IMPORTANT:
To aid reporting in case of loss or theft, please record the product's model and serial numbers in the space provided. The numbers are located in the rear of the product.

Model No.:

Serial No.:

FOR CUSTOMERS IN U.K.

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW: Earth
BLUE: Neutral
BROWN: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

• The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth ⊥ or coloured green or green-and-yellow.
• The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.
• The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

Ensure that your equipment is connected correctly. If you are in any doubt consult a qualified electrician.

“WARNING: THIS APPARATUS MUST BE EARTHED.”

Authorised representative responsible for the European Union Community Market

SHARP ELECTRONICS (Europe) GmbH
Sonninstrasse 3, D-20097 Hamburg
IMPORTANT INFORMATION

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within a triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**CAUTION:**

The text is a caution statement about reducing the risk of electric shock. It advises against opening the product and mentions that there are no user-serviceable parts inside. It also directs users to refer servicing to qualified service personnel.

**WARNING:**

FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user’s authority to operate this equipment.

**NOTE:**

This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product utilizes a CR coin Lithium battery which contains a Perchlorate material. Special handling for this material may apply. California residents, See www.dtsc.ca.gov/hazardouswaste/perchlorate/ Others, consult local environmental officers.

U.S.A. ONLY
IMPORTANT INFORMATION (Continued)

Attention: Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

EU ONLY

A. Information on Disposal for Users (private households)

1. In the European Union

Attention: If you want to dispose of this equipment, please do not use the ordinary dustbin!

Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment. Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.

*) Please contact your local authority for further details.

If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

For Switzerland: Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don’t purchase a new product. Further collection facilities are listed on the homepage of www.swico.ch or www.sens.ch.

B. Information on Disposal for Business Users

1. In the European Union

If the product is used for business purposes and you want to discard it:

Please contact your SHARP dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.

For Spain: Please contact the established collection system or your local authority for take-back of your used products.

2. In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.

The battery supplied with this product contains traces of Lead.

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. Please contact your local authority for details on the collection and recycling schemes.

For Switzerland:

The used battery is to be returned to the selling point.

For other non-EU countries:

Please contact your local authority for correct method of disposal of the used battery.

“BATTERY DISPOSAL”

THIS PRODUCT CONTAINS A LITHIUM PRIMARY (MANGANESE DIOXIDE) MEMORY BACK-UP BATTERY THAT MUST BE DISPOSED OF PROPERLY. PLEASE CONTACT YOUR LOCAL SHARP DEALER OR AUTHORIZED SERVICE REPRESENTATIVE FOR ASSISTANCE IN DISPOSING OF THIS BATTERY.
DEAR SHARP CUSTOMER

Thank you for your purchase of a SHARP LCD product. To ensure safety and many years of trouble-free operation of your product, please read the Safety Precautions carefully before using this product.

SAFETY PRECAUTIONS

Electricity is used to perform many useful functions, but it can also cause personal injuries and property damage if improperly handled. This product has been engineered and manufactured with the highest priority on safety. However, improper use can result in electric shock and/or fire. In order to prevent potential danger, please observe the following instructions when installing, operating and cleaning the product. To ensure your safety and prolong the service life of your LCD product, please read the following precautions carefully before using the product.

1. Read instructions — All operating instructions must be read and understood before the product is operated.
2. Keep this manual in a safe place — These safety and operating instructions must be kept in a safe place for future reference.
3. Observe warnings — All warnings on the product and in the instructions must be observed closely.
4. Follow instructions — All operating instructions must be followed.
5. Cleaning — Unplug the power cord from the AC outlet before cleaning the product. Use a dry cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.
6. Attachments — Do not use attachments not recommended by the manufacturer. Use of inadequate attachments can result in accidents.
7. Water and moisture — Do not use the product near water. Do not install the product in a place where water may splash onto it. Be careful of equipment which drains water such as an air-conditioner.
8. Ventilation — The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a sofa, rug or other similar surface, since they can block ventilation openings. Do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.
9. Power cord protection — The power cords must be routed properly to prevent people from stepping on them or objects from resting on them.
10. The screen used in this product is made of glass. Therefore, it can break when the product is dropped or applied with impact. Be careful not to be injured by broken glass pieces in case the screen breaks.
11. Overloading — Do not overload AC outlets or extension cords. Overloading can cause fire or electric shock.
12. Entering of objects and liquids — Never insert an object into the product through vents or openings. High voltage flows in the product, and inserting an object can cause electric shock and/or short internal parts. For the same reason, do not spill water or liquid on the product.
13. Servicing — Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified service person to perform servicing.
14. Repair — If any of the following conditions occurs, unplug the power cord from the AC outlet, and request a qualified service person to perform repairs.
   a. When the power cord or plug is damaged.
   b. When a liquid was spilled on the product or when objects have fallen into the product.
   c. When the product has been exposed to rain or water.
   d. When the product does not operate properly as described in the operating instructions.
      Do not touch the controls other than those described in the operating instructions. Improper adjustment of controls not described in the instructions can cause damage, which often requires extensive adjustment work by a qualified technician.
   e. When the product has been dropped or damaged.
   f. When the product displays an abnormal condition. Any noticeable abnormality in the product indicates that the product needs servicing.
15. Replacement parts — In case the product needs replacement parts, make sure that the service person uses replacement parts specified by the manufacturer, or those with the same characteristics and performance as the original parts. Use of unauthorized parts can result in fire, electric shock and/or other danger.
16. Safety checks — Upon completion of service or repair work, request the service technician to perform safety checks to ensure that the product is in proper operating condition.
17. Wall mounting — When mounting the product on a wall, be sure to install the product according to the method recommended by the manufacturer.
18. Heat sources — Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).
SAFETY PRECAUTIONS (Continued)

19. Batteries — Incorrect use of batteries may cause the batteries to burst or ignite. A leaky battery may corrode the equipment, dirty your hands or spoil your clothing. In order to avoid these problems, make sure to observe the precautions below:
   • Use the specified batteries only.
   • Install the batteries with due attention to the plus (+) and minus (-) sides of the batteries according to the instructions in the compartment.
   • Do not mix old and new batteries.
   • Do not mix batteries of different types. Voltage specifications of batteries of the same shape may vary.
   • Replace an exhausted battery with a new one promptly.
   • If you will not use the remote control for a long time, remove the batteries.
   • If leaked battery fluid gets on your skin or clothing, rinse immediately and thoroughly. If it gets into your eye, bathe your eye well rather than rubbing and seek medical treatment immediately. Leaked battery fluid that gets into your eye or your clothing may cause a skin irritation or damage your eye.

20. Usage of the monitor must not be accompanied by fatal risks or dangers that, could lead directly to death, personal injury, severe physical damage or other loss, including nuclear reaction control in nuclear facility, medical life support system, and missile launch control in a weapon system.

21. Do not stay in contact with the parts of the product that become hot for long periods of time. Doing so may result in low-temperature burns.

**WARNING:**
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate counter measures.

To maintain compliance with EMC regulations, use shielded cables to connect to the following terminals: PC/AV DVI-D output terminal, PC/AV HDMI input terminal, PC D-SUB input terminal, PC RGB input terminals, and RS-232C input/output terminals.

If a monitor is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as:
   • Using fixing devices like wall mount brackets recommended by the manufacturer.
   • Only using furniture that can safely support the monitor.
   • Ensuring the monitor is not overhanging the edge of the supporting furniture.
   • Not placing the monitor on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the monitor to a suitable support.
   • Not standing the monitors on cloth or other materials placed between the monitor and supporting furniture.
   • Educating children about the dangers of climbing on furniture to reach the monitor or its controls.

**Especially for child safety**
- Don’t allow children to climb on or play with the monitor.
- Don’t place the monitor on furniture that can easily be used as steps, such as a chest of drawers.
- Remember that children can become excited while watching a program, especially on a “larger than life” monitor. Care should be taken to place or install the monitor where it cannot be pushed, pulled over, or knocked down.
- Care should be taken to route all cords and cables connected to the monitor so that they cannot be pulled or grabbed by curious children.
The TFT color LCD panel used in this monitor is made with the application of high precision technology. However, there may be minute points on the screen where pixels never light or are permanently lit. Also, if the screen is viewed from an acute angle there may be uneven colors or brightness. Please note that these are not malfunctions but common phenomena of LCDs and will not affect the performance of the monitor.

- Do not display a still picture for a long period, as this could cause a residual image.
- Never rub or tap the monitor with hard objects.
- Please understand that SHARP CORPORATION bears no responsibility for errors made during use by the customer or a third party, nor for any other malfunctions or damage to this product arising during use, except where indemnity liability is recognized under law.

- This monitor and its accessories may be upgradable without advance notice.
- Do not use the monitor where there is a lot of dust, where humidity is high, or where the monitor may come into contact with oil or steam, as this could lead to fire.
- Ensure that the monitor does not come into contact with water or other fluids. Ensure that no objects such as paper clips or pins enter the monitor as this could lead to fire or electric shock.
- Do not place the monitor on top of unstable objects or in unsafe places. Do not allow the monitor to receive strong shocks or to strongly vibrate. Causing the monitor to fall or topple over may damage it.
- Do not use the monitor near heating equipment or in places where there is likelihood of high temperature, as this may lead to generation of excessive heat and outbreak of fire.
- Do not use the monitor in places where it may be exposed to direct sunlight.
- The AC outlet shall be installed near the equipment and shall be easily accessible.
- Do not touch the screen while the PC is starting up, since it will be detected as a failure of the infrared transmitter/receiver elements and will lead to a malfunction. When this occurs, restart the PC.
- Do not operate the screen with a hard or pointed object such as a fingernail, pen, or pencil.
- Two touch panels cannot be used when two displays are connected to the computer.
- Only the touch panel on the display that is set as the primary monitor will be operable.
- If another USB device is connected to the computer to which the touch panel is connected, do not operate the USB device during touch panel input. Input may not take place correctly.
- If two touch panels are used in close proximity to each other, use handwriting mode. The touch pens will interfere with each other and will not operate correctly.
- If the infrared transmitter/receiver becomes dirty, malfunctioning may result. Use a soft cloth to gently wipe dirt off the infrared transmitter/receiver.
- If dust accumulates inside the infrared transmitter/receiver, the product cannot transmit or receive infrared rays properly, resulting in a malfunction. To clean the dust accumulated inside, contact an authorized SHARP servicing dealer or service center (extra charge required).

The Power Cord
- Use only the power cord supplied with the monitor.
- Do not damage the power cord nor place heavy objects on it, stretch it or over bend it. Also, do not add extension cords. Damage to the cord may result in fire or electric shock.
- Do not use the power cord with a power tap. Adding an extension cord may lead to fire as a result of overheating.
- Do not remove or insert the power plug with wet hands. Doing so could result in electric shock.
- Unplug the power cord if it is not used for a long time.
- Do not attempt to repair the power cord if it is broken or malfunctioning. Refer the servicing to the service representative.

Manual Scope
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- Intel, Celeron, and Intel Core 2 Duo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S.A. and other countries.
- AMD, AMD Sempron, AMD Athlon, and combinations thereof are trademarks of Advanced Micro Devices, Inc.
- This product comes with RICOH Bitmap Fonts produced and sold by RICOH COMPANY, LTD.
- All other brand and product names are trademarks or registered trademarks of their respective holders.
- Language of OSD menu used in this manual is English by way of example.
- Illustrations in this manual may not exactly represent the actual product or display.

LED Backlight
- The LED backlight in this product has a limited lifetime.
  * If the screen gets dark or does not turn on, it may be necessary to replace the LED backlight. This LED backlight is exclusive to this product and must be replaced by an authorized SHARP servicing dealer or service center.
  * Please contact your local SHARP servicing dealer or service center for assistance.
MOUNTING PRECAUTIONS

• This product is for use indoors.
• A mounting bracket compliant with VESA specifications is required.
• Since the monitor is heavy, consult your dealer before installing, removing or moving the monitor.
• Mounting the monitor on the wall requires special expertise and the work must be performed by an authorized SHARP dealer. You should never attempt to perform any of this work yourself. Our company will bear no responsibility for accidents or injuries caused by improper mounting or mishandling.
• This monitor cannot be used in vertical orientation.
• Use the monitor with the surface perpendicular to a level surface. If necessary, the monitor may be tilted up to 20 degrees upward.
• When moving the monitor, be sure to hold it with either both handles or the 4 corners on the bottom of the unit. Do not place your hand on the screen. This may cause product damage, failure, or injury.
• This monitor should be used at an ambient temperature between 41°F (5°C) and 95°F (35°C). Provide enough space around the monitor to prevent heat from accumulating inside.

If it is difficult to provide sufficient space for any reason such as the installation of the monitor inside a housing, or if the ambient temperature may be outside of the range of 41°F (5°C) to 95°F (35°C), install a fan or take other measures to keep the ambient temperature within the required range.
• Temperature condition may change when using the monitor together with the optional equipments recommended by SHARP. In such cases, please check the temperature condition specified by the optional equipments.
• Do not block any ventilation openings. If the temperature inside the monitor rises, this could lead to a malfunction.
• Do not place the monitor on a device which generates heat.
• Do not use the product in locations where the unit is exposed to direct sunlight or other strong light. Since this product operates with infrared rays, such light may cause a malfunction.
To use the touch panel, the touch panel must be connected to a computer, and the touch panel driver and Pen Software must be installed on the computer from the supplied CD-ROM. System requirements for each software program are as follows.

<table>
<thead>
<tr>
<th>Component</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>PC/AT compatible computer with a USB 1.1 port (must be able to supply a 500 mA (5.0 V) current) and able to output a resolution of 1920 x 1080. (CD-ROM drive required for software installation.)</td>
</tr>
<tr>
<td>OS</td>
<td>Windows XP (32-bit or 64-bit version), Windows Vista (32-bit or 64-bit version), Windows 7 (32-bit or 64-bit version)</td>
</tr>
<tr>
<td>CPU</td>
<td>Intel Celeron or AMD Sempron 1.6 GHz or faster Intel Core 2 Duo or AMD Athlon II X2 2.8 GHz or faster recommended</td>
</tr>
<tr>
<td>Memory</td>
<td>At least 2 GB (at least 1 GB for Windows XP)</td>
</tr>
<tr>
<td>Free space on hard drive</td>
<td>At least 100 MB (free space separately required for data storage)</td>
</tr>
</tbody>
</table>

To connect the touch panel and install the touch panel driver, see the Touch Panel Driver Operation Manual. To install the Pen Software, see the Pen Software Operation Manual.
Part Names

■ Front view

1. Touch pen ultrasonic sensor
2. Infrared transmitter/receiver
3. Power button (See page 16.)
4. Tray
5. Touch panel power LED
6. Remote control sensor (See page 15.)
7. Input switch (See page 21.)
8. Power LED (See page 16.)

■ Rear view

When the PN-ZB01 (optional) is attached

1. Optional attachment section
   This section is used to connect optional hardware for function expansion. Offering this attachment location is not a guarantee that future compatible hardware attachments will be released.
2. Speakers
3. Handles (See page 14.)
4. Vents
5. Expansion terminal cover
   Additional input/output terminals are available by attaching the PN-ZB01 interface expansion board (optional).
6. PC/AV HDMI input terminal (See page 12.)
7. PC D-sub input terminal (See page 12.)
8. Audio input terminal (See page 12.)
9. Audio output terminals (See page 12.)
10. RS-232C output terminal (See page 12.)
11. RS-232C input terminal (See page 12.)
12. Optional terminal
   This terminal is provided for possible future (optional) function expansion. Offering of this terminal is not a guarantee that future expanded functionality will be provided.
13. USB port
14. AC input terminal (See page 14.)
15. Main power switch (See page 16.)

When the PN-ZB01 (optional) is attached
16. PC/AV DVI-D input terminal (See page 13.)
17. PC/AV DVI-D output terminal (See page 13.)
18. LAN terminal (See page 13.)
19. External speaker terminals (See page 13.)
20. Audio 1 input terminals (See page 13.)
21. Audio 2 input terminals (See page 13.)
22. PC RGB input terminals (See page 13.)
23. AV component input terminals (See page 13.)
24. AV video input terminal (See page 13.)
25. AV S-video input terminal (See page 13.)

Caution
- Consult your SHARP dealer for attachment/detachment of optional parts.
- Do not open the expansion terminal cover by yourself. There are high voltage parts inside the cover which may cause an electric shock.
1. Remote control unit

1. Signal transmitter
2. POWER button (See page 16.)
3. MUTE button (See page 21.)
4. VOL +/- buttons (See page 21.)
   BRIGHT +/- buttons (See page 21.)
   Cursor control (▲ / ▼ / ◄ / ►) buttons
5. DISPLAY button (See page 21.)
6. MODE button (See page 21.)
7. INPUT button (See page 21.)
8. MENU button (See page 21.)
9. SIZE button (See page 21.)
Connecting Peripheral Equipment

Connecting Peripheral Equipment

Caution

• Be sure to turn off the main power switch and disconnect the plug from the power outlet before connecting/disconnecting cables. Also, read the manual of the equipment to be connected.
• Be careful not to confuse the input terminal with the output terminal when connecting cables. Accidentally reversing cables connected to the input and output terminals may cause malfunctions and the other problems.

TIPS

• When using the touch panel, connect the USB cable to the computer. For details, see the Touch Panel Driver Operation Manual.
• Images may not be displayed properly depending on the computer (video card) to be connected.
• A screen with 1920 x 1080 resolution may not be displayed correctly on PC RGB. In this case, check the settings of your computer (video card) to verify that input signals conform to specifications of this monitor. (See page 55.)
• If there is a check box to disable EDID in display control panel, check it when using PC RGB.
• Use the automatic screen adjustment when a PC screen is displayed for the first time using PC D-SUB or PC RGB, or when the setting of the PC is changed. The screen is adjusted automatically when SELF ADJUST in the OPTION menu is set to ON.
• If the audio output from the playback device is connected directly to speakers or other devices, the video on the monitor may appear delayed from the audio portion. Audio should be played through this monitor by connecting the playback device to the monitor’s audio input, and connecting the monitor’s audio output to the speakers or other devices.
• The audio input terminals used in each input mode are factory-set as follows.

<table>
<thead>
<tr>
<th>Input mode</th>
<th>Audio input terminal (Factory setting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC D-SUB, PC DVI-D, PC RGB</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV DVI-D</td>
<td>Audio1 input terminal</td>
</tr>
<tr>
<td>AV COMPONENT (BNC), AV S-VIDEO, AV VIDEO (BNC)</td>
<td>Audio2 input terminal</td>
</tr>
<tr>
<td>AV COMPONENT (D-SUB), AV VIDEO (D-SUB)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>PC HDMI, AV HDMI</td>
<td>PC/AV HDMI input terminal</td>
</tr>
</tbody>
</table>

Connection with a PC or AV equipment

1. PC/AV HDMI input terminal
   • Use a commercially available HDMI cable (conforming to the HDMI standard).
   • Set HDMI of INPUT SELECT on the OPTION menu according to the device to be connected.
   • Select the audio input terminal to be used in PC HDMI or AV HDMI of AUDIO SELECT on the OPTION menu.
     When HDMI is selected, connection to the audio input terminal is unnecessary.

2. PC D-sub input terminal
   • Set D-SUB of INPUT SELECT on the OPTION menu according to the device to be connected.
   • Common terminal for AV COMPONENT and AV VIDEO.
   • When the PN-ZB01 (optional) is attached, select the audio input terminal to be used in PC D-SUB of AUDIO SELECT on the OPTION menu.
   • To use with AV VIDEO (D-SUB), connect the green terminal to the device’s video output.

3. Audio input terminal
   • Use an audio cable without resistance.
   • When the PN-ZB01 (optional) is attached, set the audio input terminal used for each input mode in AUDIO SELECT on the OPTION menu.

4. Audio output terminals
   • The output sound varies depending on the input mode.
   • The volume of the output sound can be fixed by setting AUDIO OUTPUT (RCA) on the OPTION menu.
   • It is not possible to control the sound output from the audio output terminals with the AUDIO menu.

5. RS-232C input terminal
   RS-232C output terminal
   • You can control the monitor from a PC by connecting a commercially available RS-232 straight cable between these terminals and the PC.

6. USB port
   • To use the touch panel, connect the touch panel to your computer with the provided USB cable. (Touch Panel Driver Operation Manual.)
Connecting Peripheral Equipment

Connection when the PN-ZB01 (optional) is attached

The PN-ZB01 expansion board (optional) allows the use of additional connection terminals.

7. PC/AV DVI-D input terminal
   • Set DVI of INPUT SELECT on the OPTION menu according to the device to be connected.
   • Select the audio input terminal to be used in PC DVI-D or AV DVI-D of AUDIO SELECT on the OPTION menu.

8. PC RGB input terminals
   • Set BNC of INPUT SELECT on the OPTION menu to PC RGB when using the PC RGB input terminals.
   • Select the audio input terminal to be used in PC RGB of AUDIO SELECT on the OPTION menu.

9. AV component input terminals
   • Set BNC of INPUT SELECT on the OPTION menu to AV COMPONENT when using the AV component input terminals.
   • Select the audio input terminal to be used in AV COMPONENT of AUDIO SELECT on the OPTION menu.
   • Cannot be used when D-SUB in INPUT SELECT on the OPTION menu is set to AV COMPONENT.

10. AV video input terminal
    • Select the audio input terminal to be used in AV VIDEO of AUDIO SELECT on the OPTION menu.
    • Cannot be used when D-SUB in INPUT SELECT on the OPTION menu is set to AV VIDEO.

11. AV S-video input terminal
    • Select the audio input terminal to be used in AV S-VIDEO of AUDIO SELECT on the OPTION menu.

12. Audio1 input terminals / Audio2 input terminals
    • Set the audio input terminal to be used in each input mode in AUDIO SELECT on the OPTION menu.

13. LAN terminal
    • You can control the monitor from a PC on a network by connecting a commercially available LAN cable between this terminal and a network.

14. External speaker terminals
    • To use external speakers, set SPEAKER SELECT on the SETUP menu to EXTERNAL.
    • Be sure to use external speakers with an impedance of 6 Ω or greater and a rated input of at least 7 W.

15. PC/AV DVI-D output terminal
    • The video of the PC/AV DVI-D input can be output to an external device.
    • Outputting HDCP-encrypted video requires an external device which supports HDCP.
    • This terminal allows the daisy chain connection of up to 5 monitors.

TIPS
• Be sure to connect the + and - terminals and the left and right speakers properly.
• Avoid short circuiting the + and - terminals.
• When SPEAKER SELECT is set to EXTERNAL, the internal speakers are disabled.

1. Attach a speaker cable core (included with the PN-ZB01) to the end of the speaker cable connected to the monitor.
2. While pushing the tab, insert the tip of the cable.
3. Release the tab.

TIPS
• The length of the signal cables or surrounding environment may affect the image quality.
• The screen may not display properly when using terminals other than PC DVI-D/AV DVI-D for the input mode. In this case, turn off the power to all the monitors connected in a daisy chain and then turn the power on again.
• When connecting monitors in a daisy chain set AUTO INPUT CHANGE to OFF.
• Video output is disabled in the following cases:
  When the power is turned off
  When the monitor is in input signal waiting mode
Connecting the Power Cord

**Caution**
- Do not use a power cord other than the one supplied with the monitor.

1. Turn off the main power switch.
2. Plug the power cord (supplied) into the AC input terminal.
3. Plug the power cord (supplied) into the AC power outlet.

Binding Cables

The cables connected to the terminals on the rear of the monitor can be fastened with the cable clamp.

Insert the cable clamp into the cable clamp attachment on the rear of the monitor and fasten the cables.

Removing the Handles

The handles can be removed.

The installation position can be changed.

**Caution**
- The removable handles and handle screws are for use with this monitor. Do not use them for any other devices.
- To attach handles, be sure to use the handles and handle screws which were removed from the monitor.
- Be sure the handles are attached securely.
Preparing the Remote Control Unit

Installing the batteries

1. Press the cover gently and slide it in the direction of the arrow.

2. See the instructions in the compartment and put in the supplied batteries (R-6 ("AA" size) x 2) with their plus (+) and minus (-) sides oriented correctly.
3. Close the cover.

TIPS

- When the batteries become exhausted, replace them with new (commercially available) batteries.
- The supplied batteries (R-6 ("AA" size) x 2) may become exhausted quickly depending on how they are stored.
- If you will not be using the remote control for a long time, remove the batteries.
- Use manganese or alkaline batteries only.

Remote control operation range

The operation range of the remote control unit is approx. 16.4 feet (5 m) at an angle of approx 10° from the center to the top/bottom/right/left of the remote control sensor.

TIPS

- Do not expose the remote control unit to shock by dropping or stepping on it. This could lead to a malfunction.
- Do not expose the remote control unit to liquids, and do not place it in an area with high humidity.
- The remote control unit may not work properly if the remote control sensor is under direct sunlight or strong lighting.
- Objects between the remote control unit and the remote control sensor may prevent proper operation.
- Replace the batteries when they run low as this may shorten the remote control’s operation range.
- If a fluorescent light is illuminated near the remote control unit, it may interfere with proper operation.
- Do not use it with the remote control of other equipment such as air conditioner, stereo components, etc.
Turning Power On/Off

Turning on the main power

- **Caution**
  - Turn on the monitor first before turning on the PC or playback device.

- **Caution**
  - The main power must be turned on/off with the main power switch. Do not connect/disconnect the power cord or turn the breaker on/off while the main power switch is on.
  - When switching the main power switch or the POWER button off and back on, always wait for at least 5 seconds.
  - For a complete electrical disconnection, pull out the main plug.

***Turning power on/off***

Press the POWER button to turn the power ON/OFF.

- **Status of the power LED**

<table>
<thead>
<tr>
<th>Status</th>
<th>Status of the monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green lit</td>
<td>Power on</td>
</tr>
<tr>
<td>Orange lit</td>
<td>Power off (Standby mode)</td>
</tr>
<tr>
<td>Green flashing</td>
<td>Input signal waiting mode</td>
</tr>
</tbody>
</table>

- **Status of the touch panel power LED**

<table>
<thead>
<tr>
<th>Status</th>
<th>Status of the touch panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinking orange</td>
<td>Operating normally</td>
</tr>
<tr>
<td>Alternately blinking green and orange</td>
<td>Initializing</td>
</tr>
<tr>
<td>Off</td>
<td>Touch panel off (power not supplied, etc.)</td>
</tr>
</tbody>
</table>

- **Caution**
  - When switching the main power switch or the POWER button off and back on, always wait for at least 5 seconds. A short interval may result in a malfunction.
  - When the touch panel power LED blinks orange or alternately blinks green and orange, the touch panel is being initialized. Do not touch the touch panel at this time. Touching the touch panel may cause malfunctioning.

- **TIPS**
  - When the main power switch is off, the monitor cannot be turned on.
  - If the monitor is in the input signal standby mode and you press the POWER button on the remote control unit, the monitor enters standby mode.
  - Setting the SCHEDULE flashes the power LED alternately in red and orange in standby mode.
  - To disable the logo screen from displaying when turning the power ON, set LOGO SCREEN to OFF on the SETUP menu. (See page 26.)
**Operation mode**

When the monitor is turned on for the first time after being shipped from the factory, the operation mode setting screen will be displayed. Set it to MODE1 or MODE2.

- **MODE1**...OFF IF NO OPERATION is set to ON, and STANDBY MODE is set to LOW POWER. (These settings can not be changed.)
  - If there is no operation for 4 hours or more, the monitor automatically enters standby mode. Power consumption in standby mode is also minimized.

- **MODE2**...Will perform standard operation.
  - OFF IF NO OPERATION is set to OFF, and STANDBY MODE is set to STANDARD. These settings can be changed.

Even after being set, changes can be made using OPERATION MODE, located in the menu of the monitor. (See page 25.)

**Date/time setting**

- If the time has yet to be set when the monitor is first turned on, the date/time setting screen appears. Set the date and time.

1. Press , , , or to select the date and time, and press or to change the numerical values.
2. Select SET and then press .
   - Be sure to set the date and time.
   - The date/time setting screen will close automatically if no operation is performed for about 15 seconds. The date and time can be set using DATE/TIME SETTING from the OPTION menu when the date/time setting screen disappears.

**TIPS**

- Set the date in “Day/Month/Year” order.
- Set the time on a 24-hour basis.
- The clock is maintained by the internal battery.
- If you already set the time but the date/time setting screen appears when the power is turned on, the internal battery may be exhausted. Please contact your local SHARP servicing dealer or service center for assistance with battery replacement.
- Estimated service life of the internal battery: About 5 years (depending on monitor operation)
- The initial battery was inserted at the factory when the monitor was shipped, so it may run out of power before its expected operation life.

**Disabling power on/off operations**

Power on/power off operations can be disabled in order to protect the monitor from an accidental power off. Set the ADJUSTMENT LOCK in FUNCTION menu to “ON 2”. (See page 31.)
Inserting the battery

1. Rotate the battery cap and remove it, and then pull out the cover.

2. Insert the supplied battery (LR-03 ("AAA" size)) in the orientation shown, and attach the cover and battery cap.

TIPS

• The supplied battery (LR-03 ("AAA" size)) may be exhausted in a short time, depending on how it was stored.
• If the touch pen will not be used for an extended time, remove the battery from the touch pen.
• For the battery, use an alkaline battery.

Touch action and touch mode

Touch panel actions that can be used vary depending on the touch mode setting in the touch panel driver. In Windows XP/Windows Vista, dual touch mode cannot be used.

<table>
<thead>
<tr>
<th>Touch mode</th>
<th>Single touch mode</th>
<th>Dual touch mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-tap</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Double-tap</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Drag-and-drop</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Flicks</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Press-and-hold</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pan</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Zoom</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Press-and-tap</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

TIPS

• Settings for touch panel operation such as the touch mode and actions of the function buttons can be changed in the touch panel driver. For details, see the manual for the touch panel driver.
• In Windows 7, if the checkmark has been removed from “Enable multi-touch gestures and inking” in “Pen and touch” in Control Panel, select the checkbox.

Touch action

When the touch panel is touched with the pen, the input mode changes to pen mode. When touched with your finger, the input mode changes to handwriting mode. The input mode is set by default to change automatically (Standard mode).

TIPS

• For the procedures for using the touch pen in the Pen Software, see the Pen Software Operation Manual.

Common finger and pen actions

Single-tap
Same action as left-clicking a mouse.
Touch with your finger/pen.
Double-tap*1
Same action as double-clicking a mouse.
Quickly touch twice with your finger/pen.

When double-tapping with your finger, be sure to lift your finger sufficiently off the screen after the first tap. If there is insufficient distance between the screen and your finger, double-tap will not take place.

Drag-and-drop
Same action as drag-and-drop with a mouse.
Touch the screen with your finger/pen and move without lifting. When you have finished the movement, lift your finger/pen.

Pan*2
Use in a screen with a scrollbar.
With your finger/pen touching the screen, move in the direction you want to scroll. The screen scrolls in the direction of the movement.

*1 In Windows XP/Windows Vista, the settings can be changed in the touch panel driver.
*2 The settings can be changed in “Pen and touch” of Control Panel in Windows 7. For details, see Windows Help.

Flicks*2
Flick your finger/pen in the direction of the function you want to use.

Press-and-hold*2
Same action as right-clicking a mouse.
Press briefly with your finger/pen, and then lift your finger/pen from the screen.

Finger actions
Zoom
Use in a screen that is capable of enlargement/reduction. Touch the screen with two fingers and move your fingers closer together to reduce the view, or apart to enlarge the view.

Reduction

Enlargement

TIPS
• Move your finger diagonally across the screen. If you move your finger horizontally or vertically, the screen may not respond correctly.
Press-and-tap
Same action as right-clicking a mouse.
With one finger touching the screen, tap once (single tap) with another finger.

Other functions
In Windows 7, touch pointer and input panel functions can be used.
For information on these functions, see Windows Help.

Touch pointer:
A translucent image of a mouse appears near the point touched. The left/right buttons of the image can be clicked to perform the same actions as left/right clicking a mouse.

Input panel:
A software keyboard and an input panel with handwriting recognition appear on the screen.

In Windows 7 (excluding Starter), the ink function of Microsoft Office can be used.
Handwritten comments can be written, and handwriting can be recognized.
For details, see Microsoft Office Help.

Cautionary points
• Do not use the touch pen for any purpose other than touch panel operation.
• Do not press hard on the pen tip.
• Do not cover the ultrasonic transmitter of the touch pen with your hand or finger.
• Operation will not take place correctly if there is an obstacle between the infrared transmitter/receiver and the touch pen or your finger. Operation will not take place correctly if your fingers or your sleeve is near the screen.
• If the touch pen is held too flat against the screen, the touch position may not be correctly detected.
• If the touch pen does not work at the edge of the screen, move it slowly.
• Do not store with the pen tip of the touch pen or function button pressed. The battery will be exhausted.
• Do not use near a device that emits ultrasonic waves. The touch pen uses ultrasonic waves and may not operate correctly.
• If two touch panels are used in close proximity to each other, use handwriting mode. The touch pens will interfere with each other and will not operate correctly.
• If there is dirt or foreign matter on the tip of the touch pen, remove it. Foreign matter may damage the screen.
• Applications such as a screensaver or media player may cause the resolution to automatically change. If "Resolution Change Notice" is enabled in the touch panel driver, a resolution change message will appear. In this case, disable "Resolution Change Notice", or change the setting in the application so that it does not change the resolution.
• The pen may be out of position in the login screen. In this case, use the keyboard or mouse.
• If the USB cable becomes disconnected, the touch panel may not operate correctly after the cable is reconnected. In this case, restart your computer.

Eraser
The eraser is used with the Pen Software. For the procedure for using the eraser, refer to the Pen Software Operation Manual.

Caution
• When using the eraser, gently bring the cloth side into contact with the screen. Touching the screen with one of the non-cloth sides will damage the screen.
• If there is any dirt or foreign matter on the surface that contacts the screen, remove it. Foreign matter may damage the screen.
Basic Operation

1. INPUT (Input mode selection)
The menu is displayed. Press \(\uparrow\) or \(\downarrow\) to select the input mode, and press \(\rightarrow\) to enter.
* You can select the input terminal by pressing the input switch of the monitor.

<table>
<thead>
<tr>
<th>Input mode</th>
<th>Video</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC D-SUB</td>
<td>PC D-sub input terminal(^1)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>PC HDMI</td>
<td>PC/AV HDMI input terminal(^2)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV HDMI</td>
<td>PC/AV HDMI input terminal(^3)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV COMPONENT</td>
<td>PC D-sub input terminal(^1)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV VIDEO</td>
<td>PC D-sub input terminal(^1)</td>
<td>Audio input terminal</td>
</tr>
</tbody>
</table>

When the PN-ZB01 (optional) is attached

<table>
<thead>
<tr>
<th>Input mode</th>
<th>Video</th>
<th>Audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC DVI-D</td>
<td>PC/AV DVI-D input terminal(^4)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>PC HDMI</td>
<td>PC/AV HDMI input terminal(^2)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>PC D-SUB</td>
<td>PC D-sub input terminal(^1)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>PC RGB</td>
<td>PC RGB input terminals(^5)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV DVI-D</td>
<td>PC/AV DVI-D input terminal(^4)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV HDMI</td>
<td>PC/AV HDMI input terminal(^2)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV COMPONENT</td>
<td>AV COMPONENT input terminals(^6)</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV S-VIDEO</td>
<td>AV S-video input terminal</td>
<td>Audio input terminal</td>
</tr>
<tr>
<td>AV VIDEO</td>
<td>AV video input terminal</td>
<td>Audio input terminal</td>
</tr>
</tbody>
</table>

\(^1\) Select the terminal to be used in D-SUB of INPUT SELECT. (See page 26.)
\(^2\) Select the terminal to be used in HDMI of INPUT SELECT. (See page 26.)
\(^3\) Select the terminal for AUDIO SELECT which is used for audio input. (See page 26.)
\(^4\) Select the terminal to be used in DVI of INPUT SELECT. (See page 26.)
\(^5\) Select the terminal to be used in BNC of INPUT SELECT. (See page 26.)

2. MUTE
Turns off the volume temporarily. Press the MUTE button again to turn the sound back to the previous level.

3. MENU
Displays and turns off the menu screen. (see page 23.)

4. VOL +/- (Volume adjustment)
Pressing \(\uparrow\) or \(\downarrow\) displays the VOLUME menu when the menu screen is not displayed.

```
VOLUME 15
```

Press \(\uparrow\) or \(\downarrow\) to adjust the volume of the sound.
* If you do not press any buttons for about 4 seconds, the VOLUME menu automatically disappears.

5. BRIGHT +/- (Backlight adjustment)
Pressing \(\uparrow\) or \(\downarrow\) displays the BRIGHT menu when the menu screen is not displayed.

```
BRIGHT 15
```

Press \(\uparrow\) or \(\downarrow\) to adjust the brightness.
* If you do not press any buttons for about 4 seconds, the BRIGHT menu automatically disappears.

6. SIZE (Screen size selection)
The menu is displayed. Press \(\uparrow\) or \(\downarrow\) to select the screen size. (See page 22.)

7. DISPLAY
Displays monitor information. When you press this button again, the display disappears. When the PN-ZB01 (optional) is attached, the display changes from INFORMATION1 → INFORMATION2 → clear display, and so on every time you press this button.
* The display disappears automatically after about 15 seconds.
* \(\text{LAN}\) is displayed during LAN communication.
* If \(\text{LAN}\) is displayed in red, there is a duplicate IP address.

8. MODE (Color mode selection)
Each time you press this button, the color mode changes in the following order:

```
STD (Standard) → VIVID → sRGB → STD...
```

* sRGB applies to PC input only.
* sRGB is international standard of color representation specified by IEC (International Electrotechnical Commission); Color conversion is made in taking account of liquid crystal’s characteristics and represents color tone close to its original image.
Basic Operation

Switching the screen size

Even when the screen size is changed, the display may remain the same depending on the input signal.

<table>
<thead>
<tr>
<th>WIDE</th>
<th>PC input</th>
<th>Displays image so it fills the entire screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AV input</td>
<td>An image with a 4:3 aspect ratio is stretched to fill the entire screen.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZOOM 1</th>
<th>PC input</th>
<th>An image with a 4:3 aspect ratio is enlarged to fill the entire screen without changing the aspect ratio. The edges of the image may be cut off.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AV input</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZOOM 2</th>
<th>PC input</th>
<th>Use this size if ZOOM 1 cuts off the subtitles.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AV input</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NORMAL</th>
<th>PC input</th>
<th>Displays image so it fills the screen without changing the aspect ratio of the input signals.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AV input</td>
<td>Displays the entire image of the aspect ratio of 4:3 without changing the aspect ratio.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dot by Dot</th>
<th>PC input</th>
<th>Displays the dots of the signals input from the connected PC as the corresponding dots on the screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AV input</td>
<td>Displays the dots of the input signals as the corresponding dots on the screen.</td>
</tr>
</tbody>
</table>

TIPS

- Using this monitor’s screen-size switching or dual-screen display functions to compress or expand the screen for commercial or public viewing in establishments like cafes or hotels may infringe on the rights of the creators, as protected by Copyright Law, so please be careful.
- When dual-screen display is selected, the screen size cannot be changed.
- The appearance of the original video may change if you select a screen size with a different aspect ratio than the original image (e.g. TV broadcast or video input from external equipment).
- When an ordinary non-wide image (4:3) is viewed with the whole screen using the screen-size switching function of this monitor, the edge of the image may be lost or appear distorted. If you wish to respect the creator’s intentions, set the screen size to “NORMAL”.
- When playing commercial software, parts of the image (like subtitles) may be cropped. In this case select the optimal screen size using the screen-size switching function of this monitor. With some software, there may be noise or distortion at the edges of the screen. This is due to the characteristics of the software, and is not a malfunction.
- Depending on the original image size, black bands may remain at the edges of the screen.
Displaying the menu screen

Video and audio adjustment and settings of various functions are enabled. This section describes how to use the menu items. See pages 24 to 27 for details of each menu items.

Caution

• Do not turn the main power switch off while the menu items are being displayed. Doing so may initialize the settings.

Example of operation

(Adjusting CONTRAST in the PICTURE menu)

1. Press \textbf{MENU} to display the menu screen.

2. Press \textbf{or} \textbf{to select PICTURE, and press \textbf{.}}

3. Press \textbf{or} \textbf{to select CONTRAST.}

4. Press \textbf{or} \textbf{to adjust the setting.}

5. Press \textbf{twice to close the menu screen.}

TIPS

• The menu will differ depending on the input mode.
• The menu screen will close automatically if no operation is performed for about 15 seconds. (DATE/TIME SETTING, SCHEDULE and LAN SETUP screens will close in about 4 minutes.)

Menu items

The displayed menu items vary depending on whether or not the PN-ZB01 (optional) is attached. The following menus will be displayed only when the PN-ZB01 (optional) is attached.

<table>
<thead>
<tr>
<th>Menu</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>SETUP</td>
<td>HOT PLUG CONTROL [DVI]</td>
</tr>
<tr>
<td></td>
<td>RS-232C/LAN SELECT</td>
</tr>
<tr>
<td></td>
<td>LAN SETUP</td>
</tr>
<tr>
<td></td>
<td>SPEAKER SELECT</td>
</tr>
<tr>
<td>OPTION</td>
<td>INPUT SELECT [DVI]</td>
</tr>
<tr>
<td></td>
<td>[BNC]</td>
</tr>
<tr>
<td></td>
<td>AUDIO SELECT [PC DVI-D]</td>
</tr>
<tr>
<td></td>
<td>[PC D-SUB]</td>
</tr>
<tr>
<td></td>
<td>[PC RGB]</td>
</tr>
<tr>
<td></td>
<td>[AV DVI-D]</td>
</tr>
<tr>
<td></td>
<td>[AV COMPONENT (BNC)]</td>
</tr>
<tr>
<td></td>
<td>[AV COMPONENT (D-SUB)]</td>
</tr>
<tr>
<td></td>
<td>[AV S-VIDEO]</td>
</tr>
<tr>
<td></td>
<td>[AV VIDEO (BNC)]</td>
</tr>
<tr>
<td></td>
<td>[AV VIDEO (D-SUB)]</td>
</tr>
<tr>
<td>PIP/PbyP</td>
<td>PIP SOURCE</td>
</tr>
</tbody>
</table>
Menu item details

The menu will differ depending on the input mode.

**SCREEN**

You can move the menu screen display position each time DISPLAY is pressed.

**AUTO (PC D-SUB/PC RGB)**

The CLOCK, PHASE, H-POS, and V-POS are automatically adjusted.

Pressing ▼ performs adjustment.

Use this automatic adjustment when you use the PC D-sub input terminal or PC RGB input terminals to display a PC screen for the first time or when you change the setting of the PC. (See page 30.)

**CLOCK (PC D-SUB/PC RGB)**

Adjusts frequency for sampling clock for applicable video.

Adjust when there is flickering in the form of vertical stripes. When using the adjustment pattern (see page 30), make adjustments so that no vertical stripe noise appears in it.

**PHASE (PC D-SUB/PC RGB)**

Adjusts sampling clock phase for applicable video.

Useful when small characters appear with low contrast and/or there are flickers at corners.

When using the adjustment pattern (see page 30), make adjustments so that no horizontal stripe noise appears in it.

* Adjustments to PHASE should be made only after CLOCK has been correctly set.

**H-POS**

Adjust the horizontal position of the image.

**V-POS**

Adjust the vertical position of the image.

**H-SIZE**

Adjust the horizontal size of the image.

**V-SIZE**

Adjust the vertical size of the image.

**H-RESOLUTION (PC D-SUB/PC RGB)**

Sets proper horizontal resolution when the resolution of input signals is not recognized properly. (Adjustment may be impossible with some signals.)

**V-RESOLUTION (PC D-SUB/PC RGB)**

Sets proper vertical resolution when the resolution of input signals is not recognized properly. (Adjustment may be impossible with some signals.)

**RESET**

 Resets the values of the SCREEN menu items to the factory preset values.

Select “ON” and then press ▼.  

**PICTURE**

You can move the menu screen display position each time DISPLAY is pressed.

**AUTO (PC D-SUB/PC RGB)**

The ANALOG GAIN and ANALOG OFFSET are automatically adjusted.

Pressing ▼ performs adjustment.

**ANALOG GAIN (PC D-SUB/PC RGB)**

Adjusts the bright portions of the video input signal.

**ANALOG OFFSET (PC D-SUB/PC RGB)**

Adjusts the dark portions of the video input signal.

**BRIGHT**

Adjusts the backlight brightness. (In PIP mode, the main side setting is reflected in the image.)

**CONTRAST**

Adjusts the difference between the bright and dark portions of the image.

**BLACK LEVEL**

Adjusts the entire brightness of the video signals.

**TINT**

Adjusts the hue. Selecting + changes the color towards green, and selecting - changes it towards magenta.

**COLORS**

Adjusts the color intensity.

**SHARPNESS**

Adjusts the sharpness of the image.

**RGB INPUT RANGE (PC DVI-D/PC HDMI/PC D-SUB/PC RGB/AV DVI-D/AV HDMI)**

Sets the RGB input signal range. When using HDMI set to AUTO, the RGB input signal is detected automatically. Use AUTO normally.

If the RGB input signal range cannot be set appropriately even when using AUTO, set according to the image. When the setting is different, images will be displayed with washed out blacks and compressed gradients.

**ADVANCED (AV input)**

You can adjust more specifically. (See page 30.)

**COLOR MODE**

Changes the color mode on the screen. The color mode on the screen can also be changed using a remote control unit. (See page 21.)

* sRGB is PC input only. See page 21 for details.

(In PIP mode, the main side setting is reflected in the image.)

**WHITE BALANCE**

THRU .......... Displays the input signal level as is. (for PC DVI-D/PC HDMI only)

PRESET .......... Selects the color temperature using PRESET.

USER .......... Used for adjusting R-/G-/B-CONTRAST and R-/G-/B-OFFSET respectively.

(In PIP mode, the main side setting is reflected in the image.)

**PRESET**

Selects the color temperature when the WHITE BALANCE is set to PRESET.

The setting values are shown for reference. The color temperature of the screen varies over time. This function is not intended to keep the color temperature constant.
USER
Adjusts each item when the WHITE BALANCE is set to USER.
R-CONTRAST  Adjusts bright-toned red component.
G-CONTRAST  Adjusts bright-toned green component.
B-CONTRAST  Adjusts bright-toned blue component.
R-OFFSET     Adjusts dark-toned red component.
G-OFFSET     Adjusts dark-toned green component.
B-OFFSET     Adjusts dark-toned blue component.

COPY TO USER
Copies the value of white set for PRESET to the USER setting.
Select “ON” and then press MENU.
(In the case other than white, color tone may differ from the PRESET.)

GAMMA
Selects the gamma. USER sets the gamma to the sent value (see page 35). (In PIP mode, the main side setting is reflected in the image.)

DISPLAY COLOR PATTERN
Displays a color pattern. Can be displayed while the menu screen is displayed, so you can refer to the pattern while adjusting the image.
OFF  No pattern display.
WHITE  White single color pattern display.
RED  Red single color pattern display.
GREEN  Green single color pattern display.
BLUE  Blue single color pattern display.
USER  Red/green/blue mixed color pattern display.
When USER is selected, set each color’s level.

RESET
Resets the values of the PICTURE menu items to the factory preset values.
Select “ON” and then press MENU.

AUDIO
TREBLE
Adjusts the volume of treble-level sound.

BASS
Adjusts the volume of bass-level sound.

BALANCE
Adjusts the balance of the audio sound between right and left.

RESET
Resets the values of the AUDIO menu items to the factory preset values.
Select “ON” and then press MENU.

SETUP

OSD H-POSITION
Adjusts the horizontal display position of menu screen.

OSD V-POSITION
Adjusts the vertical display position of menu screen.

MONAURAL AUDIO
Outputs audio signals as monaural.

LANGUAGE
Sets the display language for the menu screen.

POWER ON DELAY
You can delay the screen display after the monitor is turned on. The period can be set up to 60 seconds in units of one second. When this function is activated, the power LED flashes (at approx. 1 second interval) in orange. This function is disabled when 0 is specified.

OPERATION MODE
MODE1  OFF IF NO OPERATION is set to ON, and STANDBY MODE is set to LOW POWER.
        (These settings can not be changed.)
MODE2  OFF IF NO OPERATION is set to OFF, and STANDBY MODE is set to STANDARD. These settings can be changed.

STANDBY MODE
When STANDARD is selected, startup time from standby mode is reduced. Note, however that, more power will be consumed in standby mode.
When LOW POWER is selected, current consumption is reduced while the monitor is in standby mode. Note, however, that the startup time from standby mode becomes longer.
If set to LOW POWER, certain RS-232C commands cannot be used in standby mode, and control via LAN will be disabled.

OFF IF NO OPERATION
Determines whether or not to set the monitor to go into standby mode when there is no operation from the remote control unit, RS-232C commands, or LAN for over 4 hours.
Menu Items

HOT PLUG CONTROL
Sets whether to use hot plug control for the PC/AV HDMI and PC/AV DVI-D input terminals.

RS-232C/LAN SELECT
Selects the method with which to control the monitor from the computer.

ID No. SET
Assigns ID numbers to monitors connected in a daisy chain (see page 33), using RS-232 cables.
The numbers 1 to 255 are available for ID numbers.
If “0” is set, the system regards this as the state where no ID number is set.

AUTO ASSIGN ID No.
ID No. to be used will be automatically assigned when multiple monitors are connected with RS-232C.
Select ON, then press [MENU].
Perform operations using the first monitor in the daisy chain.

BAUD RATE
Selects the communication speed used for RS-232C communication.

LAN SETUP
Configures the settings to control the monitor from the computer via LAN. (See page 43.)

AUTO ASSIGN FIXED IP ADDR.
Can be enabled when RS-232C/LAN SELECT is LAN and the DHCP CLIENT is OFF.
Set DHCP CLIENT to OFF for the monitor connected to the RS-232C output terminal and the daisy chain of connected monitors that follows.
Fixed IP addresses are automatically allocated.
If the IP address is a duplicate with a network device other than a monitor, individually change the IP address.

INPUT SELECT
Select the input mode to be used in PC D-Sub input terminal, PC/AV DVI-D input terminal, PC/AV HDMI input terminal and PC RGB/AV component input terminals.
For D-SUB, select SET after selecting the input mode, and then press [MENU].
D-SUB and BNC cannot be set to AV COMPONENT at the same time.
If D-SUB is set to AV VIDEO, the AV VIDEO input terminal cannot be used for BNC.

AUDIO SELECT
Selects the terminal used to input audio signals in each input mode.

INPUT SIGNAL (PC D-SUB/PC RGB)
If a computer connected to the PC D-sub/PC RGB input terminal outputs any of the following resolutions, make a selection from the following options.
480 LINES .......... AUTO, 640x480 or 848x480
768 LINES .......... AUTO, 1024x768, 1280x768, or 1360x768
1050 LINES ......... 1400x1050 or 1680x1050
ZOOM2 SPECIAL SETTING (See page 28.)

SCAN MODE (AV input)
Sets the scan mode used for AV mode input.
MODE1 ............... Over-scan display
MODE2 ............... Under-scan display
MODE3 ............... Under-scan display when the input signal is 1080i/p. Otherwise, over-scan display
* Even when MODE1 is selected, under-scan display is used when the input signal is 1080p and the screen size is Dot by Dot.

POWER MANAGEMENT
POWER MANAGEMENT determines whether or not to switch modes from no signal to the input signal standby mode.

COLOR SYSTEM (AV S-VIDEO/AV VIDEO)
Select the color system of the AV equipment which is connected to AV S-video and AV video input terminal. (AUTO / PAL / PAL-60 / SECAM / NTSC3.58 / NTSC4.43)
When AUTO is selected, the color system is automatically set according to the input signal.

Option

DATE/TIME SETTING
Set the date and time. Press or to select the date and time, and press or to change the numerical values.
Set the date in “Day/Month/Year” order.
Set the time on a 24-hour basis. (Factory default)

DATE/TIME FORMAT
Sets the date/time display format.
DATE ..................MM/DD/YYYY
DD/MM/YYYY
YYYY/MM/DD
(YYYY: Year, MM: Month, DD: Day)
TIME ..................Select 12- or 24-hour time.

SCHEDULE (See page 29.)
You can turn the power on/off and change the screen brightness at a specified time.

COPY SETTING VALUE
When the monitor has been connected to multiple monitors by RS-232C, the settings in the monitor can be copied to the monitor connected to the RS-232C output terminal and to the daisy chain of connected monitors that follows.
Selects the settings to copy with COPY SETTING VALUE TARGET.
“PICTURE” ONLY ..... Copies the PICTURE menu settings.*
ALL .................. Copies all the settings.*
Select the ID No. of the monitor that you would like copy to with COPY TO ID No., then select COPY and press [MENU].
If you select ALL, settings will be copied to all monitors.
When you would like to confirm the ID No. that is set to the monitor, select ID No. DISPLAY and press [MENU]. The ID No. will be displayed on the screen.
* Certain setting details such as ANALOG GAIN, ANALOG OFFSET, and DISPLAY COLOR PATTERN cannot be copied.

LOGO SCREEN
Sets whether or not to display the logo screen.
Menu Items

AUDI OUTPUT (RCA)
Sets the volume of sound output from the audio output terminals.
When set to VARIABLE 2, sound will not be output from the built-in speaker or the external speaker terminal.
VARIABLE1 ...... You can adjust the volume using VOLUME.
VARIABLE2 ...... You can adjust the volume using VOLUME.
FIXED ................. Fixes the sounds.

AUDI LEVEL (STEREO MINI)
Selects the maximum audio input level of the audio input terminal.

SELF ADJUST
On a PC D-SUB/PC RGB screen, specify whether to perform screen adjustment automatically or not. When ON is selected, the screen is automatically adjusted when its resolution is 800 x 600 or higher and the timing of input signals changes. “ADJUSTING” appears on the screen during the adjustment. For images with black edges, etc., depending on the signal, adjustment may not be possible. In this case select OFF. (Perform manual adjustment of the screen.)

AUTO INPUT CHANGE
Specify whether to change inputs automatically. When ON is selected and no signal is present in the selected input mode, AUTO INPUT CHANGE automatically changes the selected mode to another mode where a video signal is present. When video signals exist in multiple input modes, the switching priority is as follows:
PC D-SUB, PC HDMI, AV HDMI, AV COMPONENT and AV VIDEO

When the PN-ZB01 (optional) is attached:
PC DVI-D, PC HDMI, PC D-SUB, PC RGB, AV DVI-D, AV HDMI, AV COMPONENT, AV S-VIDEO and AV VIDEO
(Input mode switching may take 15 seconds or more, depending on the connected equipment. Input signals may not be detected properly and a priority may change, depending on the connected equipment or video signals.)

TOUCH PANEL MODE (PC input)
When the resolution is 1920 x 1080, setting this to ON improves touch panel tracking.
When two screens are displayed, or when V-POS or V-SIZE is adjusted on the SCREEN menu, the screen may become distorted. In this vent, set to OFF.

PIP/PbyP

PIP MODES
Sets the display method.
OFF ............ Displays one screen.
PIP ............. Displays a sub screen inside a main screen.
PbyP ........... Displays a main screen and a sub screen in a line.
PbyP2 ........ Displays a main screen which measures 1280 pixels in the longest direction and a sub screen in a line.

PIP SIZE
Sets the size of the sub screen in PIP mode.

PIP H-POS
Adjusts the horizontal position of the sub screen in PIP mode.

PIP V-POS
Adjusts the vertical position of the sub screen in PIP mode.

PIP BLEND
In PIP mode, use this menu item to display the sub screen transparently.

PIP SOURCE
Selects the input signal of the sub screen in PIP, PbyP, or PbyP2 mode.

SOUND CHANGE
Sets the sound which is output in PIP, PbyP, or PbyP2 mode.
If the main screen is displayed as a full screen by the AUTO OFF function, the sound for the main screen is output even when the sound for the sub screen is specified.

MAIN POS
Sets the position of the main screen in PbyP or PbyP2 mode.
PbyP2 POS
Sets the position of the sub screen in PbyP2 mode.

AUTO OFF
Sets the display method when no signals for the sub screen are input in PIP, PbyP, or PbyP2 mode.

TIPS
• When WHITE BALANCE is set to THRU, BLACK LEVEL, CONTRAST, TINT, COLORS, RGB INPUT RANGE, GAMMA and COPY TO USER cannot be set.
• If COLOR MODE is set to sRGB, the following items cannot be set.
WHITE BALANCE, PRESET, USER, COPY TO USER, and GAMMA
• When the COLOR MODE is set to VIVID, GAMMA can not be adjusted.
• STANDBY MODE cannot be set to LOW POWER when SCHEDULE is effective or when OFF is selected for LED in FUNCTION.
• When displaying the color pattern, it is possible to adjust certain items of the PICTURE menu. Non-adjustable items cannot be selected. Audio input from the HDMI input terminal is also not output.
**Dual screen display**

You can display the screens of the PC input signal and AV input signal simultaneously.
Set this function with "PIP MODES" in the PIP/PbyP menu.

<table>
<thead>
<tr>
<th>PIP</th>
<th>Main screen</th>
<th>Sub screen</th>
<th>A sub screen is displayed inside a main screen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PbyP</td>
<td>Main screen</td>
<td>Sub screen</td>
<td>A main screen and a sub screen are displayed in a line.</td>
</tr>
<tr>
<td>PbyP2</td>
<td>Main screen</td>
<td>Sub screen</td>
<td>Displays a main screen which measures 1280 pixels in the longest direction and a sub screen in a line.</td>
</tr>
</tbody>
</table>

* The currently selected input signal is displayed on the main screen.
* You cannot simultaneously display the screens of signals of the same type, such as two types of PC input signals or two types of AV input signals.
* The dual screen display cannot be used with the combination of PC DVI-D and AV HDMI or of AV DVI-D and PC HDMI.

**TIPS**

- You might infringe on a copyright of the author which is protected by copyright law when you display the images of the computer screen and television/VCR simultaneously for profit-making or to show the image to the public.
- The screen size for dual-screen display is the same as the screen size for single-screen display. The Dot by Dot screen is displayed in NORMAL size except when it is set as the PIP main screen.
- When dual-screen display is selected, the AUTO INPUT CHANGE function is disabled.
- When dual-screen display is selected, the INPUT SELECT options cannot be set.
- When an interlaced signal (1080i, 480i, video, S-Video) is input to the sub screen, horizontal lines may flicker. If this happens, display the image on the main screen.

---

**ZOOM2 SPECIAL SETTING**

If you connect a laptop computer with any of the following screen resolutions and black bands appear around the screen, set ZOOM2 SPECIAL SETTING of INPUT SIGNAL on the OPTION menu to ON and then select ZOOM2 in the SIZE setting.
This displays the area inside the black band.

<table>
<thead>
<tr>
<th>Laptop computer resolution</th>
<th>Corresponding signal*1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1280x800</td>
<td>1280x1024, 1280x960, 1400x1050*2</td>
</tr>
<tr>
<td>1280x600</td>
<td>1280x720</td>
</tr>
<tr>
<td>1024x600</td>
<td>1024x768</td>
</tr>
</tbody>
</table>

*1: This setting is effective only when the screen resolution, including the black band, is one of the resolutions listed above.
*2: Use the automatic screen adjustment.
**SCHEDULE**

You can set the time to switch the monitor on and off. Set this function with “SCHEDULE” in the OPTION menu. (See page 26.)

1. Press \(\uparrow\) or \(\downarrow\) to select the SCHEDULE number, and press \(\rightarrow\).
2. Set the SCHEDULE. (See the description below.)
   Press \(\uparrow\) or \(\downarrow\) to select items, and press \(\leftarrow\) or \(\rightarrow\) to change the setting.
3. Press \(\text{MENU}\).
   SCHEDULE becomes effective.

1. \(\uparrow\): SCHEDULE effective
   \(\downarrow\): SCHEDULE not effective
2. **POWER**
   ON: Switches the monitor on at the specified time.
   OFF: Switches the monitor off at the specified time and puts the monitor in standby mode.
3. **DAY OF THE WEEK**
   Specifies the day of the week to execute the SCHEDULE.
   0: ONLY ONCE
   - Executes the SCHEDULE once on the specified day.
   - Specify the day of the week to execute the SCHEDULE.
   1: EVERY WEEK
   - Executes the SCHEDULE on the specified day of the week every week. Specify the day of the week to execute the SCHEDULE.
   - Periodic setting such as “Monday through Friday” is also possible.
   2: EVERY DAY
   - Executes the SCHEDULE every day regardless of the day of the week.
4. **TIME**
   Specifies the time to execute the SCHEDULE.
   Set the time on a 24-hour basis. (Factory default)
   Can be entered as 12-hour time using the TIME setting in DATE/TIME FORMAT.
5. **INPUT**
   Specifies the input mode at power-on. When not specifying, the screen at the previous power-off appears.
   Input modes displayed on DVI, HDMI, BNC and D-SUB depend on INPUT SELECT settings.
6. **BRIGHT**
   Sets the brightness when changing the screen brightness at a specified time.

**Caution**
- Do not switch off the main power after setting the SCHEDULE.
- Specify the correct date and time. (See page 26.)
- SCHEDULE does not function unless the date and time are specified.
- Check regularly that the set date and time are correct.
- When STANDBY MODE is LOW POWER, SCHEDULE cannot be set.
- When a temperature abnormality occurs and the backlight brightness is reduced, the brightness is not changed even if a schedule set to BRIGHT is executed.

**TIPS**
- Up to 8 SCHEDULE items can be registered.
- Setting the SCHEDULE flashes the power LED alternately in red and orange in standby mode.
- A SCHEDULE that has a large number has precedence over that of a small number when schedules overlap.
- If D-SUB of INPUT SELECT on the OPTION menu is set to AV VIDEO, the input mode will switch to AV VIDEO (D-SUB) regardless if set to D-SUB or VIDEO.
**ADVANCED items (AV input) (See page 24 for additional Menu item details.)**

**FLESH TONE**
Adjust the hue control.

**3D-NR**
Reduce the noise of playback images on video. Setting a higher level reduces more noise. However, it may cause blurring on an image.

**MPEG-NR**
Reduce block noise caused by digital compression.

**3D-Y/C (AV VIDEO)**
Specify whether to perform 3-dimension Y/C separation. If dot interference or cross-color is occurring in fast-motion scenes, selecting “OFF” may improve the image quality.

**C.M.S.-HUE**
Adjusts color tone with 6 colors of R (red), Y (yellow), G (green), C (cyan), B (blue), and M (magenta).

**C.M.S.-SATURATION**
Adjusts color vividness with 6 colors of R (red), Y (yellow), G (green), C (cyan), B (blue), and M (magenta).

**C.M.S.-VALUE**
Adjusts color brightness with 6 colors of R (red), Y (yellow), G (green), C (cyan), B (blue), and M (magenta).

**TIPS**
- When FLESH TONE is set to LOW or HIGH, C.M.S.-HUE/-SATURATION/-VALUE cannot be set.

---

**Adjustments for PC screen display**

**Automatic adjustment**
When you use the PC D-sub input terminal or PC RGB input terminals to display a PC screen for the first time, or when you change the setting of the PC, use the automatic screen adjustment.

1. Switch the input to PC D-SUB or to PC RGB and display the adjustment pattern. (See the description below.)
2. Press MENU and use or to display the SCREEN menu.
3. Press and select “AUTO”.
4. Press .
   The automatic adjustment is complete in several seconds.
5. Press twice to close the menu screen.

**TIPS**
- If the screen cannot be adjusted properly with one automatic adjustment, repeat the automatic adjustment two or three times. Try manual adjustment if necessary.

**Screen display for adjustment**
Before making adjustments in the SCREEN menu or PICTURE menu, display an image to brighten the entire screen. If you are using a Windows PC, use the adjustment pattern on the supplied CD-ROM.

**Opening the adjustment pattern**
The following example is performed in Windows 7.

1. Load the supplied CD-ROM into the computer’s CD-ROM drive.
2. Open [CD Drive] in [Computer].
   In Windows XP, open [CD Drive] in [My Computer].
   The adjustment pattern will appear.
   Adjust the screen automatically or manually.

4. When adjustment is finished, press the [Esc] on the computer’s keyboard to quit the adjustment program.
5. Eject the CD-ROM from the CD-ROM drive.

**TIPS**
- If the display mode on the computer you are using is 65,000 colors, the color levels in the color pattern may appear differently or grayscale may appear to be colored. (This is due to the specifications of the input signal and is not a malfunction.)
You can return the settings to their factory-preset values and restrict operations.

1. Hold \[SIZE\] down until “F” appears in the upper left corner of the screen.
2. While “F” appears, press \[\], \[\], \[\], \[\], \[\] in that order.

3. Select and set the items.

**ALL RESET**
- Resets the settings to the factory default settings.
- Press \[\], select ALL RESET, and then press \[\].
- After initialization, turn the main power switch off and then back on.

**ADJUSTMENT LOCK**
- You can disable operations on the monitor and the remote control unit that use buttons.
- OFF ... Enables operation.
- ON 1 ... Disables all operations other than turning power on/off and FUNCTION.
- ON 2 ... Only the FUNCTION operation is enabled.
- Disables all operations other than FUNCTION (not even power on/off).

**ADJUSTMENT LOCK TARGET**
- Sets the target to prohibit operation of with ADJUSTMENT LOCK.
- REMOTE CONTROL ...... Prohibits remote control operation
- MONITOR BUTTONS ... Prohibits monitor button operation
- BOTH ......................... Prohibits remote control and monitor button operation

**OSD DISPLAY**
- Shows/hides the menu, modes, and messages.
- The FUNCTION screen cannot be hidden.
- ON 1 ............... Shows all menus, modes, and messages.
- ON 2 ............... Hides messages automatically displayed by the display. Shows messages during operation.
- OFF .............. Hides all menus, modes, and messages.

**LED**
- Specifies whether to light the power LED.
- OFF cannot be selected when STANDBY MODE is LOW POWER.

**TEMPERATURE ALERT**
- Selects the notification method for an abnormal temperature.
- OFF .............. Do not notify about an abnormal temperature.
- OSD & LED .......... When an abnormal temperature is detected, the power LED flashes in red and green alternately and the screen displays a message: TEMPERATURE.

**STATUS ALERT**
- Selects the notification method for a hardware error.
- OFF .............. Do not notify about the error.
- OSD & LED .......... When a hardware error is detected, the power LED flashes in red and the screen displays a message: STATUS [xxxx].

**POWER BUTTON**
- Normally, leave this setting as MONITOR.
- When using an optional part, if instruction appears, change the setting accordingly.

**CONTROLLER INPUT**
- Normally, you do not need to change this setting.
- When using an optional part, if instruction appears, change the setting accordingly.

4. Press \[\] to return to the normal screen.

**TIPS**
- When both abnormal temperature and hardware error are detected, the hardware error notification overrides.
- If TEMPERATURE ALERT or STATUS ALERT is set to OSD&LED, alert messages will appear even if the OSD DISPLAY is set to ON 2 or OFF.
Controlling the Monitor with a PC (RS-232C)

You can control this monitor from a PC via RS-232C (COM port) on the PC. You can also connect multiple monitors via a daisy chain by using a PC. By assigning ID numbers to each monitor (see page 33), you can make input mode selection/adjustment or can check the status of a specific monitor.

Precautions when the PN-ZB01 (optional) is attached
- To control the monitor via RS-232C, set RS-232C/LAN SELECT to RS-232C.
- You cannot use RS-232C and LAN control simultaneously.

PC connection

One-to-one connection with a PC
Connect with RS-232 straight cable between the PC’s COM port (RS-232C connector) and the RS-232C input terminal on the monitor.

Daisy chain connection… Advanced operation
Connect with RS-232 straight cable between the PC’s COM port (RS-232C connector) and the RS-232C input terminal on the first monitor. Next, connect RS-232 straight cable to the first monitor’s RS-232C output terminal and to the second monitor’s RS-232C input terminal. Connect in the same way to the third and subsequent monitors. Up to 25 monitors can be connected. (Depending on the length of the cable used and the surrounding environment.)

Communication conditions
Set the RS-232C communication settings on the PC to match the monitor’s communication settings as follows:

<table>
<thead>
<tr>
<th>Baud rate</th>
<th>Stop bit</th>
<th>Data length</th>
<th>Flow control</th>
<th>Parity bit</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>1 bit</td>
<td>8 bits</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

* Set to the same baud rate as the BAUD RATE setting of SETUP menu. (Initial setting: 38400 bps)
* When connecting multiple monitors in a daisy chain, set all monitors to the same BAUD RATE.

Communication procedure

Command format
When a command is sent from the PC to the monitor, the monitor operates according to the received command and sends a response message to the PC.

Command field
(4 prescribed alphanumerical characters)

Parameter field
(4 character string comprised of: 0-9, +, -, space, ?)

Example: VOLM0030
VOLM __ __ 30

* Be sure to input 4 characters for the parameter. Pad with spaces (“__”) if necessary.
(* __ * is a return code (0DH, 0AH or 0D1H))
Wrong : VOLM30
Right : VOLM __ __ 30

When inputting a negative value, specify a numerical value in three digits.
Example: AUTR-005

Do not use spaces for MPOS, DATE, and SC01 through SC08. Specify parameters using a specified number of characters.
Example: MPOS010097

If a command has “R” listed for “DIRECTION” in the “RS-232C command table” on page 36, the current value can be returned by using “?” as the parameter.

Example:
VOLM ? ? ? ? ← From PC to monitor (How much is current volume setting?).
30 ← From monitor to PC (Current volume setting: 30).

* If an ID number (see page 33) has been assigned (For example, ID number = 1).
VOLM __ __ __ ? ← From PC to monitor.
30 __ 001 ← From monitor to PC.
Controlling the Monitor with a PC (RS-232C)

■Response code format

When a command has been executed correctly

```
O   K   J
```

Return code (0DH, 0AH)

A response is returned after a command is executed.
* If an ID number has been assigned

```
O   K   SPC   0   0   1
```

ID number of responding monitor

When a command has not been executed

```
E   R   R   J
```

Return code (0DH, 0AH)
* If an ID number has been assigned

```
E   R   R   SPC   0   0   1
```

ID number

TIPS

• “ERR” is returned when there is no relevant command or when the command cannot be used in the current state of the monitor.
• If communication has not been established for reasons such as a bad connection between the PC and monitor, nothing is returned (not even ERR).
• “ERR” may be returned when a command cannot be received correctly due to interference from the surrounding environment.

Please ensure that the system or software retries the command if this occurs.
• If no monitor has been assigned the designated ID number (e.g. if the command IDS0002 is used, but no monitor with ID number: 2 is found), no response is returned.

If execution of the command is taking some time

```
W   A   I   T   J
```

Return code (0DH, 0AH)

When the following commands are used, “WAIT” is returned. In this case, a value will be returned if you wait a while. Do not send any command during this period.
No ID number is attached to WAIT response.
• Commands which return WAIT:
  1. When repeater control is used
  2. When an IDS0 or IDLK command is used
  3. When one of the following commands is used: RSET, INPS, ASNC, WIDE, PXSL, POWR, AGIN, MWIN, MWIP, MWPP

When control via RS-232C is locked (to prevent use) using the operation lock function (see page 31)

```
L   O   C   K   E   D   J
```

Return code (0DH, 0AH)

When RS-232C/LAN SELECT is set to LAN

```
U   N   S   E   L   E   C   T   E   D   J
```

Return code (0DH, 0AH)

■Communication interval

• After OK or ERR is returned, you must send the following commands.
To set a timeout for the command response, specify 10 seconds or longer.
When connecting multiple monitors in a daisy chain, set the timeout to at least the product of the monitor’s position from the computer multiplied by 10 seconds. (Example) 3rd monitor from computer: 30 seconds or longer.
• Provide an interval of 100 ms or more between the command response and the transmission of the next command.

<table>
<thead>
<tr>
<th>Command</th>
<th>Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLM0020</td>
<td>OK</td>
</tr>
<tr>
<td>Interval of 100 ms or more</td>
<td></td>
</tr>
<tr>
<td>INPS0001</td>
<td>WAIT</td>
</tr>
<tr>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

TIPS

• When executing ALL RESET, set the timeout period to 30 seconds or longer.
• When turning the power on while the POWER ON DELAY function is in use, set the timeout period to the POWER ON DELAY period + 10 seconds or longer.

Advanced operation

This section explains commands for daisy chain connection. The basic communication procedure is the same as in the “One-to-one connection with a PC” section.

■ID numbers

You can assign a unique ID number to each monitor (see page 26). This allows you to control a particular monitor in a daisy chain of monitors.
You can assign ID numbers either from the menu screen or from the PC using RS-232 cable.

[Example]

![Diagram of ID numbers](image)

If monitors are connected as shown above, you can execute commands like “Set the volume of the monitor with ID 4 to 20”.

When controlling monitors linked in a daisy chain by designating ID numbers, you should basically avoid any duplication of ID numbers.
ID numbers do not have to be assigned in ascending order starting from the PC. They can also be connected as shown below.

[Example]

![Diagram of ID numbers](image)
### Commands for ID control

The command examples shown on this page assume the following connection and ID number set up.

![Diagram of monitor setup]

**IDST** ....... A monitor receiving this command sets its own ID number in the parameter field.

**Example:**

```
IDST0001
OK _,_ 001 ← The ID number of this monitor is set to 1.
```

**TIPS**

You can automatically assign ID numbers by using the IDST command with the Repeater control (see "Repeater control" on page 35).

For example, using the command "IDST001+" automatically sets the ID numbers, as shown below.

![Diagram of IDST001+ command]

- **Example**

```
IDST001 + ← ID setting command with repeater control
WAIT
OK _,_ 001 ← "OK" response from ID number: 1
OK _,_ 002 ← "OK" response from ID number: 2
OK _,_ 003 ← "OK" response from ID number: 3
OK _,_ 004 ← "OK" response from ID number: 4 (End)
```

**IDSL** ....... The parameter of this command sets the ID number of the monitor. The monitor is subject to the next command.

**Example:**

```
IDSL0002 ← The next command is for the monitor with ID number: 2.
WAIT ← Searching for monitor with ID number: 2
OK _,_ 002 ← Found monitor with ID number: 2
VOLM0030 ← Sets volume of monitor with ID number: 2 to 30.*
WAIT ← Processing
OK _,_ 002
VOLM0020 ← Sets volume of monitor with ID number: 2 to 20.*
WAIT
OK _,_ 002
IDLK0000 ← Canceling fixed ID number setting
WAIT ← Canceling IDLK
OK _,_ 002 ← Cancelation complete
VOLM0010
OK _,_ 001 ← The volume of the monitor with ID number: 1 (the one directly connected to the PC) is set to 10. (IDLK is canceled.)
```

* The IDLK command remains effective until it is canceled, or power is shut off.

**IDCK** ....... Provides screen display of the ID number currently assigned to a monitor, and the ID number currently set for IDLK (if any).

**Example:**

```
(After executing IDLK0002)
IDCK0000 ← (Parameter has no meaning.)
ID : 001 IDLK : 002 ← Returned response. The ID number is also displayed on the monitor screen.
IDCK000 + ← Repeater control. (If a command is used with repeater control, ID designation using IDSL or IDLK is canceled.)
WAIT
ID : 001 IDLK : 000
ID : 002 IDLK : 000
ID : 003 IDLK : 000
ID : 004 IDLK : 000
```

*The IDLK command is effective only once, for the immediately succeeding command.*
Controlling the Monitor with a PC (RS-232C)

■ Repeater control
This system has a function to allow setting of multiple monitors connected in a daisy chain using a single command. This function is called repeater control. You can use Repeater control function without assigning ID numbers.

Example: Set 1 Set 2 Set 3 Set 4

* If monitors are connected as shown above, you can execute a command like "Set all monitors' input settings to PC D-SUB".

■ Repeater control command
Repeater control is achieved by setting the FOURTH CHARACTER of the parameter to "+".

Example:

VOLM030 + ← Sets volume of all monitors to 30.

In repeater control, responses are returned by all the connected monitors. If you want to determine that a value has been returned by a specific set, assign ID numbers to each monitor in advance. When some monitors do not return their responses, the probable cause is that the monitors could not receive the command or command processing is not complete. Do not send a new command.

Example: (When 4 monitors are connected, and assigned ID numbers: 1 through 4)

VOLM030 +
WAIT
OK __ 001
OK __ 002
OK __ 003
OK __ 004 ← If 4 monitors are connected in a chain, reliable operation can be ensured by sending a new command only after a reply has been returned by 4th (last) monitor.

Repeater control can also be used for reading settings.

Example:

VOLM ? ? ? +
WAIT
10 __ 001
20 __ 002
30 __ 003
30 __ 004

Volume settings for all monitors are returned.

Setting of the GAMMA user data

■ To transfer the GAMMA user data
Use the user data transfer commands (UGRW, UGGW and UGBW). For each of the R, G and B colors, divide the total 512 pieces of user data into 16 blocks, and transfer 32 pieces of data with each command.

Example: To transfer the data of block 1 (0 to 31 levels) of red (R) data

UGRW01000000010002 ... 0031C0

One piece of data consists of 4 digits.

Command Block number 32 pieces of data Checksum field

Example: When 4 monitors are connected, and assigned ID numbers: 1 through 4

VOLM030 +
WAIT
OK 001
OK 002
OK 003
OK 004

If 4 monitors are connected in a chain, reliable operation can be ensured by sending a new command only after a reply has been returned by 4th (last) monitor.

■ Saving the GAMMA user data
Use the user data save command (UGSV) to save the transferred user data in the monitor. If the data is not saved, it will be cleared when:

• The main power switch is off
• STANDBY MODE is LOW POWER and the monitor enters standby mode

■ Activating the GAMMA user data
To activate the transferred user data, select USER for GAMMA of the PICTURE menu, or send the corresponding RS-232C command.

■ Checking the GAMMA user data
Use the user data read commands (UGRR, UGGR and UGBR) to return 512 pieces of user data for each of the R, G and B colors. Divide the data into 16 blocks and return 32 pieces of data with each command. The value to be returned is not the value stored in the monitor, but the value in the temporary memory for display. (These values are the same when the user data save command (UGSV) above has been sent.)

TIPS

• The user data is not initialized by RESET of the PICTURE menu. To initialize the user data, use ALL RESET of the FUNCTION menu.

The GAMMA user data initialize command (UGRS) allows the initialization of the user data only.

TIPS

• If repeater control is used during ID designation (IDSL, IDLK), the ID designation is canceled.
RS-232C command table

How to read the command table

Command: Command field (See page 32.)
Direction: W When the “Parameter” is set in the parameter field (see page 32), the command functions as described under “Control/Response Contents”.
R The returned value indicated under “Reply” can be obtained by setting “????”, “,,,”, “?” or “???*” (repeater control) in the parameter field (see page 32).

Parameter: Parameter field (See page 32.)
Reply: Response (Returned value)

*1: “●” indicates a command which can be used in power standby mode regardless of the STANDBY MODE setting.
“○” indicates a command which cannot be used in power standby mode when STANDBY MODE is set to LOW POWER.
“–” indicates a command which cannot be used in power standby mode regardless of the STANDBY MODE setting.

*2: PN-ZB01 (optional) limitations
(A) When PN-ZB01 (optional) is not attached, (B) When PN-ZB01 (optional) is attached.
○: The command can be used.
-: Error (ERR)

Power control/Input mode selection

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<th>Direction</th>
<th>Parameter</th>
<th>Reply</th>
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<th>*2</th>
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<td></td>
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<td>○</td>
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<tr>
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<td></td>
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<td></td>
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<td>-</td>
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<td>3</td>
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<td>○</td>
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<td>4</td>
<td></td>
<td>“ERR” when other than PC D-SUB is selected for D-SUB of INPUT SELECT.</td>
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<td>○</td>
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<td></td>
<td>5</td>
<td></td>
<td>AV COMPONENT (BNC) / AV COMPONENT (D-SUB)</td>
<td>○</td>
<td>○</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td>“ERR” when other than PC RGB is selected for BNC of INPUT SELECT, and when other than AV COMPONENT is selected for D-SUB of INPUT SELECT.</td>
<td>○</td>
<td>○</td>
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<tr>
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<td>7</td>
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<td>●</td>
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<td>8</td>
<td></td>
<td>“ERR” when AV COMPONENT is selected for BNC of INPUT SELECT.</td>
<td>○</td>
<td>○</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td>AV HDMI</td>
<td>○</td>
<td>○</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
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<td>“ERR” when PC HDMI is selected for HDMI of INPUT SELECT.</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>R</td>
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<td>1</td>
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<td>PC DVI-D</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td>PC D-SUB</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
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<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
<td>AV VIDEO</td>
<td>○</td>
<td>○</td>
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<td></td>
<td>6</td>
<td></td>
<td>PC RGB</td>
<td>●</td>
<td>○</td>
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<td>7</td>
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<td>AV DVI-D</td>
<td>○</td>
<td>○</td>
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<td></td>
<td></td>
<td>8</td>
<td></td>
<td>AV S-VIDEO</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td></td>
<td>AV HDMI</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td>PC HDMI</td>
<td>○</td>
<td>○</td>
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### SCREEN menu

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<td>W</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CLOCK</td>
<td>CLOCK</td>
<td>WR</td>
<td>0-1200</td>
<td>0-1200</td>
<td></td>
</tr>
<tr>
<td>PHASE</td>
<td>PHASE</td>
<td>WR</td>
<td>0-63</td>
<td>0-63</td>
<td></td>
</tr>
<tr>
<td>POSITIONING</td>
<td>POSITION OF THE LONGEST DIRECTION</td>
<td>HPOS</td>
<td>WR</td>
<td>0-100</td>
<td>0-100</td>
</tr>
<tr>
<td></td>
<td>POSITION OF THE SHORTEST DIRECTION</td>
<td>VPOS</td>
<td>WR</td>
<td>0-100</td>
<td>0-100</td>
</tr>
<tr>
<td>SIZE</td>
<td>POSITION OF THE LONGEST DIRECTION</td>
<td>HSIZ</td>
<td>WR</td>
<td>0-100</td>
<td>0-100</td>
</tr>
<tr>
<td></td>
<td>POSITION OF THE SHORTEST DIRECTION</td>
<td>VSIZ</td>
<td>WR</td>
<td>0-100</td>
<td>0-100</td>
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<tr>
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<td>LONGEST DIRECTION RESOLUTION</td>
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<td>300-1920</td>
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<td></td>
<td>SHORTEST DIRECTION RESOLUTION</td>
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<td>1</td>
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# PICTURE menu

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<th>Parameter</th>
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<th>Control/Response contents</th>
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</thead>
<tbody>
<tr>
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<td>AGIN</td>
<td>W</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>ANALOG GAIN</td>
<td>ANGA</td>
<td>W</td>
<td>0-127</td>
<td>0-127</td>
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<tr>
<td>ANALOG OFFSET</td>
<td>ANOF</td>
<td>W</td>
<td>0-127</td>
<td>0-127</td>
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<tr>
<td>CONTRAST</td>
<td>CONT</td>
<td>WR</td>
<td>0-60</td>
<td>0-60</td>
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<td>SHRP</td>
<td>WR</td>
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<tr>
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<td>WR</td>
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<td>0-2</td>
<td>0: AUTO, 1: FULL, 2: LIMITED</td>
</tr>
<tr>
<td>RGB INPUT RANGE (PC HDMI)</td>
<td>PHDR</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>0: AUTO, 1: FULL, 2: LIMITED</td>
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<tr>
<td>RGB INPUT RANGE (AV DVI)</td>
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<td>1-2</td>
<td>1: FULL, 2: LIMITED</td>
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<tr>
<td>RGB INPUT RANGE (PC DVI)</td>
<td>PDVR</td>
<td>WR</td>
<td>1-2</td>
<td>1-2</td>
<td>1: FULL, 2: LIMITED</td>
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<tr>
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<td>1-2</td>
<td>1-2</td>
<td>1: FULL, 2: LIMITED</td>
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<td>FLES</td>
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<td>TDNR</td>
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<tr>
<td>C.M.S.-SATURATION</td>
<td>CMSR</td>
<td>WR</td>
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<tr>
<td>C.M.S.-VALUE</td>
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<td>COPY TO USER</td>
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*1 A/B

*2 A/B
### AUDIO menu

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<td>-10-10</td>
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<tr>
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### SETUP menu

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<td>OSDH</td>
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<td>MONAURAL AUDIO</td>
<td>MOND</td>
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<td>LANGUAGE</td>
<td>LANG</td>
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<td>FRANÇAIS</td>
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<td>ITALIANO</td>
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<td></td>
<td>4</td>
<td>4</td>
<td>ESPANOL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
<td>ПУСКОВИ</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>6</td>
<td>日本語</td>
</tr>
<tr>
<td>POWER ON DELAY</td>
<td>PWCD</td>
<td>WR</td>
<td>0</td>
<td>0</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1-60</td>
<td>1-60</td>
<td></td>
</tr>
<tr>
<td>OPERATION MODE</td>
<td>FNCM</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>MODE1, MODE2</td>
</tr>
<tr>
<td>STANDBY MODE</td>
<td>STBM</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>STANDARD, LOW POWER</td>
</tr>
<tr>
<td>OFF IP NO OPERATION</td>
<td>ATGF</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>HOT PLUG CONTROL (DVI)</td>
<td>HPCT</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>HOT PLUG CONTROL (HDMI)</td>
<td>HPCH</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>RS-232C/LAN SELECT</td>
<td>CTLS</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>RS-232C 1 : LAN</td>
</tr>
<tr>
<td>ID NUMBER</td>
<td>DST</td>
<td>W</td>
<td>0-255</td>
<td>0-255</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDSL</td>
<td>W</td>
<td>1-255</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDLK</td>
<td>W</td>
<td>1-255</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IDCK</td>
<td>W</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ID : xxx</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>IDLK : yyy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID CHECK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAUD RATE</td>
<td>BAUD</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>9600bps, 19200bps, 38400bps</td>
</tr>
<tr>
<td>SPEAKER SELECT</td>
<td>SPSL</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>Internal speaker, External speaker</td>
</tr>
<tr>
<td>HDMI/AUTO VIEW</td>
<td>HDNV</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>OFF, ON</td>
</tr>
<tr>
<td>SETTING COPY MODE</td>
<td>CPMD</td>
<td>WR</td>
<td>1-225</td>
<td>1-225</td>
<td>Copy to all monitors.</td>
</tr>
<tr>
<td>SETTING COPY TARGET</td>
<td>CPTG</td>
<td>WR</td>
<td>0</td>
<td>0</td>
<td>Copies the PICTURE menu settings.</td>
</tr>
<tr>
<td>LOGO SCREEN</td>
<td>BTSC</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>OFF, ON</td>
</tr>
</tbody>
</table>
### Controlling the Monitor with a PC (RS-232C)

#### OPTION menu

<table>
<thead>
<tr>
<th>Function</th>
<th>Command</th>
<th>Direction</th>
<th>Parameter</th>
<th>Reply</th>
<th>Control/Response contents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATE/TIME SETTING</strong></td>
<td><strong>DATE</strong></td>
<td>WR</td>
<td><strong>AABBCCDDEE</strong></td>
<td><strong>AABBCCDDEE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DATE DISPLAY FORMAT</strong></td>
<td><strong>DTFT</strong></td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td><strong>0: YYYY/MM/DD, 1: MM/DD/YYYY, 2: DD/MM/YYYY</strong></td>
</tr>
</tbody>
</table>

**YYYY:** Year, **MM:** Month, **DD:** Day

**TIME DISPLAY FORMAT** | **TMFT** | WR | 0-1 | 0-1 | **0: 24-HOUR TIME, 1: 12-HOUR TIME** |

**SCHEDULE** | SC01-SC08 | WR | **ABCDDEFFGHH** | **ABCDDEFFGHH** | Schedule of a specified number |

**A:** Schedule | **0:** Not effective, **1:** Effective |
**B:** Power | **0:** OFF, **1:** ON |
**C:** Day of the week | **0:** Only once, **1:** Every week, **2:** Every day |
**D:** Day of the week | **0:** Sunday, **1:** Monday through **6:** Saturday, **9:** Not exist |
**E:** Day of the week | **0:** Sunday, **1:** Monday through **6:** Saturday, **9:** Not exist |
**F:** Time | **00-23** |
**G:** Minute | **00-59** |

**H:** Input | **0:** Not specified, **1:** PC DVI-D/AV DVI-D, **2:** PC D-SUB, **3:** PC RGB/AV COMPONENT, **4:** AV VIDEO, **5:** AV S-VIDEO, **6:** PC HDMI/AV HDMI |

"ERR" when LOW POWER is selected for STANDBY MODE.

**SCHEDULE BRIGHTNESS** | SB01-SB08 | WR | 0-31 | 0-31 | Screen brightness to change |

**INPUT SELECT** | **DVI** | DVI | SL | WR | 0-1 | **0:** PC DVI-D, **1:** AV DVI-D |
**BNC** | BNC | WR | 0-1 | 0-1 | **0:** PC RGB, **1:** AV COMPONENT |
**D-SUB** | DLS | WR | 0-2 | 0-2 | **0:** PC D-SUB, **1:** AV COMPONENT, **2:** AV VIDEO |
**HDMI** | HDSL | WR | 0-1 | 0-1 | **0:** PC HDMI, **1:** AV HDMI |

**AUDIO SELECT** | **PC DVI-D** | ASP | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |
**PC HDMI** | ASHP | WR | 0-1 | 0-1 | **0:** HDMI, **1:** AUDIO(STEREO MINI) |
**PC D-SUB** | ASAP | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI) |
**PC RGB** | ASCP | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |
**AV DVI-D** | ASDA | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |
**AV HDMI** | ASHA | WR | 0-1 | 0-1 | **0:** HDMI, **1:** AUDIO(STEREO MINI) |
**AV COMPONENT (BNC)** | ASC2 | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |
**AV S-VIDEO** | ASSA | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |
**AV VIDEO** | ASVA | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |
**AV VIDEO (D-SUB)** | ASV2 | WR | 1-3 | 1-3 | **1:** AUDIO(STEREO MINI), **2:** AUDIO1(RCA), **3:** AUDIO2(RCA) |

**INPUT RESOLUTION (PC)** | **RESOLUTION CHECK PXCK** | PX | N | - | Returns current resolution in the form of hhh, vvv. |
**RESOLUTION CHECK (PC D-SUB, PC RGB)** | PXSL | WR | 1 | 1 | **768(1360 x 768)** |
| | | | 2 | 2 | **768(1280 x 768)** |
| | | | 3 | 3 | **768(1024 x 768)** |
| | | | 5 | 5 | **480(848 x 480)** |
| | | | 6 | 6 | **480(640 x 480)** |
| | | | 7 | 7 | **1050(1080 x 1050)** |
| | | | 8 | 8 | **1050(1400 x 1050)** |
| | | | 9 | 9 | **768(AUTO)** |
| | | | 10 | 10 | **480(AUTO)** |

**INPUT RESOLUTION (AV)** | **RESOLUTION CHECK RESO** | N | - | - | Returns current resolution in the form of hhh, vvv. |
| **SCAN MODE** | **SCAN** | WR | 0-2 | 0-2 | **0:** MODE1, **1:** MODE2, **2:** MODE3 (When the input mode is AV) |
| **ZOOM2 SPECIAL SETTING (PC D-SUB, PC RGB)** | **ZSP** | WR | 0-1 | 0-1 | **0:** OFF, **1:** ON |
| **POWER MANAGEMENT (PC)** | **PMNG** | WR | 0-1 | 0-1 | **0:** OFF, **1:** ON |
| **POWER MANAGEMENT (AV)** | **PMAV** | WR | 0-1 | 0-1 | **0:** OFF, **1:** ON |
| **COLOR SYSTEM** | **CSYS** | WR | 0-5 | 0-5 | **0:** AUTO, **1:** PAL, **2:** PAL-60, **3:** SECAM, **4:** NTSC3.58, **5:** NTSC4.43 |
| **AUDIO OUTPUT (RCA)** | **AOUT** | WR | 0-2 | 0-2 | **0:** VARIABLE1, **1:** FIXED, **2:** VARIABLE2 |
| **AUDIO LEVEL (STEREO MINI)** | **AVP** | WR | 0-1 | 0-1 | **0:** 1.0Vrms, **1:** 0.5Vrms |
| **SELF ADJUST** | **AADJ** | WR | 0-1 | 0-1 | **0:** OFF, **1:** ON |
| **AUTO INPUT CHANGE** | **AINC** | WR | 0-1 | 0-1 | **0:** OFF, **1:** ON |
| **TOUCH PANEL MODE** | **GMOP** | WR | 0-1 | 0-1 | **0:** OFF, **1:** ON (When the input mode is PC) |
Controlling the Monitor with a PC (RS-232C)

**PIP/PbyP menu**

<table>
<thead>
<tr>
<th>Function</th>
<th>Command</th>
<th>Direction</th>
<th>Parameter</th>
<th>Reply</th>
<th>Control/Response contents <em>1</em></th>
<th><em>2</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>PIP MODES</td>
<td>MWZN</td>
<td>WR</td>
<td>0-3</td>
<td>0-3</td>
<td>0: OFF, 1: PIP, 2: PbyP, 3: PbyP2</td>
<td></td>
</tr>
<tr>
<td>PIP SIZE</td>
<td>MPSZ</td>
<td>WR</td>
<td>1-64</td>
<td></td>
<td>0-100</td>
<td></td>
</tr>
<tr>
<td>PIP POS</td>
<td>MHPS</td>
<td>W</td>
<td>0-100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIP POS</td>
<td>MVPS</td>
<td>W</td>
<td>0-100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIP POS LD+SD BATCH</td>
<td>MPOS</td>
<td>W 0-100, 0-100</td>
<td>Specify the position in MPOSxxxxyy format. (xxx: Longer side, yyy: Shorter side position)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIP BLEND</td>
<td>MWBL</td>
<td>WR</td>
<td>0-15</td>
<td>0-15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOUND CHANGE</td>
<td>MWAD</td>
<td>WR</td>
<td>1-2</td>
<td>1-2</td>
<td>1: MAIN, 2: SUB</td>
<td></td>
</tr>
<tr>
<td>MAIN POS</td>
<td>MWPP</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>0: POS1, 1: POS2</td>
<td></td>
</tr>
<tr>
<td>PbyP2 POS</td>
<td>MW2P</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>0: POS1, 1: POS2, 2: POS3</td>
<td></td>
</tr>
<tr>
<td>AUTO OFF</td>
<td>MDPF</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>0: MANUAL, 1: AUTO</td>
<td></td>
</tr>
</tbody>
</table>

**Initialization/Functional Restriction Setting (FUNCTION) menu**

<table>
<thead>
<tr>
<th>Function</th>
<th>Command</th>
<th>Direction</th>
<th>Parameter</th>
<th>Reply</th>
<th>Control/Response contents <em>1</em></th>
<th><em>2</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL RESET</td>
<td>RSET</td>
<td>W</td>
<td>0</td>
<td></td>
<td>0: ALL RESET</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0-1</td>
<td></td>
<td>0-1: ALL RESET 1, ALL RESET 2</td>
<td></td>
</tr>
<tr>
<td>ADJUSTMENT LOCK</td>
<td></td>
<td>ALCK</td>
<td>W</td>
<td>0-2</td>
<td>0-2: OFF, 1: ON1, 2: ON2</td>
<td></td>
</tr>
<tr>
<td>ADJUSTMENT LOCK TARGET</td>
<td></td>
<td>ALGT</td>
<td>WR</td>
<td>0-2</td>
<td>0-2: REMOTE CONTROL, 1: MONITOR BUTTONS, 2: BOTH</td>
<td></td>
</tr>
<tr>
<td>DSD DISPLAY</td>
<td>LGSD</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>0-2: OFF, 1: OFF, 2: ON2</td>
<td></td>
</tr>
<tr>
<td>LED</td>
<td>OFLD</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>0-1: ON, 1: OFF &quot;ERR&quot; when LOW POWER is selected for STANDBY MODE.</td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE ALERT</td>
<td>TALT</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>0-2: OFF, 1: DSD &amp; LED, 2: LED</td>
<td></td>
</tr>
<tr>
<td>STATUS ALERT</td>
<td>SALT</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>0-2: OFF, 1: DSD &amp; LED, 2: LED</td>
<td></td>
</tr>
<tr>
<td>POWER BUTTON</td>
<td>PBTN</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>0-1: MONITOR, 1: CONTROLLER</td>
<td></td>
</tr>
<tr>
<td>CONTROLLER INPUT</td>
<td>PCIP</td>
<td>WR</td>
<td>0-2</td>
<td>0-2</td>
<td>0-2: D-SUB, 1: HDMI (&quot;ERR&quot; when MONITOR is selected for POWER BUTTON.) 2: DVI-D (&quot;ERR&quot; when MONITOR is selected for POWER BUTTON.)</td>
<td></td>
</tr>
</tbody>
</table>
### Controlling the Monitor with a PC (RS-232C)

#### Others

<table>
<thead>
<tr>
<th>Function</th>
<th>Command</th>
<th>Direction</th>
<th>Parameter</th>
<th>Reply</th>
<th>Control/Response contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREEN SIZE (PC)</td>
<td>WIDE</td>
<td>WR</td>
<td>1-5</td>
<td>1-5</td>
<td>1: WIDE, 2: NORMAL, 3: Dot by Dot, 4: ZOOM1, 5: ZOOM2</td>
</tr>
<tr>
<td>SCREEN SIZE (AV)</td>
<td>WIDE</td>
<td>WR</td>
<td>1-5</td>
<td>1-5</td>
<td>1: WIDE, 2: ZOOM1, 3: ZOOM2, 4: NORMAL, 5: Dot by Dot</td>
</tr>
<tr>
<td>VOLUME</td>
<td>VOLM</td>
<td>WR</td>
<td>0-31</td>
<td>0-31</td>
<td></td>
</tr>
<tr>
<td>MUTE</td>
<td>MUTE</td>
<td>WR</td>
<td>0-1</td>
<td>0-1</td>
<td>0: OFF, 1: ON</td>
</tr>
<tr>
<td>INFORMATION MODEL</td>
<td>INF1</td>
<td>R</td>
<td>Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SERIAL NO</td>
<td>SRNO</td>
<td>R</td>
<td>Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRIGHT</td>
<td>VLMP</td>
<td>WR</td>
<td>0-31</td>
<td>0-31</td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE SENSOR</td>
<td>DSTA</td>
<td>R</td>
<td>Value</td>
<td></td>
<td>Internal temperature normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 Internal temperature abnormal (Standby mode)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 Internal temperature abnormal (Temperature is normal now, but it was abnormal during operation.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 Internal temperature abnormal (Brightness of the backlight decreases.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 Temperature sensor abnormal</td>
</tr>
<tr>
<td>TEMPERATURE ACQUISITION</td>
<td>ERTT</td>
<td>R</td>
<td>Value</td>
<td></td>
<td>Temperature at temperature sensors 1 through 3 are returned in the following forms: [Sensor 1], [Sensor 2], [Sensor 3] Indicates a temperature sensor abnormality when &quot;126&quot; is returned.</td>
</tr>
<tr>
<td>CAUSE OF LAST STANDBY MODE</td>
<td>STCA</td>
<td>W</td>
<td>0</td>
<td></td>
<td>0 No detectable error has occurred</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R</td>
<td></td>
<td></td>
<td>1 Standby mode by POWER button</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>2 Main power off by the main power switch</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>3 Standby mode by RS-232C or LAN</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>4 Waiting mode by No Signal</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>5 Standby mode by abnormal temperature</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>6 Standby mode by SCHEDULE setting</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>7 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>12 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>15 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>16 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>17 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>18 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>19 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20 Standby mode by OFF IF NO OPERATION setting</td>
</tr>
</tbody>
</table>

#### Commands for setting of the GAMMA user data

<table>
<thead>
<tr>
<th>Function</th>
<th>Command</th>
<th>Direction</th>
<th>Parameter</th>
<th>Reply</th>
<th>Control/Response contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED GAMMA DATA TRANSFER</td>
<td>UGRW</td>
<td>W</td>
<td>aaxx</td>
<td>cc</td>
<td>aa: Block number</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(xxxx: 32 pieces)</td>
<td></td>
<td>xxxx: 32 pieces of user data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>aa: 0-1-16</td>
<td></td>
<td>cc: Checksum (ASCII data) of the block number and user data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>xxx: 0000-1023</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cc: 0-FF</td>
<td></td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>GREEN GAMMA DATA TRANSFER</td>
<td>UGGW</td>
<td>W</td>
<td>(xxxx: 32 pieces)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>aa: 01-16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>xxx: 0000-1023</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>cc: 0-FF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE GAMMA DATA TRANSFER</td>
<td>UGBW</td>
<td>W</td>
<td>(xxxx: 32 pieces)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>aa: 01-16</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>xxx: 0000-1023</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>cc: 0-FF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RED GAMMA DATA READ</td>
<td>UGRR</td>
<td>W</td>
<td>1-16</td>
<td>xxx: User data of 32 pieces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(xxxx: 32 pieces)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cc: 0-FF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN GAMMA DATA READ</td>
<td>UGGR</td>
<td>W</td>
<td>1-16</td>
<td>xxx: User data of 32 pieces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(xxxx: 32 pieces)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>cc: 0-FF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE GAMMA DATA READ</td>
<td>UGBR</td>
<td>W</td>
<td>1-16</td>
<td>xxx: User data of 32 pieces</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(xxxx: 32 pieces)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cc: 0-FF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USER DATA INITIALIZE</td>
<td>UGRS</td>
<td>W</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USER DATA SAVE</td>
<td>UGSV</td>
<td>W</td>
<td>0</td>
<td></td>
<td>Save the user data in the monitor.</td>
</tr>
</tbody>
</table>
Controlling the Monitor with a PC (LAN)

When the PN-ZB01 (optional) is attached, your monitor can be connected to a LAN allowing you to control it from a PC on the LAN. You can also configure the monitor to send e-mail notification when it has a problem. The connection requires a commercially available LAN cable (UTP cable, Category 5, straight through).

Settings to connect to a LAN
Set the monitor's IP address and subnet mask to match the settings of your LAN. These settings can be made on either the monitor or a PC connected to the monitor. The settings depend on the configuration of your LAN. Ask your LAN administrator for details.

■ To set on the monitor
Set RS-232C/LAN SELECT on the SETUP menu to LAN, and then set the LAN SETUP options. (See page 26.) After setting each item, select SET and press **MENU**.

**DHCP CLIENT**
If your LAN has a DHCP server and you wish to obtain an address automatically, change this setting to ON. To set the address manually, set this to OFF.

**IP ADDRESS**
If the DHCP CLIENT is set to OFF, specify an IP address. Press **** or **** to select items, and press **** or **** to change the values.

**SUBNET MASK**
If the DHCP CLIENT is set to OFF, specify the subnet mask. Press **** or **** to select items, and press **** or **** to change the values.

**DEFAULT GATEWAY**
If the DHCP CLIENT is set to OFF, specify the default gateway. If you are not using a gateway, specify “0.0.0.0”. Press **** or **** to select items, and press **** or **** to change the values.

**RESET**
Resets the values of the LAN settings to the factory preset values. Select ON and then press **MENU**.

**TIPS**
- When the IP address is set manually, the IP addresses of the monitor connected to the RS-232C output terminal and the daisy chain of connected monitors that follows can be assigned automatically. (See page 26.)

Initializing personal information
- When the PN-ZB01 (optional) is attached, personal information such as e-mail addresses can be registered in the monitor. Before transferring or disposing of the monitor, initialize all settings by selecting ALL RESET 1. (See page 31.) Note that ALL RESET 2 will not initialize e-mail addresses and other settings.

**TIPS**
- You must assign an IP address to the monitor by following the procedures in “Settings to connect to a LAN”. (See the description on the right.)
- Your PC must be installed with Internet Explorer (version 7.0 or later).
- To control the monitor via LAN, set RS-232C/LAN SELECT to LAN. (See page 26.)
- You cannot use RS-232C and LAN control simultaneously.

DHCP CLIENT
- If your LAN has a DHCP server and you wish to obtain an address automatically, change this setting to ON. To set the address manually, set this to OFF.

IP ADDRESS
- If the DHCP CLIENT is set to OFF, specify an IP address. Press **** or **** to select items, and press **** or **** to change the values.

SUBNET MASK
- If the DHCP CLIENT is set to OFF, specify the subnet mask. Press **** or **** to select items, and press **** or **** to change the values.

DEFAULT GATEWAY
- If the DHCP CLIENT is set to OFF, specify the default gateway. If you are not using a gateway, specify “0.0.0.0”. Press **** or **** to select items, and press **** or **** to change the values.

RESET
- Resets the values of the LAN settings to the factory preset values. Select ON and then press **MENU**.
To set from a PC

When the monitor is connected to a PC, LAN settings can be configured via PC.

Set up process
(1) Connect your monitor to a PC
(2) Specify the PC's IP address
(3) Configure the monitor's LAN settings

(1) Connecting your monitor to a PC
Connect a commercially available crossover LAN cable (UPT cable, Category 5) to the LAN port on the PC and this monitor.

(2) Specifying the PC's IP address
To configure the monitor's LAN settings, you must temporarily change the settings on the PC. This explanation is based on Windows 7.
1. Log on to the PC with an administrator account.
2. Click [Start], and then click “Control Panel”.
3. Click “View network status and tasks” in “Network and Internet”.
   In “Classic View”, click “Network and Sharing Center”.
4. Click “Local Area Connection” and then “Properties”.
5. Click “Internet Protocol Version 4 (TCP/IPv4)” and then “Properties”.
6. Make a note of the current IP address, subnet mask, and default gateway settings. Make sure you write this information now as you will be changing the IP address, subnet mask, and default gateway settings back to these settings afterwards.
7. Temporarily change the IP address and subnet mask. To access the monitor as it is shipped from the factory, set as follows.
   • IP Address: 192.168.150.1
   • Subnet Mask: 255.255.255.0
   • Default Gateway: (leave blank)

8. Click [OK] and then reboot the PC.

TIPS
• This monitor is factory preset as shown below. (When DHCP CLIENT is set to OFF)
   IP Address : 192.168.150.2
   Subnet Mask : 255.255.255.0
   Default Gateway : 0.0.0.0

(3) Configuring the monitor’s LAN settings
Access the monitor using Internet Explorer.

Controlling the monitor
1. Turn the power ON to the monitor.
2. Set RS-232C/LAN SELECT on the SETUP menu to LAN.
3. Set DHCP CLIENT to OFF in LAN SETUP on the SETUP menu.

PC operation

You will be prompted to enter a user name and password.
5. Leave the user name and password boxes blank and click [OK].
6. Click on "LAN SETUP" under NETWORK.

7. Specify the "DHCP CLIENT", "IP ADDRESS", etc.

- **DHCP CLIENT**
  
  If your LAN has a DHCP server and you wish to obtain an address automatically, change this setting to "ON". To set the address manually, set this to "OFF".

- **IP ADDRESS**
  
  If the DHCP CLIENT is set to "OFF", specify an IP address.

- **SUBNET MASK**
  
  If the DHCP CLIENT is set to "OFF", specify the subnet mask.

- **DEFAULT GATEWAY**
  
  If the DHCP CLIENT is set to "OFF", specify the default gateway. If you are not using a default gateway, specify "0.0.0.0".

8. When the setting is changed, click [Apply].
9. Check the message and click [OK].
10. Exit Internet Explorer.
11. Restore the PC's IP address jotted in Step 6, "(2) Specifying the PC's IP address".
12. Connect the monitor and the PC to the LAN.

**Caution**

- Wait 10 seconds after clicking [OK] before proceeding.
- When operating using the remote control unit or similar, click [Refresh].

**TIPS**

- When the IP address is set manually, the IP addresses of the monitor connected to the RS-232C output terminal and the daisy chain of connected monitors that follows can be assigned automatically. (See page 26.)

---

**Controlling with a PC**

**Basic operation**

You use Internet Explorer on a PC on the LAN to control the monitor.

1. Launch Internet Explorer on the PC.
2. In the "Address" box, type "http://" followed by your monitor's IP address followed by "/", then press the Enter key. You can confirm the IP address with the DISPLAY function.

   ![IP address确认](http://192.168.150.2/)

When prompted to enter a user name and password, type the user name and password that you specified in the security settings (see page 47), and click [OK]. If you did not make any security settings, leave the spaces blank and click on [OK].
3. You can check, control, and change the monitor's status and settings by clicking the menu items on the left side of the screen.

**TIPS**

- See pages 46 to 50 for details on each setting.
- If you click [Refresh] before the screen finishes updating the current display, the "Server Busy Error" will appear. Wait for a moment before operating your monitor again.
- You cannot operate the monitor while it is warming up.
- If "DHCP CLIENT" is set to "ON", press 

  ![DISPLA](remote_control.png)

  on the remote control unit two times and then check the monitor's IP address.
Controlling the Monitor with a PC (LAN)

**INFORMATION**
Information about this monitor appears.

**CONTROL**
You can control the operations corresponding to the buttons (POWER INPUT SIZE) on the remote control unit. (See page 21.)

**ADJUSTMENT**
You can adjust these settings which are also available on the monitor’s menu.
- SCREEN (See page 24.)
- PICTURE (See page 24.)
- PICTURE (ADVANCED) (See page 30.)
- AUDIO (See page 25.)
- SETUP (See page 25.)
- OPTION (See page 26.)
- SCHEDULE (See page 29.)
- PIP/PbYpP (See page 27.)
- FUNCTION (See page 31.)

**TIPS**
- After changing DISPLAY COLOR PATTERN to OFF, click [Refresh] to correctly retrieve the status of the monitor.

**TIPS**
- In standby mode, Power ON is the operation available.
This screen allows you to set the settings necessary when the monitor is connected to a LAN.

**DHCP CLIENT**
If your LAN has a DHCP server and you wish to obtain an address automatically, change this setting to “ON”. To set the address manually, set this to “OFF”.

**IP ADDRESS**
If the DHCP CLIENT is set to “OFF”, specify an IP address.

**SUBNET MASK**
If the DHCP CLIENT is set to “OFF”, specify the subnet mask.

**DEFAULT GATEWAY**
If the DHCP CLIENT is set to “OFF”, specify the default gateway.

**DNS SERVER**
Specify the DNS server address. If you are not using a DNS server, specify “0.0.0.0”.

**RESET**
Clicking [Execute] returns all of the LAN SETUP settings to the factory-preset values except for the DNS SERVER setting.

**TIPS**
- When the IP address is set manually, the IP addresses of the monitor connected to the RS-232C output terminal and the daisy chain of connected monitors that follows can be assigned automatically. (See page 26.)

---

This screen allows you to specify the security-related settings.

**USER NAME / PASSWORD**
Sets up a user name and password to restrict access to this monitor. After entering a user name and password, click [Apply].

**ACCEPT IP ADDRESS**
You can limit access to this monitor by registering IP addresses of PCs that should have access. To limit access, specify the option “From only specific IP addresses”. Otherwise, to allow access from any PC, specify “All IP Addresses”.

**IP ADDRESS 1 to 3**
If “ACCEPT IP ADDRESS” is set to “From only specific IP addresses”, enter the IP addresses that you want to allow.

**TIPS**
- The USER NAME and PASSWORD can be up to 8 alphanumeric characters or symbols.
- To cancel the user name and/or password after it has been set, make the box empty and click [Apply].
Controlling the Monitor with a PC (LAN)

**NETWORK (GENERAL)**
This screen allows you to specify the general LAN settings.

**MONITOR NAME**
Specify a name for this monitor as it should appear on the Internet Explorer screen.

**AUTO LOGOUT TIME**
Specify the time (in minutes) to elapse before automatically disconnecting this monitor from the network. Specify in minutes from 1 to 65535. A value of ‘0’ will disable this function.

**DATA PORT**
Specify the TCP port number to use for exchanging data with the monitor. Specify a value from 1025 to 65535.

**SEARCH PORT**
Specify the port number to use when searching for this monitor. Specify a value from 1025 to 65535.

**INSTALLATION INFORMATION (NAME/LOCATION)**
Specify the information to display for this monitor in the Internet Explorer window.

**TIPS**
- The MONITOR NAME can be up to 16 alphanumeric characters or symbols.
- Enter up to 50 characters in the NAME field in the INSTALLATION INFORMATION.
- Enter up to 100 characters in the LOCATION field in the INSTALLATION INFORMATION.

**MAIL (ORIGINATOR)**
This screen allows you to configure the e-mail sent periodically or when the monitor has an error. The settings depend on the configuration of your LAN. Ask your LAN administrator for details.

**SMTP SERVER**
Specify the SMTP server address for sending e-mail. * When using a domain name, make sure to specify the DNS SERVER as well. (See page 47.)

**ORIGINATOR E-MAIL ADDRESS**
Specify the e-mail address for this monitor. This address becomes the e-mail address of the originator.

**ORIGINATOR NAME**
Specify the name for the originator. This name appears in the “Originator Name” field of the e-mail.

**AUTHENTICATION**
Specify the authentication method to use when sending e-mail.

**POP SERVER**
If the “AUTHENTICATION” method is “POP before SMTP”, specify the POP server address.

**ACCOUNT NAME / PASSWORD**
If the “AUTHENTICATION” method is “POP before SMTP”, specify the account name and password to connect to the POP server.

**TIPS**
- You can enter up to 64 alphanumeric characters or symbols for the ORIGINATOR E-MAIL ADDRESS, ORIGINATOR NAME, ACCOUNT NAME, and PASSWORD.
- The SMTP SERVER and POP SERVER can be up to 64 characters.
  The following characters can be used: a-z, A-Z, 0-9, . , .
MAIL (RECIPIENT)

This screen allows you to specify the recipients of the e-mail sent periodically or when the monitor has an error.

RECIPIENT E-MAIL ADDRESSES

Specify the e-mail addresses to send error notification e-mail to.

CONDITION

Specify the conditions to send mails.

When you check PERIODICAL, specify the date and time to send the mails in the PERIODICAL setting.

CONFIRMATION

Sends test e-mail.

This allows you to confirm that the e-mail settings are configured properly.

Attach the log file to a TEMPERATURE/HARDWARE error e-mail.

When this option is checked, a log is added to the mail which notifies a temperature or status error.

TIPS

- The RECIPIENT E-MAIL ADDRESSES can be up to 64 alphanumeric characters or symbols.

MAIL (PERIODICAL)

When PERIODICAL for CONDITION of MAIL (RECIPIENT) is checked, set the date and time to send the mail.

DAY OF THE WEEK

Specify the day of the week to send the periodical mails.

TIME

Specify the time of the day to send the periodical mails.

Caution

- Do not turn off the main power when you set to send the periodical mails.
- Specify the correct date and time. (See page 26.) If the date and time settings are incorrect, the periodical mail is not sent properly.
- Regularly confirm that the specified date and time is correct.
- When LOW POWER is selected for STANDBY MODE, periodical mails will not be sent in standby mode.
Controlling the Monitor with a PC (LAN)

SNMP
You can configure settings related to SNMP.

SNMP SETTING
Set whether to enable or disable SNMP.

VERSION
Set the version of the SNMP to be supported.

COMMUNITY NAME 1 to 3
Set the name of the community required for the access.

USER 1 to 3
Set the user name, password, authentication method and other options required for access.

TRAP SETTING
Set whether to enable or disable the trap function. When this function is enabled, a trap will be sent when the monitor is turned on.

TRAP SETTING OF AUTHENTICATION ERROR
Set whether the trap function sends a notification when authentication fails.

TRAP ADDRESS & PORT
Set the destination address and port number of the notification sent by the trap function.

Caution

- After you set SNMP, click [Switch the main power of monitor off and on now.] or turn off the monitor and then turn it on again with the main power switch. When the monitor restarts, wait about 30 seconds and then start the next operation.

- If the IP address is changed while the SNMP function is operational, turn off the monitor and then turn it on again with the main power switch.

Tips

- Depending on the SNMP settings, a short delay may occur before the SNMP is usable. (About 2 minutes)
- Up to 16 alphanumeric letters and symbols can be used for the community name, user name and password.

SERVICE & SUPPORT
(URL INFORMATION)
You can display a specific URL in the URL INFORMATION field on the INFORMATION screen when an error occurs in the monitor. (See page 46.)

URL INFORMATION
Enter the URL to display on the INFORMATION screen when an error occurs on the monitor. Up to 64 alphanumeric characters or symbols can be used.

CONDITION
Specify the condition to display the URL.

CONFIRMATION
The home page of the specified URL is displayed. You can check whether the URL you entered is correct.

Tips

- It is also possible to specify the message text, such as the name of a contact or a telephone number, to be displayed instead of the linked URL.
Troubleshooting

If you are experiencing any problem with your display, before calling for service, please review the following troubleshooting tips.

There is no picture or sound.
• Is the power cord disconnected? (See page 14.)
• Is the main power switch off? (See page 16.)
• Is the monitor in standby mode (the power LED illuminating in orange)? (See page 16.)
• Make sure correct input mode is selected. (See page 21.)
• If any external equipment is connected, make sure the equipment is operating (playing back).

Remote control does not work.
• Are the batteries inserted with polarity (+,-) aligned? (See page 15.)
• Are the batteries exhausted?
• Point the remote control unit toward the monitor’s remote control sensor. (See page 15.)
• Is the menu display hidden or is operation disabled? (See page 31.)

Sound from left and right speakers is reversed. Sound is heard from only one side.
• Are audio cables connected properly? (See pages 12 to 13.)
• Make sure audio cables for external speakers are connected properly: left and right cables may be reversed or one of the two cables may not be connected. (See page 13.)
• Check the setting of BALANCE for AUDIO menu. (See page 25.)

There is a picture but no sound.
• Is the sound muted?
• Make sure the volume is not set to minimum.
• Are audio cables connected properly?
• Is the setting of AUDIO SELECT on the OPTION menu correct? (See page 26.)
• Is the setting of SPEAKER SELECT on the SETUP menu correct? (See page 26.)

Unstable video.
• The signal may be incompatible.
• Try the automatic screen adjustment when the PC D-sub input terminal or PC RGB input terminals are used.
• If the top and bottom of the image are not horizontally aligned, set TOUCH PANEL MODE on the OPTION menu to OFF.

The video from the PC/AV HDMI input terminal does not appear properly.
• Is the setting for HDMI of INPUT SELECT on the OPTION menu correct? (See page 26.)
• Is the HDMI cable HDMI standard compliant? The monitor will not work with cables that are not standard compliant.
• Is the input signal compatible with this monitor? (See page 55.)

The video from the PC/AV DVI-D input terminal does not appear properly.
• Is the setting for DVI of INPUT SELECT on the OPTION menu correct? (See page 26.)
• Is the input signal compatible with this monitor? (See page 55.)
• Turn off the power to the connected equipment and then turn the power on again.
• If the monitors are connected in a daisy chain, turn off the power to all the monitors connected in a daisy chain and then turn the power on again.

The video from PC D-SUB, PC RGB, AV COMPONENT, or AV VIDEO does not appear correctly.
• Is the setting for BNC or D-SUB of INPUT SELECT on the OPTION menu correct? (See page 26.)
• Is the input signal compatible with this monitor? (See page 55.)

Control buttons do not work.
There is no picture.
• Load noises from outside may be interfering with normal operation. Turn off the power and turn it on after waiting at least 5 seconds, and then check the operation.

The input mode changes automatically.
• When the AUTO INPUT CHANGE is ON and no signal is present in a selected input mode, the AUTO INPUT CHANGE automatically changes the selected mode to a mode where a video signal is present.
• The input mode may change in the following cases:
  - When a computer is in standby mode.
  - When video play is stopped with a playback device.

The touch panel does not respond.
• Is the USB cable connected properly? (Touch Panel Driver Operation Manual)
• Has the touch panel driver been installed? (Touch Panel Driver Operation Manual)
• Has the pen tip of the touch pen become worn? Replace the pen tip. (See page 20.)
• Is the battery inserted in the wrong orientation (+, -) in the touch pen? (See page 18.)
• Is the touch pen battery exhausted?

The response of the touch screen is slow.
Some parts of the screen do not respond.
• Is the screen exposed to direct sunlight or other strong light? The touch panel uses infrared rays and thus may not operate correctly.
• Is there an obstacle between the infrared transmitter/receiver and the touch pen or your finger? An obstacle will prevent correct operation. If your fingers or a sleeve are too close to the screen, correct operation will not be possible.
• Is the infrared transmitter/receiver dirty? Gently wipe off any dirt with a soft cloth.
• If the touch panel is touched with a small tip less than about 3/16 inch (4 mm) x 3/16 inch (4 mm), the touch may not be detected by infrared and correct operation will not take place.
• When starting your computer or connecting the USB cable, do not touch the touch panel. If you touch the touch panel, this may be detected as an element failure in the infrared transmitter/receiver and incorrect operation will result.

Power LED flashes red.
“STATUS [xxxx]” appears in the corner of the screen.
• Hardware has a problem. Turn off the monitor and request repair from your SHARP dealer. (When STATUS ALERT is set to OSD & LED. This varies depending on the setting.)

The touch panel power LED lights red.
• Hardware has a problem. Turn off the monitor and request repair from your SHARP dealer.
When “AUTO DIMMING” is displayed.
• When the internal temperature of the monitor rises excessively, the brightness of the backlight automatically decreases in order to prevent a further temperature rise. If you attempt to use the brightness while the monitor is in this state, “AUTO DIMMING” is displayed and you cannot change the brightness.
• Remove the cause of the excessive temperature rise.

The monitor makes a cracking sound.
• You may occasionally hear a cracking sound from the monitor. This happens when the cabinet slightly expands and contracts according to change in temperature. This does not affect the monitor’s performance.

The Power LED is flashing in red and green alternately.
When “TEMPERATURE” is displayed in the corner of the screen.
• When the internal temperature of the monitor rises excessively, the brightness of the backlight decreases automatically in order to prevent high-temperature-related problems. When this occurs, “TEMPERATURE” is displayed on the screen and the Power LED flashes red and green alternately. (When TEMPERATURE ALERT is set to OSD & LED. This varies depending on the setting.)
• If the internal temperature rises further, the monitor automatically enters standby mode. (The Power LED continues flashing red and green alternately.)
• Remove the cause of the excessive temperature rise.
- If the monitor enters standby mode due to a rise in temperature, to return to normal display, turn the power switch off and then back on again. The monitor, however, will enter standby mode again if the cause of the temperature rise is not eliminated. (See page 8.)
- Check whether the monitor is placed at a location where a quick rise in temperature is likely. Internal temperature rises quickly if the vents on the monitor are blocked.
- Internal temperature rises quickly if dust accumulates inside the monitor or around the vents. Remove dust if possible. Ask SHARP dealer about removing internal dust.
## Product Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>PN-L702B</td>
</tr>
<tr>
<td><strong>LCD component</strong></td>
<td>70&quot; Class [69-1/2 inch (176.6cm) diagonal] TFT LCD</td>
</tr>
<tr>
<td><strong>Max. resolution</strong></td>
<td>(pixels) 1920 x 1080</td>
</tr>
<tr>
<td><strong>Max. colors</strong></td>
<td>Approx. 1.06 billion colors</td>
</tr>
<tr>
<td><strong>Pixel pitch</strong></td>
<td>0.802 mm (H) x 0.802 mm (V)</td>
</tr>
<tr>
<td><strong>Viewing angle</strong></td>
<td>160° right/left/up/down (contrast ratio ≥ 10)</td>
</tr>
<tr>
<td><strong>Screen active area</strong></td>
<td>inch (mm) 60-9/16 x 34-1/16 (1538.9 x 865.6)</td>
</tr>
<tr>
<td><strong>Computer input signal</strong></td>
<td>Digital (DVI 1.0 standard-compliant), Analog RGB (0.7 Vp-p) [75 Ω]</td>
</tr>
<tr>
<td><strong>Sync signal</strong></td>
<td>Horizontal/vertical separate (TTL: positive/negative), Sync-on-green, Composite sync (TTL: positive/negative)</td>
</tr>
<tr>
<td><strong>Video color system</strong></td>
<td>NTSC (3.58MHz)/NTSC (4.43MHz)/PAL/PAL-60/SECAM</td>
</tr>
<tr>
<td><strong>Plug and play</strong></td>
<td>VESA DDC2B</td>
</tr>
<tr>
<td><strong>Power management</strong></td>
<td>VESA DPMS, DVI DMPM</td>
</tr>
<tr>
<td><strong>Input terminals</strong></td>
<td>PC/AV Digital            HDMI x 1</td>
</tr>
<tr>
<td><strong>When PN-ZB01 (optional) is attached</strong></td>
<td>PC/AV Digital            HDMI x 1</td>
</tr>
<tr>
<td></td>
<td>PC Analog                Mini D-sub 15 pin, 3 rows x 1</td>
</tr>
<tr>
<td></td>
<td>Audio                    3.5 mm mini stereo jack x 1</td>
</tr>
<tr>
<td><strong>Serial (RS-232C)</strong></td>
<td>D-sub 9 pin x 1</td>
</tr>
<tr>
<td><strong>Output terminals</strong></td>
<td>Audio                    RCA pin (L/R) x 2</td>
</tr>
<tr>
<td><strong>When PN-ZB01 (optional) is attached</strong></td>
<td>Audio                    RCA pin (L/R) x 2</td>
</tr>
<tr>
<td></td>
<td>Serial (RS-232C)         D-sub 9 pin x 1</td>
</tr>
<tr>
<td><strong>LAN terminal</strong></td>
<td>10 BASE-T/100 BASE-TX</td>
</tr>
<tr>
<td><strong>Speaker output</strong></td>
<td>7 W + 7 W</td>
</tr>
<tr>
<td><strong>Touch Panel</strong></td>
<td>Detection method         Infrared blocking detection method</td>
</tr>
<tr>
<td></td>
<td>Detection area inch (mm) 60-9/16 x 34-1/16 (1538.9 x 865.6)</td>
</tr>
<tr>
<td></td>
<td>PC connector             USB (1.1 compliant)</td>
</tr>
<tr>
<td></td>
<td>Power supply             Supplied from USB</td>
</tr>
<tr>
<td></td>
<td>Touch pen                Ultrasonic communication method</td>
</tr>
<tr>
<td><strong>Power requirement</strong></td>
<td>AC 100 V - 240 V, 2.8 A, 50/60 Hz</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>41°F to 95°F (5°C to 35°C)</td>
</tr>
<tr>
<td><strong>Operating humidity</strong></td>
<td>20% to 80% (no condensation)</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>(Maximum / input signal waiting mode / standby mode) 235 W / 1.0 W / 1.0 W</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>240 W</td>
</tr>
<tr>
<td><strong>Dimensions (excluding protrusions)</strong></td>
<td>inch (mm) Approx. 64-7/8 (W) x 4-9/16 (D) x 38-11/16 (H) (1,648 x 116 x 982)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>lbs. (kg) Approx. 154.3 (70)</td>
</tr>
<tr>
<td><strong>Weight [PN-ZB01 (optional)]</strong></td>
<td>lbs. (kg) Approx. 1.102 (0.5)</td>
</tr>
</tbody>
</table>

*1 Cannot be used simultaneously.
*2 Does not support plug and play.
*3 Temperature condition may change when using the monitor together with the optional equipments recommended by SHARP. In such cases, please check the temperature condition specified by the optional equipments.
*4 In addition, check the requirements of the computer and other devices to be connected, and make sure that all requirements are satisfied.
*5 When AUTO INPUT CHANGE is set to OFF.
*6 When STANDBY MODE is set to STANDARD. When STANDBY MODE is set to LOW POWER: 0.5 W

As a part of our policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.
Specifications

**Dimensional Drawings**

Note that the values shown are approximate values.

![Dimensional Drawing]

When mounting the monitor, be sure to use a wall-mount bracket that complies with the VESA-compatible mounting method. SHARP recommends using M6 screws and tighten the screws. Note that screw hole depth of the monitor is 3/8 inch (10 mm). Loose mounting may cause the product to fall, resulting in serious personal injuries as well as damage to the product. The screw and hole should come together with over 5/16 inch (8 mm) length of thread. Use a bracket which has been approved for UL1678 standard, and which can endure at least 4 times or more the weight of the monitor.

**Power management**

This monitor conforms to VESA DPMS and DVI DMPM. Both your video card and computer must support the same standard in order for the monitor’s power management function to work.

<table>
<thead>
<tr>
<th>DPMS</th>
<th>Screen</th>
<th>Power consumption</th>
<th>Hsync</th>
<th>Vsync</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON STATE</td>
<td>Display</td>
<td>235 W*1</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>STANDBY</td>
<td>No display</td>
<td>1.0 W<em>1</em>2</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>SUSPEND</td>
<td>No display</td>
<td>No display</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>OFF STATE</td>
<td>No display</td>
<td>No display</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*1 When PN-ZB01 (optional) is not connected.
*2 When AUTO INPUT CHANGE is set to OFF.

**DDC (plug and play)**

The monitor supports the VESA DDC (Display Data Channel) standard. DDC is a signal standard for plug and play between monitors and computers. Information about resolution and other parameters is exchanged between the two. This function can be used if the computer supports DDC and it has been configured to detect plug-and-play monitors.

There are several types of DDC, depending on the communication method used. This monitor supports DDC2B.
## Compatible signal timing (PC)

<table>
<thead>
<tr>
<th>Screen resolution</th>
<th>Hsync</th>
<th>Vsync</th>
<th>Dot frequency</th>
<th>Digital</th>
<th>Analog (D-SUB/RGB*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESA 640 x 480</td>
<td>31.5kHz</td>
<td>60Hz</td>
<td>25.175MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>VESA 720 x 480</td>
<td>31.5kHz</td>
<td>72Hz</td>
<td>31.5MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>VESA 800 x 600</td>
<td>35.1kHz</td>
<td>56Hz</td>
<td>36.0MHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VESA 848 x 480</td>
<td>31.0kHz</td>
<td>60Hz</td>
<td>33.75MHz</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>VESA 1024 x 768</td>
<td>48.4kHz</td>
<td>60Hz</td>
<td>65.0MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1280 x 768</td>
<td>47.8kHz</td>
<td>60Hz</td>
<td>79.5MHz</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>Wide 1280 x 800</td>
<td>49.7kHz</td>
<td>60Hz</td>
<td>83.5MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1280 x 960</td>
<td>60.0kHz</td>
<td>60Hz</td>
<td>108.0MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1280 x 1024</td>
<td>64.0kHz</td>
<td>60Hz</td>
<td>108.0MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1360 x 768</td>
<td>80.0kHz</td>
<td>75Hz</td>
<td>135.0MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1400 x 1050</td>
<td>65.3kHz</td>
<td>60Hz</td>
<td>121.75MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1440 x 900</td>
<td>55.0kHz</td>
<td>60Hz</td>
<td>106.5MHz</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>Wide 1600 x 1200*1</td>
<td>75.0kHz</td>
<td>60Hz</td>
<td>162.0MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1680 x 1050</td>
<td>65.3kHz</td>
<td>60Hz</td>
<td>146.25MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide 1920 x 1200*1</td>
<td>74.0kHz</td>
<td>60Hz</td>
<td>154.0MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>US TEXT 720 x 400</td>
<td>31.5kHz</td>
<td>70Hz</td>
<td>28.3MHz</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sun 1024 x 768</td>
<td>48.3kHz</td>
<td>60Hz</td>
<td>64.13MHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sun 1152 x 900</td>
<td>53.6kHz</td>
<td>60Hz</td>
<td>70.4MHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sun 1280 x 1024</td>
<td>56.6kHz</td>
<td>70Hz</td>
<td>74.25MHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wide 1280 x 720</td>
<td>61.8kHz</td>
<td>66Hz</td>
<td>94.88MHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wide 1280 x 1050</td>
<td>71.8kHz</td>
<td>76.2Hz</td>
<td>108.23MHz</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wide 1600 x 1000</td>
<td>81.1kHz</td>
<td>76Hz</td>
<td>134.99MHz</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*1 Displays a reduced image, except in Dot by Dot. In Dot by Dot, the image will be cut down to panel size then displayed.

*2 Available when the PN-ZB01 (optional) is attached.

* All are compliant only with non-interlaced.

* Depending on the connected PC, images may not be displayed properly even if the compatible signal described above is input.

* The frequency values for the Sun are reference values.

## Compatible signal timing (AV)

<table>
<thead>
<tr>
<th>Screen resolution</th>
<th>Frequency</th>
<th>DVI-D*</th>
<th>HDMI</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920 × 1080p</td>
<td>24Hz</td>
<td>-</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>1920 × 1080i</td>
<td>50Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>60Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>1280 × 720p</td>
<td>50Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>60Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>720 × 576p</td>
<td>50Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>720 × 480p</td>
<td>59.94Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>60Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>640 × 480p(VGA)</td>
<td>59.94Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>60Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
</tr>
<tr>
<td>720(1440) × 576i</td>
<td>50Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>720(1440) × 480i</td>
<td>59.94Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>60Hz</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* Available when the PN-ZB01 (optional) is attached.
Specifications

PC/AV DVI-D input terminal pins
(DVI-D 24 pin)

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TMDS data 2-</td>
<td>13</td>
<td>N.C.</td>
</tr>
<tr>
<td>2</td>
<td>TMDS data 2+</td>
<td>14</td>
<td>+5V</td>
</tr>
<tr>
<td>3</td>
<td>TMDS data 2/4 shield</td>
<td>15</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>N.C.</td>
<td>16</td>
<td>Hot-plug detection</td>
</tr>
<tr>
<td>5</td>
<td>N.C.</td>
<td>17</td>
<td>TMDS data 0-</td>
</tr>
<tr>
<td>6</td>
<td>DDC clock</td>
<td>18</td>
<td>TMDS data 0+</td>
</tr>
<tr>
<td>7</td>
<td>DDC data</td>
<td>19</td>
<td>TMDS data 0/5 shield</td>
</tr>
<tr>
<td>8</td>
<td>N.C.</td>
<td>20</td>
<td>N.C.</td>
</tr>
<tr>
<td>9</td>
<td>TMDS data 1-</td>
<td>21</td>
<td>N.C.</td>
</tr>
<tr>
<td>10</td>
<td>TMDS data 1+</td>
<td>22</td>
<td>TMDS clock shield</td>
</tr>
<tr>
<td>11</td>
<td>TMDS data 1/3 shield</td>
<td>23</td>
<td>TMDS clock+</td>
</tr>
<tr>
<td>12</td>
<td>N.C.</td>
<td>24</td>
<td>TMDS clock-</td>
</tr>
</tbody>
</table>

PC D-sub input terminal pins
(Mini D-sub 15 pin)

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red video signal input</td>
</tr>
<tr>
<td>2</td>
<td>Green video signal input</td>
</tr>
<tr>
<td>3</td>
<td>Blue video signal input</td>
</tr>
<tr>
<td>4</td>
<td>N.C.</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td>N.C.</td>
</tr>
<tr>
<td>7</td>
<td>Transmitted data</td>
</tr>
<tr>
<td>8</td>
<td>Received data</td>
</tr>
<tr>
<td>9</td>
<td>GND</td>
</tr>
</tbody>
</table>

PC/AV DVI-D output terminal pins
(DVI-D 24 pin)

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TMDS data 2-</td>
<td>13</td>
<td>N.C.</td>
</tr>
<tr>
<td>2</td>
<td>TMDS data 2+</td>
<td>14</td>
<td>+5V</td>
</tr>
<tr>
<td>3</td>
<td>TMDS data 2/4 shield</td>
<td>15</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>N.C.</td>
<td>16</td>
<td>Hot-plug detection</td>
</tr>
<tr>
<td>5</td>
<td>N.C.</td>
<td>17</td>
<td>TMDS data 0-</td>
</tr>
<tr>
<td>6</td>
<td>DDC clock</td>
<td>18</td>
<td>TMDS data 0+</td>
</tr>
<tr>
<td>7</td>
<td>DDC data</td>
<td>19</td>
<td>TMDS data 0/5 shield</td>
</tr>
<tr>
<td>8</td>
<td>N.C.</td>
<td>20</td>
<td>N.C.</td>
</tr>
<tr>
<td>9</td>
<td>TMDS data 1-</td>
<td>21</td>
<td>N.C.</td>
</tr>
<tr>
<td>10</td>
<td>TMDS data 1+</td>
<td>22</td>
<td>TMDS clock shield</td>
</tr>
<tr>
<td>11</td>
<td>TMDS data 1/3 shield</td>
<td>23</td>
<td>TMDS clock+</td>
</tr>
<tr>
<td>12</td>
<td>N.C.</td>
<td>24</td>
<td>TMDS clock-</td>
</tr>
</tbody>
</table>

PC/AV HDMI input terminal pins
(HDMI™ Connector)

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TMDS data 2+</td>
<td>11</td>
<td>TMDS clock shield</td>
</tr>
<tr>
<td>2</td>
<td>TMDS data 2 shield</td>
<td>12</td>
<td>TMDS clock-</td>
</tr>
<tr>
<td>3</td>
<td>TMDS data 2-</td>
<td>13</td>
<td>CEC</td>
</tr>
<tr>
<td>4</td>
<td>TMDS data 1+</td>
<td>14</td>
<td>N.C.</td>
</tr>
<tr>
<td>5</td>
<td>TMDS data 1 shield</td>
<td>15</td>
<td>SCL</td>
</tr>
<tr>
<td>6</td>
<td>TMDS data 1-</td>
<td>16</td>
<td>SDA</td>
</tr>
<tr>
<td>7</td>
<td>TMDS data 0+</td>
<td>17</td>
<td>DDC/CEC GND</td>
</tr>
<tr>
<td>8</td>
<td>TMDS data 0 shield</td>
<td>18</td>
<td>+5V</td>
</tr>
<tr>
<td>9</td>
<td>TMDS data 0-</td>
<td>19</td>
<td>Hot-plug detection</td>
</tr>
</tbody>
</table>

RS-232C input terminal pins
(D-sub 9 pin)

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N.C.</td>
<td>6</td>
<td>N.C.</td>
</tr>
<tr>
<td>2</td>
<td>Transmitted data</td>
<td>7</td>
<td>N.C.</td>
</tr>
<tr>
<td>3</td>
<td>Received data</td>
<td>8</td>
<td>N.C.</td>
</tr>
<tr>
<td>4</td>
<td>N.C.</td>
<td>9</td>
<td>N.C.</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RS-232C output terminal pins
(D-sub 9 pin)

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N.C.</td>
<td>6</td>
<td>N.C.</td>
</tr>
<tr>
<td>2</td>
<td>Received data</td>
<td>7</td>
<td>N.C.</td>
</tr>
<tr>
<td>3</td>
<td>Transmitted data</td>
<td>8</td>
<td>N.C.</td>
</tr>
<tr>
<td>4</td>
<td>N.C.</td>
<td>9</td>
<td>N.C.</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td></td>
<td></td>
</tr>
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Mounting Precautions
(For SHARP dealers and service engineers)

- When installing, removing or moving the monitor, ensure that this is carried out by at least 4 people.
- Be sure to use a wall-mount bracket designed or designated for mounting the monitor.
- This monitor is designed to be installed on a concrete wall or pillar. Reinforced work might be necessary for some materials such as plaster / thin plastic board / wood before starting installation.
  This monitor and bracket must be installed on a wall which can endure at least 4 times or more the weight of the monitor. Install by the most suitable method for the material and the structure.
- To attach a VESA-compliant mounting bracket, use M6 screws that are 5/16 inch (8 mm) to 3/8 inch (10 mm) longer than the thickness of the mounting bracket.
- After mounting, please carefully ensure the monitor is secure, and not able to come loose from the wall or mount.
- Do not use any screw holes other than VESA holes for installation.

Attaching the Tray

1. Remove the cover from the back of the monitor.

2. Secure the tray mounting fitting.
   Secure using the screw removed in step 1 and 2 M5 tray mounting screws (supplied).

3. Secure the tray.
   Insert the tray into the tray mounting fitting and secure with 2 M4 tray mounting screws (supplied).