English-10**

# SETTING OSD LANGUAGE

- Set the OSD language before using OSD functions.
- Use the control keys (LEFT/RIGHT or UP/DOWN or EXIT) to access the "LANGUAGE SELECTION" menu.
- Press the LEFT/RIGHT or UP/DOWN buttons to select the desired OSD language.
- To exit from this OSD menu, press the EXIT button.

**NOTE:**    Setting the OSD language is only necessary upon initial setup. The OSD language will stay the same until changed by the user.

**For OSD menu or Advanced OSD menu, see CD-ROM Version.**

**English-11**

# Specifications

| Monitor Specifications | MD211G3 Monitor | Notes |
|---|---|---|
| LCD Module               Diagonal:<br>Viewable Image Size:<br>Native Resolution (Pixel Count): | 54.0 cm/21.3 inches<br>54.0 cm/21.3 inches<br>1536 x 2048 (Portrait)<br>2048 x 1536 (Landscape) | Active matrix; thin film transistor (TFT) liquid crystal display (LCD); SA-SFT (IPS) 0.212 mm dot pitch; 1450 cd/m² max luminance; 400 cd/cm² calibrated luminance; 900:1 contrast ratio (typical). |
| Input Signal | | |
|    DisplayPort:     DisplayPort Connector: | Digital RGB | DisplayPort Complies with Standard V1.1a, applicable to HDCP |
|    DVI:               DVI-D 24pin: | Digital RGB | DVI |
| Display Tones | 10bit: 1024 (10bit) shades of gray from a pallet of 48961 (15.5bit)<br>8bit: 256 (8bit) shades of gray from a pallet of 48961 (15.5bit) | When used with a NEC approved 10bit display controller<br>When used with a NEC approved 8bit display controller |
| Synchronization Range      Horizontal:<br>Vertical: | 31.5 kHz to 99.4 kHz, 126.3 kHz<br>30 Hz, 50 Hz to 85 Hz | Automatically<br>Automatically |
| Clock Frequency | 214.3 MHz (Max) | |
| Viewing Angle          Left/Right:<br>Up/Down: | ±88° (CR > 10)<br>±88° (CR > 10) | |
| Image Formation Time | 27 ms (Typ.) | 13 ms (Gray to gray Typ) |
| Resolutions Supported (Some systems may not support all modes listed). | 640 x 480*1 at 60 Hz to 85 Hz<br>720 x 400*1 at 70 Hz to 85 Hz<br>800 x 600*1 at 56 Hz to 85 Hz<br>1024 x 768*1 at 60 Hz to 85 Hz<br>1280 x 1024*1 at 60 Hz to 85 Hz<br>1600 x 1200*1 at 60 Hz to 75 Hz<br>1920 x 1200*1 at 60 Hz<br>2048 x 1536 at 30 Hz to 60 Hz (Reduced Blanking)<br>2048 x 1536 at 60 Hz (Reduced Blanking)...........NEC DISPLAY SOLUTIONS recommended resolution for optimal display performance.<br>1024 x 1280 at 60 Hz*1<br>1200 x 1600 at 60 Hz*1<br>1536 x 2048 at 60 Hz (Reduced Blanking)...........NEC DISPLAY SOLUTIONS recommended resolution for optimal display performance. | |
| Active Display Area       Landscape: Horiz.:<br>Vert.:<br>Portrait: Horiz.:<br>Vert.: | 433.2 mm/17.1 inches<br>324.9 mm/12.8 inches<br>324.9 mm/12.8 inches<br>433.2 mm/17.1 inches | |
| USB Hub                    I/F:<br>Port:<br><br>Load Current: | USB Specification Revision 2.0<br>Upstream 1<br>Downstream 2<br>Maximum 0.5A per port | |
| Power Supply | AC 100-240 V ~ 50/60 Hz | |
| Current Rating | 1.2 - 0.46 A | For Mexico 2.0A |
| Dimensions            Landscape:<br><br>Portrait:<br><br>Height Adjustment: | 467.8 mm (W) x 377.6 - 527.6 mm (H) x 227.6 mm (D)<br>18.4 inches (W) x 14.9 - 20.8 inches (H) x 9.0 inches (D)<br>361.6 mm (W) x 483.4 - 580.7 mm (H) x 227.6 mm (D)<br>14.2 inches (W) x 19.0 - 22.9 inches (H) x 9.0 inches (D)<br>150 mm/5.9 inches | |
| Weight | 10.7 kg (23.6 lbs)/Without stand: 7.5 kg (16.5 lbs) | |
| Sensor Accuracy and Repeatability<br>Front Sensor<br>                         Accuracy:<br>              Repeatability:<br>Ambient Sensor<br>                         Accuracy:<br><br><br>              Repeatability: | <br><br>+/-10% (Lv>10cd/m²), +/-1cd/m² (10cd/m²≧Lv>2cd/m²), +/-0.5cd/m² (Lv ≦ 2cd/m²)<br>+/-2%<br><br>+/-10%<br><br><br>+/-5% | <br><br><br>(Standard Deviation)<br><br>(Light source: Fluorescent Lamp, Distance: 58 cm, Angle: 25 +/-5 degrees from the vertical axis of the ambient sensor).<br>(Same as Accuracy conditions). |
| Environmental Considerations<br>     Operating Temperature:<br>                       Humidity:<br>                       Altitude:<br>       Atmospheric pressure:<br>  Transport/Storage Temperature:<br>                       Humidity:<br>                       Altitude:<br>       Atmospheric pressure: | <br>5°C to 35°C/41°F to 95°F<br>30% to 80%<br>-1,246 to 9,842 Feet/-380 to 3,000 m<br>700hPa to 1060hPa<br>-10°C to 60°C/14°F to 140°F<br>10% to 85%<br>-1,246 to 39,370 Feet/-380 to 12,000 m<br>200hPa to 1060hPa | |

At 25 degrees, Target Brightness 400cd/m²

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

**NOTE:** Technical specifications are subject to change without notice.

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1st Edition, April 2012

Printed on recycled paper
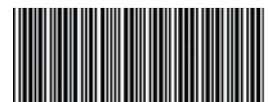
Printed in China
Part No. 1E507781