Stretched Display

User Manual

PS42A
PS42B

Table of contents

Declaration of Conformity

FCC Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Name of Responsible Party:	AU Optronics Corp. America
Address of Responsible Party:	37085 Grand River Ave. Farmington, MI 48335 U. S. A.
Contact Person:	Company Representative
Phone No.:	+1 408-518-8800
Fax No.:	+1 408-518-8123

FCC Compliance Statement

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

FCC Information

This equipment has been tested and found to comply with the limits for a 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 instructions 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.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Please use the supplied power adapter and power cord to ensure the FCC compliance. If a power cord is not provided, please contact your supplier.

CE Declaration of Conformity

$C \in$

Hereby, AUO Inc., declares that this LCD monitor is in compliance with the essential requirements and other relevant provisions of EMC Directive 2014/30/EU, Low Voltage Directive 2014/35/EU, and RoHS Directive 2011/65/EU and Directive 2009/125/EC with regard to establishing a framework for the setting of eco-design requirements for energy-related product.

Notice: Shielded cables

All connections to other computing devices must be made using shielded cables to maintain compliance with EMC regulations.

Caution

Changes or modifications not expressly approved by the manufacturer could void the user authority, which is granted by the Federal Communications Commission, to operate this product.

Notice: Canadian users

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Safety Information

Warnings

⚡	This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.
⚠	This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

⚡ WARNING

To prevent fire or shock hazards, do not expose this unit to rain or moisture.

⚡ WARNING

Do not use this unit's polarized plug with an extension cord receptacle or other outlets unless the prongs can be fully inserted.

⚡ WARNING

Refrain from opening the display cabinet as there are high voltage components inside. Refer servicing to qualified service personnel.

⚠ CAUTION

To reduce the risk of electric shock, make sure power cord is unplugged from wall socket. To fully disengage the power to the unit, please disconnect the power cord from the ac outlet. Do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel.

⚠ CAUTION

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

	North America (USA/Canada/ Taiwan)	European Union	UK	China	Japan
Plug Shape					
Voltage	120 (110 in Taiwan)	230	230	220	100

When operating a display which requires an AC 125-240V power supply, make sure to use a power supply cord that matches the power supply voltage of the AC power outlet being used.

The power supply cord should be connected to an outlet with a grounded connection.

NOTE

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

Use the power cord which has BSMI mark at both ends when you use this monitor in Taiwan.

- The intended primary use of this product is as an Information Technical Equipment in an office or domestic environment.

- The product is intended to be connected to a an external device and is not intended for the display of television broadcast signals.

Safety Precautions

Please note the following when setting up and using the display:

- **DO NOT OPEN THE DISPLAY.** There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.

- Do not spill any liquids into the cabinet or use your display near water.

- Do not insert objects of any kind into slots on the display, as they may touch dangerous voltage points, which can be harmful or fatal or may cause electric shock, fire or equipment failure.

- Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.

- Do not place this product on a sloping or unstable cart, stand or table, as the monitor may fall, causing serious damage to the display.

- Do not mount the display face up, face down or upside down for an extended period of time as it may cause permanent damage to the screen.

- The power supply cord you use must have been approved by and comply with the safety standards of your country. (Type H05VV-F 3G 1mm2 should be used in Europe)

- In UK, use a BS-approved power cord with melded plug having a black (13A) fuse installed for use with this display.

- Do not place any objects on top of the display and do not use the display outdoors.

- Do not bend, crimp or otherwise damage the power cord.

- Do not use the display in high temperature, humid, dusty, or oily areas.

- If display glass is broken, do not come in contact with the liquid crystal and handle with care.

- Allow adequate ventilation around the display, so that heat can properly dissipate. Do not block ventilated openings or place the display near a radiator or other heat sources.

- The power cable connector is the primary means of detaching the system from the power supply. The monitor should be installed close to a power outlet, which is easily-accessible.

- Handle with care when transporting. Save packaging for transporting.

- Please clean the ventilation holes on the back of the display at least once a year to remove any dust or dirt.

- Do not use the display under rapid temperature and humidity change condition or avoid cold air from air-conditioning outlet directly, as it may shorten the lifetime of the display or cause condensation. If condensation happens, let the display stand unplugged until there is no condensation.

- The touch panel glass is not safety glass and is not laminated. As with other glass, the touch panel glass may break into sharp pieces if misused, dropped, or otherwise subjected to a substantial shock. If touch panel glass happens to break, please use care to avoid injury.

- DO NOT tap the monitor with hard or pointed objects, such as a pen or pencil.

Recommended Use

- For optimum performance, allow 20 minutes for warm-up.

- Position the display at a 90° angle to windows and other light sources to minimize glare and reflections.

- Clean the display surface with a lint-free, non-abrasive cloth. Avoid using any cleaning solution or glass cleaner.

- Adjust the display's brightness, contrast and sharpness controls to enhance readability.

- Avoid displaying fixed patterns on the monitor for long periods of time to avoid image persistence (after image effects).

Ergonomics

To realize the maximum ergonomic benefits, the following is recommended:

- Use the preset **Size** and **Position** controls with standard signals.

- Use the preset **Color Setting**.

- Use non-interlaced signals.

- Do not use primary color blue on a dark background, as it is difficult to see and may produce eye fatigue due to insufficient contrast.

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

Cleaning the LCD Panel

- When the liquid crystal panel is dusty, please gently wipe with a soft cloth.

- Do not rub the LCD panel with hard material.

- Do not apply pressure to the LCD surface.

- Do not use OA cleaner as it will cause deterioration or discolor on the LCD surface.

Cleaning the Cabinet

- Unplug the power supply

- Gently wipe the cabinet with a soft cloth

- To clean the cabinet, dampen the cloth with a neutral detergent and water, wipe the cabinet and follow with a dry cloth.

NOTE

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

Package Contents

Your new display should include the following items:

LCD monitor
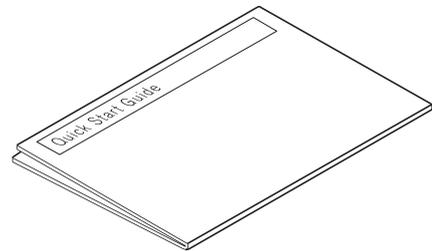
Quick Start Guide

Remote Control
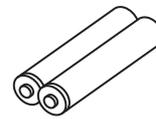
Remote Control Batteries

Screw

Clamp
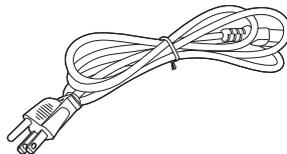
Power cord
(By regional request)

Installation of Your Display

⚡ WARNING

- For proper installation it is strongly recommended to use a trained, authorized technician. Failure to follow standard mounting procedures could result in damage to the equipment or injury to the user or installer.
- Product warranty does not cover damage caused by improper installation, remodelling, or natural disasters. Failure to follow these recommendations could result in voiding the warranty.
- DO NOT mount the display yourself. For proper installation **it is strongly recommended to use a trained, qualified technician**.
- This display is designed to operate at an altitude of up to 2,000m above sea level.

Moving Your Display

⚠ CAUTION

Never move or carry the display yourself.

Prior to installation, place the display on a flat area or surface with adequate space.

Make sure there is nothing on the floor/surface that can damage the display.

To avoid damaging the screen face, place a protective sheet on the surface underneath the display.

NOTE

Do not leave the monitor in the face-up or face-down position for more than one hour as this may result in a negative effect on the screen's performance.

Mounting Location

It is important to install the display in a location that allows adequate ventilation around the display, so that heat can properly dissipate away from the display and its mounting accessories. If installing the display onto a ceiling or wall with a mounting bracket, then the ceiling and wall must be strong enough to support the display and its mounting accessories.

Ventilation Requirements

When mounting in an enclosed space or recessed area, leave adequate room between the display and the enclosure in order to allow heat to disperse, as shown below.
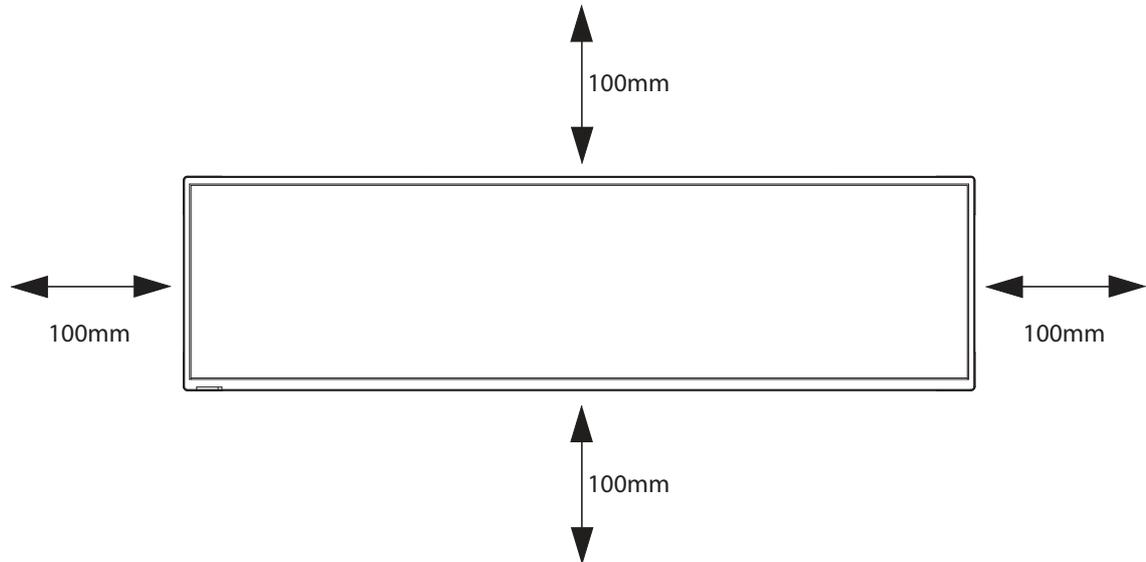
Make sure to provide air conditioning around the display or adequate ventilation, so that heat can properly dissipate away from the unit and mounting accessories.

Please note the following:

- DO NOT install in locations where a door can knock against the display.
- DO NOT install in areas where the display will be subjected to dust and/or strong vibrations.
- DO NOT install the display next to the location where the main power supply enters the building.
- DO NOT install the display in an area where people can easily grab and hang onto the display or its mounting accessories.

Mounting Equipment

⚠ CAUTION

This display cannot be used or installed without a support stand or a mounting support accessory.

The display is designed for use with the VESA mounting system. When using mounting accessories other than those that are approved by the dealer, they must comply with the VESA-compatible (FDMlv1) mounting method. It is recommended to use mounting interfaces that comply with UL1678 standard in North America.

Attaching Mounting Equipment to Your Display

For installation, it is recommended to use M6 screws and tighten them securely. Screws should have a boss screw thread of at least 10mm, a loose-proof spring washer, and a length 8mm longer than the thickness of the mounting bracket. (Fastening torque 470 to 635N-cm)
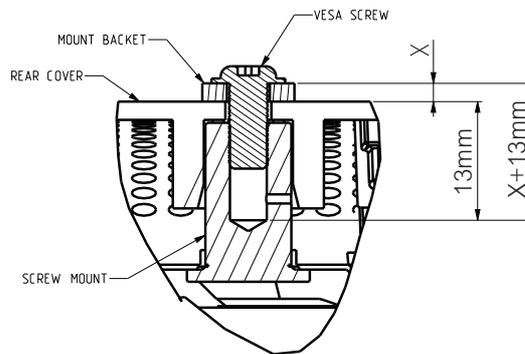
The back of the display is equipped with four screw-holes and matching taped holes, with a dimension of 400mm x 100mm & 200mm x 100mm.
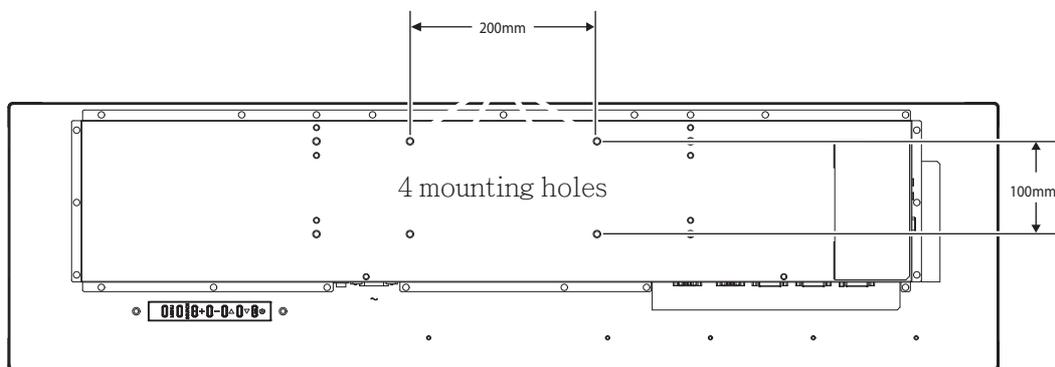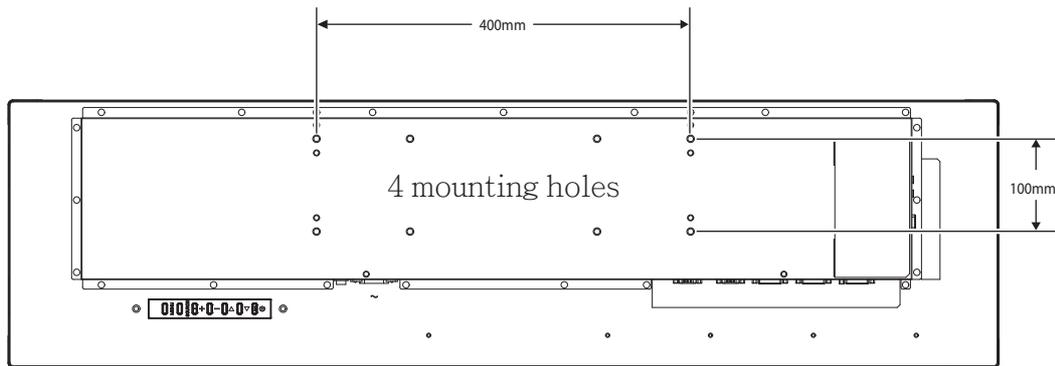
Installing for Portrait or Landscape Orientation

The display can be installed in portrait or landscape orientation. Ensure that the display is oriented as shown in the images below.

NOTE

- The operating environmental condition (temperature) when the display is in portrait orientation is 0°C to 50°C (32°F to 122°F). The operating humidity is 10-80% (without condensation).
- Proper operation of the display is not guaranteed when it is not mounted as shown below (upside down, face down, etc.).
- In portrait orientation, the lifetime of the backlight is shorter than when in landscape orientation.

Installation in portrait mode

The power indicator should be on the bottom side when viewed from the front of the display.
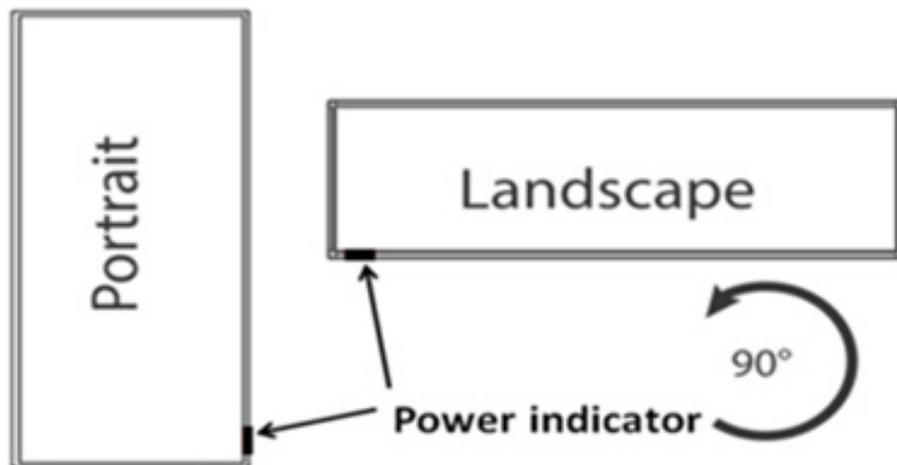
NOTE

This display does not have a function to rotate displayed images. To display images in portrait orientation, use images that have already been rotated.

Do NOT install the display in a face up or a face down position.
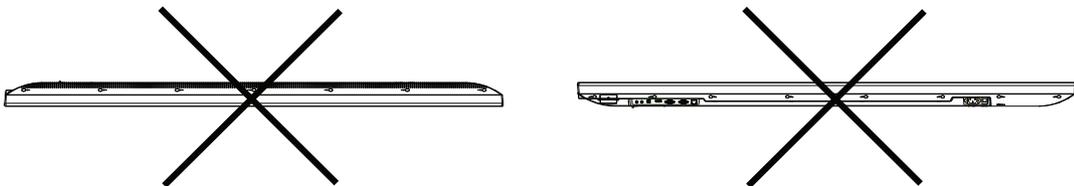
Display Components

Control Panel - Location & Buttons
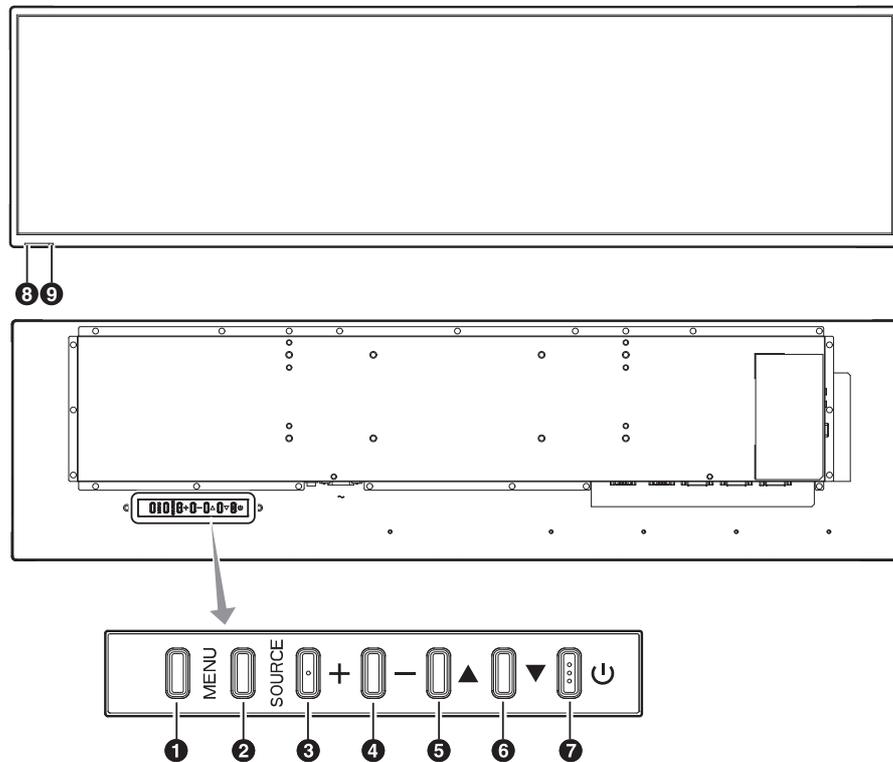
①	**MENU button**	Turns the OSD menu on/off.
②	**SOURCE button**	Toggles between the input sources of your display. You can select Source with up(▲)/down(▼) button.
③	**(+) button**	Increases levels for the selected item in the OSD menu.
④	**(-) button**	Decreases levels for the selected item in the OSD menu.
⑤	**▲ Up button**	Moves the selection in the OSD menu right/up.
⑥	**▼ Down button**	Moves the selection in the OSD menu left/down.
⑦	**⏻ Power button**	Turns the power ON/OFF.
⑧	**Light Sensor**	Helps sense ambient light and allows the display to make automatic adjustments to its brightness. To activate the light sensor, select **Main Menu** > **Initial Setting** > **Light Sensor** in the OSD menu.

| ⑨ | **Remote control receiver/Power indicator** | **Remote control receiver:** |

The signal receiver of the wireless remote control.

Status		LED (Red)	LED (Green)	Description
AC switch Off		Off	Off	AC off mode
Power off mode		On	Off	System is at power off mode.
Power on mode	Power on LED = On	Off	On	System is at power on mode.
	Power on LED = Off	Off	Off	
Scheduler Reserved		On	On	System is at standby mode, but user sets the scheduler. System is waiting for wake up by scheduler.

Ports & Connectors
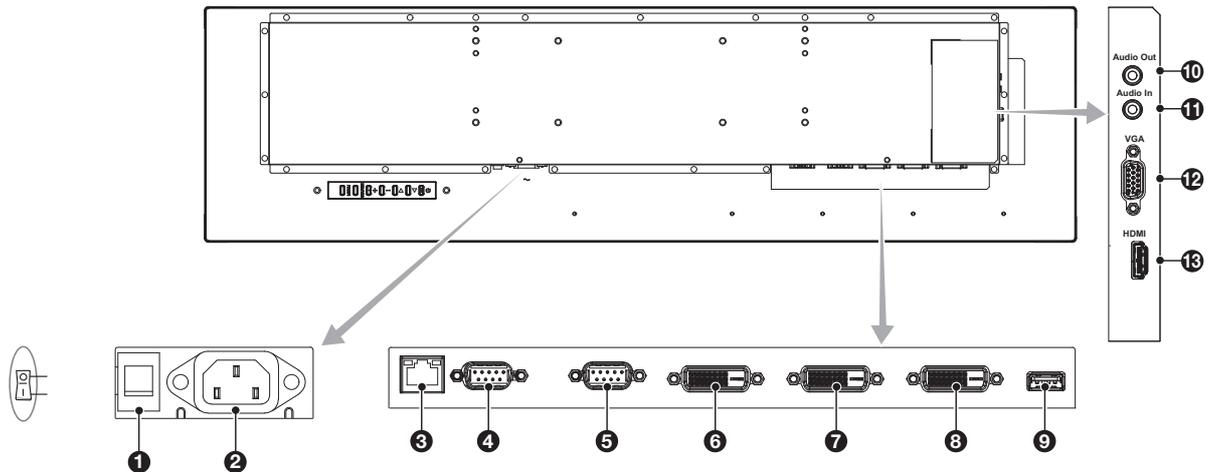
①	**AC SWITCH**	Switches the main power of the display ON/OFF.
②	**AC IN connector**	Connects to a power outlet via the supplied power cord.
③	**LAN (RJ-45 Ethernet)**	Connects to a router for LAN access.
④	**RS232 Out**	Connects to the RS232 IN connector of another display.
⑤	**RS232 In**	Connects to the RS232 OUT connector of a computer or other display. For details, please refer to the appendix "RS232 remote control" in this manual.
⑥	**DVI output connector**	Connects the DVI input connector of the digital input interface of another display. DVI1 or DVI2 is the signal source that is used for DVI output.
⑦	**DVI input connector (DVI1)**	Connects to the equipment compliant with the DVI standard of the digital input interface.
⑧	**DVI input connector (DVI2)**	Connects to the equipment compliant with the DVI standard of the digital input interface.
⑨	**Service port**	(For customer service) This is not available.
⑩	**Audio output connector**	Connects to external speakers, audio amplifiers, etc. or outputs the signal that is supplied to the Audio input connector.
⑪	**Audio input connector**	Connects to the Audio output connector of a video source such as a computer, VCR, or DVD player when the display is connected to the source via the VGA In connector.
⑫	**VGA input connector**	Connects to the analog video output (VGA) of a computer or other RGB equipment.
⑬	**HDMI input connector**	Connects to devices supporting audio/video data using the digital HDMI interface.

Remote control

①	**Power button**	Turns the power ON/OFF.
②	**Number buttons**	No function.
③	**SET ID button**	No function.
④	**MENU button**	Switches the OSD menu mode on/ off.
⑤	**UP/DOWN/LEFT/ RIGHT buttons**	Moves the currently highlighted area in the OSD menu. (▲) button moves the highlighted area up, (▼) button moves the highlighted area down, (◀) button moves the highlighted area left, (▶) button moves the highlighted area right.
⑥	**SOUND button**	No function.
⑦	**ASPECT button**	Selects the current display aspect ratio to switch the options from **Full**, **TRIM_UP**, **TRIM_DOWN**, **Zoom**, and **Normal**.
⑧	**SOURCE button**	Displays the OSD menu to switch the video input. You can select **HDMI**, **DVI1**, **DVI2**, and **VGA**.
⑨	**MEDIA CONTROL buttons**	No function.
⑩	**AUDIO/VIDEO CONTROL buttons**	No function.
⑪	**INPUT button**	Displays the OSD menu to switch the video input. You can select **HDMI**, **DVI1**, **DVI2**, and **VGA**.
⑫	**ENTER button**	No function.
⑬	**INFO button**	Displays the current screen resolution and refresh rate.
⑭	**OK button**	Accepts the settings made in the OSD menu.
⑮	**BACK button**	Displays the previous OSD menu.

⑯	**MUTE button**	Switches the mute function on/off.
⑰	**PICTURE button**	Selects the current picture mode to switch the options from **Dynamic**, **Cinema**, **Custom**, and **Standard**.
⑱	**VOLUME buttons (VOL)**	Adjusts the audio output levels. The plus (+) button increases and the minus (–) button decreases the audio output level.
⑲	**SUBTITLE button**	No function.

Remote control range

Point the remote control toward the display's remote control sensor when making selections with the buttons. The operating range of the remote control is a distance of about 10m from the front of the remote control sensor. The horizontal and vertical angles of the remote control are approximately 30° within a distance of about 4.5m.

30°   30°
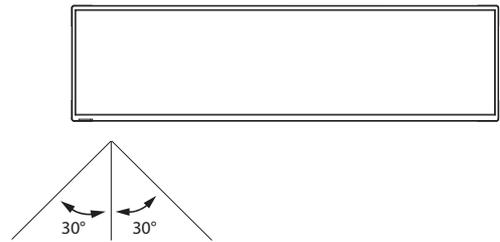
⚠ **CAUTION**

The remote control may not function when direct sunlight or strong illumination strikes the remote control sensor or when there is an object in its path.

Installing the Remote Control Batteries

The remote control is powered by two 1.5V AAA batteries.

To install or replace batteries:

1. Unlock the cover and pull it up as indicated by the arrow.

2. Put in the batteries following the polarity orientation (+) (-)indicated inside the case.

3. Replace the cover.

①   ②
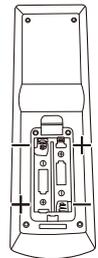
Preparing Your Display for Use

1. Install in the desired location.

⚠ CAUTION

MOVING OR INSTALLING THE DISPLAY MUST BE DONE BY TWO OR MORE PEOPLE.

Failure to follow this caution may result in injury if the display falls.

⚠ CAUTION

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

IMPORTANT

When setting the display down to install the wall mount, place it face down on a flat and stable surface covered by a protective sheet or cloth and a table cushion. DO NOT place the display on an uncovered surface.

2. Make connections.

3. Plug the supplied power cable into the display and a power source.
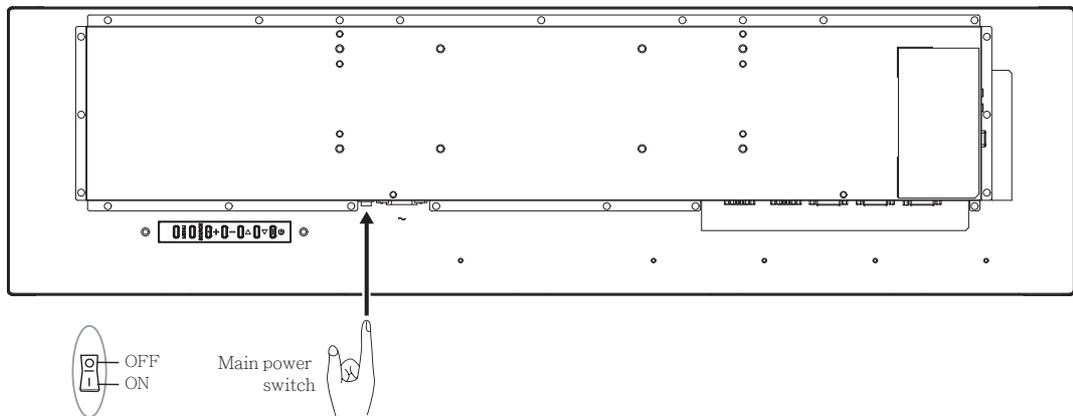
OFF
ON
Main power switch

NOTE

Adjustment

1. Turn the main power switch ON.

2. Turn ON the main power of this equipment and the computer or the video equipment.

3. Adjust the screen.

For a longer service life

The backlight used for the display has its lifetime, and the brightness of the backlight decreases with the time of use.

Moreover, when an image is shown for a long time, the "residual image" phenomenon may occur, in which the previous screen image remains when changing the screen display.

The residual image gradually fades by changing screen images, but if the same screen is displayed for too long, the residual image will not disappear.

For a longer service life of this equipment, please take precautions to the following.

• Please turn OFF the main power when the equipment is not in use.

   • Use the power button of the main unit or remote control to turn the power OFF.

   • Please set the power save function to "30 ~ 300 Sec" It automatically switches to power saving mode when no signal is input. The factory default is set to "300 Sec".

   • Use the scheduler function to turn the power ON / OFF automatically according to the specified time.

NOTE

• Be sure to set the date / time when using the scheduler function.
• Use the burn-in prevention function in order to reduce the burden on the LCD.

Connecting Devices to Your Display

Before connecting any equipment:

- First turn off the power of all the attached equipment and then make connections to the display.

- Refer to the user manual included with each separate piece of equipment.

NOTE

Do not connect/disconnect cables when turning on the display or when turning on other external equipment as this may result in image loss.

NOTE

Use an audio cable without a built-in resistor. This type of audio cable turns down the sound.
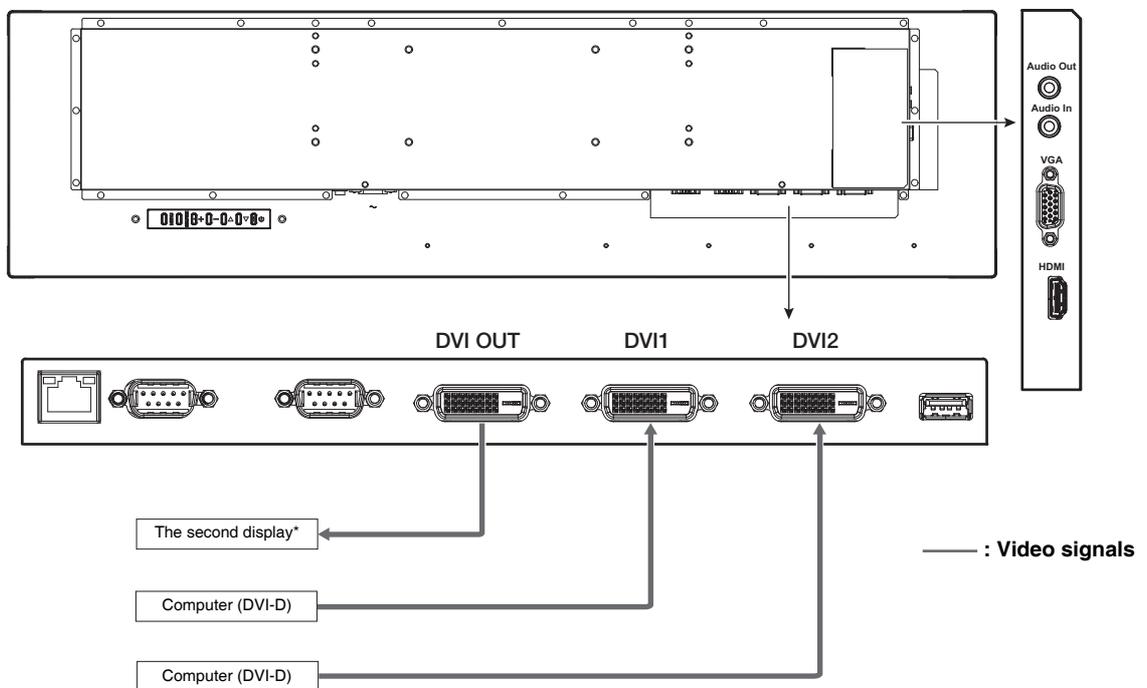
*: there is a limit on the number of connected units when making multi-connection (daisy-chaining).

Functions

Power Management

To reduce power, the display supports three power-off methods, for different purposes.

Sleep Timer (OSD Main Menu > Setup > Sleep Timer)

- The user can set the timer to power off the display, regardless of the current source signal status. Sleep Timer options in the OSD menu are: 5 mins, 15 mins, 30 mins, 60 mins, 90 mins, 120 mins, 180 mins, and OFF.
- This value will not be saved. It only executes once, and the default is OFF.

Power Save (OSD Main Menu > Setup > Power Save)

- This timer will power off the display when the current source has no signal. The adjustable range of the Power Save Timer is 30 sec-300 sec, or OFF. This timer can be disabled in the OSD menu.
- This value will be saved; the default is 300 sec.
- If the display is connected via HDMI/DVI1/DVI2/VGA and switches to standby as a result of the Power Save Timer, the display will power on automatically if the signal from the current source returns.

NOTE

- The Sleep Timer priority is the same as Power Save Timer; if both timers are enabled, the power-off time of the display will depend on which timer is programmed to power off first.
- Not all video devices are guaranteed to support the auto power-on function when connected to the display.

Scheduler (OSD Main Menu > Setup > Scheduler)

- The user can set seven schedules to determine power-on times and power-off times individually.
- If the power-off time setting in the Schedule is enabled, the system will disable the Sleep Timer automatically.

Light Sensor

A light sensor is installed on the display to help sense ambient light and allow the display to make automatic adjustments to its backlight brightness.

To activate the light sensor, select **Main Menu > Initial Setting > Light Sensor** in the OSD menu. To edit the light sensor settings, select **Service Menu**[1] **> Setup > Light Sensor Settings** in the Service menu[1].

When the light sensor is activated, the backlight brightness (**Current BL**)[2] of this display will be adjusted to the target backlight value (**BL1**, **BL2** and **BL3**) according to the **Current Lux**[3] value and the **TS1** and **TS2** threshold settings.

The default settings are shown below, for example:

If **Current Lux** = 929 (> **TS2** (800)), the backlight brightness (**Current BL**) will be adjusted to 100 (**BL3**).
If the ambient light of the surrounding environment becomes dark, and **Current Lux** = 500 (>**TS1** (140) and < **TS2** (800)), the backlight brightness (**Current BL**) will be adjusted to 40 (**BL2**).
If the ambient light of the surrounding environment becomes darker, and **Current Lux** = 100 (< **TS1** (140)), the backlight brightness (**Current BL**) will be adjusted to 0 (**BL1**)[4].

Since this function depends on ambient light, the default setting may not fulfill the requirements for the specified environment, please adjust the **TS1/2** and **BL1/2/3** thresholds in the OSD as indicated below to determine the backlight setting.

NOTE

[1]: Using the remote control, and press [**Menu**] > [**Down**] > [**Up**] > [**Left**] > [**OK**] to enter the Service menu.

[2]: **Current BL**: Displays the current backlight value based on the **TS1/2**, **BL1/2/3** setting.

[3]: **Current Lux**: Display the ambient light value of the surrounding environment detected by light sensor. Do not cover the light sensor, as shading will lower the sensitivity of the sensor's detection capabilities.

[4]: There is a basic luminance for this display even when the **Current BL** is 0.

Changing aspects

You can change the aspect ratio of the screen by pushing the ASPECT button on the remote control or by setting up in the OSD main menu. **Main Menu** > **Picture** > **Aspect Ratio**.

Mode	Original signals		Comments
	16:9	**4:3**	
Full			Change the aspect ratio to fill the whole screen.
Zoom			Enlarge or reduce the resolution of the image vertically or horizontally in any ratio. (it can be enlarged/reduced 0.9 times to 3 times vertically or horizontally) The display position of the image can be adjusted by H. Position and V. Position for horizontal and vertical adjustment, respectively.
Normal			Display the image that fills the height of the screen without changing its aspect ratio.
	1920 x 1080, 1920 x 960	**Other timing**	
TRIM_UP			Display the image that fills the width of the screen without changing its aspect ratio, cutting out 480 dots from the top of the image. It support only for timing of 1920x1080 and 1920x960.
TRIM_DOWN			Display the image that fills the width of the screen without changing its aspect ratio, cutting out 480 dots from the bottom of the image. It support only for timing of 1920x1080 and 1920x960.

Screen distortion occurs if you try to use an image aspect different from the original signal

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NOTE

- Please be aware that using the screen images compressed and enlarged by changing the image aspect, for purpose of commercial profit or viewing by the public at coffee shops or hotels, etc., may infringe upon the rights of the copyright holder protected under copyright law.

OSD (On-Screen-Display) Controls

This device is equipped with an OSD (On Screen Display) function that provides easy adjustment settings.

With the OSD function, you can control the menu displayed on the screen to adjust the brightness and other settings.

OSD Main Menu

```
                          Main Menu

   Picture
   Setup
   Initial Setting
   Multi Display Control
   System Information




   ▲ ▼ Move                          (OK) OK
                                     [Menu] Exit
```
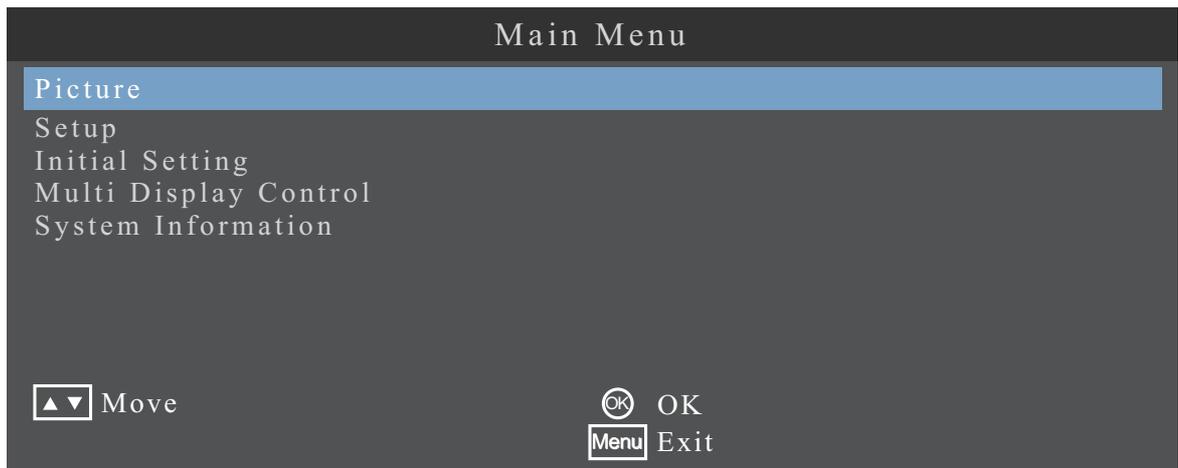
Sub-Menu Name	FUNCTION	See Page
Picture	Adjusts the picture settings of the display	30
Setup	Adjusts general settings of the display such as Scheduler, Power Save	31
Initial Setting	Adjusts the language and time settings of the display	33
Multi Display Control	Adjusts the Tiling settings and Monitor ID	35
System Information	Displays the model number and software version of the display	36

Basic operation of the OSD screen

Please make sure that the power indicator is lit green and that the power of the equipment is ON.

	Step	Wireless Remote Control	Keypad Operation
1	Opening and Navigating the OSD Main Menu	Press the [MENU] button to display the OSD screen. Press the up ($\triangle$)/down ($\triangledown$) button to select an item in the main menu.	Press the [MENU] button to display the OSD screen. Press the up ($\triangle$)/down ($\triangledown$) button to select an item in the main menu.
2	Making Selections in the OSD Main Menu	Press the [OK] button to determine the selected item in the main menu. The top item in the relevant sub menu is selected.	Press the [SOURCE] button to determine the selected item in the main menu. The top item in the relevant sub menu is selected.
3	Opening and Navigating OSD Sub-Menus	Press the up ($\triangle$)/down ($\triangledown$) button to navigate to an item in the sub menu.	Press the up ($\triangle$)/down ($\triangledown$) button to navigate to an item in the sub menu.
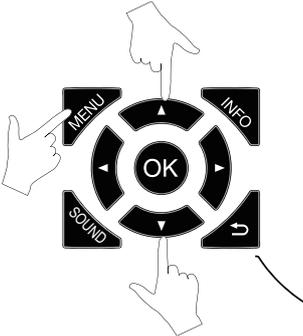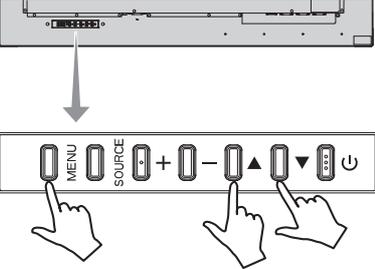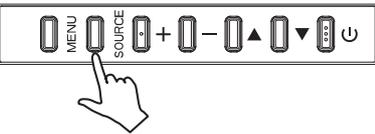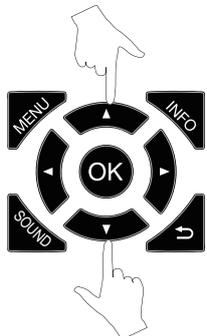
	Step	Wireless Remote Control	Keypad Operation
4	Making Selections in the OSD Sub-Menus	Press the [OK] button to select an item in the sub menu.	Press the [SOURCE] button to determine the selected item in the sub menu.
5	Adjusting settings in the OSD sub-menus	Press the left (◁)/right (▷) button to adjust a setting or press the [OK] button to display further features of the setting.	Press the plus (+)/minus (–) button to select a setting and press the [SOURCE] button to determine the setting.
6	Returning to the previous menus and exiting the OSD Main Menu	Press the [BACK] button to exit from the current menu and return to the previous menu. Press the [MENU] button to exit from the OSD Menu.	Press the [MENU] button to exit from the OSD Menu.
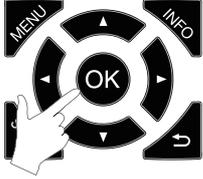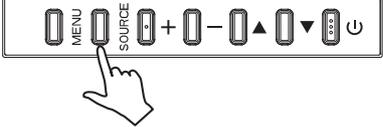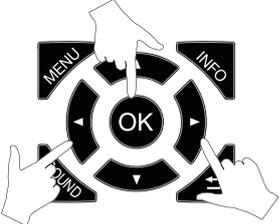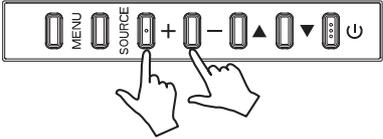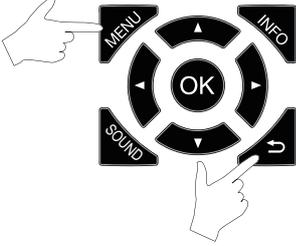
PICTURE

Picture	
Picture Mode	Custom
Backlight	100
Color Temperature	9300
Gamma	2.2
Noise Reduction	Off
Adaptive Contrast	Off
Aspect Ratio	Full
Color Range	Automatic
Reset Picture Setting	
▲▼ Move	OK OK
↩ Return	Menu Exit
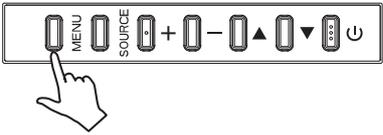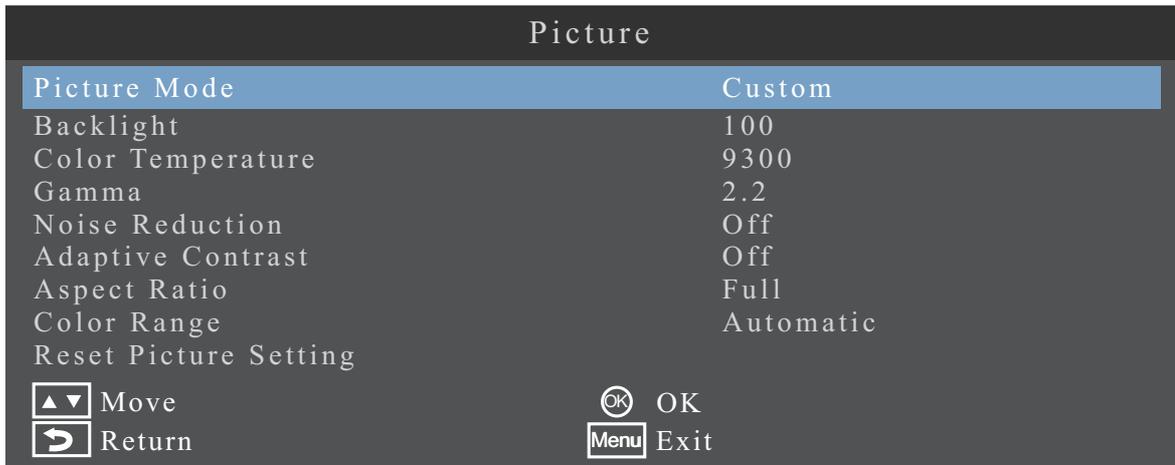
PICTURE	FUNCTION
Picture Mode	Selects **Standard**, **Dynamic**, **Custom** or **Cinema** mode to adjust the **Contrast**, **Brightness**, **Sharpness**, **Tint**, and **Color** settings.
Backlight	Adjusts the **Backlight** setting from **0** to **100**.
Color Temperature	Selects the **Color Temperature** setting with options of **4900**, **6500**, **9300**, **11500**, or **Custom**.
Gamma	Selects the **Gamma** setting with options of **2.2**, **2.4**, or **Native**.
Noise Reduction	Selects the **Noise Reduction** setting with options of **Off**, **Low**, **Middle**, or **High**.
Adaptive Contrast	Sets **Adaptive Contrast** to **On** or **Off**.
Aspect Ratio	Adjusts the **Aspect Ratio** setting. • Sets the aspect ratio to **Full, TRIM_UP, TRIM_DOWN, Zoom or Normal.**
Color Range	Selects the **Color Range** setting with options of **0-255**, **16-235**, or **Automatic**.
Reset Picture Setting	Resets the settings in the Picture menu back to their default settings.

NOTE

- The default settings will change depending on the signal source. If the settings related to the **Picture** (such as **Contrast**, **Brightness**, **Sharpness**, **Tint**, **Color**, **Backlight**, **Color Temperature** and **Gamma**) have been changed, the **Picture Mode** setting will change to **Custom** and be stored.

SETUP

	Setup	
Scheduler		**Off**
Signal Check Priority		
Control Setting		LAN
Ethernet Setting		
Sleep Timer		Off
Power Save		Off
Equalizer		Automatic
VGA Setting		
Restore Default		
▲▼ Move		OK OK
⮐ Return		Menu Exit

SETUP	FUNCTION
Scheduler	Changes the **Scheduler** setting. • Before setting the "**Scheduler**", be sure to set the current date and time with "Date/Time settings". • In order to activate the schedule function, please first enable the scheduler on the menu. • When the scheduler function is enabled, the sleep timer will not work. • A total of 7 schedules is allowed.
Signal Check Priority	• Sets Priority 1 to Priority 4 (Priority 1: highest priority) as the priority of each signal. When the current source signal is lost, the display attempts to find a new signal source according to the **Signal Check Priority** setting. • When the signal source for which Priority 1 is set is not found, the display checks other sources in order of priority and switches to the available source with the highest priority. • When the signal source with the highest priority recovers, the display automatically switches to the source again. • When **Signal Check Priority** is disabled, the display uses the last used source at power on.
Control Setting	Allows the display to be controlled remotely via RS232 or LAN.
Ethernet Setting	Adjusts the **Ethernet Setting** for the display. Select DHCP or Static. If Static is selected, enter the IP, Mask, Gateway, and DNS addresses.
Sleep Timer	Sets the **Sleep Timer** to **5**, **15**, **30**, **60**, **90**, **120**, **180** minutes or **Off**. • When the sleep timer function is enabled, the scheduler function will not work.
Power Save	Sets the **Power Save** setting to **Off** or from **30 sec** to **300 sec** (30 seconds per interval).

SETUP	FUNCTION
Equalizer	Adjusts the **Equalizer** setting when screen degradation occurs. (for DVI1 and DVI2 only) Sets the Equalizer to **Auto** or between **Level 1** and **Level 7**.
VGA Setting	Adjusts **H Position**, **V Position**, **Clock**, **Phase**, **Auto Adjustment** and **Auto**.
Restore Default	Resets all the settings to their default settings.

NOTE

For **VGA setting**, the default settings depend on the timing of signal.

INITIAL SETTING

Initial Setting	
OSD Rotation	◀ Landscape ▶
Menu Language	English
Time Format	12-hour
Clock	2018/1/1 12:00PM
Light Sensor	Off
Remote Operation	Enable
Keypad Operation	Enable
Anti-Image Retention	Off

▲▼ Move　　　　◀▶ Adjust
⤺ Return　　　　Menu Exit
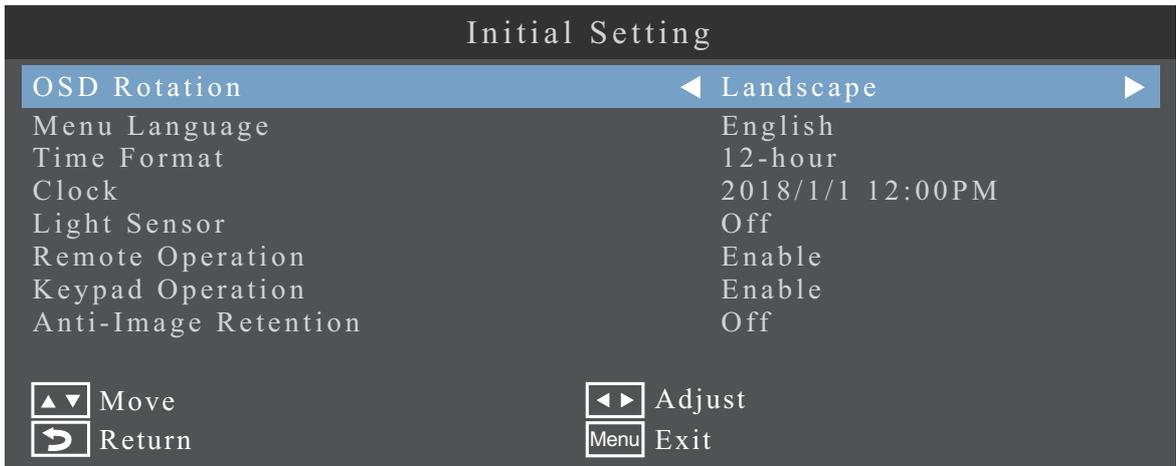
INITIAL SETTING	FUNCTION
OSD Rotation	Changes the orientation of the OSD Menu to **Landscape** or **Portrait**. If **Portrait** is selected, the main menu will be shown vertically. For more information on a vertical main menu, please see the "Vertical Main Menu" section on page 37.
Menu Language	Changes the OSD language to **English**, 日本語 , **Français**, **Deutsch**, or **Español**.
Time Format	Changes the time format to **12-hour** or **24-hour**.
Clock	Sets the time and date.
Light Sensor	Sets the **Light Sensor** setting to **On** or **Off**. • The display will automatically decrease its brightness to conserve power when the light sensor is set to **On**.
Remote Operation	Changes the **Remote Operation** to **Enable** or **Disable**. • When the **Remote/Keypad Operation** is enabled and locked, press the following buttons on the remote control: [**Menu**] > [**Down**] > [**Up**] > [**Left**] > [**OK**]. The **Remote/Keypad Operation** will be unlocked and disabled.
Keypad Operation	Changes the **Keypad Operation** to ENABLE or DISABLE.
Anti-Image Retention	Sets the **Anti-Image Retention** setting to **Off** or **Picture Shift**.

Image Persistance: Please be aware that LCD Technology may experience a phenomenon known as Image Persistence. Image Persistence occurs when a residual or "ghost" image of a previous image remains visible on the screen. Unlike CRT monitors, image persistence in LCD monitors is not permanent, but constant images being displayed for a long period of time should be avoided.

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

As with all personal display devices, dealer recommends displaying moving images and using a moving "Anti-Image Retention" at regular intervals whenever the screen is idle or turning off the monitor when not in use.

Please set **Anti-Image Retention**, **Clock** and **Scheduler** functions to further reduce the risk of Image persistence.

MULTI DISPLAY CONTROL

```
                    Multi Display Control

  Monitor ID                          ◄ 01                    ►
  Power ON Delay                        Off
  Power on LED                          On




  ▲▼ Move                            ◄► Adjust
  ↩ Return                           Menu Exit
```
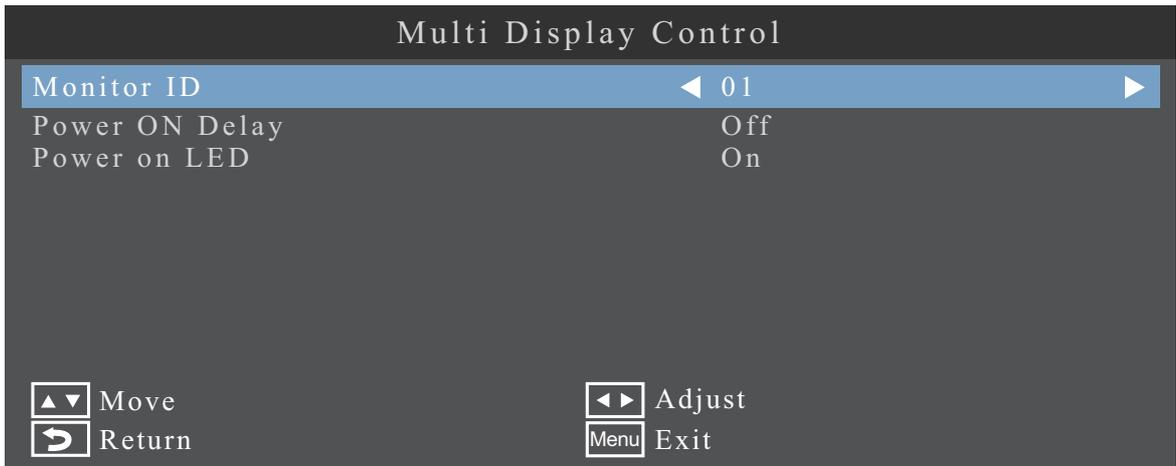
MULTI DISPLAY CONTROL	FUNCTION
Monitor ID	Sets a unique **Monitor ID** for the display. (2-digit numbers, 01 to 25). • The Monitor ID is set for the "Power ON delay" setting or sending "external commands".
Power ON Delay	Adjusts the **Power ON delay** setting for the "Standby" mode and "Power on" mode. The delay time can be set between 0 and 30 seconds.
Power on LED	Sets the power on LED to "On" or "Off". [Off]: The "power on" LED indicator will be turned off. [On]: The "power on" LED indicator will show green light when the display power is on.

SYSTEM INFORMATION

```
                      System Information
┌────────────────────────────────────────────────────────────┐
│ Model Name                        PS42                       │
│ SW Version                        1.00.00                    │
│ LAN Version                       1.07.00                    │
│ IP Address                        192.168.2.1                │
│ Serial Number                     PS42182900000001           │
│                                                              │
│                                                              │
│                                                              │
│  ▲▼ Move                                                     │
│  ⮌  Return                     Menu Exit                     │
└────────────────────────────────────────────────────────────┘
```
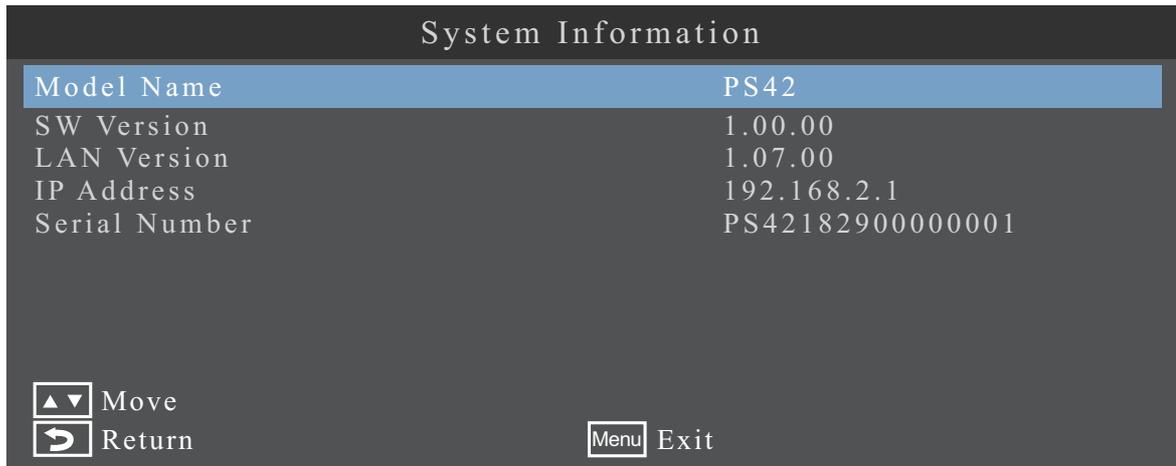
SYSTEM INFORMATION	FUNCTION
Model Name	Displays the model name of the display.
SW Version	Displays the version of the current software of the display.
LAN Version	Displays the version of the current LAN software of the display.
IP Address	Displays the current IP address of the display.
Serial Number	Displays the serial number of the display.

Vertical Main Menu
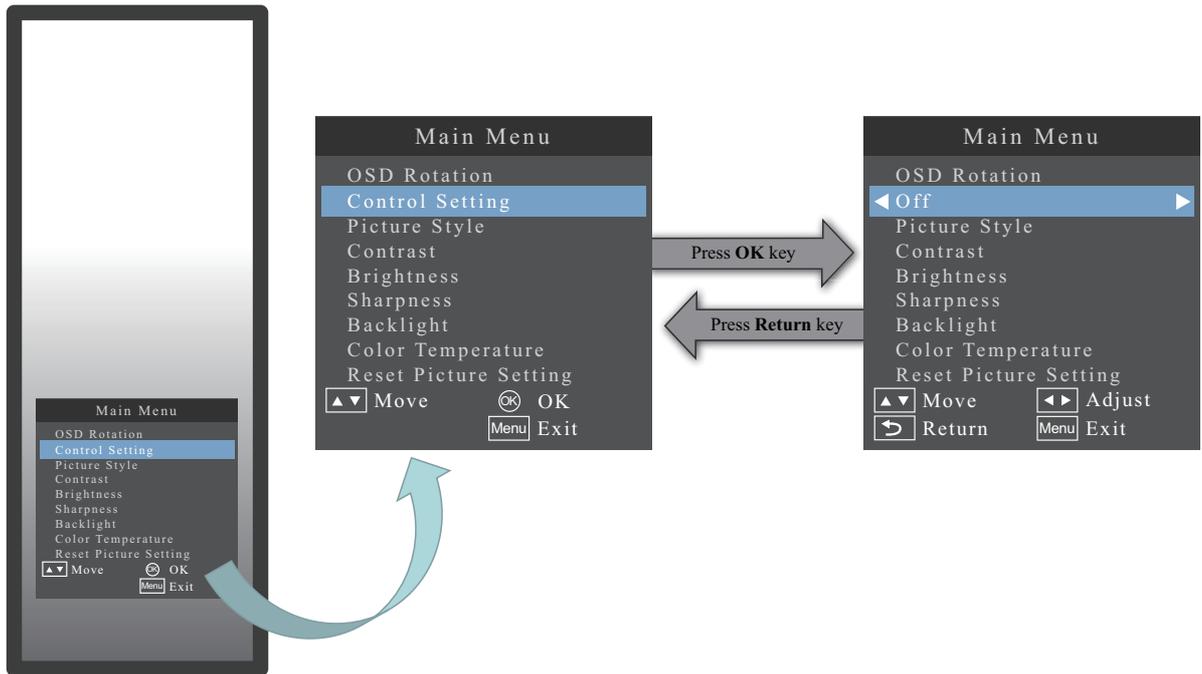
Main menu	FUNCTION
OSD Rotation	Changes the orientation of the OSD menu to **Landscape** or **Portrait**. If the item is set to **Landscape**, the main menu will display the main menu horizontally.
Control Setting	Allows the display to be controlled remotely via RS232 or LAN.
Picture Style	Selects the picture style from **Standard**, **Dynamic**, **Custom** or **Cinema**.
Contrast	Adjusts the **Contrast** setting.
Brightness	Adjusts the **Brightness** setting.
Sharpness	Adjusts the **Sharpness** setting.
Backlight	Adjusts the **Backlight** setting.
Color Temperature	Adjusts the **Color Temperature** setting.
Reset Picture Setting	Resets the settings in the Picture menu back to their default settings.

NOTE

If the picture settings (such as **Contract**, **Brightness**, **Sharpness**, **Tint**, **Color**, **Backlight**, **Color Temperature** and **Gamma**) have been changed, the **Picture Style** setting will be changed to **Custom**.


Troubleshooting

If you notice something wrong, check the following table.

The LCD does not display

Symptom	Condition	Cause and solution
Nothing displays on the LCD display	The power indicator blinks red	There may be a failure of the main unit. Please consult your dealer / after-sales service desk for service.
	Power indicator does not light up	Please ensure that the power cord is connected properly and the "power on LED" indicator is set to "ON". • **OSD Main Menu > Multi Display Control > Power on LED -> ON**
		Or use other equipment to check whether the outlet is supplying power normally.
		Please check whether the main power switch is switched OFF.
	The power indicator blinks in green	An input connector without input signal may be selected. Please press the input switching button to switch the input connector.
		Open the OSD screen and check the following items.
		• If the OSD screen is not displayed, there may be a failure in the LCD. Please consult your dealer / after-sales service desk for service.
		• If the OSD screen displays normally, the equipment is not malfunctioning. Please adjust "Backlight" and "Contrast" in the **Picture** setting.
		• If the OSD screen displays normally, but the screen image is still not displaying after "Backlight" and "Contrast" adjustment, check whether the connected equipment is properly functioning. If the LCD is connected to a computer, please check the computer's frequency, resolution, and its output signal type.

Symptom	Condition	Cause and solution
	An indicator other than green is blinking or lit	The power management function may be activated. Press any key on the keyboard, move the mouse, or press the POWER button on the remote control.
		Please make sure the signal cable connected to the main unit or to the connector of the connected devices is connected properly.
		Please make sure the conversion adapter is connected properly.
		Please make sure the power of the connected computer or the video equipment is ON.
The screen turned off	The screen displayed normally but then goes black, flickers, or turns off*	Replacing with a new LCD is necessary. Please consult your dealer / after-sales service desk for service.

* The backlight used in the LCD has a certain life span.

LCD does not display properly

Symptom	Cause and solution
There are black spots (dots that do not light when on) and bright spots (dots that remain lit when off) on the screen	This is not a malfunction, it is due to the characteristics of LCDs.
The brightness of the screen is uneven	Depending on the content displayed, such symptoms may occur. This is due to the characteristics of LCDs, and is not a malfunction.
There are thin vertical stripes on the screen	Depending on the content displayed, such symptoms may occur. This is due to the characteristics of LCDs, and is not a malfunction.
Moiré patterns occur when displaying fine patterns	Although such symptoms may occur when displaying fine patterns, it is due to the characteristics of the LCD panel, and is not a malfunction.
Colors appear strange at some viewing angles	The change in hue increases depending on the viewing angle (the angle at which the screen is viewed).
Condition of the screen display changes	The display condition of the screen changes over time. Depending on the ambient temperature, the image may be affected by the display condition of the screen. This is due to the characteristics of the LCD panel, and is not a malfunction.
A faint image of the previous screen remains even the screen image has changed	When a still image is displayed for a long time, residual images may occur. Press the POWER button on the remote control to switch the equipment to standby, or display a moving screen (screensaver); the residual image will disappear naturally in about one day. If a still image is displayed for a long time, the residual image may not disappear, but this is not a malfunction. We recommend that you switch the power off when the equipment is not in use.
The screen displays strange colors	Open the OSD screen and check the following items.
	• If the OSD screen is not displaying normally, there may be a failure in the LCD.
	• Please consult your dealer / after-sales service desk for service.
	• If the OSD screen displays normally, the equipment is not malfunctioning. Please reset the Picture settings **(Picture > Reset Picture Setting)** or restore to the factory default values **(Setup > Restore Default)**.

Symptom	Cause and solution
The screen image is rough (except for the above), or momentarily interrupted	If the OSD screen displays normally but the screen of the computer does not display properly even after adjusting the "Picture" setting, check the connection with the computer, the computer's frequency, resolution, and its type of output signal.
	Open the OSD screen and check the following items.
	• If the OSD screen is not displaying normally, there may be a failure in the LCD. Please consult your dealer / after-sales service desk for service.
	• If the OSD screen displays normally, the equipment is not malfunctioning. Please check the connection with the computer, the computer's frequency, resolution, and its type of output signal.
The power turns off automatically	Please check the settings of the sleep timer.
The equipment does not work as set by the schedule function	Please check the settings of the sleep timer. When the sleep timer is activated, the schedule function will not work.
Screen image disturbed	Image disturbance may occur when turning the power on or changing settings; it is not a malfunction.

When guidance / attention message screen displays

Symptom	Cause	Solution
No Signal *1	The signal cable may not be properly connected to the equipment or the computer's connector.	Please properly connect the signal cable to the equipment and the connector of the computer.
	The signal cable may be disconnected.	Please check the connection of the signal cable.
	The computer may be turned off.	Please make sure the power of the computer is on.
	The power management function of the computer may be activated.	Move the mouse or press any key on the keyboard.
ATTENTION! SIGNAL FREQUENCY IS OUT OF RANGE PLEASE CHANGE SIGNAL TIMING H: 90.2 KHz V: 59.9 Hz *2	The input signal of the equipment may not be appropriate.	Please change the input frequency or the resolution of the computer.
	The input signal frequency is higher than the supported signal frequency.	Please change the input frequency or the resolution of the computer.
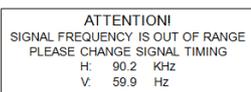
*1 Depending on the connected device, it may not output the correct signal right after the input frequency or resolution is changed, so a caution message may be displayed. If the screen displays normally after a while, it means that the proper signal is being input.

*2 Depending on the connected device, it may not output the correct signal right after the power is turned on, so an attention message may be displayed. If the screen displays normally after a while, it means that the input signal frequency is correct.

Other troubles (remote control)

Symptom	Cause and solution
The remote control is not functioning	• Is the battery of the remote control running out of power? • Is the polarity of the battery reversed? • Are you pointing it properly at the receiver of the LCD?

Other troubles (connection through RS232 or LAN)

Symptom	Cause and solution
Cannot control through RS232	Make sure that the reverse type (cross type) RS232 cable is properly connected.
Cannot control through LAN	Make sure that the LAN cable (Cat. 5 or higher) is properly connected.
	Make sure that the network settings are set correctly.

Controlling the Display Remotely

RS232/LAN Connections
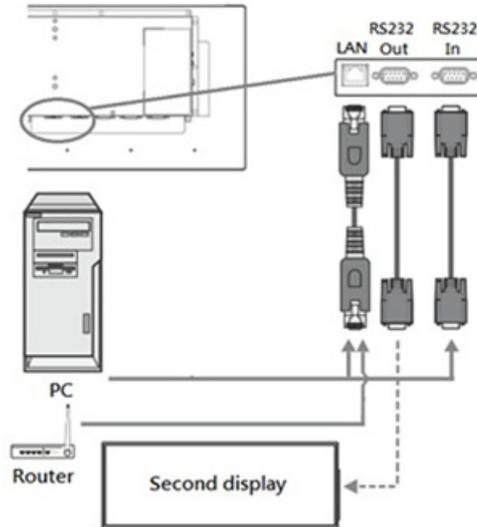
LAN Remote Control

LAN port (RJ-45) is equipped as standard on this equipment. Connect the LAN cable (commercially available) to setup LAN settings. When using this machine in a LAN environment, it is necessary to set an IP address on this machine.

LAN Connection:

To connect the display and a computer in network through a LAN hub.

1. Turn off the main power switch of the computer and the display. If you make a connection while the power is on, it the devices may fail.

2. Using a straight-type LAN cable, connect the computer to the LAN hub.

3. Using a straight-type LAN cable, connect the LAN hub to the **LAN** connector of the display.

4. Power on the display. Open the OSD Menu and select Setup > **Control Setting** > **LAN**.

NOTE

When you use a cross-type LAN cable, you can connect the display and the computer one-to-one without using a LAN hub, however, the computer may not be supported. It is recommended to check the operation in advance.

RS232 remote control

Connecting the RS232 terminal of this equipment to the RS232 terminal of the computer with the reverse type (cross type) RS232 cable (commercially available) enables the following operations from the computer.

RS232 Connection:

The Serial terminal conforms to the RS-232C interface specification, so that the display can be controlled by a computer which is connected to this terminal.

To connect the display and a computer through a serial connection:

1. Turn off the main power switch of the computer and the display. If you make a connection while the power is on, the devices may fail.

2. Using a RS-232C interface cable, connect the computer to the **RS232** In connector of the display.

3. Power on the display. Open the OSD Menu and select **Setup** > **Control Setting** > **RS232**.

NOTE:

Use a RS232 cable to connect the RS232 Out connector to a second display if required.

Pin layout

RS232 input/output

PinNo	Name
1	NC
2	RXD
3	TXD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

D-SUB9P
(the LCD side)
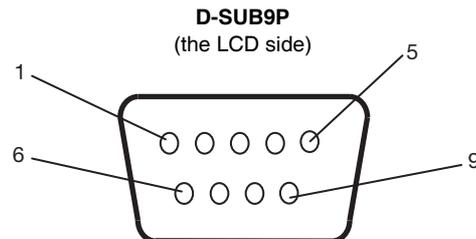
The display uses RXD, TXD, GND lines for RS232 control.

The following operations are supported control commands.

Control Command Function Overview	
Main operations	**Description**
Reset	Restores settings to their defaults. Reset commands including Picture Reset, Sound reset, etc.
Power ON or OFF	Turns the display on or off.
Volume control and mute	Adjusts the volume.
Input source	Switches between input signals.
Items about picture	Adjusts picture mode, backlight, etc
Items about multi-display control	Includes options used to set up multiple displays, such as screen position, display ID, etc.
Items about initial setting	Uses commands to adjust initial setting options, such as language, RTC time, OSD rotation, etc. For example, selecting the language can change the on-screen menu language.
Items about light sensor	Adjusts the Display's backlight.

Command Protocol

1. The communication protocol setting is as follows:

Communication Settings	
Protocol	**RS232**
Baud rate	9600 [bps]
Data length	8 [bit]
Parity bit	None
Stop bit	1 [bit]
Flow control	None

2. Control command protocol:

The command is structured by the **command length code, Checksum, ID code, command type code, function code, data code and end code**. The length of the command is different for each function.

Command Protocol	
Command length code	Total byte of message excluding CR (end code).
Checksum	Calculate Checksum by XOR of all bytes.
ID code	Identification for each of the displays.
Command type code	0x73: Set command; 0x67: Get command; 0x72: Reply command; 0x2B: Valid command reply; 0x2D: Invalid command reply
Command code	Each control function is assigned to a unique command code.
Data code (value)	Value of each control function
End code (CR)	0x0D

A remote tool (terminal software), helps users send control commands more conveniently. When developing terminal software, please send command packets within 50ms x (length +1) (known as the "timeout period") and reserve enough delay time to execute next command. The detail delay time is listed in the command table for reference.

If the computer does not send the command packet within the timeout period, a transmission error will occur. If the display receives the command, it will send a return command to the computer. The computer checks the return command to see whether or not the command it sent was received, and must receive the return command before sending the next command.

Basic Commands

Several basic commands are shown here as examples. Note that these commands are used when a single computer connects to a single display. Contact your dealer for advanced command specifications if you want to connect multiple displays, or perform complicated controls using other commands than the basic commands.

Set command

Command format: Length (1 byte) + Checksum (1 byte) + ID (1 byte) + Cmd Type (1 byte) + Cmd Code(1 byte) + Value(>=3 byte) + CR (1 byte)

Example 1: Set Brightness as 76 for ID-02 and this command is valid

Send Packet									
Byte	0	1	2	3	4	5	6	7	8
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value			End
						Byte1	Byte2	Byte3	
Hex	0x38	0x33	0x02	0x73	0x46	0x30	0x37	0x36	0x0D

checksum = (0x38)^(0x02)^(0x73)^(0x46)^(0x30)^(0x37)^(0x36)^(0x0D) = 0x33

Return packet					
Byte	0	1	2	3	4
Name	Length	Check sum	ID	Cmd Type	End
Hex	0x34	0x10	0x02	0x2B	0x0D

checksum = (0x34)^(0x02)^(0x2B)^(0x0D) = 0x10

Example 2: Set Brightness as 176 for ID-02 and this command is invalid

Send packet									
Byte	0	1	2	3	4	5	6	7	8
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value			End
						Byte1	Byte2	Byte3	
Hex	0x38	0x32	0x02	0x73	0x46	0x31	0x37	0x36	0x0D

checksum = (0x38)^(0x02)^(0x73)^(0x46)^(0x31)^(0x37)^(0x36)^(0x0D) = 0x32

Return packet					
Byte	0	1	2	3	4
Name	Length	Check sum	ID	Cmd Type	End
Hex	0x34	0x16	0x02	0x2D	0x0D

checksum = (0x34)^(0x02)^(0x2D)^(0x0D) = 0x16

Example 3: Set Brightness as 76 for all monitors

Send packet								
Byte	0	1	2	3	4	5	6	7	8
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value			End
						Byte1	Byte2	Byte3	
Hex	0x38	0x31	0x00	0x73	0x46	0x30	0x37	0x36	0x0D

checksum = (0x38)^(0x00)^(0x73)^(0x46)^(0x30)^(0x37)^(0x36)^(0x0D) = 0x31

Return packet
No return packet

Get command

Command format: Length (1 byte) + ID (2 byte) + Cmd Type (1 byte) + Cmd Code(1 byte) + Value(>=3 byte) + CR (1 byte)

Example 1: Get Brightness from ID-05 and this command is valid, and the Brightness value is 67.

Send Packet								
Byte	0	1	2	3	4	5	6	7	8
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value			End
						Byte1	Byte2	Byte3	
Hex	0x38	0x29	0x05	0x67	0x4E	0x30	0x30	0x30	0x0D

checksum = (0x38)^(0x05)^(0x67)^(0x4E)^(0x30)^(0x30)^(0x30)^(0x0D) = 0x29

Return Packet								
Byte	0	1	2	3	4	5	6	7	8
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value			End
						Byte1	Byte2	Byte3	
Hex	0x38	0x3D	0x05	0x72	0x4E	0x30	0x36	0x37	0x0D

checksum = (0x38)^(0x05)^(0x72)^(0x4E)^(0x30)^(0x36)^(0x37)^(0x0D) = 0x3D

Example 2: Get Model Name from ID-05, and the Model Name is ABC_123456

Send Packet										
Byte	0	1	2	3	4	5	6	7	8	9	10
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value					
						Byte1	Byte2	Byte3	Byte4	Byte5	Byte6
Hex	0x44	0x08	0x05	0x67	0x20	0x03	0x00	0x00	0x00	0x00	0x00

Send Packet

Byte	11	12	13	14	15	16	17	18	19	20	
Name	Value									End	
	Byte7	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15		
Hex	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x00	0x0D	

checksum =
(0x44)^(0x05)^(0x67)^(0x20)^(0x03)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x00)^(0x0D) = 0x08

Return Packet

Byte	0	1	2	3	4	5	6	7	8	9	10
Name	Length	Check sum	ID	Cmd Type	Cmd Code	Value					
						Byte1	Byte2	Byte3	Byte4	Byte5	Byte6
Hex	0x44	0x05	0x05	0x72	0x20	0x03	0x41 ('A')	0x42 ('B')	0x43 ('C')	0x5F ('_')	0x31 ('1')

Byte	11	12	13	14	15	16	17	18	19	20	
Name	Value									End	
	Byte7	Byte8	Byte9	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15		
Hex	0x32 ('2')	0x33 ('3')	0x34 ('4')	0x35 ('5')	0x36 ('6')	0x00	0x00	0x00	0x00	0x0D	

checksum =
(0x44)^(0x05)^(0x72)^(0x20)^(0x03)^(0x41)^(0x42)^(0x43)^(0x5F)^(0x31)^(0x32)^(0x33)^(0x34)^(0x35)^(0x36)^(0x00)^(0x00)^(0x00)^(0x00)^(0x0D) = 0x05

Control Functions - Set Command List

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
All	Power	8		s	3C	000: Standby	200	
						001: On	15000	
	Volume	8		s	57	000 ~ 100	300	
	Mute	8		s	58	000: Off	300	
						001: On	300	
	Video Source	8		s	41	000:VGA	5000	
						001:HDMI	5000	
						005:DVI1	5000	
						006:DVI2	5000	
Picture	Picture Mode	8		s	A1	000: Standard	300	
						001: Dynamic	300	
						002: Cinema	300	
						003: Custom	300	
	Contrast	8		s	44	000 ~ 100	300	
	Brightness	8		s	46	000 ~ 100	300	
	Sharpness	8		s	48	000 ~ 010	300	
	Tint	8		s	A3	000 ~ 050	300	
	Color	8		s	A2	000 ~ 050	300	
	Backlight	8		s	AB	000 ~ 100	300	
	Hue	8		s	6E	Byte1: Hue type and value can be 0x1: Red Hue 0x2: Magenta Hue 0x3: Blue Hue 0x4: Cyan Hue 0x5: Green Hue 0x6: Yellow Byte2-3: Hue value and value can be 00~32, OSD value = return value-16	300	Ex. 100 means the Red Hue value set as -16, 232 means the Magenta Hue set as 16, 316 means the Blue Hue set as 0
	Saturation	8		s	6D	Byte1: Saturation type and value can be 0x1: Red Saturation 0x2:Magenta Saturation 0x3:Blue Saturation 0x4:Cyan Saturation 0x5:Green Saturation 0x6:Yellow Saturation Byte2-3: Hue value and value can be 00~15	300	Ex. 100 means the Red Saturation value set as 0, 215 means the Magenta Saturation set as 15

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Color Temp	8		s	AD	0: 4900K 1:6500K, 2:9300K, 3:11500K, 4: Custom	300	
	Change Color Temperature Gain	14		s	D3	Byte1~Byte9 (2) Byte 1 ~ Byte 3 : 0~0x7FF for Red Gain in hex format (3) Byte 4 ~ Byte 6 : 0~0x7FF for Red Gain in hex format (4) Byte 7 ~ Byte 9 : 0~0x7FF for Red Gain in hex format	300	When change color temperature red/ green/blue gain, system will change the picture mode as personal and the color mode as personal automatically. Ex. 2047=0x7FF ==> Byte1=0, Byte2= 0x07, Byte3=0xFF
	Aspect Ratio	8		s	54	000: Full	500	
						001: TRIM_UP	500	
						002: TRIM_DOWN	500	
						003: Zoom	500	
						004: Normal	500	
	Gamma	8		s	4A	000:gamma2.2	300	
						001:gamma2.4		
						002:gamma native		
	Noise Reduction	8		s	4B	000:Off	300	
						001:Low		
						002:Middle		
						003:High		
	Adaptive Contrast	8		s	4C	000:Off	300	
						001:On		
	Aspect Ratio Zoom_Inc_Dec	8		s	70	000: Decrease the value of Aspect Ratio Zoom 001: Increase the value of Aspect Ratio Zoom	500	
	Aspect Ratio H.Zoom_Inc_ Dec	8		s	71	000: Decrease the value of Aspect Ratio H Zoom 001: Increase the value of Aspect Ratio H Zoom	500	
	Aspect Ratio V.Zoom_Inc_ Dec	8		s	72	000: Decrease the value of Aspect Ratio V Zoom 001: Increase the value of Aspect Ratio V Zoom	500	

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Aspect Ratio H.Position_Inc_Dec	8		s	73	000: Decrease the value of Aspect Ratio H position 001: Increase the value of Aspect Ratio H position	500	
	Aspect Ratio V.Position_Inc	8		s	74	000: Decrease the value of Aspect Ratio V position 001: Increase the value of Aspect Ratio V position	500	
	Color Range	8		s	4D	000:16~235	300	
						001:0~255		
						002:Auto		
	Picture Reset	8		s	49		500	Value don't care
Multi Display Control	Monitor ID	8		s	5F	001 ~ 025	3300	00 is used for broadcast
	Power On Delay	8		s	CE	000: OFF	350	
						001~060: power on after x*0.5 seconds	350	value= 6 means 6*0.5 = 3s, power on after 3s
						061: Auto	350	
	Power On LED	8		s	DD	000: Off	300	
						001: On	300	

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
Setup	On/Off Timer (Schedule function)	14		s	D1	Byte1~Byte9 (1) Byte1: Decide which Timer is selected, and its enable/disable setting. Byte1[3:0]=0x1~0x07. There are totally 7 Timers, this value is used to decide which Timer is selected. Byte1[7]: Reserved, should be 0. Byte1[6]: The Timer is enable or not. Byte1[6]=1 means enable. Byte1[5]: The On Timer is enable or not. Byte1[5]=1 means enable. Byte1[4]: The Off Timer is enable or not. Byte1[4]=1 means enable. (2) Byte2: The Day of the On/Off Timer. bit0 for Sunday, bit1 for Monday, bit2 for Tuesday, bit3 for Wednesday, bit4 for Thursday, bit5 for Friday, bit6 for Saturday, bit7 for Everyday. (3) Byte3: The Hour of the On Timer. Byte3=0x00~0x17. (4) Byte4: The Minute of the On Timer. Byte4=0x00~0x3B. (5) Byte5: The Hour of the Off Timer. Byte5=0x00~0x17. (6) Byte6: The Minute of the Off Timer. Byte6=0x00~0x3B. (7) Byte7: Select the Video Source. 0x00=VGA, 0x01=HDMI1, 0x05=DVI, 0x06=DVI-2, Other values are reserved. (8) Byte8~9 are reserved, and should be 0x00.	600	Note: Some of the Video Sources are not supported if the model doesn't have this feature. Ex: Byte1=0x01 means the Timer no.1 is selected and disable. Ex: Byte1=0x41 means the Timer no.1 is select and enable, and its both On and Off Timers are disable. Ex: Byte1=0x61 means the Timer no.1 is select and enable, and its On Timer is enable, Off Timer is disable. Ex: Byte1=0x71 means the Timer no.1 is select and enable, and its both On and Off Timers are enable. Ex: Byte1=0x53 means the Timer no.3 is select and enable, and its On Timer is disable, Off Timer is enable. Ex: Byte2=0x02 means the Timer is on Monday. Ex: Byte3=0x08, Byte4=0x1E means the On Timer is at 8:30. Ex: Byte5=0x17, Byte6=0x00 means the Off Timer is at 23:00. Ex: Byte7=0x00 means the selected Video Source is VGA.
	Enable Signal Check	8		s	60	000: Disable	1500	
						001: Enable		

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark

	Signal Priority	8		s	61	Byte1: Priority ID and value can be
						
						    0x0: priority1,
						    0x1: priority2,
						    0x2: priority3,
						    0x3: priority4
						
						Byte2: Signal type and value can be
						
						    0x0: VGA,
						    0x1: HDMI,
						    0x5: DVI1,
						    0x6: DVI2
						
						Byte3: Value don't care
							500	

	Reset Signal Priority	8		s	62	Value don't care	500	
	Power Save	8		s	CB	000: Off	300	
						001~010: power off after x*30s		Ex: value 005 means 5*30s = 150s, power off after 150s
	Sleep Timer	8		s	53	000:off	300	
						001:5min		
						002:15min		
						003:30min		
						004:60min		
						005:90min		
						006:120min		
						007:180min		
	Equalizer	8		s	75	000:Automatic	300	For DVI source only
						001:Level 1		
						002:Level 2		
						003:Level 3		
						004:Level 4		
						005:Level 5		
						006:Level 6		
						007:Level 7		
	Auto Adjustment Execute	8		s	B5		3000	For VGA only, execute auto adjustment when Auto Adjustment= Enable.

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	VGA Clock frequency	8		s	B6	000 ~ 100	500	The real adjustable range is depends on timing (resolution), 0 ~100 will be calculated and map to the OSD setting. The value set to the command may be not the same with the value mapped to the OSD setting which user modify by remote or keypad. The operation of command will make user see the change of video on the monitor.
	VGA Phase	8		s	B7	000 ~ 100	500	
	VGA H. Position	8		s	B8	000 ~ 100	500	
	VGA V. Position Inc	8		s	B9		500	Increase the V position step by step until the boundary
	VGA V. Position Dec	8		s	BE		500	Decrease the V position step by step until the boundary
	VGA setting-Auto Adjustment	8		s	52	000:Disable	300	Modify for setting the OSD item only (not execute the Auto adjustment function)
						001:Enable		
	All Reset	8		s	68		5000	Value don't care
Initial Setting	OSD Rotation	8		s	C5	000: Landscape	500	
						001: Portrait	500	
	Language	8		s	55	000: English	200	
						001: French		
						002: German		
						003: Spanish		
						006: Japanese		

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	RTC Year	8		s	BD	018 ~ 046	500	Ex: value=018 means Year 2018 If the setting is illegal (Ex: Year 2018 doesn't have the date Feb/29), return "Invalid Command Reply".
	RTC Month	8		s	BF	001 ~ 012	500	Ex: value=001 means January If the setting is illegal (Ex: February doesn't have the date Feb/31), return "Invalid Command Reply".
	RTC Day	8		s	C0	001 ~ 031	500	If the setting is illegal (Ex: Day31 doesn't exist in April), return "Invalid Command Reply".
	RTC Hour	8		s	C1	000 ~ 023	500	
	RTC Minute	8		s	C2	000 ~ 059	500	
	Light Sensor	8		s	BA	000: Off	300	Ambient Light Sensor
						001: On	500	
	IR Control	8		s	63	000: Disable	300	There is no function for all the buttons at the remote controller, except password
						001: Enable		
	Keypad Control	8		s	65	000: Disable	300	There is no function for all the buttons at the keypad
						001: Enable		
	Anti-Image Retention	8		s	66	000: Off	500	
						001: Picture Shift		
	Time Format	8		s	50	000:24 hour	500	
						001:12hour		
Others	Aging Mode	8		s	6B	000:Disable	500	Not support in USB source
						001: Enable		

Mode	Set Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Test Pattern	8		s	6C	000: off	500	Not support in USB source
						001: White		
						002: Red		
						003: Green		
						004: Blue		
						005: Black		
	All User Reset	8		s	69		20000	Value don't care 1. Reset total working time. 2. Reset all Main menu OSD value to default. (Reset the RTC Time) It will power off then power on the monitor.
	Factory Reset	8		s	6A		20000	Value don't care 1. Reset total working time. 2. Reset all Main menu OSD value to default. (Reset the RTC Time) It will power off then power on the monitor.
Light Sensor	Light Sensor-Backlight3	8		s	D6	10 <= value <=100, value is a multiple of 5 and Backlight1 < Backlight2 < Backlight3	1000	Default:100 Refer to page 25
	Light Sensor-Backlight2	8		s	D7	5 <= value <= 95, value is a multiple of 5 and Backlight1 < Backlight2 < Backlight3		Default:40 Refer to page 25
	Light Sensor-Backlight1	8		s	D8	0 <= value <=90, value is a multiple of 5 and Backlight1 < Backlight2 < Backlight3		Default:0 Refer to page 25
	Light Sensor-Threshold2	10		s	DA	20 <= value <= 2000 , value is a multiple of 20 and Threshold1 < Threshold2		Default:800 Refer to page 25
	Light Sensor-Threshold1	10		s	DC	0 <= value <= 1980 , value is a multiple of 20 and Threshold1 < Threshold2		Default:140 Refer to page 25
	Restore Light Sensor Settings	8		s	DF		1000	Value don't care

Control Functions - Get Command List

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
All	Power	8		g	56	000: Standby	150	
						001: On		
	Volume	8		g	51	000 ~ 100	100	
	Mute	8		g	52	000: Off	100	
						001: On		
	Signal Status	8		g	32	000: Signal unstable (or no signal)	100	
						001: Signal stable (Active Sync exists)		
	5V	10		g	57	04750~05250, tolerance is -5%~+5%	100	value=4846 means 4..846V
	12V	10		g	58	11400~12600, tolerance is -5%~+5%	100	value=11707 means 11.707V
	Operation Time	10		g	5F	00000 ~ 99999 (Operation time when normal power off process is executed)	100	unit is minute
	Cumulative working time	10		g	88	00000 ~ 99999	100	unit is minute

	Thermal Sensor Value	10		g	5A	(1) Input value: Byte1-Byte2-...Byte5
						  (a) Byte1=
						    0x01: Get the thermal sensor value from main board
						    0x02: Get the thermal sensor value from keypad board
						  (b) Byte2~Byte5 are reserved, should b 0x00
						(2) Return value: Byte1-Byte2-...Byte5
						  (a) Byte1=0x01: The thermal sensor value is from main board
						  (b) Byte2:
						    If the thermal value is >=0, Byte2='+' (0x2B)
						    If the thermal value is <0, Byte2='-' (0x2D)
						  (c) Byte3~Byte5: The absolute value of the temperature, in ASCII format.
							100	Ex: If the temperature 5°C is from main board, the return value should be: Byte1=0x01, Byte2=0x2B, Byte3=0x30, Byte4=0x30, Byte5=0x35.

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Video Source	8		g	55	000:VGA	100	
						001:HDMI		
						005:DVI1		
						006:DVI2		
Picture	Picture Mode	8		g	95	000: Standard	100	
						001: Dynamic		
						002: Cinema		
						003: Custom		
	Contrast	8		g	4D	000 ~ 100	100	
	Brightness	8		g	4E	000 ~ 100	100	
	Sharpness	8		g	4F	000 ~ 010	100	
	Tint	8		g	97	000 ~ 050	100	
	Color	8		g	96	000 ~ 050	100	
	Backlight	8		g	98	000 ~ 100	100	
	Hue	14		g	87	Byte1: Tint value Byte2: Red Hue value, Byte3: Magenta Hue value, Byte4: Blue Hue value, Byte5: Cyan Hue value, Byte6: Green Hue value, Byte7: Yellow Hue value, Byte8~9: reserved, default:0 Byte1: value can be 0x00~0x32, Byte2~7: value can be 0x00~0x20	100	Ex: Byte1=0x19 means the Tint value on OSD is 25 Byte2~7: OSD value = return value - 16, Byte2= 0x00=0 means the Red Hue value is -16, Byte3=0x10=16 means the Magenta Hue value is 0
	Saturation	14		g	74	Byte1: Color value Byte2: Red Saturation value, Byte3: Magenta Saturation value, Byte4: Blue Saturation value, Byte5: Cyan Saturation value, Byte6: Green Saturation value, Byte7: Yellow Saturation value, Byte8~9: reserved, default:0 Byte1: value can be 0x00~0x32, Byte2~7: value can be 0x00~0x0F	100	Ex: Byte1=0x32 means the Color value on OSD is 50 Byte2~7: Byte2= 0x00=0 means the Red Hue value is 0, Byte3=0x0F=15means the Magenta Hue value is 15
	Color Temp	8		g	9A	0: 4900K 1:6500K, 2:9300K, 3:11500K, 4: Custom	100	

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Color Temperature Gain Value	14		g	DF	Byte1~Byte9 (2) Byte 1 ~ Byte 3 : 0~0x7FF for Red Gain in hex format (3) Byte 4 ~ Byte 6 : 0~0x7FF for Red Gain in hex format (4) Byte 7 ~ Byte 9 : 0~0x7FF for Red Gain in hex format	100	Ex: Byte1=0, Byte2= 0x07, Byte3=0xFF ==> 0x7FF = 2047
	Aspect Ratio	8		g	60	000: Full	100	
						001: TRIM_UP		
						002: TRIM_DOWN		
						003: Zoom		
						004: Normal		
	Aspect Ratio Zoom	8		g	61	90 ~ 300	100	90 means 90%, 300 means 300%, for aspect ratio is Zoom only
	Aspect Ratio H.Zoom	8		g	62	90 ~ 300	100	90 means 90%, 300 means 300%, for aspect ratio is Zoom only
	Aspect Ratio V.Zoom	8		g	63	90 ~ 300	100	90 means 90%, 300 means 300%, for aspect ratio is Zoom only

	Aspect Ratio H. Position	10		g	65	(1) Input value: Byte1-Byte2-...Byte5
						  (a) Byte1~Byte5 are reserved, should be 0x30
						(2) Return value: Byte1-Byte2-...Byte5
						  (a) Byte1= reserved, should be 0x30
						  (b) Byte2:
						    If the H position value is >=0, Byte2='+' (0x2B)
						    If the H position value is <0, Byte2='-' (0x2D)
						  (c) Byte3~Byte5: The absolute value of the H position in ASCII format.
							100	

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark

	Aspect Ratio V. Position	10		g	66	(1) Input value: Byte1-Byte2-...Byte5
						  (a) Byte1~Byte5 are reserved, should be 0x30
						(2) Return value: Byte1-Byte2-...Byte5
						  (a) Byte1= reserved, should be 0x30
						  (b) Byte2:
						    If the V position value is >=0, Byte2='+' (0x2B)
						    If the V position value is <0, Byte2='-' (0x2D)
						  (c) Byte3~Byte5: The absolute value of the V position in ASCII format.
							100	

	Gamma	8		g	35	000:gamma2.2	100	
						001:gamma2.4		
						002:gamma native		
	Noise Reduction	8		g	36	000:Off	100	
						001:Low		
						002:Middle		
						003:High		
	Adaptive Contrast	8		g	3D	000:Off	100	
						001:On		
	Color Range	8		g	3E	000:16~235	100	
						001:0~255		
						002:Auto		

Setup	On/Off Timer (Schedule function)	14		g	DC	Input value: Byte1 - Byte2 - Byte3…Byte9
						(1) Byte1[3:0]:
						  The Number of the On/Off Timer.
						  There are totally 7 On/Off Timers, and this byte is used to selected which timer is going to be accessed.
						(2) Byte1[7:4] is reserved, should be 0.
						(3) Byte2~9 are reserved, should be 0x00.
							100	See the return value examples below:
								Ex: Byte1=0x01 means the Timer no.1 is selected and disable.
								Ex: Byte1=0x41 means the Timer no.1 is select and enable, and its both On and Off Timers are disable.

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
						Return value: Byte1 - Byte2 - Byte3…Byte9 (1) Byte1[3:0]: Should return the same value as Byte1 at Input value. Byte1[7]: Reserved, should be 0. Byte1[6]: The Timer is enable or not. Byte1[6]=1 means enable. Byte1[5]: The On Timer is enable or not. Byte1[5]=1 means enable. Byte1[4]: The Off Timer is enable or not. Byte1[4]=1 means enable. (2) Byte2: The Day of the On/Off Timer. bit0 for Sunday, bit1 for Monday, bit2 for Tuesday, bit3 for Wednesday, bit4 for Thursday, bit5 for Friday, bit6 for Saturday, bit7 for Everyday. (3) Byte3: The Hour of the On Timer. Byte3=0x00~0x17. (4) Byte4: The Minute of the On Timer. Byte4=0x00~0x3B. (5) Byte5: The Hour of the Off Timer. Byte5=0x00~0x17. (6) Byte6: The Minute of the Off Timer. Byte6=0x00~0x3B. (7) Byte7: Select the Video Source. 0x00=VGA, 0x01=HDMI1, 0x05=DVI, 0x06=DVI-2, 0xFF=Default. Other values are reserved. (8) Byte8~9 are reserved, and should be 0x00.		Ex: Byte1=0x61 means the Timer no.1 is select and enable, and its On Timer is enable, Off Timer is disable. Ex: Byte1=0x71 means the Timer no.1 is select and enable, and its both On and Off Timers are enable. Ex: Byte1=0x53 means the Timer no.3 is select and enable, and its On Timer is disable, Off Timer is enable. Ex: Byte2=0x02 means the Timer is on Monday. Ex: Byte3=0x08, Byte4=0x1E means the On Timer is at 8:30. Ex: Byte5=0x17, Byte6=0x00 means the Off Timer is at 23:00. Ex: Byte7=0x00 means the selected Video Source is VGA. Note: Input source none : 0xFF for Power on input source presents symbol '--'
	Enable Signal Check	8		g	4A	000: Disable	100	
						001: Enable		

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark

	Signal Check Priority	14		g	4B	Input value: Byte1 - Byte2 - Byte3…Byte9, value don't care
						Return value: Byte1 - Byte2 - Byte3…Byte9
						(1) Byte1 to Byte4: value can be
						      0x0: VGA,
						      0x1: HDMI,
						      0x5: DVI1,
						      0x6: DVI2,
						If input source does not set, return 0xFF
						Byte1: Priority1 input signal
						Byte2: Priority2 input signal
						Byte3: Priority3 input signal
						Byte4: Priority4 input signal
						(2) Byte5~9 are reserved, should be 0x00.
							100	

	Network Setting	14		g	DD	Input Value: Byte1 - Byte2 - Byte3…Byte9
						(1) Byte1=0x00: IP Setup Mode
						    Byte1=0x01: IP Address
						    Byte1=0x02: Get Subnet Mask
						    Byte1=0x03: Default Gateway
						    Byte1=0x04: Primary DNS
						    Byte1=0x05: Secondary DNS
						    Byte1=0x06: MAC Address
						(2) Byte2~9 are reserved, should be 0x00.
						Return value: Byte1 - Byte2 - Byte3…Byte9
						The Byte1 at the return value should be the same as the value of Byte1 at Input value.
						Byte2~Byte15 should be hex value format
						(1) If Byte1=0x00(IP Setup Mode) at Input value, the return value should be
						    Byte1=0x00
						    Byte2=0x00: Manual
						         0x01: DHCP
						    Byte3~9 are reserved, should be 0x00.
							100	Ex:
								Subnet Mask= 255.255.255.0, the return value:
								Byte1=0x02,
								Byte2=0xFF,
								Byte3=0xFF,
								Byte4=0xFF,
								Byte5=0x00,
								Byte6~9=0x00.

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
						(2) If Byte1=0x01(IP Address) at Input value, the return value should be 　　Ex: IP address=169.254.81.38 　　Byte1=0x01 (same as Byte1 at Input value) 　　Byte2=0xA9 (=169), 　　Byte3=0xFE (=254), 　　Byte4=0x51(=81), 　　Byte5=0x26 (=38) 　　Byte6~9 are reserved, should be 0x00. (3) If Byte1=0x02~0x05 at Input value, refer to (2) (4) If Byte1=0x06(MAC Address) at Input value, the return value should be 　　Ex: MAC address=00:22:64:7E:2C:82 　　Byte1=0x06 (same as Byte1 at Input value) 　　Byte2=0x00, Byte3=0x22, 　　Byte4=0x64, Byte5=0x7E, 　　Byte6=0x2C, Byte7=0x82 　　Byte8~9 are reserved, should be 0x00.		
	Power Save	8		g	D1	000: Off	100	
						001~010: power off after x*30s		Ex: value 005 means 5*30s = 150s, power off after 150s
	Sleep Timer	8		g	43	000:off	100	
						001:5min		
						002:15min		
						003:30min		
						004:60min		
						005:90min		
						006:120min		
						007:180min		

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Equalizer	8		g	70	000:Automatic	100	For DVI source only
						001:Level 1		
						002:Level 2		
						003:Level 3		
						004:Level 4		
						005:Level 5		
						006:Level 6		
						007:Level 7		
	VGA Clock frequency	8		g	A2	000 ~ 100	100	For VGA only.
	VGA Phase	8		g	A3	000 ~ 100	100	For VGA only.
	VGA H. Position	8		g	A4	000 ~ 100	100	For VGA only.
	VGA V. Position	8		g	A5	000 ~ Max_value	100	For VGA only. Max_value depend on timing (resolution)
	VGA setting-Auto Adjustment	8		g	42	000:Disable	100	
						001:Enable		
Initial Setting	Language	8		g	64	000: English	100	
						001: French		
						002: German		
						003: Spanish		
						006: Japanese		
	RTC Year	8		g	A9	018 ~ 046	100	Ex: value=018 means Year 2018 If the RTC is not enable, return "Invalid Command Reply"
	RTC Month	8		g	AA	001 ~ 012	100	Ex: value=001 means January If the RTC is not enable, return "Invalid Command Reply"
	RTC Day	8		g	AB	001 ~ 031	100	If the RTC is not enable, return "Invalid Command Reply"

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	RTC Hour	8		g	AC	000 ~ 023	100	If the RTC is not enable, return "Invalid Command Reply"
	RTC Minute	8		g	AD	000 ~ 059	100	If the RTC is not enable, return "Invalid Command Reply"
	Light Sensor	8		g	A6	000: Off	100	Ambient Light Sensor
						001: On		
	IR Control	8		g	53	000: Disable	100	All the buttons at the remote controller have no function
						001: Enable		
	Keypad Control	8		g	5D	000: Disable	100	All the buttons at the keypad board is no function
						001: Enable		
	Anti-Image Retention	8		g	5C	000: Off	100	
						001: Picture Shift		
	Time Format	8		g	40	000:24 hour	100	
						001:12hour		
Multi Display Control	Monitor ID	8		g	5E	001 ~ 025	100	
	Power On Delay	8		g	94	000: OFF	100	
						001~060: power on after x*0.5 seconds		value= 6 means 6*0.5 = 3s, power on after 3s
						061: Auto		
	Power On LED	8		g	E3	000: Off	100	
						001: On		
Others	Aging Mode	8		g	6B	000:Disable		
						001:Enable		
	Test Pattern	8		g	6F	000: off	100	
						001: White		
						002: Red		
						003: Green		
						004: Blue		
						005: Black		

| OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
System Information	Model Info	20		g	20	(1) Input value: Byte1 - Byte2 - Byte3…Byte15 Byte2~Byte11=0x00 Byte1=0x03: Get Model Name Byte1=0x04: Get Scale Firmware Version Byte1=0x05: Get LAN Firmware Version Byte1=0x07: Get Firmware Built Date Byte1=0x08: Get Firmware Built Time Byte1=0x09: Get Panel Info. (2) Return value: Byte1 - Byte2 - Byte3…Byte15 The Byte1 value at the return value should be the same as the value of Byte1 at input value. Byte2~Byte15 should be ASCII format. Ex: If Customer=Generic, Byte1=0x01, Byte2='G', Byte3='e',...Byte8='c', Byte9~Byte11=0x00. Ex: If the Scale Firmware Version=1.02, Byte1=0x03, Byte2='1', Byte3='.', Byte4='0', Byte5='2', Byte6~Byte11=0x00.	500	
Light Sensor	Light Sensor-Backlight3	8		g	76	10 <= value <= 100, value is a multiple of 5 and Backlight1 < Backlight2 < Backlight3	150	
	Light Sensor-Backlight2	8		g	77	5 <= value <= 95, value is a multiple of 5 and Backlight1 < Backlight2 < Backlight3	150	
	Light Sensor-Backlight1	8		g	78	0 <= value <= 90, value is a multiple of 5 and Backlight1 < Backlight2 < Backlight3	150	
	Light Sensor-Current Backlight	8		g	7D	0~100	150	Light Sensor is Off: Return invalid command. Light Sensor is On: (a) Current Status is success: Return value of current backlight (b) Current Status is fail: Return 999

OSD mode	Get Function	Len	ID	Cmd Type	Cmd Code (Hex)	Value Range (ASCII Bytes)	Wait response time (ms)	Remark
	Light Sensor-Current Status	8		g	7E	000: Off 001: Fail 002: Success	150	
	Light Sensor-Threshold2	10		g	7A	20 <= value <= 2000, value is a multiple of 20 and Threshold1 < Threshold2	150	
	Light Sensor-Threshold1	10		g	7B	0 <= value <= 1980, value is a multiple of 20 and Threshold1 < Threshold2	150	
	Light Sensor-Current Lux	10		g	7C		150	value=13500 means current lux detected by light sensor is 13500 lux Light Sensor is Off: Return invalid command. Light Sensor is On: (a) Current Status is success: Return value of current lux (b) Current Status is fail: Return 99999

Product Specifications

LCD Module	
42.8 Type Half (1071.7 mm) (diagonal)	
Liquid Crystal	Active matrix type color TFT LCD
Effective Display Area	1039.68 × 259.92mm
Number of Display Pixels	1920 × 480
Pixel Pitch	0.542mm
Display Colors	Approximately 16.77 million colors
Viewing Angle (Standard Value)	178° left and right, 178° up and down (contrast ratio 10)
Brightness	700nits (P420IVF01.1-9) 1500nits (P420IVF02.0-9)
Contrast Ratio (Standard Value)	4000 : 1
Response Speed (Standard Value)	8.0ms. (G.to.G)
Scanning Frequency	
Horizontal	29 to 81 kHz
Vertical	56 to 76 Hz (50/60 Hz frame lock)

Terminals		
AC Power input		
Video Input	DVI 1/DVI 2	Support DVI-D only
	HDMI	
	VGA	
DVI output	DVI output	1. Signal comes from DVI input ports only. 2. No output if content with HDCP.
Audio input	φ3.5mm Jack	Use for VGA/DVI audio
Audio output	φ3.5mm Jack	
USB	FW upgrade	
RS232 input	RS232/UART control (Male)	Use for control by PC
RS232 output	RS232/UART control (Male)	To control the 2nd display
LAN Port	LAN Port	Use for control by PC
Local Key (Keypad)	Menu, Source, +, -, 5, 6, Power	Rear (7 Keys)
LED Indicator	On : Green ; Standby : Red	Front/ 2 Colors

IR Receiver	Infrared Receiver, 37.9KHz	Front
Light Sensor	Use for adjusting backlight automatically	Front
Standards Compliants		
Safety	J60950-1, J3000, IEC/EN/UL60950-1, IEC/EN/UL62368-1, CNS14336-1, CNS15663	
Power saving	VESA.DPM compliant, Energy Star (Ver7.1), CEC	
Unnecessary radiation	VCCI-A, JIS.C.61000-3-2, J55032 (Class A), EN50155,CNS13438(Class A)	
Operational Environment		
Temperature	0 to 50°C	
Humidity	10 to 80% (No condensation)	
Altitude	2000m	
Storage Environment		
Temperature	–20 to 60°C	
Humidity	10 to 90% (No condensation)	
Power Supply		
AC100-240V 50/60Hz		
Power Consumption		
Maximum	75W (P420IVF01.1-9) 95W (P420IVF02.0-9)	
Power saving	2.0W or lower	
Standby	0.5W or lower	
Weight		
Approximately 9.5kg		

External dimensions (excluding protrusions)

Dimensions: mm
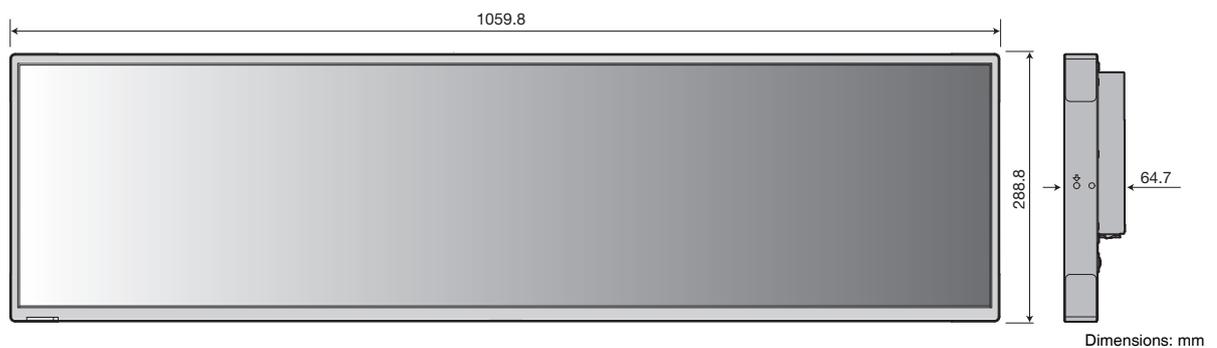
Supported Resolutions

Support Timing	HDMI	DVI	PC
640x480@60	640x480@60	640x480@60	640x480@60
640x480@72	640x480@72	640x480@72	640x480@72
640x480@75	640x480@75	640x480@75	640x480@75
720x400@70	720x400@70	720x400@70	720x400@70
800x600@56	800x600@56	800x600@56	800x600@56
800x600@60	800x600@60	800x600@60	800x600@60
800x600@72	800x600@72	800x600@72	800x600@72
800x600@75	800x600@75	800x600@75	800x600@75
1024x768@60	1024x768@60	1024x768@60	1024x768@60
1024x768@70	1024x768@70	1024x768@70	1024x768@70
1024x768@75	1024x768@75	1024x768@75	1024x768@75
1152x864@75	1152x864@75	1152x864@75	1152x864@75
1280x768@60	1280x768@60	1280x768@60	
1280x960@60	1280x960@60	1280x960@60	1280x960@60
1280x1024@60	1280x1024@60	1280x1024@60	1280x1024@60
1280x1024@75	1280x1024@75	1280x1024@75	1280x1024@75
1366x768@60	1366x768@60	1366x768@60	
1400x1050@60	1400x1050@60	1400x1050@60	1400x1050@60
1440x900@60	1440x900@60	1440x900@60	1440x900@60
1600x1200@60	1600x1200@60	1600x1200@60	1600x1200@60
1680x1050@60	1680x1050@60	1680x1050@60	1680x1050@60
1920x480@60	1920x480@60	1920x480@60	1920x480@60
1920x540@60	1920x540@60	1920x540@60	
1920x960@60	1920x960@60	1920x960@60	
1920x1080@60	1920x1080@60	1920x1080@60	1920x1080@60
CEA-720x480P-60	CEA-720x480P-60		
CEA-1280x720P-60	CEA-1280x720P-60		
CEA-1920x1080i-60	CEA-1920x1080i-60		
CEA-1440x480i-60	CEA-1440x480i-60		
CEA-720x576P-50	CEA-720x576P-50		
CEA-1280x720P-50	CEA-1280x720P-50		
CEA-1920x1080i-50	CEA-1920x1080i-50		
CEA-1440x576i-50	CEA-1440x576i-50		
CEA-1920x1080P-24	CEA-1920x1080P-24		
CEA-1920x1080P-25	CEA-1920x1080P-25		
CEA-1920x1080P-30	CEA-1920x1080P-30		

Recycling Information

WEEE Mark (European Directive 2012/19/EU)

Disposing of your used product: In the European Union

EU-wide legislation as implemented in each Member State requires that used electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you dispose of such products, please follow the guidance of your local authority or ask the shop where you purchased the product, or if applicable, follow applicable legislation or agreement you may have. The mark on electrical and electronic products may only apply to the current European Union Member States.

Outside the European Union

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

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

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